

# KIC 006314173

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006314173-01	OBS	3708.01	1.433247	132.832364	433055.4	3.500	2507.0	-1.0	1.96	7311	106.89	12427.86
006314173-02	OBS	No	1.433216	132.134849	41585.1	4.683	226.2	215.9	1.96	7311	46.47	12428.22

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006314173-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_ALT—HAS_SEC_TCE—SEASONAL_DEPTH_DV—SEASONAL_DEPTH_ALT—CENT_NOFITS
006314173-02	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.

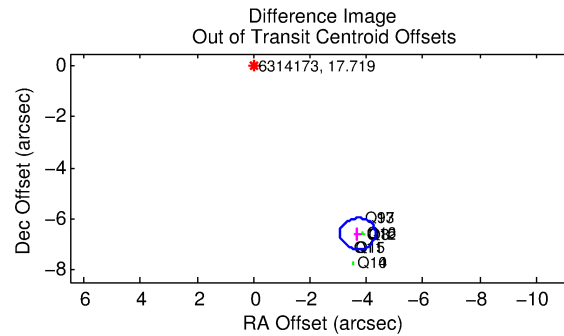
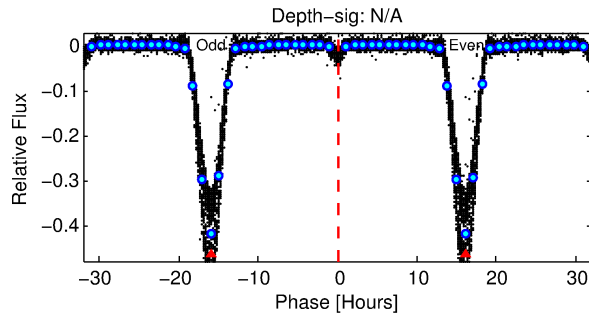
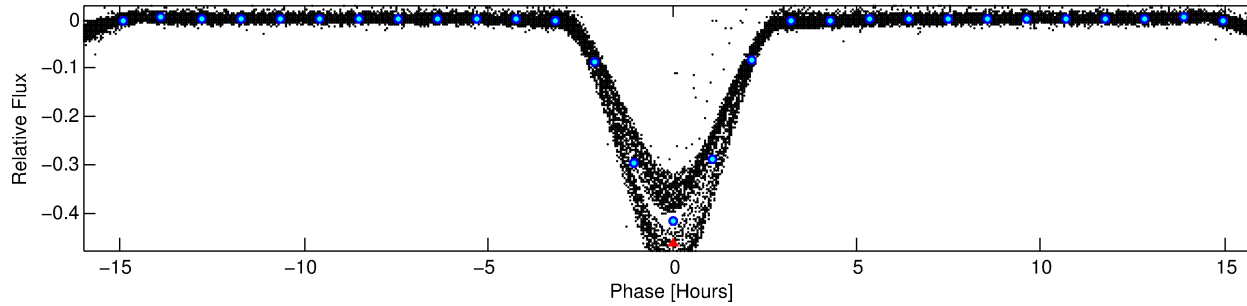
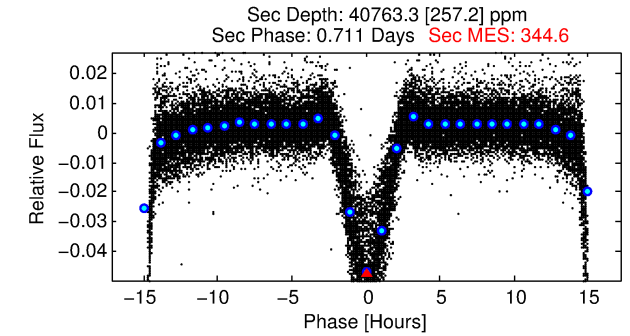
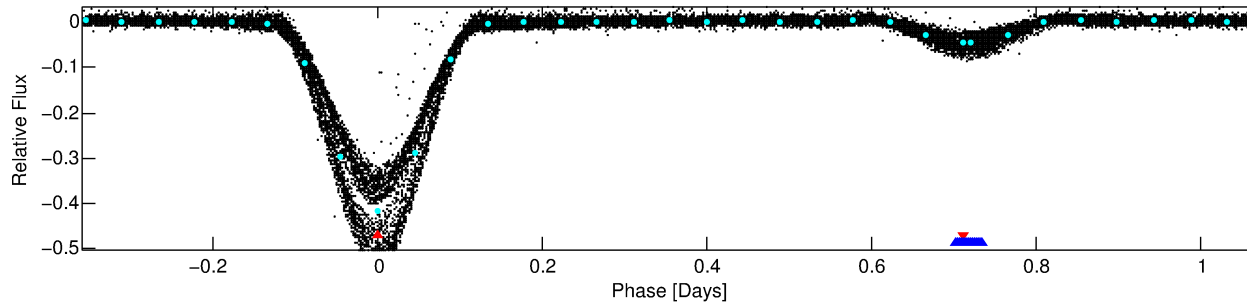
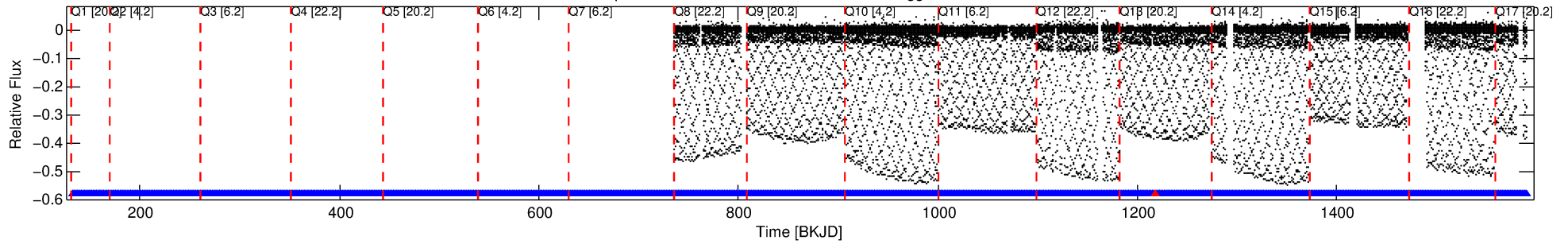
## Ephemeris Match Information For 006314173-01

No Significant Match Found

# DV One-Page Summary

KIC: 6314173 Candidate: 1 of 2 Period: 1.433 d  
KOI: K03708 Corr: No Ephemeris Match

Kp: 17.72 R\*: 1.96 Rs Teff: 7311.0 K Logg: 4.01 Fe/H: -0.400



## TPS TCE Results:

Period = 1.43325 d  
Epoch = 132.8324 BKJD

DV fit results are unavailable

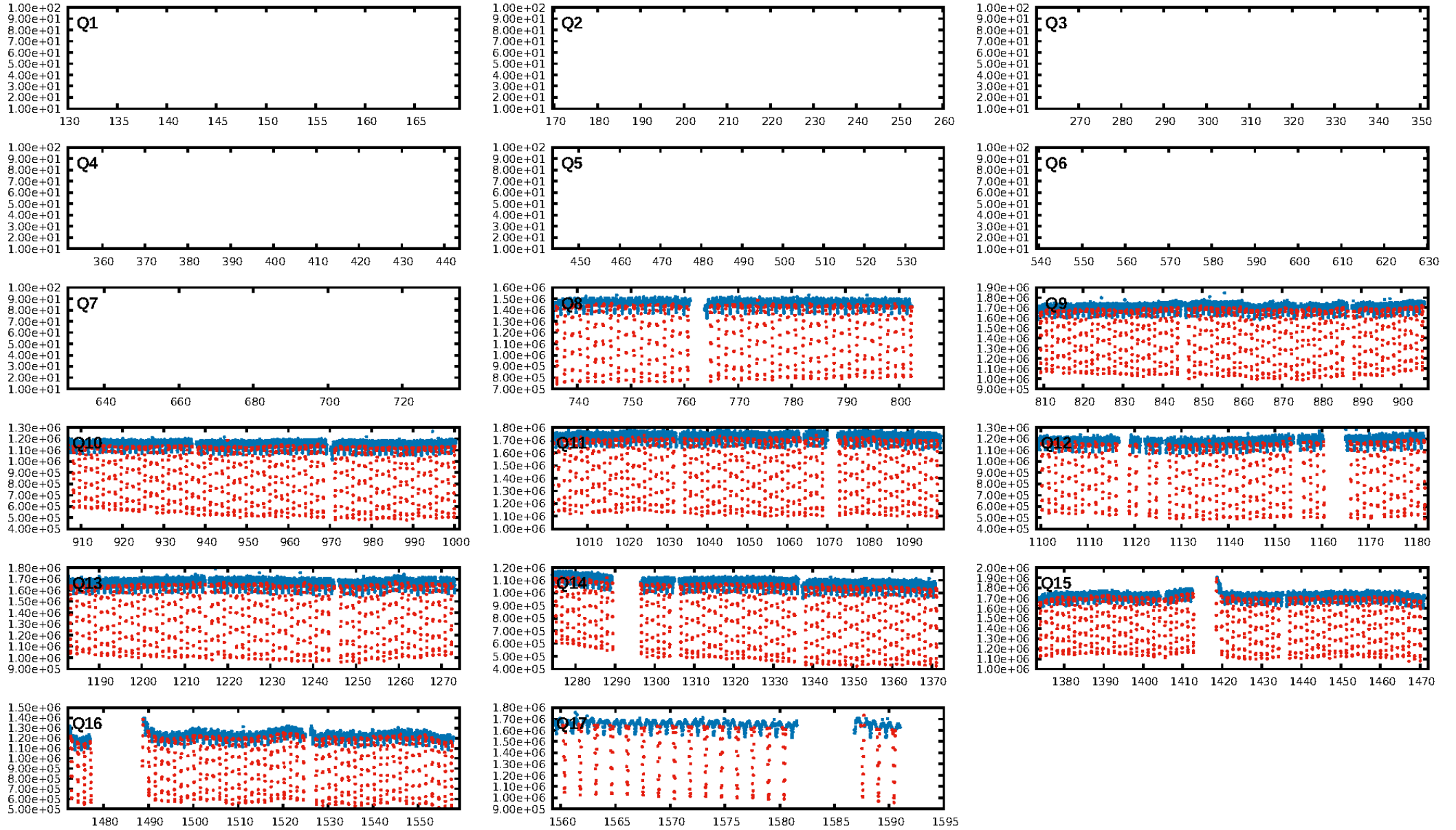
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [529/530]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 7.562 arcsec [36.52 $\sigma$ ]  
KicOffset-rm: 0.334 arcsec [4.33 $\sigma$ ]  
OotOffset-st: 2/2/3/3 [10]  
KicOffset-st: 2/2/3/3 [10]  
DiffImageQuality-fgm: 1.00 [10/10]  
DiffImageOverlap-fno: 1.00 [10/10]

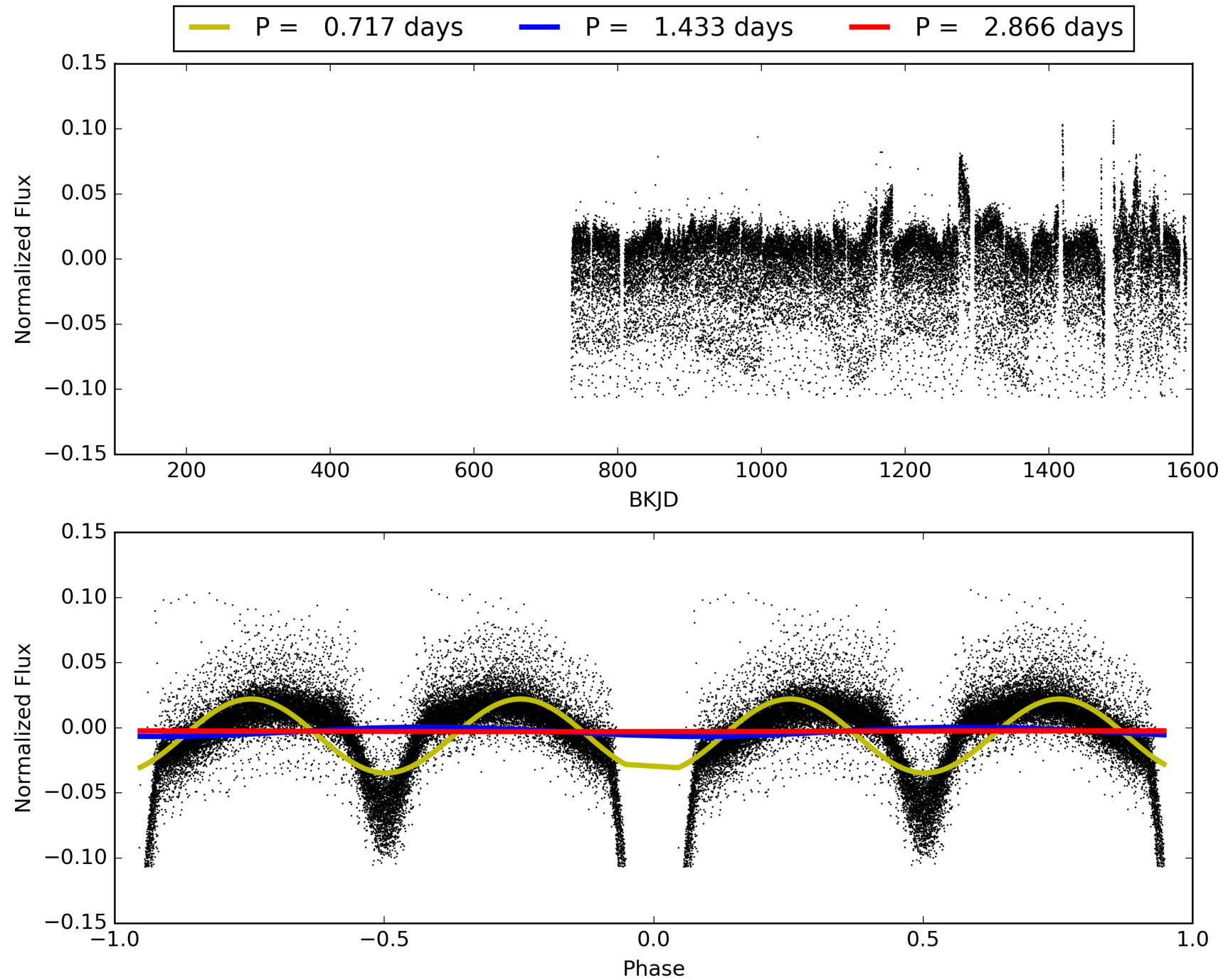
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:30:25 Z

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

# TCE 006314173-01, PDC Light Curves

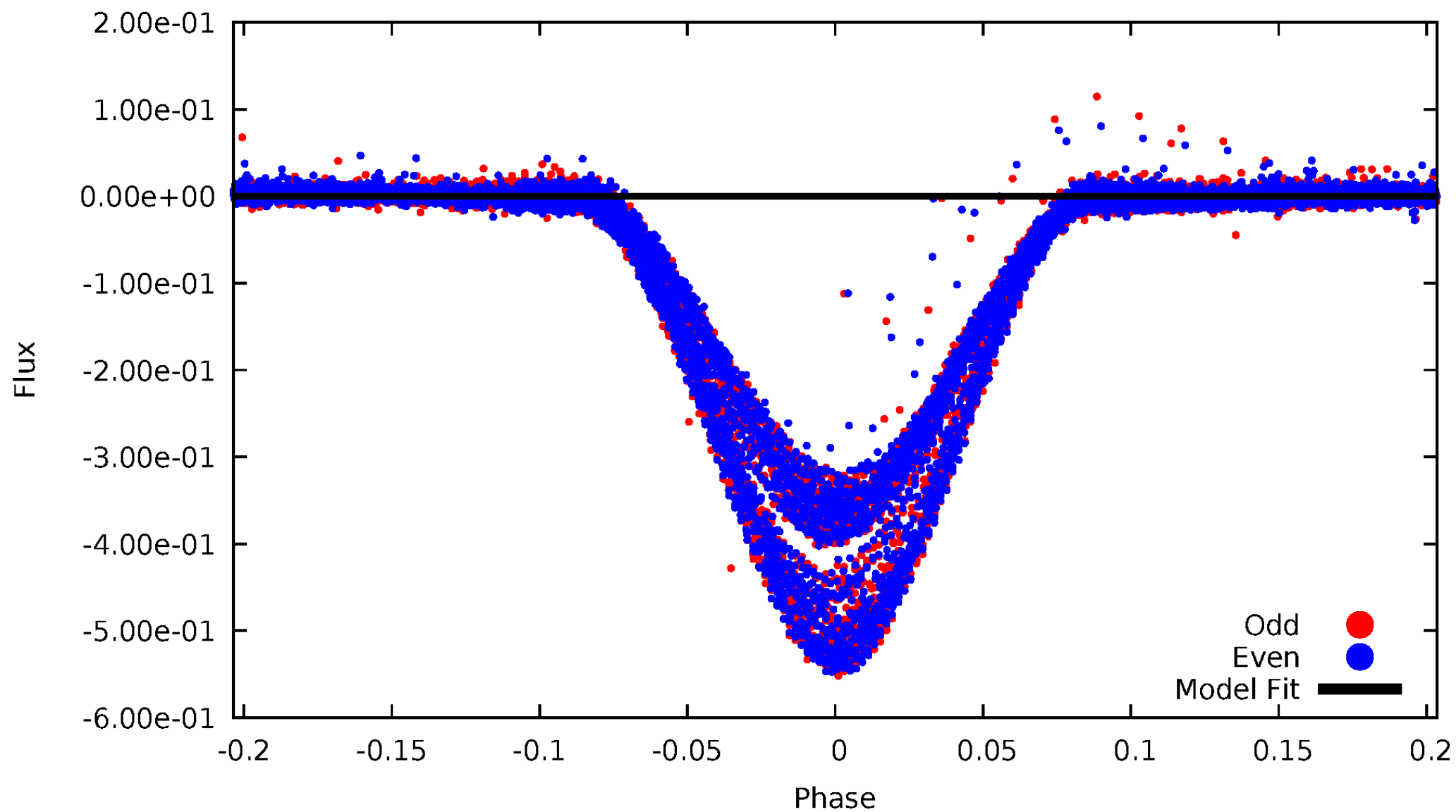


TCE 006314173-01



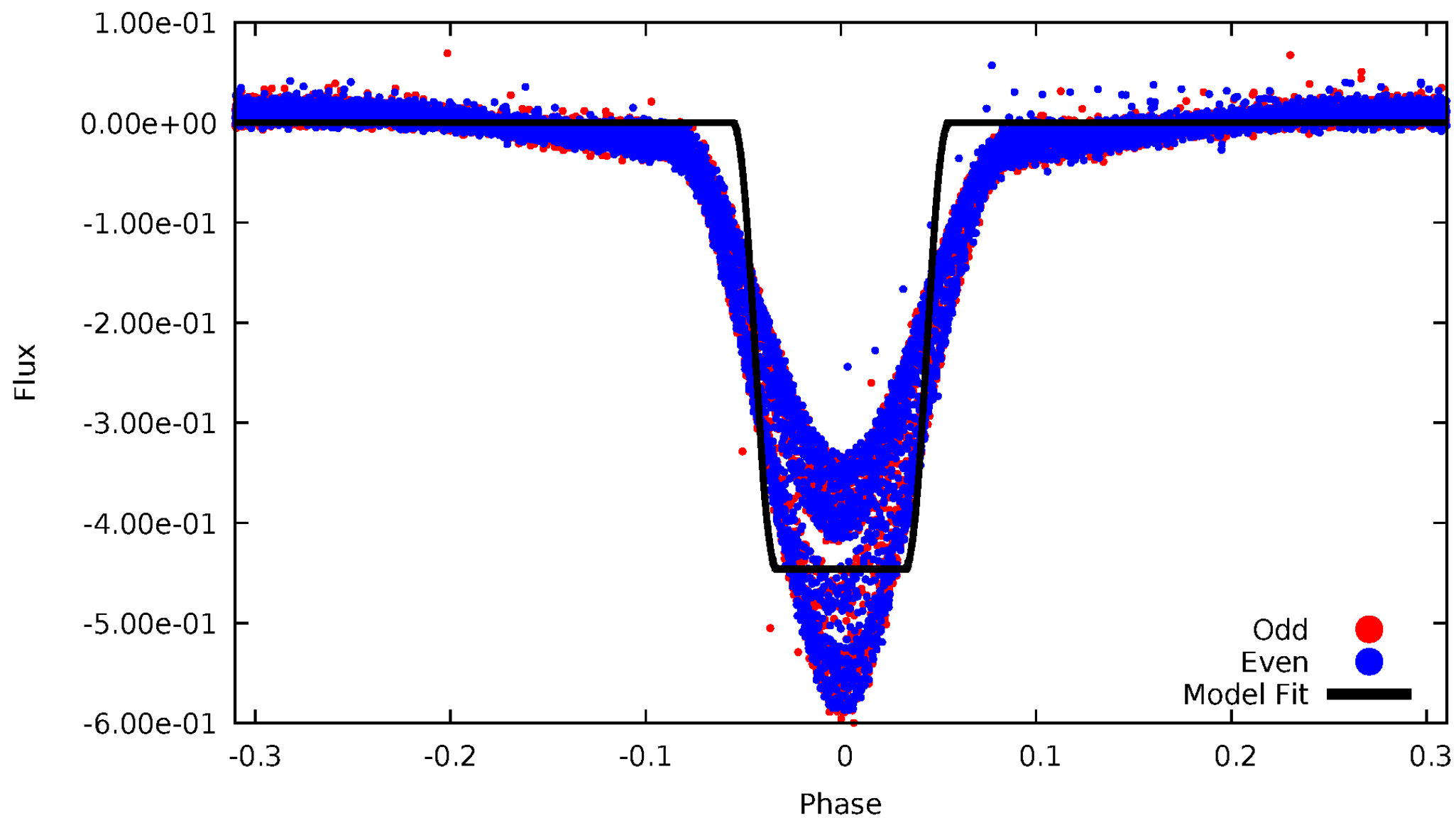
# DV Odd/Even

TCE 006314173-01



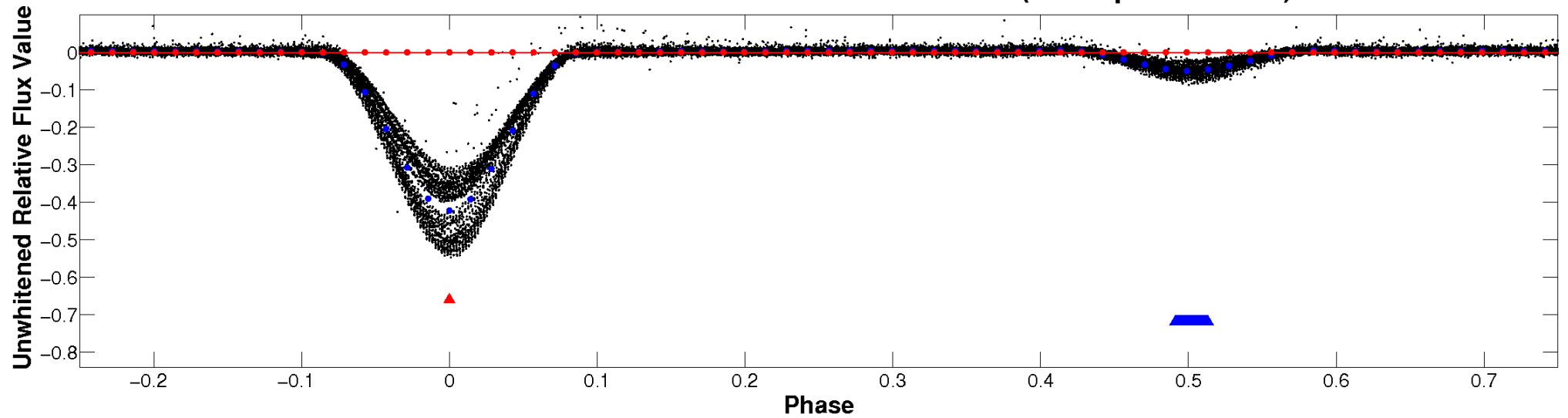
# ALT Odd/Even

TCE 006314173-01

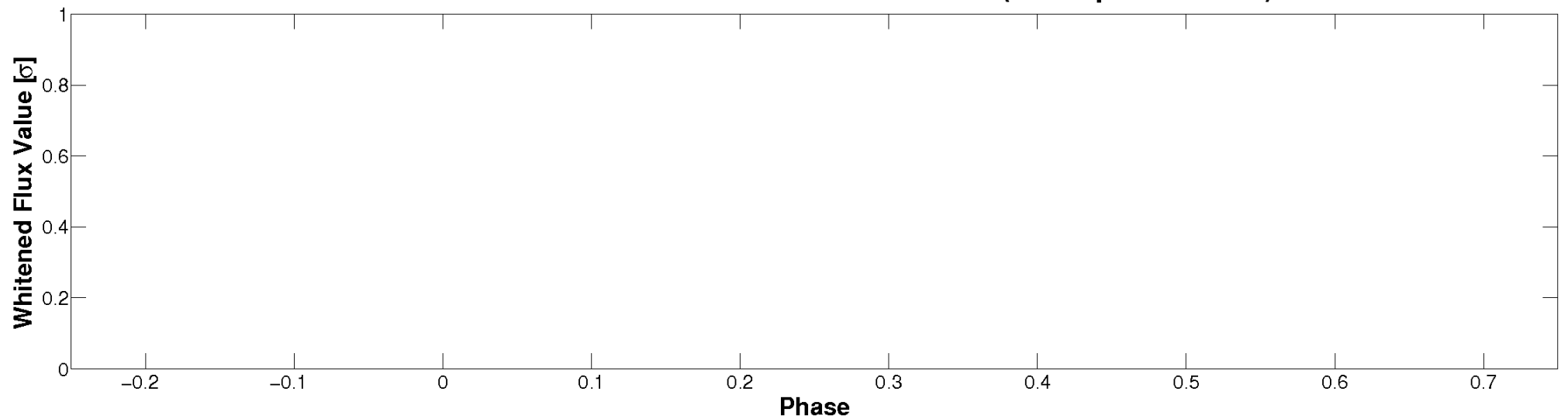


# Non-Whitened Vs. Whitened Light Curve

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

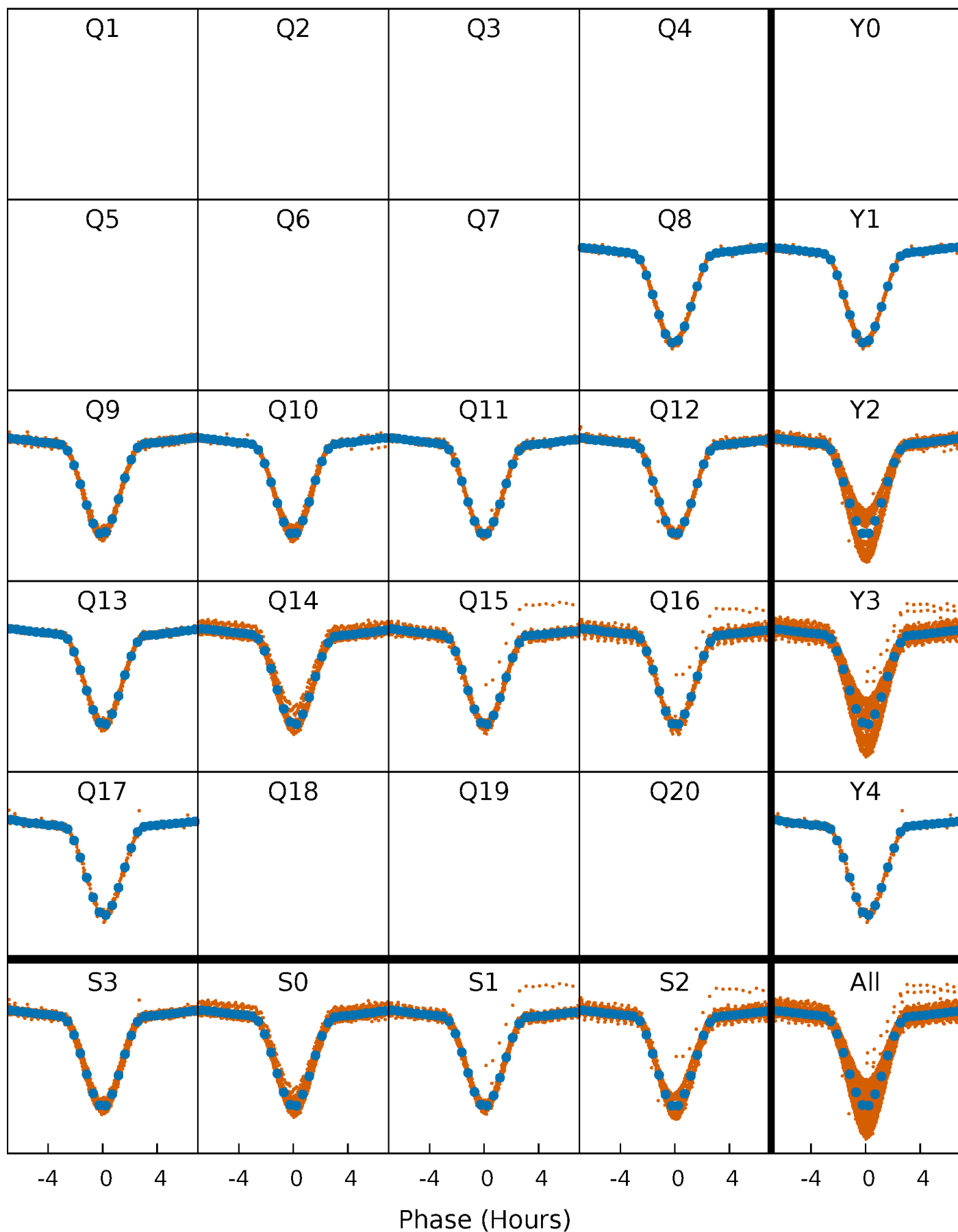


**Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



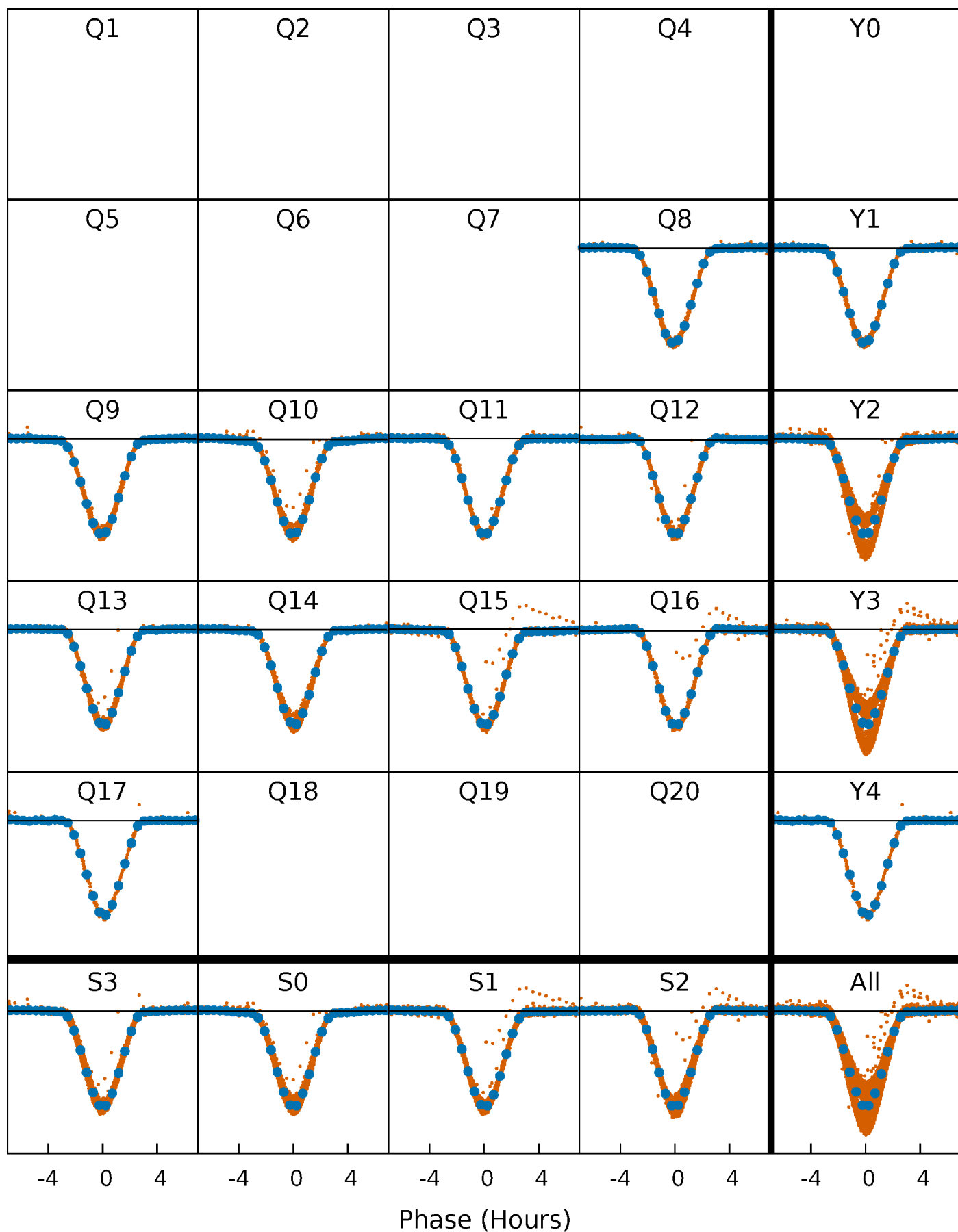
# PDC Quarter-Phased Transit Curves

TCE 006314173-01 P= 1.433247 Days  $T_0=132.832364$  (BKJD)



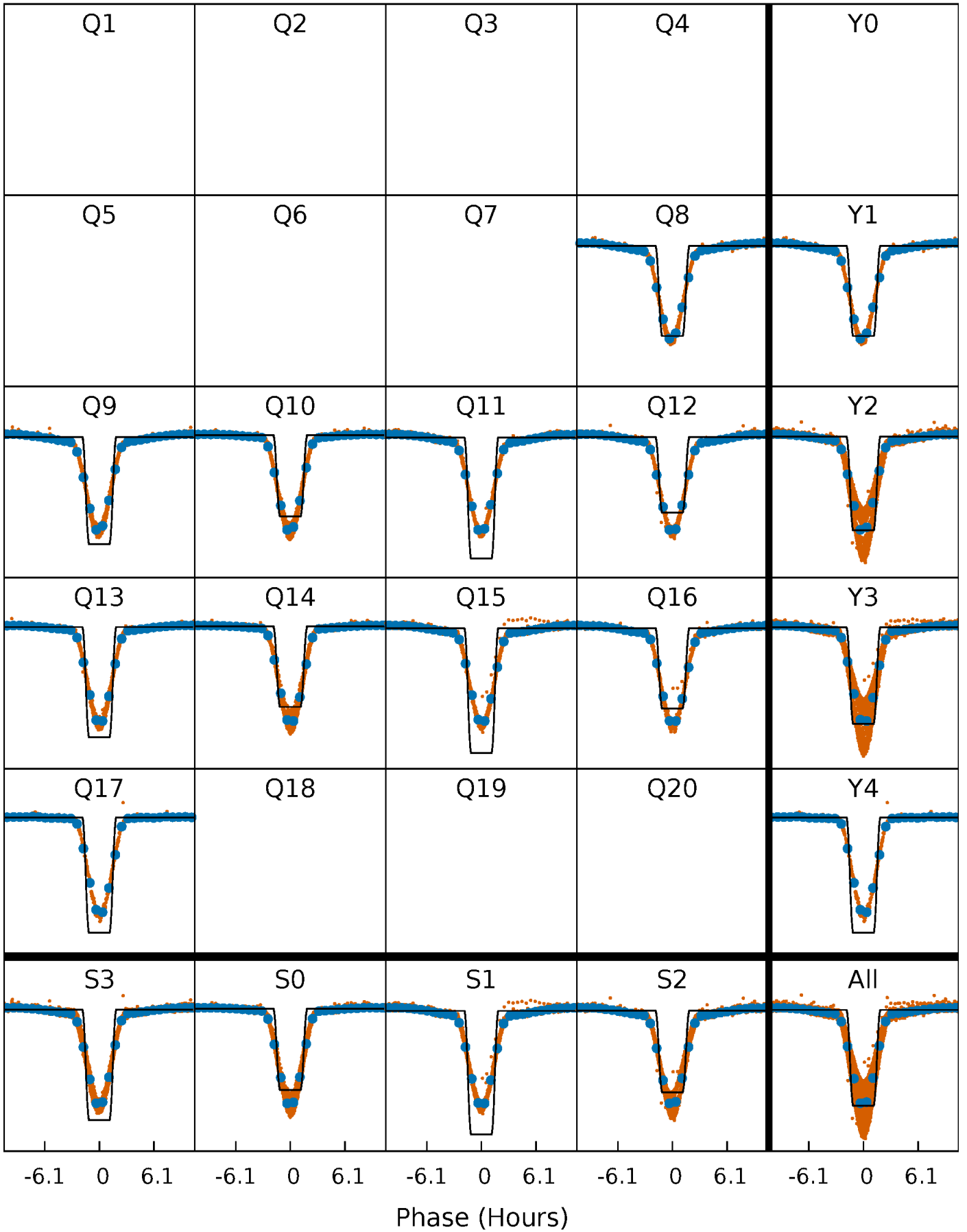
# DV Quarter-Phased Transit Curves

TCE 006314173-01 P= 1.433247 Days  $T_0=132.832364$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

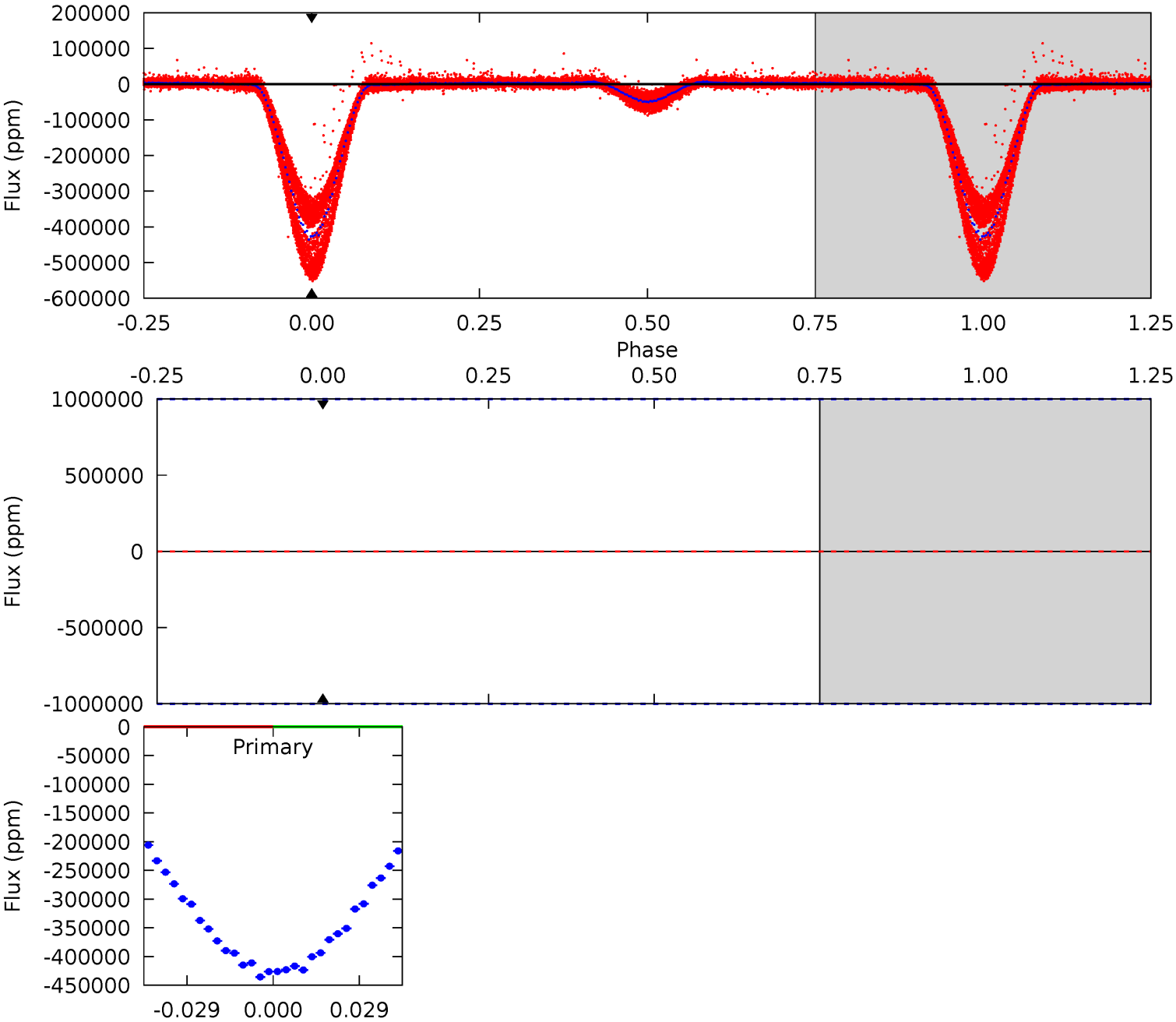
TCE 006314173-01 P= 1.433247 Days  $T_0=132.833759$  (BKJD)



# DV Model-Shift Uniqueness Test

006314173-01, P = 1.433247 Days, E = 132.832364 Days

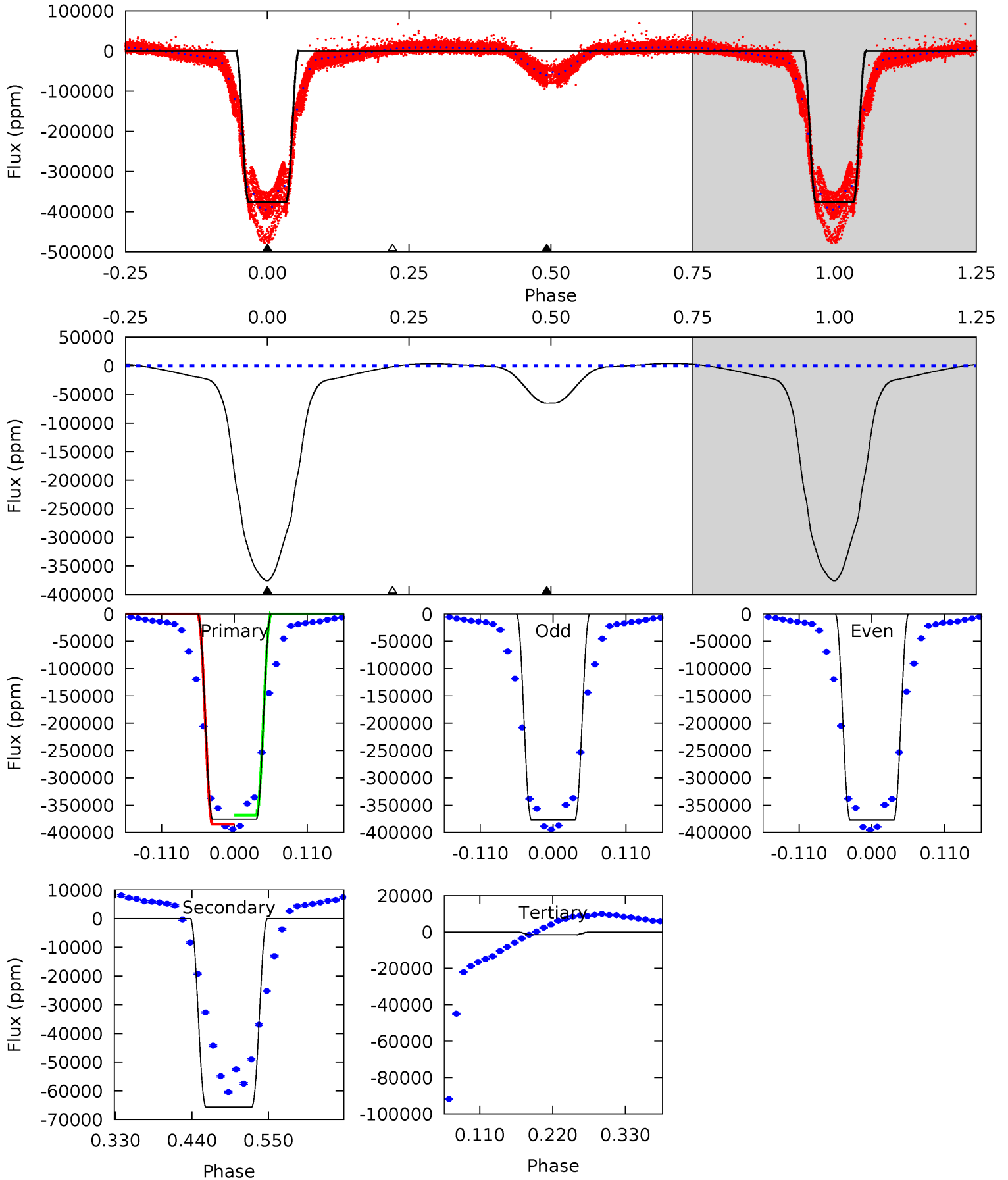
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

006314173-01, P = 1.433247 Days, E = 132.833759 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
1756	306.4	7.28	0	4.54	1.60	37.3	1749	1756	299.2	306.4	1.08	1.08	0.01	0



### Stellar Parameters For KIC 006314173

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7311^{+230}_{-307}$	$4.013^{+0.273}_{-0.147}$	$-0.400^{+0.250}_{-0.300}$	$1.959^{+0.468}_{-0.643}$	$1.442^{+0.193}_{-0.289}$	$0.270^{+0.477}_{-0.113}$
	+3%/-4%	+7%/-4%	+62%/-75%	+24%/-33%	+13%/-20%	+177%/-42%
Source	KIC0	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 006314173-01 / KOI 3708.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$103.17^{+29.41}_{-27.05}$	$3690^{+305}_{-316}$	$-3487^{+9175}_{-2253}$	$-0.026^{+4.355}_{-3.681}$
Alt.	$-65621 \pm 214$	$139.40^{+31.32}_{-30.72}$	$3704^{+287}_{-338}$	$4464^{+406}_{-315}$	$1.579^{+0.906}_{-0.510}$

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

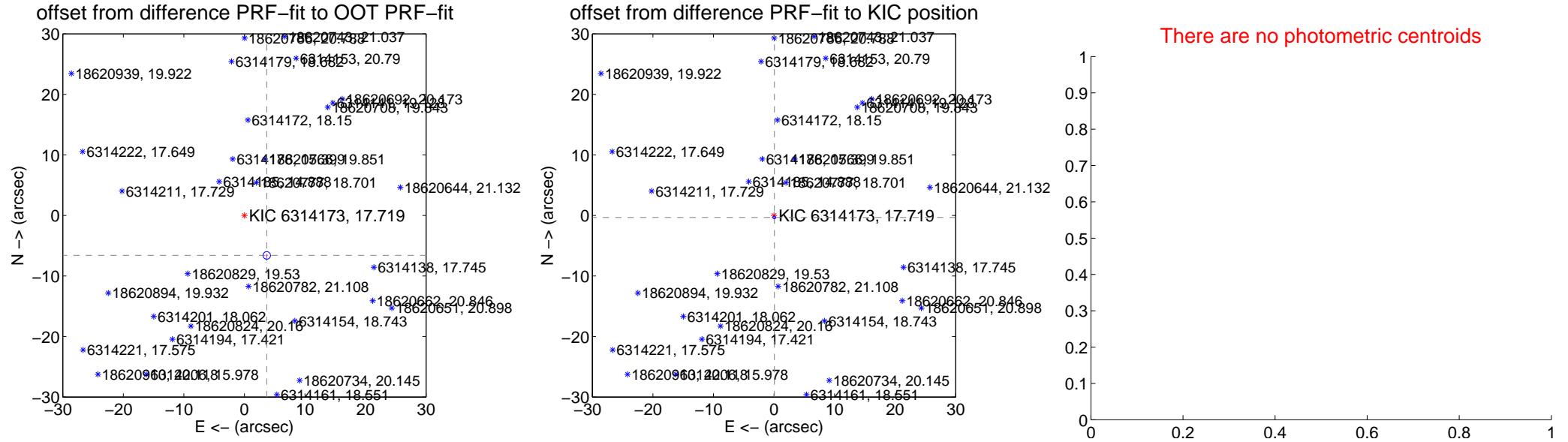
## DV Centroid Data

Supplemental centroid analysis for 006314173-01. Kepler magnitude: 17.72. Transit SNR -1.00

There are 10 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 6.78 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$7.562 \pm 0.207$	36.52	$-3.688 \pm 0.094$	$-6.602 \pm 0.231$
PRF-fit source offset from KIC position	$0.334 \pm 0.077$	4.33	$-0.057 \pm 0.078$	$-0.329 \pm 0.076$
photometric centroid source offset	—	—	—	—

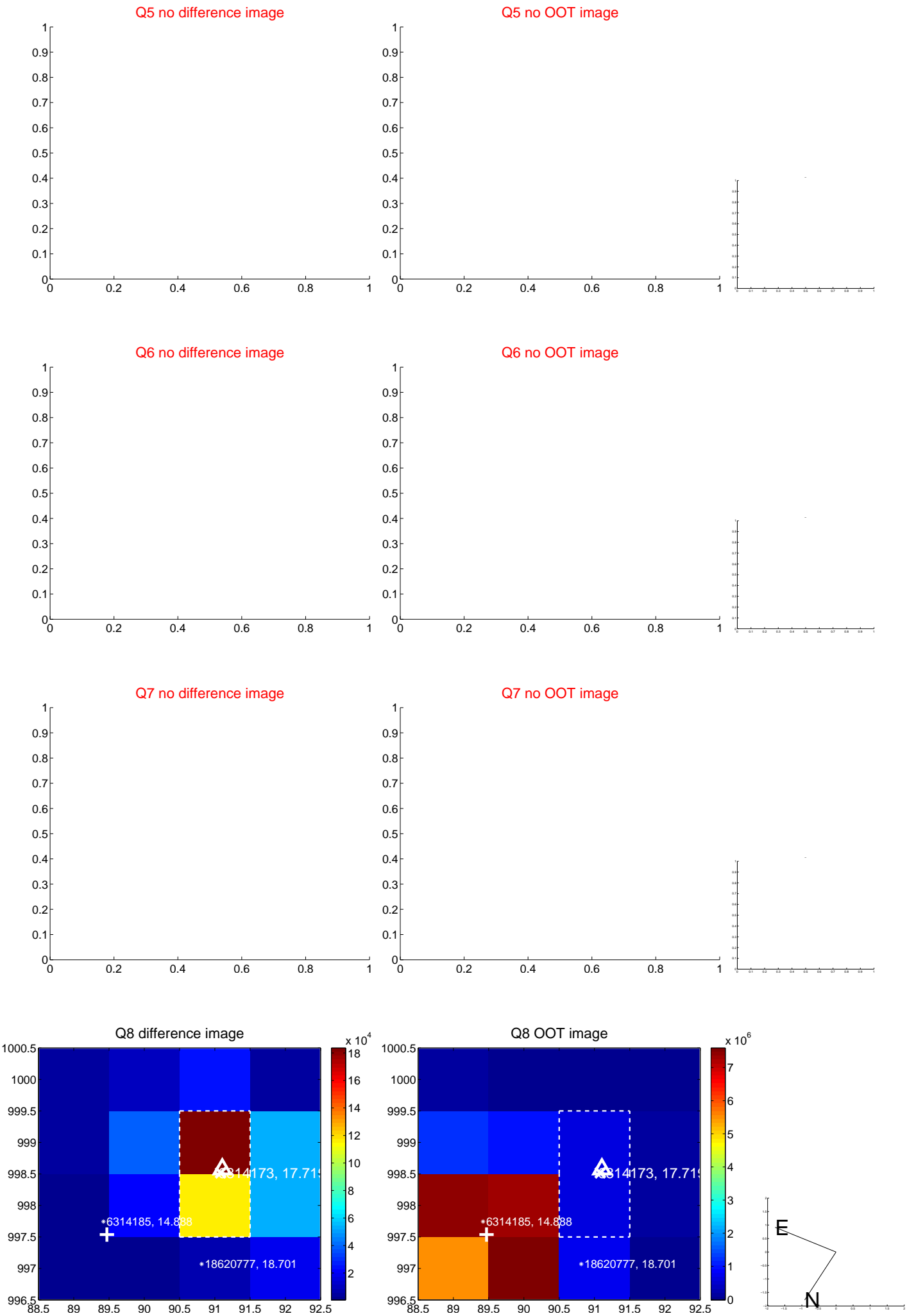


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

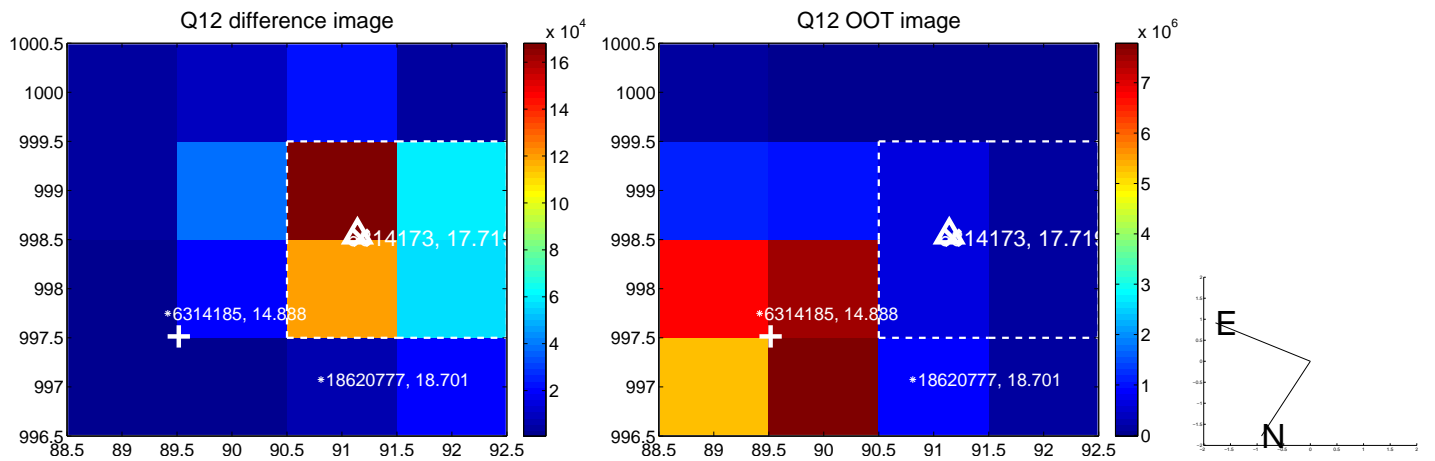
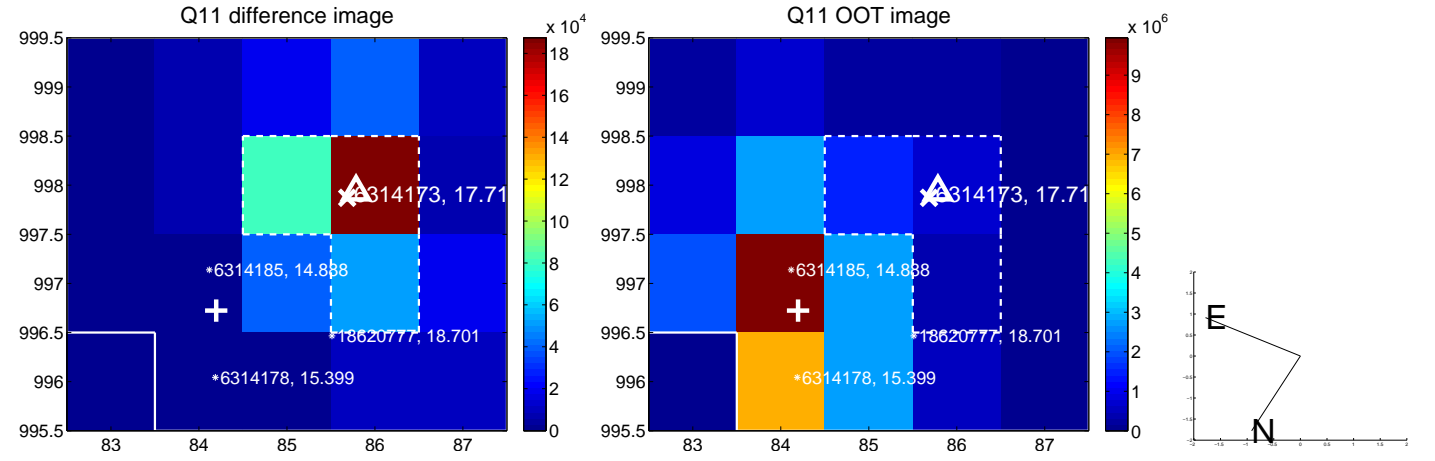
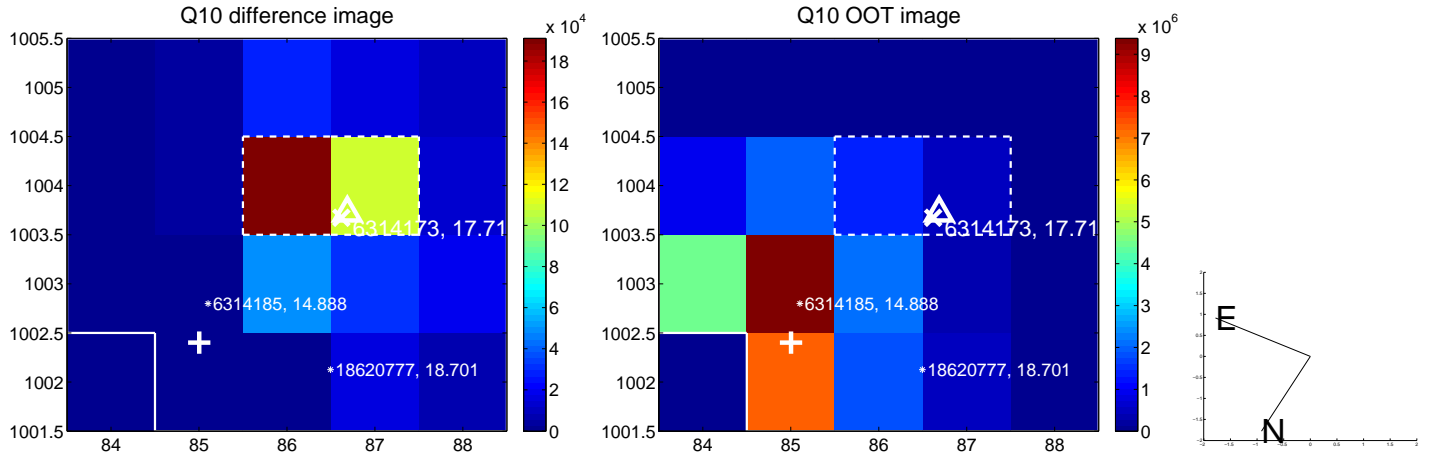
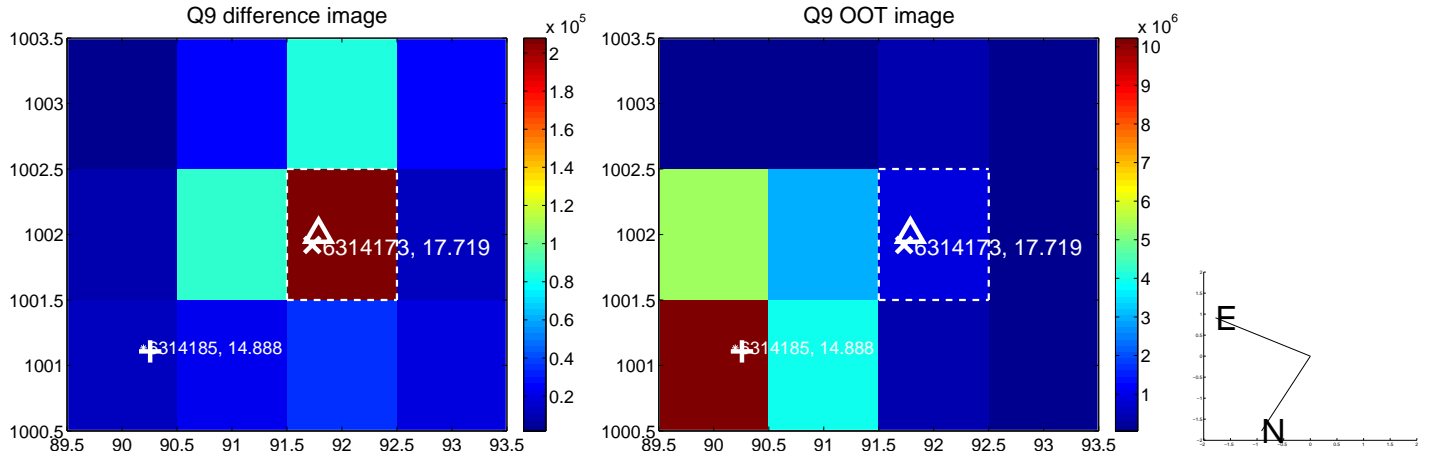
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



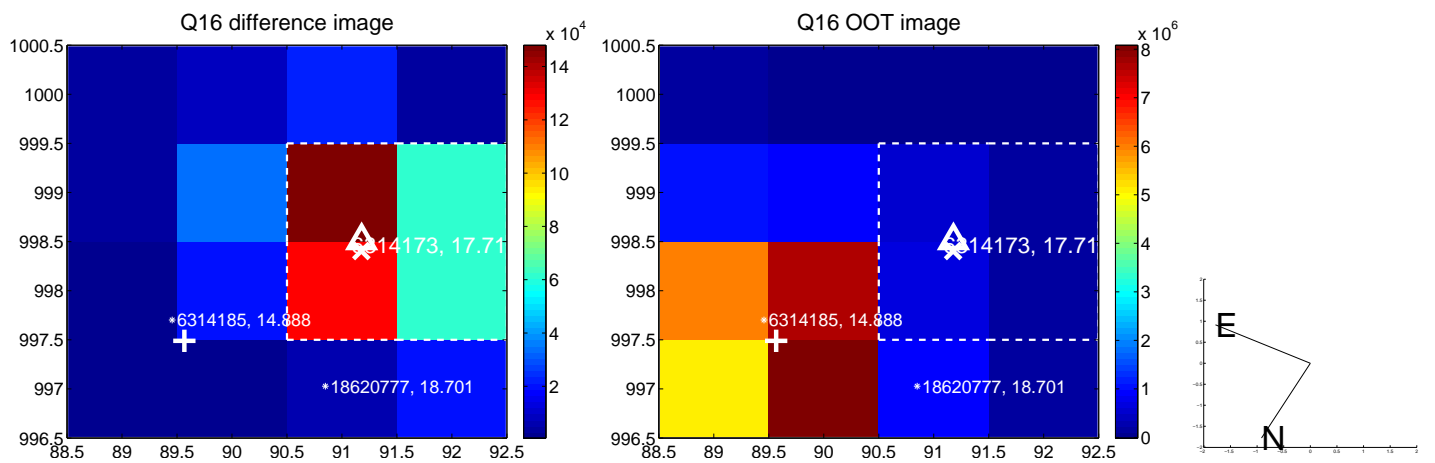
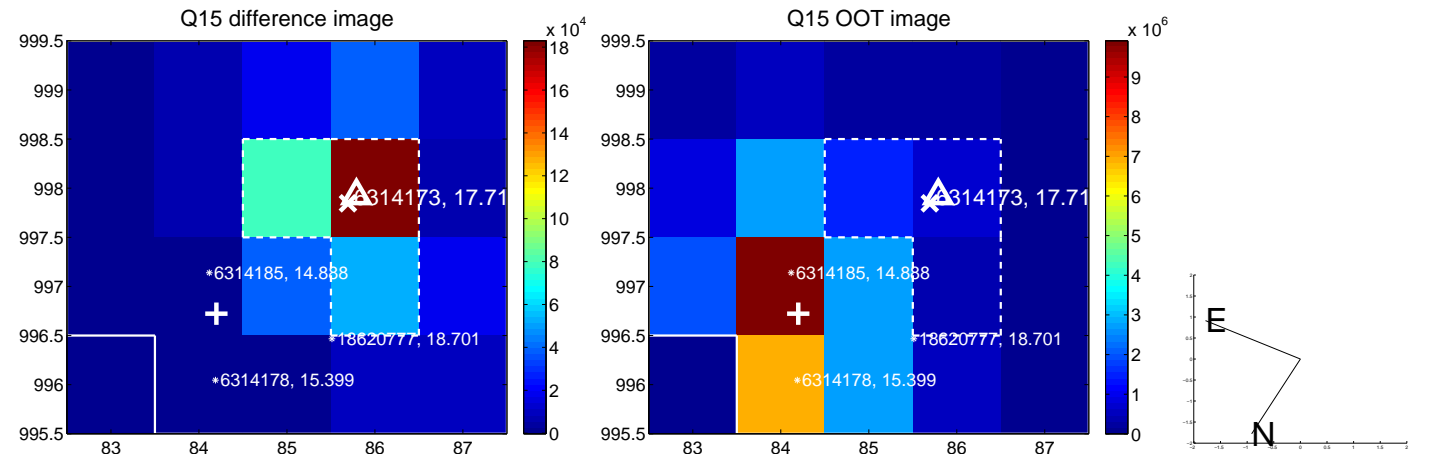
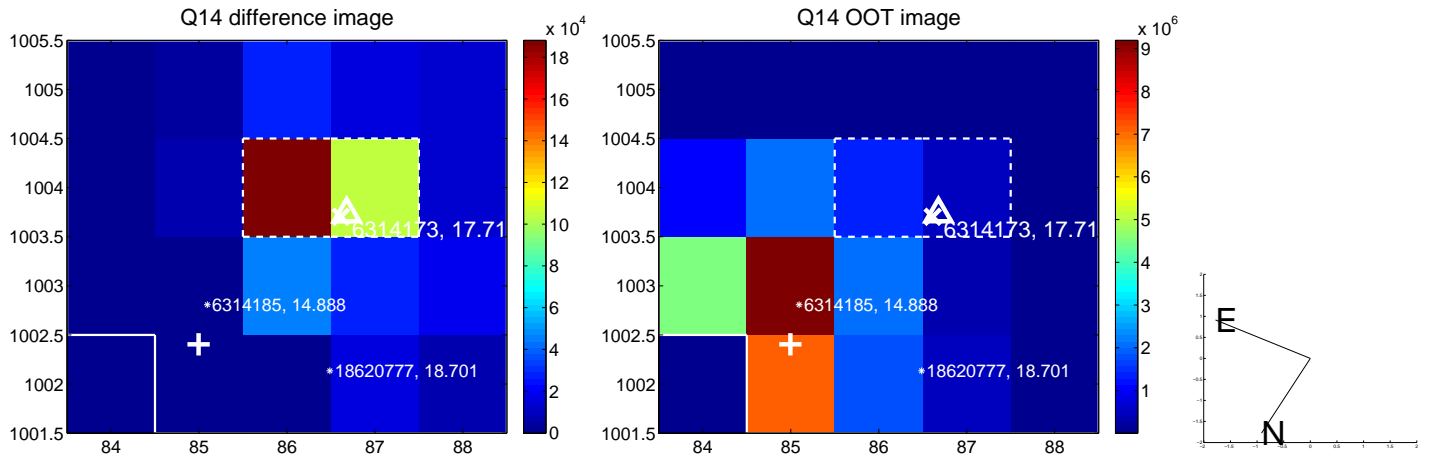
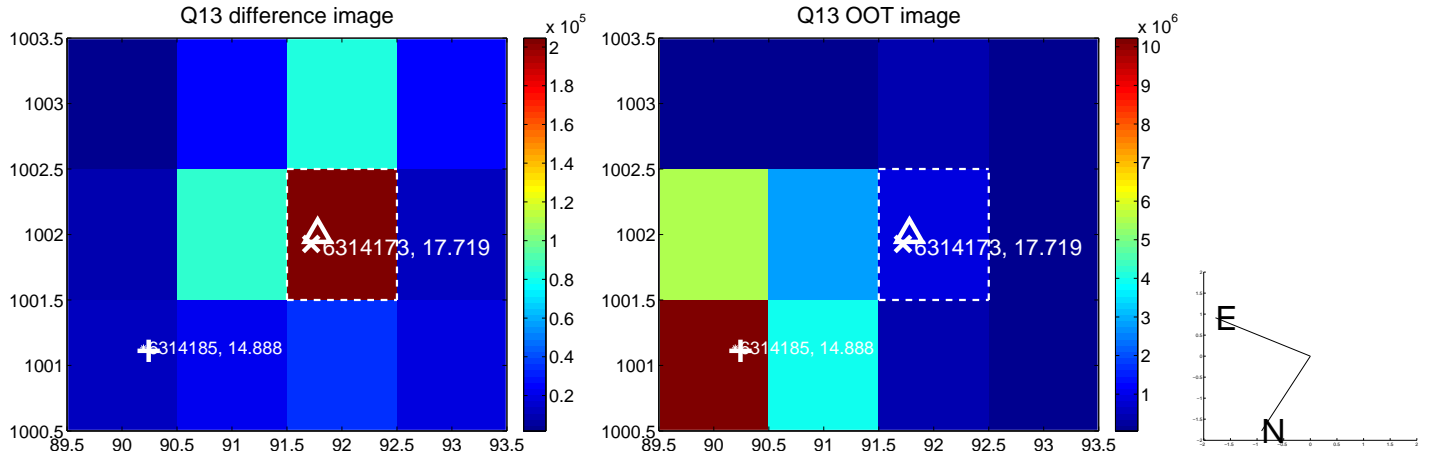
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



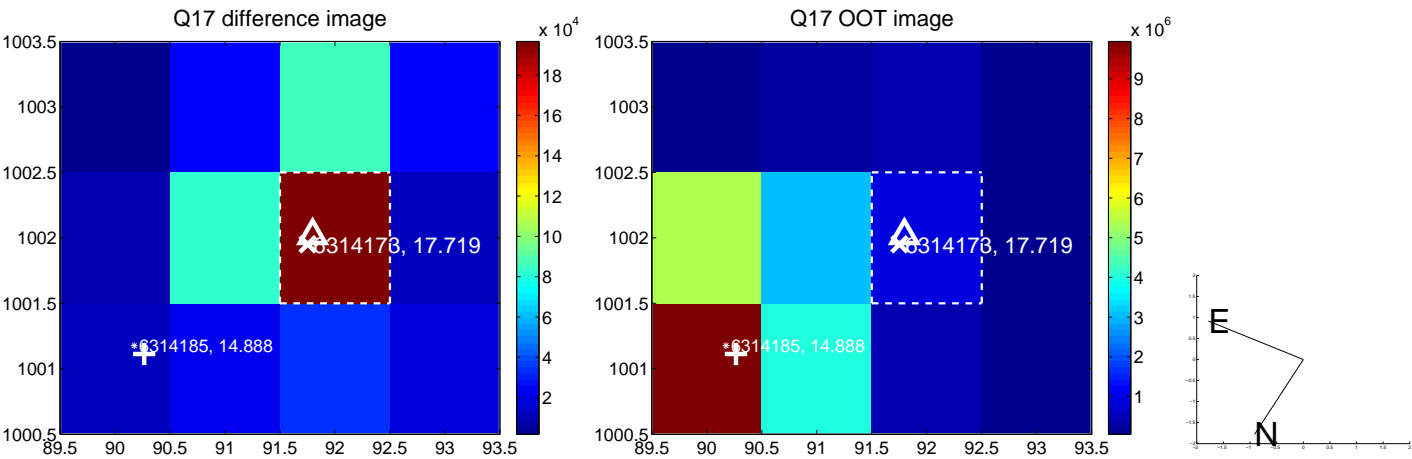
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



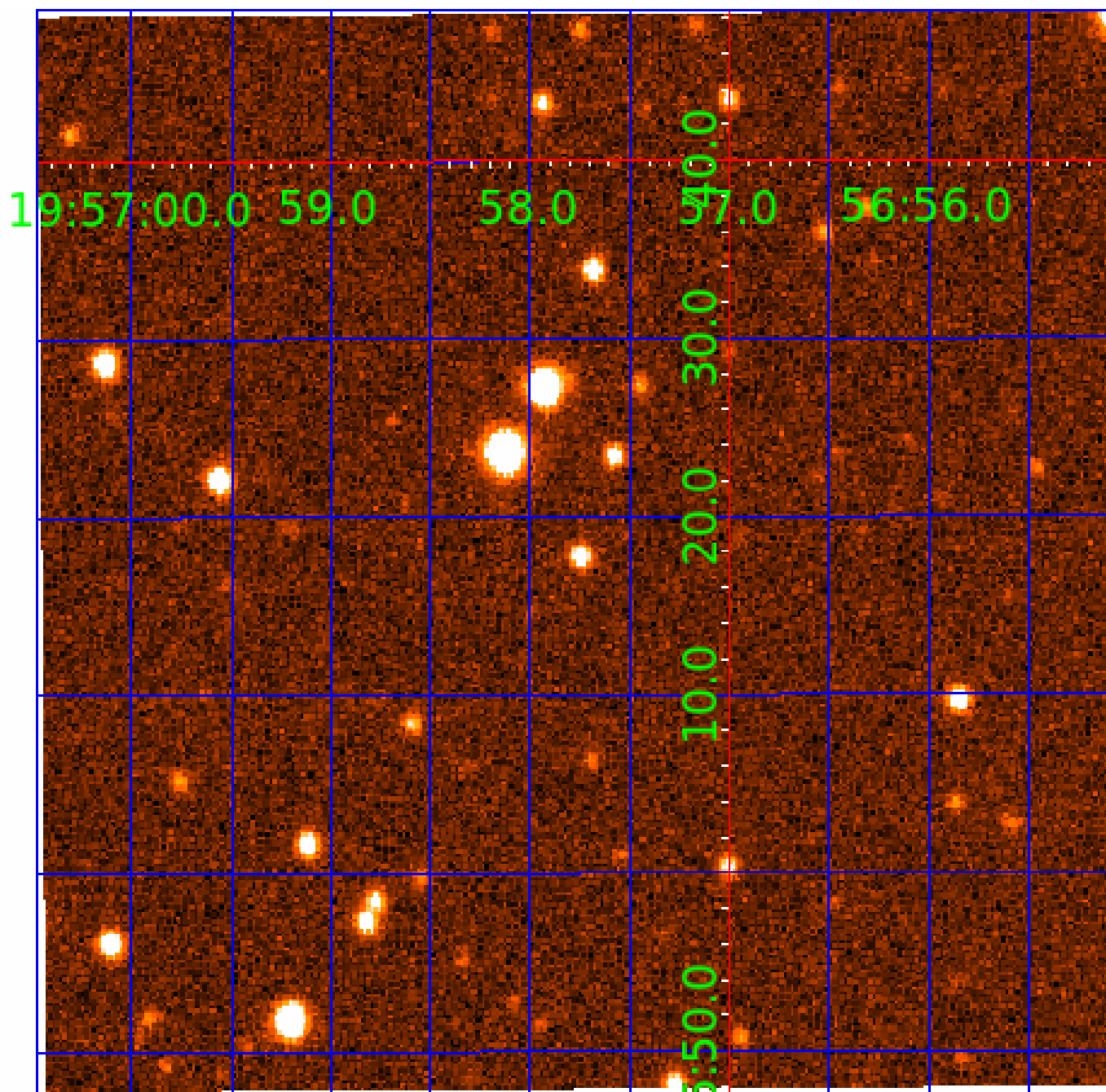
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



# KIC 006314173

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006314173-01	OBS	3708.01	1.433247	132.832364	433055.4	3.500	2507.0	-1.0	1.96	7311	106.89	12427.86
006314173-02	OBS	No	1.433216	132.134849	41585.1	4.683	226.2	215.9	1.96	7311	46.47	12428.22

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006314173-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_ALT—HAS_SEC_TCE—SEASONAL_DEPTH_DV—SEASONAL_DEPTH_ALT—CENT_NOFITS
006314173-02	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.

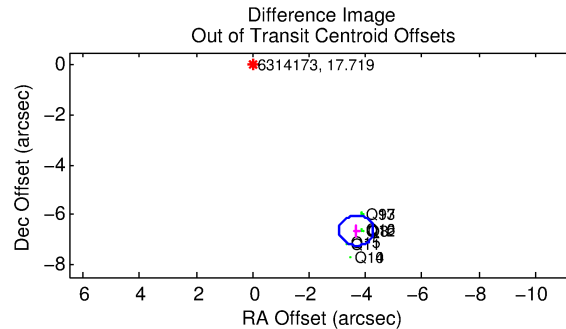
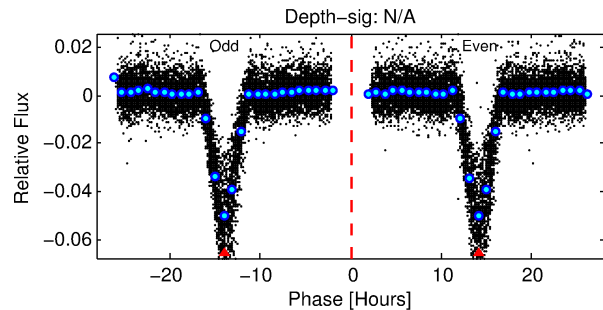
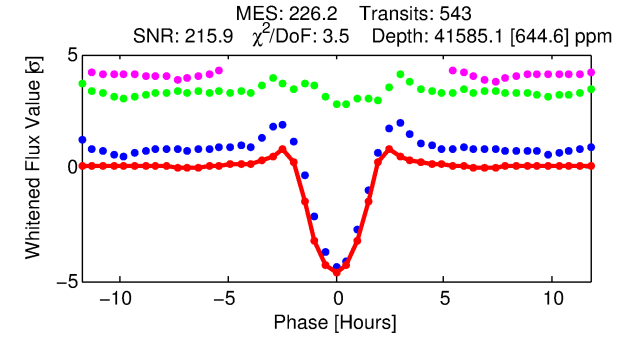
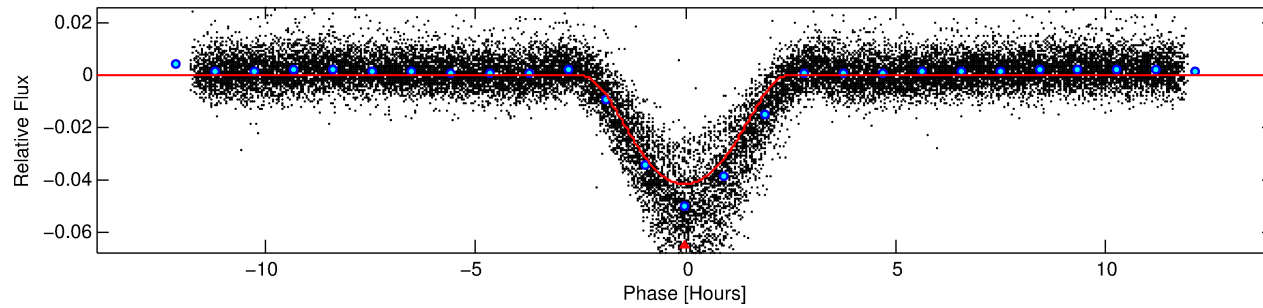
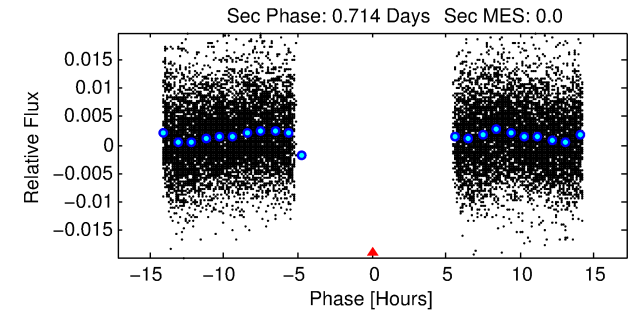
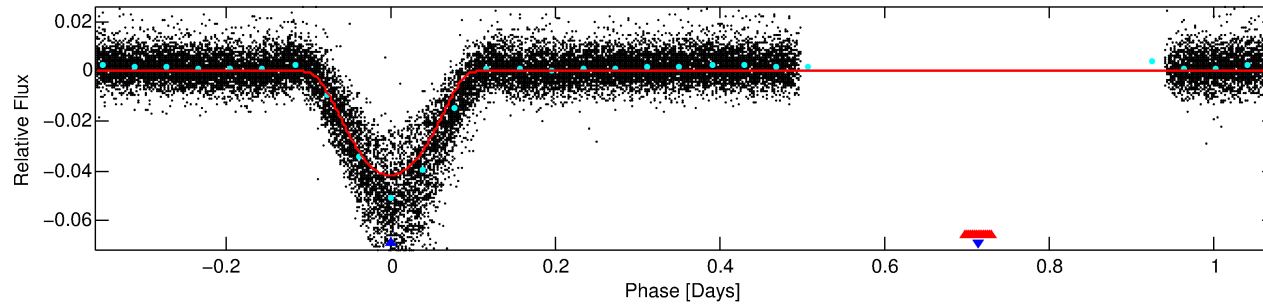
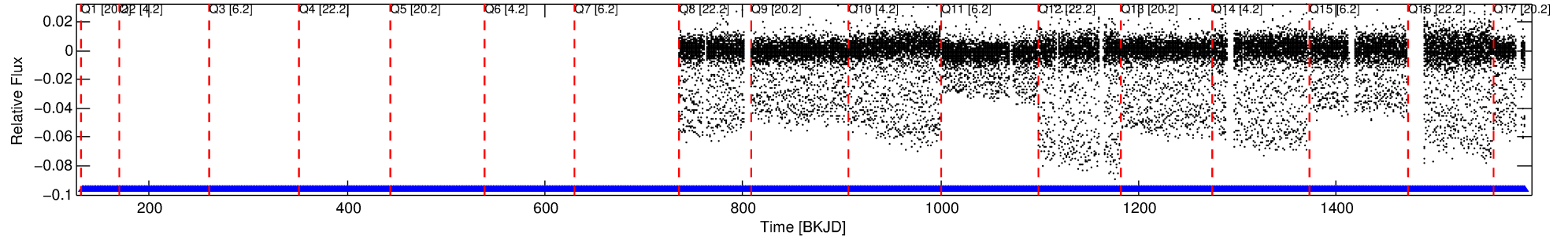
## Ephemeris Match Information For 006314173-02

No Significant Match Found

# DV One-Page Summary

KIC: 6314173 Candidate: 2 of 2 Period: 1.433 d  
KOI: K03708 Corr: No Ephemeris Match

Kp: 17.72 R\*: 1.96 Rs Teff: 7311.0 K Logg: 4.01 Fe/H: -0.400



## DV Fit Results:

Period = 1.43322 [0.00000] d  
Epoch = 132.1348 [0.0006] BKJD  
Rp/R\* = 0.2174 [0.0078]  
a/R\* = 2.31 [0.03]  
b = 0.82 [0.02]  
Seff = 12428.22 [6235.38]  
Teff = 2692 [338] K  
Rp = 46.47 [15.34] Re  
a = 0.0281 [0.0085] AU  
Ag = N/A  
Teffp = N/A

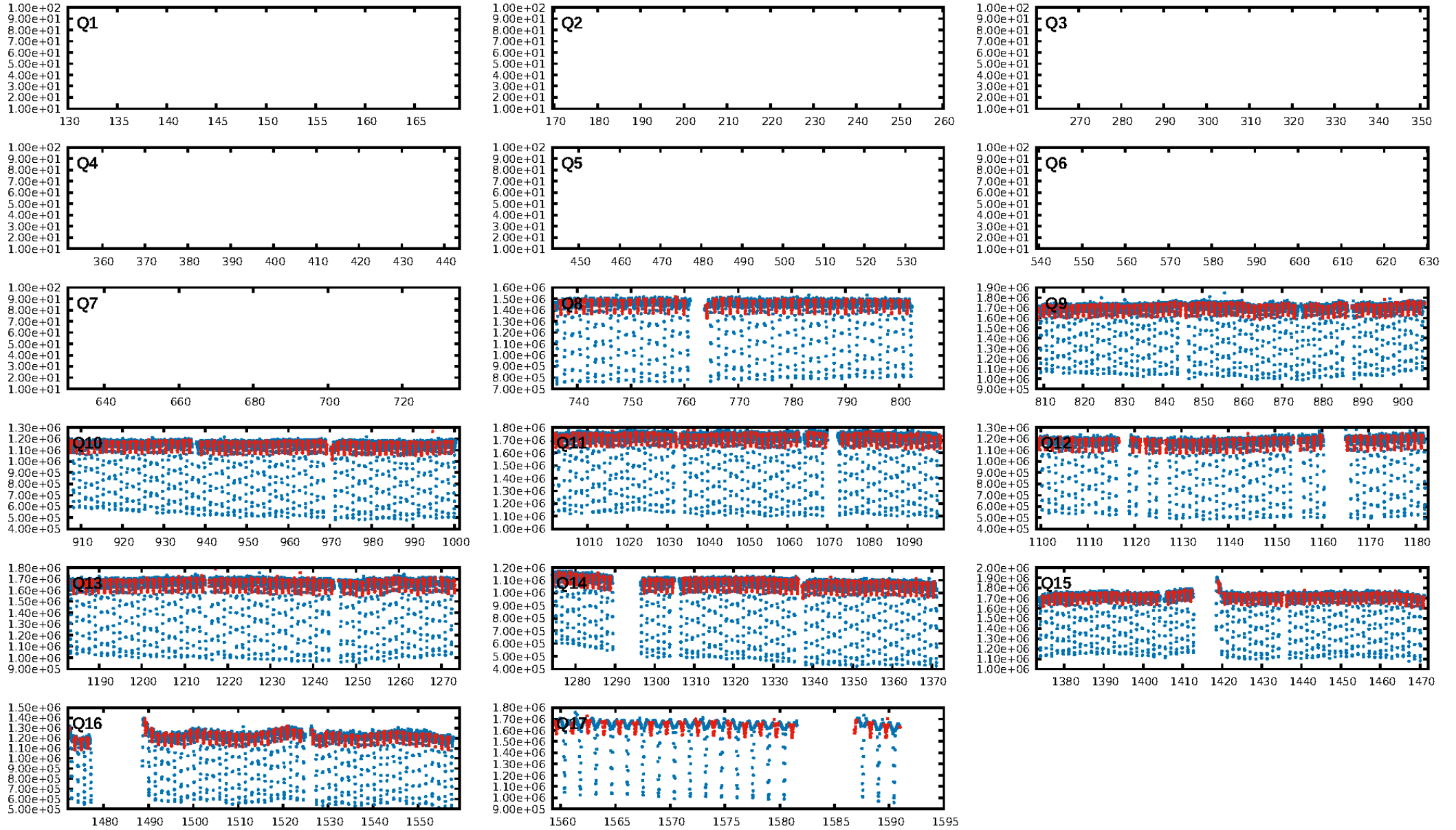
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGoF-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [524/524]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 7.588 arcsec [37.66σ]  
KicOffset-rm: 0.341 arcsec [4.54σ]  
OotOffset-st: 2/2/3/3 [10]  
KicOffset-st: 2/2/3/3 [10]  
DiffImageQuality-fgm: 1.00 [10/10]  
DiffImageOverlap-fno: 1.00 [10/10]

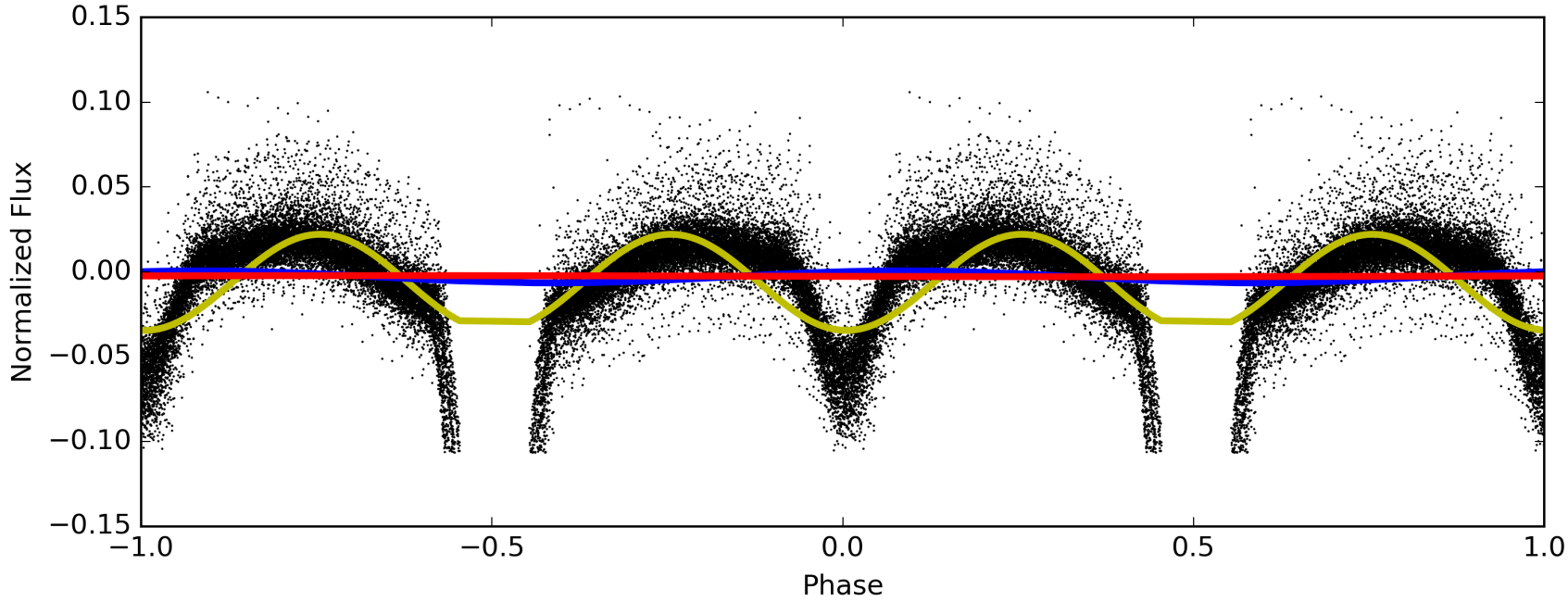
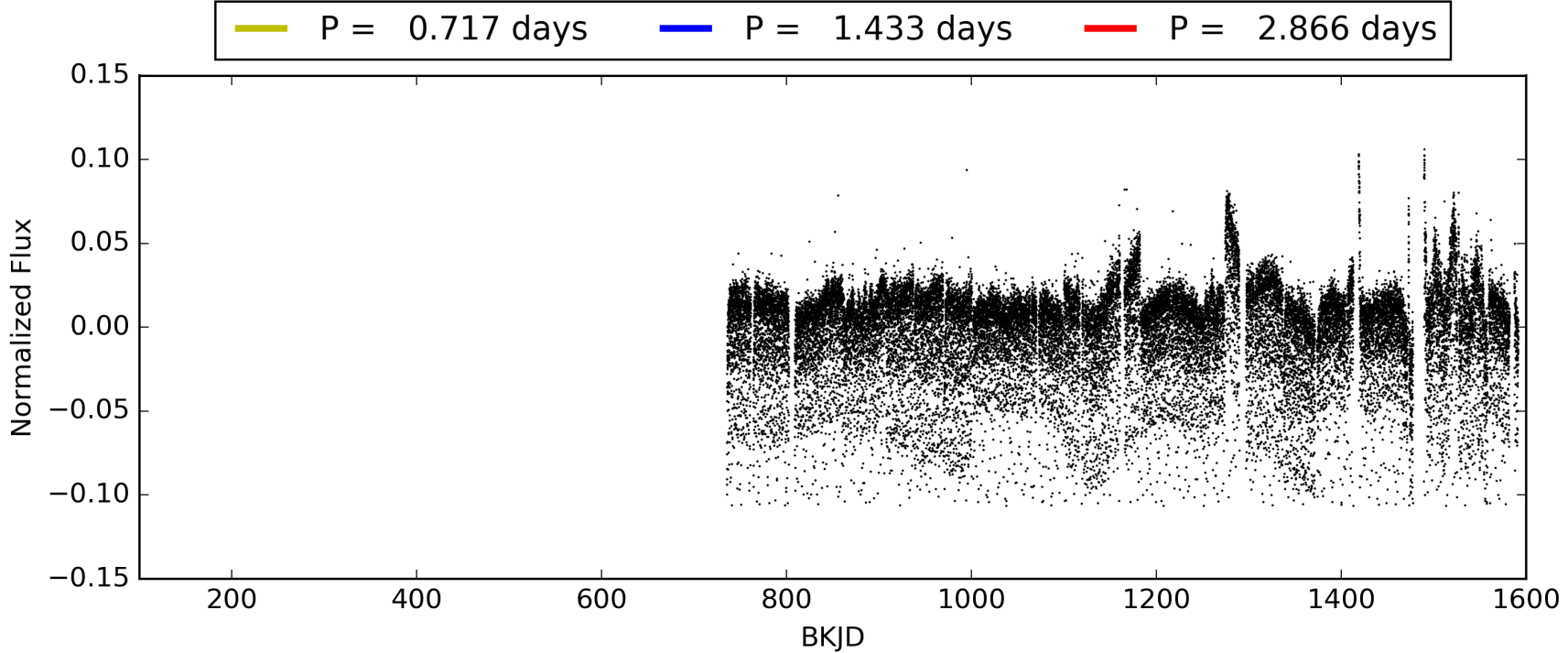
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:30:34 Z

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

# TCE 006314173-02, PDC Light Curves

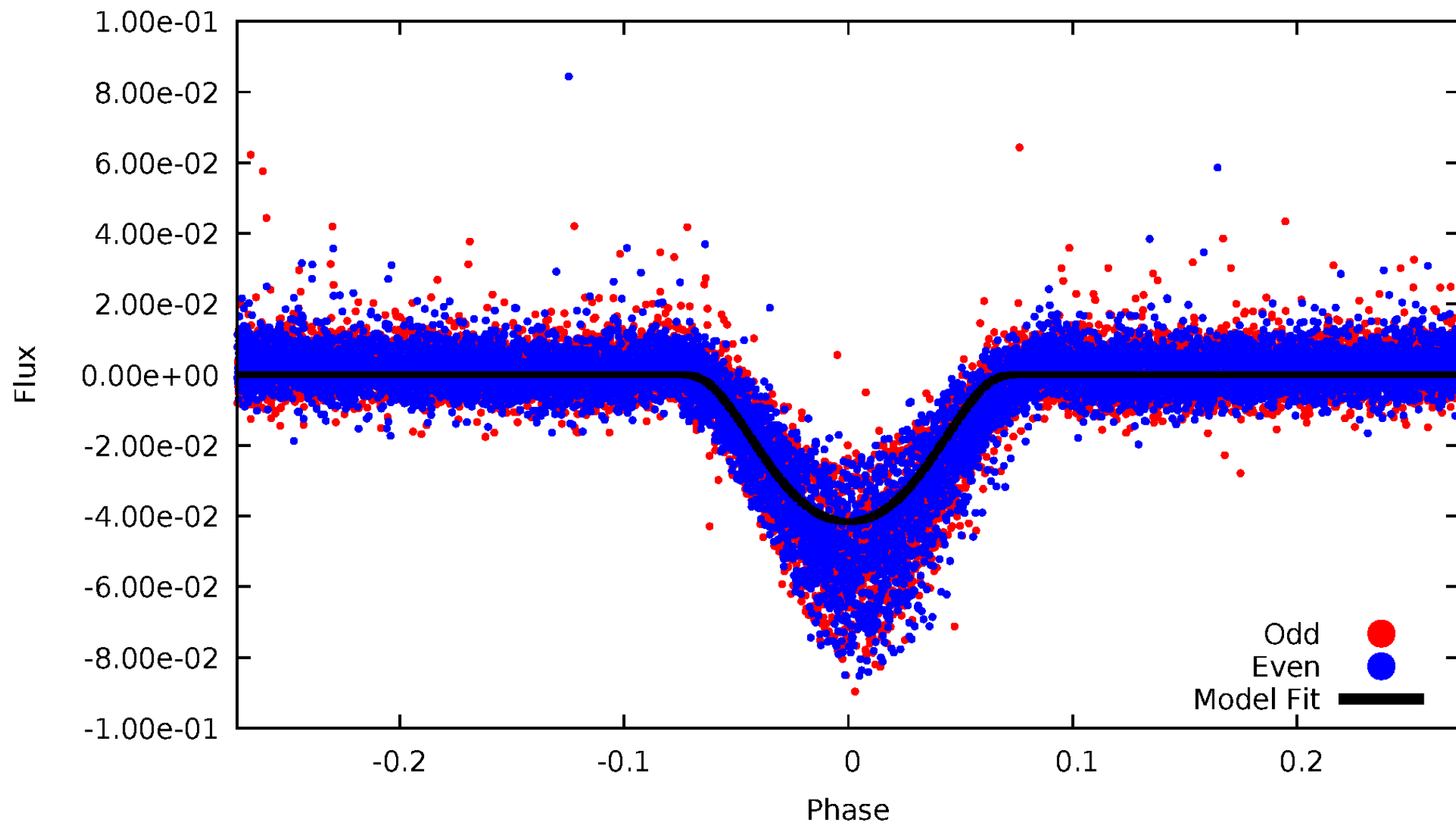


TCE 006314173-02



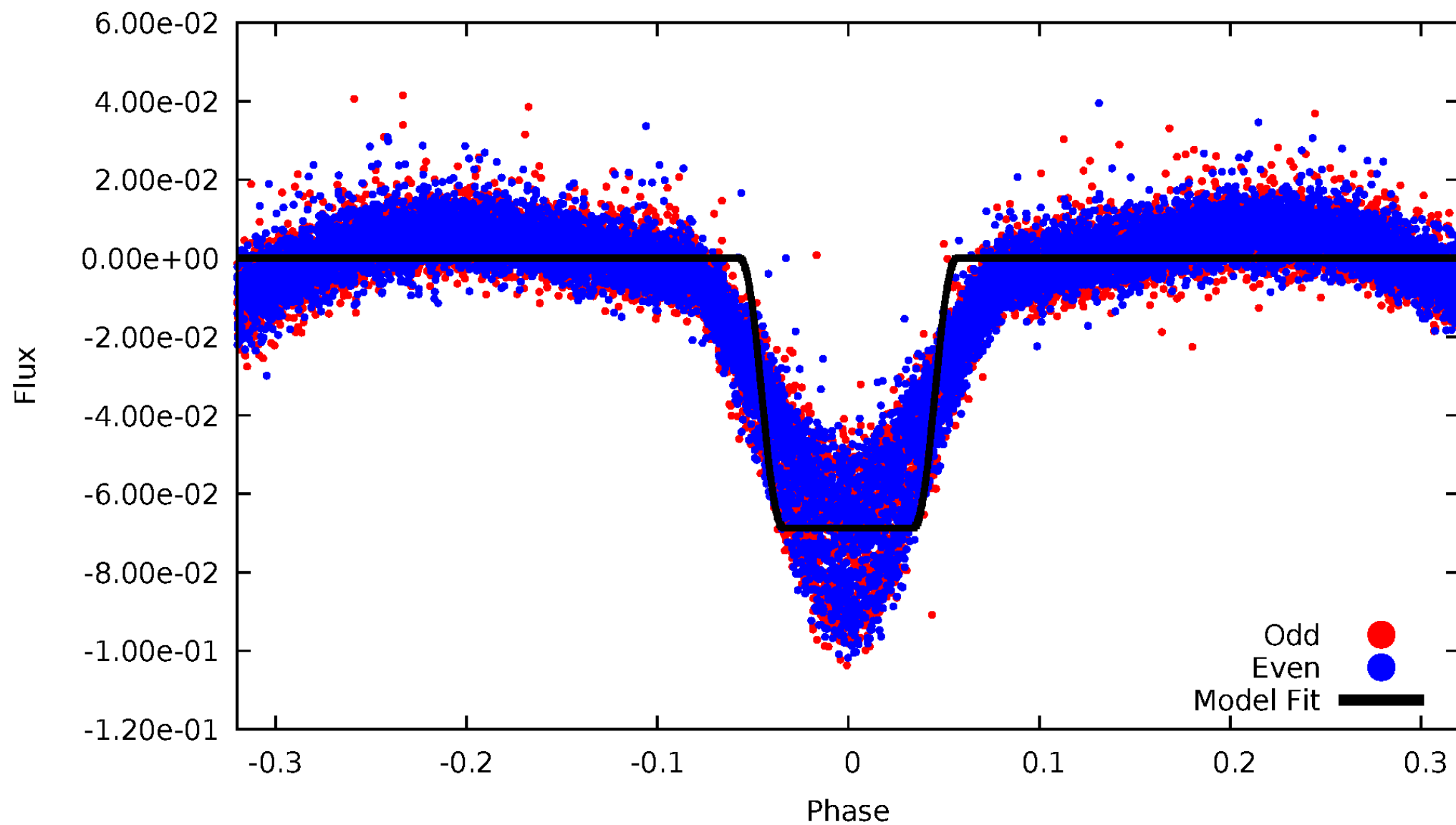
# DV Odd/Even

TCE 006314173-02



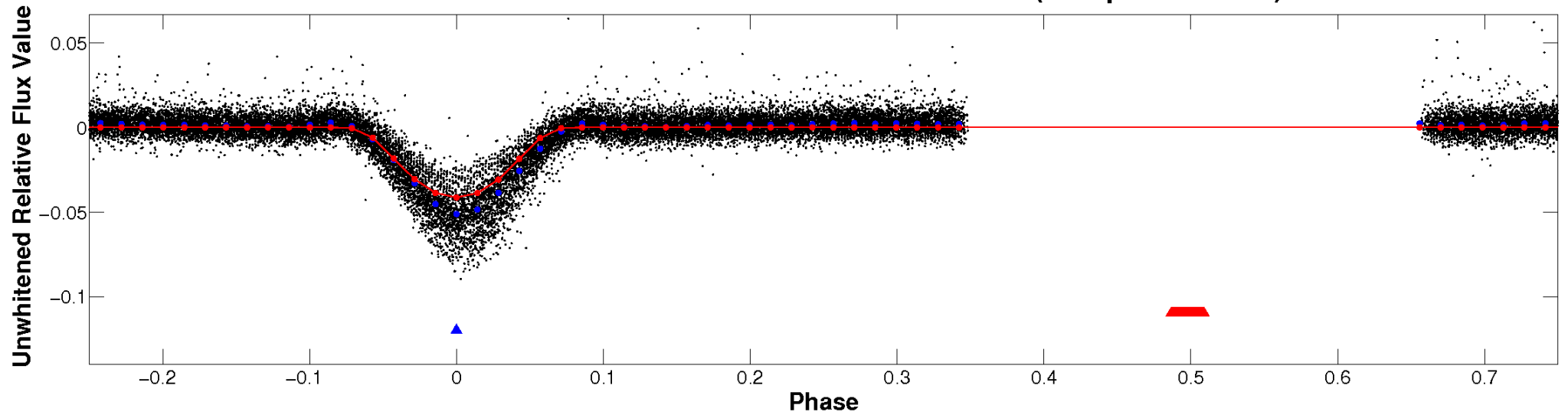
# ALT Odd/Even

TCE 006314173-02

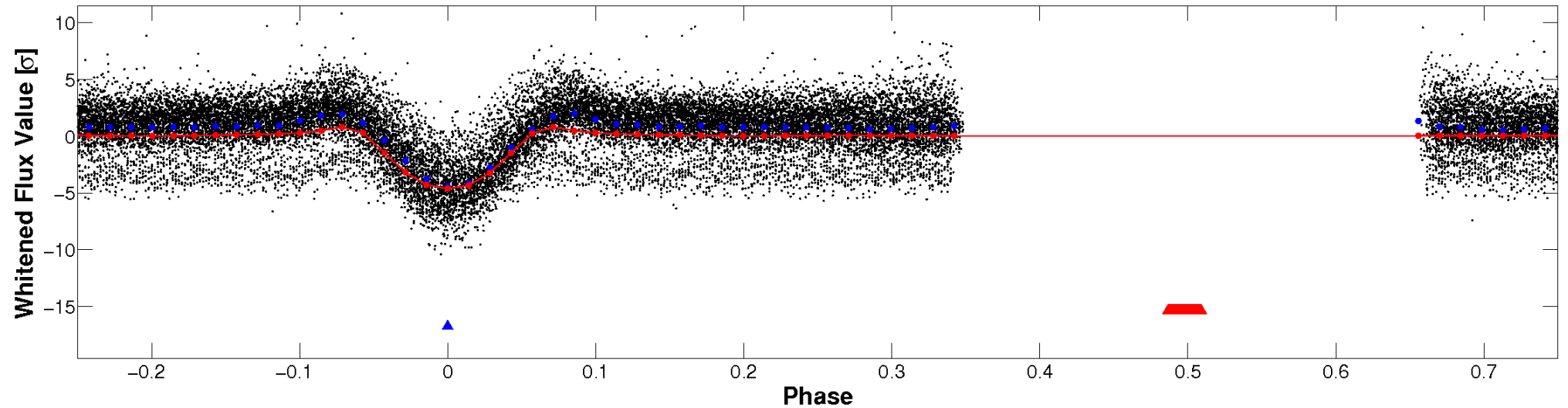


# Non-Whitened Vs. Whitened Light Curve

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

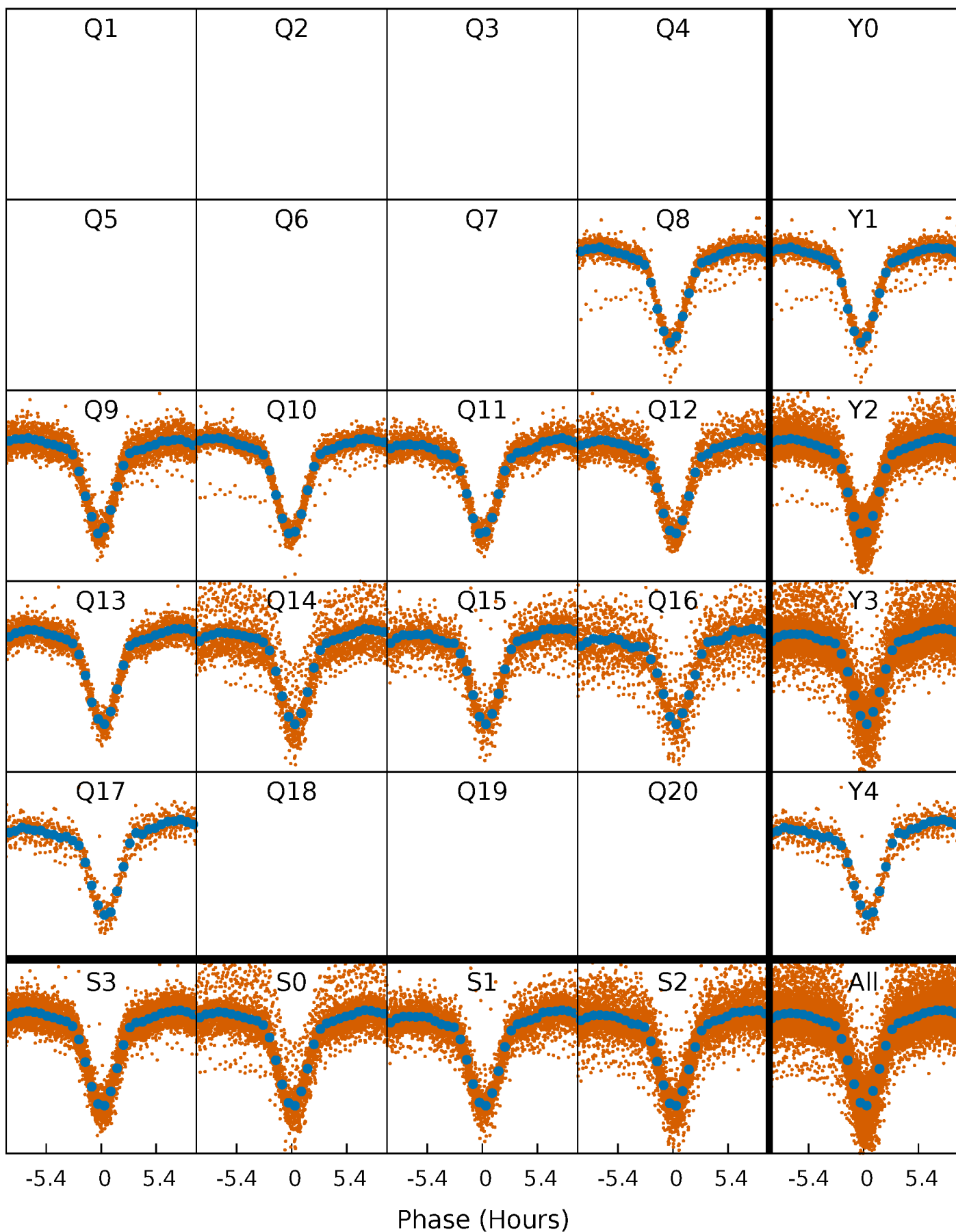


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



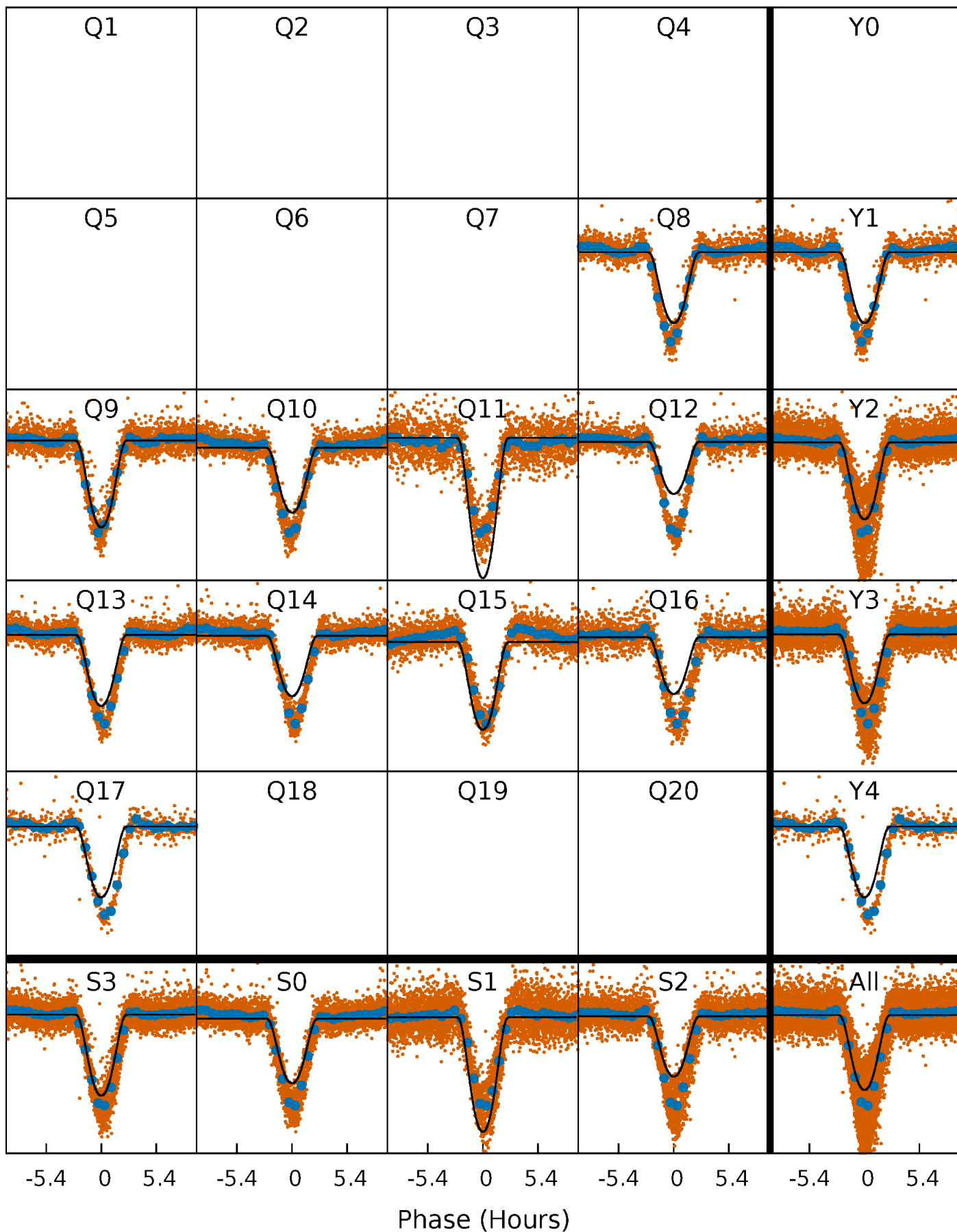
# PDC Quarter-Phased Transit Curves

TCE 006314173-02 P= 1.433216 Days  $T_0=132.134849$  (BKJD)



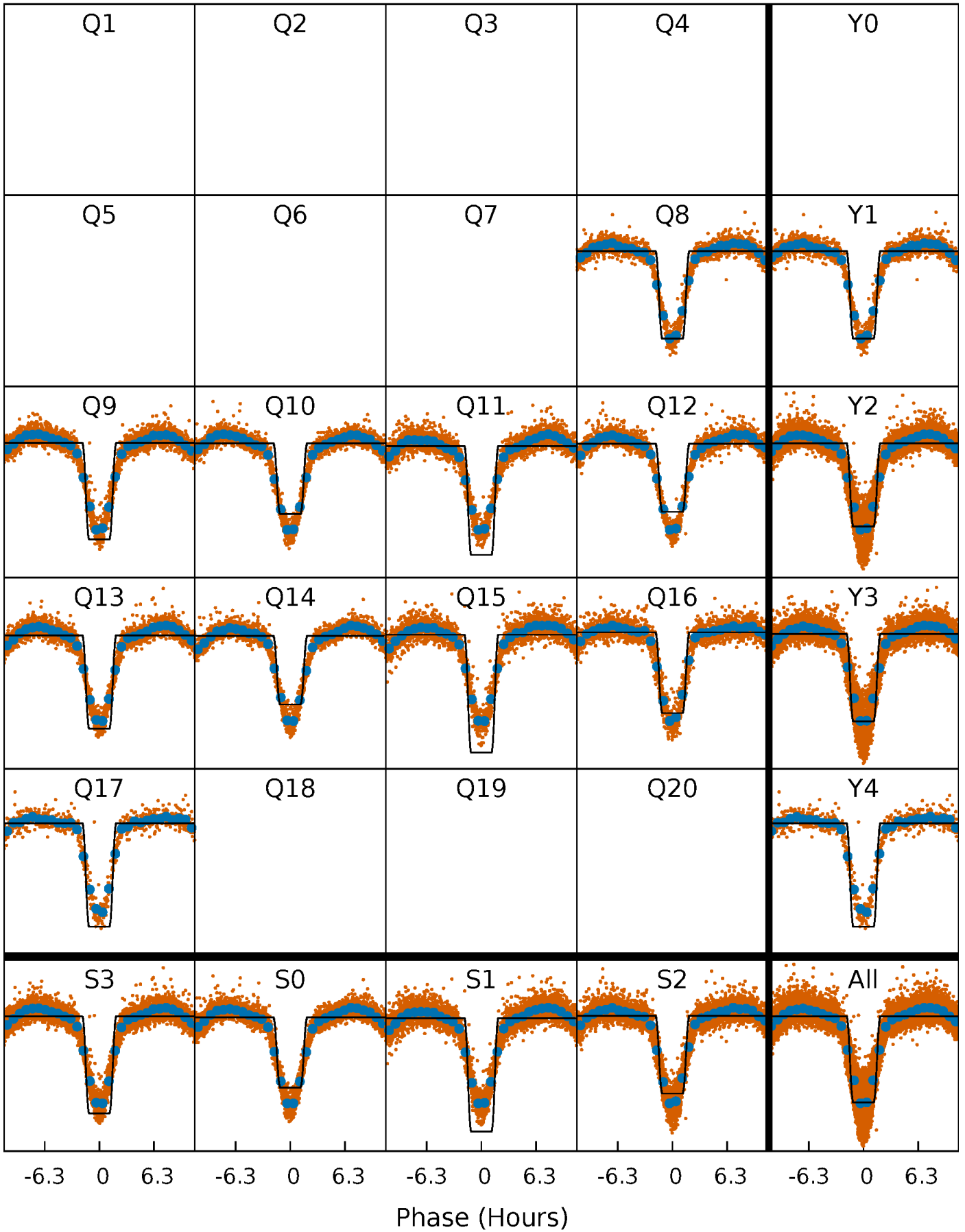
# DV Quarter-Phased Transit Curves

TCE 006314173-02 P= 1.433216 Days  $T_0=132.134849$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

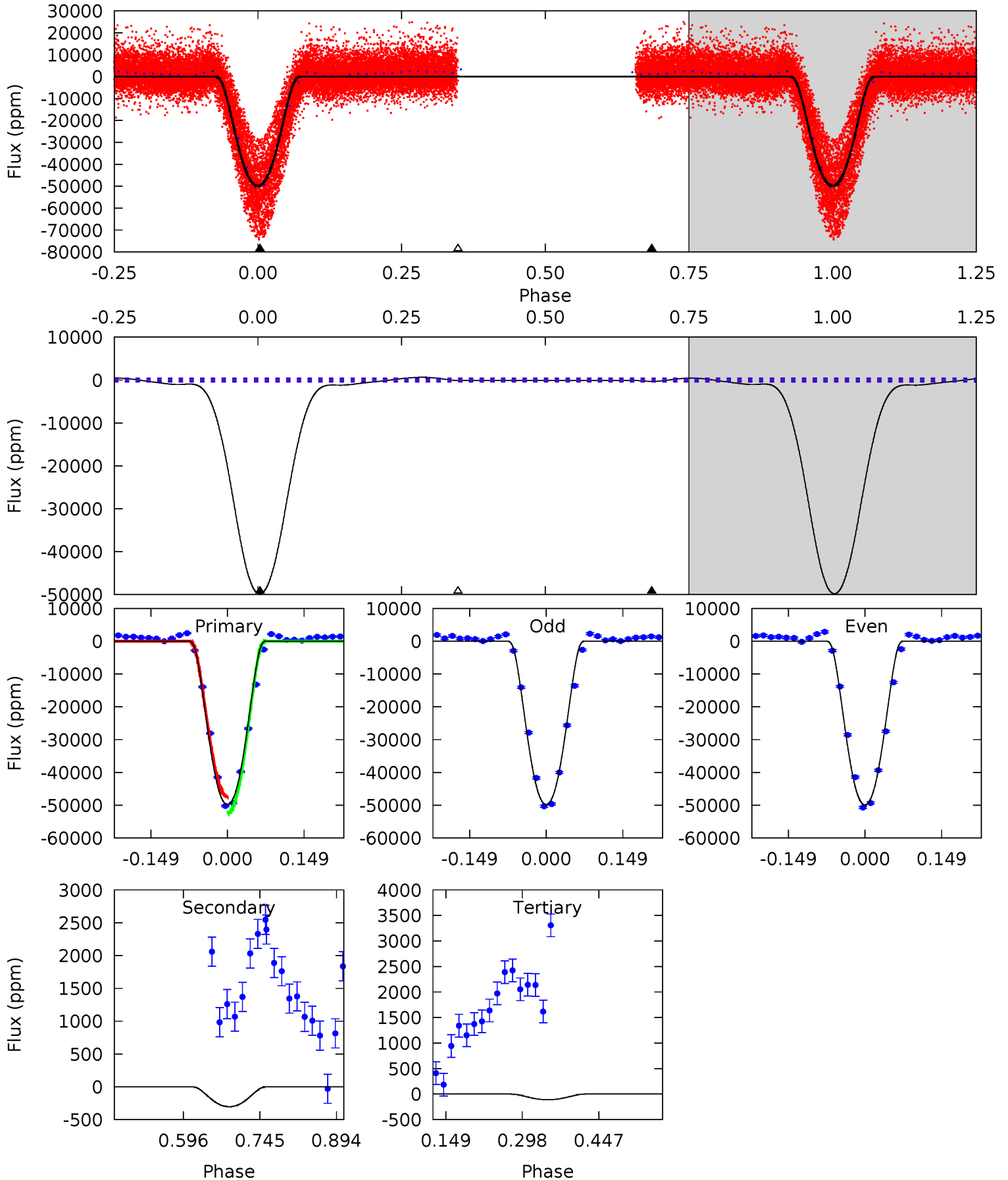
TCE 006314173-02   P= 1.433259 Days    $T_0=132.108666$  (BKJD)



# DV Model-Shift Uniqueness Test

006314173-02, P = 1.433216 Days, E = 132.134849 Days

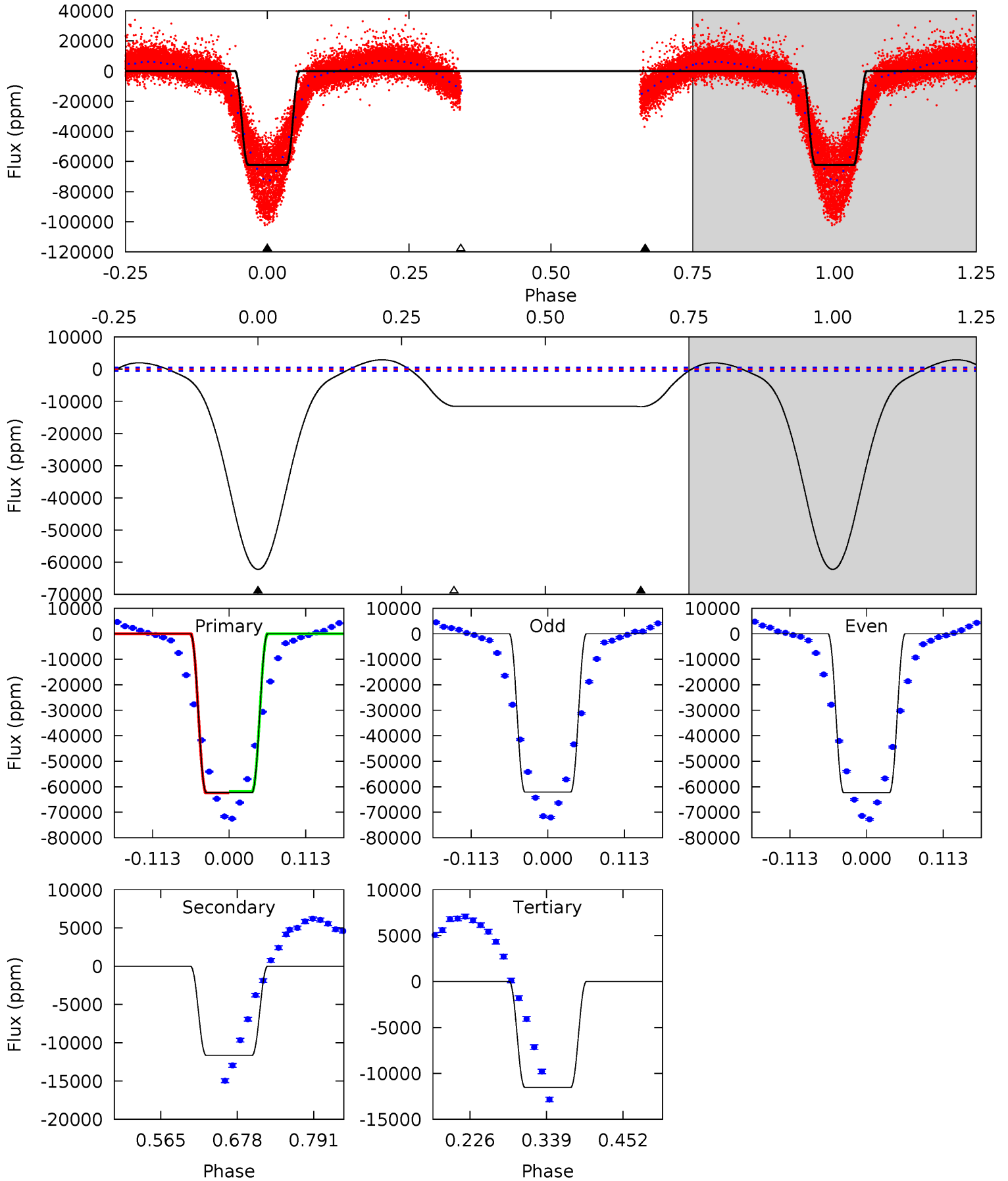
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
655.8	4.00	1.45	0	4.48	1.44	7.62	654.4	655.8	2.55	4.00	0.81	0.98	0.01	35.0



# Alt Model-Shift Uniqueness Test

006314173-02, P = 1.433259 Days, E = 132.108666 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
567.8	106.4	105.2	0	4.54	1.58	34.6	462.6	567.8	1.12	106.4	1.03	1.04	0.04	2.33



### Stellar Parameters For KIC 006314173

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7311^{+230}_{-307}$	$4.013^{+0.273}_{-0.147}$	$-0.400^{+0.250}_{-0.300}$	$1.959^{+0.468}_{-0.643}$	$1.442^{+0.193}_{-0.289}$	$0.270^{+0.477}_{-0.113}$
	+3%/-4%	+7%/-4%	+62%/-75%	+24%/-33%	+13%/-20%	+177%/-42%
Source	KIC0	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 006314173-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-304 \pm 76$	$45.82^{+6.81}_{-7.73}$	$3719^{+277}_{-322}$	$-3370^{+224}_{-182}$	$0.064^{+0.028}_{-0.021}$
Alt.	$-11656 \pm 110$	$55.42^{+8.12}_{-9.93}$	$3718^{+277}_{-339}$	$4594^{+136}_{-162}$	$1.687^{+0.701}_{-0.401}$

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

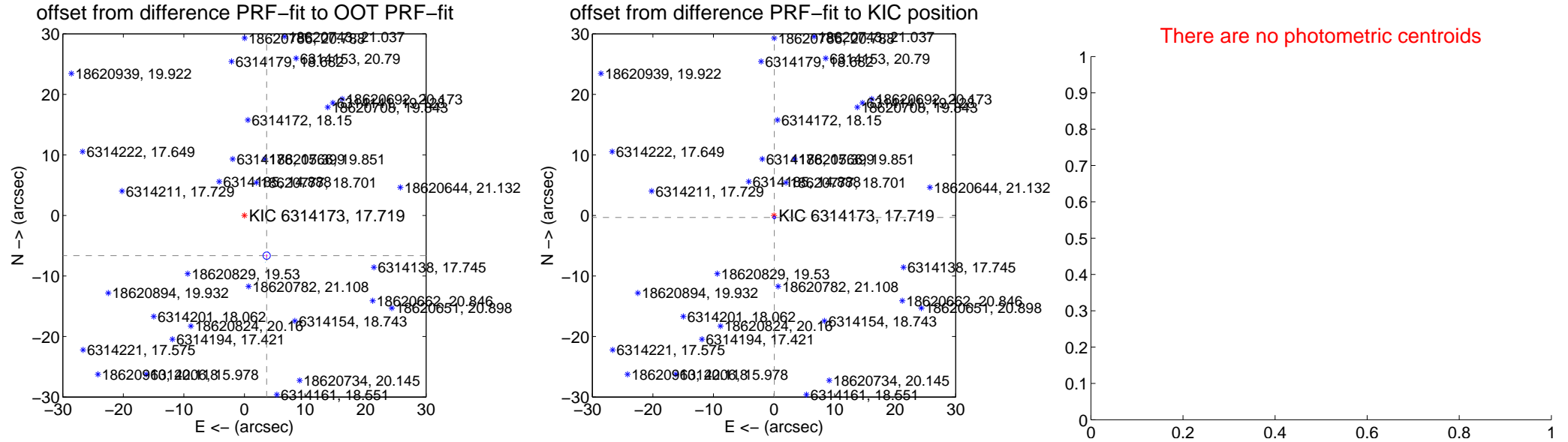
## DV Centroid Data

Supplemental centroid analysis for 006314173-02. Kepler magnitude: 17.72. Transit SNR 215.93

There are 10 quarters with good PRF difference image offsets

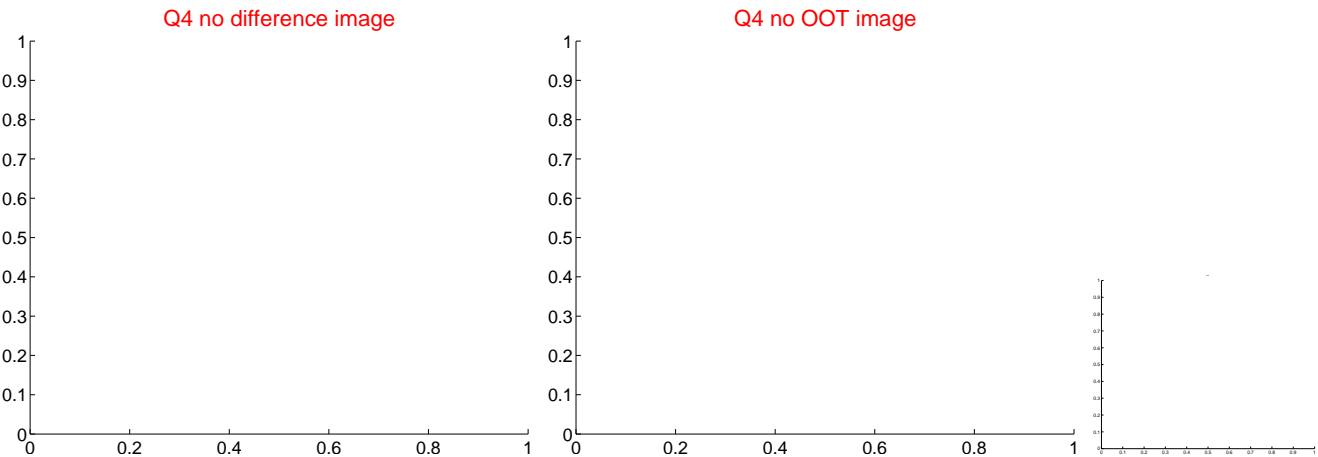
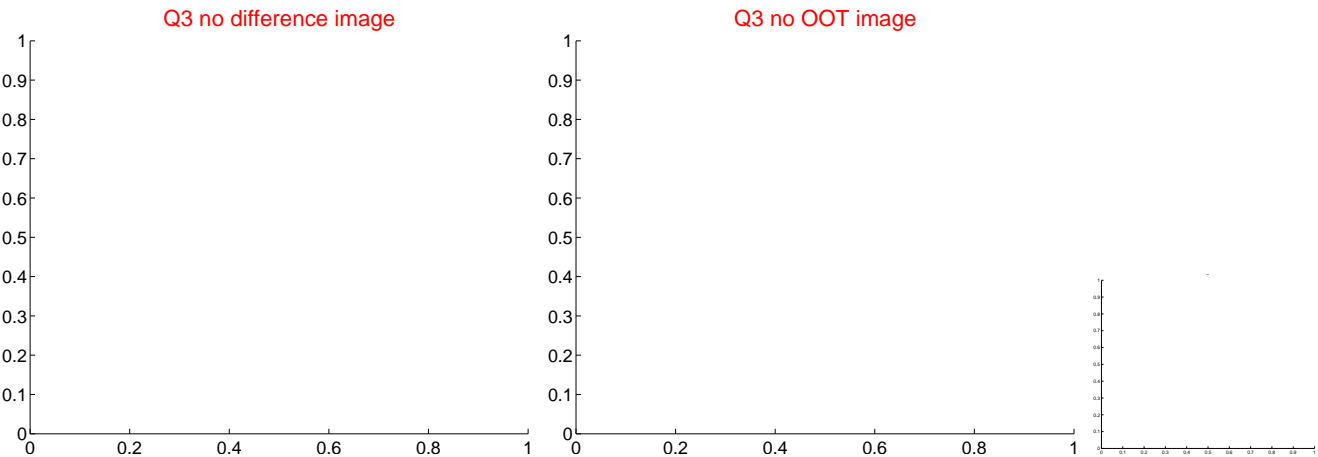
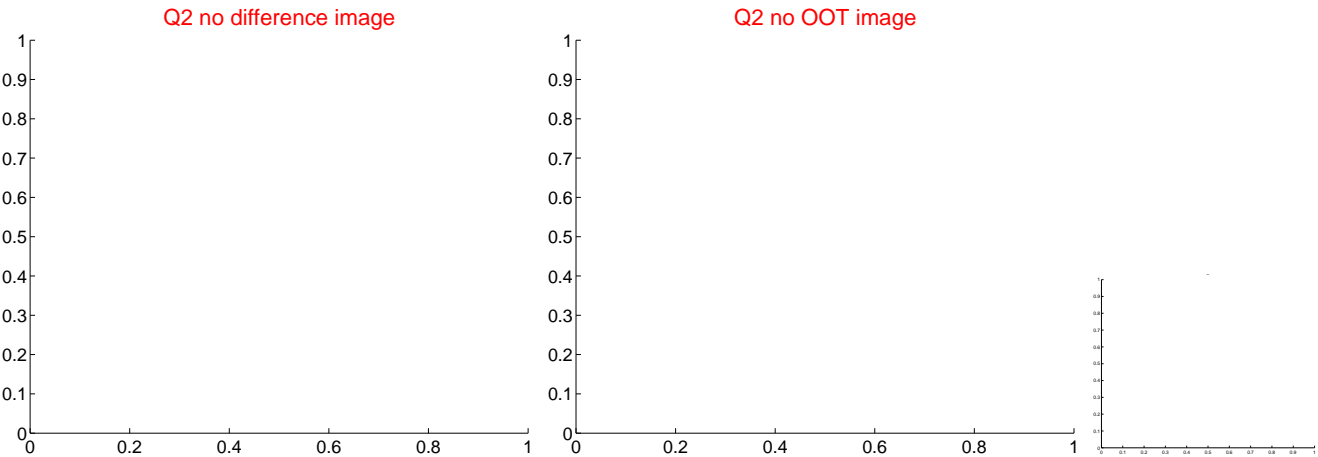
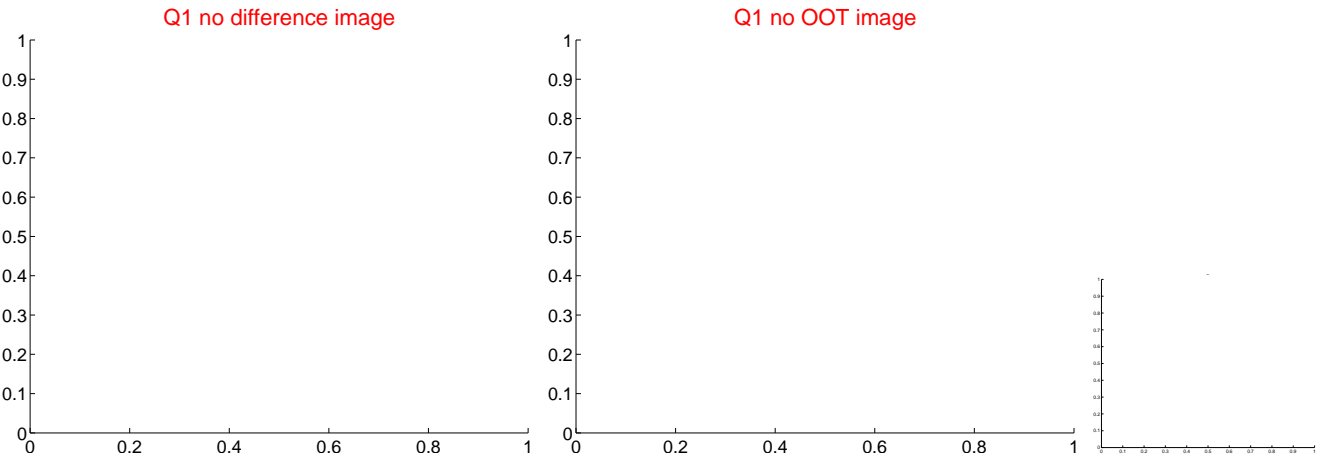
The OOT PRF centroid is offset from the target star catalog position by about 6.78 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$7.588 \pm 0.201$	37.66	$-3.672 \pm 0.111$	$-6.640 \pm 0.222$
PRF-fit source offset from KIC position	$0.341 \pm 0.075$	4.54	$-0.053 \pm 0.078$	$-0.337 \pm 0.075$
photometric centroid source offset	—	—	—	—

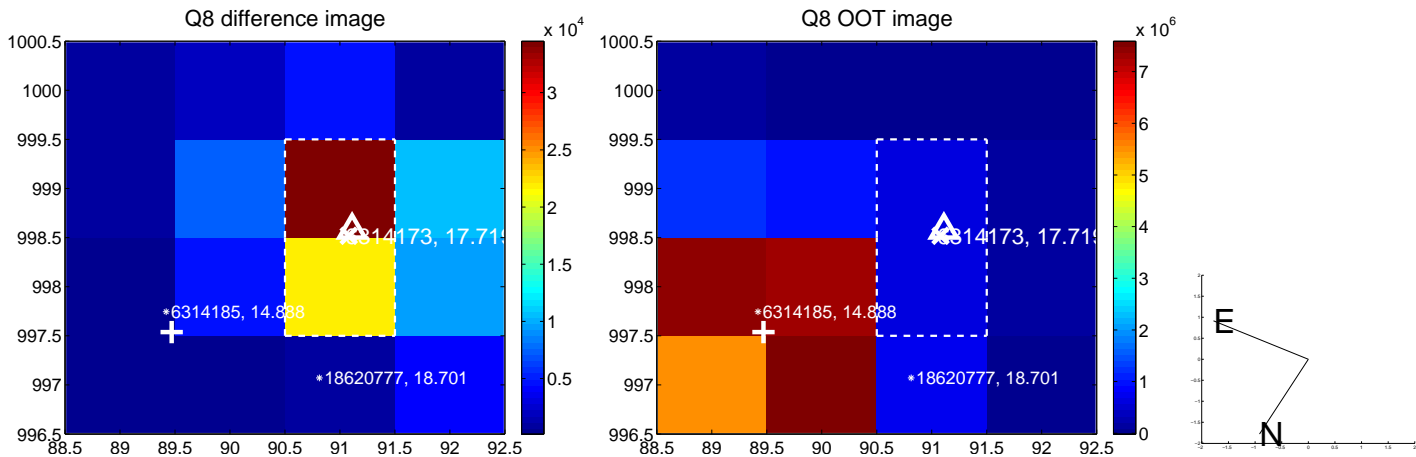
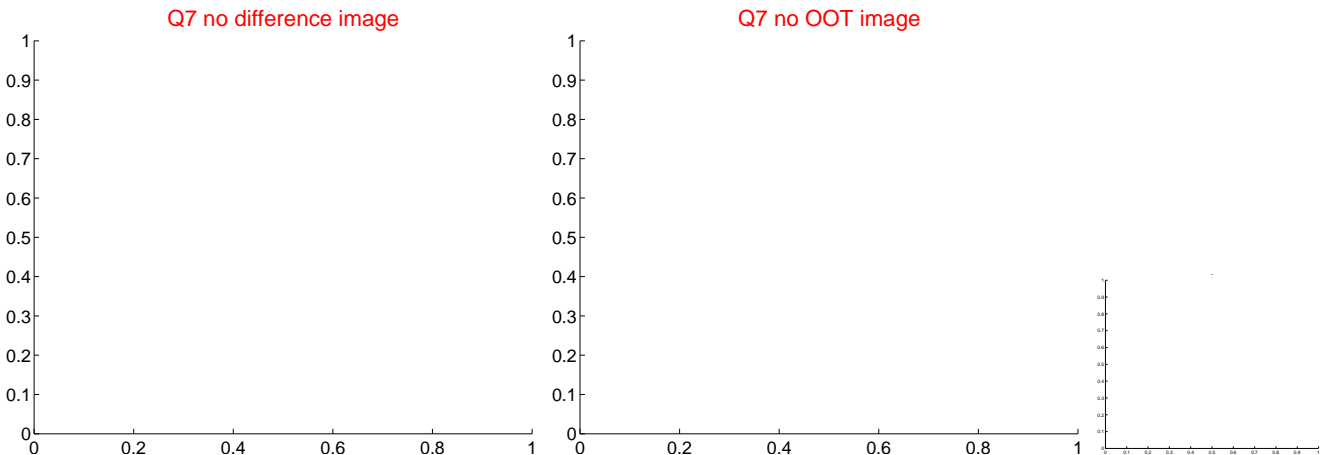
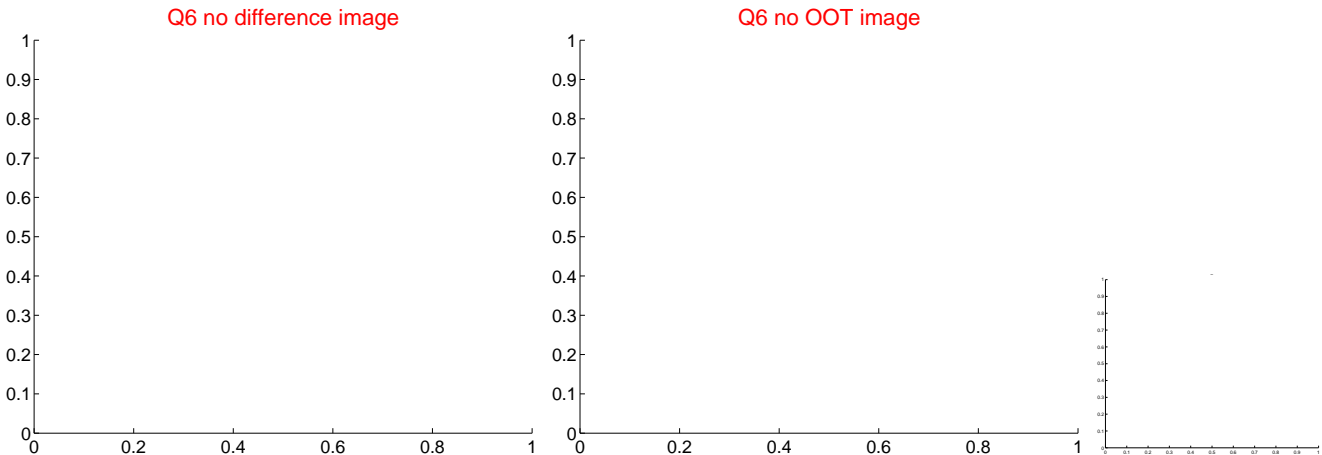
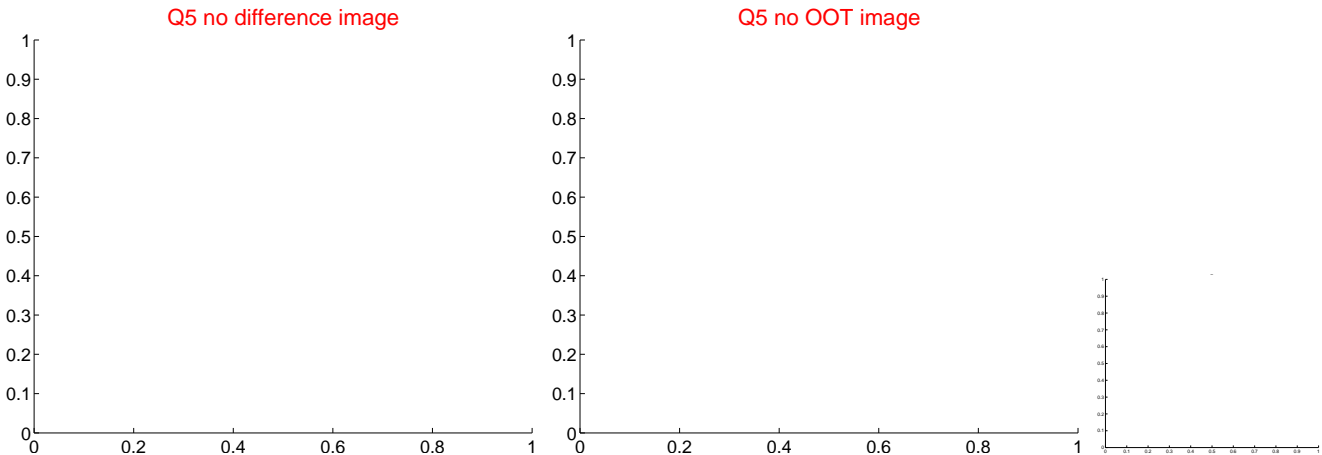


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

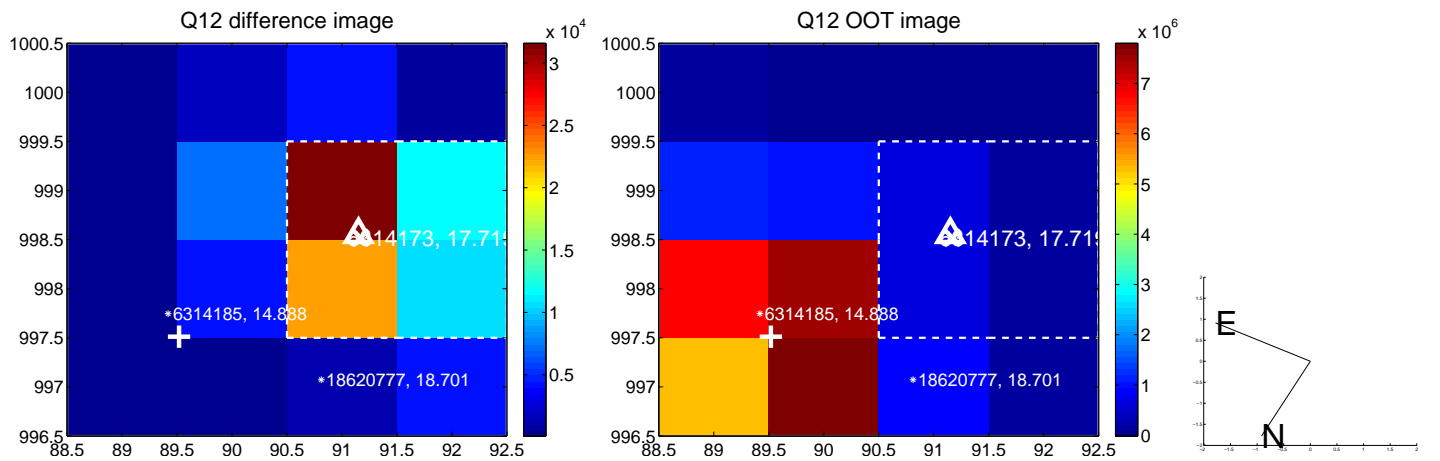
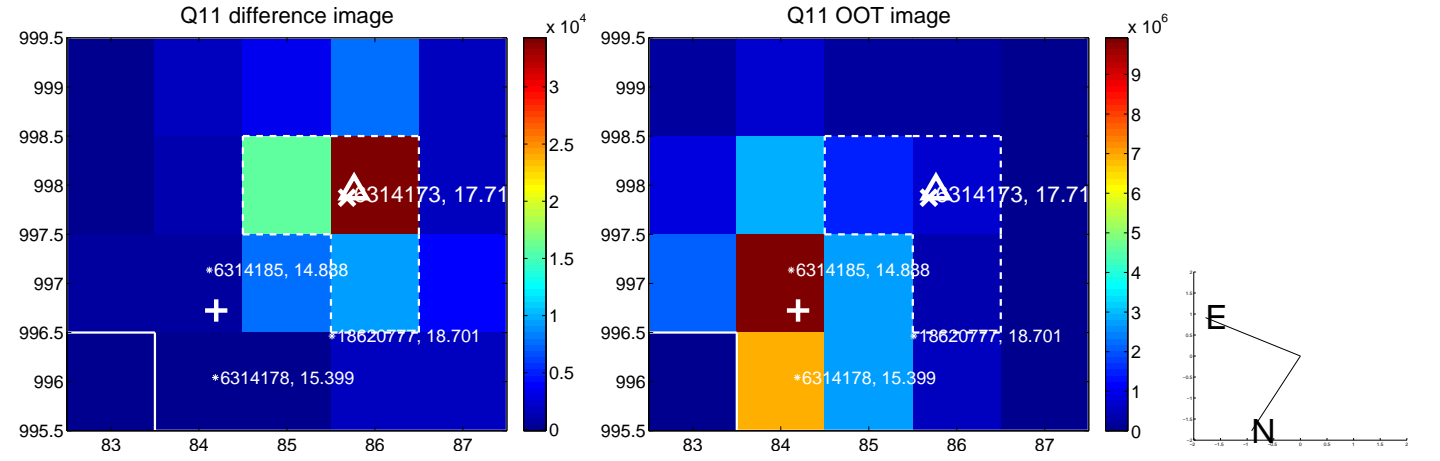
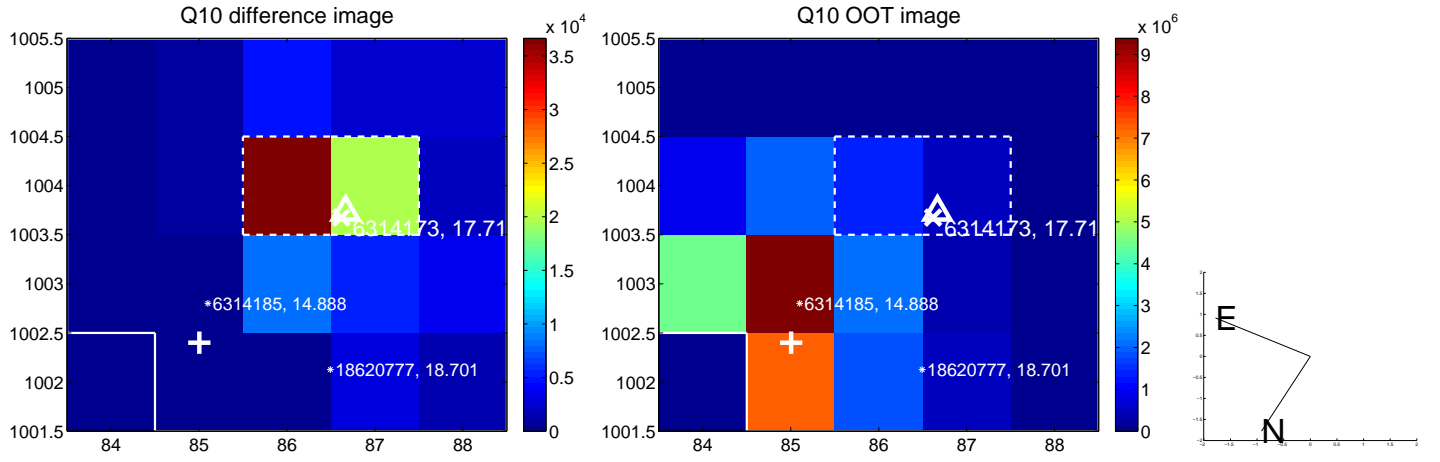
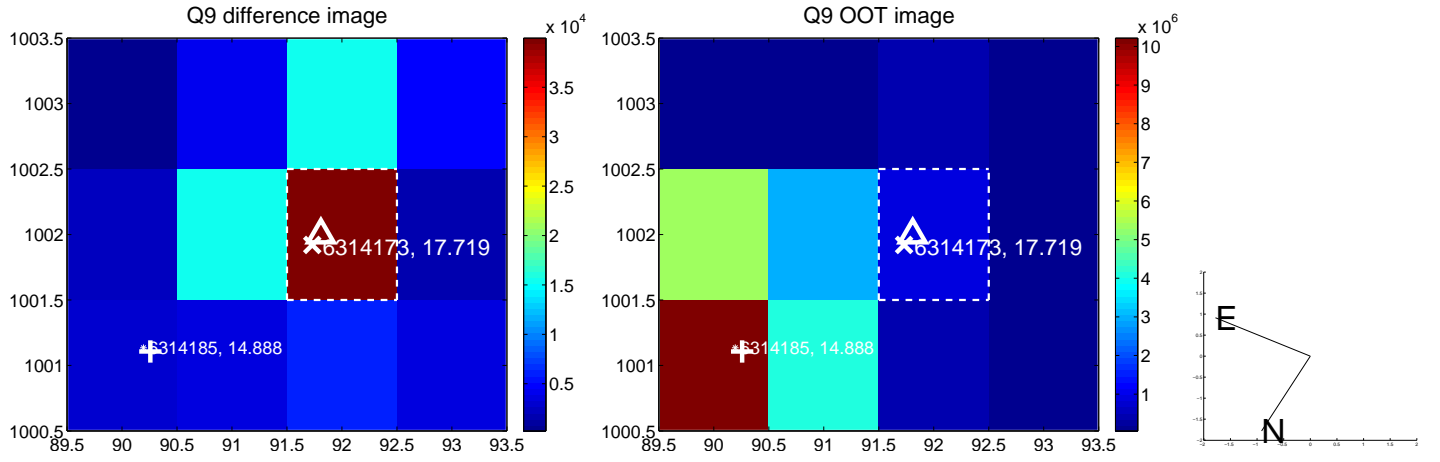
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



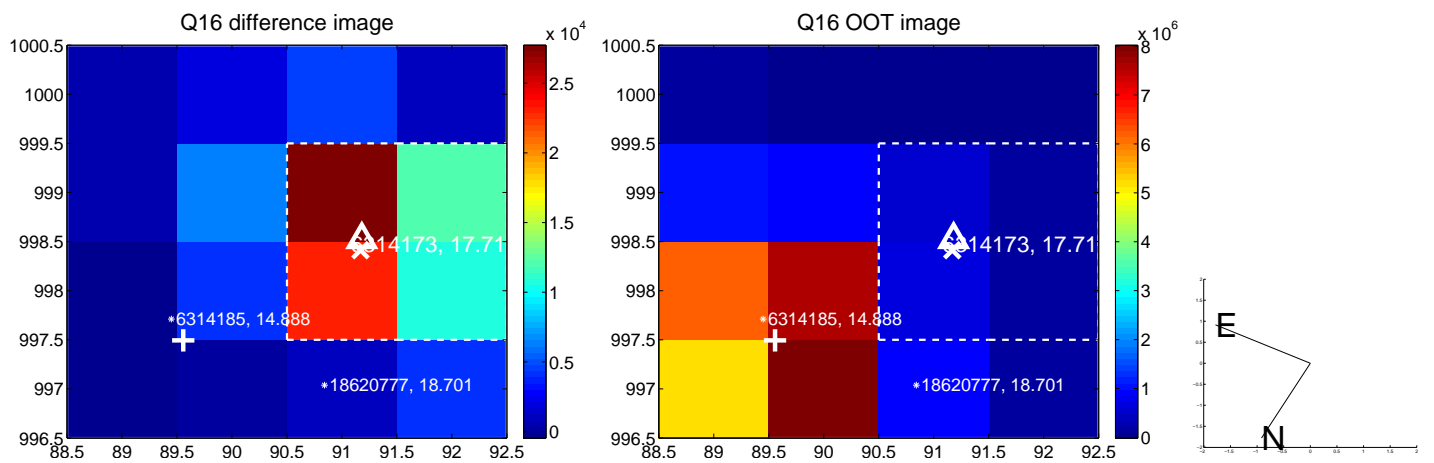
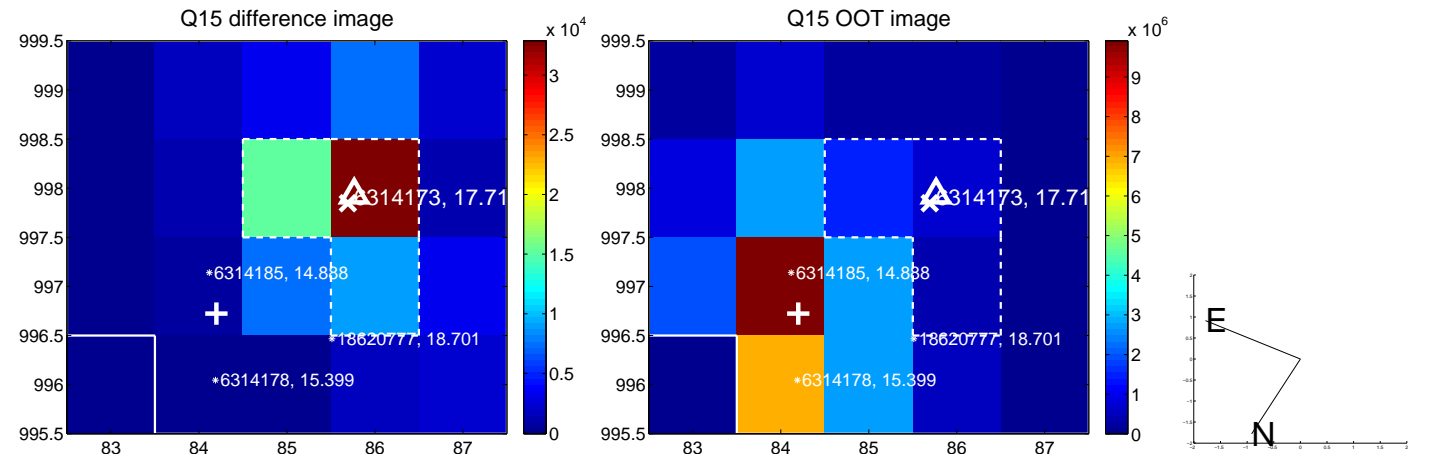
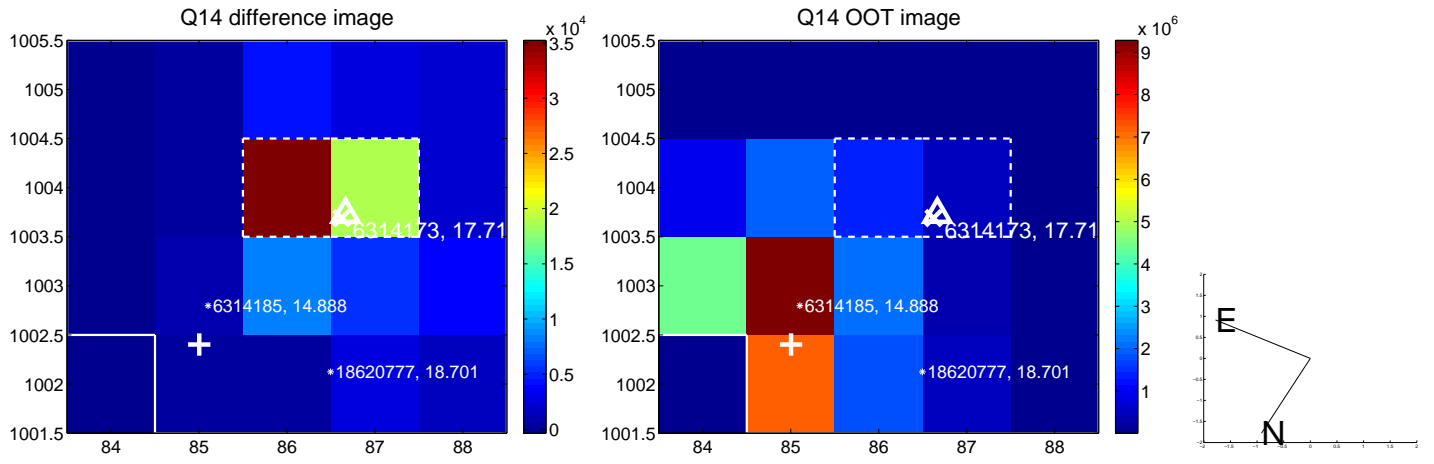
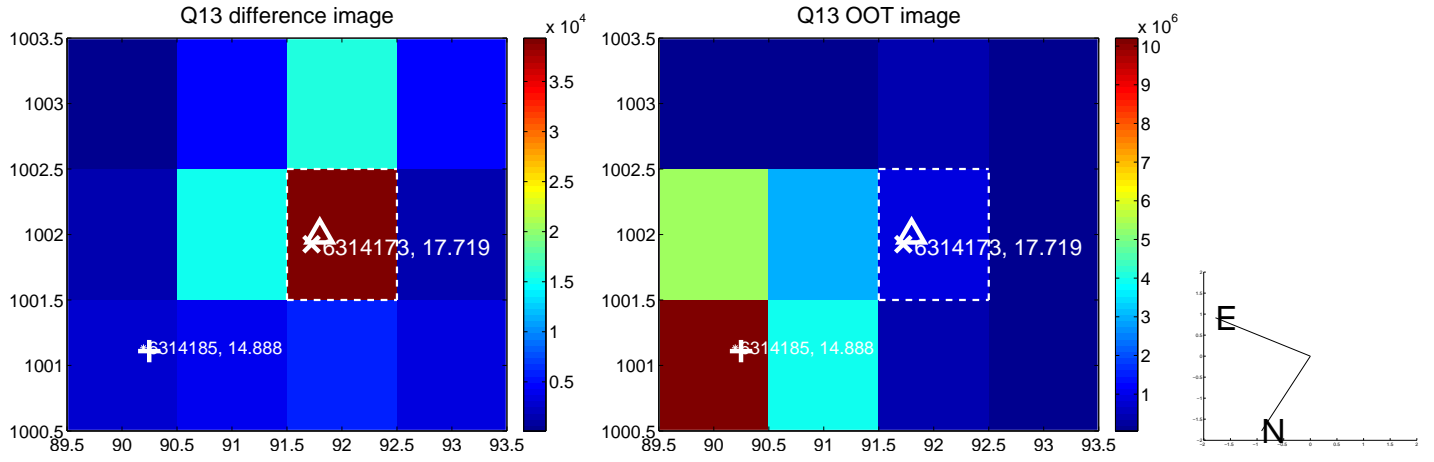
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



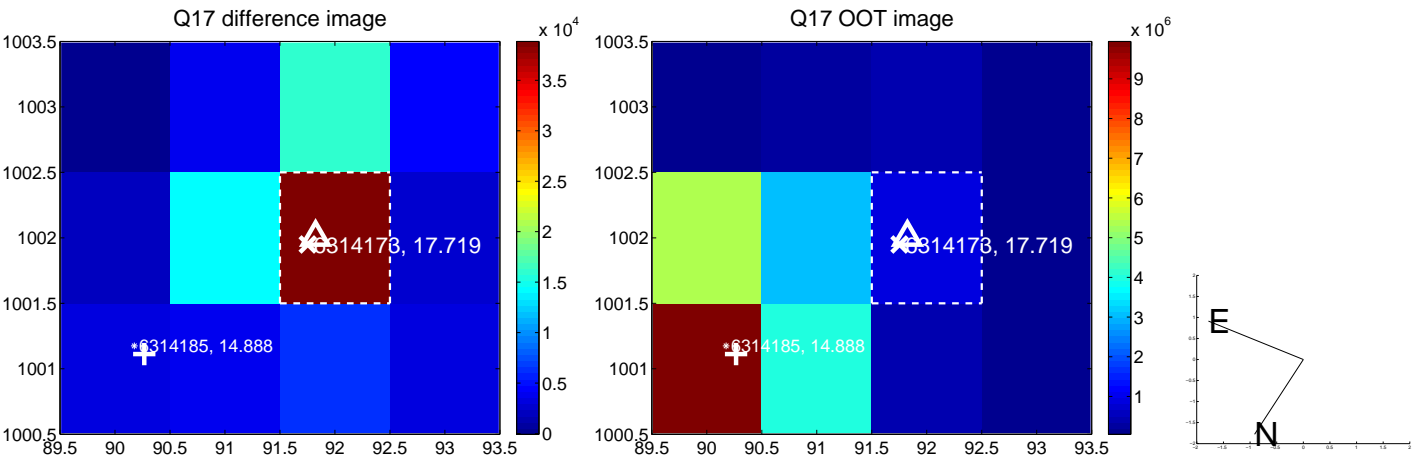
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



folded centroid time series figure for this object.

UKIRT Image

Declination

