

# KIC 006056992

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006056992-01	OBS	0051.01	10.431148	133.936457	29002.7	3.865	502.4	462.9	1.00	5780	25.64	114.51

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006056992-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED—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.

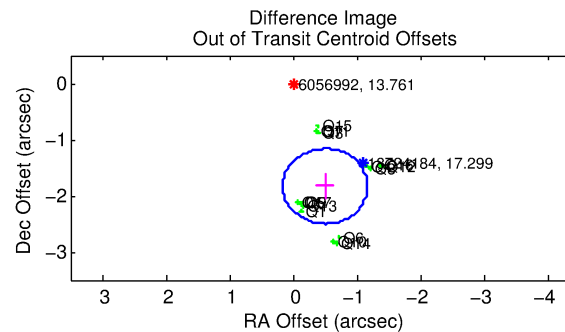
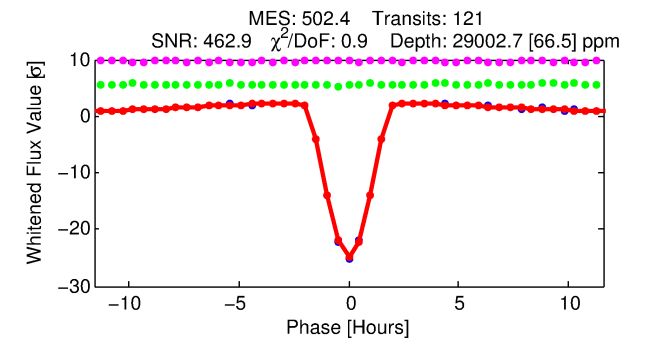
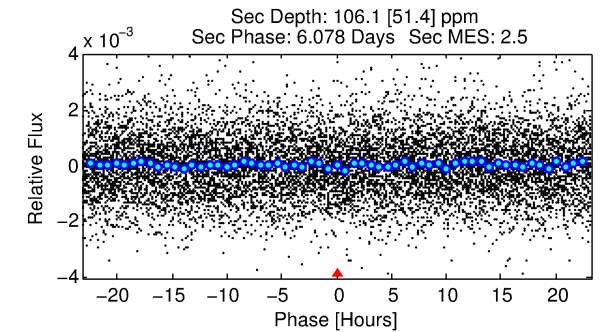
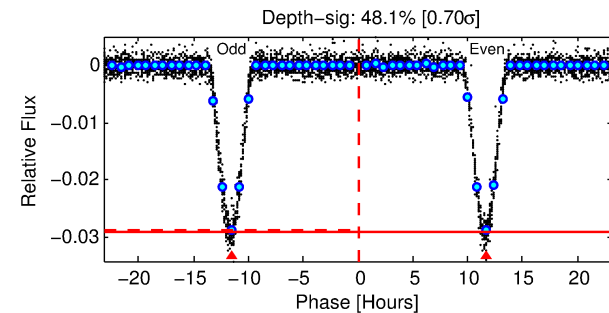
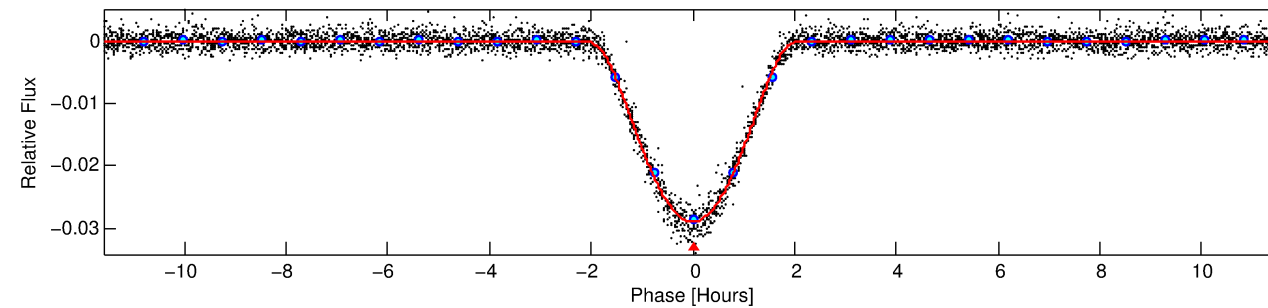
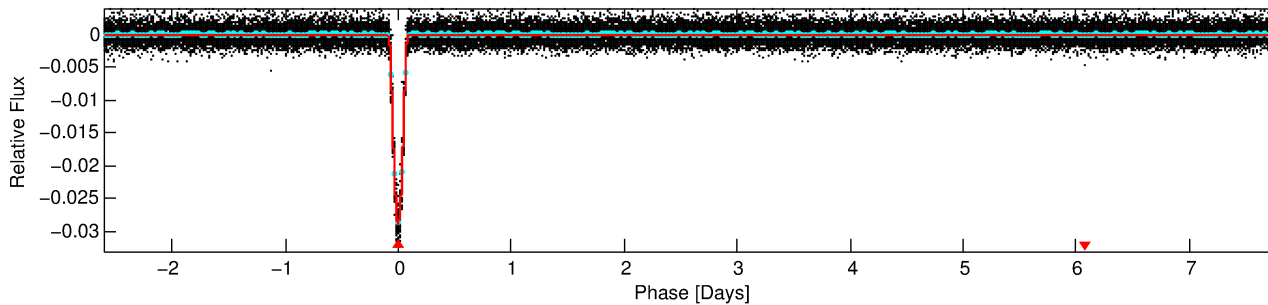
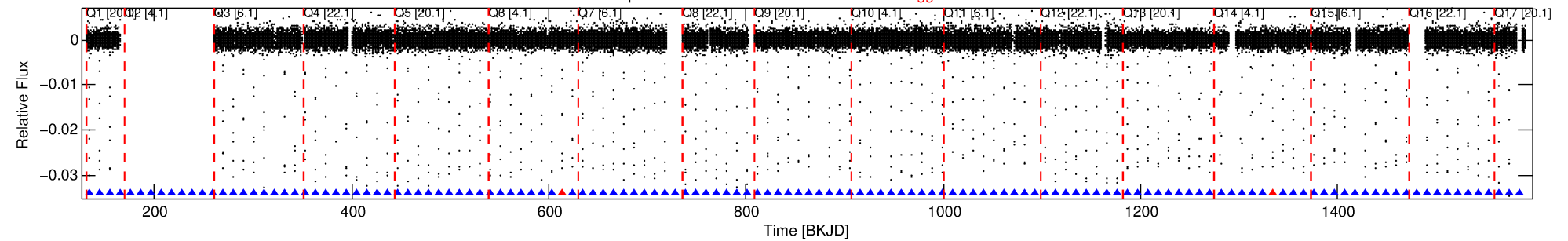
## Ephemeris Match Information For 006056992-01

No Significant Match Found

# DV One-Page Summary

KIC: 6056992 Candidate: 1 of 1 Period: 10.431 d  
KOI: K00051.01 Corr: 0.984

Kp: 13.76 R\*: 1.00 Rs Teff: 5780.0 K Logg: 4.44 Fe/H: 0.000



## DV Fit Results:

Period = 10.43115 [0.00000] d  
Epoch = 133.9365 [0.0002] BKJD  
Rp/R\* = 0.2349 [0.0188]  
a/R\* = 16.47 [0.17]  
b = 0.94 [0.03]  
Seff = 114.51 [0.00]  
Teq = 834 [0] K  
Rp = 25.64 [2.05] Re  
a = 0.0935 [0.0000] AU  
Ag = 0.78 [0.40] [-0.57σ]  
Teffp = 1210 [154] K [2.44σ]

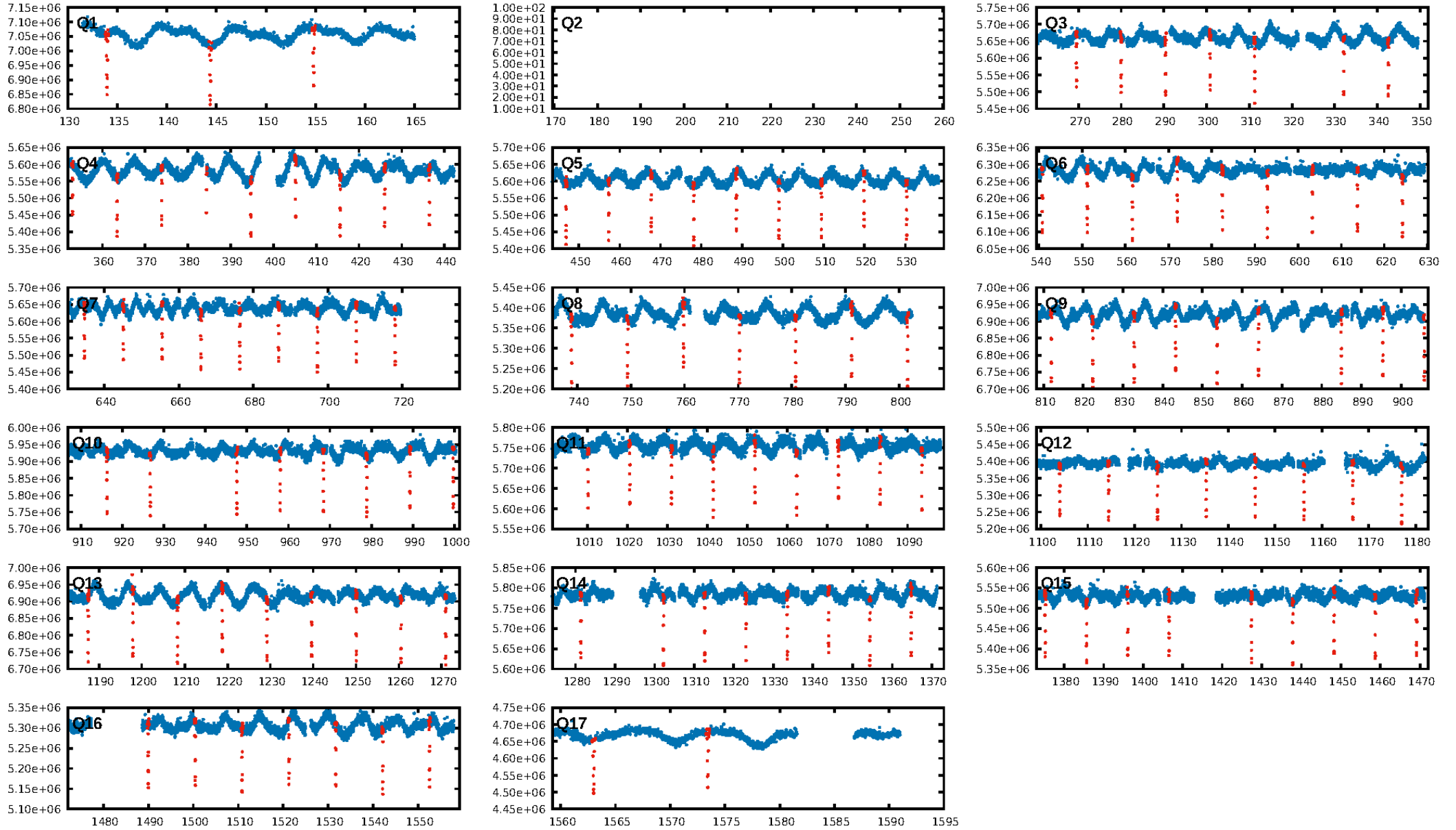
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 0.98 [114/116]  
GhostDiagnostic-chr: 3.754  
Centroid-sig: 0.0%  
Centroid-so: 1.047 arcsec [46.86σ]  
OotOffset-rm: 1.900 arcsec [8.53σ]  
KicOffset-rm: 1.893 arcsec [25.46σ]  
OotOffset-st: 3/4/4/5 [16]  
KicOffset-st: 3/4/4/5 [16]  
DiffImageQuality-fgm: 1.00 [16/16]  
DiffImageOverlap-fno: 1.00 [16/16]

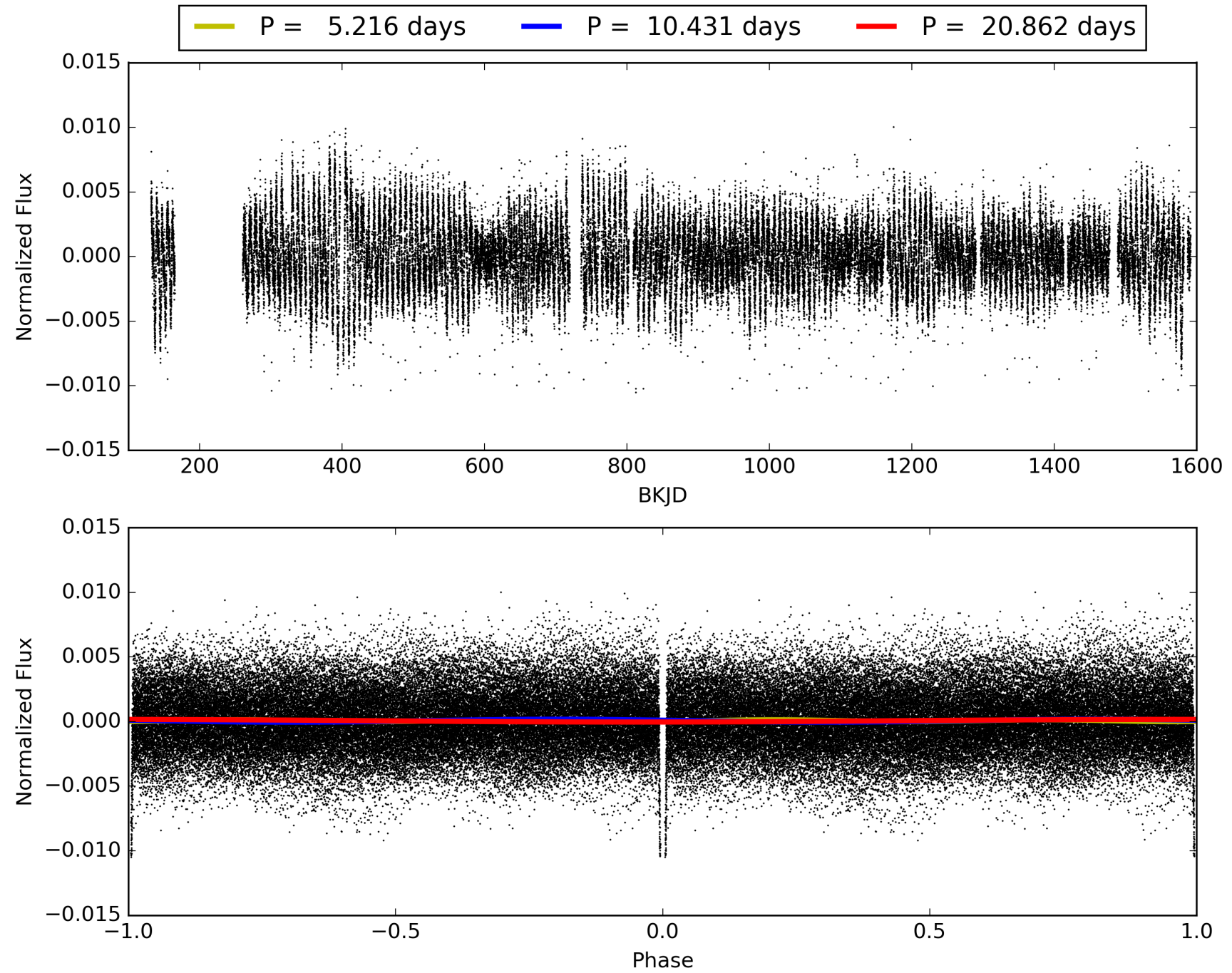
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:21:44 Z

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

# TCE 006056992-01, PDC Light Curves

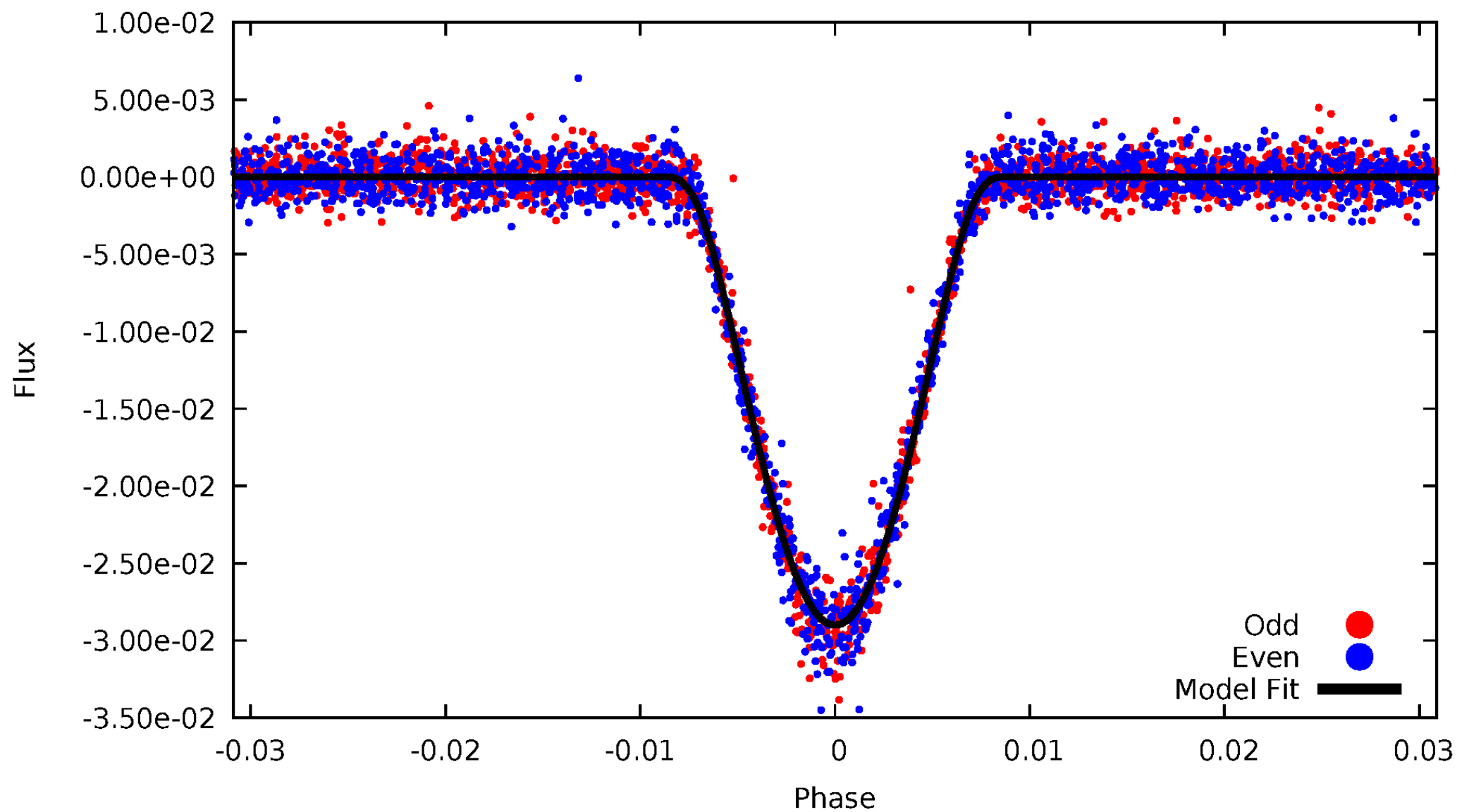


TCE 006056992-01



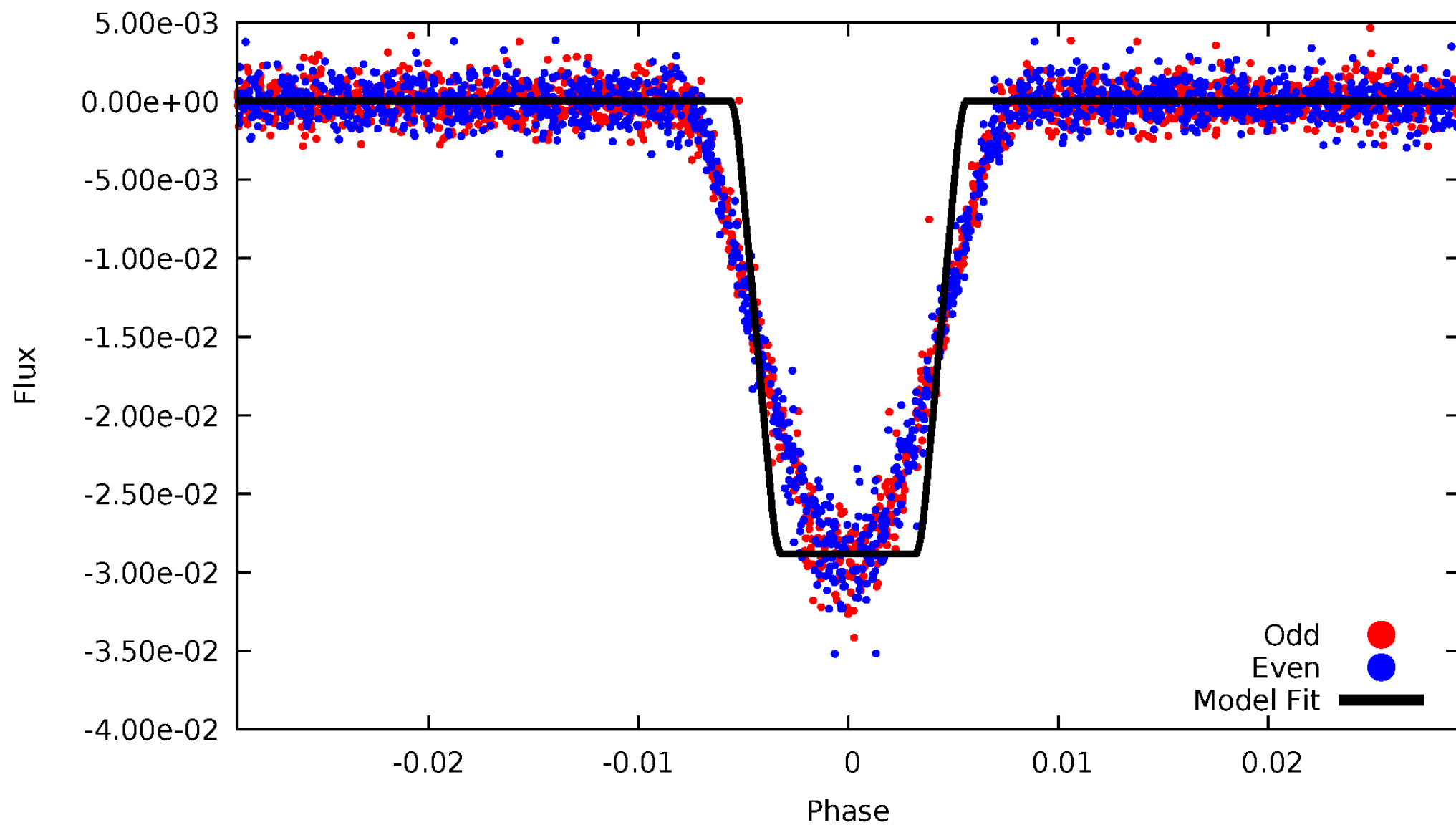
# DV Odd/Even

TCE 006056992-01



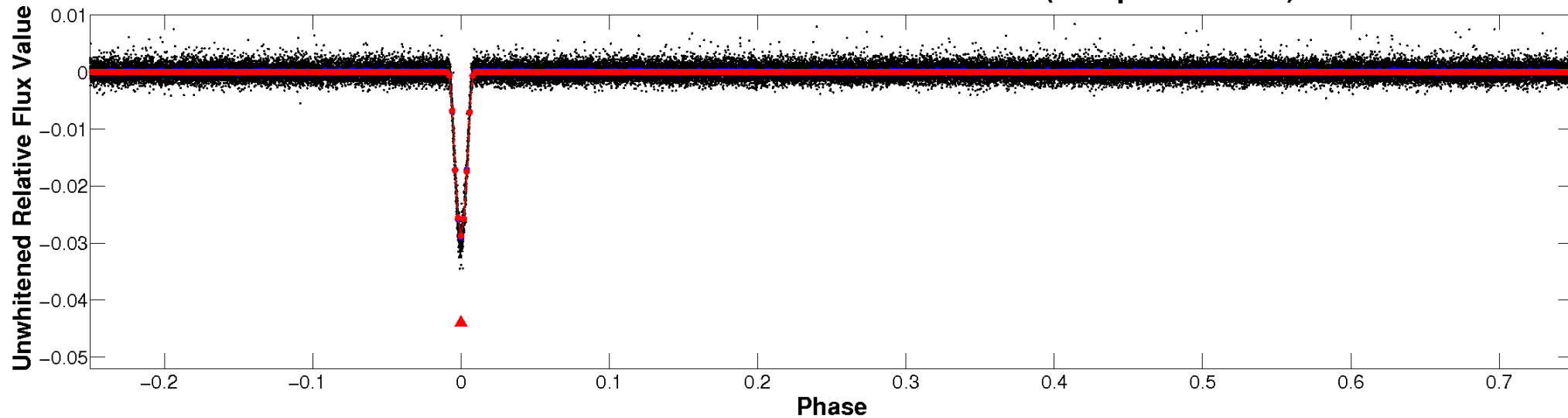
# ALT Odd/Even

TCE 006056992-01

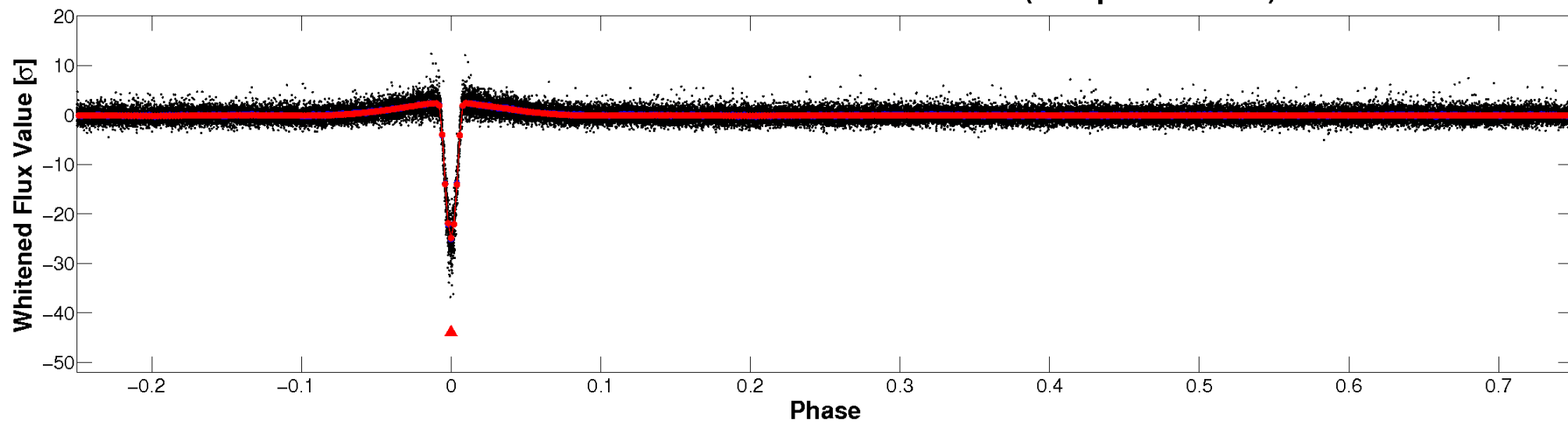


# Non-Whitened Vs. Whitened Light Curve

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

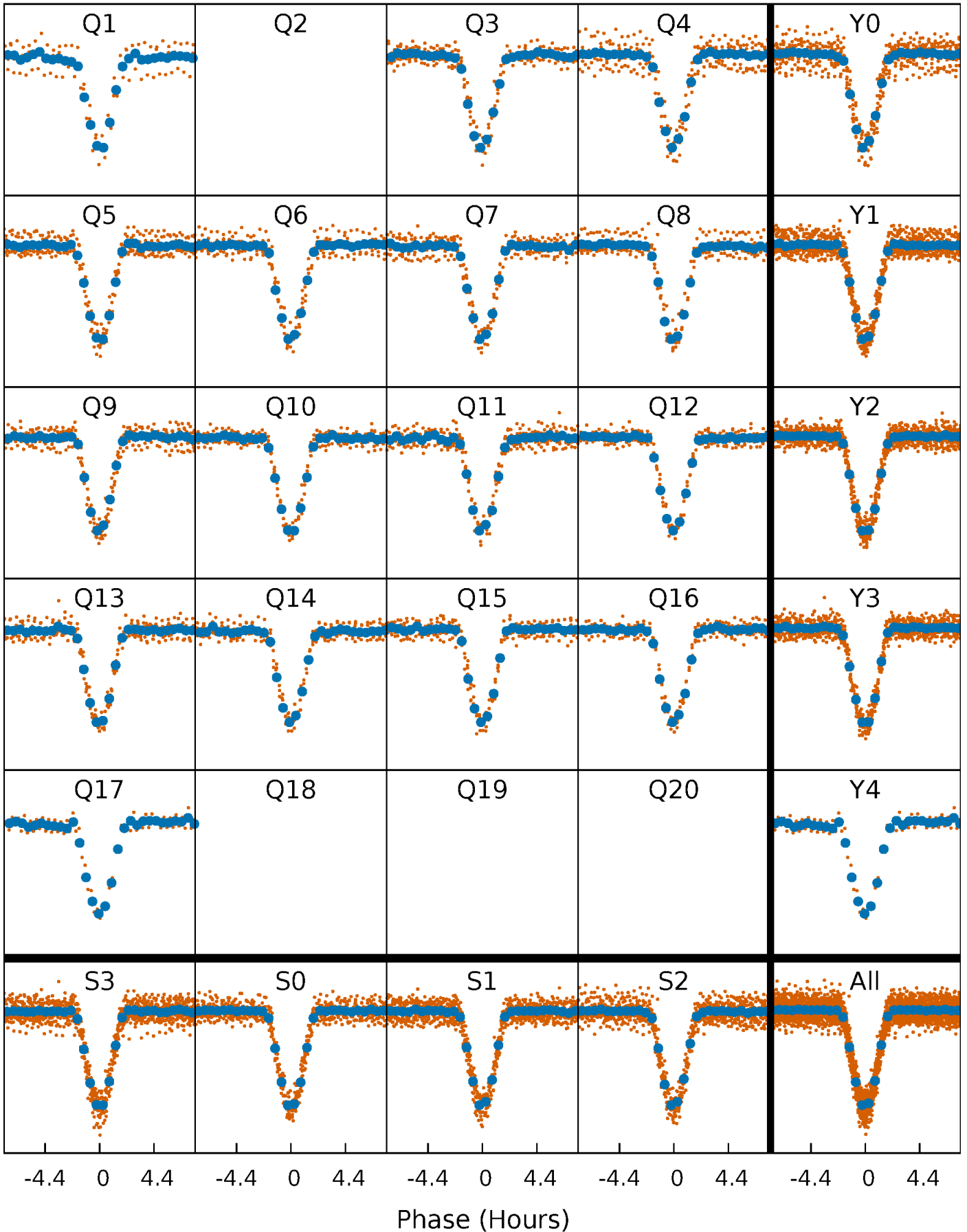


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

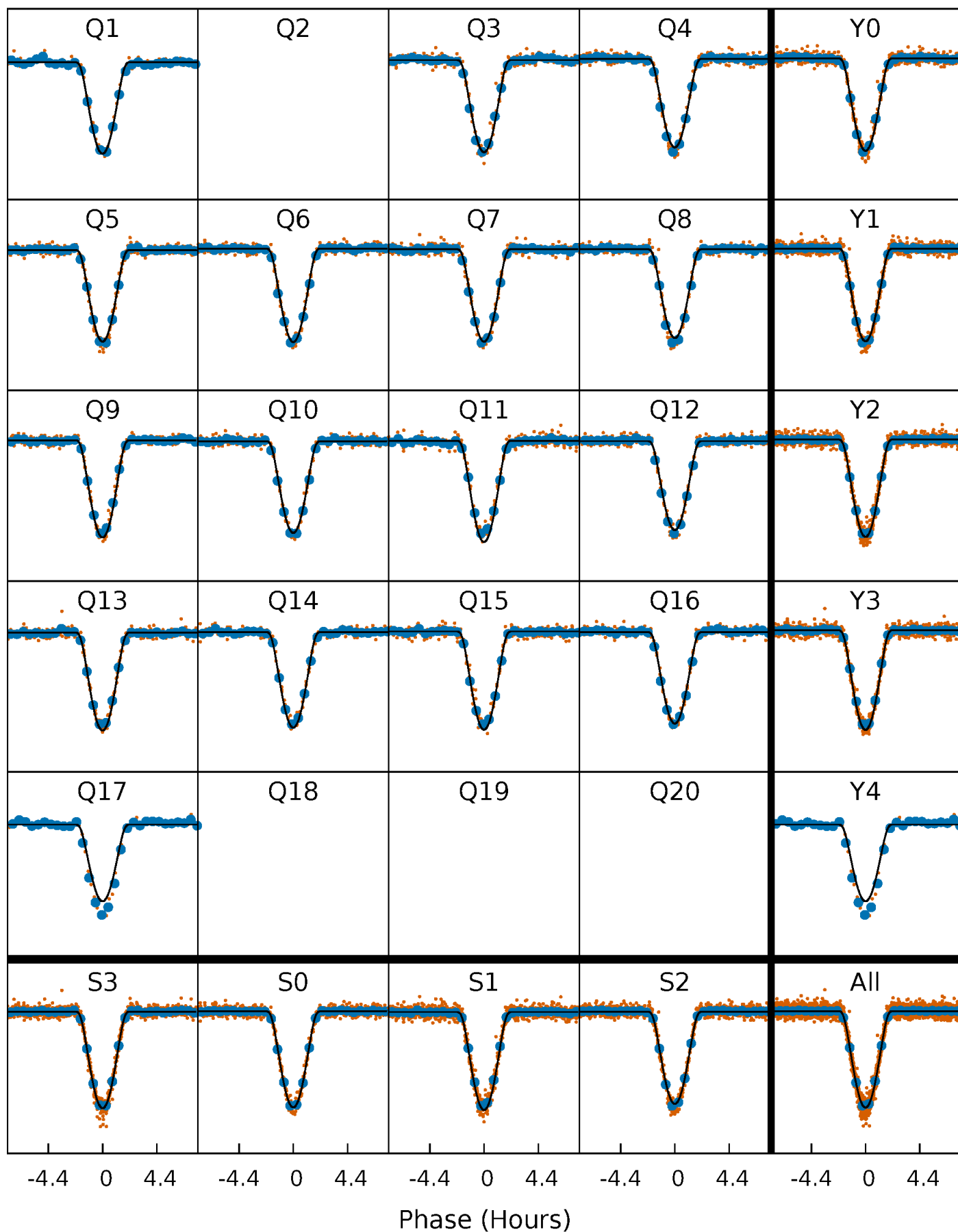
TCE 006056992-01 P= 10.431148 Days  $T_0=133.936457$  (BKJD)





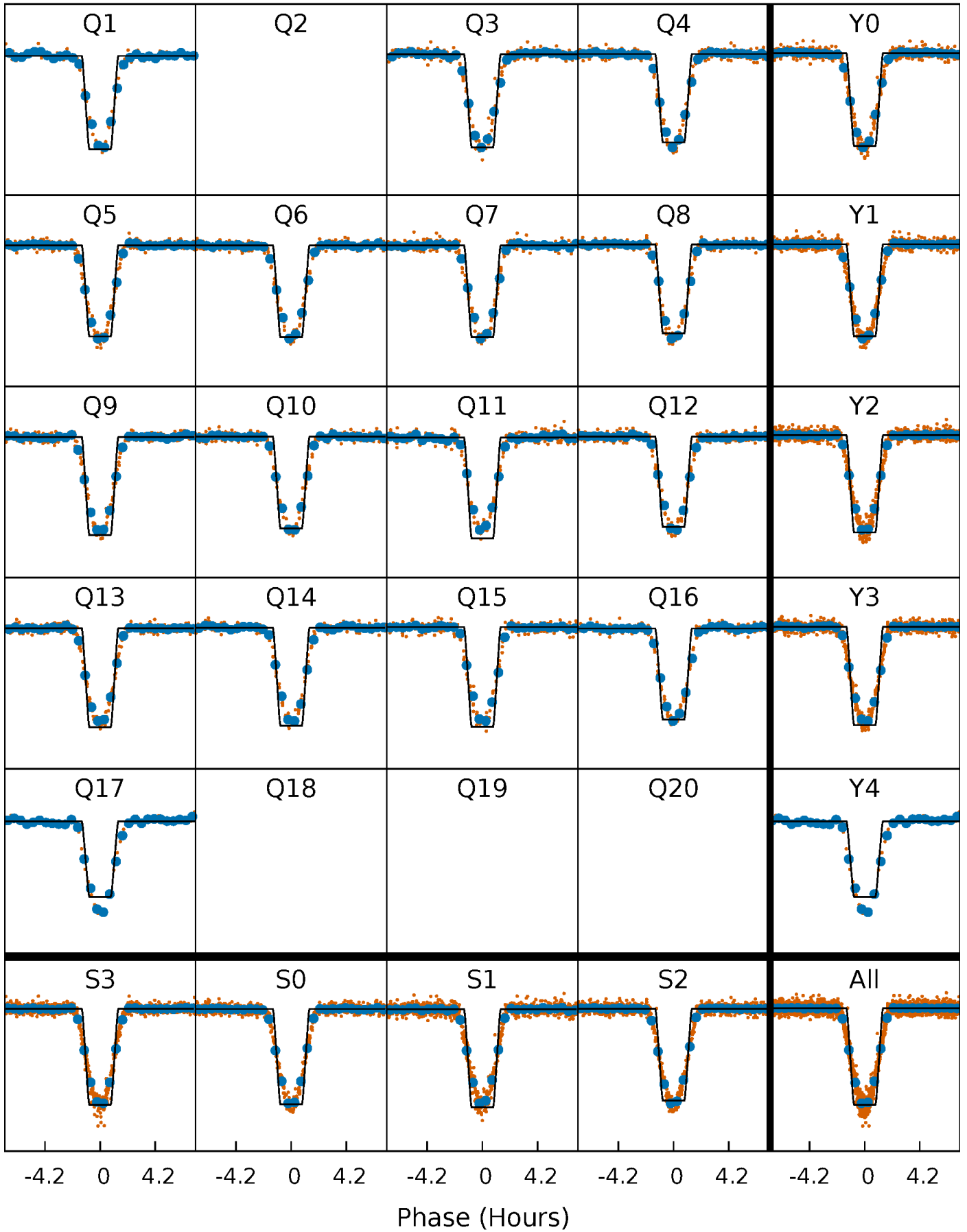
# DV Quarter-Phased Transit Curves

TCE 006056992-01 P= 10.431148 Days  $T_0=133.936457$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

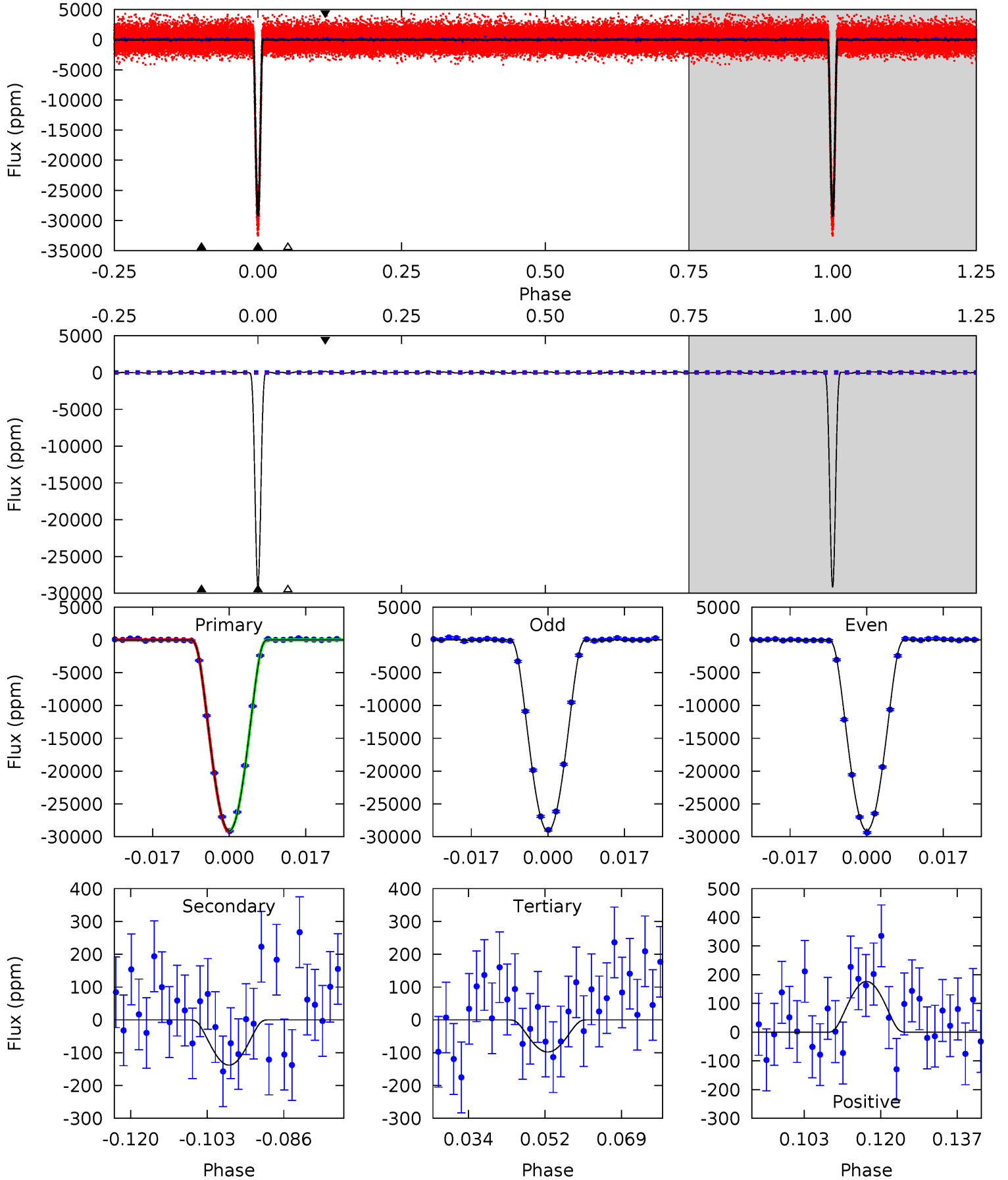
TCE 006056992-01 P= 10.431139 Days  $T_0=133.936864$  (BKJD)



# DV Model-Shift Uniqueness Test

006056992-01, P = 10.431148 Days, E = 123.505309 Days

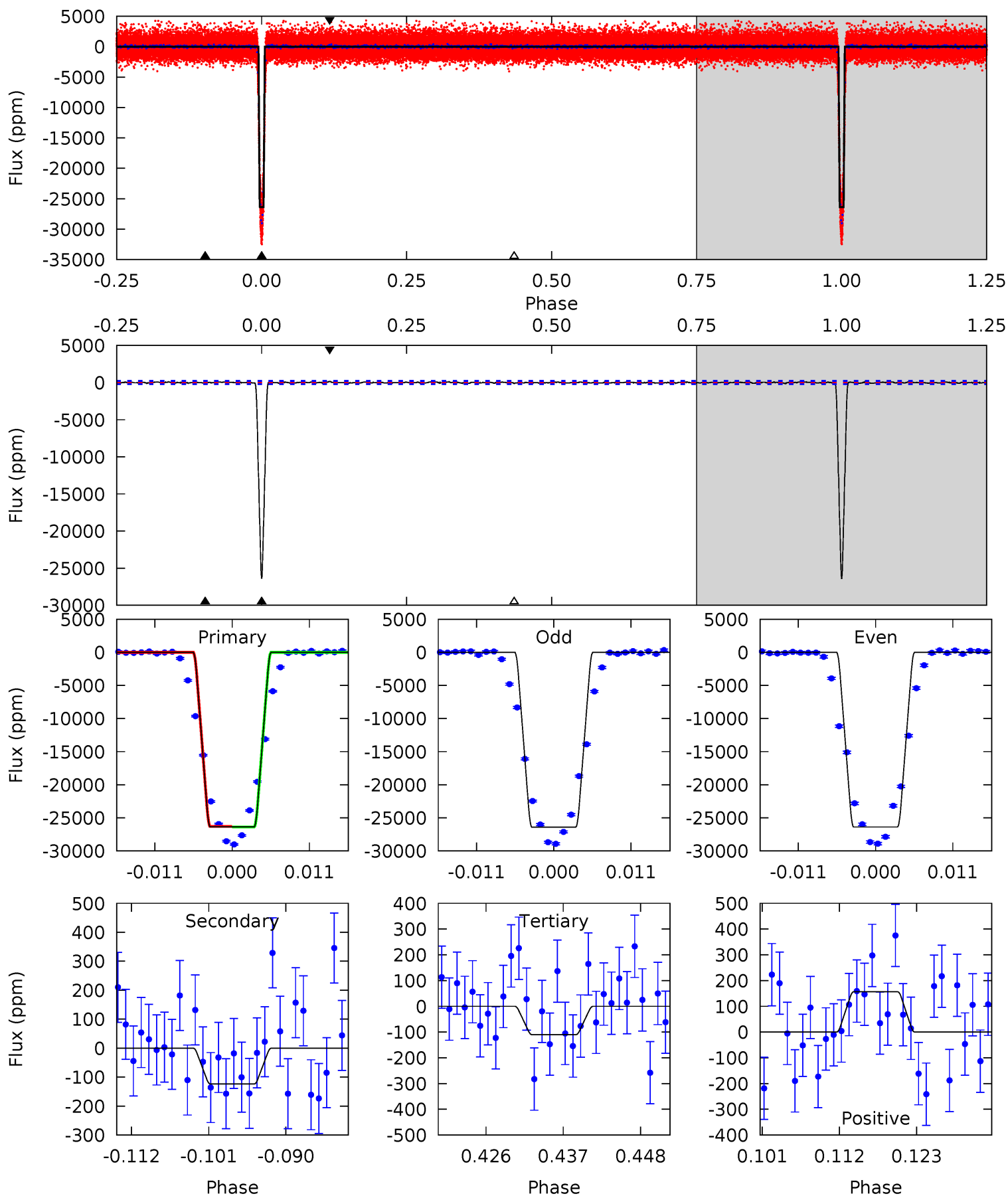
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
879.9	4.17	2.96	5.33	4.92	2.38	1.44	877.0	874.6	1.21	-1.16	1.48	1.00	0.01	2.25



# Alt Model-Shift Uniqueness Test

006056992-01, P = 10.431139 Days, E = 123.505725 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
603.6	2.83	2.52	3.58	5.00	2.54	0.96	601.1	600.0	0.31	-0.75	0.32	1.00	0.01	0



### Stellar Parameters For KIC 006056992

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5780^{+1}_{-1}$	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

### Secondary Eclipse Parameters for KIC 006056992-01 / KOI 0051.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-138 \pm 33$	$25.51^{+2.75}_{-2.50}$	$1163^{+57}_{-55}$	$2143^{+98}_{-107}$	$0.990^{+0.375}_{-0.262}$
Alt.	$-124 \pm 44$	$18.67^{+2.42}_{-2.30}$	$1165^{+57}_{-51}$	$2312^{+134}_{-166}$	$1.683^{+0.805}_{-0.682}$

$T_{max}$  = 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

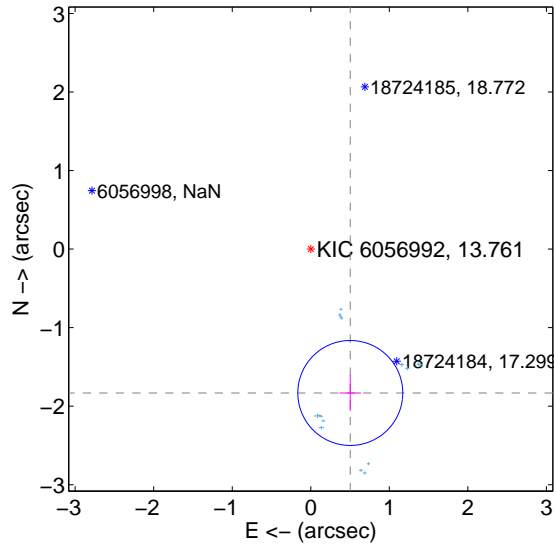
Supplemental centroid analysis for 006056992-01. Kepler magnitude: 13.76. Transit SNR 462.85

There are 16 quarters with good PRF difference image offsets

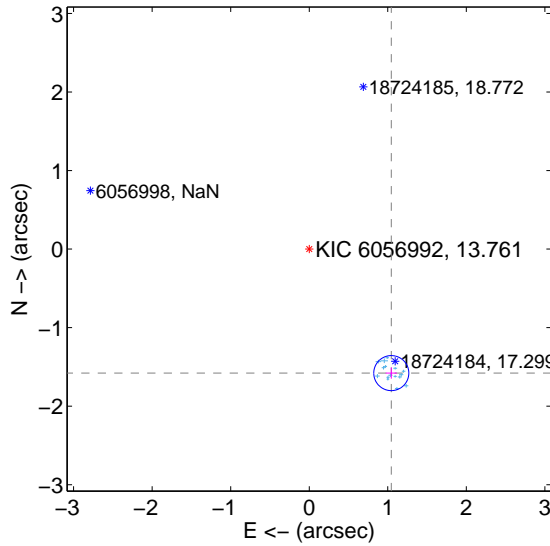
The direct PRF centroid is offset from the target star catalog position by about 1.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.900 \pm 0.223$	8.53	$-0.503 \pm 0.136$	$-1.832 \pm 0.228$
PRF-fit source offset from KIC position	$1.893 \pm 0.074$	25.46	$-1.045 \pm 0.072$	$-1.579 \pm 0.072$
photometric centroid source offset	$1.05 \pm 0.02$	46.86	$-0.81 \pm 0.02$	$-0.66 \pm 0.02$

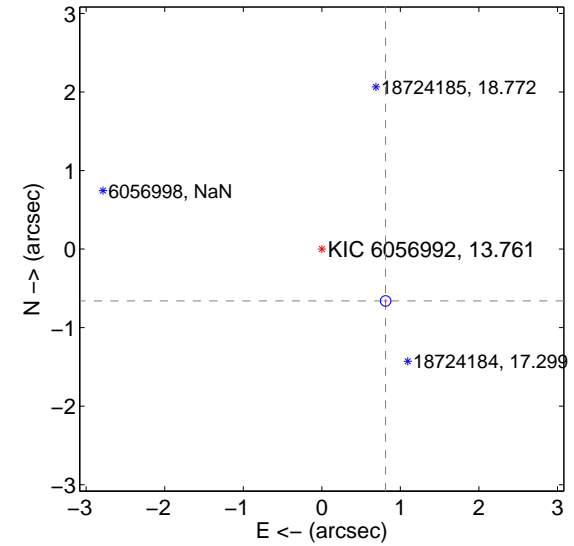
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

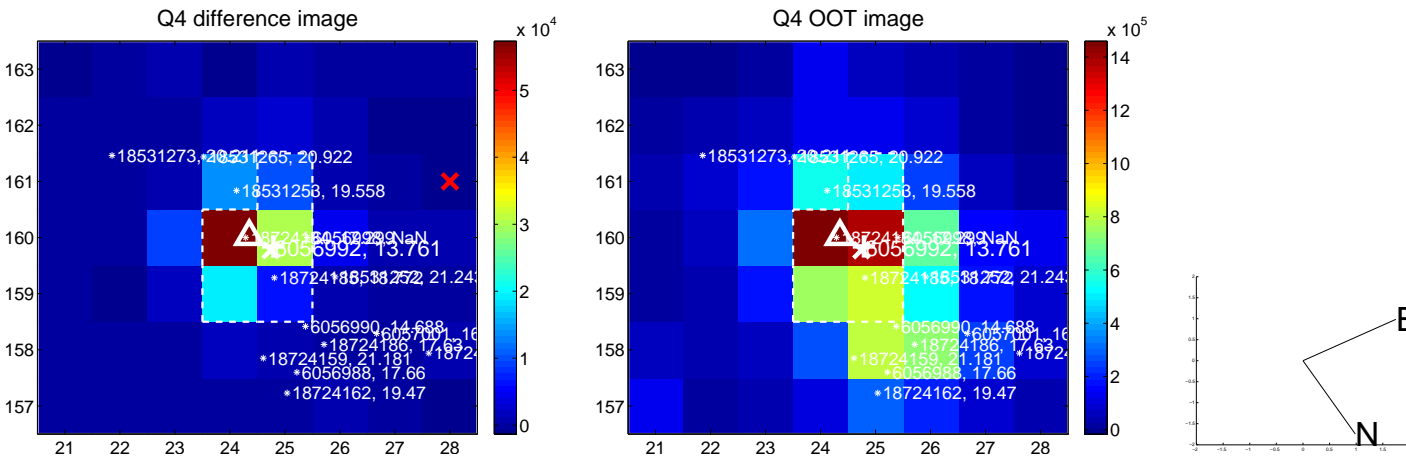
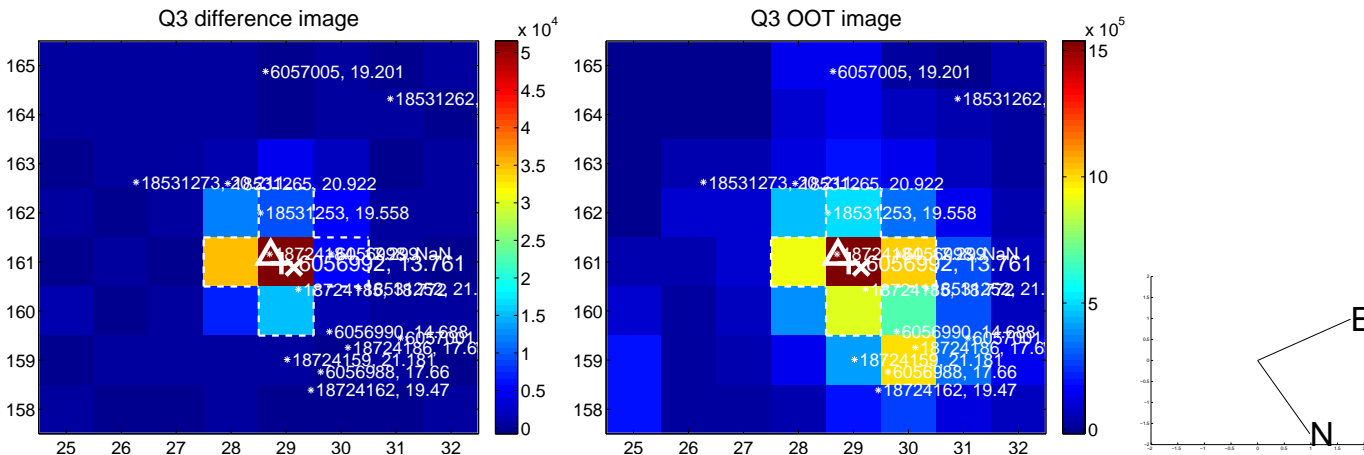
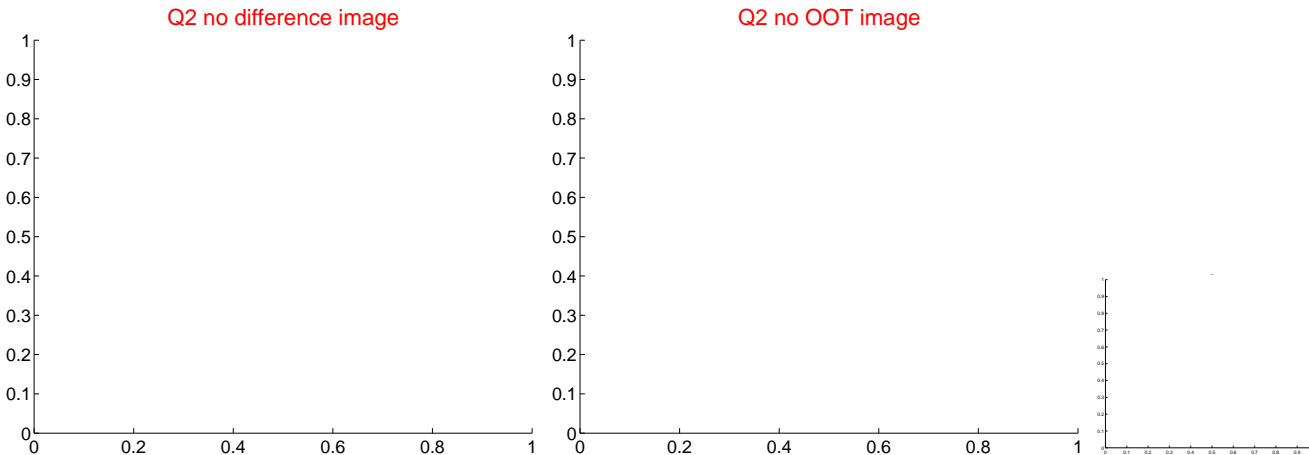
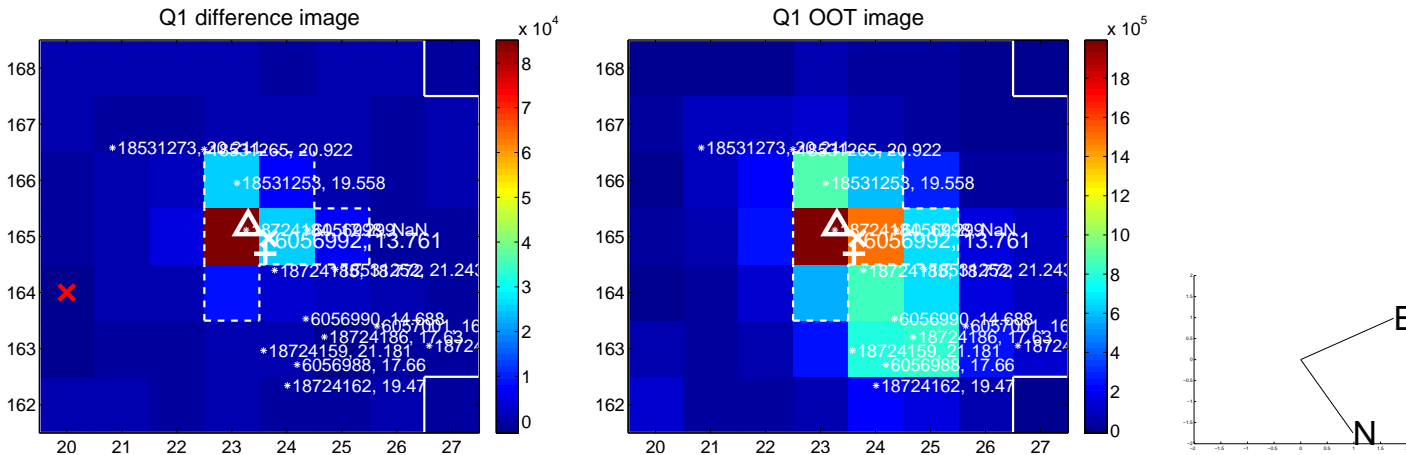


offset from photometric centroids

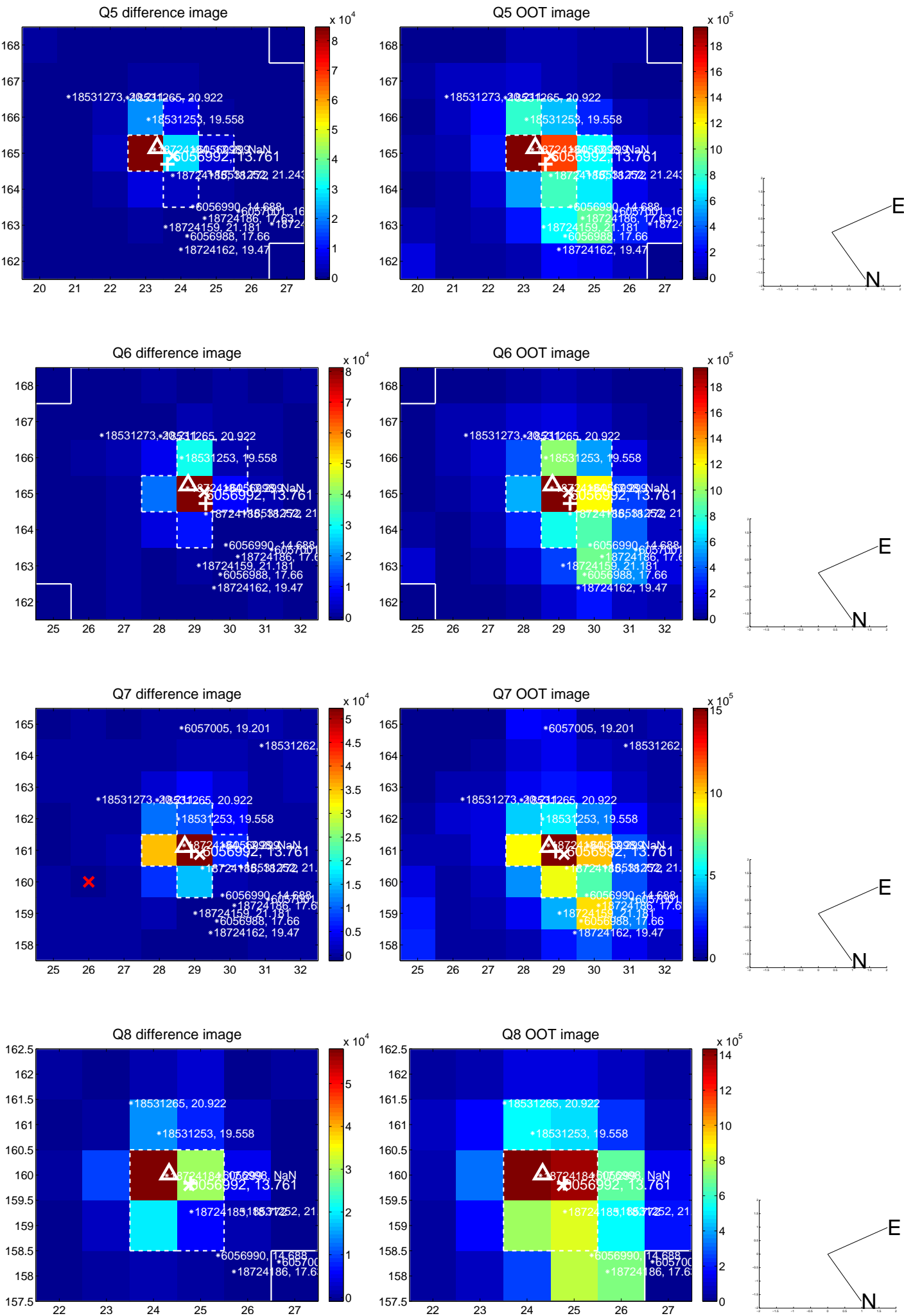


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

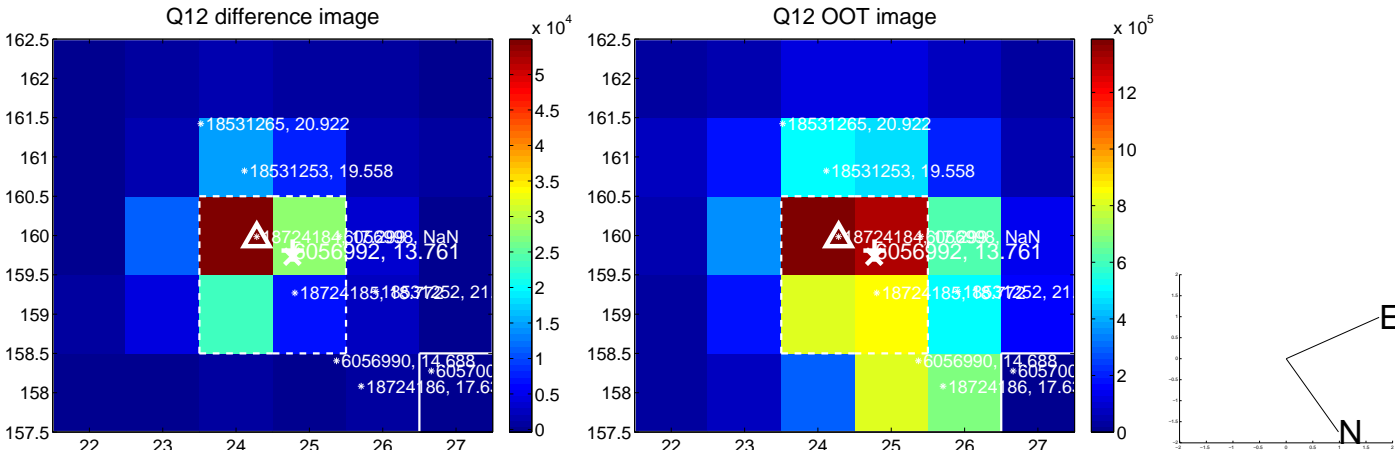
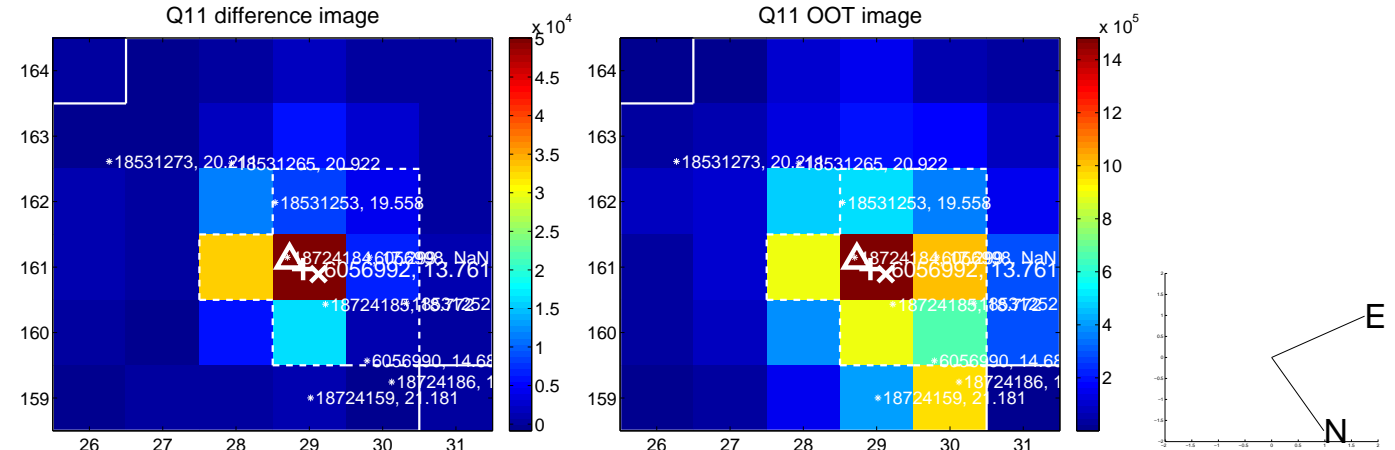
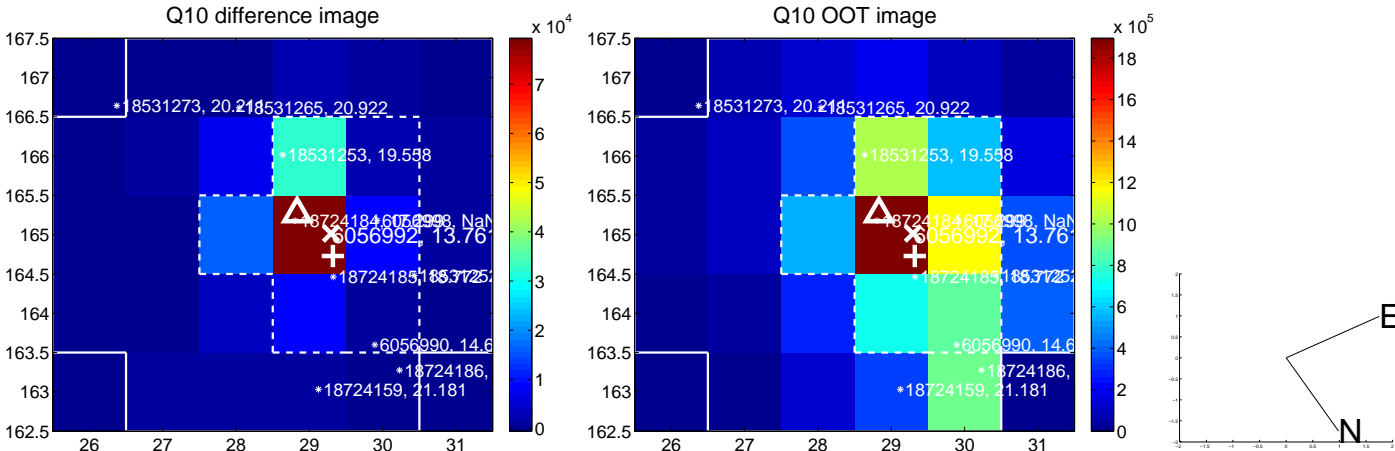
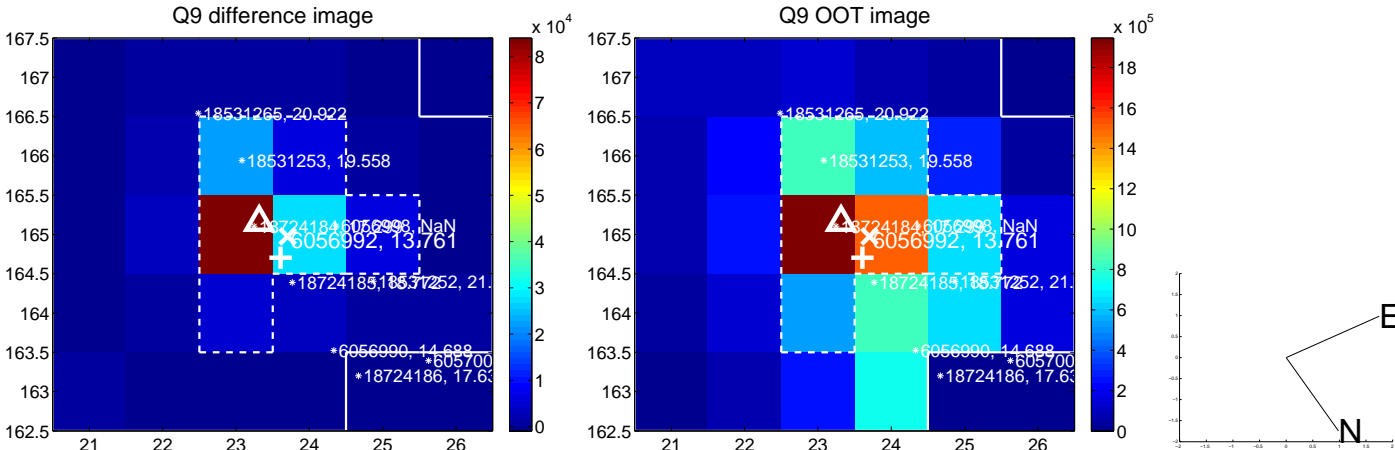


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

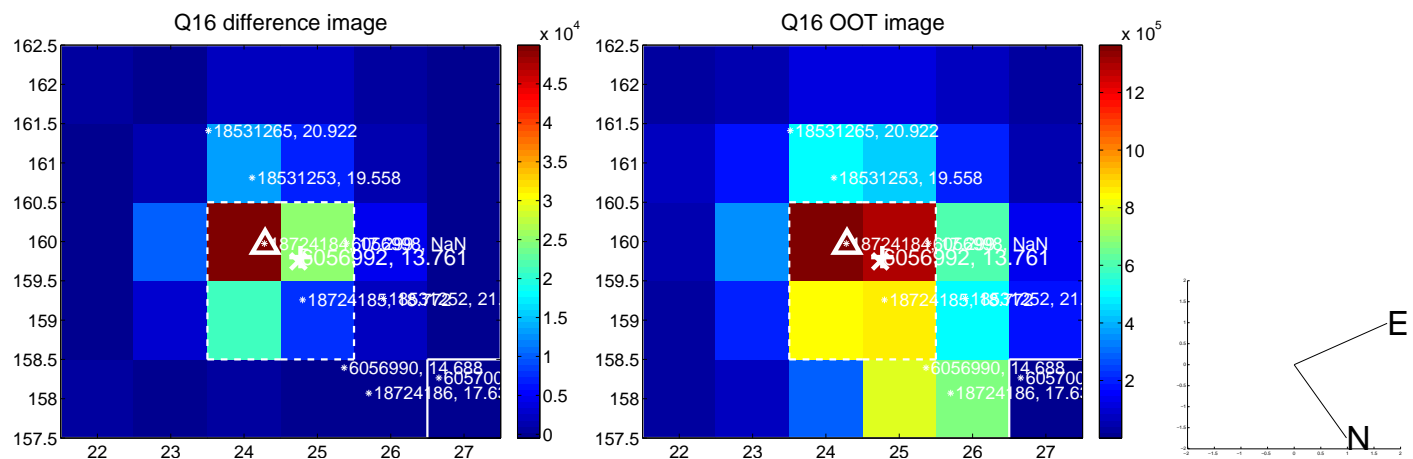
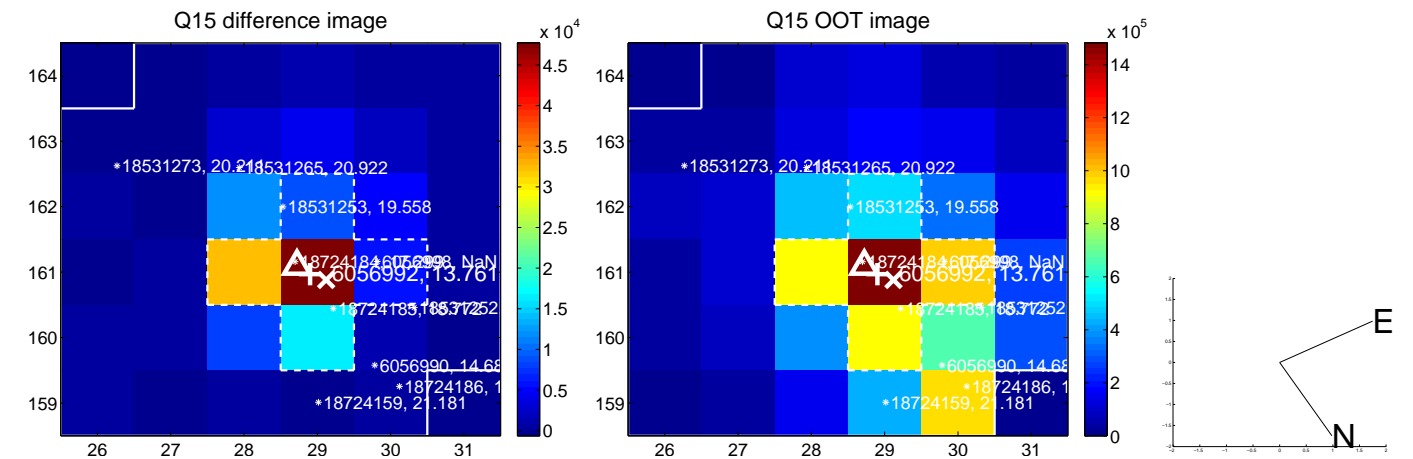
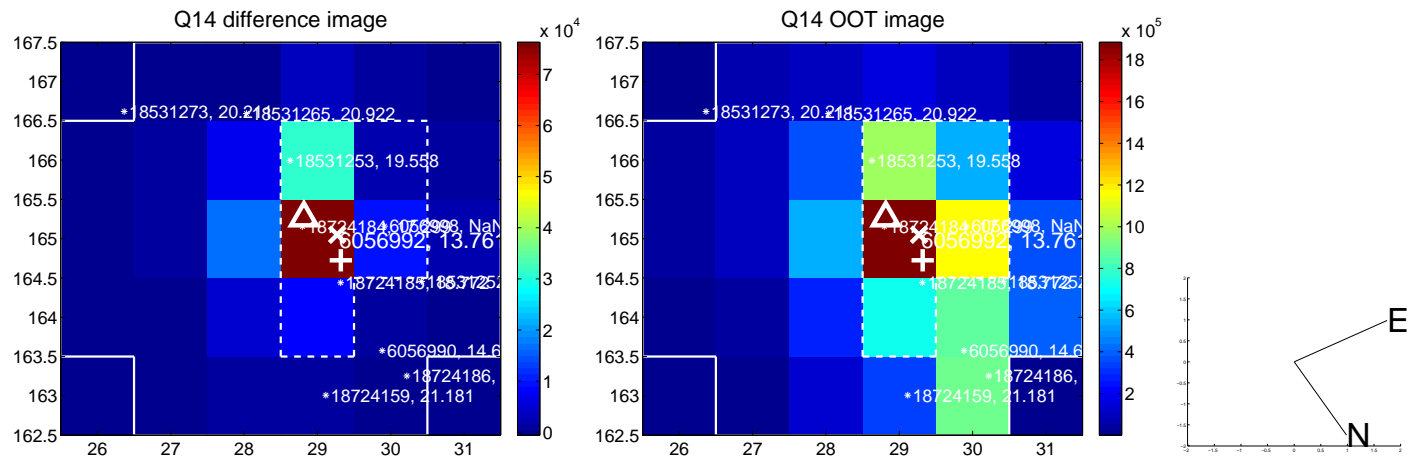
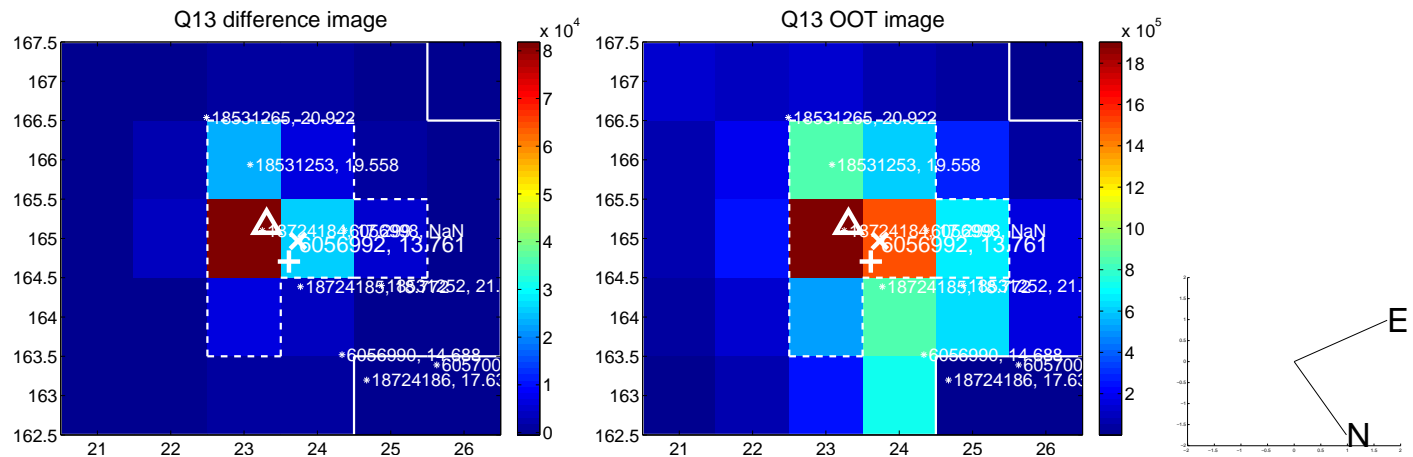




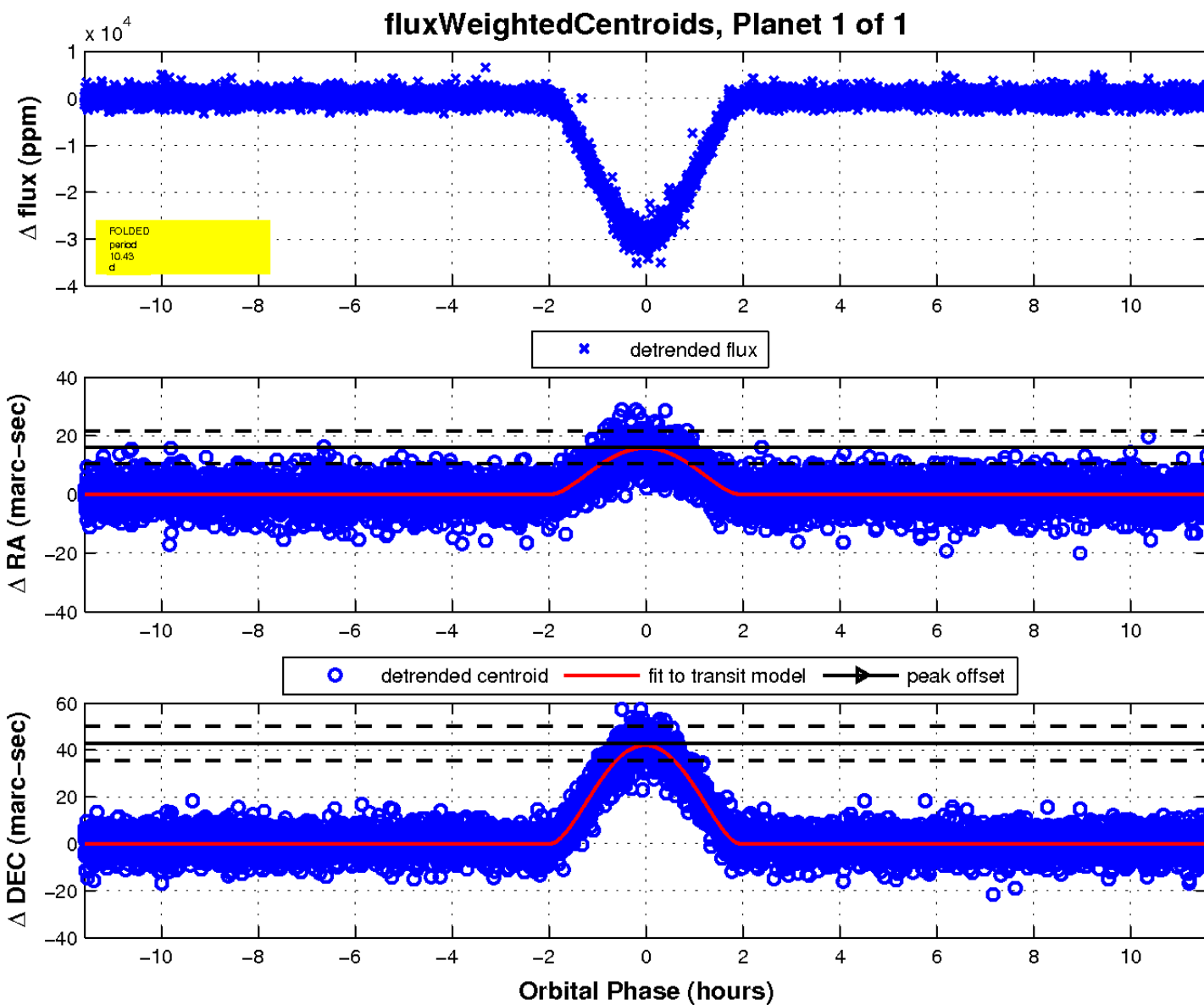
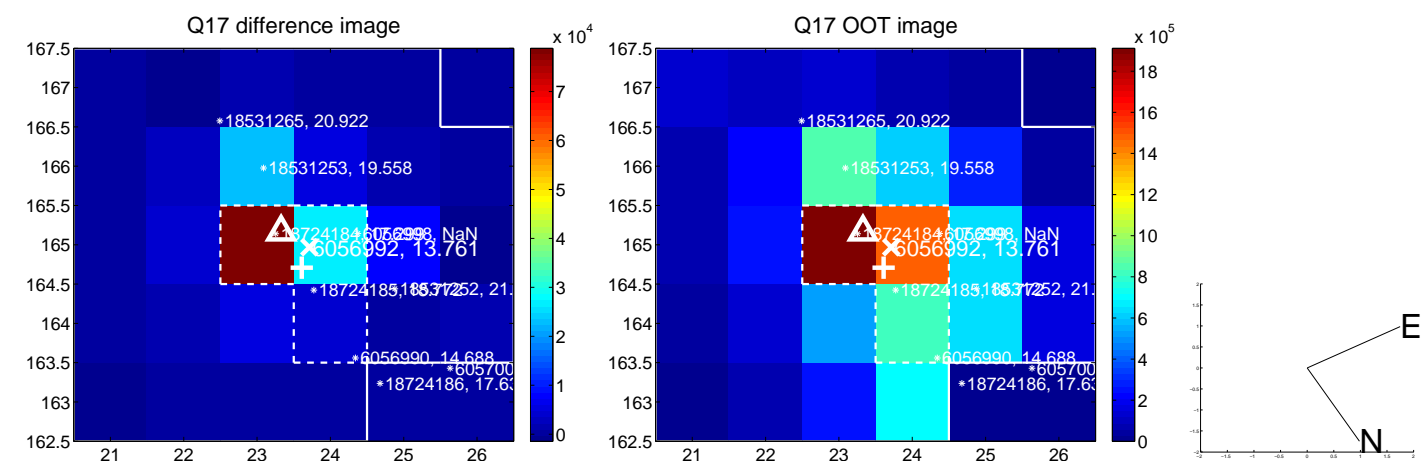
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



# UKIRT Image

Declination

