

# KIC 008949247

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008949247-01	OBS	1387.01	23.799940	152.565445	59546.2	5.014	2734.8	2331.5	0.96	5934	34.17	38.98

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008949247-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED

**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.

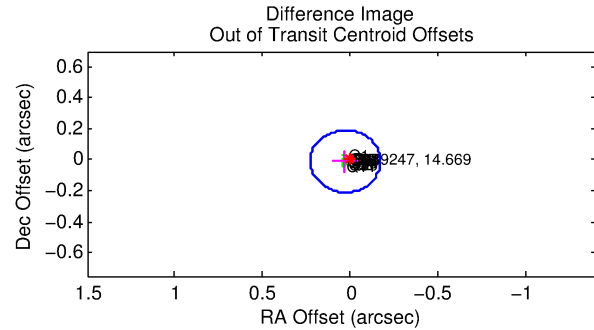
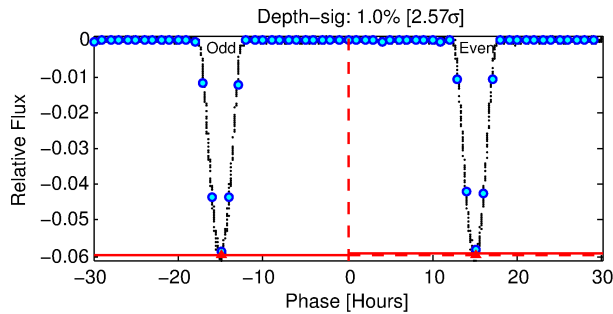
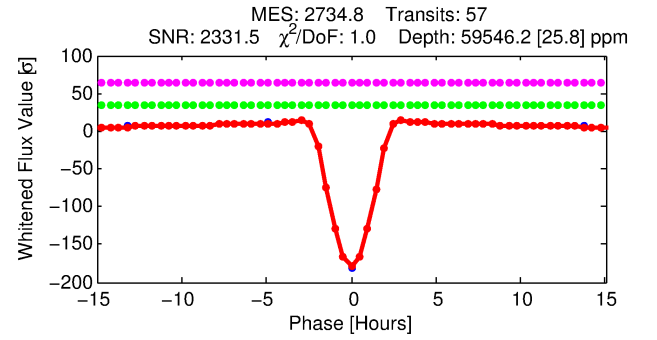
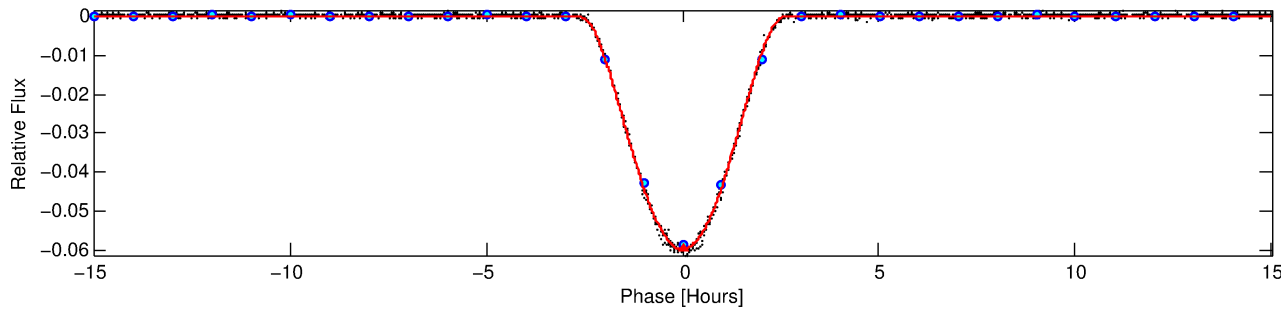
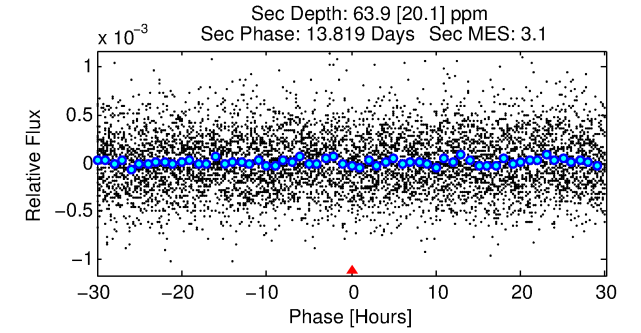
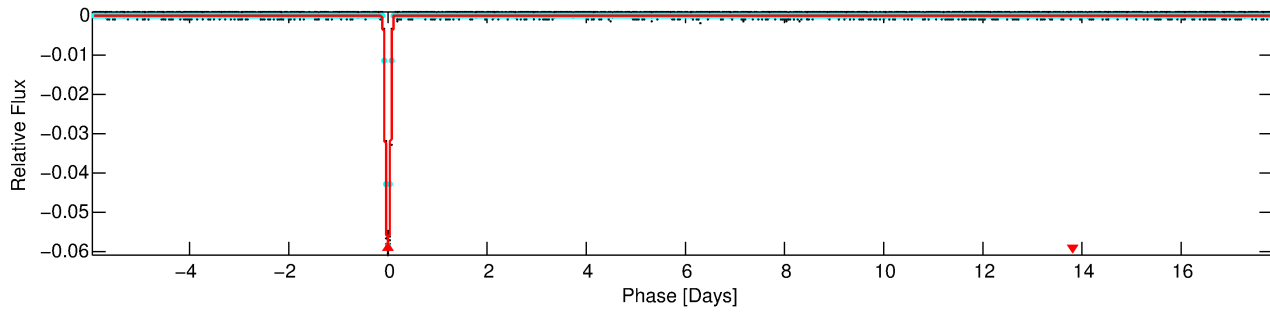
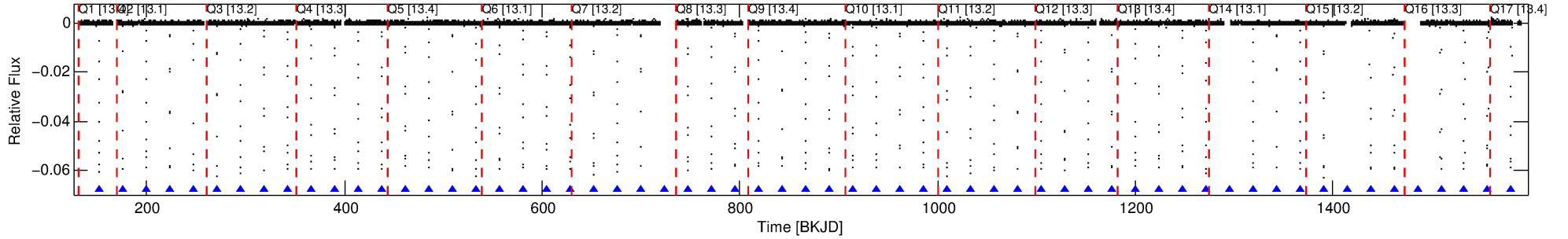
## Ephemeris Match Information For 008949247-01

No Significant Match Found

# DV One-Page Summary

KIC: 8949247 Candidate: 1 of 1 Period: 23.800 d  
KOI: K01387.01 Corr: 1.000

Kp: 14.67 R\*: 0.96 Rs Teff: 5934.0 K Logg: 4.47 Fe/H: -0.120



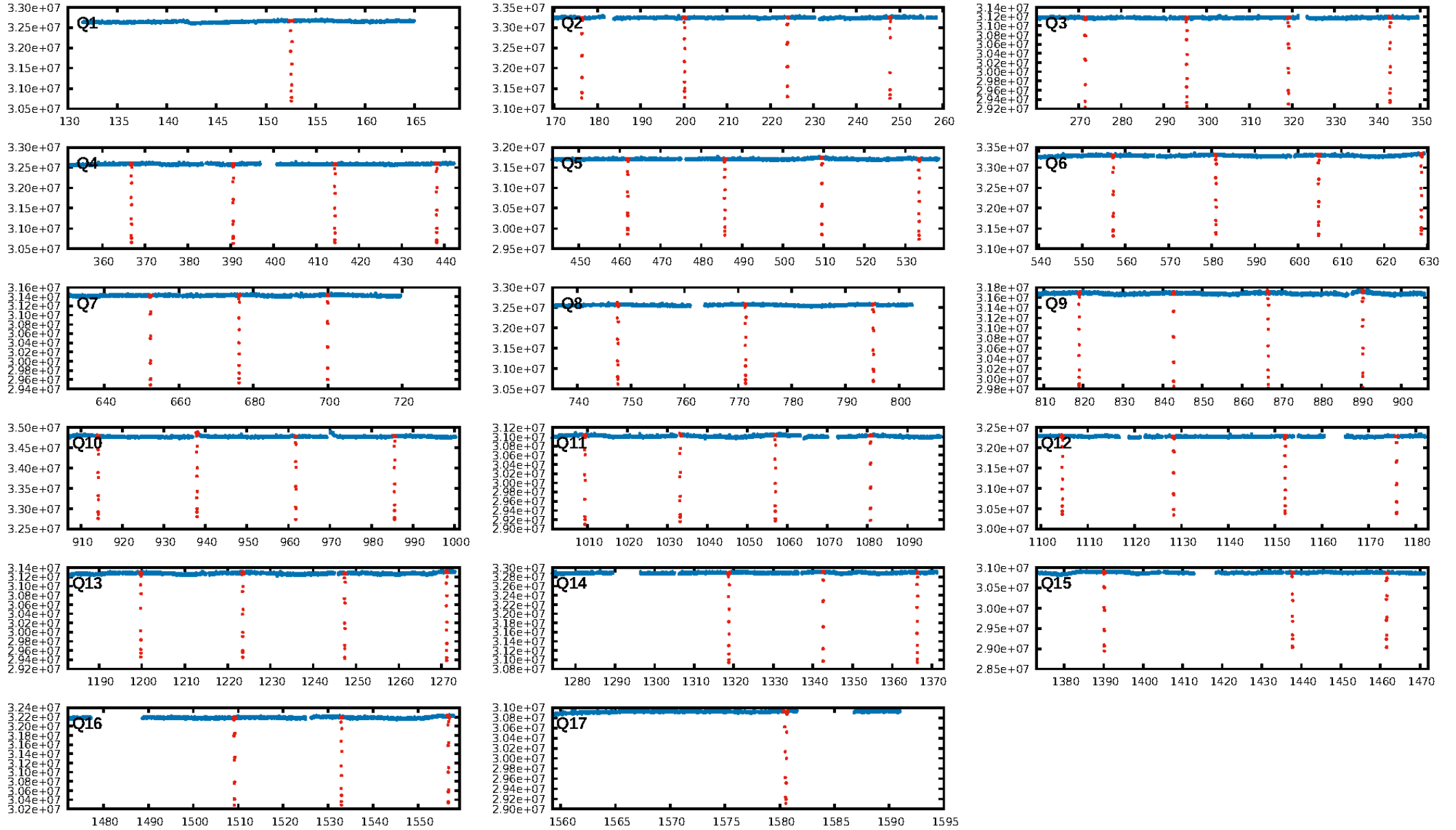
## DV Fit Results:

Period = 23.79994 [0.00000] d  
Epoch = 152.5654 [0.0000] BKJD  
Rp/R\* = 0.3272 [0.0065]  
a/R\* = 34.71 [0.04]  
b = 0.92 [0.01]  
Seff = 38.98 [15.14]  
Teq = 637 [62] K  
Rp = 34.17 [10.31] Re  
a = 0.1616 [0.0410] AU  
Ag = 0.79 [0.38] [-0.56σ]  
Teffp = 928 [79] K [2.91σ]

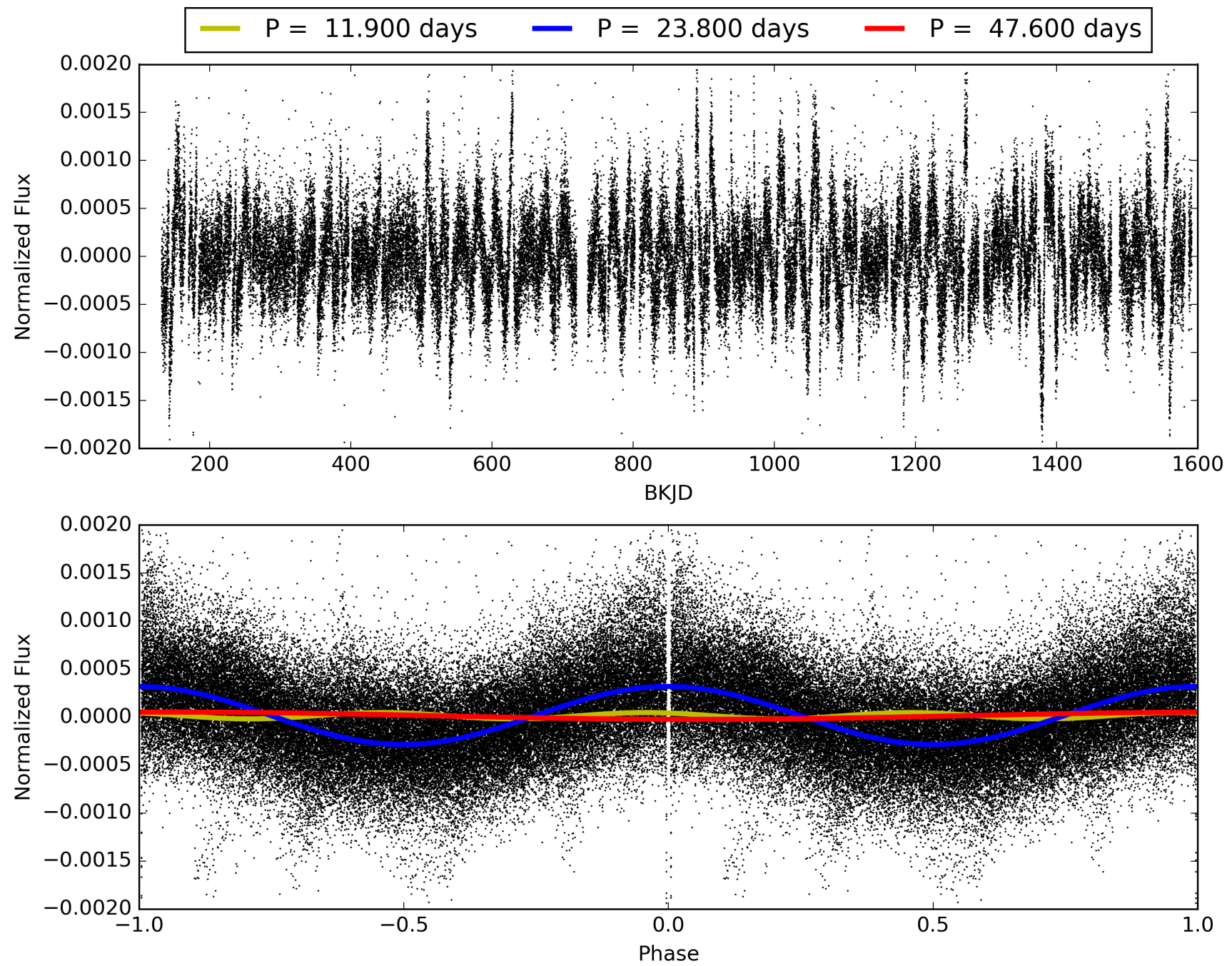
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 98.2%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [55/55]  
GhostDiagnostic-chr: 4.587  
Centroid-sig: 0.0%  
Centroid-so: 0.223 arcsec [46.12σ]  
OotOffset-rm: 0.031 arcsec [0.47σ]  
KicOffset-rm: 0.188 arcsec [2.75σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 008949247-01, PDC Light Curves

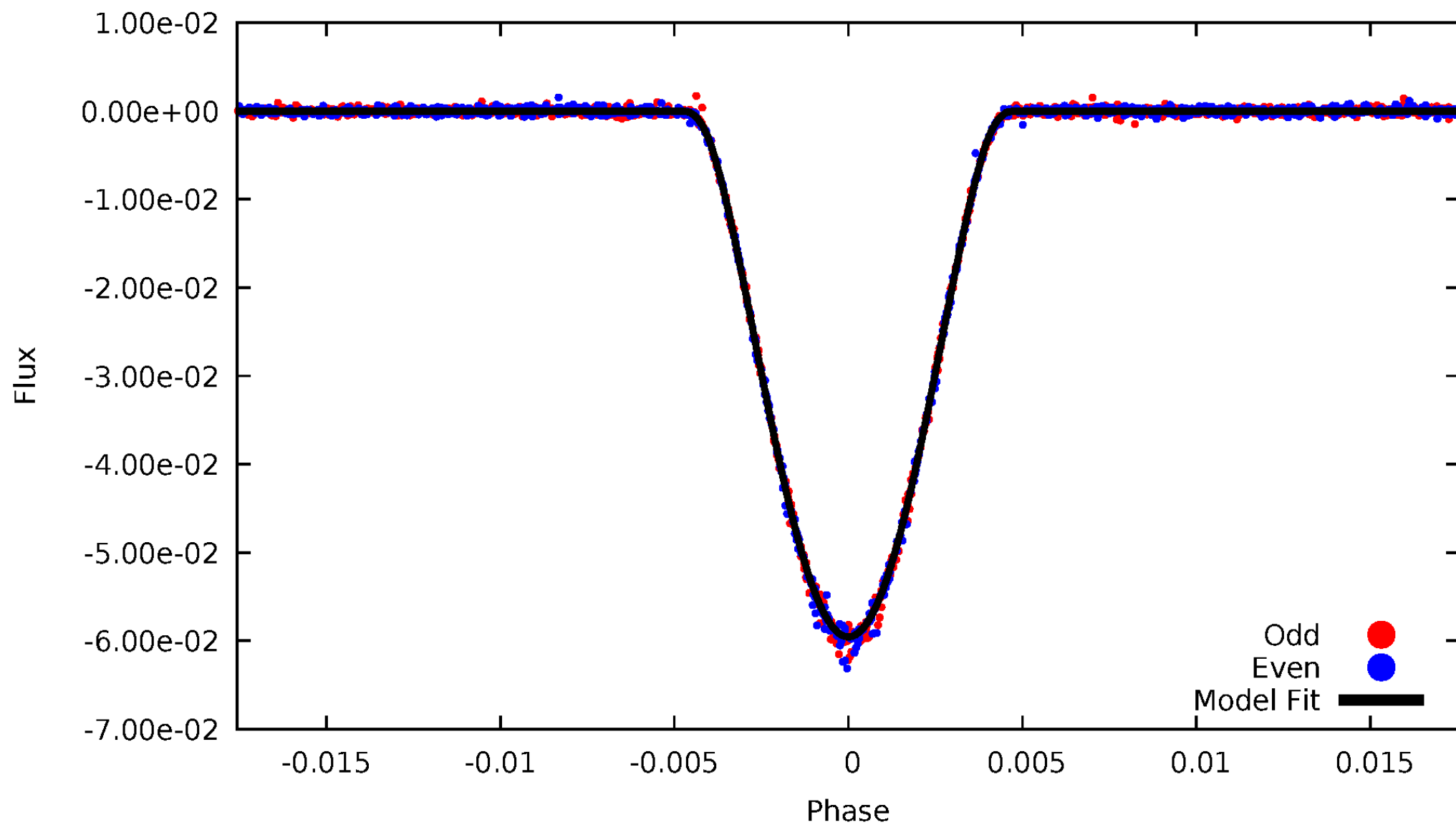


TCE 008949247-01



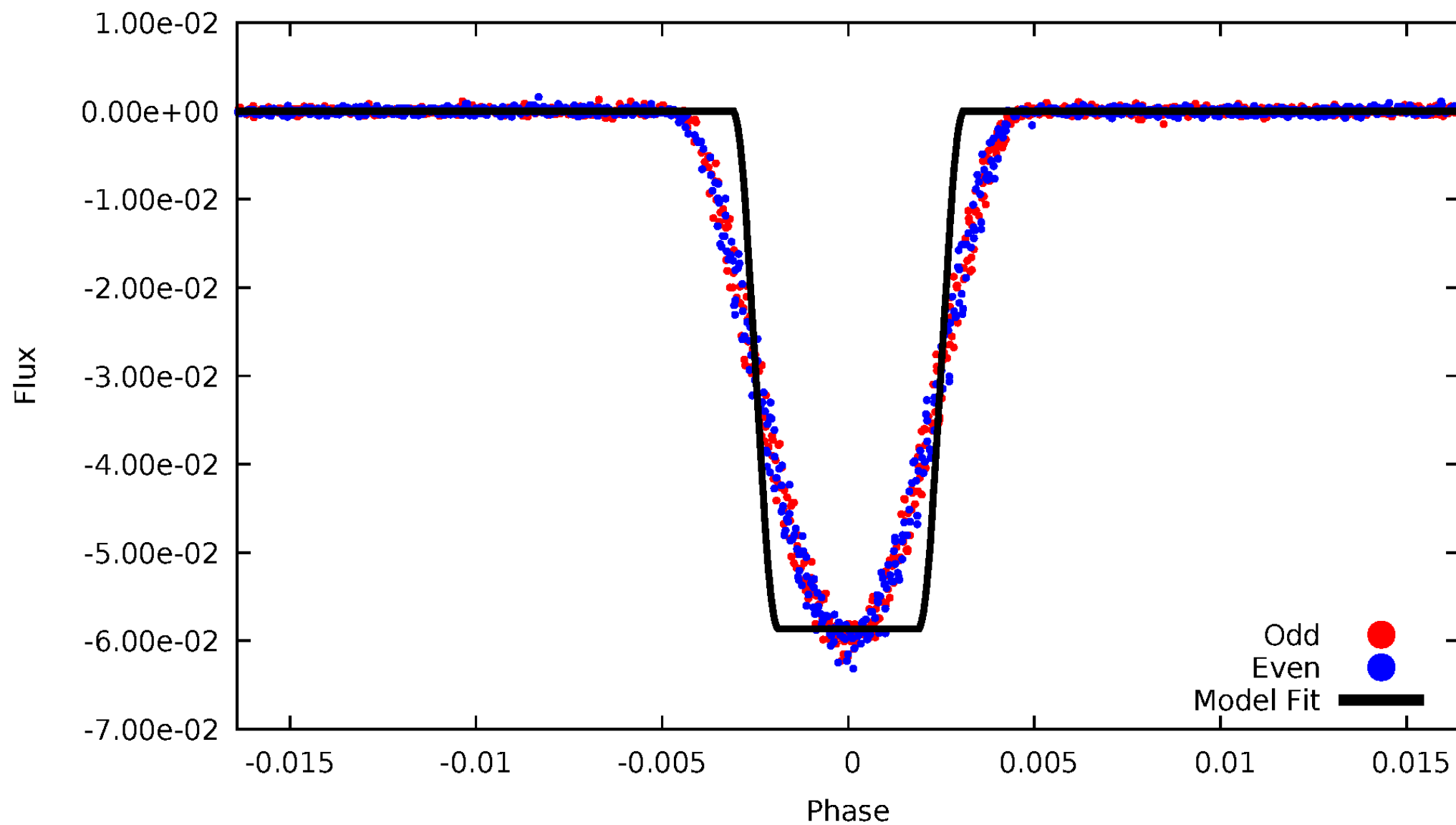
# DV Odd/Even

TCE 008949247-01



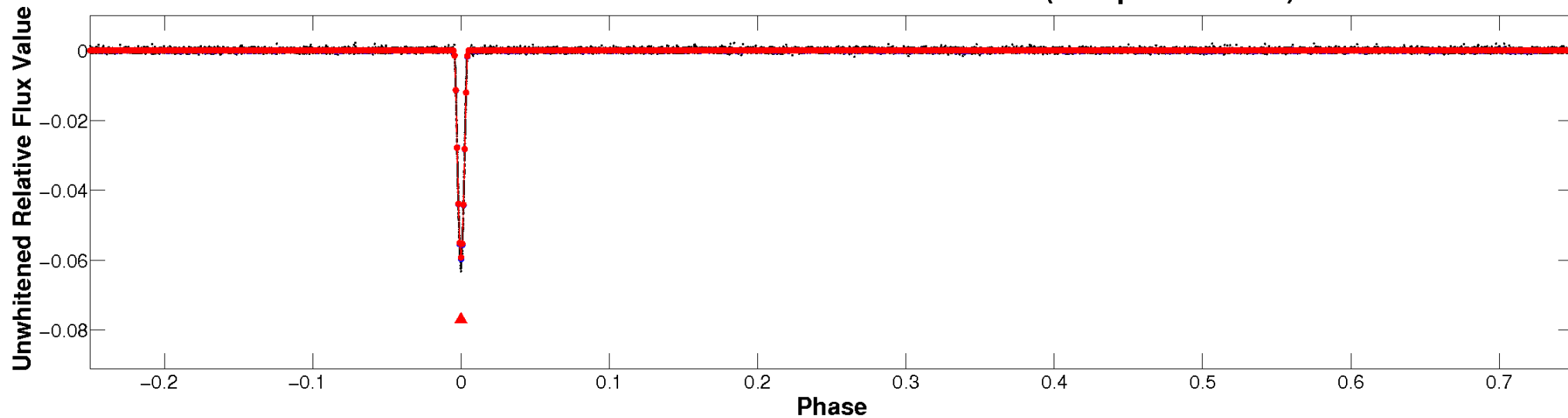
# ALT Odd/Even

TCE 008949247-01

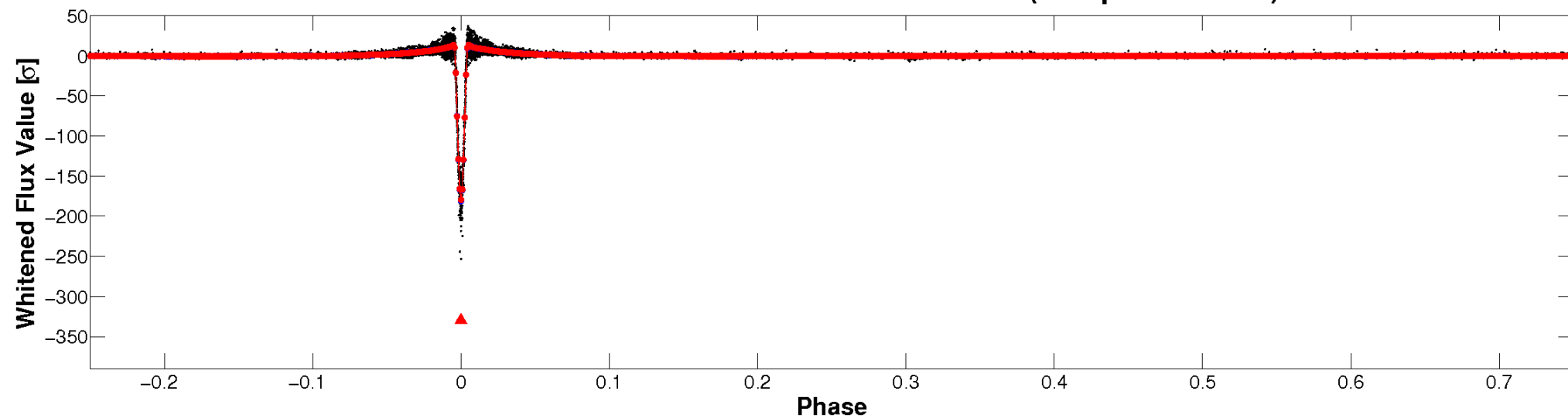


# Non-Whitened Vs. Whitened Light Curve

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

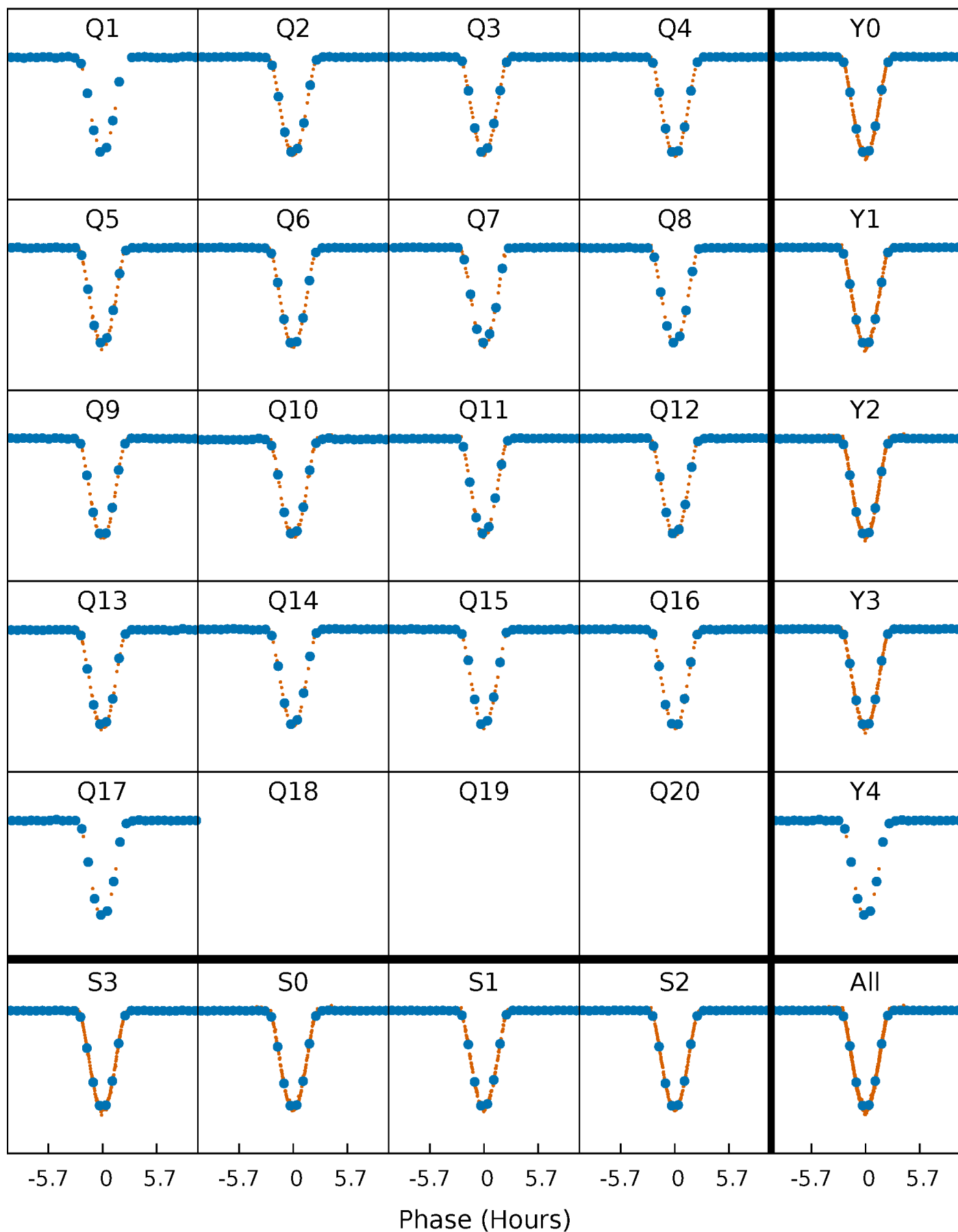


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

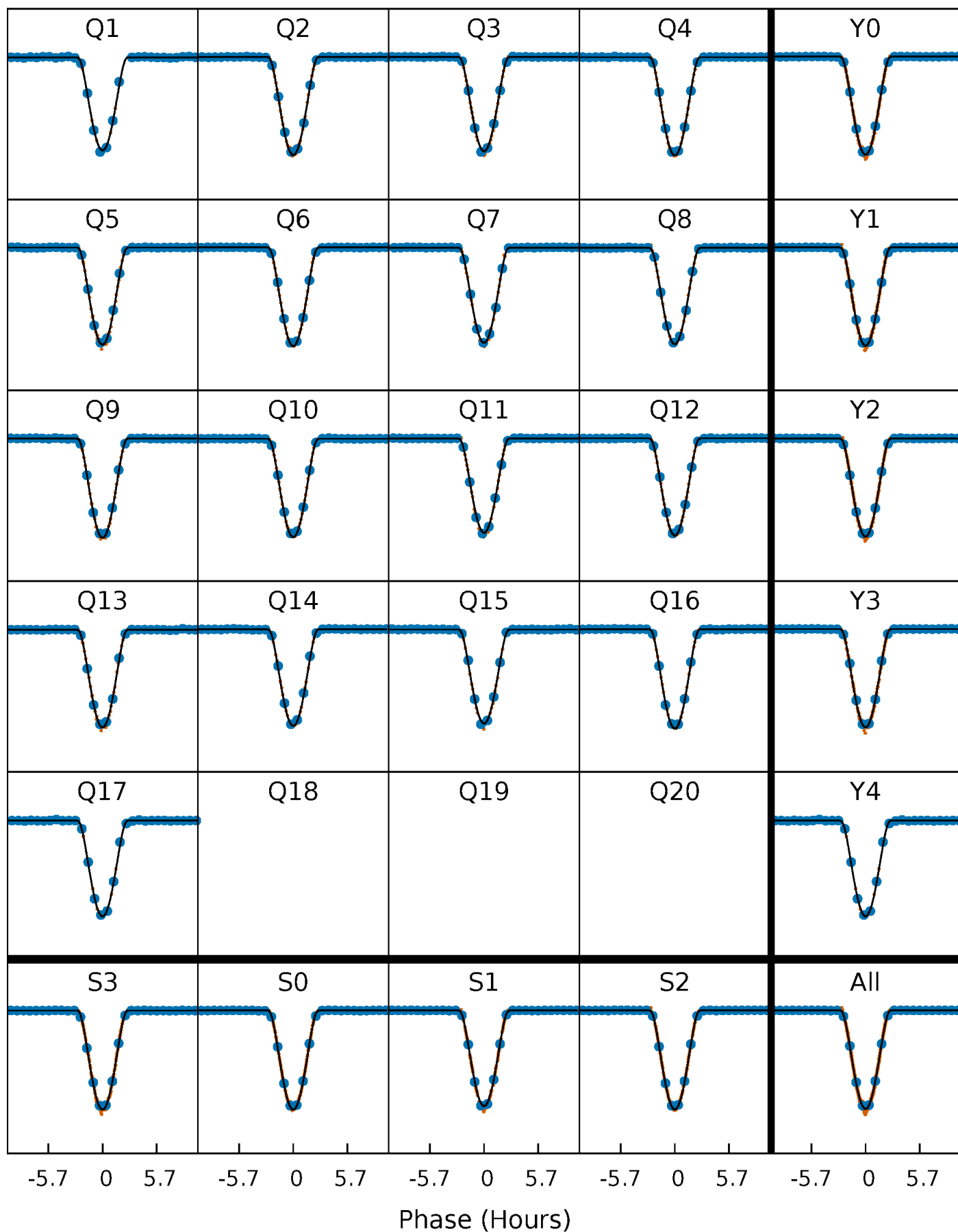
TCE 008949247-01 P= 23.799940 Days  $T_0=152.565445$  (BKJD)





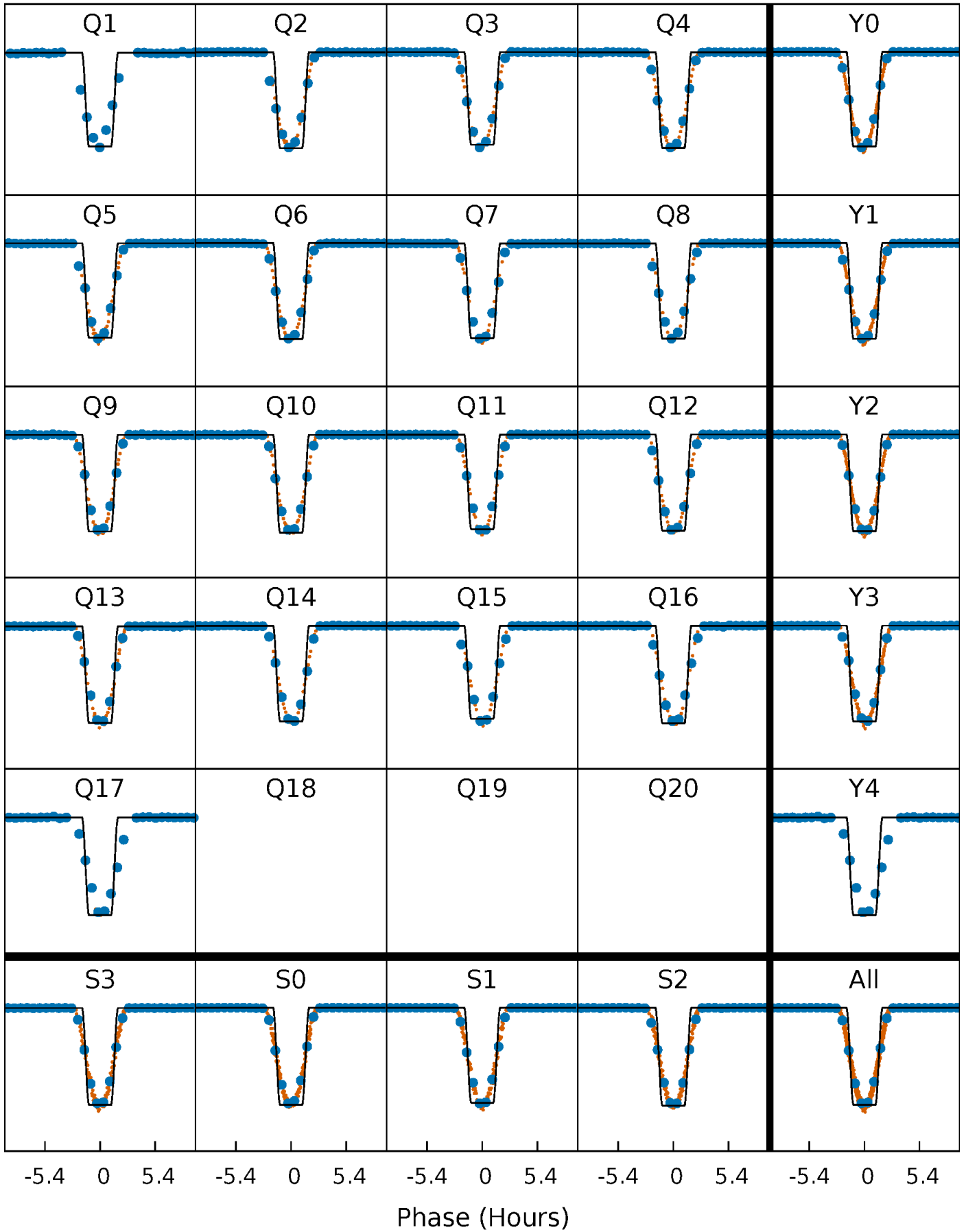
# DV Quarter-Phased Transit Curves

TCE 008949247-01 P= 23.799940 Days  $T_0=152.565445$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

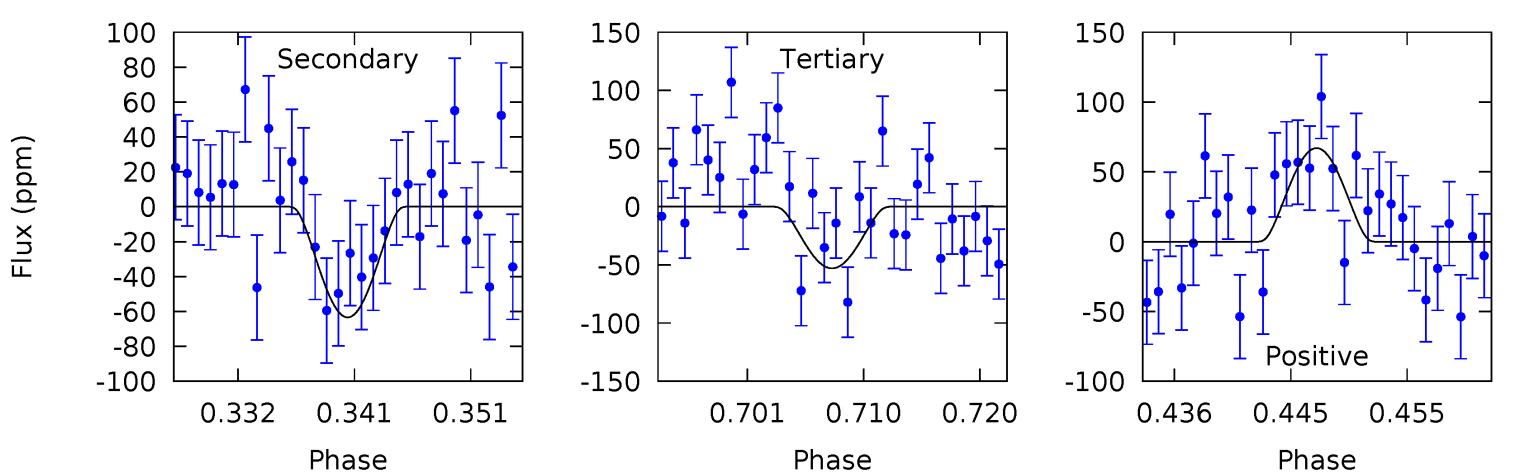
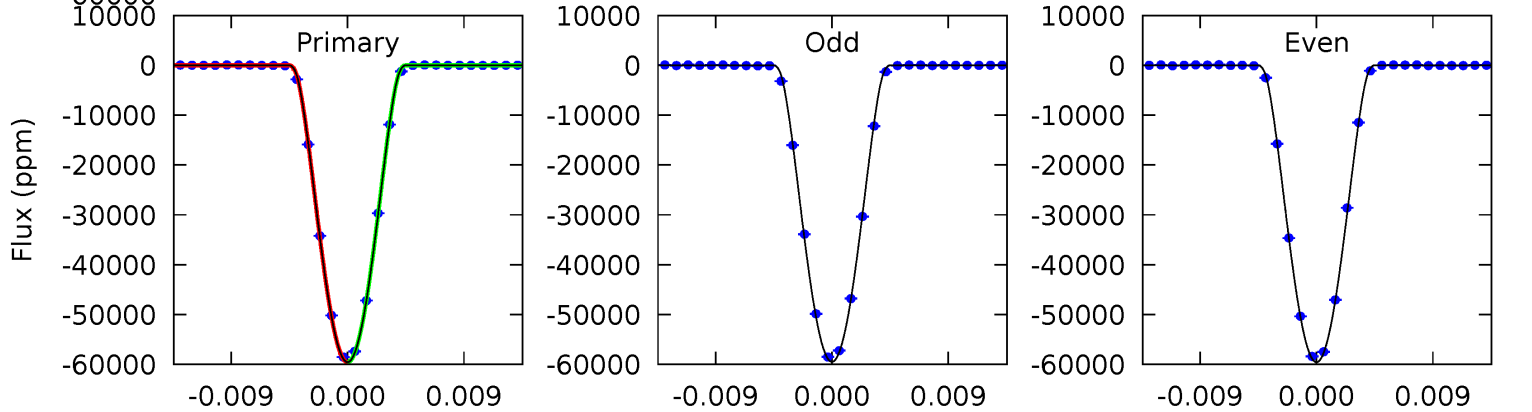
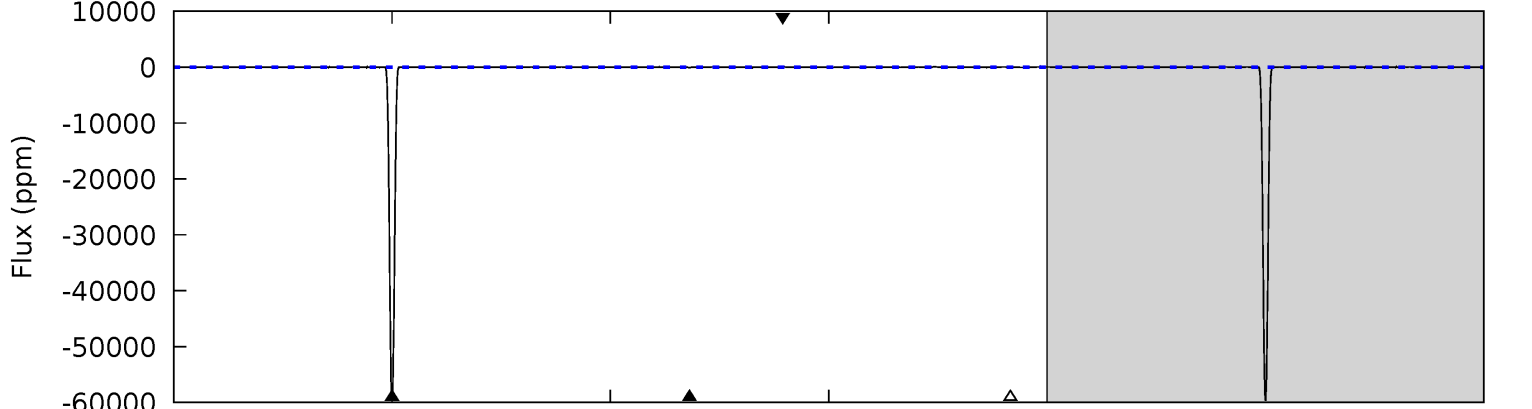
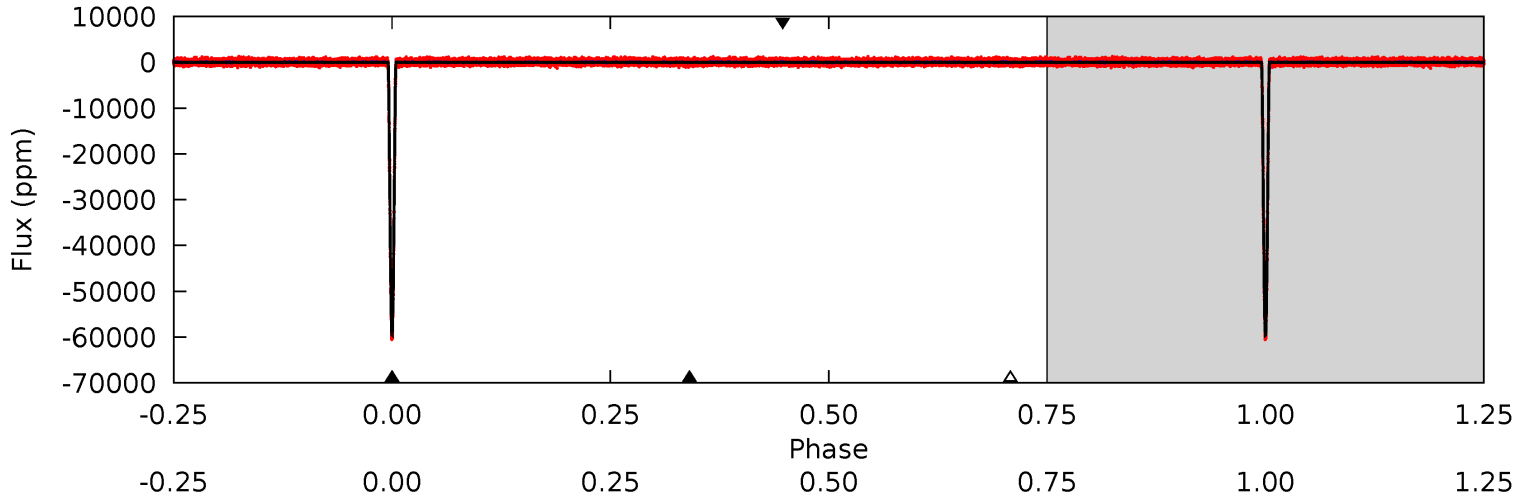
TCE 008949247-01   P= 23.799756 Days    $T_0=152.570836$  (BKJD)



# DV Model-Shift Uniqueness Test

008949247-01, P = 23.799940 Days, E = 128.765505 Days

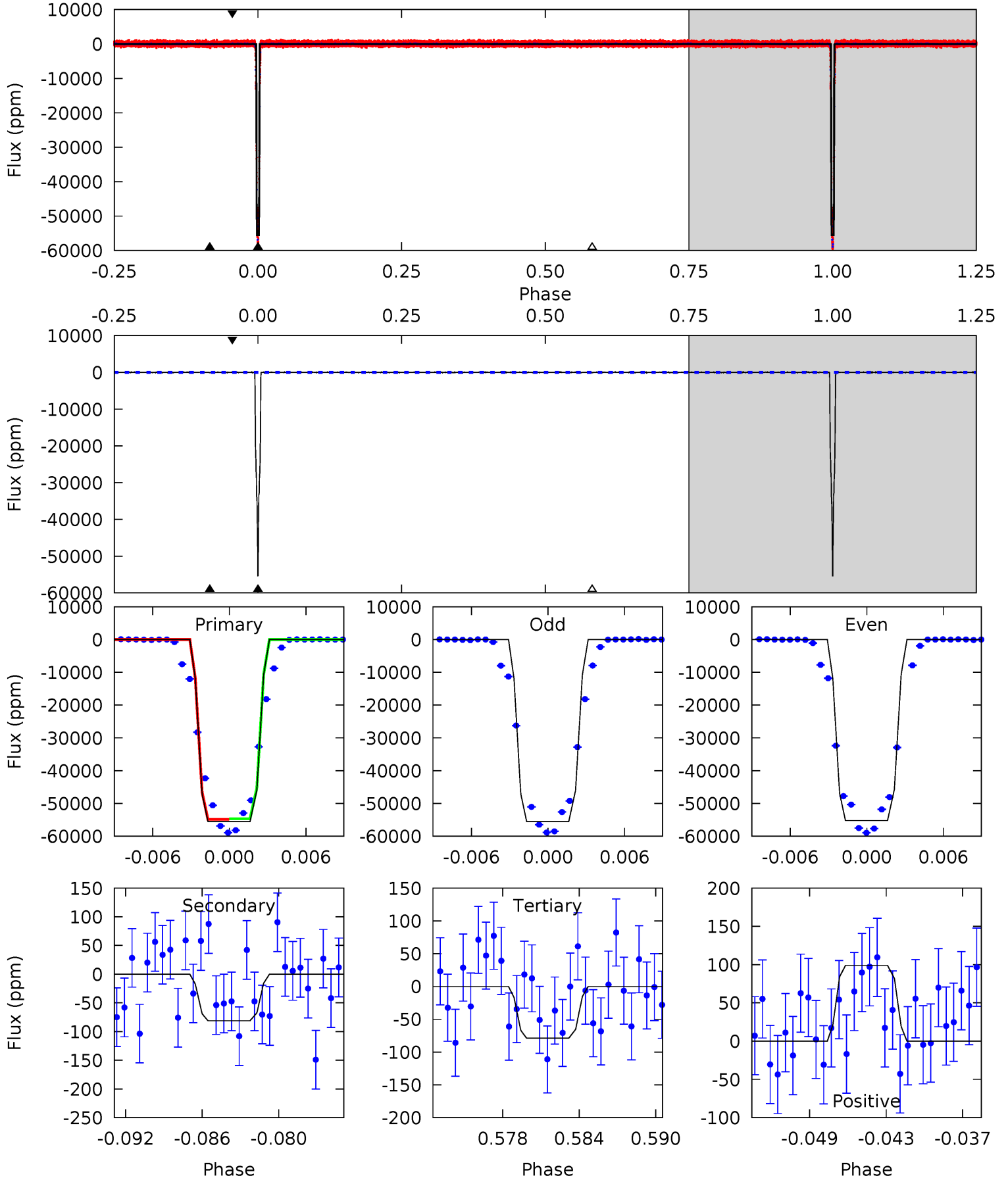
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4773	5.08	4.24	5.37	5.04	2.59	1.73	4769	4767	0.84	-0.29	3.22	1.00	0.00	0



# Alt Model-Shift Uniqueness Test

008949247-01, P = 23.799756 Days, E = 128.771080 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
2286	3.34	3.25	4.07	5.12	2.74	1.09	2283	2282	0.09	-0.73	6.41	1.01	0.00	0



### Stellar Parameters For KIC 008949247

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5934^{+160}_{-178}$	$4.473^{+0.067}_{-0.202}$	$-0.120^{+0.300}_{-0.300}$	$0.957^{+0.288}_{-0.103}$	$0.991^{+0.135}_{-0.122}$	$1.591^{+0.446}_{-0.833}$
	+3%/-3%	+1%/-5%	+250%/-250%	+30%/-11%	+14%/-12%	+28%/-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 008949247-01 / KOI 1387.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-63 \pm 12$	$34.81^{+6.38}_{-2.72}$	$904^{+70}_{-41}$	$1837^{+57}_{-93}$	$0.709^{+0.211}_{-0.204}$
Alt.	$-81 \pm 24$	$25.62^{+4.59}_{-1.95}$	$905^{+68}_{-46}$	$2069^{+76}_{-99}$	$1.602^{+0.703}_{-0.535}$

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

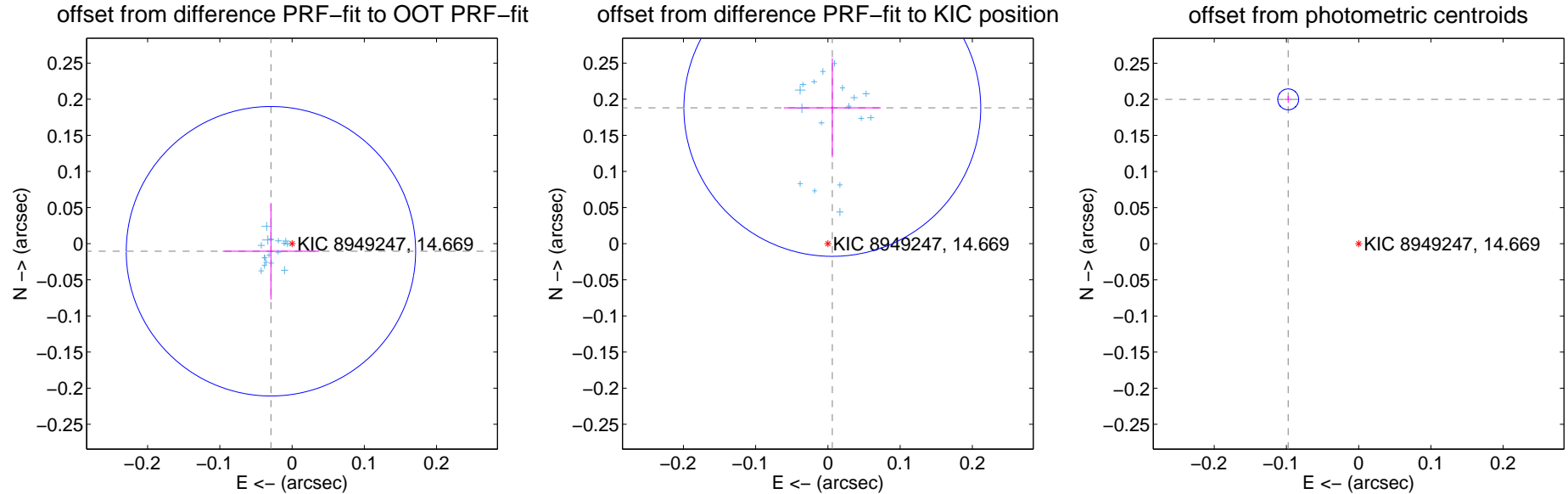
## DV Centroid Data

Supplemental centroid analysis for 008949247-01. Kepler magnitude: 14.67. Transit SNR 2331.51

There are 17 quarters with good PRF difference image offsets

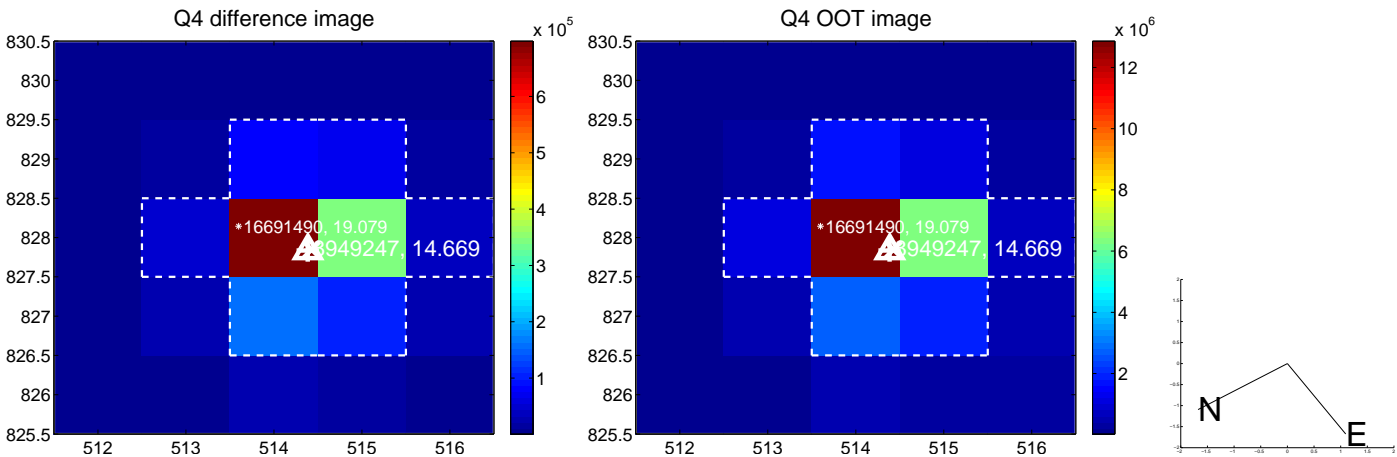
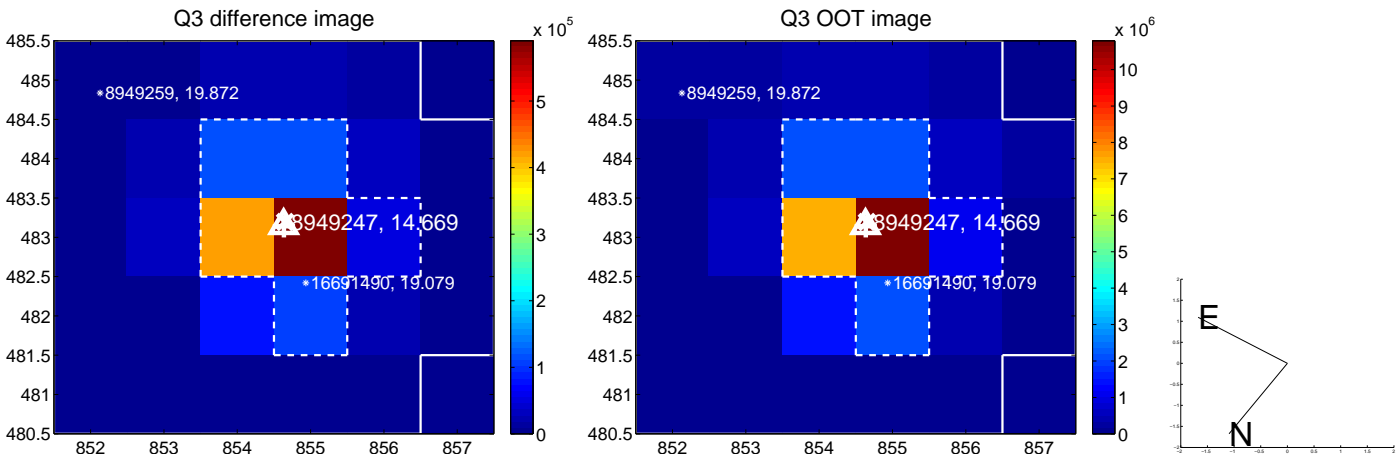
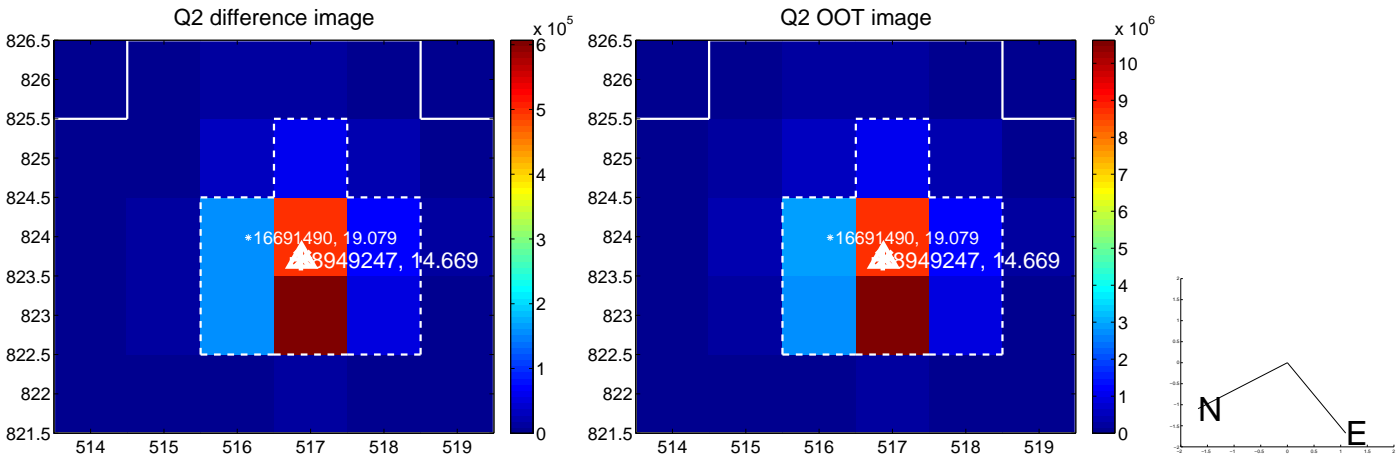
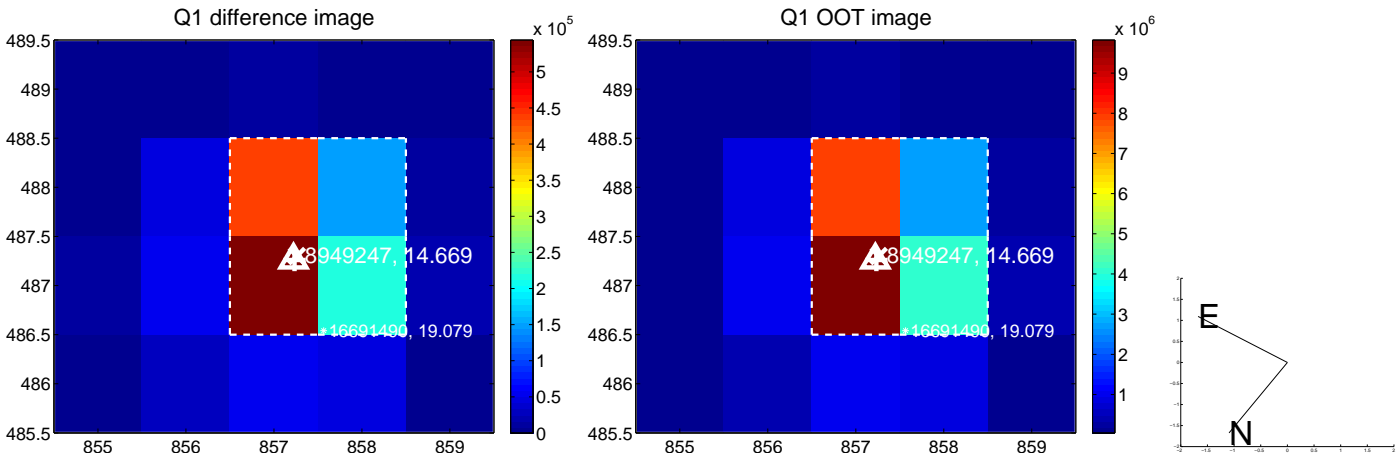
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.031 \pm 0.067$	0.47	$0.029 \pm 0.067$	$-0.010 \pm 0.067$
PRF-fit source offset from KIC position	$0.188 \pm 0.069$	2.75	$-0.006 \pm 0.067$	$0.188 \pm 0.069$
photometric centroid source offset	$0.22 \pm 0.00$	46.12	$0.10 \pm 0.00$	$0.20 \pm 0.00$

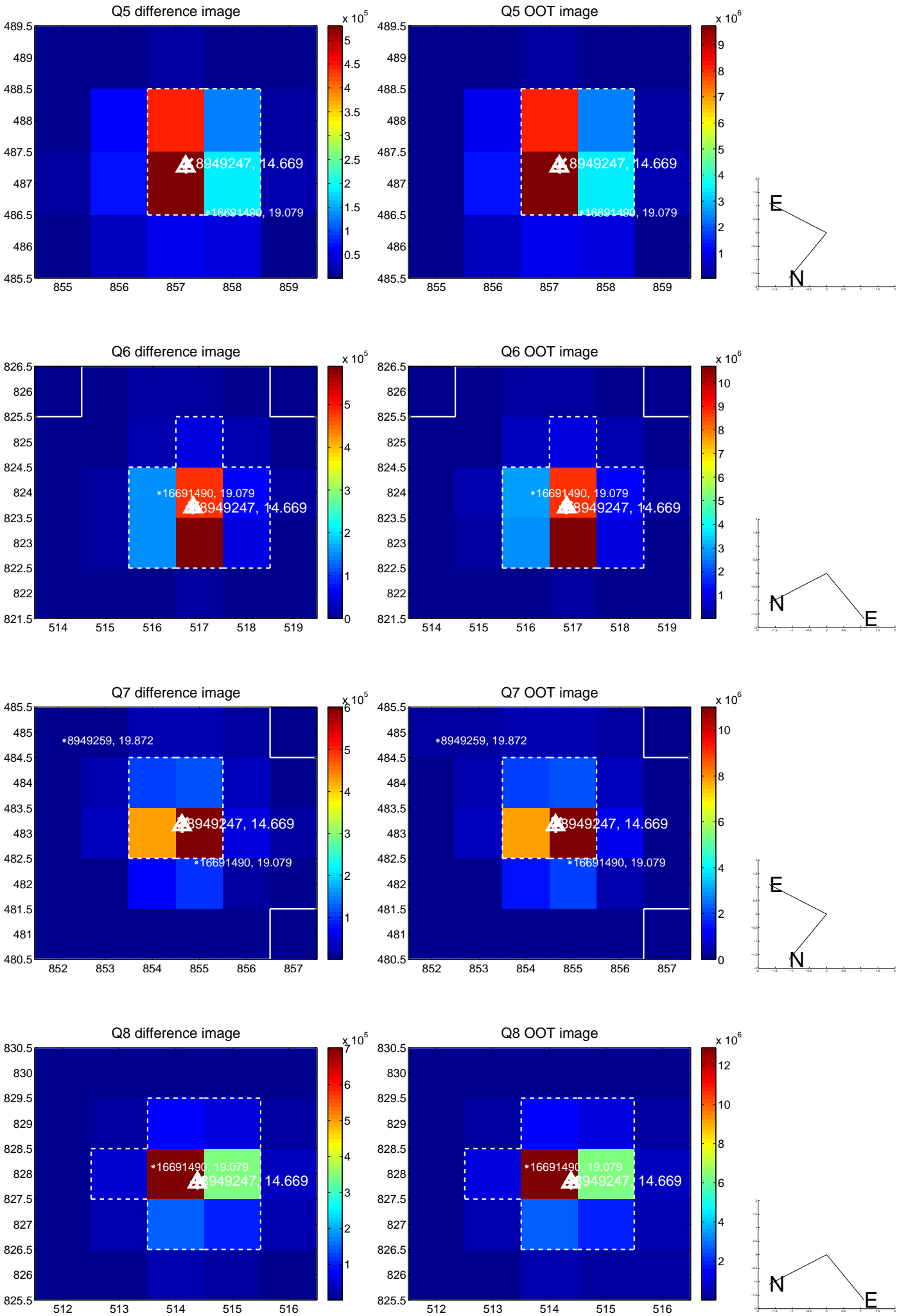


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

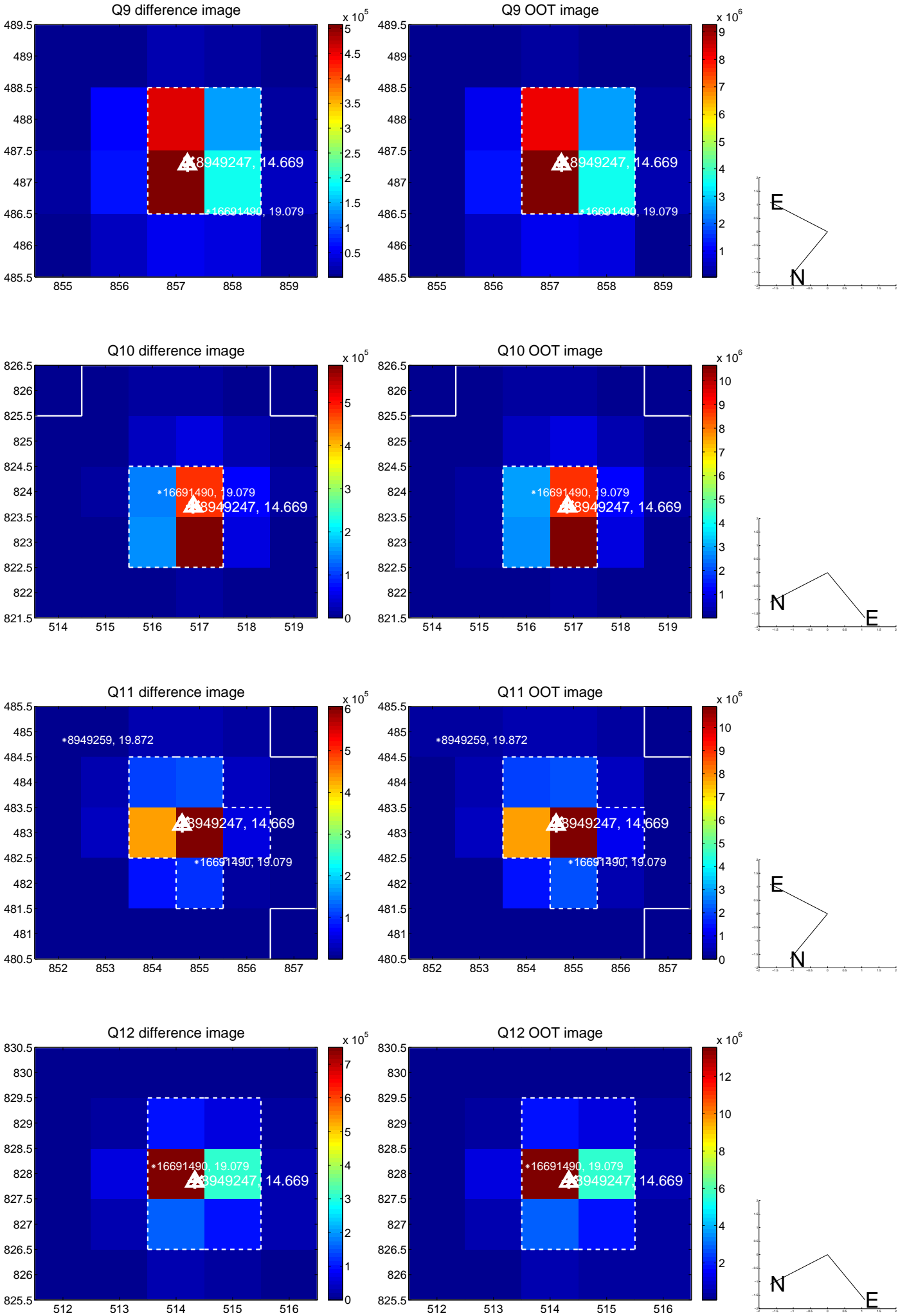


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

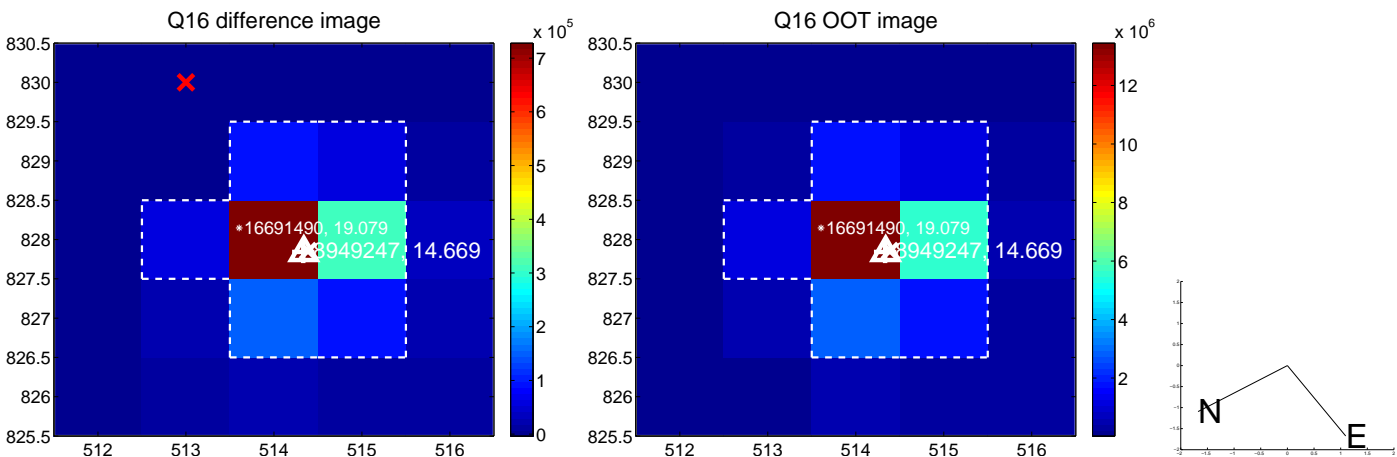
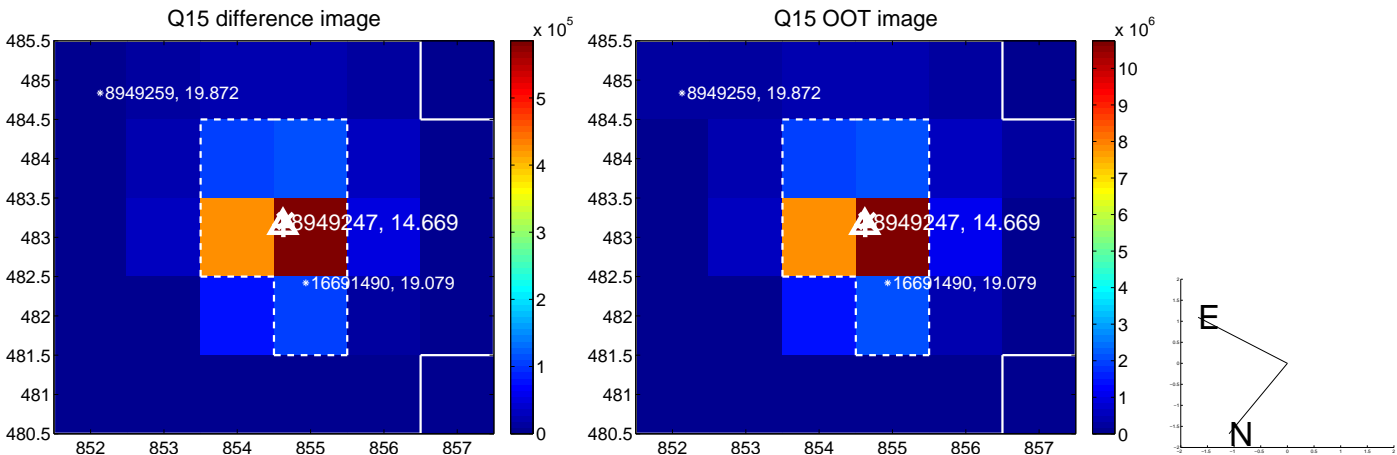
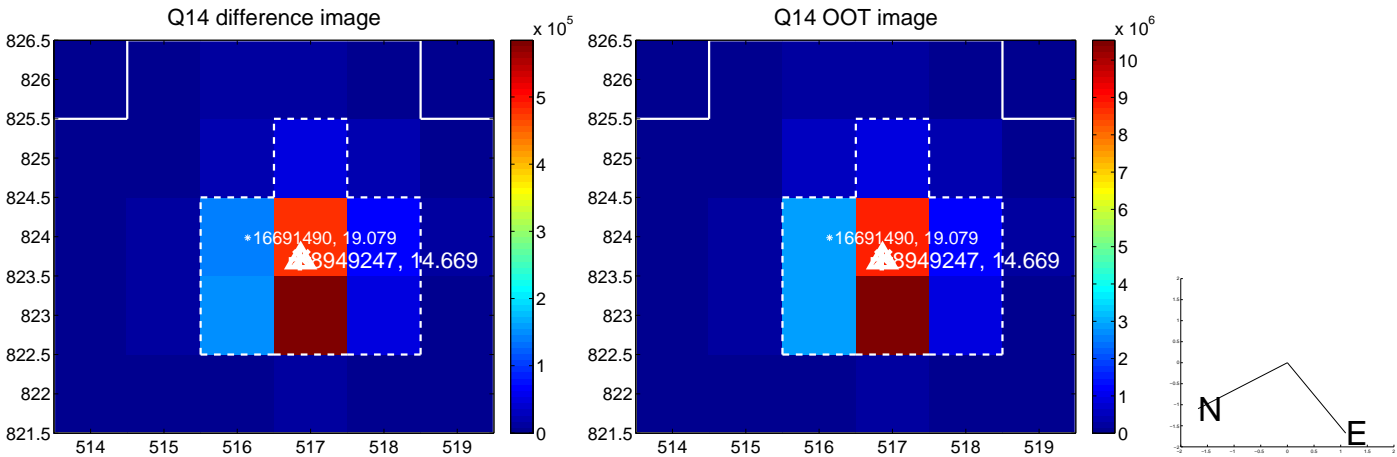
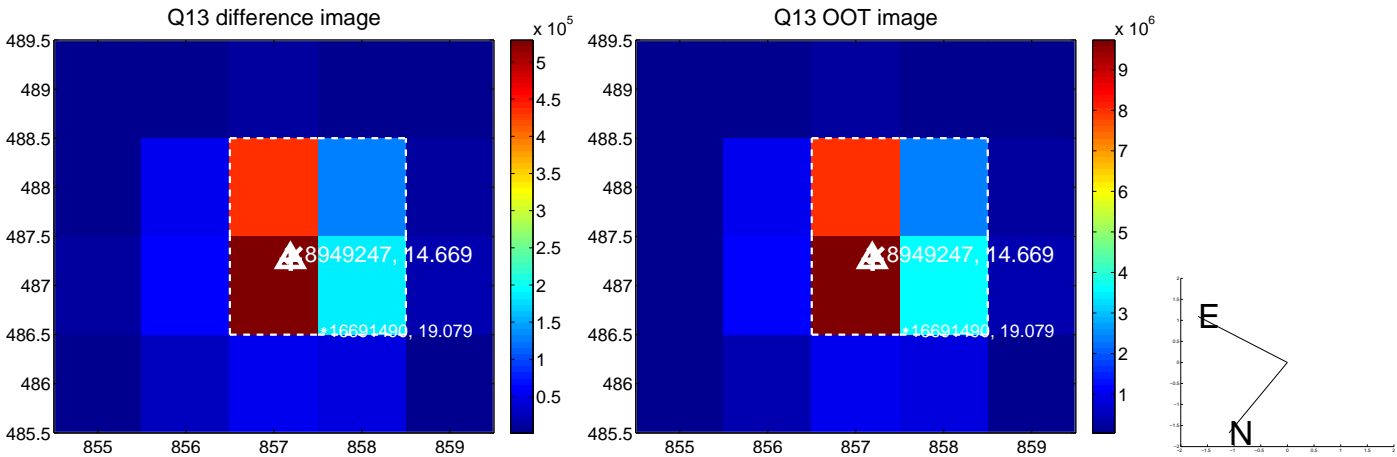




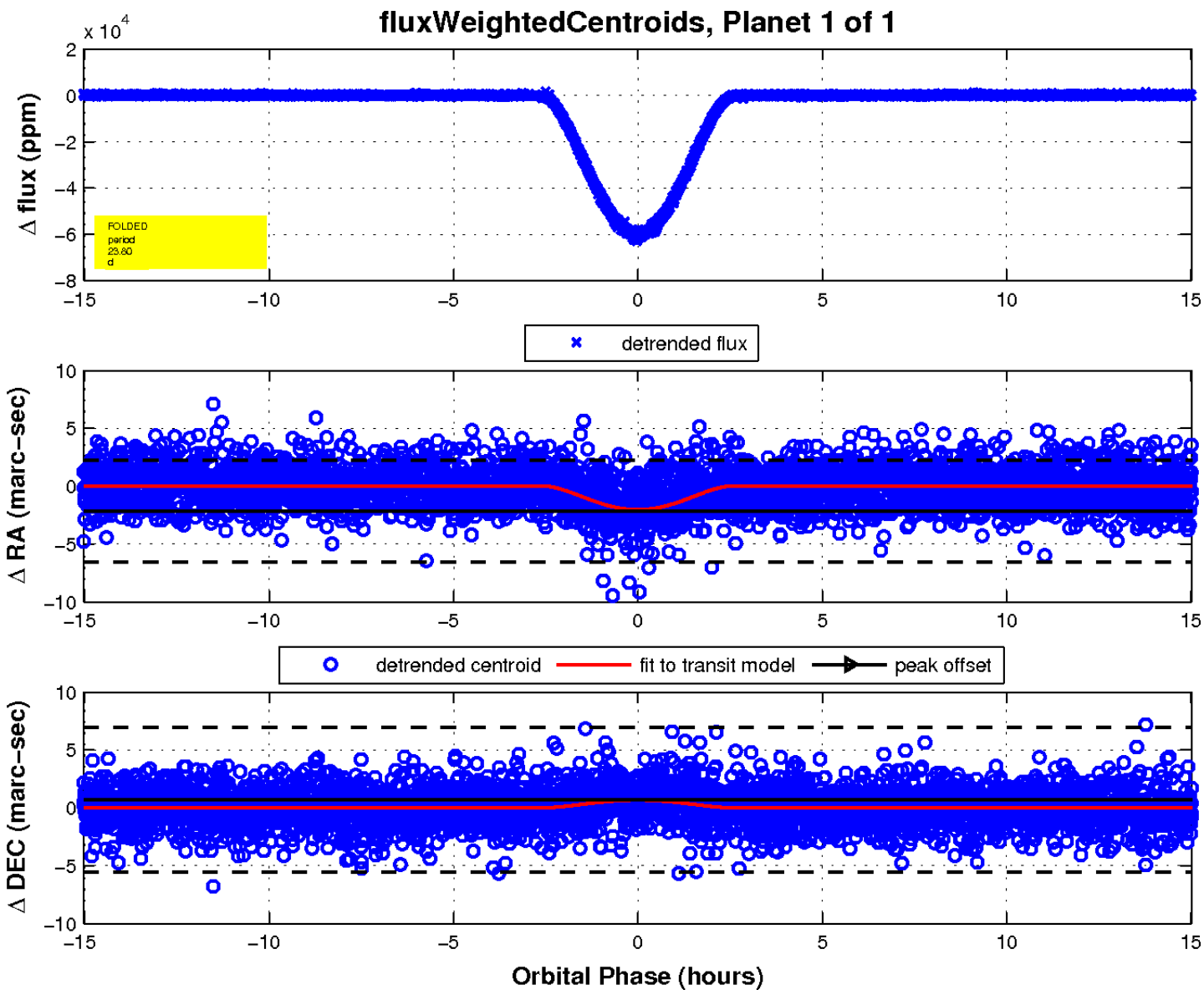
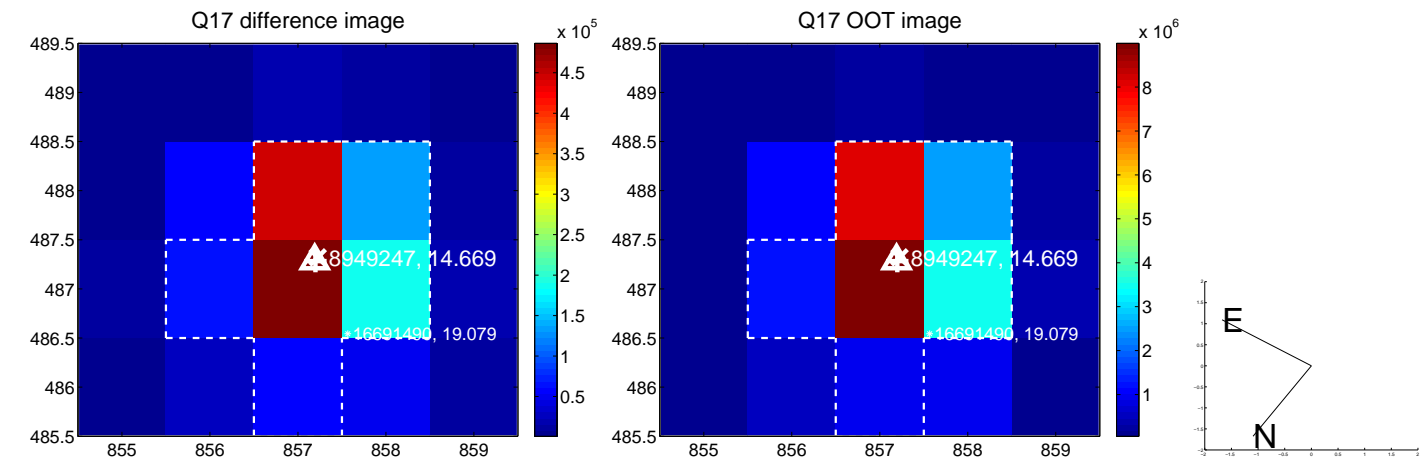
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

