

# KIC 008396062

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008396062-01	OBS	No	0.673021	132.057742	586.3	0.502	17.7	34.0	1.88	7141	4.81	28467.97
008396062-02	OBS	No	0.673070	132.098964	329.4	2.455	15.9	13.6	1.88	7141	4.46	28465.18
008396062-03	OBS	No	0.816141	132.121611	343.0	2.000	11.6	-1.0	1.88	7141	3.53	22014.41

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008396062-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008396062-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
008396062-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_NOFITS

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

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

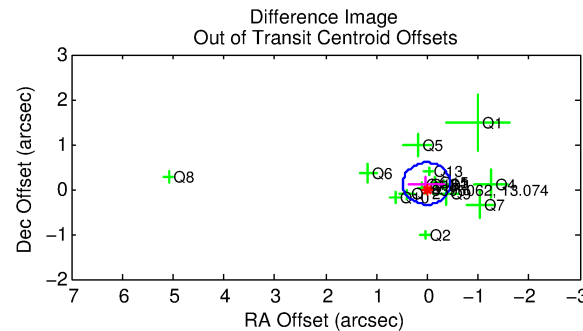
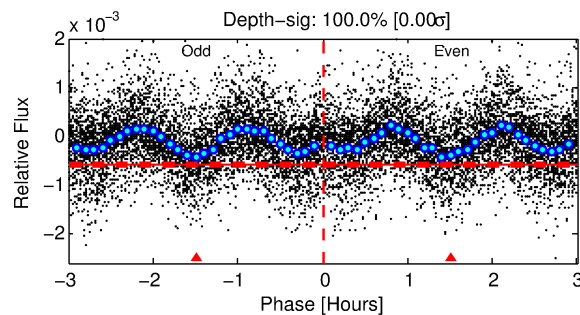
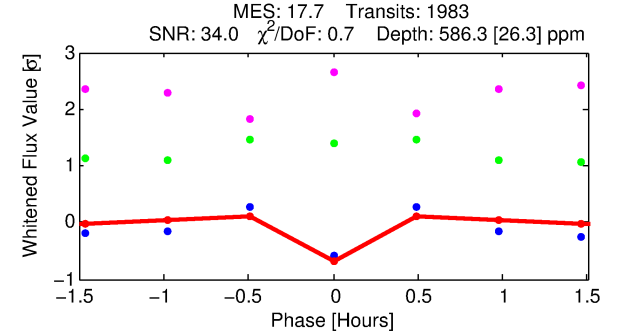
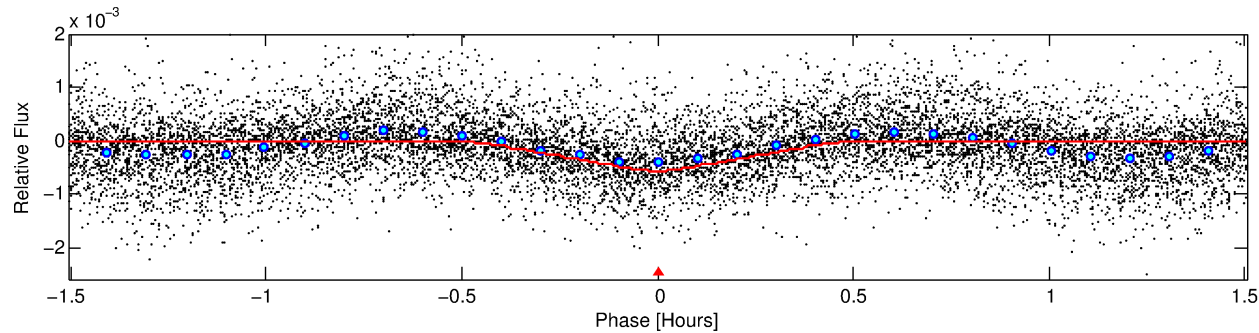
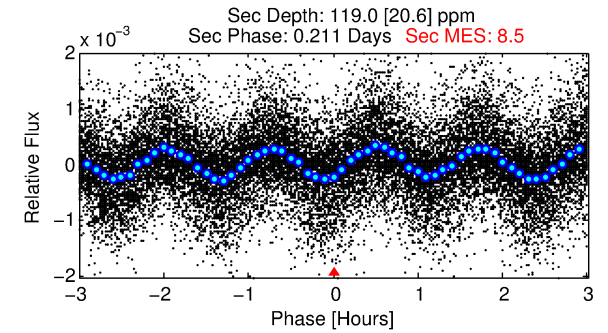
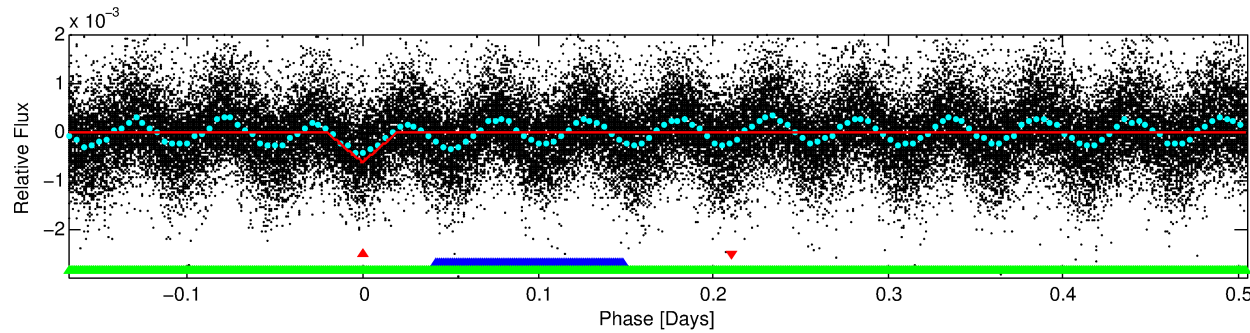
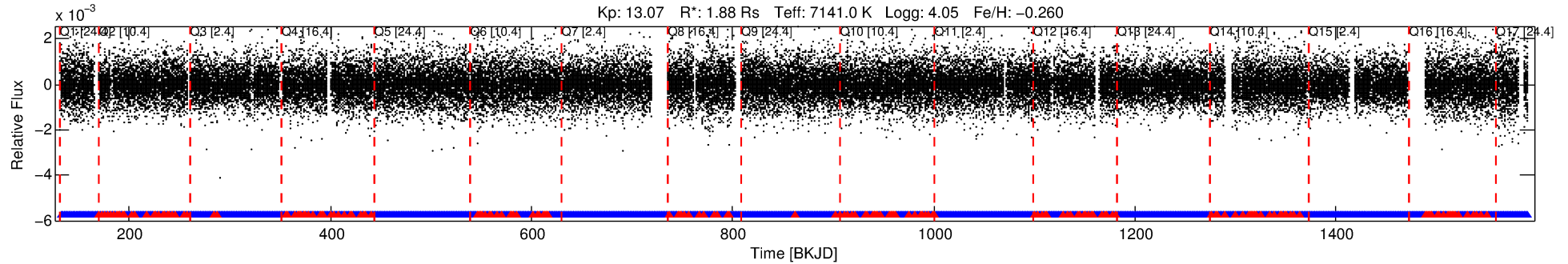
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008396062-01

No Significant Match Found

# DV One-Page Summary

KIC: 8396062 Candidate: 1 of 3 Period: 0.673 d



## DV Fit Results:

Period = 0.67302 [0.00000] d  
Epoch = 132.0577 [0.0003] BKJD  
Rp/R\* = 0.0235 [0.0037]  
a/R\* = 10.44 [9.39]  
b = 0.10 [8.98]  
Seff = 28467.97 [12568.56]  
Teq = 3312 [366] K  
Rp = 4.81 [1.59] Re  
a = 0.0170 [0.0045] AU  
Ag = 0.82 [0.44] [-0.41σ]  
Teffp = 4868 [480] K [2.58σ]

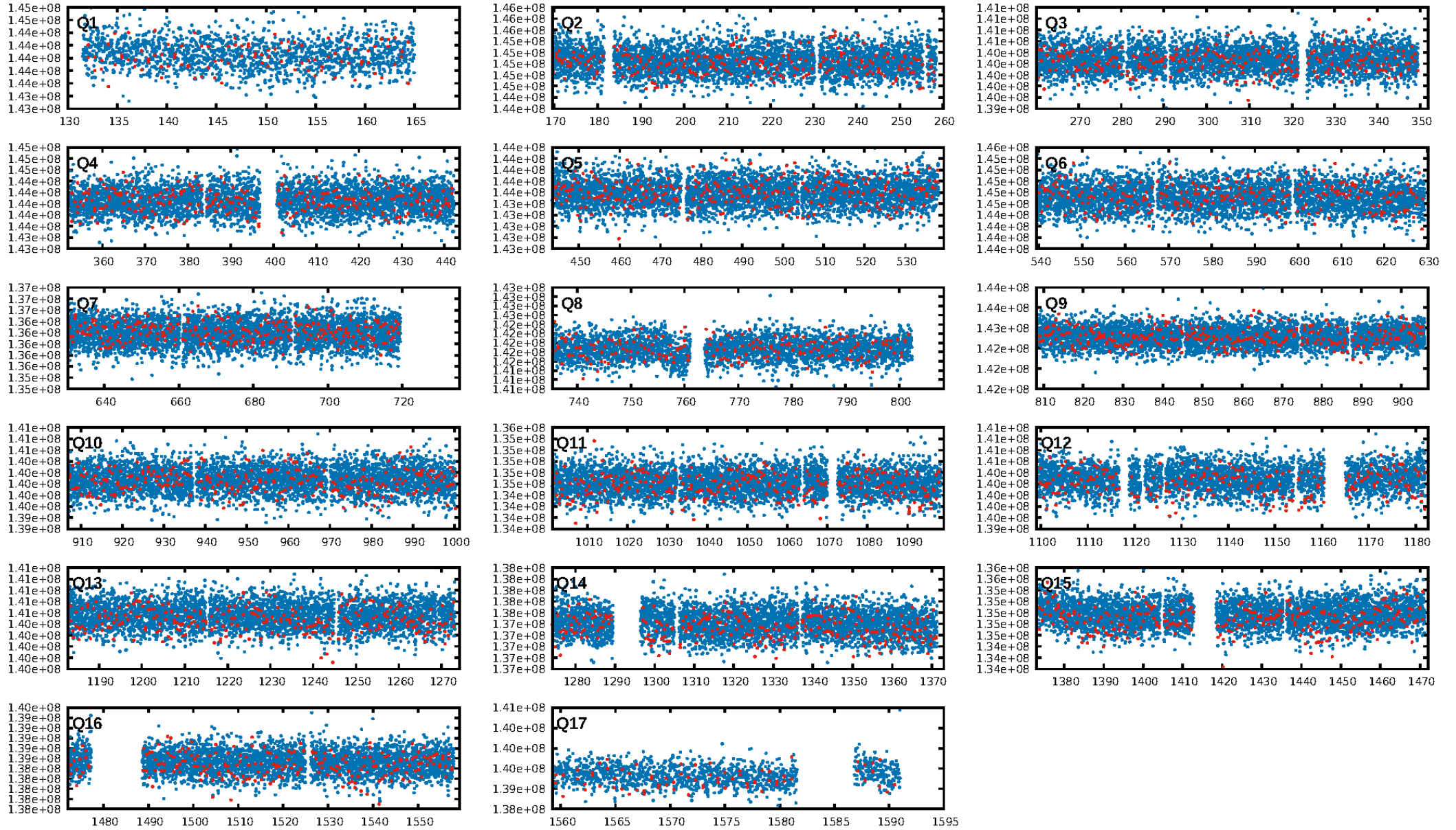
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
**LongPeriod-sig: 0.0% [0.00σ]**  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.90 [1698/1895]  
GhostDiagnostic-chr: 9.759  
**Centroid-sig: 0.1%**  
Centroid-so: 0.301 arcsec [2.78σ]  
OotOffset-rm: 0.125 arcsec [0.80σ]  
KicOffset-rm: 0.203 arcsec [0.98σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.88 [15/17]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:46:01 Z

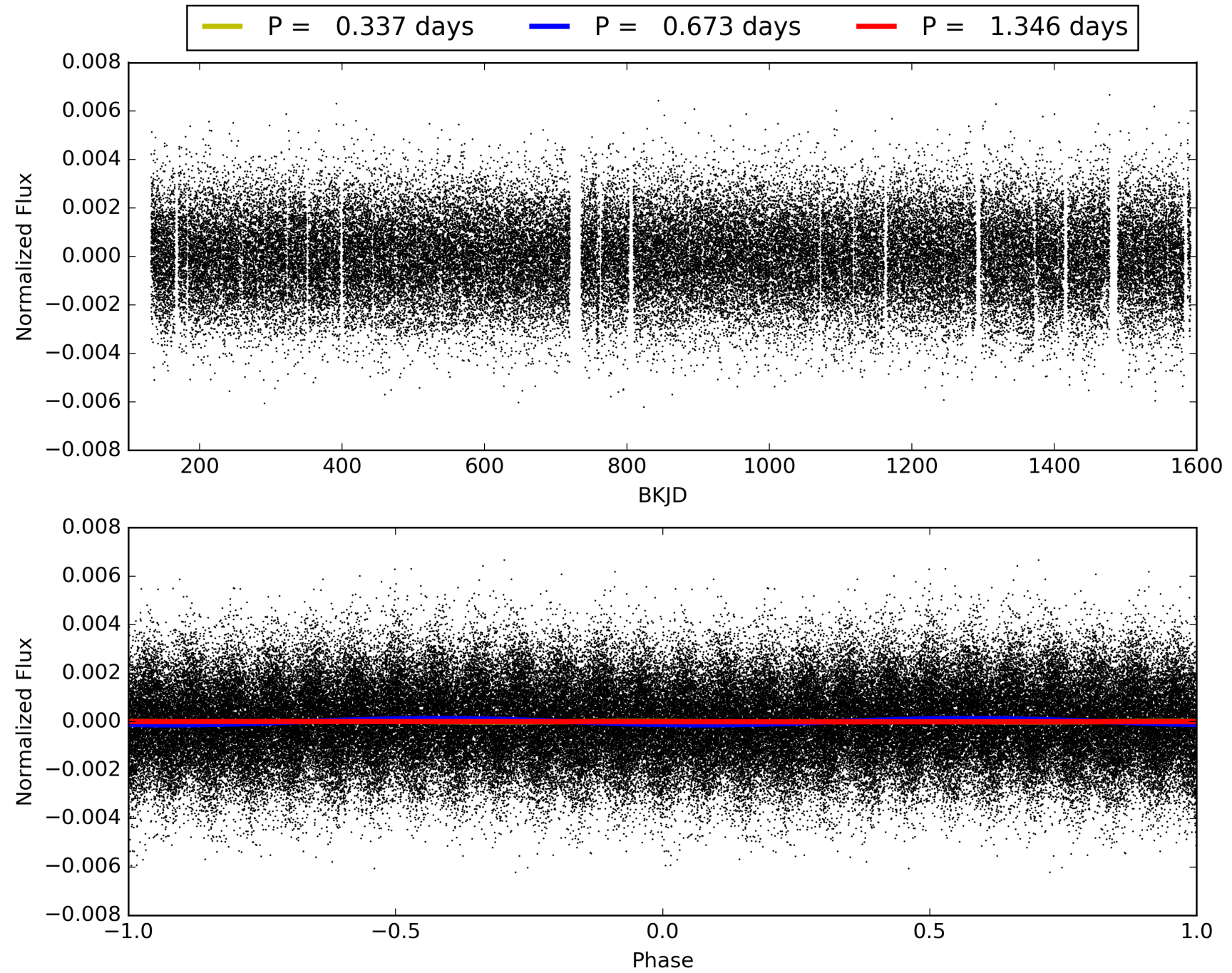
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008396062-01, PDC Light Curves





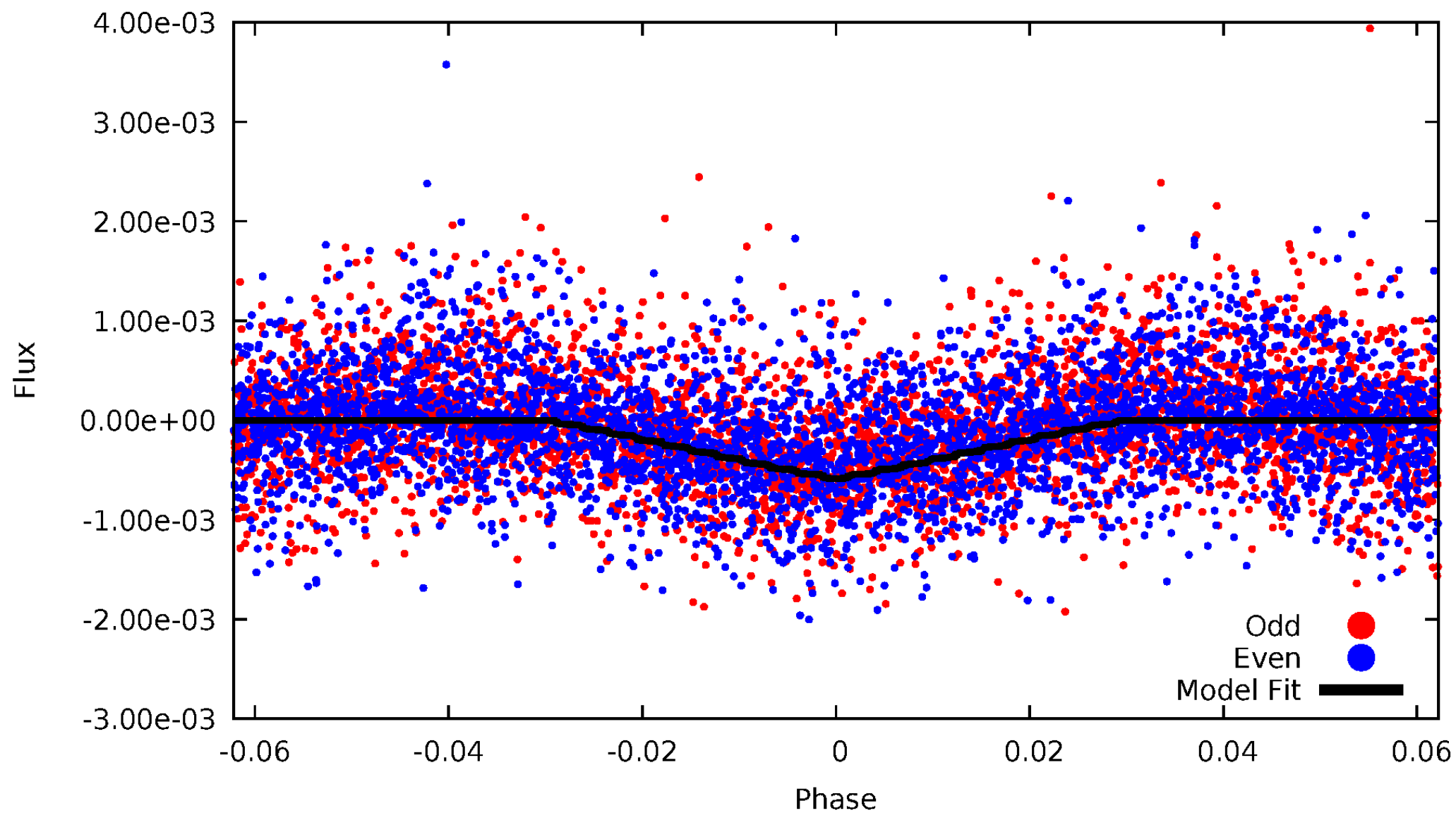
TCE 008396062-01





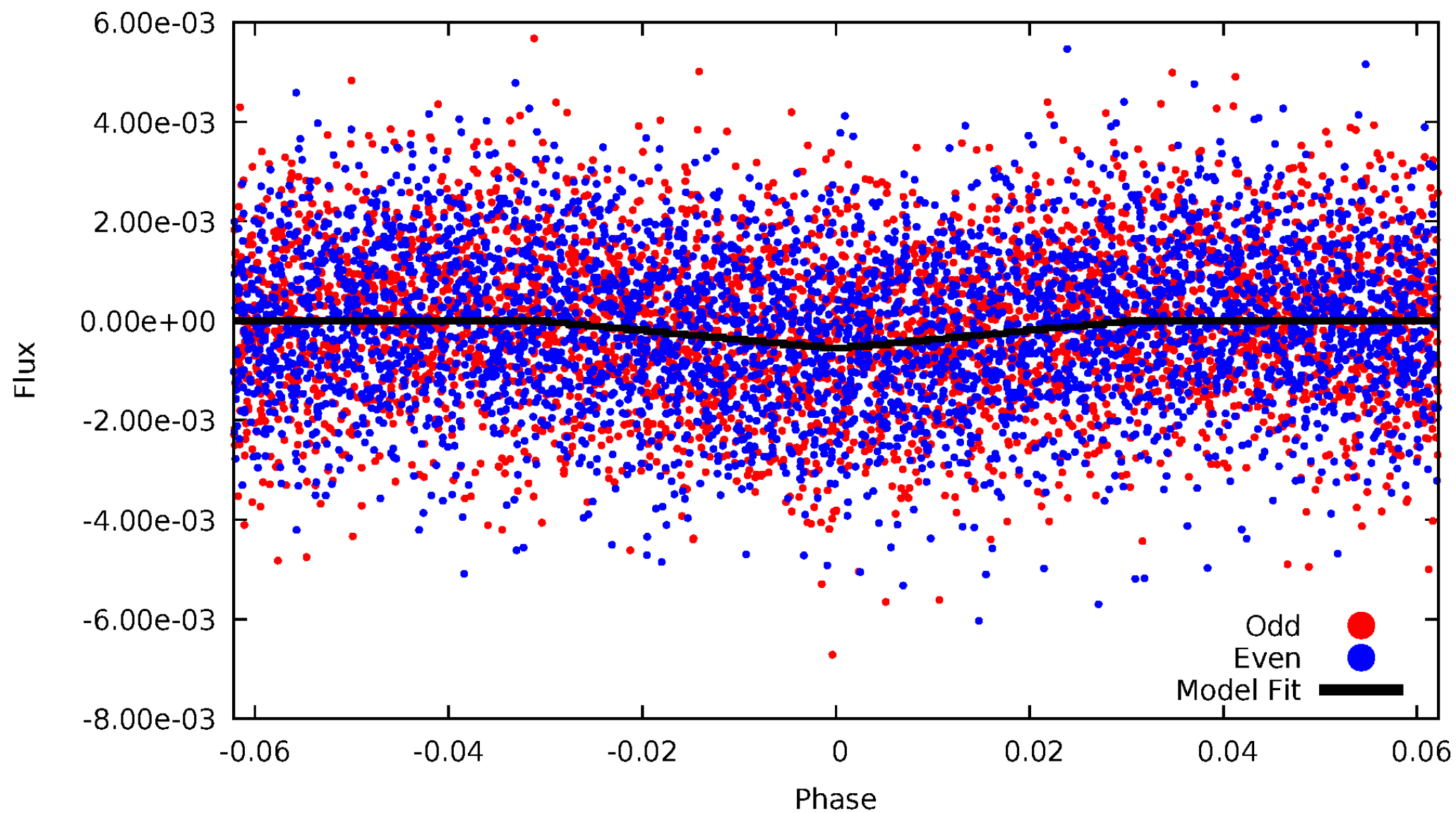
# DV Odd/Even

TCE 008396062-01



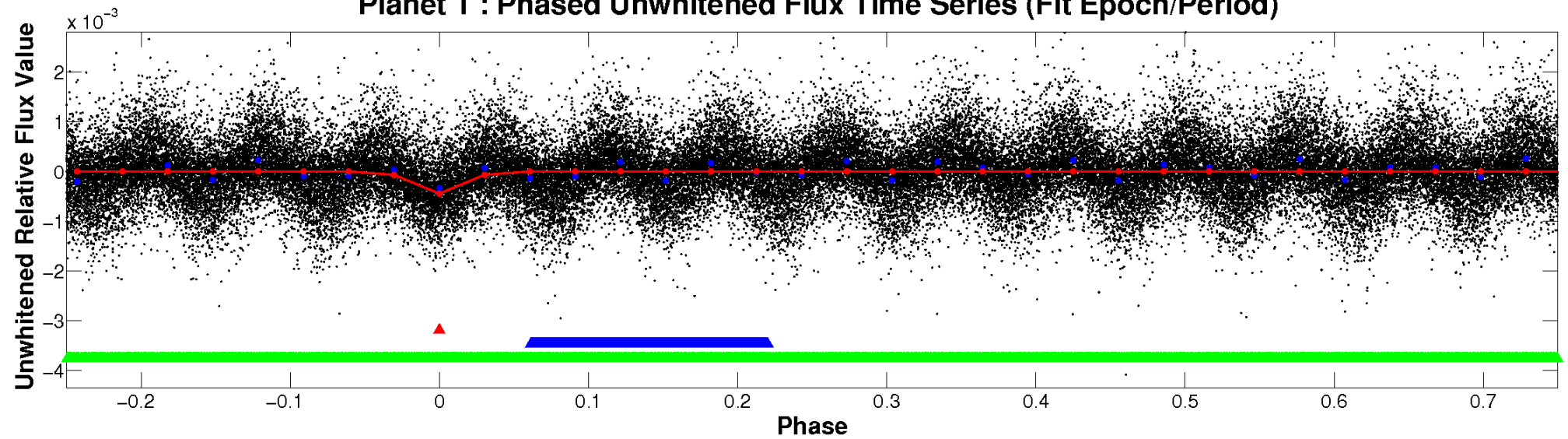
# ALT Odd/Even

TCE 008396062-01

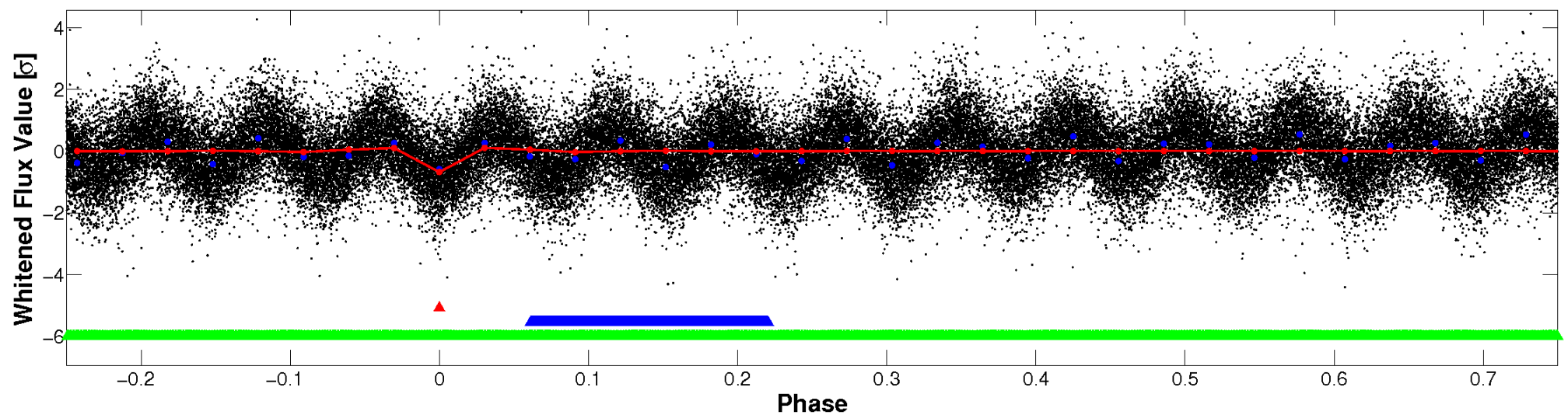


# Non-Whitened Vs. Whitened Light Curve

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



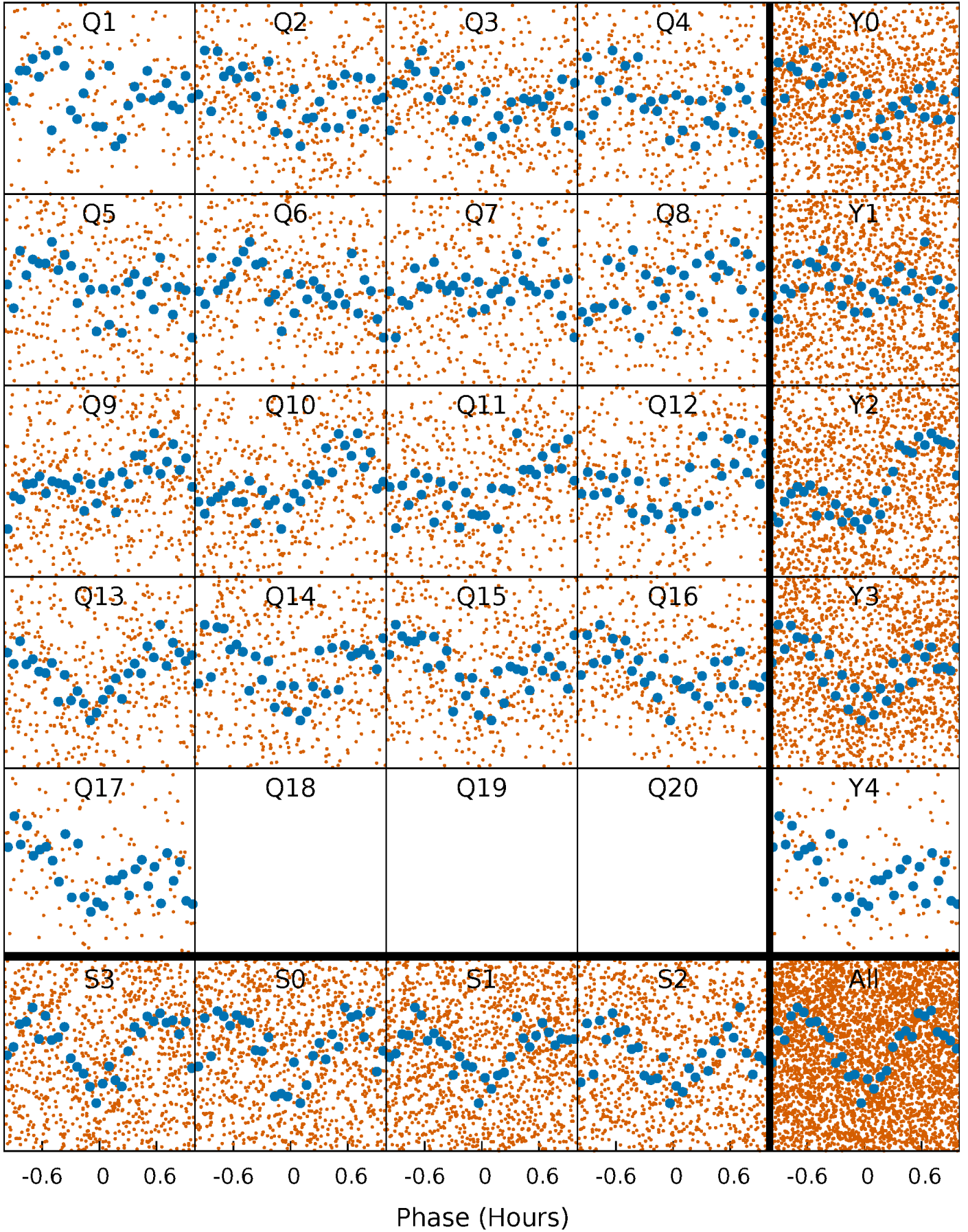
Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)





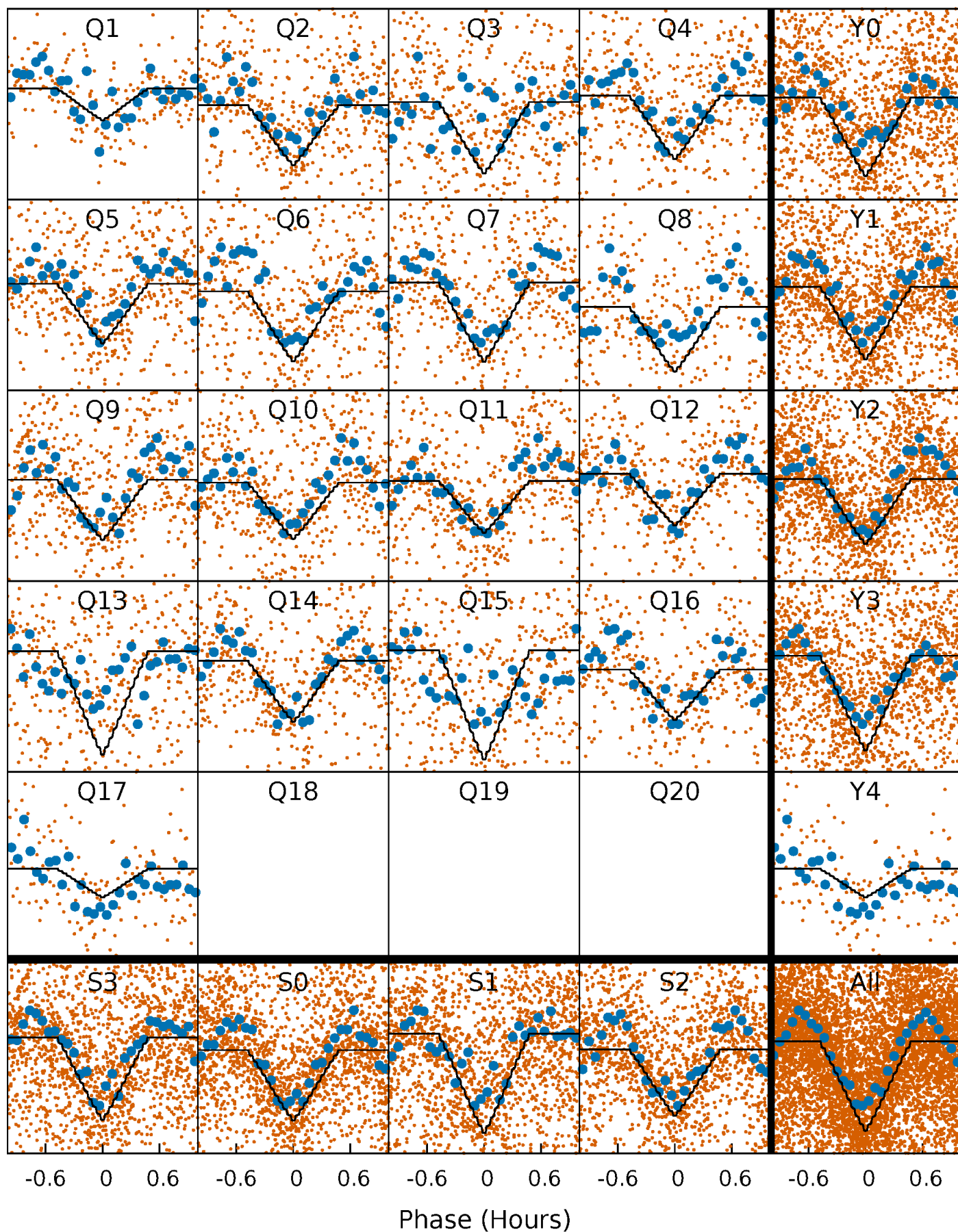
# PDC Quarter-Phased Transit Curves

TCE 008396062-01 P= 0.673021 Days  $T_0=132.057742$  (BKJD)



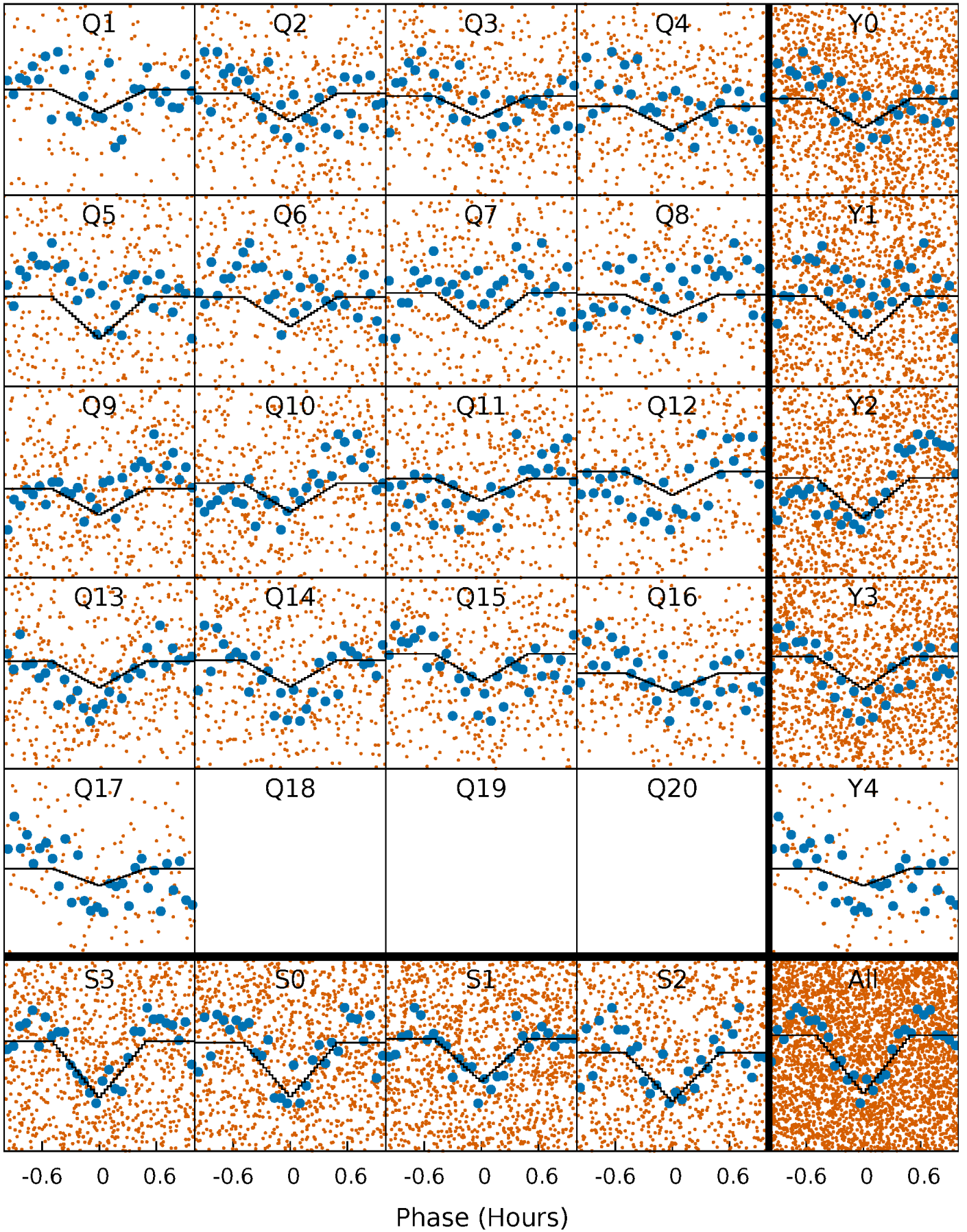
# DV Quarter-Phased Transit Curves

TCE 008396062-01 P= 0.673021 Days  $T_0=132.057742$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 008396062-01 P= 0.673021 Days  $T_0=132.057742$  (BKJD)

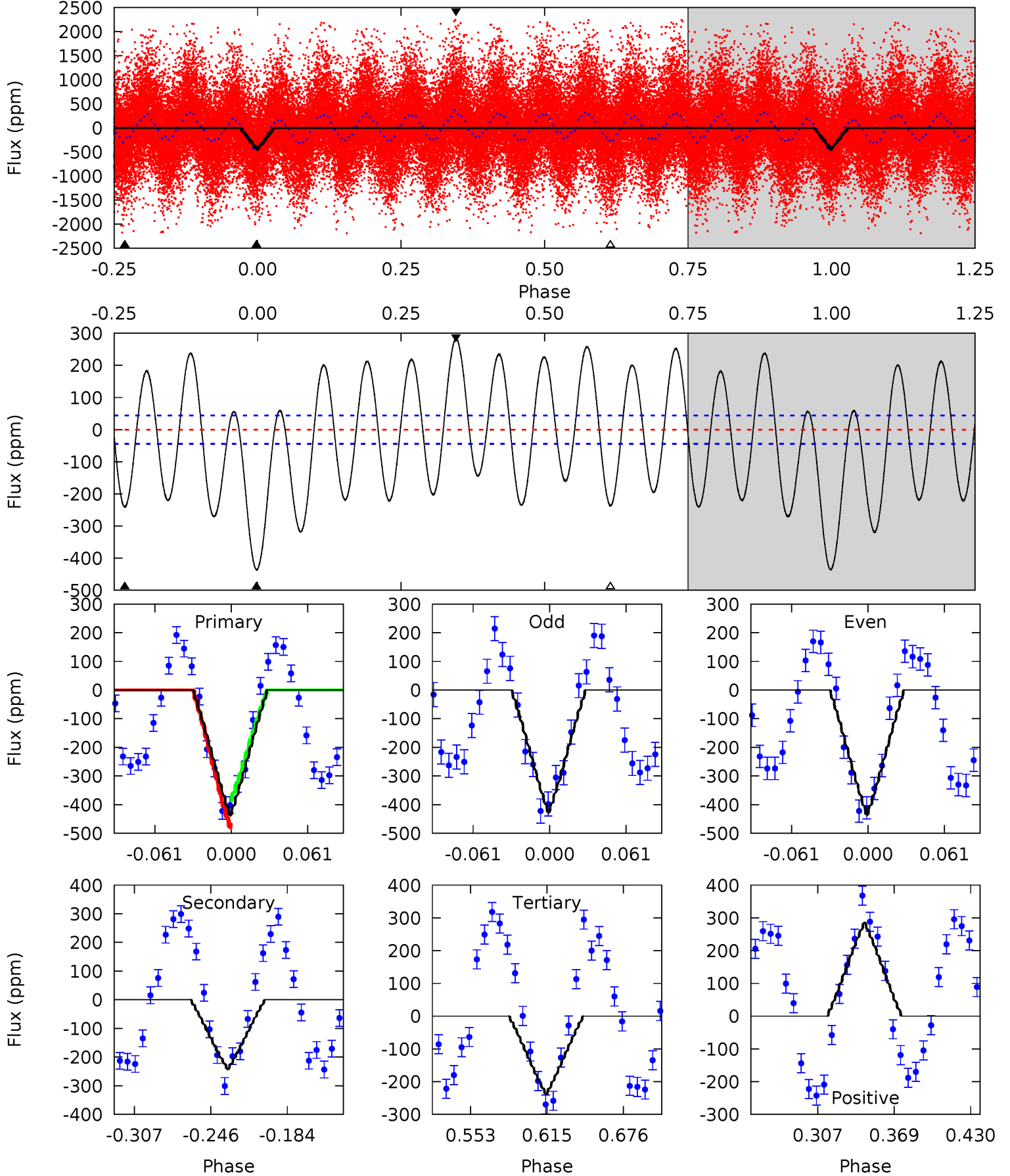




# DV Model-Shift Uniqueness Test

008396062-01, P = 0.673021 Days, E = 131.384721 Days

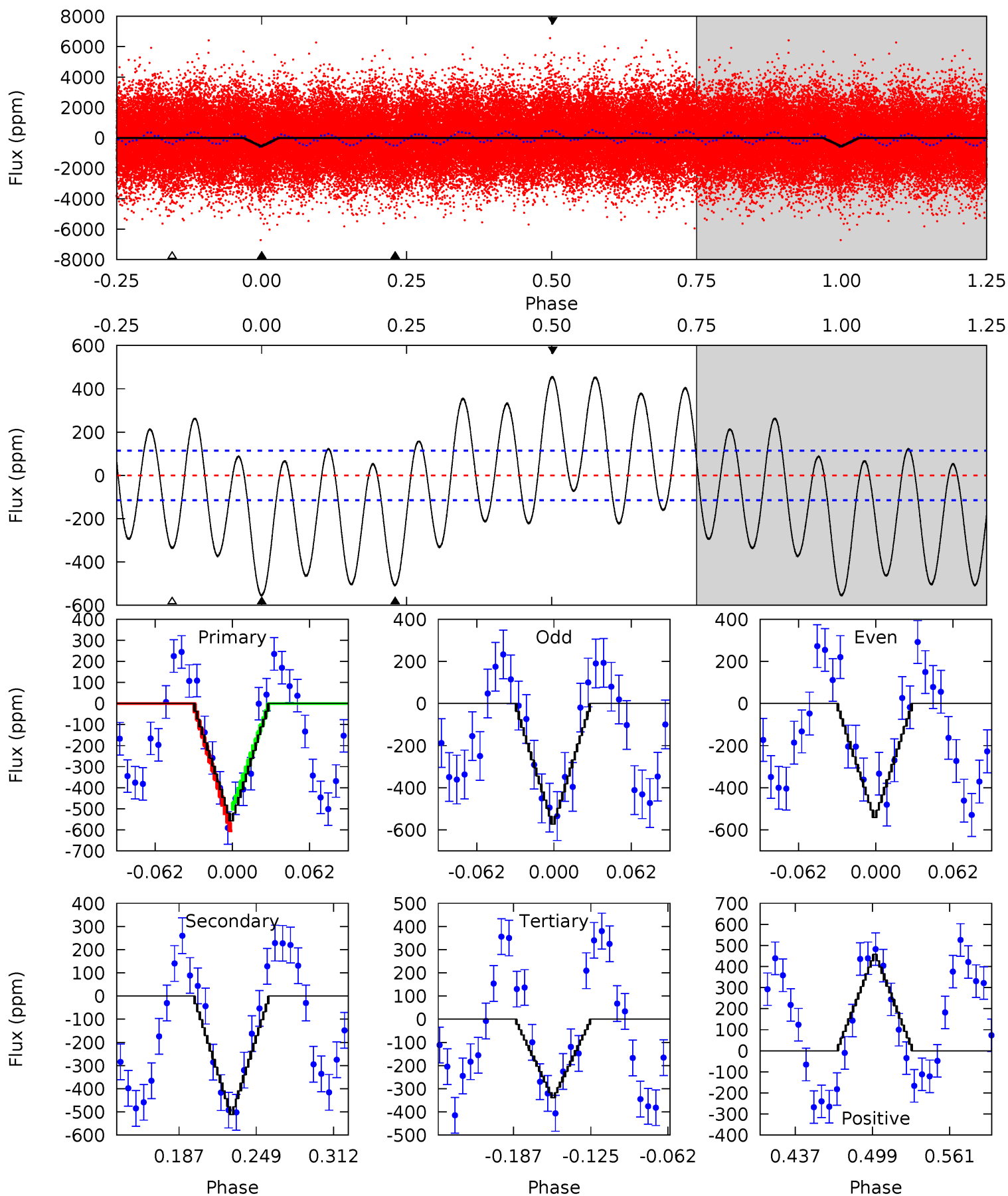
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
46.3	25.6	25.1	30.2	4.67	1.87	17.6	21.2	16.1	0.44	-4.57	0.44	0.95	0.39	4.21



# Alt Model-Shift Uniqueness Test

008396062-01, P = 0.673021 Days, E = 131.384721 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
22.7	20.9	13.8	18.7	4.66	1.86	10.2	8.91	4.07	7.02	2.18	0.64	1.03	0.45	2.08



### Stellar Parameters For KIC 008396062

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7141^{+199}_{-299}$	$4.050^{+0.234}_{-0.156}$	$-0.260^{+0.300}_{-0.300}$	$1.878^{+0.548}_{-0.493}$	$1.441^{+0.218}_{-0.267}$	$0.307^{+0.381}_{-0.148}$
	+3%/-4%	+6%/-4%	+115%/-115%	+29%/-26%	+15%/-19%	+124%/-48%
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 008396062-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-242 \pm 9$	$4.67^{+1.04}_{-0.88}$	$4548^{+350}_{-329}$	$5481^{+557}_{-476}$	$1.744^{+0.905}_{-0.572}$
Alt.	$-512 \pm 25$	$4.69^{+1.03}_{-1.01}$	$4555^{+397}_{-361}$	$6803^{+783}_{-592}$	$3.695^{+2.218}_{-1.290}$

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



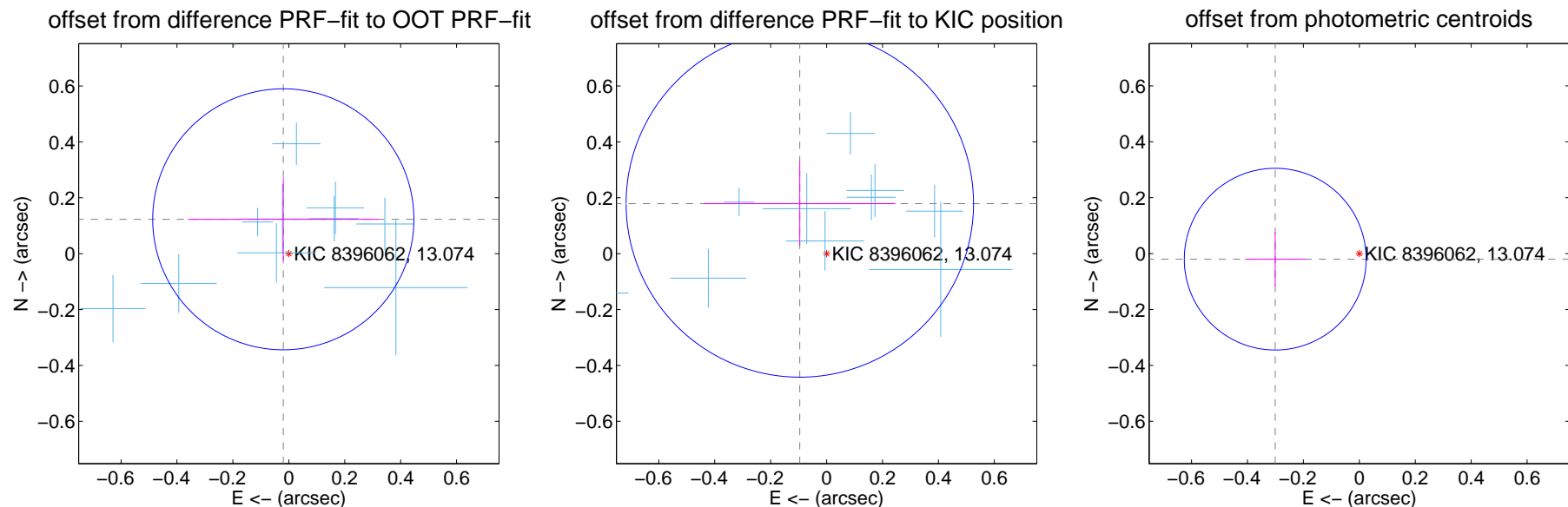
## DV Centroid Data

Supplemental centroid analysis for 008396062-01. Kepler magnitude: 13.07. Transit SNR 33.96

There are 15 quarters with good PRF difference image offsets

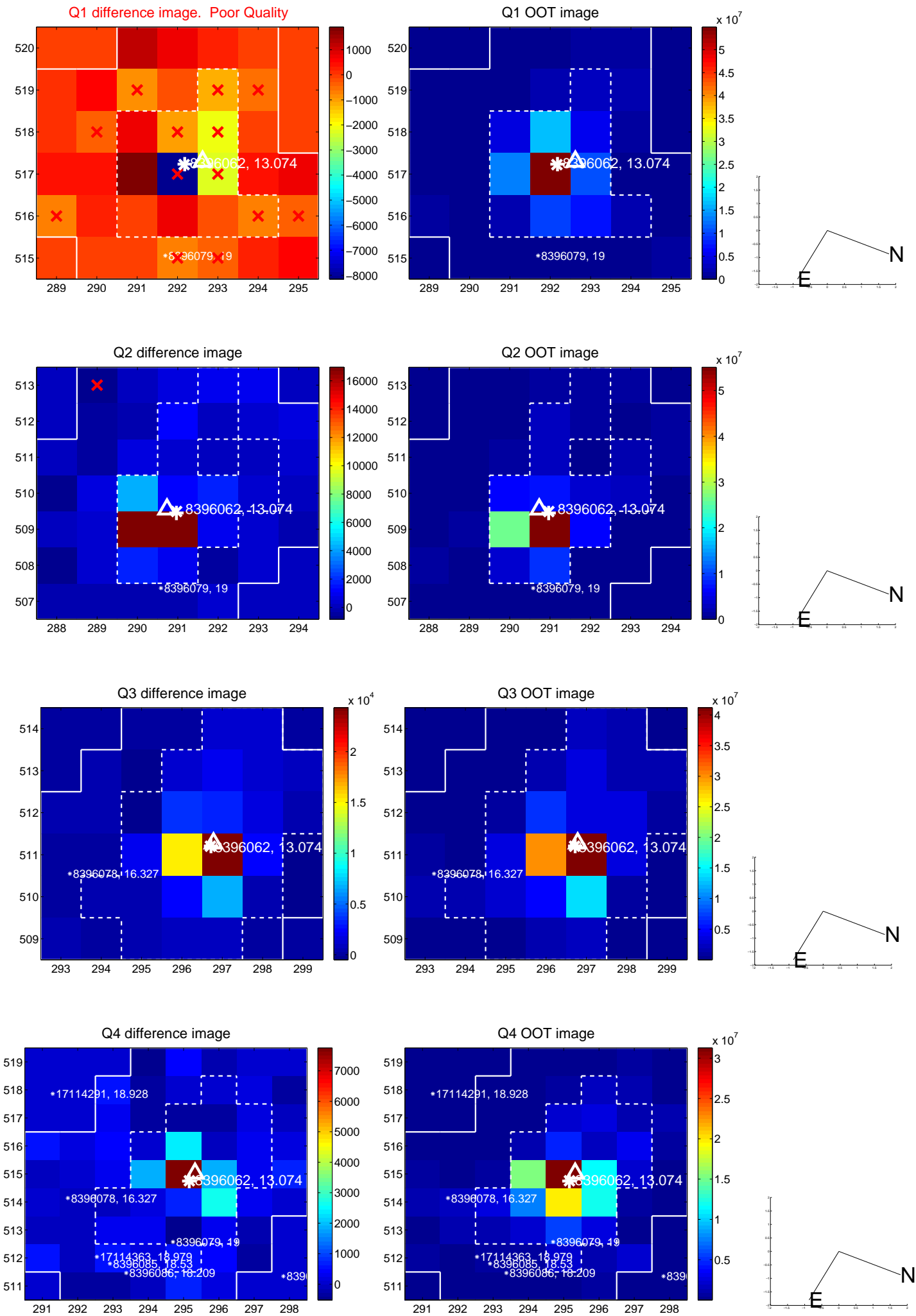
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.125 \pm 0.156$	0.80	$0.020 \pm 0.341$	$0.123 \pm 0.148$
PRF-fit source offset from KIC position	$0.203 \pm 0.207$	0.98	$0.096 \pm 0.342$	$0.179 \pm 0.150$
photometric centroid source offset	$0.30 \pm 0.11$	2.78	$0.30 \pm 0.11$	$-0.02 \pm 0.10$

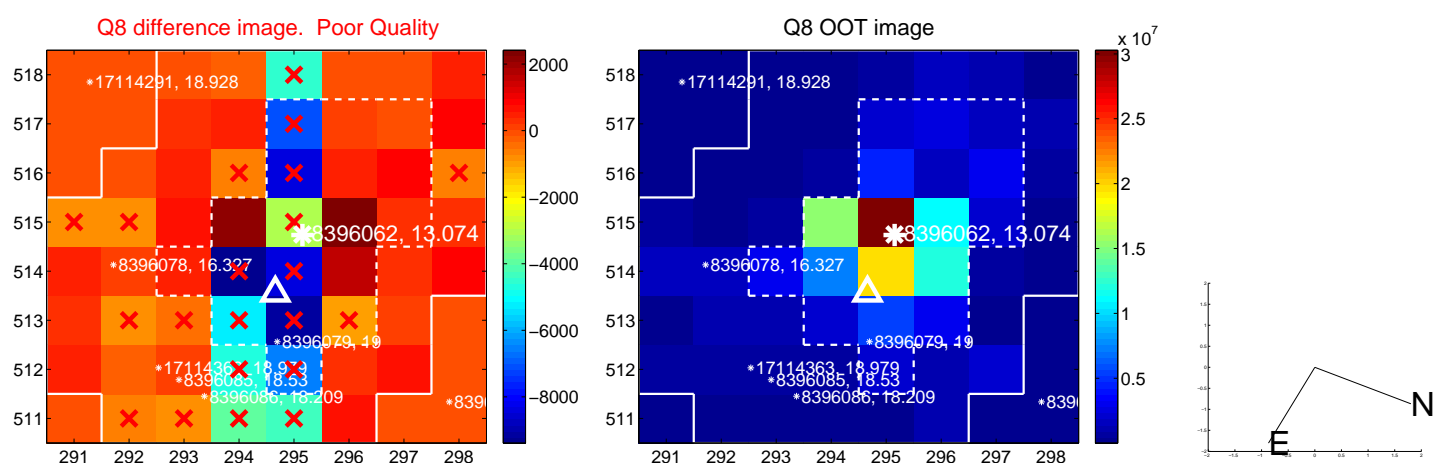
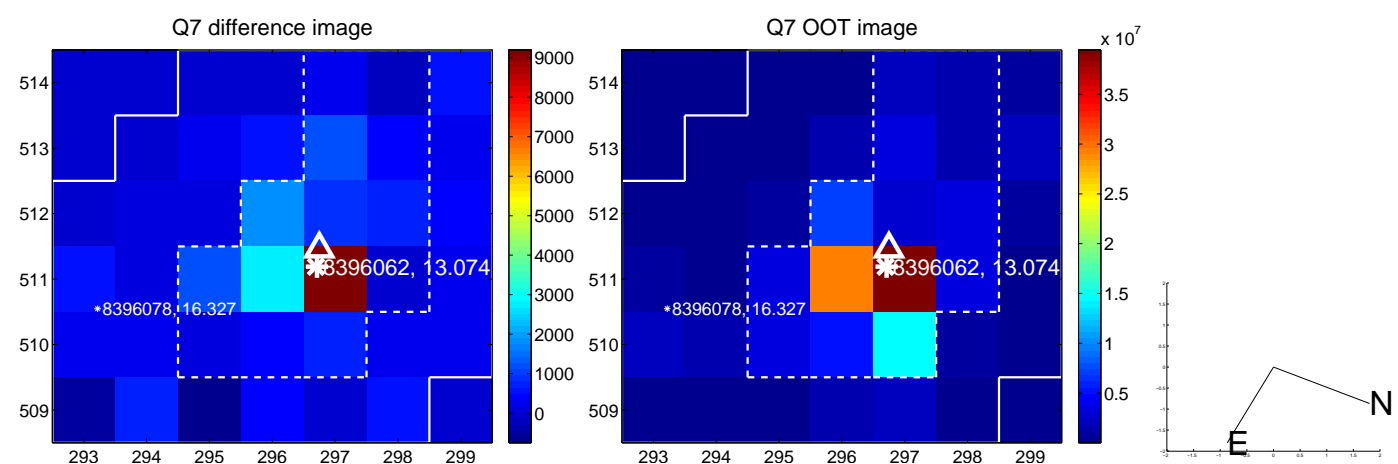
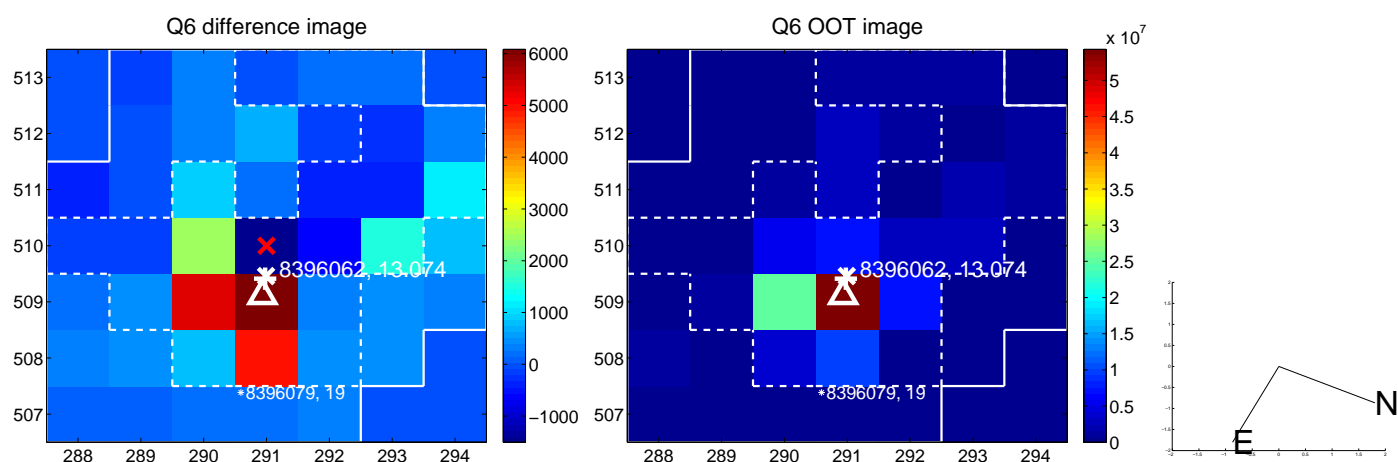
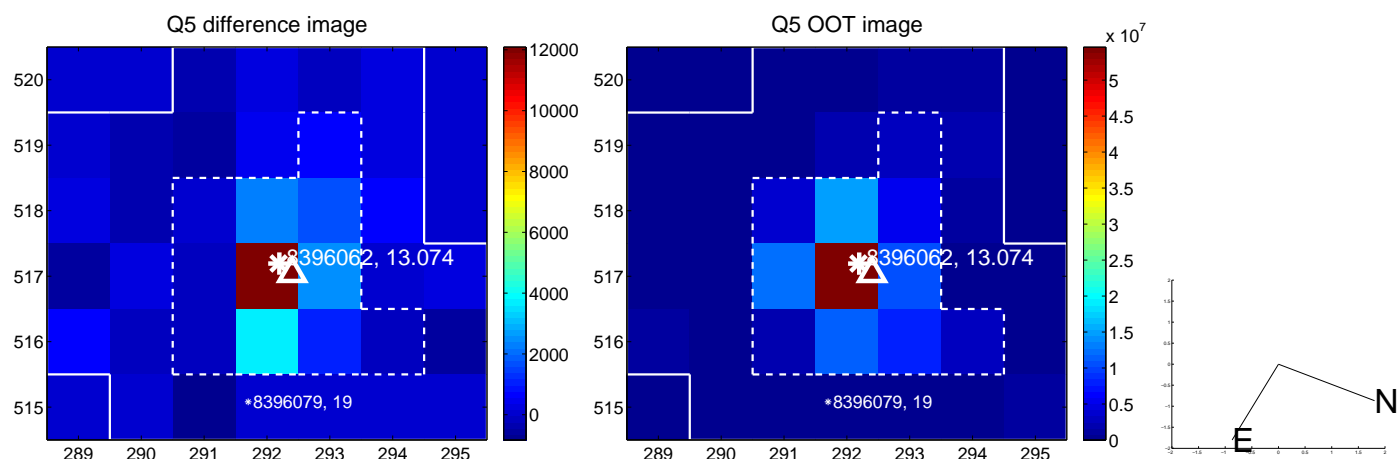


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

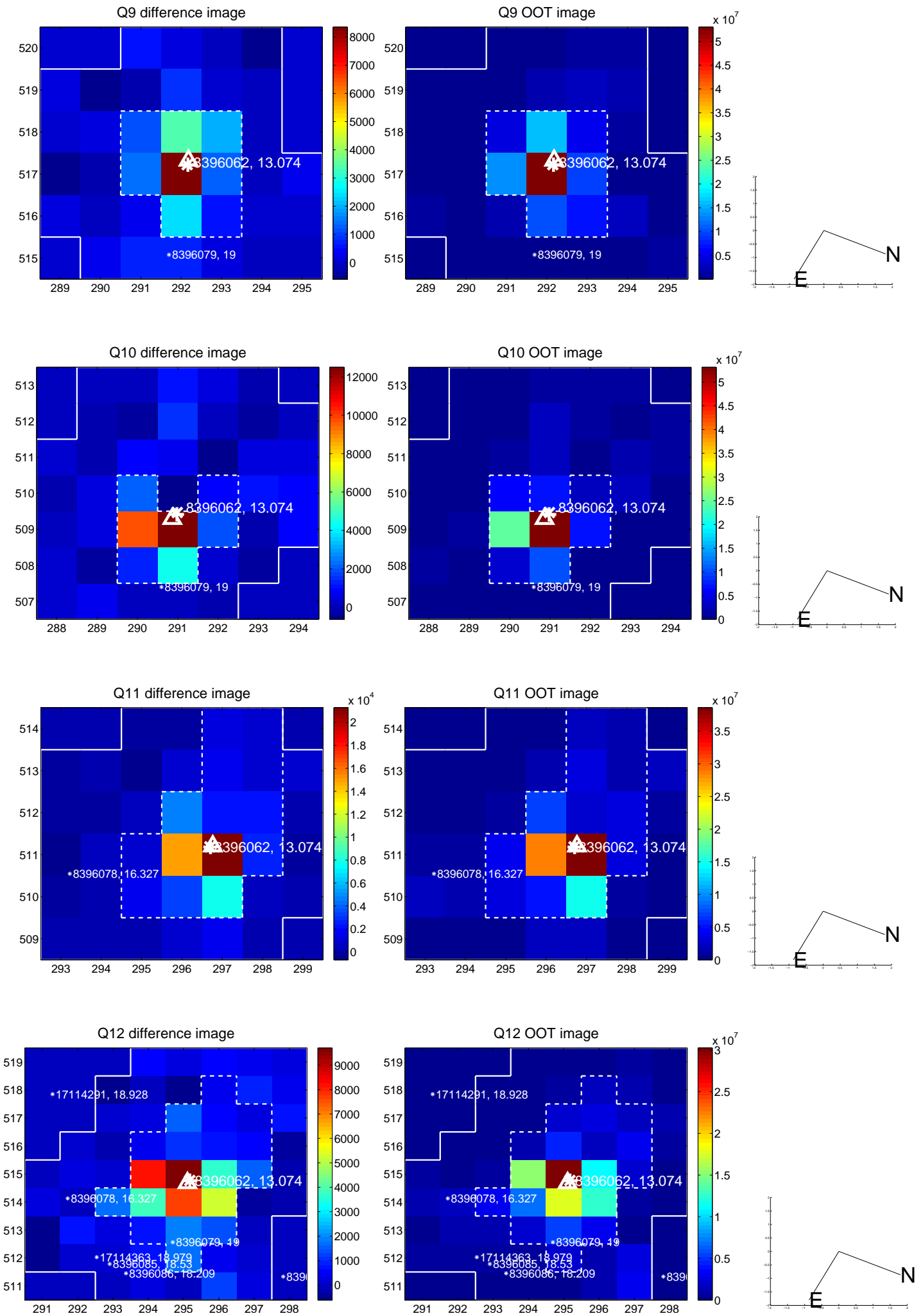


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

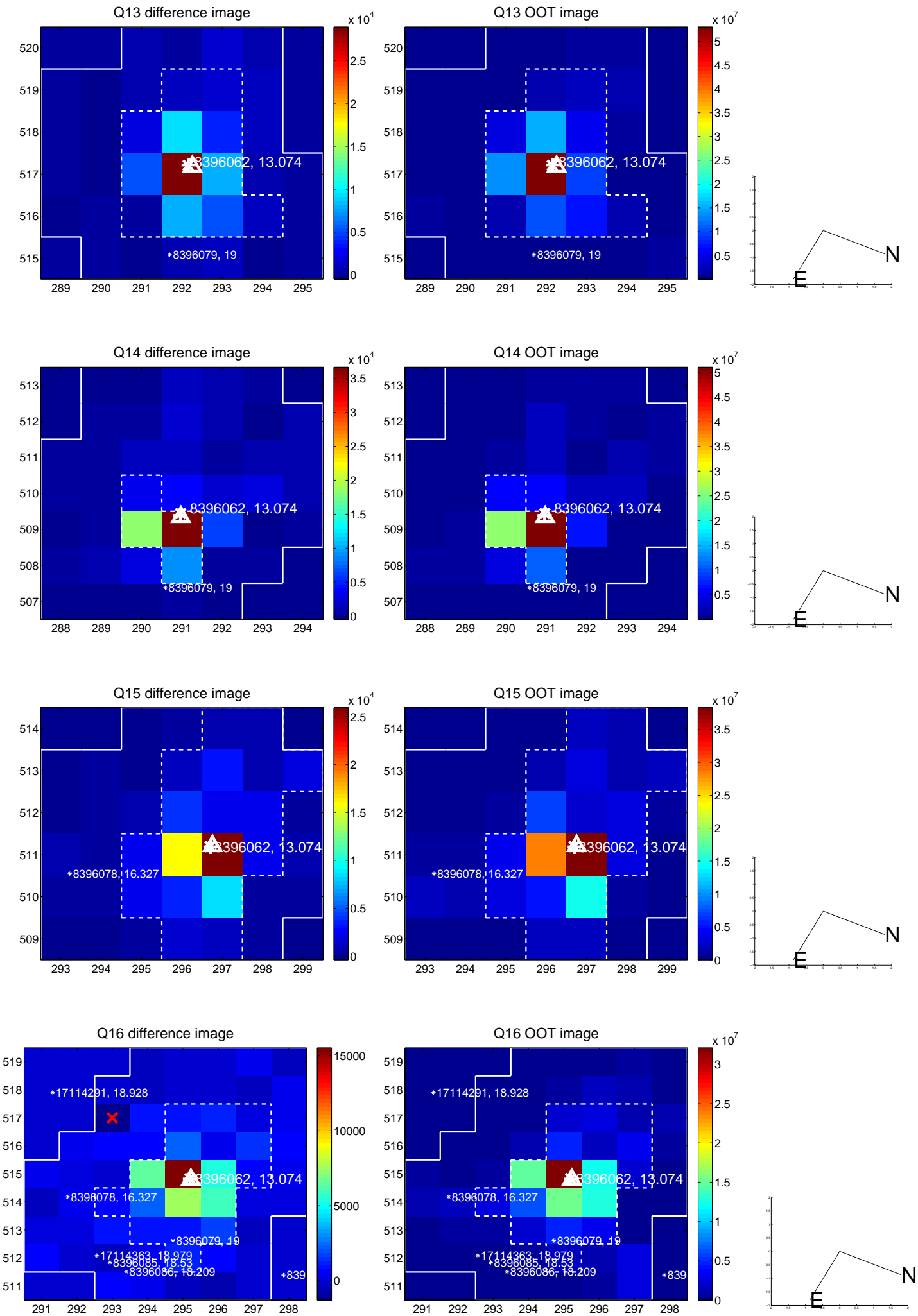




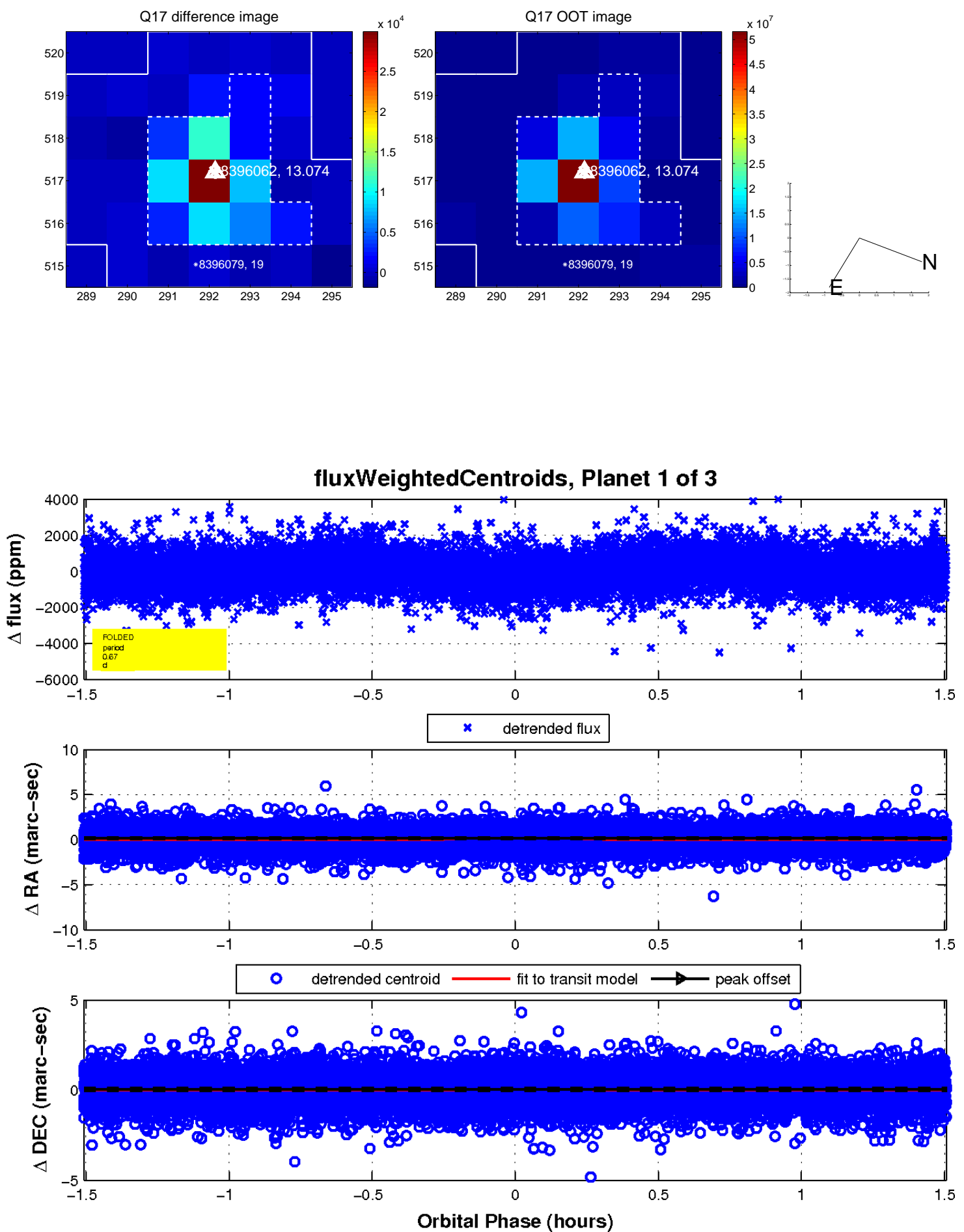
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

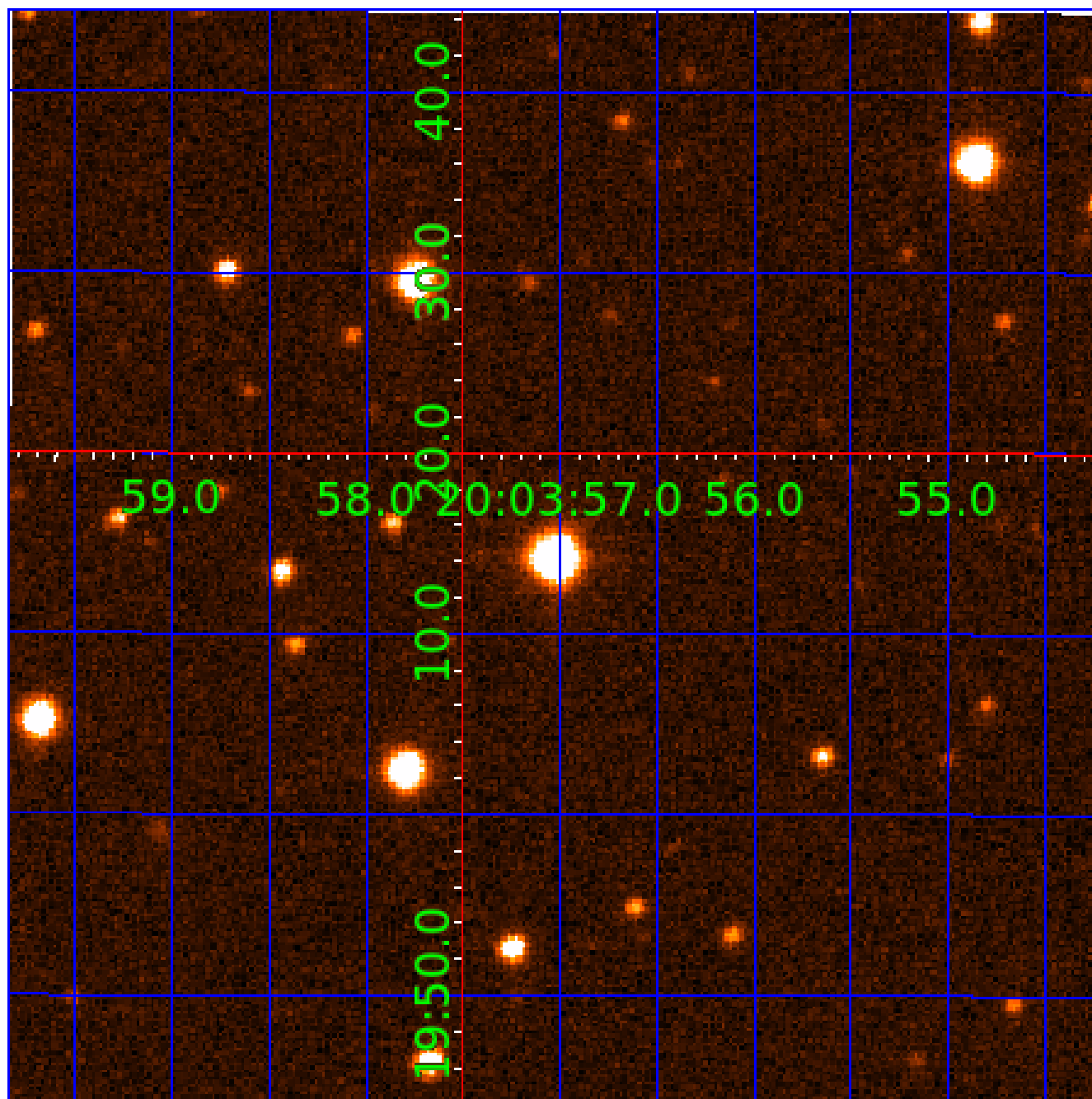


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 008396062

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008396062-01	OBS	No	0.673021	132.057742	586.3	0.502	17.7	34.0	1.88	7141	4.81	28467.97
008396062-02	OBS	No	0.673070	132.098964	329.4	2.455	15.9	13.6	1.88	7141	4.46	28465.18
008396062-03	OBS	No	0.816141	132.121611	343.0	2.000	11.6	-1.0	1.88	7141	3.53	22014.41

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008396062-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008396062-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
008396062-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_NOFITS

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

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

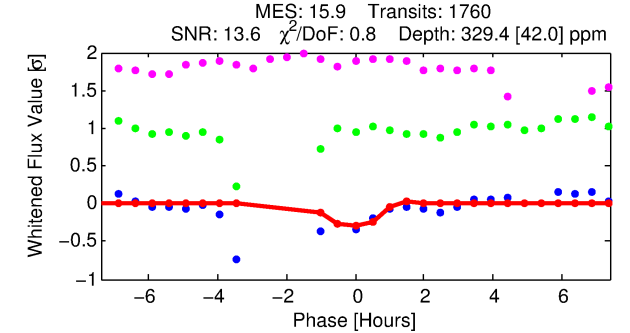
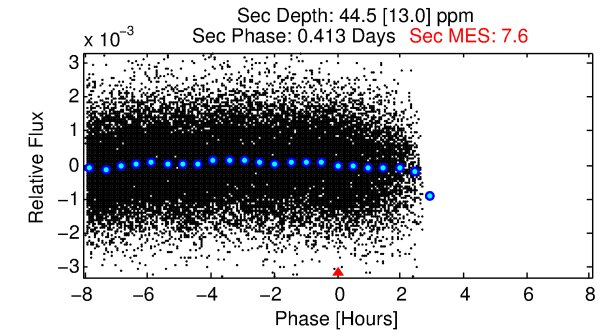
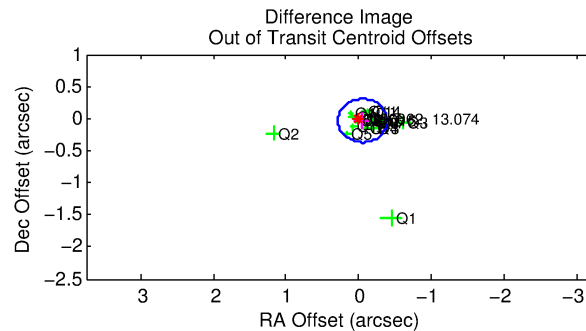
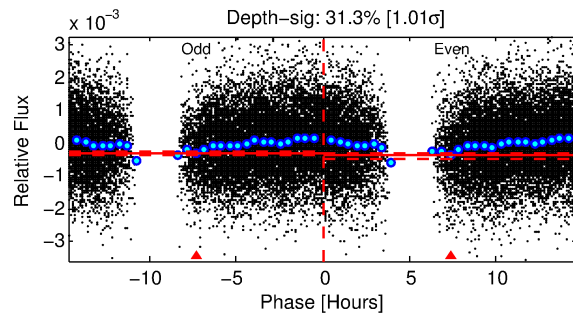
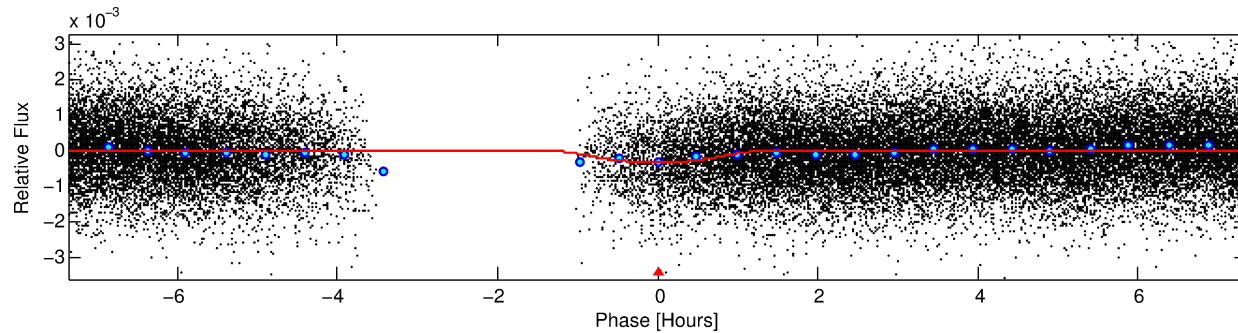
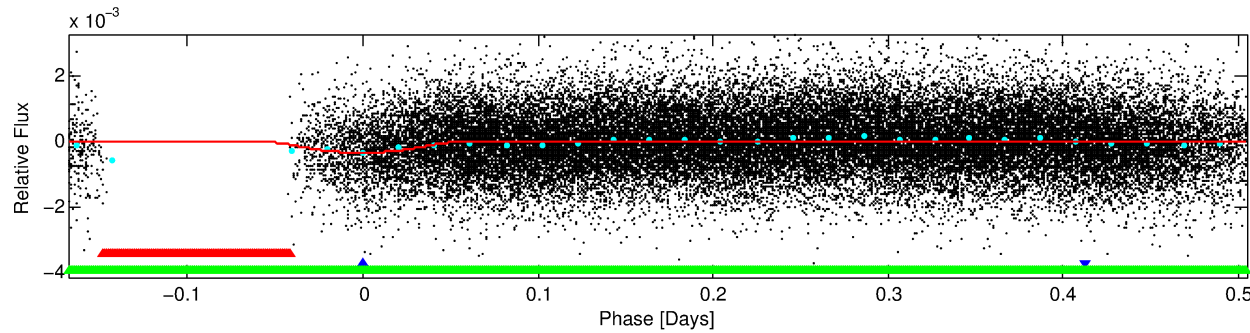
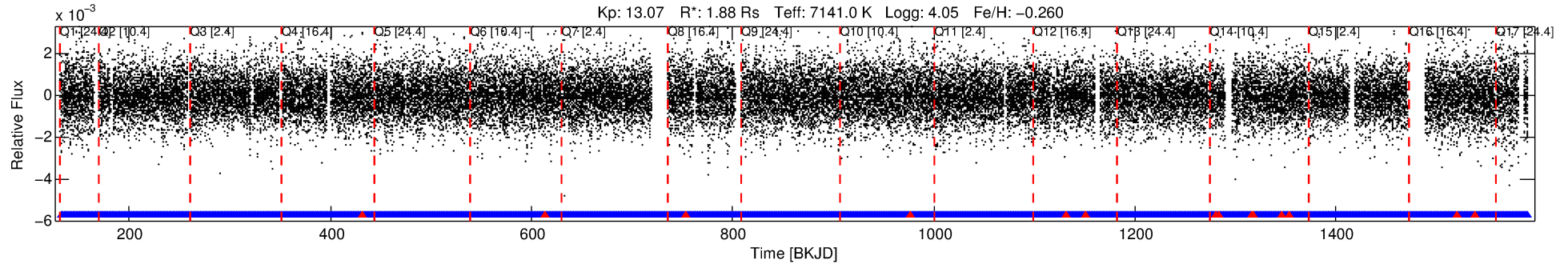
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008396062-02

No Significant Match Found

# DV One-Page Summary

KIC: 8396062 Candidate: 2 of 3 Period: 0.673 d



## DV Fit Results:

Period = 0.67307 [0.00001] d  
Epoch = 132.0990 [0.0031] BKJD  
Rp/R\* = 0.0218 [0.0020]  
a/R\* = 1.17 [0.05]  
b = 0.98 [0.01]  
Seff = 28465.18 [12567.33]  
Teq = 3312 [366] K  
Rp = 4.46 [1.36] Re  
a = 0.0170 [0.0045] AU  
Ag = 0.35 [0.19] [-3.41σ]  
Teffp = 3952 [378] K [1.22σ]

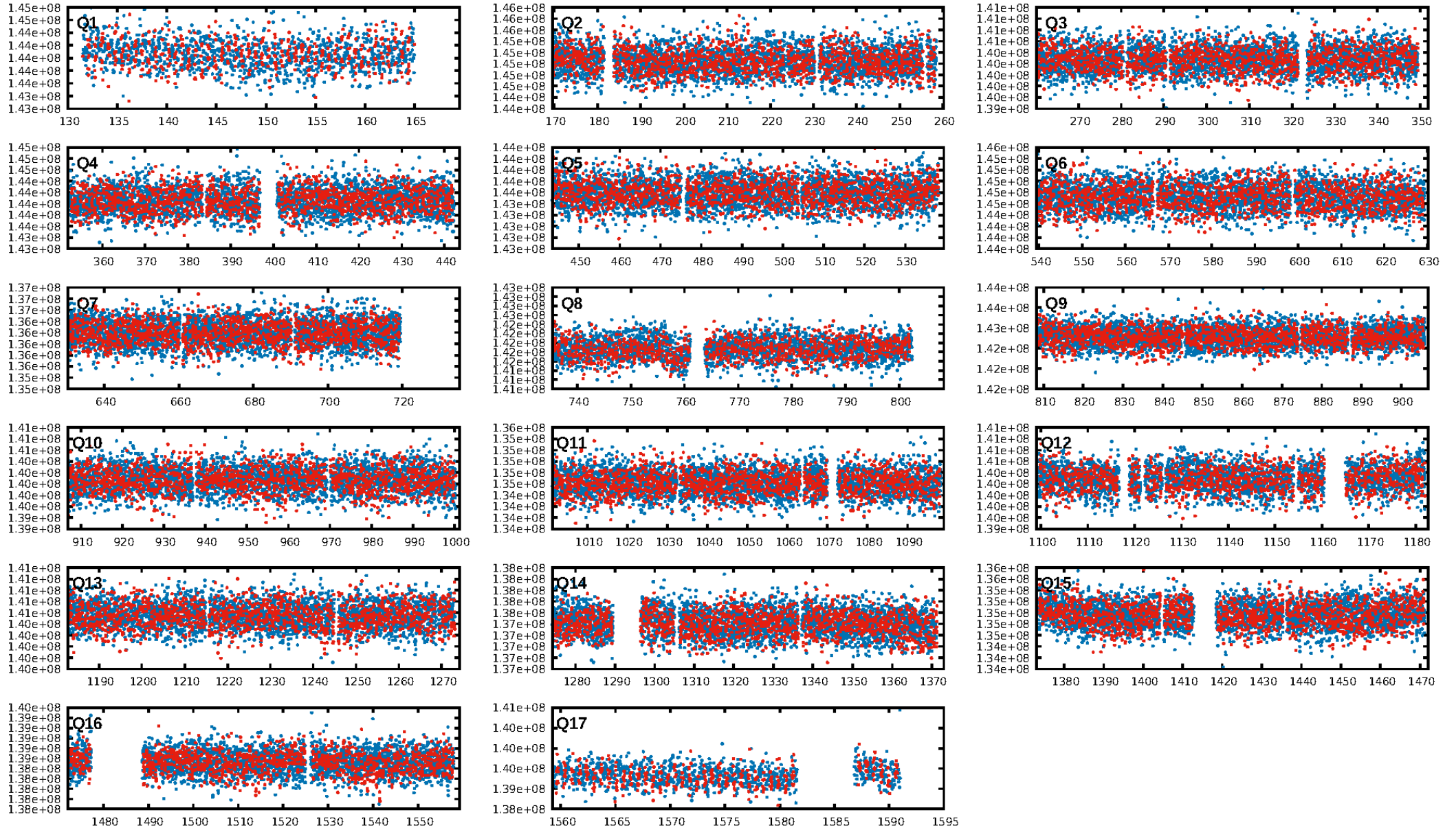
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: 72.2% [1.08σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.99 [1705/1720]  
GhostDiagnostic-chr: 1.03  
Centroid-sig: 0.0%  
Centroid-so: 0.279 arcsec [2.68σ]  
OotOffset-rm: 0.059 arcsec [0.52σ]  
KicOffset-rm: 0.031 arcsec [0.28σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:46:10 Z

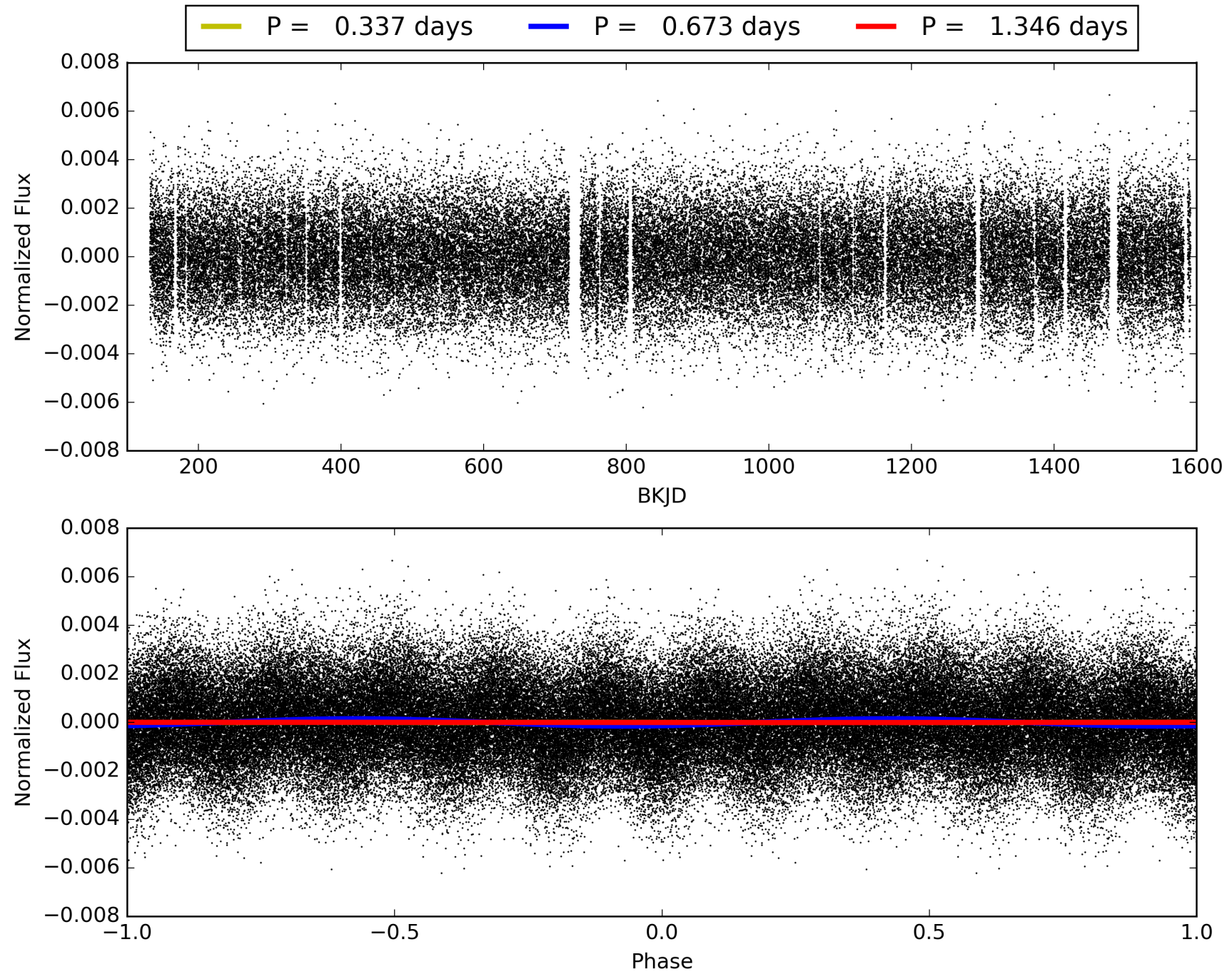
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008396062-02, PDC Light Curves



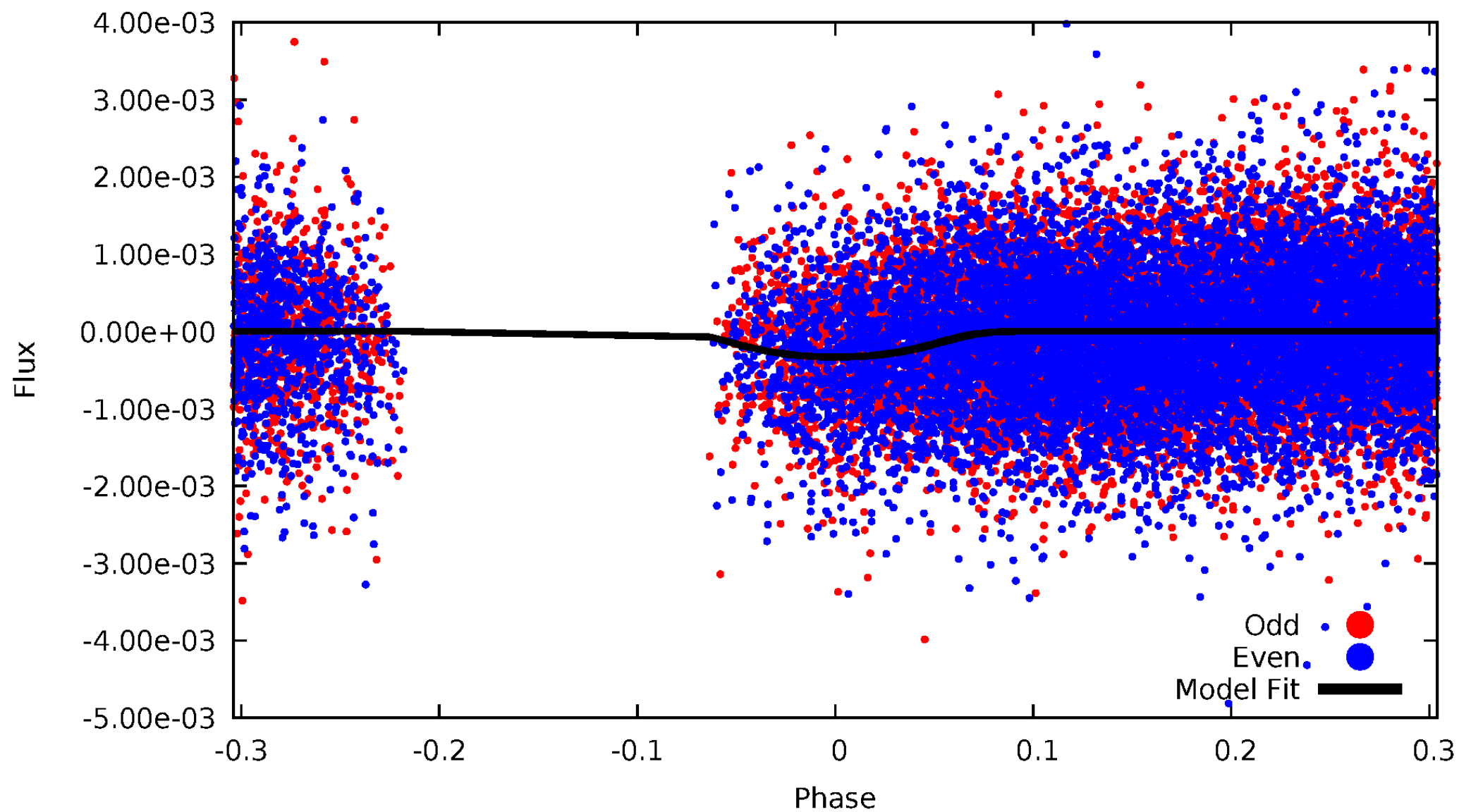


# TCE 008396062-02



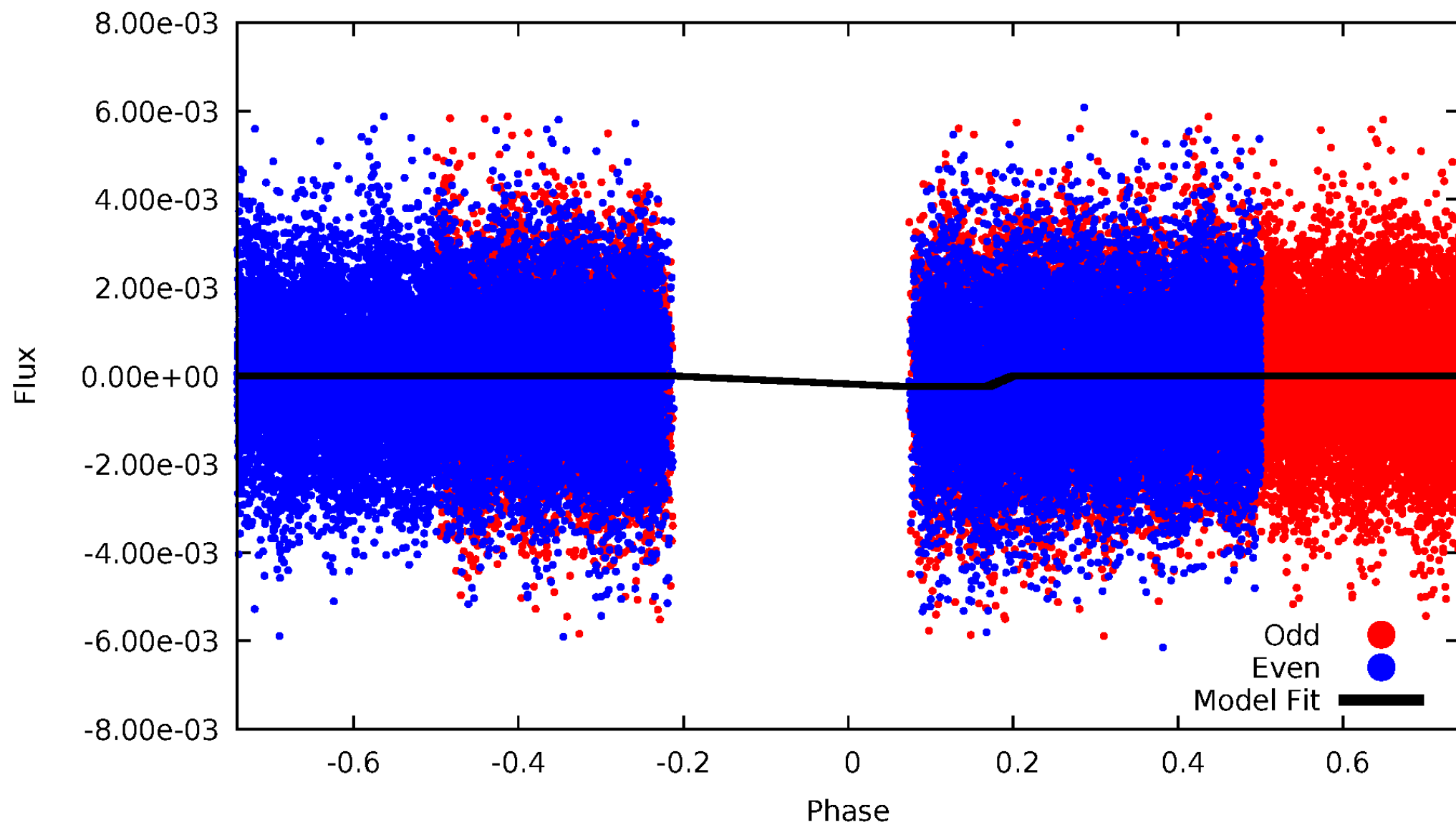
# DV Odd/Even

TCE 008396062-02



# ALT Odd/Even

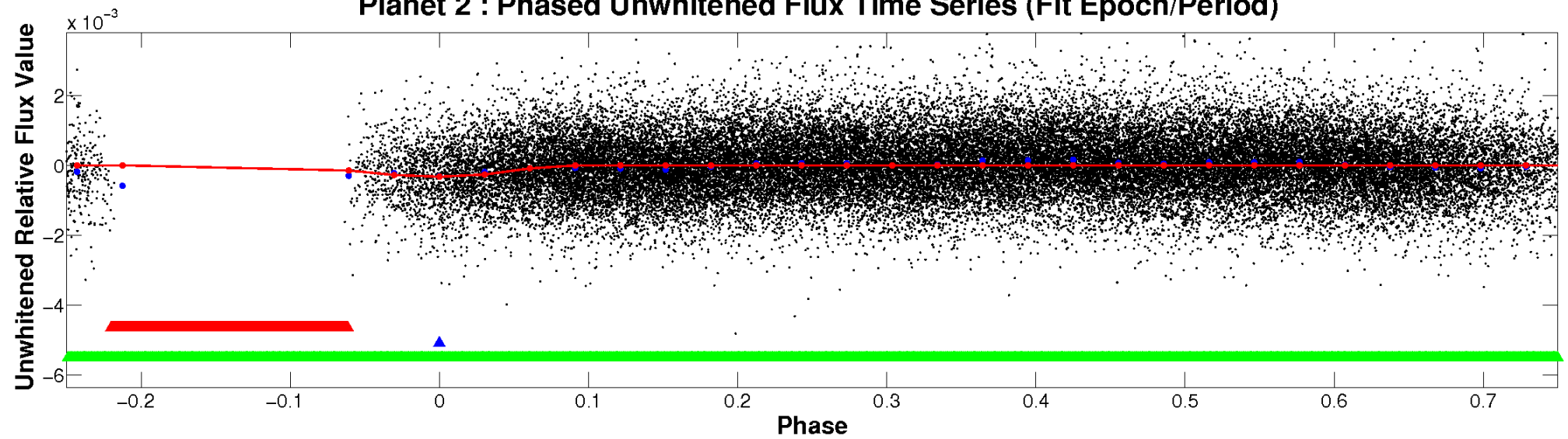
TCE 008396062-02



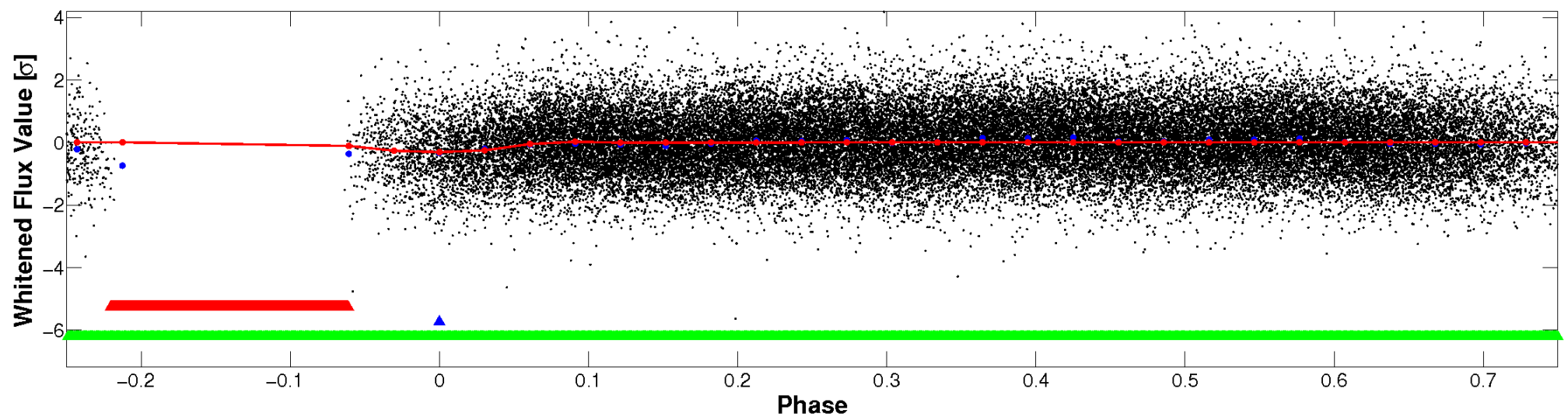


# Non-Whitened Vs. Whitened Light Curve

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

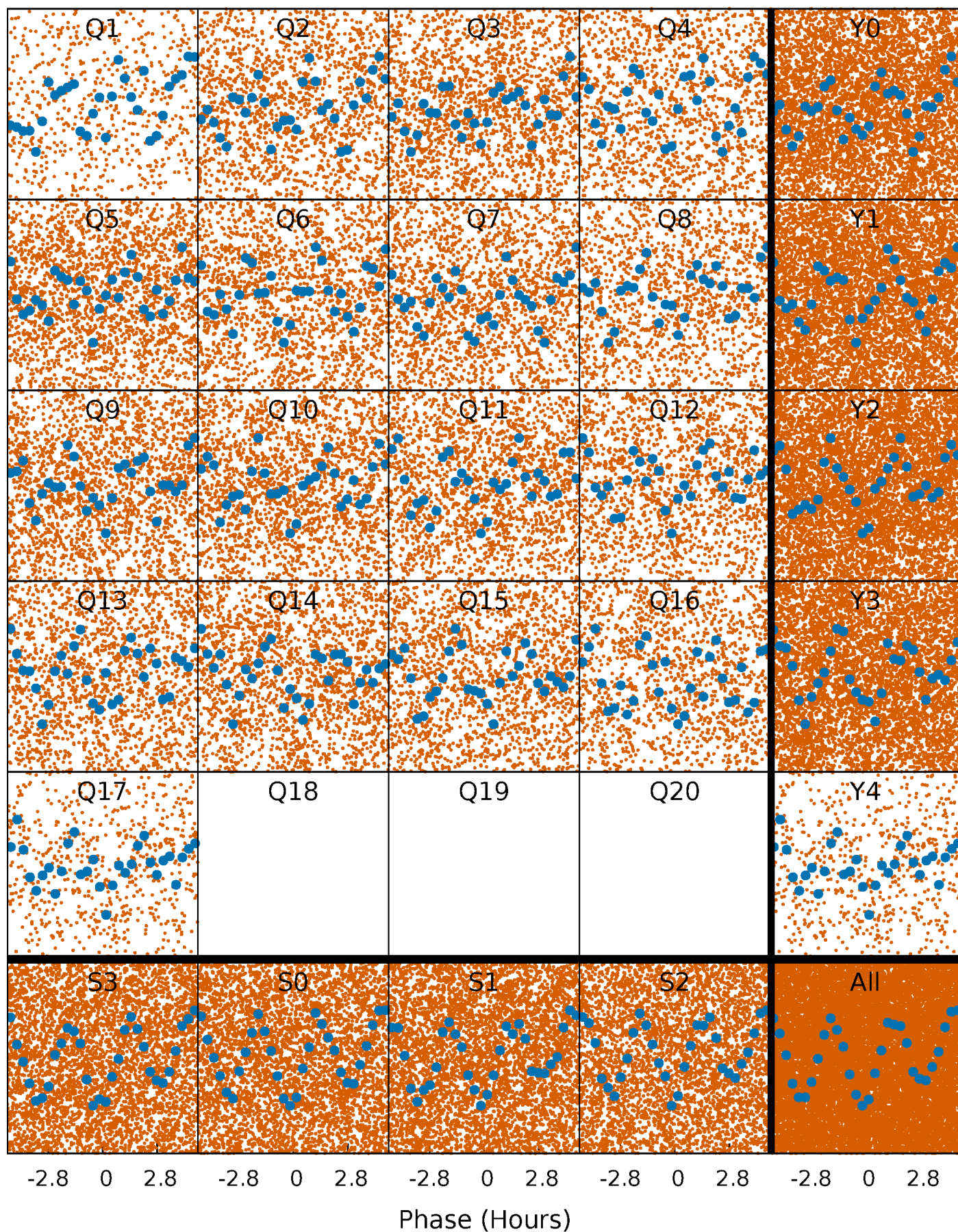


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

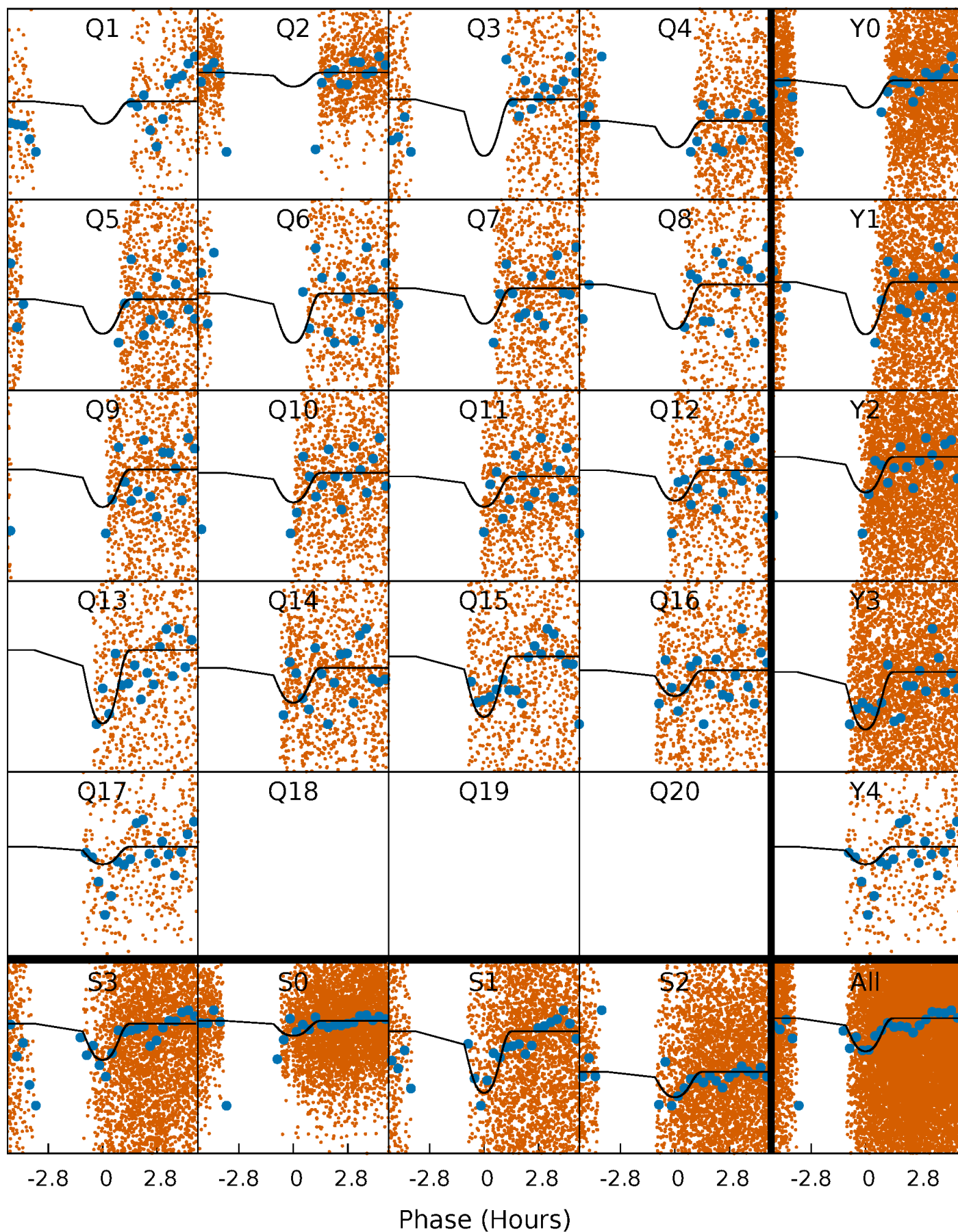
TCE 008396062-02   P= 0.673070 Days    $T_0=132.098964$  (BKJD)





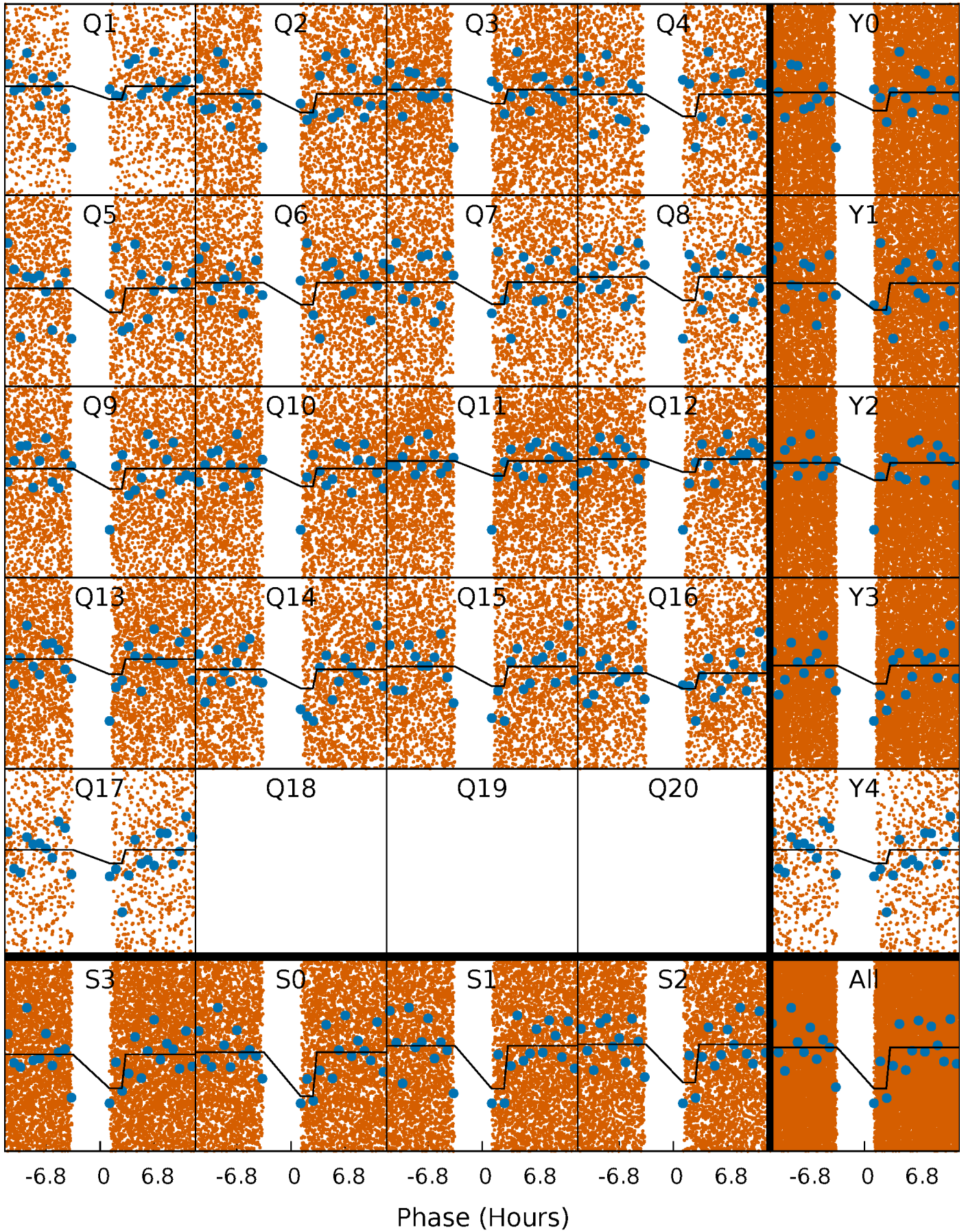
# DV Quarter-Phased Transit Curves

TCE 008396062-02   P= 0.673070 Days    $T_0=132.098964$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

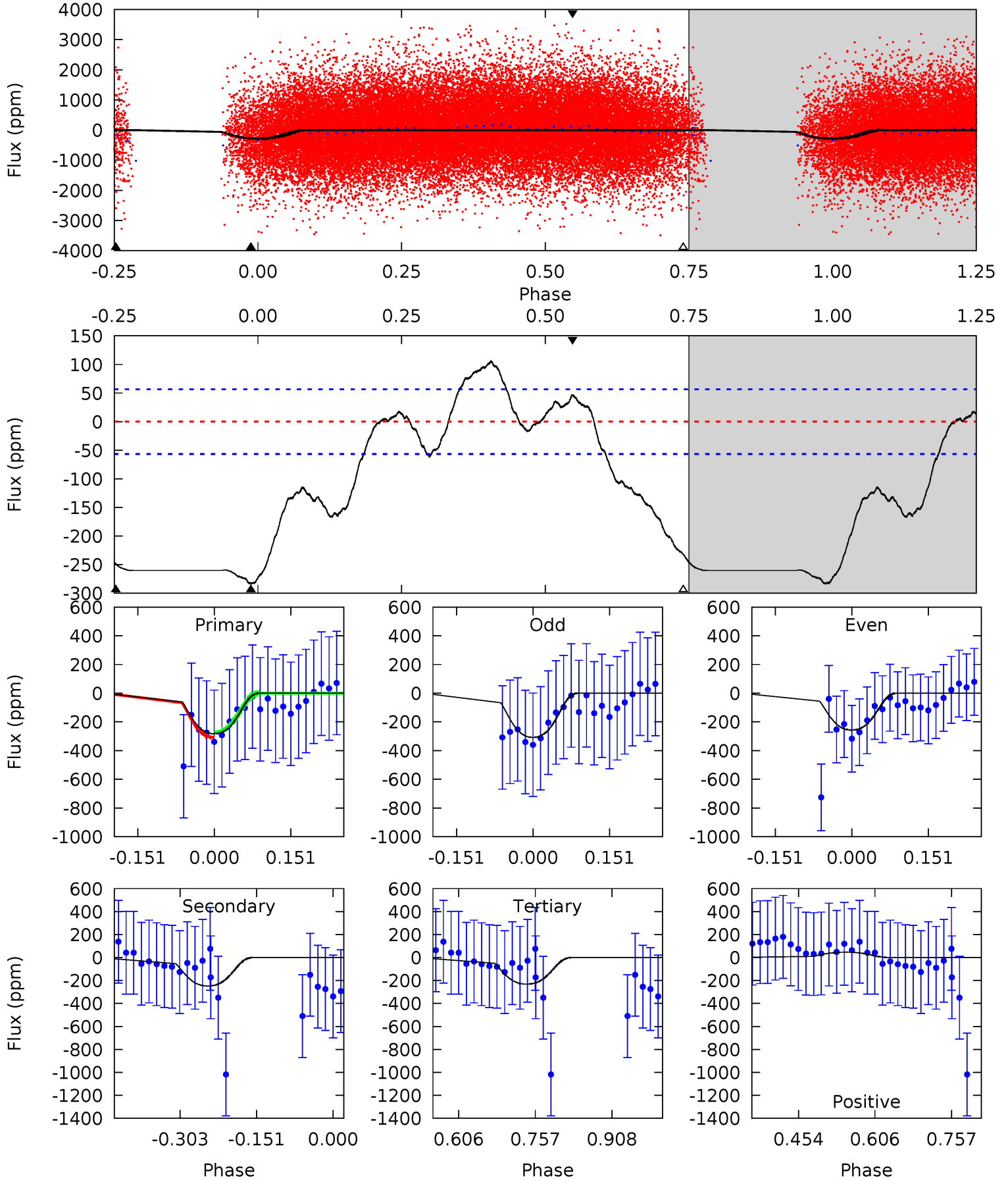
TCE 008396062-02 P= 0.673013 Days  $T_0=132.112759$  (BKJD)



# DV Model-Shift Uniqueness Test

008396062-02, P = 0.673070 Days, E = 131.425894 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
22.4	19.7	18.4	3.66	4.48	1.43	5.79	4.05	18.8	1.29	16.0	2.03	1.07	0.27	1.13

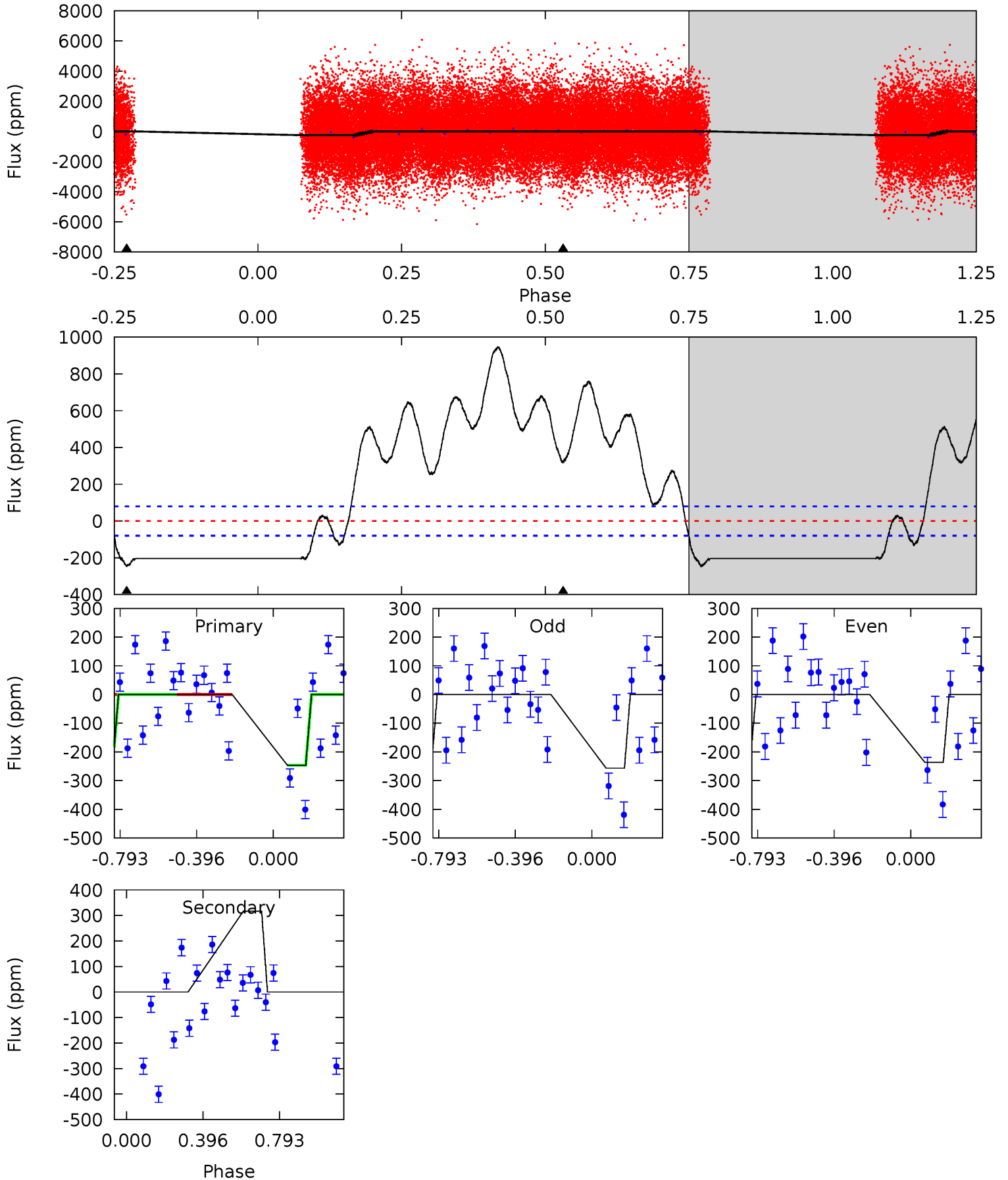




# Alt Model-Shift Uniqueness Test

008396062-02, P = 0.673013 Days, E = 131.439746 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
13.2	-16.9	0	0	4.27	0.85	10.2	13.2	13.2	-16.9	-16.9	0.54	1.20	0.79	0



### Stellar Parameters For KIC 008396062

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7141^{+199}_{-299}$	$4.050^{+0.234}_{-0.156}$	$-0.260^{+0.300}_{-0.300}$	$1.878^{+0.548}_{-0.493}$	$1.441^{+0.218}_{-0.267}$	$0.307^{+0.381}_{-0.148}$
	+3%/-4%	+6%/-4%	+115%/-115%	+29%/-26%	+15%/-19%	+124%/-48%
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 008396062-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-248 \pm 13$	$4.37^{+0.79}_{-0.74}$	$4563^{+342}_{-359}$	$5753^{+385}_{-337}$	$2.050^{+0.833}_{-0.565}$
Alt.	$317 \pm 19$	$3.14^{+0.61}_{-0.61}$	$4569^{+339}_{-332}$	$-7797^{+567}_{-727}$	$-5.051^{+1.487}_{-2.582}$

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

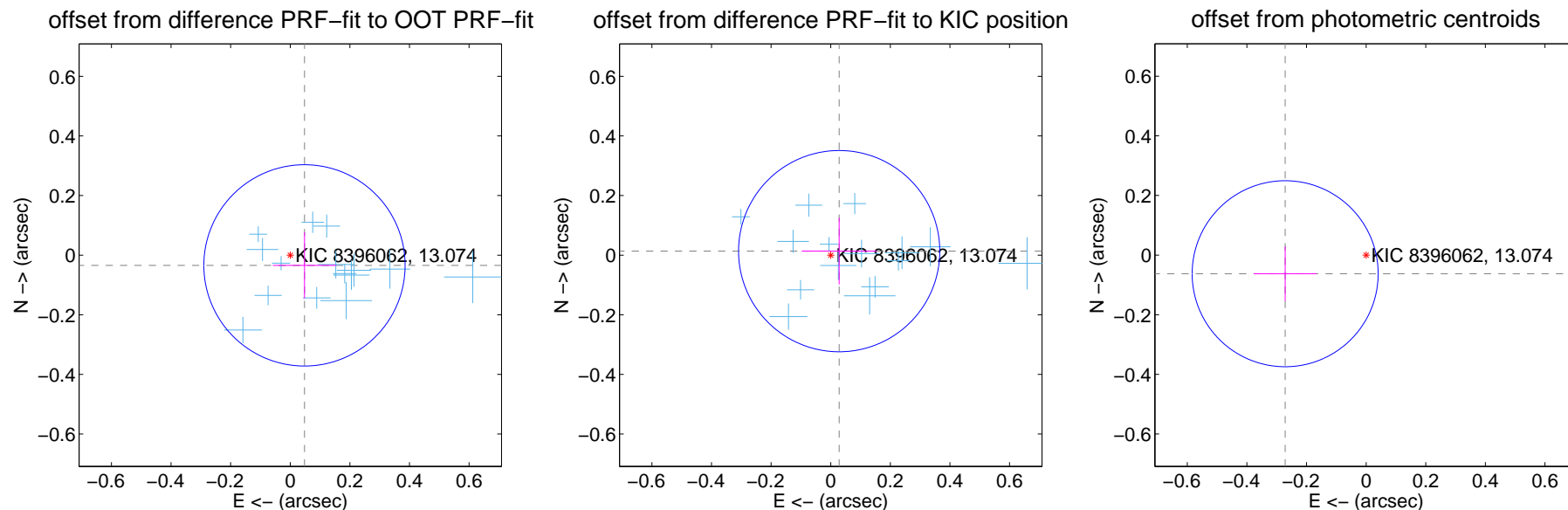
## DV Centroid Data

Supplemental centroid analysis for 008396062-02. Kepler magnitude: 13.07. Transit SNR 13.58

There are 17 quarters with good PRF difference image offsets

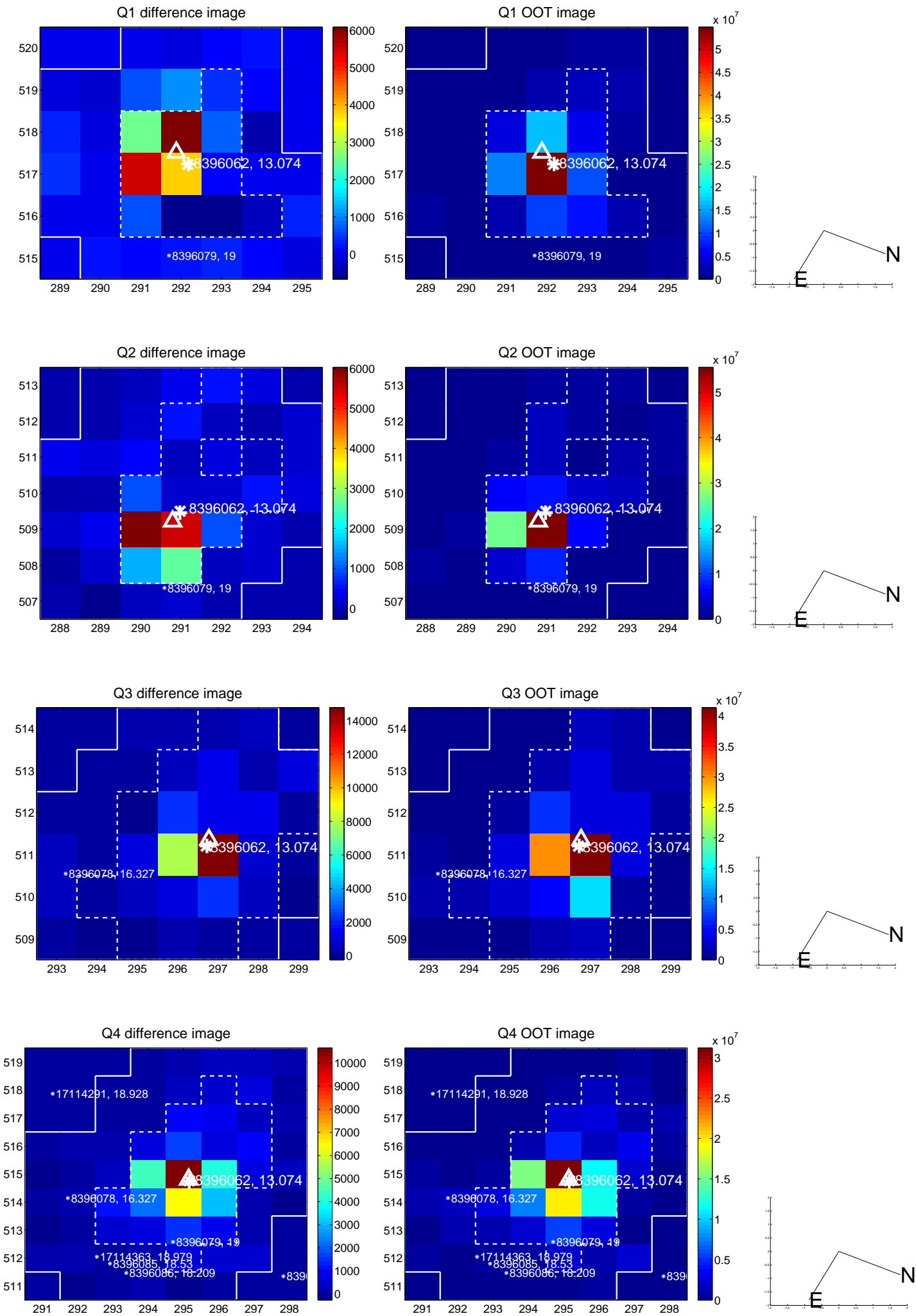
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.059 \pm 0.113$	0.52	$-0.048 \pm 0.106$	$-0.034 \pm 0.111$
PRF-fit source offset from KIC position	$0.031 \pm 0.113$	0.28	$-0.028 \pm 0.126$	$0.013 \pm 0.112$
photometric centroid source offset	$0.28 \pm 0.10$	2.68	$0.27 \pm 0.10$	$-0.06 \pm 0.09$

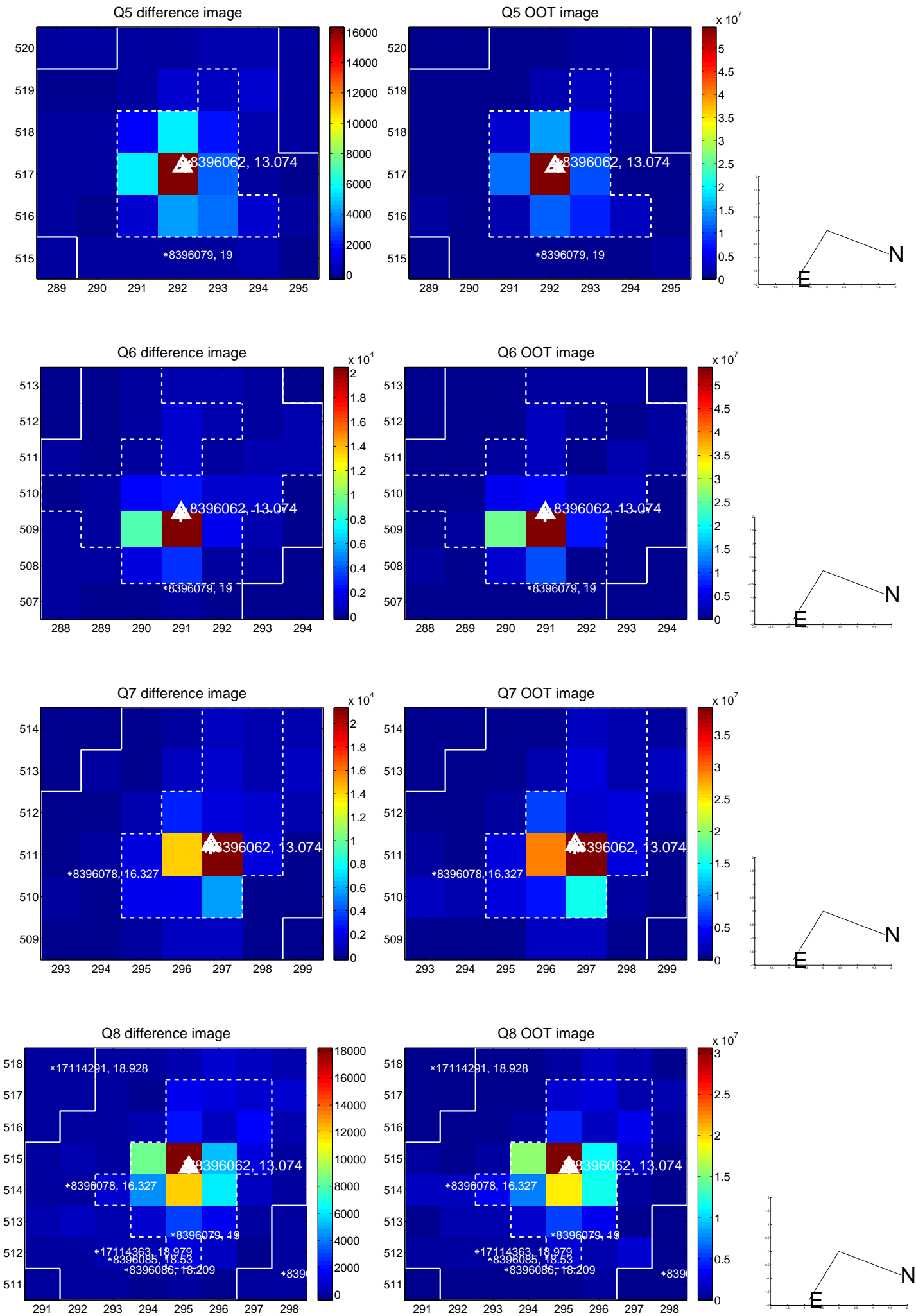


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

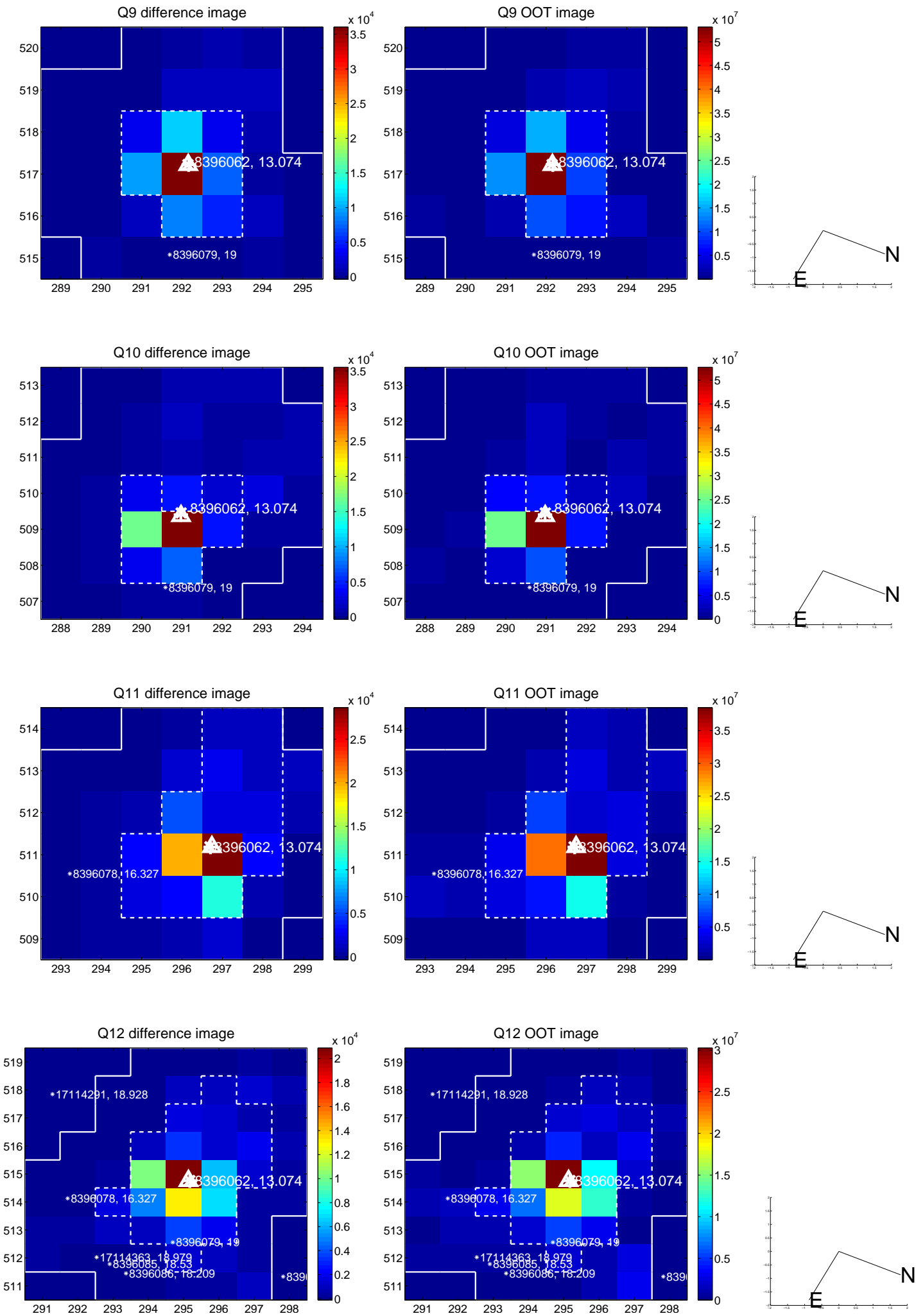


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

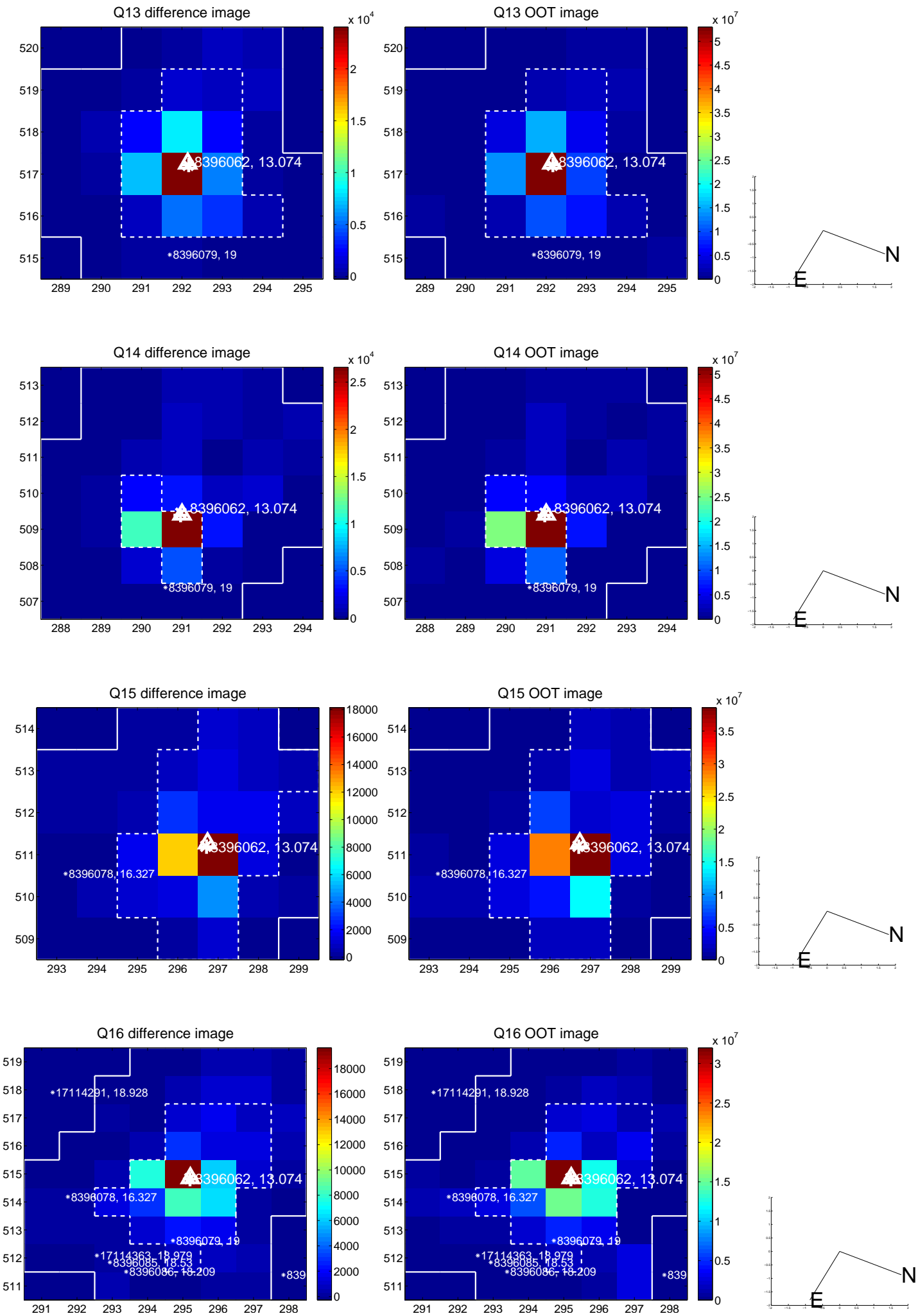




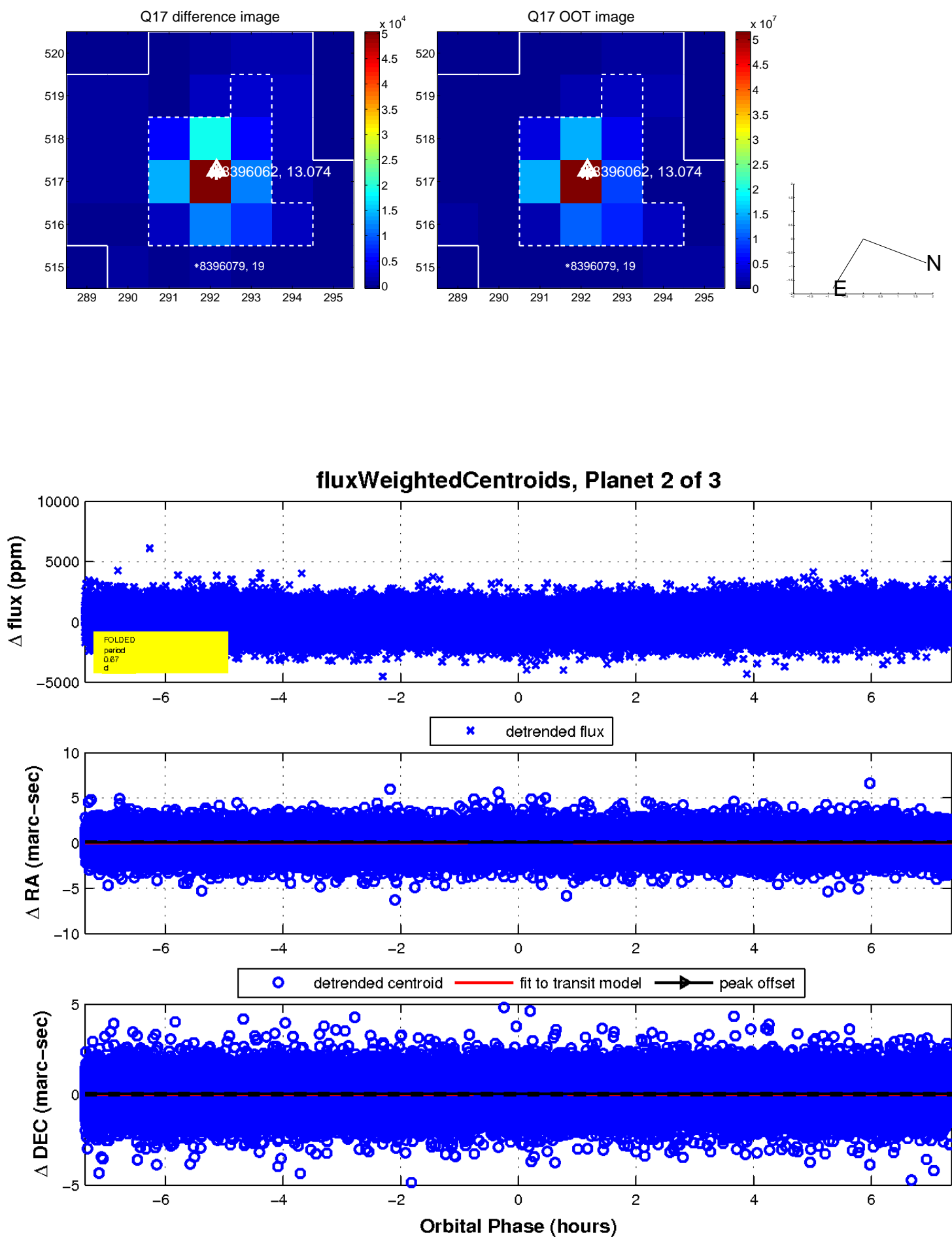
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

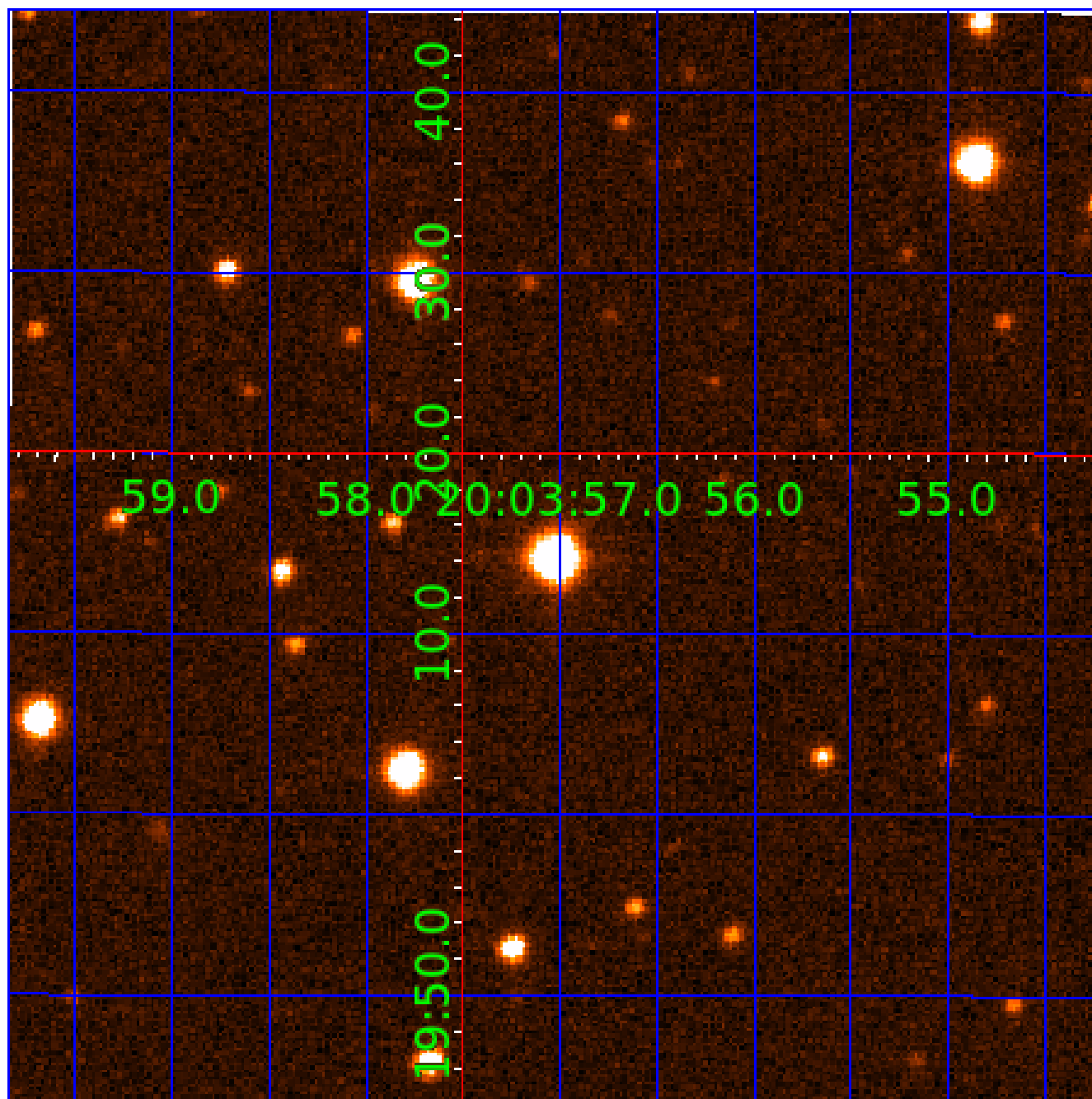


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 008396062

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008396062-01	OBS	No	0.673021	132.057742	586.3	0.502	17.7	34.0	1.88	7141	4.81	28467.97
008396062-02	OBS	No	0.673070	132.098964	329.4	2.455	15.9	13.6	1.88	7141	4.46	28465.18
008396062-03	OBS	No	0.816141	132.121611	343.0	2.000	11.6	-1.0	1.88	7141	3.53	22014.41

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008396062-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008396062-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
008396062-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—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.

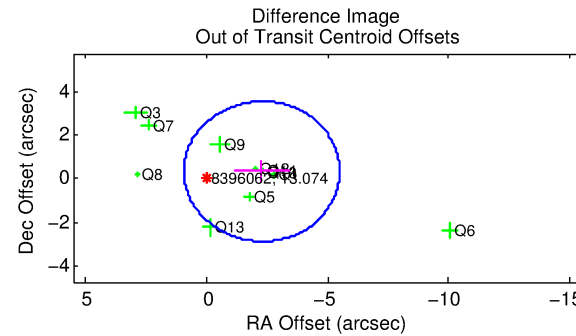
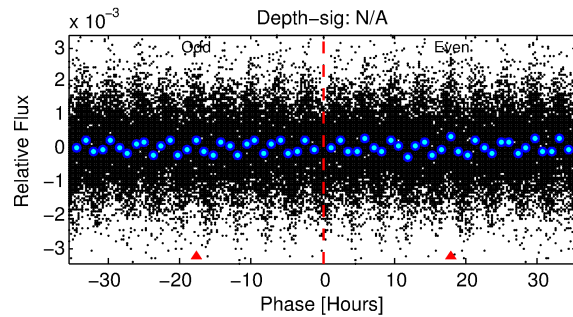
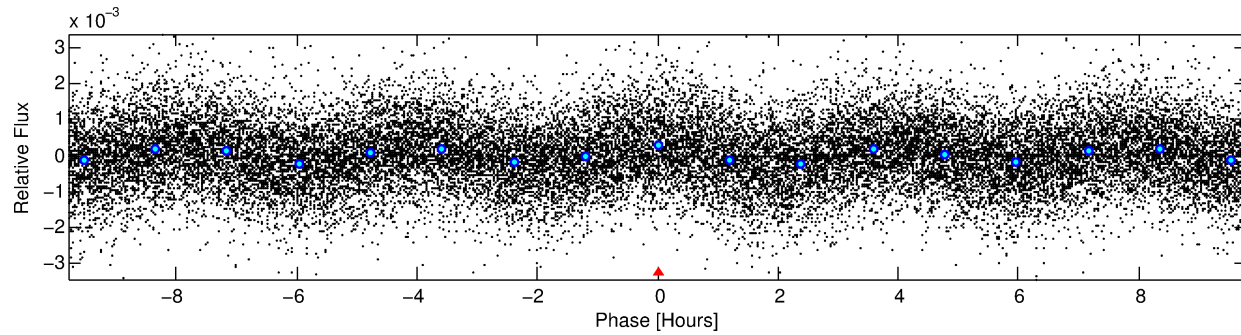
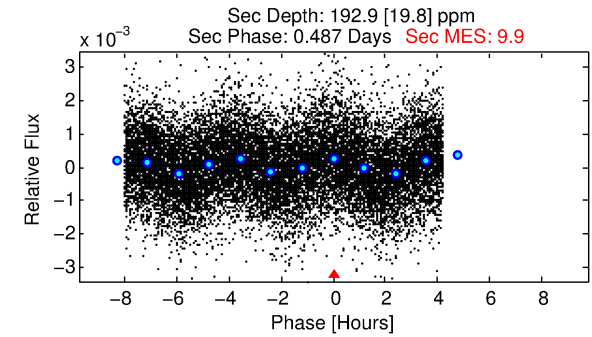
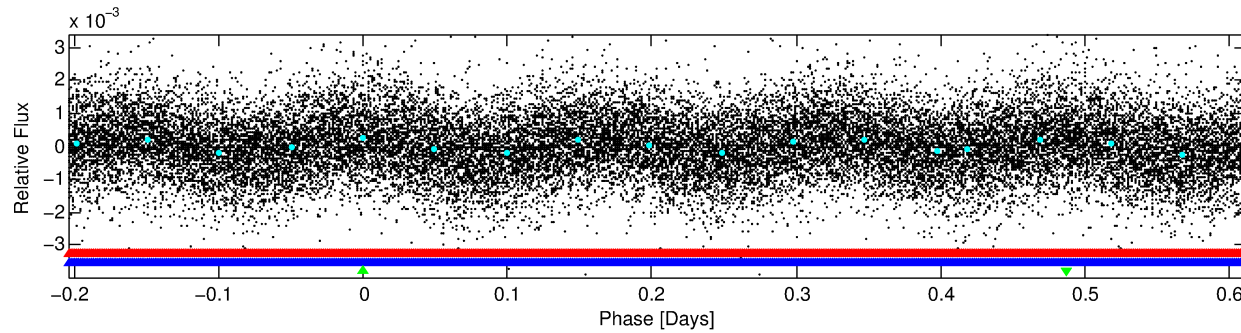
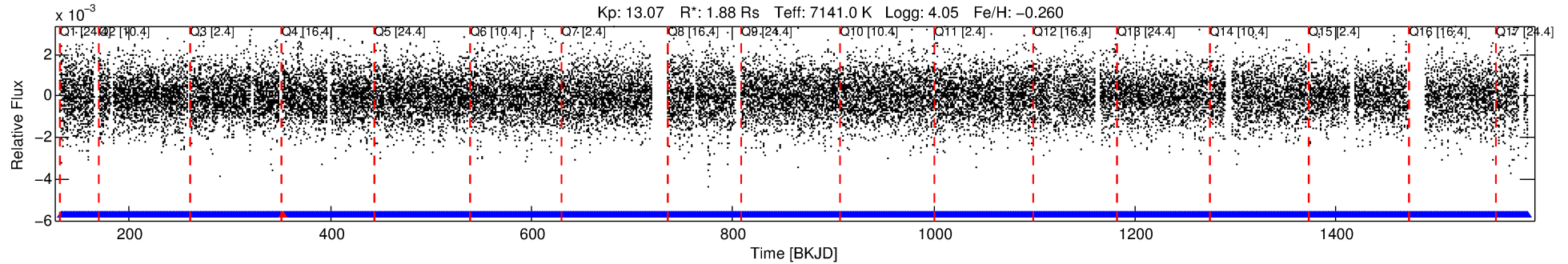
Ephemeris Match Information For 008396062-03

No Significant Match Found



# DV One-Page Summary

KIC: 8396062 Candidate: 3 of 3 Period: 0.816 d



## TPS TCE Results:

Period = 0.81614 d  
Epoch = 132.1216 BKJD

DV fit results are unavailable

## DV Diagnostic Results:

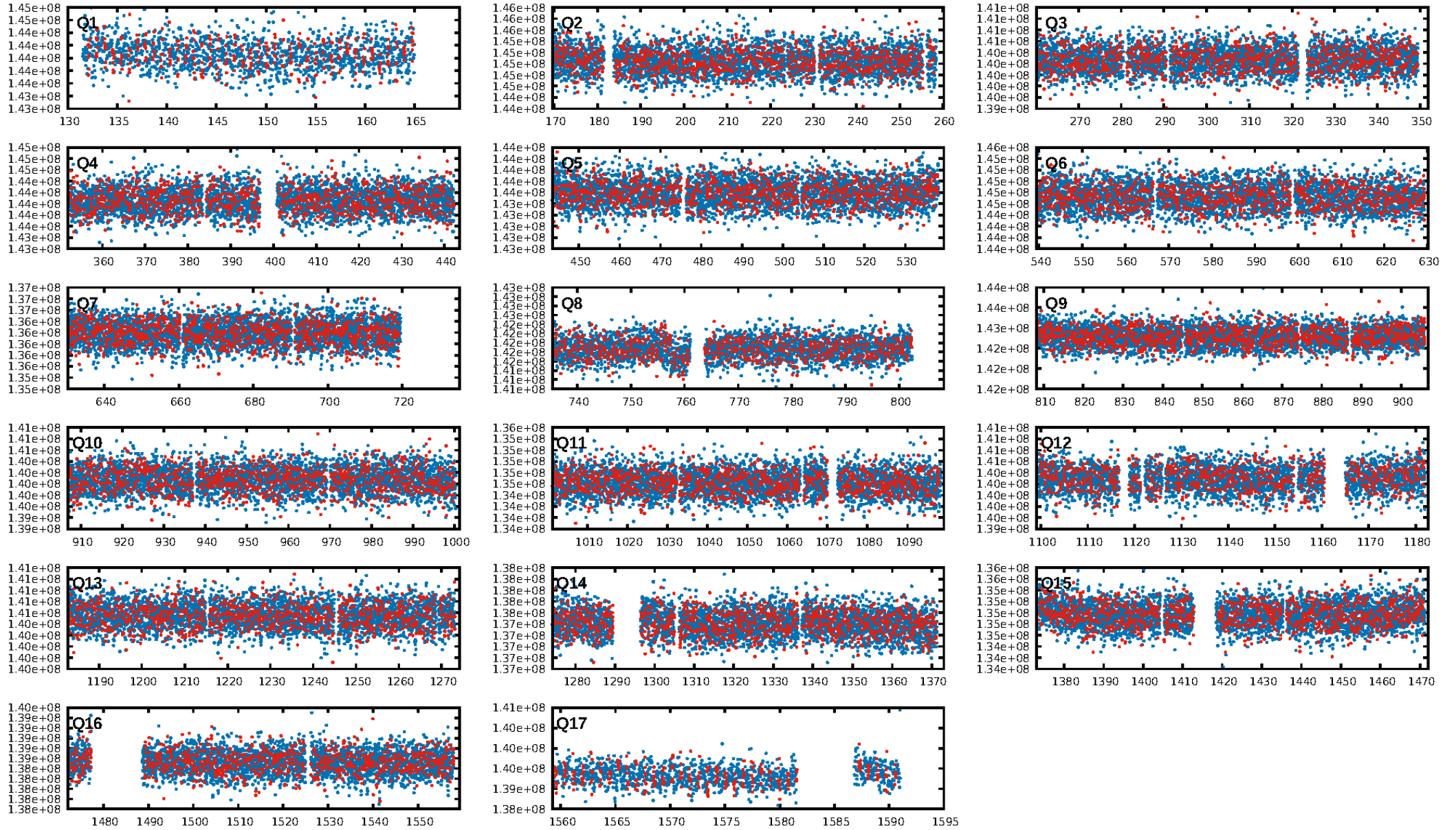
ShortPeriod-sig: 72.2% [1.08 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1297/1298]  
GhostDiagnostic-chr: 1.61

Centroid-sig: 0.0%  
Centroid-so: 1.285 arcsec [3.29 $\sigma$ ]  
OotOffset-rm: 2.314 arcsec [2.16 $\sigma$ ]  
KicOffset-rm: 2.154 arcsec [2.38 $\sigma$ ]  
OotOffset-st: 3/2/2/4 [11]  
KicOffset-st: 3/2/2/4 [11]  
DiffImageQuality-fgm: 0.36 [4/11]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:46:22 Z

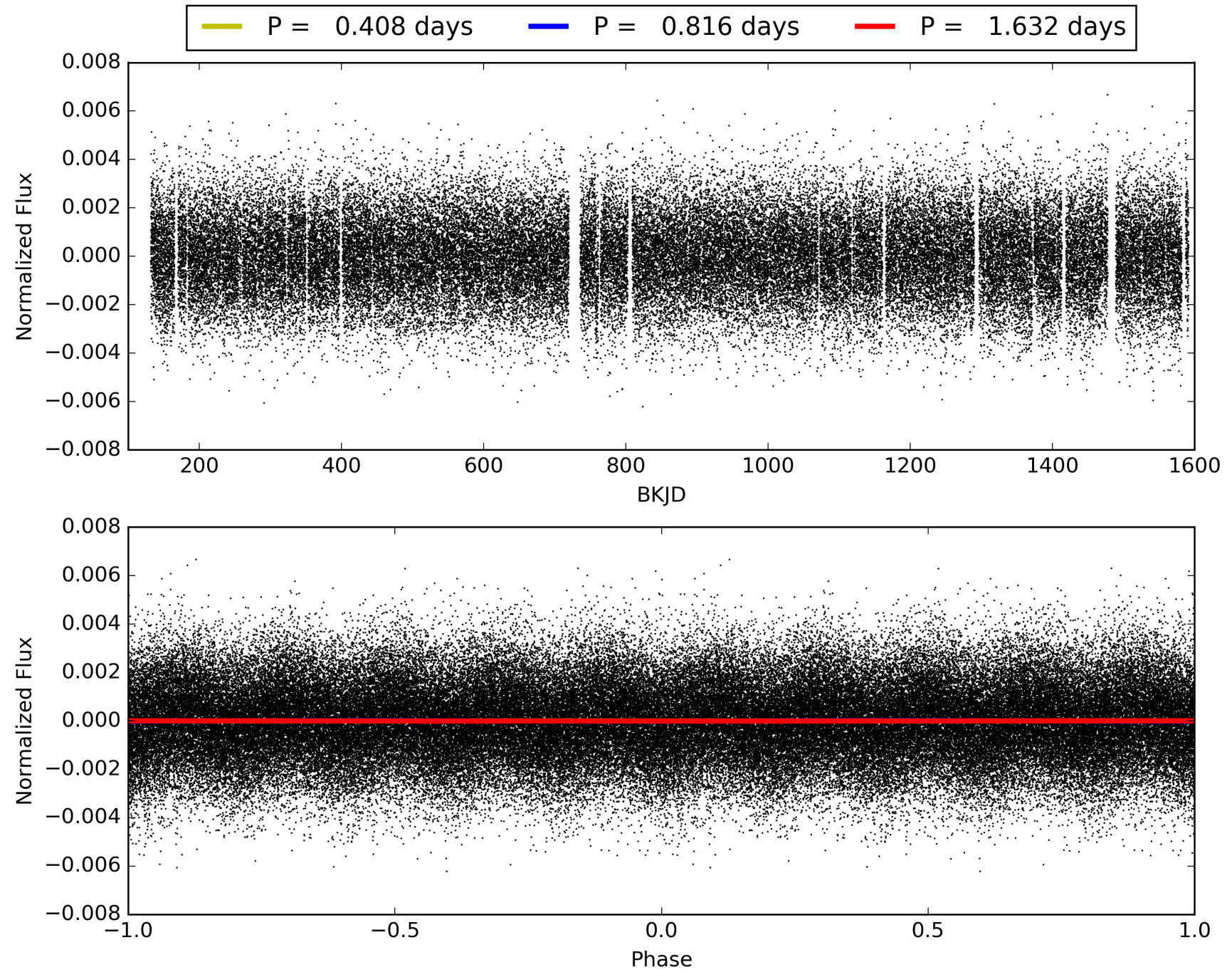
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008396062-03, PDC Light Curves



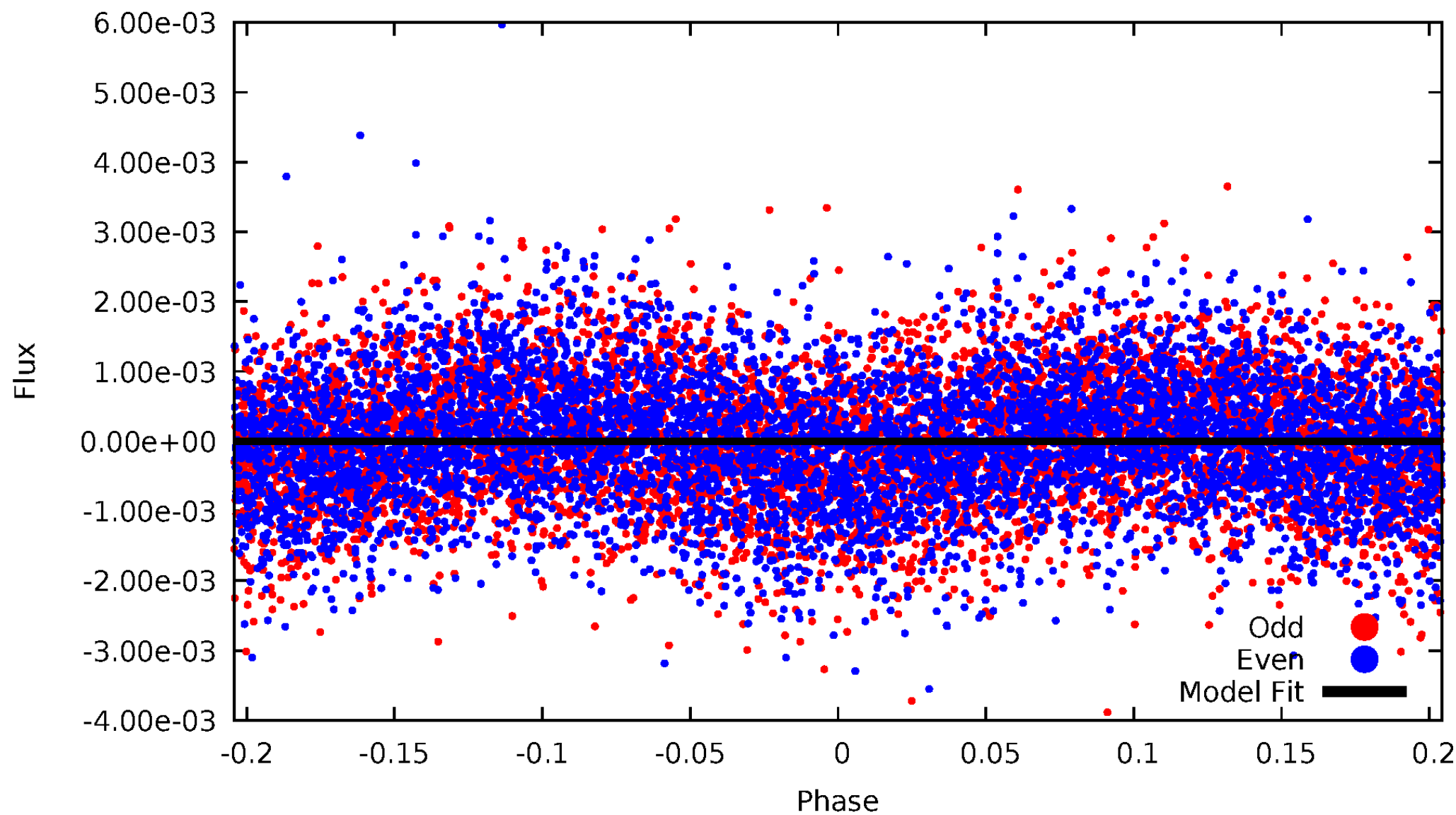


# TCE 008396062-03



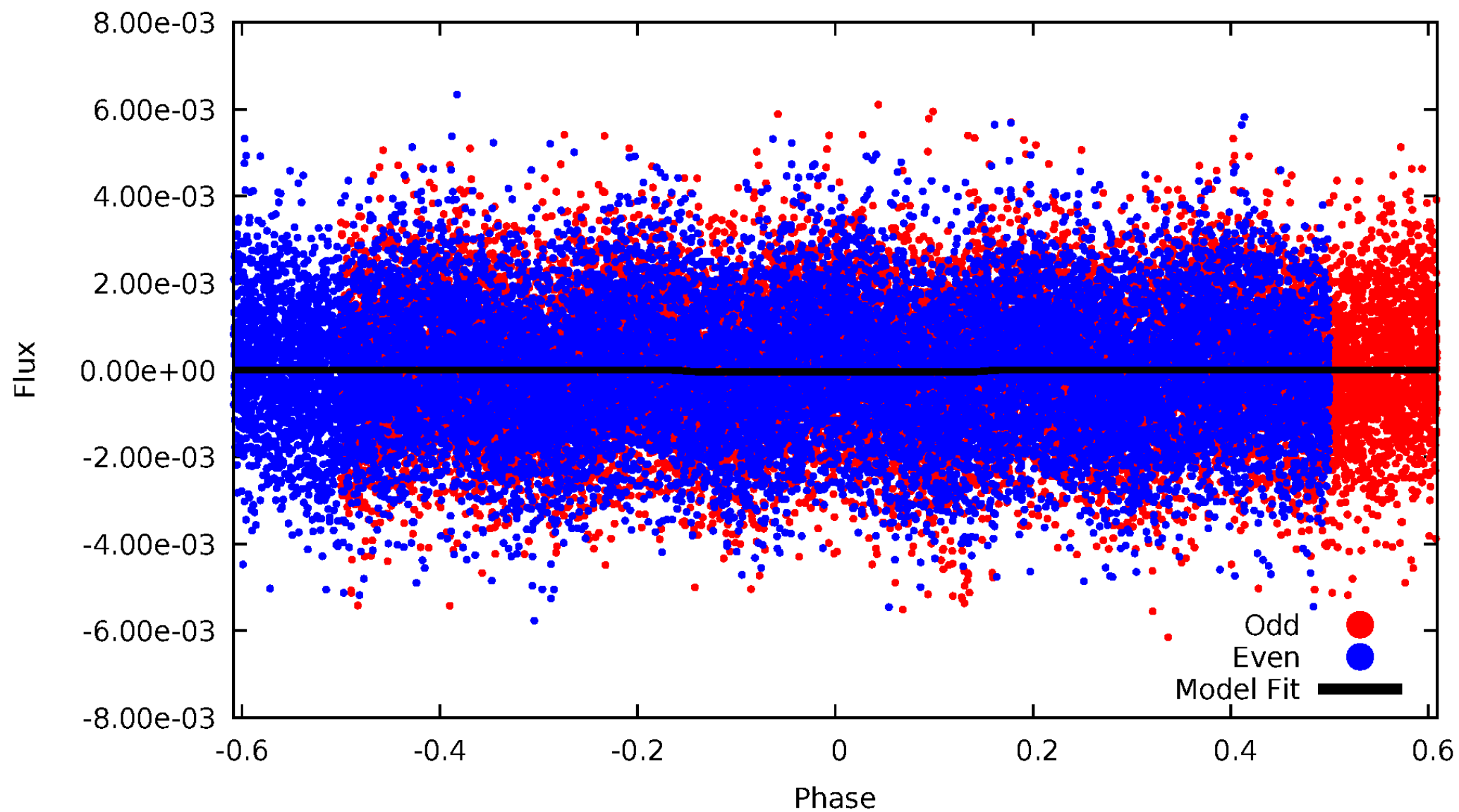
# DV Odd/Even

TCE 008396062-03



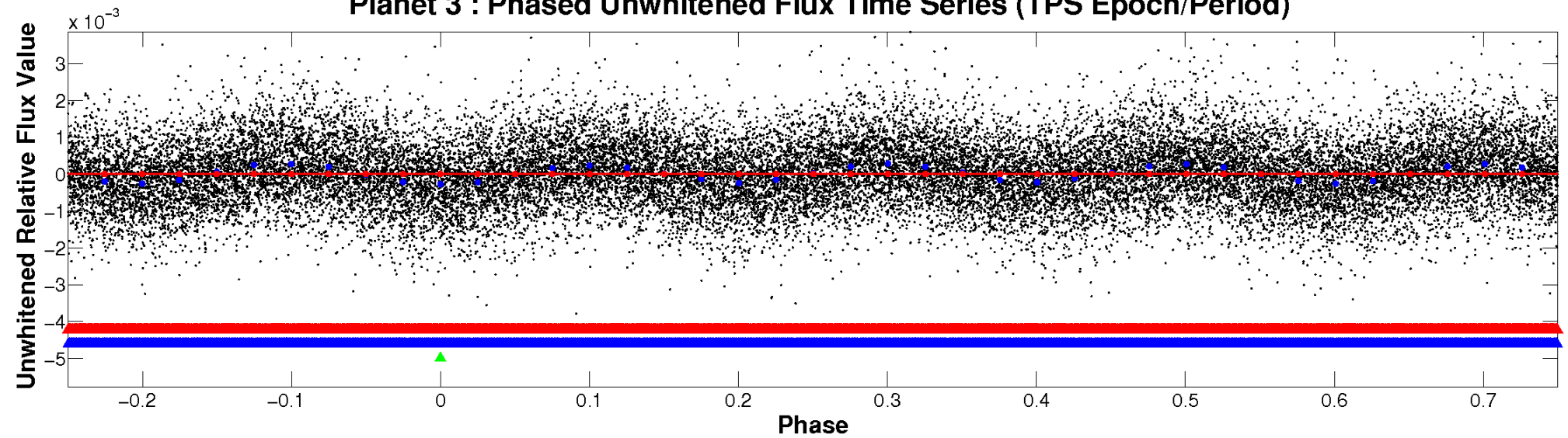
# ALT Odd/Even

TCE 008396062-03

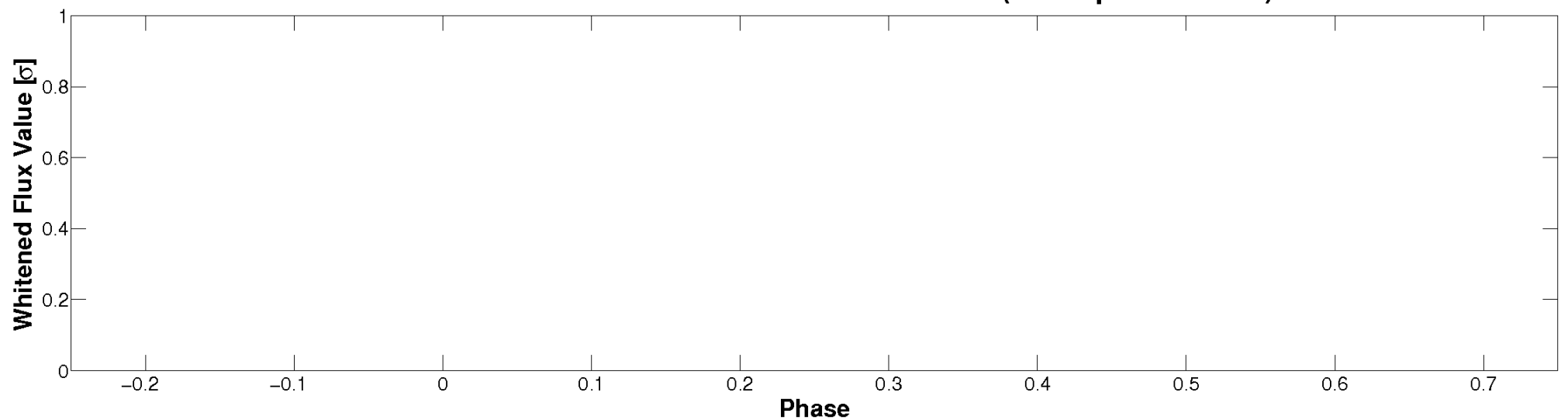


# Non-Whitened Vs. Whitened Light Curve

**Planet 3 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**



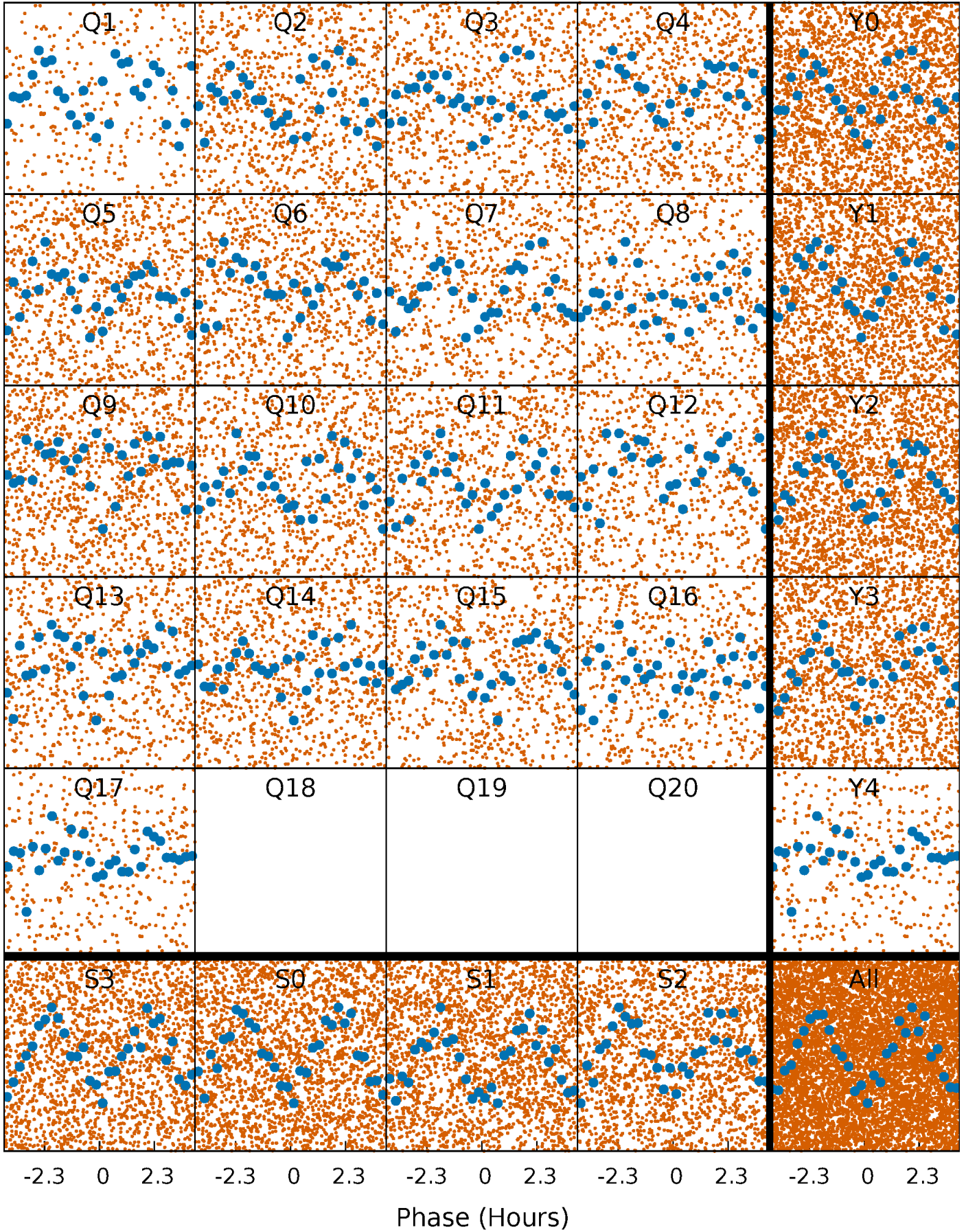
**Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)**





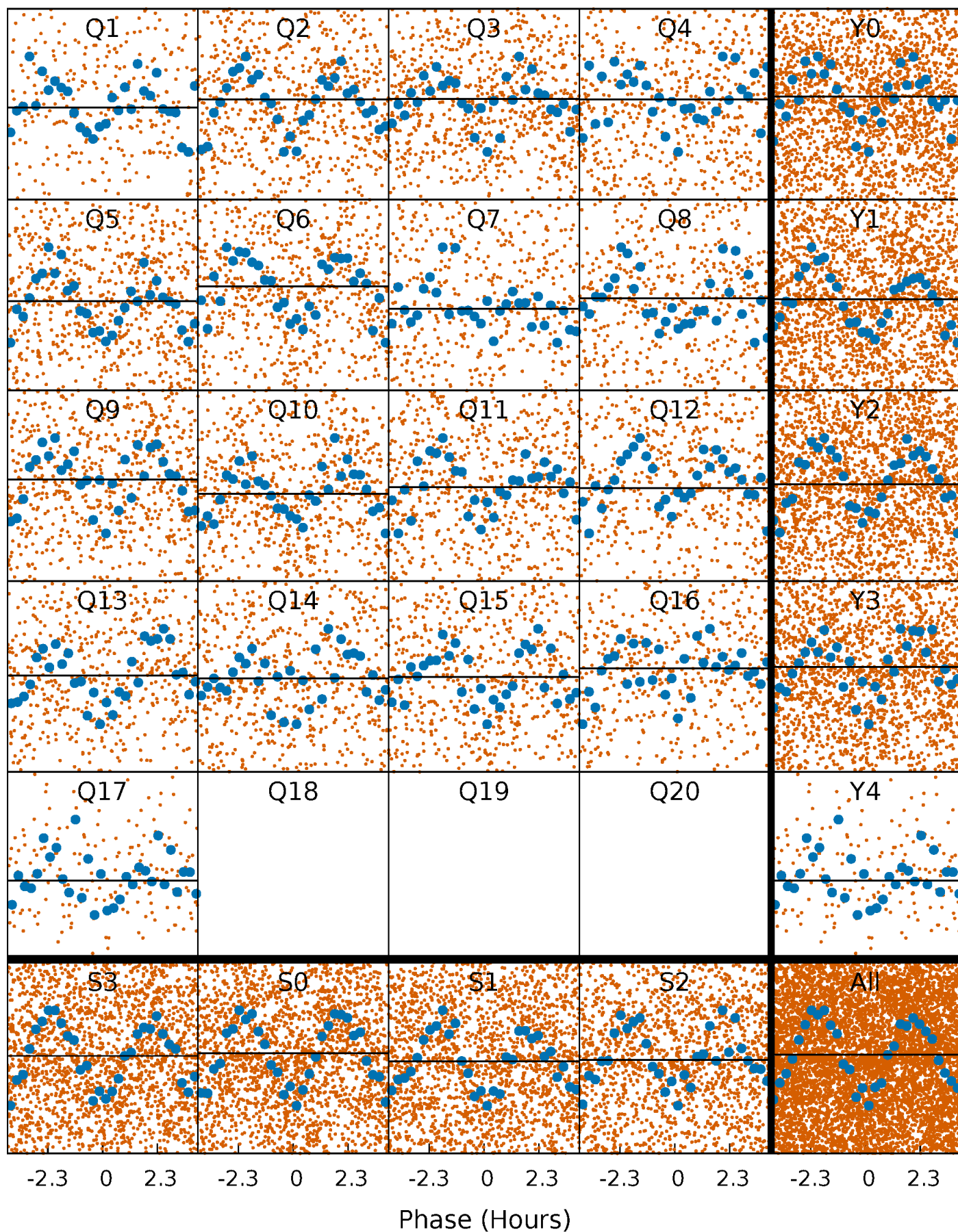
# PDC Quarter-Phased Transit Curves

TCE 008396062-03   P= 0.816141 Days    $T_0=132.121611$  (BKJD)



# DV Quarter-Phased Transit Curves

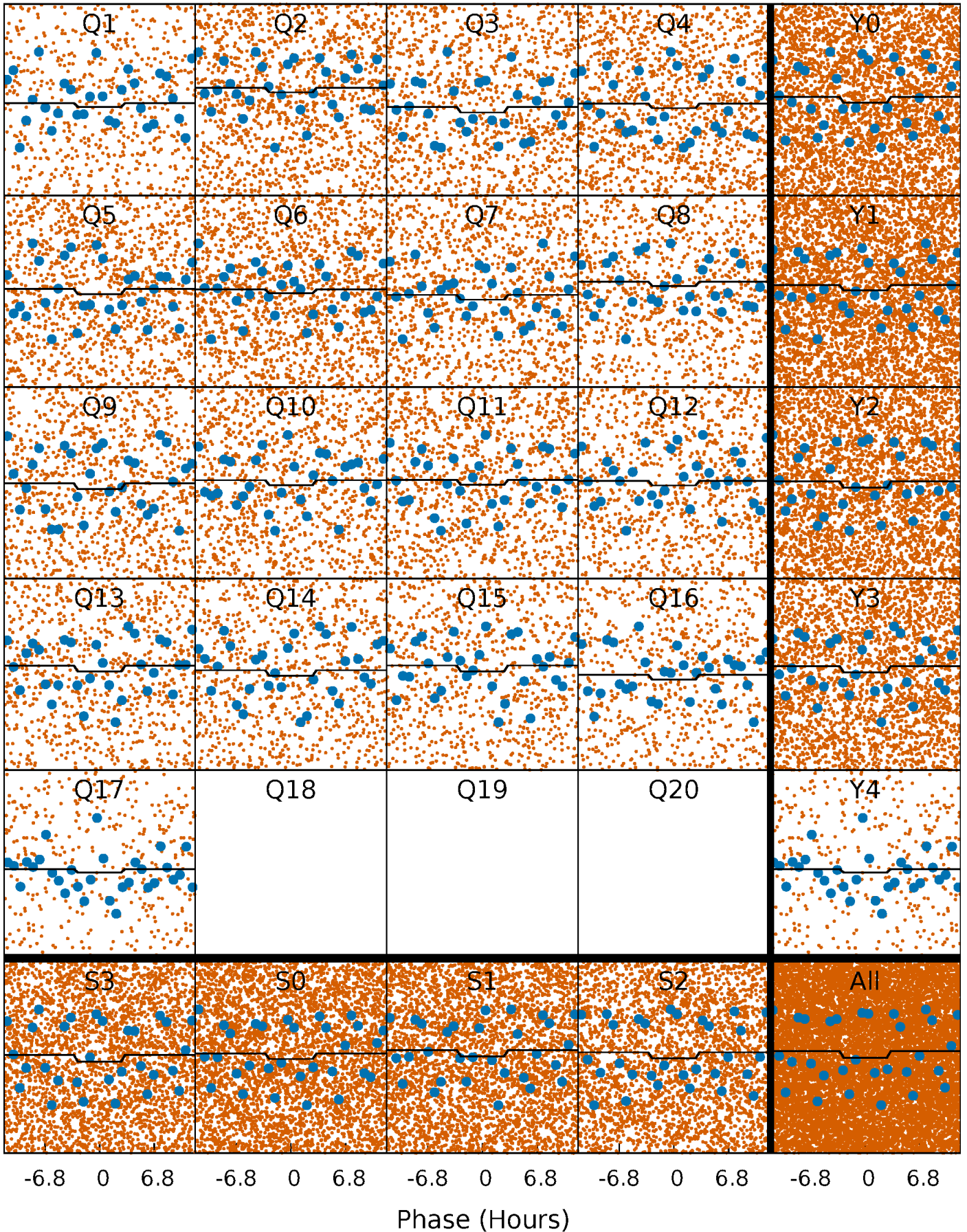
TCE 008396062-03 P= 0.816141 Days  $T_0=132.121611$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

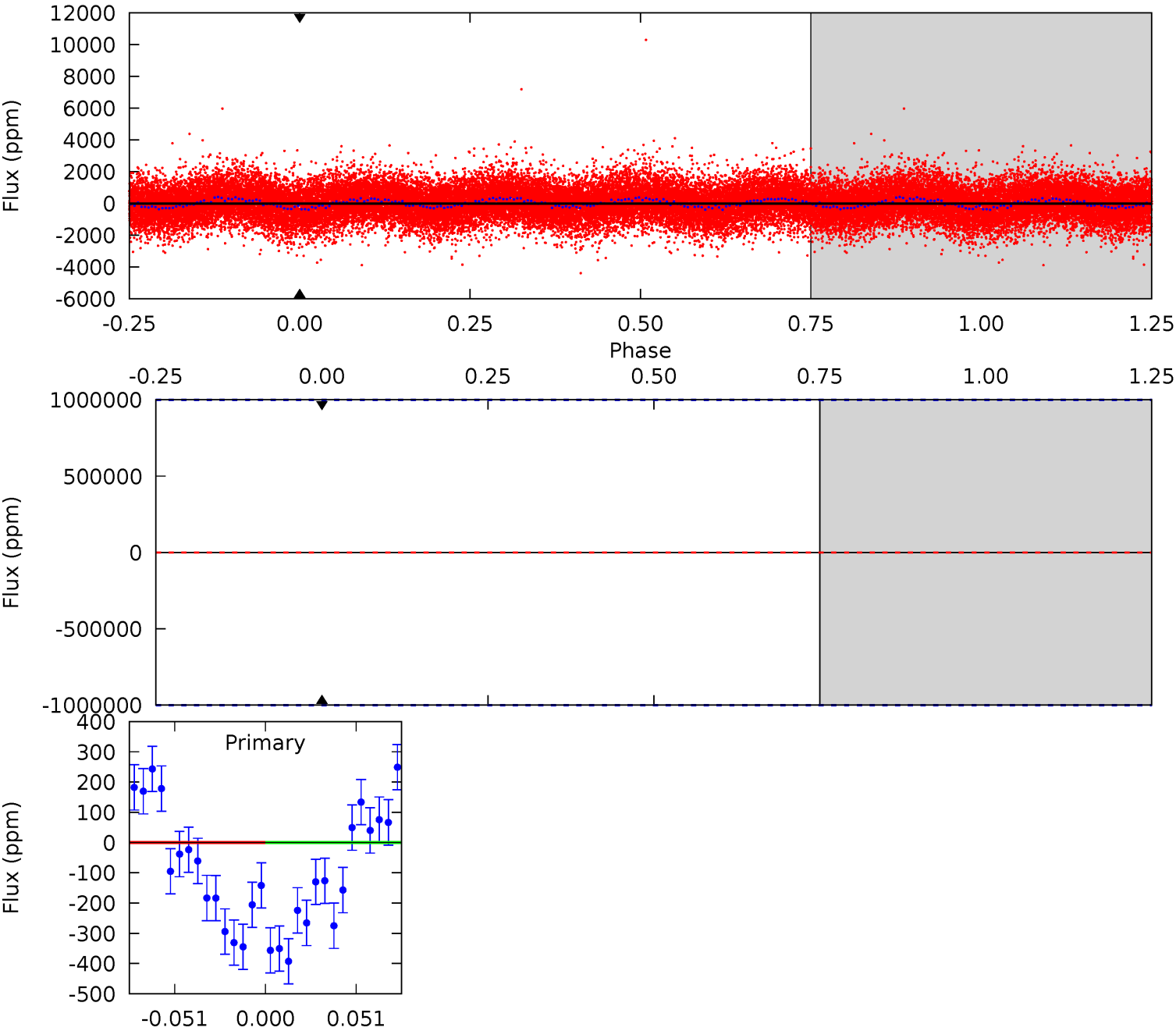
TCE 008396062-03 P= 0.816141 Days  $T_0=132.041207$  (BKJD)



# DV Model-Shift Uniqueness Test

008396062-03, P = 0.816141 Days, E = 131.305470 Days

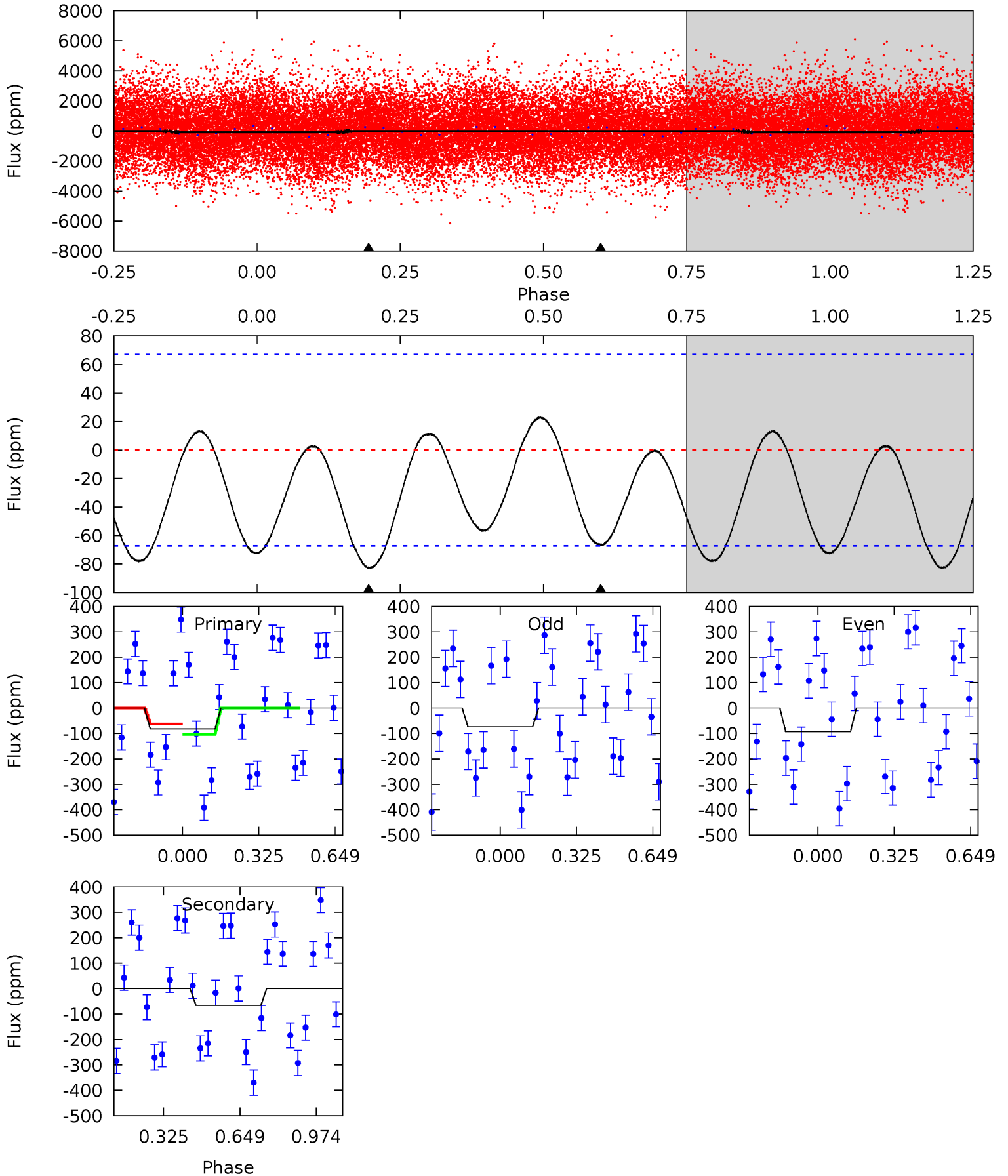
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

008396062-03, P = 0.816141 Days, E = 131.225066 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
5.30	4.27	0	0	4.31	0.98	0.87	5.30	5.30	4.27	4.27	0.62	1.61	0.22	1.33



### Stellar Parameters For KIC 008396062

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7141^{+199}_{-299}$	$4.050^{+0.234}_{-0.156}$	$-0.260^{+0.300}_{-0.300}$	$1.878^{+0.548}_{-0.493}$	$1.441^{+0.218}_{-0.267}$	$0.307^{+0.381}_{-0.148}$
	+3%/-4%	+6%/-4%	+115%/-115%	+29%/-26%	+15%/-19%	+124%/-48%
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 008396062-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$14.13^{+15.12}_{-9.75}$	$4272^{+346}_{-357}$	$4740^{+38289}_{-37261}$	$1.146^{+218.999}_{-167.645}$
Alt.	$-67 \pm 16$	$13.39^{+16.47}_{-9.18}$	$4289^{+327}_{-328}$	$-3572^{+7601}_{-350}$	$0.076^{+0.704}_{-0.061}$

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



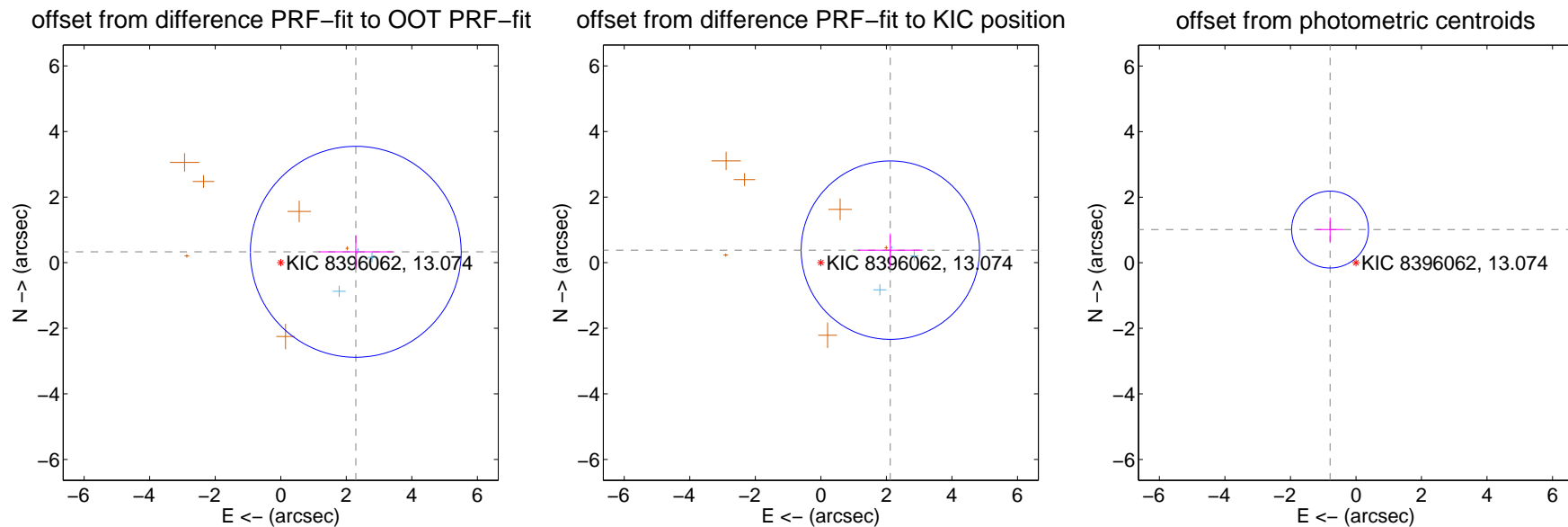
## DV Centroid Data

Supplemental centroid analysis for 008396062-03. Kepler magnitude: 13.07. Transit SNR -1.00

There are 4 quarters with good PRF difference image offsets

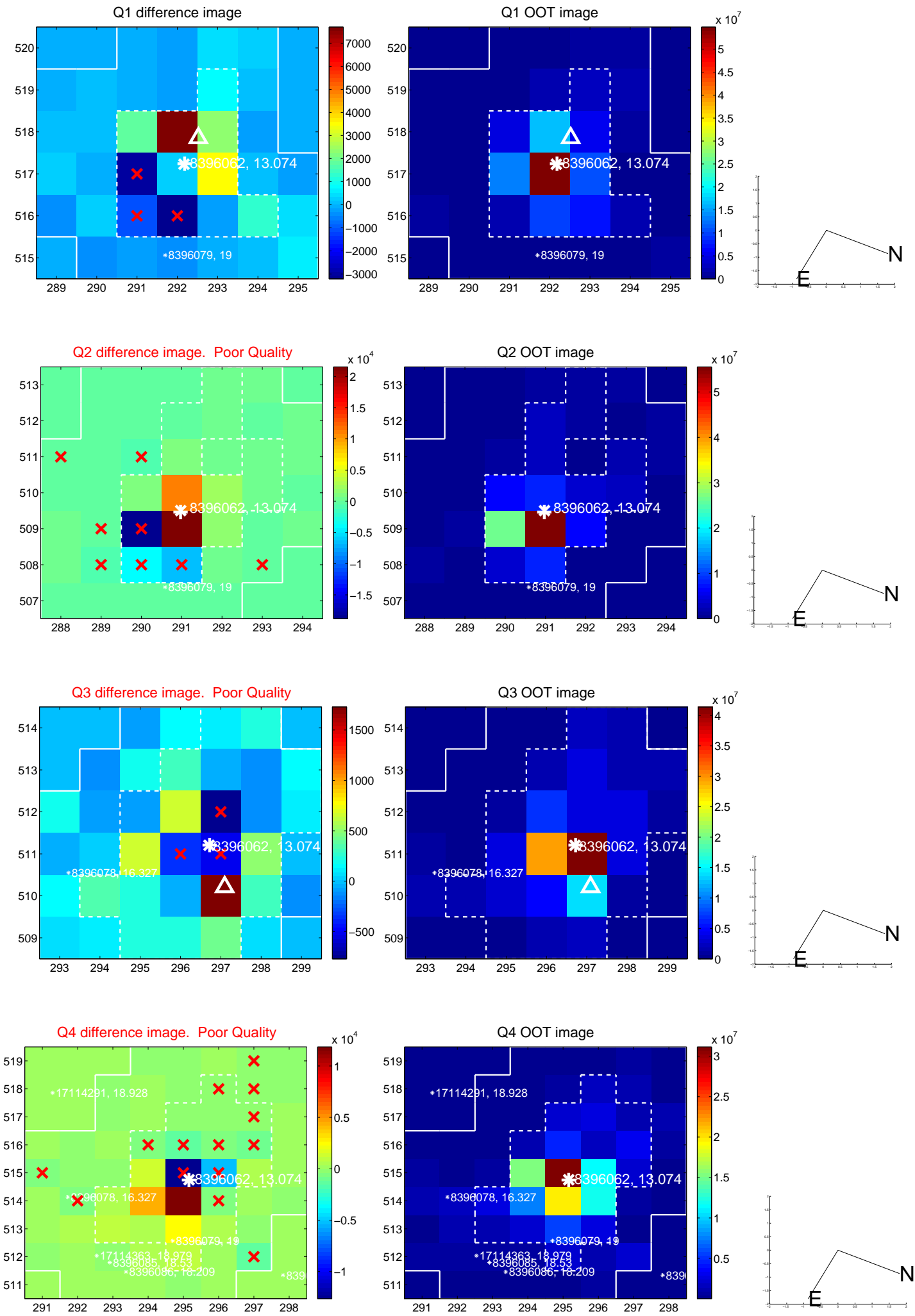
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.314 \pm 1.072$	2.16	$-2.290 \pm 1.133$	$0.332 \pm 0.504$
PRF-fit source offset from KIC position	$2.154 \pm 0.907$	2.38	$-2.119 \pm 0.985$	$0.382 \pm 0.509$
photometric centroid source offset	$1.28 \pm 0.39$	3.29	$0.79 \pm 0.42$	$1.01 \pm 0.37$

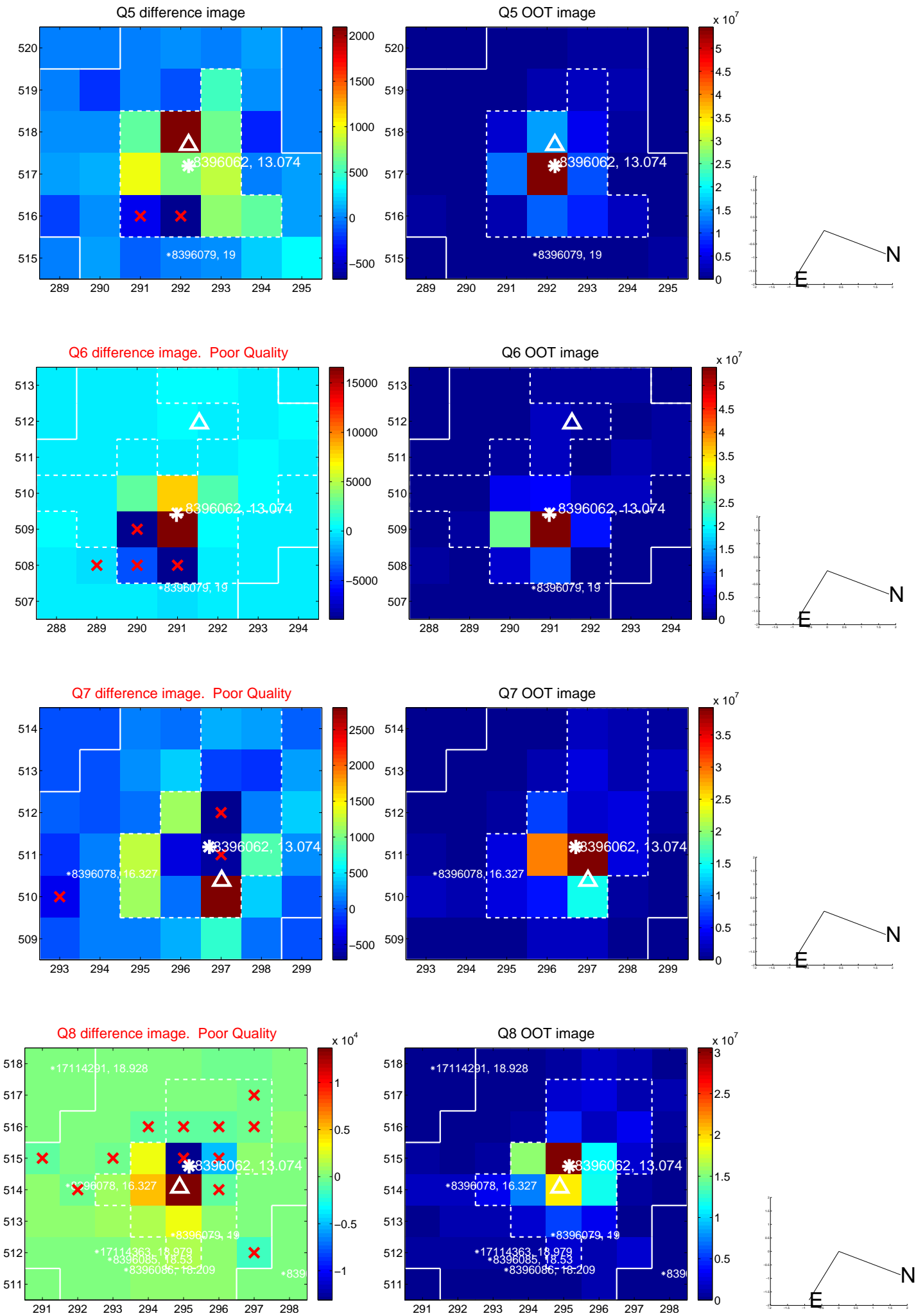


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

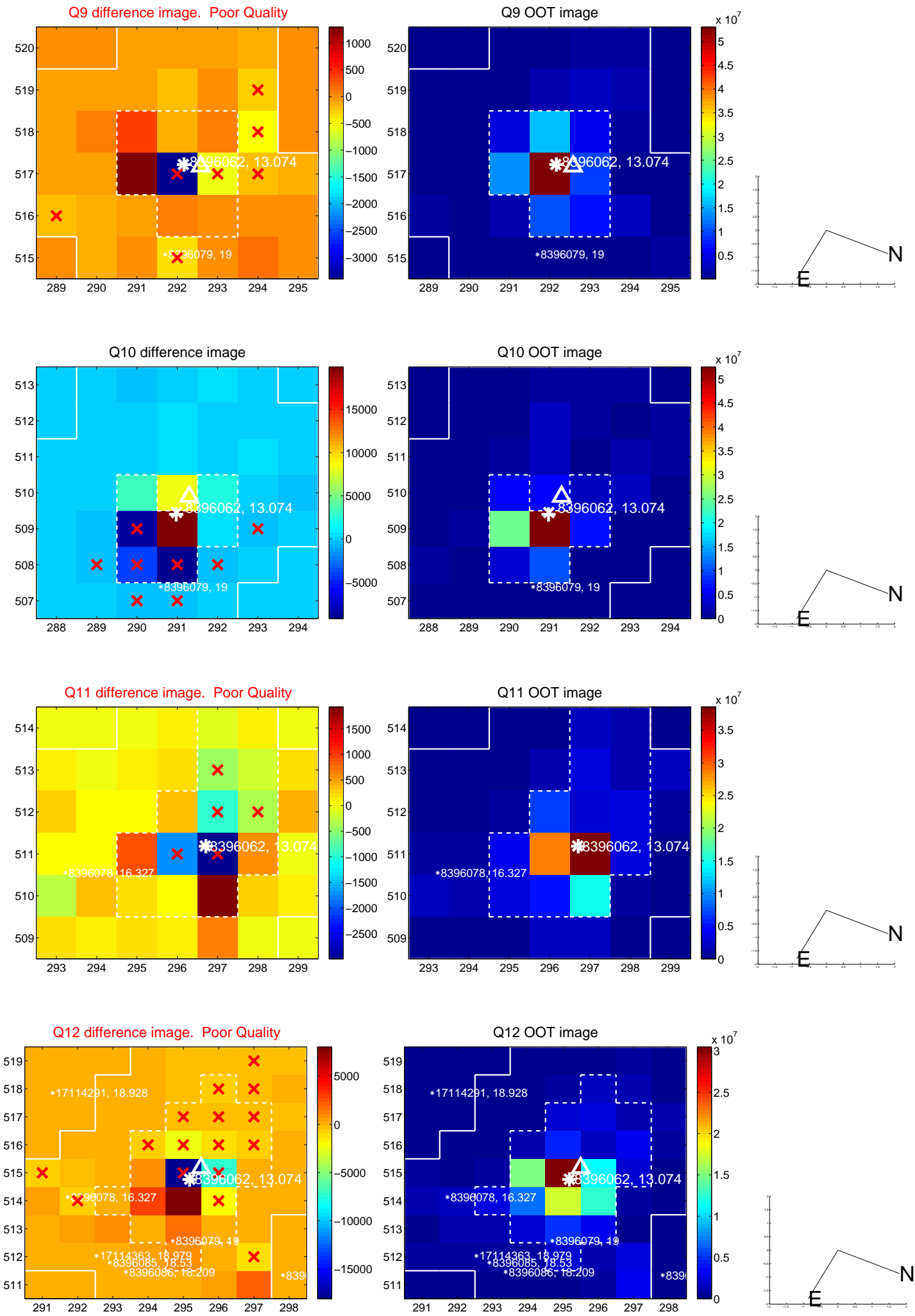
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



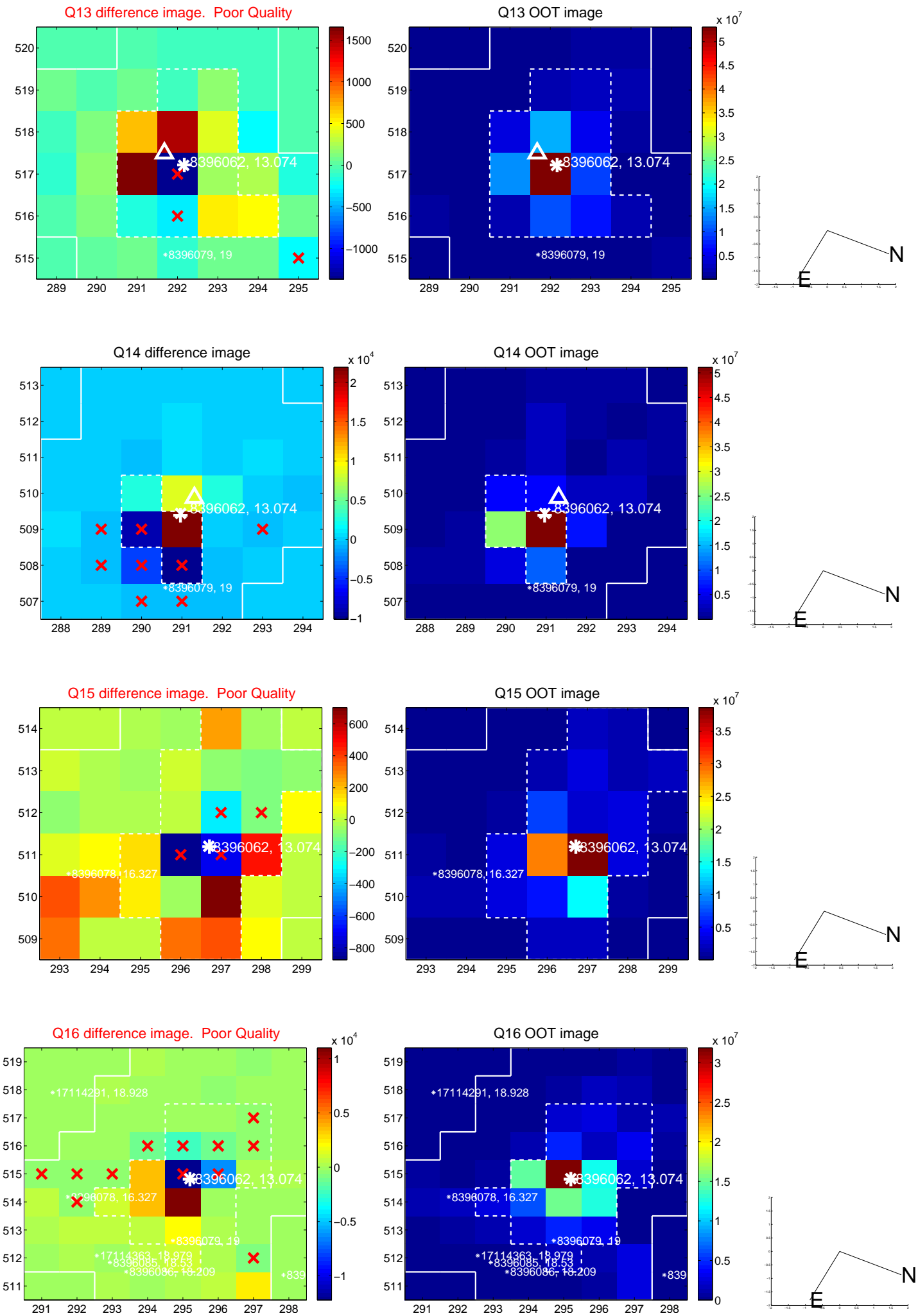
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

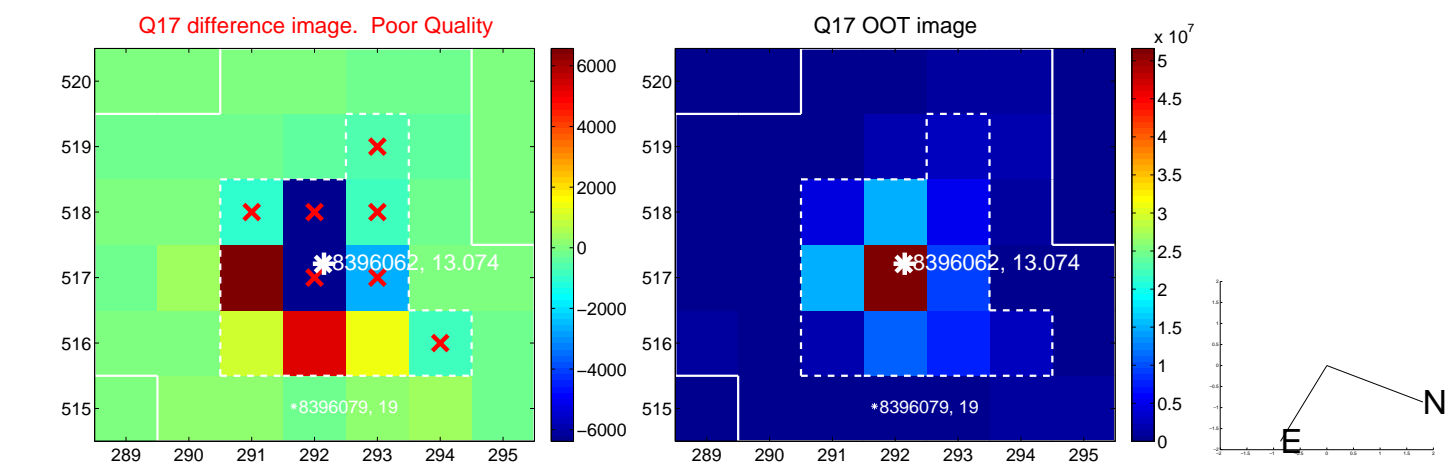


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

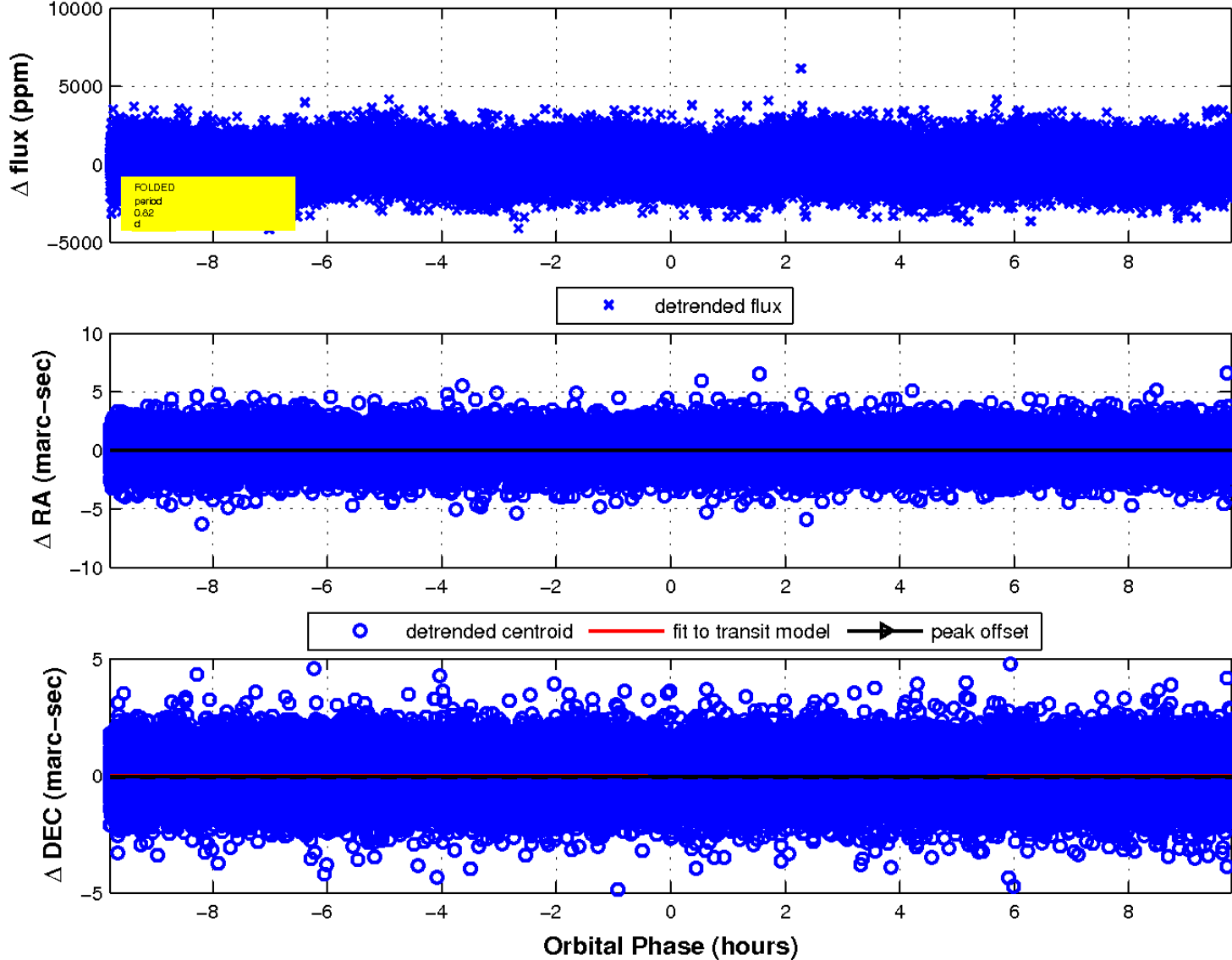




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

