

# KIC 008654540

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008654540-01	OBS	No	1.224343	132.532120	20.1	4.735	7.4	7.1	2.41	8759	1.16	36414.90

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008654540-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

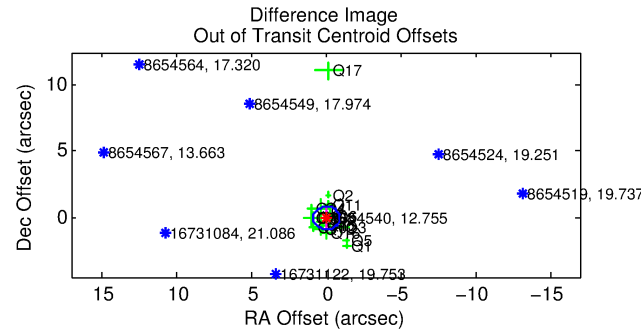
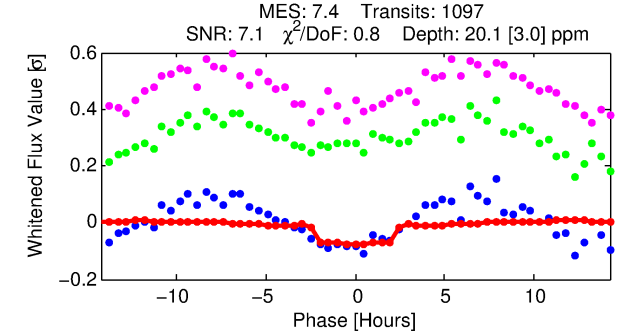
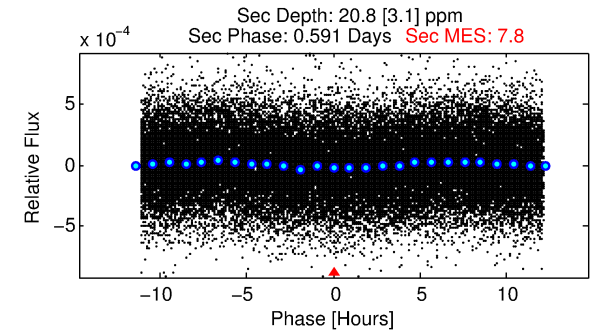
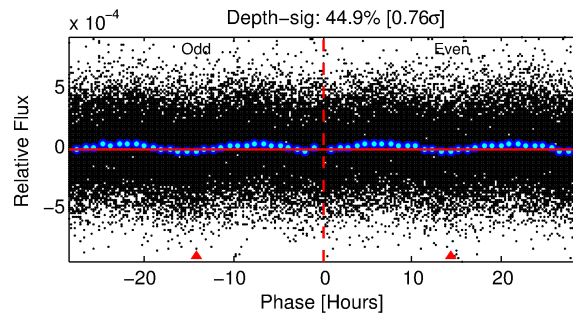
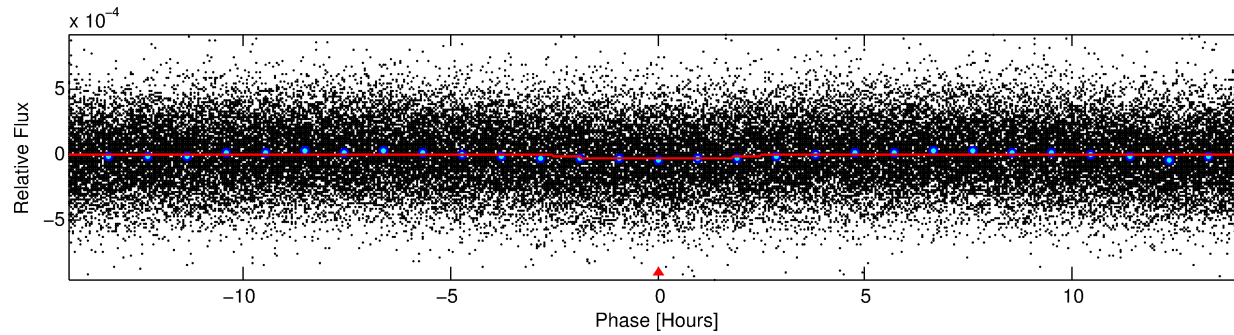
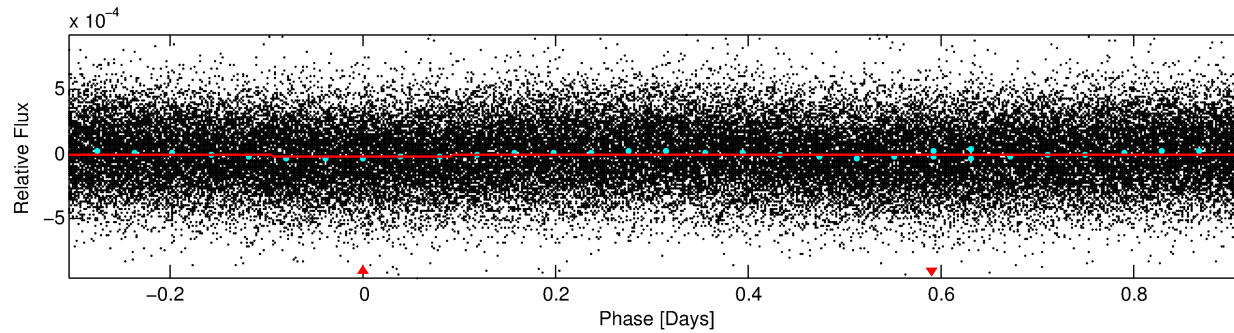
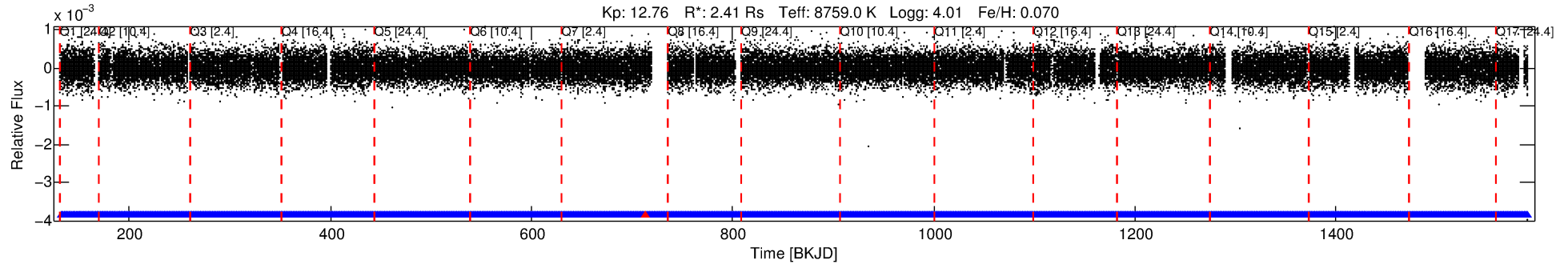
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008654540-01

No Significant Match Found

# DV One-Page Summary

KIC: 8654540 Candidate: 1 of 1 Period: 1.224 d



## DV Fit Results:

Period = 1.22434 [0.00002] d  
Epoch = 132.5321 [0.0070] BKJD  
Rp/R\* = 0.0044 [0.0015]  
a/R\* = 1.63 [2.14]  
b = 0.71 [1.49]  
Seff = 36414.90 [15380.39]  
Teq = 3522 [372] K  
Rp = 1.16 [0.52] Re  
a = 0.0290 [0.0074] AU  
Ag = 7.14 [5.58] [1.10 $\sigma$ ]  
Teffp = 8903 [1577] K [3.32 $\sigma$ ]

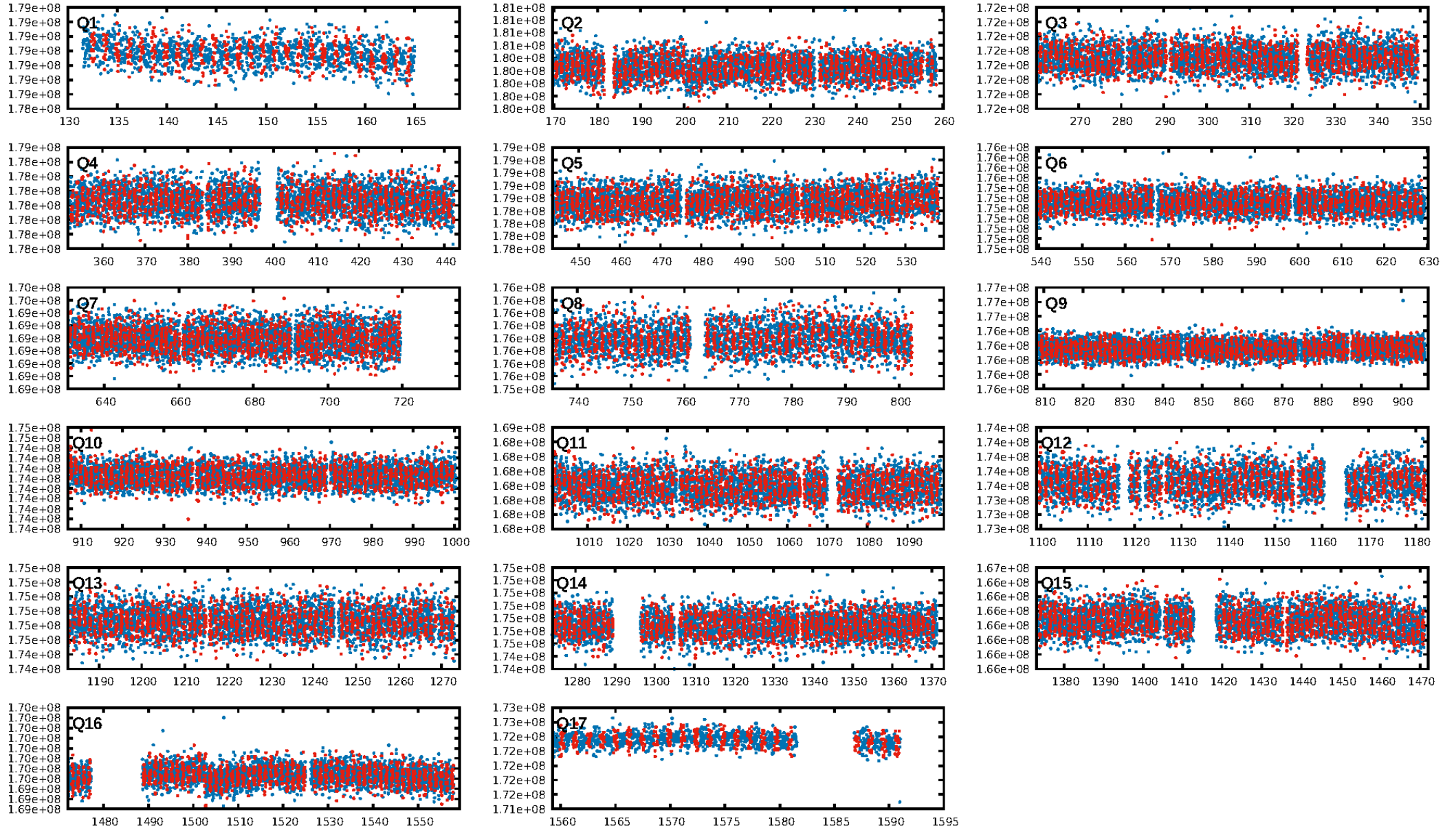
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.84e-12  
RollingBand-fgt: 1.00 [1047/1048]  
GhostDiagnostic-chr: 0.785  
Centroid-sig: 0.6%  
Centroid-so: 2.085 arcsec [1.73 $\sigma$ ]  
OotOffset-rm: 0.065 arcsec [0.22 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-rm: 0.157 arcsec [0.30 $\sigma$ ]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.94 [16/17]  
DiffImageOverlap-fno: 1.00 [17/17]

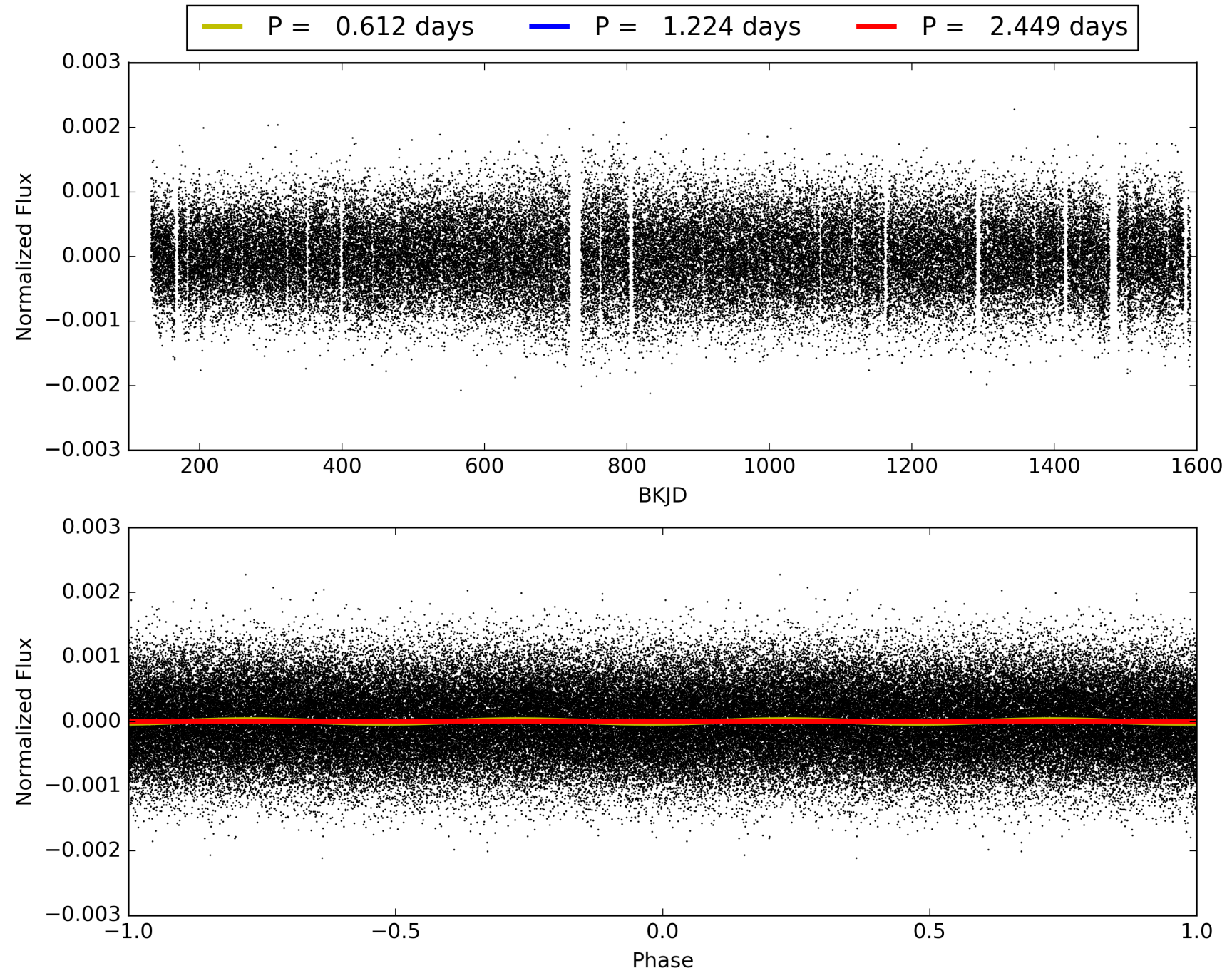
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:32:31 Z

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

# TCE 008654540-01, PDC Light Curves



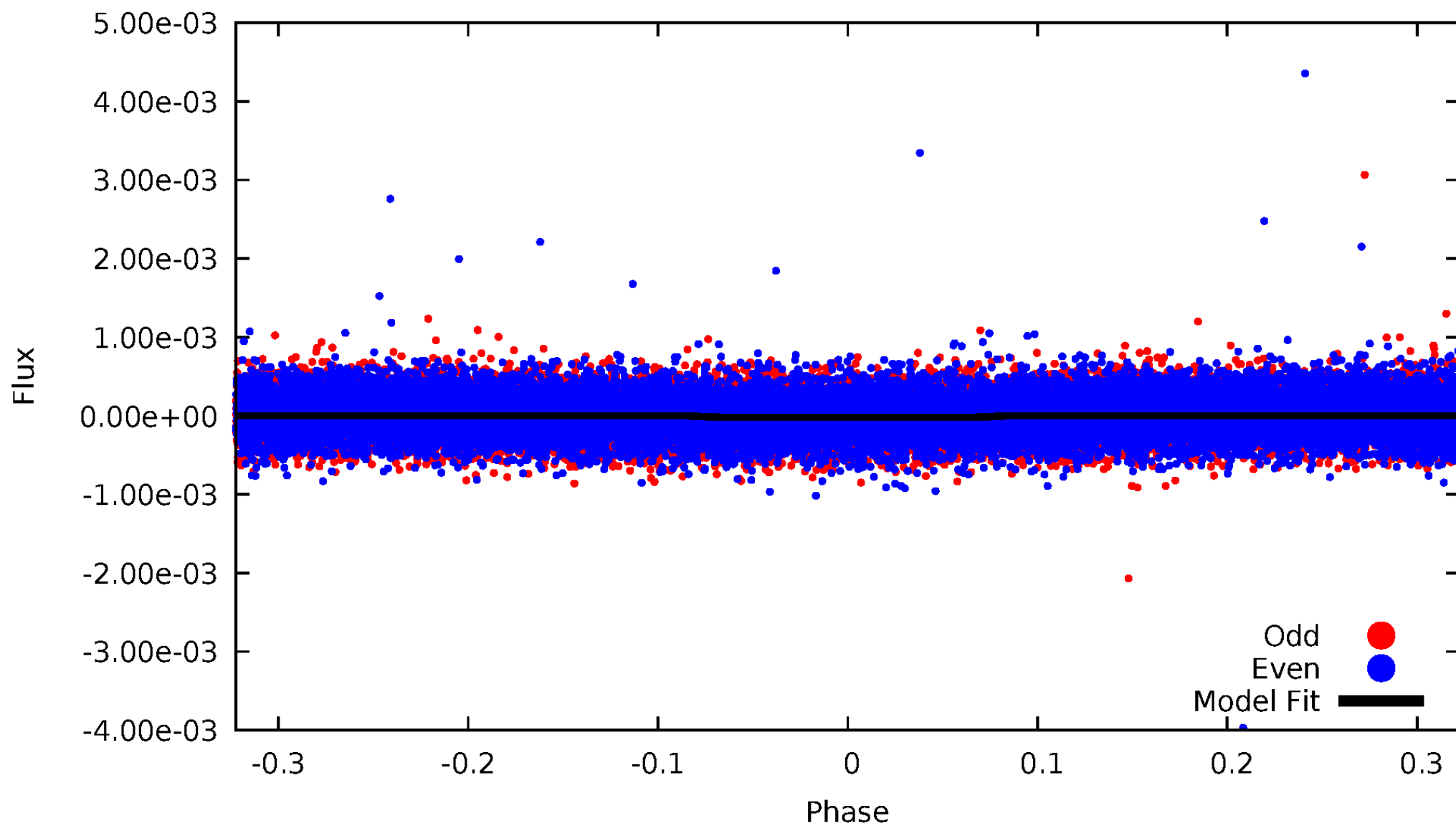
TCE 008654540-01





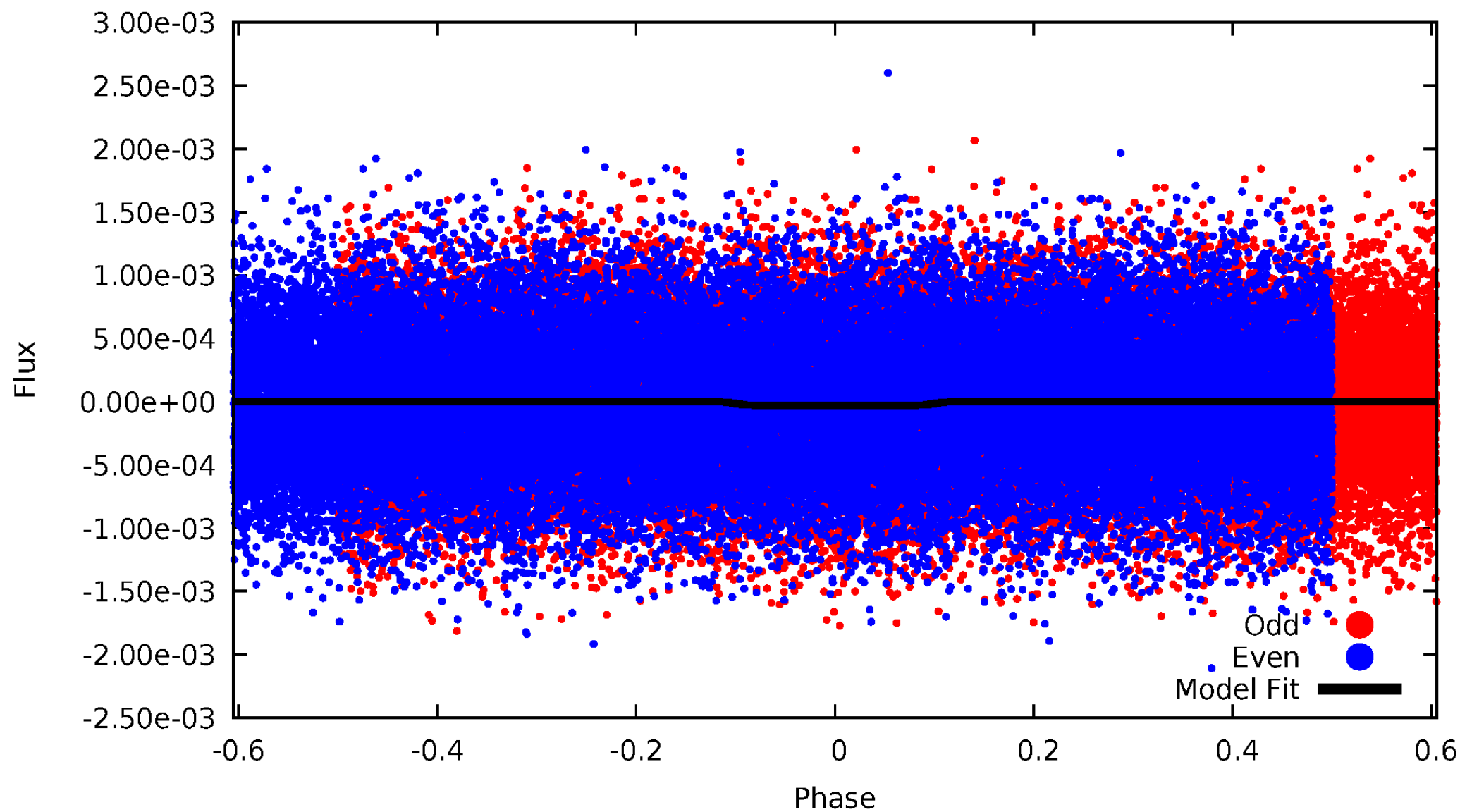
# DV Odd/Even

TCE 008654540-01



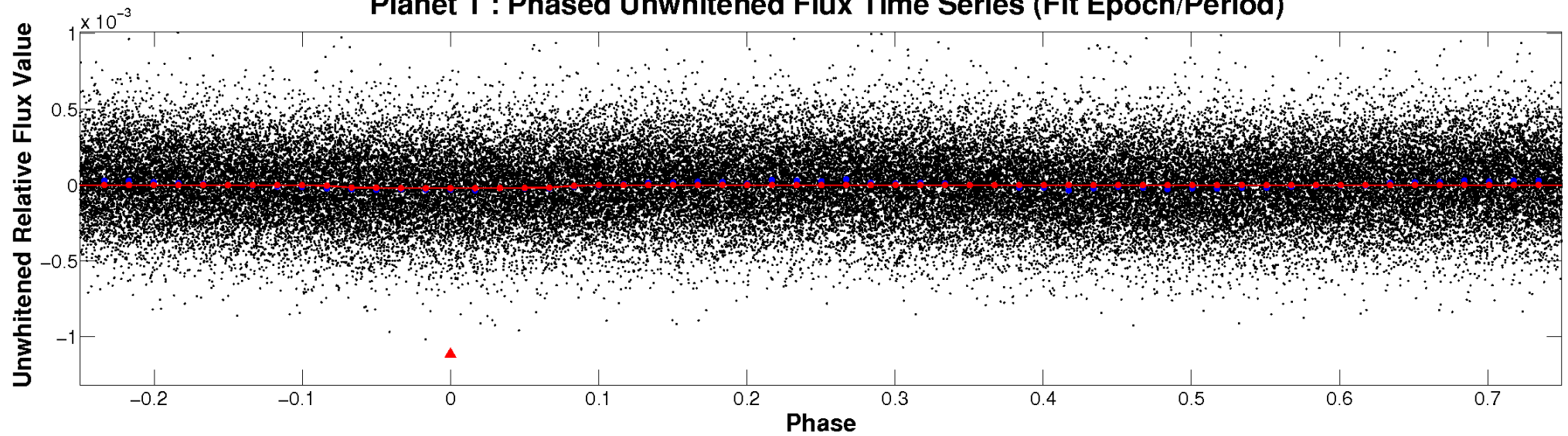
# ALT Odd/Even

TCE 008654540-01

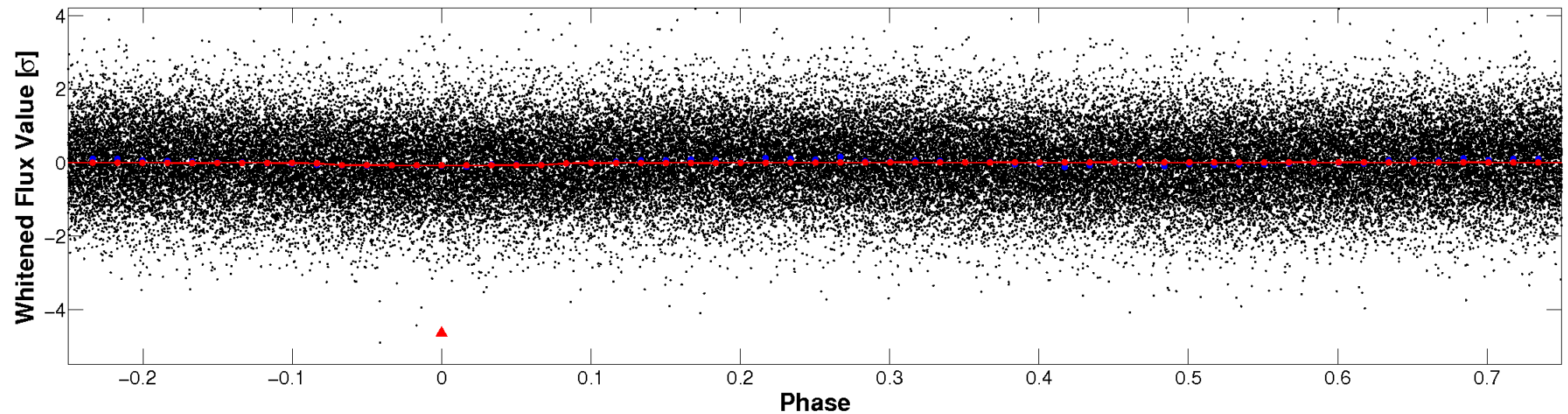


# Non-Whitened Vs. Whitened Light Curve

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

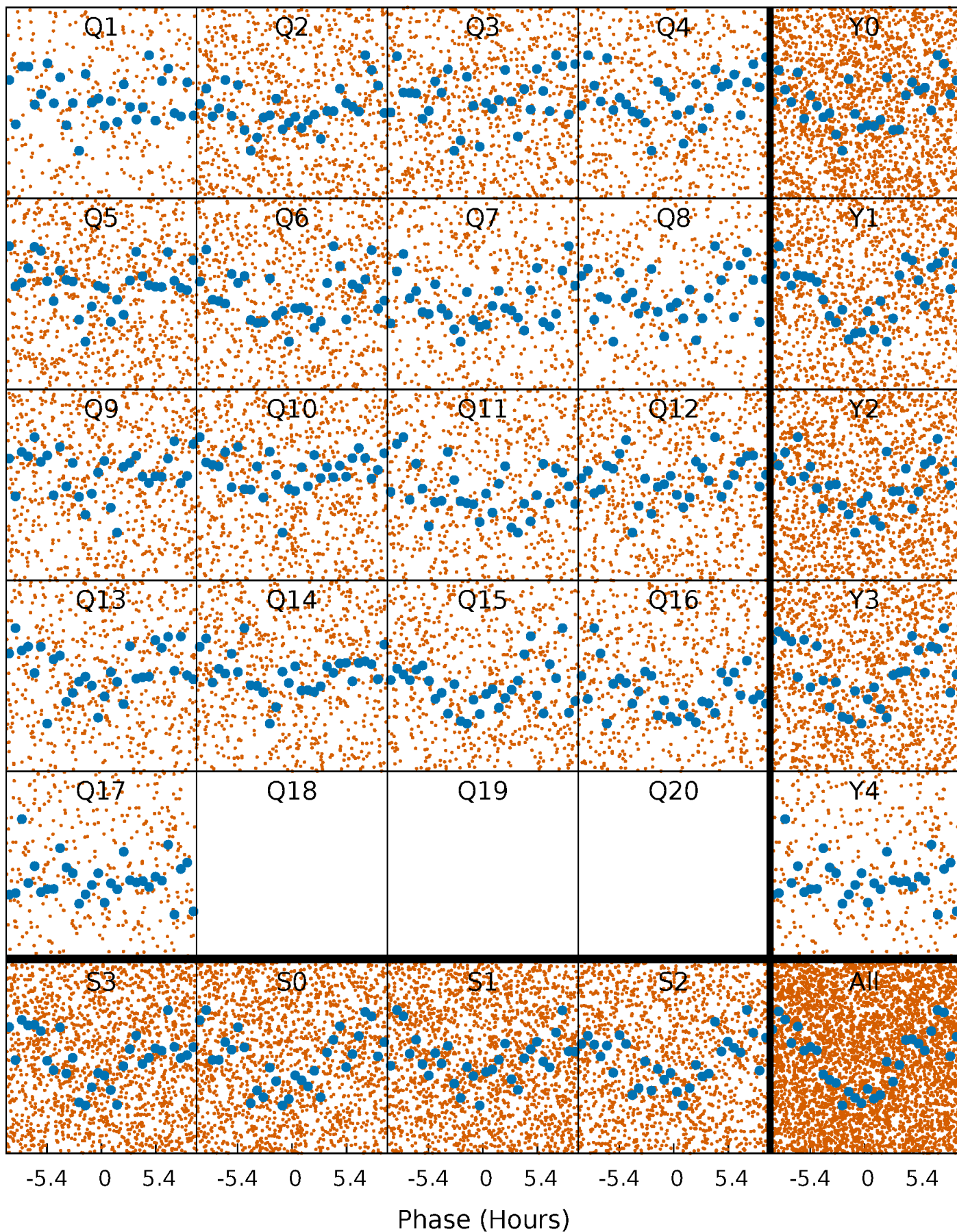


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

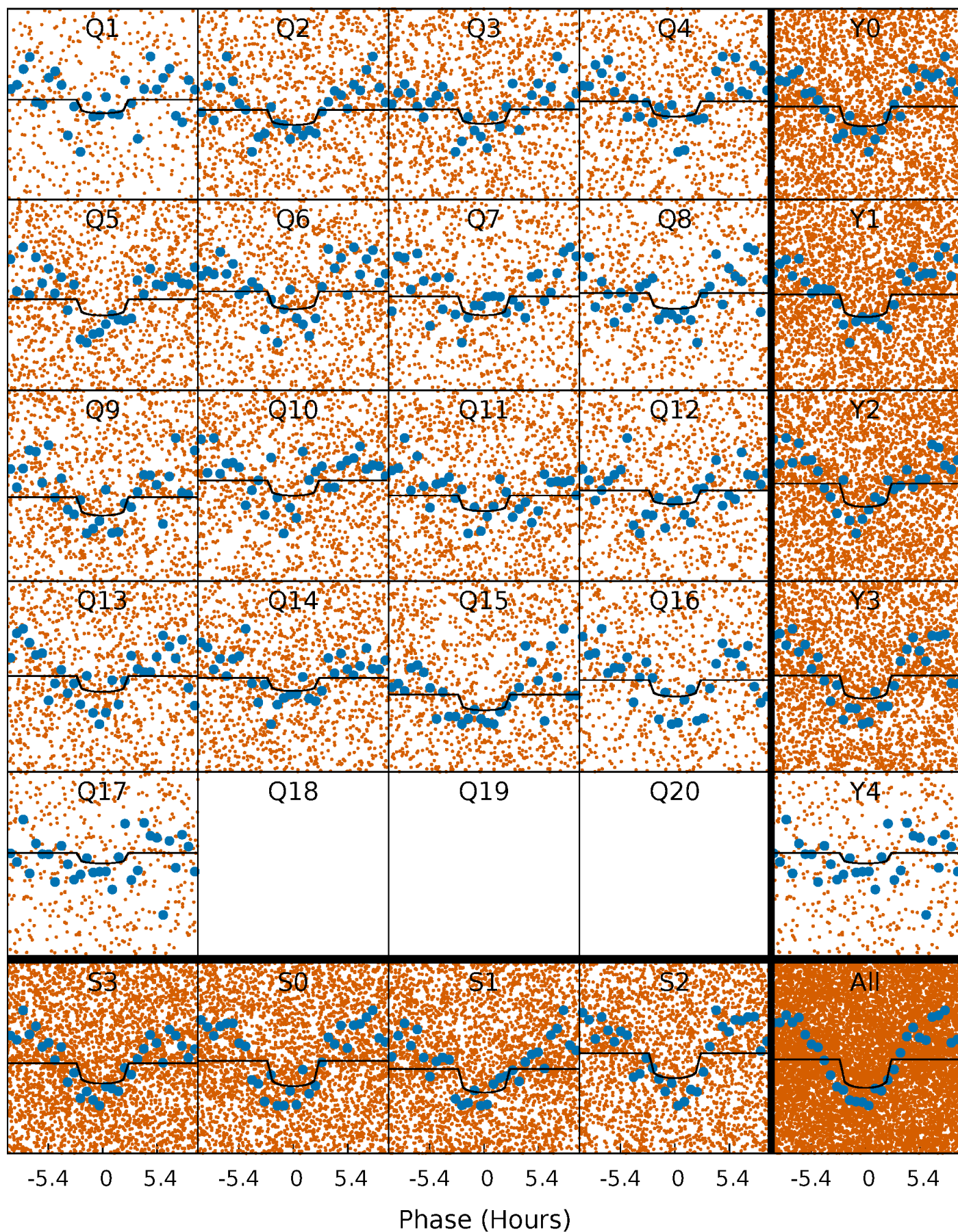
TCE 008654540-01 P= 1.224343 Days  $T_0=132.532120$  (BKJD)





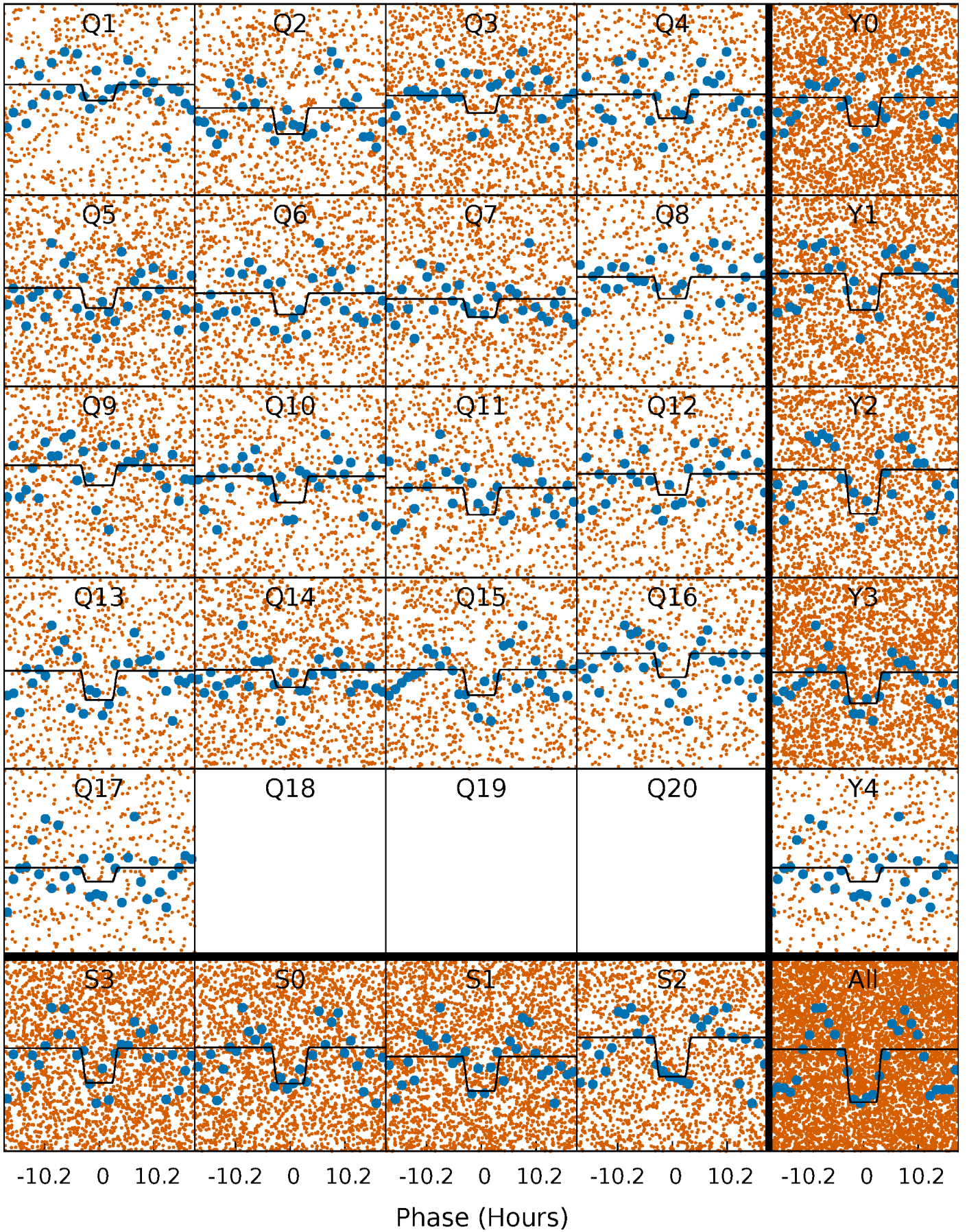
# DV Quarter-Phased Transit Curves

TCE 008654540-01 P= 1.224343 Days  $T_0=132.532120$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 008654540-01 P= 1.224362 Days  $T_0=132.501662$  (BKJD)

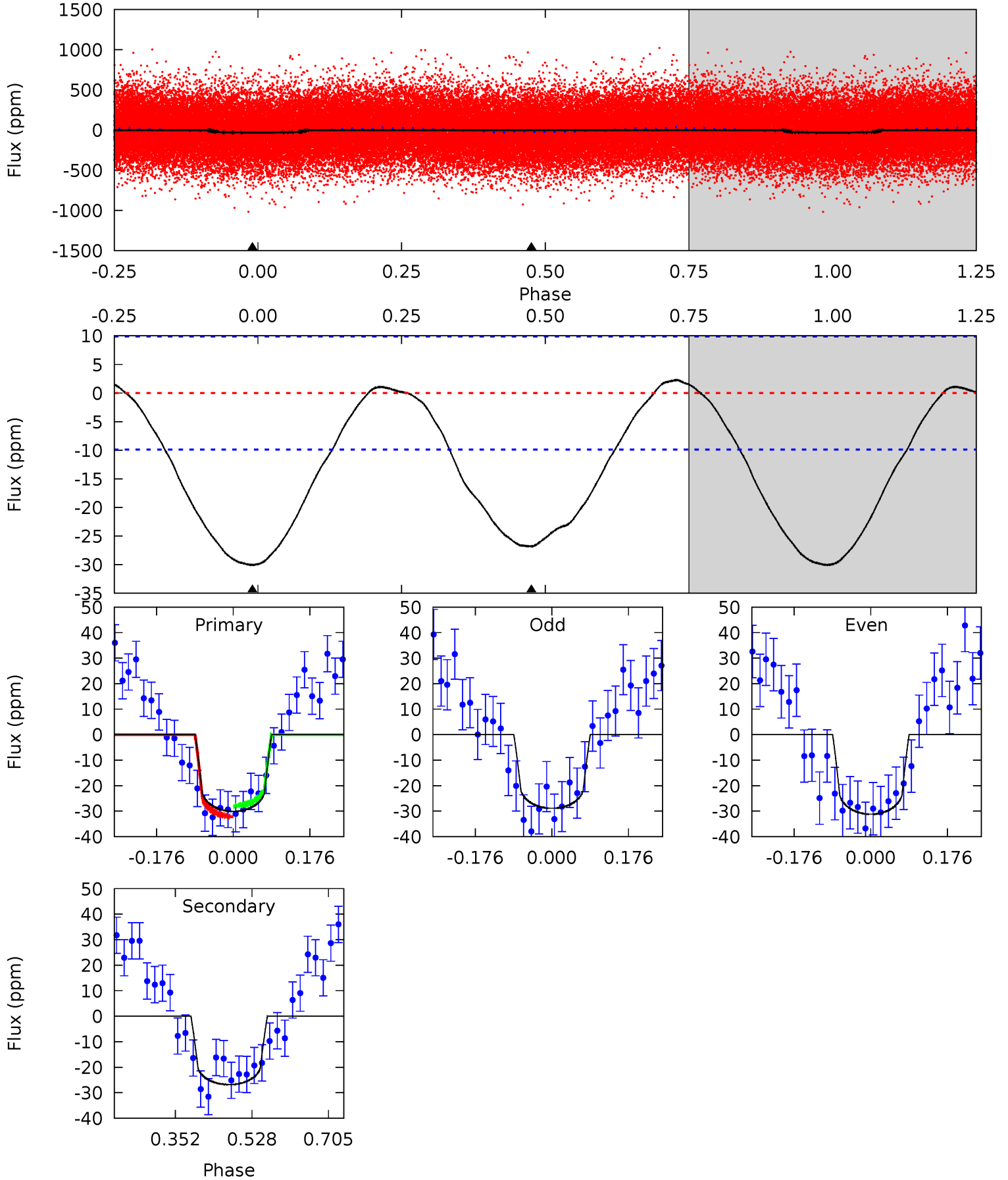




# DV Model-Shift Uniqueness Test

008654540-01, P = 1.224343 Days, E = 131.307777 Days

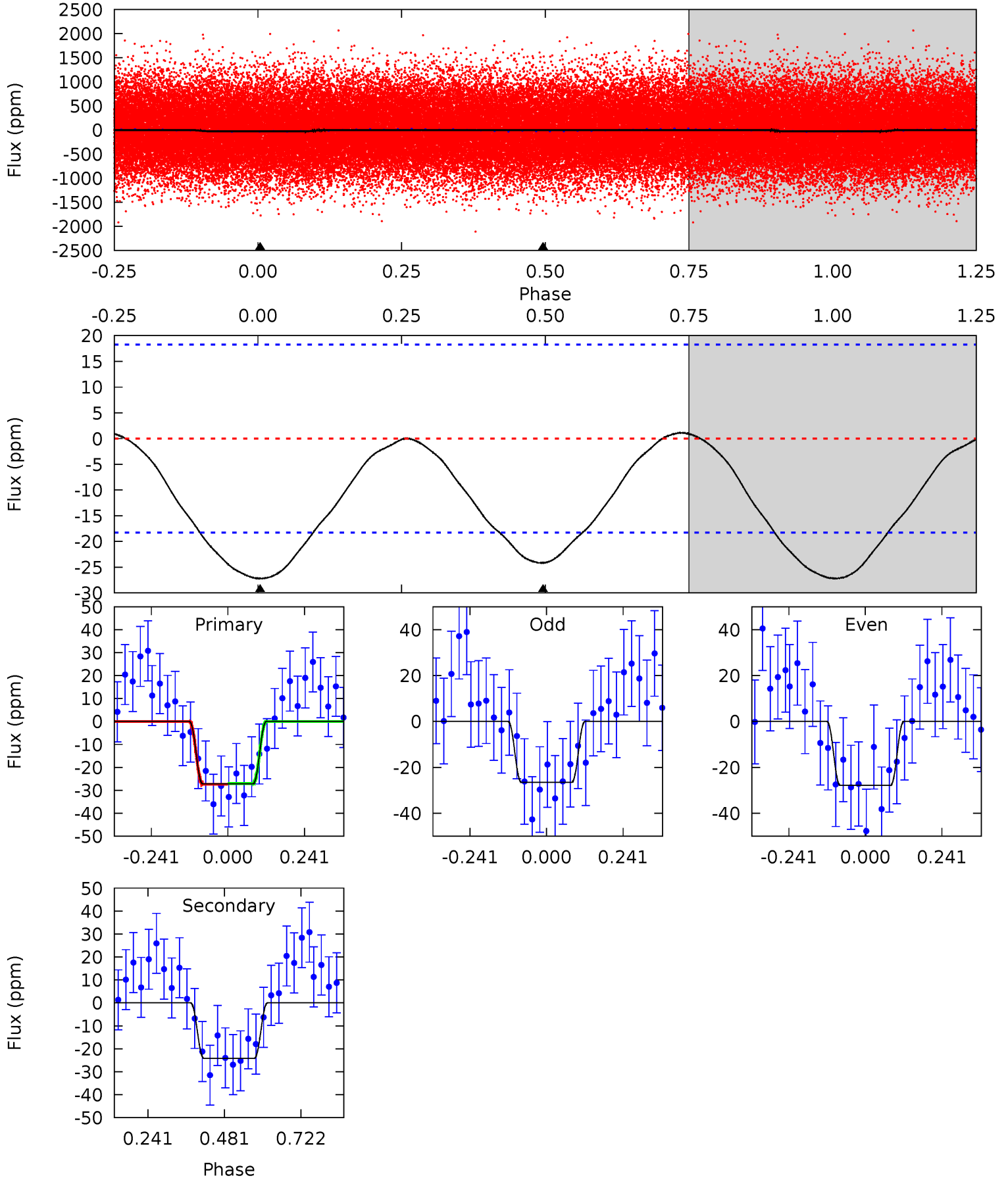
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.5	12.1	0	0	4.44	1.35	0.84	13.5	13.5	12.1	12.1	0.52	0.96	0.07	0.96



# Alt Model-Shift Uniqueness Test

008654540-01, P = 1.224362 Days, E = 131.277300 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
6.52	5.79	0	0	4.38	1.17	0.18	6.52	6.52	5.79	5.79	0.16	1.19	0.04	0.04





### Stellar Parameters For KIC 008654540

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$8759^{+274}_{-412}$	$4.010^{+0.210}_{-0.157}$	$0.070^{+0.250}_{-0.600}$	$2.408^{+0.714}_{-0.714}$	$2.161^{+0.321}_{-0.551}$	$0.218^{+0.264}_{-0.096}$
	+3%/-5%	+5%/-4%	+357%/-857%	+30%/-30%	+15%/-25%	+121%/-44%
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 008654540-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-27 \pm 2$	$1.13^{+0.43}_{-0.38}$	$4854^{+395}_{-391}$	$9551^{+3399}_{-1592}$	$9.686^{+11.958}_{-4.581}$
Alt.	$-24 \pm 4$	$1.39^{+0.49}_{-0.40}$	$4879^{+369}_{-381}$	$7907^{+2114}_{-1156}$	$5.471^{+5.339}_{-2.394}$

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

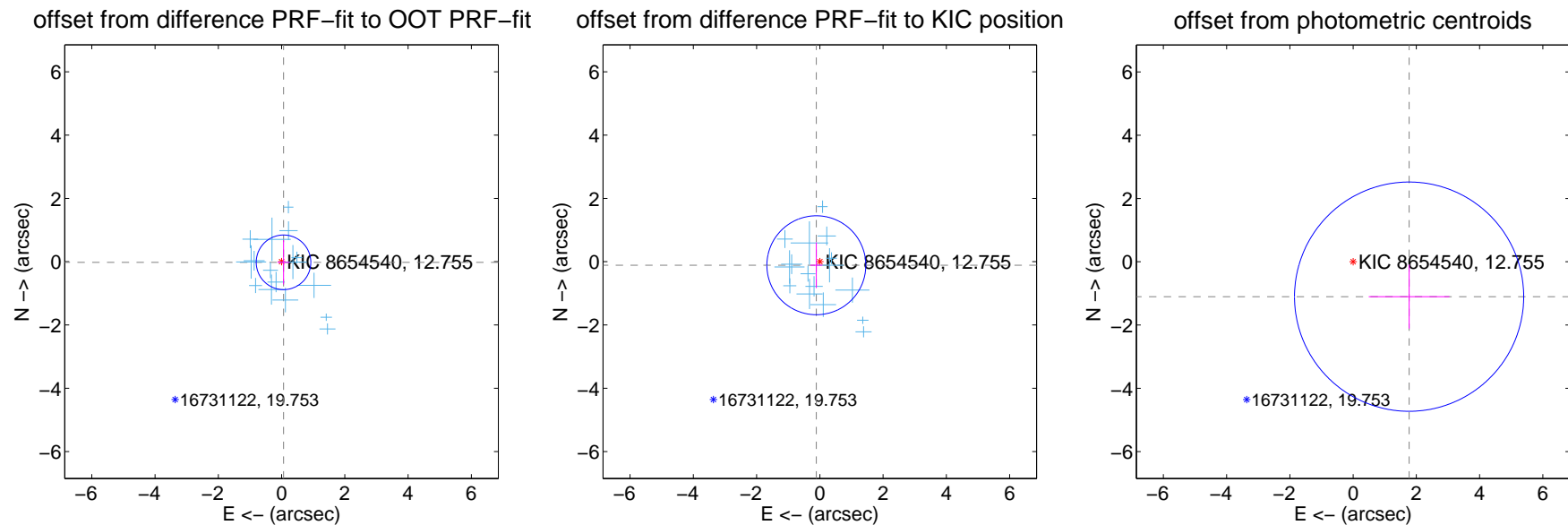
## DV Centroid Data

Supplemental centroid analysis for 008654540-01. Kepler magnitude: 12.76. Transit SNR 7.13

There are 16 quarters with good PRF difference image offsets

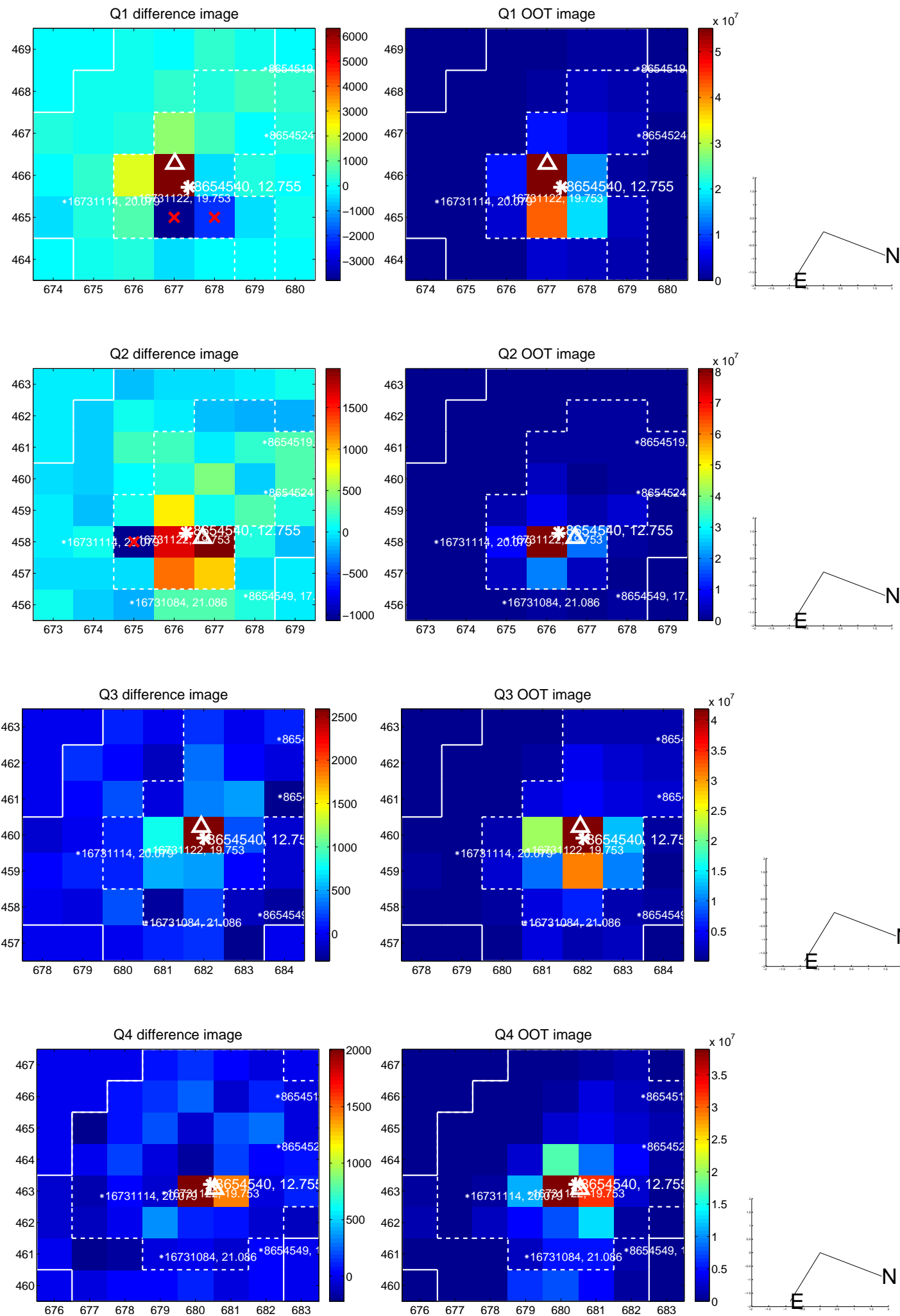
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.065 \pm 0.288$	0.22	$-0.062 \pm 0.189$	$-0.019 \pm 0.698$
PRF-fit source offset from KIC position	$0.157 \pm 0.521$	0.30	$0.110 \pm 0.190$	$-0.112 \pm 0.722$
photometric centroid source offset	$2.09 \pm 1.21$	1.73	$-1.77 \pm 1.28$	$-1.10 \pm 1.01$

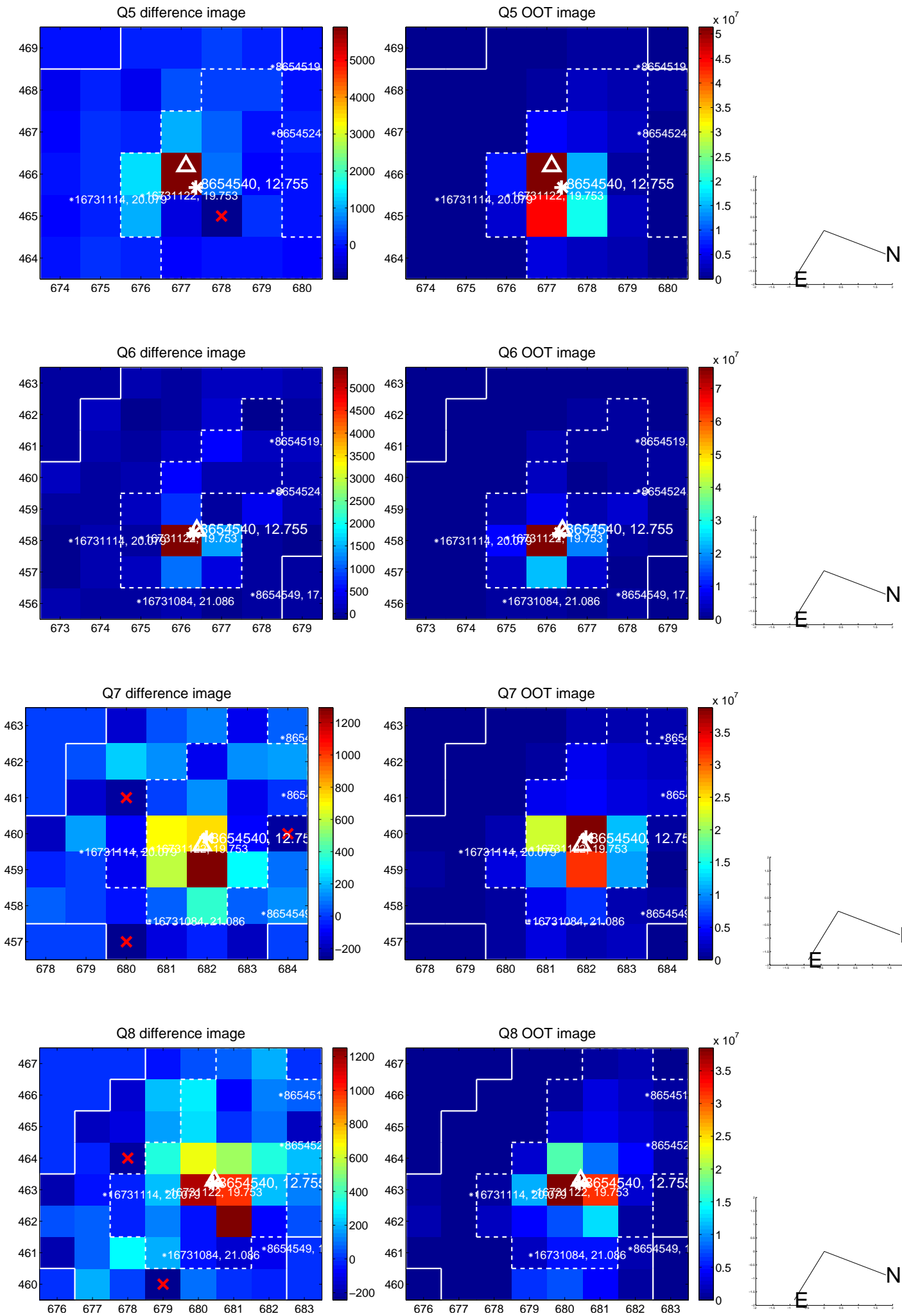


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

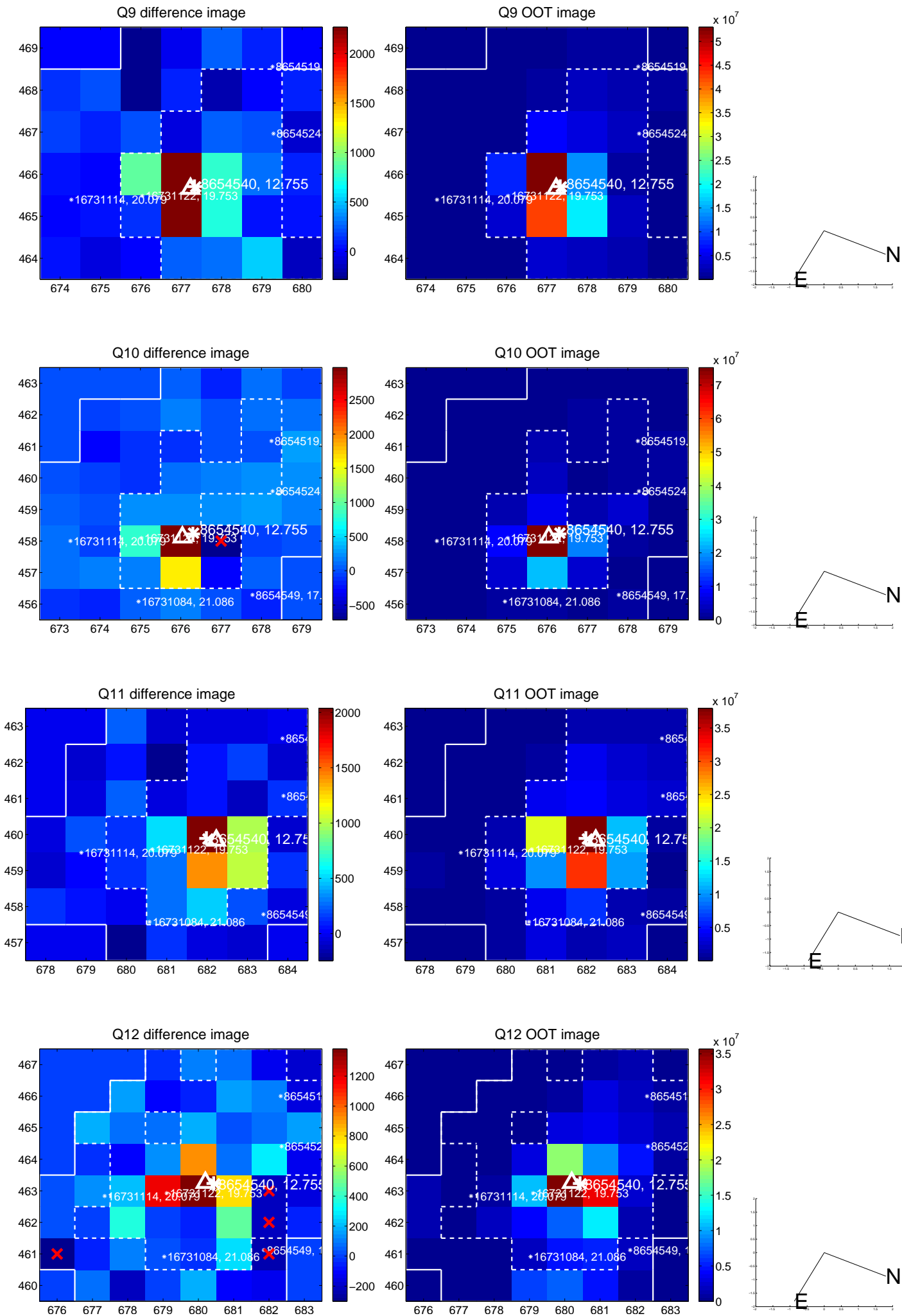


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

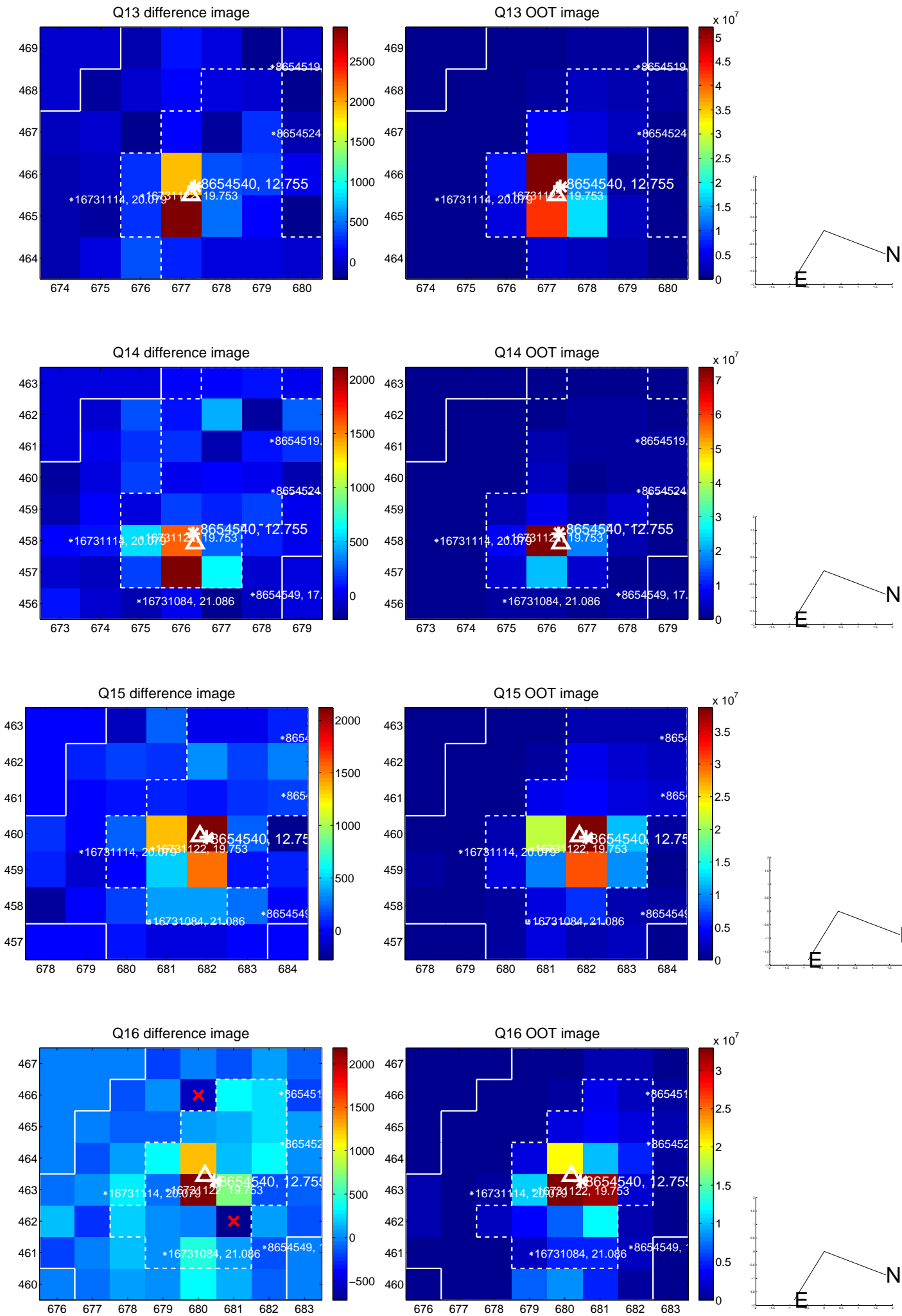




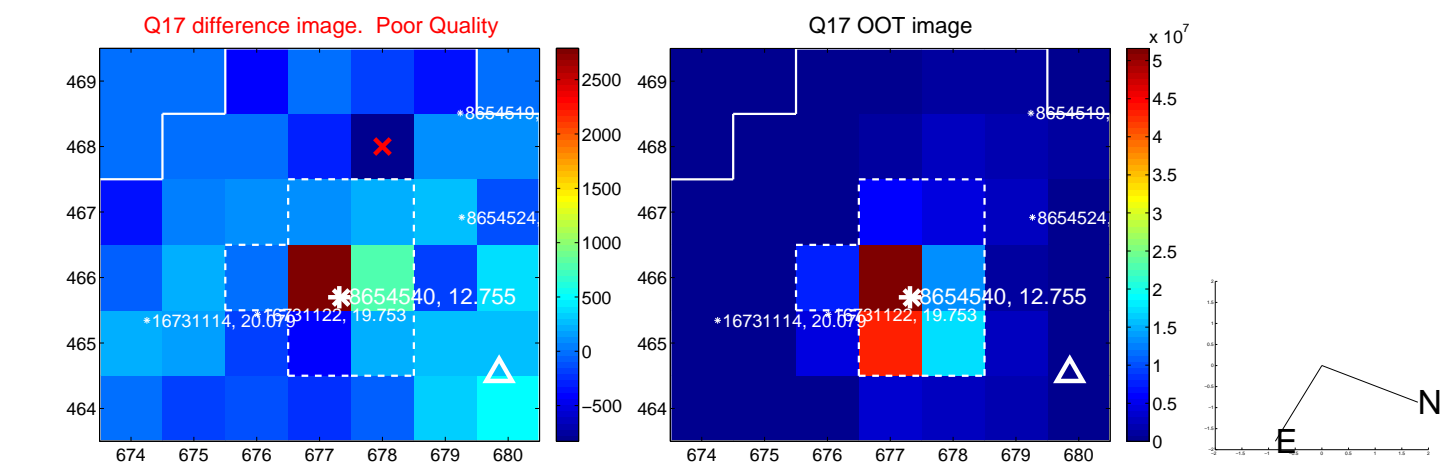
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



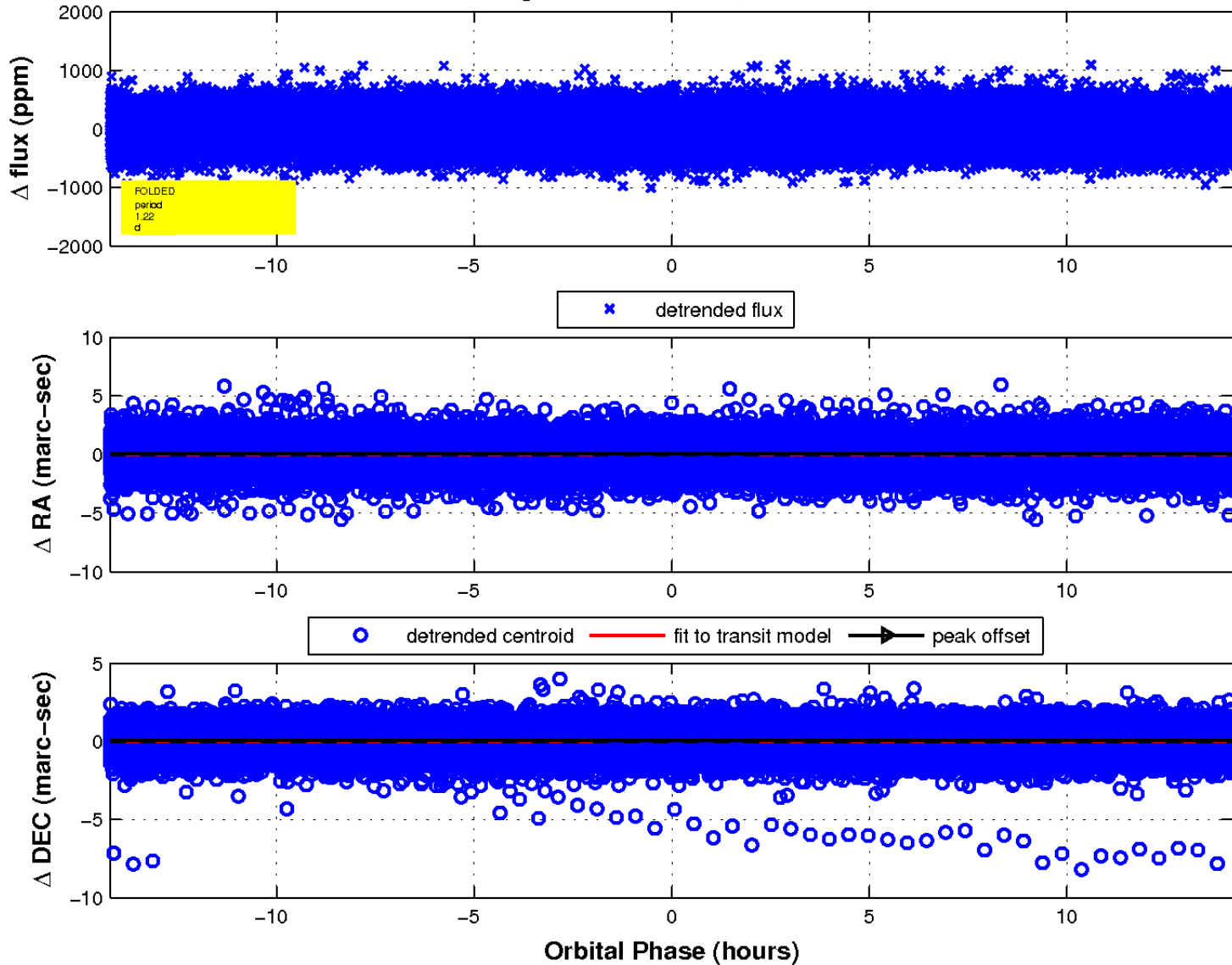
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

