

# KIC 005786382

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005786382-01	OBS	No	0.805854	132.120453	120.1	3.074	10.6	9.5	0.60	4946	0.79	943.41
005786382-02	OBS	No	0.805847	131.754097	1.1	4.863	9.2	0.1	0.60	4946	0.06	943.43

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005786382-01	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST
005786382-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

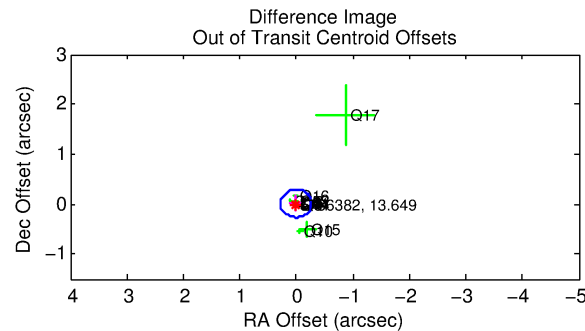
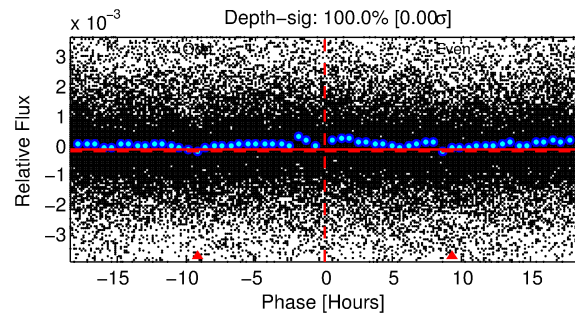
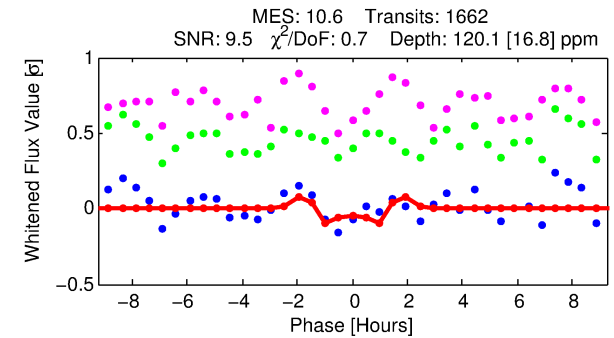
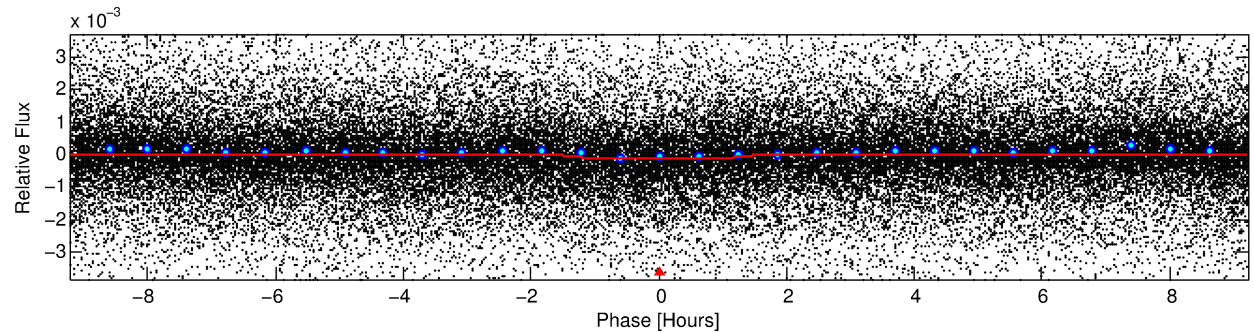
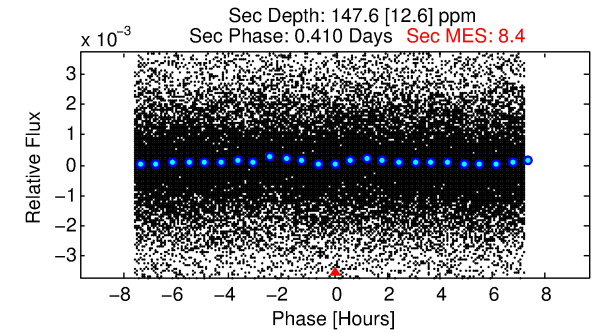
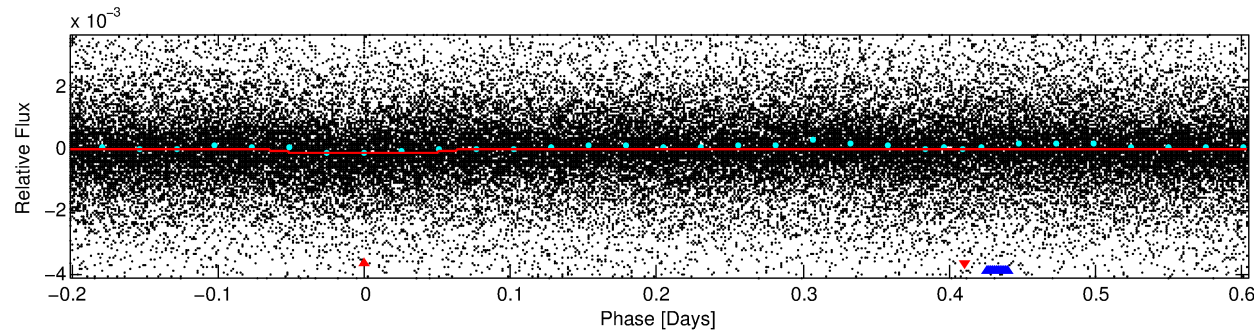
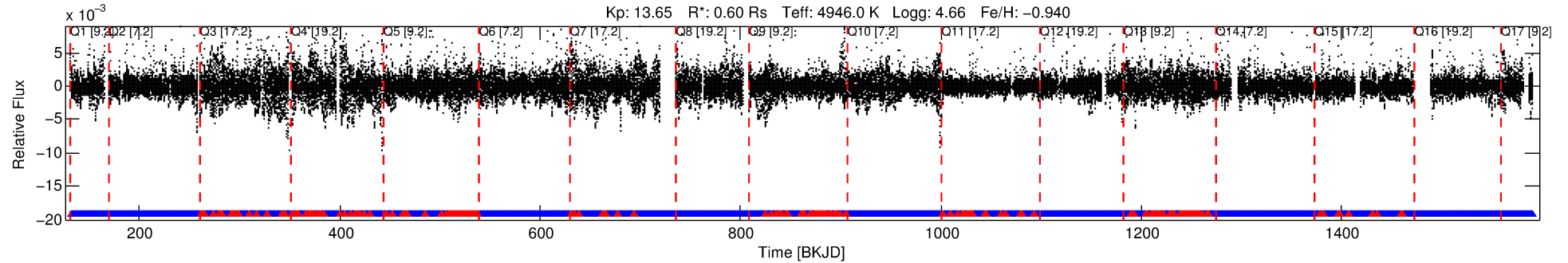
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005786382-01

No Significant Match Found

# DV One-Page Summary

KIC: 5786382 Candidate: 1 of 2 Period: 0.806 d



## DV Fit Results:

Period = 0.80585 [0.00001] d  
Epoch = 132.1205 [0.0013] BKJD  
Rp/R\* = 0.0121 [0.0028]  
a/R\* = 1.32 [0.51]  
b = 0.90 [0.19]  
Seff = 943.42 [151.68]  
Teq = 1413 [57] K  
Rp = 0.79 [0.19] Re  
a = 0.0143 [0.0010] AU  
Ag = 26.51 [12.67] [2.01σ]  
**Teffp = 4958 [596] K [5.92σ]**

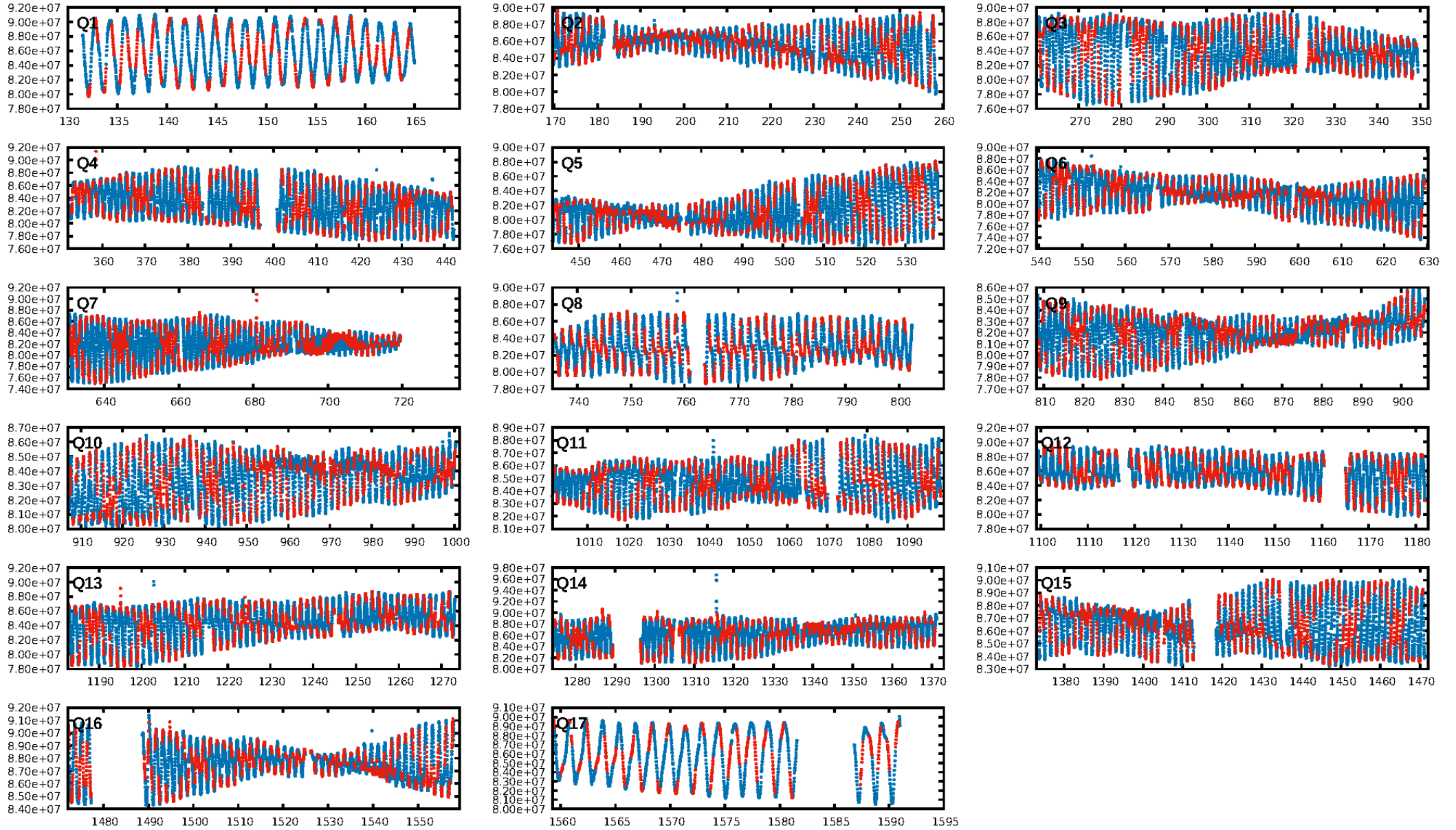
## DV Diagnostic Results:

**ShortPeriod-sig: 0.0% [0.00σ]**  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGoF-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.87 [1382/1588]  
**GhostDiagnostic-chr: 0.1728**  
Centroid-sig: 78.0%  
Centroid-so: 0.148 arcsec [0.64σ]  
OotOffset-rm: 0.017 arcsec [0.18σ]  
OotOffset-st: 4/3/4/5 [16]  
KicOffset-rm: 0.204 arcsec [2.14σ]  
KicOffset-st: 4/3/4/5 [16]  
DiffImageQuality-fgm: 0.94 [15/16]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:14:00 Z

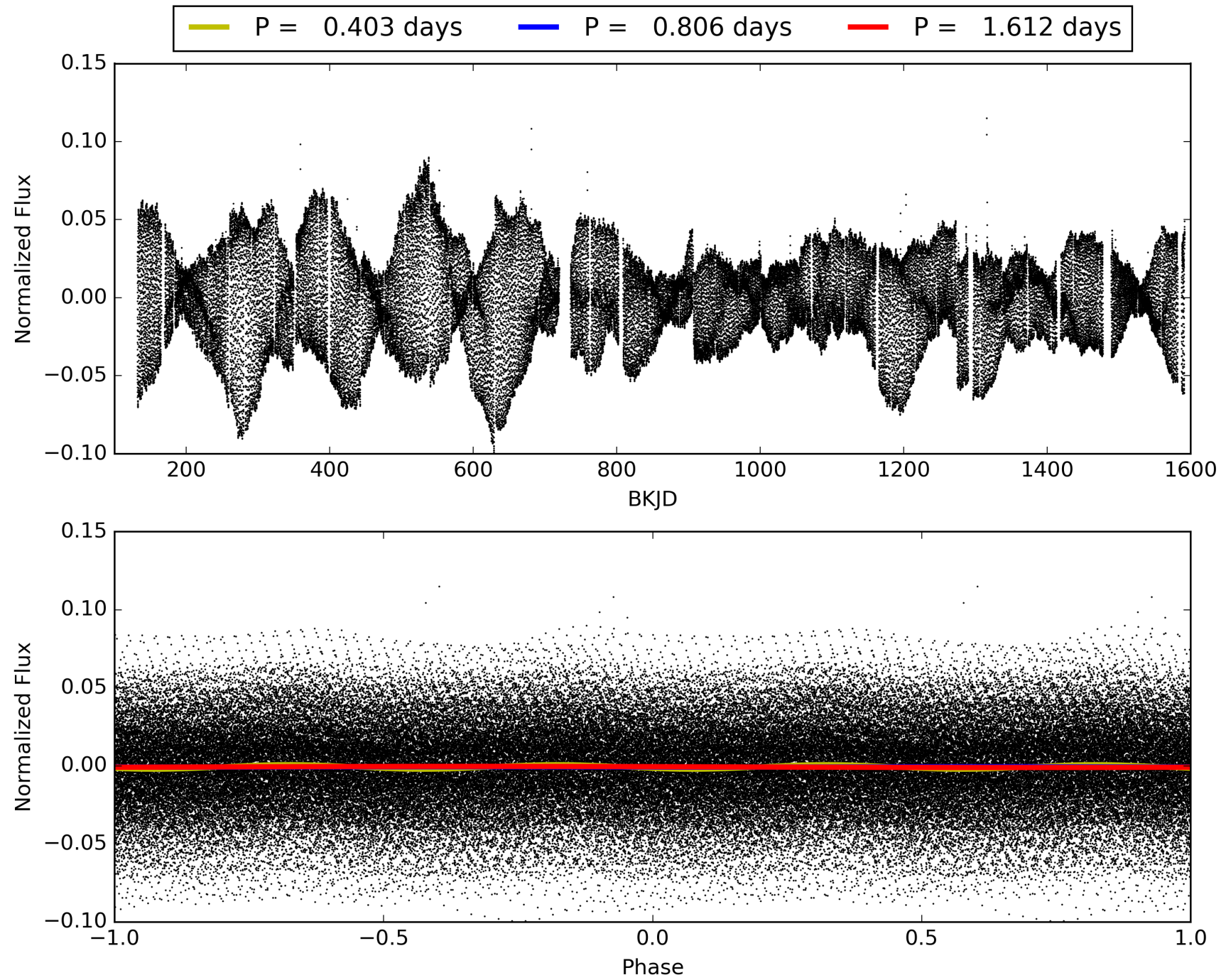
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005786382-01, PDC Light Curves



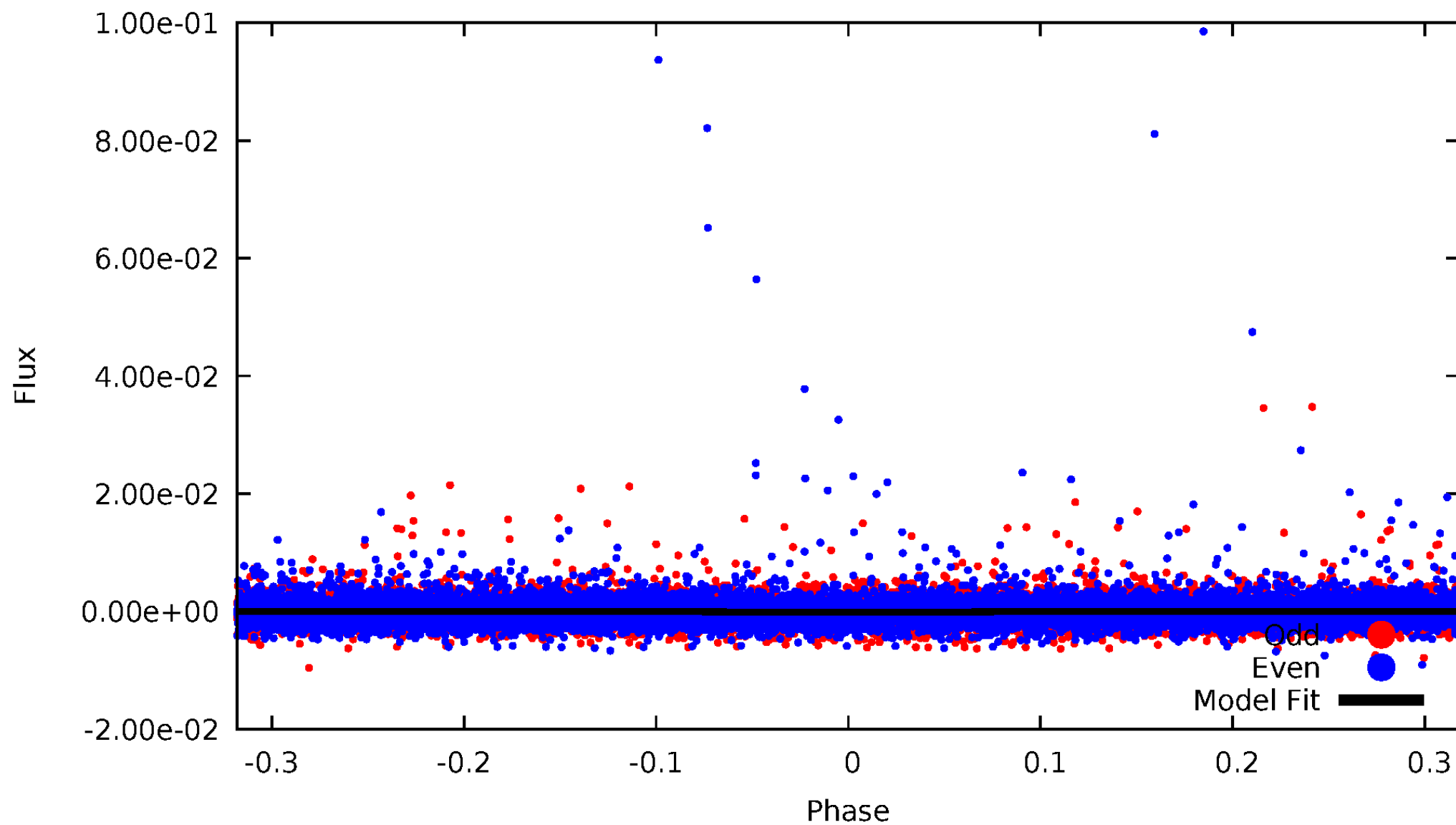


TCE 005786382-01



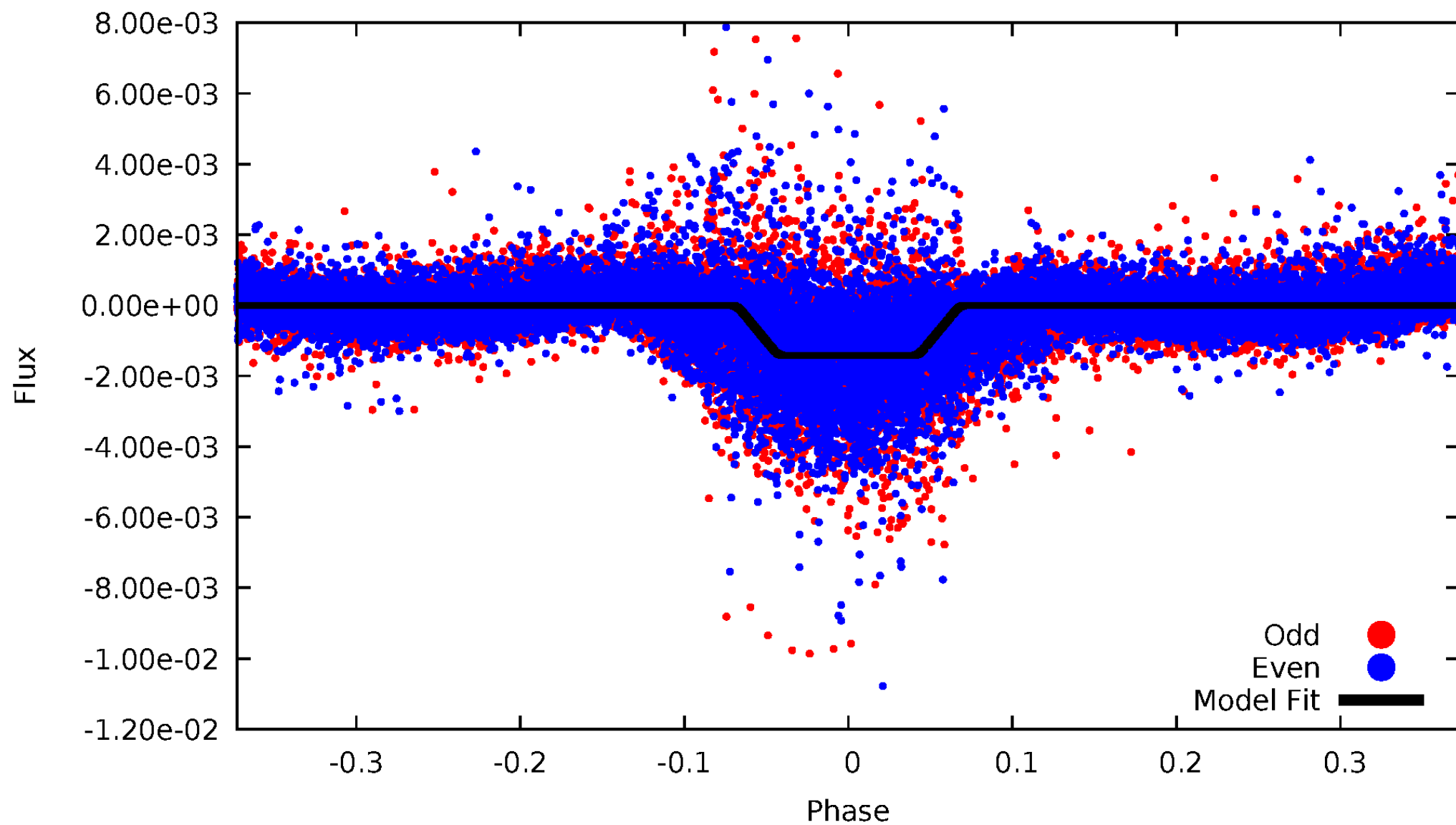
# DV Odd/Even

TCE 005786382-01



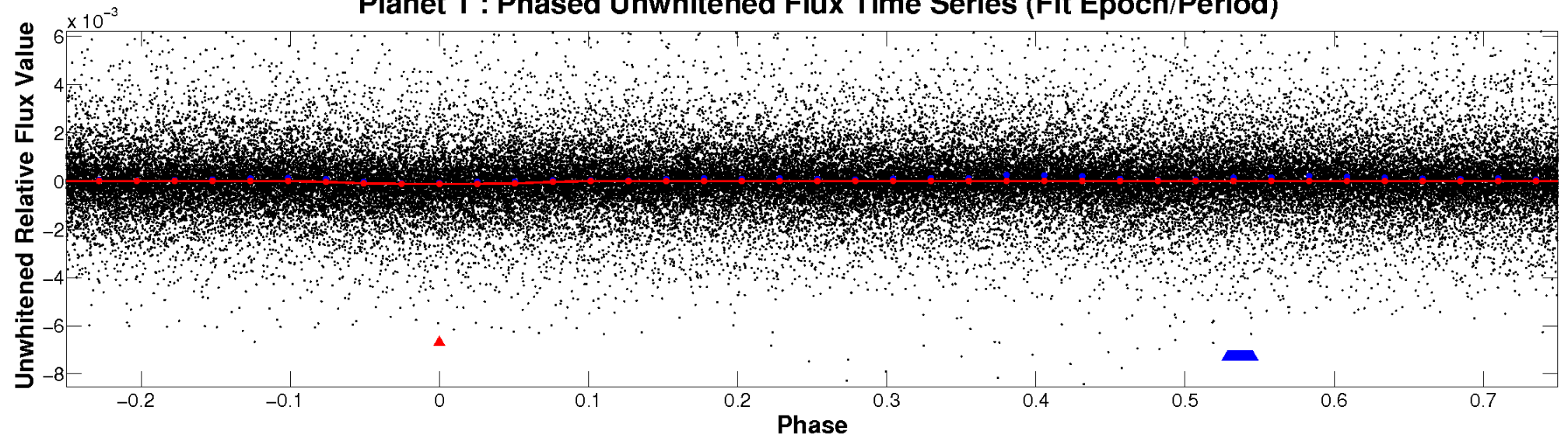
# ALT Odd/Even

TCE 005786382-01

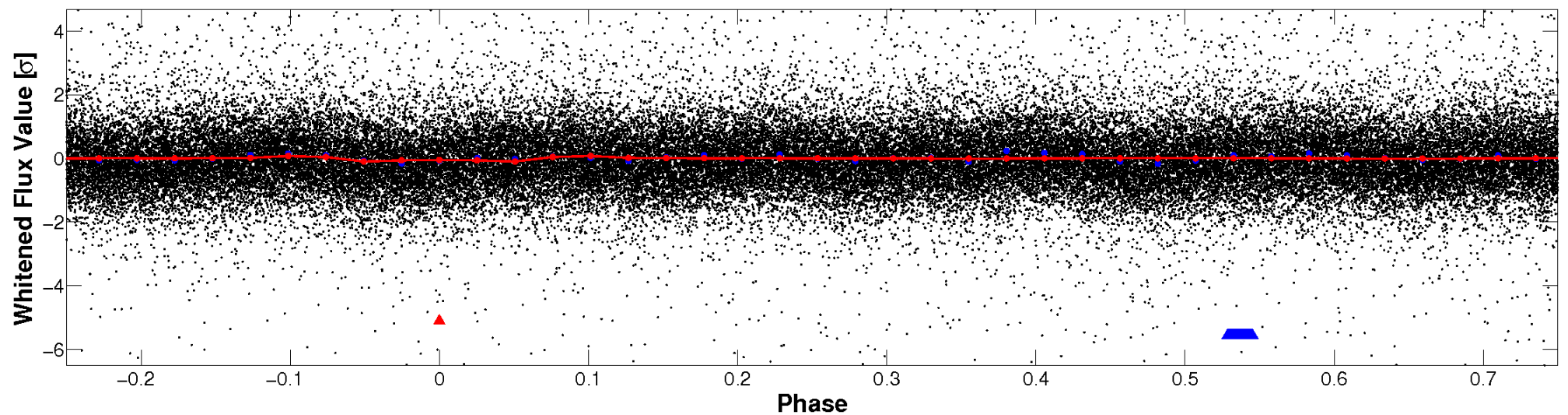


# Non-Whitened Vs. Whitened Light Curve

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



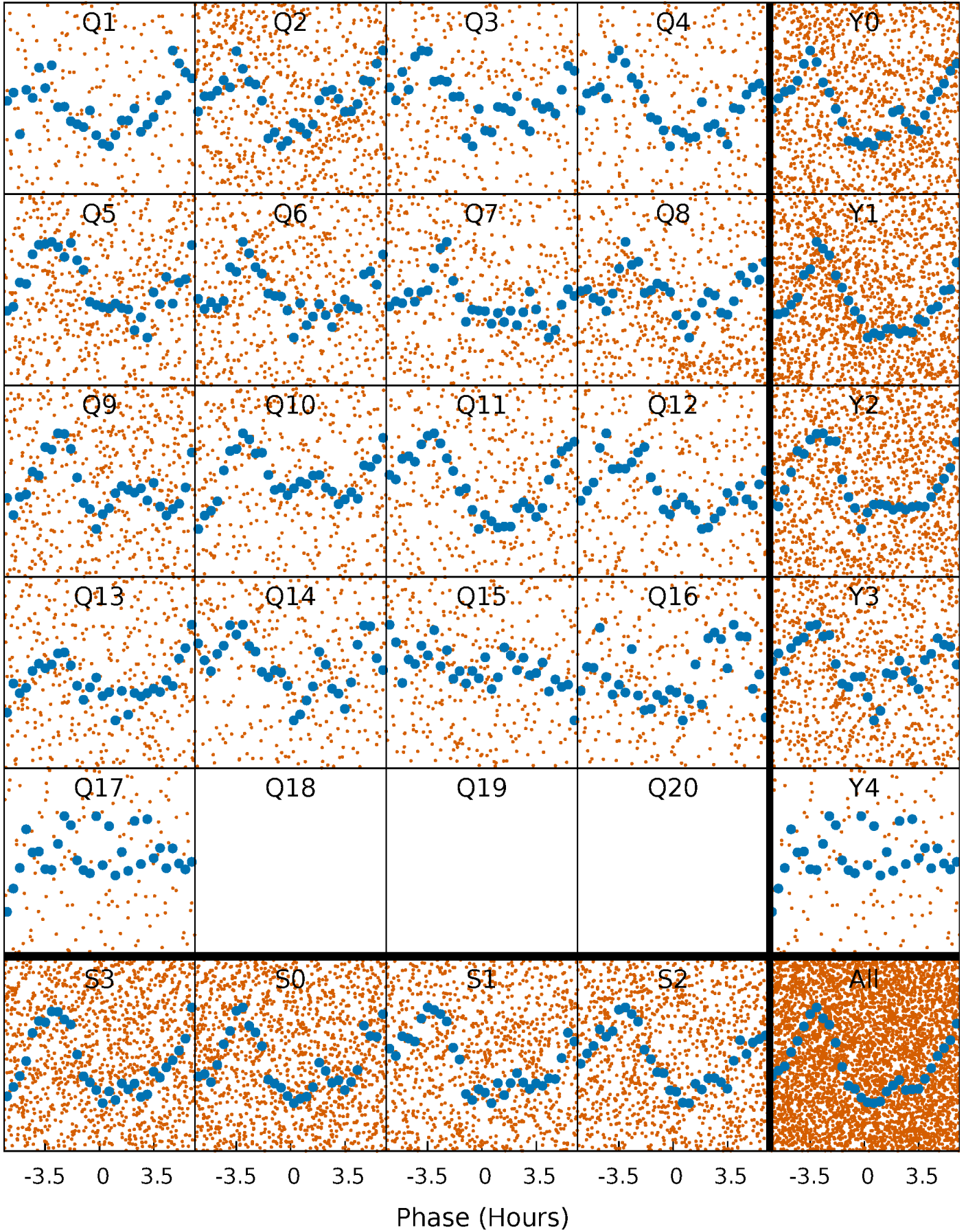
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

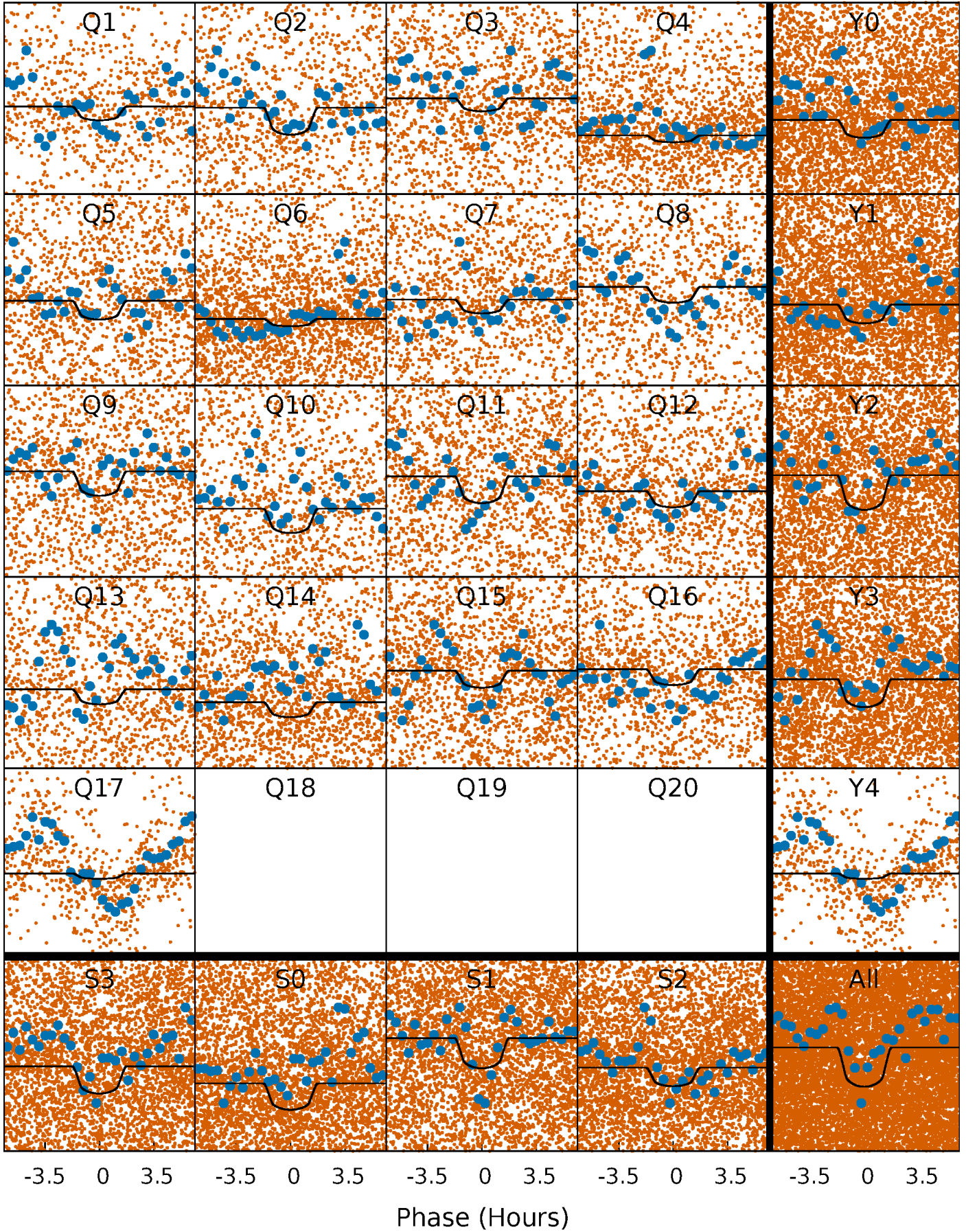
TCE 005786382-01 P= 0.805854 Days  $T_0=132.120453$  (BKJD)





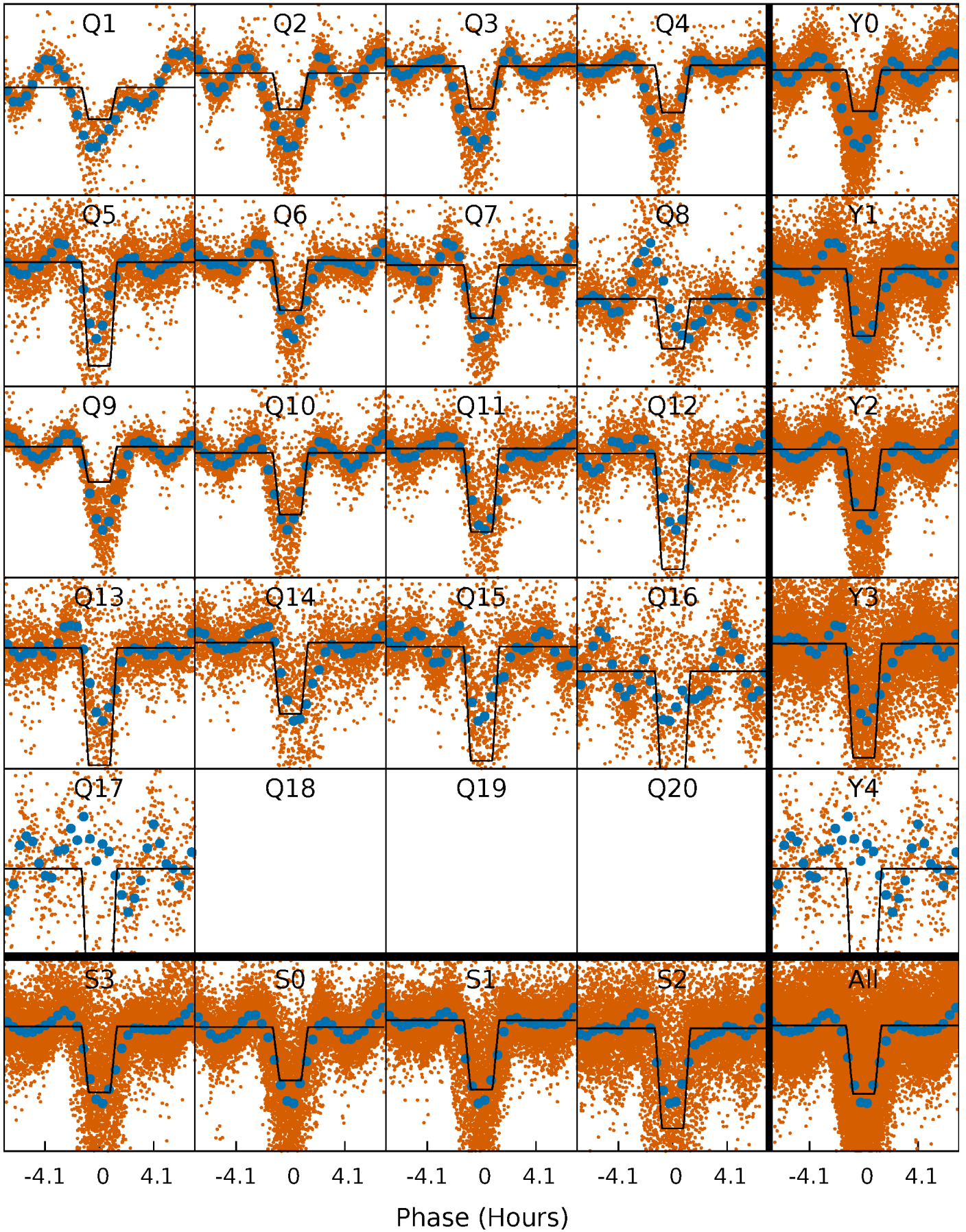
# DV Quarter-Phased Transit Curves

TCE 005786382-01 P= 0.805854 Days  $T_0=132.120453$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

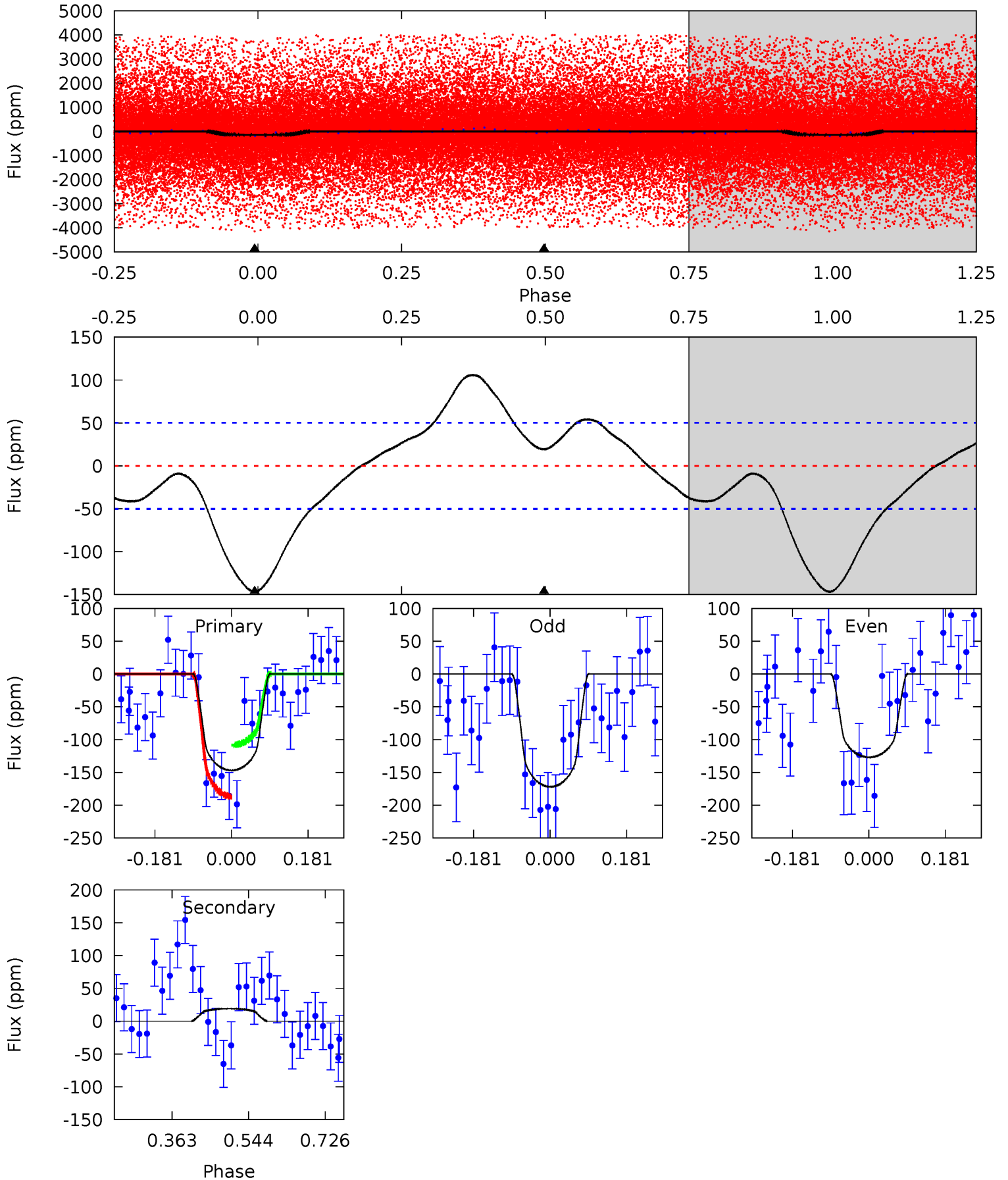
TCE 005786382-01 P= 0.805837 Days  $T_0=132.111941$  (BKJD)



# DV Model-Shift Uniqueness Test

005786382-01, P = 0.805854 Days, E = 131.314599 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
13.0	-1.68	0	0	4.44	1.34	2.71	13.0	13.0	-1.68	-1.68	2.04	0.41	0.42	3.51

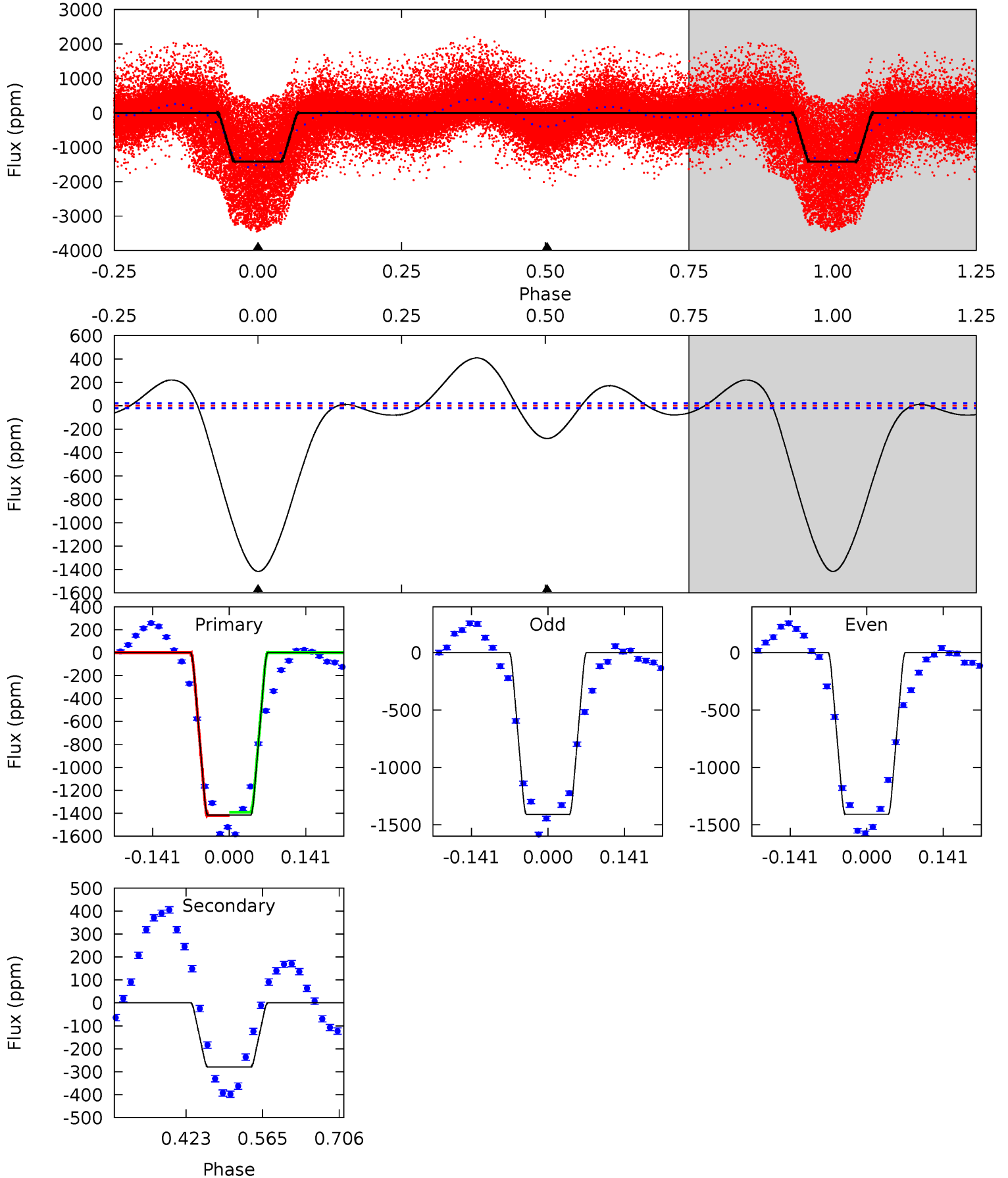




# Alt Model-Shift Uniqueness Test

005786382-01, P = 0.805837 Days, E = 131.306104 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
292.4	57.7	0	0	4.49	1.47	24.2	292.4	292.4	57.7	57.7	0.06	1.04	0.22	2.80





### Stellar Parameters For KIC 005786382

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4946^{+147}_{-147}$	$4.659^{+0.060}_{-0.040}$	$-0.940^{+0.300}_{-0.300}$	$0.598^{+0.051}_{-0.046}$	$0.594^{+0.054}_{-0.025}$	$3.917^{+0.907}_{-0.625}$
	+3%/-3%	+1%/-1%	+32%/-32%	+9%/-8%	+9%/-4%	+23%/-16%
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 005786382-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$19 \pm 11$	$0.78^{+0.20}_{-0.18}$	$1964^{+66}_{-75}$	$-3448^{+413}_{-389}$	$-3.400^{+2.077}_{-3.514}$
Alt.	$-279 \pm 5$	$2.46^{+0.21}_{-0.22}$	$1969^{+73}_{-69}$	$3628^{+130}_{-125}$	$5.199^{+1.035}_{-0.752}$

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

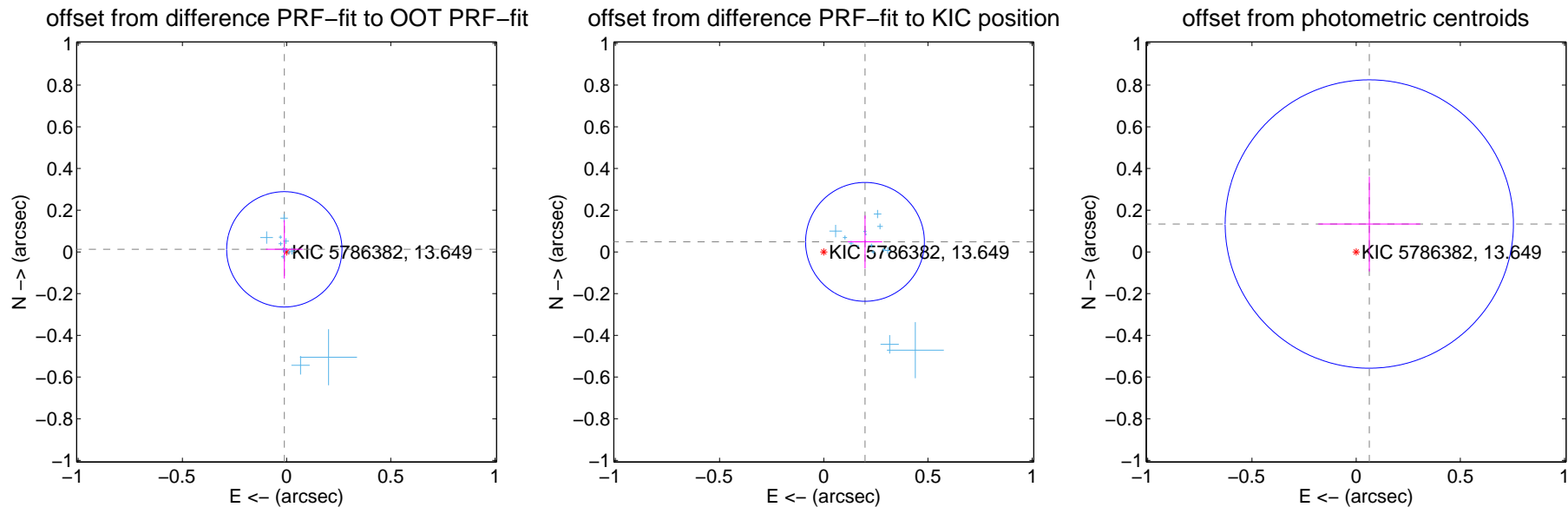
## DV Centroid Data

Supplemental centroid analysis for 005786382-01. Kepler magnitude: 13.65. Transit SNR 9.51

There are 15 quarters with good PRF difference image offsets

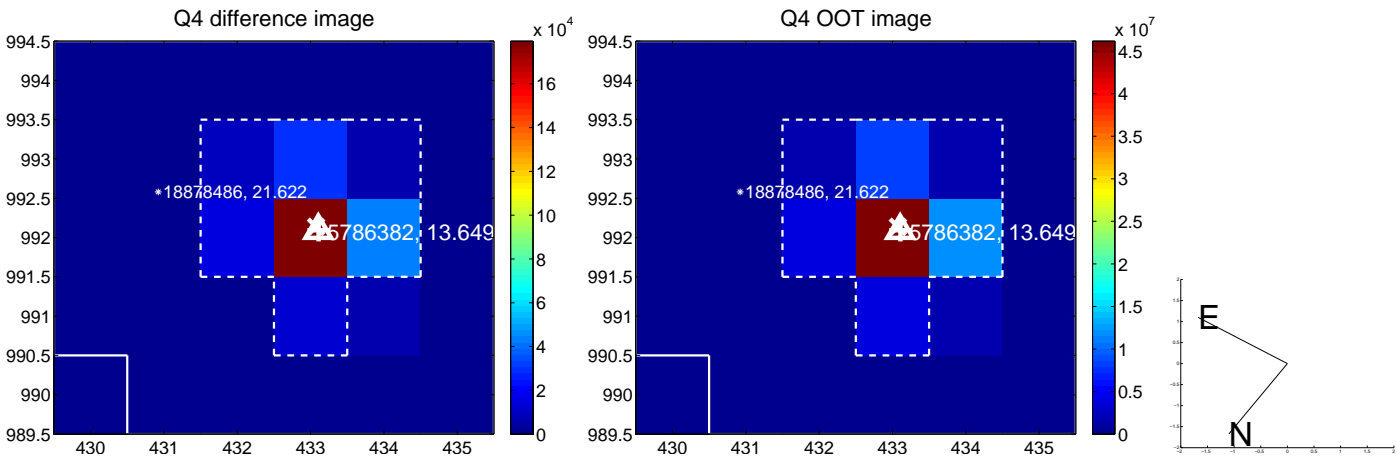
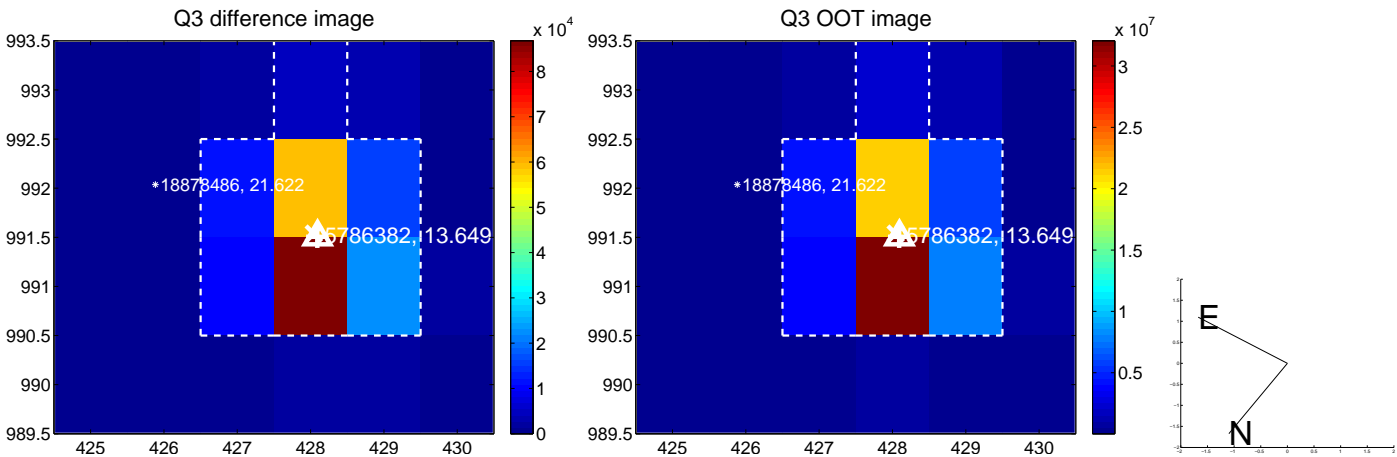
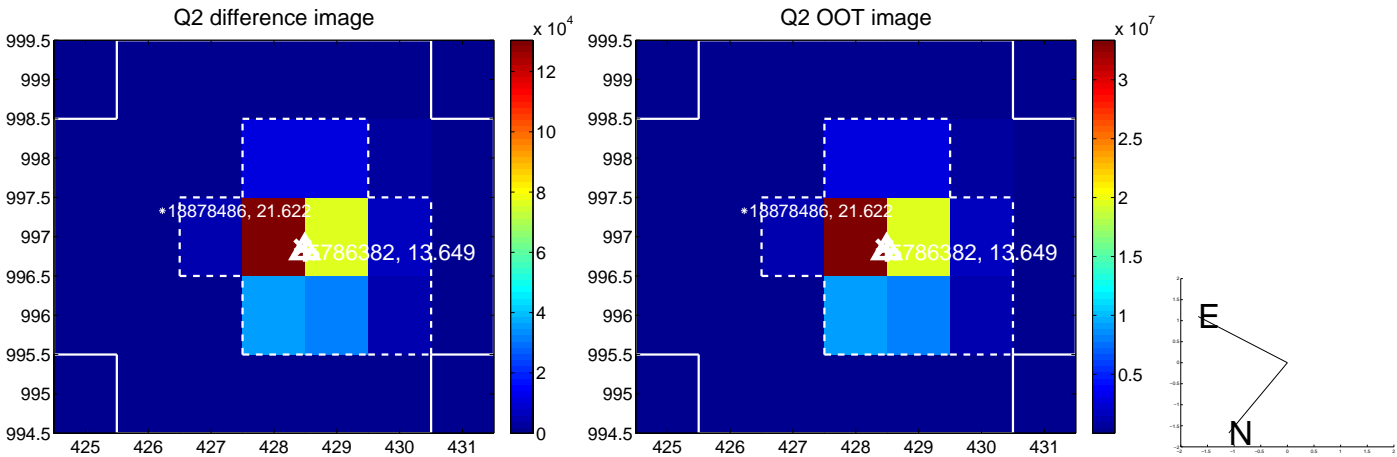
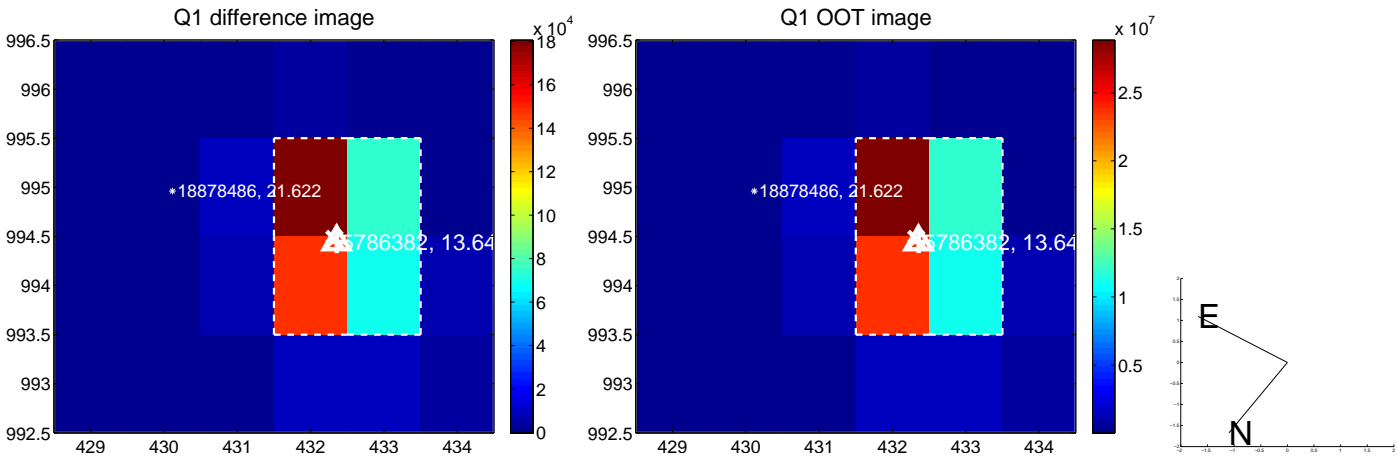
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.017 \pm 0.092$	0.18	$0.011 \pm 0.088$	$0.012 \pm 0.140$
PRF-fit source offset from KIC position	$0.204 \pm 0.095$	2.14	$-0.198 \pm 0.083$	$0.048 \pm 0.126$
photometric centroid source offset	$0.15 \pm 0.23$	0.64	$-0.06 \pm 0.24$	$0.13 \pm 0.23$

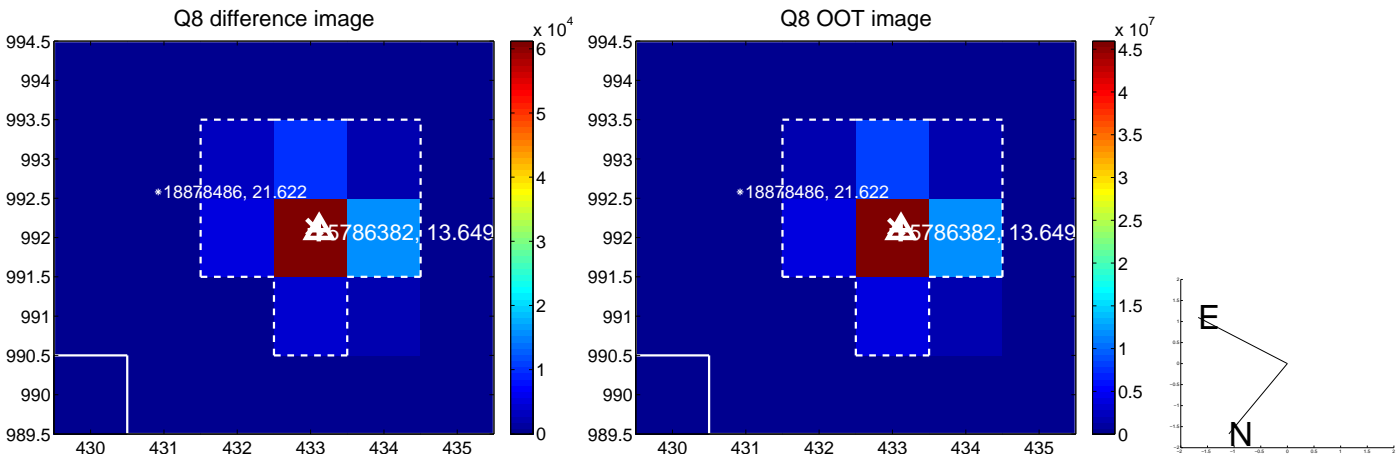
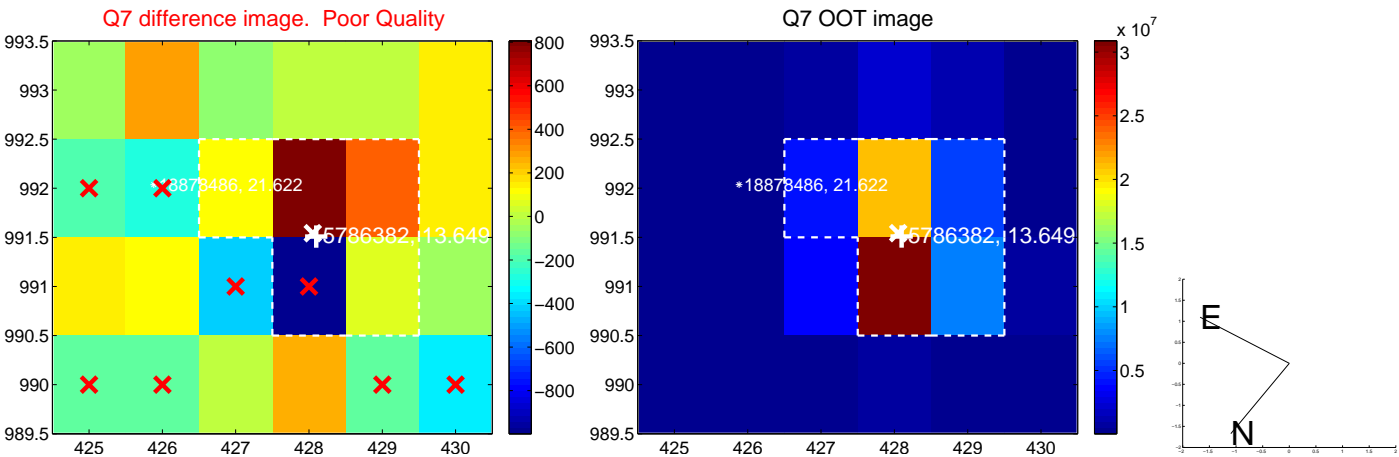
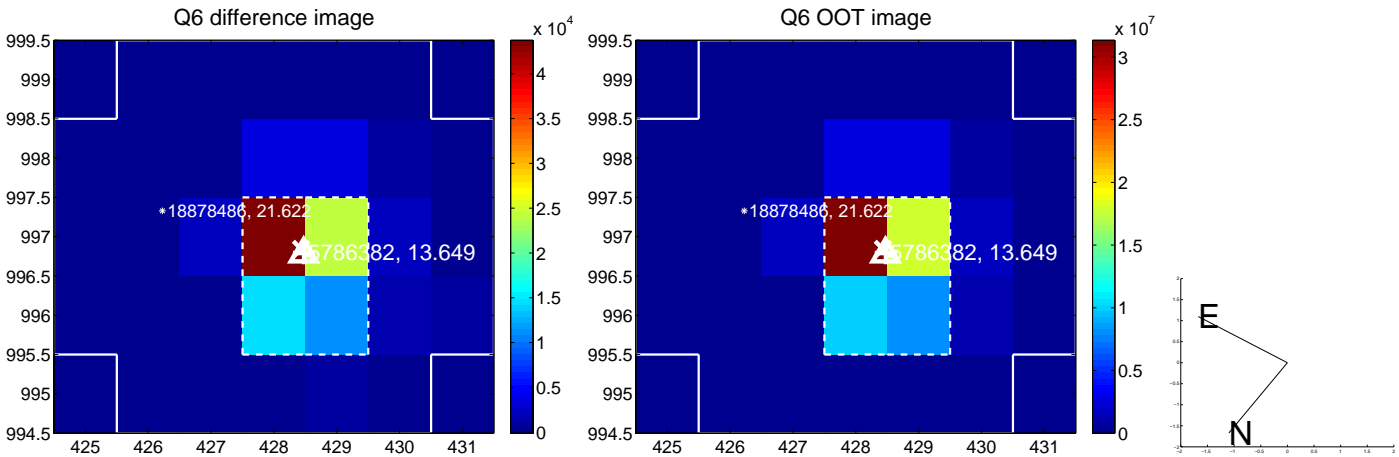
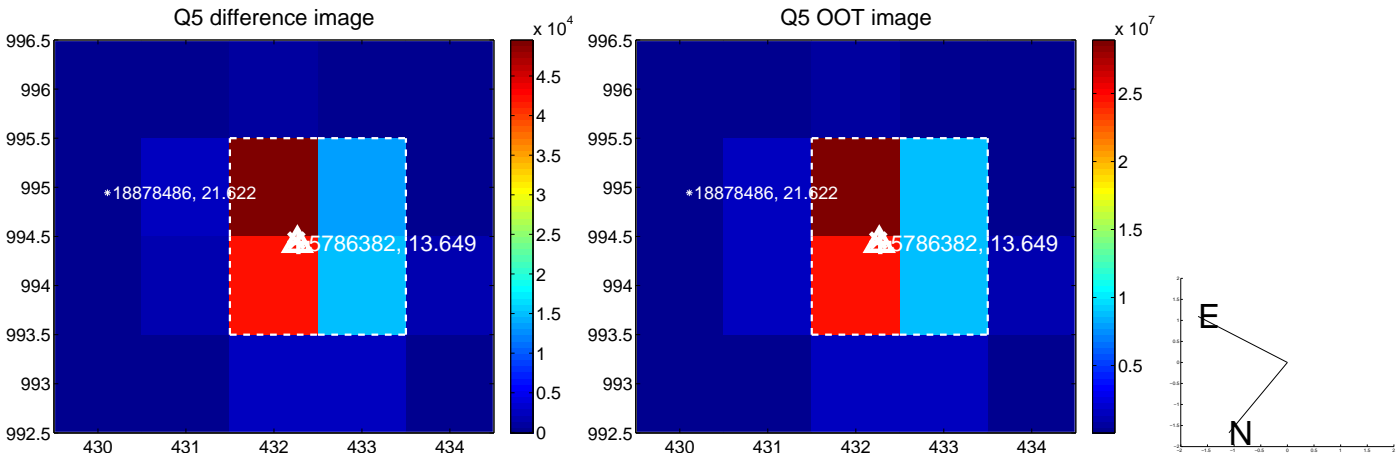


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

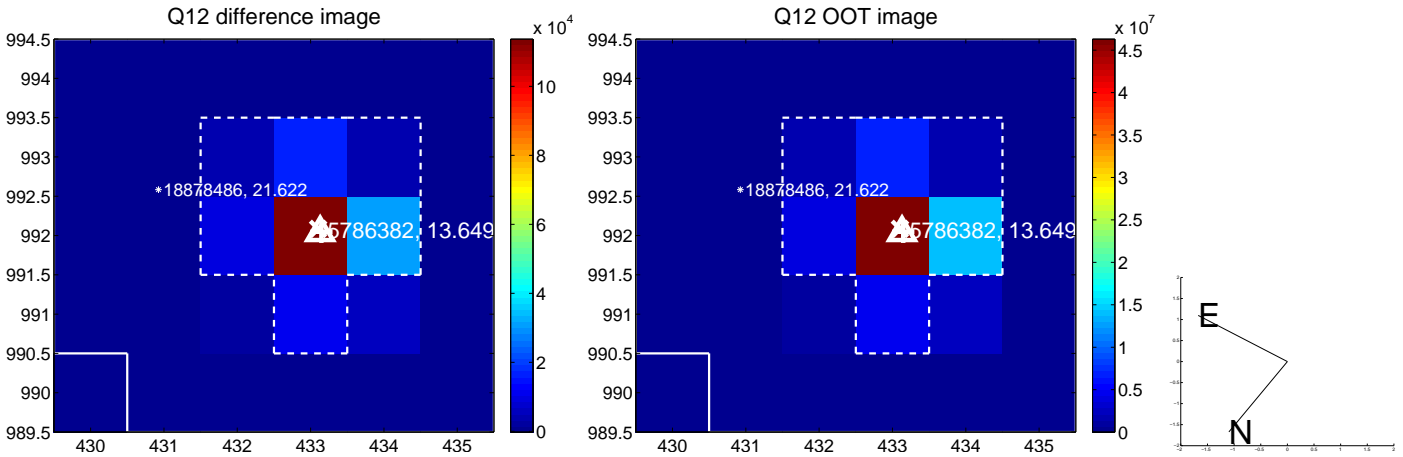
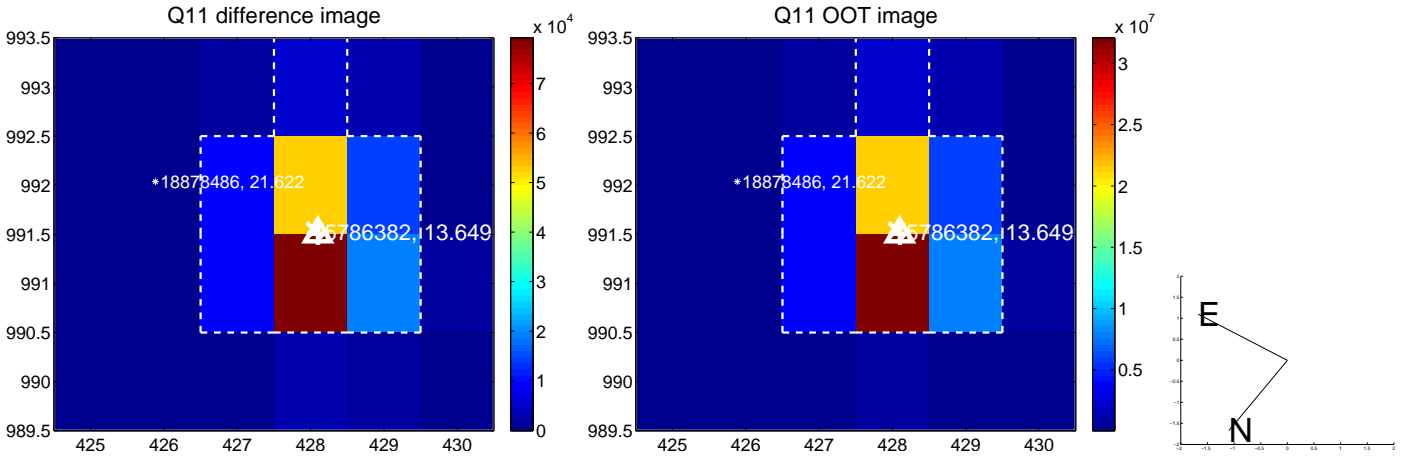
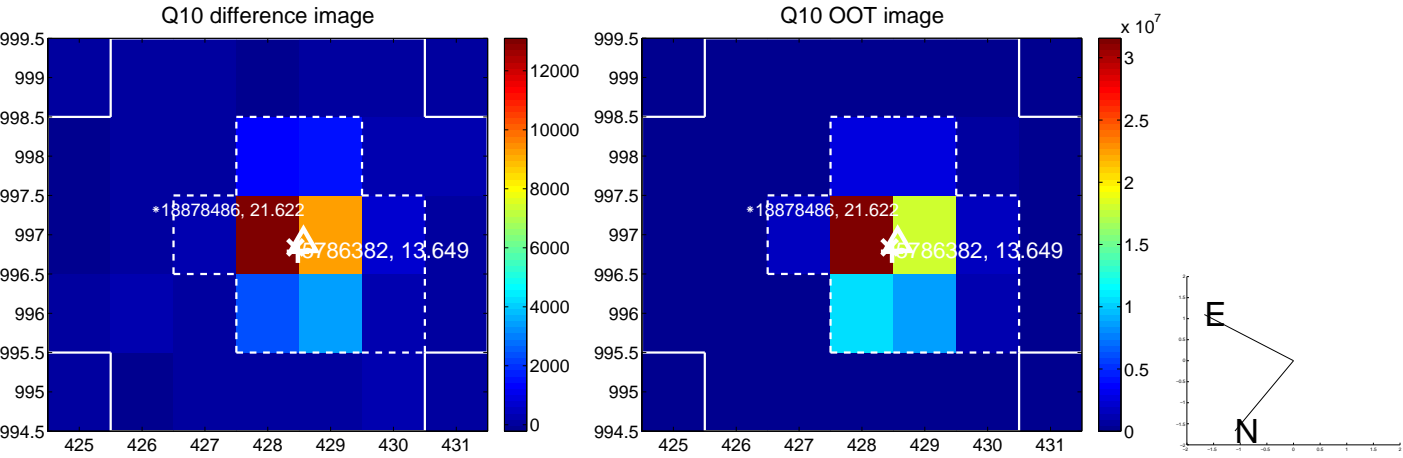
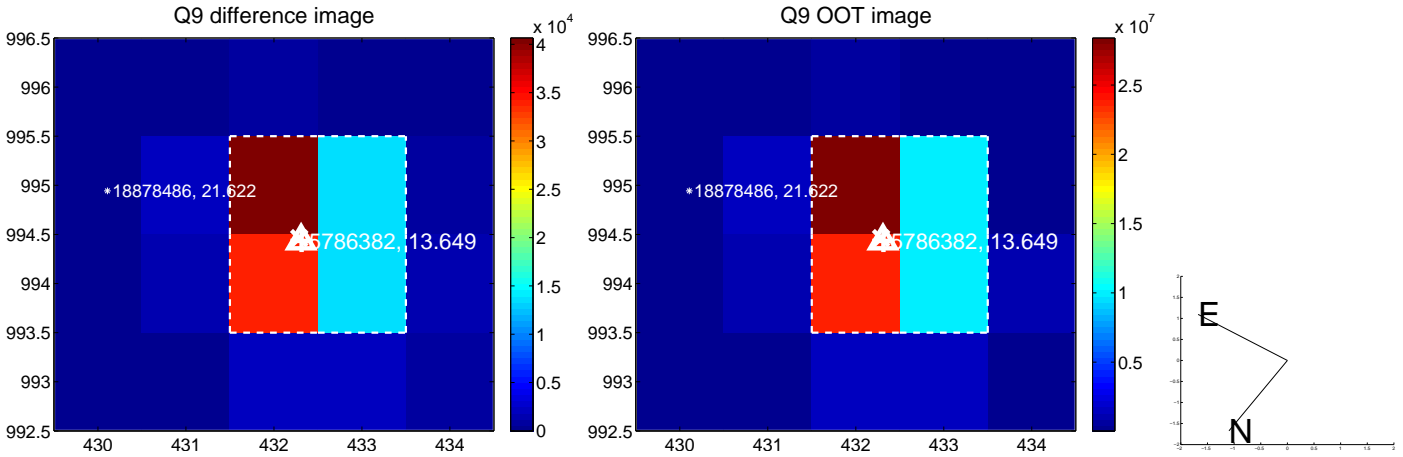


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

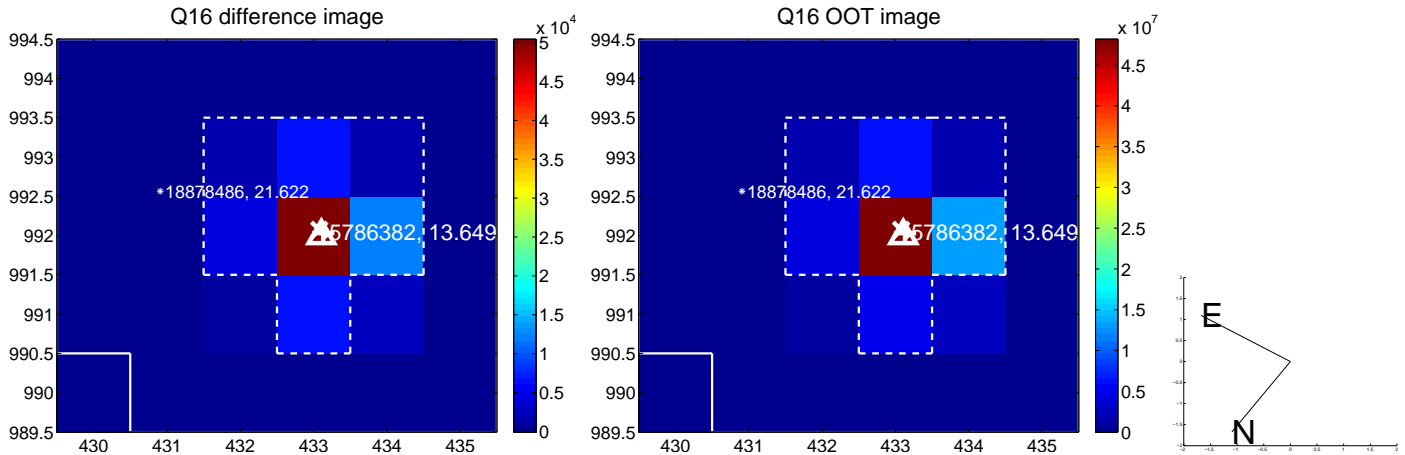
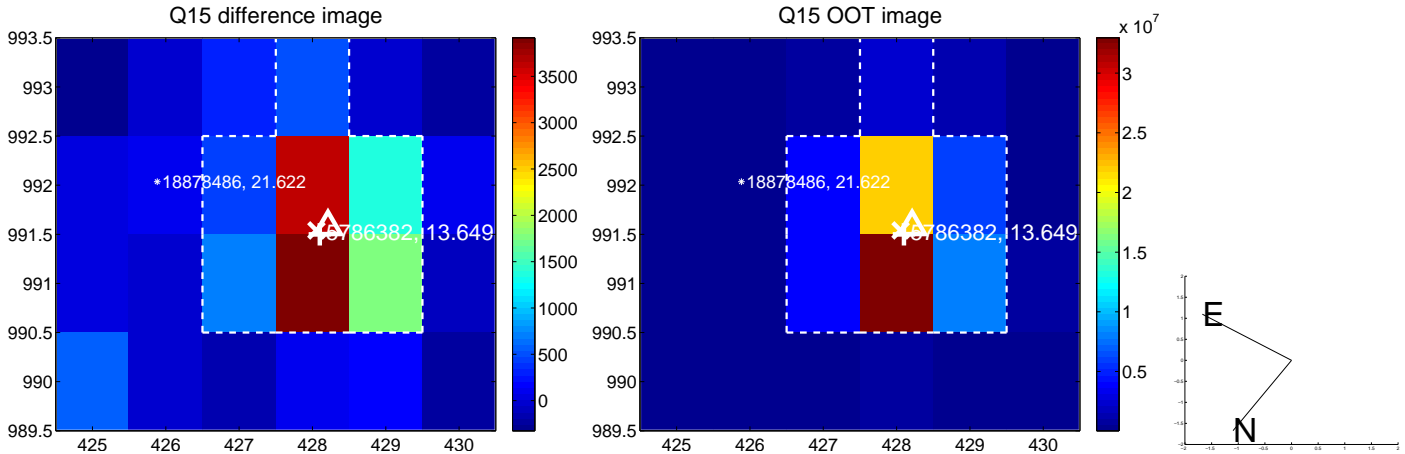
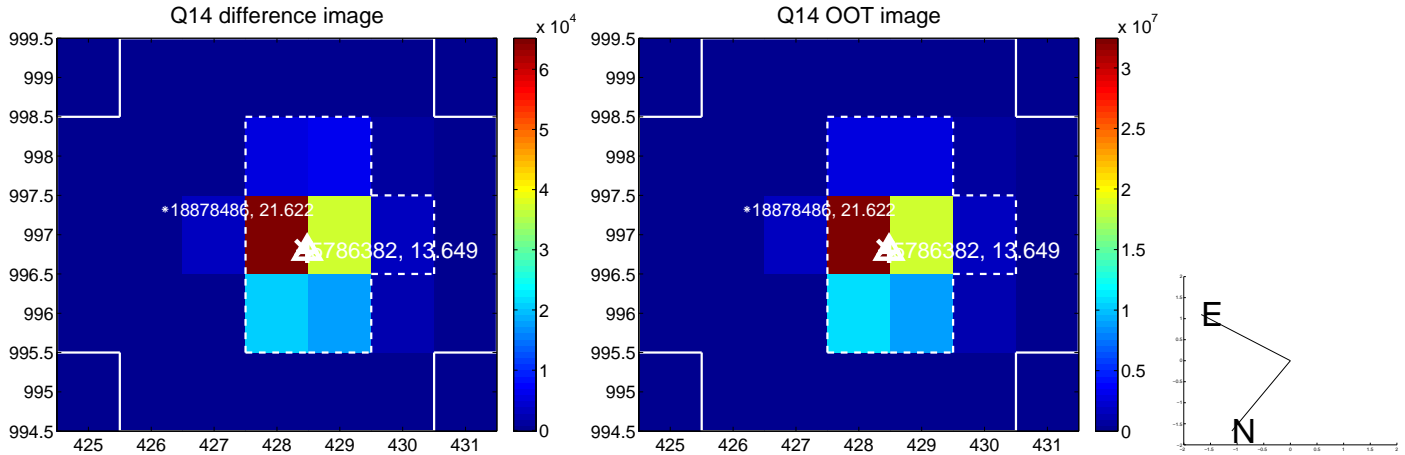
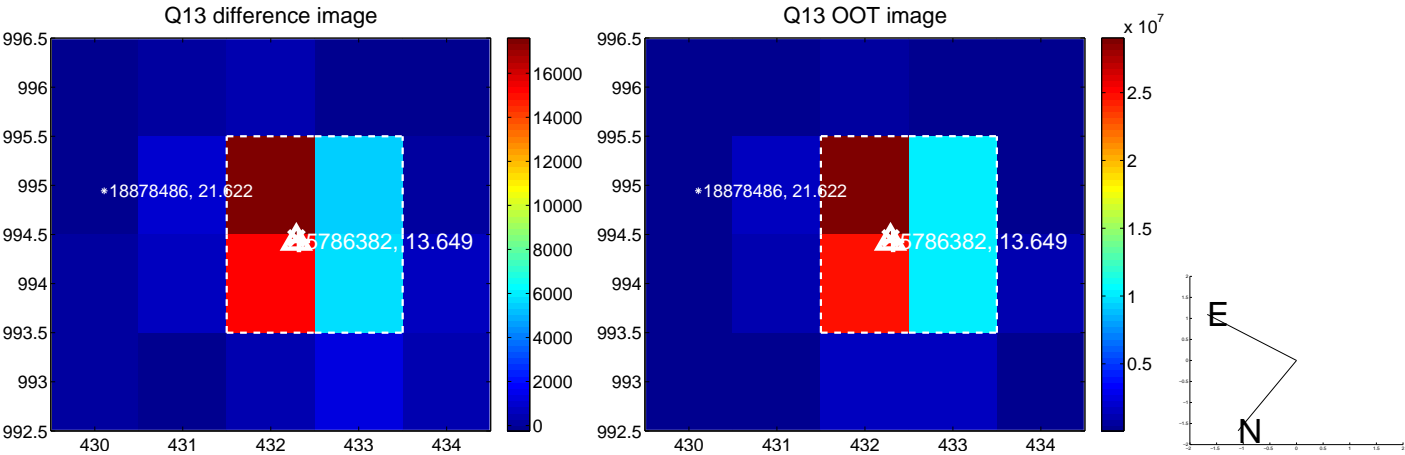




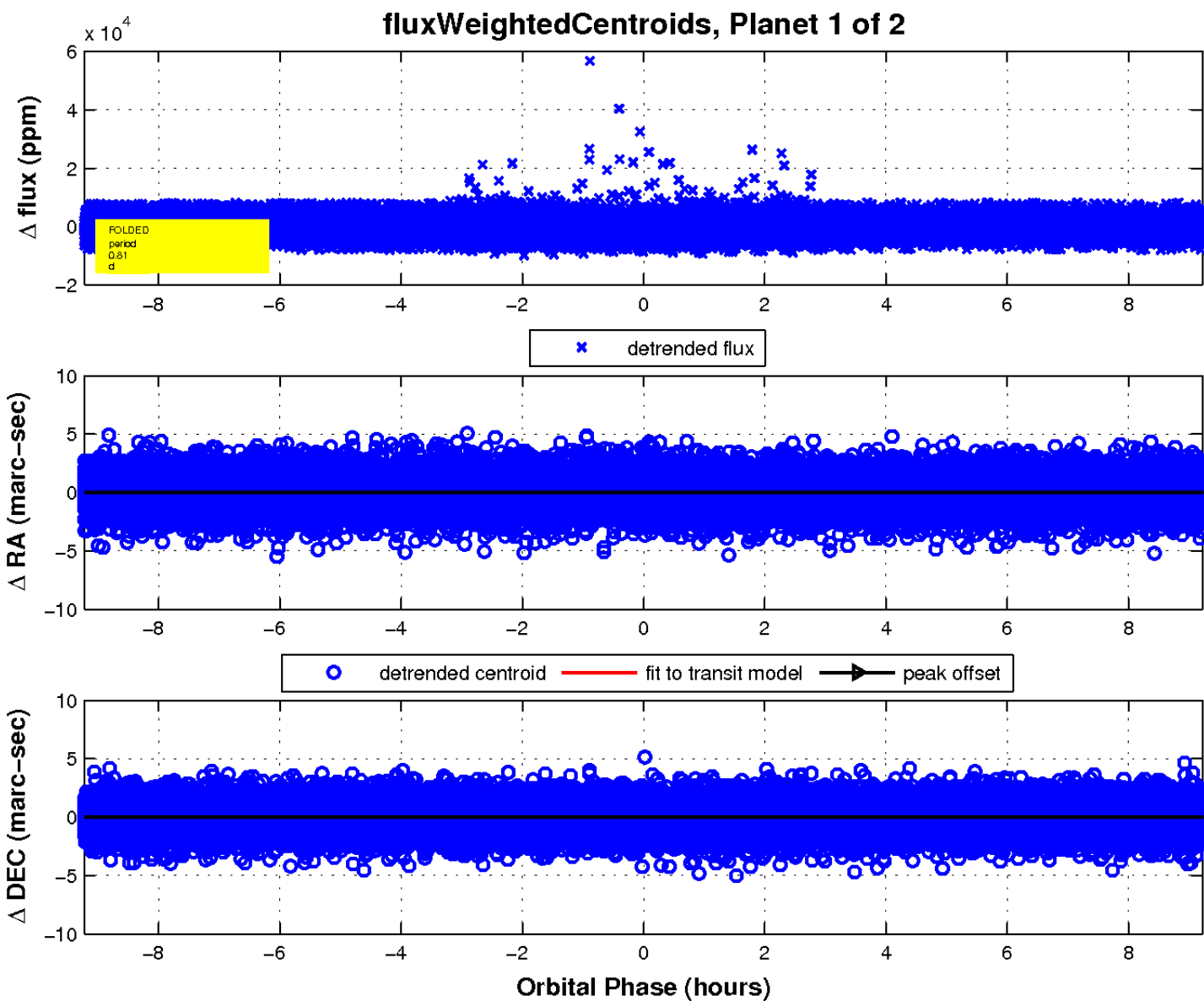
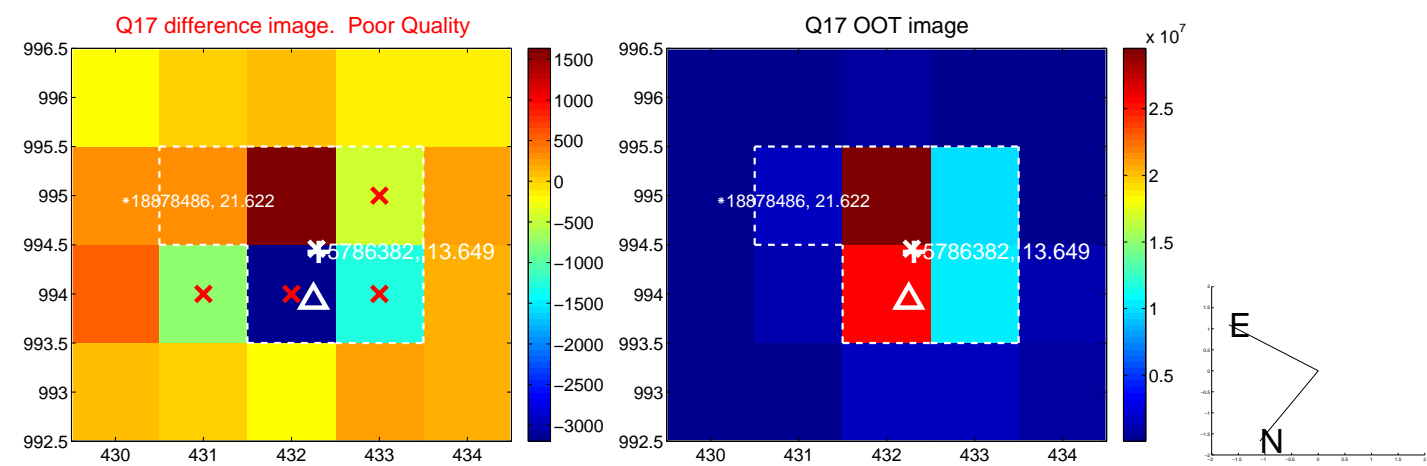
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

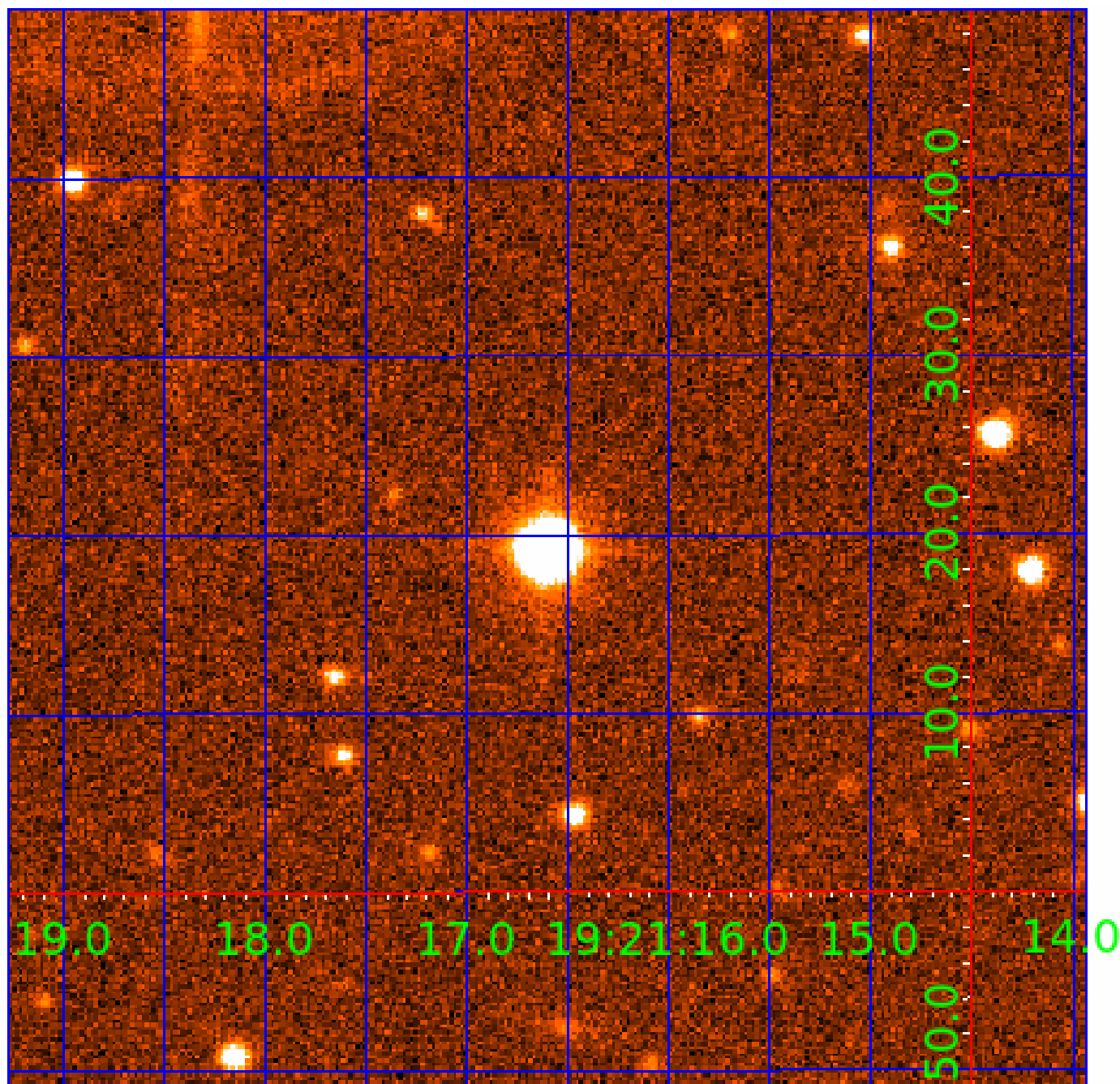


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 005786382

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005786382-01	OBS	No	0.805854	132.120453	120.1	3.074	10.6	9.5	0.60	4946	0.79	943.41
005786382-02	OBS	No	0.805847	131.754097	1.1	4.863	9.2	0.1	0.60	4946	0.06	943.43

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005786382-01	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST
005786382-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

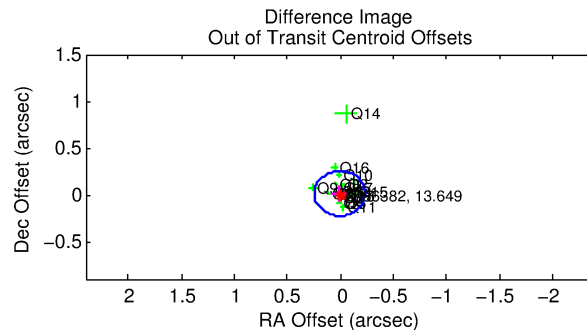
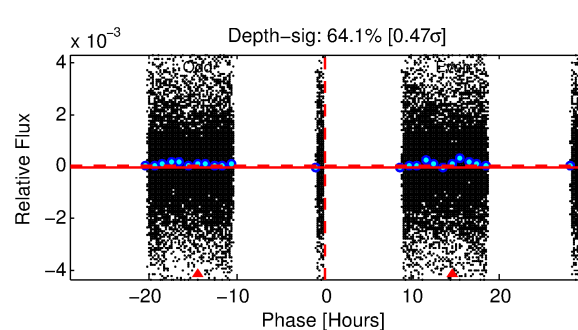
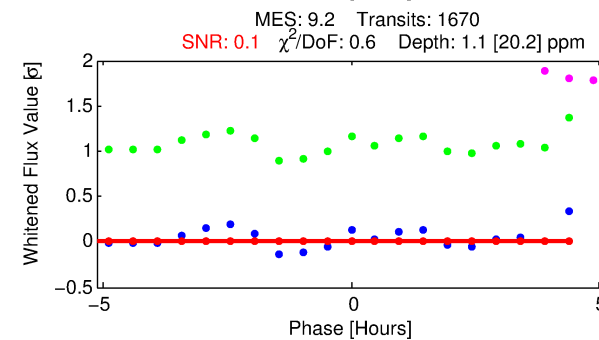
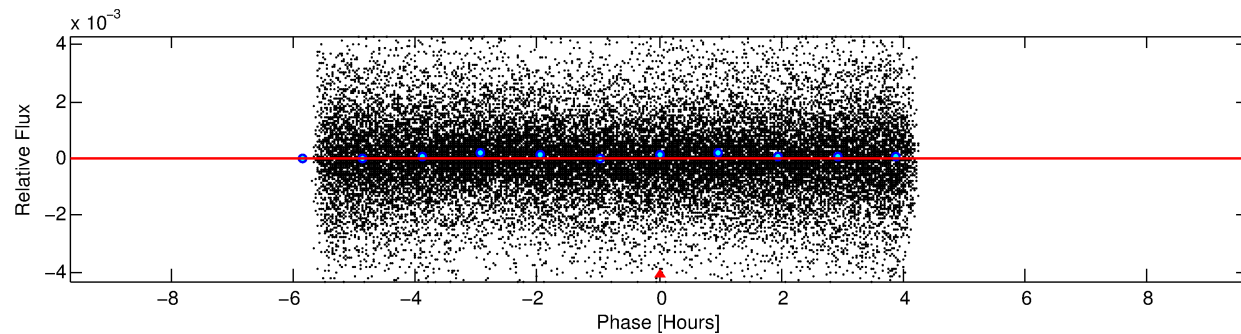
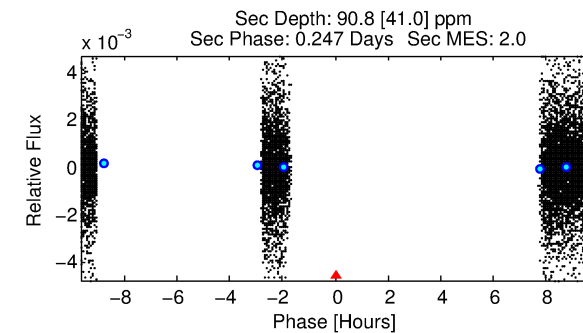
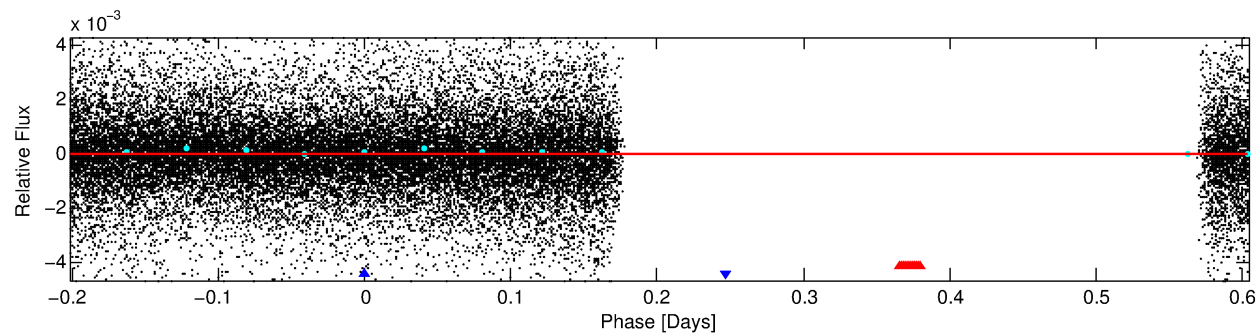
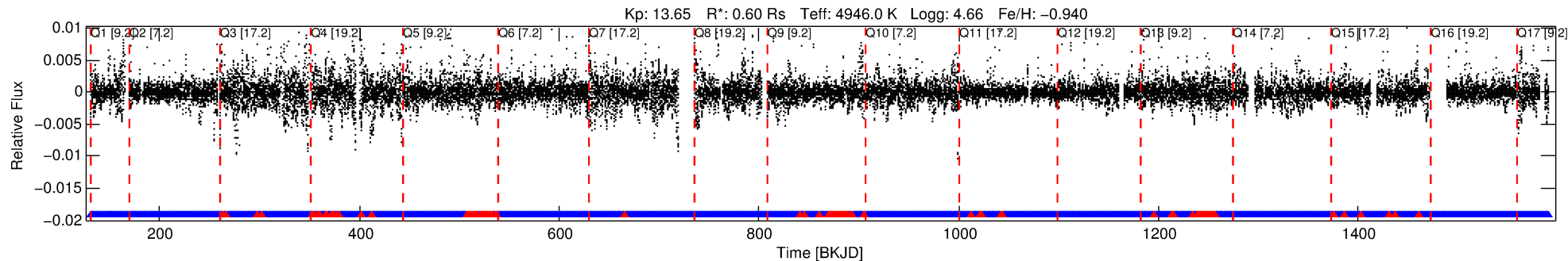
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005786382-02

No Significant Match Found

# DV One-Page Summary

KIC: 5786382 Candidate: 2 of 2 Period: 0.806 d



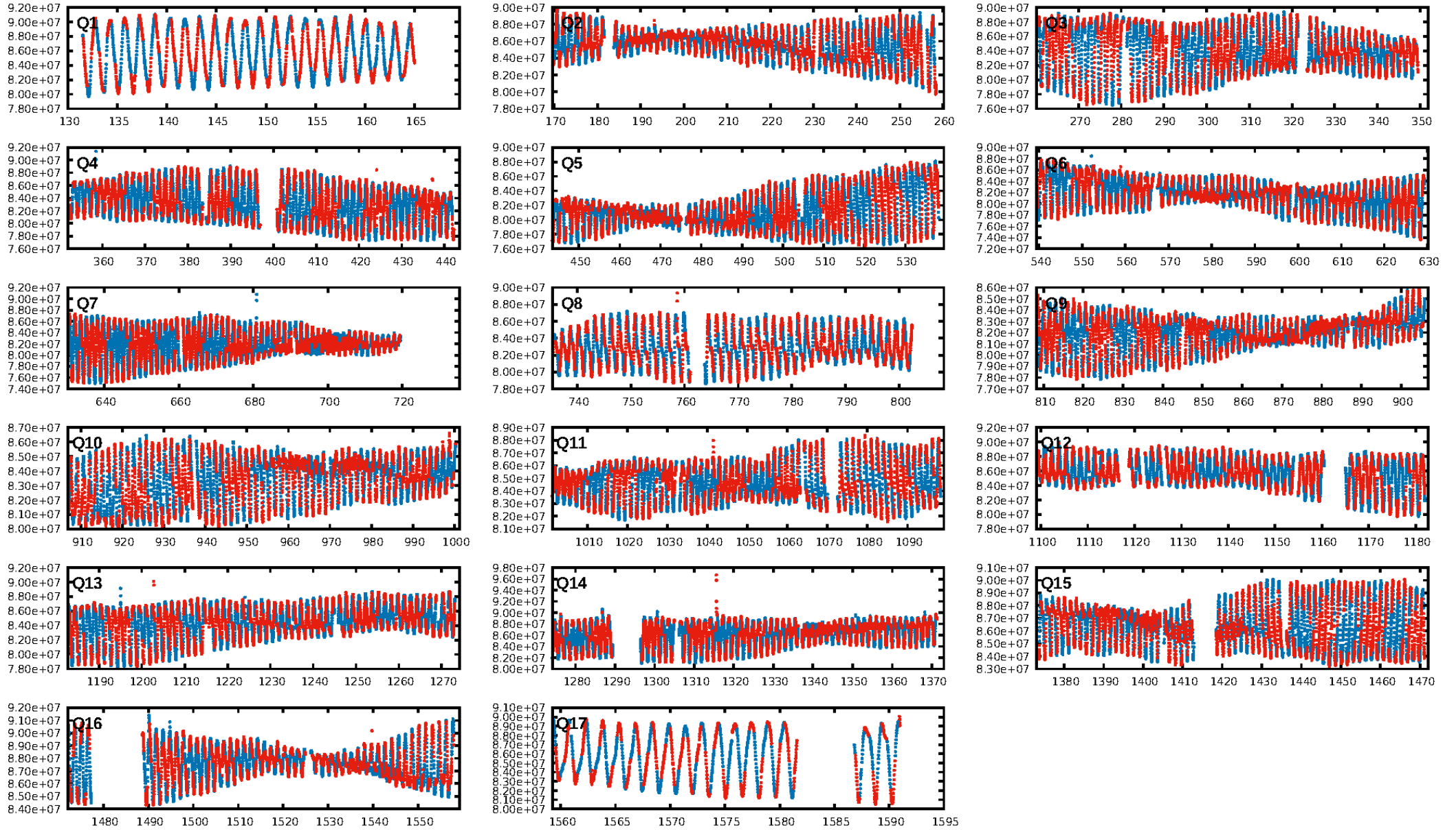
## DV Fit Results:

Period = 0.80585 [0.00145] d  
Epoch = 131.7541 [0.2009] BKJD  
Rp/R\* = 0.0010 [0.0111]  
a/R\* = 1.34 [16.32]  
b = 0.45 [48.80]  
Seff = 943.43 [151.70]  
Teq = 1413 [57] K  
Rp = 0.06 [0.72] Re  
a = 0.0143 [0.0010] AU  
Ag = 2546.88 [58427.38] [0.04σ]  
Teff = 15522 [89027] K [0.16σ]

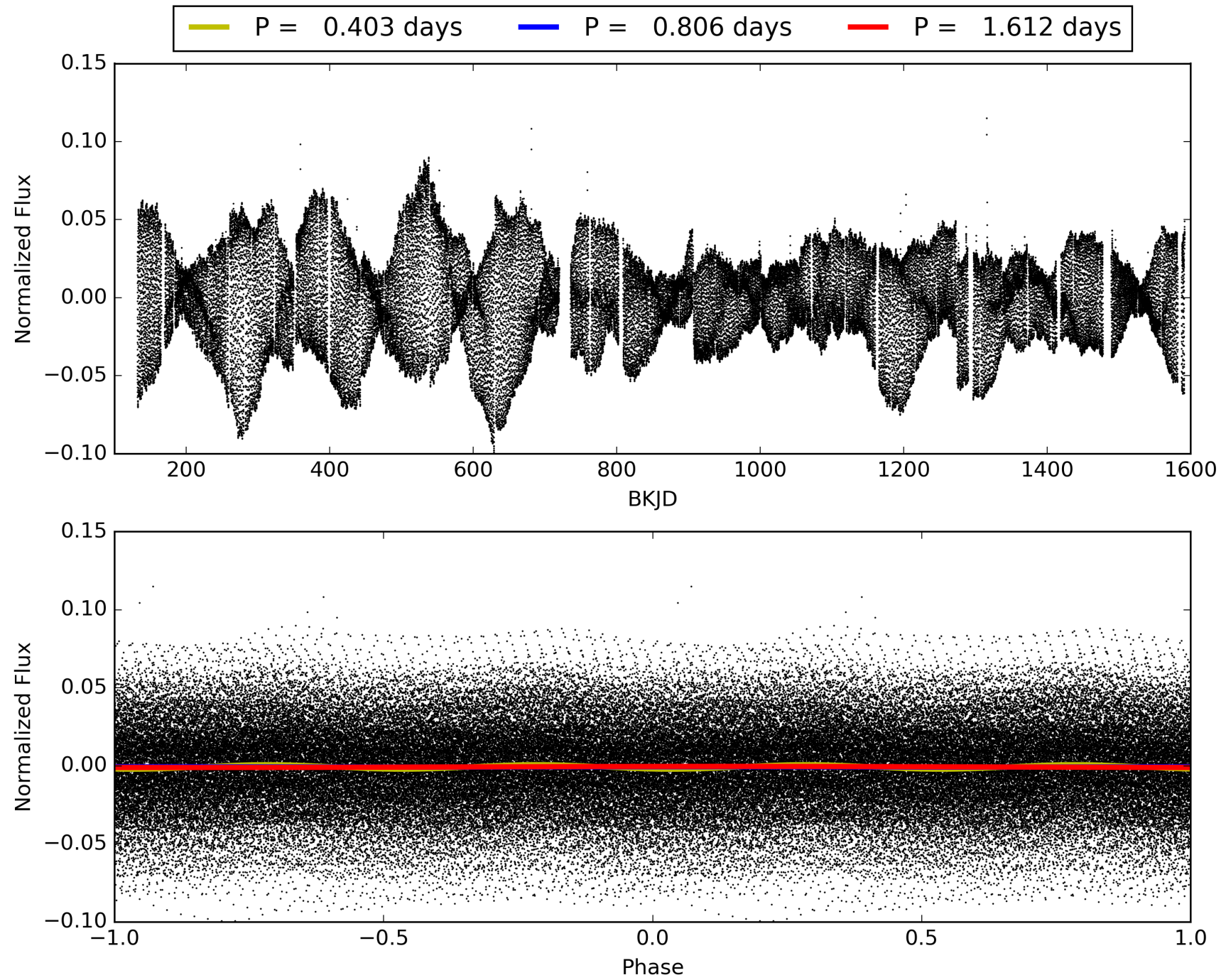
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.93 [1477/1595]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.015 arcsec [0.19σ]  
KicOffset-rm: 0.186 arcsec [2.53σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.82 [14/17]  
DiffImageOverlap-fno: 0.00 [0/17]

# TCE 005786382-02, PDC Light Curves



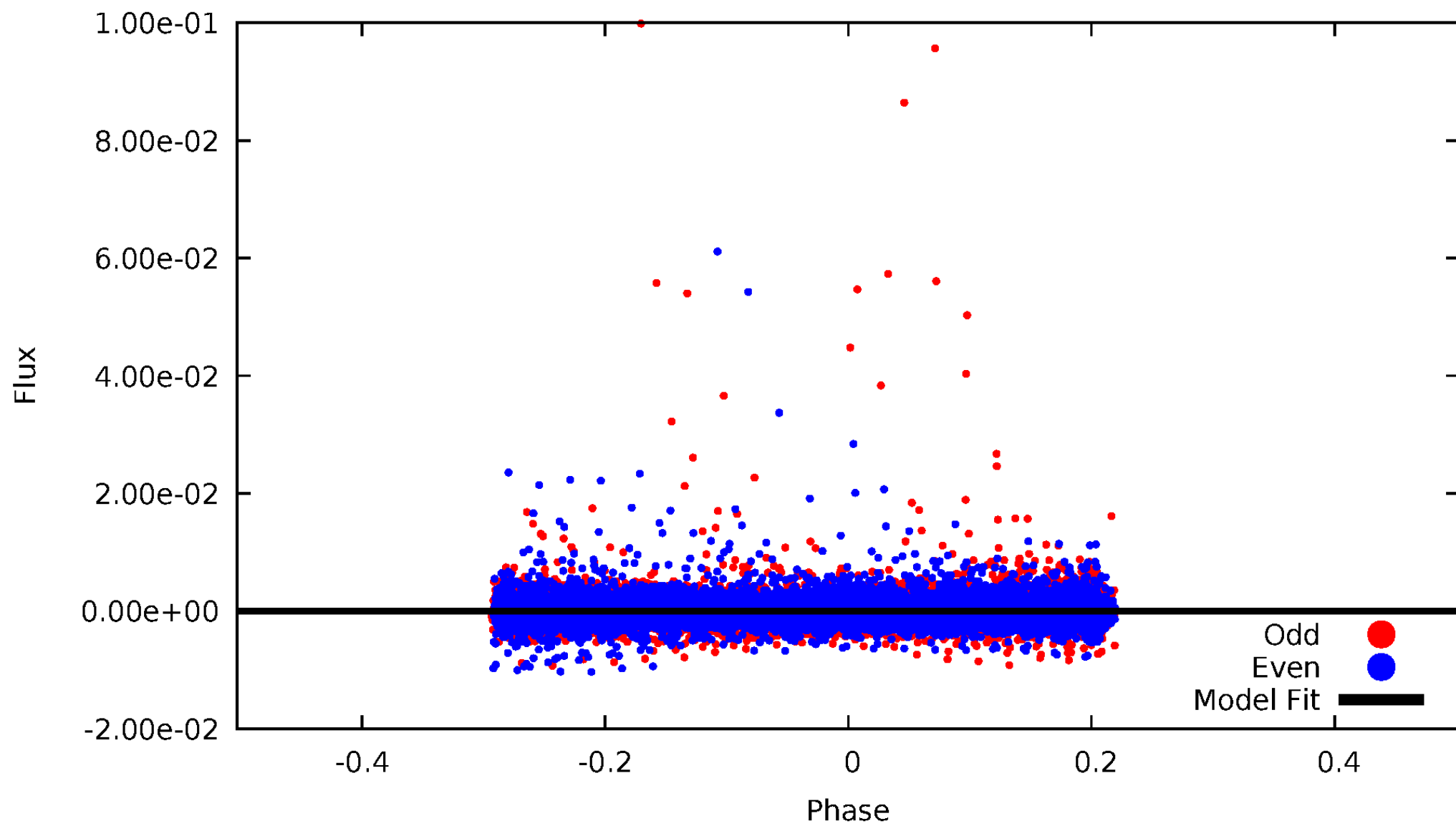
TCE 005786382-02





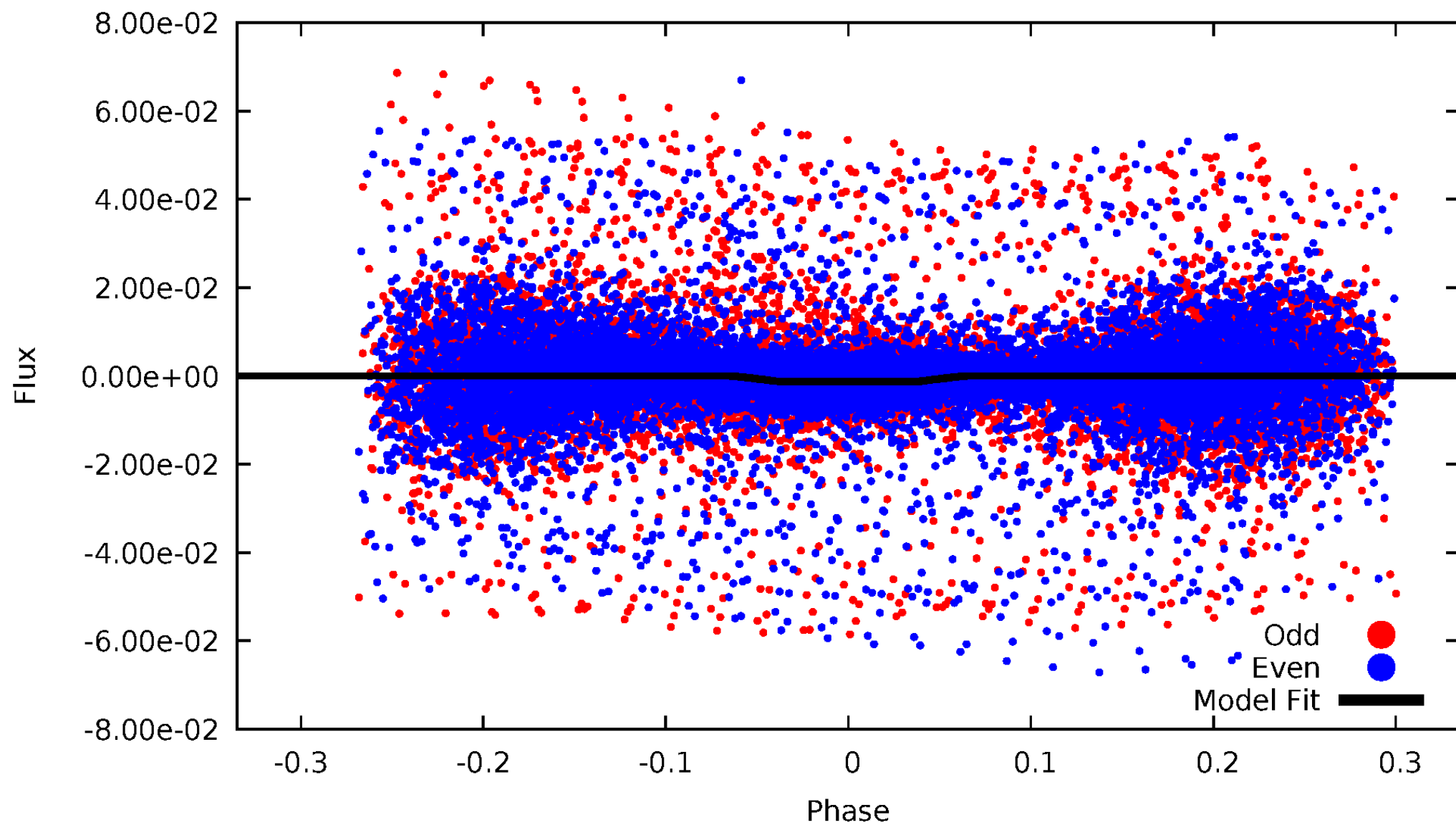
# DV Odd/Even

TCE 005786382-02



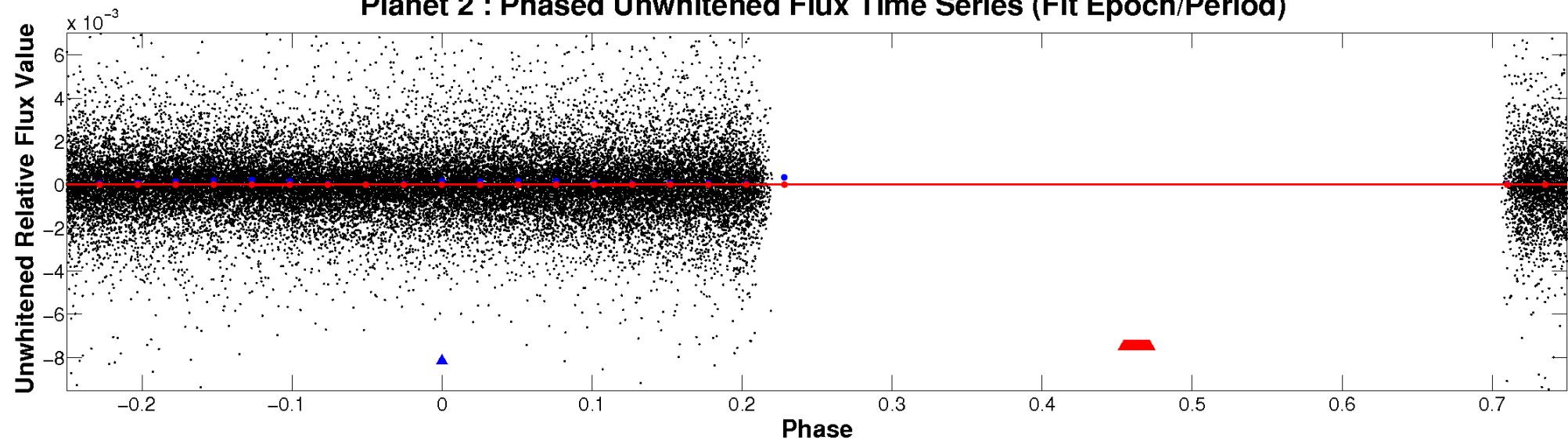
# ALT Odd/Even

TCE 005786382-02

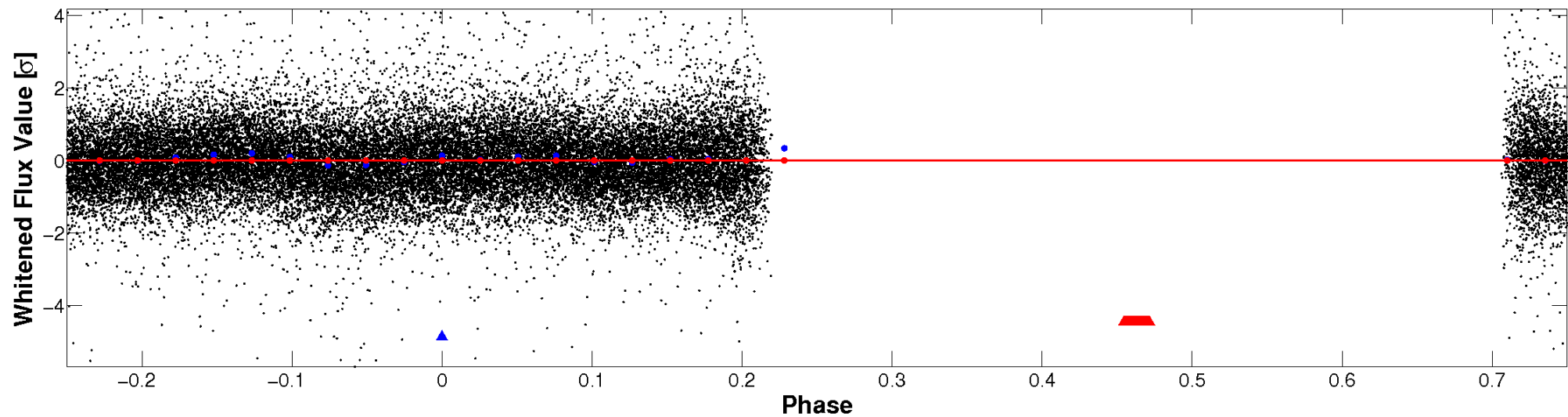


# Non-Whitened Vs. Whitened Light Curve

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

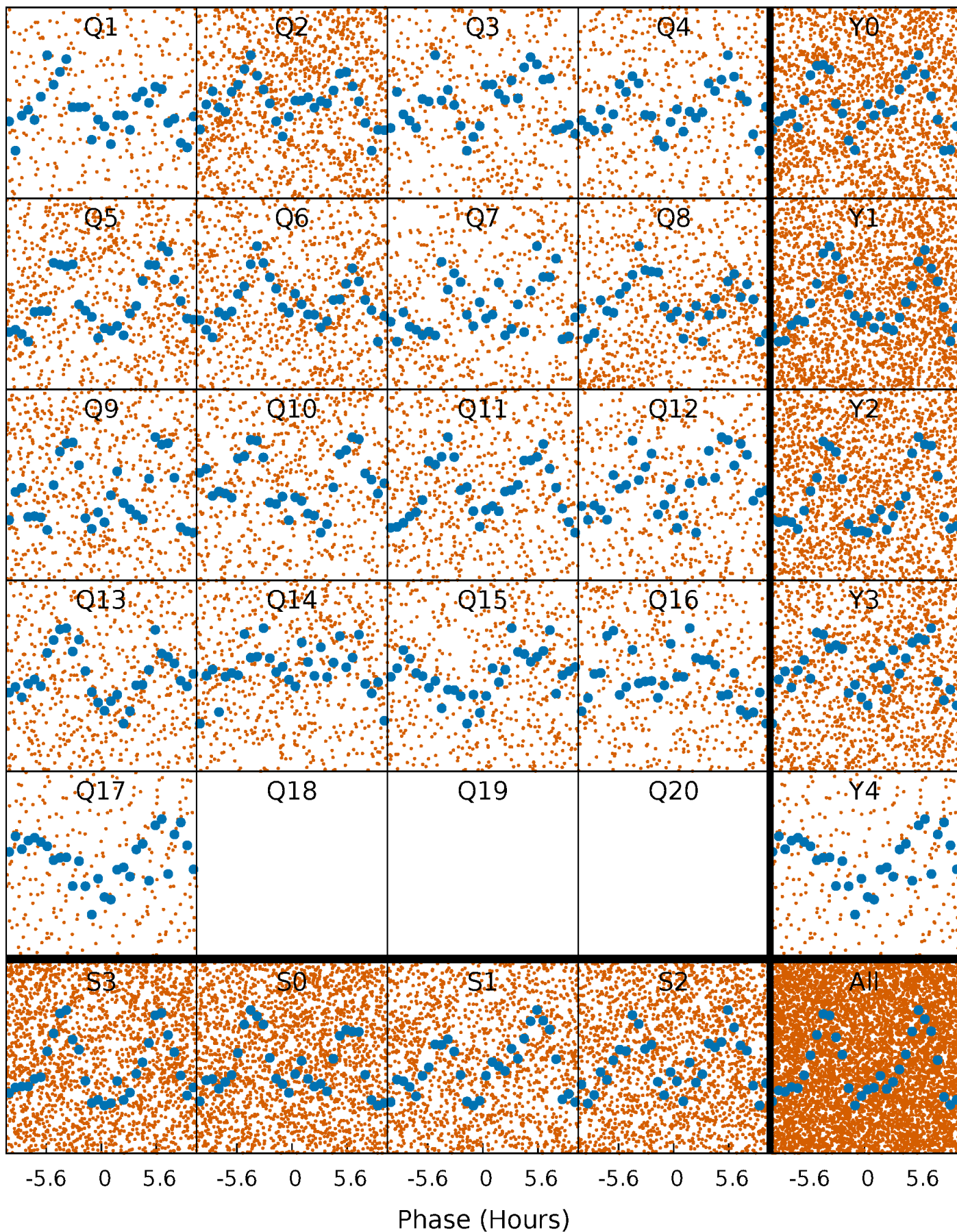


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



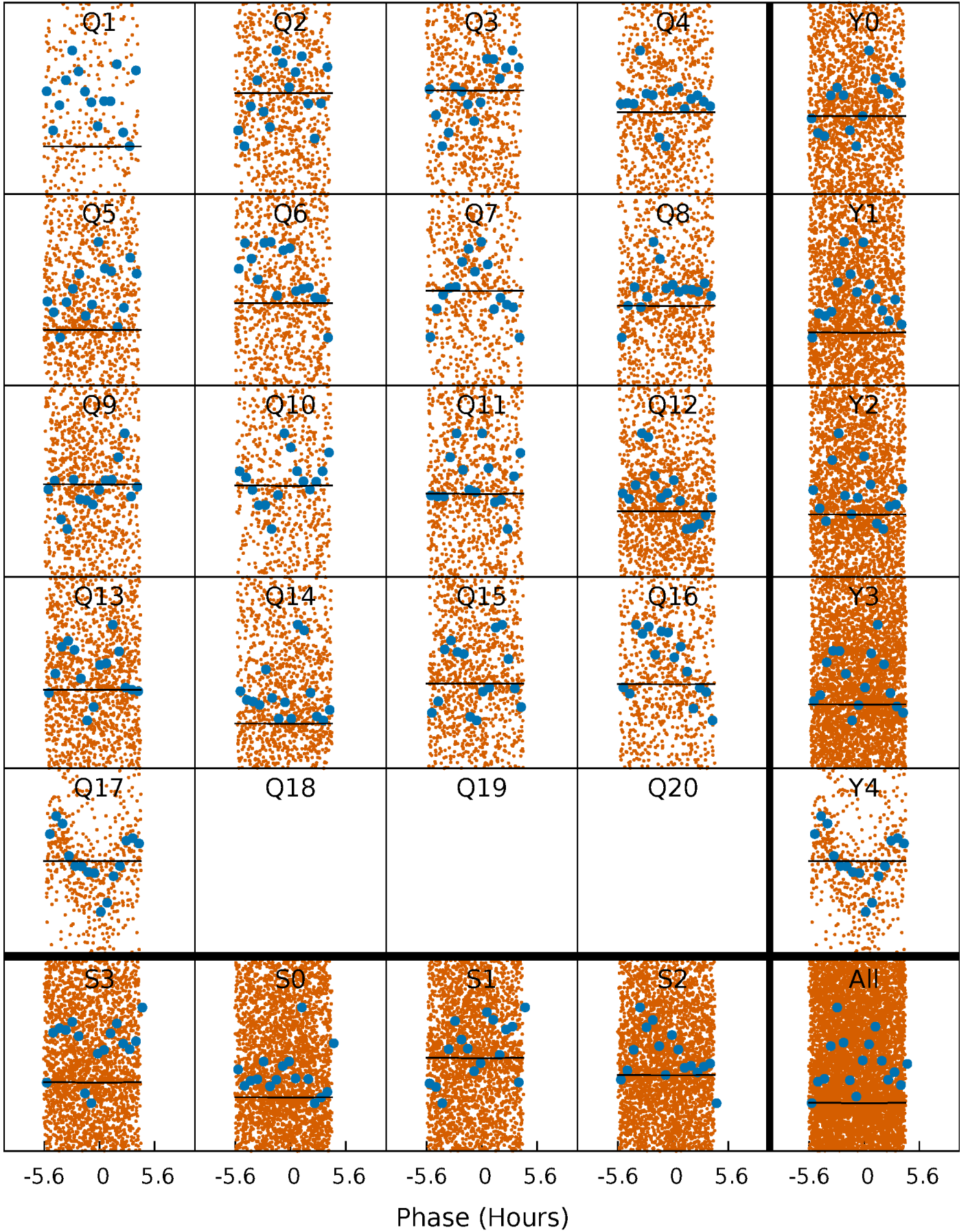
# PDC Quarter-Phased Transit Curves

TCE 005786382-02   P= 0.805847 Days    $T_0=131.754097$  (BKJD)



# DV Quarter-Phased Transit Curves

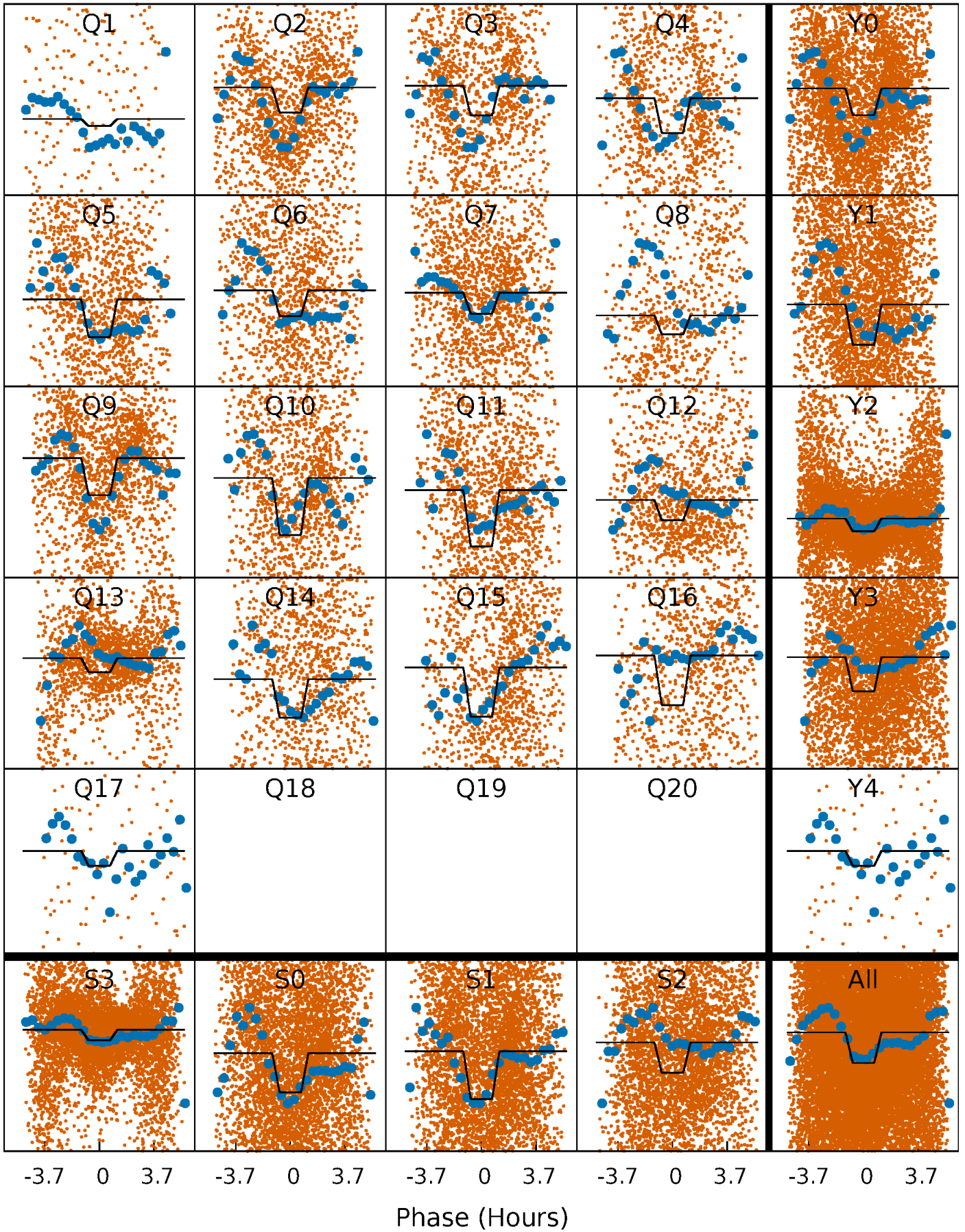
TCE 005786382-02   P= 0.805847 Days    $T_0=131.754097$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 005786382-02     $P = 0.805822$  Days     $T_0 = 131.734086$  (BKJD)

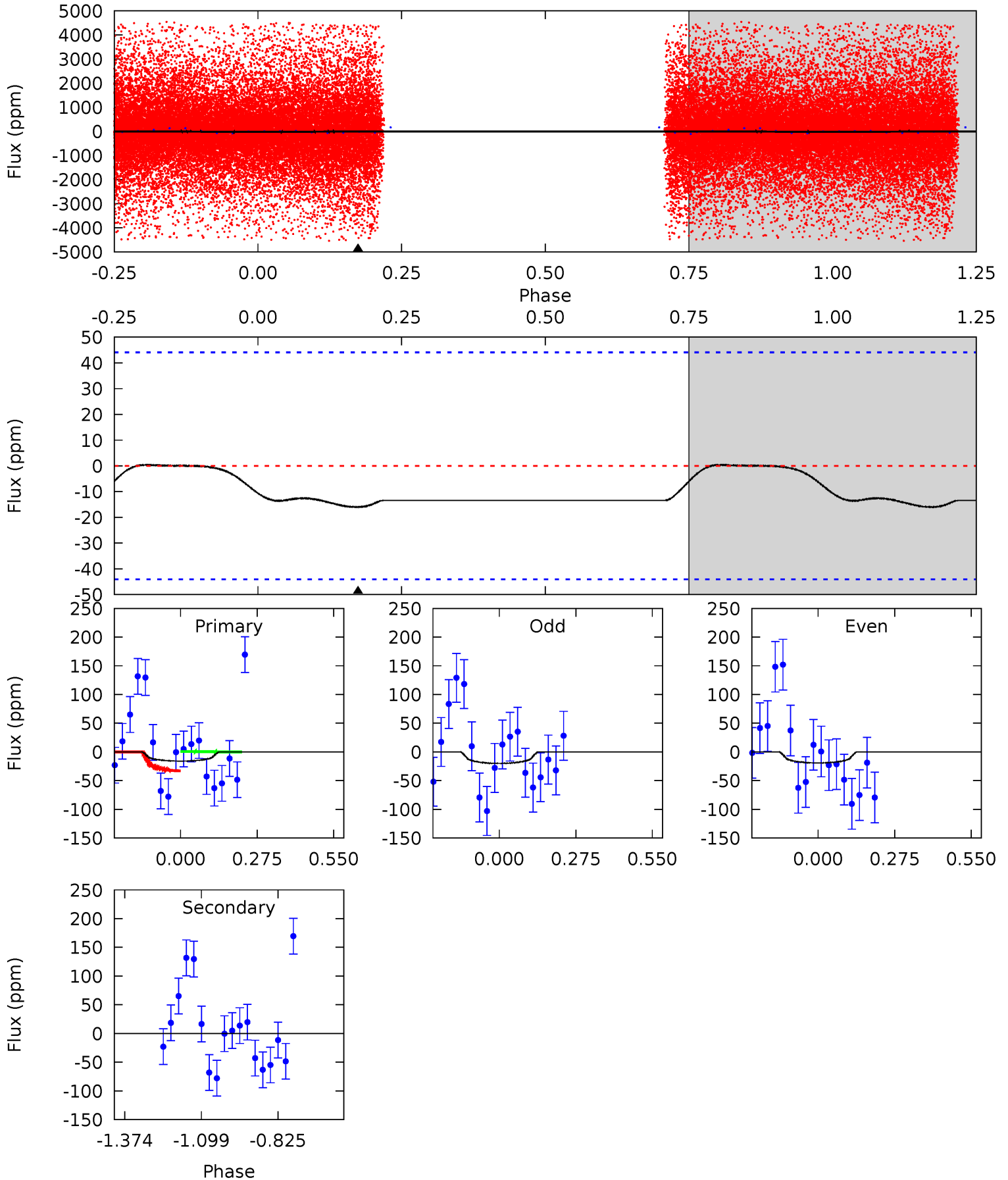




# DV Model-Shift Uniqueness Test

005786382-02,  $P = 0.805847$  Days,  $E = 130.948250$  Days

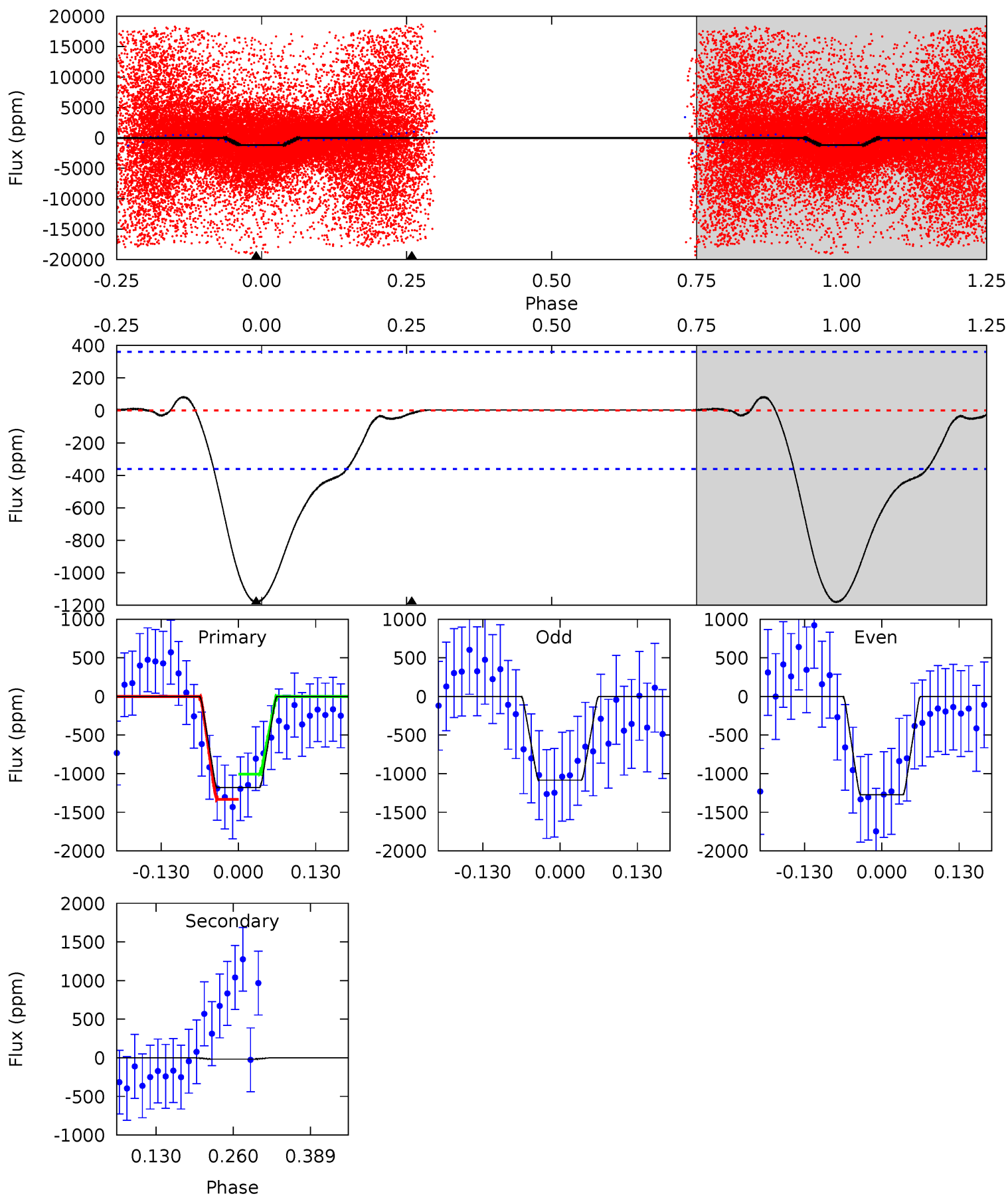
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.58	0	0	0	4.35	1.09	0.40	1.58	1.58	0	0	0.04	-65.7	0.02	1.68



# Alt Model-Shift Uniqueness Test

005786382-02, P = 0.805822 Days, E = 130.928264 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
14.8	0.22	0	0	4.51	1.51	1.68	14.8	14.8	0.22	0.22	1.20	0.82	0.06	2.93



### Stellar Parameters For KIC 005786382

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4946^{+147}_{-147}$	$4.659^{+0.060}_{-0.040}$	$-0.940^{+0.300}_{-0.300}$	$0.598^{+0.051}_{-0.046}$	$0.594^{+0.054}_{-0.025}$	$3.917^{+0.907}_{-0.625}$
	+3%/-3%	+1%/-1%	+32%/-32%	+9%/-8%	+9%/-4%	+23%/-16%
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 005786382-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 10$	$0.48^{+0.49}_{-0.33}$	$1971^{+70}_{-73}$	$-2586^{+6490}_{-1443}$	$-0.162^{+8.774}_{-8.668}$
Alt.	$-17 \pm 80$	$2.31^{+0.79}_{-0.72}$	$1966^{+69}_{-64}$	$1743^{+1431}_{-4799}$	$0.310^{+2.000}_{-1.649}$

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

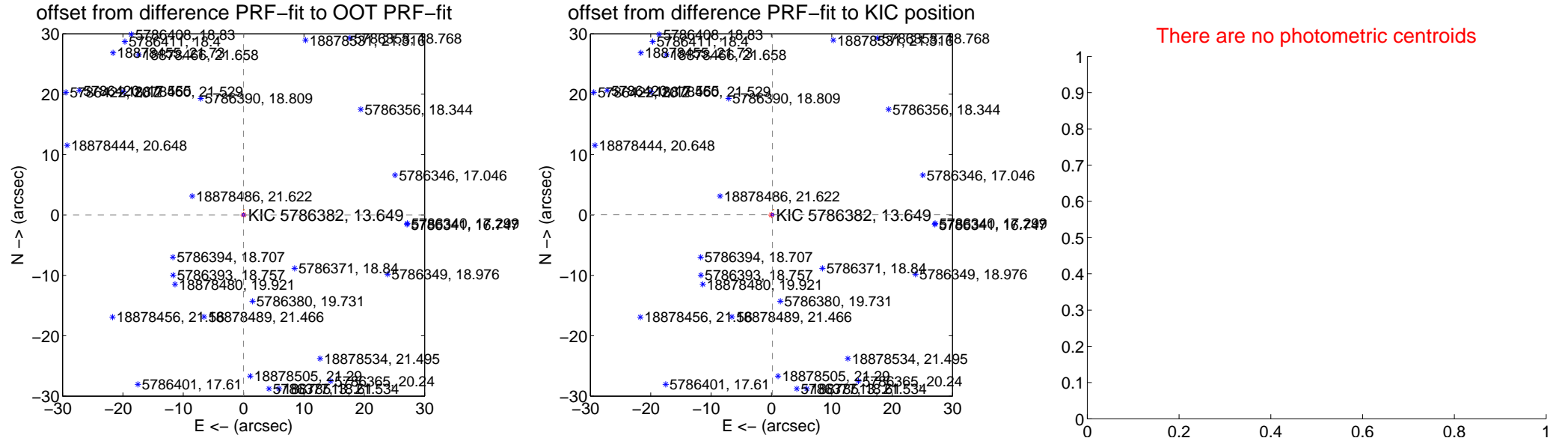
## DV Centroid Data

Supplemental centroid analysis for 005786382-02. Kepler magnitude: 13.65. Transit SNR 0.07

There are 14 quarters with good PRF difference image offsets

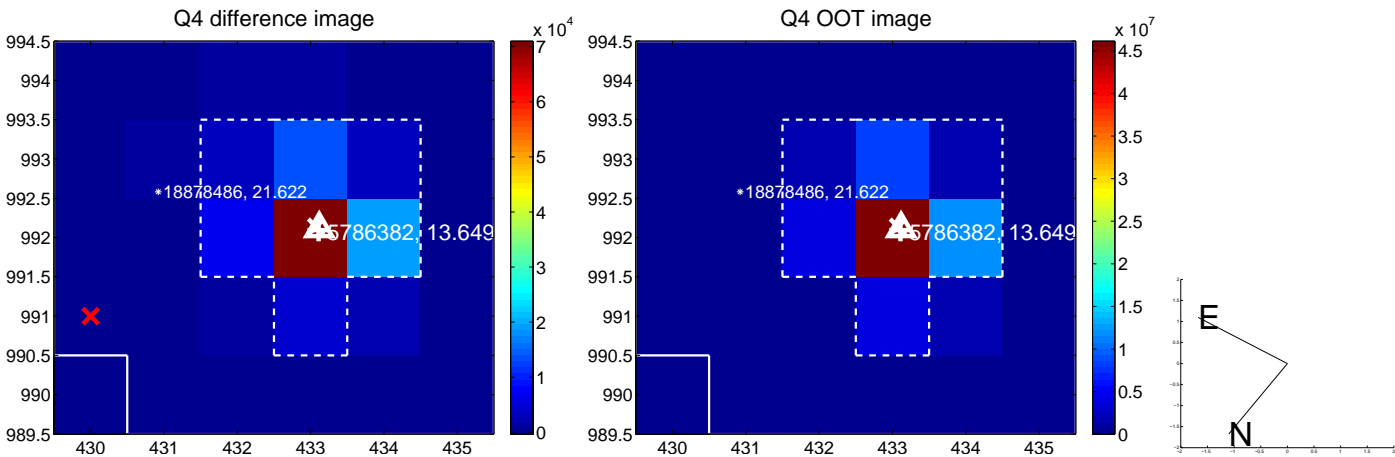
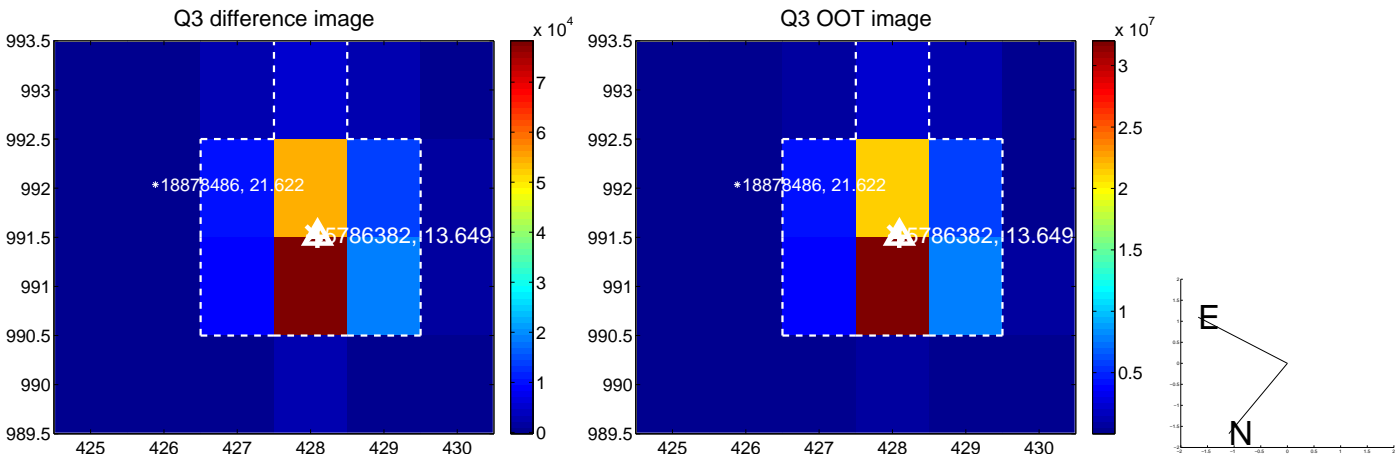
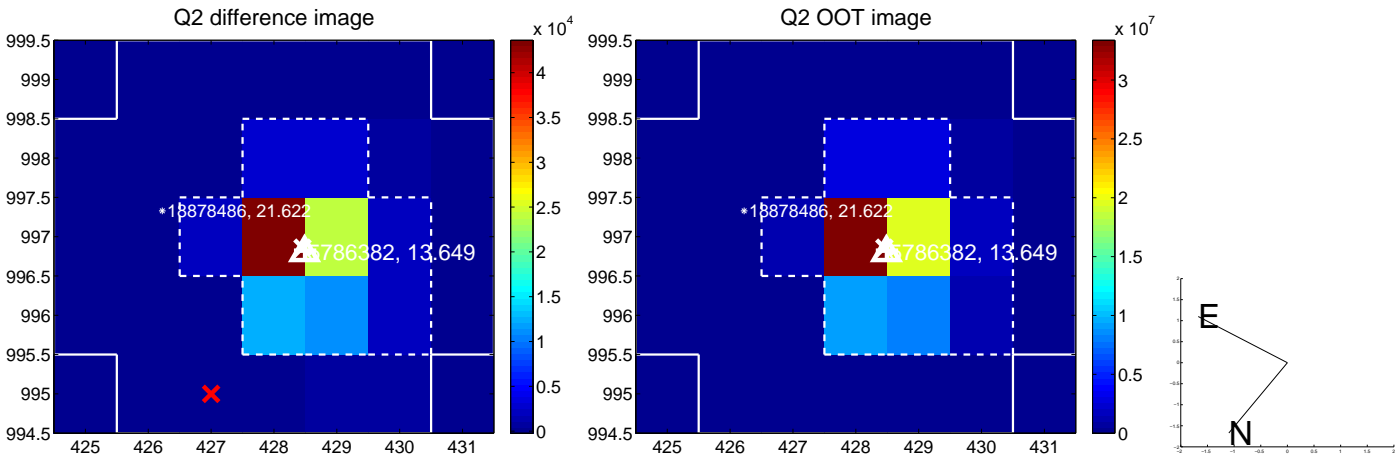
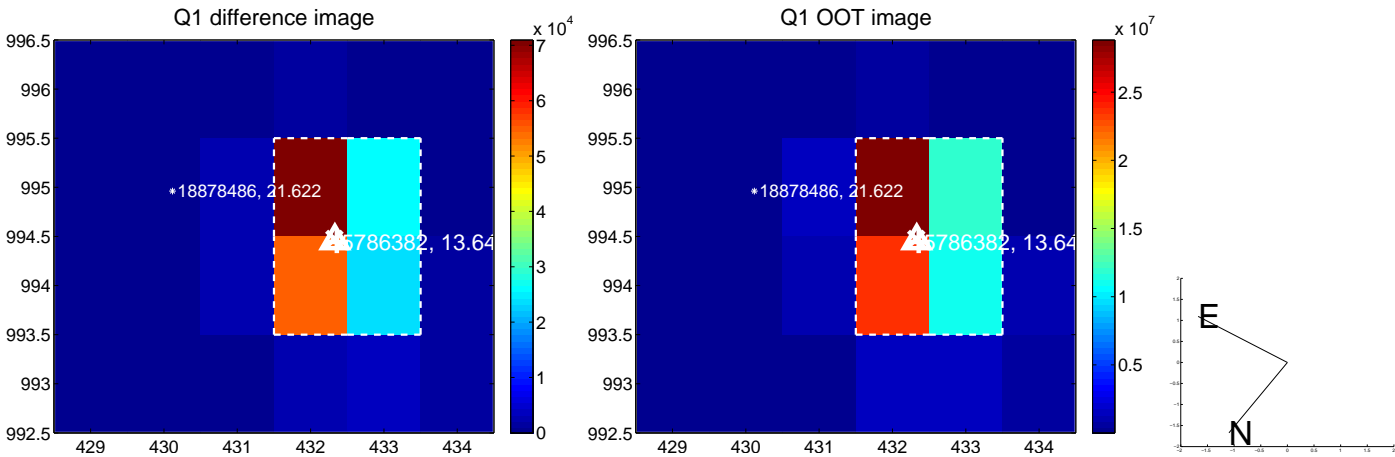
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.015 \pm 0.080$	0.19	$0.008 \pm 0.070$	$0.014 \pm 0.084$
PRF-fit source offset from KIC position	$0.186 \pm 0.074$	2.53	$-0.180 \pm 0.071$	$0.047 \pm 0.087$
photometric centroid source offset	—	—	—	—

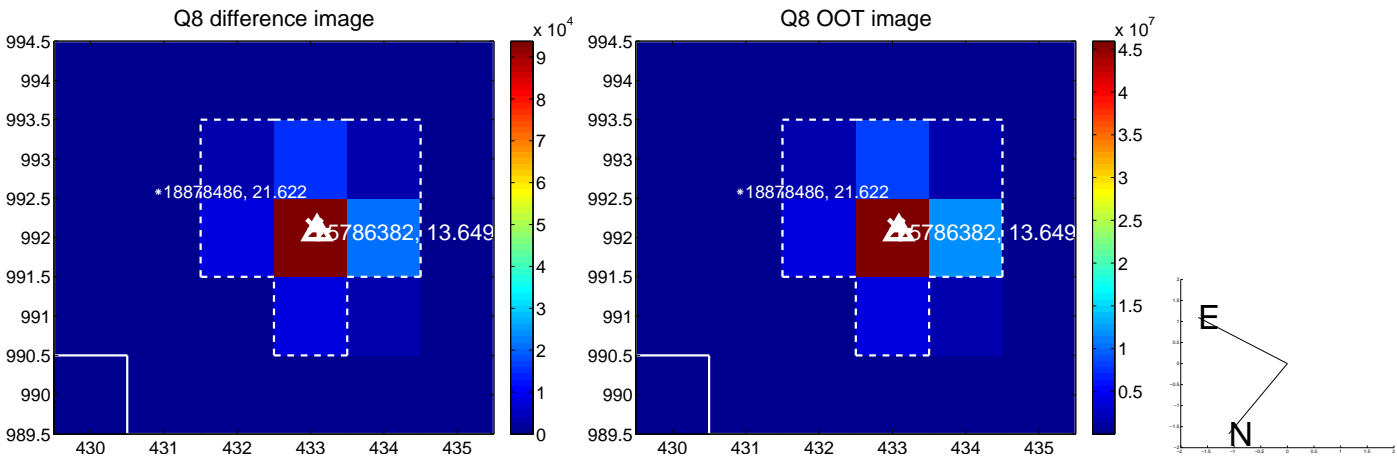
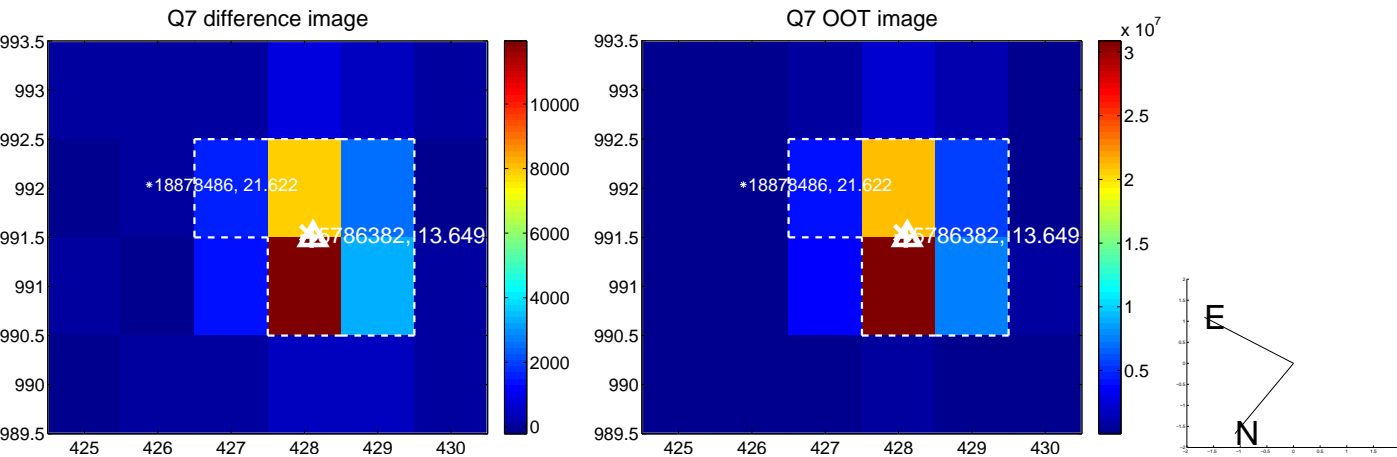
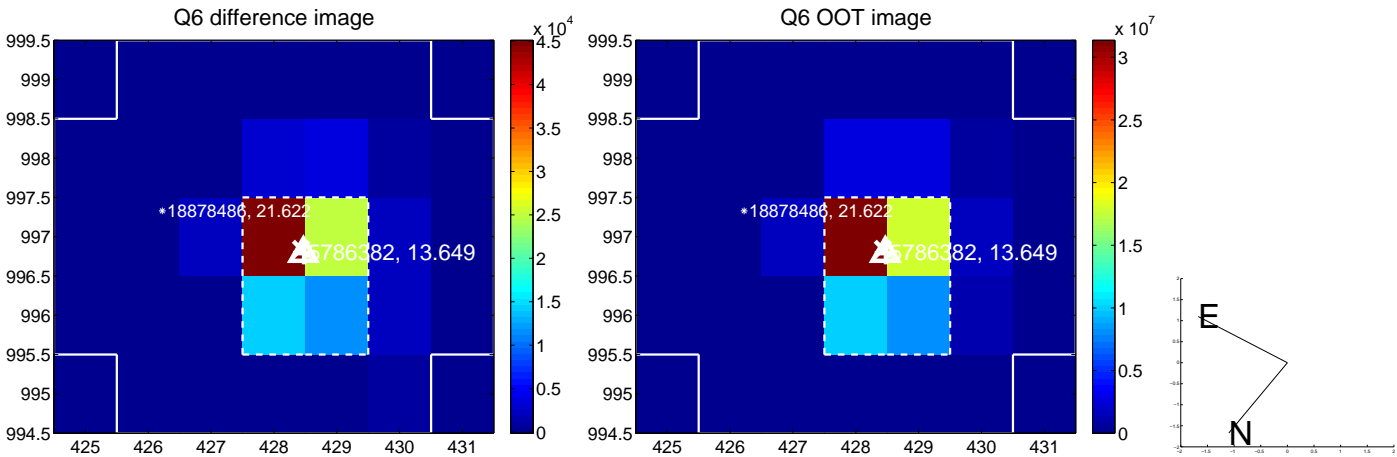
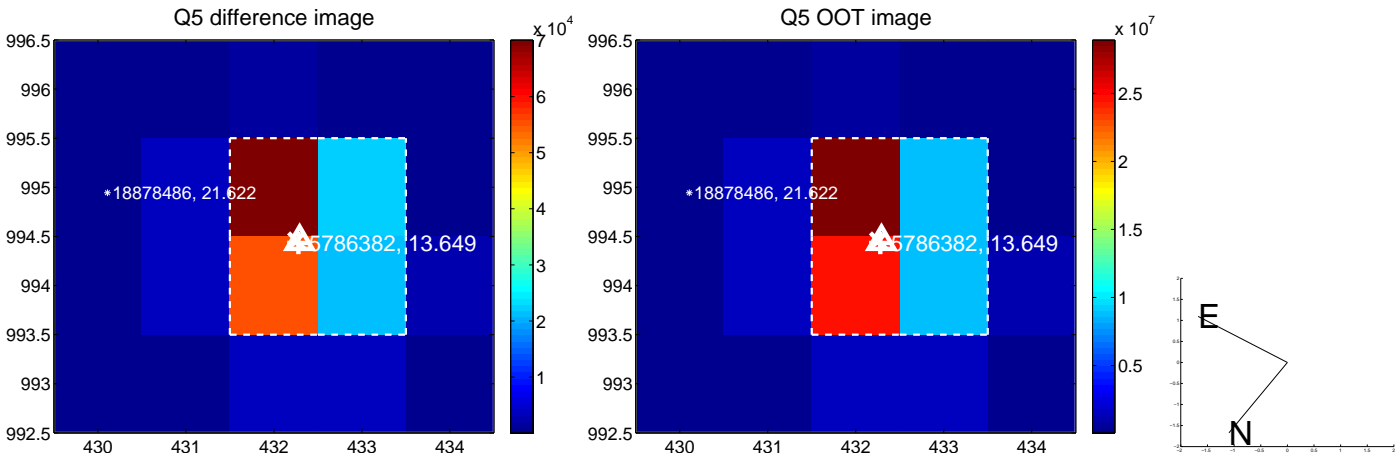


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

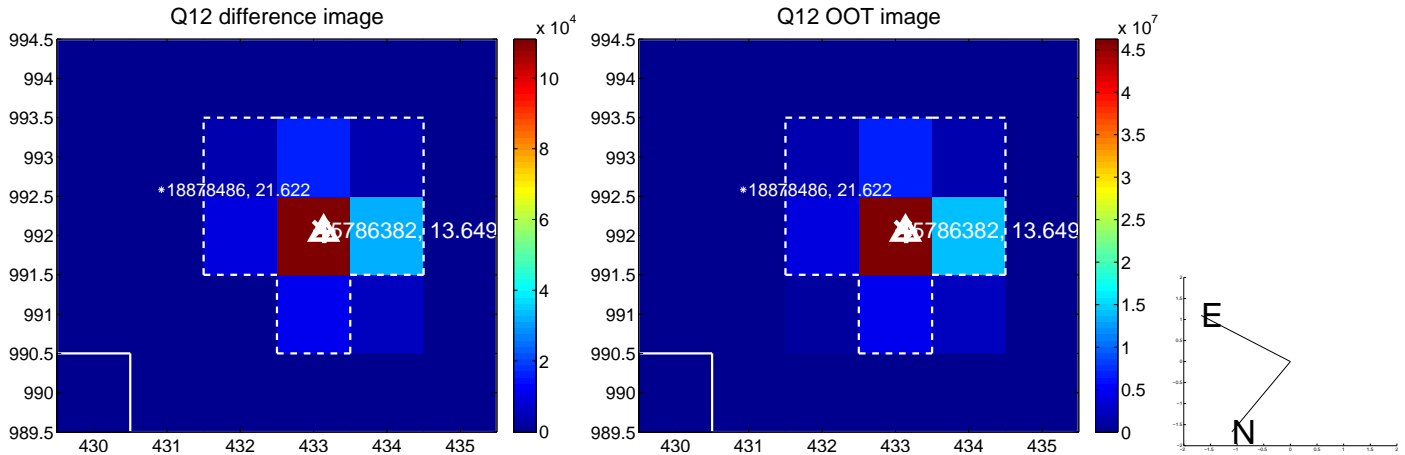
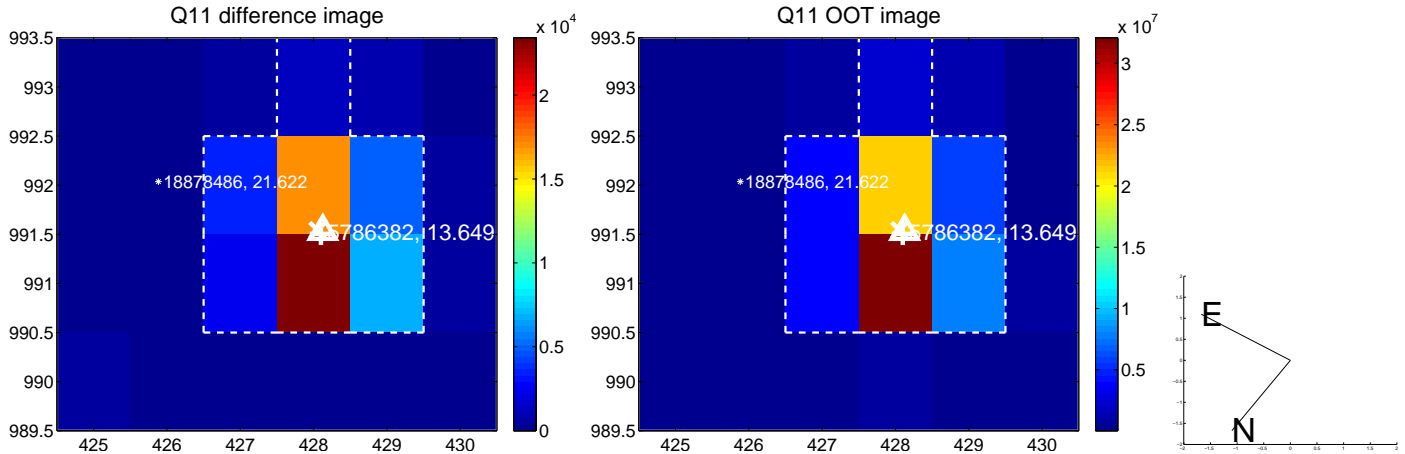
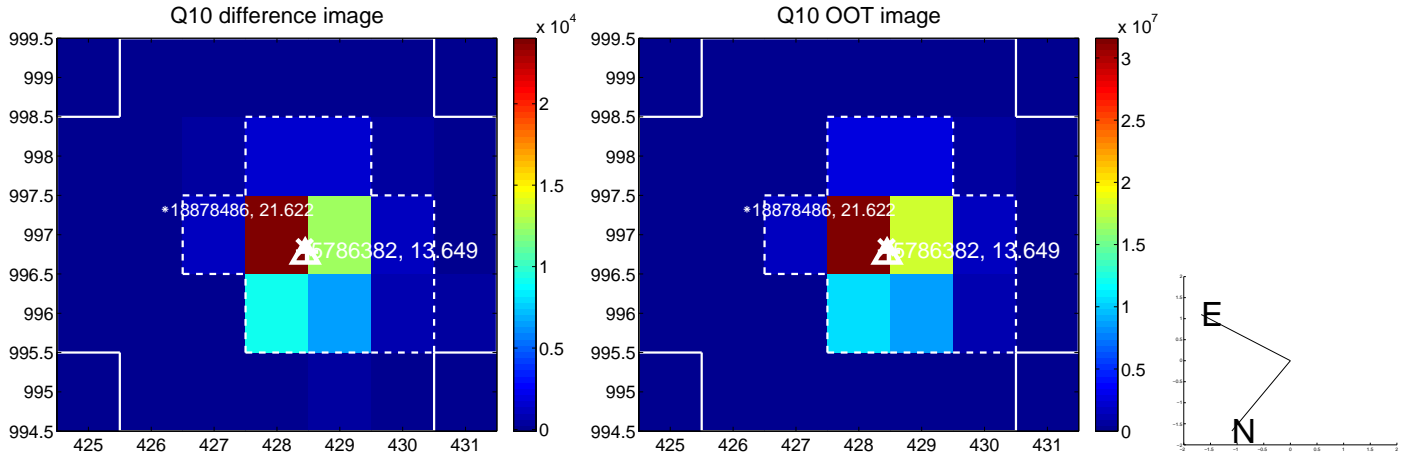
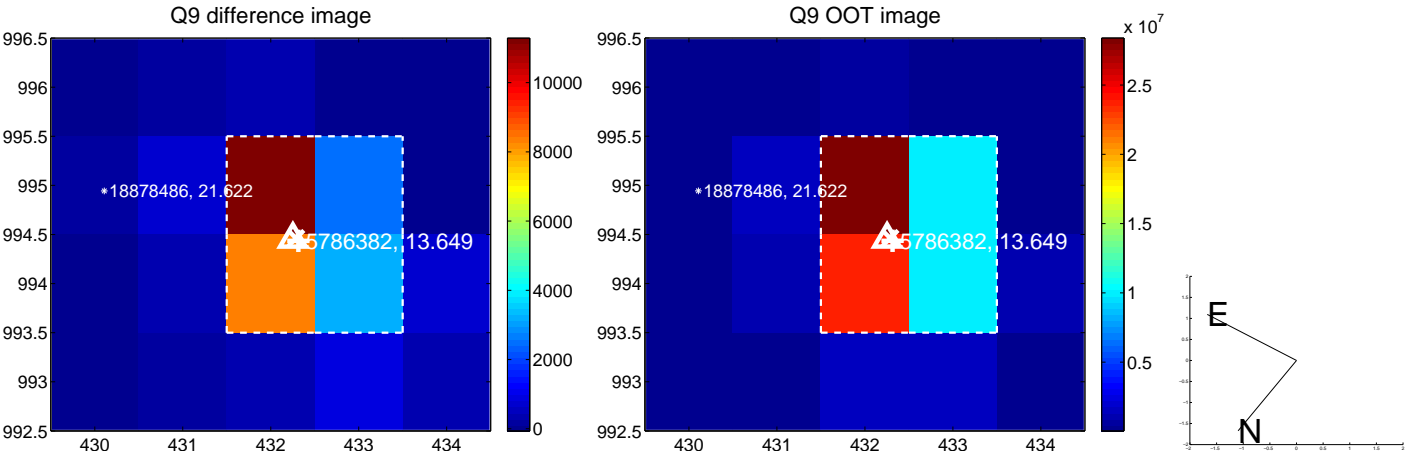
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

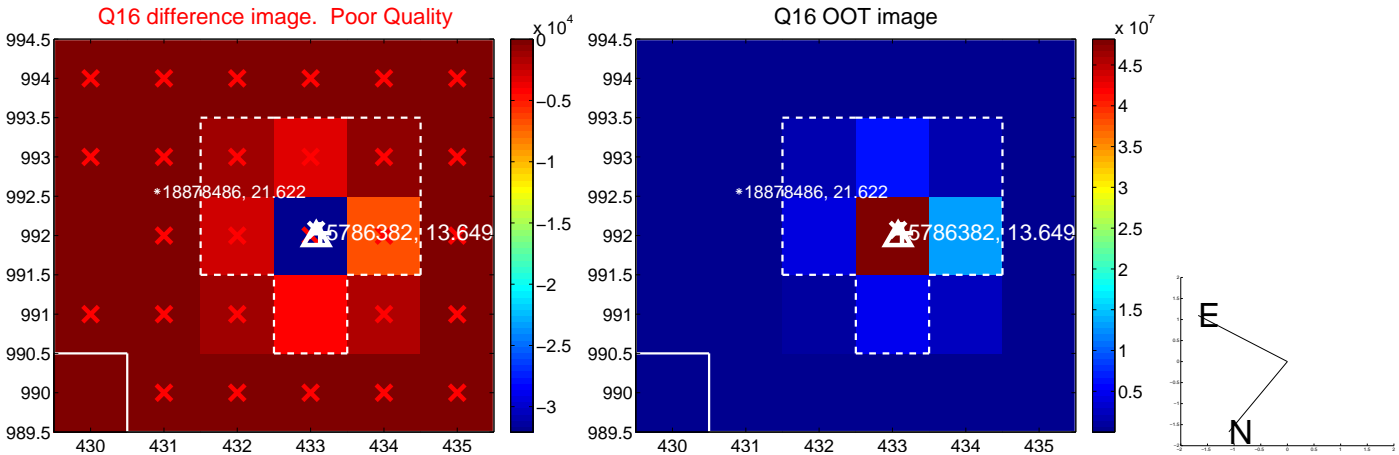
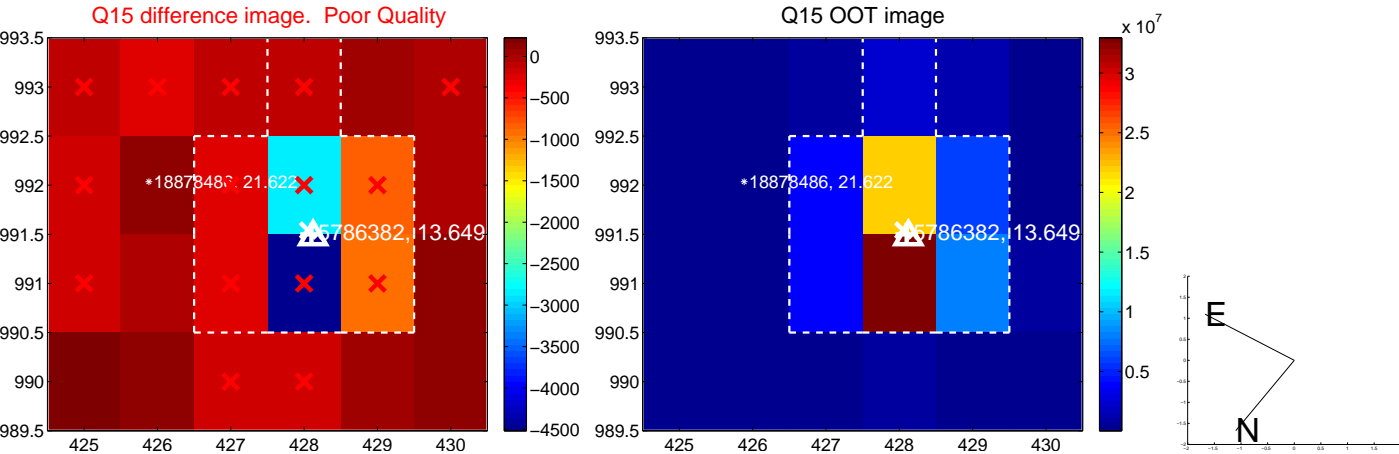
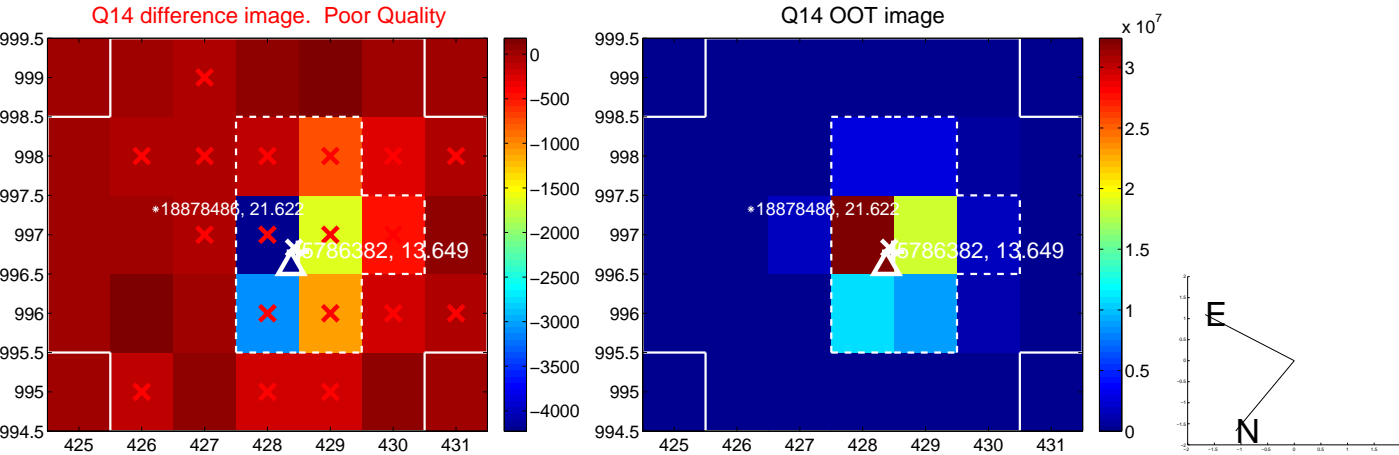
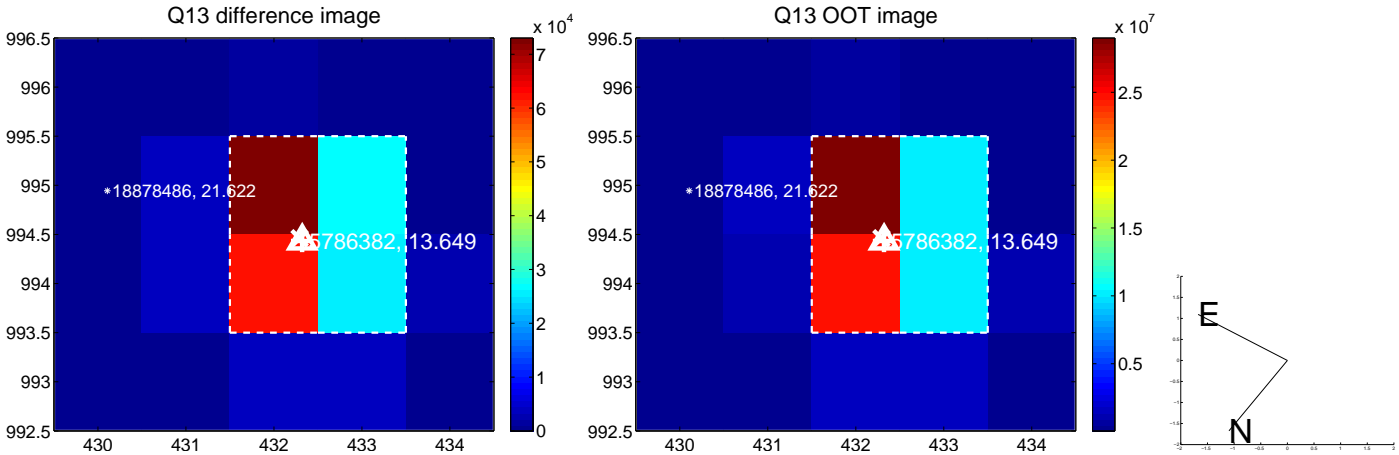


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

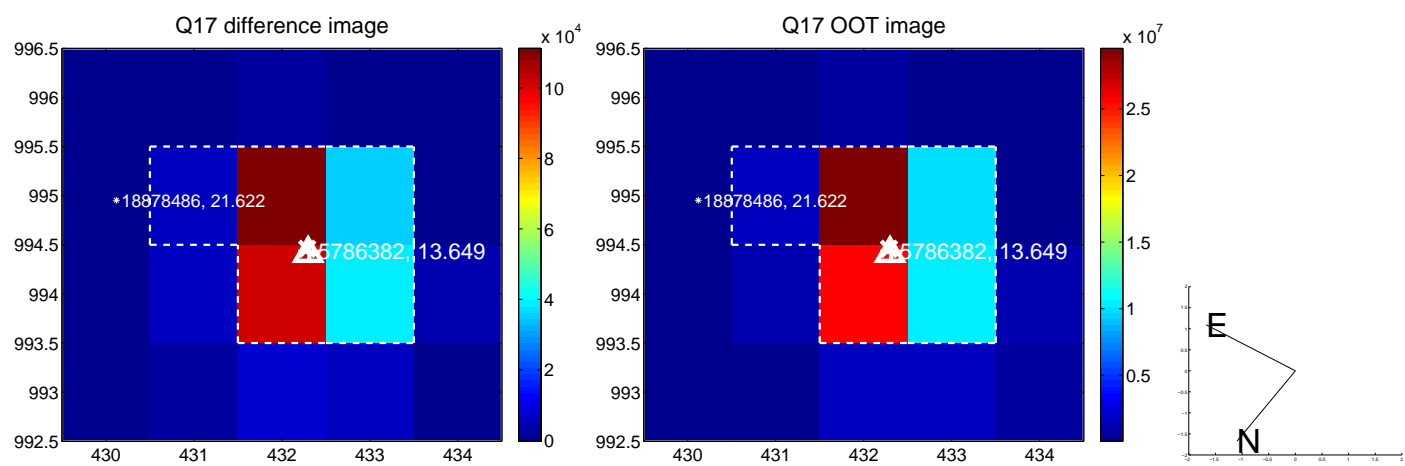




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

