

# KIC 005817712

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005817712-01	OBS	5204.01	4.206238	132.256677	95.0	9.847	9.8	10.2	0.79	5514	0.92	240.61

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005817712-01	OBS	FP	0.00	1	0	0	1	LPP_DV—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.

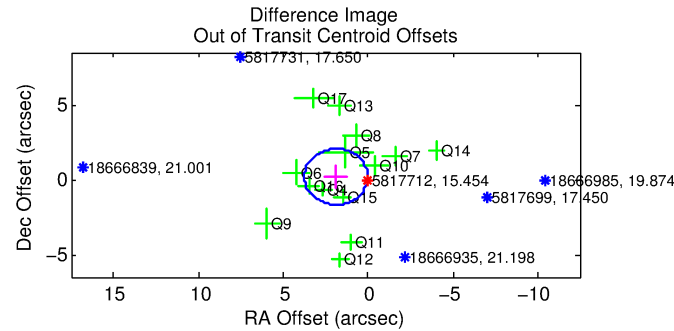
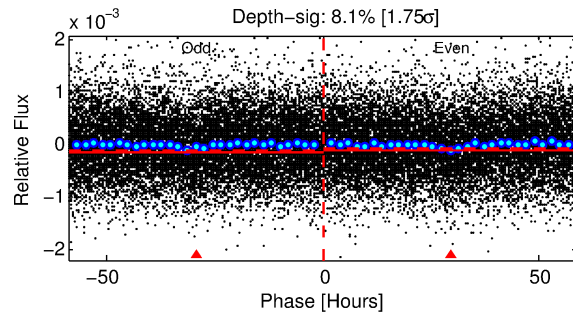
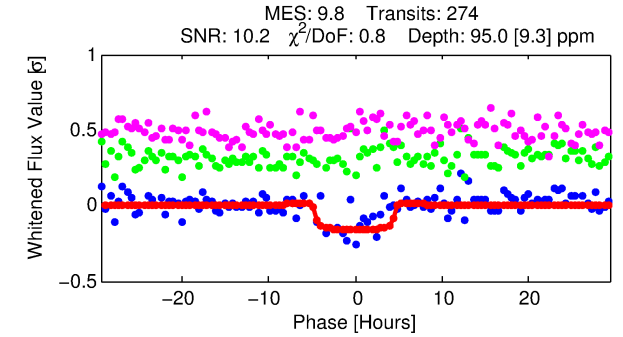
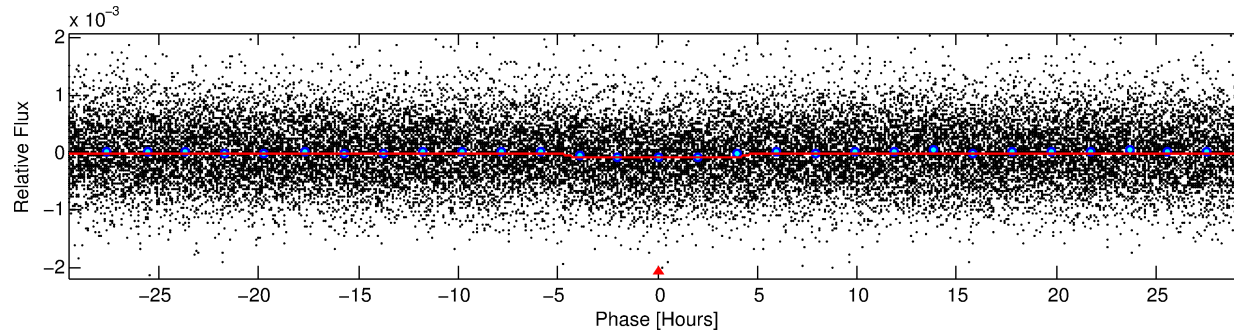
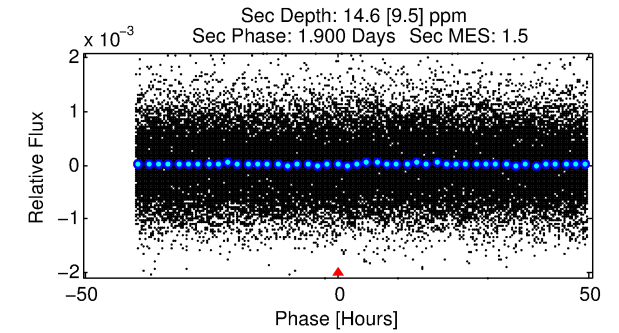
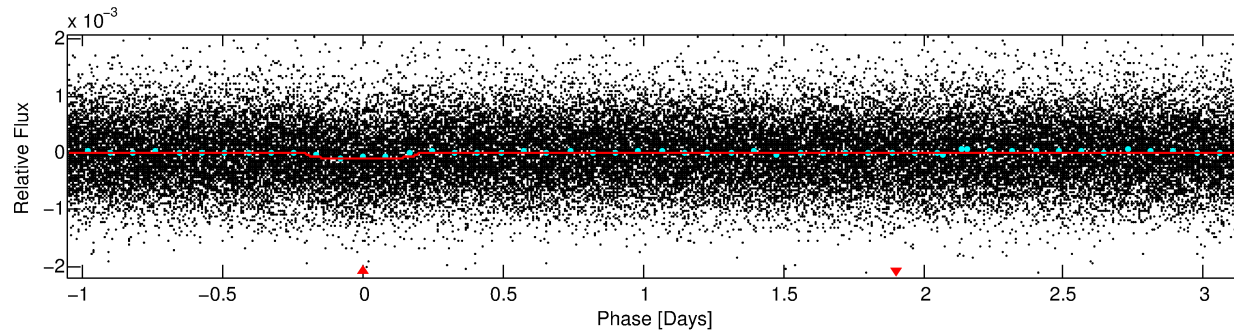
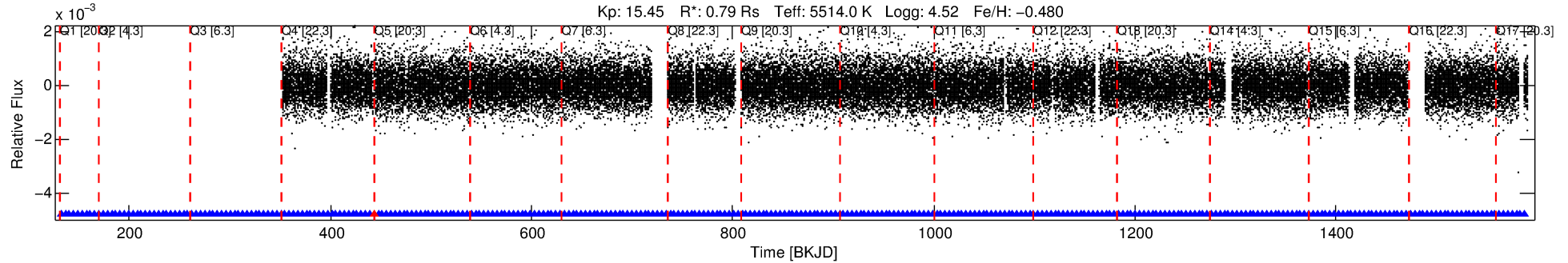
## Ephemeris Match Information For 005817712-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta\text{Row}$	$\Delta\text{Col}$	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
005817712-01	5817712	005817566-sec	5817566	1:2	74.3	-8	-17	11.68	15.45	1640.00	Direct-PRF	0	3.55	1.18

**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta\text{Row}$  and  $\Delta\text{Col}$  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: 5817712 Candidate: 1 of 1 Period: 4.206 d  
KOI: K05204.01 Corr: 0.833



## DV Fit Results:

Period = 4.20624 [0.00008] d  
Epoch = 132.2567 [0.0137] BKJD  
Rp/R\* = 0.0106 [0.0027]  
a/R\* = 1.76 [1.47]  
b = 0.90 [0.26]  
Seff = 240.61 [63.70]  
Teq = 1004 [66] K  
Rp = 0.92 [0.29] Re  
a = 0.0463 [0.0070] AU  
Ag = 20.56 [17.59] [1.11σ]  
Teffp = 3306 [696] K [3.29σ]

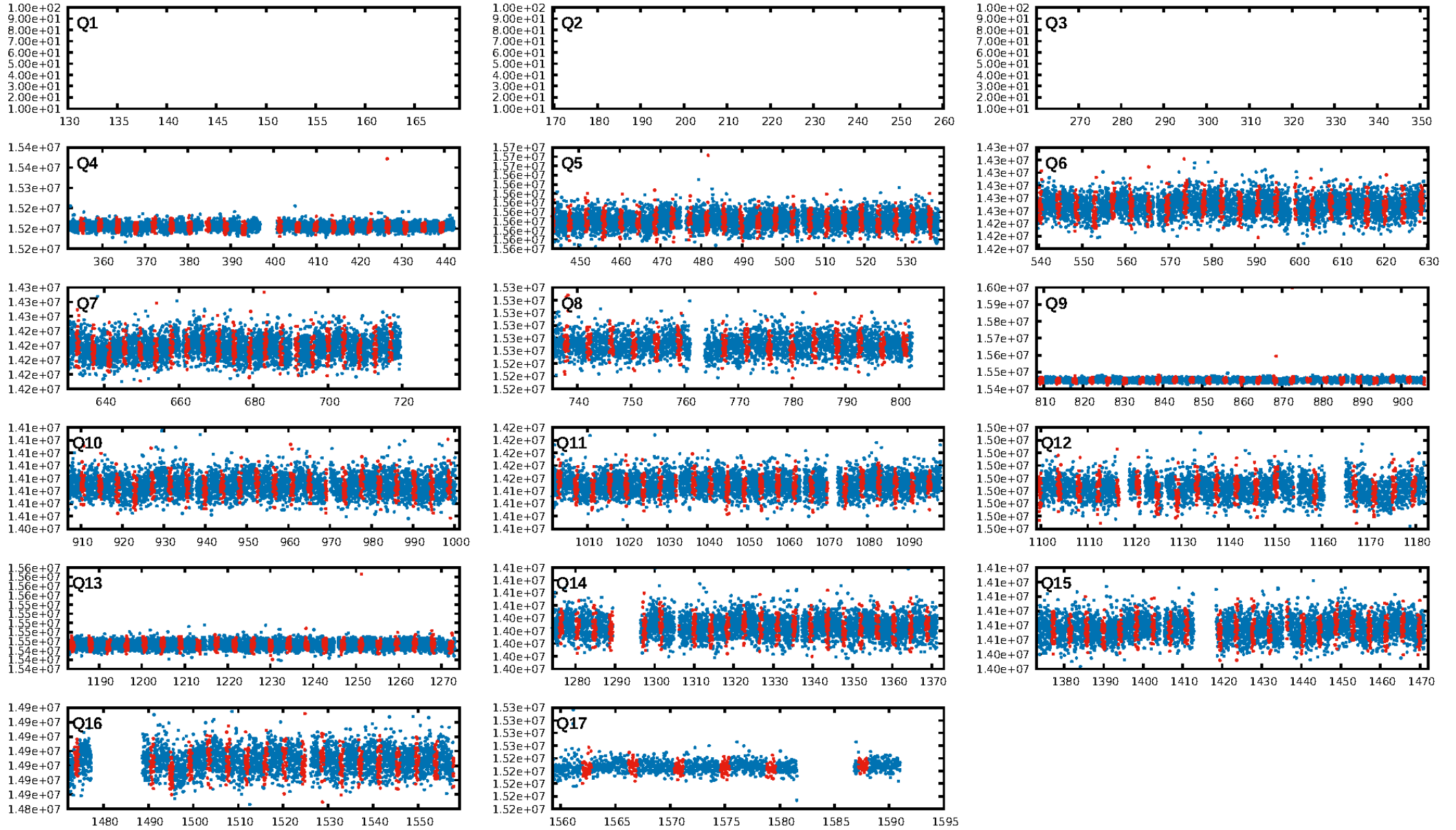
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.29e-22  
RollingBand-fgt: 1.00 [267/268]  
**GhostDiagnostic-chr: 0.3471**  
Centroid-sig: 30.1%  
Centroid-so: 1.436 arcsec [1.00σ]  
**OotOffset-rm: 1.891 arcsec [3.04σ]**  
KicOffset-rm: 1.809 arcsec [2.85σ]  
OotOffset-st: 3/3/4/4 [14]  
KicOffset-st: 3/3/4/4 [14]  
DiffImageQuality-fgm: 0.00 [0/14]  
DiffImageOverlap-fno: 1.00 [14/14]

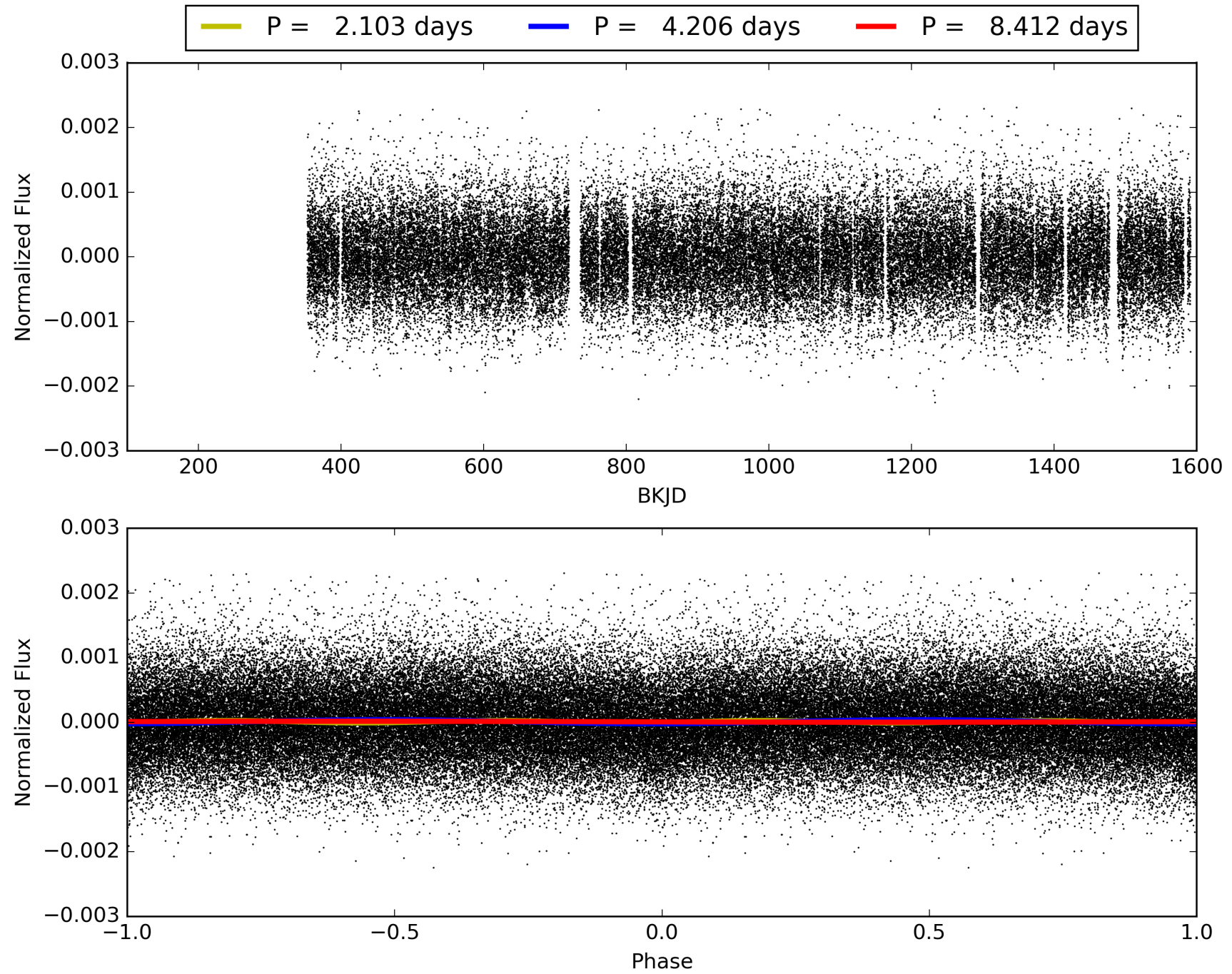
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 08:39:56 Z

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

# TCE 005817712-01, PDC Light Curves

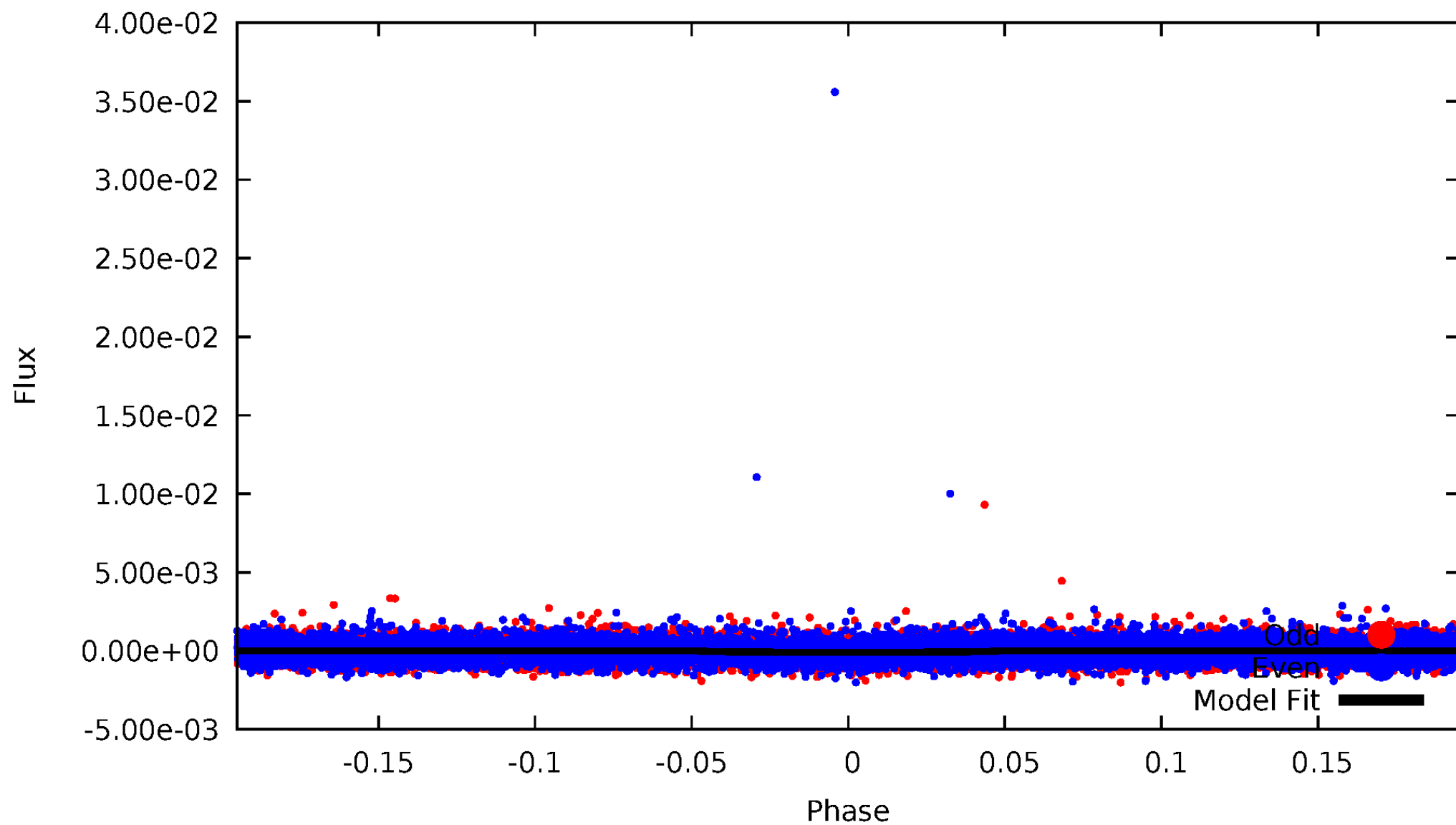


TCE 005817712-01



# DV Odd/Even

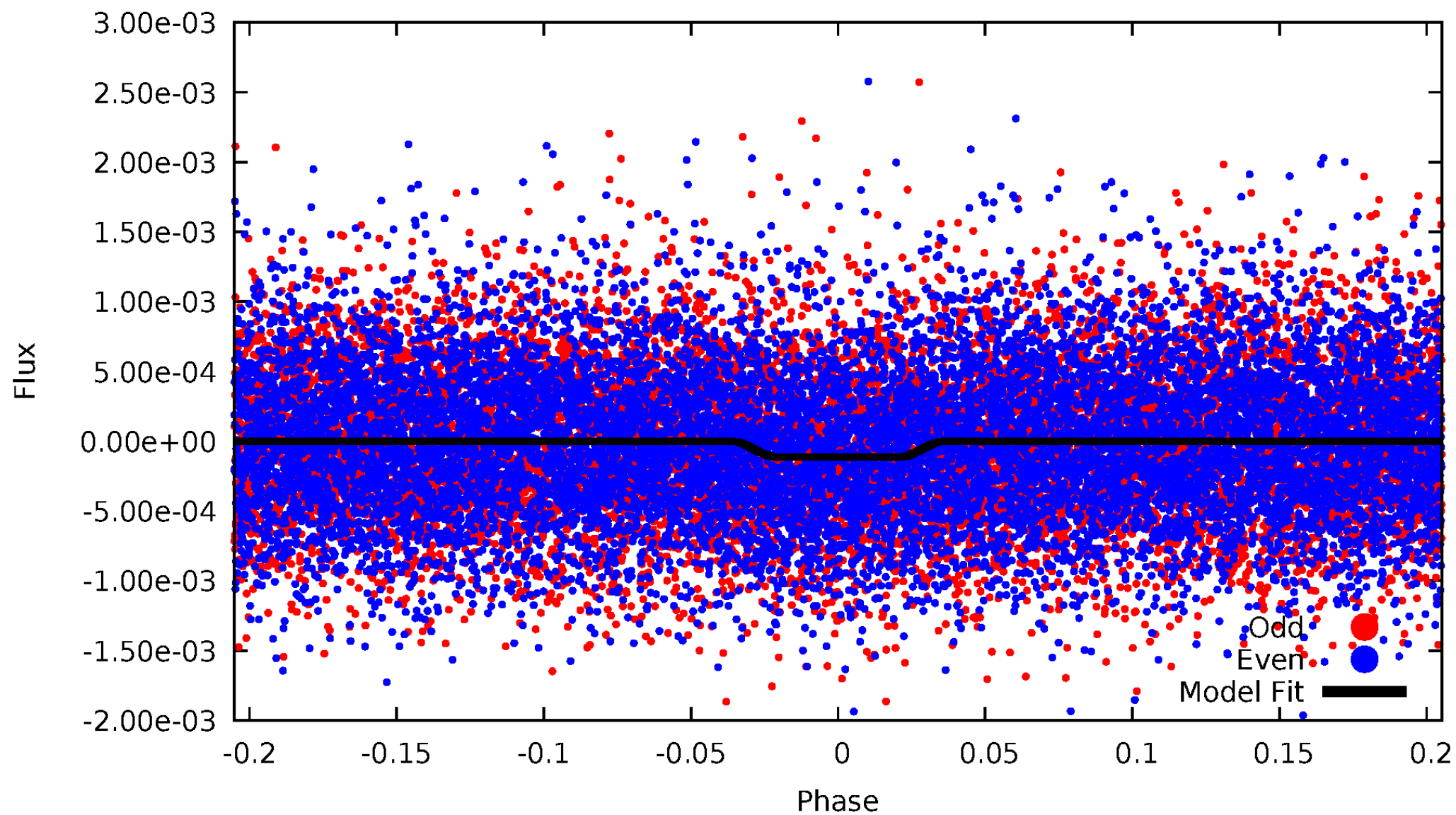
TCE 005817712-01





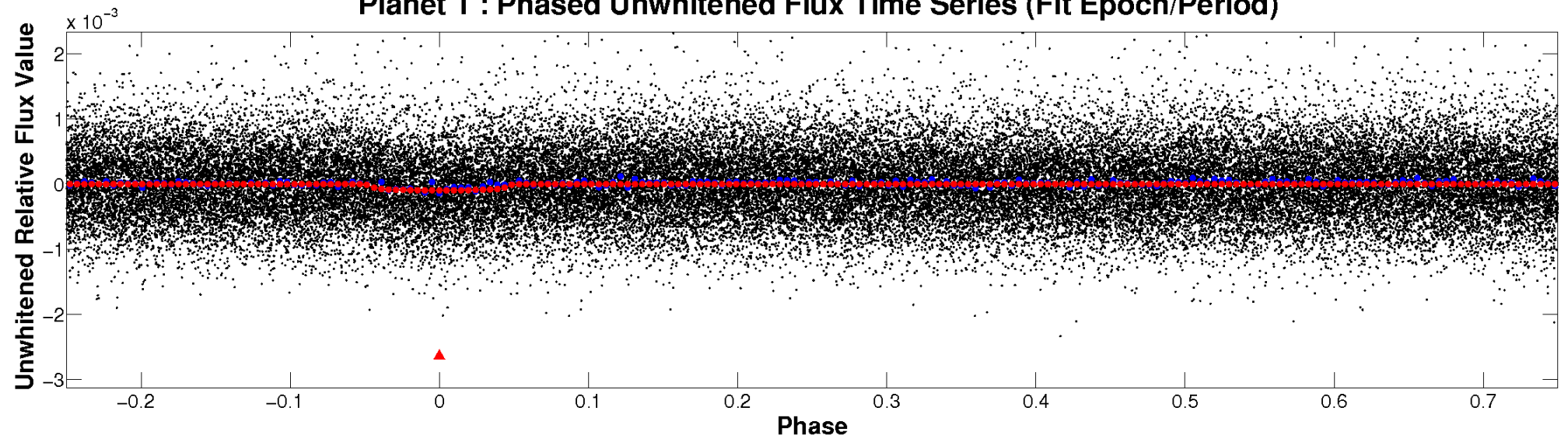
# ALT Odd/Even

TCE 005817712-01

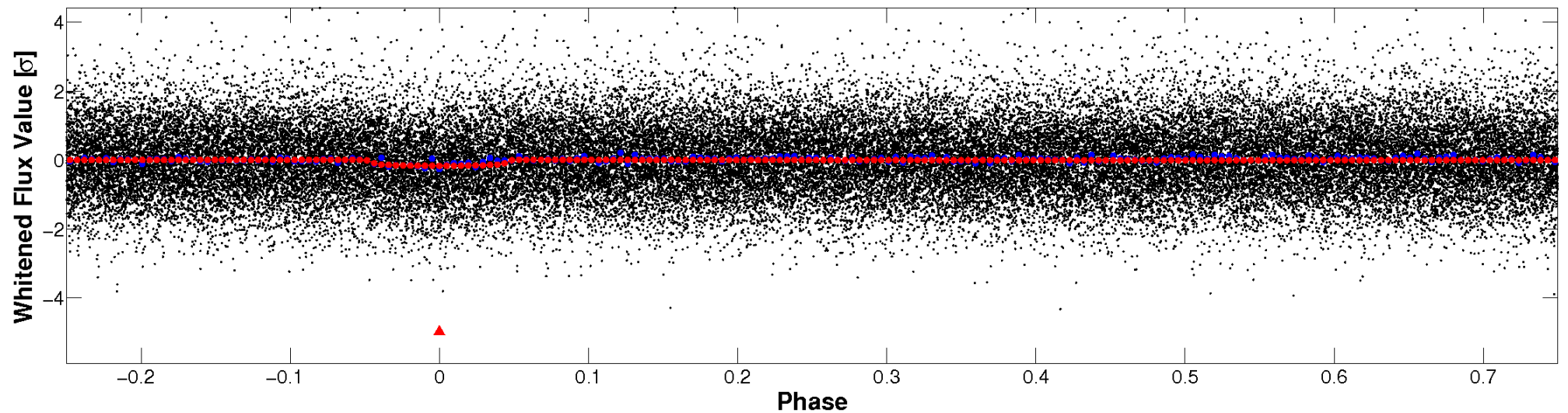


# Non-Whitened Vs. Whitened Light Curve

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

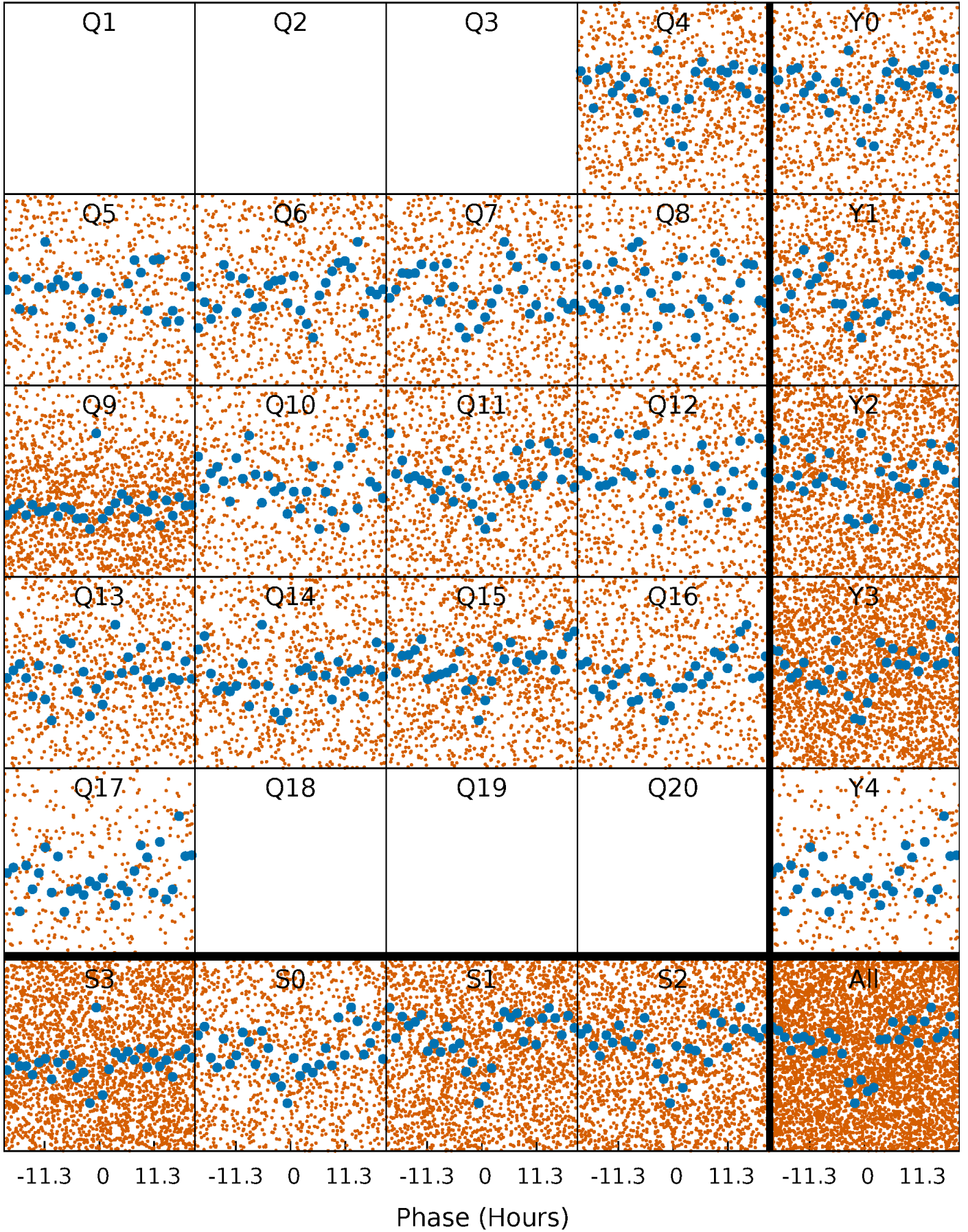


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

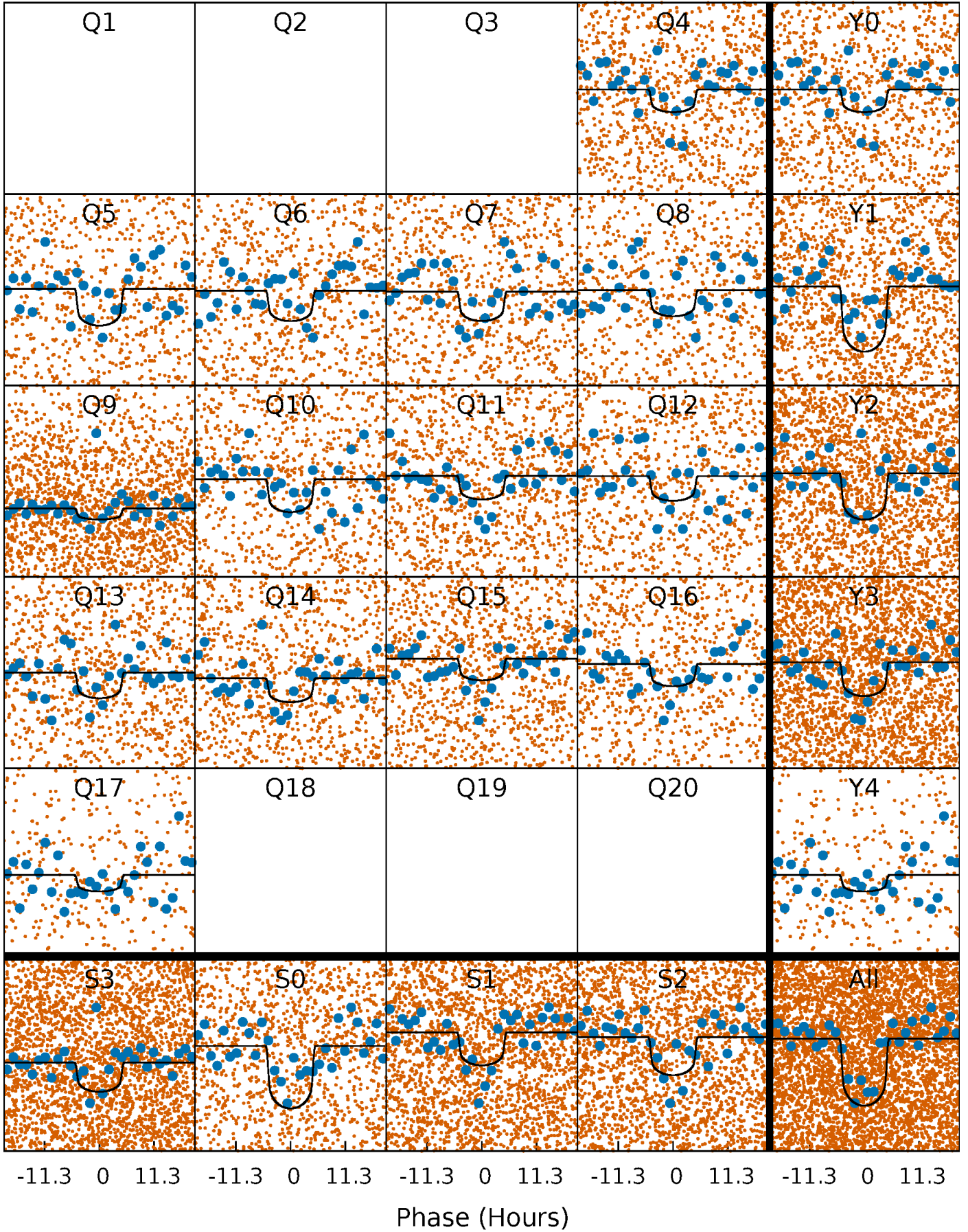
TCE 005817712-01   P= 4.206238 Days    $T_0=132.256677$  (BKJD)





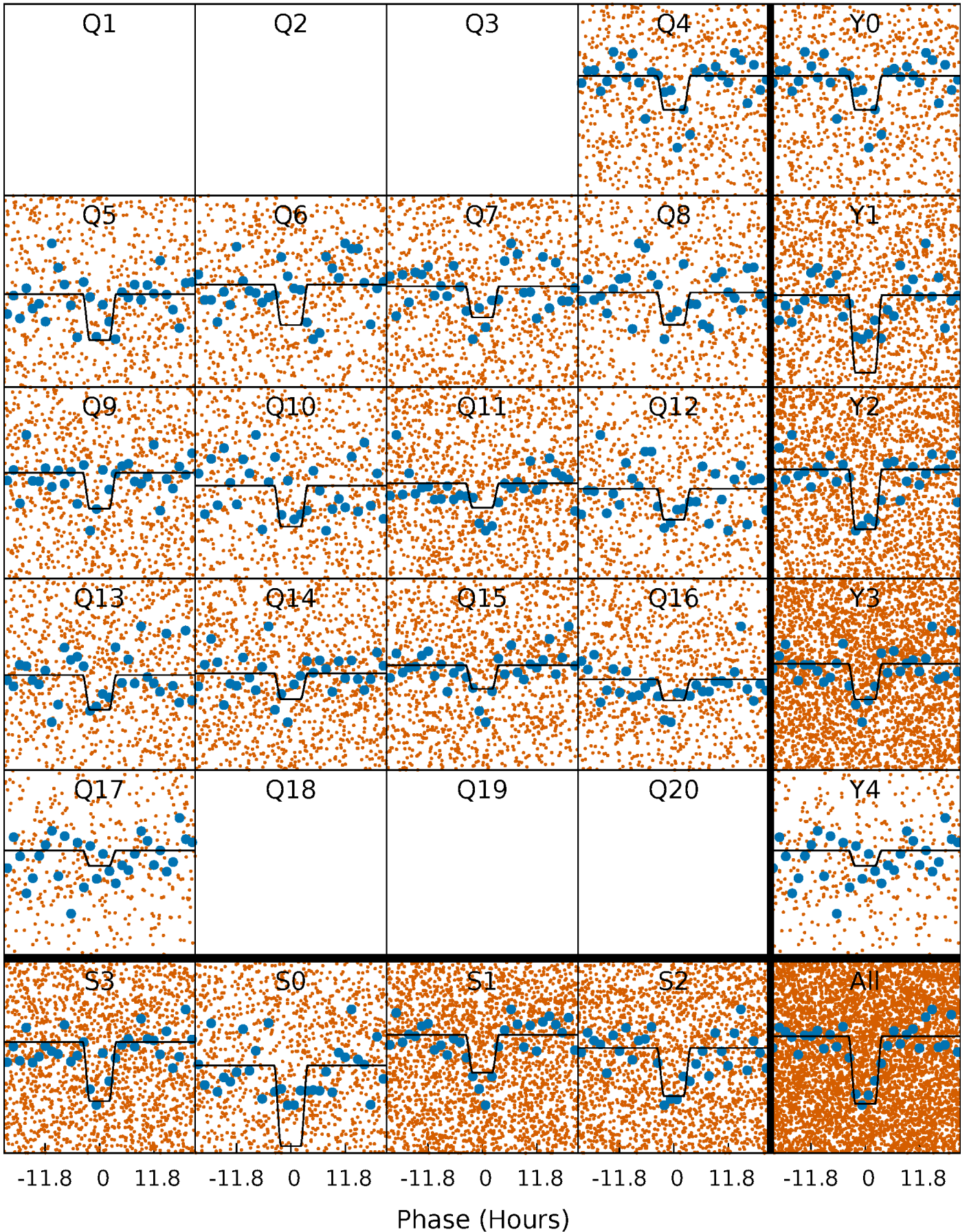
# DV Quarter-Phased Transit Curves

TCE 005817712-01 P= 4.206238 Days  $T_0=132.256677$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

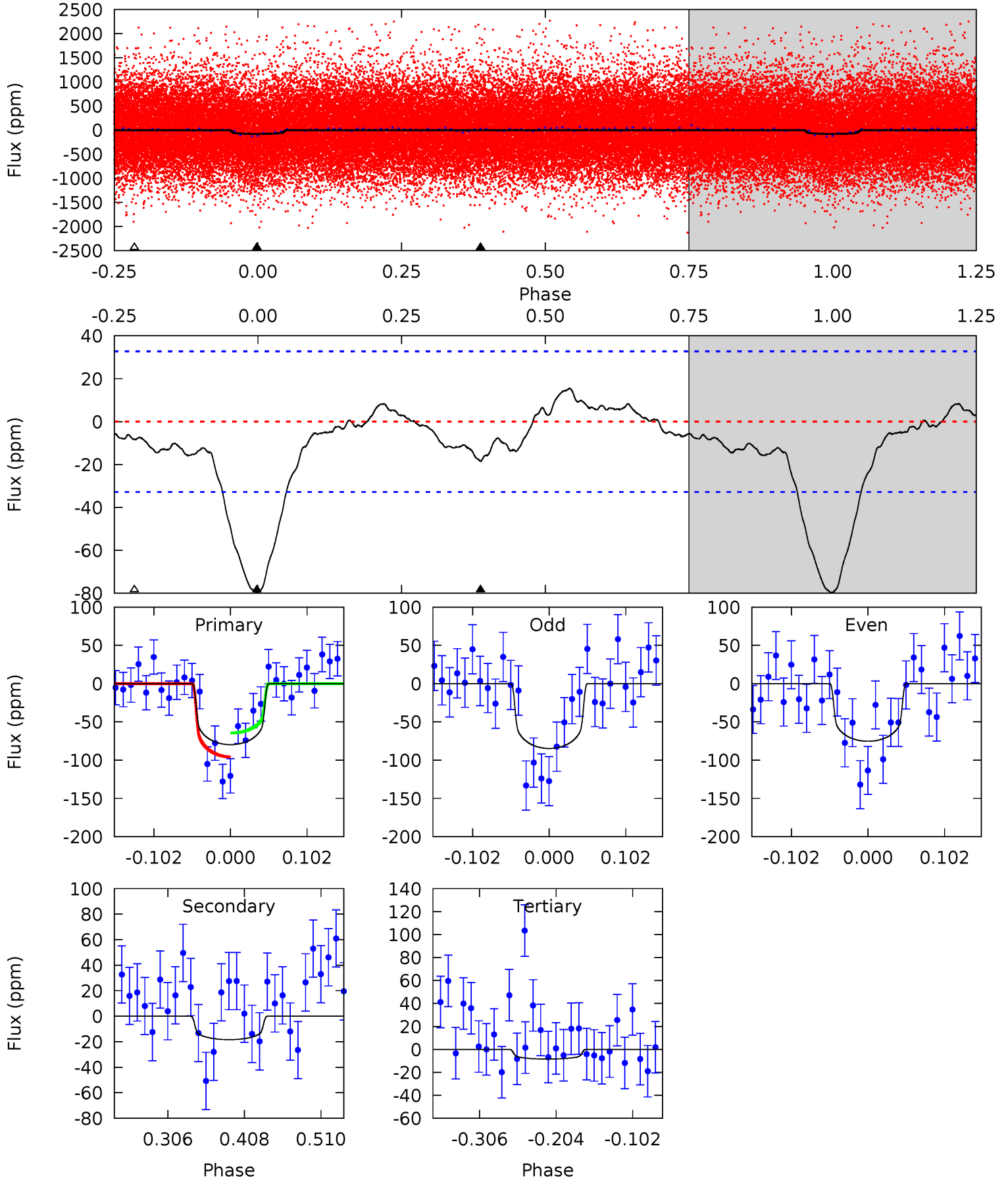
TCE 005817712-01 P= 4.206386 Days  $T_0=132.195261$  (BKJD)



# DV Model-Shift Uniqueness Test

005817712-01, P = 4.206238 Days, E = 132.256677 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
11.1	2.56	1.17	0	4.56	1.64	1.09	9.93	11.1	1.39	2.56	0.66	0.79	0.16	2.18

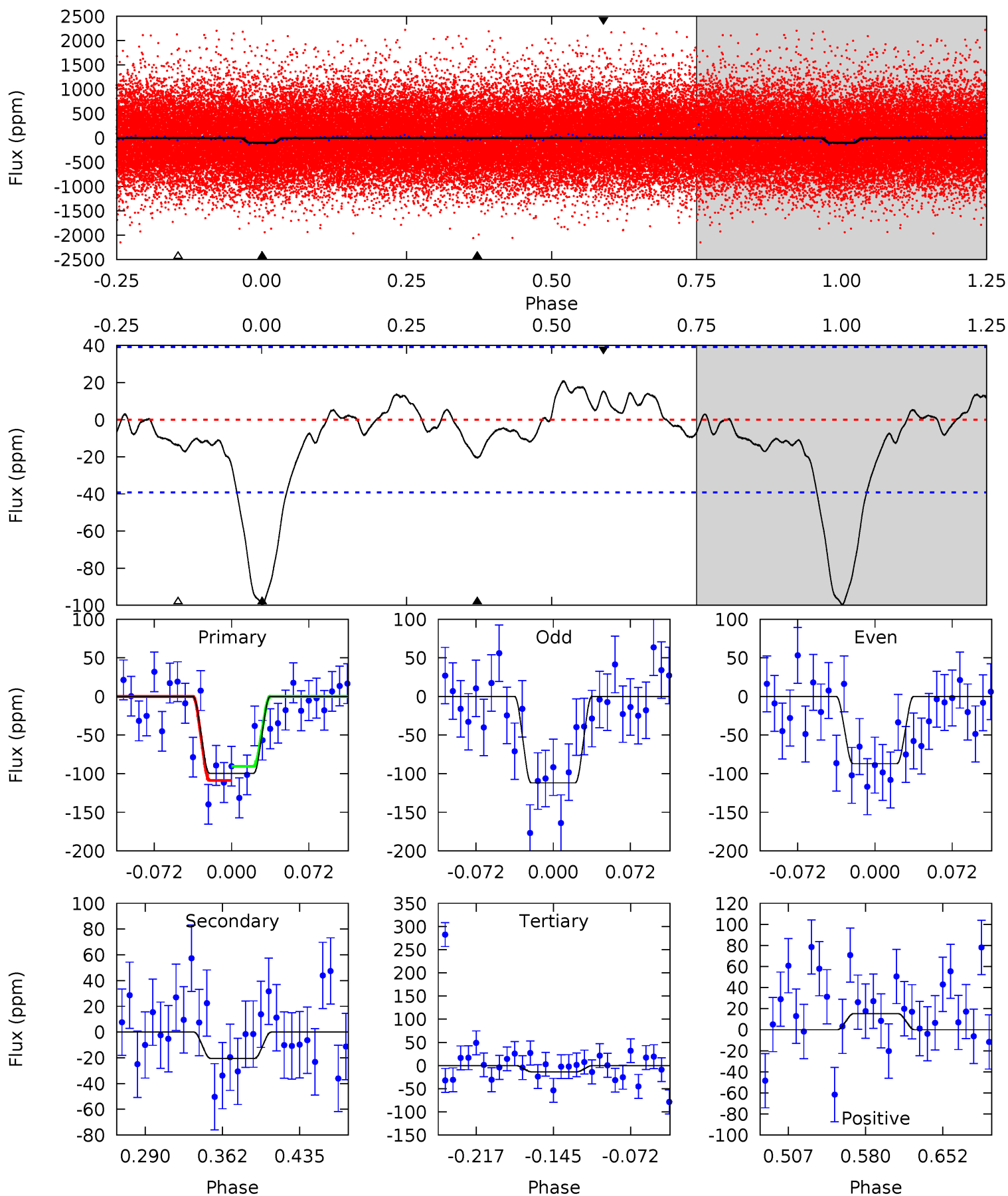




# Alt Model-Shift Uniqueness Test

005817712-01, P = 4.206386 Days, E = 132.195261 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
11.8	2.41	1.62	1.81	4.63	1.80	1.12	10.1	9.96	0.79	0.60	1.47	0.88	0.17	1.08





### Stellar Parameters For KIC 005817712

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5514^{+210}_{-191}$	$4.518^{+0.095}_{-0.116}$	$-0.480^{+0.300}_{-0.300}$	$0.790^{+0.146}_{-0.097}$	$0.750^{+0.107}_{-0.050}$	$2.142^{+0.867}_{-0.726}$
	+4%/-3%	+2%/-3%	+62%/-62%	+18%/-12%	+14%/-7%	+40%/-34%
Source	KIC0	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 005817712-01 / KOI 5204.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-18 \pm 7$	$0.93^{+0.28}_{-0.23}$	$1408^{+81}_{-72}$	$3840^{+506}_{-417}$	$25^{+26}_{-13}$
Alt.	$-20 \pm 8$	$0.94^{+0.25}_{-0.26}$	$1412^{+72}_{-74}$	$3889^{+535}_{-460}$	$26^{+27}_{-14}$

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

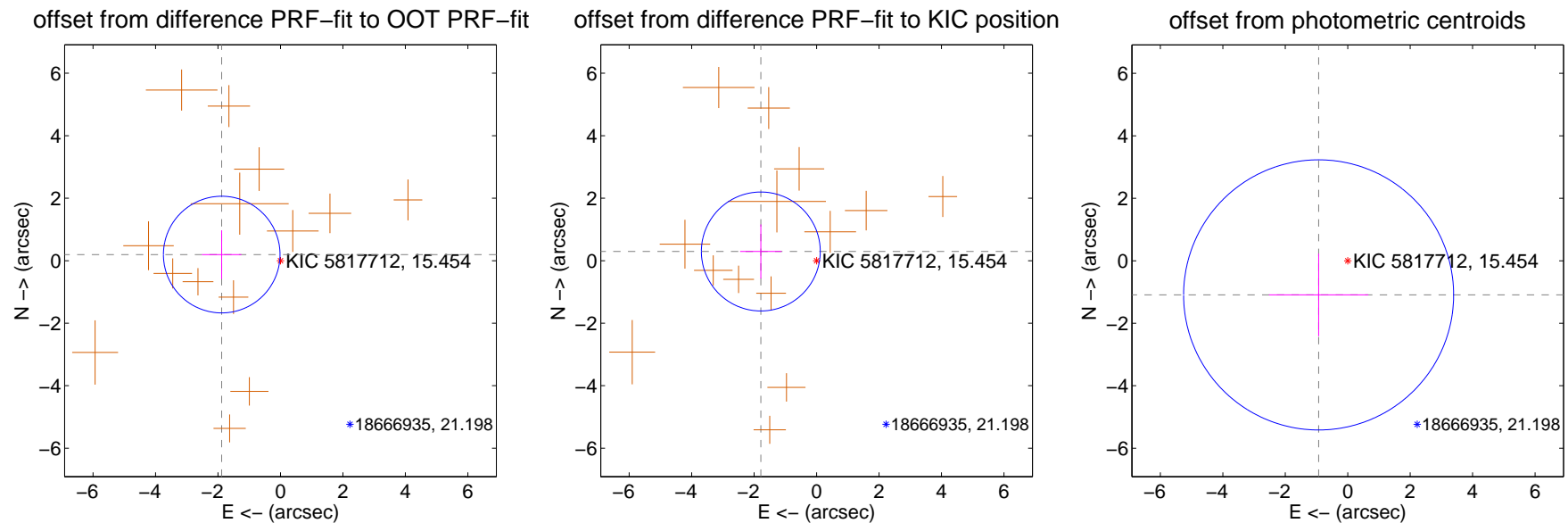
## DV Centroid Data

Supplemental centroid analysis for 005817712-01. Kepler magnitude: 15.45. Transit SNR 10.20

There are 0 quarters with good PRF difference image offsets

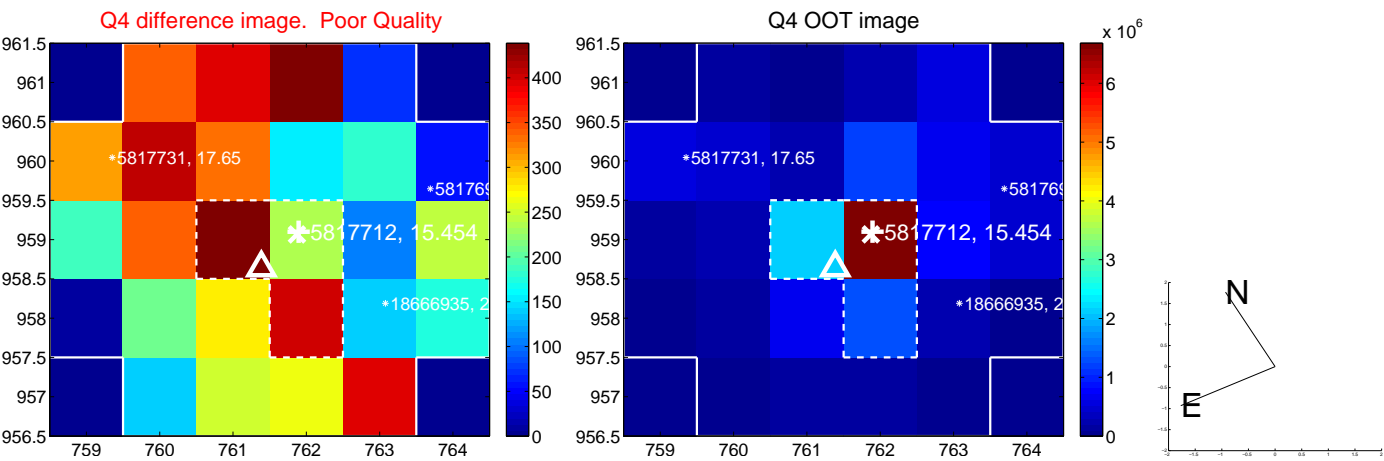
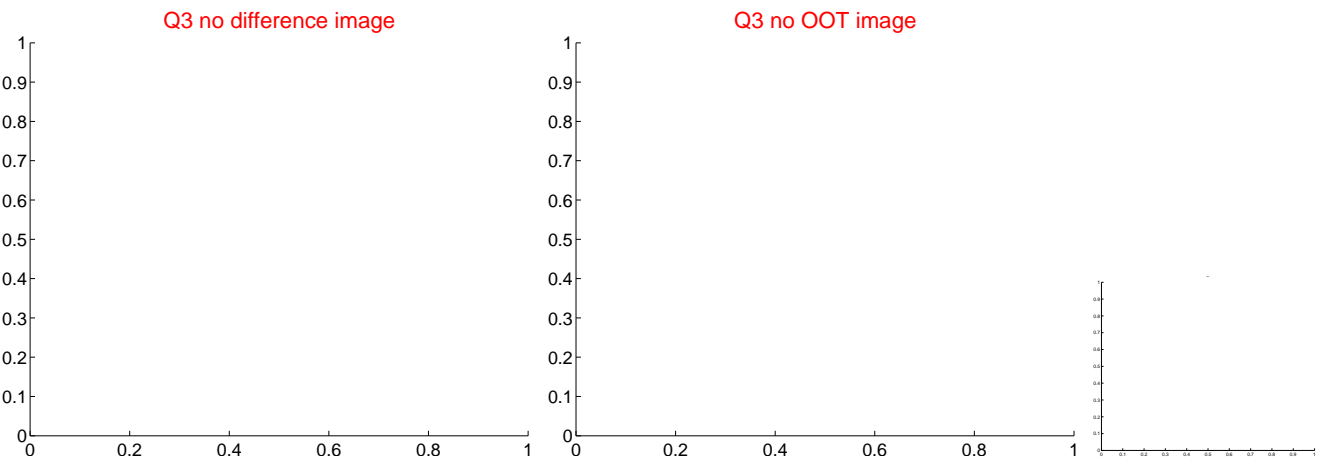
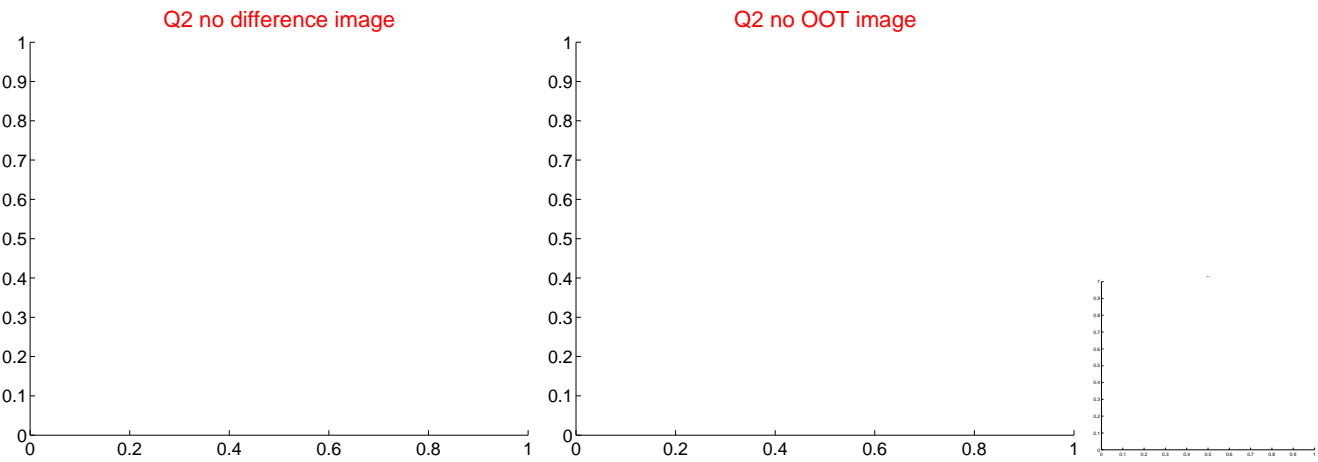
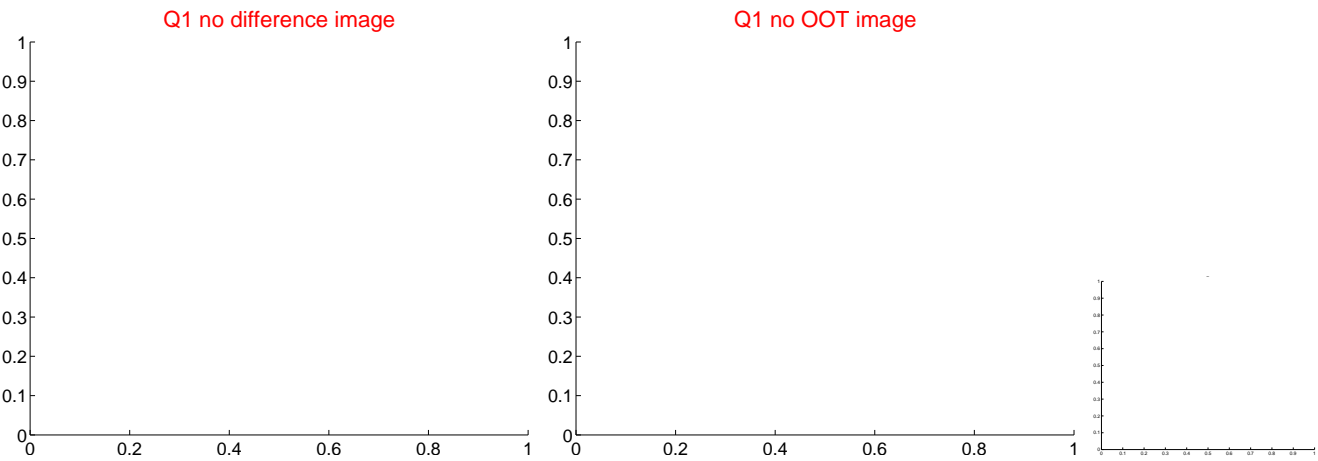
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.891 \pm 0.622$	3.04	$1.881 \pm 0.630$	$0.196 \pm 0.779$
PRF-fit source offset from KIC position	$1.809 \pm 0.634$	2.85	$1.785 \pm 0.664$	$0.295 \pm 0.865$
photometric centroid source offset	$1.44 \pm 1.44$	1.00	$0.93 \pm 1.59$	$-1.09 \pm 1.32$

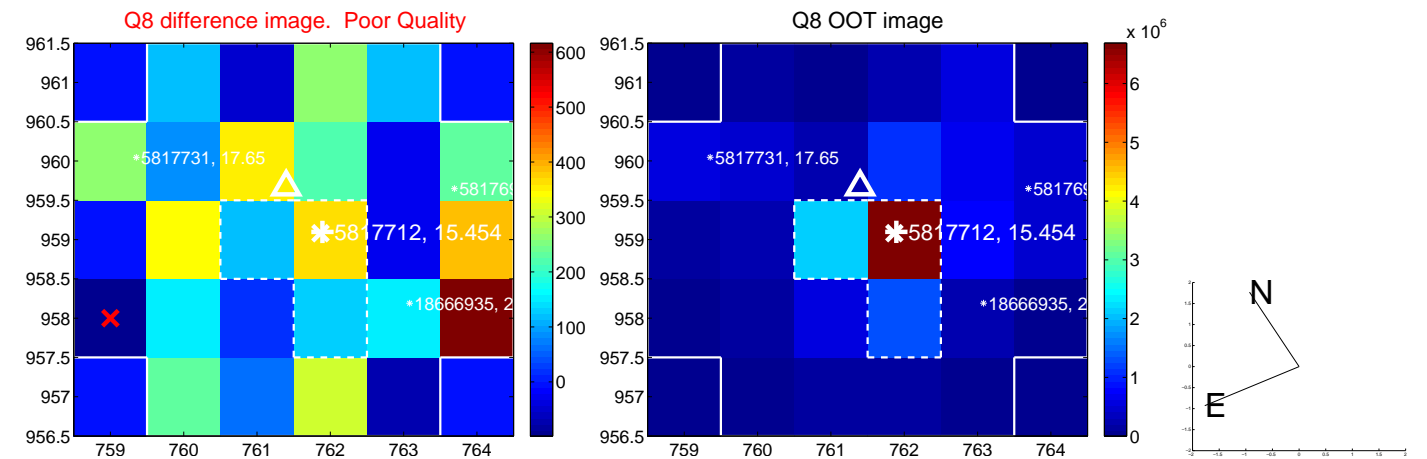
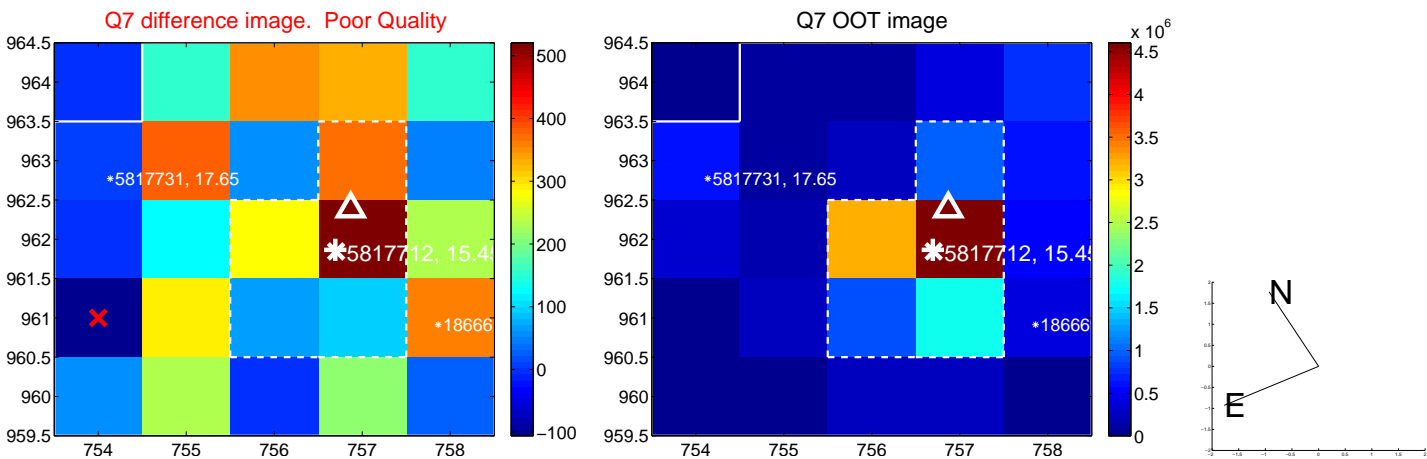
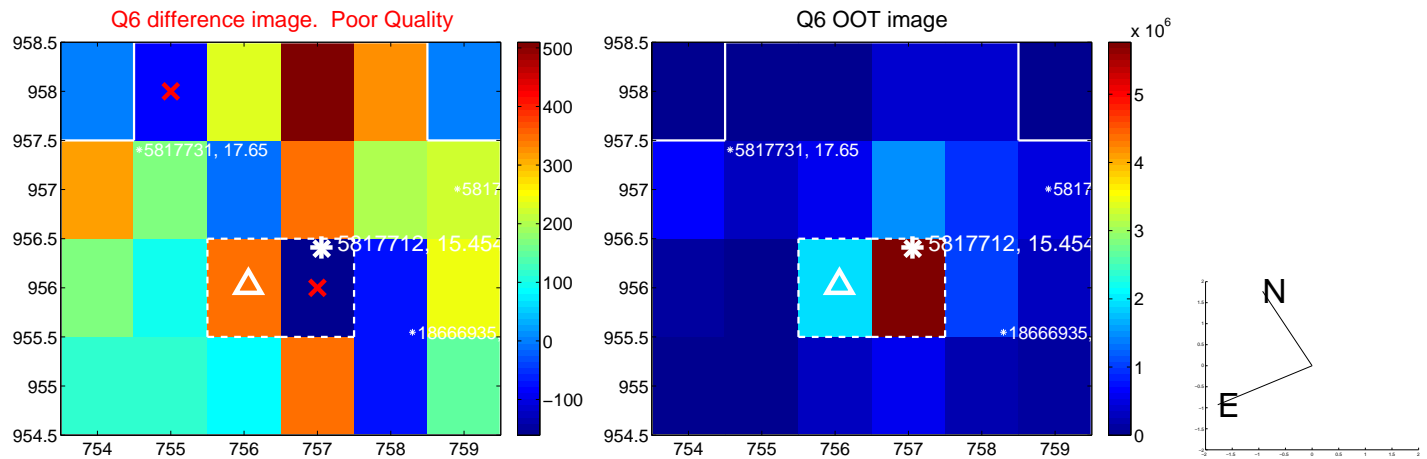
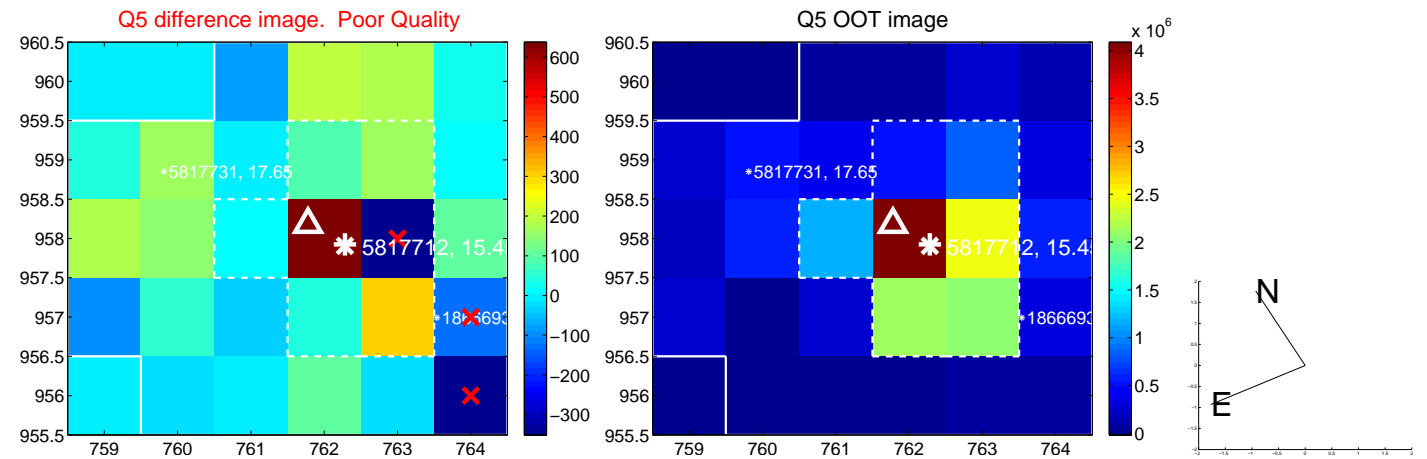


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

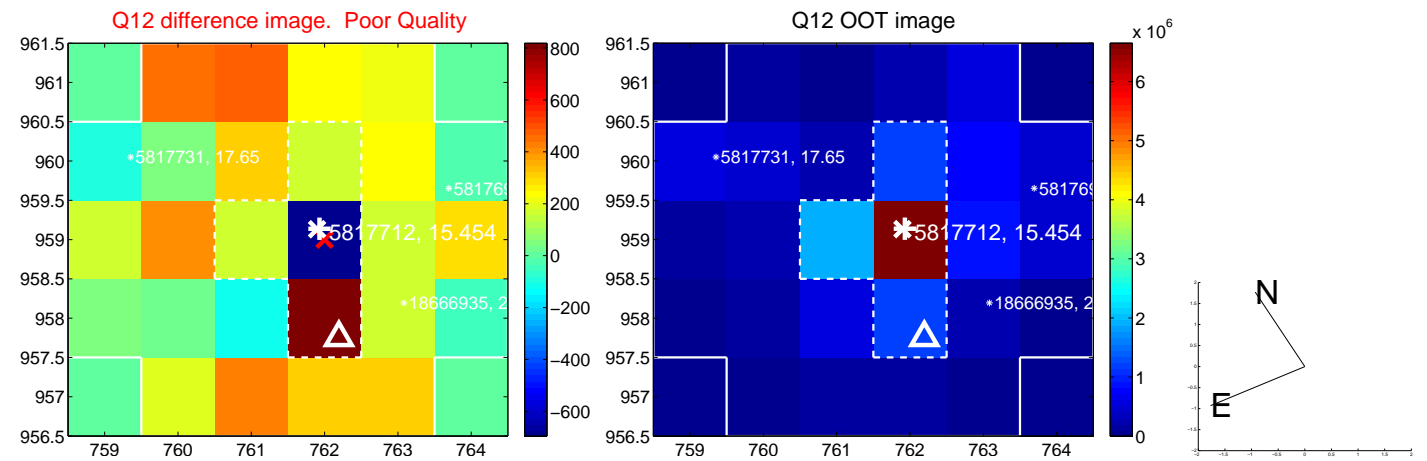
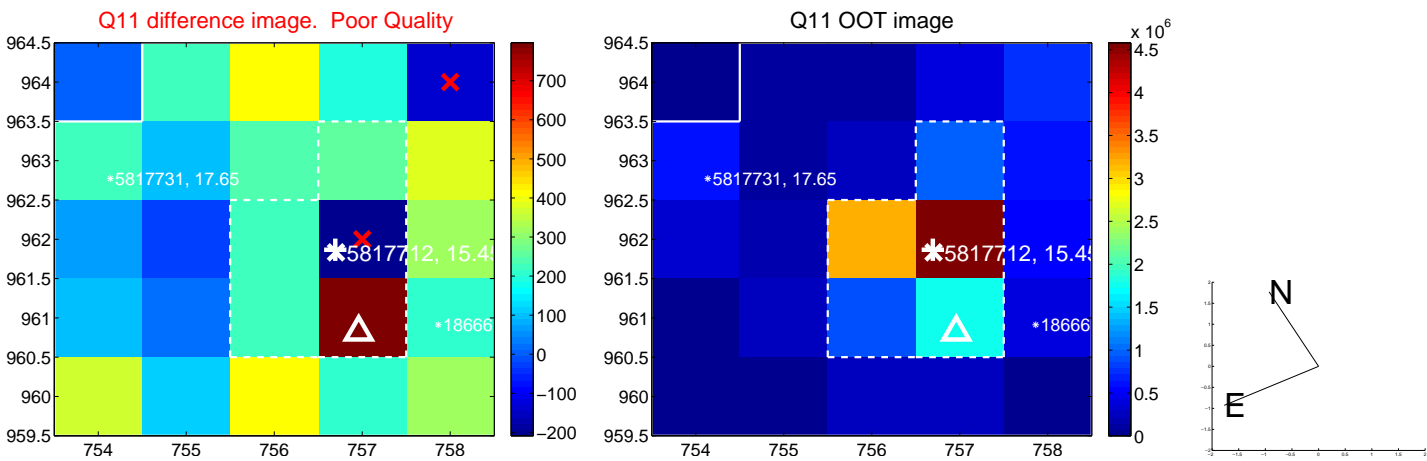
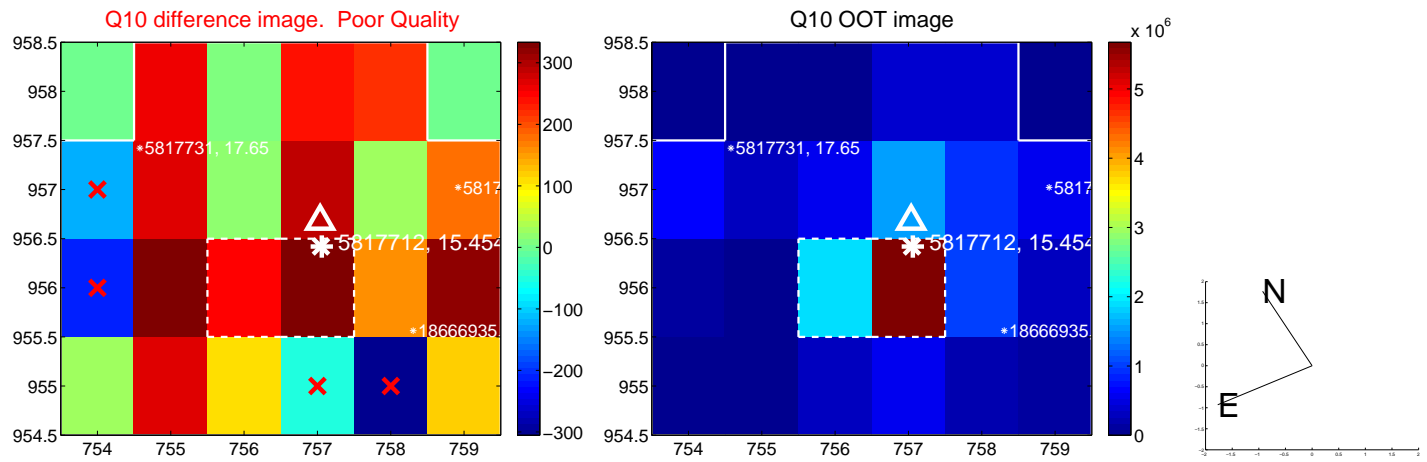
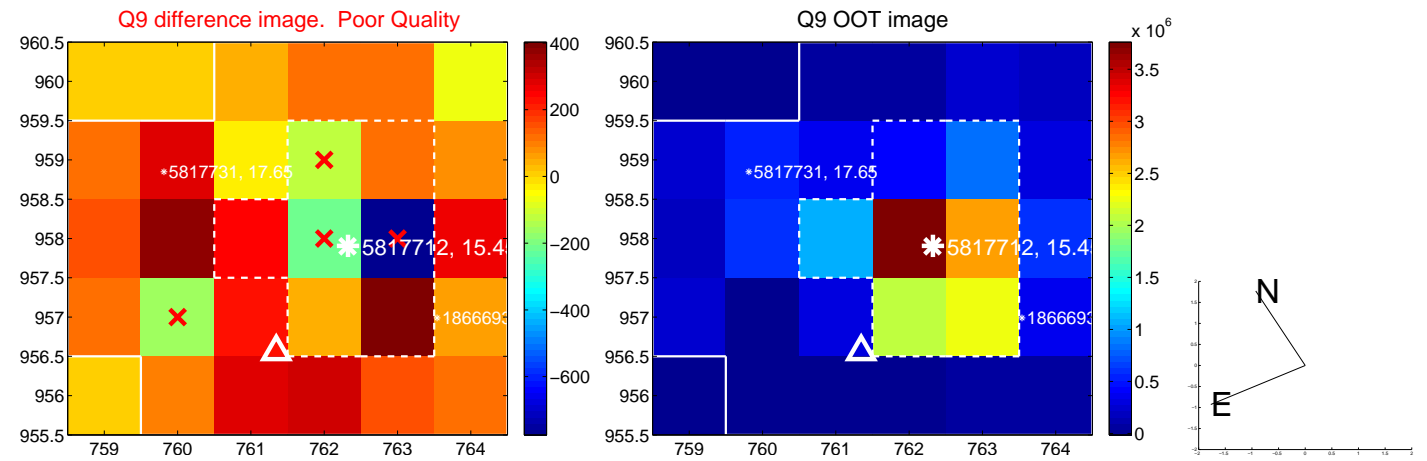


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

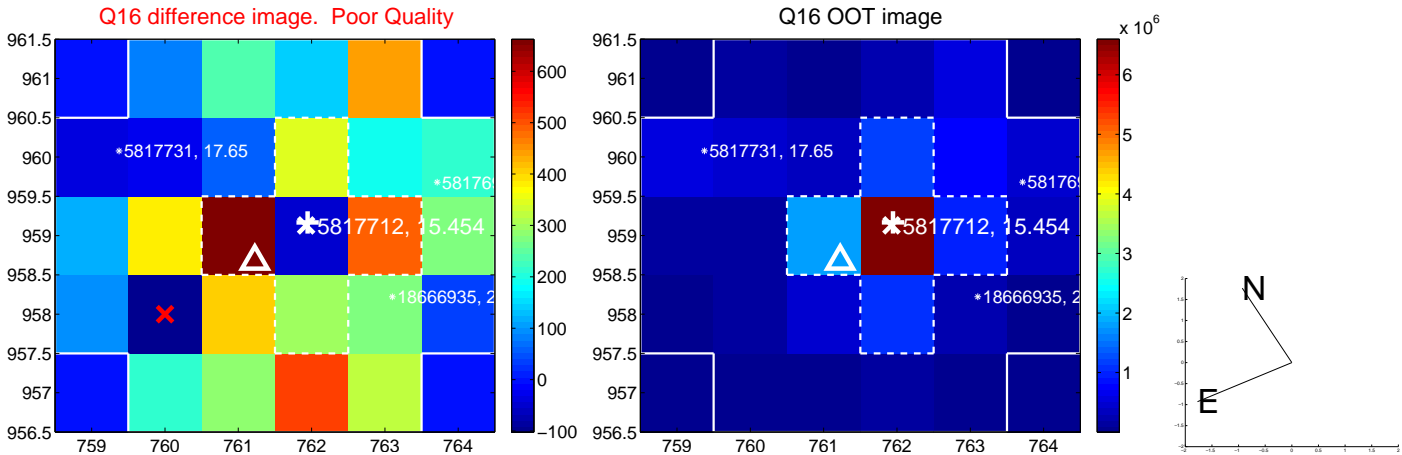
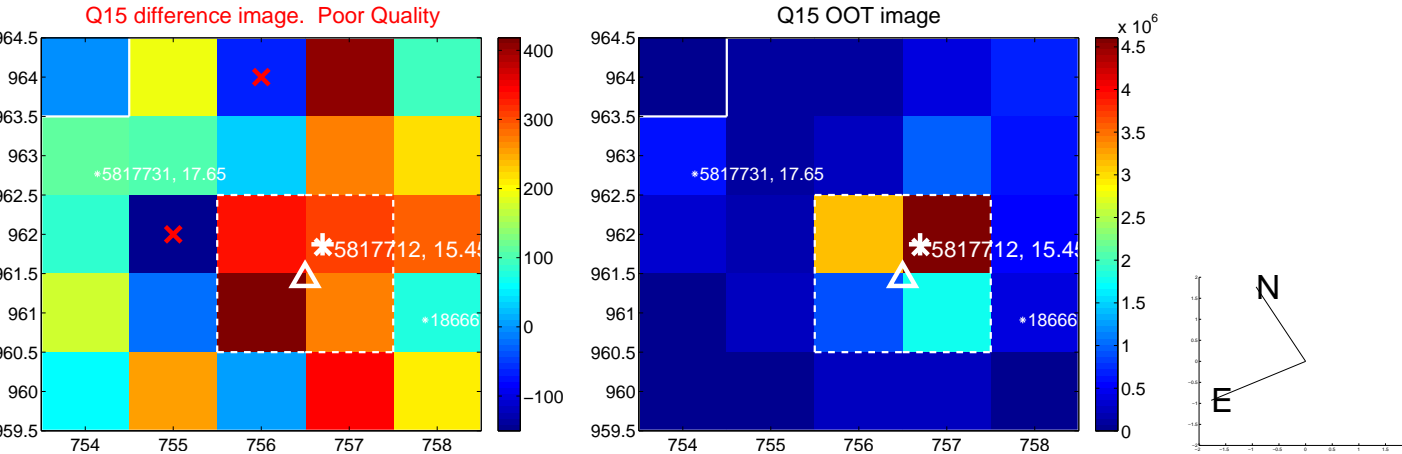
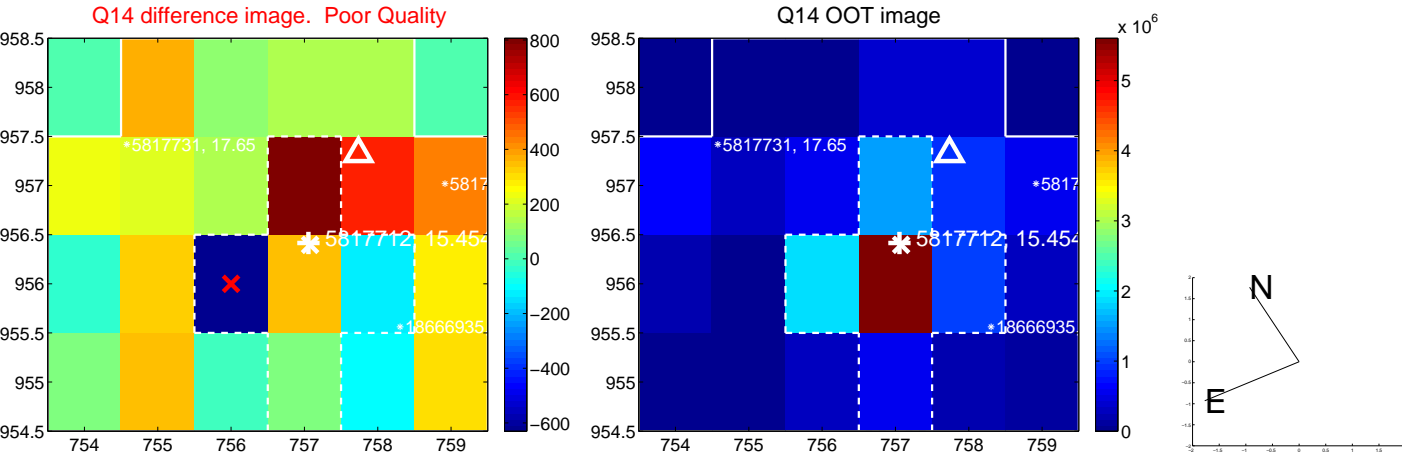
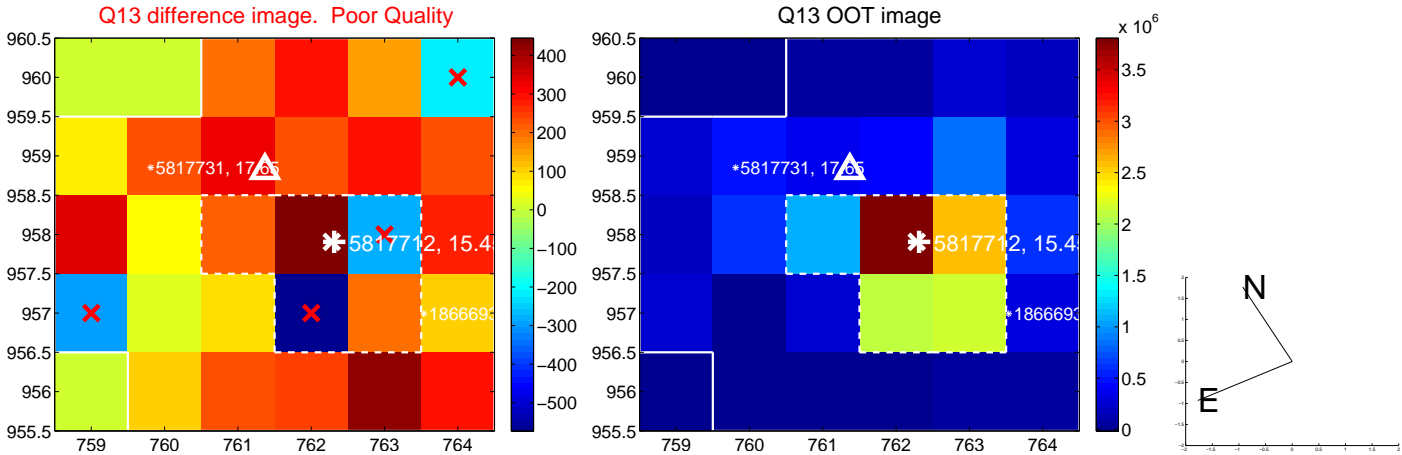




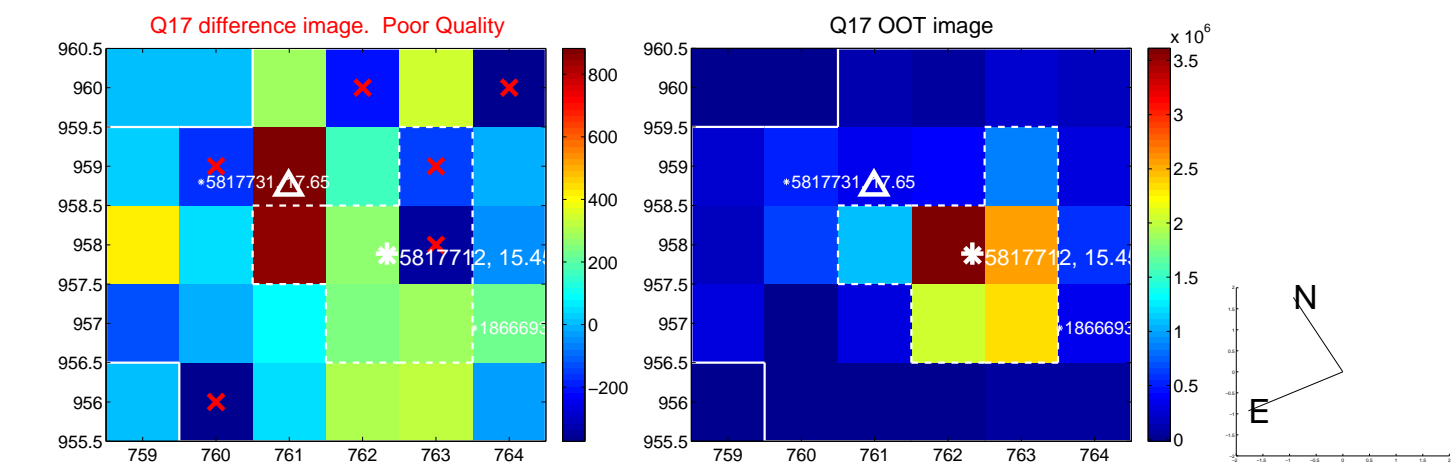
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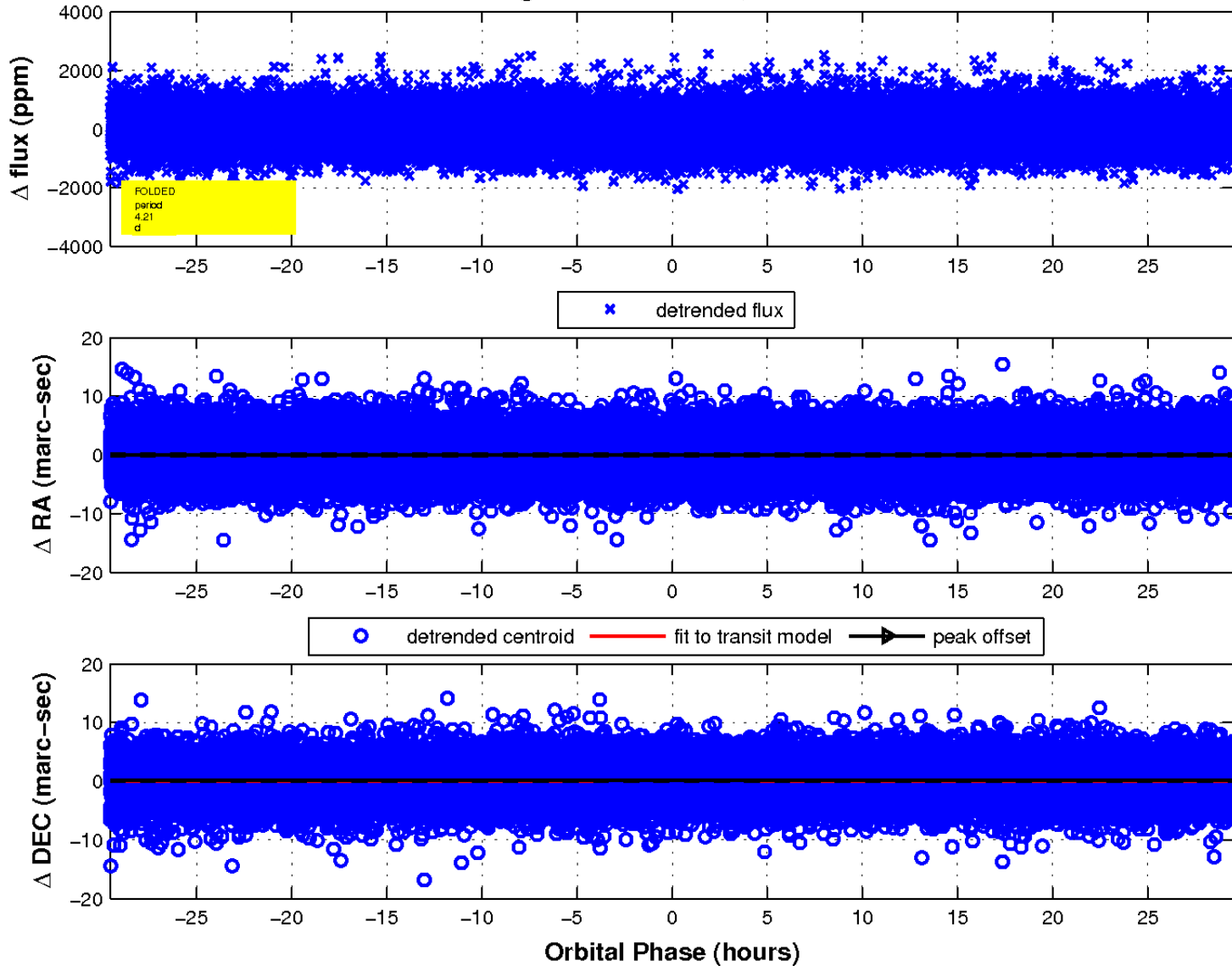
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

