

# KIC 007812455

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007812455-01	OBS	2881.01	0.903575	131.880261	258.7	0.807	22.6	36.0	1.10	6455	2.10	5172.72

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007812455-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_ALT—CENT_UNRESOLVED_OFFSET

**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 007812455-01

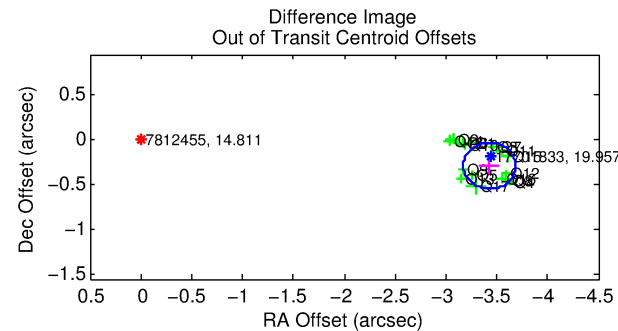
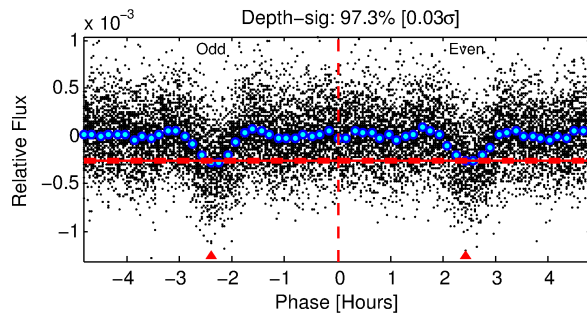
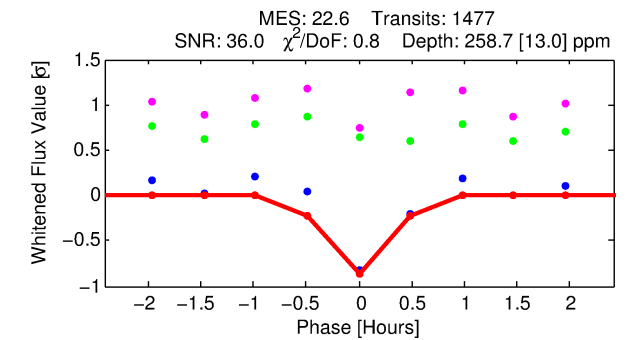
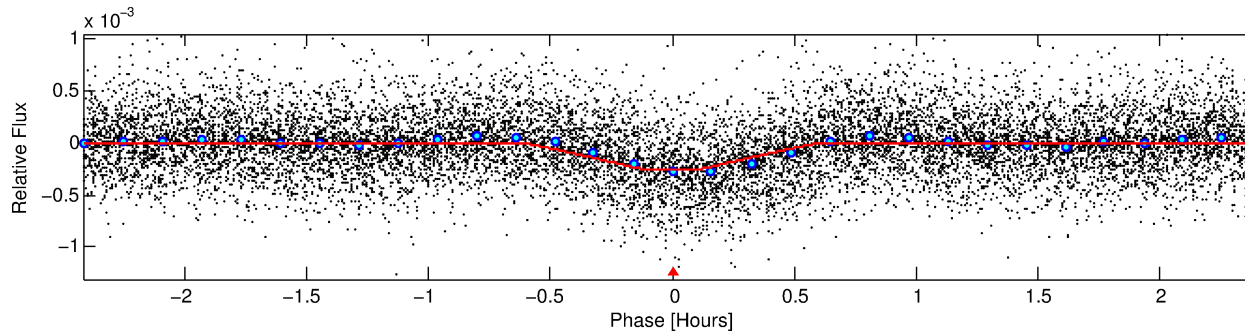
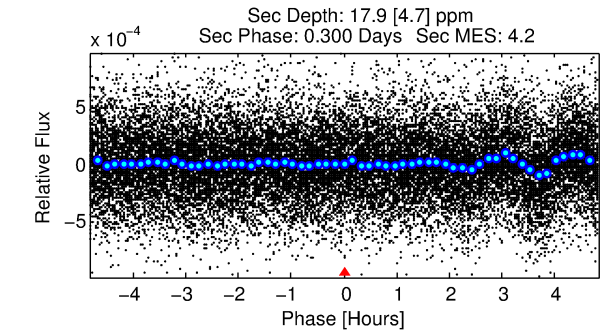
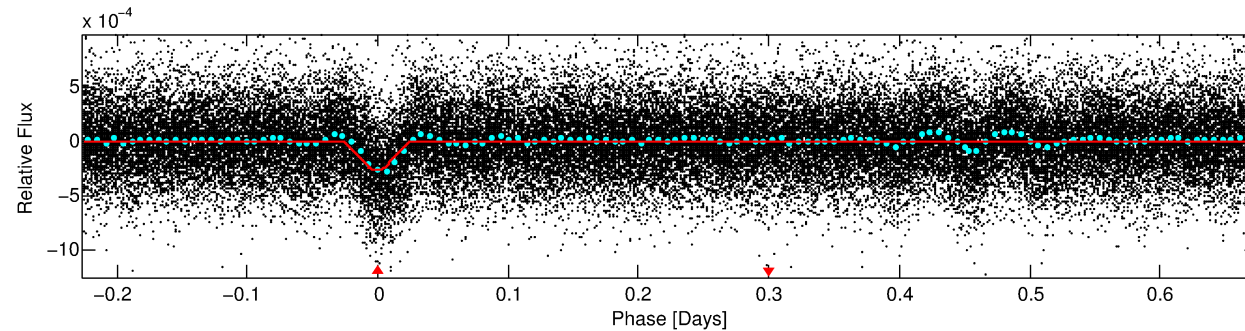
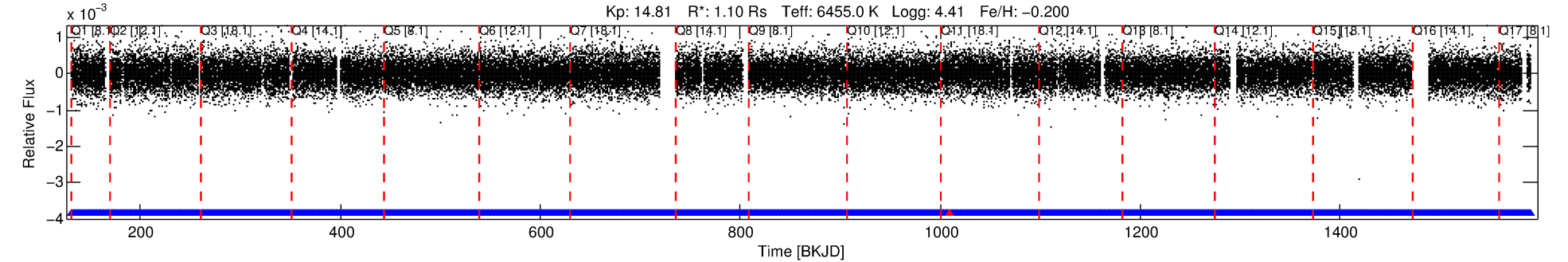
No Significant Match Found

# DV One-Page Summary

KIC: 7812455 Candidate: 1 of 1 Period: 0.904 d

KOI: K02881 Corr: No Ephemeris Match

Kp: 14.81 R\*: 1.10 Rs Teff: 6455.0 K Logg: 4.41 Fe/H: -0.200



## DV Fit Results:

Period = 0.90357 [0.00000] d  
Epoch = 131.8803 [0.0004] BKJD  
Rp/R\* = 0.0175 [0.0038]  
a/R\* = 4.14 [4.72]  
b = 0.90 [0.26]  
Seff = 5172.72 [2018.95]  
Teq = 2162 [211] K  
Rp = 2.10 [0.79] Re  
a = 0.0191 [0.0049] AU  
Ag = 0.81 [0.51] [-0.37σ]  
Teffp = 3175 [412] K [2.19σ]

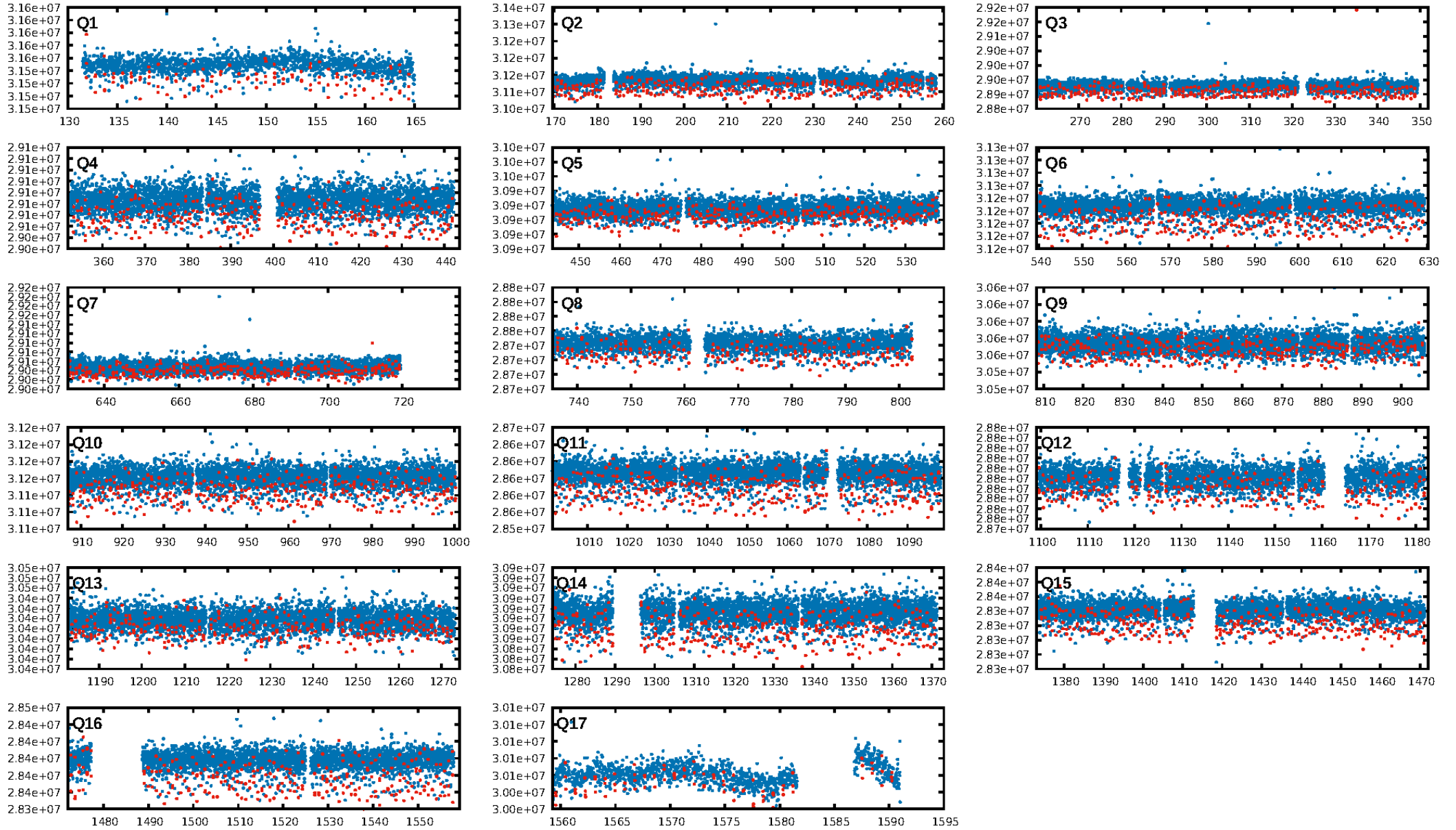
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.80e-107  
RollingBand-fgt: 1.00 [1410/1411]  
GhostDiagnostic-chr: 0.9627  
Centroid-sig: 0.0%  
Centroid-so: 4.472 arcsec [13.68σ]  
OotOffset-rm: 3.438 arcsec [40.13σ]  
KicOffset-rm: 3.437 arcsec [42.28σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

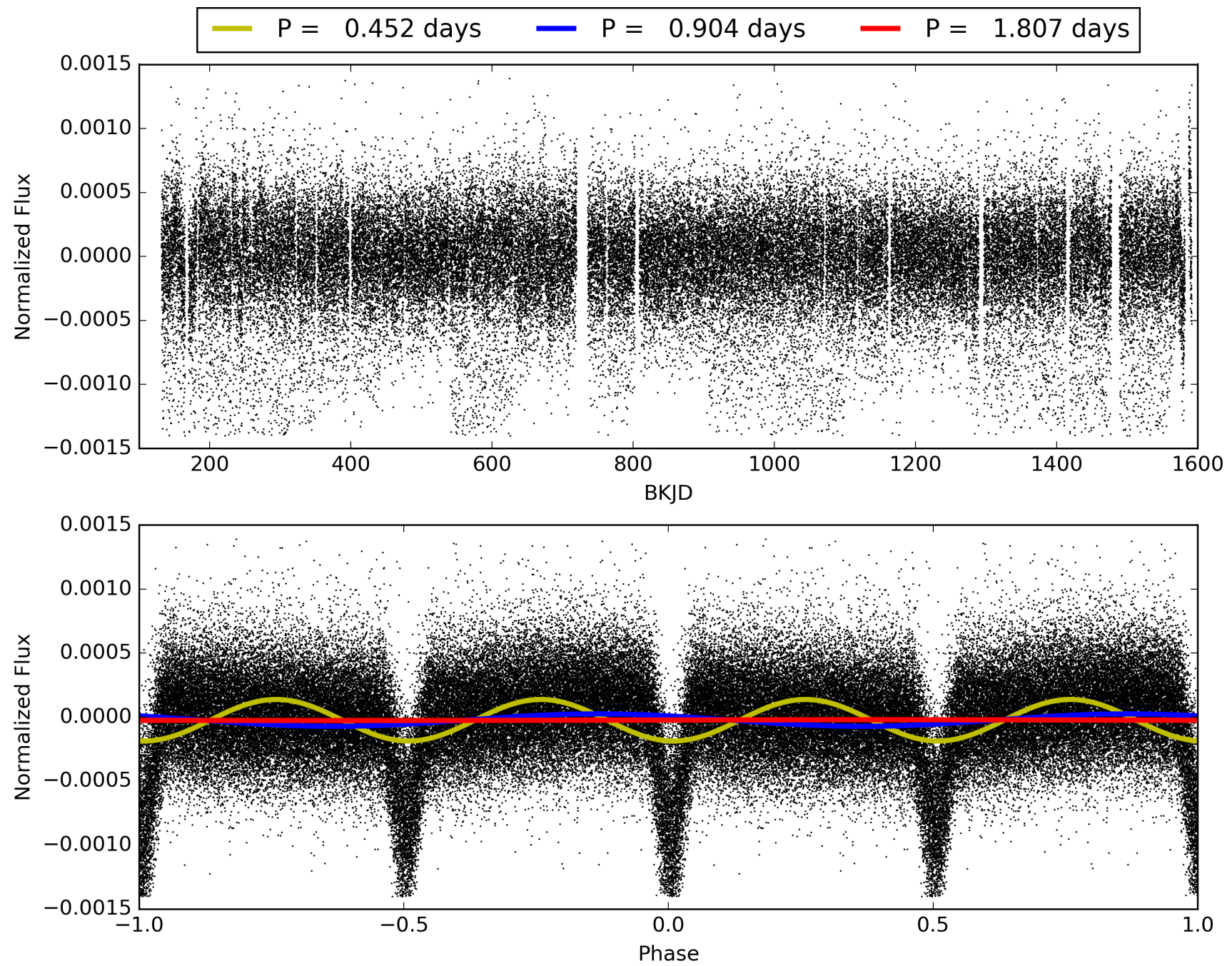
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 04:21:31 Z

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

# TCE 007812455-01, PDC Light Curves



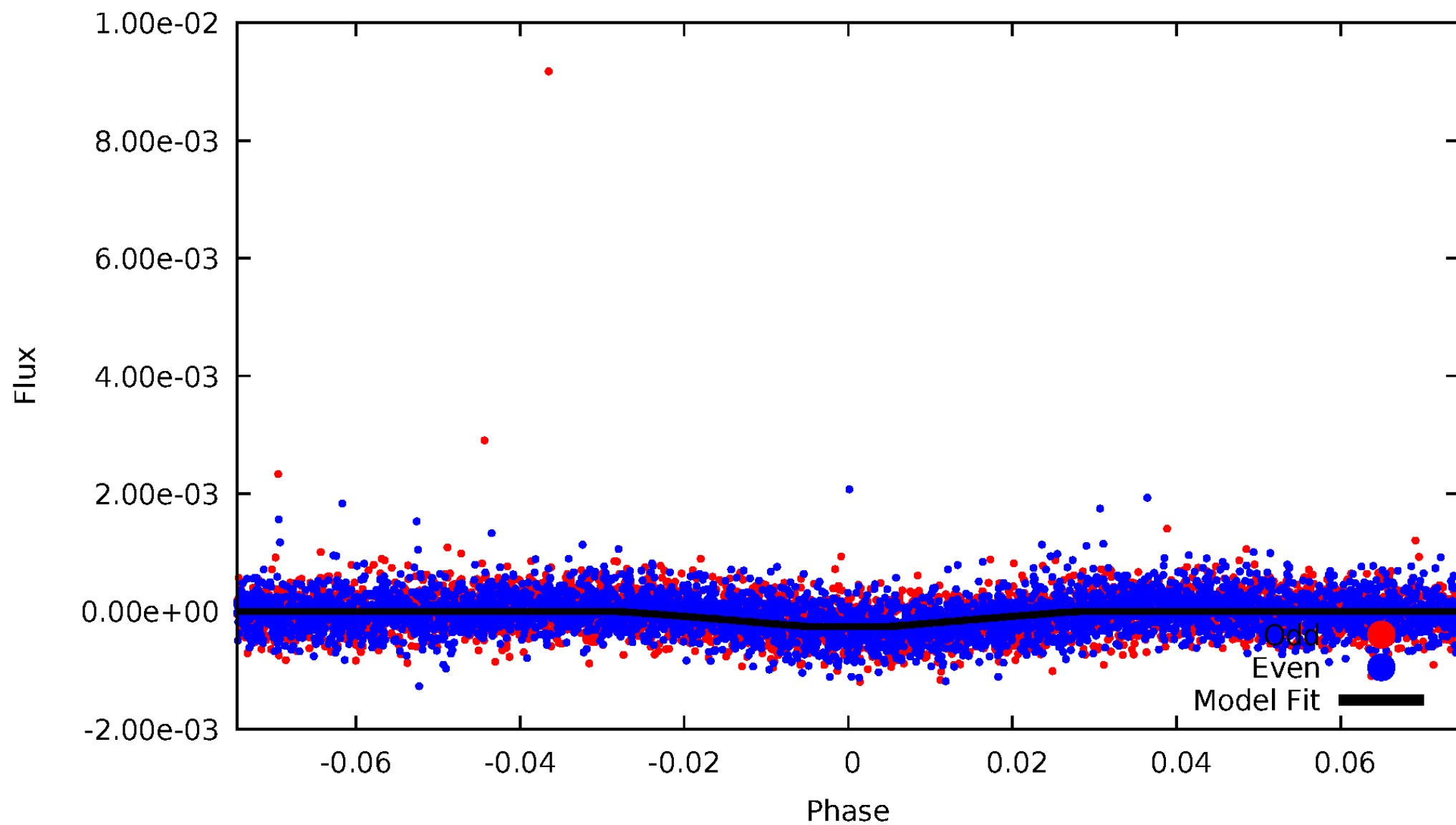
TCE 007812455-01





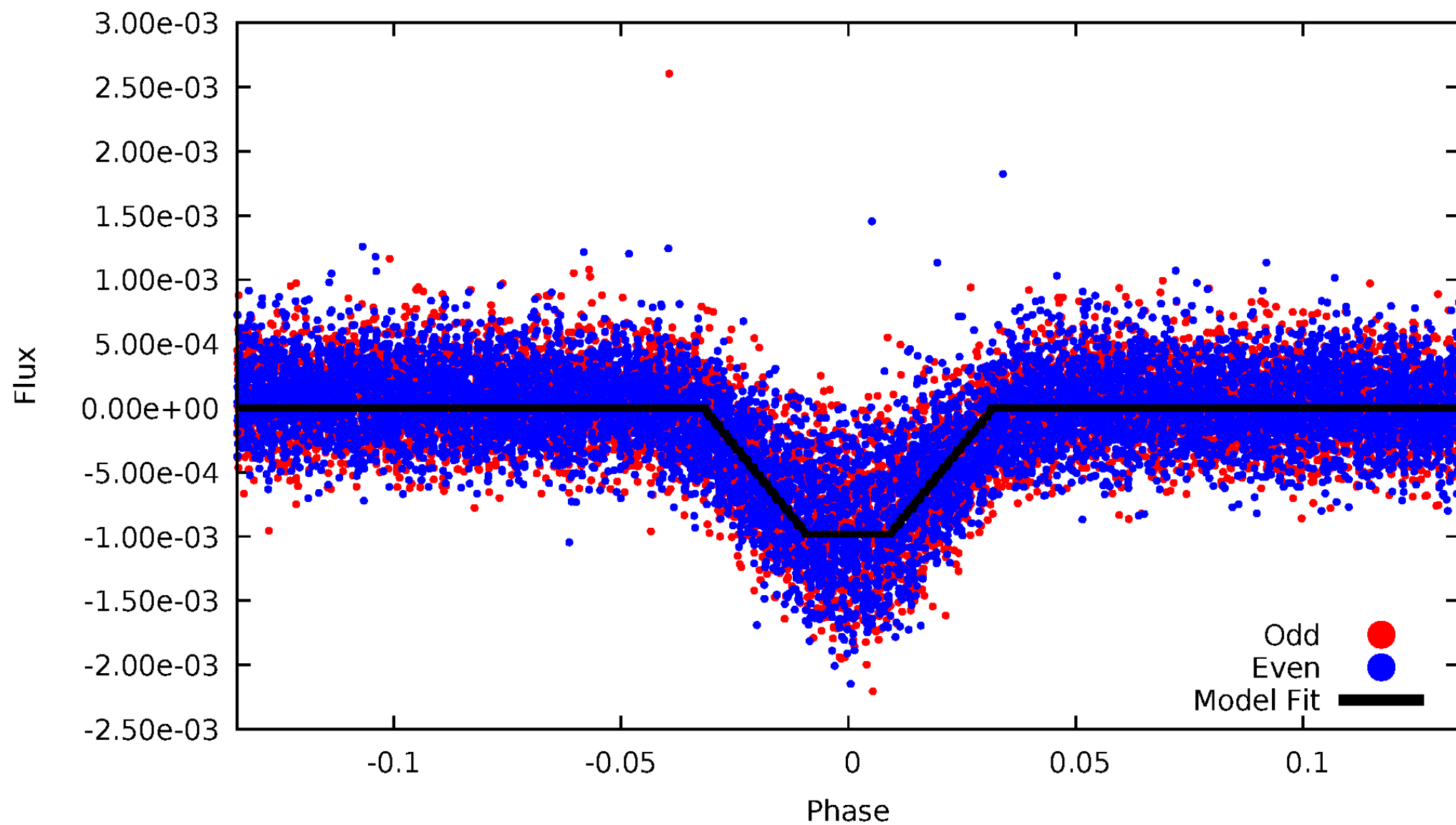
# DV Odd/Even

TCE 007812455-01

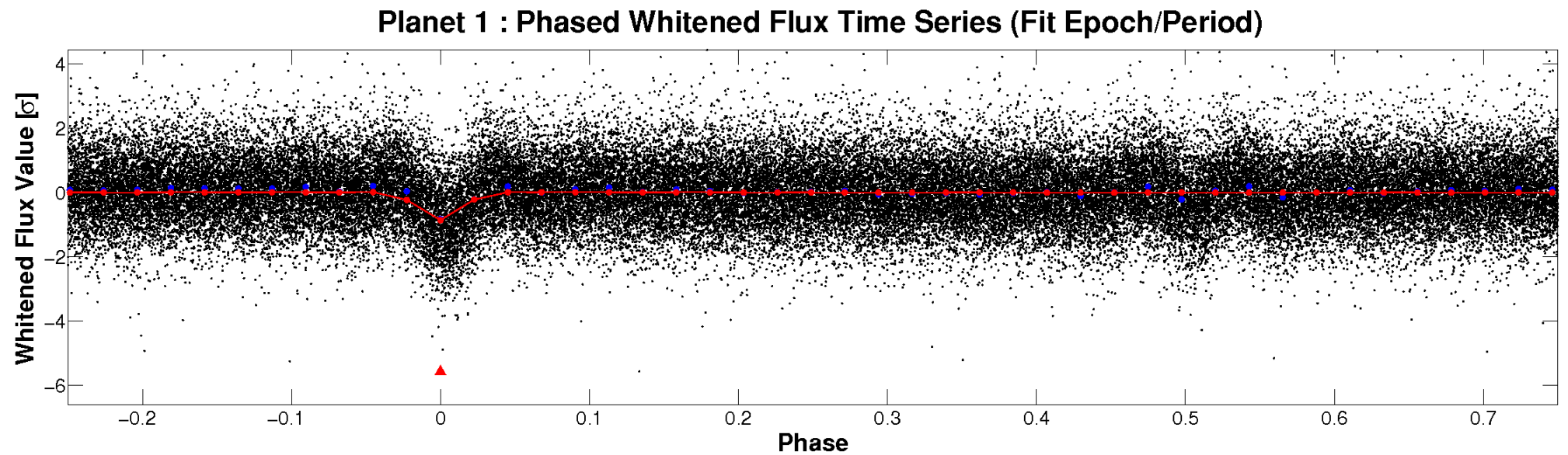
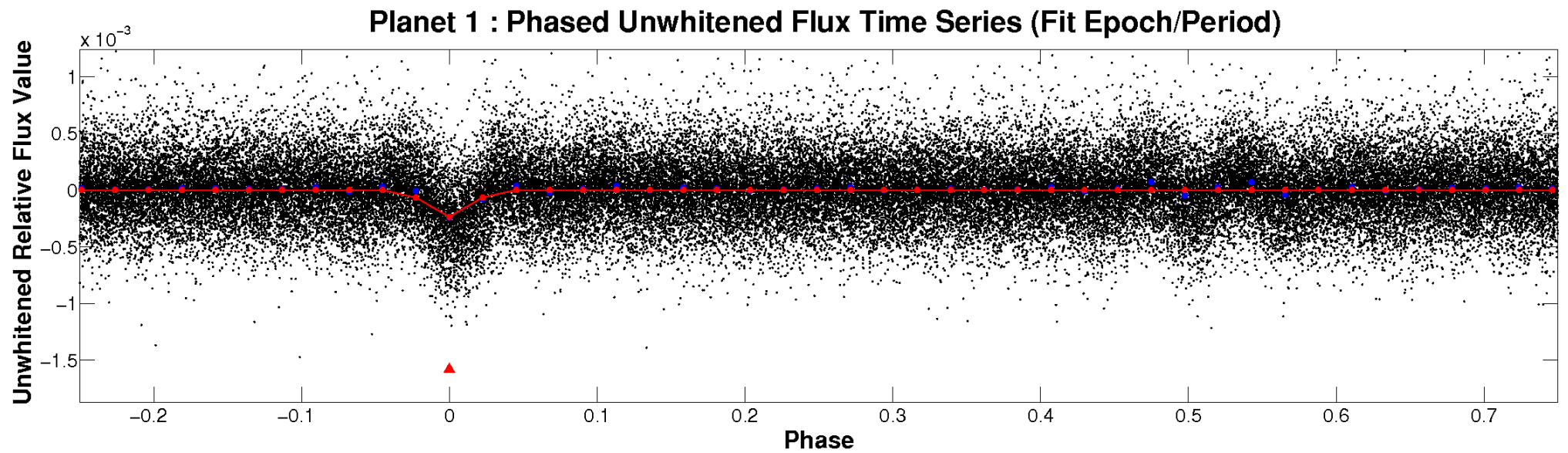


# ALT Odd/Even

TCE 007812455-01

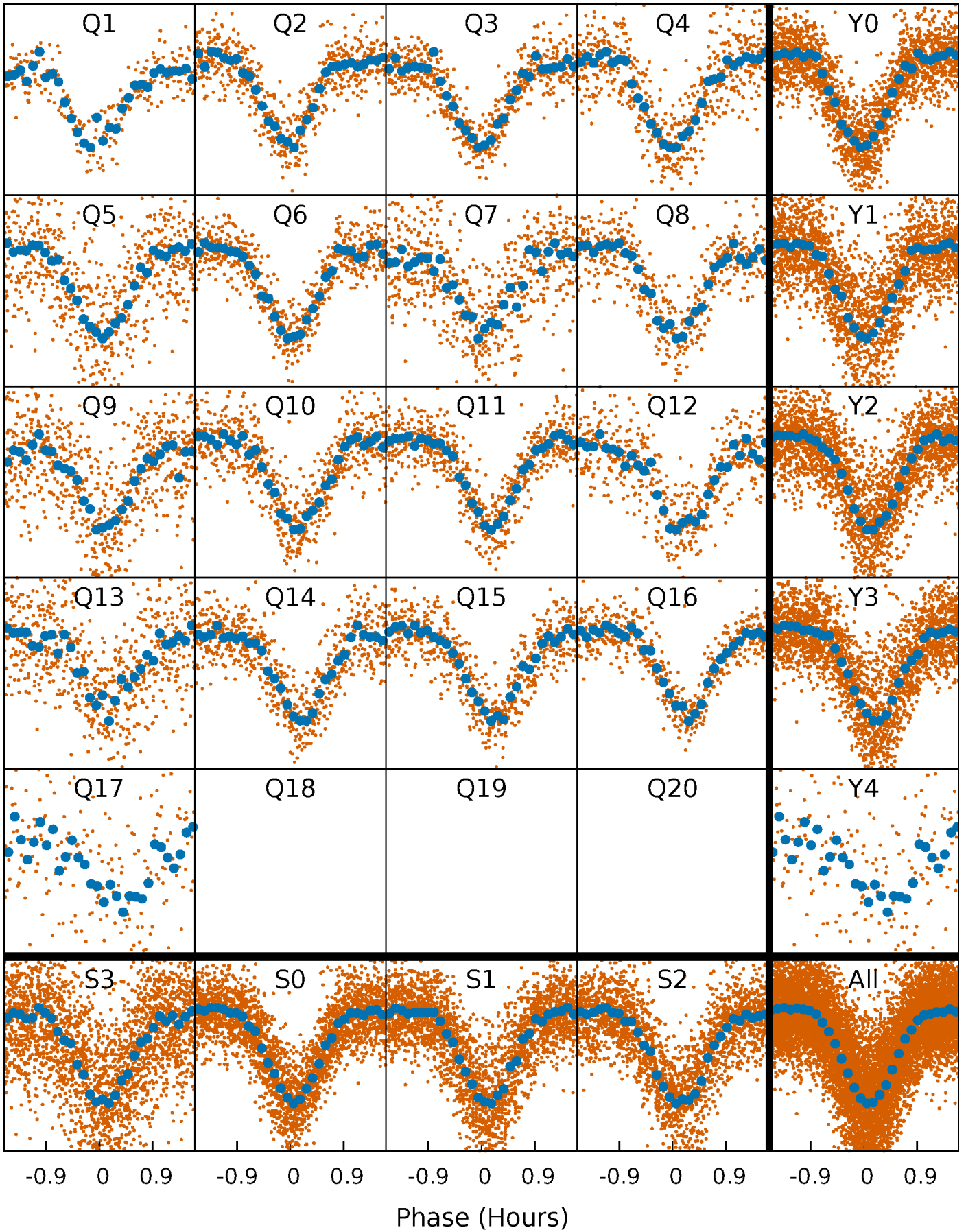


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

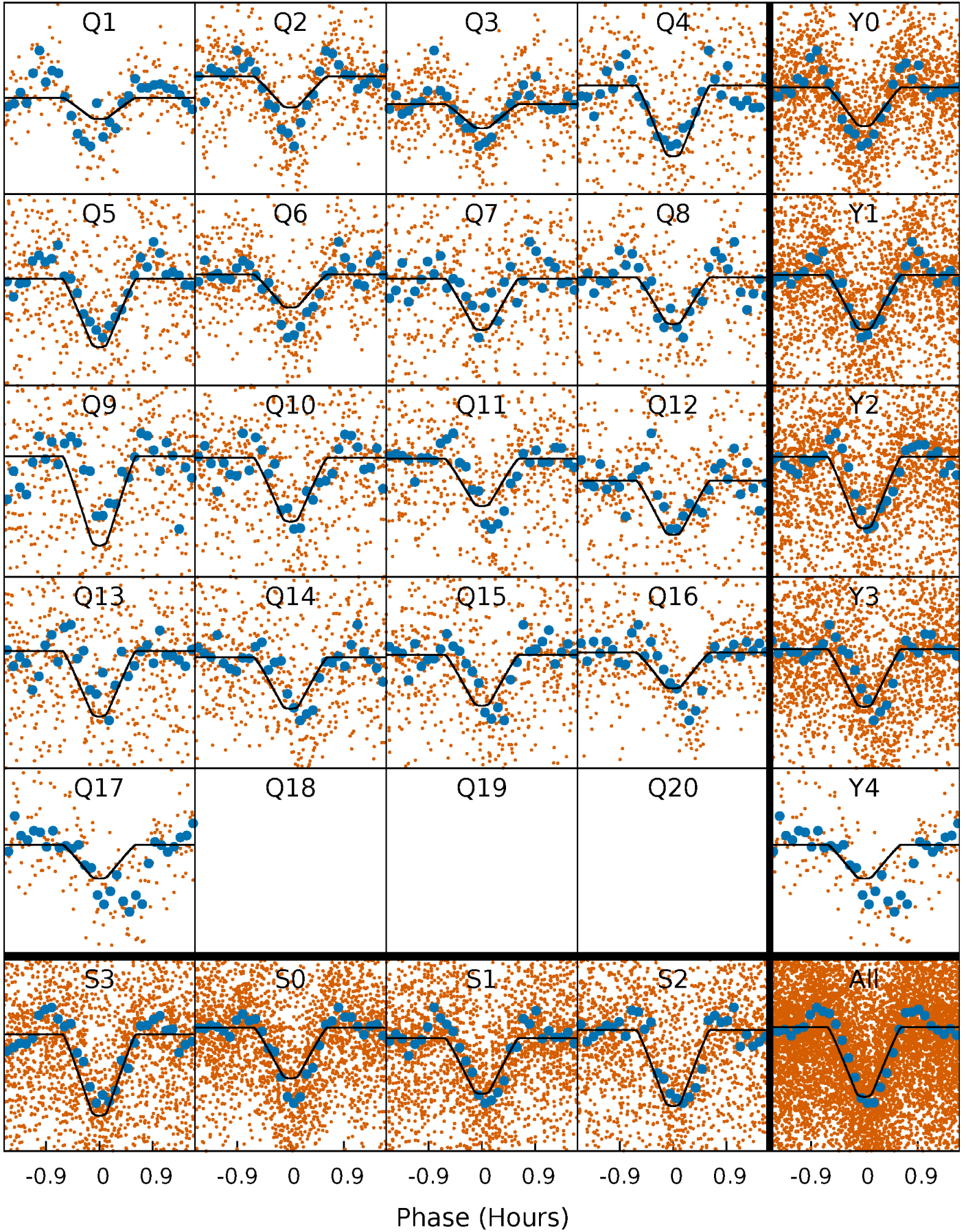
TCE 007812455-01 P= 0.903575 Days  $T_0=131.880261$  (BKJD)





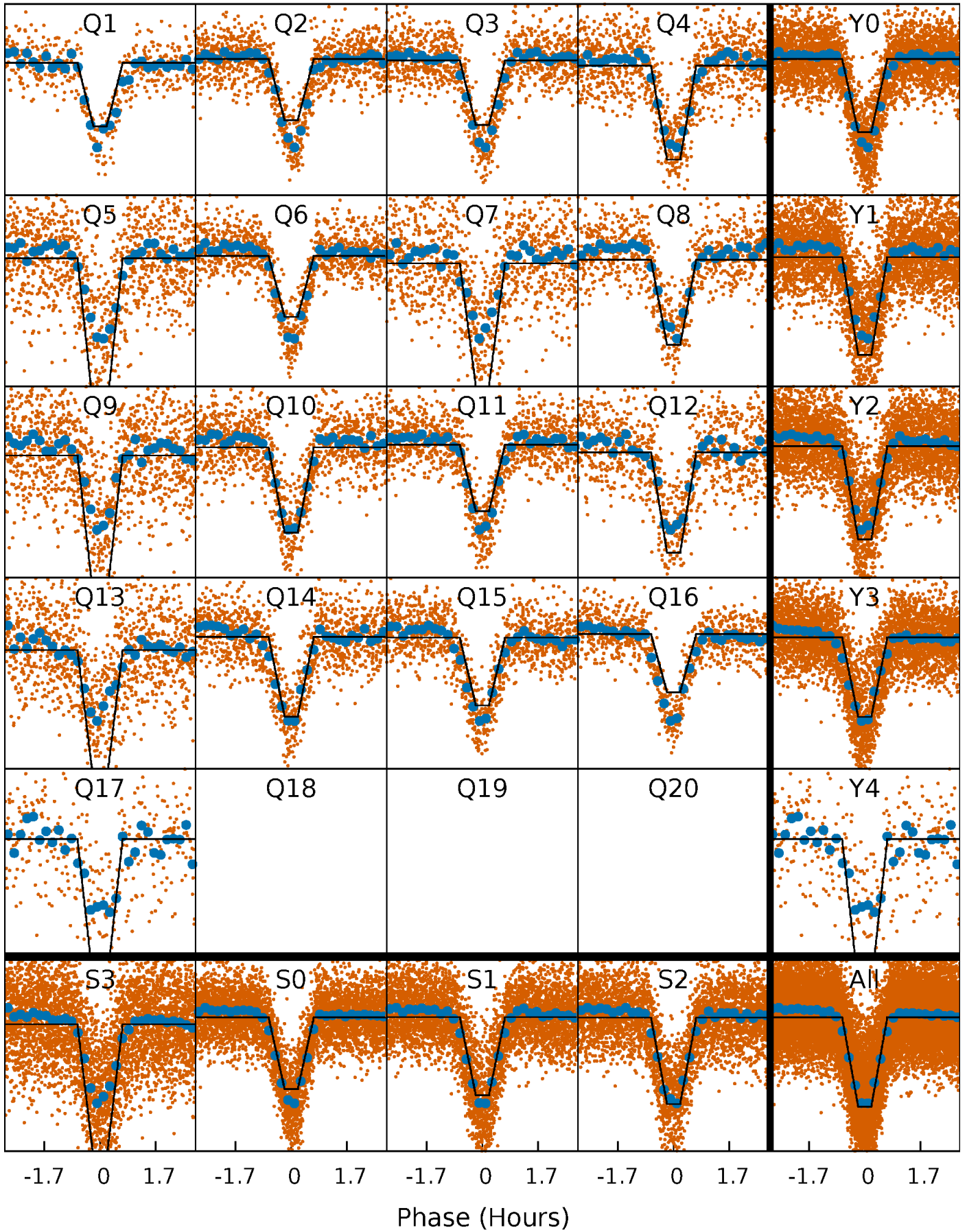
# DV Quarter-Phased Transit Curves

TCE 007812455-01 P= 0.903575 Days  $T_0=131.880261$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

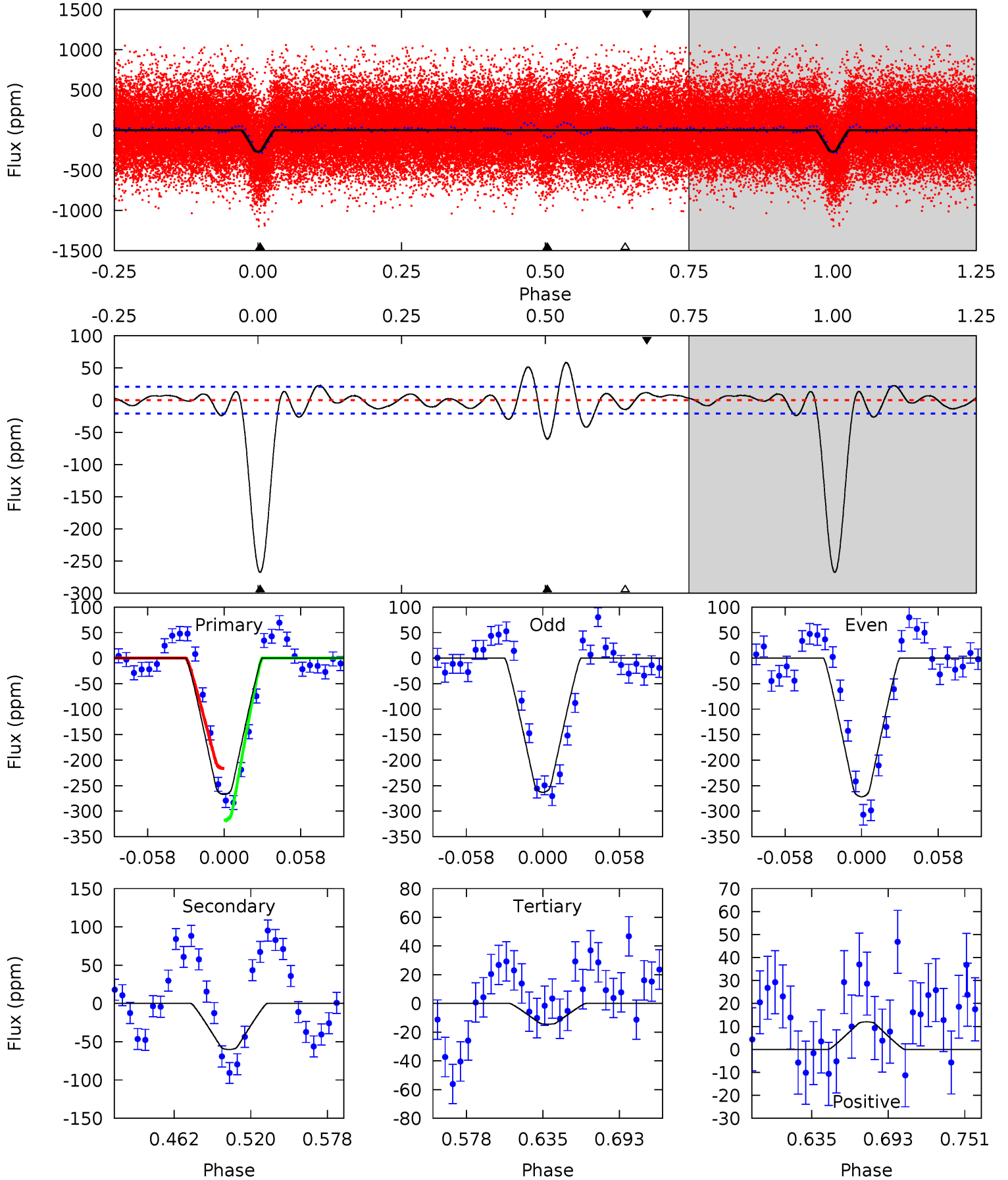
TCE 007812455-01 P= 0.903586 Days  $T_0=131.875707$  (BKJD)



# DV Model-Shift Uniqueness Test

007812455-01, P = 0.903575 Days, E = 130.976686 Days

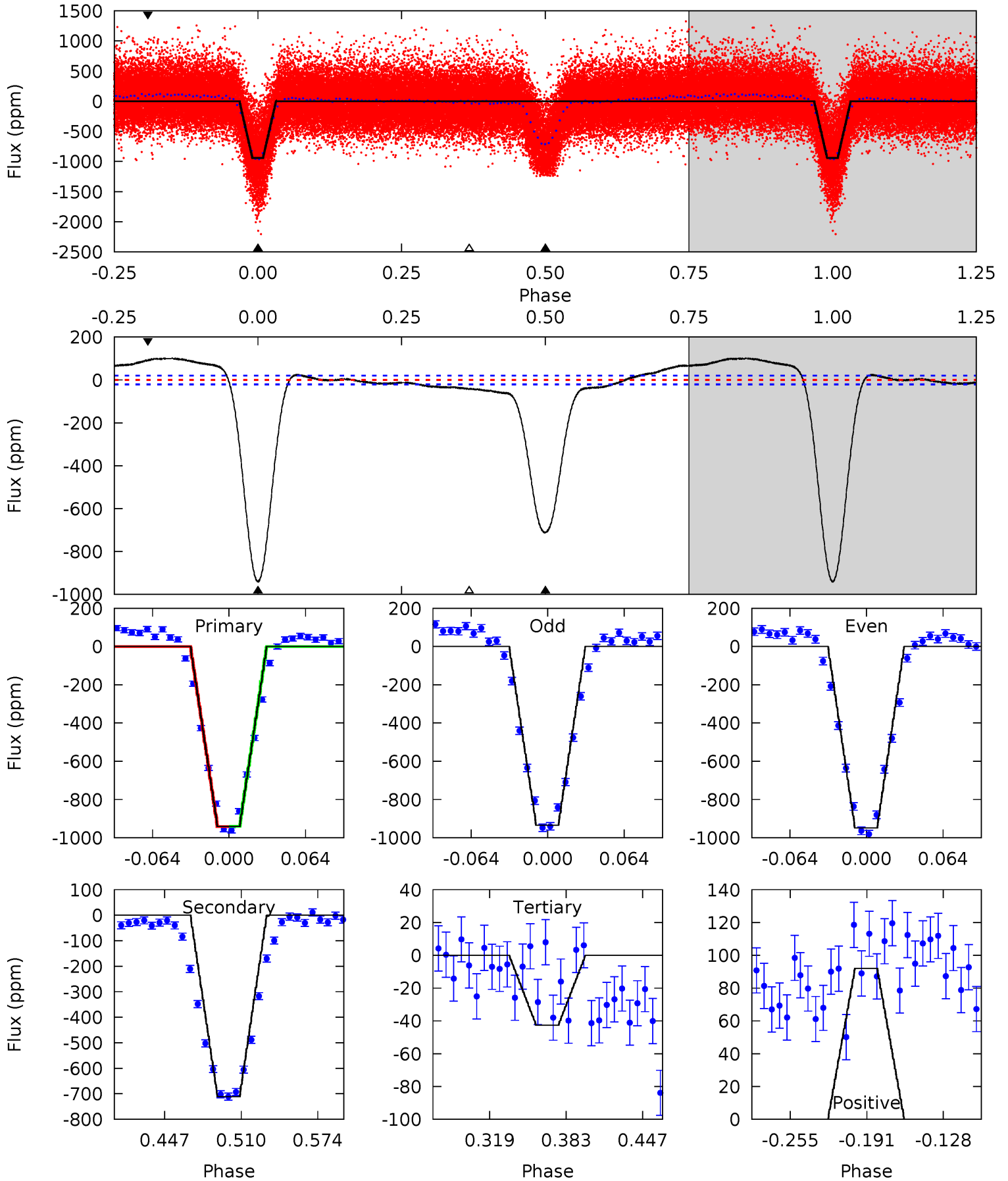
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
60.0	13.5	3.25	2.68	4.68	1.90	2.59	56.7	57.3	10.2	10.8	0.97	1.00	0.18	11.4



# Alt Model-Shift Uniqueness Test

007812455-01, P = 0.903586 Days, E = 130.972121 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
212.6	160.8	9.65	20.8	4.66	1.85	11.0	203.0	191.9	151.2	140.0	1.67	0.99	0.10	0.18





### Stellar Parameters For KIC 007812455

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6455^{+154}_{-193}$	$4.410^{+0.067}_{-0.202}$	$-0.200^{+0.250}_{-0.300}$	$1.101^{+0.338}_{-0.121}$	$1.136^{+0.163}_{-0.147}$	$1.200^{+0.342}_{-0.639}$
	+2%/-3%	+2%/-5%	+125%/-150%	+31%/-11%	+14%/-13%	+29%/-53%
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 007812455-01 / KOI 2881.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-60 \pm 4$	$2.19^{+0.53}_{-0.58}$	$3061^{+214}_{-150}$	$4372^{+572}_{-380}$	$2.513^{+1.954}_{-0.933}$
Alt.	$-711 \pm 4$	$3.88^{+0.72}_{-0.59}$	$3067^{+212}_{-146}$	$5876^{+461}_{-346}$	$9.279^{+3.614}_{-2.573}$

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

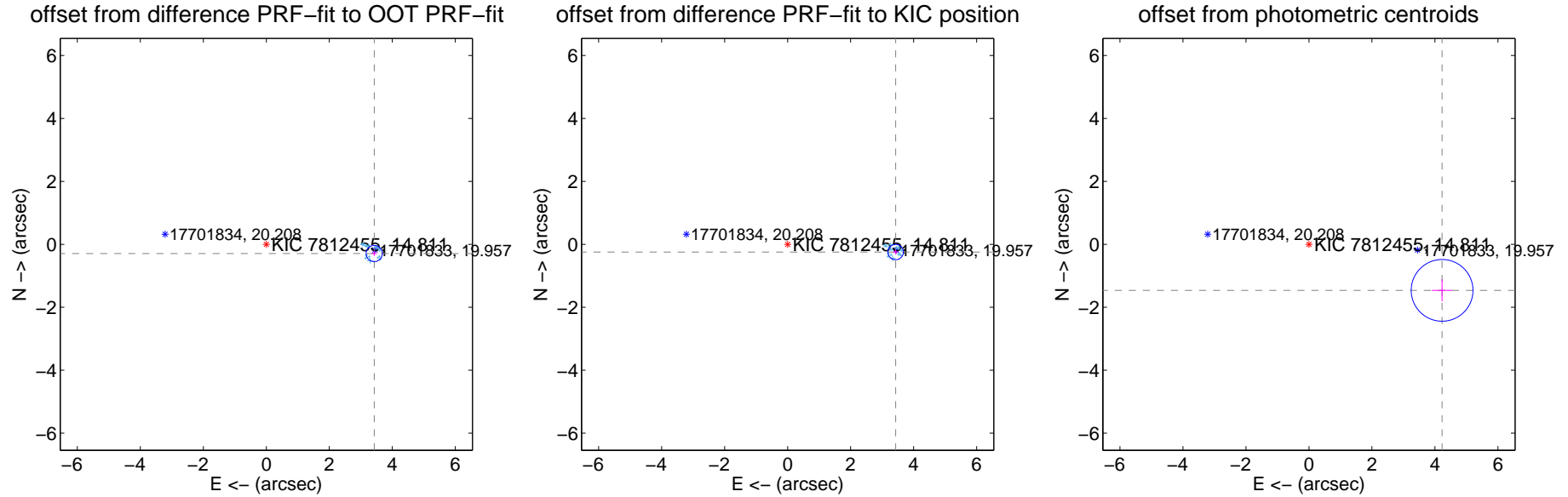
## DV Centroid Data

Supplemental centroid analysis for 007812455-01. Kepler magnitude: 14.81. Transit SNR 35.98

There are 17 quarters with good PRF difference image offsets

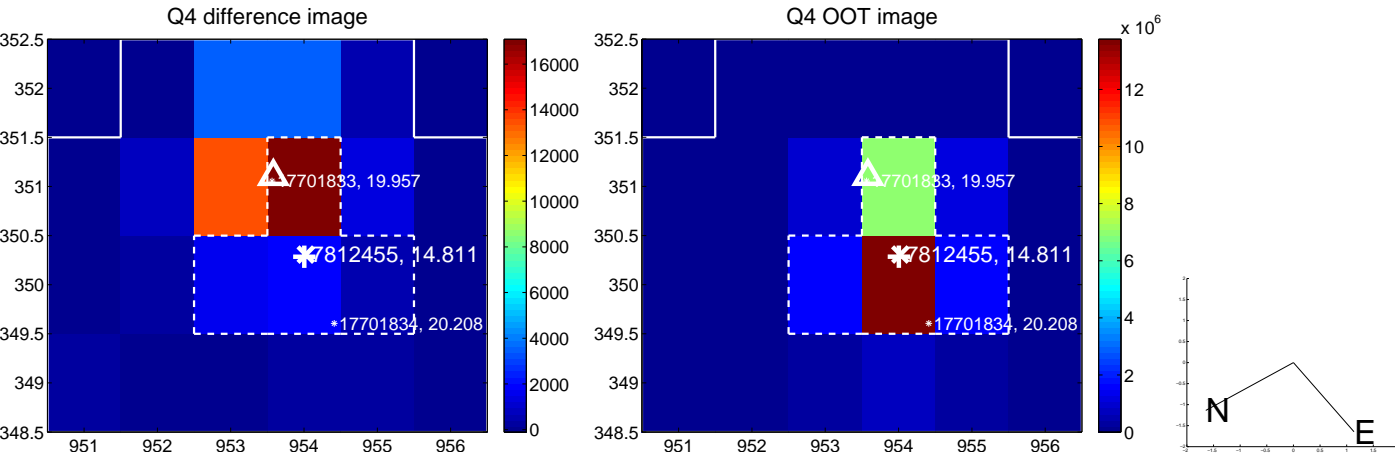
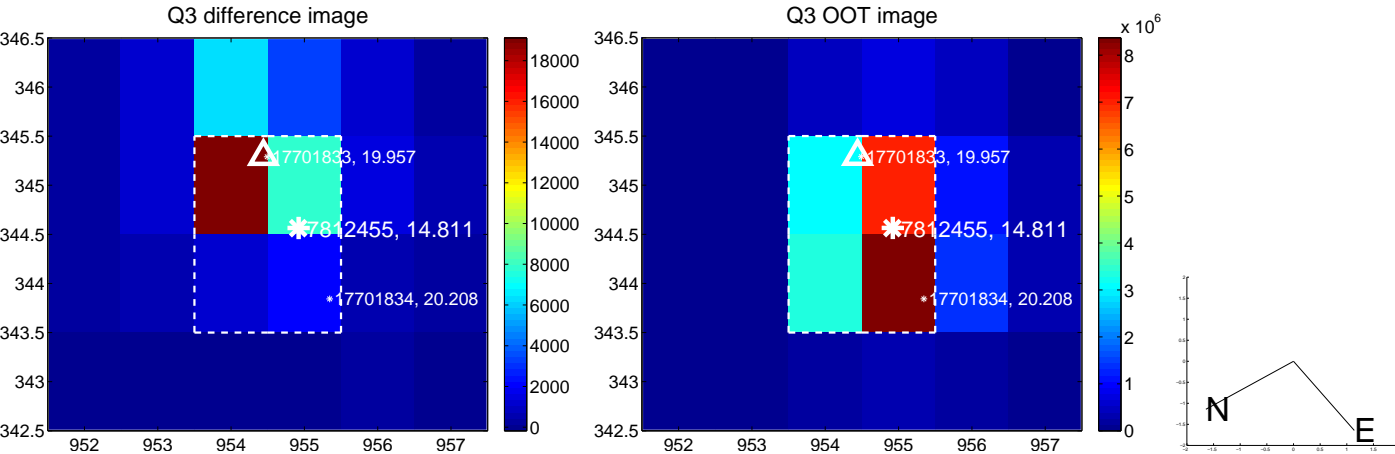
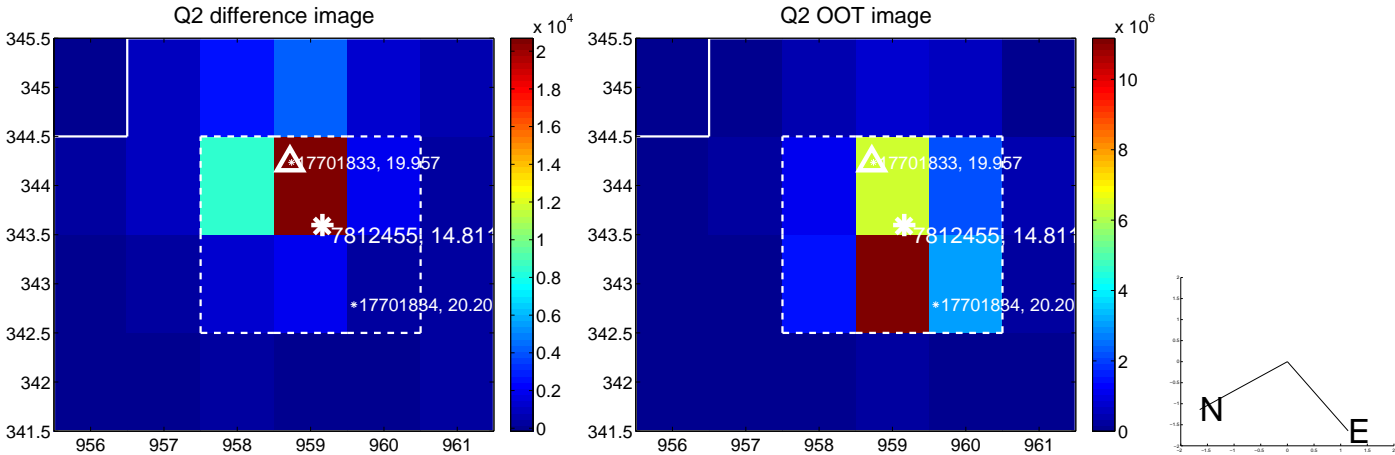
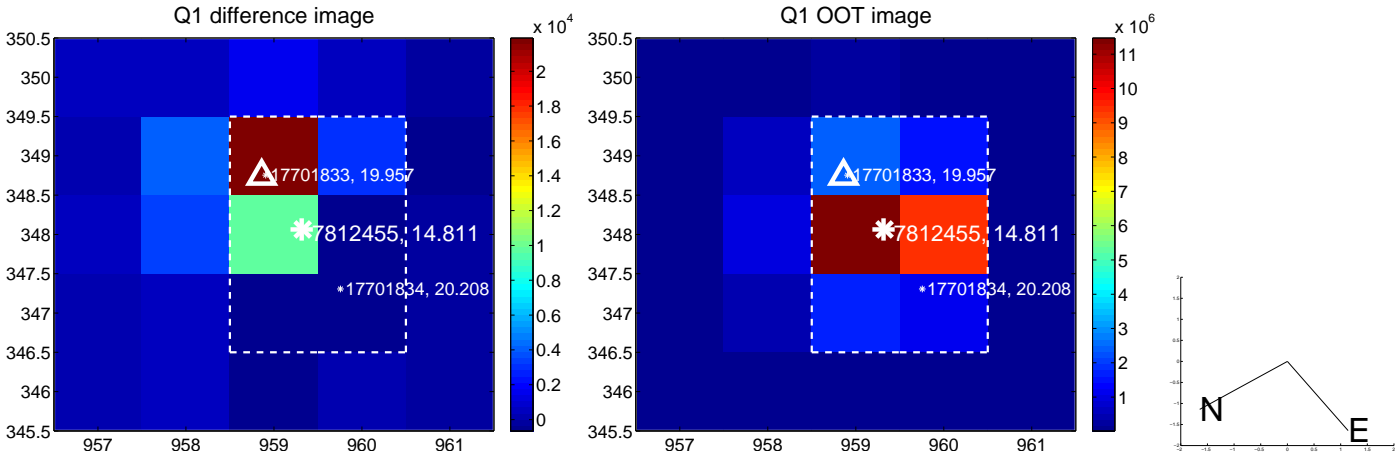
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.438 \pm 0.086$	40.13	$-3.426 \pm 0.086$	$-0.292 \pm 0.083$
PRF-fit source offset from KIC position	$3.437 \pm 0.081$	42.28	$-3.428 \pm 0.081$	$-0.246 \pm 0.074$
photometric centroid source offset	$4.47 \pm 0.33$	13.68	$-4.23 \pm 0.32$	$-1.46 \pm 0.35$

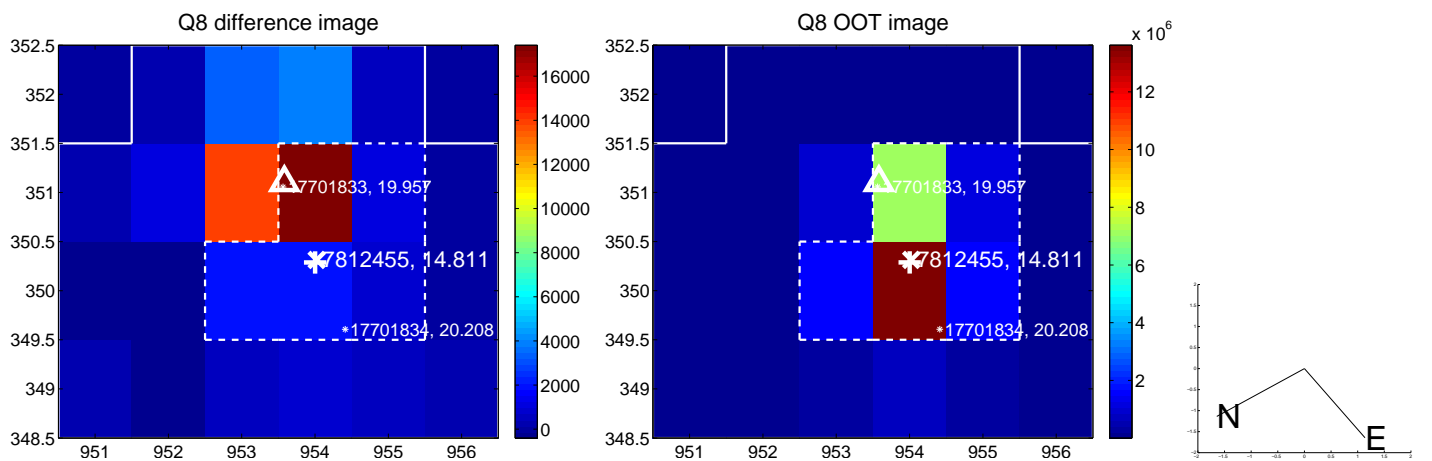
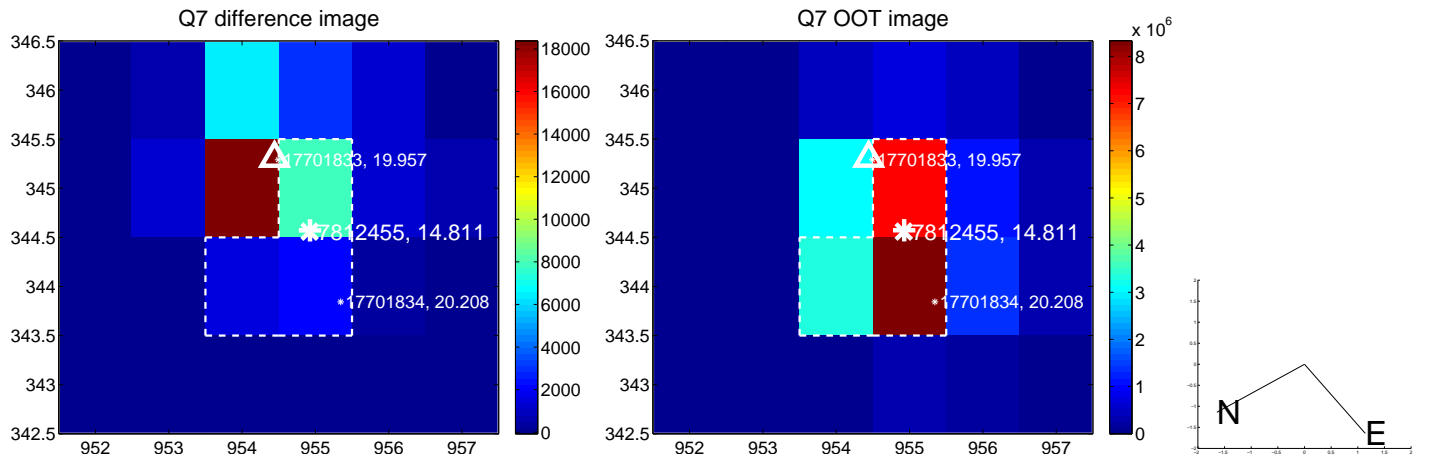
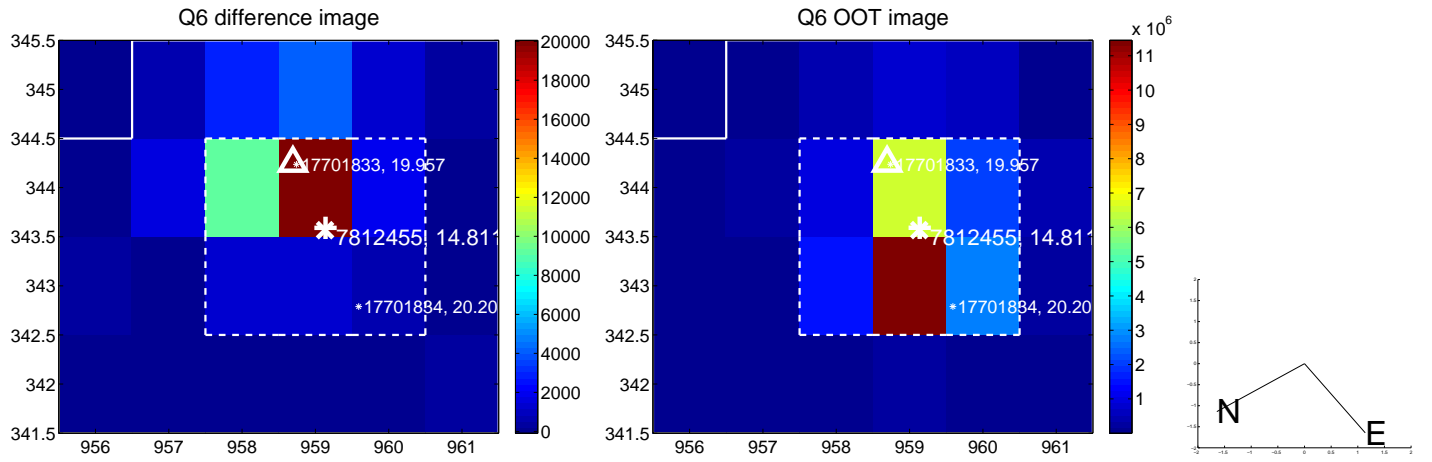
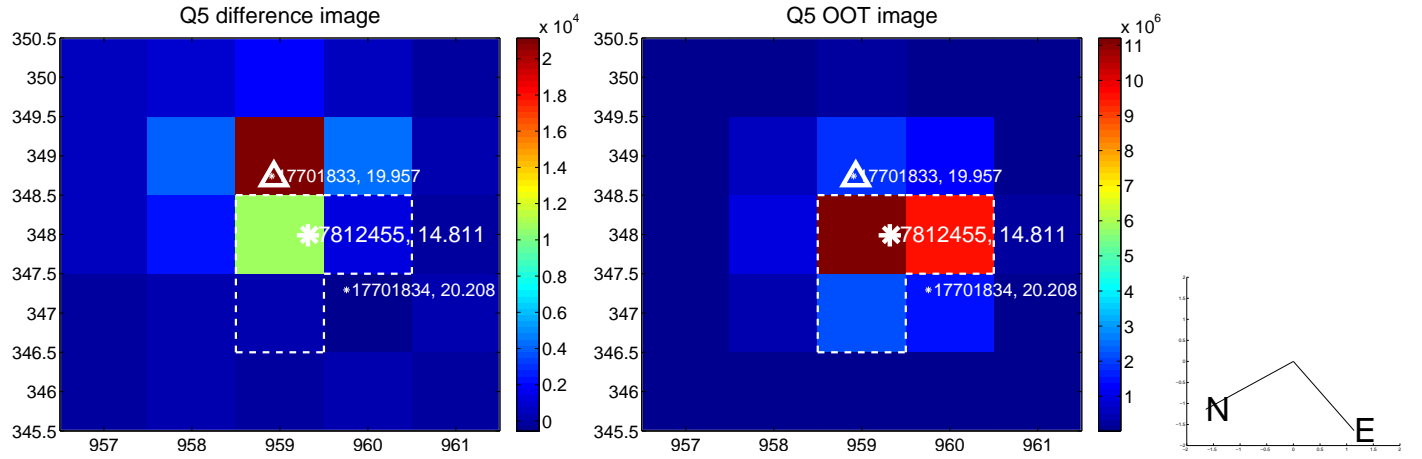


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

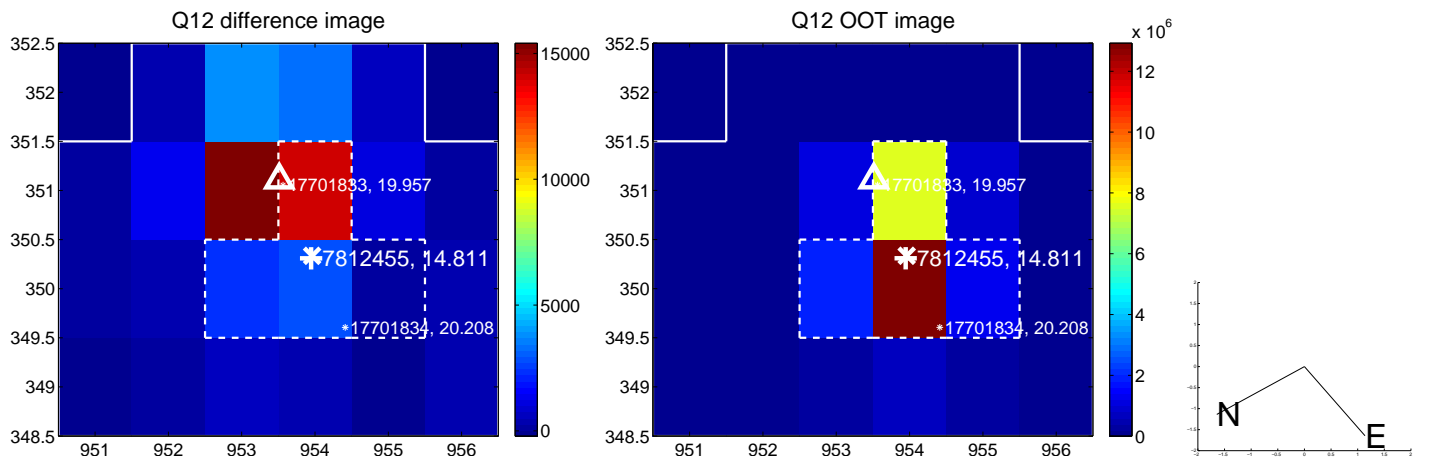
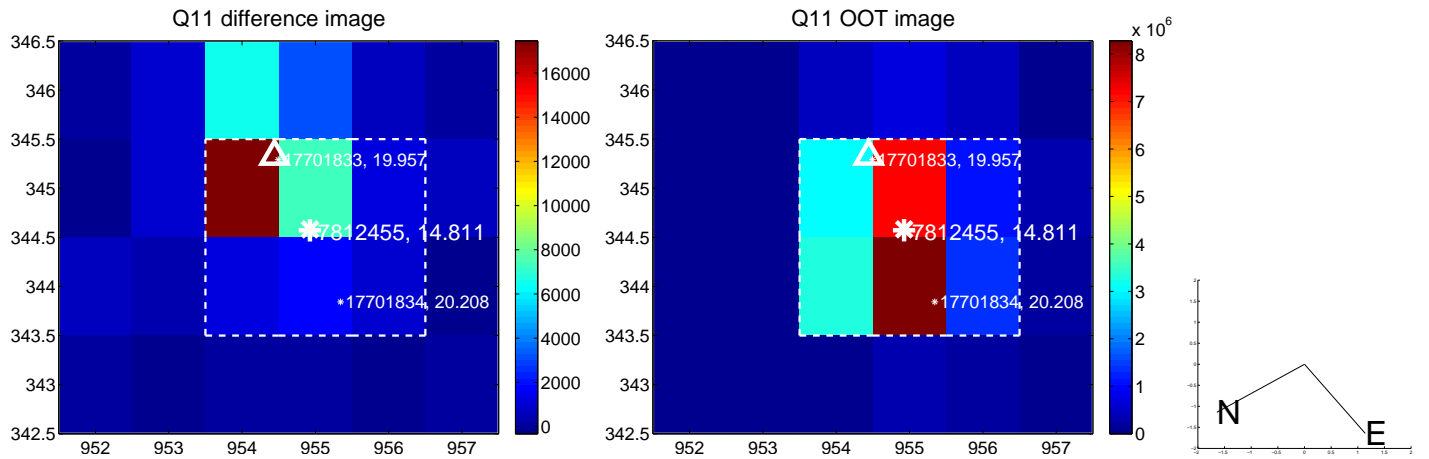
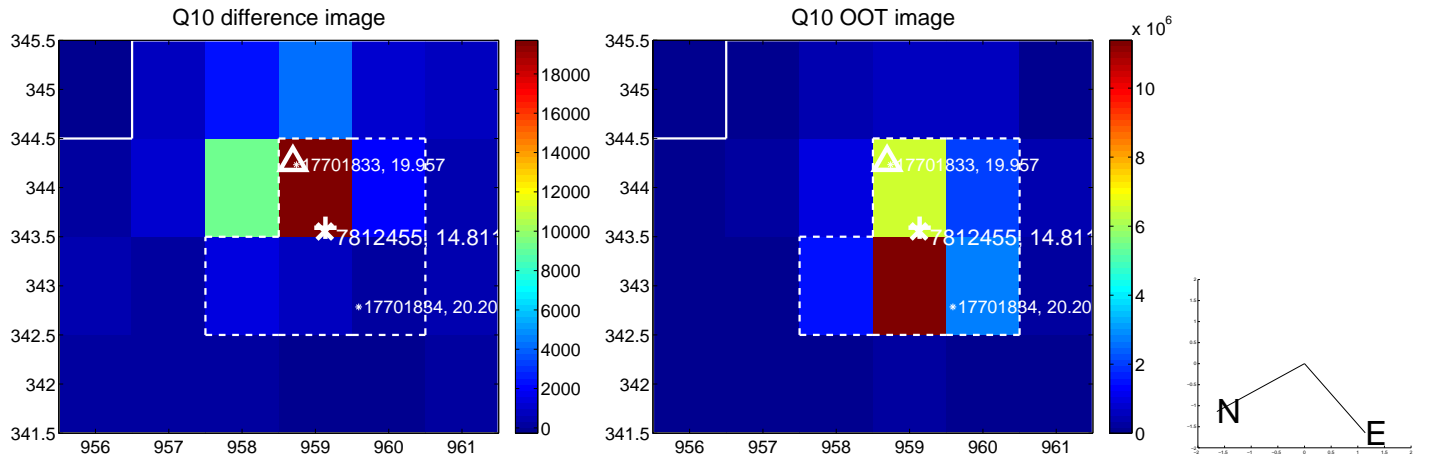
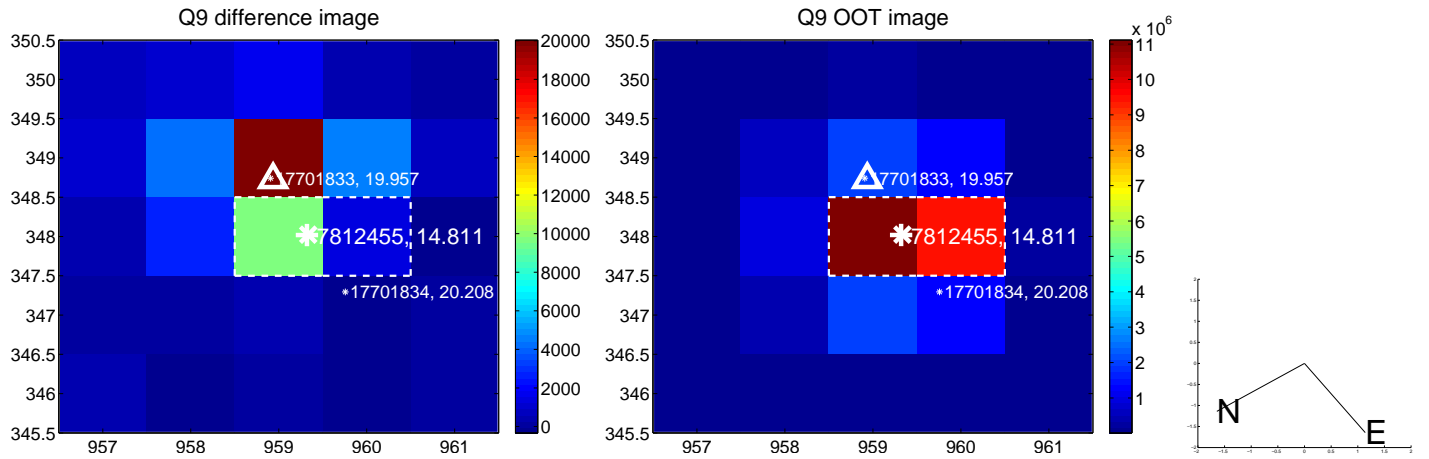


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

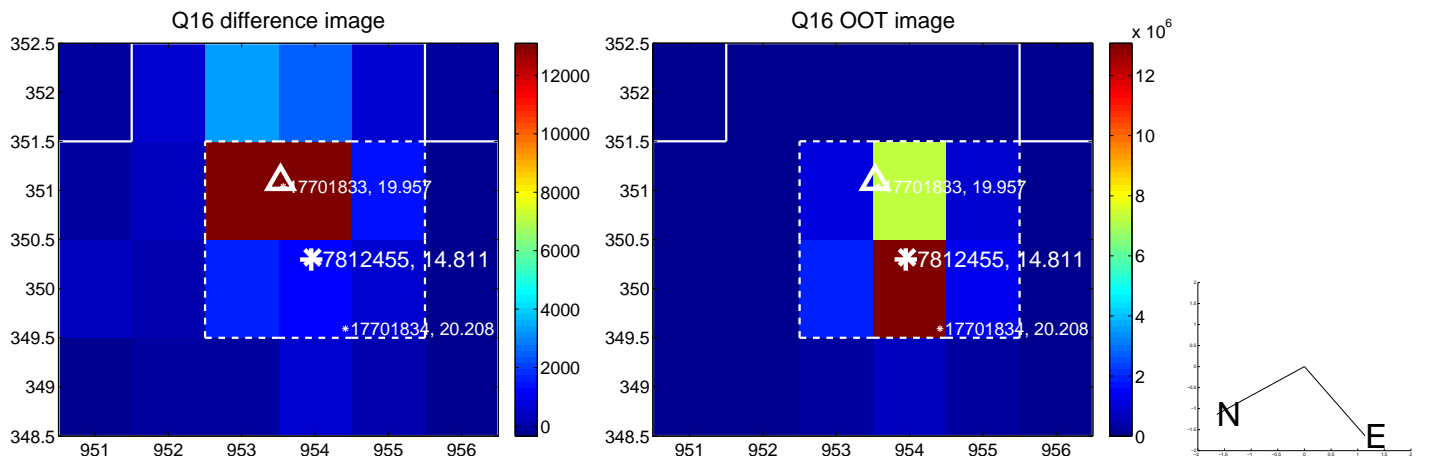
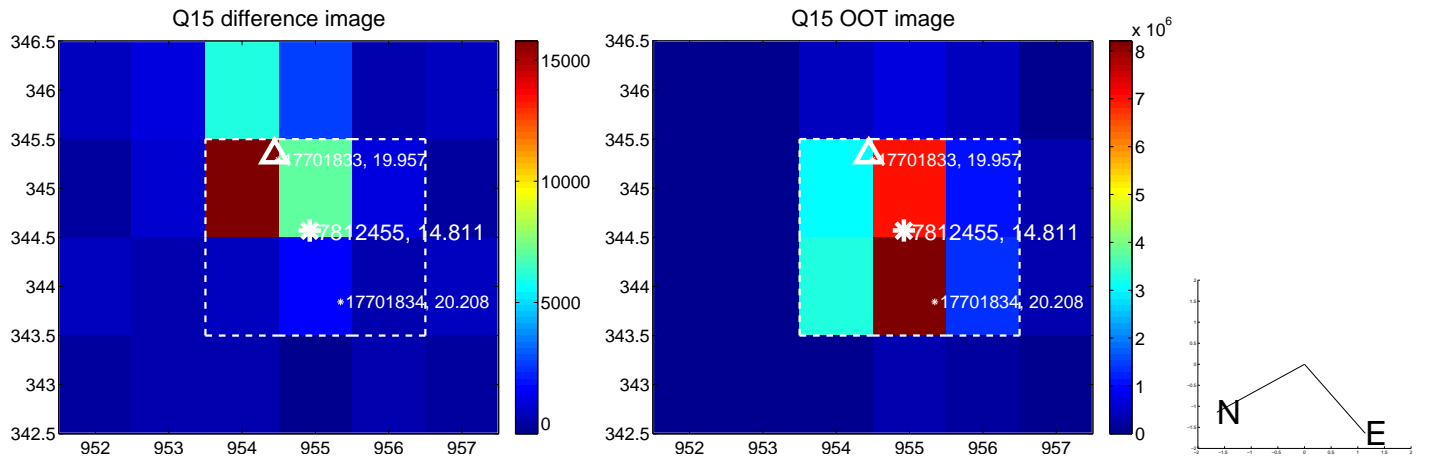
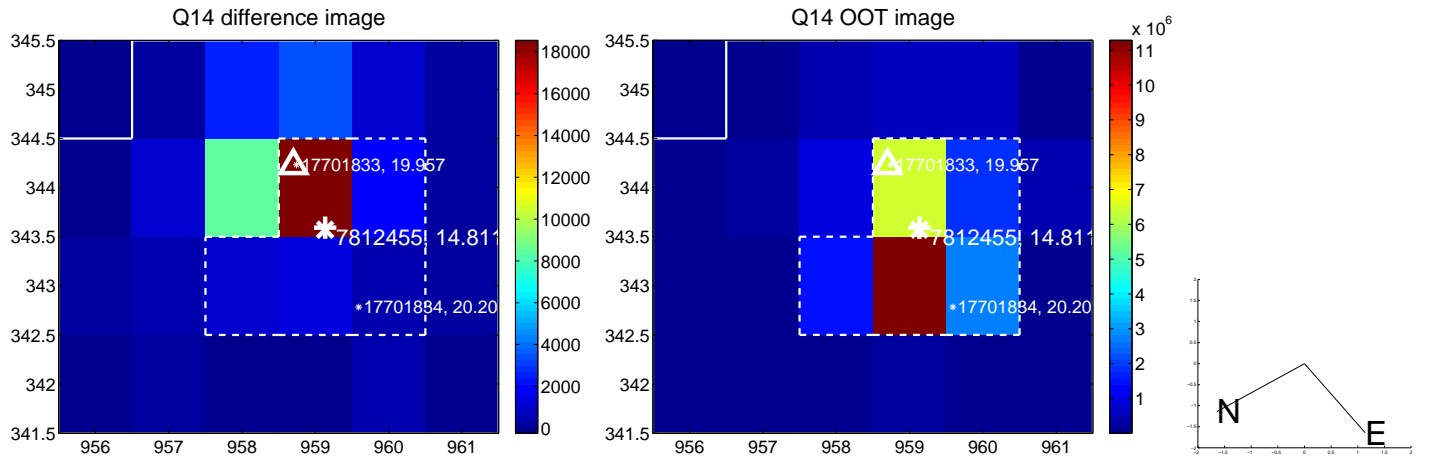
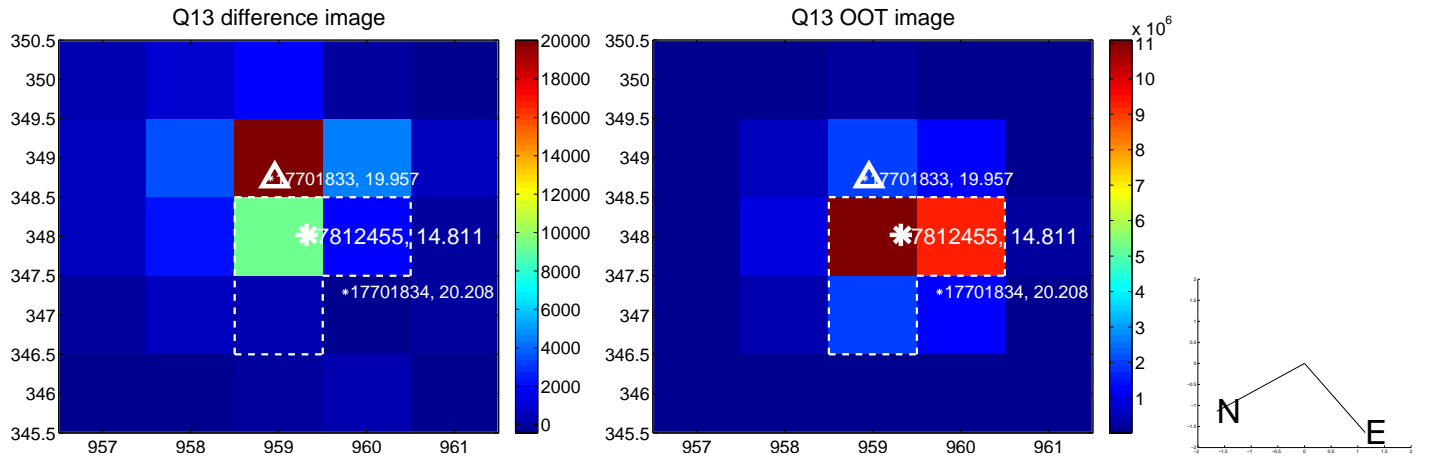




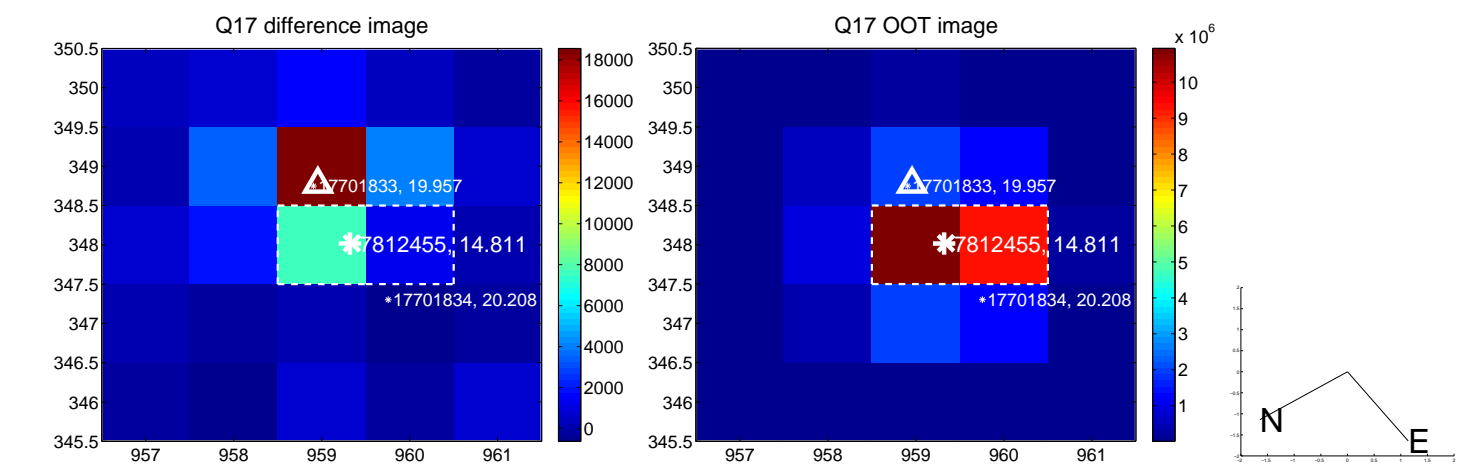
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



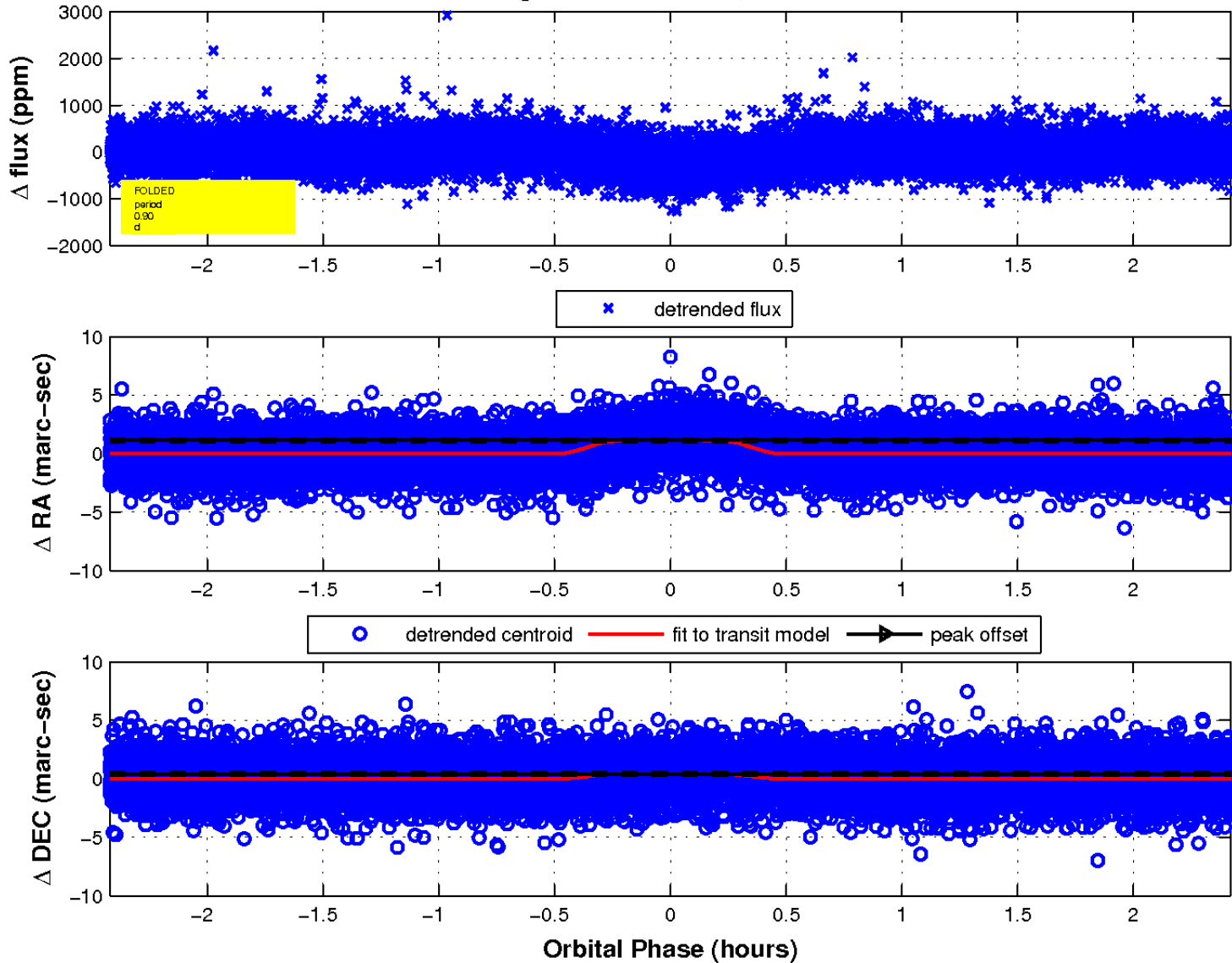
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



### fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

