

# KIC 011236244

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011236244-01	OBS	2460.01	11.322779	136.053002	299.4	3.139	12.9	14.3	0.64	4563	1.34	22.30

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011236244-01	OBS	PC	0.96	0	0	0	0	CENT_KIC_POS

**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.

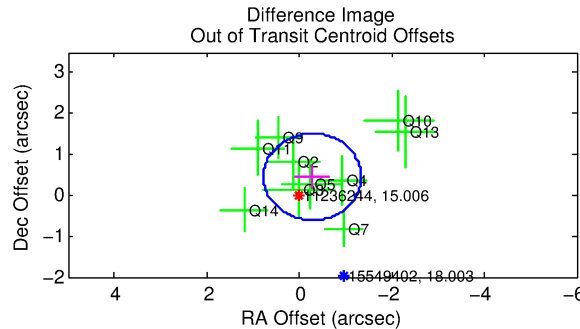
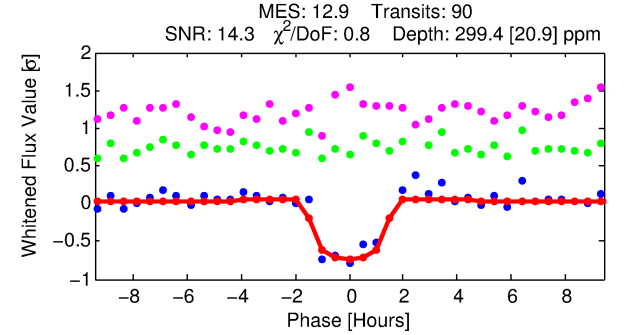
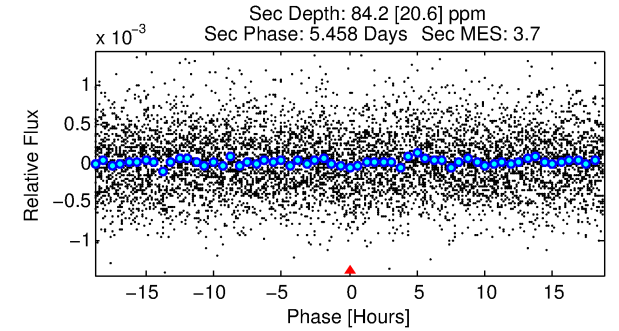
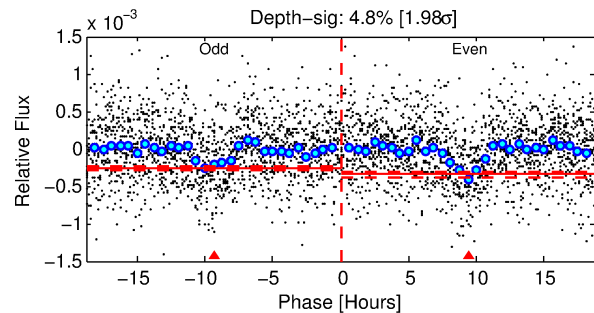
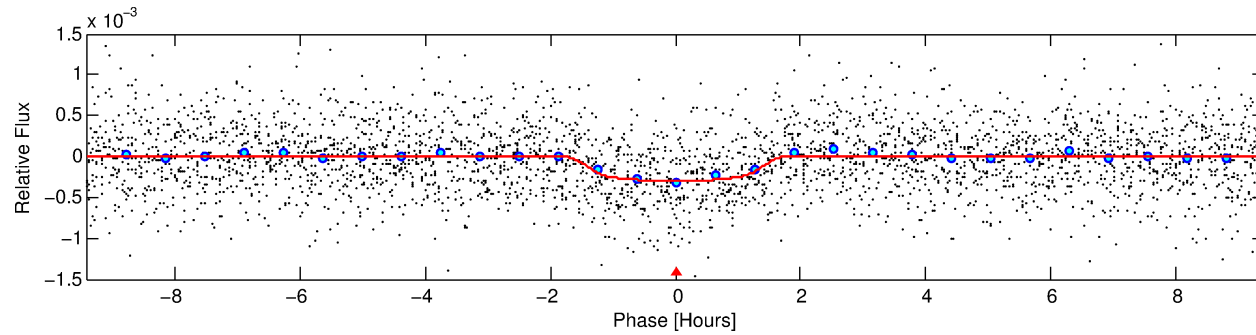
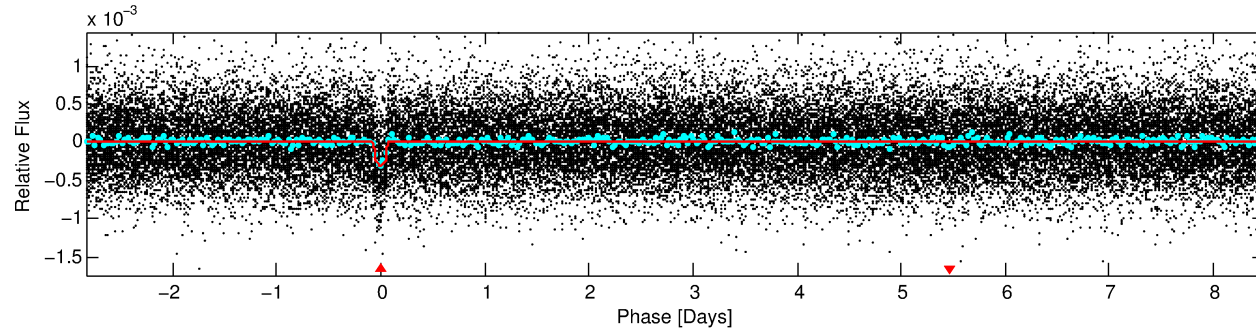
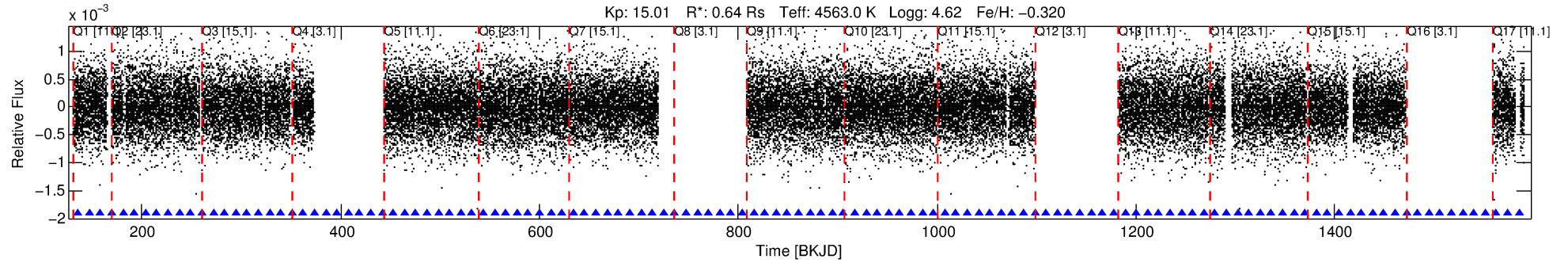
## Ephemeris Match Information For 011236244-01

No Significant Match Found

# DV One-Page Summary

KIC: 11236244 Candidate: 1 of 1 Period: 11.323 d

KOI: K02460.01 Corr: 0.979



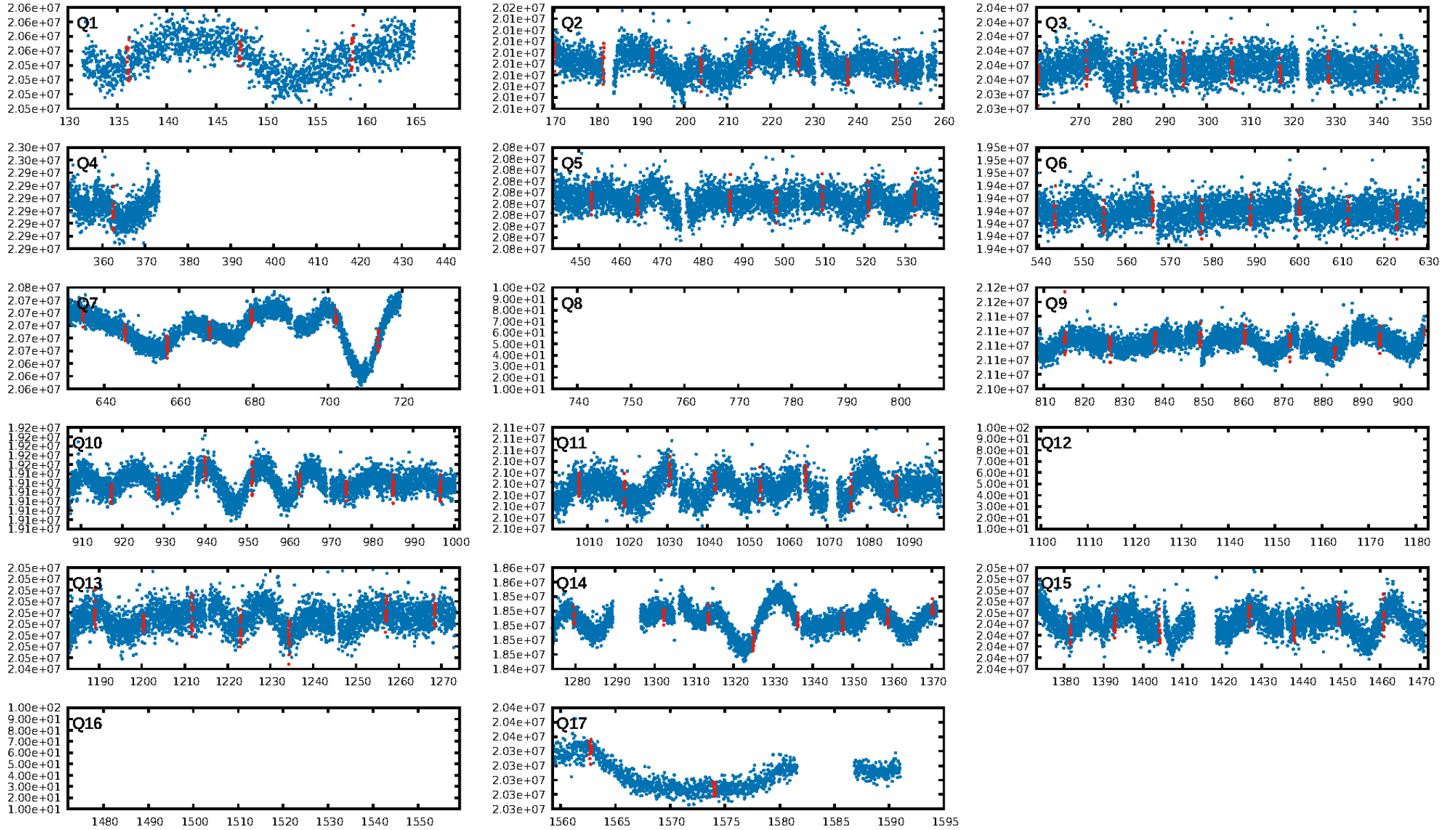
## DV Fit Results:

Period = 11.32278 [0.00007] d  
Epoch = 136.0530 [0.0045] BKJD  
Rp/R\* = 0.0191 [0.0092]  
a/R\* = 14.00 [25.02]  
b = 0.88 [0.46]  
Seff = 22.30 [3.38]  
Teff = 554 [21] K  
Rp = 1.34 [0.66] Re  
a = 0.0847 [0.0058] AU  
Ag = 185.39 [185.27] [1.00σ]  
Teffp = 3161 [792] K [3.29σ]

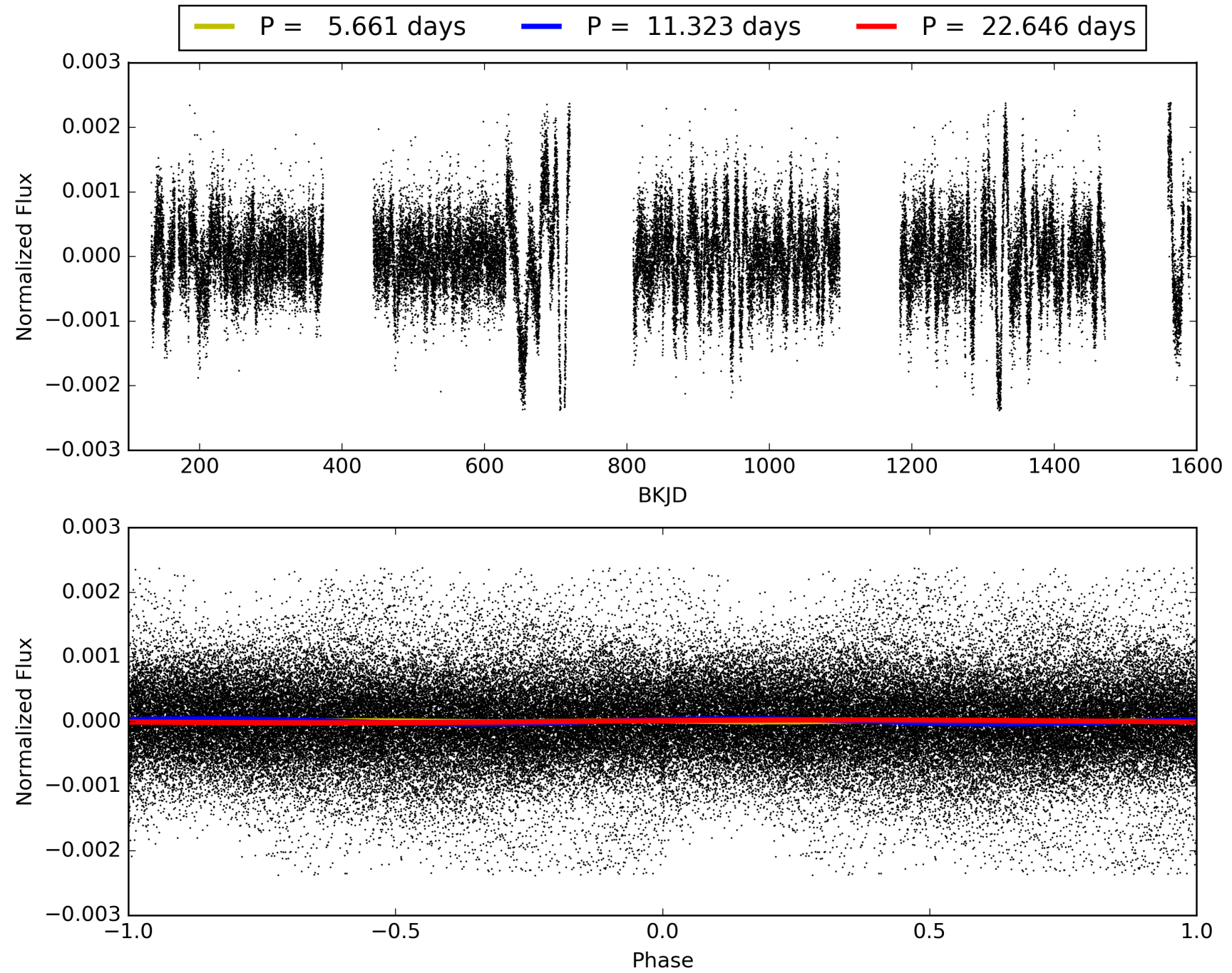
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 5.69e-38  
RollingBand-fgt: 1.00 [84/84]  
GhostDiagnostic-chr: 2.017  
Centroid-sig: 0.0%  
Centroid-so: 2.104 arcsec [2.38σ]  
OotOffset-rm: 0.530 arcsec [1.50σ]  
KicOffset-rm: 0.930 arcsec [2.50σ]  
OotOffset-st: 3/3/1/3 [10]  
KicOffset-st: 3/3/1/3 [10]  
DiffImageQuality-fgm: 0.90 [9/10]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 011236244-01, PDC Light Curves

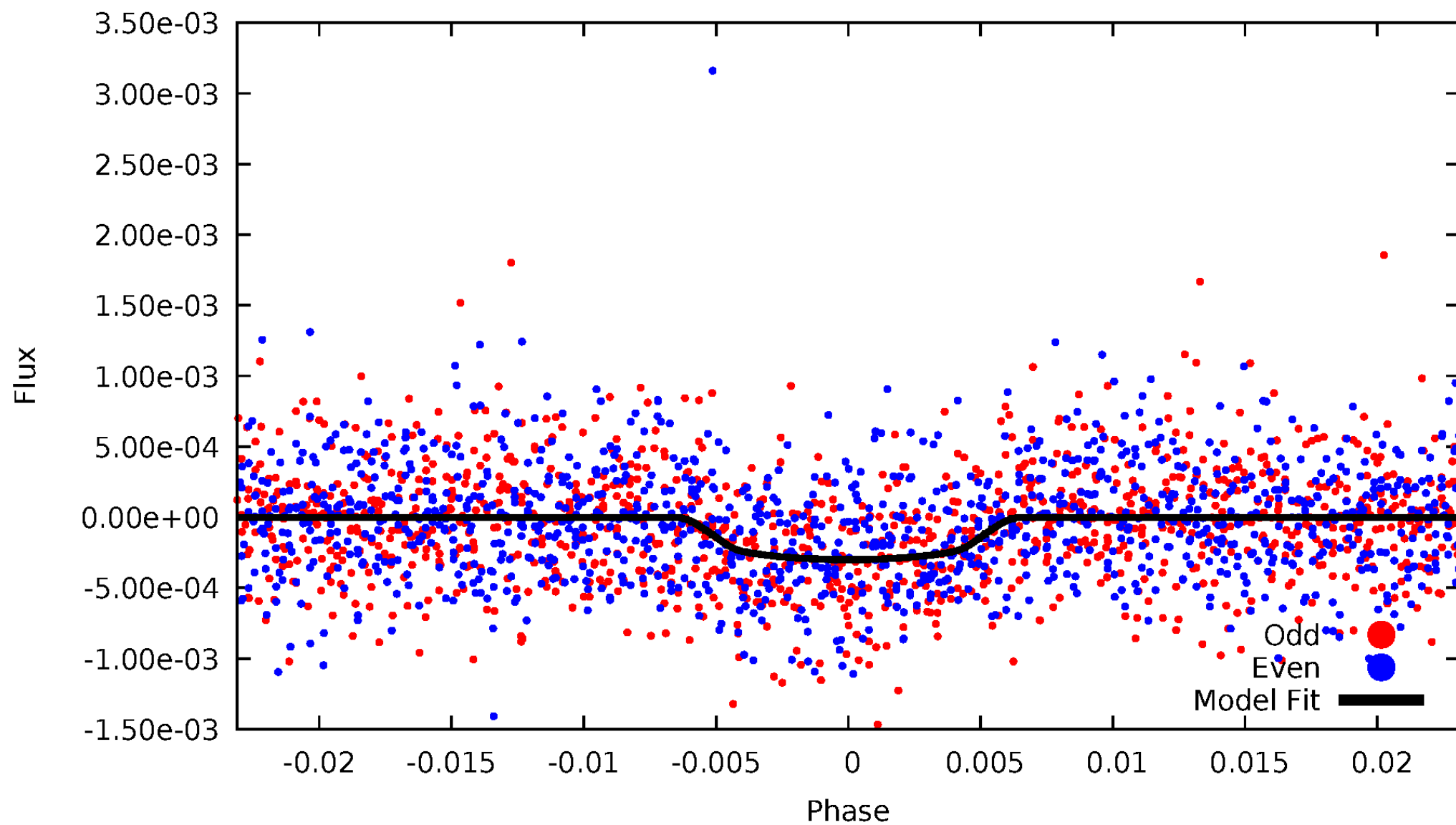


TCE 011236244-01



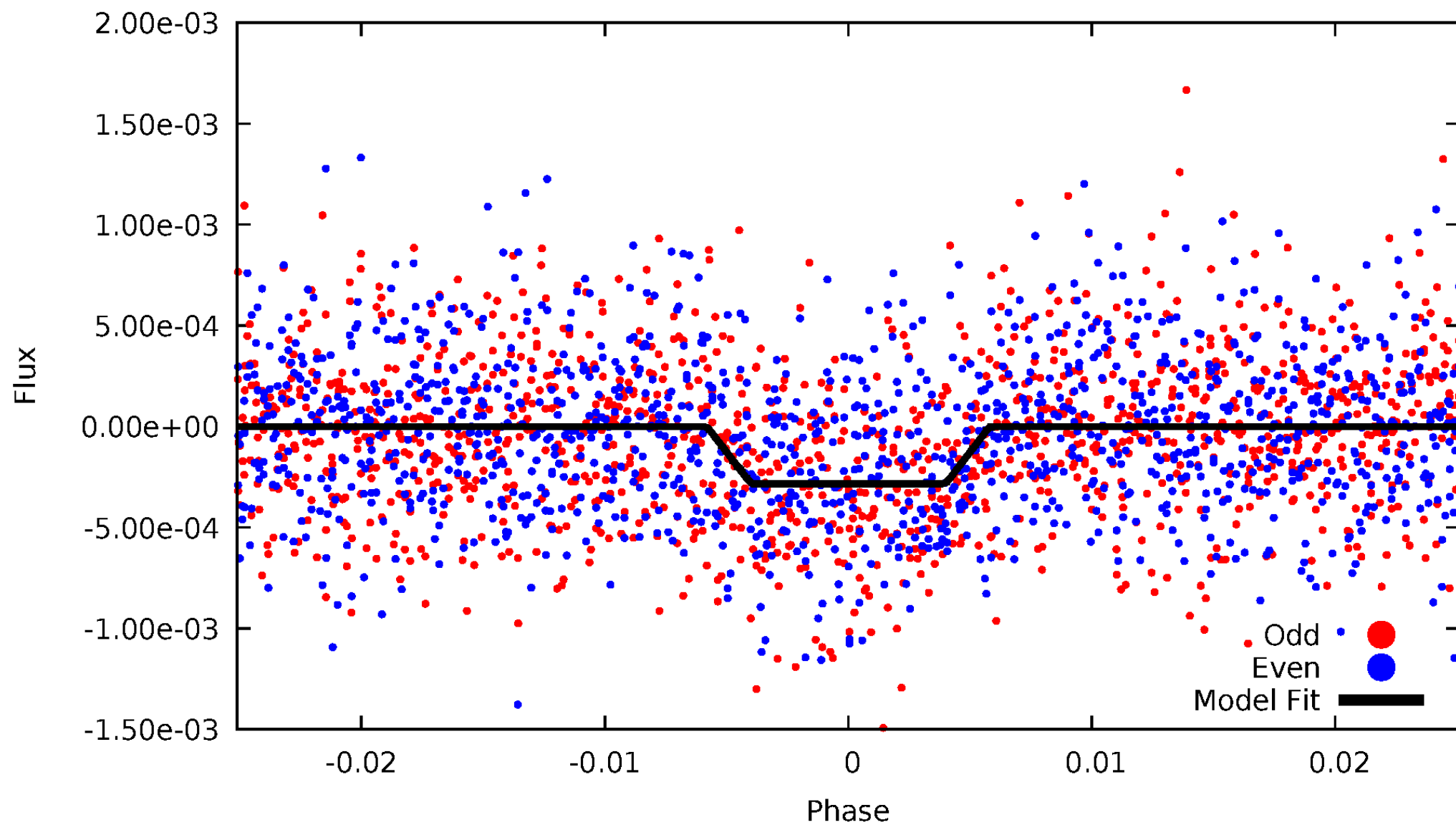
# DV Odd/Even

TCE 011236244-01



# ALT Odd/Even

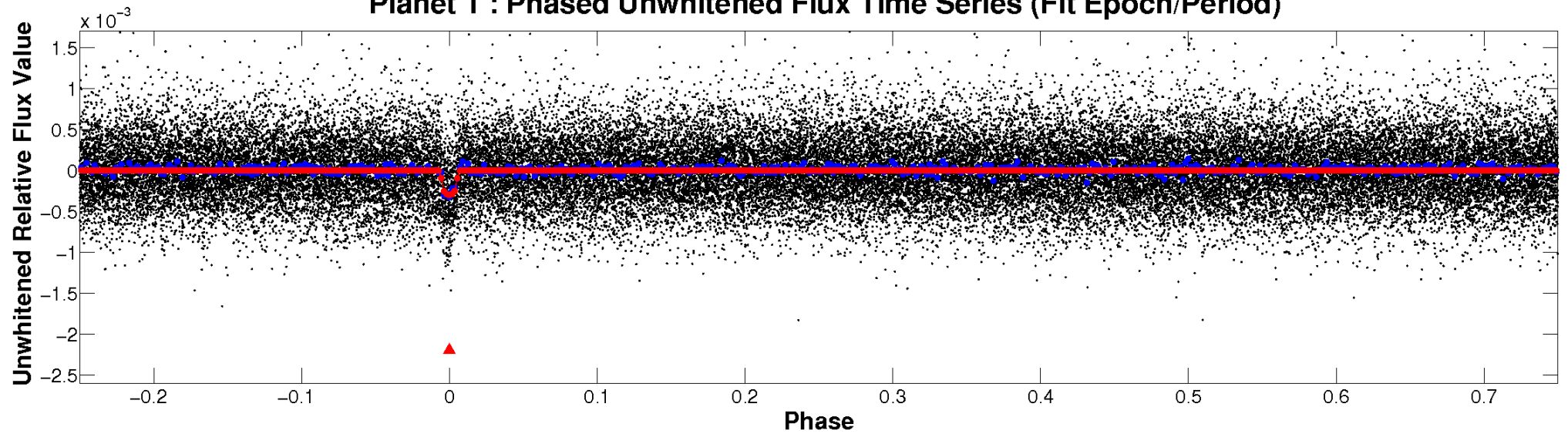
TCE 011236244-01



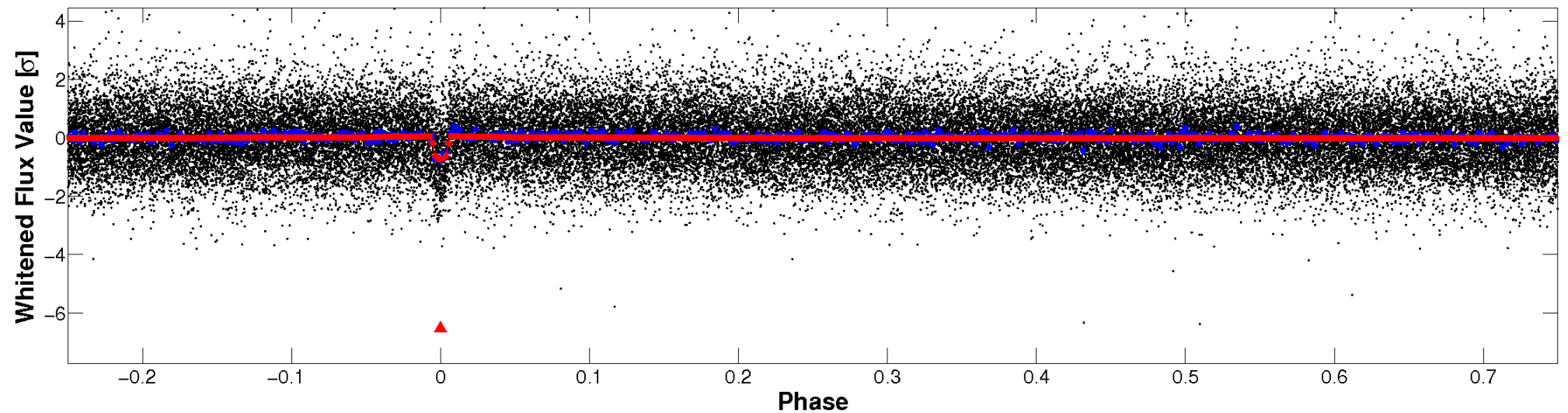


# Non-Whitened Vs. Whitened Light Curve

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

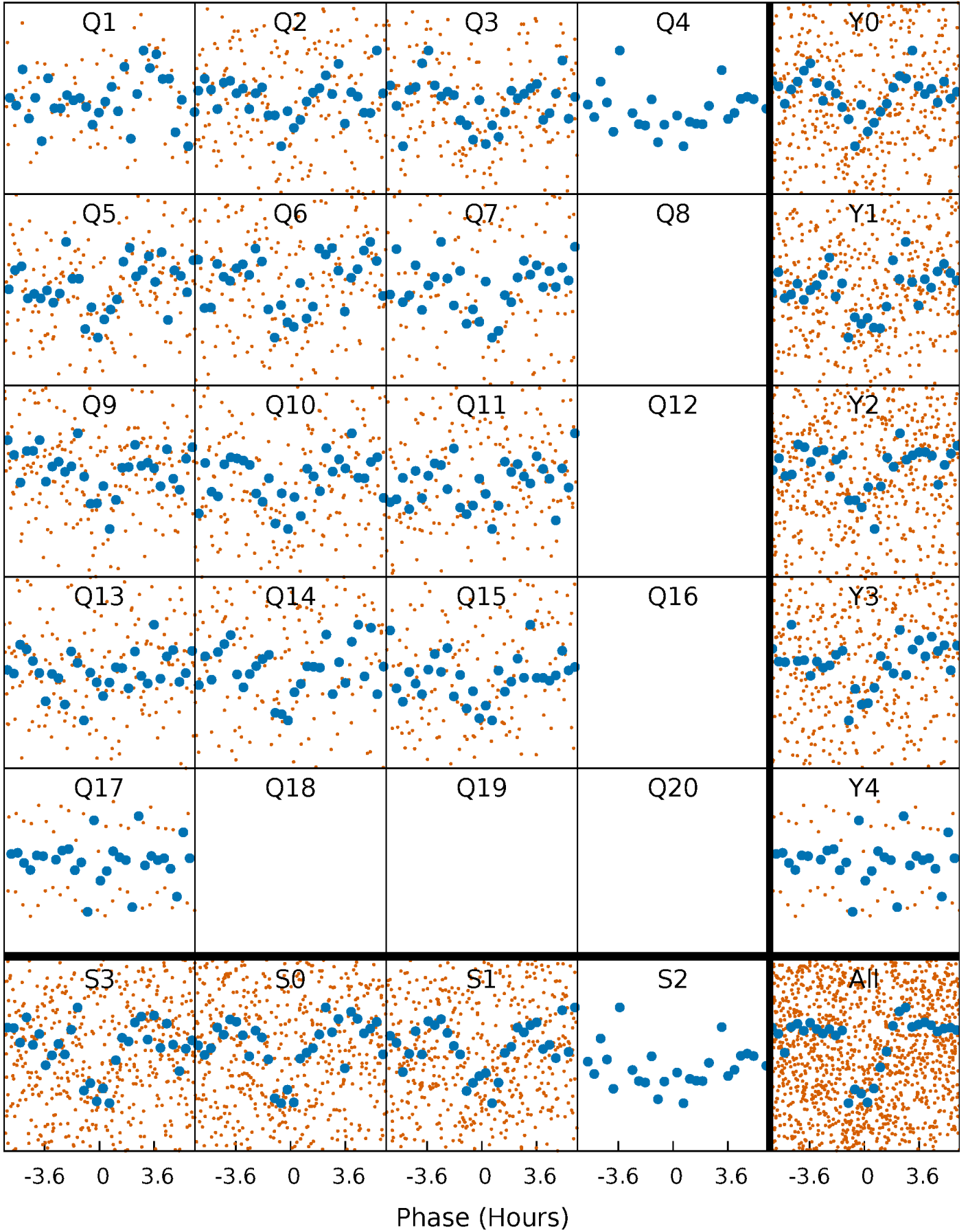


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

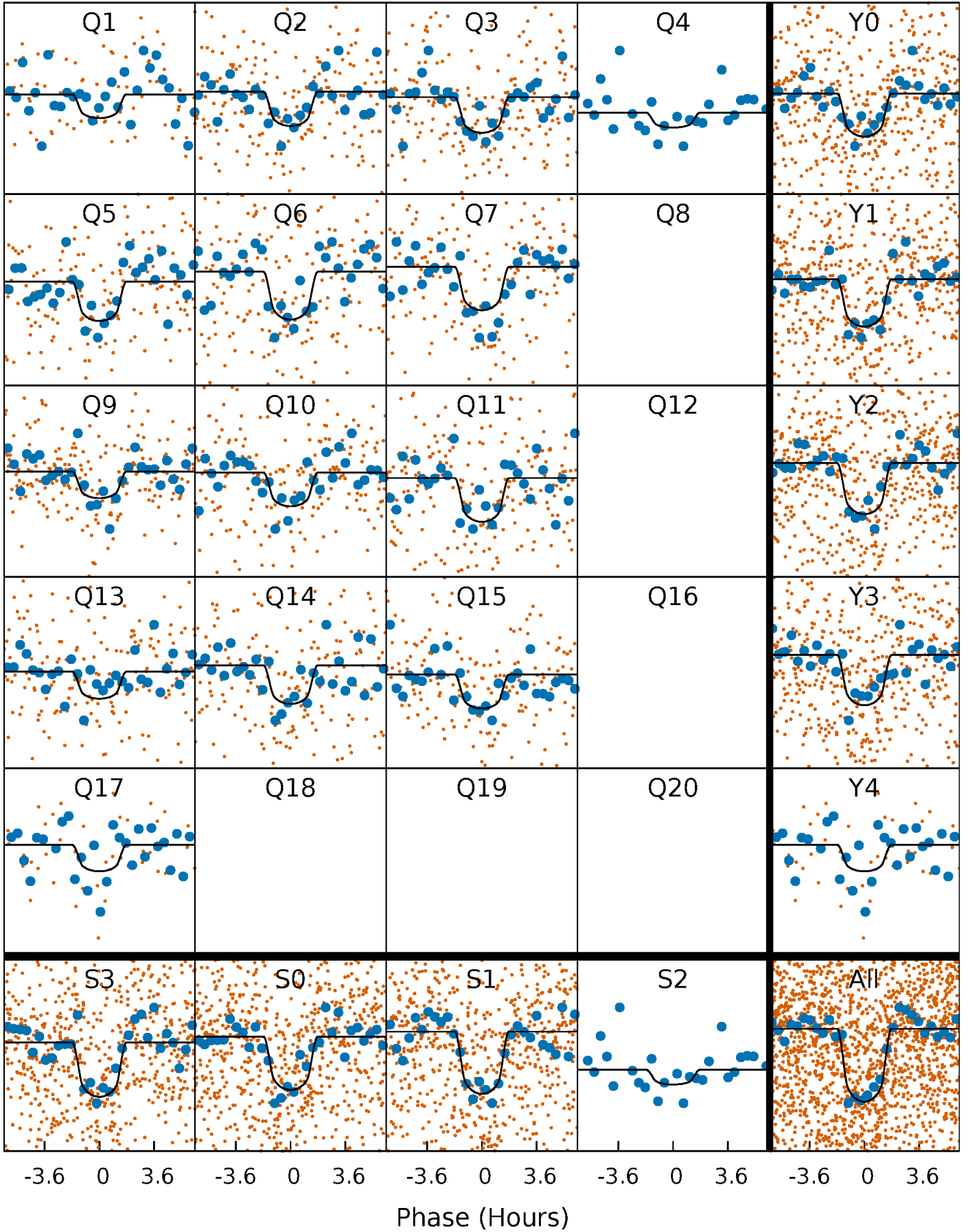
TCE 011236244-01 P= 11.322779 Days  $T_0=136.053002$  (BKJD)





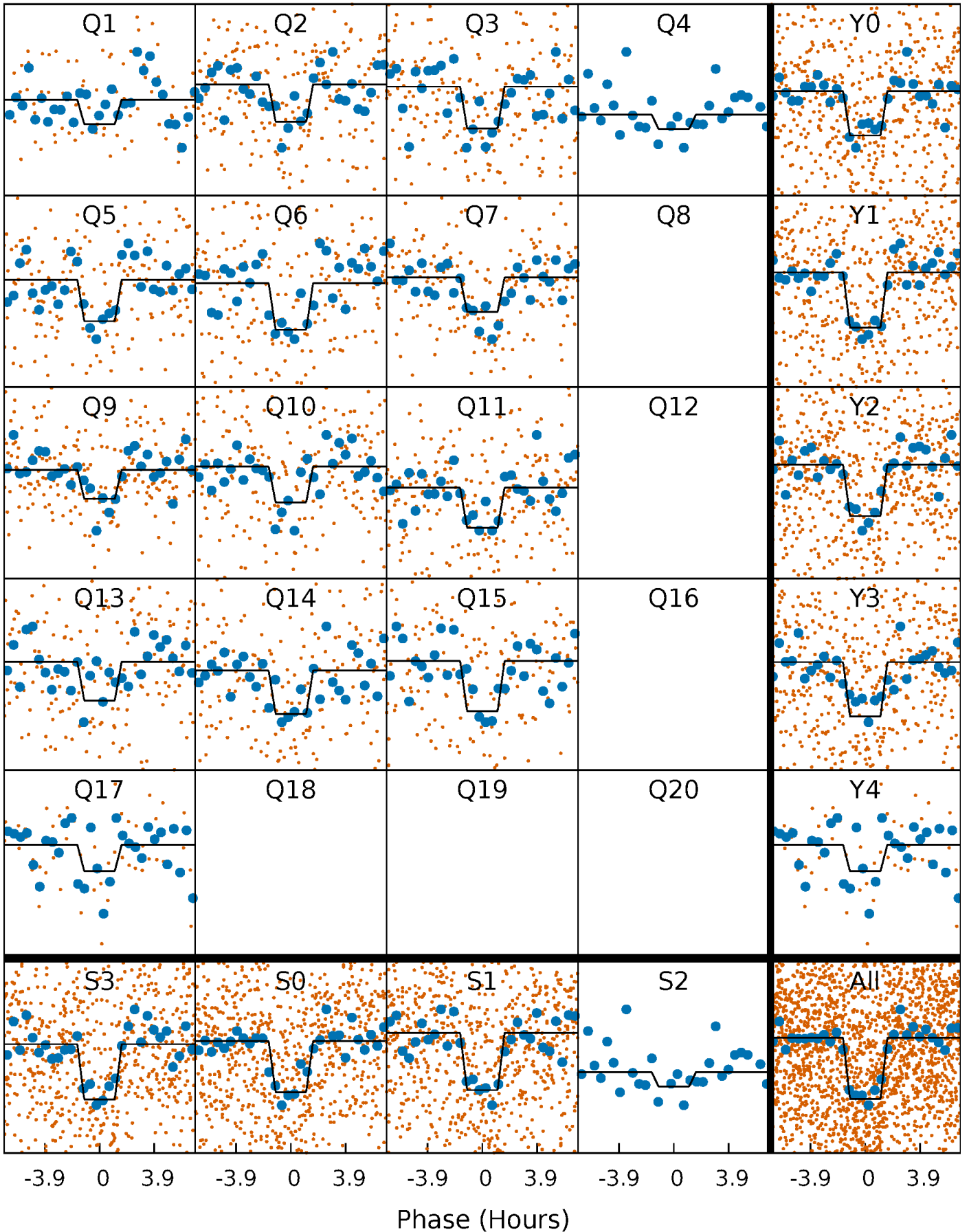
# DV Quarter-Phased Transit Curves

TCE 011236244-01 P= 11.322779 Days  $T_0=136.053002$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

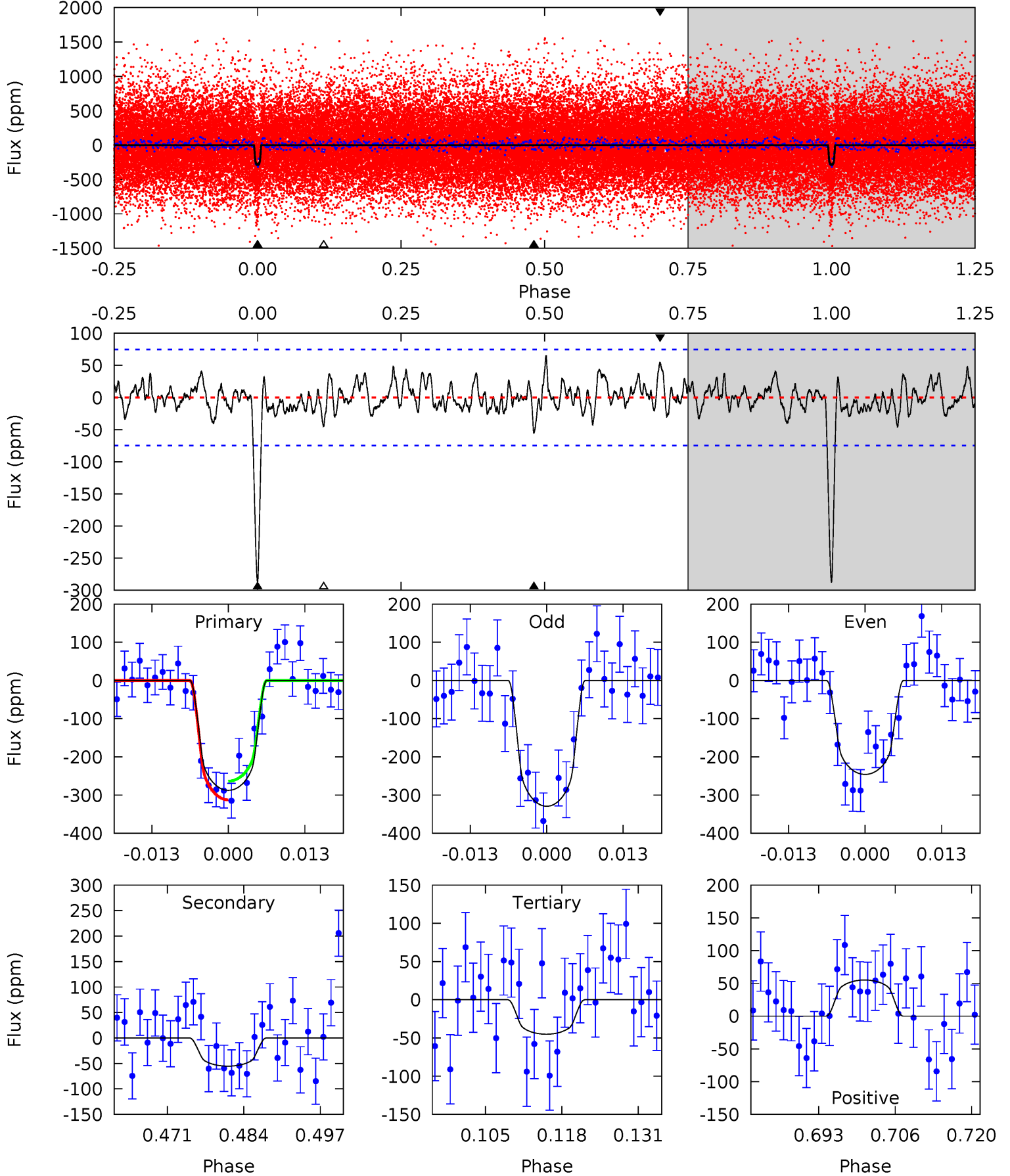
TCE 011236244-01 P= 11.322691 Days  $T_0=136.055103$  (BKJD)



# DV Model-Shift Uniqueness Test

011236244-01,  $P = 11.322779$  Days,  $E = 124.730223$  Days

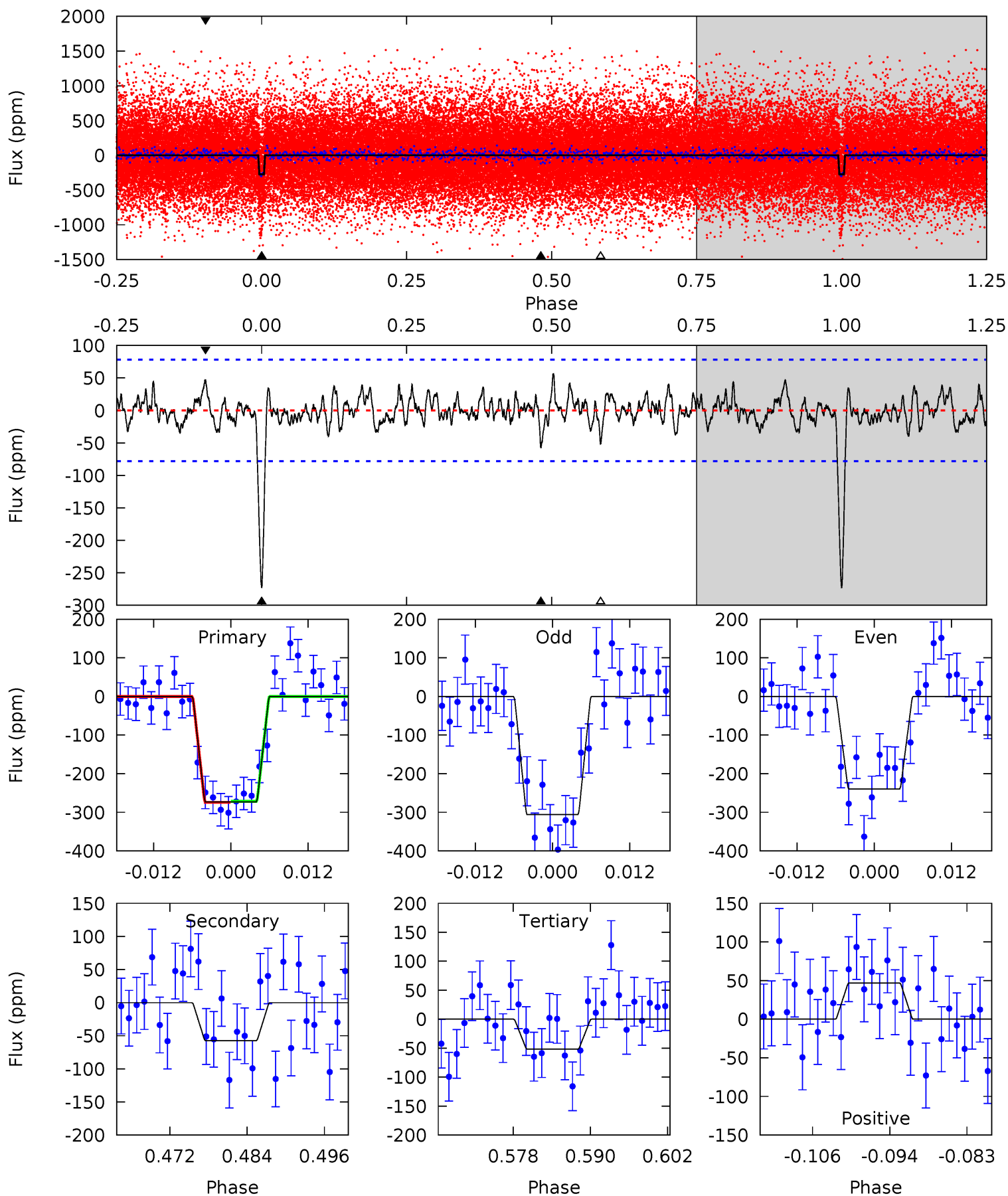
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.2	3.69	3.01	3.67	4.97	2.48	1.21	16.2	15.5	0.68	0.01	2.78	0.98	0.19	1.64



# Alt Model-Shift Uniqueness Test

011236244-01, P = 11.322691 Days, E = 124.732412 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
17.4	3.66	3.31	2.99	4.99	2.52	1.05	14.1	14.4	0.35	0.67	2.11	0.96	0.17	0.08



### Stellar Parameters For KIC 011236244

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4563^{+123}_{-136}$	$4.624^{+0.048}_{-0.028}$	$-0.320^{+0.300}_{-0.300}$	$0.642^{+0.051}_{-0.056}$	$0.634^{+0.077}_{-0.045}$	$3.368^{+0.770}_{-0.432}$
	+3%/-3%	+1%/-1%	+94%/-94%	+8%/-9%	+12%/-7%	+23%/-13%
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 011236244-01 / KOI 2460.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-55 \pm 15$	$1.34^{+0.63}_{-0.59}$	$772^{+24}_{-26}$	$3309^{+749}_{-399}$	$124^{+304}_{-72}$
Alt.	$-57 \pm 16$	$1.19^{+0.61}_{-0.58}$	$769^{+26}_{-26}$	$3404^{+886}_{-422}$	$160^{+455}_{-97}$

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



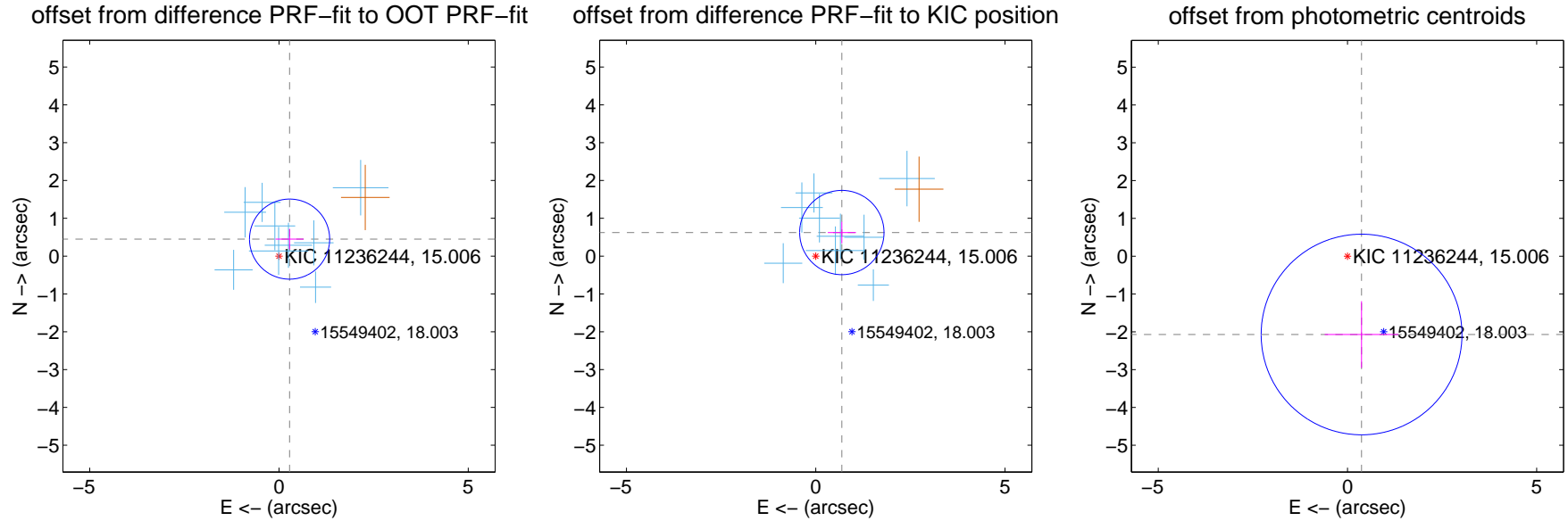
## DV Centroid Data

Supplemental centroid analysis for 011236244-01. Kepler magnitude: 15.01. Transit SNR 14.34

There are 9 quarters with good PRF difference image offsets

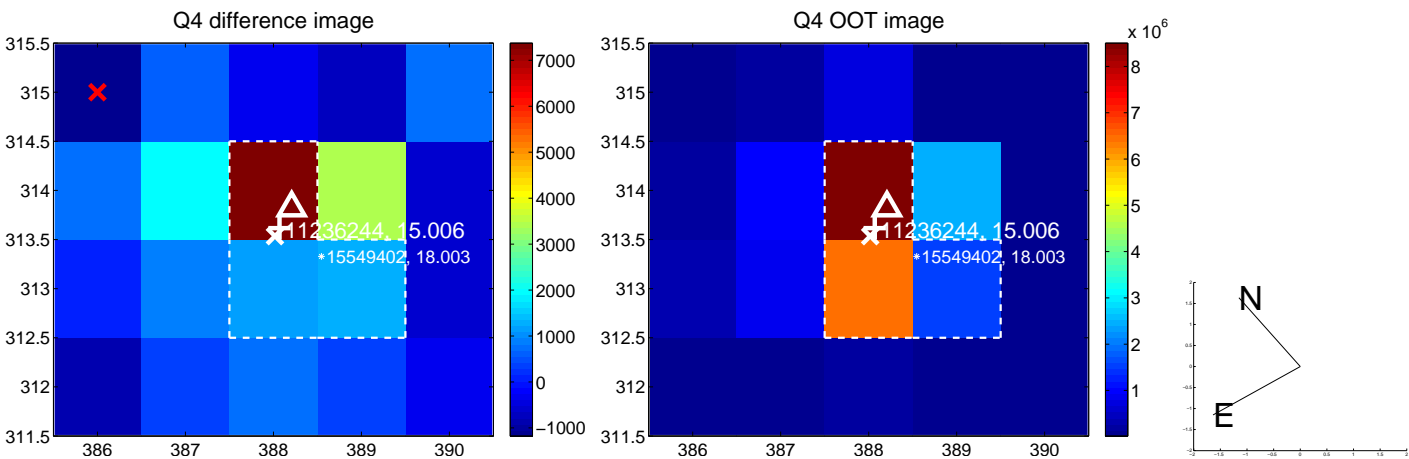
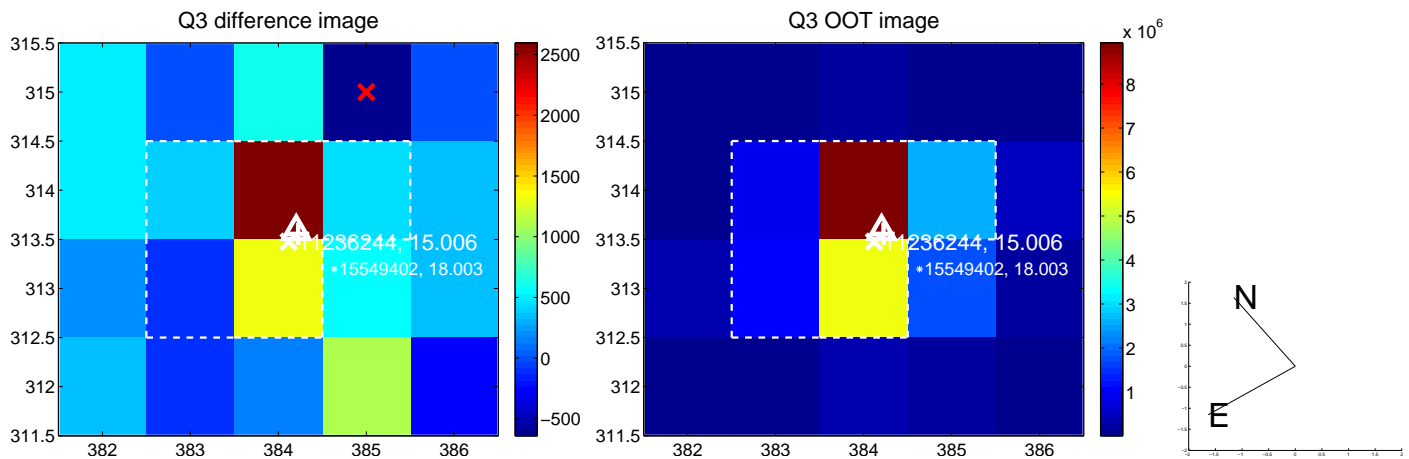
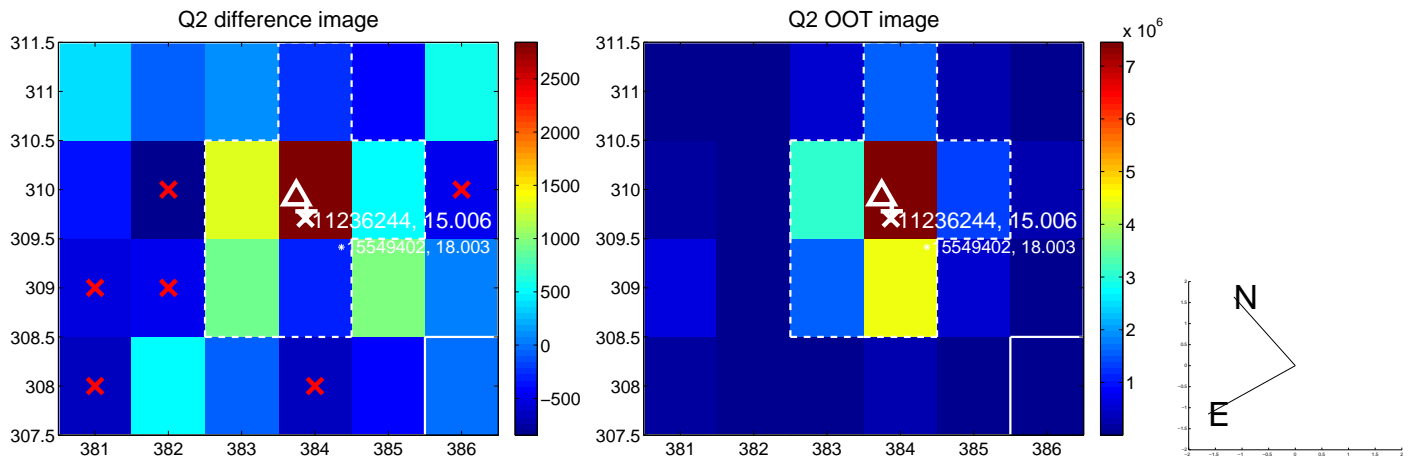
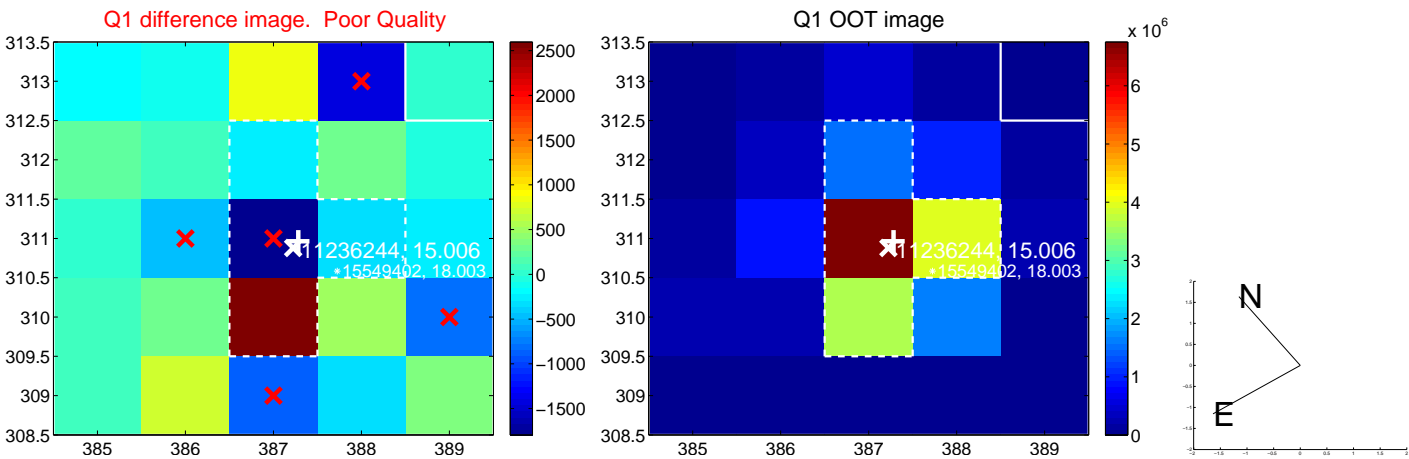
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.530 \pm 0.353$	1.50	$-0.280 \pm 0.373$	$0.450 \pm 0.270$
PRF-fit source offset from KIC position	$0.930 \pm 0.371$	2.50	$-0.690 \pm 0.373$	$0.624 \pm 0.286$
photometric centroid source offset	$2.10 \pm 0.88$	2.38	$-0.37 \pm 0.97$	$-2.07 \pm 0.88$

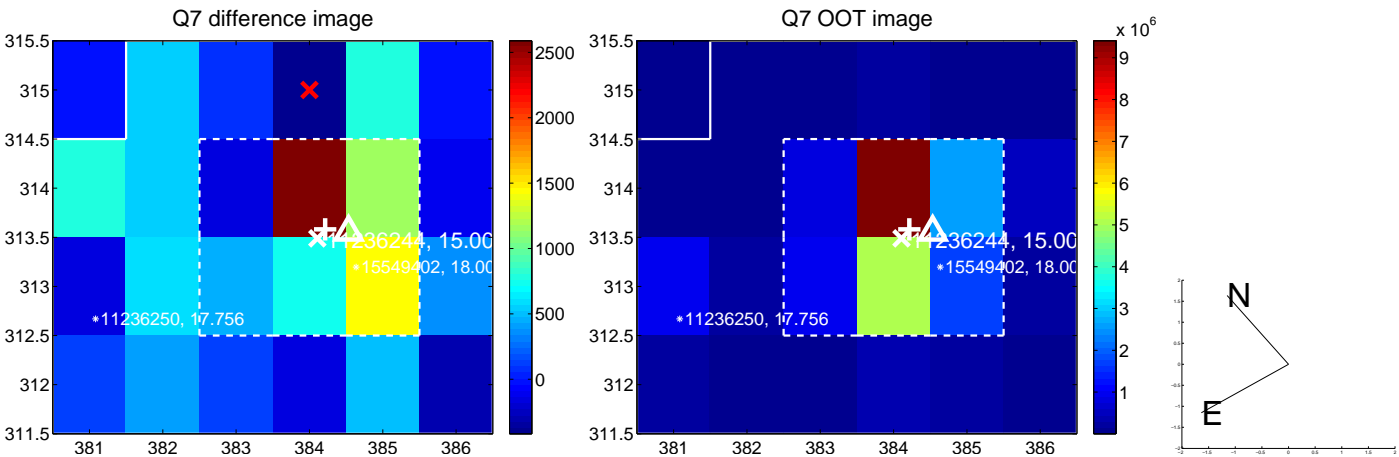
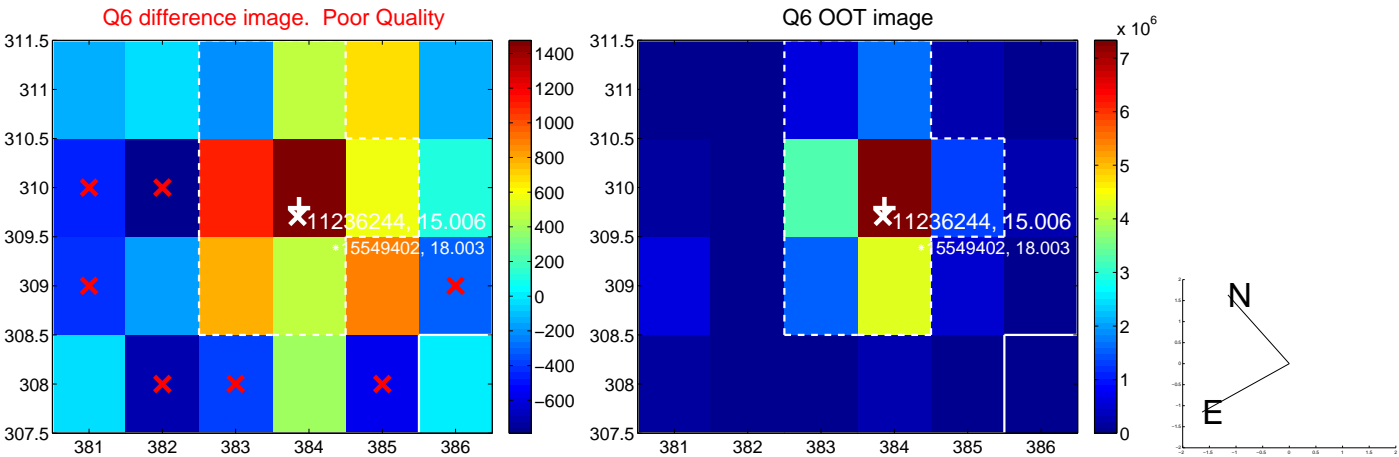
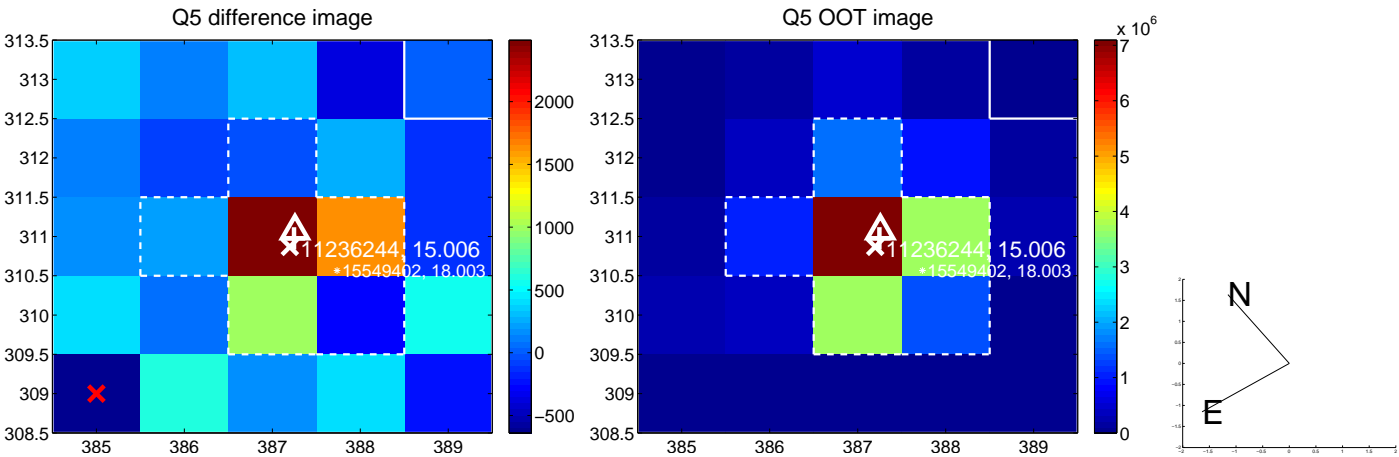


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

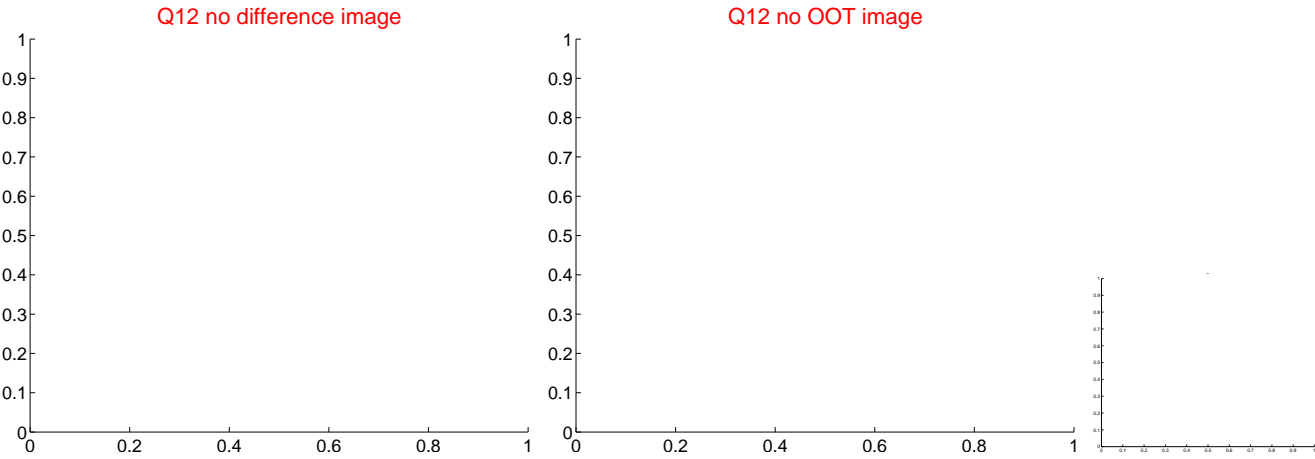
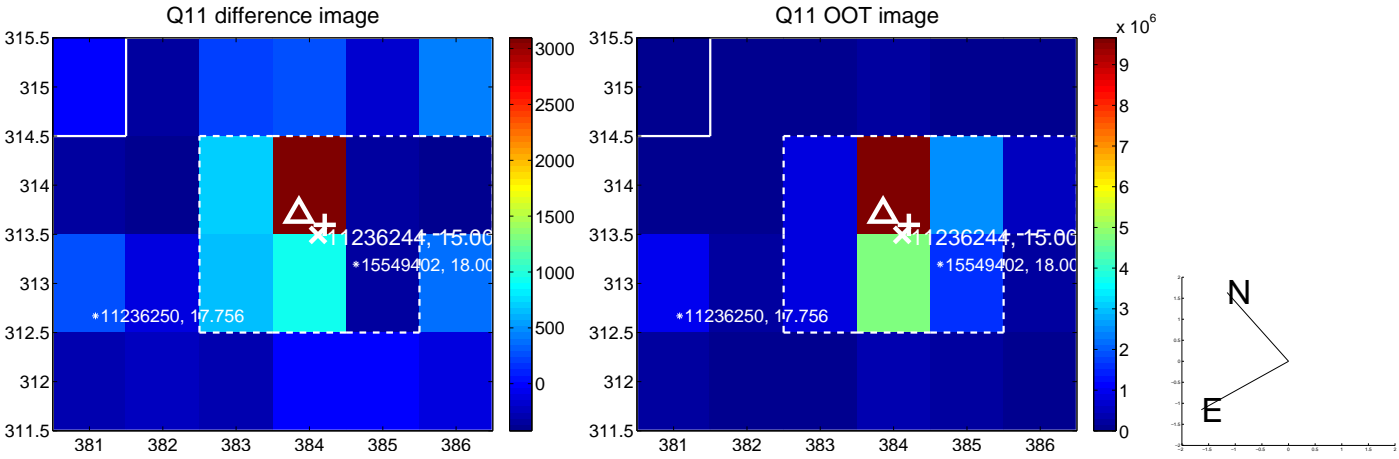
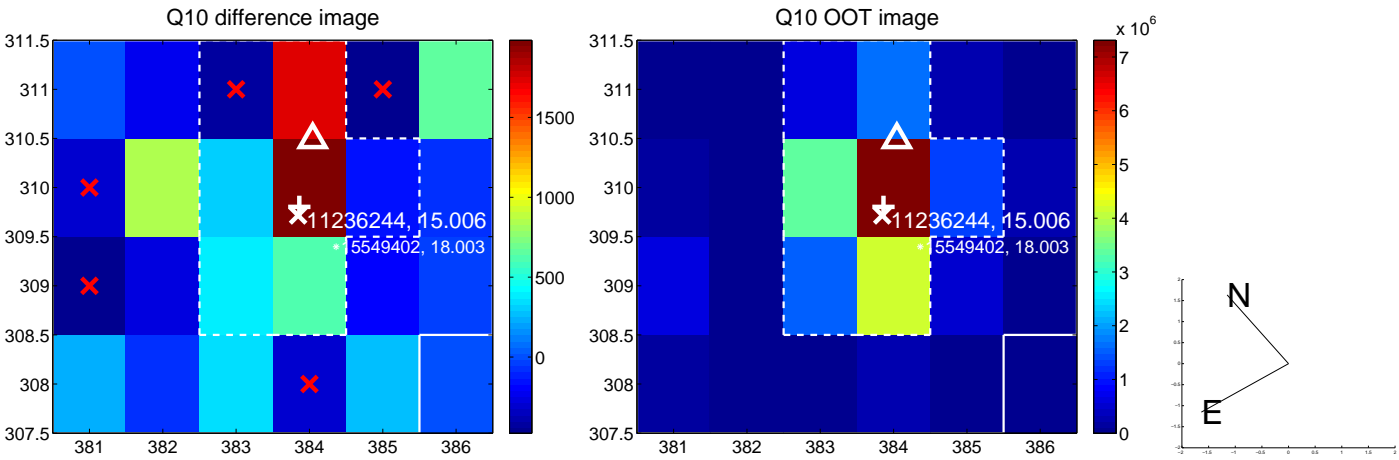
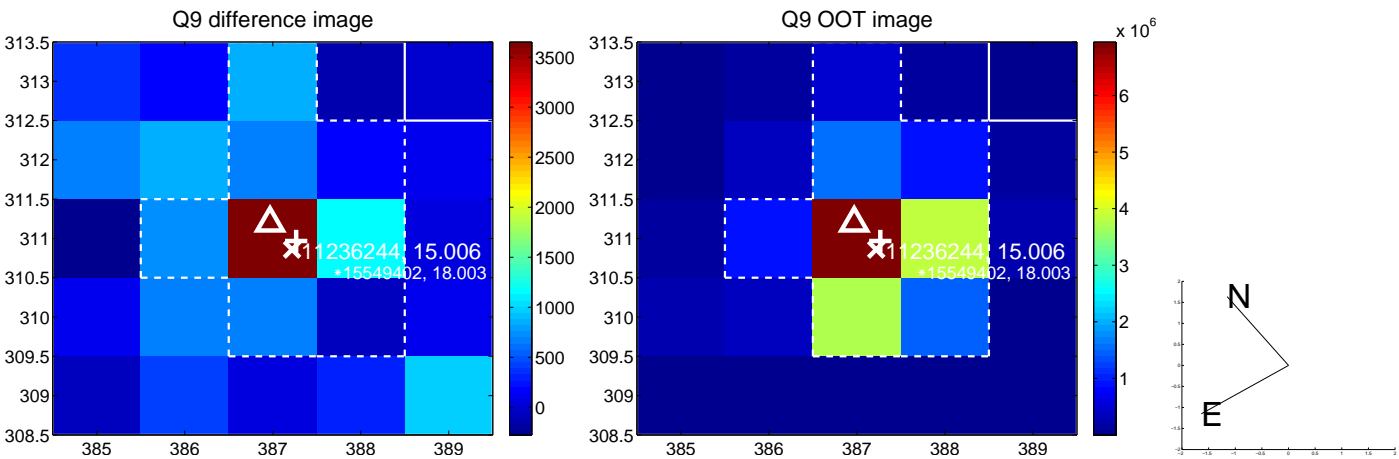
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



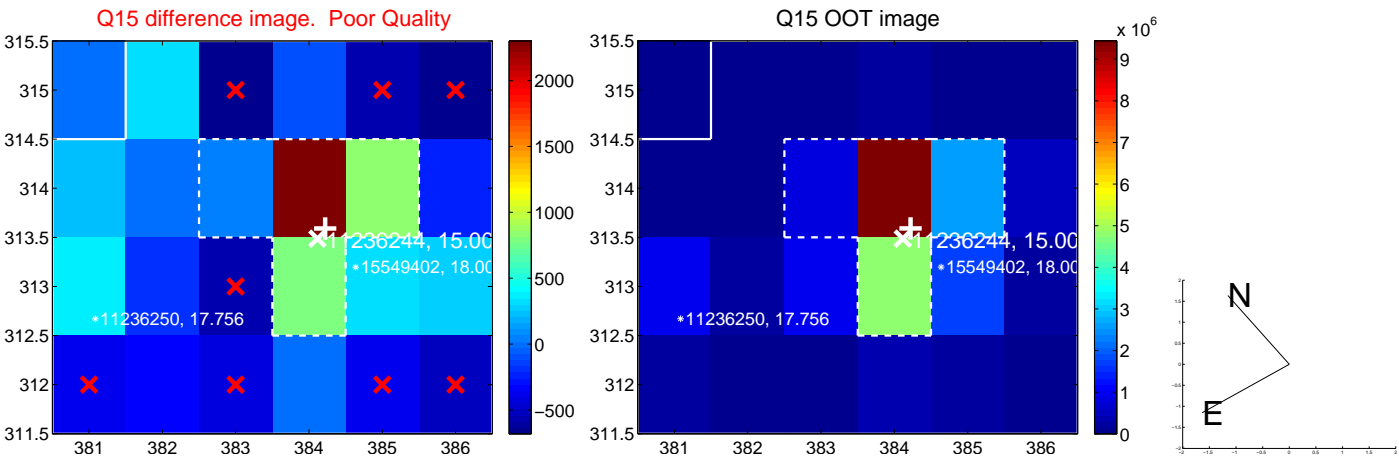
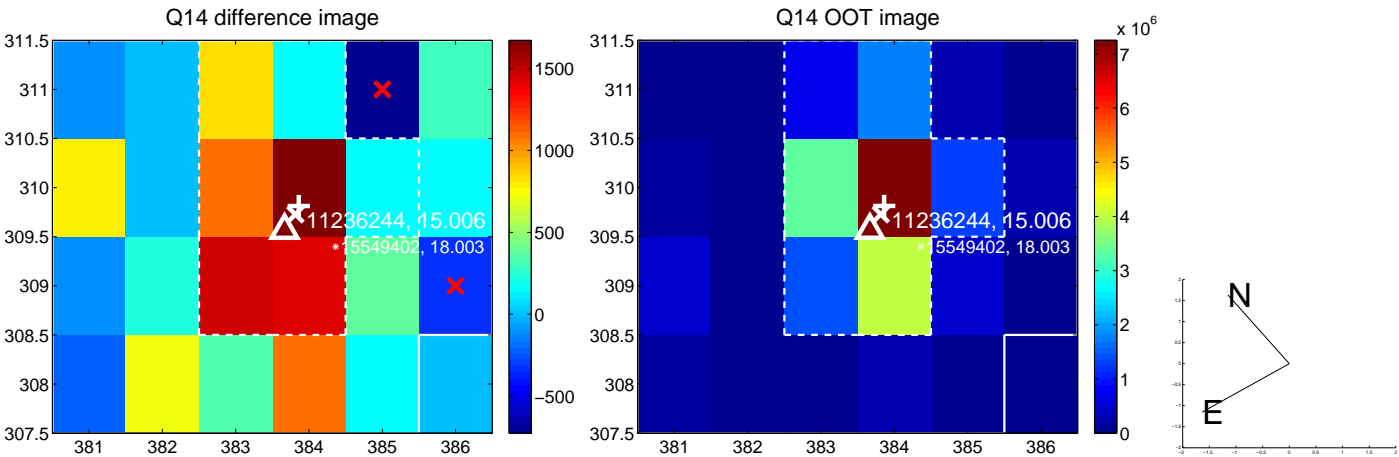
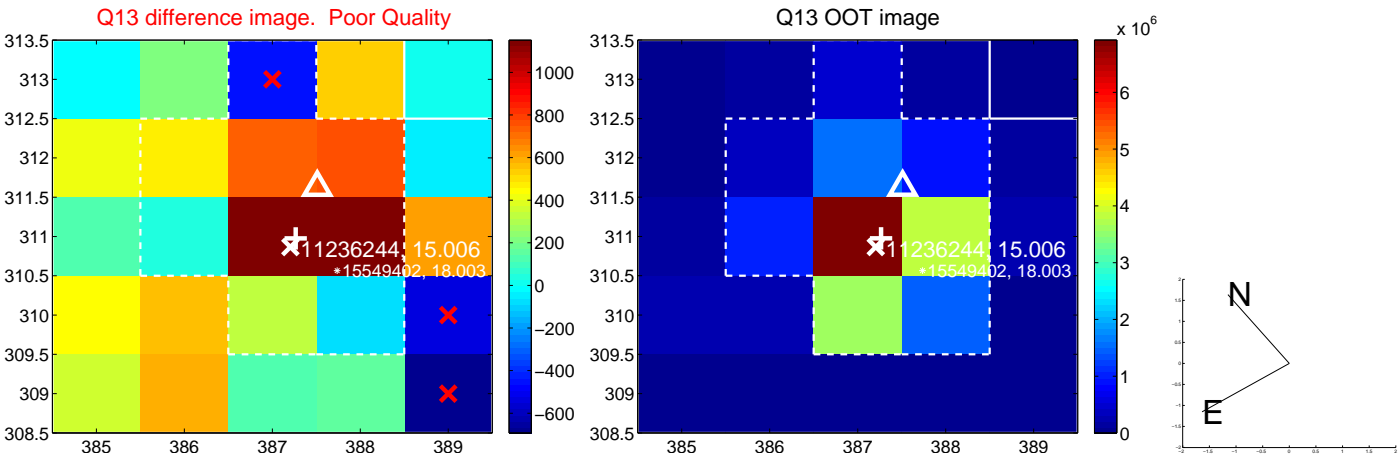
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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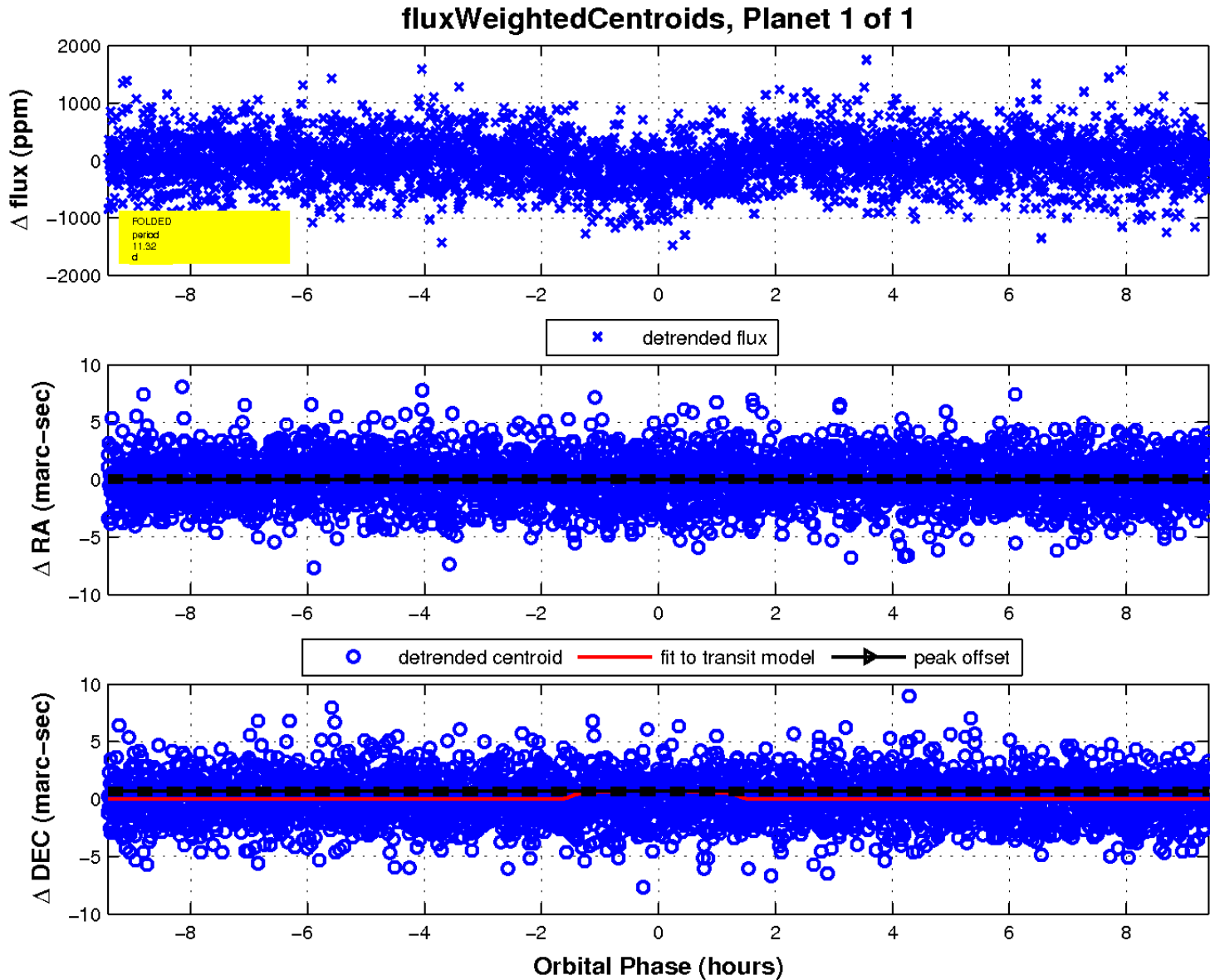
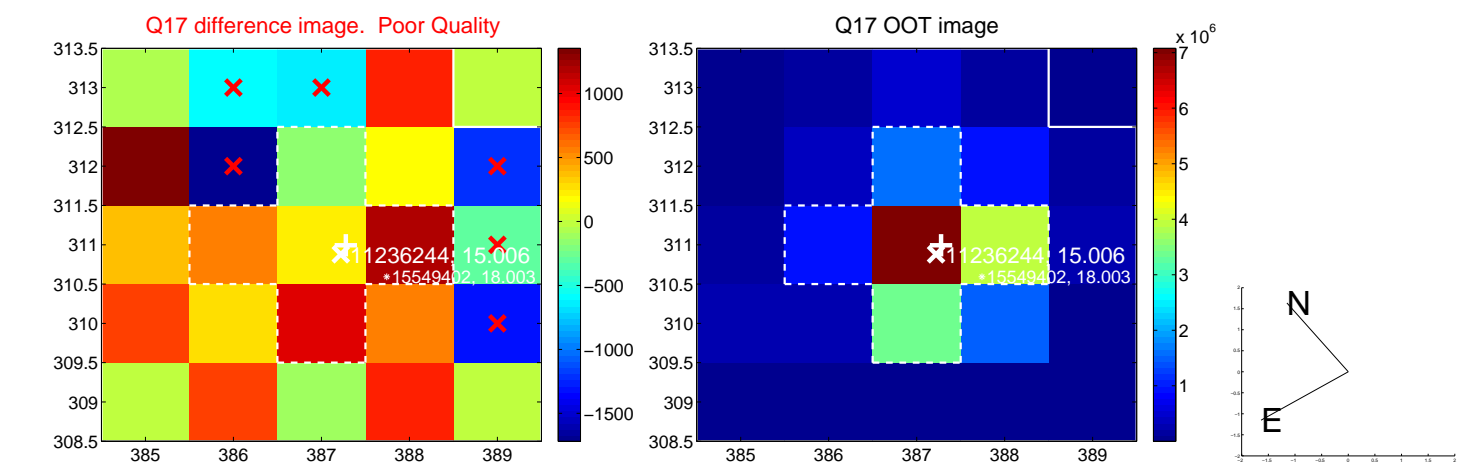


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





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



UKIRT Image

Declination

