

# KIC 007304449

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007304449-01	OBS	1702.01	1.538177	131.822853	781.7	1.202	28.2	44.9	0.27	3364	0.92	31.06

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007304449-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

**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 007304449-01

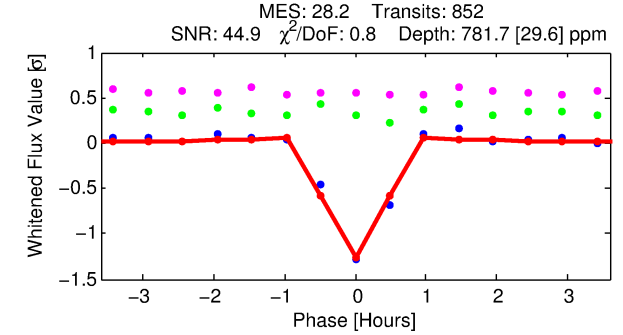
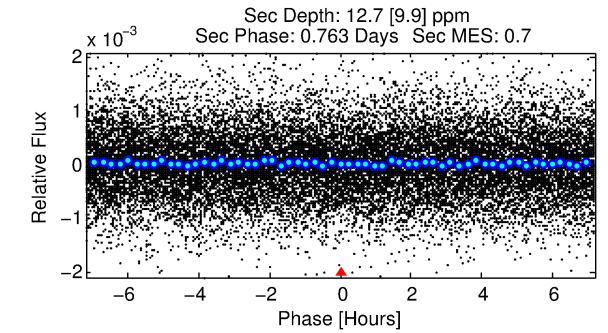
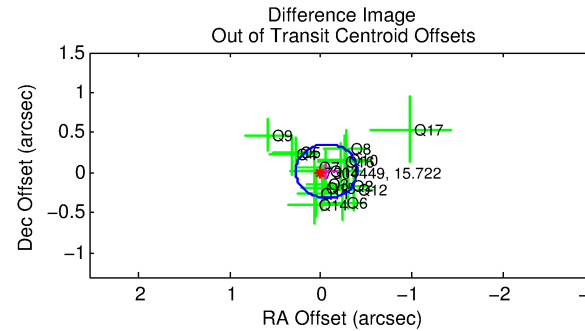
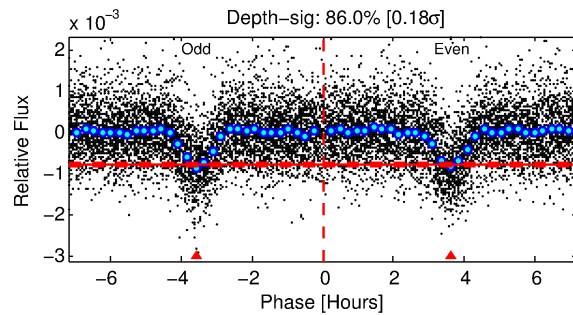
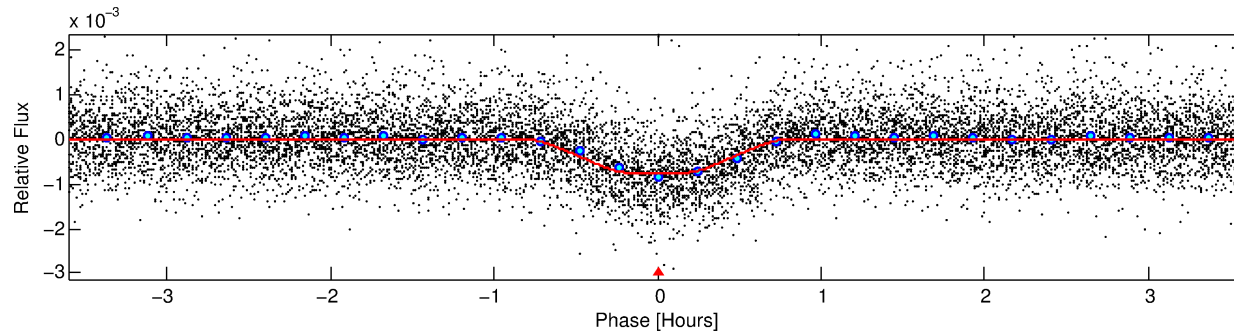
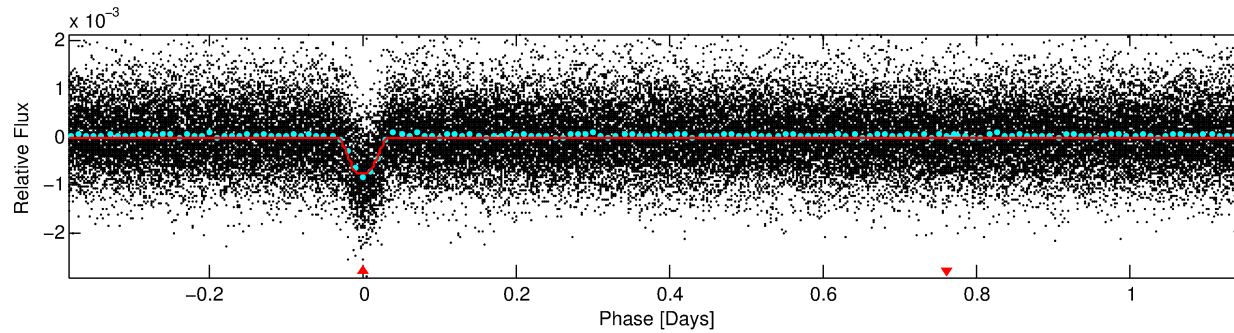
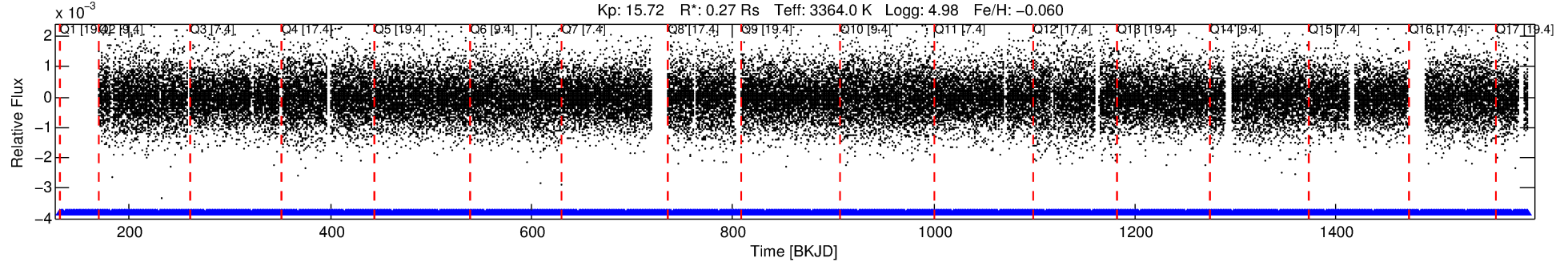
No Significant Match Found

# DV One-Page Summary

KIC: 7304449 Candidate: 1 of 1 Period: 1.538 d

KOI: K01702.01 Corr: 0.949

Kp: 15.72 R\*: 0.27 Rs Teff: 3364.0 K Logg: 4.98 Fe/H: -0.060



## DV Fit Results:

Period = 1.53818 [0.00000] d  
Epoch = 131.8229 [0.0004] BKJD  
Rp/R\* = 0.0308 [0.0043]  
a/R\* = 5.01 [2.75]  
b = 0.90 [0.12]  
Seff = 31.06 [6.37]  
Teq = 602 [31] K  
Rp = 0.92 [0.24] Re  
a = 0.0167 [0.0027] AU  
Ag = 2.29 [1.95] [0.66σ]  
Teffp = 1145 [239] K [2.25σ]

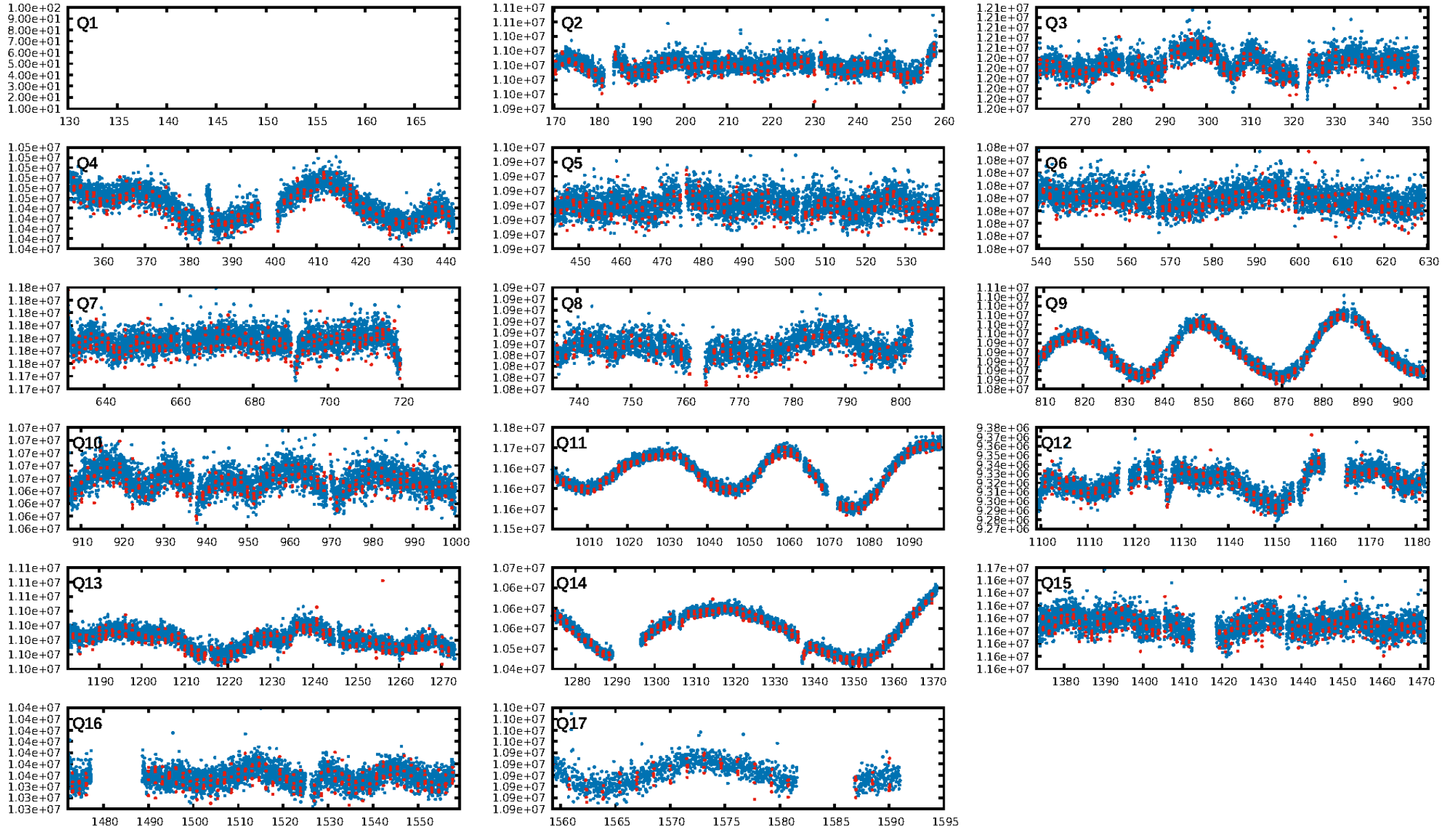
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.12e-170  
RollingBand-fgt: 1.00 [834/834]  
GhostDiagnostic-chr: 2.485  
Centroid-sig: 0.7%  
Centroid-so: 1.334 arcsec [5.03σ]  
OotOffset-rm: 0.064 arcsec [0.57σ]  
KicOffset-rm: 0.683 arcsec [6.55σ]  
OotOffset-st: 4/4/4/4 [16]  
KicOffset-st: 4/4/4/4 [16]  
DiffImageQuality-fgm: 1.00 [16/16]  
DiffImageOverlap-fno: 1.00 [16/16]

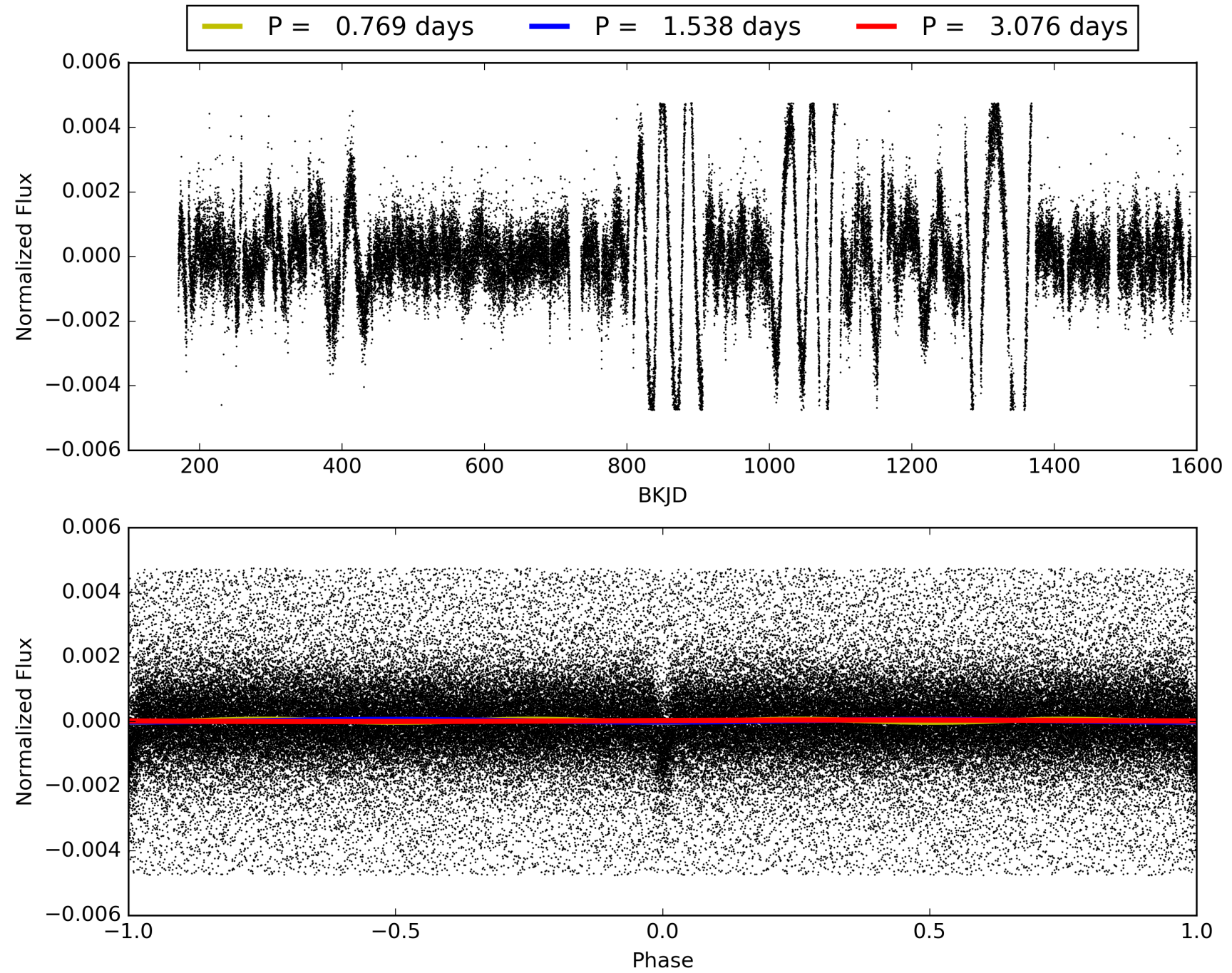
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:31:08 Z

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

# TCE 007304449-01, PDC Light Curves

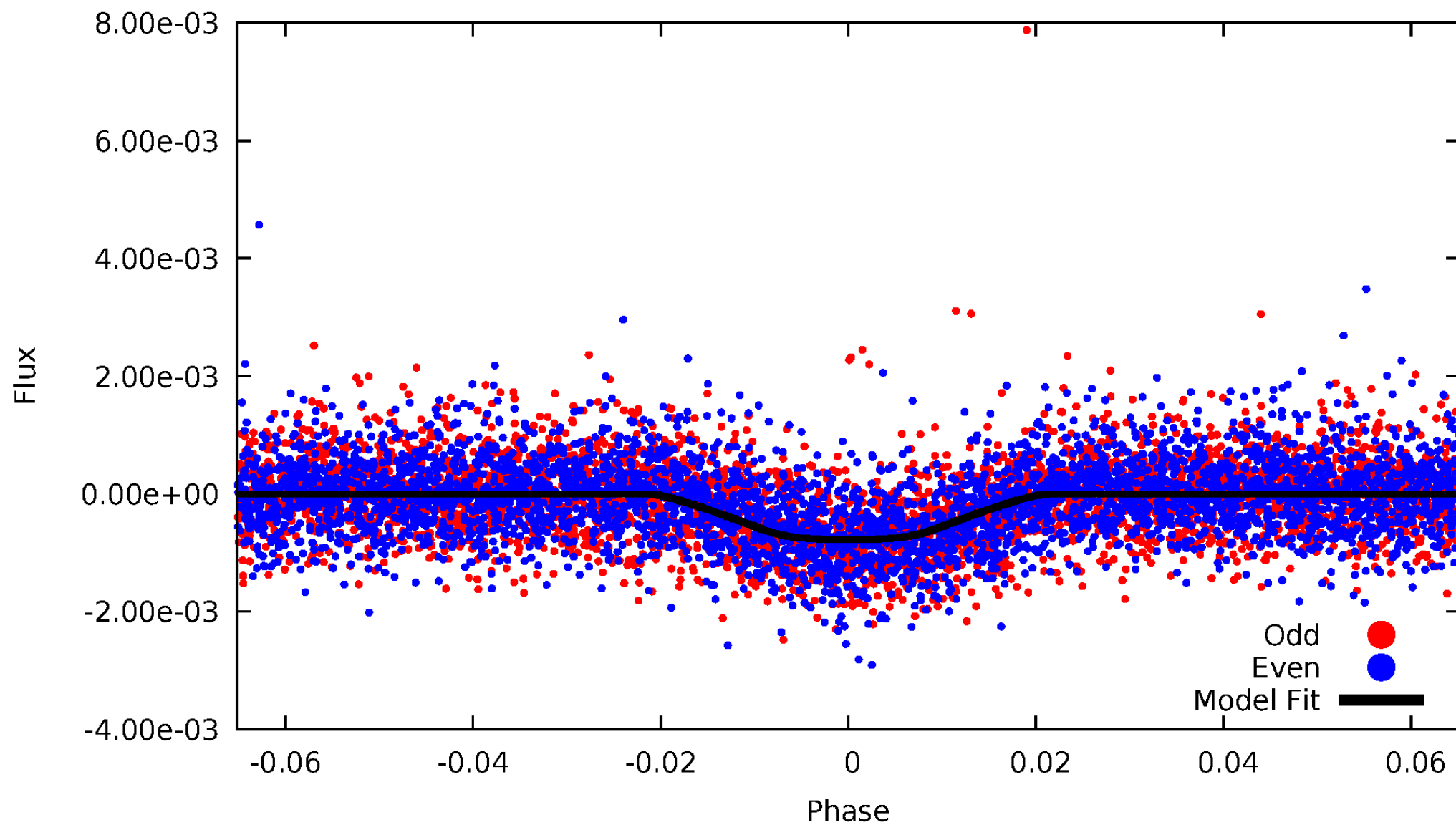


TCE 007304449-01



# DV Odd/Even

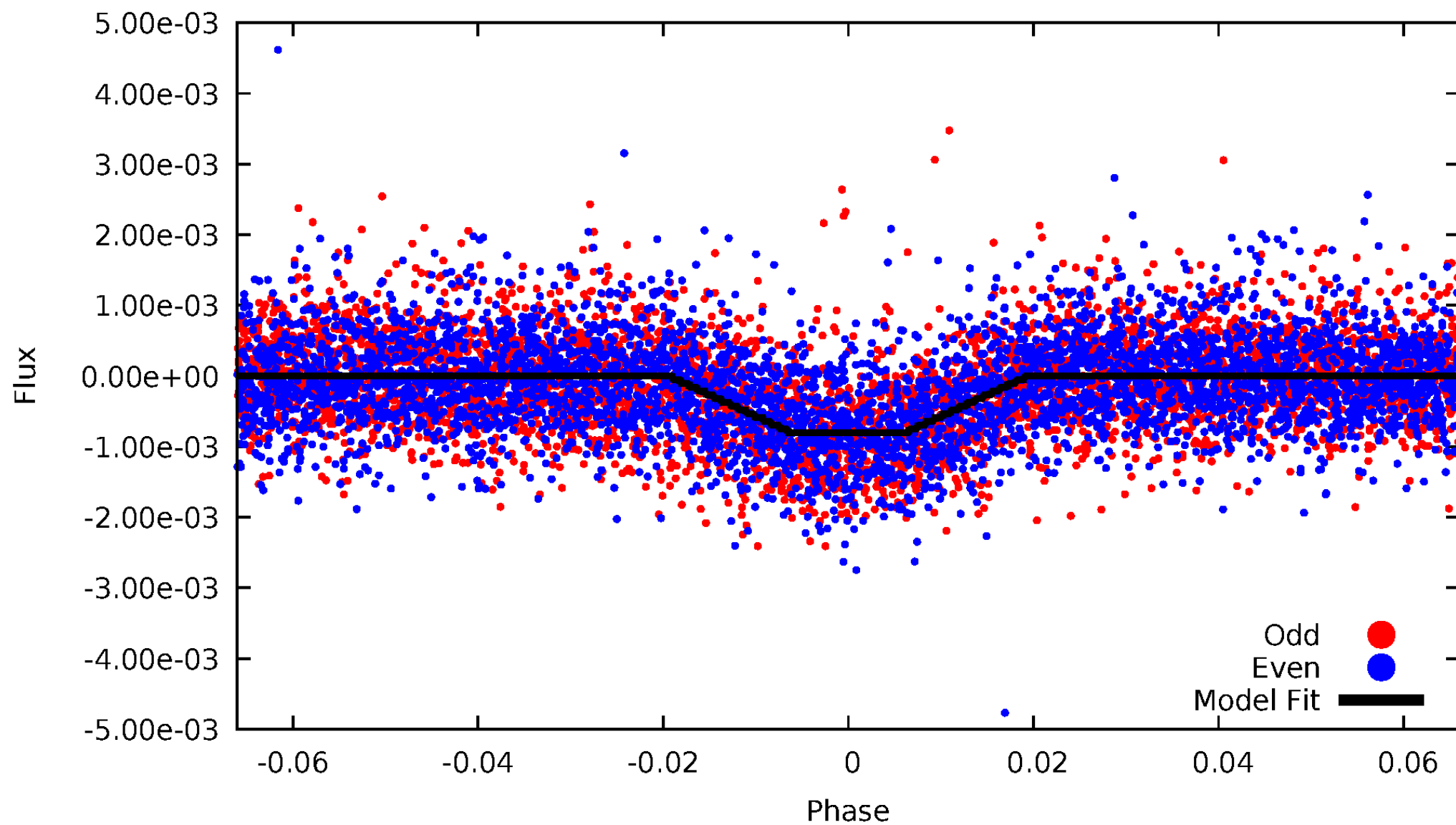
TCE 007304449-01





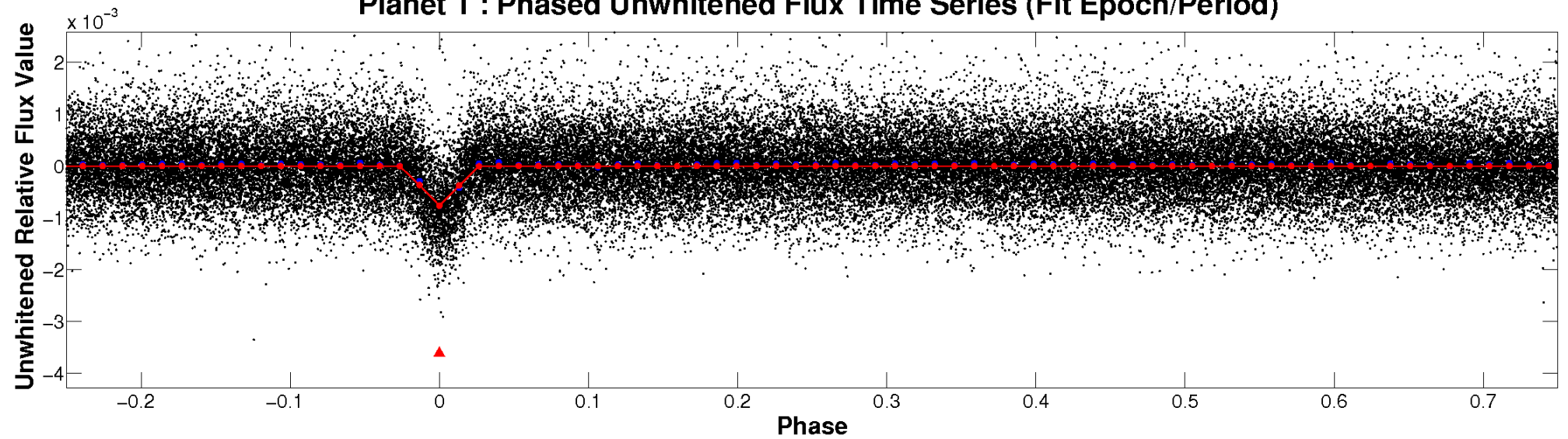
# ALT Odd/Even

TCE 007304449-01

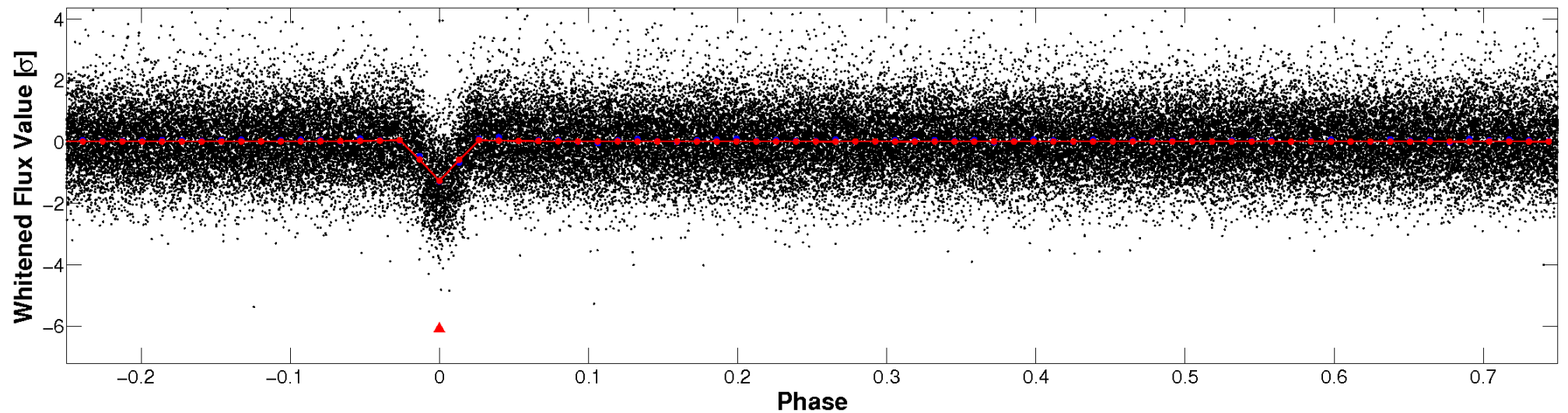


# Non-Whitened Vs. Whitened Light Curve

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

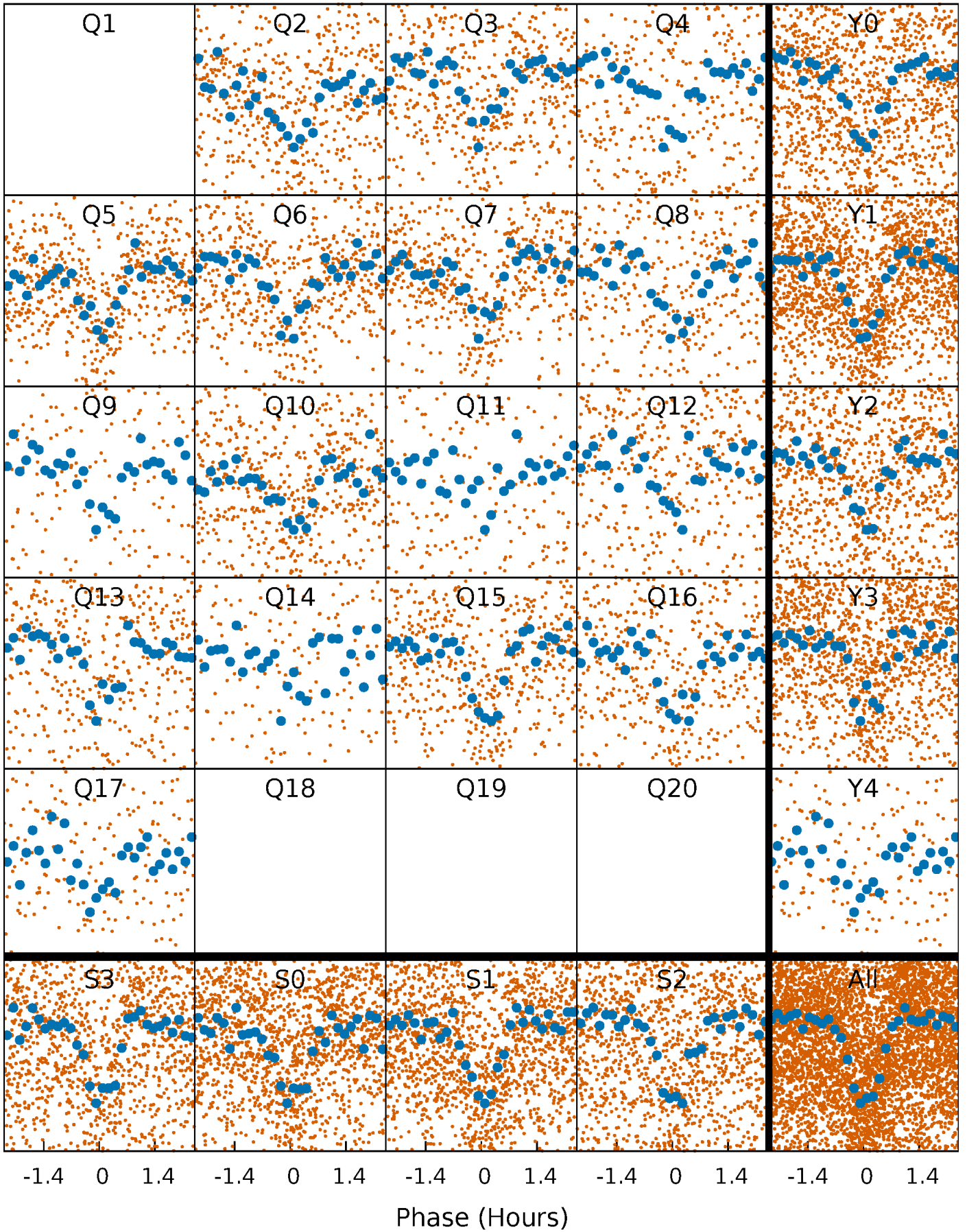


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

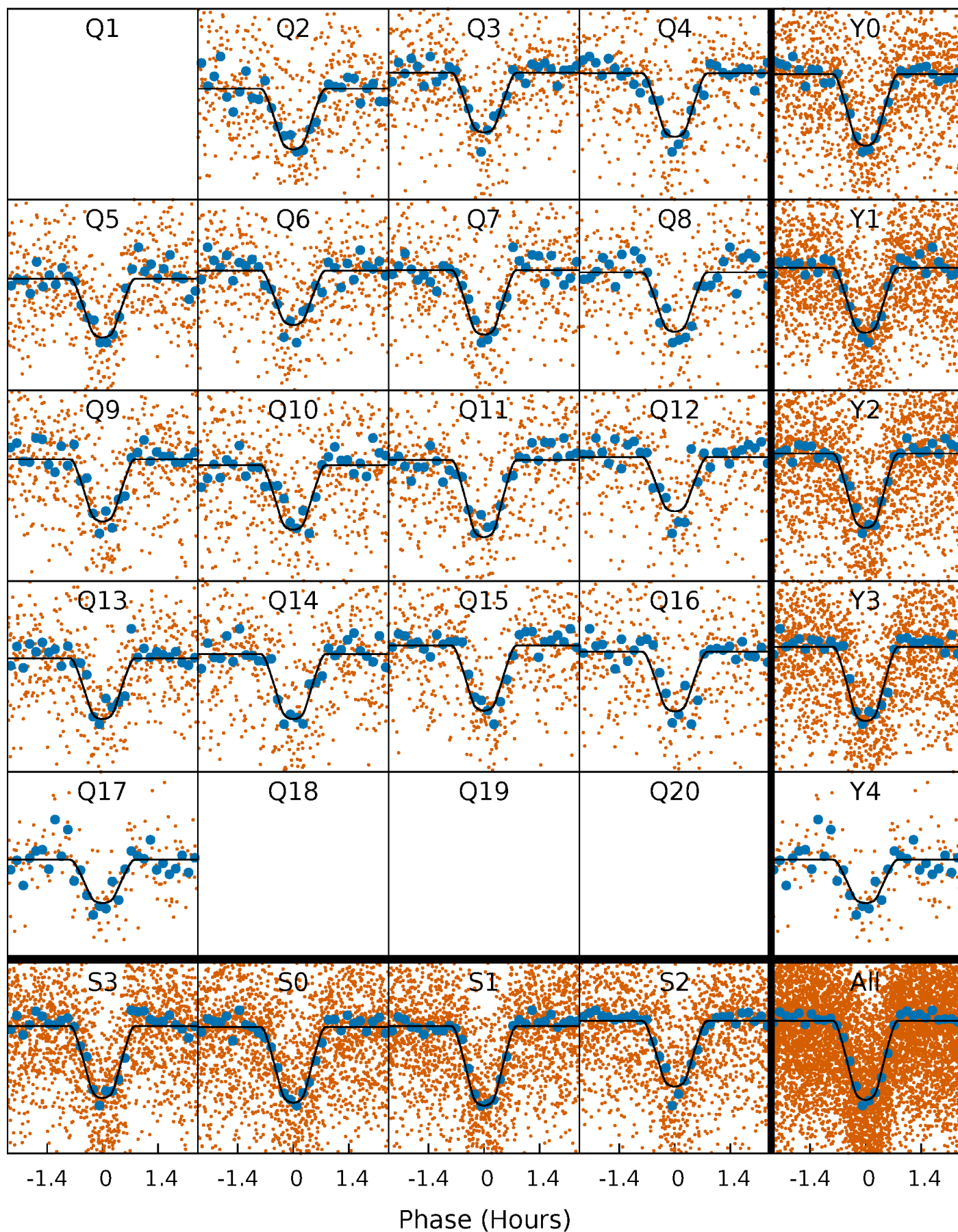
TCE 007304449-01 P= 1.538177 Days  $T_0=131.822853$  (BKJD)





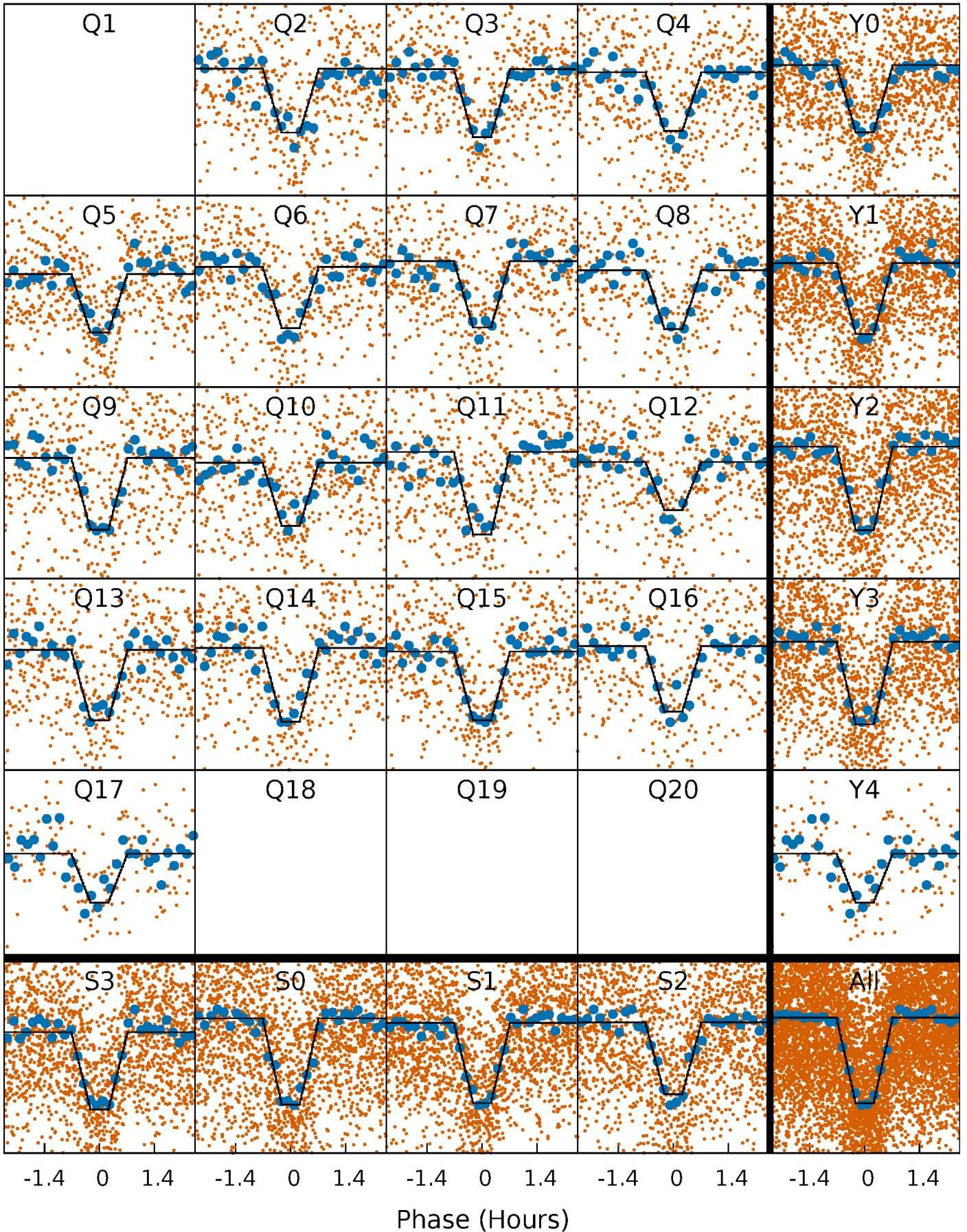
# DV Quarter-Phased Transit Curves

TCE 007304449-01 P= 1.538177 Days  $T_0=131.822853$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

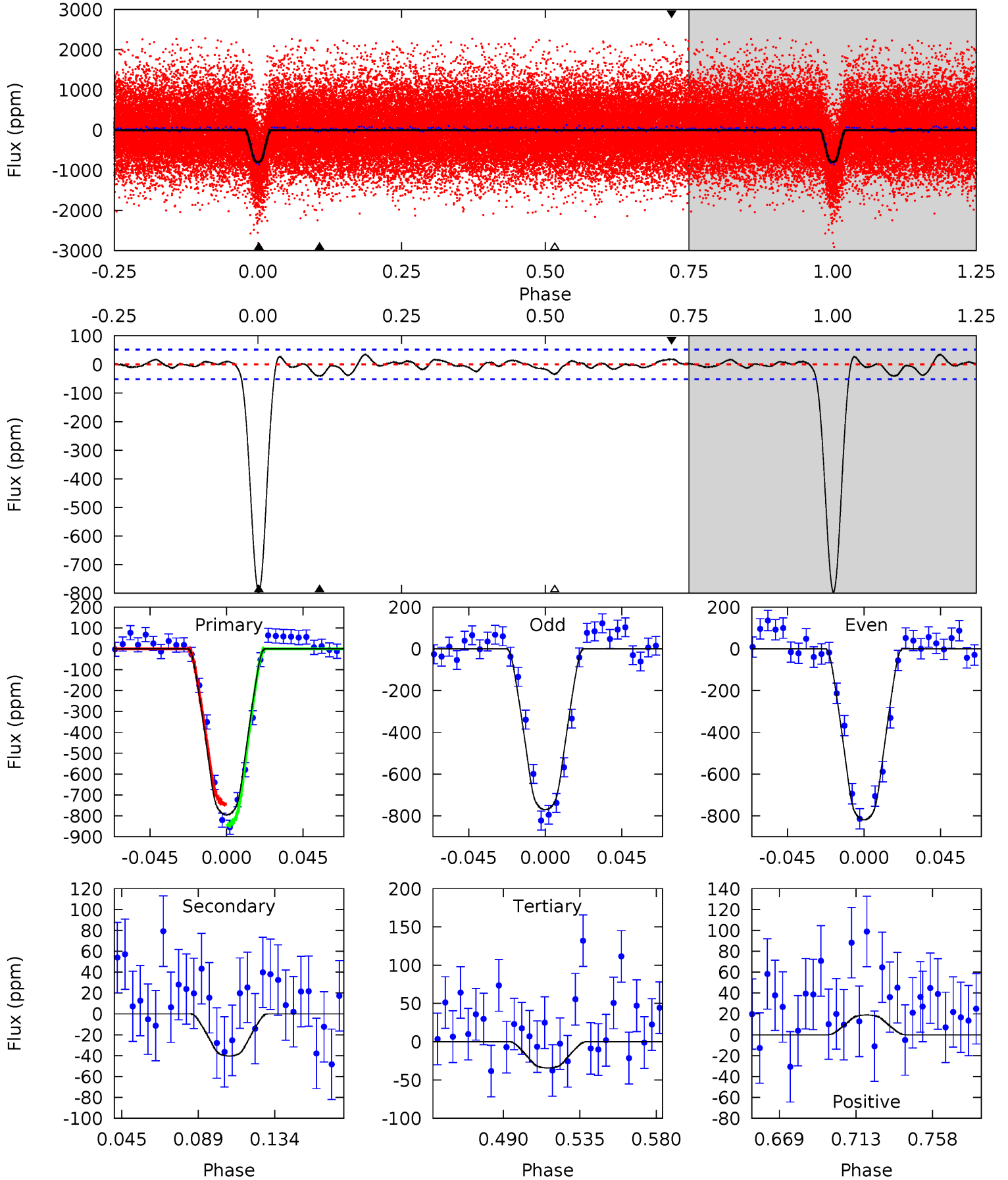
TCE 007304449-01 P= 1.538185 Days  $T_0=131.820638$  (BKJD)



# DV Model-Shift Uniqueness Test

007304449-01, P = 1.538177 Days, E = 131.822853 Days

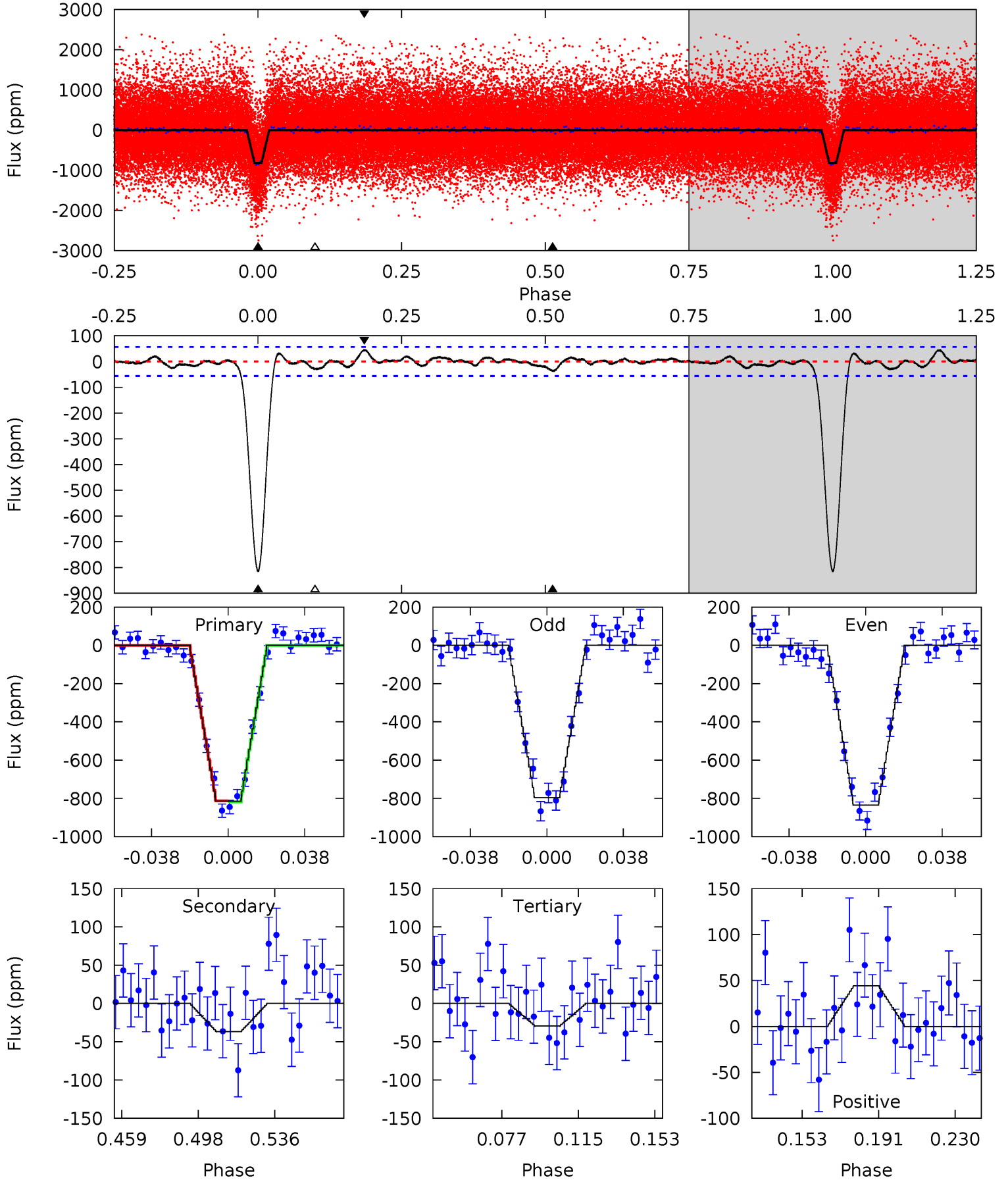
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
72.7	3.68	3.12	1.73	4.73	2.01	1.07	69.5	70.9	0.56	1.95	2.20	0.99	0.04	4.64



# Alt Model-Shift Uniqueness Test

007304449-01, P = 1.538185 Days, E = 131.820638 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
68.7	3.10	2.49	3.73	4.76	2.07	0.97	66.2	65.0	0.61	-0.63	1.67	0.97	0.05	0.30





### Stellar Parameters For KIC 007304449

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3364^{+74}_{-67}$	$4.978^{+0.070}_{-0.070}$	$-0.060^{+0.150}_{-0.100}$	$0.274^{+0.062}_{-0.050}$	$0.260^{+0.072}_{-0.059}$	$17.850^{+8.833}_{-4.989}$
	+2%/-2%	+1%/-1%	+250%/-167%	+23%/-18%	+28%/-23%	+49%/-28%
Source	SPE70	SPE60	SPE70	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 007304449-01 / KOI 1702.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-40 \pm 11$	$0.92^{+0.17}_{-0.15}$	$841^{+35}_{-33}$	$2222^{+104}_{-115}$	$7.405^{+3.459}_{-2.705}$
Alt.	$-37 \pm 12$	$0.84^{+0.16}_{-0.15}$	$841^{+33}_{-31}$	$2239^{+120}_{-122}$	$7.829^{+4.206}_{-3.010}$

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

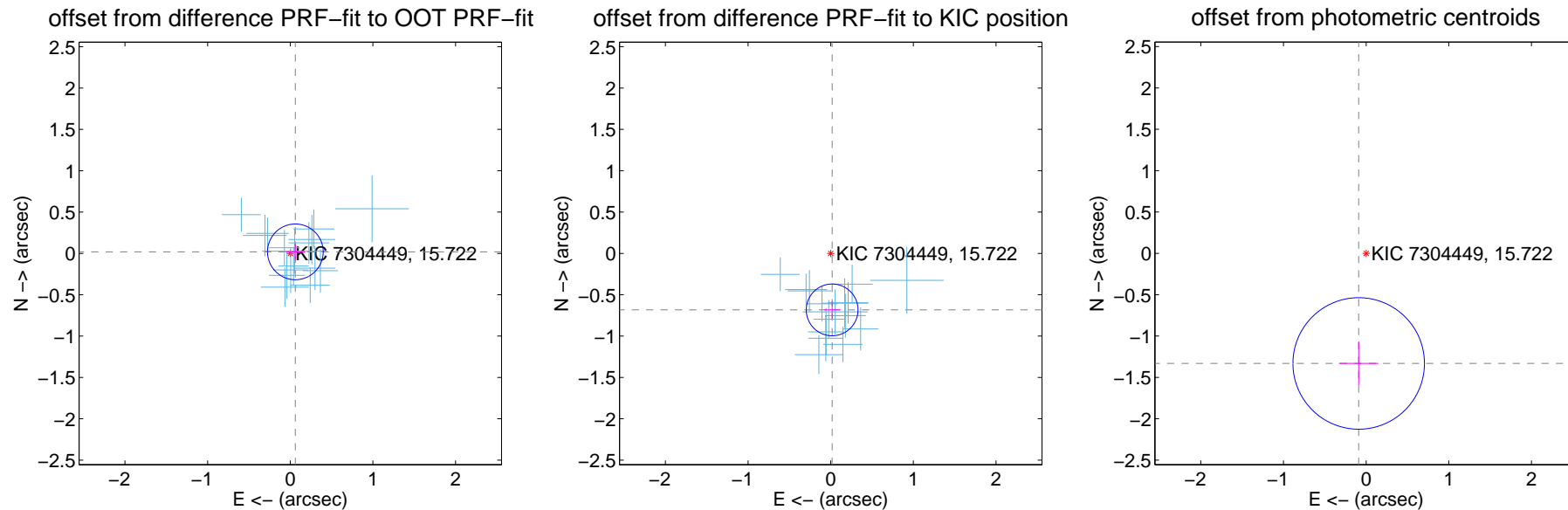
## DV Centroid Data

Supplemental centroid analysis for 007304449-01. Kepler magnitude: 15.72. Transit SNR 44.86

There are 16 quarters with good PRF difference image offsets

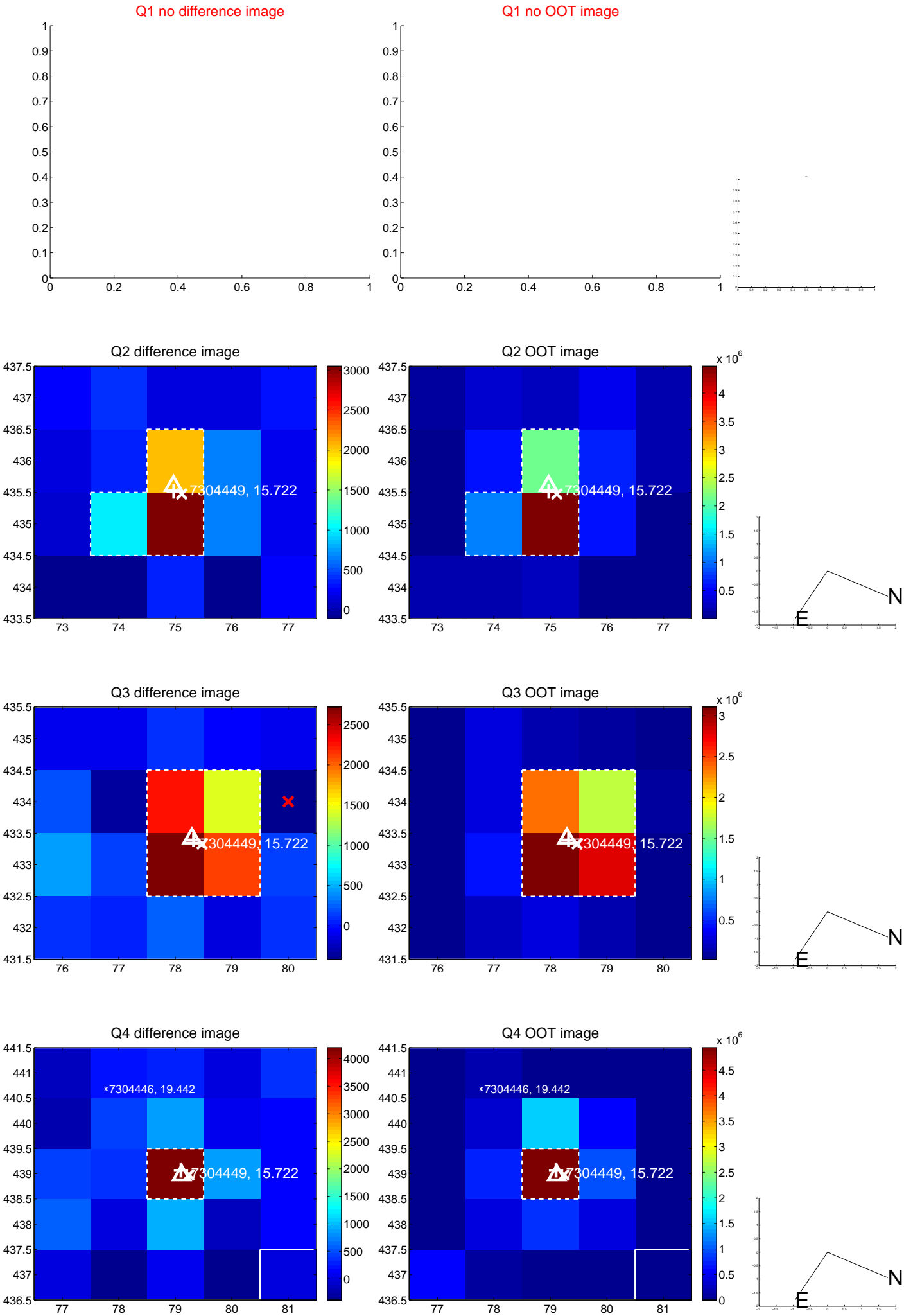
The direct PRF centroid is offset from the target star catalog position by about 0.87 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.064 \pm 0.112$	0.57	$-0.062 \pm 0.113$	$0.019 \pm 0.097$
PRF-fit source offset from KIC position	$0.683 \pm 0.104$	6.55	$-0.017 \pm 0.098$	$-0.683 \pm 0.104$
photometric centroid source offset	$1.33 \pm 0.27$	5.03	$0.09 \pm 0.24$	$-1.33 \pm 0.27$

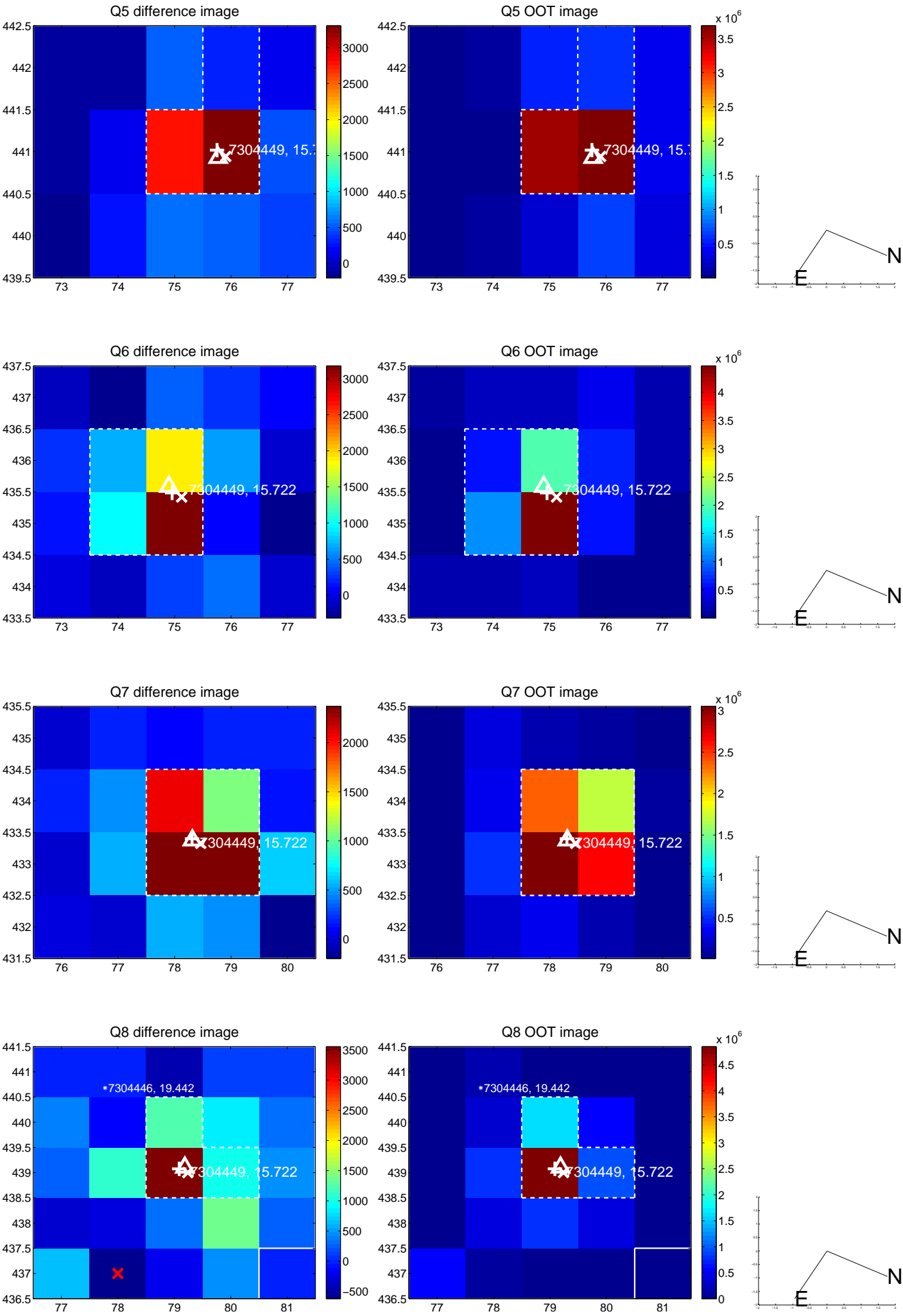


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

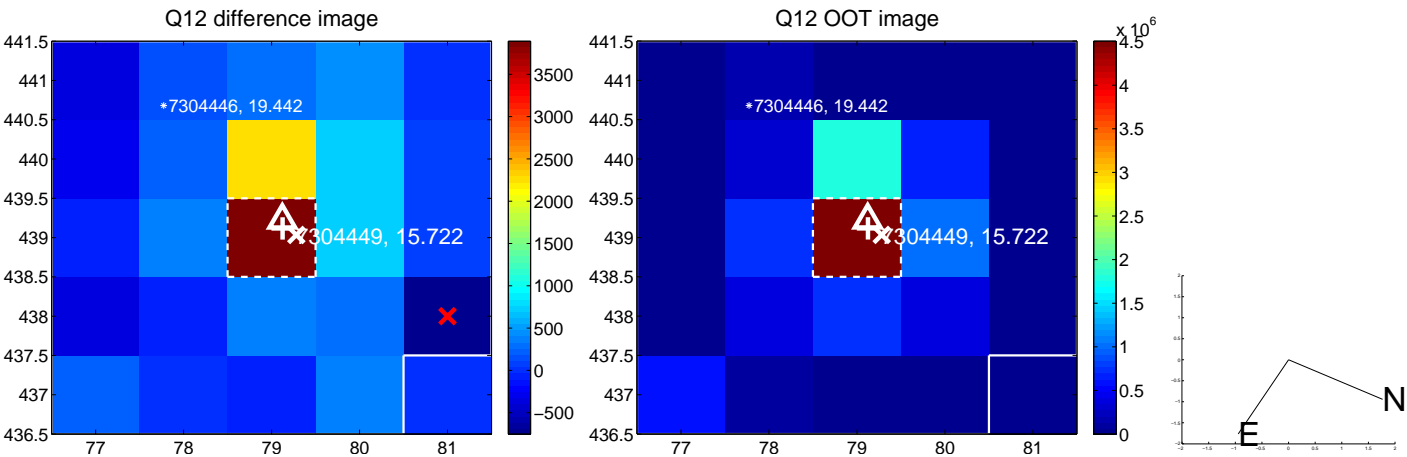
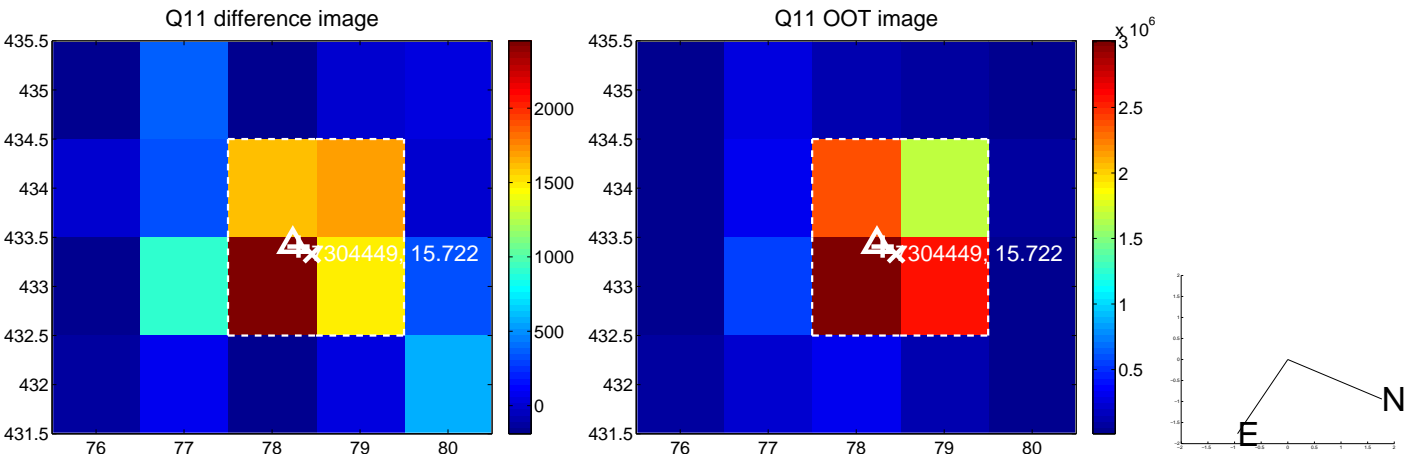
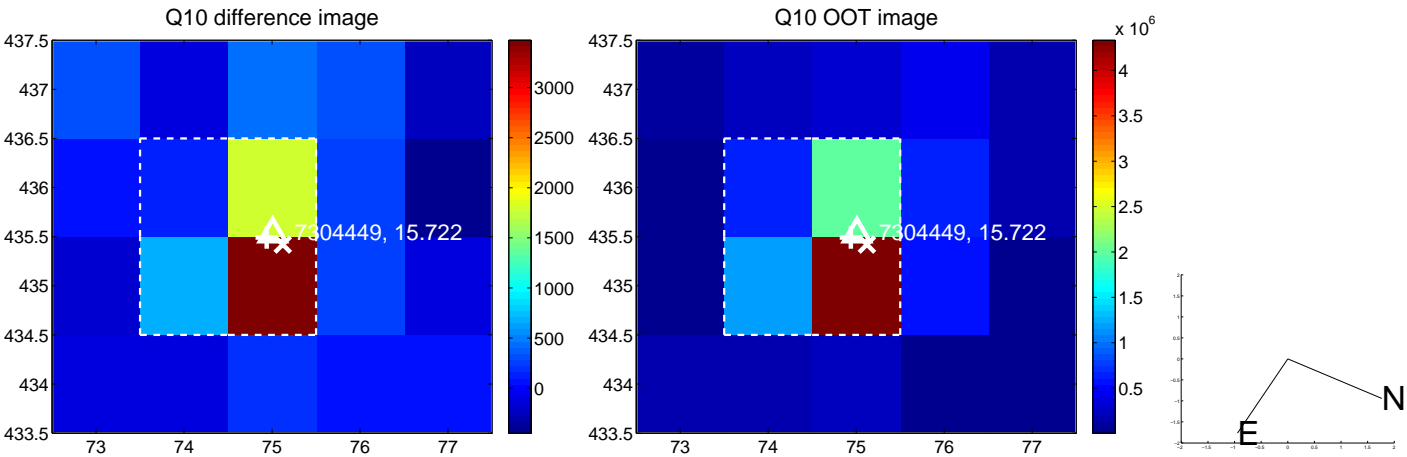
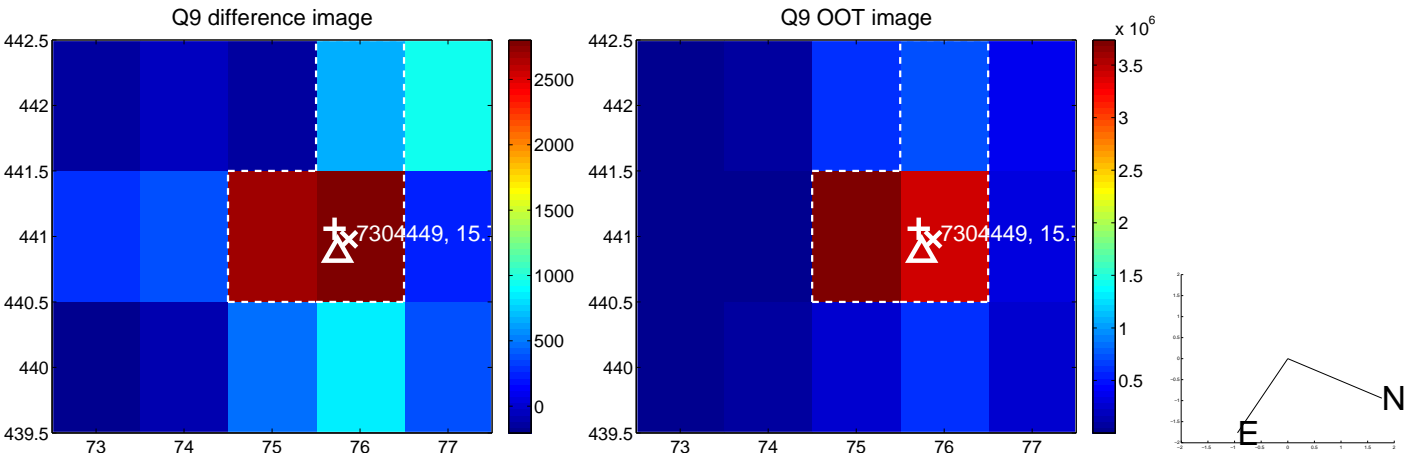


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

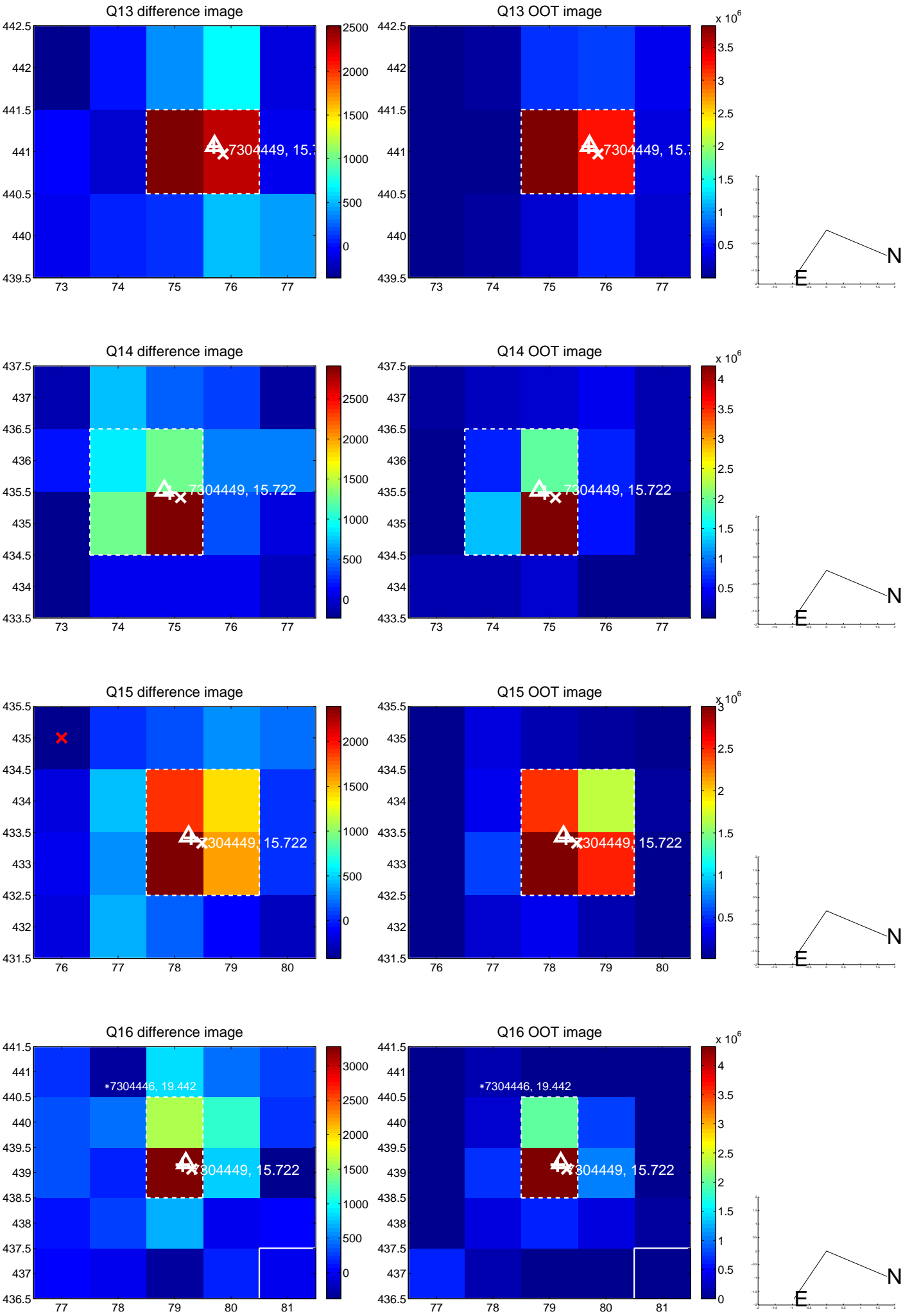




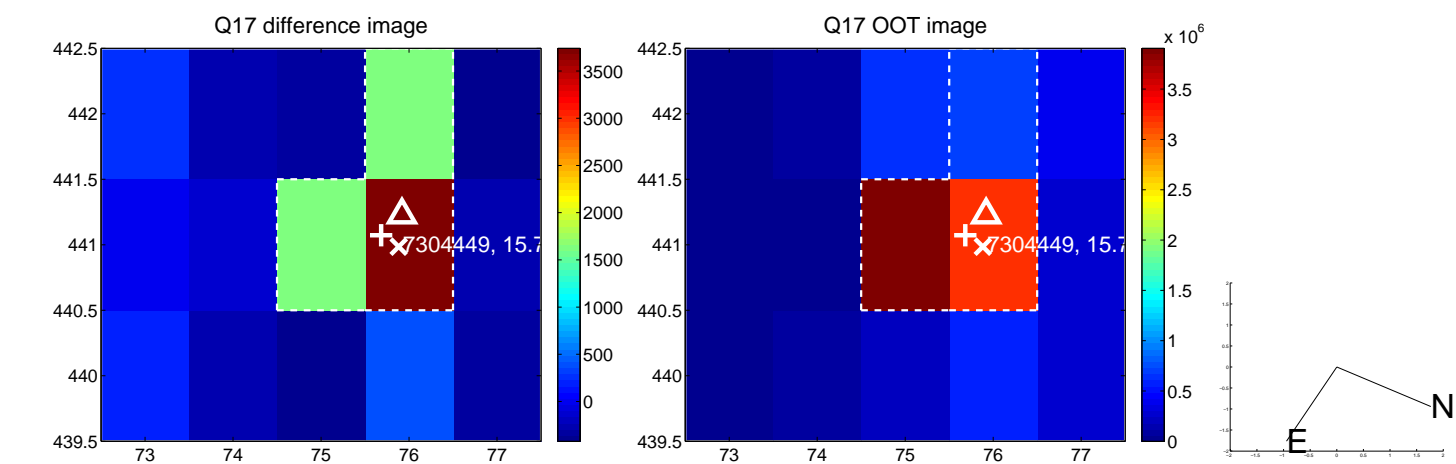
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



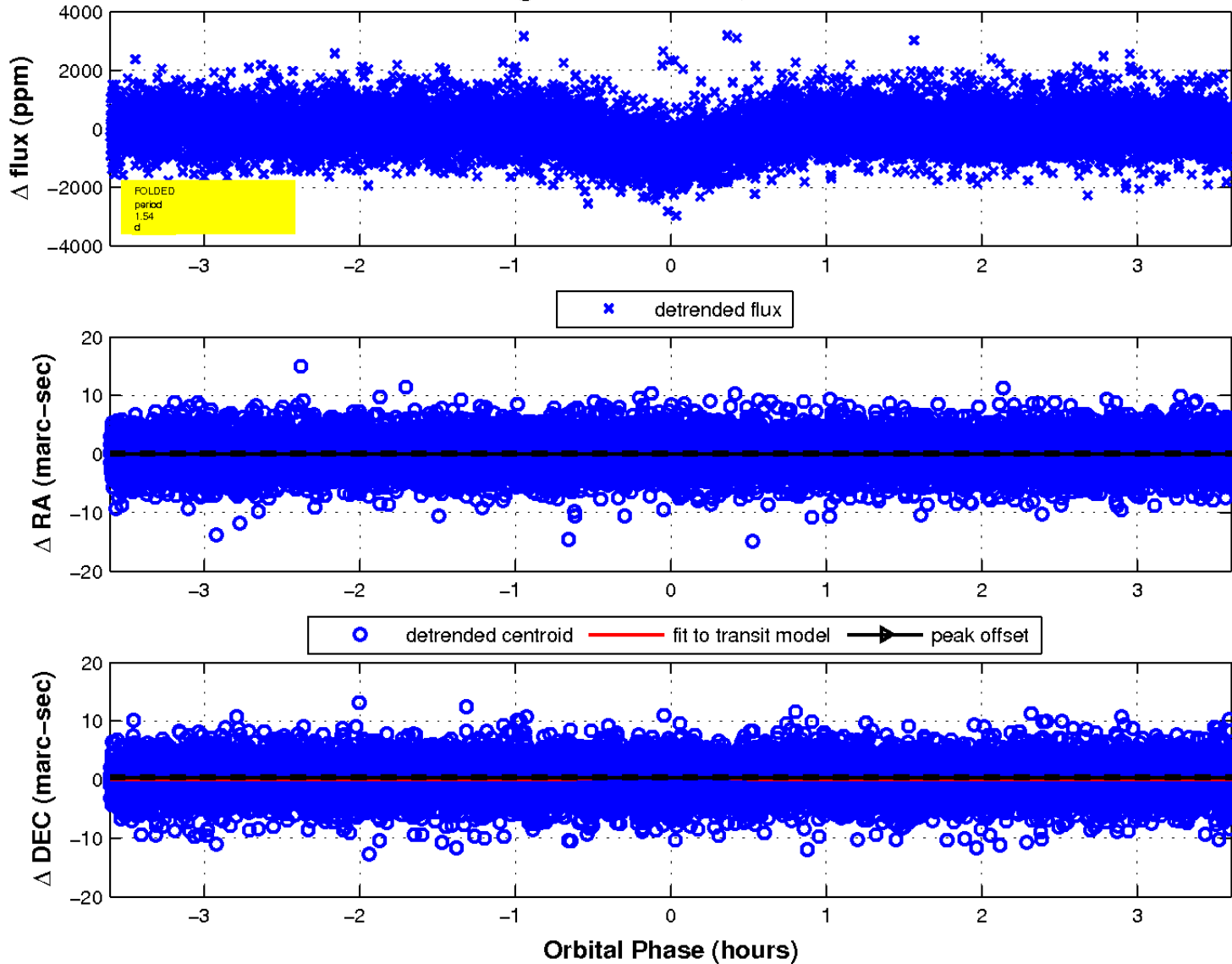
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



# UKIRT Image

Declination

