

# KIC 008043882

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008043882-01	OBS	6169.01	0.779569	131.707460	63.5	5.170	12.7	14.2	1.07	5899	0.85	4582.73
008043882-02	OBS	No	34.936320	131.979432	393.7	3.256	10.2	5.3	1.07	5899	2.34	28.79
008043882-03	OBS	No	101.382013	215.345901	921.6	6.571	9.2	8.1	1.07	5899	3.55	6.96

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008043882-01	OBS	FP	0.00	0	0	1	1	CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
008043882-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008043882-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST

**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.

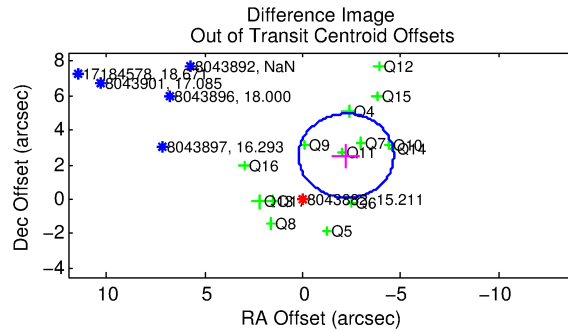
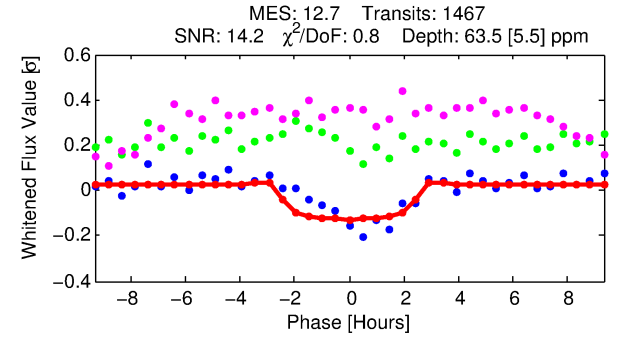
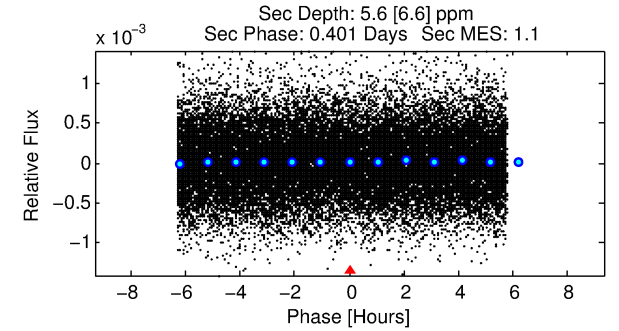
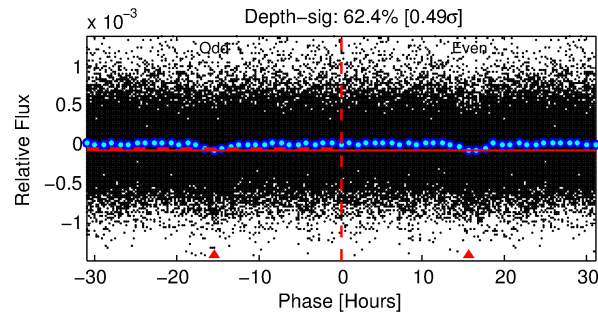
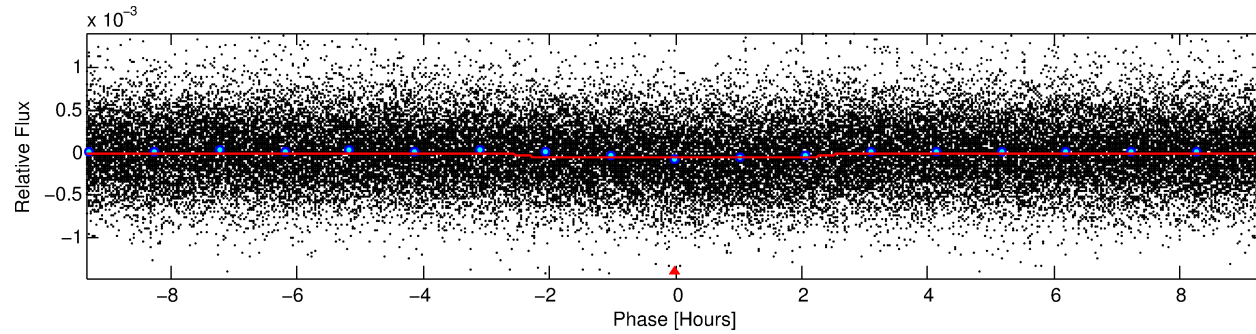
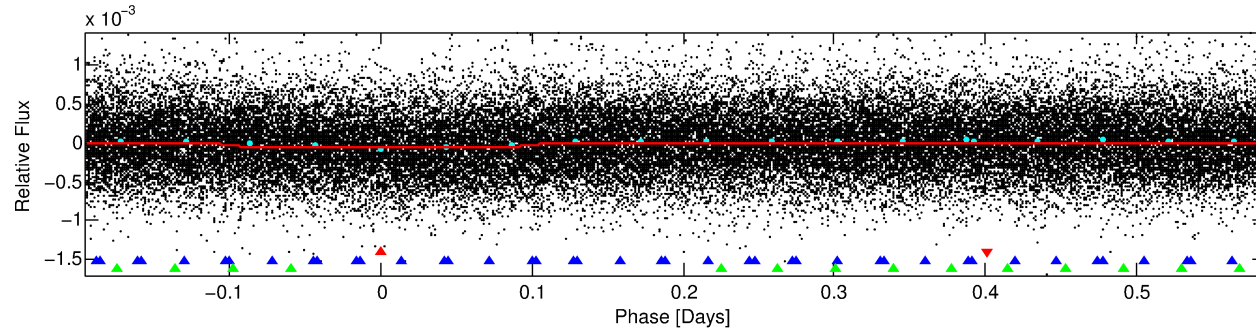
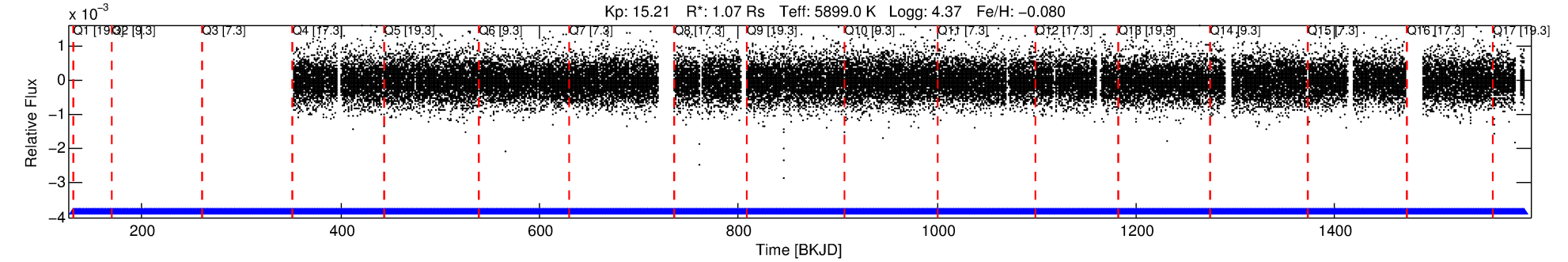
## Ephemeris Match Information For 008043882-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
008043882-01	8043882	5469.01	8043968	1:1	60.1	15	-2	15.29	15.21	1.30	Direct-PRF	1	2.26	0.02

**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 8043882 Candidate: 1 of 3 Period: 0.780 d  
KOI: K06169.01 Corr: 0.863



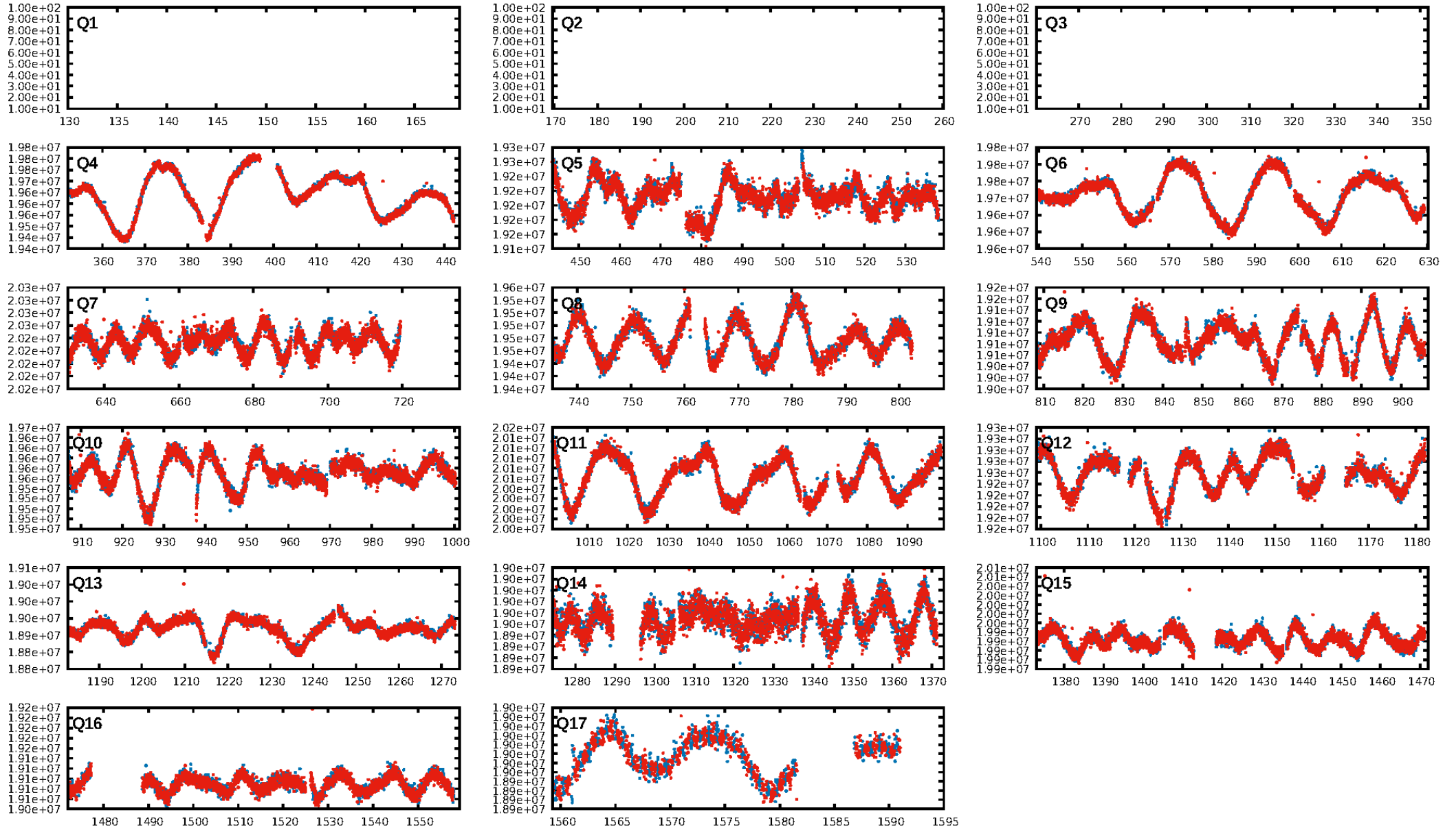
## DV Fit Results:

Period = 0.77957 [0.00001] d  
Epoch = 131.7075 [0.0035] BKJD  
Rp/R\* = 0.0073 [0.0073]  
a/R\* = 1.31 [2.50]  
b = 0.19 [23.36]  
Seff = 4582.73 [1802.90]  
Teff = 2098 [206] K  
Rp = 0.85 [0.89] Re  
a = 0.0165 [0.0042] AU  
Ag = 1.15 [2.70] [0.06 $\sigma$ ]  
Teffp = 3359 [1951] K [0.64 $\sigma$ ]

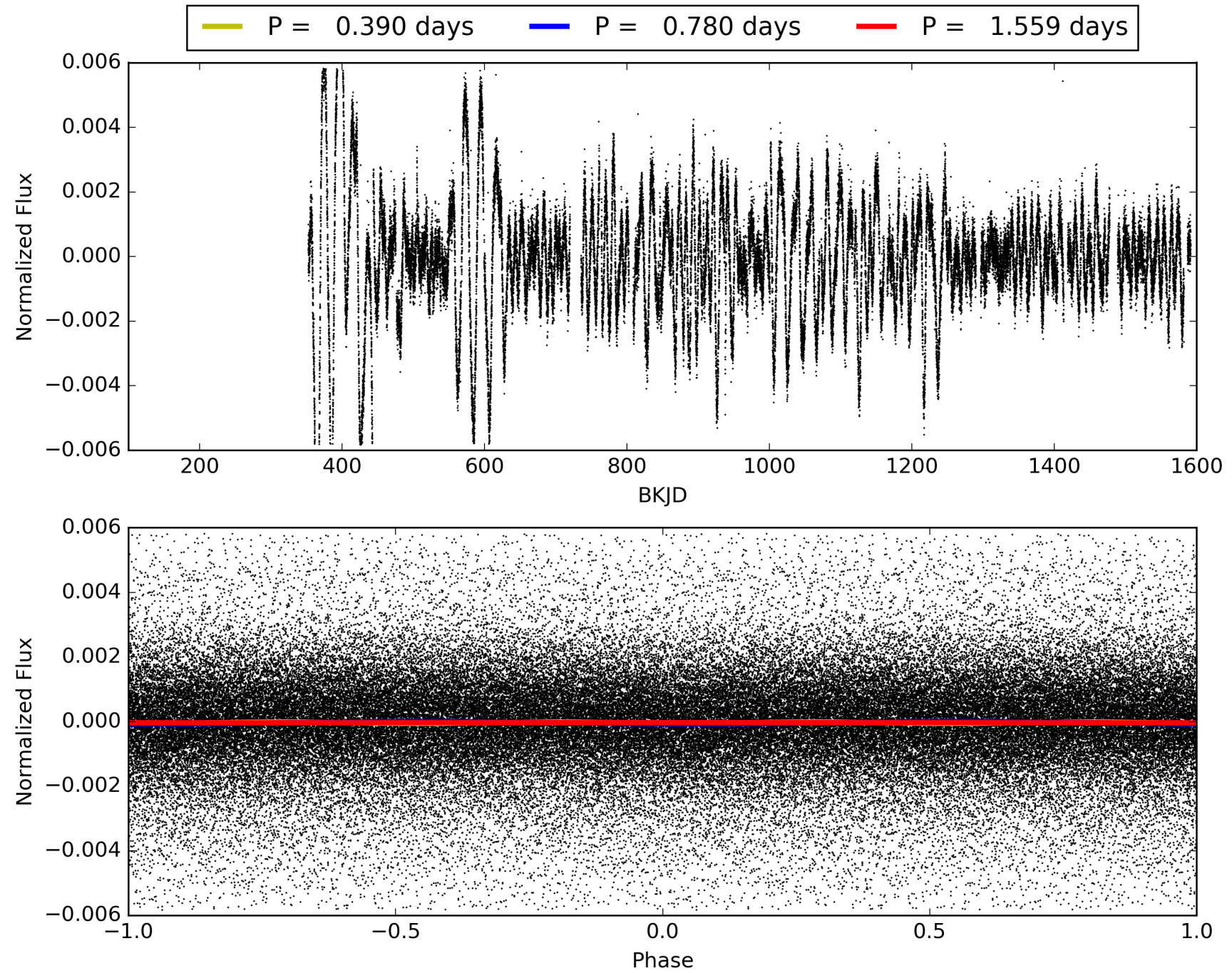
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [134.16 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.48e-28  
RollingBand-fgt: 1.00 [1433/1433]  
GhostDiagnostic-chr: 0.02998  
Centroid-sig: 0.0%  
Centroid-so: 2.474 arcsec [3.61 $\sigma$ ]  
OotOffset-rm: 3.348 arcsec [4.13 $\sigma$ ]  
KicOffset-rm: 3.339 arcsec [4.04 $\sigma$ ]  
OotOffset-st: 3/3/4/4 [14]  
KicOffset-st: 3/3/4/4 [14]  
DiffImageQuality-fgm: 0.14 [2/14]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 008043882-01, PDC Light Curves

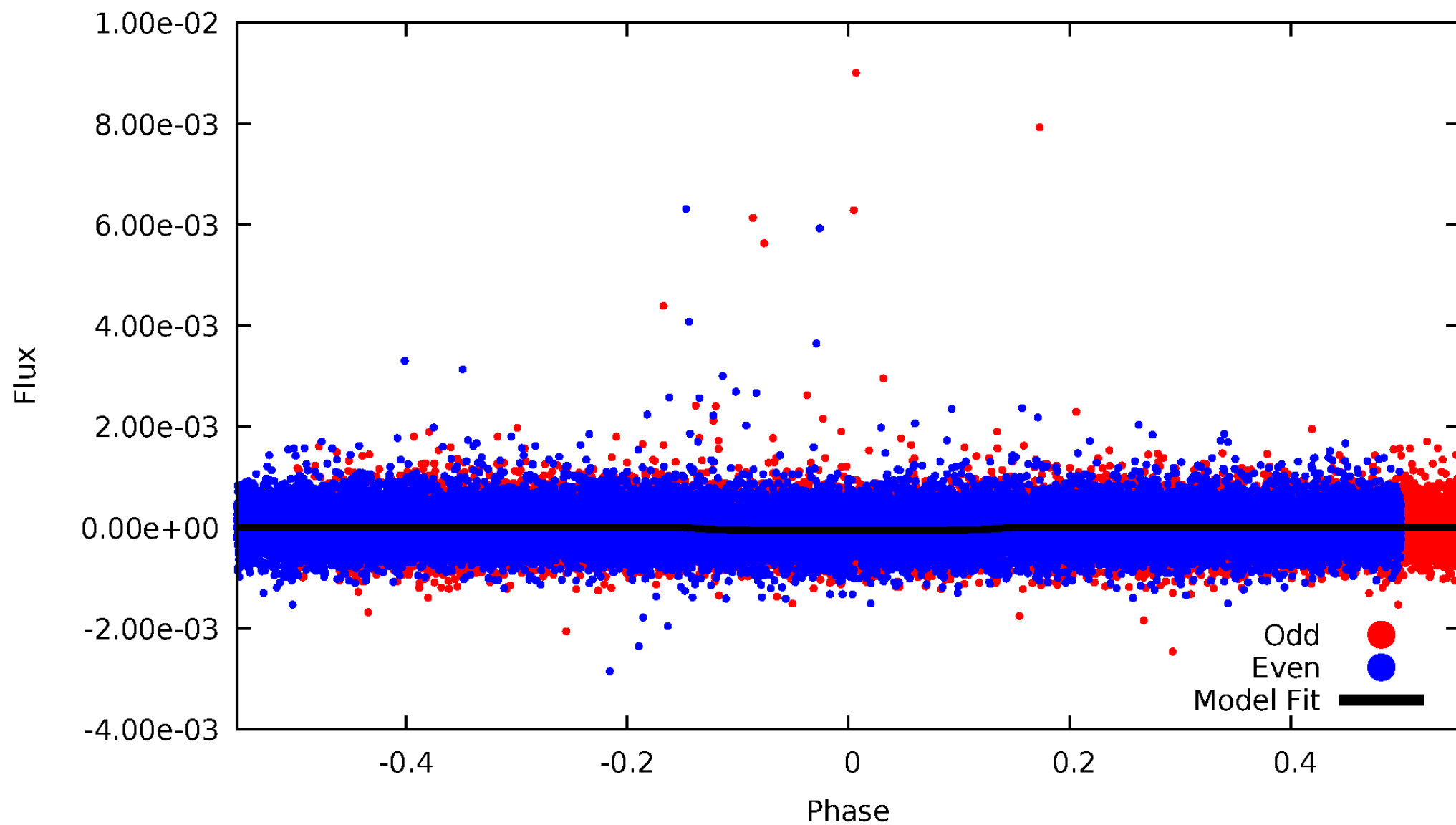


TCE 008043882-01



# DV Odd/Even

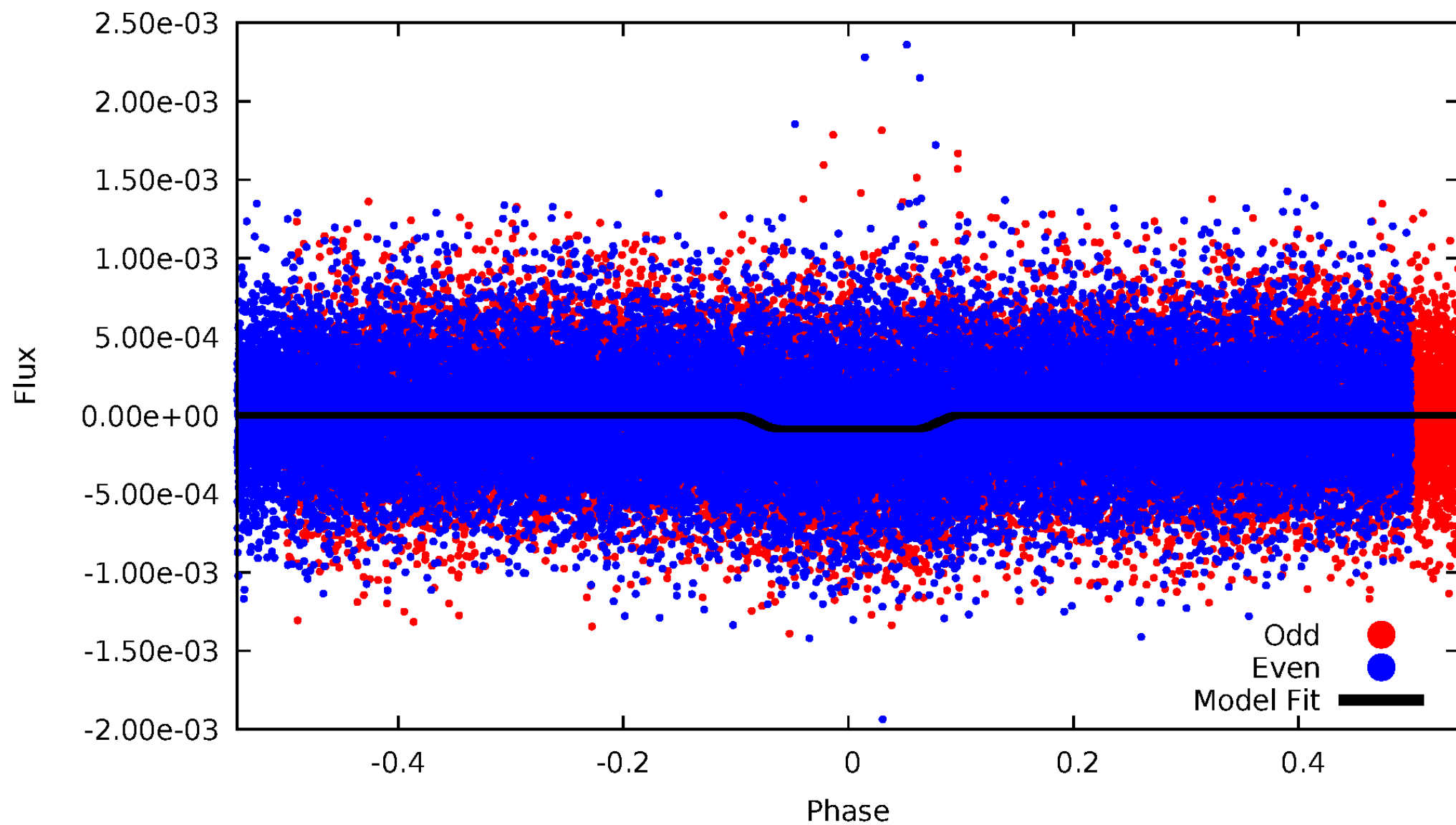
TCE 008043882-01





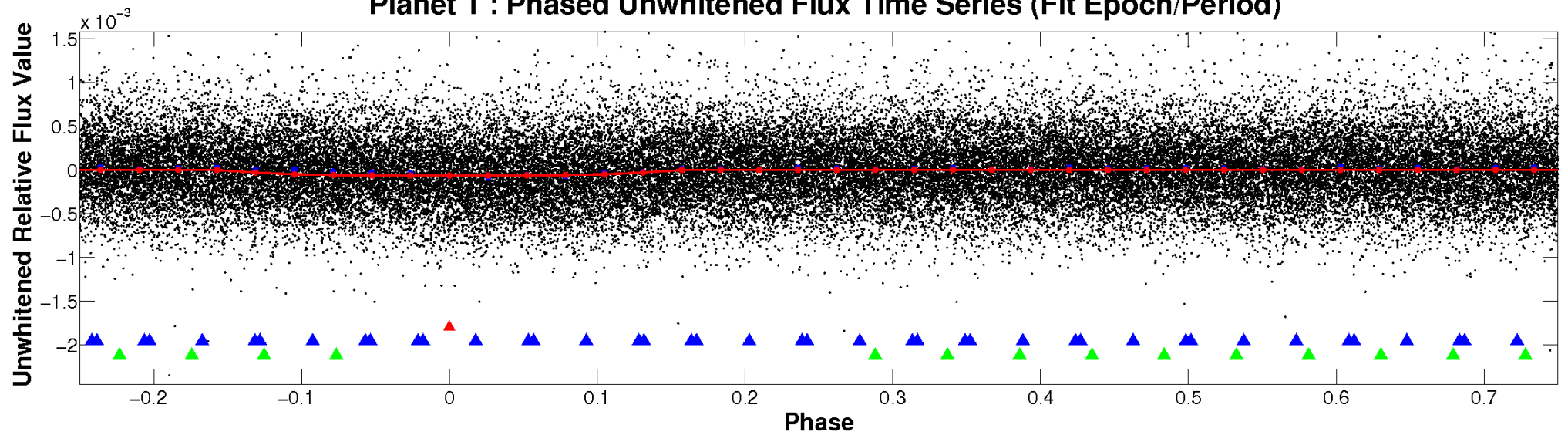
# ALT Odd/Even

TCE 008043882-01

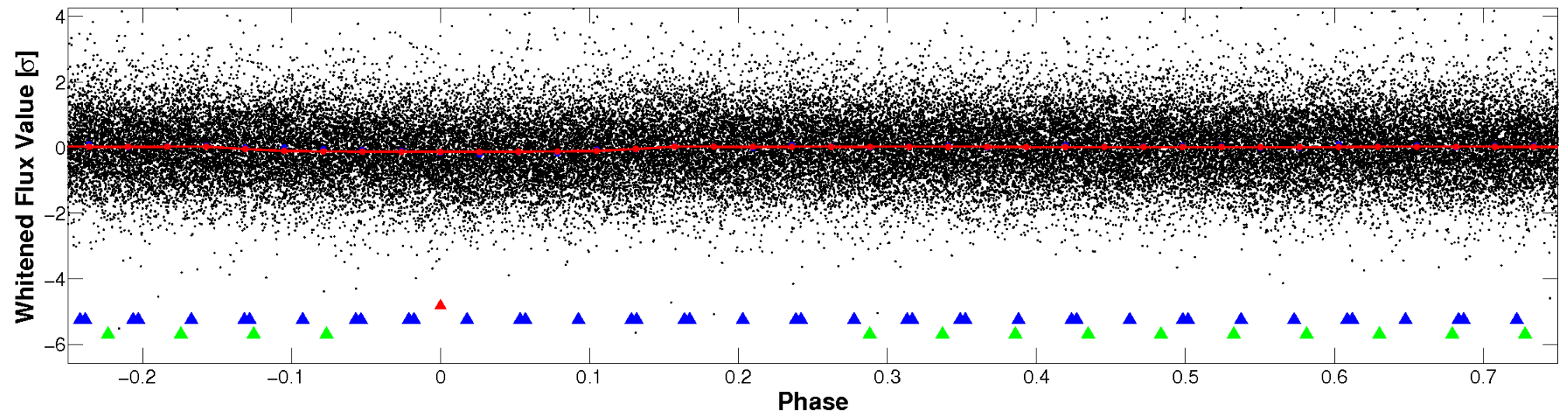


# Non-Whitened Vs. Whitened Light Curve

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

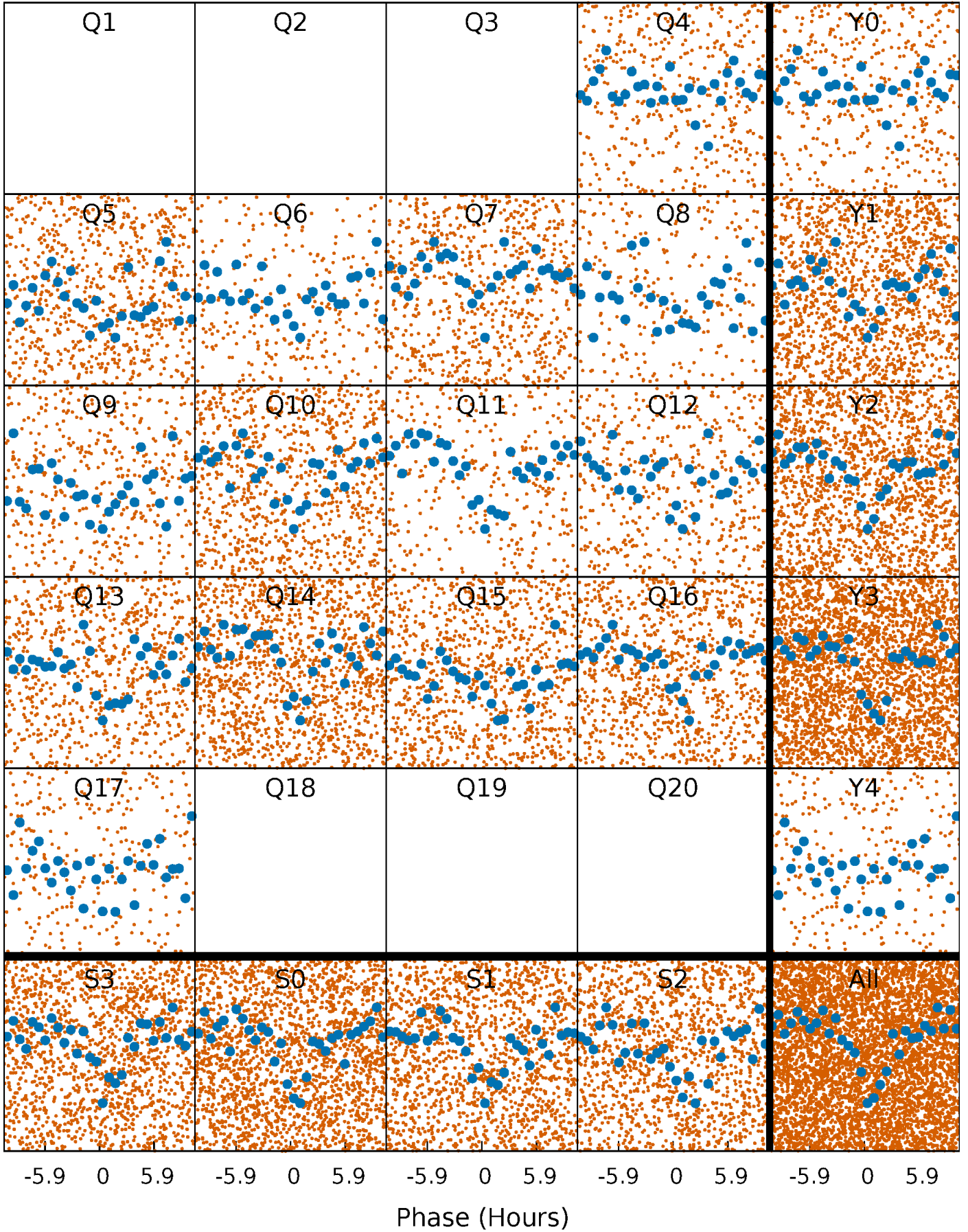


## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

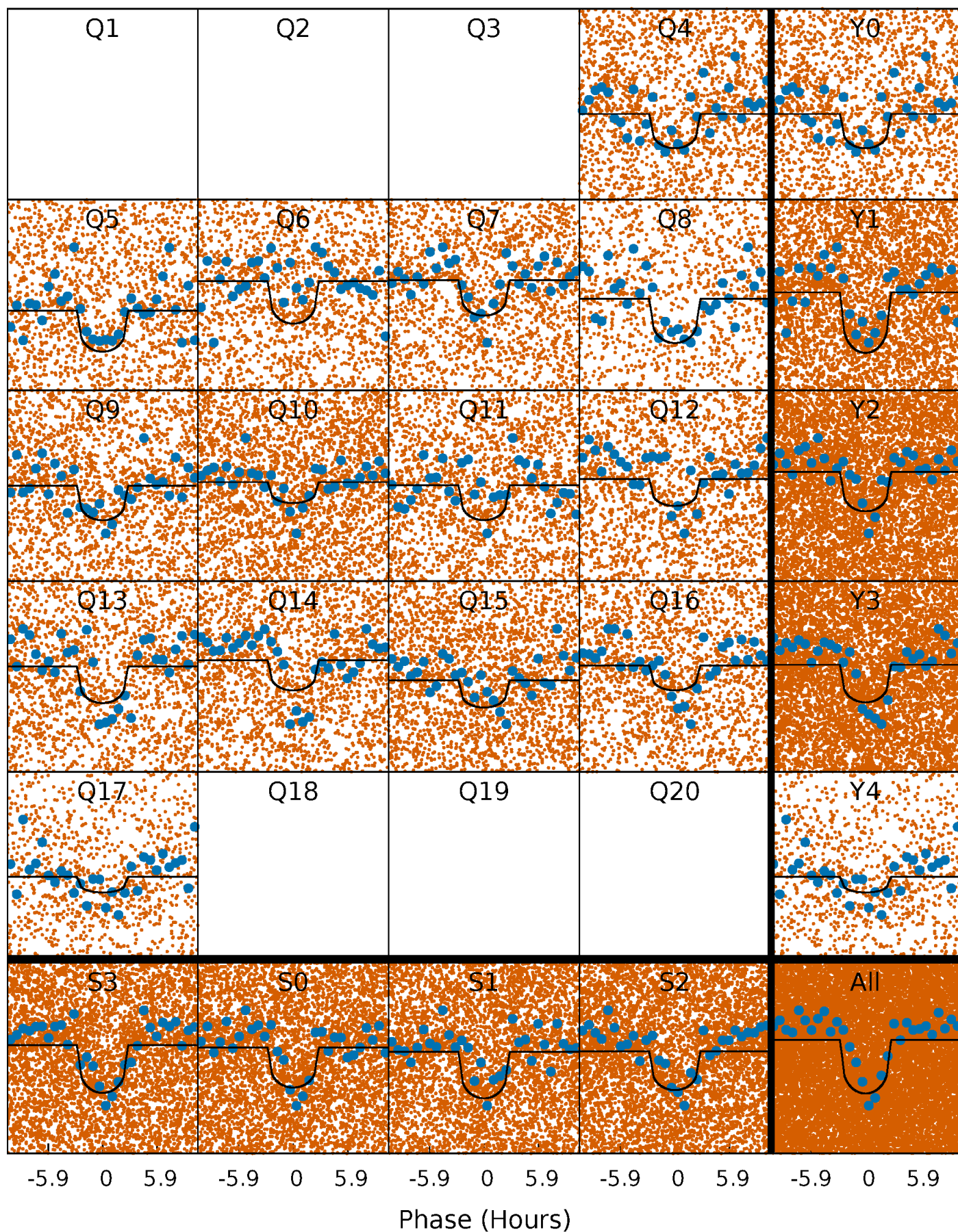
TCE 008043882-01   P= 0.779569 Days    $T_0=131.707459$  (BKJD)





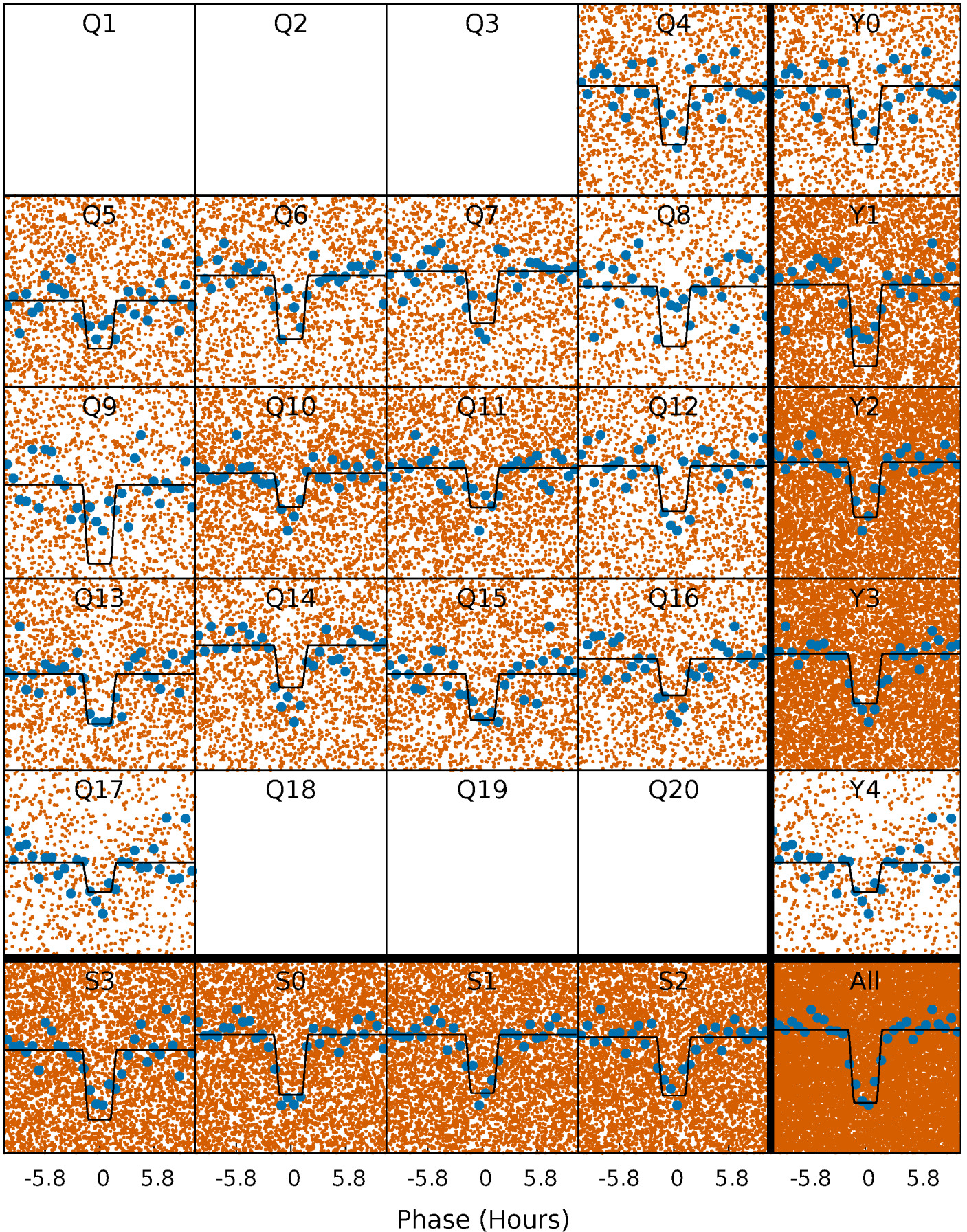
# DV Quarter-Phased Transit Curves

TCE 008043882-01   P= 0.779569 Days    $T_0=131.707459$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 008043882-01   P= 0.779602 Days    $T_0=131.691954$  (BKJD)

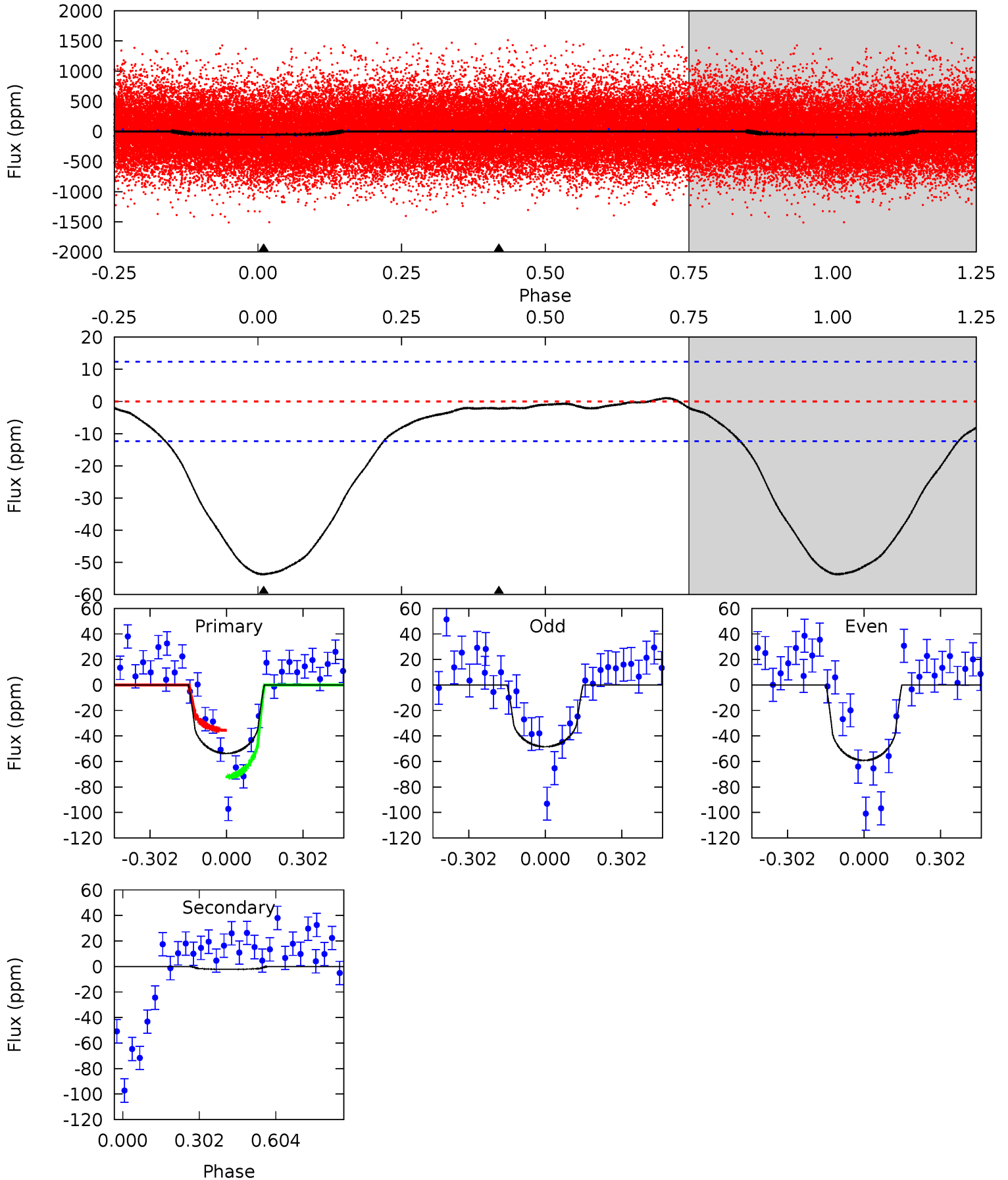




# DV Model-Shift Uniqueness Test

008043882-01, P = 0.779569 Days, E = 131.707459 Days

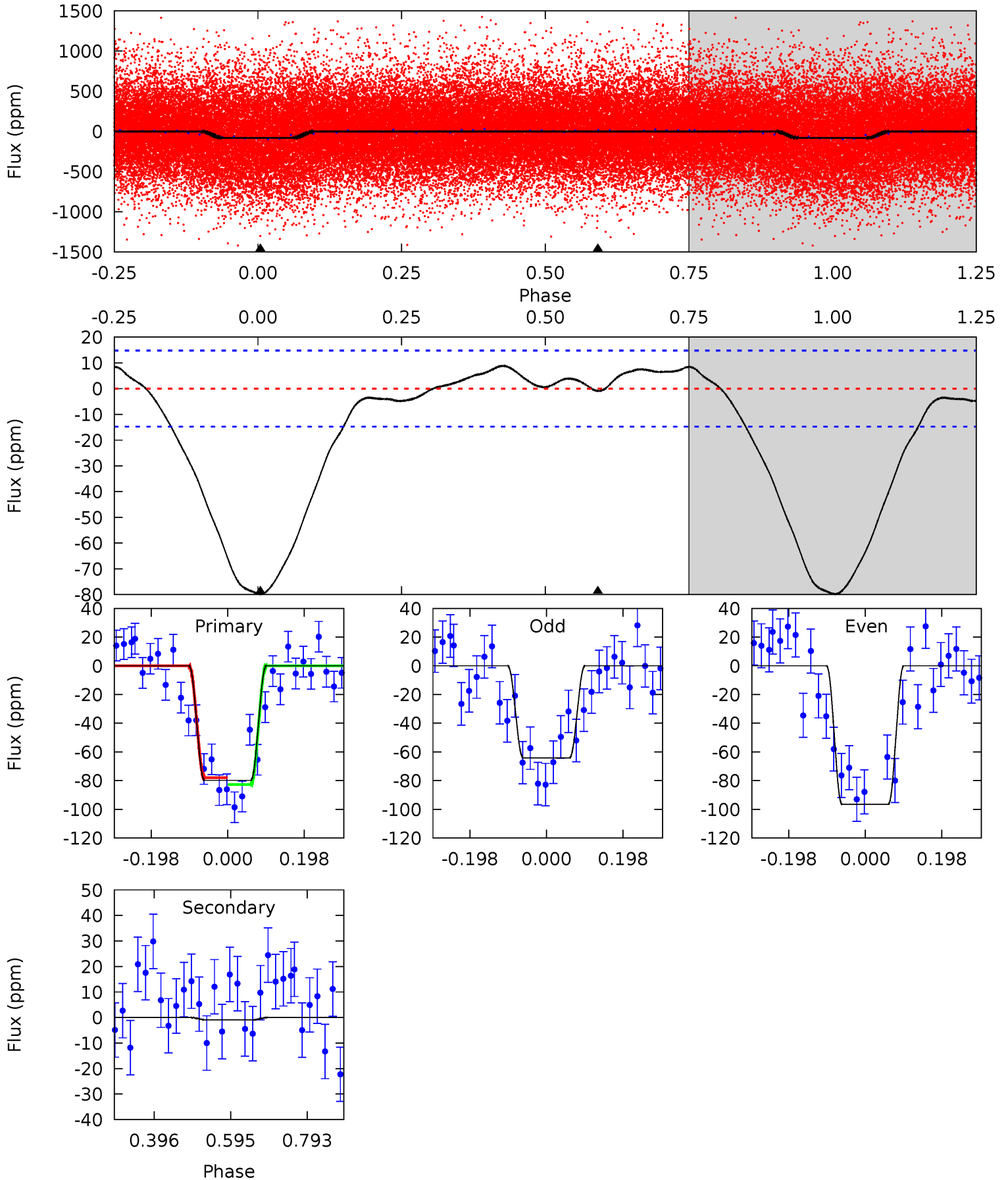
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.8	0.78	0	0	4.33	1.03	0.41	18.8	18.8	0.78	0.78	1.87	0.92	0.02	6.35



# Alt Model-Shift Uniqueness Test

008043882-01, P = 0.779602 Days, E = 131.691954 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
23.9	0.27	0	0	4.42	1.29	1.04	23.9	23.9	0.27	0.27	4.85	0.97	0.10	0.73





### Stellar Parameters For KIC 008043882

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5899^{+184}_{-205}$	$4.370^{+0.124}_{-0.201}$	$-0.080^{+0.300}_{-0.300}$	$1.070^{+0.322}_{-0.173}$	$0.979^{+0.138}_{-0.110}$	$1.126^{+0.670}_{-0.572}$
	+3%/-3%	+3%/-5%	+375%/-375%	+30%/-16%	+14%/-11%	+60%/-51%
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 008043882-01 / KOI 6169.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-2\pm3$	$1.03^{+0.77}_{-0.66}$	$2959^{+233}_{-168}$	$-2554^{+6553}_{-640}$	$0.222^{+1.629}_{-0.270}$
Alt.	$-1\pm3$	$1.19^{+0.77}_{-0.69}$	$2947^{+233}_{-165}$	$-2957^{+6298}_{-473}$	$0.065^{+0.813}_{-0.357}$

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

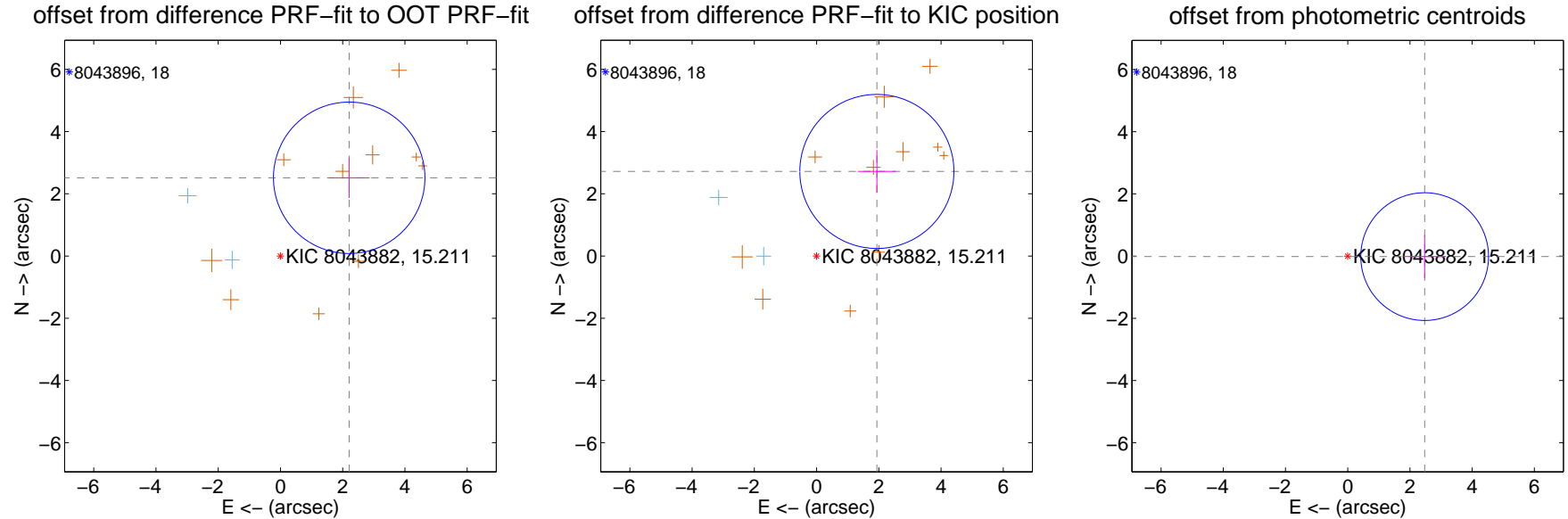
## DV Centroid Data

Supplemental centroid analysis for 008043882-01. Kepler magnitude: 15.21. Transit SNR 14.16

There are 2 quarters with good PRF difference image offsets

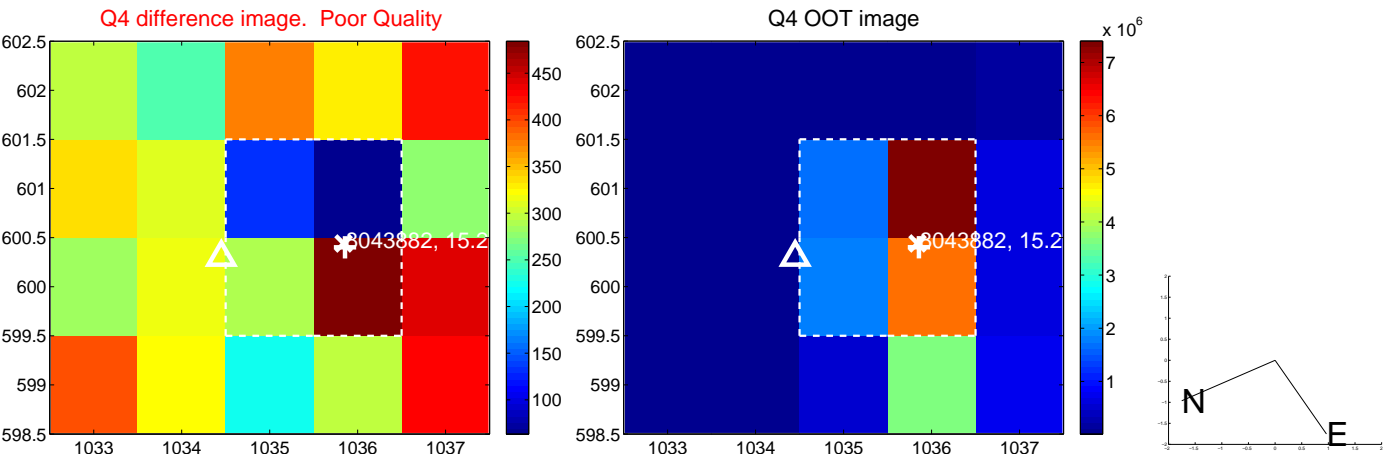
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.348 \pm 0.811$	4.13	$-2.210 \pm 0.653$	$2.515 \pm 0.650$
PRF-fit source offset from KIC position	$3.339 \pm 0.825$	4.04	$-1.938 \pm 0.608$	$2.719 \pm 0.688$
photometric centroid source offset	$2.47 \pm 0.68$	3.61	$-2.47 \pm 0.68$	$-0.02 \pm 0.70$

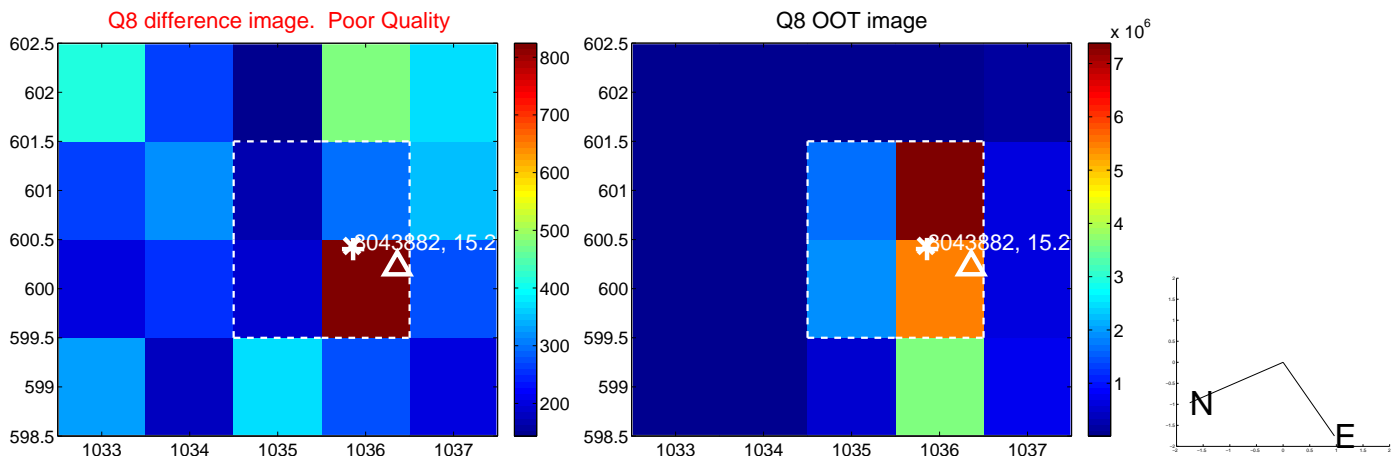
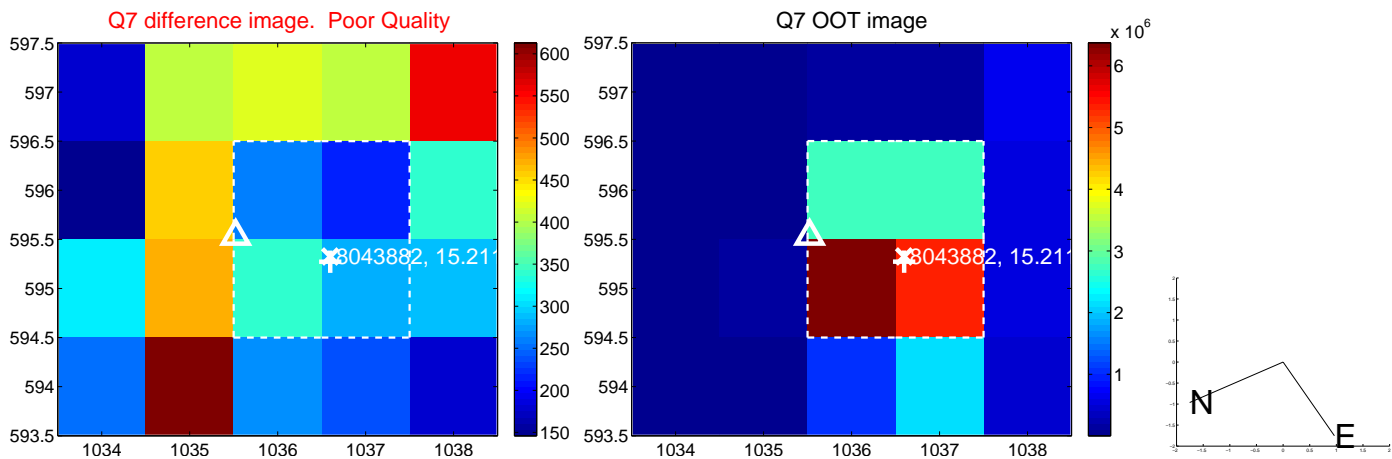
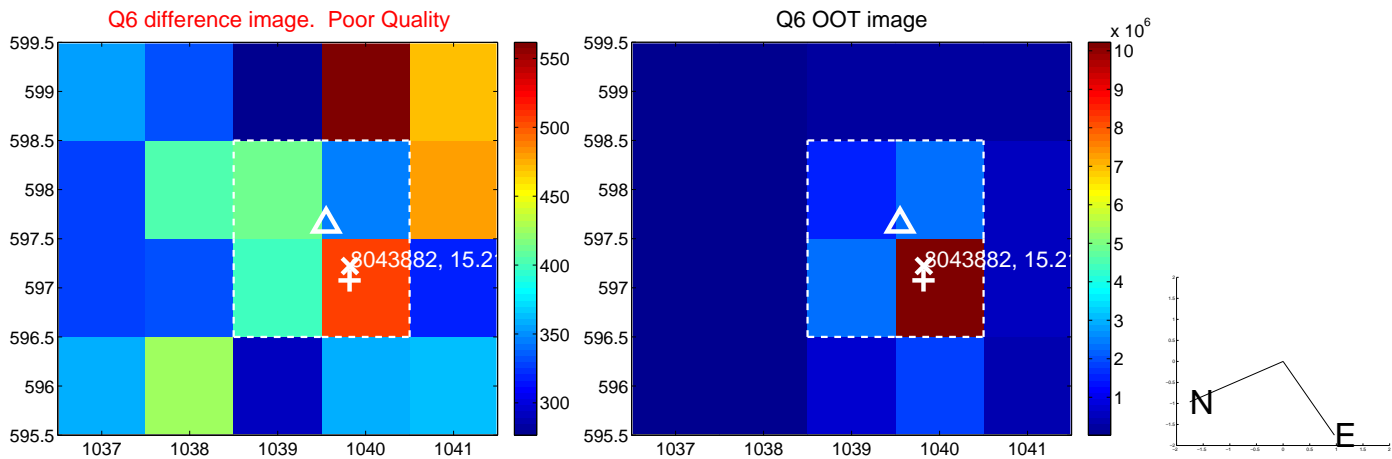
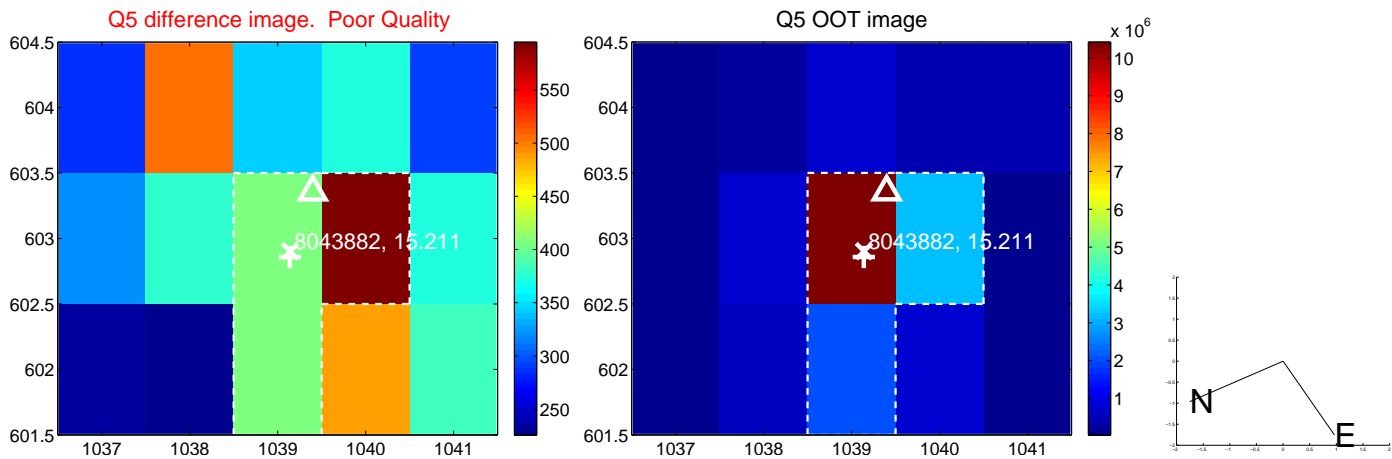


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

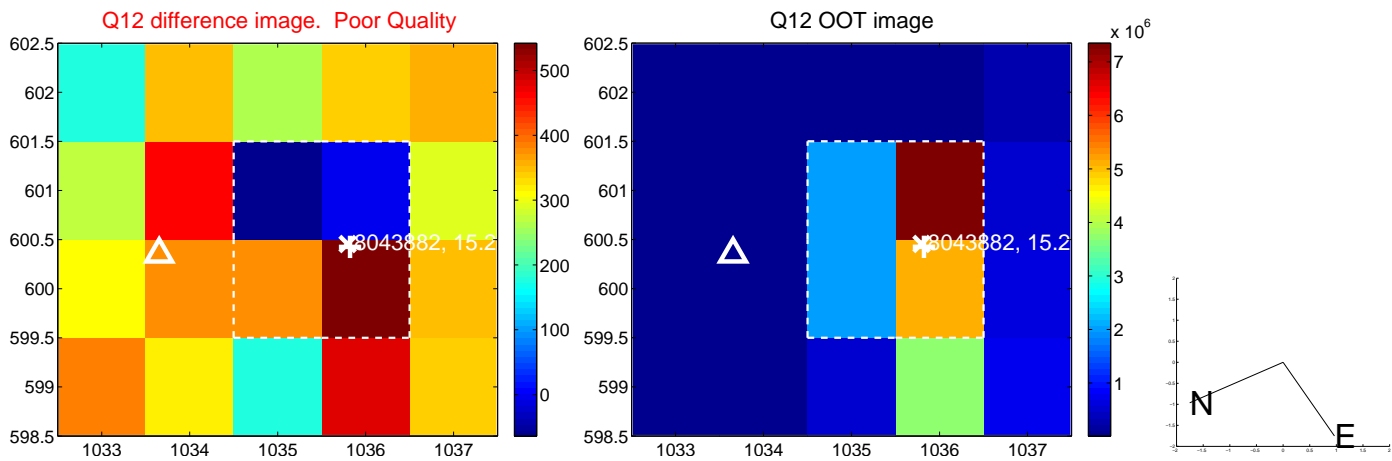
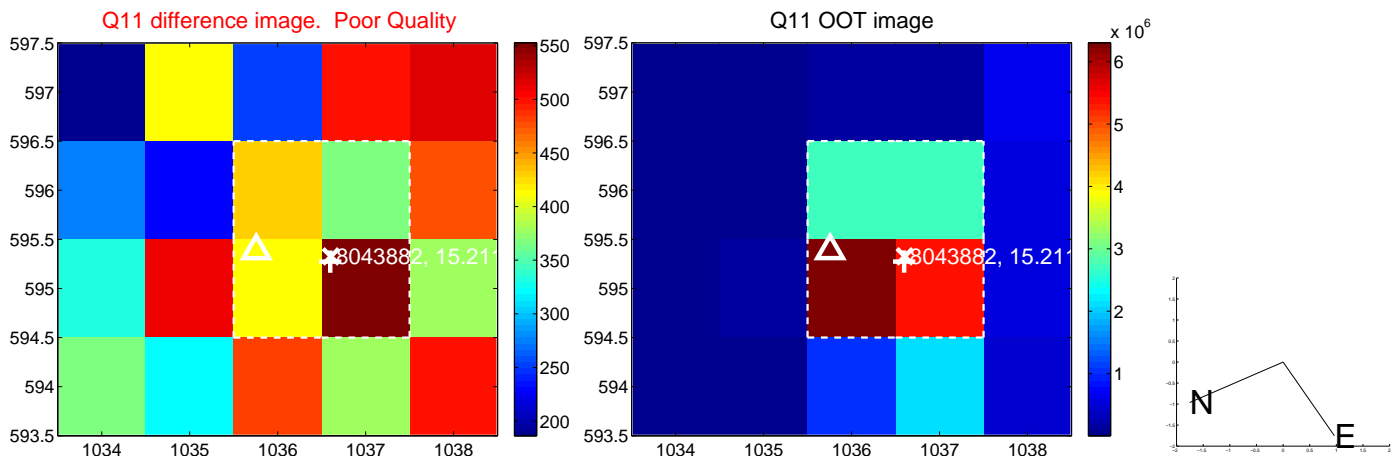
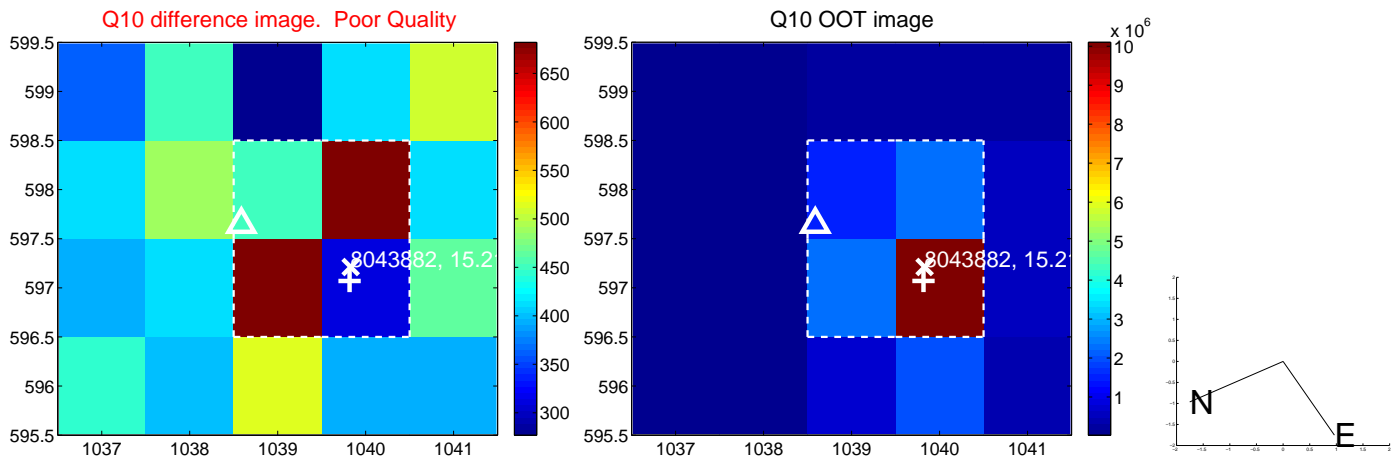
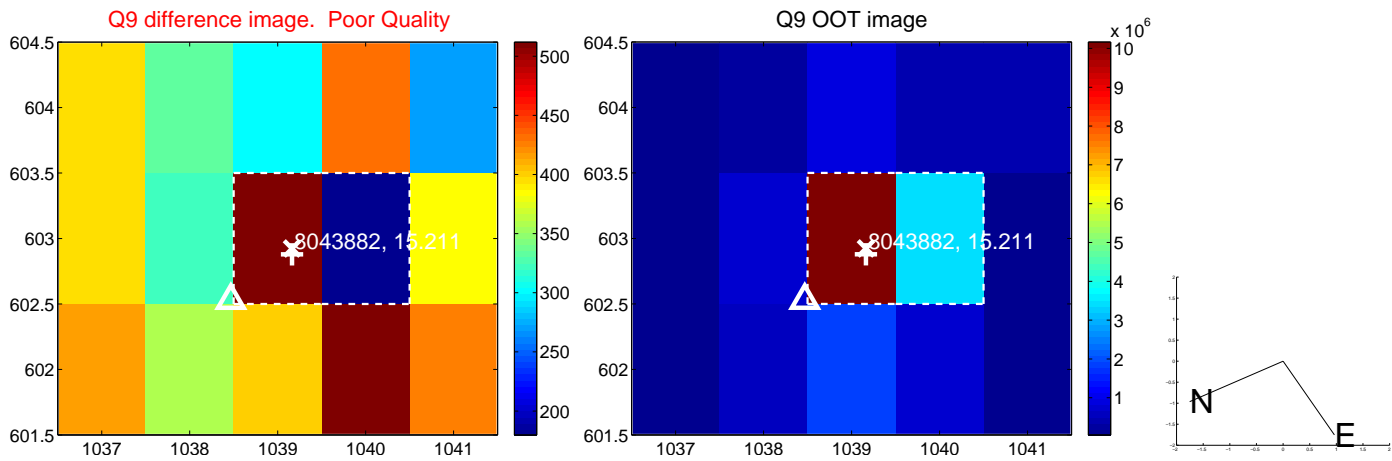


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

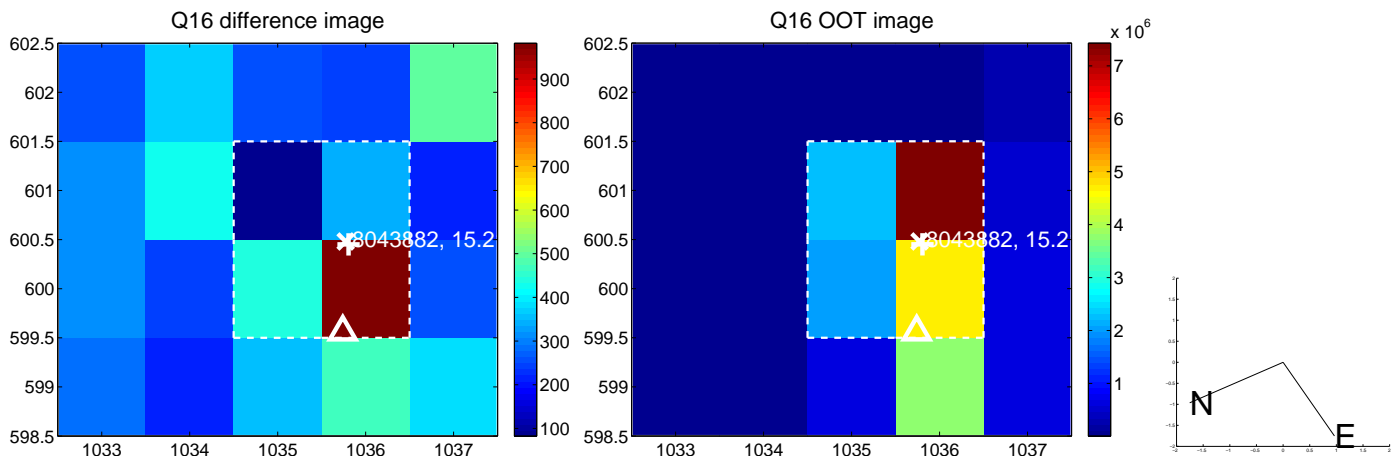
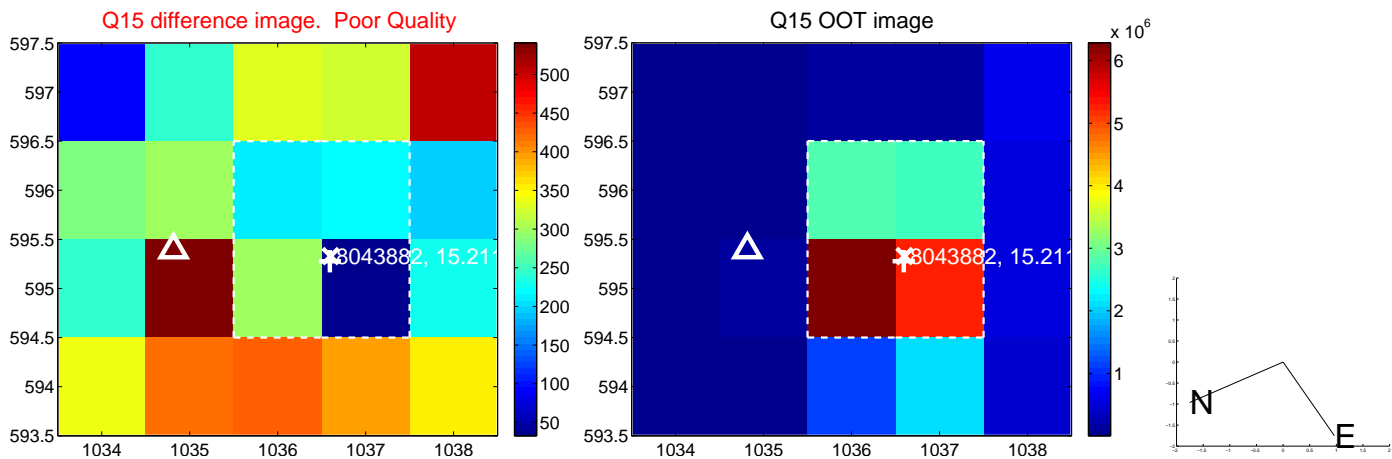
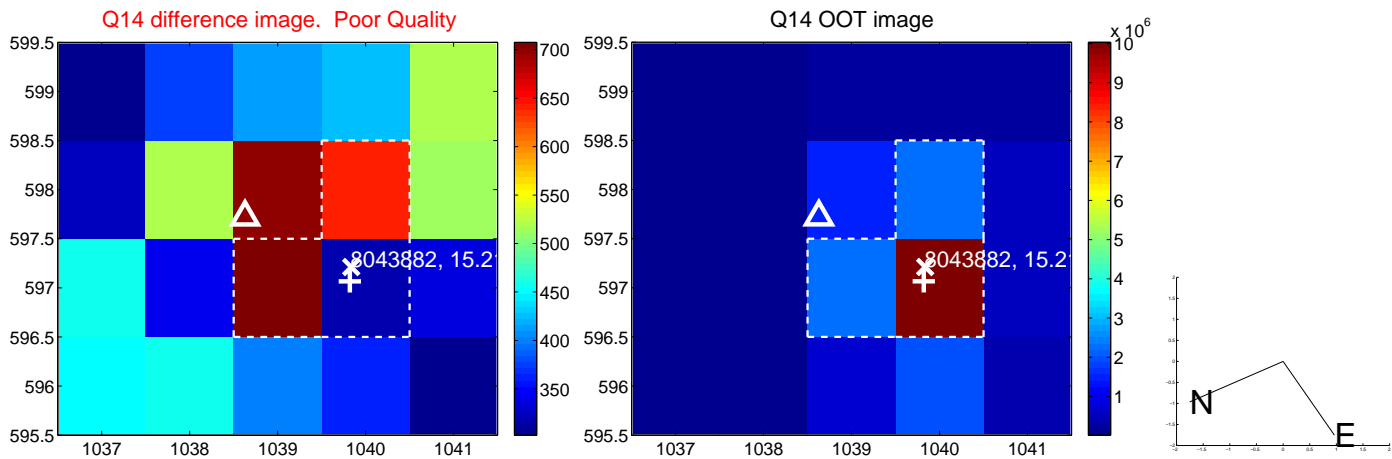
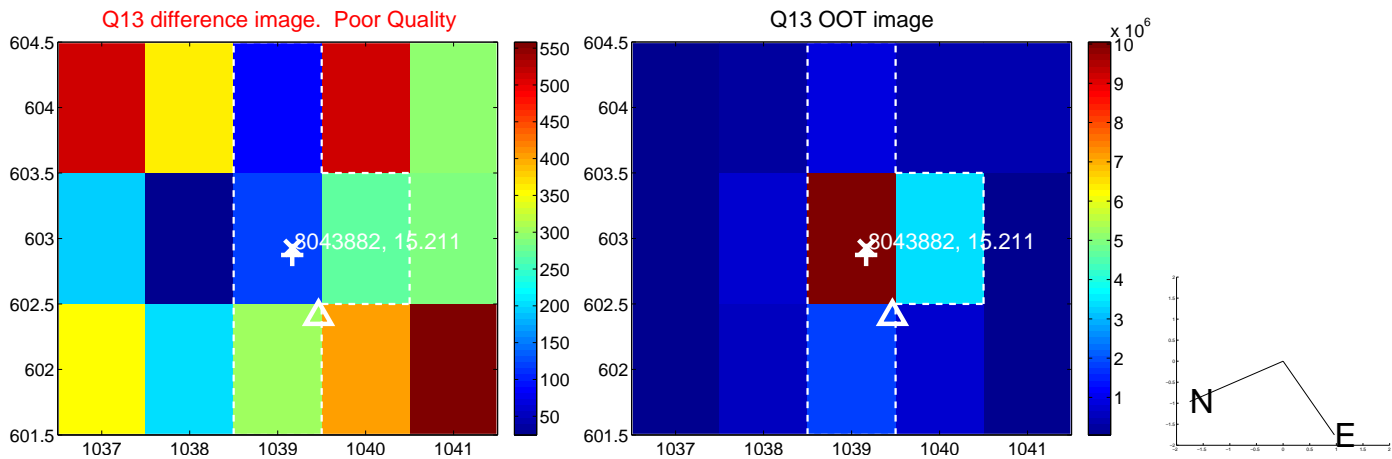




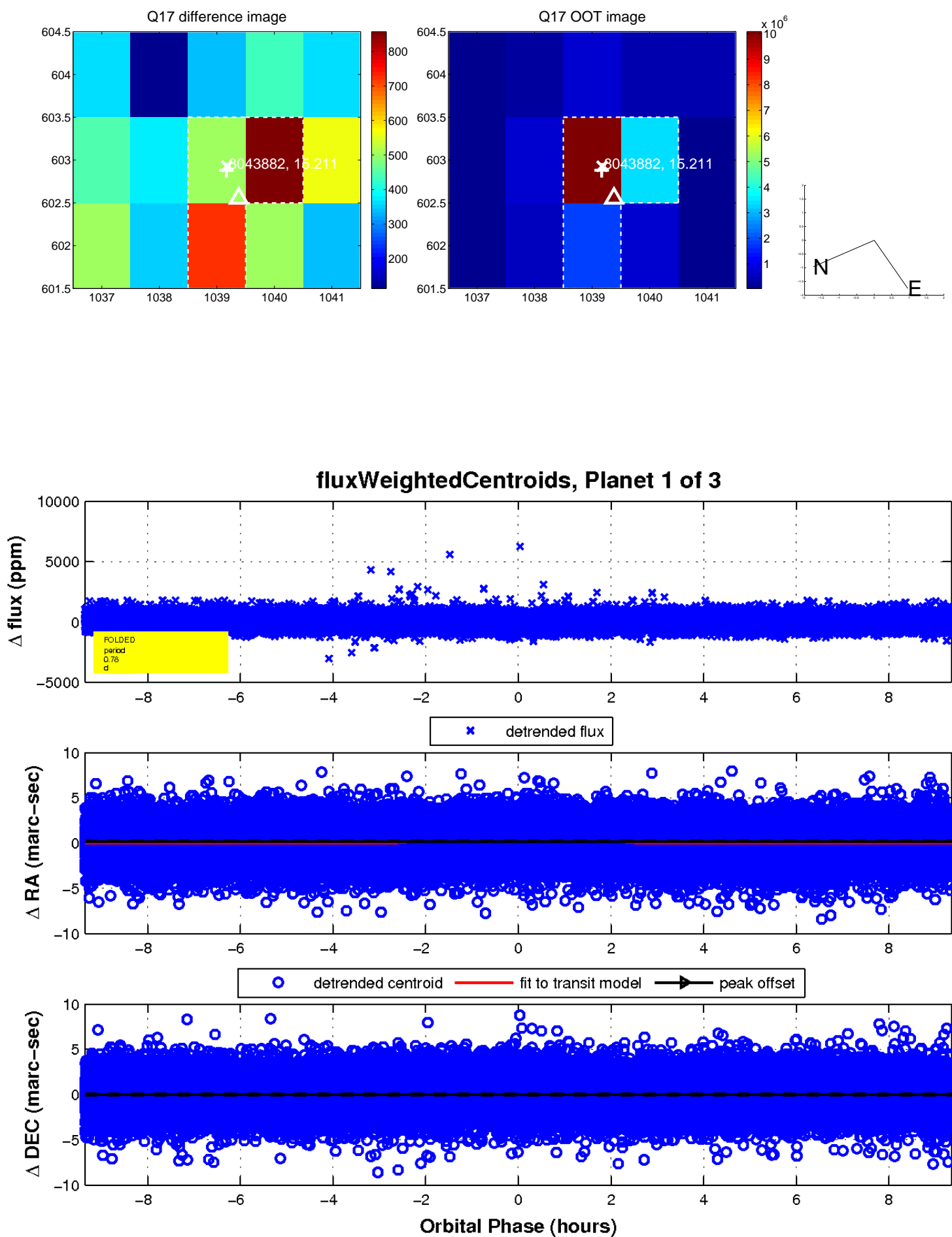
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

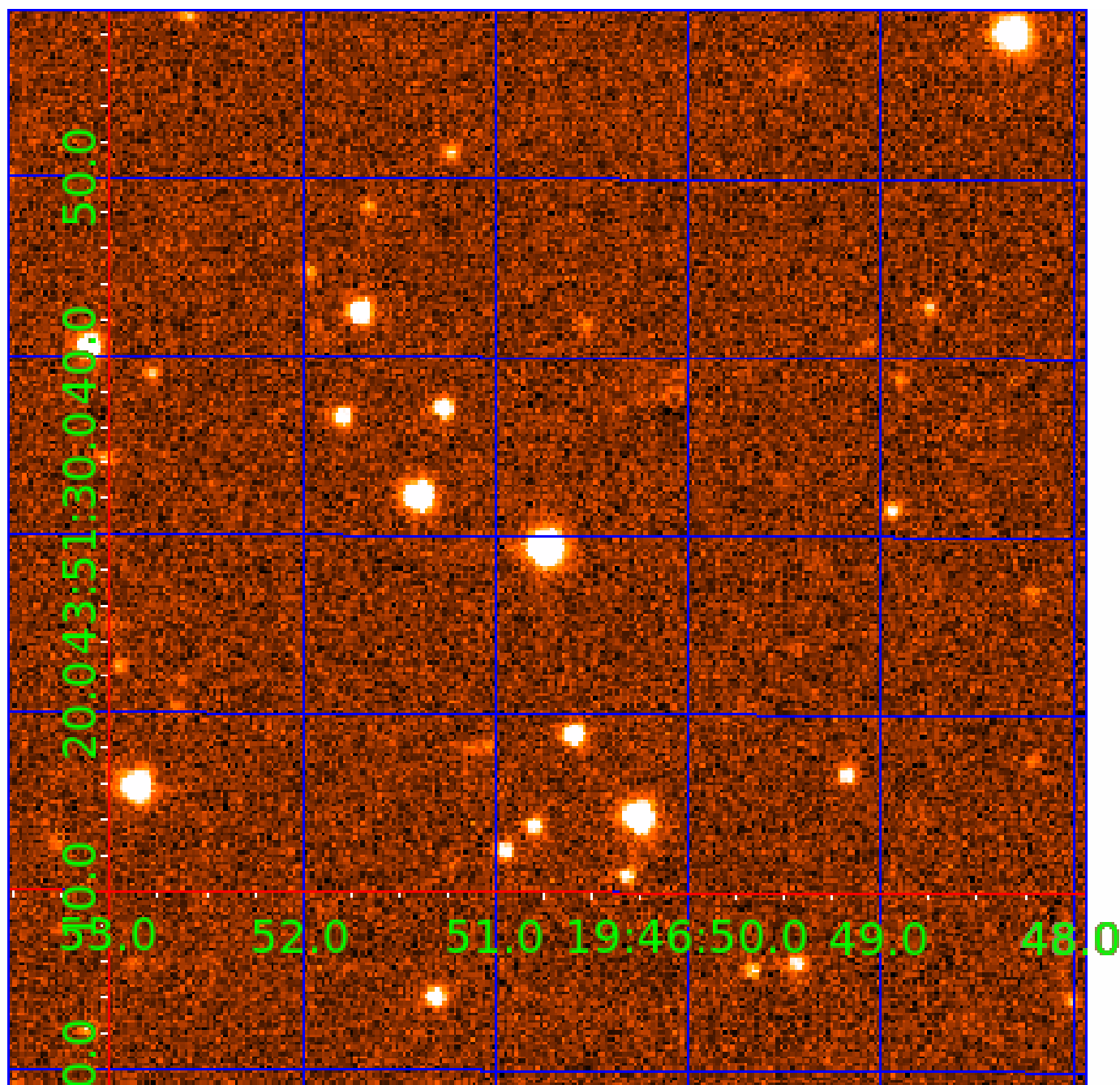


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 008043882

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
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008043882-03	OBS	No	101.382013	215.345901	921.6	6.571	9.2	8.1	1.07	5899	3.55	6.96

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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008043882-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008043882-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST

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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 008043882-02

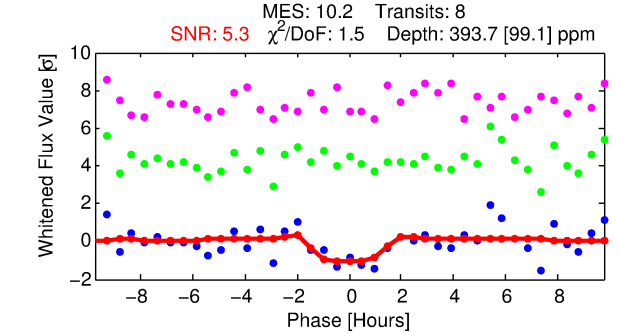
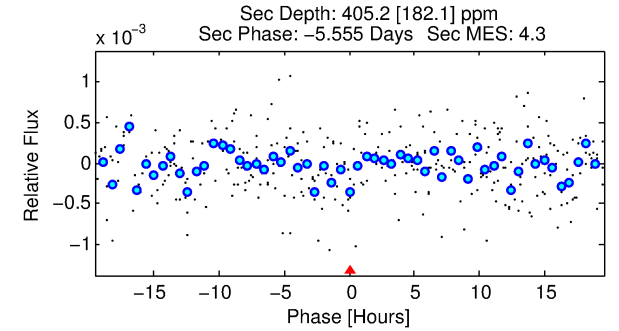
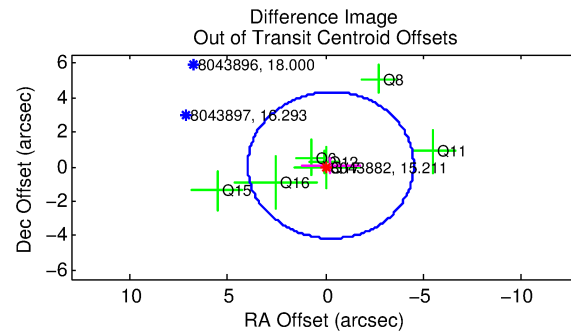
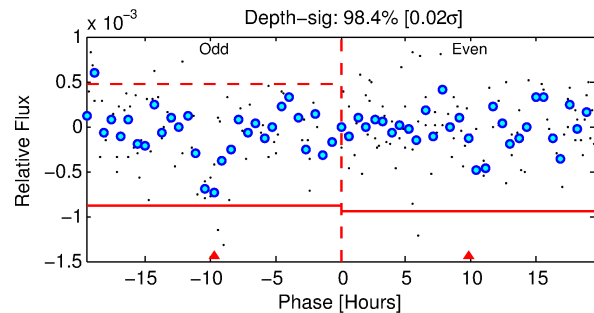
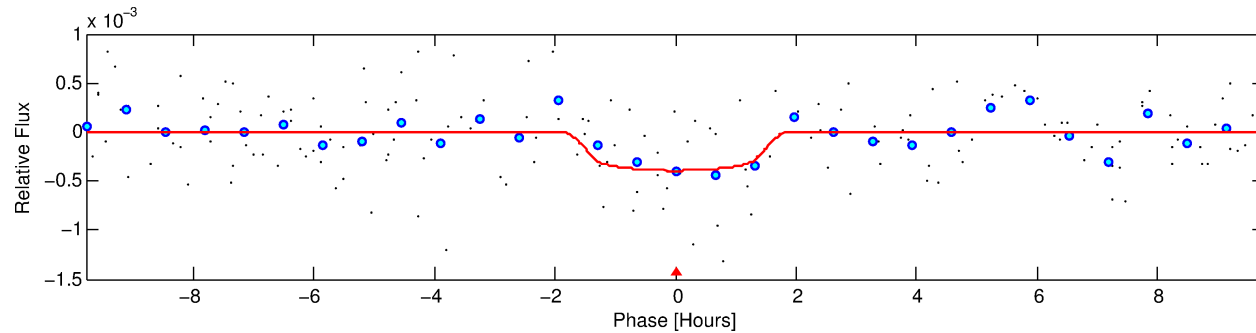
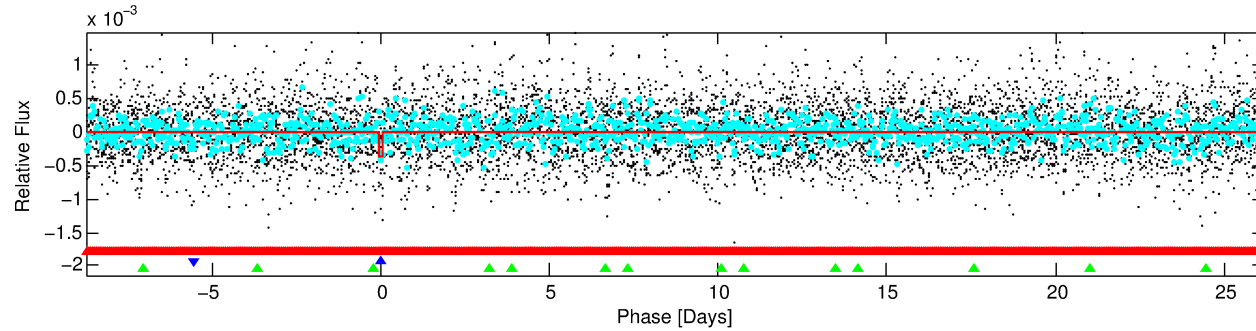
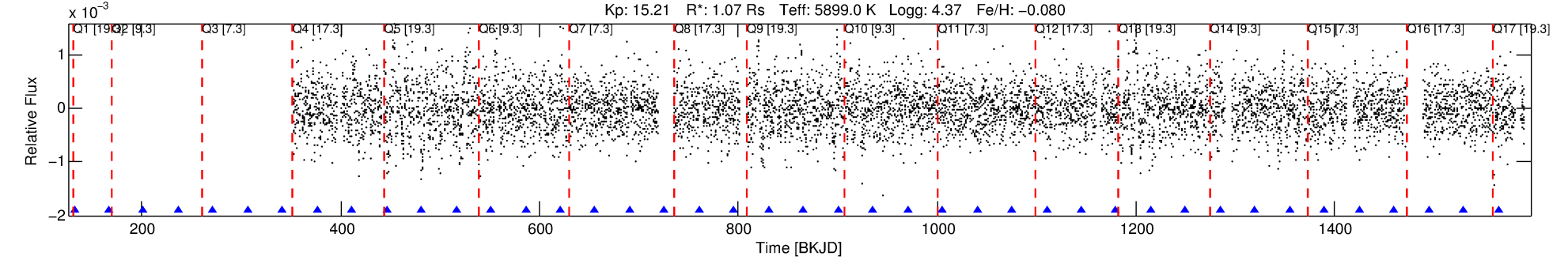
No Significant Match Found

# DV One-Page Summary

KIC: 8043882 Candidate: 2 of 3 Period: 34.936 d

KOI: K06169 Corr: No Ephemeris Match

Kp: 15.21 R\*: 1.07 R<sub>s</sub> Teff: 5899.0 K Logg: 4.37 Fe/H: -0.080



## DV Fit Results:

Period = 34.93632 [0.00136] d  
Epoch = 131.9794 [0.0367] BKJD  
Rp/R\* = 0.0200 [0.0686]  
a/R\* = 53.30 [860.83]  
b = 0.79 [7.95]  
Seff = 28.79 [11.33]  
Teff = 591 [58] K  
Rp = 2.34 [8.04] Re  
a = 0.2077 [0.0526] AU  
Ag = 1756.70 [12072.22] [0.15σ]  
Teffp = 5912 [10145] K [0.52σ]

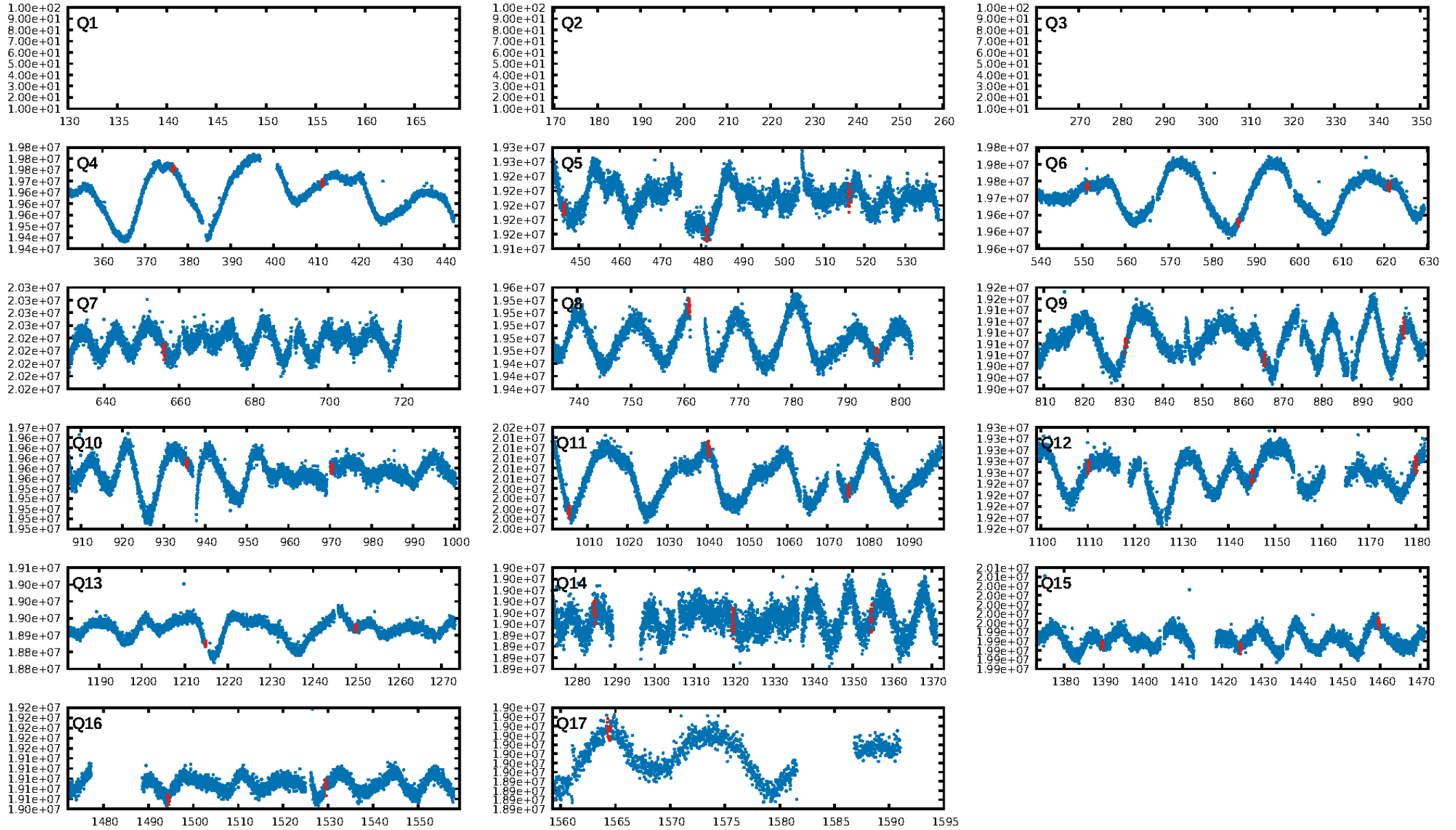
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [134.16σ]  
LongPeriod-sig: 100.0% [217.45σ]  
ModelChiSquare2-sig: 0.4%  
ModelChiSquareGof-sig: 97.6%  
Bootstrap-pfa: 4.99e-21  
RollingBand-fgt: 1.00 [8/8]  
GhostDiagnostic-chr: 0.3368  
Centroid-sig: 18.8%  
Centroid-so: 0.761 arcsec [0.81σ]  
OotOffset-rm: 0.286 arcsec [0.20σ]  
KicOffset-rm: 0.162 arcsec [0.14σ]  
OotOffset-st: 1/2/3/1 [7]  
KicOffset-st: 1/2/3/1 [7]  
DiffImageQuality-fgm: 0.29 [2/7]  
DiffImageOverlap-fno: 0.00 [0/14]

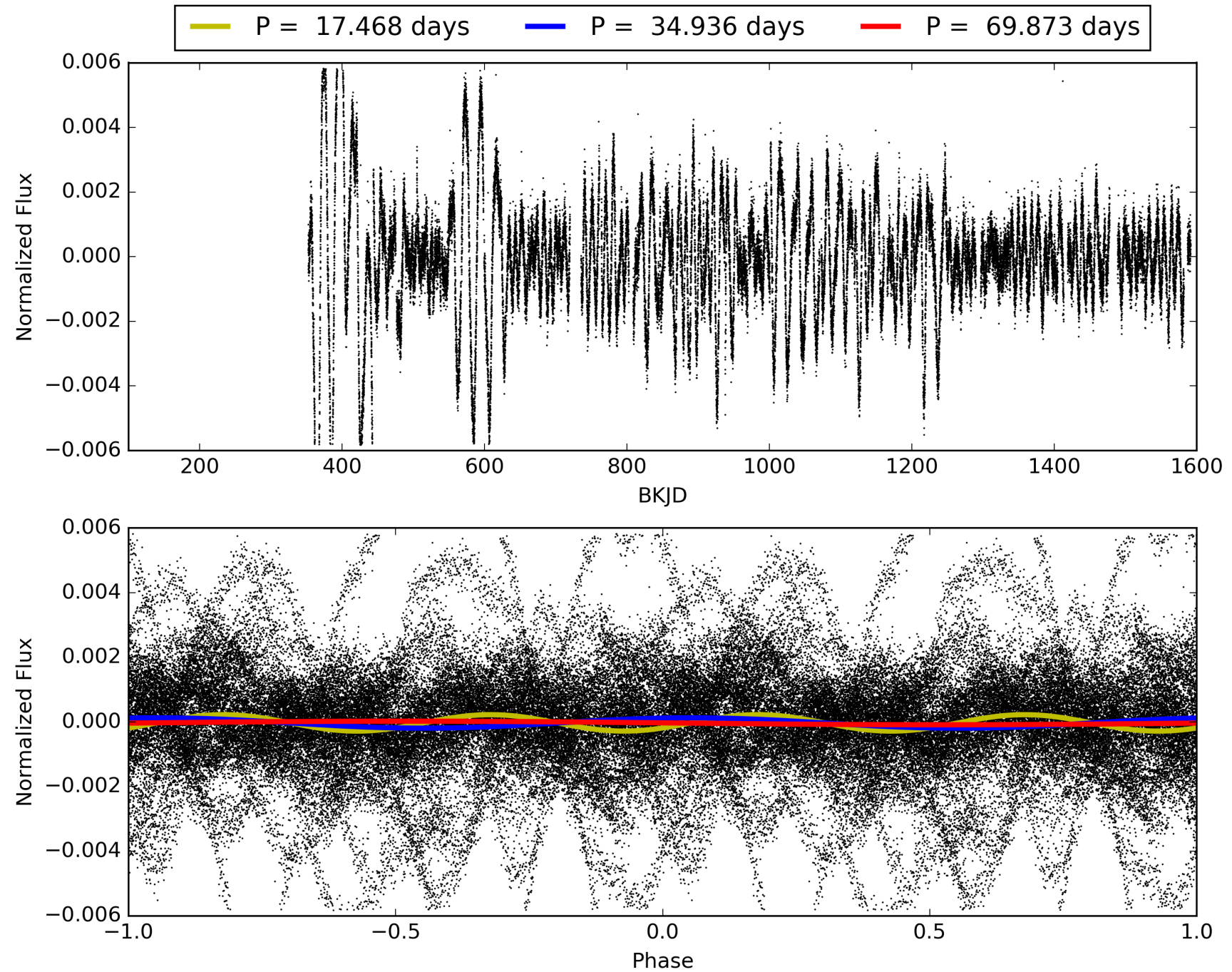
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:09:57 Z

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

# TCE 008043882-02, PDC Light Curves



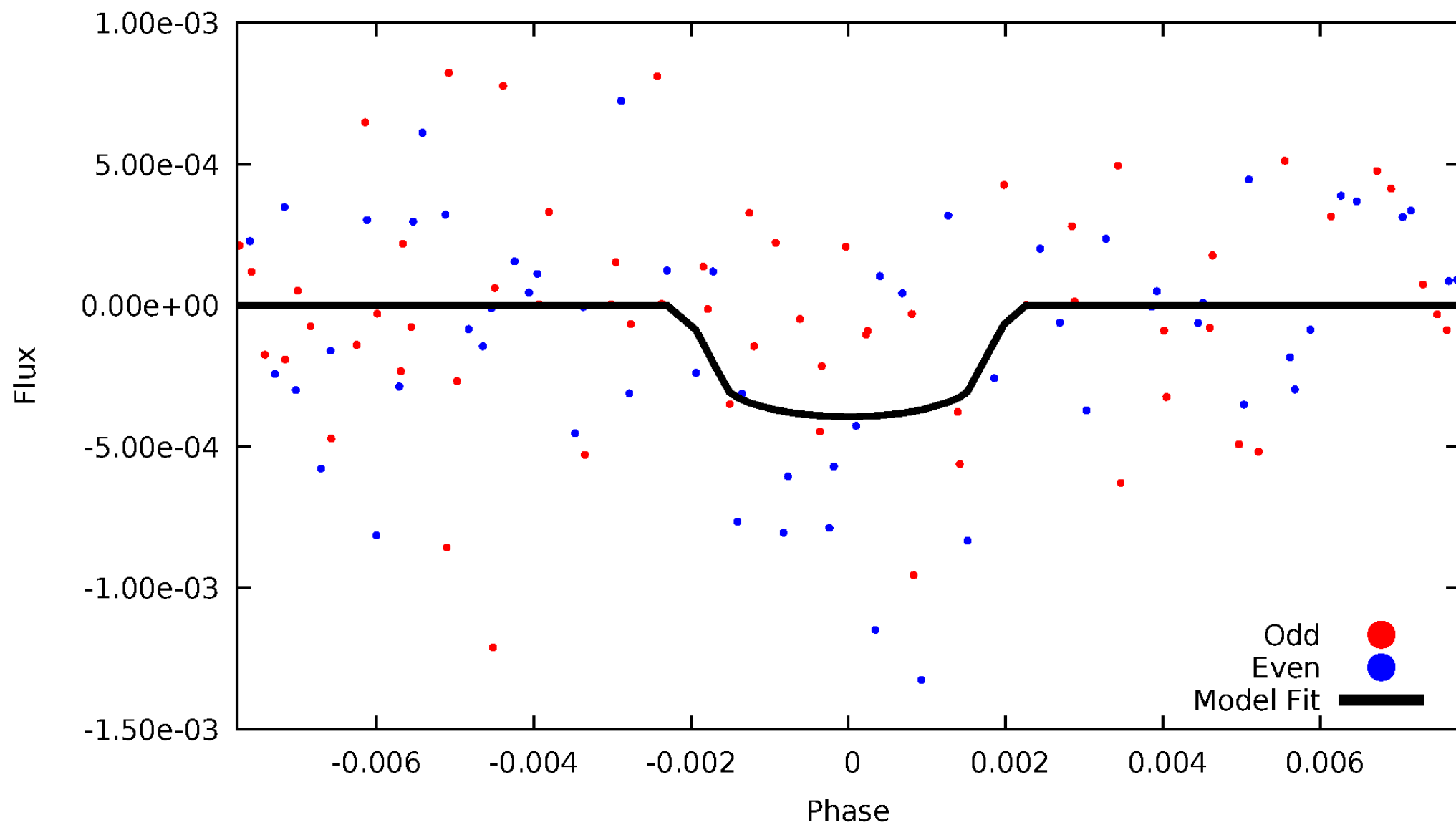
TCE 008043882-02





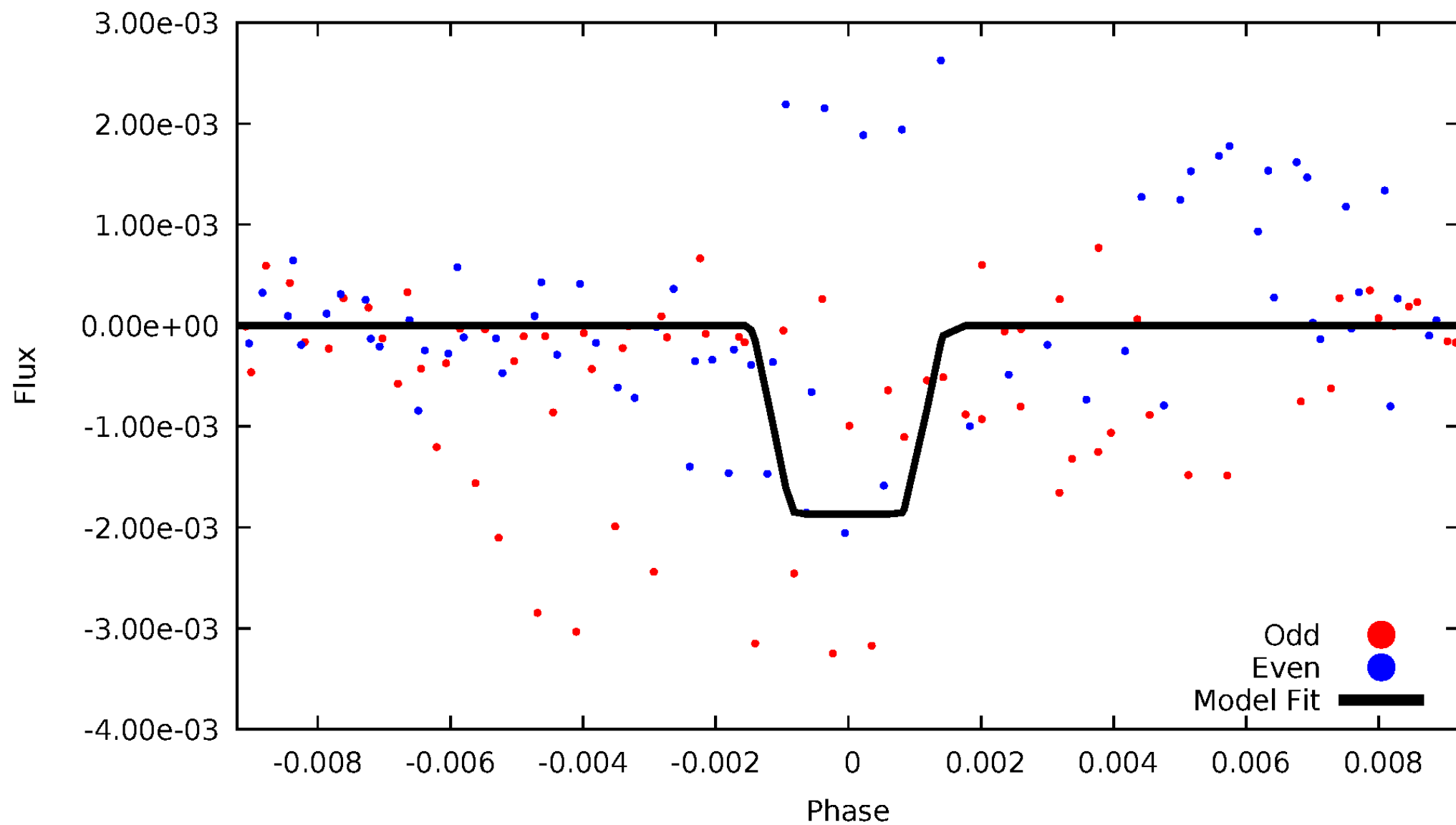
# DV Odd/Even

TCE 008043882-02



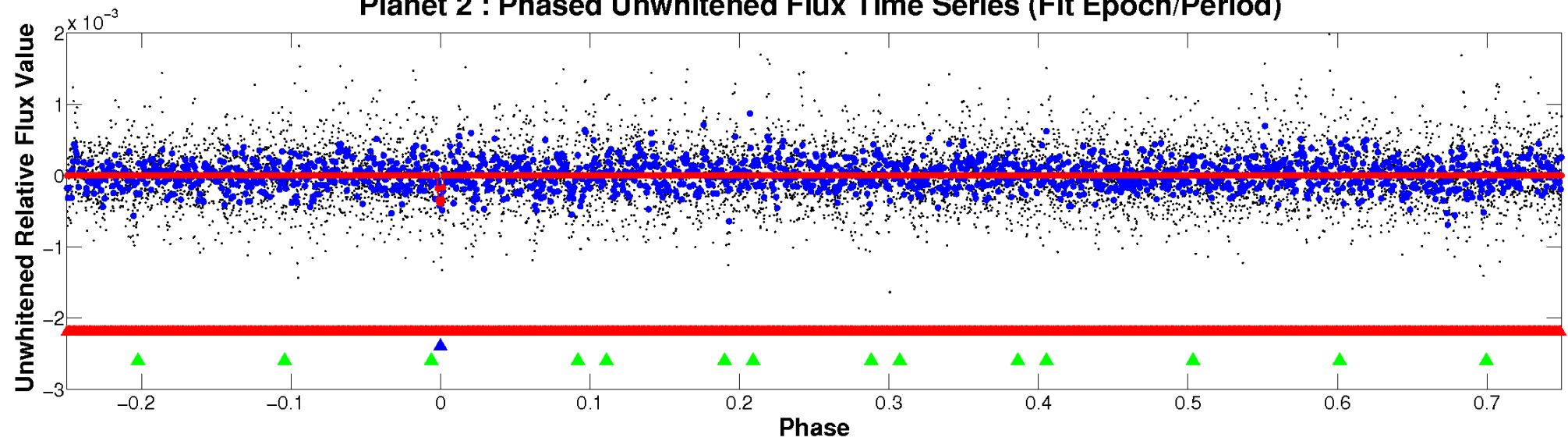
# ALT Odd/Even

TCE 008043882-02

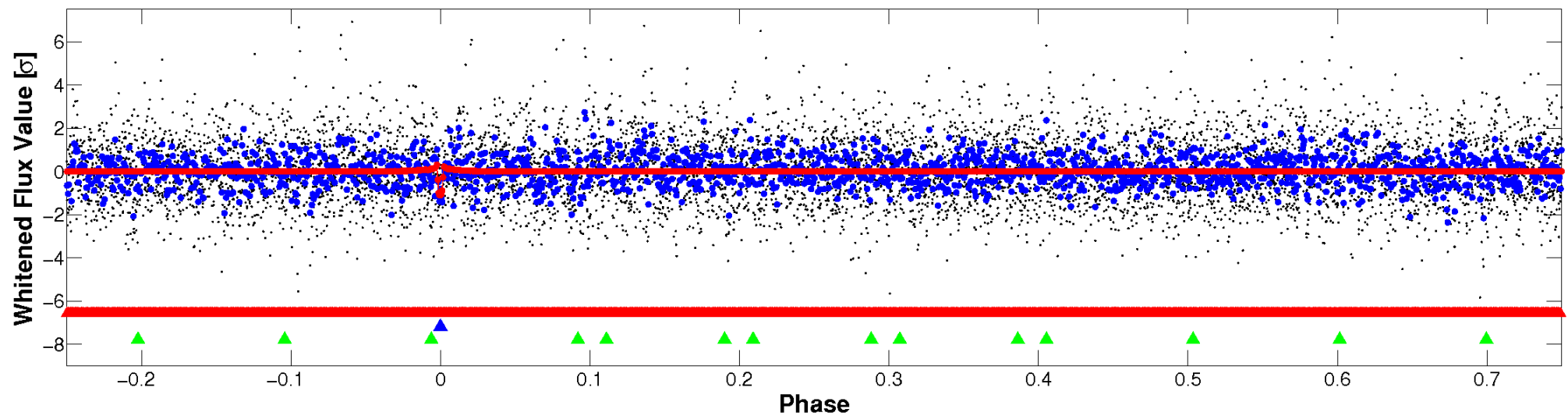


# Non-Whitened Vs. Whitened Light Curve

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

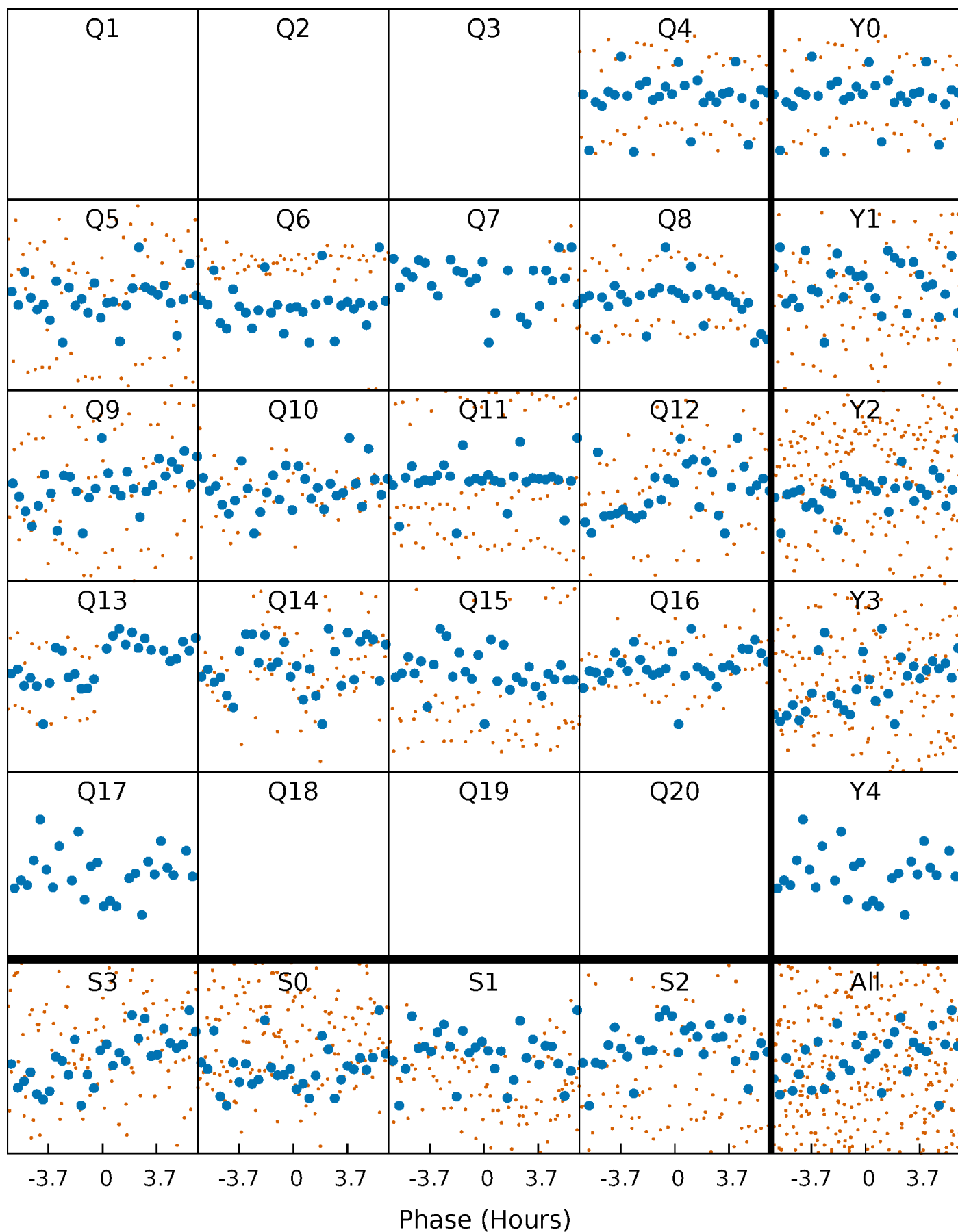


**Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



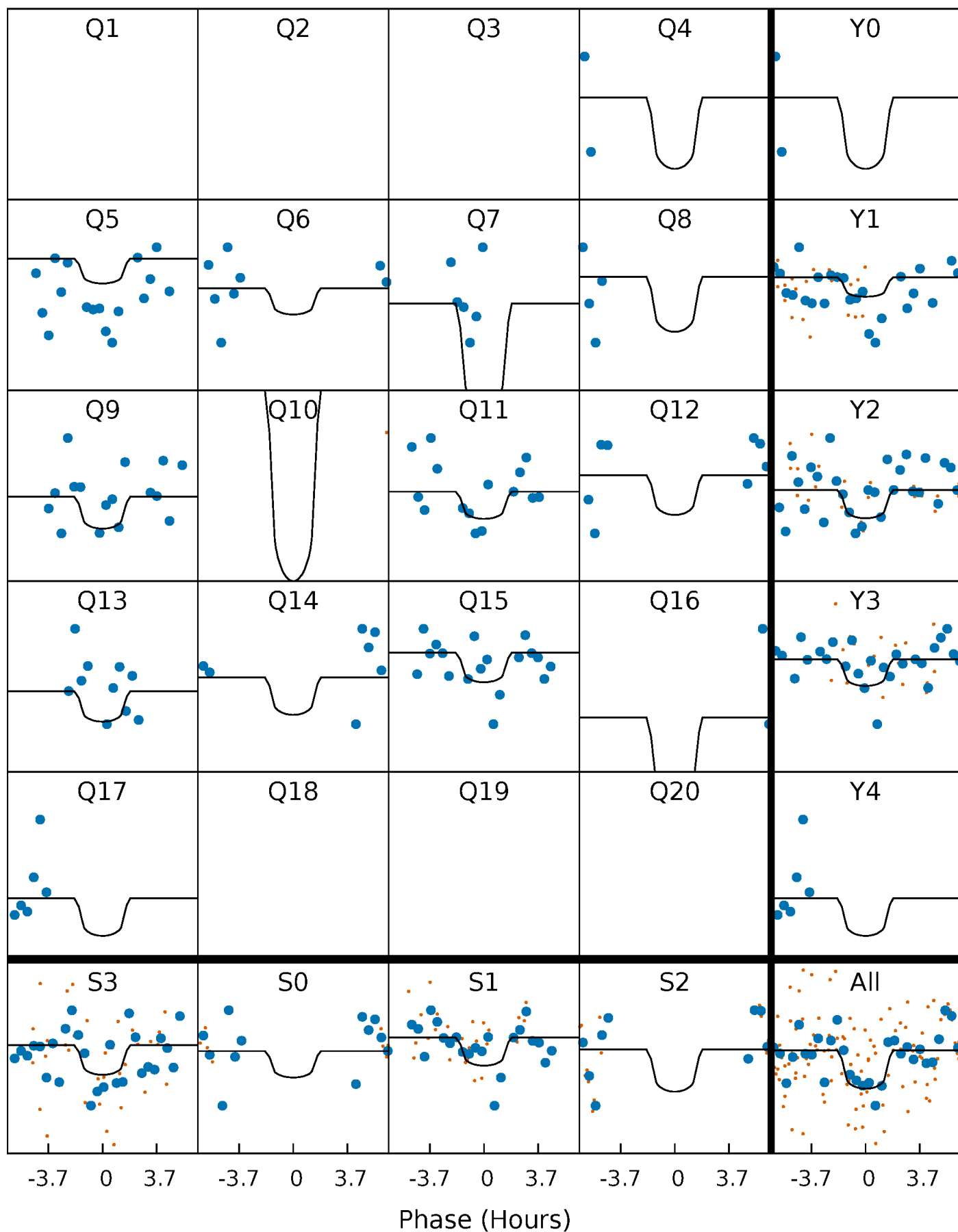
# PDC Quarter-Phased Transit Curves

TCE 008043882-02   P= 34.936320 Days    $T_0=131.979432$  (BKJD)



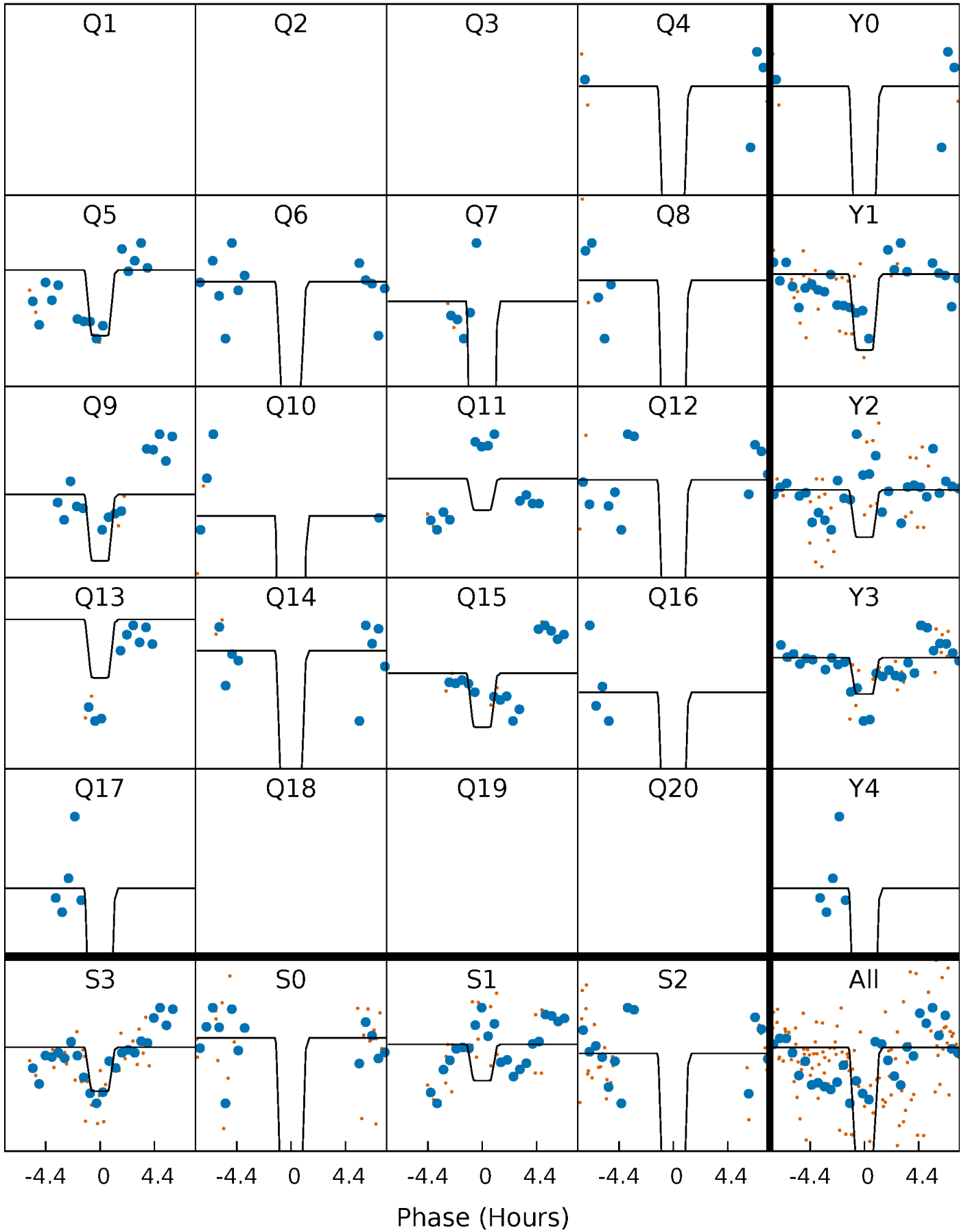
# DV Quarter-Phased Transit Curves

TCE 008043882-02   P= 34.936320 Days    $T_0=131.979432$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

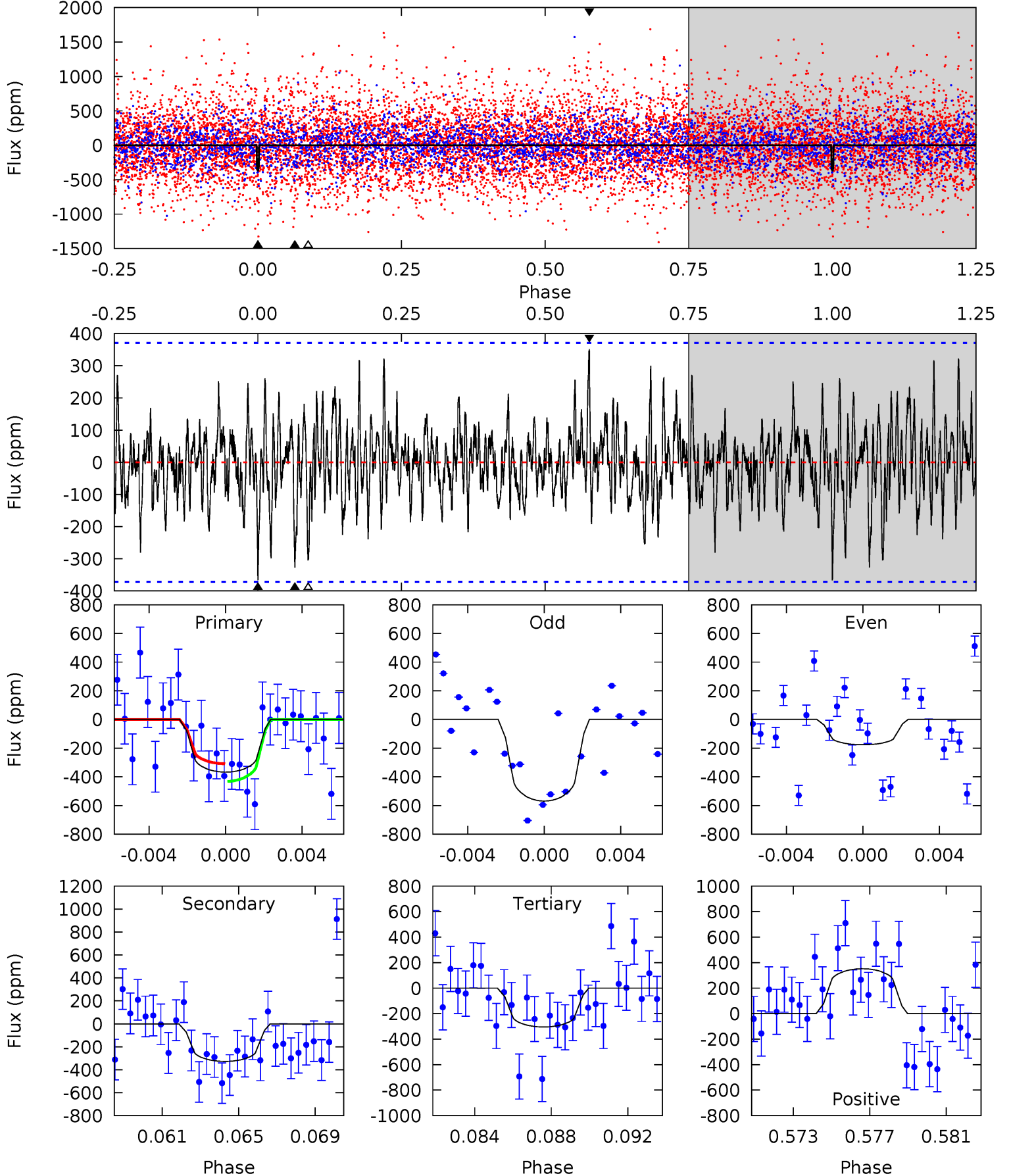
TCE 008043882-02 P= 34.932009 Days  $T_0=132.056814$  (BKJD)



# DV Model-Shift Uniqueness Test

008043882-02,  $P = 34.936320$  Days,  $E = 131.979432$  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
5.15	4.59	4.27	4.93	5.21	2.89	1.34	0.87	0.22	0.31	-0.34	2.75	1.05	0.49	0.87

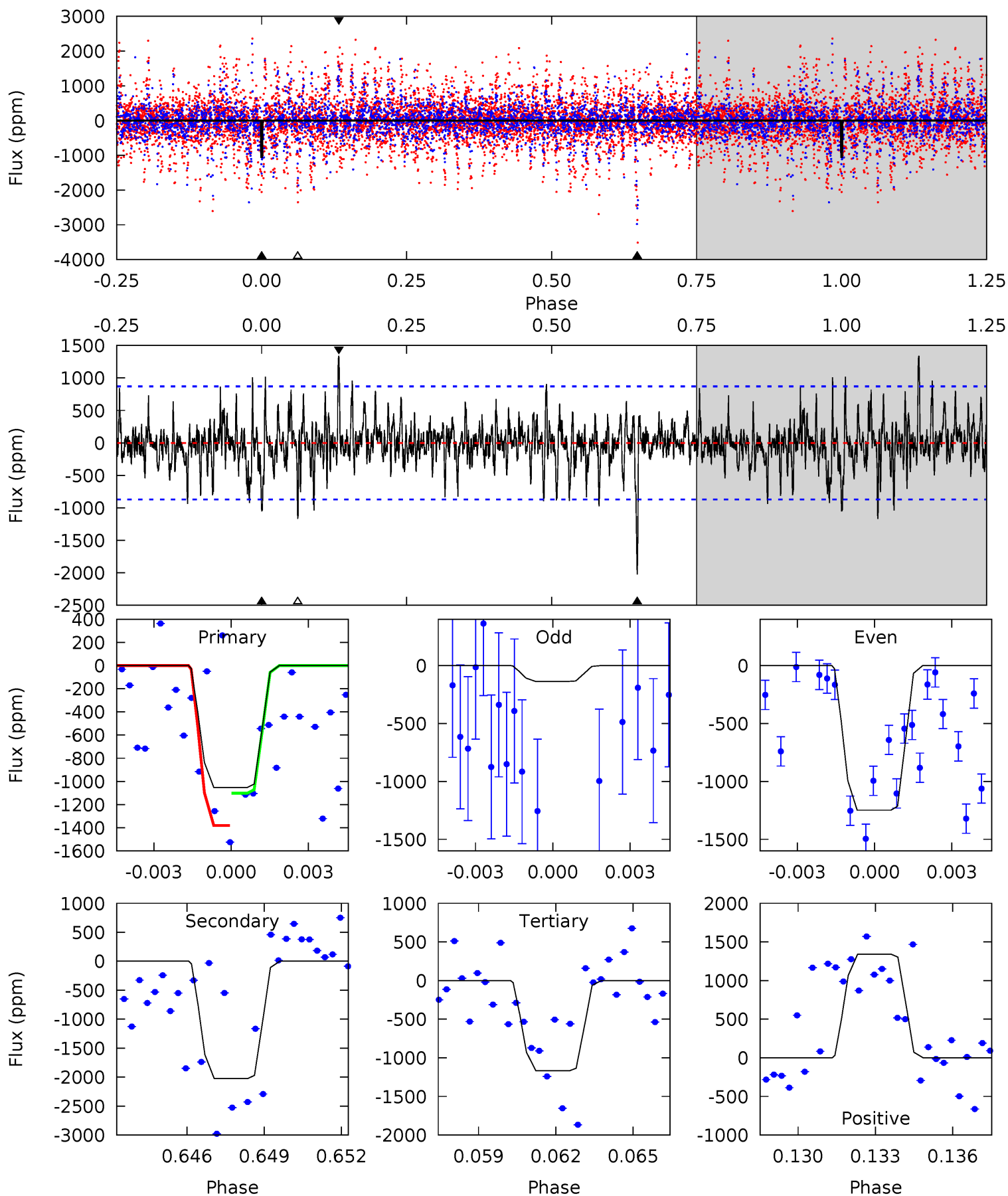




# Alt Model-Shift Uniqueness Test

008043882-02,  $P = 34.932009$  Days,  $E = 132.056814$  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
6.37	12.2	7.06	8.11	5.26	2.99	1.60	-0.70	-1.74	5.19	4.14	3.77	0.90	0.40	0.87



### Stellar Parameters For KIC 008043882

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5899^{+184}_{-205}$	$4.370^{+0.124}_{-0.201}$	$-0.080^{+0.300}_{-0.300}$	$1.070^{+0.322}_{-0.173}$	$0.979^{+0.138}_{-0.110}$	$1.126^{+0.670}_{-0.572}$
	+3%/-3%	+3%/-5%	+375%/-375%	+30%/-16%	+14%/-11%	+60%/-51%
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 008043882-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-327 \pm 71$	$6.34^{+6.07}_{-4.59}$	$830^{+64}_{-49}$	$3804^{+2635}_{-747}$	$193^{+2147}_{-144}$
Alt.	$-2024 \pm 165$	$8.12^{+7.02}_{-5.57}$	$833^{+60}_{-52}$	$4929^{+3957}_{-1021}$	$750^{+5949}_{-544}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

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

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

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

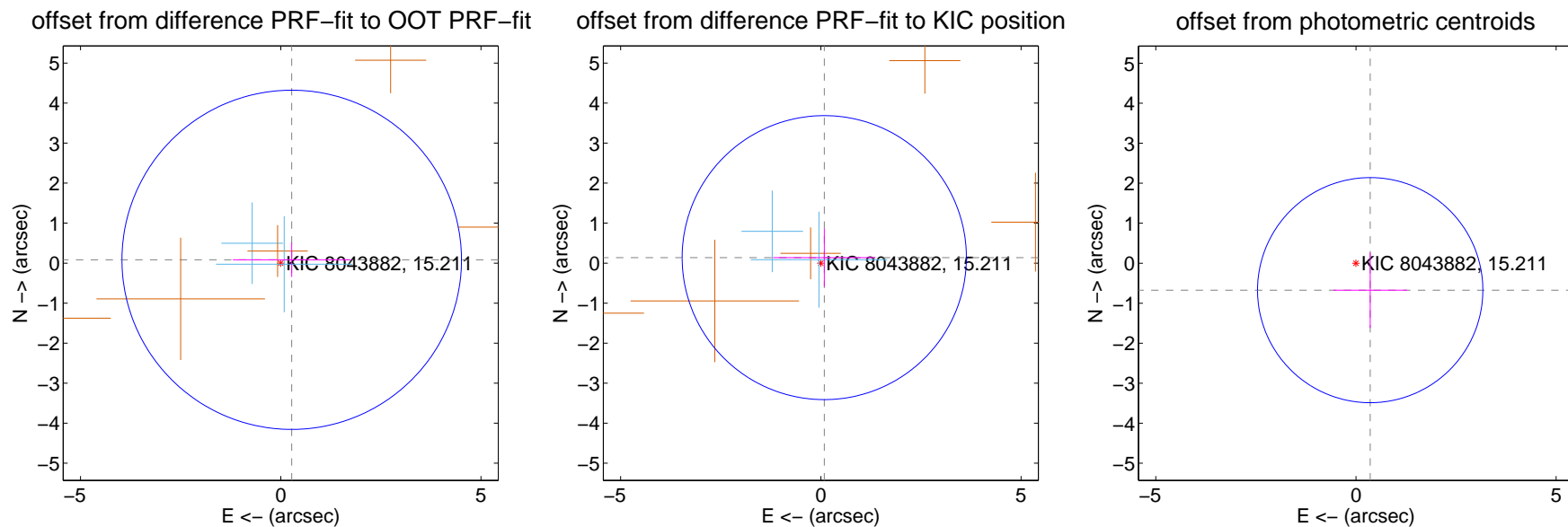
## DV Centroid Data

Supplemental centroid analysis for 008043882-02. Kepler magnitude: 15.21. Transit SNR 5.29

There are 2 quarters with good PRF difference image offsets

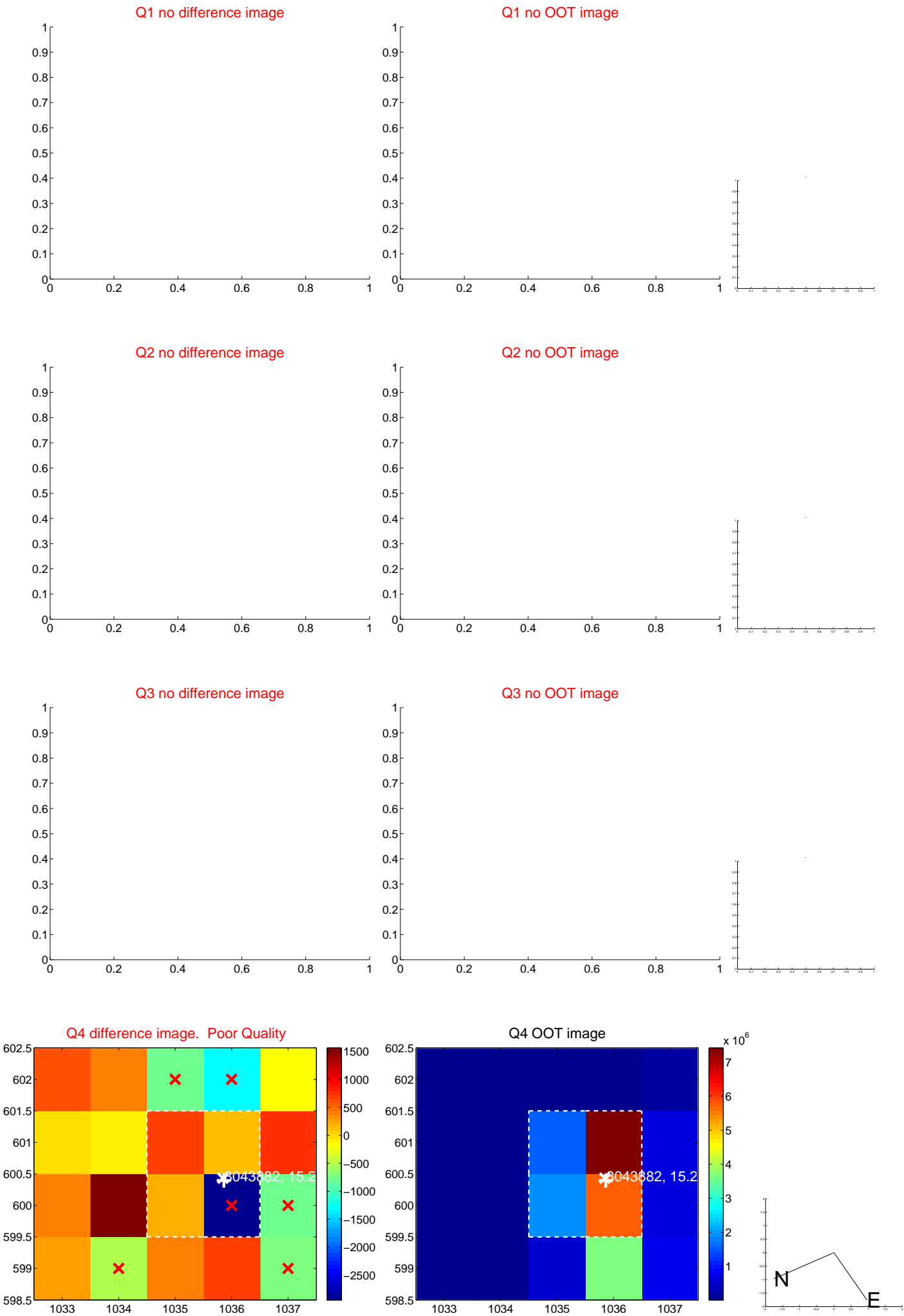
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.286 \pm 1.413$	0.20	$-0.274 \pm 1.471$	$0.083 \pm 0.430$
PRF-fit source offset from KIC position	$0.162 \pm 1.183$	0.14	$-0.085 \pm 1.279$	$0.138 \pm 0.726$
photometric centroid source offset	$0.76 \pm 0.94$	0.81	$-0.36 \pm 0.92$	$-0.67 \pm 0.94$

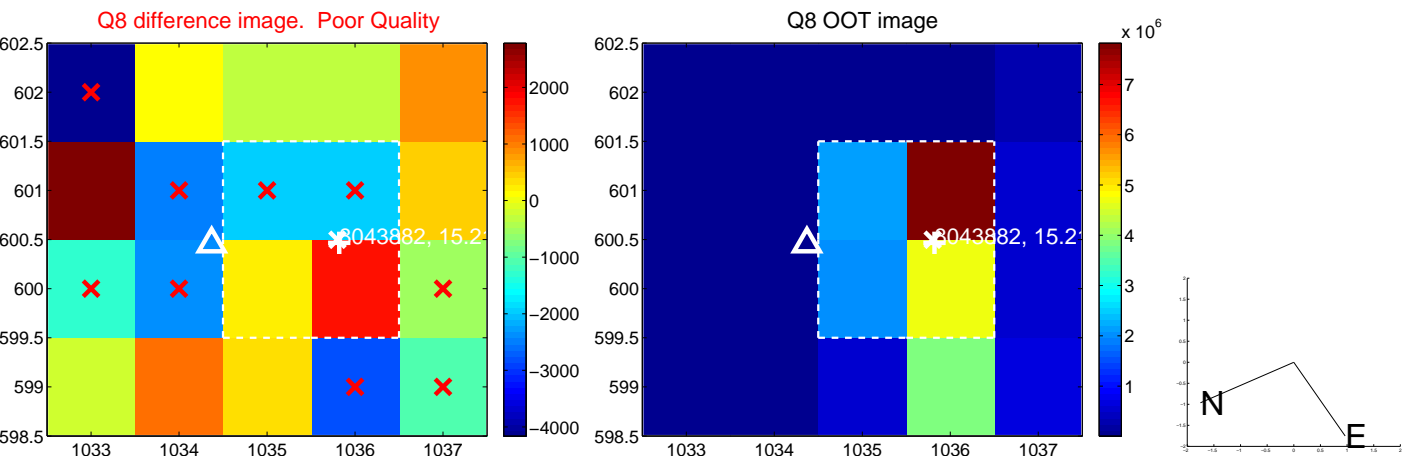
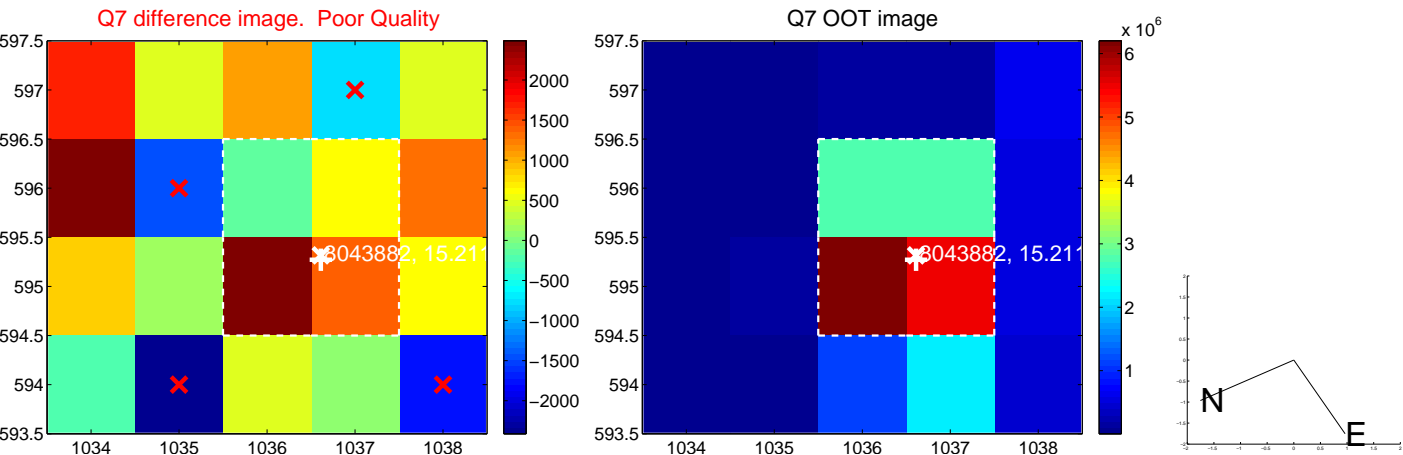
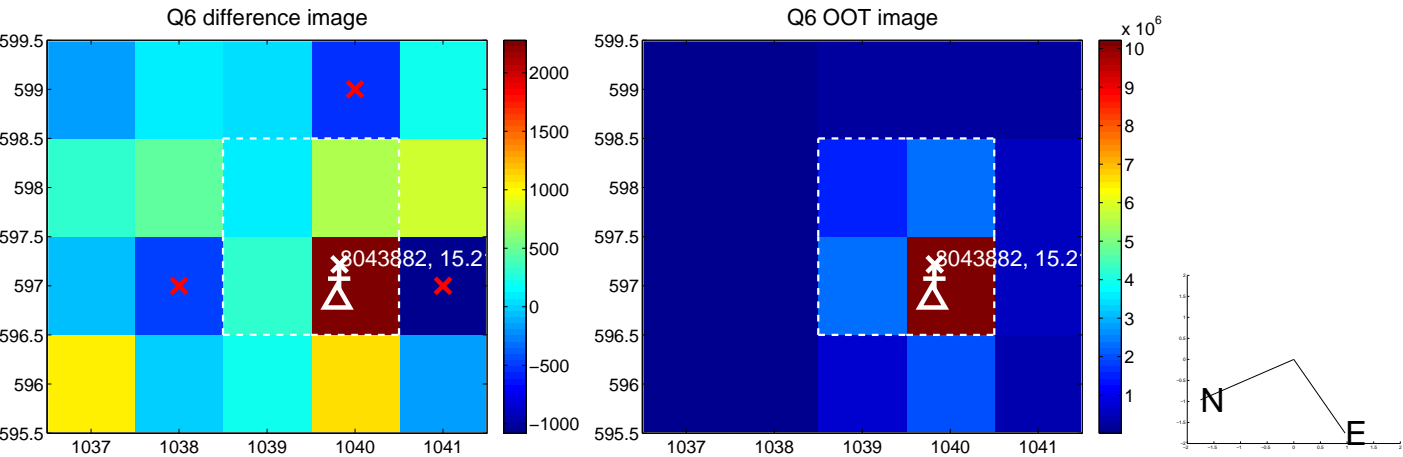
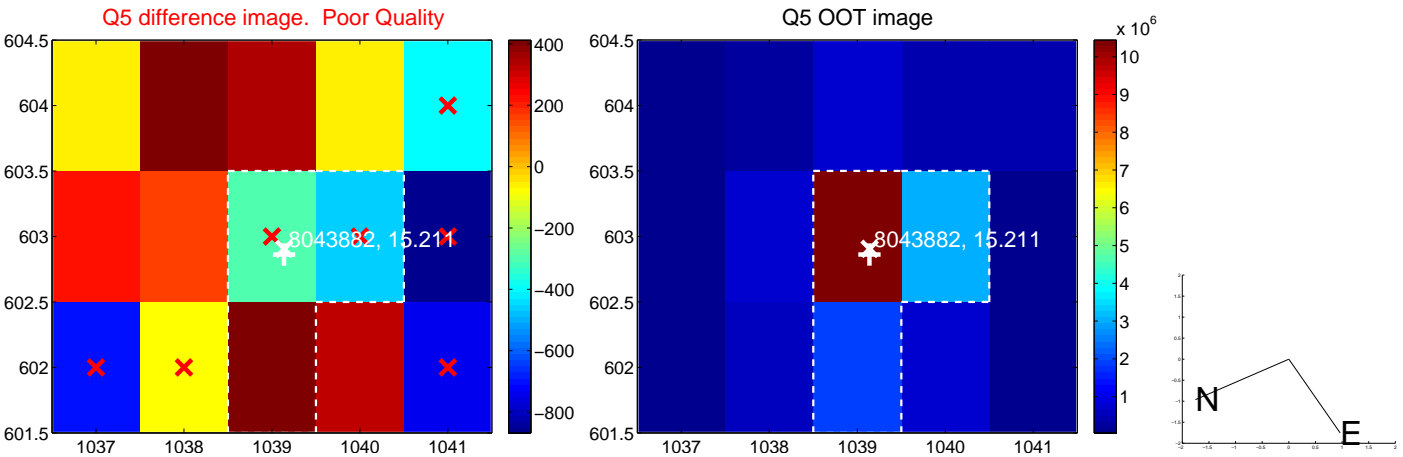


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

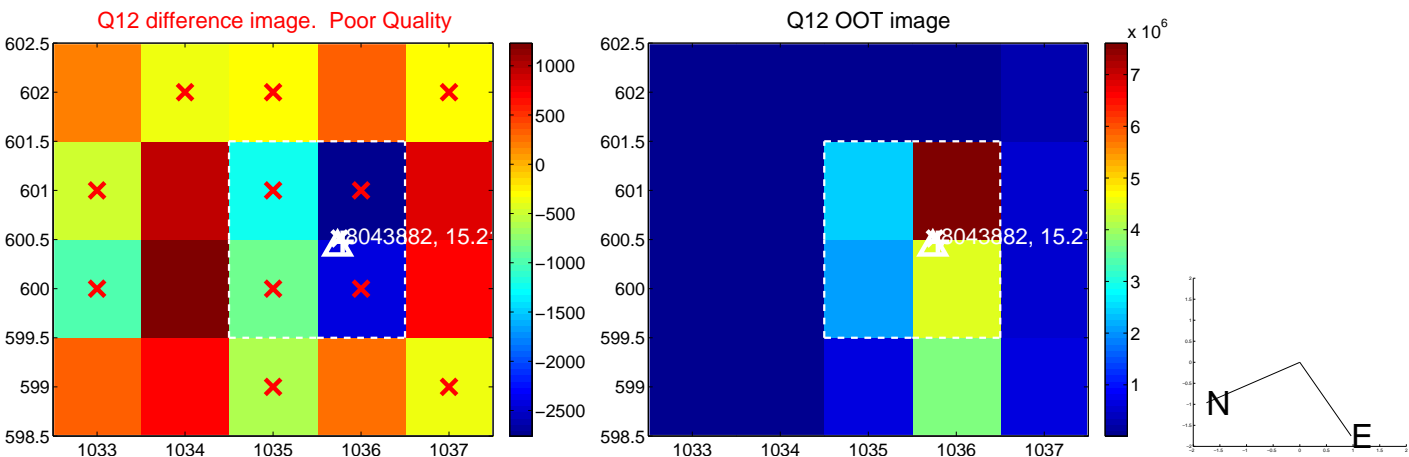
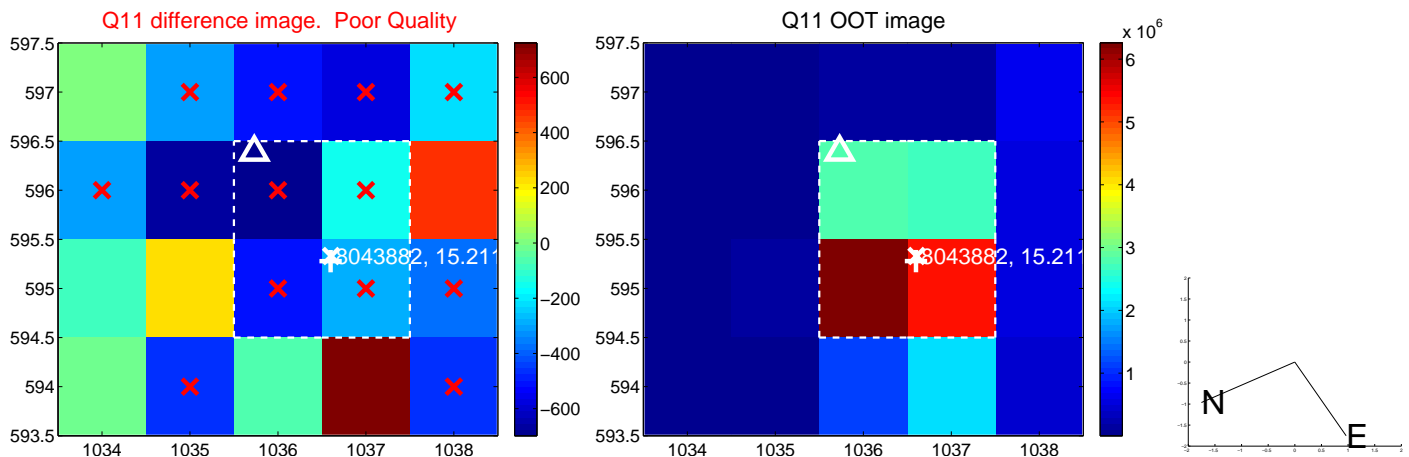
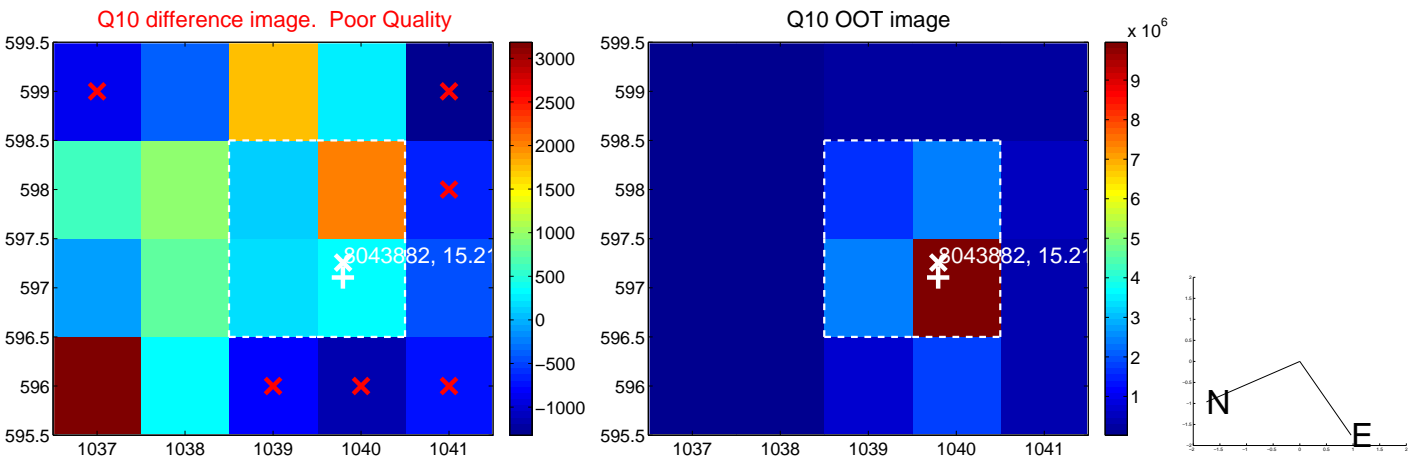
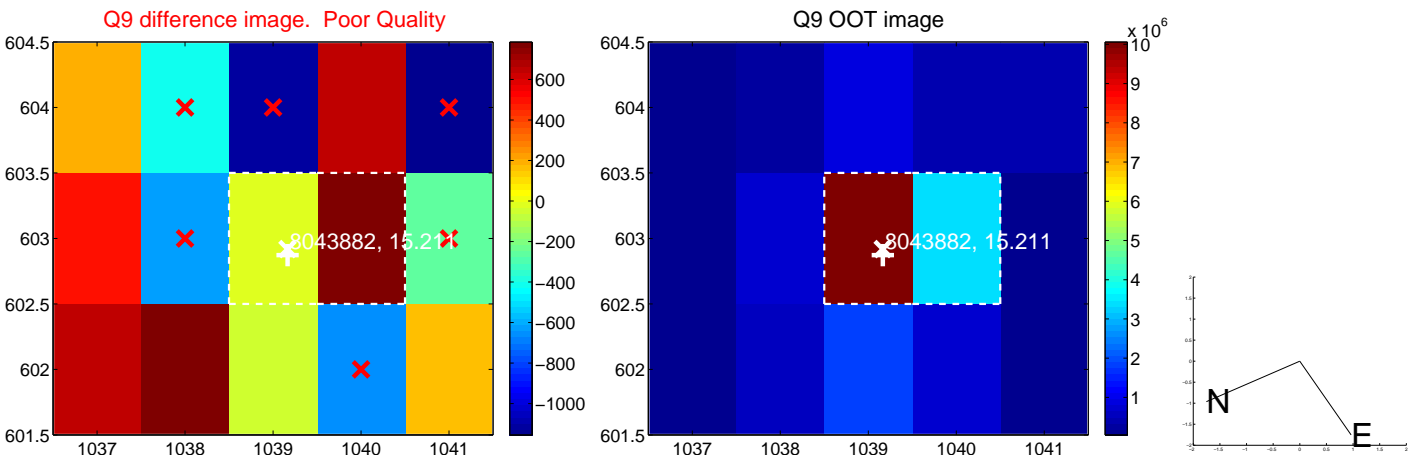


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

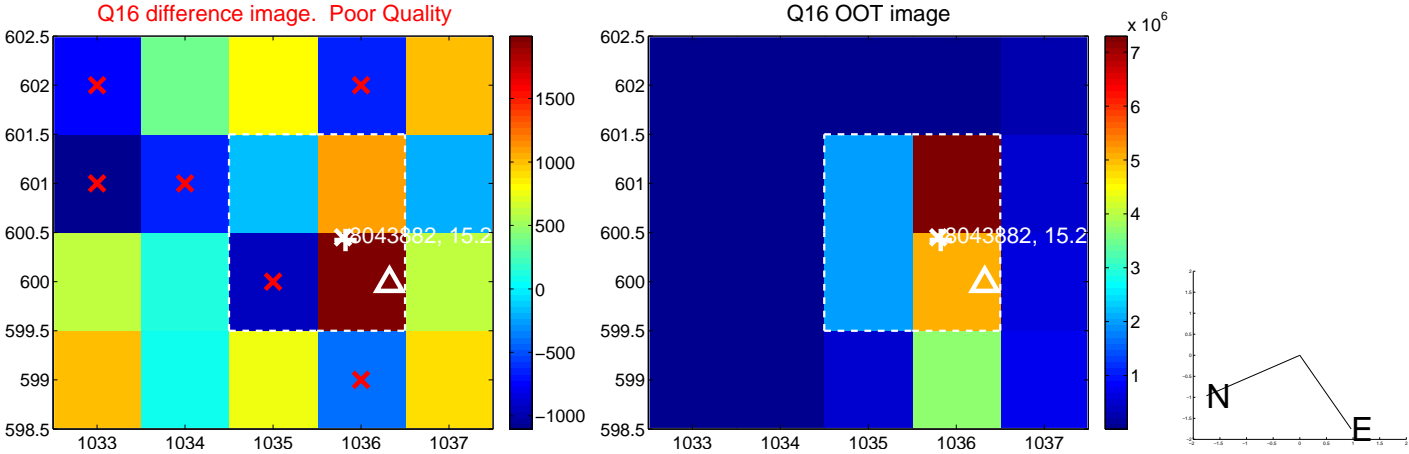
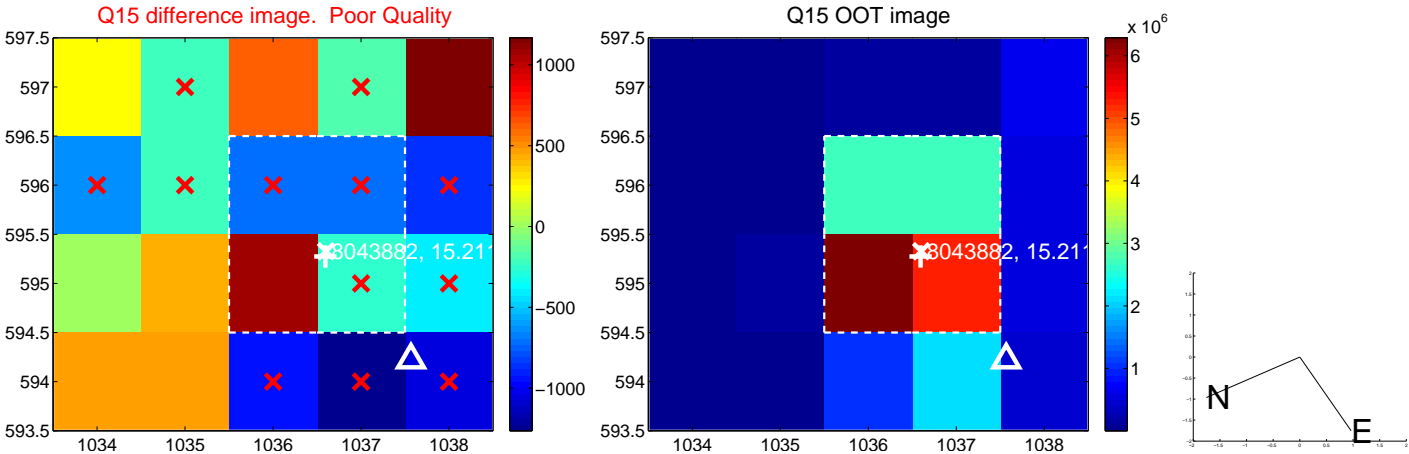
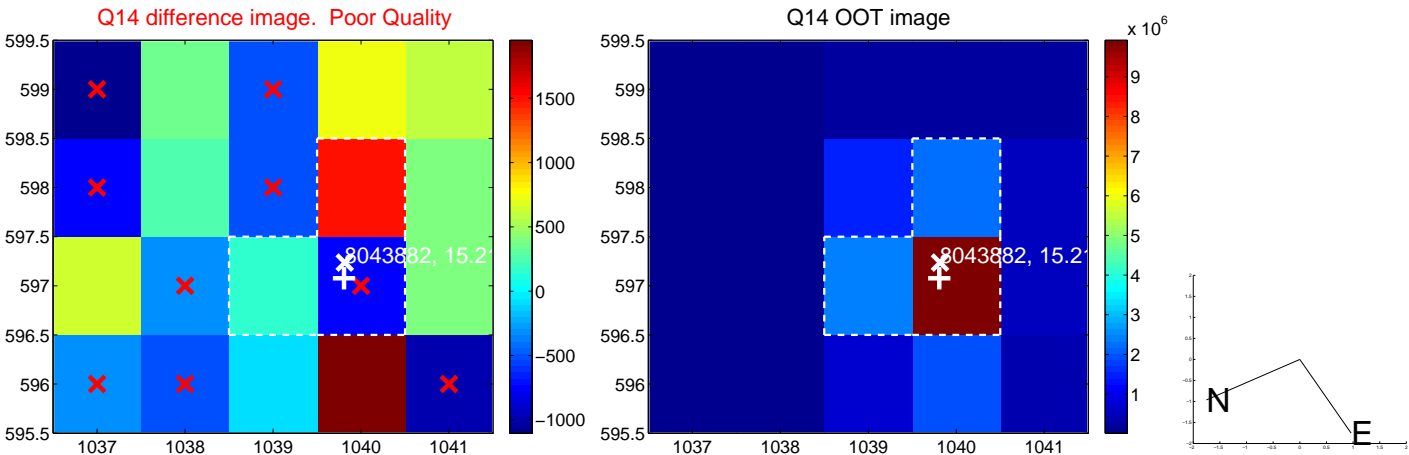
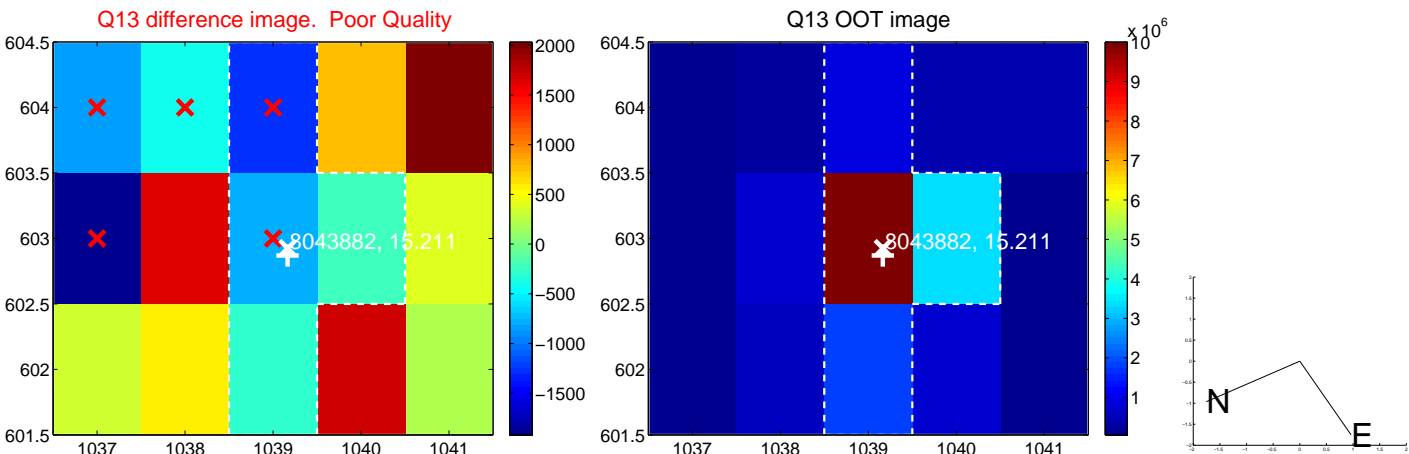




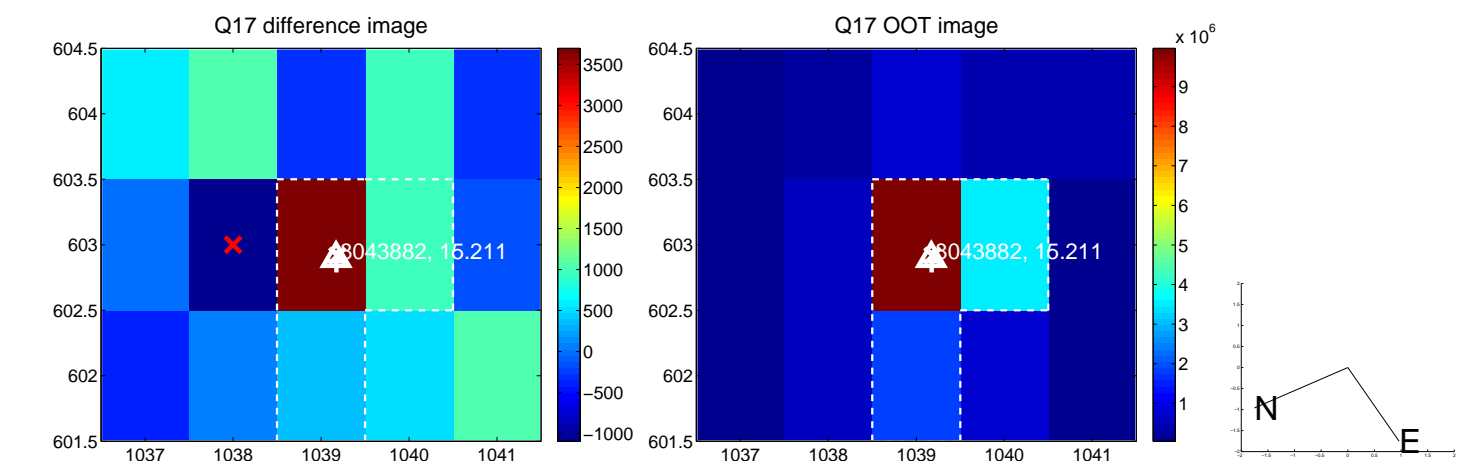
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



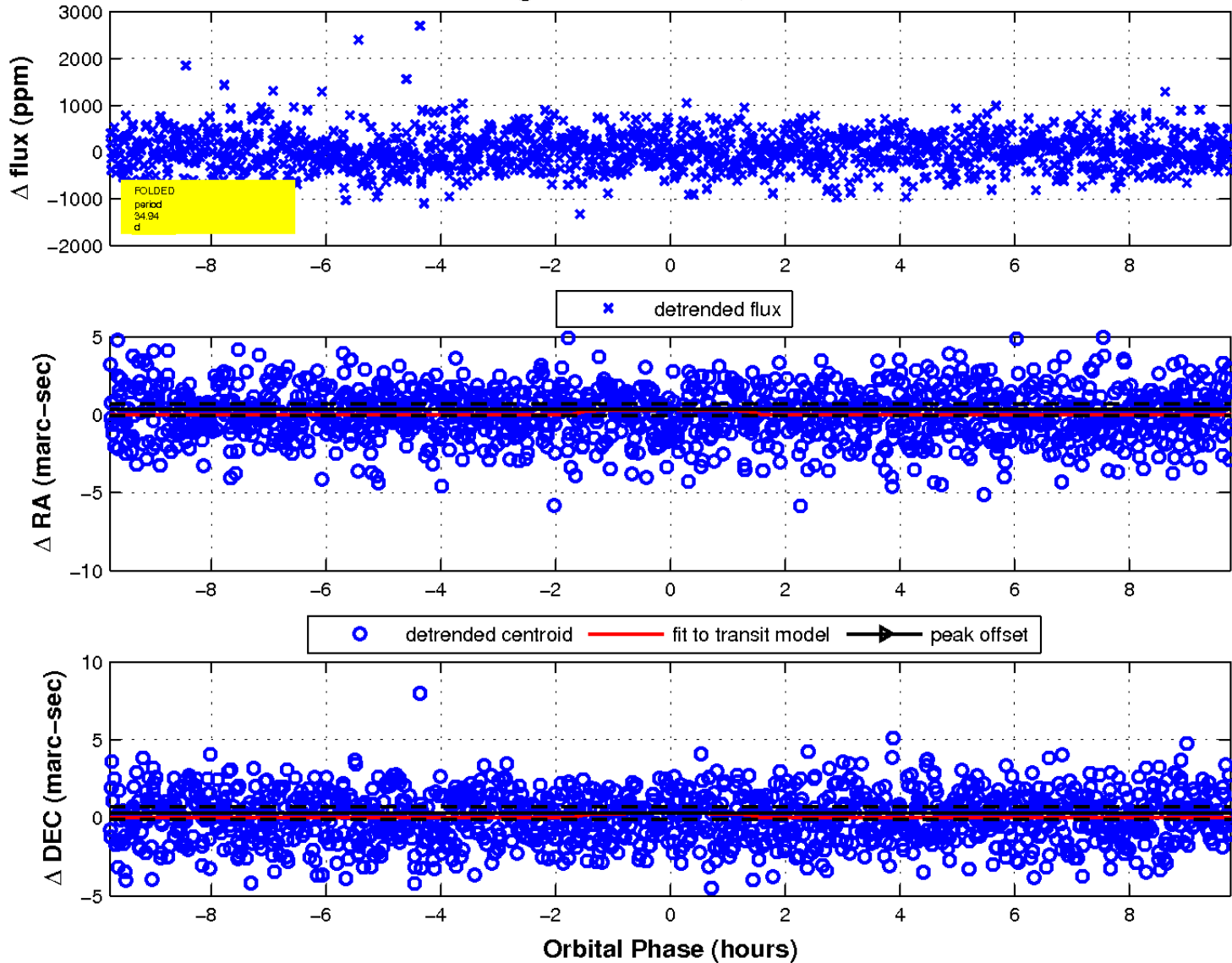
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

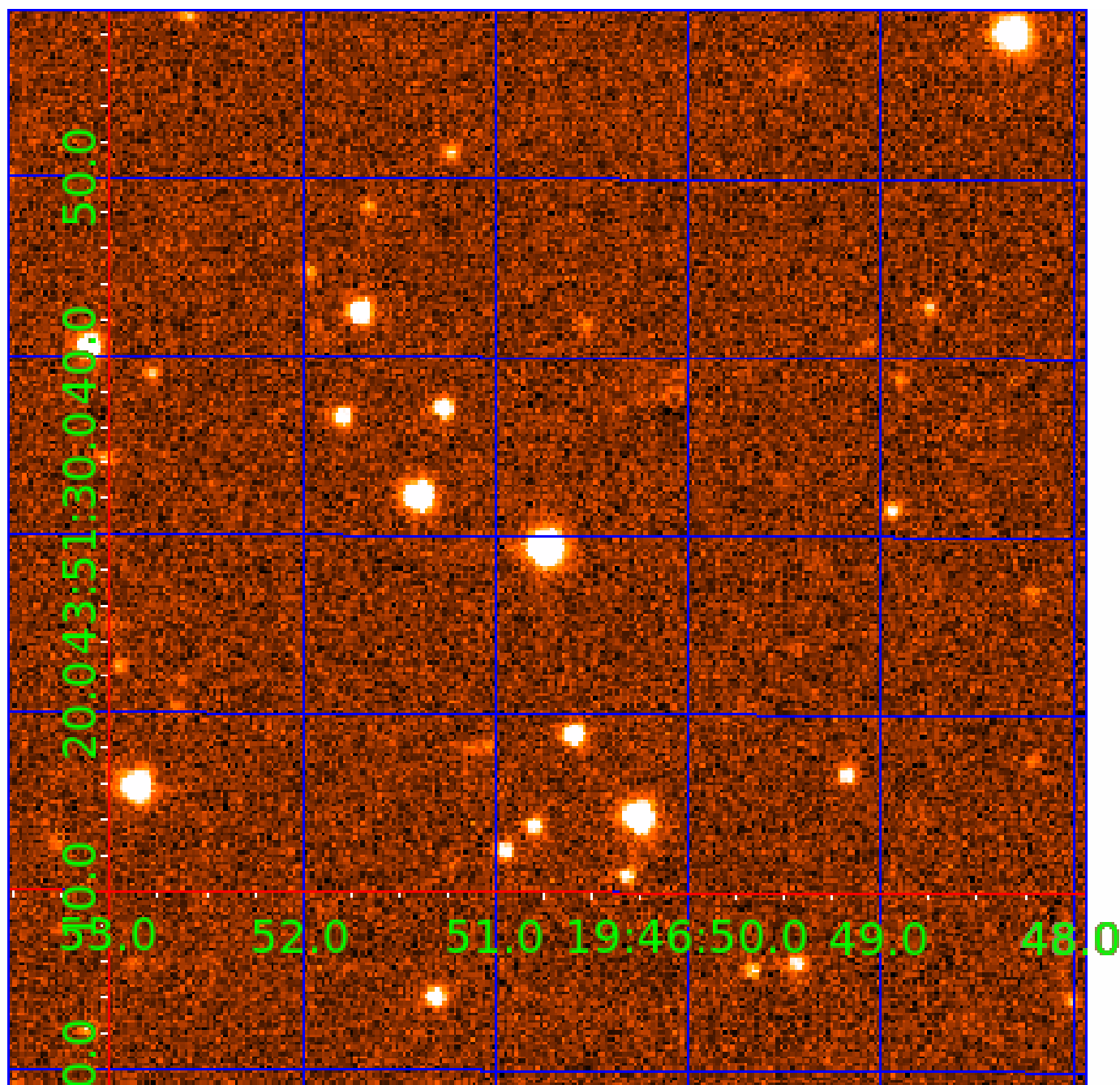


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



# KIC 008043882

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008043882-01	OBS	6169.01	0.779569	131.707460	63.5	5.170	12.7	14.2	1.07	5899	0.85	4582.73
008043882-02	OBS	No	34.936320	131.979432	393.7	3.256	10.2	5.3	1.07	5899	2.34	28.79
008043882-03	OBS	No	101.382013	215.345901	921.6	6.571	9.2	8.1	1.07	5899	3.55	6.96

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008043882-01	OBS	FP	0.00	0	0	1	1	CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
008043882-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008043882-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST

**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 008043882-03

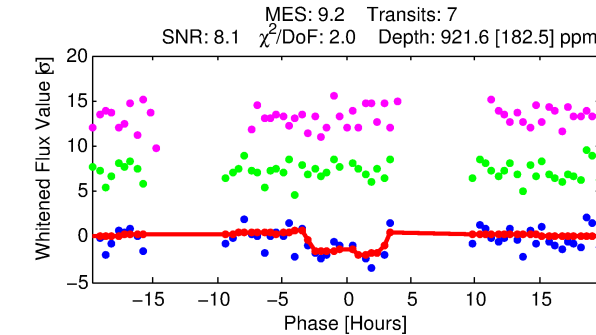
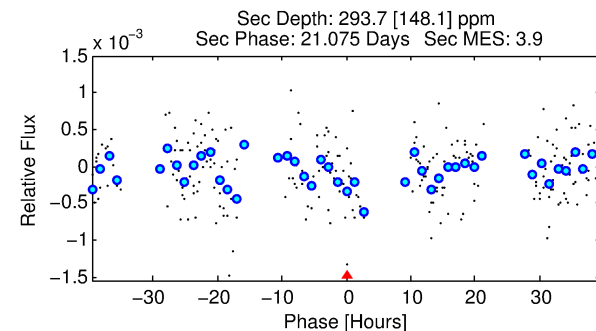
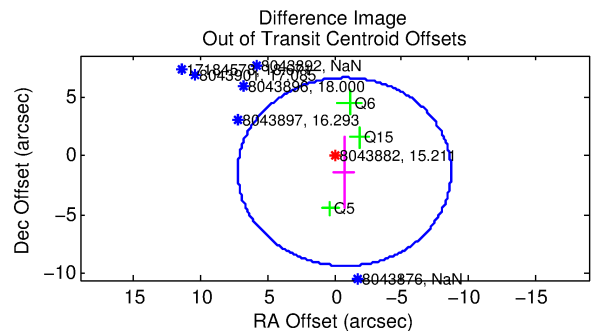
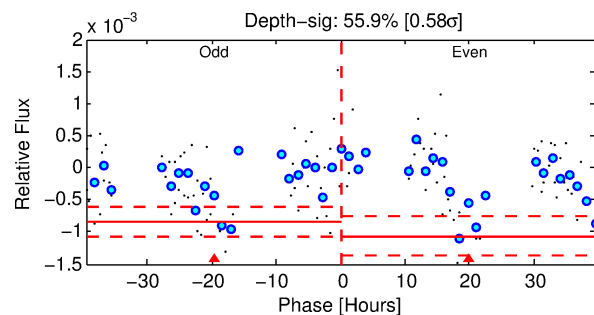
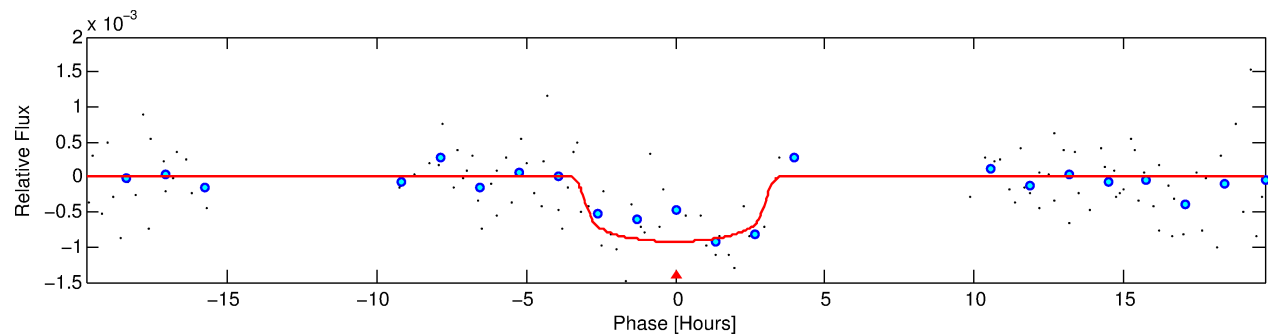
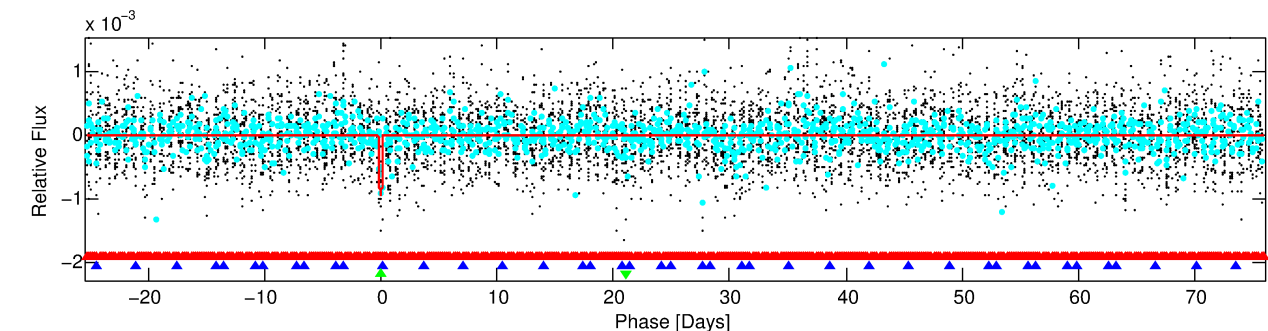
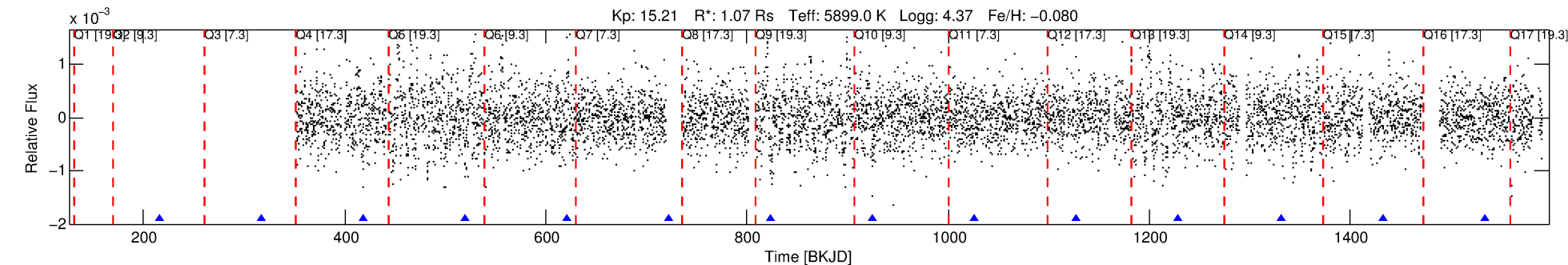
No Significant Match Found



# DV One-Page Summary

KIC: 8043882 Candidate: 3 of 3 Period: 101.382 d  
KOI: K06169 Corr: No Ephemeris Match

Kp: 15.21 R\*: 1.07 Rs Teff: 5899.0 K Logg: 4.37 Fe/H: -0.080



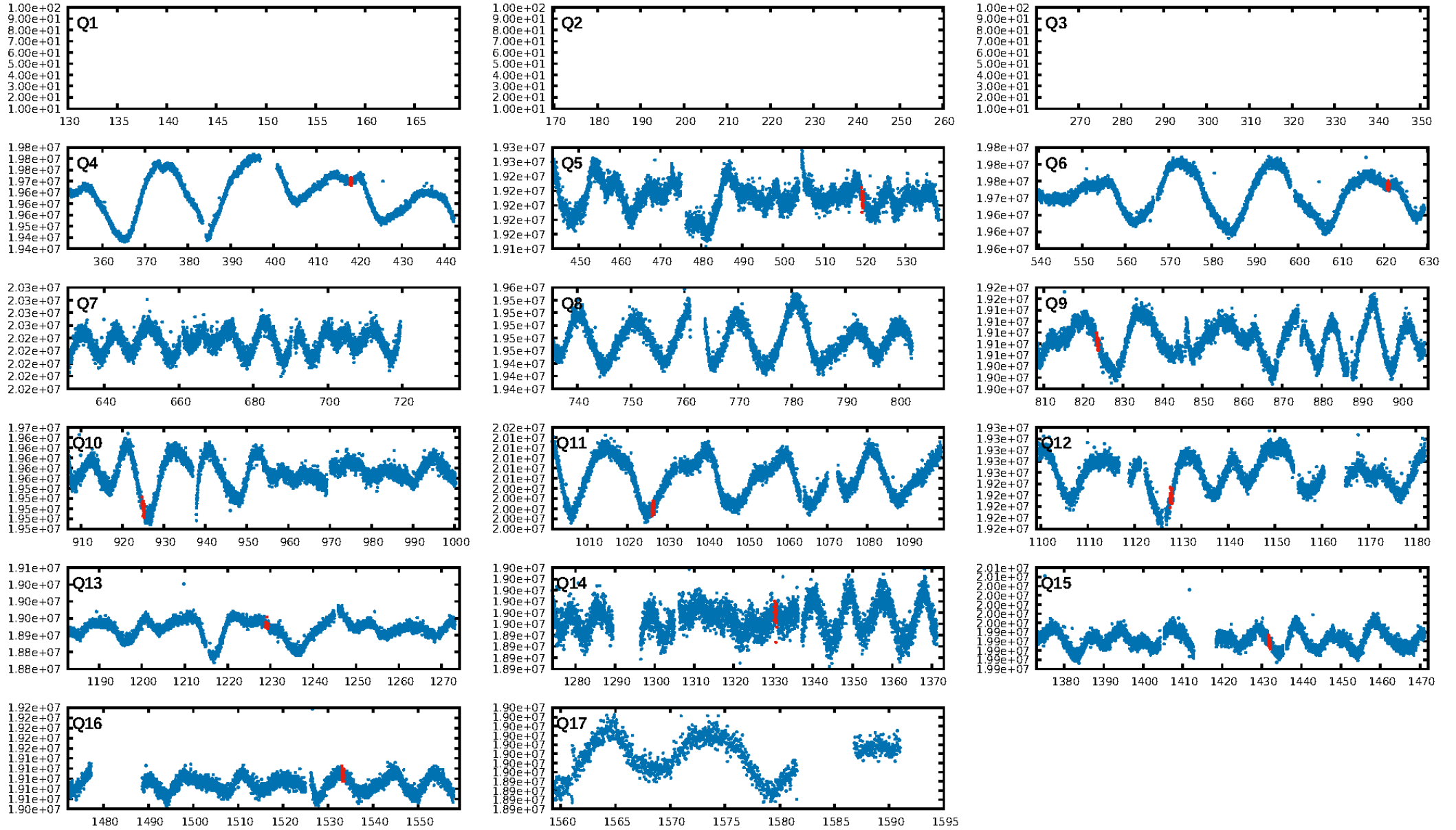
## DV Fit Results:

Period = 101.38201 [0.01270] d  
Epoch = 215.3459 [0.0649] BKJD  
Rp/R\* = 0.0304 [0.0212]  
a/R\* = 81.53 [269.69]  
b = 0.76 [1.72]  
Seff = 6.96 [2.74]  
Teff = 414 [41] K  
Rp = 3.55 [2.69] Re  
a = 0.4226 [0.1070] AU  
Ag = 2295.04 [3503.56] [0.65σ]  
Teffp = 4431 [1649] K [2.44σ]

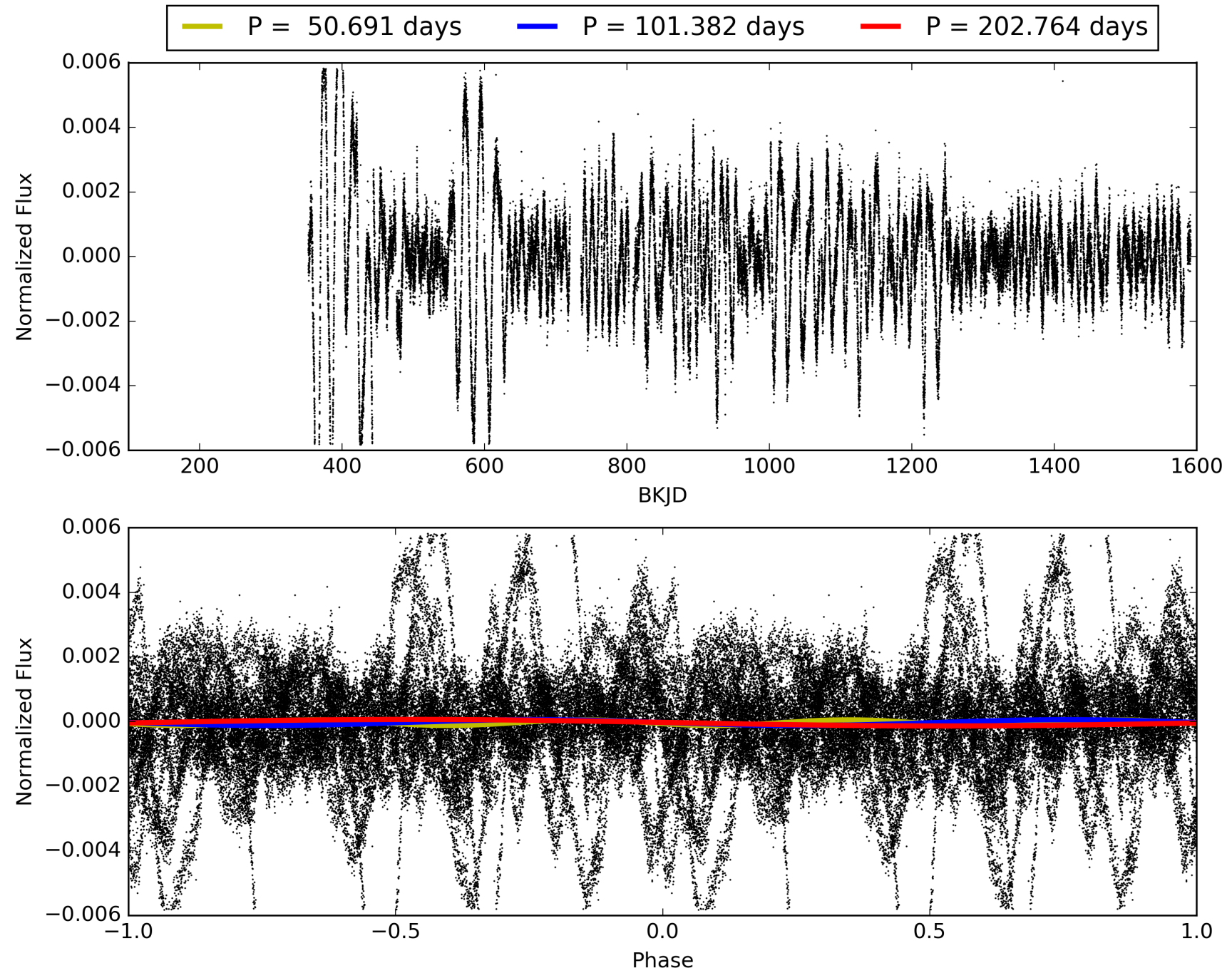
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [217.45σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 13.2%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 8.07e-12**  
RollingBand-fgt: 1.00 [7/7]  
**GhostDiagnostic-chr: -0.07471**  
**Centroid-sig: 0.1%**  
Centroid-so: 1.052 arcsec [2.04σ]  
OotOffset-rm: 1.552 arcsec [0.58σ]  
KicOffset-rm: 1.343 arcsec [0.48σ]  
OotOffset-st: 1/1/0/1 [3]  
KicOffset-st: 1/1/0/1 [3]  
DiffImageQuality-fgm: 0.00 [0/3]  
DiffImageOverlap-fno: 0.00 [0/8]

# TCE 008043882-03, PDC Light Curves

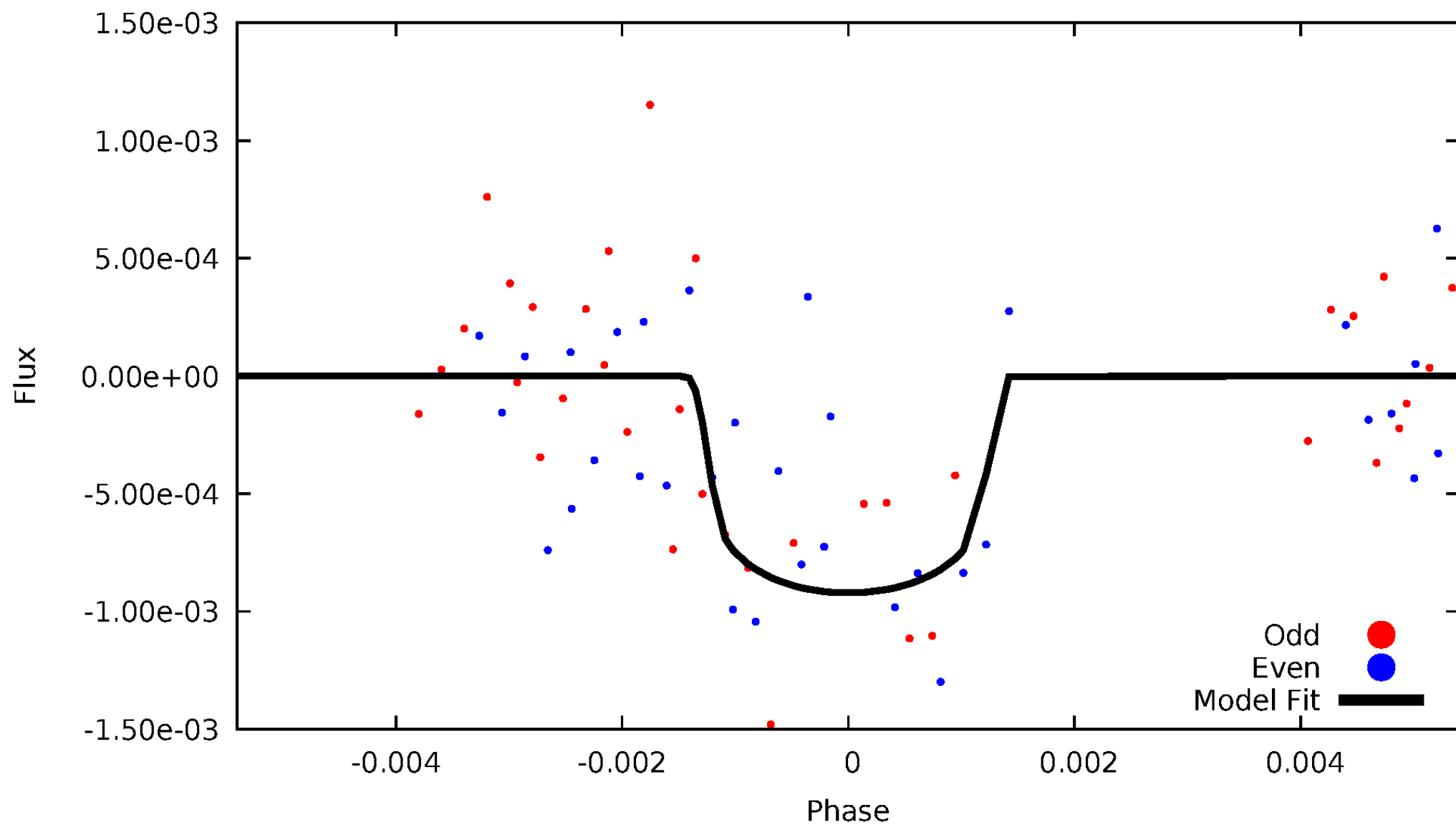


# TCE 008043882-03



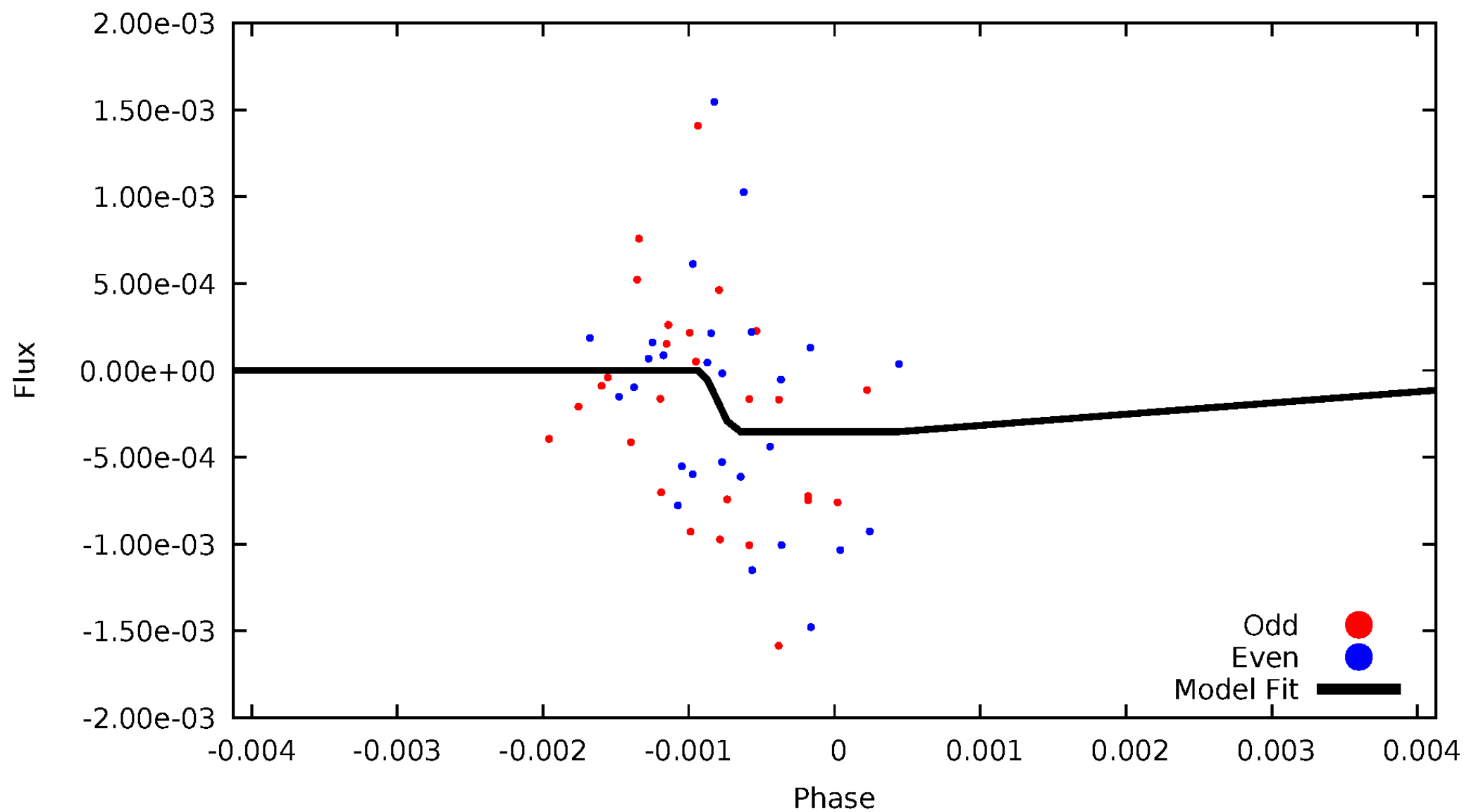
# DV Odd/Even

TCE 008043882-03



# ALT Odd/Even

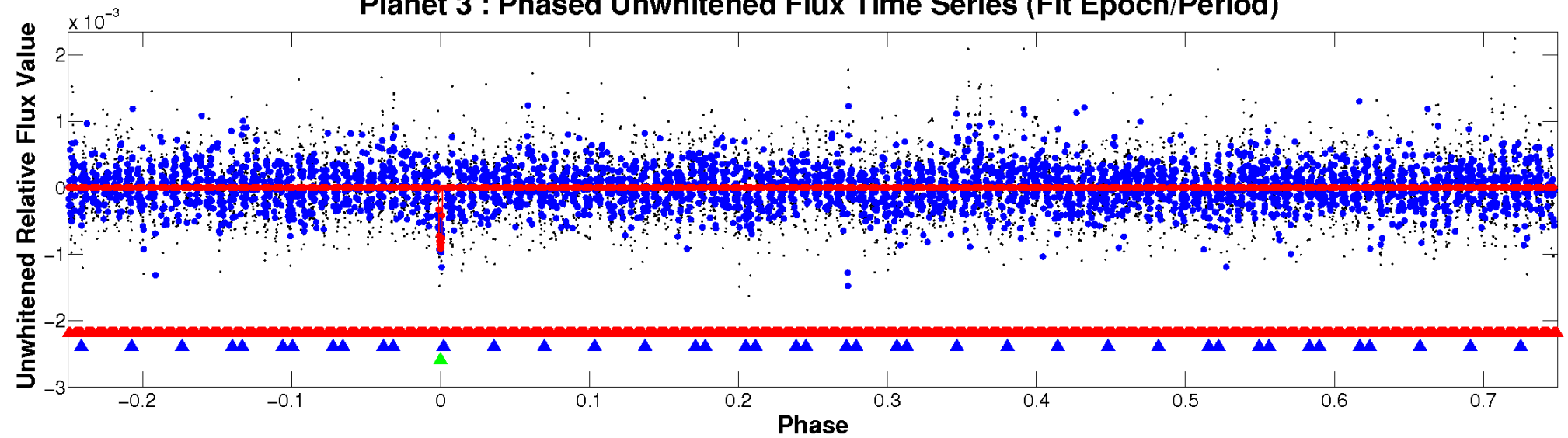
TCE 008043882-03



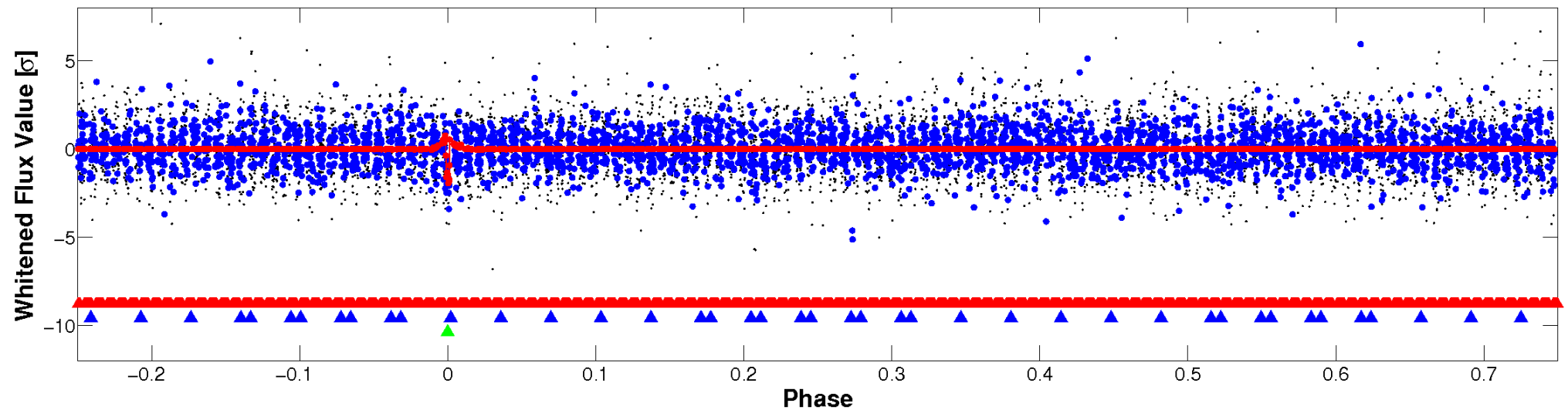


# Non-Whitened Vs. Whitened Light Curve

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

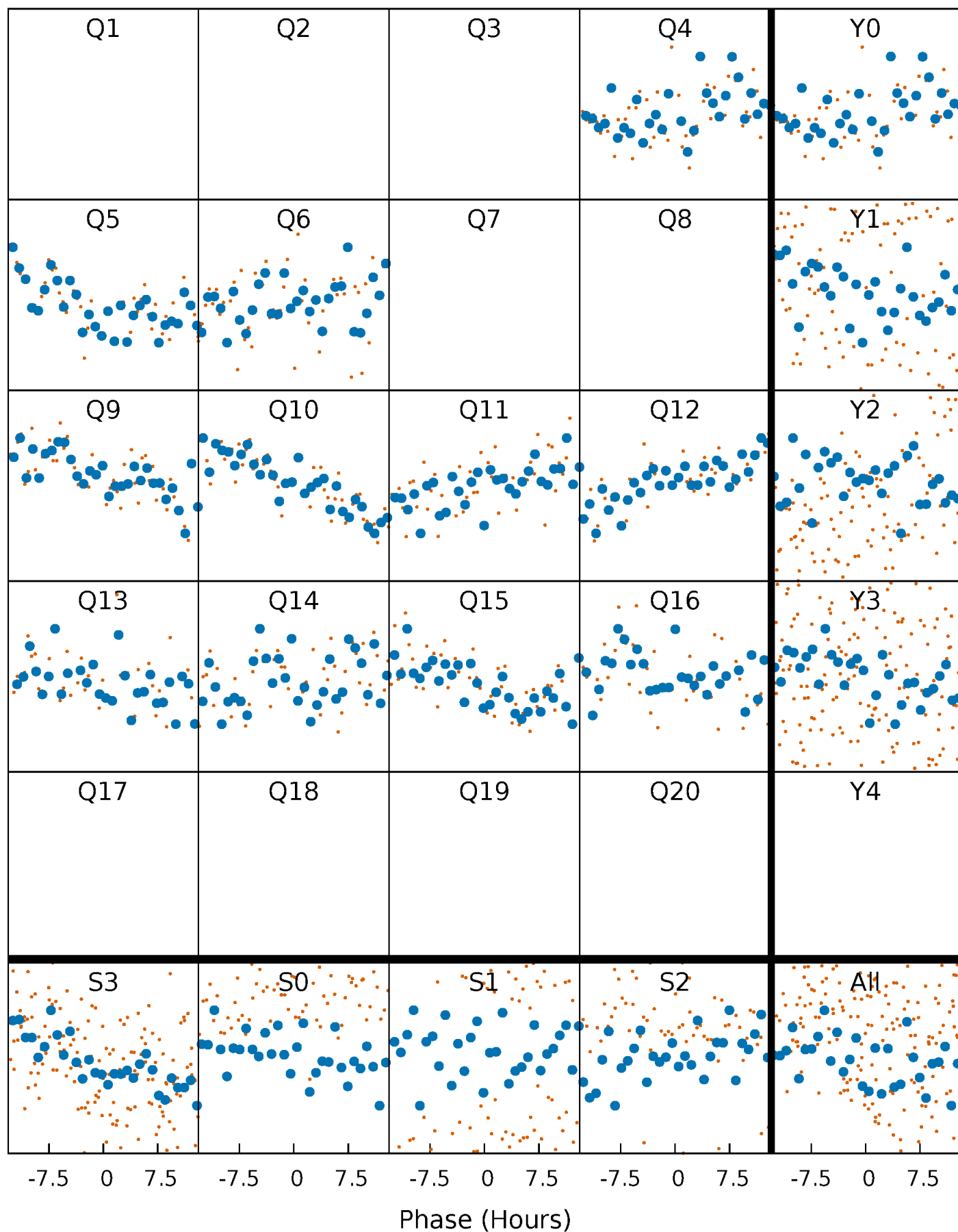


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



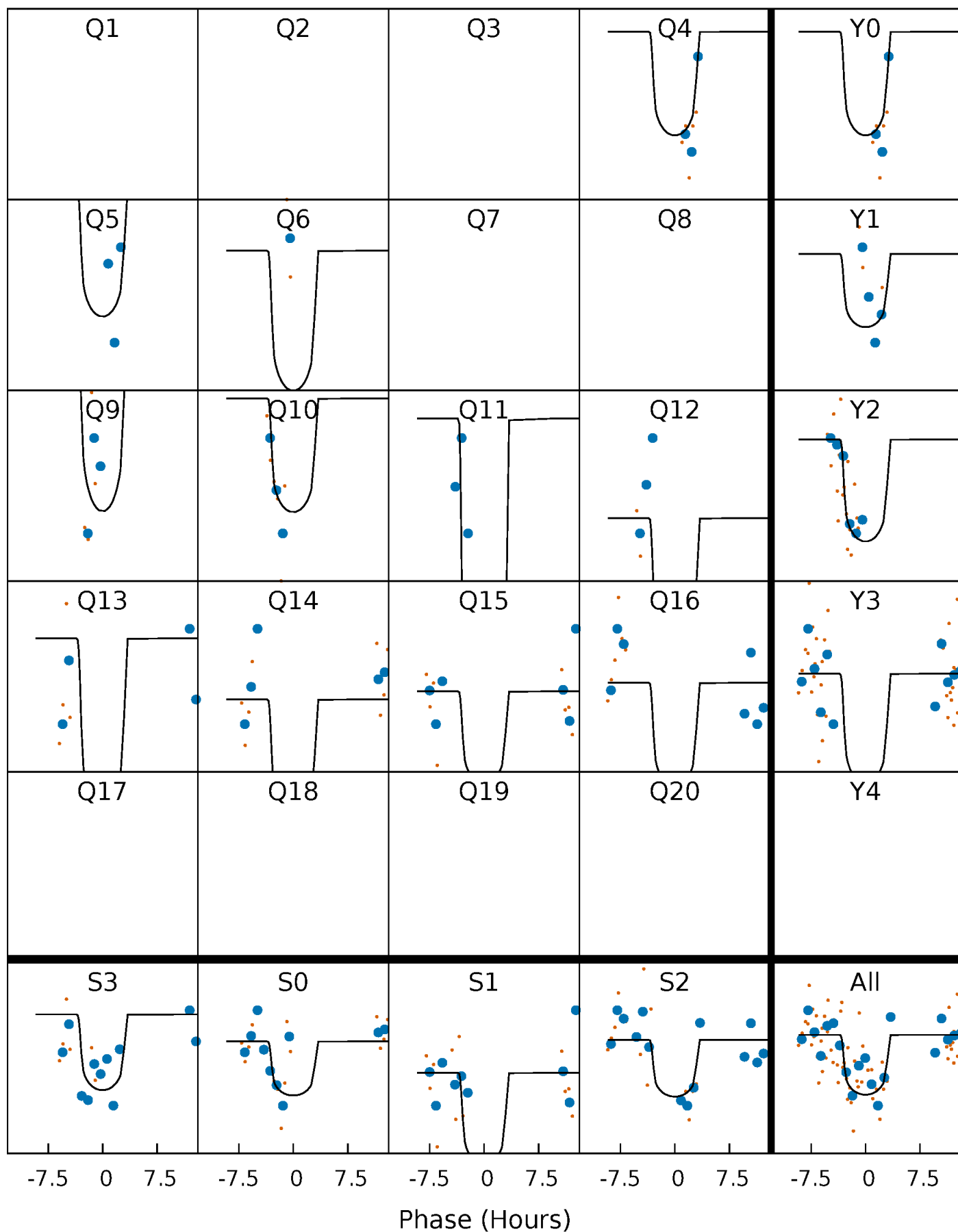
# PDC Quarter-Phased Transit Curves

TCE 008043882-03   P=101.382013 Days    $T_0=215.345901$  (BKJD)



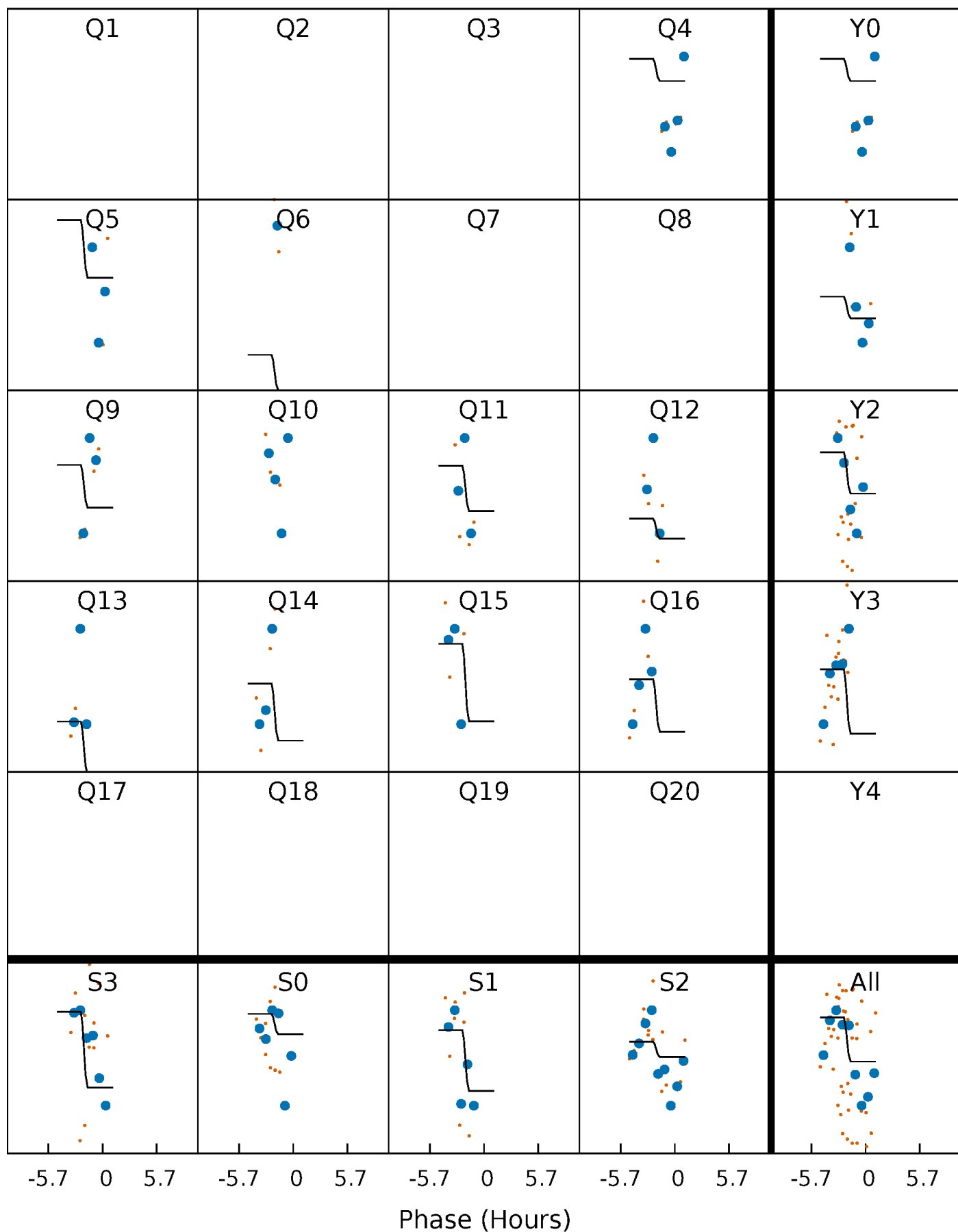
# DV Quarter-Phased Transit Curves

TCE 008043882-03   P=101.382013 Days    $T_0=215.345901$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

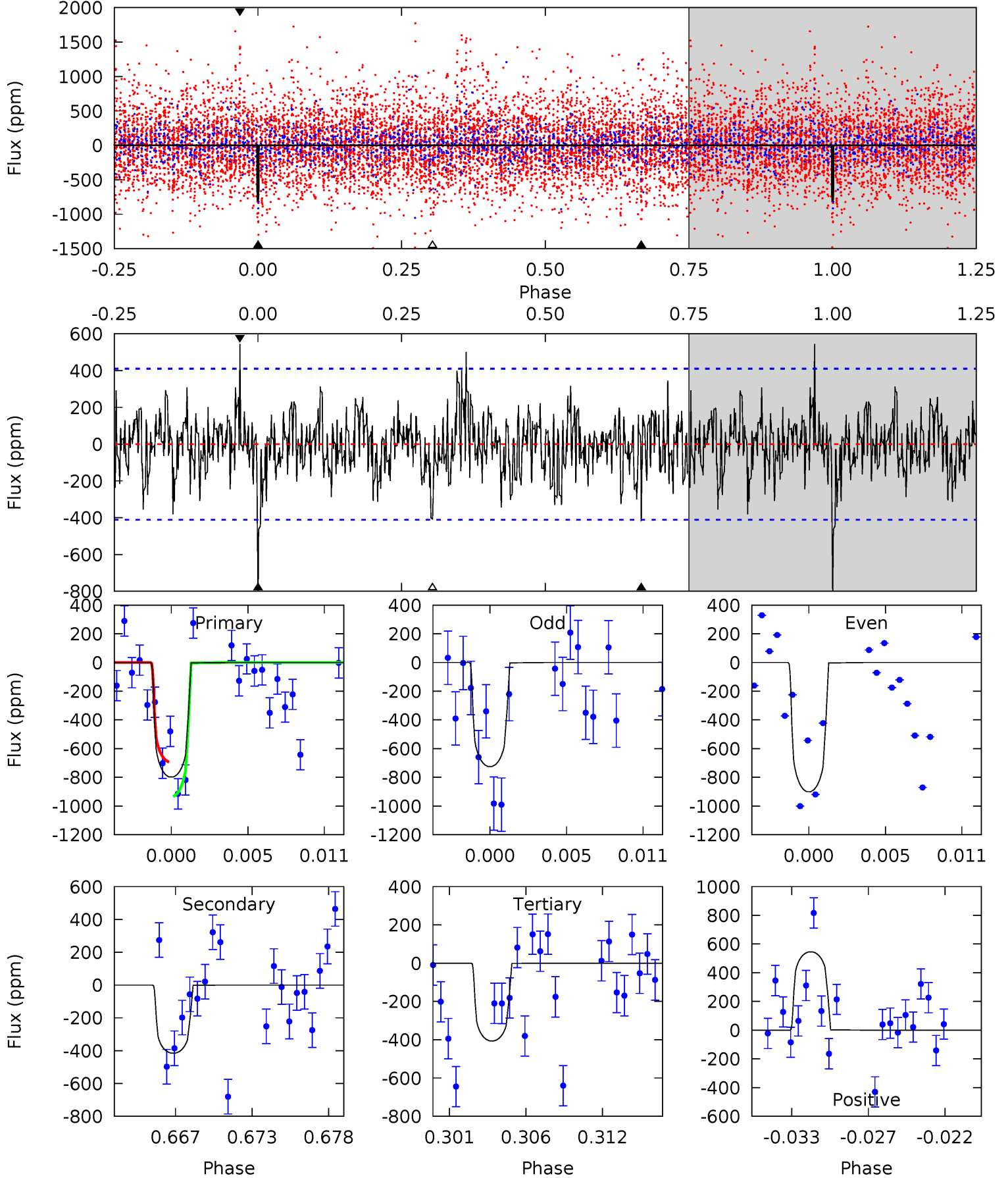
TCE 008043882-03 P=101.356058 Days  $T_0=215.496902$  (BKJD)



# DV Model-Shift Uniqueness Test

008043882-03, P = 101.382013 Days, E = 215.345901 Days

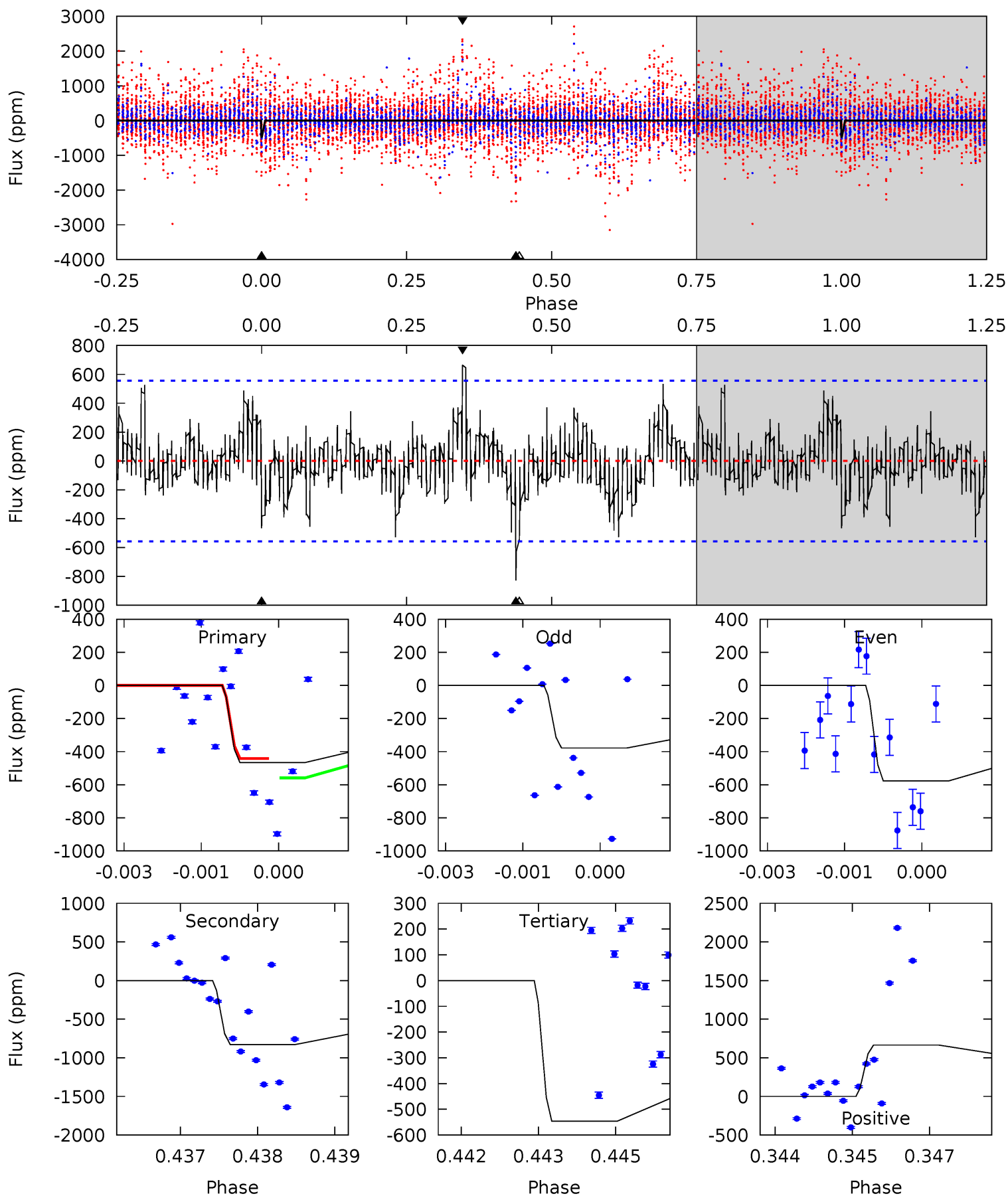
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.99	5.19	5.08	6.82	5.14	2.78	1.52	4.90	3.16	0.11	-1.63	1.10	0.85	0.41	1.48



# Alt Model-Shift Uniqueness Test

008043882-03, P = 101.356058 Days, E = 215.496902 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
4.53	8.05	5.31	6.47	5.41	3.22	1.36	-0.78	-1.94	2.74	1.58	0.90	0.65	0.45	0.43





### Stellar Parameters For KIC 008043882

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5899^{+184}_{-205}$	$4.370^{+0.124}_{-0.201}$	$-0.080^{+0.300}_{-0.300}$	$1.070^{+0.322}_{-0.173}$	$0.979^{+0.138}_{-0.110}$	$1.126^{+0.670}_{-0.572}$
	+3%/-3%	+3%/-5%	+375%/-375%	+30%/-16%	+14%/-11%	+60%/-51%
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 008043882-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-415 \pm 80$	$3.89^{+2.62}_{-2.08}$	$582^{+45}_{-33}$	$4720^{+2225}_{-761}$	$2654^{+10568}_{-1714}$
Alt.	$-829 \pm 103$	$2.81^{+2.41}_{-1.68}$	$582^{+44}_{-34}$	$6534^{+5699}_{-1637}$	$10013^{+56192}_{-7094}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

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

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

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

## DV Centroid Data

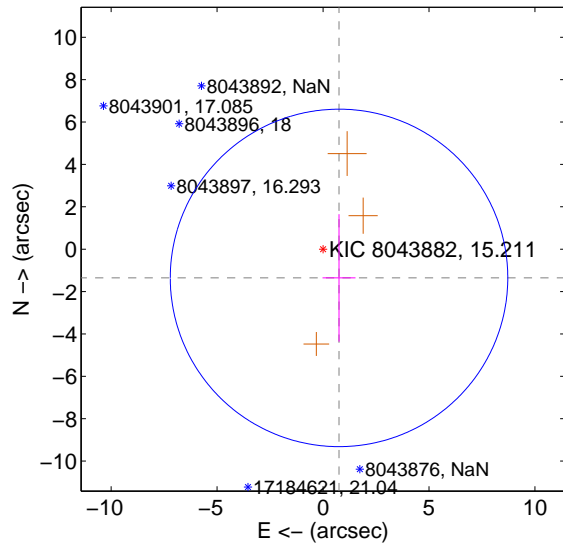
Supplemental centroid analysis for 008043882-03. Kepler magnitude: 15.21. Transit SNR 8.07

There are 0 quarters with good PRF difference image offsets

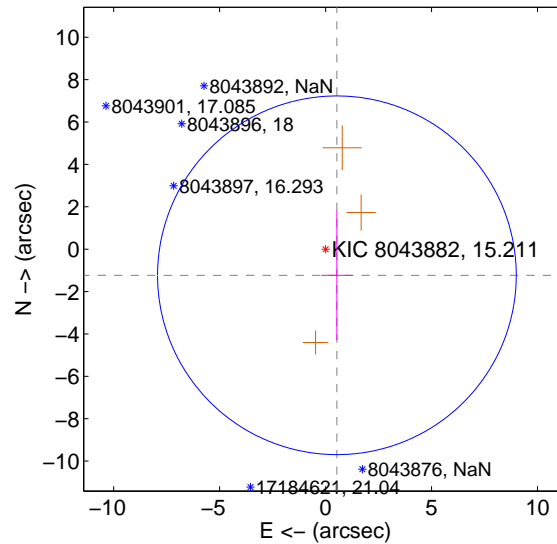
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.552 \pm 2.654$	0.58	$-0.755 \pm 0.777$	$-1.356 \pm 3.006$
PRF-fit source offset from KIC position	$1.343 \pm 2.821$	0.48	$-0.534 \pm 0.744$	$-1.232 \pm 3.058$
photometric centroid source offset	$1.05 \pm 0.51$	2.04	$-0.90 \pm 0.52$	$-0.54 \pm 0.50$

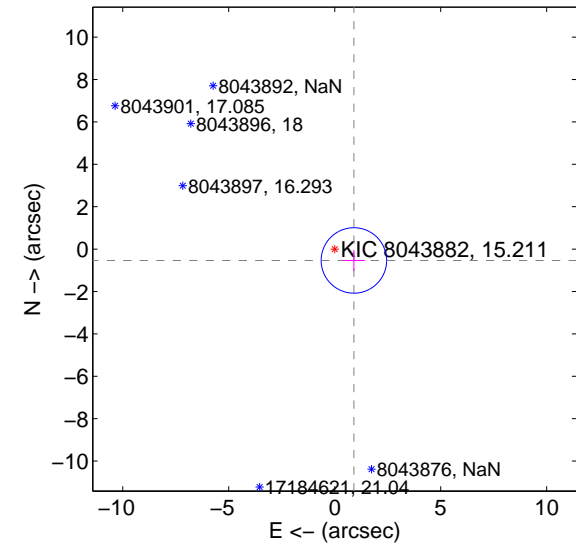
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

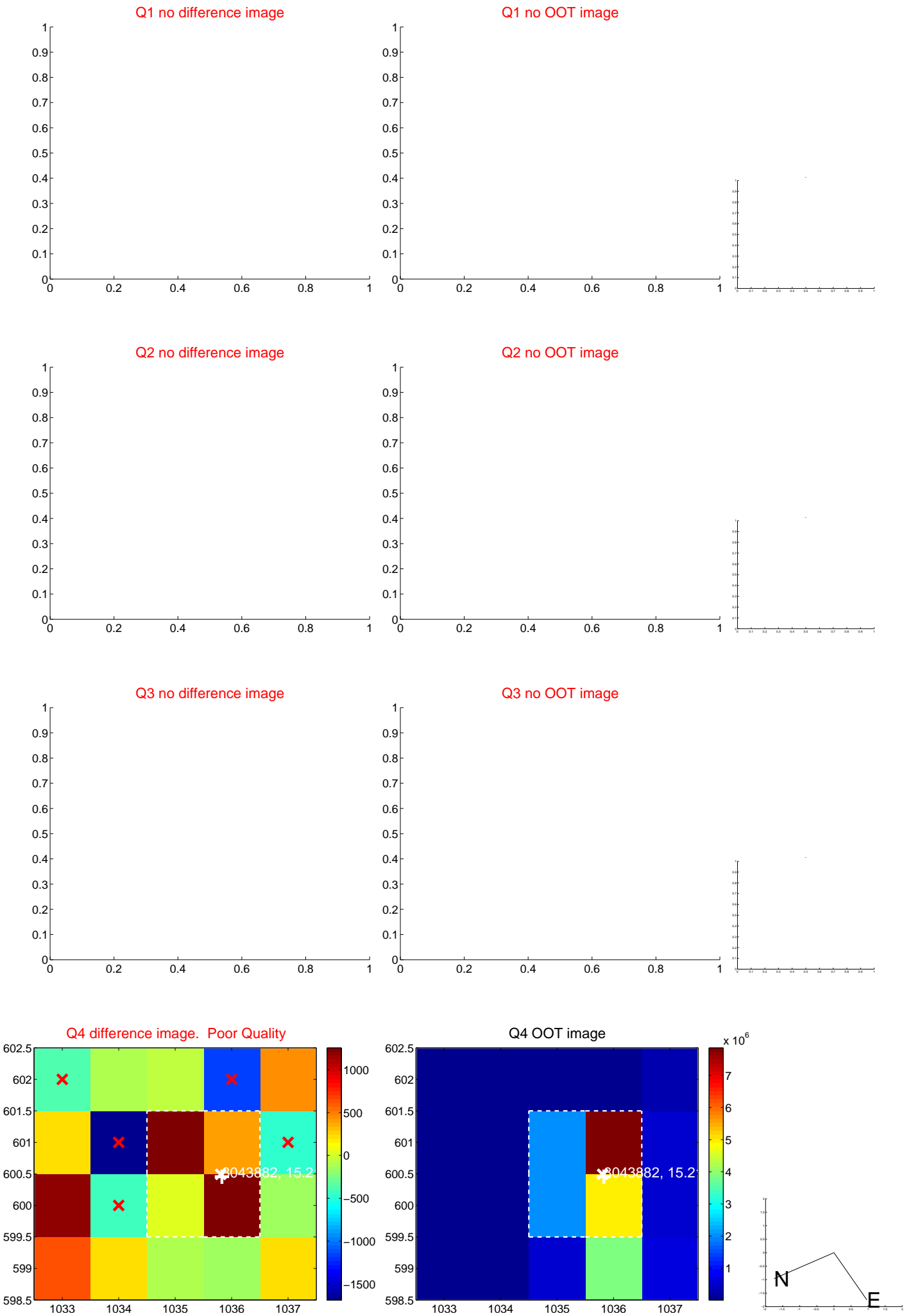


offset from photometric centroids

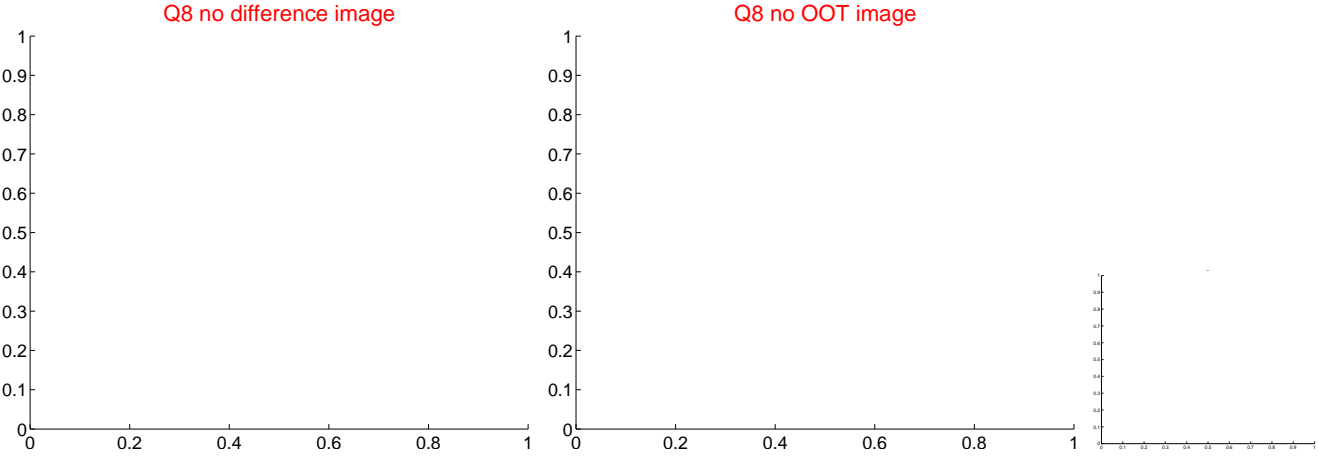
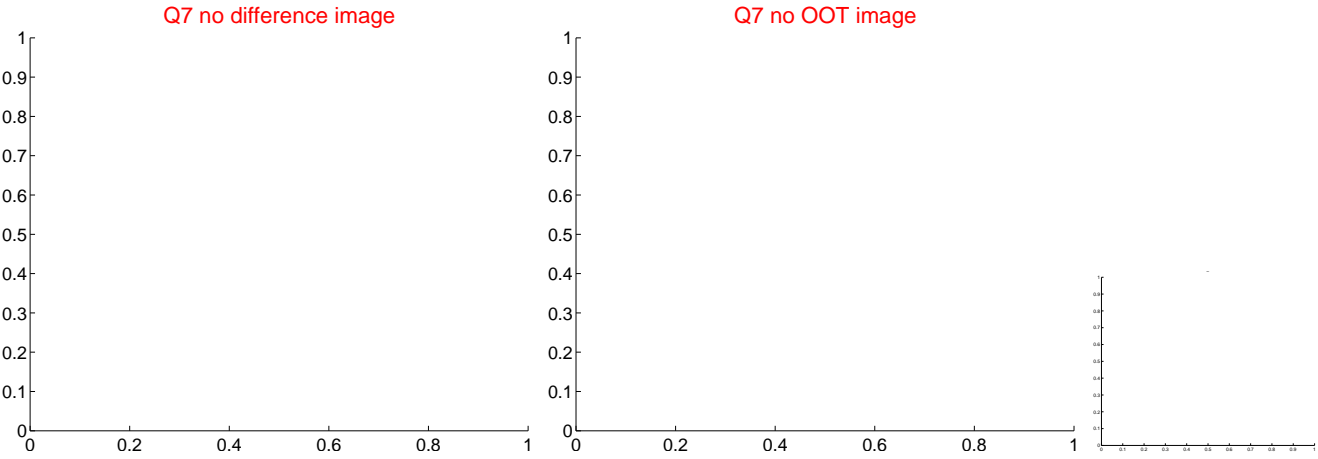
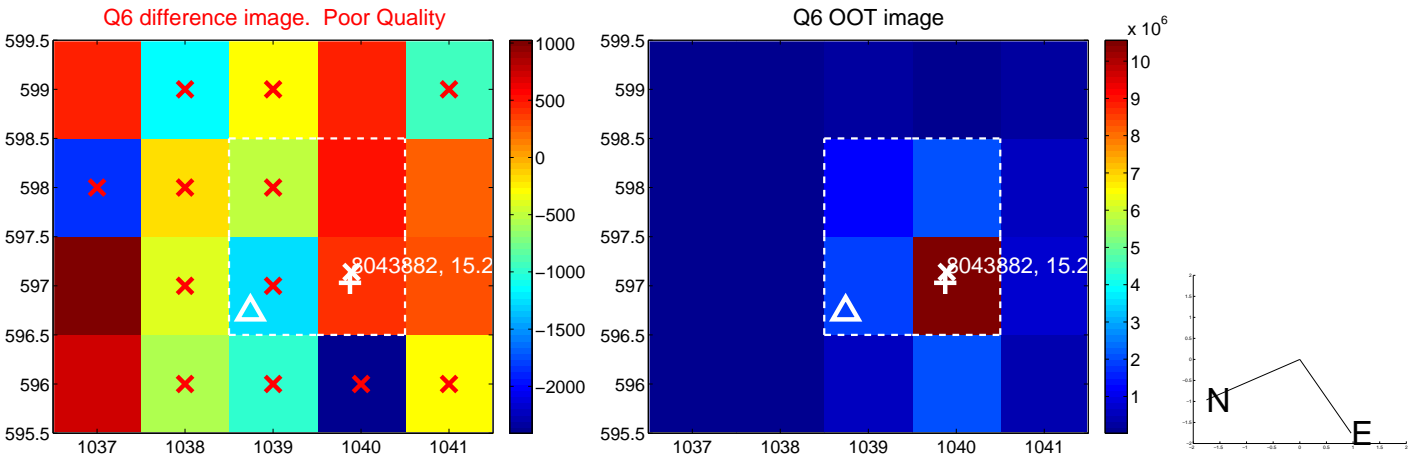
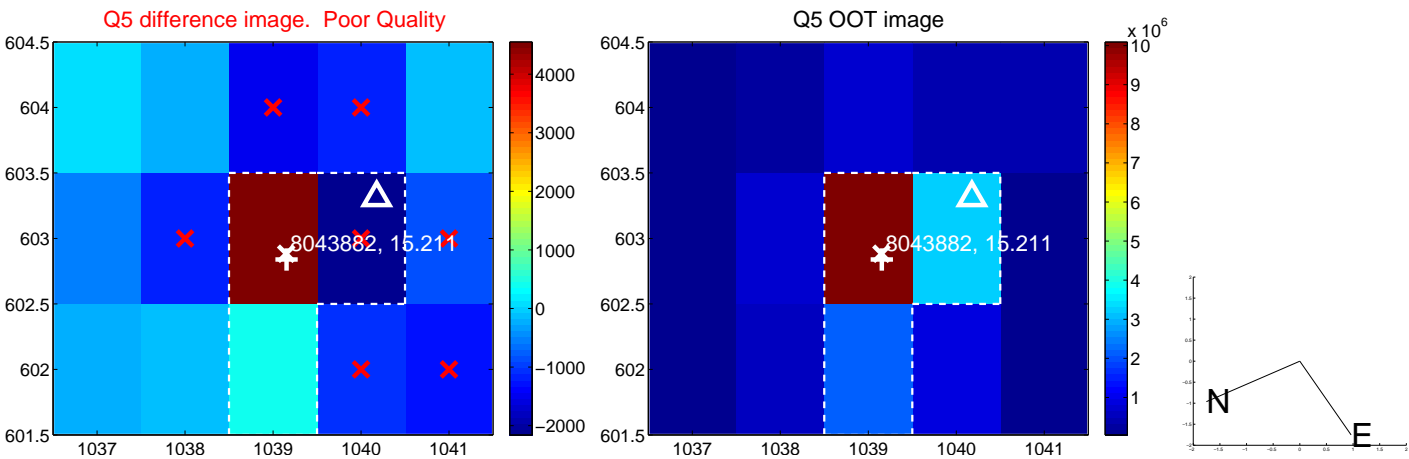


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

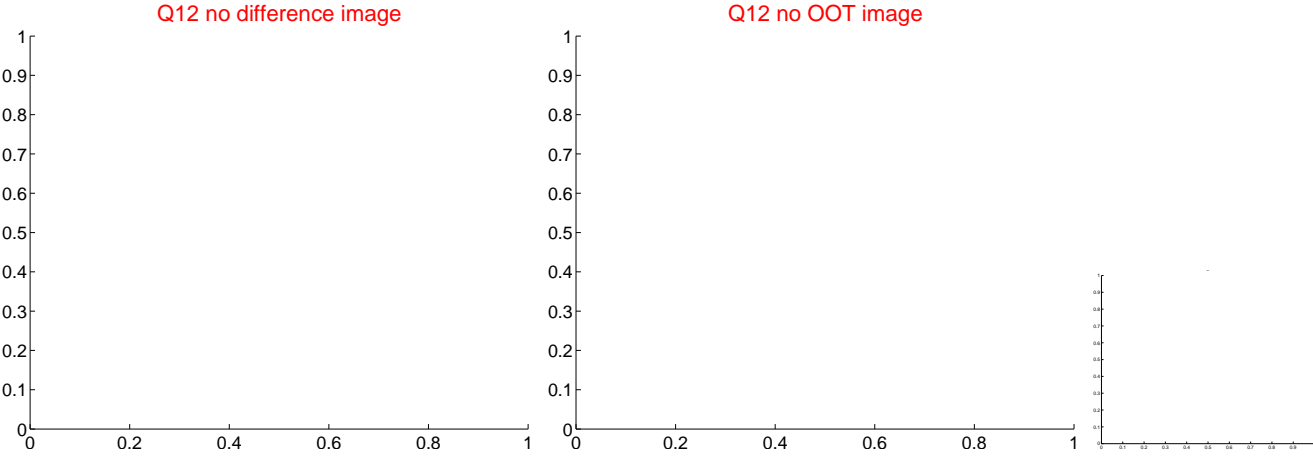
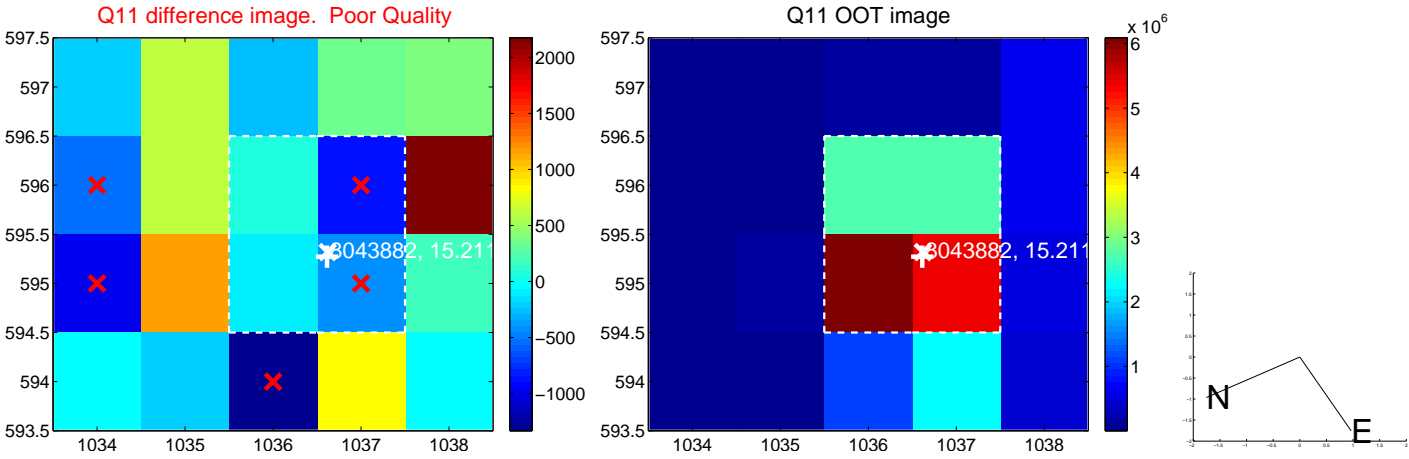
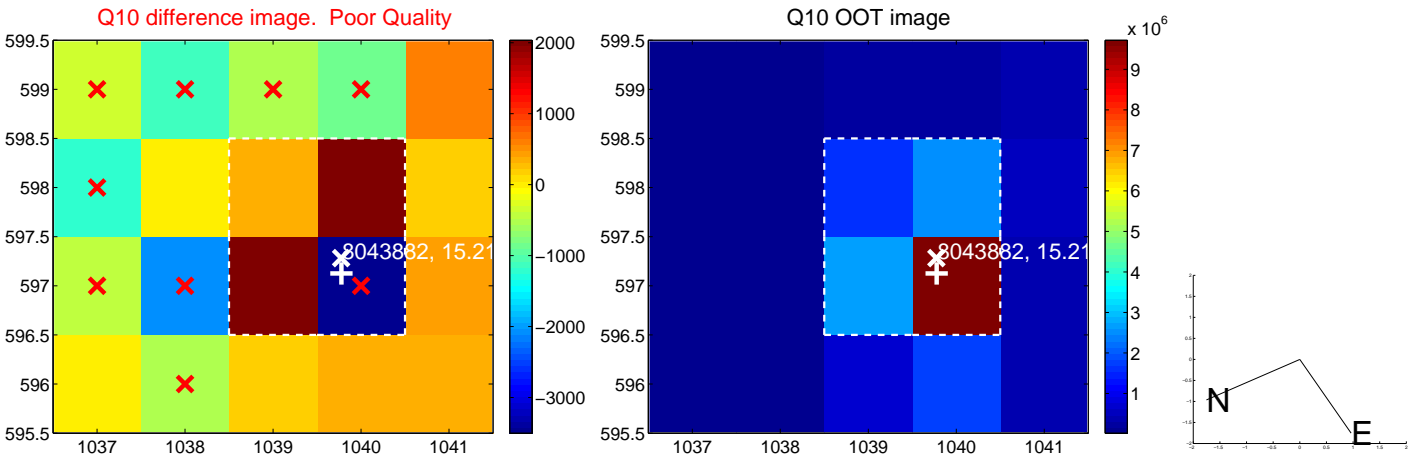
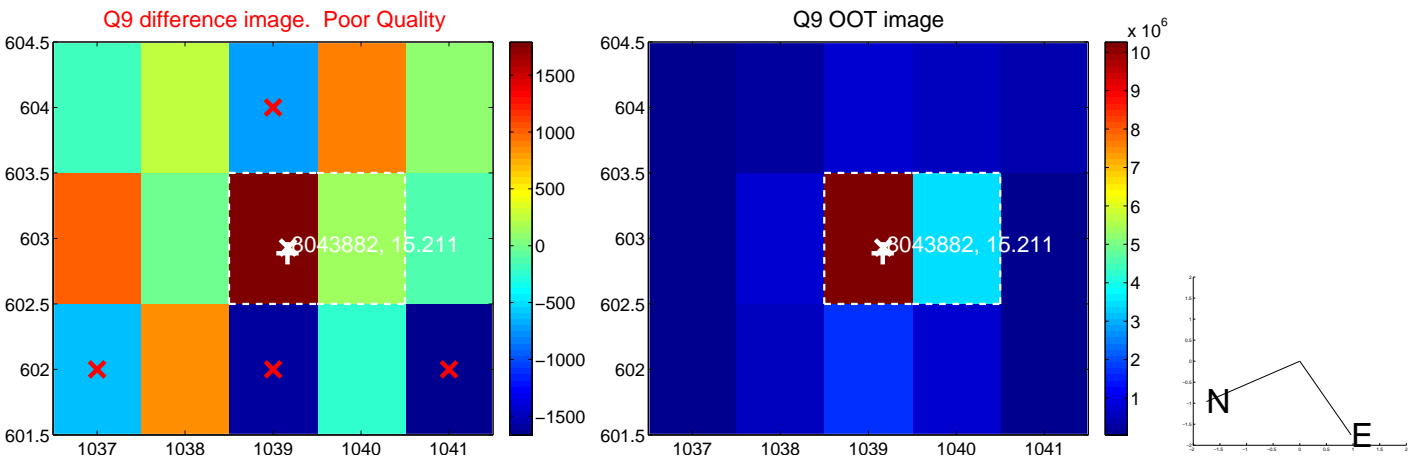
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



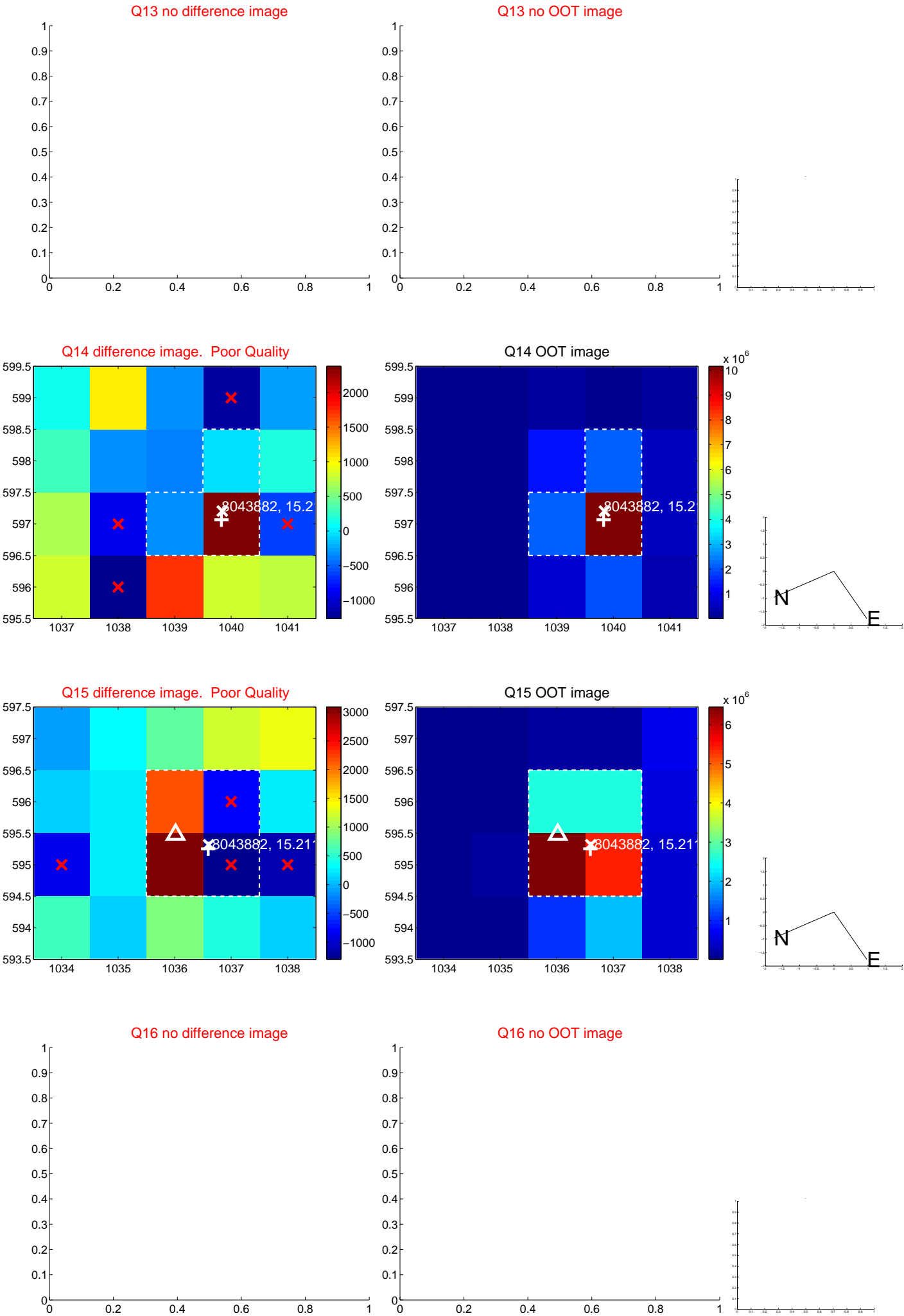
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

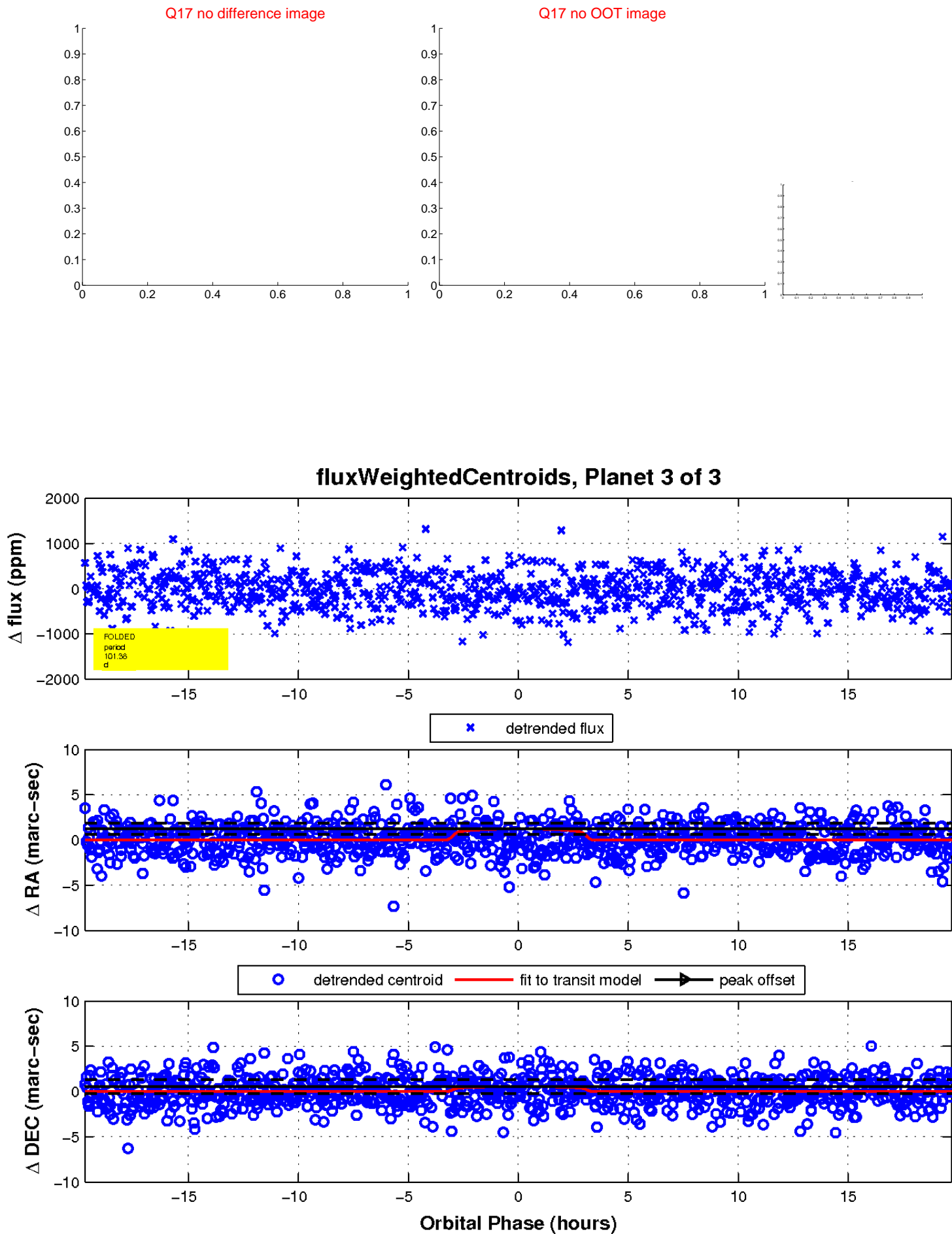


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

