

# KIC 003328027

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003328027-01	OBS	4174.01	2.115451	132.016999	159.6	5.469	15.0	15.4	0.97	5952	1.75	979.84

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003328027-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—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.

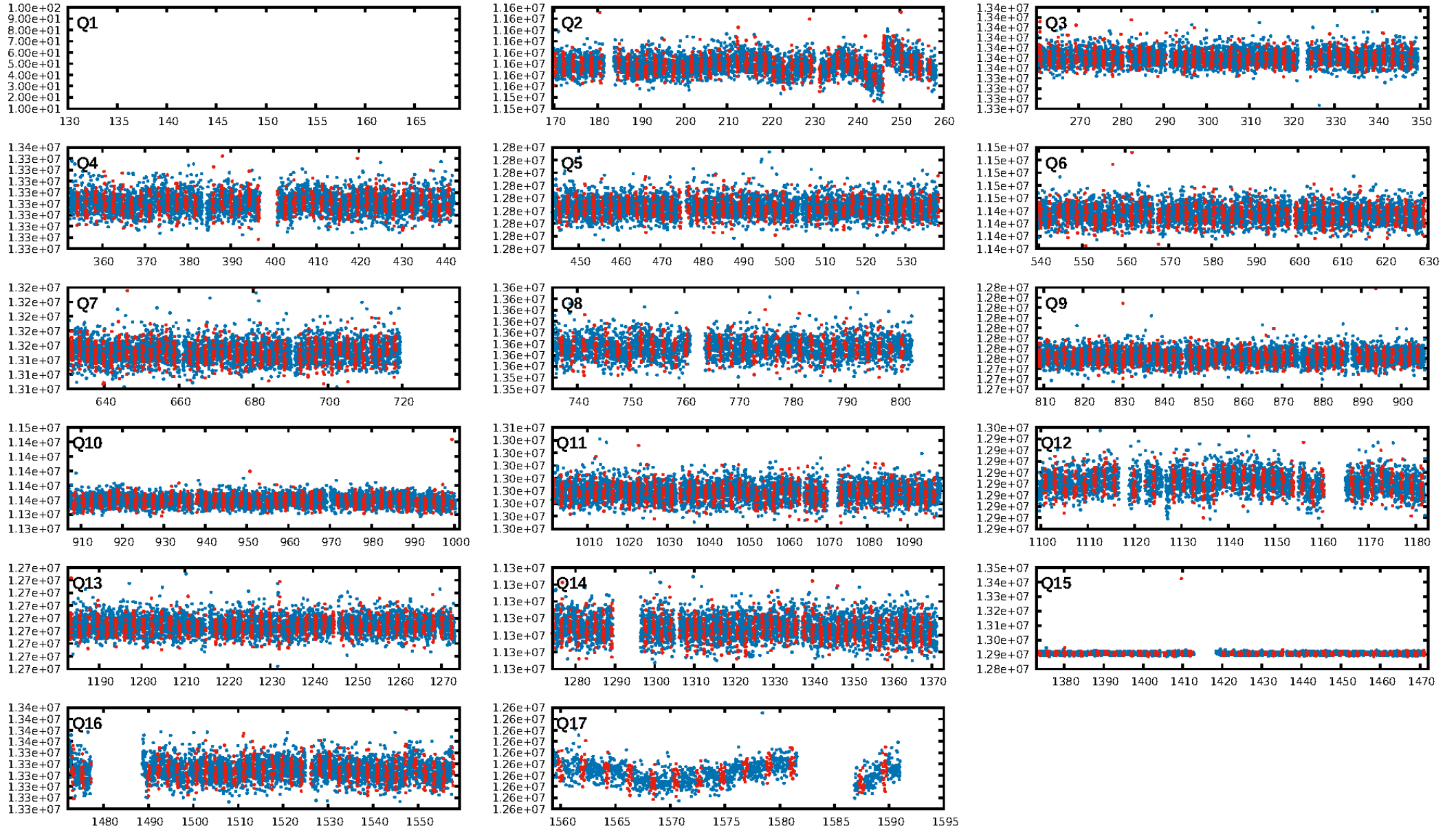
## Ephemeris Match Information For 003328027-01

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	$\sigma_P$	$\sigma_T$
003328027-01	3328027	003327980-pri	3327980	1:2	51.7	-3	-12	12.12	15.63	2658.80	Direct-PRF	0	3.97	1.43

**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.

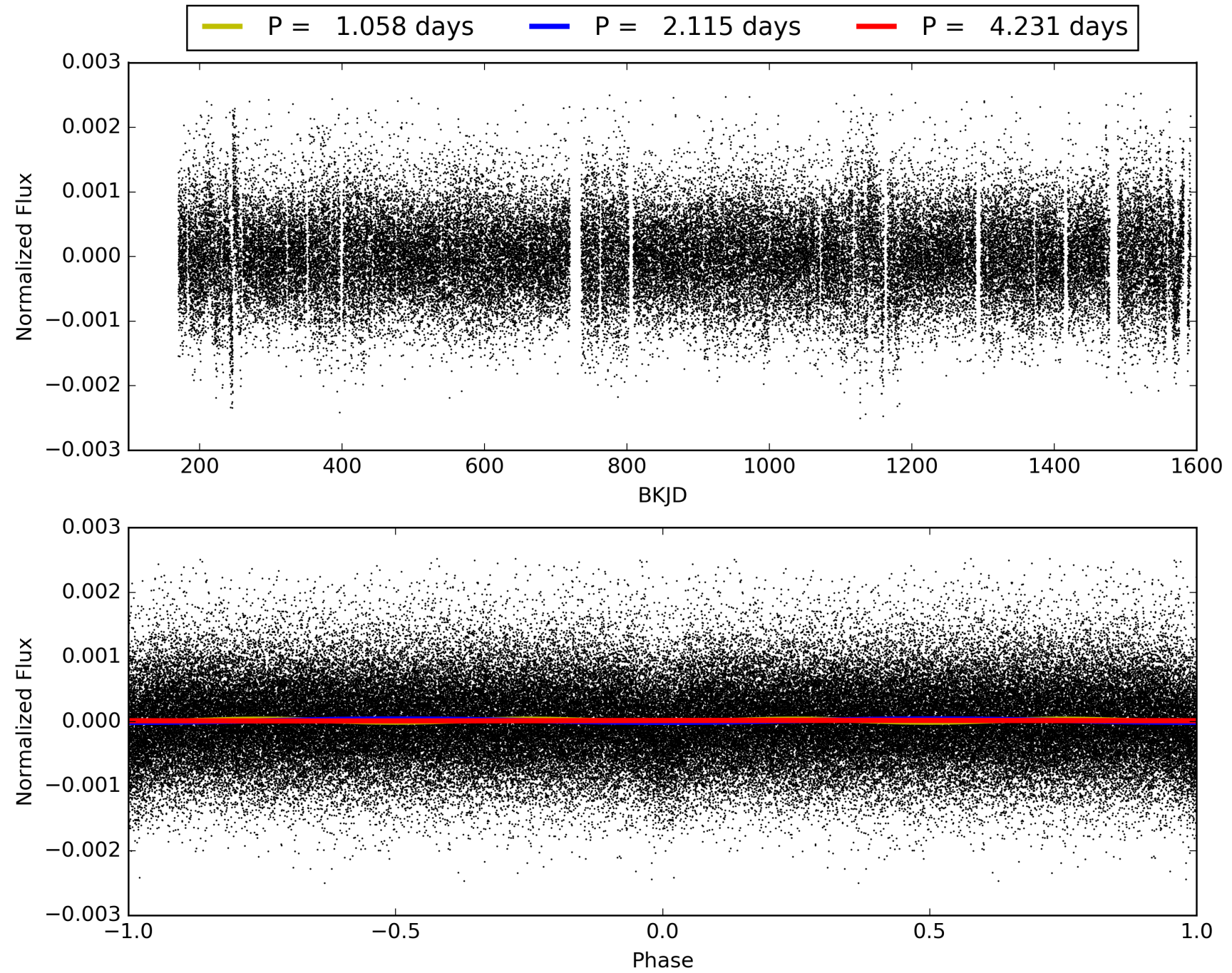
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 003328027-01, PDC Light Curves



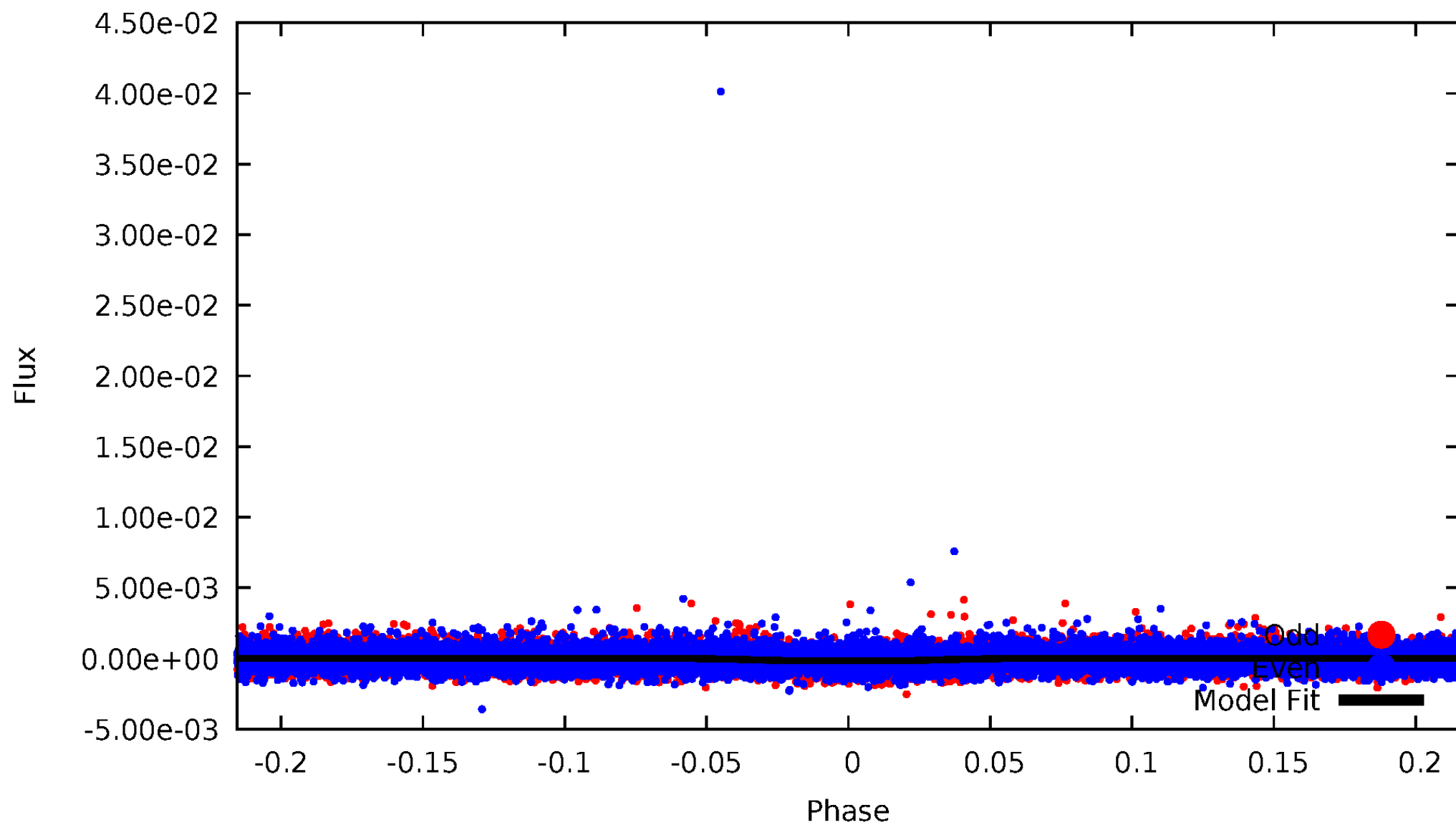


TCE 003328027-01



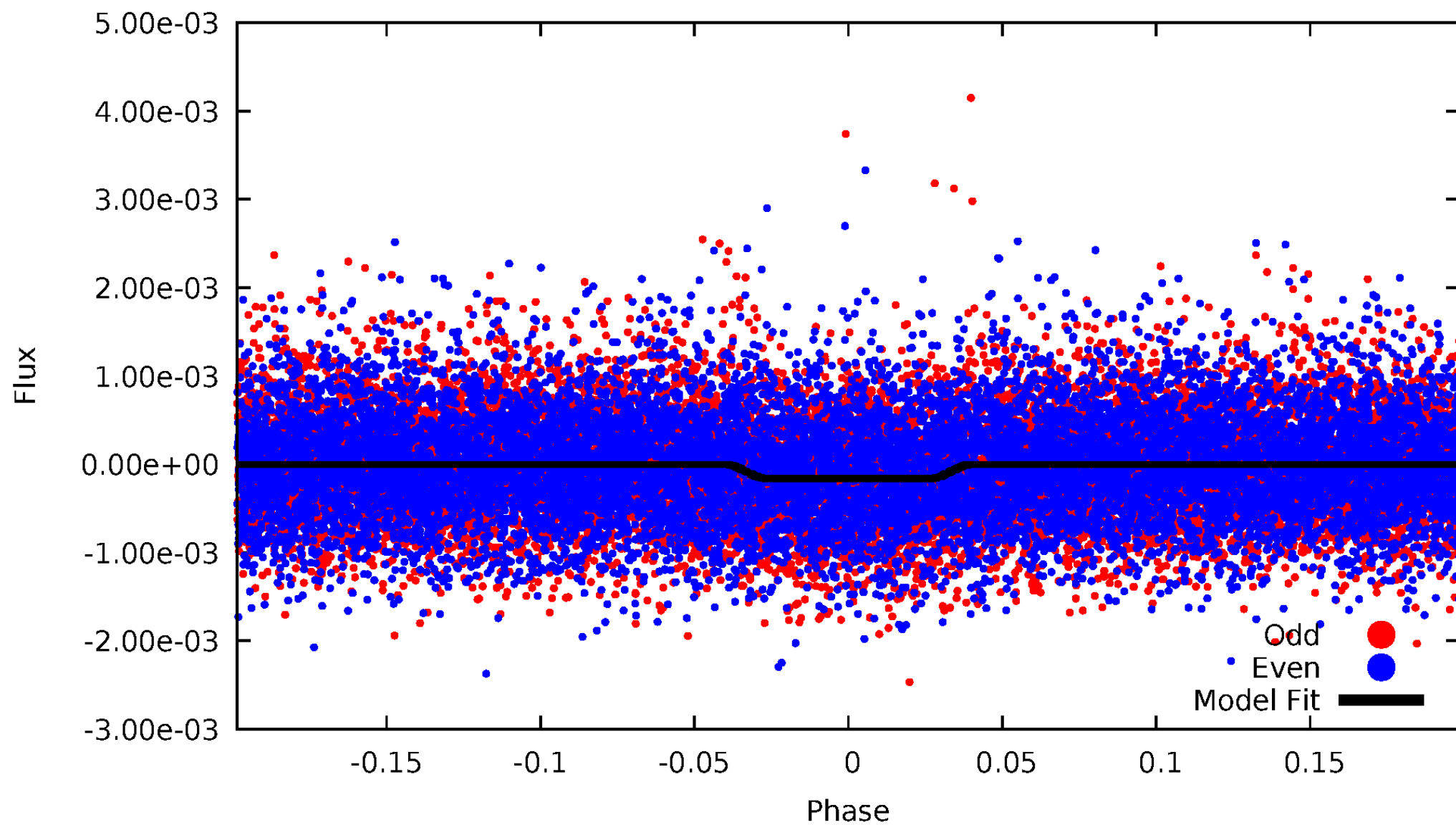
# DV Odd/Even

TCE 003328027-01



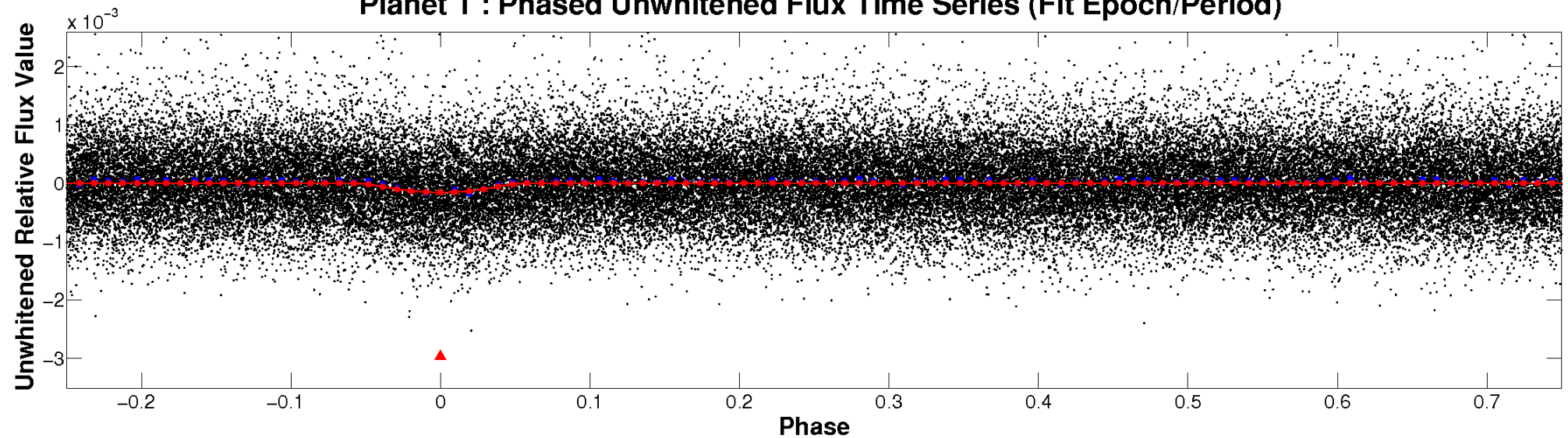
# ALT Odd/Even

TCE 003328027-01

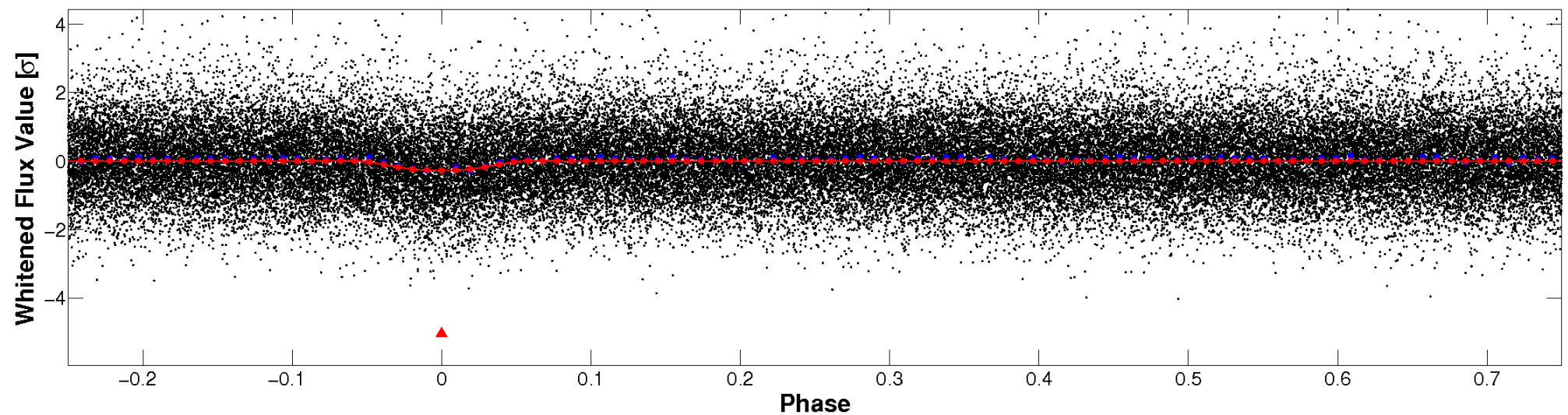


# Non-Whitened Vs. Whitened Light Curve

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



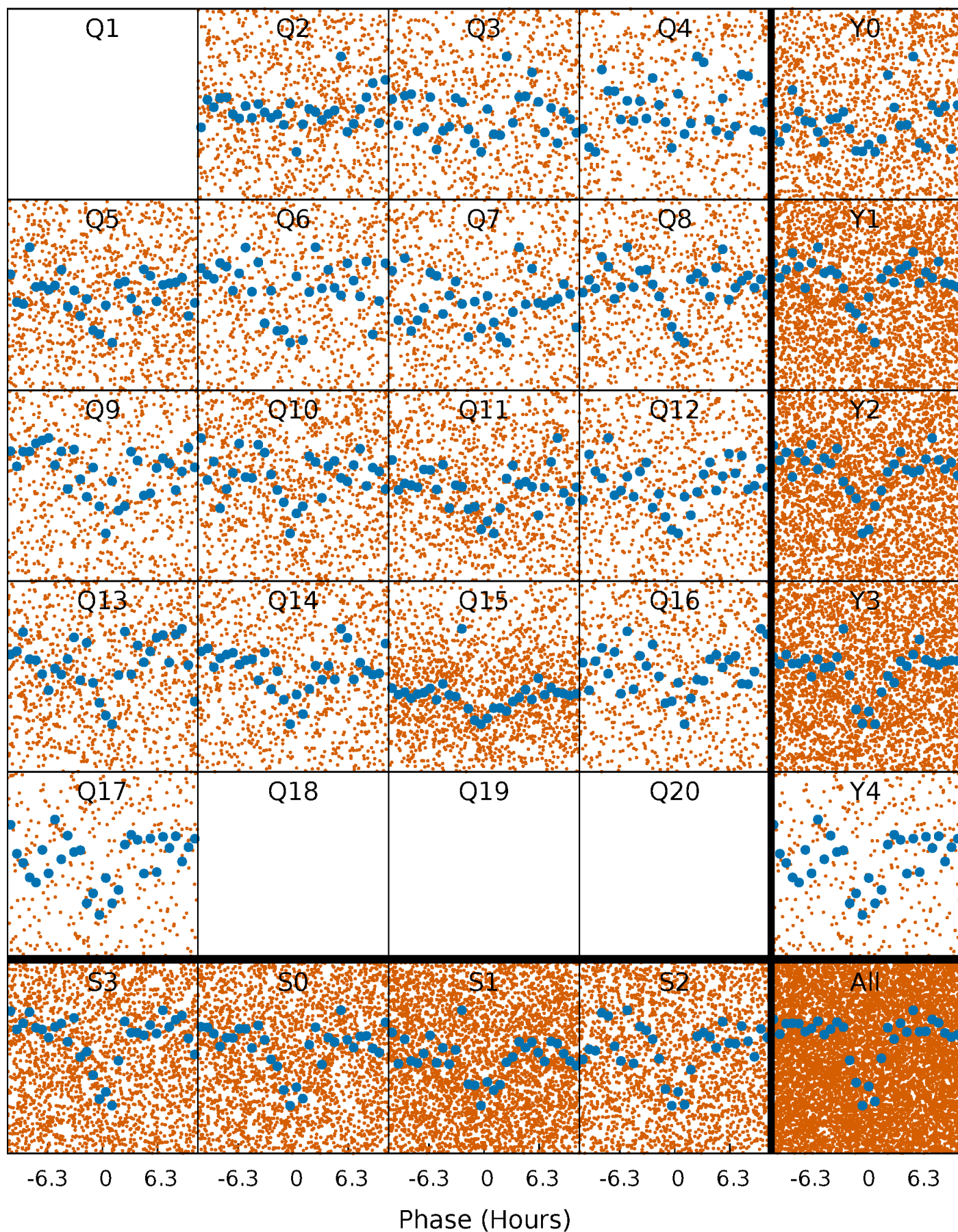
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

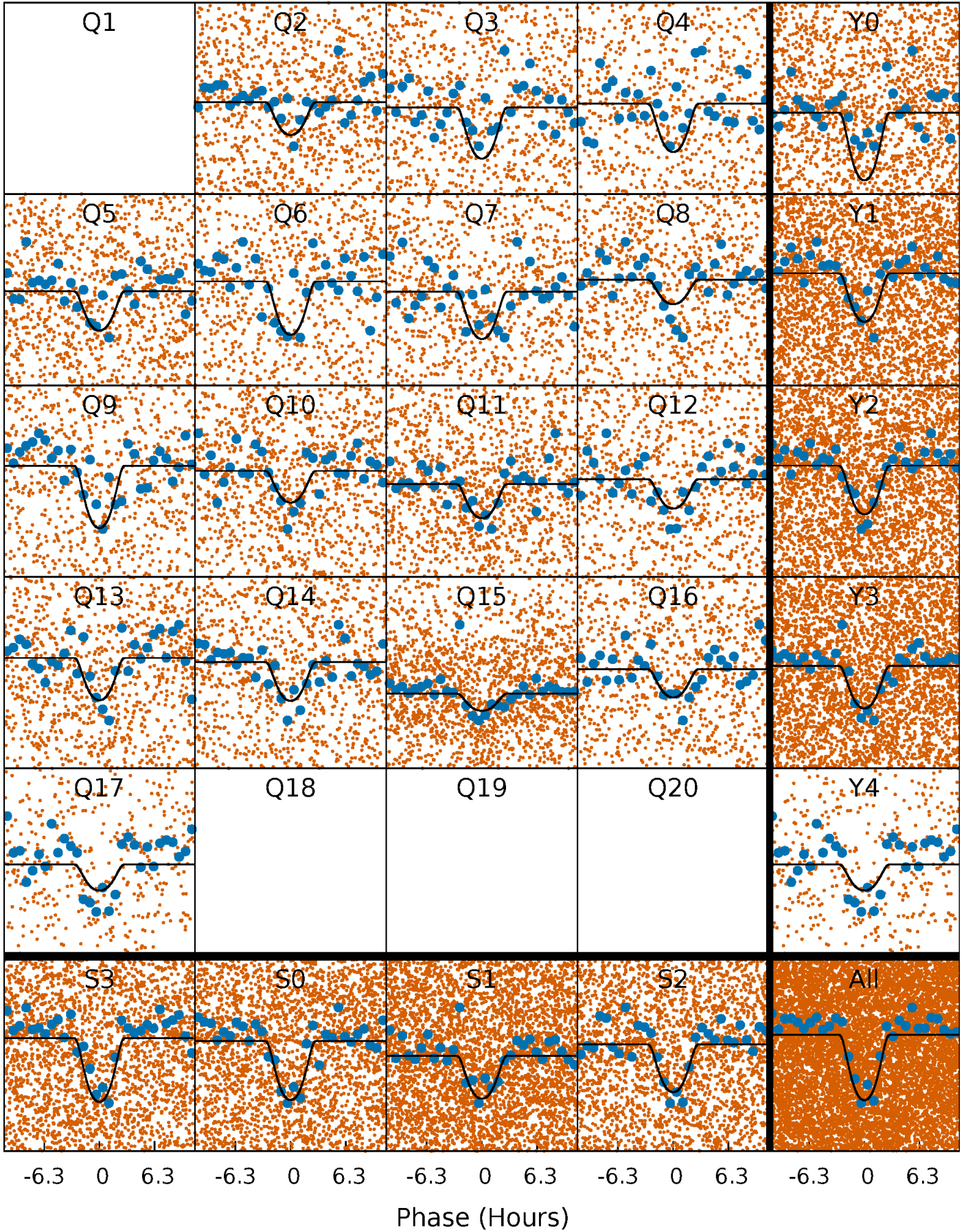
TCE 003328027-01 P= 2.115451 Days  $T_0=132.016999$  (BKJD)





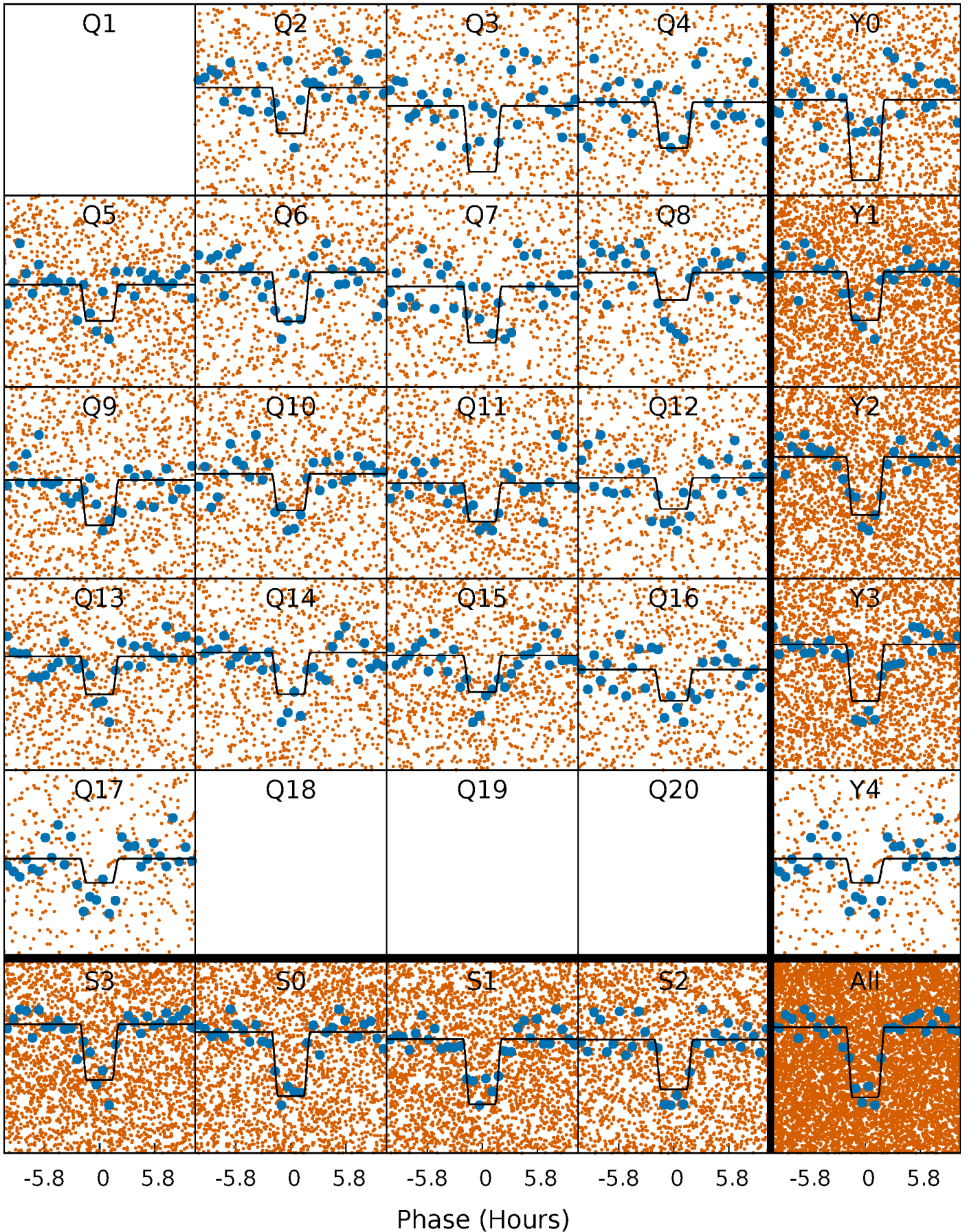
# DV Quarter-Phased Transit Curves

TCE 003328027-01 P= 2.115451 Days  $T_0=132.016999$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 003328027-01 P= 2.115458 Days  $T_0=132.017564$  (BKJD)

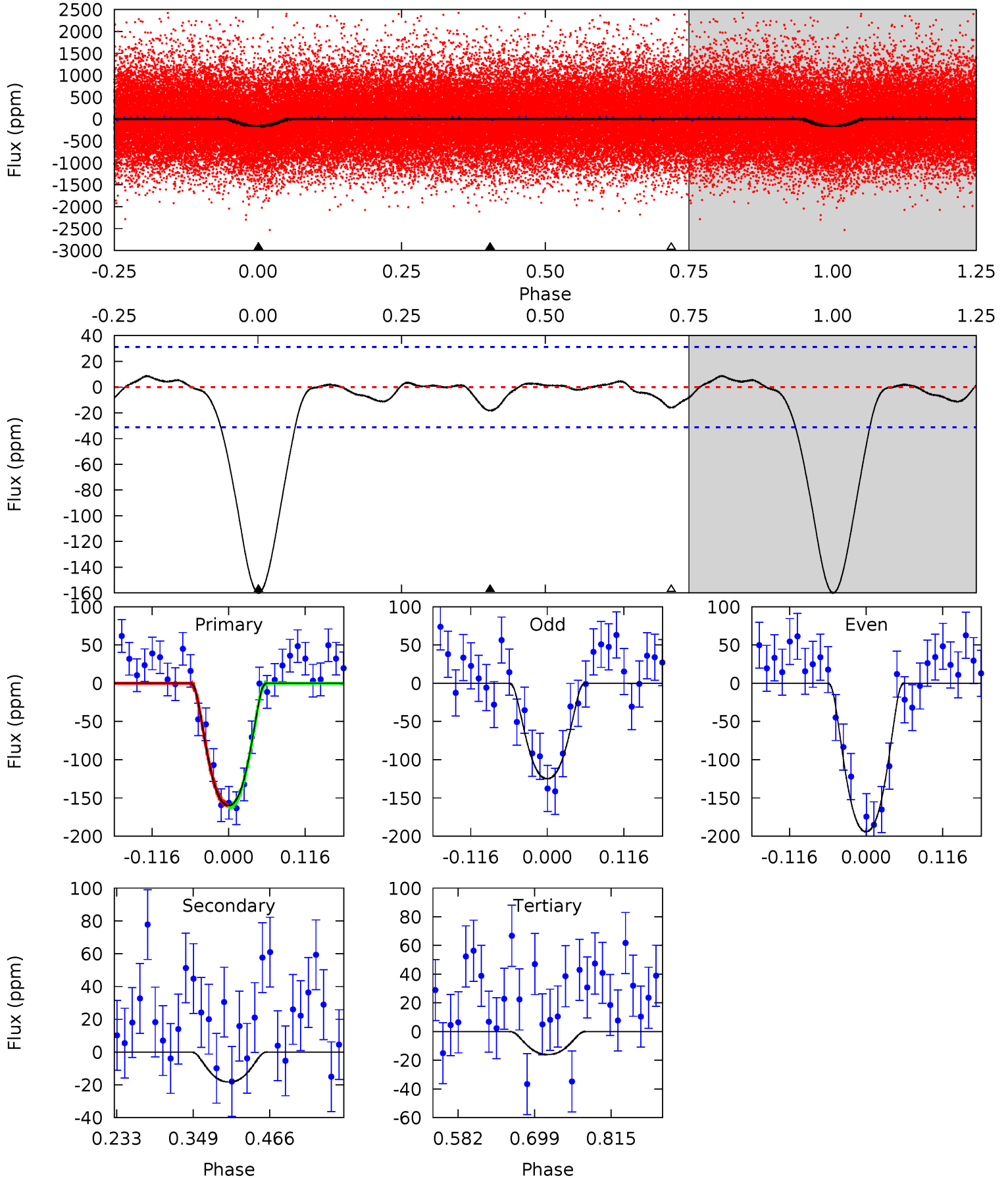




# DV Model-Shift Uniqueness Test

003328027-01, P = 2.115451 Days, E = 132.016999 Days

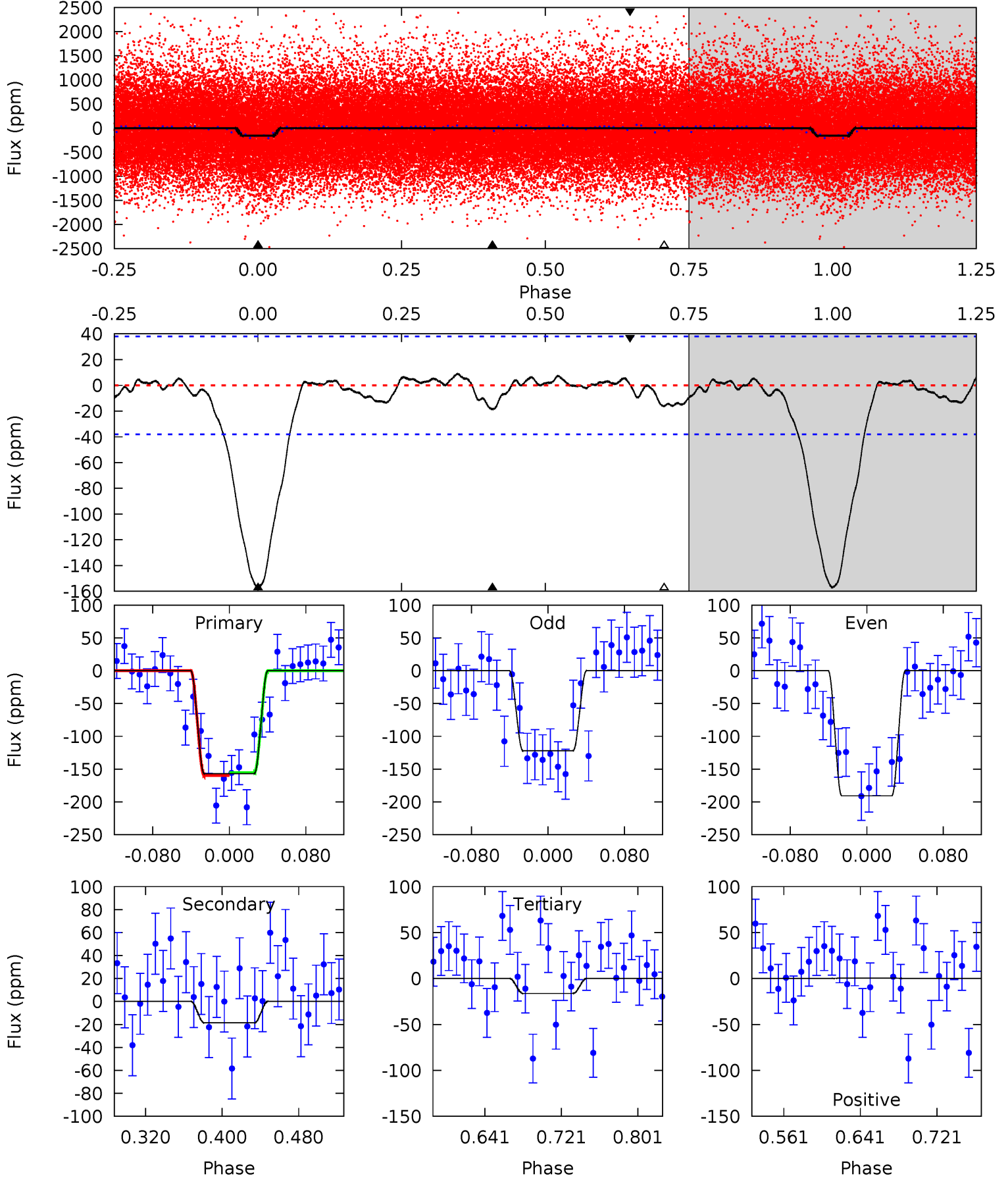
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.2	2.65	2.33	0	4.53	1.57	0.86	20.9	23.2	0.33	2.65	5.03	1.05	0.05	0.19



# Alt Model-Shift Uniqueness Test

003328027-01, P = 2.115458 Days, E = 132.017564 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
19.0	2.26	1.97	0.04	4.61	1.75	0.72	17.1	19.0	0.29	2.22	4.17	1.00	0.05	0.26





### Stellar Parameters For KIC 003328027

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5952^{+184}_{-205}$	$4.489^{+0.052}_{-0.208}$	$0.020^{+0.250}_{-0.300}$	$0.971^{+0.297}_{-0.099}$	$1.057^{+0.127}_{-0.140}$	$1.629^{+0.448}_{-0.882}$
	+3%/-3%	+1%/-5%	+1250%/-1500%	+31%/-10%	+12%/-13%	+28%/-54%
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 003328027-01 / KOI 4174.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-18 \pm 7$	$1.82^{+0.59}_{-0.52}$	$2029^{+154}_{-93}$	$3437^{+463}_{-383}$	$3.080^{+3.441}_{-1.605}$
Alt.	$-19 \pm 8$	$1.41^{+0.53}_{-0.49}$	$2049^{+130}_{-114}$	$3746^{+727}_{-507}$	$5.059^{+7.982}_{-2.857}$

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

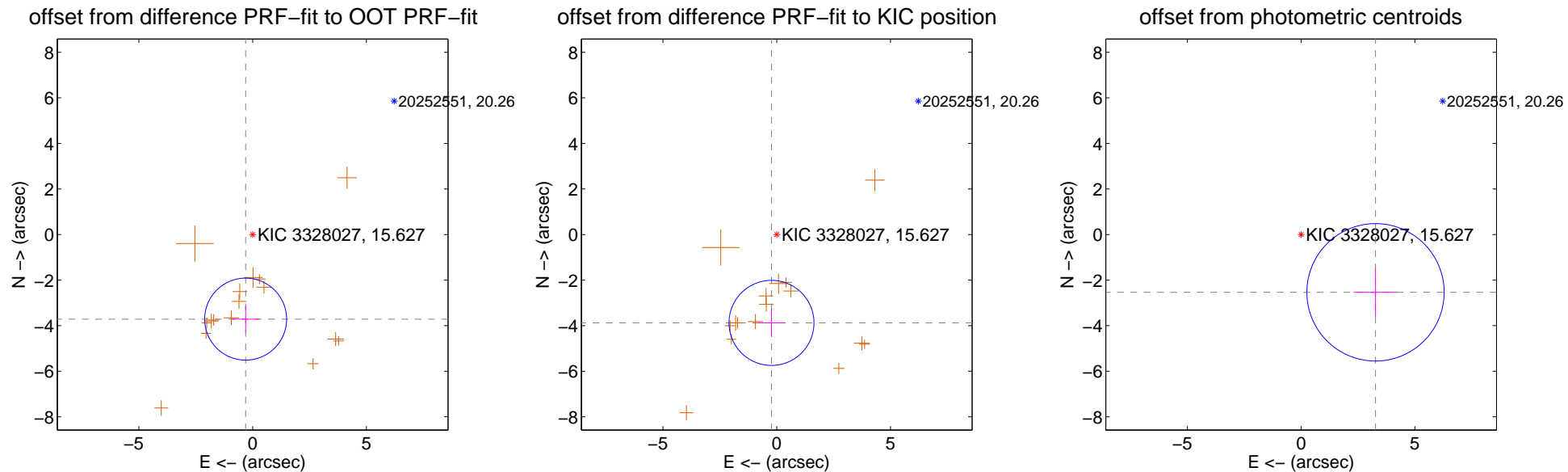
## DV Centroid Data

Supplemental centroid analysis for 003328027-01. Kepler magnitude: 15.63. Transit SNR 15.36

There are 0 quarters with good PRF difference image offsets

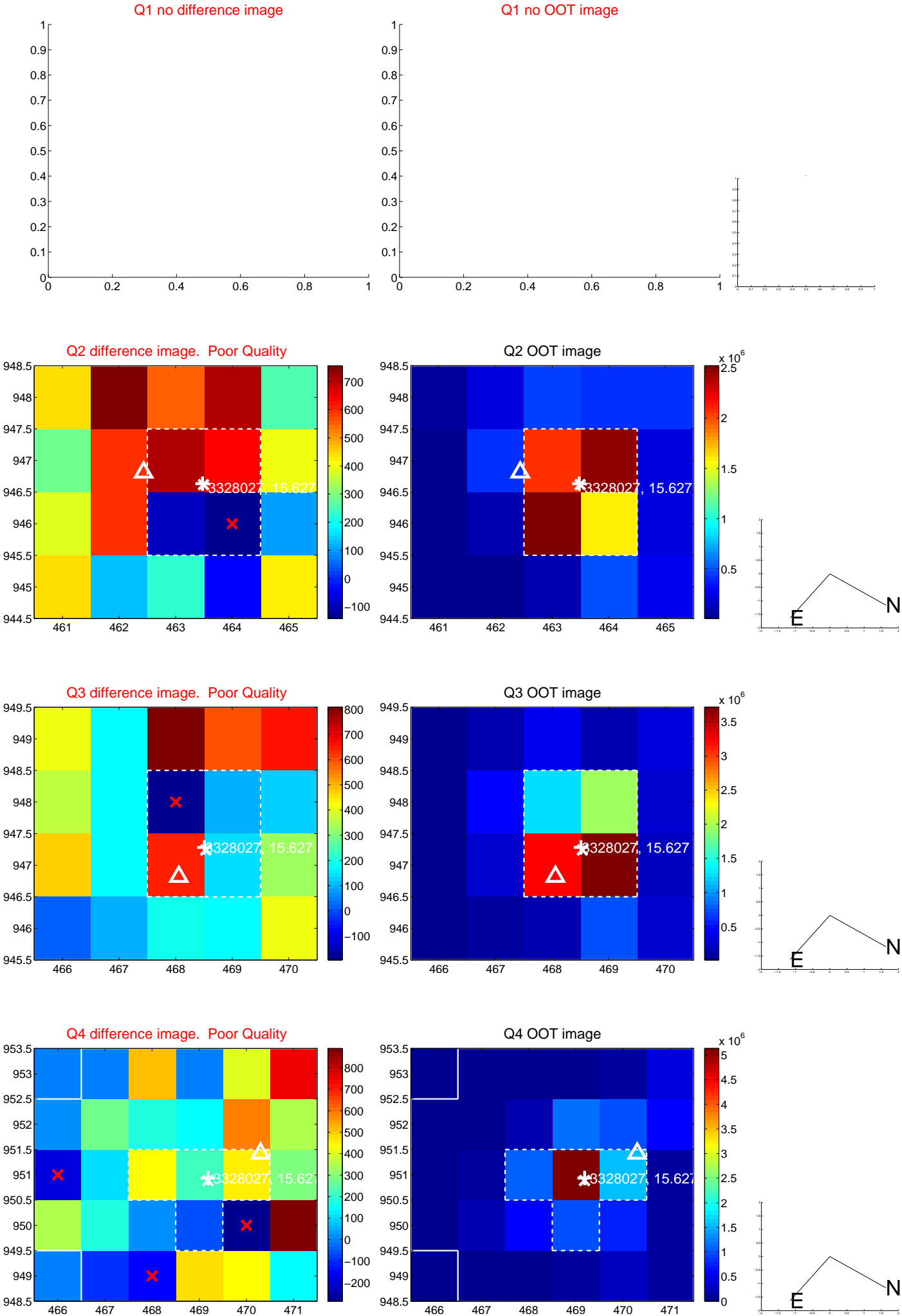
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.726 \pm 0.600$	6.21	$0.308 \pm 0.591$	$-3.713 \pm 0.584$
PRF-fit source offset from KIC position	$3.885 \pm 0.622$	6.24	$0.230 \pm 0.584$	$-3.878 \pm 0.611$
photometric centroid source offset	$4.14 \pm 1.01$	4.12	$-3.27 \pm 0.97$	$-2.54 \pm 1.06$

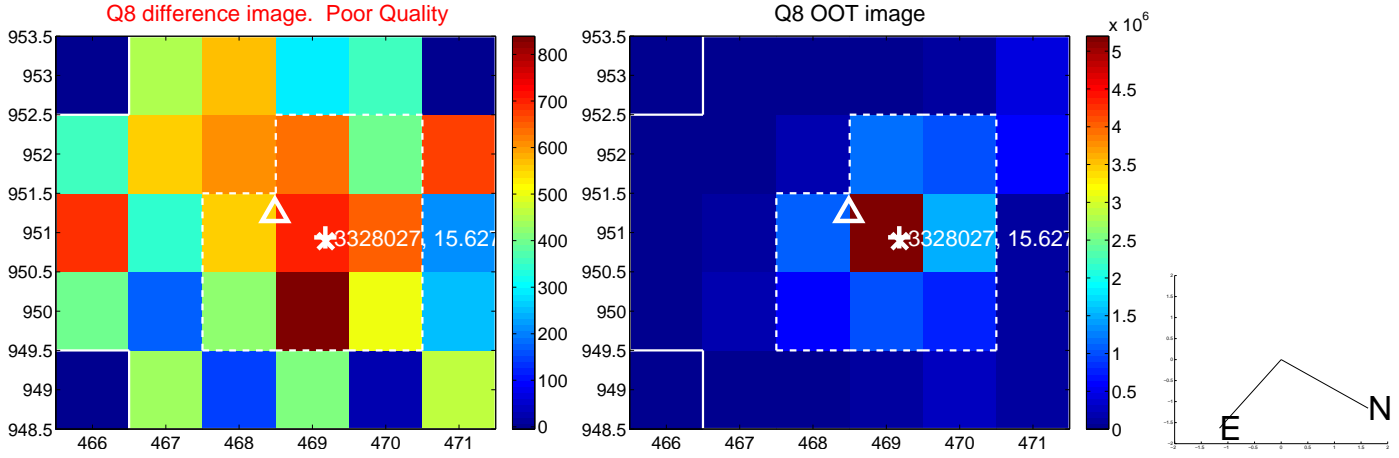
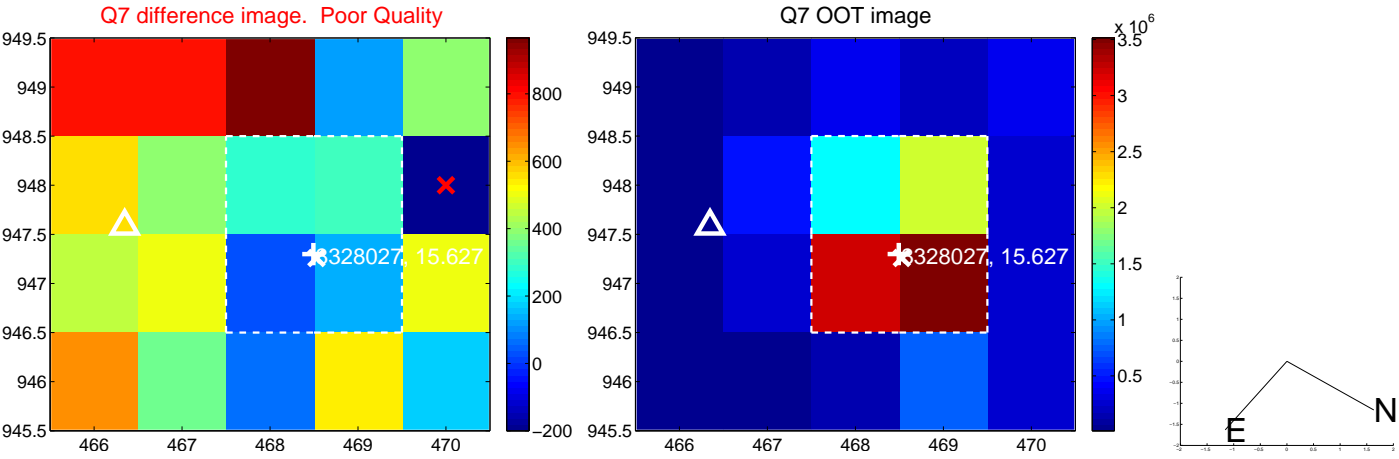
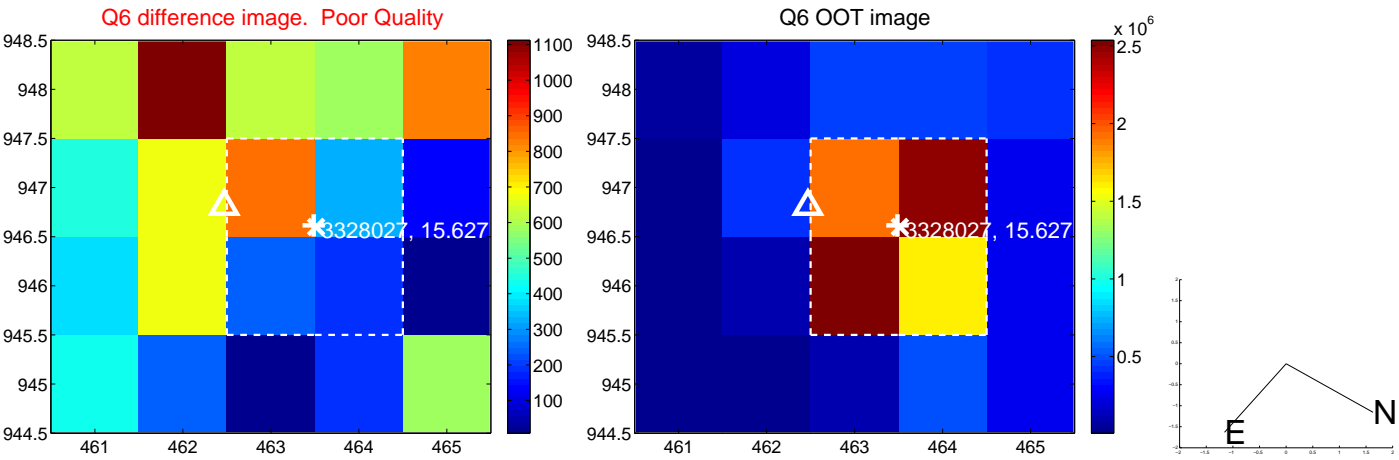
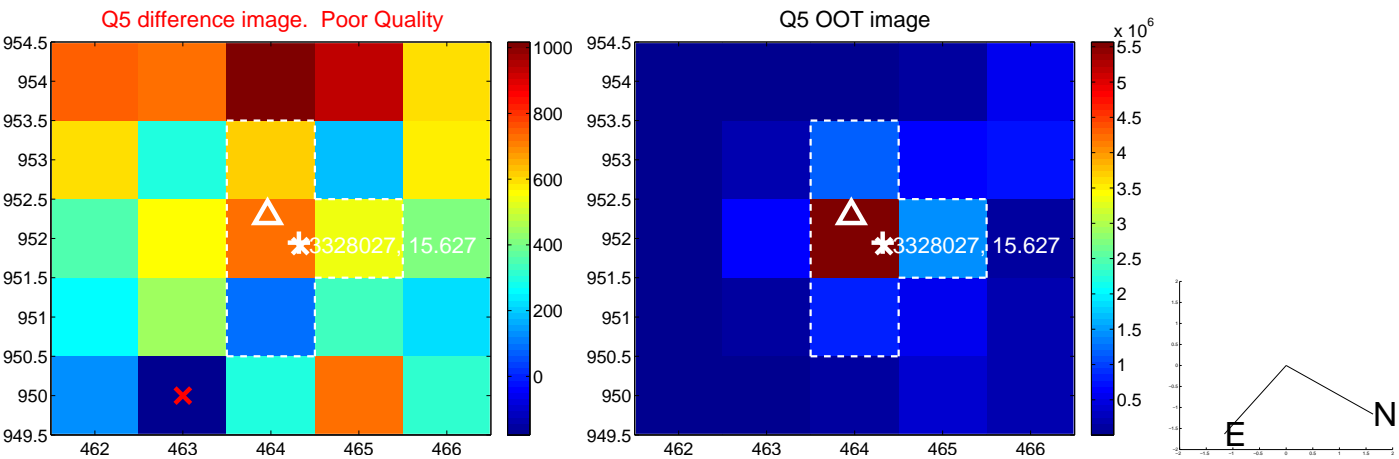


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

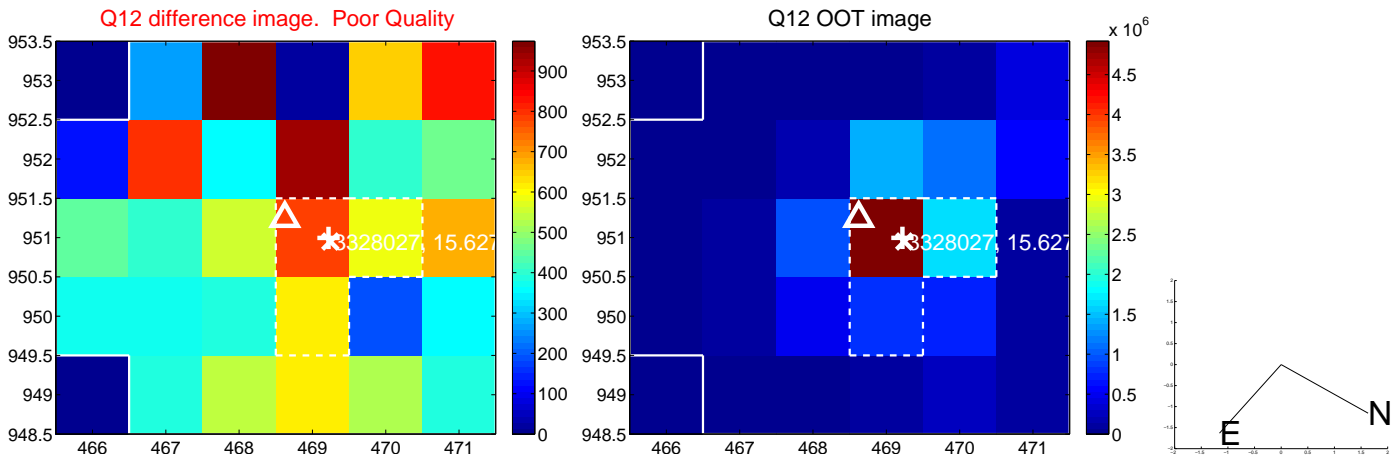
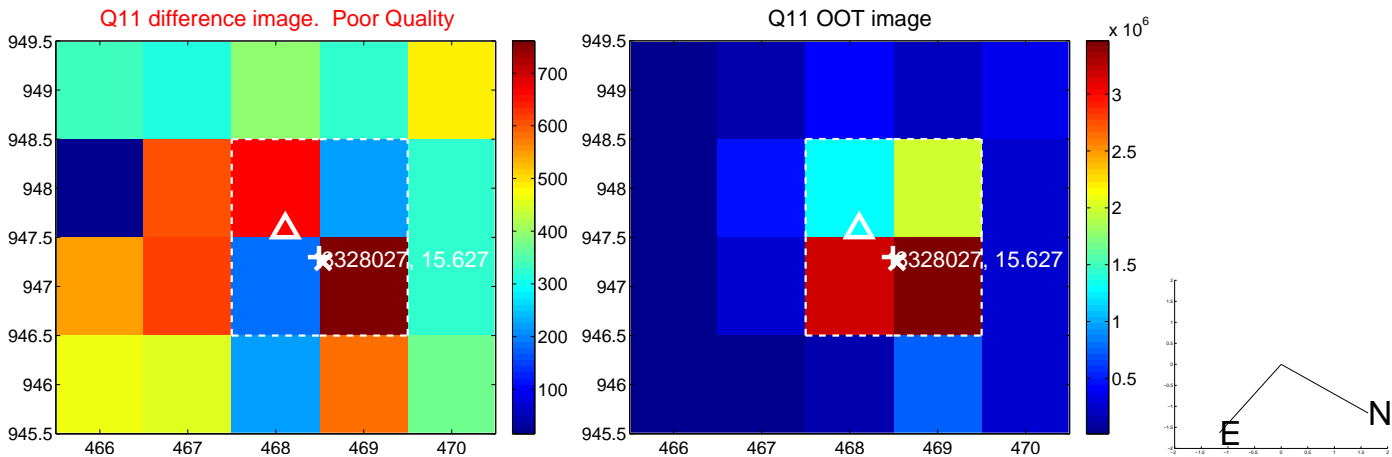
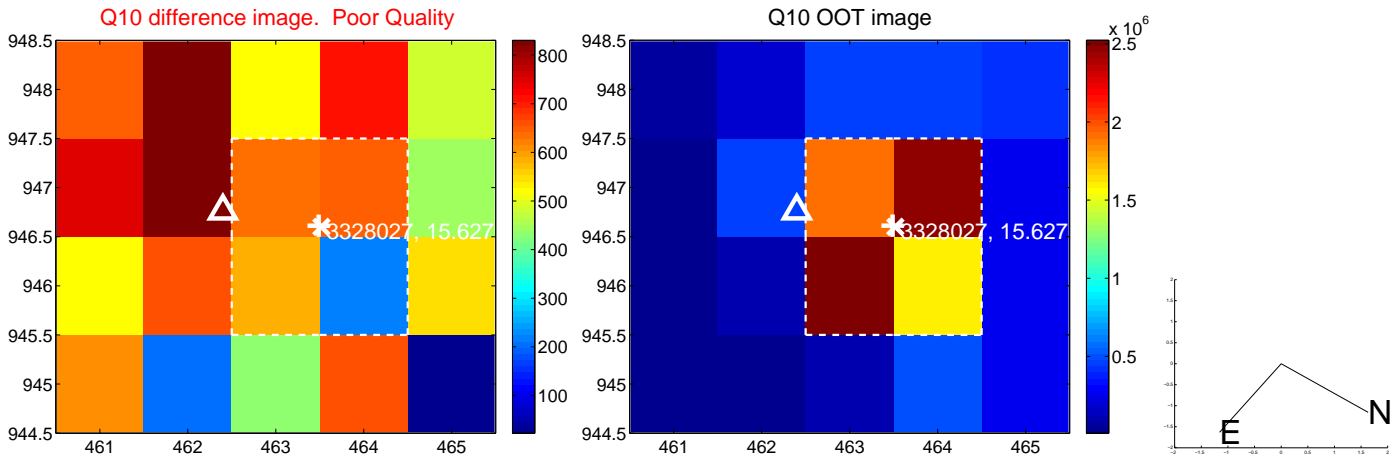
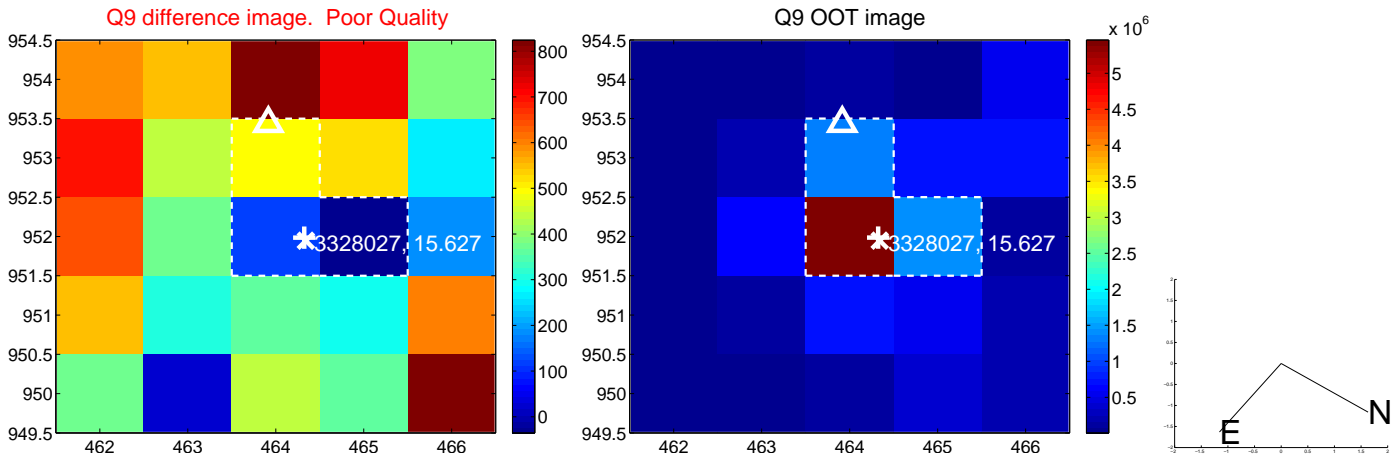


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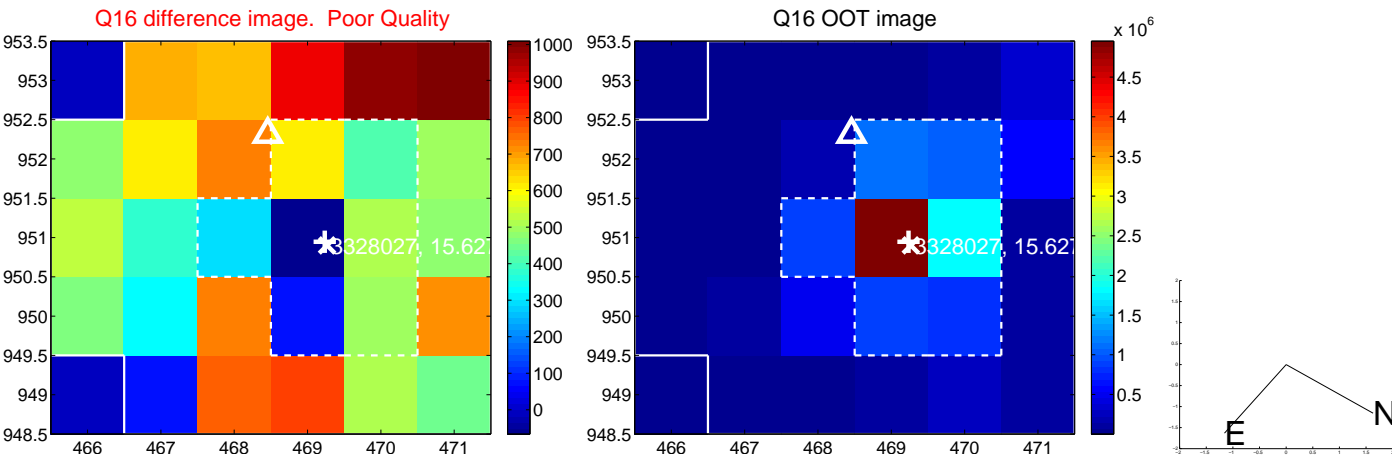
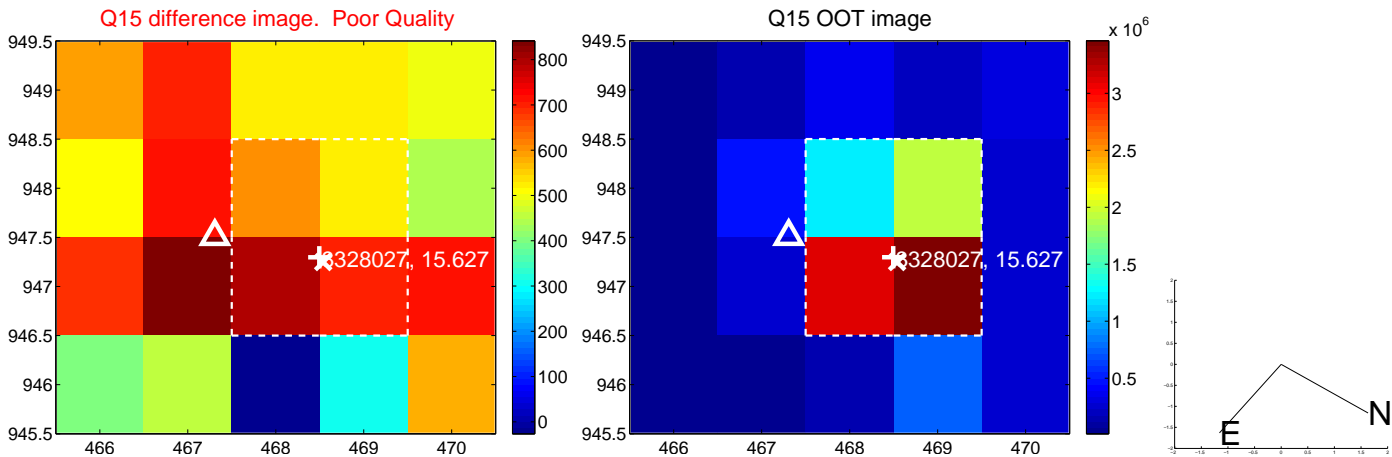
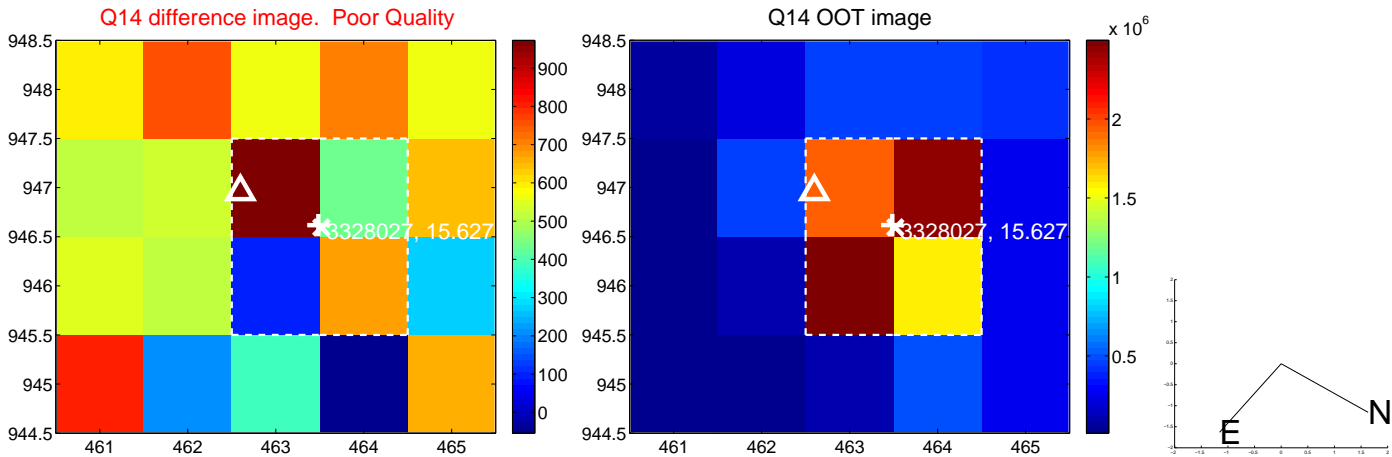
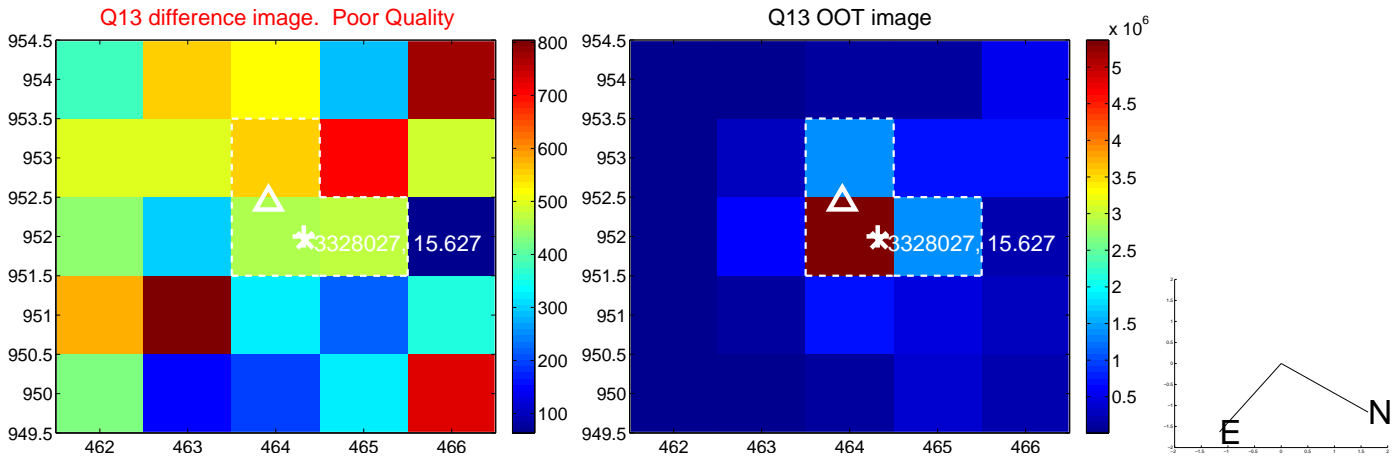




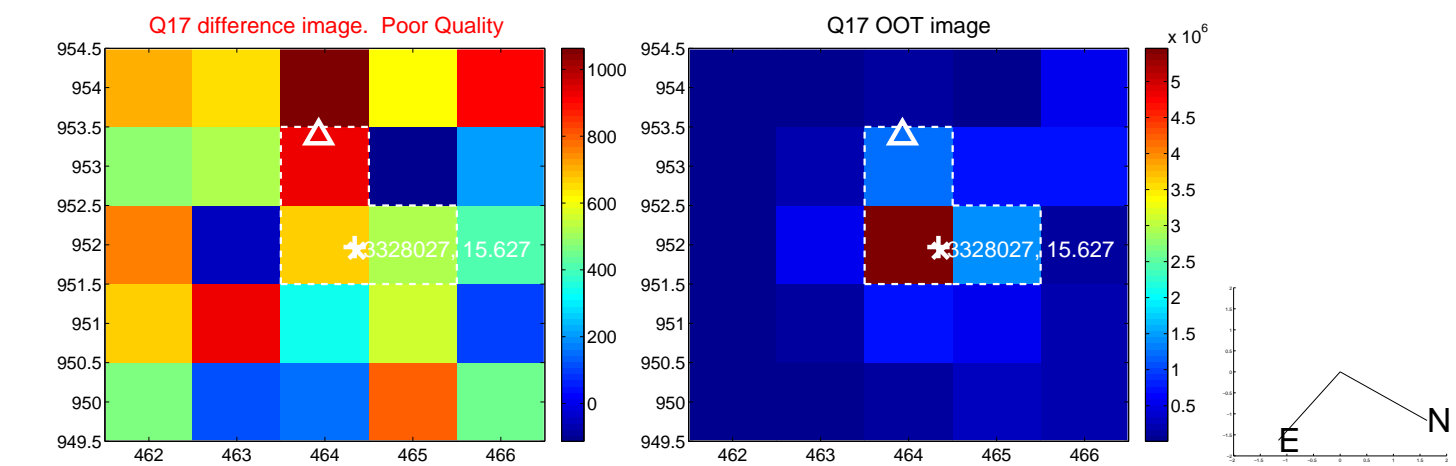
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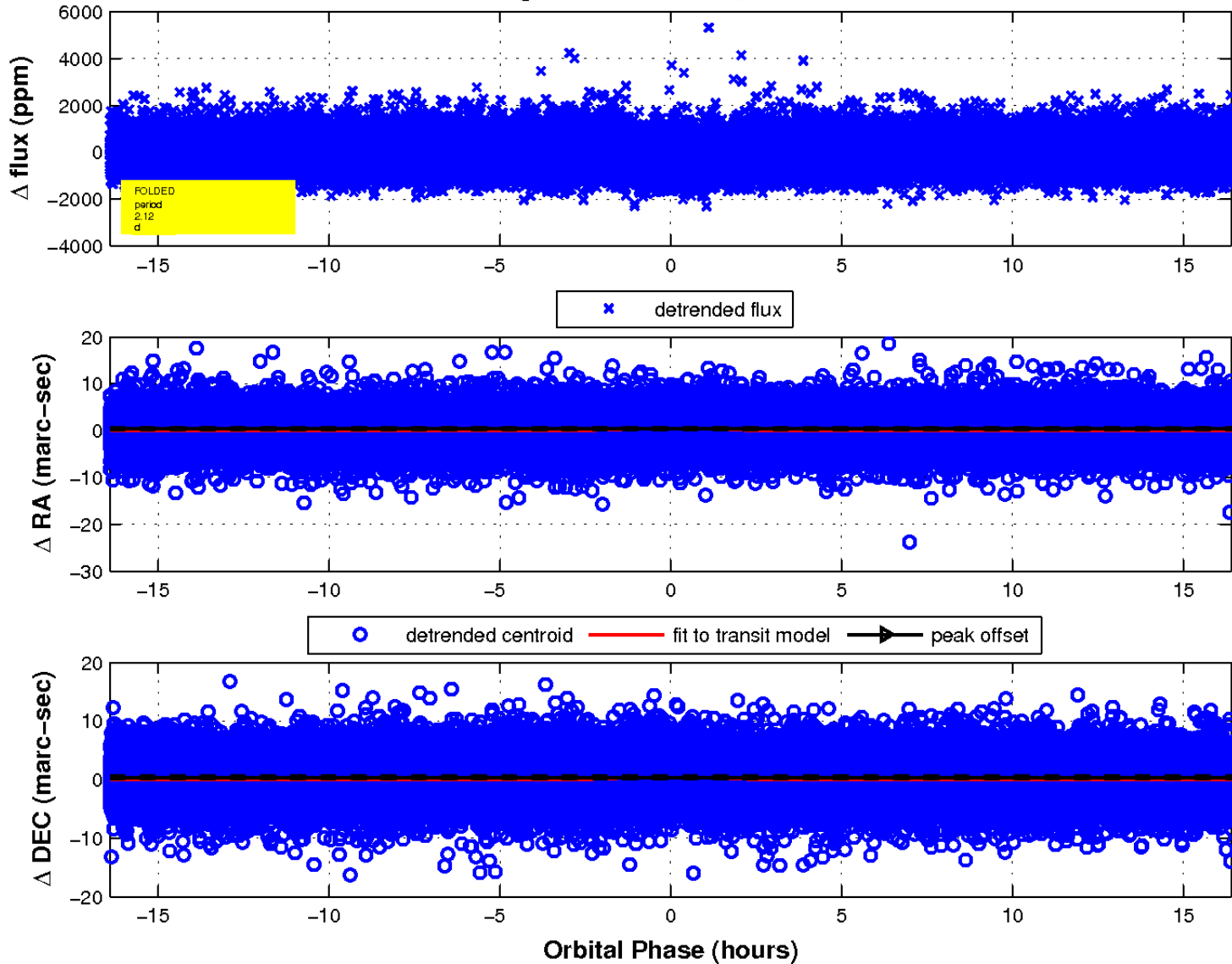
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

