

# KIC 004567400

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004567400-01	OBS	No	17.170454	145.138199	249.2	47.311	12.5	21.2	2.45	7912	7.45	815.35

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004567400-01	OBS	FP	0.00	1	0	0	0	LPP_DV

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

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

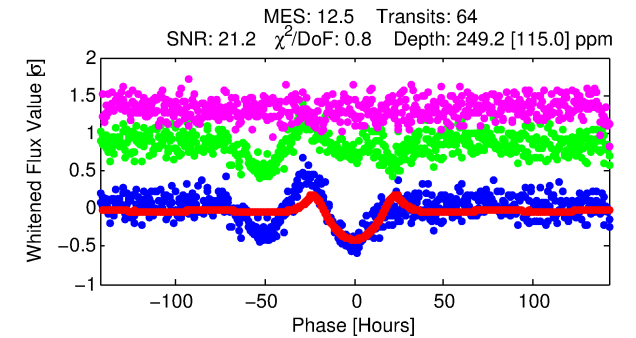
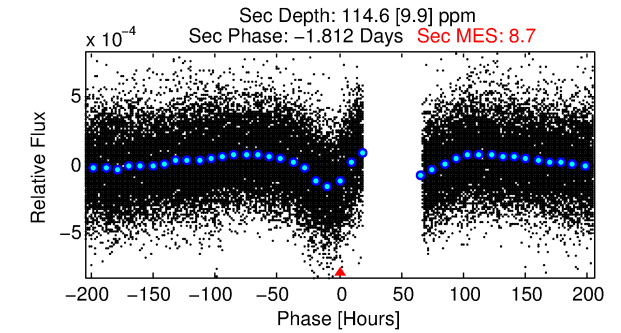
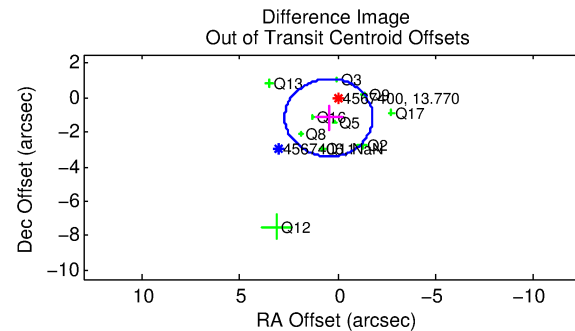
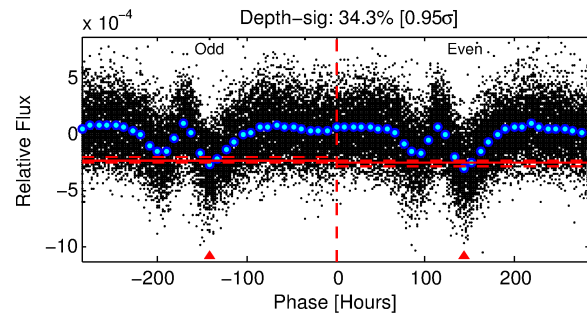
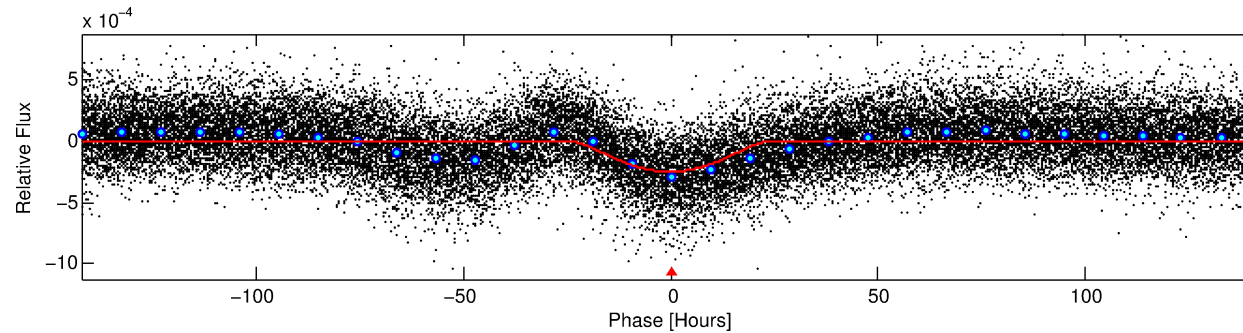
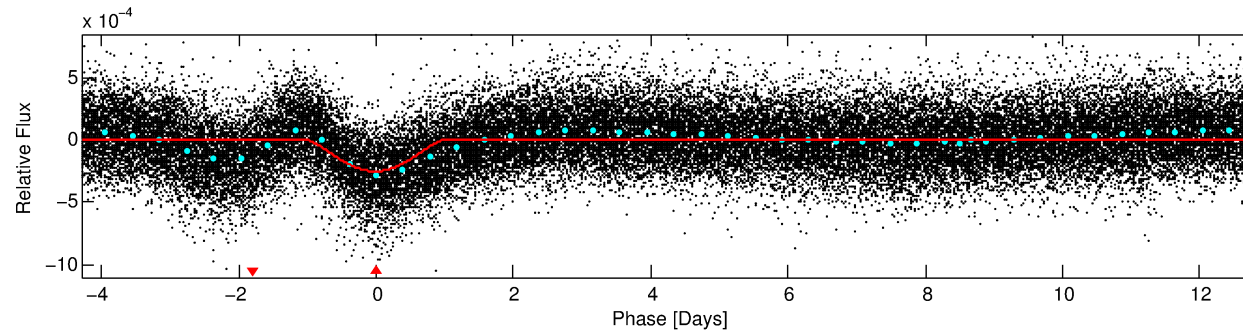
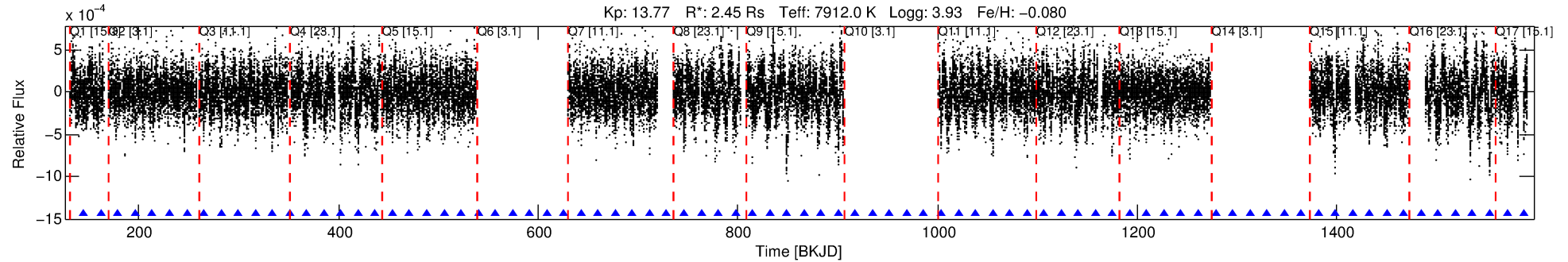
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004567400-01

No Significant Match Found

# DV One-Page Summary

KIC: 4567400 Candidate: 1 of 1 Period: 17.170 d



## DV Fit Results:

Period = 17.17045 [0.00068] d  
Epoch = 145.1382 [0.0327] BKJD  
Rp/R\* = 0.0278 [0.0156]  
a/R\* = 1.21 [0.04]  
b = 1.00 [0.03]  
Seff = 815.35 [369.47]  
Teq = 1363 [154] K  
Rp = 7.45 [4.74] Re  
a = 0.1609 [0.0441] AU  
Ag = 29.45 [35.33] [0.81 $\sigma$ ]  
Teffp = 4908 [1393] K [2.53 $\sigma$ ]

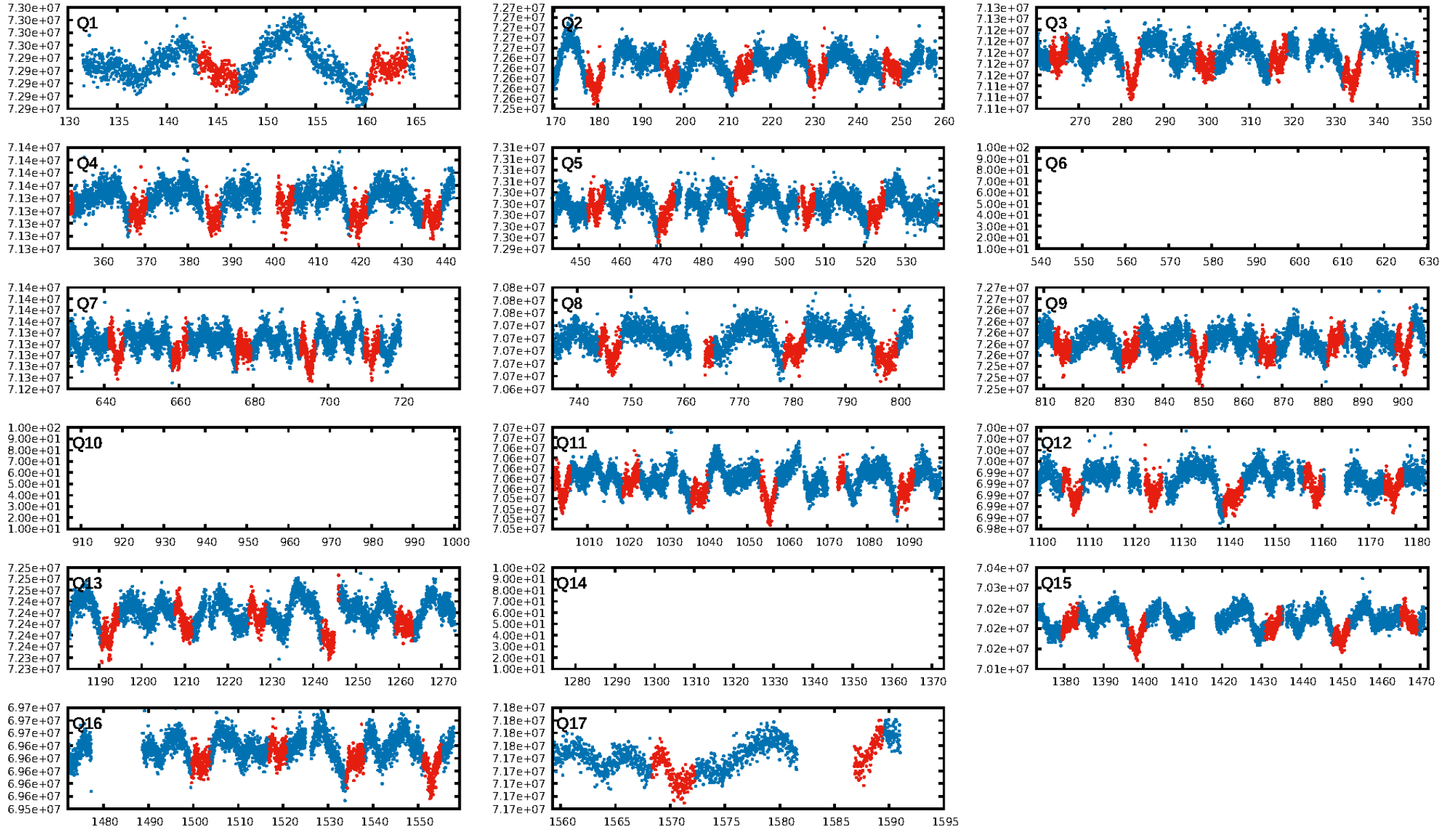
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 97.4%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.03e-36  
RollingBand-fgt: 1.00 [60/60]  
GhostDiagnostic-chr: 4.526  
Centroid-sig: 1.8%  
Centroid-so: 0.616 arcsec [1.78 $\sigma$ ]  
OotOffset-rm: 1.249 arcsec [1.67 $\sigma$ ]  
OotOffset-st: 1/2/3/4 [10]  
KicOffset-rm: 1.434 arcsec [2.01 $\sigma$ ]  
KicOffset-st: 1/2/3/4 [10]  
DiffImageQuality-fgm: 0.80 [8/10]  
DiffImageOverlap-fno: 1.00 [14/14]

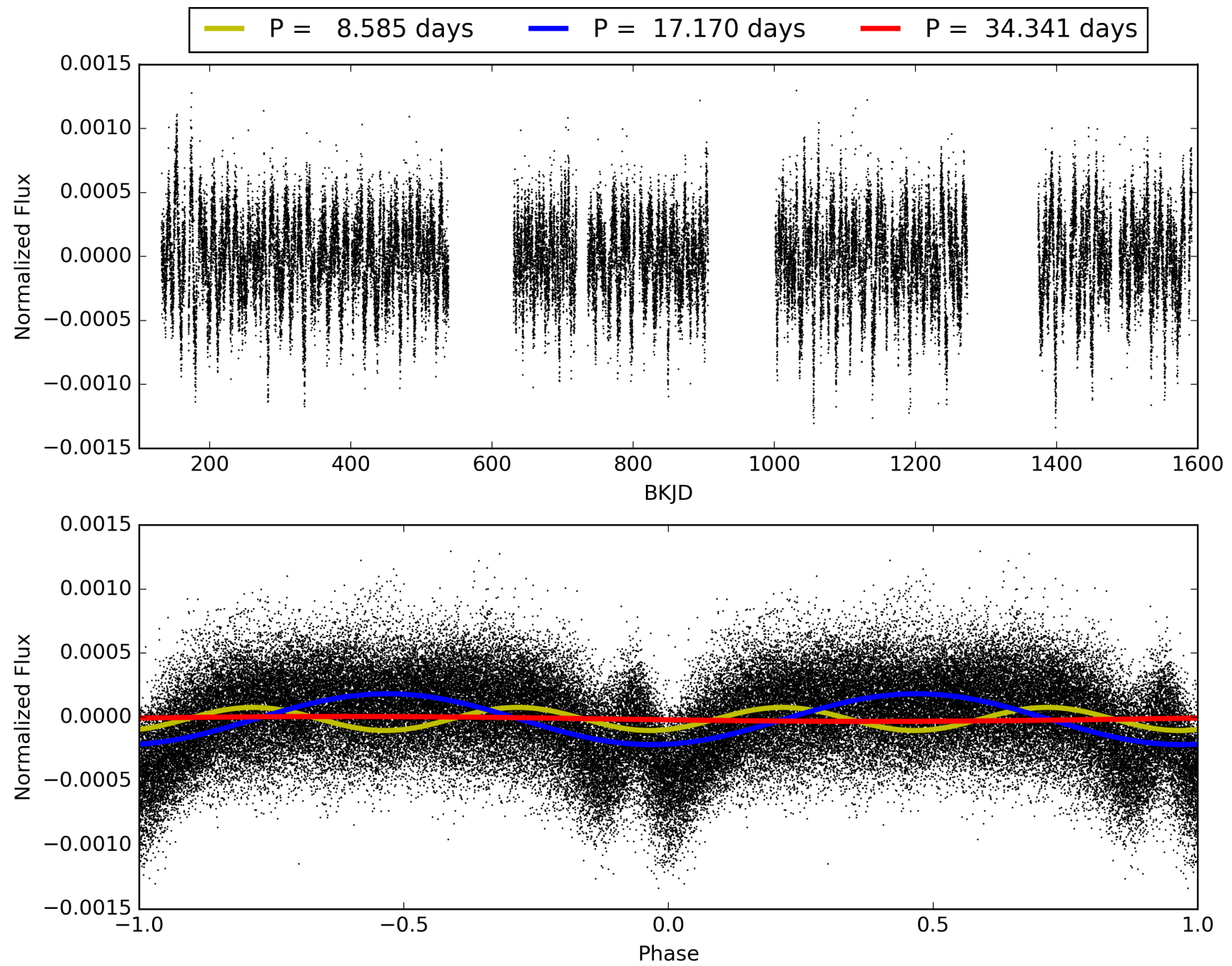
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:23:44 Z

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

# TCE 004567400-01, PDC Light Curves

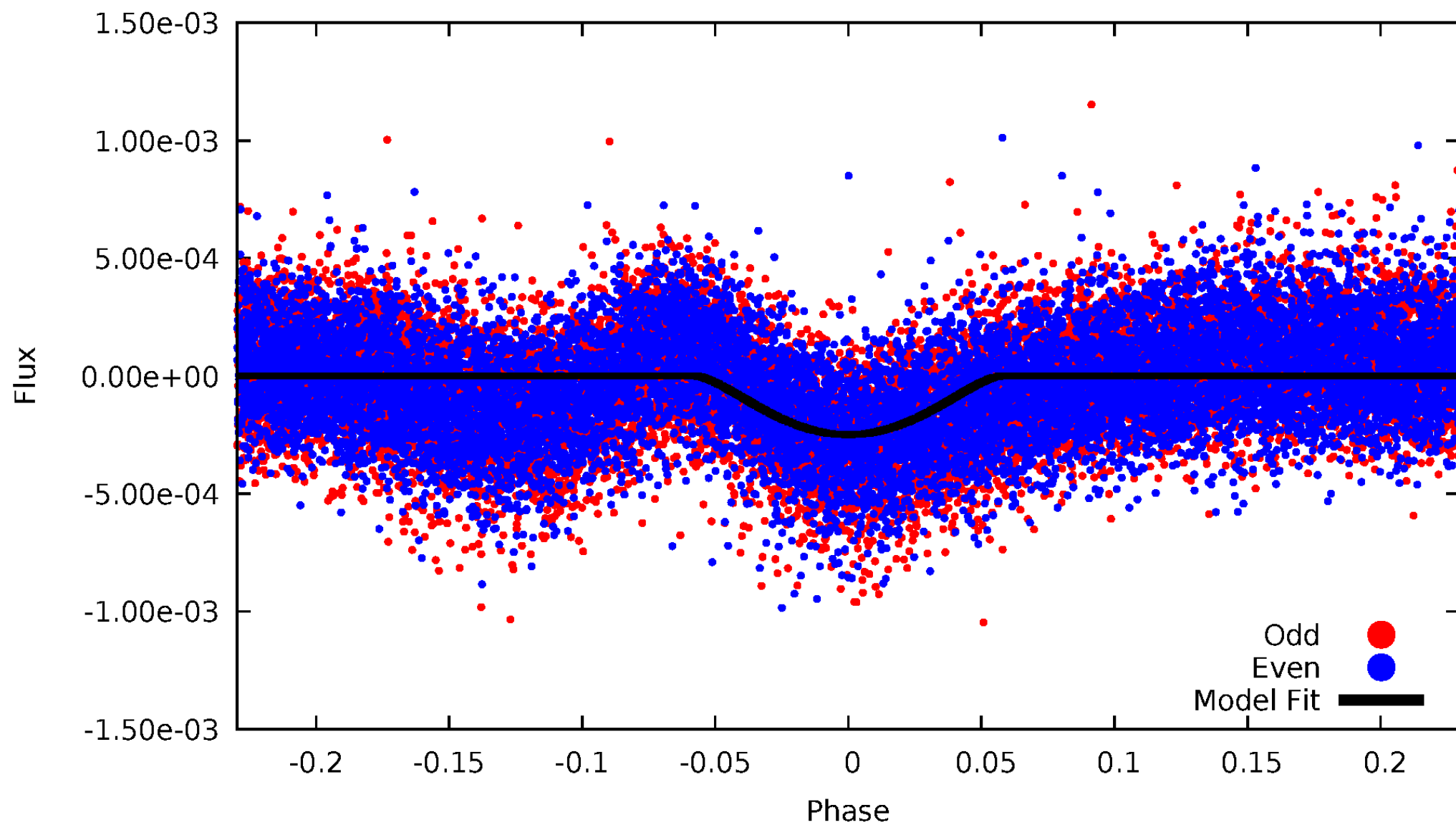


# TCE 004567400-01



# DV Odd/Even

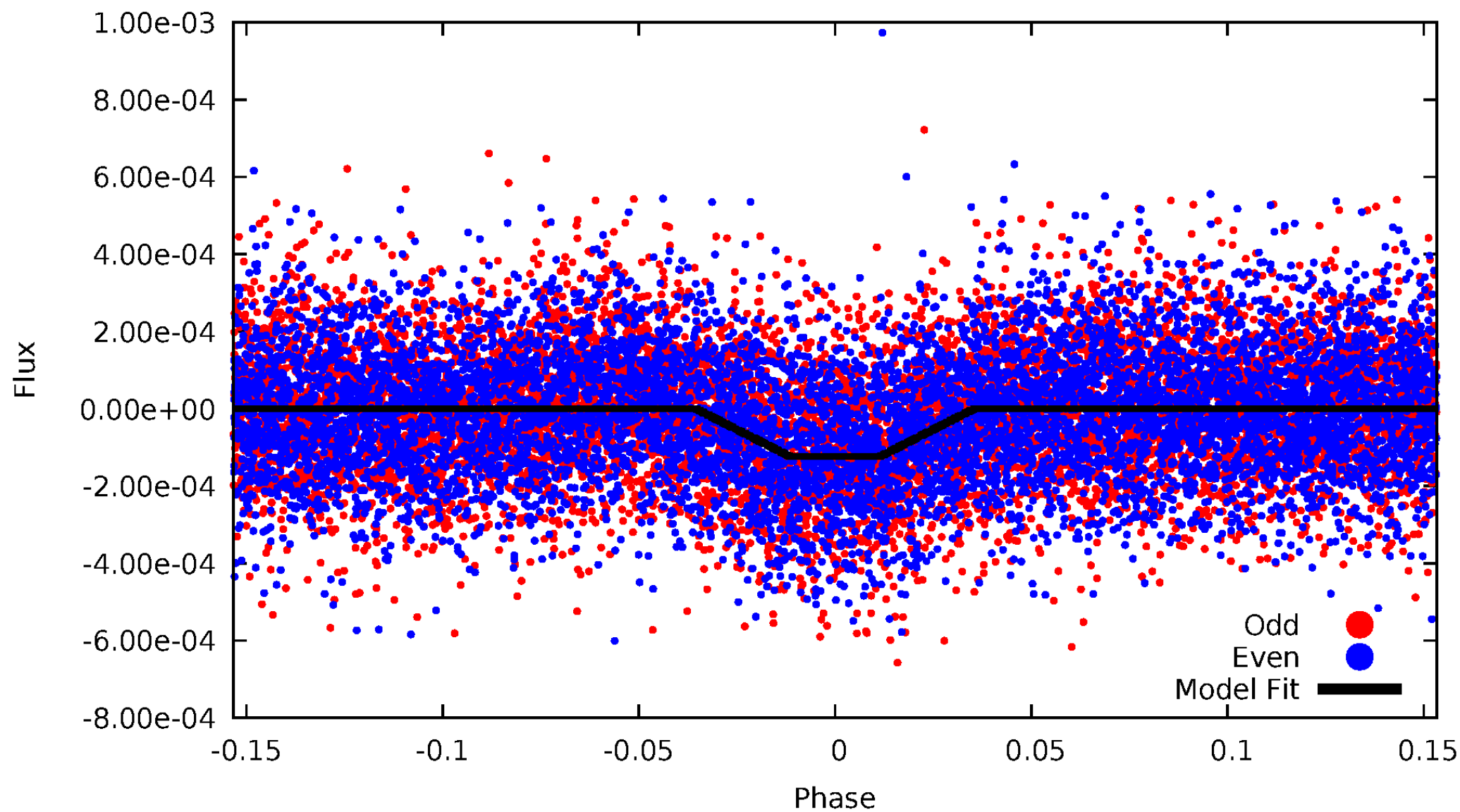
TCE 004567400-01



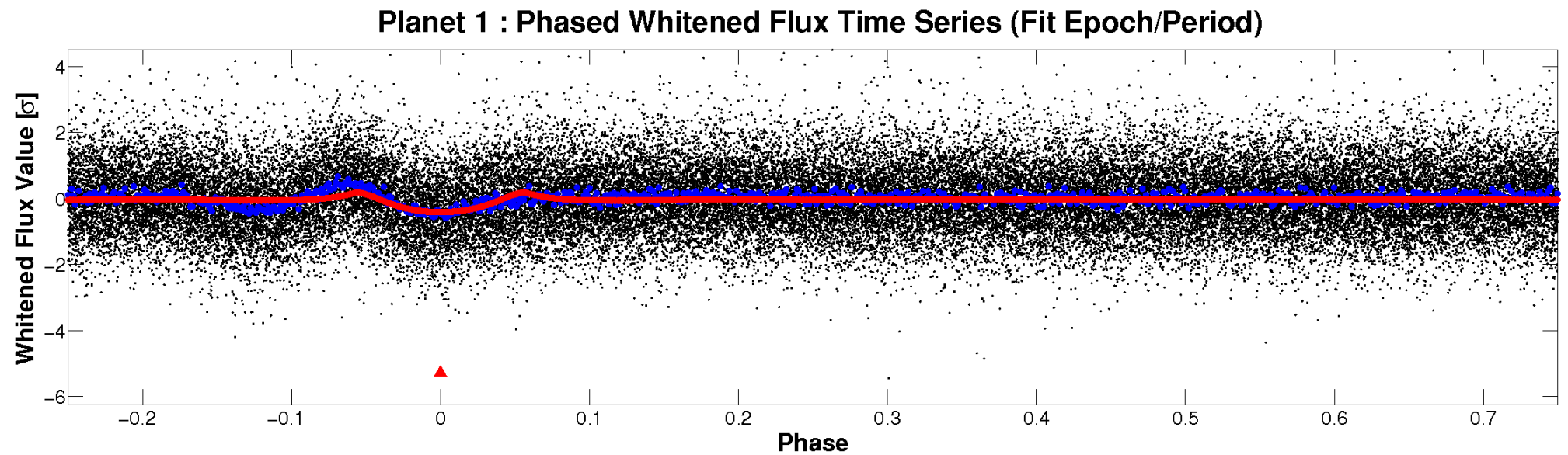
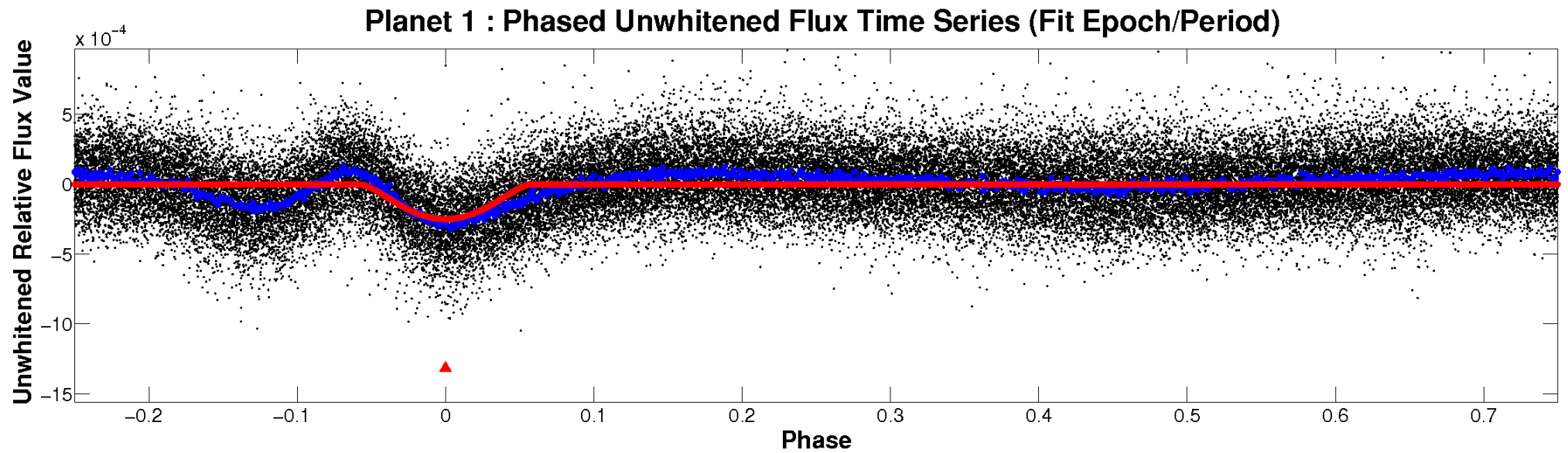


# ALT Odd/Even

TCE 004567400-01

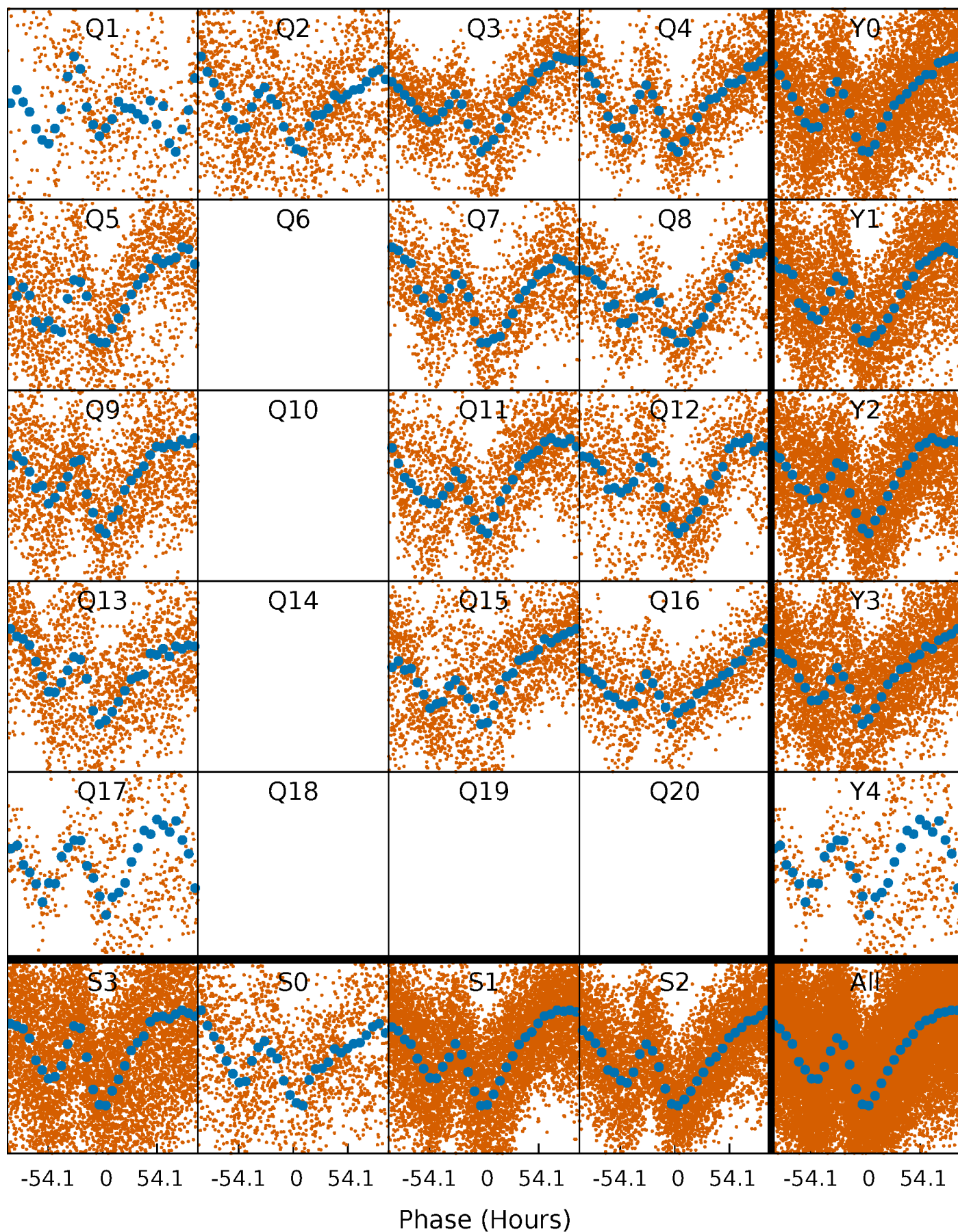


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

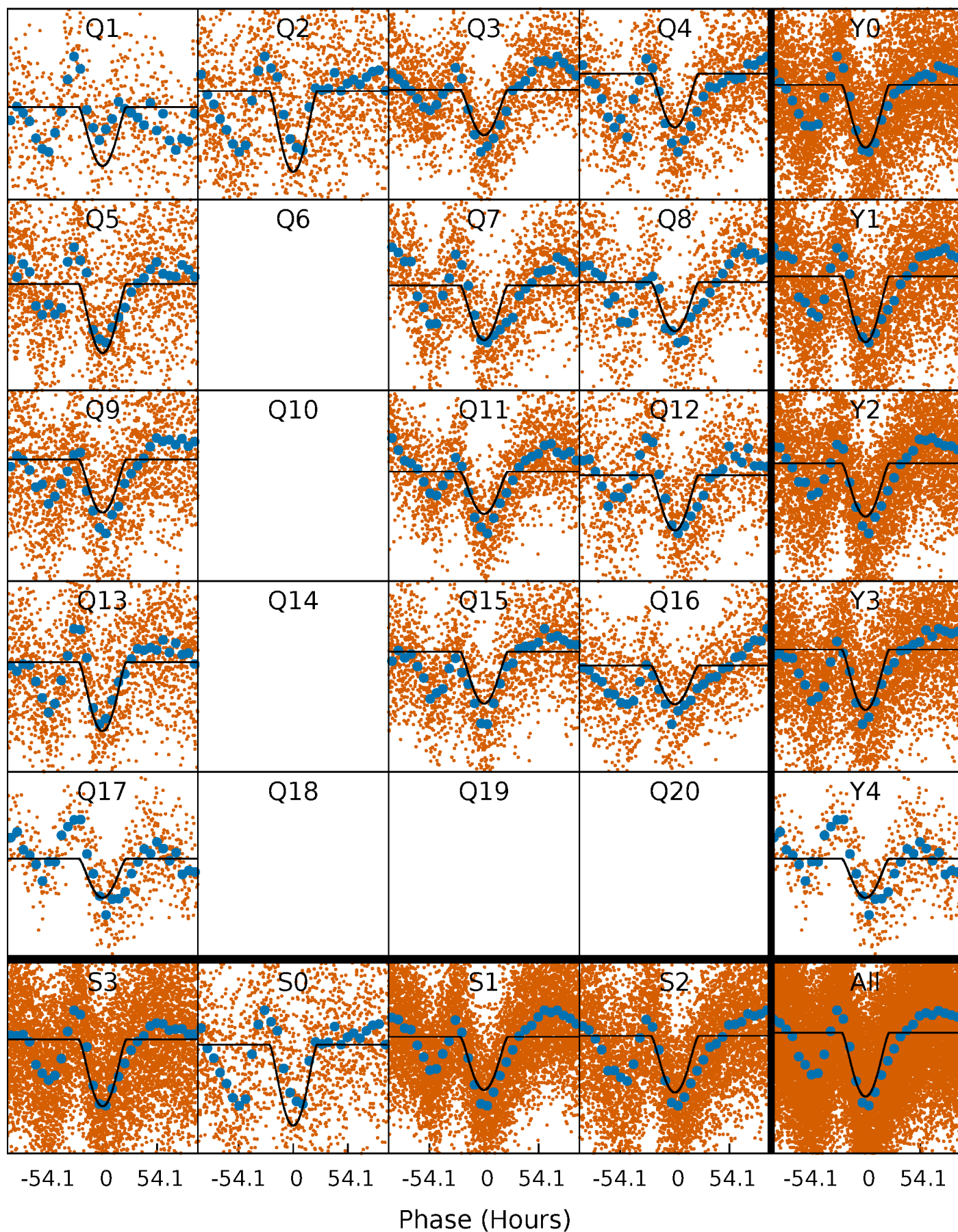
TCE 004567400-01 P= 17.170454 Days  $T_0=145.138199$  (BKJD)





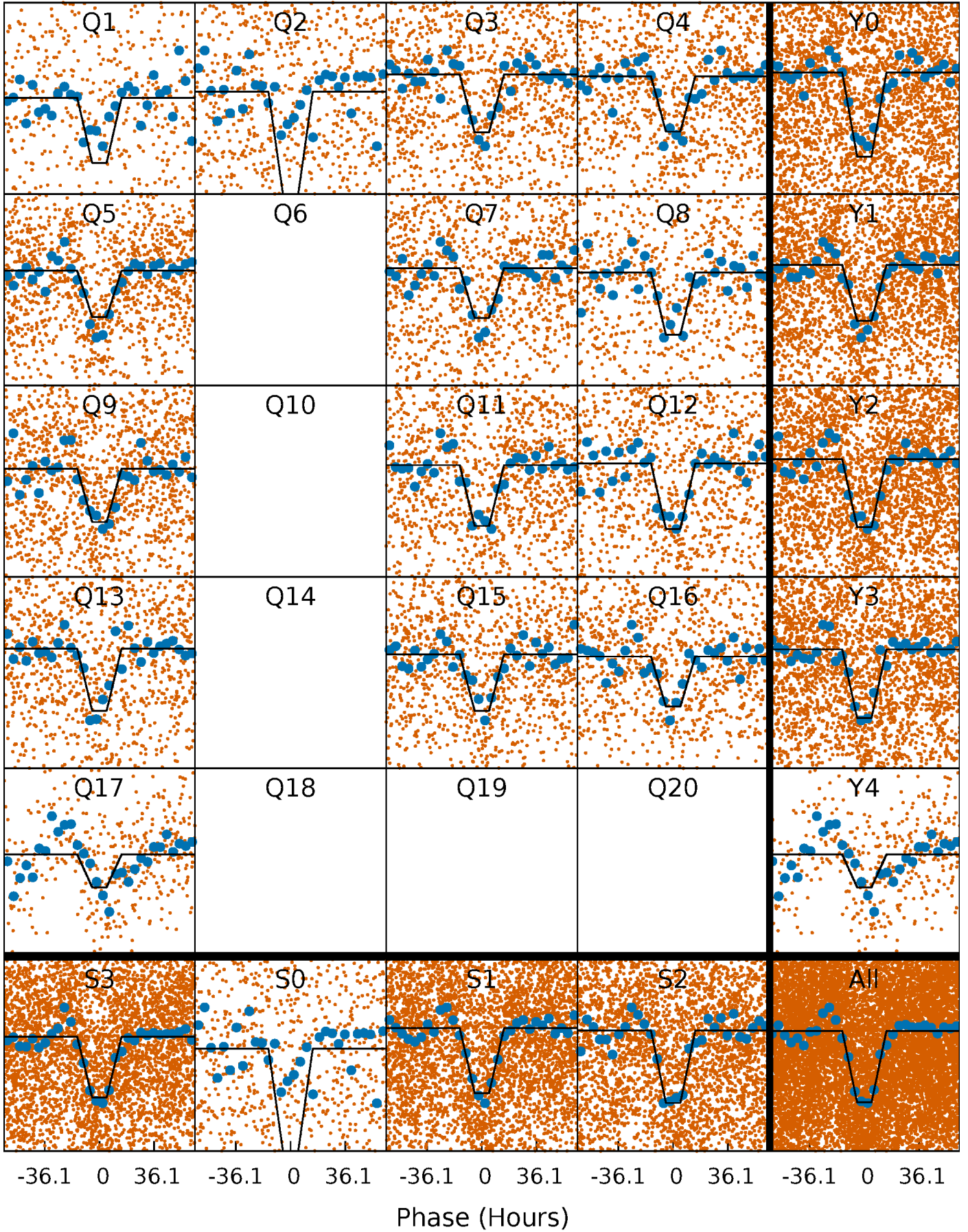
# DV Quarter-Phased Transit Curves

TCE 004567400-01 P= 17.170454 Days  $T_0=145.138199$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

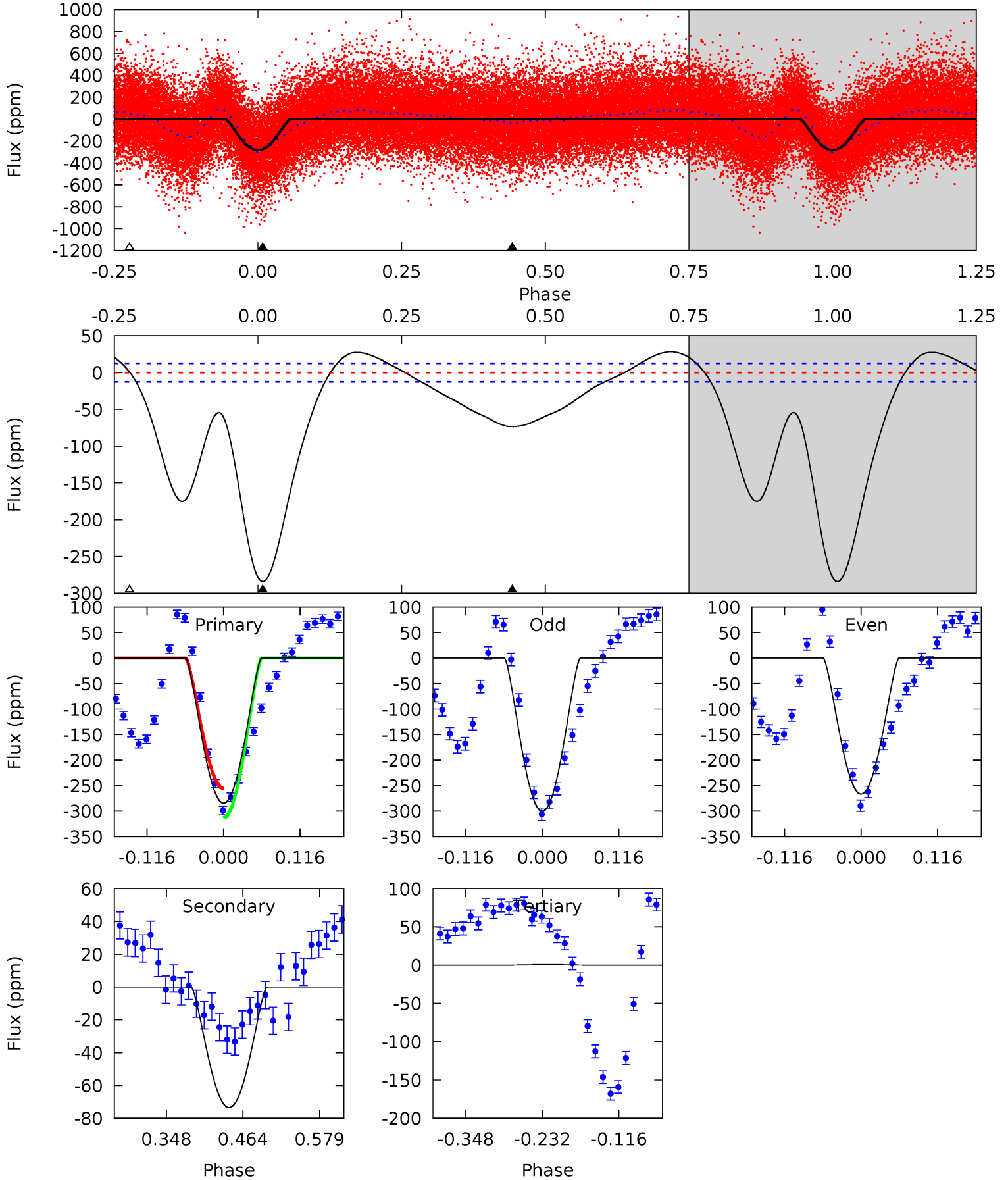
TCE 004567400-01 P= 17.172472 Days  $T_0=144.890781$  (BKJD)



# DV Model-Shift Uniqueness Test

004567400-01, P = 17.170454 Days, E = 127.967745 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
102.1	26.4	-0.28	0	4.53	1.57	19.7	102.4	102.1	26.7	26.4	6.07	1.00	0.09	10.4

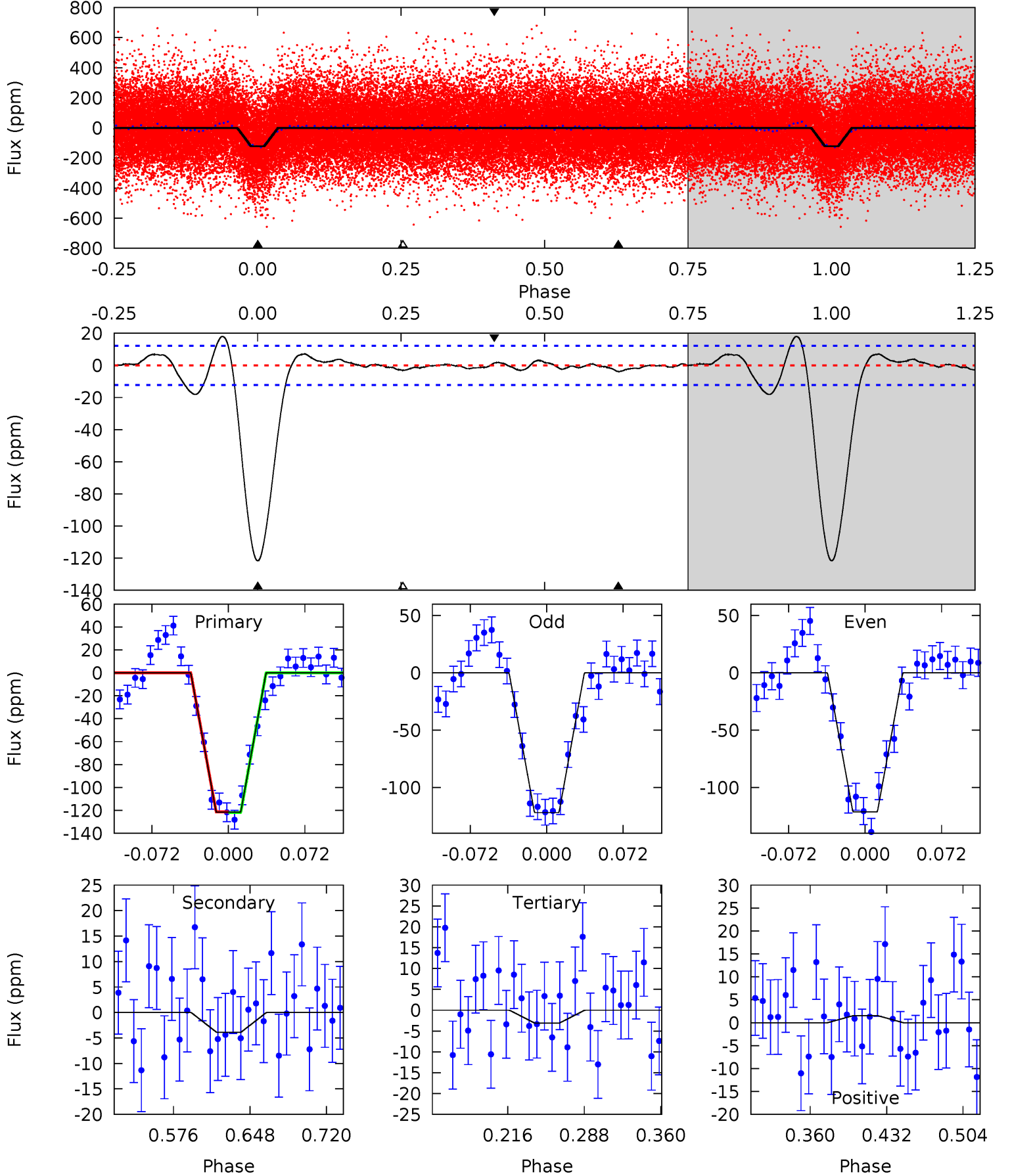




# Alt Model-Shift Uniqueness Test

004567400-01, P = 17.172472 Days, E = 127.718309 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
46.1	1.47	1.18	0.58	4.63	1.80	1.71	44.9	45.5	0.29	0.89	0.12	1.00	0.13	0.14





### Stellar Parameters For KIC 004567400

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7912^{+219}_{-329}$	$3.934^{+0.241}_{-0.130}$	$-0.080^{+0.200}_{-0.350}$	$2.452^{+0.434}_{-0.743}$	$1.885^{+0.104}_{-0.389}$	$0.180^{+0.280}_{-0.064}$
	+3%/-4%	+6%/-3%	+250%/-438%	+18%/-30%	+6%/-21%	+156%/-35%
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 004567400-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-74 \pm 3$	$7.36^{+4.23}_{-3.71}$	$1882^{+121}_{-147}$	$4391^{+1473}_{-626}$	$19^{+59}_{-11}$
Alt.	$-4 \pm 3$	$3.95^{+3.75}_{-2.68}$	$1895^{+117}_{-155}$	$3178^{+1477}_{-953}$	$2.933^{+21.772}_{-2.490}$

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

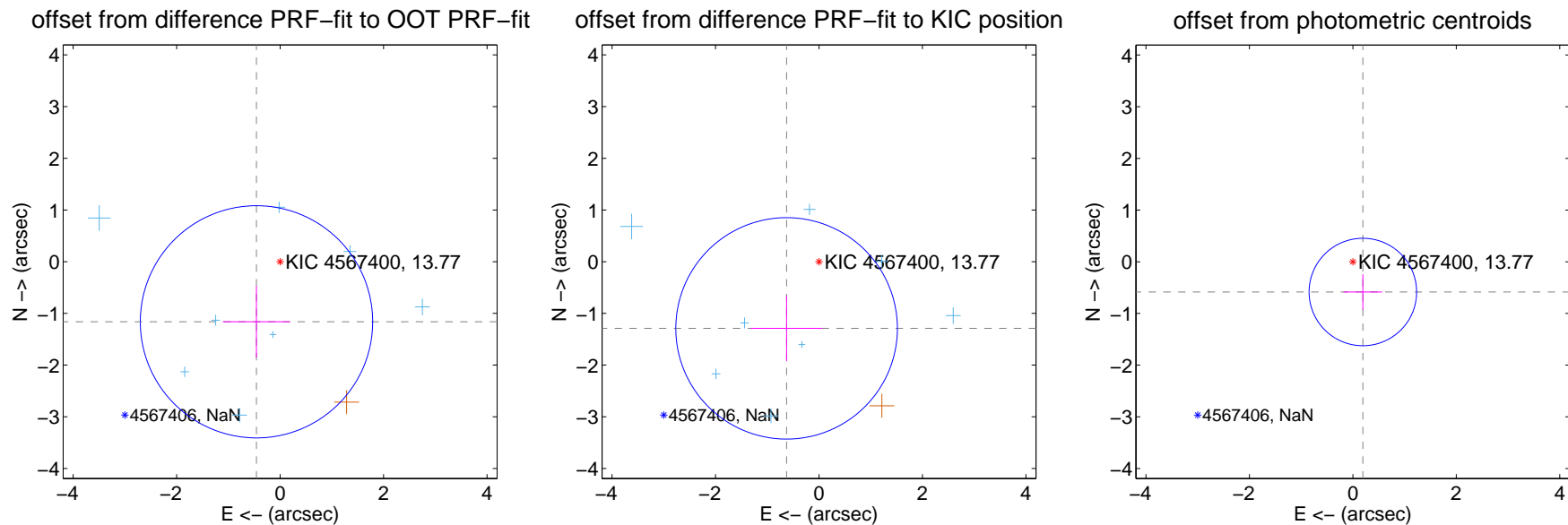
## DV Centroid Data

Supplemental centroid analysis for 004567400-01. Kepler magnitude: 13.77. Transit SNR 21.16

There are 8 quarters with good PRF difference image offsets

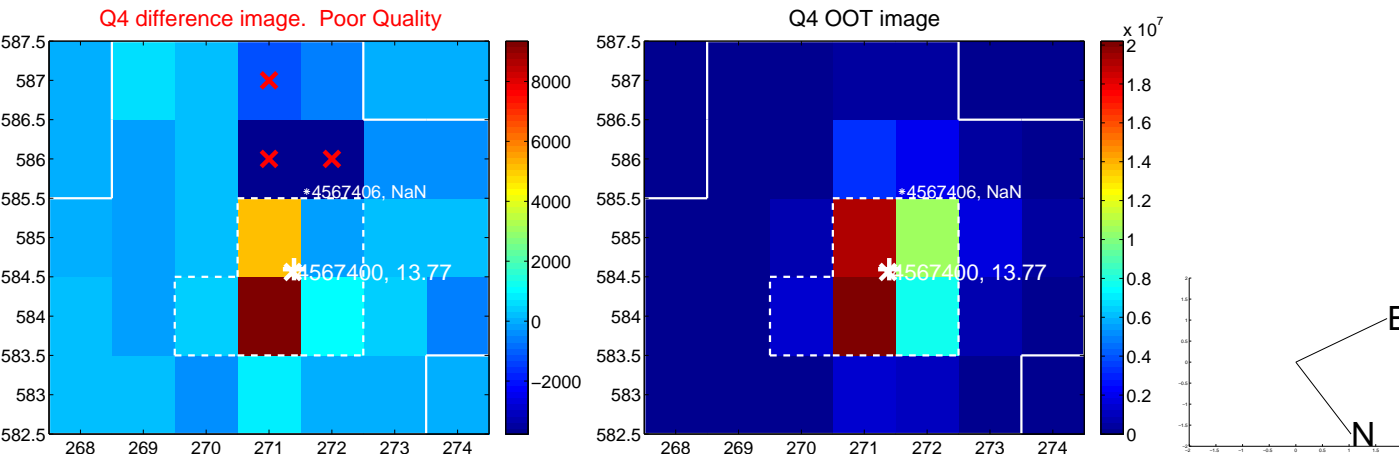
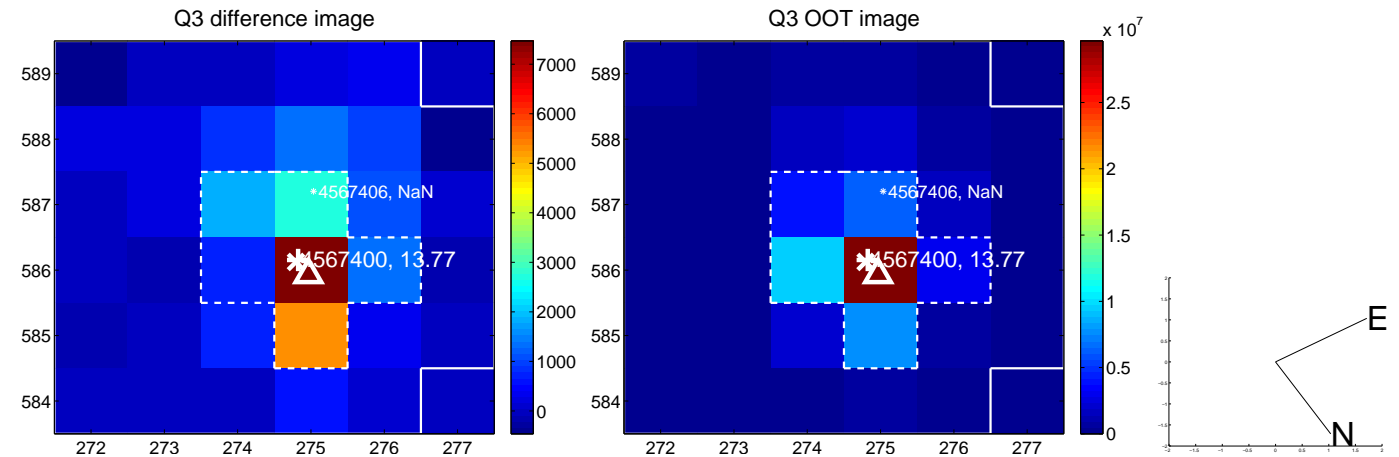
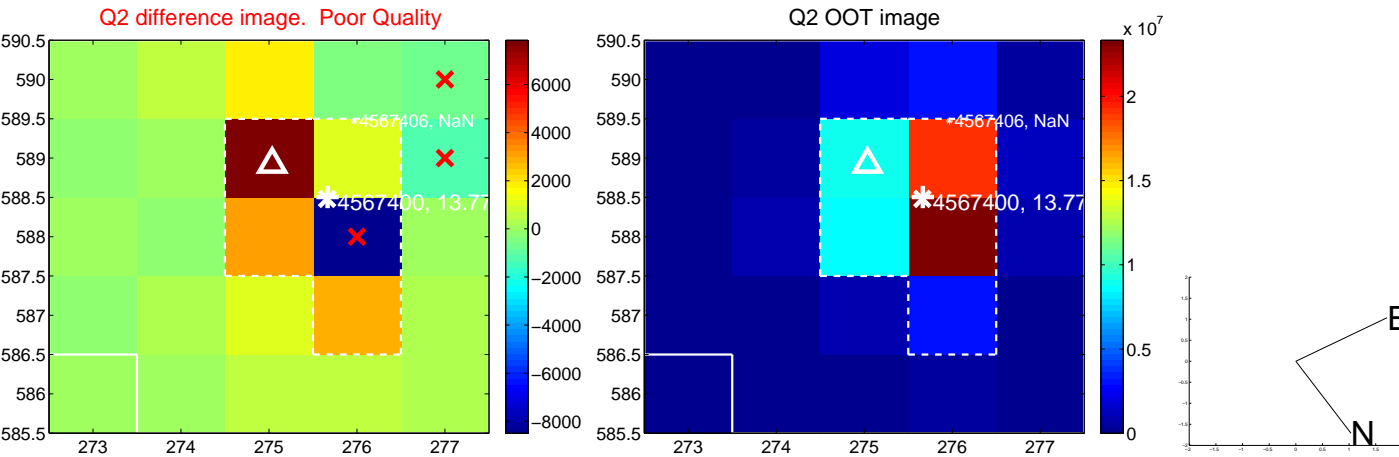
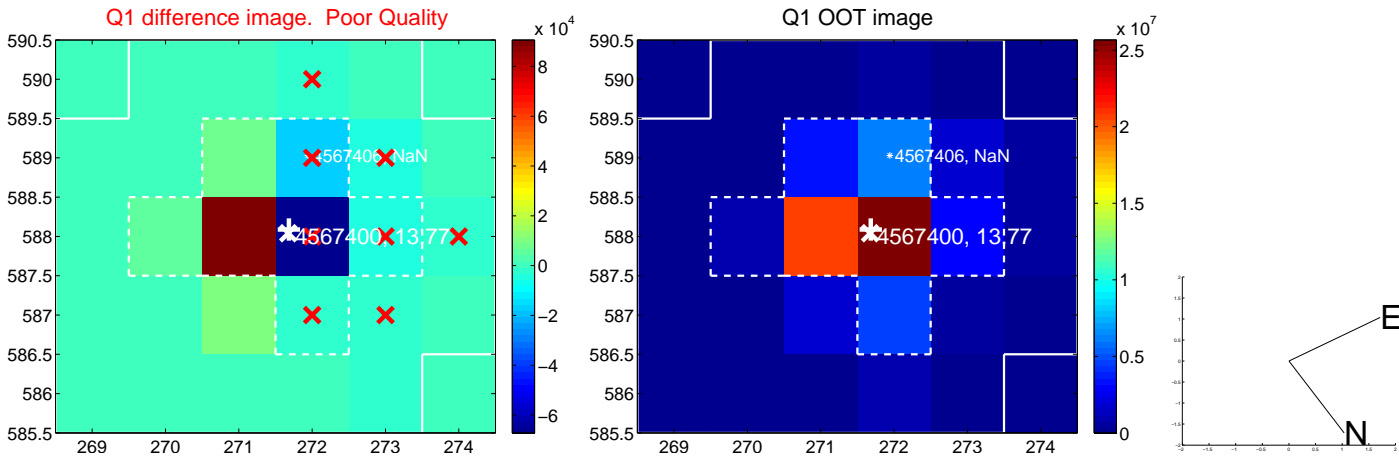
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.249 \pm 0.748$	1.67	$0.457 \pm 0.651$	$-1.163 \pm 0.691$
PRF-fit source offset from KIC position	$1.434 \pm 0.714$	2.01	$0.626 \pm 0.691$	$-1.290 \pm 0.633$
photometric centroid source offset	$0.62 \pm 0.35$	1.78	$-0.19 \pm 0.37$	$-0.58 \pm 0.34$

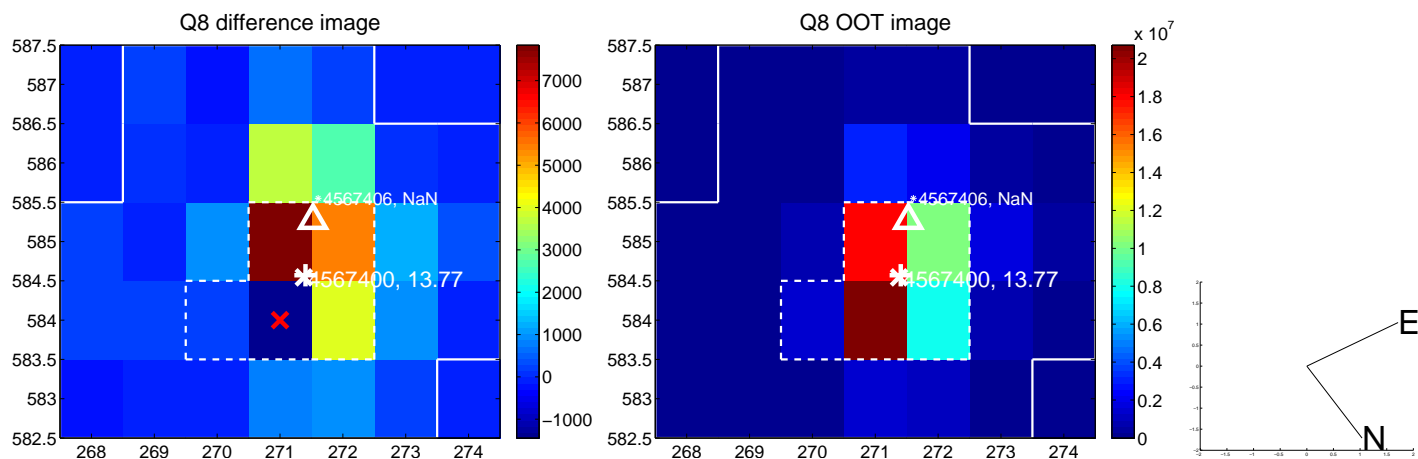
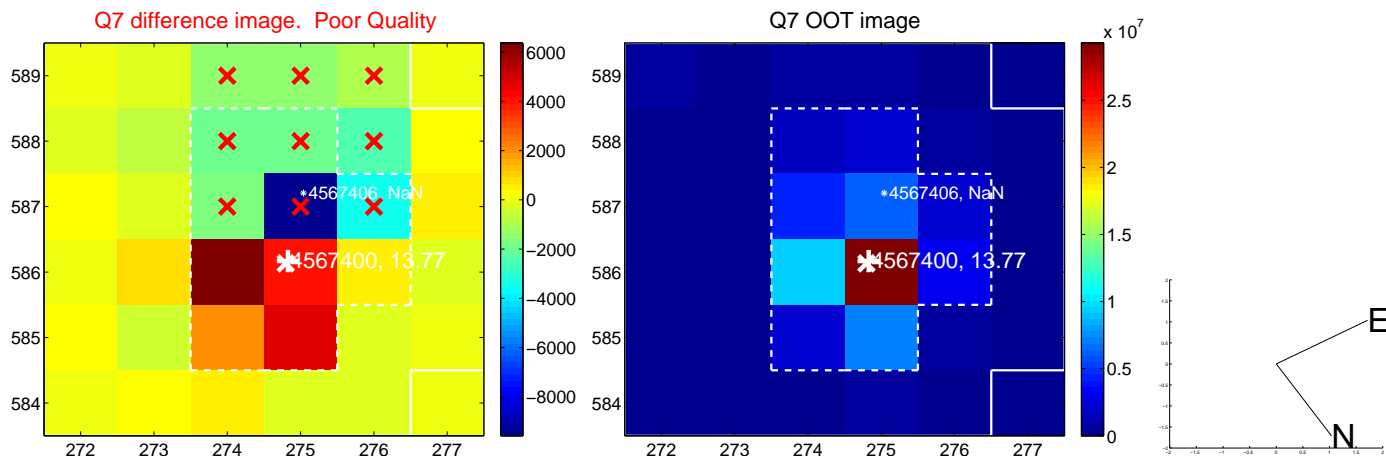
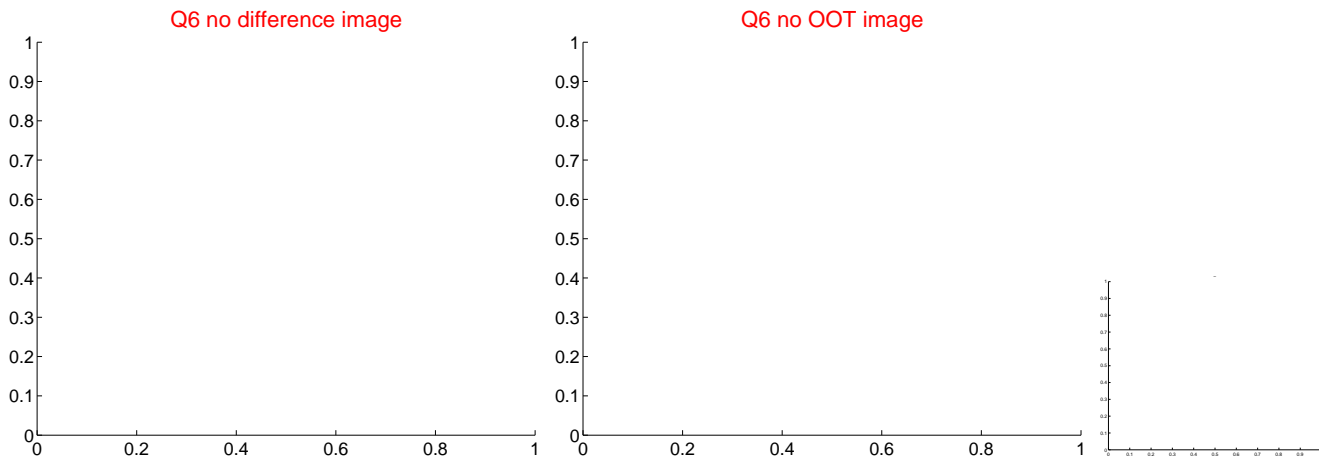
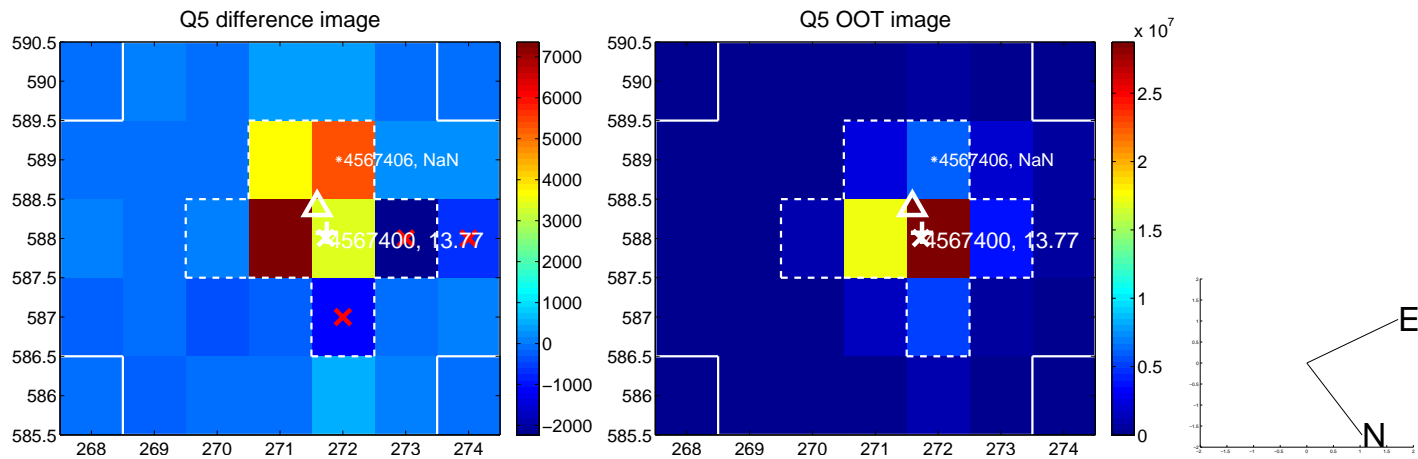


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

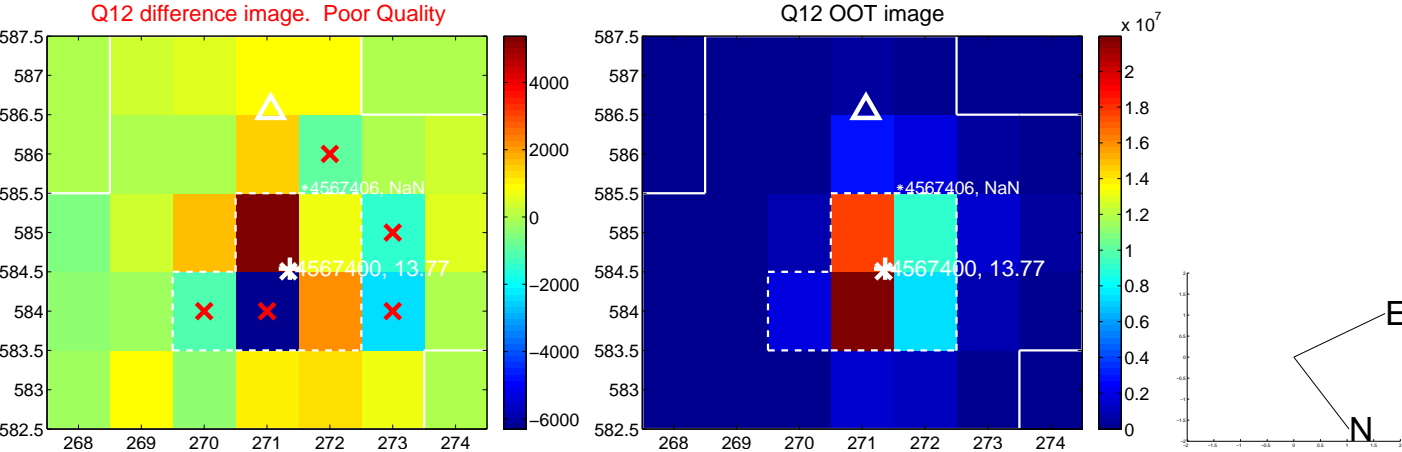
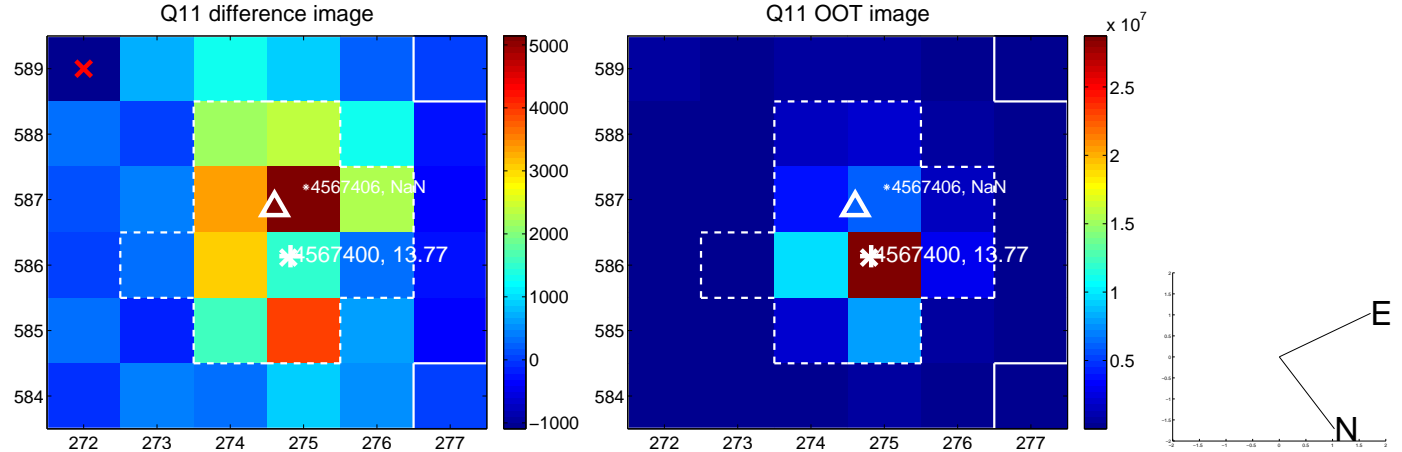
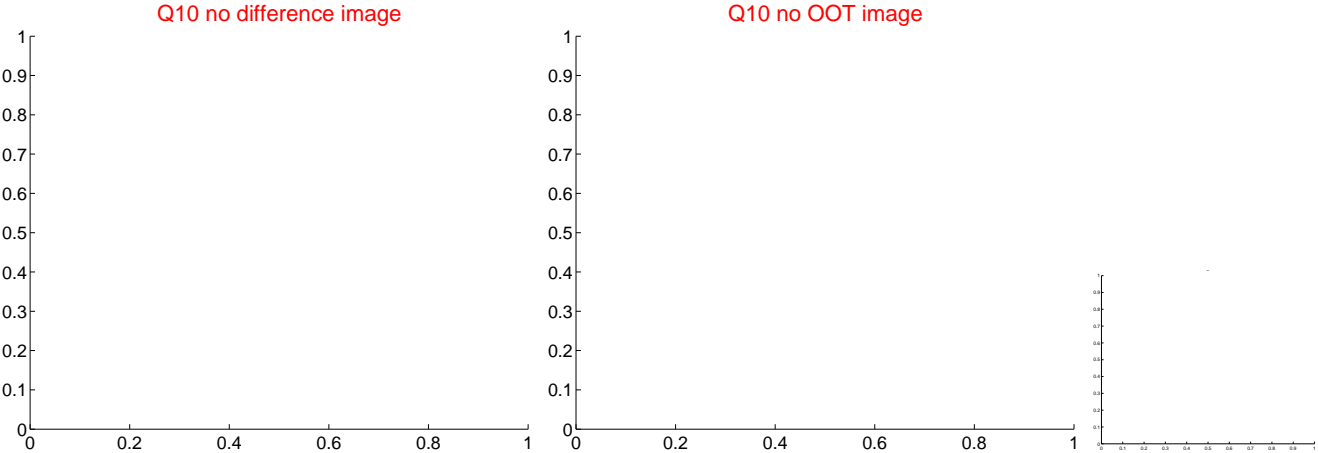
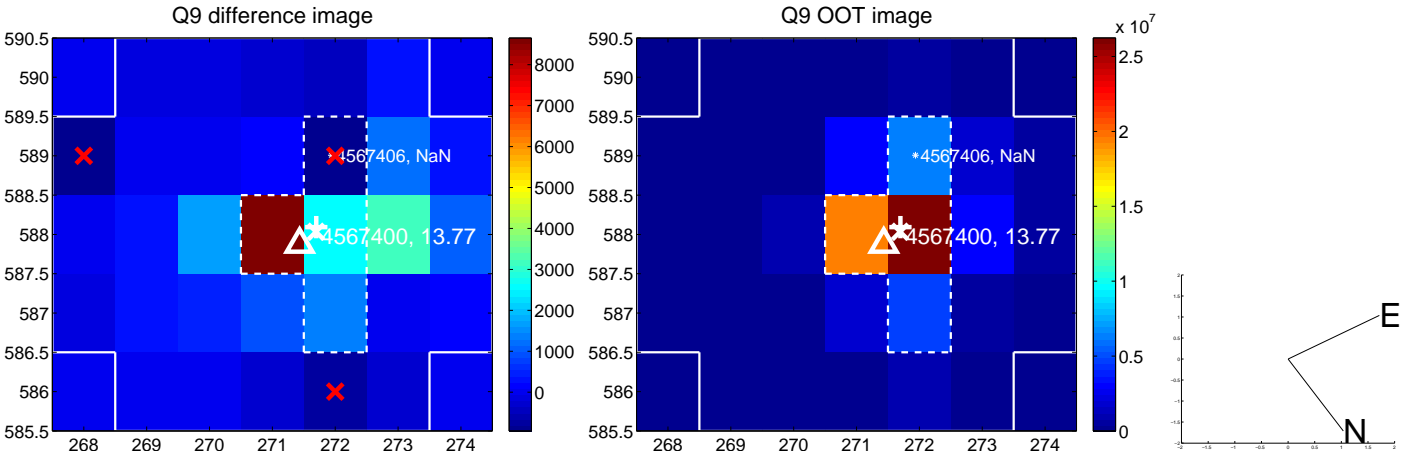


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

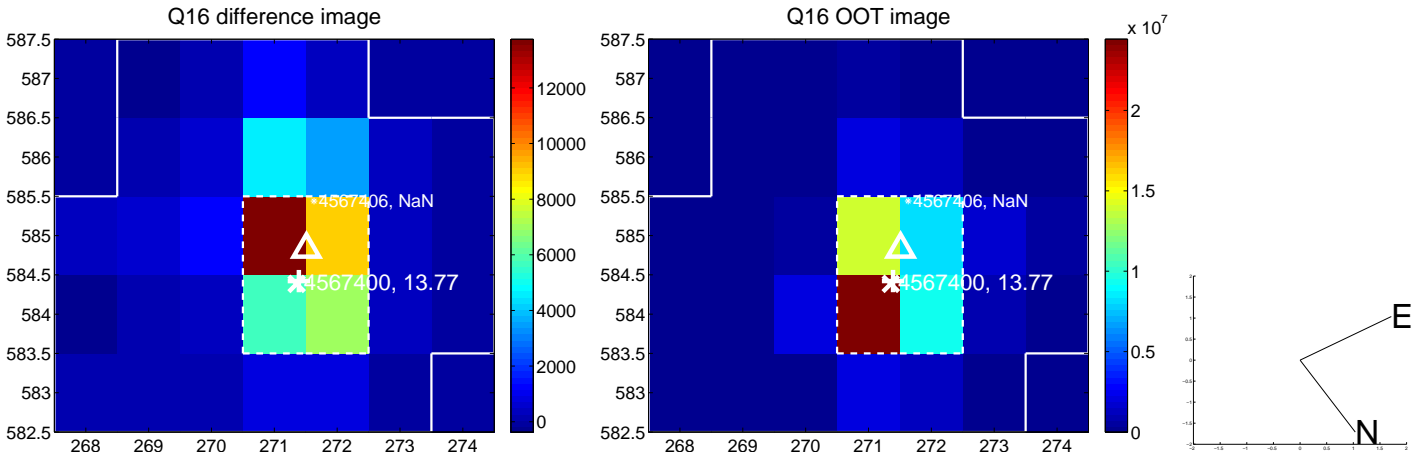
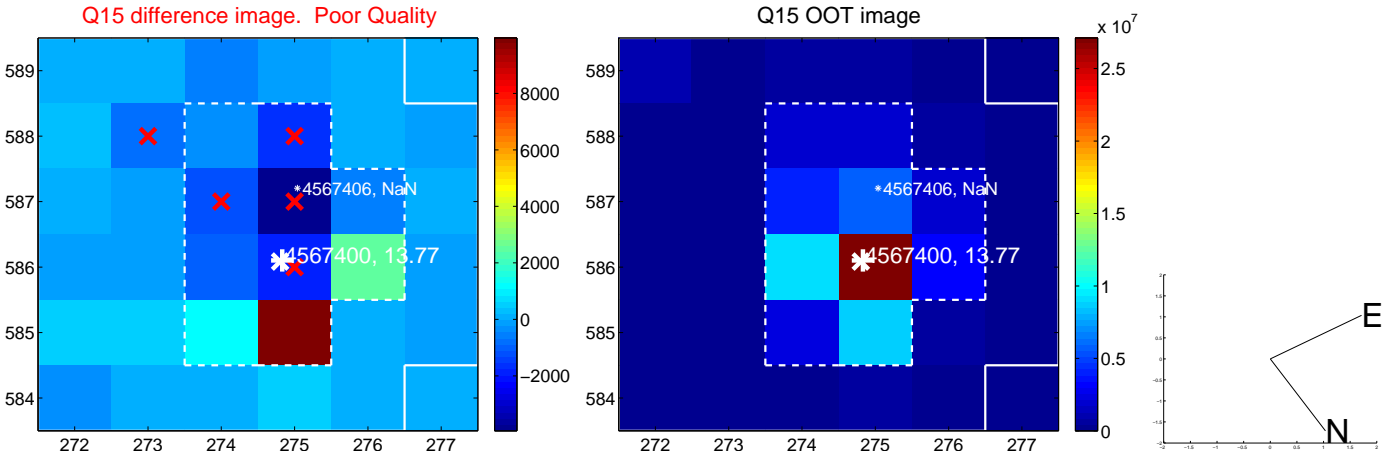
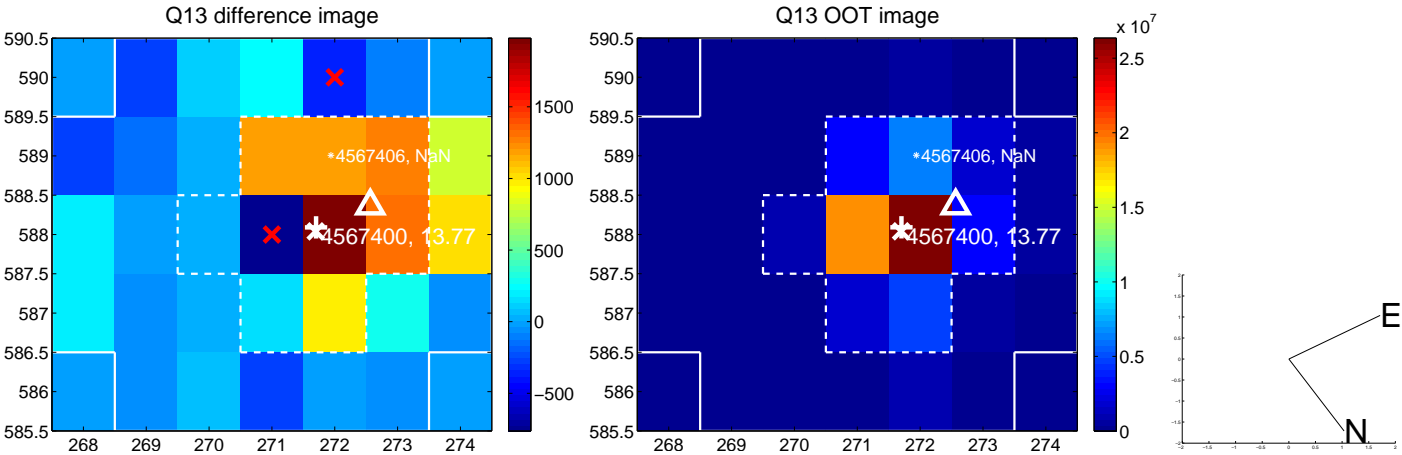




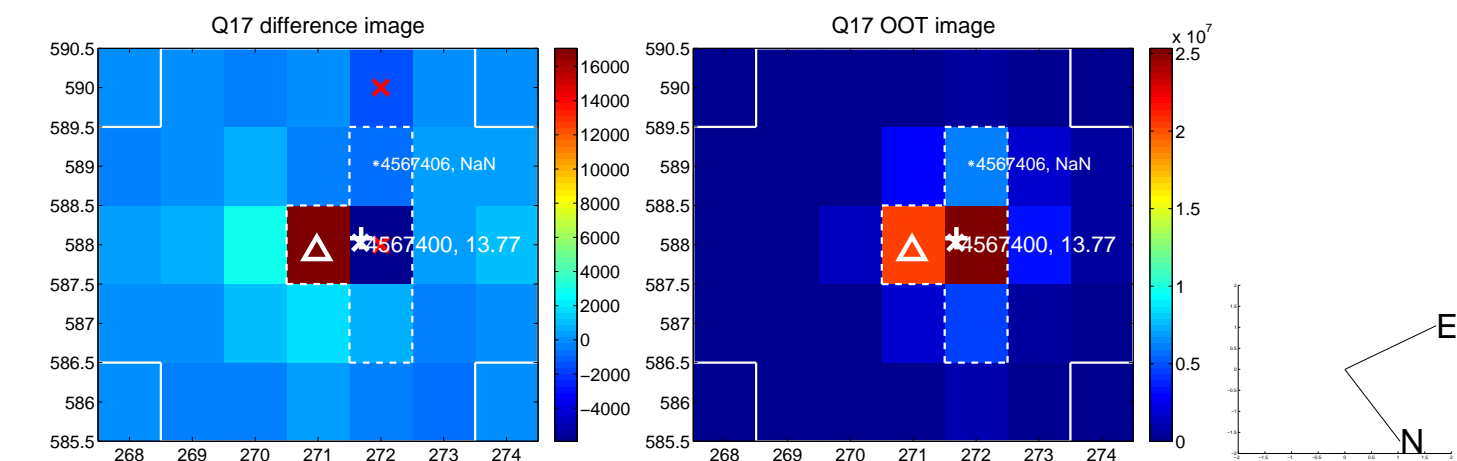
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



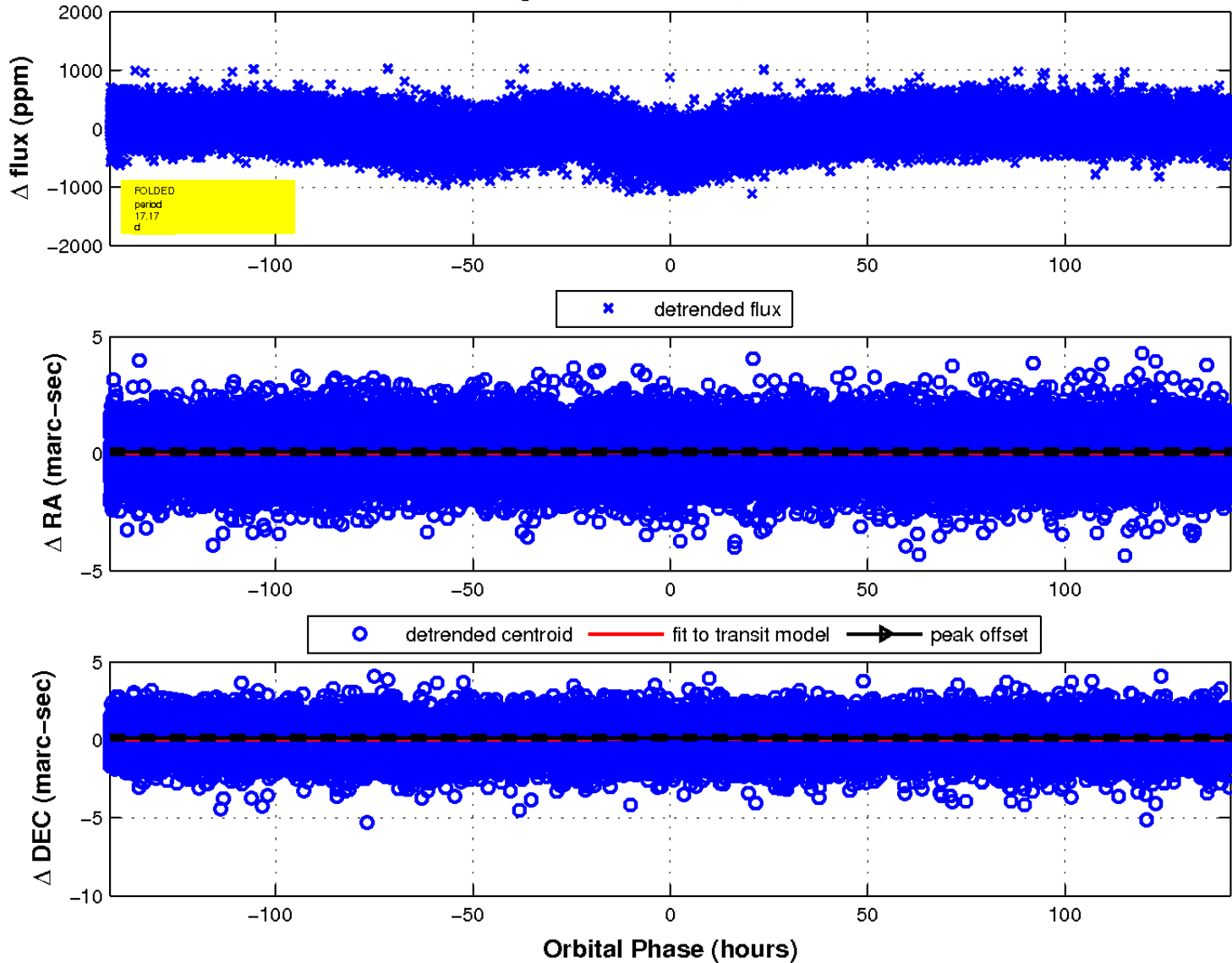
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

