

# KIC 005956354

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005956354-01	OBS	4726.01	8.038776	135.306658	142.4	3.946	10.4	11.7	0.97	6018	1.39	174.23

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005956354-01	OBS	FP	0.00	0	0	1	0	CENT_RESOLVED_OFFSET

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

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

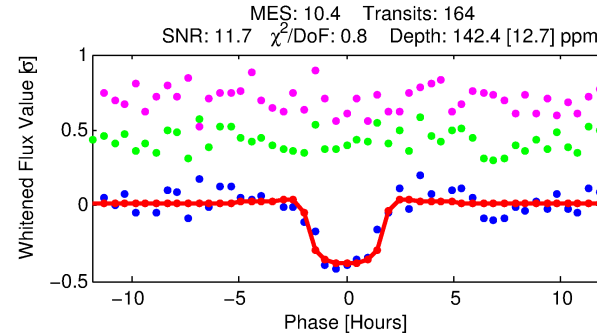
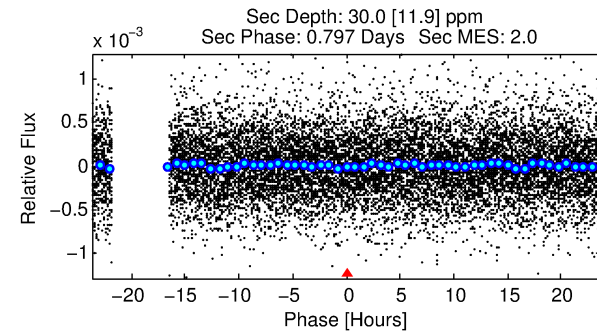
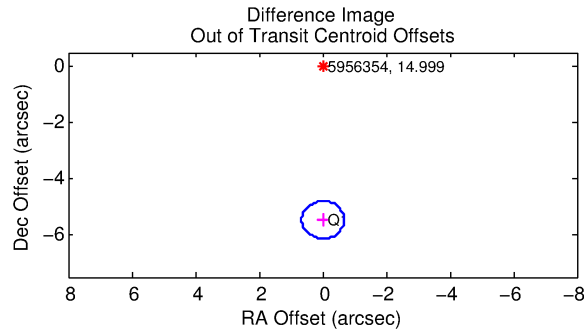
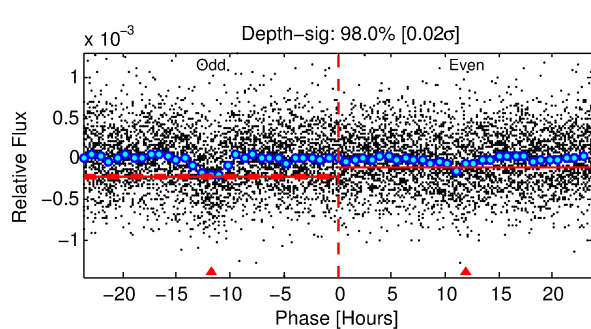
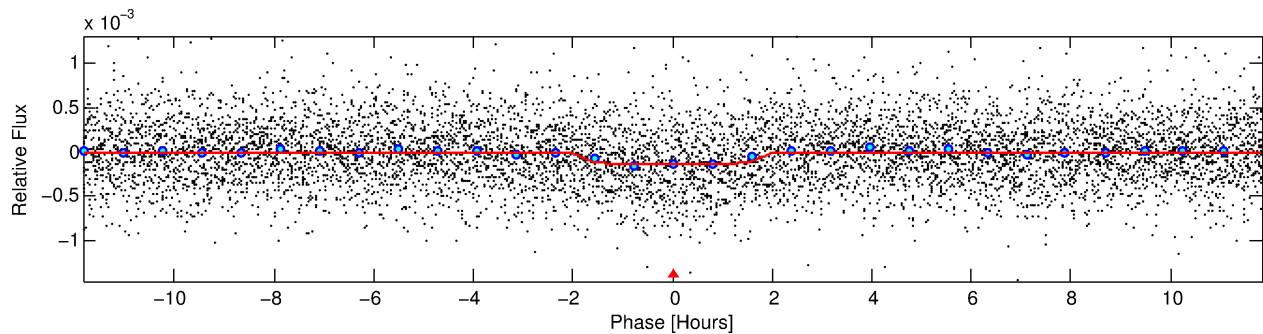
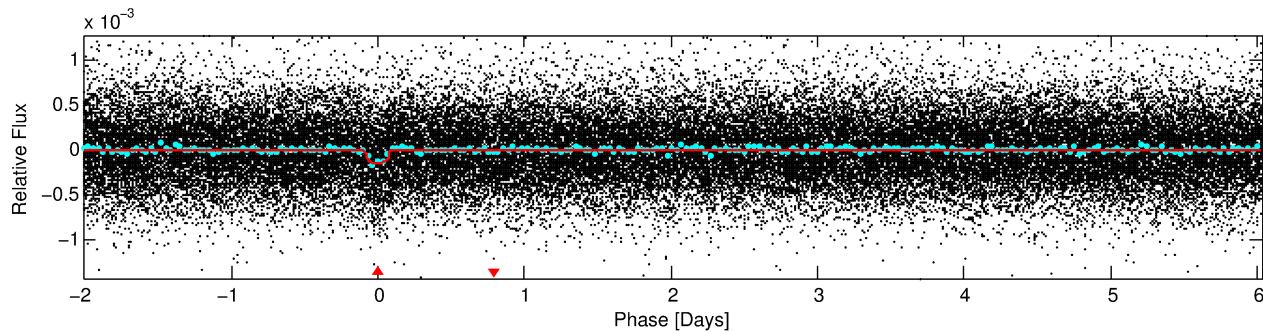
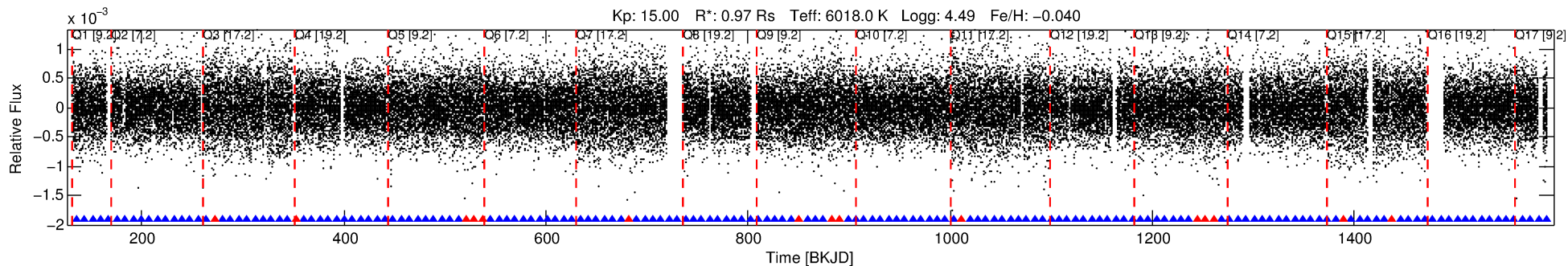
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005956354-01

No Significant Match Found

# DV One-Page Summary

KIC: 5956354 Candidate: 1 of 1 Period: 8.039 d  
KOI: K04726.01 Corr: 0.909



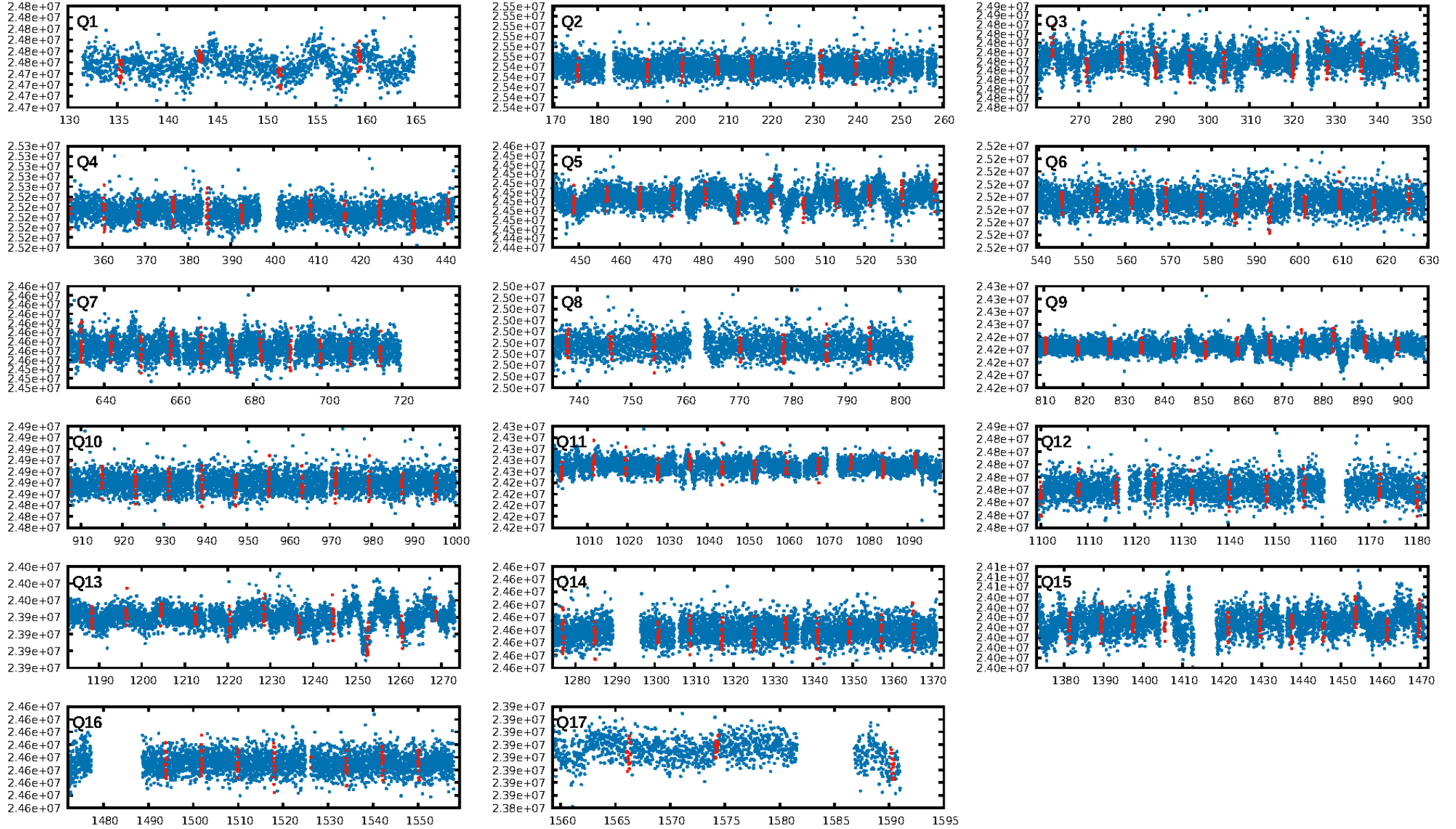
## DV Fit Results:

Period = 8.03878 [0.00007] d  
Epoch = 135.3067 [0.0064] BKJD  
Rp/R\* = 0.0131 [0.0043]  
a/R\* = 6.84 [11.23]  
b = 0.91 [0.30]  
Seff = 174.23 [66.55]  
Teq = 926 [88] K  
Rp = 1.39 [0.61] Re  
a = 0.0801 [0.0197] AU  
Ag = 54.55 [46.09] [1.16σ]  
Teff = 3893 [752] K [3.92σ]

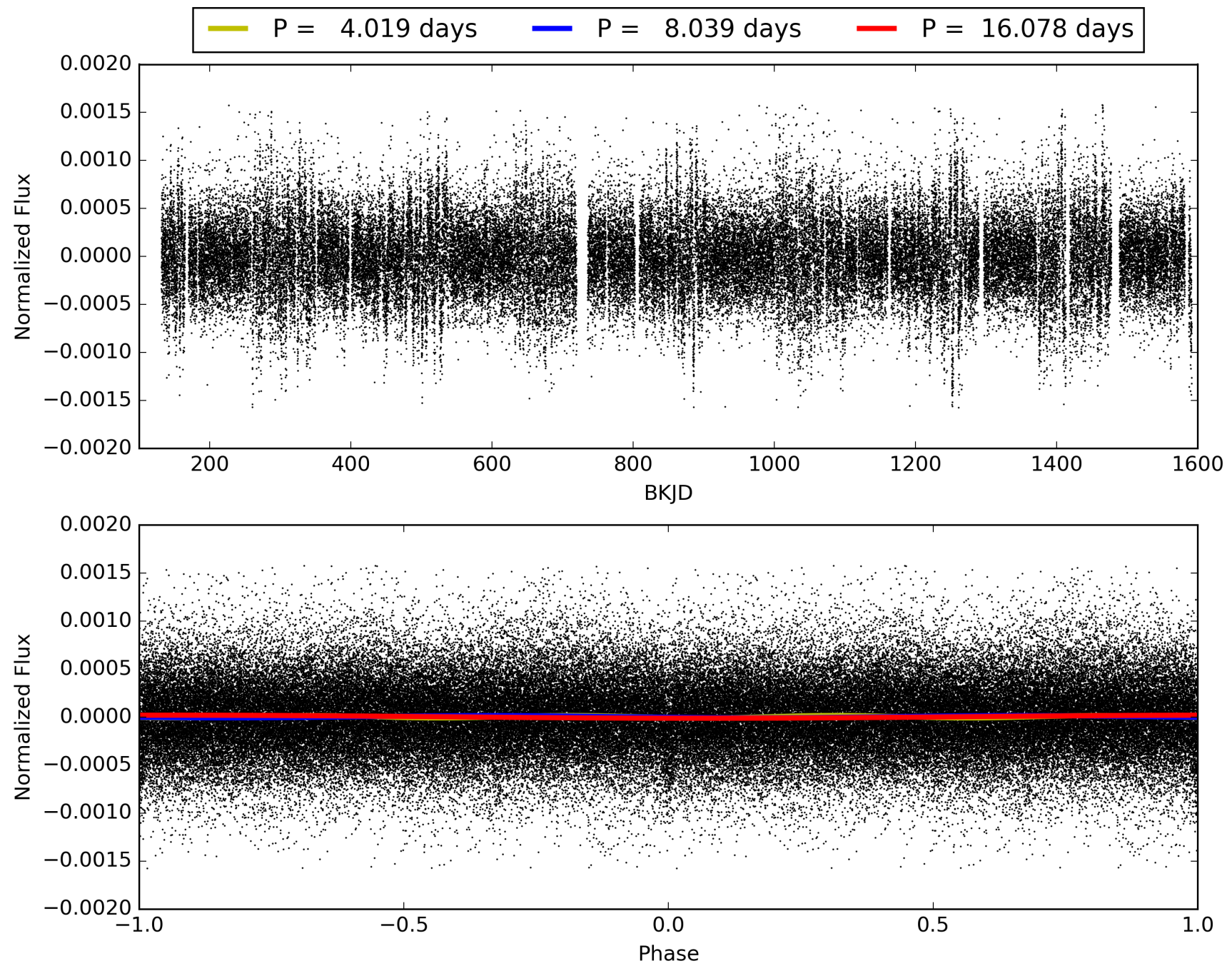
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 70.8%  
ModelChiSquareGoF-sig: 100.0%  
Bootstrap-pfa: 3.32e-25  
RollingBand-fgt: 0.90 [142/157]  
GhostDiagnostic-chr: -0.2568  
Centroid-sig: 0.0%  
Centroid-so: 143.650 arcsec [101.47σ]  
OotOffset-rm: 5.465 arcsec [24.45σ]  
KicOffset-rm: 5.369 arcsec [24.02σ]  
OotOffset-st: 0/0/0/1 [1]  
KicOffset-st: 0/0/0/1 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 005956354-01, PDC Light Curves



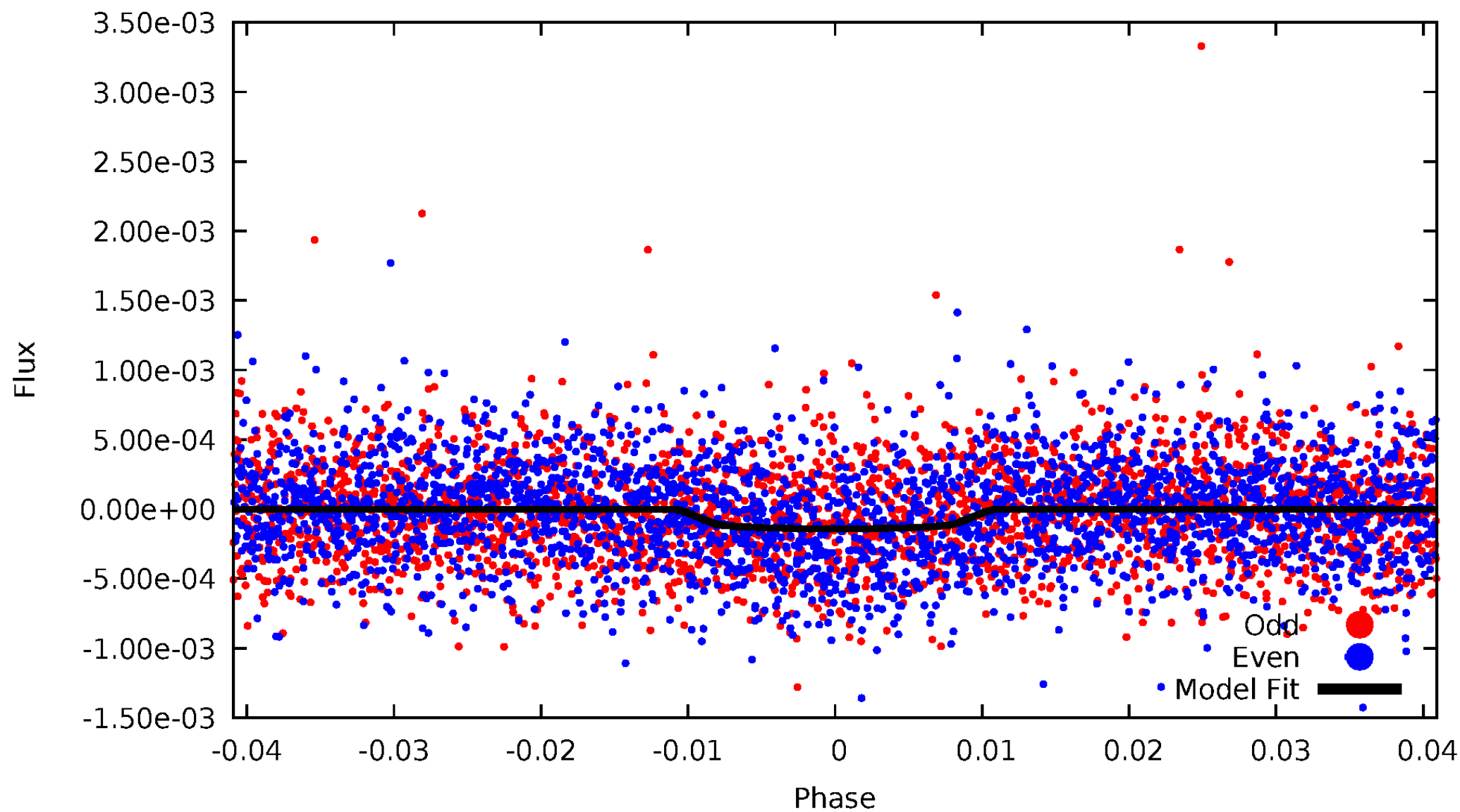
TCE 005956354-01





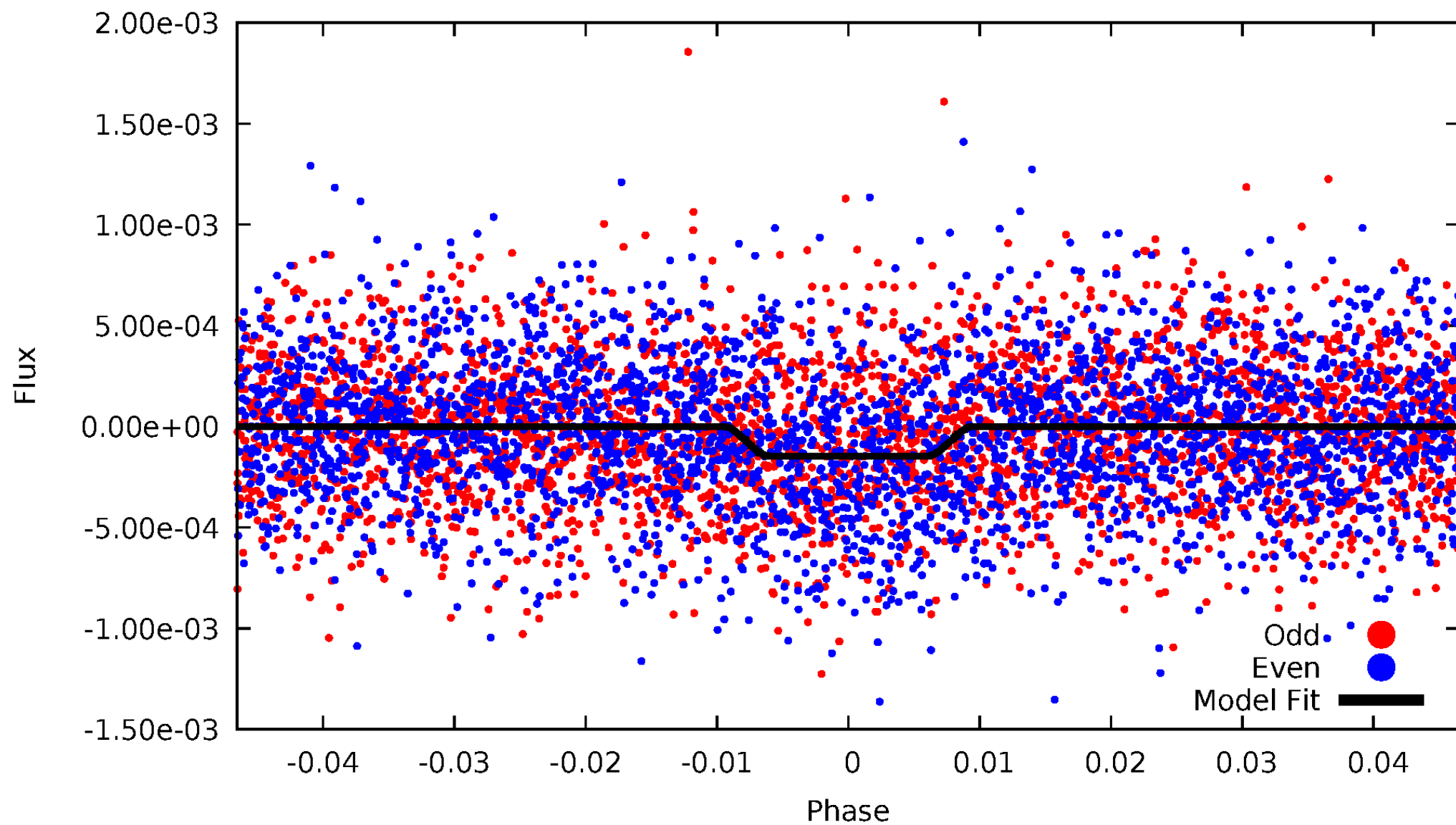
# DV Odd/Even

TCE 005956354-01



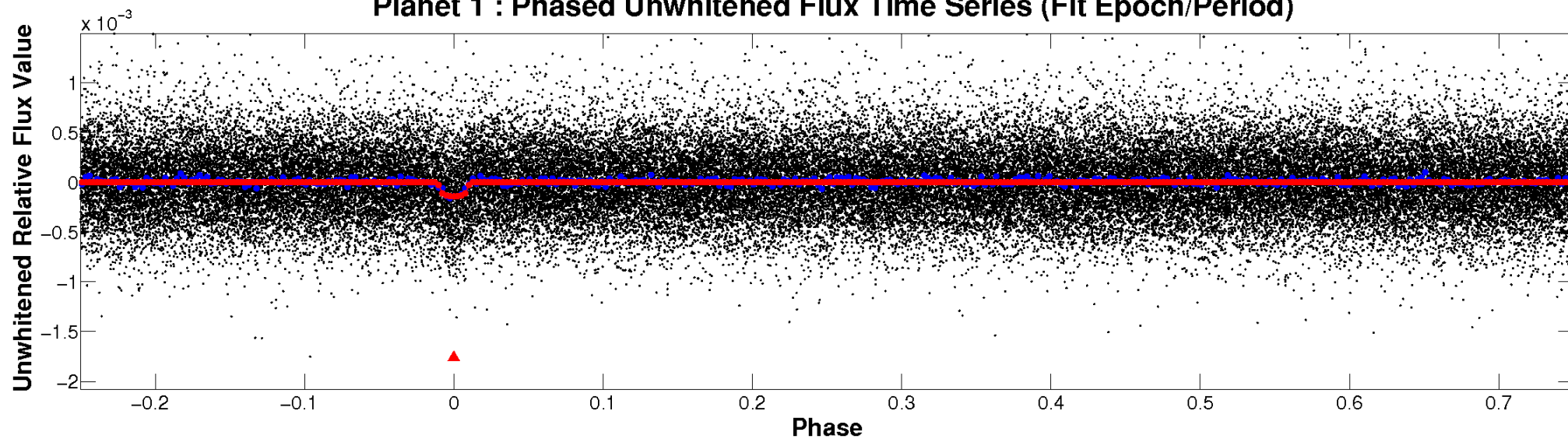
# ALT Odd/Even

TCE 005956354-01

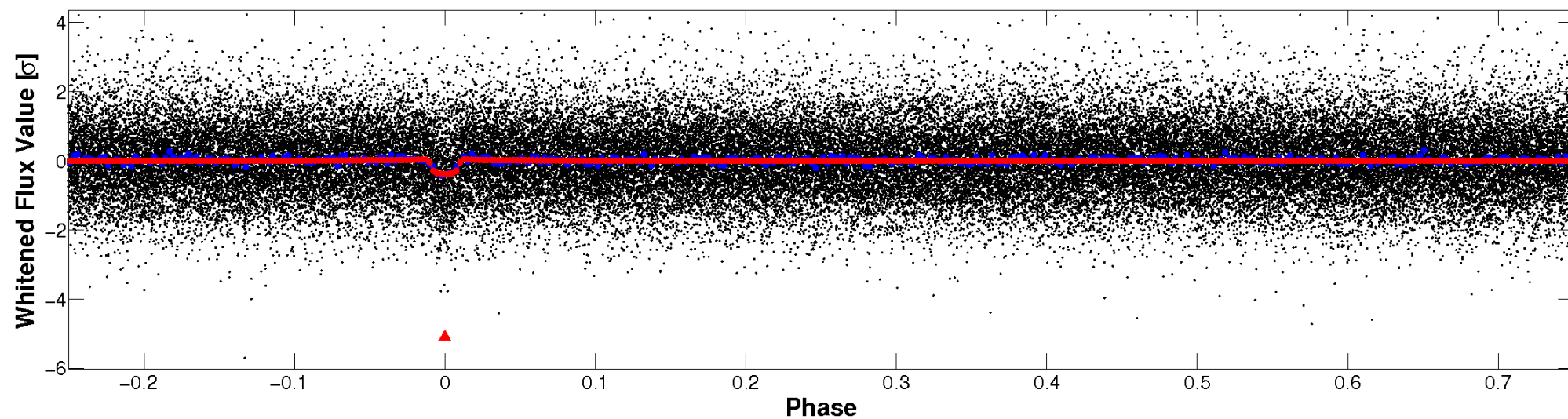


# Non-Whitened Vs. Whitened Light Curve

**Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)**

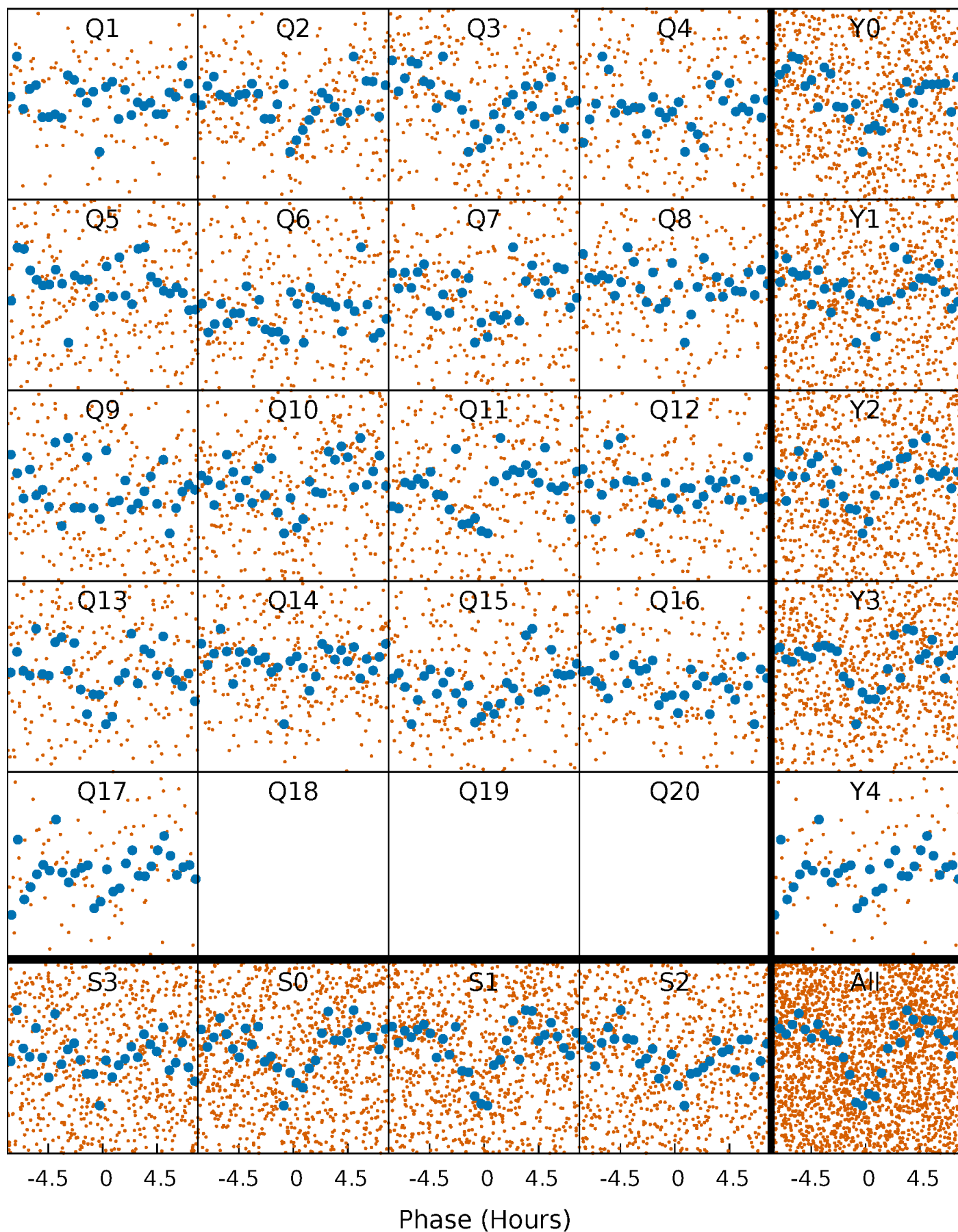


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

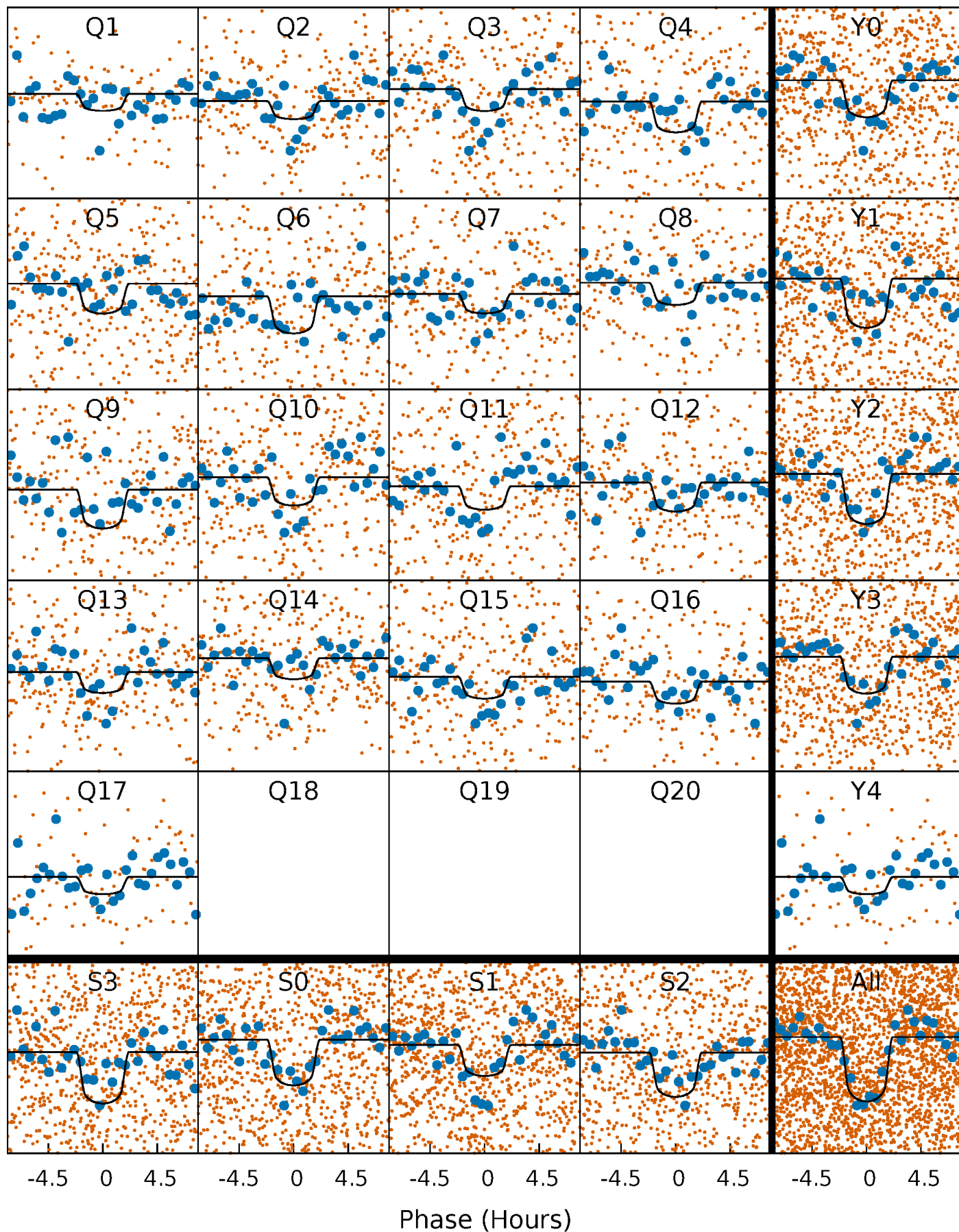
TCE 005956354-01 P= 8.038776 Days  $T_0=135.306658$  (BKJD)





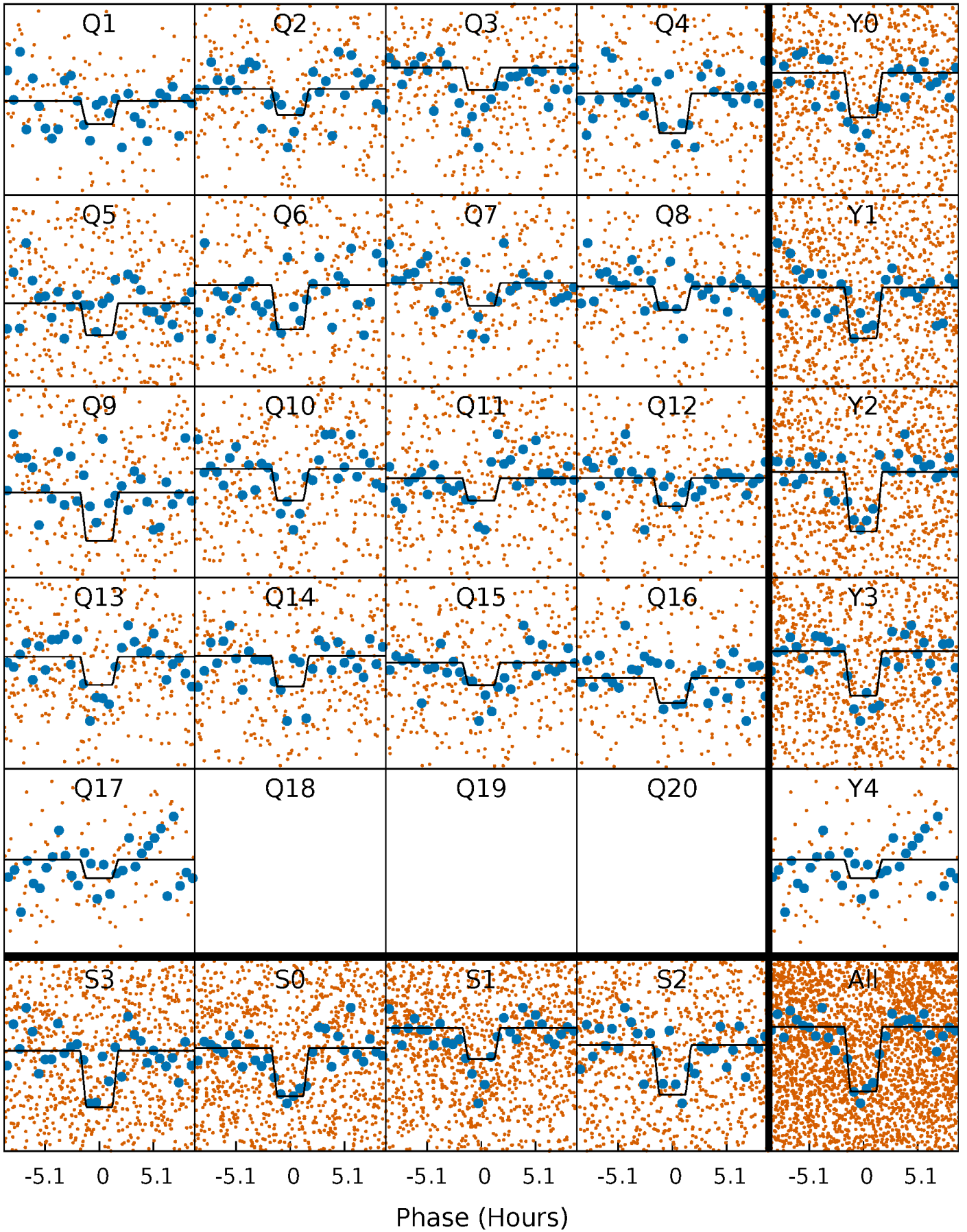
# DV Quarter-Phased Transit Curves

TCE 005956354-01 P= 8.038776 Days  $T_0=135.306658$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

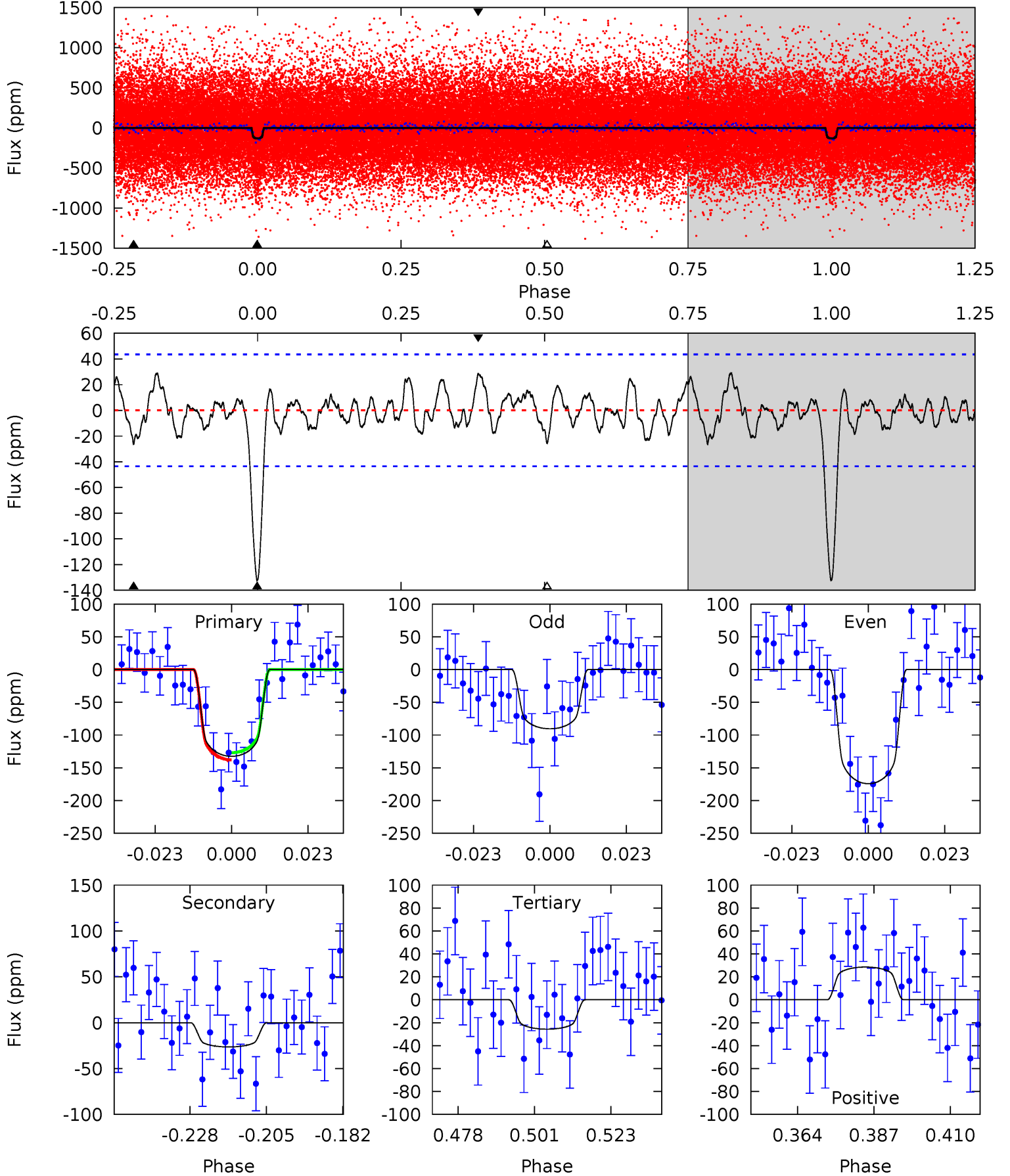
TCE 005956354-01 P= 8.038593 Days  $T_0=135.323144$  (BKJD)



# DV Model-Shift Uniqueness Test

005956354-01, P = 8.038776 Days, E = 127.267882 Days

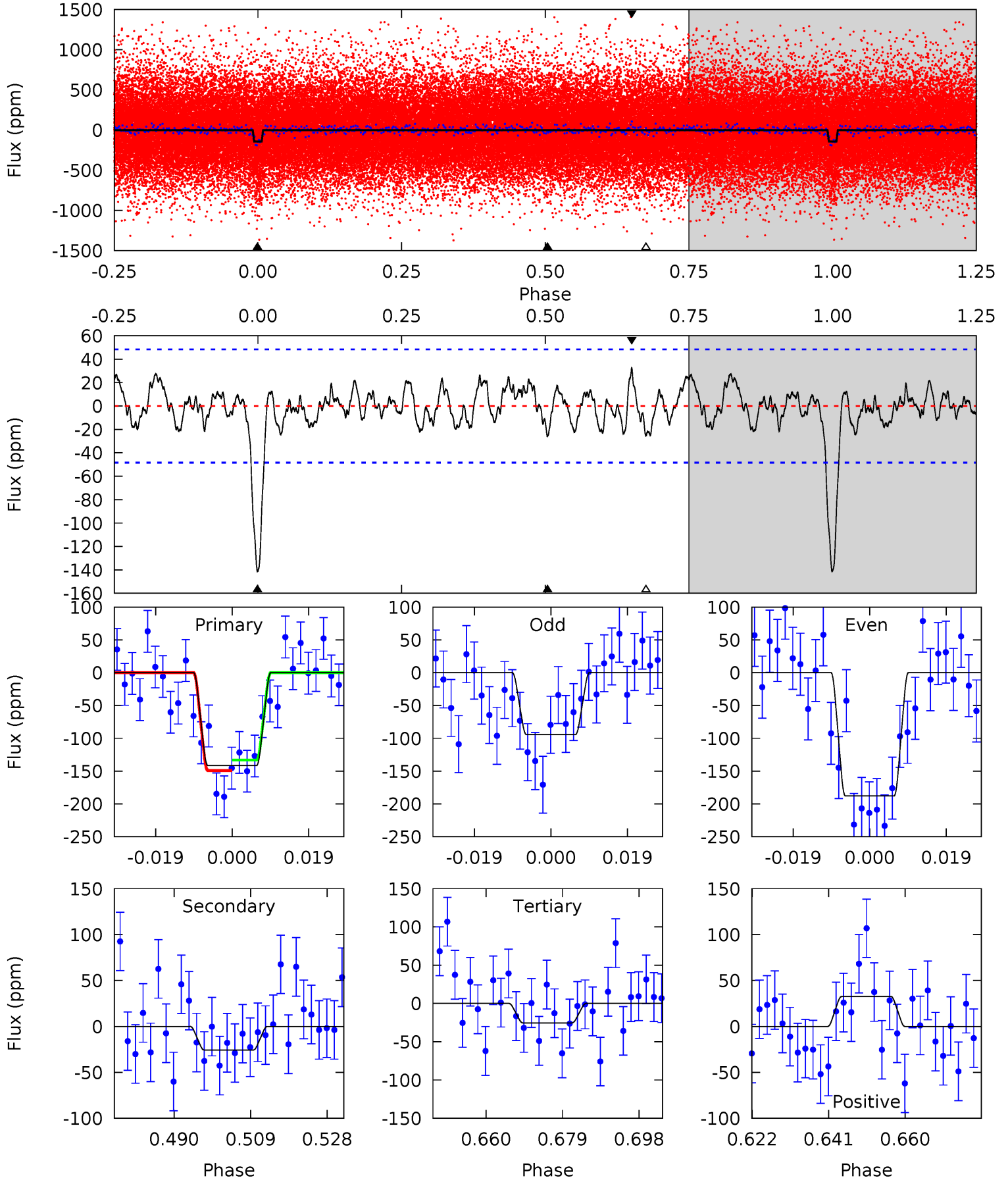
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.8	2.96	2.87	3.19	4.87	2.28	1.28	11.9	11.6	0.09	-0.23	4.68	0.94	0.18	0.61



# Alt Model-Shift Uniqueness Test

005956354-01, P = 8.038593 Days, E = 127.284551 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
14.3	2.61	2.58	3.31	4.90	2.35	1.25	11.7	11.0	0.03	-0.71	4.72	0.94	0.19	0.81





### Stellar Parameters For KIC 005956354

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6018^{+181}_{-181}$	$4.485^{+0.050}_{-0.200}$	$-0.040^{+0.250}_{-0.300}$	$0.975^{+0.282}_{-0.101}$	$1.058^{+0.134}_{-0.134}$	$1.608^{+0.417}_{-0.841}$
	+3%/-3%	+1%/-4%	+625%/-750%	+29%/-10%	+13%/-13%	+26%/-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 005956354-01 / KOI 4726.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-26 \pm 9$	$1.46^{+0.51}_{-0.49}$	$1324^{+85}_{-63}$	$4036^{+713}_{-451}$	$41^{+58}_{-21}$
Alt.	$-26 \pm 10$	$1.34^{+0.55}_{-0.44}$	$1328^{+93}_{-67}$	$4129^{+782}_{-541}$	$47^{+67}_{-27}$

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

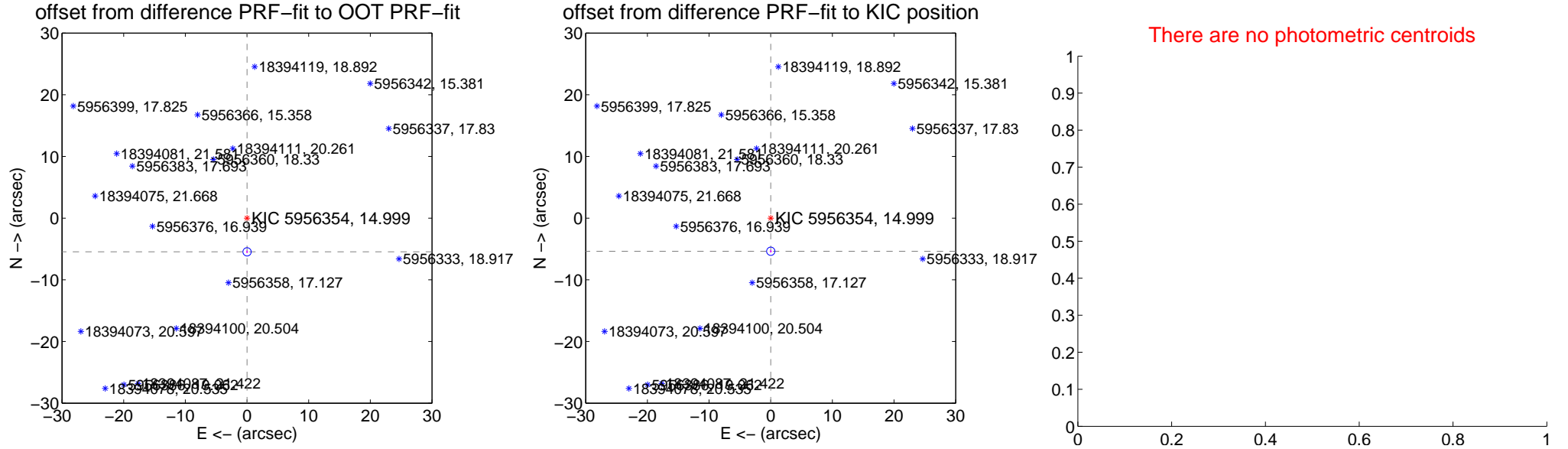
## DV Centroid Data

Supplemental centroid analysis for 005956354-01. Kepler magnitude: 15.00. Transit SNR 11.71

There are 1 quarters with good PRF difference image offsets

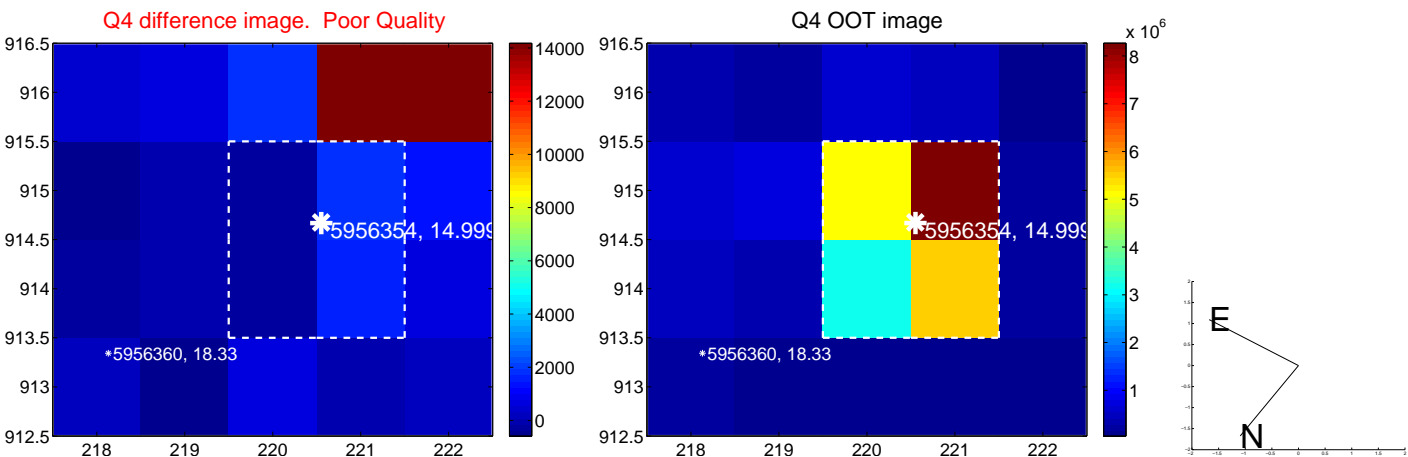
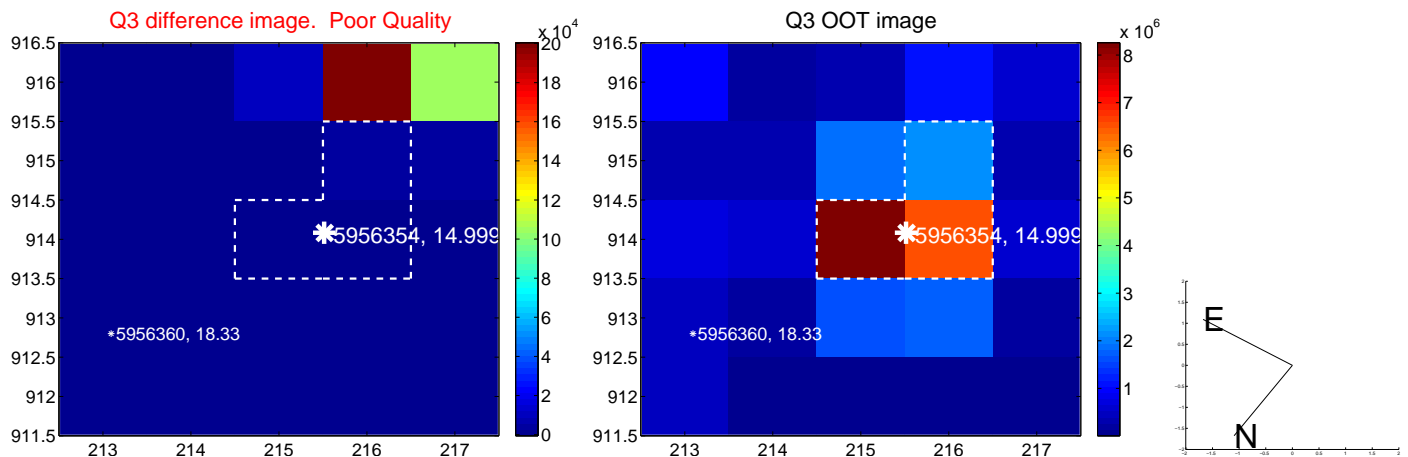
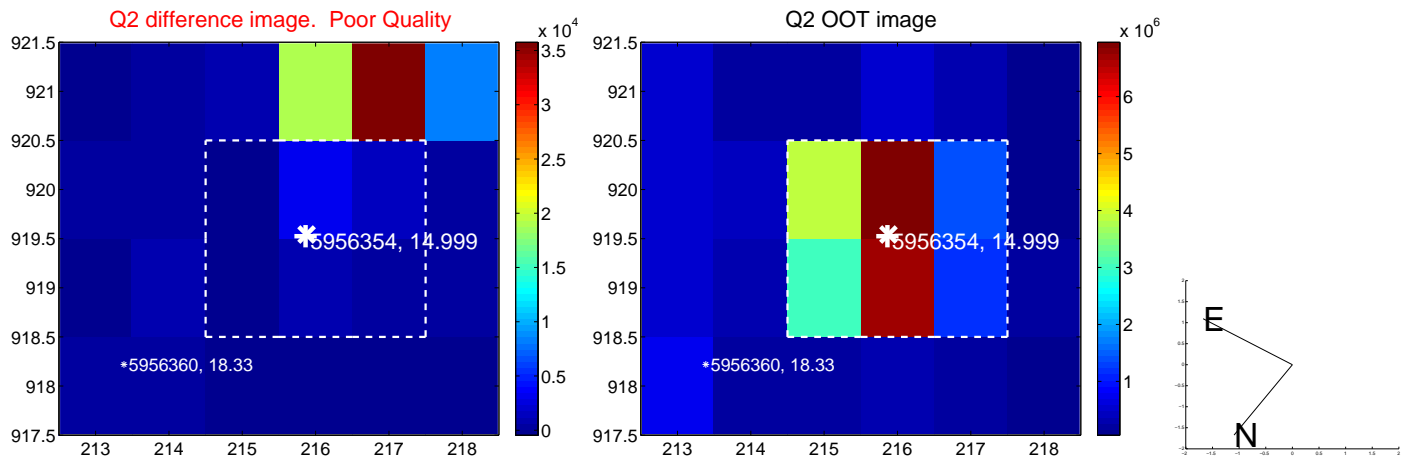
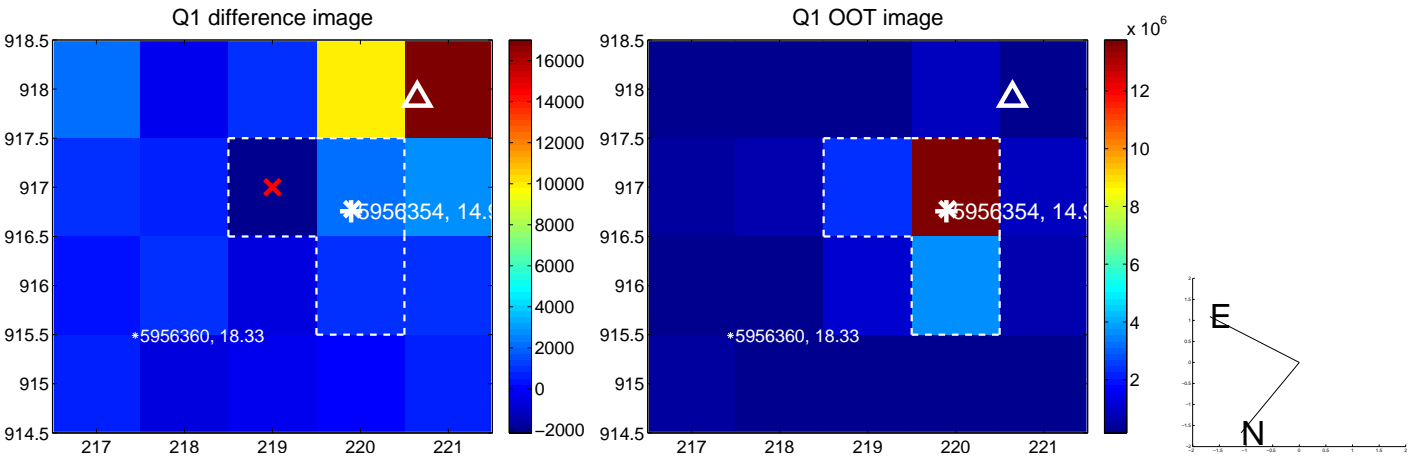
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	5.465 $\pm$ 0.224	24.45	-0.010 $\pm$ 0.157	-5.465 $\pm$ 0.224
PRF-fit source offset from KIC position	5.369 $\pm$ 0.224	24.02	-0.009 $\pm$ 0.157	-5.369 $\pm$ 0.224
photometric centroid source offset	—	—	—	—

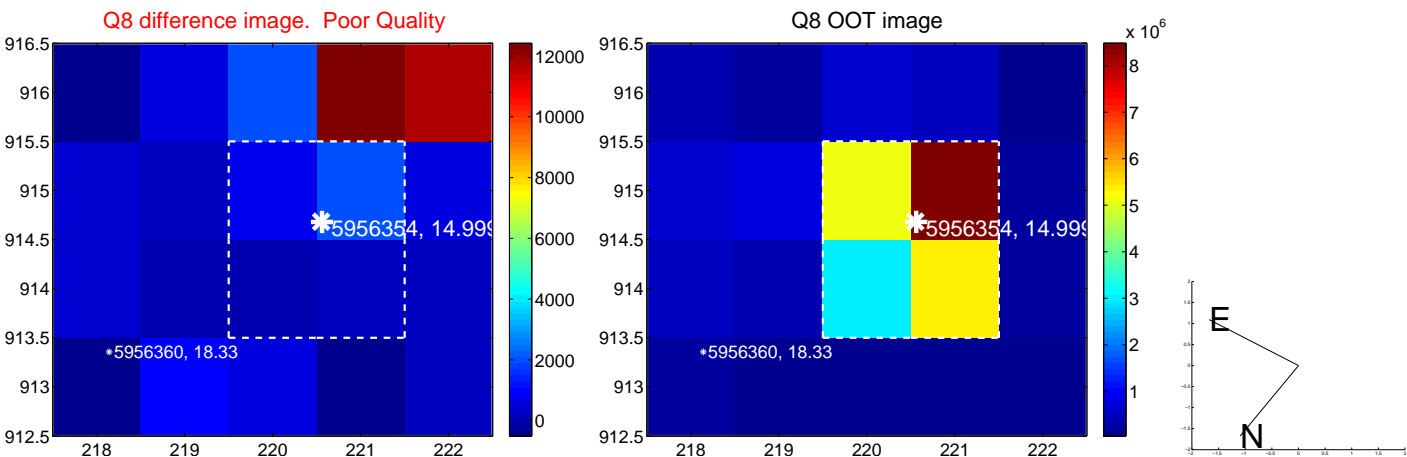
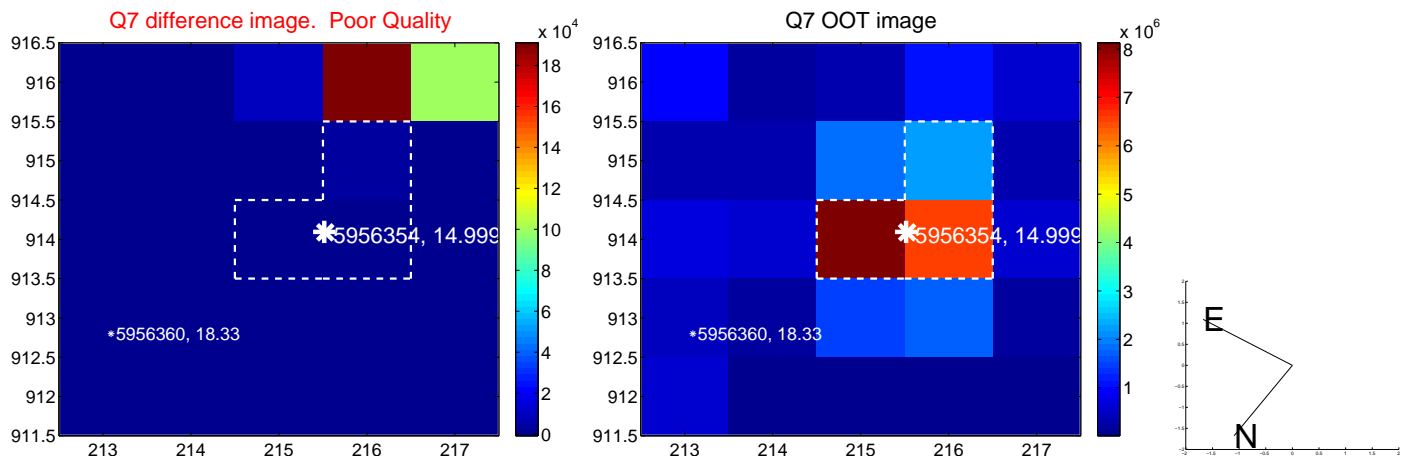
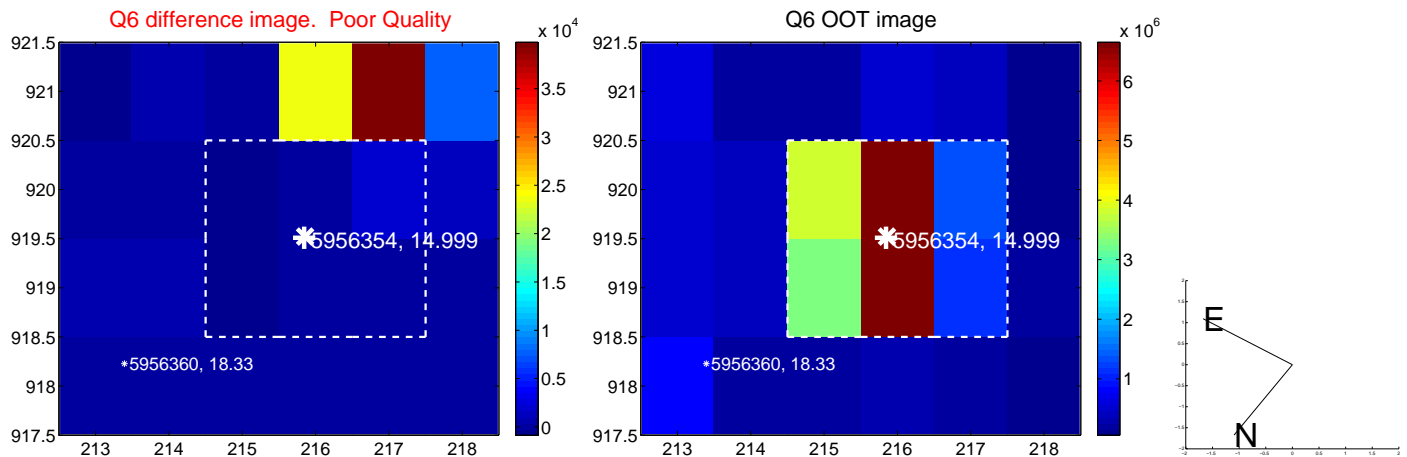
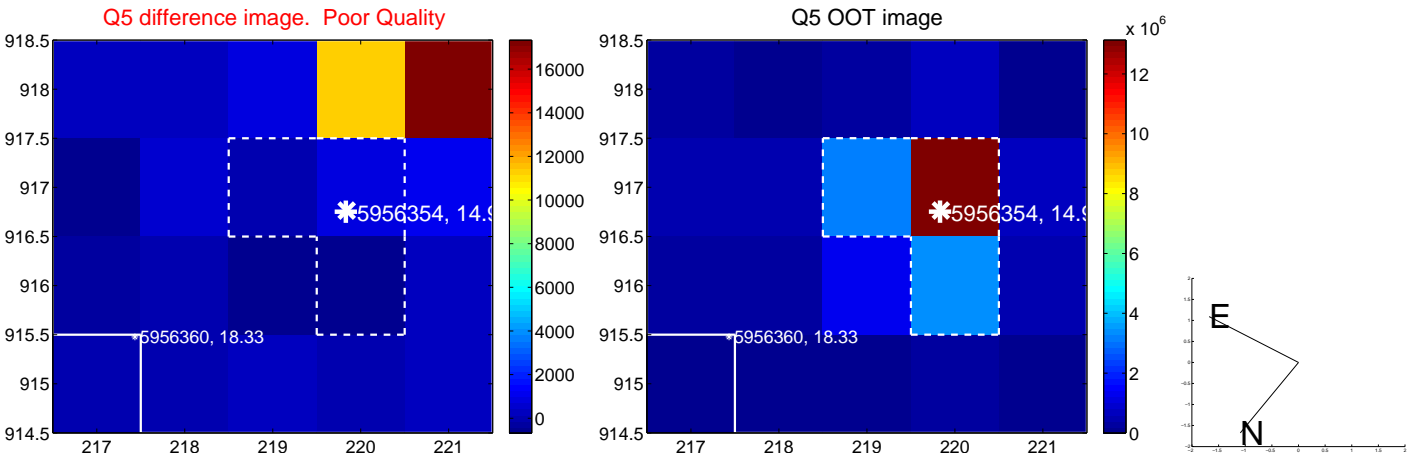


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

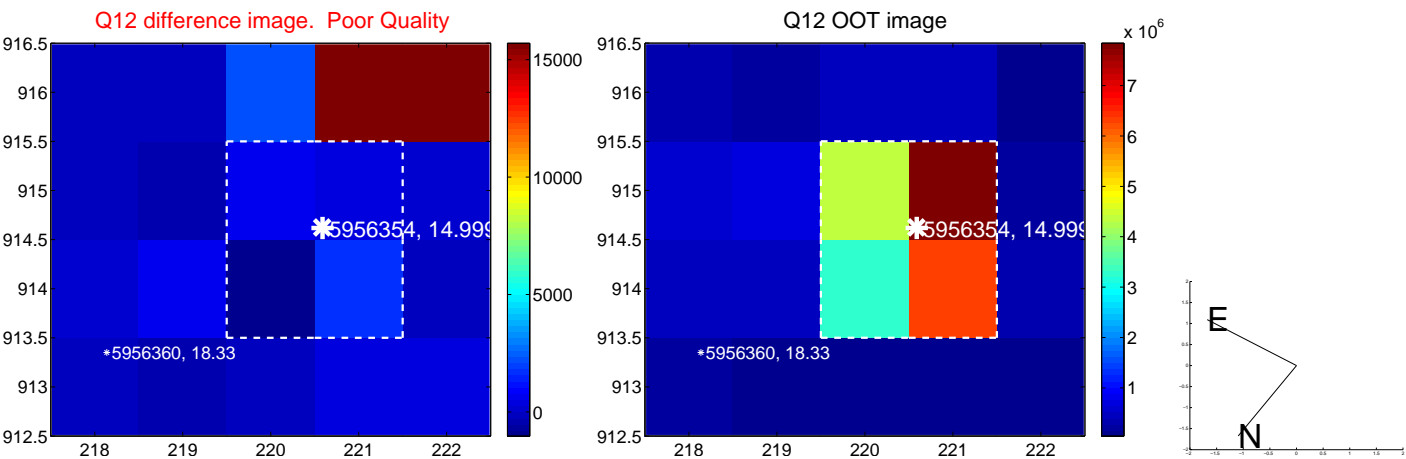
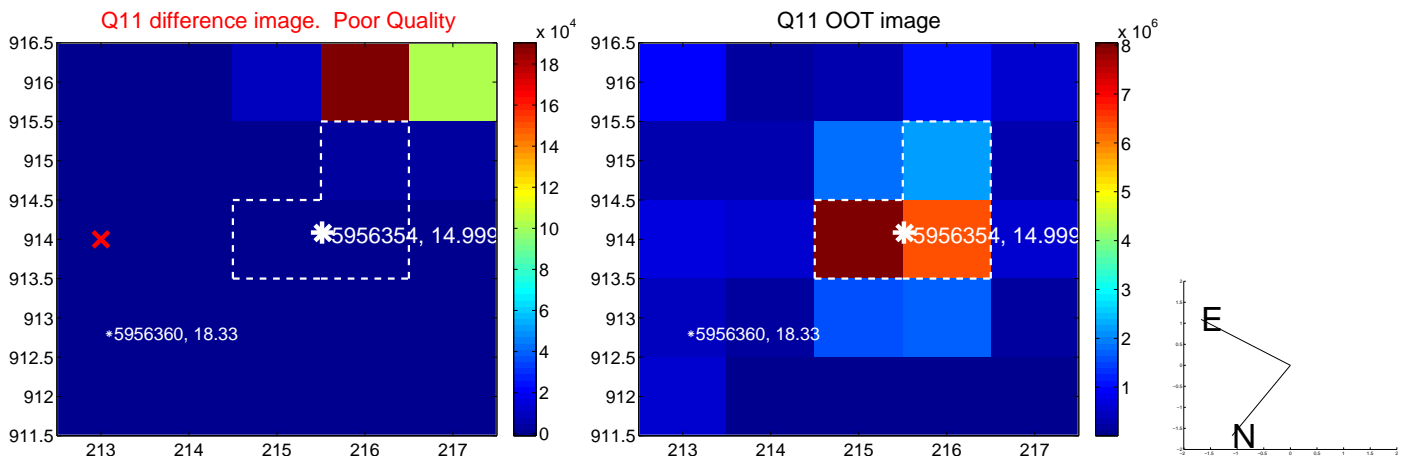
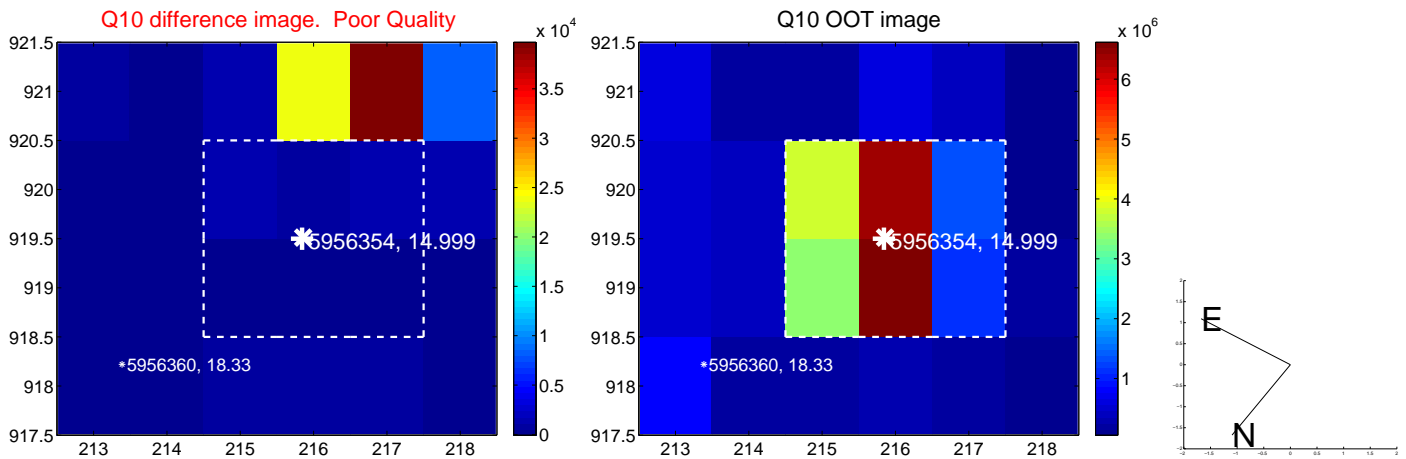
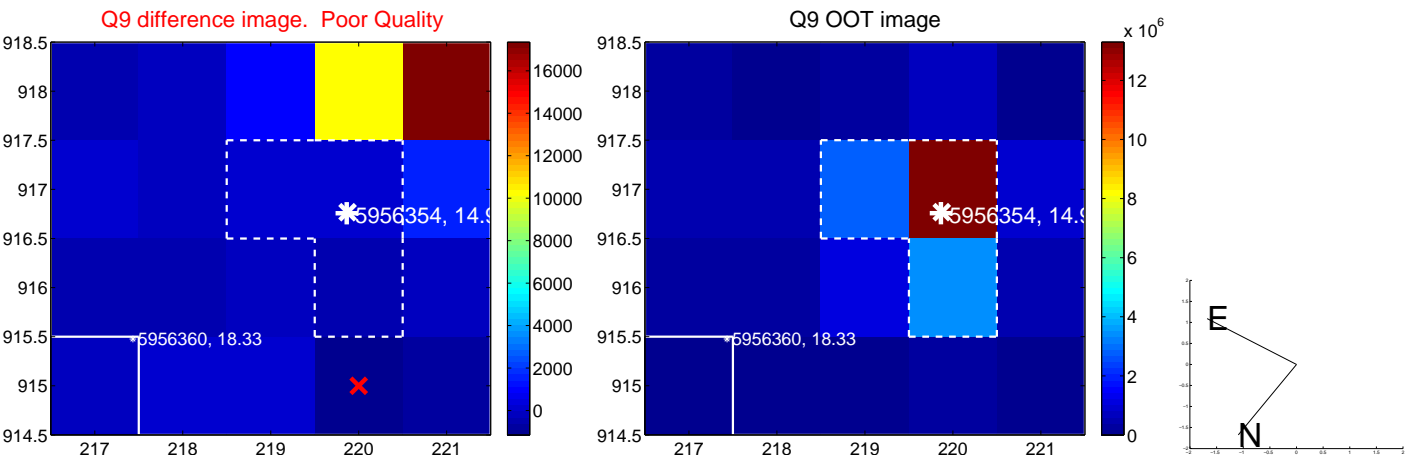


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

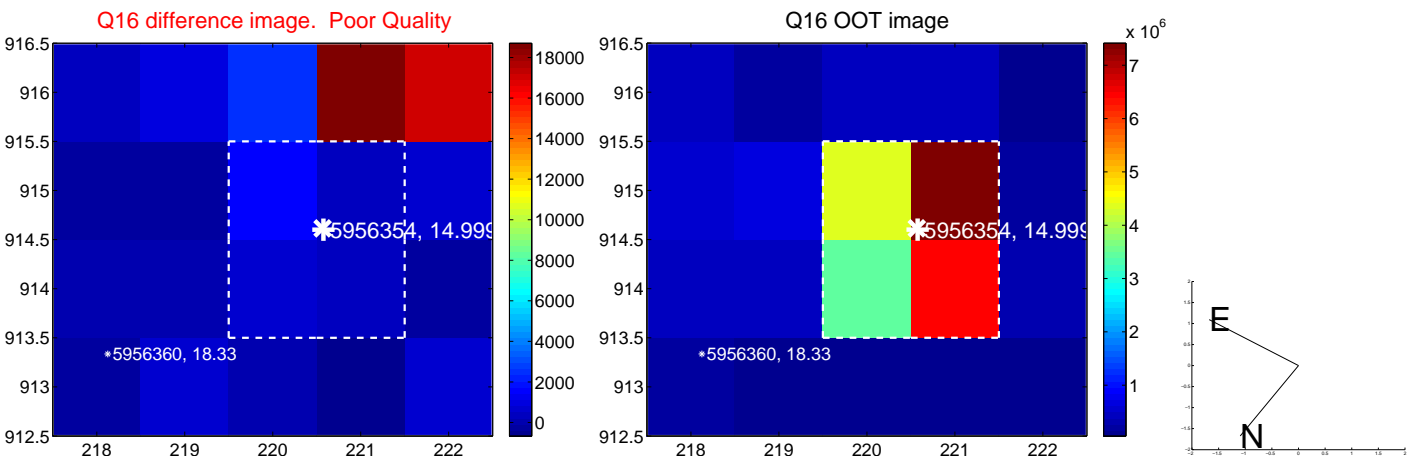
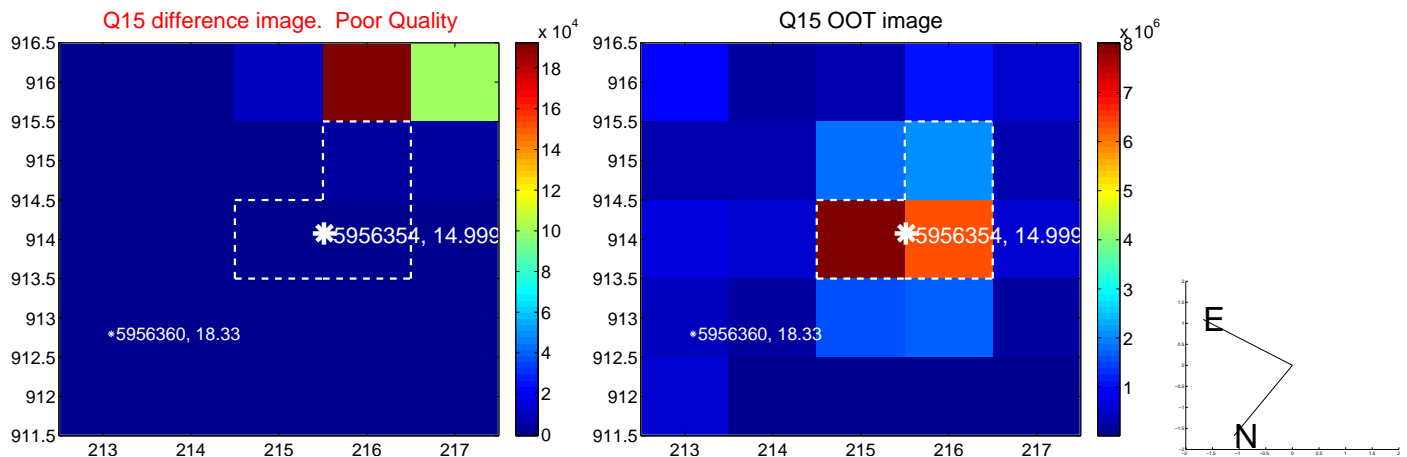
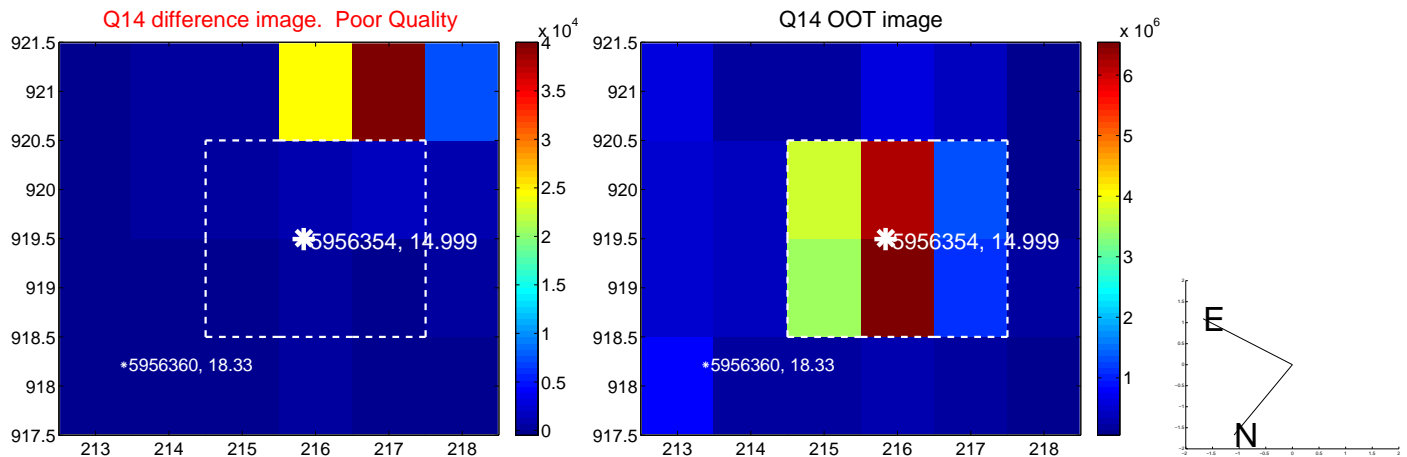
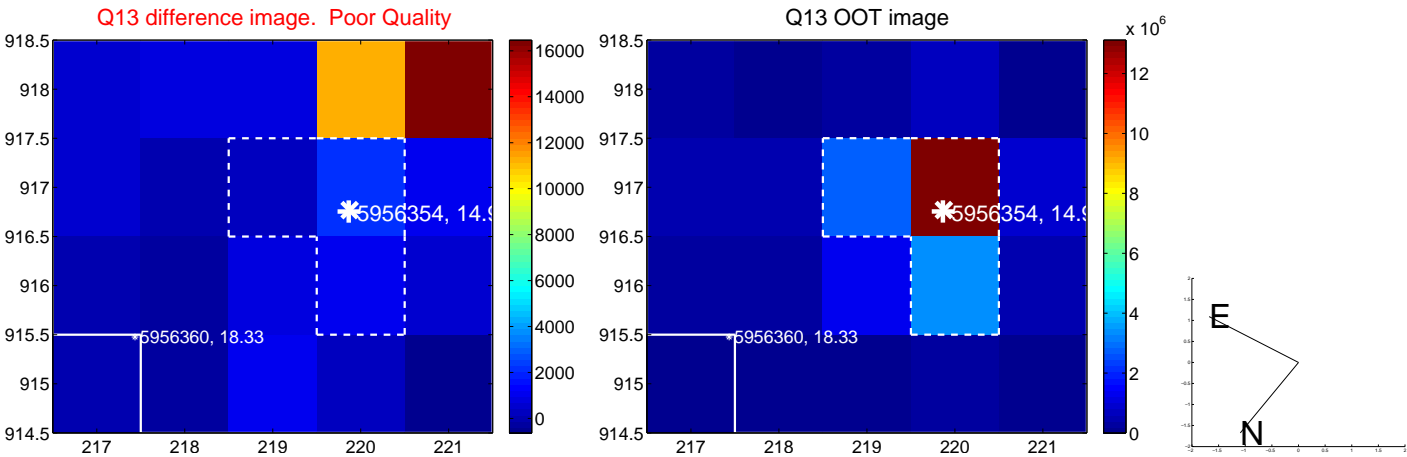




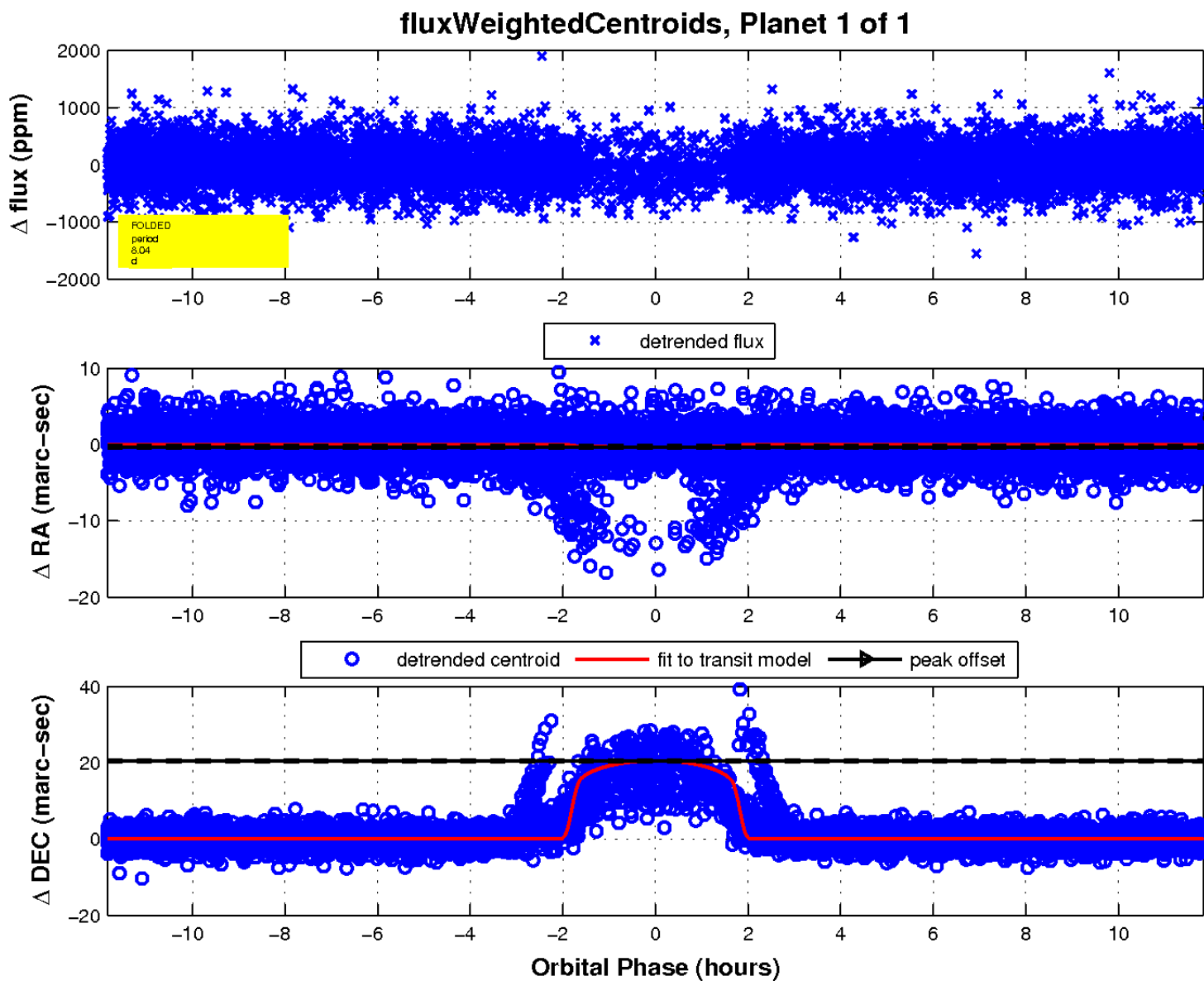
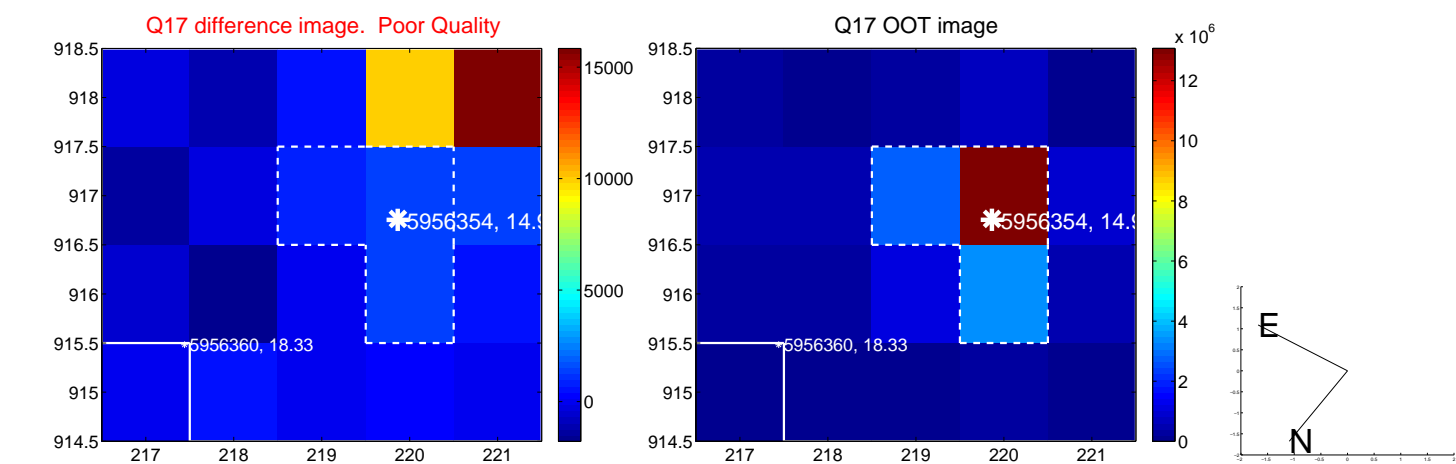
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

Declination

