

# KIC 009388435

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009388435-01	OBS	No	0.540311	131.528051	19.7	2.998	8.7	7.8	1.91	7239	0.92	40484.36

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009388435-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

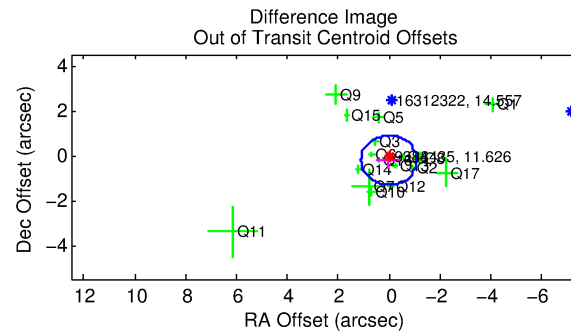
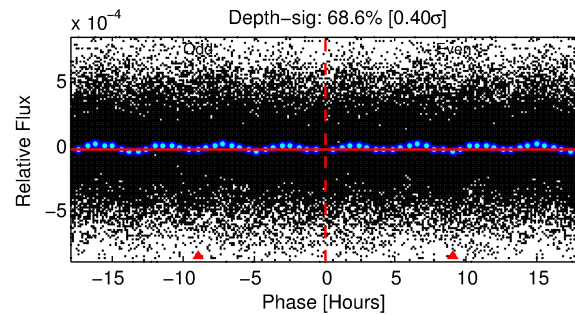
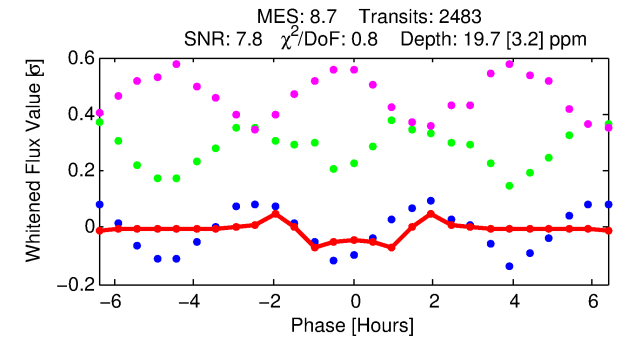
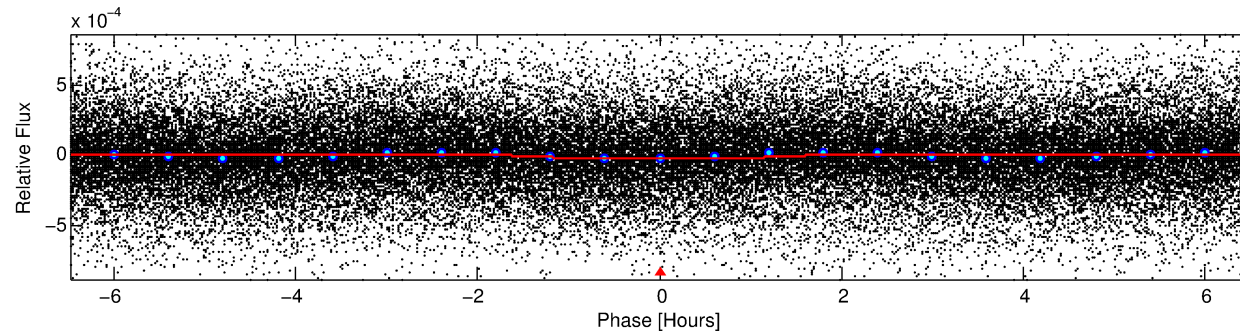
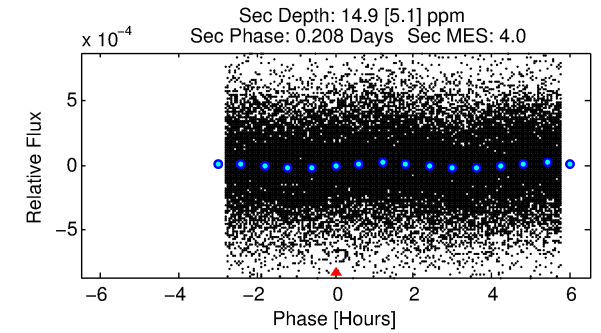
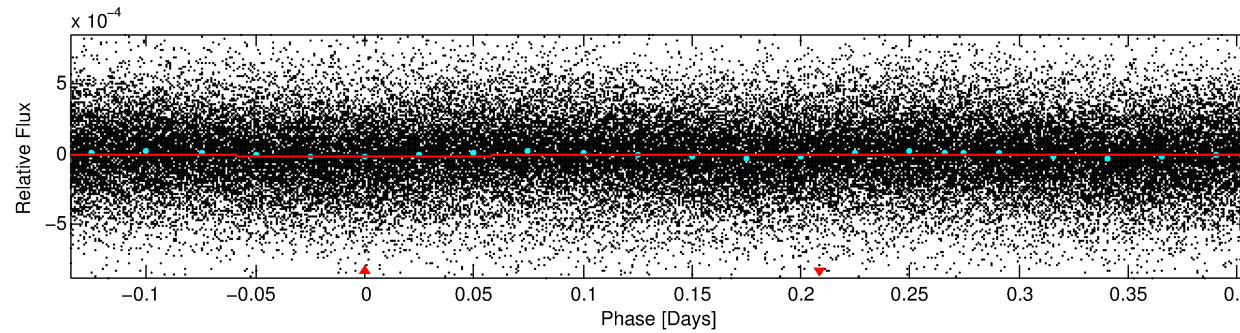
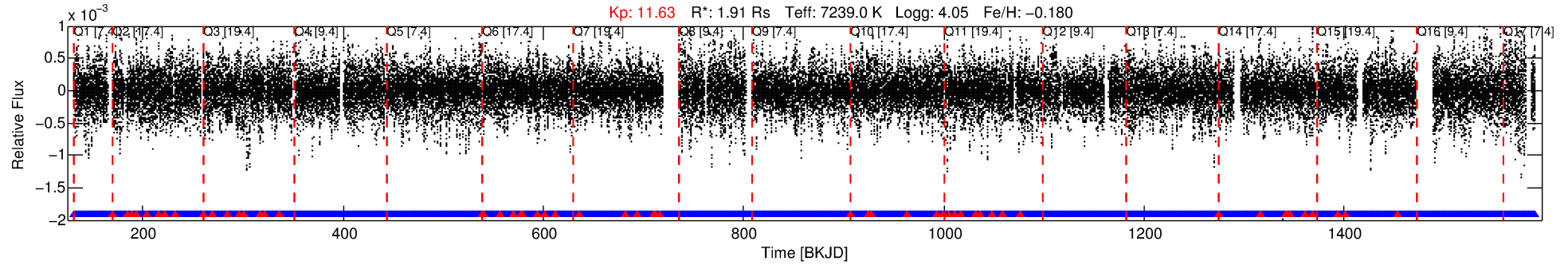
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009388435-01

No Significant Match Found

# DV One-Page Summary

KIC: 9388435 Candidate: 1 of 1 Period: 0.540 d



## DV Fit Results:

Period = 0.54031 [0.00001] d  
Epoch = 131.5281 [0.0017] BKJD  
Rp/R\* = 0.0044 [0.0007]  
a/R\* = 1.27 [0.41]  
b = 0.73 [0.55]  
Seff = 40484.36 [15874.73]  
Teff = 3617 [355] K  
Rp = 0.92 [0.31] Re  
a = 0.0149 [0.0037] AU  
Ag = 2.17 [1.25] [0.93σ]  
Teffp = 6789 [840] K [3.48σ]

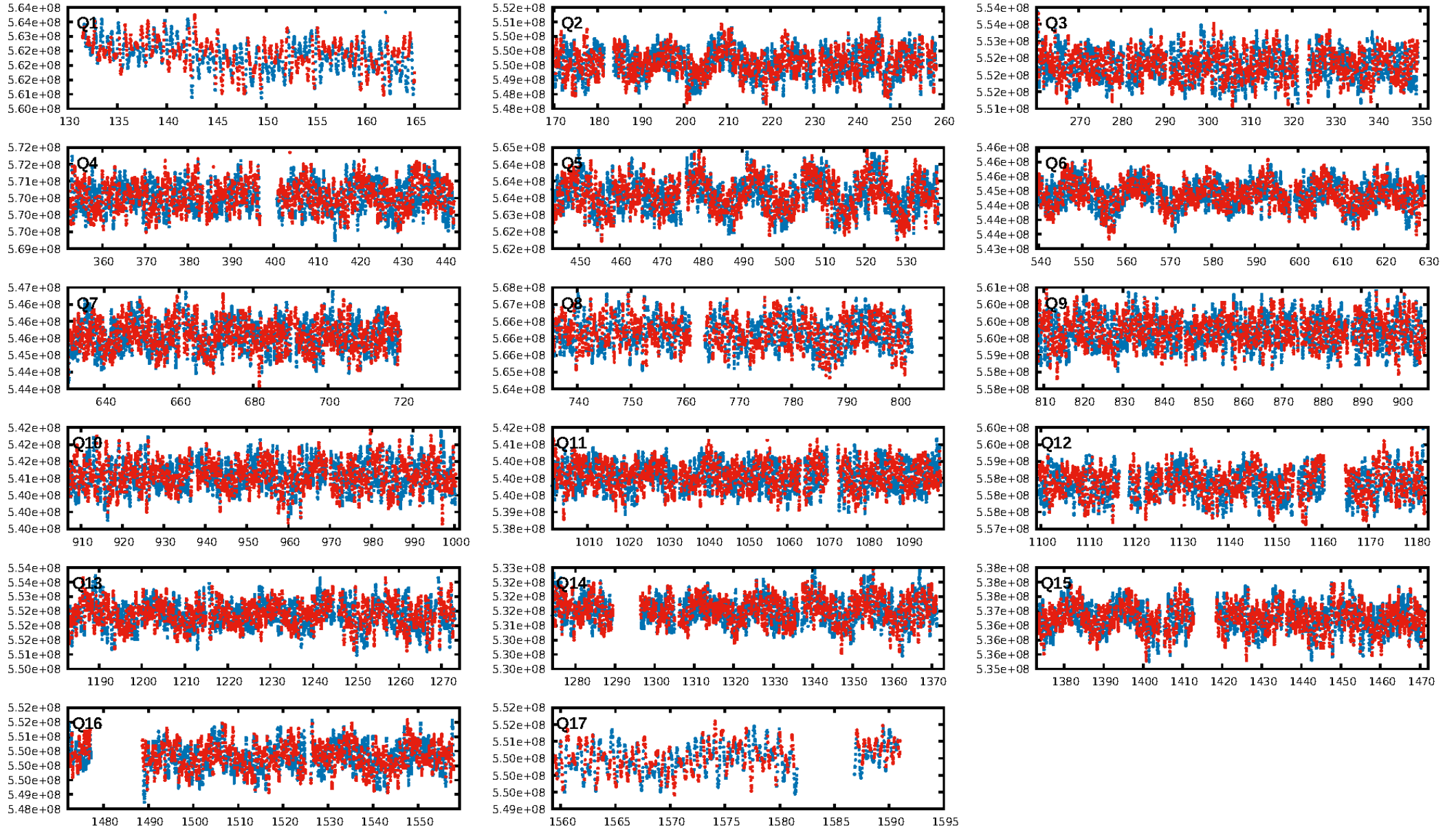
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.58e-16  
RollingBand-fgt: 0.98 [2314/2371]  
**GhostDiagnostic-chr: 0.736**  
Centroid-sig: 3.9%  
Centroid-so: 0.652 arcsec [1.66σ]  
OotOffset-rm: 0.216 arcsec [0.59σ]  
KicOffset-rm: 0.204 arcsec [0.46σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.41 [7/17]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 09:56:01 Z

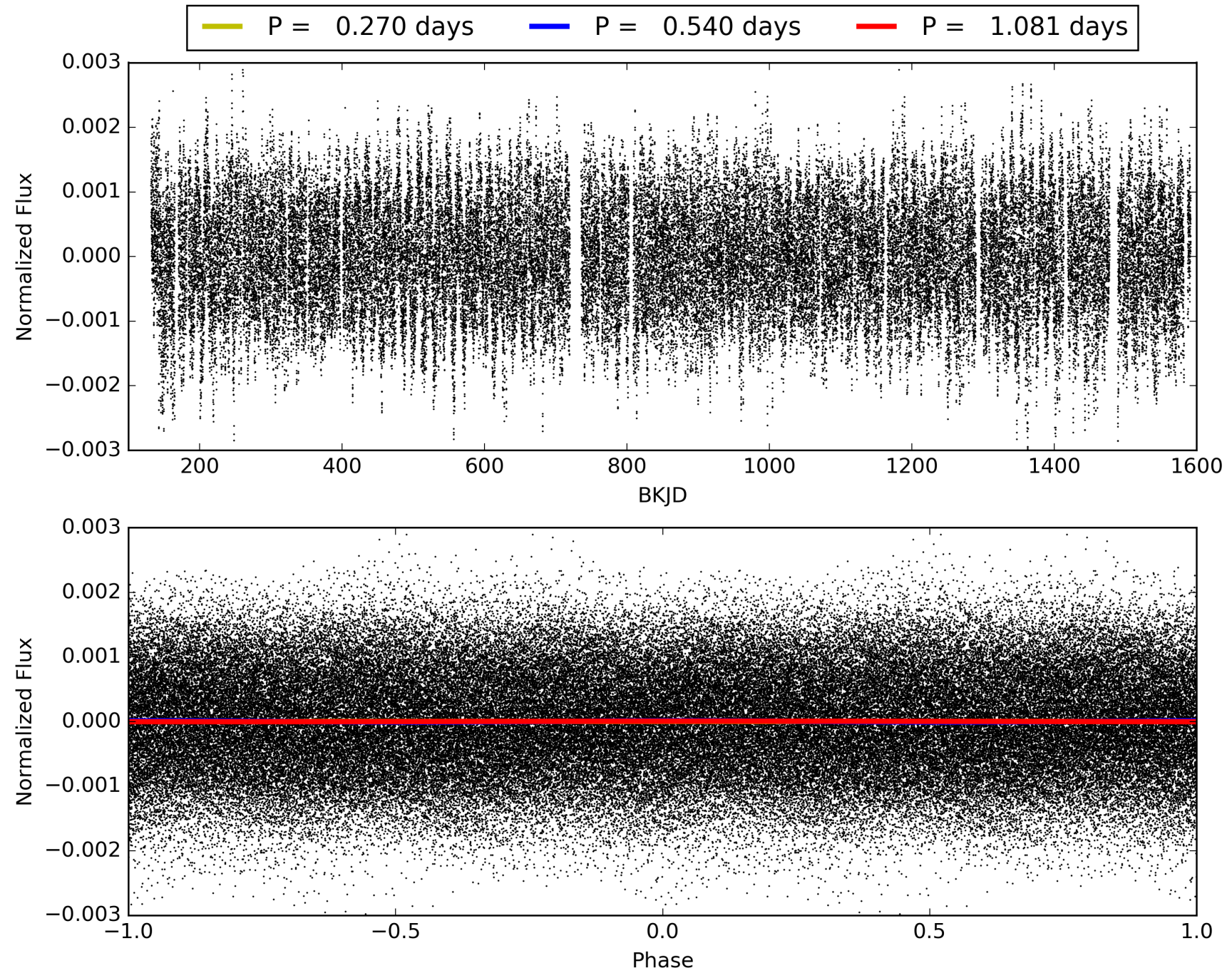
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 009388435-01, PDC Light Curves



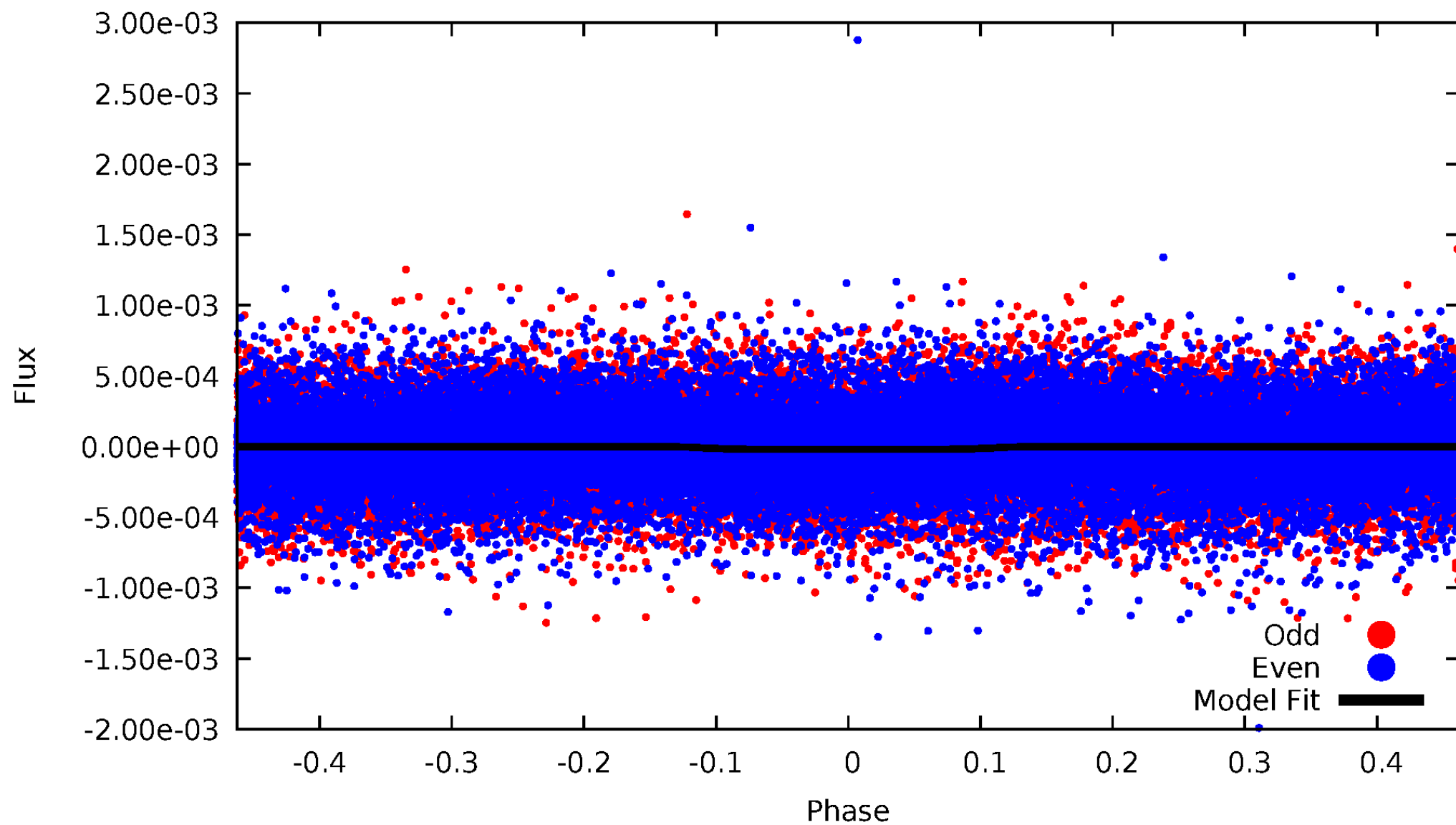


TCE 009388435-01



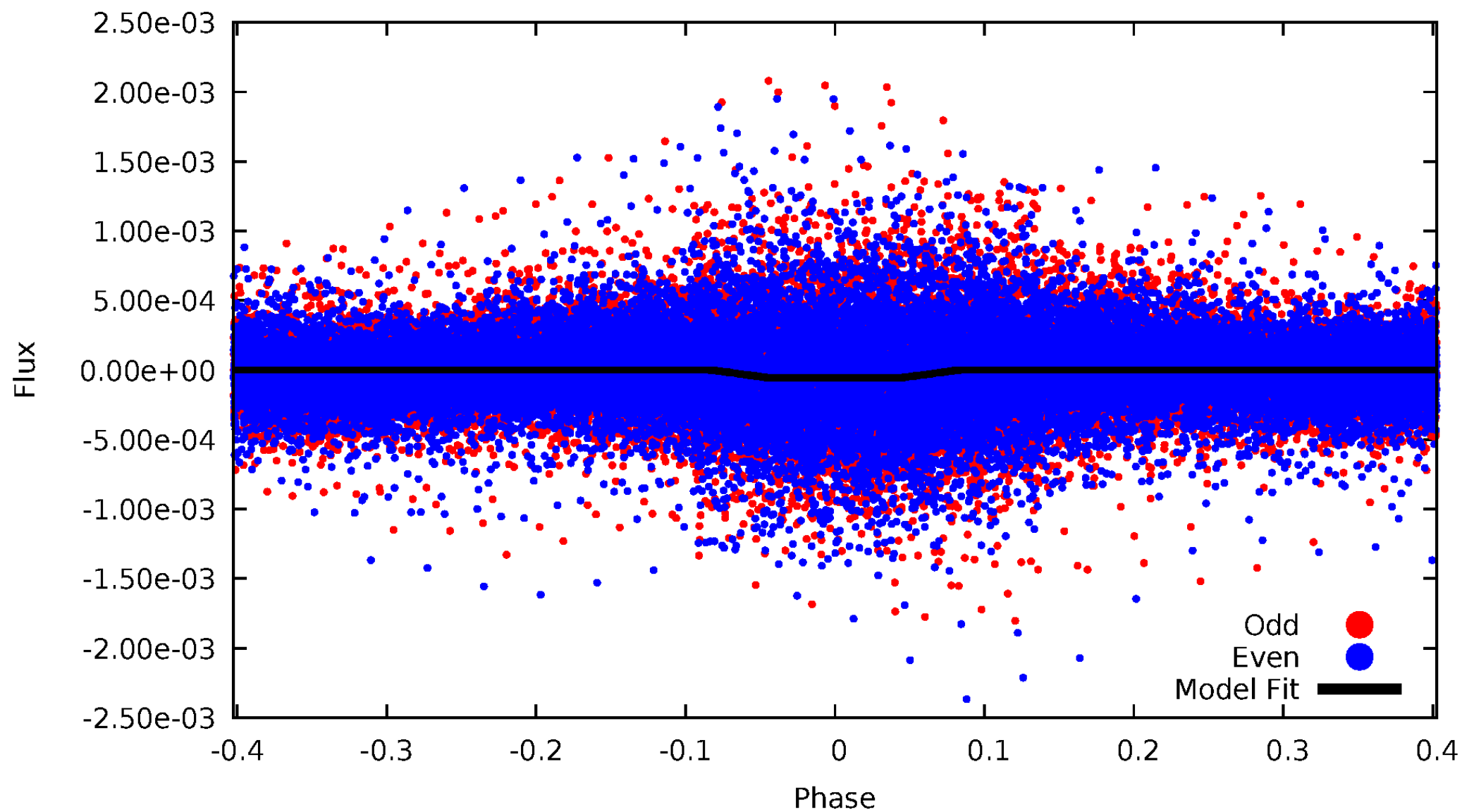
# DV Odd/Even

TCE 009388435-01

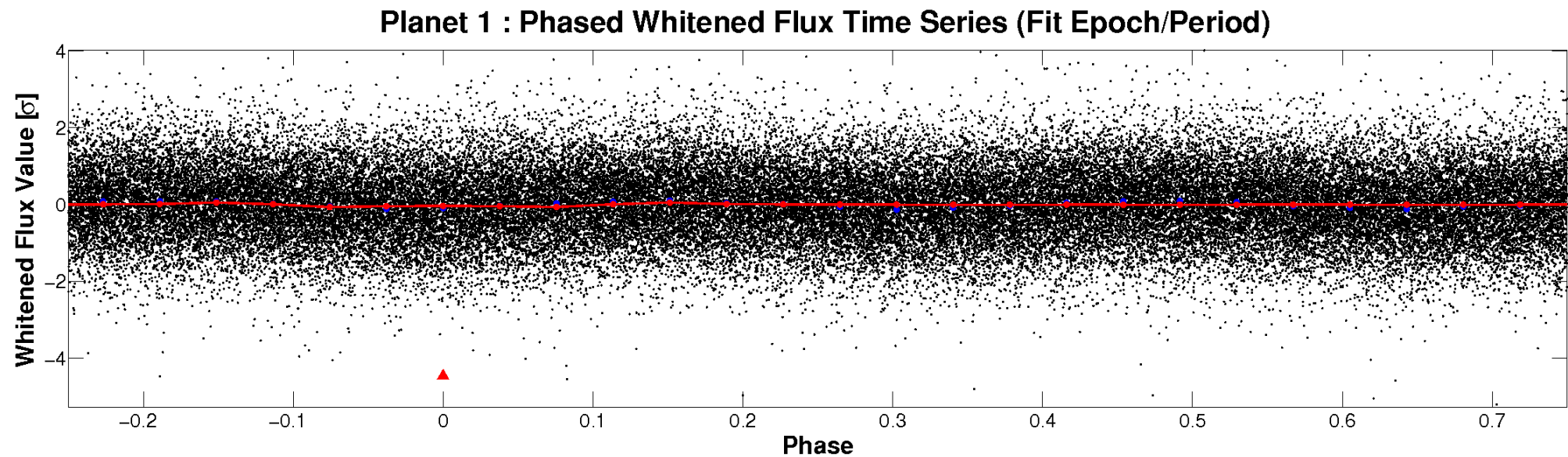
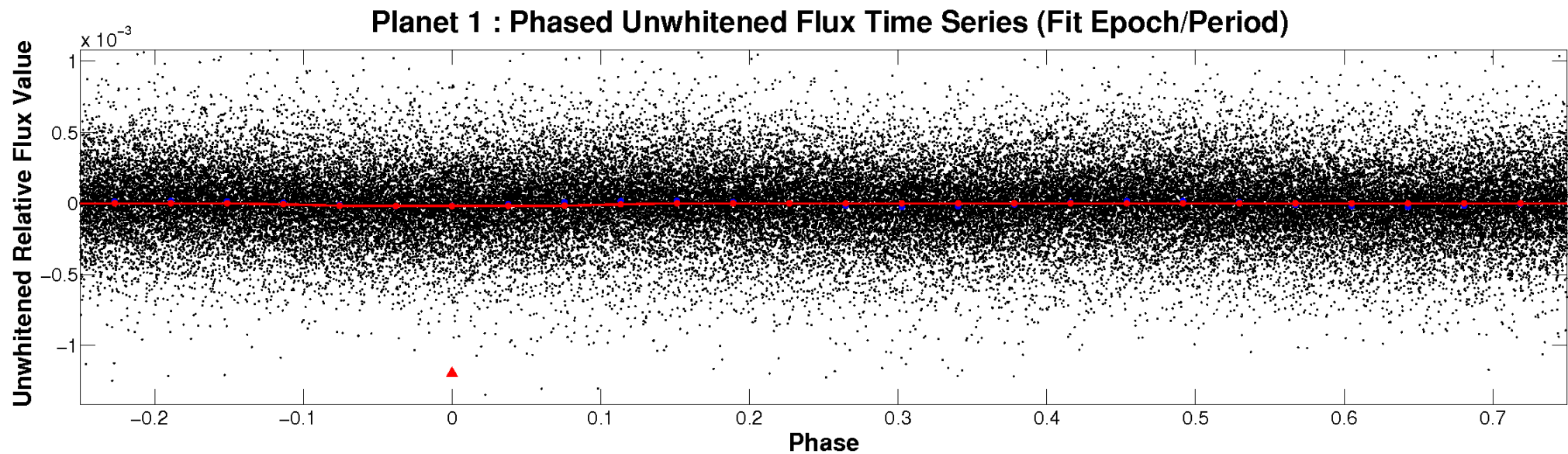


# ALT Odd/Even

TCE 009388435-01



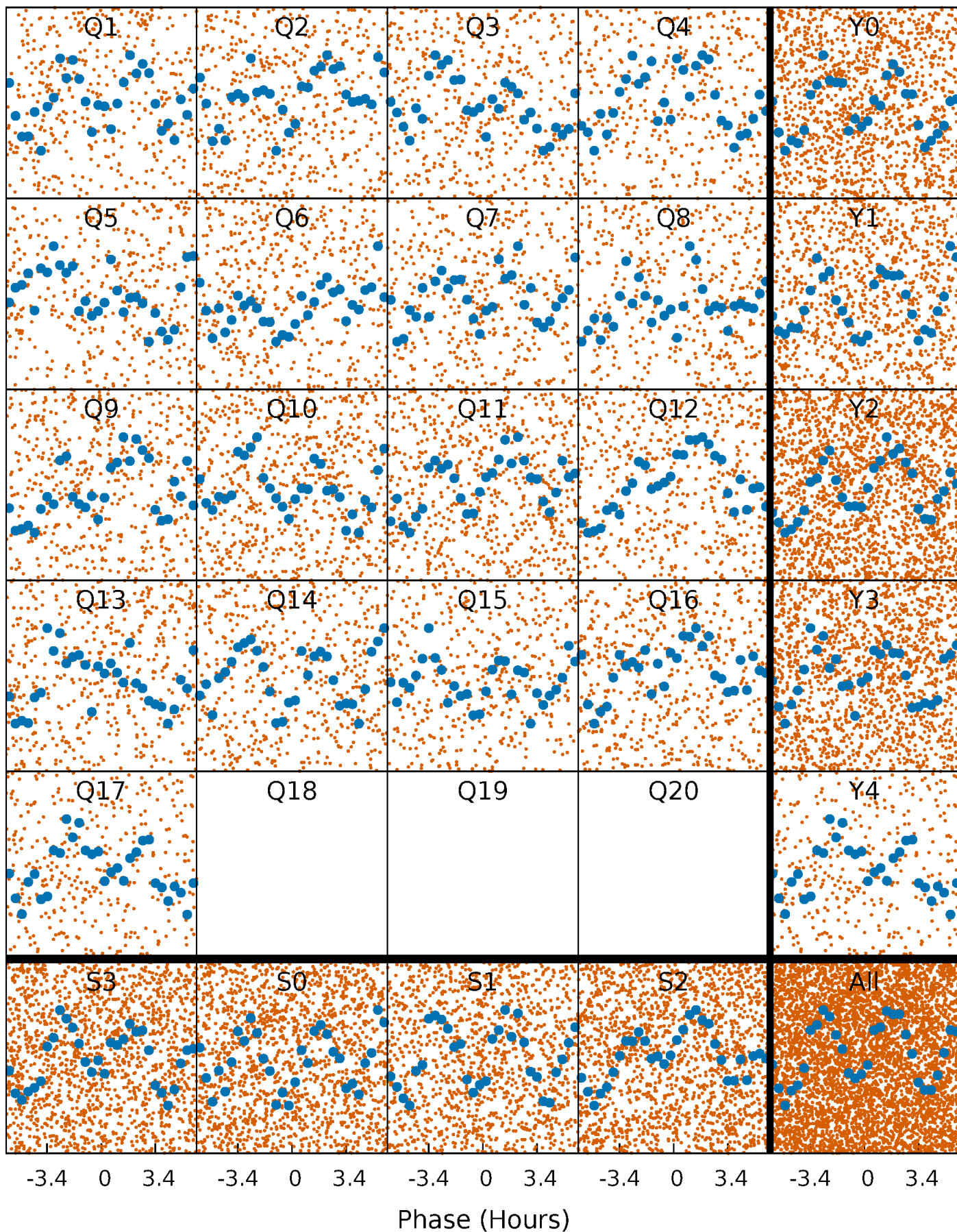
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

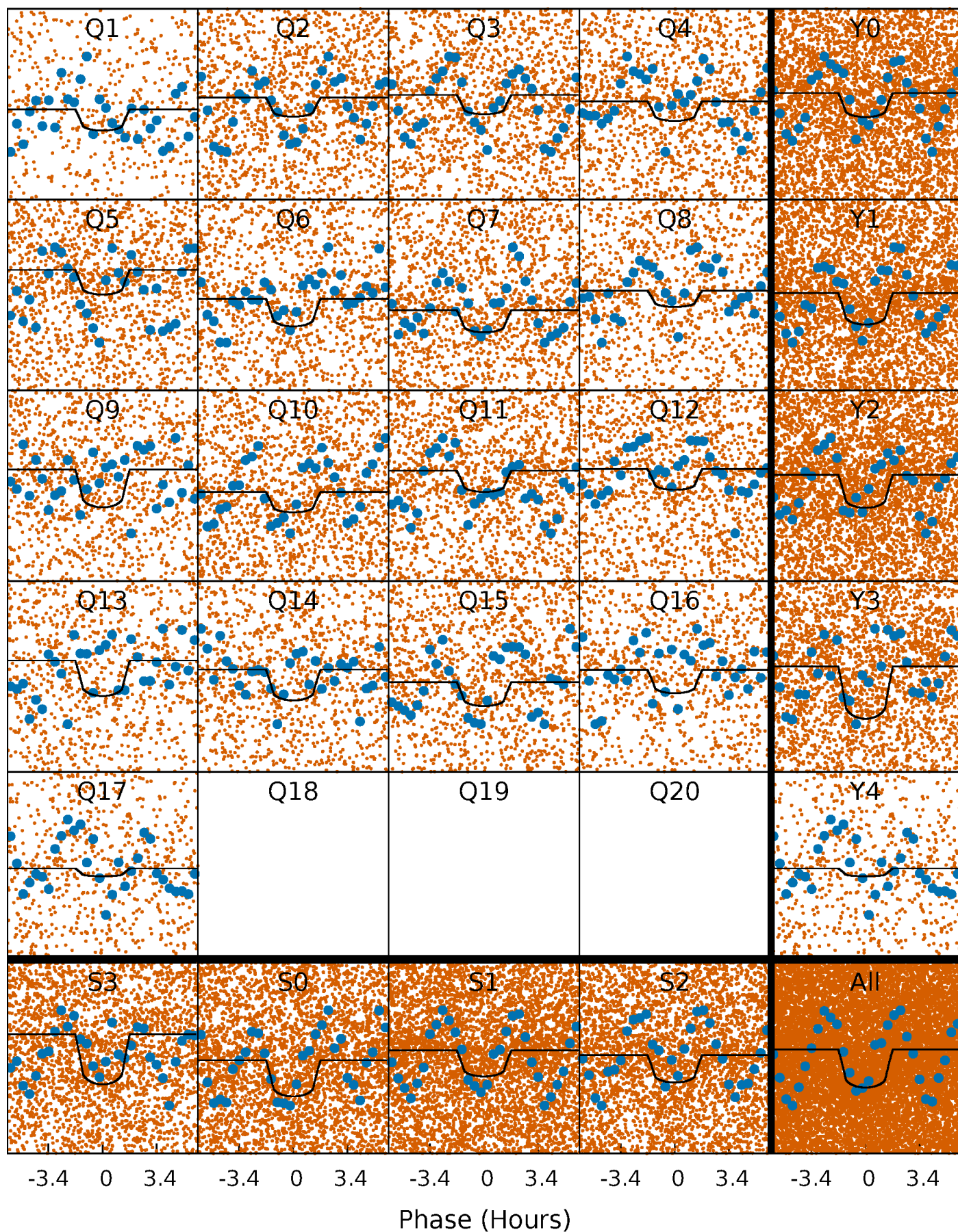
TCE 009388435-01 P= 0.540311 Days  $T_0=131.528051$  (BKJD)





# DV Quarter-Phased Transit Curves

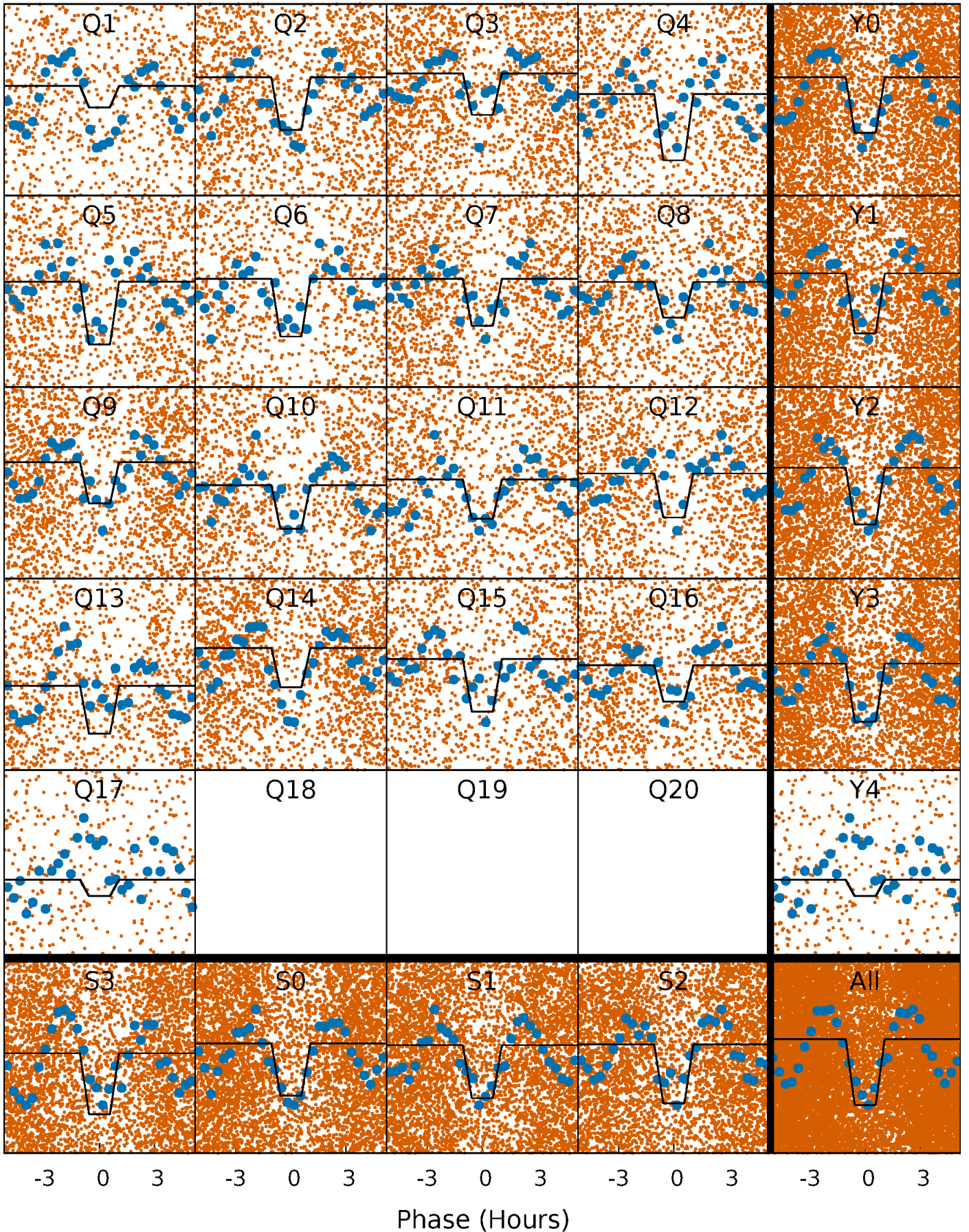
TCE 009388435-01   P= 0.540311 Days    $T_0=131.528051$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

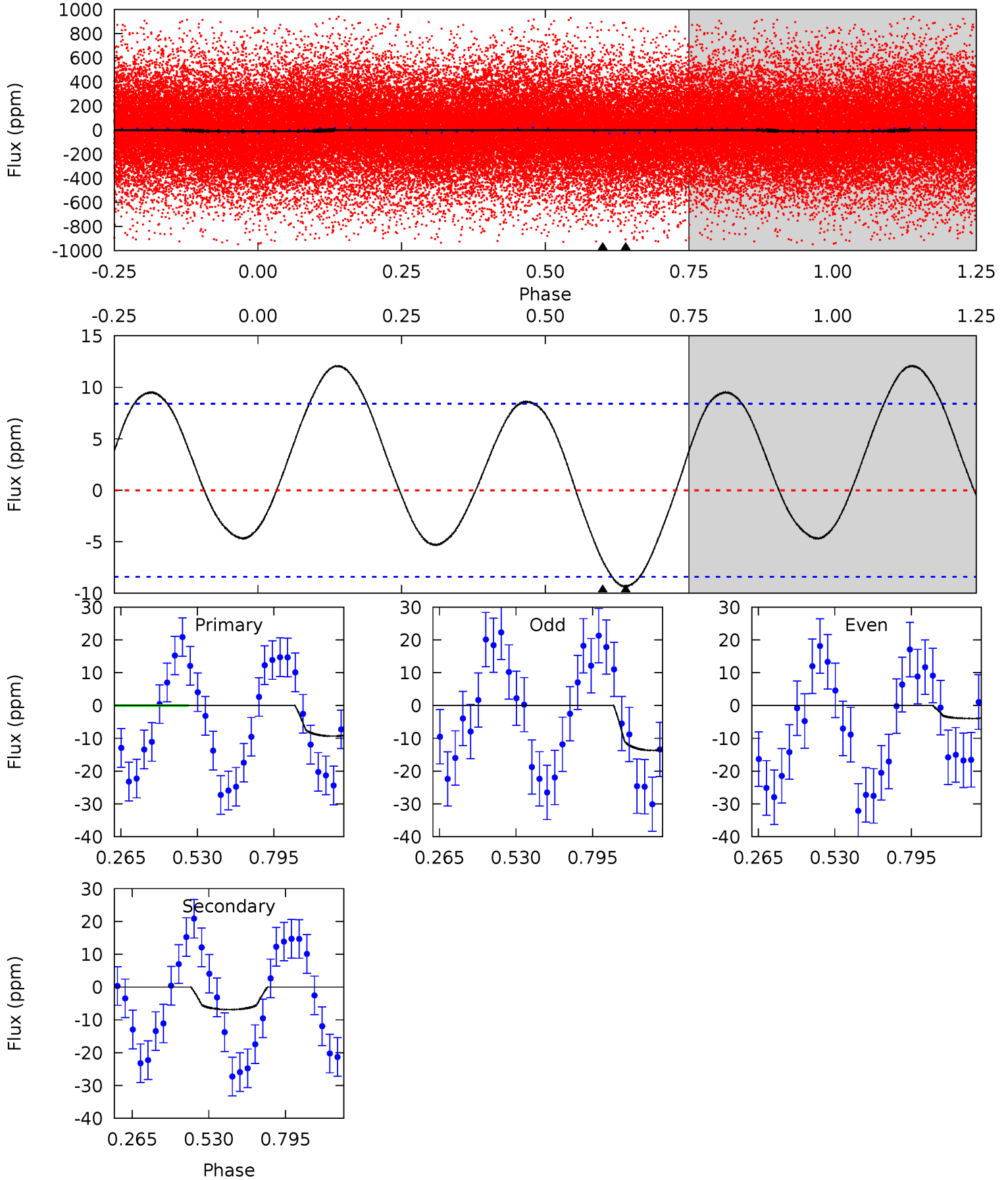
TCE 009388435-01 P= 0.540300 Days  $T_0=131.521868$  (BKJD)



# DV Model-Shift Uniqueness Test

009388435-01, P = 0.540311 Days, E = 130.987740 Days

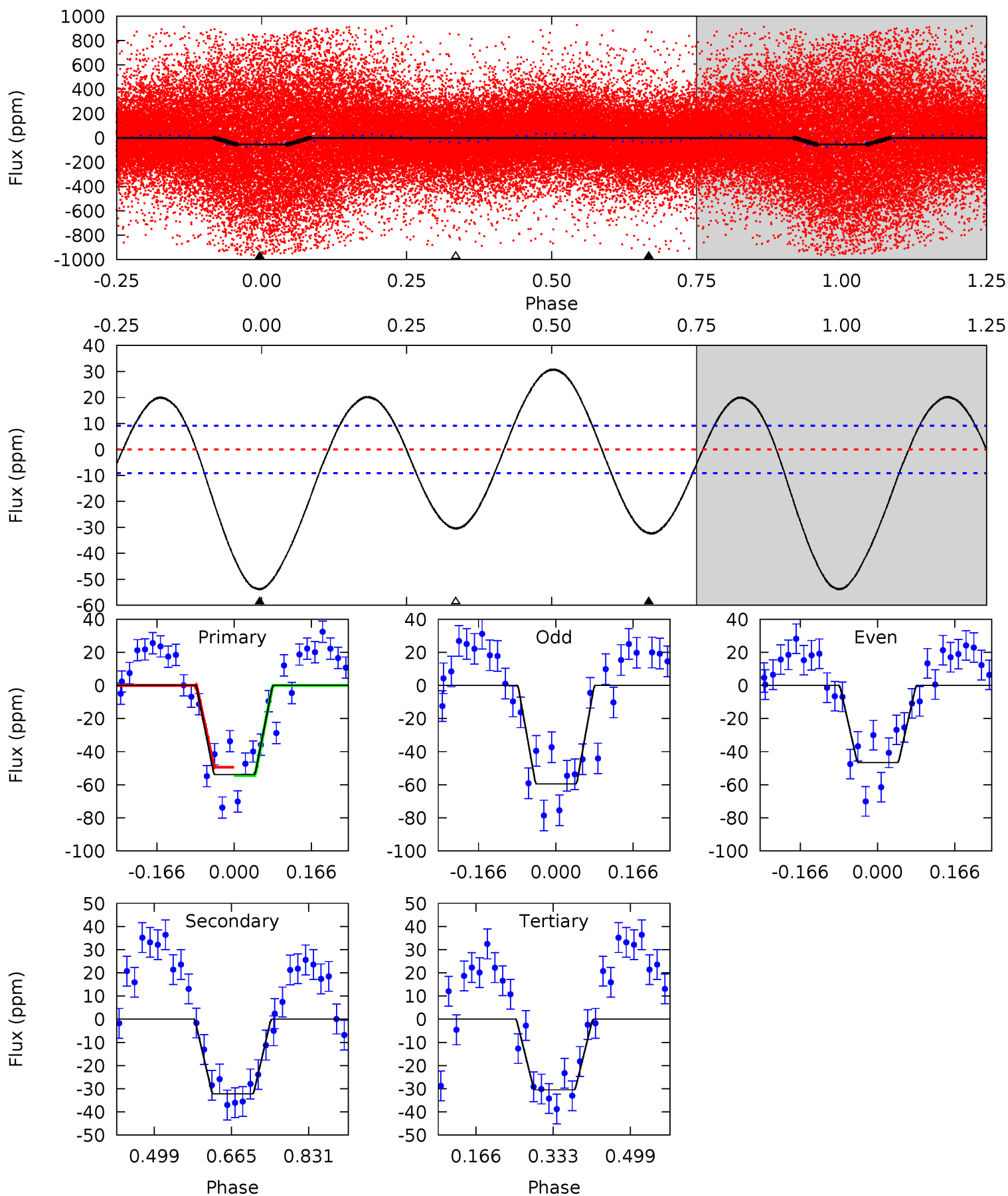
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.85	3.56	0	0	4.36	1.11	3.16	4.85	4.85	3.56	3.56	2.55	1.06	0.56	4.59



# Alt Model-Shift Uniqueness Test

009388435-01, P = 0.540300 Days, E = 130.981568 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
26.3	15.8	14.9	0	4.46	1.38	9.81	11.4	26.3	0.89	15.8	3.21	0.93	0.36	1.22





### Stellar Parameters For KIC 009388435

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7239^{+226}_{-327}$	$4.054^{+0.185}_{-0.167}$	$-0.180^{+0.250}_{-0.350}$	$1.909^{+0.576}_{-0.523}$	$1.502^{+0.225}_{-0.250}$	$0.304^{+0.341}_{-0.139}$
	+3%/-5%	+5%/-4%	+139%/-194%	+30%/-27%	+15%/-17%	+112%/-46%
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 009388435-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-7 \pm 2$	$0.89^{+0.21}_{-0.18}$	$4990^{+423}_{-371}$	$5122^{+693}_{-736}$	$1.015^{+0.706}_{-0.420}$
Alt.	$-32 \pm 2$	$1.55^{+0.30}_{-0.25}$	$5035^{+393}_{-369}$	$5924^{+421}_{-401}$	$1.647^{+0.652}_{-0.496}$

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

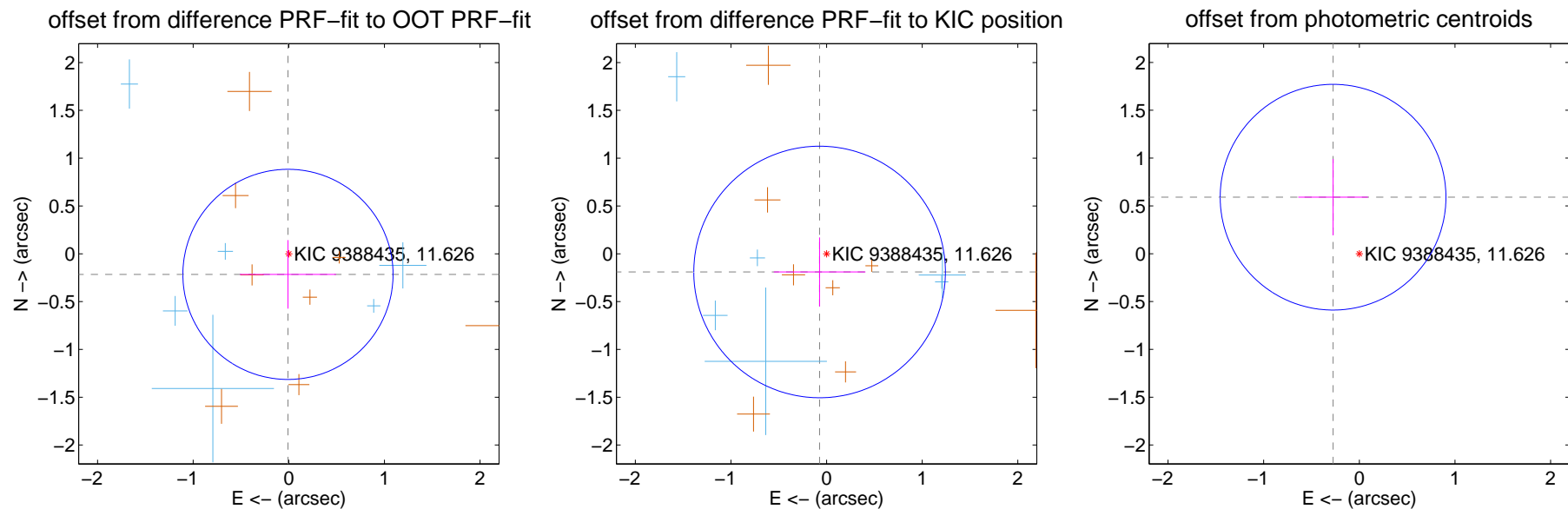
## DV Centroid Data

Supplemental centroid analysis for 009388435-01. **Kepler magnitude: 11.63.** Transit SNR 7.82

There are 7 quarters with good PRF difference image offsets

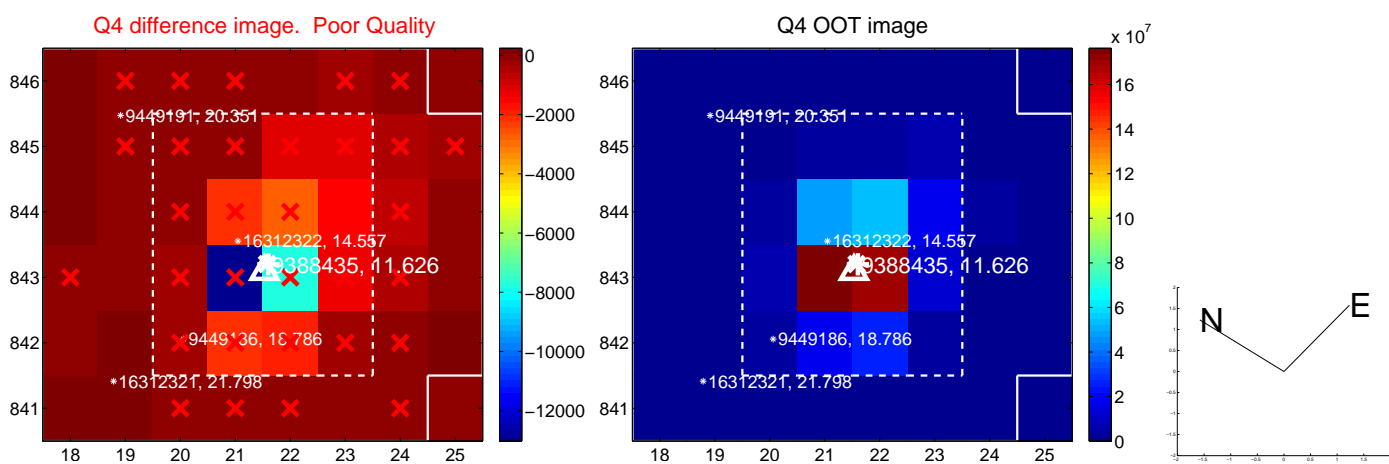
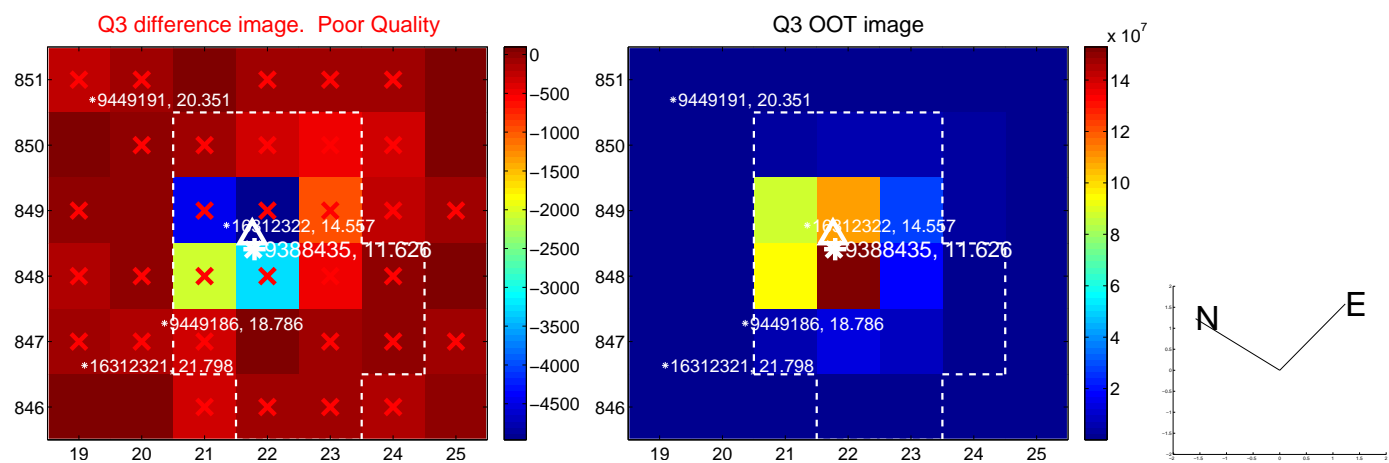
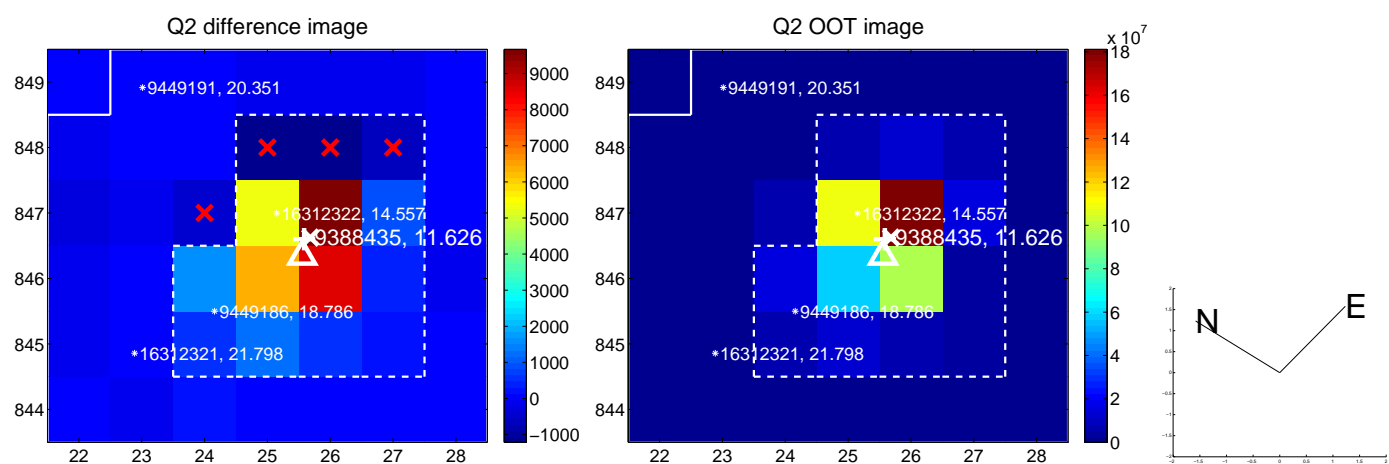
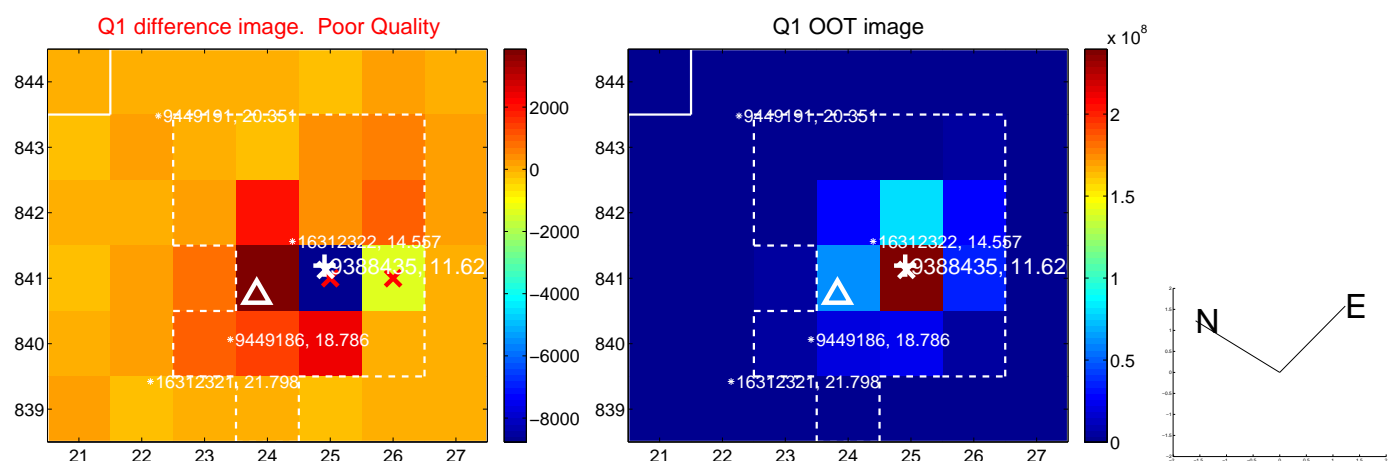
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.216 \pm 0.366$	0.59	$0.009 \pm 0.502$	$-0.215 \pm 0.359$
PRF-fit source offset from KIC position	$0.204 \pm 0.438$	0.46	$0.073 \pm 0.479$	$-0.190 \pm 0.361$
photometric centroid source offset	$0.65 \pm 0.39$	1.66	$0.27 \pm 0.36$	$0.59 \pm 0.40$

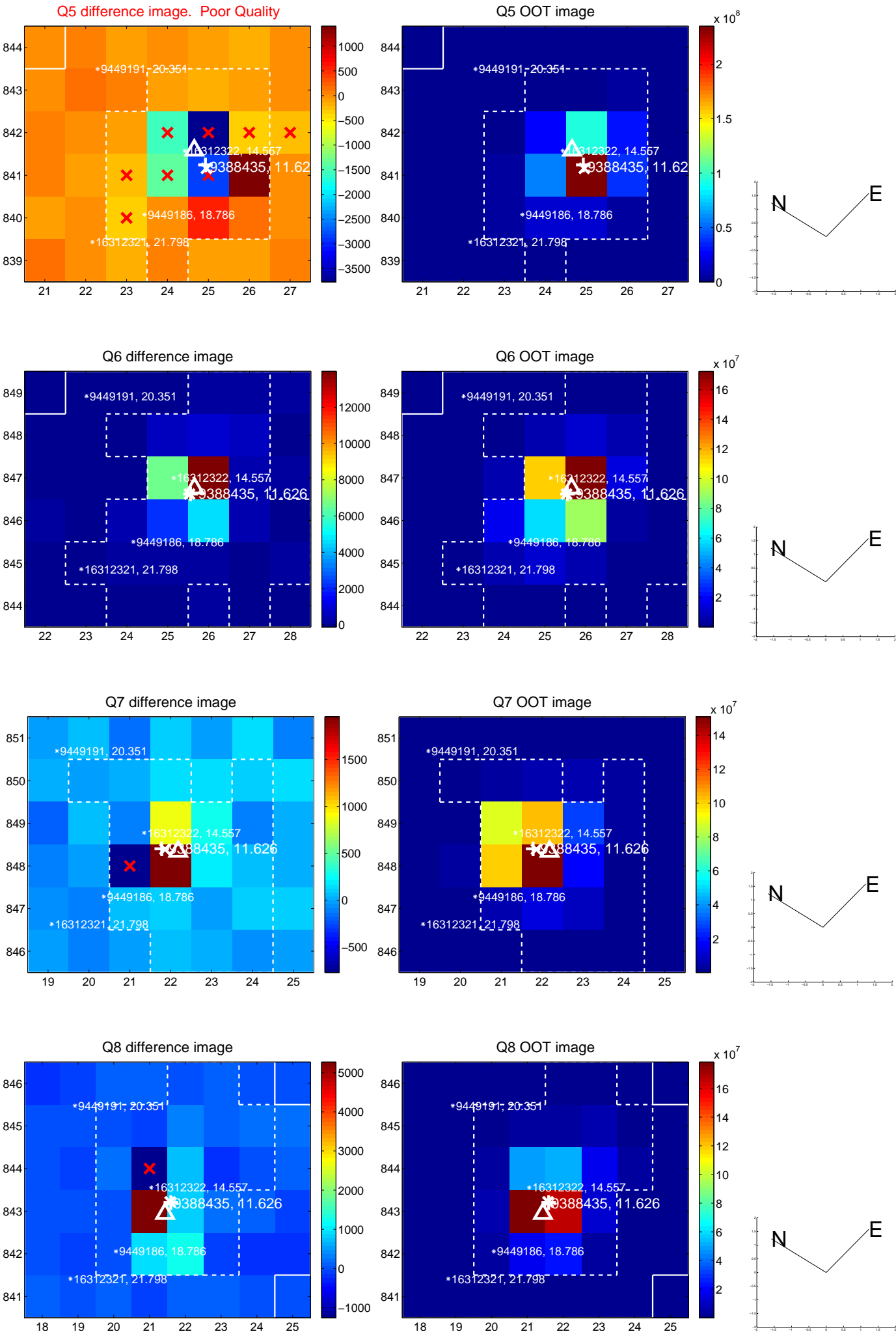


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

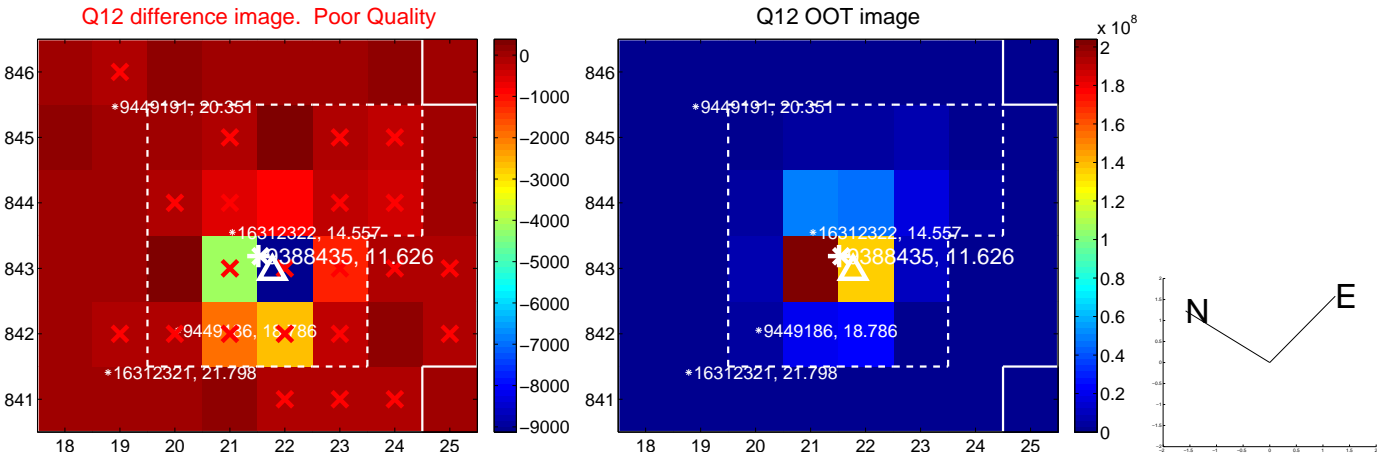
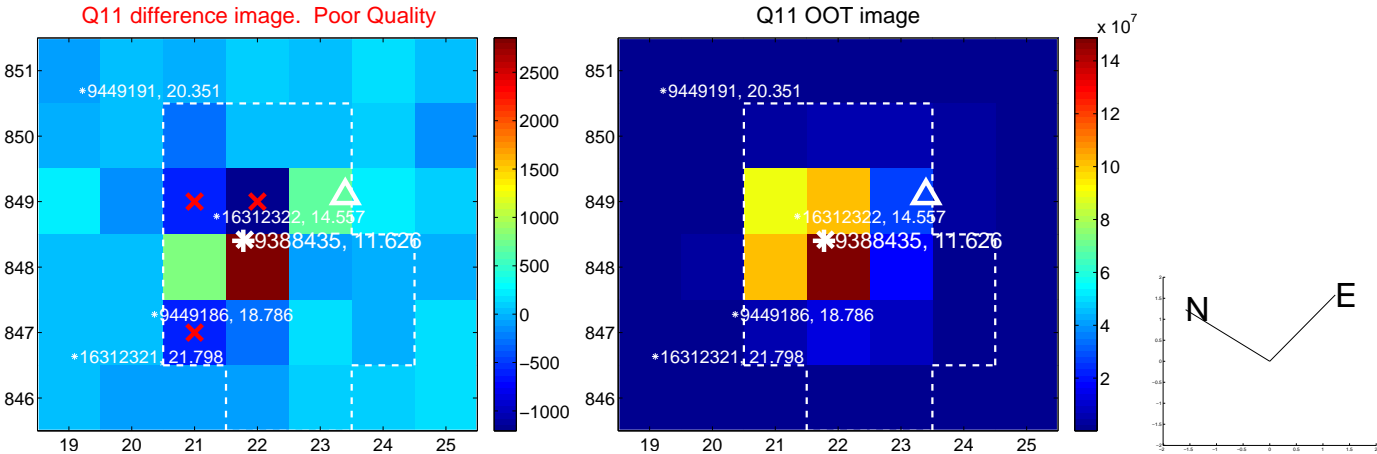
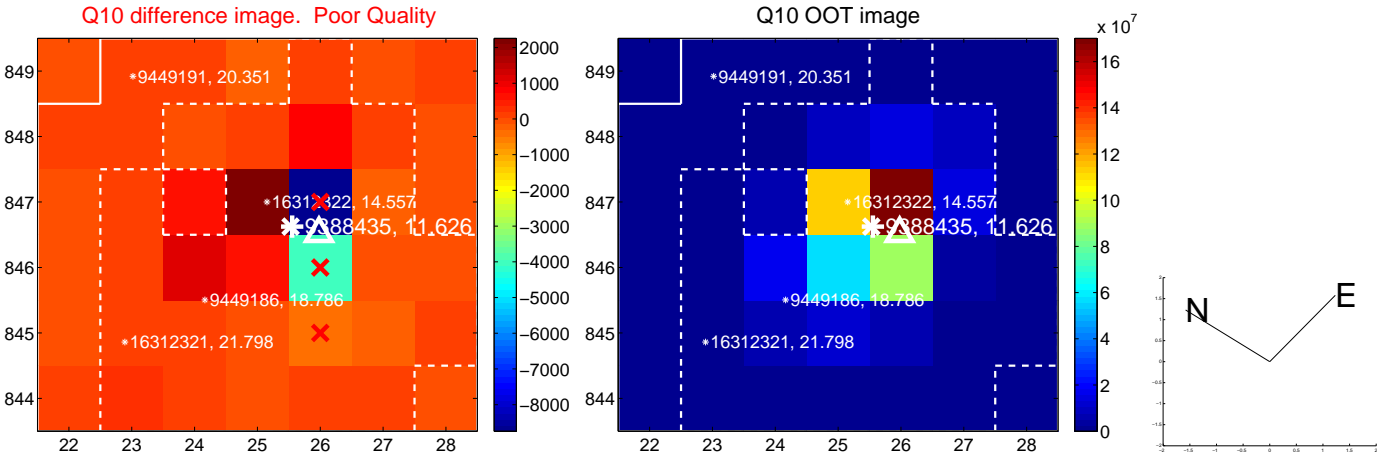
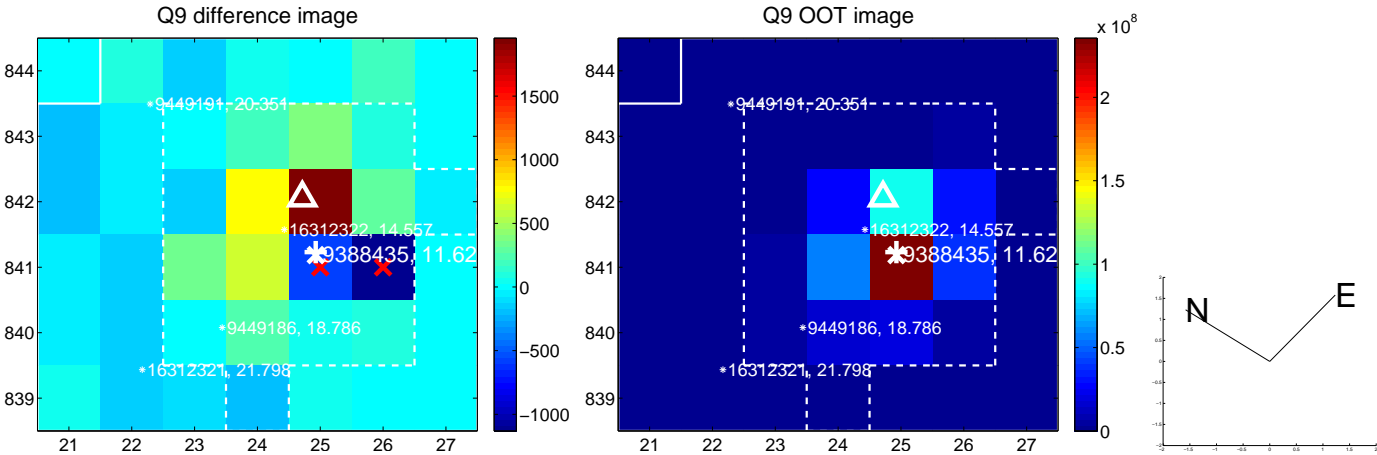


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

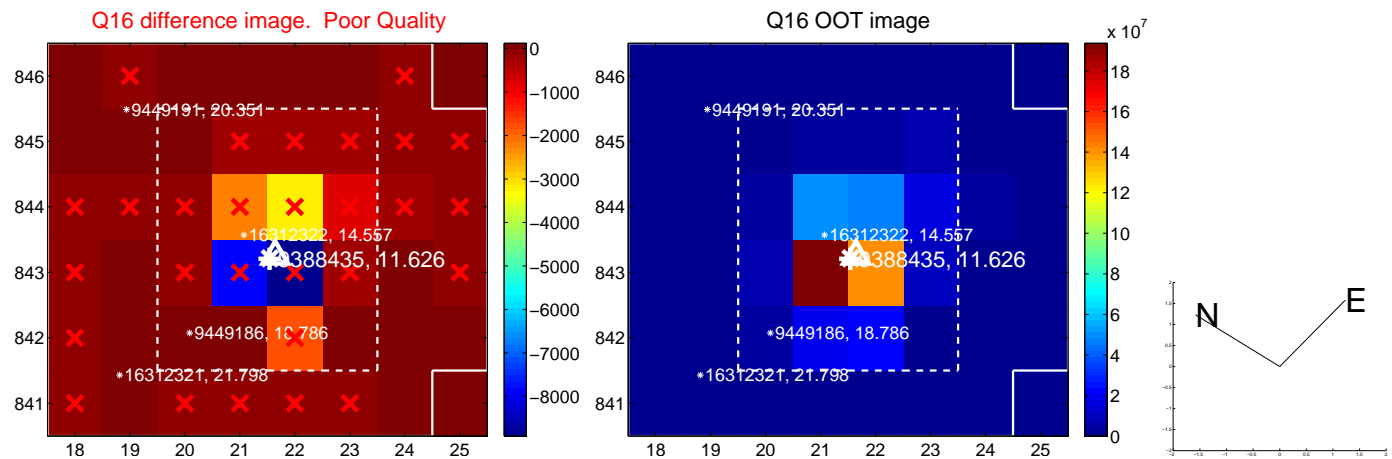
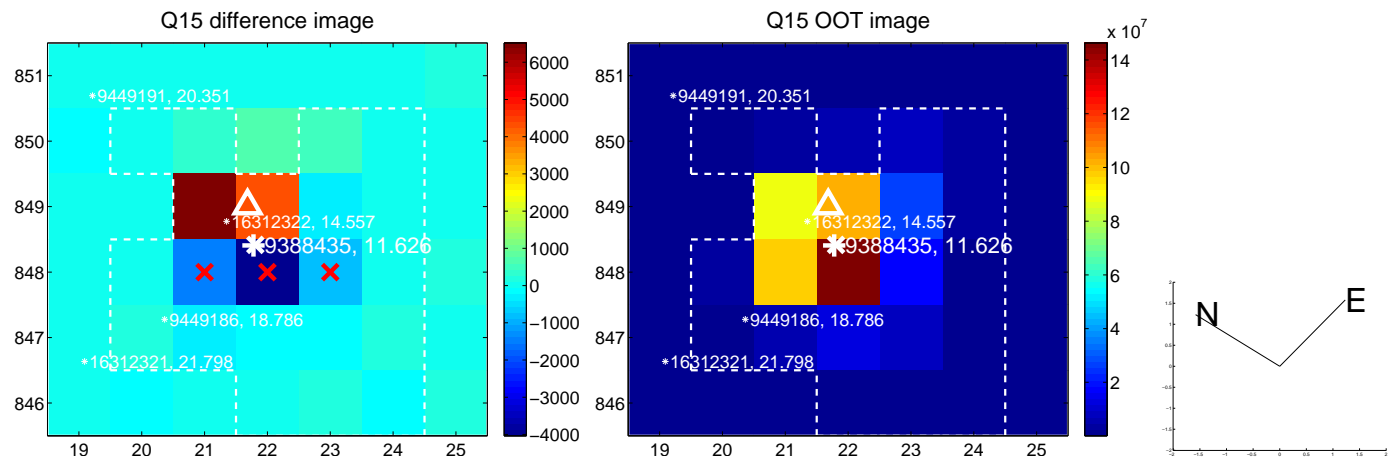
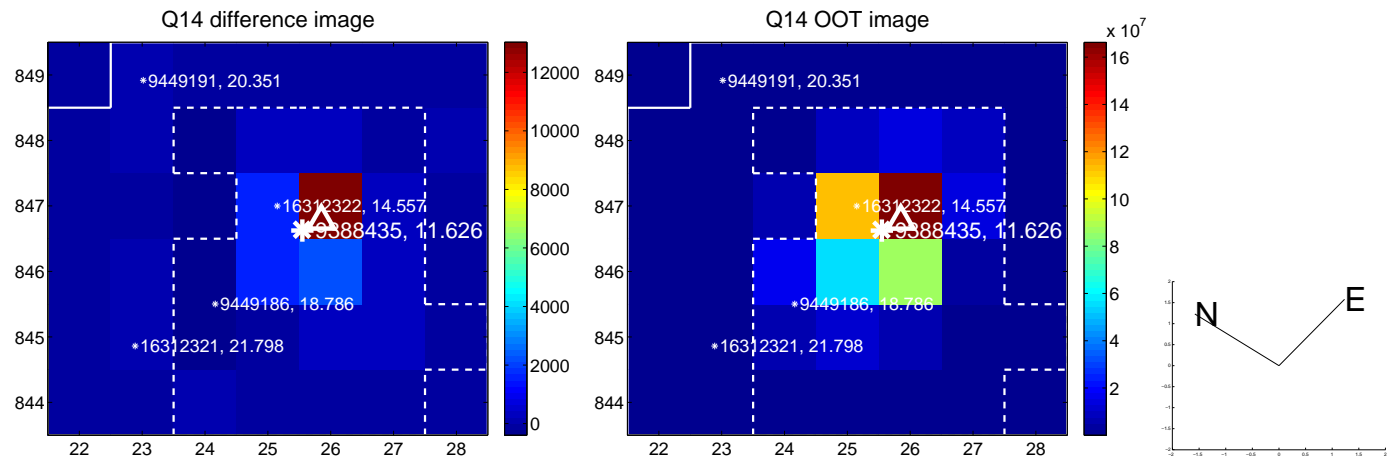
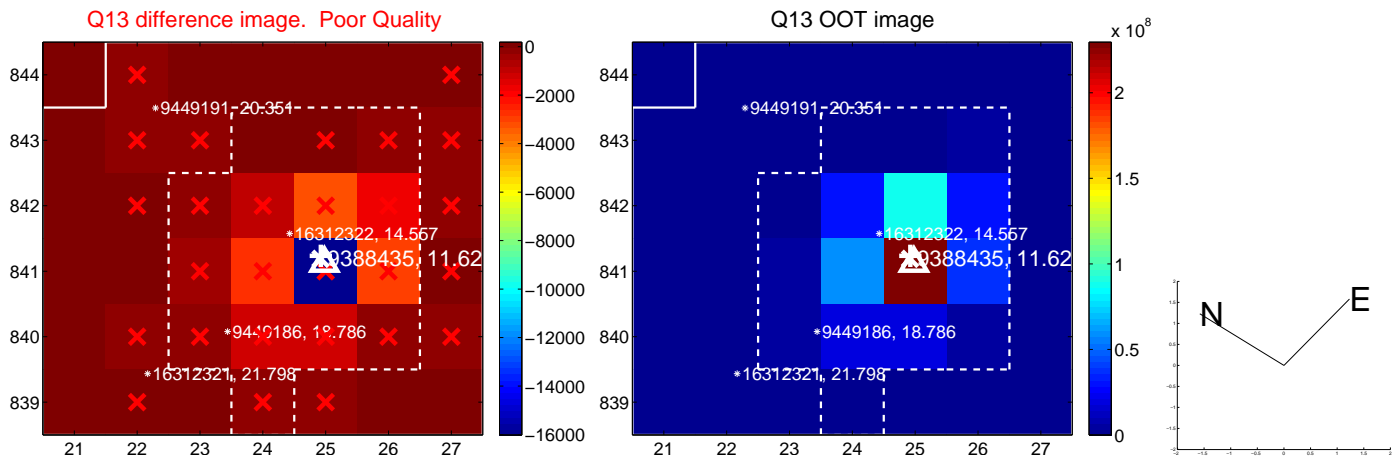




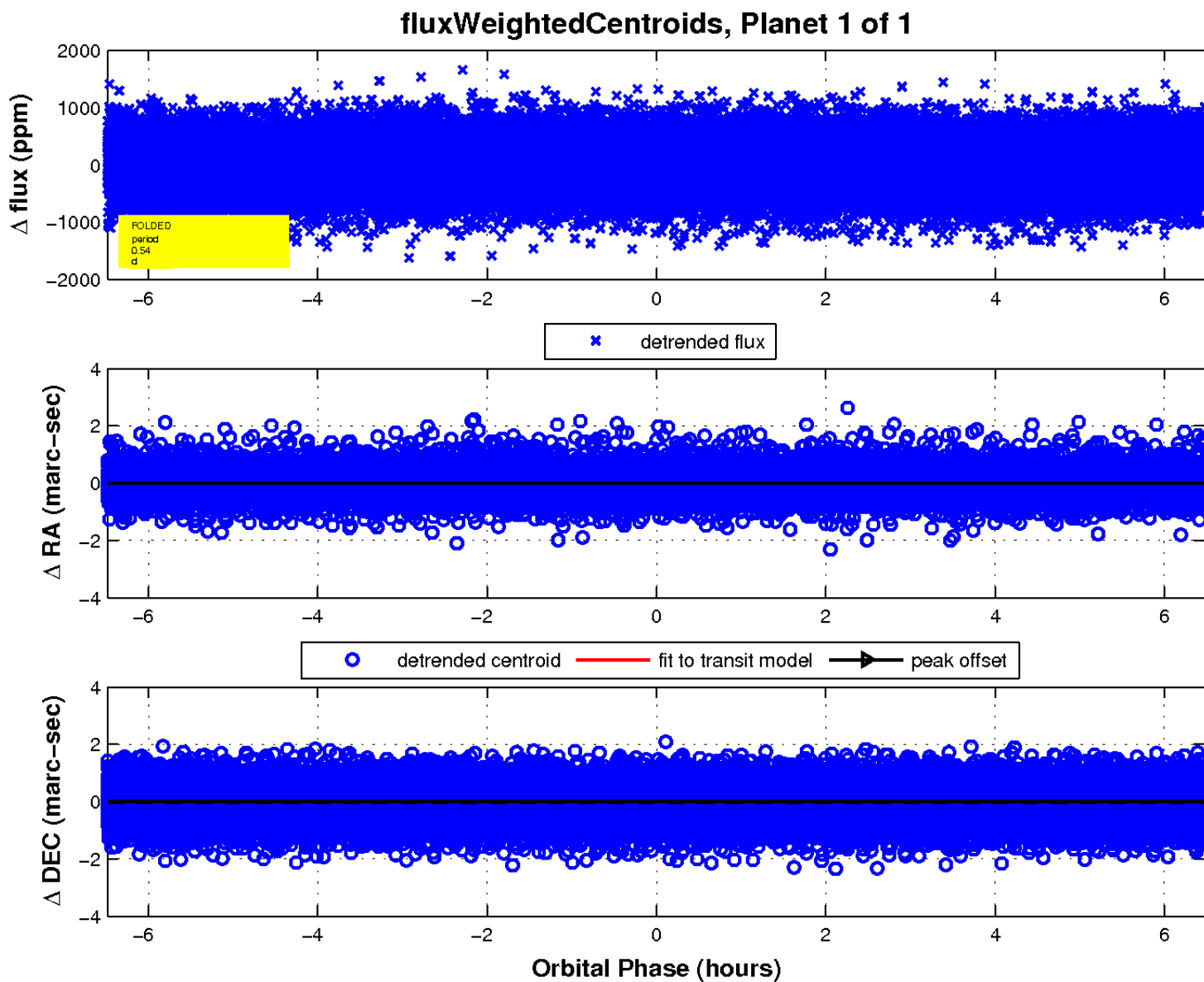
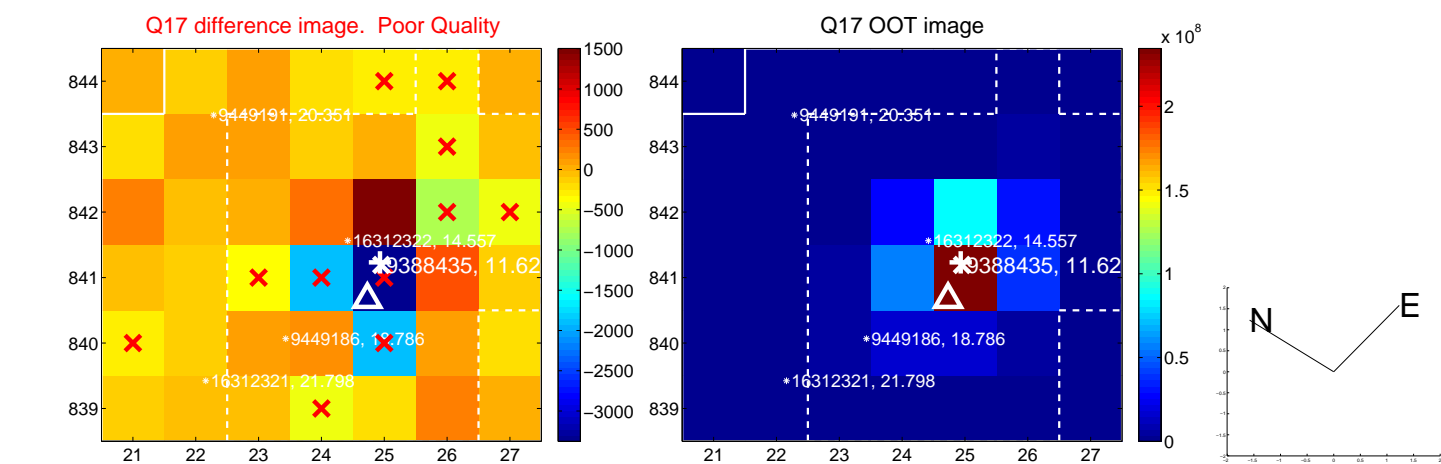
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

