

# KIC 003438975

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R <sub>★</sub> (R <sub>☉</sub> )	T <sub>★</sub> (K)	R <sub>p</sub> (R <sub>⊕</sub> )	S <sub>p</sub> (S <sub>⊕</sub> )
003438975-01	OBS	0300.01	2.975996	132.978361	117.6	5.421	41.6	49.6	1.80	5947	3.93	2171.60

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003438975-01	OBS	FP	0.00	0	0	1	1	CENT_CROWDED—HALO_GHOST—EPEM_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 003438975-01

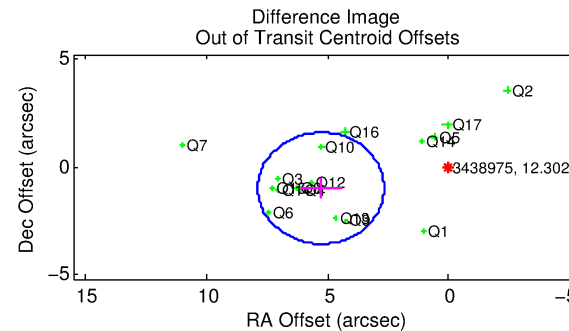
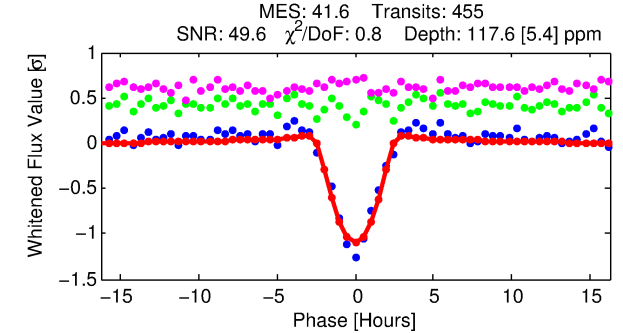
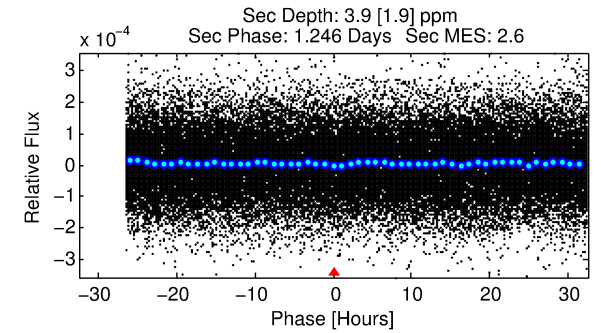
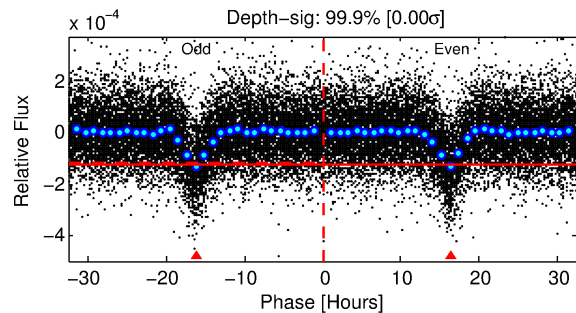
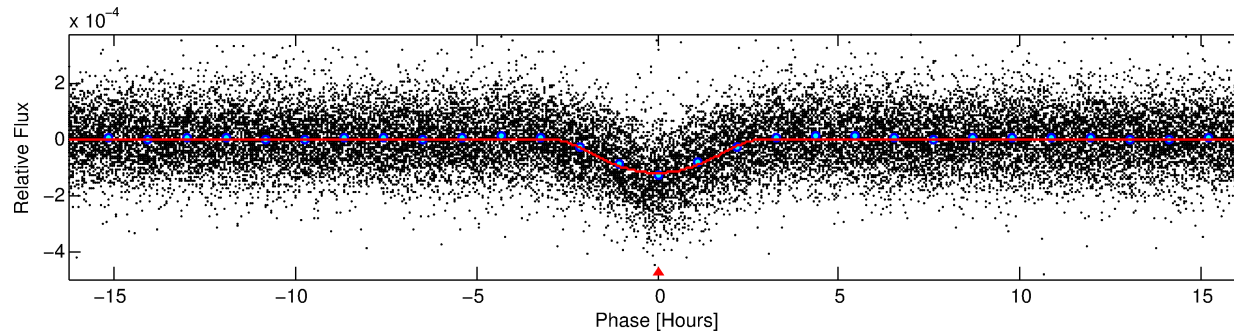
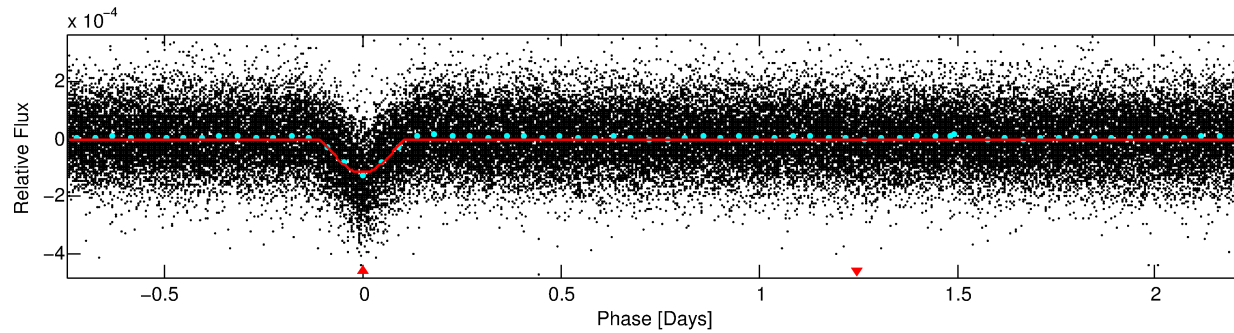
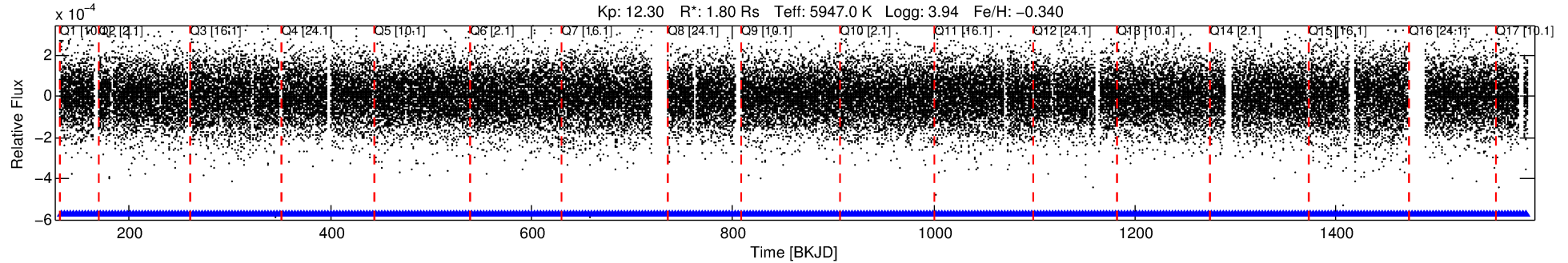
TCE (1)	KIC	Parent (2)	Parent KIC	P <sub>1</sub> :P <sub>2</sub>	Dist (″)	ΔRow	ΔCol	m <sub>2</sub>	m <sub>1</sub>	D <sub>2</sub> /D <sub>1</sub>	Mechanism	Flag	σ <sub>P</sub>	σ <sub>T</sub>
003438975-01	3438975	4980.01	3439031	1:1	38.3	-2	-10	11.29	12.30	3782.60	Direct-PRF	0	0.32	0.38

**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m<sub>2</sub> and m<sub>1</sub> are the magnitudes of the parent and child. D<sub>2</sub>/D<sub>1</sub> is the parent's transit depth divided by the child's. σ<sub>P</sub> and σ<sub>T</sub> are the significance of the match in period and epoch. For a match to be considered significant σ<sub>P</sub> < 5.0 and σ<sub>T</sub> < 5.0. Matches which have σ<sub>P</sub> and σ<sub>T</sub> very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 3438975 Candidate: 1 of 1 Period: 2.976 d  
KOI: K00300.01 Corr: 0.800

Kp: 12.30 R\*: 1.80 Rs Teff: 5947.0 K Logg: 3.94 Fe/H: -0.340



## DV Fit Results:

Period = 2.97600 [0.00001] d  
Epoch = 132.9784 [0.0022] BKJD  
Rp/R\* = 0.0201 [0.0131]  
a/R\* = 1.32 [0.09]  
b = 1.00 [0.02]  
Seff = 2171.60 [1152.59]  
Teq = 1741 [231] K  
Rp = 3.93 [2.84] Re  
a = 0.0408 [0.0129] AU  
Ag = 0.23 [0.34] [-2.24σ]  
Teffp = 1866 [651] K [0.18σ]

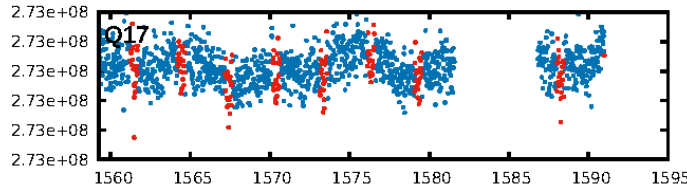
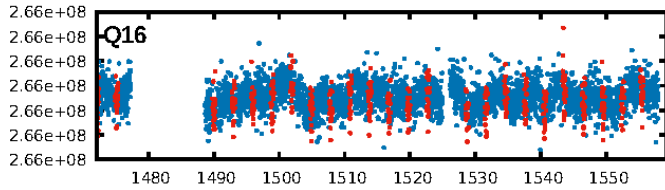
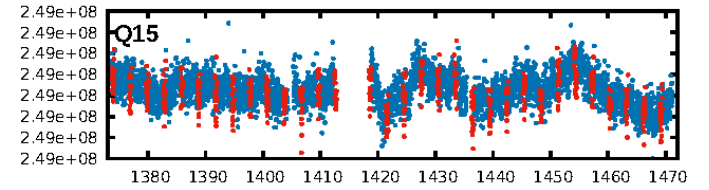
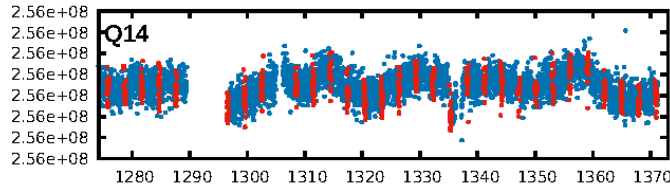
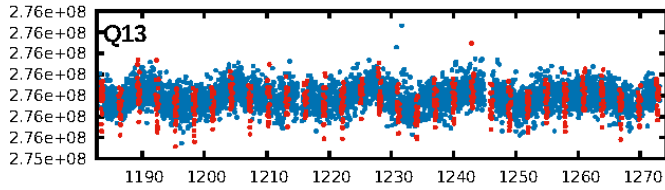
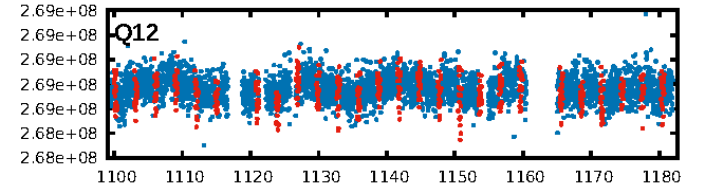
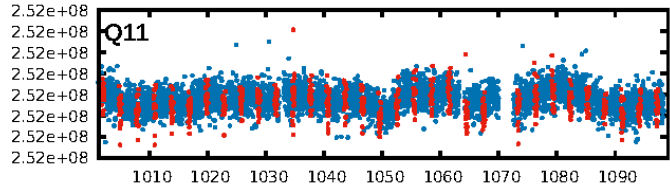
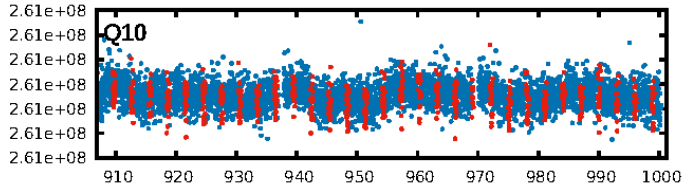
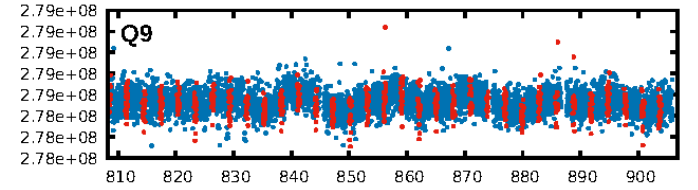
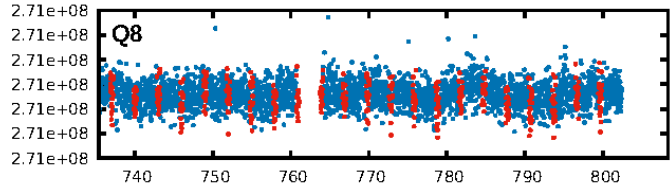
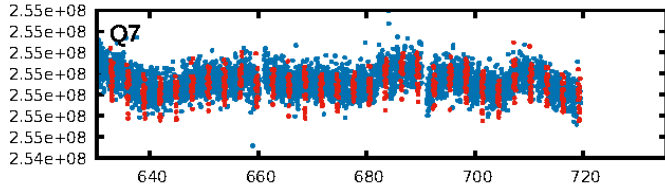
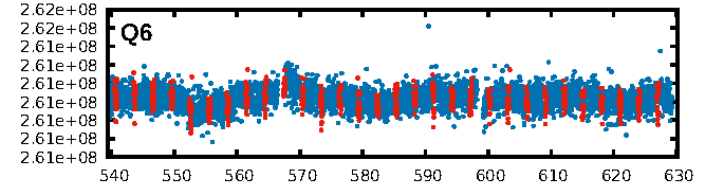
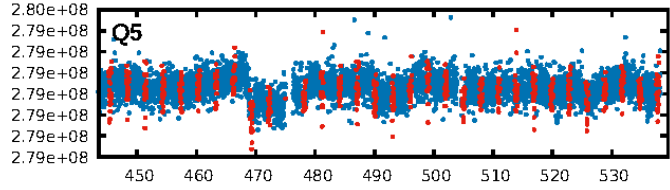
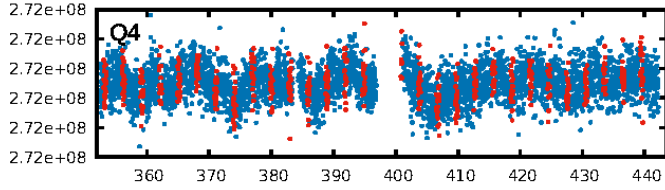
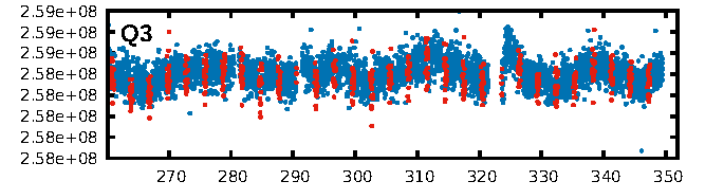
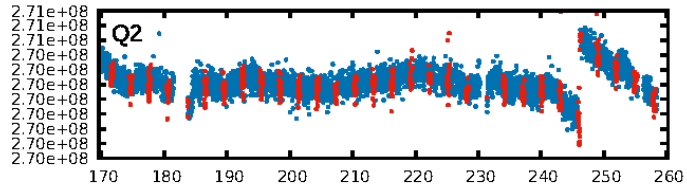
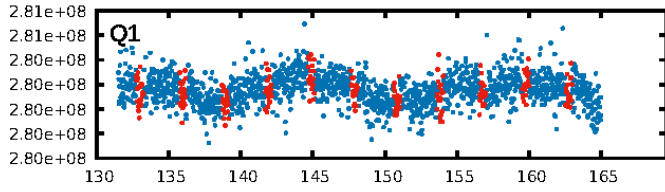
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [436/436]  
GhostDiagnostic-chr: -0.1419  
Centroid-sig: 0.0%  
Centroid-so: 4.228 arcsec [19.28σ]  
OotOffset-rm: 5.368 arcsec [6.19σ]  
KicOffset-rm: 5.425 arcsec [6.59σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.18 [3/17]  
DiffImageOverlap-fno: 1.00 [17/17]

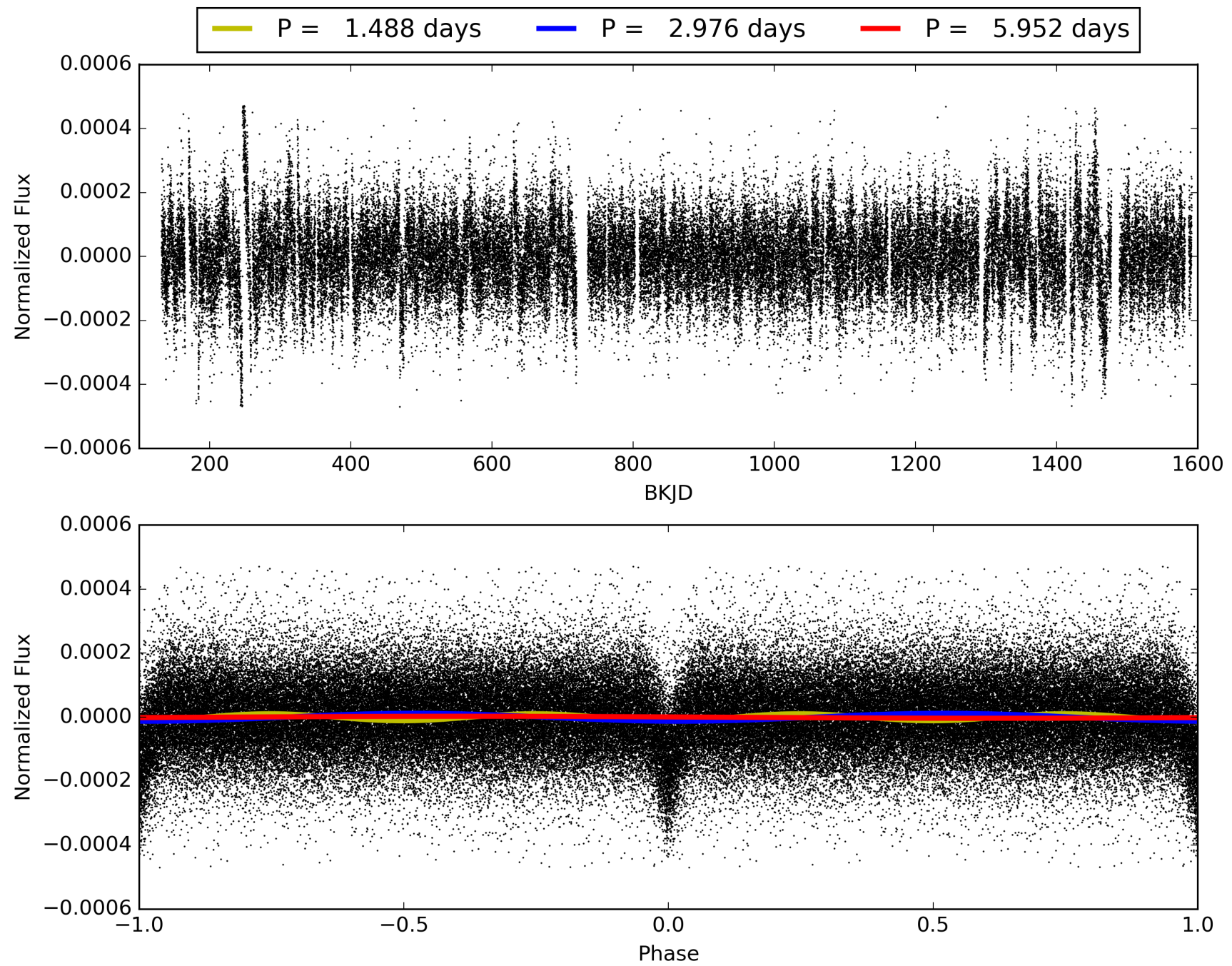
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:19:32 Z

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

## TCE 003438975-01, PDC Light Curves



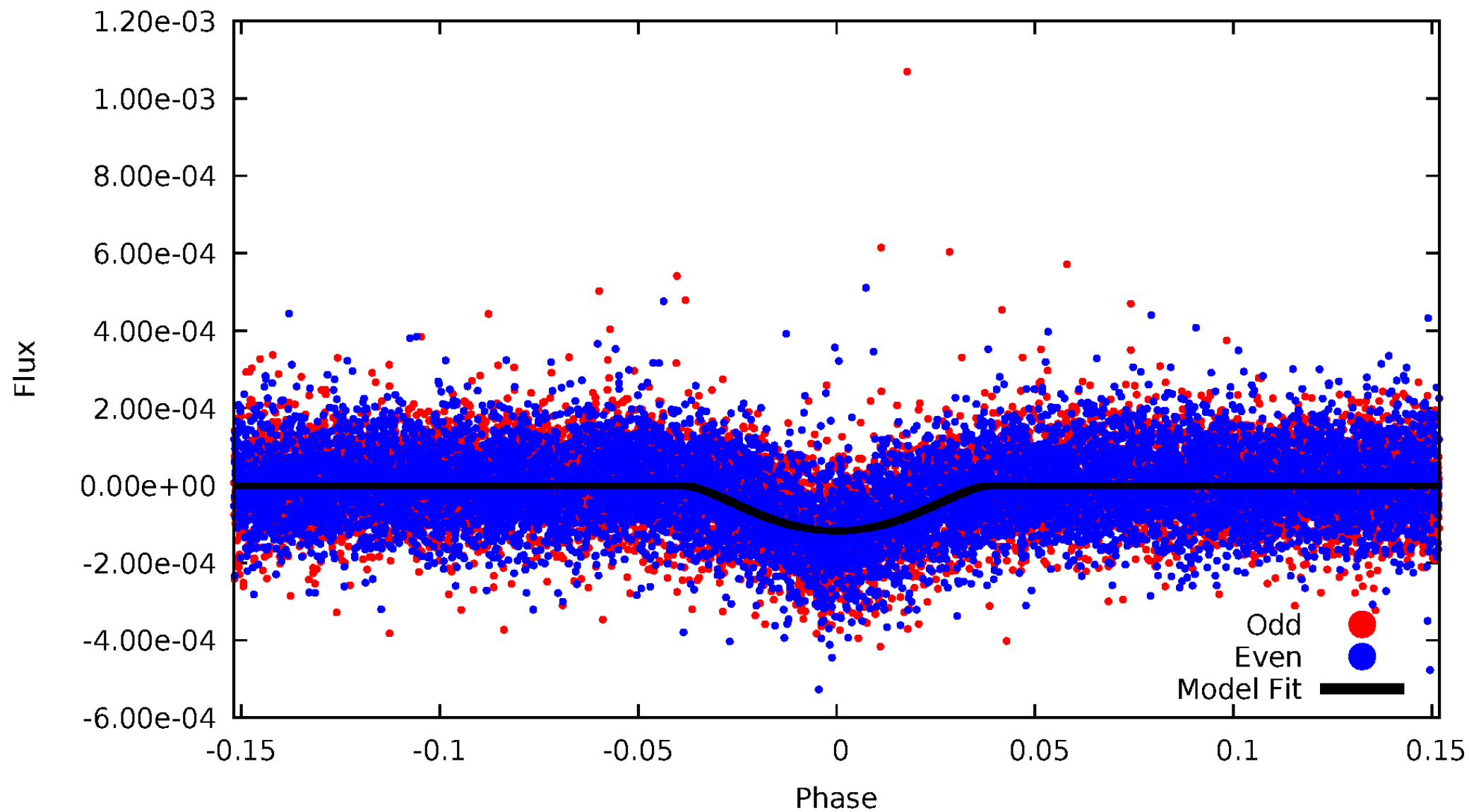
TCE 003438975-01





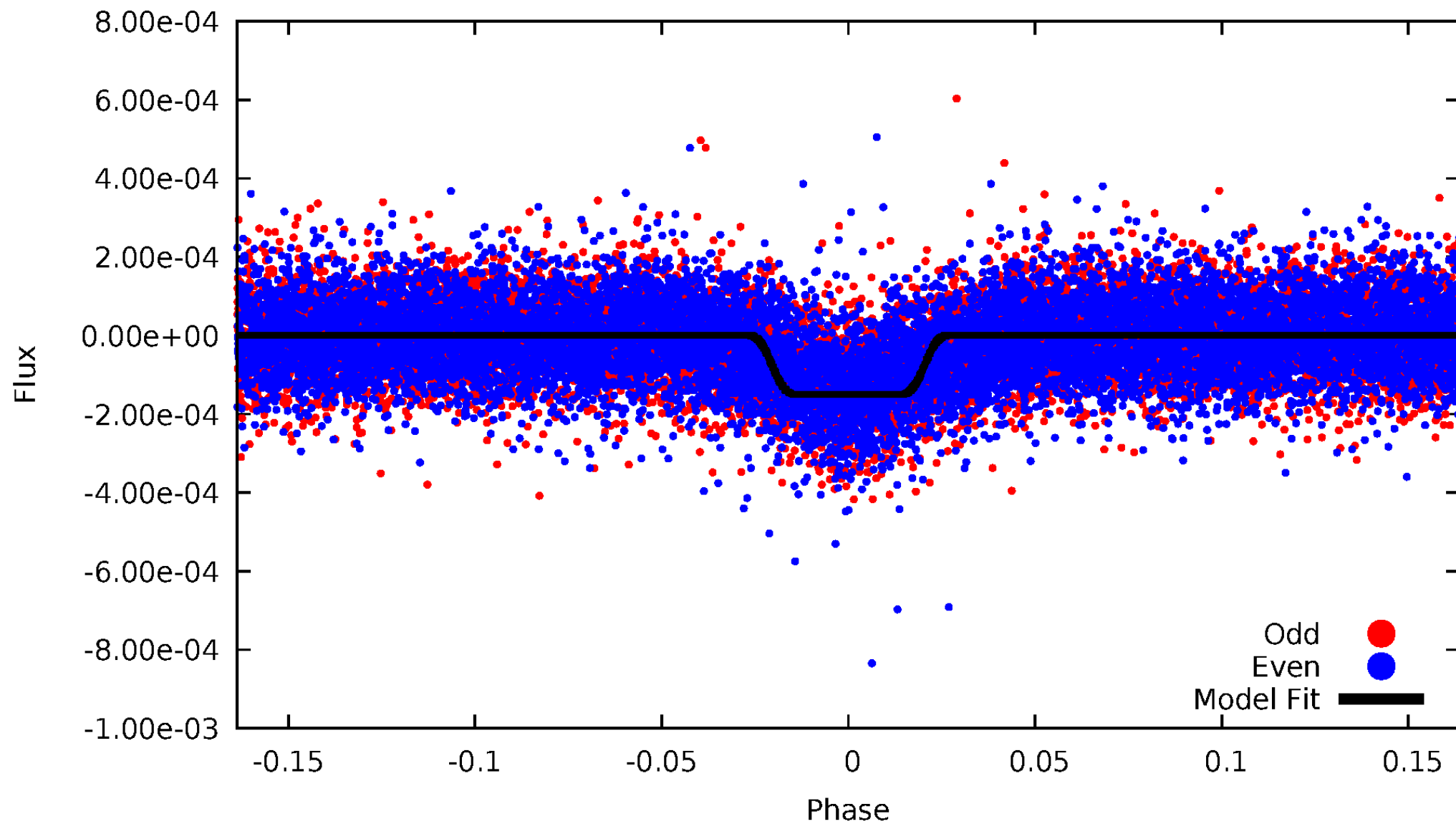
# DV Odd/Even

TCE 003438975-01



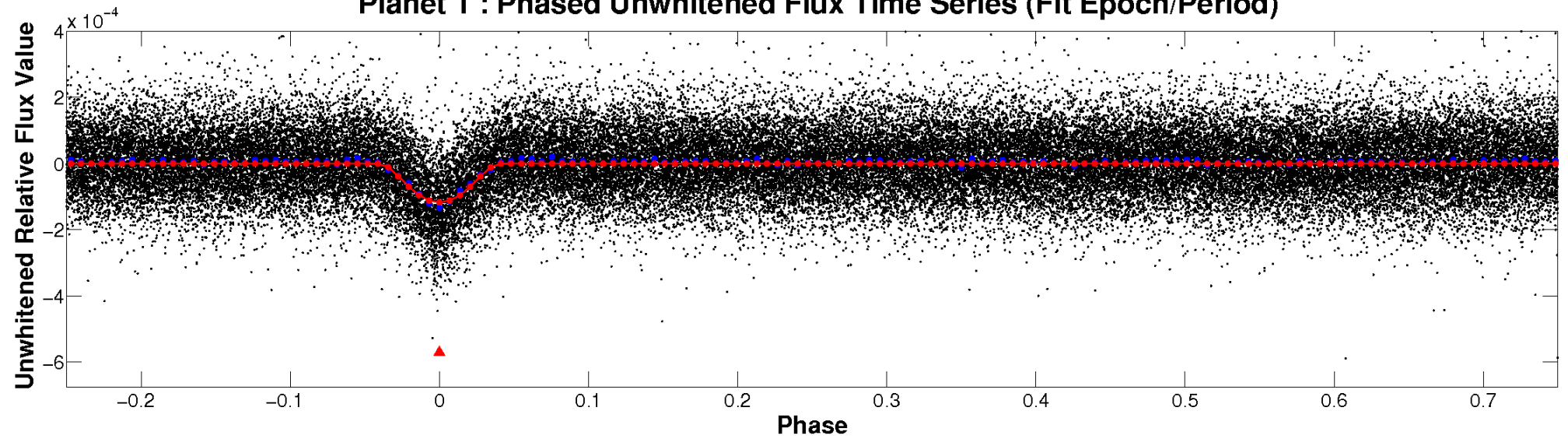
# ALT Odd/Even

TCE 003438975-01

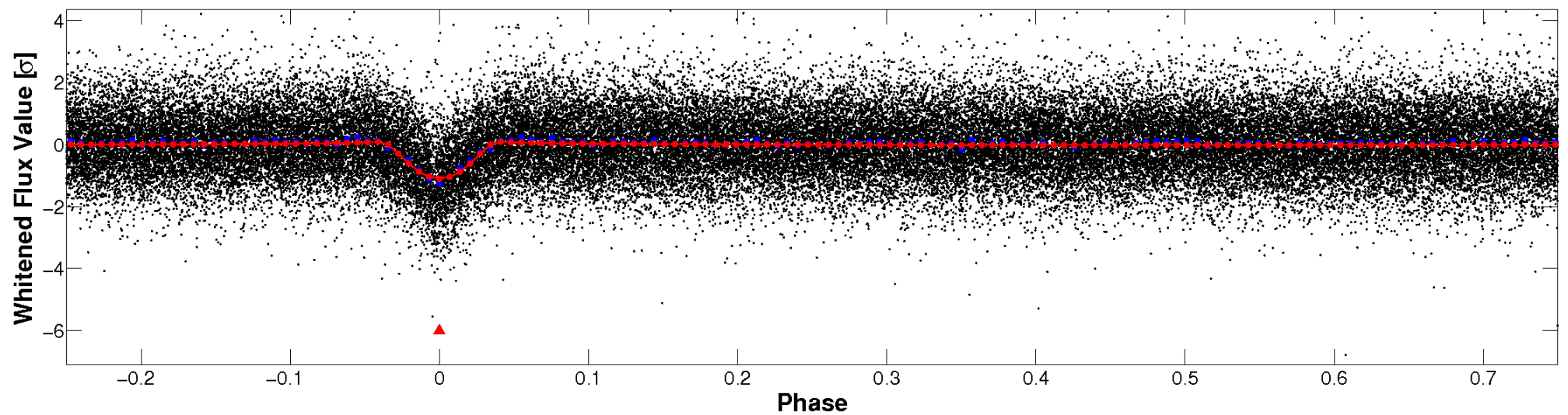


# Non-Whitened Vs. Whitened Light Curve

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

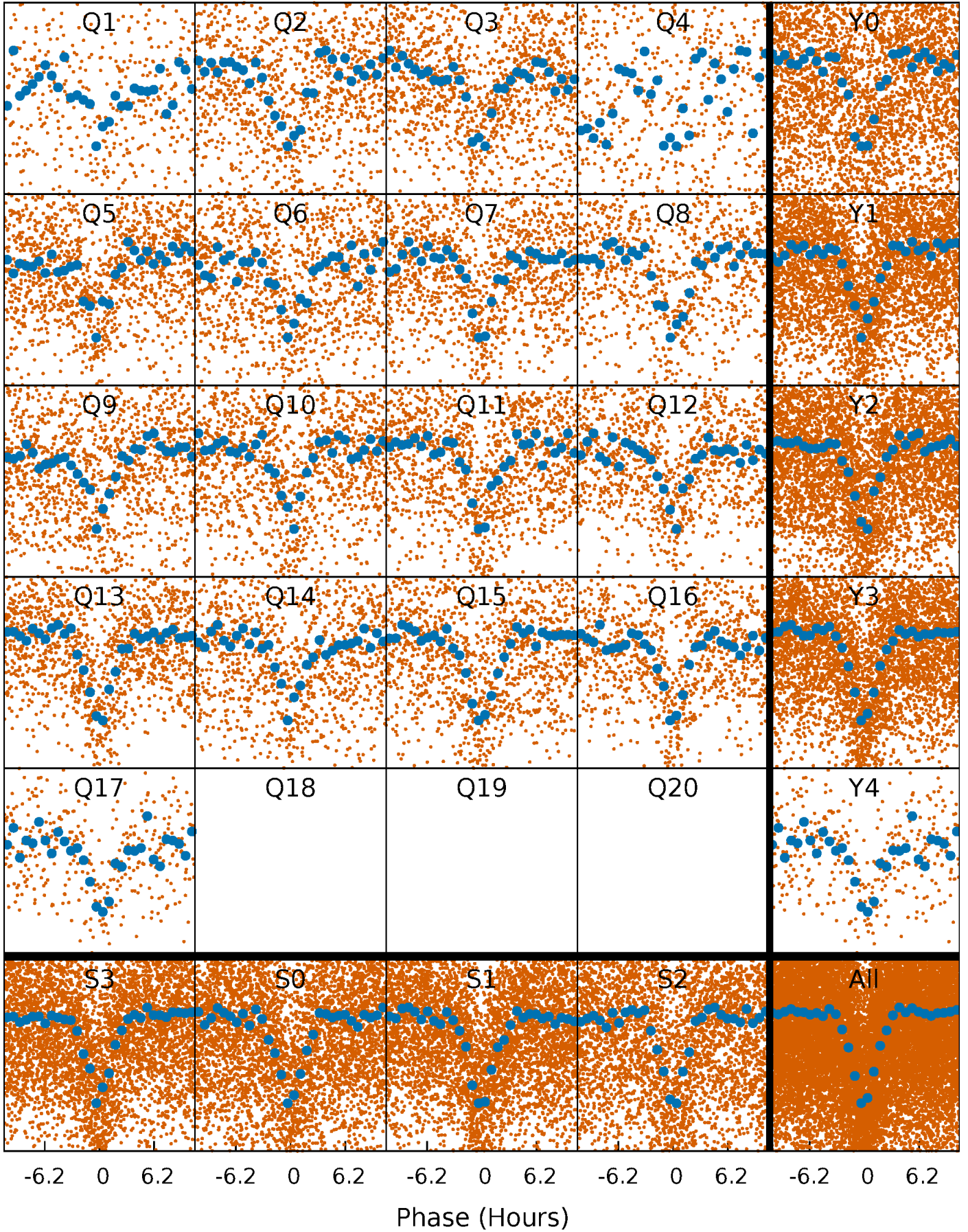


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

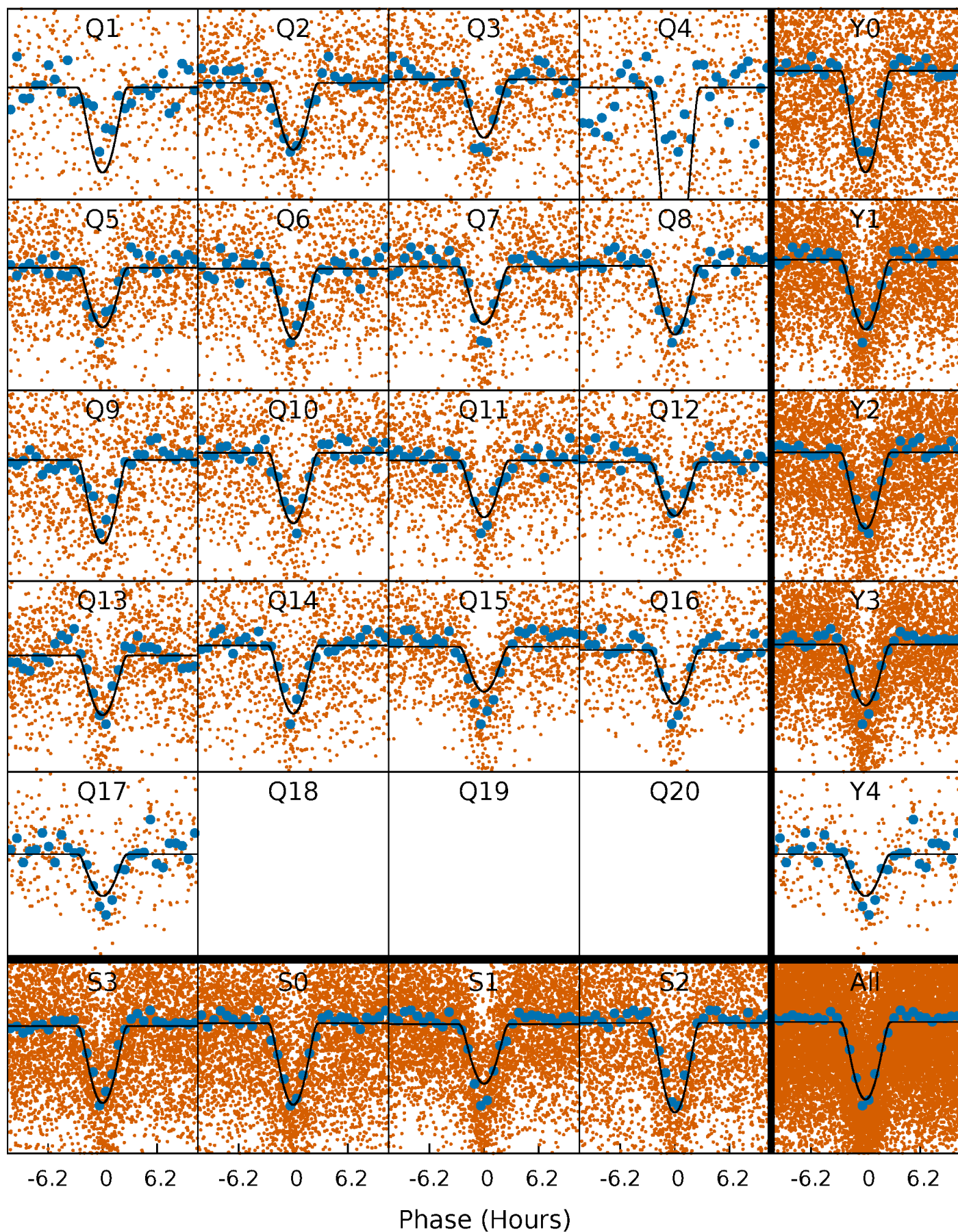
TCE 003438975-01   P= 2.975996 Days    $T_0=132.978361$  (BKJD)





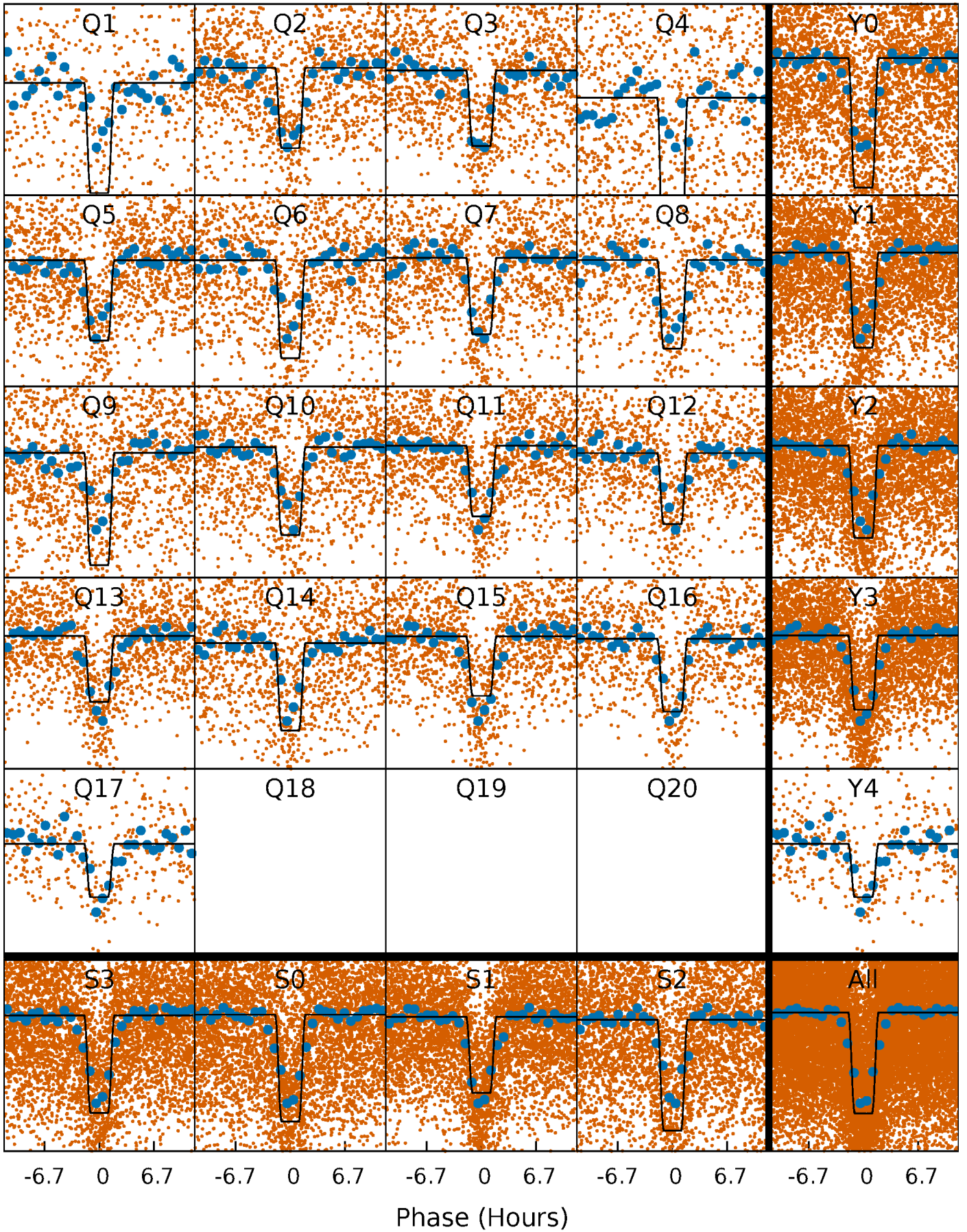
# DV Quarter-Phased Transit Curves

TCE 003438975-01 P= 2.975996 Days  $T_0=132.978361$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 003438975-01 P= 2.975988 Days  $T_0=132.979015$  (BKJD)

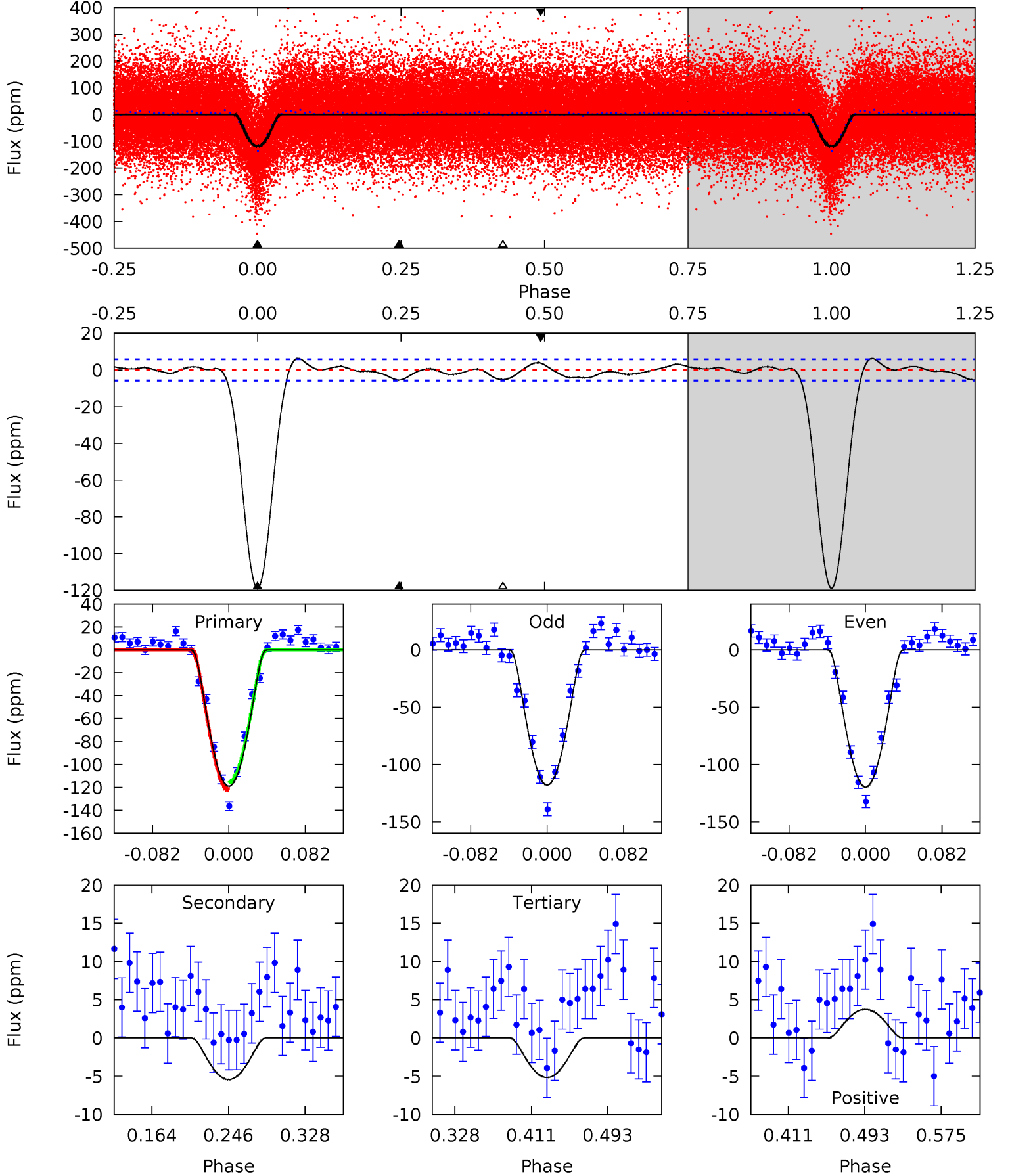




# DV Model-Shift Uniqueness Test

003438975-01, P = 2.975996 Days, E = 130.002365 Days

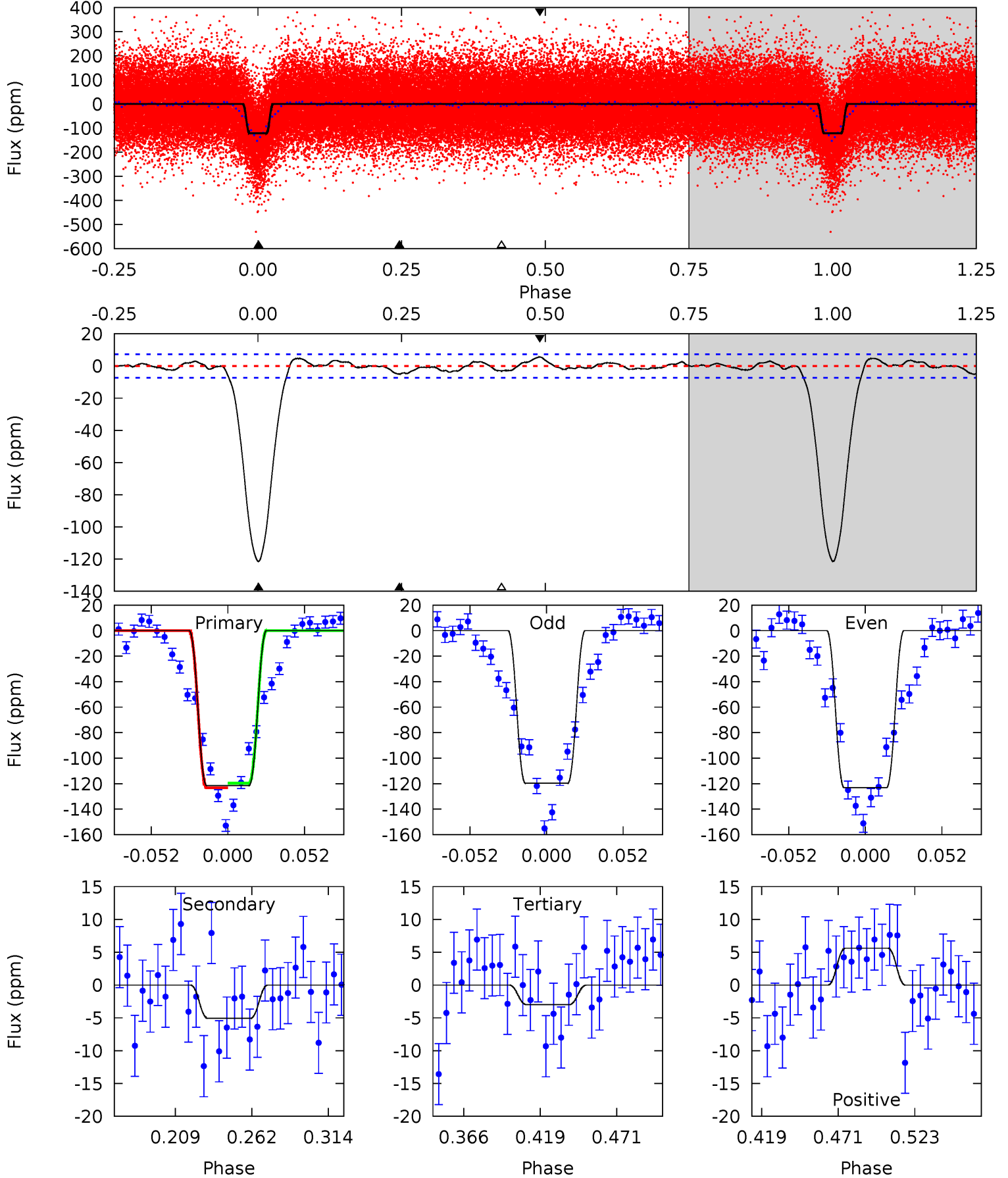
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
94.6	4.33	4.12	2.98	4.61	1.74	1.77	90.4	91.6	0.21	1.35	0.76	0.99	0.05	2.48



# Alt Model-Shift Uniqueness Test

003438975-01, P = 2.975988 Days, E = 130.003027 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
77.8	3.26	1.92	3.60	4.70	1.94	1.31	75.9	74.2	1.34	-0.34	1.12	0.99	0.04	1.16





### Stellar Parameters For KIC 003438975

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5947^{+178}_{-148}$	$3.939^{+0.308}_{-0.103}$	$-0.340^{+0.350}_{-0.250}$	$1.796^{+0.376}_{-0.564}$	$1.023^{+0.163}_{-0.147}$	$0.249^{+0.473}_{-0.092}$
	+3%/-2%	+8%/-3%	+103%/-74%	+21%/-31%	+16%/-14%	+190%/-37%
Source	PHO1	FLK73	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 003438975-01 / KOI 0300.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-5 \pm 1$	$3.84^{+2.46}_{-2.11}$	$2391^{+151}_{-206}$	$2130^{+1239}_{-4695}$	$0.347^{+1.321}_{-0.225}$
Alt.	$-5 \pm 2$	$2.67^{+2.28}_{-1.68}$	$2394^{+150}_{-218}$	$2751^{+1221}_{-5182}$	$0.634^{+4.220}_{-0.456}$

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

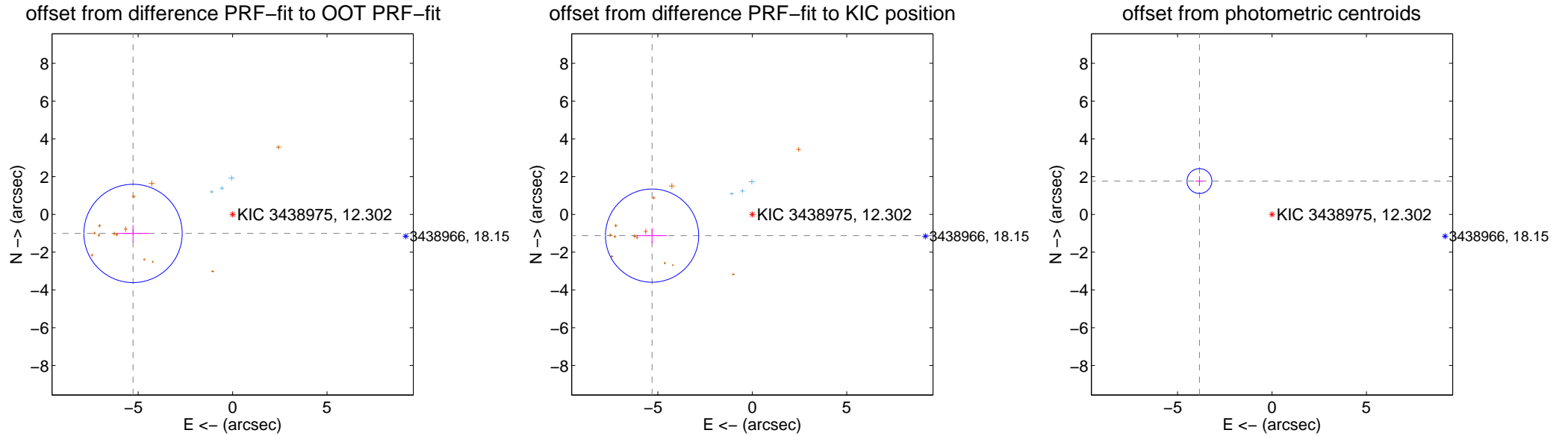
## DV Centroid Data

Supplemental centroid analysis for 003438975-01. Kepler magnitude: 12.30. Transit SNR 49.60

There are 3 quarters with good PRF difference image offsets

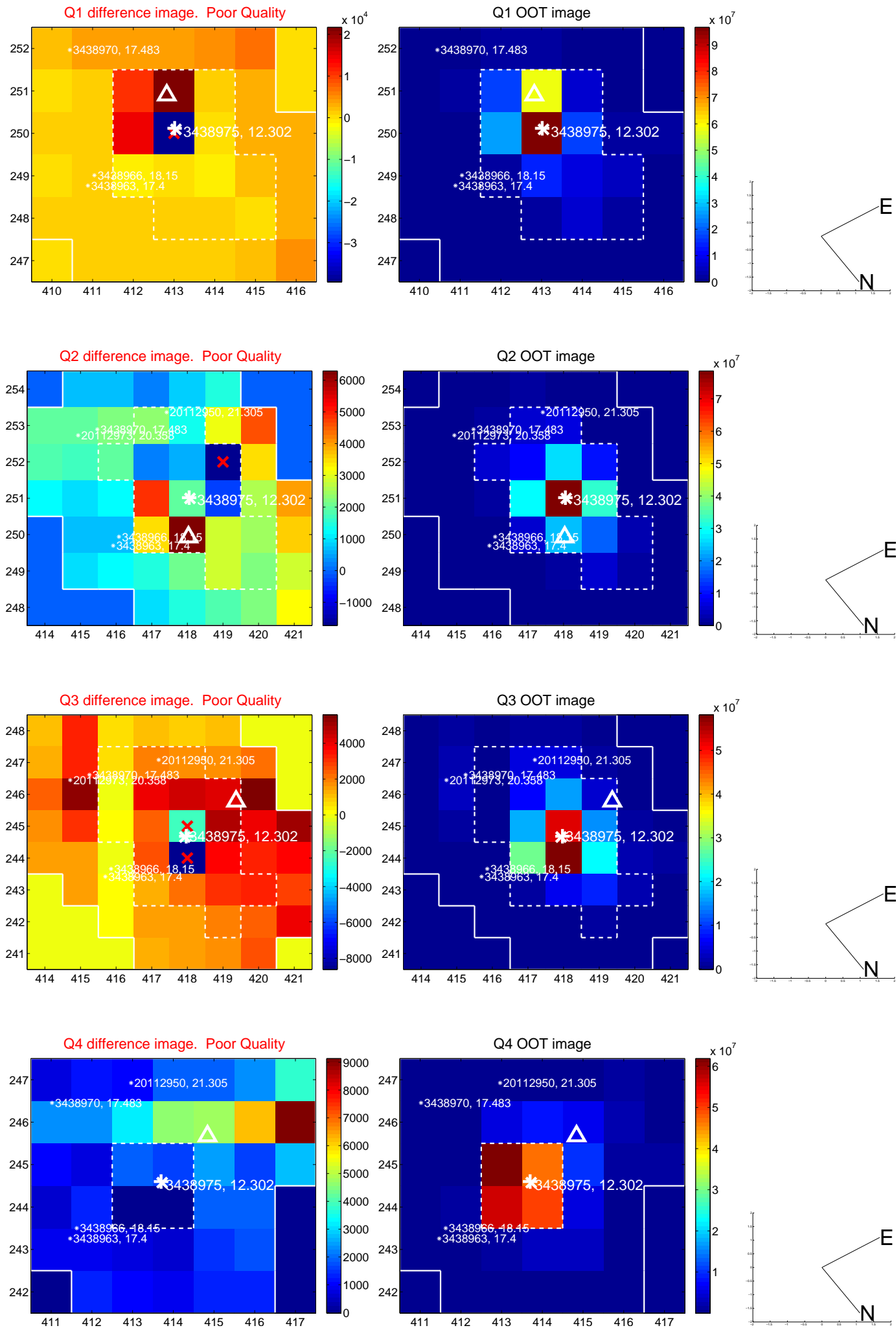
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$5.368 \pm 0.868$	6.19	$5.272 \pm 0.848$	$-1.008 \pm 0.441$
PRF-fit source offset from KIC position	$5.425 \pm 0.823$	6.59	$5.307 \pm 0.802$	$-1.124 \pm 0.398$
photometric centroid source offset	$4.23 \pm 0.22$	19.28	$3.84 \pm 0.21$	$1.77 \pm 0.25$

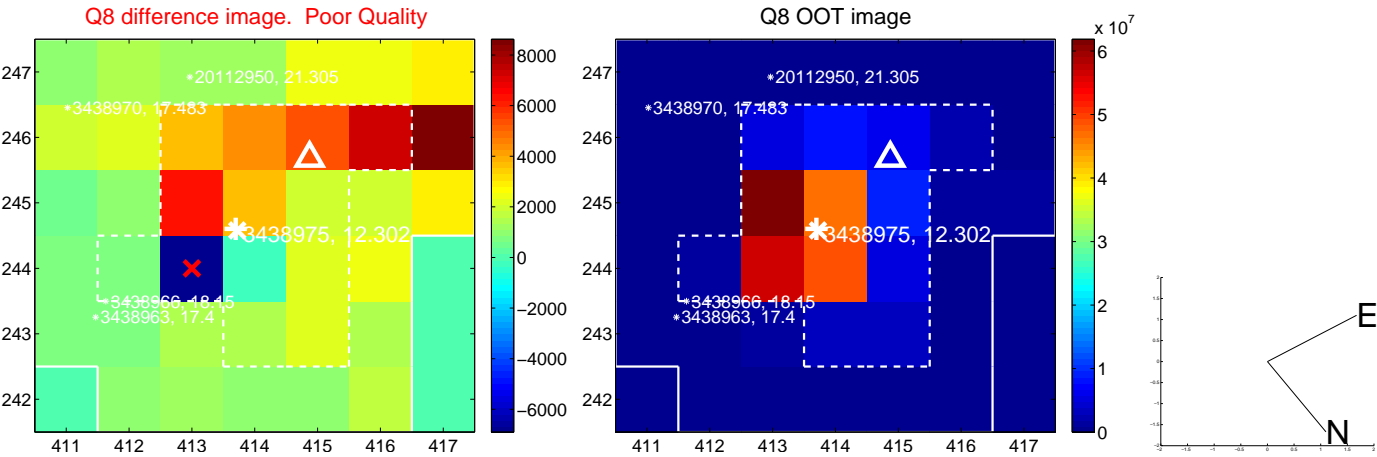
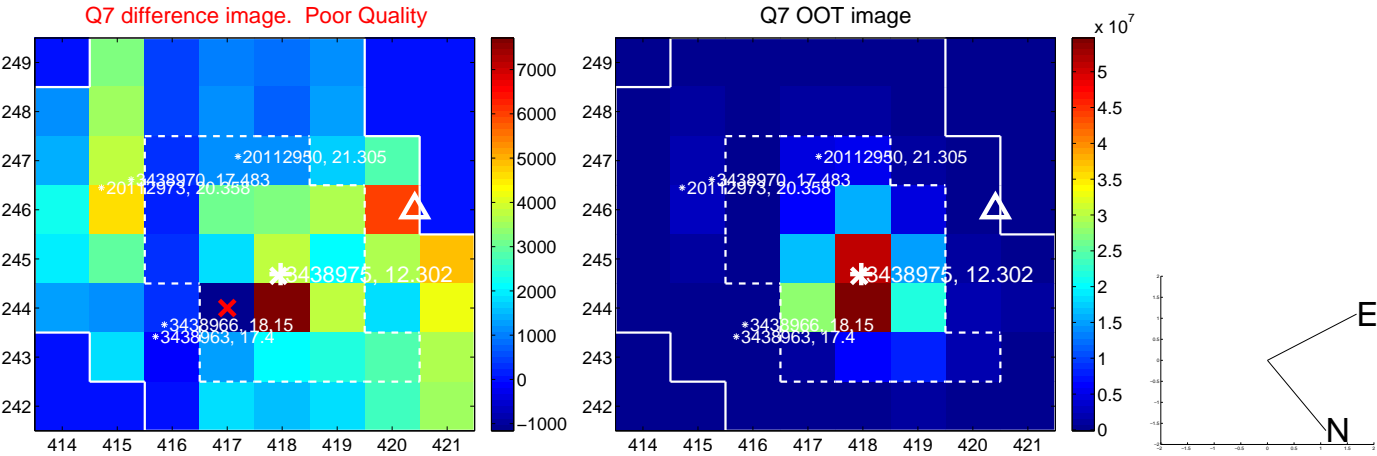
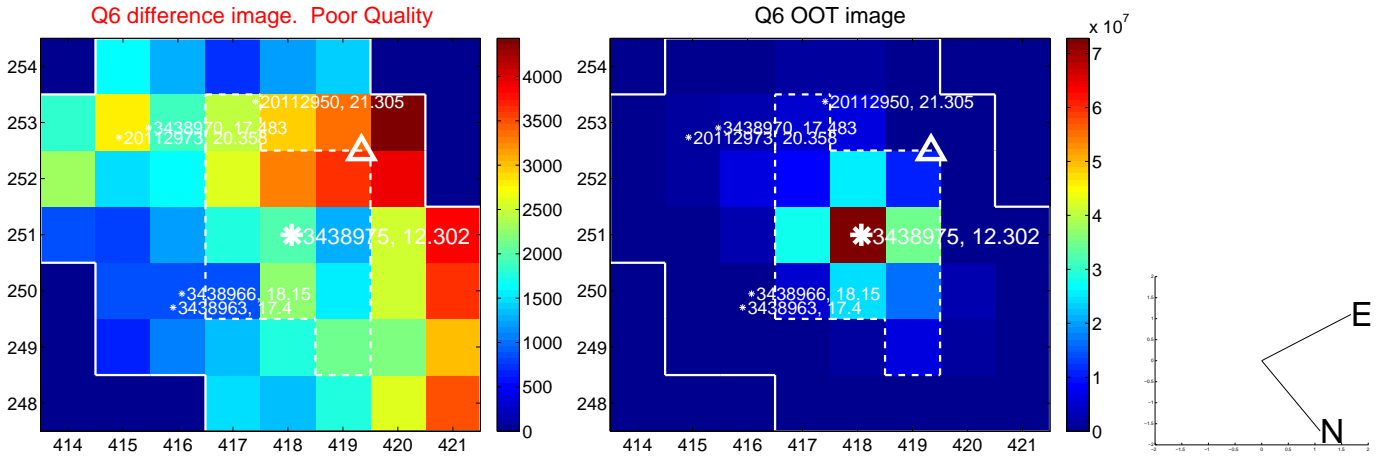
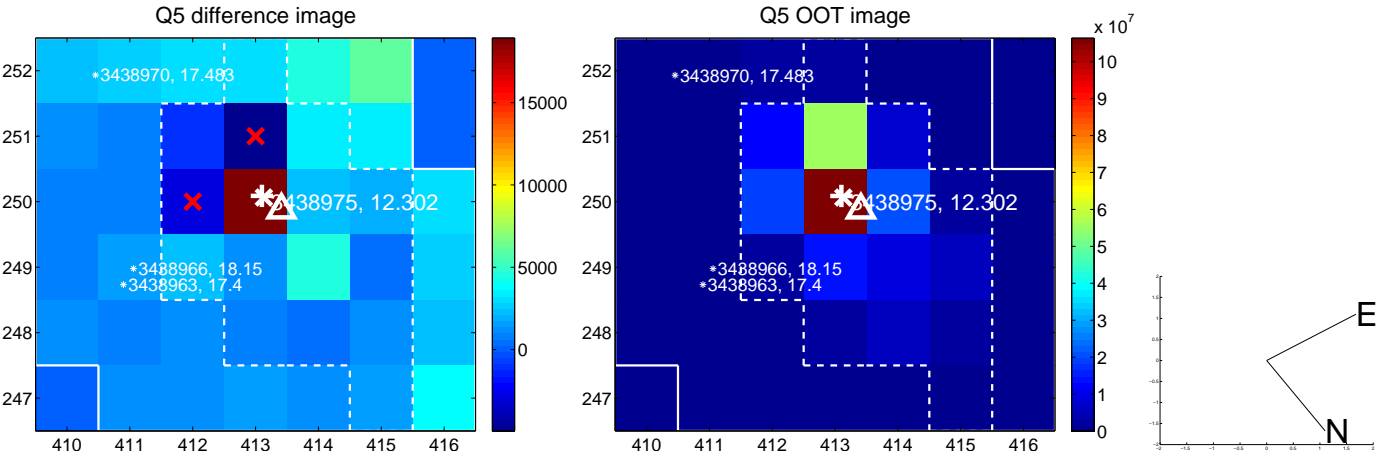


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

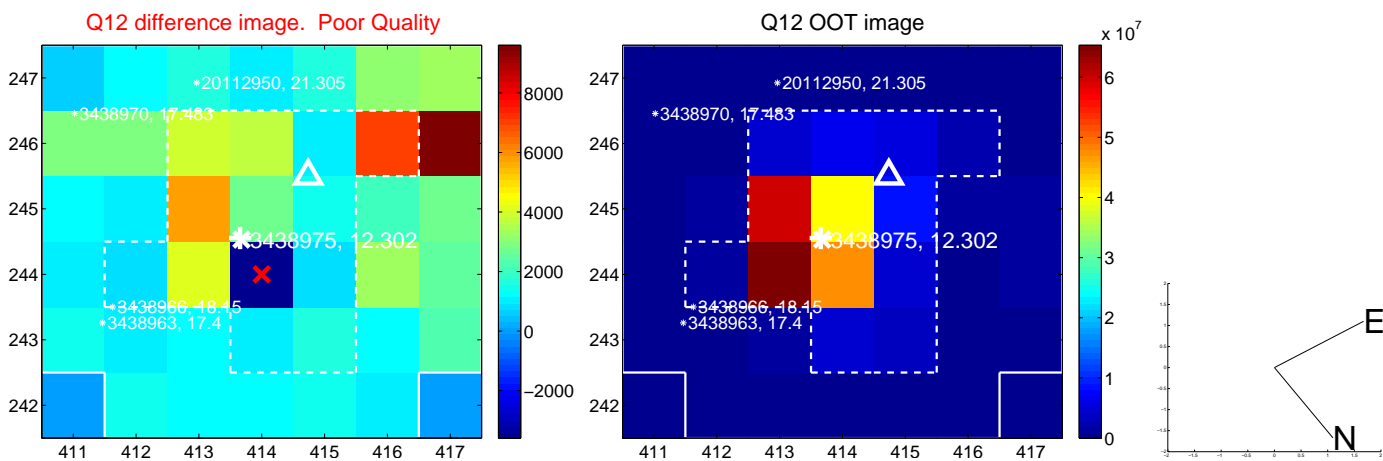
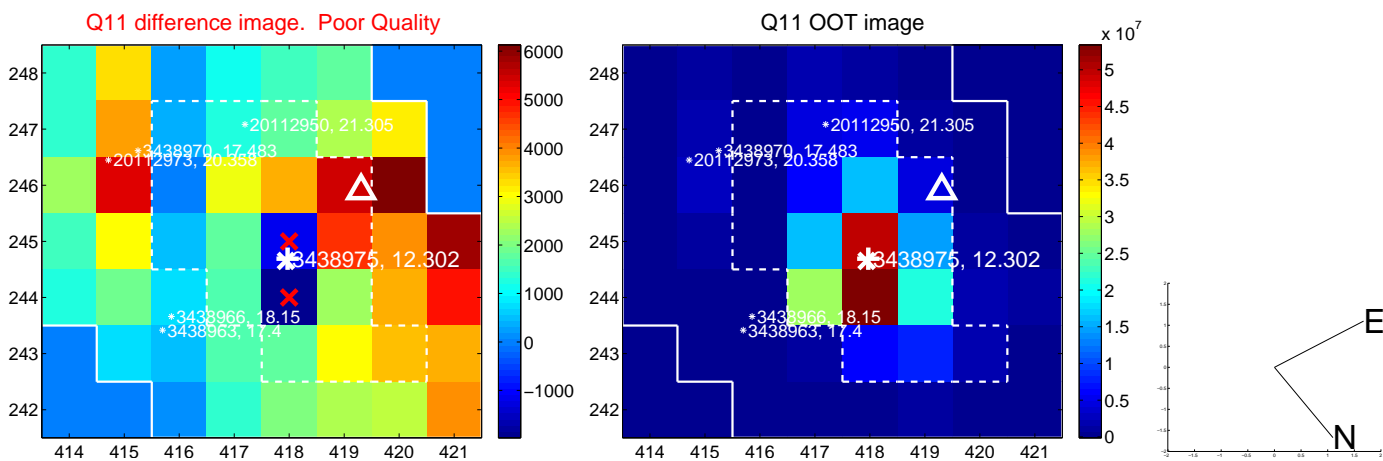
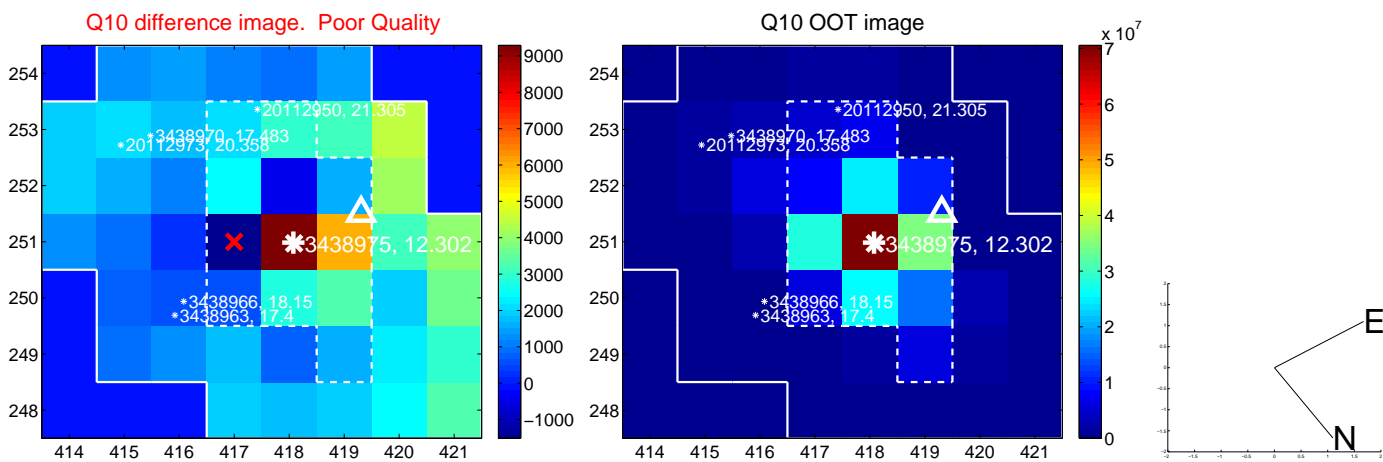
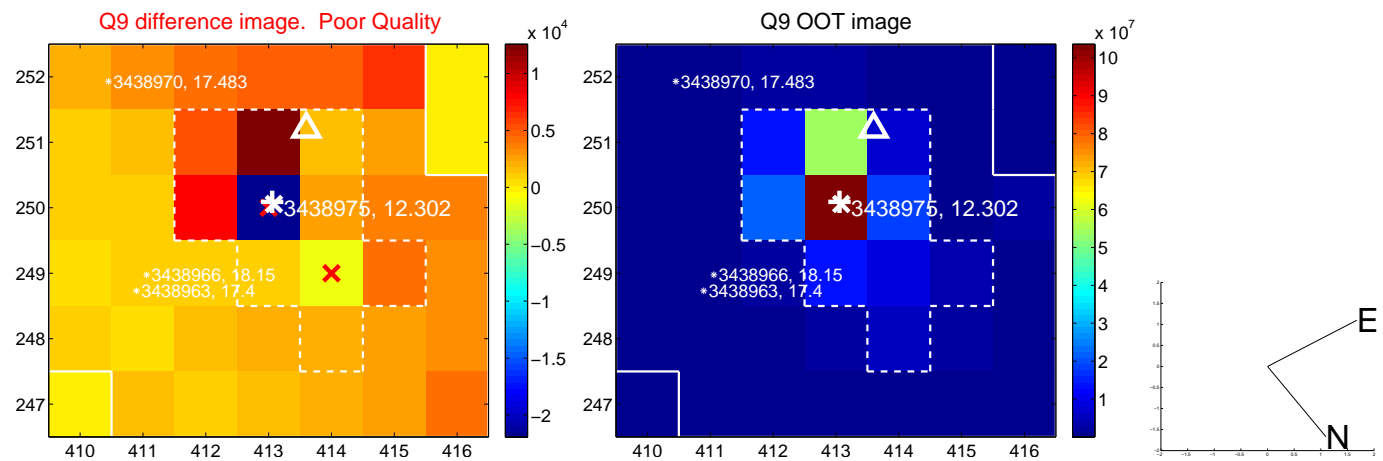


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

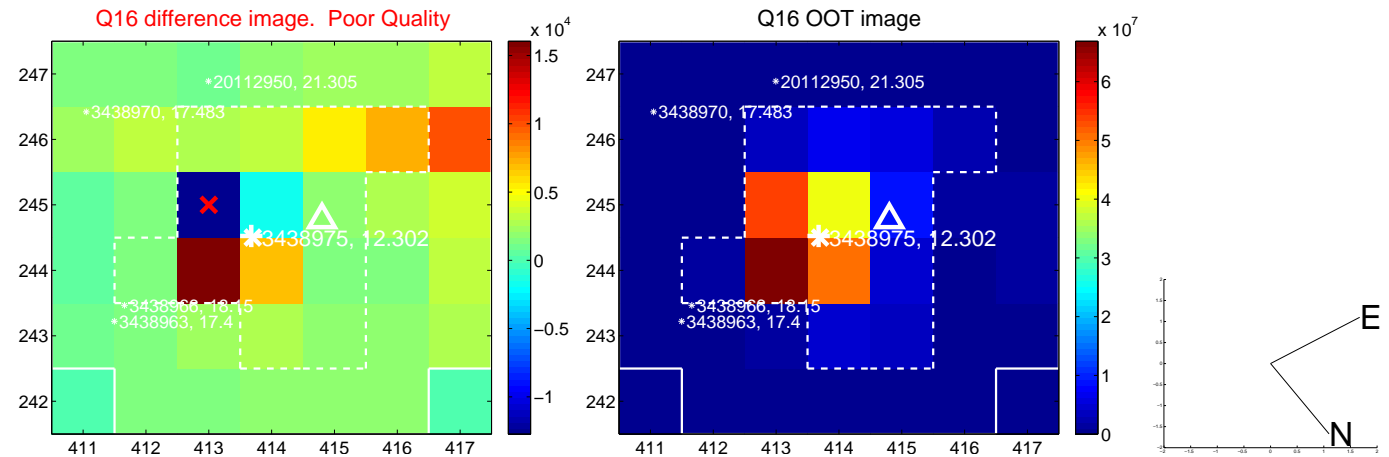
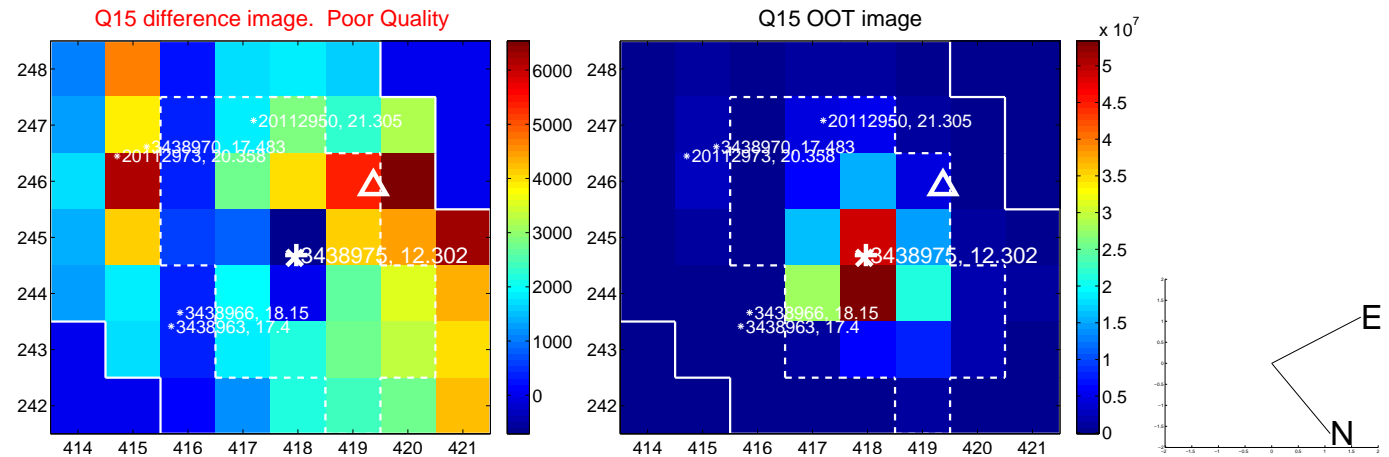
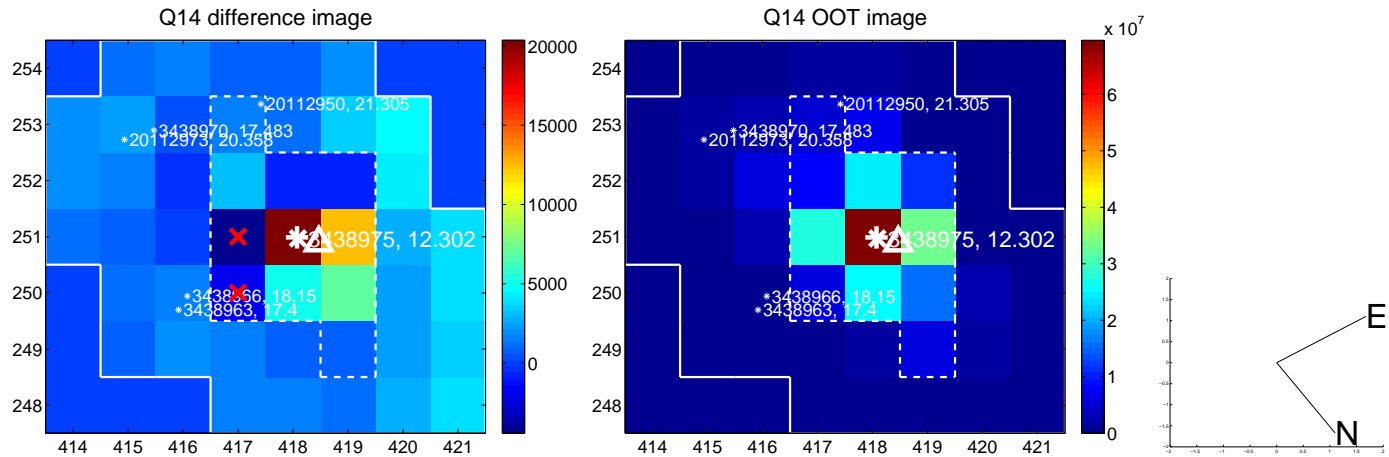
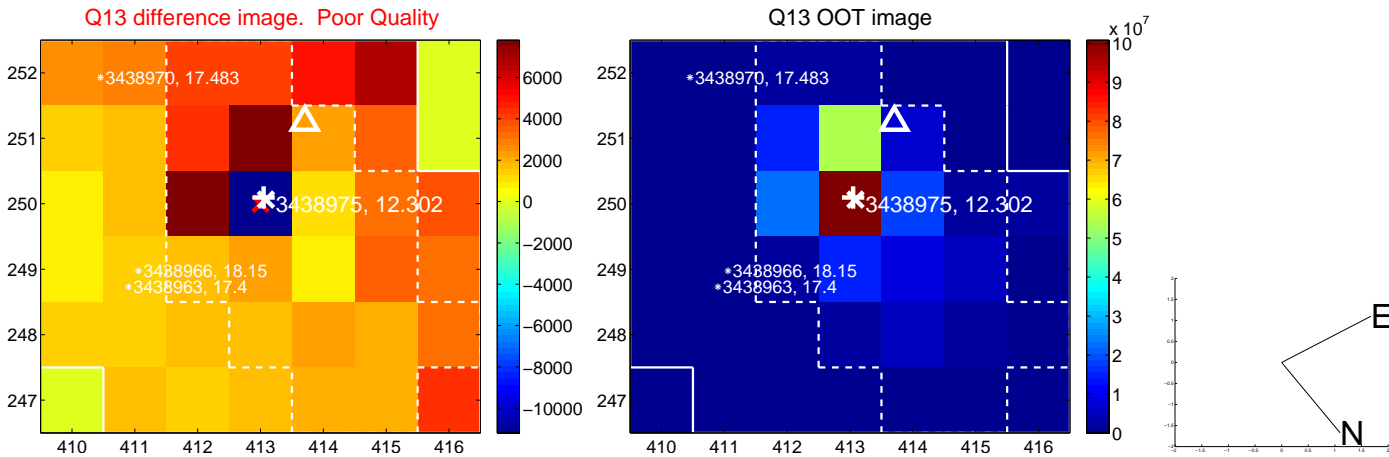




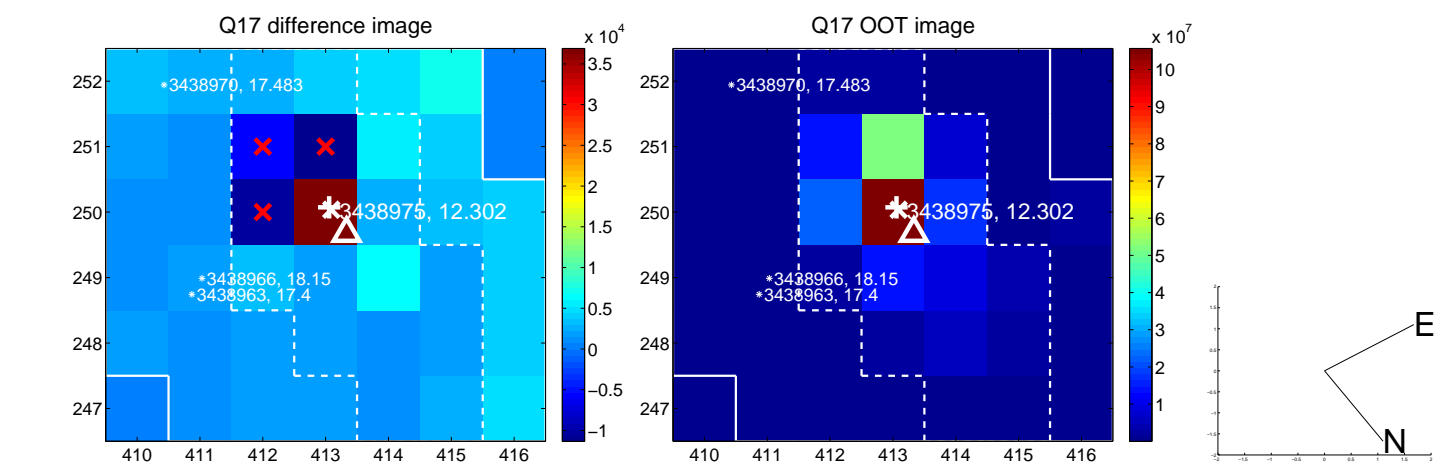
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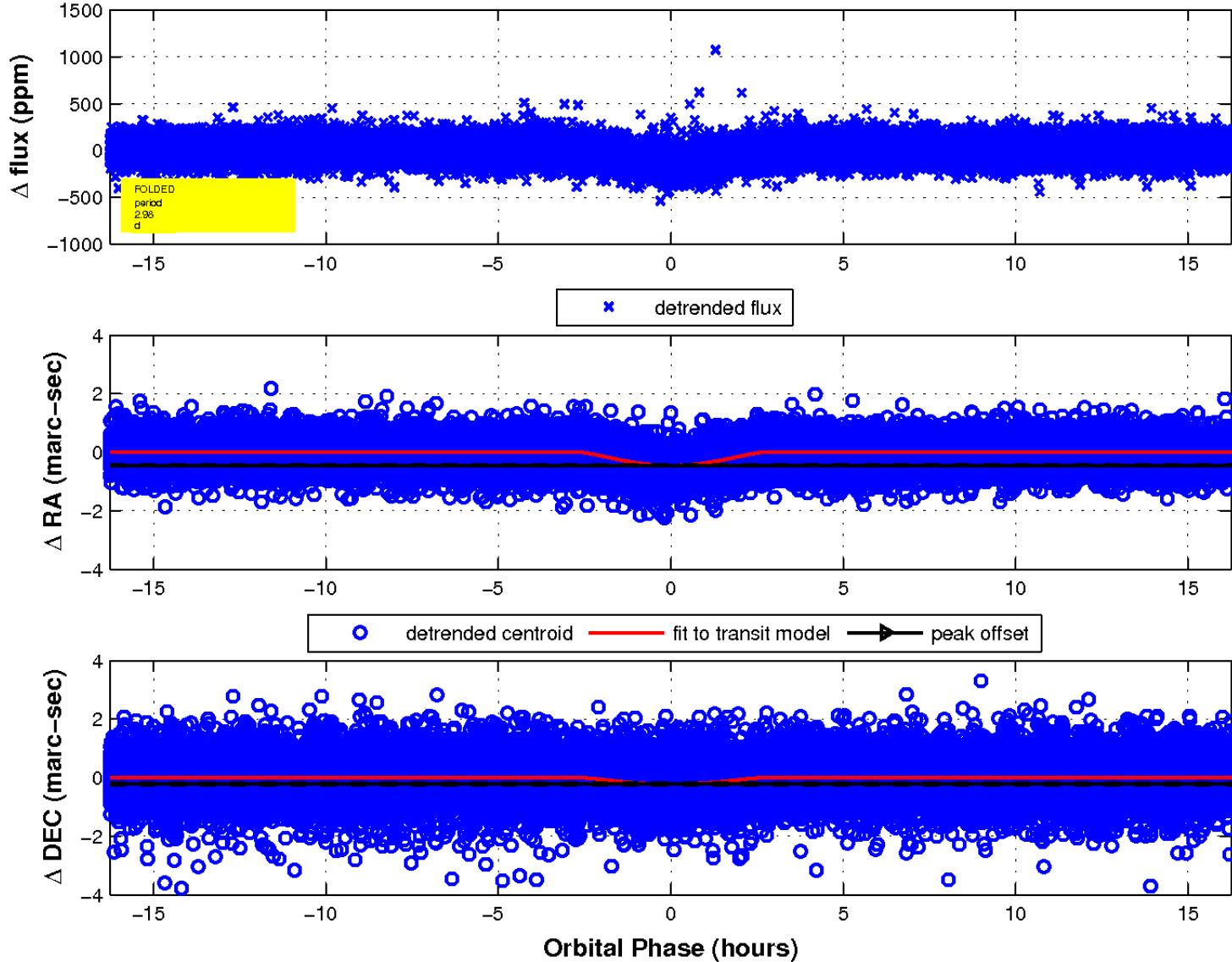
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

