

# KIC 010292554

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010292554-01	OBS	No	0.660641	131.678057	23.2	5.500	7.9	5.7	0.84	5497	0.41	2695.37

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010292554-01	OBS	FP	0.00	1	0	1	1	LPP_DV—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.

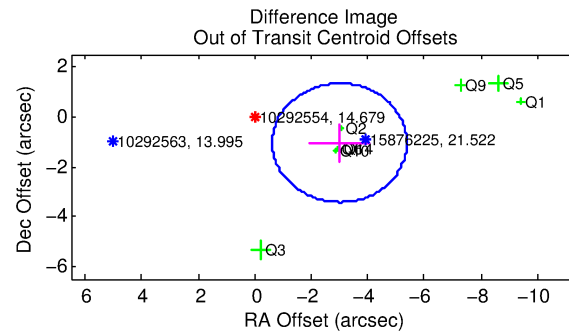
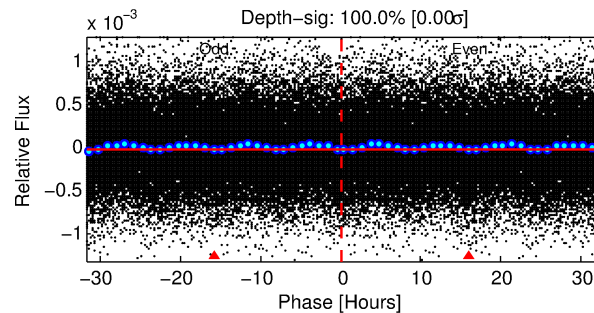
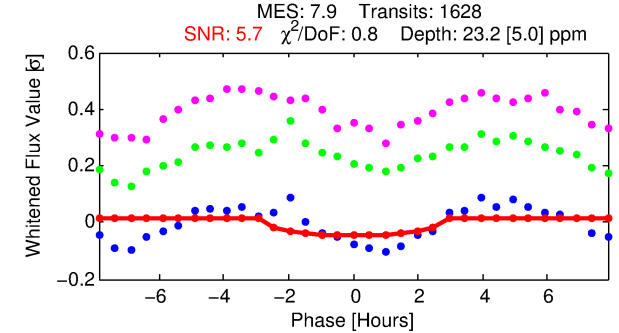
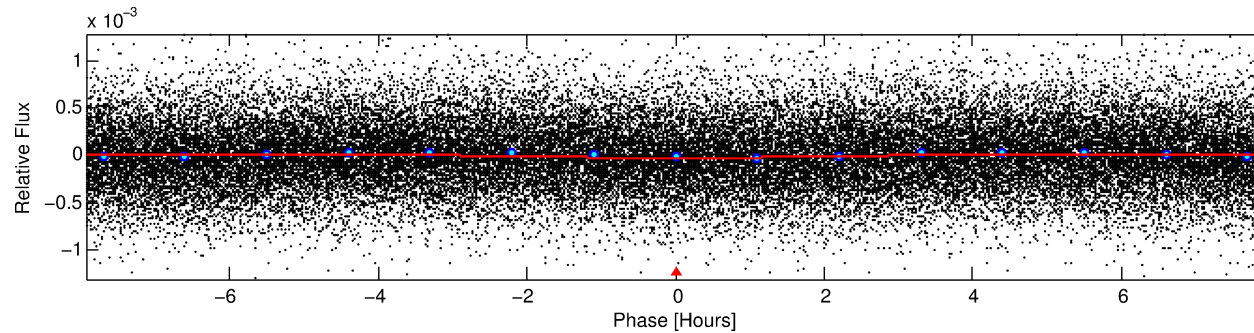
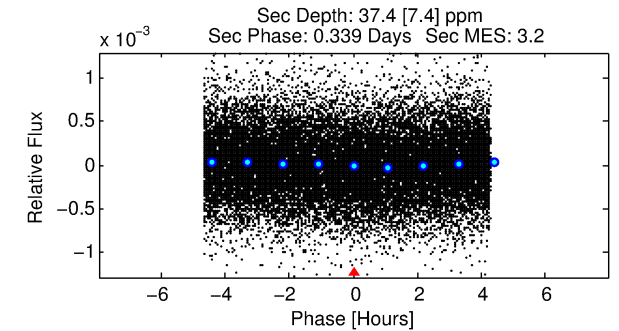
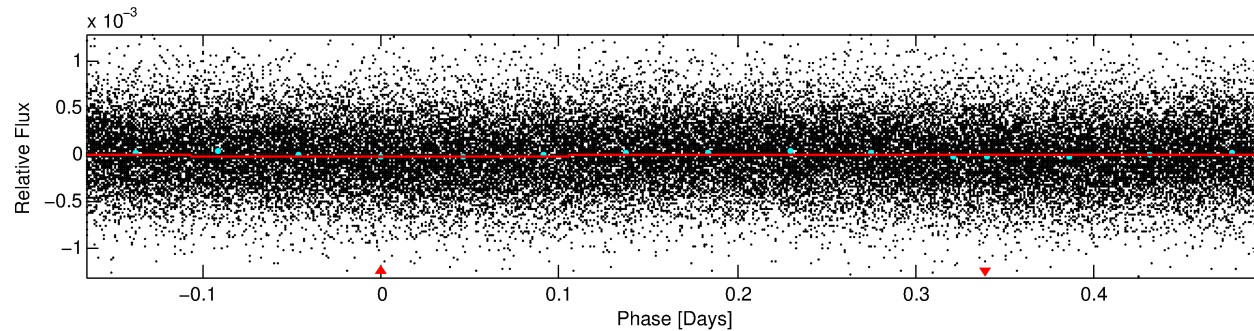
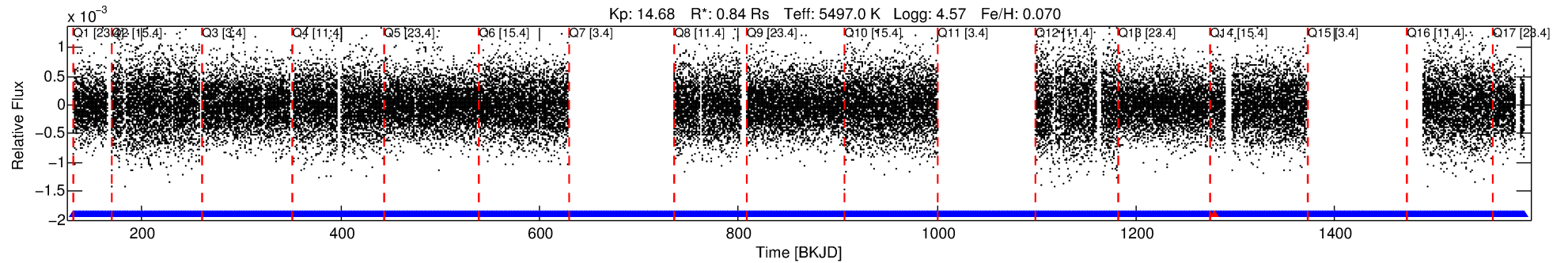
## Ephemeris Match Information For 010292554-01

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	$\sigma_P$	$\sigma_T$
010292554-01	10292554	010226388-pri	10226388	1:1	108.4	-19	19	10.77	14.68	11109.00	Direct-PRF	0	2.71	0.74

**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: 10292554 Candidate: 1 of 1 Period: 0.661 d



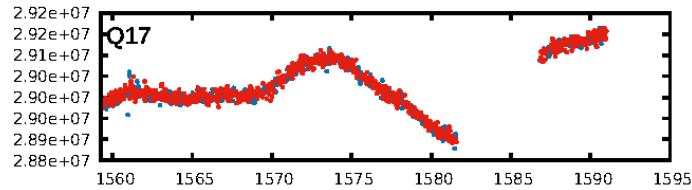
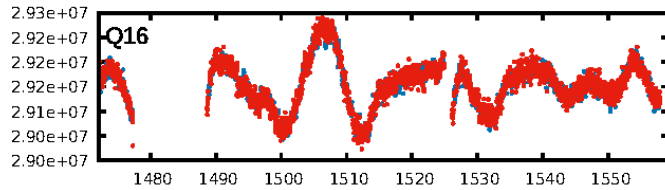
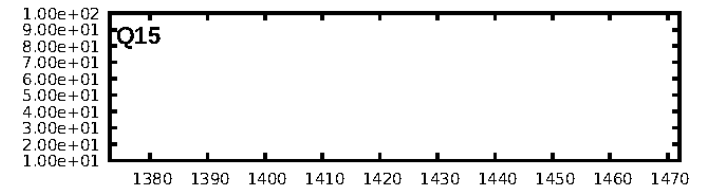
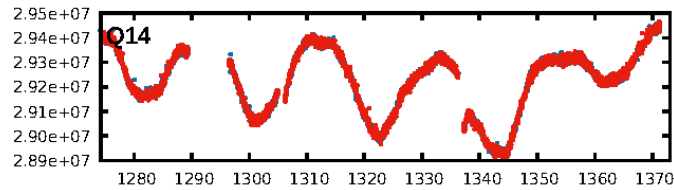
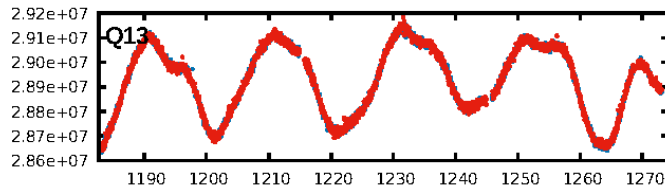
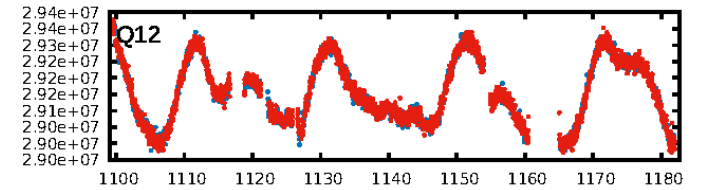
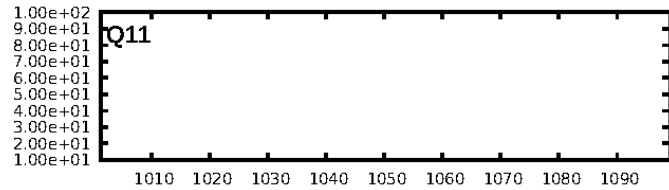
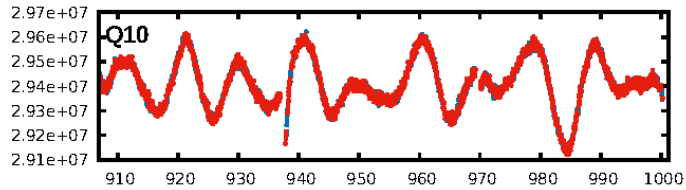
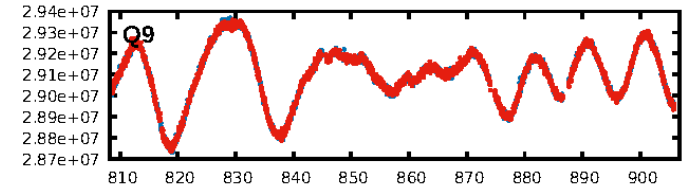
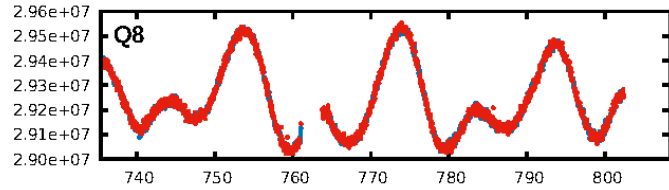
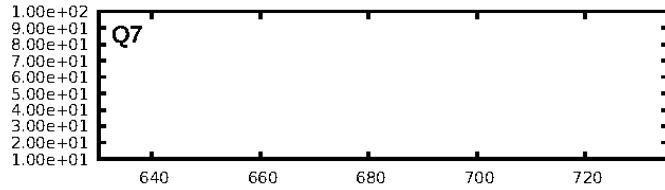
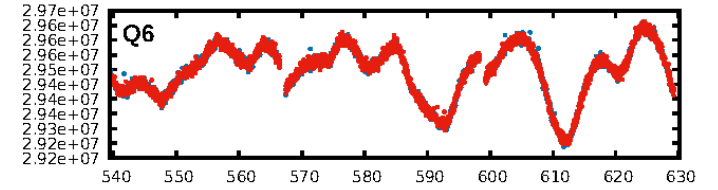
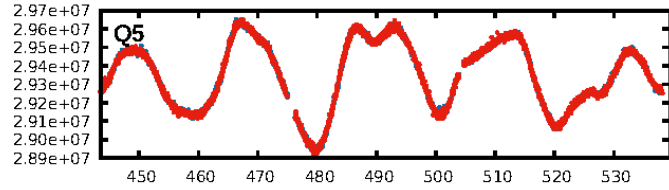
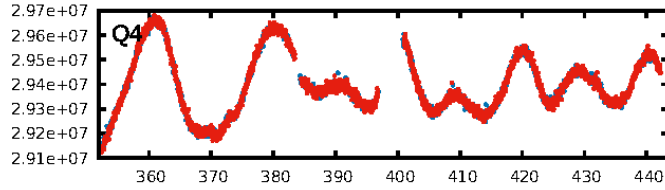
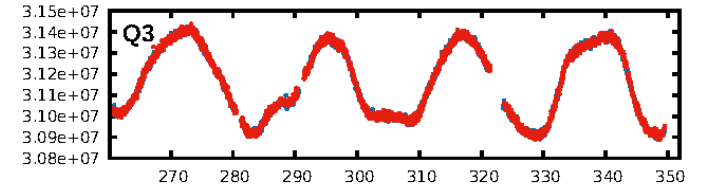
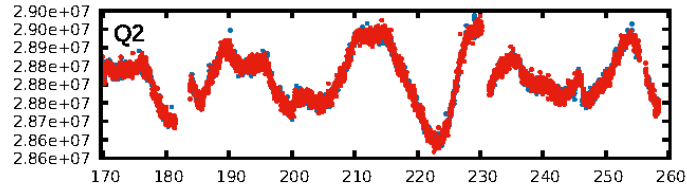
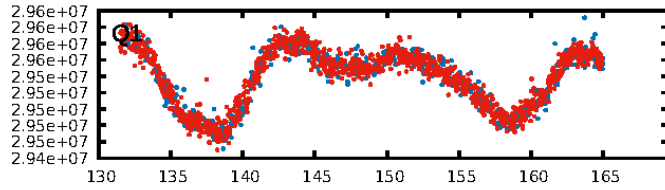
## DV Fit Results:

Period = 0.66064 [0.00002] d  
Epoch = 131.6781 [0.0090] BKJD  
Rp/R\* = 0.0045 [0.0067]  
a/R\* = 1.10 [1.14]  
b = 0.50 [9.10]  
Seff = 2695.37 [800.93]  
Teff = 1837 [136] K  
Rp = 0.41 [0.62] Re  
a = 0.0146 [0.0026] AU  
Ag = 26.05 [78.48] [0.32σ]  
Teffp = 6418 [4817] K [0.95σ]

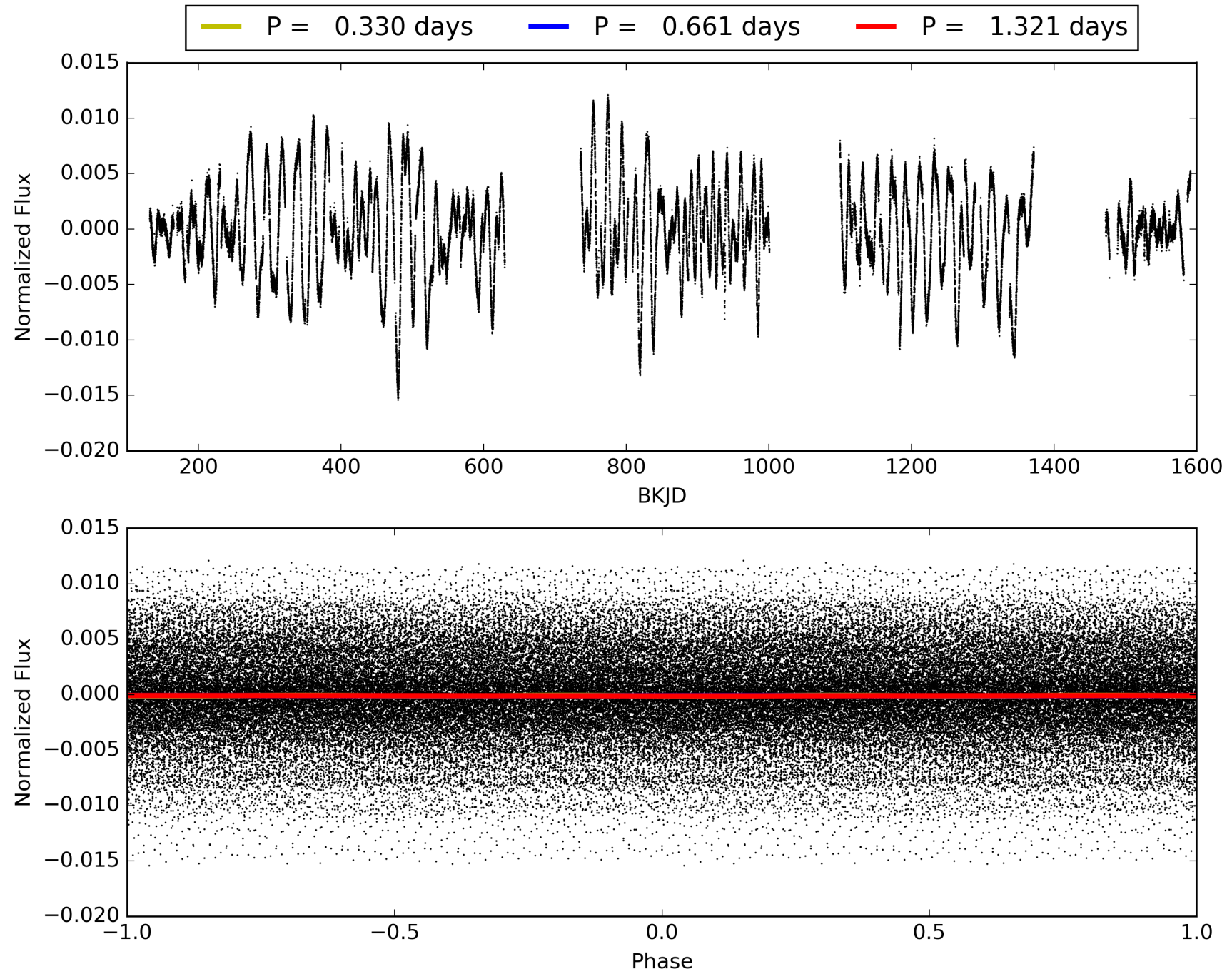
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1535/1536]  
GhostDiagnostic-chr: -0.06939  
Centroid-sig: 2.2%  
Centroid-so: 2.776 arcsec [1.33σ]  
OotOffset-rm: 3.176 arcsec [4.01σ]  
KicOffset-rm: 3.004 arcsec [9.34σ]  
OotOffset-st: 4/1/0/3 [8]  
KicOffset-st: 4/1/0/3 [8]  
DiffImageQuality-fgm: 0.00 [0/8]  
DiffImageOverlap-fno: 1.00 [14/14]

## TCE 010292554-01, PDC Light Curves

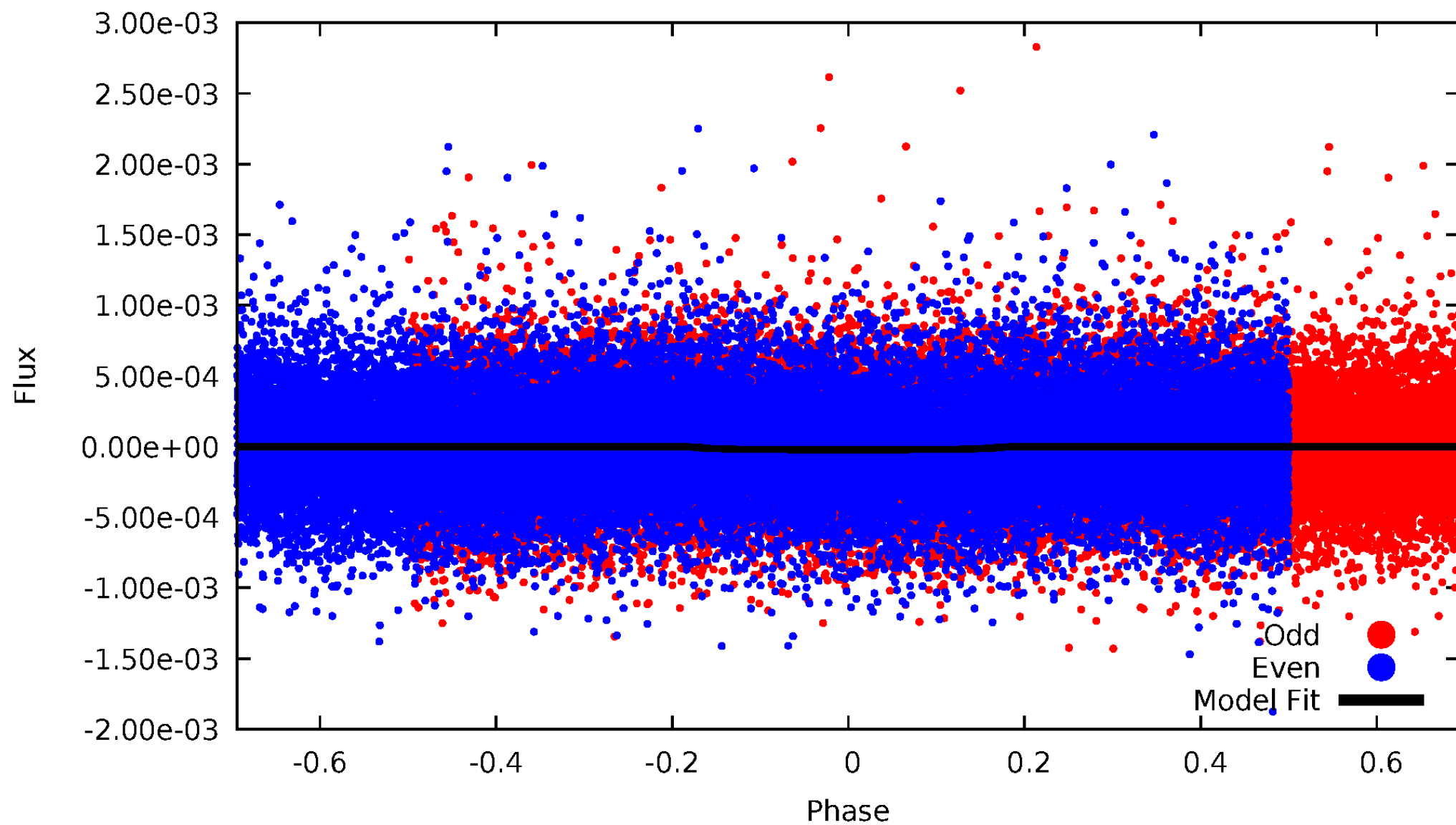


TCE 010292554-01



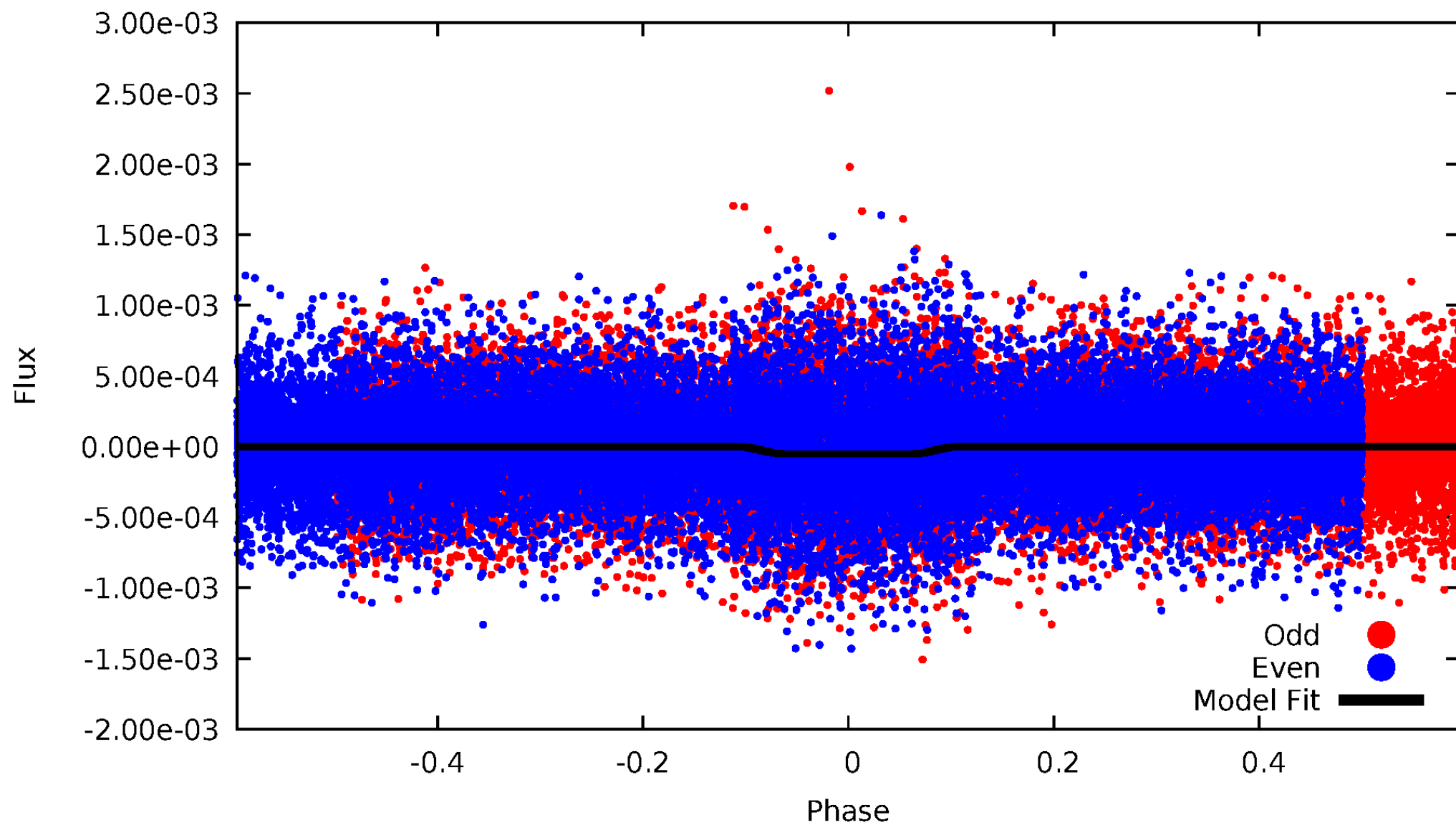
# DV Odd/Even

TCE 010292554-01



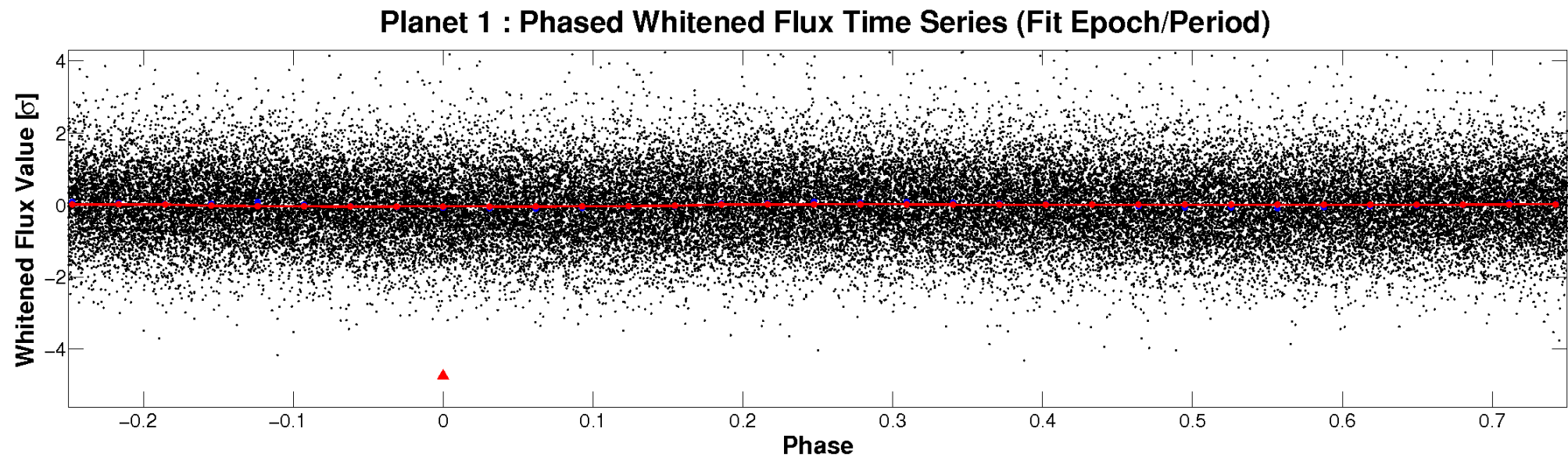
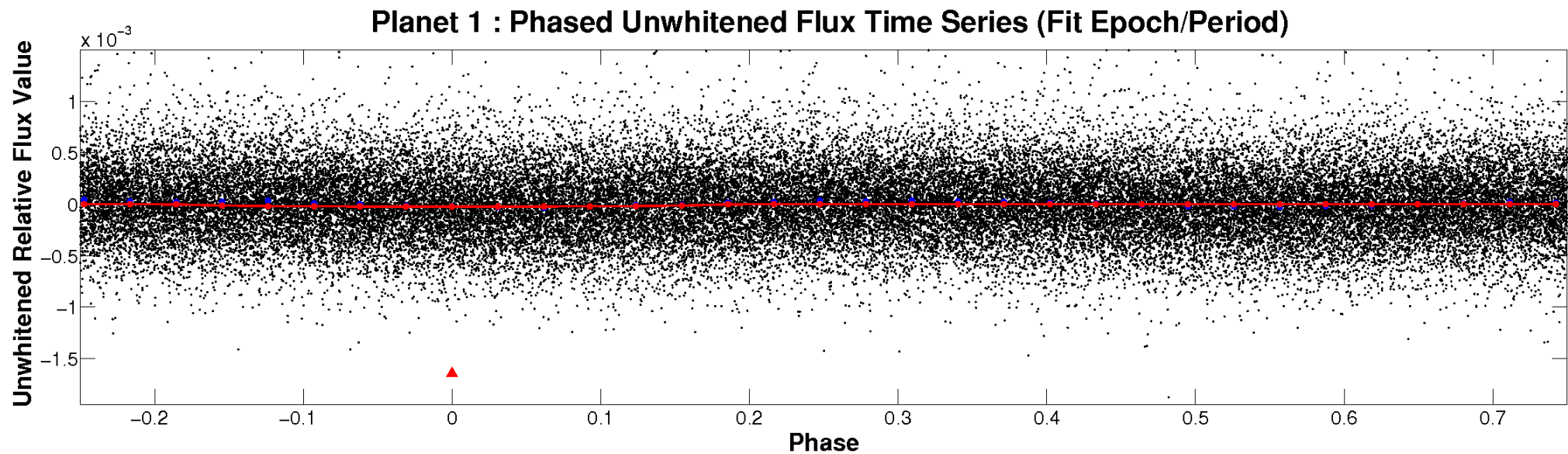
# ALT Odd/Even

TCE 010292554-01



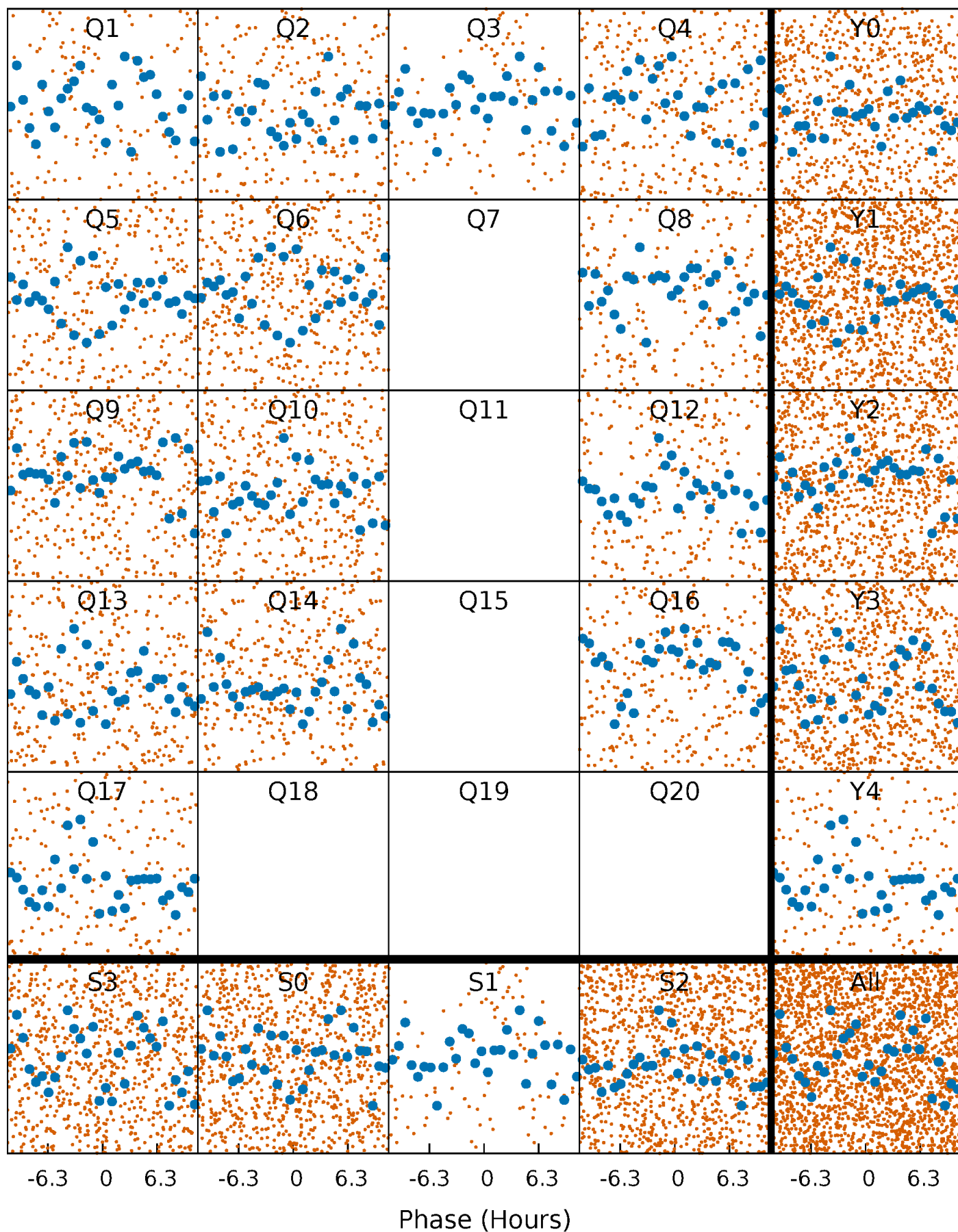


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

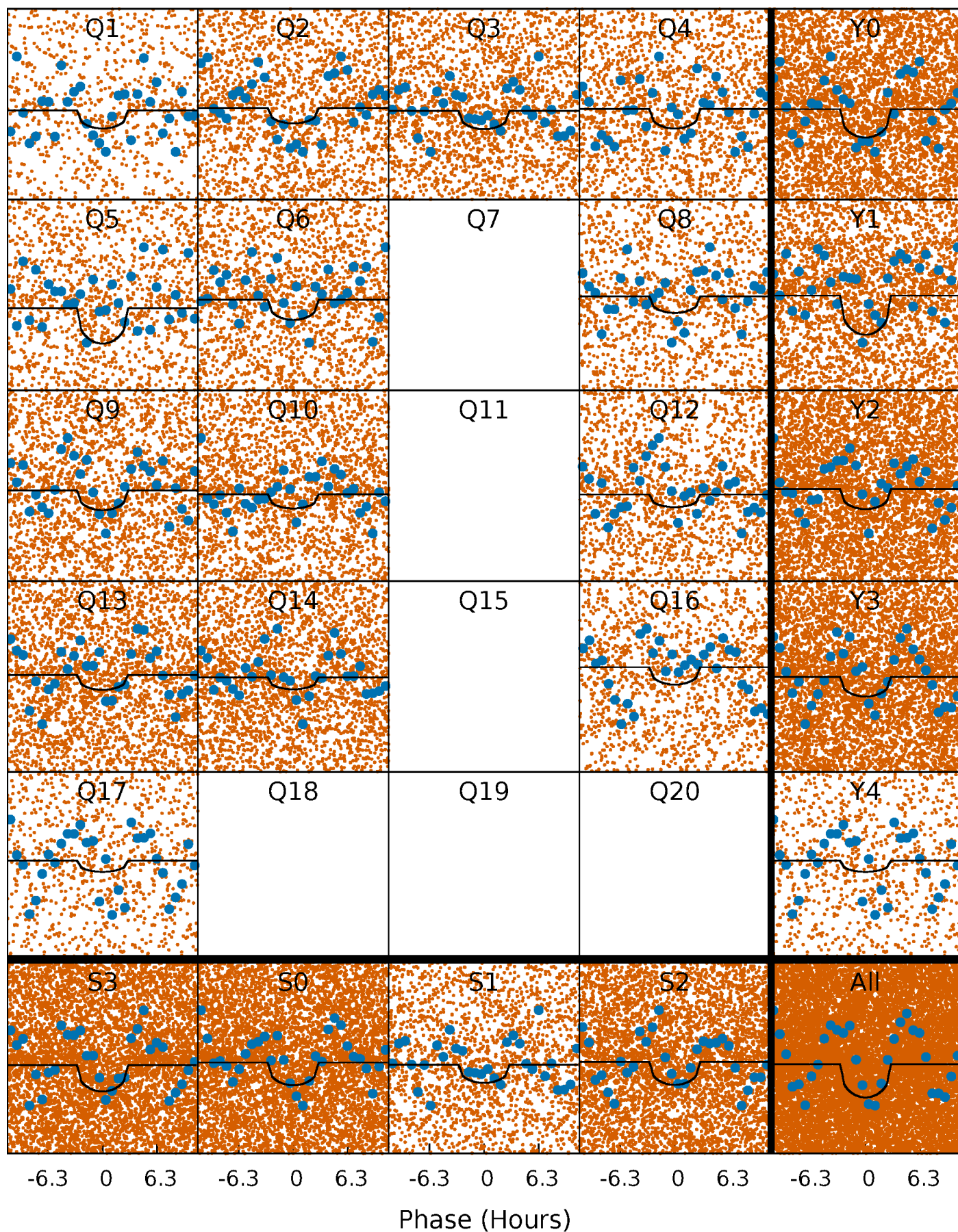
TCE 010292554-01 P= 0.660641 Days  $T_0=131.678057$  (BKJD)





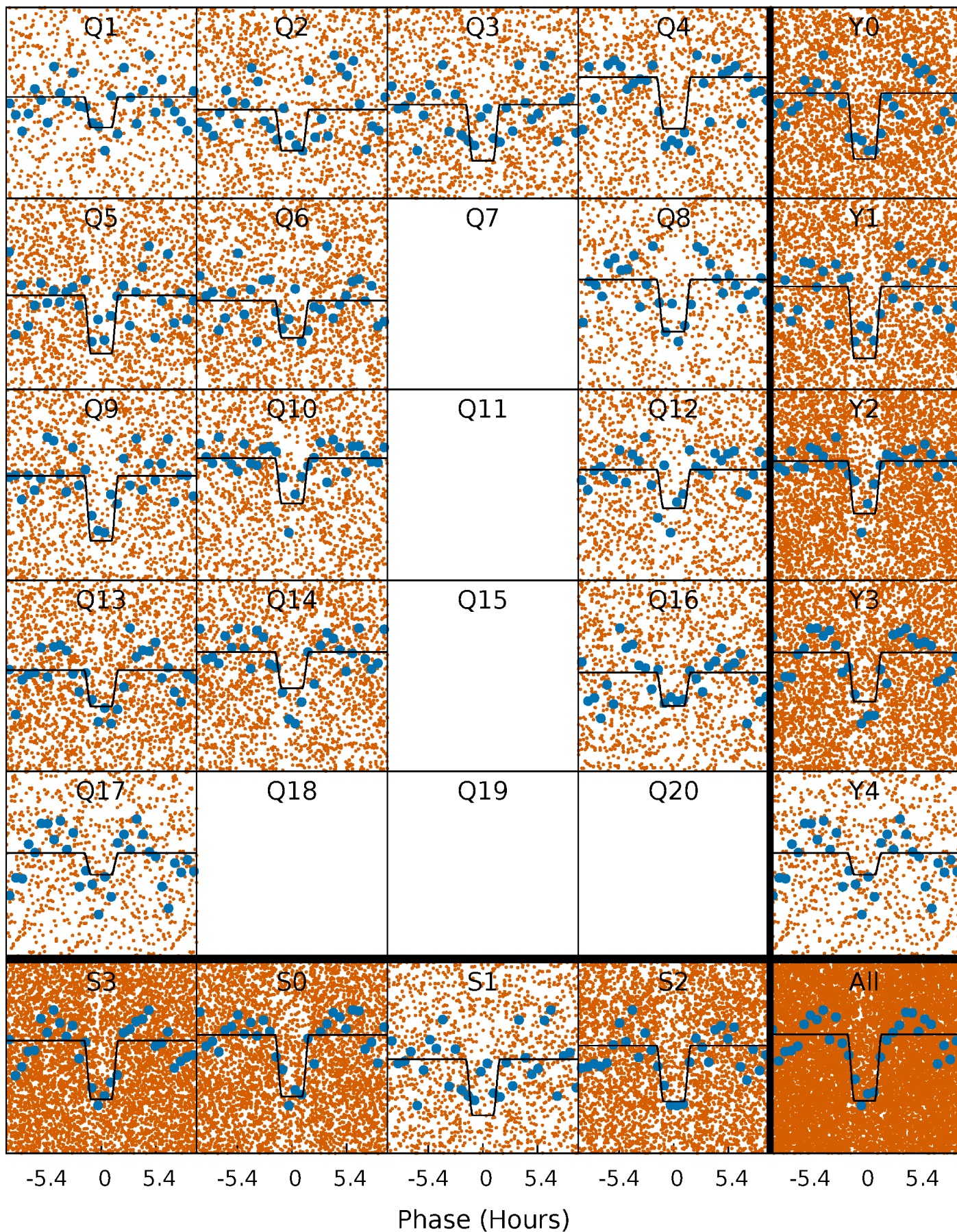
# DV Quarter-Phased Transit Curves

TCE 010292554-01 P= 0.660641 Days  $T_0=131.678057$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 010292554-01 P= 0.660673 Days  $T_0=131.671481$  (BKJD)

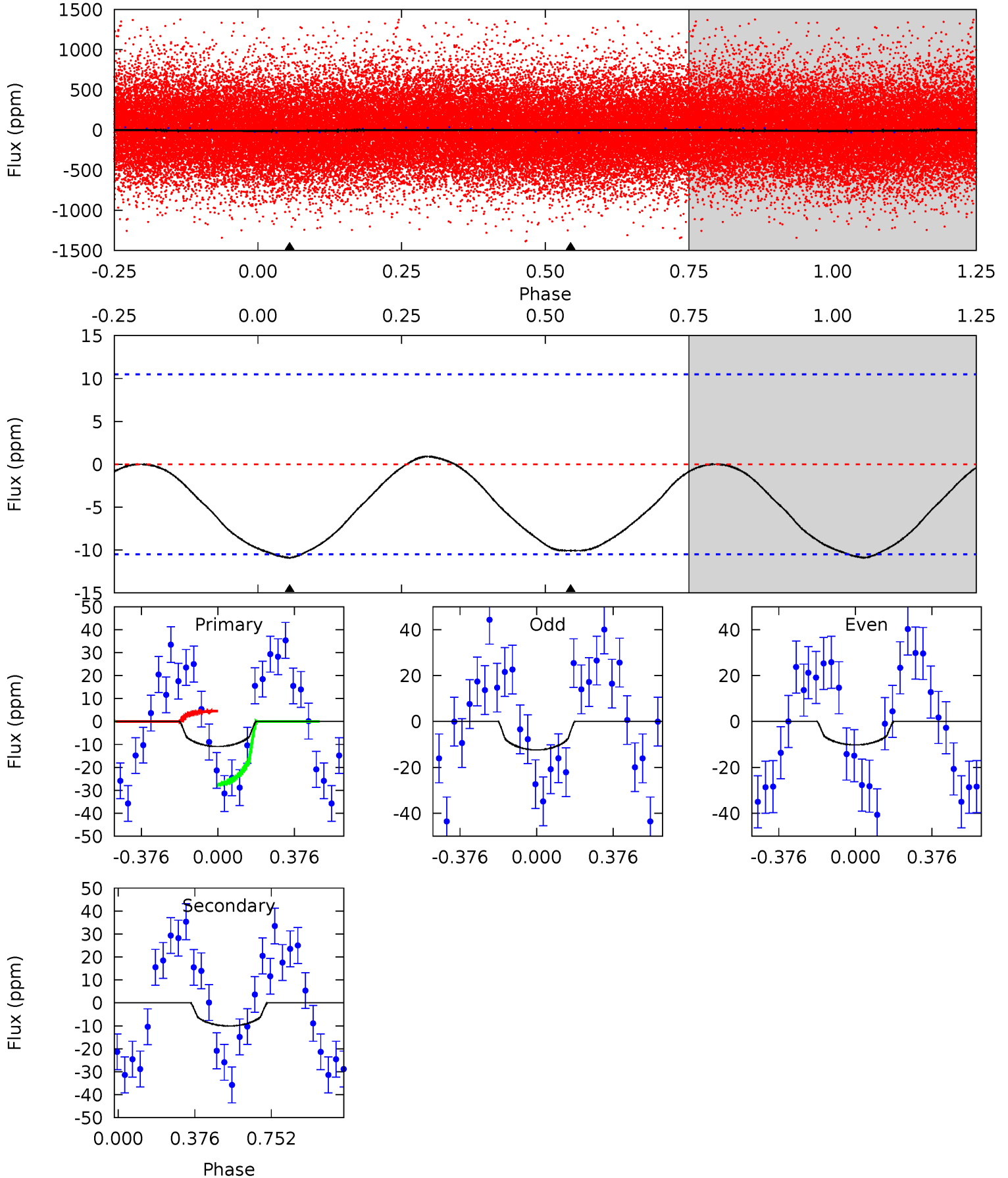




# DV Model-Shift Uniqueness Test

010292554-01, P = 0.660641 Days, E = 131.017416 Days

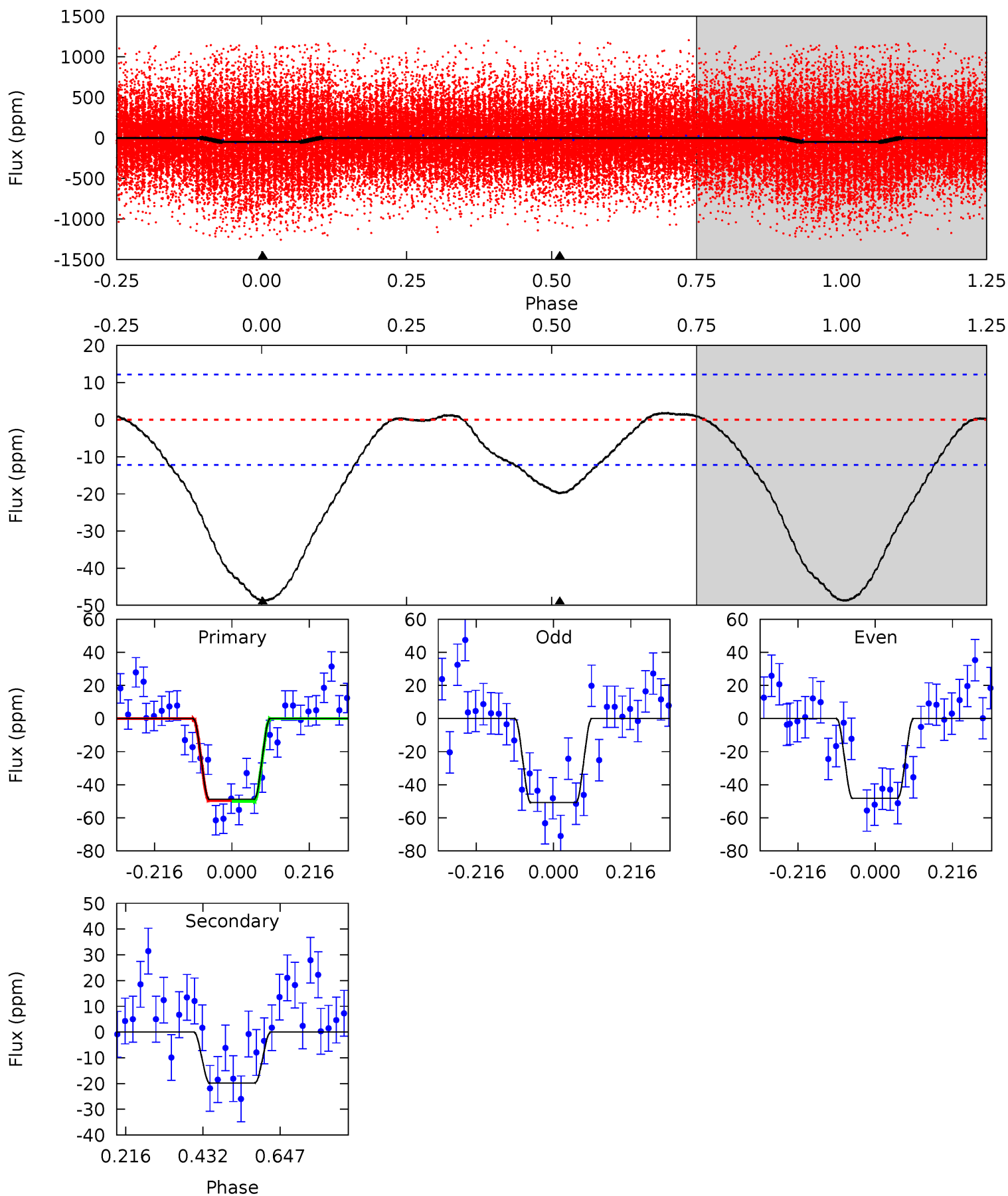
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.44	4.10	0	0	4.28	0.89	0.19	4.44	4.44	4.10	4.10	0.45	0.77	0.08	4.58



# Alt Model-Shift Uniqueness Test

010292554-01, P = 0.660673 Days, E = 131.010808 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
17.6	7.16	0	0	4.40	1.24	0.27	17.6	17.6	7.16	7.16	0.47	0.98	0.04	0.08



### Stellar Parameters For KIC 010292554

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5497^{+147}_{-164}$	$4.570^{+0.027}_{-0.153}$	$0.070^{+0.250}_{-0.300}$	$0.839^{+0.173}_{-0.062}$	$0.952^{+0.065}_{-0.106}$	$2.272^{+0.341}_{-0.976}$
	+3%/-3%	+1%/-3%	+357%/-429%	+21%/-7%	+7%/-11%	+15%/-43%
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 010292554-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-10 \pm 2$	$0.65^{+0.56}_{-0.43}$	$2617^{+134}_{-99}$	$3905^{+2461}_{-837}$	$2.607^{+22.921}_{-1.825}$
Alt.	$-20 \pm 3$	$0.83^{+0.59}_{-0.51}$	$2618^{+149}_{-104}$	$4090^{+2204}_{-775}$	$3.318^{+19.939}_{-2.193}$

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



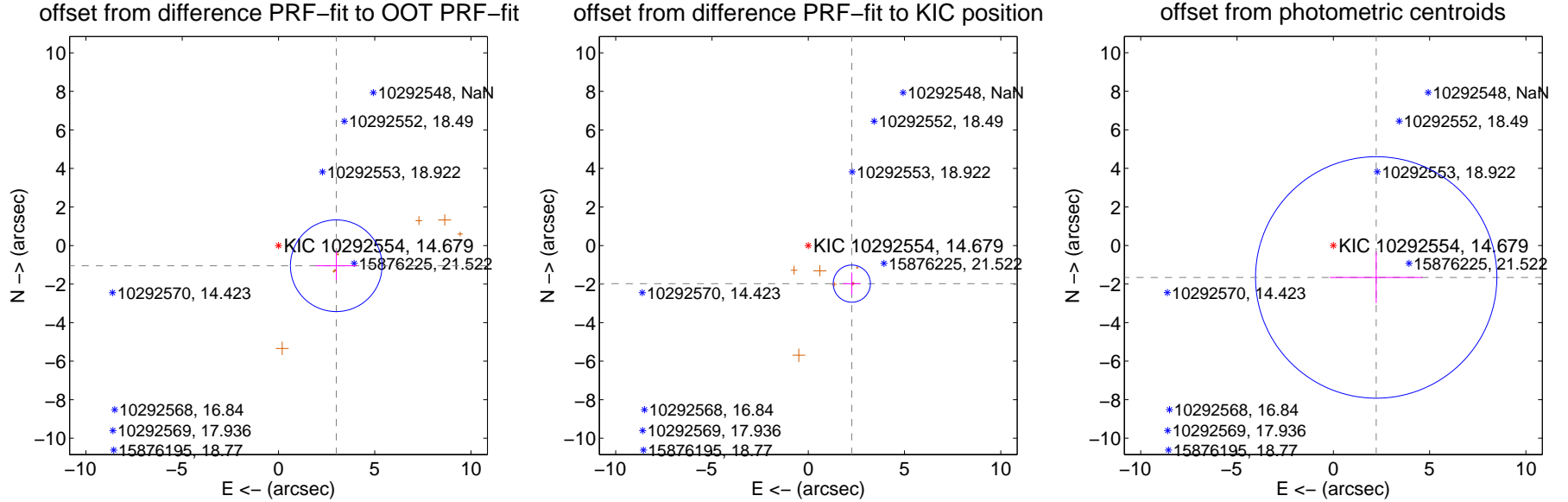
## DV Centroid Data

Supplemental centroid analysis for 010292554-01. Kepler magnitude: 14.68. Transit SNR 5.67

There are 0 quarters with good PRF difference image offsets

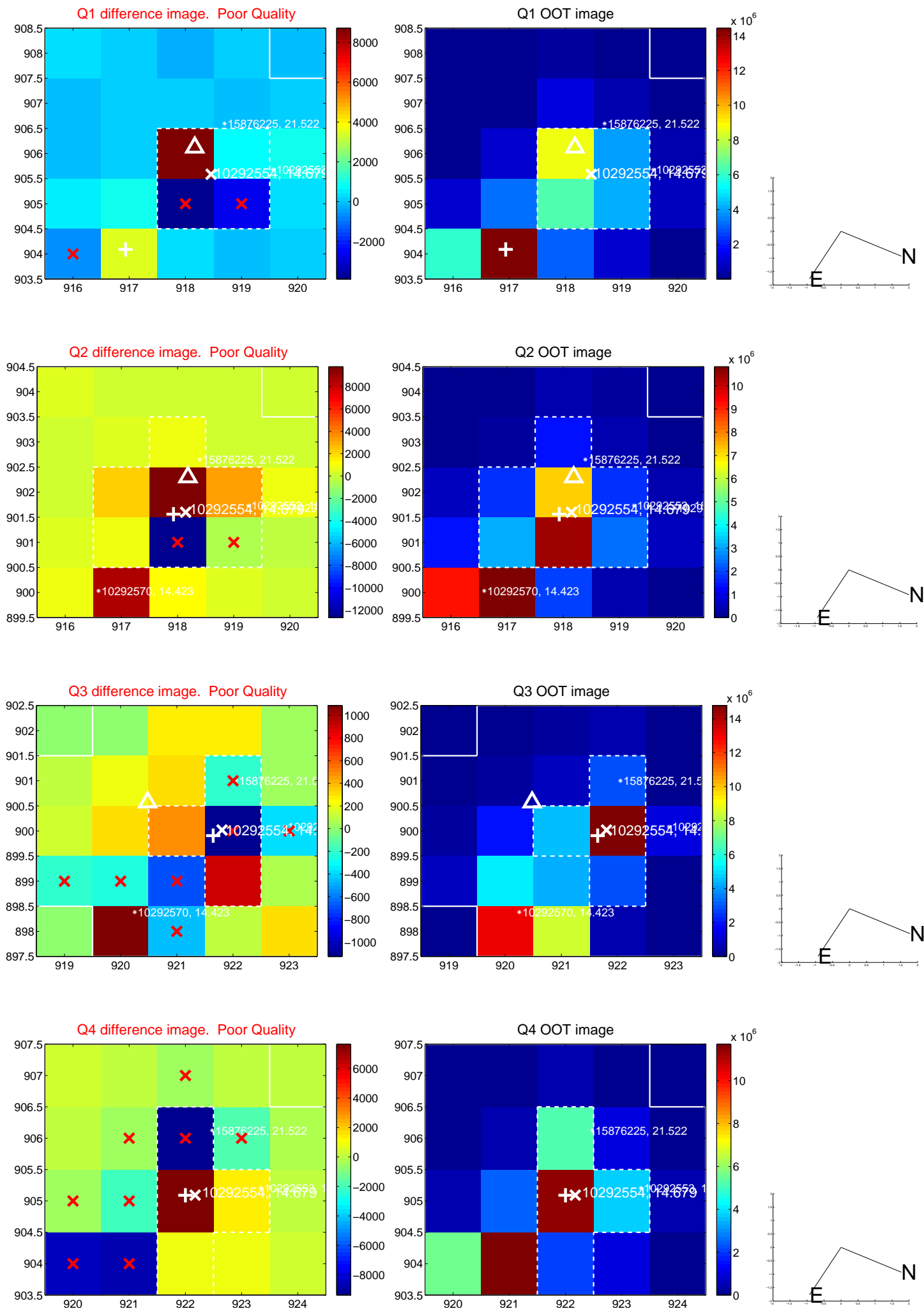
The direct PRF centroid is offset from the target star catalog position by about 0.93 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.176 \pm 0.793$	4.01	$-2.998 \pm 1.065$	$-1.048 \pm 0.752$
PRF-fit source offset from KIC position	$3.004 \pm 0.322$	9.34	$-2.261 \pm 0.449$	$-1.977 \pm 0.574$
photometric centroid source offset	$2.78 \pm 2.09$	1.33	$-2.23 \pm 2.41$	$-1.66 \pm 1.33$

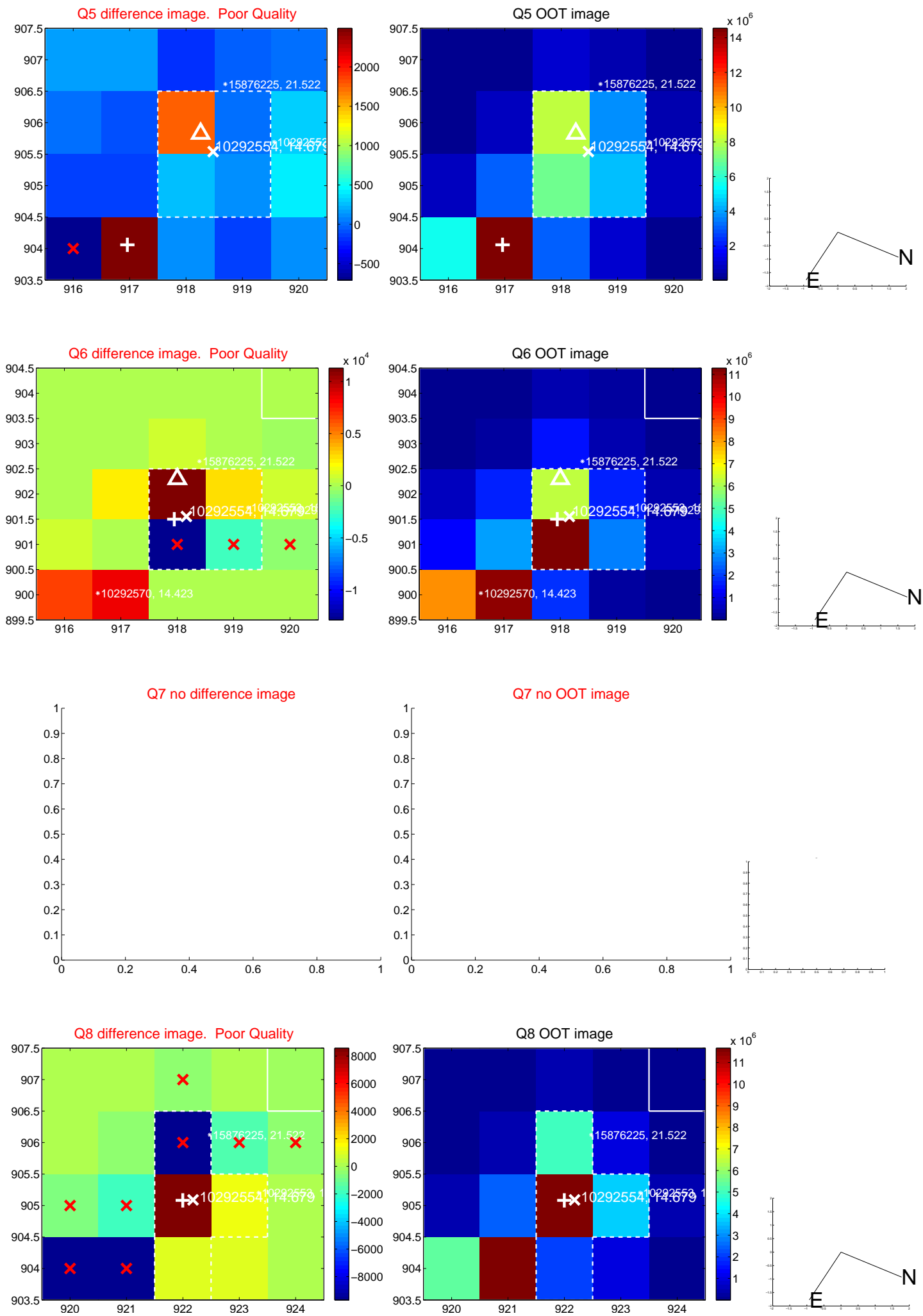


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

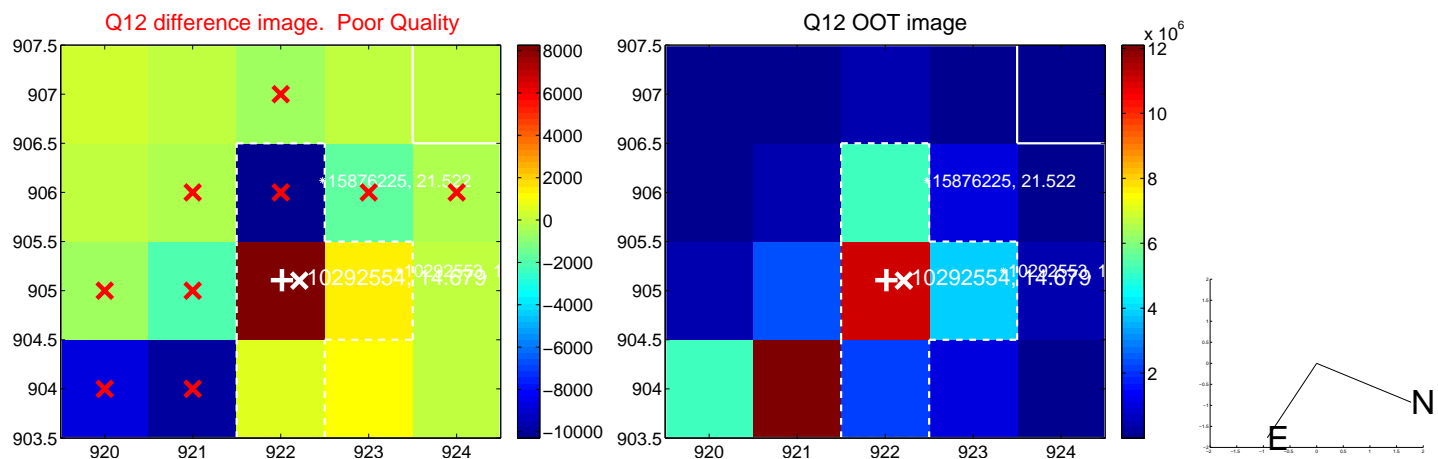
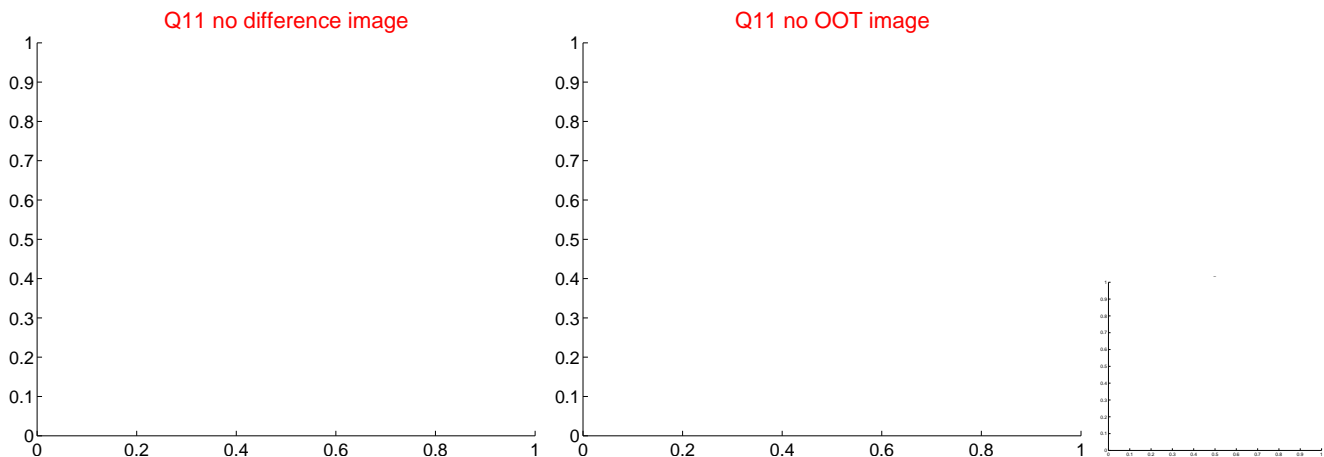
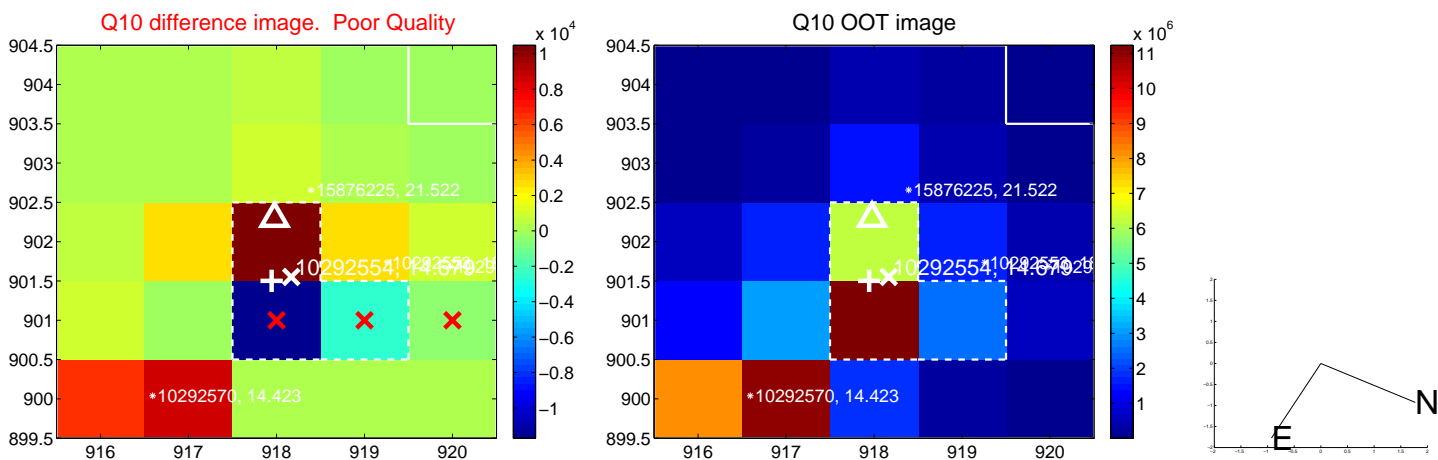
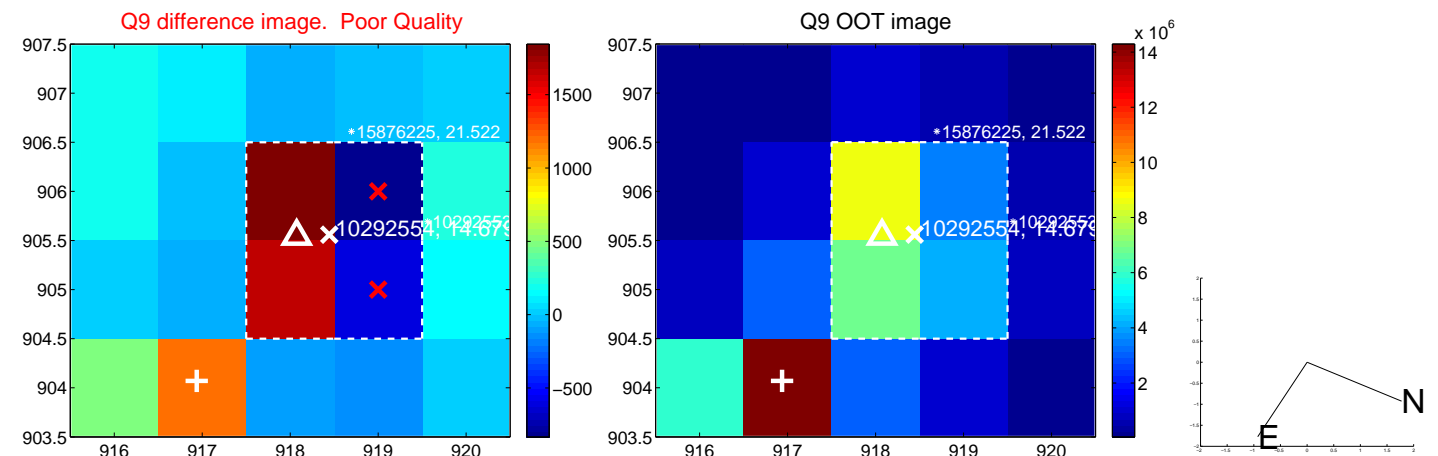
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



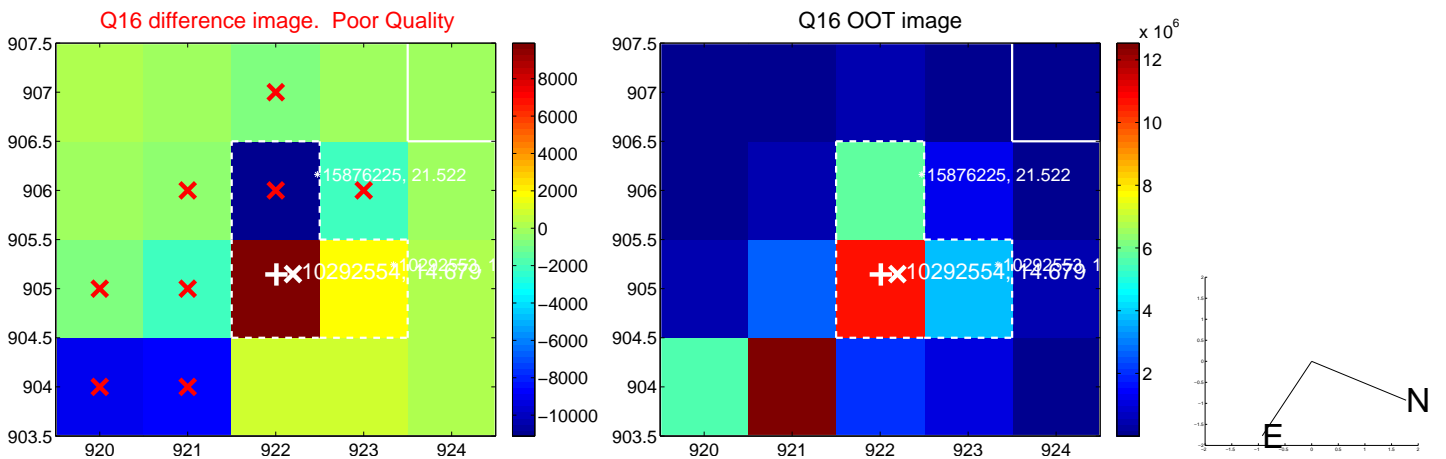
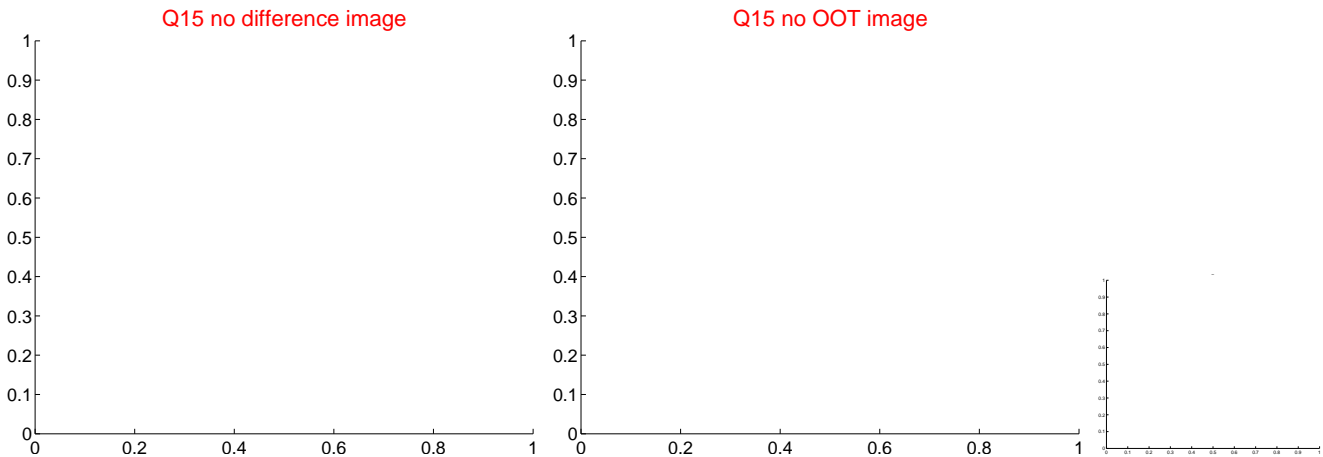
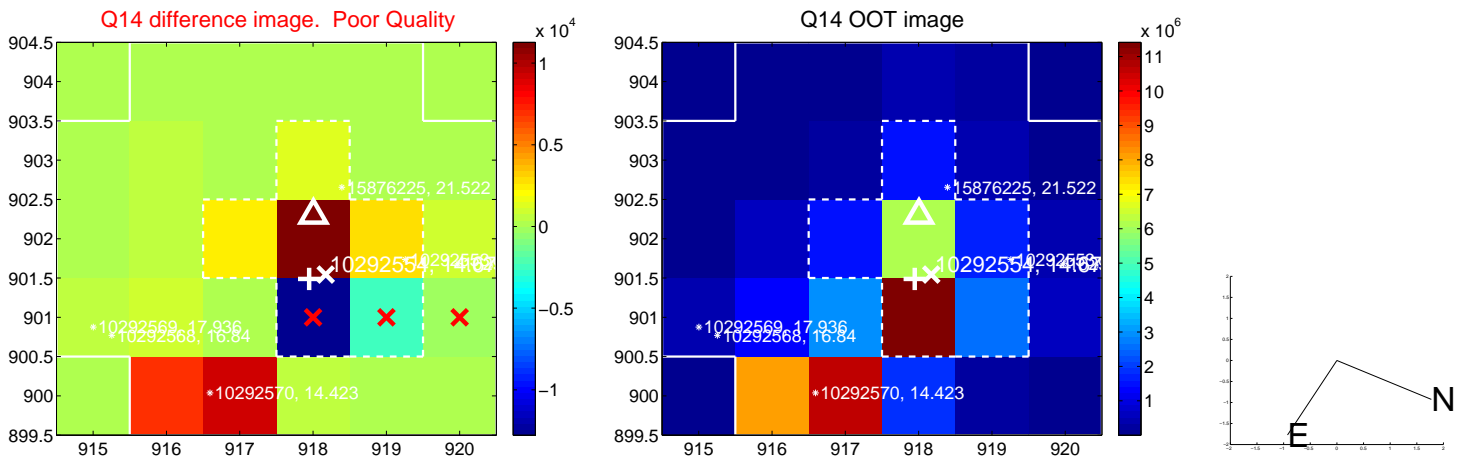
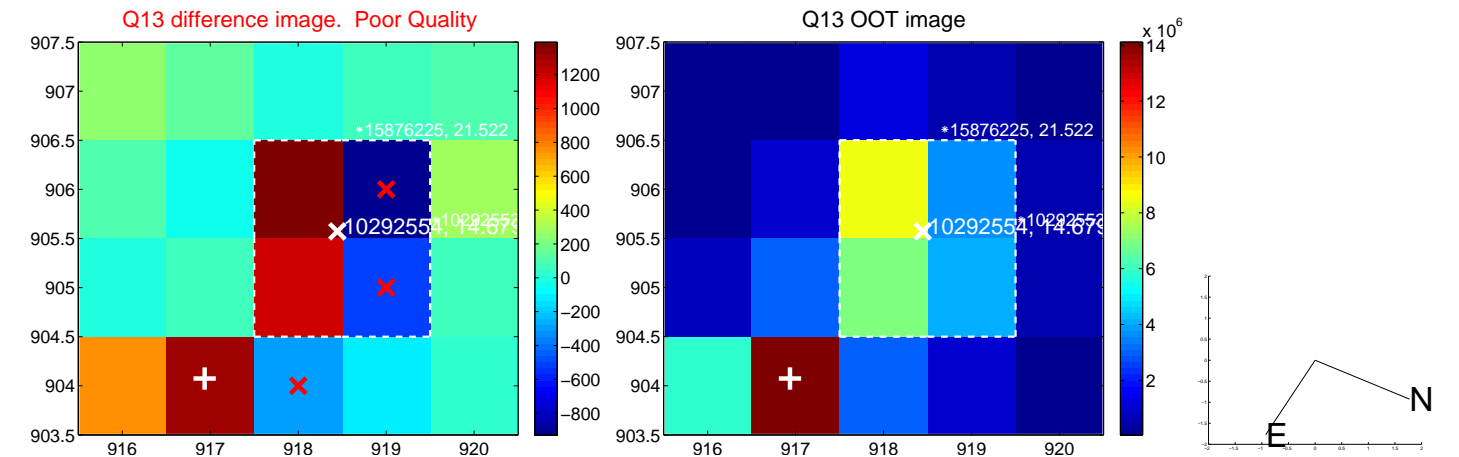
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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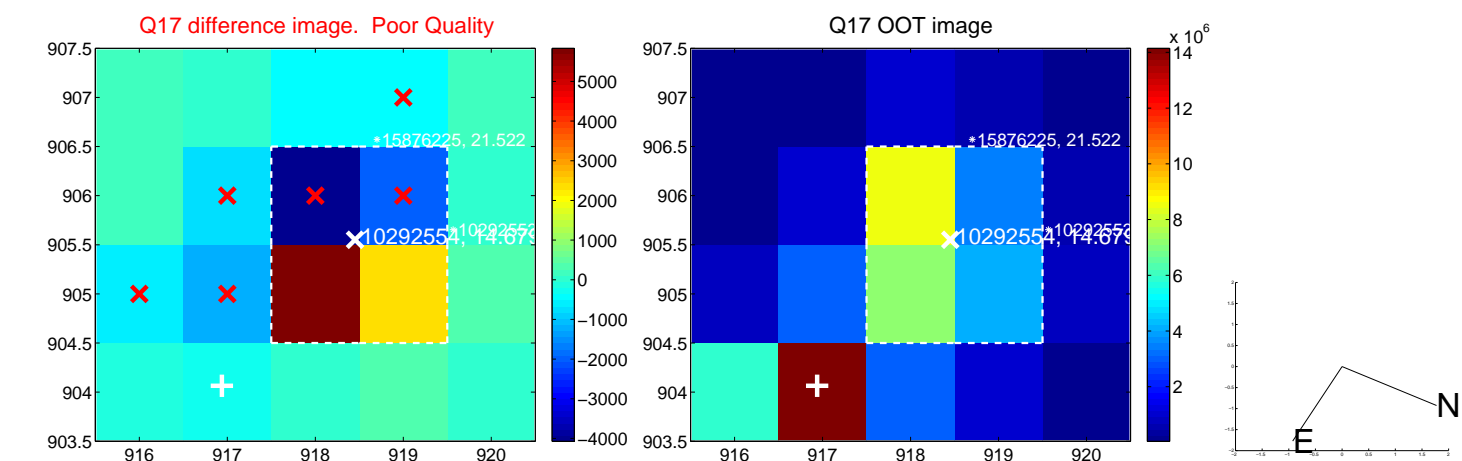


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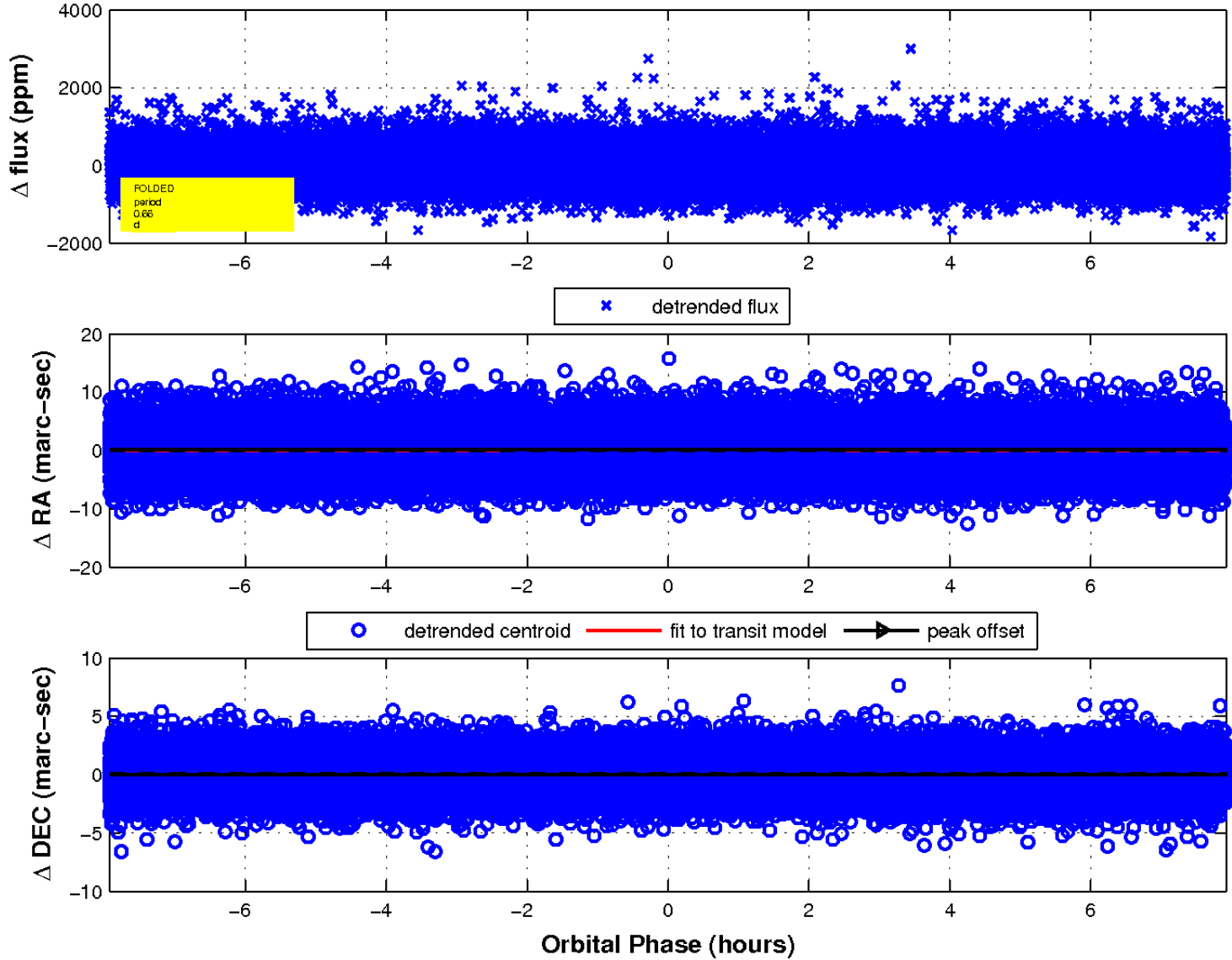




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

