

# KIC 003450040

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003450040-01	OBS	4205.01	1.166945	131.647025	69.8	1.977	14.4	14.0	0.90	5632	0.91	1537.88

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003450040-01	OBS	PC	0.99	0	0	0	0	NO_COMMENT

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

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

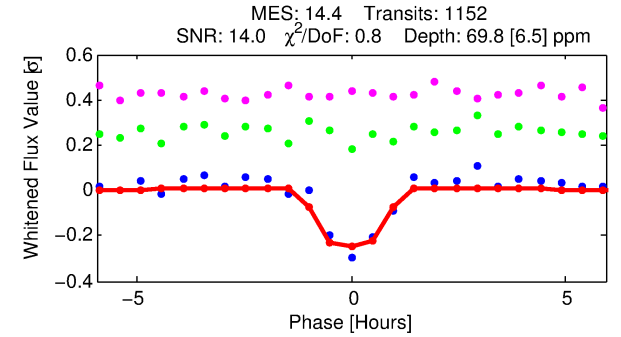
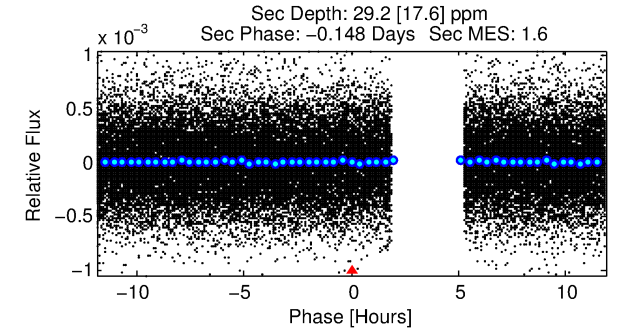
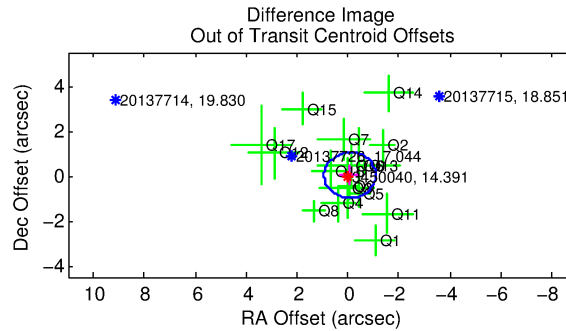
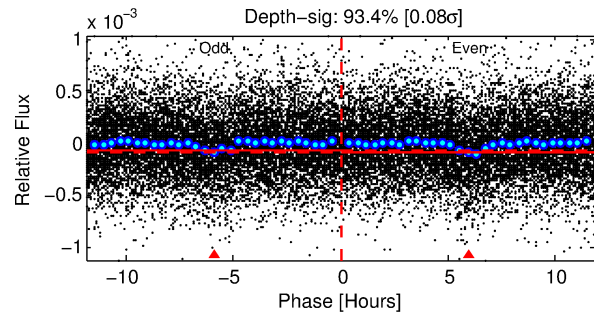
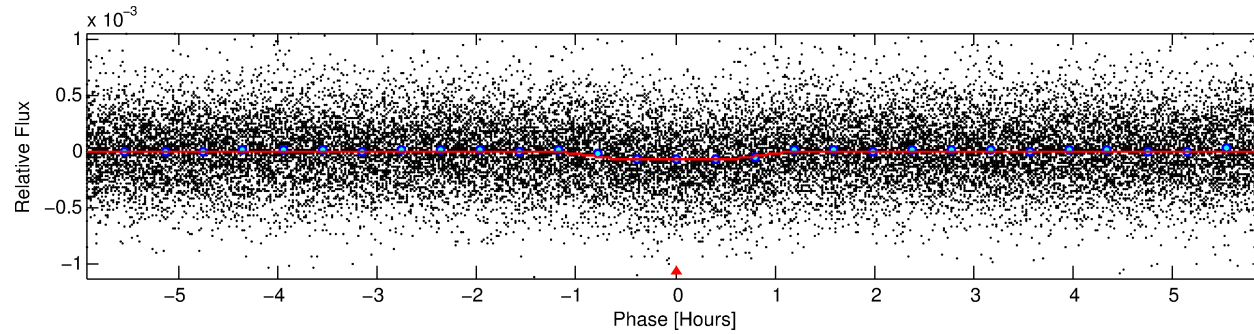
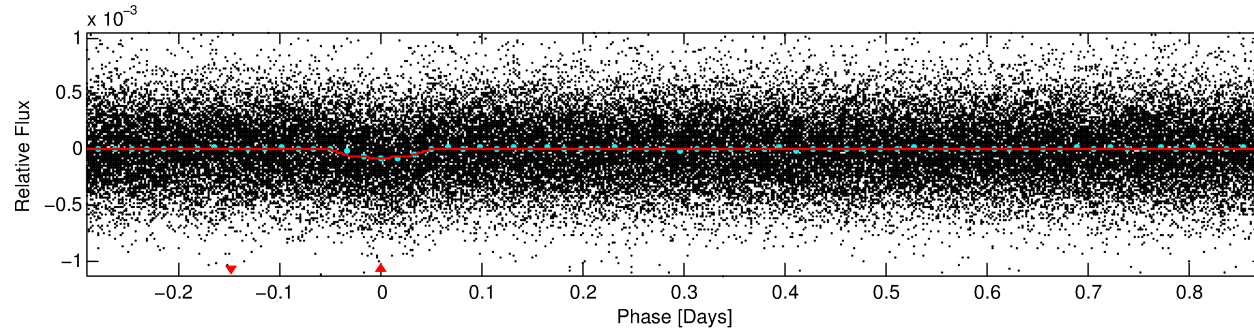
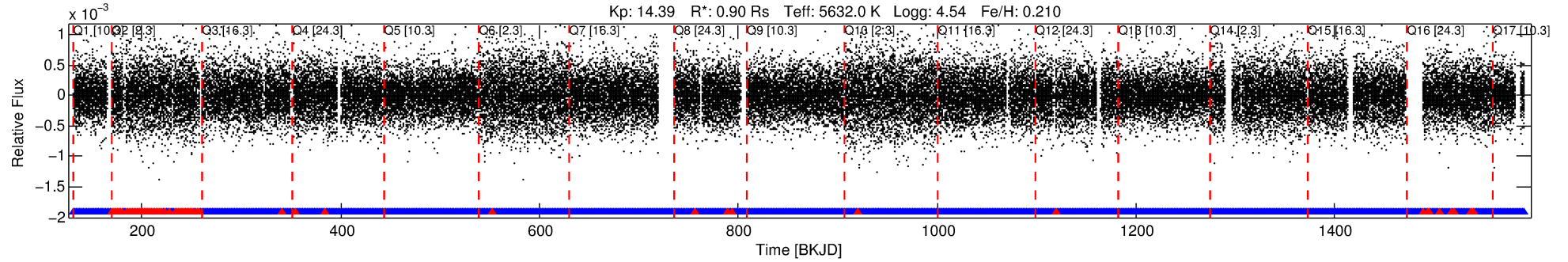
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003450040-01

No Significant Match Found

# DV One-Page Summary

KIC: 3450040 Candidate: 1 of 1 Period: 1.167 d  
KOI: K04205.01 Corr: 0.884



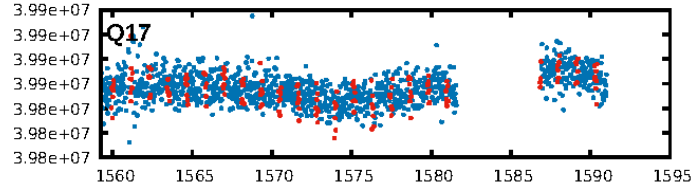
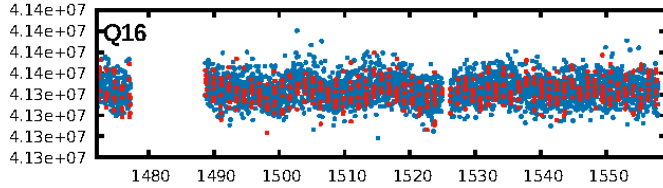
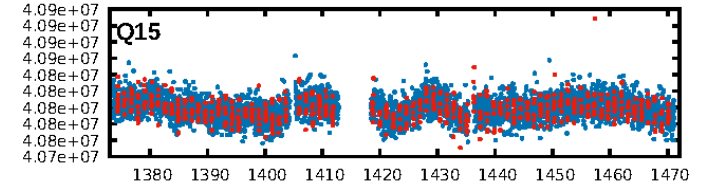
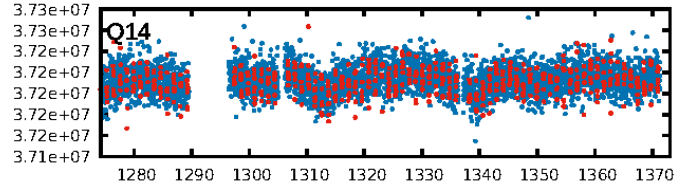
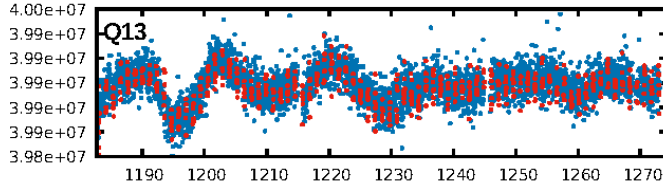
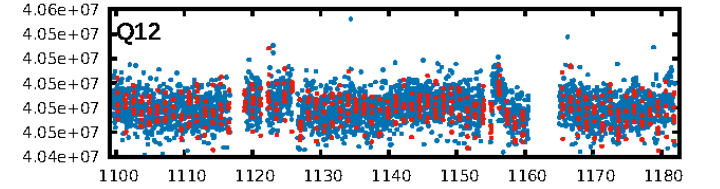
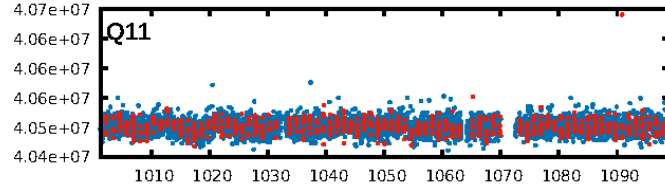
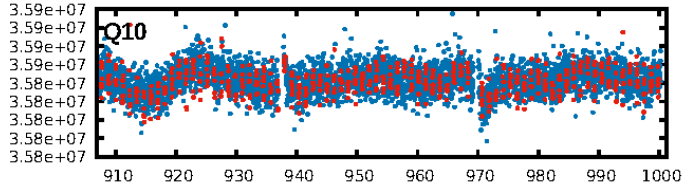
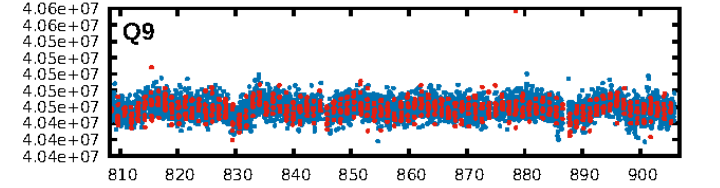
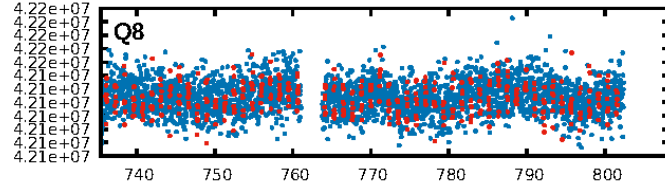
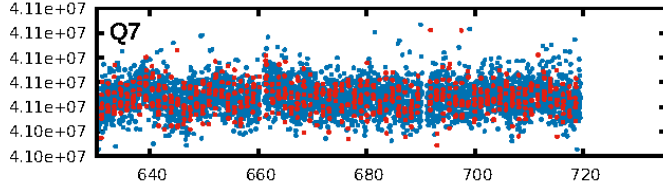
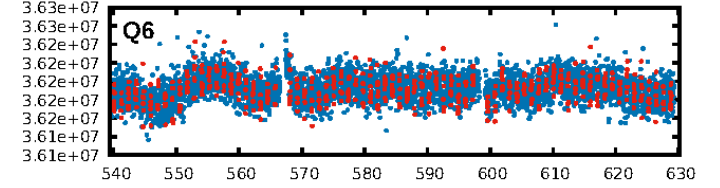
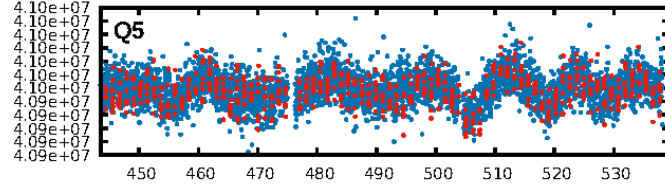
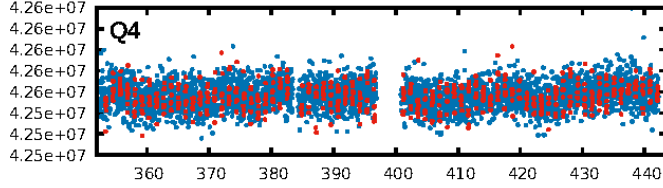
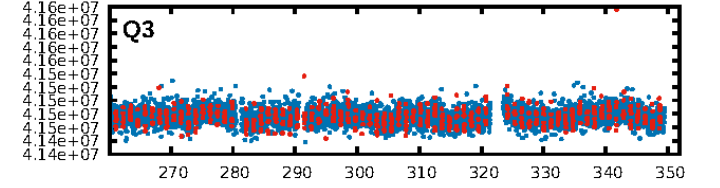
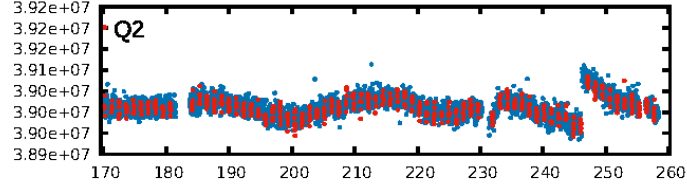
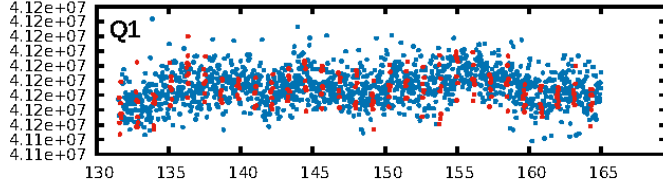
## DV Fit Results:

Period = 1.16695 [0.00001] d  
Epoch = 131.6470 [0.0020] BKJD  
Rp/R\* = 0.0093 [0.0051]  
a/R\* = 2.20 [4.39]  
b = 0.91 [0.50]  
Seff = 1537.88 [328.41]  
Teff = 1597 [85] K  
Rp = 0.91 [0.52] Re  
a = 0.0219 [0.0028] AU  
Ag = 9.21 [11.66] [0.70 $\sigma$ ]  
Teffp = 4301 [1345] K [2.01 $\sigma$ ]

## DV Diagnostic Results:

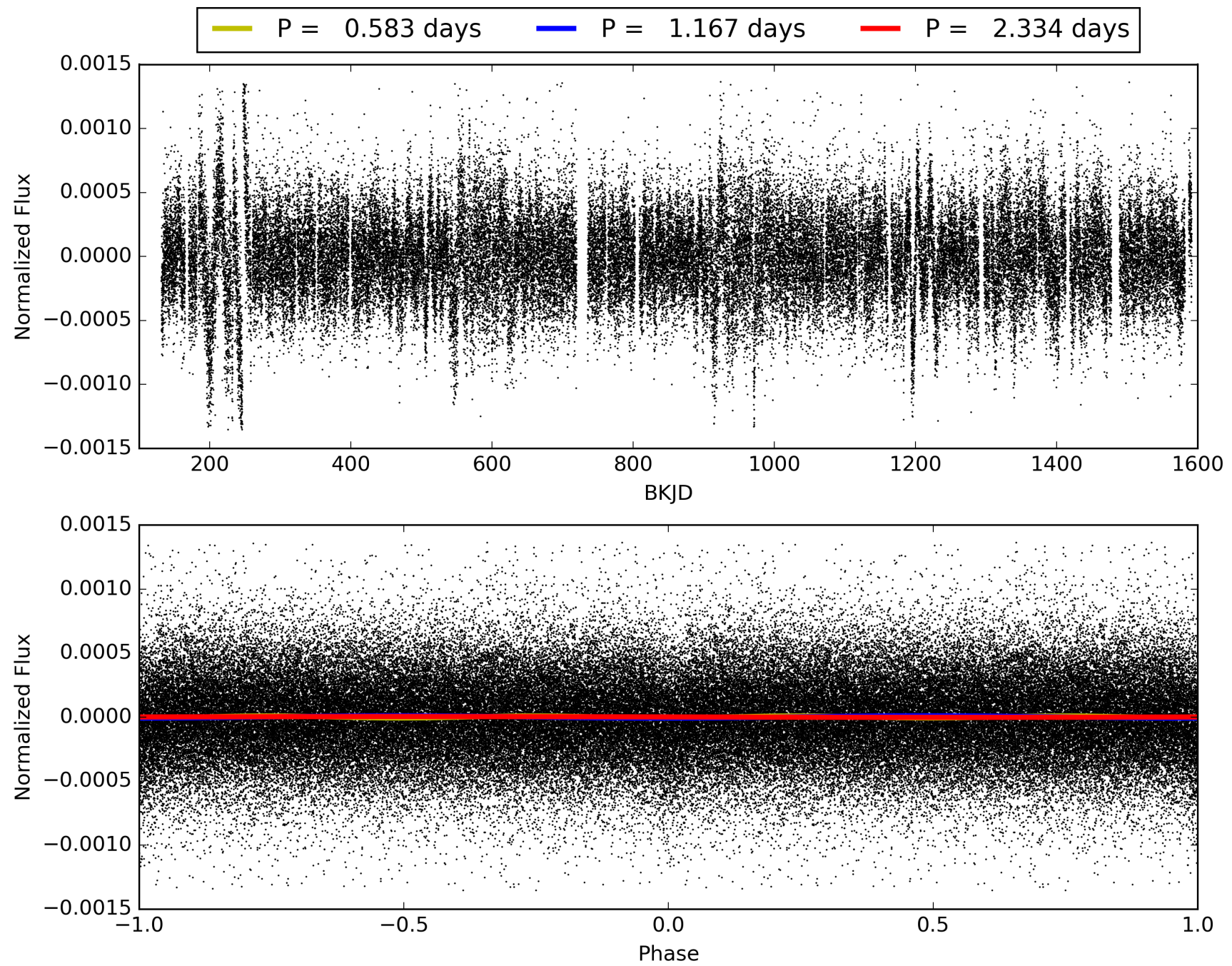
ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 7.88e-45  
RollingBand-fgt: 0.92 [1017/1100]  
GhostDiagnostic-chr: 1.957  
Centroid-sig: 1.67%  
Centroid-so: 1.677 arcsec [1.87 $\sigma$ ]  
OotOffset-rm: 0.081 arcsec [0.24 $\sigma$ ]  
KicOffset-rm: 0.194 arcsec [0.48 $\sigma$ ]  
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]

# TCE 003450040-01, PDC Light Curves



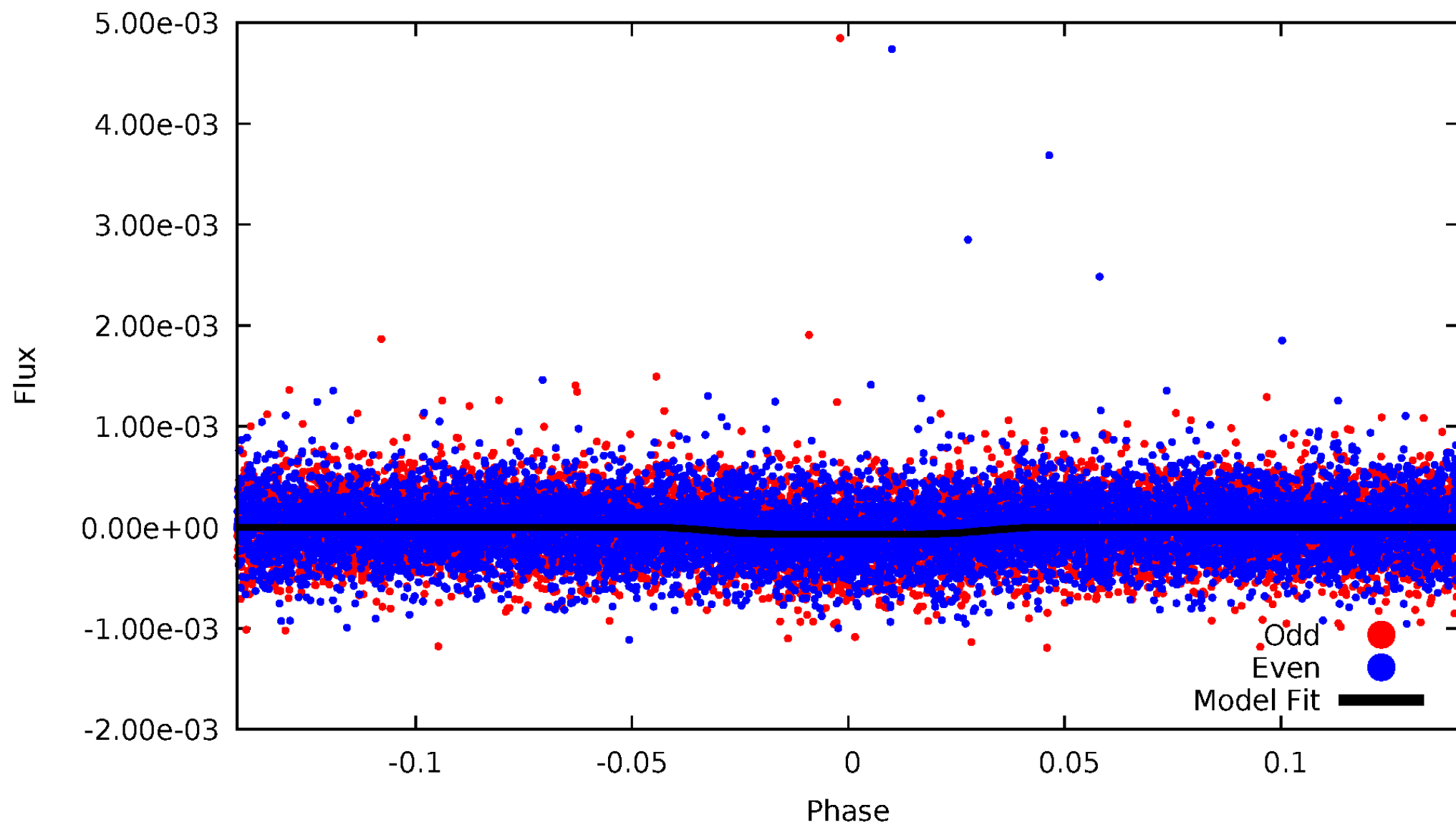


TCE 003450040-01



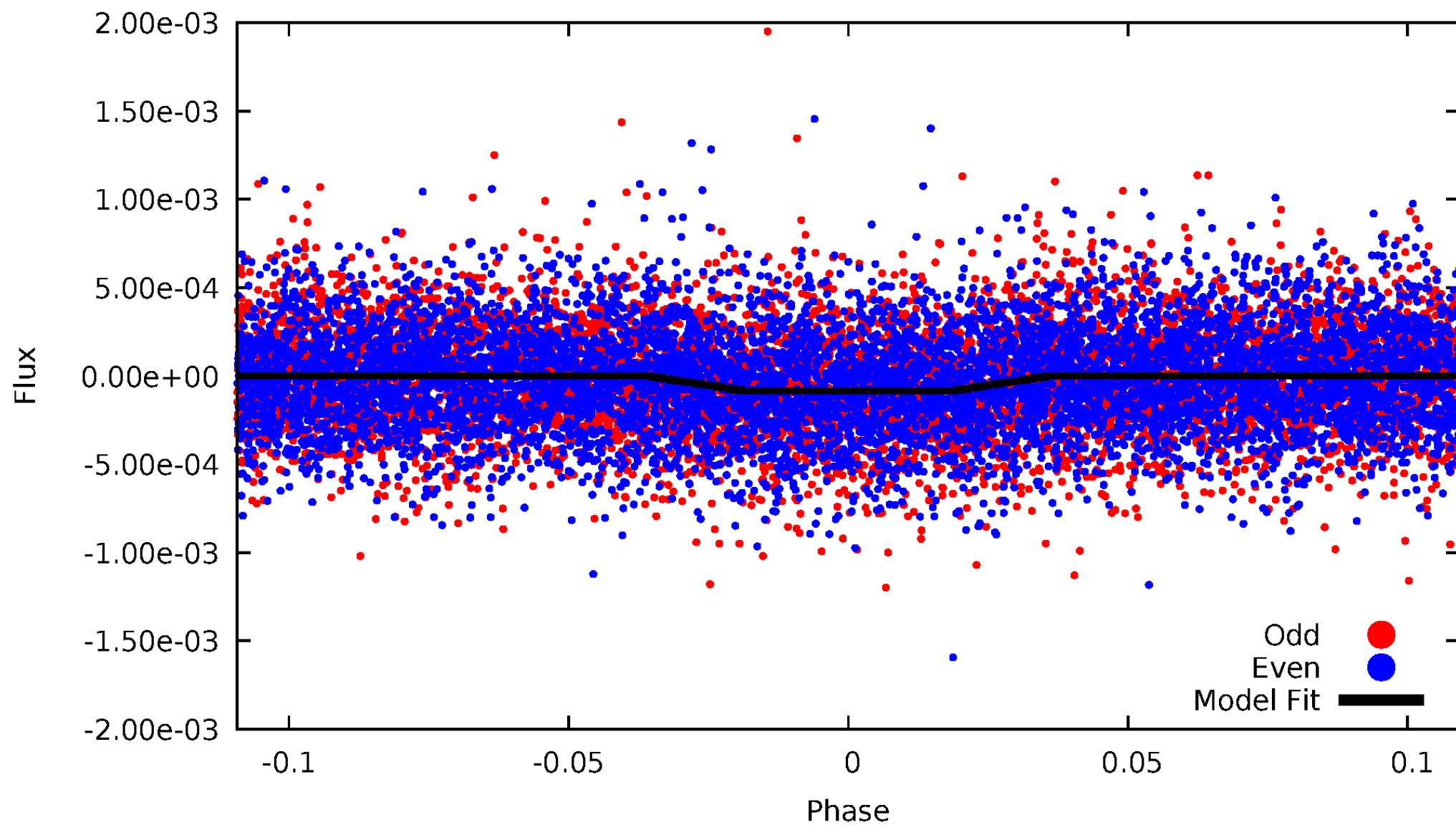
# DV Odd/Even

TCE 003450040-01

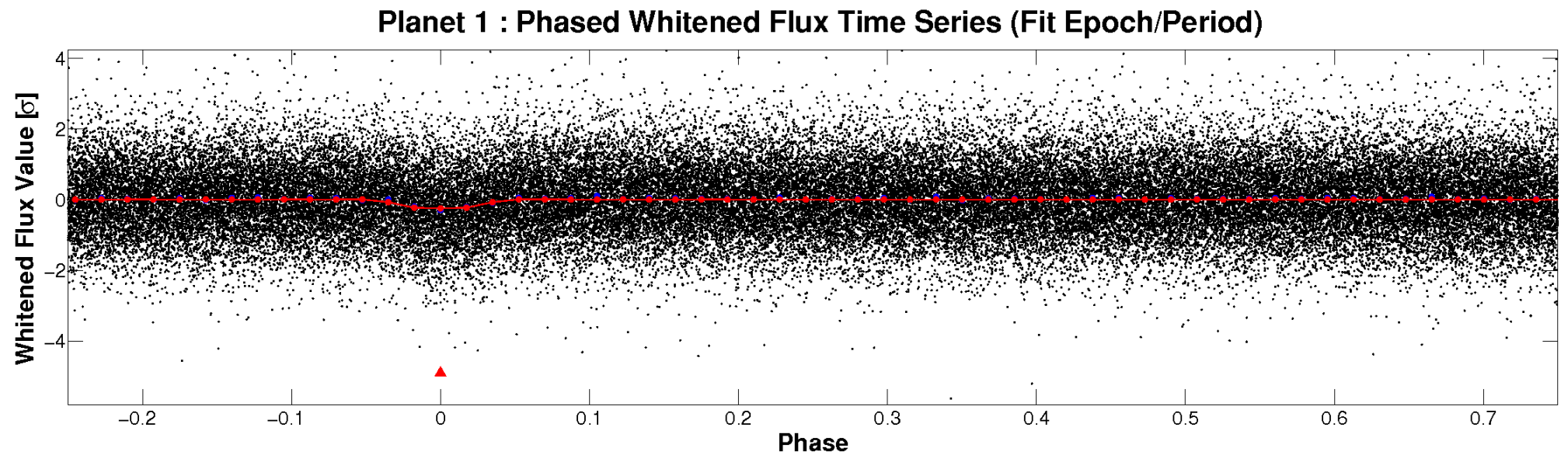
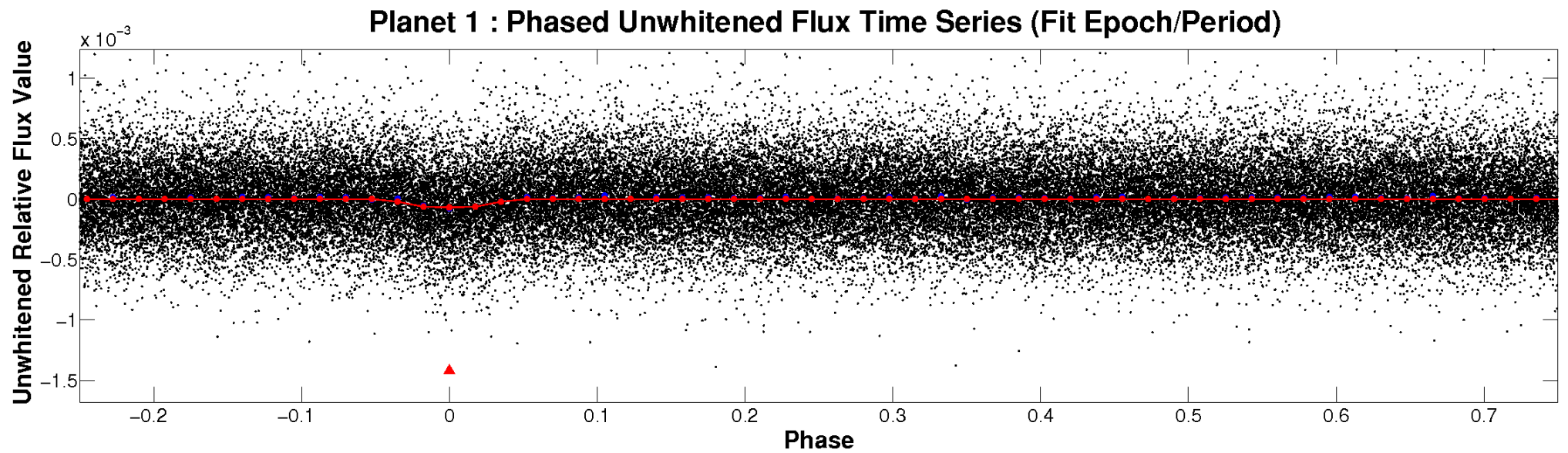


# ALT Odd/Even

TCE 003450040-01



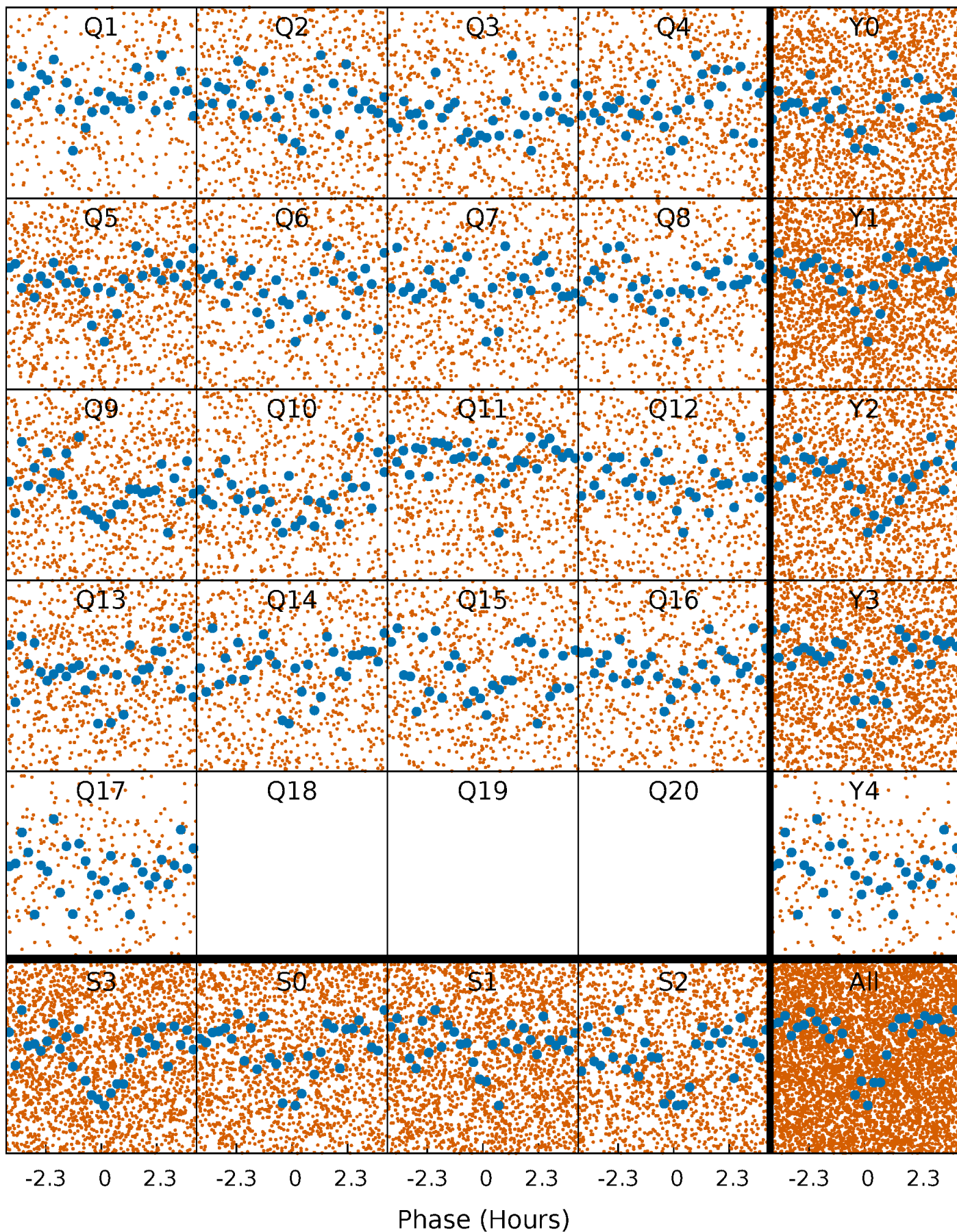
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

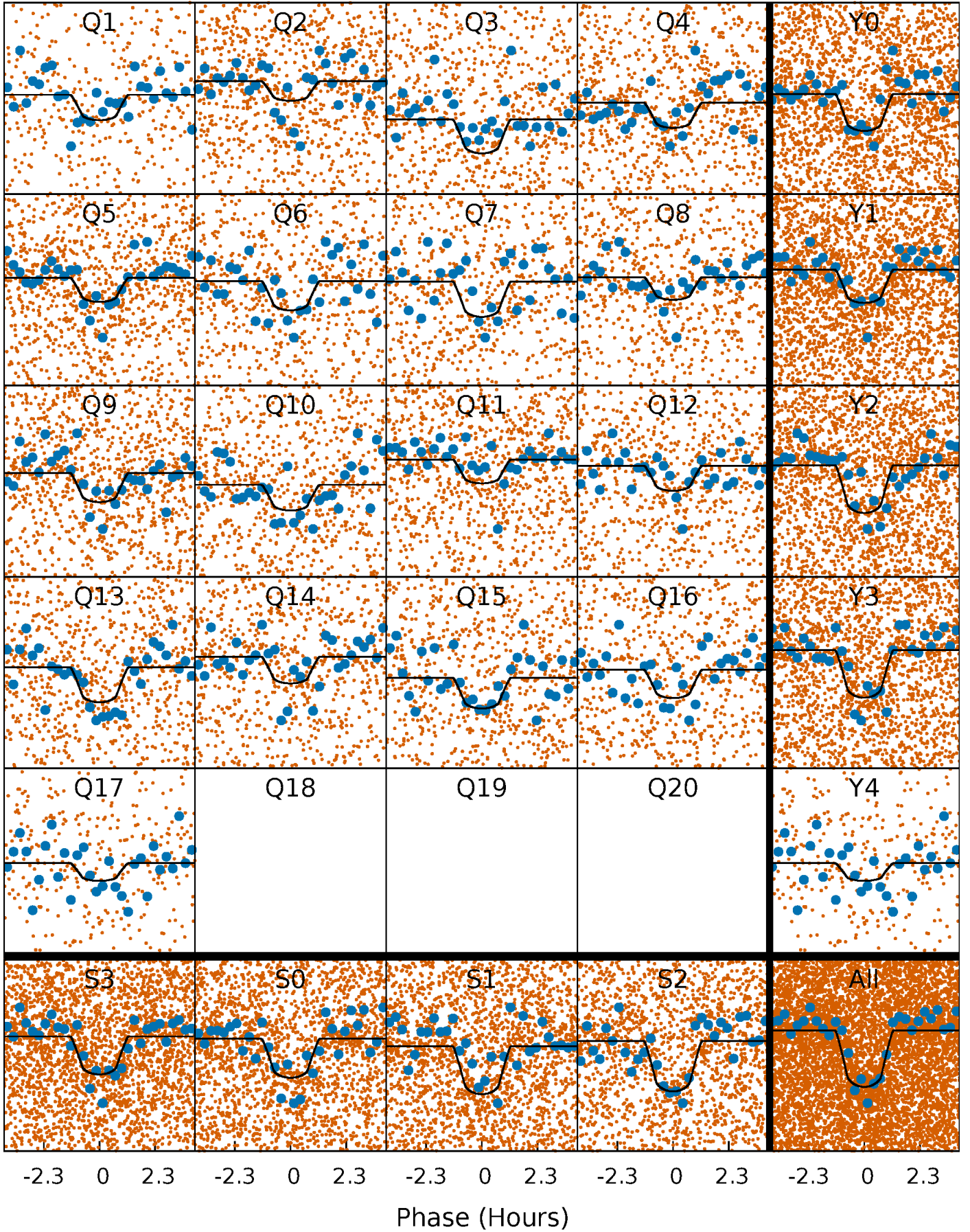
TCE 003450040-01 P= 1.166945 Days  $T_0=131.647025$  (BKJD)





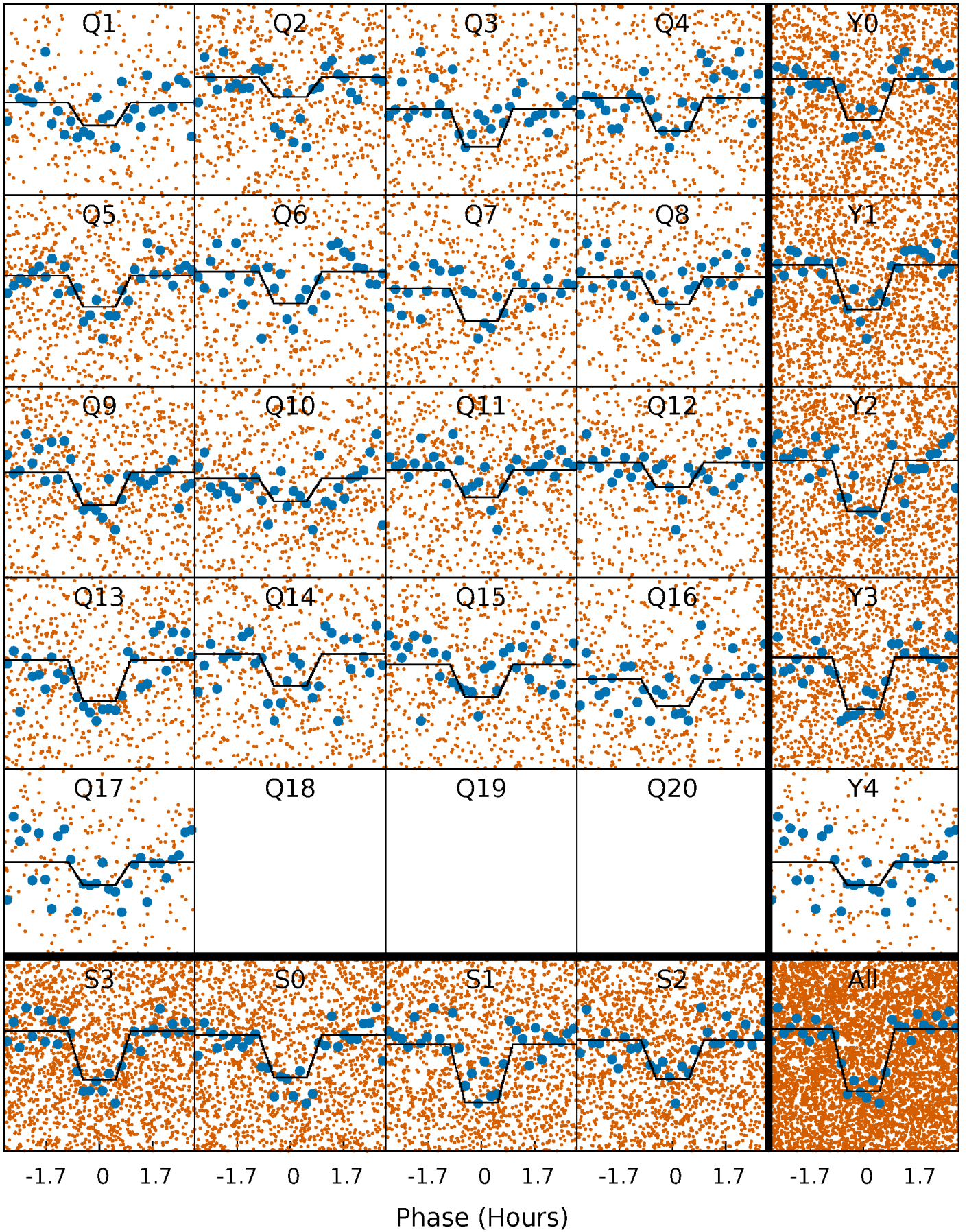
# DV Quarter-Phased Transit Curves

TCE 003450040-01 P= 1.166945 Days  $T_0=131.647025$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

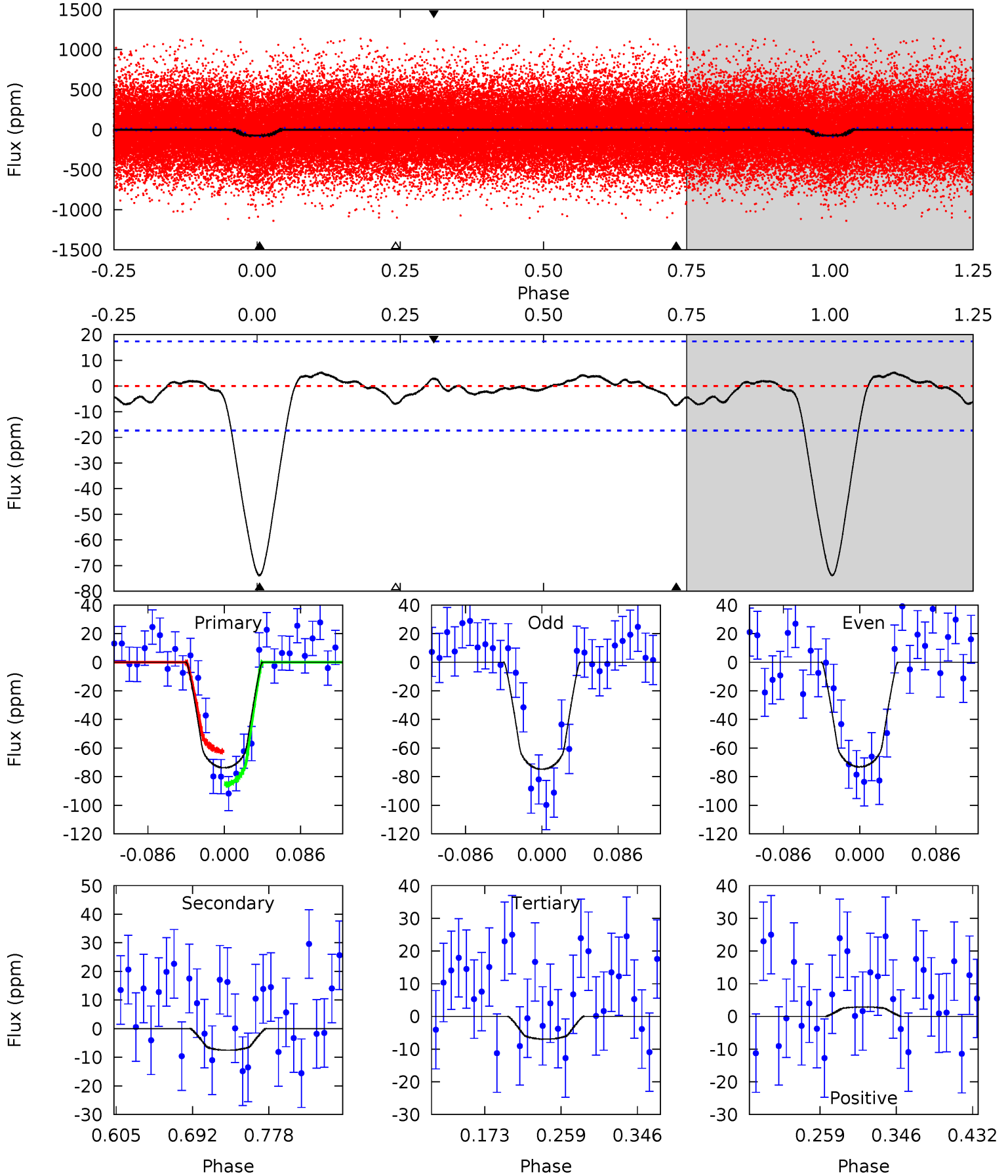
TCE 003450040-01 P= 1.166965 Days  $T_0=131.639783$  (BKJD)



# DV Model-Shift Uniqueness Test

003450040-01, P = 1.166945 Days, E = 130.480080 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
19.5	1.99	1.84	0.76	4.60	1.71	0.68	17.7	18.8	0.16	1.23	0.22	0.94	0.07	3.08

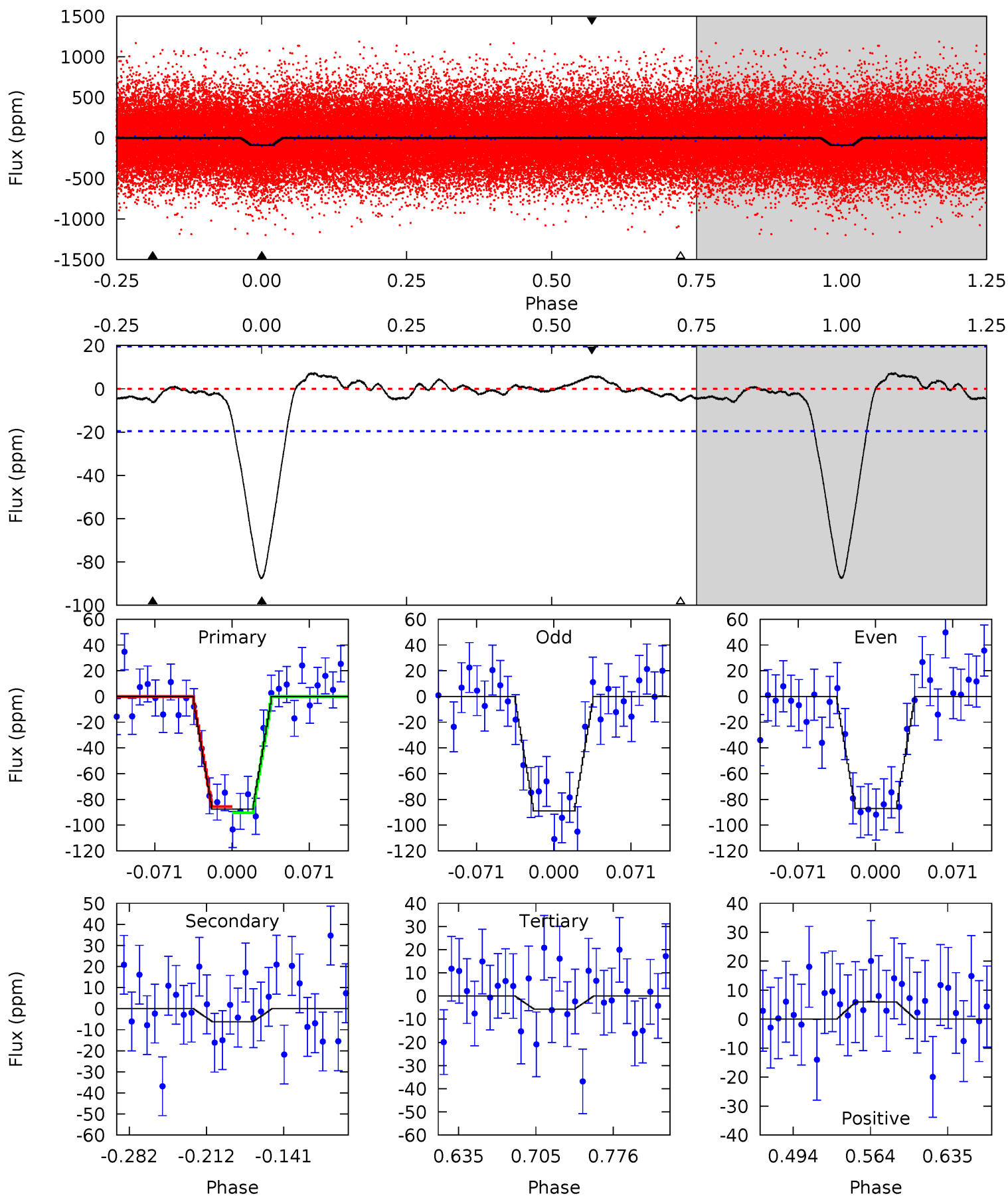




# Alt Model-Shift Uniqueness Test

003450040-01, P = 1.166965 Days, E = 130.472818 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
20.8	1.48	1.34	1.41	4.64	1.81	0.70	19.4	19.4	0.14	0.07	0.23	0.91	0.08	0.58





### Stellar Parameters For KIC 003450040

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5632^{+67}_{-92}$	$4.537^{+0.014}_{-0.119}$	$0.210^{+0.150}_{-0.150}$	$0.904^{+0.121}_{-0.038}$	$1.026^{+0.037}_{-0.081}$	$1.954^{+0.141}_{-0.640}$
	+1%/-2%	+0%/-3%	+71%/-71%	+13%/-4%	+4%/-8%	+7%/-33%
Source	SPE90	SPE90	SPE90	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 003450040-01 / KOI 4205.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-8 \pm 4$	$0.97^{+0.52}_{-0.46}$	$2260^{+82}_{-51}$	$3386^{+913}_{-675}$	$1.961^{+5.260}_{-1.312}$
Alt.	$-6 \pm 4$	$0.95^{+0.53}_{-0.46}$	$2262^{+83}_{-52}$	$3237^{+1159}_{-848}$	$1.607^{+6.213}_{-1.182}$

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

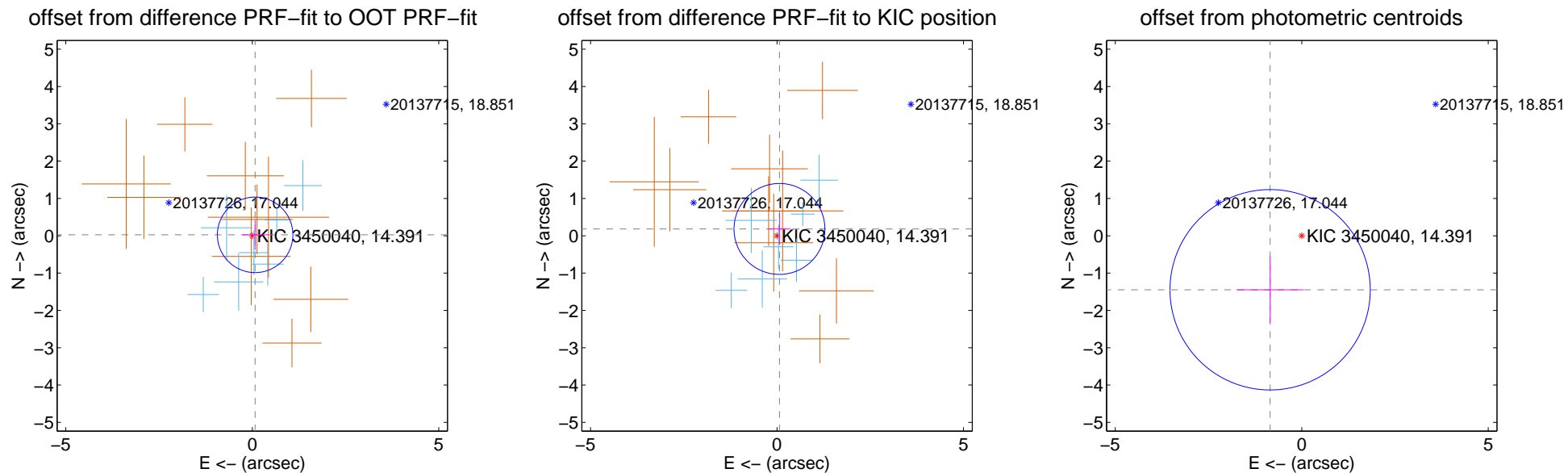
## DV Centroid Data

Supplemental centroid analysis for 003450040-01. Kepler magnitude: 14.39. Transit SNR 13.97

There are 7 quarters with good PRF difference image offsets

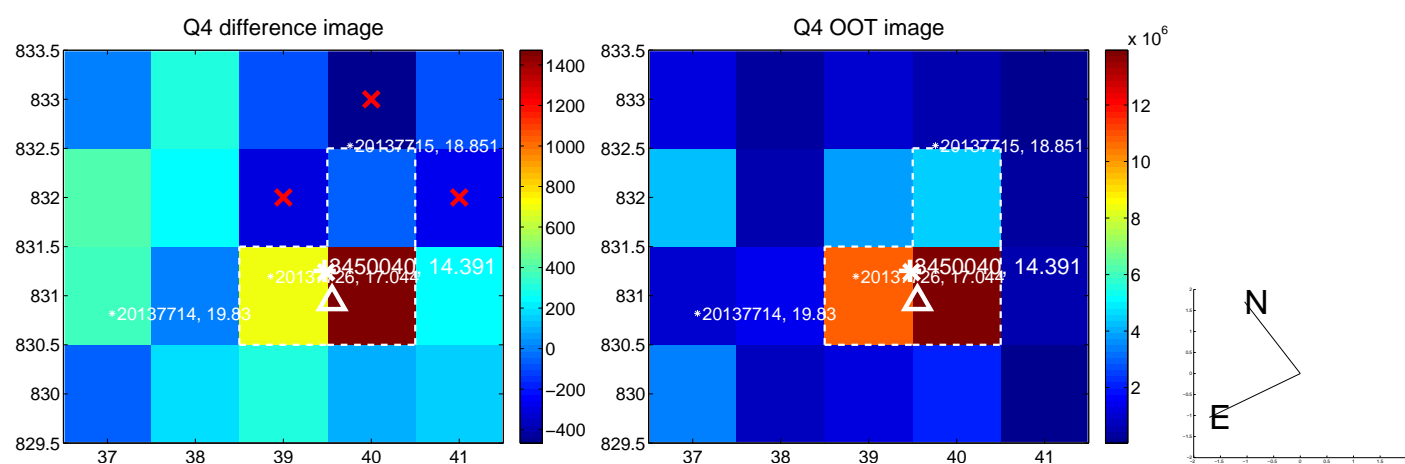
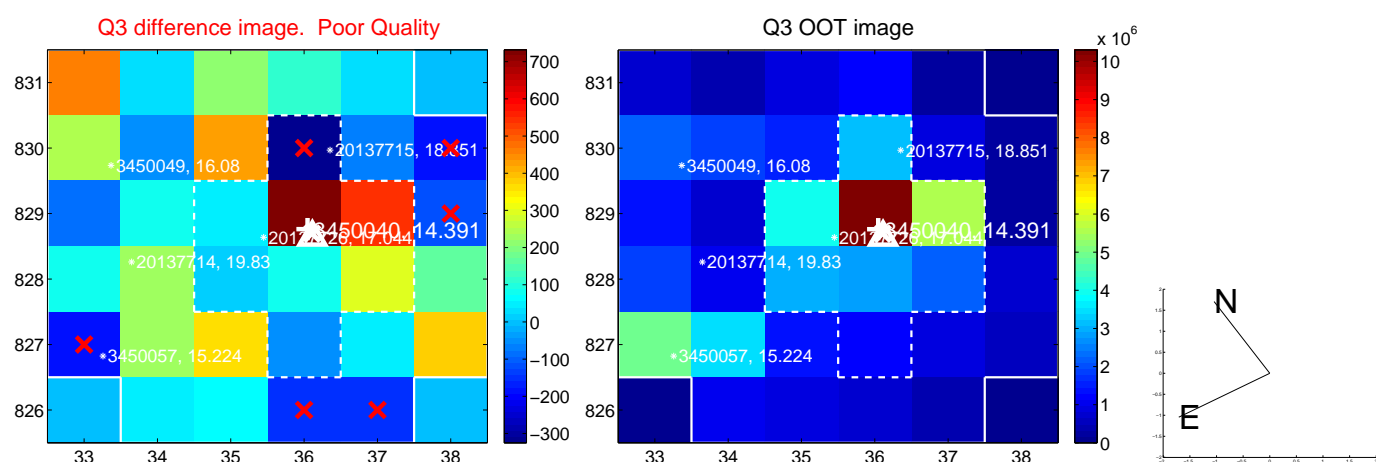
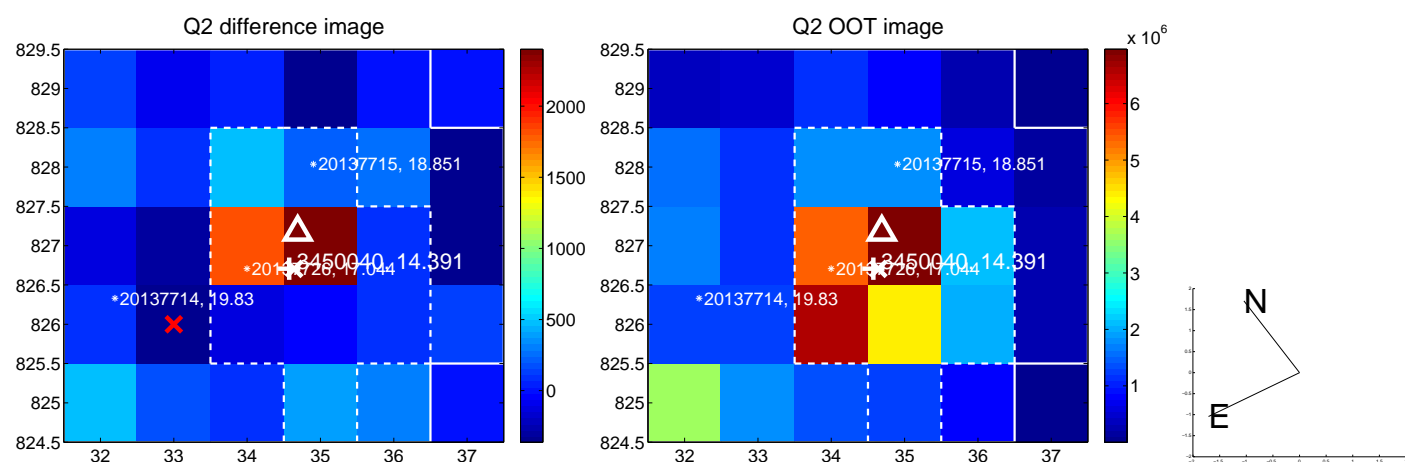
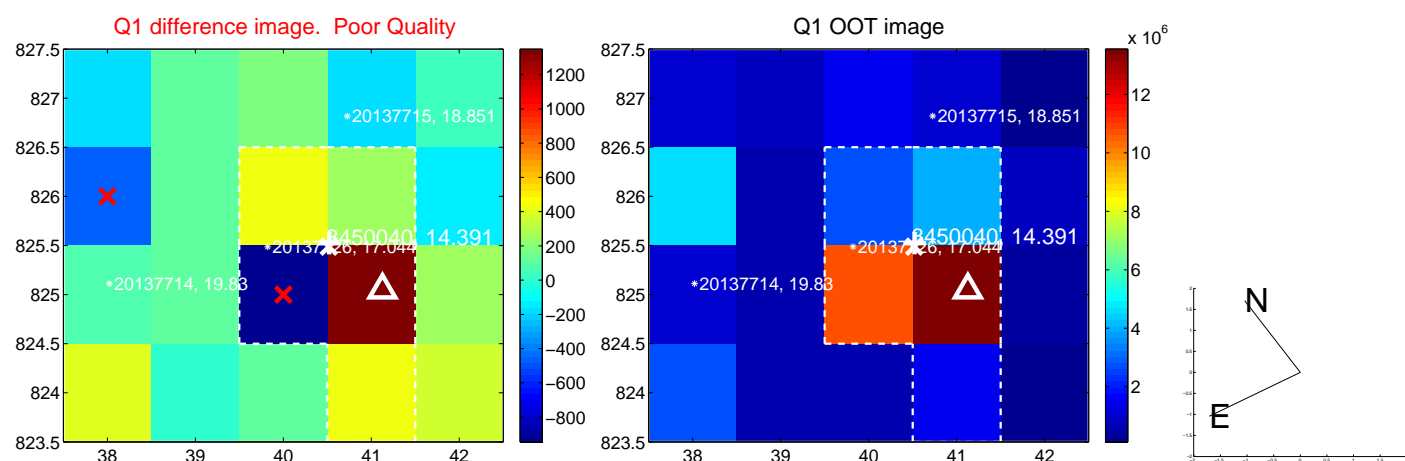
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.081 \pm 0.337$	0.24	$-0.077 \pm 0.348$	$0.025 \pm 0.404$
PRF-fit source offset from KIC position	$0.194 \pm 0.406$	0.48	$-0.065 \pm 0.294$	$0.183 \pm 0.418$
photometric centroid source offset	$1.68 \pm 0.89$	1.87	$0.85 \pm 0.90$	$-1.45 \pm 0.89$

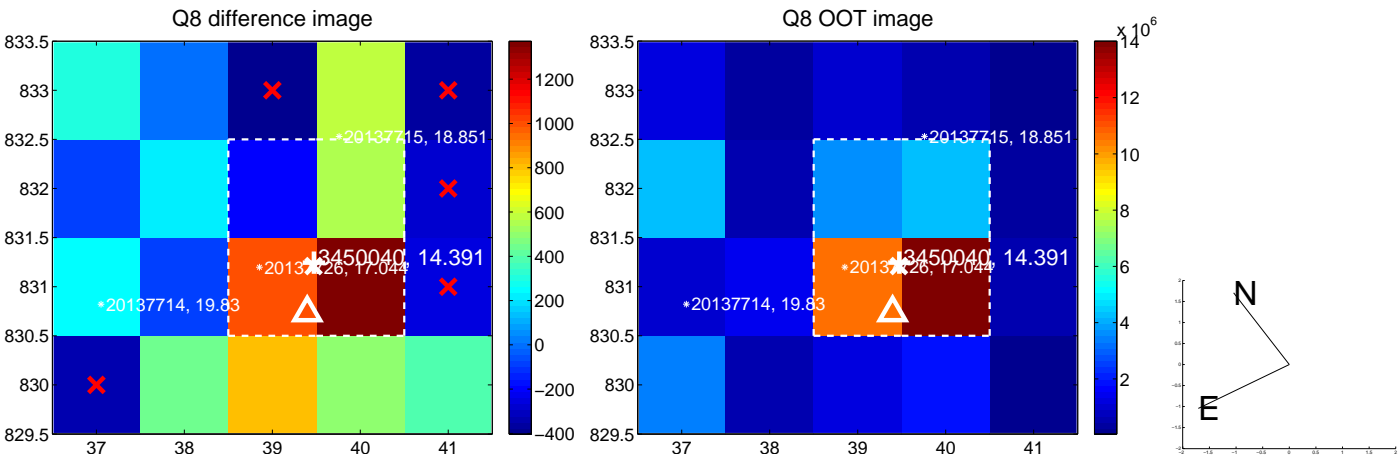
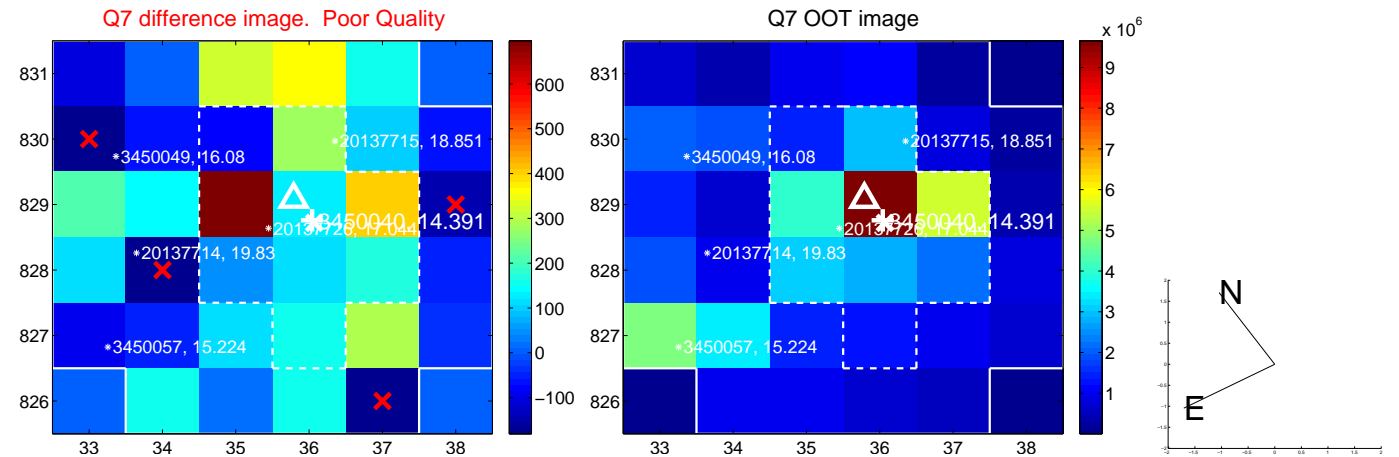
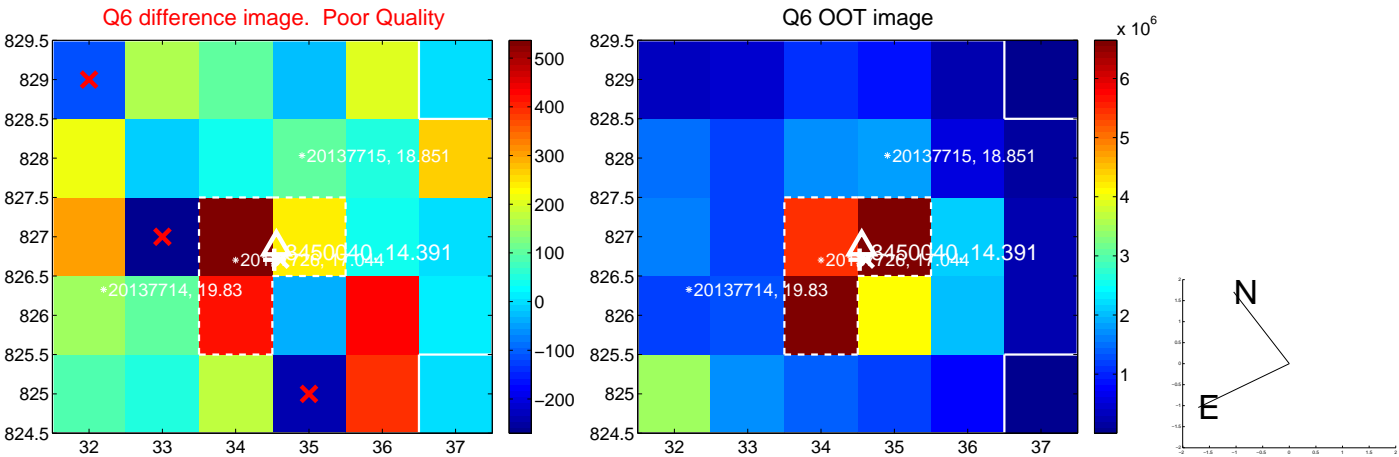
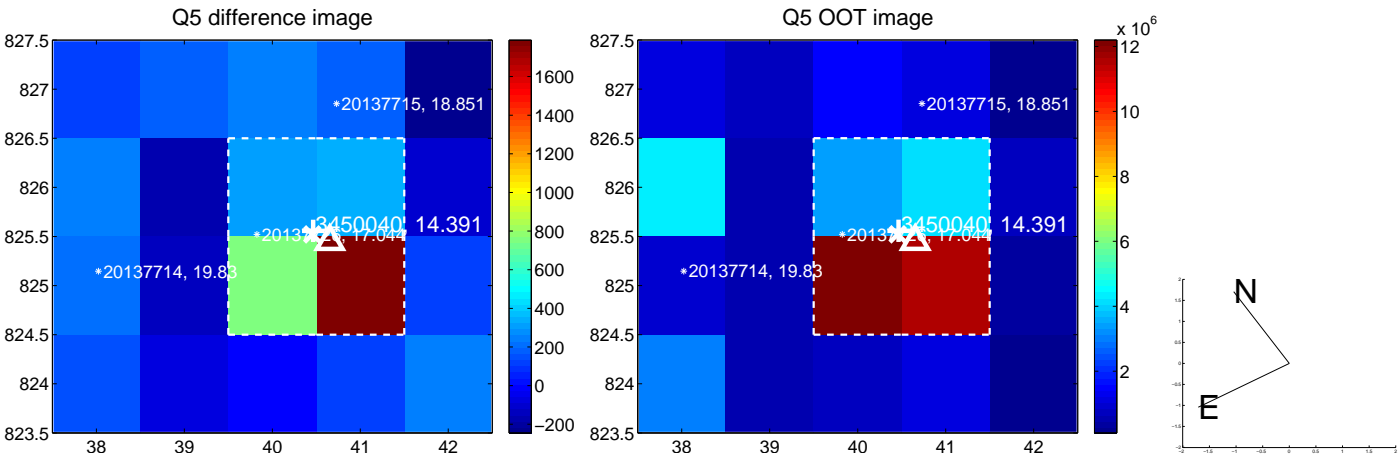


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

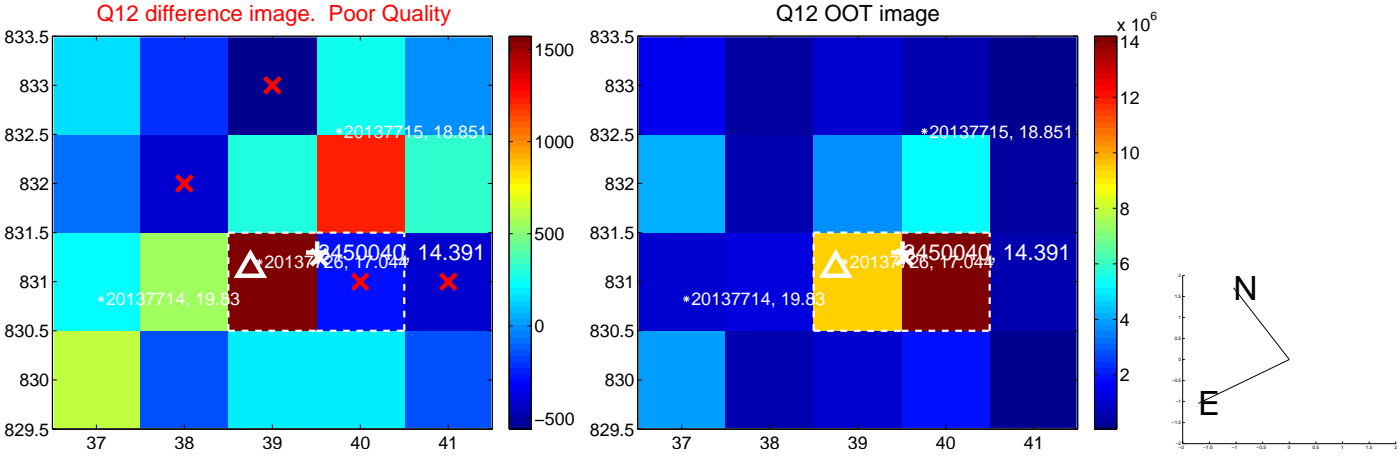
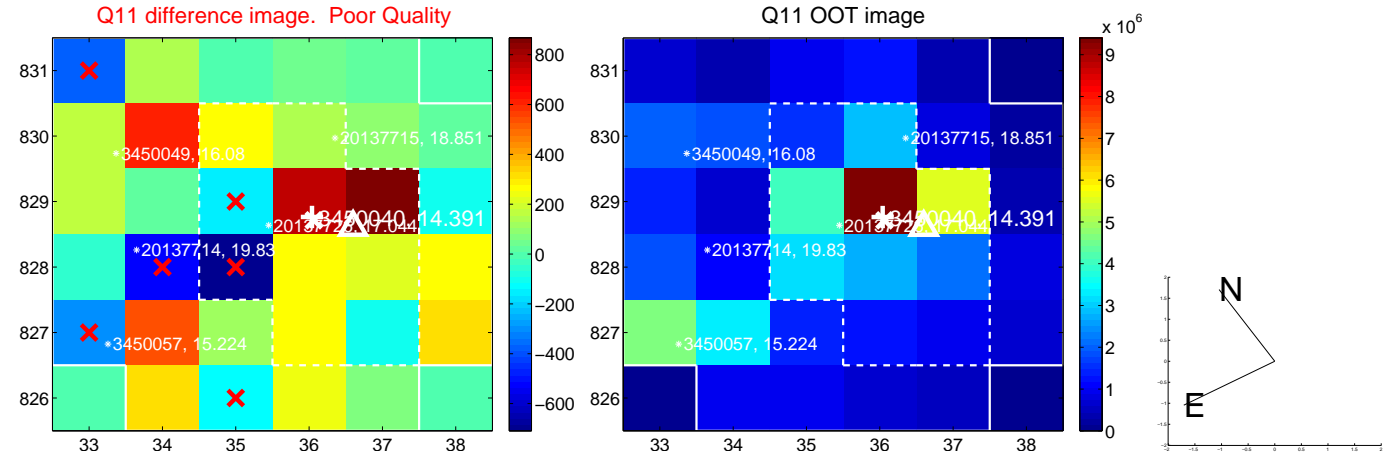
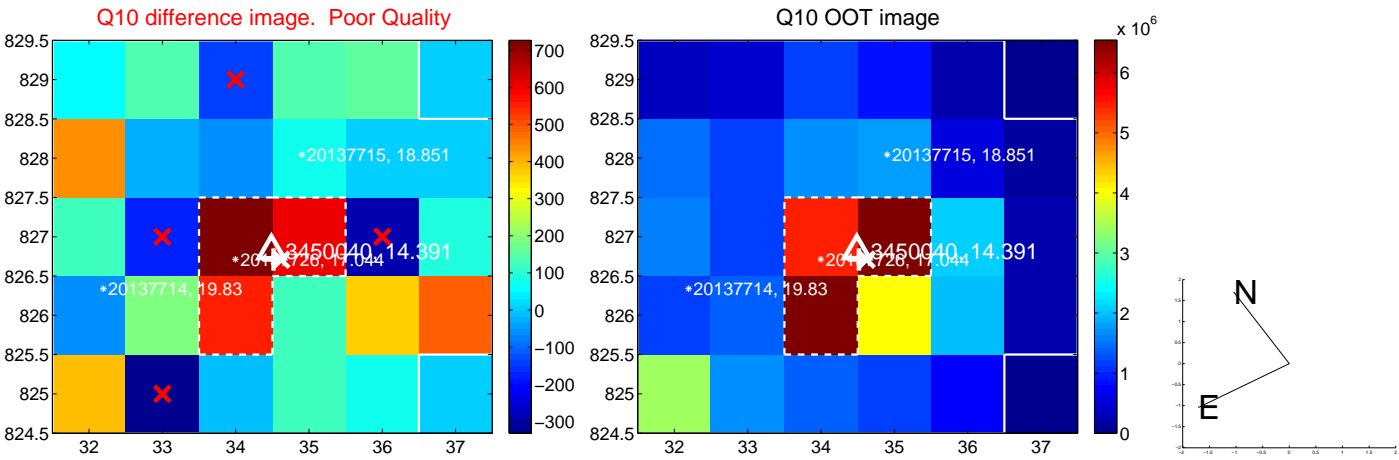
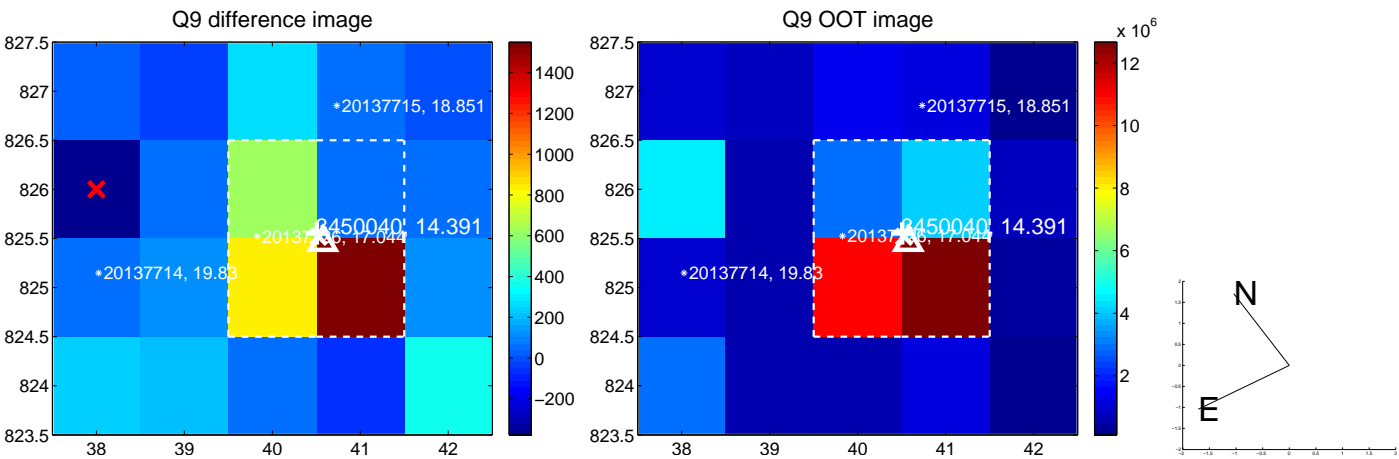


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

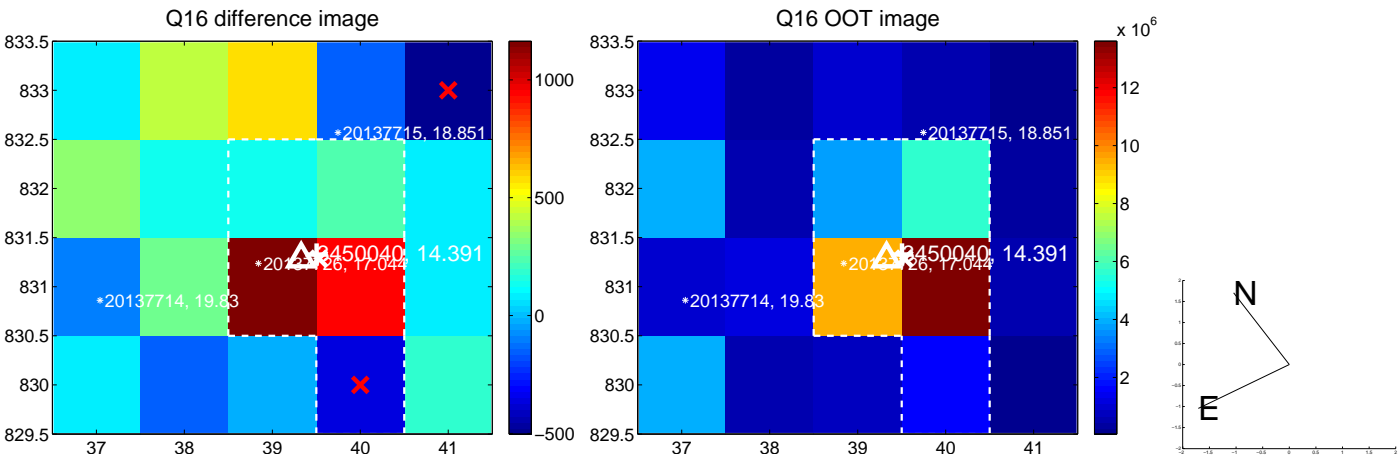
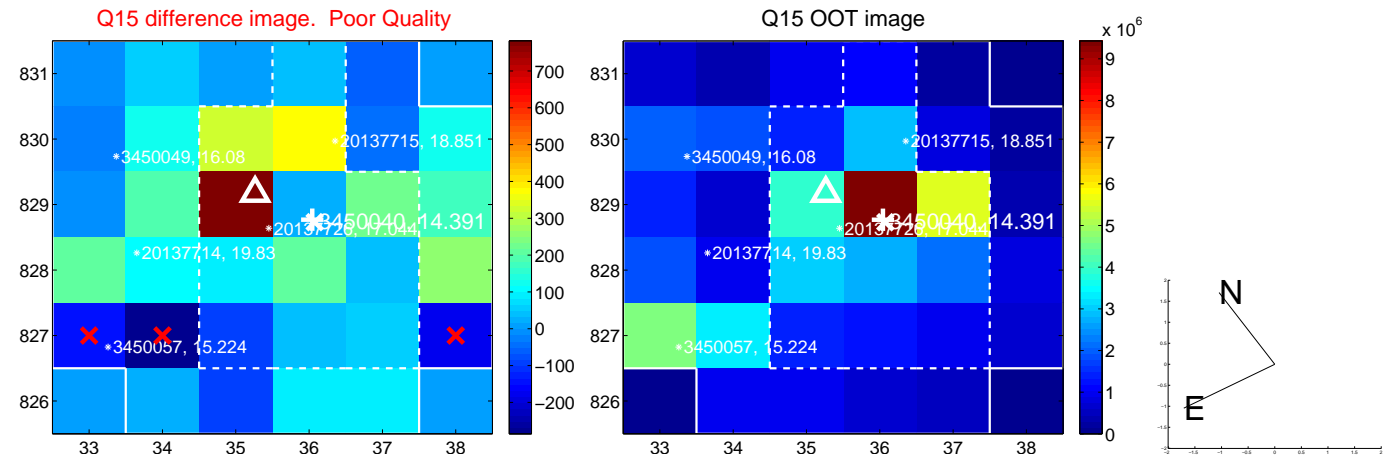
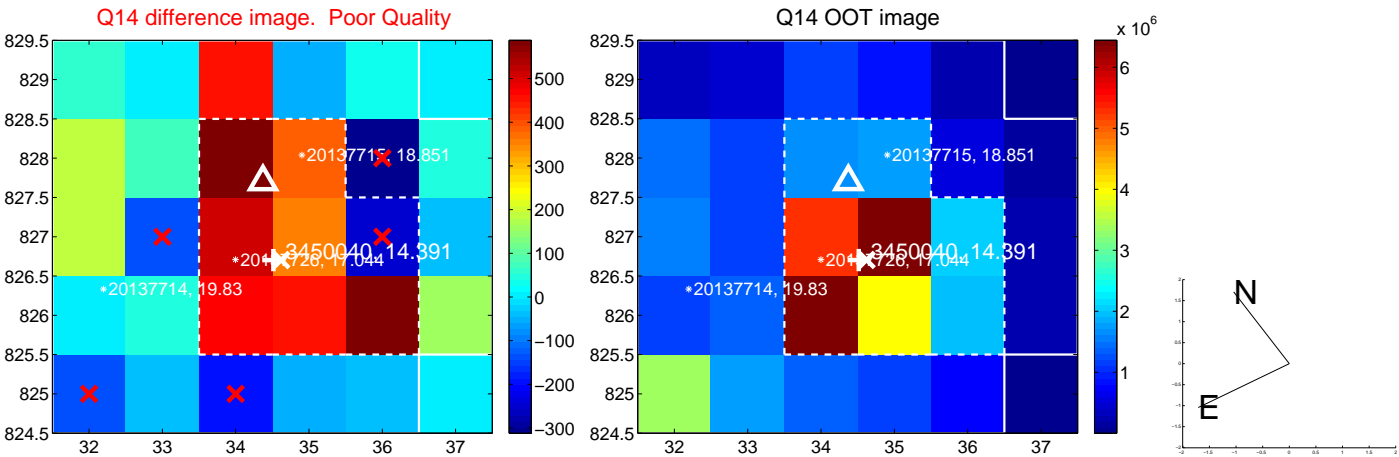
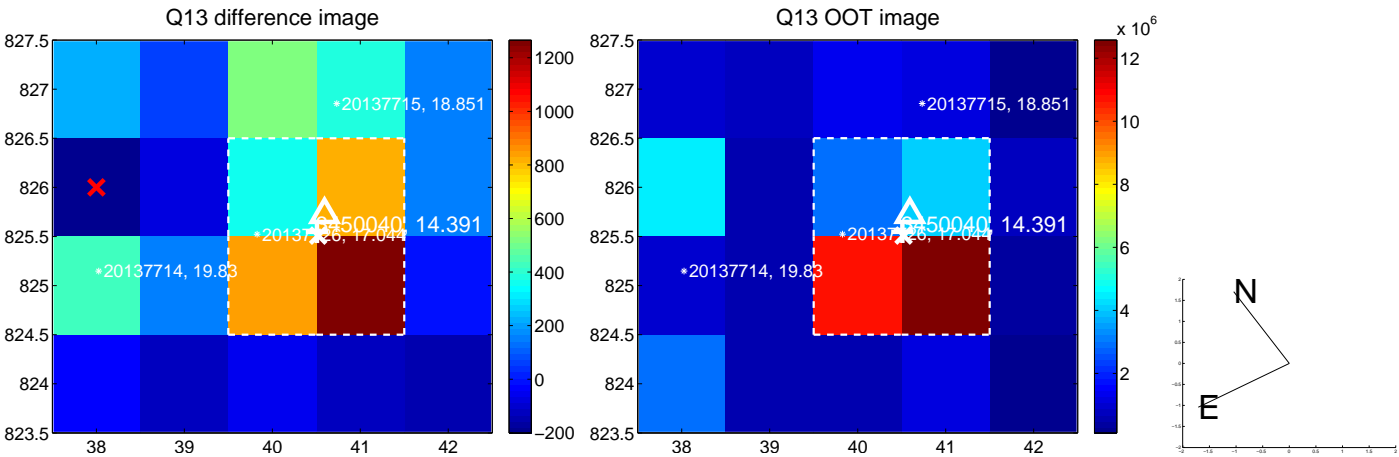




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white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





UKIRT Image

Declination

