

# KIC 011391957

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011391957-01	OBS	0765.01	8.353885	138.217874	1012.2	2.482	36.3	39.9	0.79	5592	2.89	92.18

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011391957-01	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.

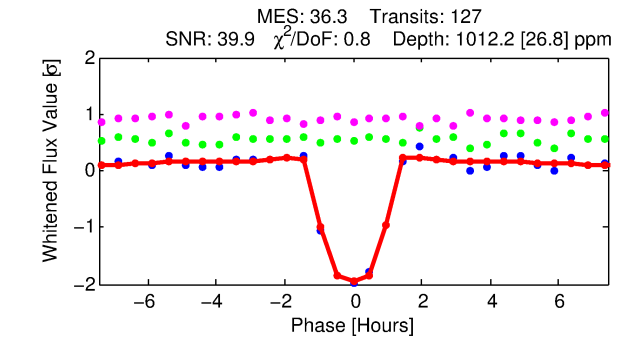
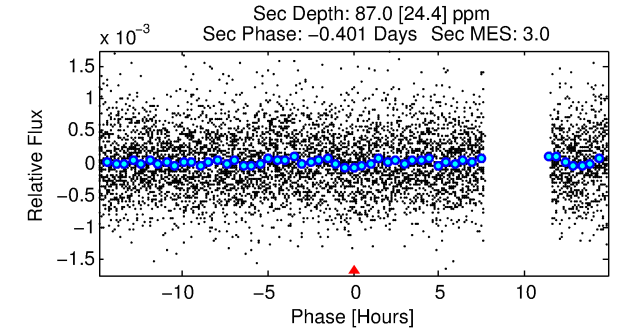
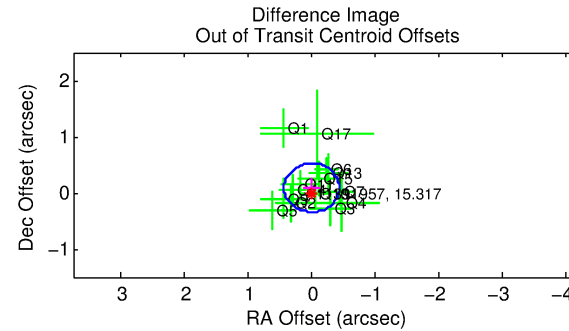
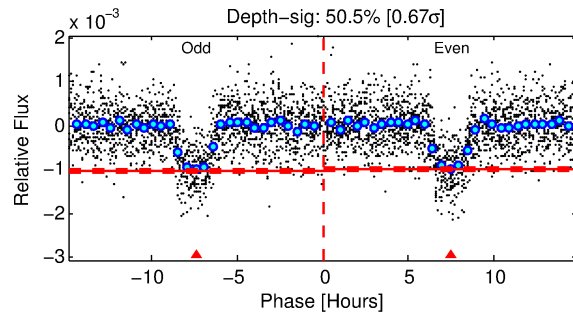
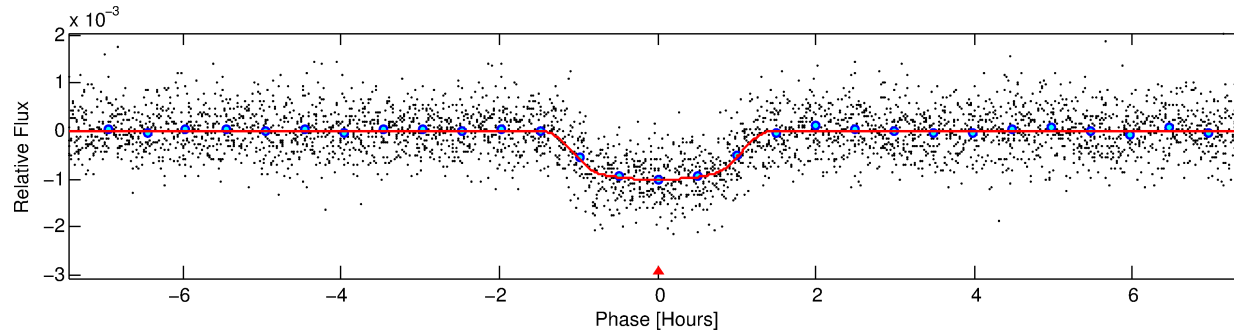
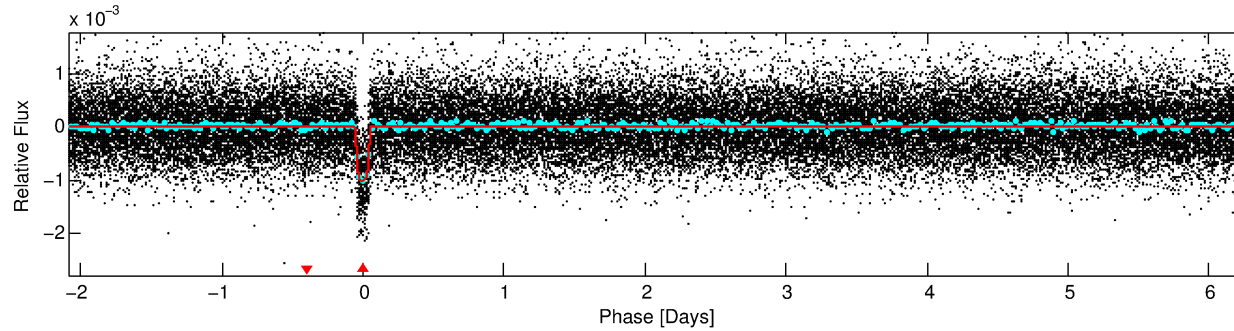
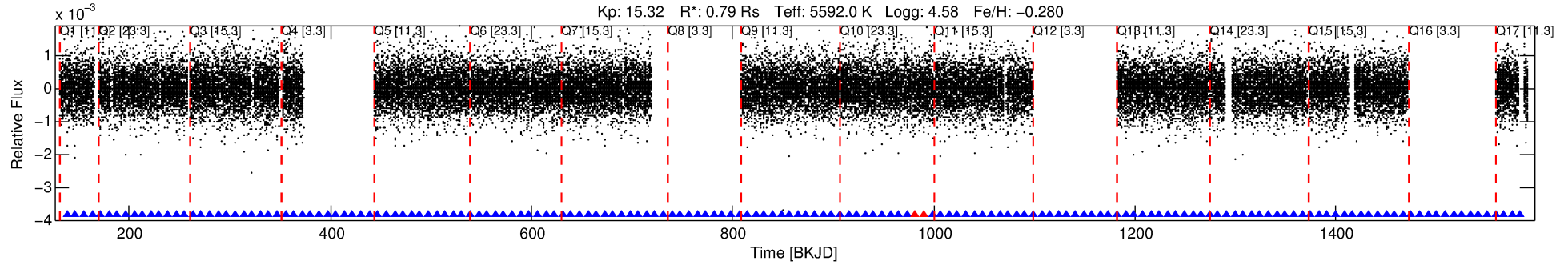
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011391957-01

No Significant Match Found

# DV One-Page Summary

KIC: 11391957 Candidate: 1 of 1 Period: 8.354 d  
KOI: K00765.01 Corr: 0.957



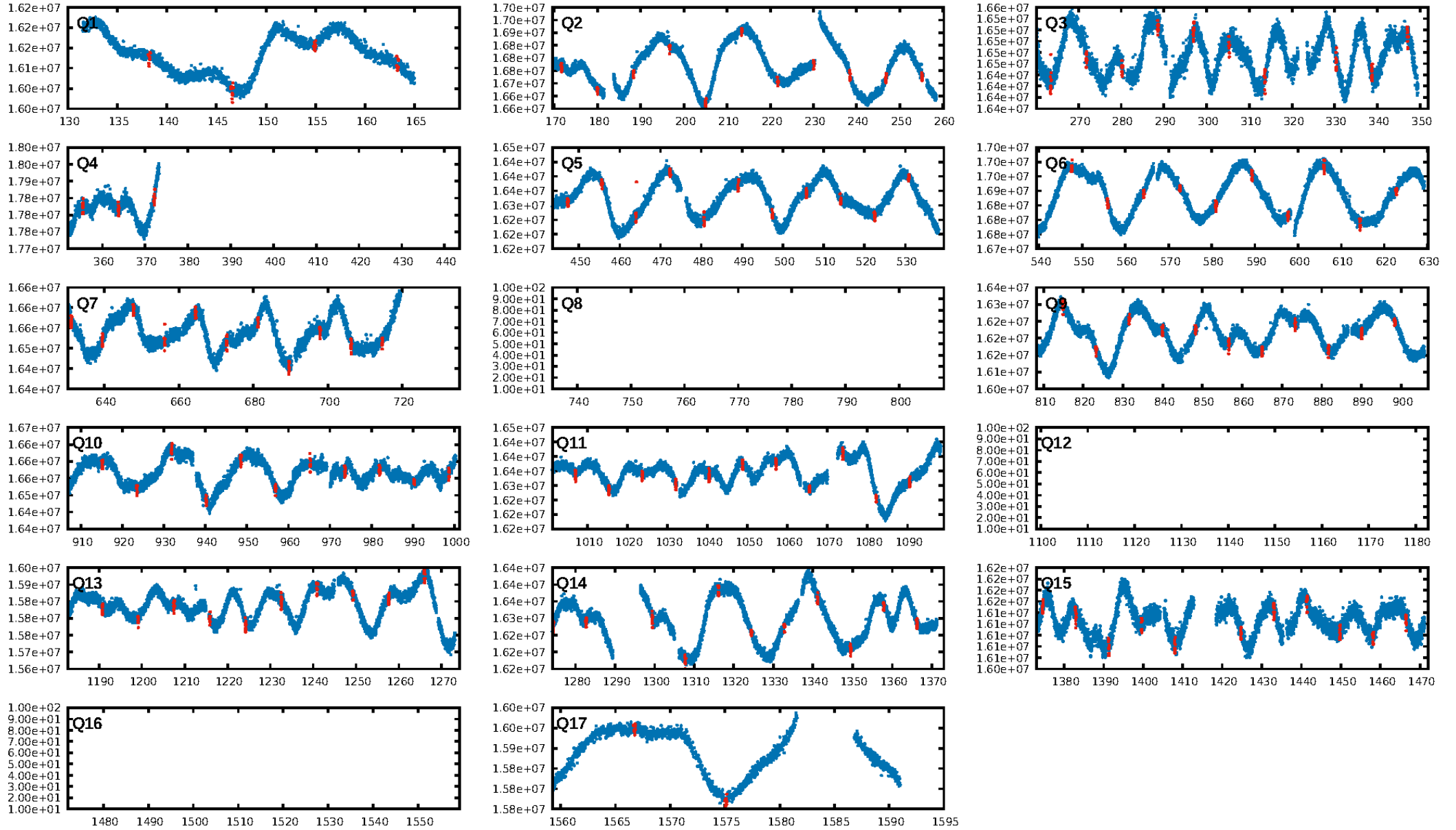
## DV Fit Results:

Period = 8.35388 [0.00001] d  
Epoch = 138.2179 [0.0012] BKJD  
Rp/R\* = 0.0336 [0.0034]  
a/R\* = 14.76 [6.39]  
b = 0.86 [0.13]  
Seff = 92.18 [26.26]  
Teq = 790 [56] K  
Rp = 2.89 [0.68] Re  
a = 0.0767 [0.0139] AU  
Ag = 33.79 [14.67] [2.23 $\sigma$ ]  
Teffp = 2945 [267] K [7.91 $\sigma$ ]

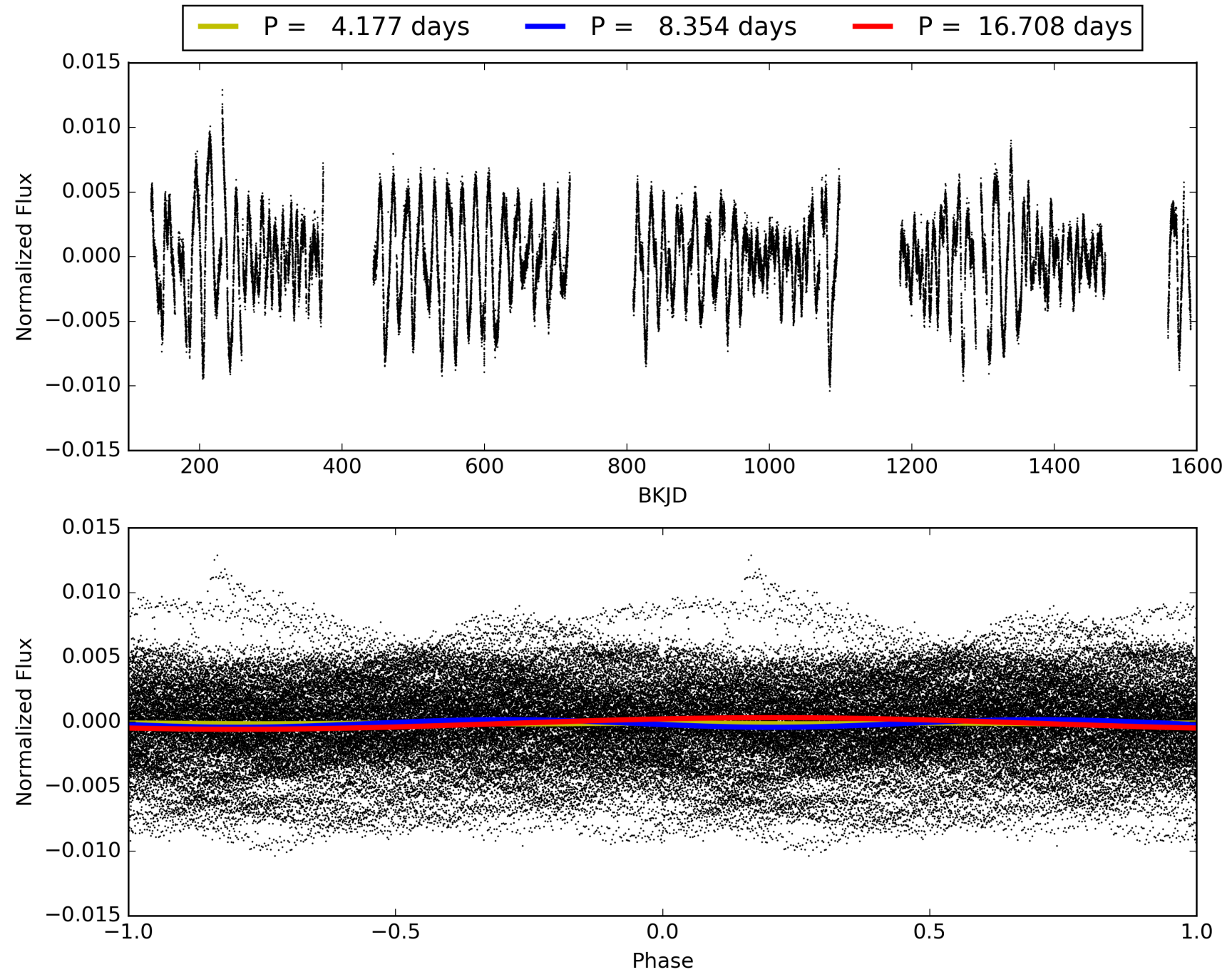
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.28e-280  
RollingBand-fgt: 0.98 [116/118]  
GhostDiagnostic-chr: 13.17  
Centroid-sig: 64.5%  
Centroid-so: 0.332 arcsec [0.93 $\sigma$ ]  
OotOffset-rm: 0.089 arcsec [0.61 $\sigma$ ]  
KicOffset-rm: 0.172 arcsec [1.28 $\sigma$ ]  
OotOffset-st: 4/4/1/5 [14]  
KicOffset-st: 4/4/1/5 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 011391957-01, PDC Light Curves

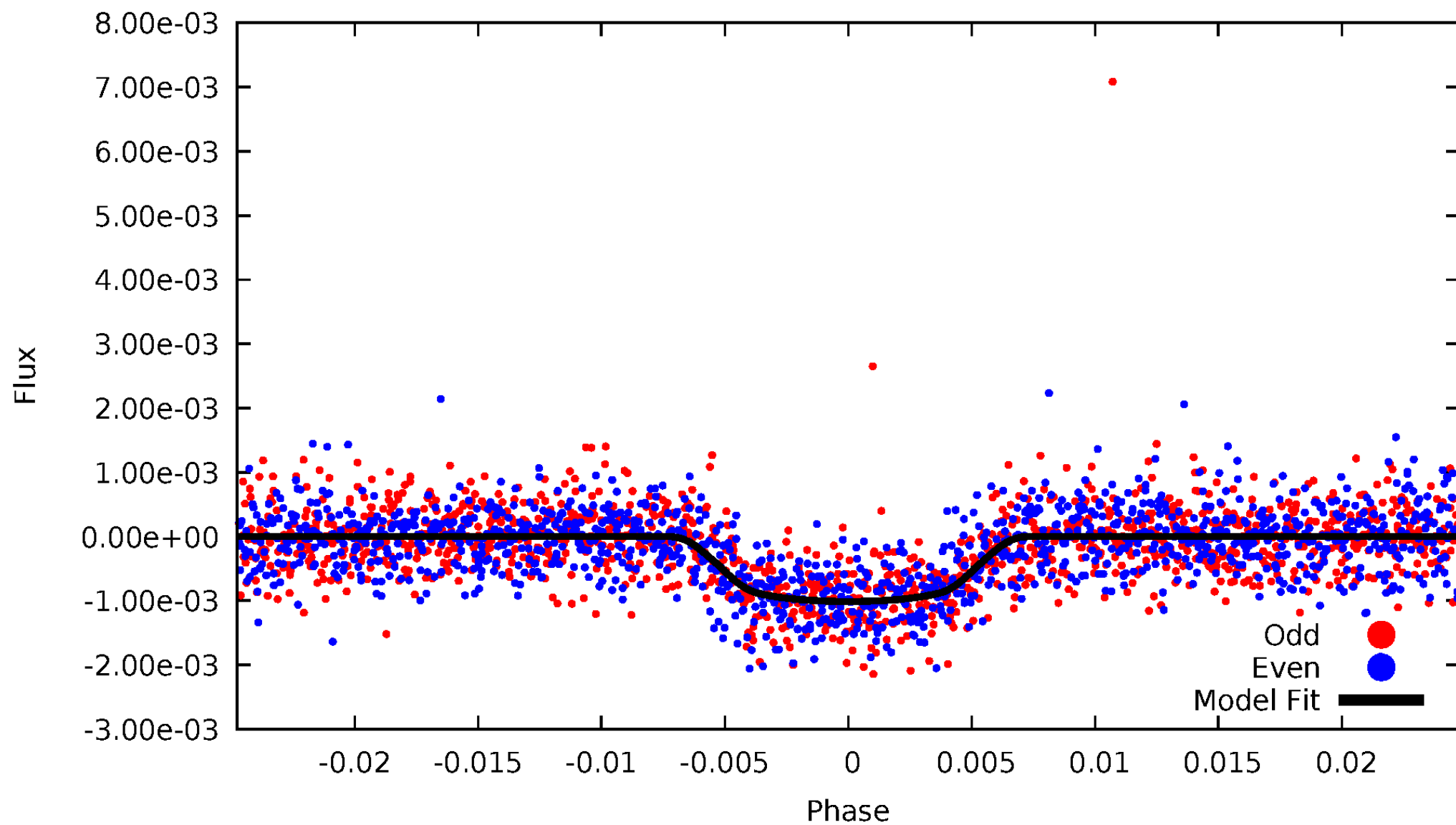


TCE 011391957-01



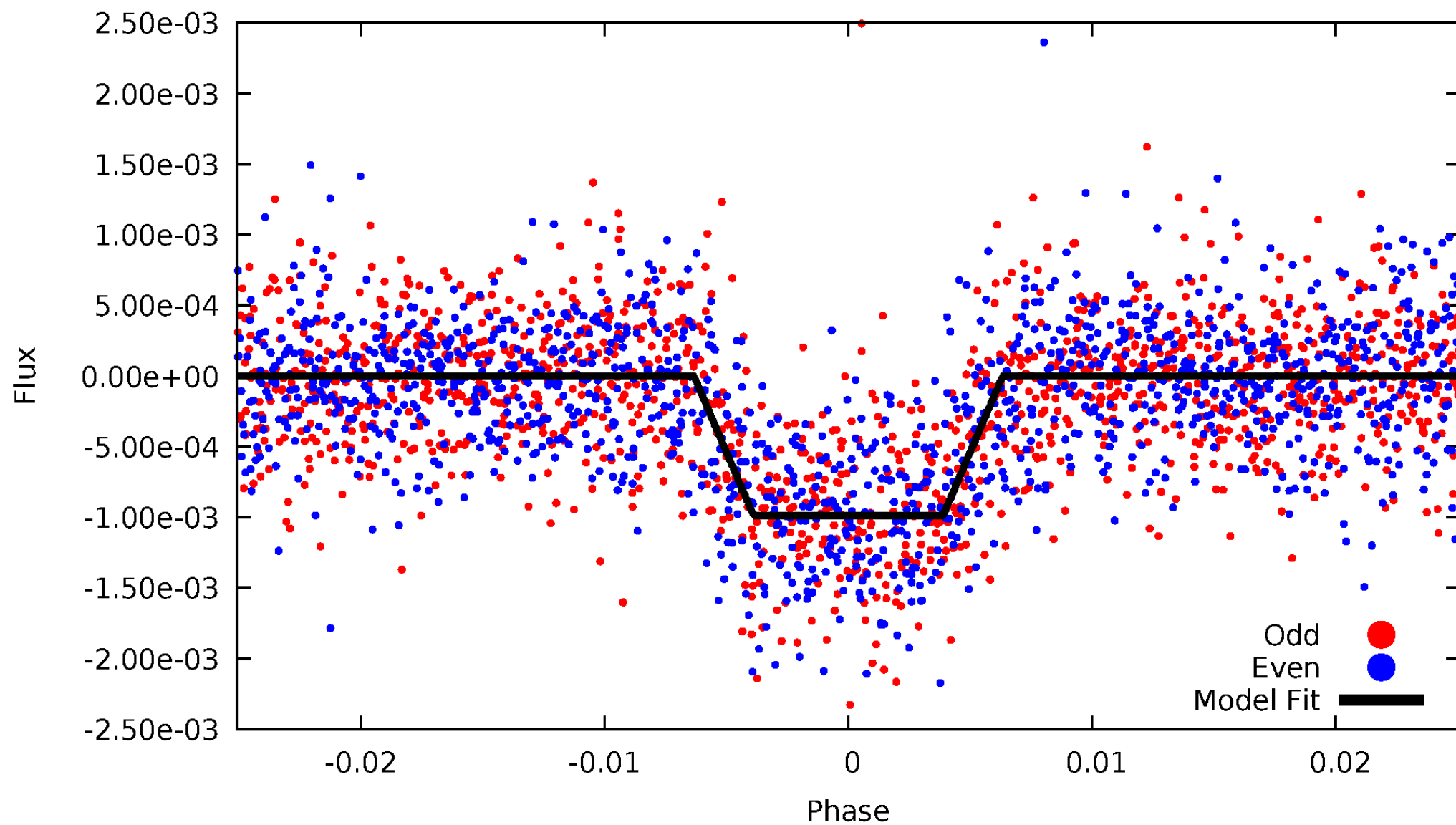
# DV Odd/Even

TCE 011391957-01



# ALT Odd/Even

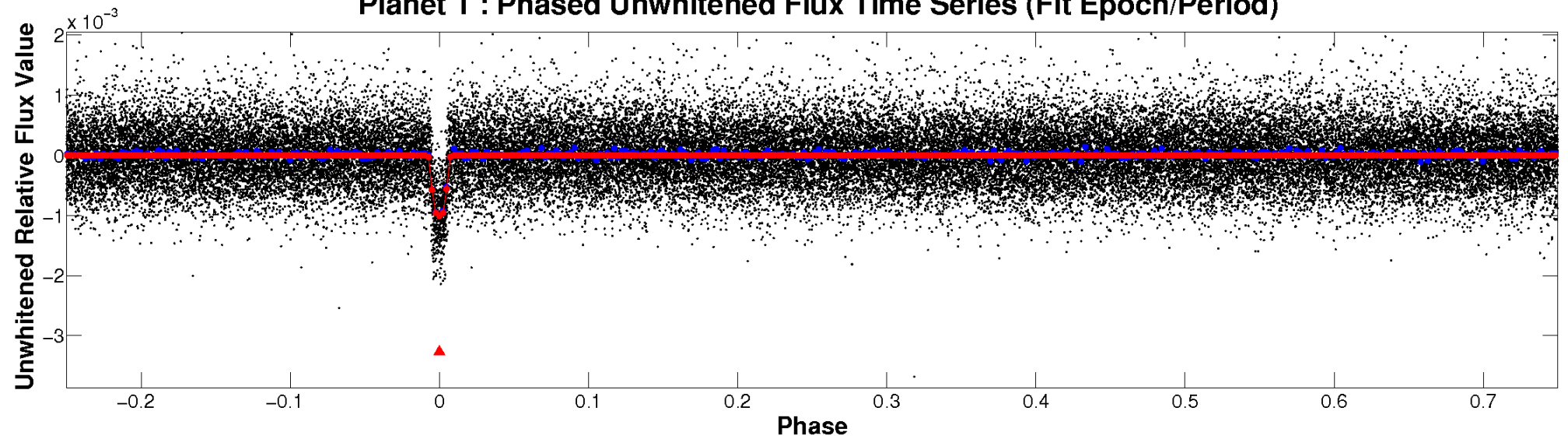
TCE 011391957-01



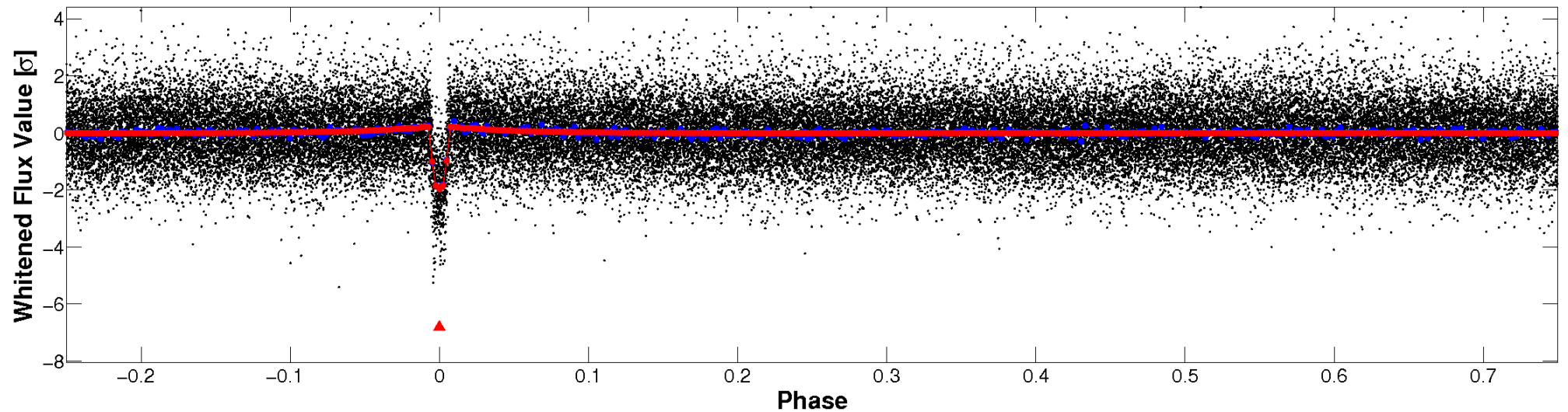


# Non-Whitened Vs. Whitened Light Curve

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

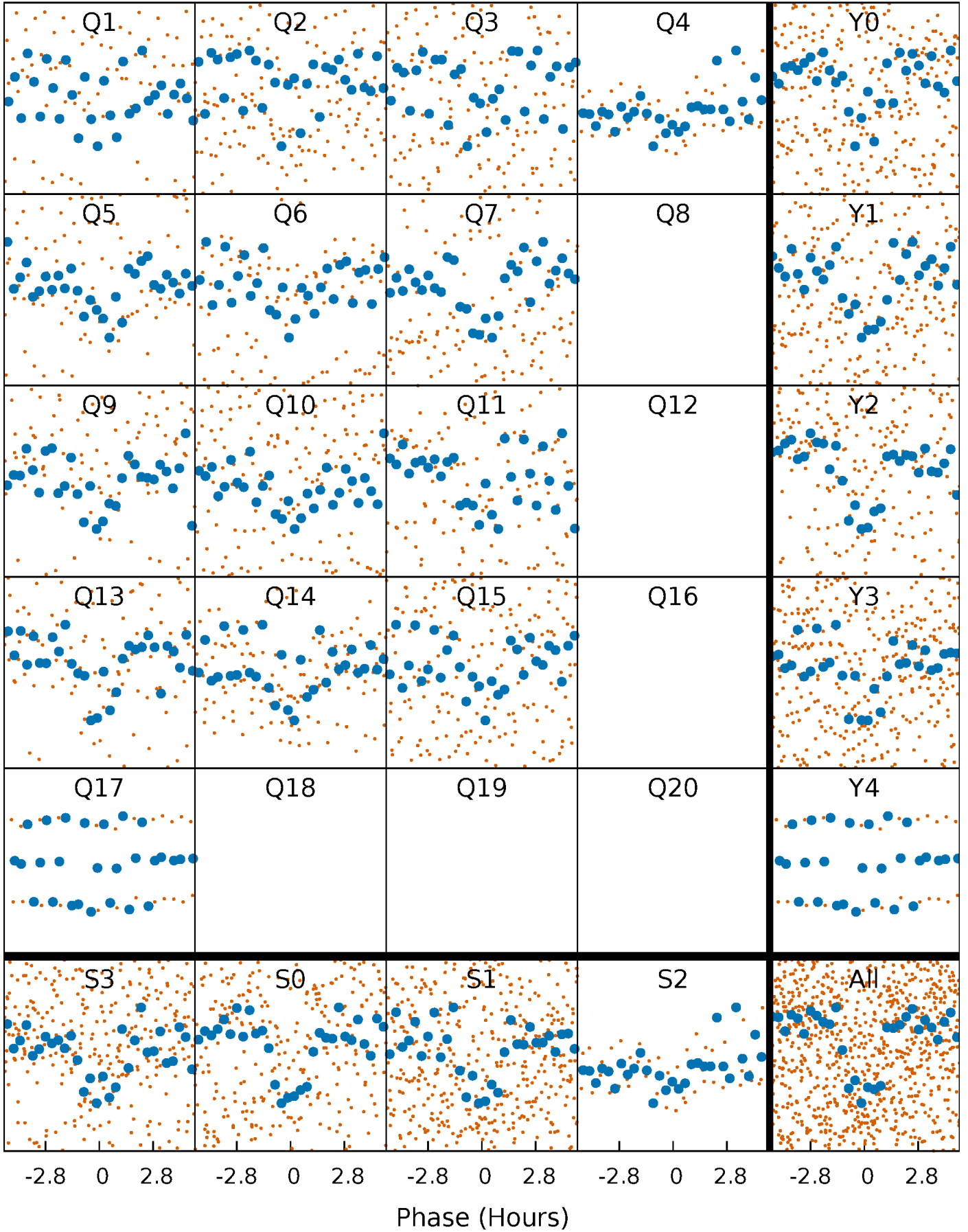


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

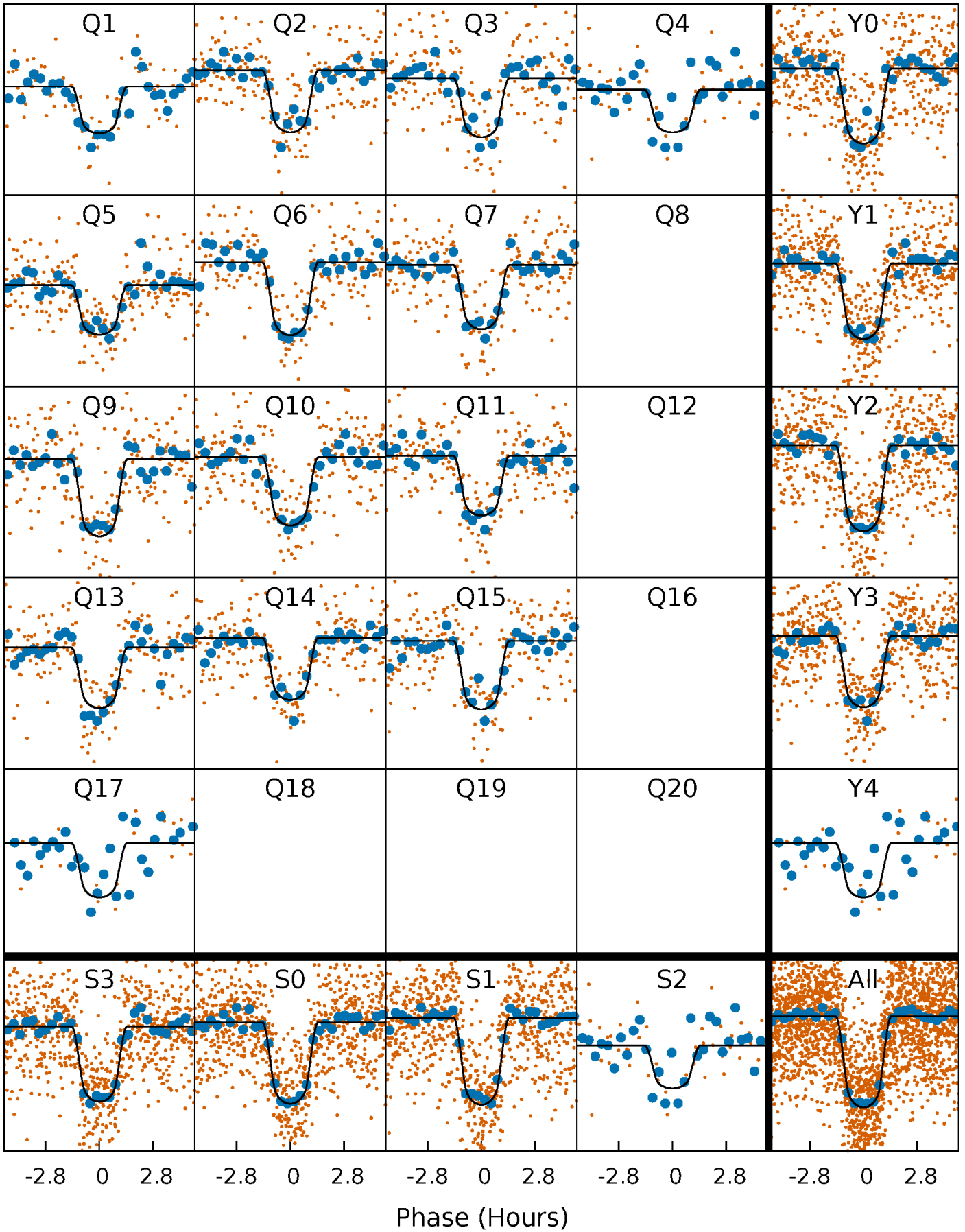
TCE 011391957-01   P= 8.353885 Days    $T_0=138.217874$  (BKJD)





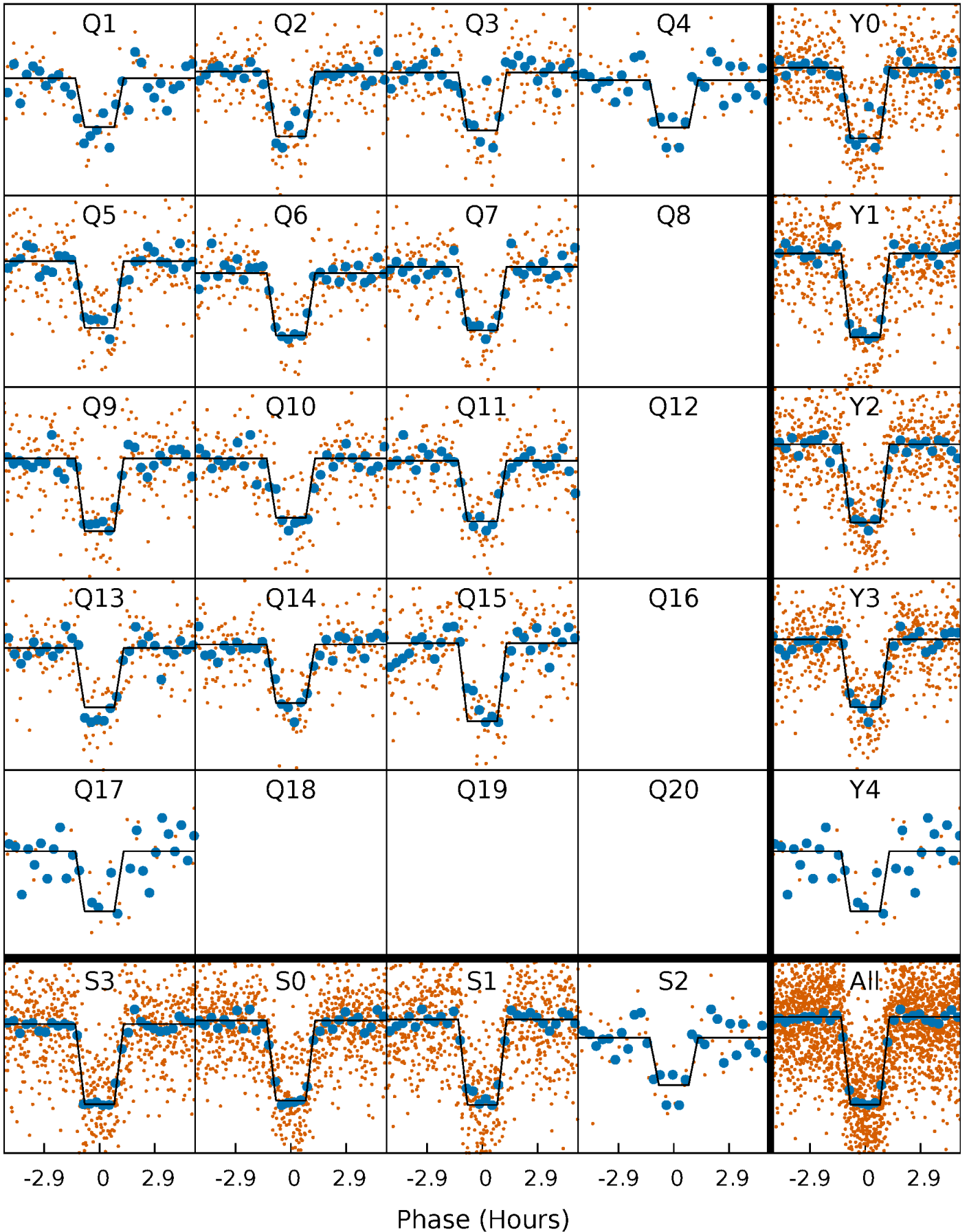
# DV Quarter-Phased Transit Curves

TCE 011391957-01 P= 8.353885 Days  $T_0=138.217874$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

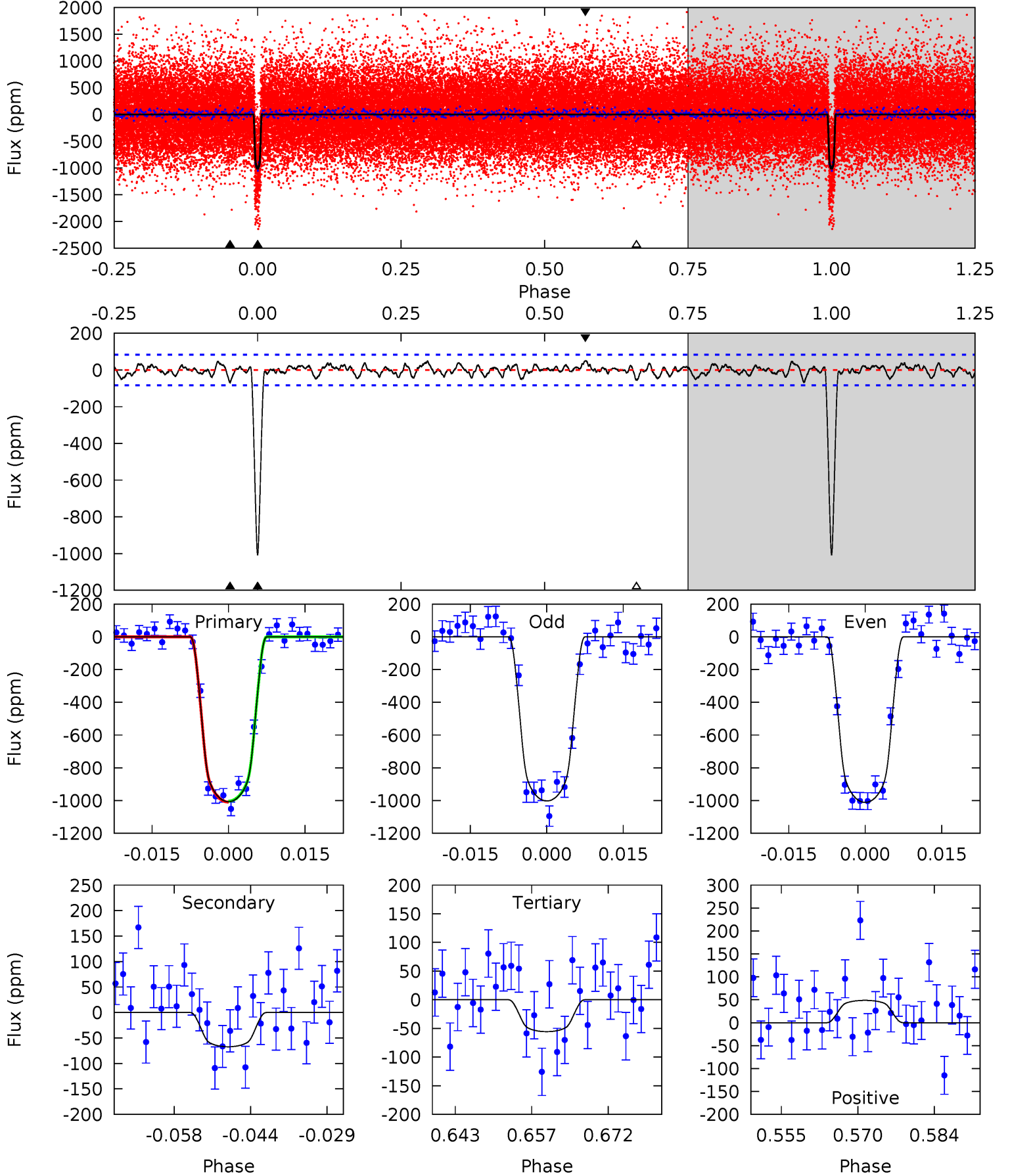
TCE 011391957-01   P= 8.353824 Days    $T_0=138.222519$  (BKJD)



# DV Model-Shift Uniqueness Test

011391957-01, P = 8.353885 Days, E = 129.863989 Days

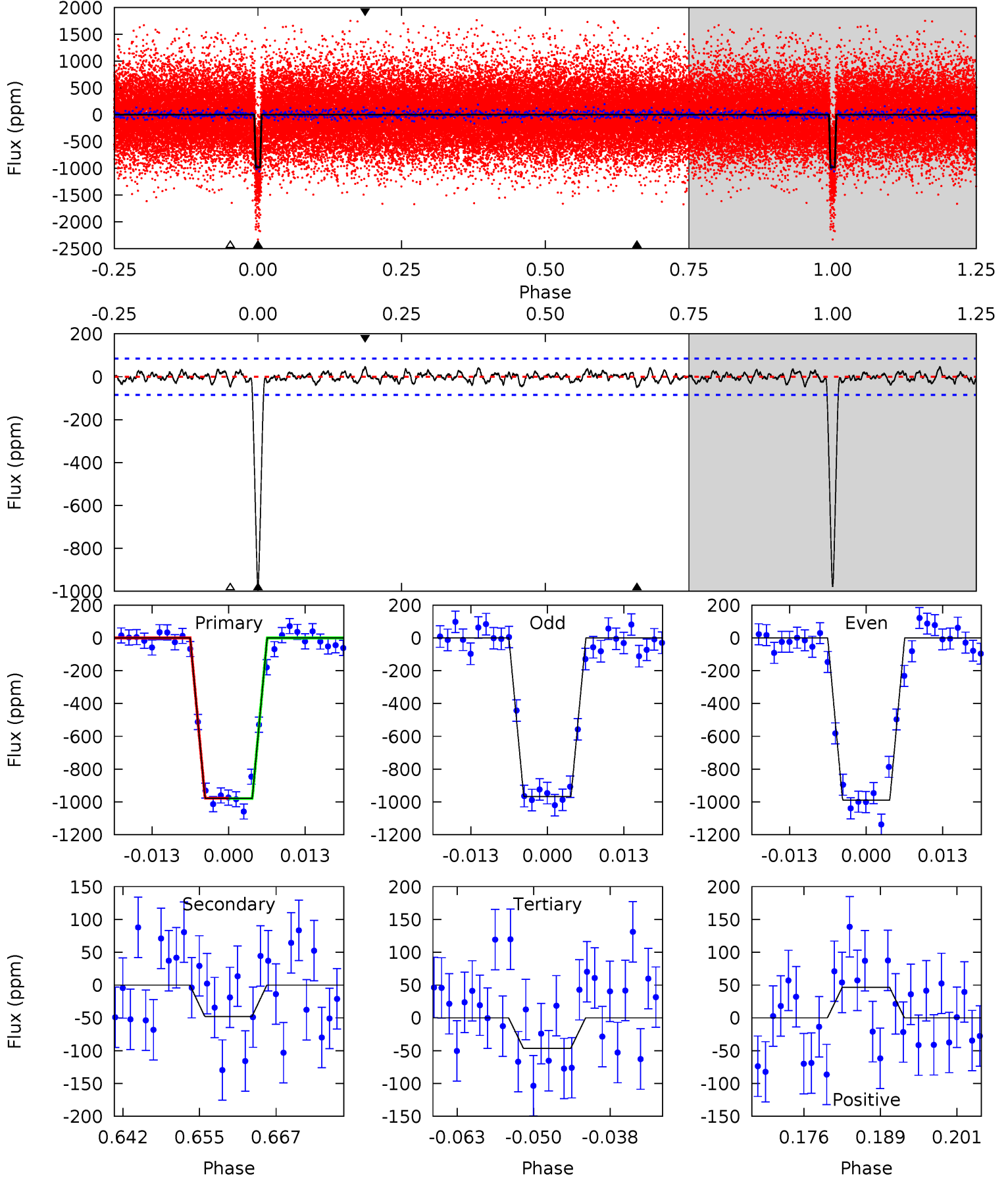
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
59.8	4.00	3.31	2.89	4.95	2.44	1.21	56.5	56.9	0.69	1.10	0.26	0.97	0.05	0.18



# Alt Model-Shift Uniqueness Test

011391957-01, P = 8.353824 Days, E = 129.868695 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
57.6	2.82	2.74	2.75	4.98	2.50	0.95	54.8	54.8	0.08	0.07	0.63	0.99	0.05	0.07



### Stellar Parameters For KIC 011391957

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5592^{+152}_{-152}$	$4.582^{+0.036}_{-0.144}$	$-0.280^{+0.300}_{-0.300}$	$0.787^{+0.169}_{-0.073}$	$0.862^{+0.089}_{-0.097}$	$2.493^{+0.485}_{-1.030}$
	+3%/-3%	+1%/-3%	+107%/-107%	+21%/-9%	+10%/-11%	+19%/-41%
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 011391957-01 / KOI 0765.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-67 \pm 17$	$2.98^{+0.40}_{-0.35}$	$1121^{+56}_{-39}$	$3295^{+169}_{-185}$	$23^{+9}_{-7}$
Alt.	$-48 \pm 17$	$2.81^{+0.42}_{-0.37}$	$1128^{+59}_{-48}$	$3193^{+220}_{-217}$	$19^{+11}_{-7}$

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

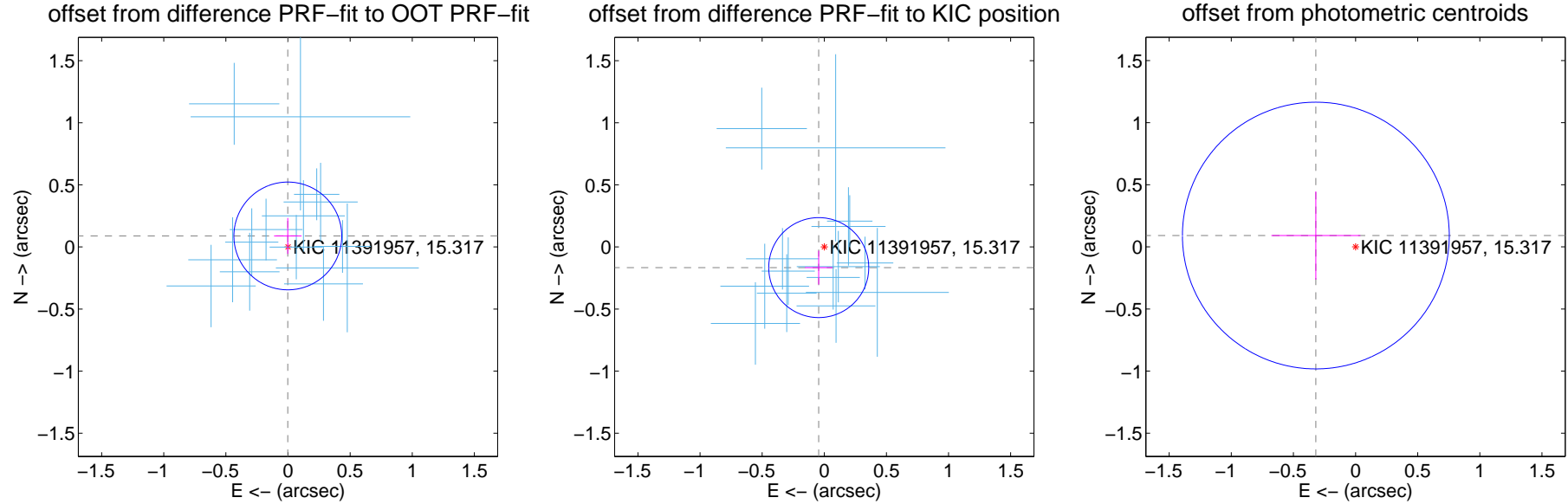
## DV Centroid Data

Supplemental centroid analysis for 011391957-01. Kepler magnitude: 15.32. Transit SNR 39.92

There are 14 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.089 \pm 0.145$	0.61	$0.002 \pm 0.111$	$0.089 \pm 0.145$
PRF-fit source offset from KIC position	$0.172 \pm 0.134$	1.28	$0.045 \pm 0.110$	$-0.166 \pm 0.136$
photometric centroid source offset	$0.33 \pm 0.36$	0.93	$0.32 \pm 0.36$	$0.09 \pm 0.36$

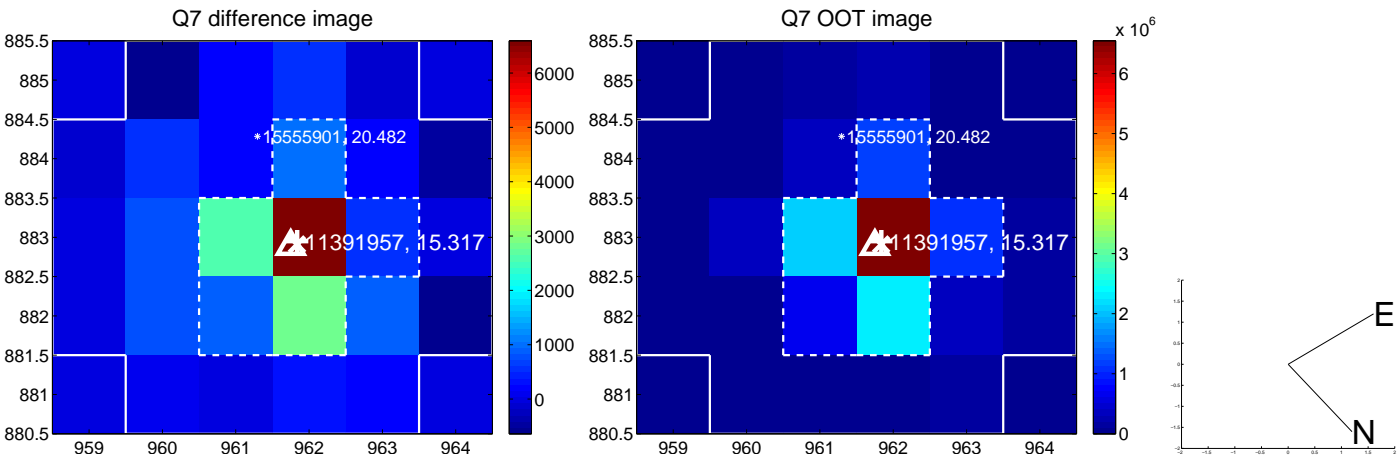
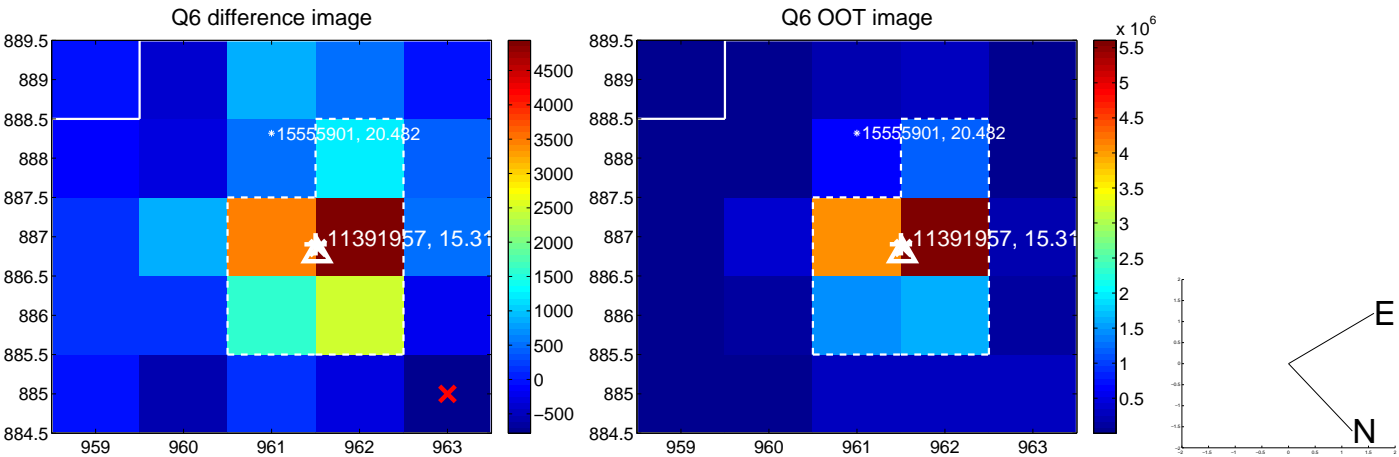
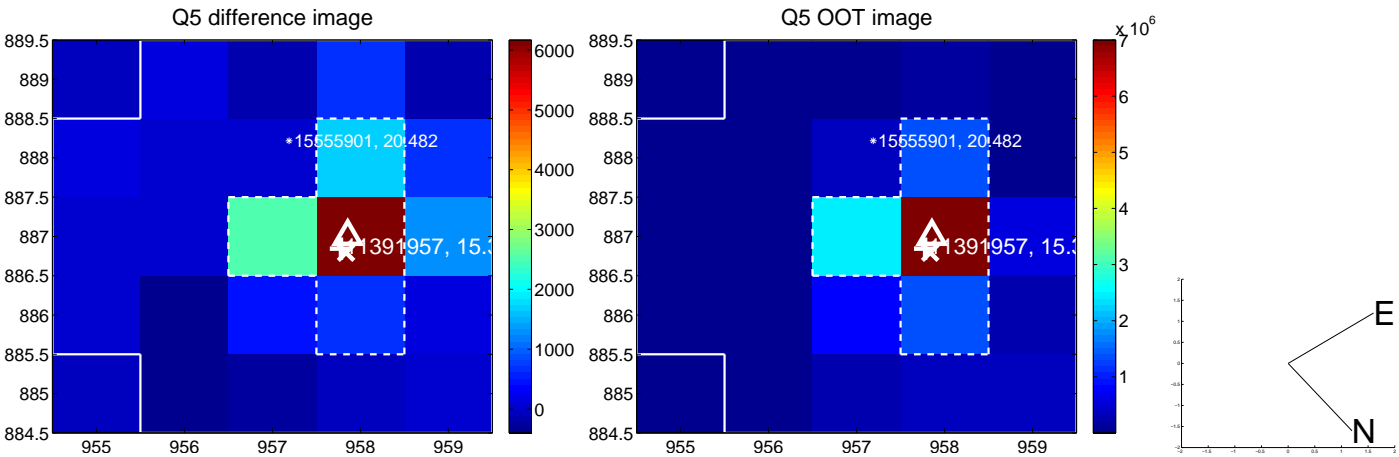


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

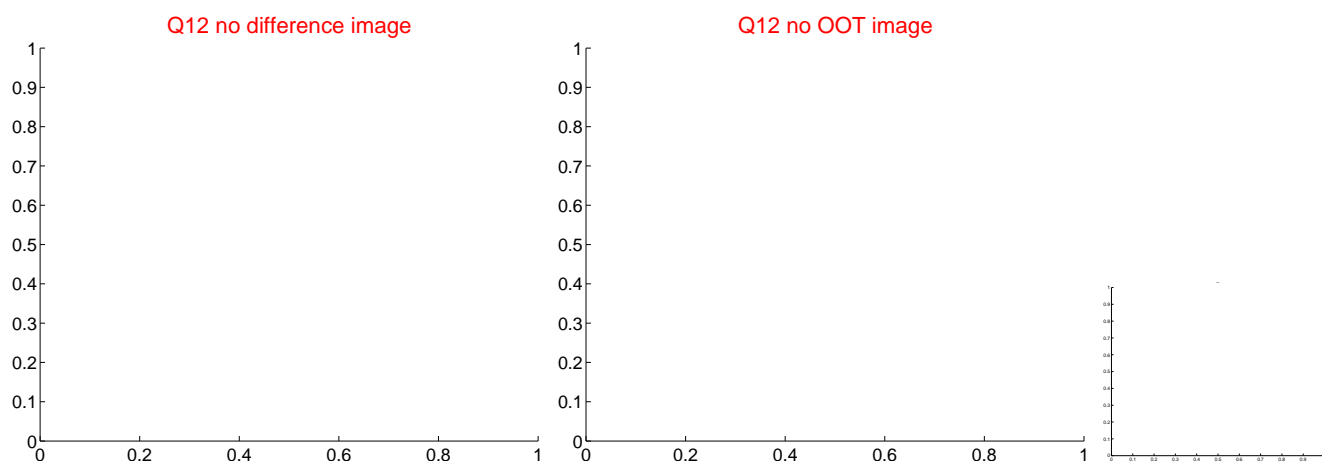
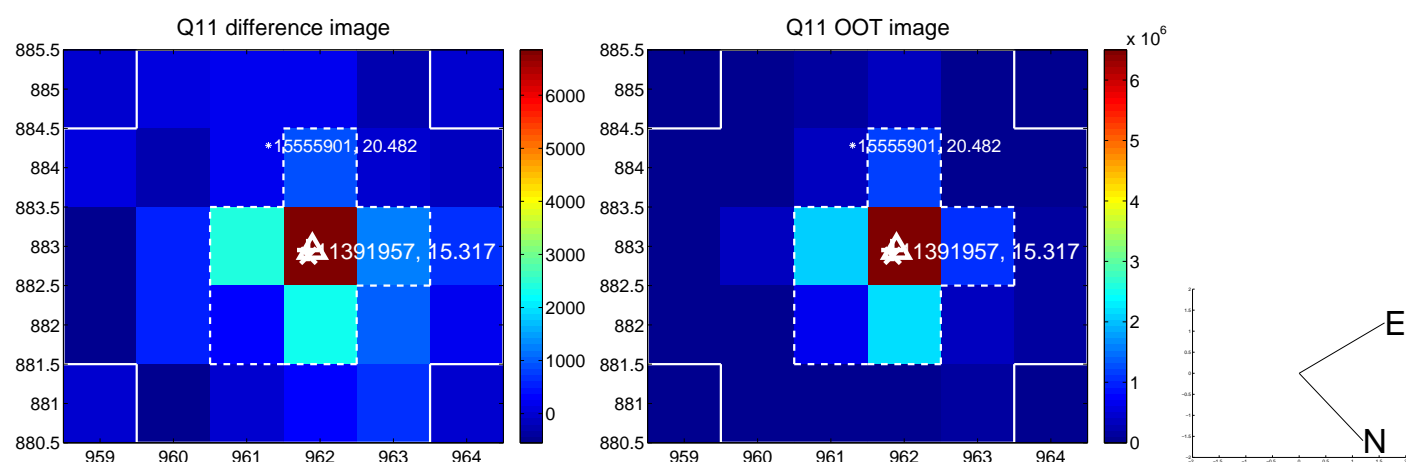
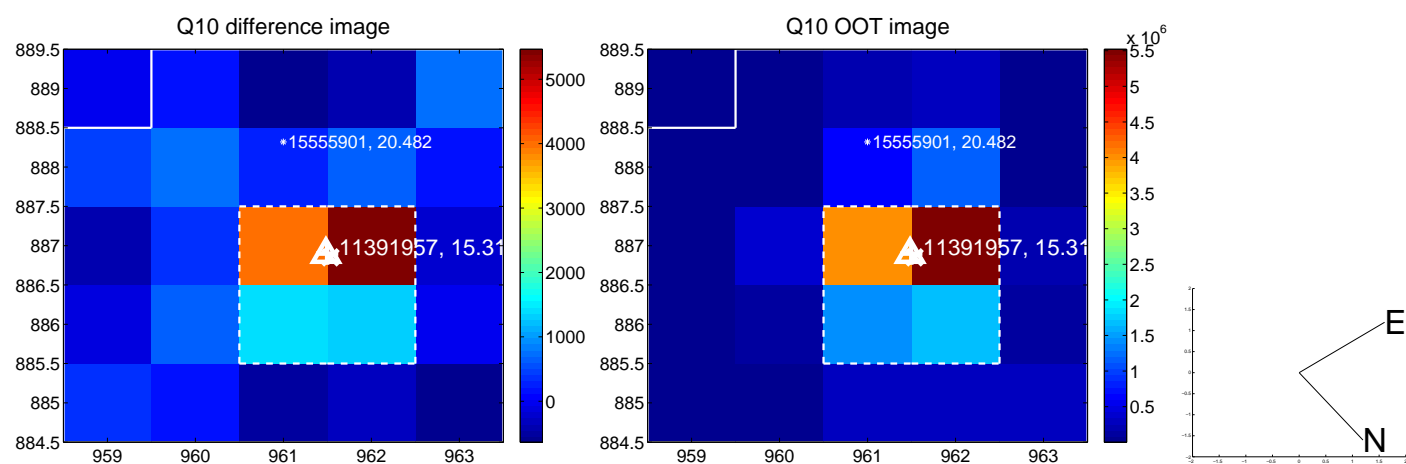
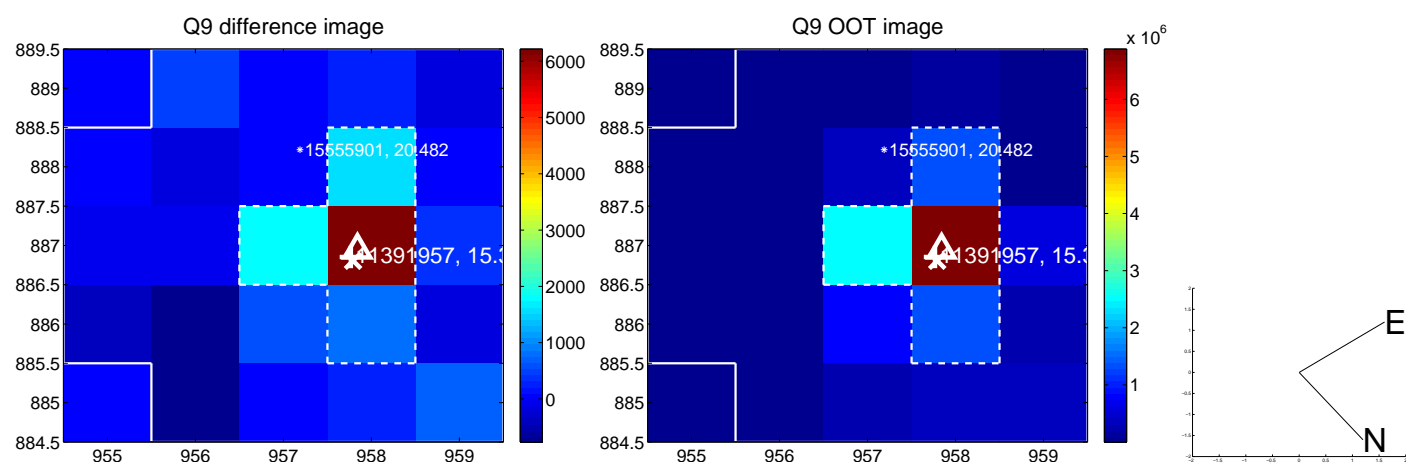




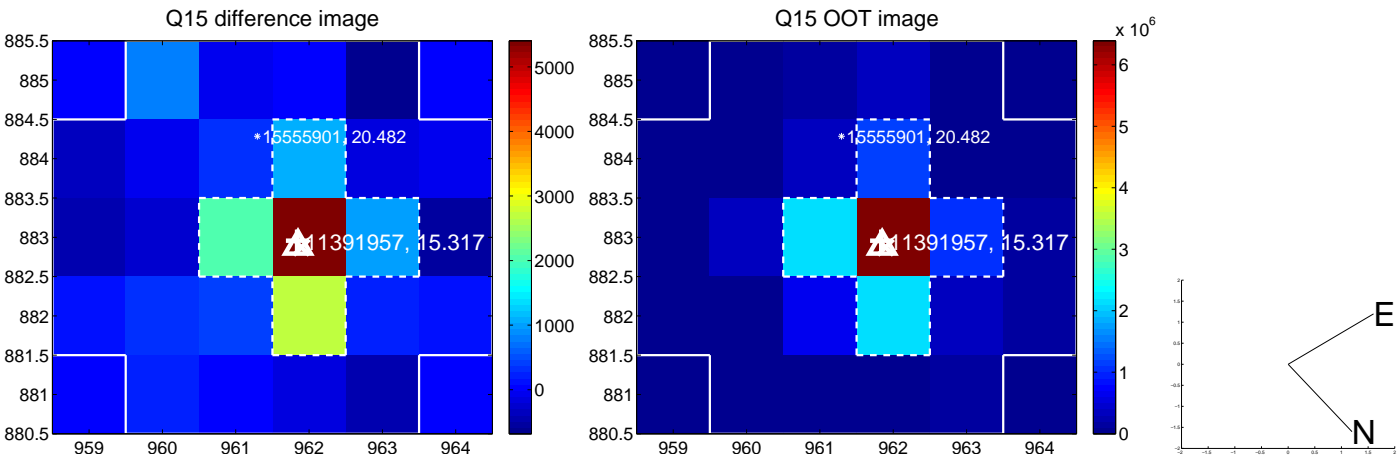
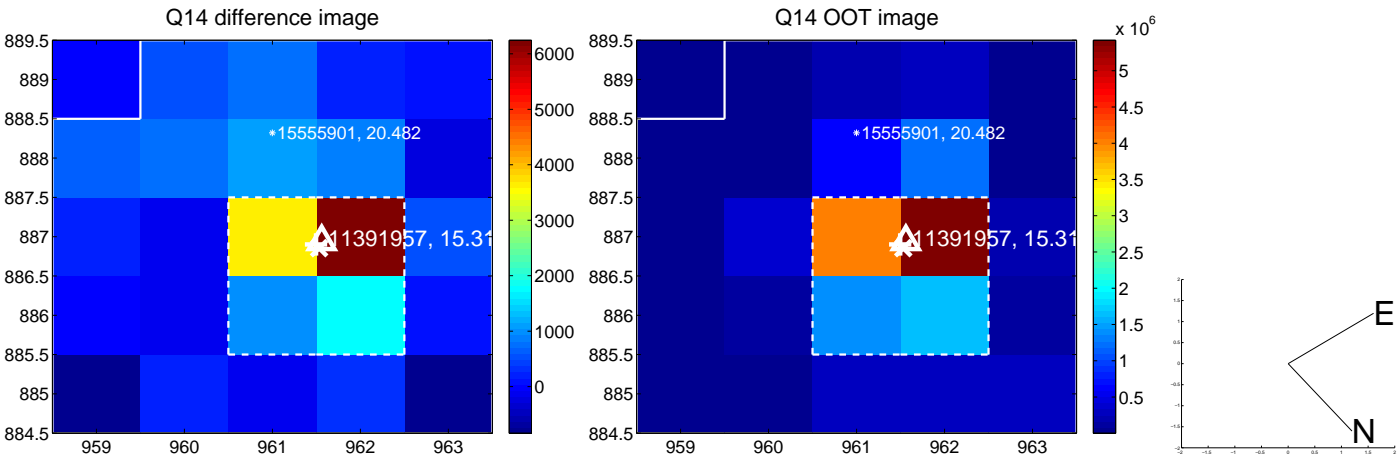
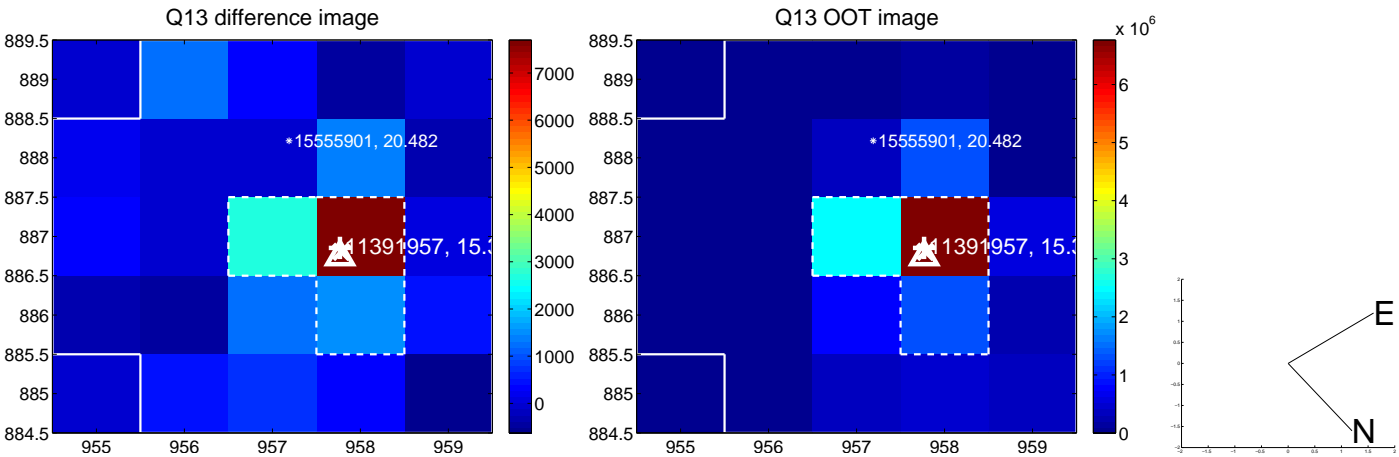
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



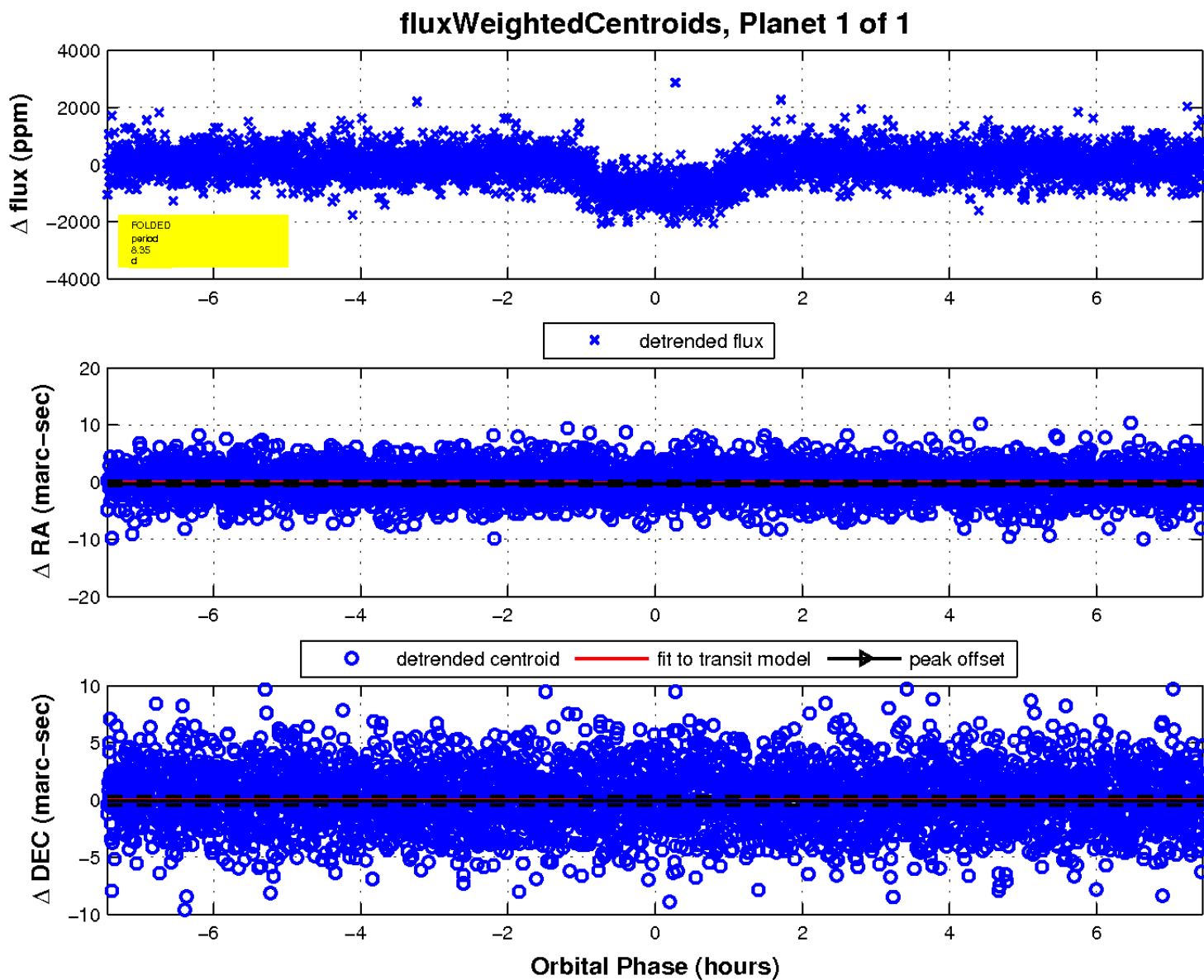
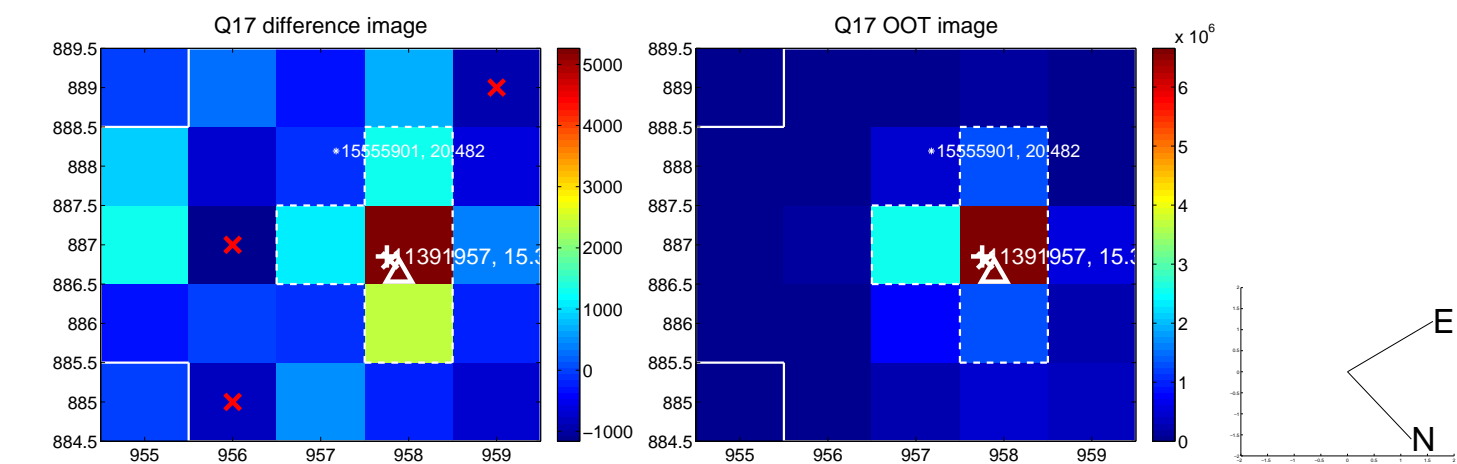
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



# UKIRT Image

Declination

