

# KIC 003114667

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003114667-01	OBS	3763.01	0.888587	132.092244	427113.1	1.500	2791.0	-1.0	0.62	4324	33.61	508.81
003114667-02	OBS	No	0.888587	131.648494	274593.5	1.500	1950.0	-1.0	0.62	4324	32.30	508.81

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003114667-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
003114667-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

**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.

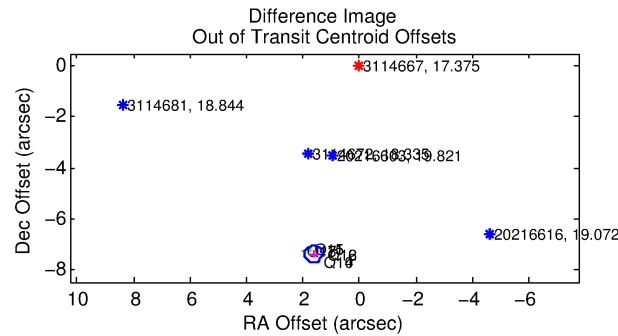
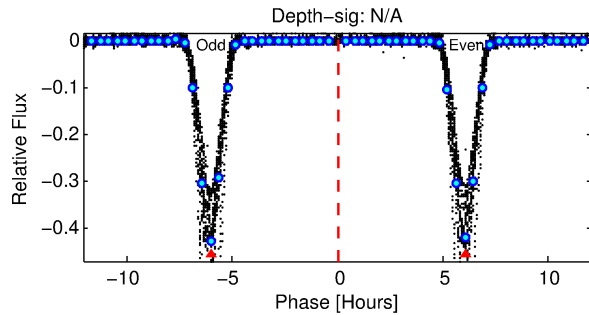
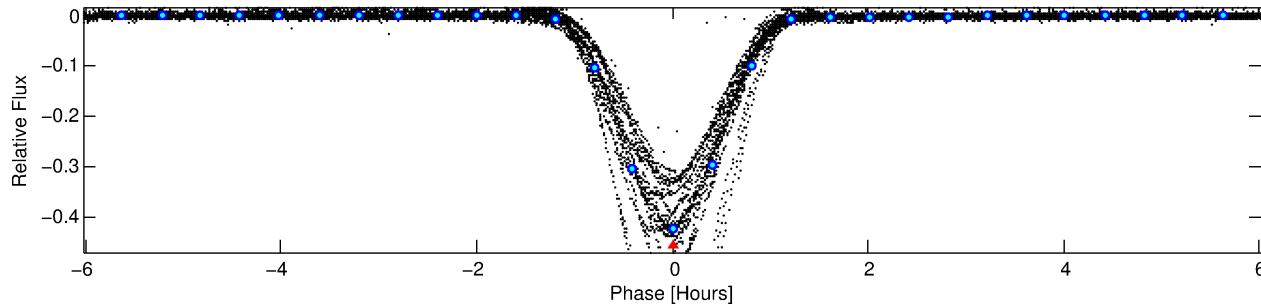
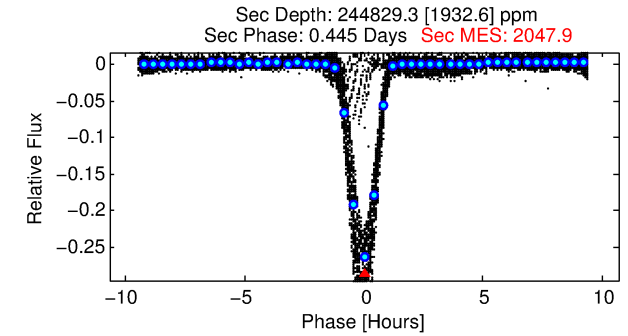
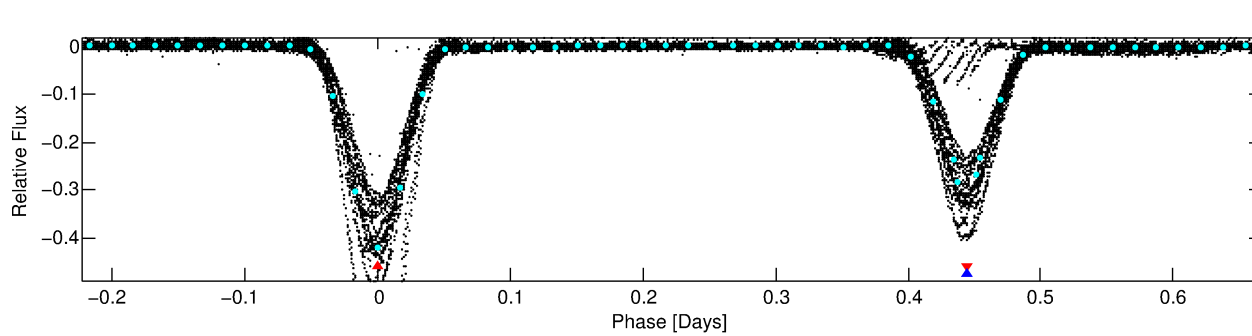
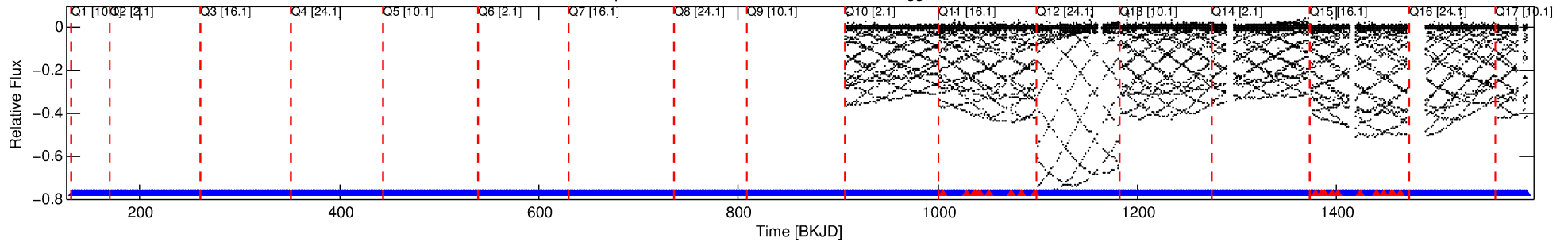
## Ephemeris Match Information For 003114667-01

No Significant Match Found

# DV One-Page Summary

KIC: 3114667 Candidate: 1 of 2 Period: 0.889 d  
KOI: K03763.01 Corr: 0.804

Kp: 17.38 R\*: 0.62 Rs Teff: 4324.0 K Logg: 4.64 Fe/H: -0.280



## TPS TCE Results:

Period = 0.88859 d  
Epoch = 132.0922 BKJD

DV fit results are unavailable

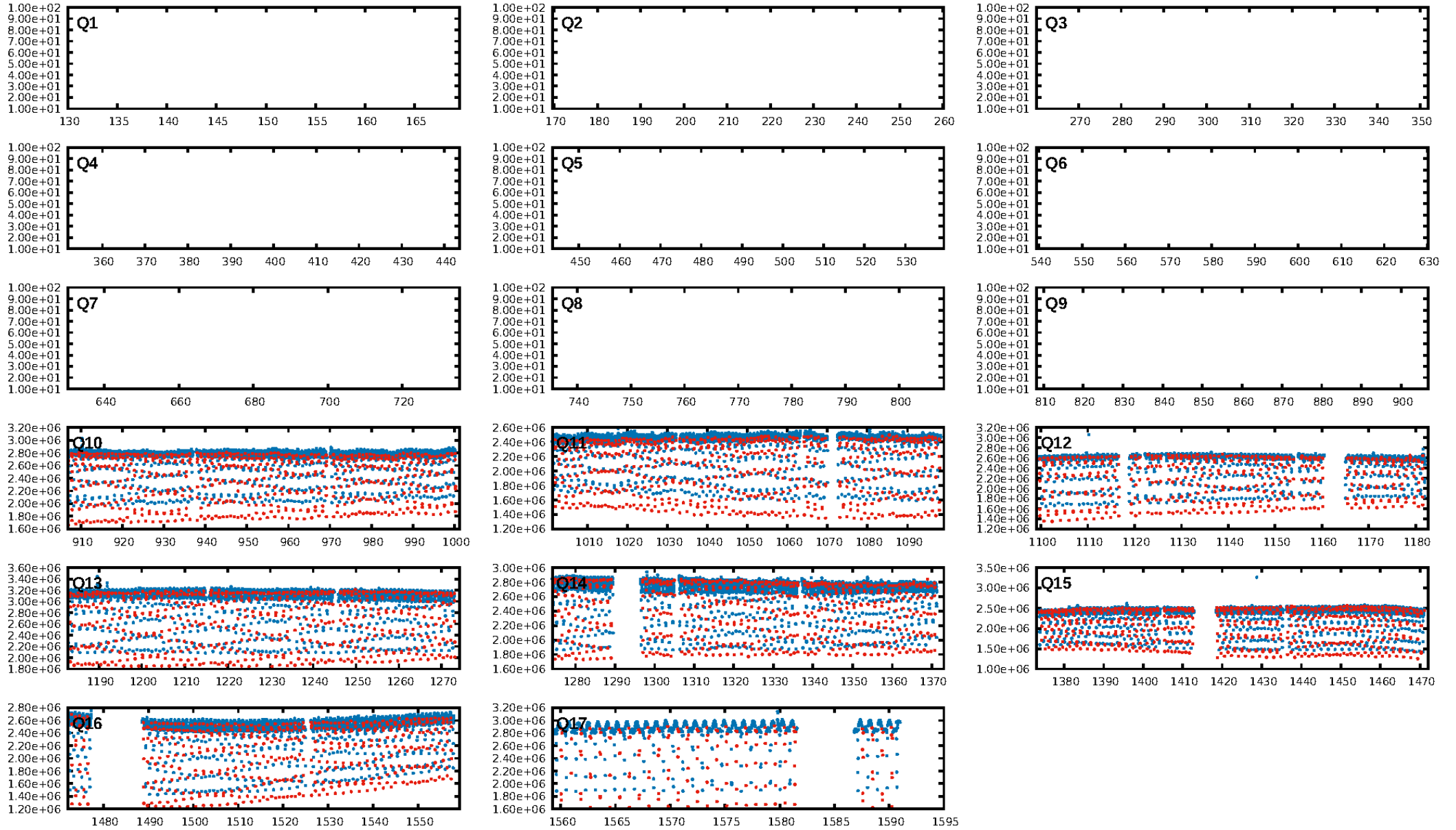
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.97 [647/667]  
GhostDiagnostic-chr: 1.173  
Centroid-sig: N/A  
Centroid-so: 1.460 arcsec [892.78 $\sigma$ ]  
OotOffset-rm: 7.585 arcsec [69.99 $\sigma$ ]  
KicOffset-rm: 0.248 arcsec [3.10 $\sigma$ ]  
OotOffset-st: 2/2/2/2 [8]  
KicOffset-st: 2/2/2/2 [8]  
DiffImageQuality-fgm: 1.00 [8/8]  
DiffImageOverlap-fno: 1.00 [8/8]

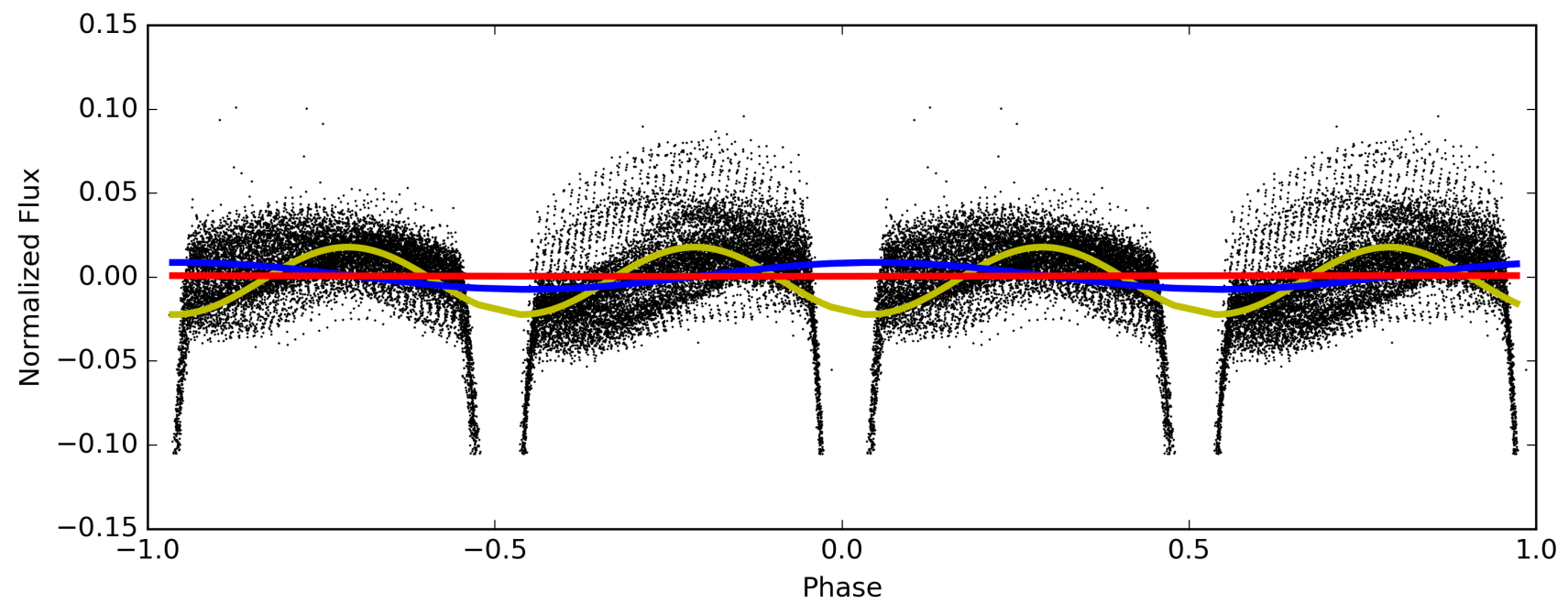
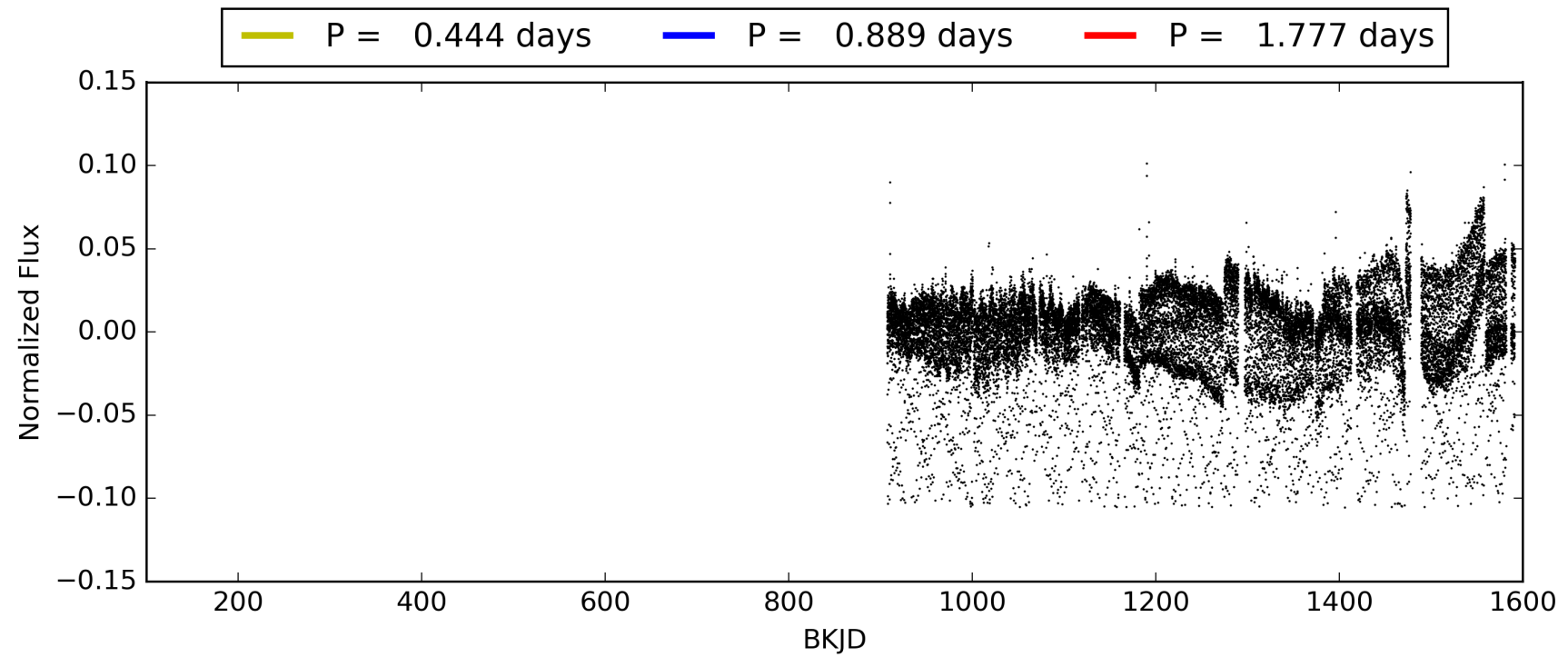
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 10:23:29 Z

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

# TCE 003114667-01, PDC Light Curves

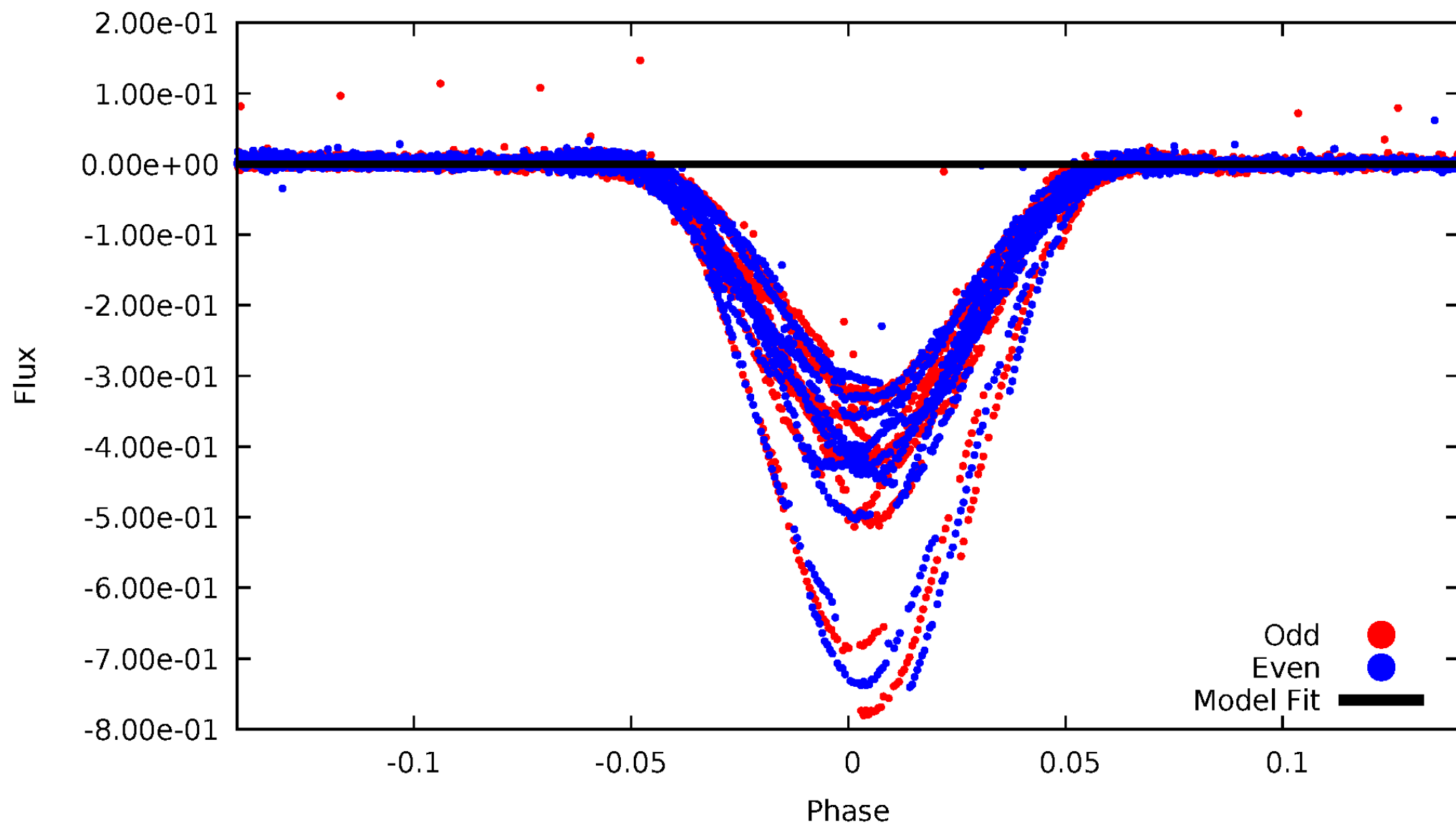


TCE 003114667-01



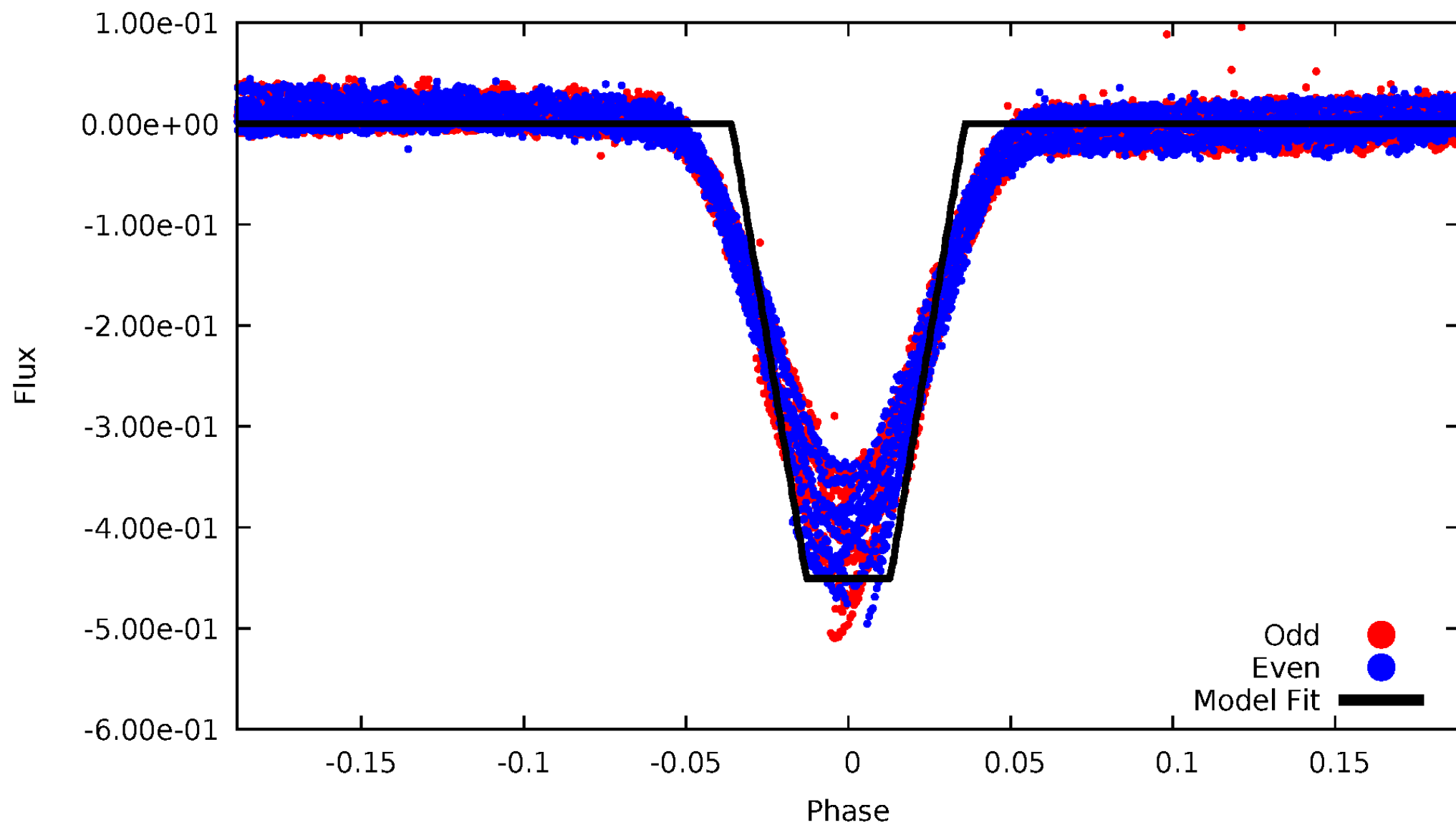
# DV Odd/Even

TCE 003114667-01



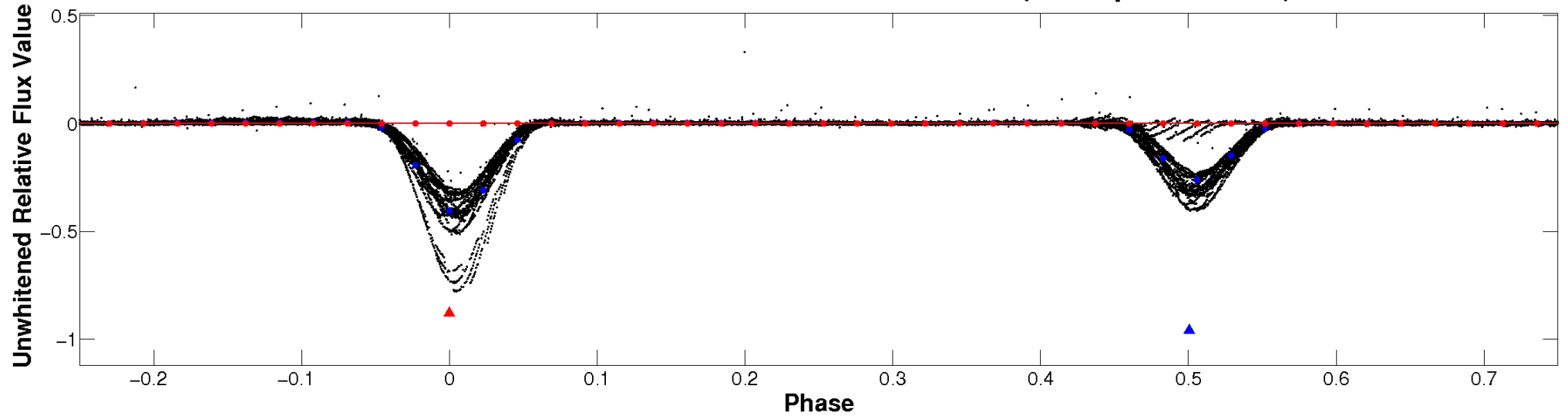
# ALT Odd/Even

TCE 003114667-01

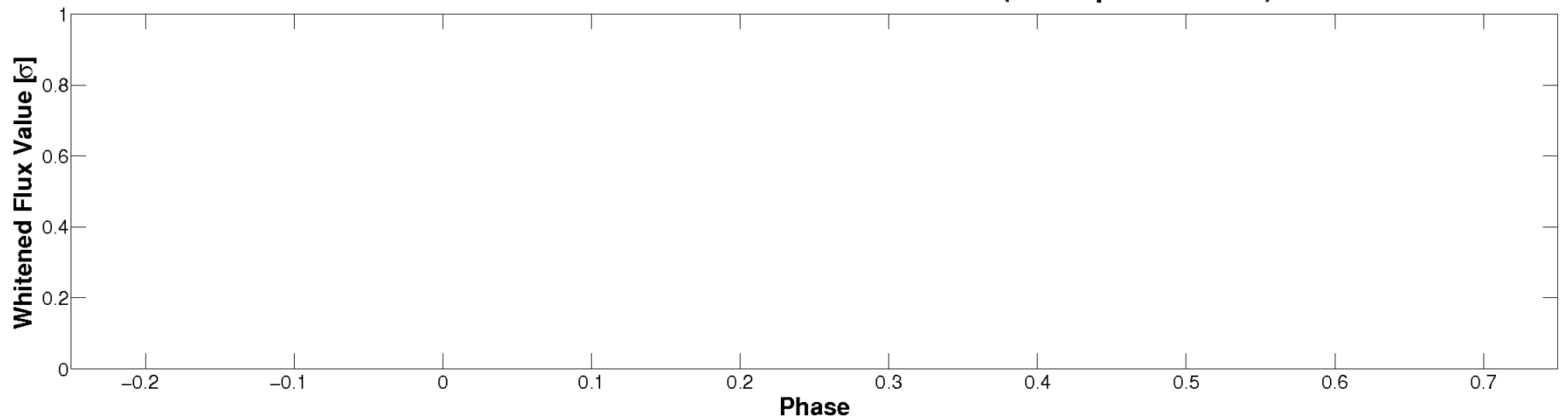


# Non-Whitened Vs. Whitened Light Curve

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

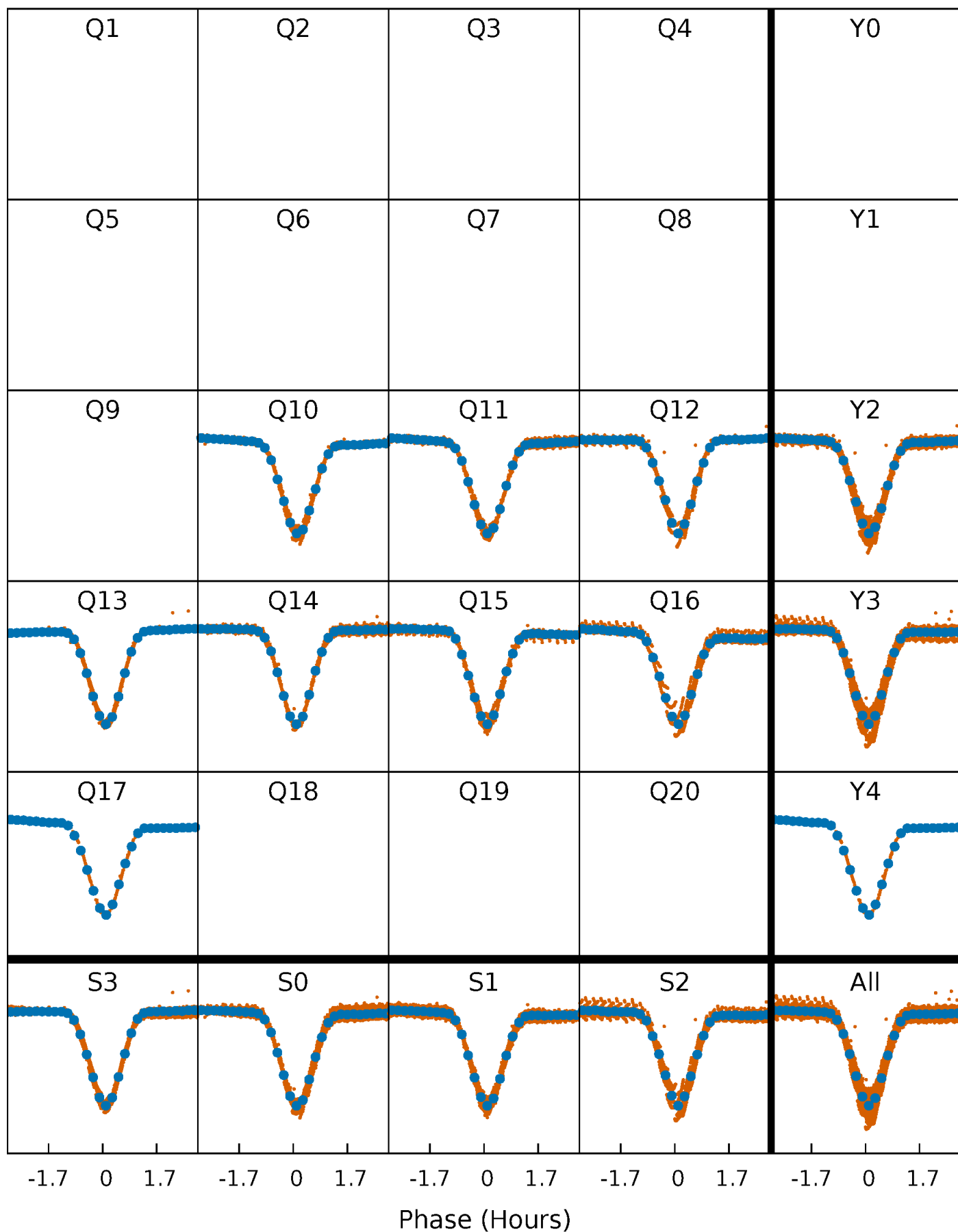


**Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



# PDC Quarter-Phased Transit Curves

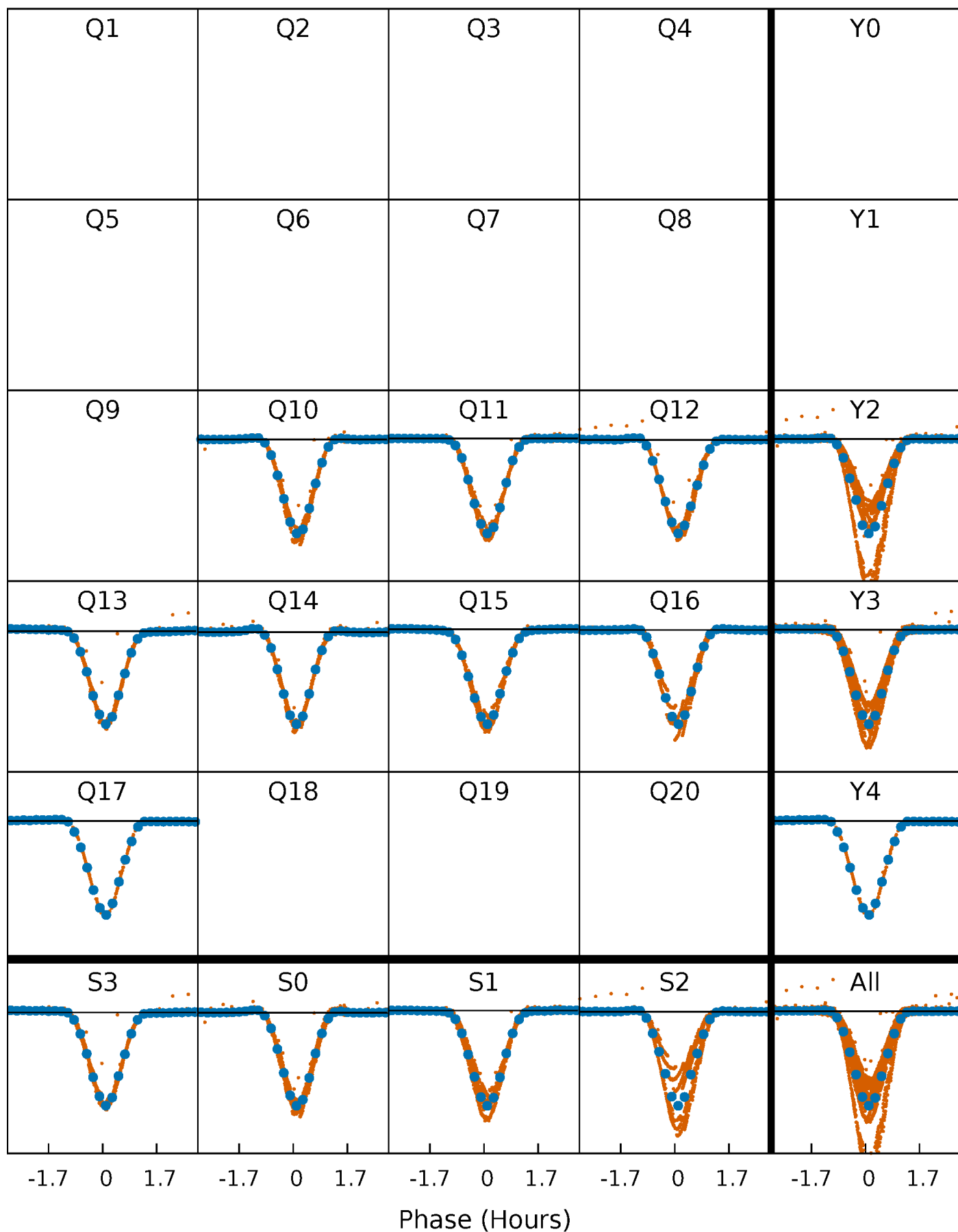
TCE 003114667-01 P= 0.888587 Days  $T_0=132.092244$  (BKJD)





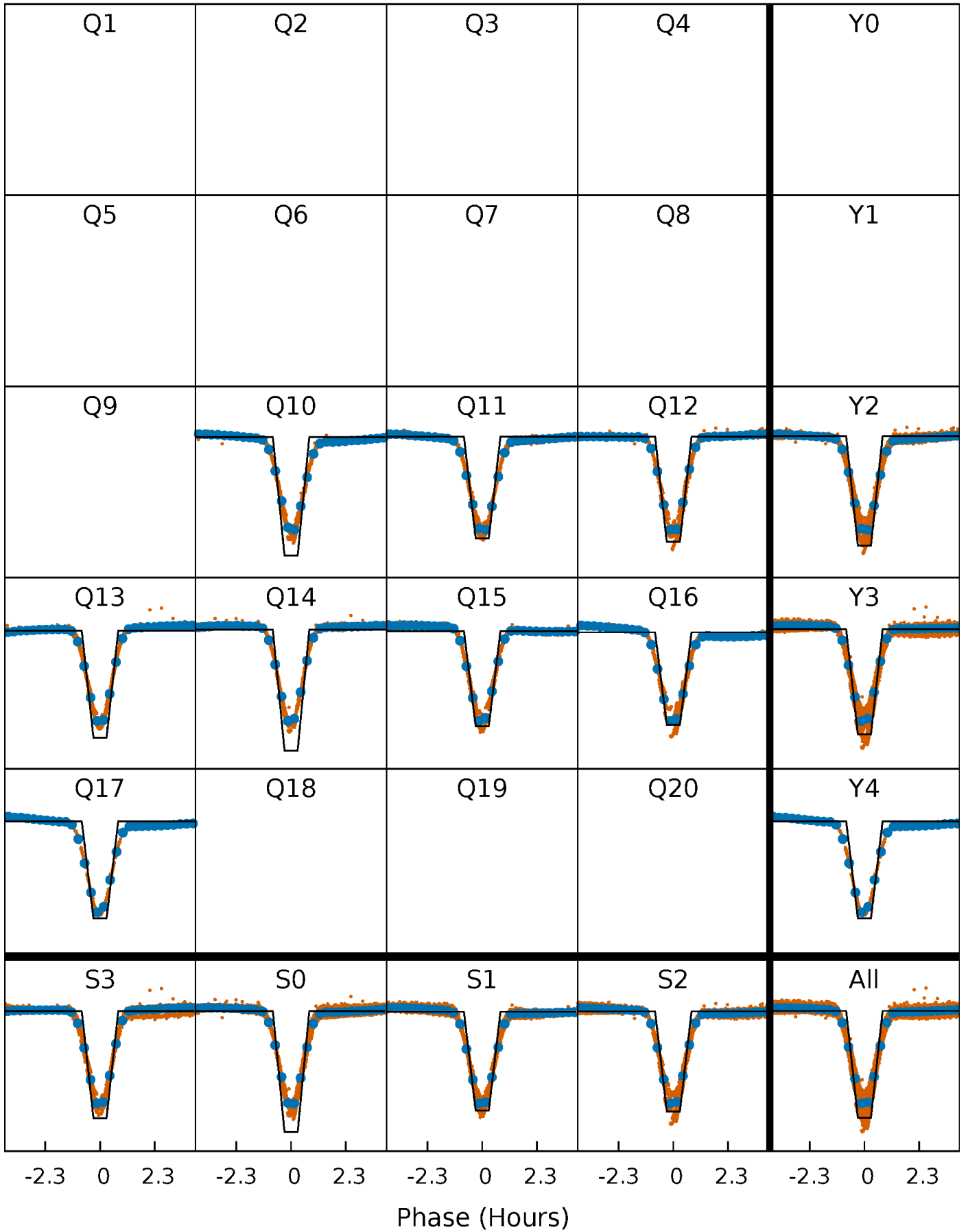
# DV Quarter-Phased Transit Curves

TCE 003114667-01 P= 0.888587 Days  $T_0=132.092244$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

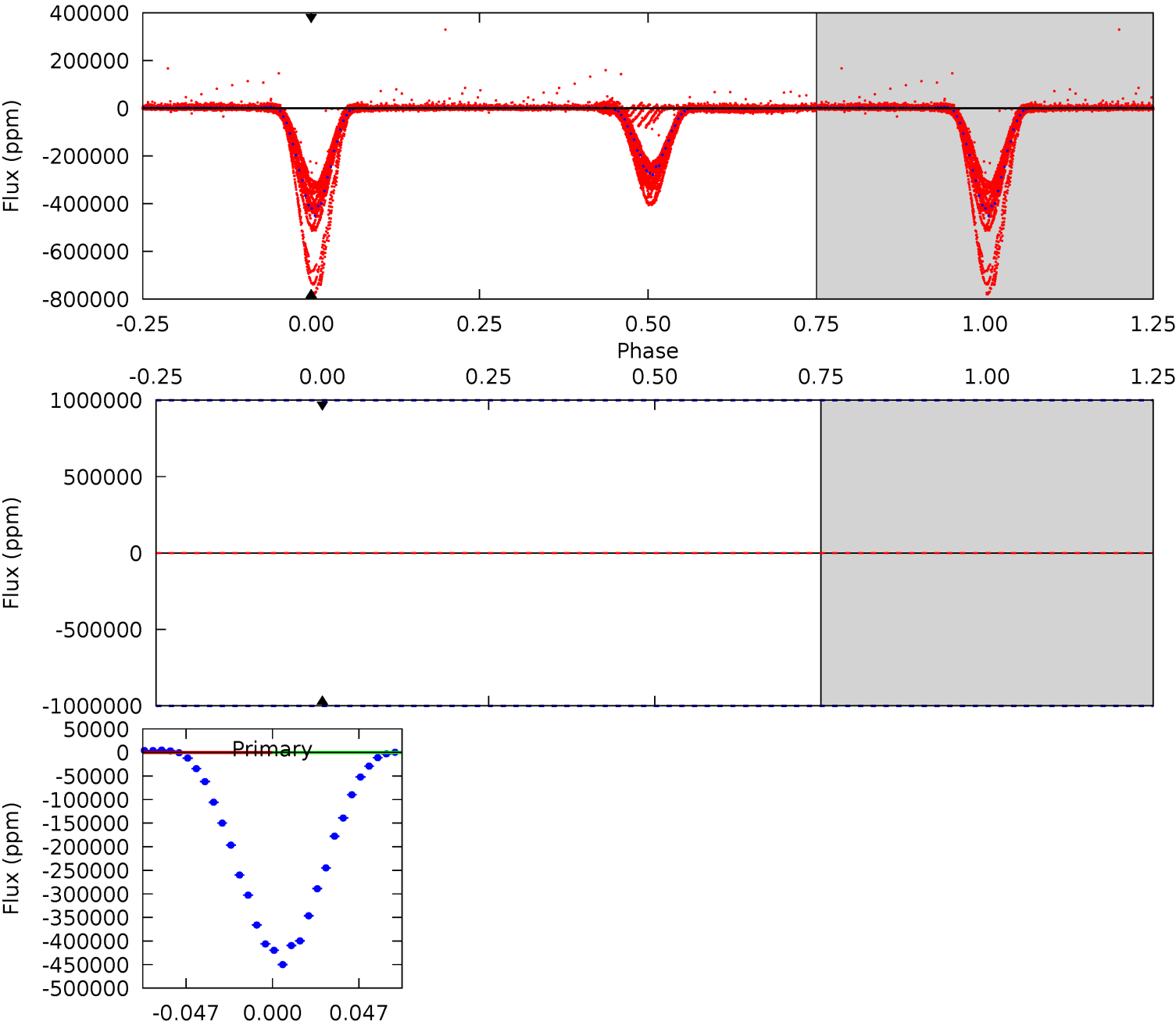
TCE 003114667-01   P= 0.888587 Days    $T_0=132.097003$  (BKJD)



DV Model-Shift Uniqueness Test

003114667-01, P = 0.888587 Days, E = 132.092244 Days

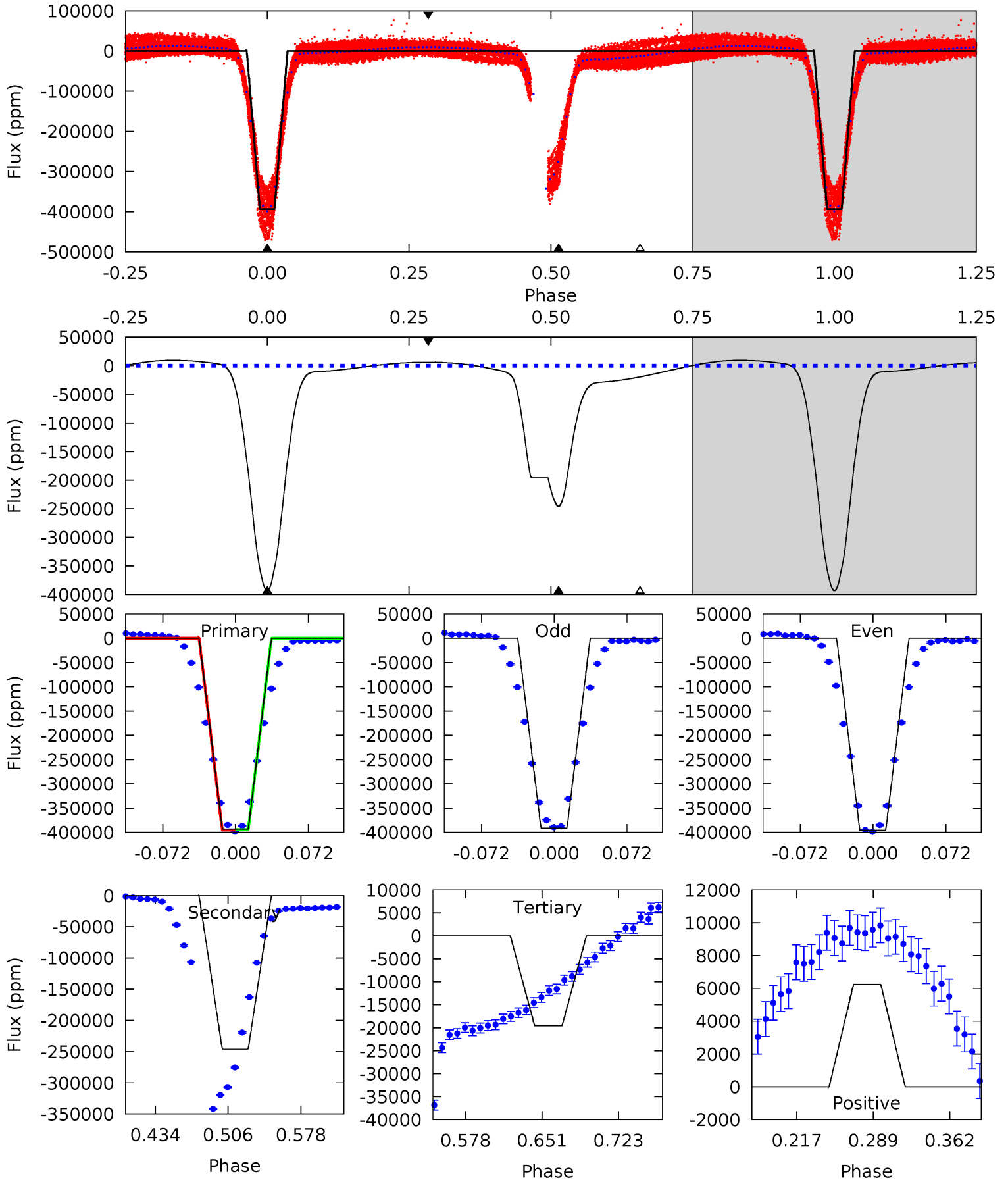
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

003114667-01, P = 0.888587 Days, E = 132.097003 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
1110	694.7	55.3	17.6	4.63	1.80	30.4	1055	1092	639.4	677.1	5.97	1.01	0.02	1.21



### Stellar Parameters For KIC 003114667

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4324^{+152}_{-167}$	$4.639^{+0.056}_{-0.024}$	$-0.280^{+0.300}_{-0.300}$	$0.616^{+0.050}_{-0.061}$	$0.604^{+0.067}_{-0.055}$	$3.634^{+0.896}_{-0.438}$
	+4%/-4%	+1%/-1%	+107%/-107%	+8%/-10%	+11%/-9%	+25%/-12%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 003114667-01 / KOI 3763.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$33.20^{+6.92}_{-6.56}$	$1682^{+61}_{-74}$	$-1960^{+5717}_{-1691}$	$0.212^{+13.913}_{-11.162}$
Alt.	$-246078 \pm 354$	$44.98^{+7.11}_{-7.27}$	$1683^{+67}_{-75}$	$4058^{+298}_{-252}$	$21^{+8}_{-5}$

$T_{\text{max}}$  = 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

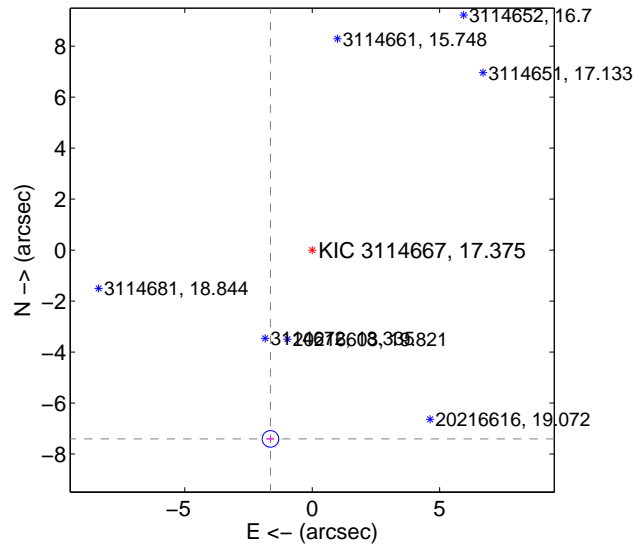
Supplemental centroid analysis for 003114667-01. Kepler magnitude: 17.38. Transit SNR -1.00

There are 8 quarters with good PRF difference image offsets

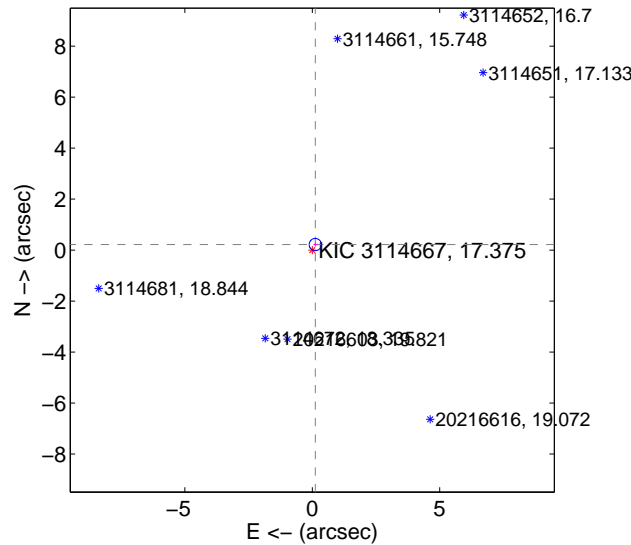
The OOT PRF centroid is offset from the target star catalog position by about 7.83 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$7.585 \pm 0.108$	69.99	$1.638 \pm 0.138$	$-7.406 \pm 0.107$
PRF-fit source offset from KIC position	$0.248 \pm 0.080$	3.10	$-0.118 \pm 0.077$	$0.218 \pm 0.081$
photometric centroid source offset	$1.46 \pm 0.00$	892.78	$-0.18 \pm 0.00$	$1.45 \pm 0.00$

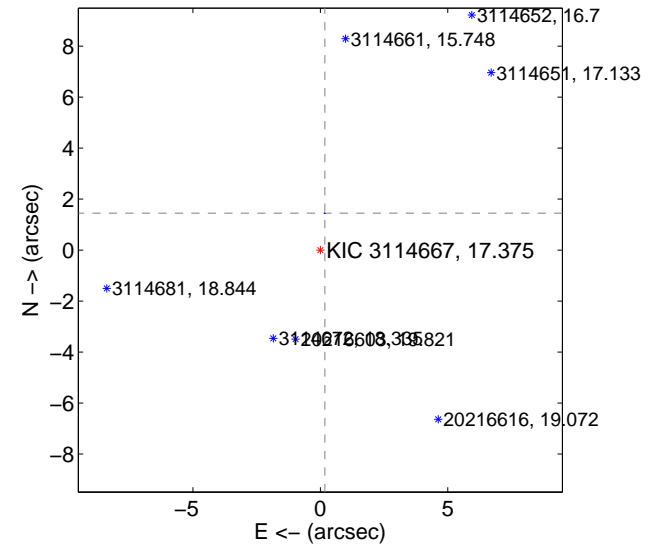
offset from difference PRF-fit to OOT PRF-fit



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.

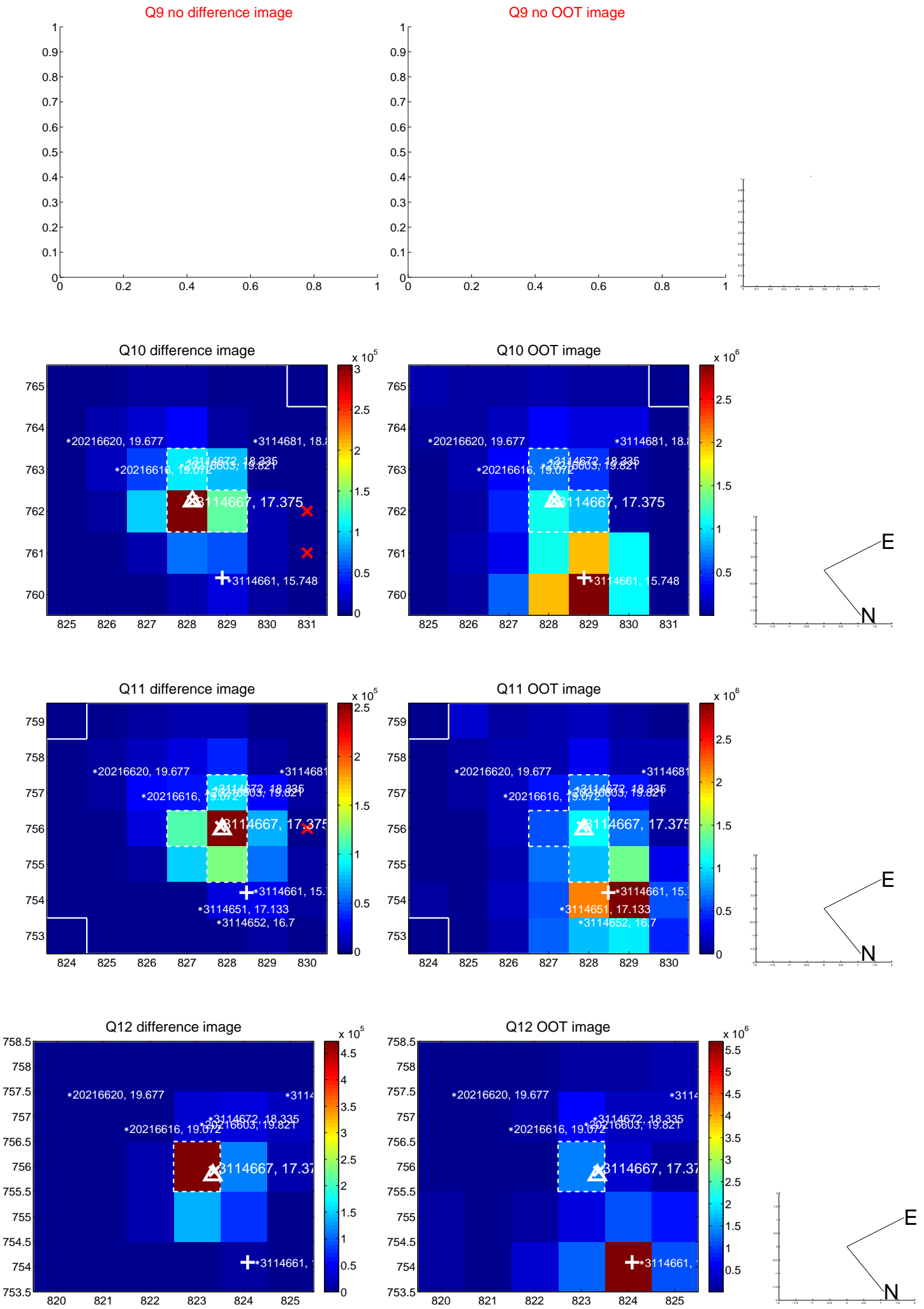


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

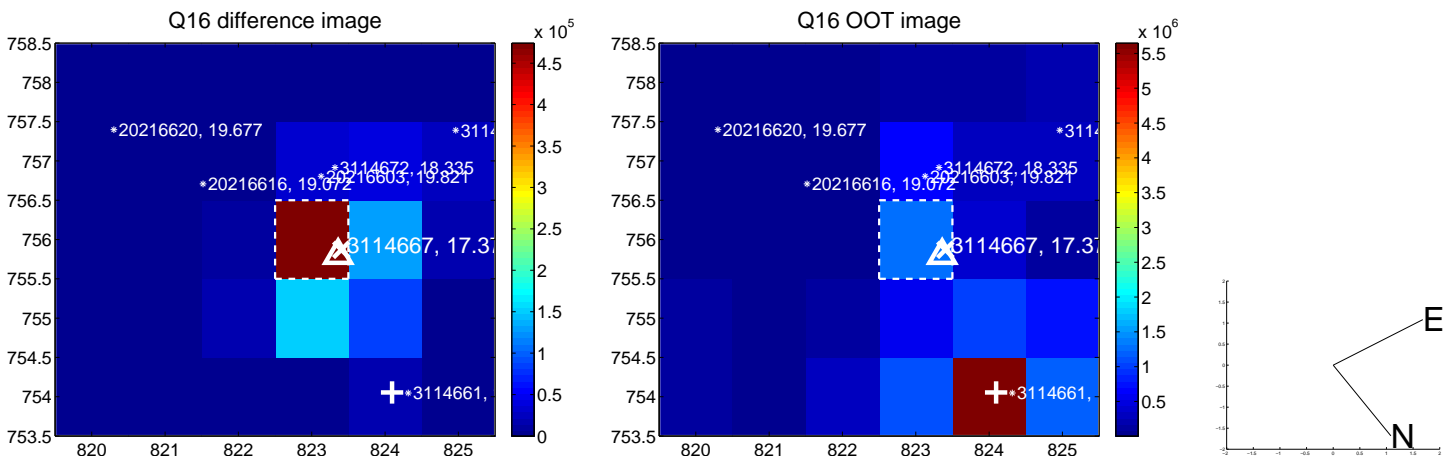
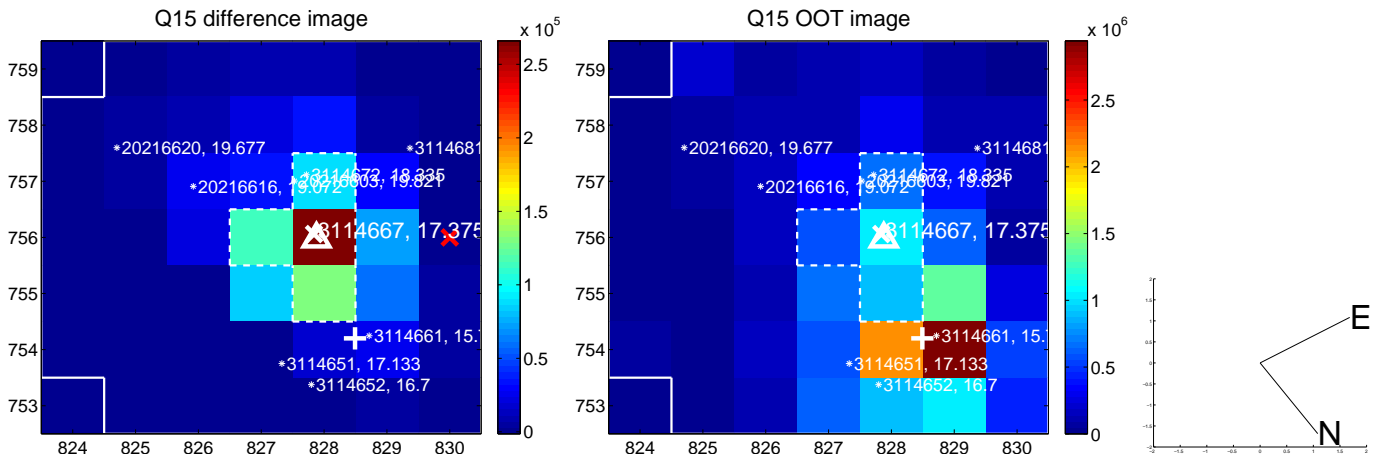
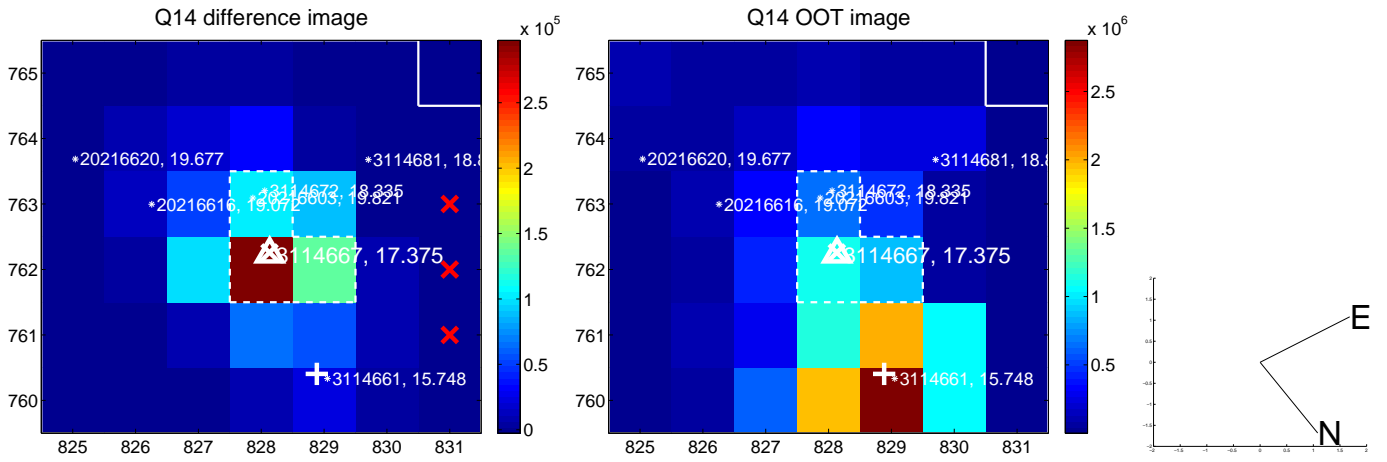
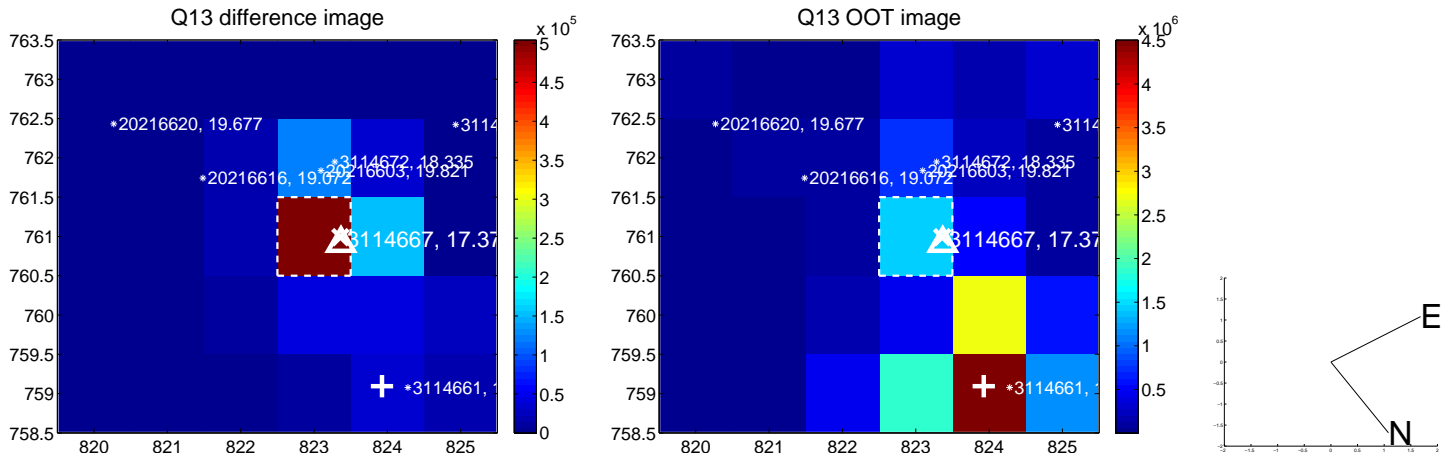




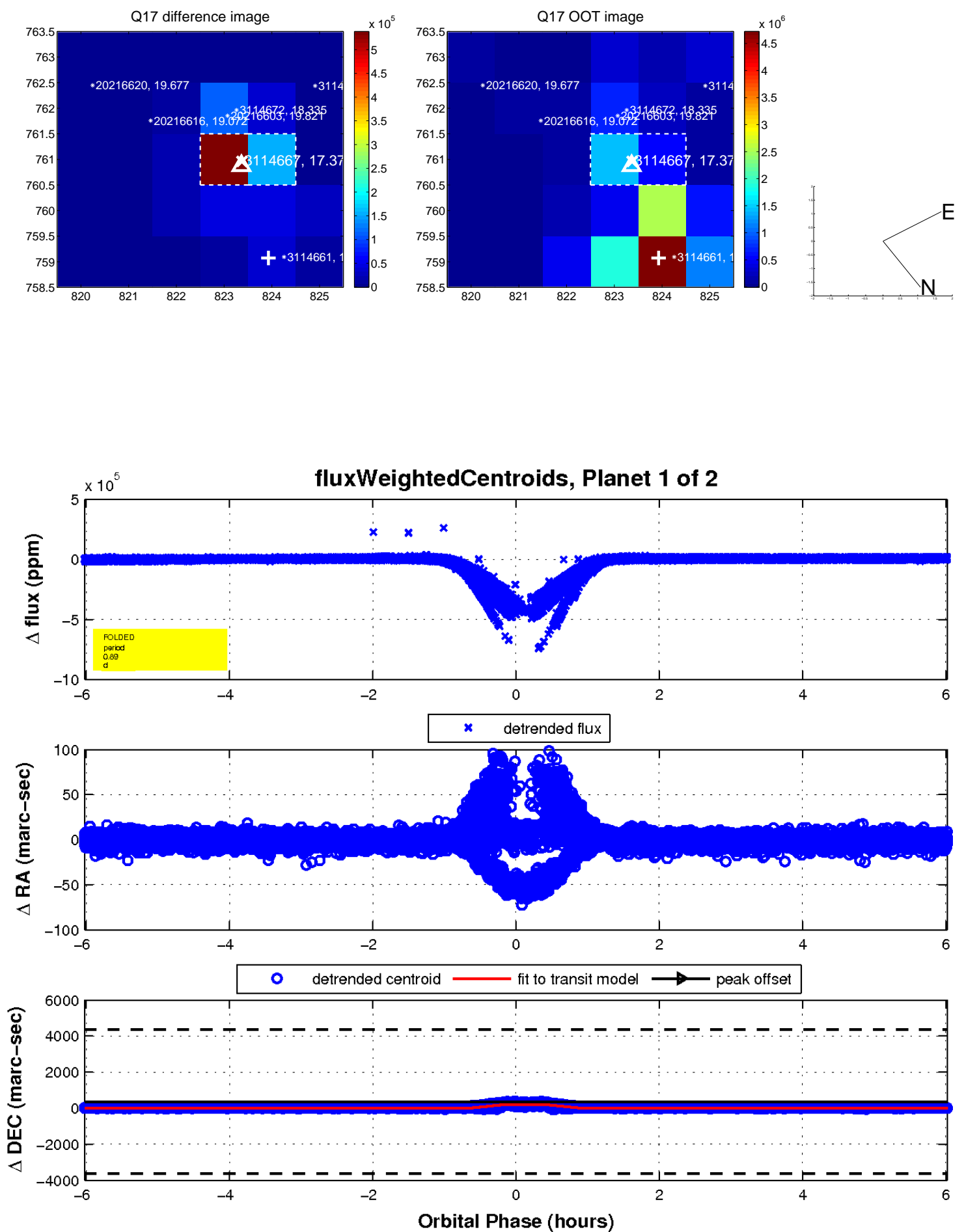
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

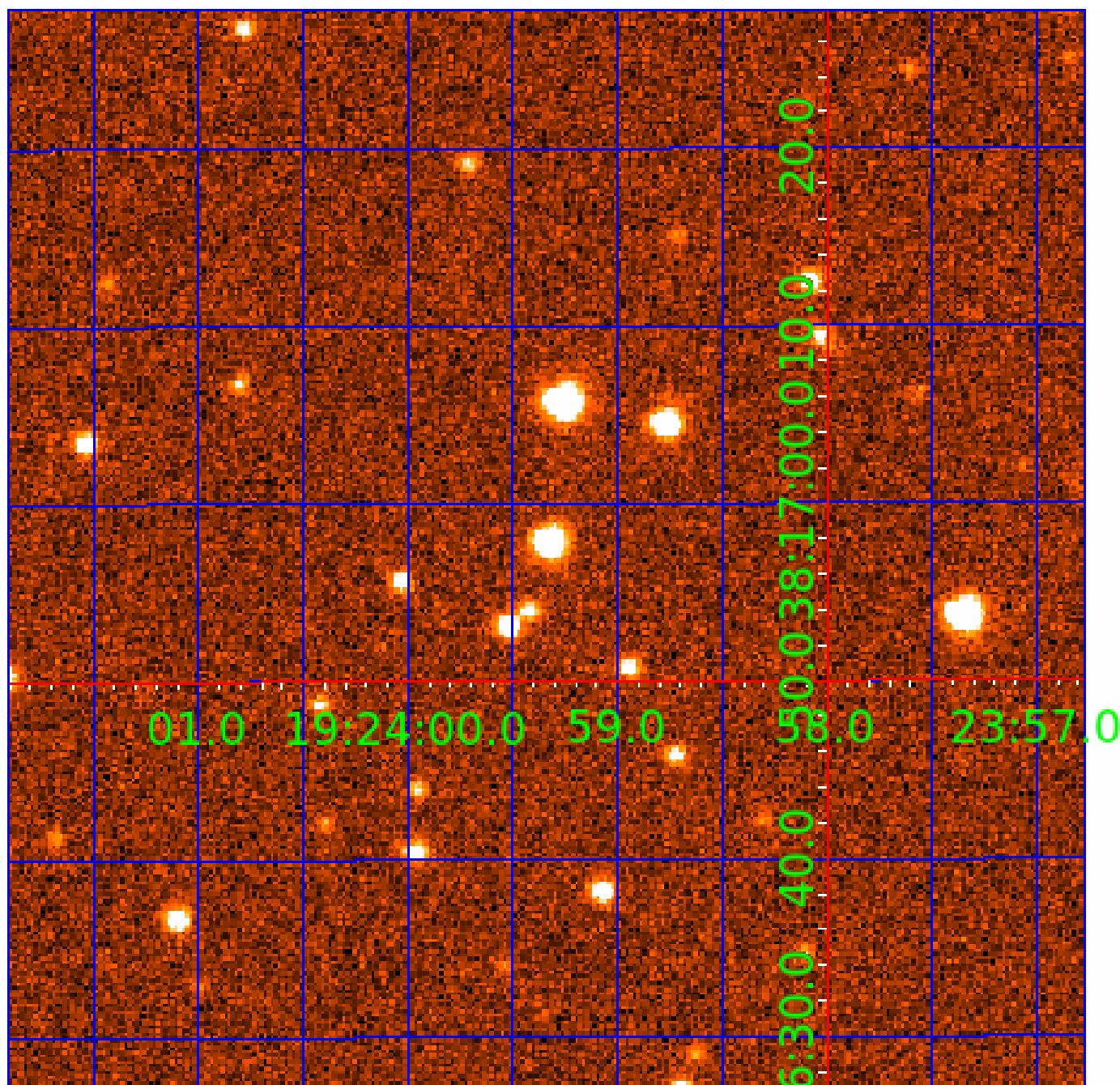


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 003114667

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003114667-01	OBS	3763.01	0.888587	132.092244	427113.1	1.500	2791.0	-1.0	0.62	4324	33.61	508.81
003114667-02	OBS	No	0.888587	131.648494	274593.5	1.500	1950.0	-1.0	0.62	4324	32.30	508.81

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003114667-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
003114667-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

**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 003114667-02

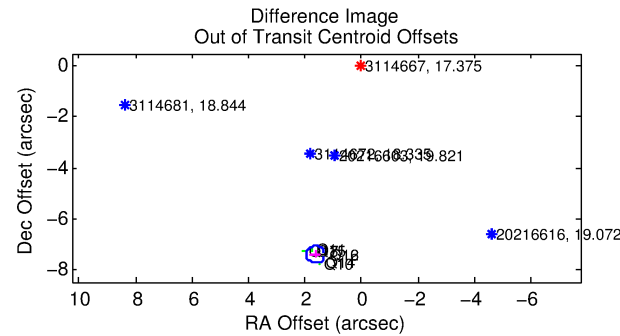
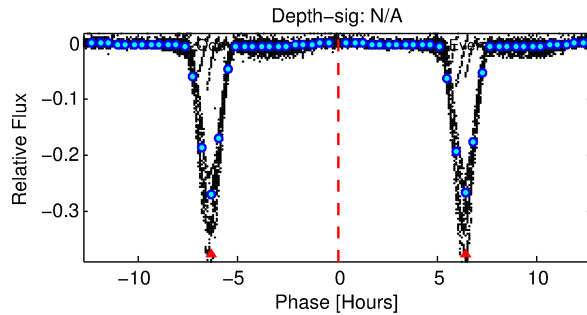
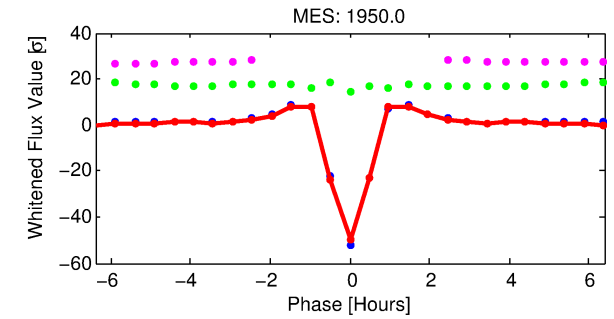
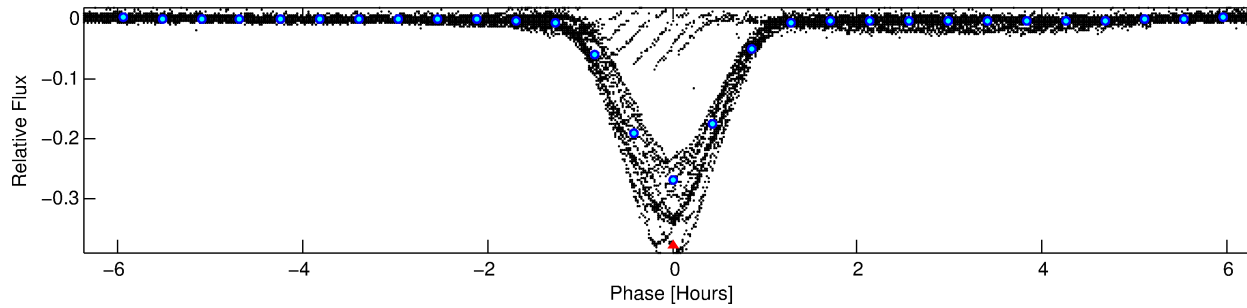
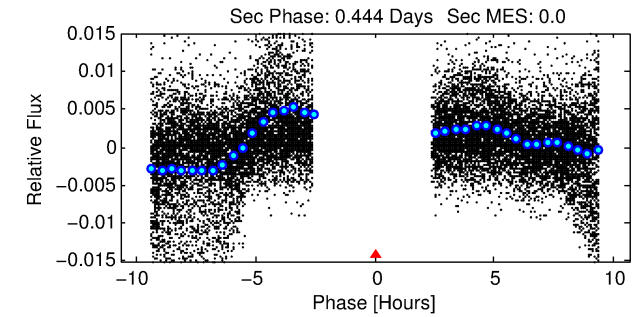
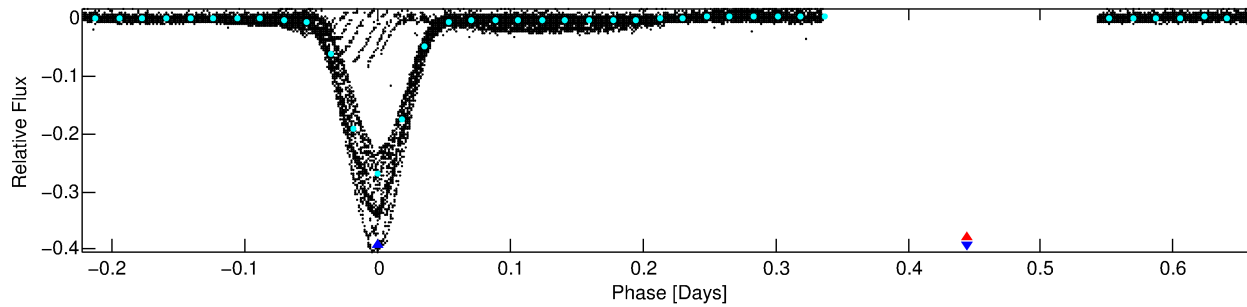
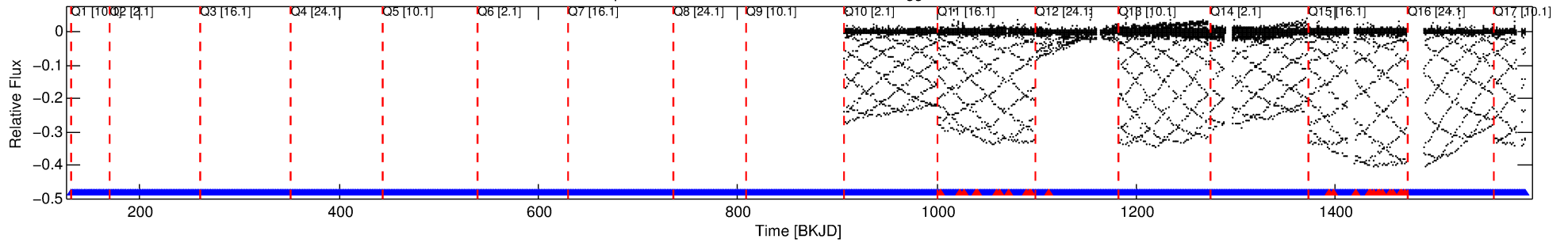
No Significant Match Found

# DV One-Page Summary

KIC: 3114667 Candidate: 2 of 2 Period: 0.889 d

KOI: K03763 Corr: No Ephemeris Match

Kp: 17.38 R\*: 0.62 Rs Teff: 4324.0 K Logg: 4.64 Fe/H: -0.280



TPS TCE Results:

Period = 0.88859 d

Epoch = 131.6485 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: 0.96 [638/665]

GhostDiagnostic-chr: 1.421

Centroid-sig: N/A

Centroid-so: 1.532 arcsec [823.38 $\sigma$ ]

OotOffset-rm: 7.601 arcsec [68.34 $\sigma$ ]

KicOffset-rm: 0.239 arcsec [2.99 $\sigma$ ]

OotOffset-st: 2/2/2/2 [8]

KicOffset-st: 2/2/2/2 [8]

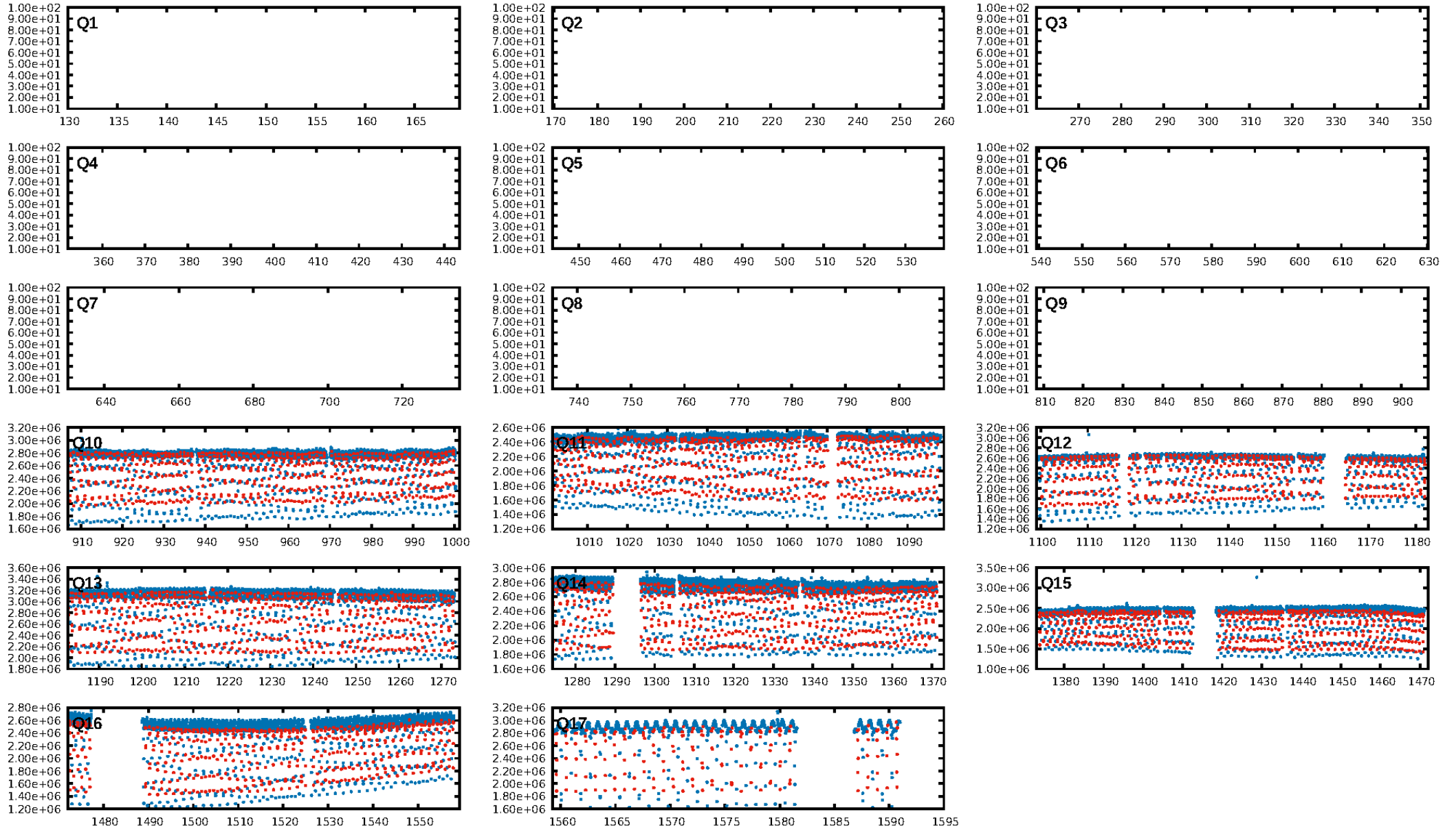
DiffImageQuality-fgm: 1.00 [8/8]

DiffImageOverlap-fno: 1.00 [8/8]

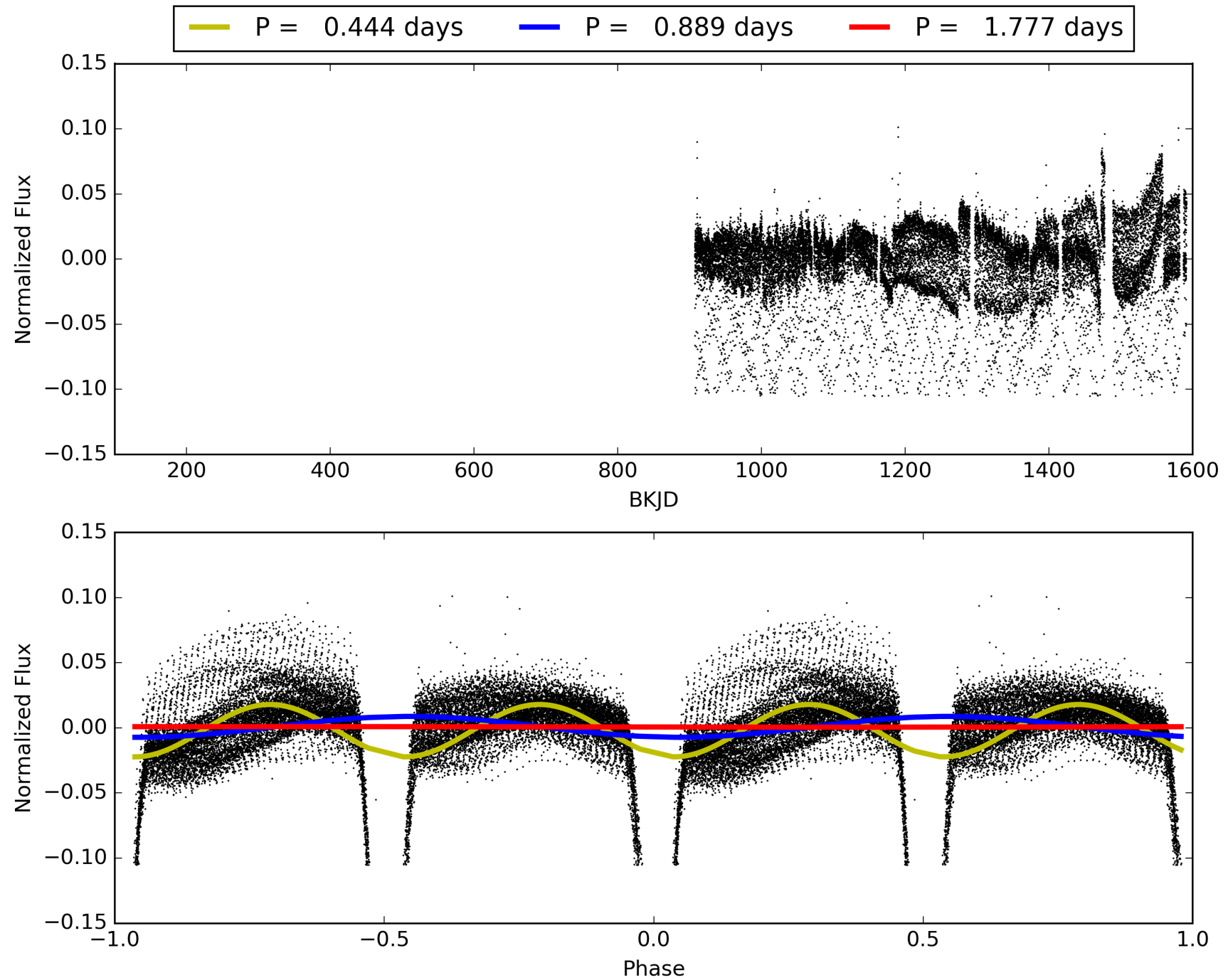
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 10:23:35 Z

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

# TCE 003114667-02, PDC Light Curves



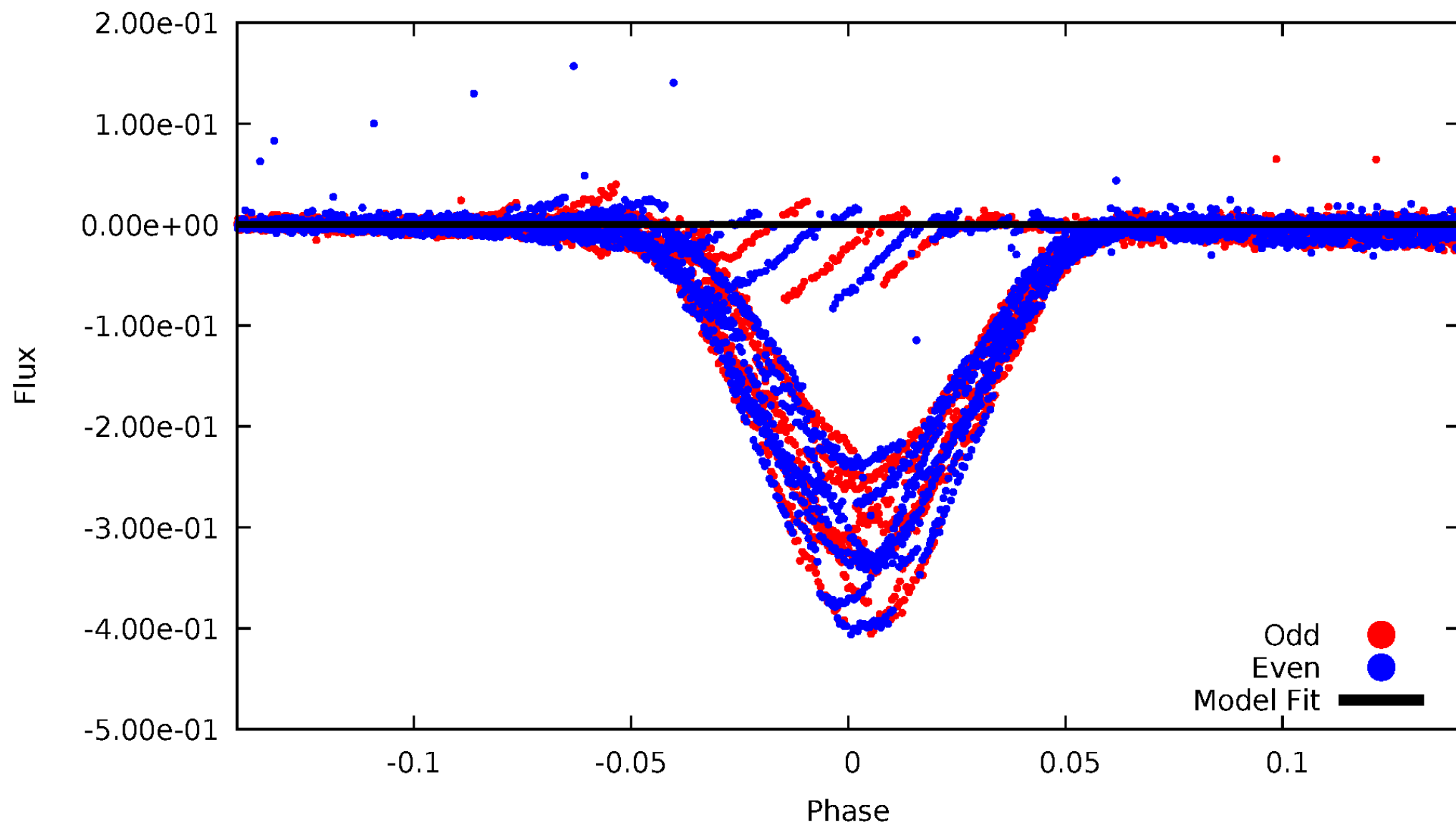
TCE 003114667-02





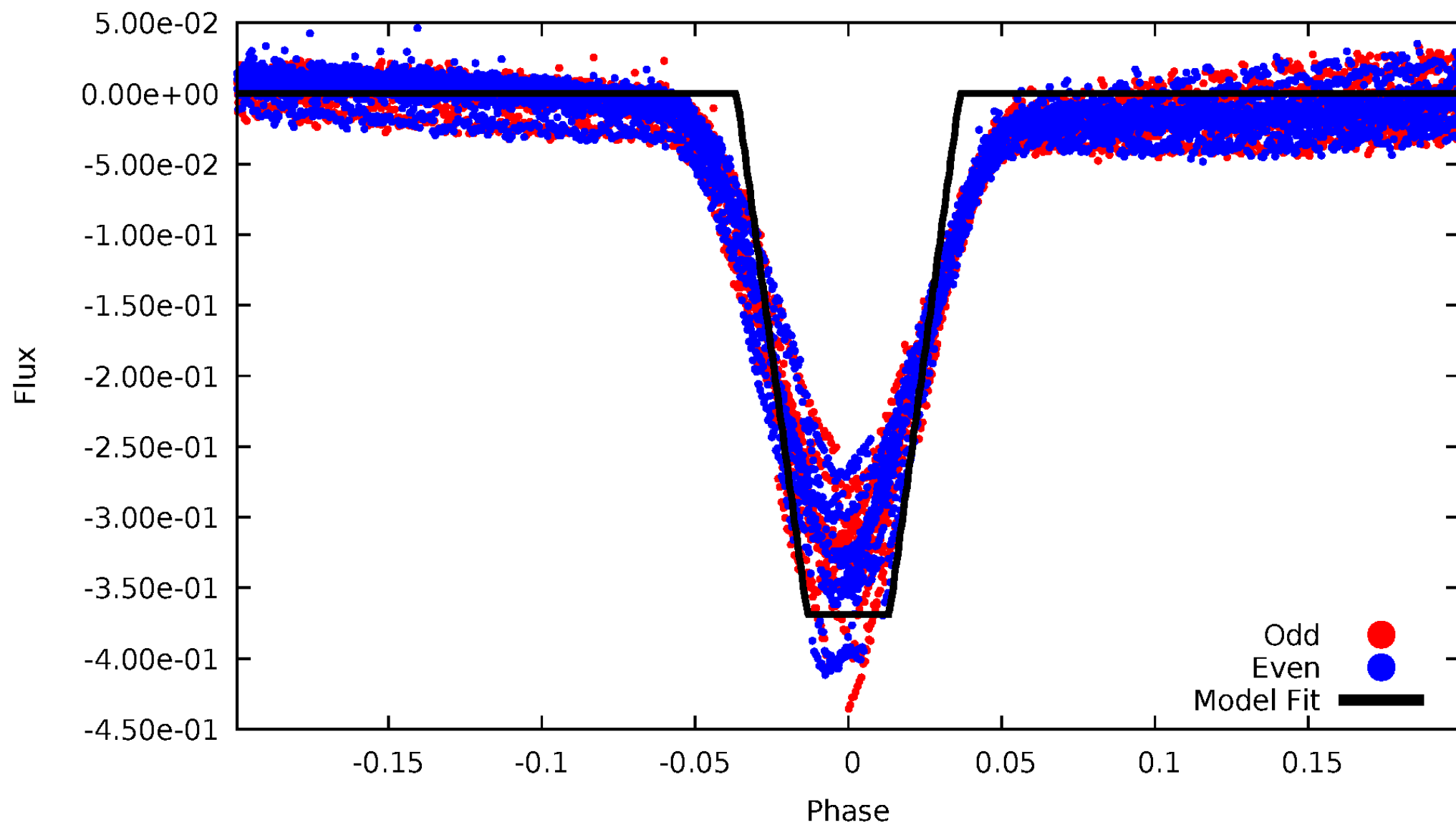
# DV Odd/Even

TCE 003114667-02



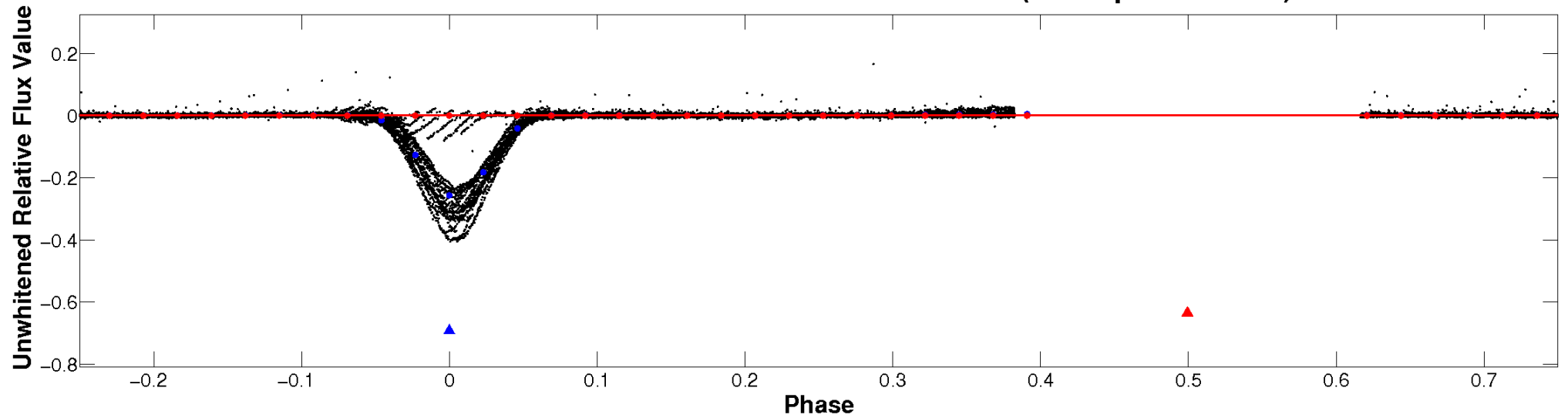
# ALT Odd/Even

TCE 003114667-02

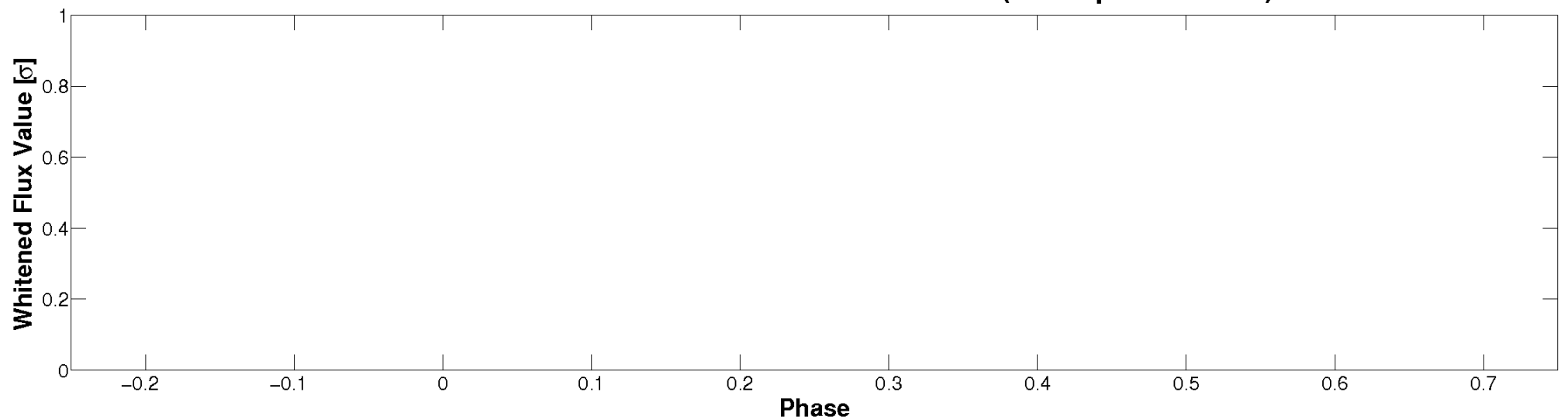


# Non-Whitened Vs. Whitened Light Curve

**Planet 2 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**

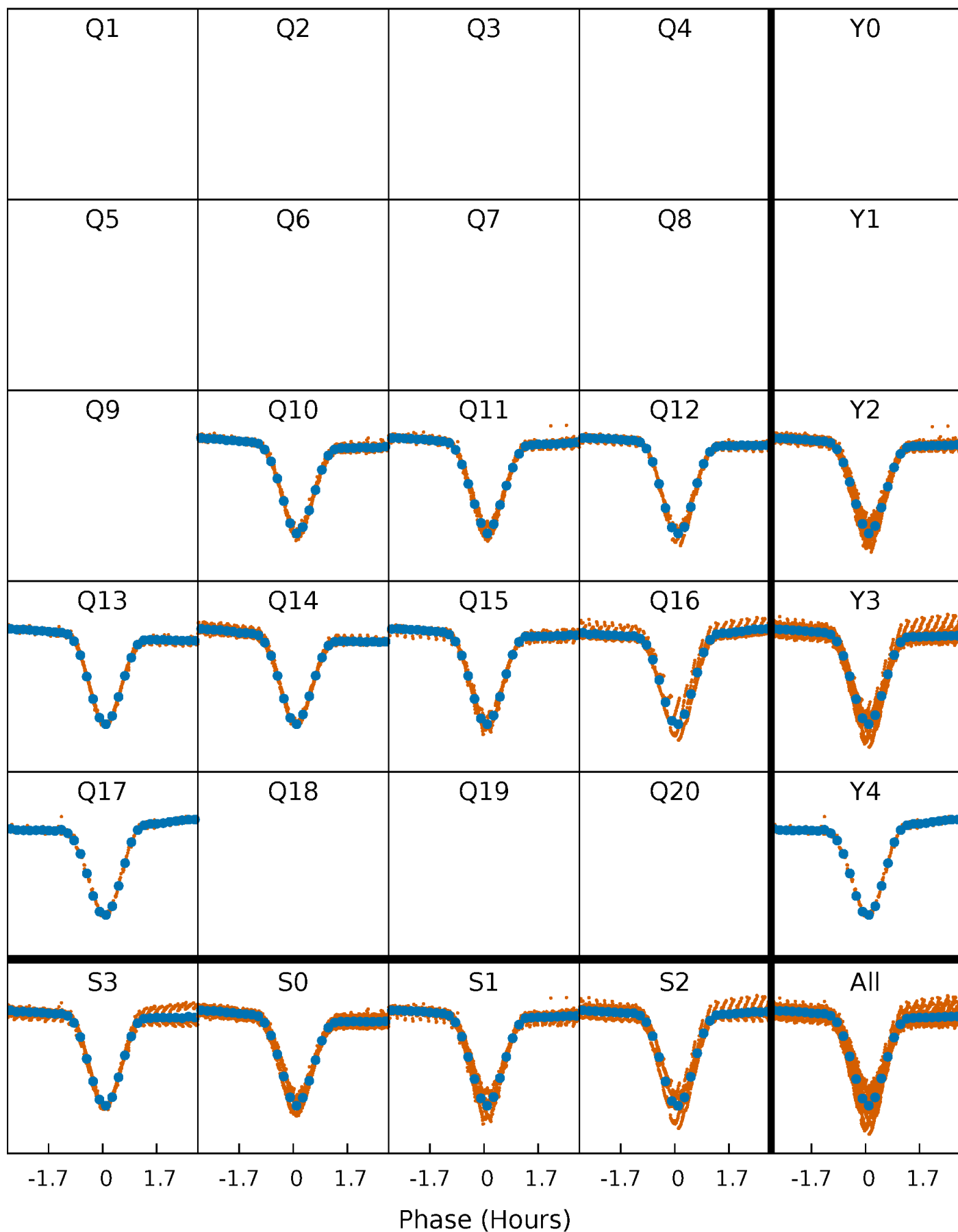


**Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



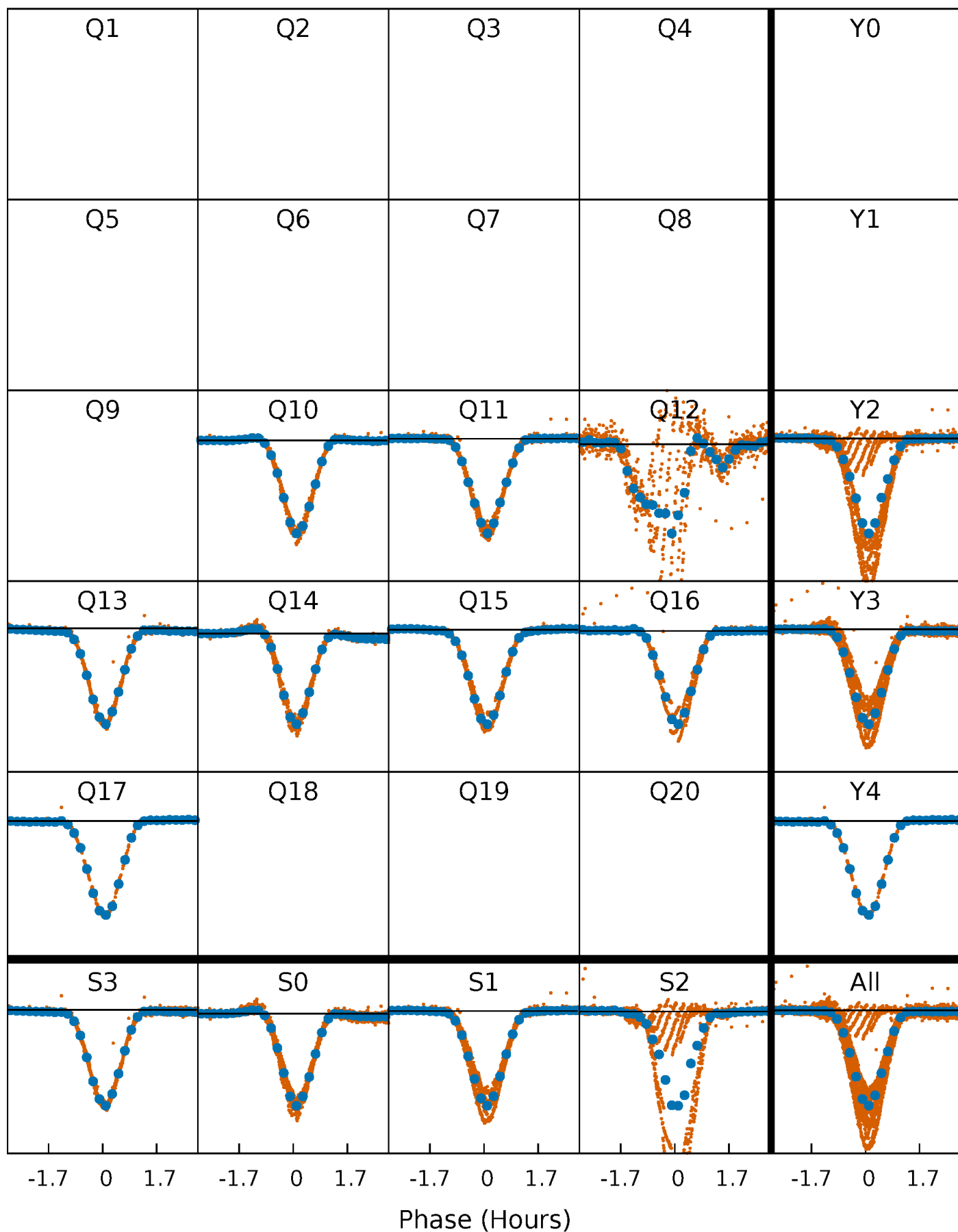
# PDC Quarter-Phased Transit Curves

TCE 003114667-02   P= 0.888587 Days    $T_0=131.648494$  (BKJD)



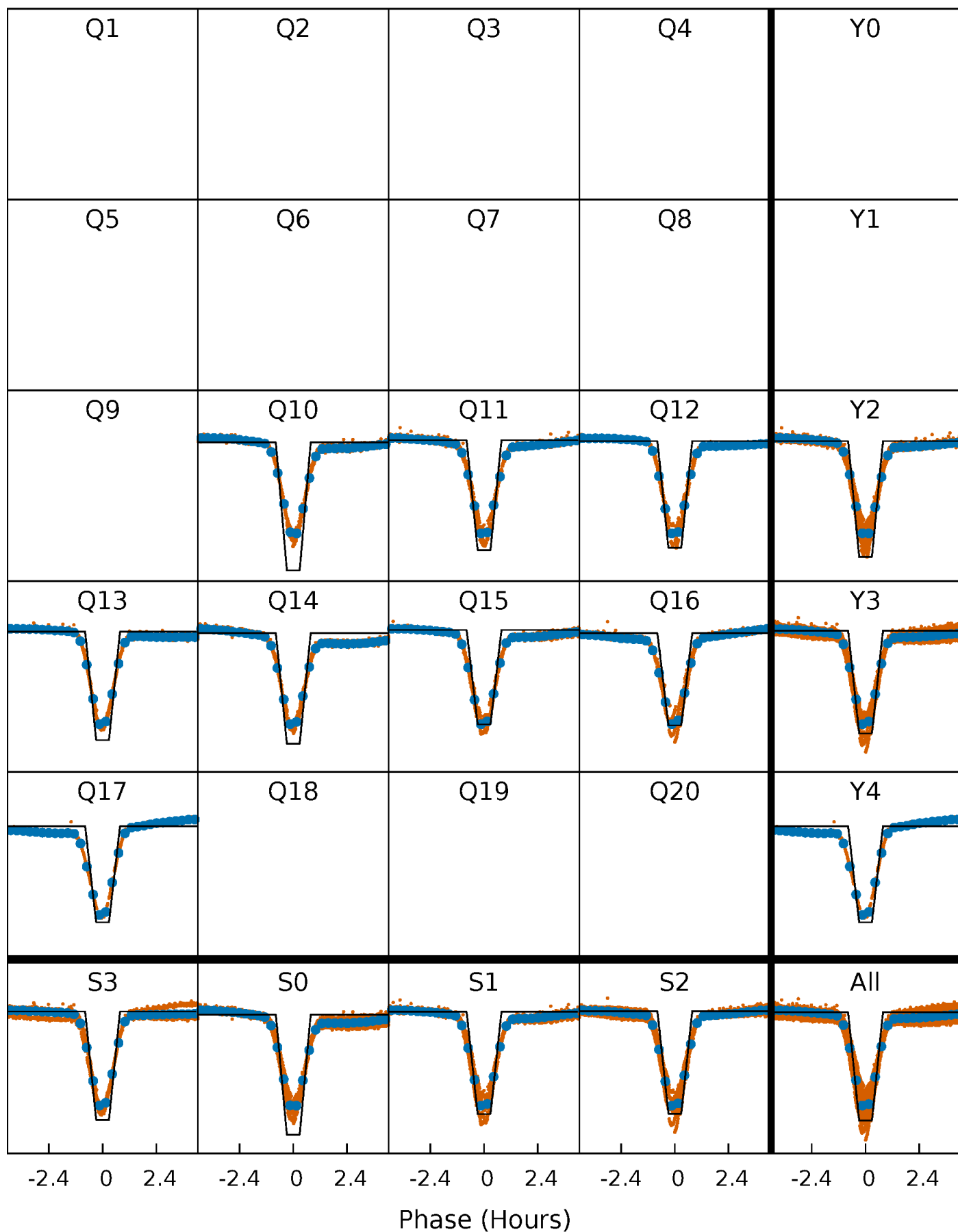
# DV Quarter-Phased Transit Curves

TCE 003114667-02   P= 0.888587 Days    $T_0=131.648494$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

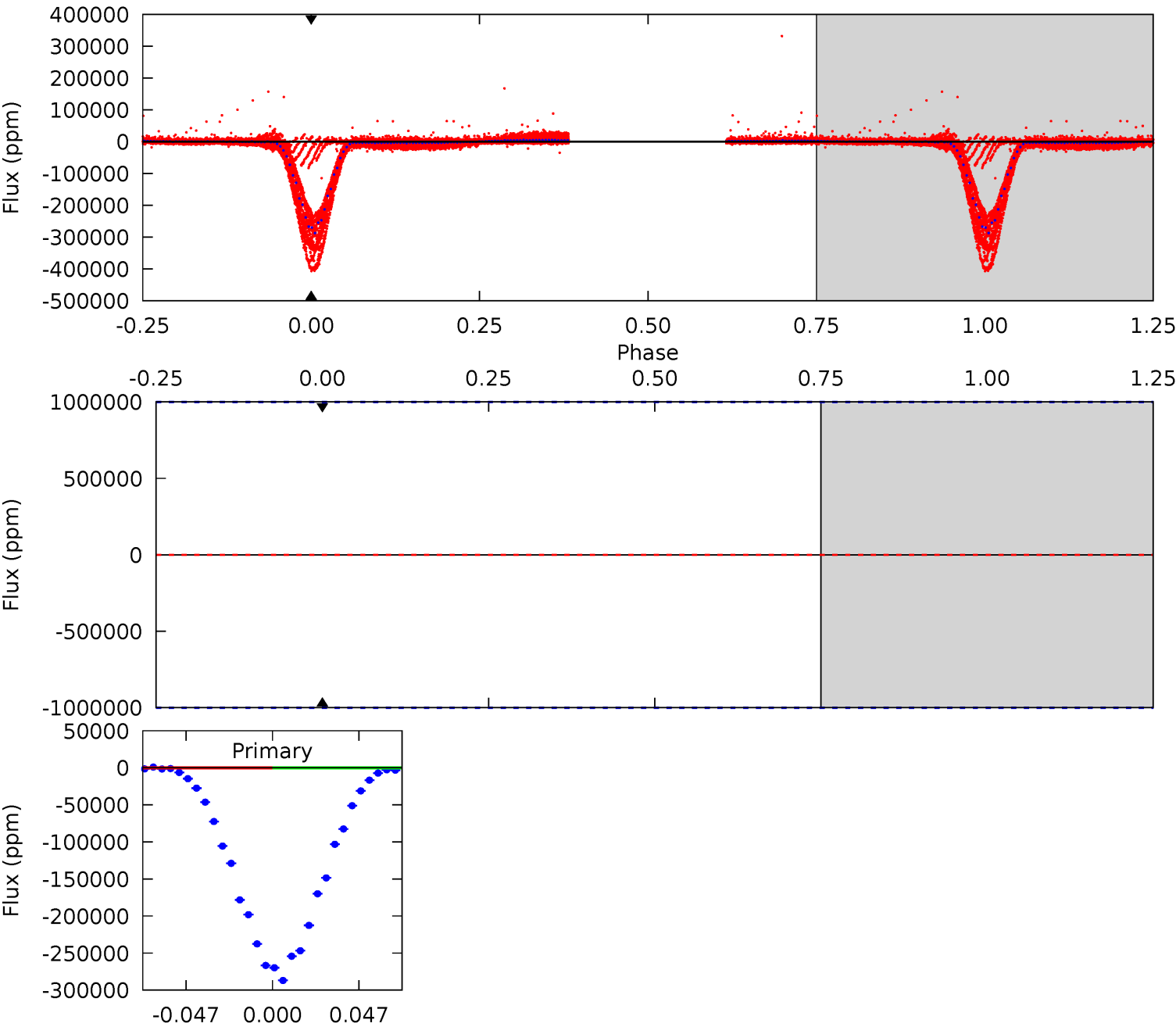
TCE 003114667-02     $P = 0.888587$  Days     $T_0 = 131.653093$  (BKJD)



DV Model-Shift Uniqueness Test

003114667-02, P = 0.888587 Days, E = 131.648494 Days

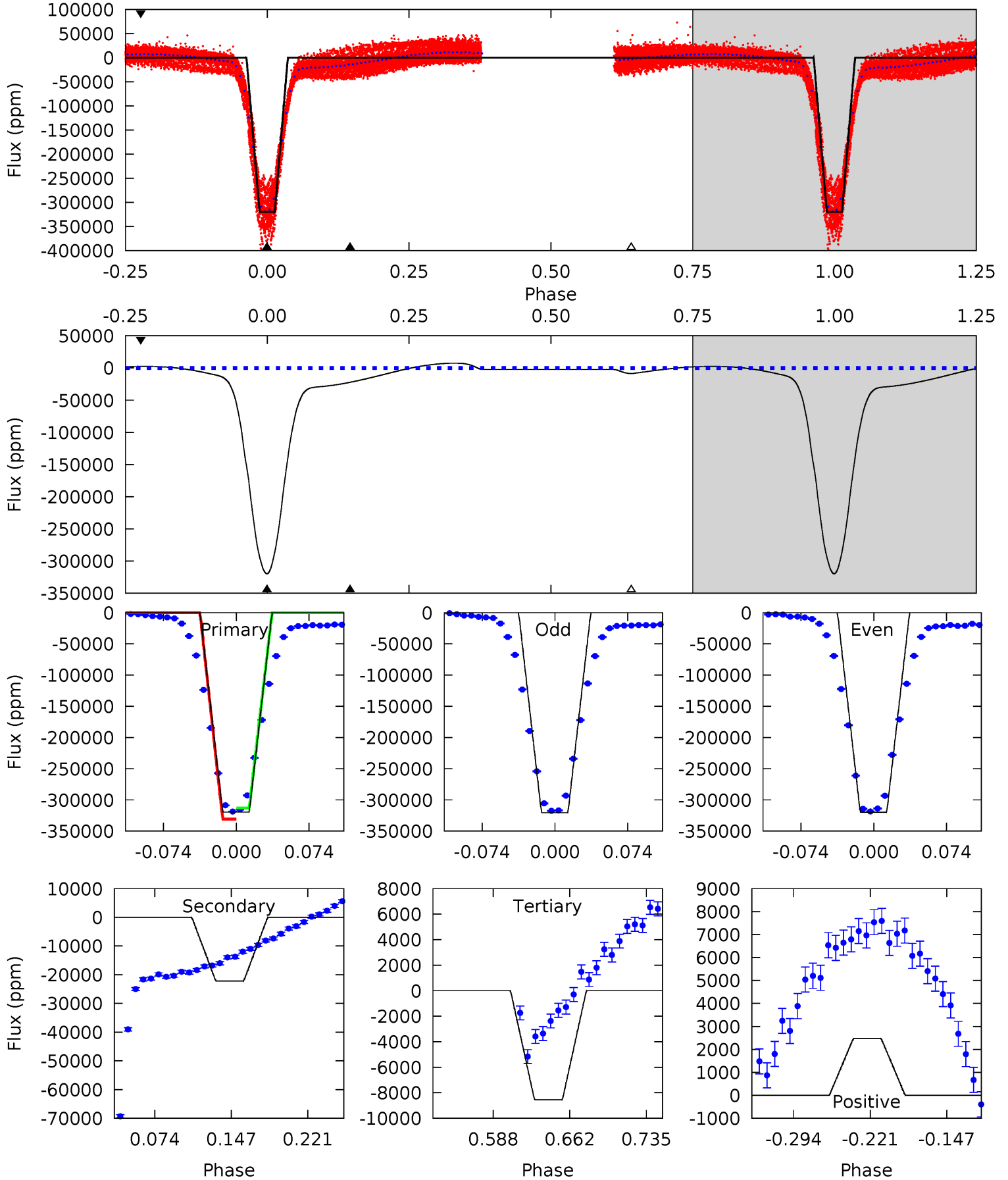
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

003114667-02, P = 0.888587 Days, E = 131.653093 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
1058	73.5	28.3	8.18	4.63	1.79	17.1	1029	1049	45.2	65.3	1.12	1.01	0.02	26.0





### Stellar Parameters For KIC 003114667

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4324^{+152}_{-167}$	$4.639^{+0.056}_{-0.024}$	$-0.280^{+0.300}_{-0.300}$	$0.616^{+0.050}_{-0.061}$	$0.604^{+0.067}_{-0.055}$	$3.634^{+0.896}_{-0.438}$
	+4%/-4%	+1%/-1%	+107%/-107%	+8%/-10%	+11%/-9%	+25%/-12%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 003114667-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$31.93^{+6.51}_{-6.24}$	$1677^{+71}_{-73}$	$-2651^{+6402}_{-1075}$	$-0.986^{+14.529}_{-12.070}$
Alt.	$-22222 \pm 302$	$40.63^{+7.14}_{-6.73}$	$1680^{+61}_{-65}$	$2724^{+162}_{-156}$	$1.784^{+0.822}_{-0.474}$

$T_{\text{max}}$  = 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

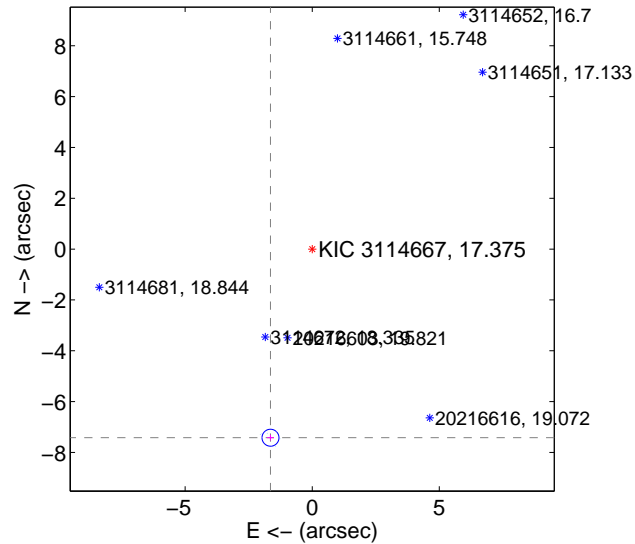
Supplemental centroid analysis for 003114667-02. Kepler magnitude: 17.38. Transit SNR -1.00

There are 8 quarters with good PRF difference image offsets

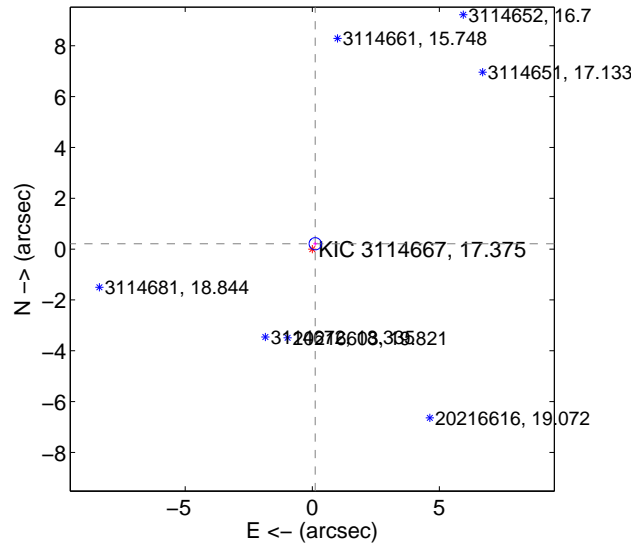
The OOT PRF centroid is offset from the target star catalog position by about 7.83 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$7.601 \pm 0.111$	68.34	$1.641 \pm 0.139$	$-7.421 \pm 0.110$
PRF-fit source offset from KIC position	$0.239 \pm 0.080$	2.99	$-0.116 \pm 0.077$	$0.210 \pm 0.081$
photometric centroid source offset	$1.53 \pm 0.00$	823.38	$-0.18 \pm 0.00$	$1.52 \pm 0.00$

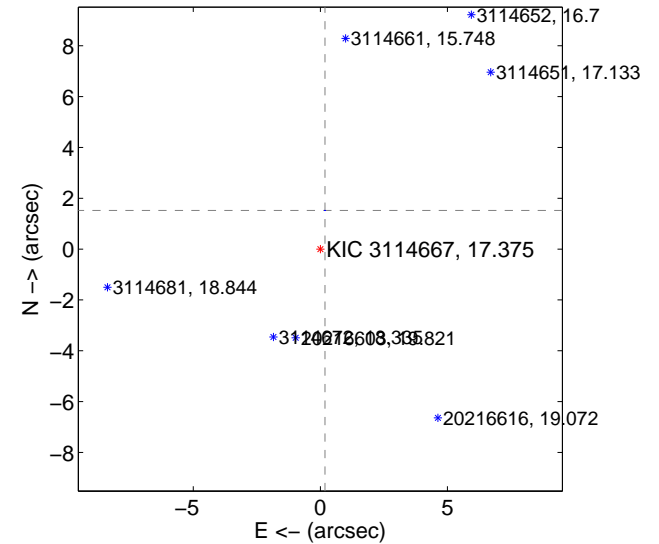
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

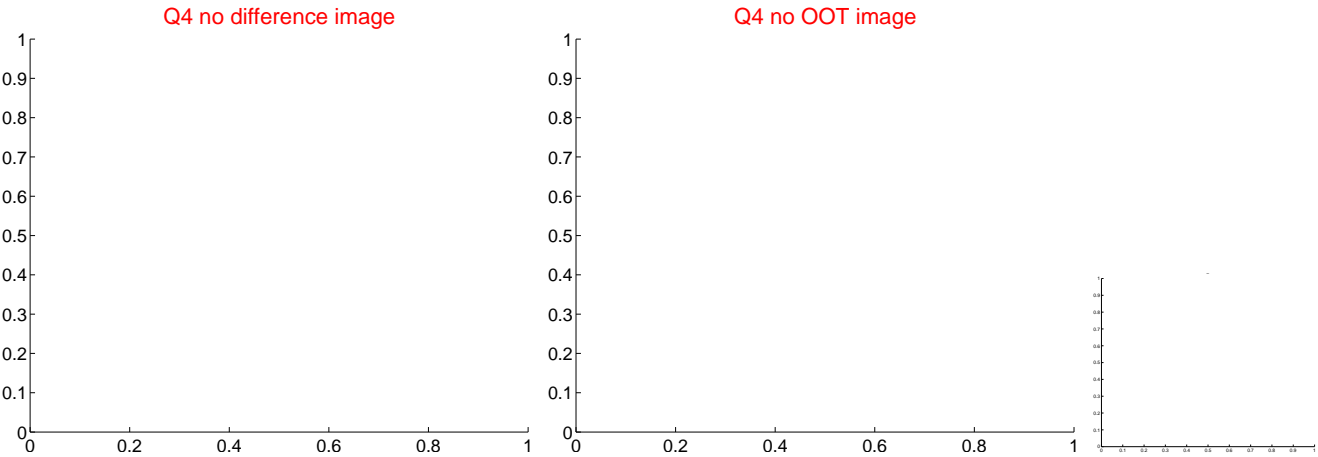
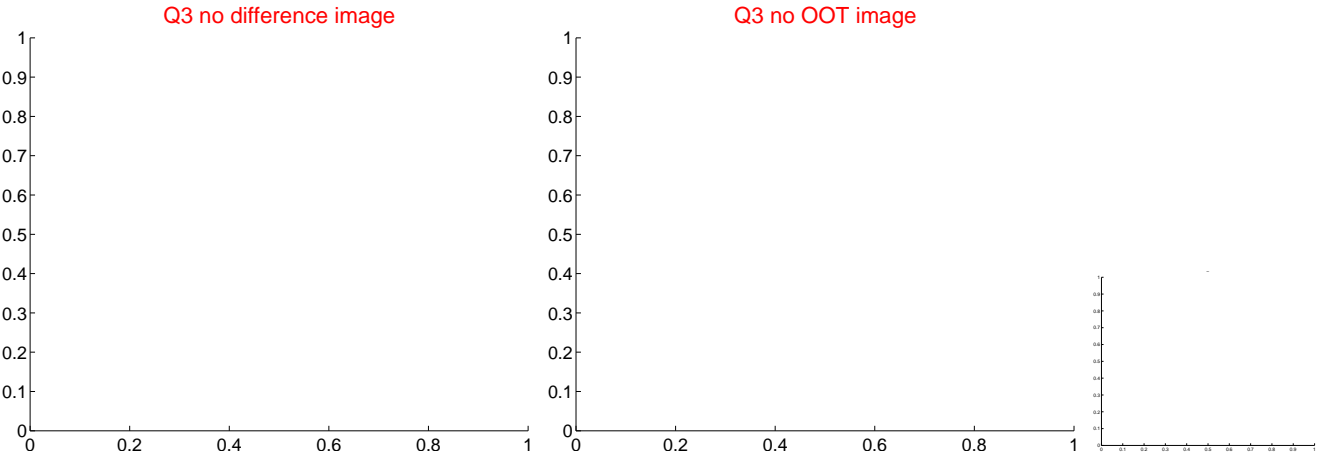
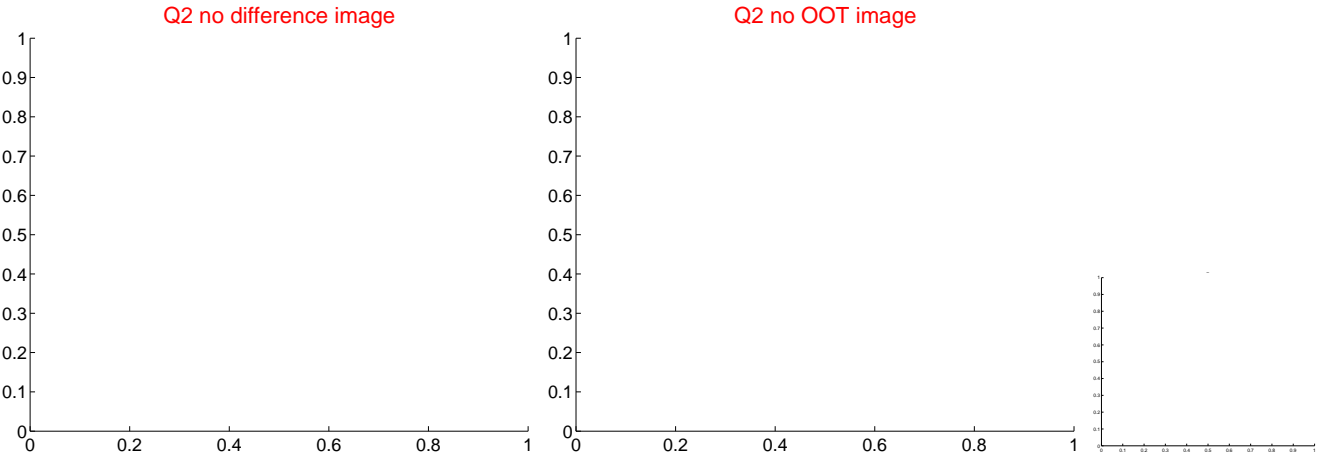
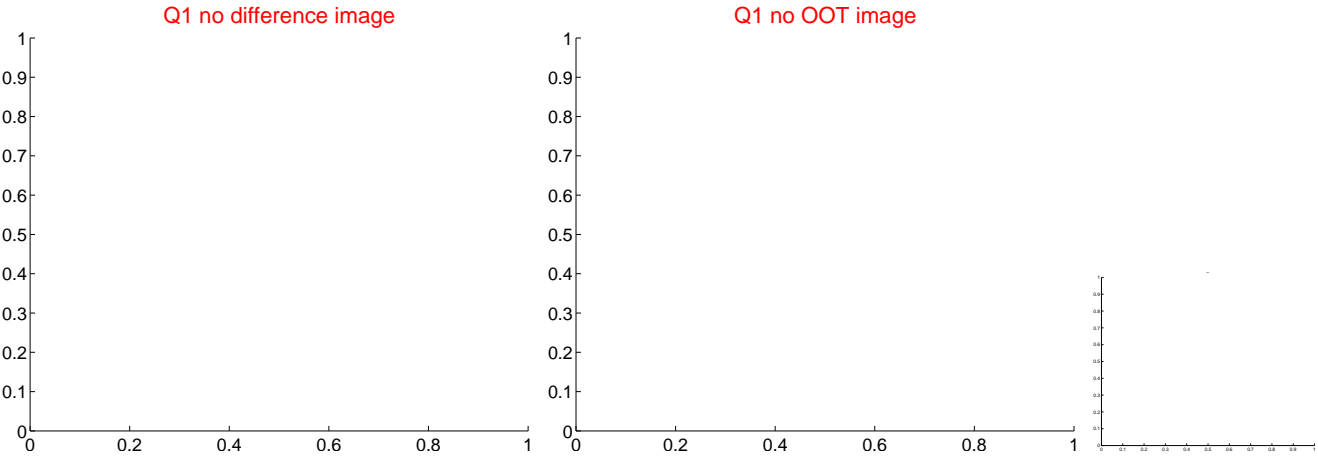


offset from photometric centroids

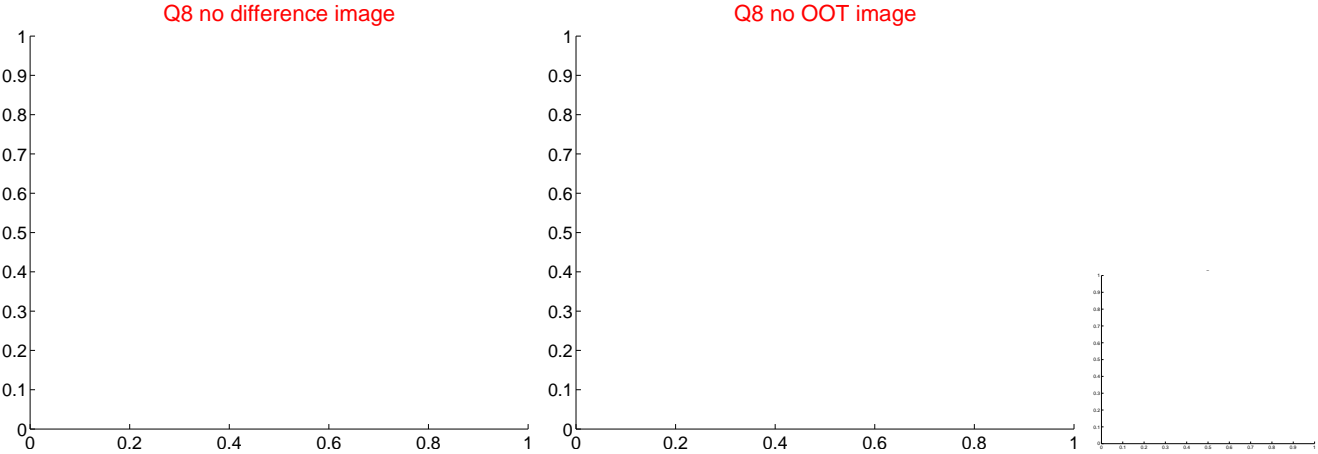
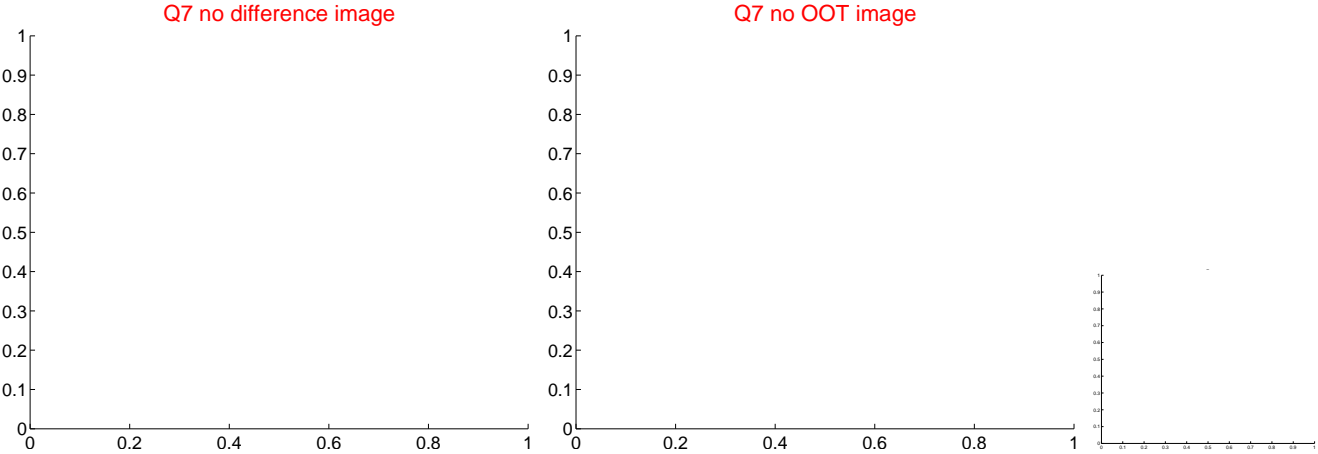
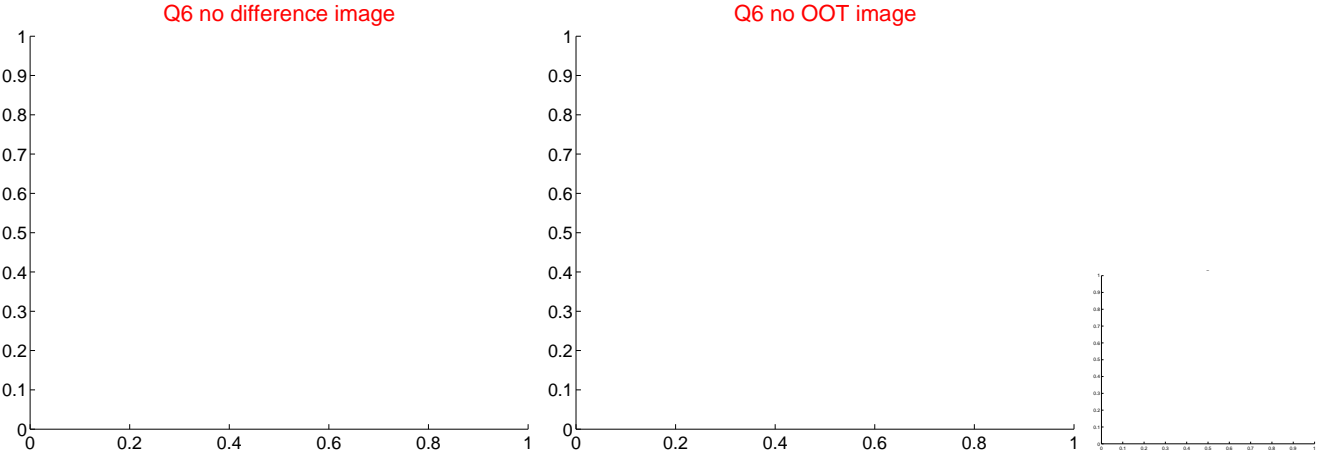
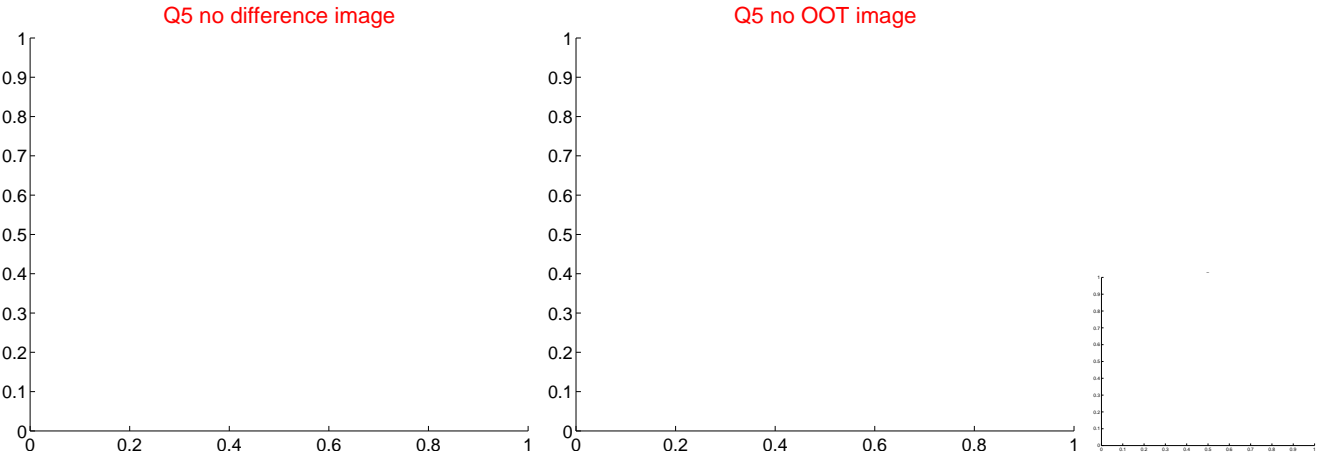


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

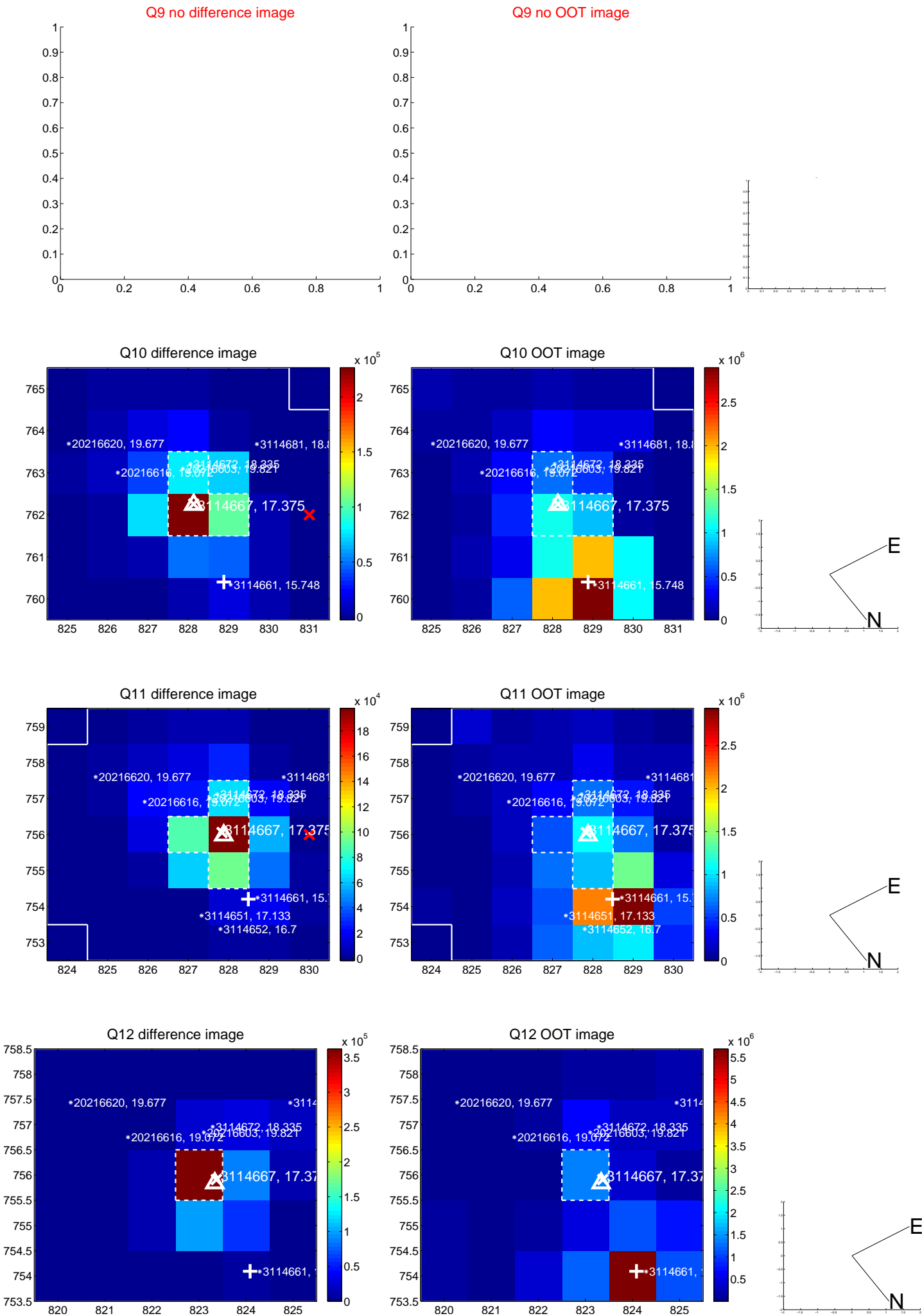
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



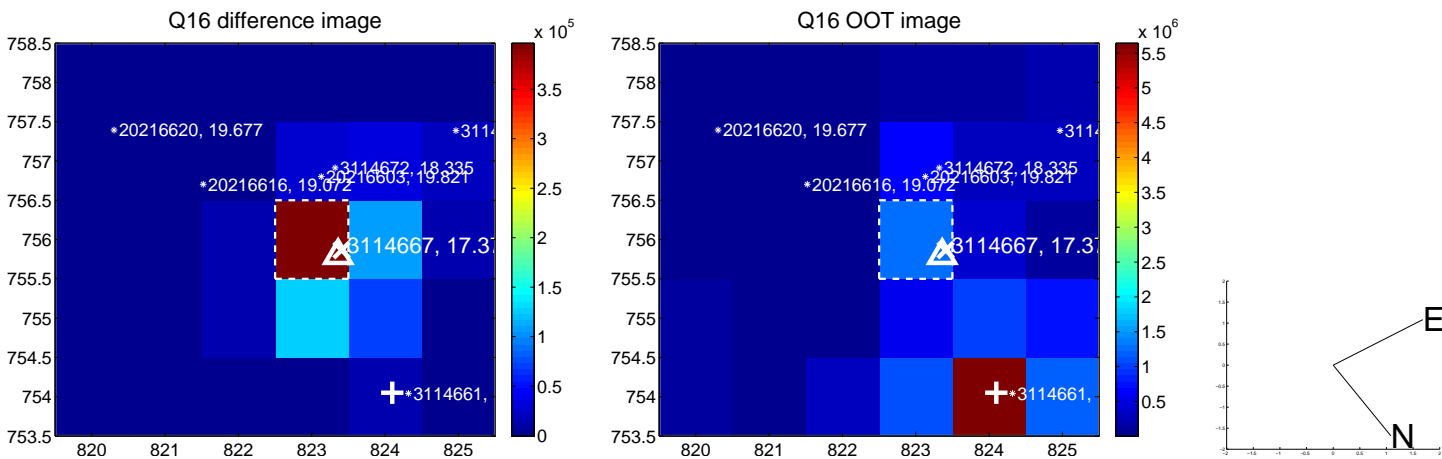
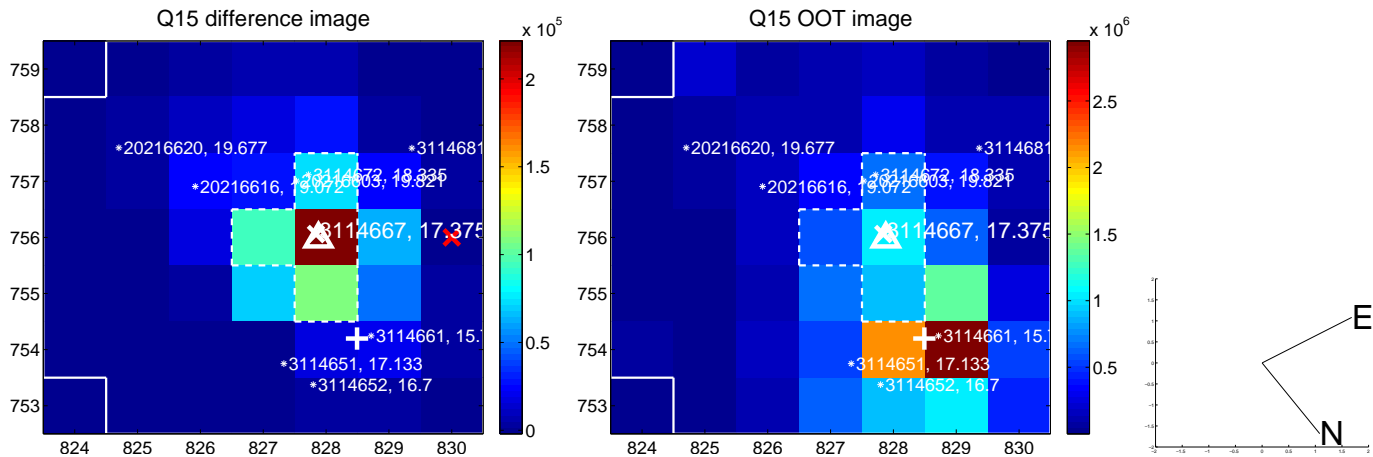
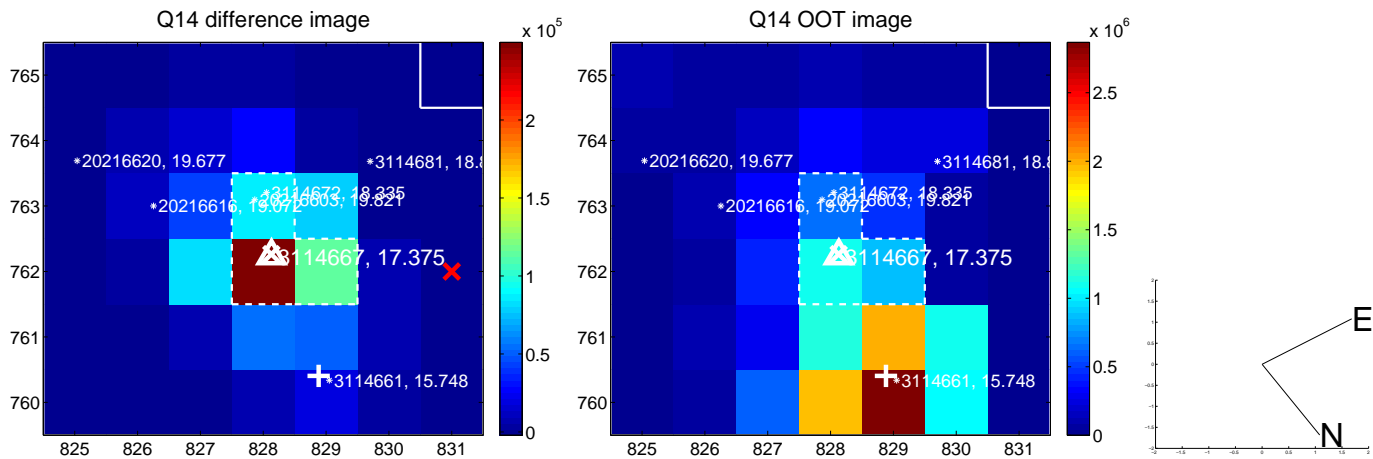
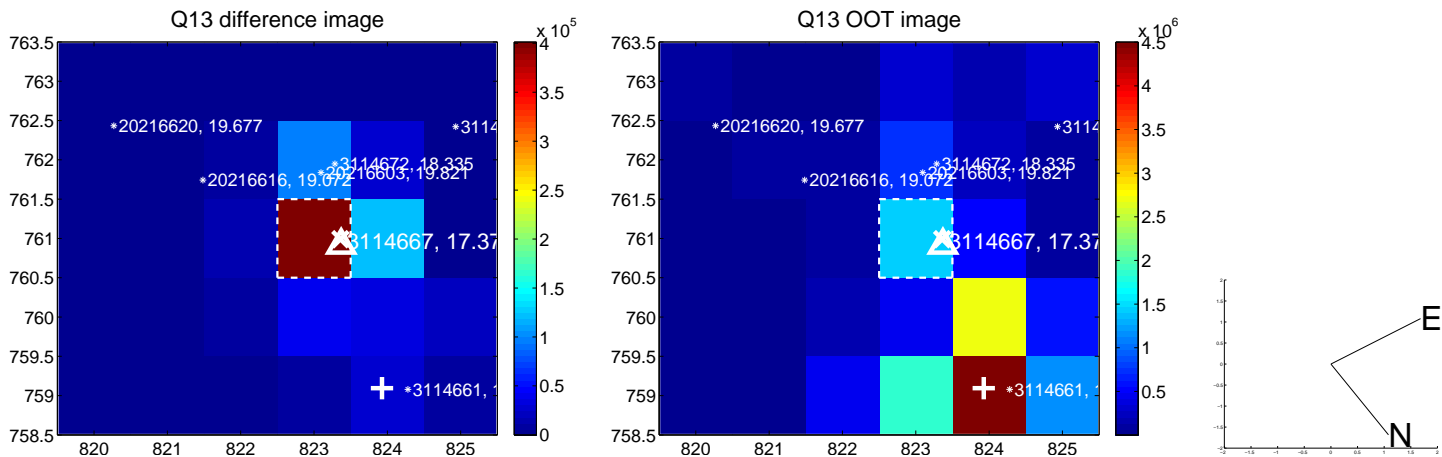
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



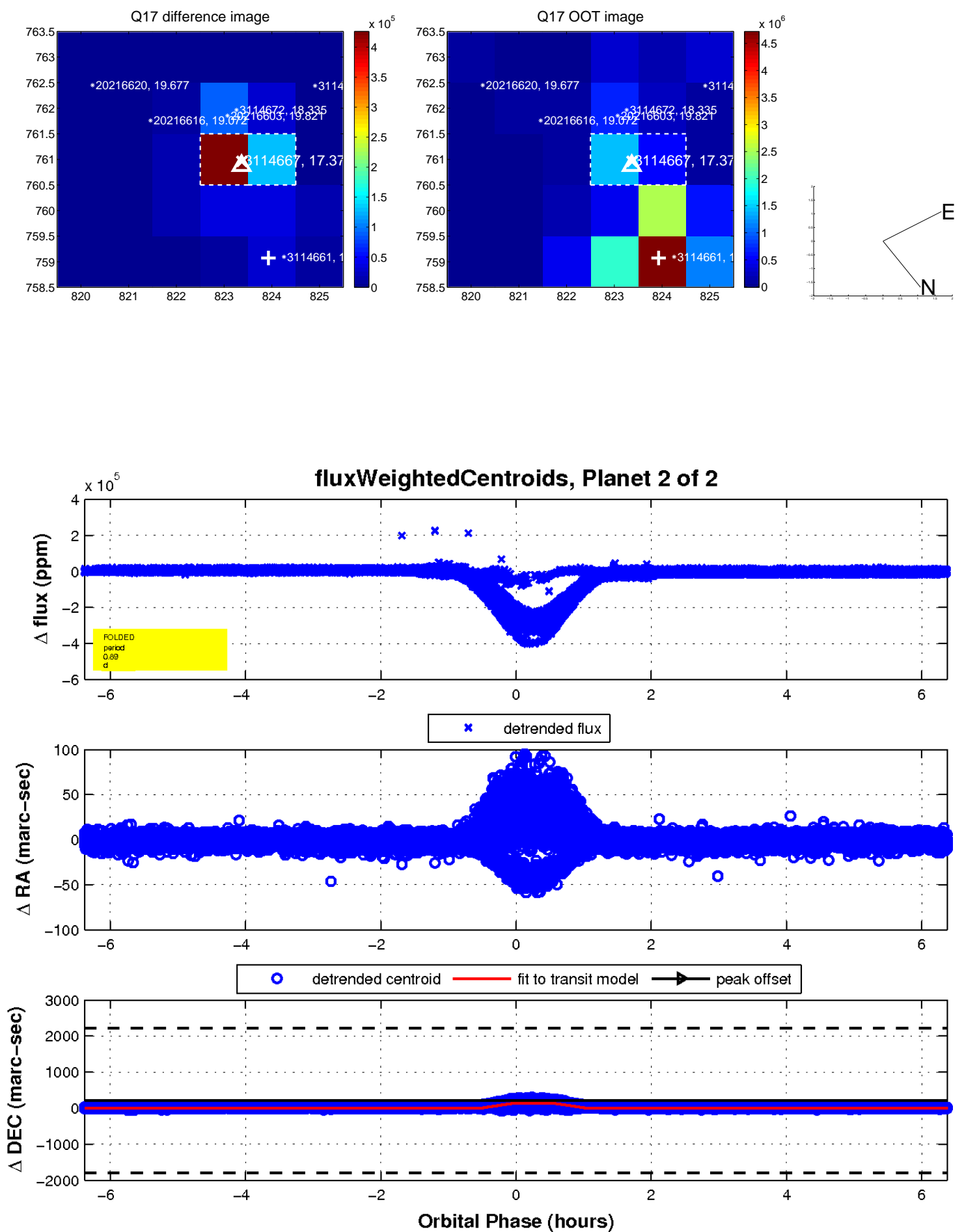
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

