

# KIC 009425347

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009425347-01	OBS	No	1.013606	132.497790	24.7	11.398	7.5	6.7	1.02	5765	0.50	2749.37

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009425347-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

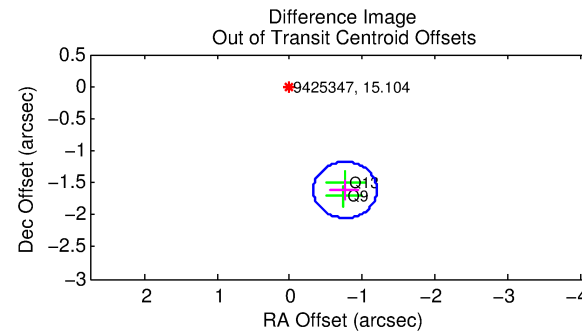
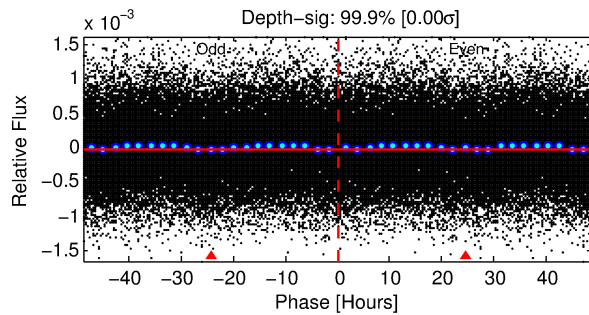
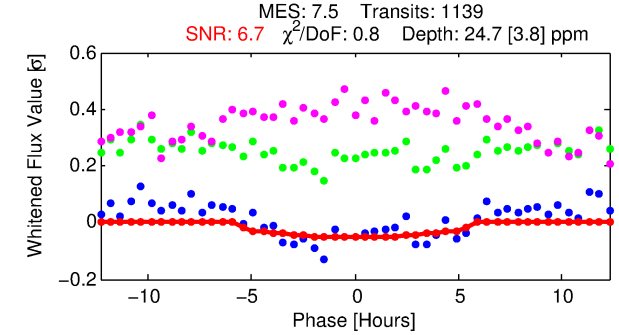
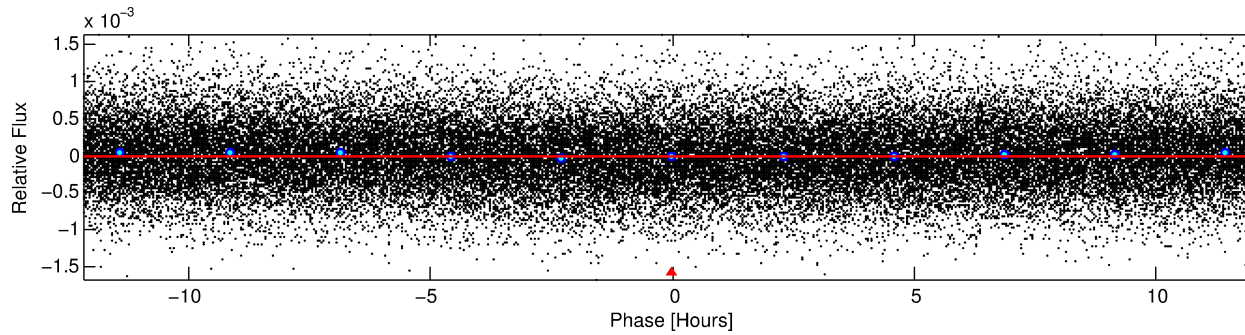
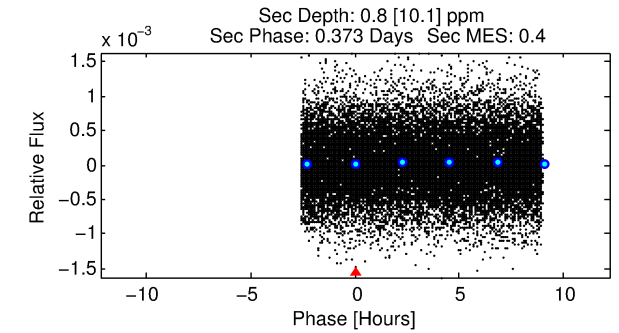
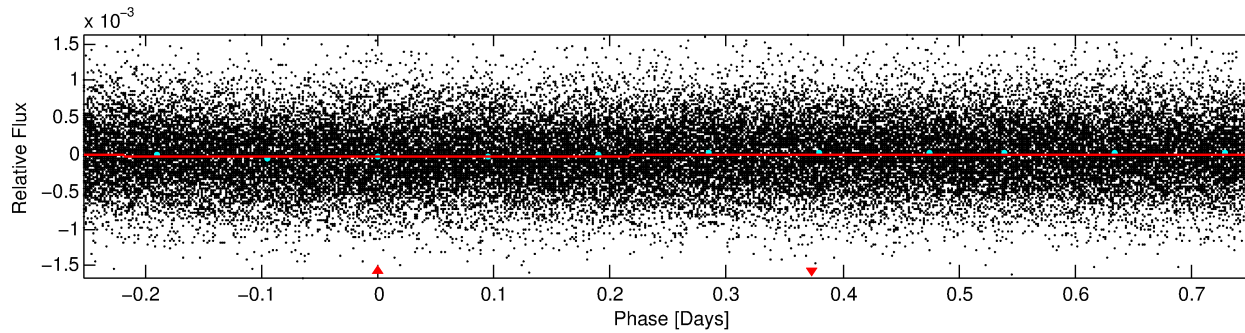
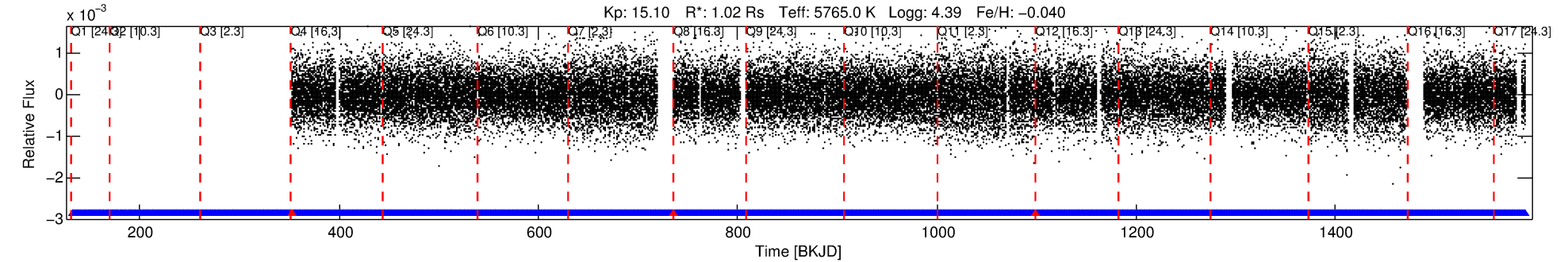
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009425347-01

No Significant Match Found

# DV One-Page Summary

KIC: 9425347 Candidate: 1 of 1 Period: 1.014 d



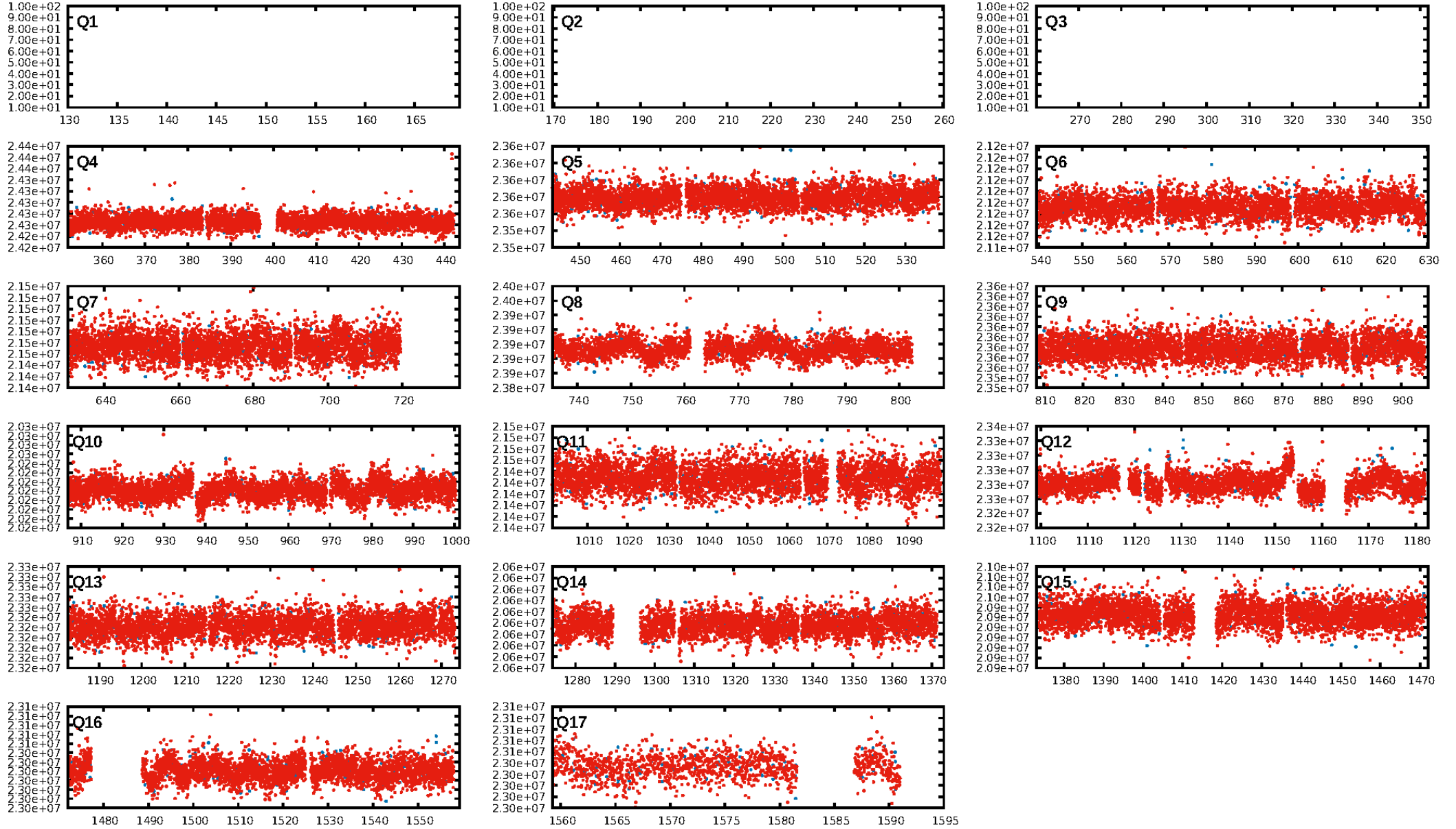
## DV Fit Results:

Period = 1.01361 [0.00003] d  
Epoch = 132.4978 [0.0180] BKJD  
Rp/R\* = 0.0045 [0.0059]  
a/R\* = 1.01 [0.09]  
b = 0.06 [92.89]  
Seff = 2749.37 [1035.26]  
Teq = 1846 [174] K  
Rp = 0.50 [0.67] Re  
a = 0.0194 [0.0046] AU  
Ag = 0.64 [8.46] [-0.04σ]  
Teffp = 2558 [8391] K [0.08σ]

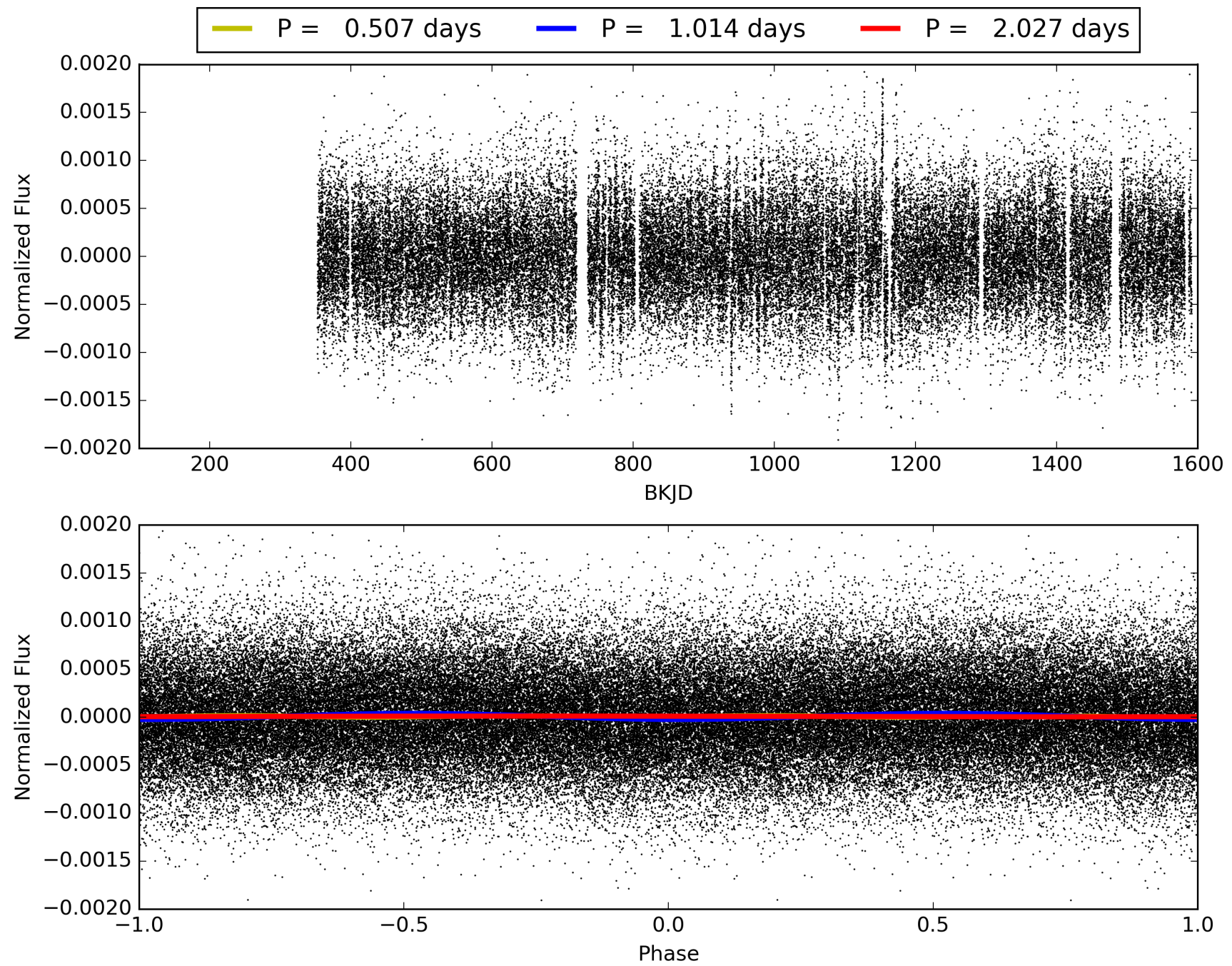
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1109/1112]  
GhostDiagnostic-chr: 0.8539  
Centroid-sig: 0.0%  
Centroid-so: 8.080 arcsec [4.27σ]  
OotOffset-rm: 1.782 arcsec [12.22σ]  
KicOffset-rm: 1.925 arcsec [12.25σ]  
OotOffset-st: 0/0/0/2 [2]  
KicOffset-st: 0/0/0/2 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 009425347-01, PDC Light Curves

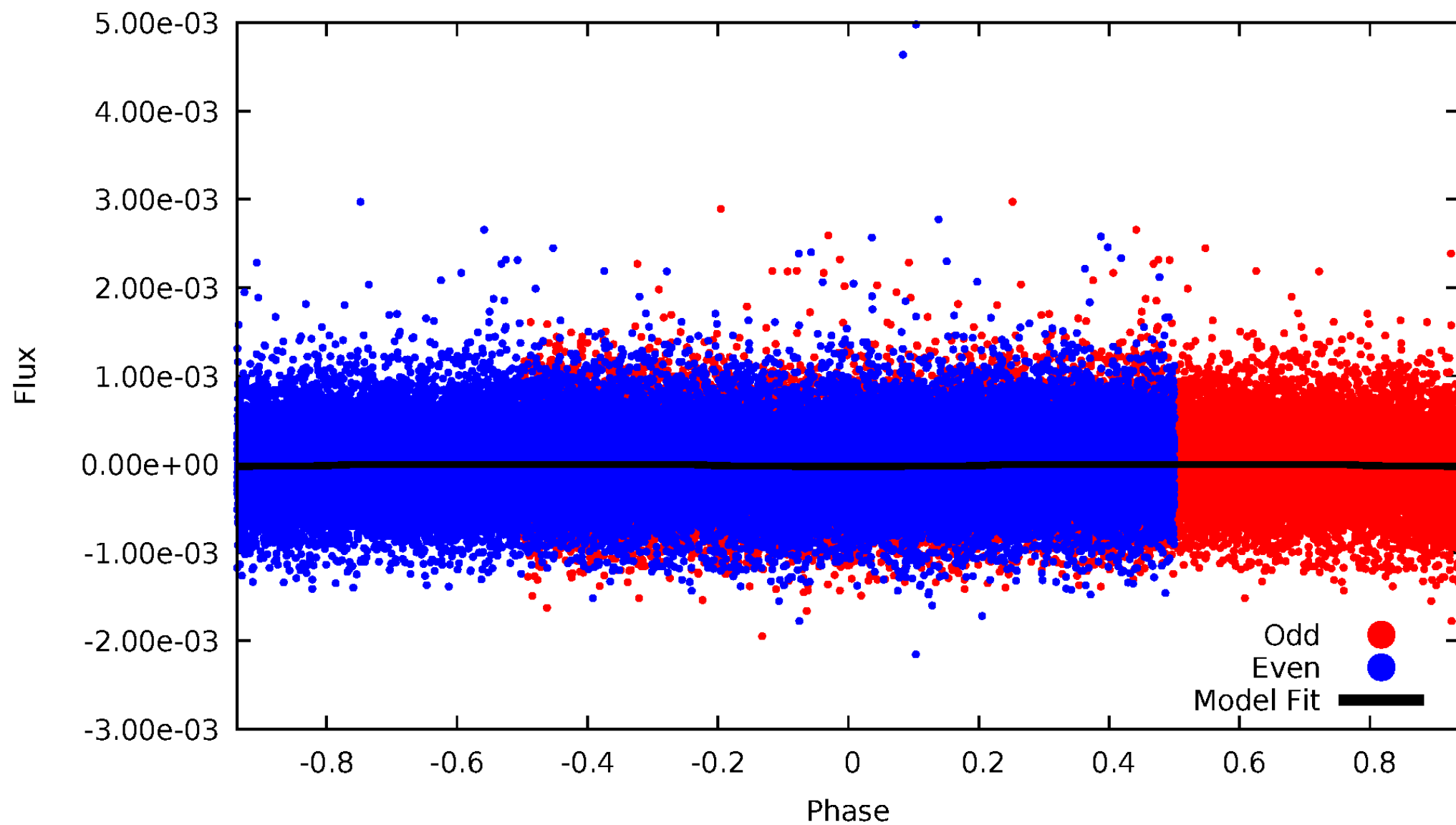


TCE 009425347-01



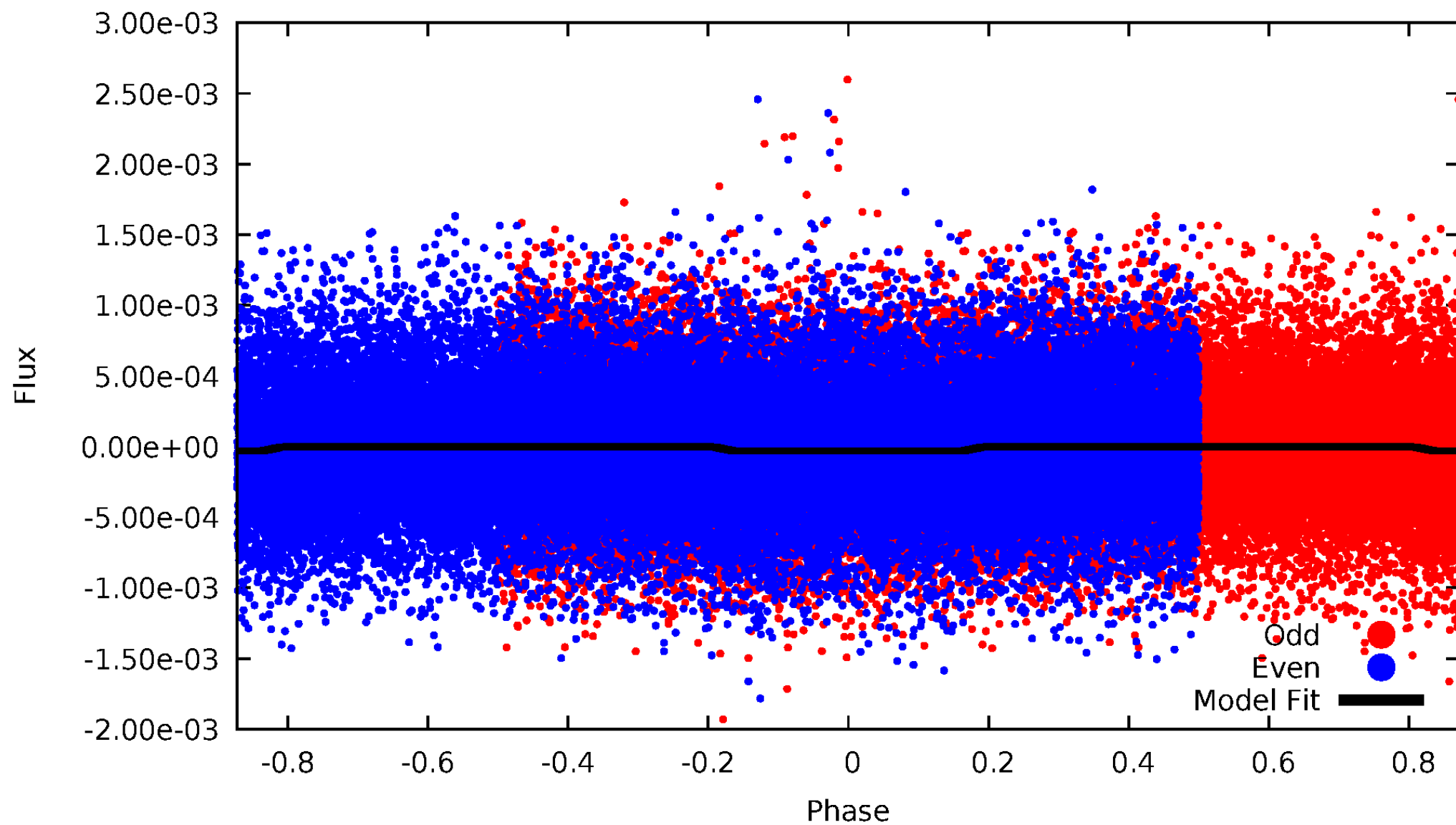
# DV Odd/Even

TCE 009425347-01

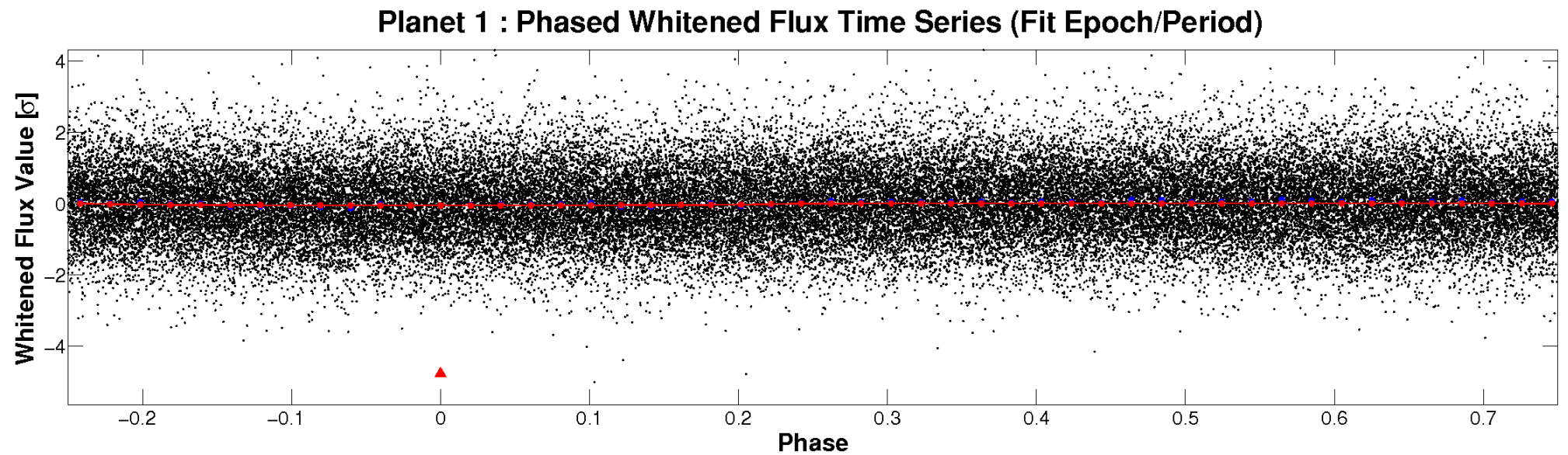
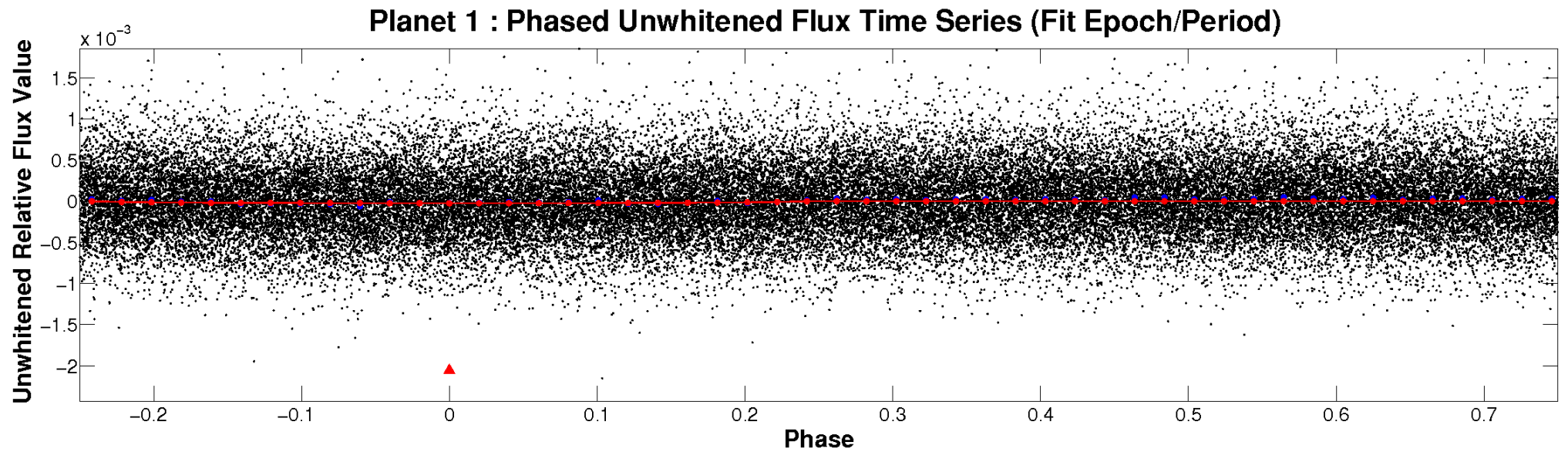


# ALT Odd/Even

TCE 009425347-01

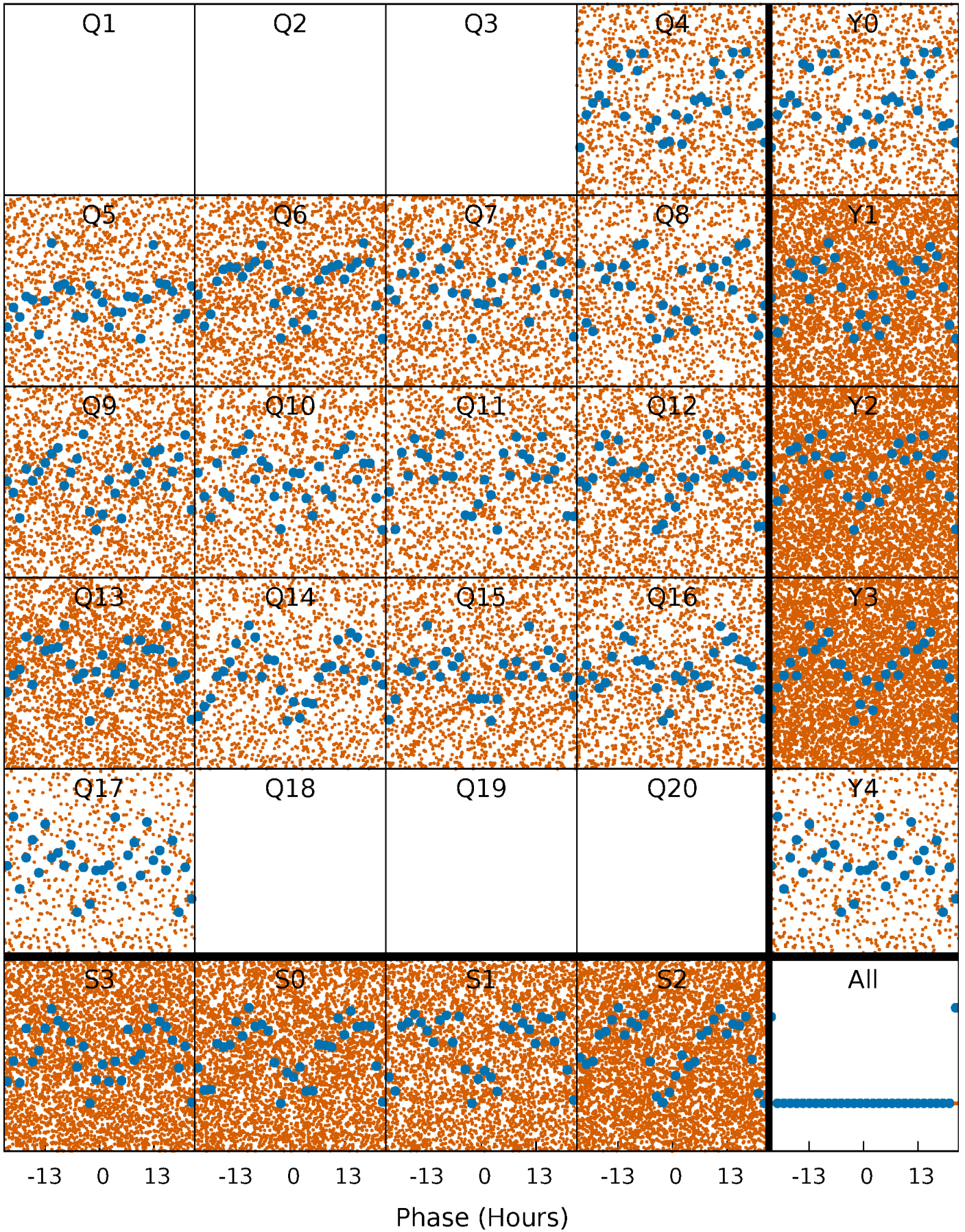


# Non-Whitened Vs. Whitened Light Curve



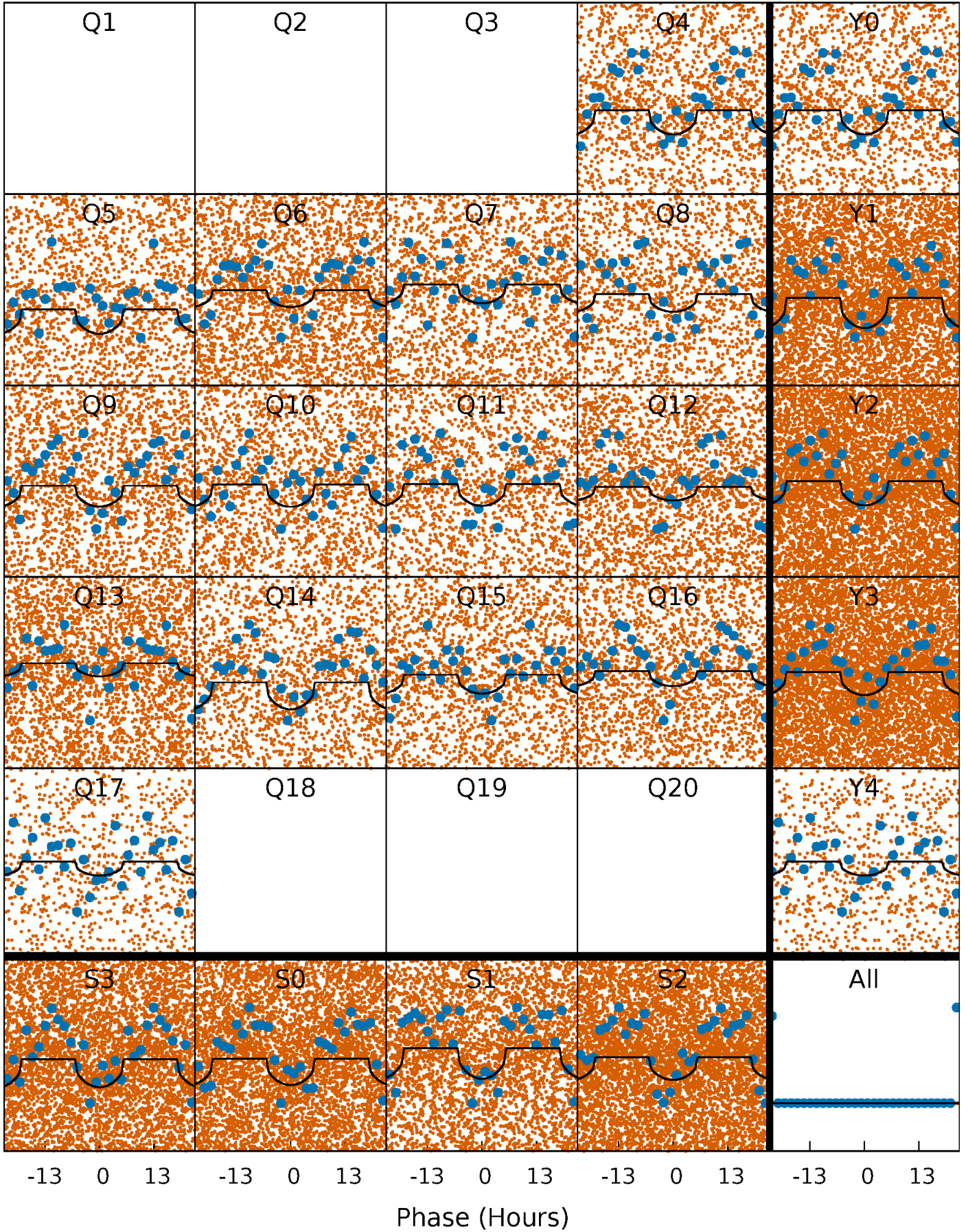
# PDC Quarter-Phased Transit Curves

TCE 009425347-01   P= 1.013606 Days    $T_0=132.497790$  (BKJD)



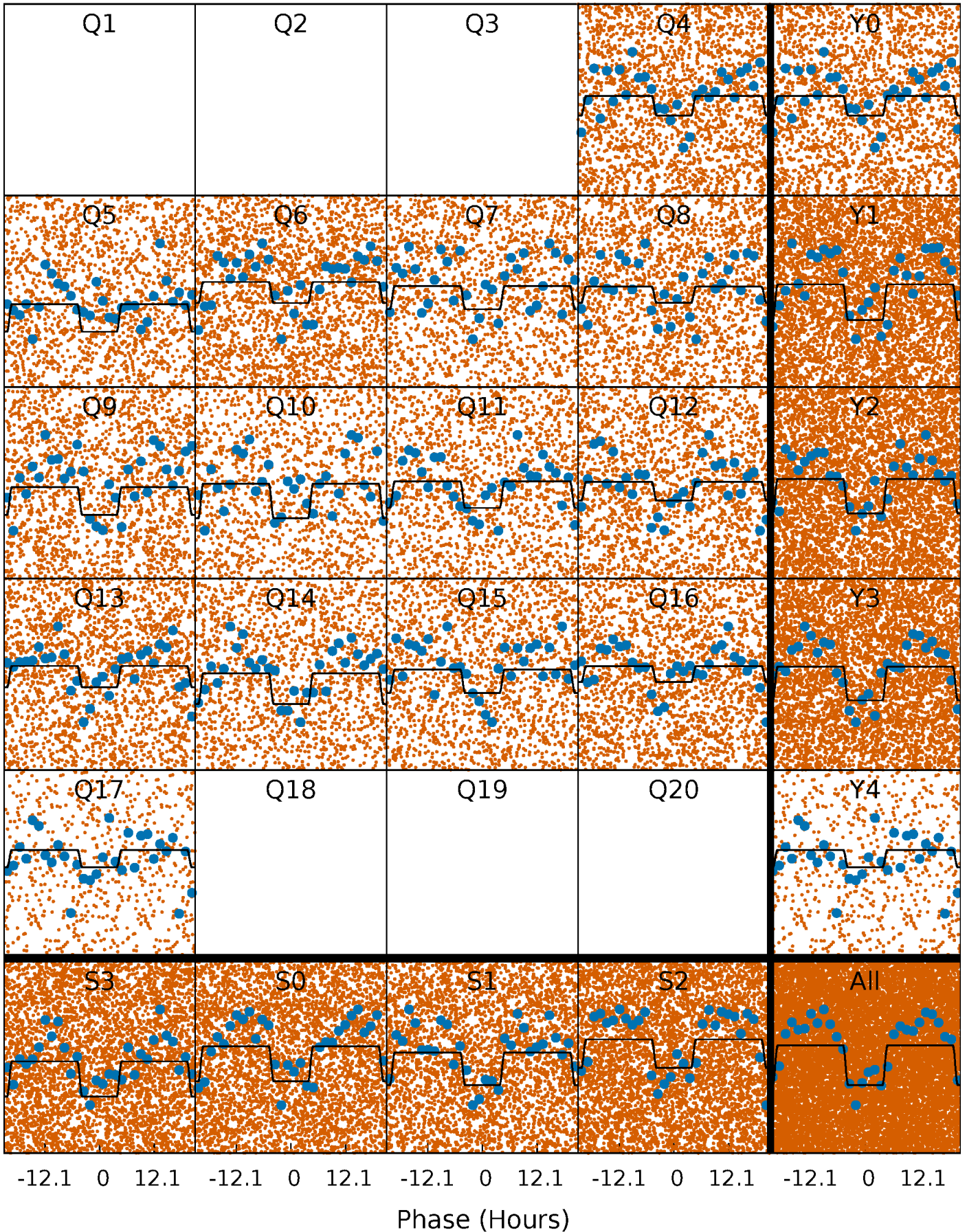
# DV Quarter-Phased Transit Curves

TCE 009425347-01 P= 1.013606 Days  $T_0=132.497790$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

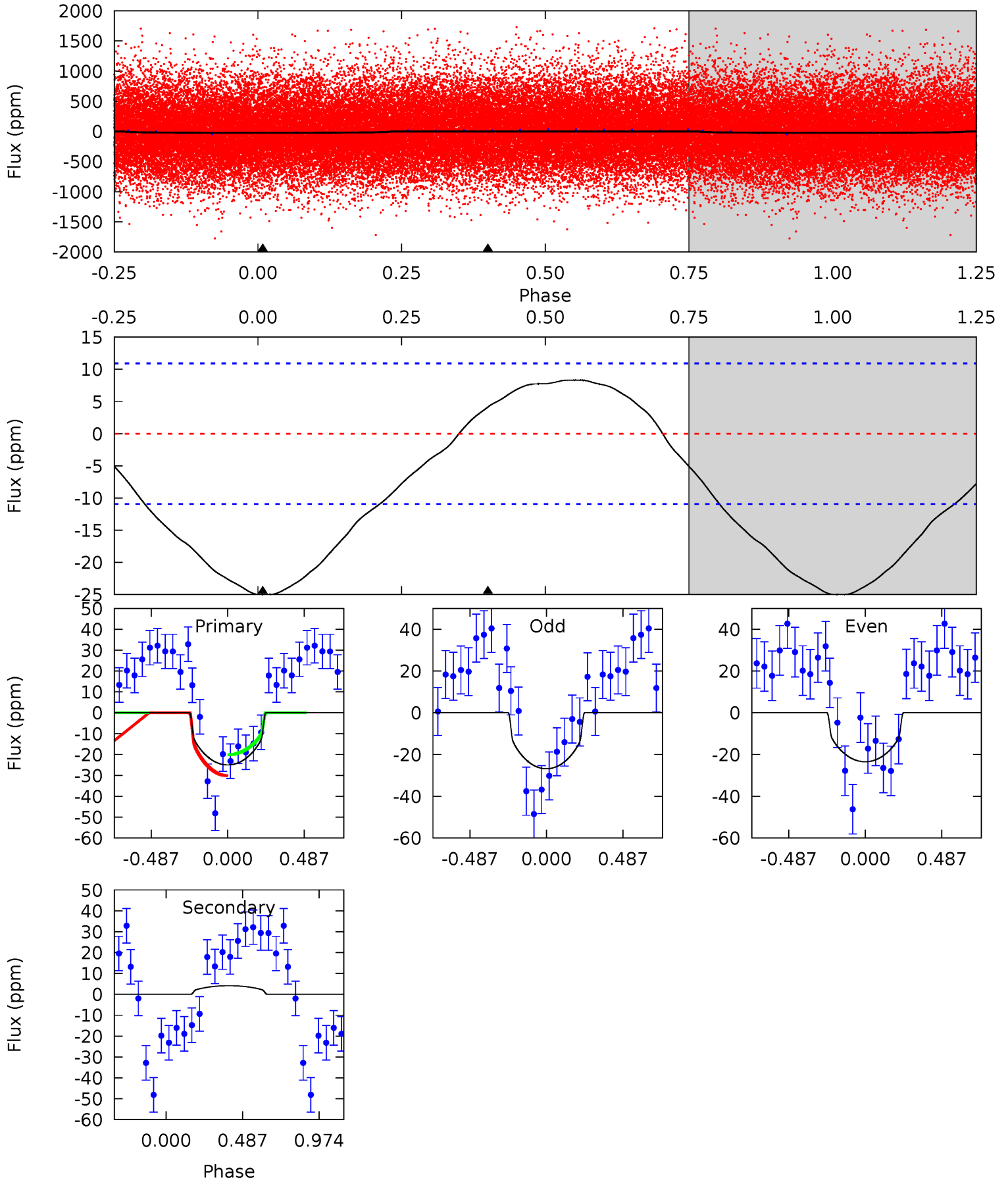
TCE 009425347-01 P= 1.013682 Days  $T_0=132.449754$  (BKJD)



# DV Model-Shift Uniqueness Test

009425347-01, P = 1.013606 Days, E = 132.497790 Days

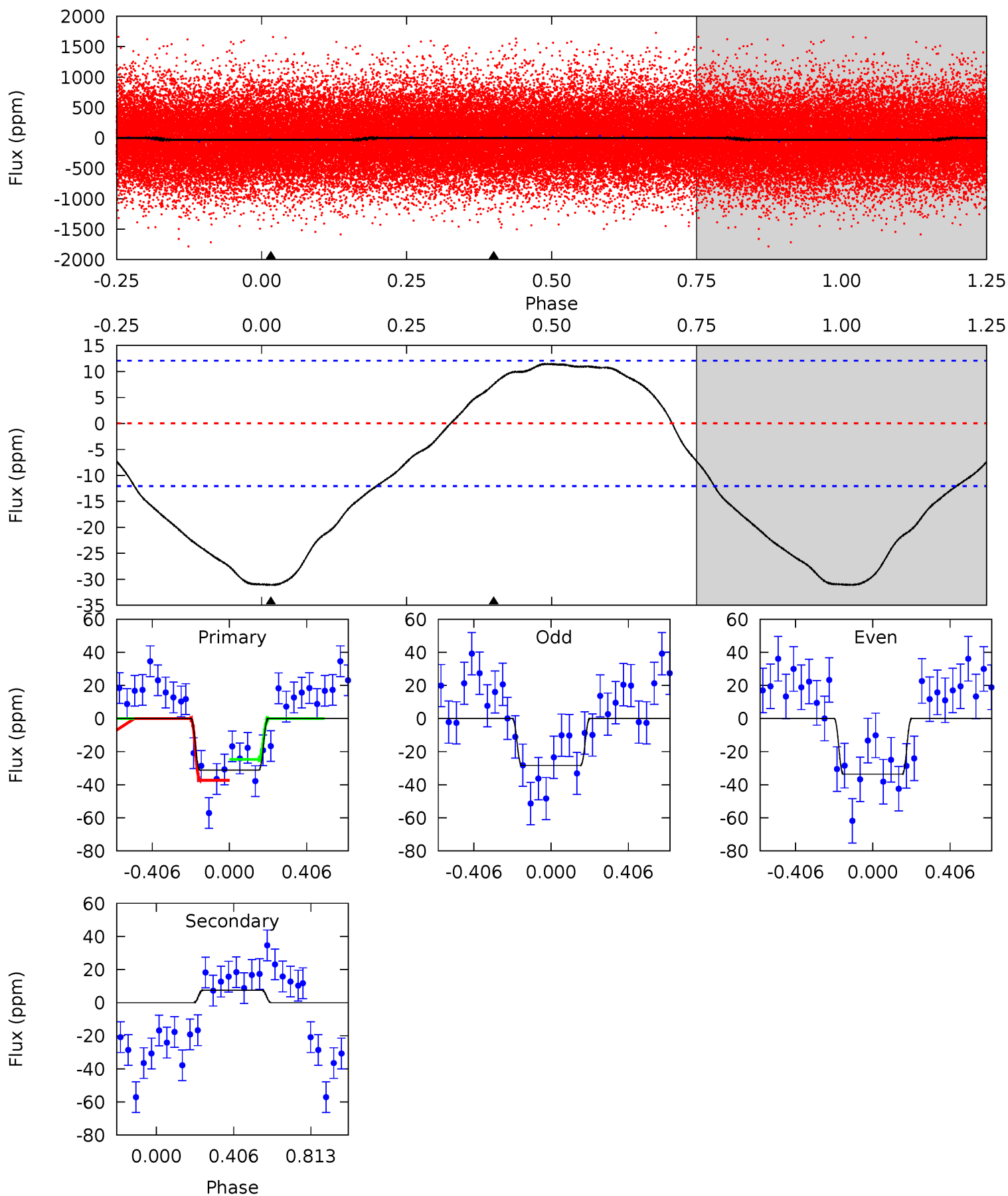
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.65	-1.59	0	0	4.22	0.70	1.28	9.65	9.65	-1.59	-1.59	0.65	0.89	0.25	1.91



# Alt Model-Shift Uniqueness Test

009425347-01, P = 1.013682 Days, E = 132.449754 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
11.0	-2.66	0	0	4.26	0.83	1.79	11.0	11.0	-2.66	-2.66	0.94	1.01	0.27	2.20



### Stellar Parameters For KIC 009425347

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5765^{+173}_{-190}$	$4.395^{+0.120}_{-0.195}$	$-0.040^{+0.250}_{-0.300}$	$1.022^{+0.286}_{-0.154}$	$0.947^{+0.125}_{-0.102}$	$1.249^{+0.703}_{-0.606}$
	+3%/-3%	+3%/-4%	+625%/-750%	+28%/-15%	+13%/-11%	+56%/-49%
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 009425347-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$4 \pm 3$	$0.72^{+0.58}_{-0.47}$	$2590^{+187}_{-144}$	$-3670^{+479}_{-1675}$	$-1.345^{+1.030}_{-9.992}$
Alt.	$8 \pm 3$	$0.77^{+0.61}_{-0.48}$	$2599^{+207}_{-149}$	$-4036^{+606}_{-1994}$	$-2.541^{+1.816}_{-15.957}$

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

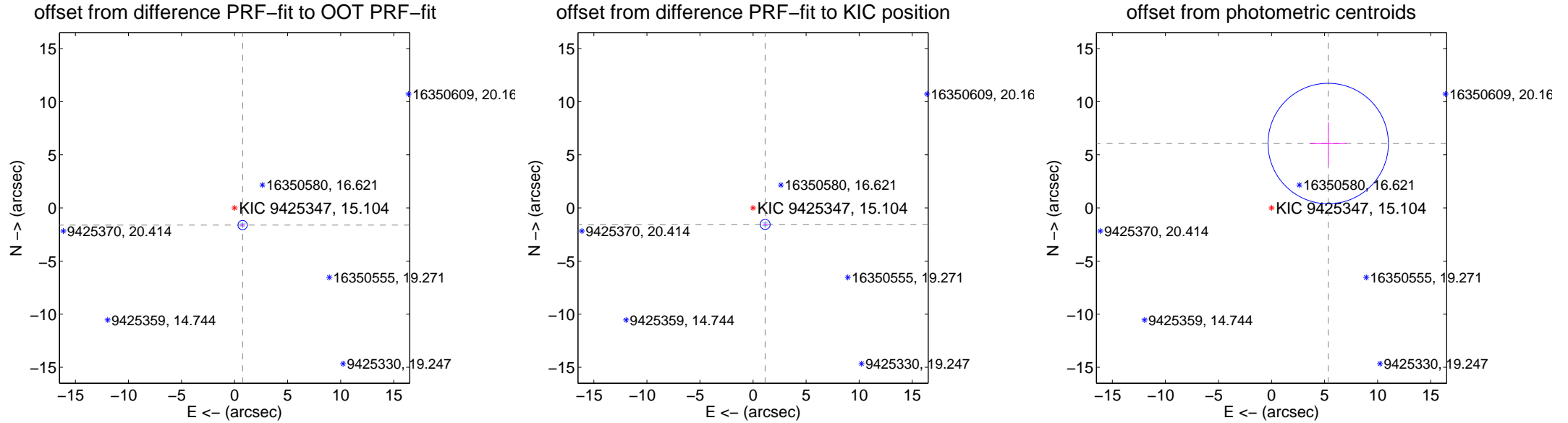
## DV Centroid Data

Supplemental centroid analysis for 009425347-01. Kepler magnitude: 15.10. Transit SNR 6.75

There are 2 quarters with good PRF difference image offsets

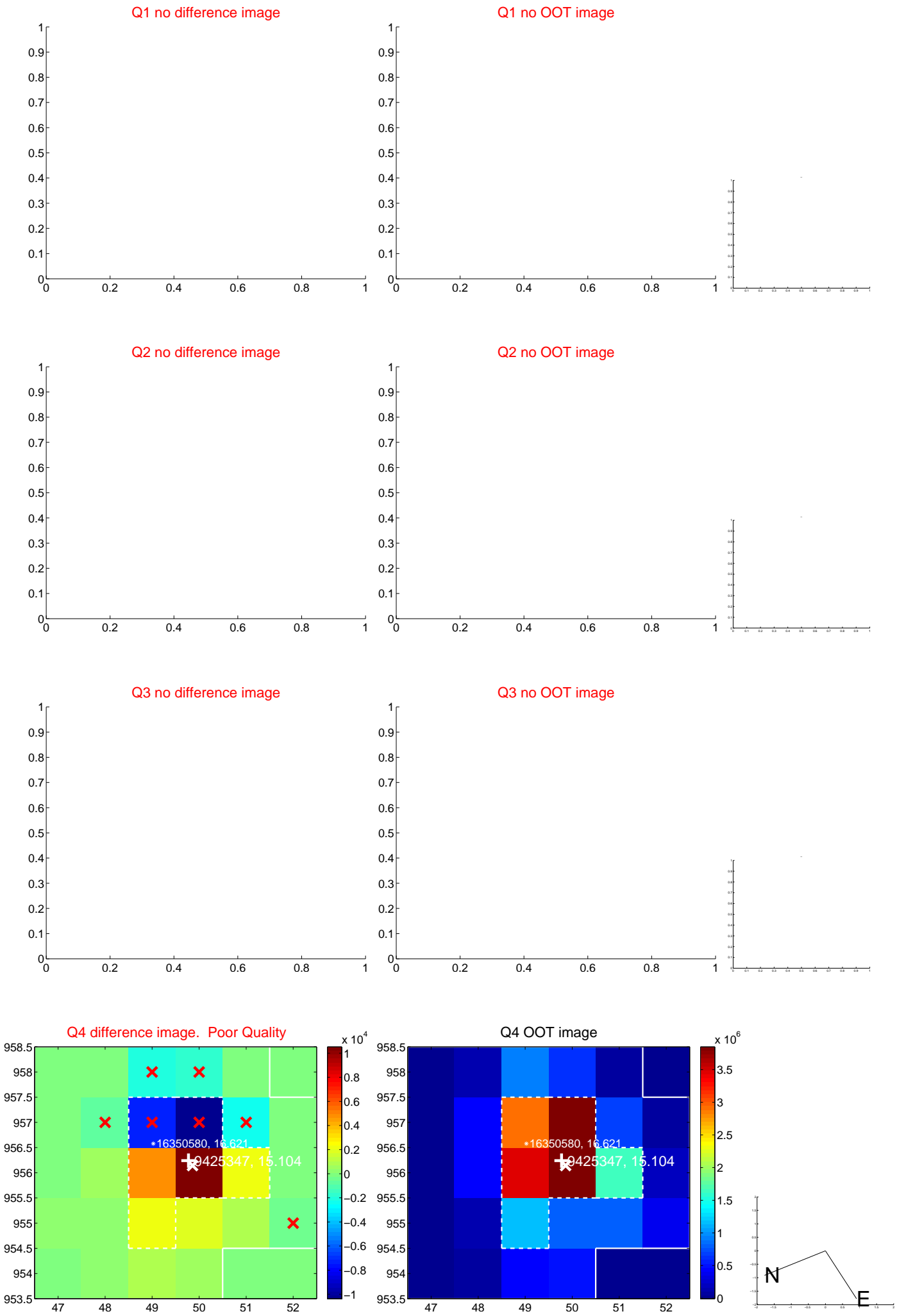
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.782 \pm 0.146$	12.22	$-0.758 \pm 0.194$	$-1.613 \pm 0.133$
PRF-fit source offset from KIC position	$1.925 \pm 0.157$	12.25	$-1.139 \pm 0.194$	$-1.551 \pm 0.133$
photometric centroid source offset	$8.08 \pm 1.89$	4.27	$-5.34 \pm 1.72$	$6.06 \pm 2.01$

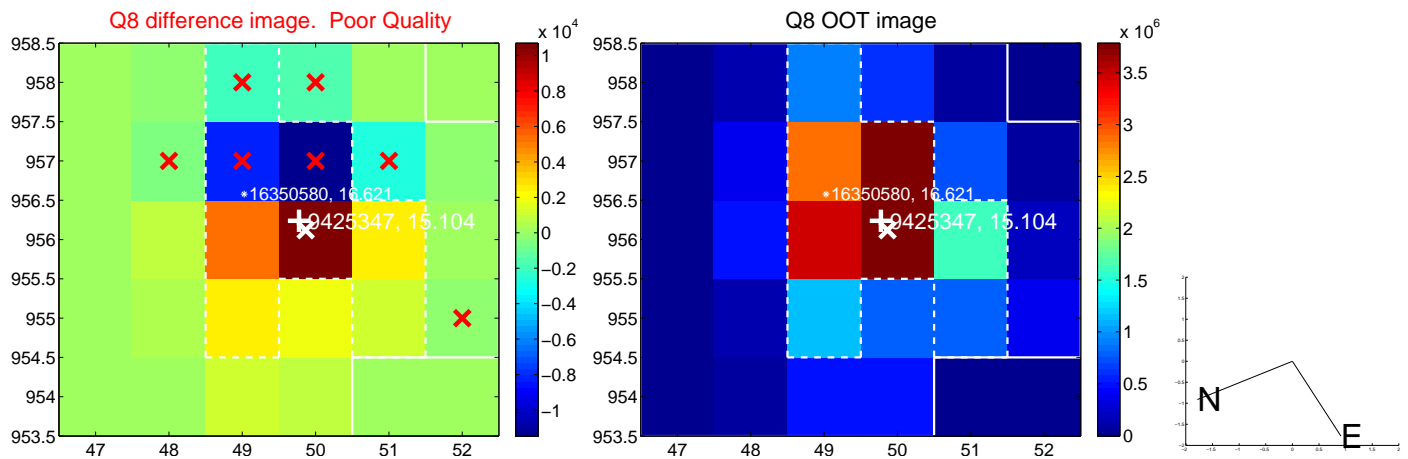
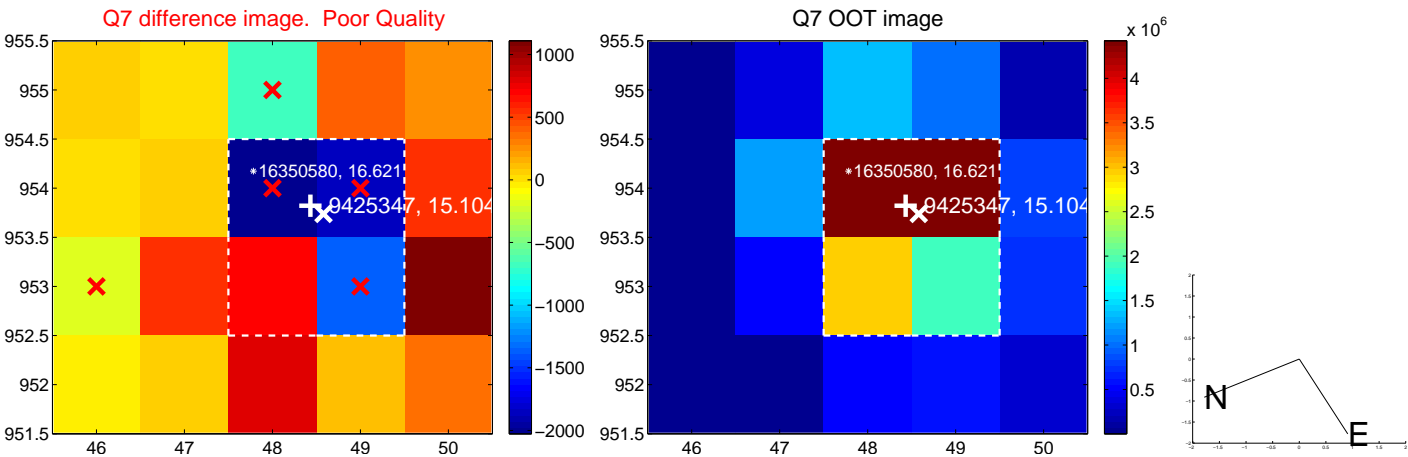
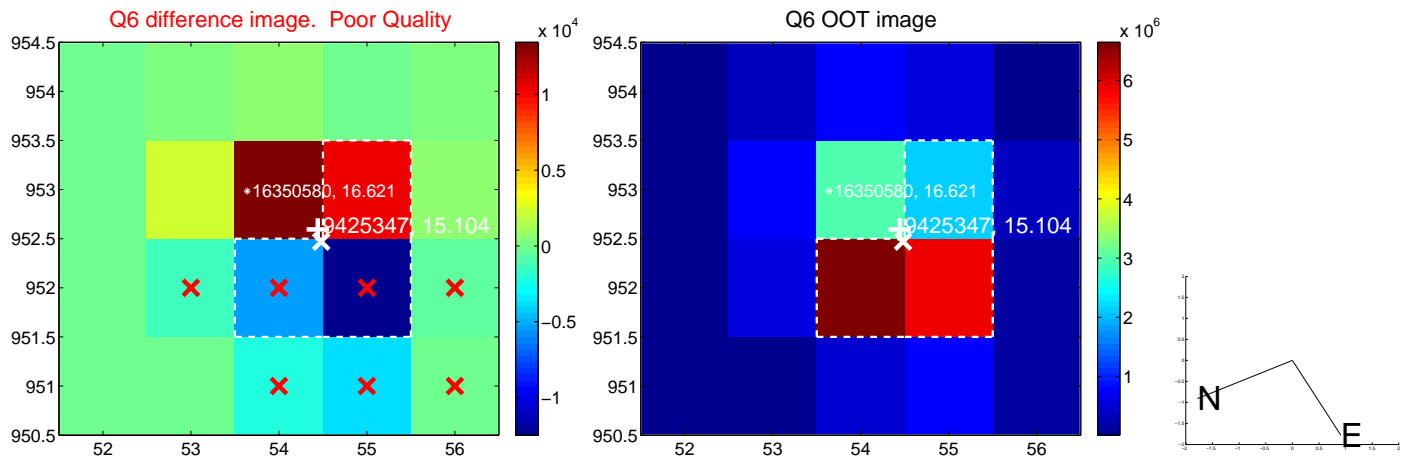
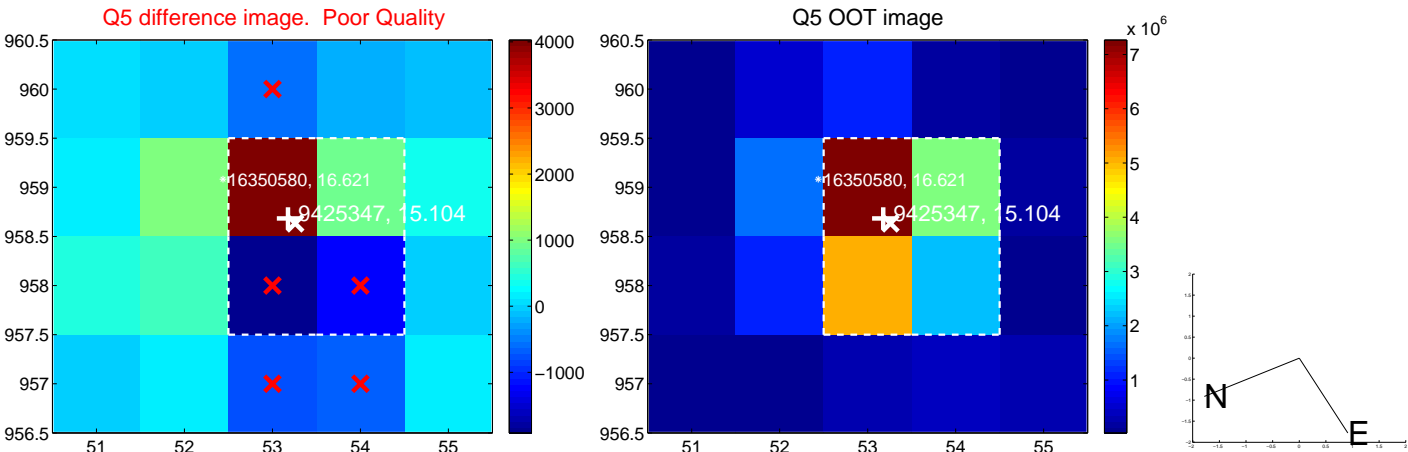


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

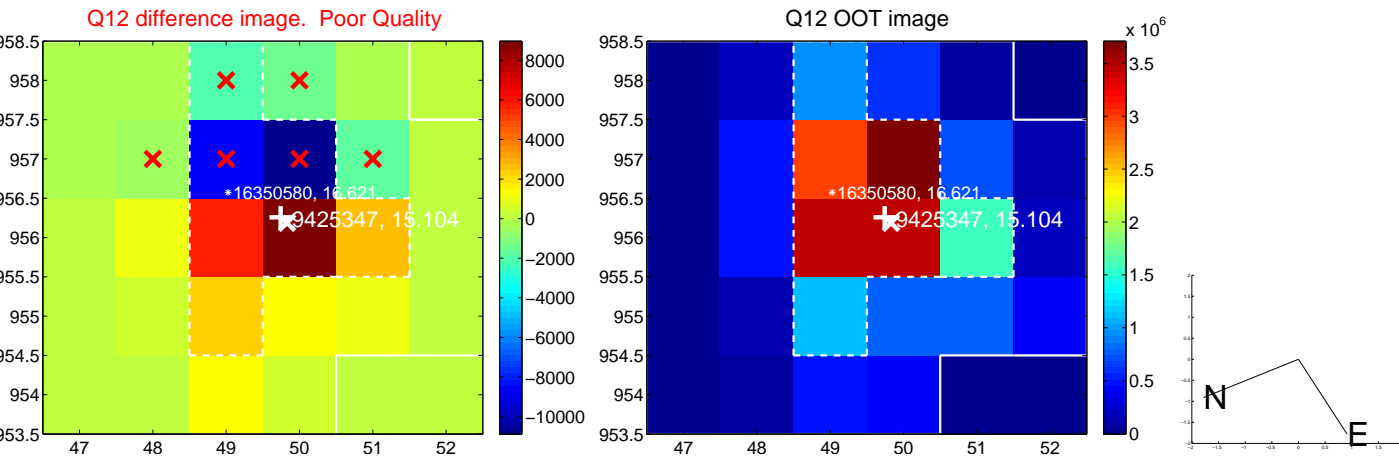
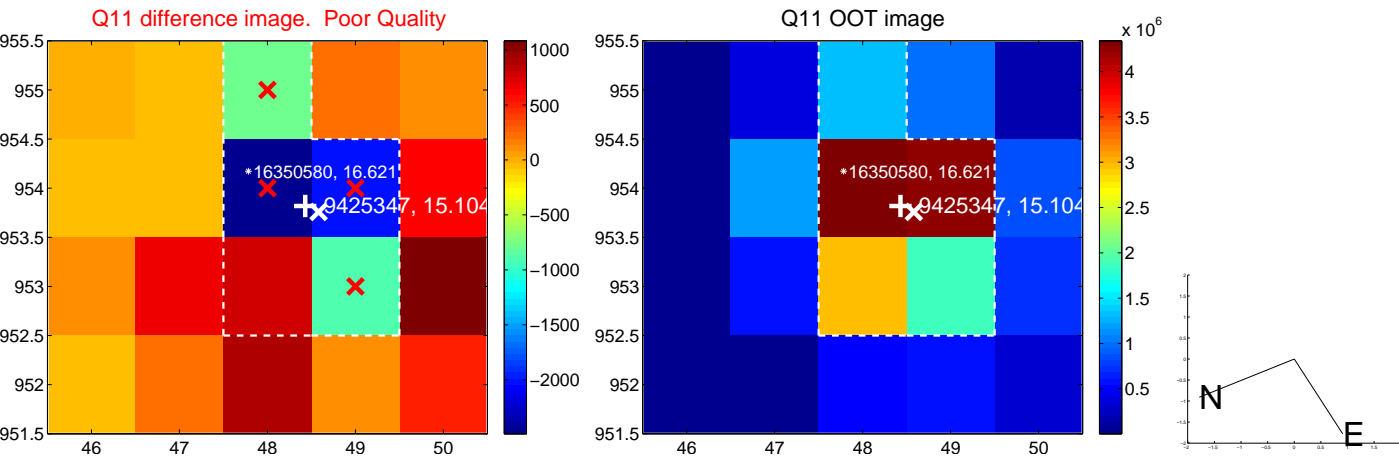
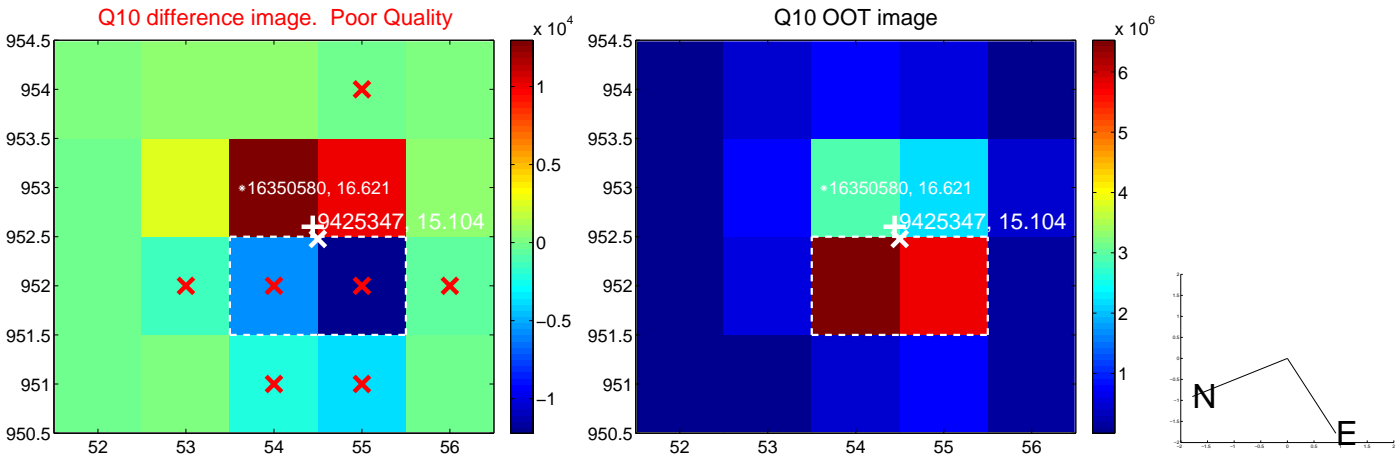
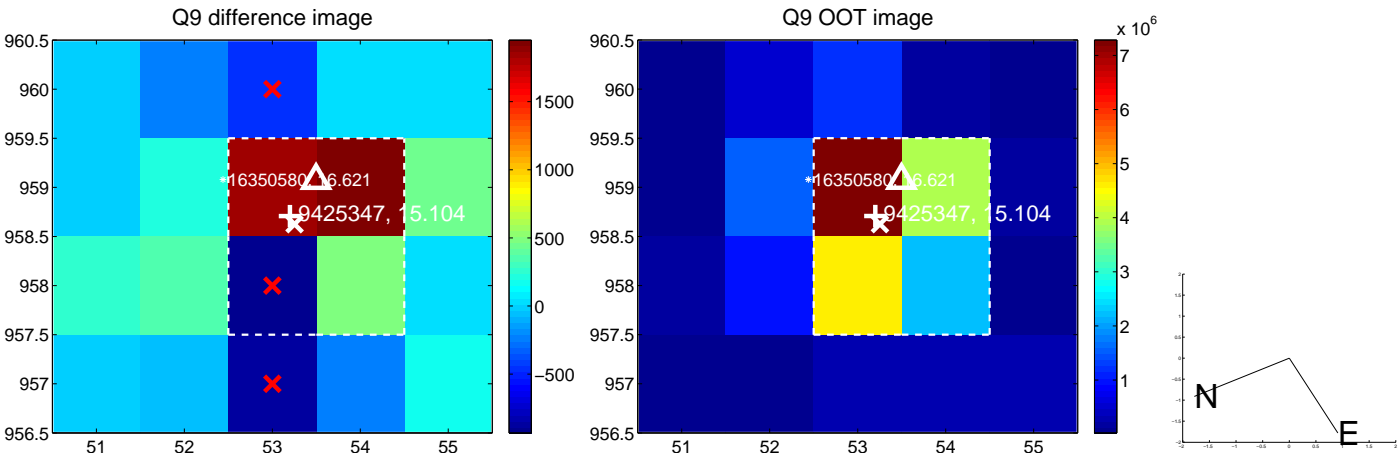
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



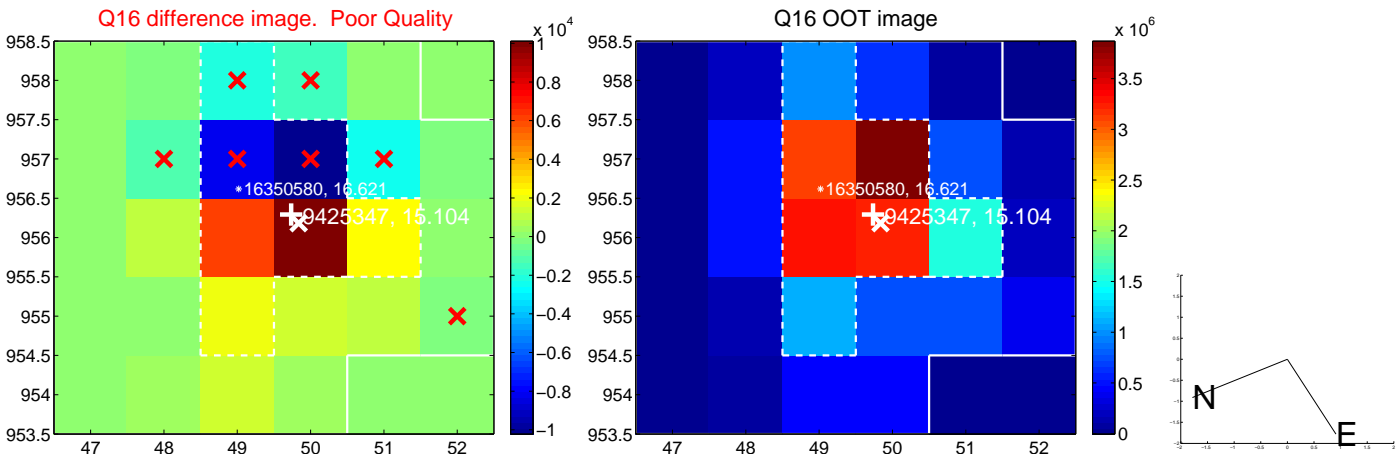
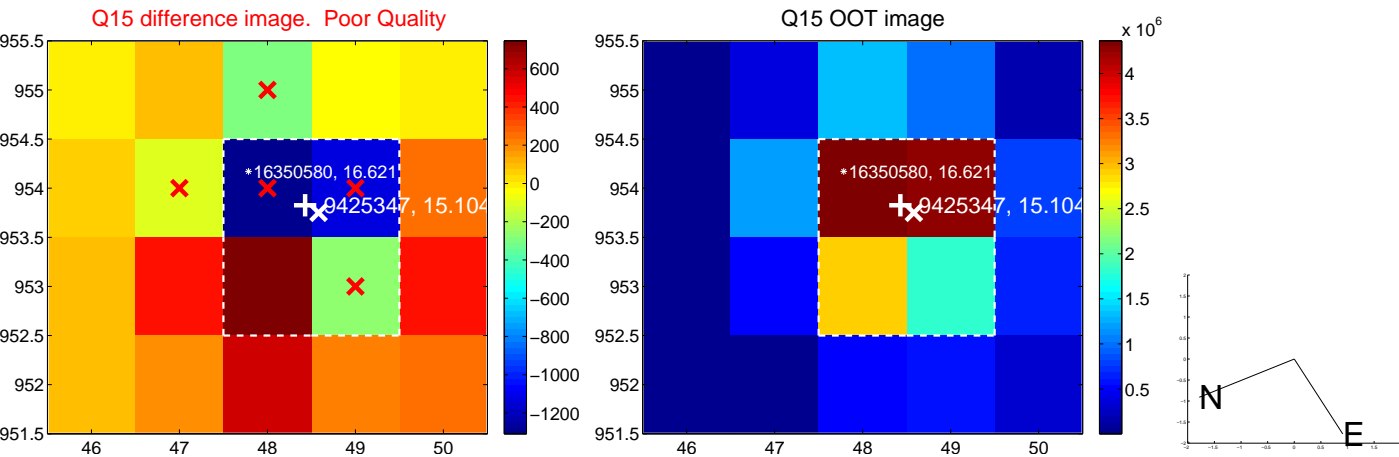
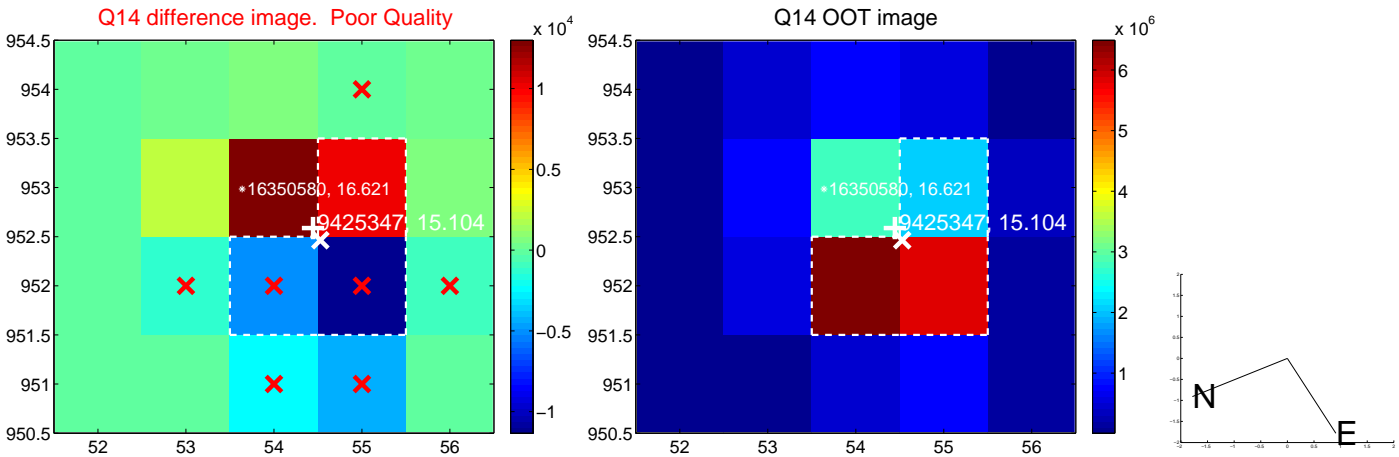
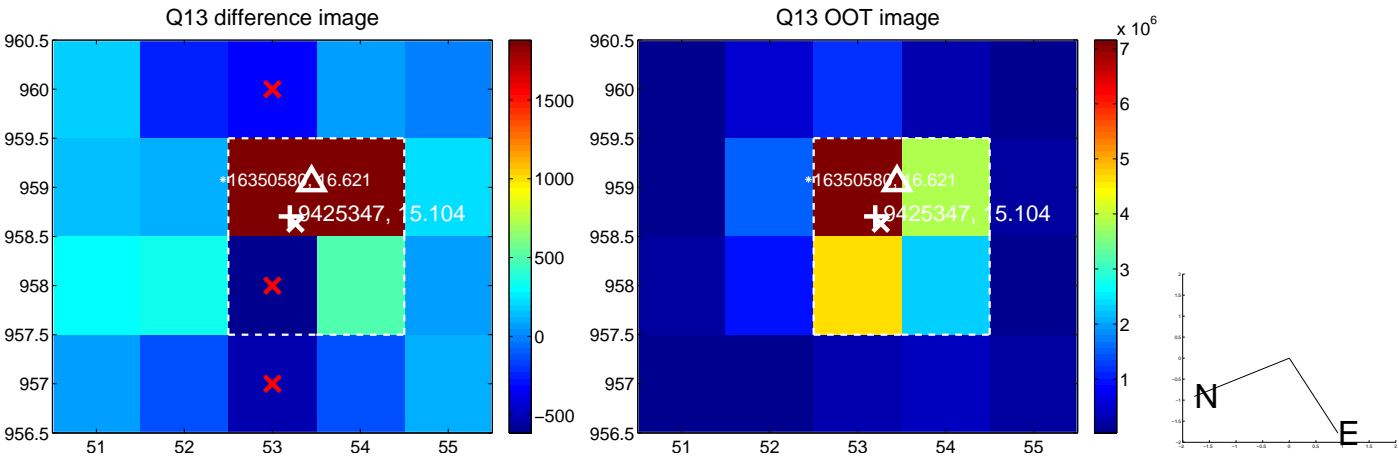
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



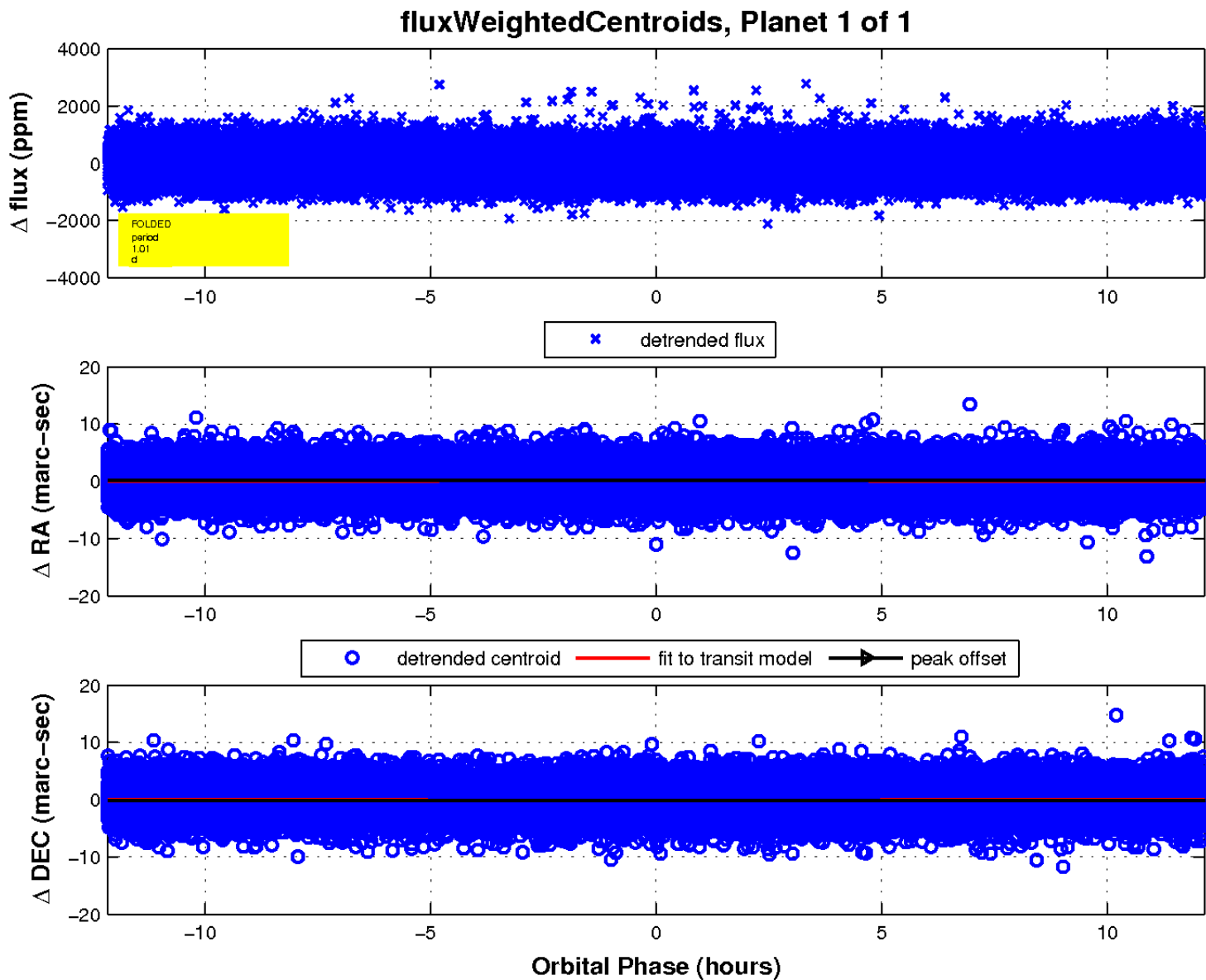
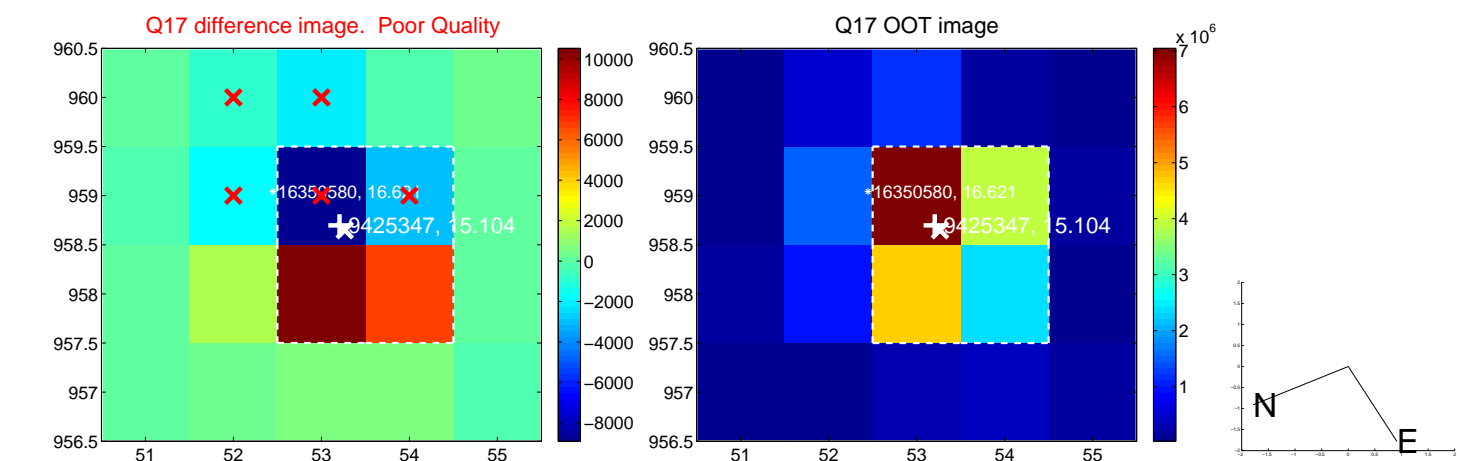
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

