

# KIC 007695093

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007695093-01	OBS	6041.01	4.032761	133.302082	119849.4	4.139	9442.4	6688.7	0.96	5960	35.41	447.91
007695093-02	OBS	No	4.032761	135.318537	6054.5	3.983	512.7	509.6	0.96	5960	8.87	447.91

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007695093-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_KIC_POS
007695093-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—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.

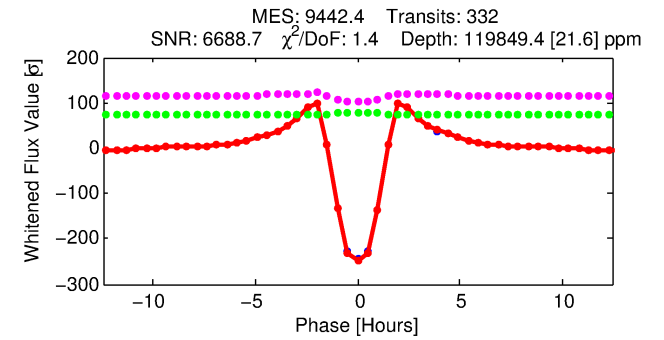
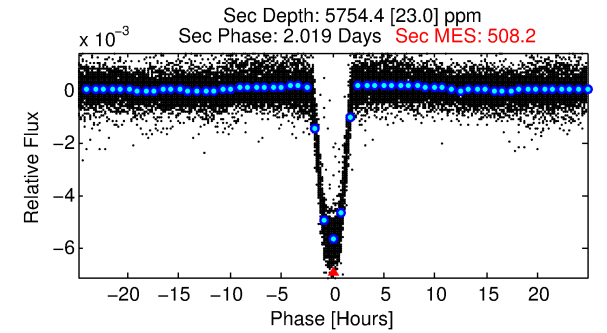
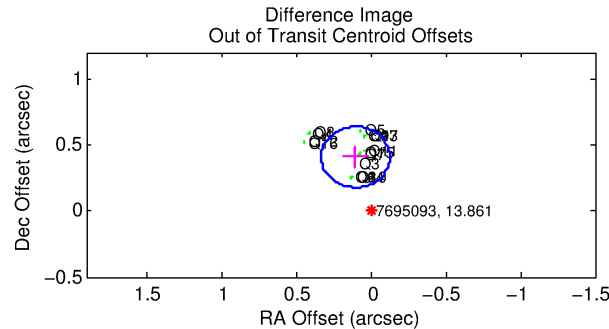
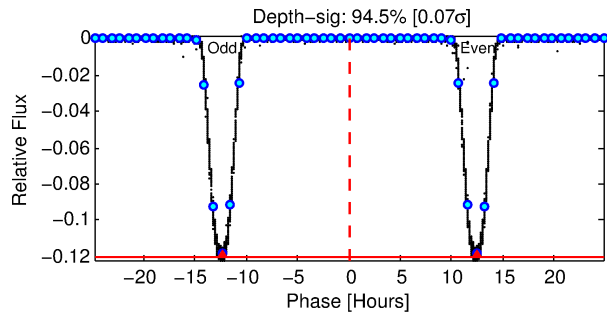
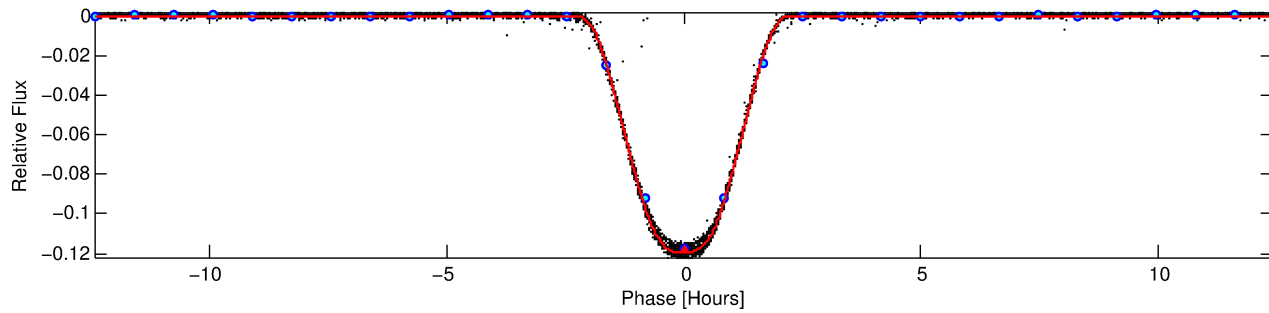
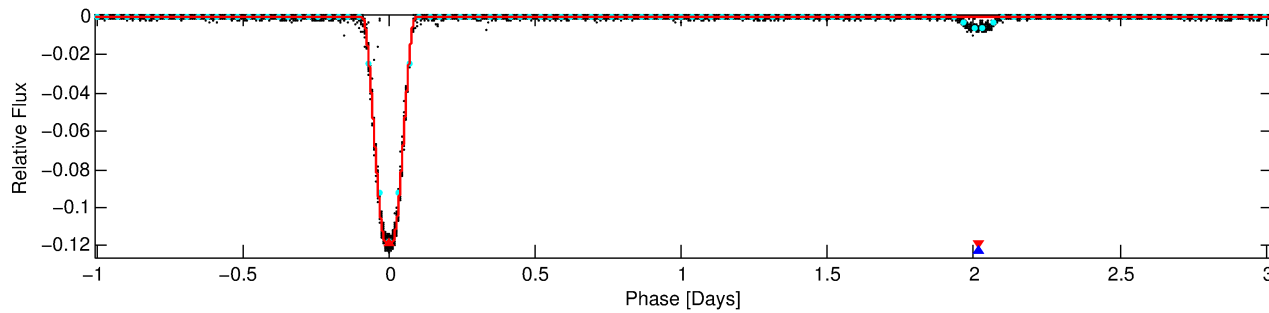
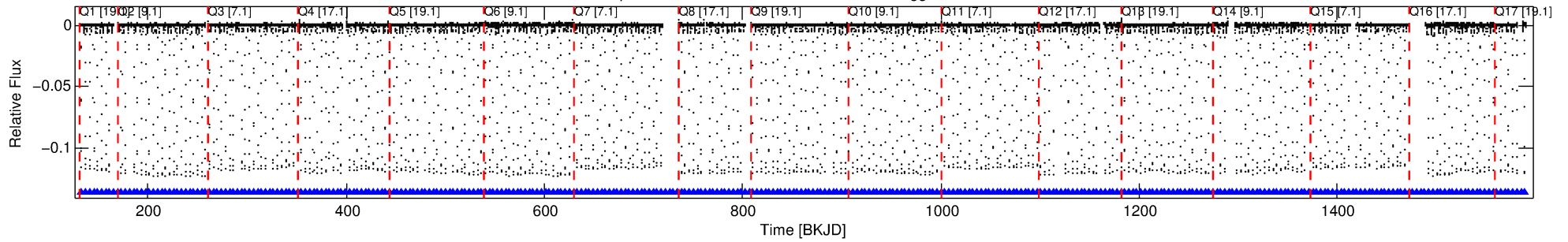
## Ephemeris Match Information For 007695093-01

No Significant Match Found

# DV One-Page Summary

KIC: 7695093 Candidate: 1 of 2 Period: 4.033 d  
KOI: K06041.01 Corr: 0.999

Kp: 13.86 R\*: 0.96 Rs Teff: 5960.0 K Logg: 4.44 Fe/H: -0.300



## DV Fit Results:

Period = 4.03276 [0.00000] d  
Epoch = 133.3021 [0.0000] BKJD  
Rp/R\* = 0.3373 [0.0000]  
a/R\* = 8.92 [0.00]  
b = 0.61 [0.00]  
Seff = 447.91 [167.18]  
Teq = 1173 [109] K  
Rp = 35.41 [10.23] Re  
a = 0.0483 [0.0118] AU  
Ag = 5.90 [2.11] [2.32σ]  
Teffp = 2826 [76] K [12.39σ]

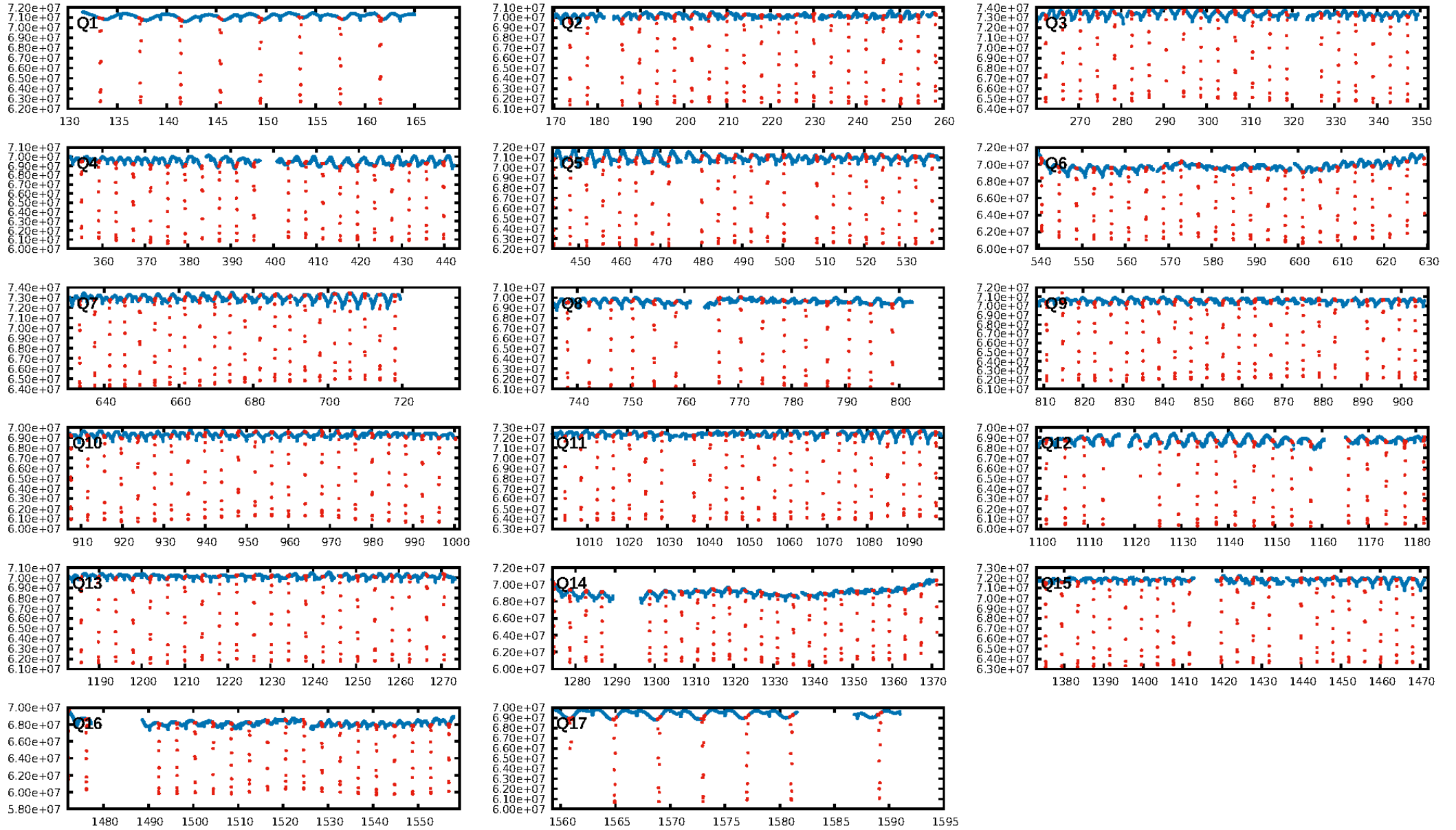
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-igt: 1.00 [317/317]  
GhostDiagnostic-chr: 3.385  
Centroid-sig: 0.0%  
Centroid-so: 0.841 arcsec [1168.64σ]  
OotOffset-rm: 0.420 arcsec [5.48σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-rm: 0.188 arcsec [2.80σ]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

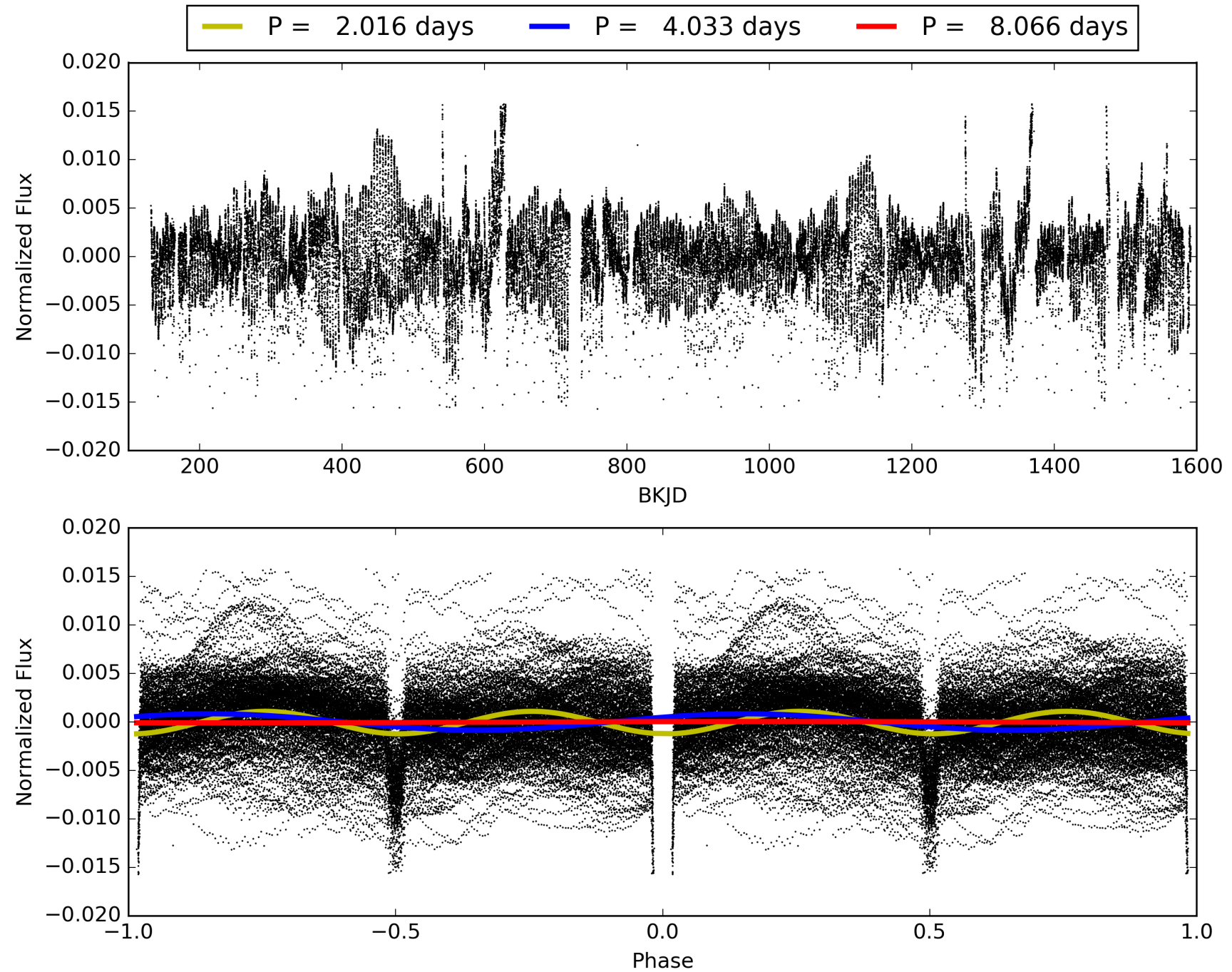
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:16:58 Z

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

# TCE 007695093-01, PDC Light Curves

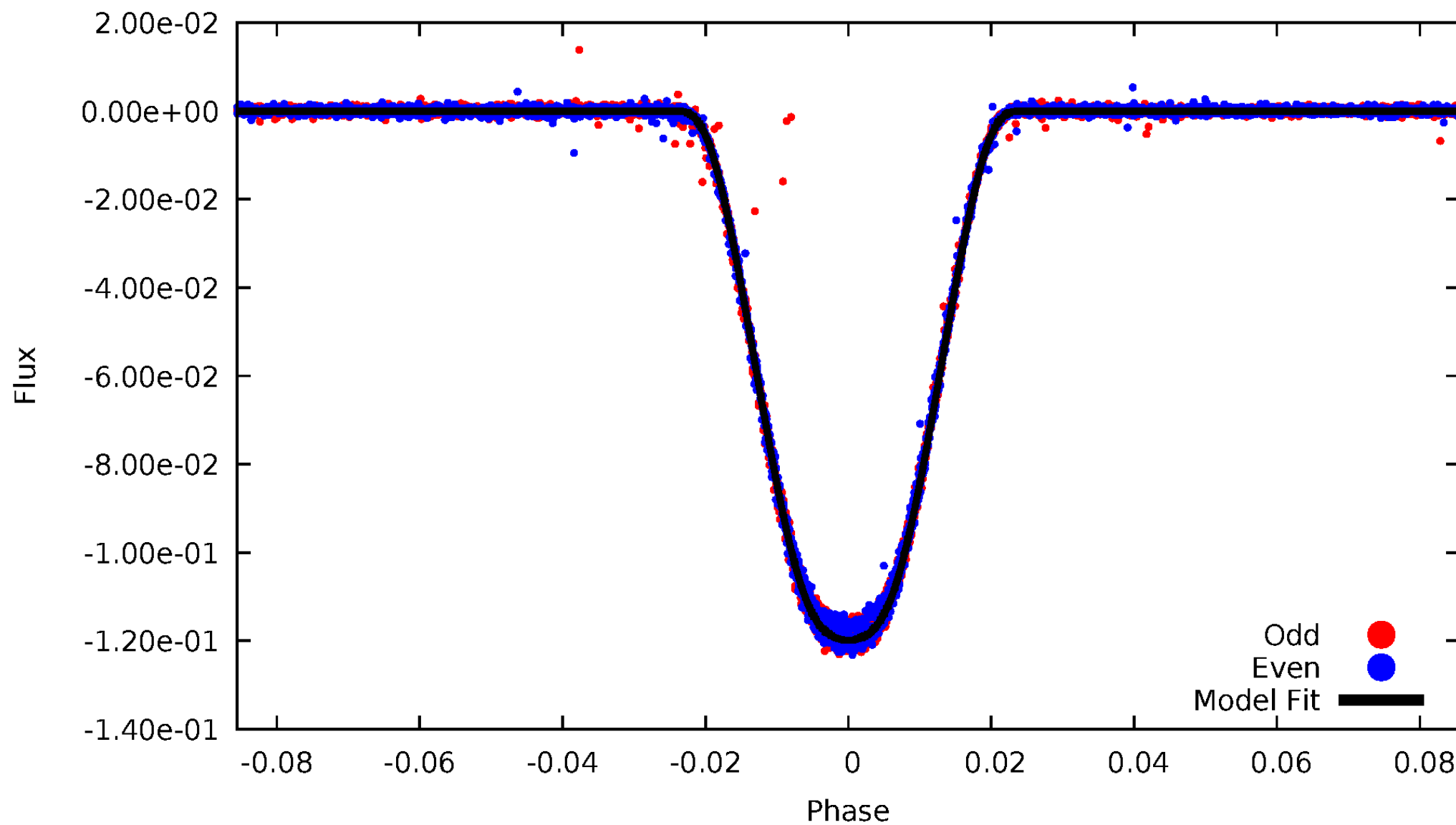


TCE 007695093-01



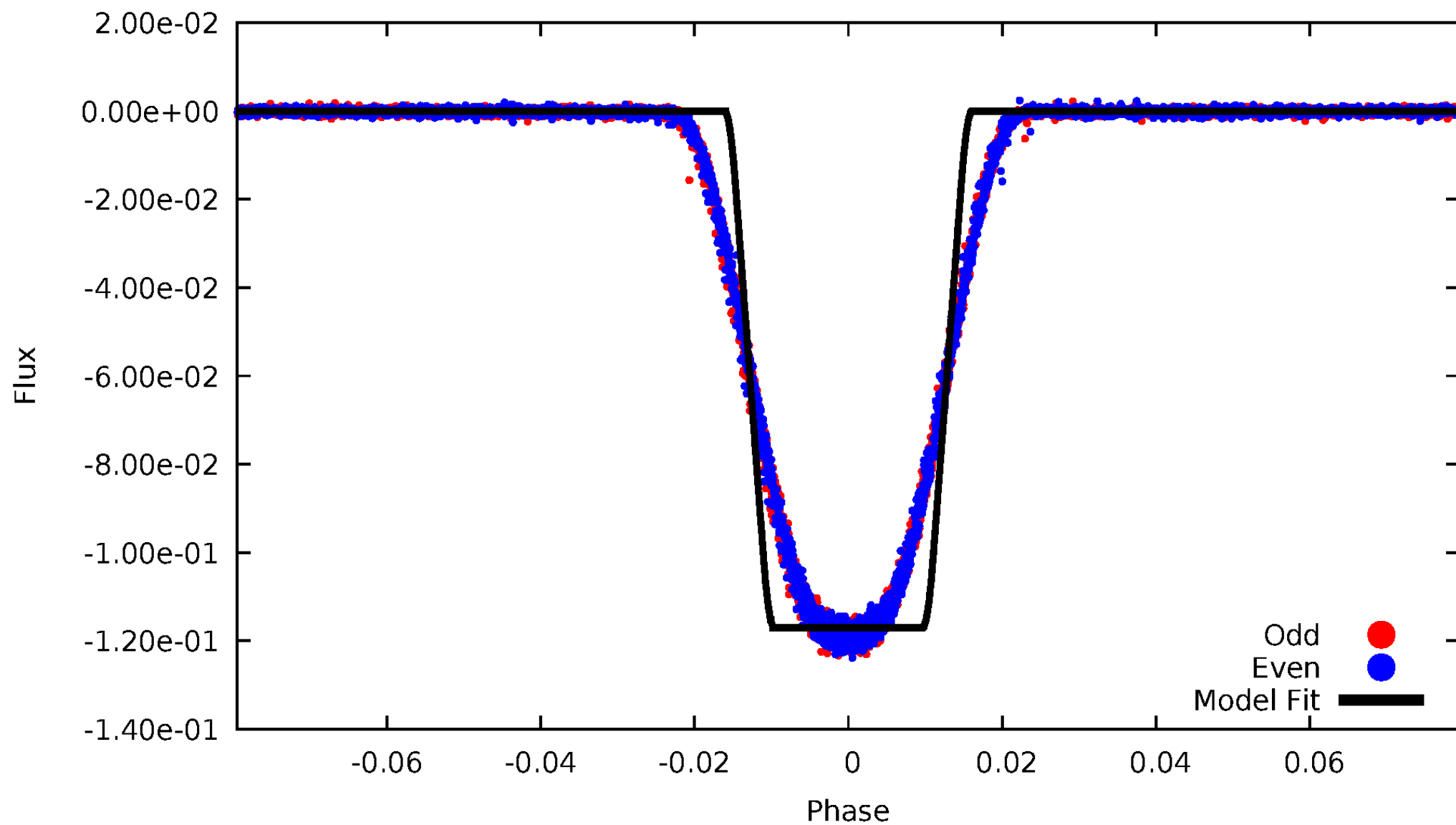
# DV Odd/Even

TCE 007695093-01



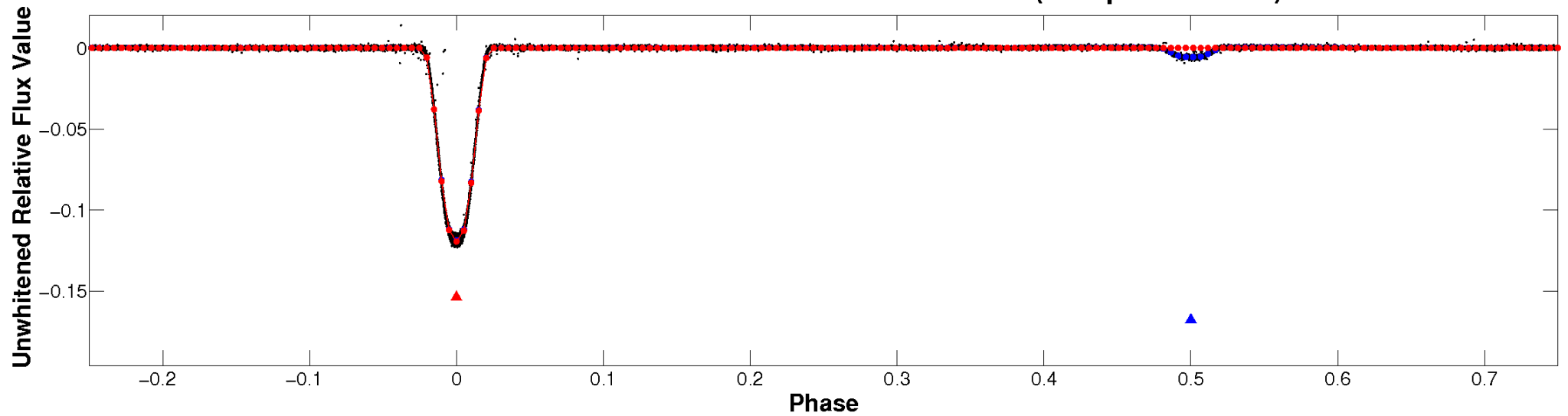
# ALT Odd/Even

TCE 007695093-01

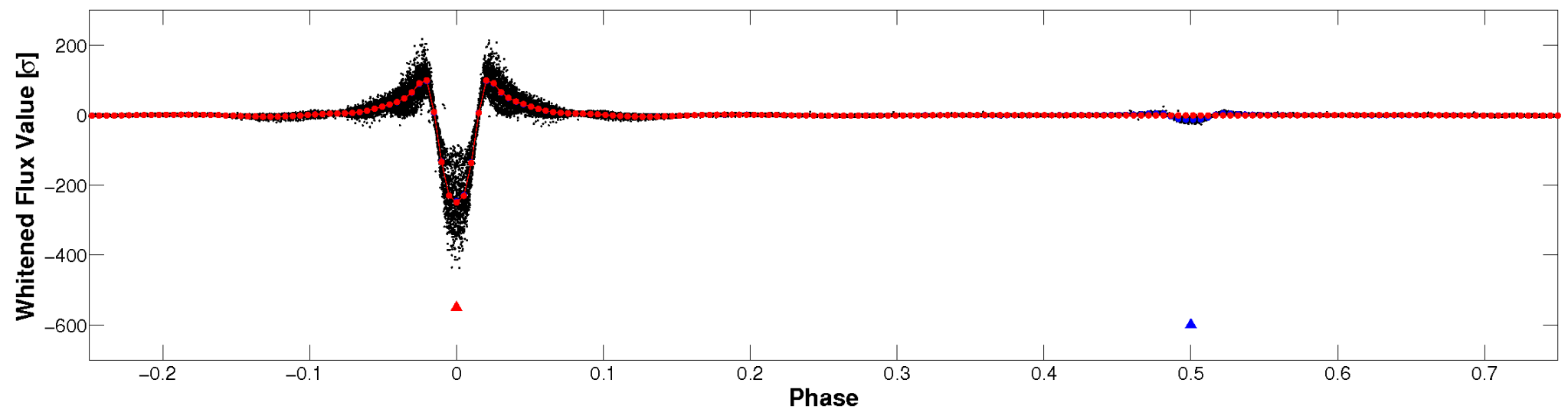


# Non-Whitened Vs. Whitened Light Curve

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

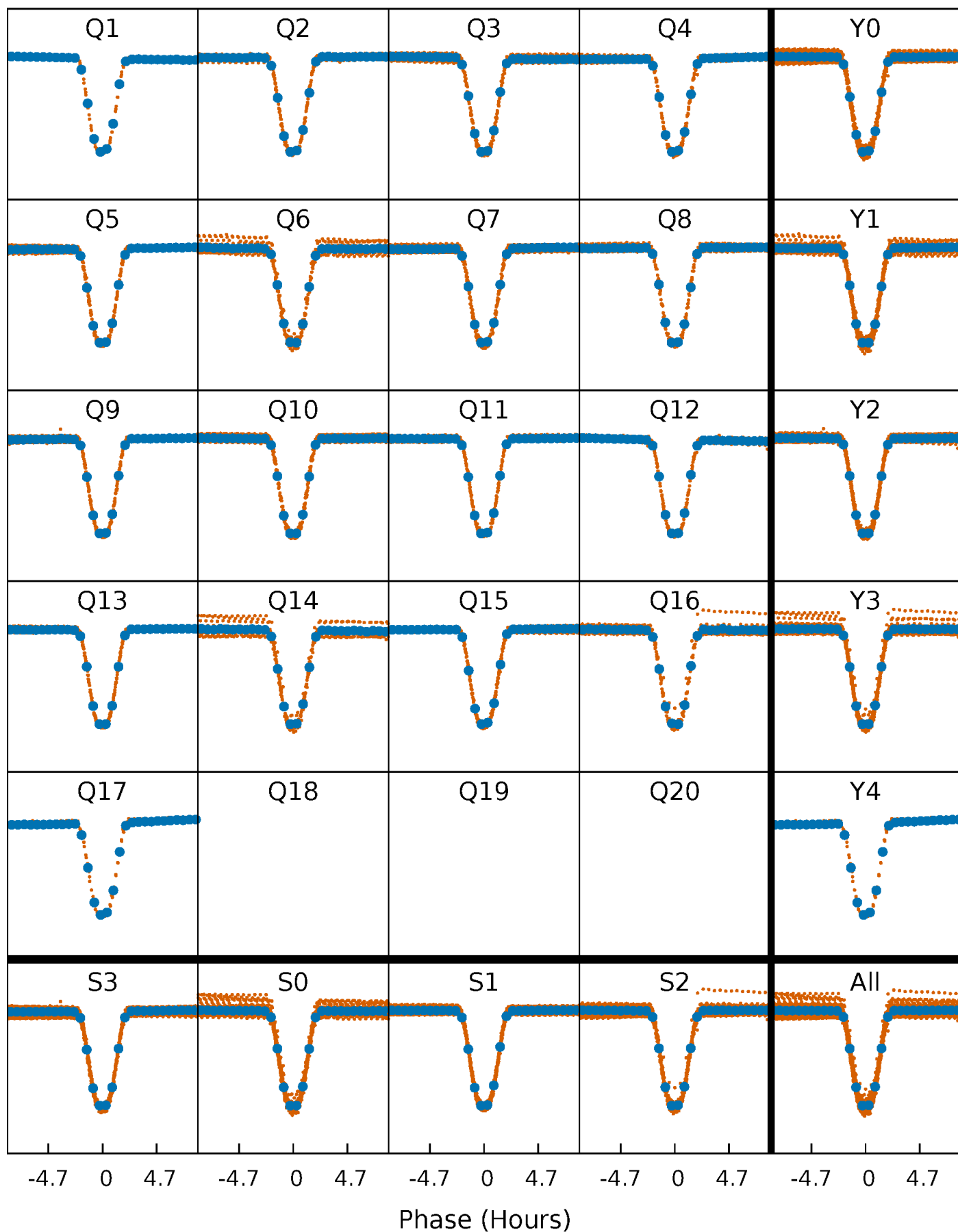


## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

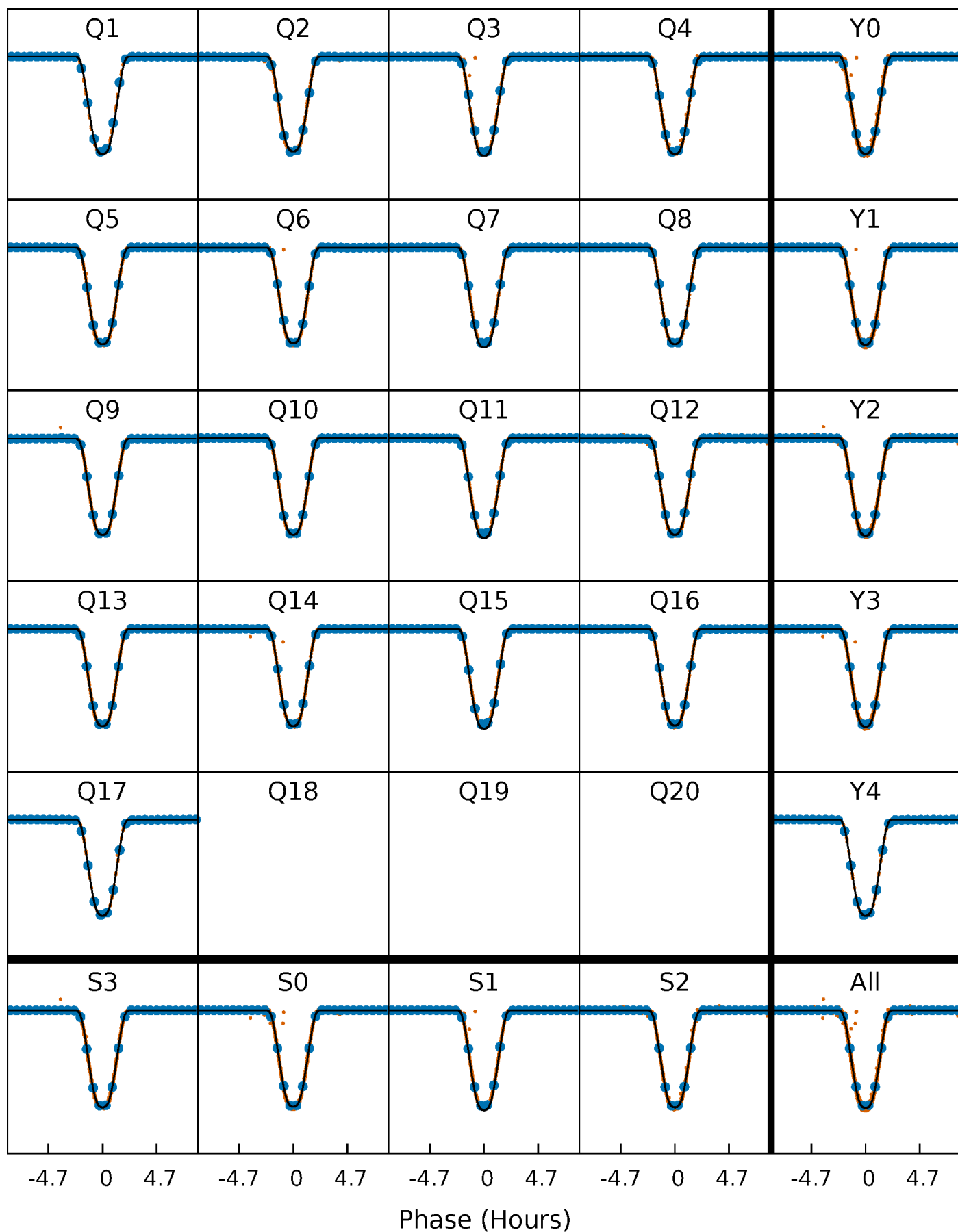
TCE 007695093-01 P= 4.032761 Days  $T_0=133.302082$  (BKJD)





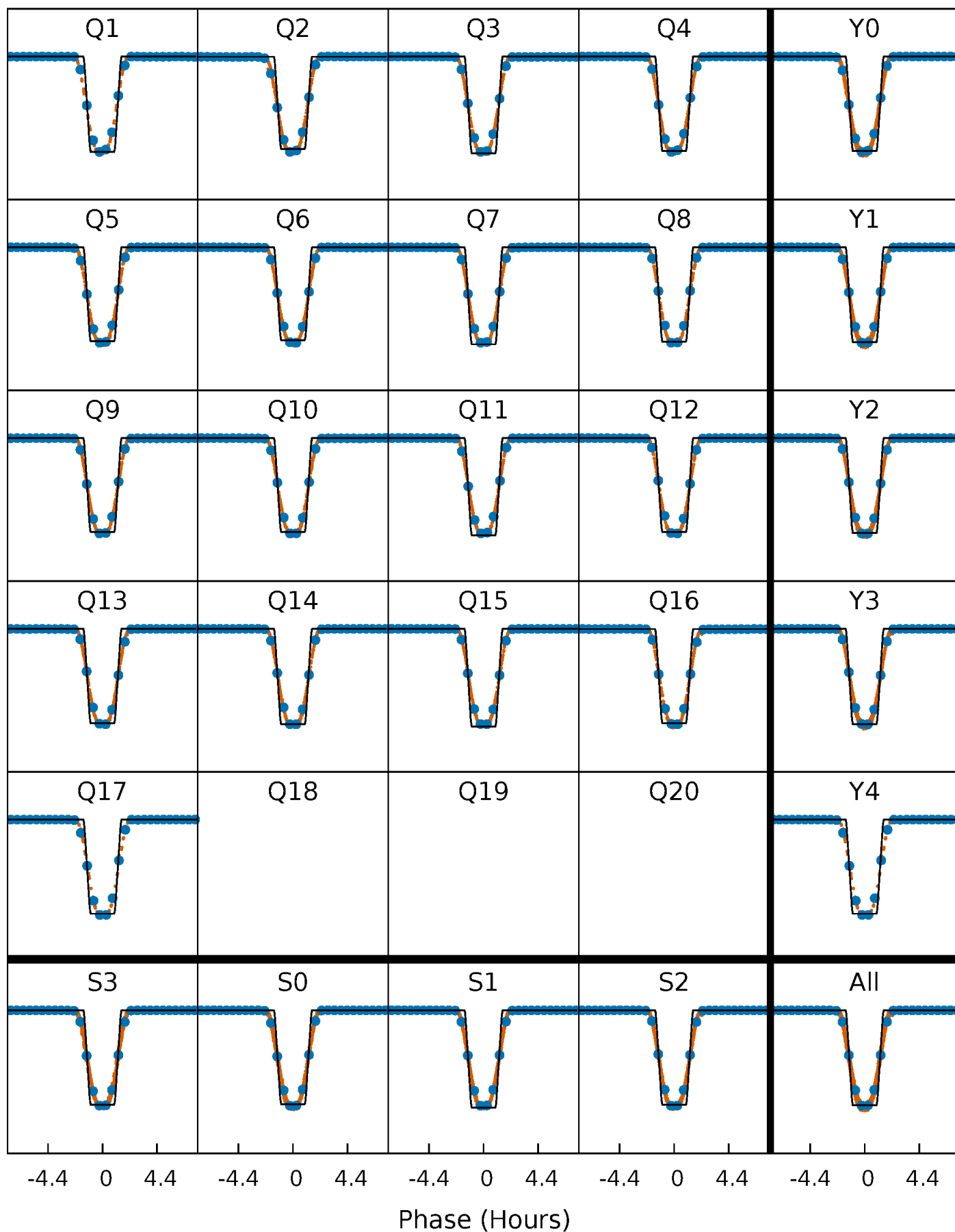
# DV Quarter-Phased Transit Curves

TCE 007695093-01 P= 4.032761 Days  $T_0=133.302082$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

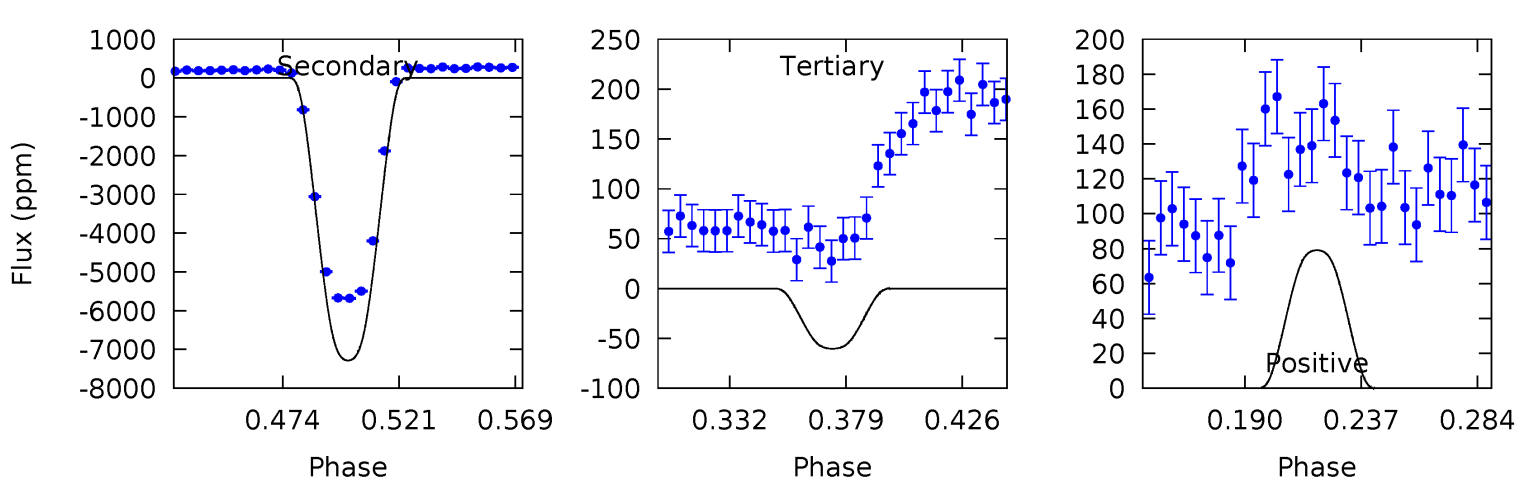
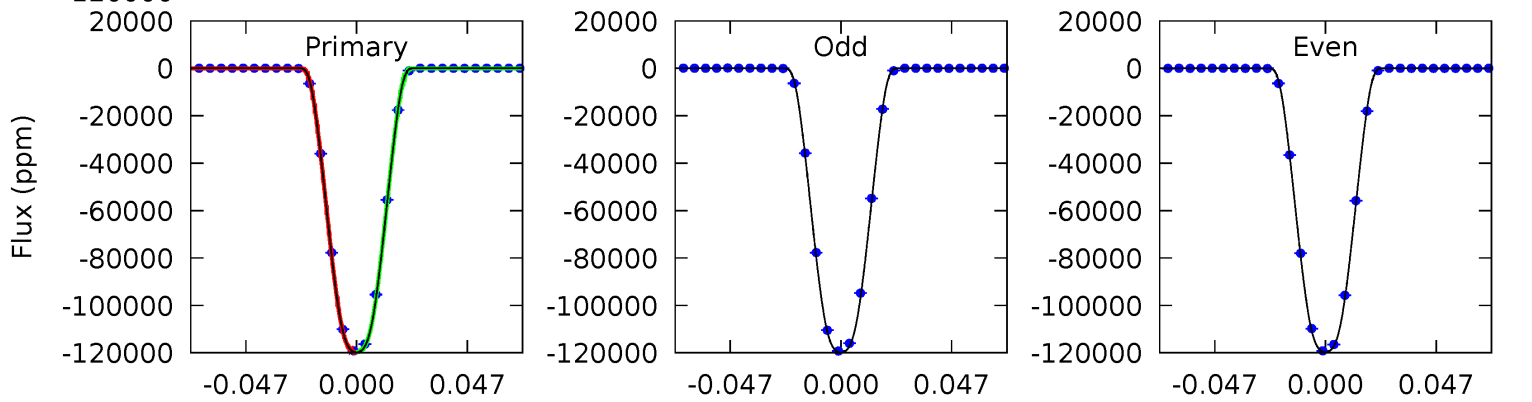
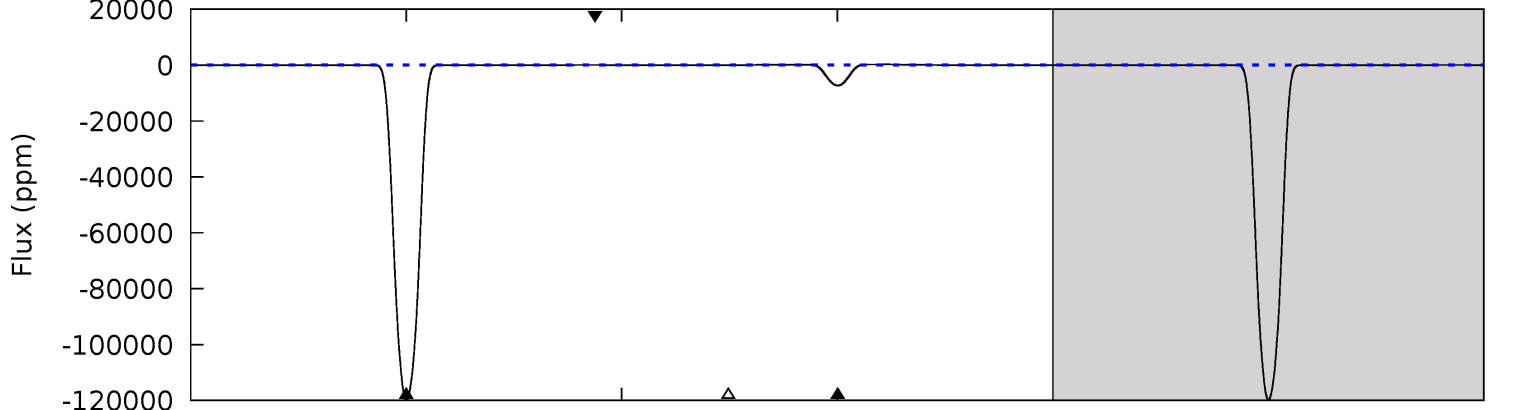
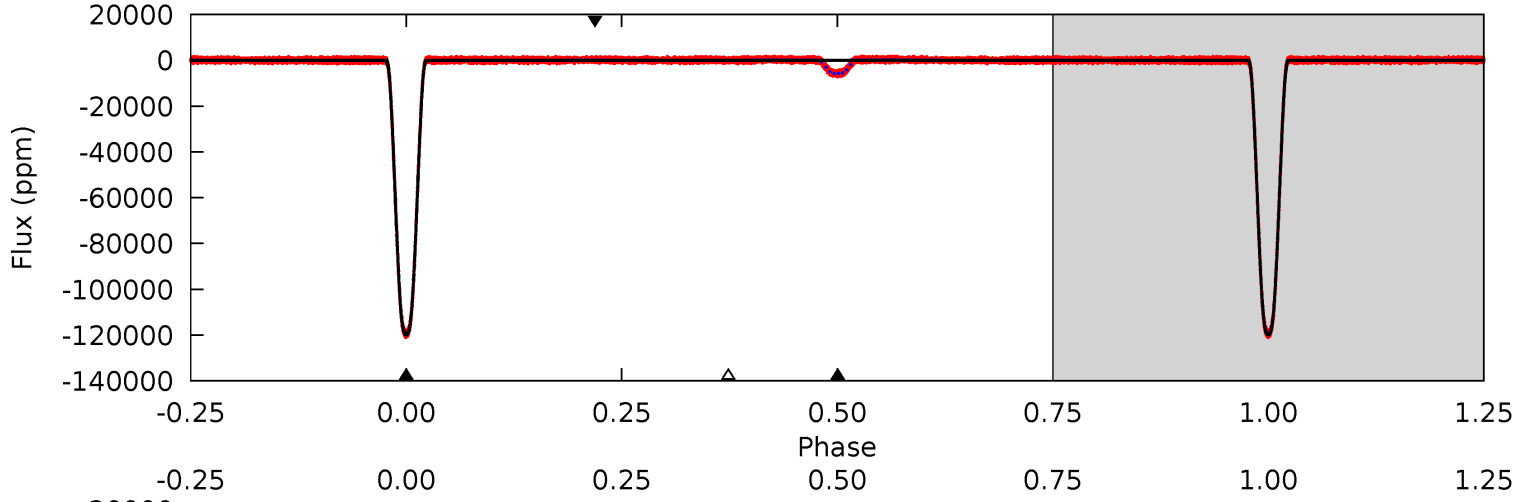
TCE 007695093-01 P= 4.032752 Days  $T_0=133.303290$  (BKJD)



# DV Model-Shift Uniqueness Test

007695093-01, P = 4.032761 Days, E = 129.269321 Days

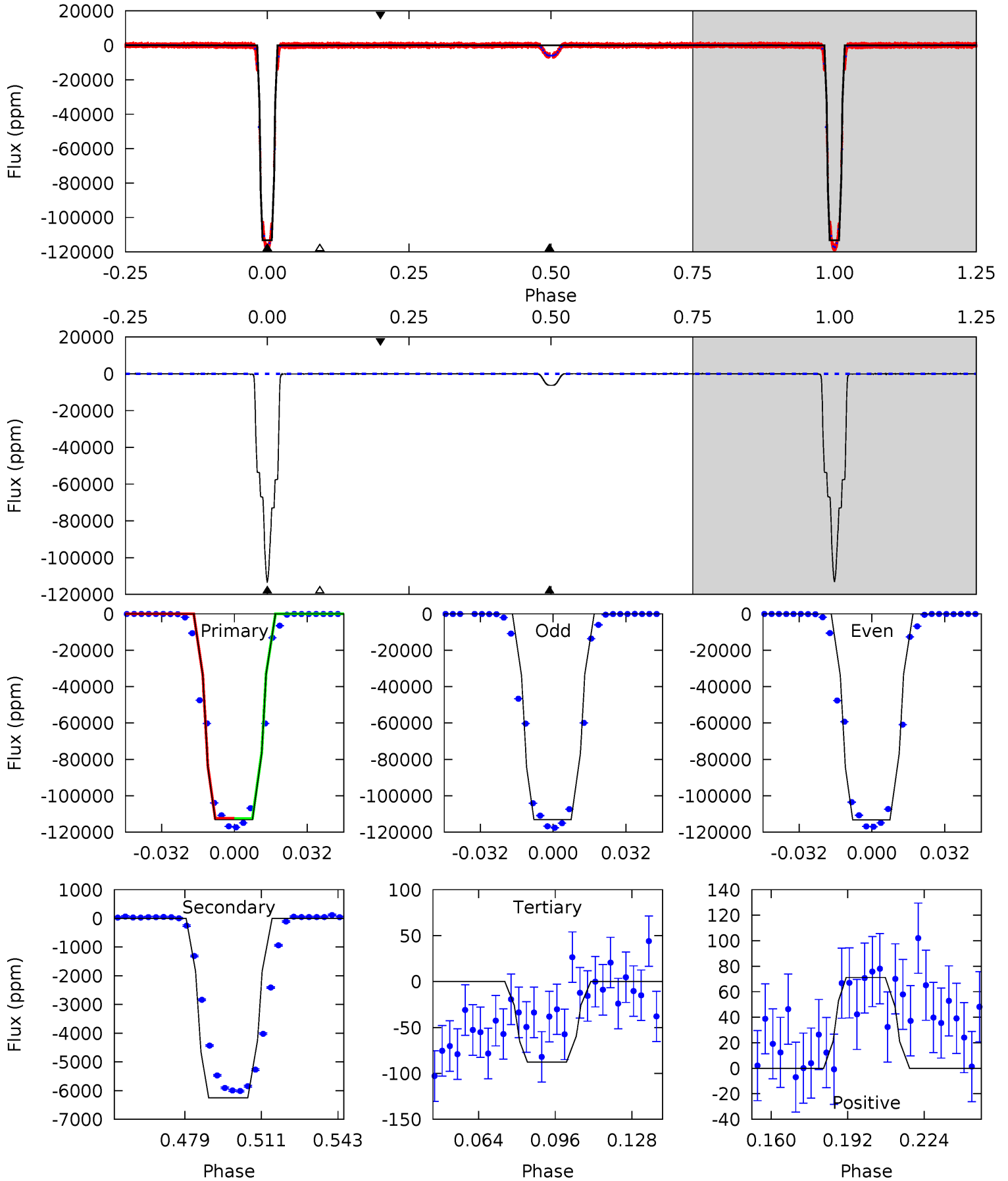
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13829	840.5	6.96	9.13	4.72	1.98	7.79	13822	13819	833.5	831.4	6.38	0.99	0.00	0



# Alt Model-Shift Uniqueness Test

007695093-01, P = 4.032752 Days, E = 129.270538 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
6436	355.5	4.98	4.05	4.80	2.15	2.29	6431	6432	350.6	351.5	5.91	1.00	0.00	1.46



### Stellar Parameters For KIC 007695093

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5960^{+161}_{-161}$	$4.438^{+0.098}_{-0.196}$	$-0.300^{+0.300}_{-0.300}$	$0.962^{+0.278}_{-0.139}$	$0.927^{+0.119}_{-0.108}$	$1.466^{+0.649}_{-0.728}$
	+3%/-3%	+2%/-4%	+100%/-100%	+29%/-14%	+13%/-12%	+44%/-50%
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 007695093-01 / KOI 6041.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-7284 \pm 9$	$35.70^{+6.71}_{-2.95}$	$1657^{+126}_{-83}$	$3466^{+62}_{-65}$	$7.213^{+1.377}_{-1.821}$
Alt.	$-6252 \pm 18$	$36.44^{+5.98}_{-3.09}$	$1661^{+115}_{-89}$	$3363^{+62}_{-58}$	$5.991^{+1.092}_{-1.371}$

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

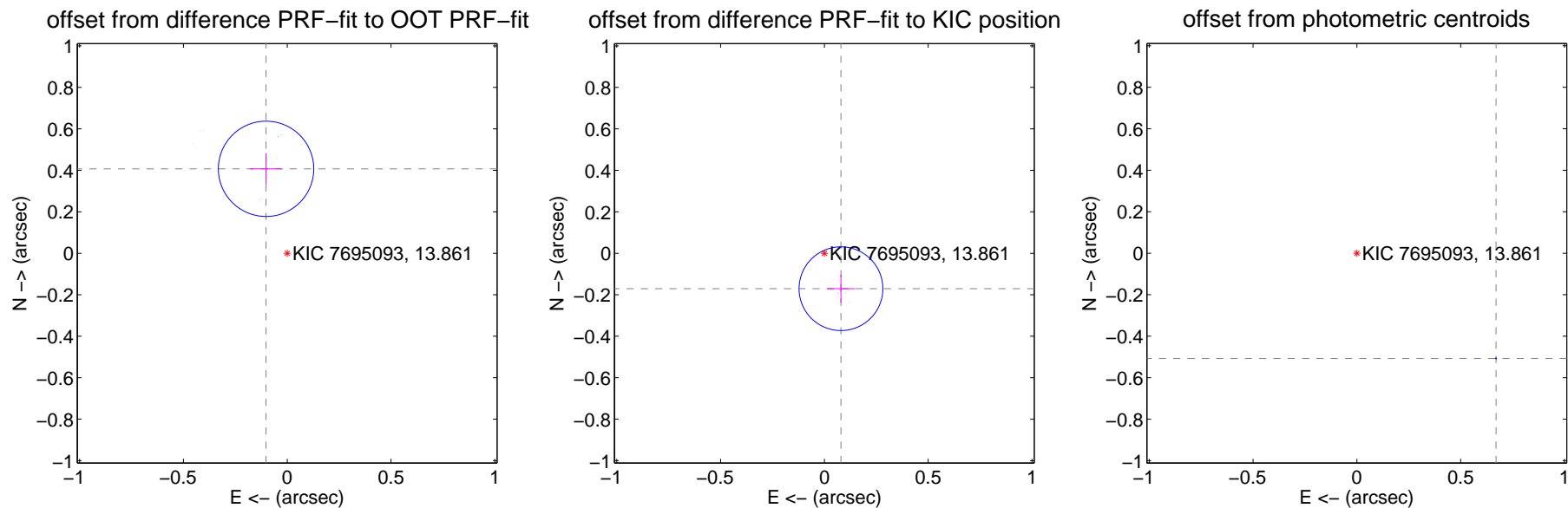
## DV Centroid Data

Supplemental centroid analysis for 007695093-01. Kepler magnitude: 13.86. Transit SNR 6688.73

There are 17 quarters with good PRF difference image offsets

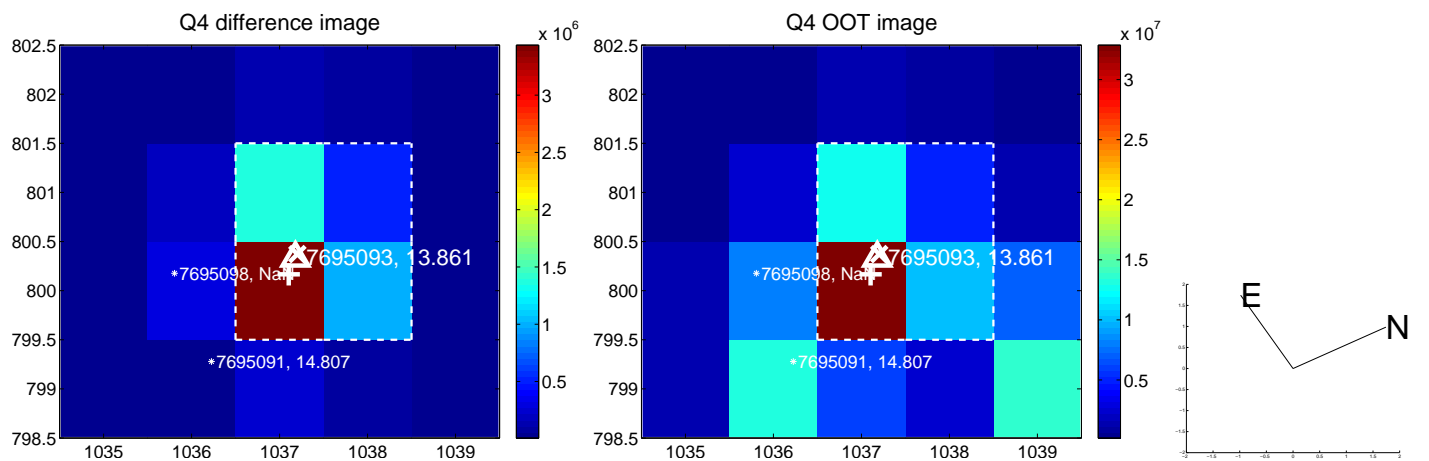
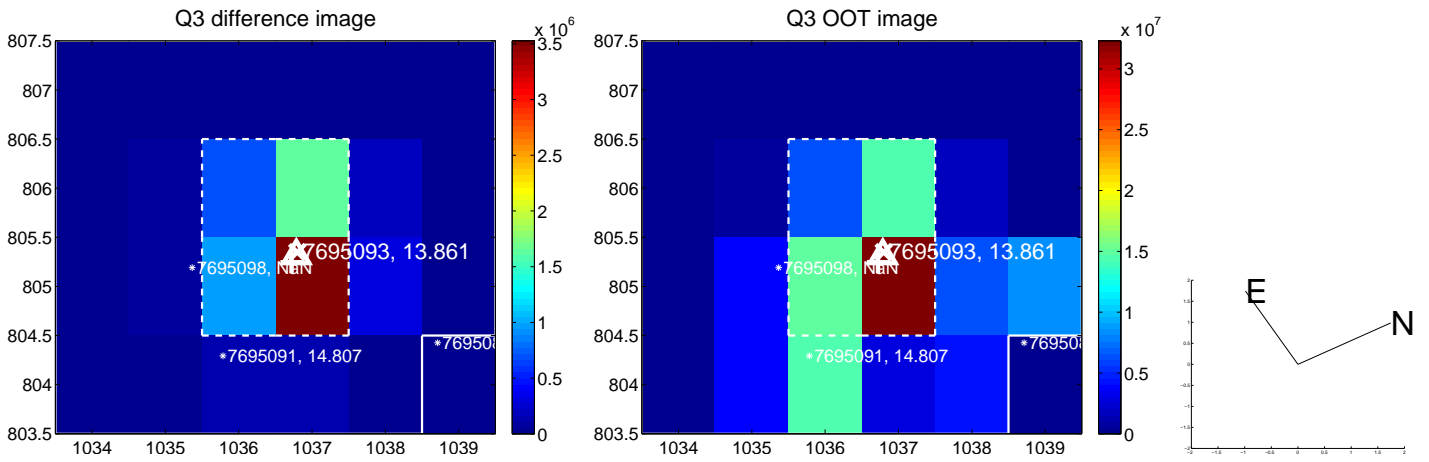
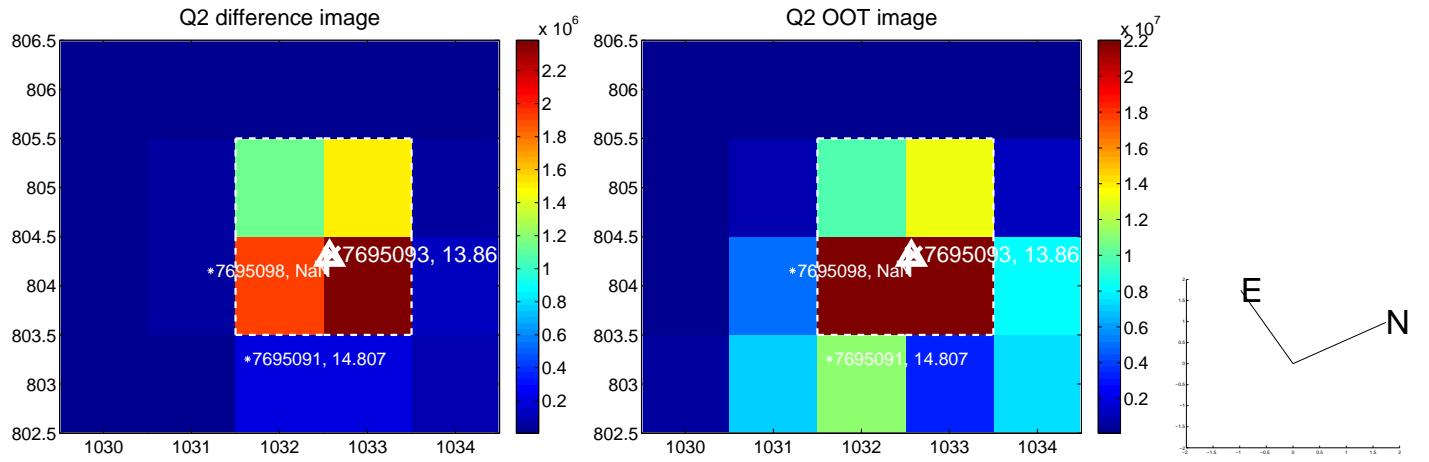
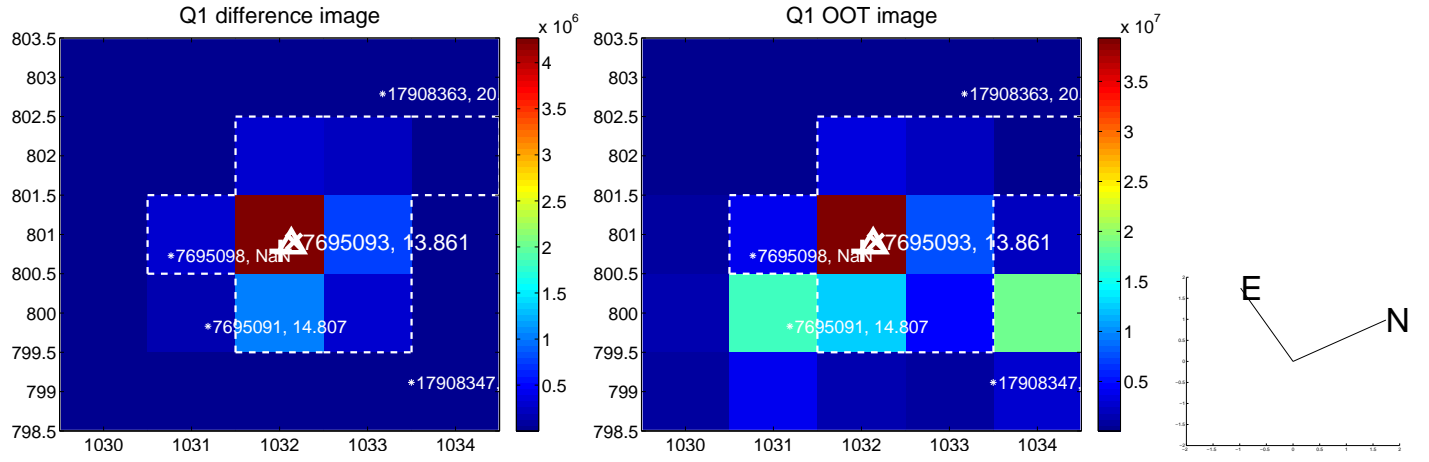
The direct PRF centroid is offset from the target star catalog position by about 0.77 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.420 \pm 0.077$	5.48	$0.102 \pm 0.077$	$0.407 \pm 0.075$
PRF-fit source offset from KIC position	$0.188 \pm 0.067$	2.80	$-0.080 \pm 0.067$	$-0.171 \pm 0.067$
photometric centroid source offset	$0.84 \pm 0.00$	1168.64	$-0.67 \pm 0.00$	$-0.51 \pm 0.00$

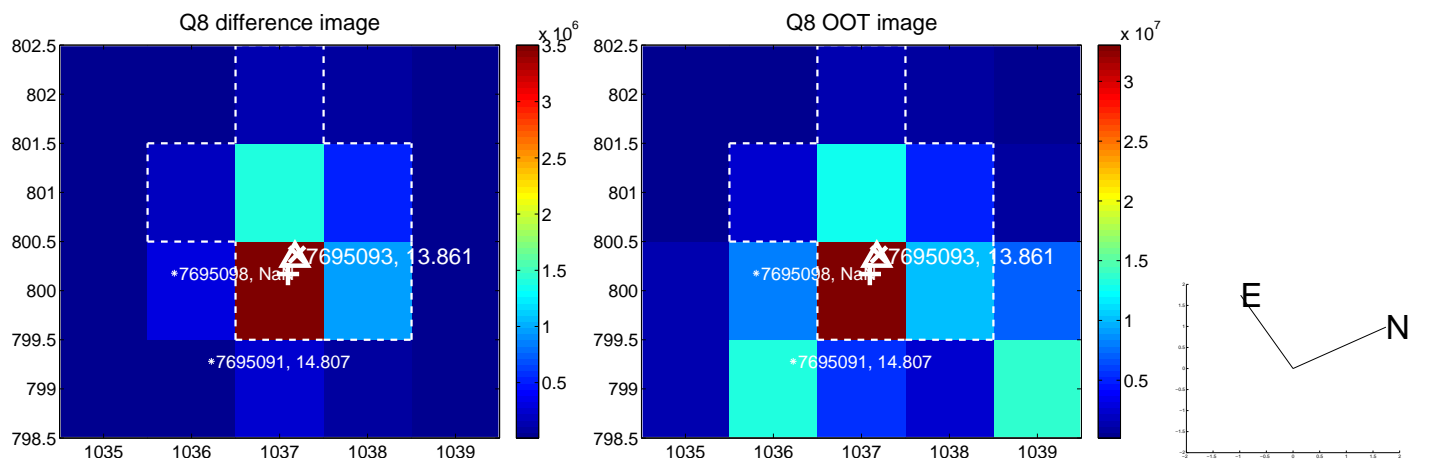
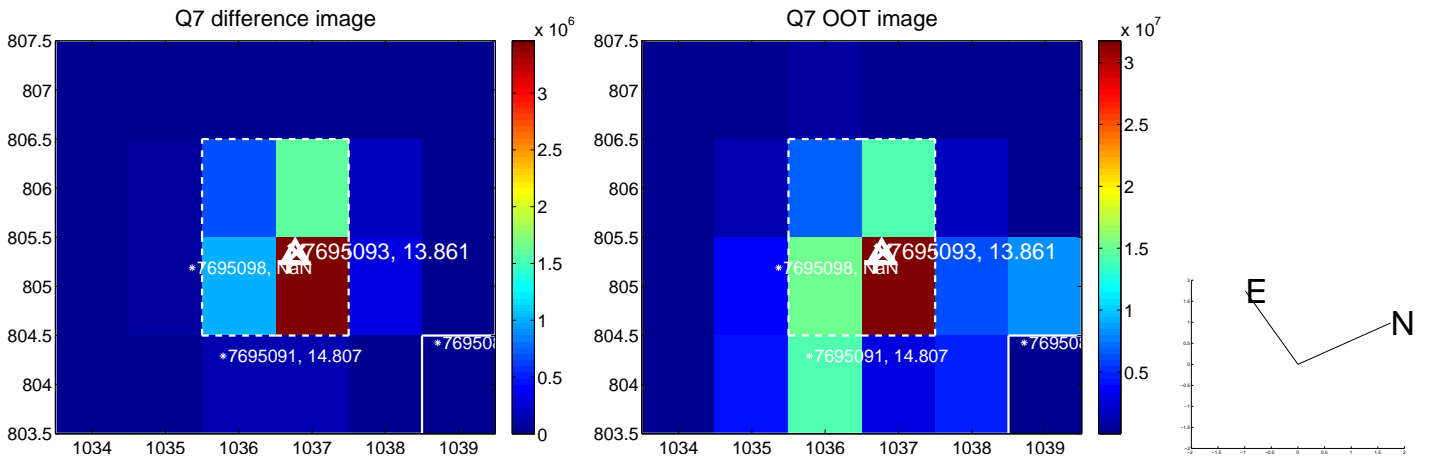
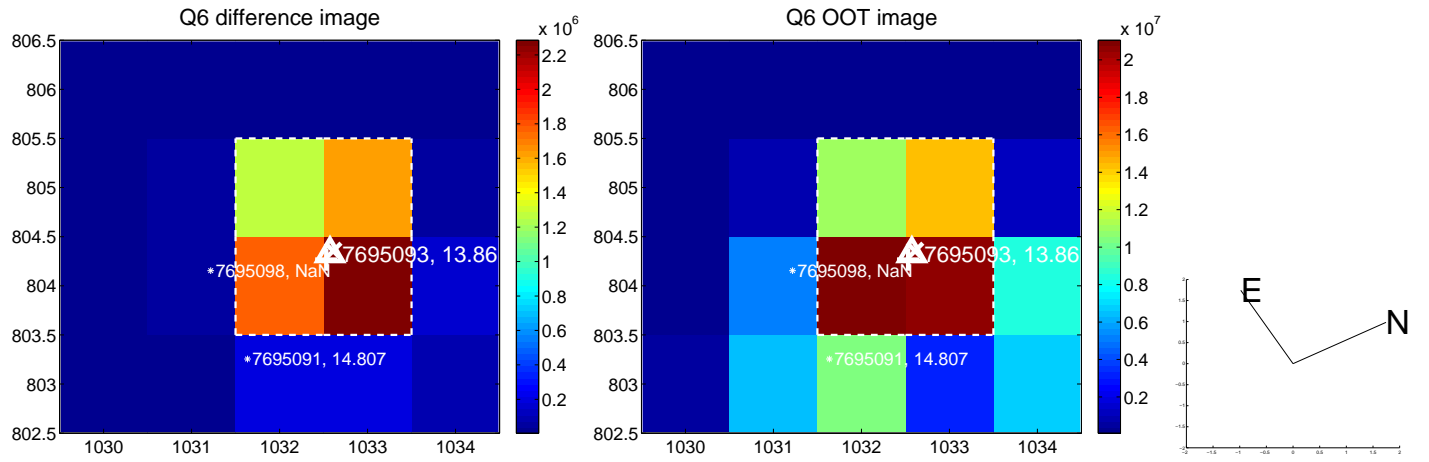
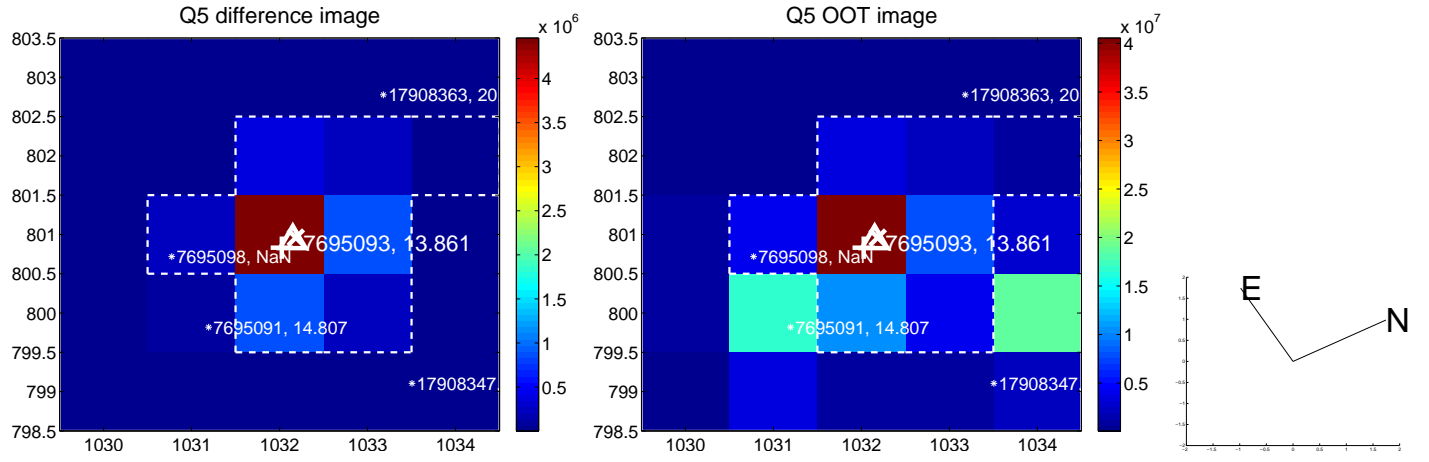


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

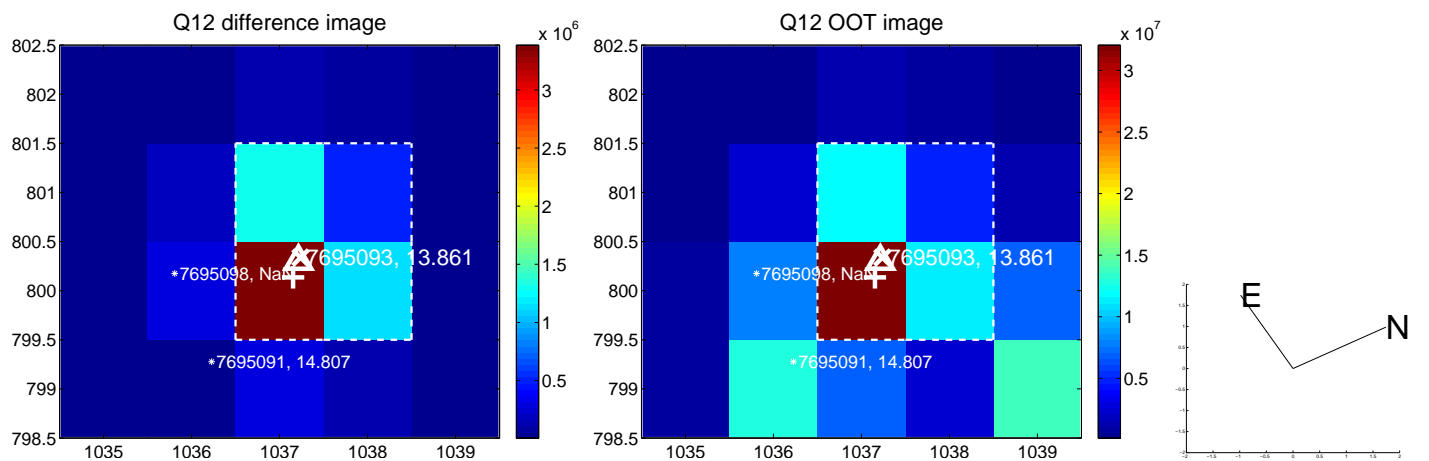
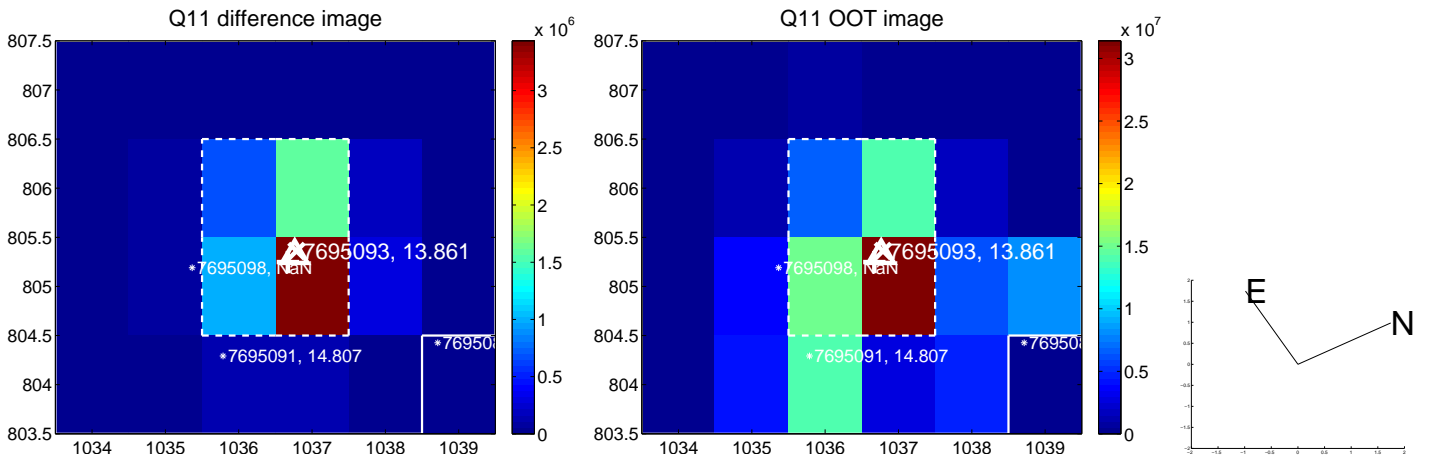
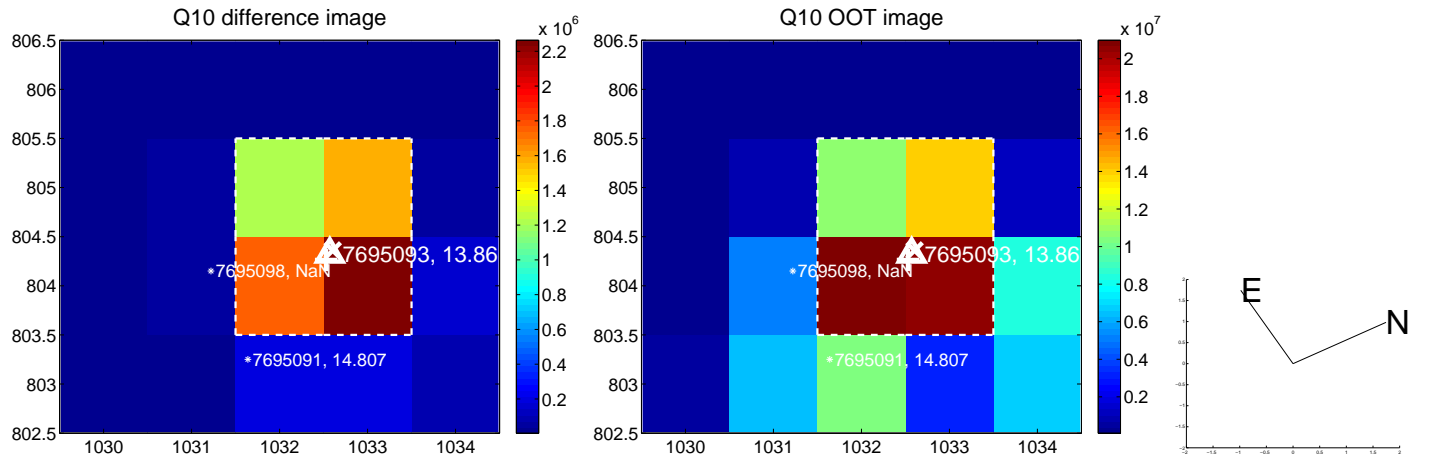
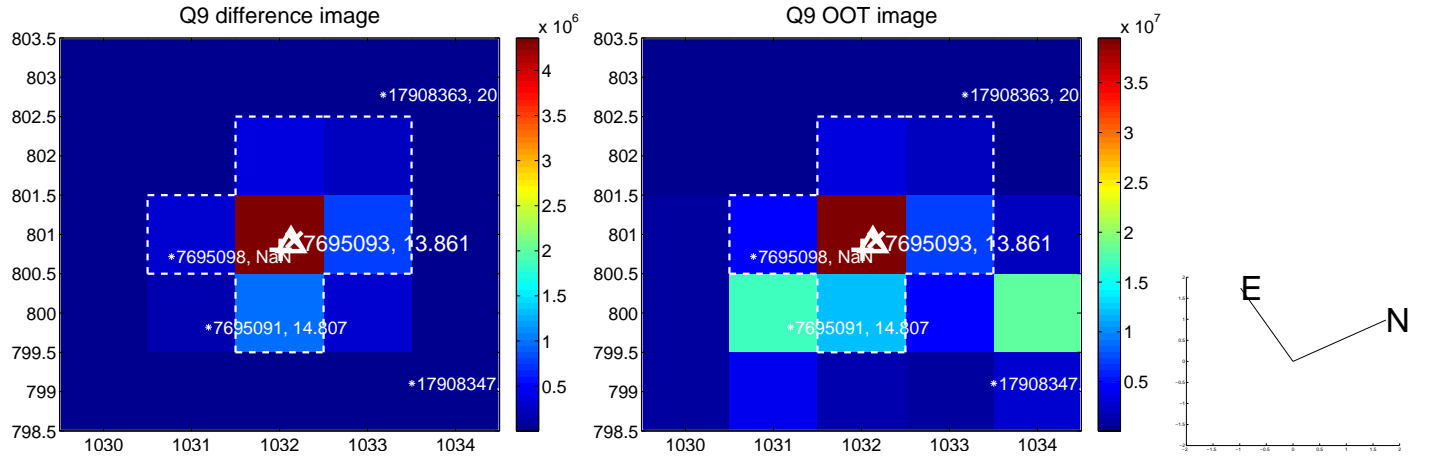


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

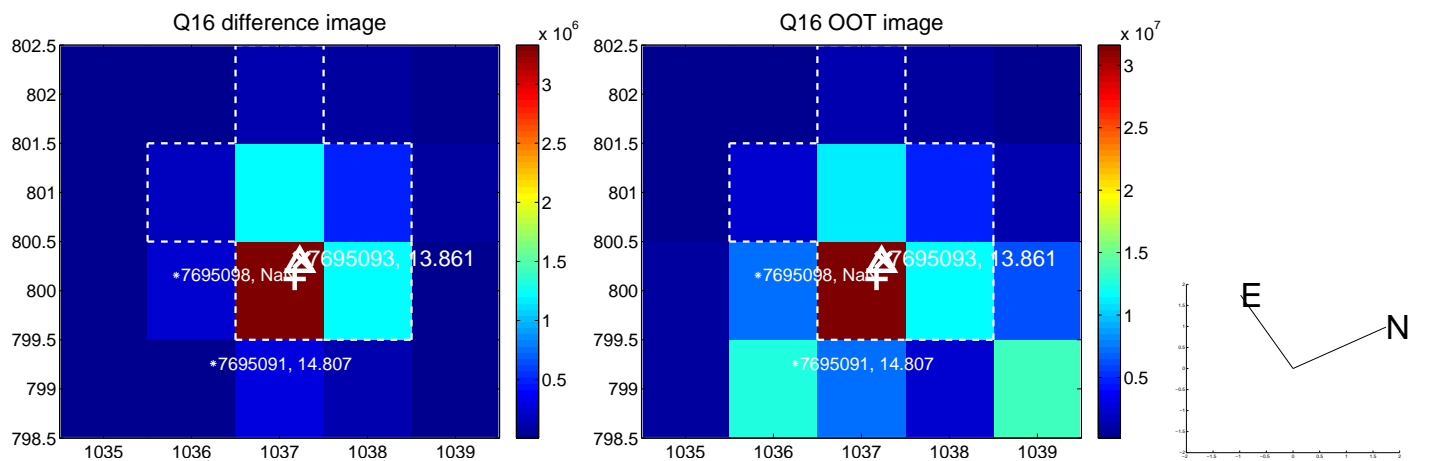
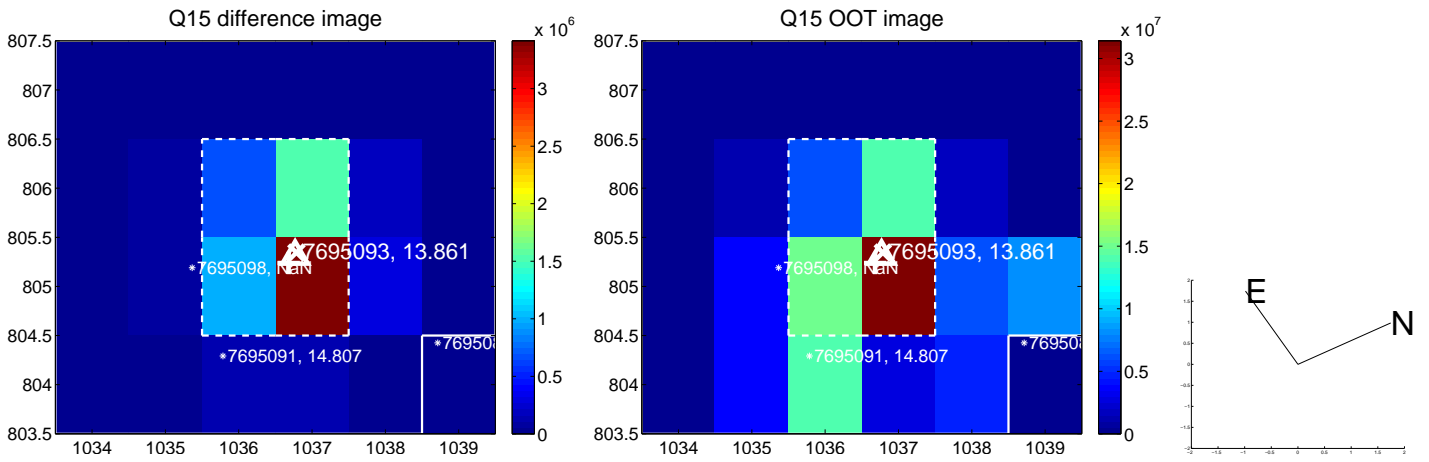
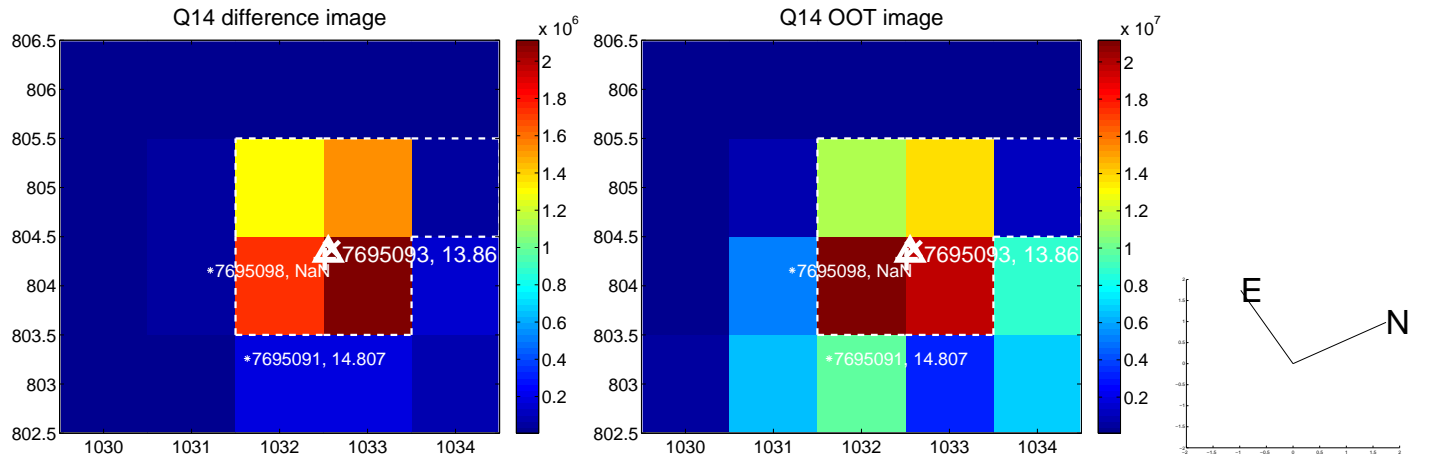
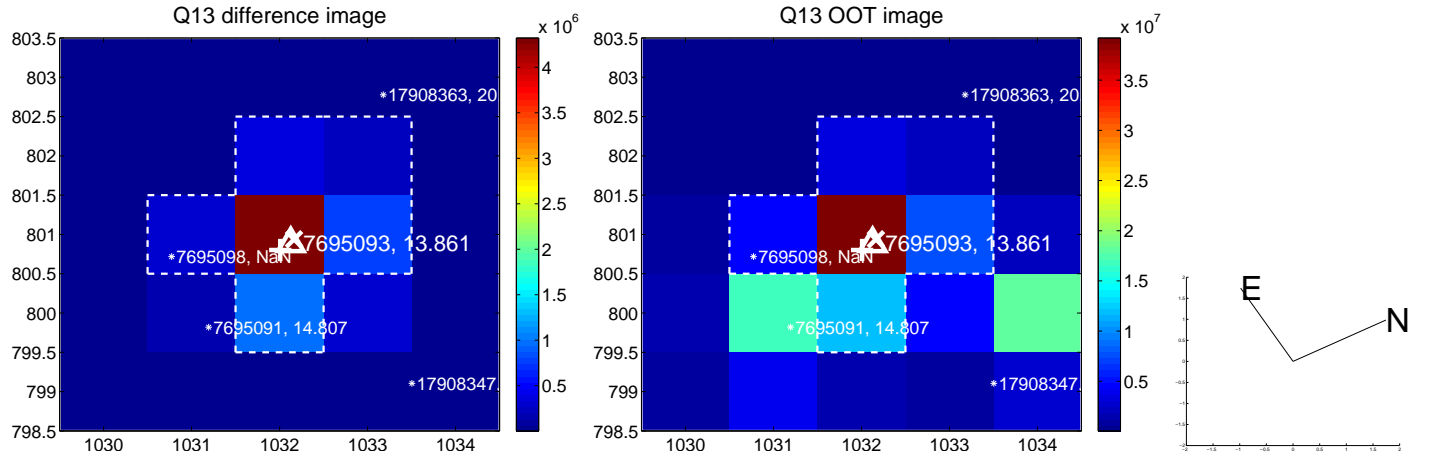




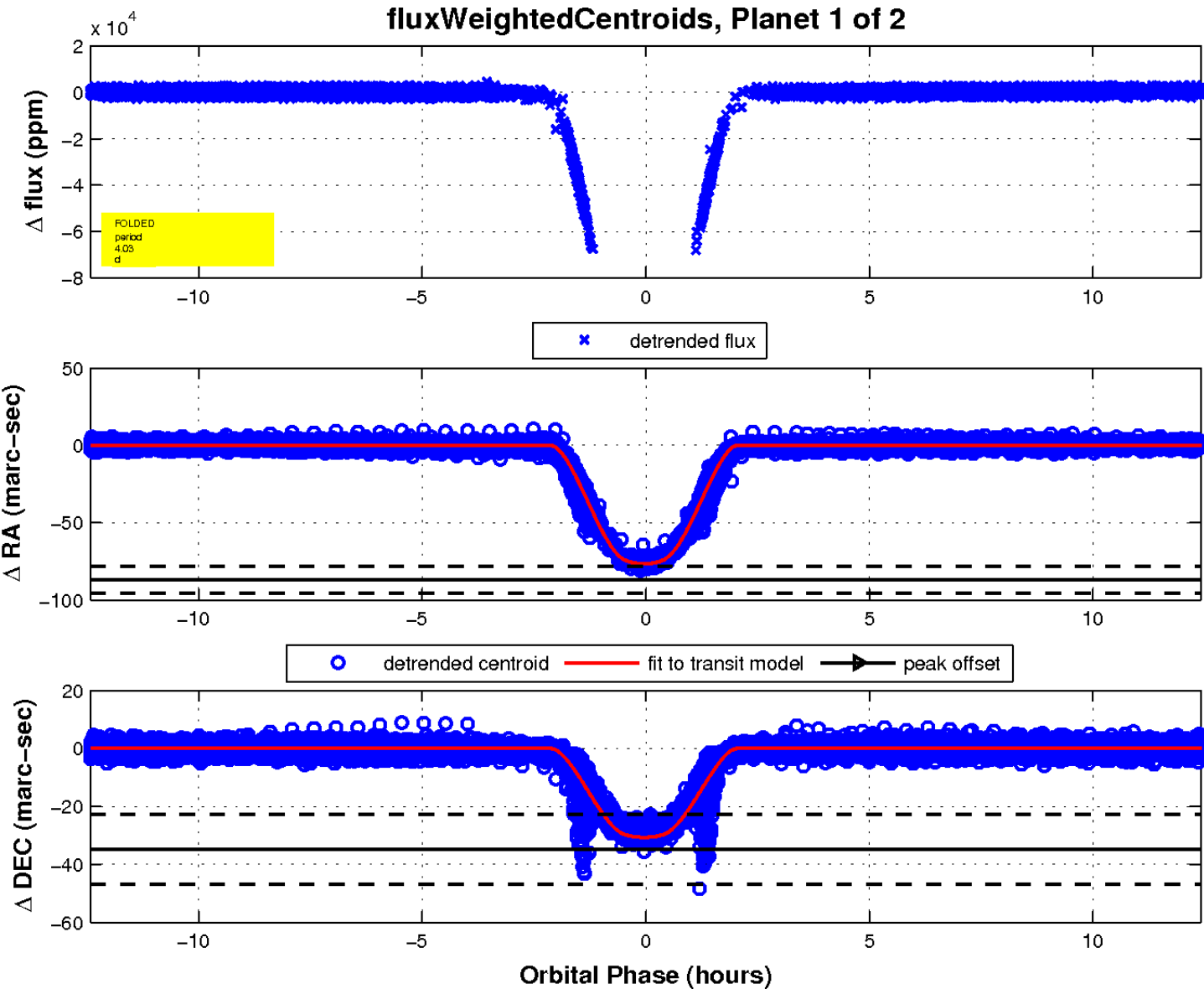
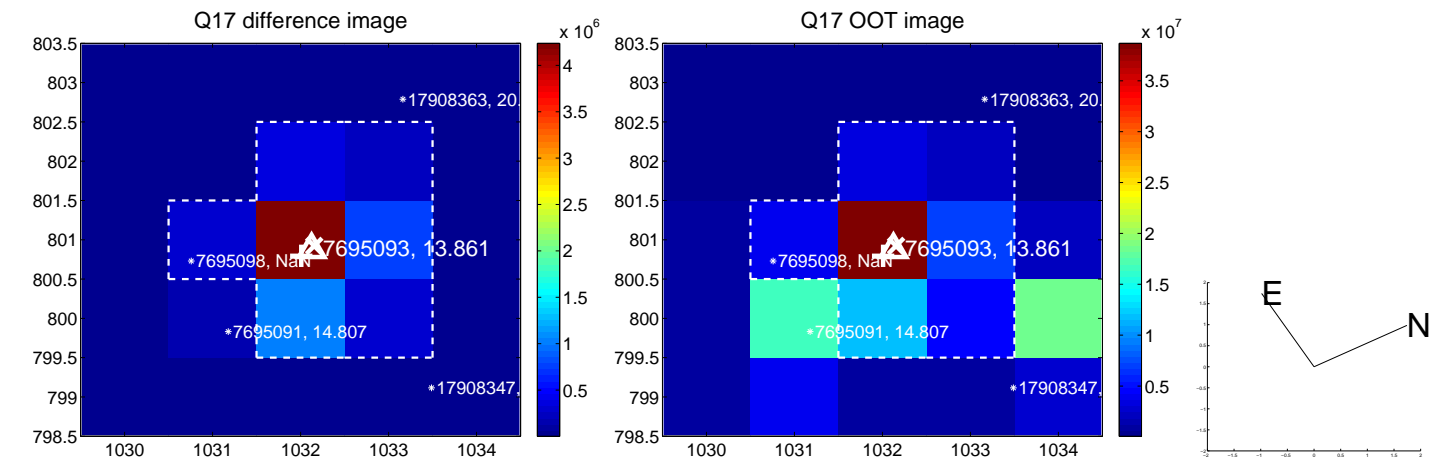
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

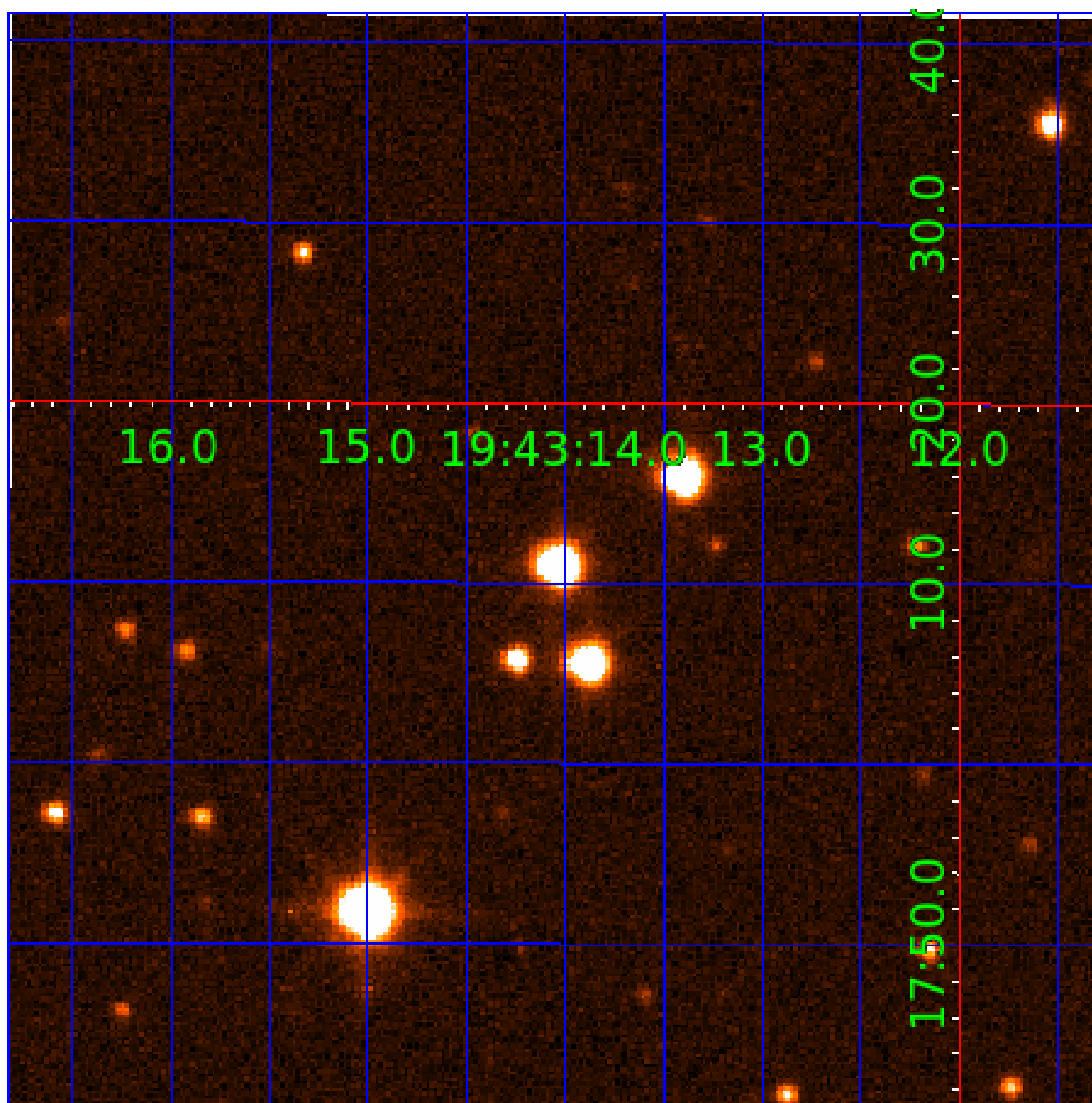


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 007695093

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007695093-01	OBS	6041.01	4.032761	133.302082	119849.4	4.139	9442.4	6688.7	0.96	5960	35.41	447.91
007695093-02	OBS	No	4.032761	135.318537	6054.5	3.983	512.7	509.6	0.96	5960	8.87	447.91

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007695093-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_KIC_POS
007695093-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—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.

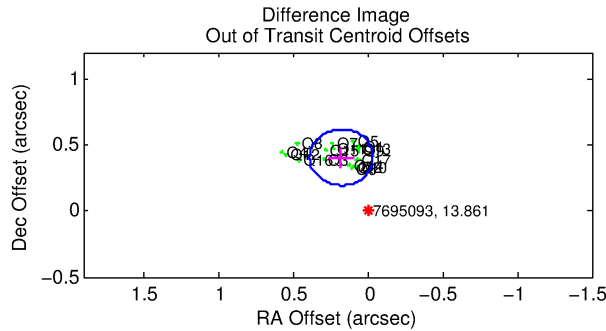
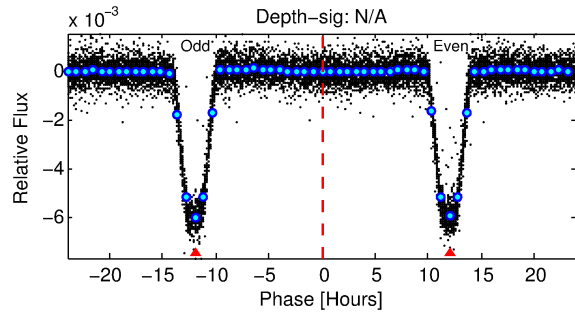
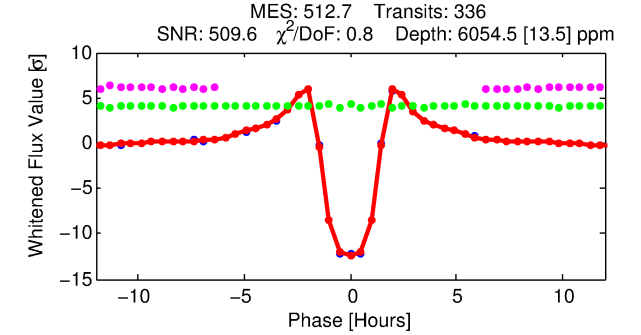
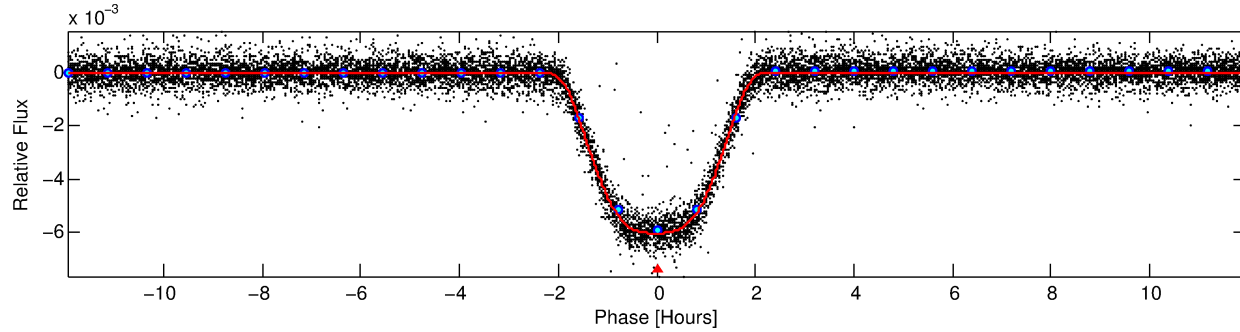
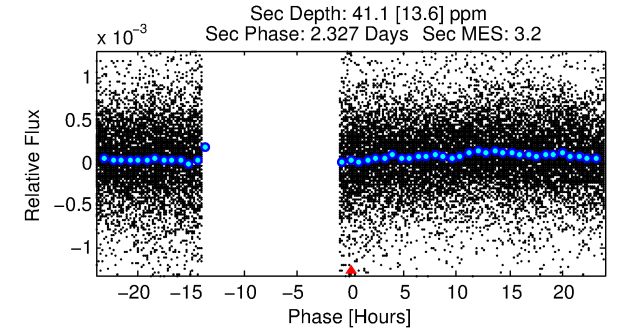
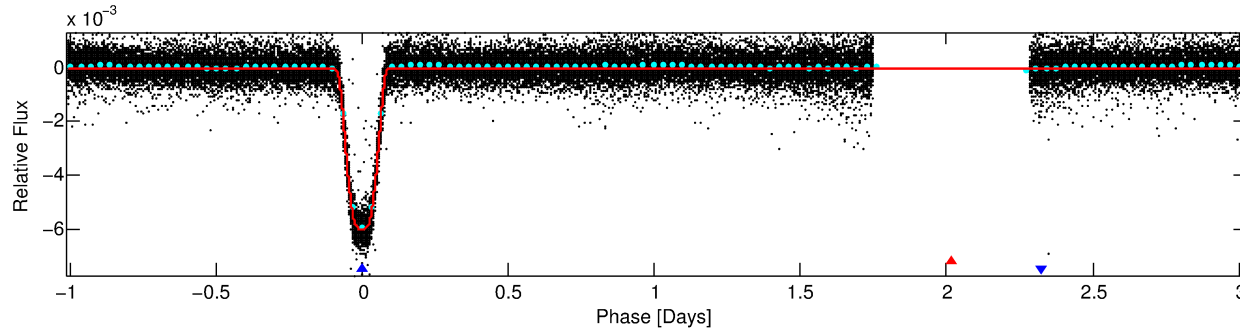
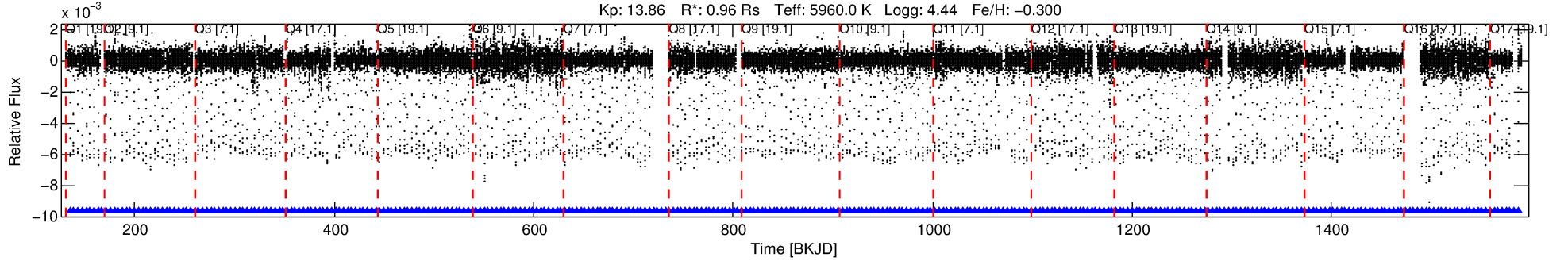
## Ephemeris Match Information For 007695093-02

No Significant Match Found

# DV One-Page Summary

KIC: 7695093 Candidate: 2 of 2 Period: 4.033 d  
KOI: K06041 Corr: No Ephemeris Match

Kp: 13.86 R\*: 0.96 Rs Teff: 5960.0 K Logg: 4.44 Fe/H: -0.300



## DV Fit Results:

Period = 4.03276 [0.00000] d  
Epoch = 135.3185 [0.0001] BKJD  
Rp/R\* = 0.0845 [0.0001]  
a/R\* = 4.81 [0.01]  
b = 0.90 [0.00]  
Seff = 447.91 [167.18]  
Teq = 1173 [109] K  
Rp = 8.87 [2.56] Re  
a = 0.0483 [0.0118] AU  
Ag = 0.67 [0.33] [-1.00σ]  
Teffp = 1642 [143] K [2.61σ]

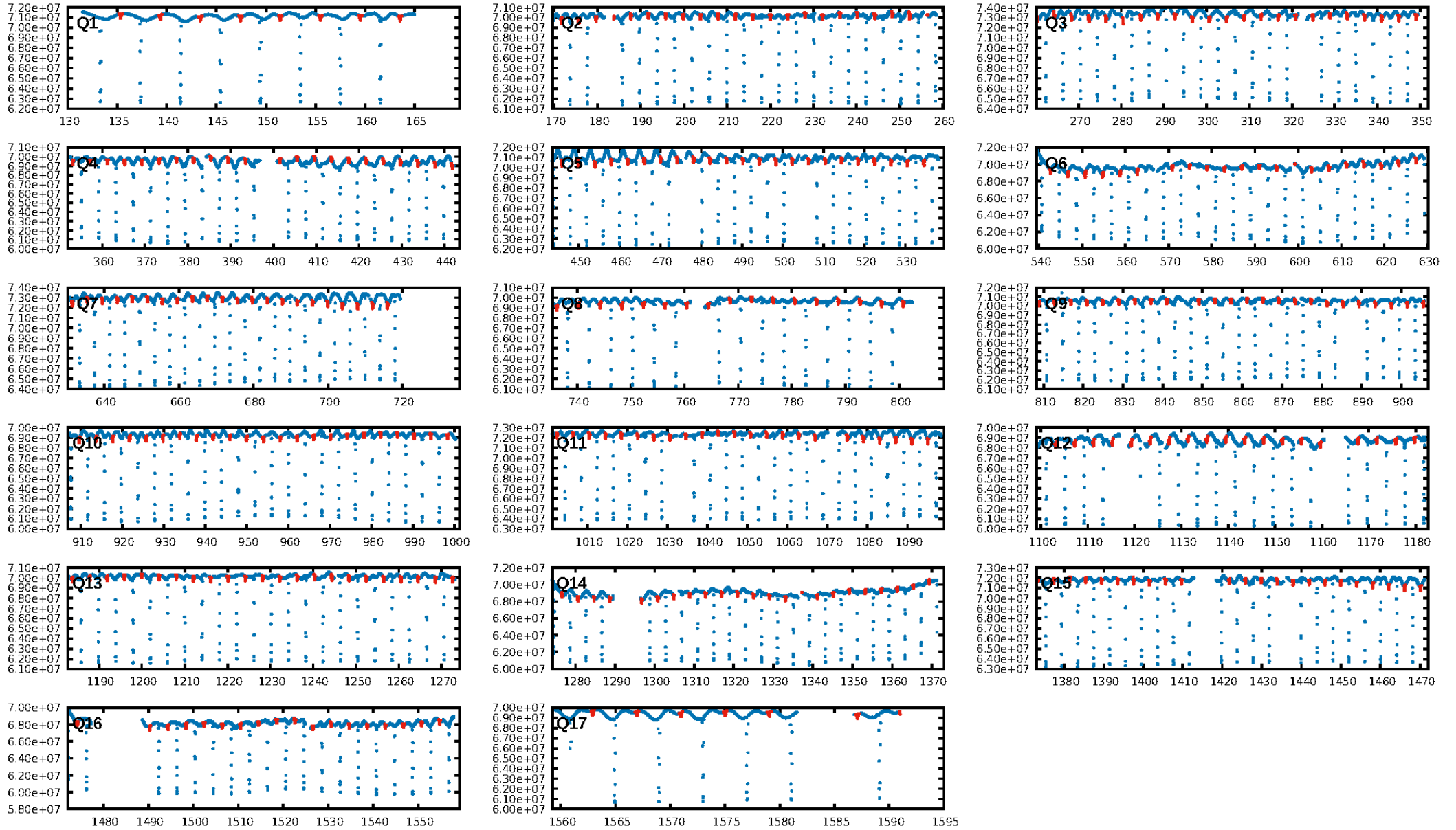
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [322/322]  
GhostDiagnostic-chr: 4.42  
Centroid-sig: 0.0%  
Centroid-so: 1.222 arcsec [99.64σ]  
OotOffset-rm: 0.442 arcsec [6.25σ]  
KicOffset-rm: 0.173 arcsec [2.40σ]  
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: 03-Feb-2016 08:17:03 Z

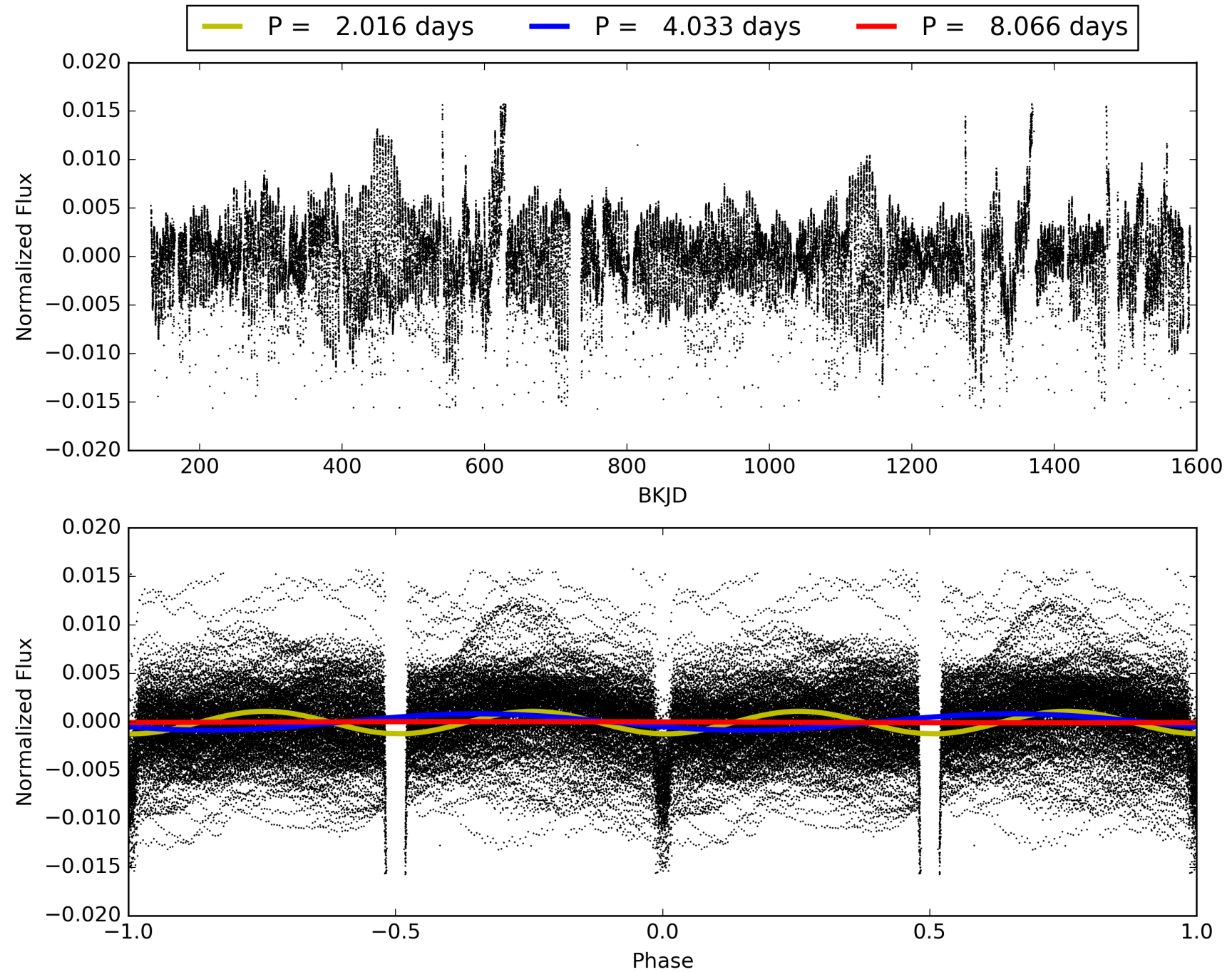
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007695093-02, PDC Light Curves





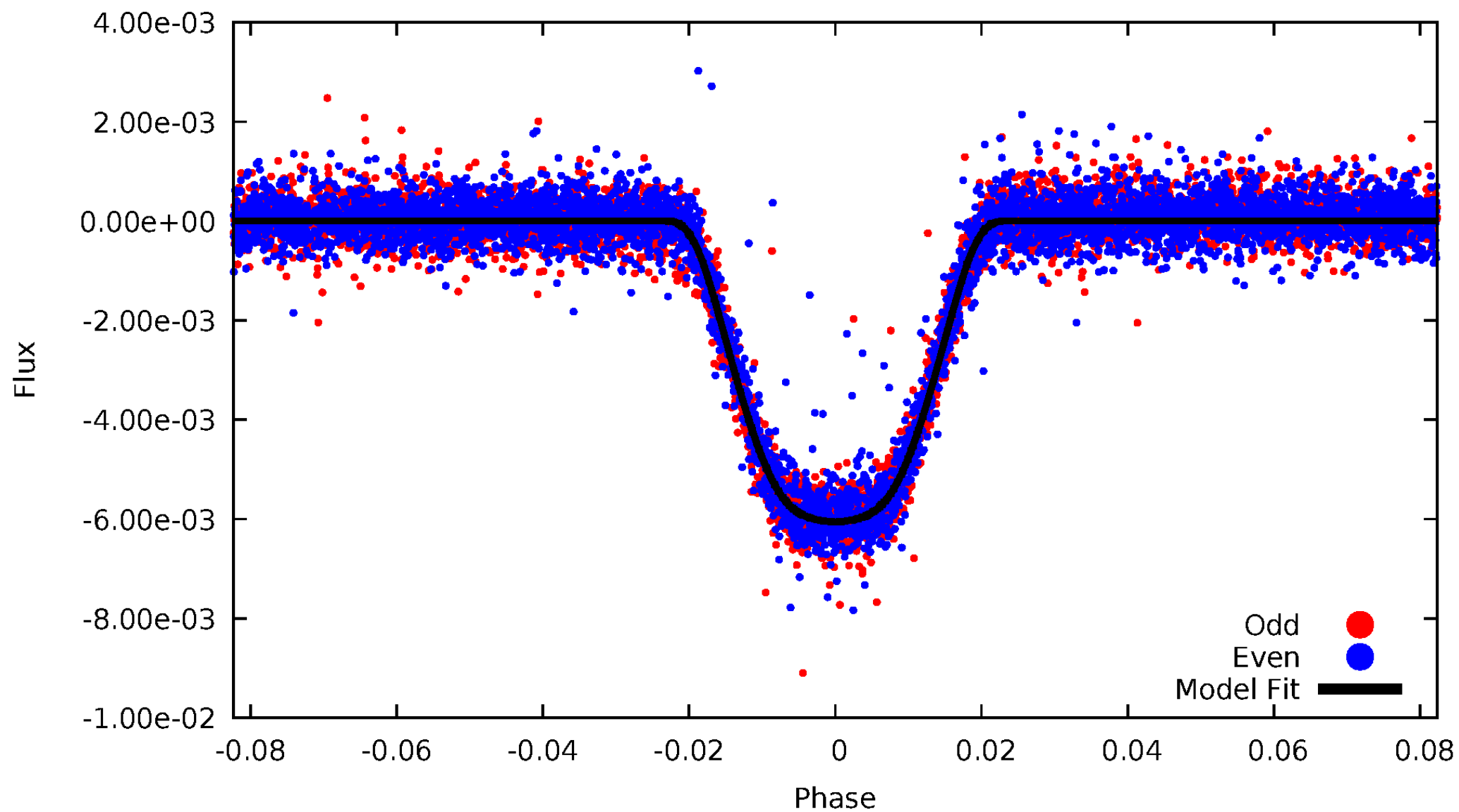
TCE 007695093-02





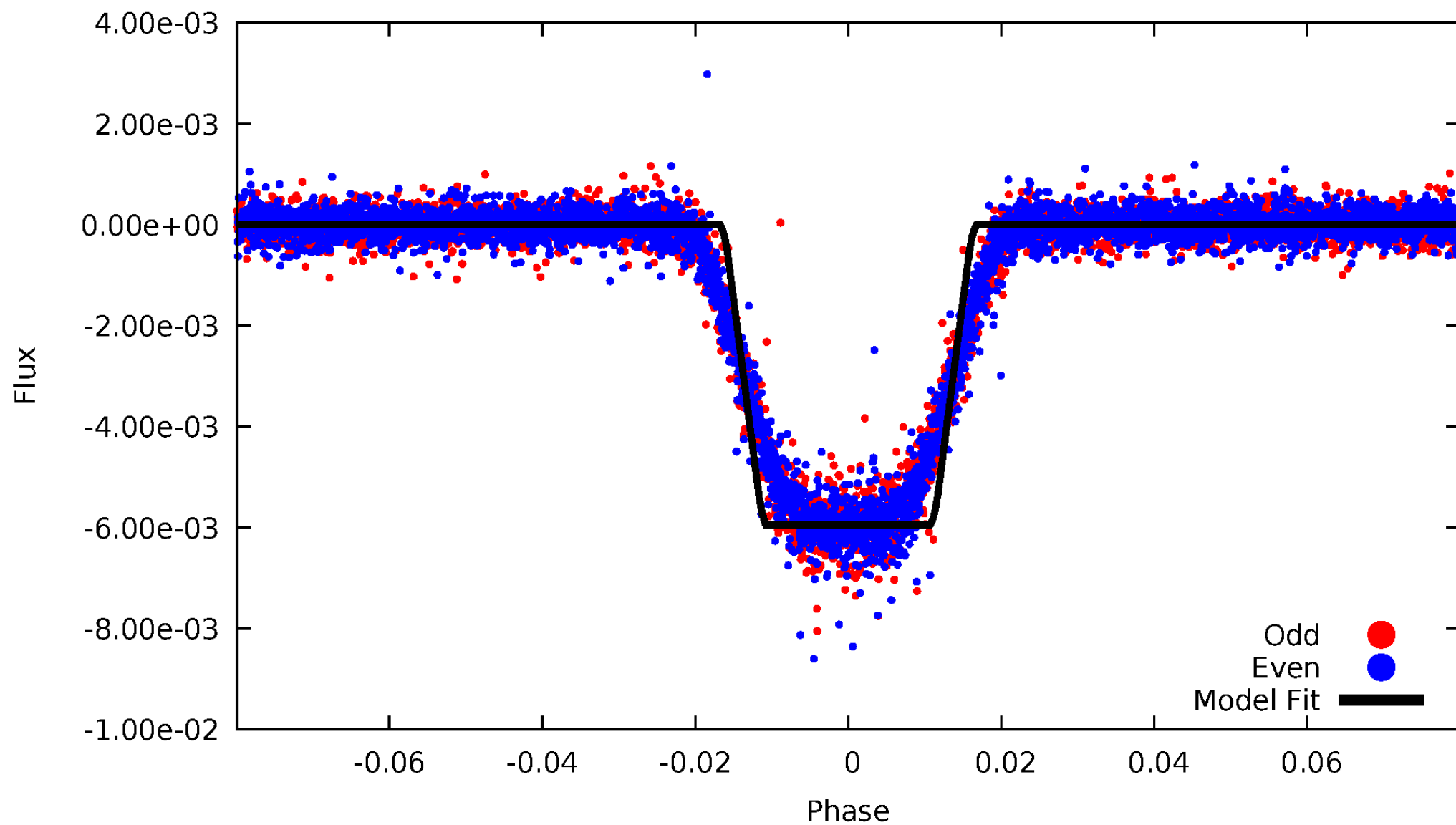
# DV Odd/Even

TCE 007695093-02



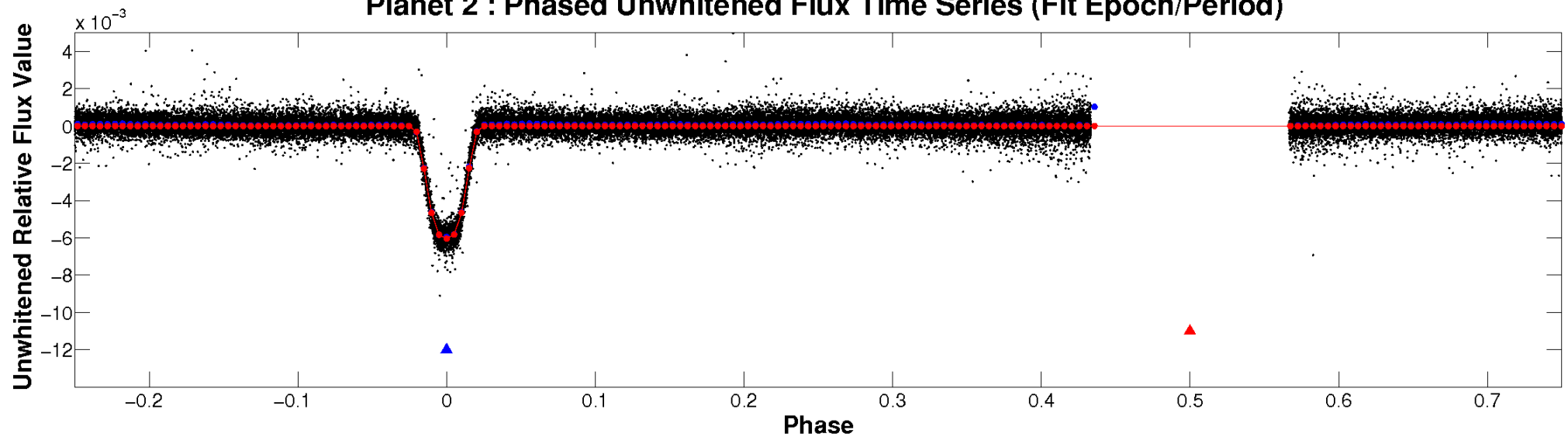
# ALT Odd/Even

TCE 007695093-02

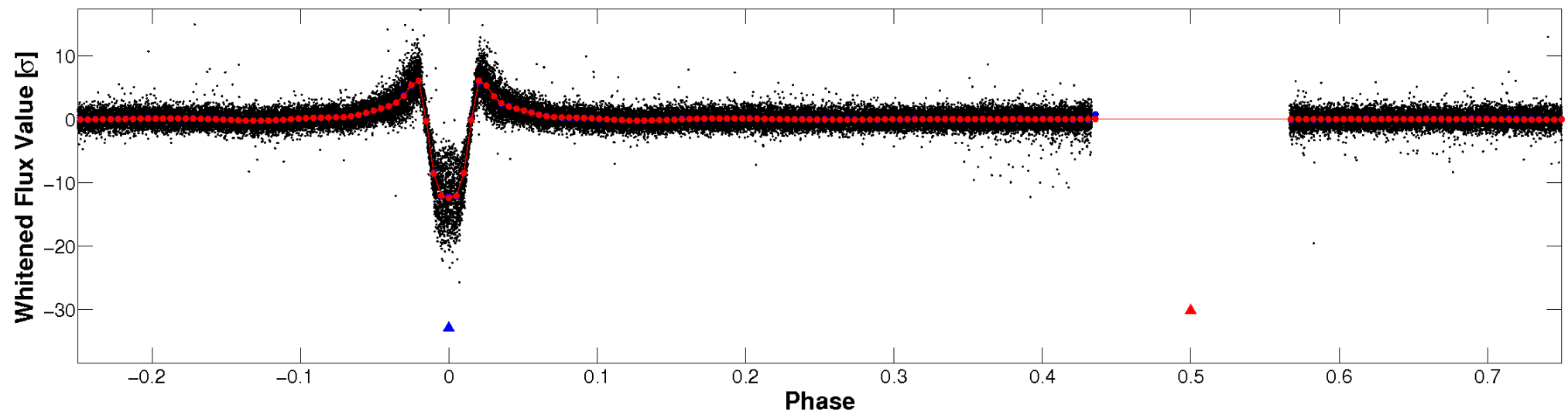


# Non-Whitened Vs. Whitened Light Curve

## Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

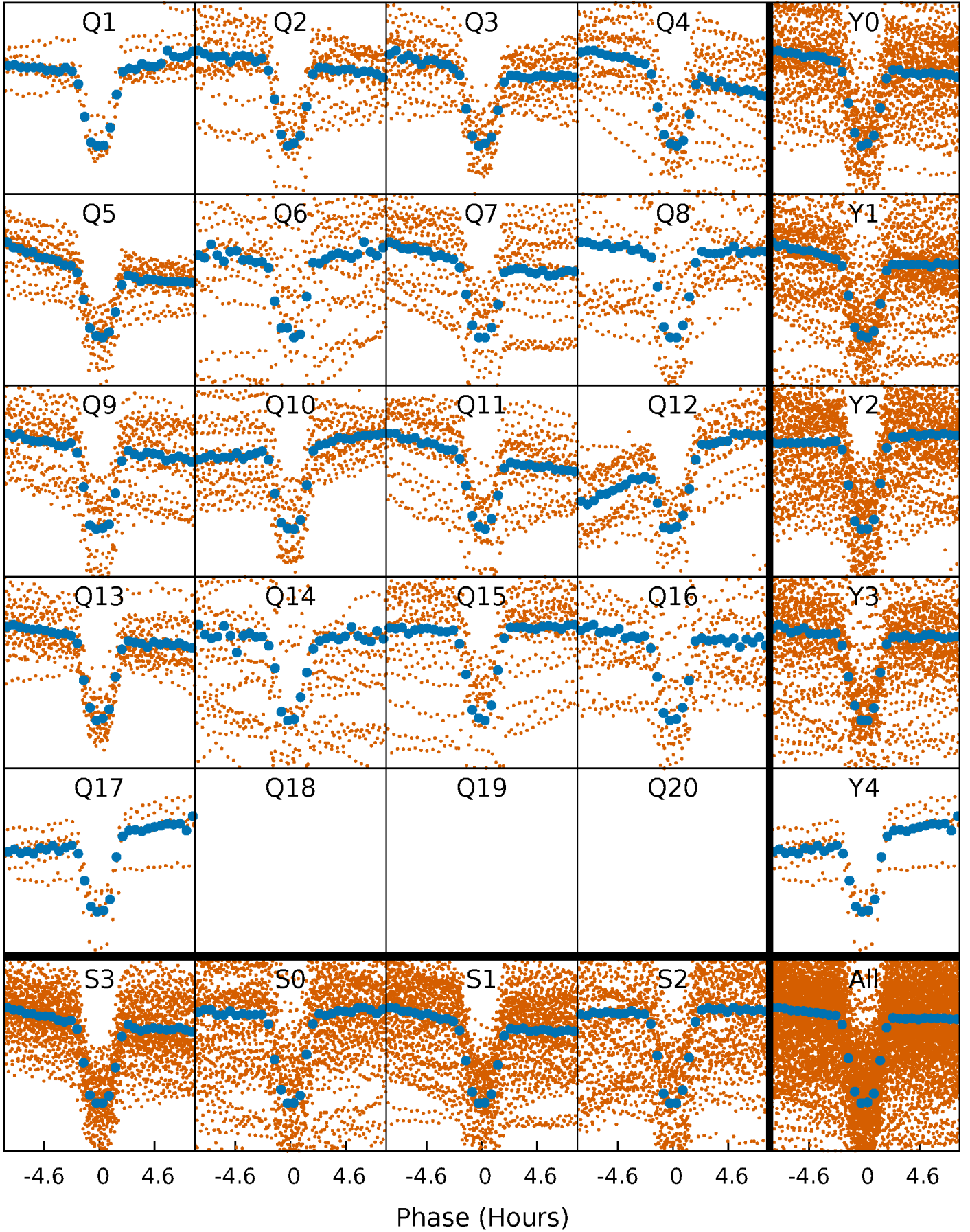


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



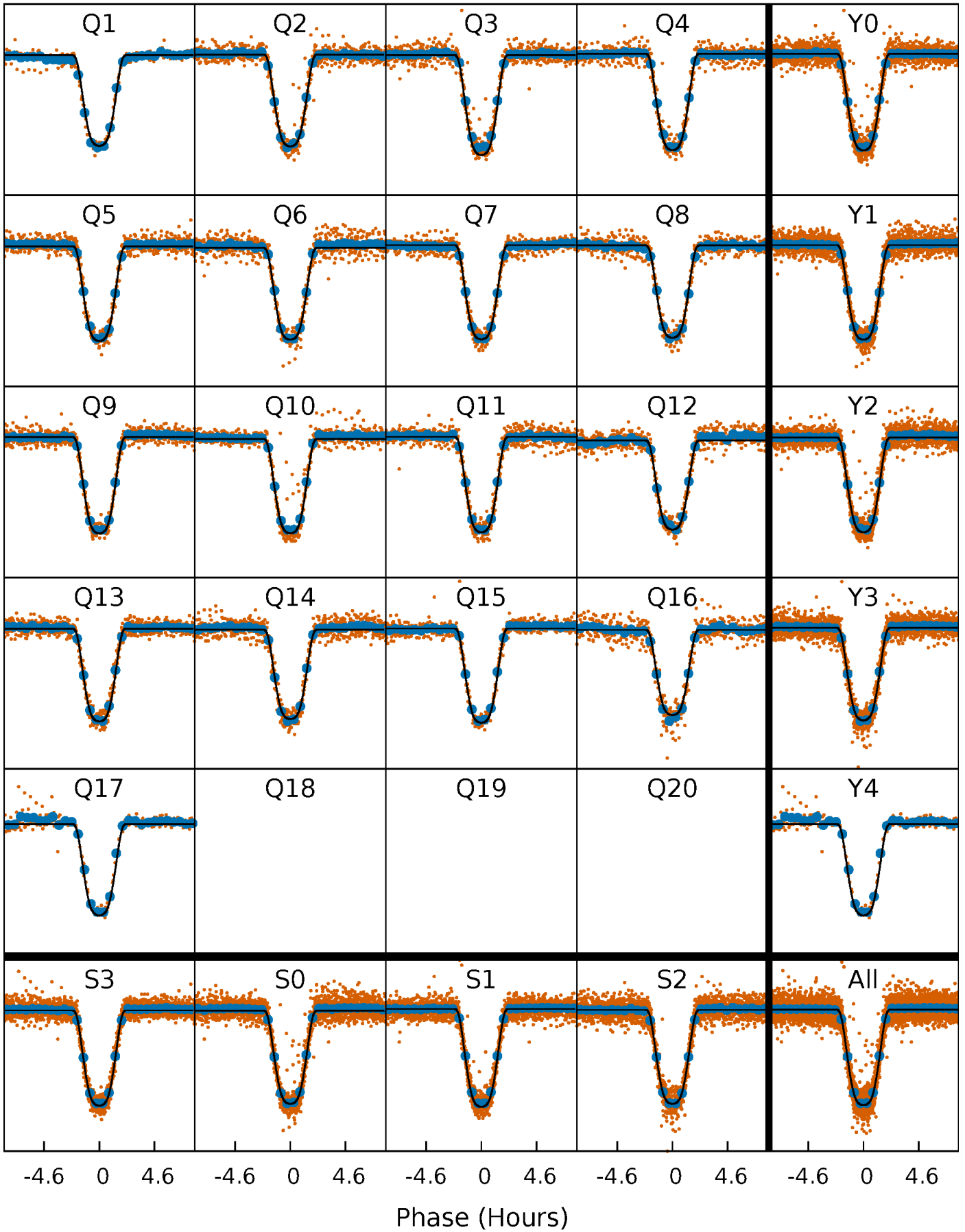
# PDC Quarter-Phased Transit Curves

TCE 007695093-02   P= 4.032761 Days    $T_0=135.318537$  (BKJD)



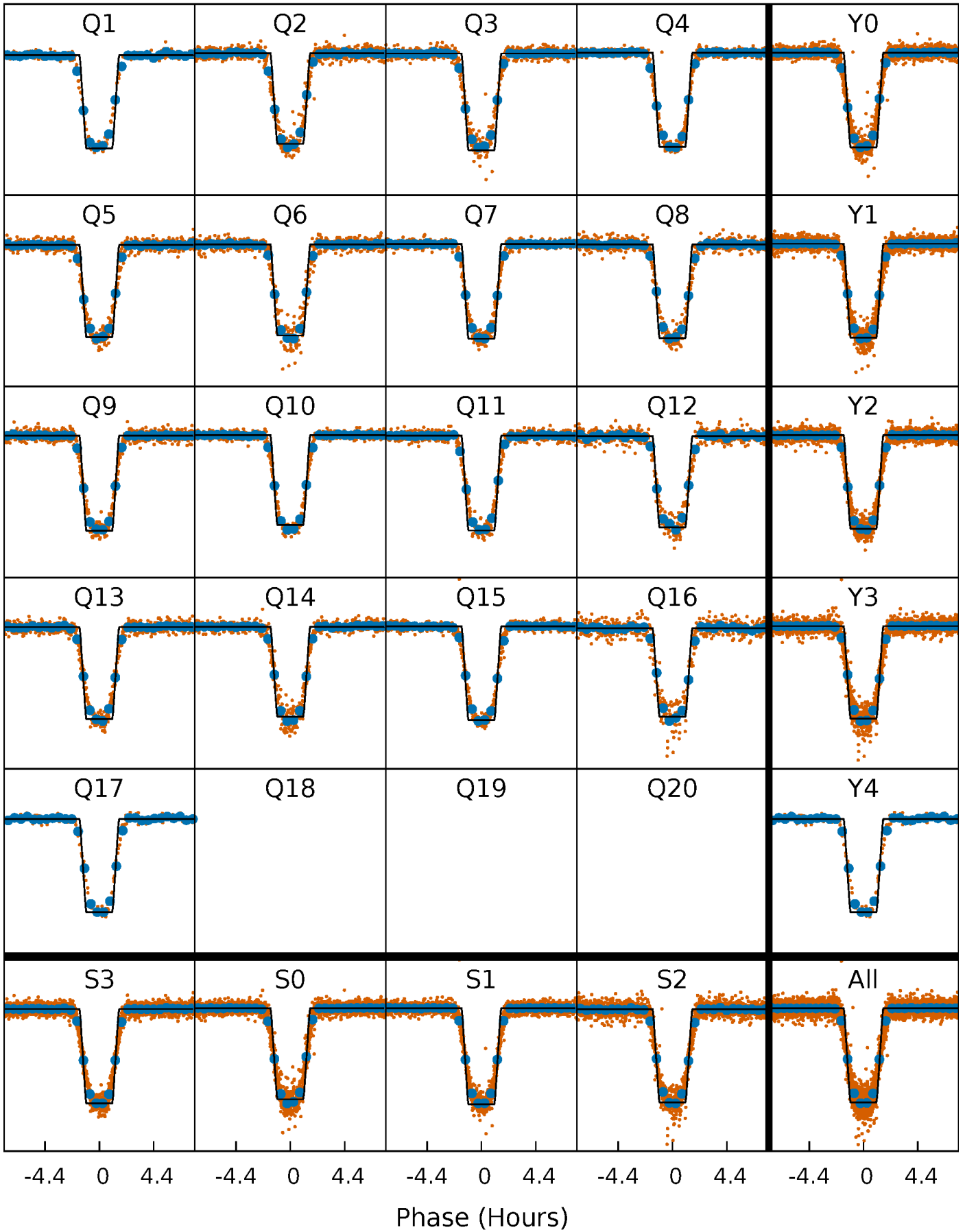
# DV Quarter-Phased Transit Curves

TCE 007695093-02   P= 4.032761 Days    $T_0=135.318537$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

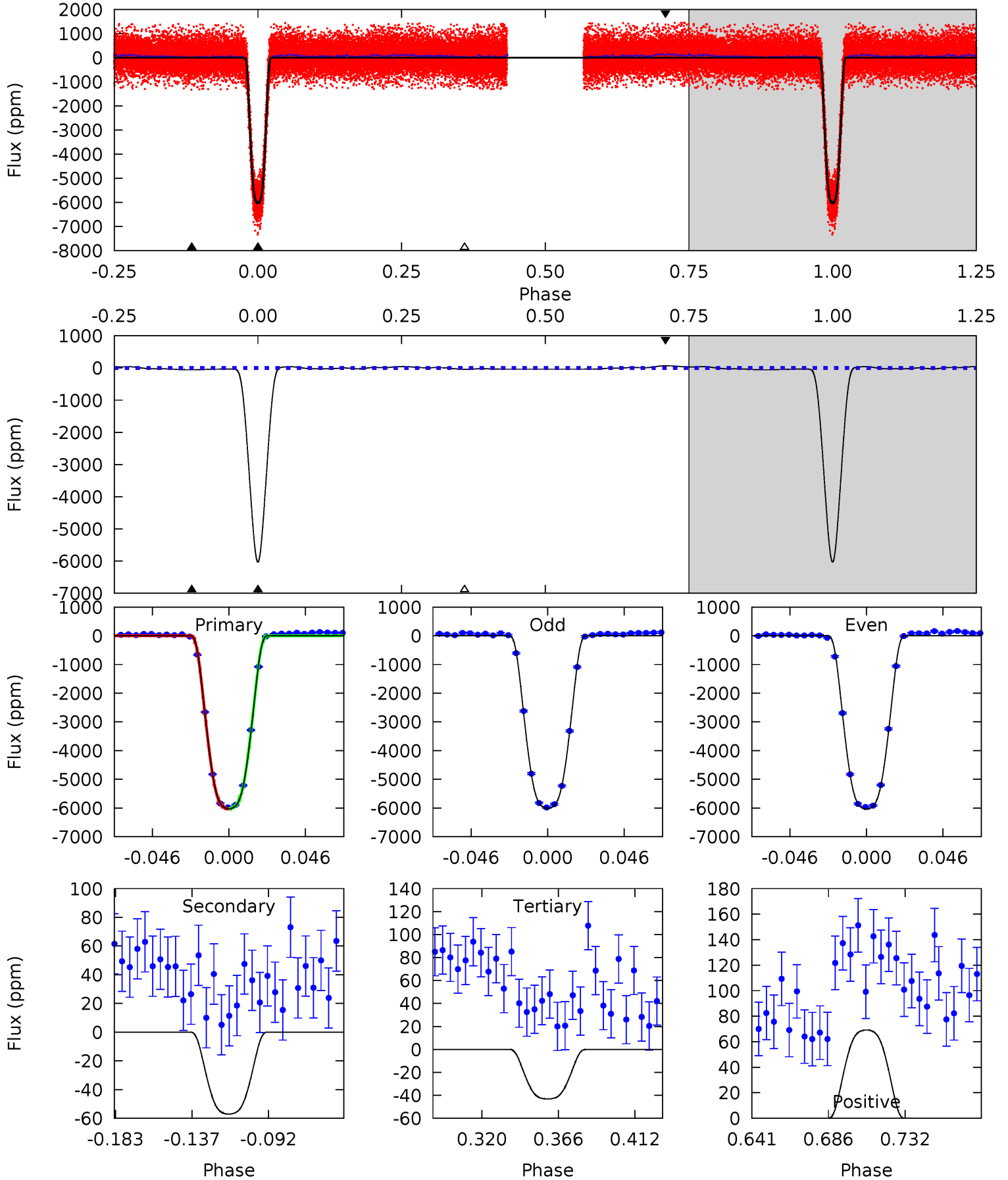
TCE 007695093-02   P= 4.032752 Days    $T_0=135.320121$  (BKJD)



# DV Model-Shift Uniqueness Test

007695093-02, P = 4.032761 Days, E = 131.285776 Days

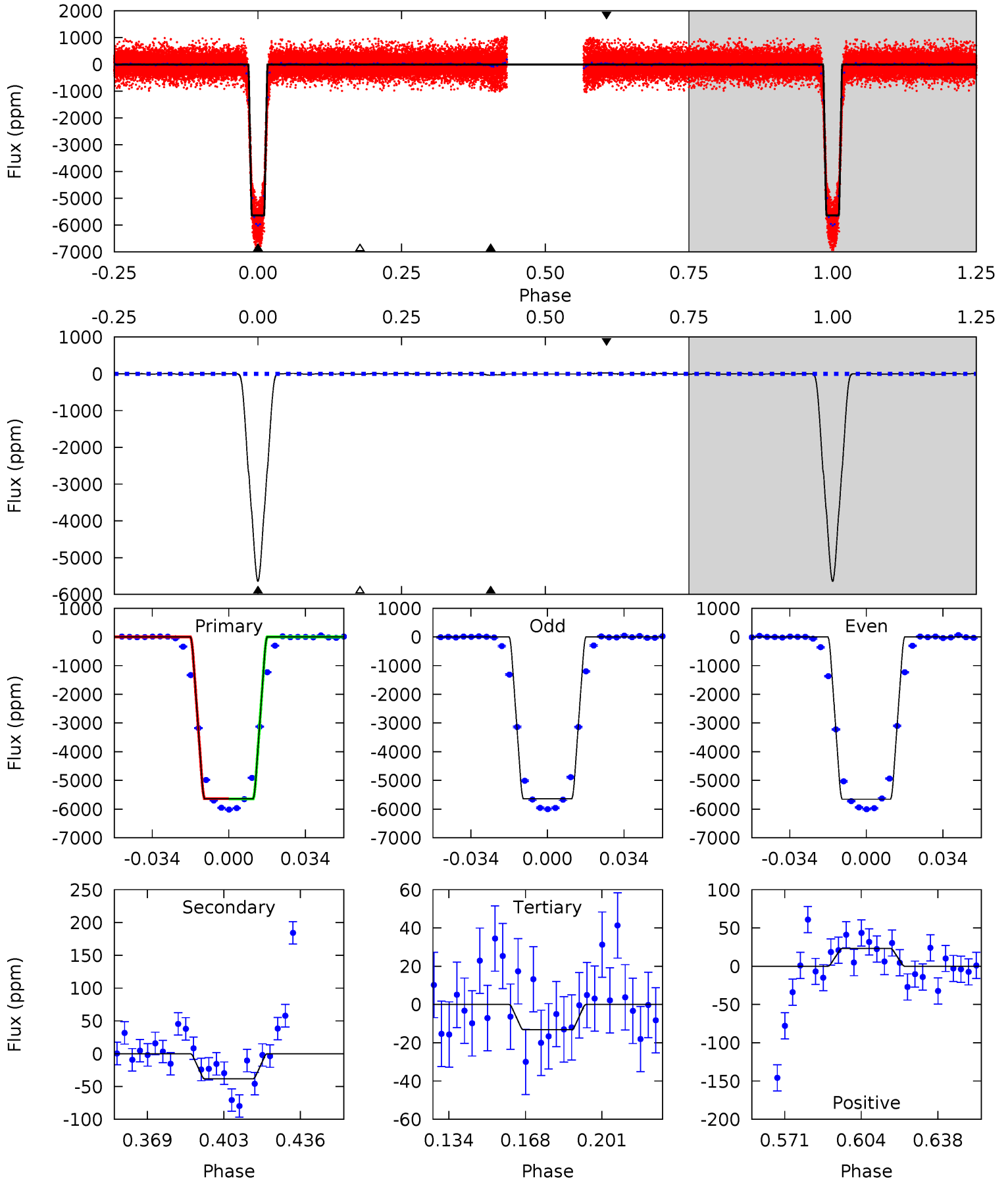
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
862.7	8.16	6.18	9.90	4.73	2.00	4.12	856.5	852.8	1.98	-1.74	1.82	1.00	0.01	1.26



# Alt Model-Shift Uniqueness Test

007695093-02, P = 4.032752 Days, E = 131.287369 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
1021	6.92	2.39	4.19	4.79	2.13	1.21	1018	1016	4.53	2.73	1.38	1.00	0.00	0.33





### Stellar Parameters For KIC 007695093

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5960^{+161}_{-161}$	$4.438^{+0.098}_{-0.196}$	$-0.300^{+0.300}_{-0.300}$	$0.962^{+0.278}_{-0.139}$	$0.927^{+0.119}_{-0.108}$	$1.466^{+0.649}_{-0.728}$
	+3%/-3%	+2%/-4%	+100%/-100%	+29%/-14%	+13%/-12%	+44%/-50%
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 007695093-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-57 \pm 7$	$9.09^{+1.53}_{-0.82}$	$1670^{+133}_{-93}$	$2461^{+72}_{-84}$	$0.862^{+0.217}_{-0.231}$
Alt.	$-38 \pm 6$	$8.26^{+1.25}_{-0.77}$	$1662^{+119}_{-91}$	$2360^{+79}_{-106}$	$0.702^{+0.187}_{-0.179}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

$T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{\text{obs}}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{\text{obs}} \gg T_{\text{max}}$  AND  $A_{\text{obs}} \gg 1.0$

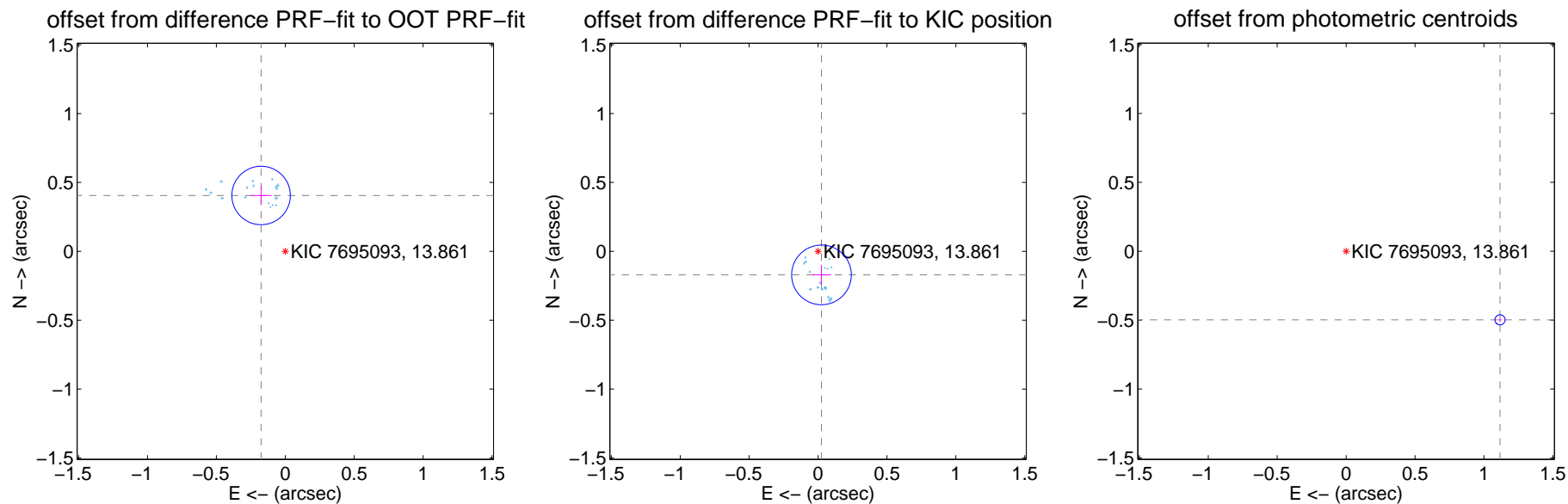
## DV Centroid Data

Supplemental centroid analysis for 007695093-02. Kepler magnitude: 13.86. Transit SNR 509.64

There are 17 quarters with good PRF difference image offsets

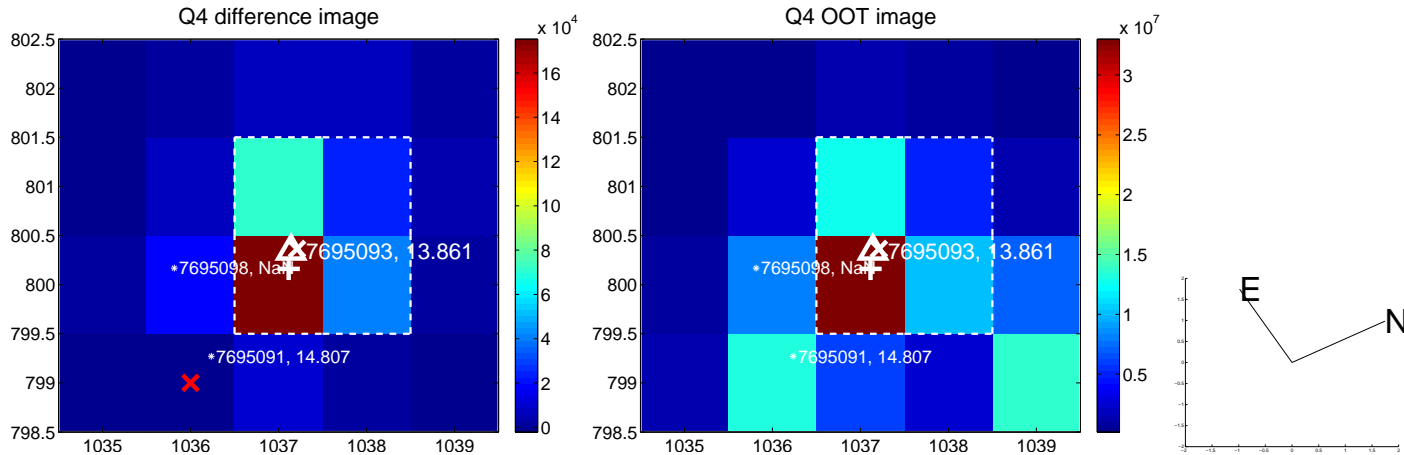
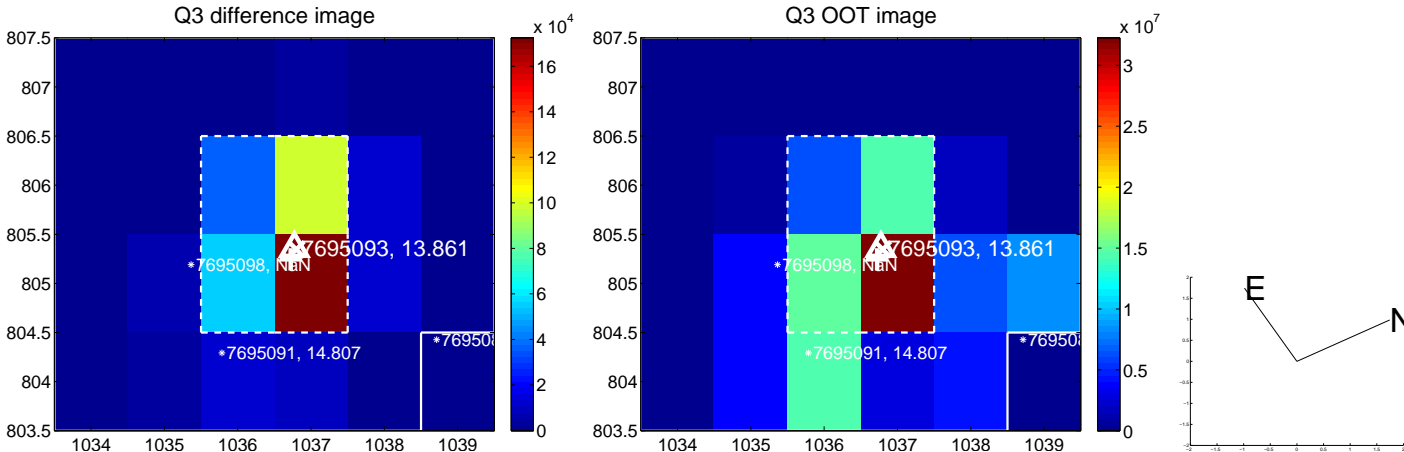
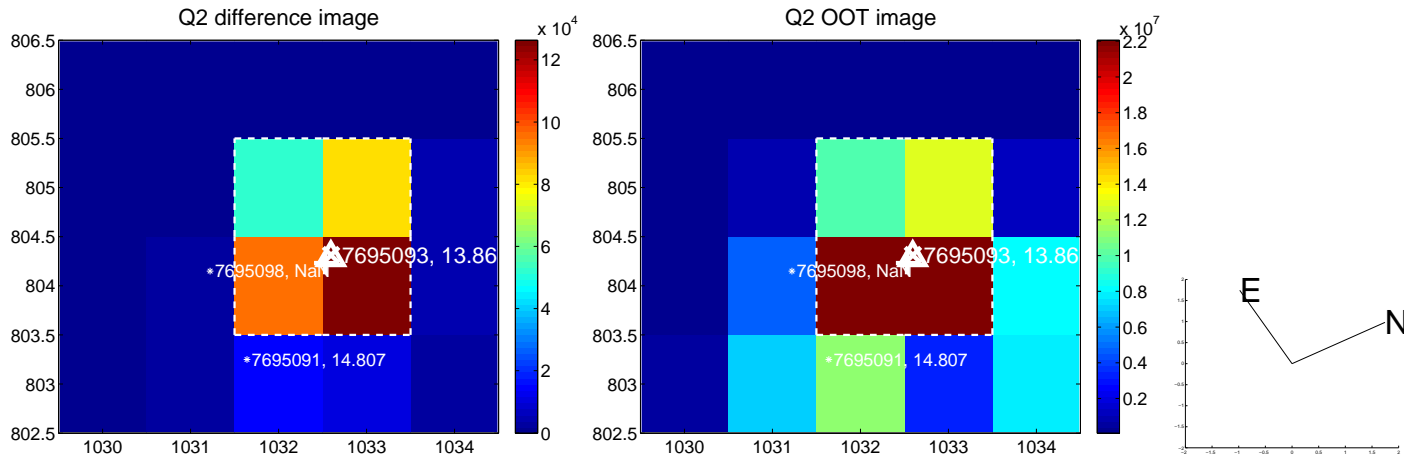
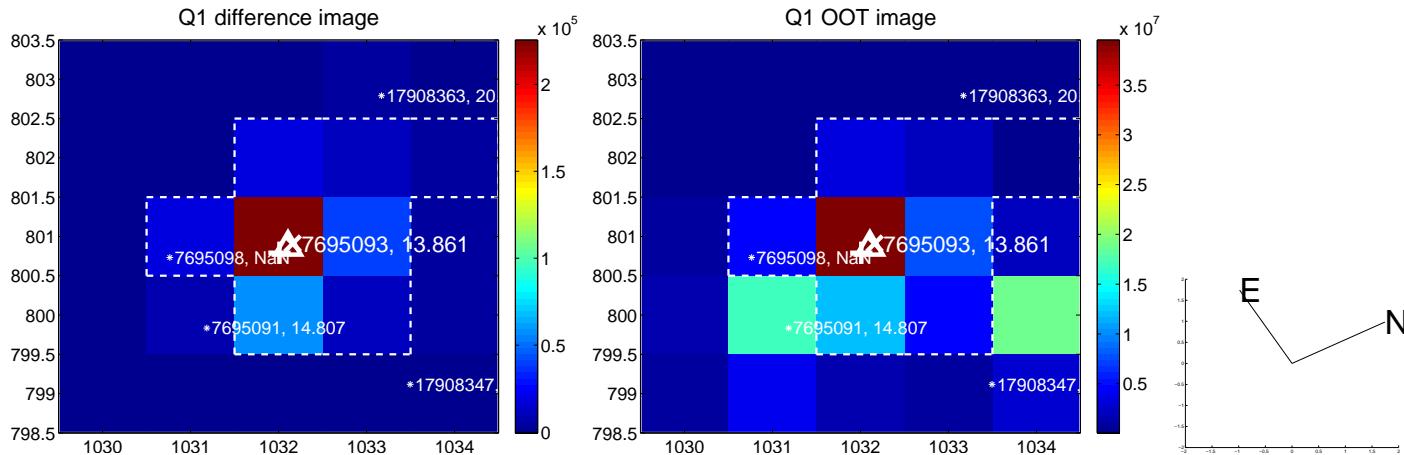
The direct PRF centroid is offset from the target star catalog position by about 0.76 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.442 \pm 0.071$	6.25	$0.176 \pm 0.077$	$0.405 \pm 0.070$
PRF-fit source offset from KIC position	$0.173 \pm 0.072$	2.40	$-0.025 \pm 0.069$	$-0.171 \pm 0.072$
photometric centroid source offset	$1.22 \pm 0.01$	99.64	$-1.12 \pm 0.01$	$-0.50 \pm 0.02$

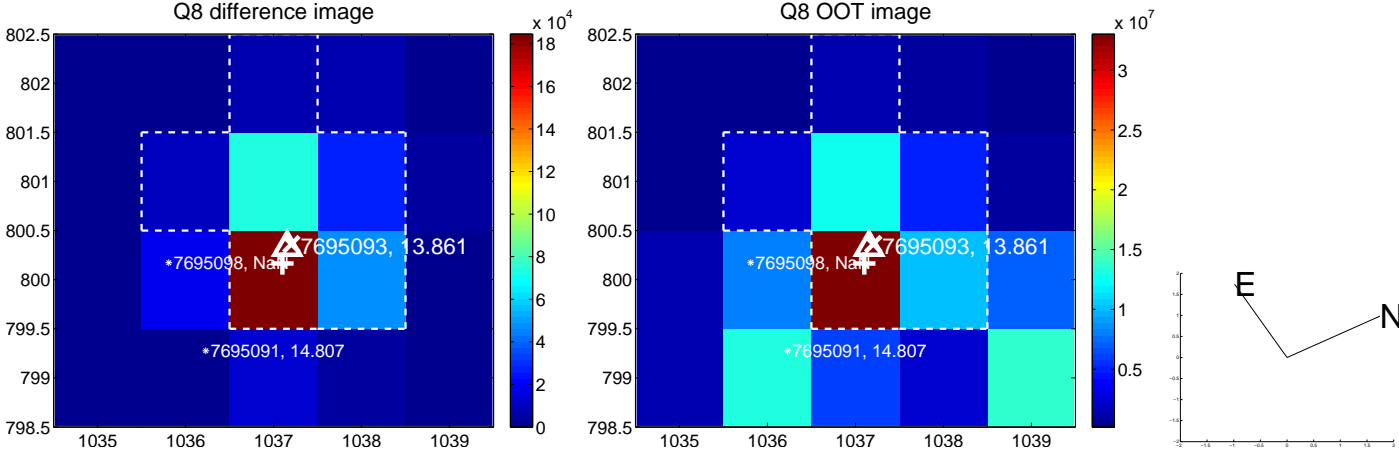
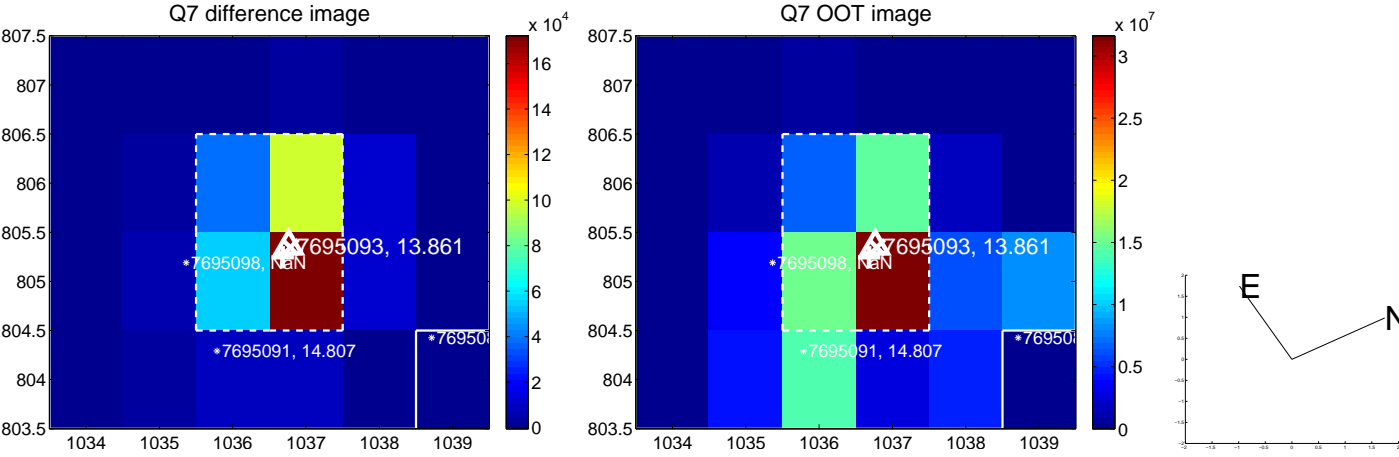
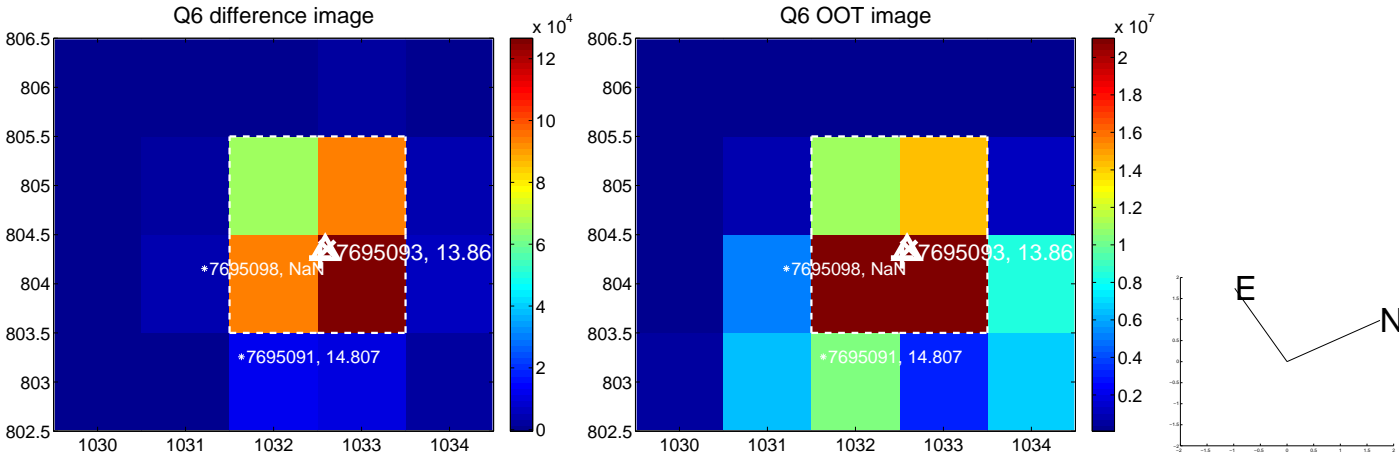
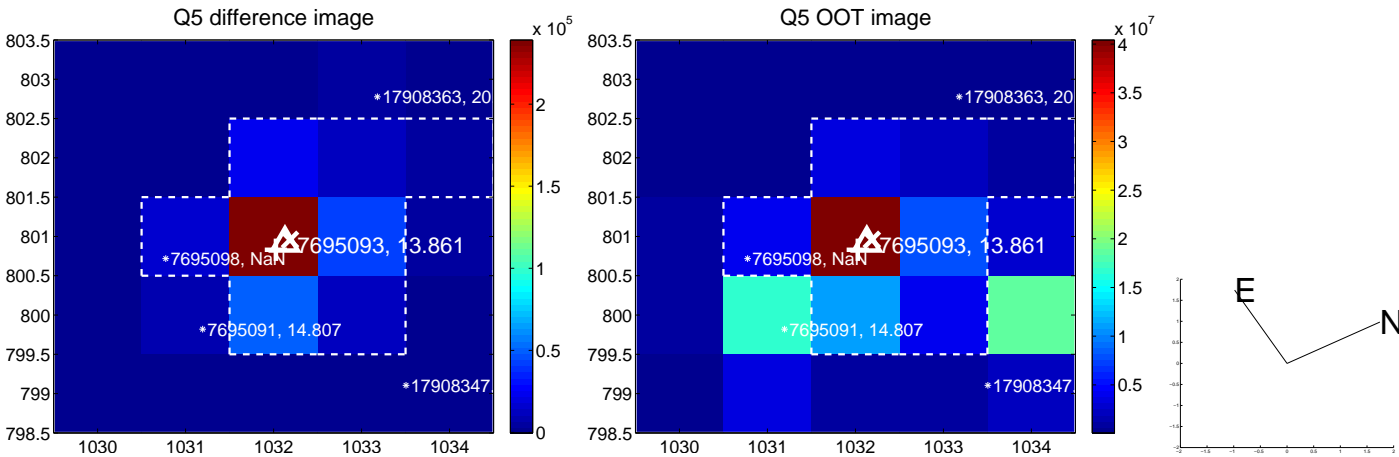


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

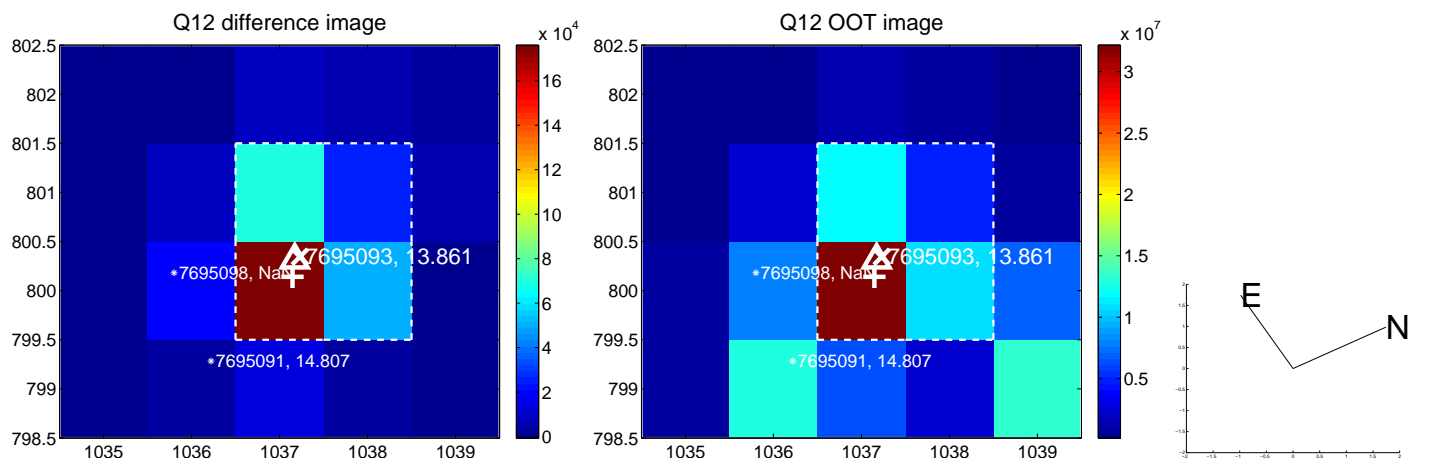
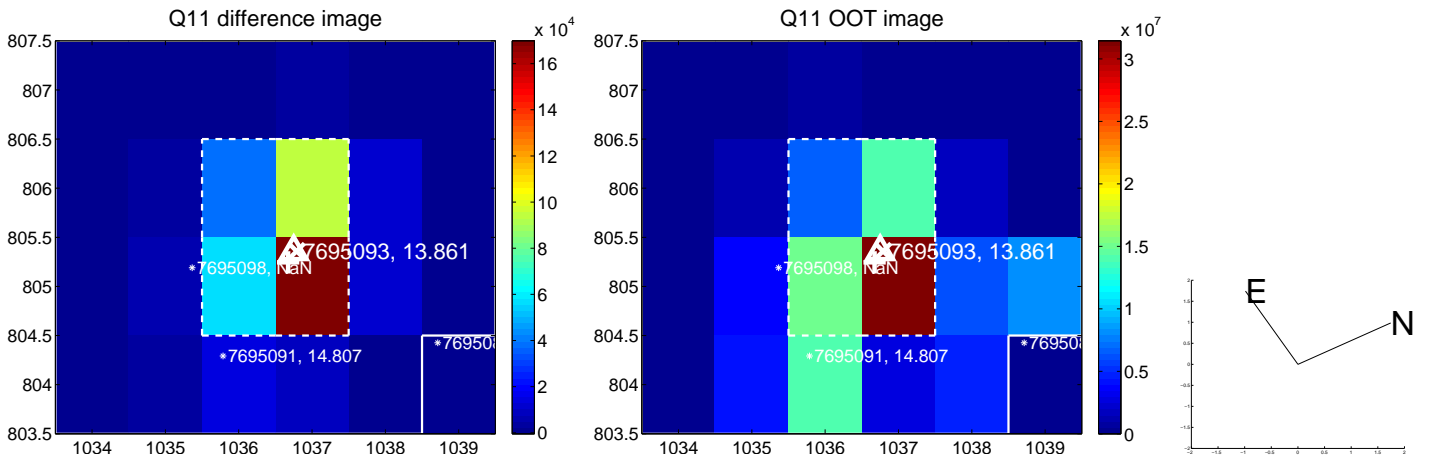
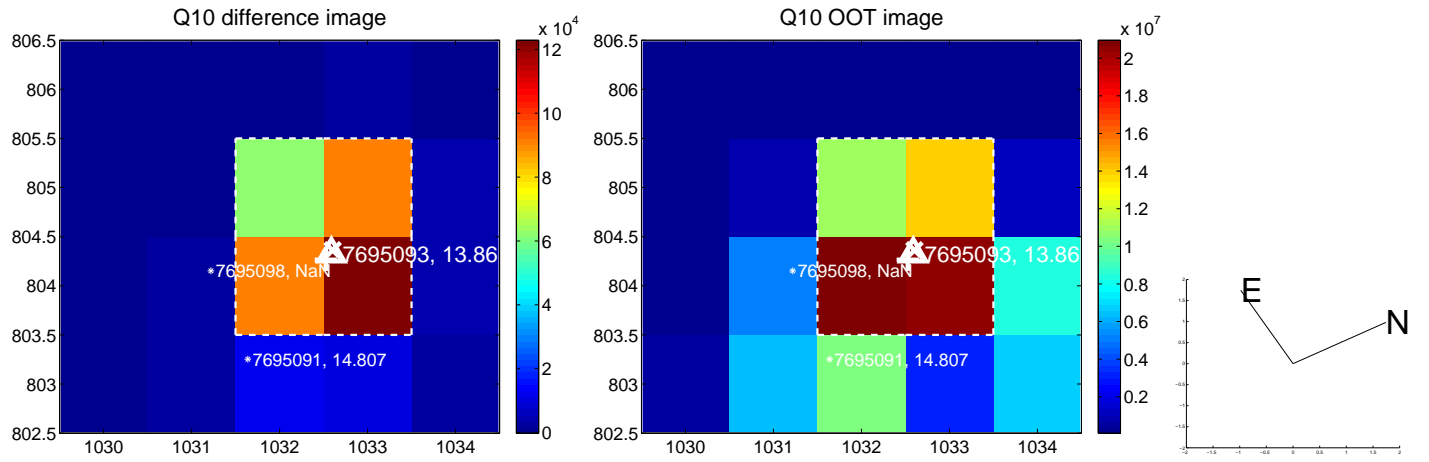
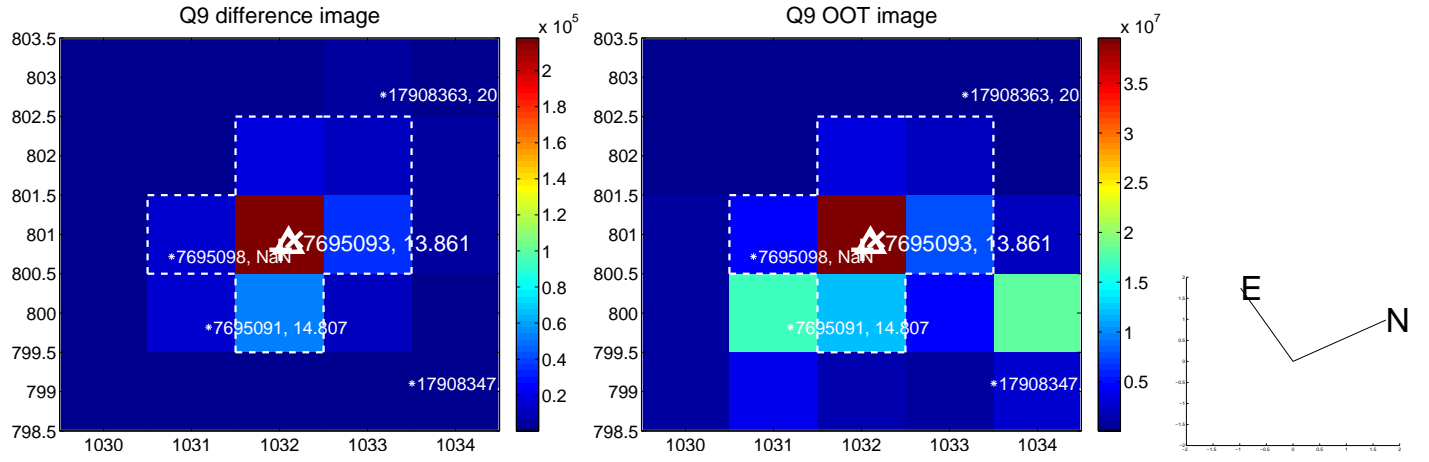
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



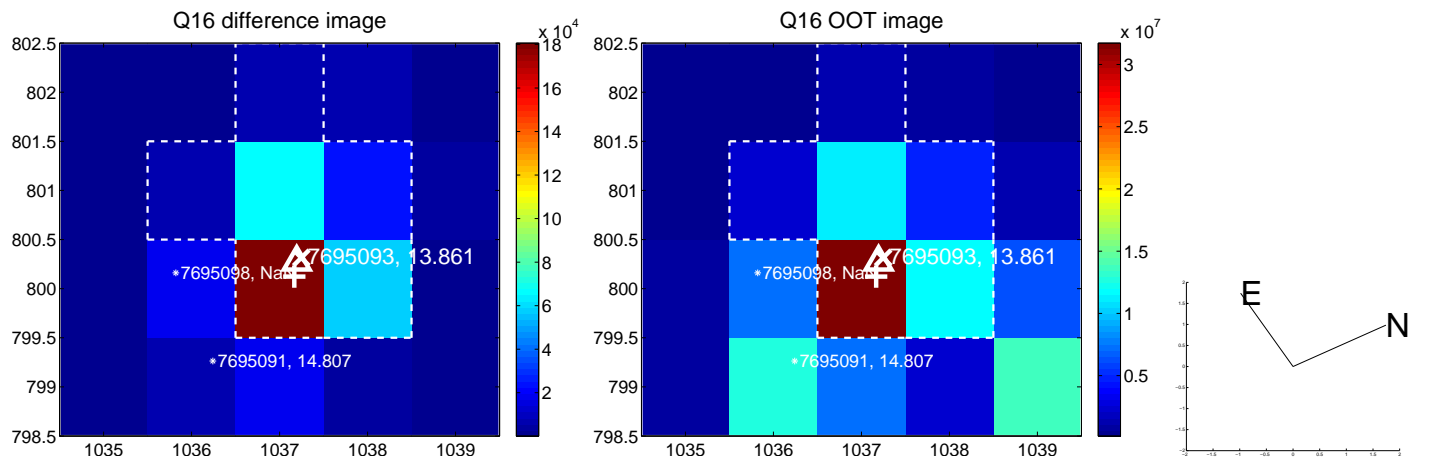
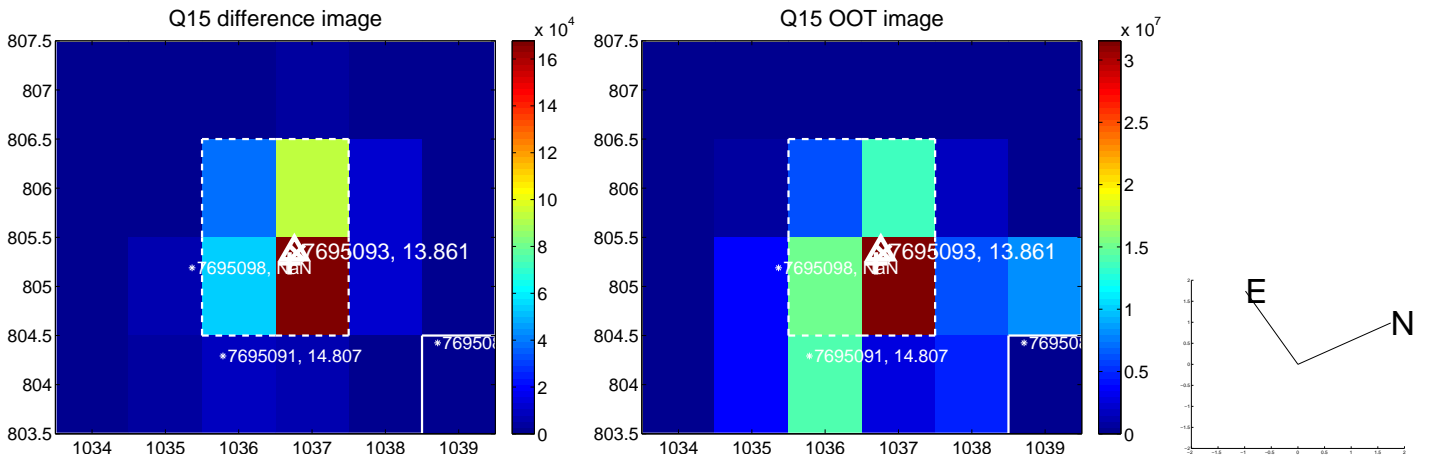
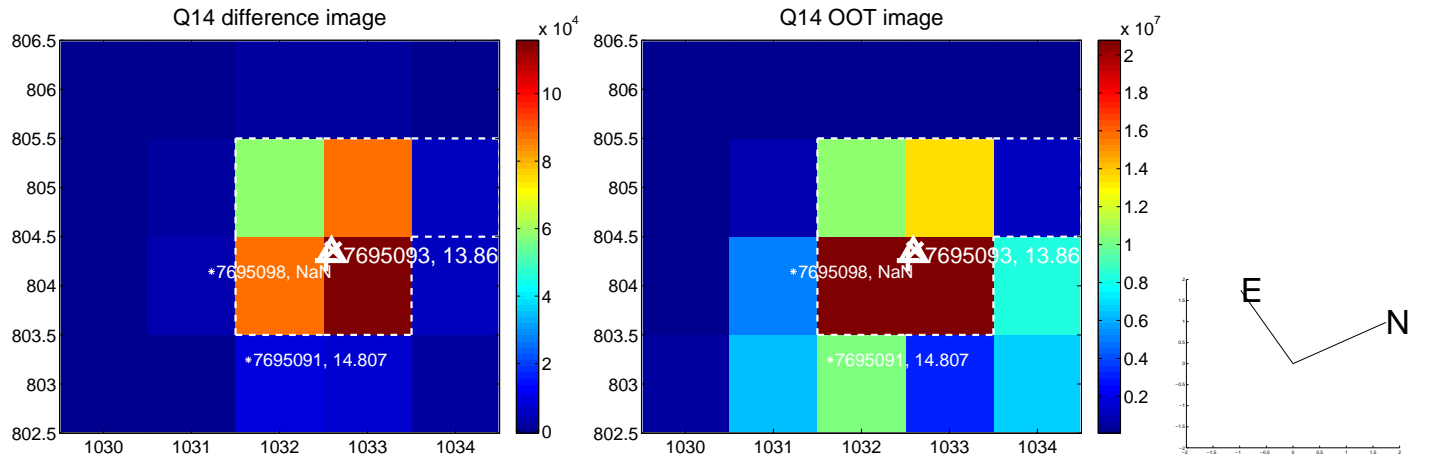
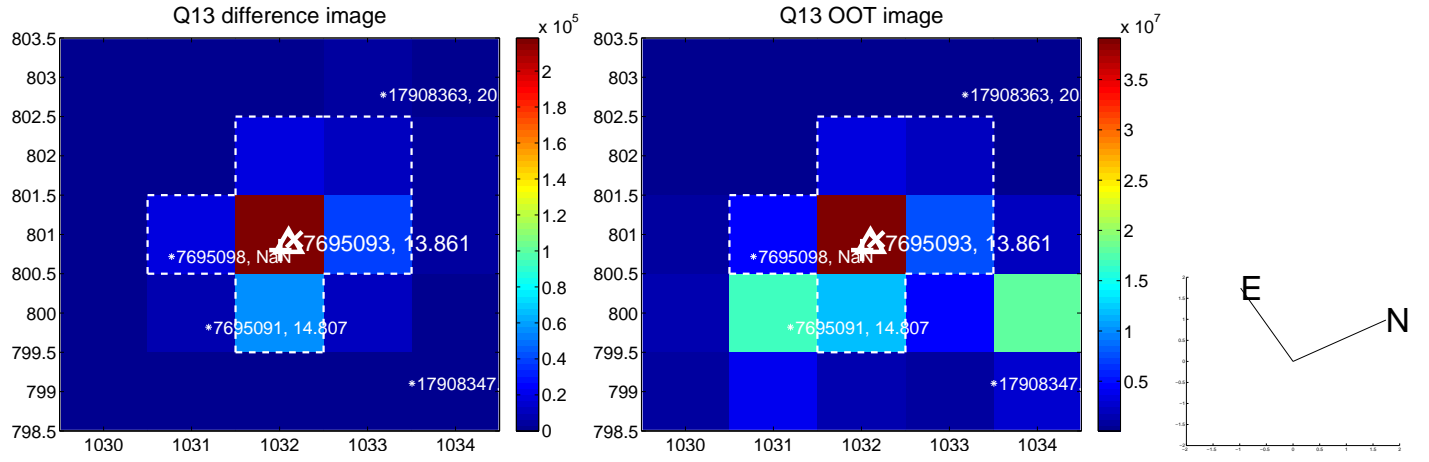
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



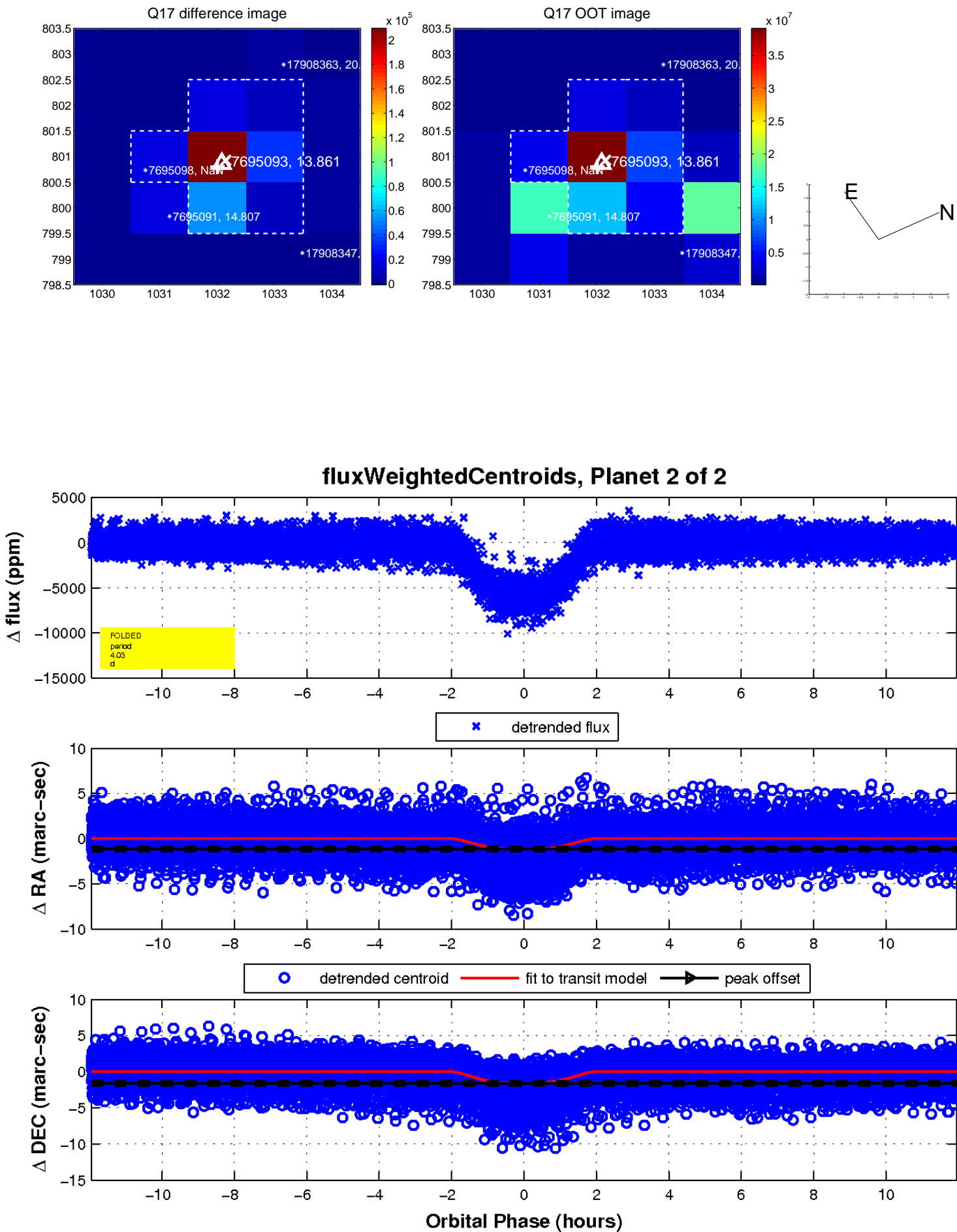
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

