

# KIC 007369523

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007369523-01	OBS	6870.01	2.659420	133.320424	302324.3	7.035	19001.2	11027.1	0.93	6156	60.69	790.65

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007369523-01	OBS	FP	0.00	0	1	0	0	MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—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.

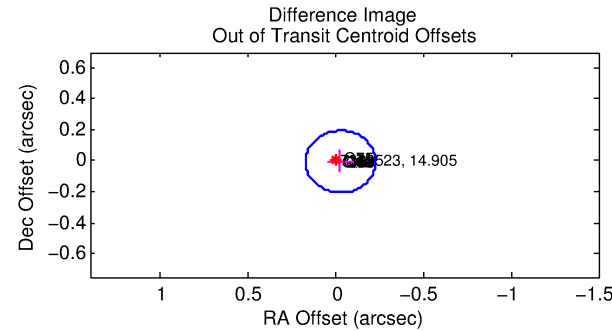
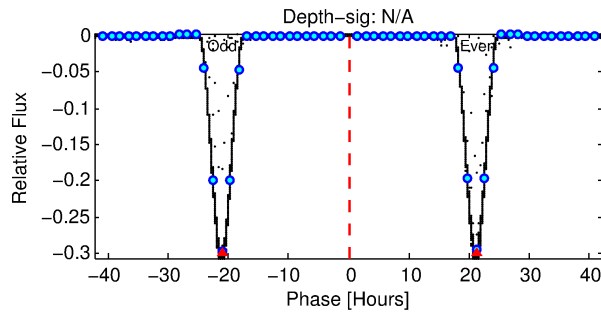
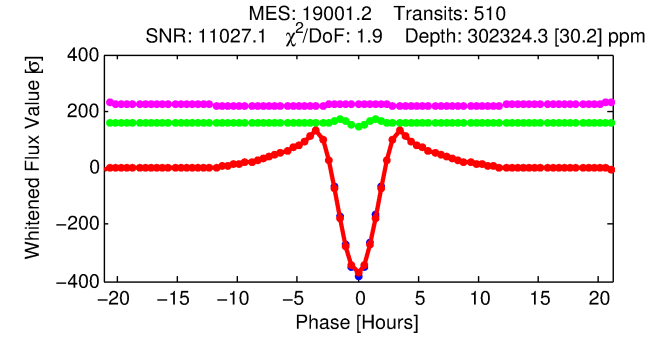
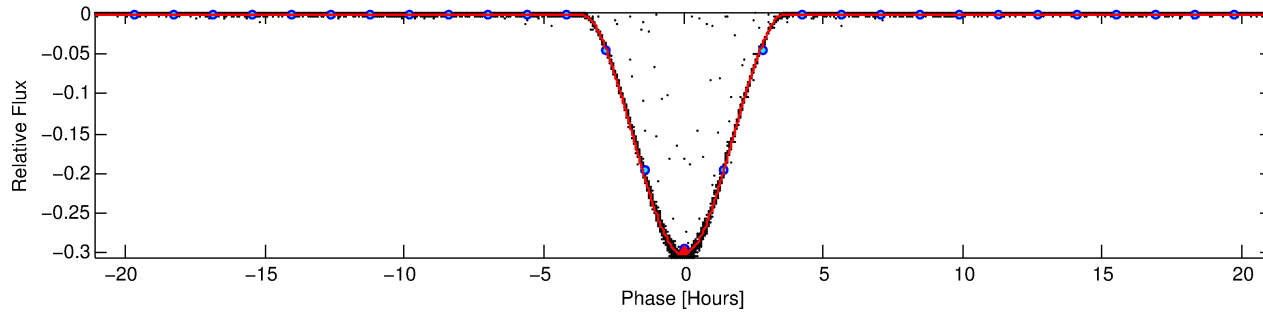
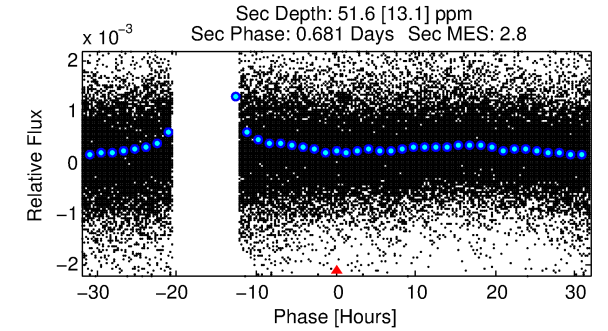
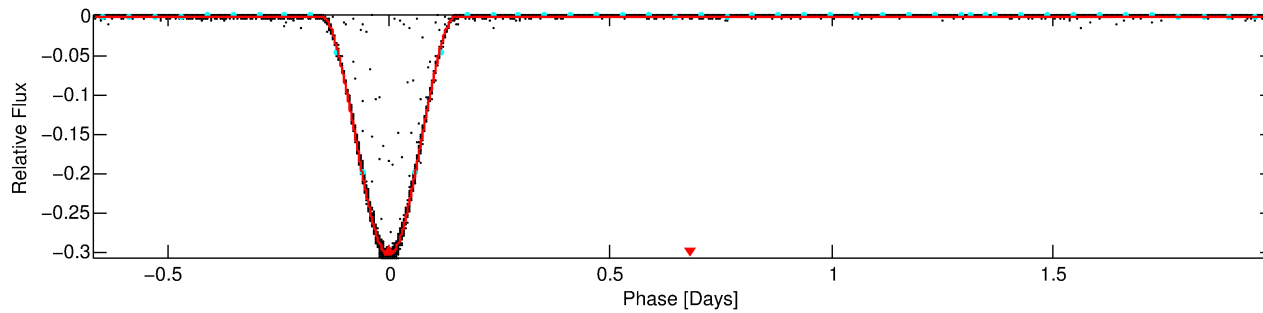
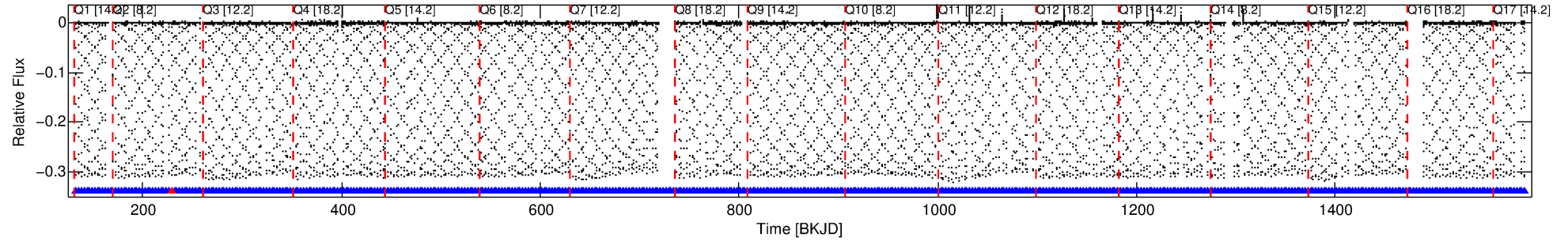
## Ephemeris Match Information For 007369523-01

No Significant Match Found

# DV One-Page Summary

KIC: 7369523 Candidate: 1 of 1 Period: 2.659 d  
KOI: K06870.01 Corr: 0.997

Kp: 14.90 R\*: 0.93 Rs Teff: 6156.0 K Logg: 4.50 Fe/H: -0.320



## DV Fit Results:

Period = 2.65942 [0.00000] d  
Epoch = 133.3204 [0.0000] BKJD  
Rp/R\* = 0.5968 [0.0029]  
a/R\* = 4.37 [0.00]  
b = 0.63 [0.01]  
Seff = 790.65 [313.31]  
Teff = 1352 [134] K  
Rp = 60.69 [17.72] Re  
a = 0.0376 [0.0095] AU  
Ag = 0.01 [0.00] [-201.01σ]  
Teffp = 675 [48] K [-4.75σ]

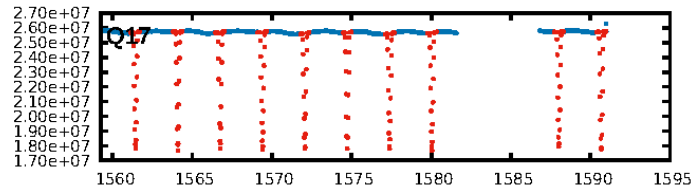
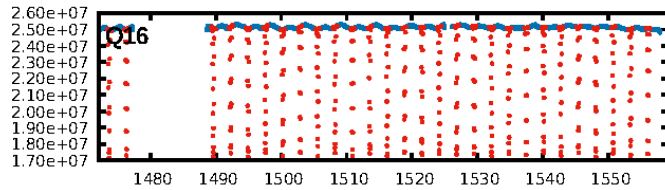
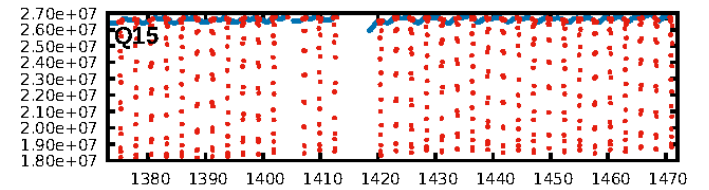
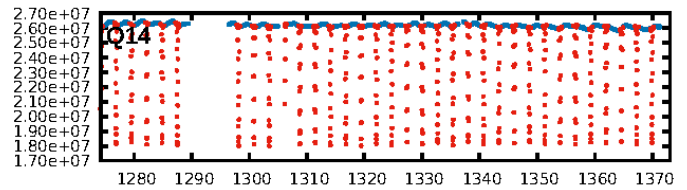
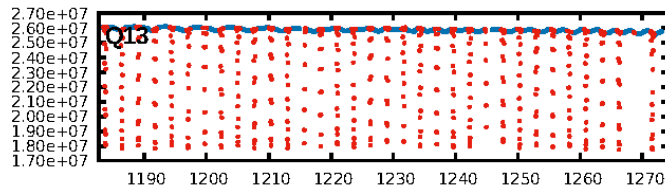
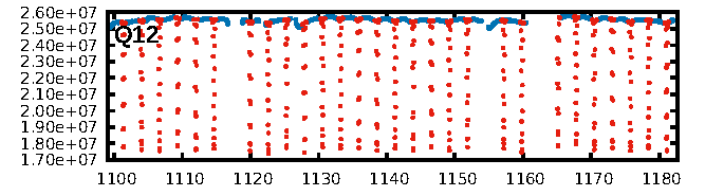
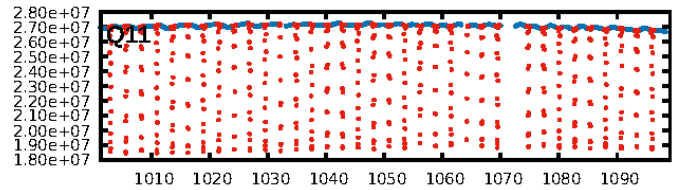
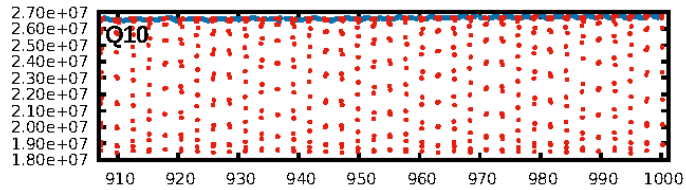
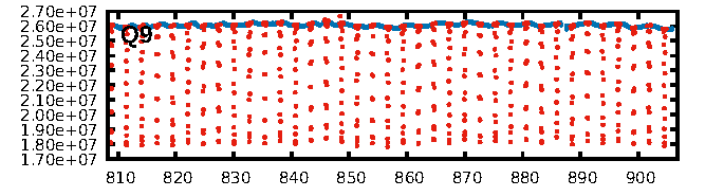
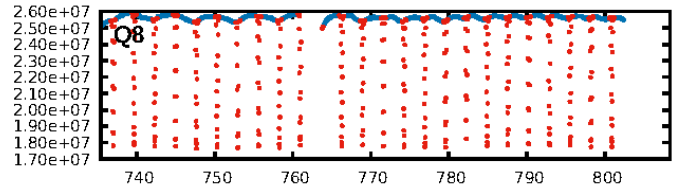
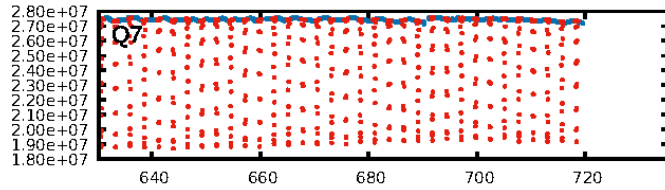
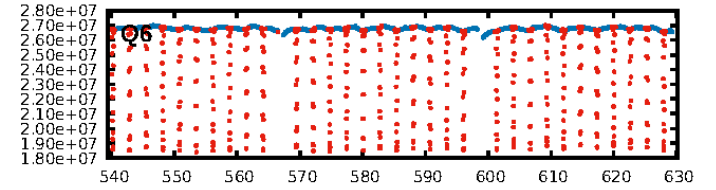
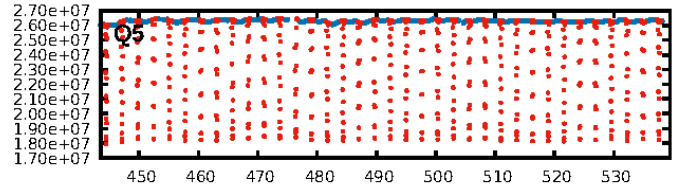
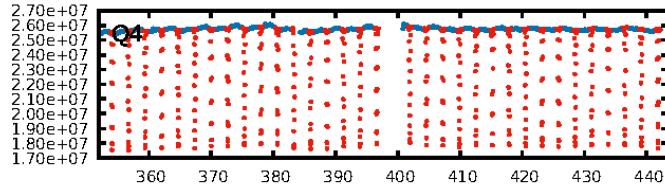
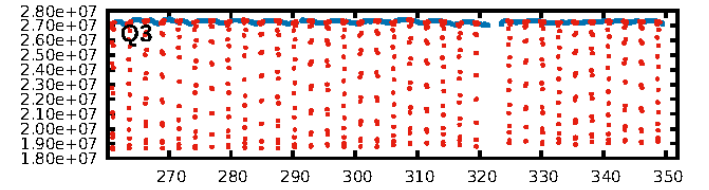
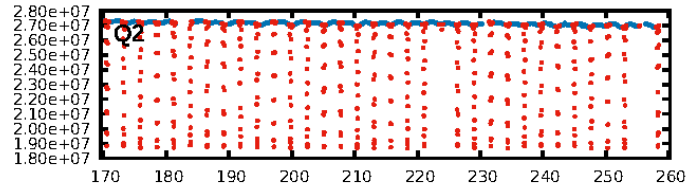
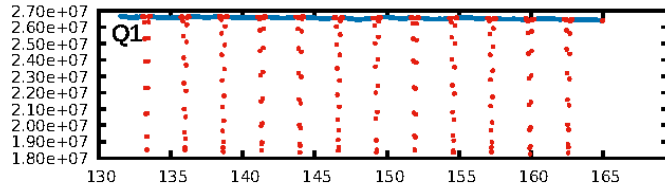
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [487/488]  
GhostDiagnostic-chr: 1.444  
Centroid-sig: N/A  
Centroid-so: 0.058 arcsec [114.36σ]  
OotOffset-rm: 0.027 arcsec [0.41σ]  
KicOffset-rm: 0.112 arcsec [1.65σ]  
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]

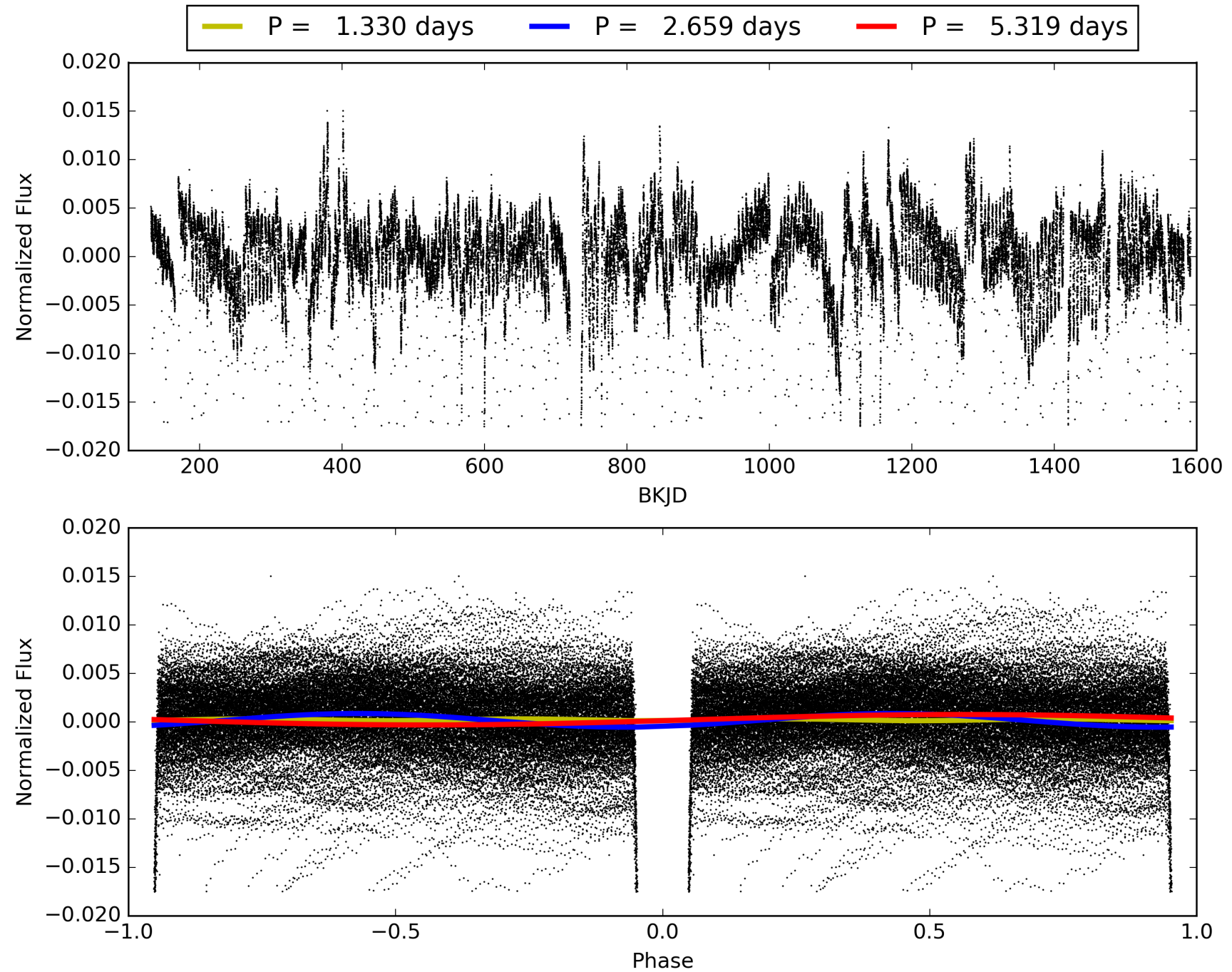
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:51:10 Z

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

## TCE 007369523-01, PDC Light Curves

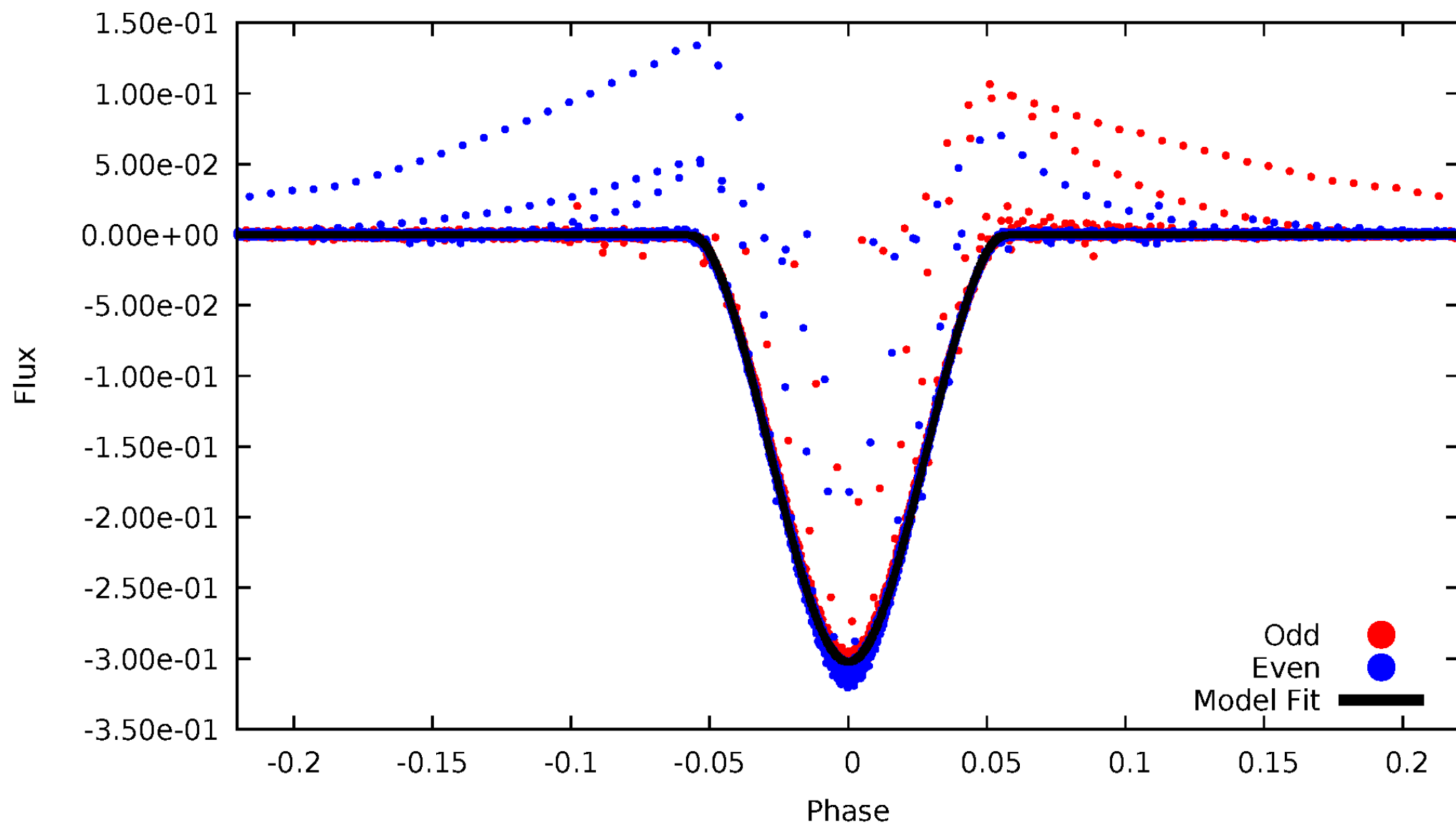


TCE 007369523-01



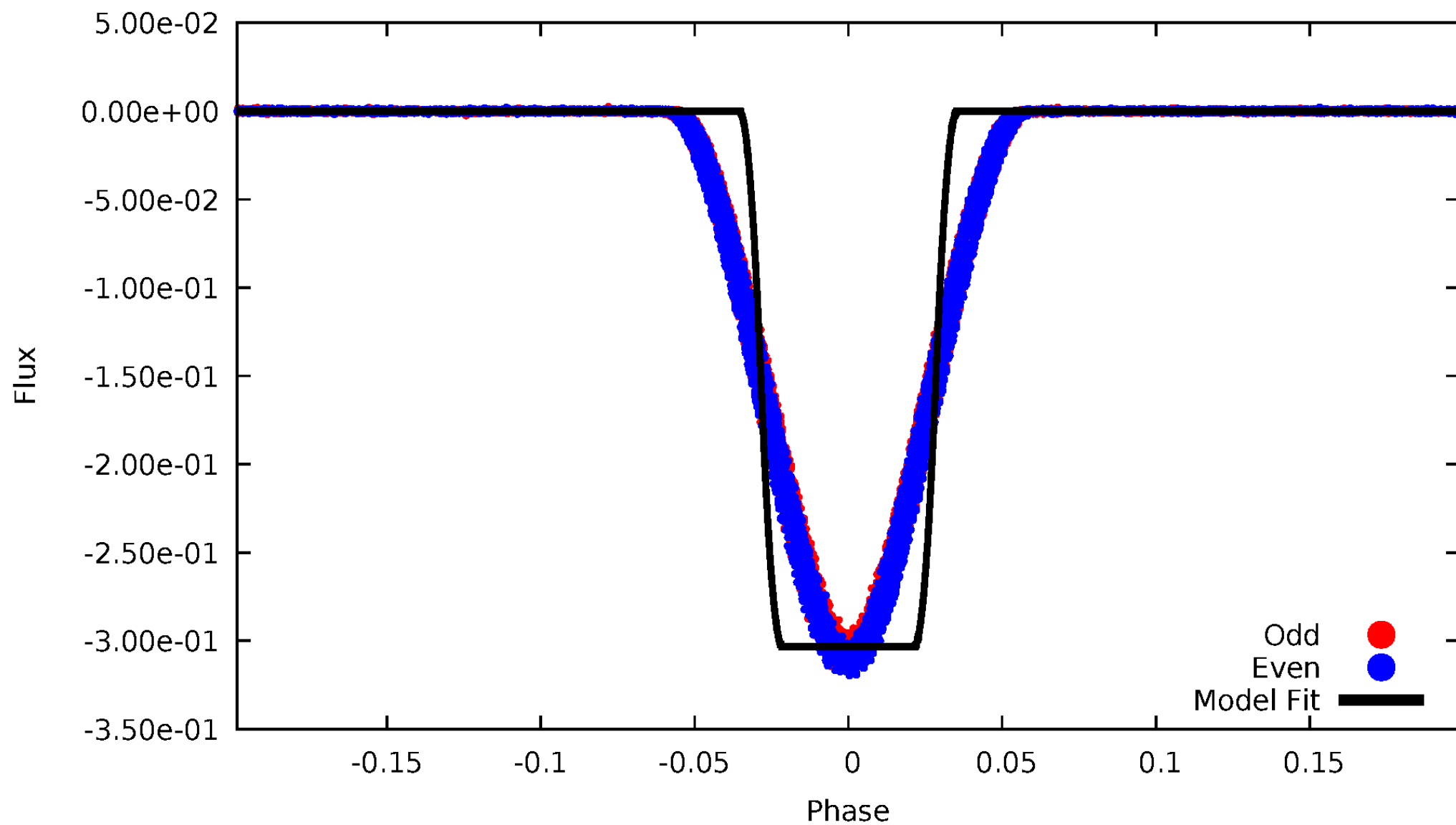
# DV Odd/Even

TCE 007369523-01



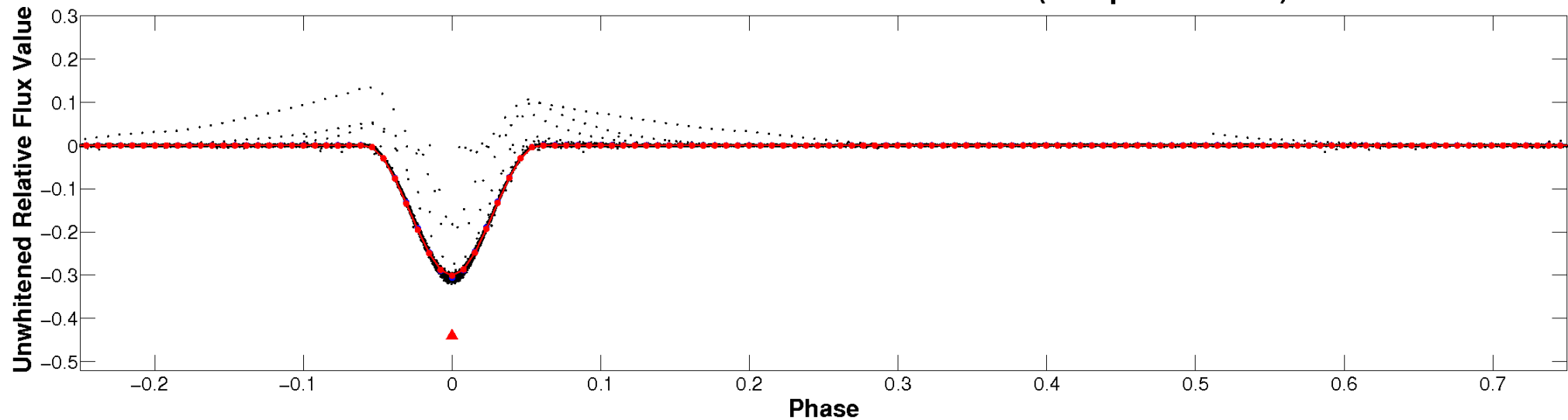
# ALT Odd/Even

TCE 007369523-01

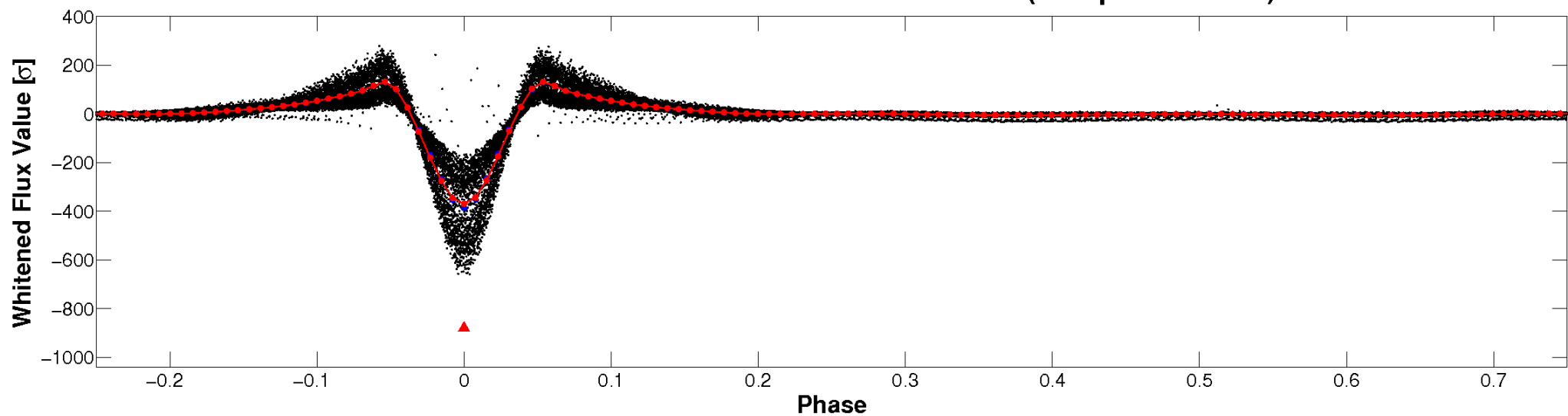


# Non-Whitened Vs. Whitened Light Curve

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

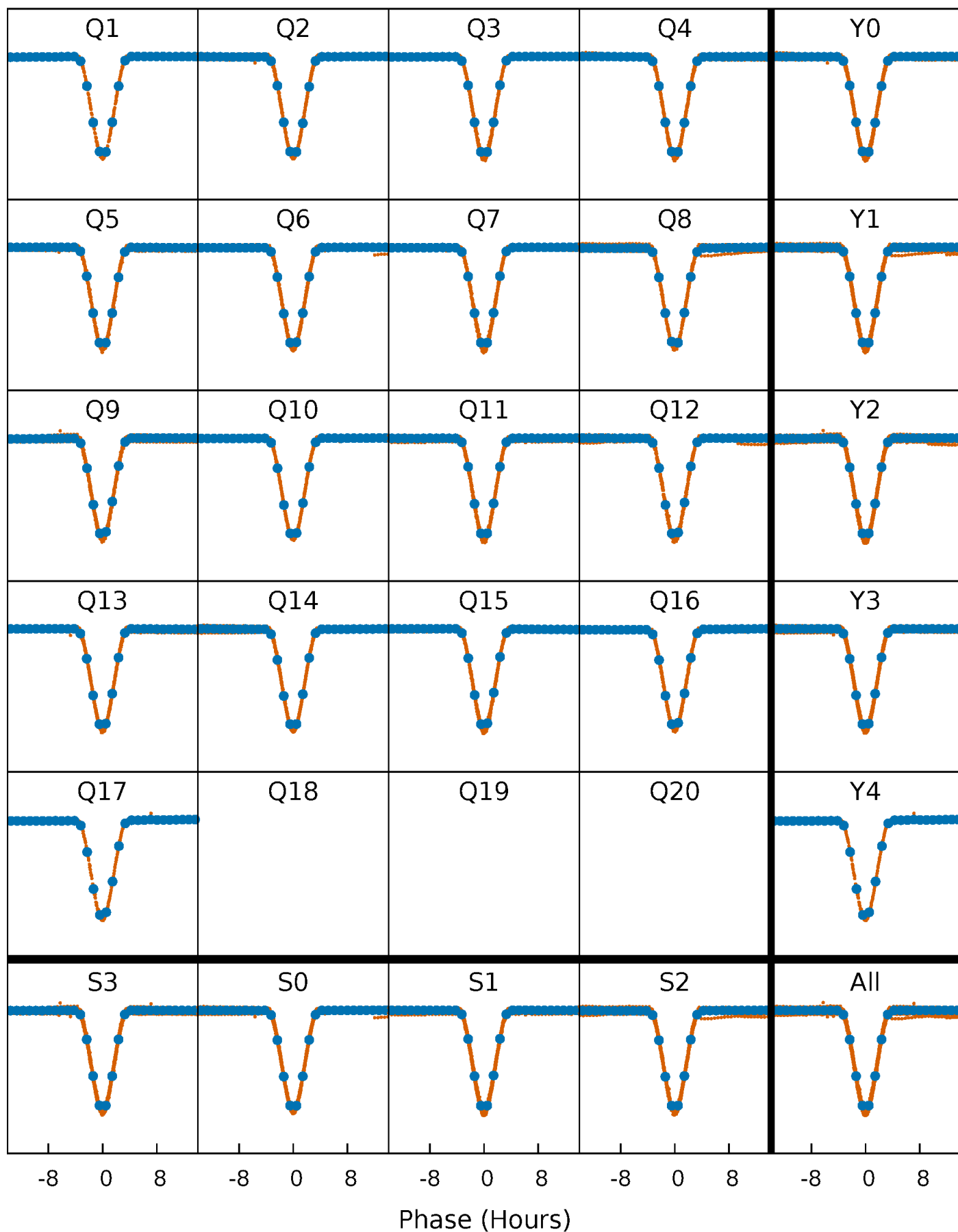


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

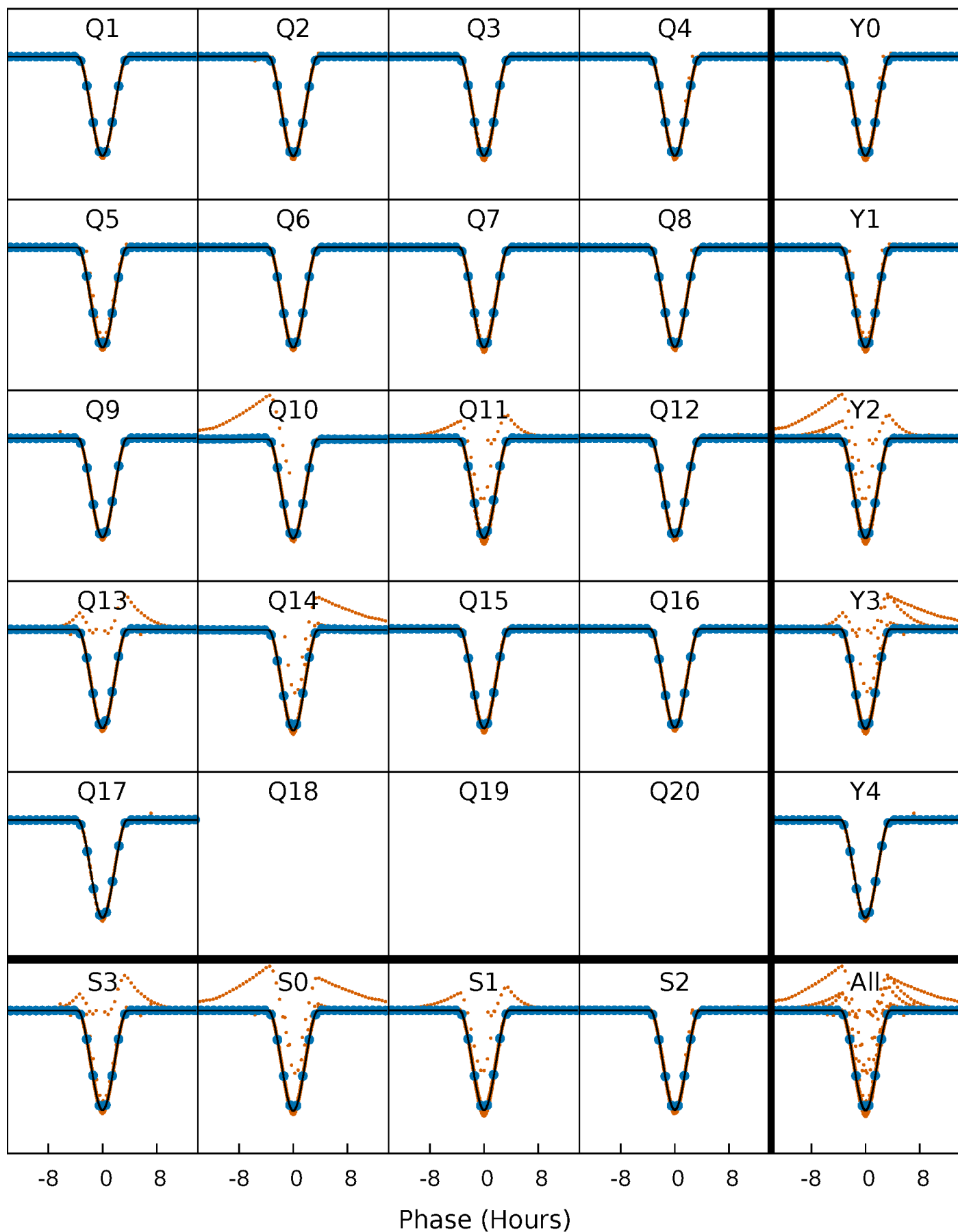
TCE 007369523-01 P= 2.659420 Days  $T_0=133.320424$  (BKJD)





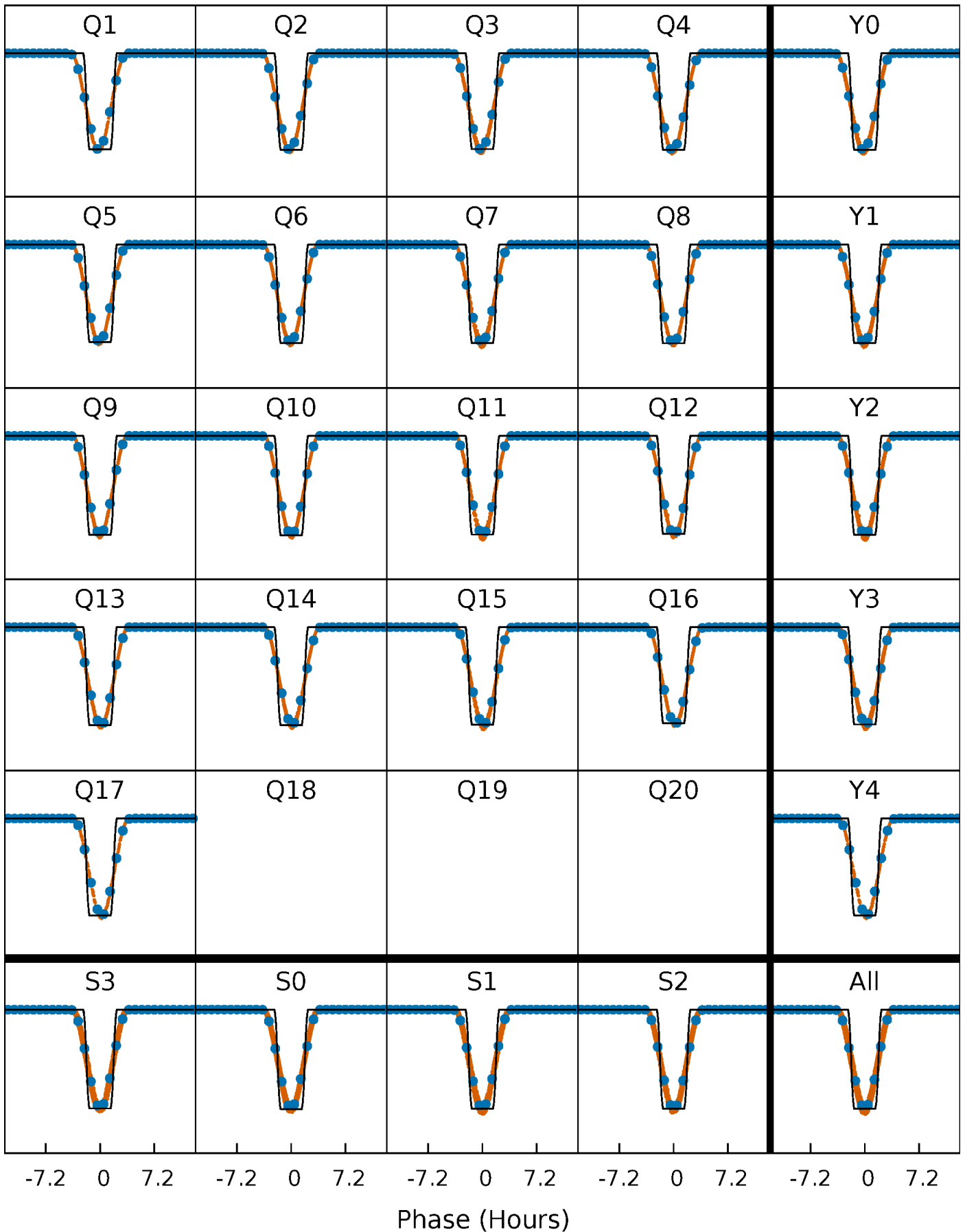
# DV Quarter-Phased Transit Curves

TCE 007369523-01 P= 2.659420 Days  $T_0=133.320424$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

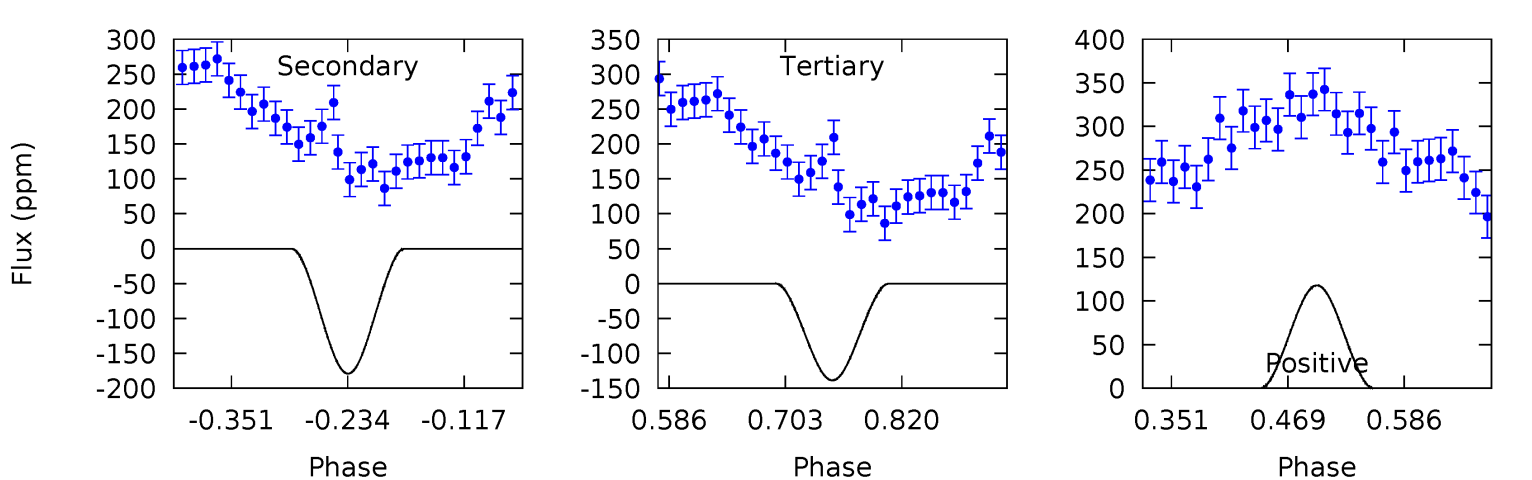
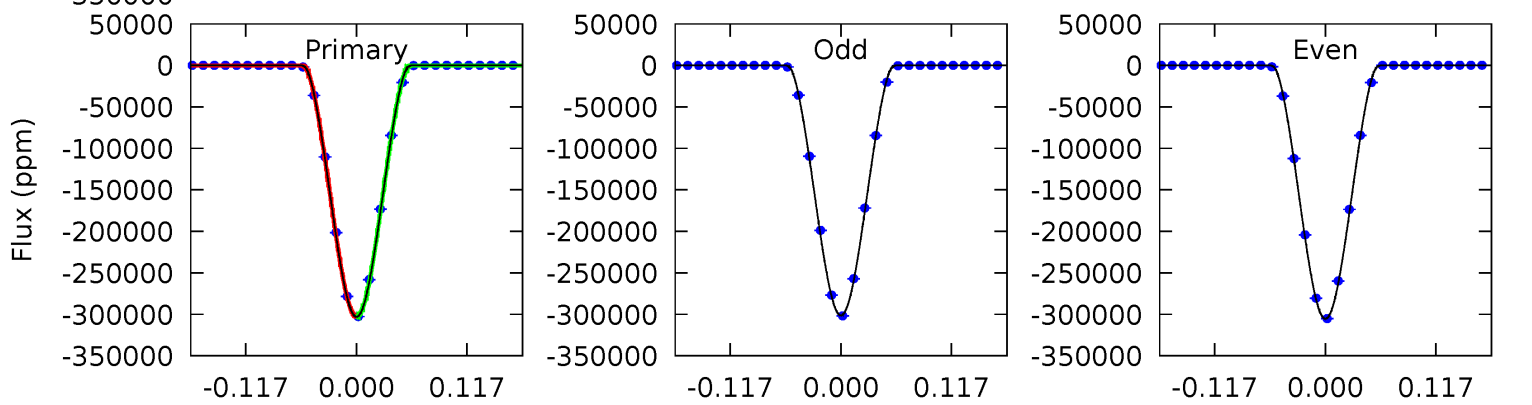
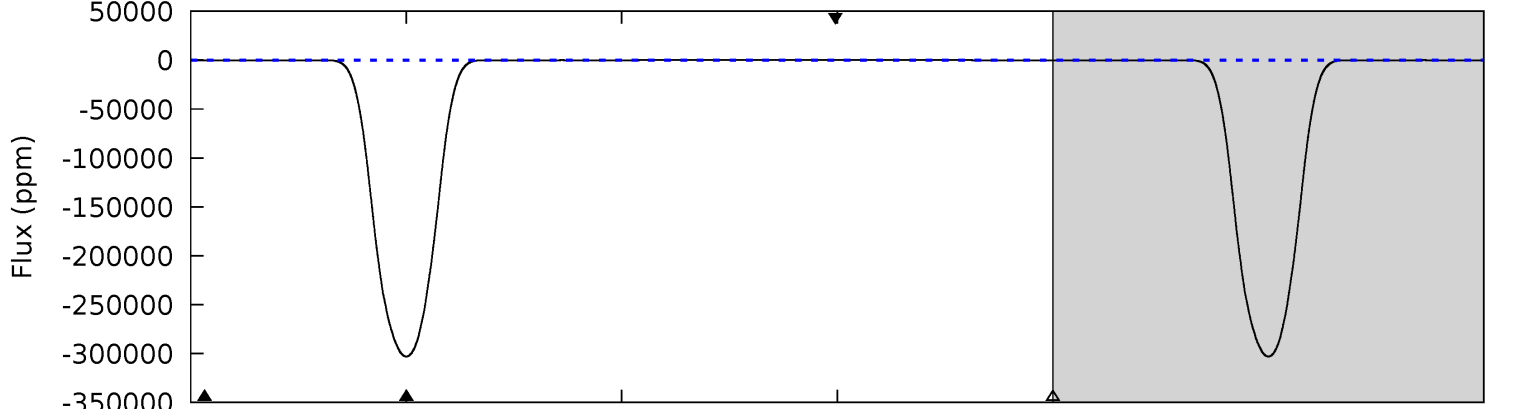
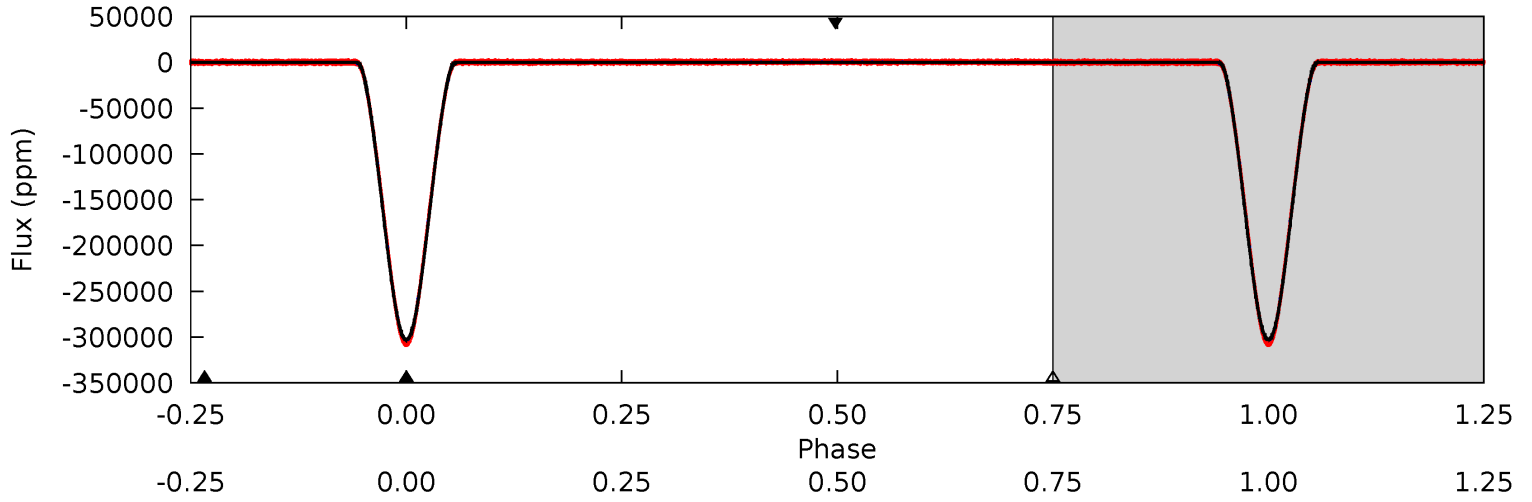
TCE 007369523-01 P= 2.659389 Days  $T_0=133.329317$  (BKJD)



# DV Model-Shift Uniqueness Test

007369523-01, P = 2.659420 Days, E = 130.661004 Days

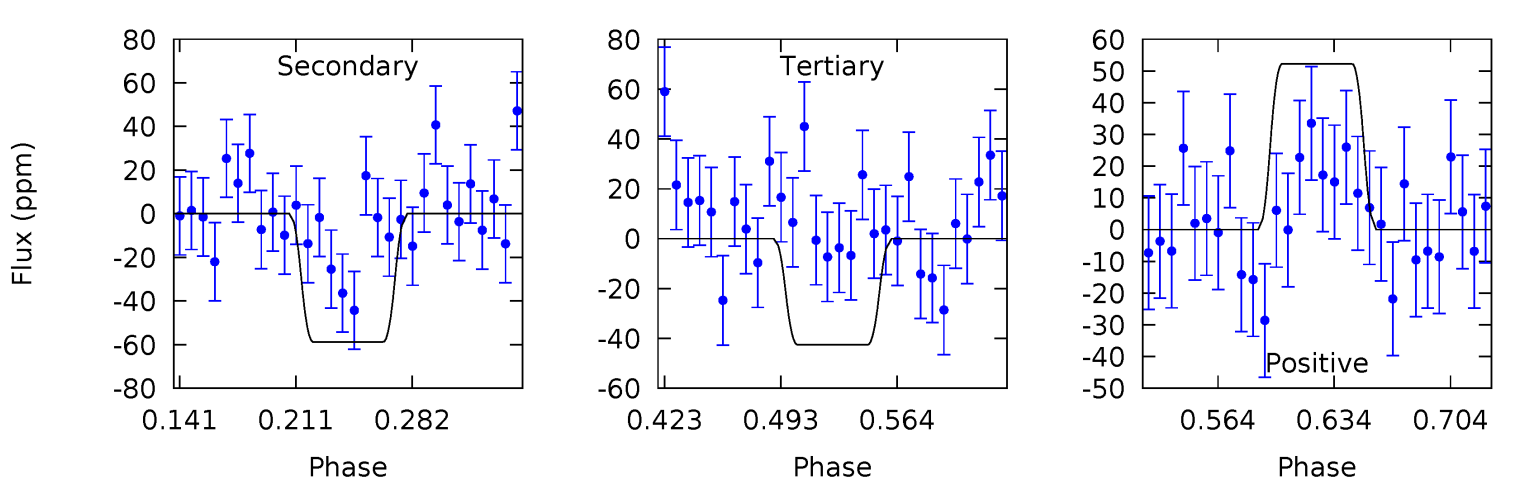
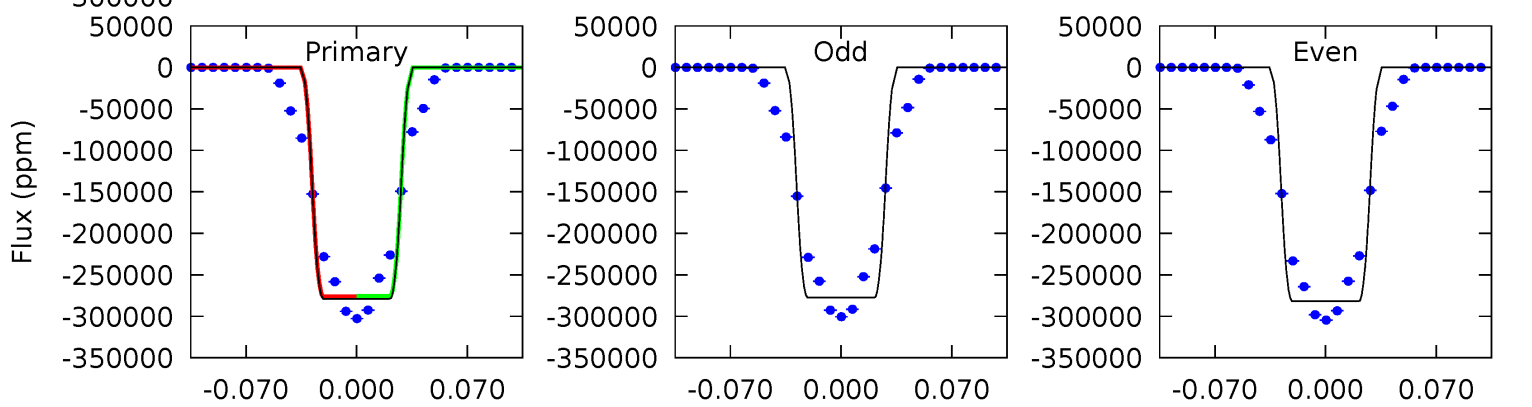
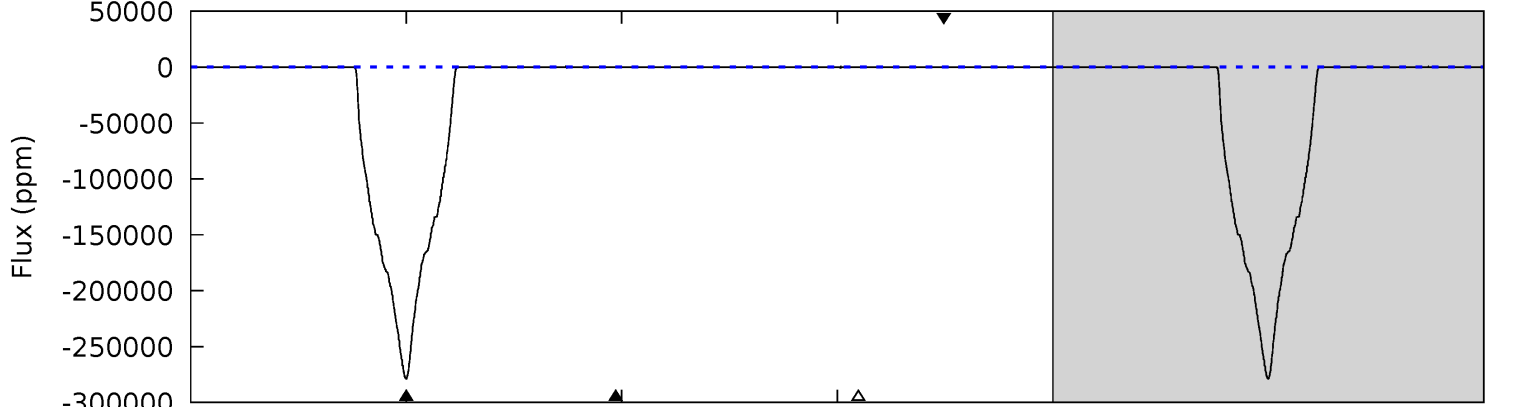
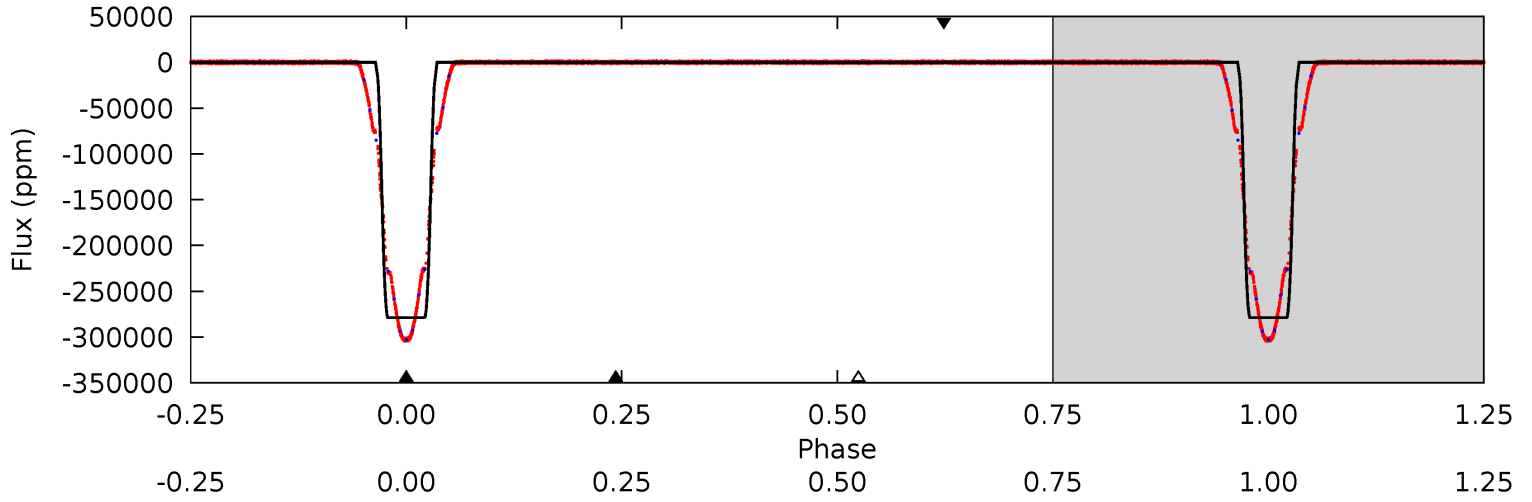
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34461	20.4	15.8	13.4	4.53	1.57	7.64	34445	34448	4.58	6.95	237.0	0.99	0.00	19.2



# Alt Model-Shift Uniqueness Test

007369523-01, P = 2.659389 Days, E = 130.669928 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
16065	3.39	2.45	3.01	4.64	1.81	1.05	16063	16062	0.93	0.38	121.0	1.00	0.00	0



### Stellar Parameters For KIC 007369523

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6156^{+183}_{-202}$	$4.500^{+0.052}_{-0.208}$	$-0.320^{+0.300}_{-0.350}$	$0.932^{+0.272}_{-0.091}$	$1.000^{+0.127}_{-0.127}$	$1.743^{+0.463}_{-0.882}$
	+3%/-3%	+1%/-5%	+94%/-109%	+29%/-10%	+13%/-13%	+27%/-51%
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 007369523-01 / KOI 6870.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-179 \pm 9$	$62.35^{+9.78}_{-4.64}$	$1929^{+128}_{-93}$	$-2418^{+62}_{-82}$	$0.035^{+0.005}_{-0.008}$
Alt.	$-59 \pm 17$	$57.54^{+9.42}_{-4.47}$	$1927^{+131}_{-99}$	$-2438^{+61}_{-82}$	$0.013^{+0.005}_{-0.005}$

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

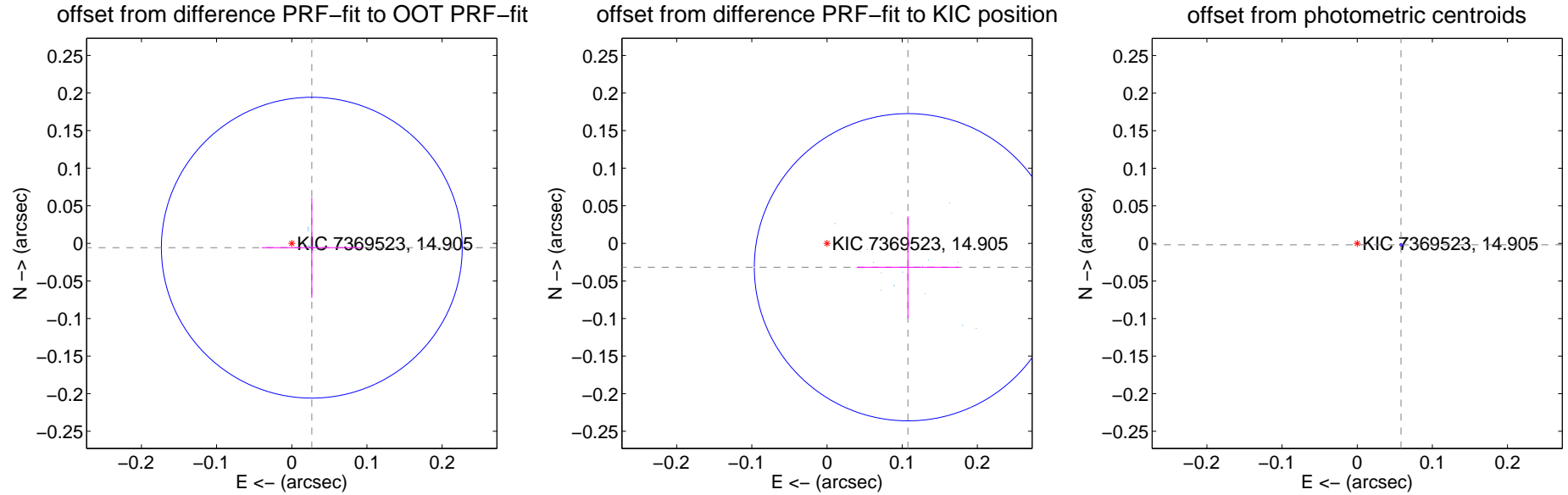
## DV Centroid Data

Supplemental centroid analysis for 007369523-01. Kepler magnitude: 14.90. Transit SNR 11027.12

There are 17 quarters with good PRF difference image offsets

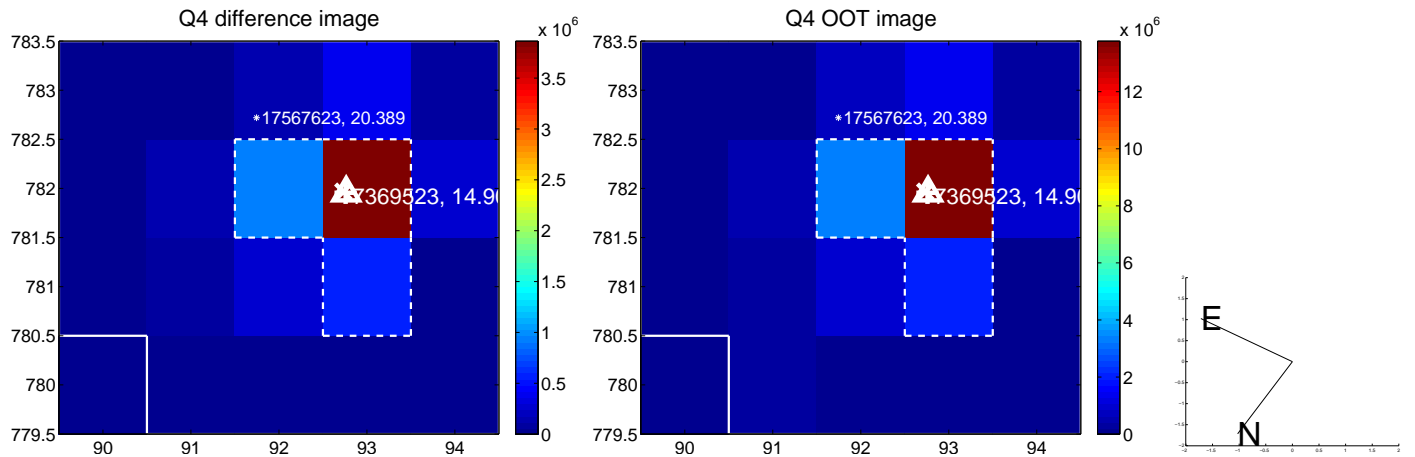
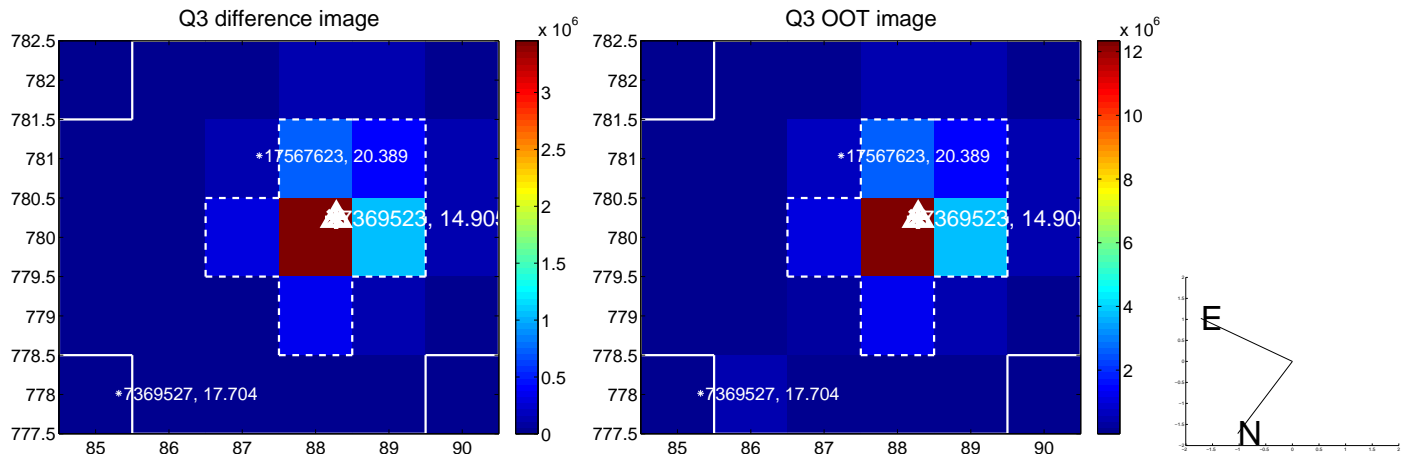
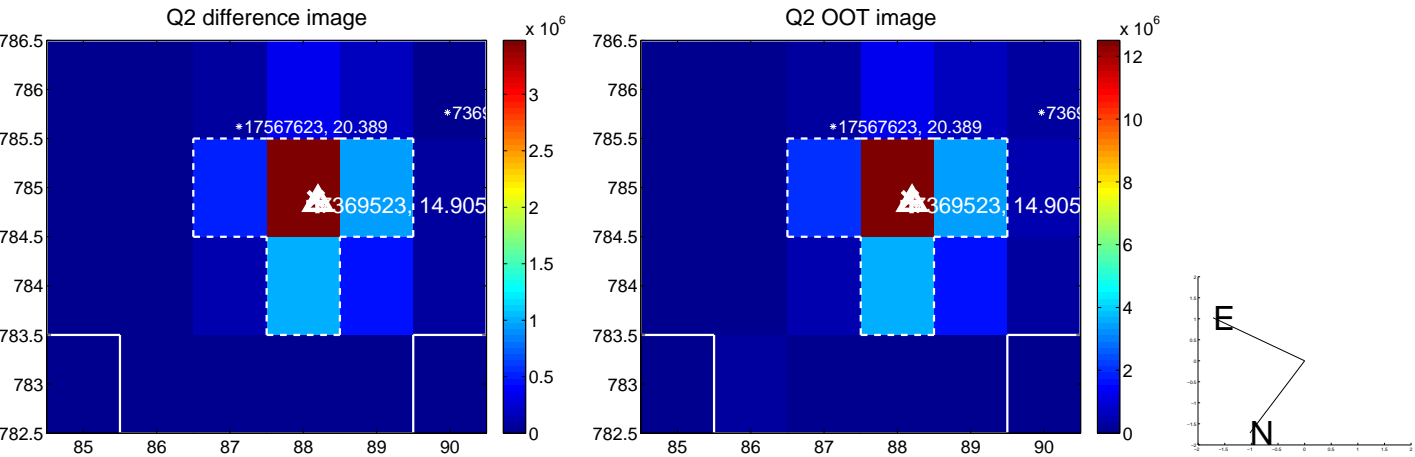
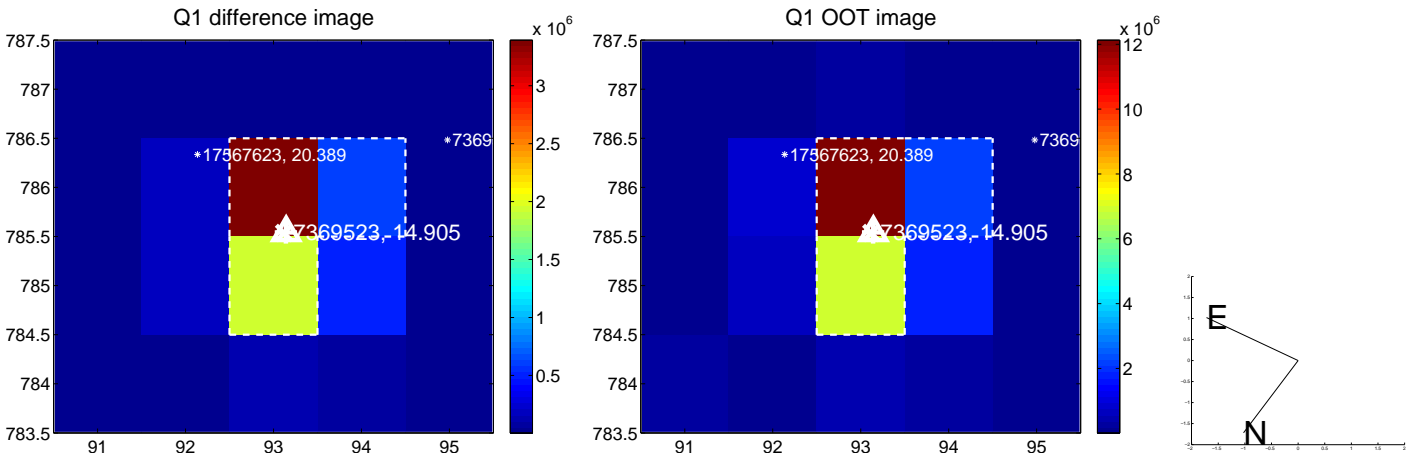
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.027 \pm 0.067$	0.41	$-0.027 \pm 0.067$	$-0.006 \pm 0.067$
PRF-fit source offset from KIC position	$0.112 \pm 0.068$	1.65	$-0.108 \pm 0.068$	$-0.032 \pm 0.068$
photometric centroid source offset	$0.06 \pm 0.00$	114.36	$-0.06 \pm 0.00$	$-0.00 \pm 0.00$

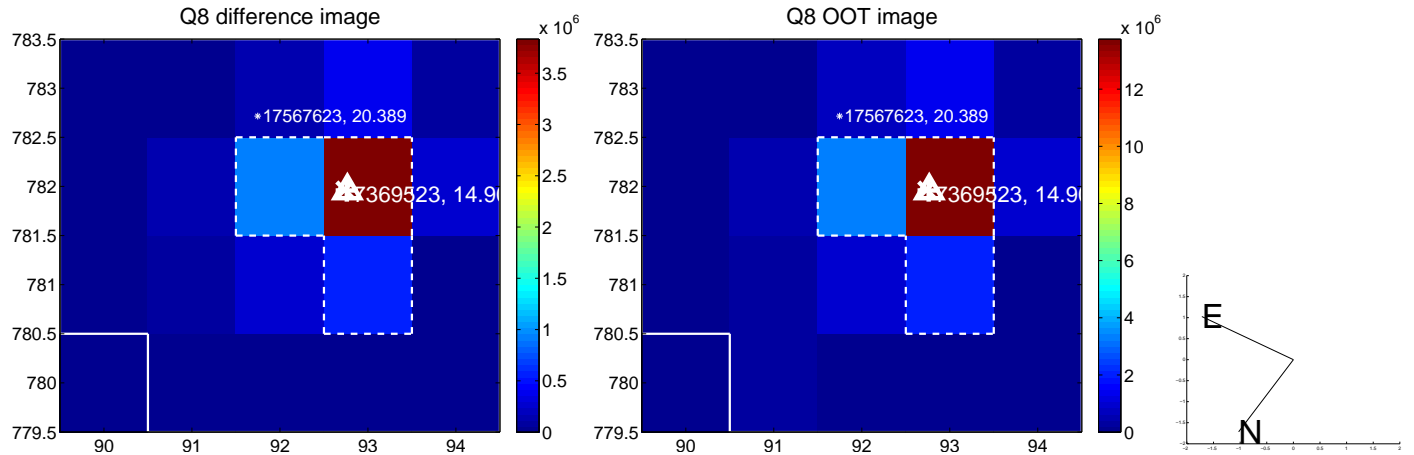
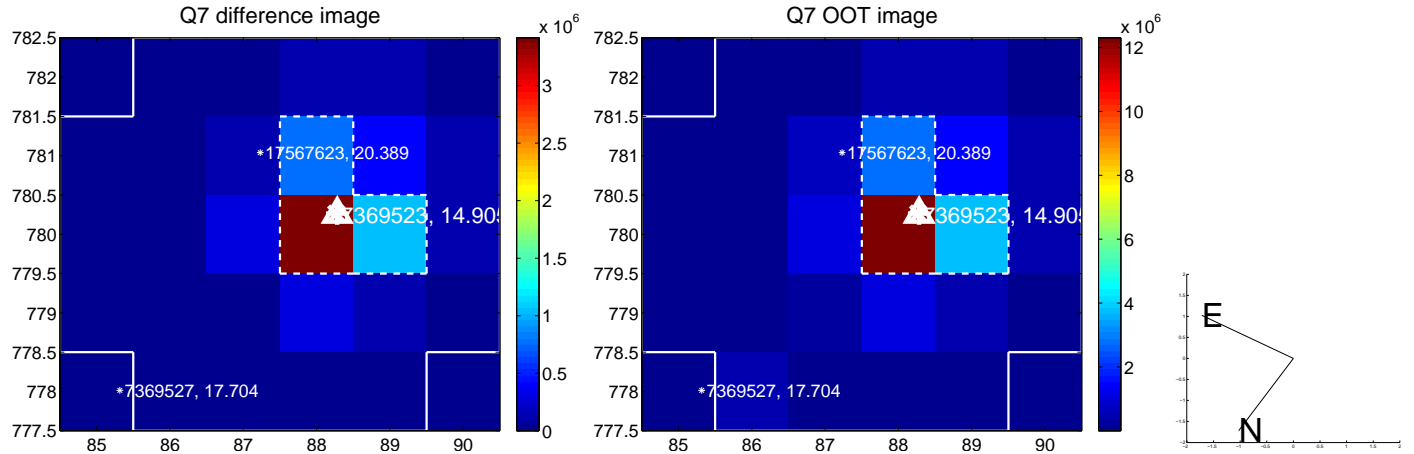
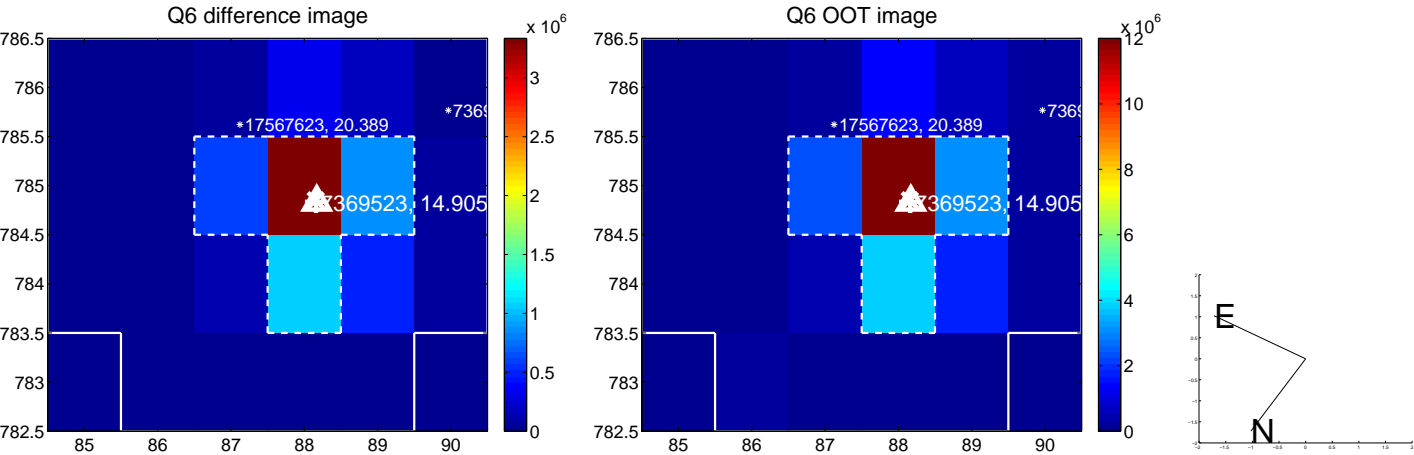
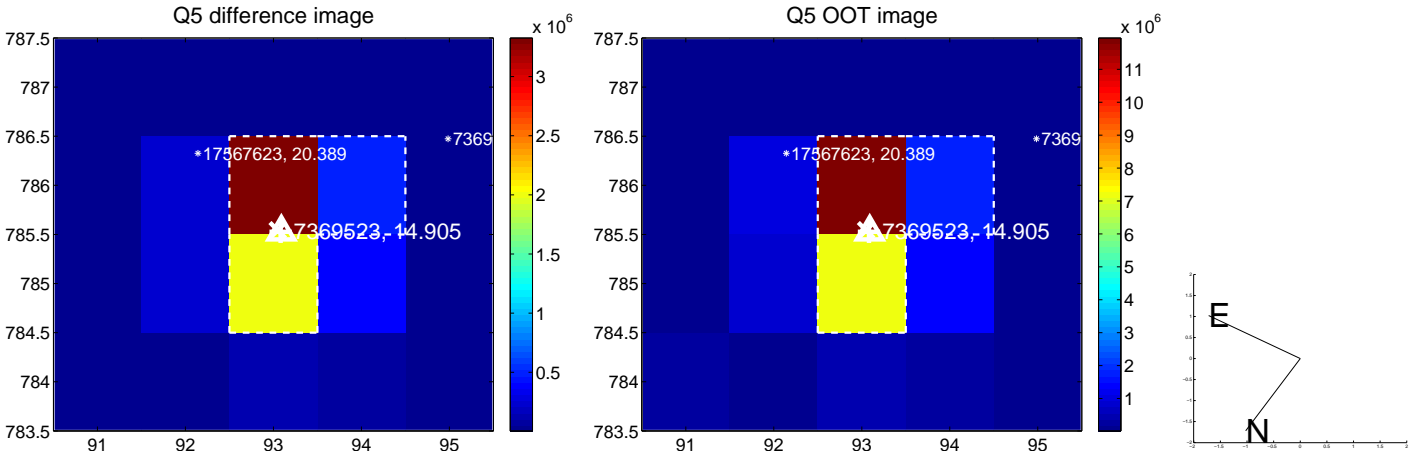


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

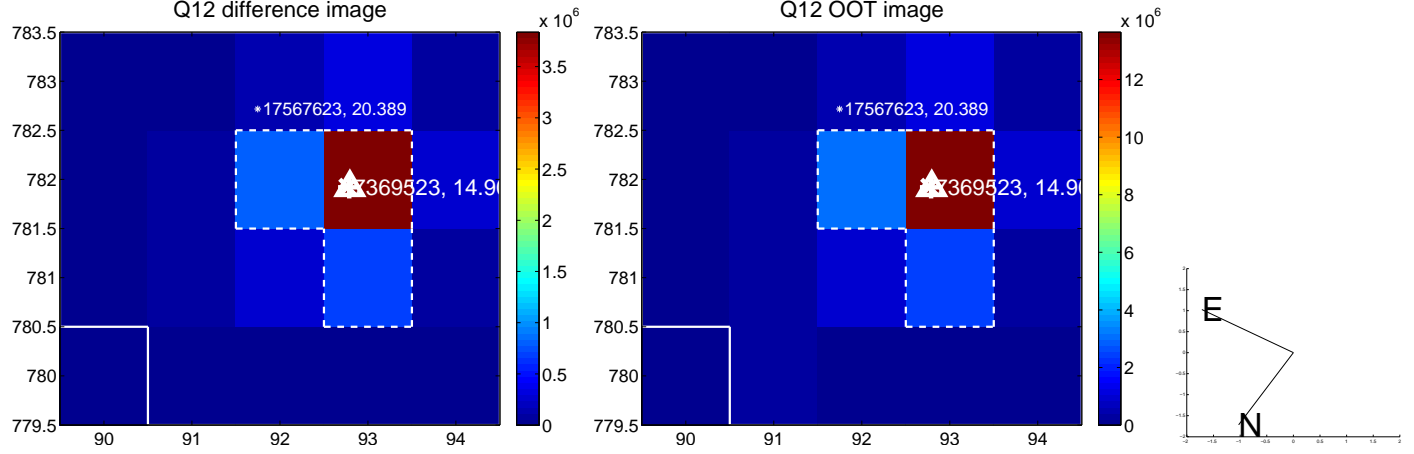
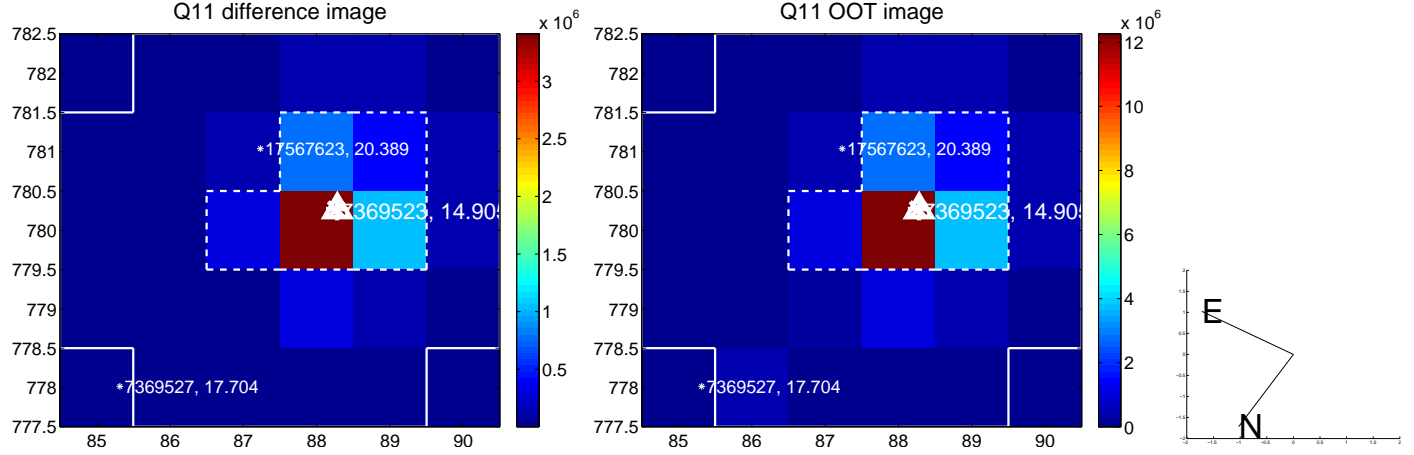
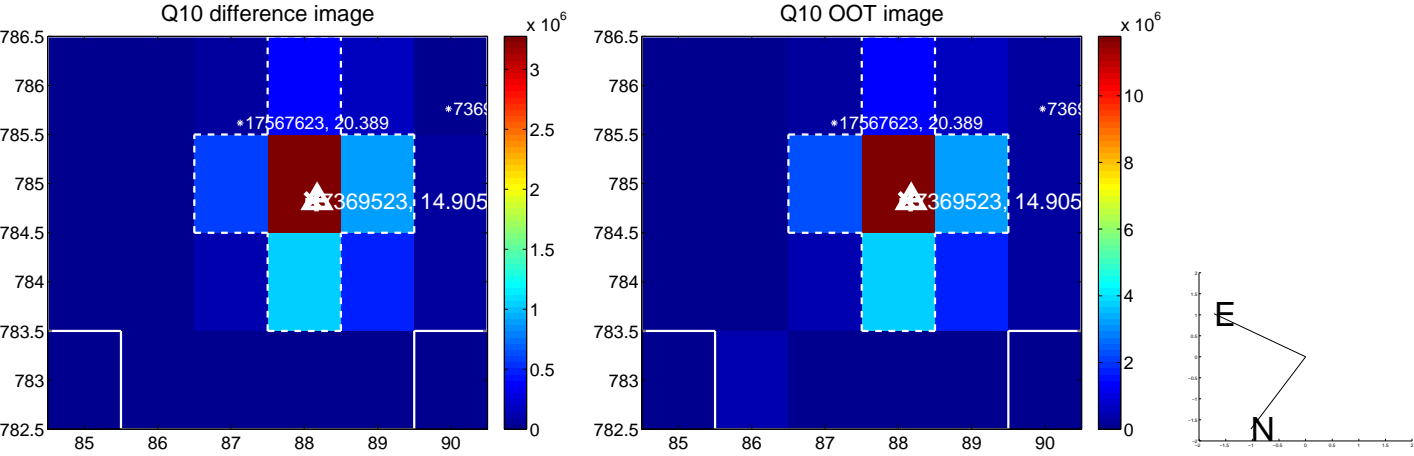
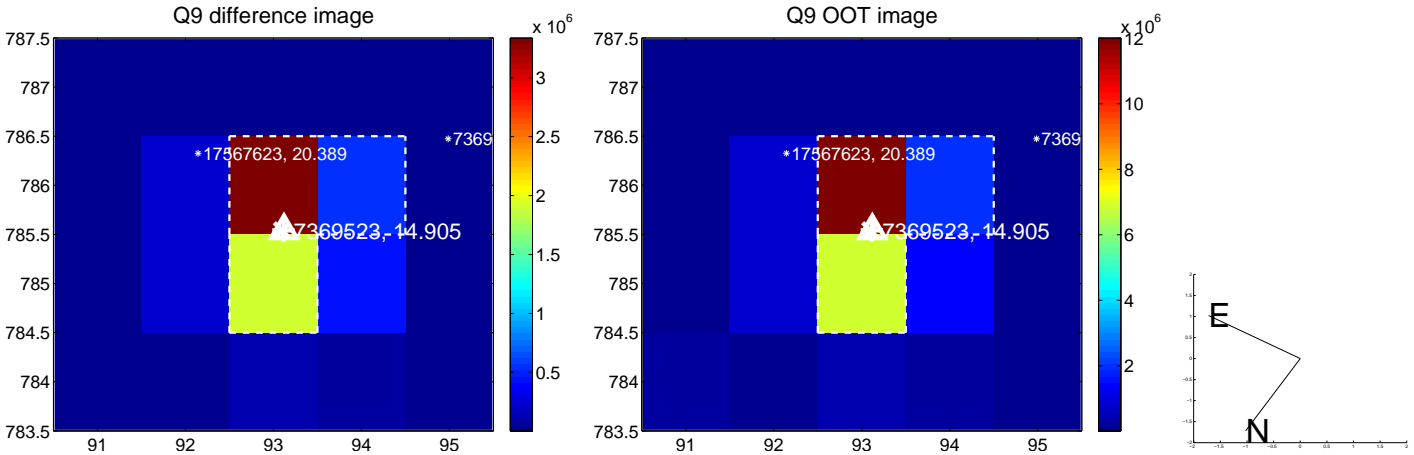


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

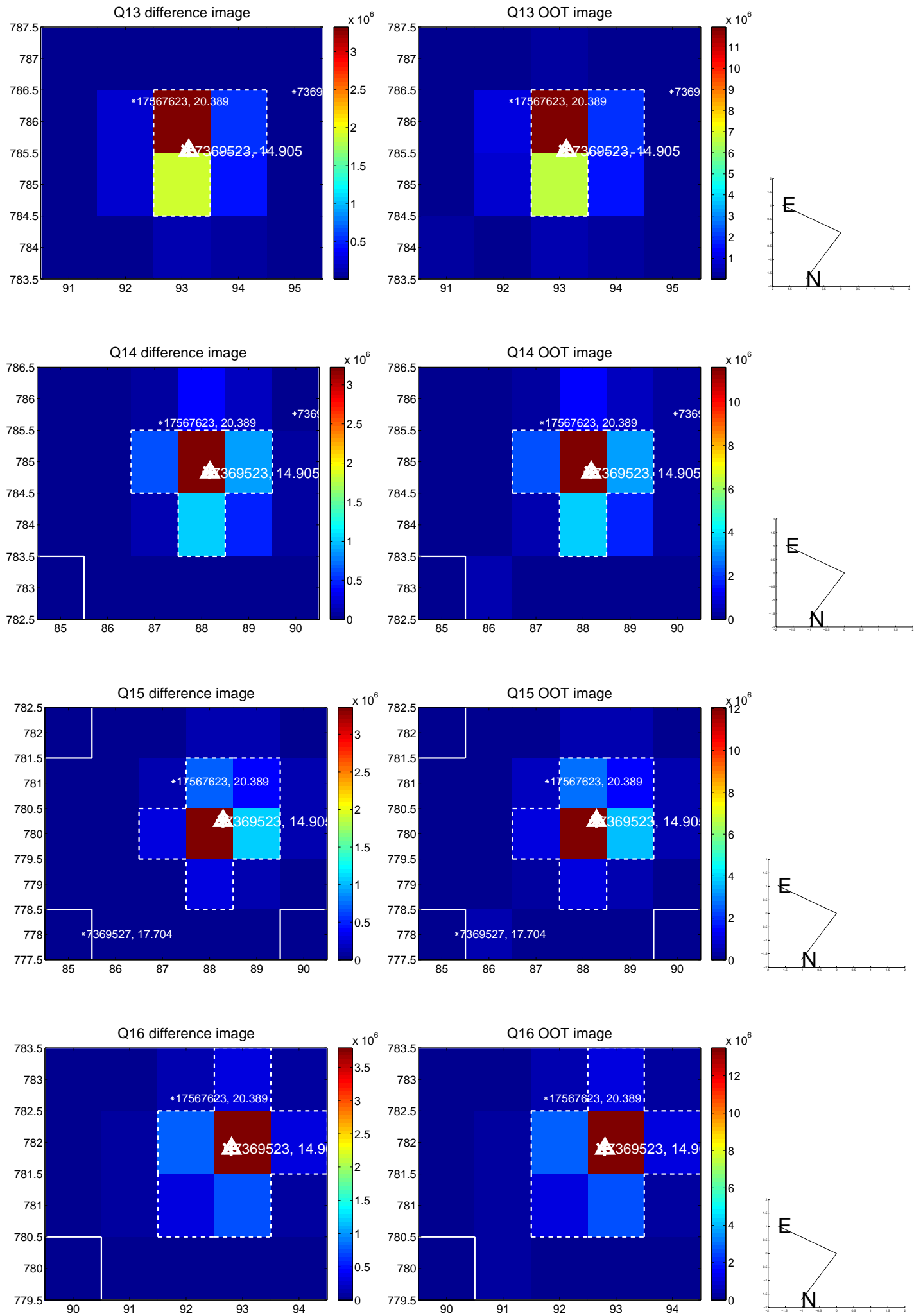




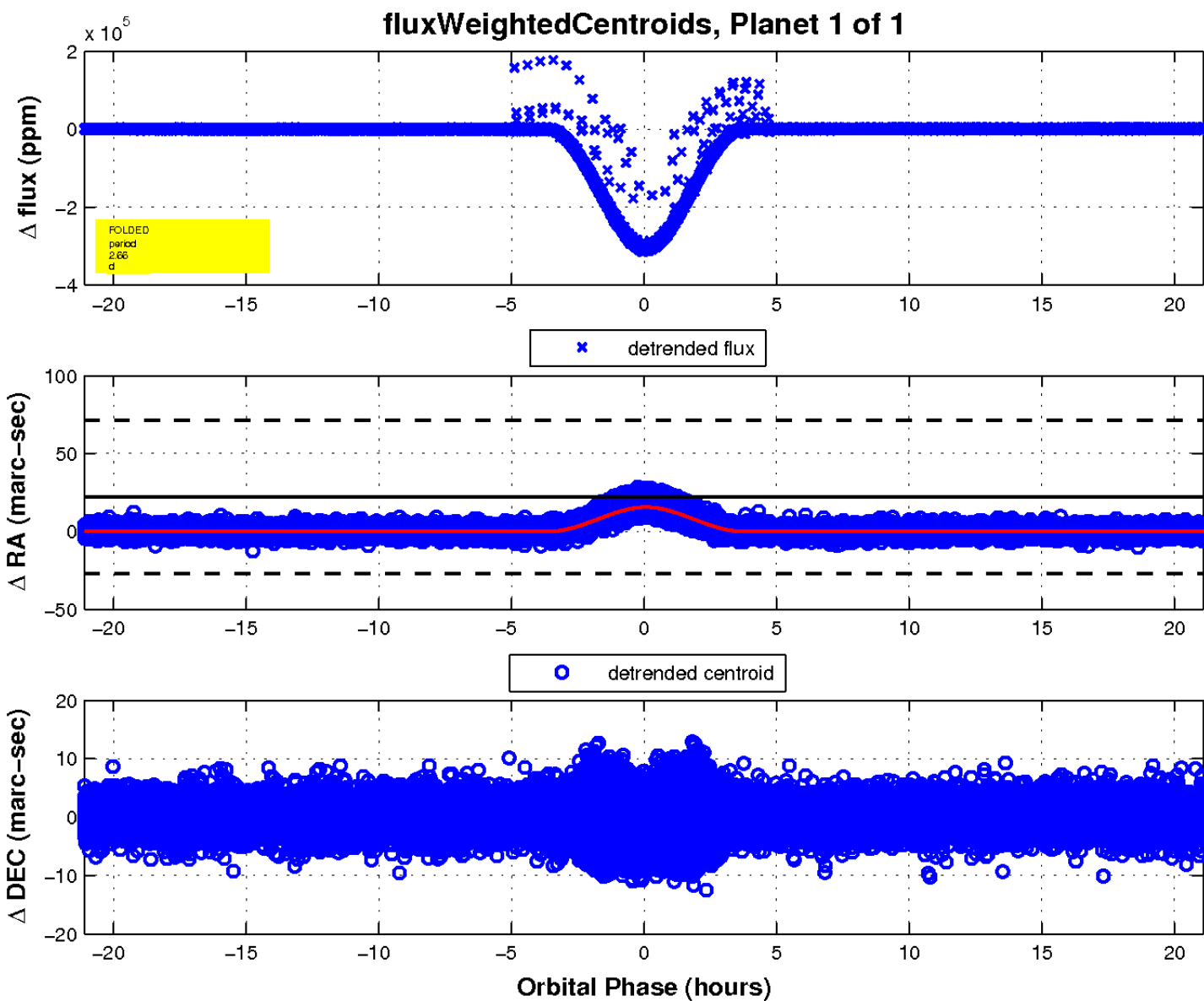
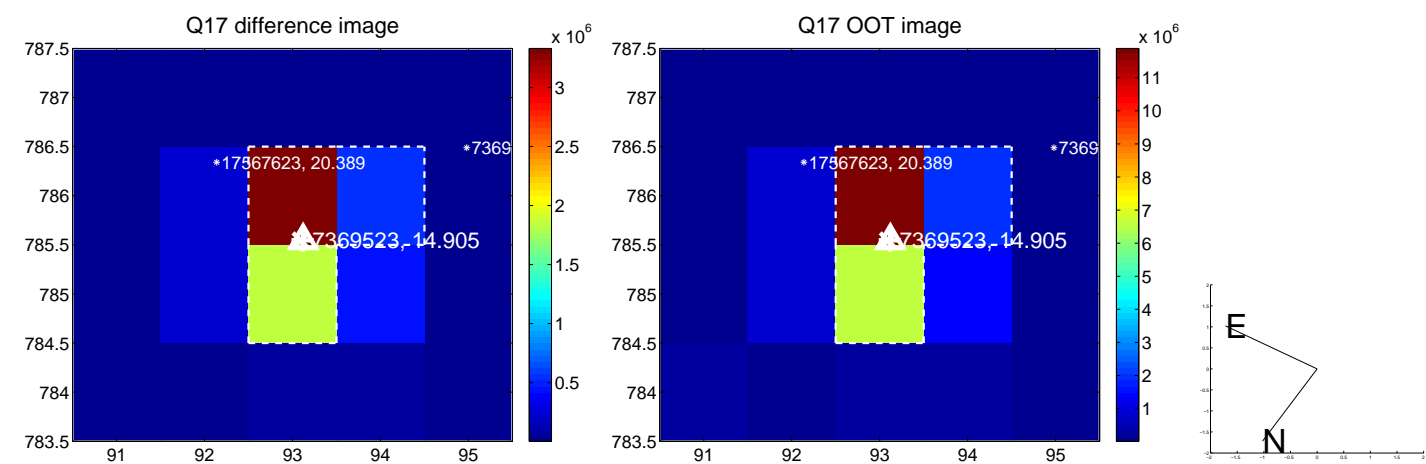
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

