

# KIC 003541800

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003541800-01	OBS	0491.01	4.662280	132.359066	335.0	3.756	28.0	31.3	1.02	6191	3.69	437.48

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003541800-01	OBS	FP	0.00	0	0	1	0	CENT_RESOLVED_OFFSET—HALO_GHOST

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

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

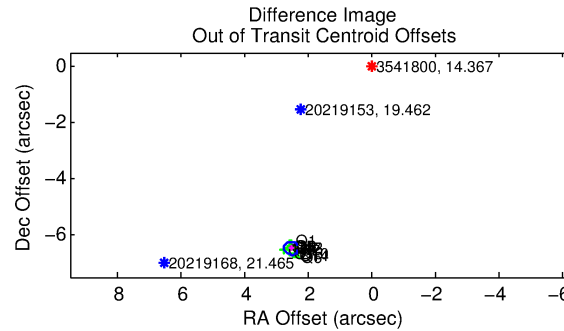
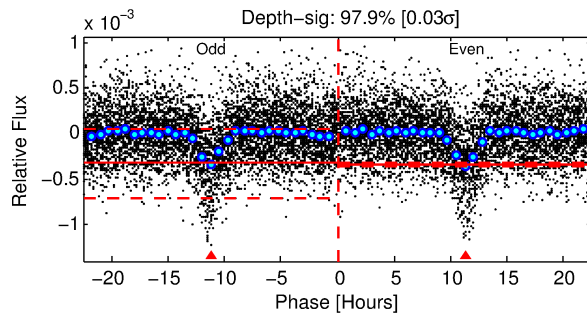
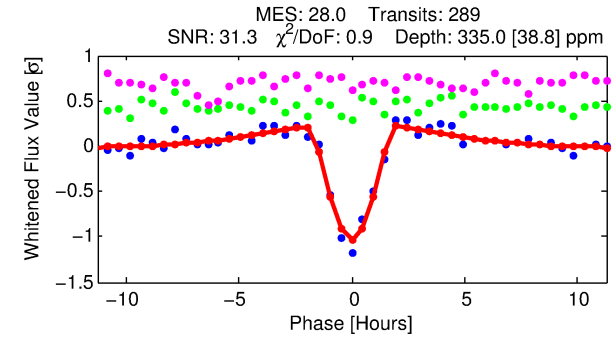
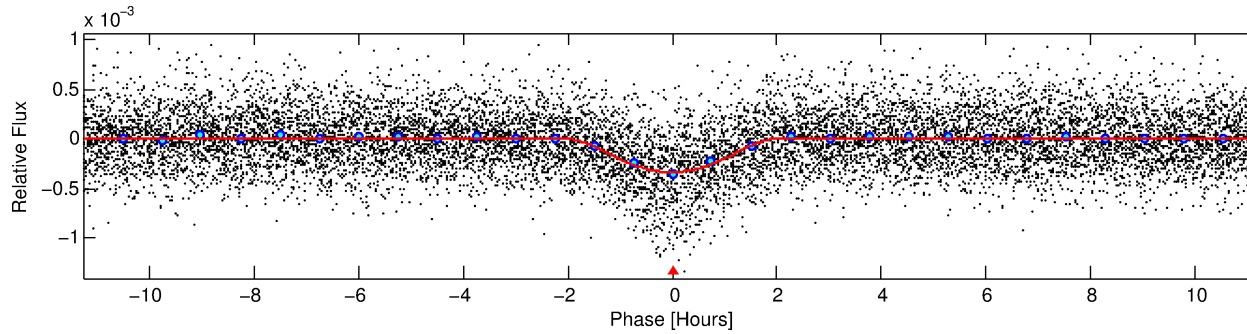
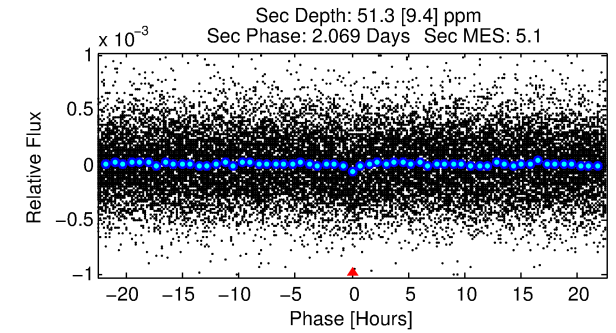
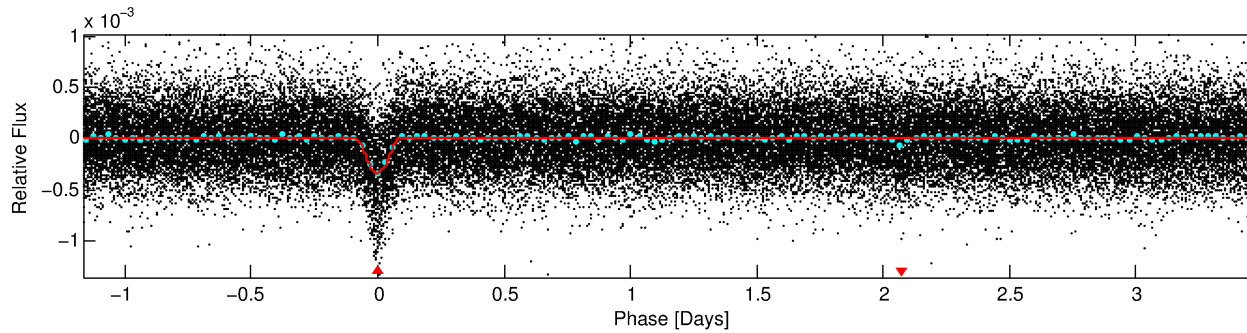
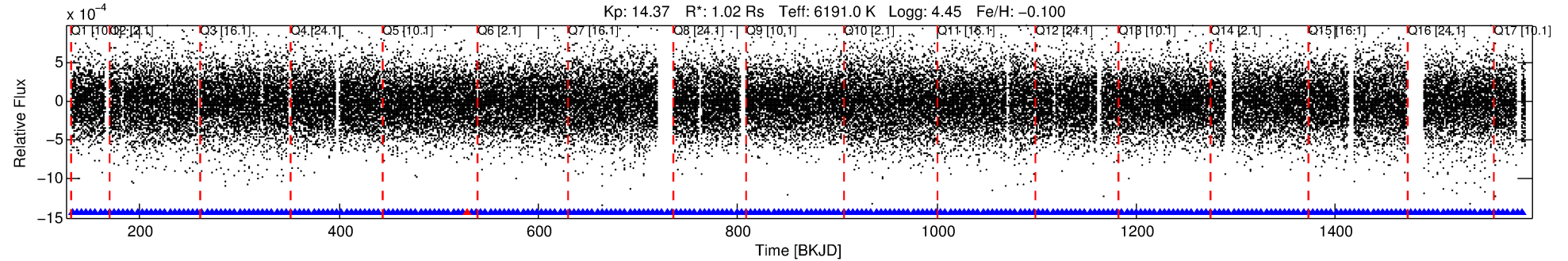
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003541800-01

No Significant Match Found

# DV One-Page Summary

KIC: 3541800 Candidate: 1 of 1 Period: 4.662 d  
KOI: K00491.01 Corr: 0.988



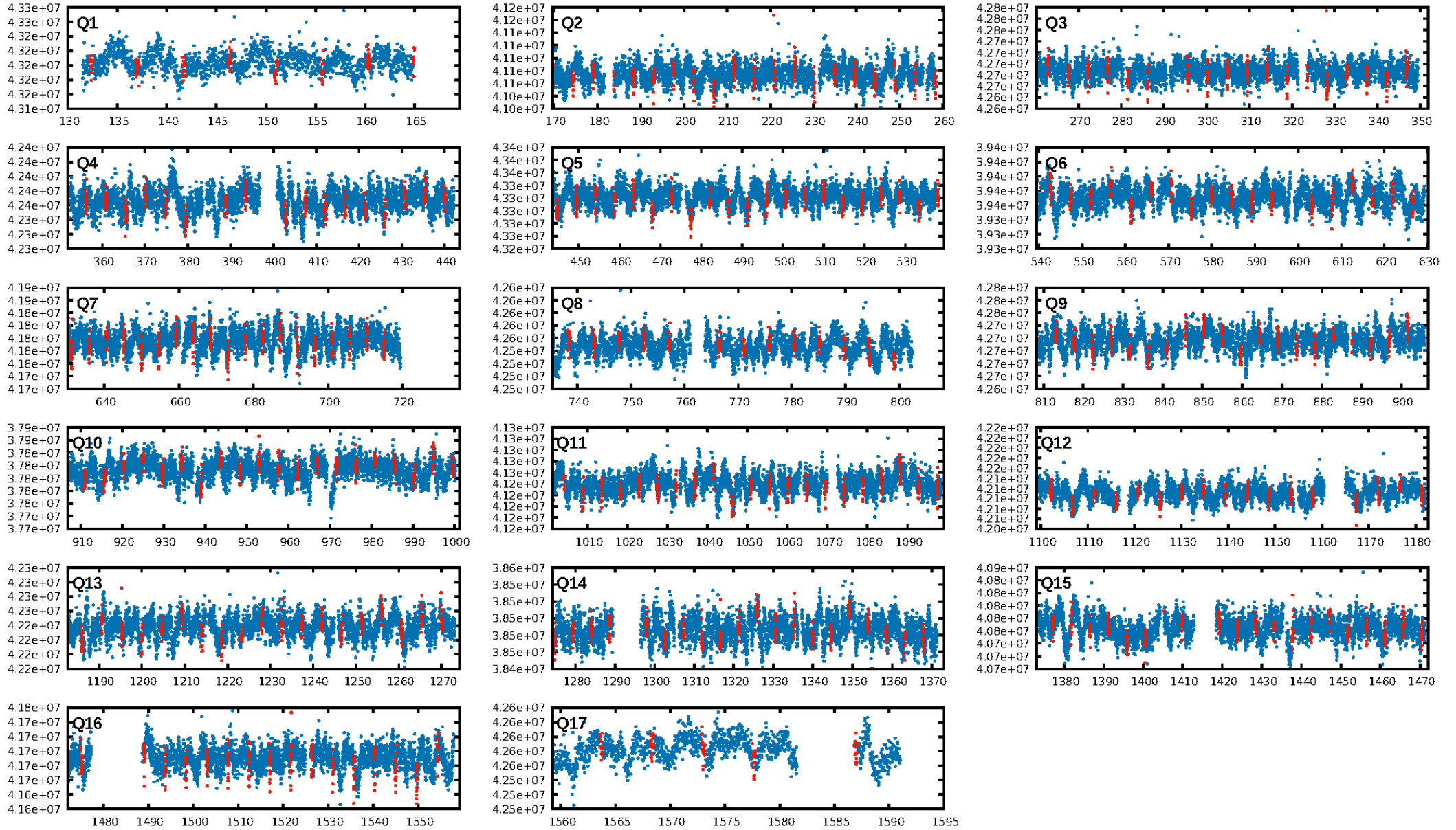
## DV Fit Results:

Period = 4.66228 [0.00001] d  
Epoch = 132.3591 [0.0023] BKJD  
Rp/R\* = 0.0330 [0.0364]  
a/R\* = 2.67 [0.65]  
b = 1.00 [0.06]  
Seff = 437.48 [169.46]  
Teq = 1166 [113] K  
Rp = 3.69 [4.20] Re  
a = 0.0562 [0.0138] AU  
Ag = 6.55 [14.66] [0.38σ]  
Teffp = 2884 [1597] K [1.07σ]

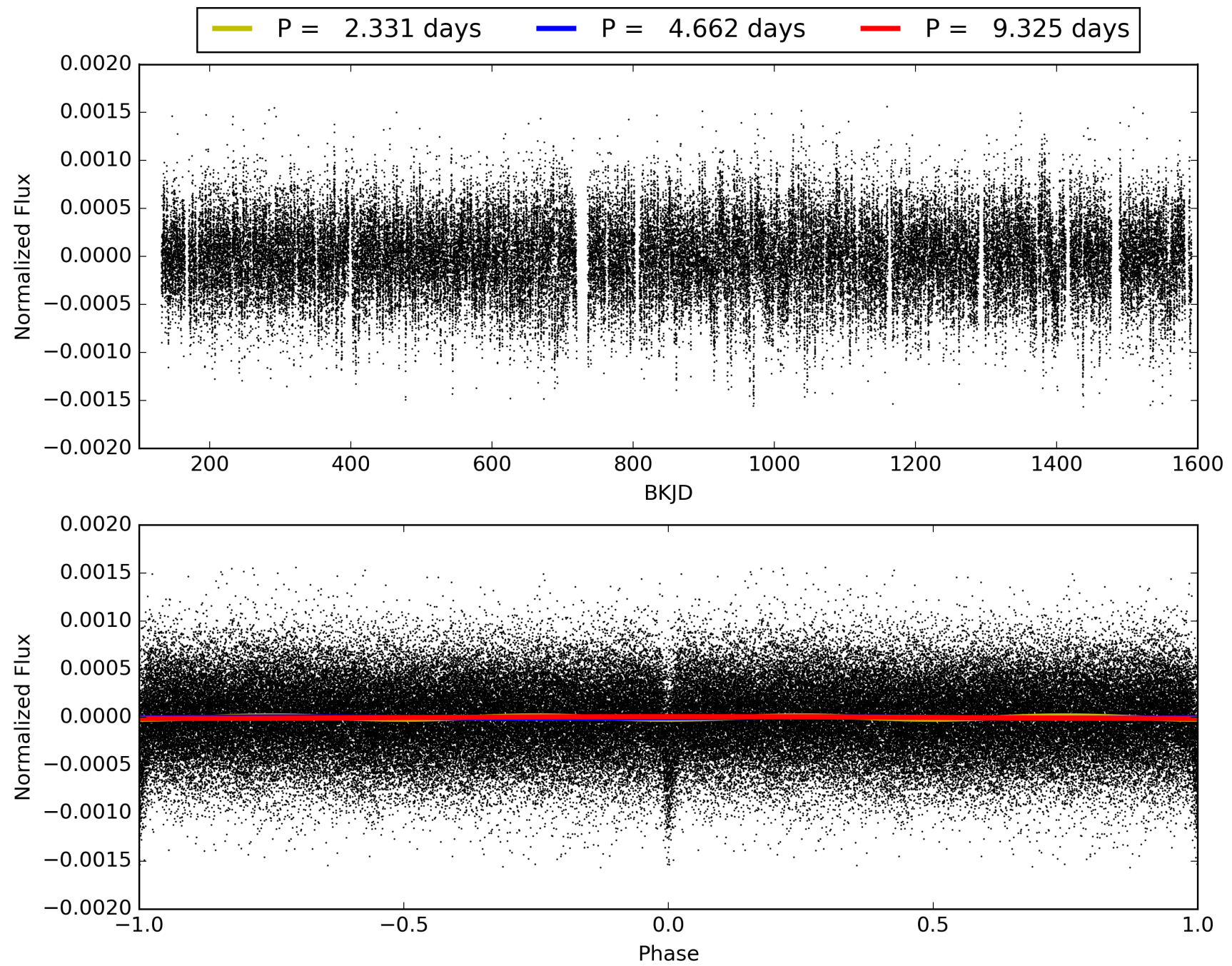
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.84e-172  
RollingBand-fgt: 1.00 [275/276]  
GhostDiagnostic-chr: 0.04649  
Centroid-sig: 0.0%  
Centroid-so: 11.594 arcsec [32.95σ]  
OotOffset-rm: 6.955 arcsec [88.29σ]  
KicOffset-rm: 6.914 arcsec [95.35σ]  
OotOffset-st: 4/4/0/5 [13]  
KicOffset-st: 4/4/0/5 [13]  
DiffImageQuality-fgm: 1.00 [13/13]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 003541800-01, PDC Light Curves



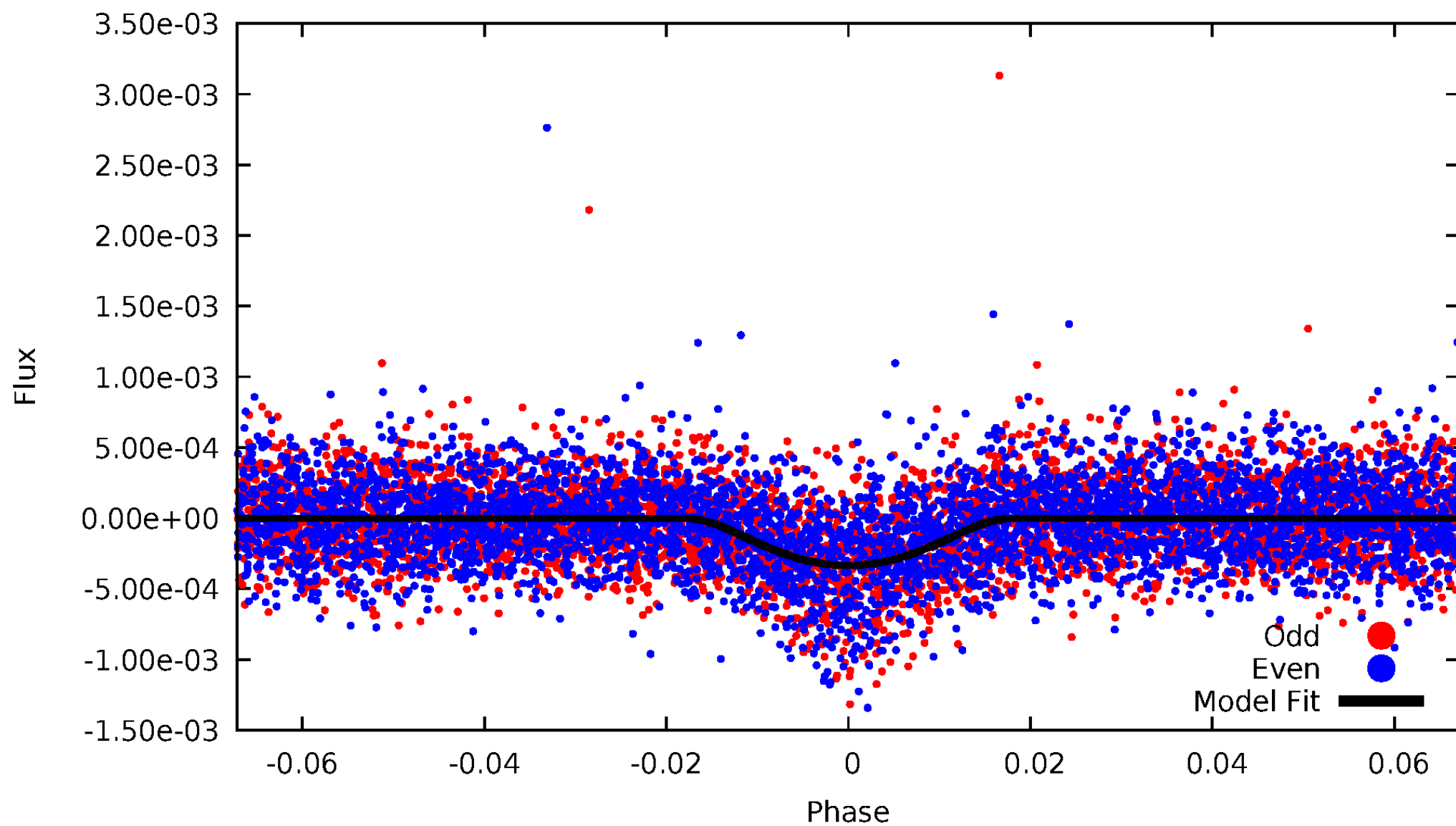
TCE 003541800-01





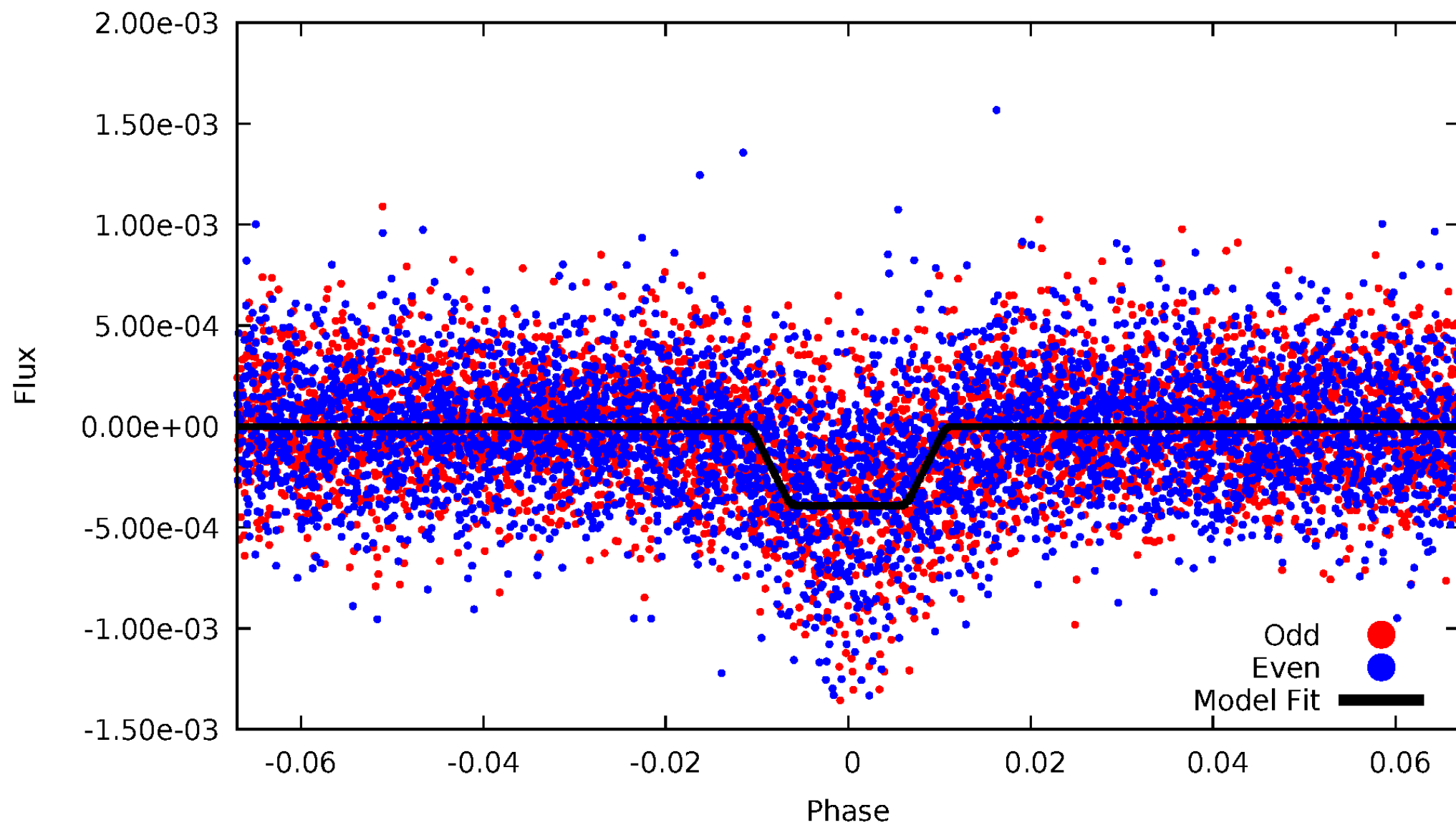
# DV Odd/Even

TCE 003541800-01

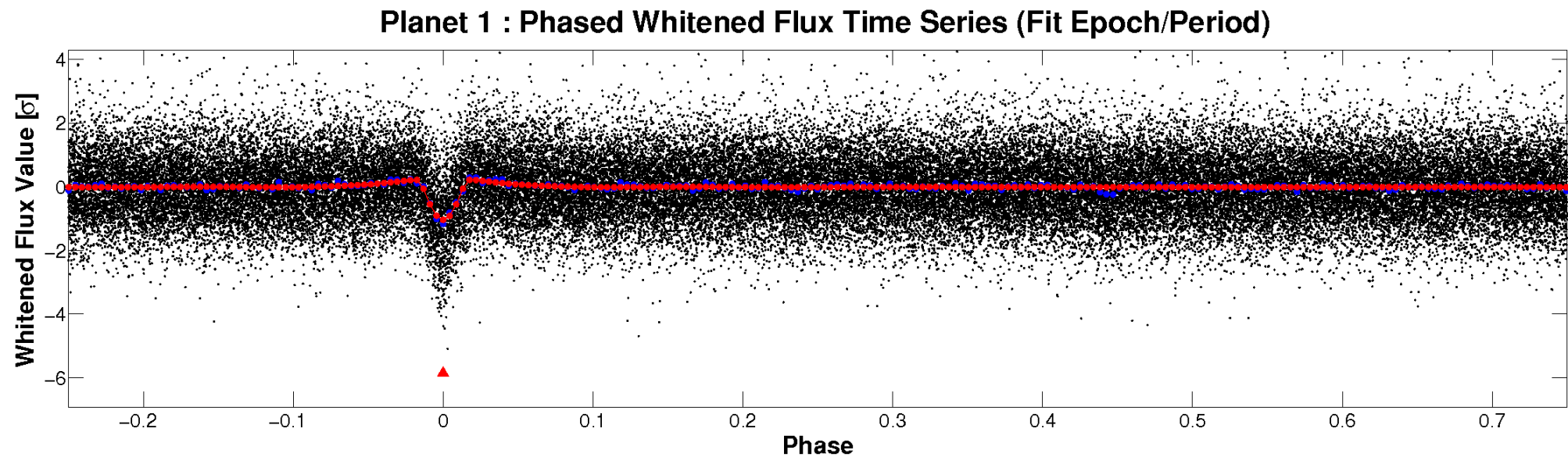
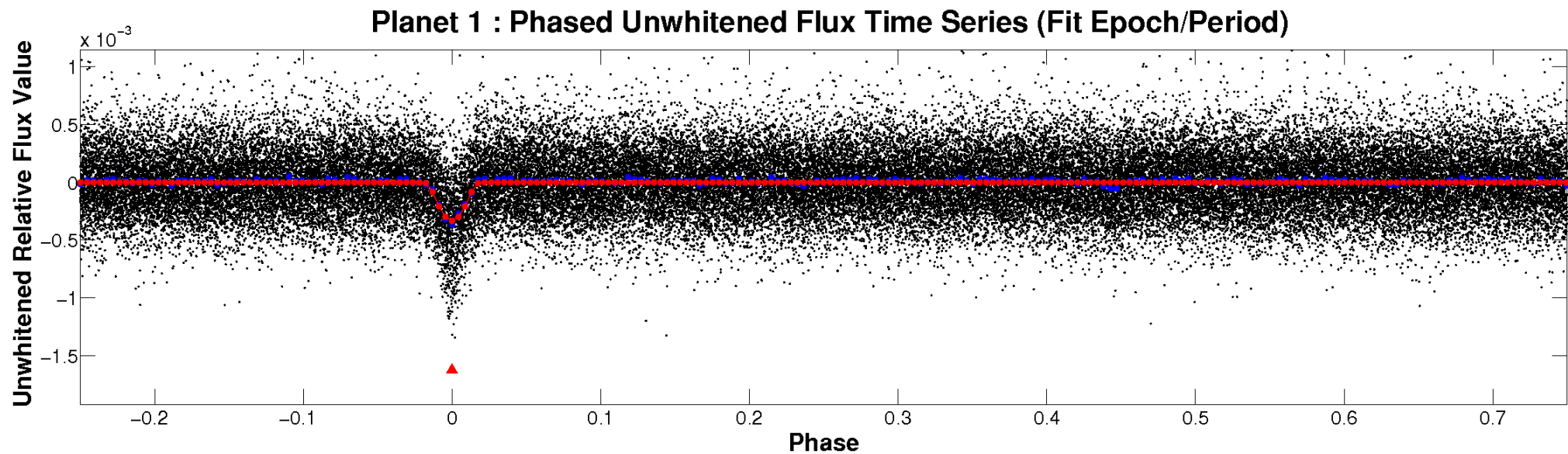


# ALT Odd/Even

TCE 003541800-01

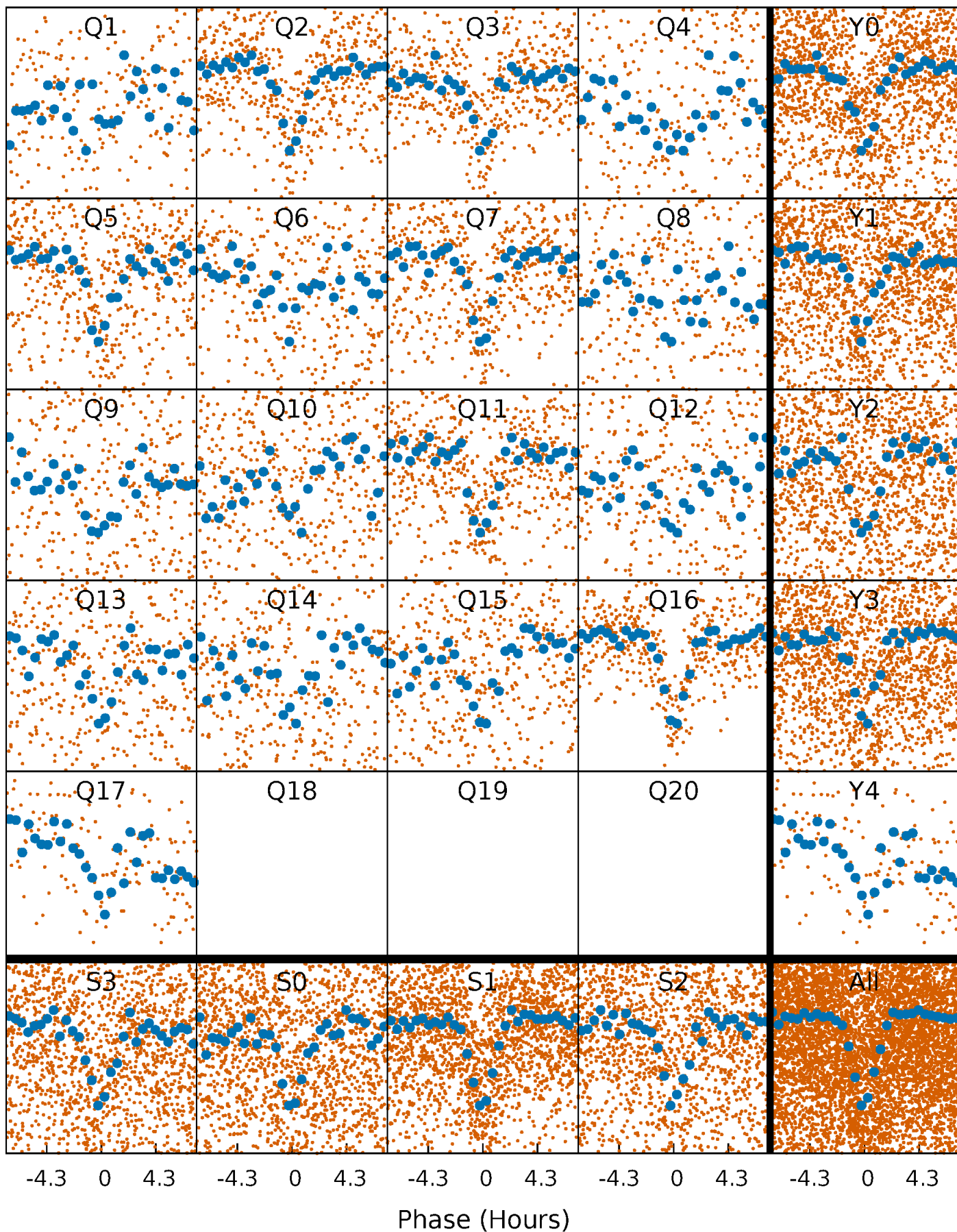


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

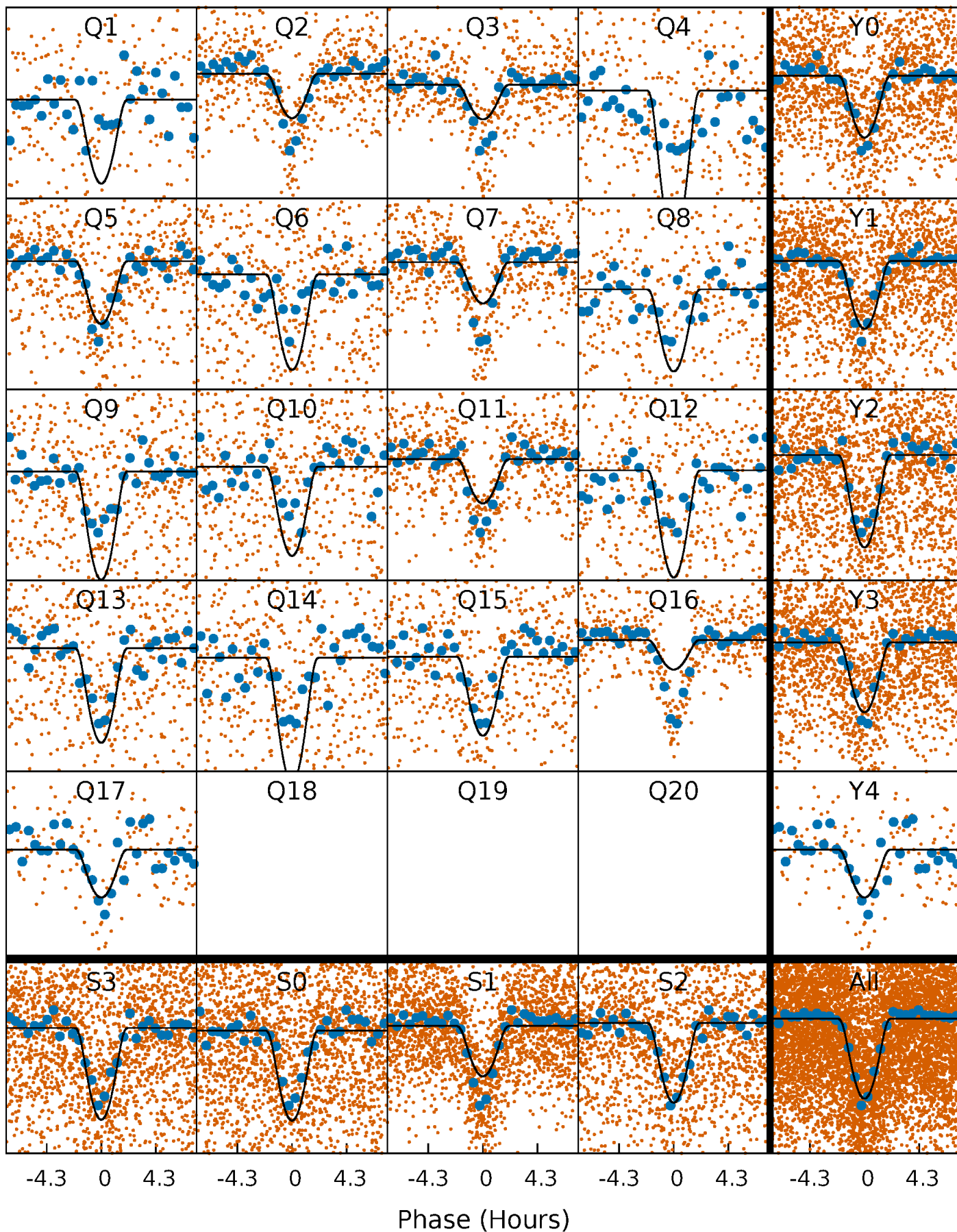
TCE 003541800-01 P= 4.662280 Days  $T_0=132.359066$  (BKJD)





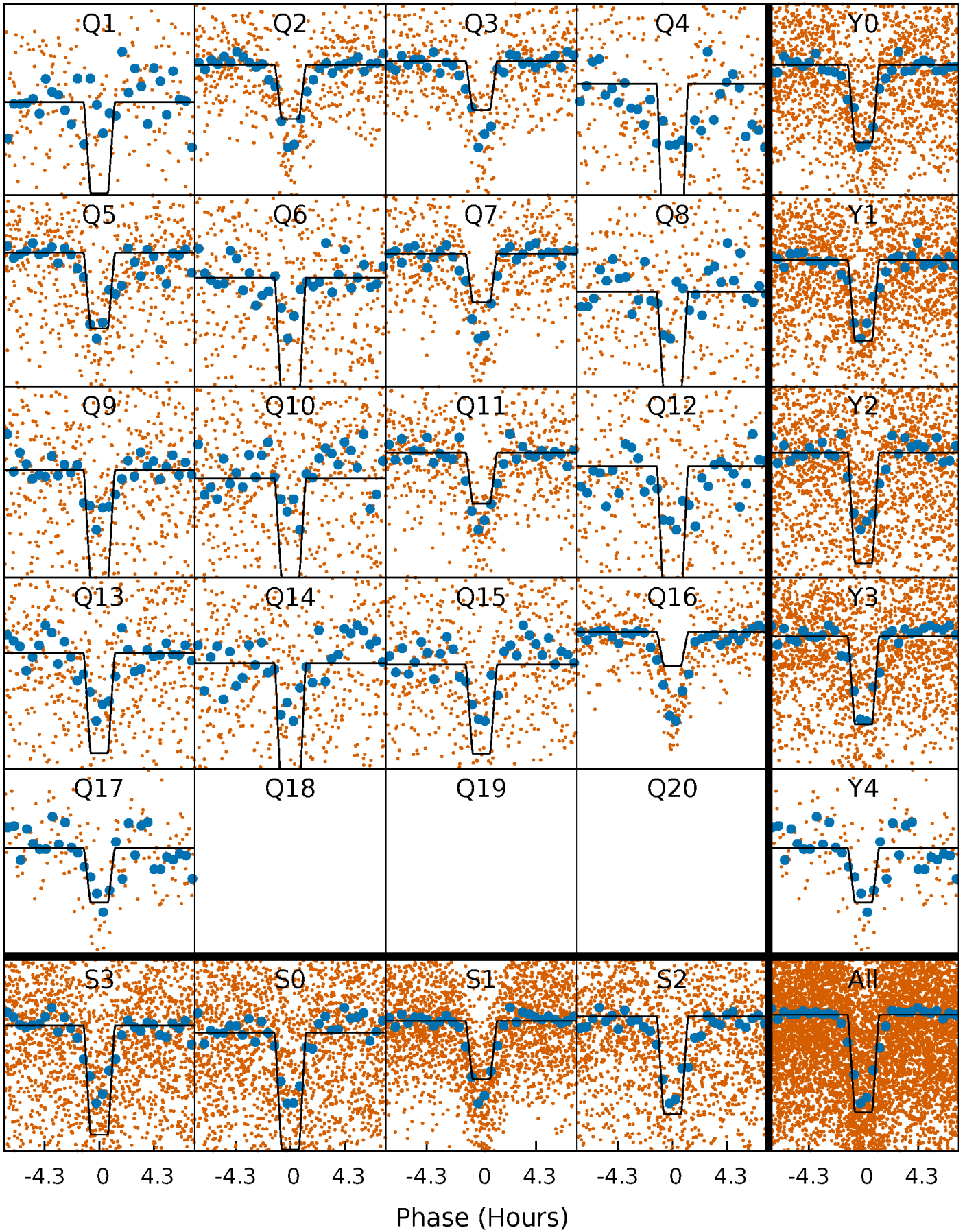
# DV Quarter-Phased Transit Curves

TCE 003541800-01 P= 4.662280 Days  $T_0=132.359066$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

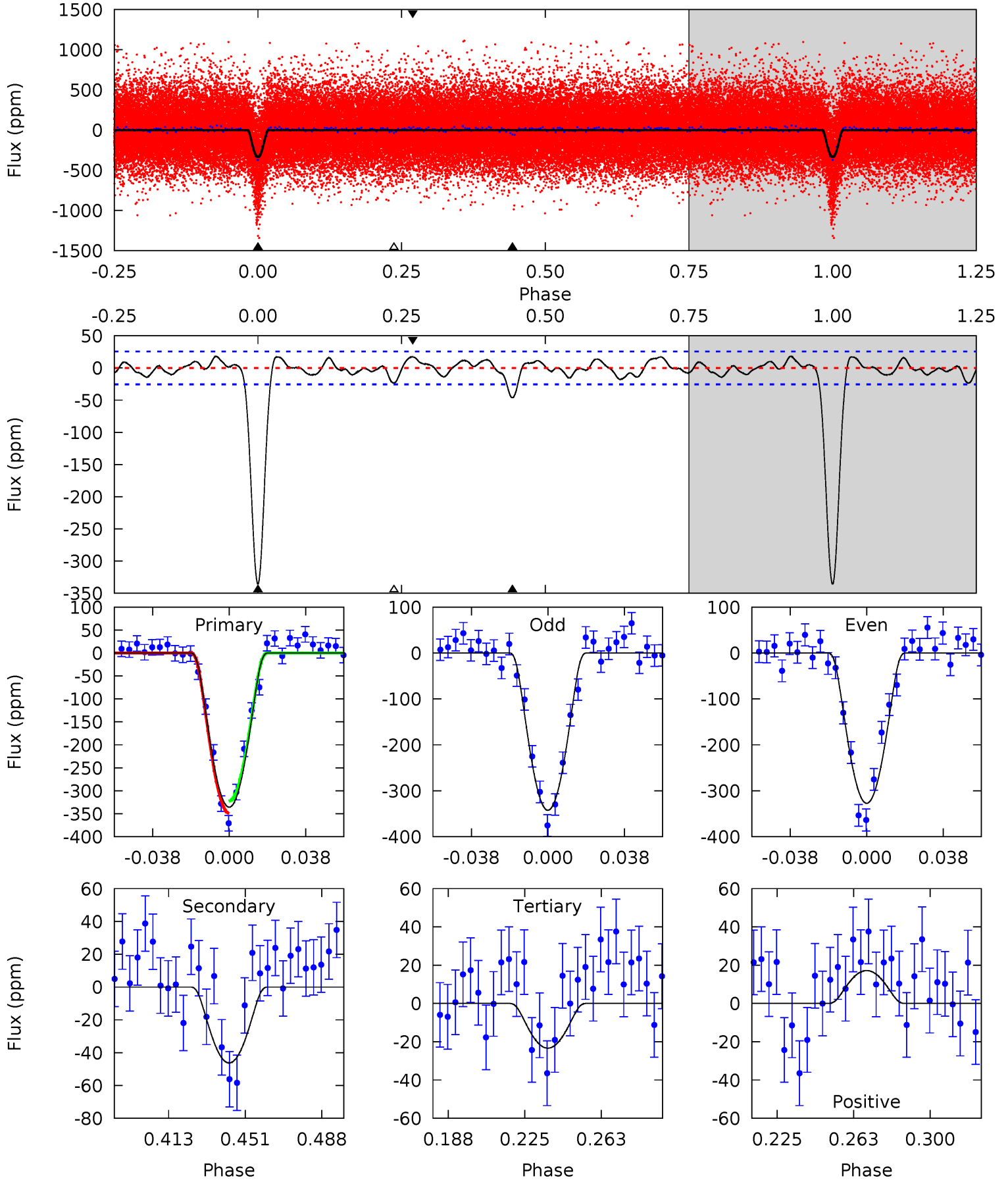
TCE 003541800-01 P= 4.662276 Days  $T_0=132.358643$  (BKJD)



# DV Model-Shift Uniqueness Test

003541800-01, P = 4.662280 Days, E = 127.696786 Days

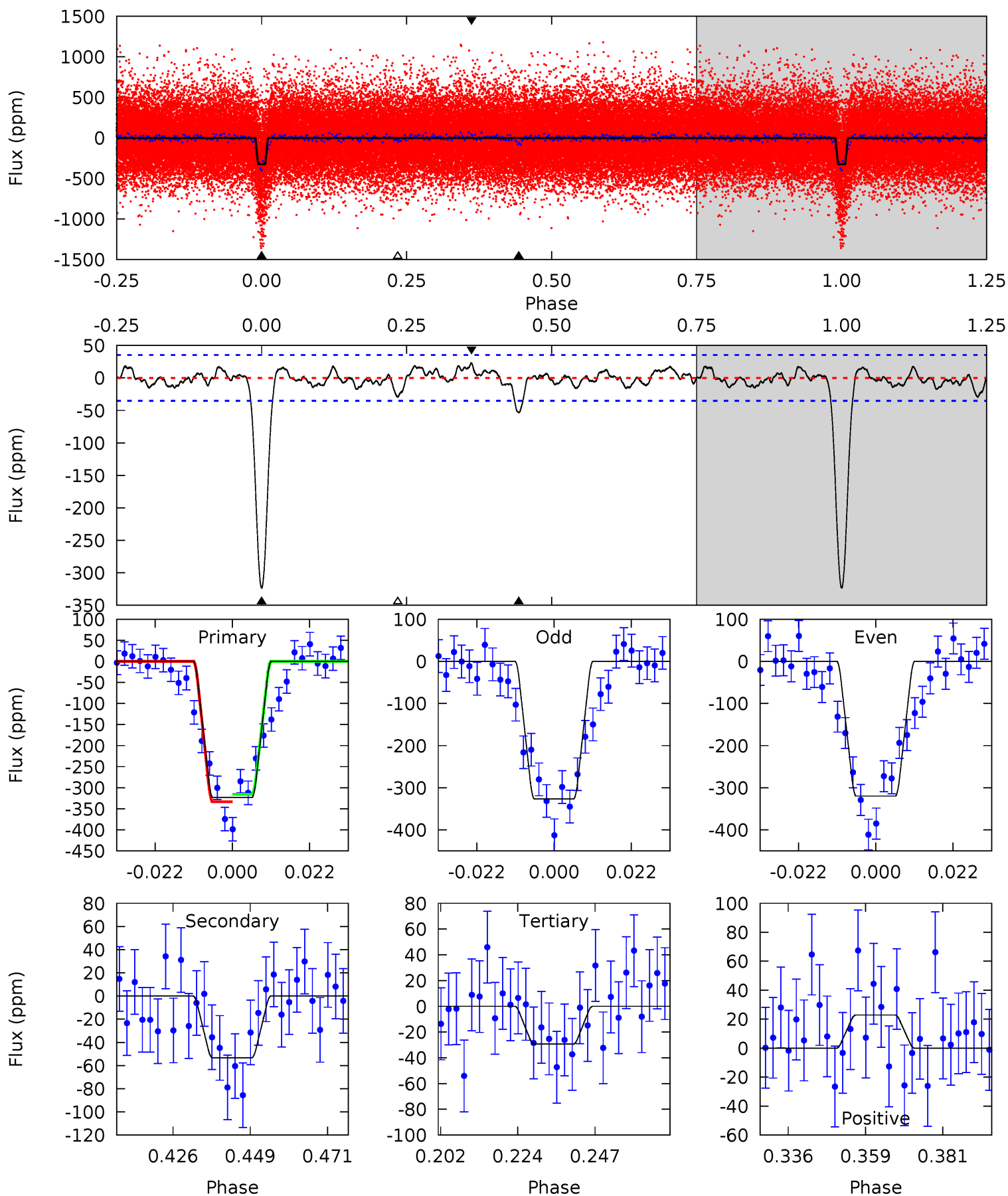
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
62.6	8.62	4.35	3.20	4.77	2.08	1.65	58.2	59.4	4.27	5.42	1.41	1.06	0.05	2.51



# Alt Model-Shift Uniqueness Test

003541800-01, P = 4.662276 Days, E = 127.696367 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
44.6	7.35	4.04	3.15	4.87	2.28	1.28	40.5	41.4	3.31	4.19	0.45	1.08	0.07	1.26





### Stellar Parameters For KIC 003541800

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6191^{+172}_{-216}$	$4.454^{+0.050}_{-0.200}$	$-0.100^{+0.250}_{-0.350}$	$1.025^{+0.293}_{-0.105}$	$1.088^{+0.141}_{-0.141}$	$1.423^{+0.387}_{-0.738}$
	+3%/-3%	+1%/-4%	+250%/-350%	+29%/-10%	+13%/-13%	+27%/-52%
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 003541800-01 / KOI 0491.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-46 \pm 5$	$4.70^{+4.03}_{-2.83}$	$1662^{+107}_{-83}$	$3117^{+1131}_{-569}$	$3.580^{+18.446}_{-2.563}$
Alt.	$-53 \pm 7$	$3.92^{+3.61}_{-2.66}$	$1662^{+118}_{-89}$	$3378^{+1698}_{-635}$	$5.878^{+49.213}_{-4.280}$

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

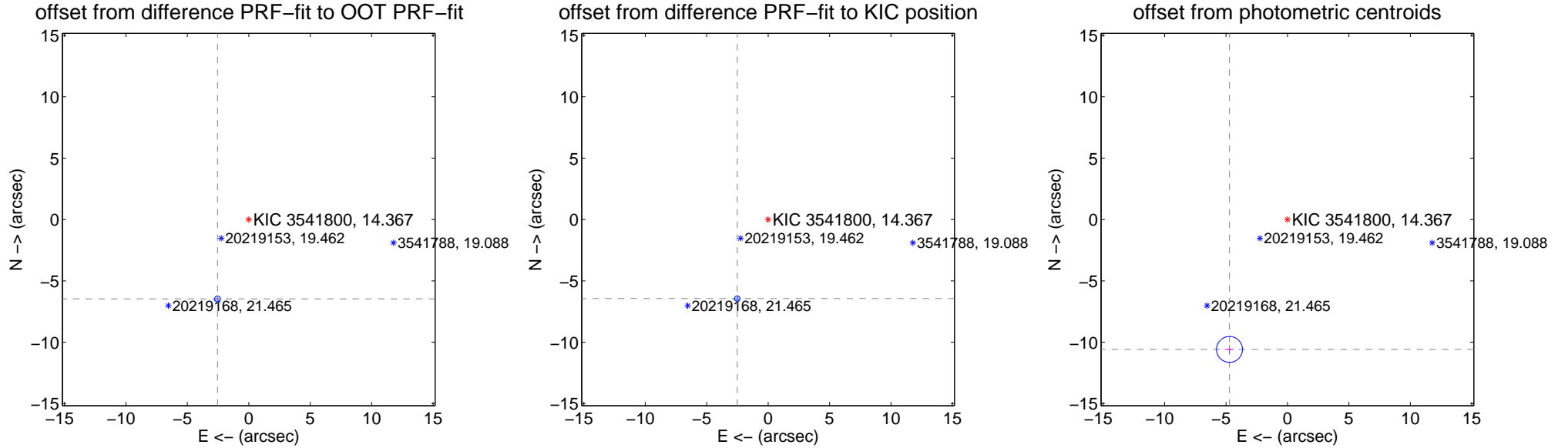
## DV Centroid Data

Supplemental centroid analysis for 003541800-01. Kepler magnitude: 14.37. Transit SNR 31.32

There are 13 quarters with good PRF difference image offsets

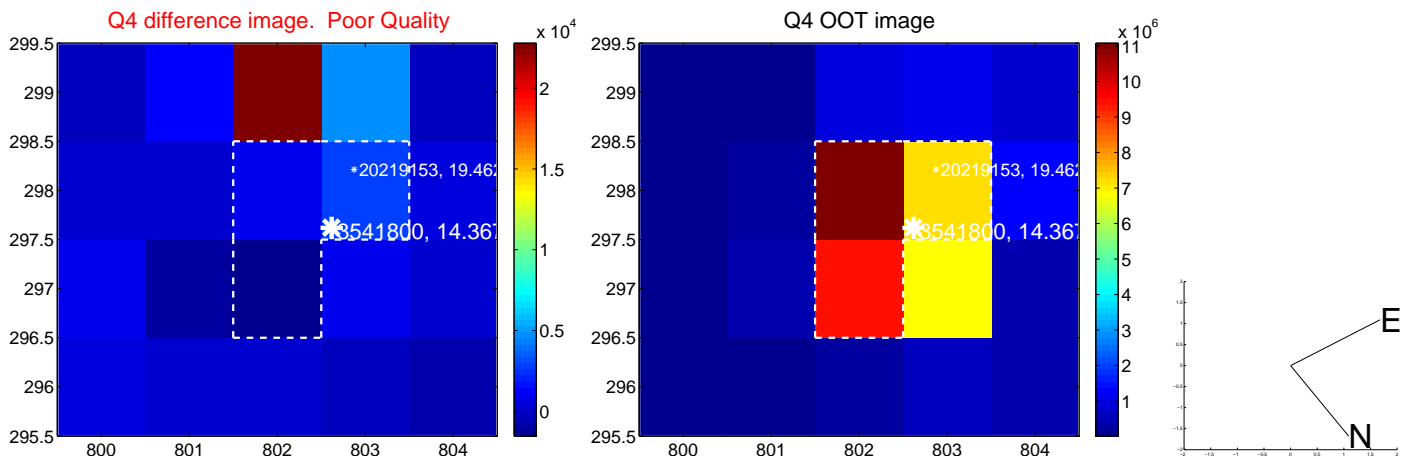
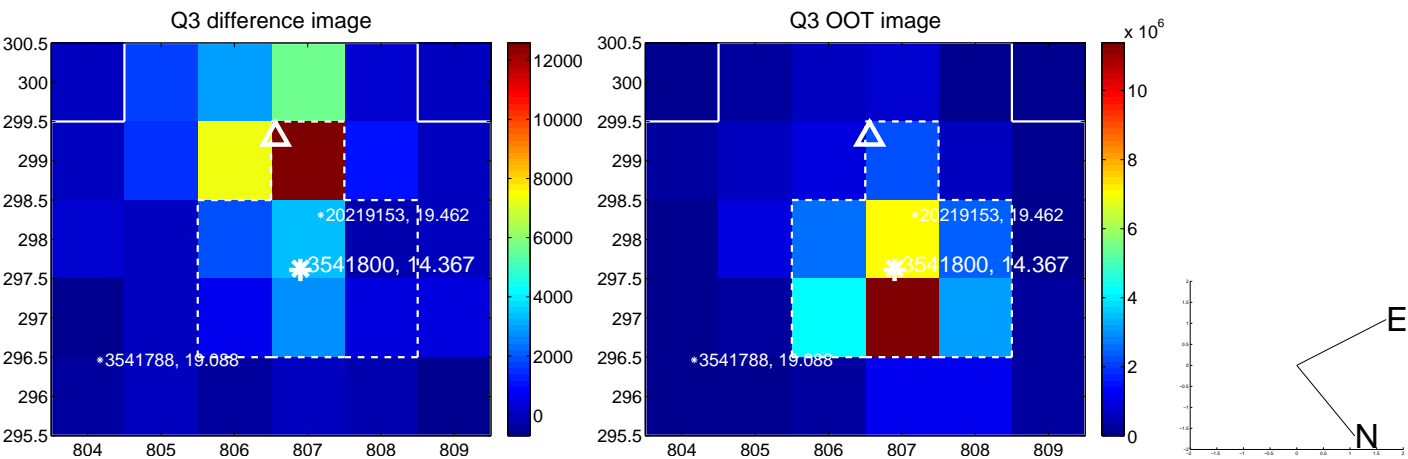
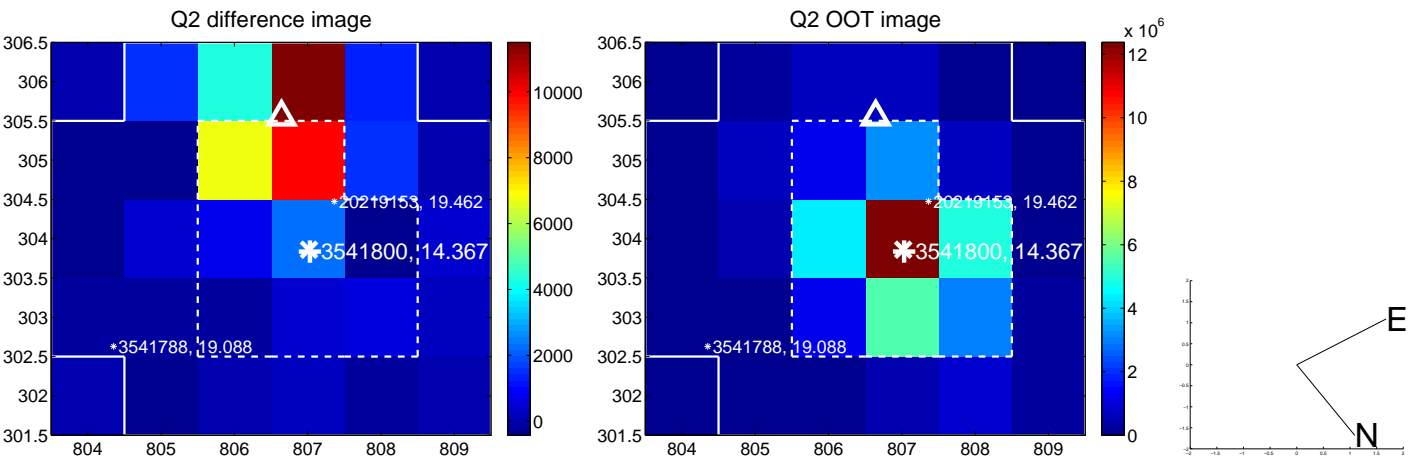
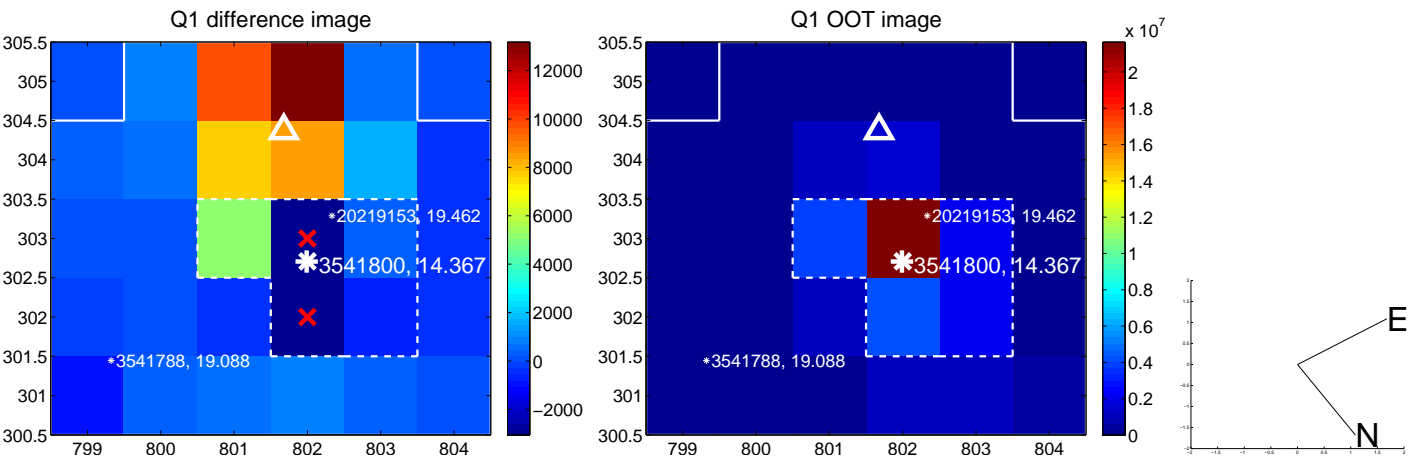
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>6.955 <math>\pm</math> 0.079</b>	<b>88.29</b>	2.546 $\pm$ 0.070	-6.472 $\pm$ 0.080
PRF-fit source offset from KIC position	<b>6.914 <math>\pm</math> 0.073</b>	<b>95.35</b>	2.513 $\pm$ 0.070	-6.441 $\pm$ 0.073
photometric centroid source offset	<b>11.59 <math>\pm</math> 0.35</b>	<b>32.95</b>	4.72 $\pm$ 0.34	-10.59 $\pm$ 0.35

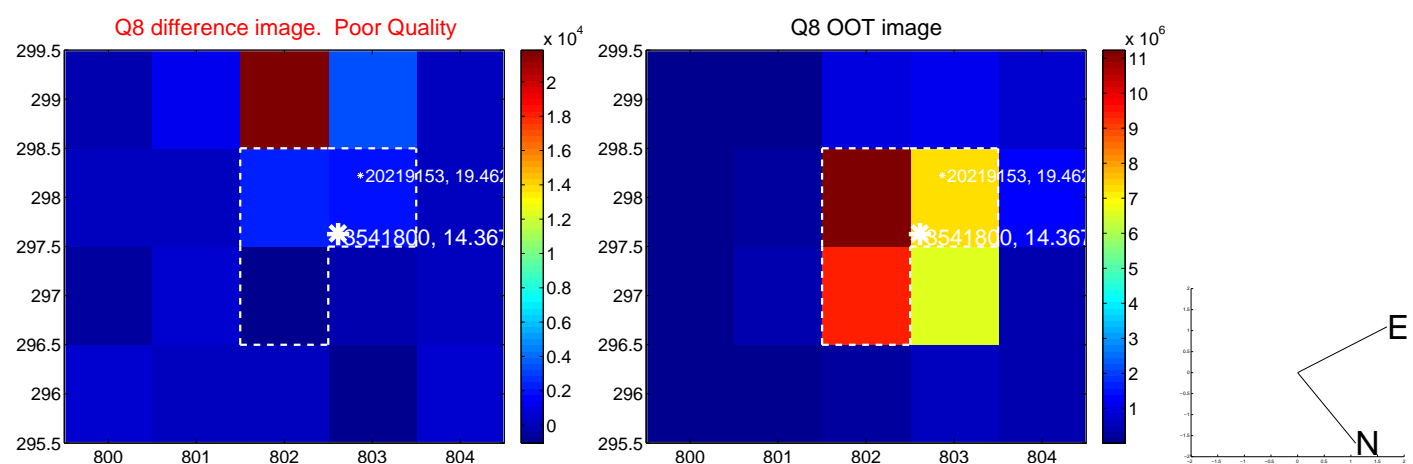
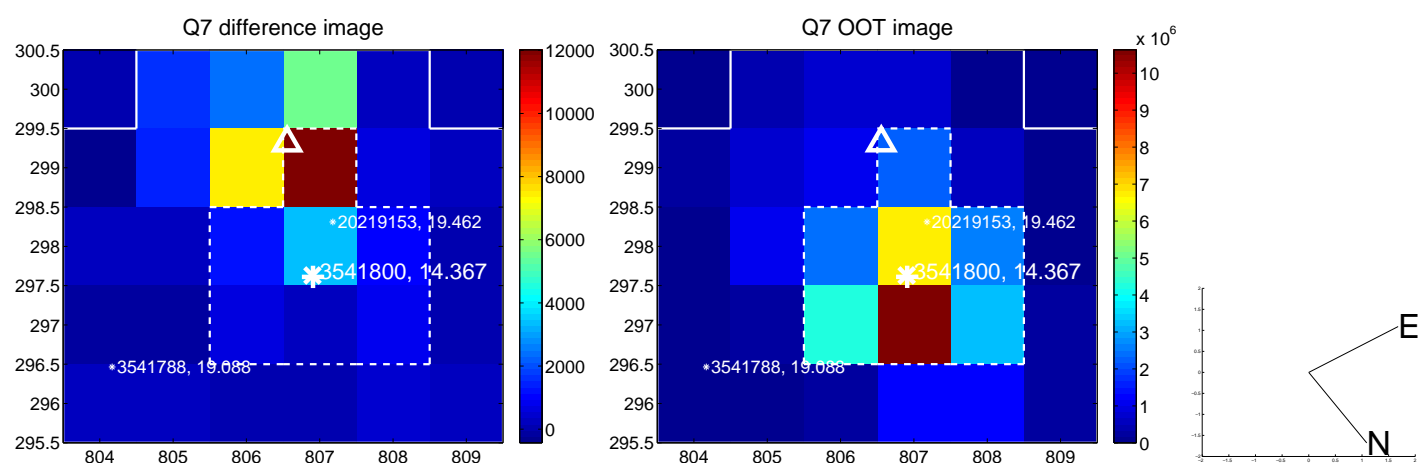
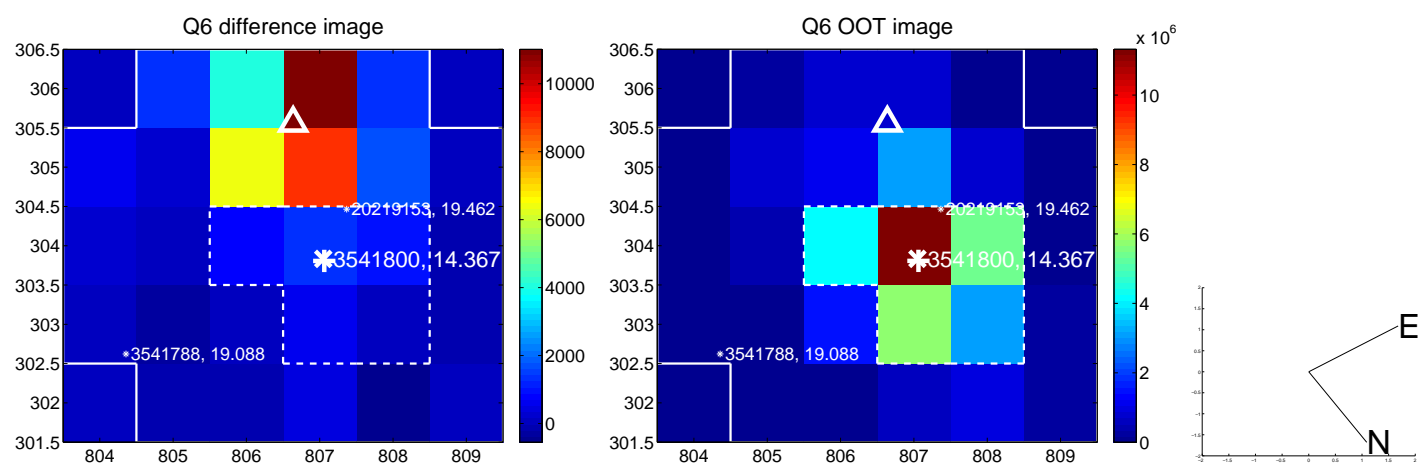
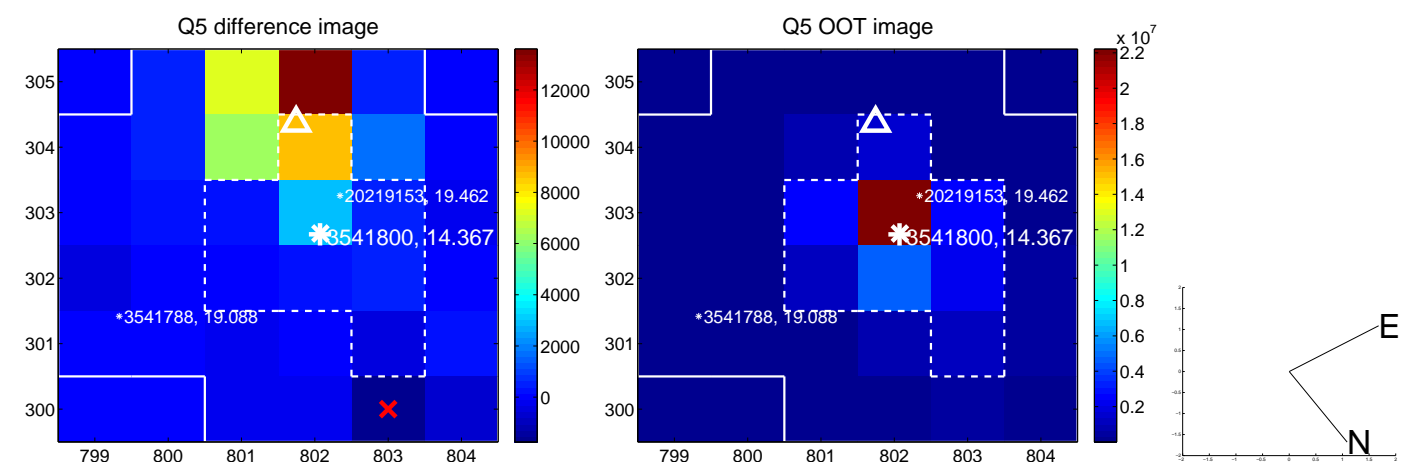


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

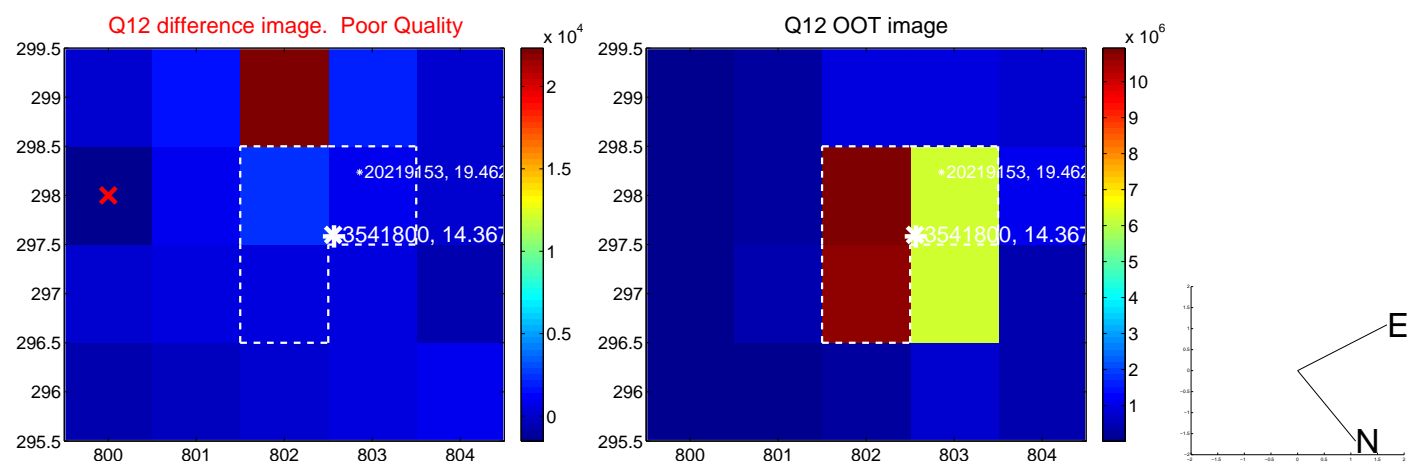
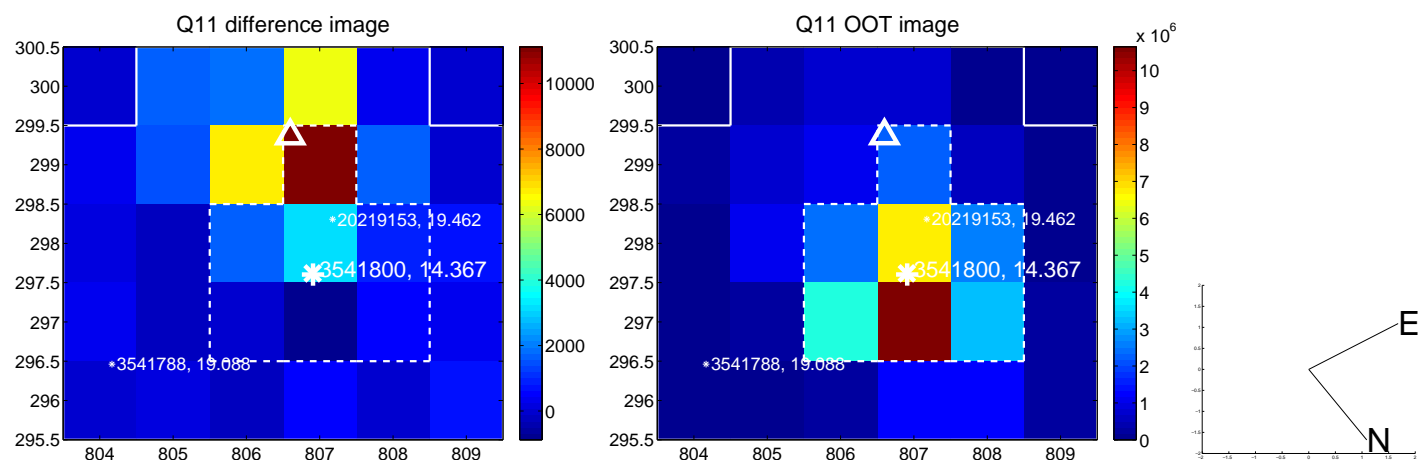
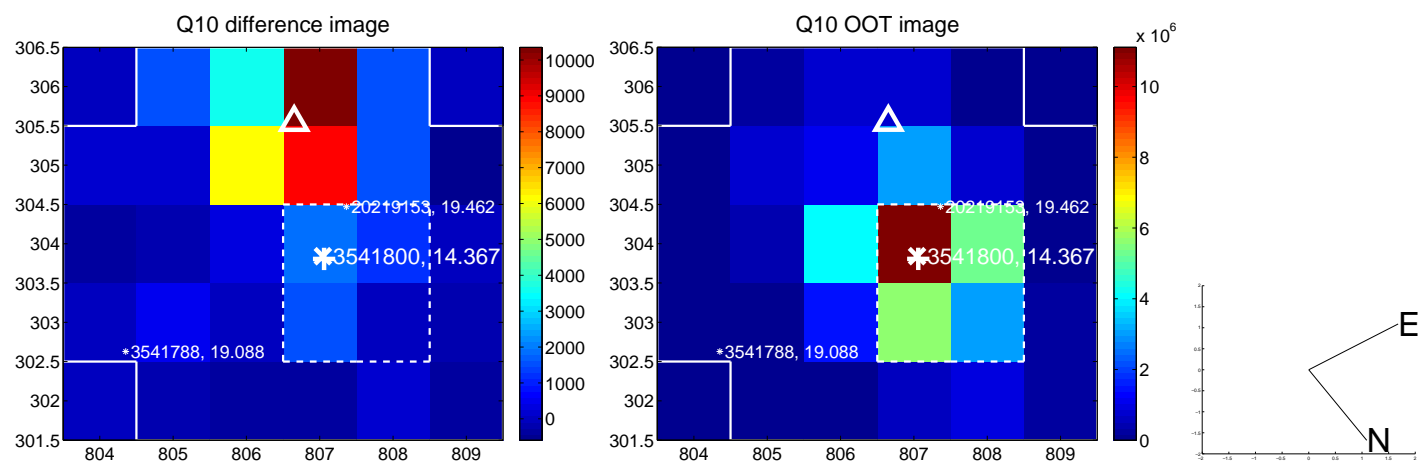
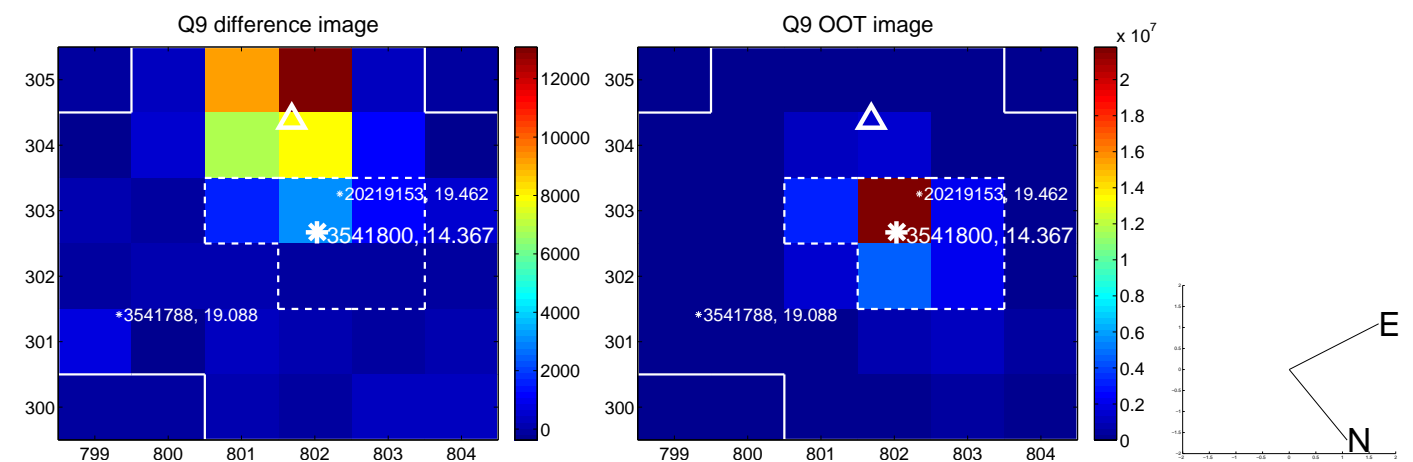


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

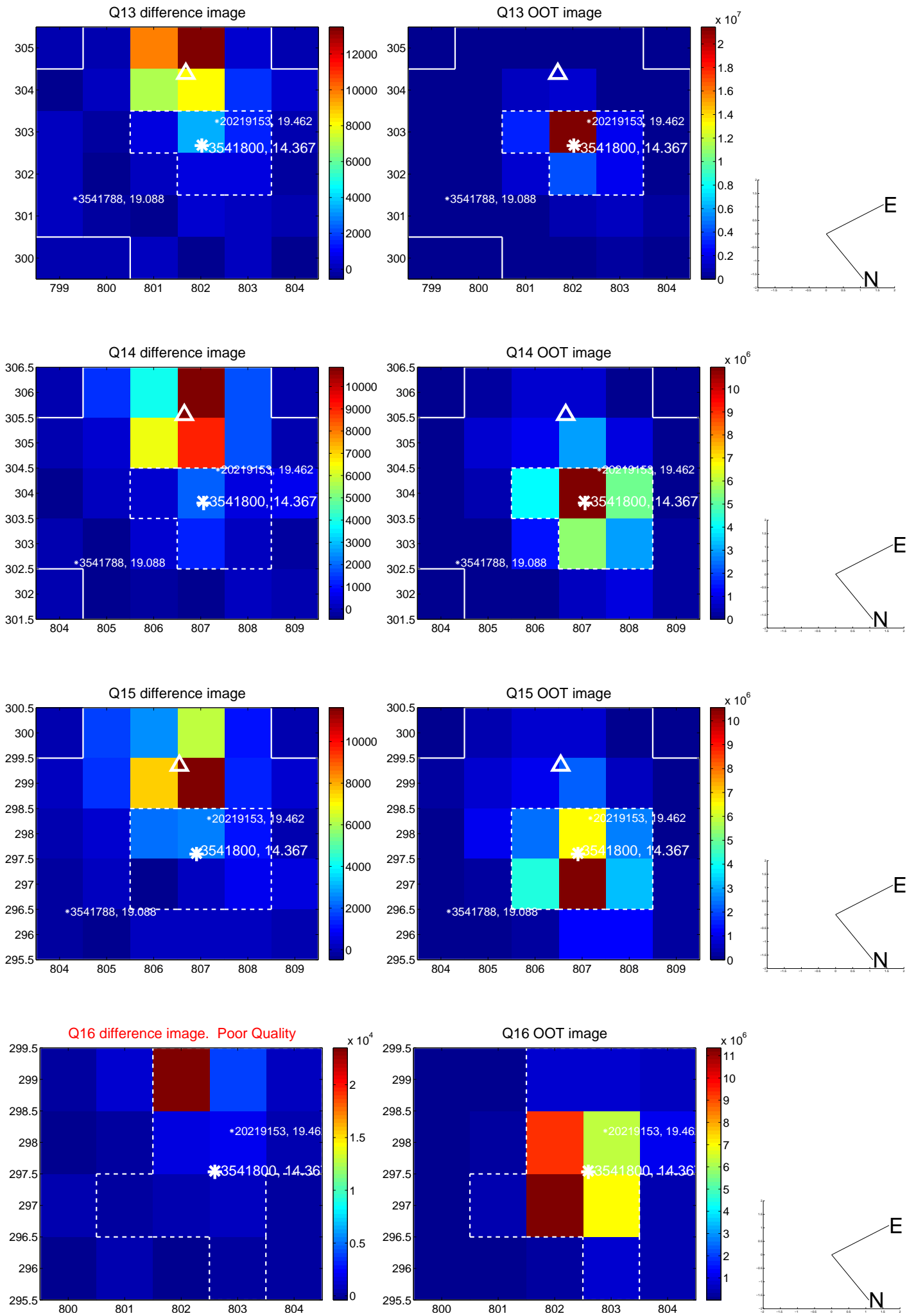




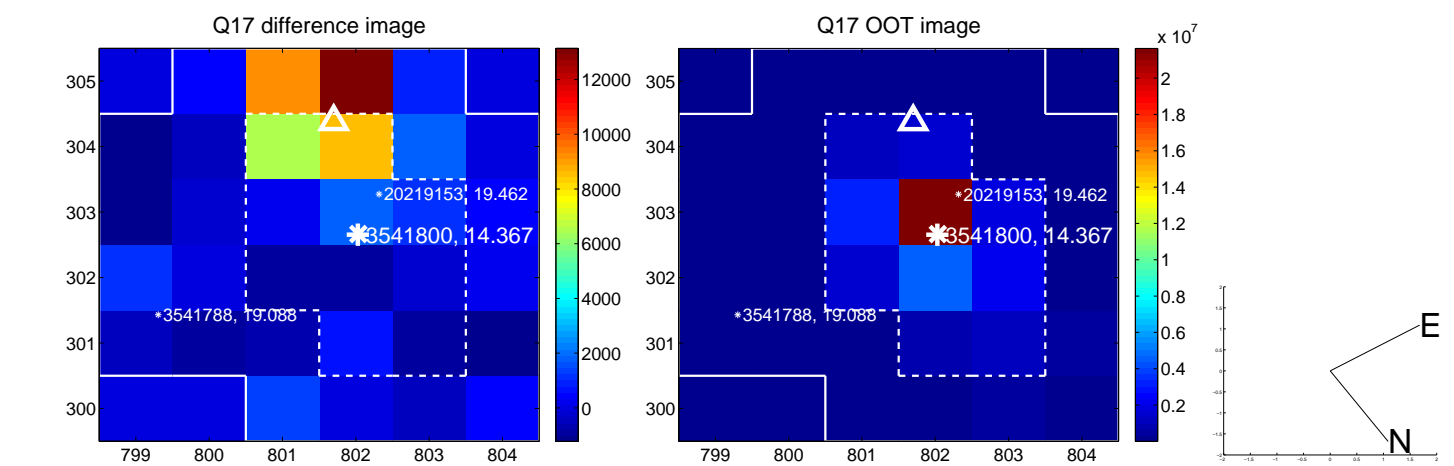
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



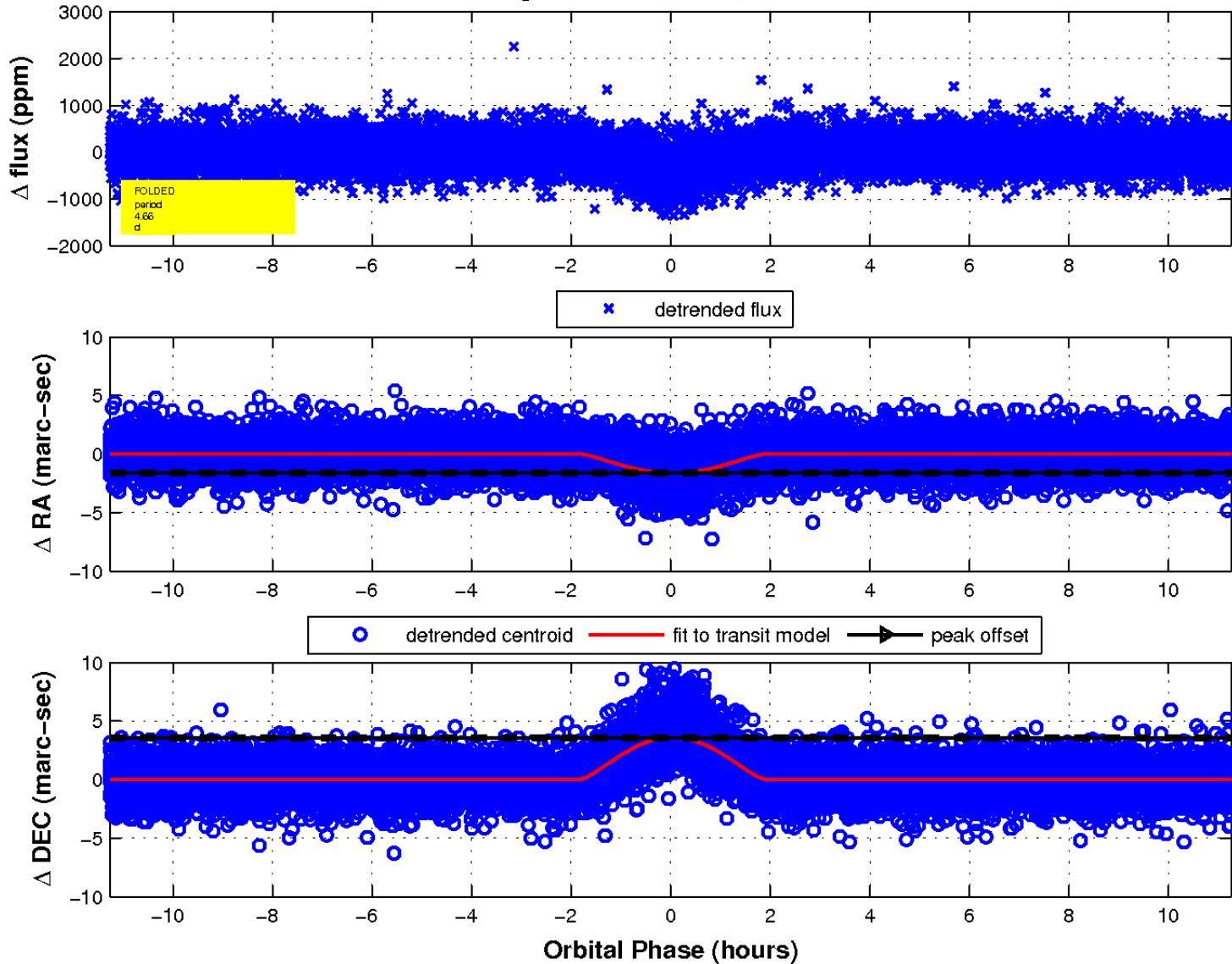
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

