

# KIC 007448023

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007448023-01	OBS	7839.01	0.566813	131.788545	85.4	2.028	9.5	11.2	0.70	4665	0.80	1493.13

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007448023-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—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.

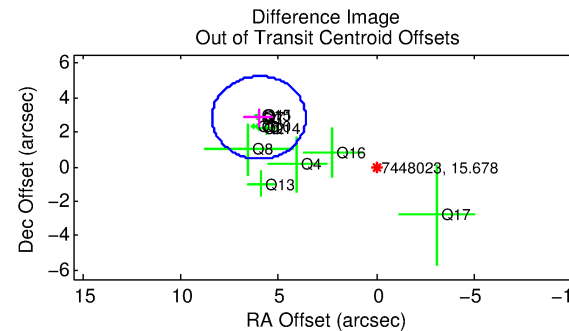
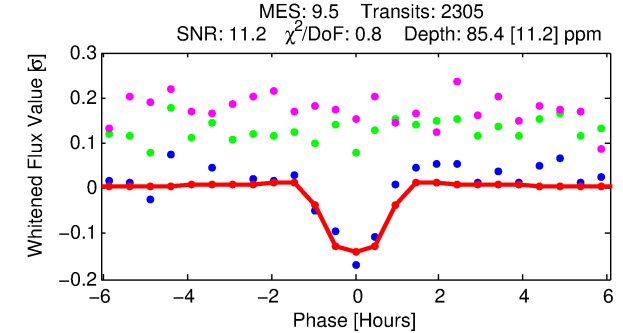
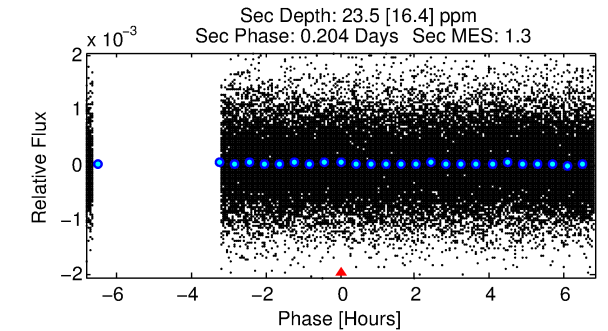
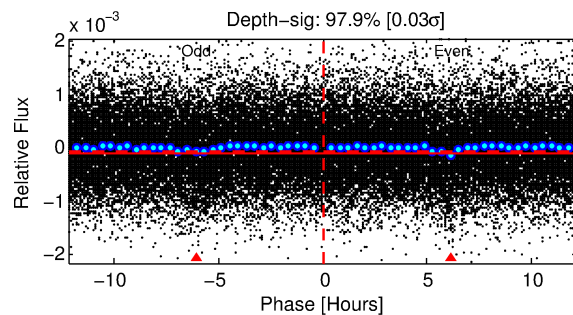
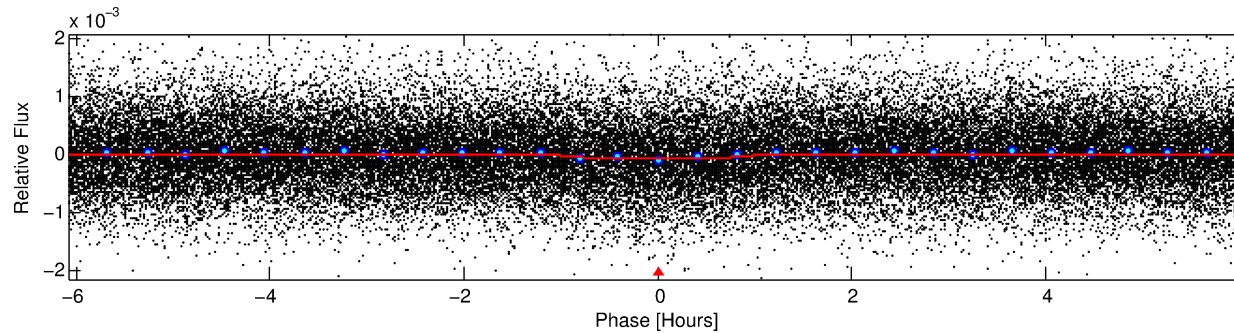
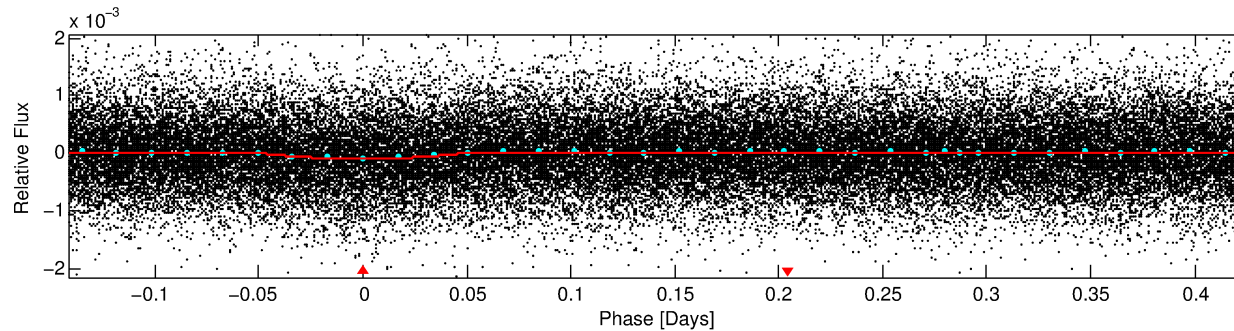
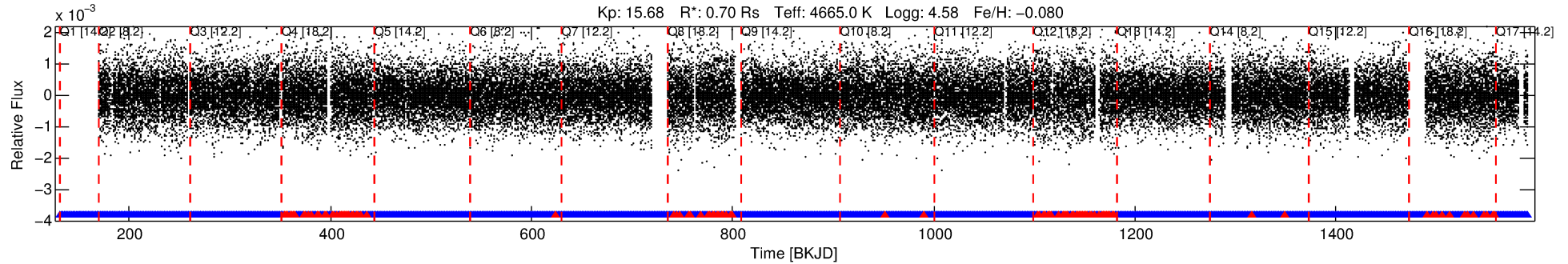
## Ephemeris Match Information For 007448023-01

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	$\sigma_P$	$\sigma_T$
007448023-01	7448023	RR-Lyr-pri	7198959	1:1	3776.6	295	1	7.86	15.68	7332.90	Col-Anomaly	0	3.01	22.21

**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: 7448023 Candidate: 1 of 1 Period: 0.567 d



## DV Fit Results:

Period = 0.56681 [0.00001] d  
Epoch = 131.7885 [0.0024] BKJD  
Rp/R\* = 0.0103 [0.0089]  
a/R\* = 1.37 [2.09]  
b = 0.89 [0.76]  
Seff = 1493.13 [234.90]  
Teq = 1585 [62] K  
Rp = 0.80 [0.69] Re  
a = 0.0119 [0.0009] AU  
Ag = 2.88 [5.34] [0.35 $\sigma$ ]  
Teffp = 3192 [1481] K [1.08 $\sigma$ ]

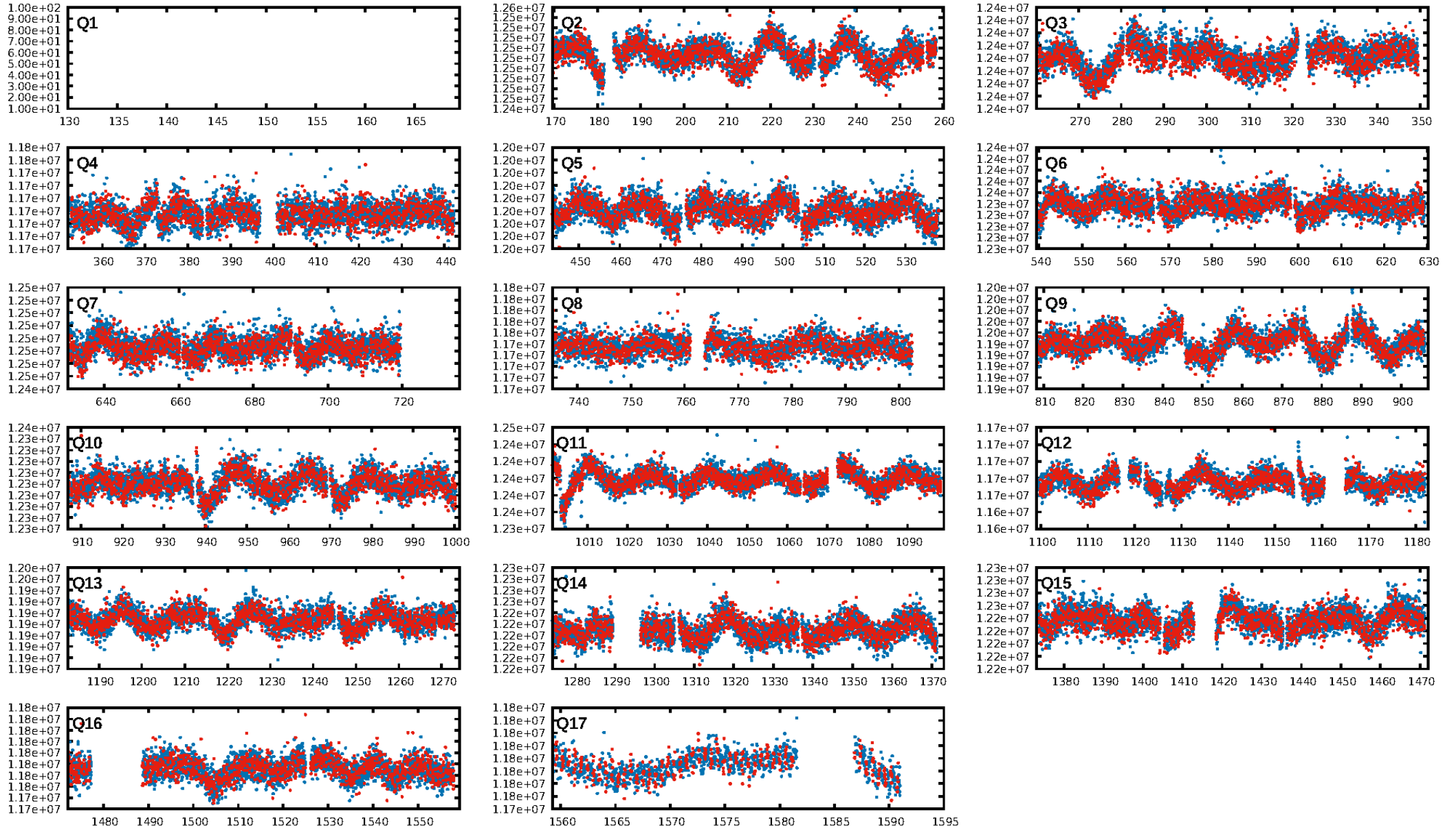
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.74e-20  
RollingBand-fgt: 0.95 [2136/2258]  
**GhostDiagnostic-chr: 26.91**  
Centroid-sig: 2.1%  
Centroid-so: 1.648 arcsec [1.39 $\sigma$ ]  
**OotOffset-rm: 6.642 arcsec [8.31 $\sigma$ ]**  
**KicOffset-rm: 6.689 arcsec [8.02 $\sigma$ ]**  
OotOffset-st: 4/4/3/2 [13]  
KicOffset-st: 4/4/3/2 [13]  
DiffImageQuality-fgm: 0.00 [0/13]  
DiffImageOverlap-fno: 1.00 [16/16]

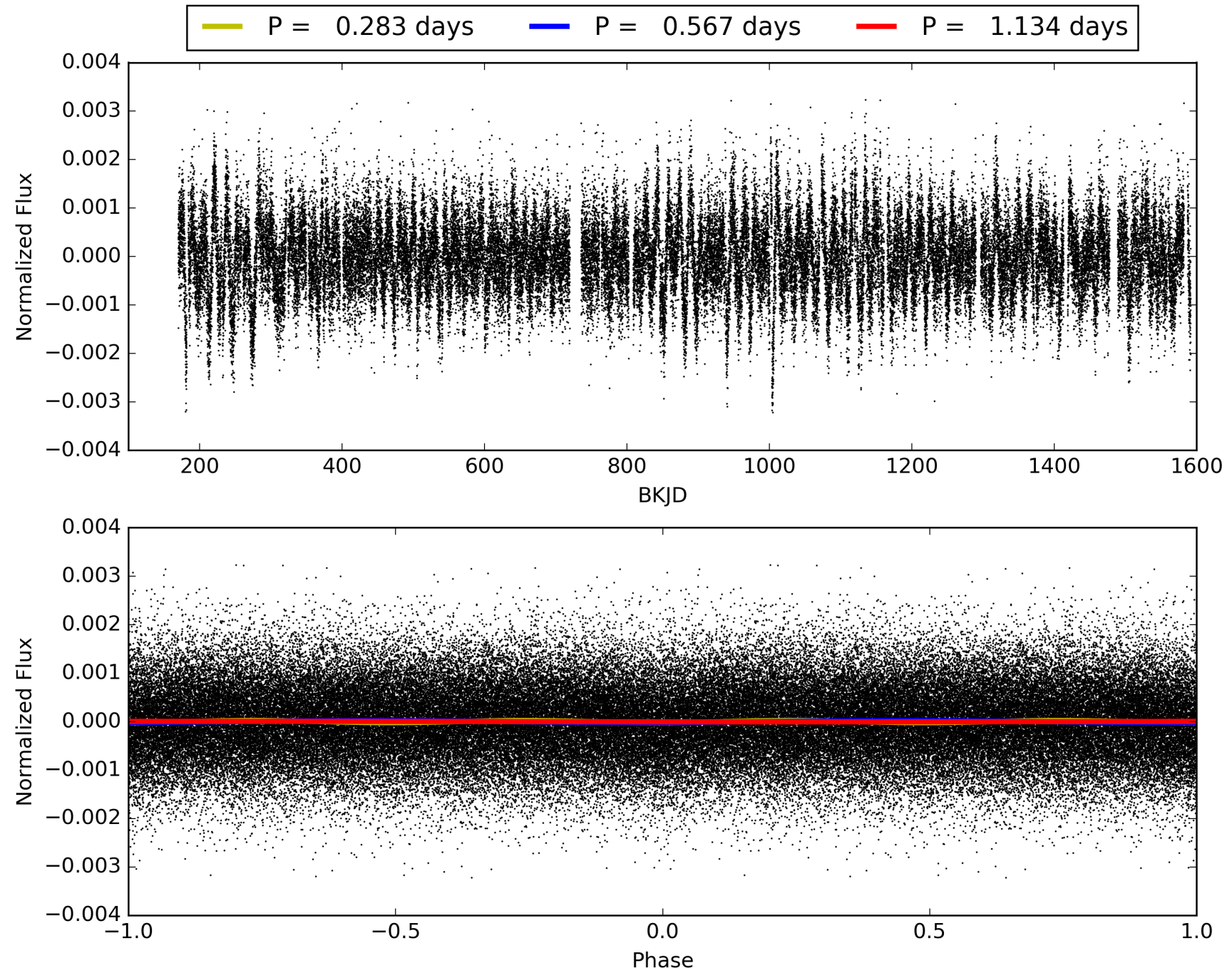
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 13:29:17 Z

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

# TCE 007448023-01, PDC Light Curves



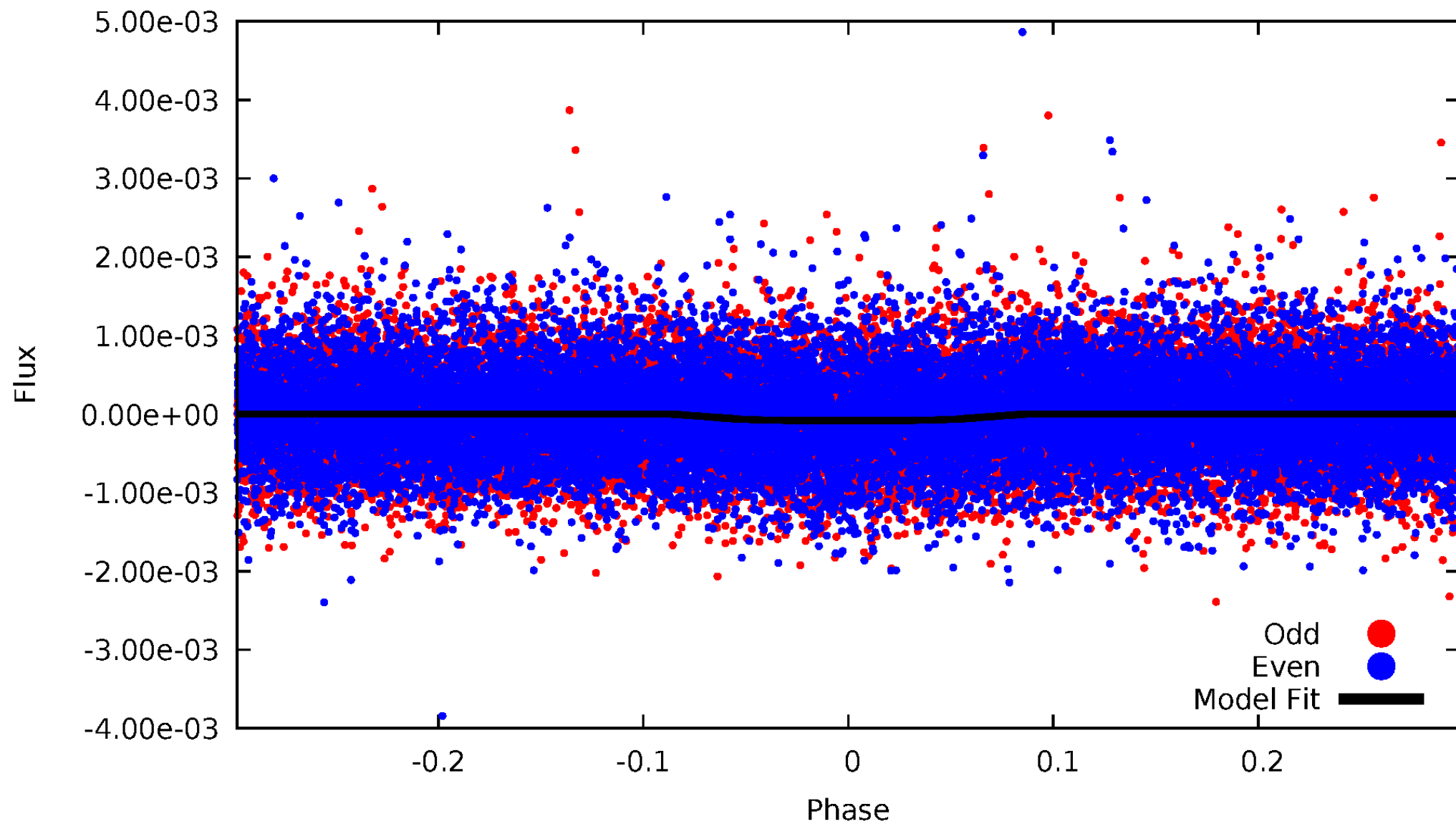
TCE 007448023-01





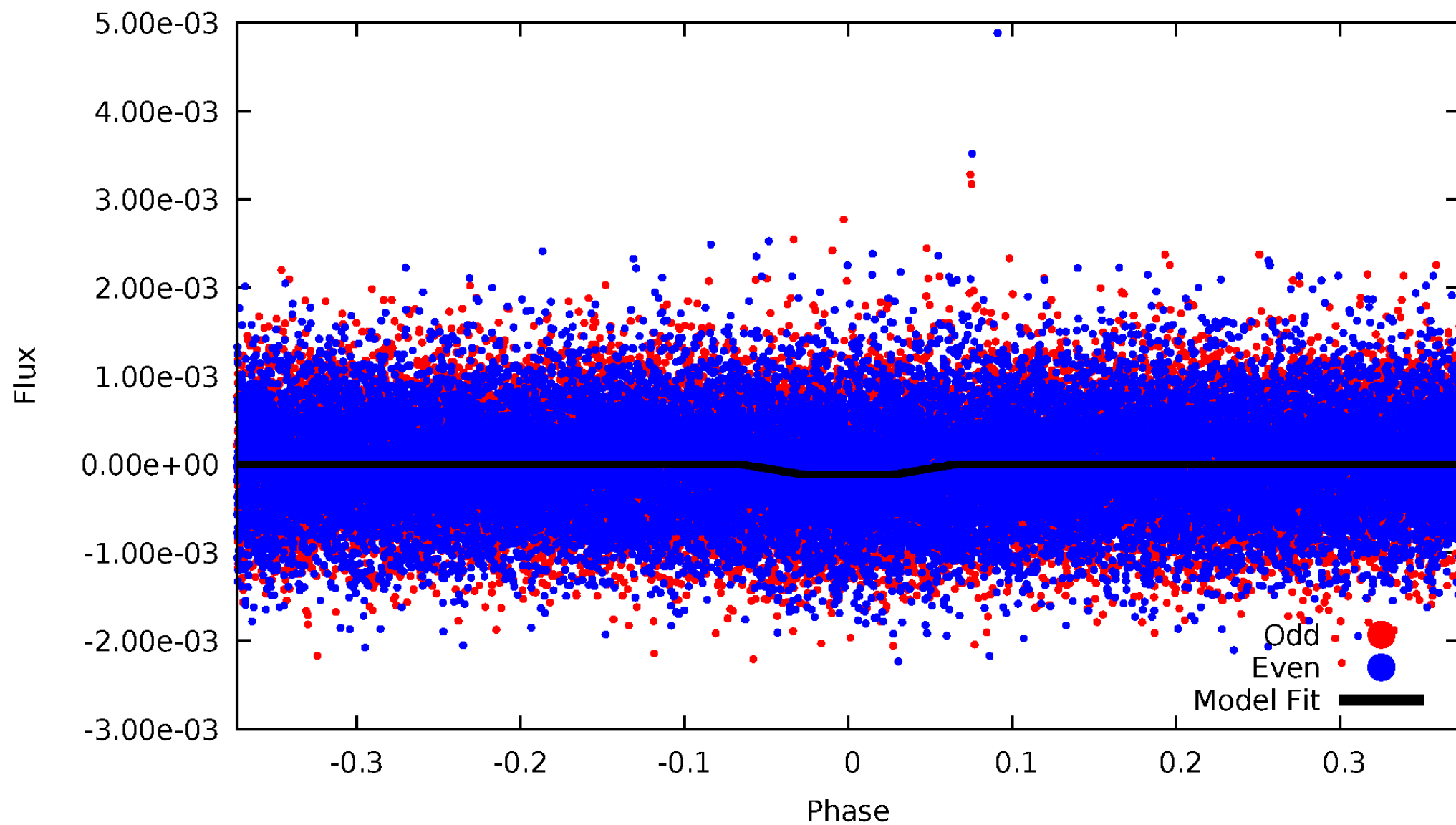
# DV Odd/Even

TCE 007448023-01

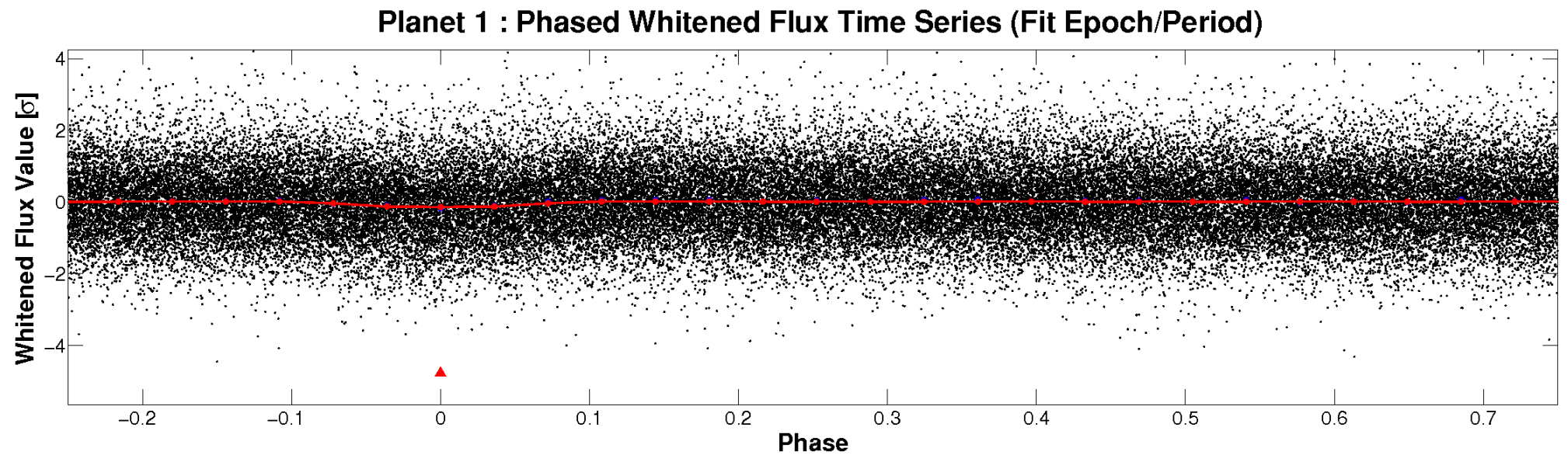
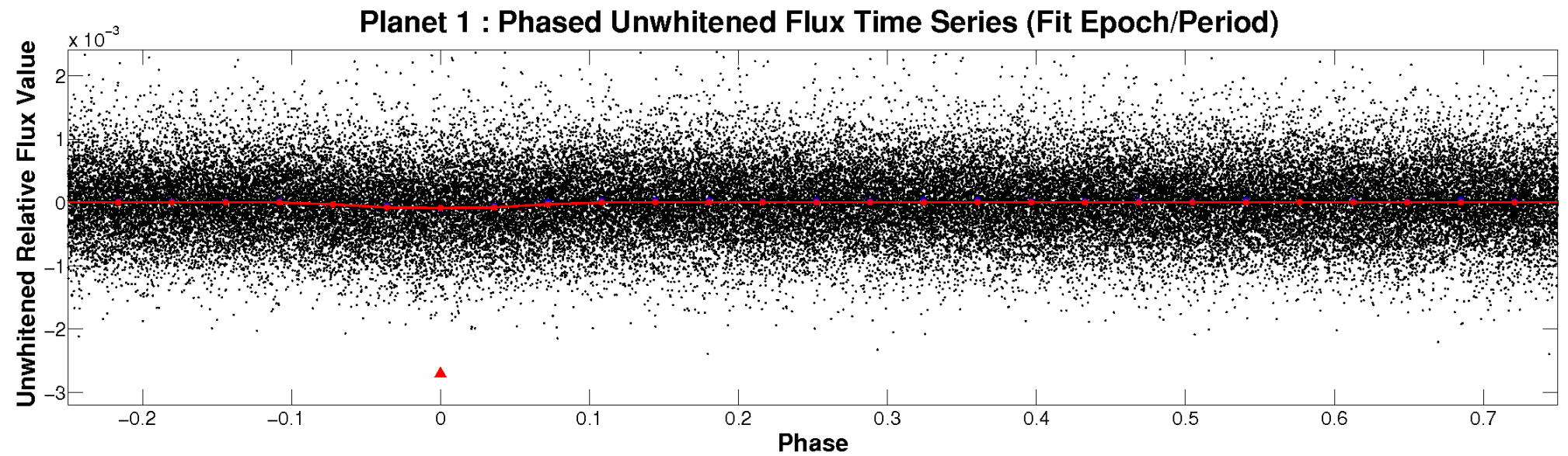


# ALT Odd/Even

TCE 007448023-01

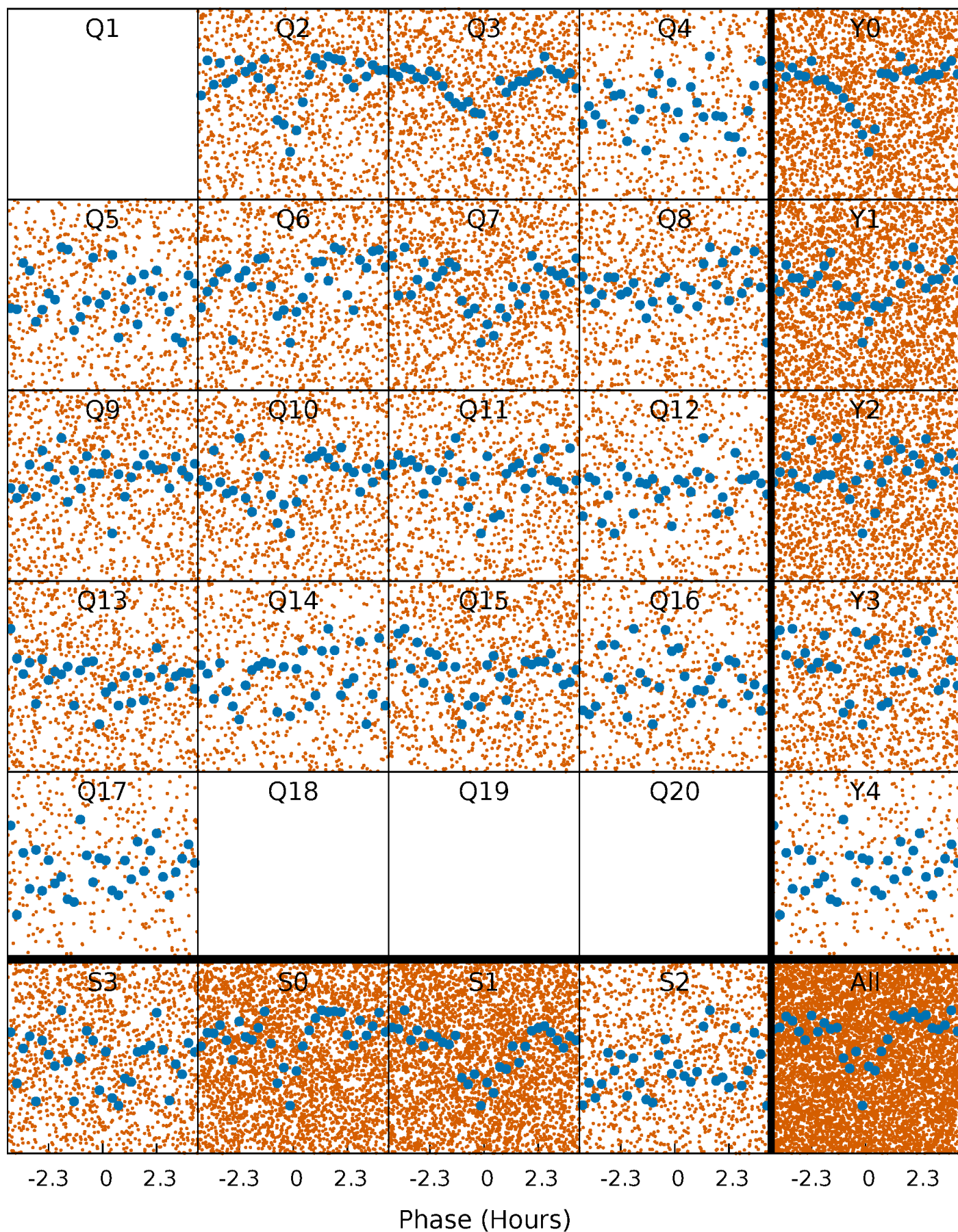


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

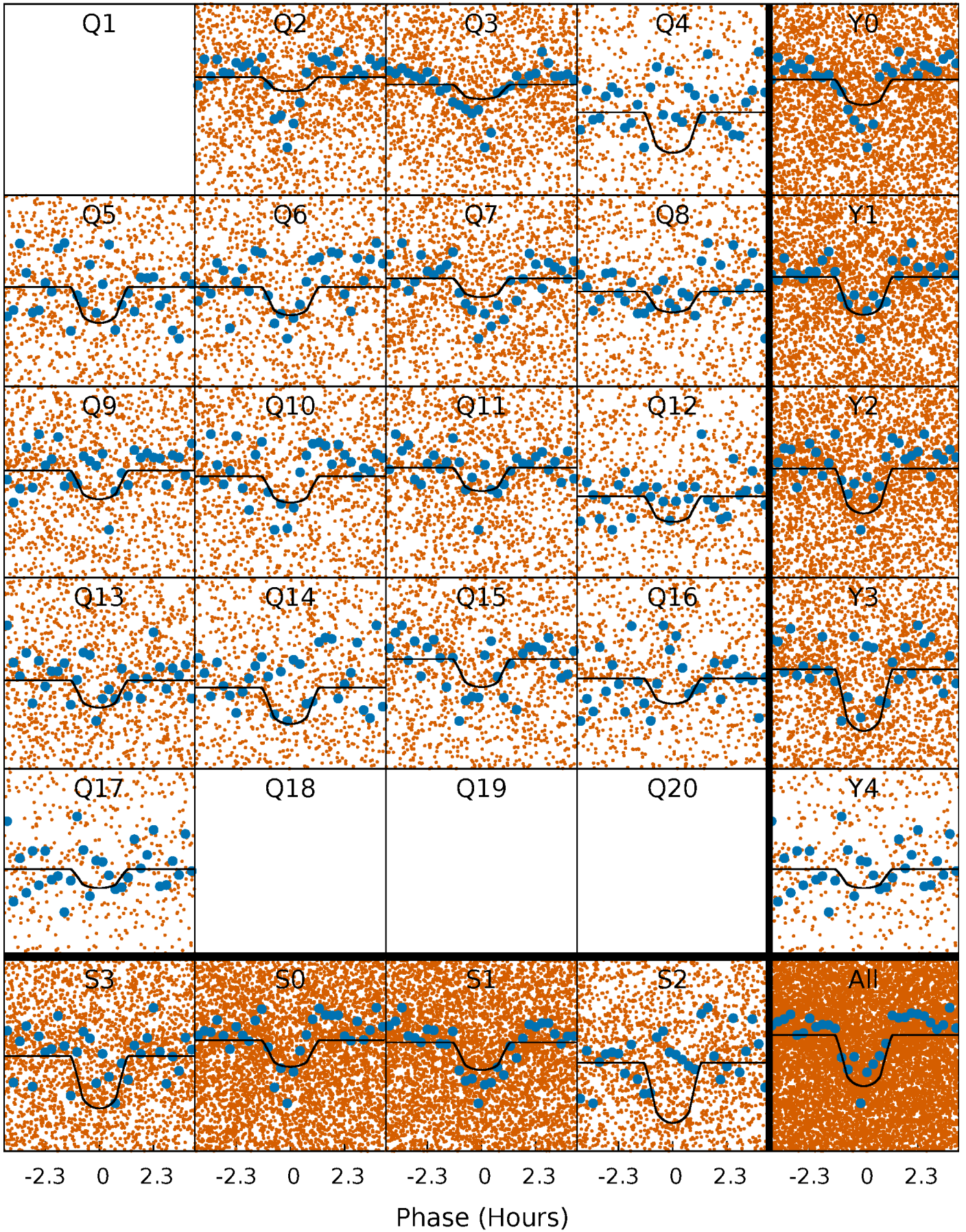
TCE 007448023-01 P= 0.566813 Days  $T_0=131.788545$  (BKJD)





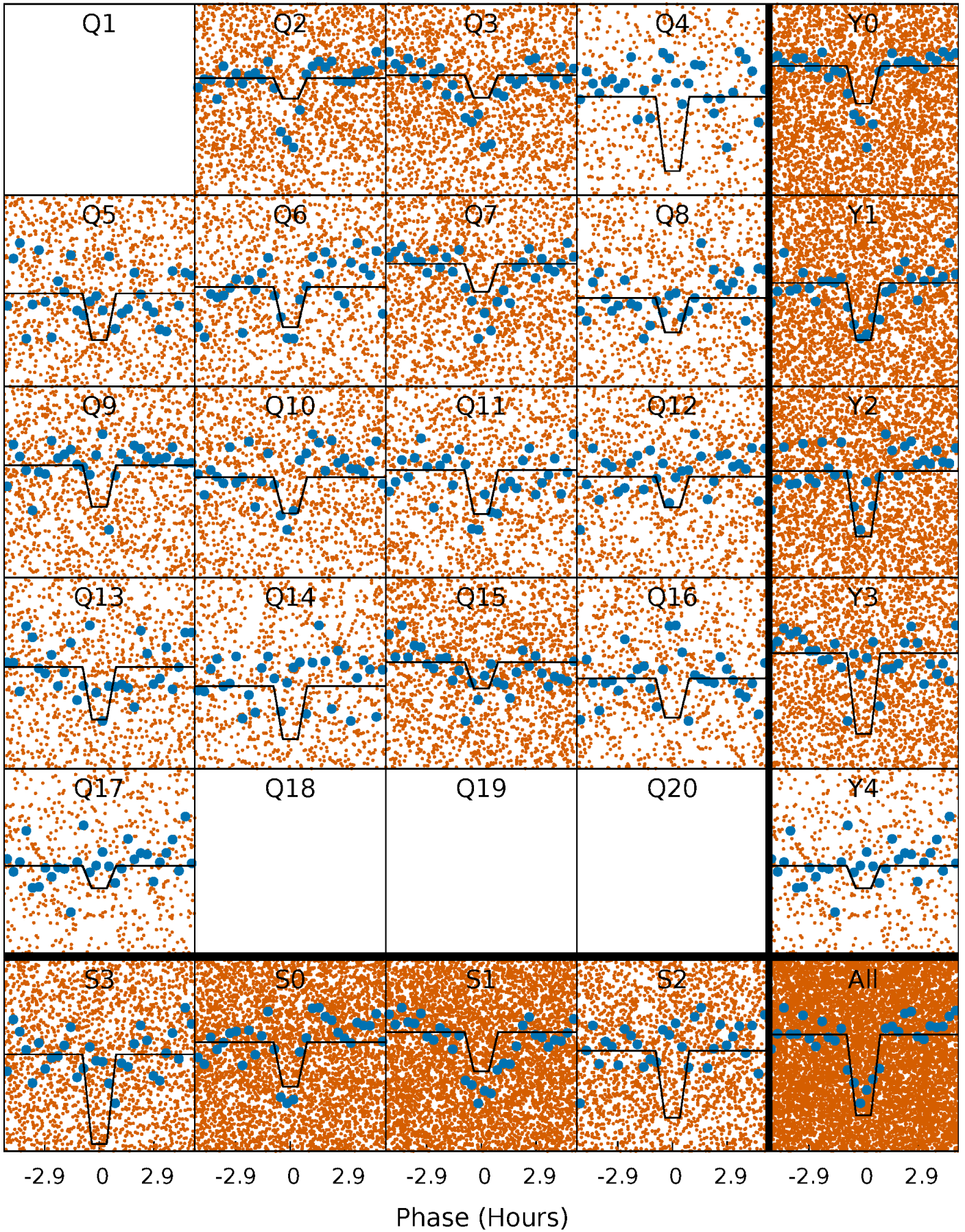
# DV Quarter-Phased Transit Curves

TCE 007448023-01 P= 0.566813 Days  $T_0=131.788545$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 007448023-01 P= 0.566814 Days  $T_0=131.782808$  (BKJD)

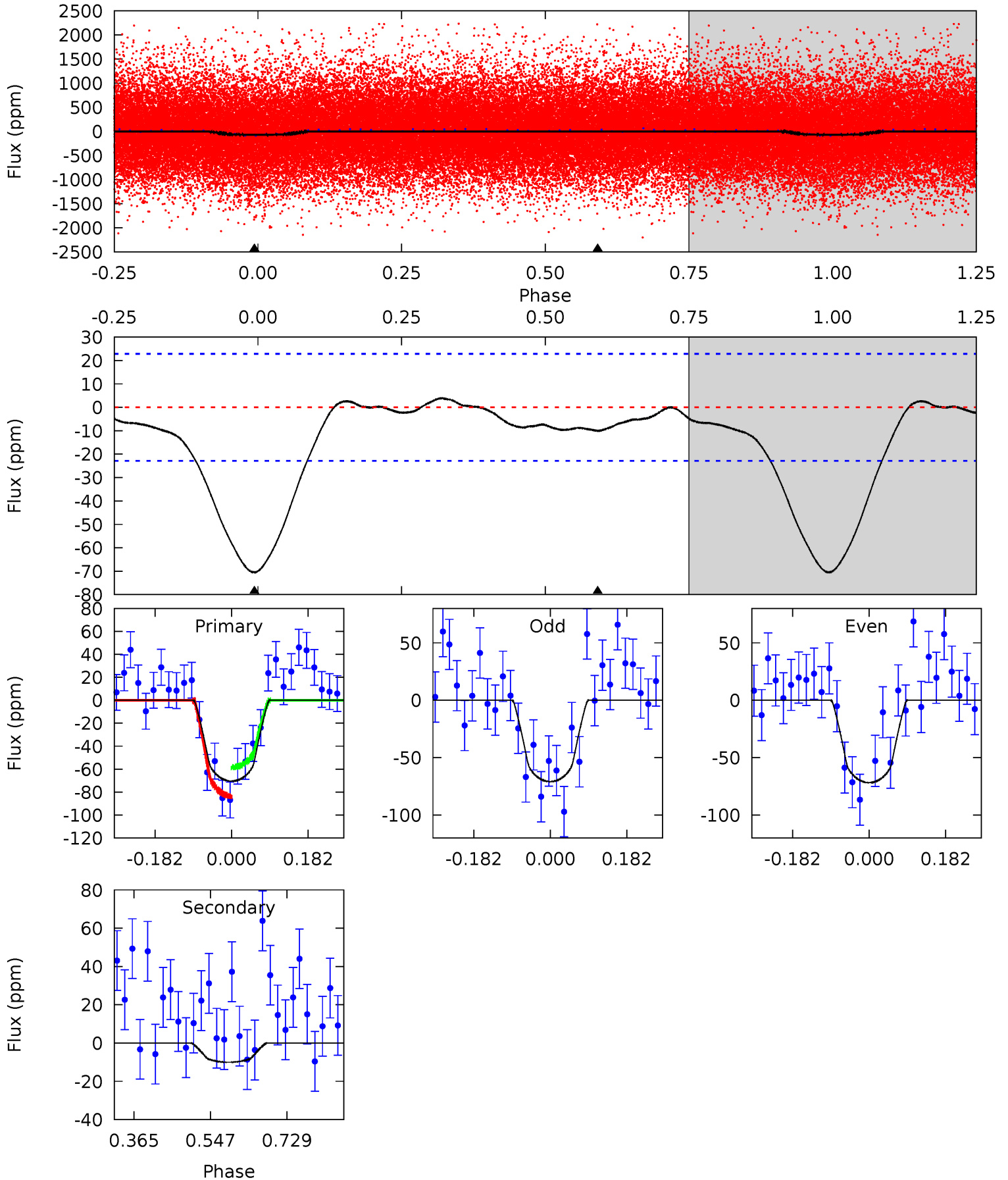




# DV Model-Shift Uniqueness Test

007448023-01, P = 0.566813 Days, E = 131.788545 Days

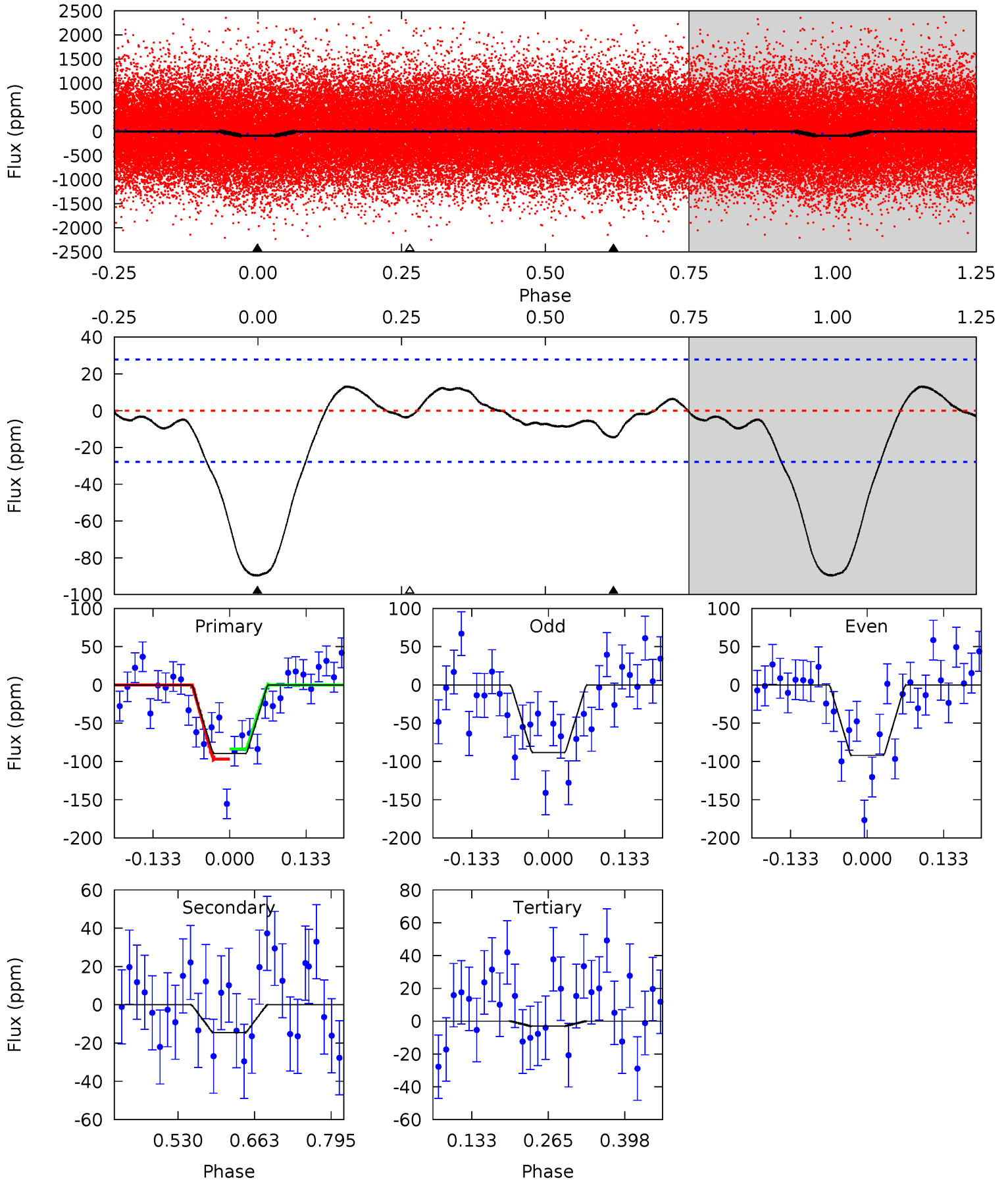
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	1.95	0	0	4.44	1.33	0.60	13.7	13.7	1.95	1.95	0.09	1.05	0.05	2.44



# Alt Model-Shift Uniqueness Test

007448023-01, P = 0.566814 Days, E = 131.782808 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	2.35	0.49	0	4.51	1.50	1.15	14.0	14.5	1.86	2.35	0.30	0.98	0.13	1.06





### Stellar Parameters For KIC 007448023

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4665^{+139}_{-139}$	$4.584^{+0.054}_{-0.027}$	$-0.080^{+0.300}_{-0.300}$	$0.704^{+0.046}_{-0.064}$	$0.695^{+0.077}_{-0.051}$	$2.799^{+0.700}_{-0.317}$
	+3%/-3%	+1%/-1%	+375%/-375%	+7%/-9%	+11%/-7%	+25%/-11%
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 007448023-01 / KOI 7839.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-10 \pm 5$	$0.94^{+0.59}_{-0.56}$	$2203^{+75}_{-78}$	$2756^{+1107}_{-4827}$	$0.838^{+4.644}_{-0.582}$
Alt.	$-15 \pm 6$	$0.94^{+0.66}_{-0.56}$	$2203^{+74}_{-79}$	$3006^{+1152}_{-795}$	$1.277^{+5.920}_{-0.880}$

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

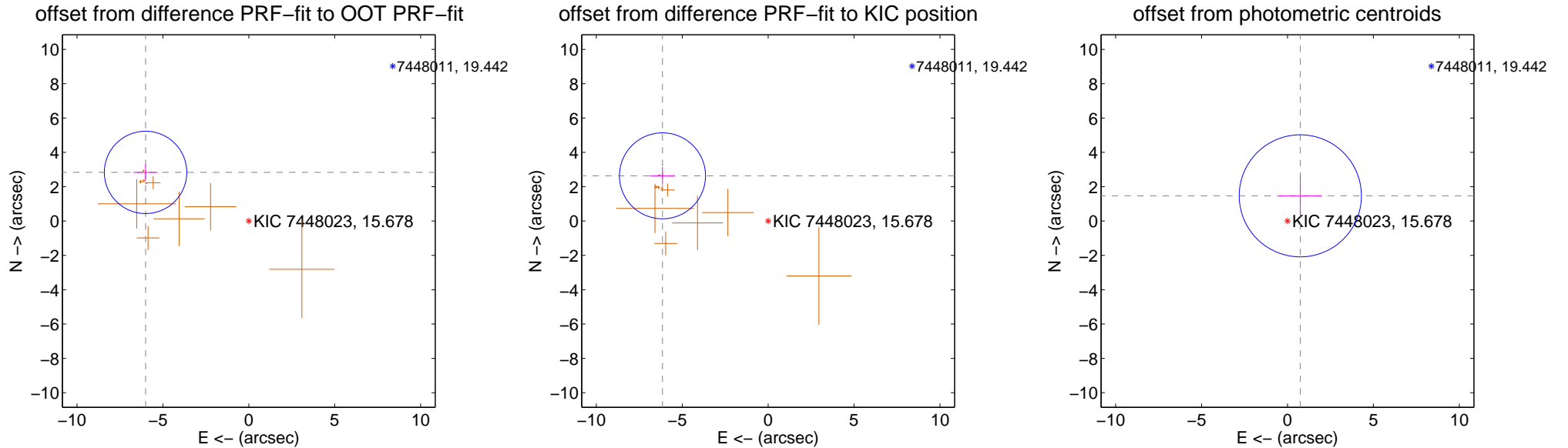
## DV Centroid Data

Supplemental centroid analysis for 007448023-01. Kepler magnitude: 15.68. Transit SNR 11.25

There are 0 quarters with good PRF difference image offsets

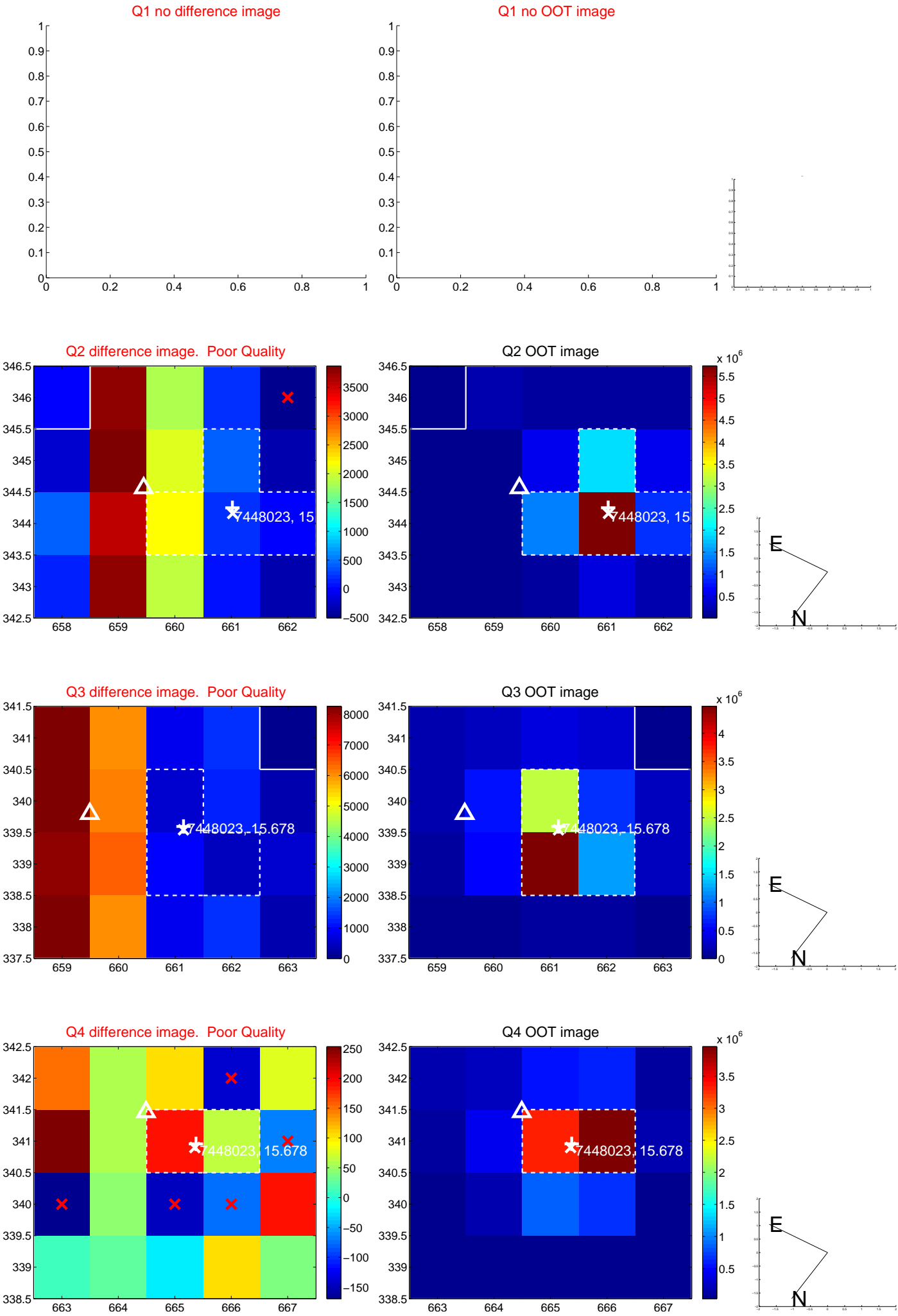
The direct PRF centroid is offset from the target star catalog position by about 0.41 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$6.642 \pm 0.799$	8.31	$6.007 \pm 0.705$	$2.834 \pm 0.465$
PRF-fit source offset from KIC position	$6.689 \pm 0.834$	8.02	$6.148 \pm 0.723$	$2.635 \pm 0.511$
photometric centroid source offset	$1.65 \pm 1.19$	1.39	$-0.75 \pm 1.24$	$1.47 \pm 1.17$

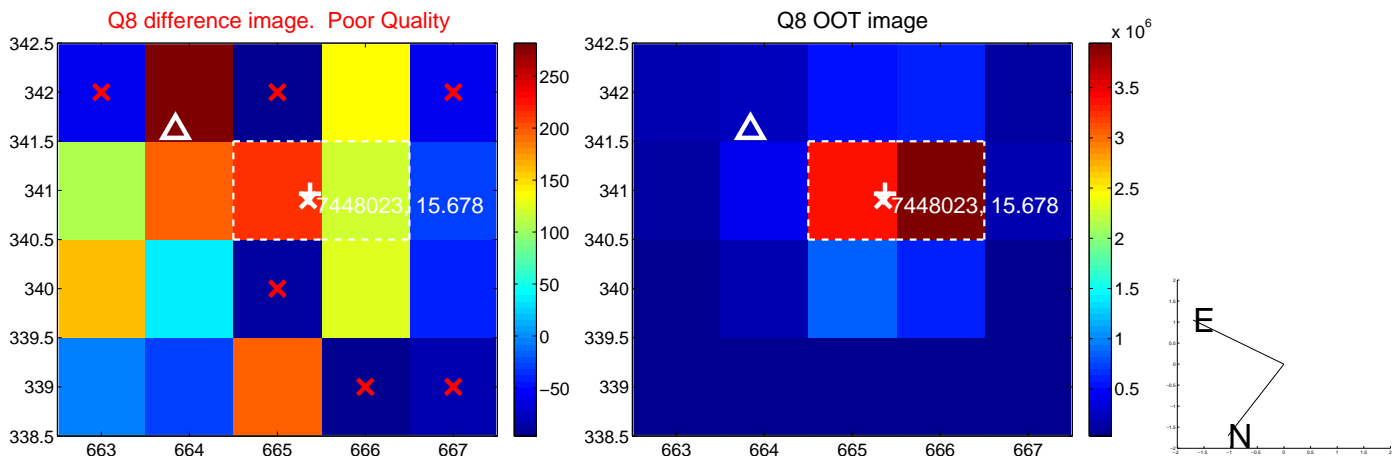
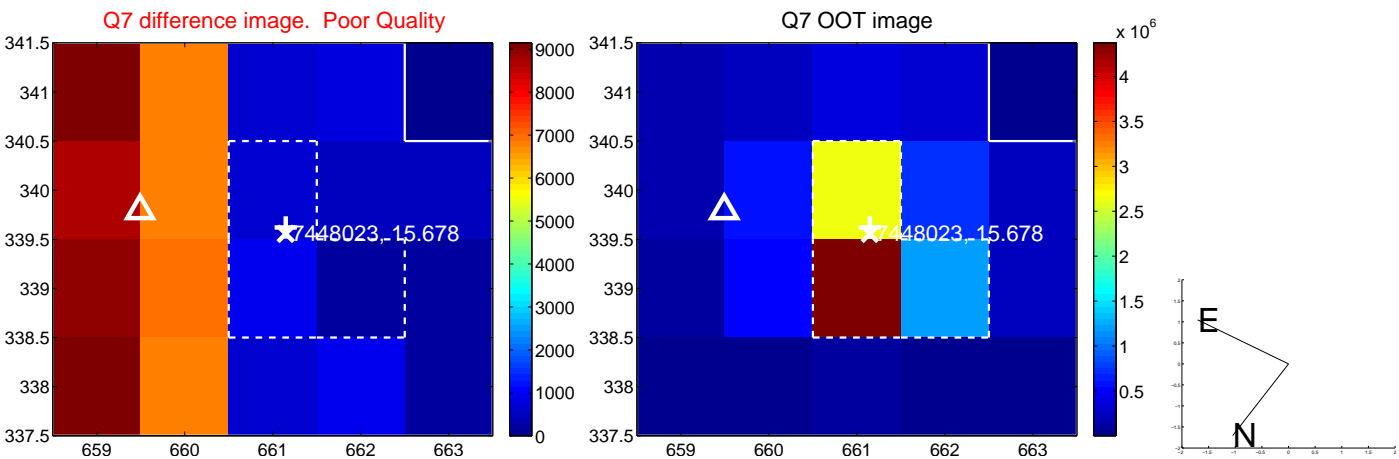
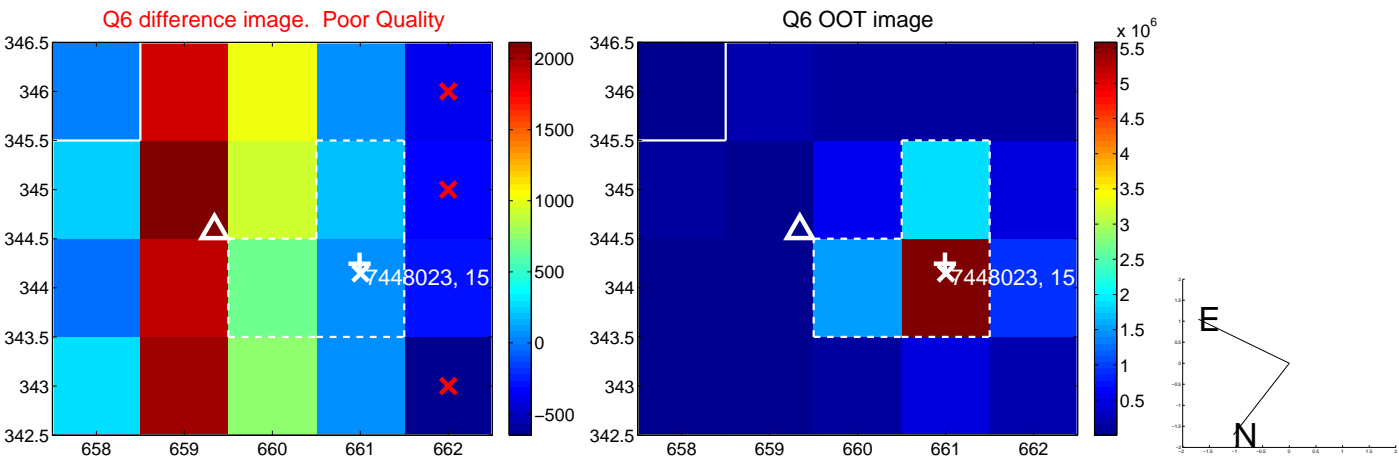
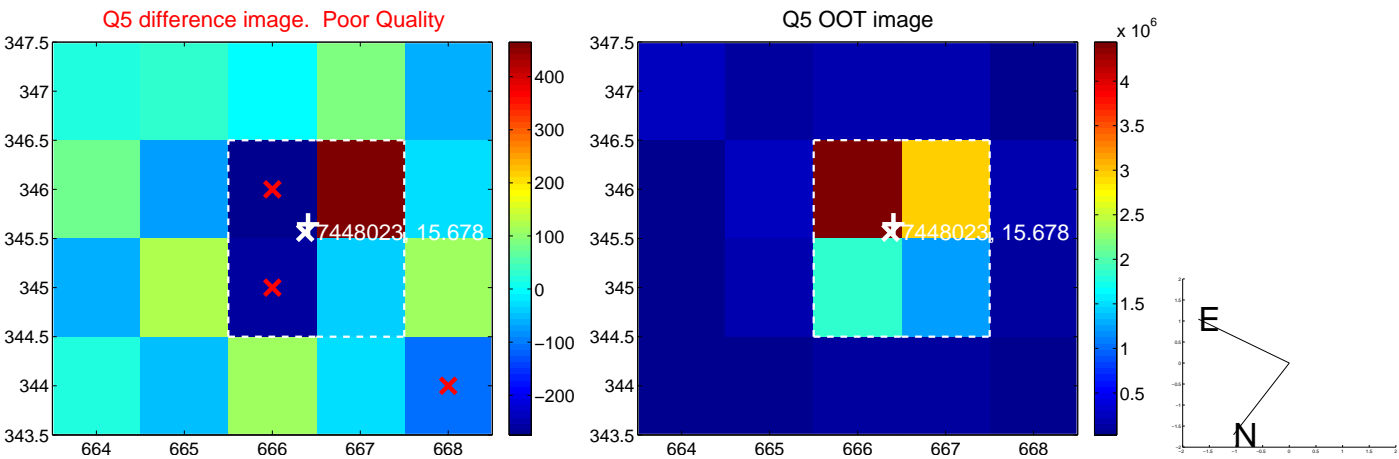


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

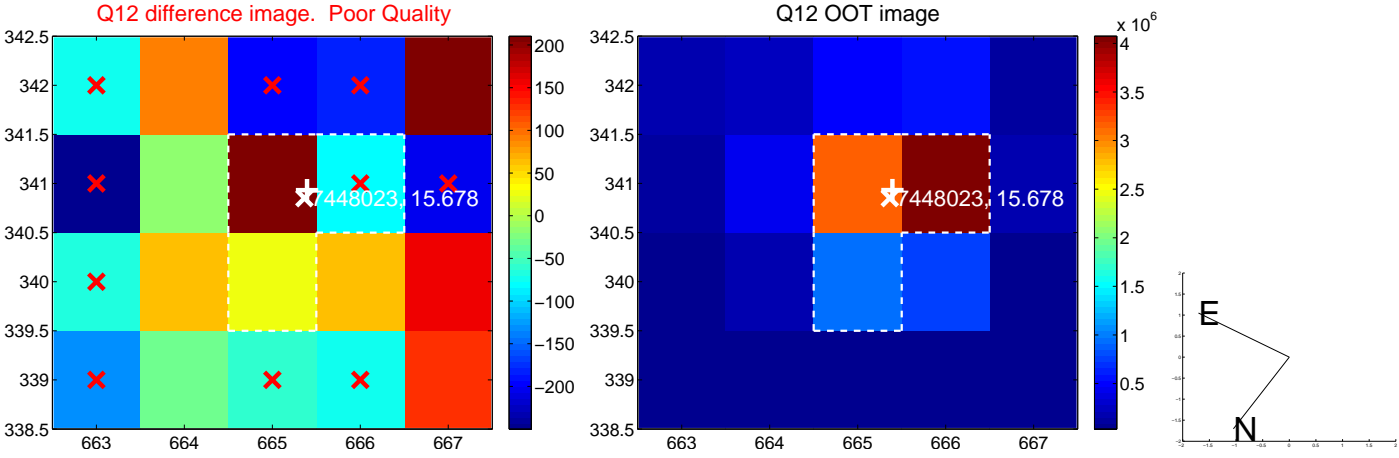
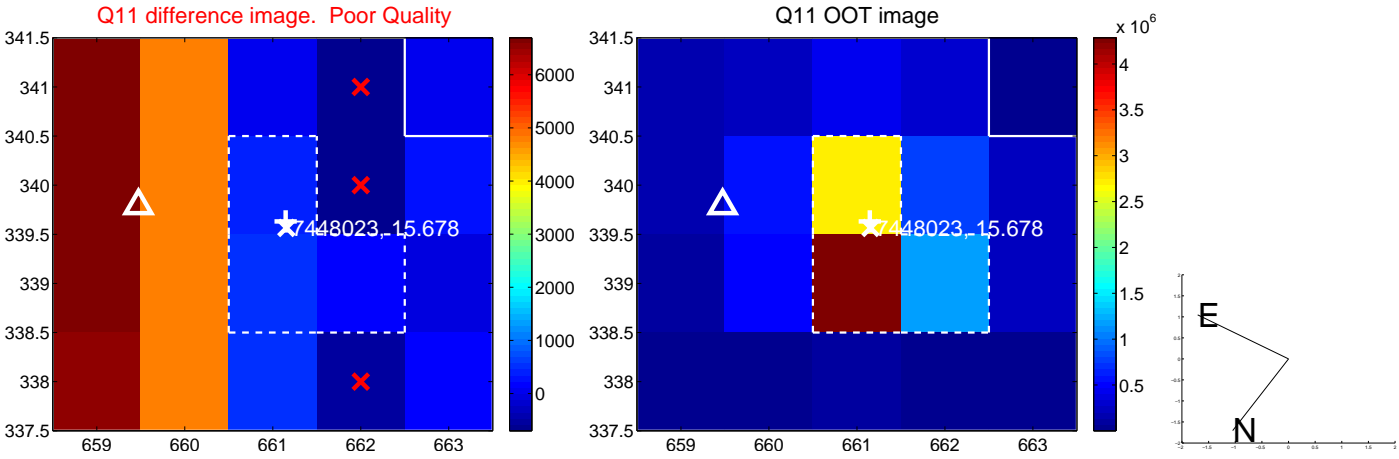
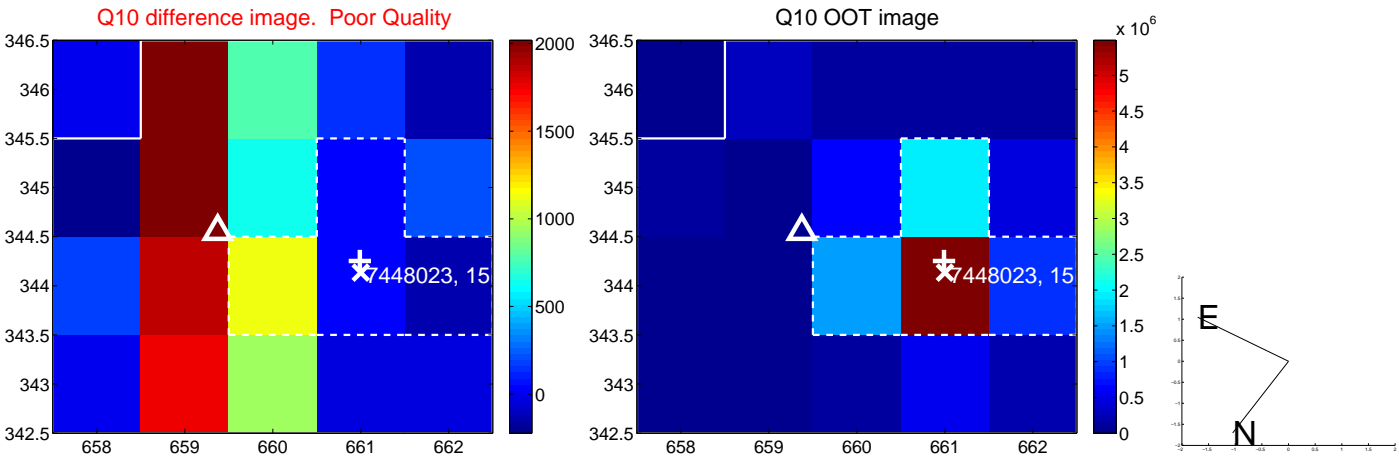
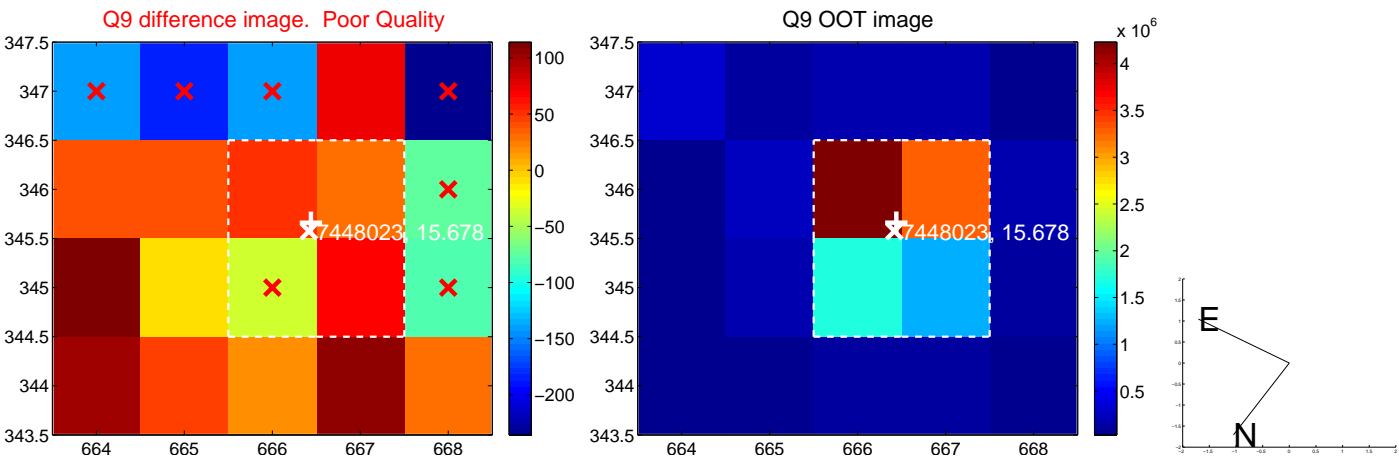


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

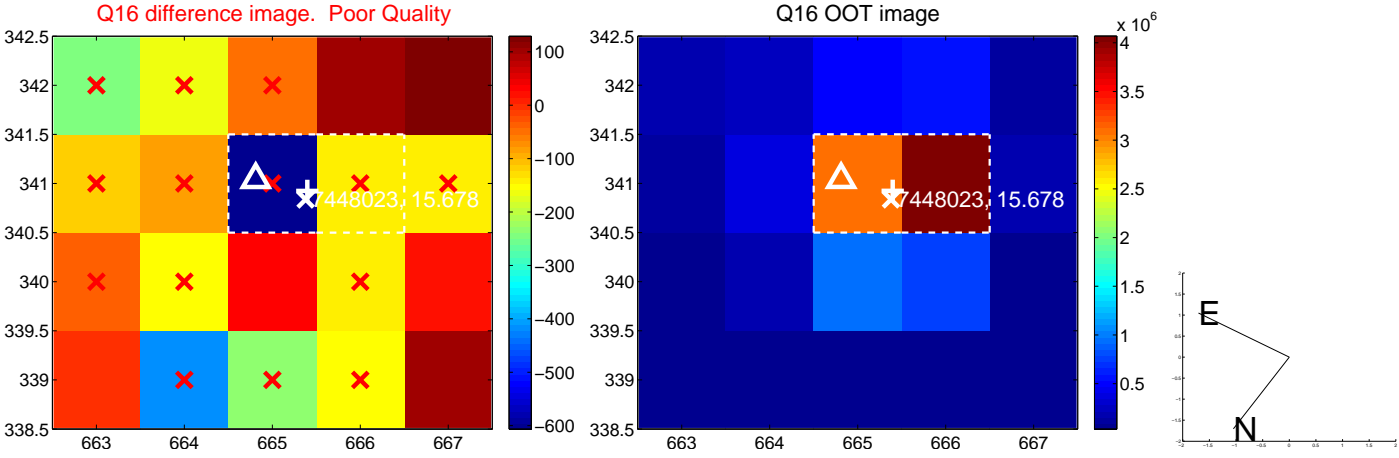
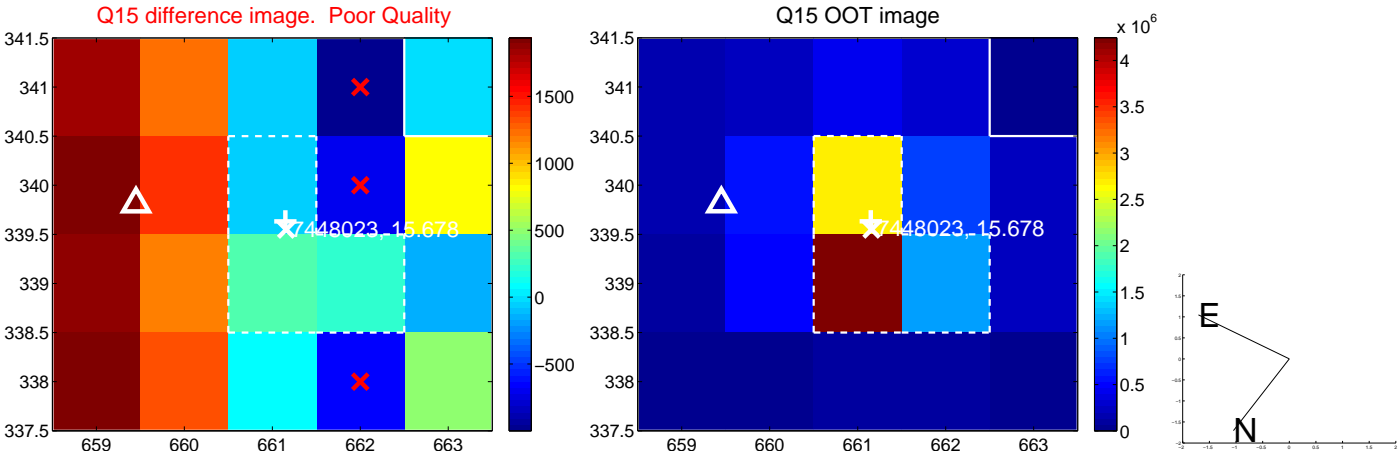
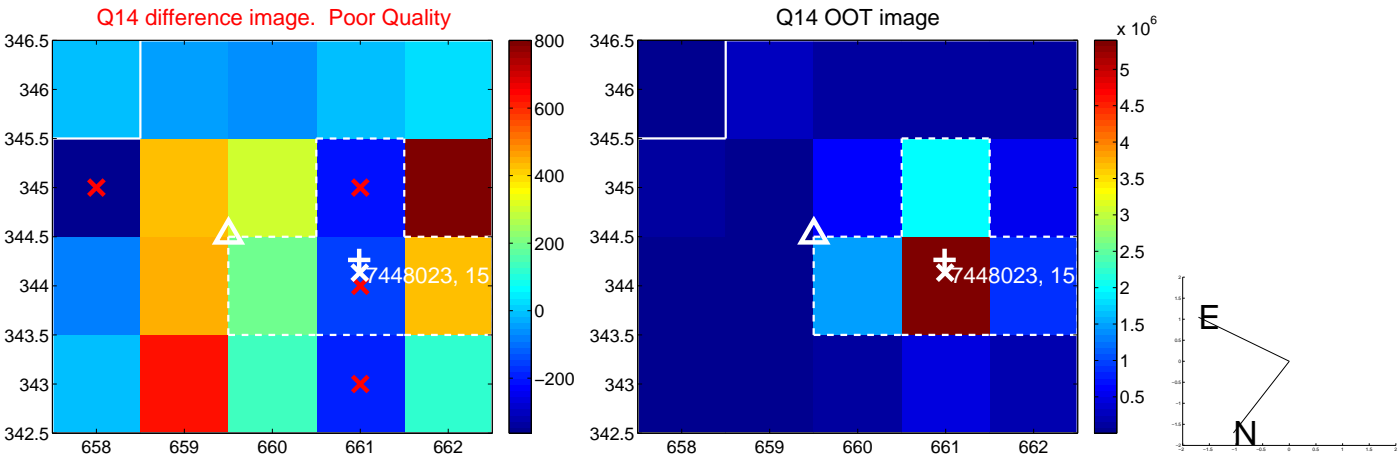
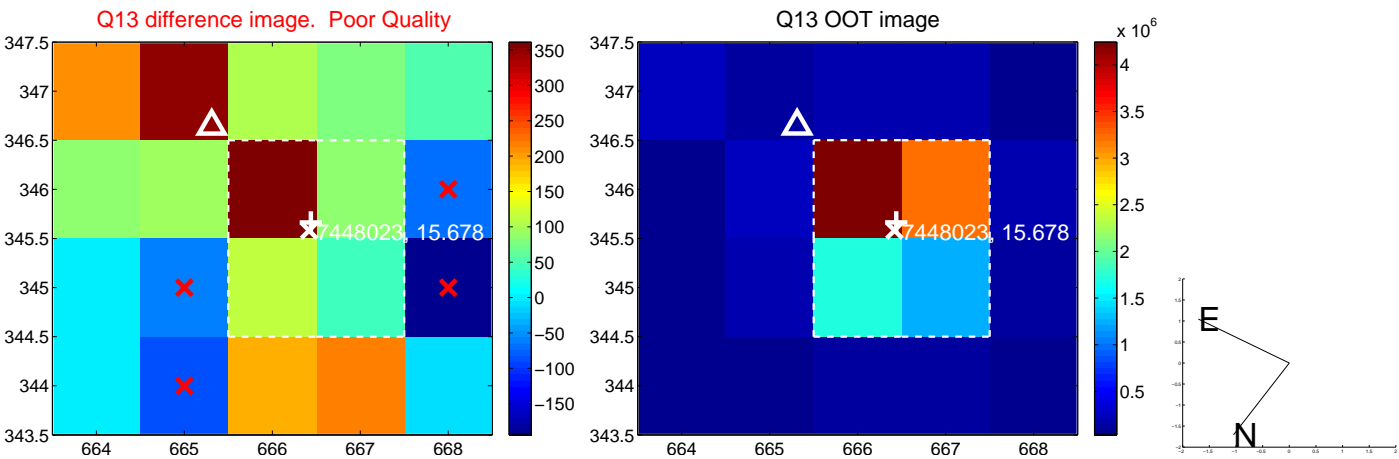




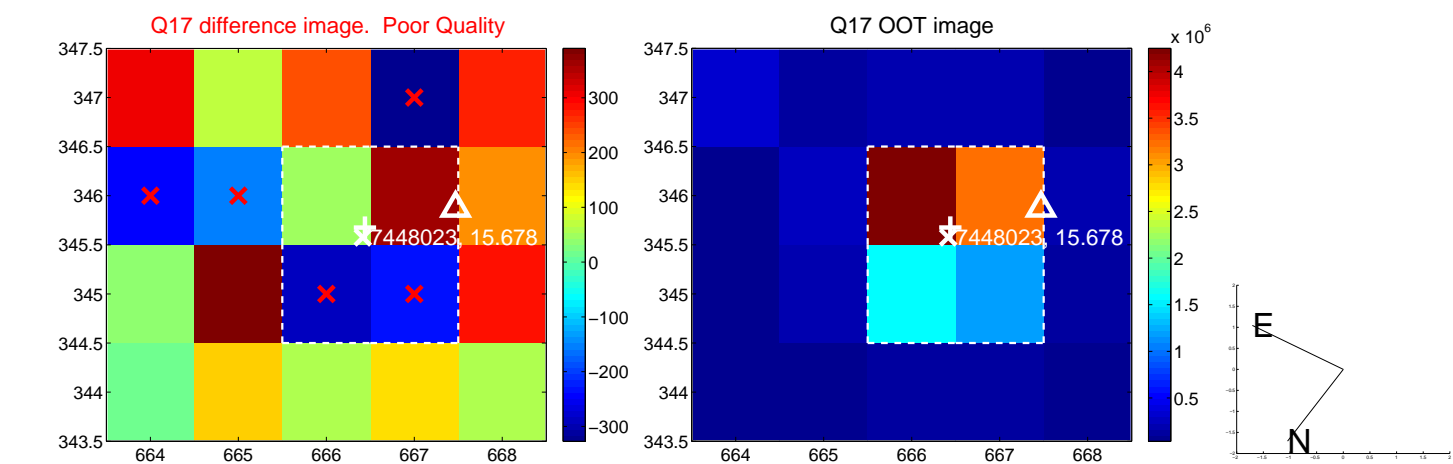
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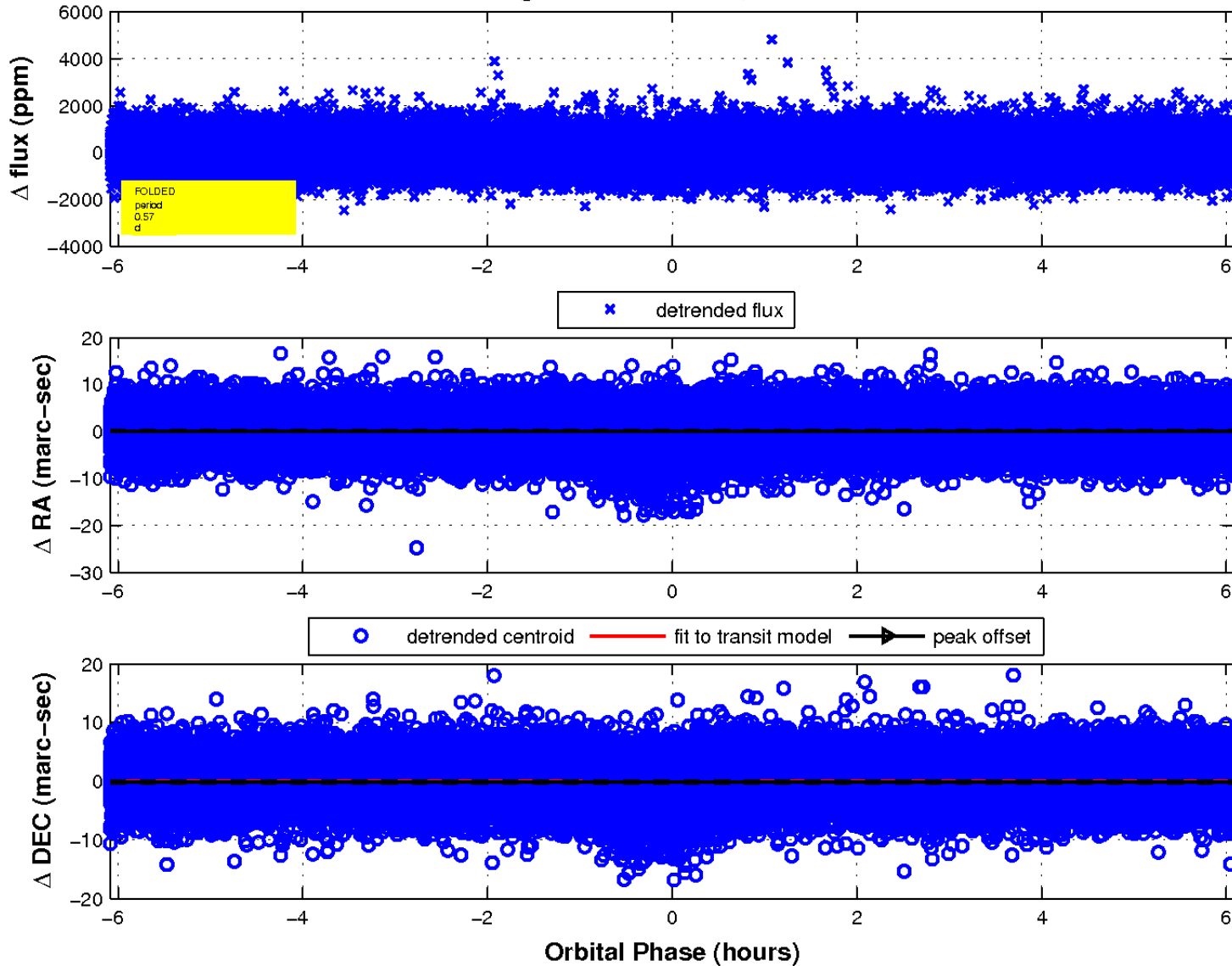
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

