

# KIC 005817613

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005817613-01	OBS	4256.01	4.205809	132.300372	215.2	7.565	13.5	14.4	0.84	5590	1.38	248.07

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005817613-01	OBS	FP	0.00	0	0	1	1	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 005817613-01

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	$\sigma_P$	$\sigma_T$
005817613-01	5817613	6138.01	5817566	1:1	44.5	-11	-1	11.68	15.89	532.23	Direct-PRF	0	3.25	2.06

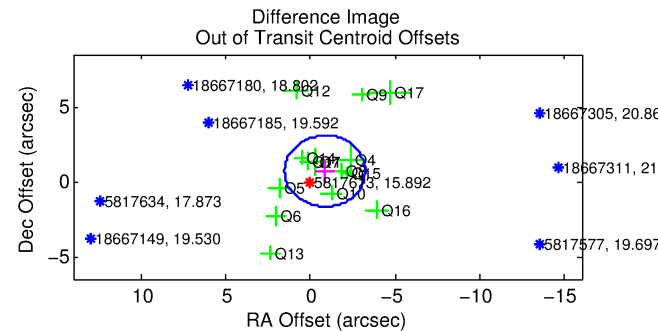
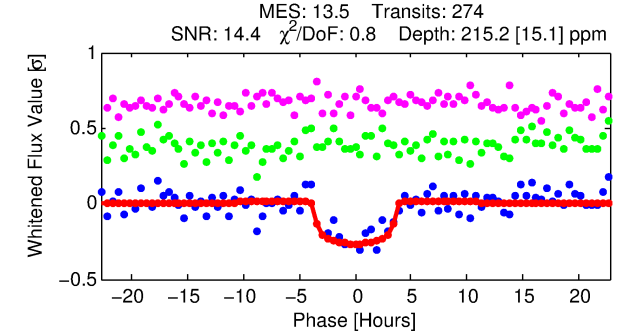
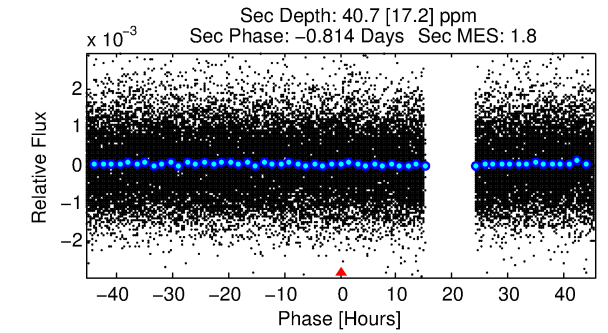
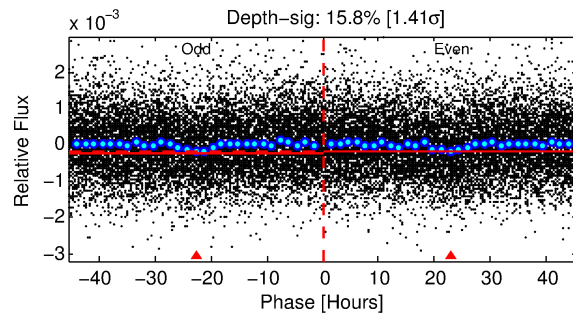
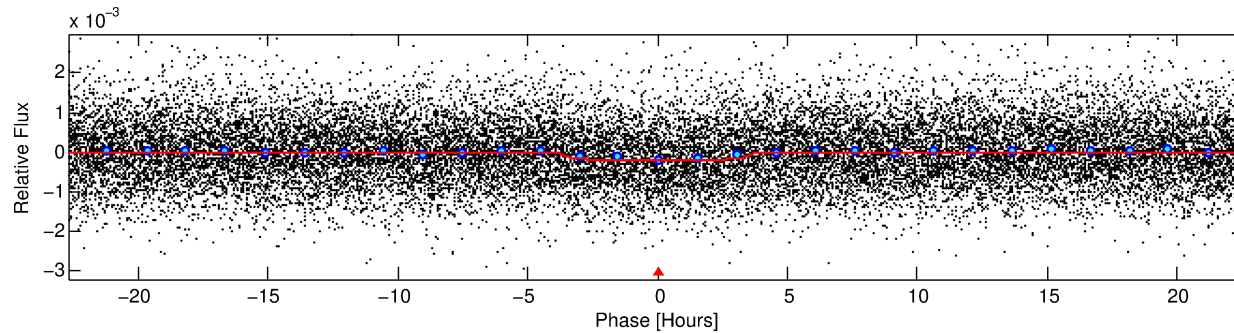
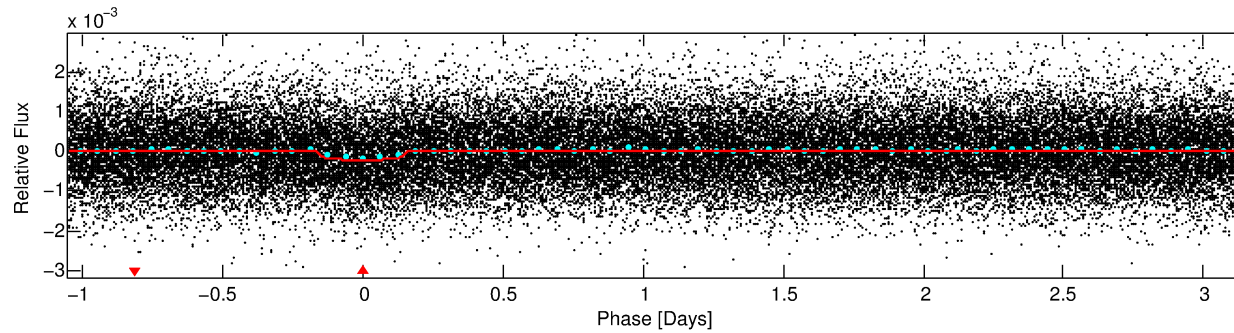
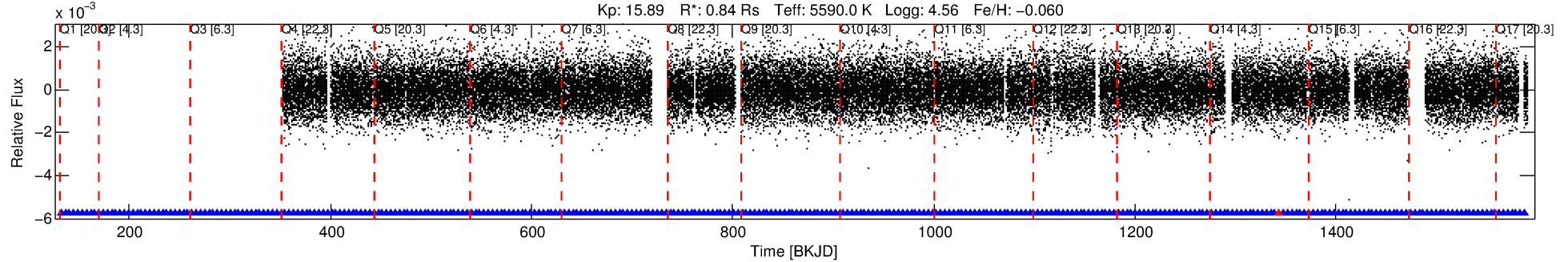
**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  is the parent's transit depth divided by the child's.  $\sigma_P$  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: 5817613 Candidate: 1 of 1 Period: 4.206 d

KOI: K04256.01 Corr: 0.976

Kp: 15.89 R\*: 0.84 Rs Teff: 5590.0 K Logg: 4.56 Fe/H: -0.060



## DV Fit Results:

Period = 4.20581 [0.00004] d  
Epoch = 132.3004 [0.0077] BKJD  
Rp/R\* = 0.0150 [0.0059]  
a/R\* = 2.73 [4.05]  
b = 0.81 [0.73]  
Seff = 248.08 [86.98]  
Teq = 1012 [89] K  
Rp = 1.38 [0.65] Re  
a = 0.0498 [0.0111] AU  
Ag = 29.29 [27.78] [1.02σ]  
Teffp = 3640 [820] K [3.19σ]

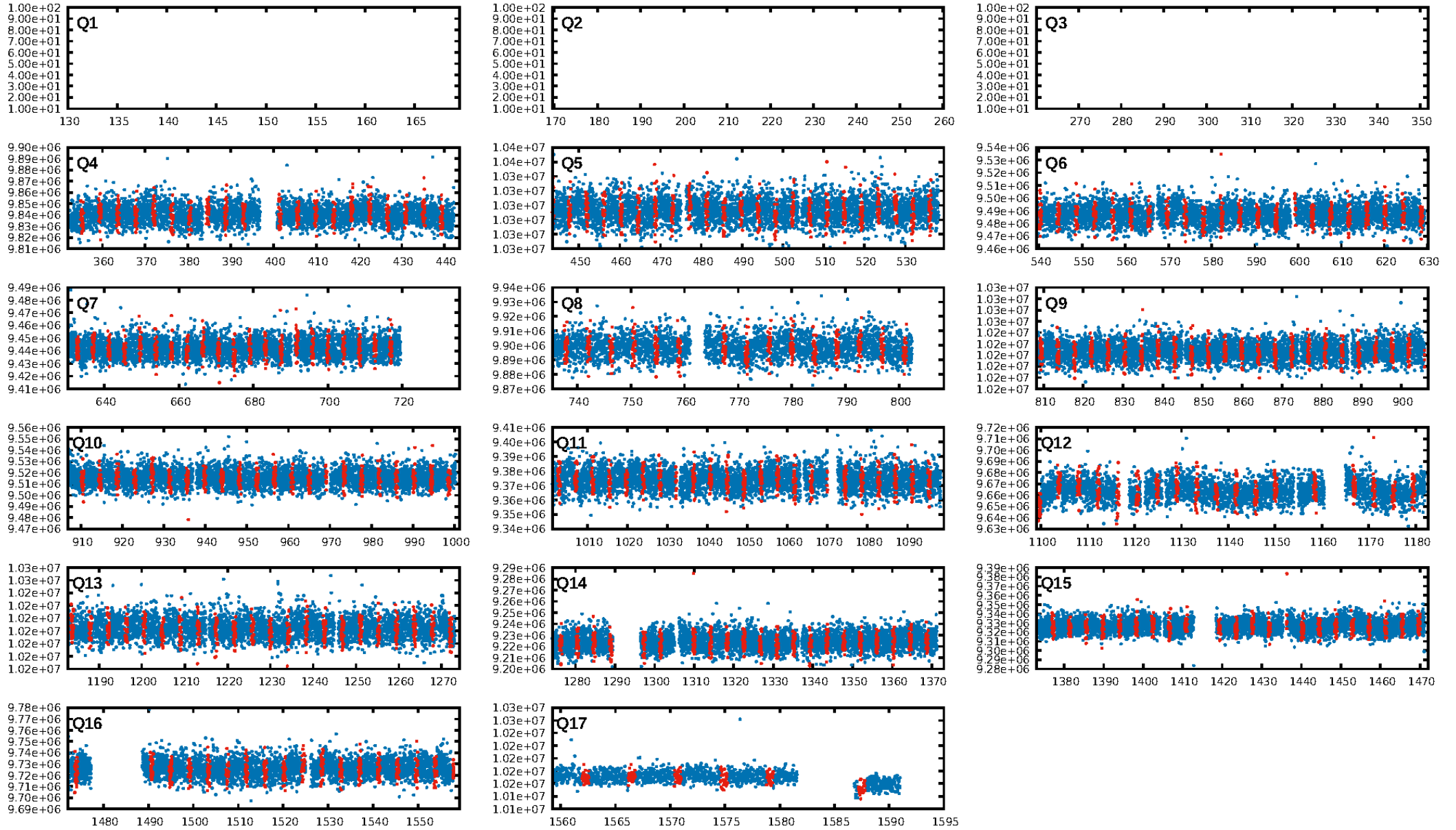
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 9.90e-43  
RollingBand-fgt: 1.00 [267/268]  
**GhostDiagnostic-chr: 0.2208**  
Centroid-sig: 0.0%  
Centroid-so: 2.649 arcsec [2.81σ]  
OotOffset-rm: 1.094 arcsec [1.38σ]  
KicOffset-rm: 1.139 arcsec [1.38σ]  
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]

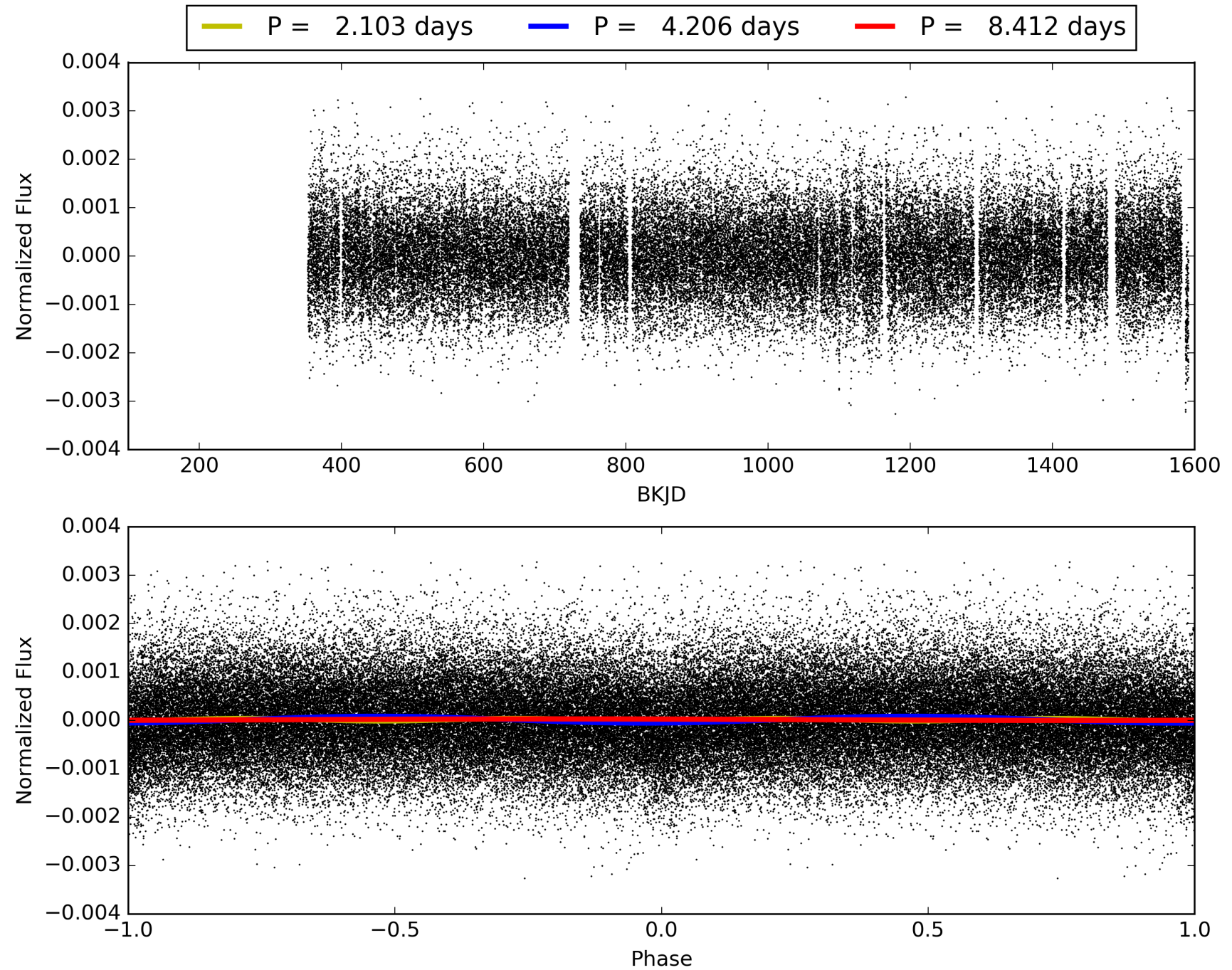
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 08:06:55 Z

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

# TCE 005817613-01, PDC Light Curves



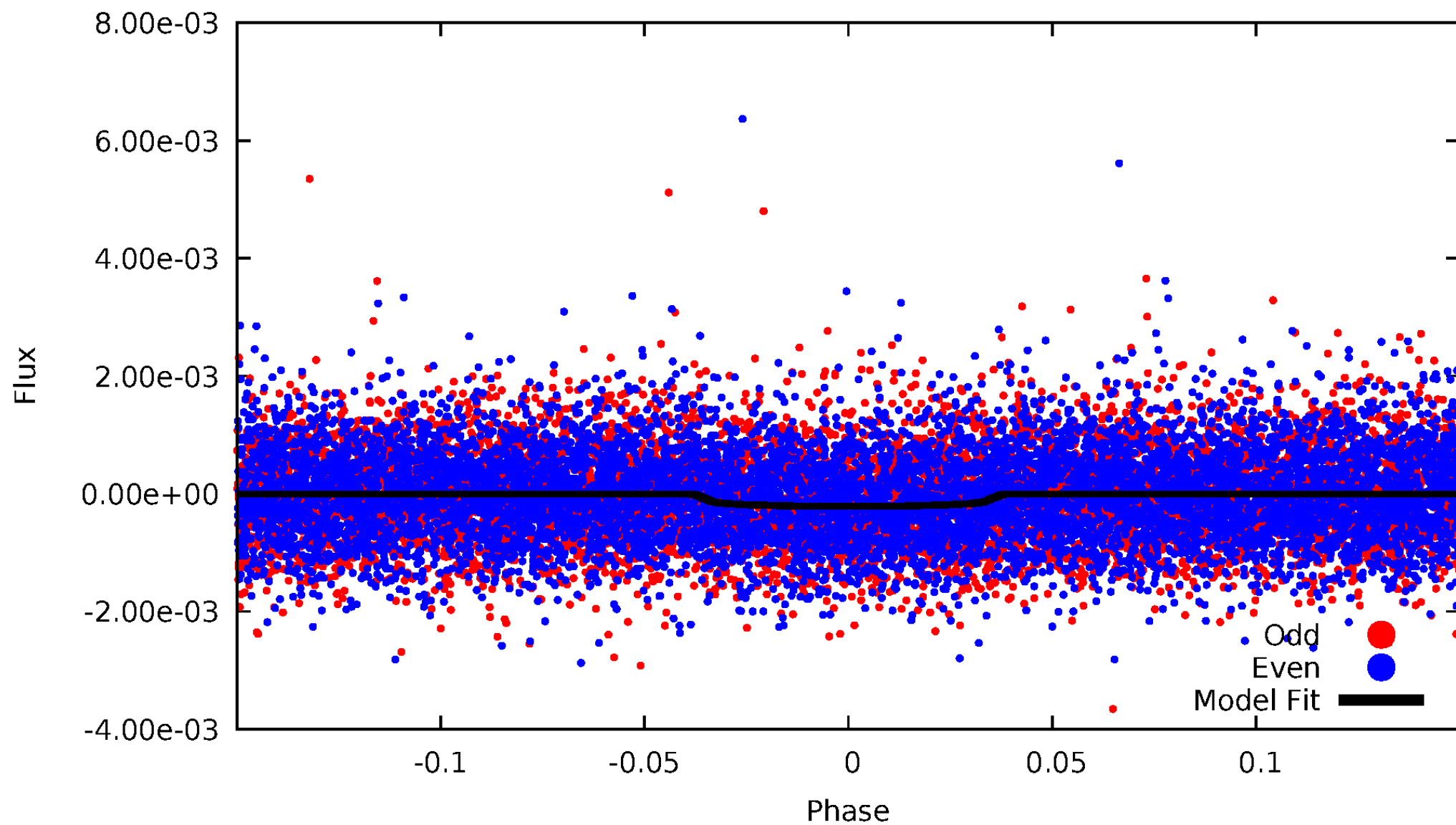
# TCE 005817613-01





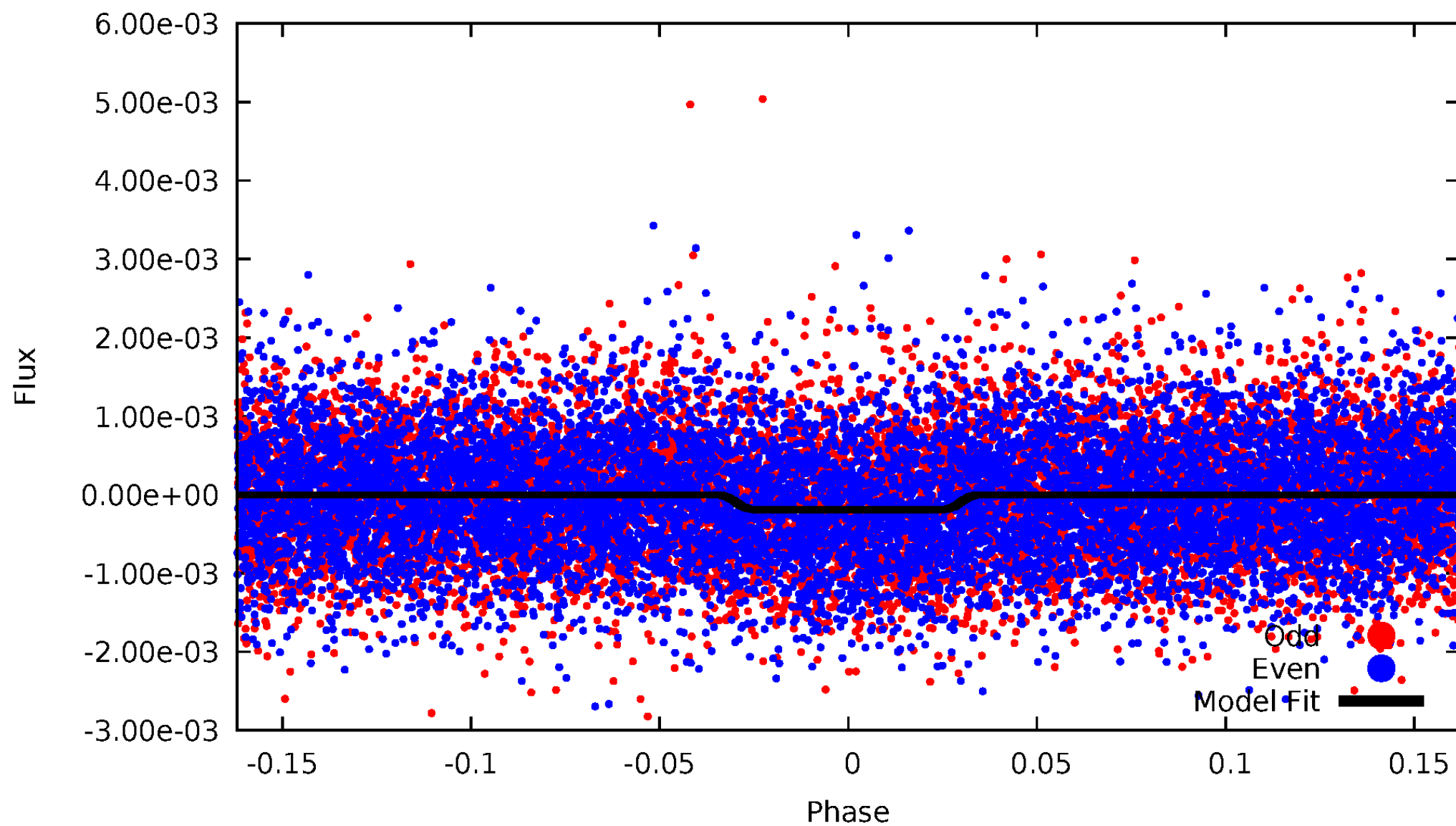
# DV Odd/Even

TCE 005817613-01



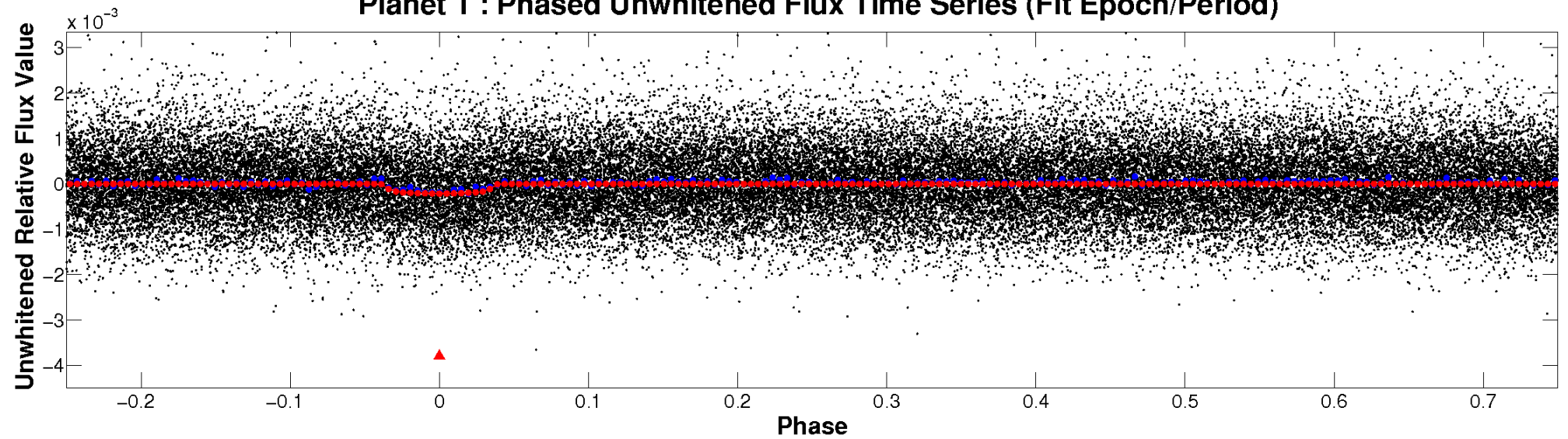
# ALT Odd/Even

TCE 005817613-01

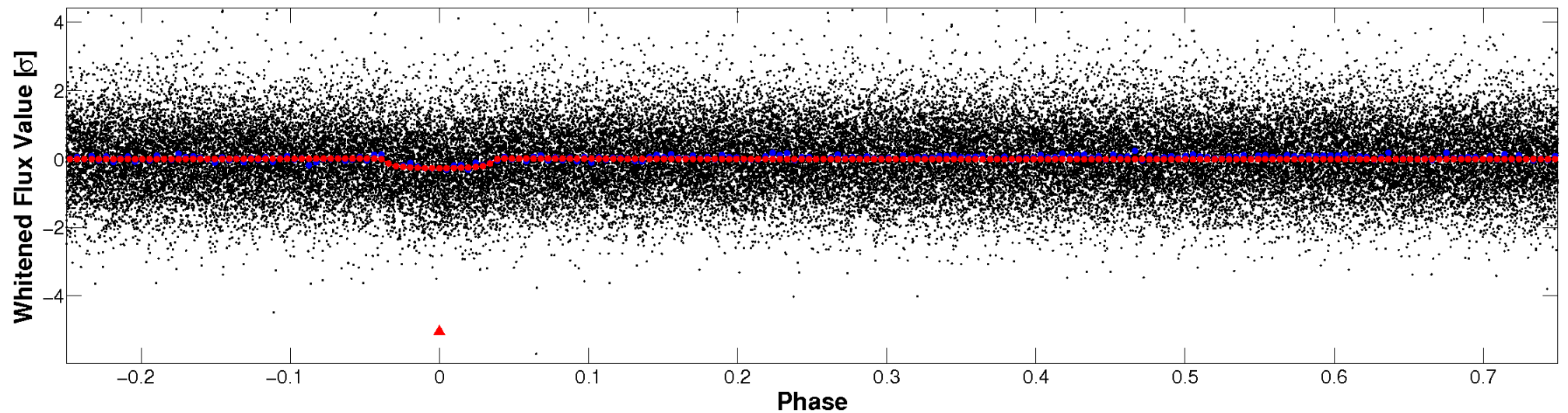


# Non-Whitened Vs. Whitened Light Curve

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

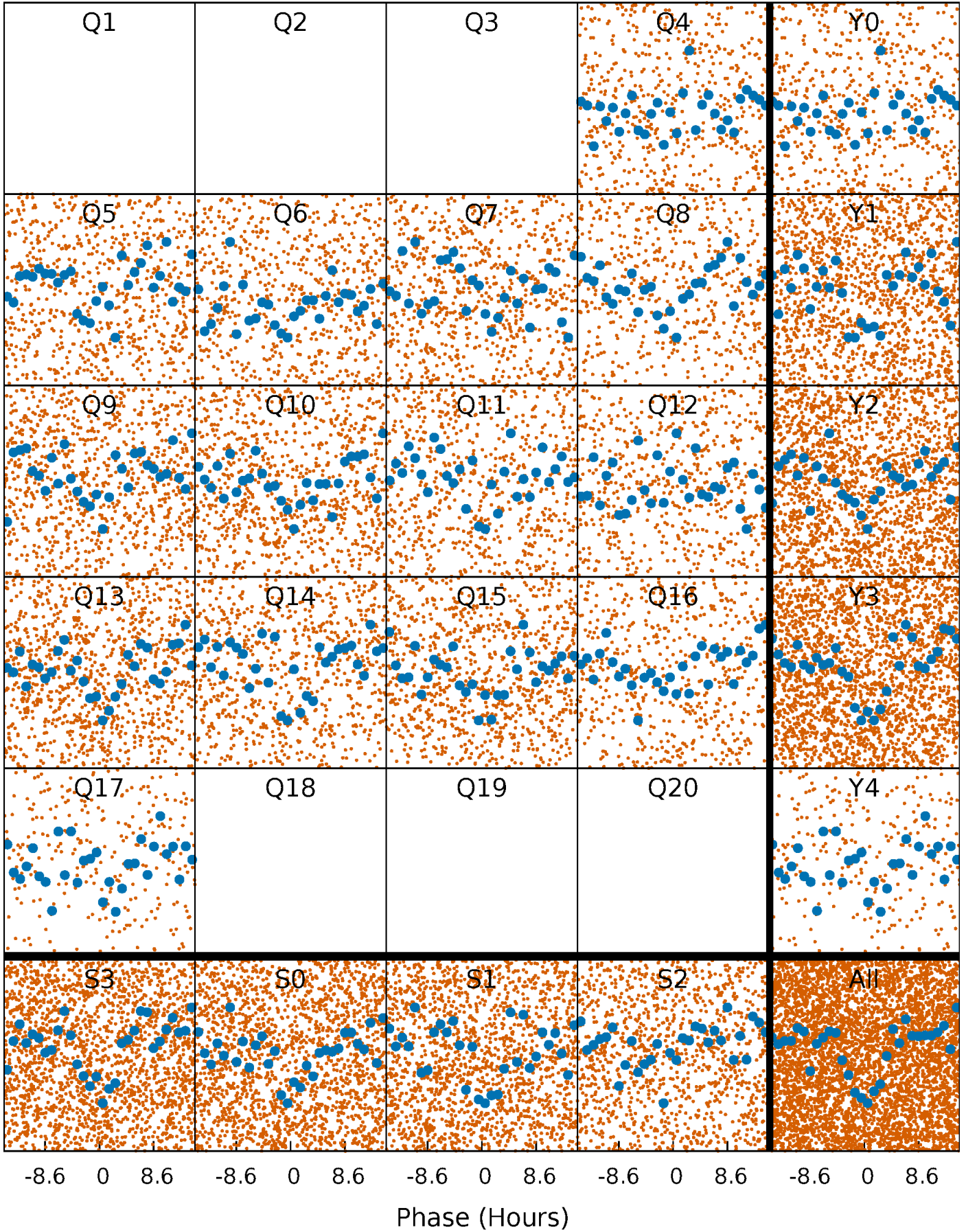


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

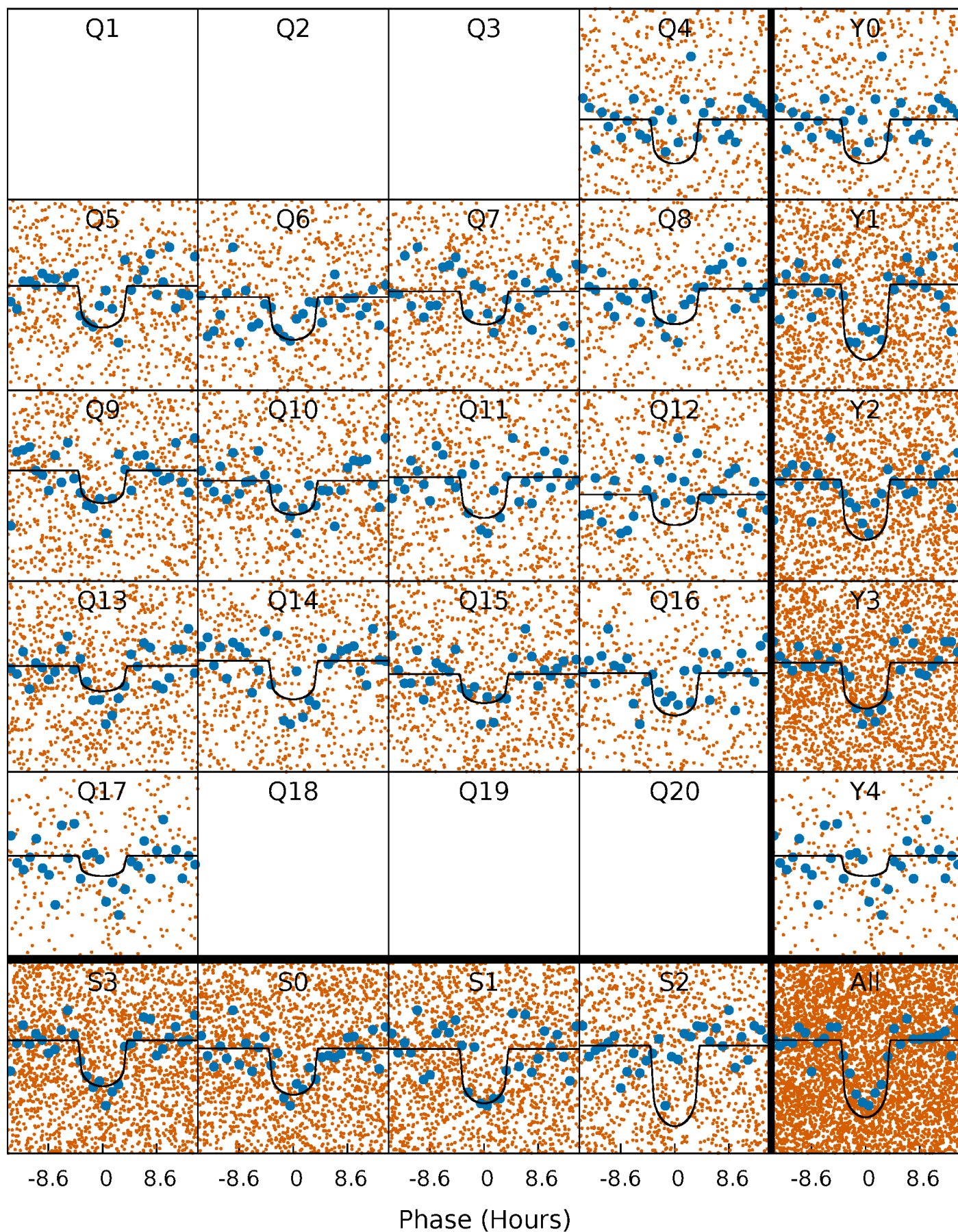
TCE 005817613-01 P= 4.205809 Days  $T_0=132.300372$  (BKJD)





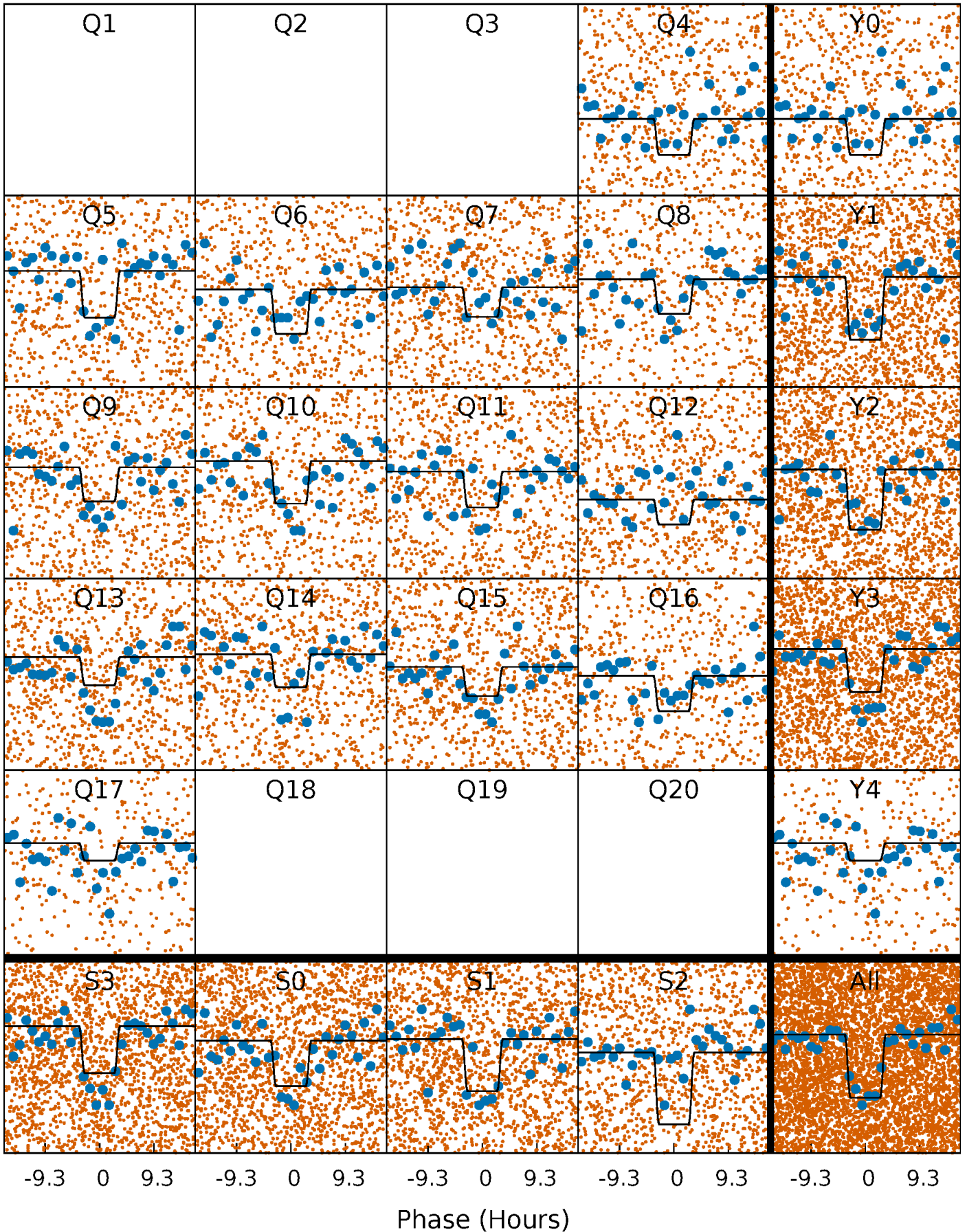
# DV Quarter-Phased Transit Curves

TCE 005817613-01 P= 4.205809 Days  $T_0=132.300372$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

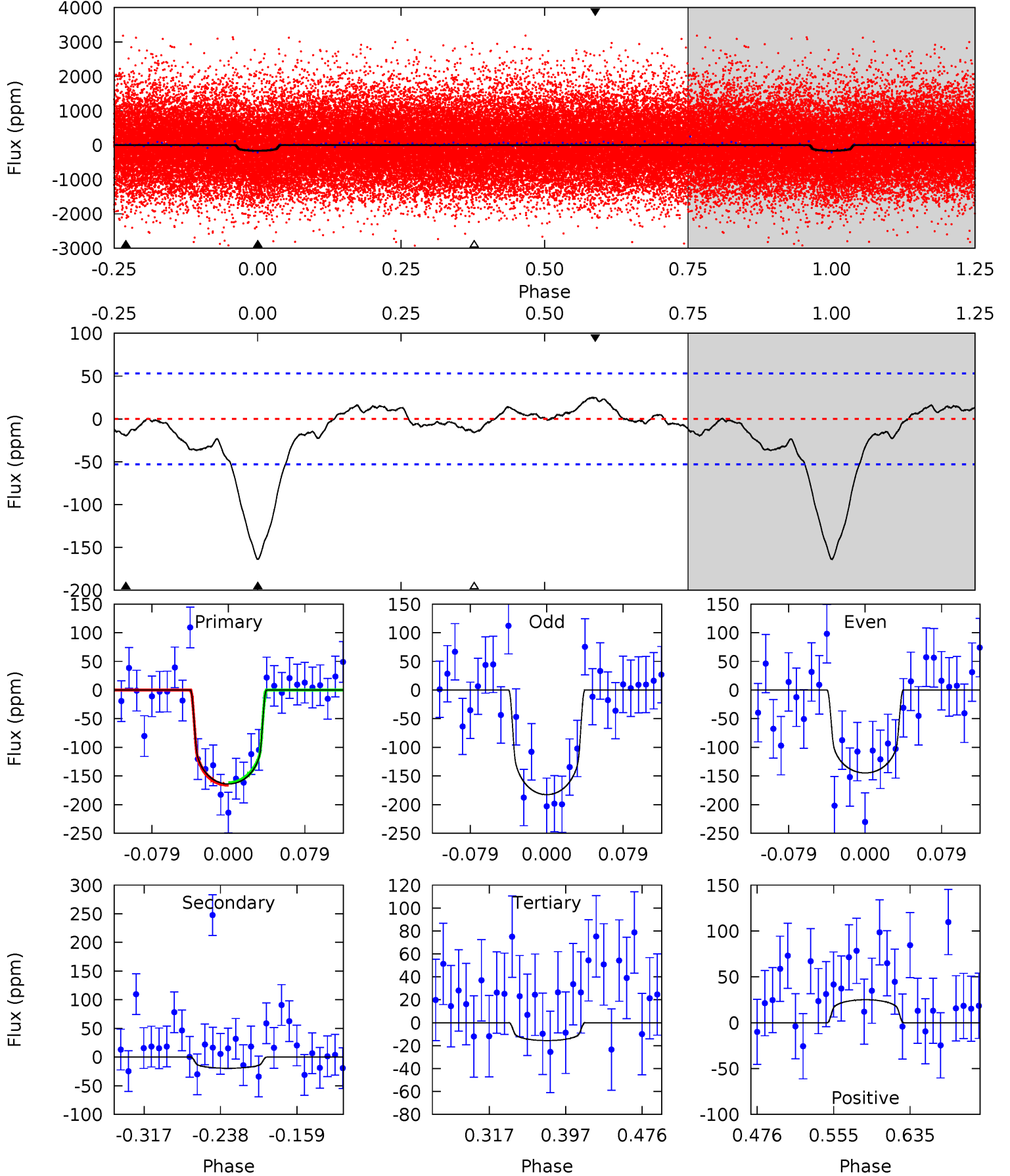
TCE 005817613-01 P= 4.205930 Days  $T_0=132.278619$  (BKJD)



# DV Model-Shift Uniqueness Test

005817613-01, P = 4.205809 Days, E = 132.300372 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
14.3	1.69	1.36	2.18	4.61	1.75	1.21	12.9	12.1	0.33	-0.49	1.65	0.80	0.13	0.17

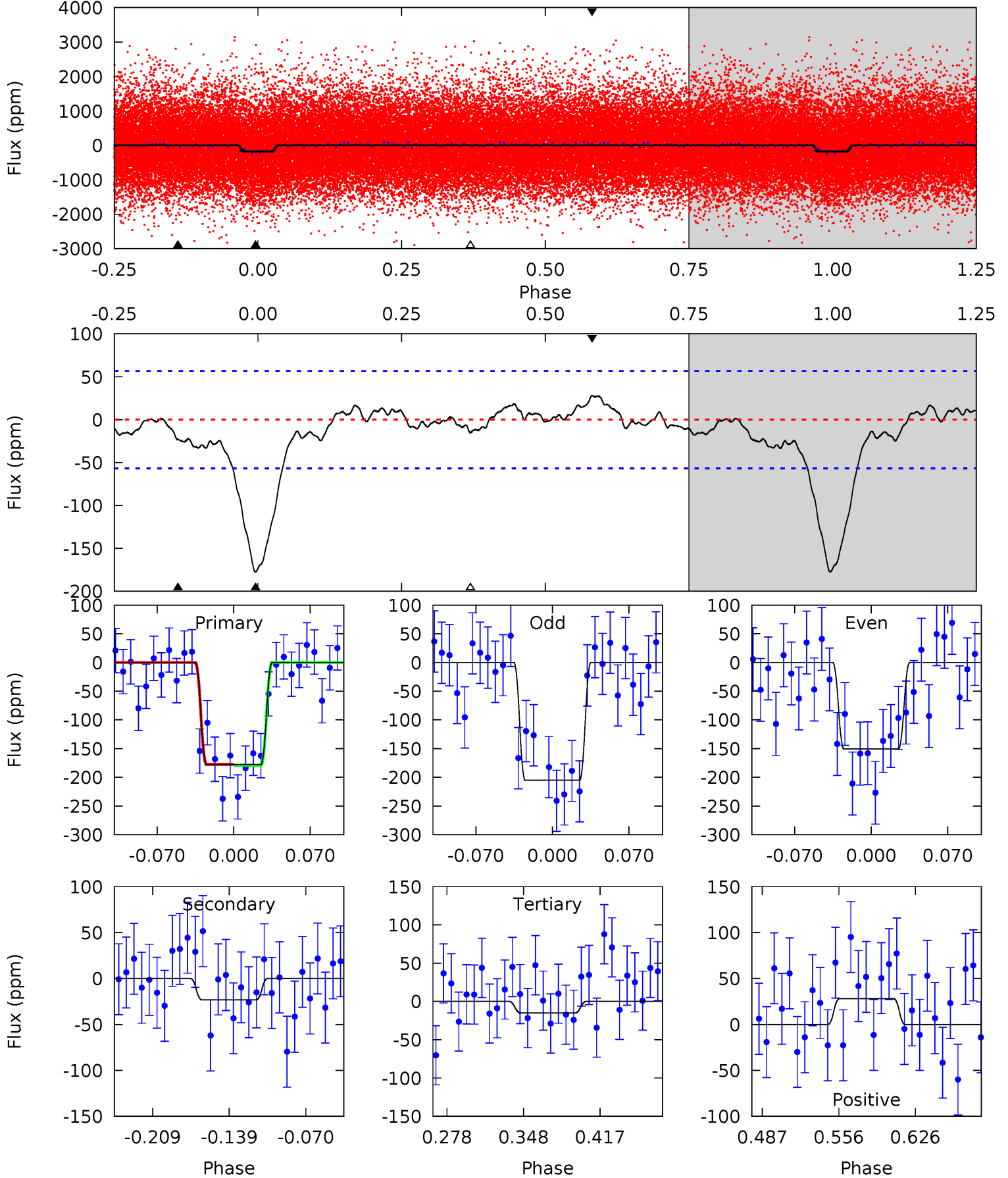




# Alt Model-Shift Uniqueness Test

005817613-01, P = 4.205930 Days, E = 132.278619 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
14.5	1.91	1.24	2.29	4.64	1.81	0.92	13.3	12.2	0.67	-0.39	2.23	0.89	0.14	0.06





### Stellar Parameters For KIC 005817613

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5590^{+186}_{-186}$	$4.560^{+0.031}_{-0.178}$	$-0.060^{+0.300}_{-0.300}$	$0.839^{+0.220}_{-0.073}$	$0.934^{+0.094}_{-0.104}$	$2.227^{+0.400}_{-1.027}$
	+3%/-3%	+1%/-4%	+500%/-500%	+26%/-9%	+10%/-11%	+18%/-46%
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 005817613-01 / KOI 4256.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-19 \pm 12$	$1.45^{+0.63}_{-0.56}$	$1449^{+103}_{-68}$	$3452^{+746}_{-562}$	$11^{+23}_{-7}$
Alt.	$-23 \pm 12$	$1.32^{+0.57}_{-0.53}$	$1447^{+96}_{-68}$	$3689^{+780}_{-609}$	$17^{+34}_{-12}$

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

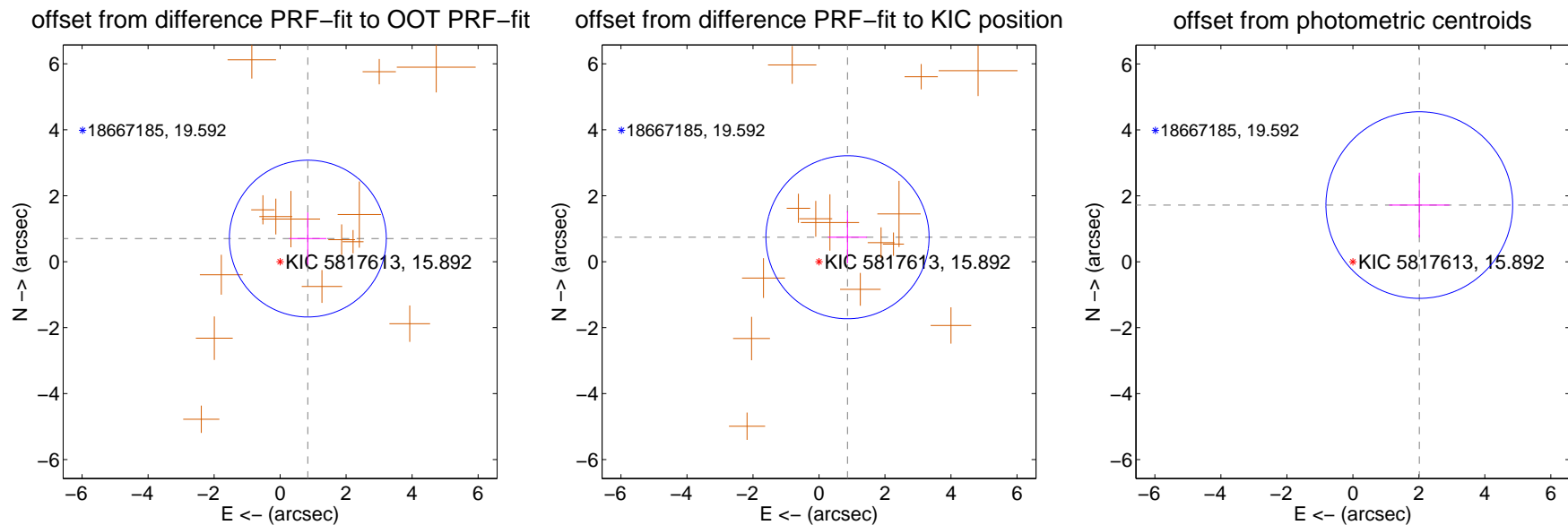
## DV Centroid Data

Supplemental centroid analysis for 005817613-01. Kepler magnitude: 15.89. Transit SNR 14.42

There are 0 quarters with good PRF difference image offsets

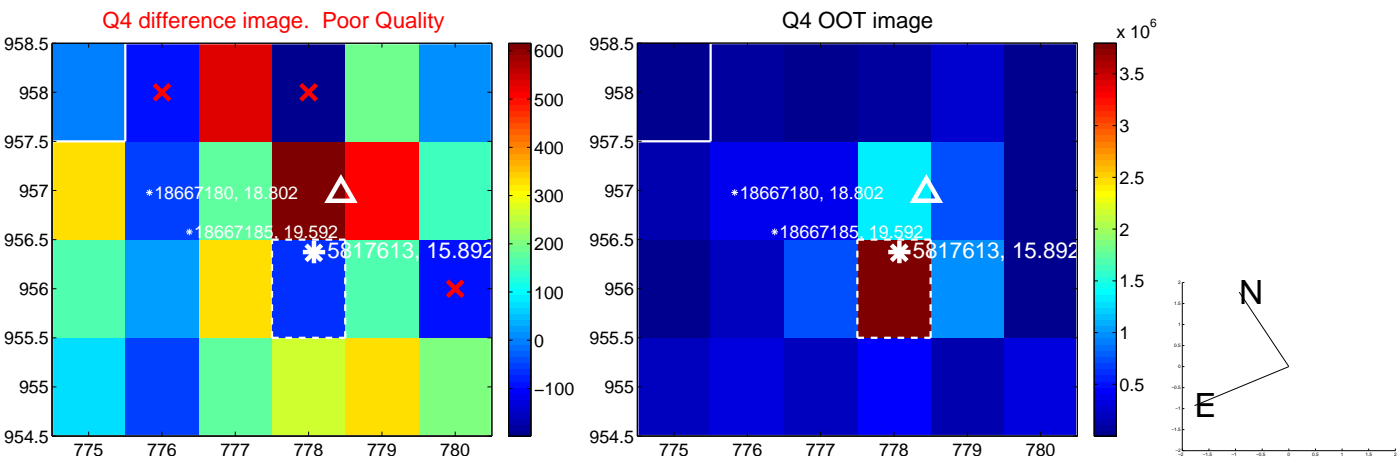
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.094 \pm 0.793$	1.38	$-0.840 \pm 0.563$	$0.701 \pm 0.792$
PRF-fit source offset from KIC position	$1.139 \pm 0.824$	1.38	$-0.864 \pm 0.592$	$0.742 \pm 0.790$
photometric centroid source offset	$2.65 \pm 0.94$	2.81	$-2.01 \pm 0.91$	$1.72 \pm 0.98$

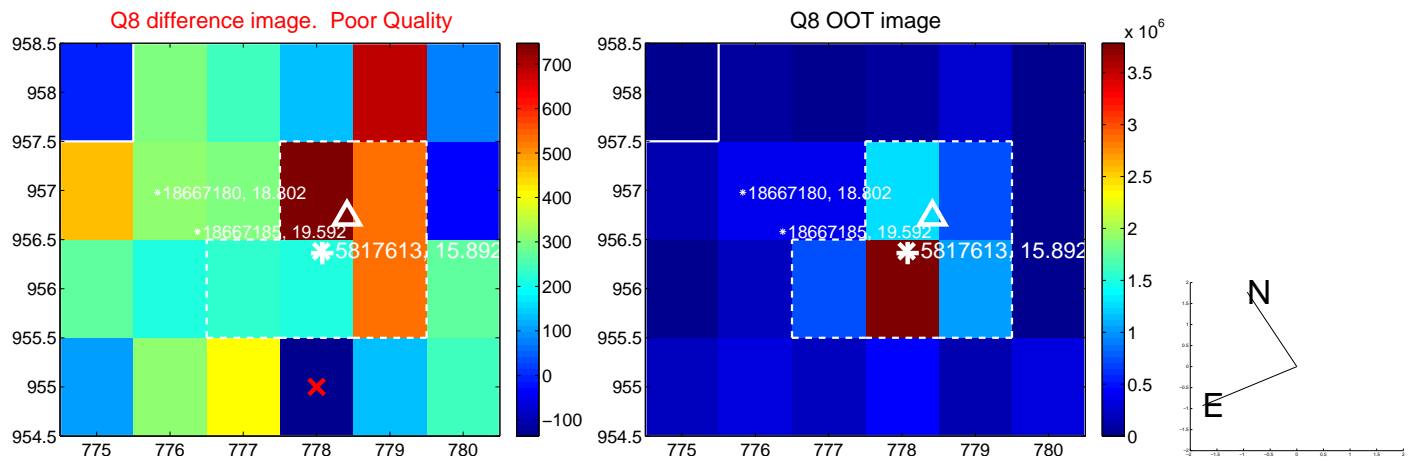
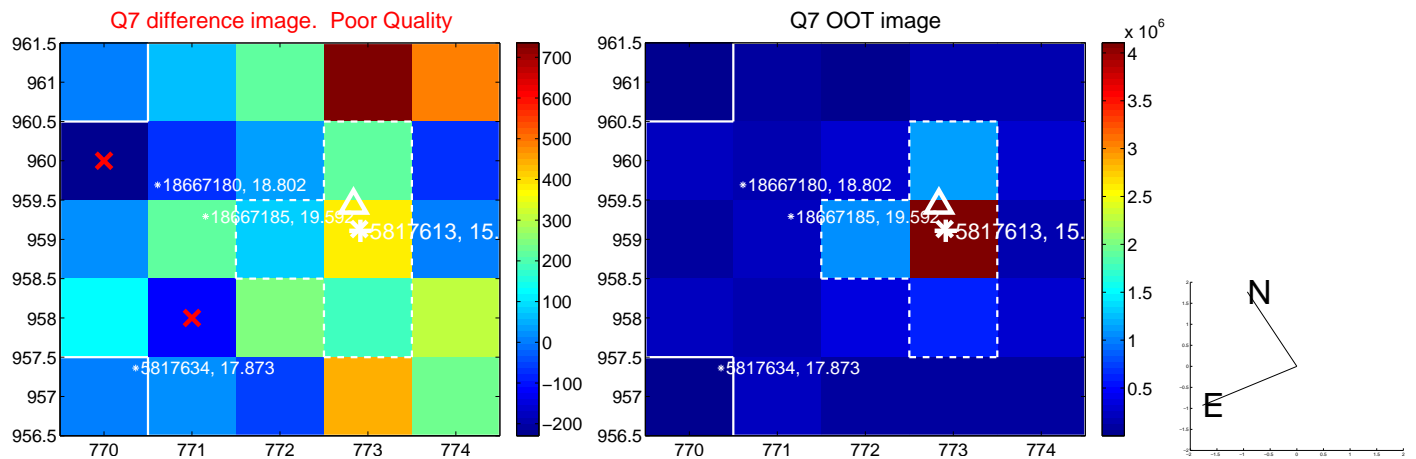
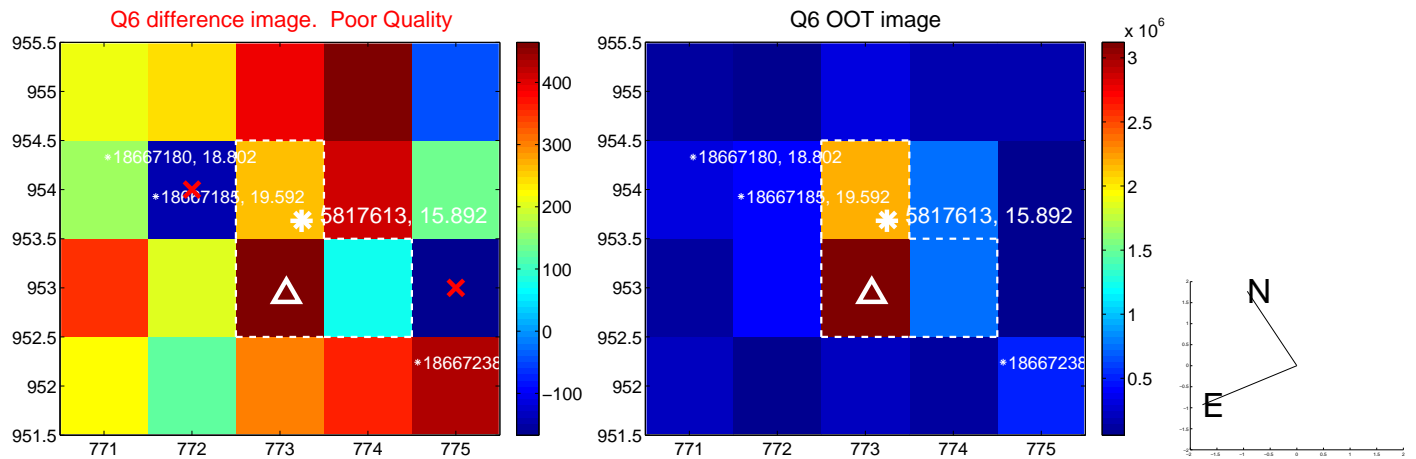
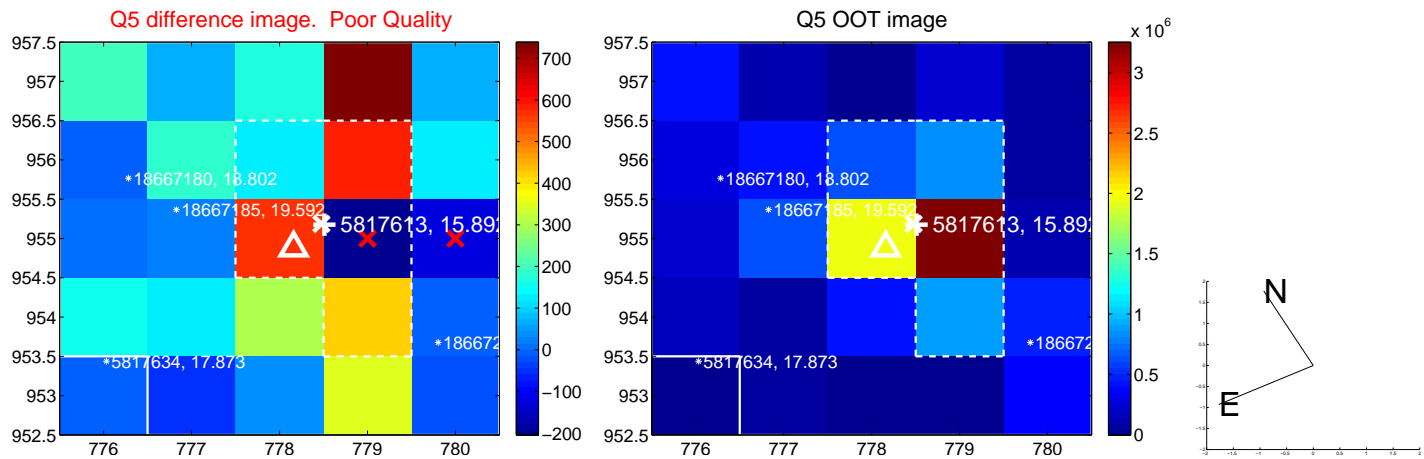


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

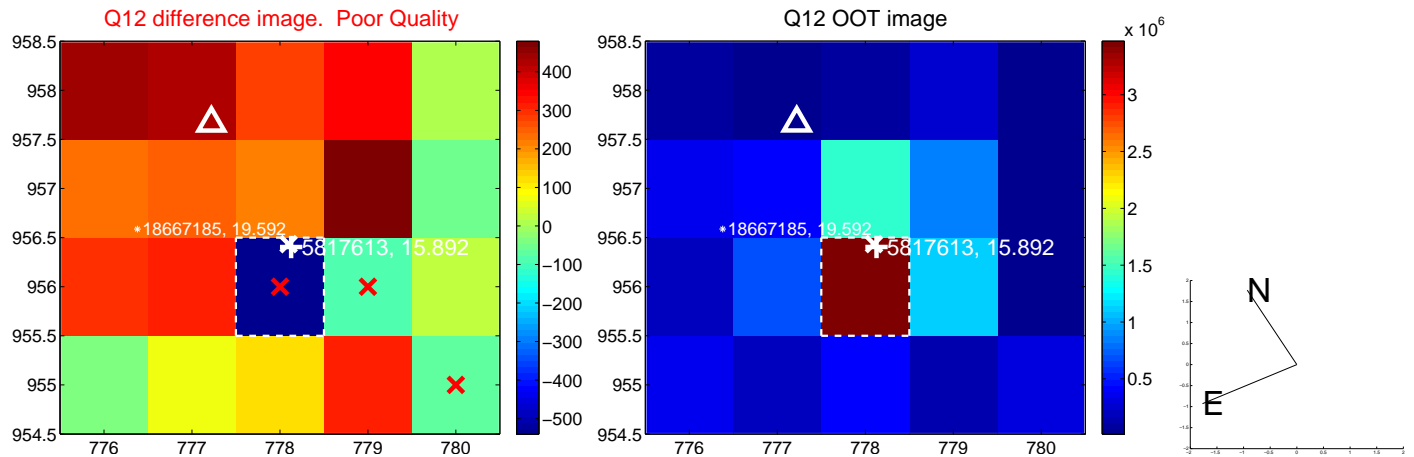
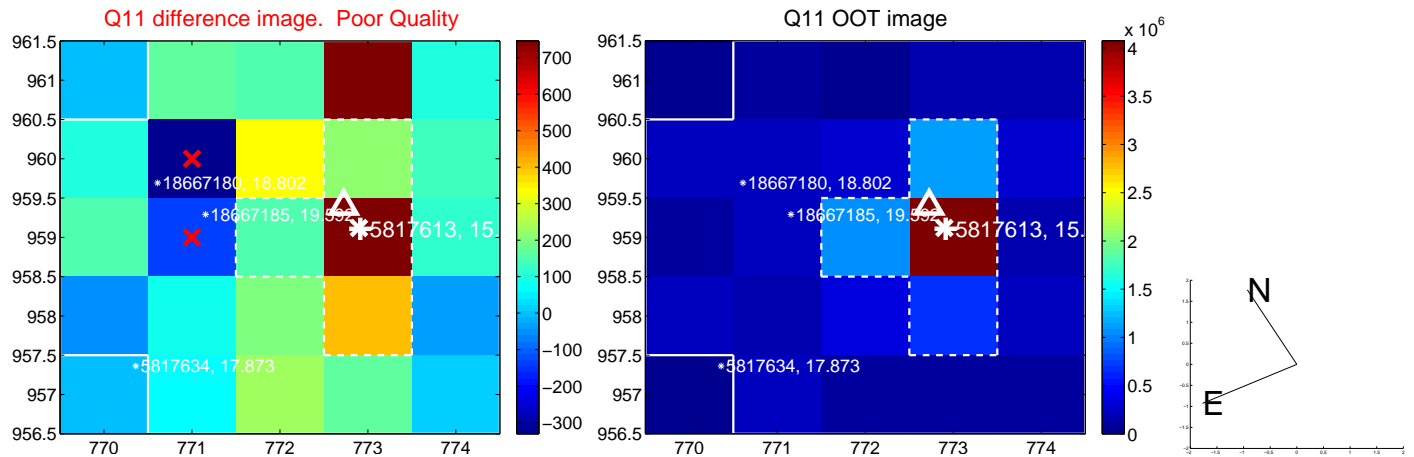
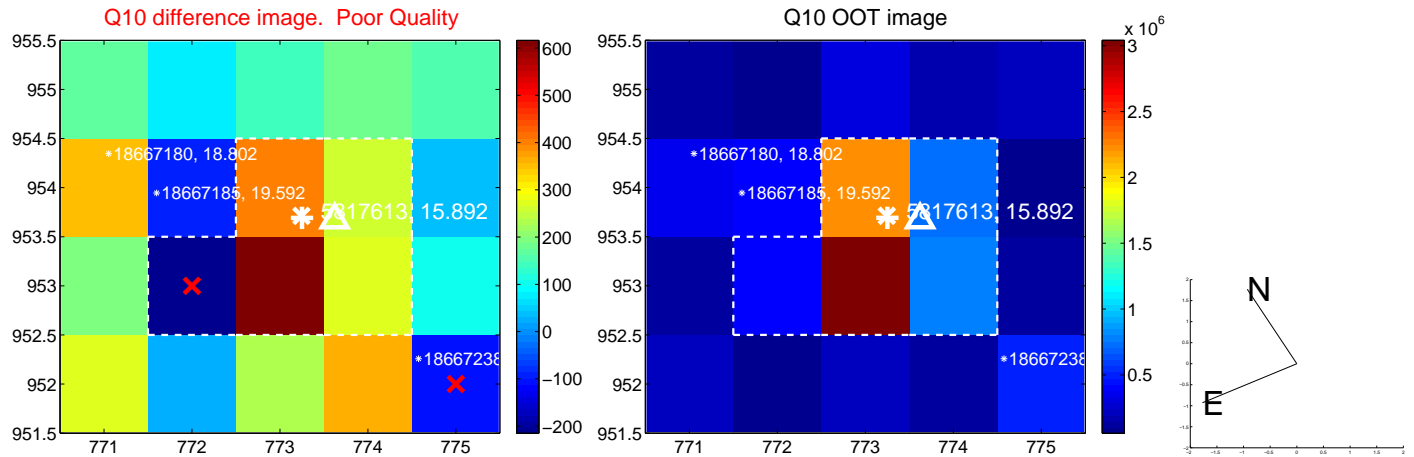
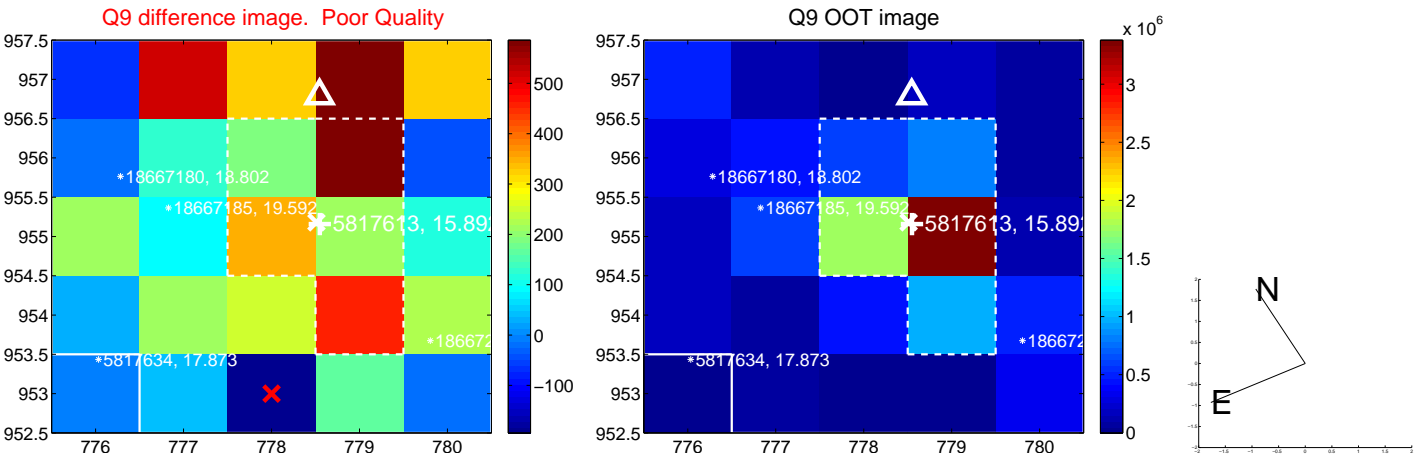


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

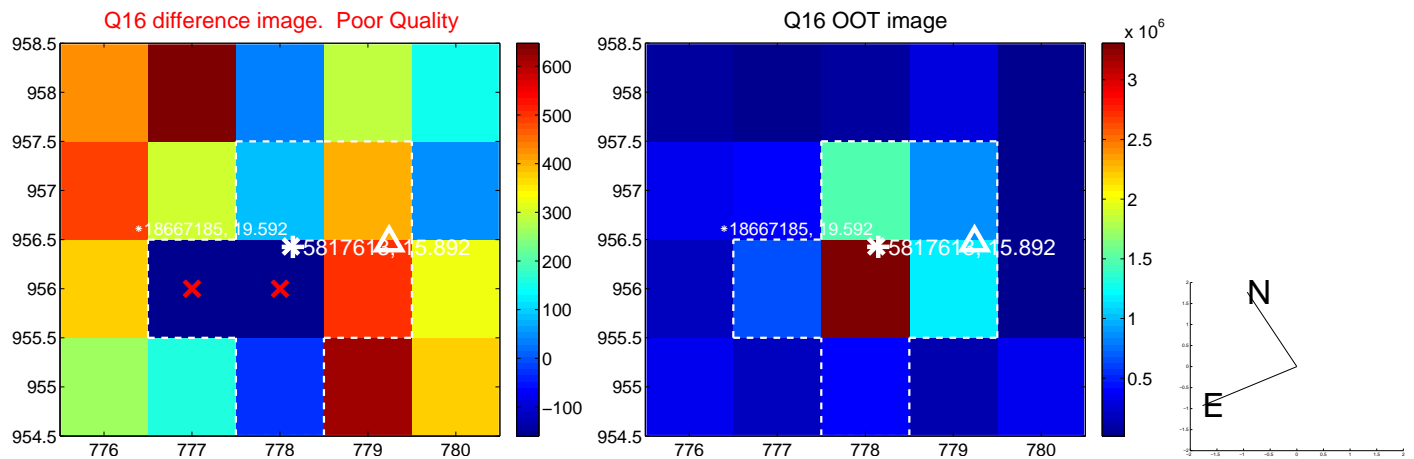
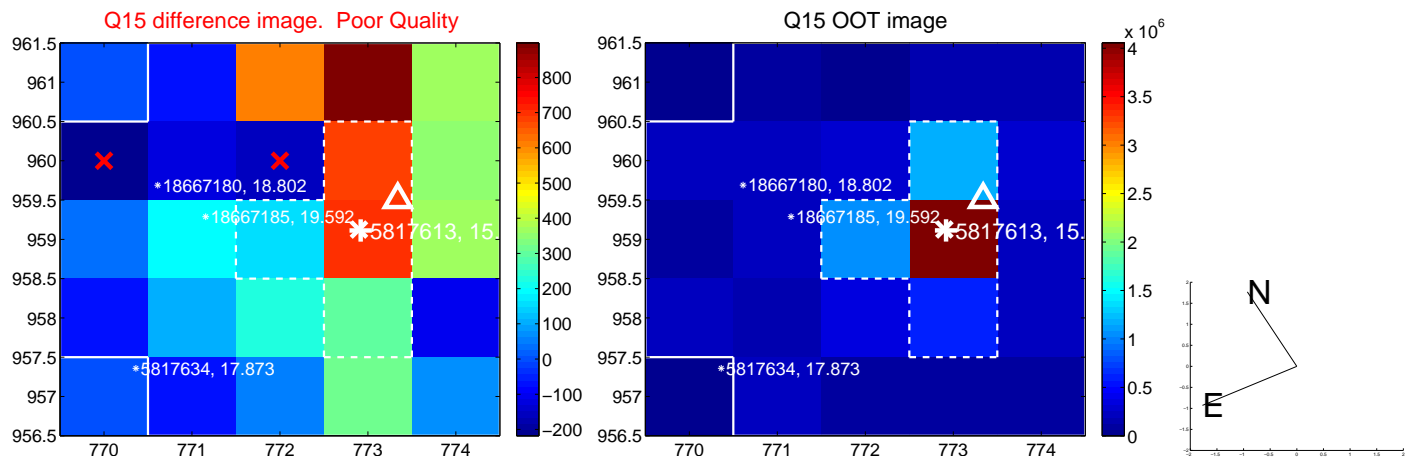
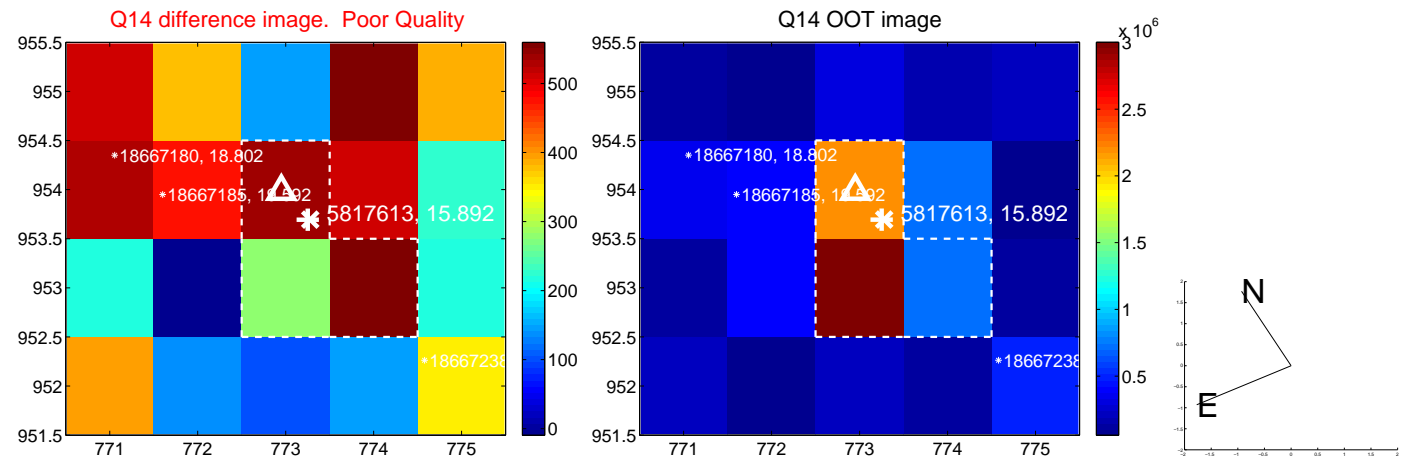
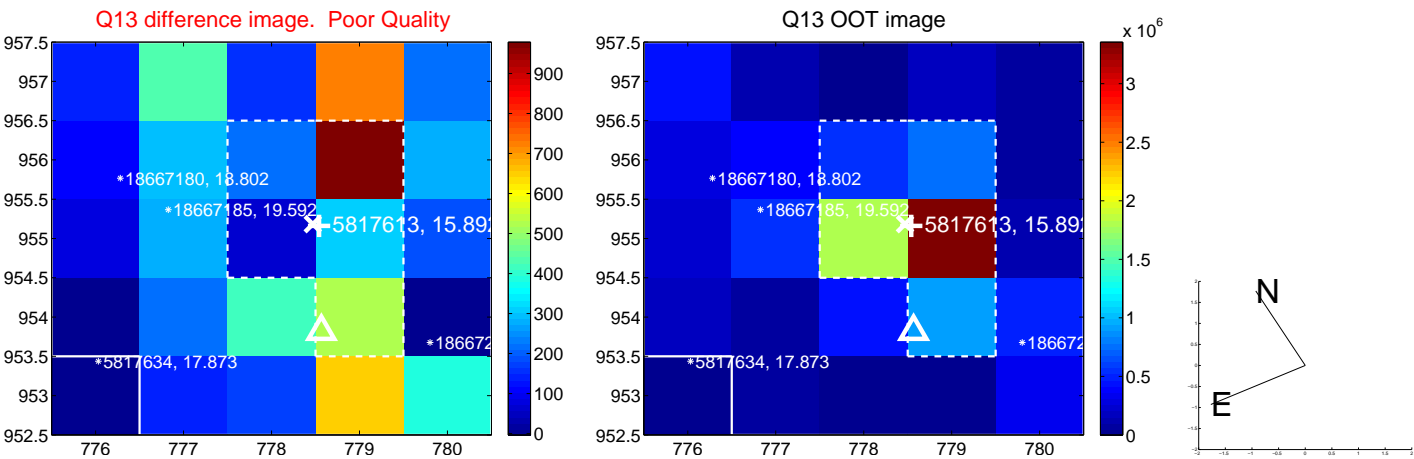




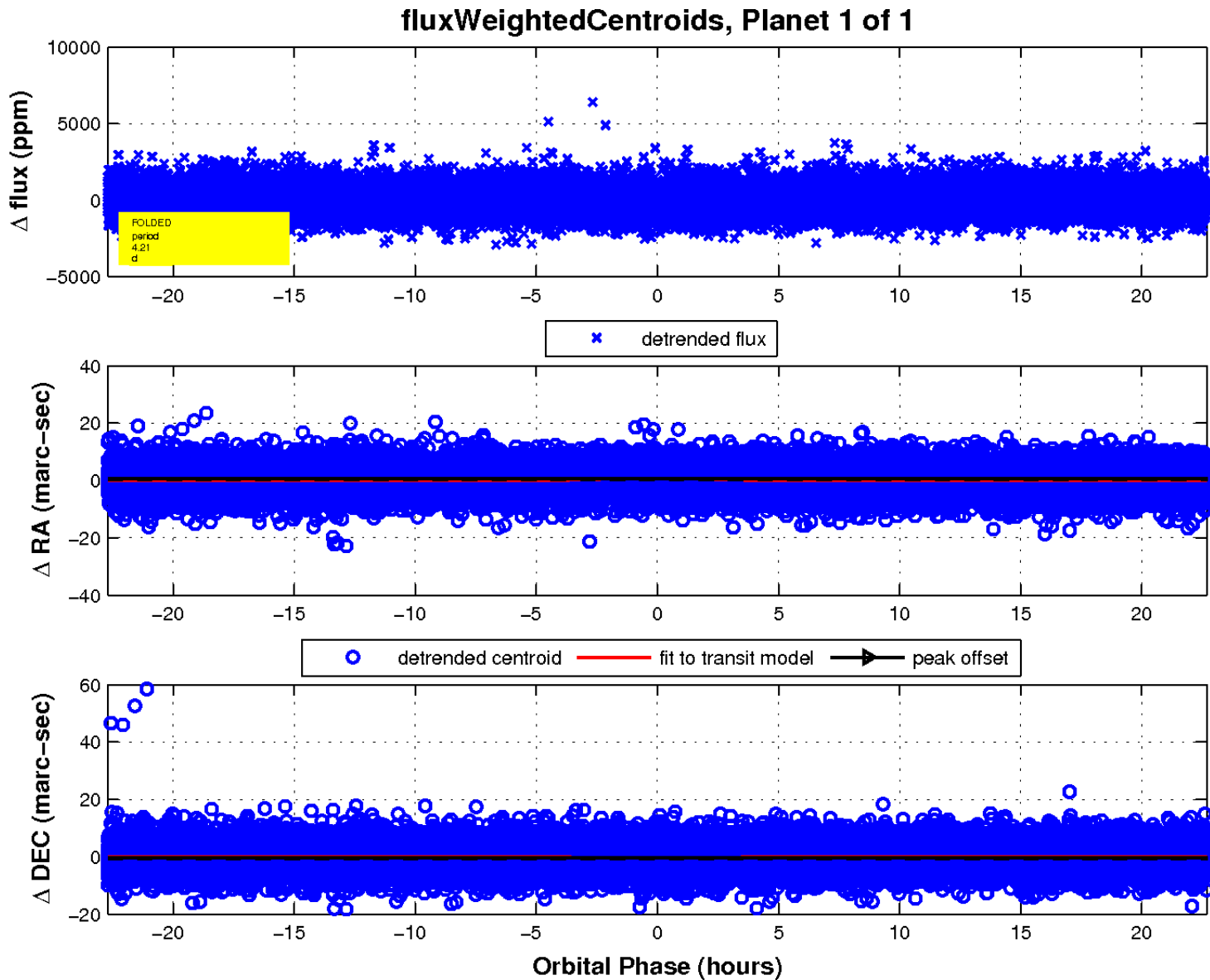
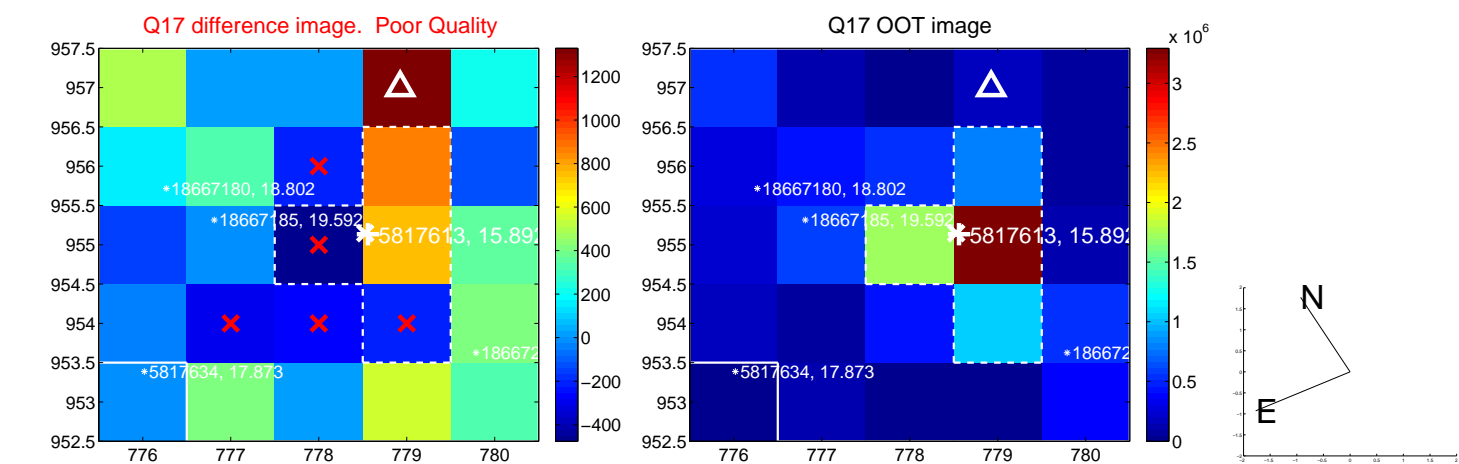
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

Declination

