

# KIC 008398290

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008398290-01	OBS	7033.01	1.021603	132.283129	15.3	7.389	9.1	7.1	2.18	6596	0.91	16171.37
008398290-02	OBS	No	34.556054	137.916829	280.7	1.669	9.8	11.7	2.18	6596	3.71	147.83
008398290-03	OBS	No	29.519659	159.308940	270.0	1.699	9.3	10.3	2.18	6596	3.61	182.38

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008398290-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008398290-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008398290-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV

**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 008398290-01

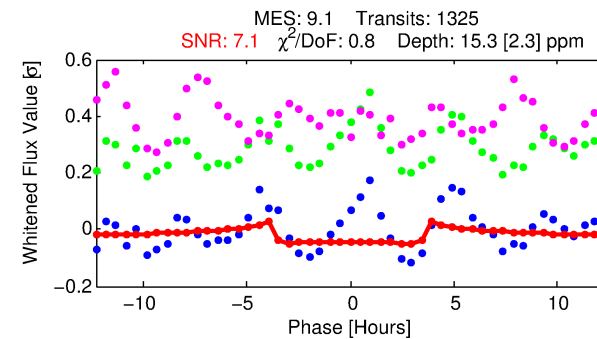
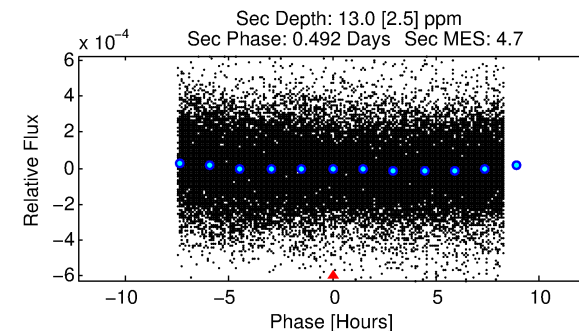
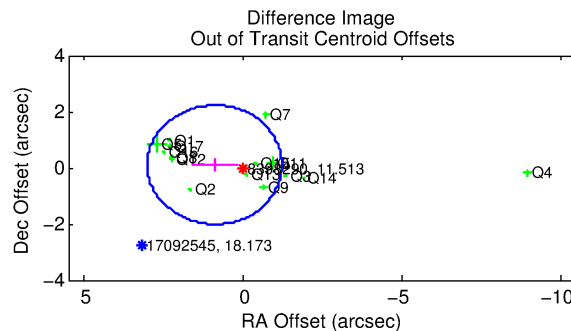
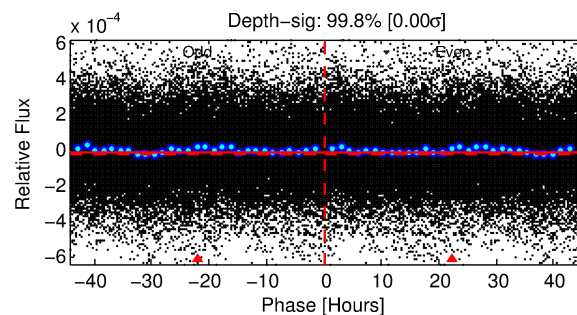
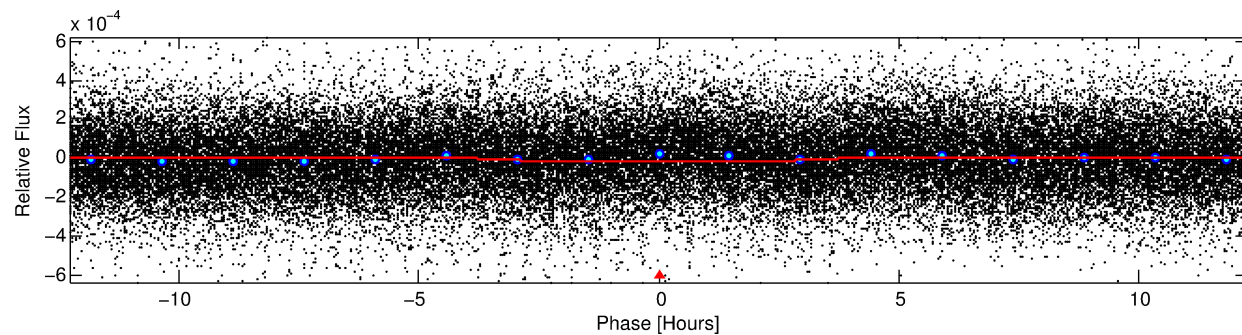
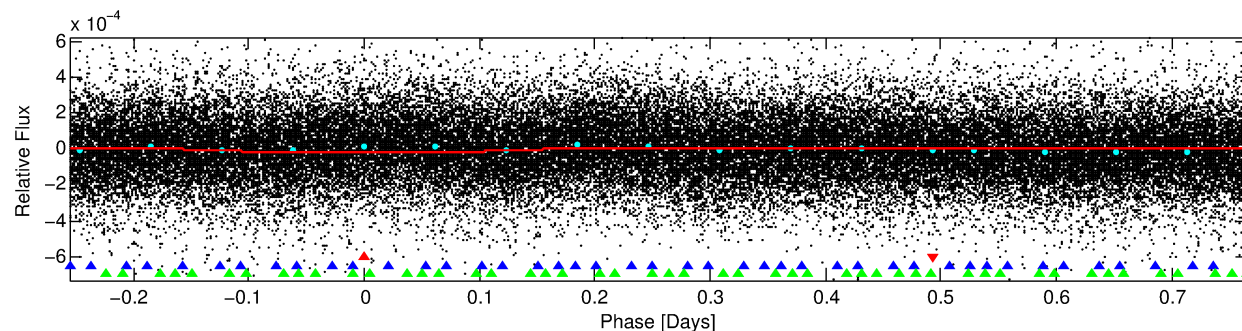
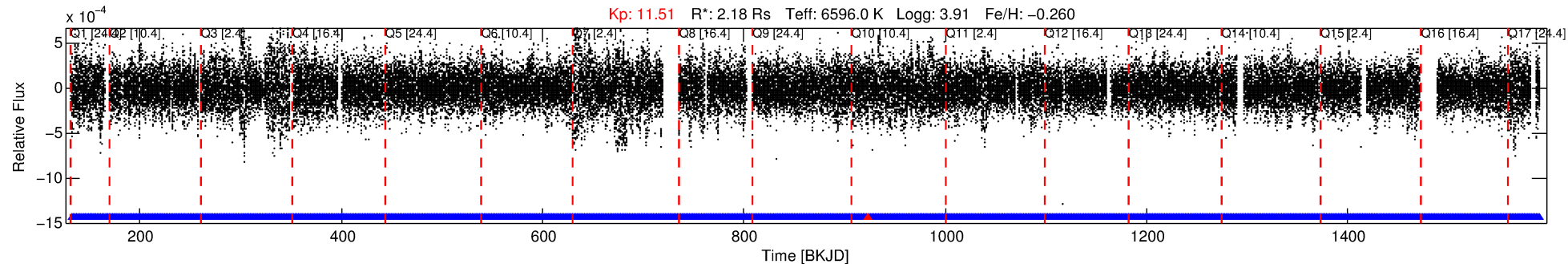
No Significant Match Found

# DV One-Page Summary

KIC: 8398290 Candidate: 1 of 3 Period: 1.022 d

KOI: K07033 Corr: No Ephemeris Match

Kp: 11.51 R\*: 2.18 Rs Teff: 6596.0 K Logg: 3.91 Fe/H: -0.260



## DV Fit Results:

Period = 1.02160 [0.00002] d  
Epoch = 132.2831 [0.0041] BKJD  
Rp/R\* = 0.0038 [0.0017]  
a/R\* = 1.13 [0.60]  
b = 0.71 [1.79]  
Seff = 16171.37 [11129.57]  
Teq = 2875 [495] K  
Rp = 0.91 [0.58] Re  
a = 0.0223 [0.0096] AU  
Ag = 4.27 [4.82] [0.68σ]  
Teffp = 6390 [1464] K [2.27σ]

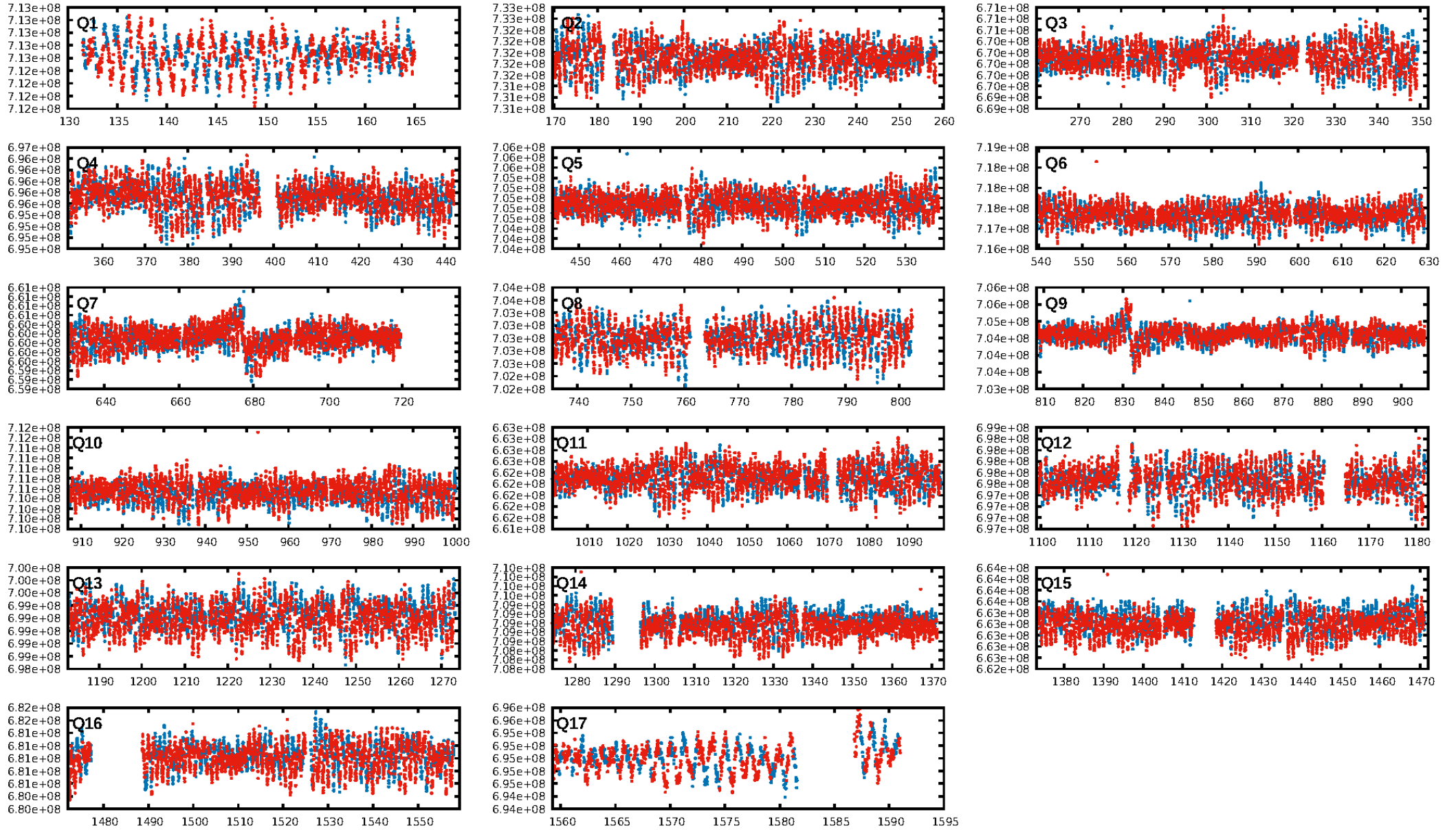
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [90.21σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGoF-sig: N/A  
Bootstrap-pfa: 8.15e-13  
RollingBand-fgt: 1.00 [1264/1265]  
GhostDiagnostic-chr: -1.446  
Centroid-sig: 31.7%  
Centroid-so: 0.607 arcsec [0.87σ]  
OotOffset-rm: 0.902 arcsec [1.28σ]  
KicOffset-rm: 1.276 arcsec [1.63σ]  
OotOffset-st: 2/4/4/5 [15]  
KicOffset-st: 2/4/4/5 [15]  
DiffImageQuality-fgm: 0.40 [6/15]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 07:19:55 Z

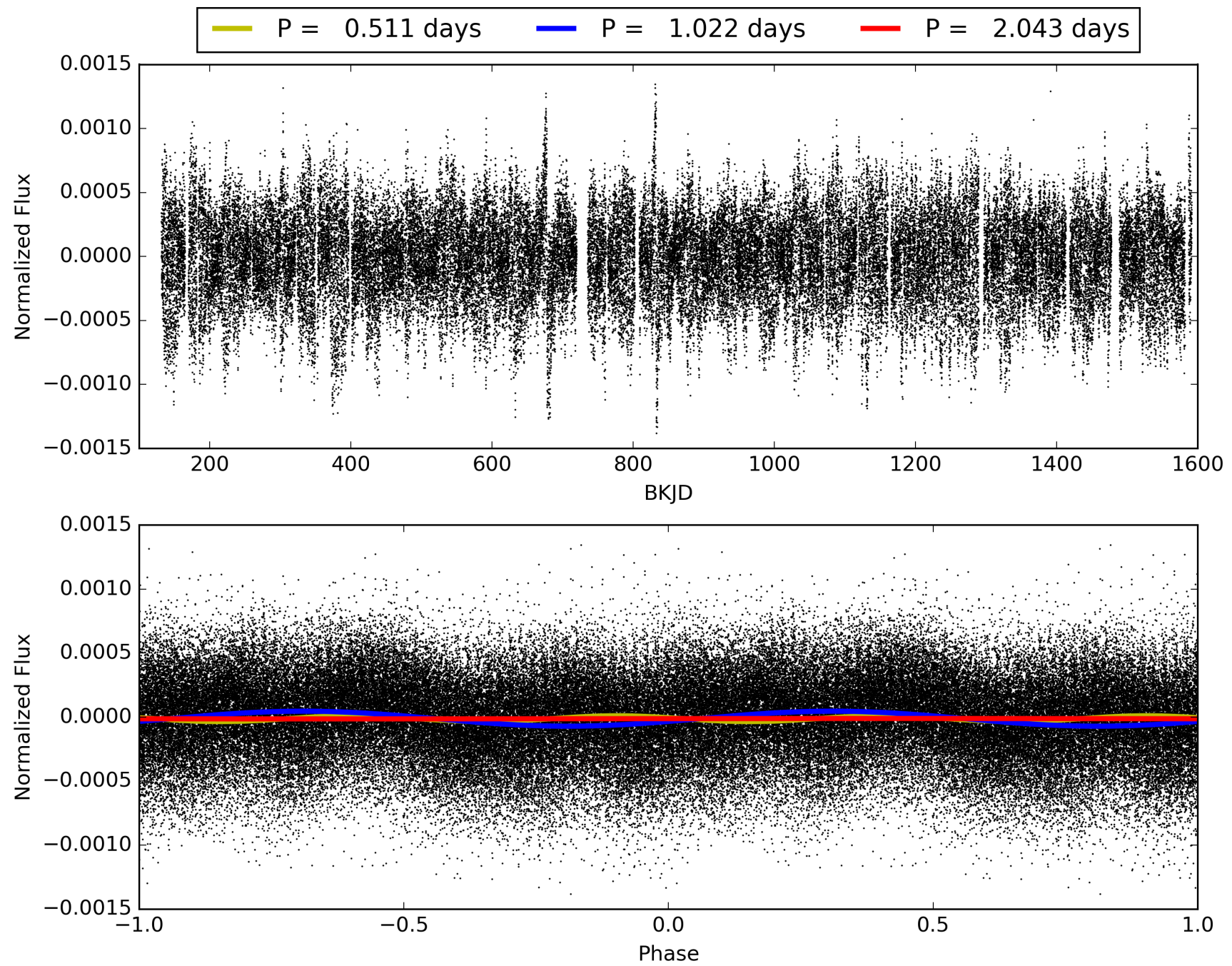
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008398290-01, PDC Light Curves



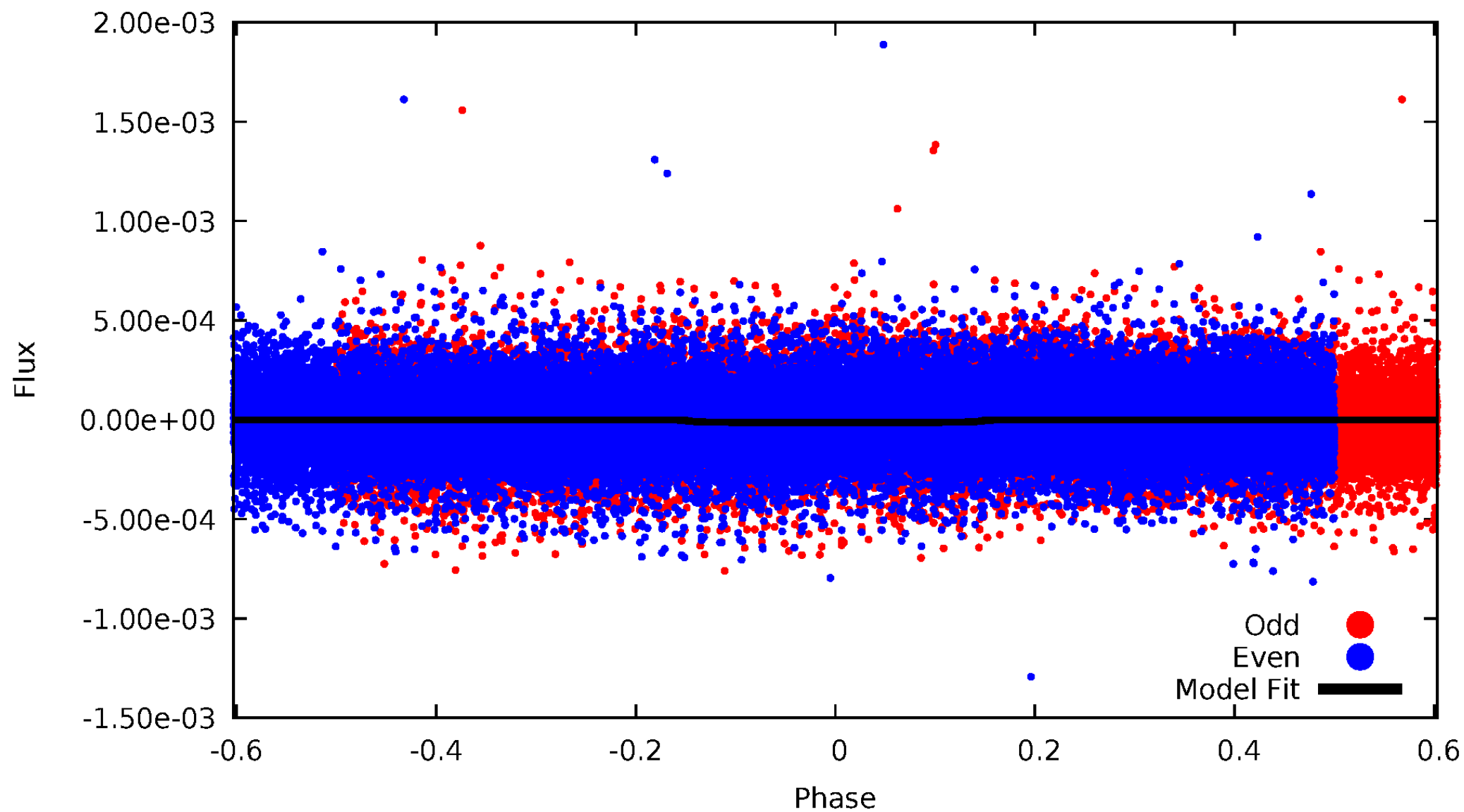


# TCE 008398290-01



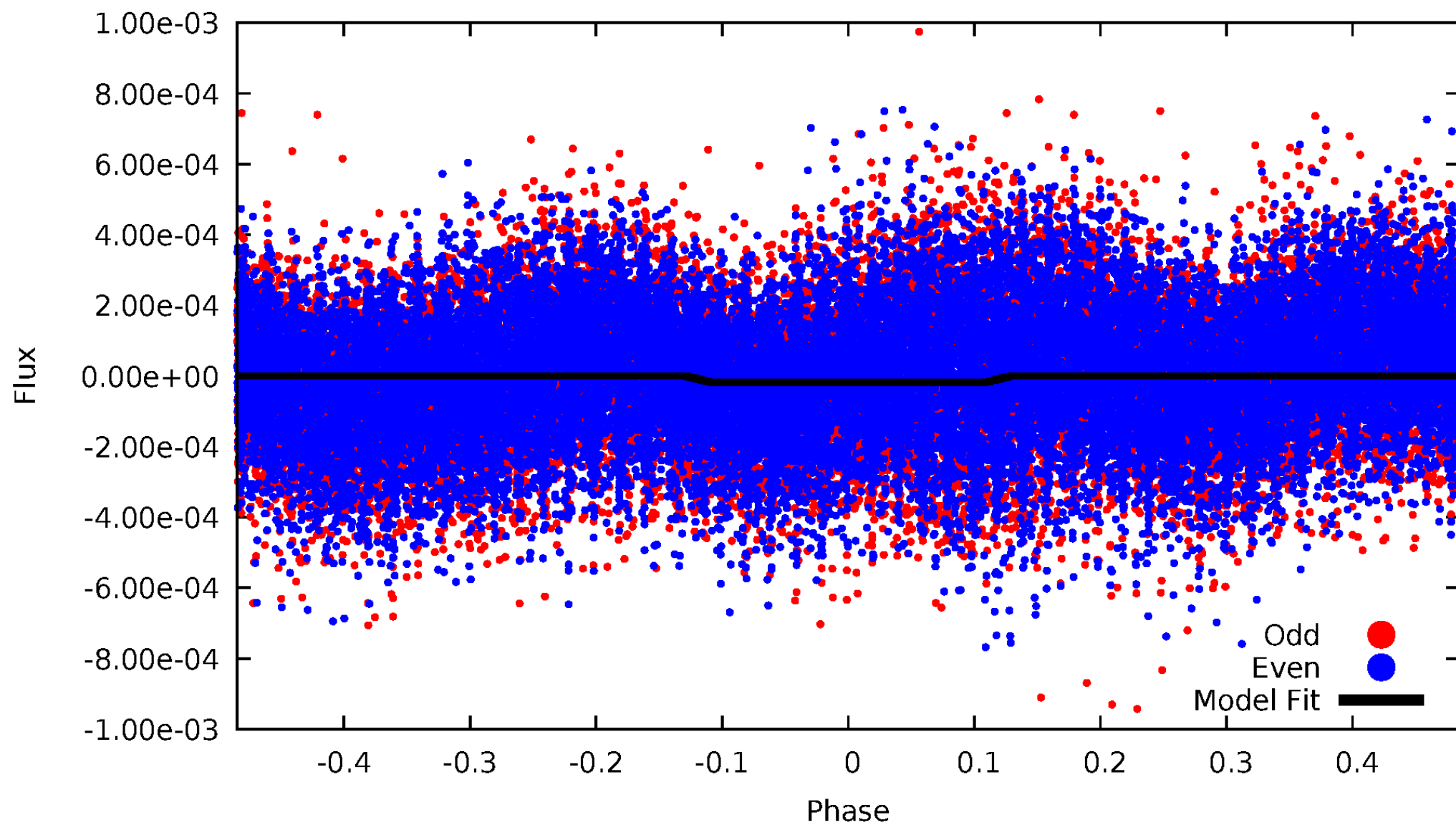
# DV Odd/Even

TCE 008398290-01



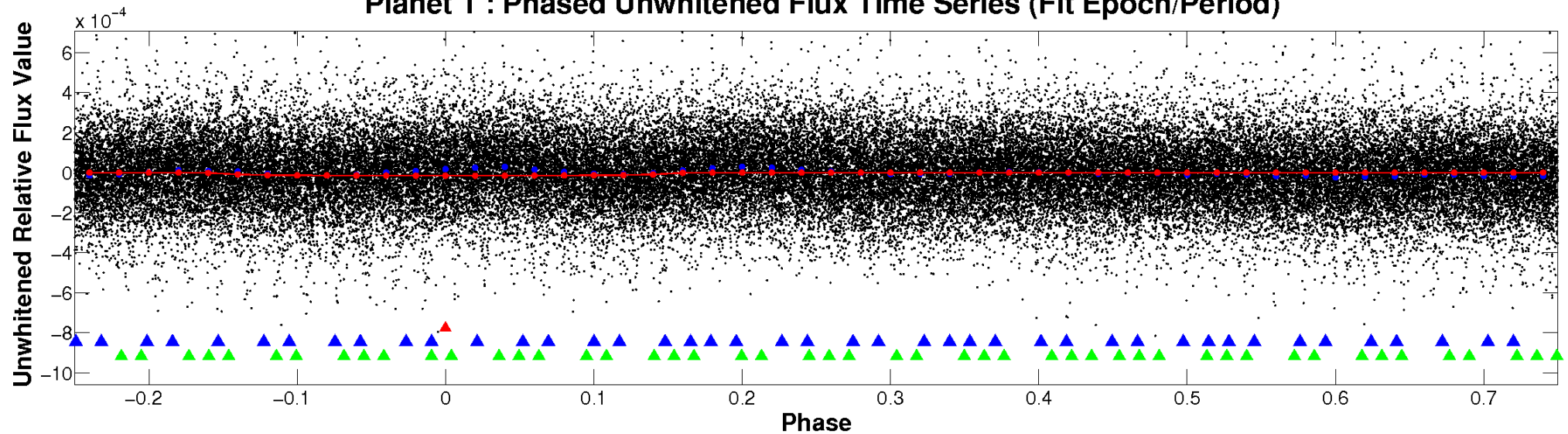
# ALT Odd/Even

TCE 008398290-01

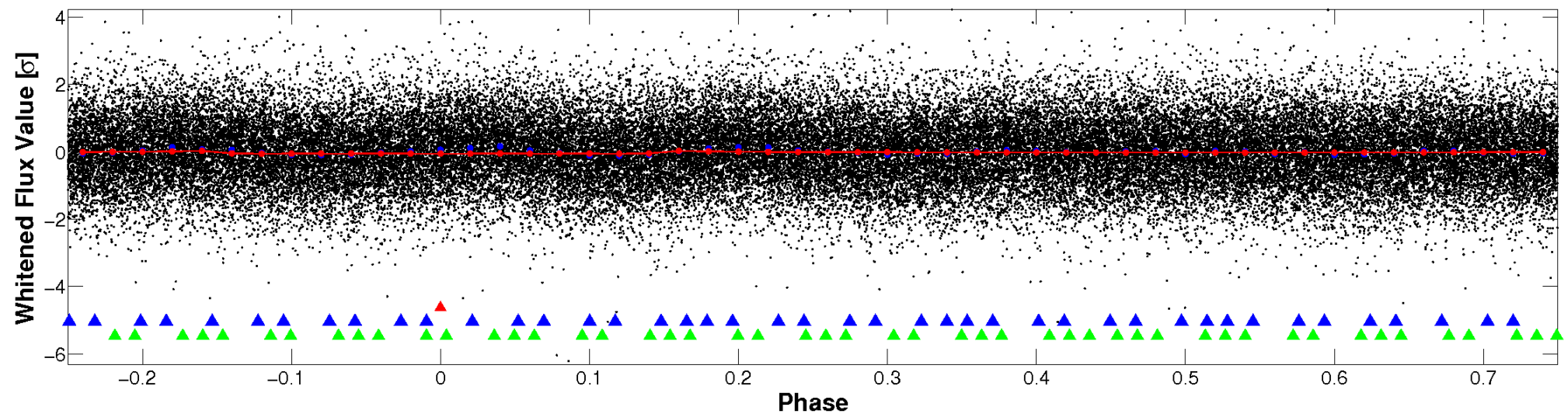


# Non-Whitened Vs. Whitened Light Curve

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



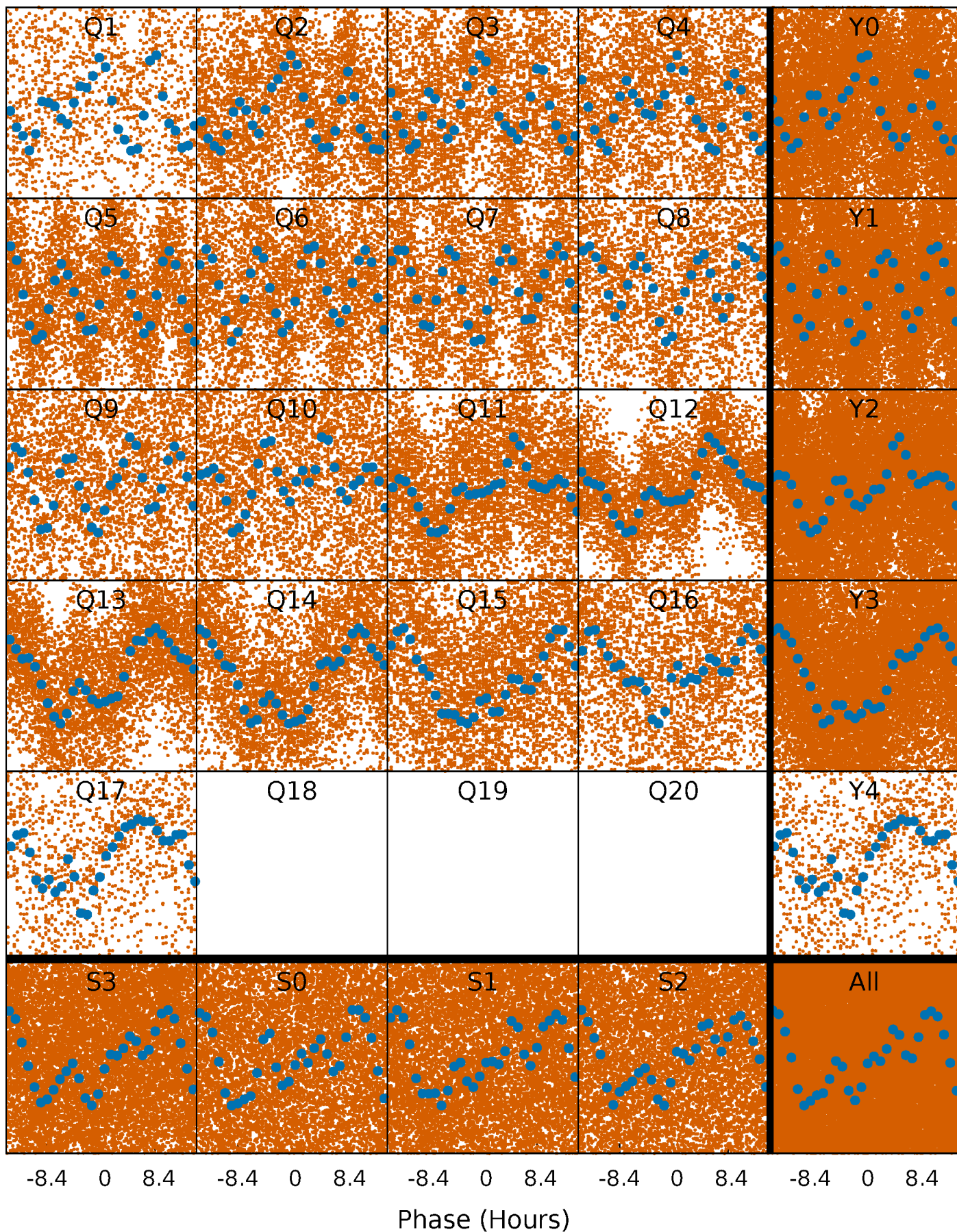
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

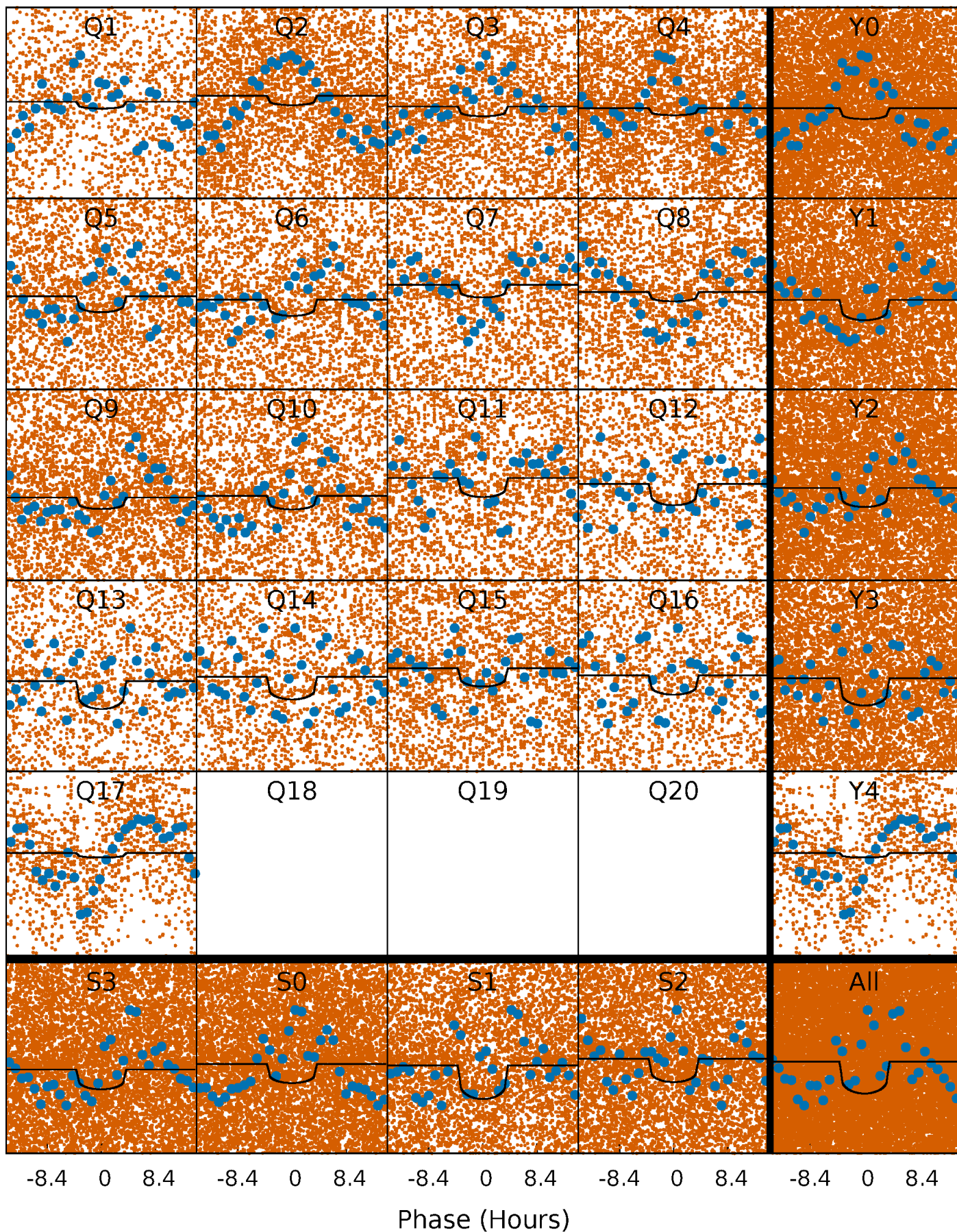
TCE 008398290-01 P= 1.021603 Days  $T_0=132.283129$  (BKJD)





# DV Quarter-Phased Transit Curves

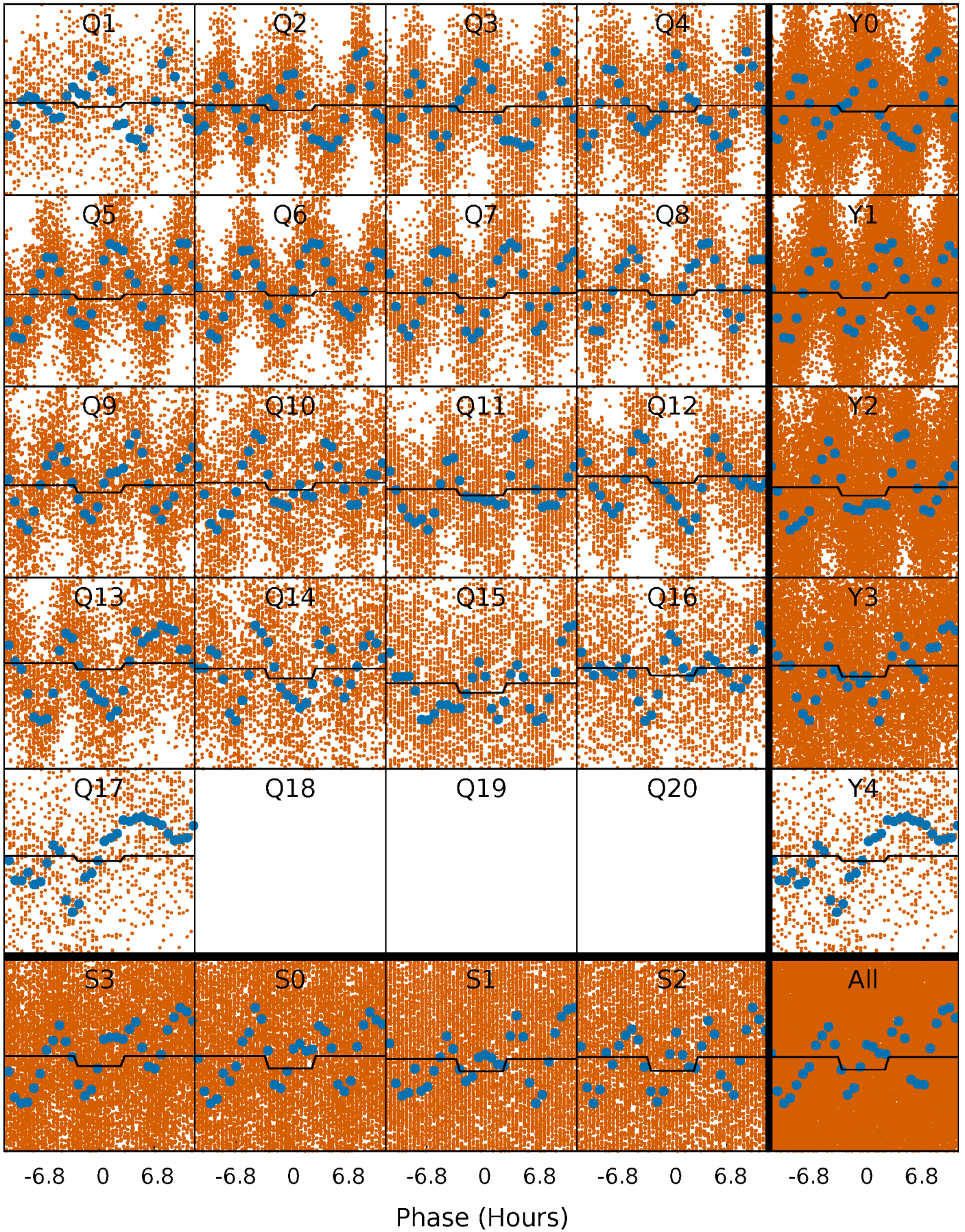
TCE 008398290-01   P= 1.021603 Days    $T_0=132.283129$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

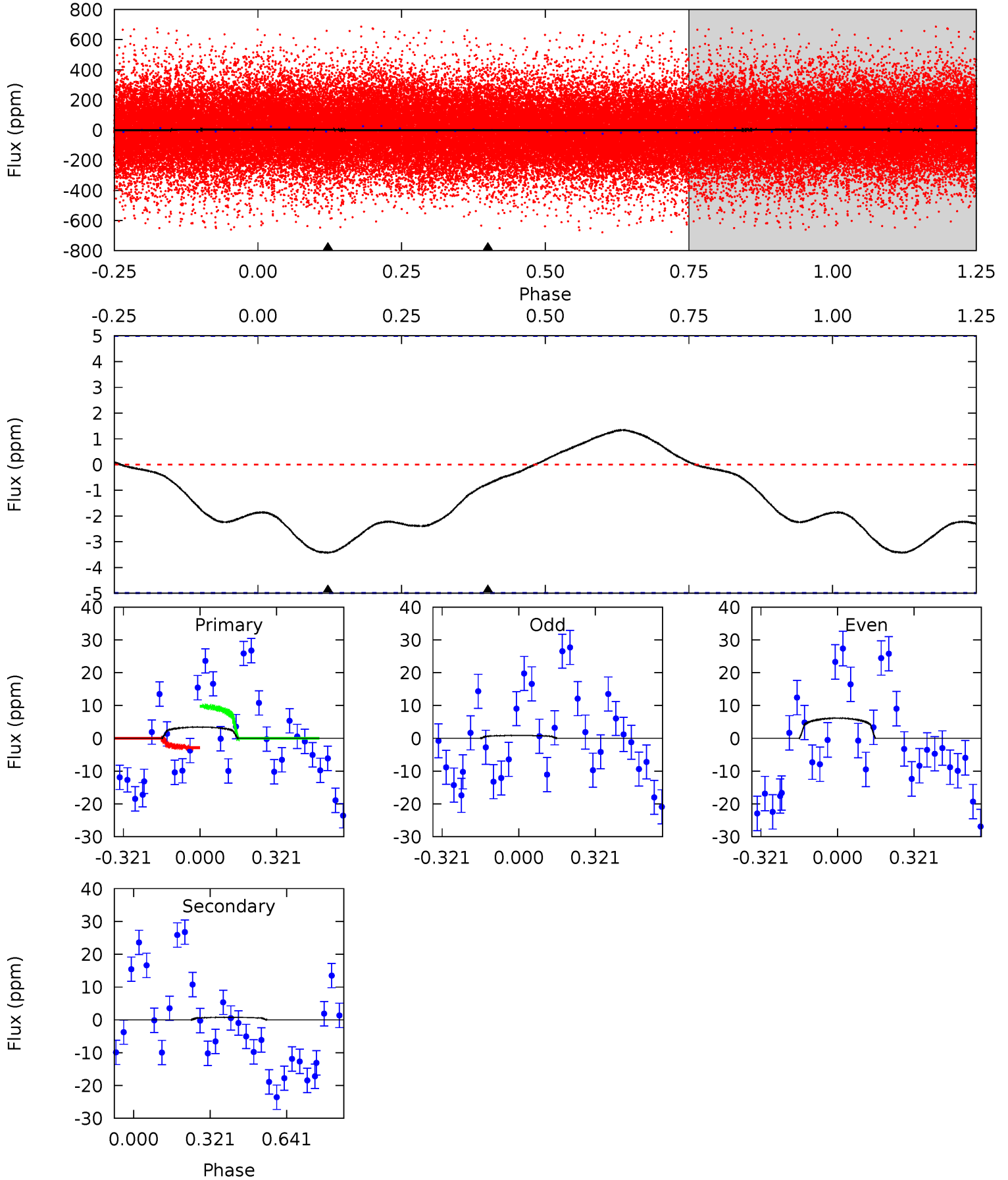
TCE 008398290-01 P= 1.021622 Days  $T_0=132.280510$  (BKJD)



# DV Model-Shift Uniqueness Test

008398290-01, P = 1.021603 Days, E = 131.261526 Days

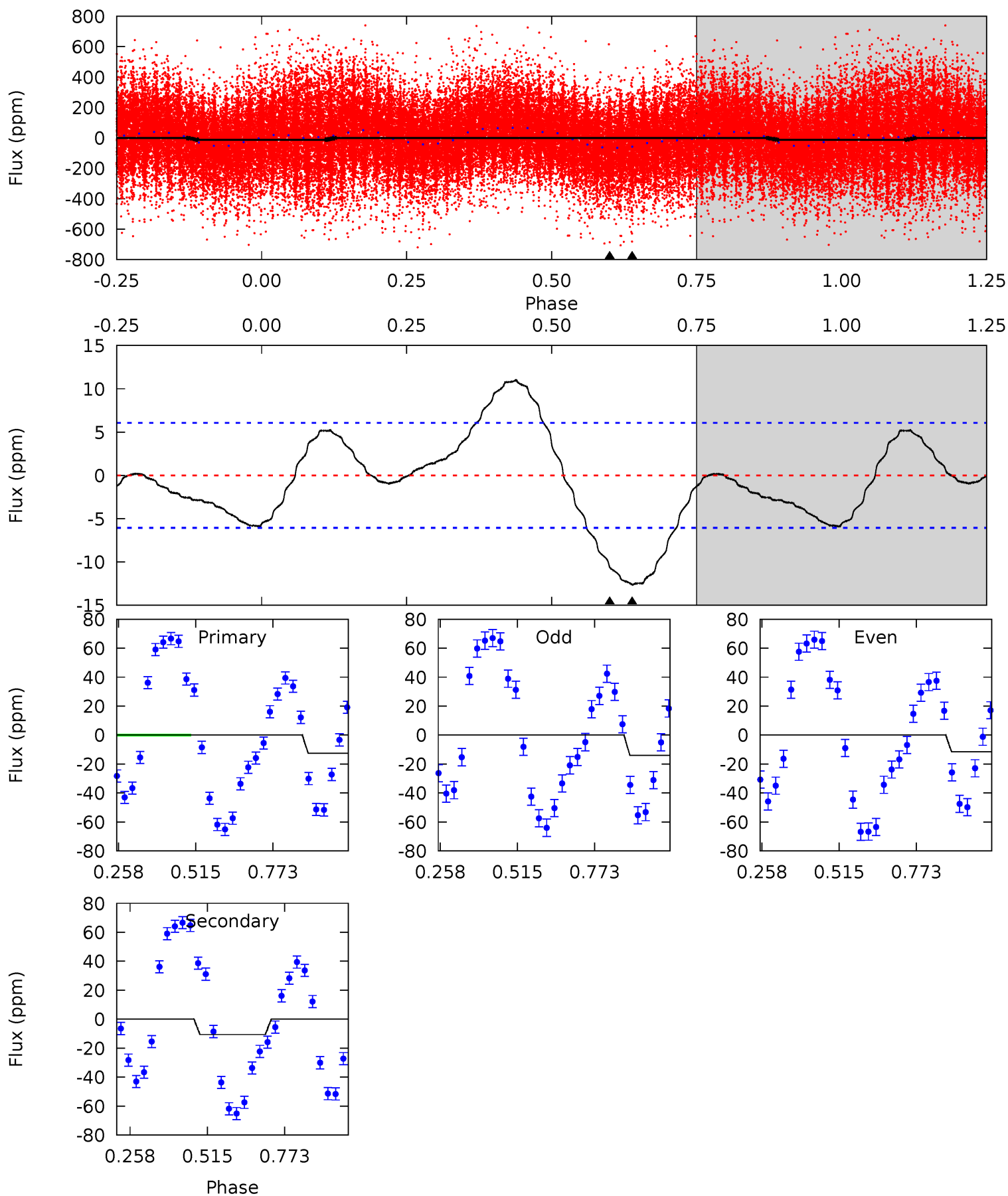
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.96	0.65	0	0	4.31	0.99	0.22	2.96	2.96	0.65	0.65	2.29	1.00	0.28	2.97



# Alt Model-Shift Uniqueness Test

008398290-01, P = 1.021622 Days, E = 131.258888 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
9.11	7.62	0	0	4.36	1.13	2.40	9.11	9.11	7.62	7.62	0.88	1.16	0.47	8.88





### Stellar Parameters For KIC 008398290

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6596^{+182}_{-228}$	$3.913^{+0.390}_{-0.130}$	$-0.260^{+0.250}_{-0.300}$	$2.176^{+0.506}_{-1.012}$	$1.415^{+0.192}_{-0.357}$	$0.194^{+0.665}_{-0.076}$
	+3%/-3%	+10%/-3%	+96%/-115%	+23%/-47%	+14%/-25%	+344%/-39%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 008398290-01 / KOI 7033.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-1\pm 1$	$0.85^{+0.40}_{-0.40}$	$3926^{+332}_{-451}$	$-2853^{+7148}_{-1099}$	$0.240^{+0.960}_{-0.399}$
Alt.	$-11\pm 1$	$0.93^{+0.45}_{-0.39}$	$3899^{+325}_{-440}$	$5555^{+1795}_{-807}$	$3.265^{+6.295}_{-1.758}$

$T_{max}$  = 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

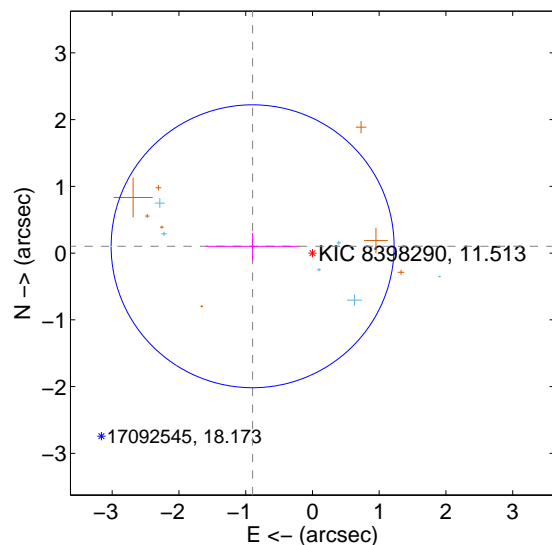
Supplemental centroid analysis for 008398290-01. **Kepler magnitude: 11.51.** Transit SNR 7.09

There are 6 quarters with good PRF difference image offsets

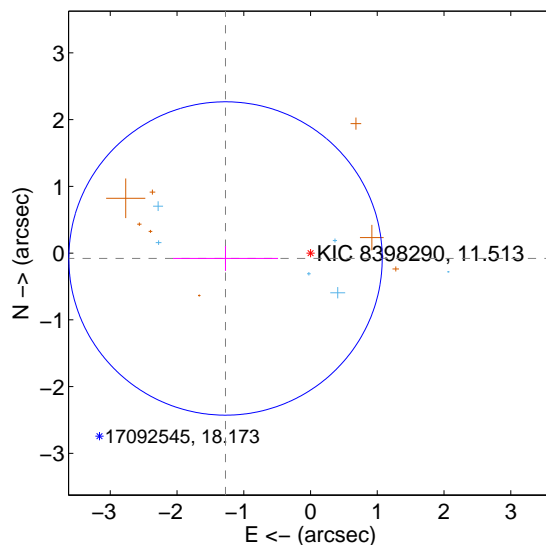
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.902 \pm 0.706$	1.28	$0.896 \pm 0.703$	$0.102 \pm 0.201$
PRF-fit source offset from KIC position	$1.276 \pm 0.782$	1.63	$1.273 \pm 0.787$	$-0.081 \pm 0.187$
photometric centroid source offset	$0.61 \pm 0.70$	0.87	$0.56 \pm 0.72$	$-0.25 \pm 0.55$

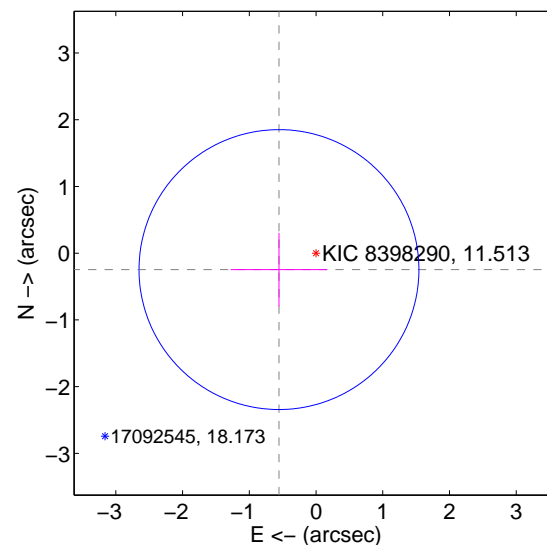
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

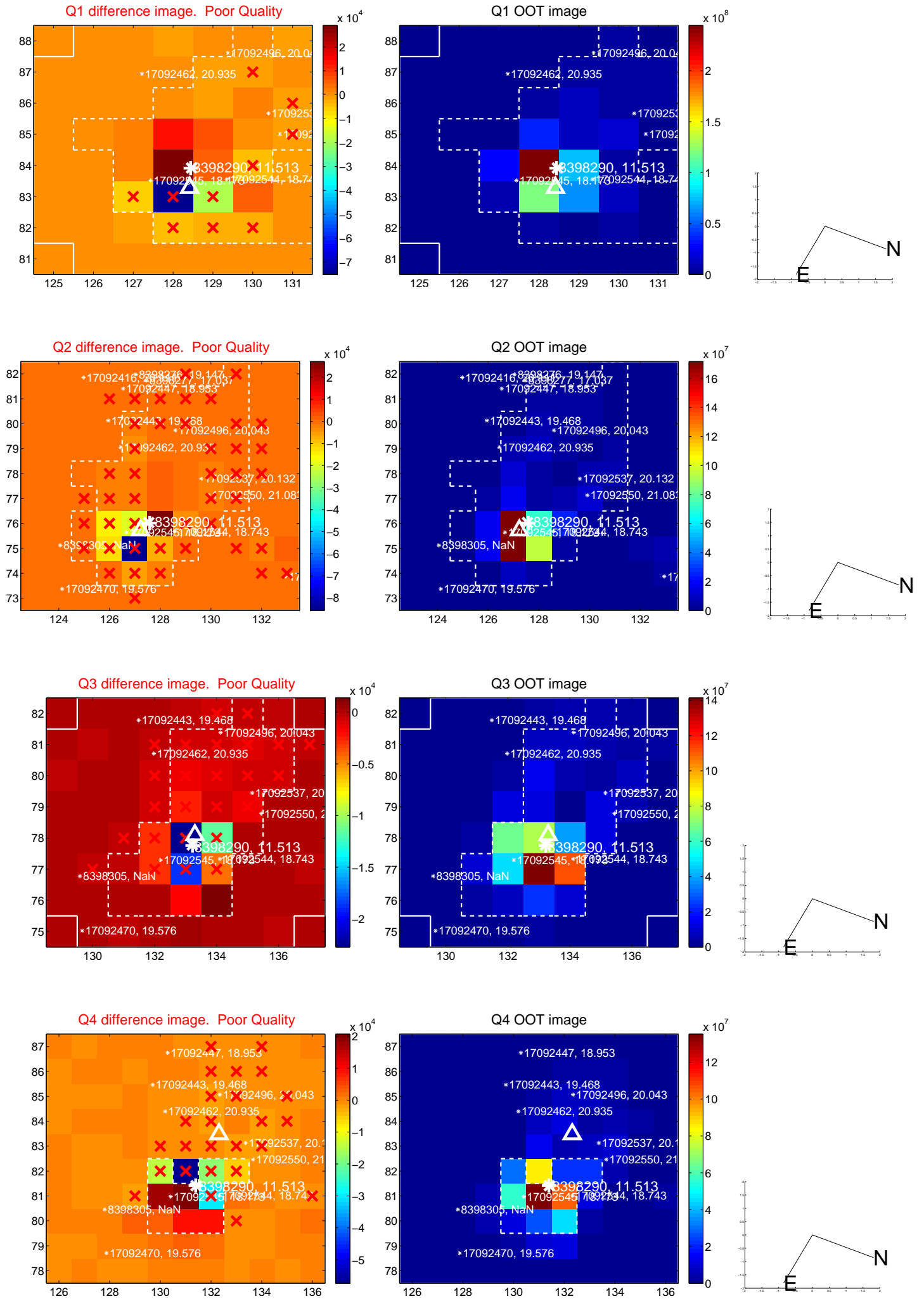


offset from photometric centroids

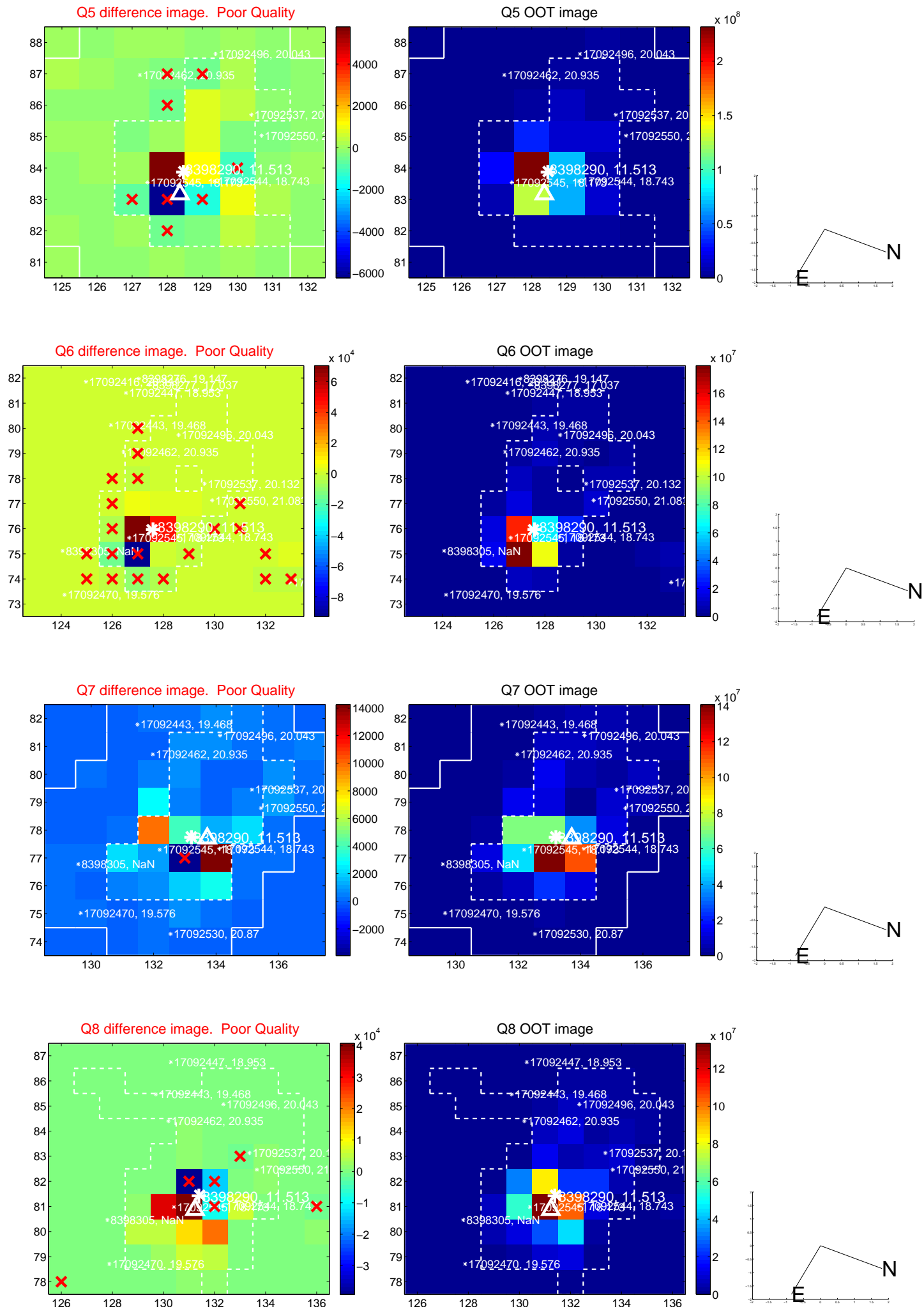


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

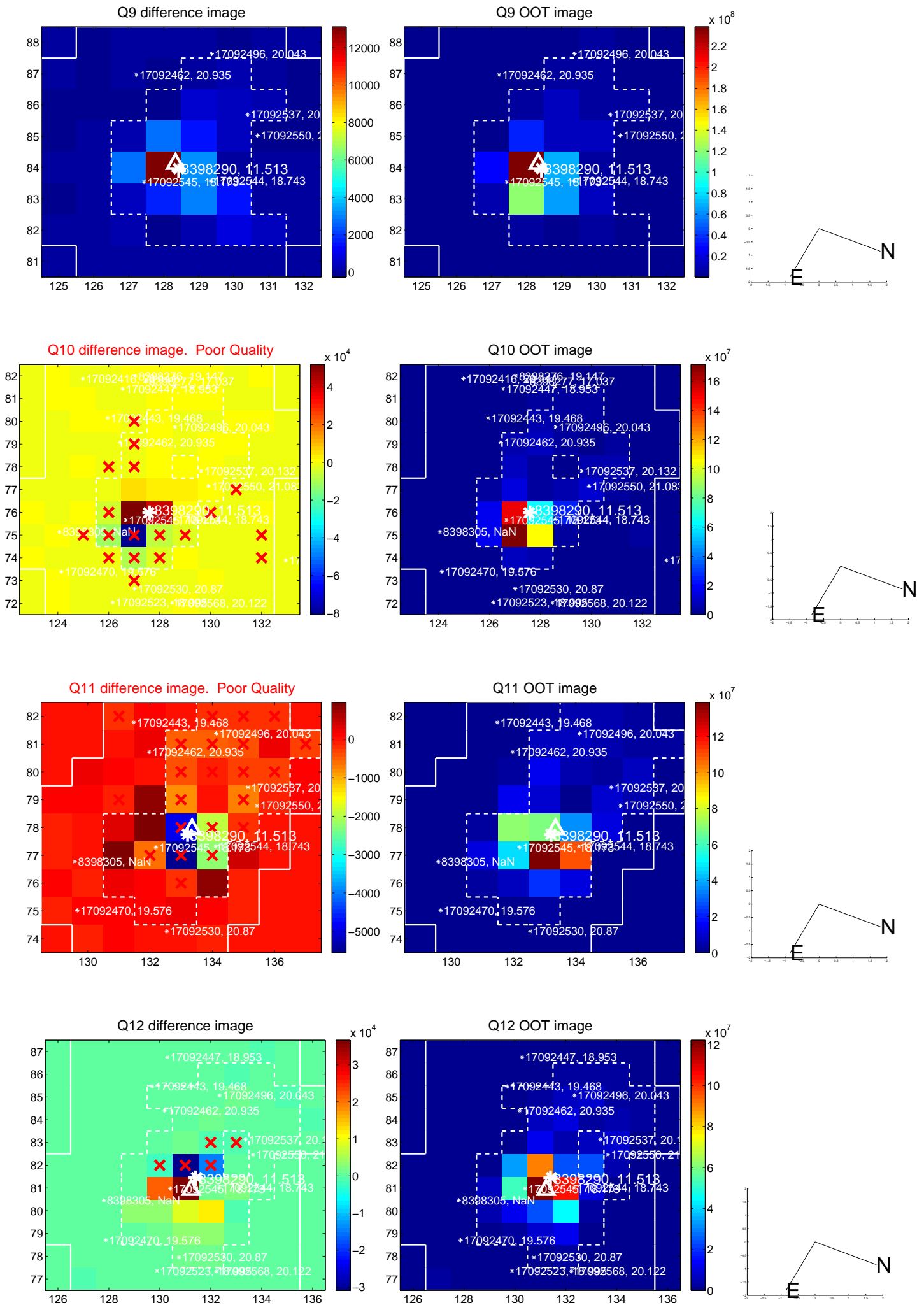


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

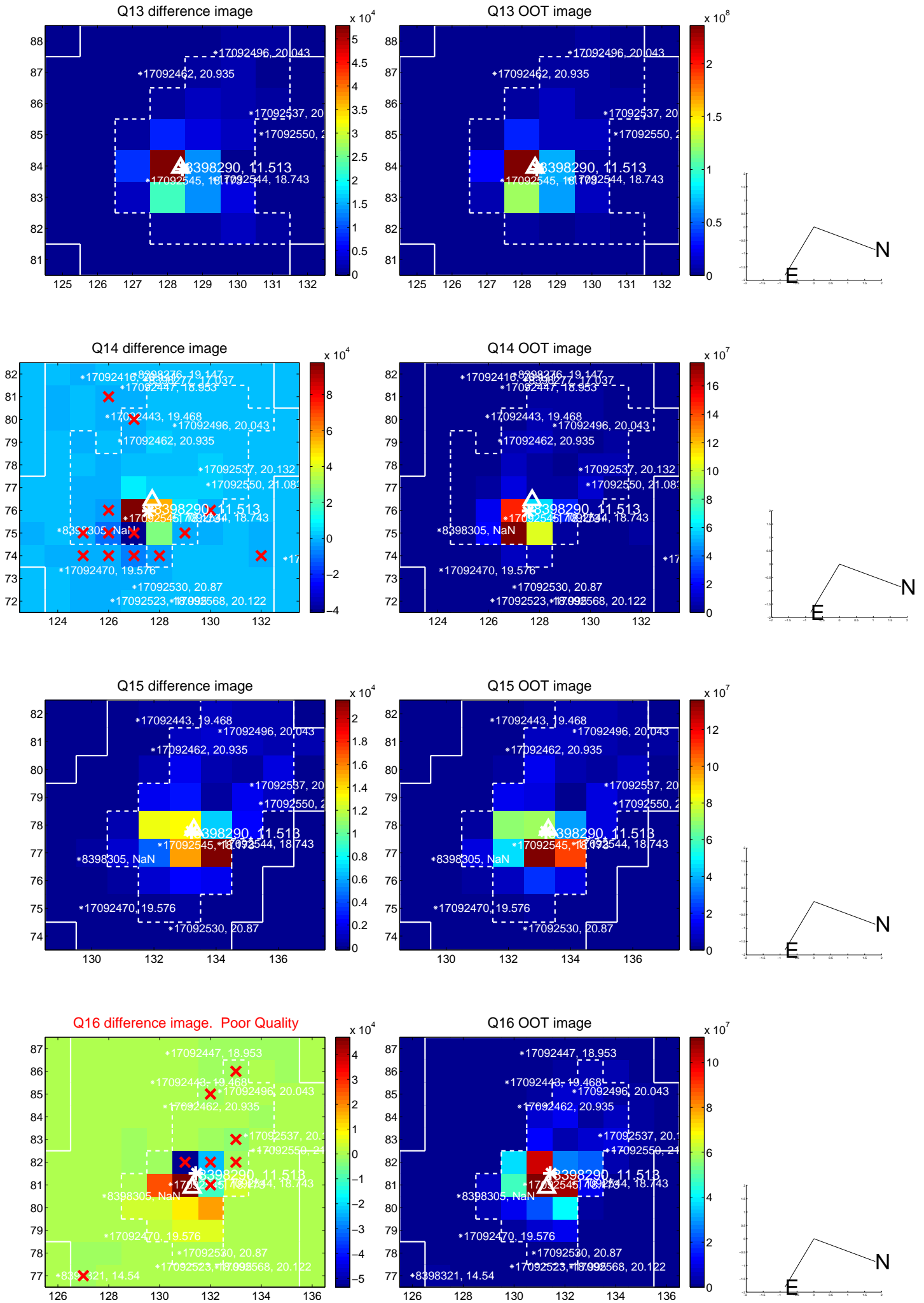




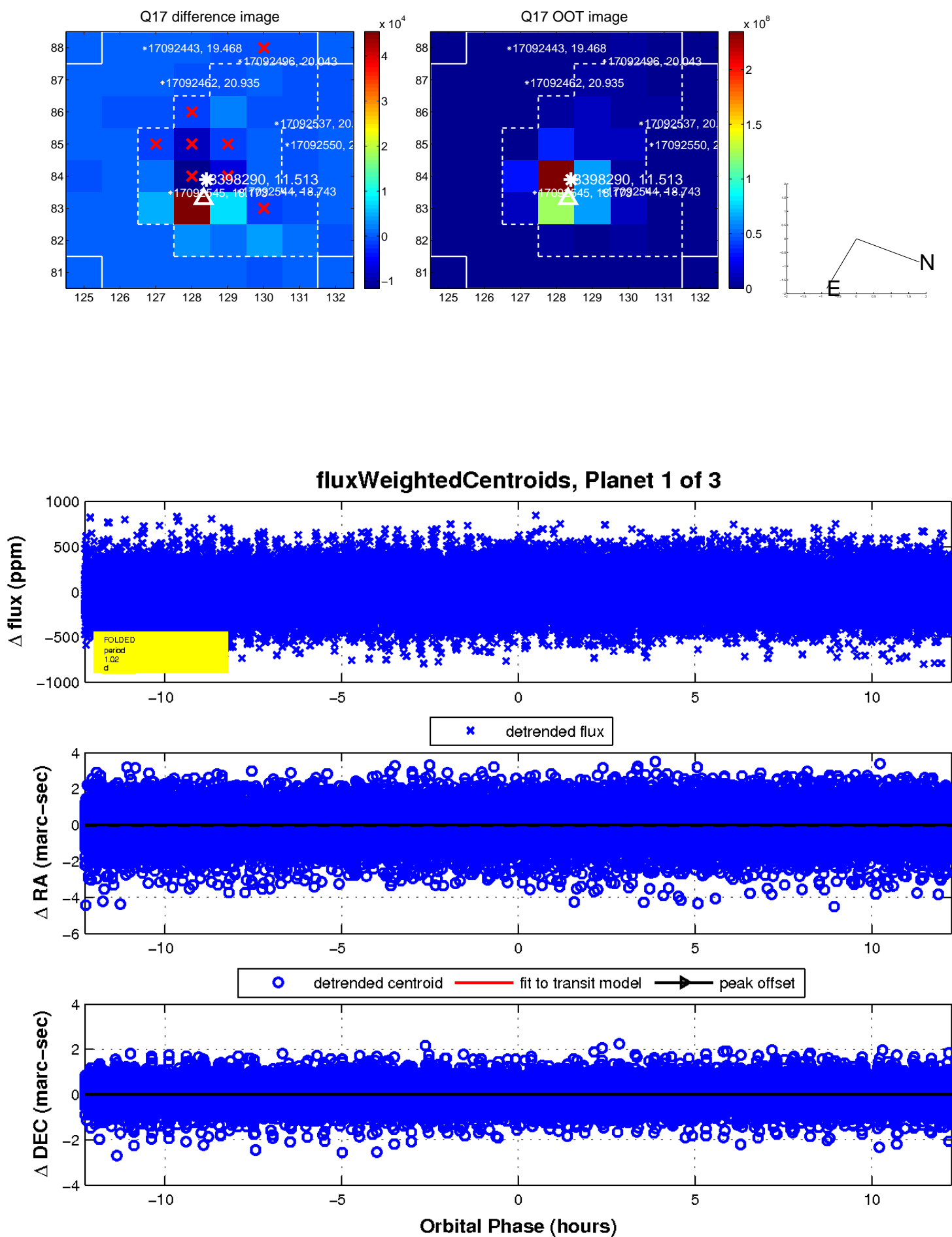
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

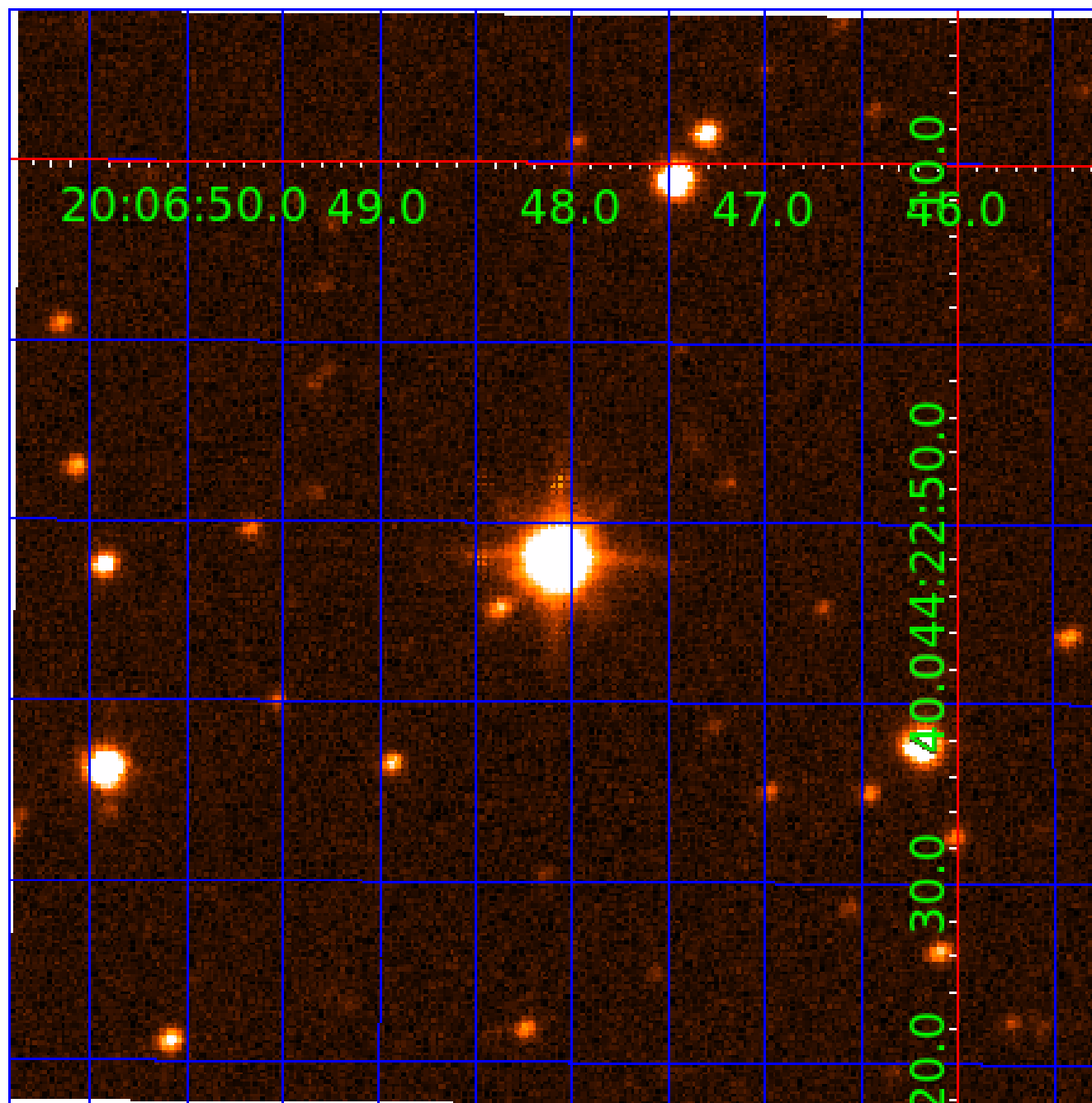


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 008398290

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008398290-01	OBS	7033.01	1.021603	132.283129	15.3	7.389	9.1	7.1	2.18	6596	0.91	16171.37
008398290-02	OBS	No	34.556054	137.916829	280.7	1.669	9.8	11.7	2.18	6596	3.71	147.83
008398290-03	OBS	No	29.519659	159.308940	270.0	1.699	9.3	10.3	2.18	6596	3.61	182.38

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008398290-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008398290-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008398290-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV

**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.

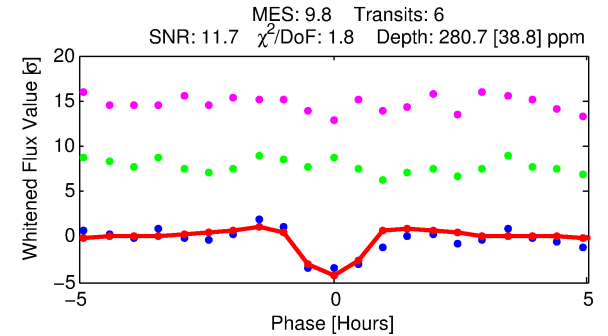
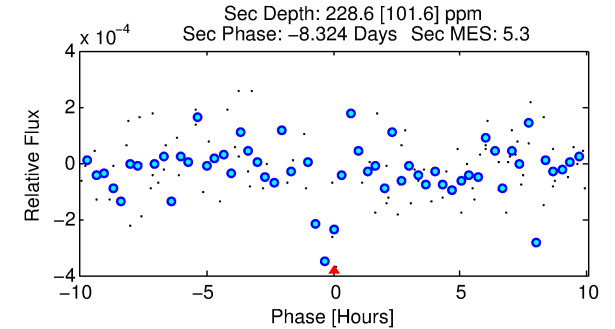
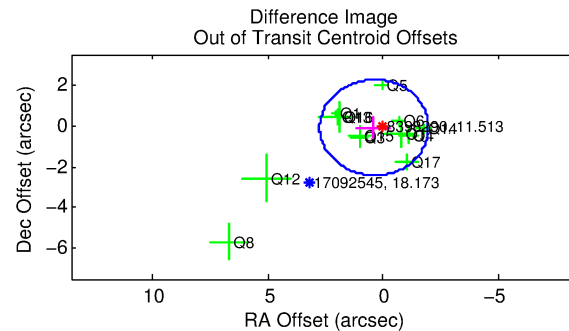
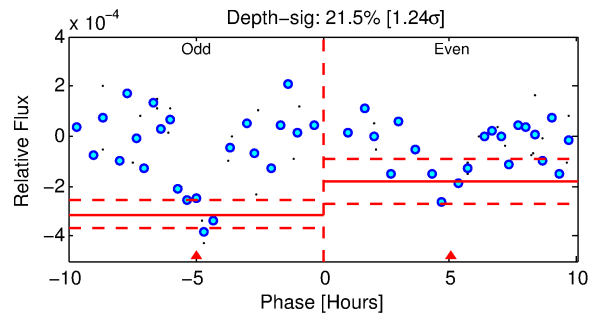
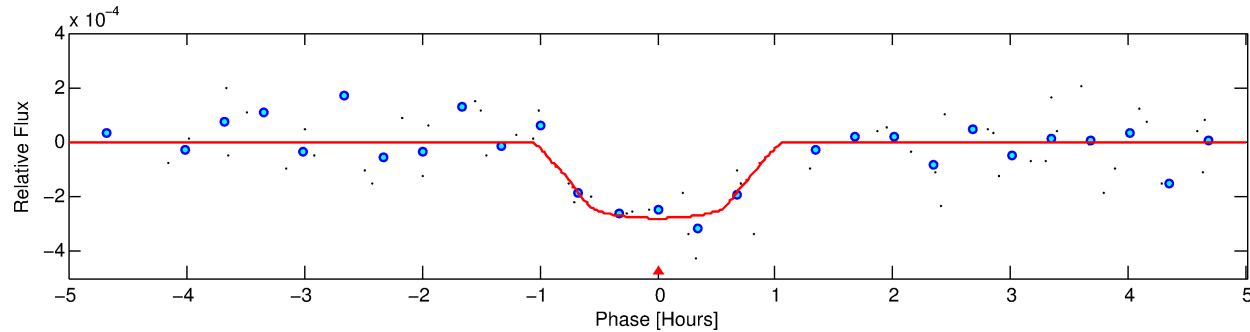
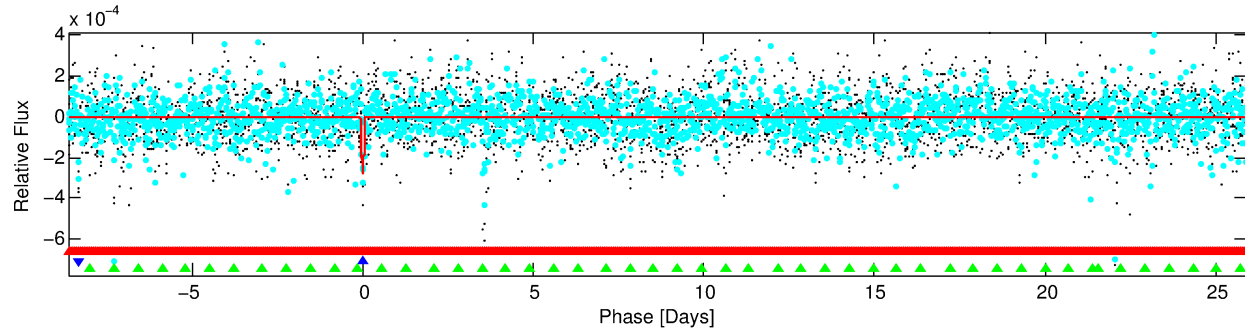
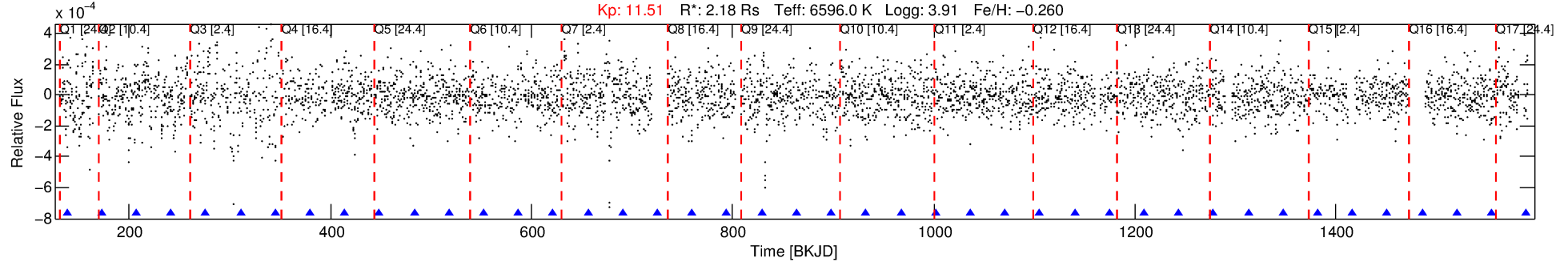
## Ephemeris Match Information For 008398290-02

No Significant Match Found

# DV One-Page Summary

KIC: 8398290 Candidate: 2 of 3 Period: 34.556 d  
KOI: K07033 Corr: No Ephemeris Match

Kp: 11.51 R\*: 2.18 Rs Teff: 6596.0 K Logg: 3.91 Fe/H: -0.260



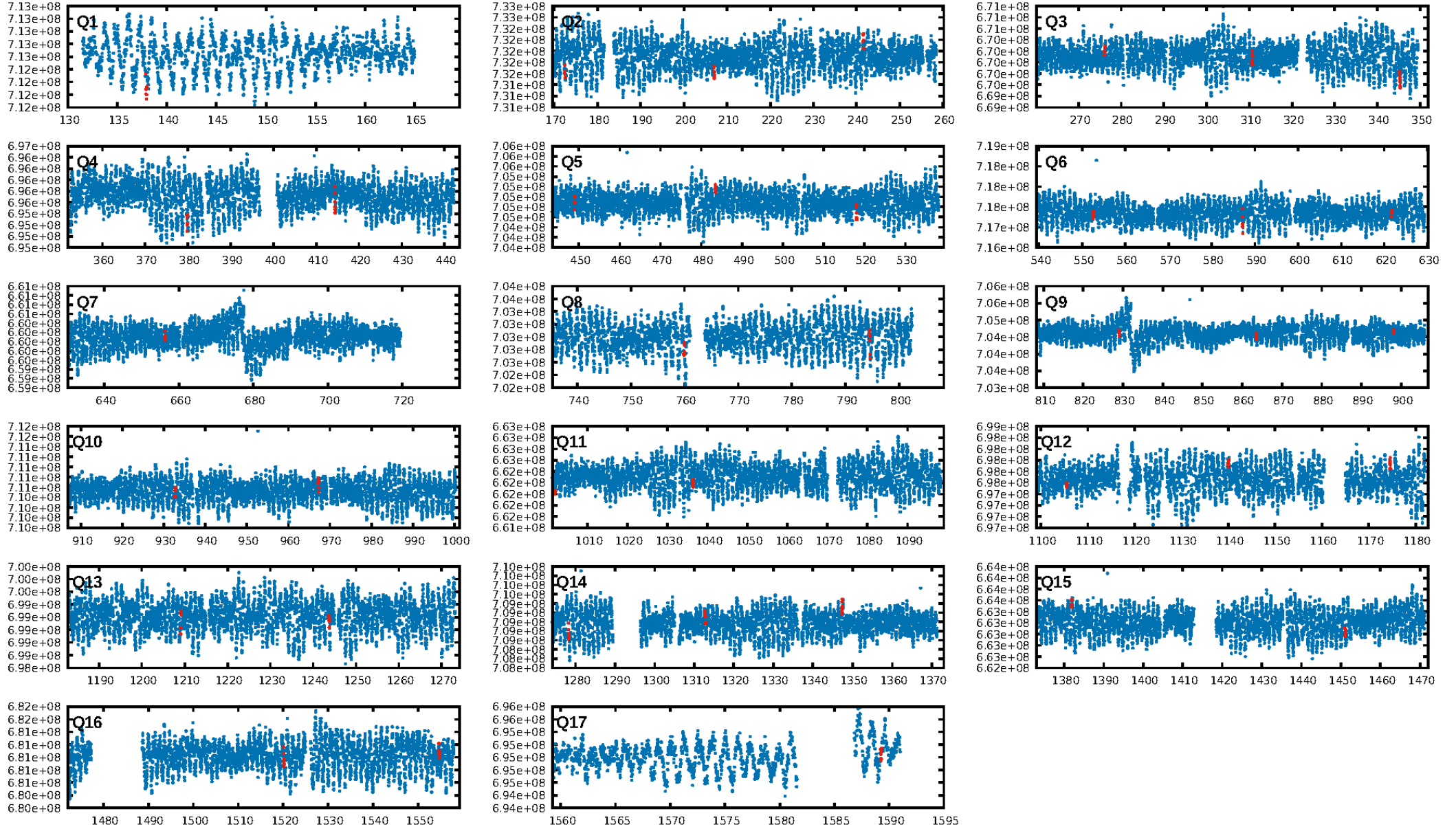
## DV Fit Results:

Period = 34.55605 [0.00018] d  
Epoch = 137.9168 [0.0053] BKJD  
Rp/R\* = 0.0156 [0.0225]  
a/R\* = 153.06 [1152.14]  
b = 0.31 [22.33]  
Seff = 147.83 [101.74]  
Teq = 889 [153] K  
Rp = 3.71 [5.61] Re  
a = 0.2331 [0.1004] AU  
Ag = 495.64 [1480.65] [0.33σ]  
Teffp = 6486 [4725] K [1.18σ]

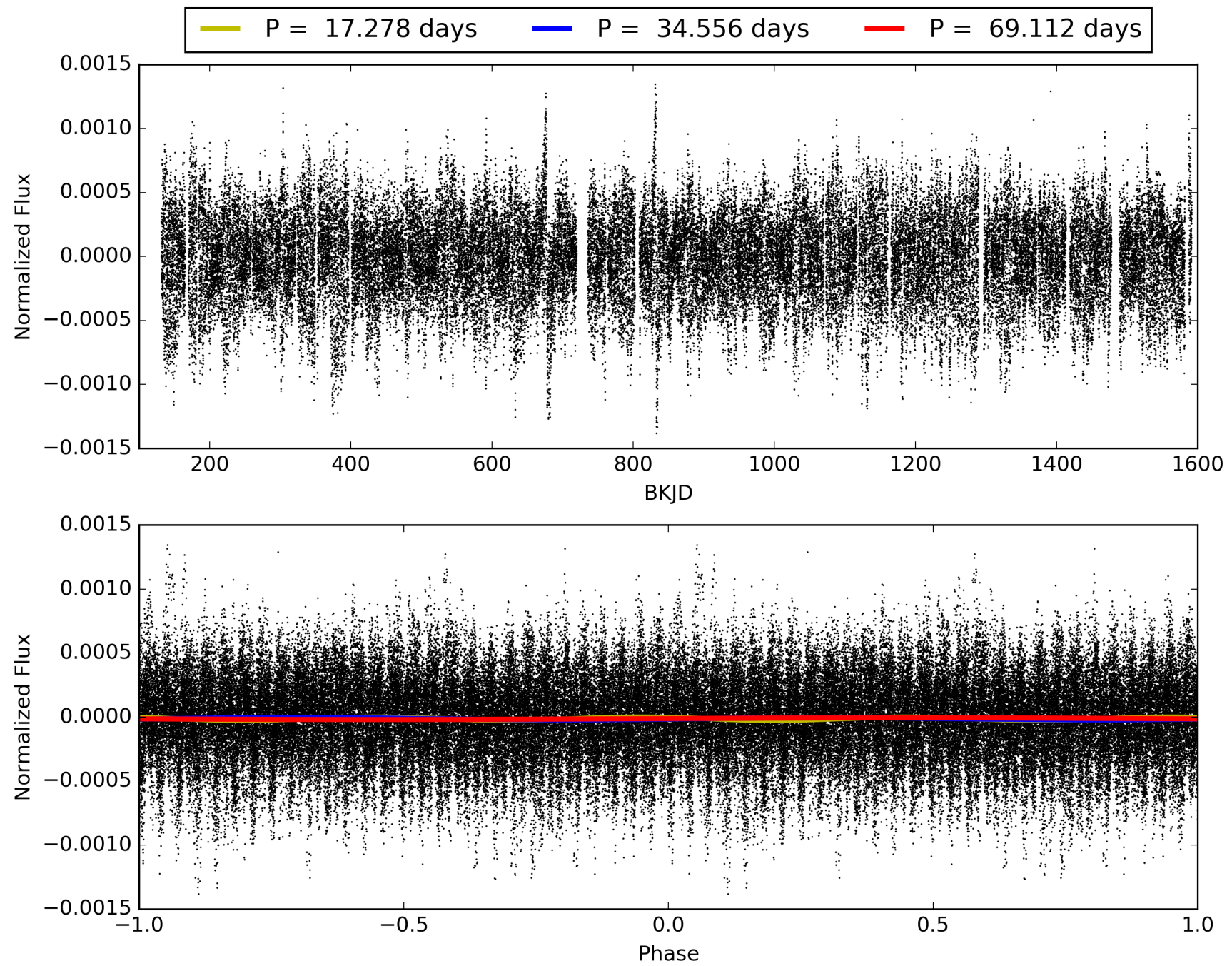
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [50.75σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 20.6%  
ModelChiSquareGof-sig: 99.0%  
Bootstrap-pfa: 4.15e-10  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: 1.625  
Centroid-sig: 0.0%  
Centroid-so: 0.875 arcsec [2.37σ]  
OotOffset-rm: 0.411 arcsec [0.52σ]  
KicOffset-rm: 0.488 arcsec [0.85σ]  
OotOffset-st: 2/3/4/4 [13]  
KicOffset-st: 2/3/4/4 [13]  
DiffImageQuality-fgm: 0.46 [6/13]  
DiffImageOverlap-fno: 0.47 [8/17]

# TCE 008398290-02, PDC Light Curves



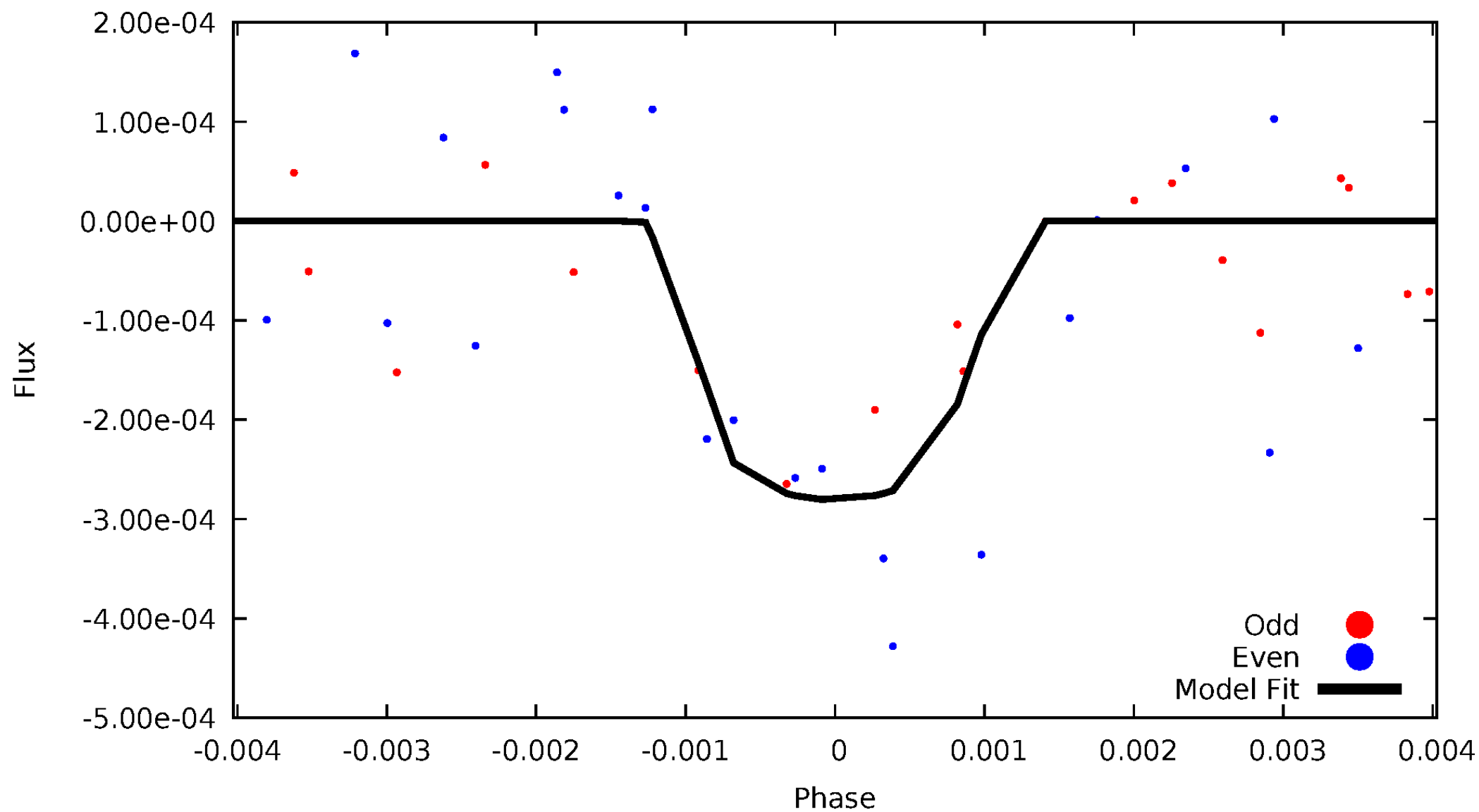
TCE 008398290-02





# DV Odd/Even

TCE 008398290-02



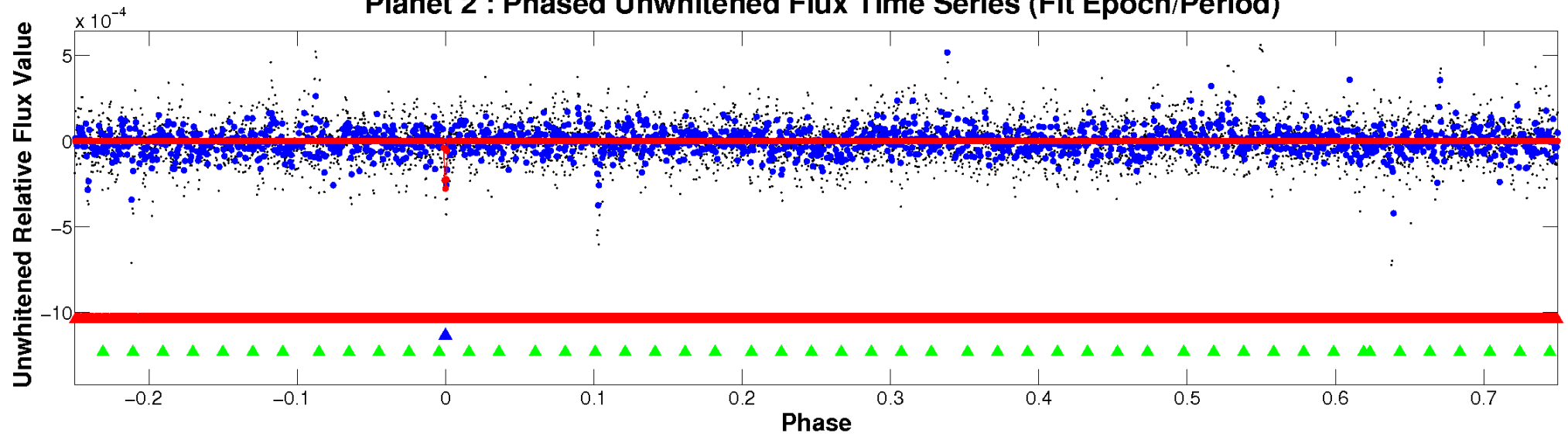


ALT Odd/Even

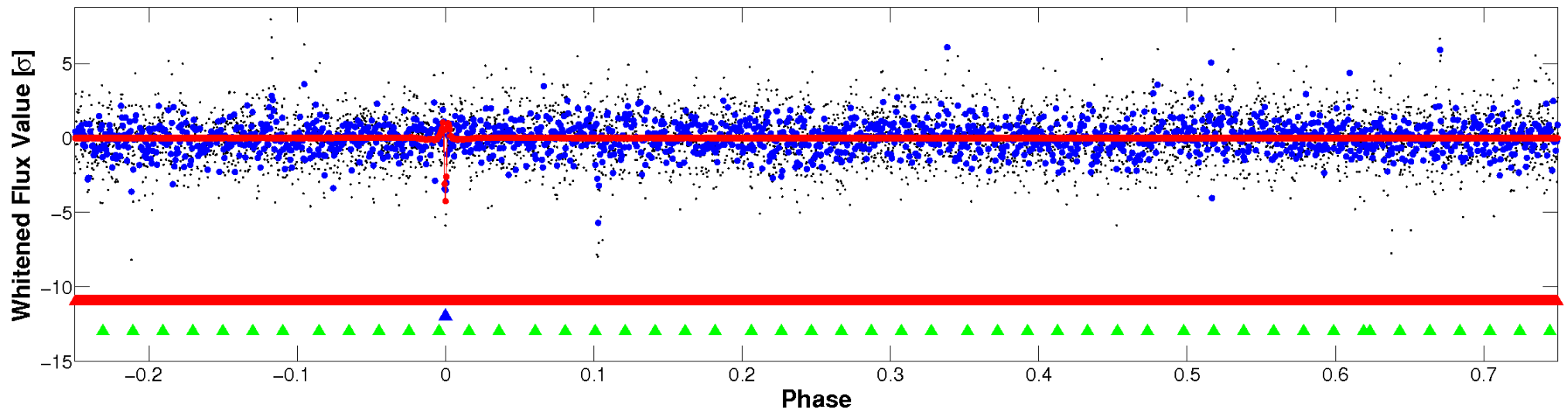
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

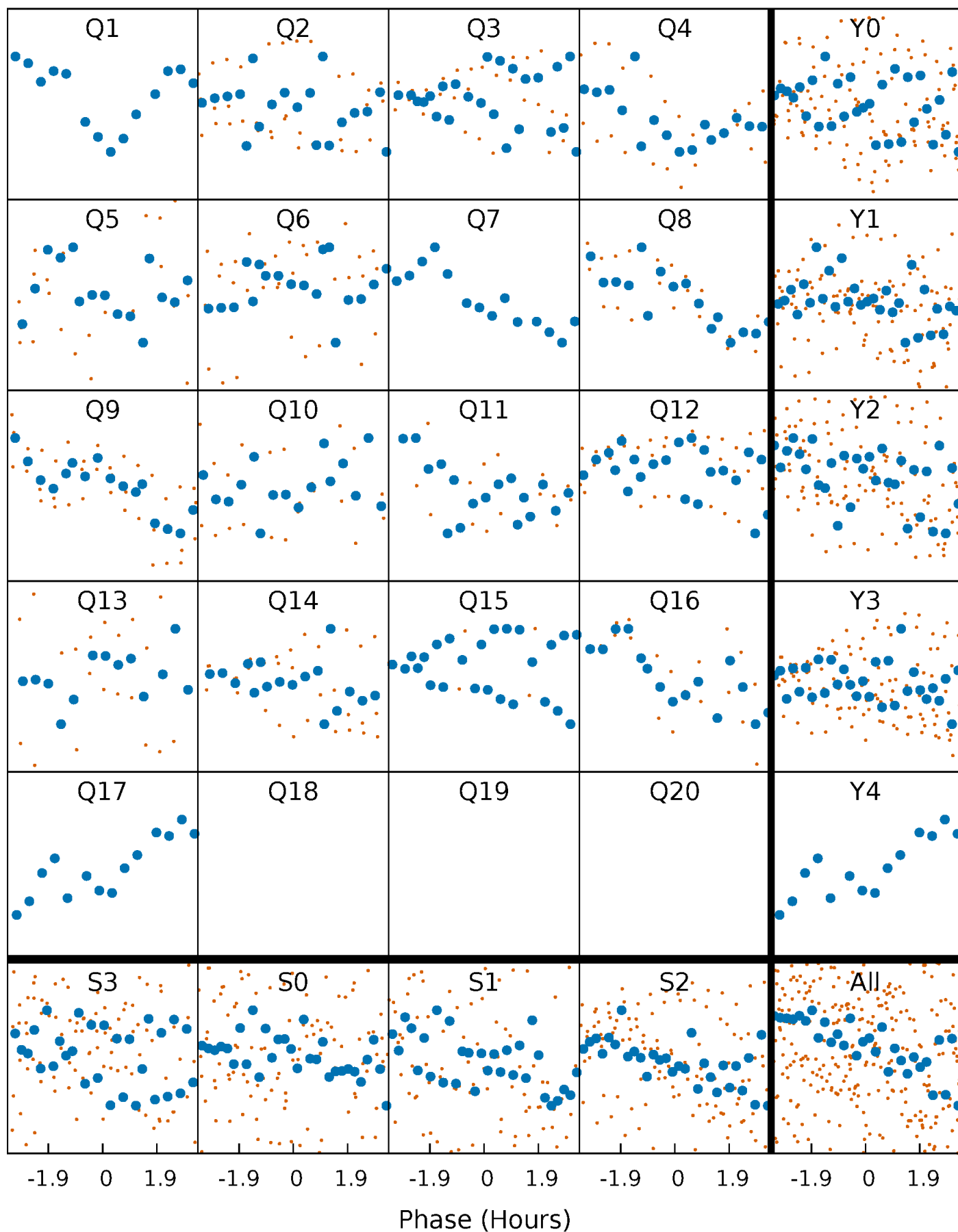


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

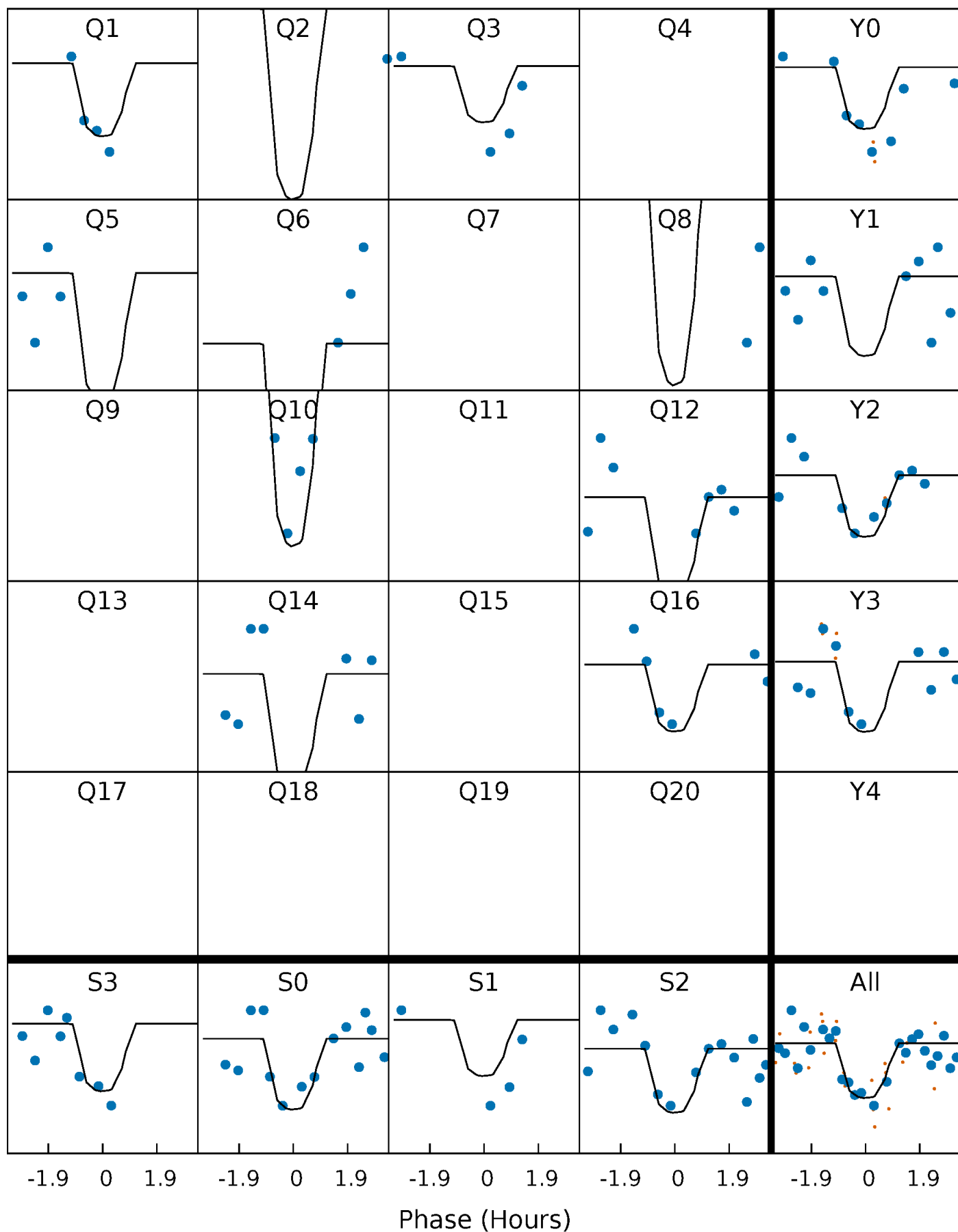
TCE 008398290-02   P= 34.556054 Days    $T_0=137.916829$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 008398290-02   P= 34.556054 Days    $T_0=137.916829$  (BKJD)

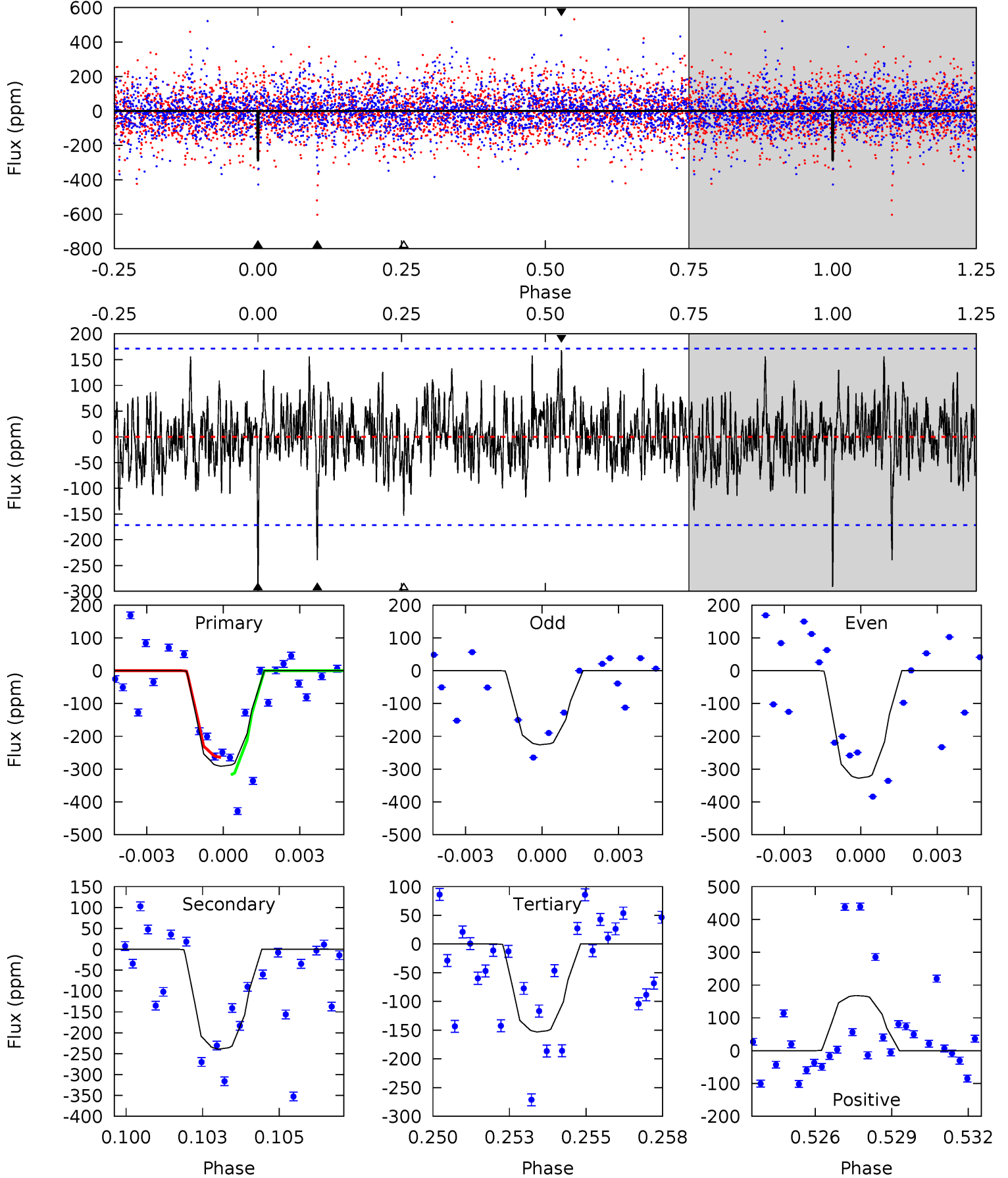


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

008398290-02, P = 34.556054 Days, E = 103.360775 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
8.97	7.36	4.71	5.18	5.28	3.01	1.42	4.26	3.80	2.65	2.19	1.58	1.17	0.37	0.82



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 008398290

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6596^{+182}_{-228}$	$3.913^{+0.390}_{-0.130}$	$-0.260^{+0.250}_{-0.300}$	$2.176^{+0.506}_{-1.012}$	$1.415^{+0.192}_{-0.357}$	$0.194^{+0.665}_{-0.076}$
	+3%/-3%	+10%/-3%	+96%/-115%	+23%/-47%	+14%/-25%	+344%/-39%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 008398290-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-239 \pm 32$	$4.74^{+4.46}_{-3.17}$	$1220^{+82}_{-144}$	$5584^{+5055}_{-1366}$	$308^{+2621}_{-226}$
Alt.	N/A	N/A	N/A	N/A	N/A

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



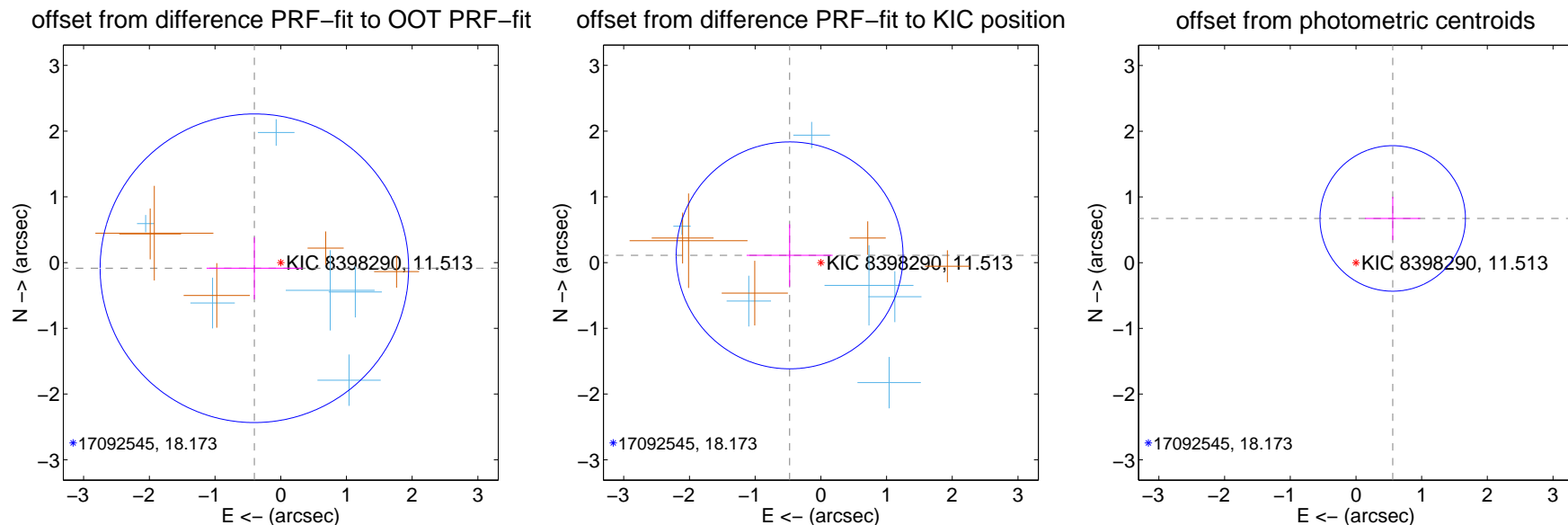
## DV Centroid Data

Supplemental centroid analysis for 008398290-02. **Kepler magnitude: 11.51.** Transit SNR 11.72

There are 6 quarters with good PRF difference image offsets

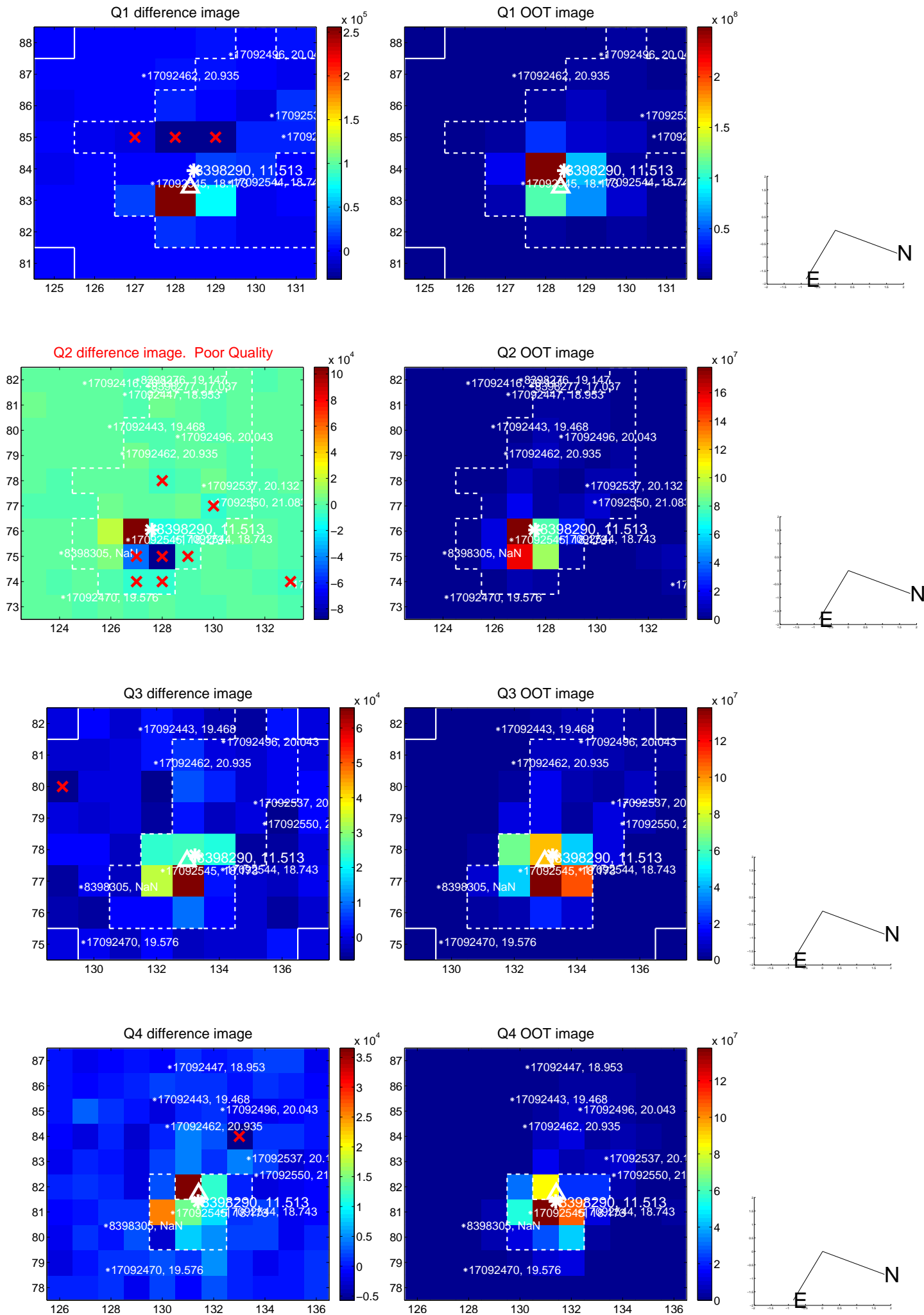
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.411 \pm 0.783$	0.52	$0.401 \pm 0.728$	$-0.086 \pm 0.472$
PRF-fit source offset from KIC position	$0.488 \pm 0.575$	0.85	$0.475 \pm 0.655$	$0.110 \pm 0.473$
photometric centroid source offset	$0.88 \pm 0.37$	2.37	$-0.56 \pm 0.42$	$0.67 \pm 0.33$

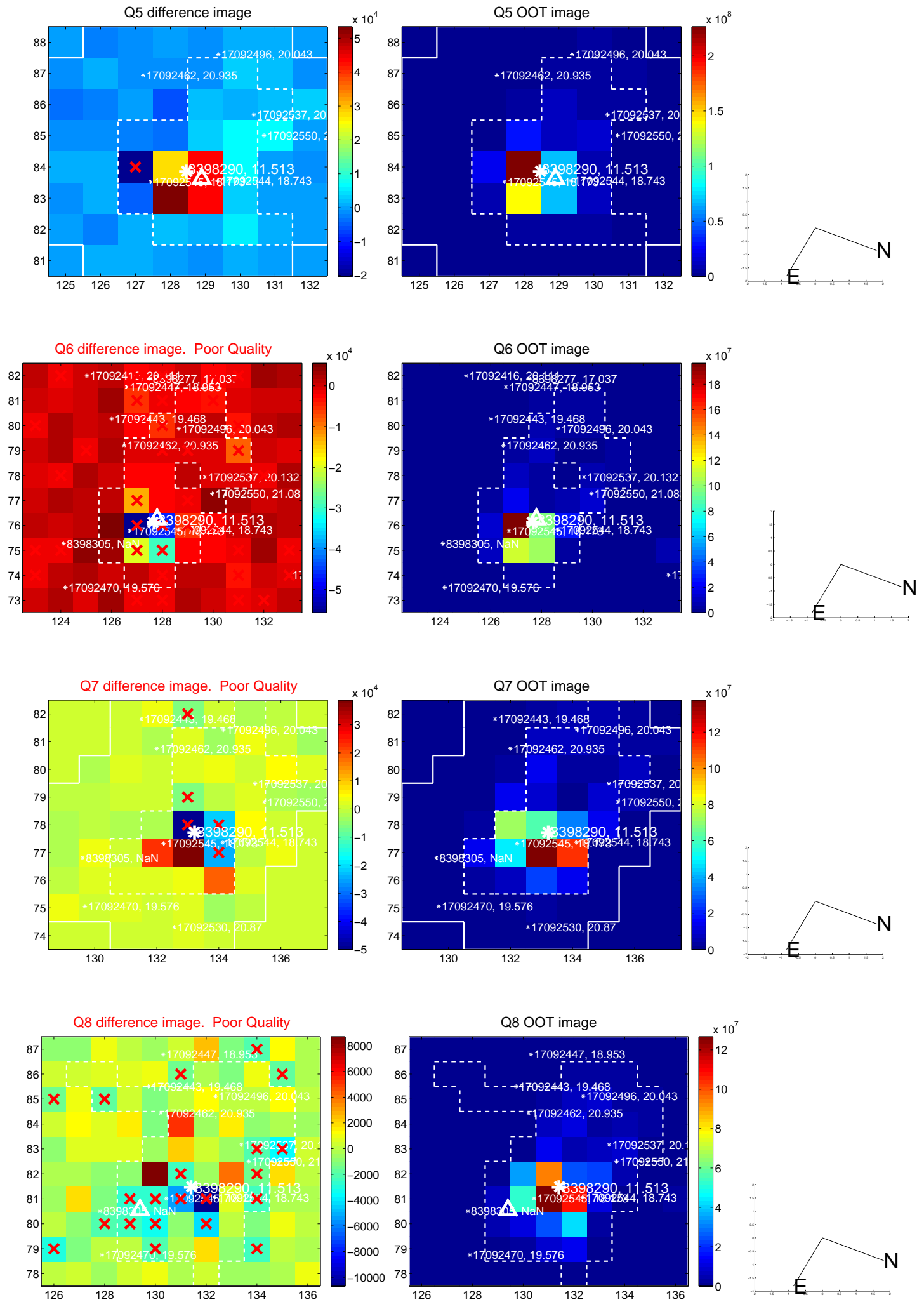


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

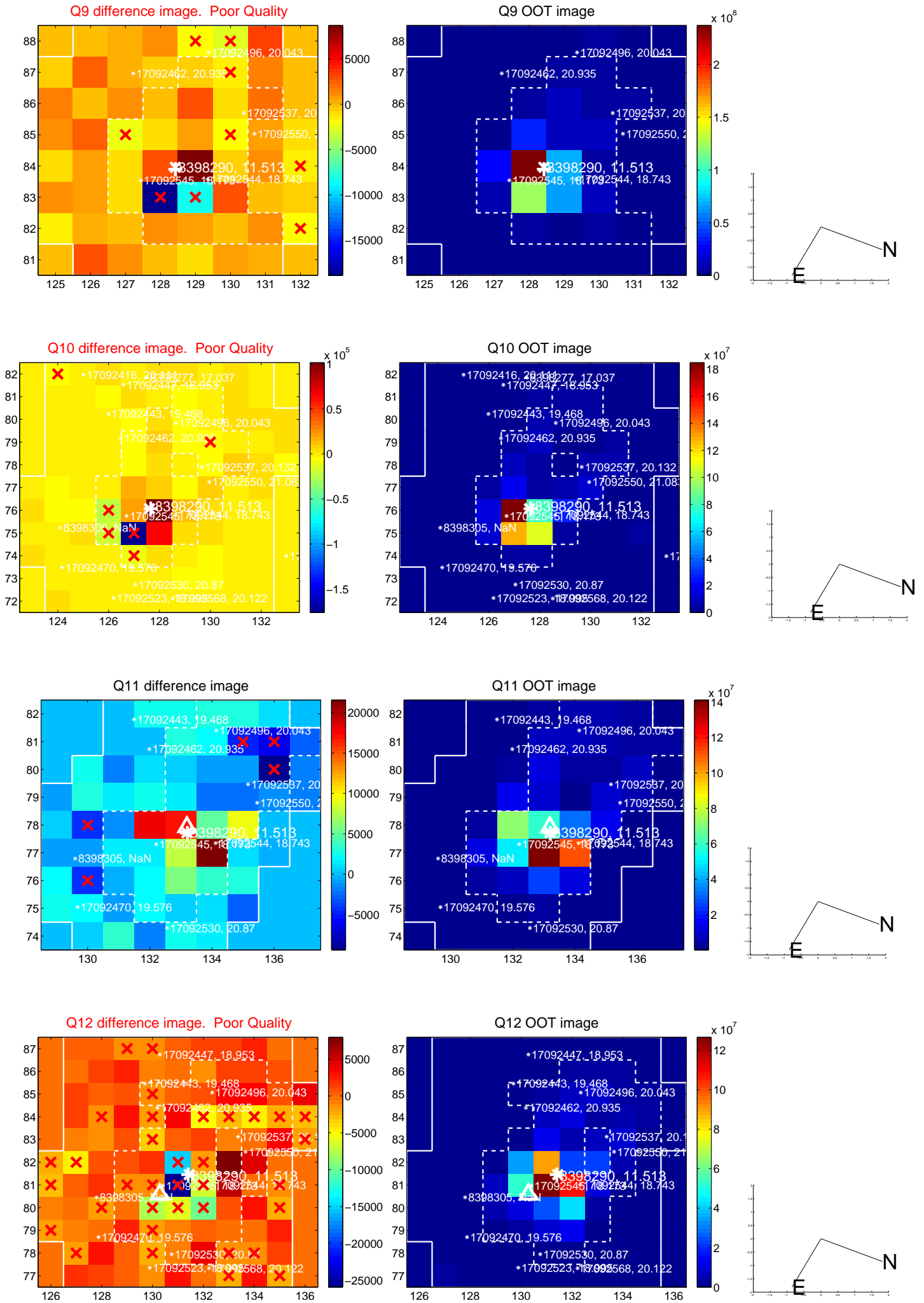
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

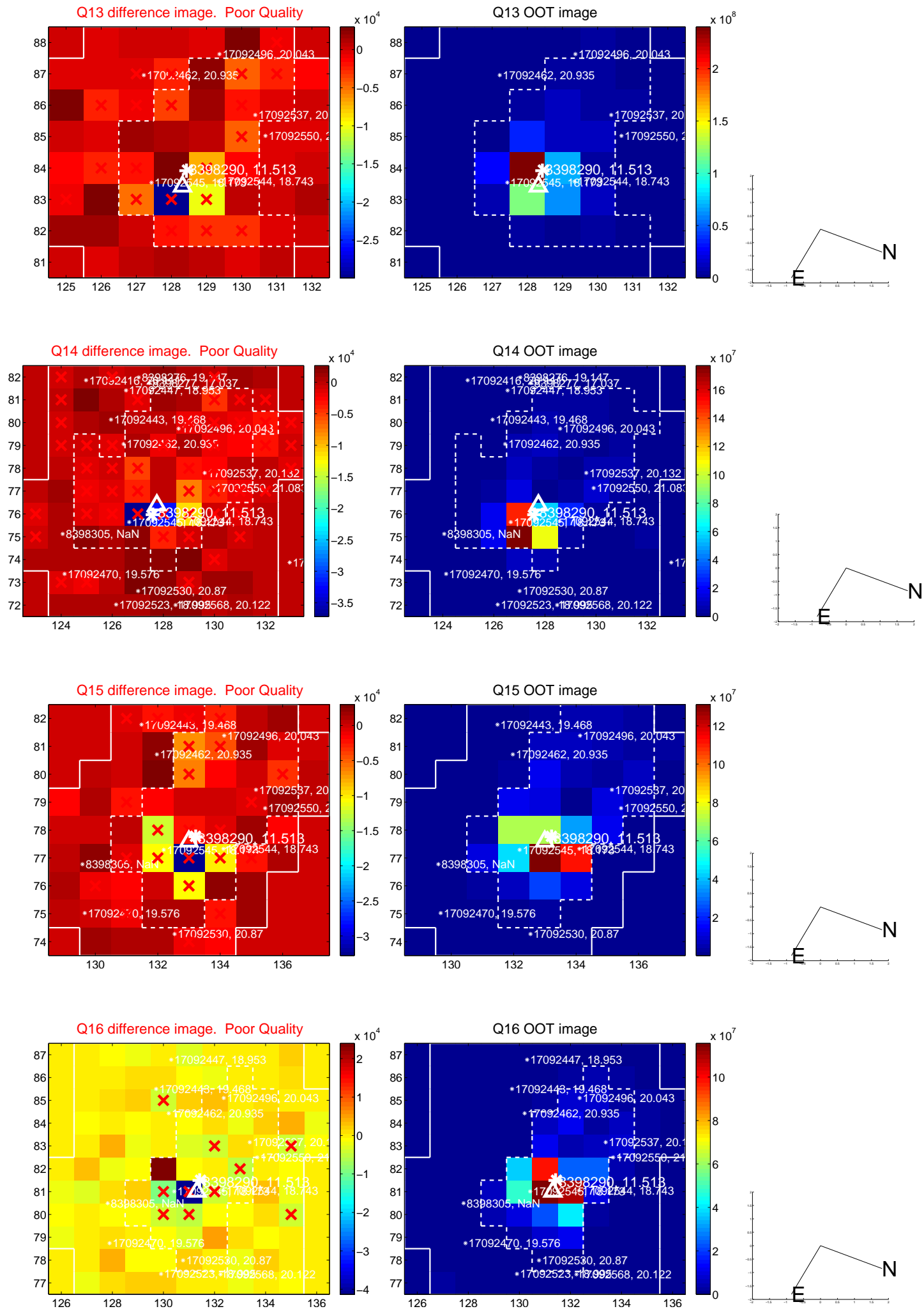


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

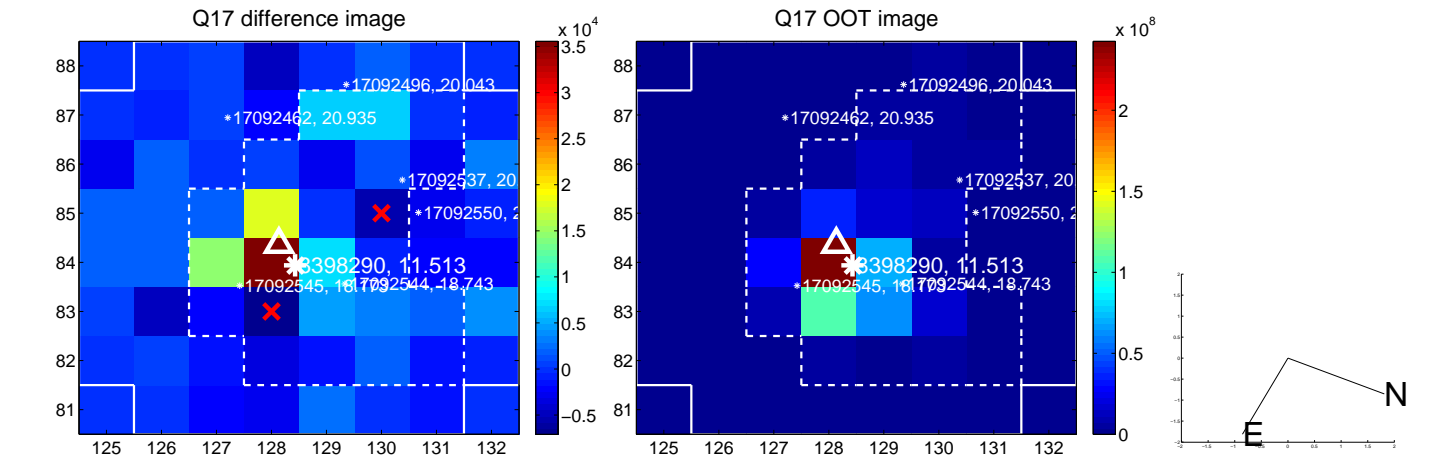




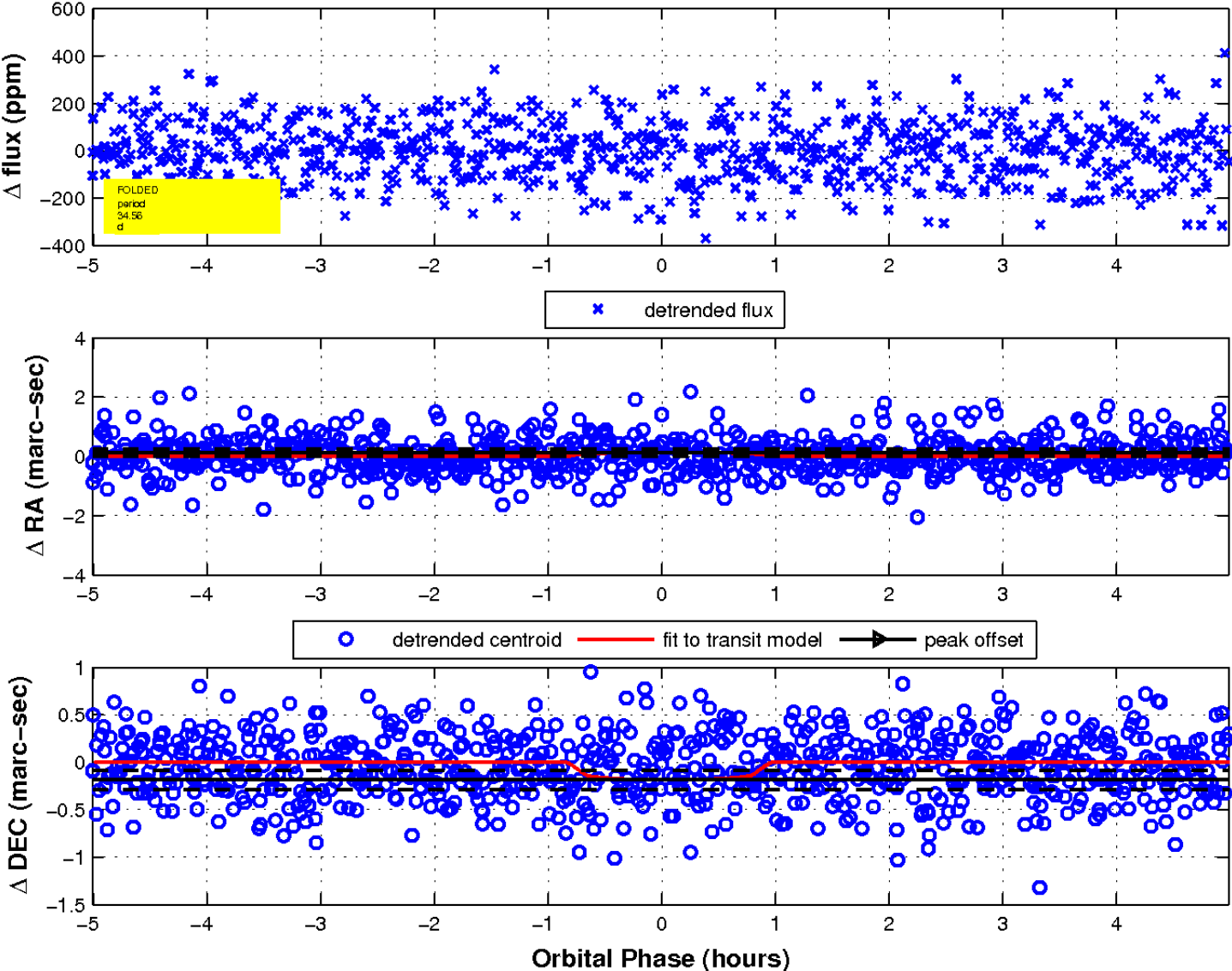
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

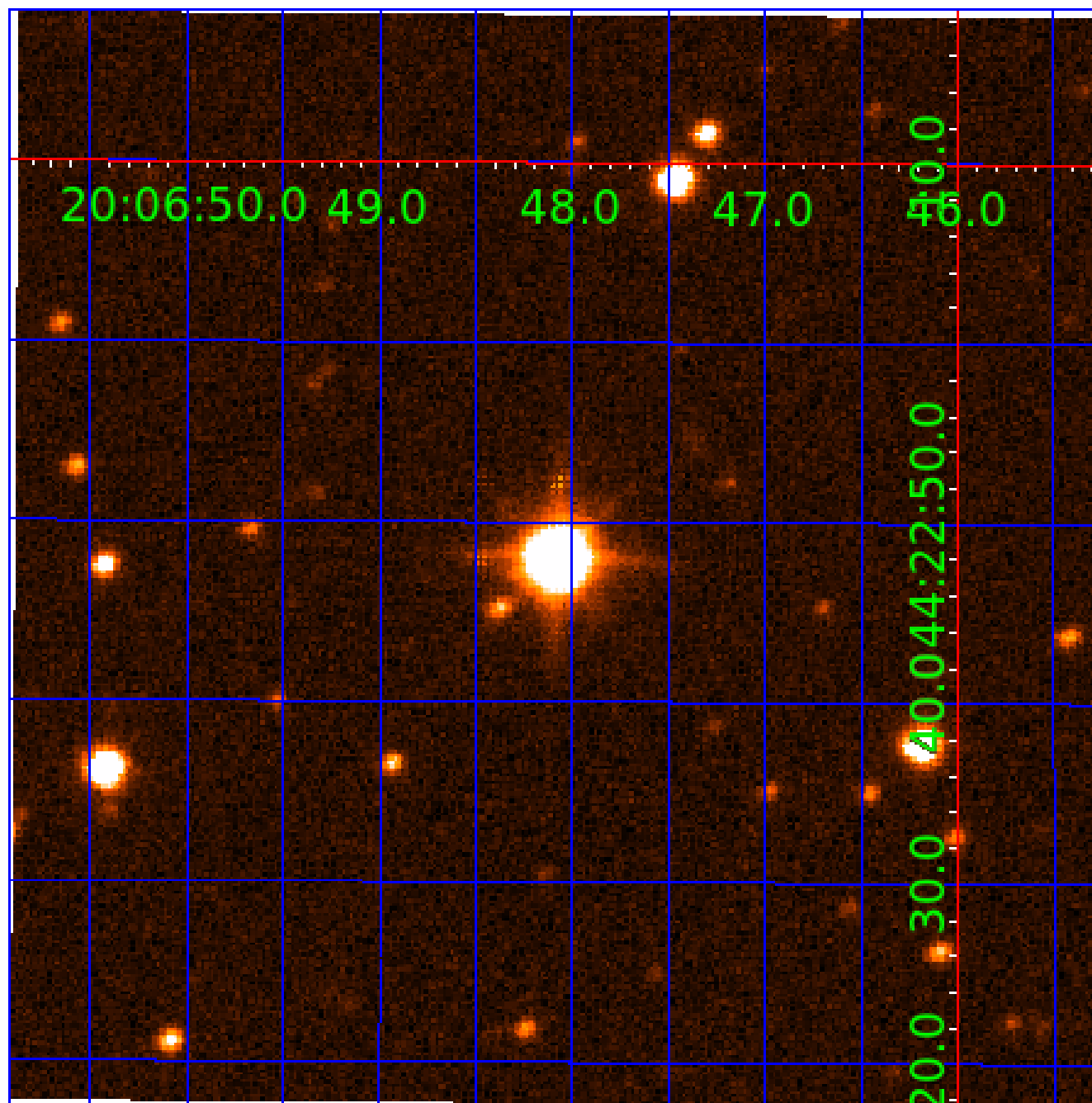


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



# KIC 008398290

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008398290-01	OBS	7033.01	1.021603	132.283129	15.3	7.389	9.1	7.1	2.18	6596	0.91	16171.37
008398290-02	OBS	No	34.556054	137.916829	280.7	1.669	9.8	11.7	2.18	6596	3.71	147.83
008398290-03	OBS	No	29.519659	159.308940	270.0	1.699	9.3	10.3	2.18	6596	3.61	182.38

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008398290-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008398290-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008398290-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV

**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 008398290-03

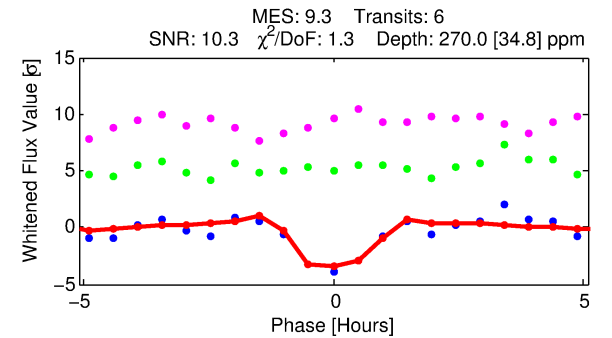
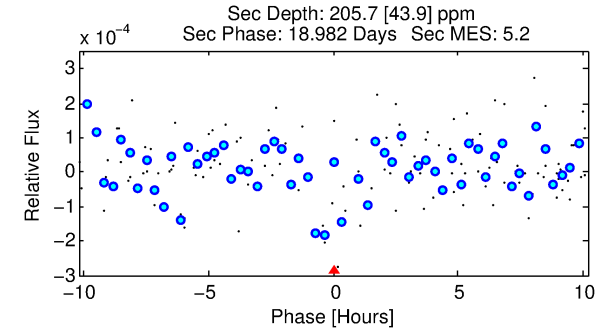
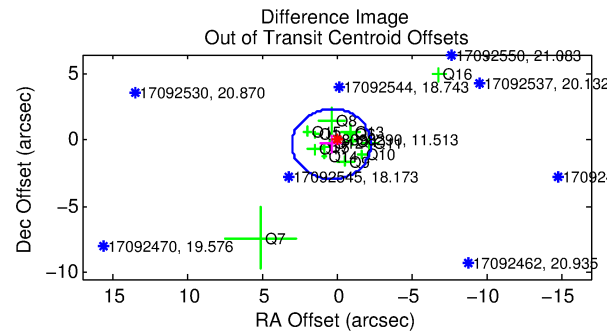
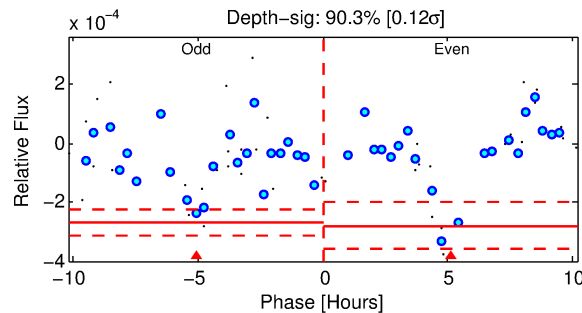
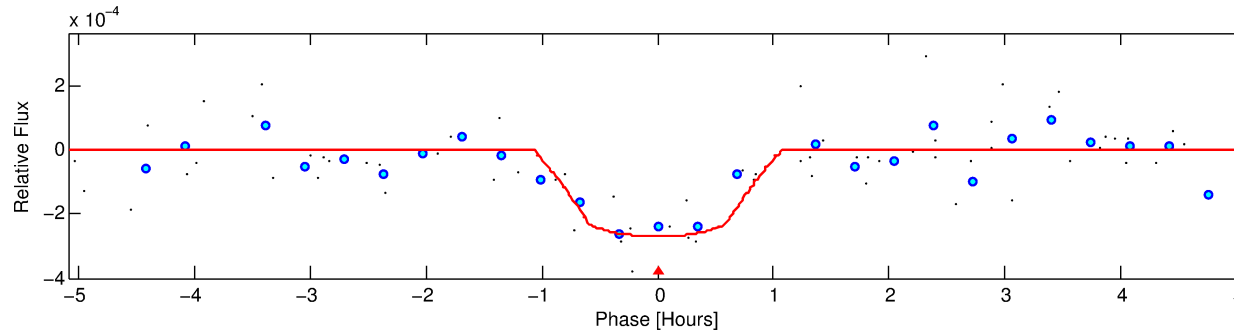
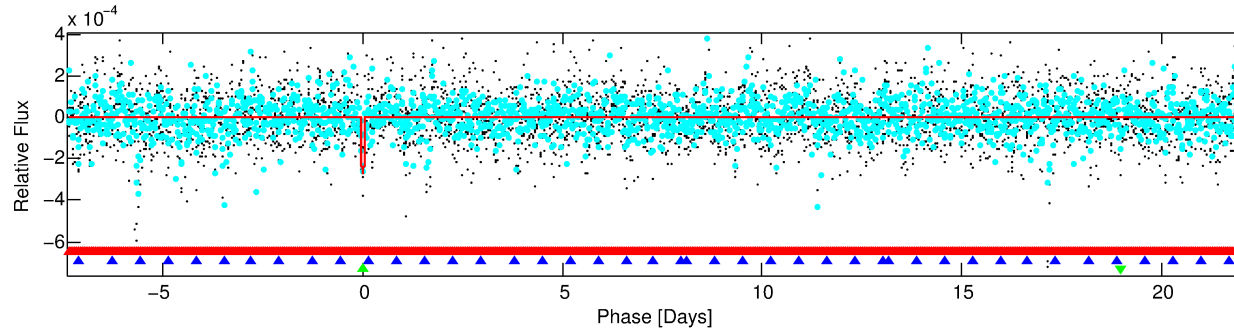
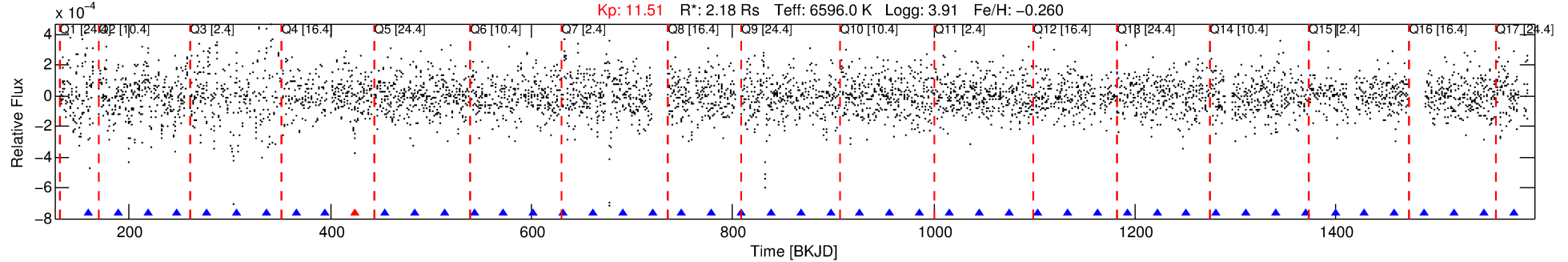
No Significant Match Found



# DV One-Page Summary

KIC: 8398290 Candidate: 3 of 3 Period: 29.520 d  
KOI: K07033 Corr: No Ephemeris Match

Kp: 11.51 R\*: 2.18 Rs Teff: 6596.0 K Logg: 3.91 Fe/H: -0.260



## DV Fit Results:

Period = 29.51966 [0.00018] d  
Epoch = 159.3089 [0.0061] BKJD  
Rp/R\* = 0.0152 [0.0290]  
a/R\* = 134.09 [1355.40]  
b = 0.10 [99.25]  
Seff = 182.38 [125.52]  
Teq = 937 [161] K  
Rp = 3.61 [7.10] Re  
a = 0.2098 [0.0904] AU  
Ag = 382.21 [1484.46] [0.26σ]  
Teffp = 6406 [6130] K [0.89σ]

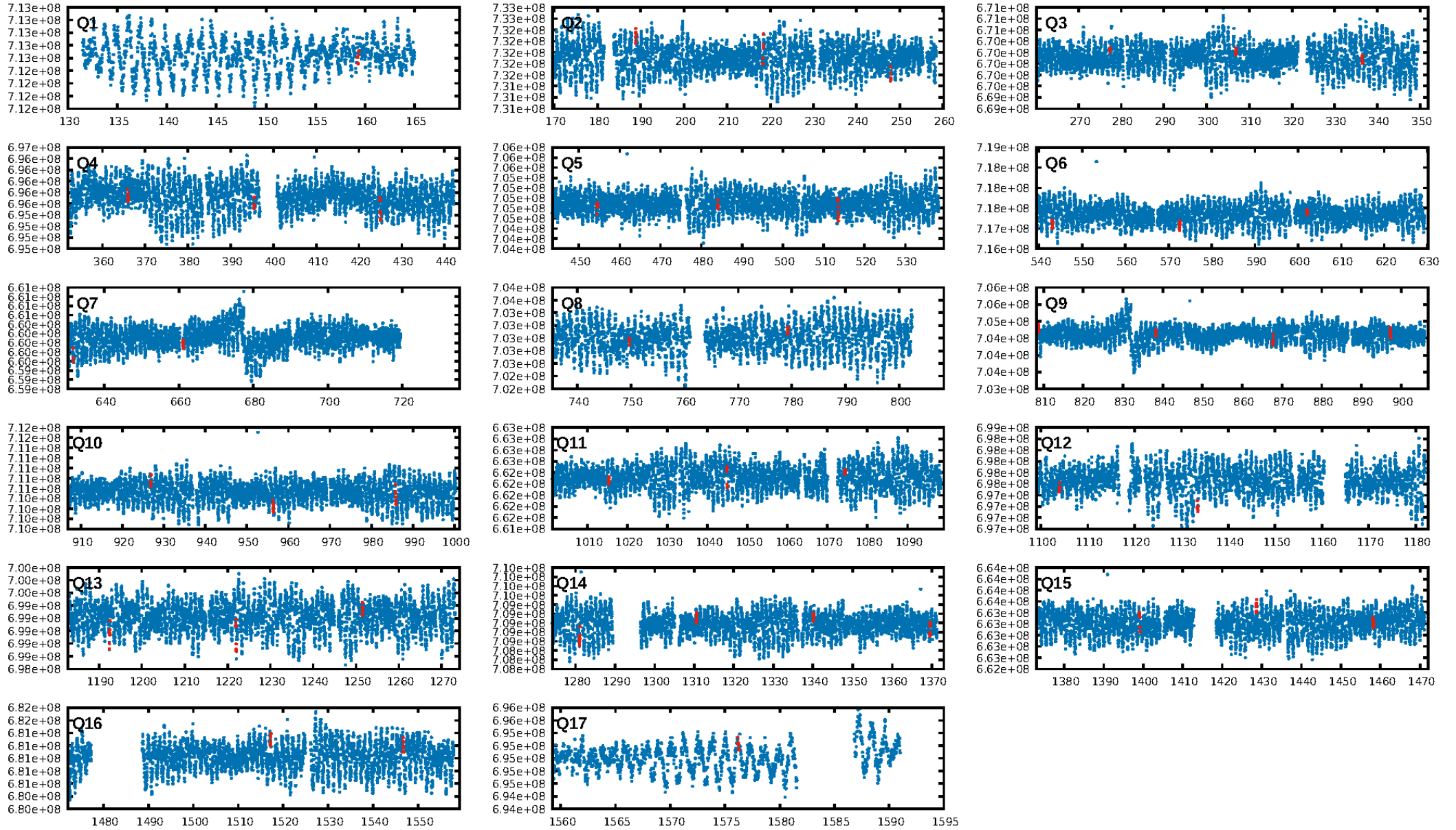
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [90.21σ]  
LongPeriod-sig: 100.0% [50.75σ]  
ModelChiSquare2-sig: 52.9%  
ModelChiSquareGof-sig: 99.9%  
Bootstrap-pfa: 4.15e-09  
RollingBand-fgt: 0.75 [3/4]  
GhostDiagnostic-chr: -9.477  
Centroid-sig: 68.1%  
Centroid-so: 0.130 arcsec [0.37σ]  
OotOffset-rm: 0.445 arcsec [0.51σ]  
KicOffset-rm: 0.530 arcsec [0.64σ]  
OotOffset-st: 3/3/4/5 [15]  
KicOffset-st: 3/3/4/5 [15]  
DiffImageQuality-fgm: 0.60 [9/15]  
DiffImageOverlap-fno: 0.53 [9/17]

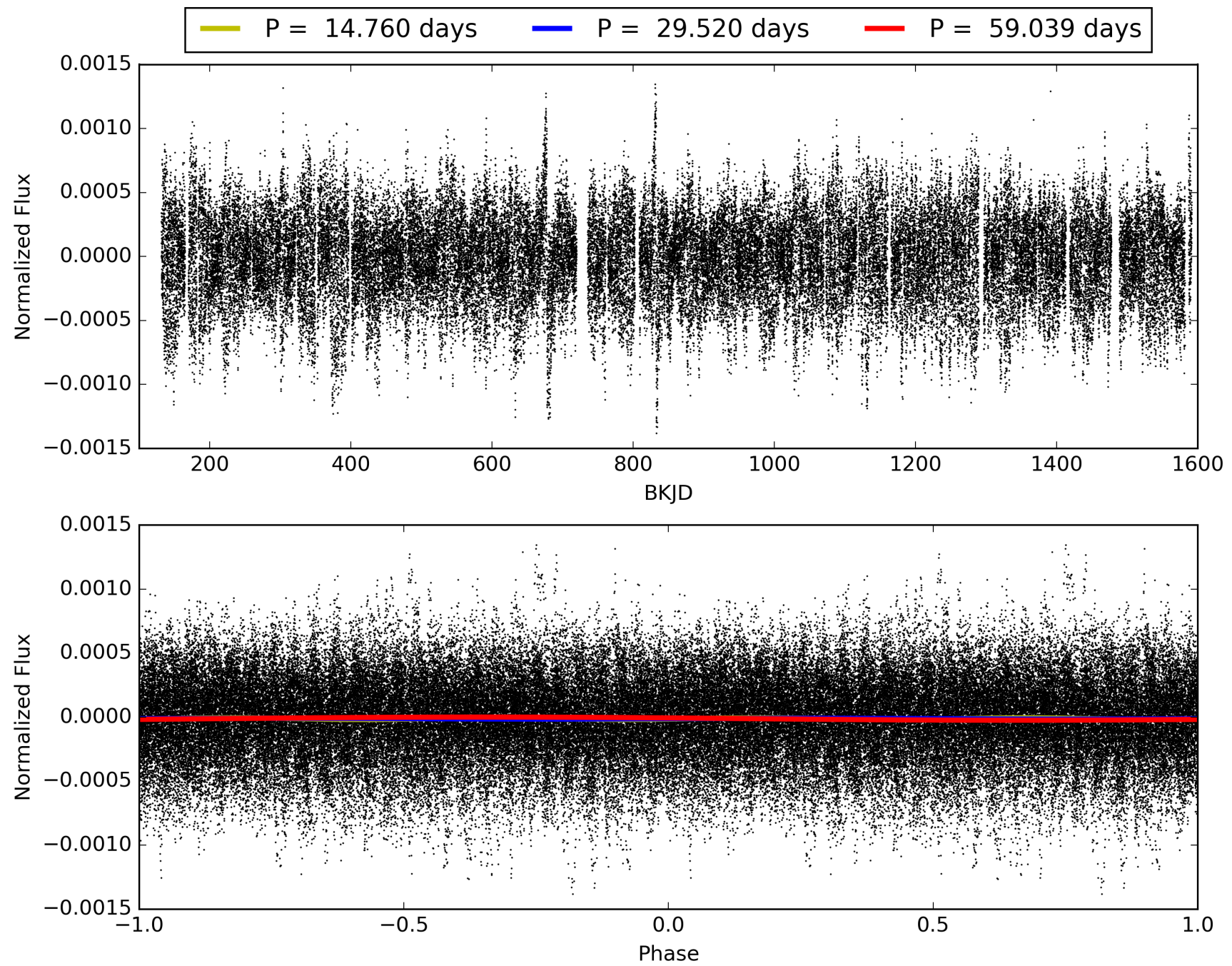
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 07:20:10 Z

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

# TCE 008398290-03, PDC Light Curves

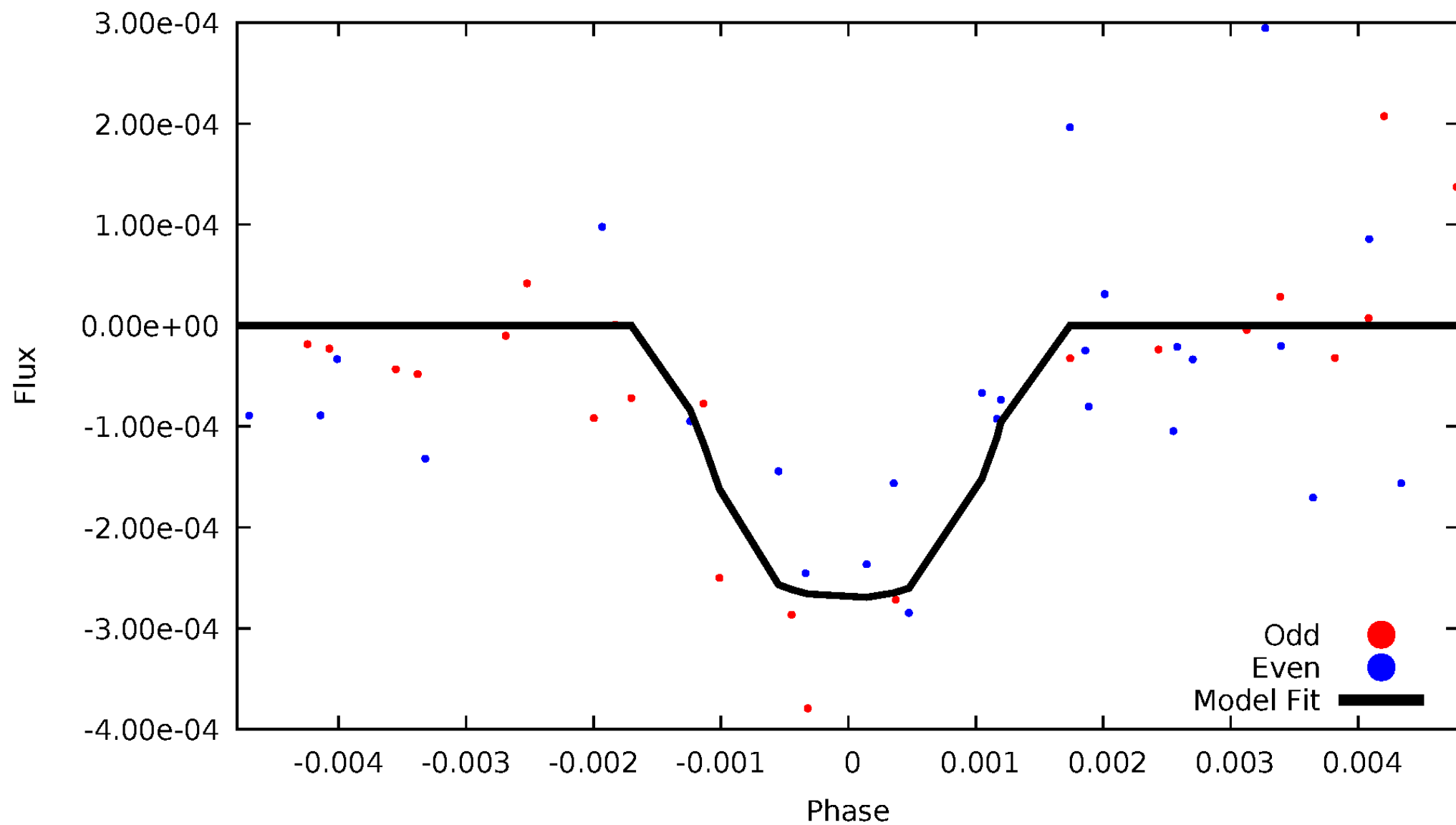


TCE 008398290-03



# DV Odd/Even

TCE 008398290-03





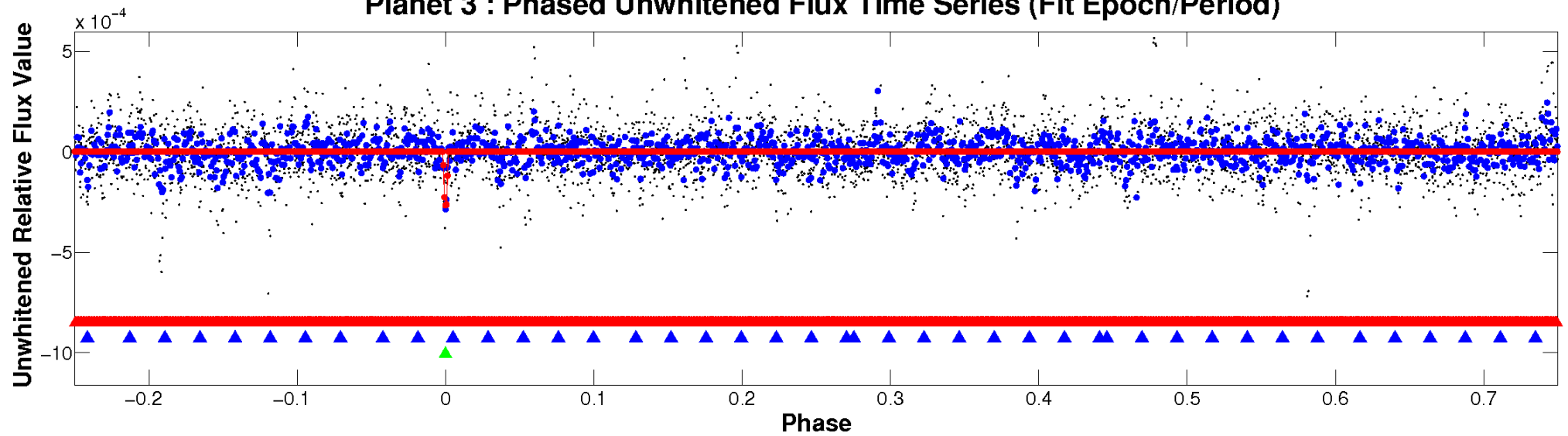
ALT Odd/Even

This plot does not exist for this TCE.

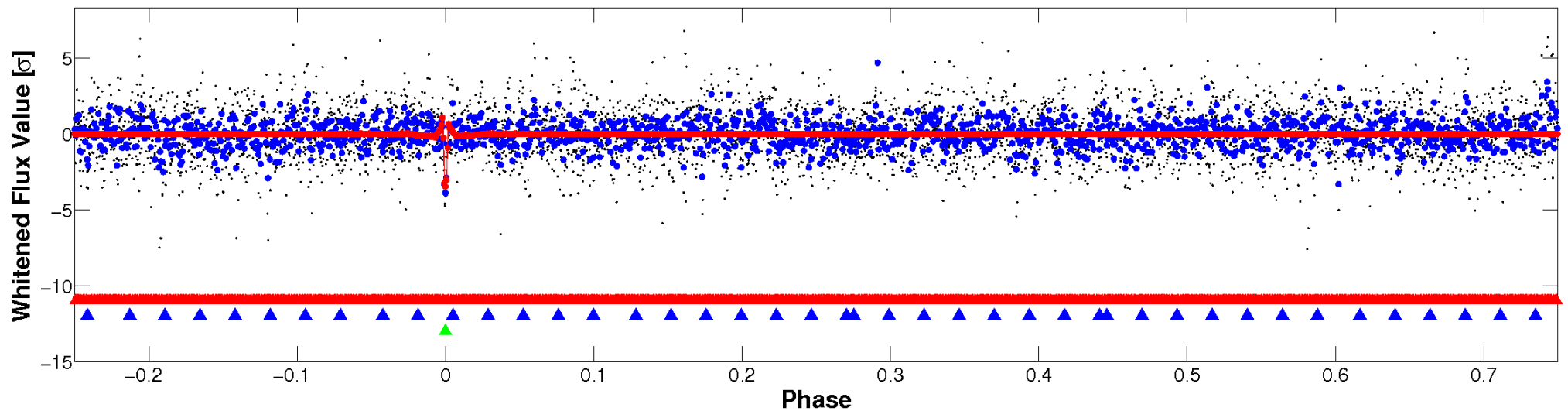


# Non-Whitened Vs. Whitened Light Curve

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

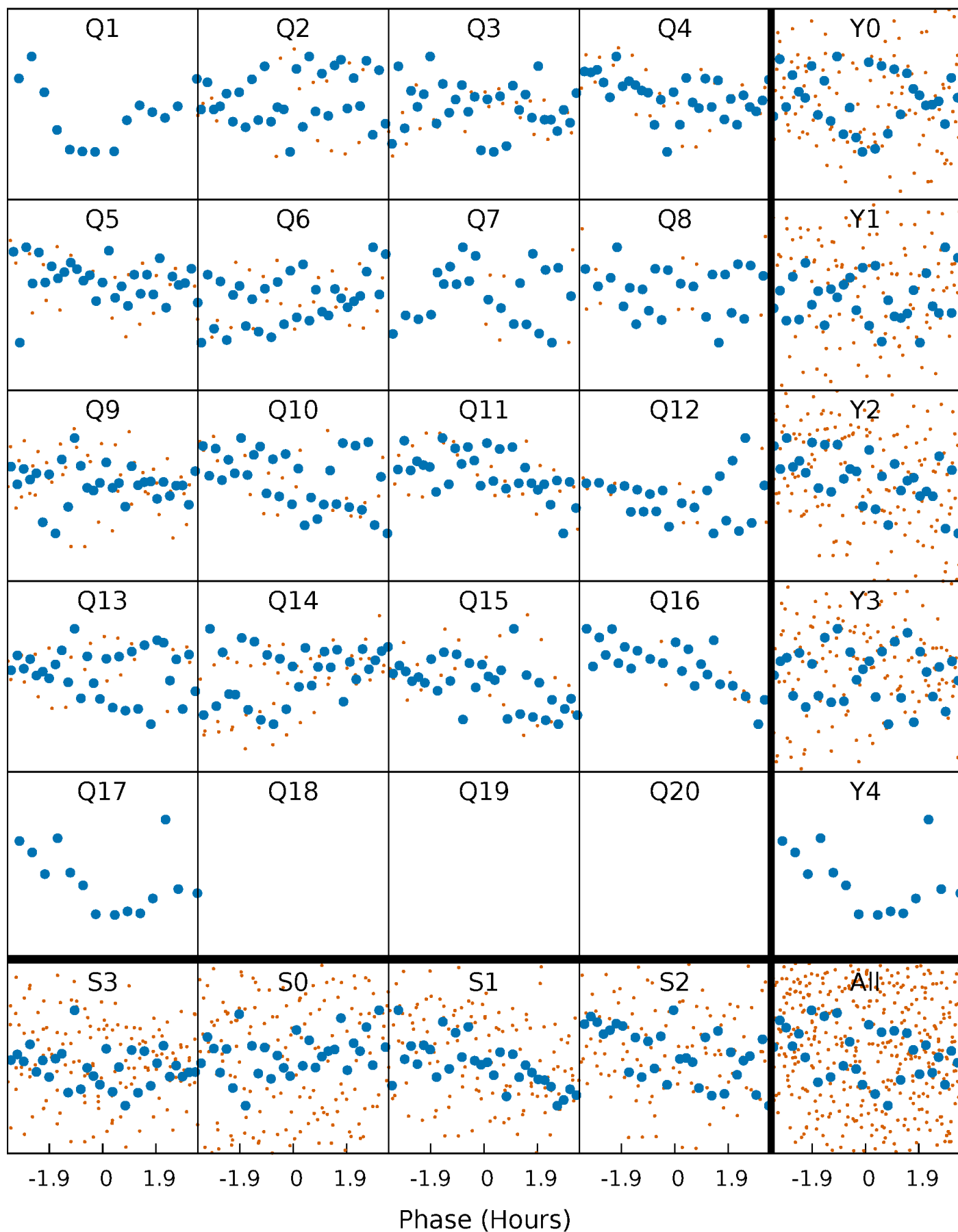


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



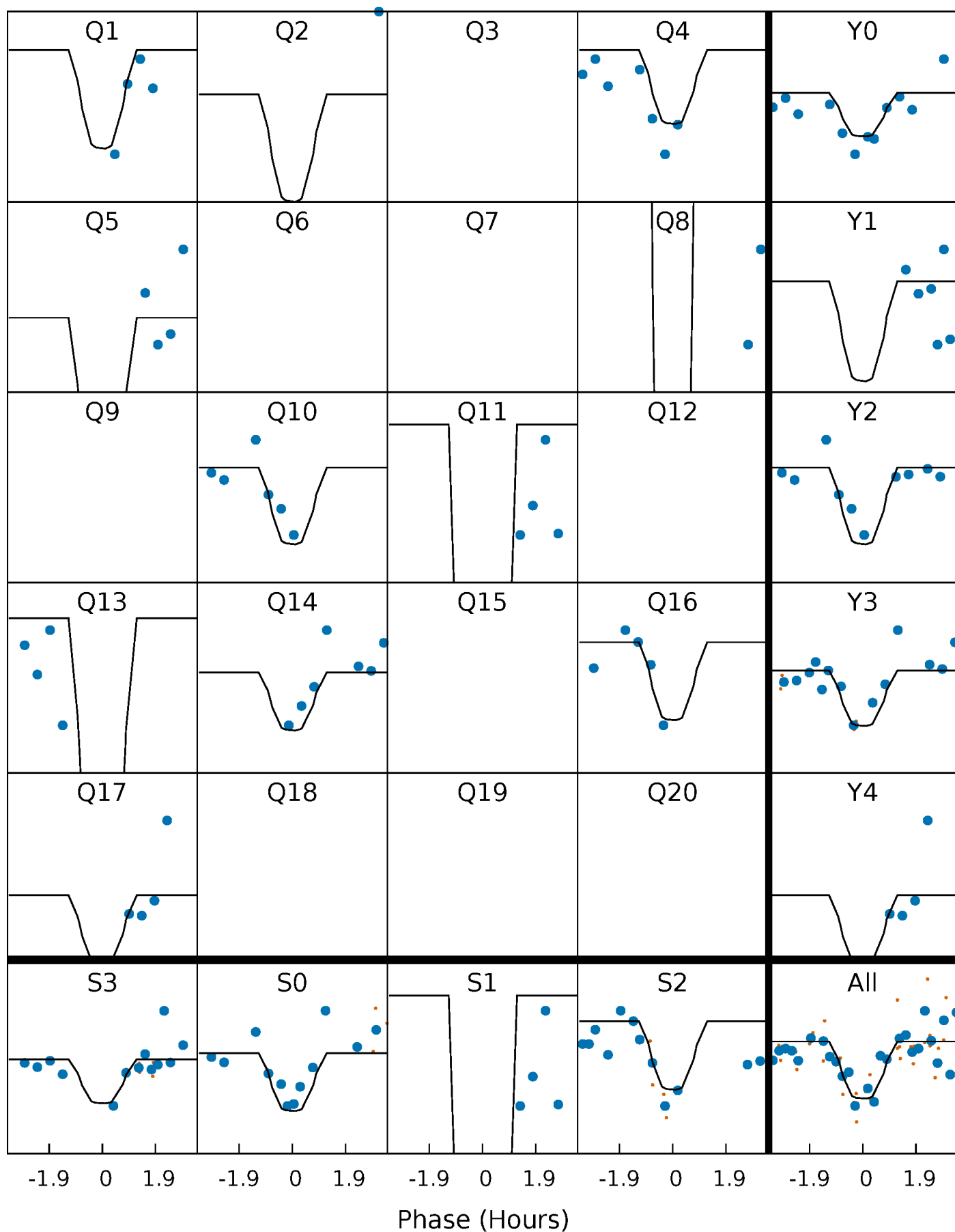
# PDC Quarter-Phased Transit Curves

TCE 008398290-03   P= 29.519659 Days    $T_0=159.308940$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 008398290-03 P= 29.519659 Days  $T_0=159.308940$  (BKJD)

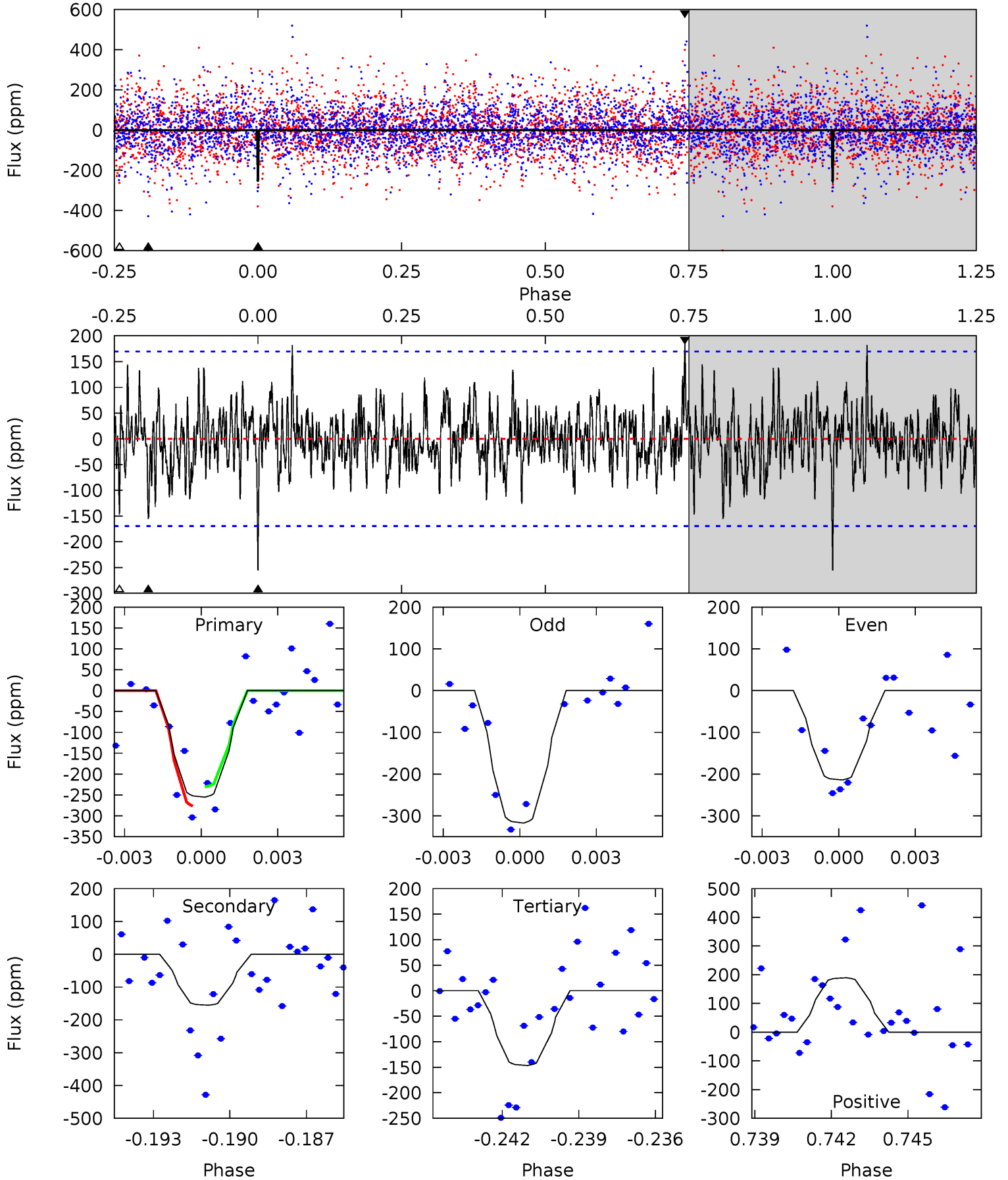


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

008398290-03, P = 29.519659 Days, E = 129.789281 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
7.92	4.82	4.55	5.88	5.26	2.98	1.46	3.38	2.05	0.27	-1.06	1.52	0.94	0.43	0.71



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.



### Stellar Parameters For KIC 008398290

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6596^{+182}_{-228}$	$3.913^{+0.390}_{-0.130}$	$-0.260^{+0.250}_{-0.300}$	$2.176^{+0.506}_{-1.012}$	$1.415^{+0.192}_{-0.357}$	$0.194^{+0.665}_{-0.076}$
	+3%/-3%	+10%/-3%	+96%/-115%	+23%/-47%	+14%/-25%	+344%/-39%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 008398290-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-155 \pm 32$	$5.80^{+5.99}_{-4.08}$	$1280^{+100}_{-157}$	$4635^{+3830}_{-1004}$	$111^{+1159}_{-85}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

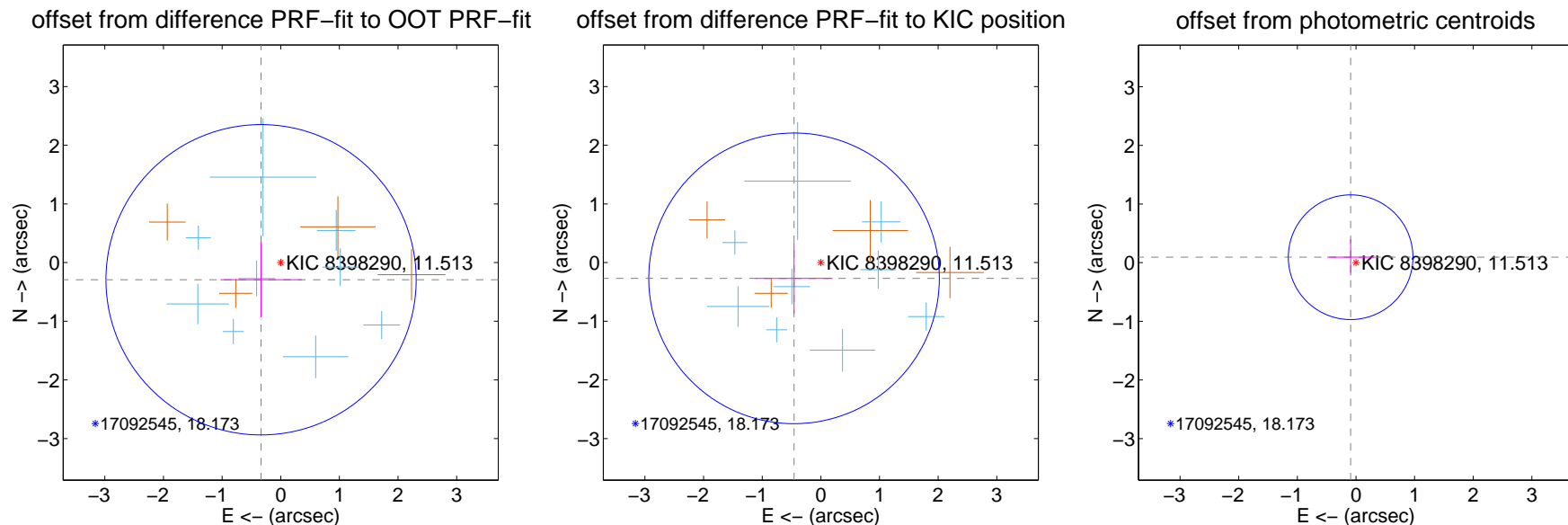
## DV Centroid Data

Supplemental centroid analysis for 008398290-03. **Kepler magnitude: 11.51.** Transit SNR 10.33

There are 9 quarters with good PRF difference image offsets

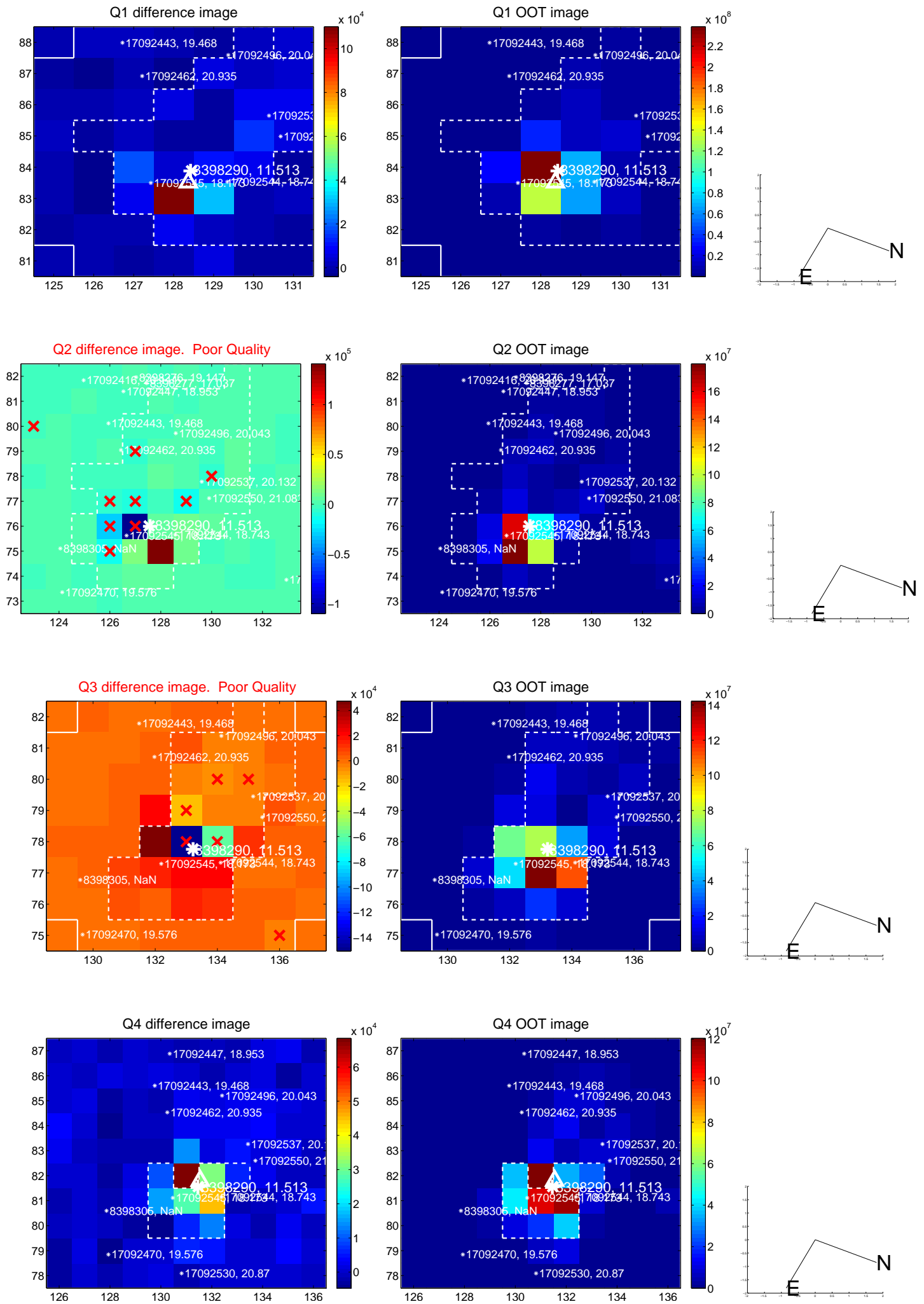
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.445 \pm 0.882$	0.51	$0.336 \pm 0.691$	$-0.293 \pm 0.638$
PRF-fit source offset from KIC position	$0.530 \pm 0.826$	0.64	$0.457 \pm 0.656$	$-0.269 \pm 0.603$
photometric centroid source offset	$0.13 \pm 0.35$	0.37	$0.09 \pm 0.40$	$0.09 \pm 0.31$

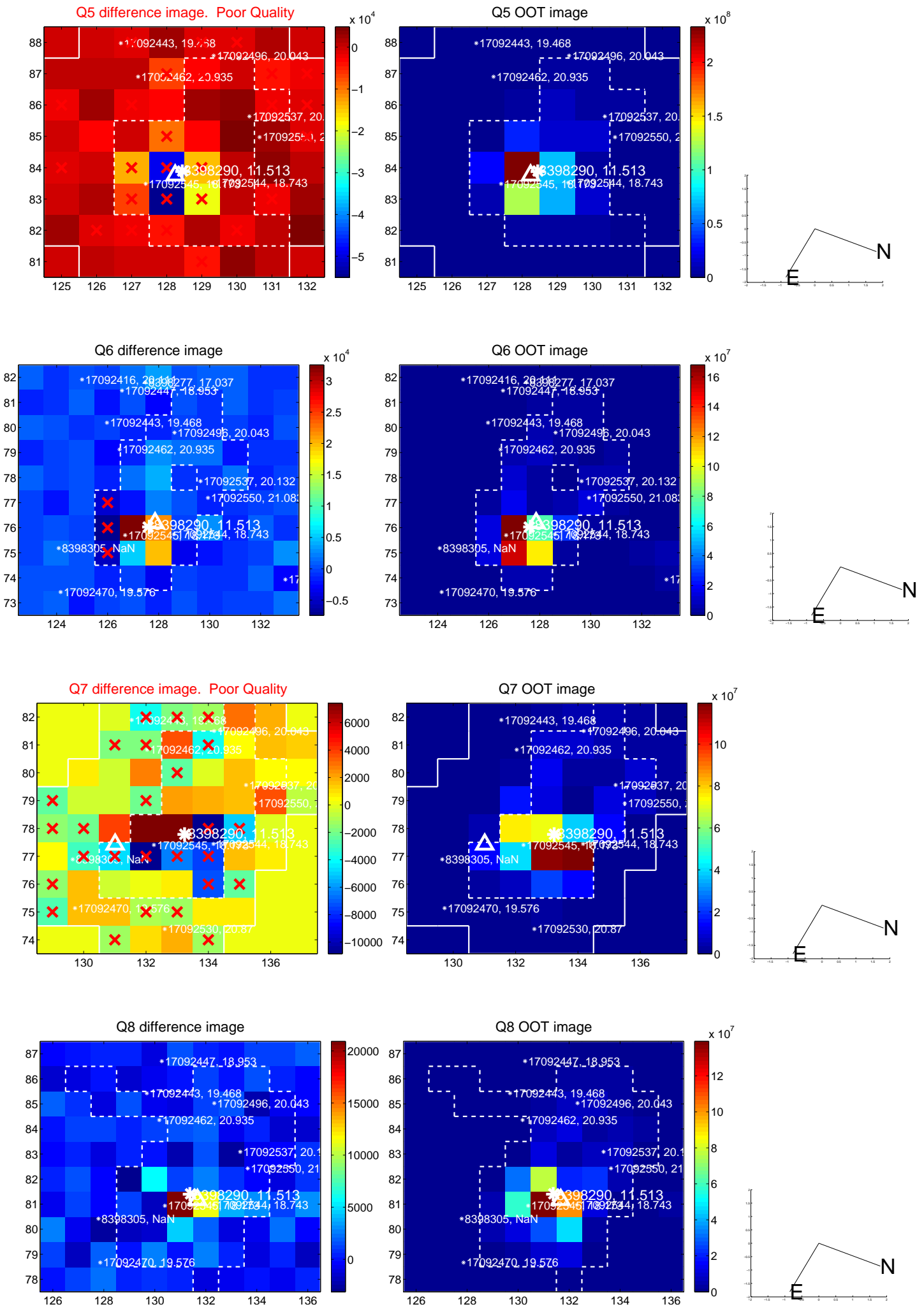


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

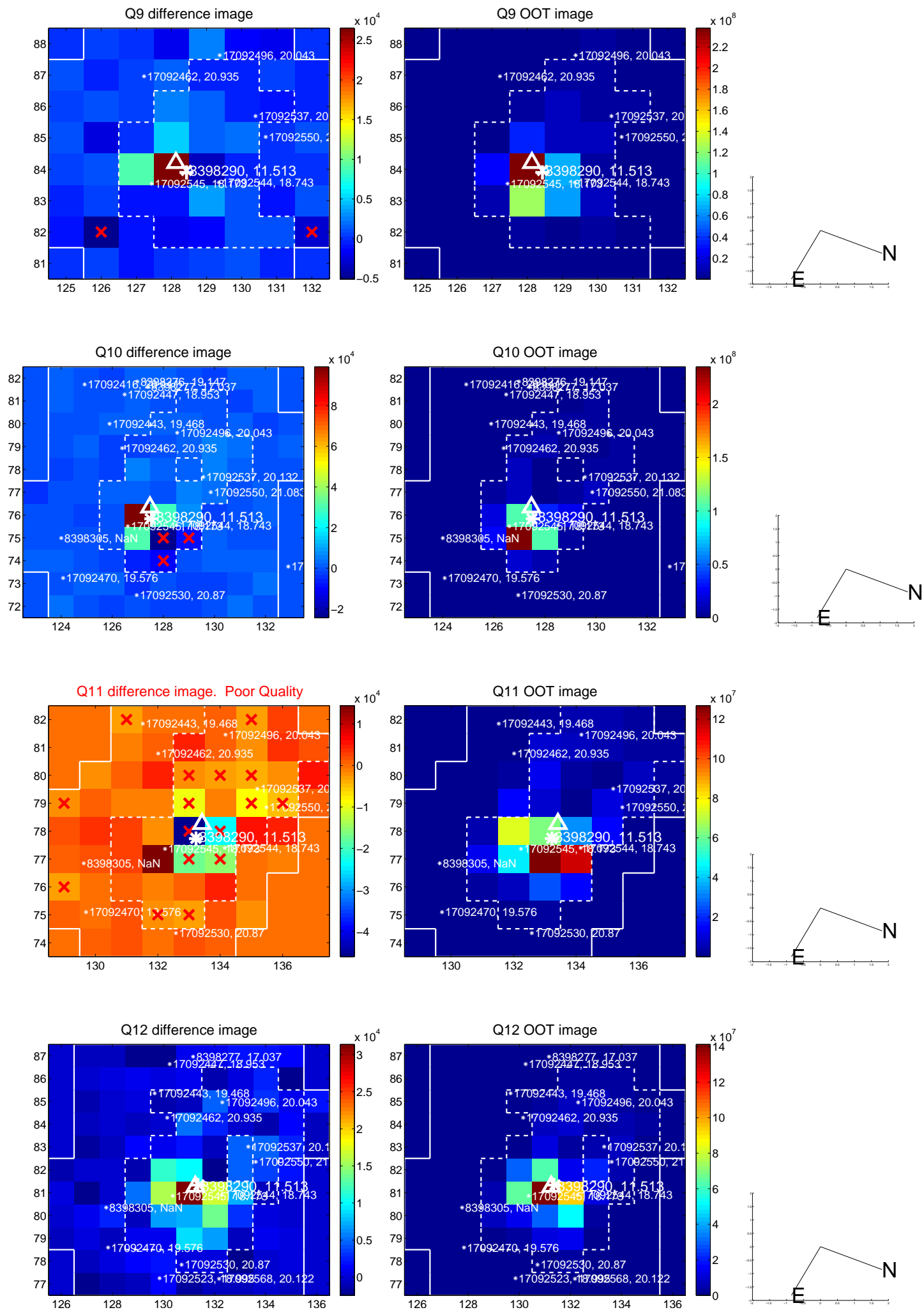
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



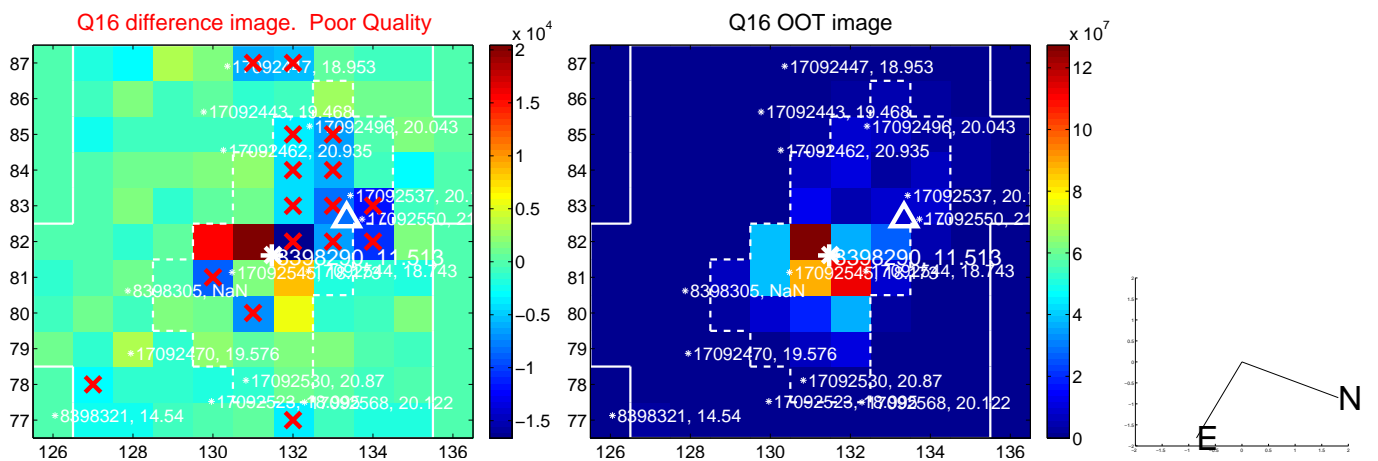
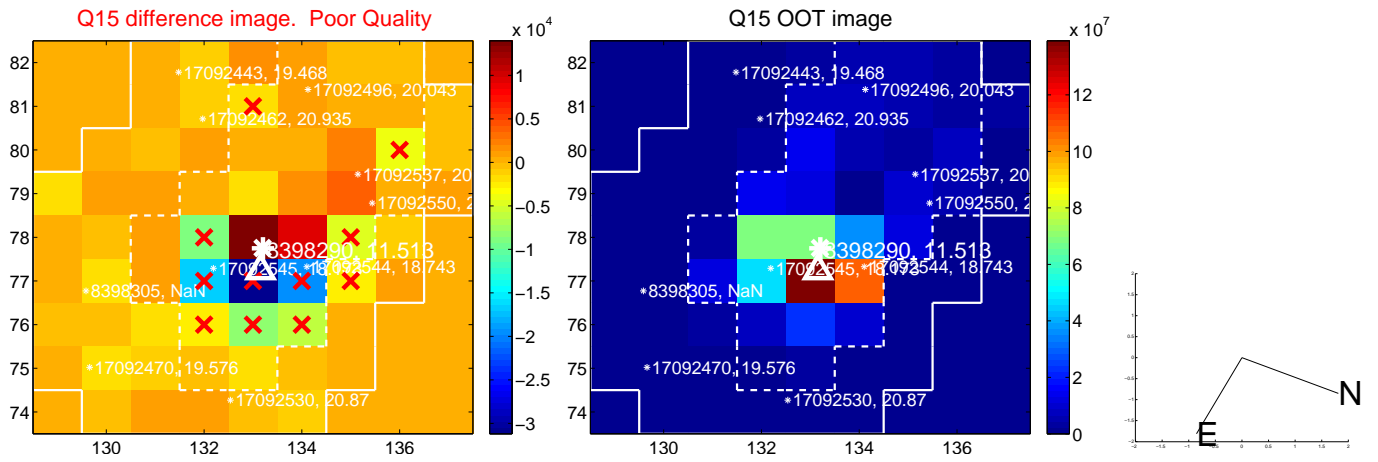
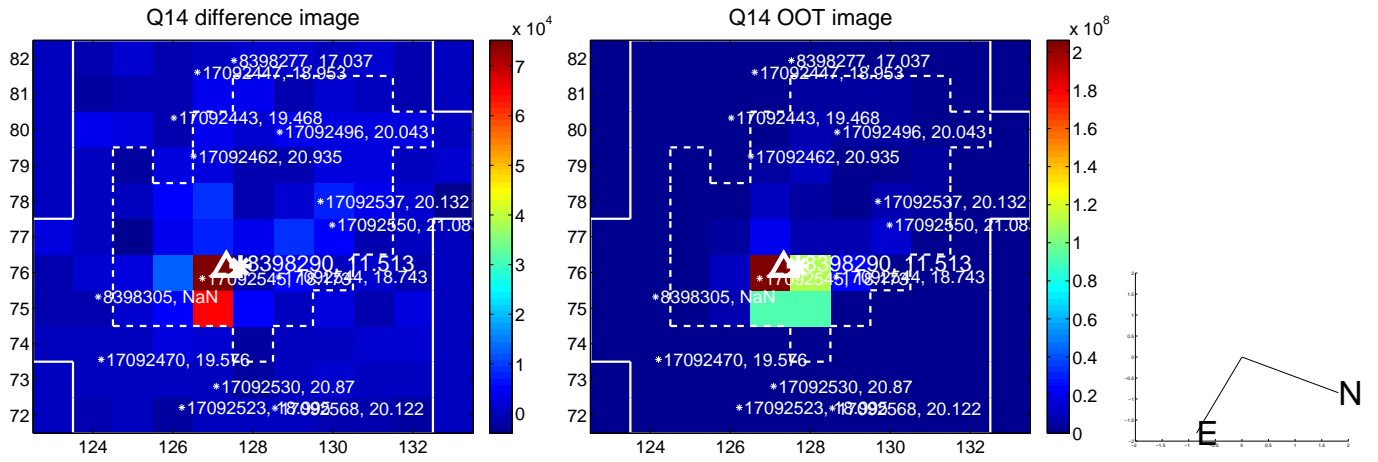
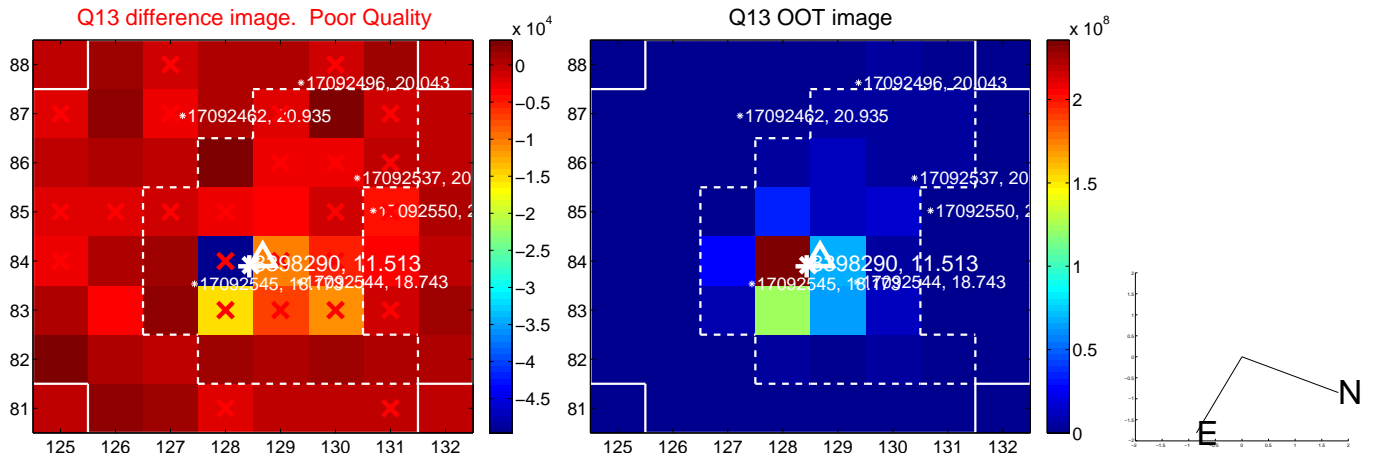
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.







UKIRT Image

Declination

