

# KIC 003239671

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R <sub>★</sub> (R <sub>☉</sub> )	T <sub>★</sub> (K)	R <sub>p</sub> (R <sub>⊕</sub> )	S <sub>p</sub> (S <sub>⊕</sub> )
003239671-01	OBS	2066.01	147.974226	263.084799	1304.2	7.120	23.2	23.7	0.95	5578	3.73	2.79

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003239671-01	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 003239671-01

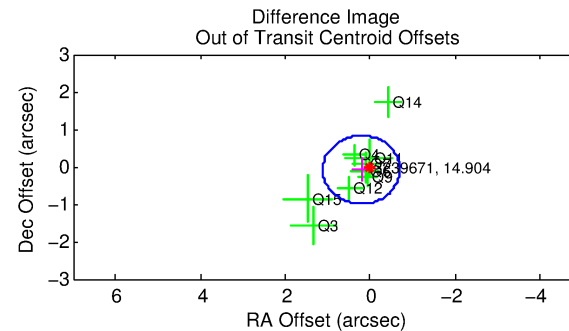
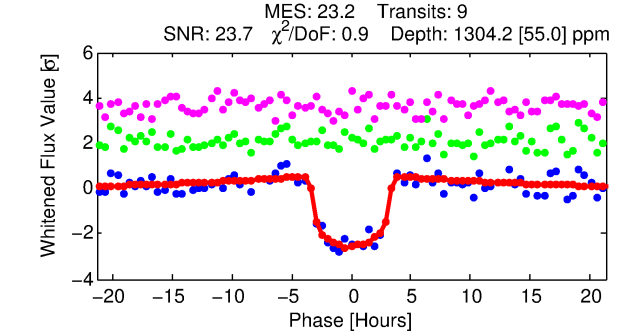
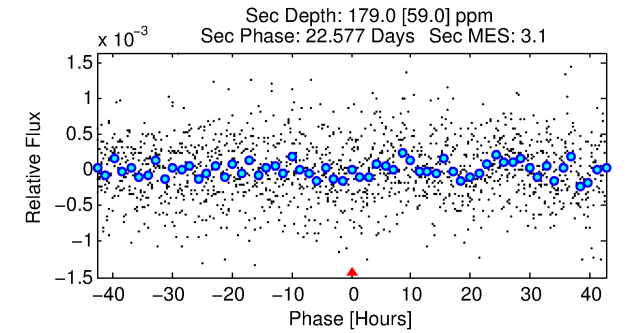
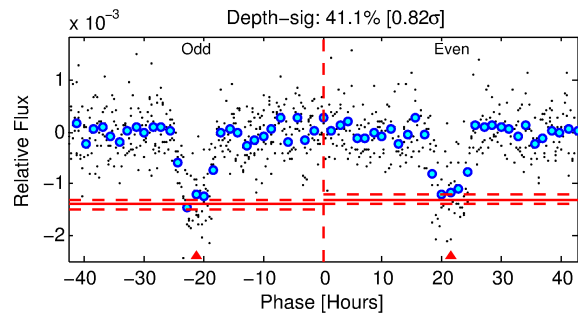
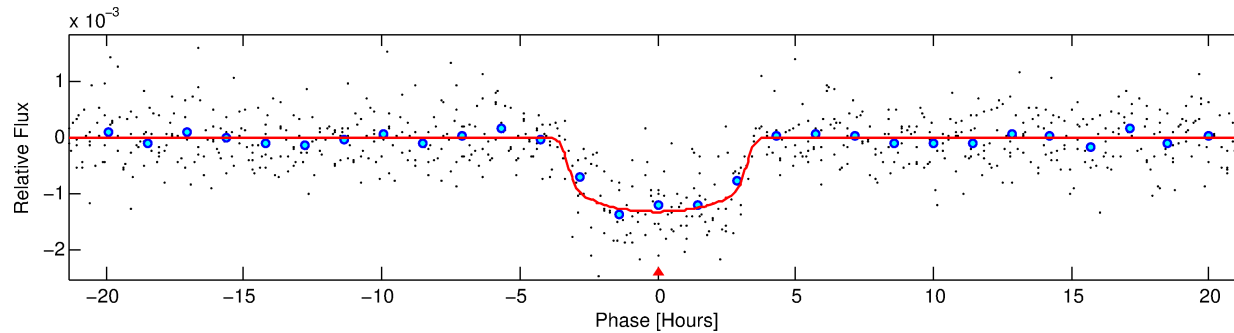
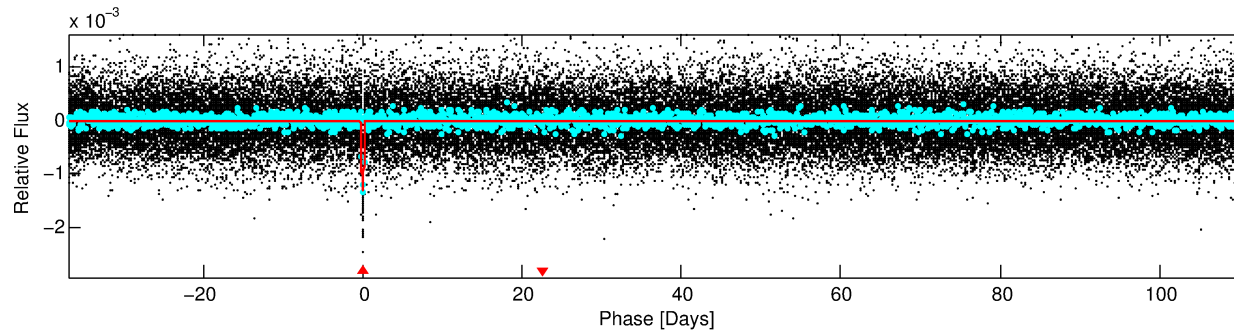
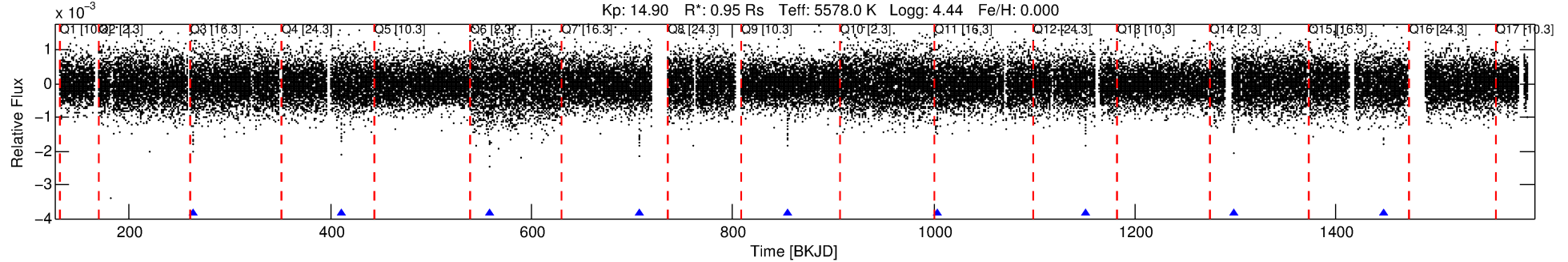
No Significant Match Found

# DV One-Page Summary

KIC: 3239671 Candidate: 1 of 1 Period: 147.974 d

KOI: K02066.01 Corr: 0.989

Kp: 14.90 R\*: 0.95 Rs Teff: 5578.0 K Logg: 4.44 Fe/H: 0.000



## DV Fit Results:

Period = 147.97423 [0.00113] d  
Epoch = 263.0848 [0.0054] BKJD  
Rp/R\* = 0.0360 [0.0049]  
a/R\* = 113.10 [62.19]  
b = 0.75 [0.32]  
Seff = 2.79 [0.54]  
Teq = 329 [16] K  
Rp = 3.73 [0.70] Re  
a = 0.5300 [0.0610] AU  
Ag = 1985.32 [916.99] [2.16σ]  
Teffp = 3400 [370] K [8.30σ]

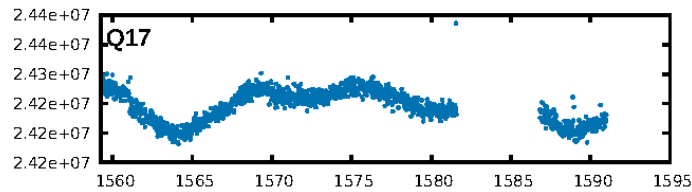
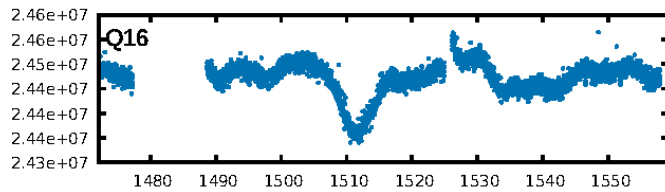
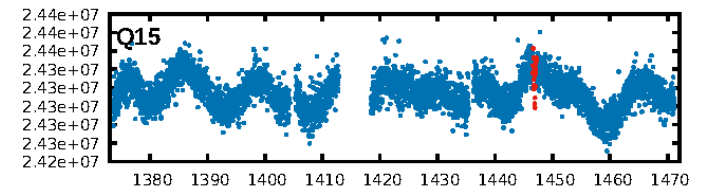
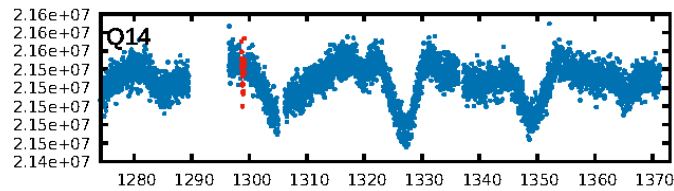
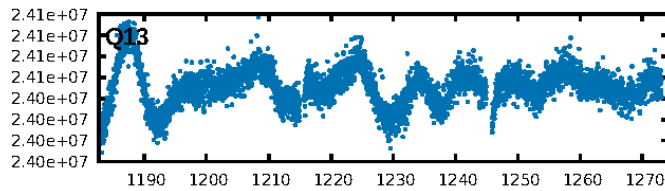
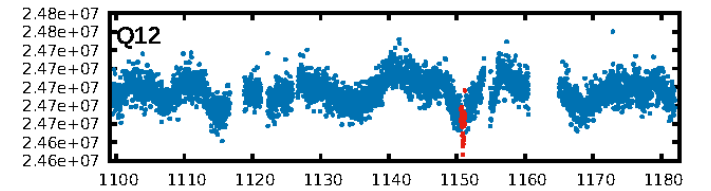
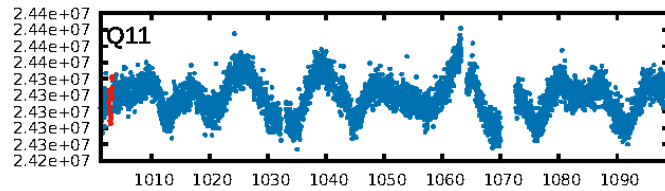
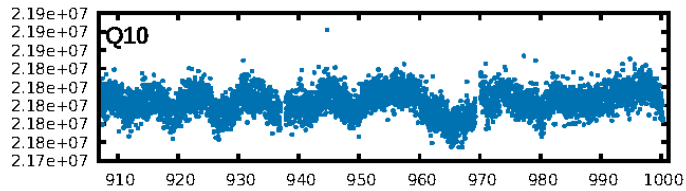
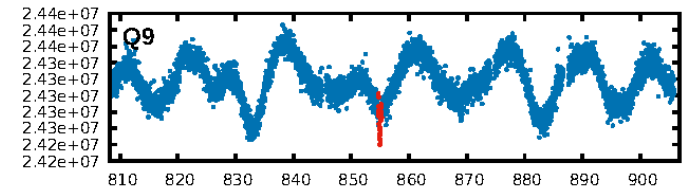
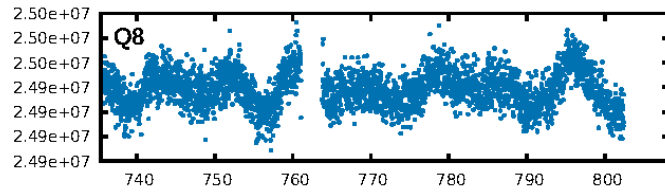
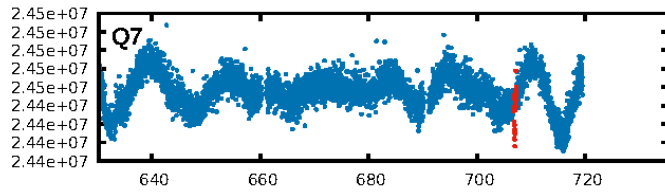
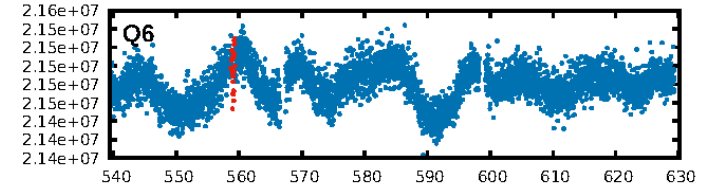
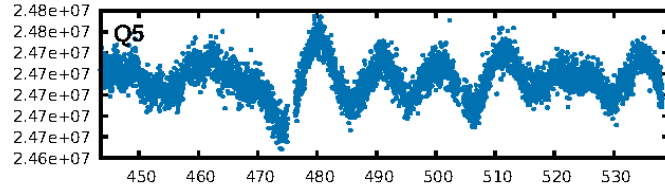
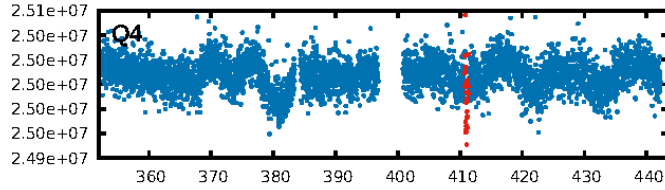
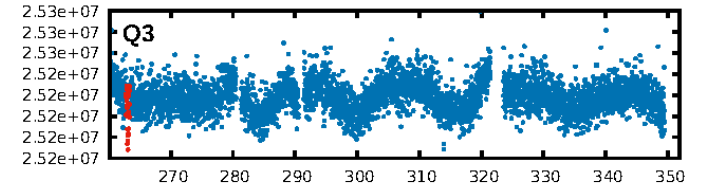
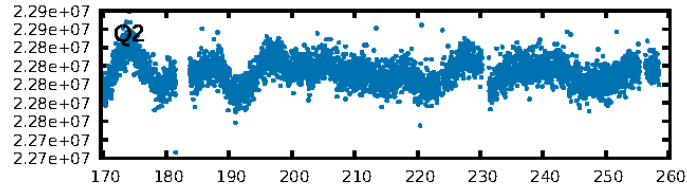
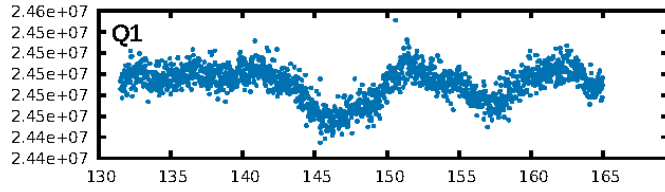
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 59.8%  
ModelChiSquareGof-sig: 99.9%  
Bootstrap-pfa: 3.49e-102  
RollingBand-fgt: 1.00 [9/9]  
GhostDiagnostic-chr: 5.79  
Centroid-sig: 64.4%  
Centroid-so: 0.228 arcsec [0.48σ]  
OotOffset-rm: 0.222 arcsec [0.73σ]  
OotOffset-st: 2/4/2/1 [9]  
KicOffset-rm: 0.260 arcsec [0.76σ]  
KicOffset-st: 2/4/2/1 [9]  
DiffImageQuality-fgm: 1.00 [9/9]  
DiffImageOverlap-fno: 1.00 [9/9]

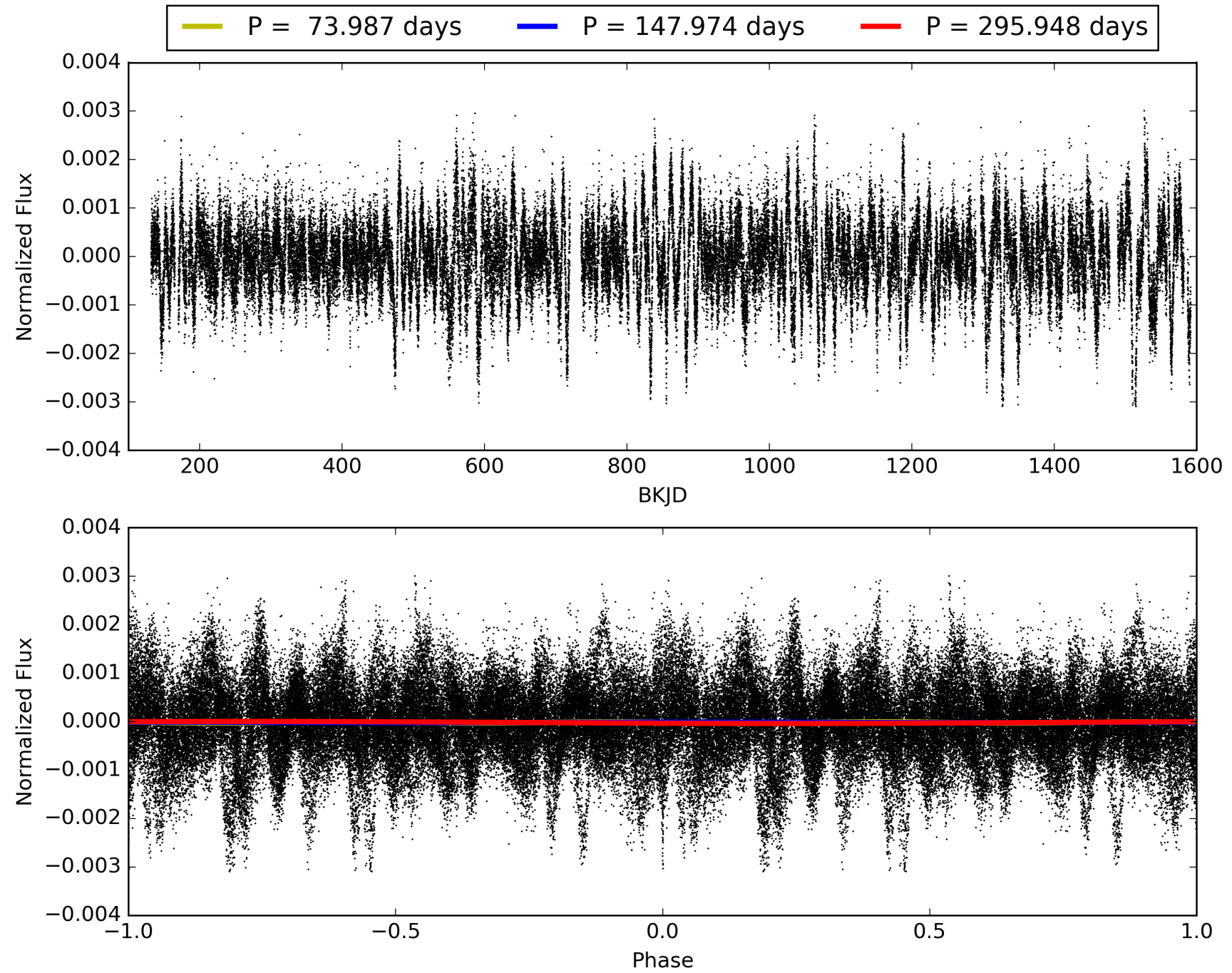
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:22:54 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 003239671-01, PDC Light Curves

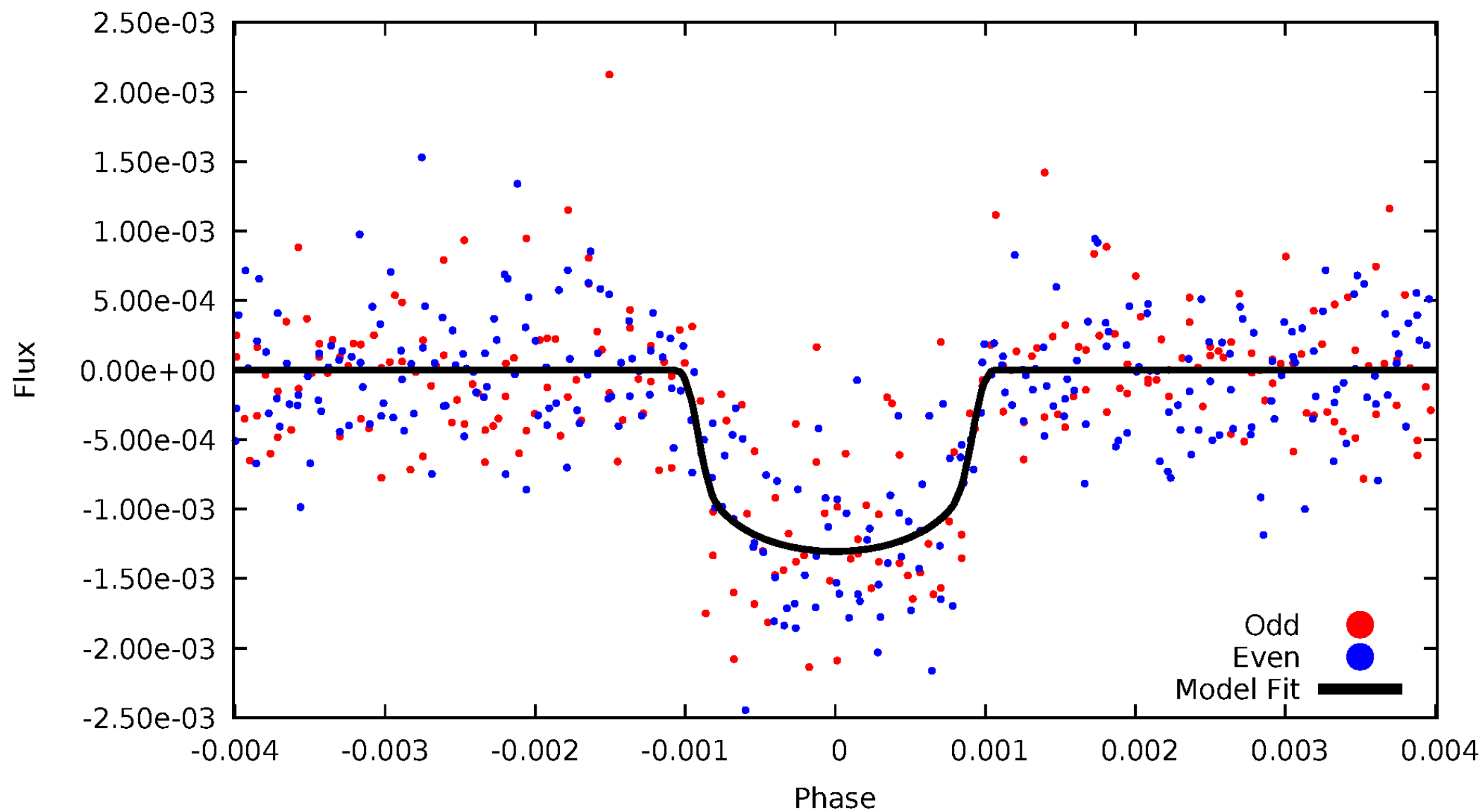


TCE 003239671-01



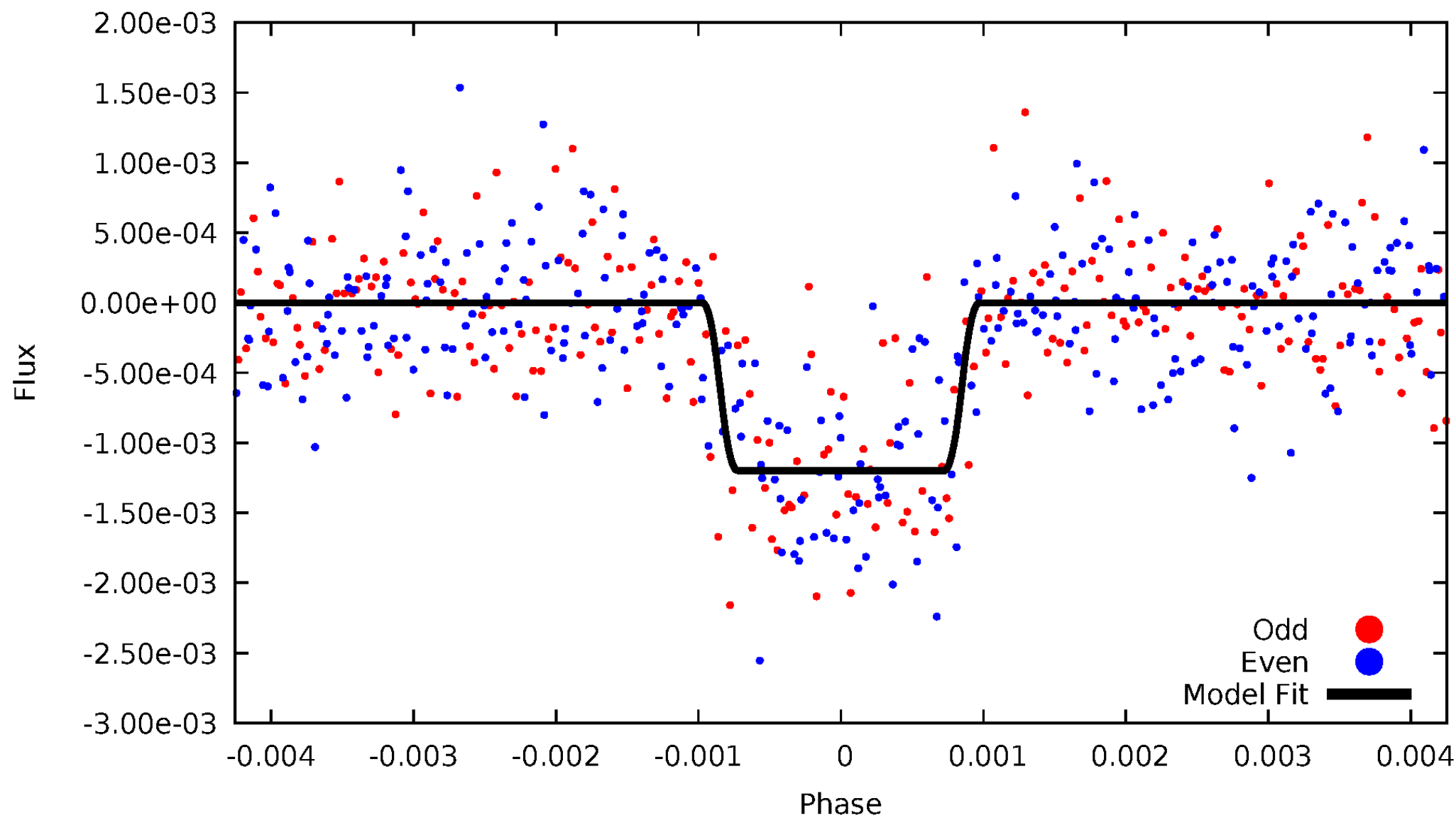
# DV Odd/Even

TCE 003239671-01



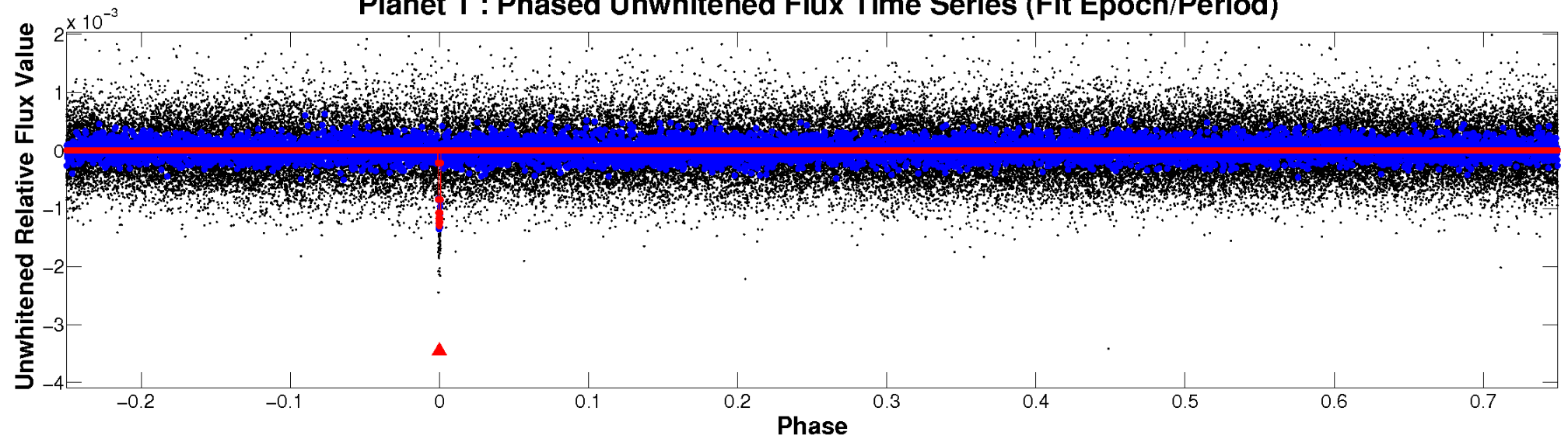
# ALT Odd/Even

TCE 003239671-01

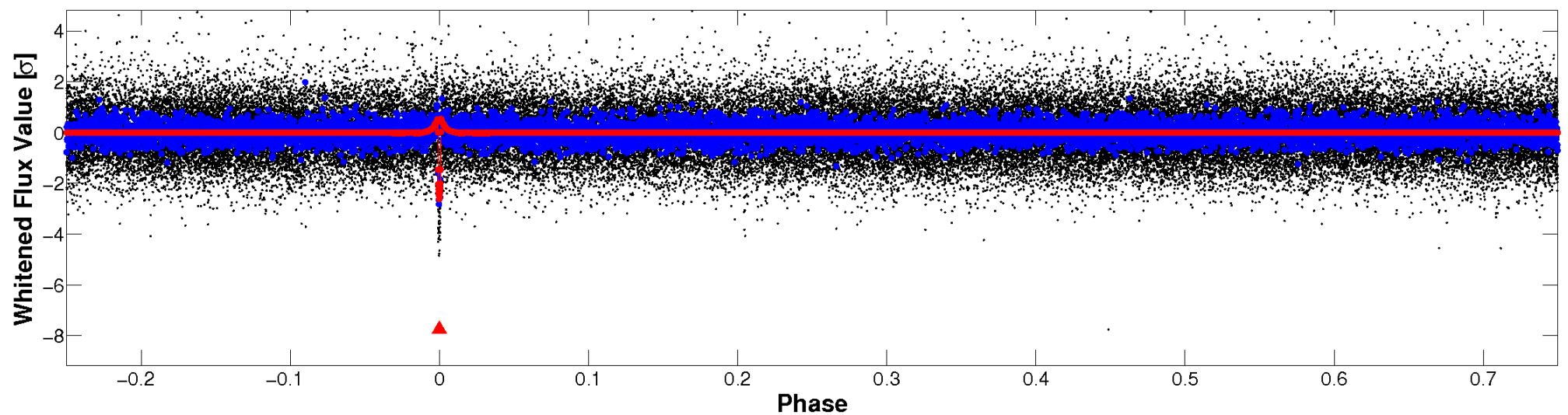


# Non-Whitened Vs. Whitened Light Curve

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



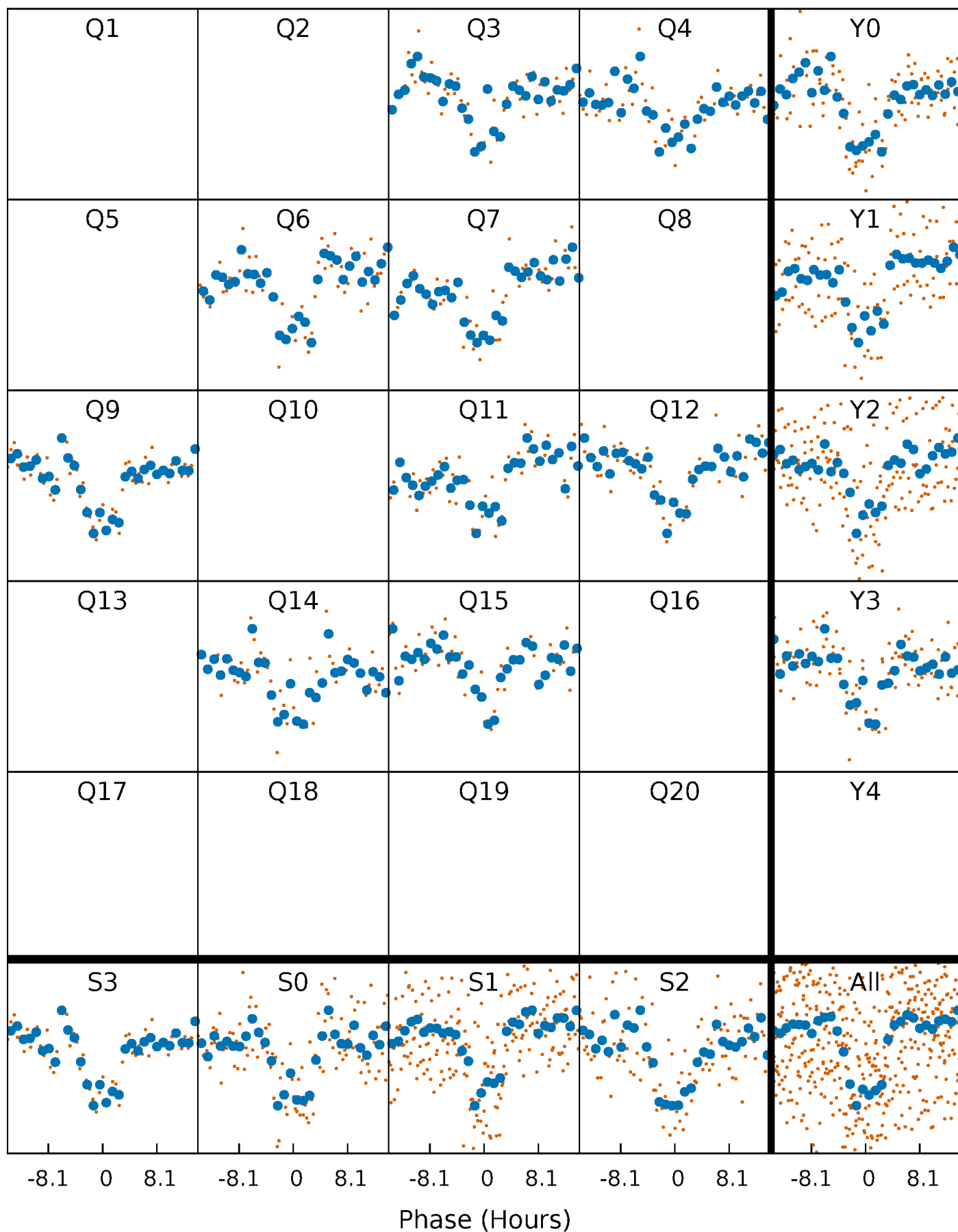
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

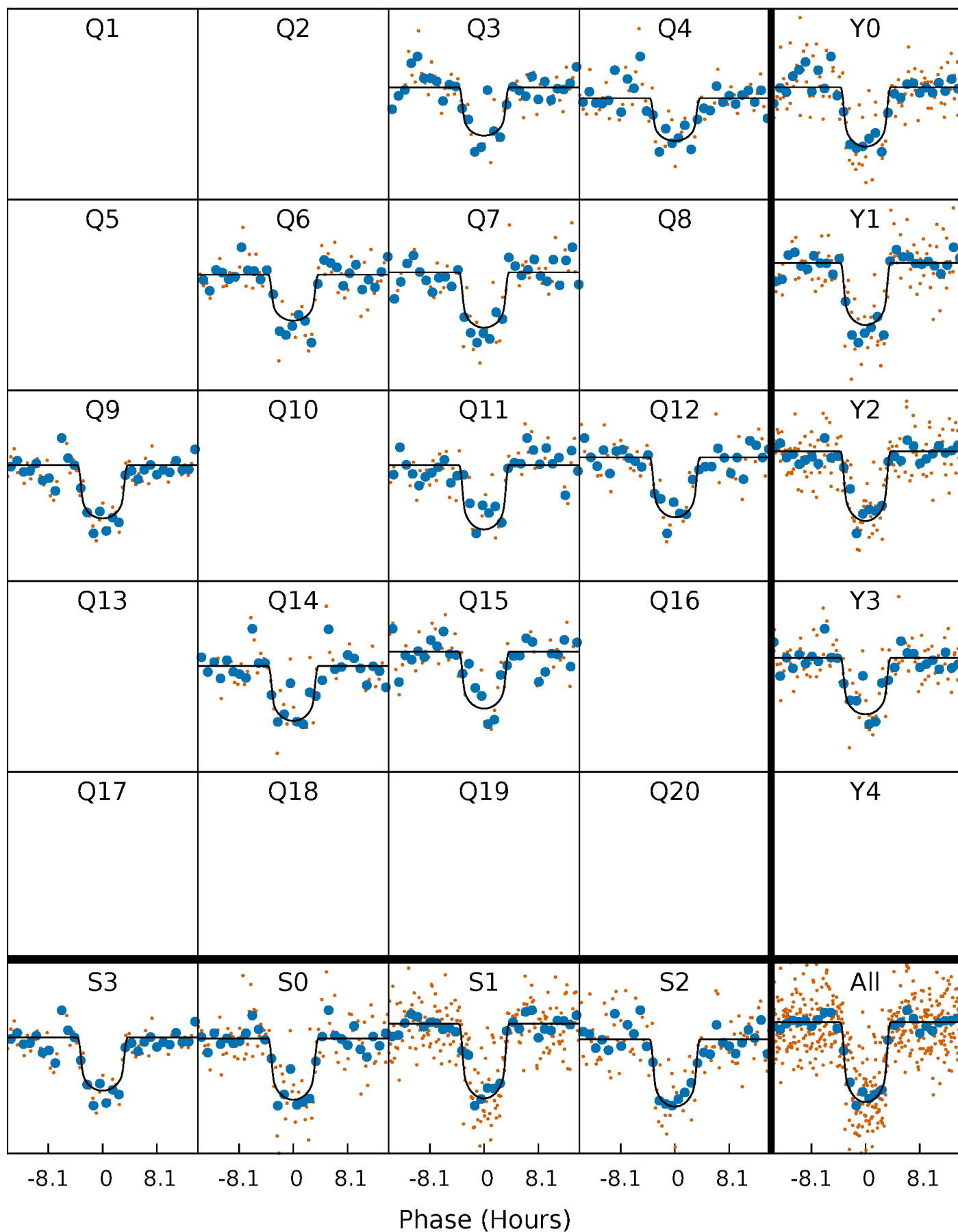
TCE 003239671-01 P=147.974226 Days  $T_0=263.084799$  (BKJD)





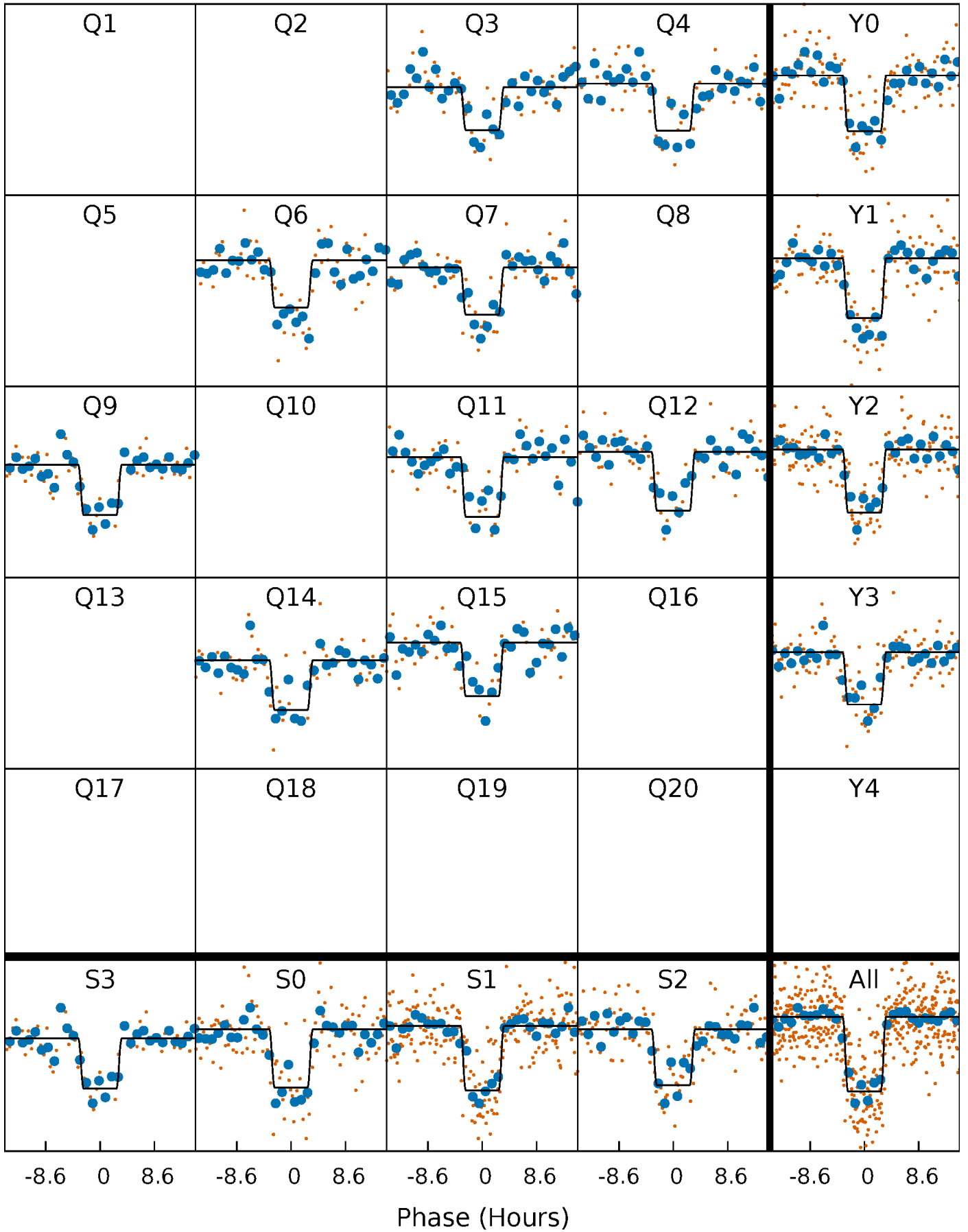
# DV Quarter-Phased Transit Curves

TCE 003239671-01 P=147.974226 Days  $T_0=263.084799$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

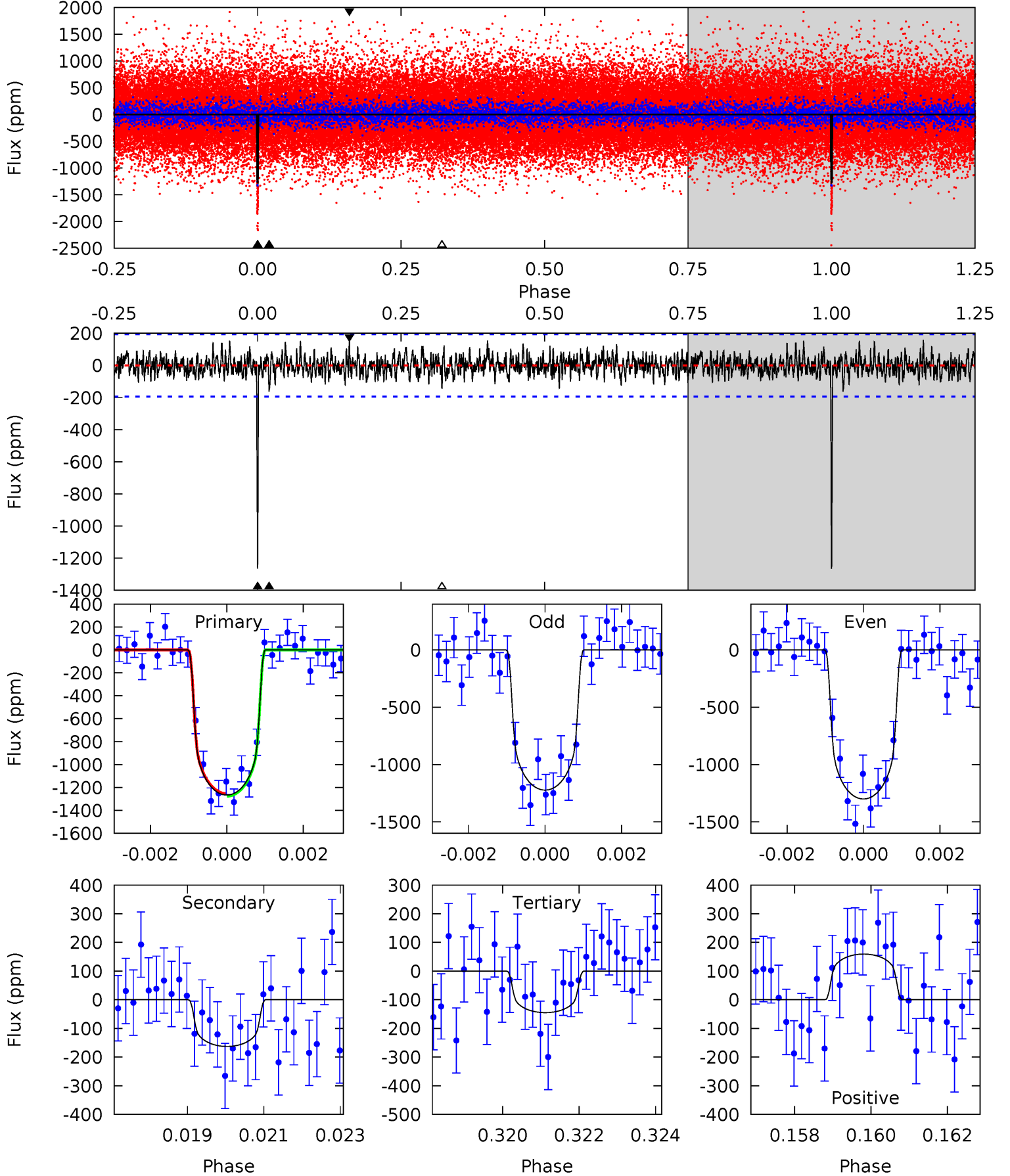
TCE 003239671-01 P=147.978087 Days  $T_0=263.072734$  (BKJD)



# DV Model-Shift Uniqueness Test

003239671-01, P = 147.974226 Days, E = 115.110573 Days

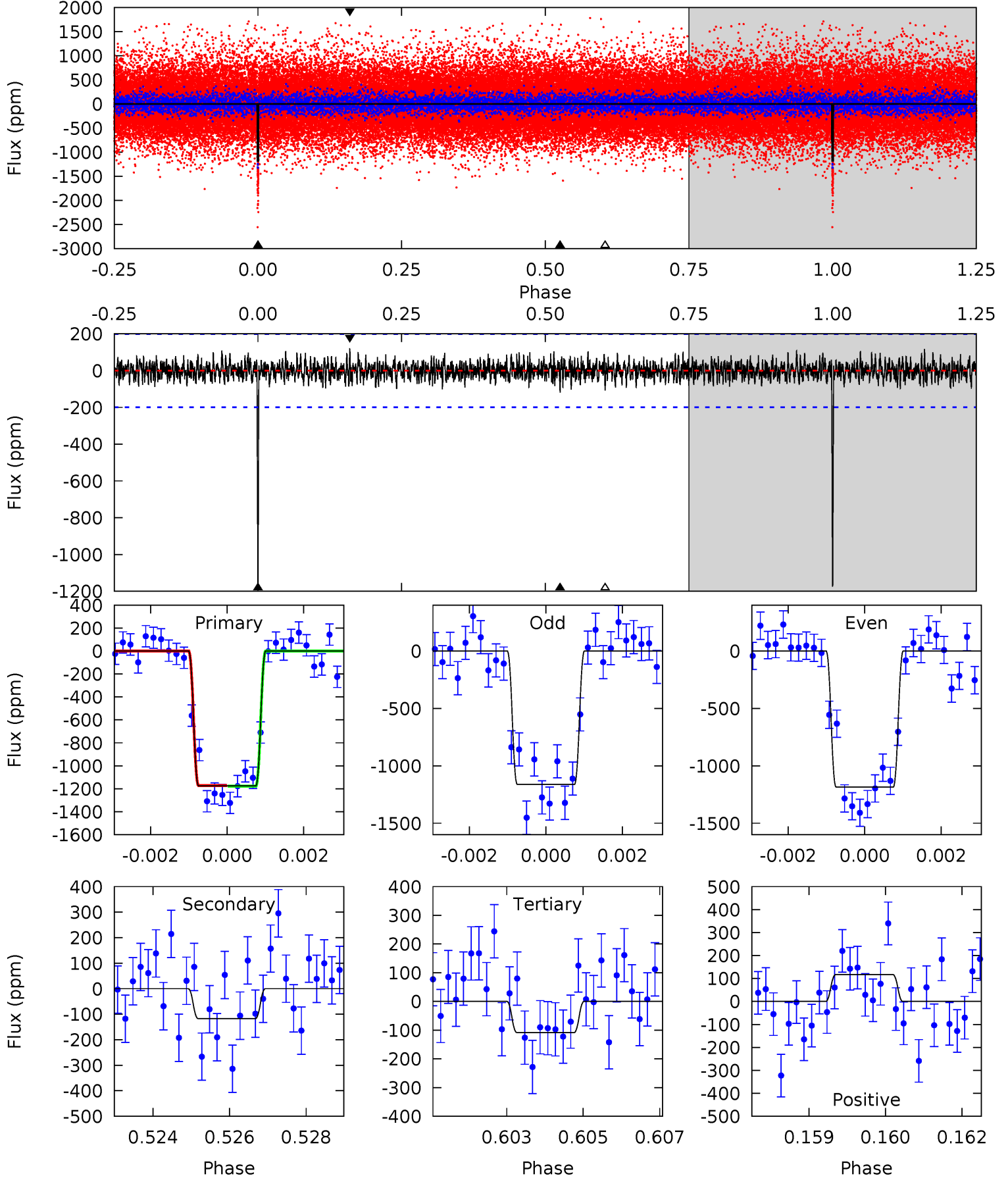
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.7	4.47	3.97	4.37	5.32	3.07	1.27	30.7	30.3	0.49	0.09	1.06	0.97	0.11	0.31



# Alt Model-Shift Uniqueness Test

003239671-01, P = 147.978087 Days, E = 115.094647 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
31.4	3.14	2.90	3.13	5.33	3.10	0.93	28.5	28.3	0.24	0.01	0.30	1.01	0.09	0.07



### Stellar Parameters For KIC 003239671

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5578^{+100}_{-111}$	$4.440^{+0.090}_{-0.099}$	$0.000^{+0.150}_{-0.150}$	$0.950^{+0.123}_{-0.082}$	$0.905^{+0.062}_{-0.051}$	$1.488^{+0.486}_{-0.436}$
	+2%/-2%	+2%/-2%	+inf%/-inf%	+13%/-9%	+7%/-6%	+33%/-29%
Source	SPE57	SPE57	SPE57	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 003239671-01 / KOI 2066.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-163 \pm 36$	$3.77^{+0.57}_{-0.59}$	$459^{+18}_{-16}$	$3707^{+220}_{-207}$	$1754^{+797}_{-544}$
Alt.	$-117 \pm 37$	$3.61^{+0.58}_{-0.52}$	$460^{+18}_{-17}$	$3553^{+271}_{-251}$	$1359^{+756}_{-525}$

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

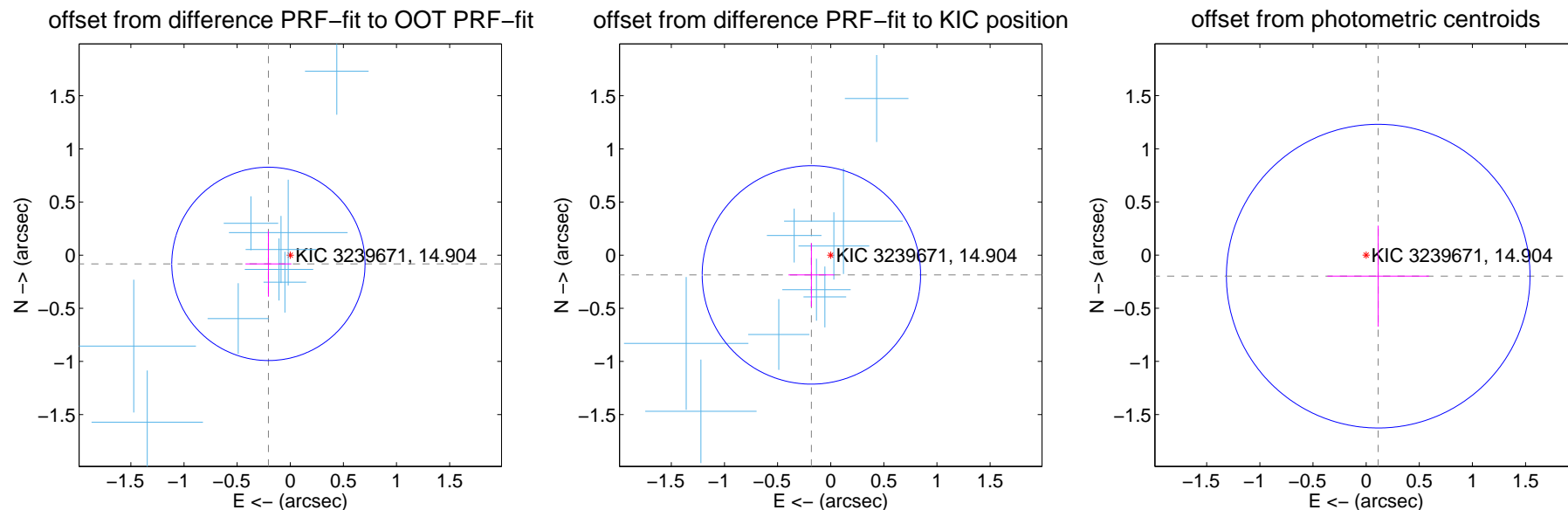
## DV Centroid Data

Supplemental centroid analysis for 003239671-01. Kepler magnitude: 14.90. Transit SNR 23.72

There are 9 quarters with good PRF difference image offsets

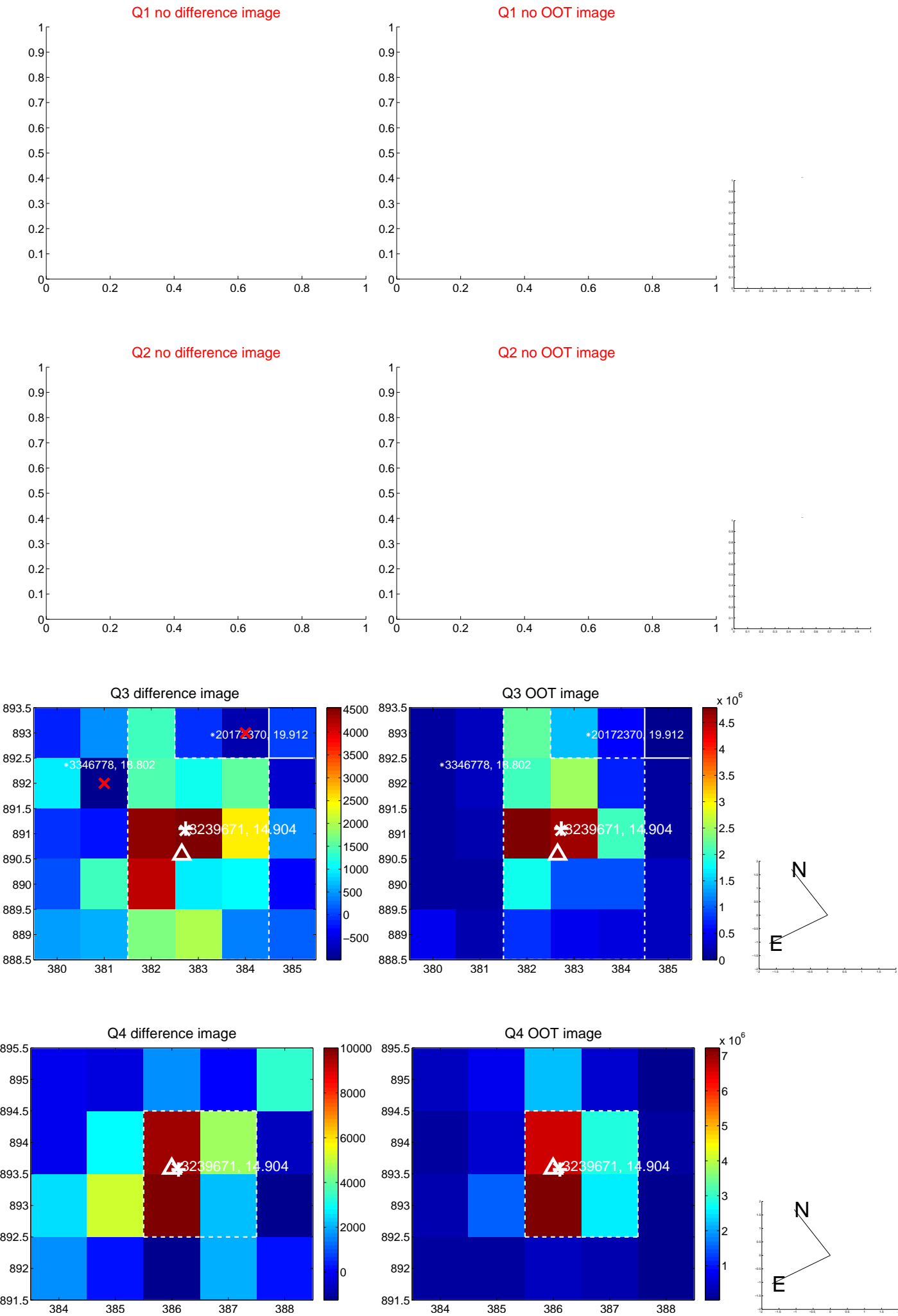
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.222 \pm 0.303$	0.73	$0.206 \pm 0.217$	$-0.082 \pm 0.308$
PRF-fit source offset from KIC position	$0.260 \pm 0.343$	0.76	$0.182 \pm 0.216$	$-0.186 \pm 0.299$
photometric centroid source offset	$0.23 \pm 0.48$	0.48	$-0.11 \pm 0.48$	$-0.20 \pm 0.48$



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.

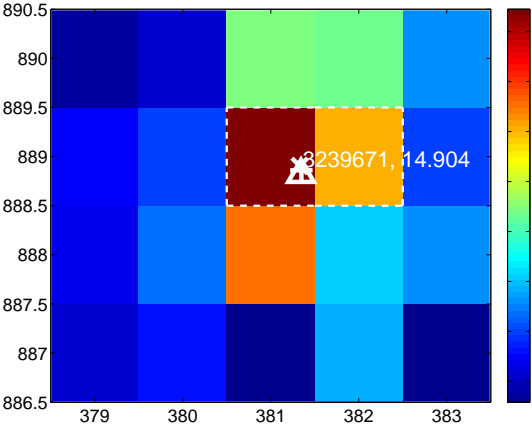
Q5 no difference image



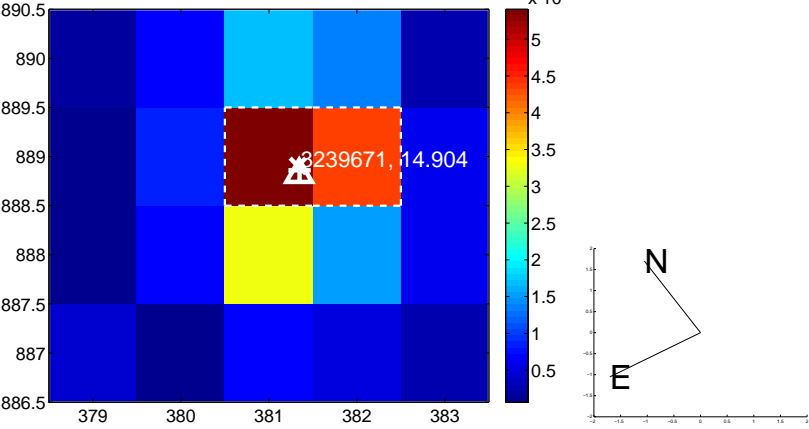
Q5 no OOT image



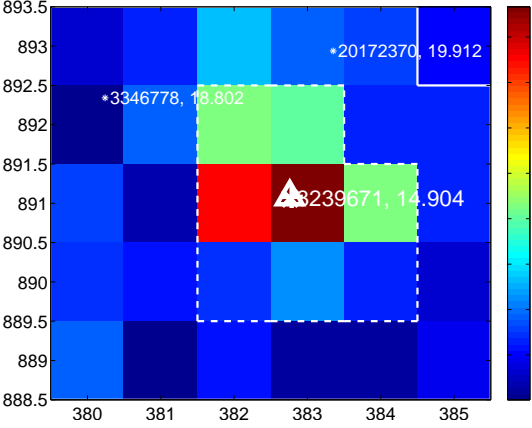
Q6 difference image



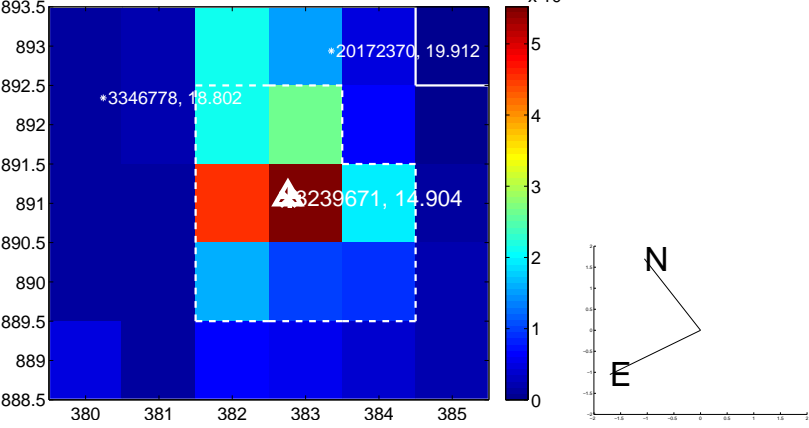
Q6 OOT image



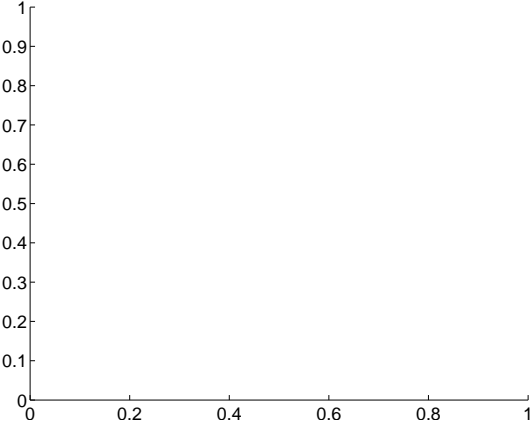
Q7 difference image



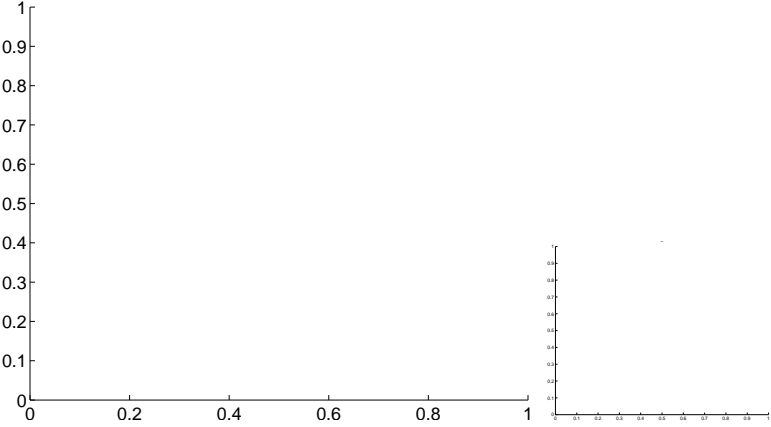
Q7 OOT image



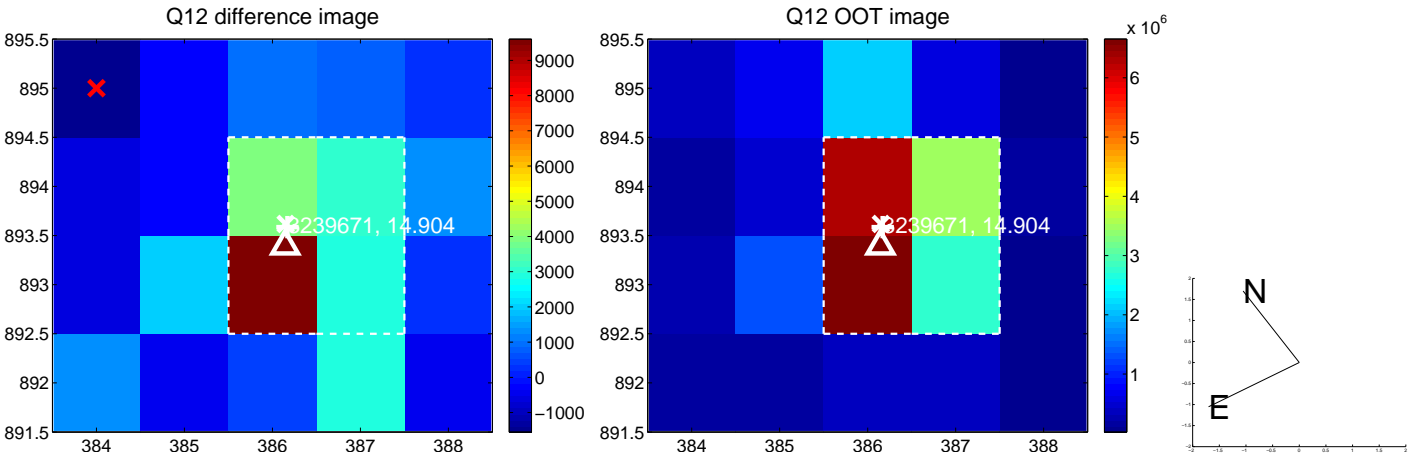
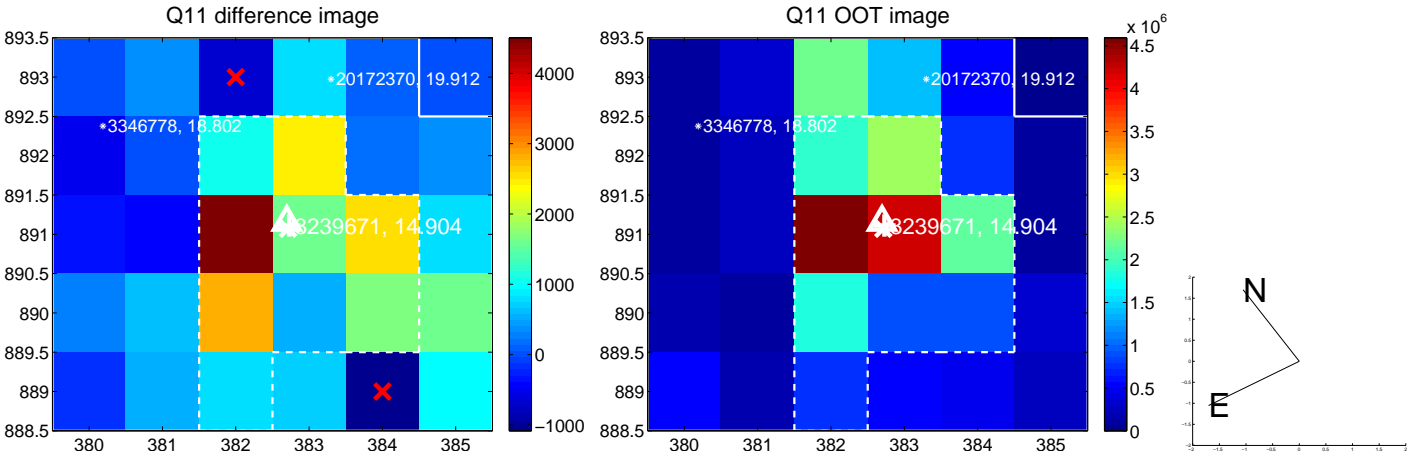
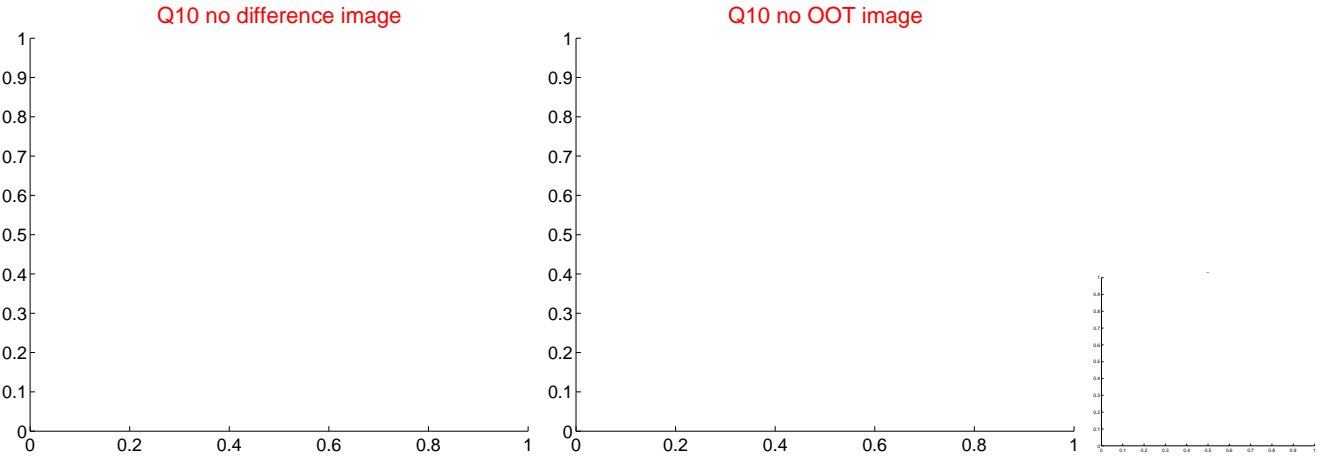
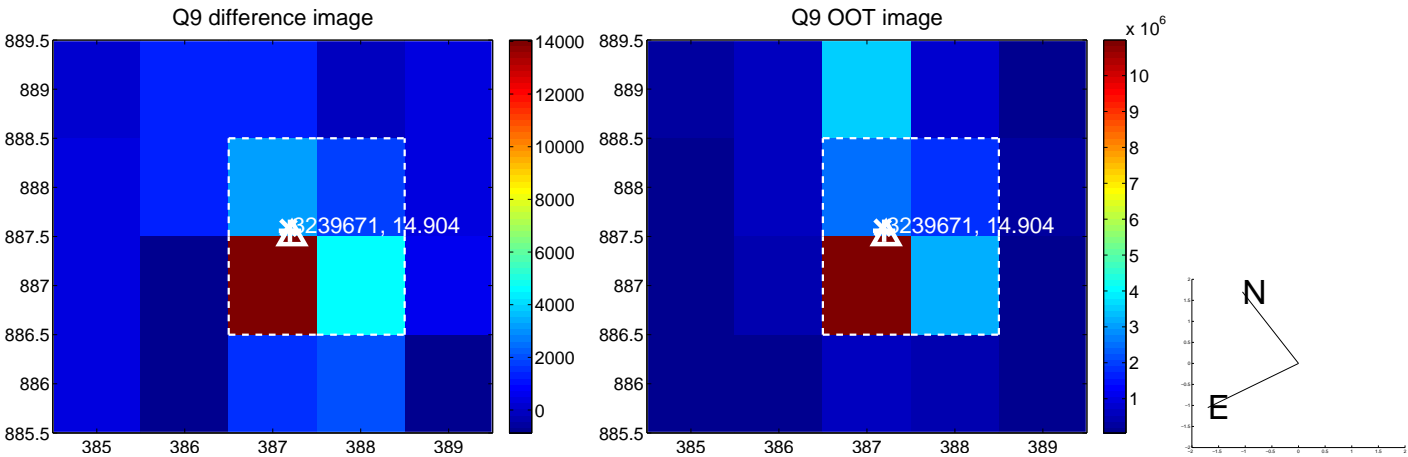
Q8 no difference image



Q8 no OOT image

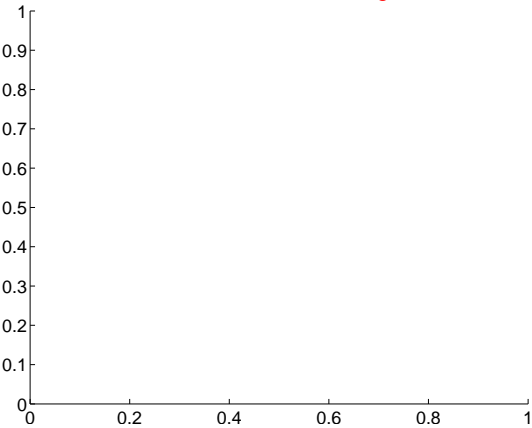


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

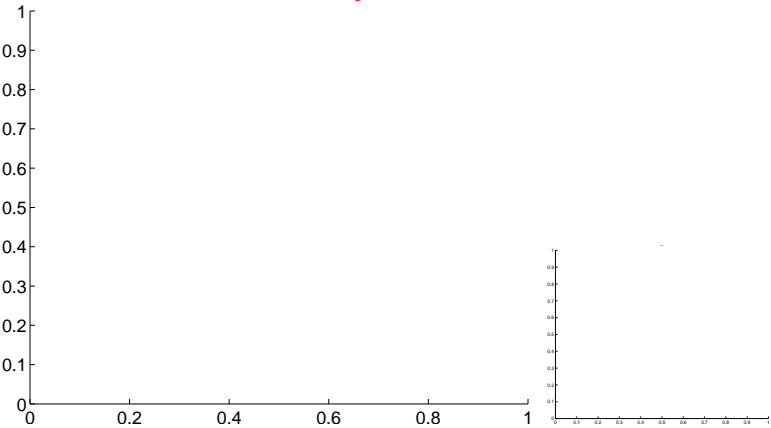


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

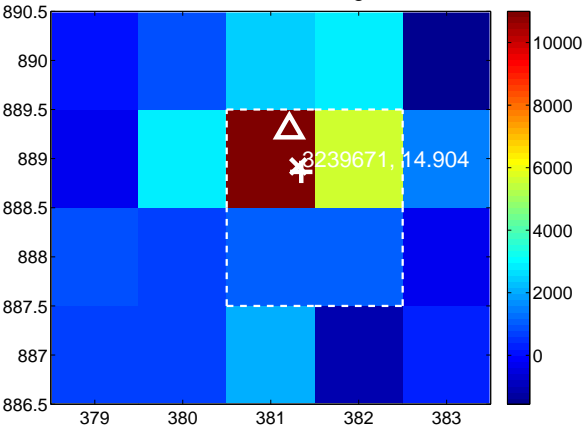
Q13 no difference image



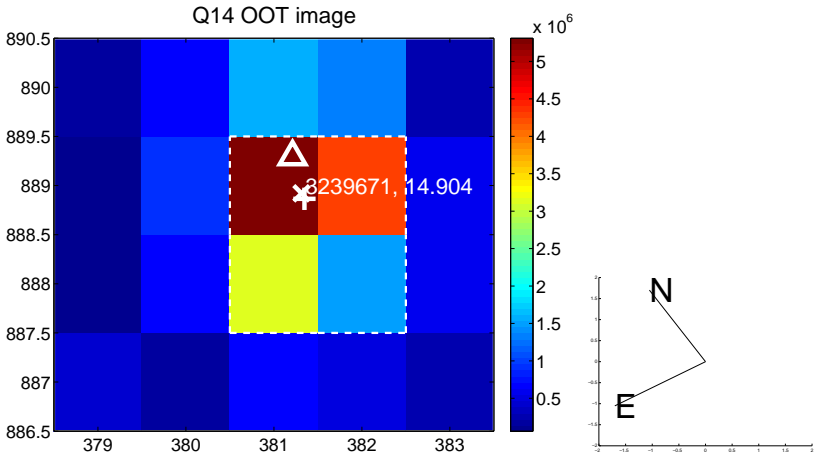
Q13 no OOT image



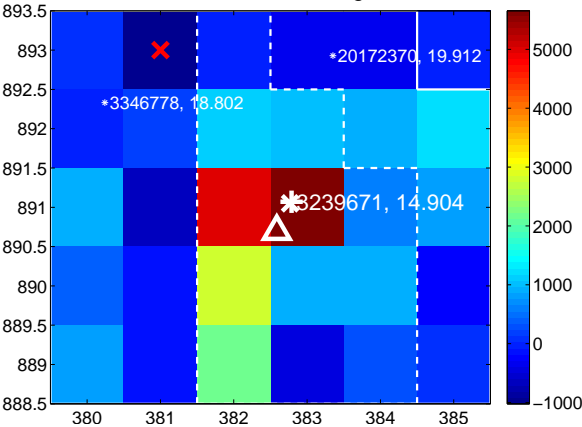
Q14 difference image



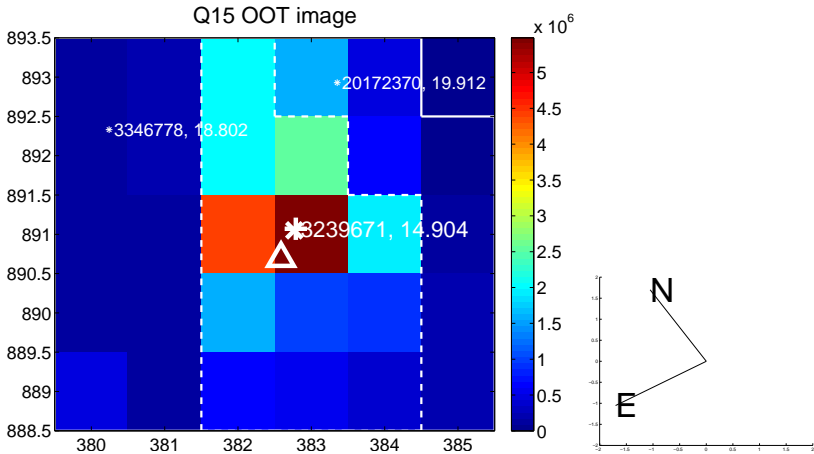
Q14 OOT image



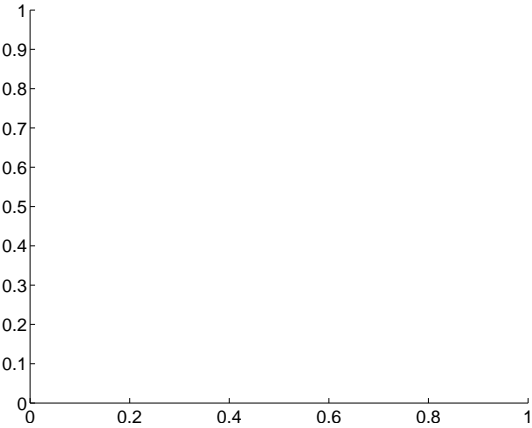
Q15 difference image



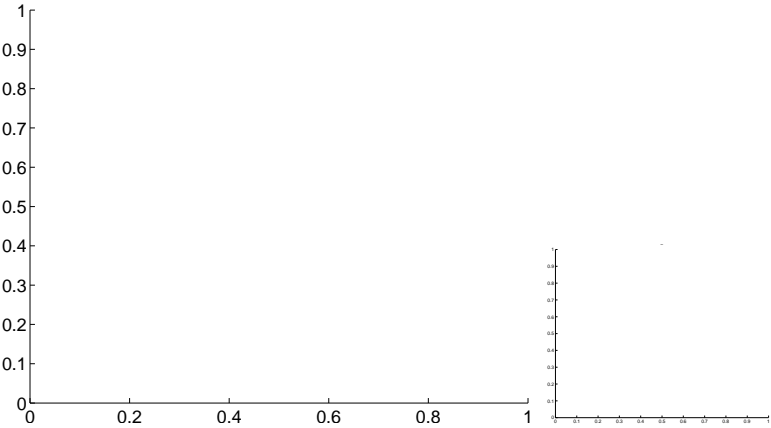
Q15 OOT image



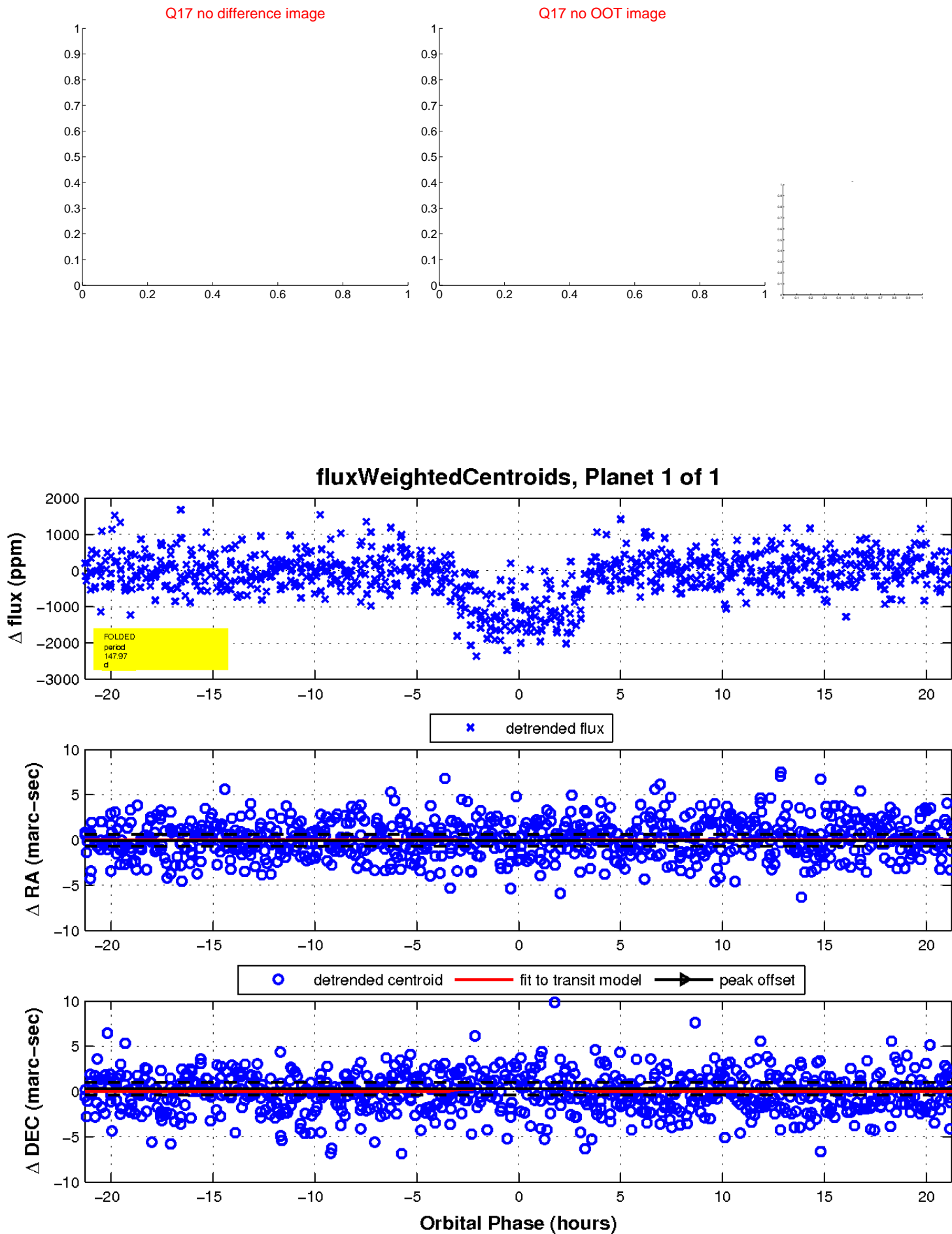
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

