

# KIC 011153539

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011153539-01	OBS	0762.01	4.498796	135.353946	453.6	3.933	26.5	28.2	0.97	6075	2.33	390.09

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011153539-01	OBS	PC	1.00	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.

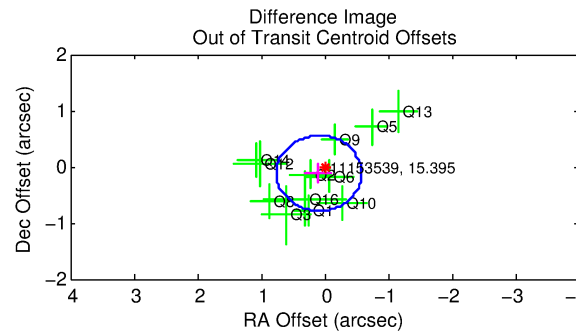
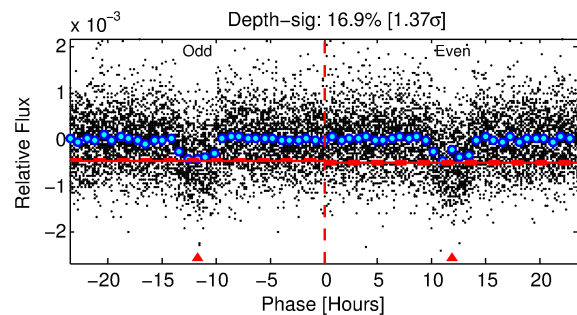
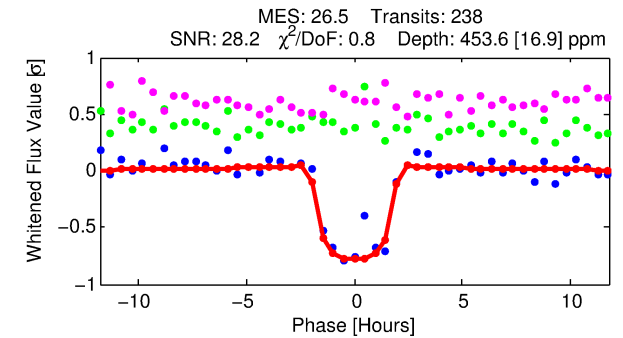
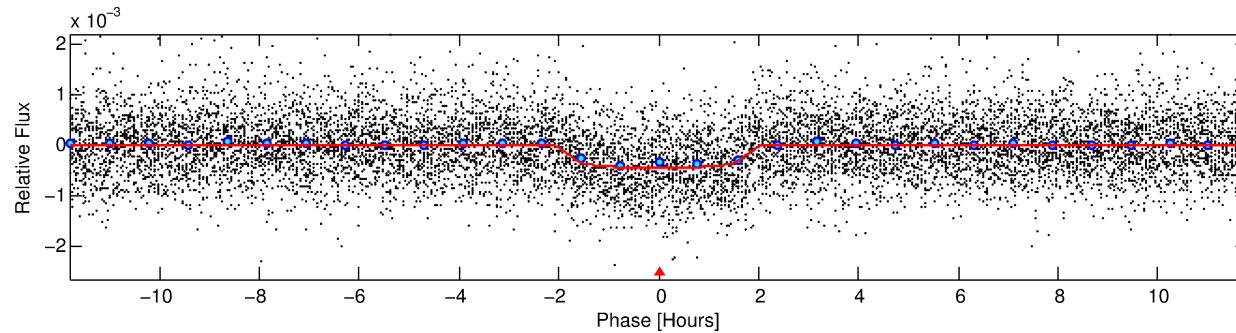
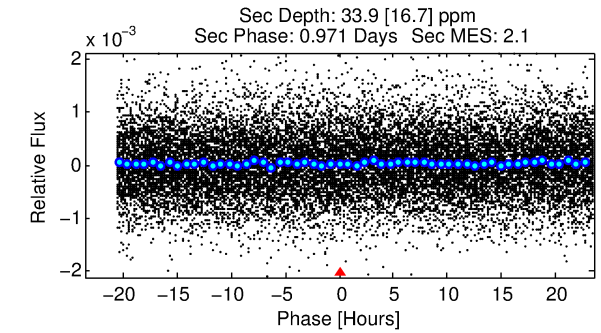
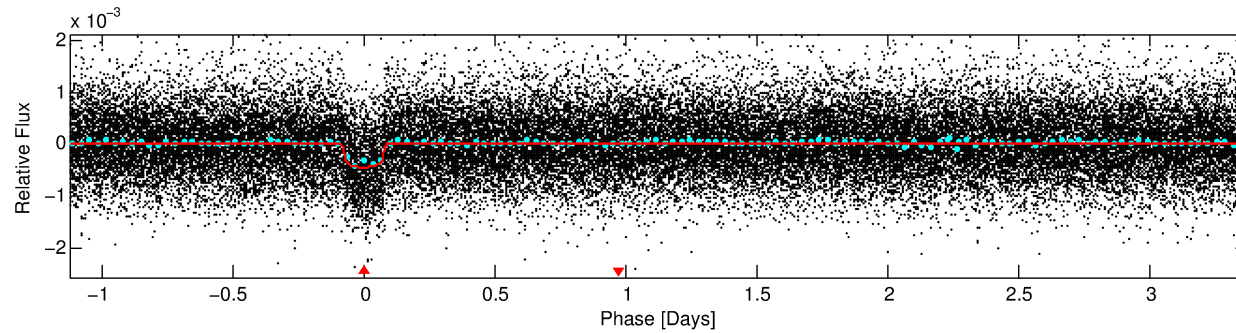
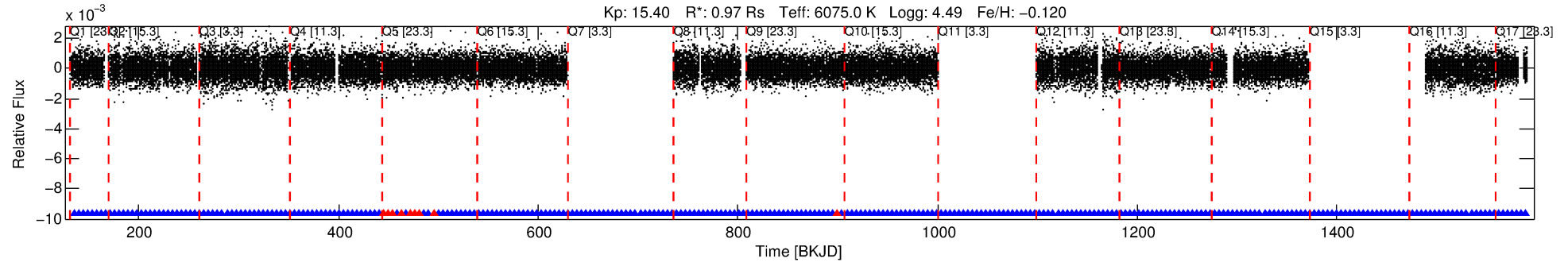
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011153539-01

No Significant Match Found

# DV One-Page Summary

KIC: 11153539 Candidate: 1 of 1 Period: 4.499 d  
KOI: K00762.01 Corr: 0.979



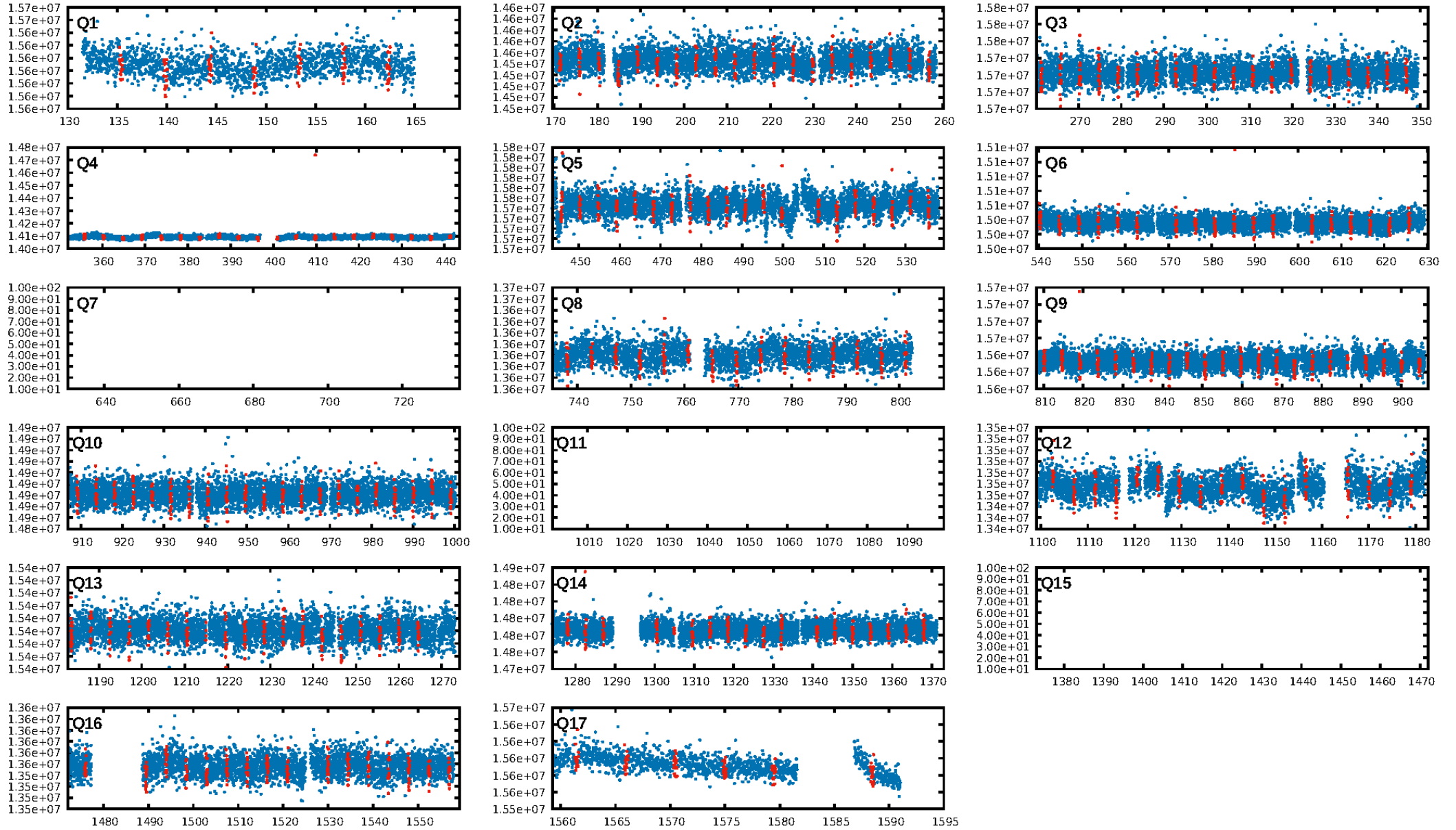
## DV Fit Results:

Period = 4.49880 [0.00001] d  
Epoch = 135.3539 [0.0022] BKJD  
Rp/R\* = 0.0221 [0.0038]  
a/R\* = 5.15 [4.27]  
b = 0.84 [0.30]  
Seff = 390.09 [157.81]  
Teq = 1133 [115] K  
Rp = 2.33 [0.83] Re  
a = 0.0542 [0.0141] AU  
Ag = 10.07 [7.15] [1.27σ]  
Teffp = 3121 [481] K [4.02σ]

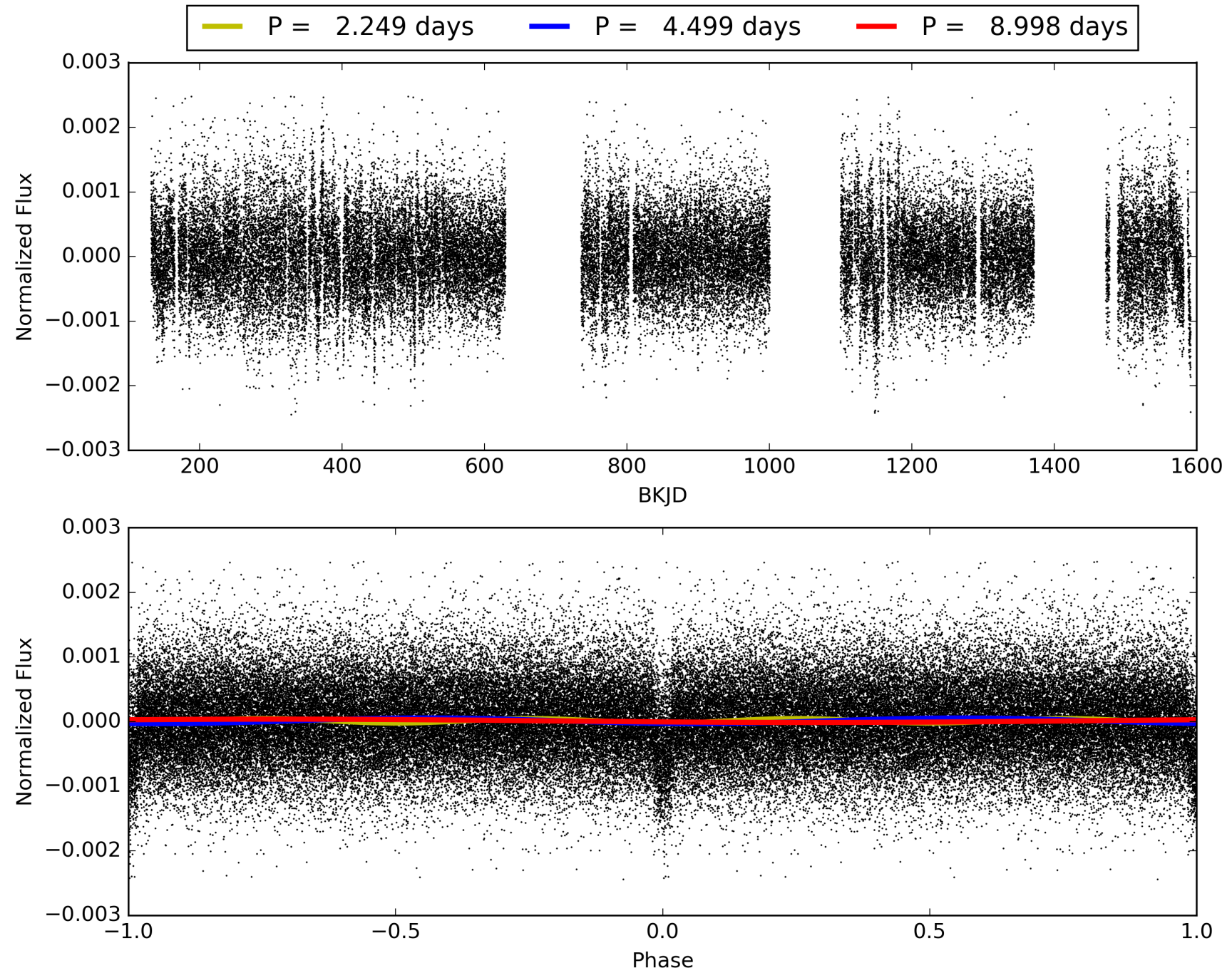
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.64e-151  
RollingBand-fgt: 0.96 [216/225]  
GhostDiagnostic-chr: 2.438  
Centroid-sig: 28.1%  
Centroid-so: 0.991 arcsec [2.13σ]  
OotOffset-rm: 0.148 arcsec [0.66σ]  
KicOffset-rm: 0.189 arcsec [0.77σ]  
OotOffset-st: 4/1/3/4 [12]  
KicOffset-st: 4/1/3/4 [12]  
DiffImageQuality-fgm: 1.00 [12/12]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 011153539-01, PDC Light Curves

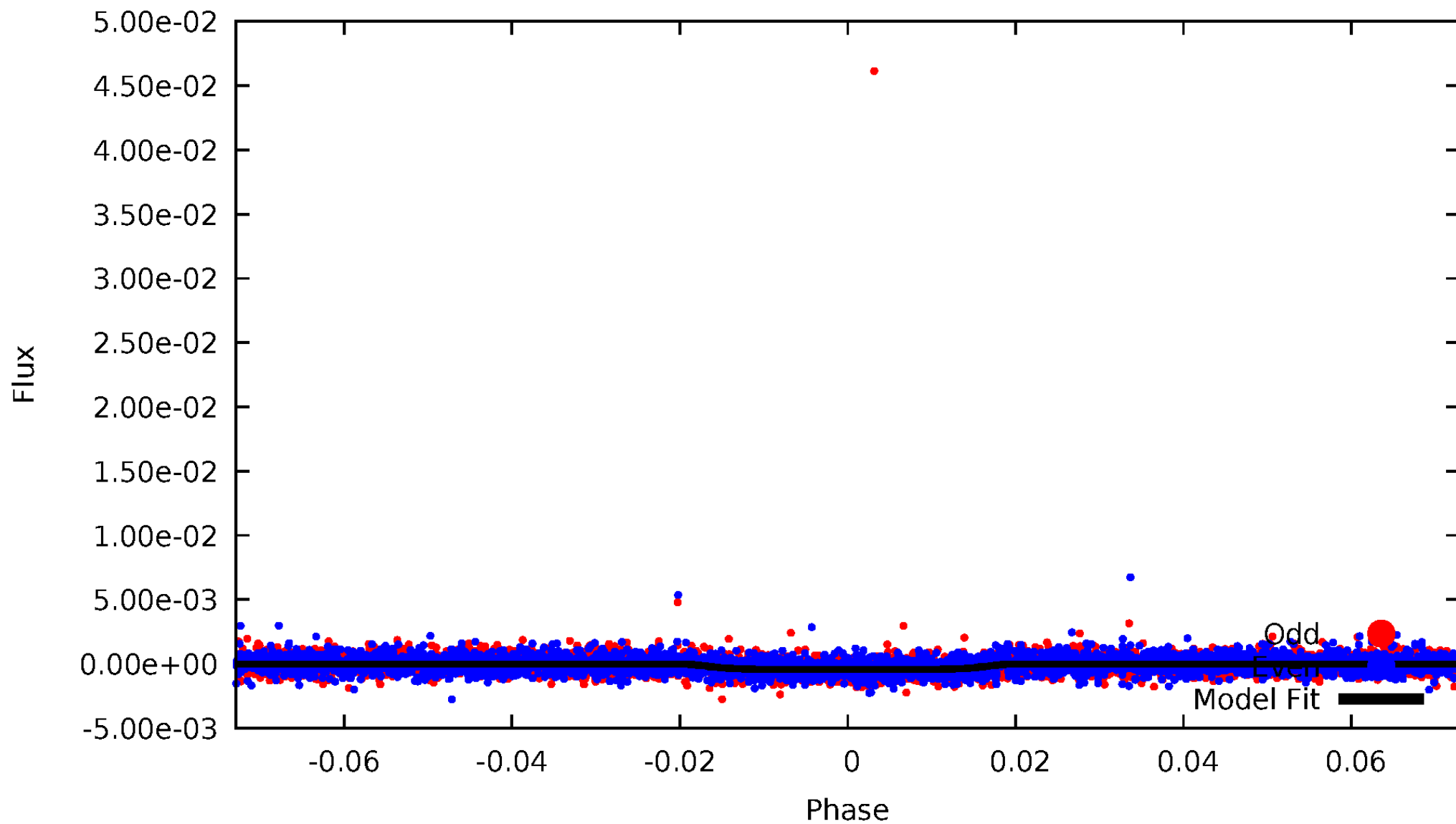


# TCE 011153539-01



# DV Odd/Even

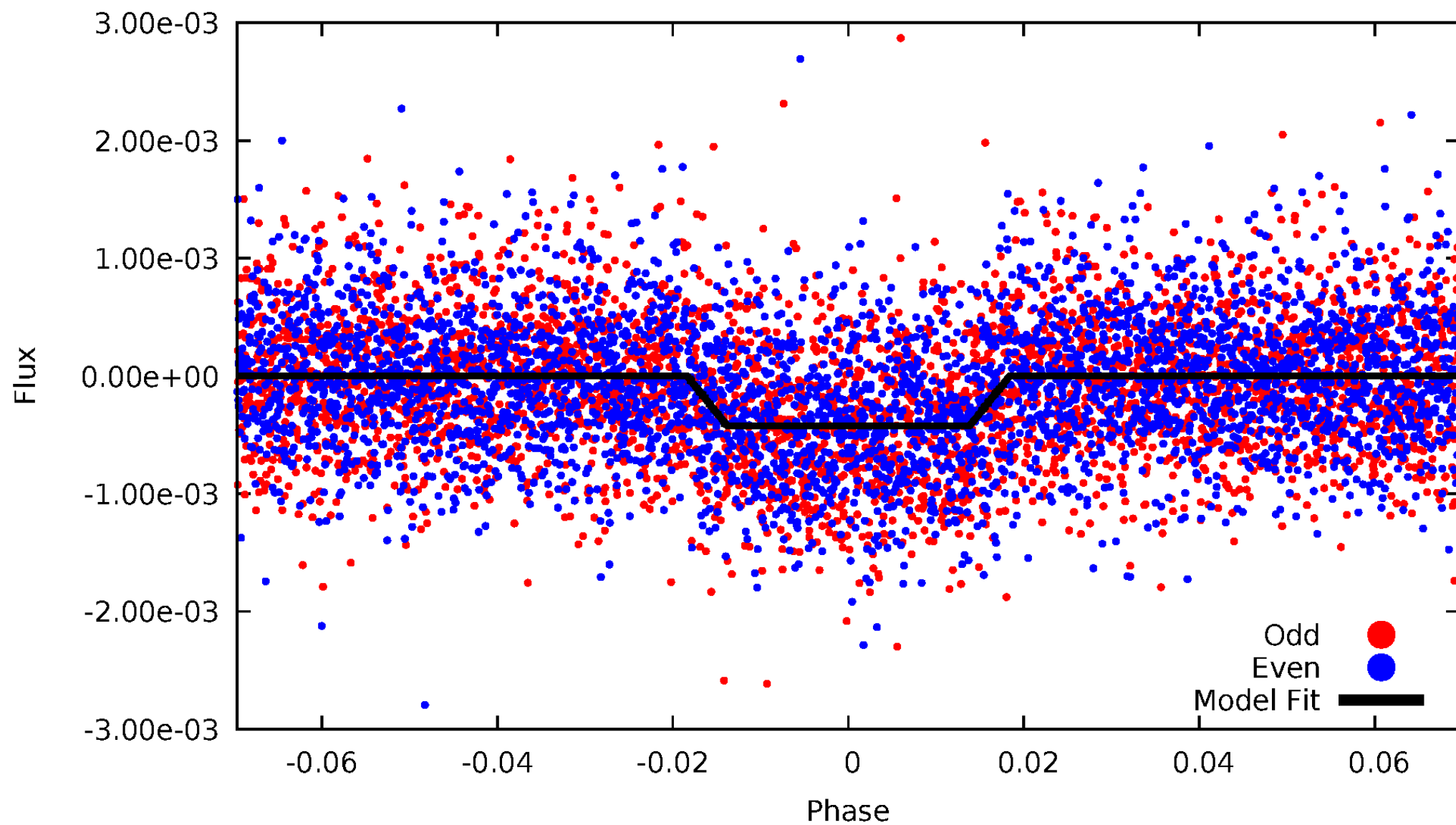
TCE 011153539-01





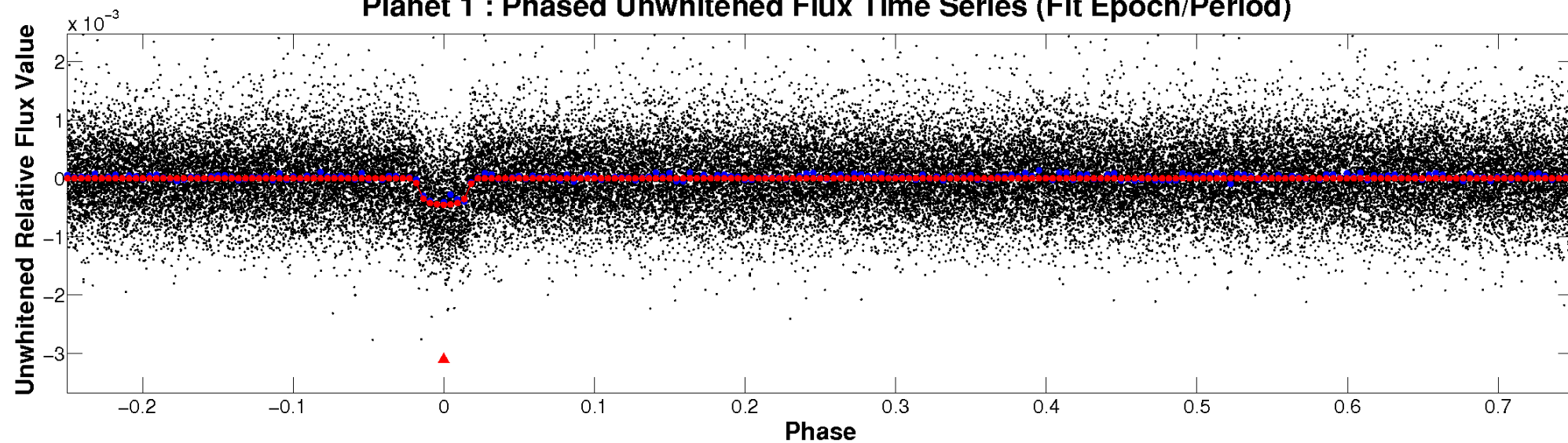
# ALT Odd/Even

TCE 011153539-01

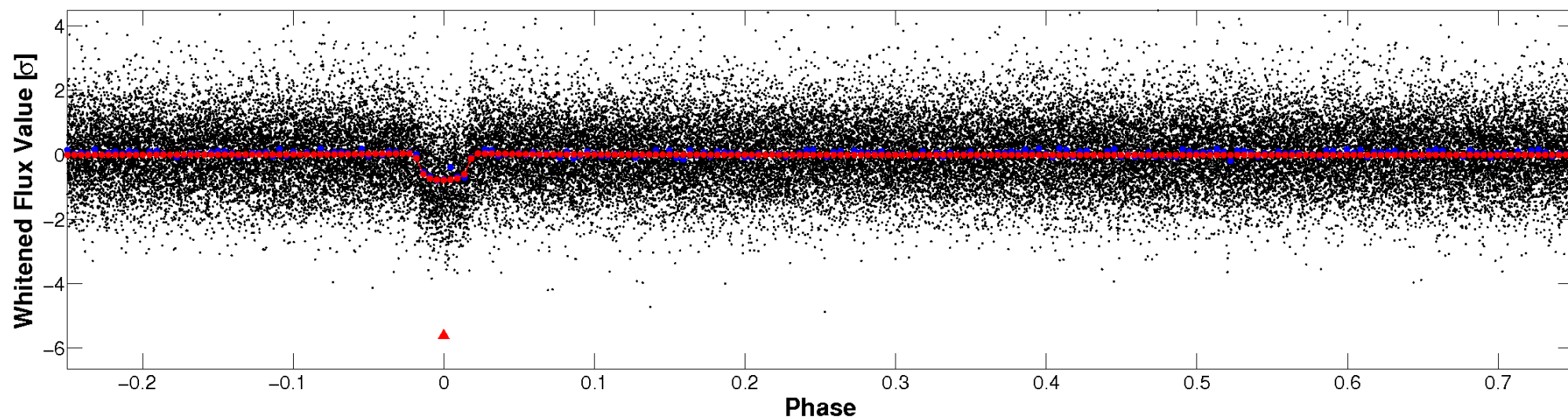


# Non-Whitened Vs. Whitened Light Curve

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

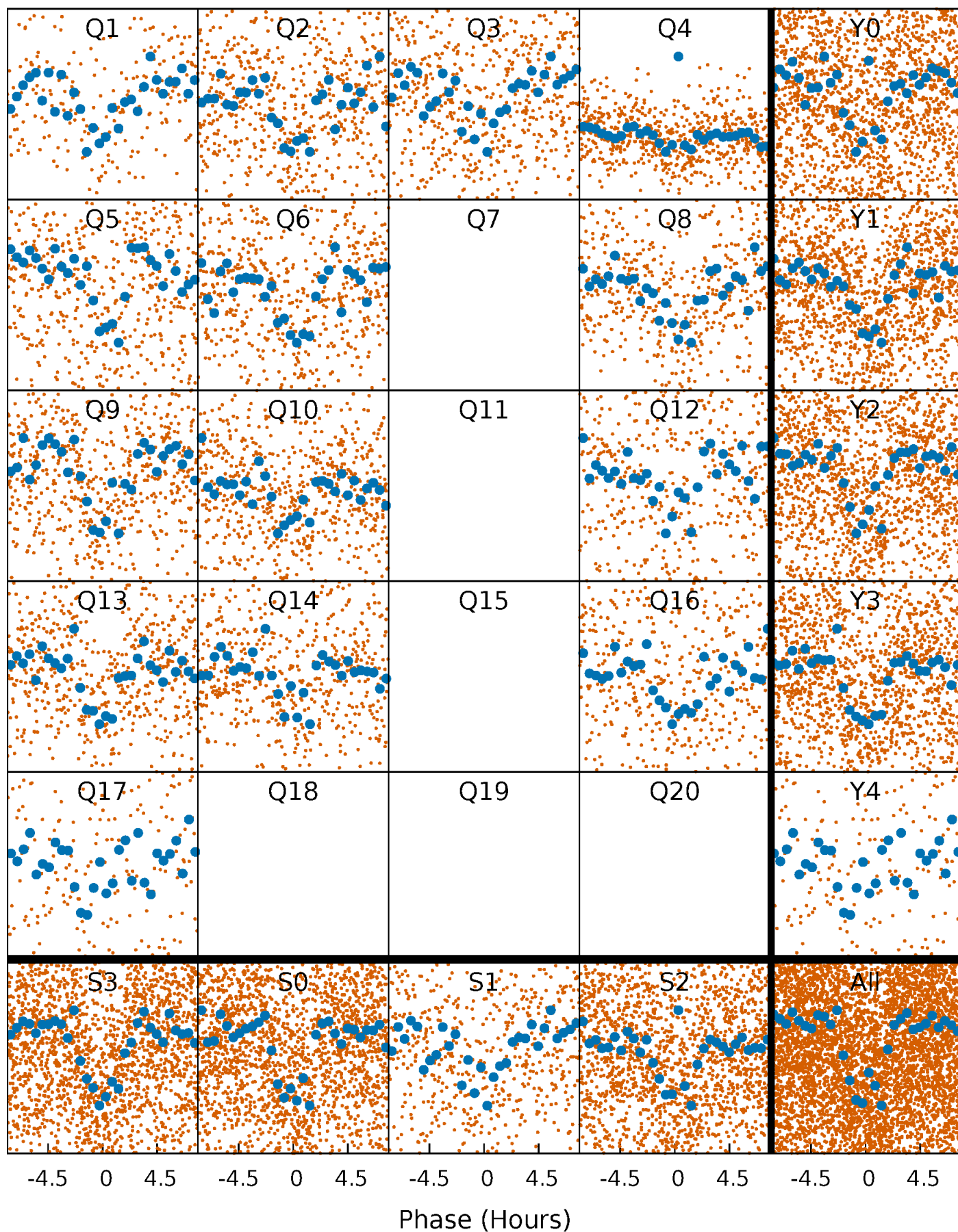


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

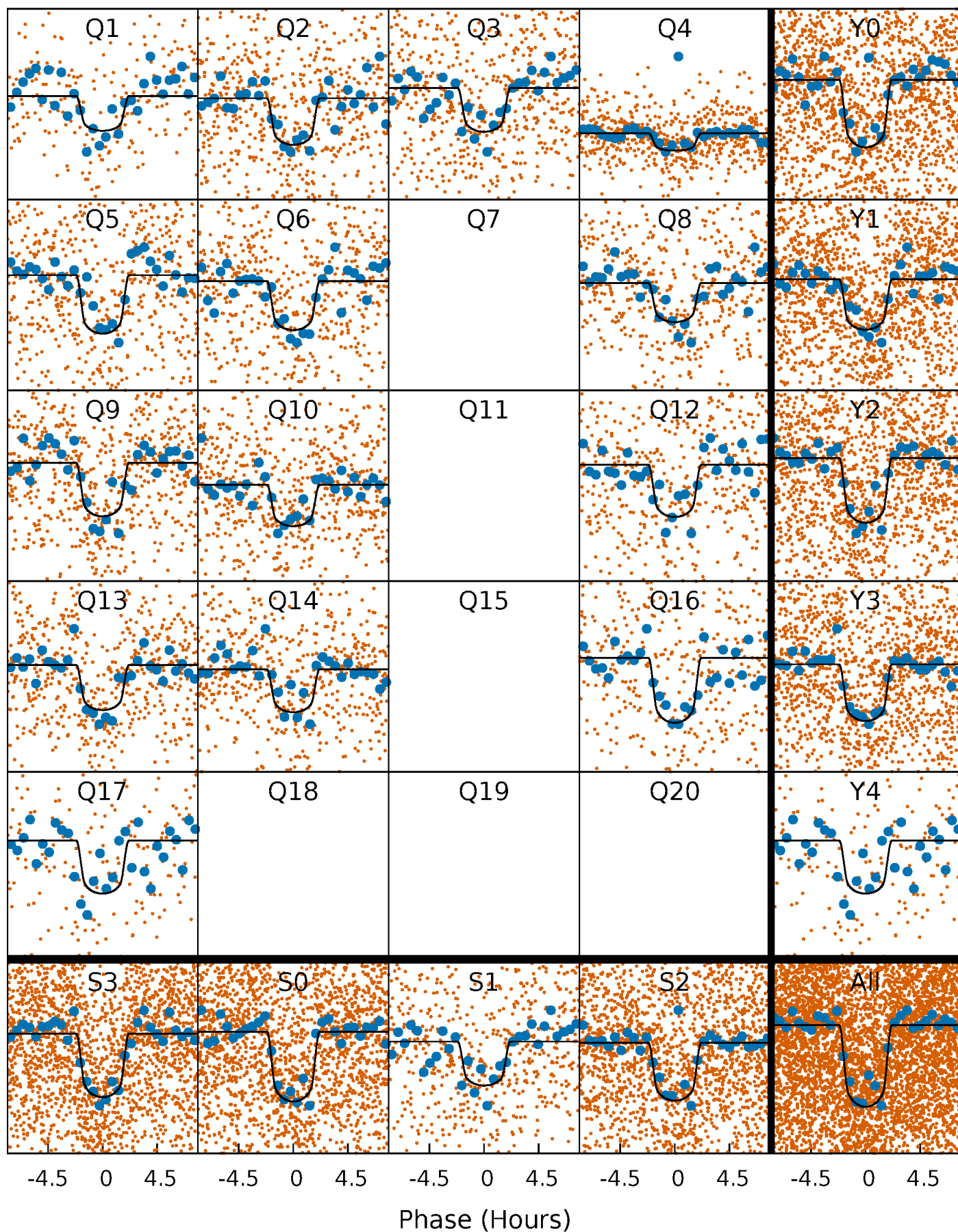
TCE 011153539-01 P= 4.498796 Days  $T_0=135.353946$  (BKJD)





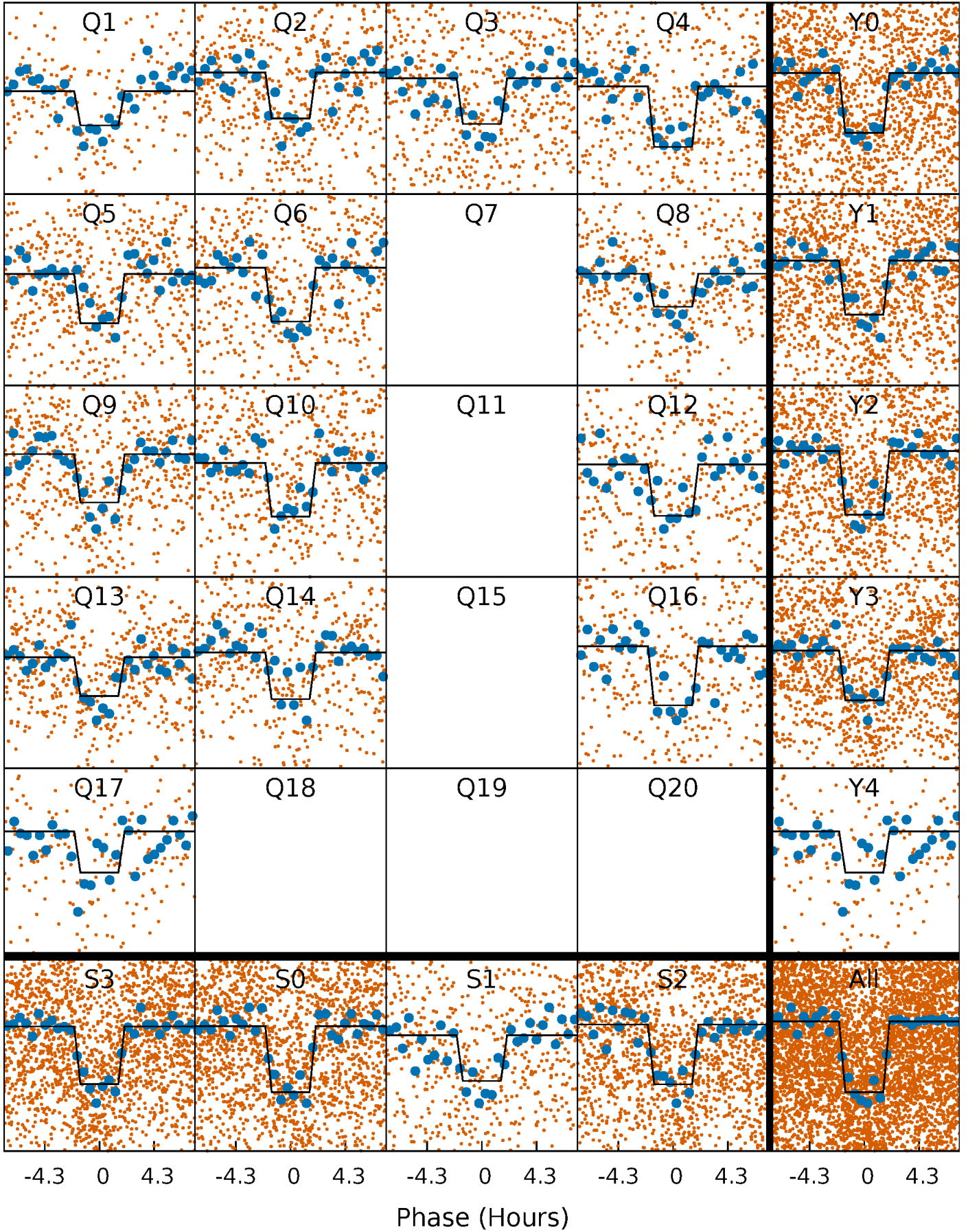
# DV Quarter-Phased Transit Curves

TCE 011153539-01 P= 4.498796 Days  $T_0=135.353946$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

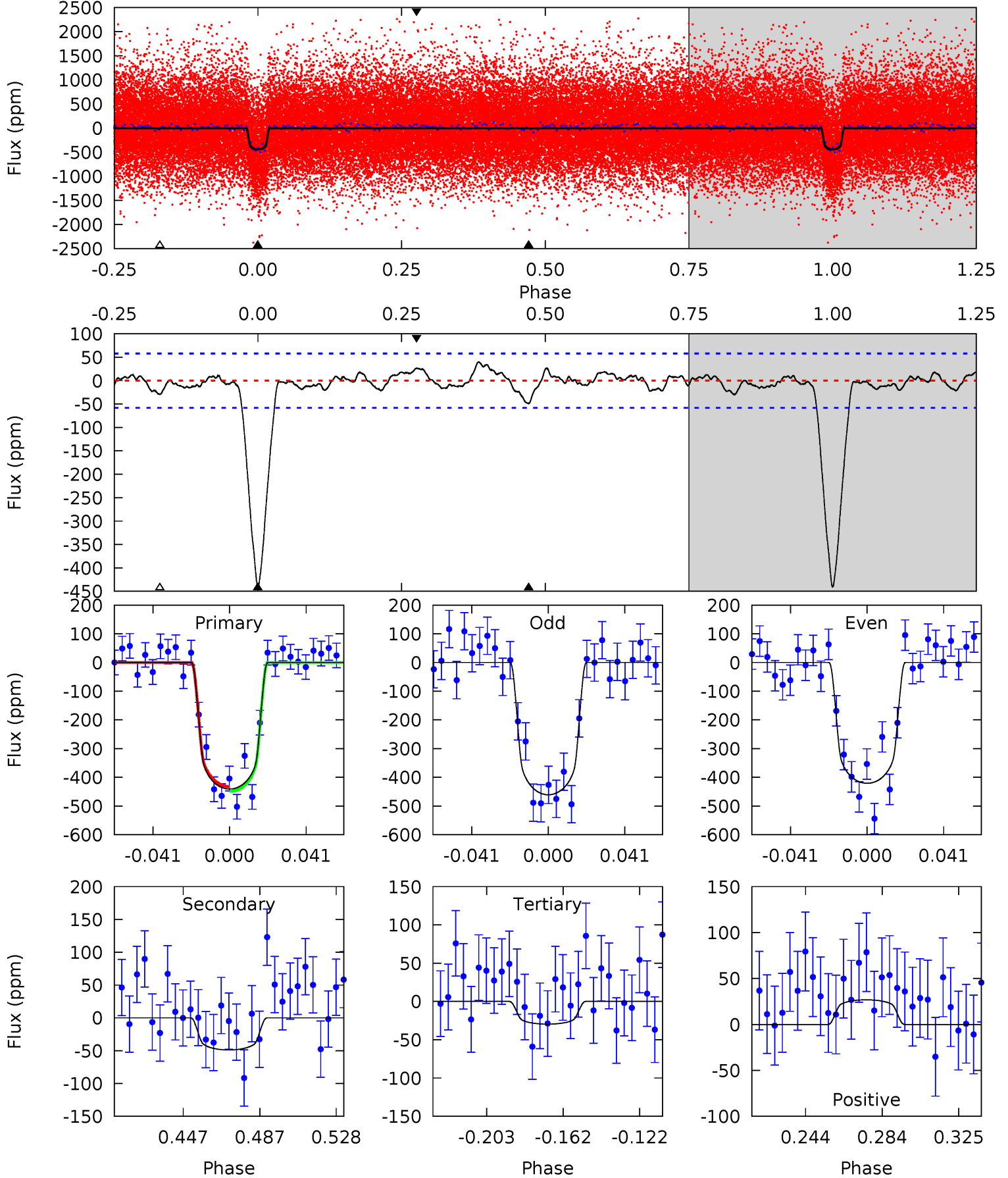
TCE 011153539-01 P= 4.498751 Days  $T_0=135.360725$  (BKJD)



# DV Model-Shift Uniqueness Test

011153539-01, P = 4.498796 Days, E = 130.855150 Days

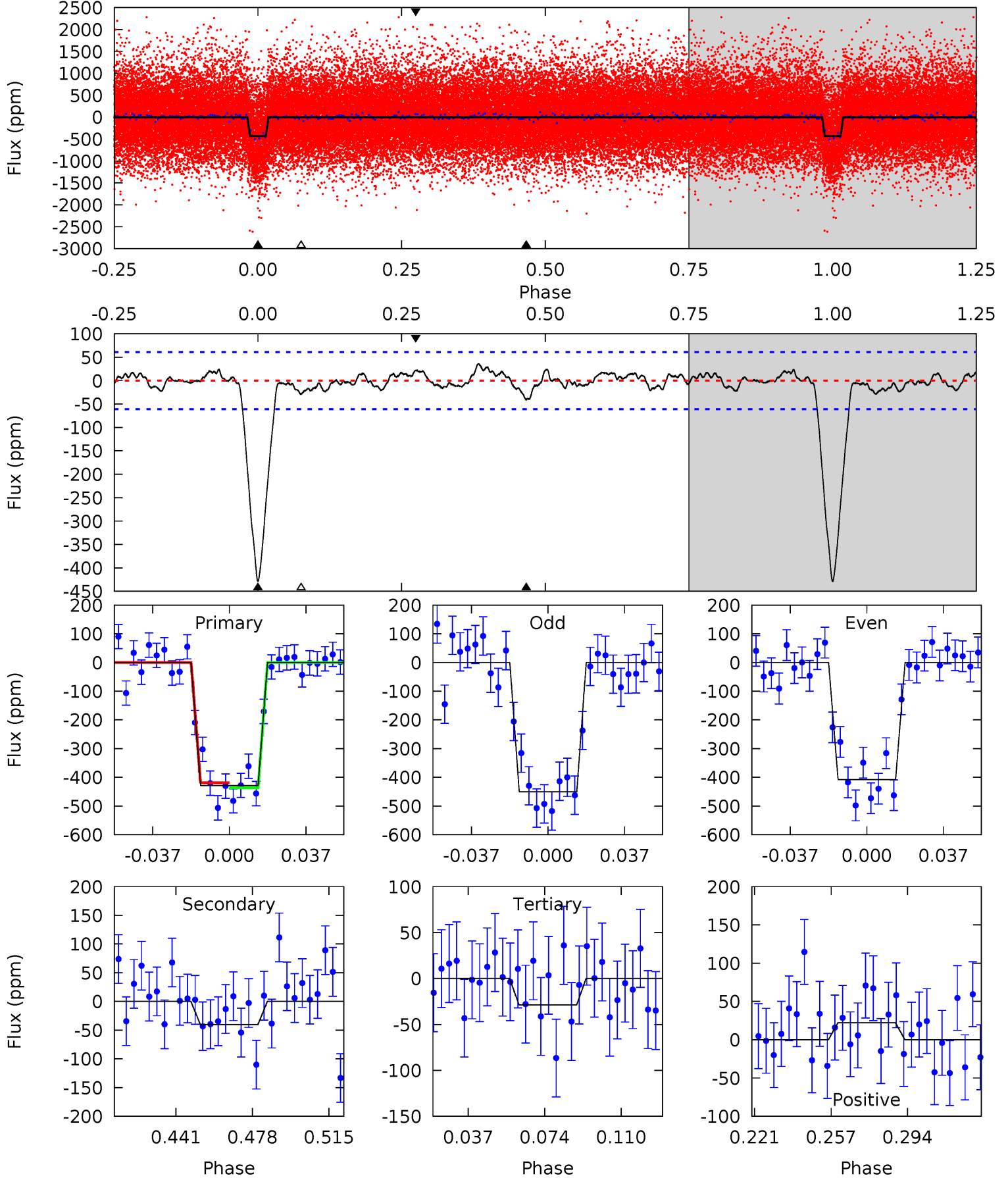
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.1	4.01	2.43	2.19	4.75	2.05	1.08	33.7	33.9	1.58	1.81	1.64	0.95	0.08	0.68



# Alt Model-Shift Uniqueness Test

011153539-01, P = 4.498751 Days, E = 130.861974 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
33.5	3.15	2.25	1.73	4.77	2.09	0.98	31.3	31.8	0.90	1.42	1.68	1.01	0.08	0.69



### Stellar Parameters For KIC 011153539

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6075^{+189}_{-210}$	$4.486^{+0.052}_{-0.208}$	$-0.120^{+0.250}_{-0.350}$	$0.969^{+0.300}_{-0.100}$	$1.048^{+0.139}_{-0.139}$	$1.622^{+0.443}_{-0.835}$
	+3%/-3%	+1%/-5%	+208%/-292%	+31%/-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 011153539-01 / KOI 0762.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-49 \pm 12$	$2.46^{+0.57}_{-0.49}$	$1620^{+113}_{-84}$	$3765^{+322}_{-257}$	$13^{+8}_{-5}$
Alt.	$-40 \pm 13$	$2.27^{+0.53}_{-0.46}$	$1620^{+114}_{-85}$	$3741^{+357}_{-324}$	$12^{+8}_{-5}$

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



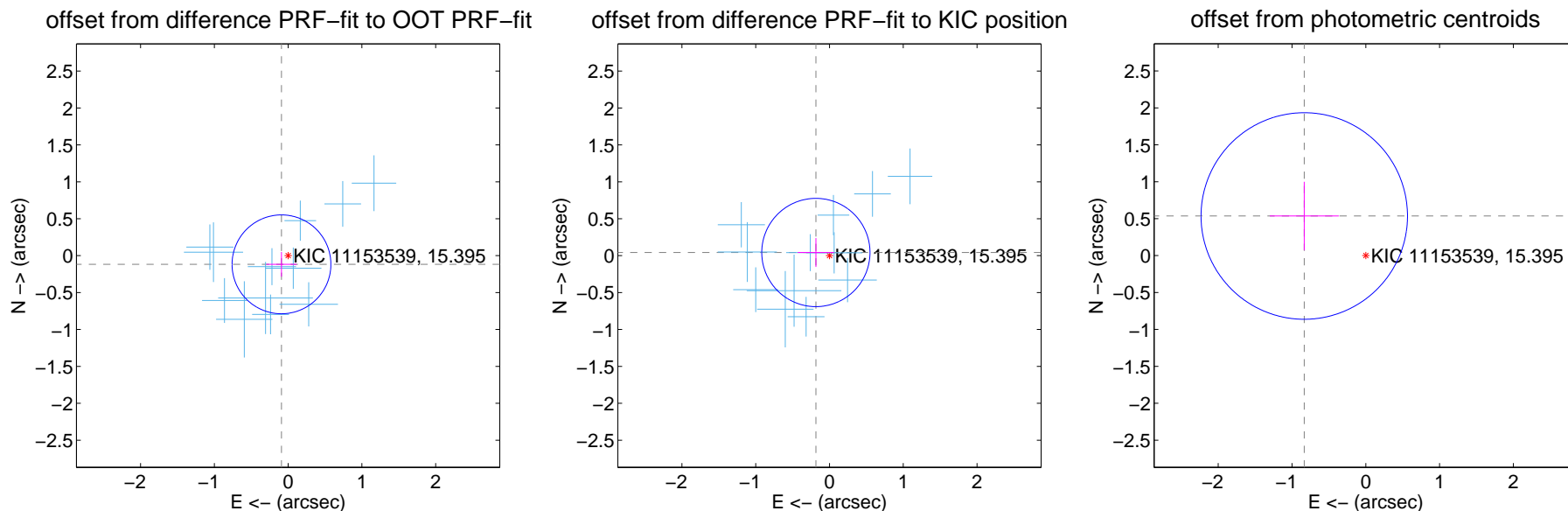
## DV Centroid Data

Supplemental centroid analysis for 011153539-01. Kepler magnitude: 15.39. Transit SNR 28.18

There are 12 quarters with good PRF difference image offsets

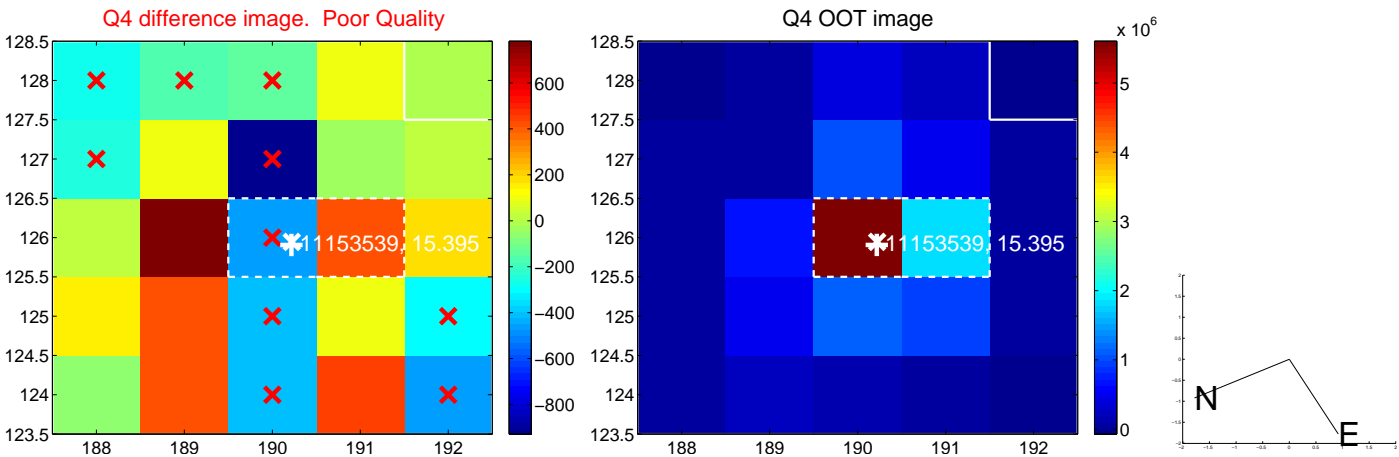
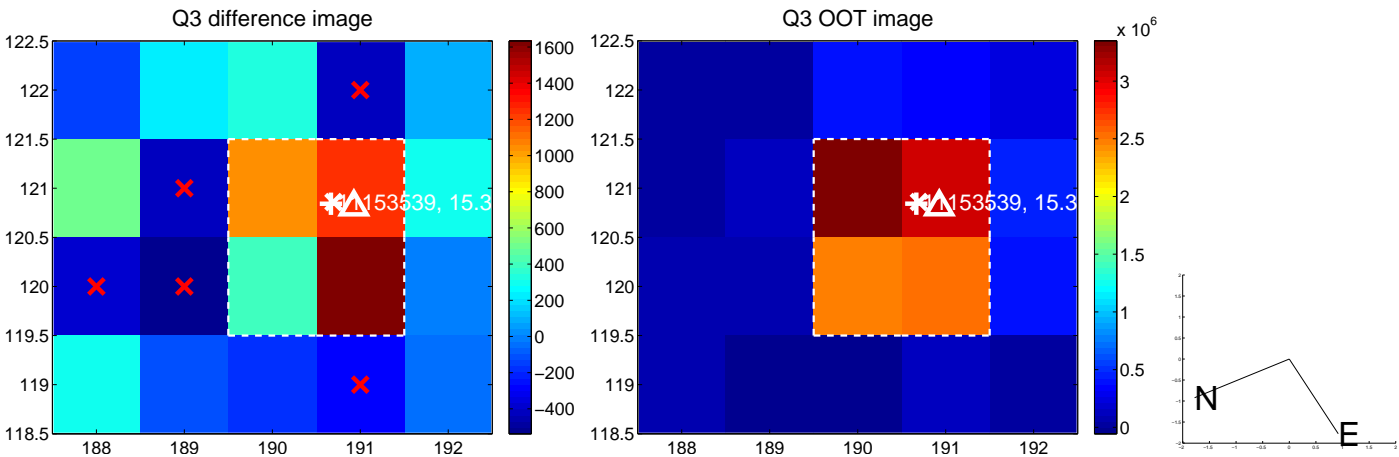
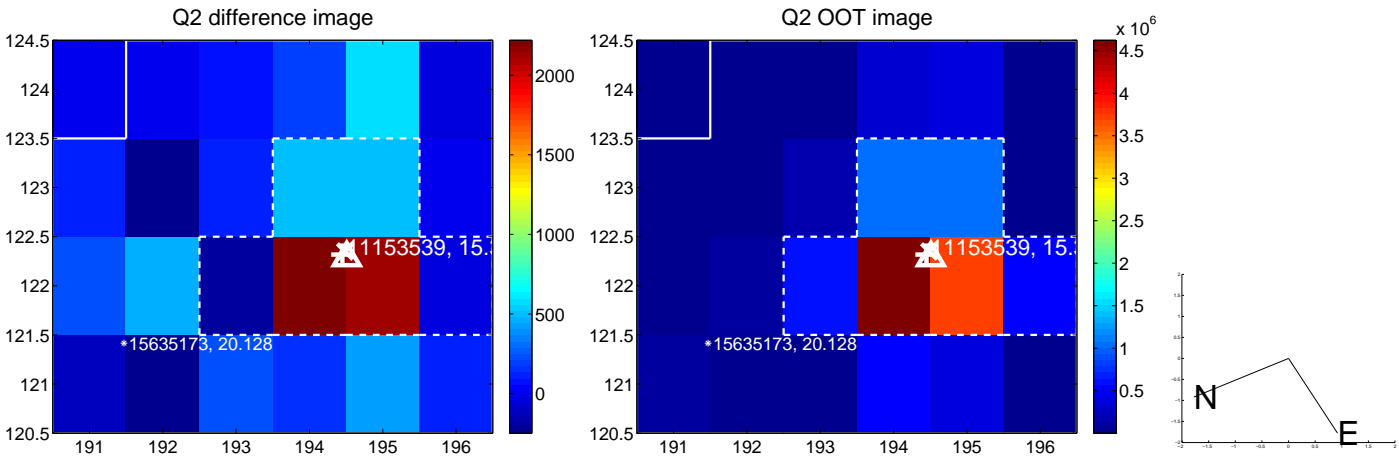
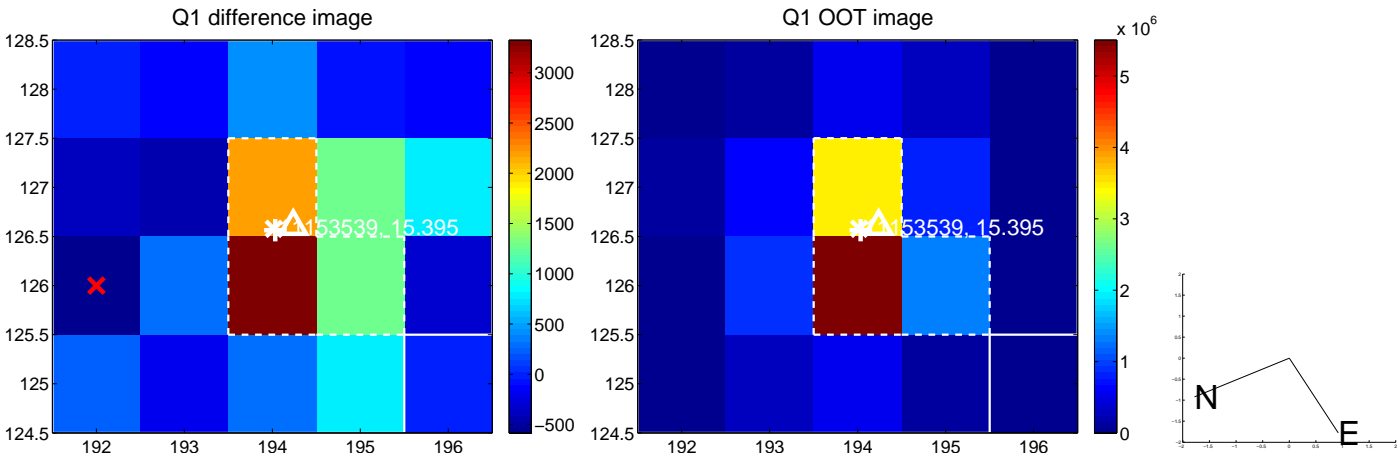
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.148 \pm 0.223$	0.66	$0.090 \pm 0.206$	$-0.118 \pm 0.167$
PRF-fit source offset from KIC position	$0.189 \pm 0.244$	0.77	$0.184 \pm 0.247$	$0.043 \pm 0.196$
photometric centroid source offset	$0.99 \pm 0.47$	2.13	$0.83 \pm 0.47$	$0.54 \pm 0.46$

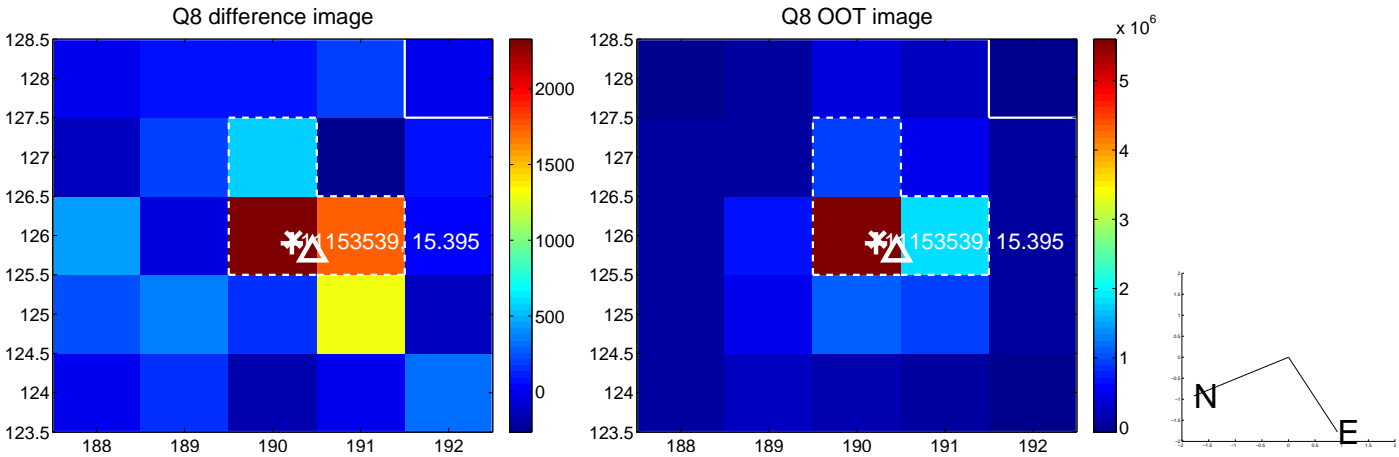
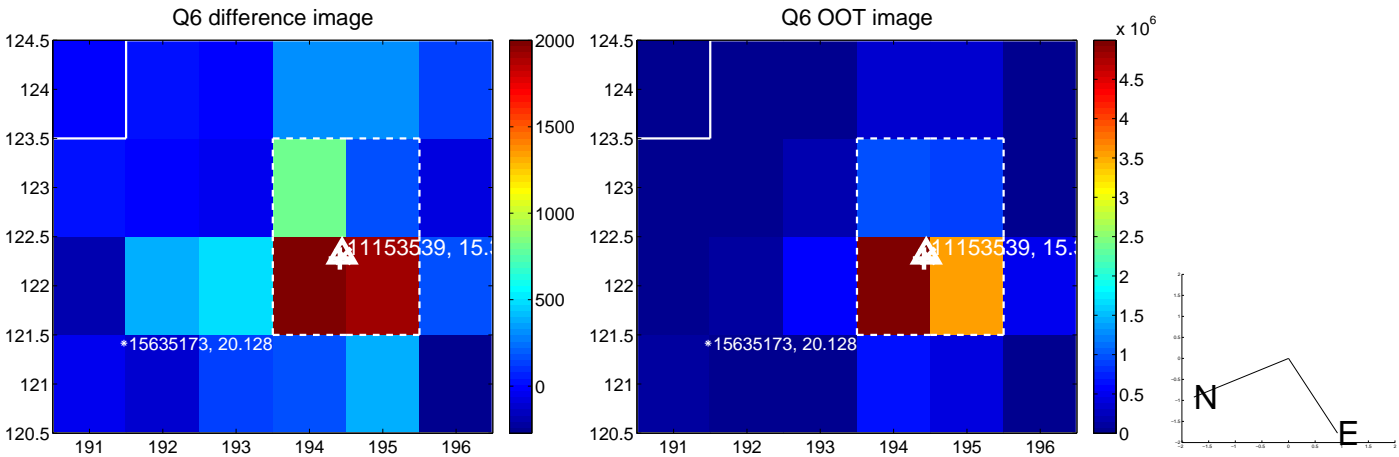
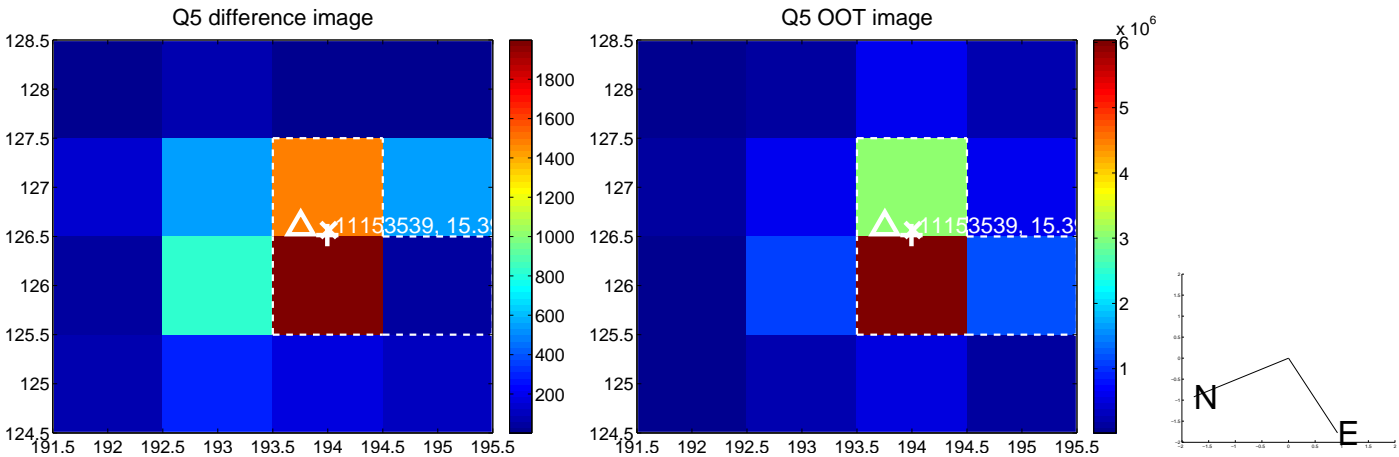


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

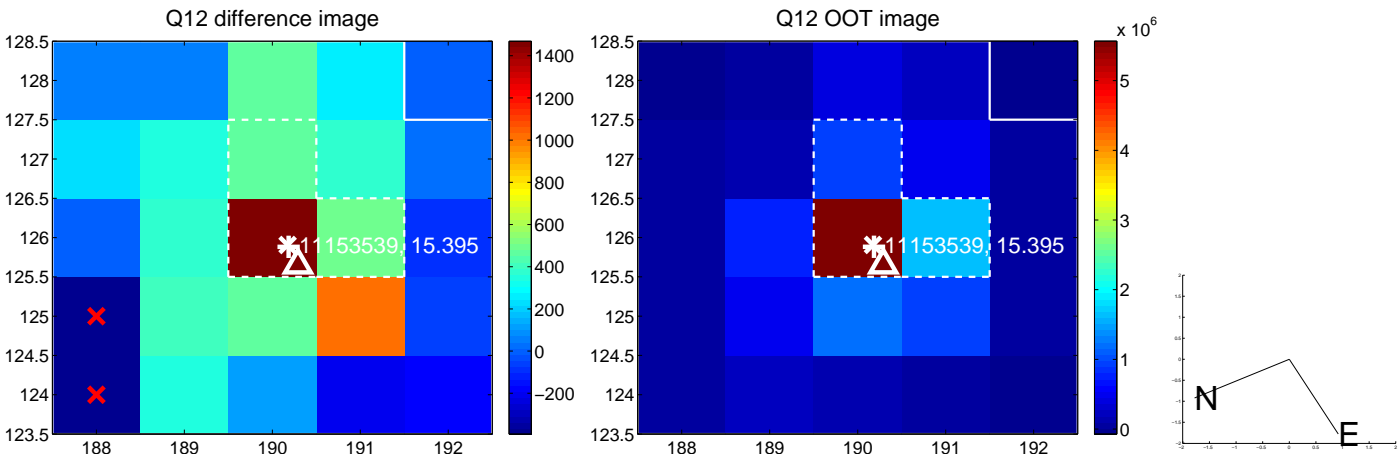
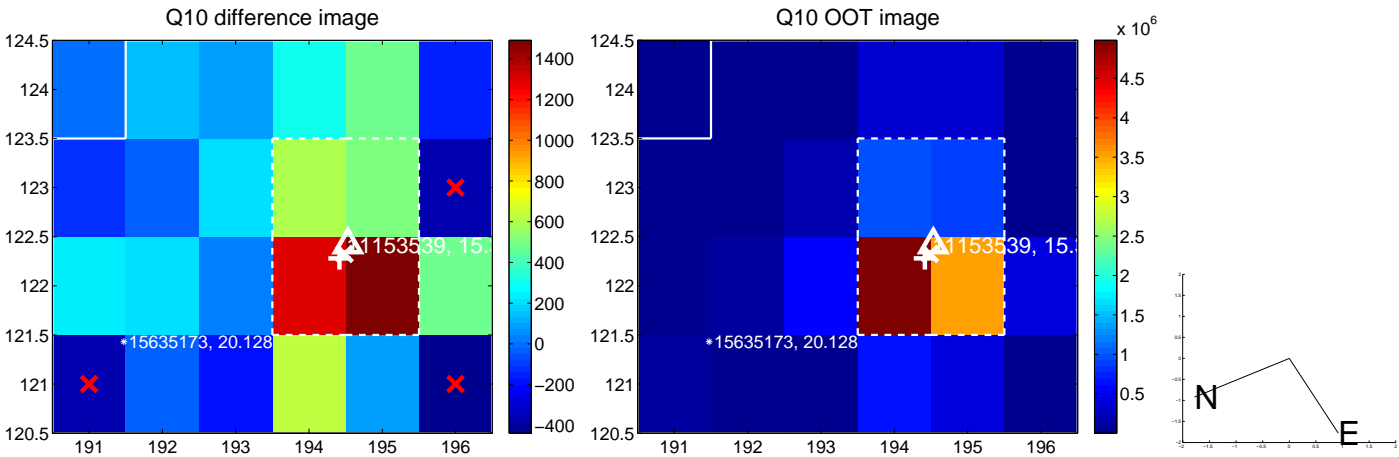
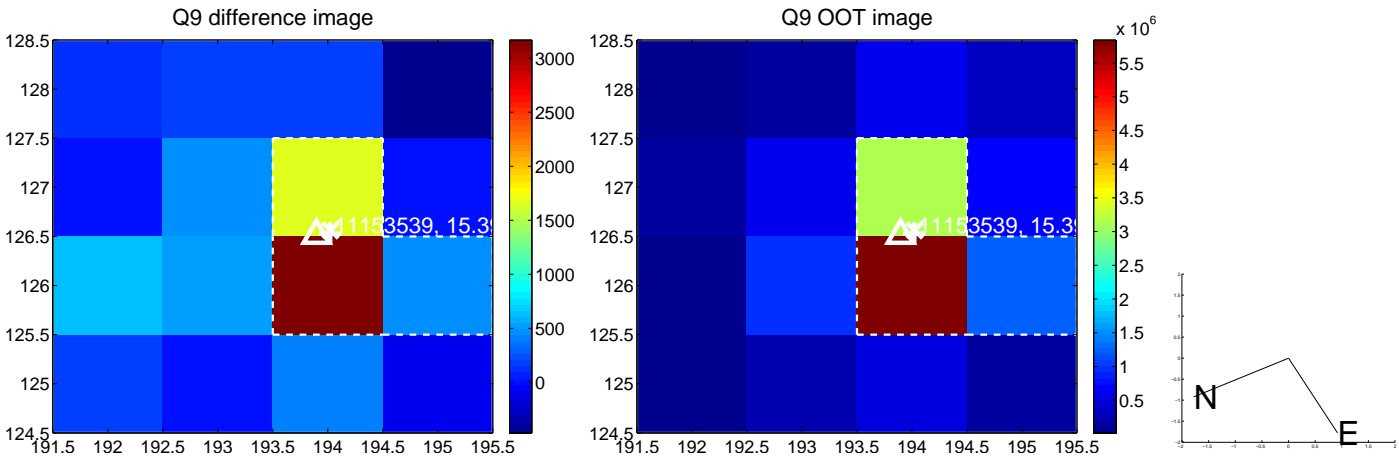
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



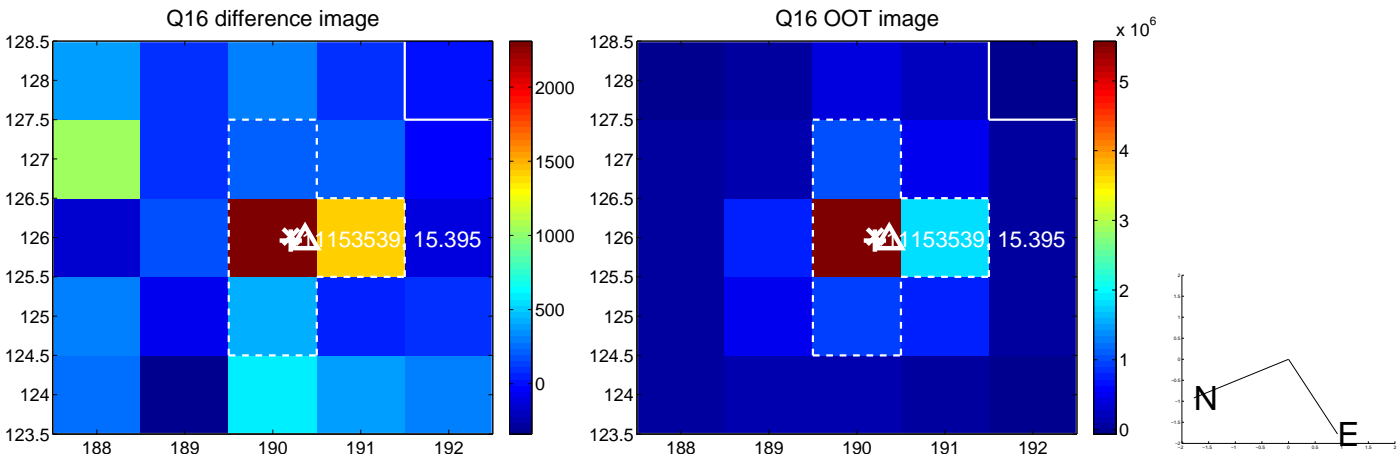
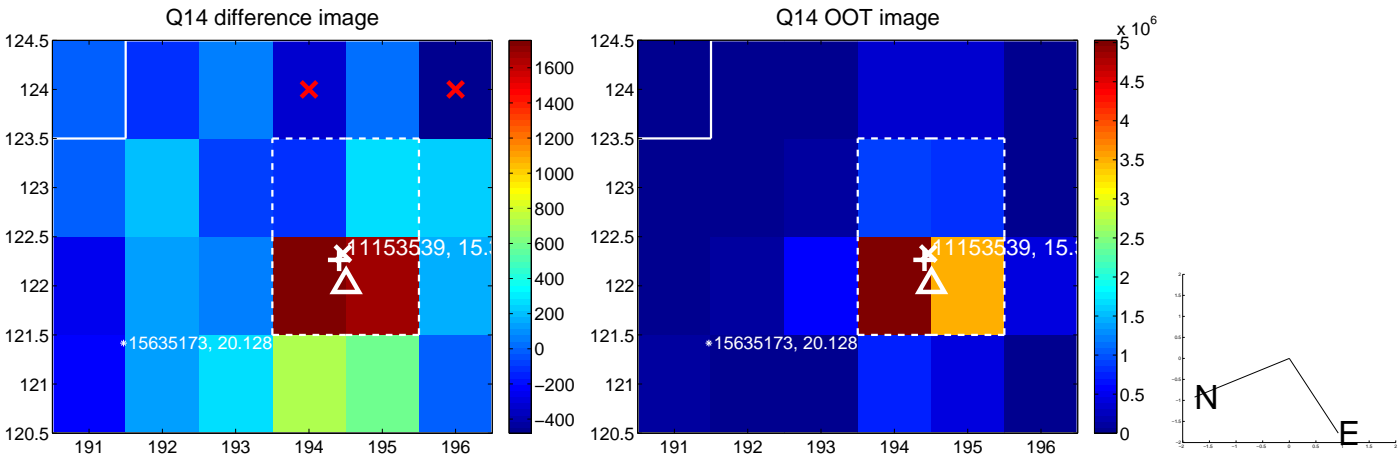
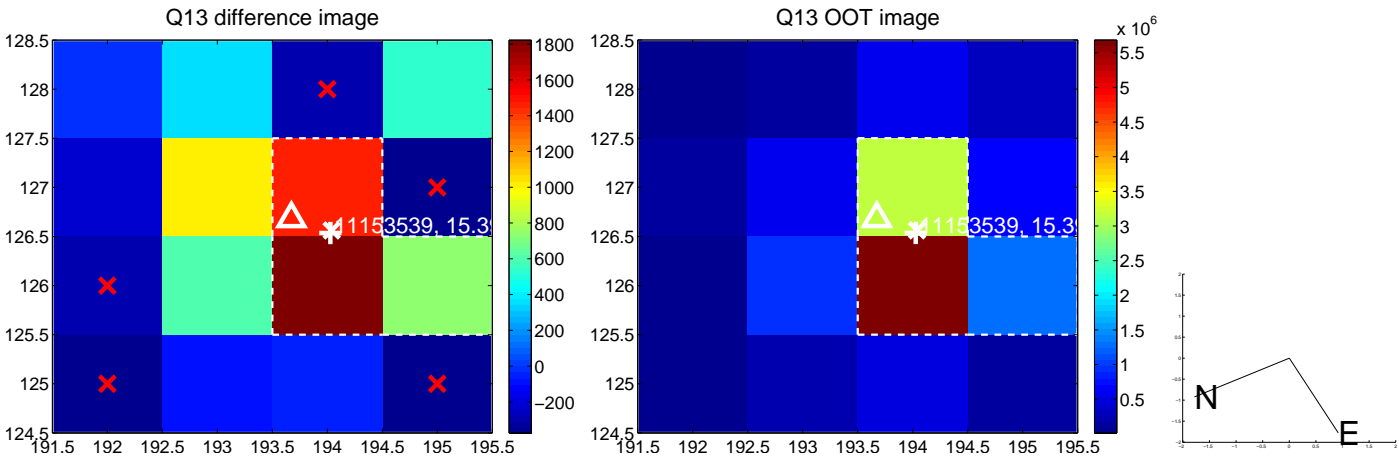
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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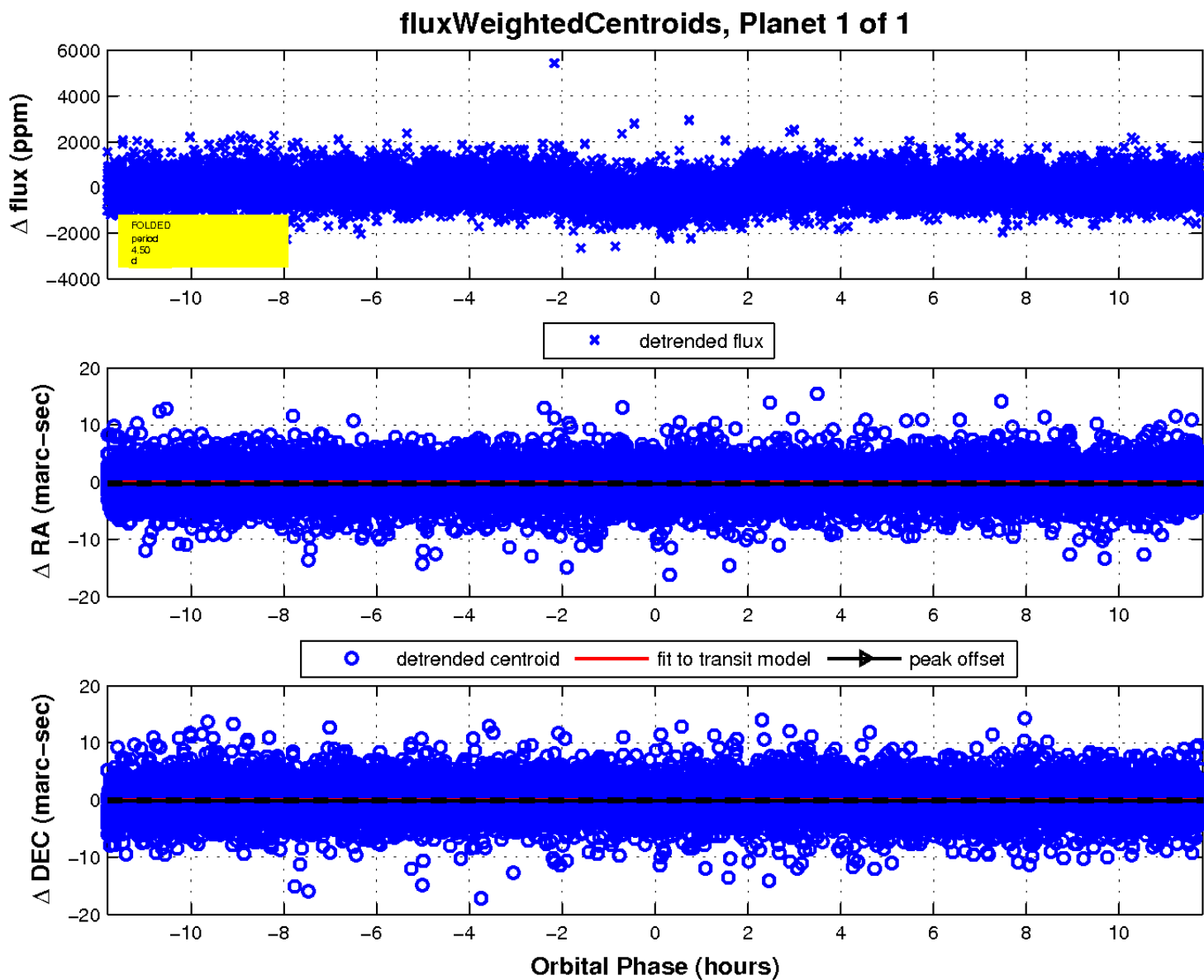
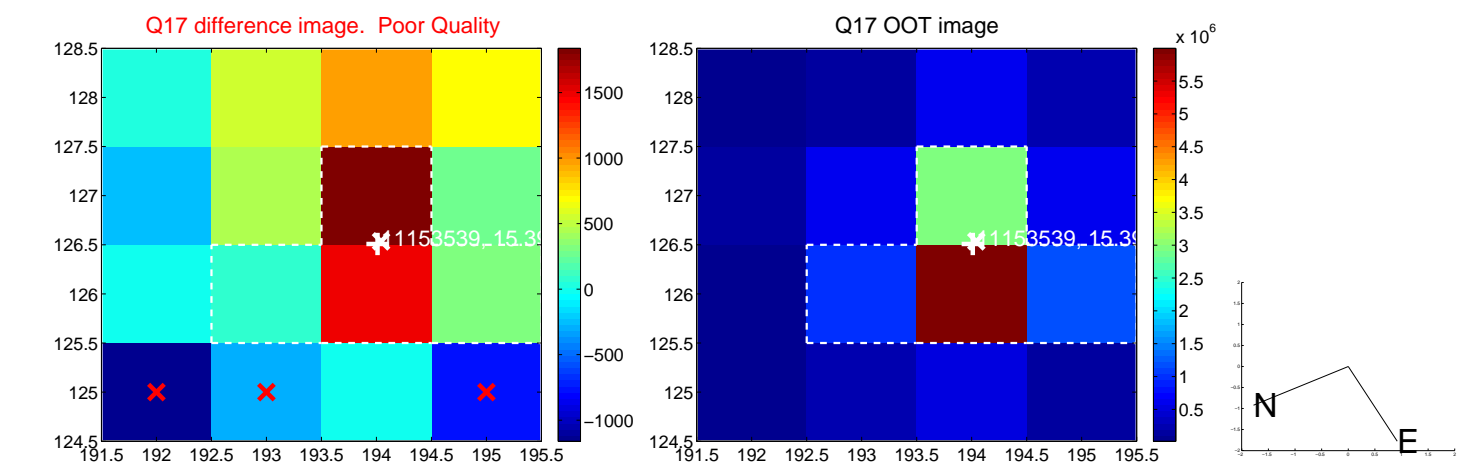


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

