

# KIC 006278762

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006278762-01	OBS	3158.05	9.740496	134.878351	122.6	1.762	31.8	38.1	0.72	5051	0.99	48.63
006278762-02	OBS	3158.04	7.743518	135.091938	83.6	2.963	30.2	33.0	0.72	5051	0.80	66.03
006278762-03	OBS	3158.03	6.189430	134.784170	76.9	2.300	29.6	31.9	0.72	5051	0.78	89.02
006278762-04	OBS	3158.02	4.545889	131.521874	69.0	1.825	27.6	31.0	0.72	5051	0.69	134.34
006278762-05	OBS	3158.01	3.600136	133.250777	119.0	2.000	22.8	-1.0	0.72	5051	0.77	183.34

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006278762-01	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
006278762-02	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
006278762-03	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
006278762-04	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
006278762-05	OBS	PC	1.00	0	0	0	0	CENT_SATURATED

**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.

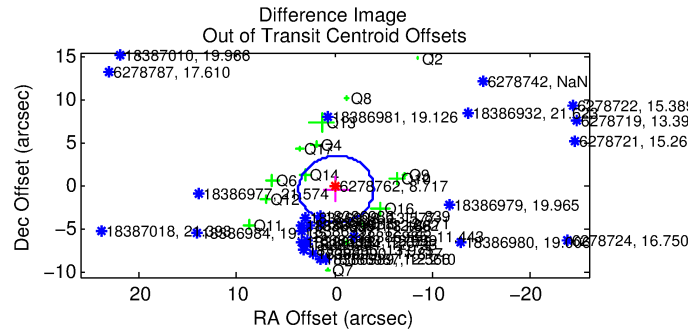
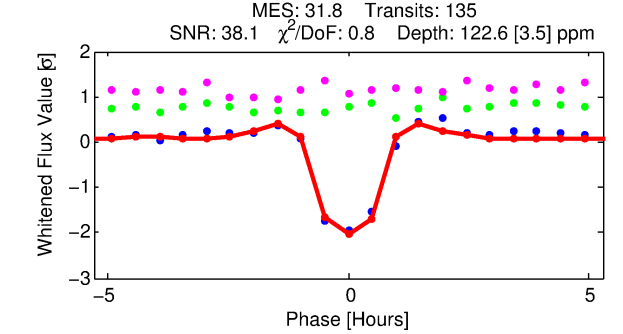
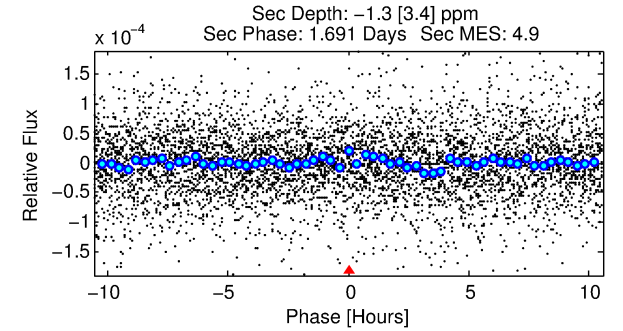
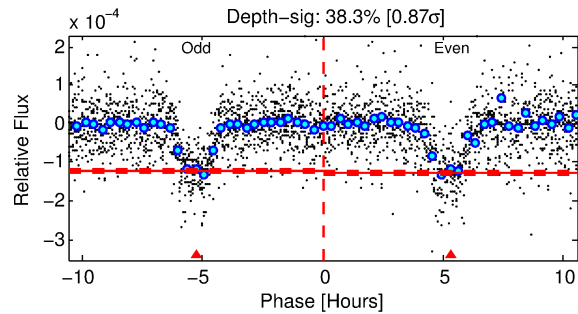
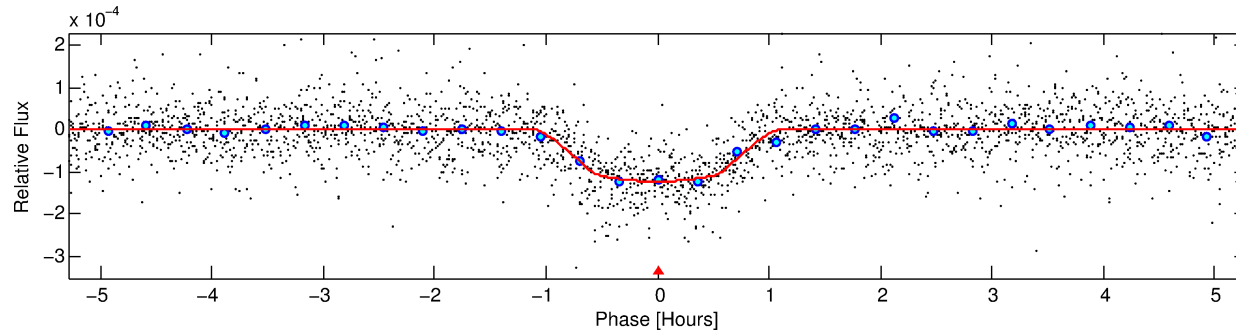
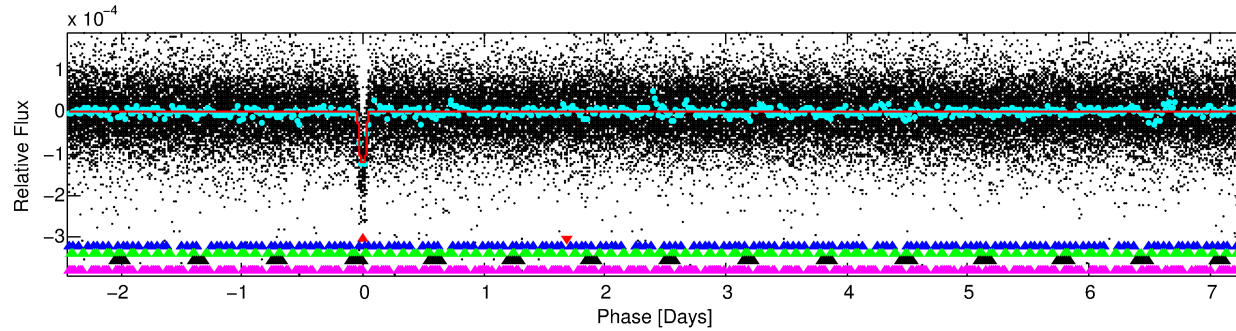
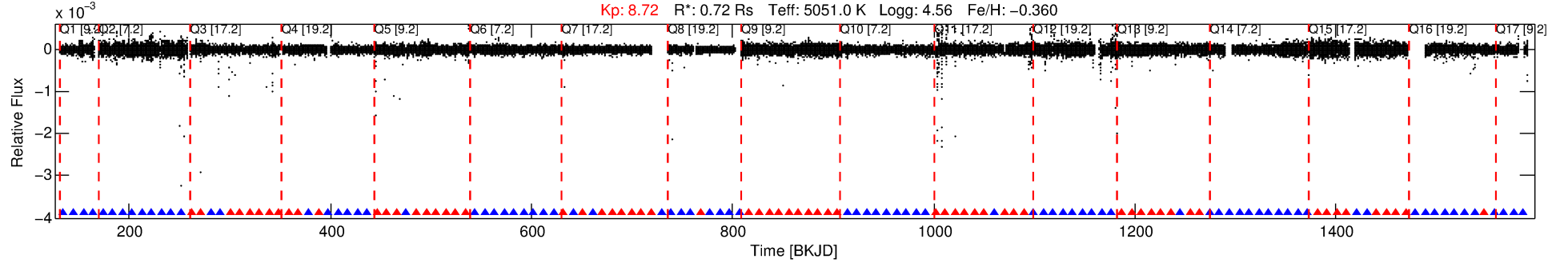
Ephemeris Match Information For 006278762-01

No Significant Match Found

# DV One-Page Summary

KIC: 6278762 Candidate: 1 of 5 Period: 9.740 d  
KOI: K03158.05 Name: Kepler-444f Corr: 0.979

Kp: 8.72 R\*: 0.72 Rs Teff: 5051.0 K Logg: 4.56 Fe/H: -0.360



## DV Fit Results:

Period = 9.74050 [0.00001] d  
Epoch = 134.8784 [0.0010] BKJD  
Rp/R\* = 0.0126 [0.0023]  
a/R\* = 18.18 [14.07]  
b = 0.92 [0.14]  
Seff = 48.63 [7.69]  
Teq = 673 [27] K  
Rp = 0.99 [0.20] Re  
a = 0.0790 [0.0046] AU  
Ag = N/A  
Teffp = N/A

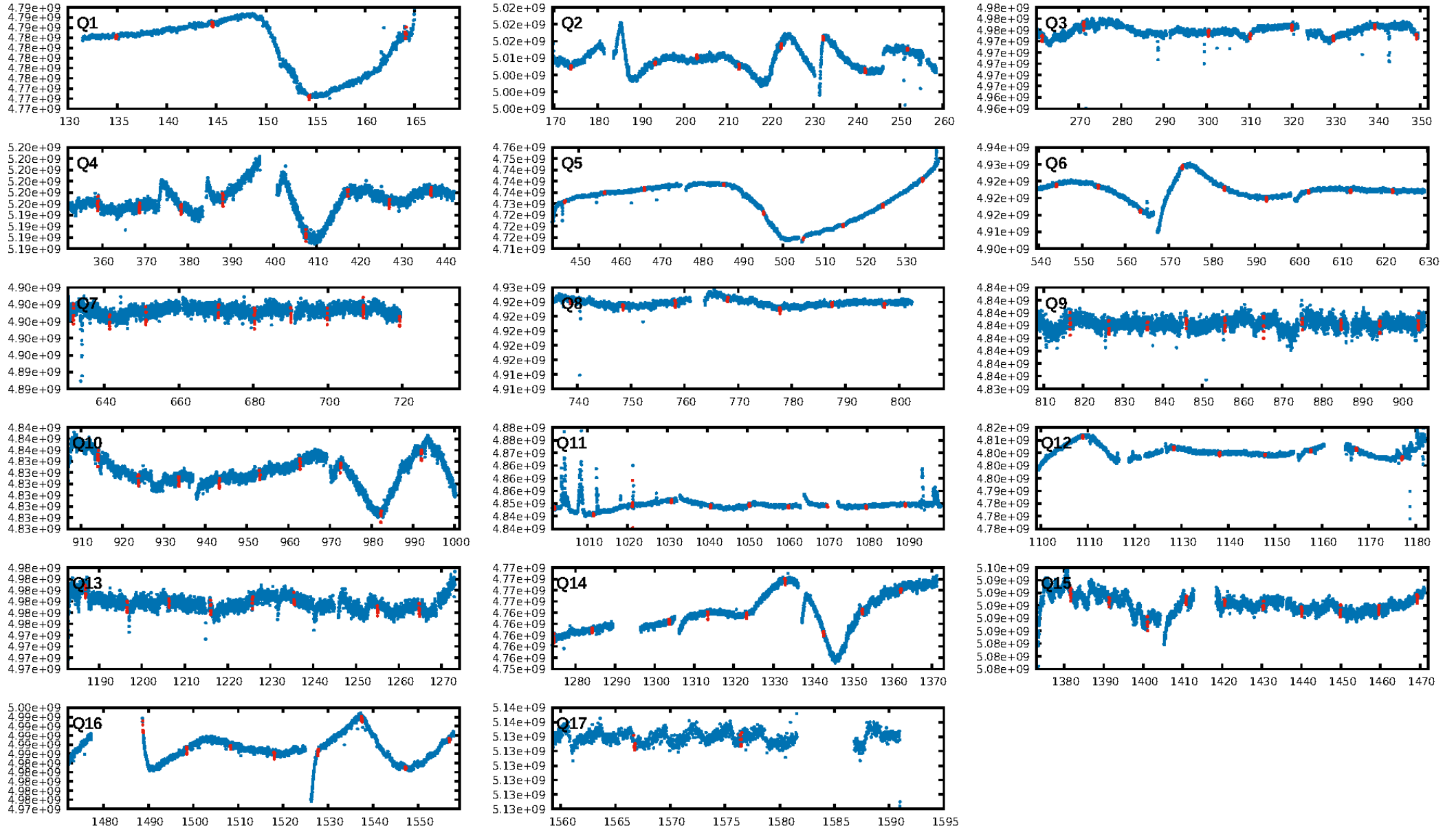
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [13.90σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 99.4%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.50 [64/129]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 0.0%  
Centroid-so: 6.257 arcsec [16.34σ]  
OotOffset-rm: 0.388 arcsec [0.30σ]  
OotOffset-st: 4/4/4/3 [15]  
KicOffset-rm: 5.659 arcsec [3.11σ]  
KicOffset-st: 4/4/4/3 [15]  
DiffImageQuality-fgm: 0.00 [0/15]  
DiffImageOverlap-fno: 1.00 [17/17]

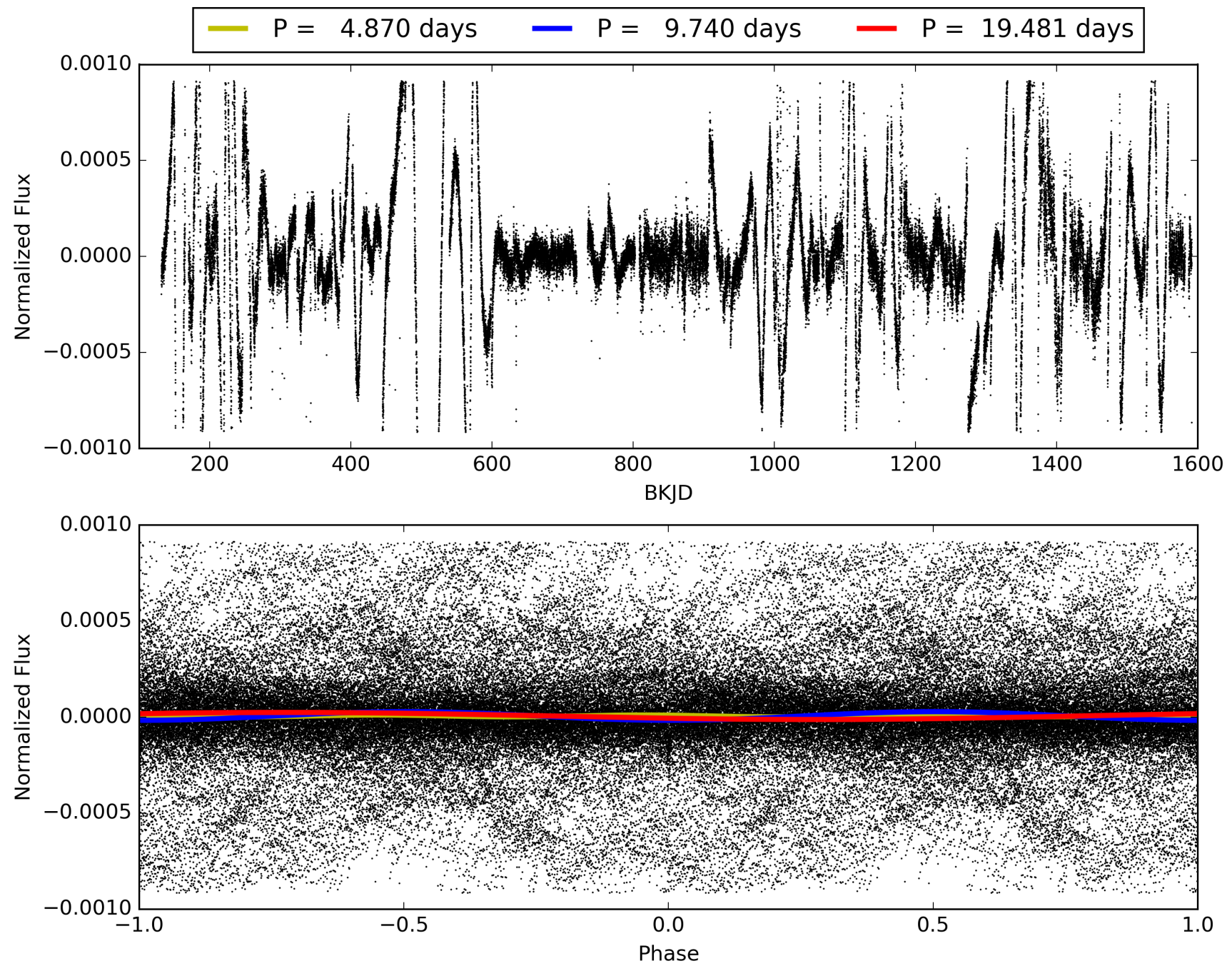
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:44:55 Z

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

# TCE 006278762-01, PDC Light Curves



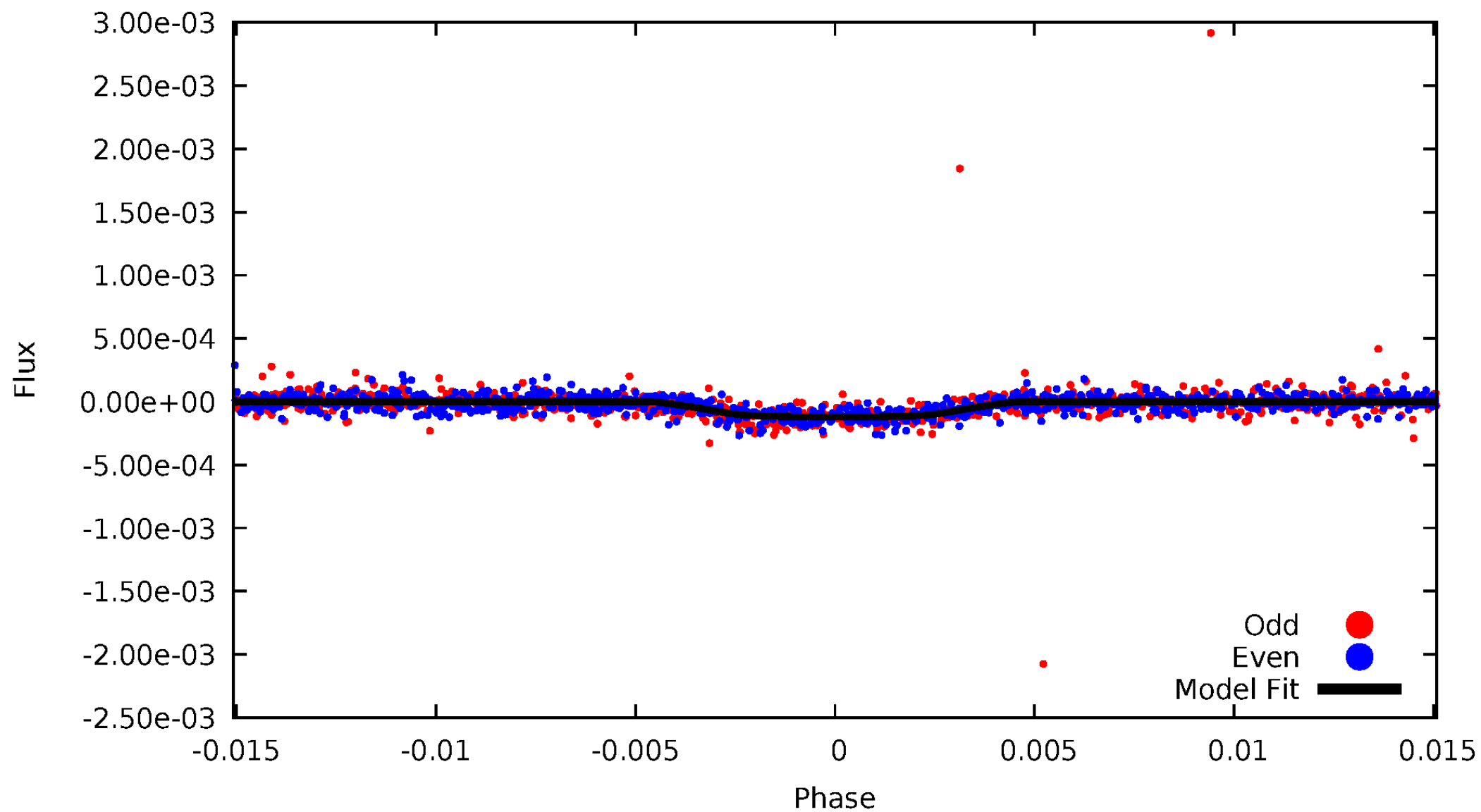
TCE 006278762-01





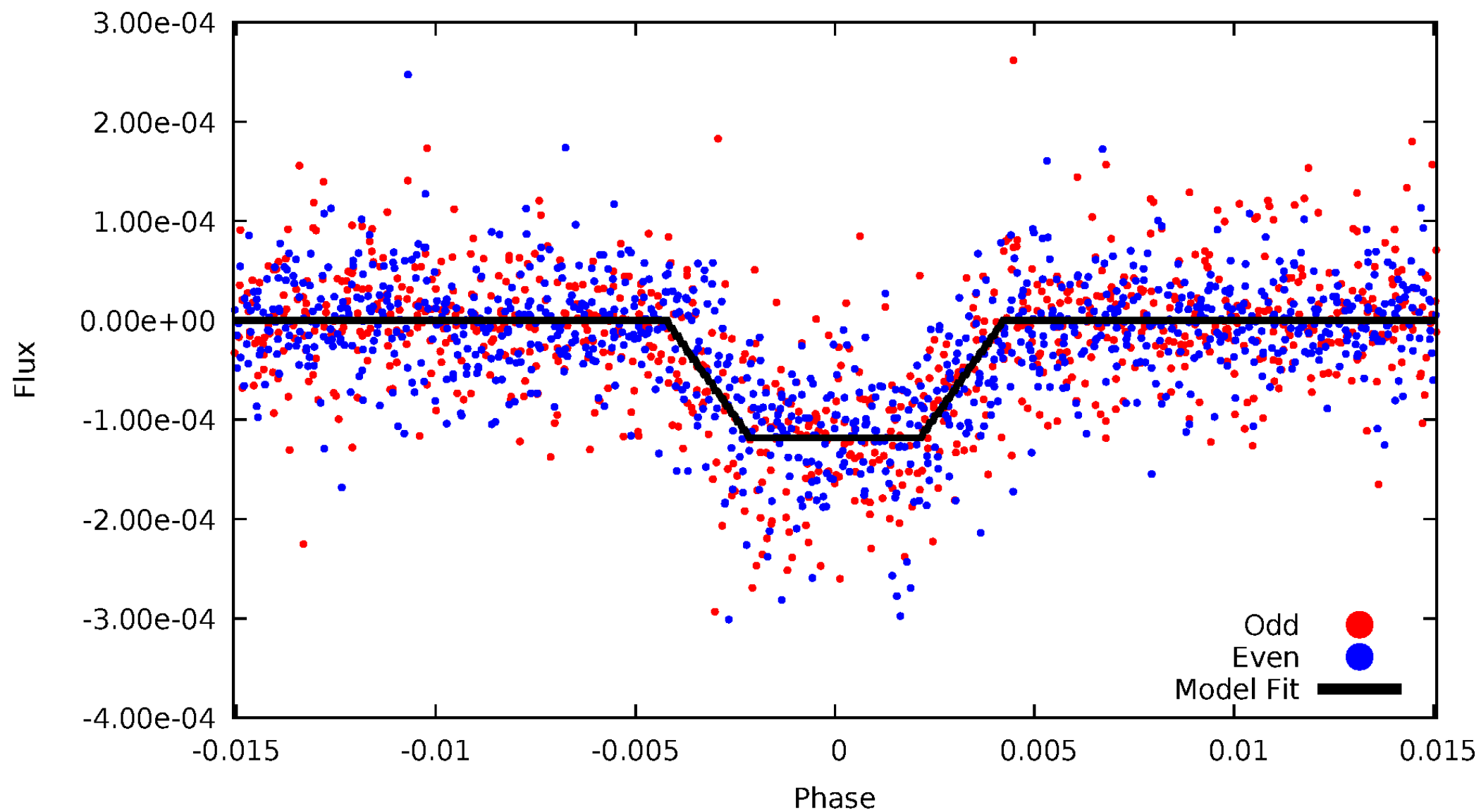
DV Odd/Even

TCE 006278762-01



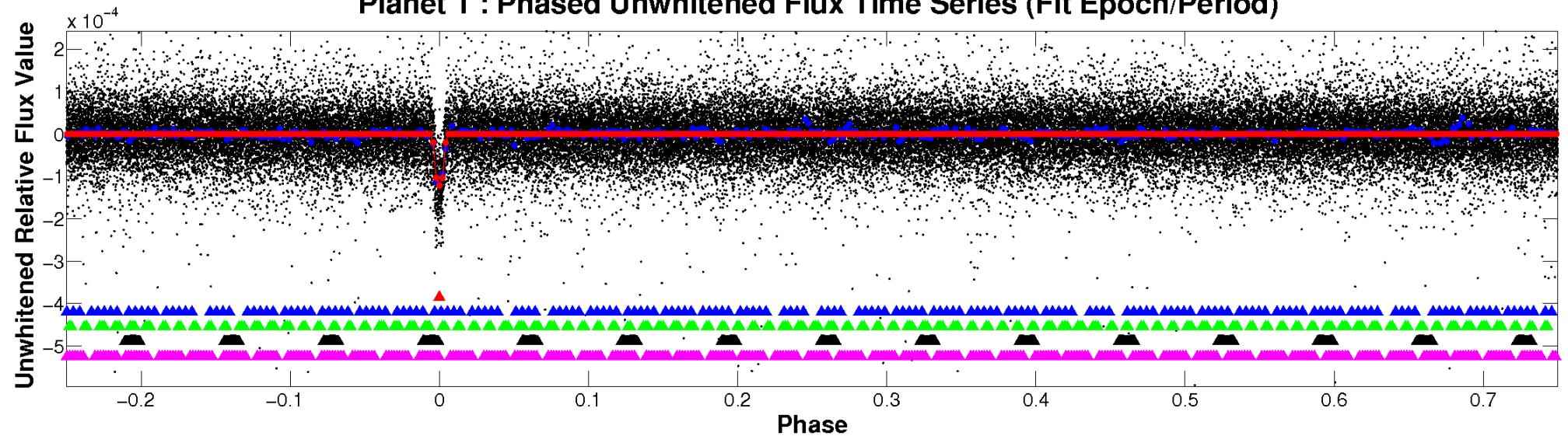
# ALT Odd/Even

TCE 006278762-01

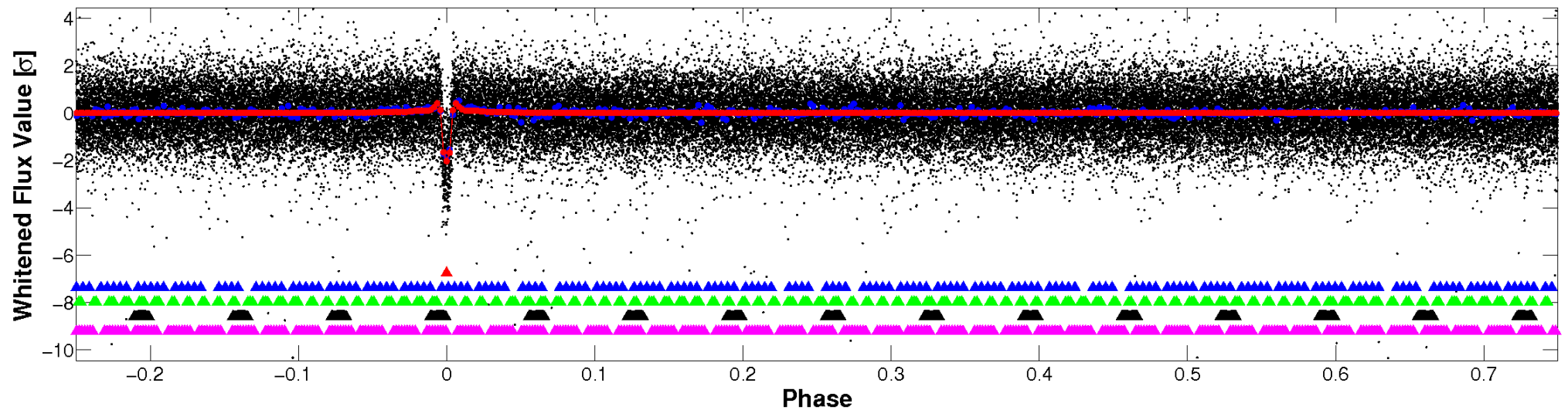


# Non-Whitened Vs. Whitened Light Curve

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

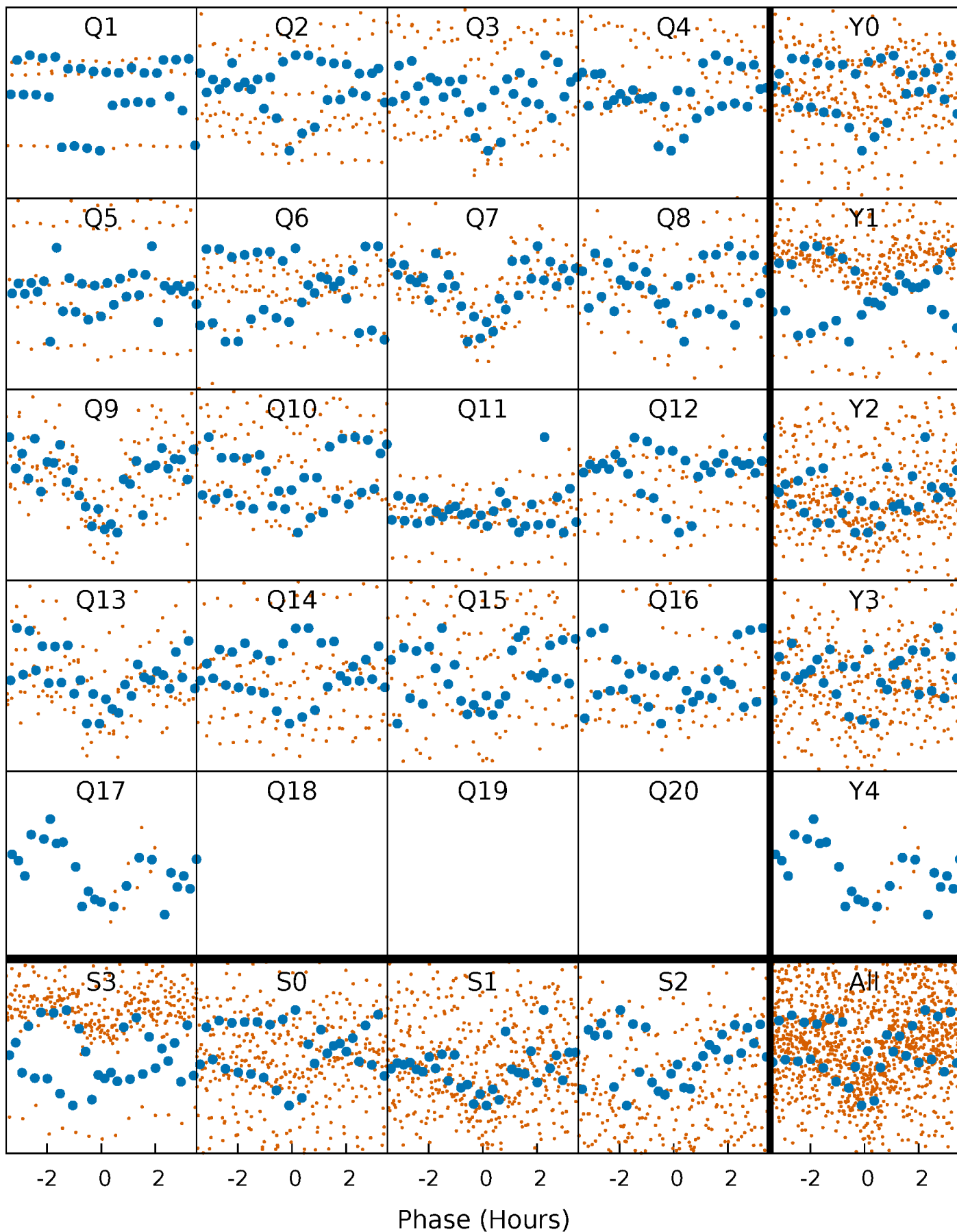


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

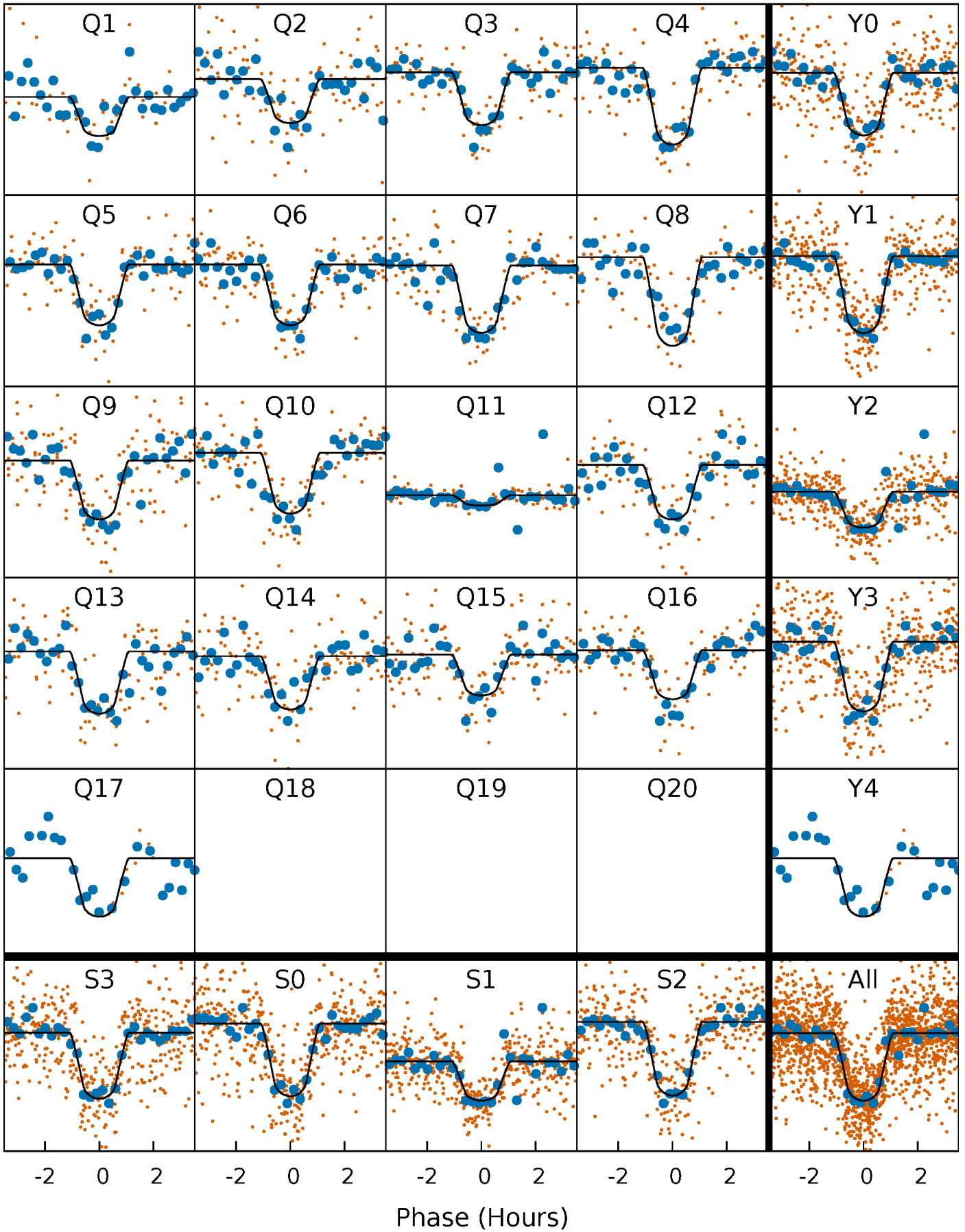
TCE 006278762-01 P= 9.740496 Days  $T_0=134.878351$  (BKJD)





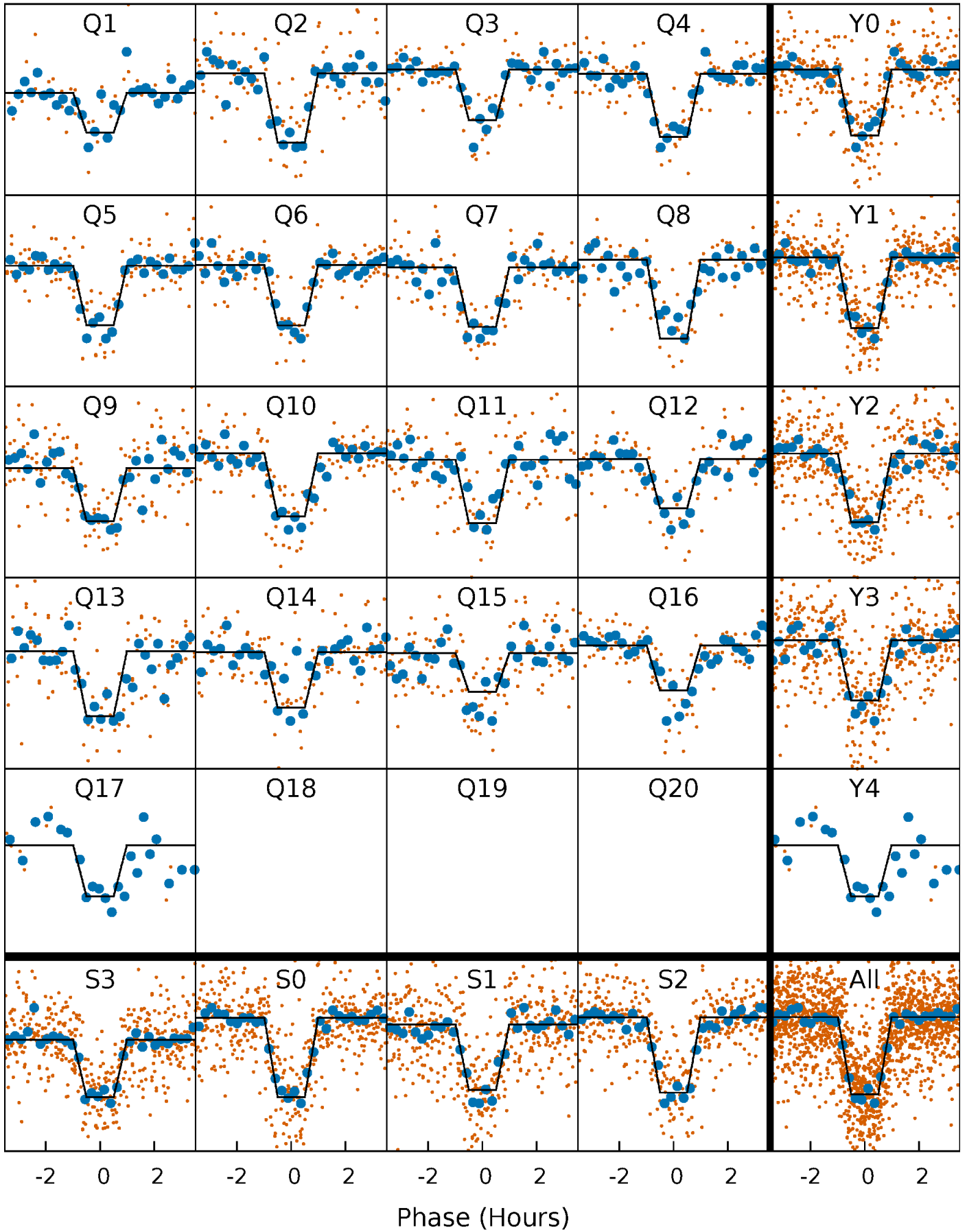
# DV Quarter-Phased Transit Curves

TCE 006278762-01   P= 9.740496 Days    $T_0=134.878351$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

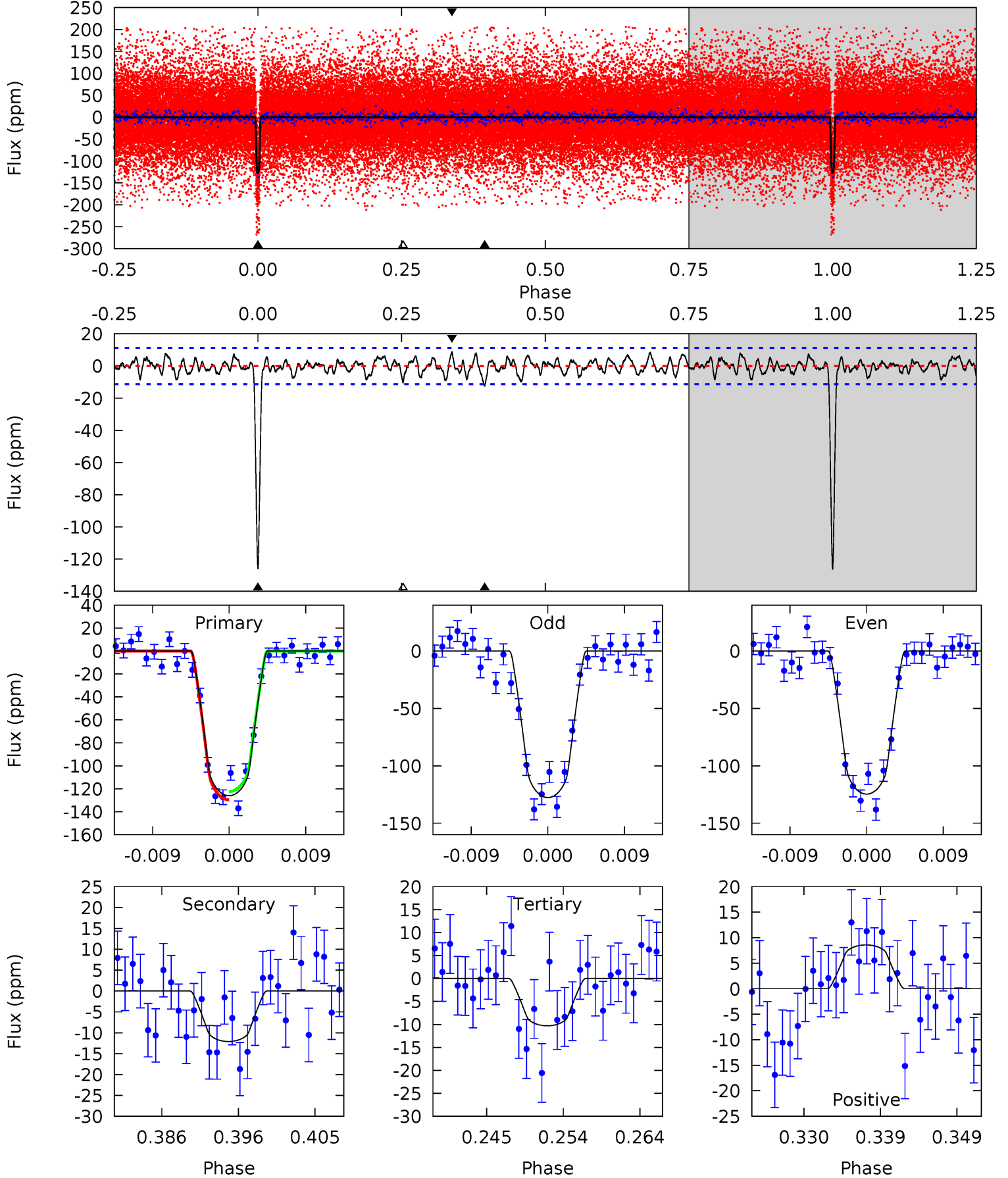
TCE 006278762-01 P= 9.740438 Days  $T_0=134.881333$  (BKJD)



# DV Model-Shift Uniqueness Test

006278762-01, P = 9.740496 Days, E = 125.137855 Days

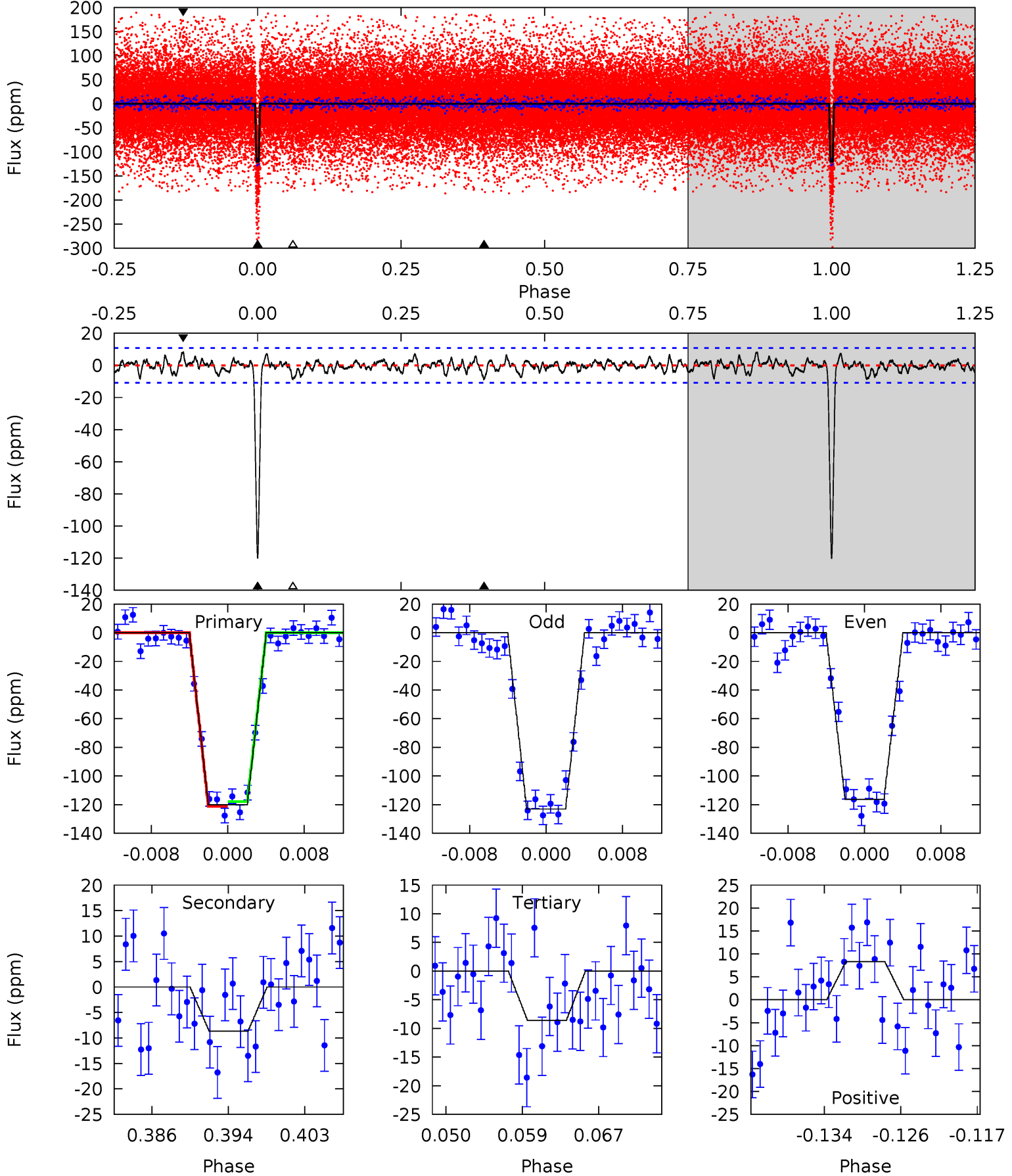
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
56.3	5.40	4.60	3.83	5.04	2.60	1.57	51.7	52.5	0.80	1.57	0.69	0.99	0.06	1.61



# Alt Model-Shift Uniqueness Test

006278762-01, P = 9.740438 Days, E = 125.140895 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
56.2	4.06	4.03	3.90	5.06	2.64	1.25	52.2	52.3	0.03	0.15	1.57	1.05	0.06	0.74





### Stellar Parameters For KIC 006278762

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5051^{+177}_{-141}$	$4.562^{+0.033}_{-0.023}$	$-0.360^{+0.350}_{-0.150}$	$0.721^{+0.057}_{-0.031}$	$0.692^{+0.099}_{-0.026}$	$2.601^{+0.317}_{-0.283}$
	+4%/-3%	+1%/-1%	+97%/-42%	+8%/-4%	+14%/-4%	+12%/-11%
Source	SPE69	AST69	SPE69	DSEP		

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

### Secondary Eclipse Parameters for KIC 006278762-01 / KOI 3158.05

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-12 \pm 2$	$0.98^{+0.20}_{-0.17}$	$939^{+36}_{-29}$	$3207^{+236}_{-189}$	$43^{+24}_{-15}$
Alt.	$-9 \pm 2$	$0.87^{+0.19}_{-0.19}$	$939^{+36}_{-27}$	$3176^{+260}_{-210}$	$40^{+26}_{-15}$

$T_{max}$  = 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

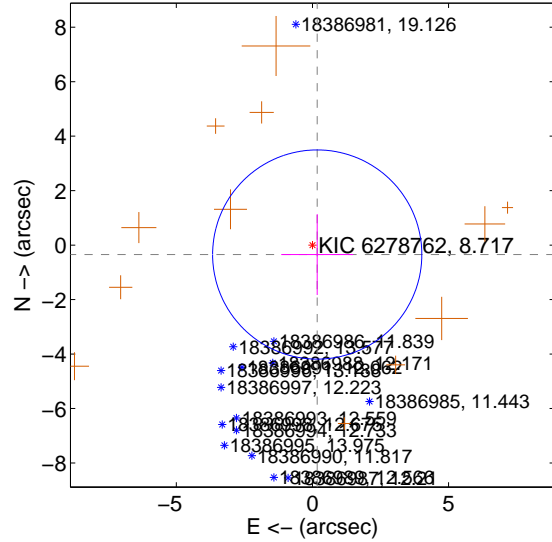
Supplemental centroid analysis for 006278762-01. **Kepler magnitude: 8.72.** Transit SNR 38.07

There are 0 quarters with good PRF difference image offsets

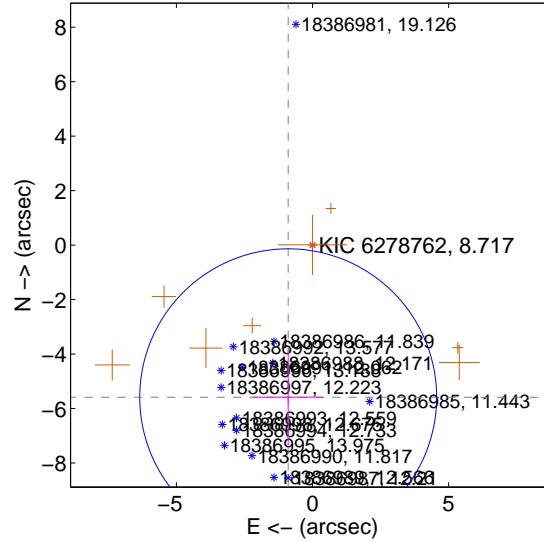
The OOT PRF centroid is offset from the target star catalog position by about 7.45 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.388 \pm 1.280$	0.30	$-0.175 \pm 1.321$	$-0.347 \pm 1.486$
PRF-fit source offset from KIC position	$5.659 \pm 1.817$	3.11	$0.893 \pm 1.294$	$-5.588 \pm 1.749$
photometric centroid source offset	$6.26 \pm 0.38$	16.34	$1.42 \pm 0.30$	$-6.09 \pm 0.39$

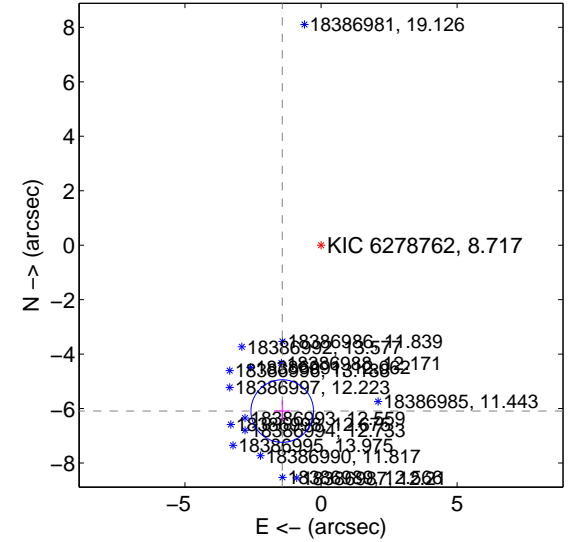
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

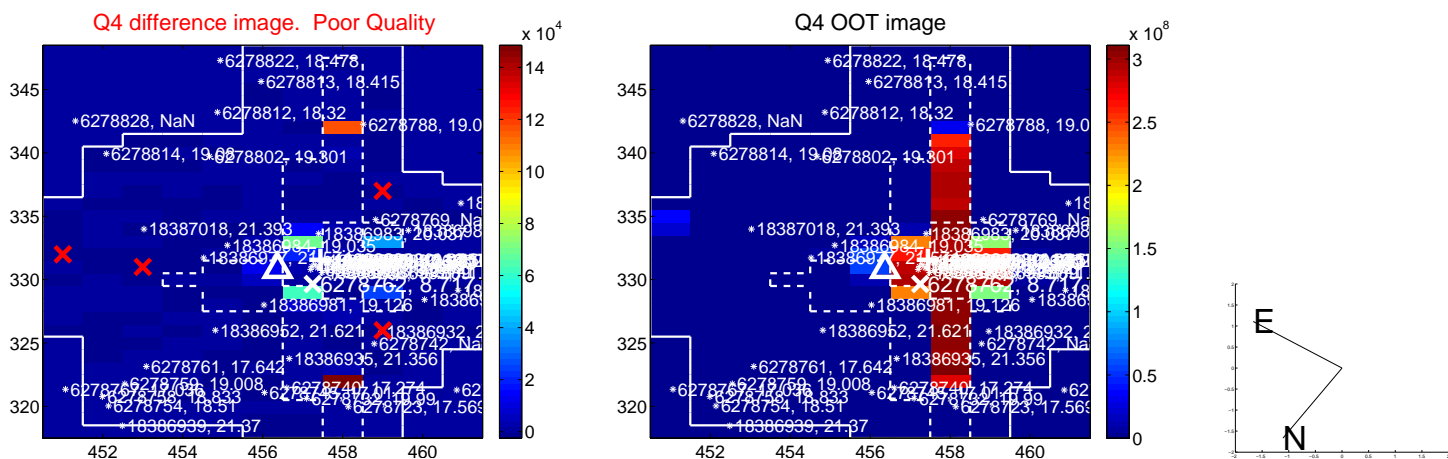
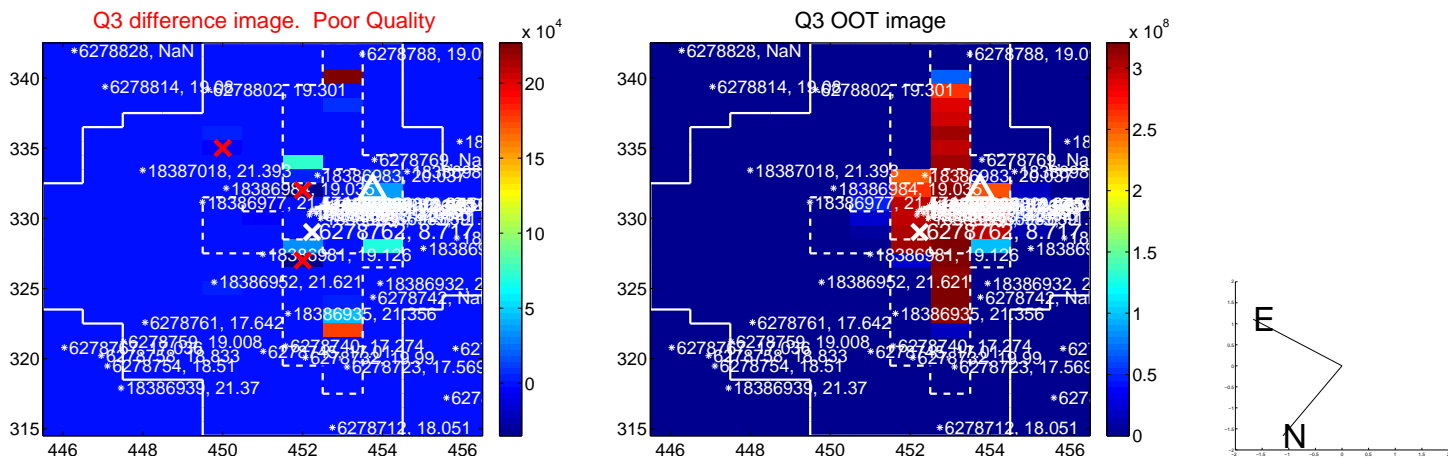
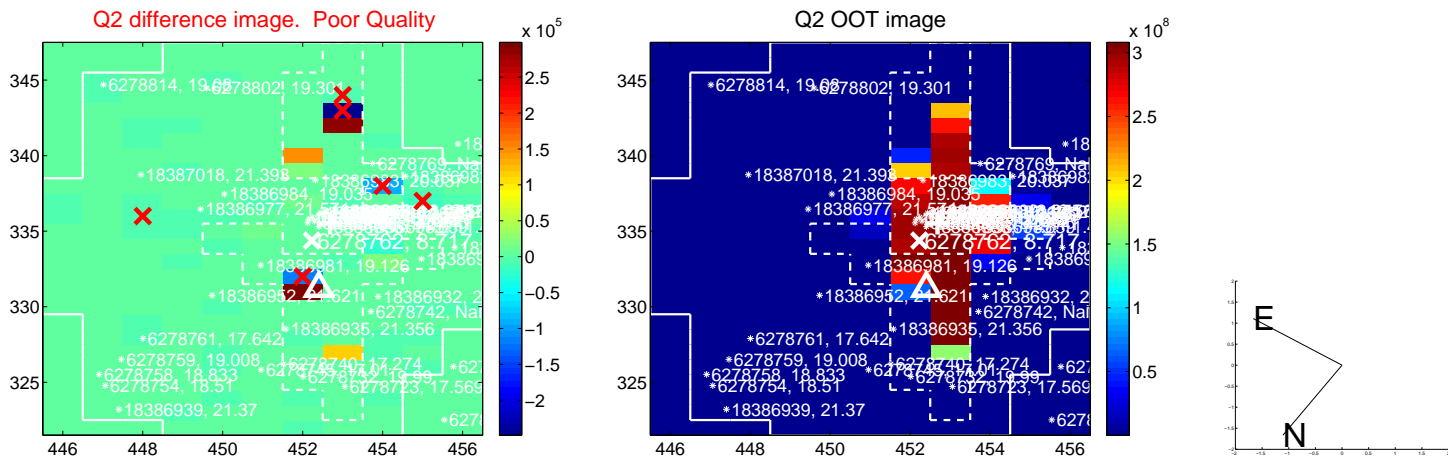
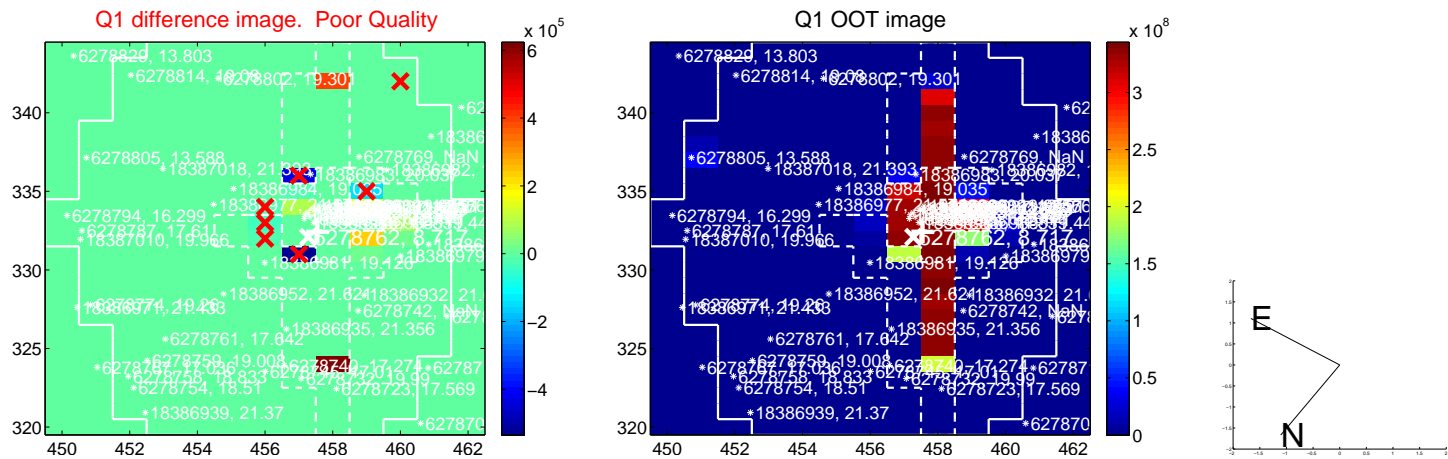


offset from photometric centroids

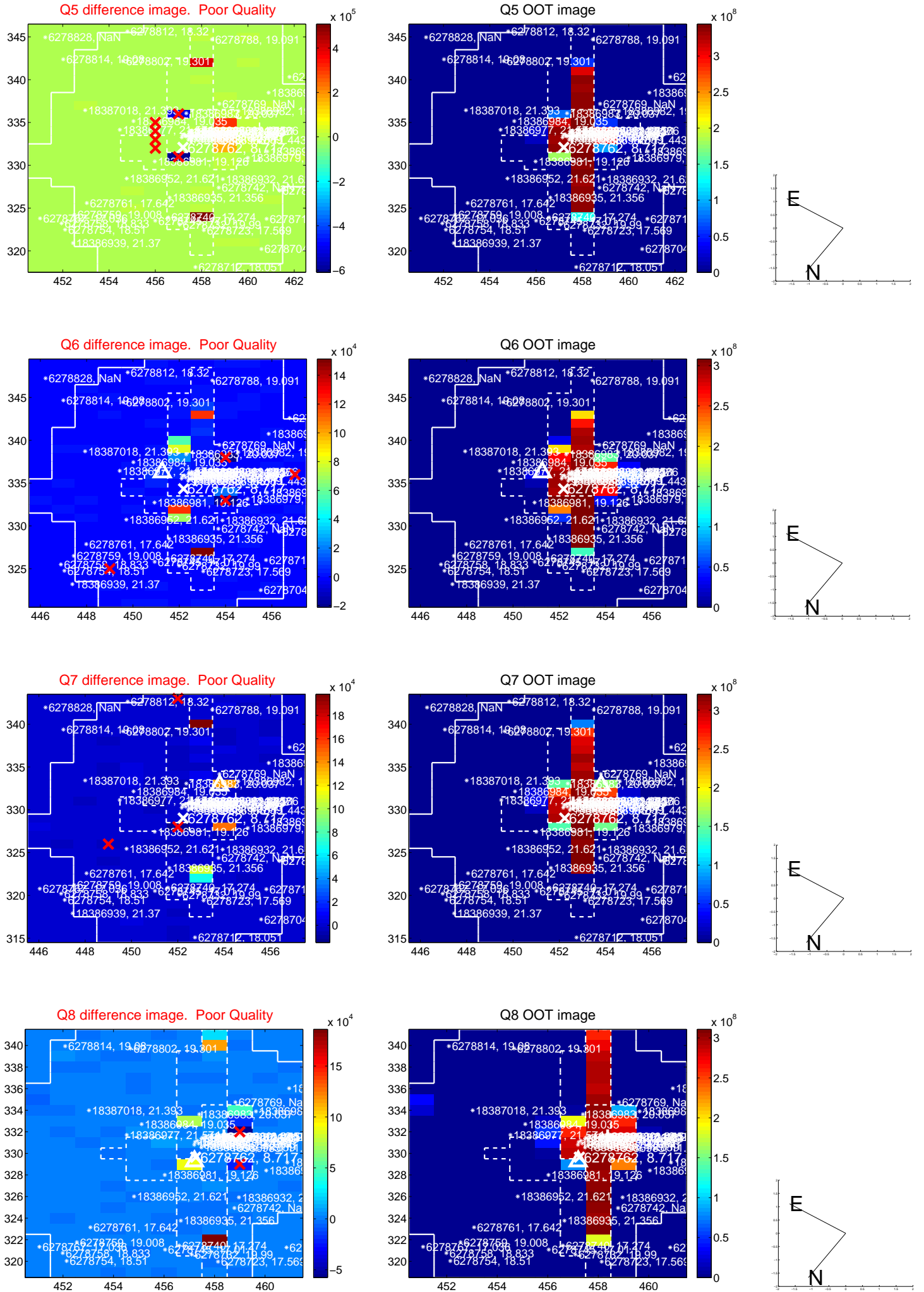


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

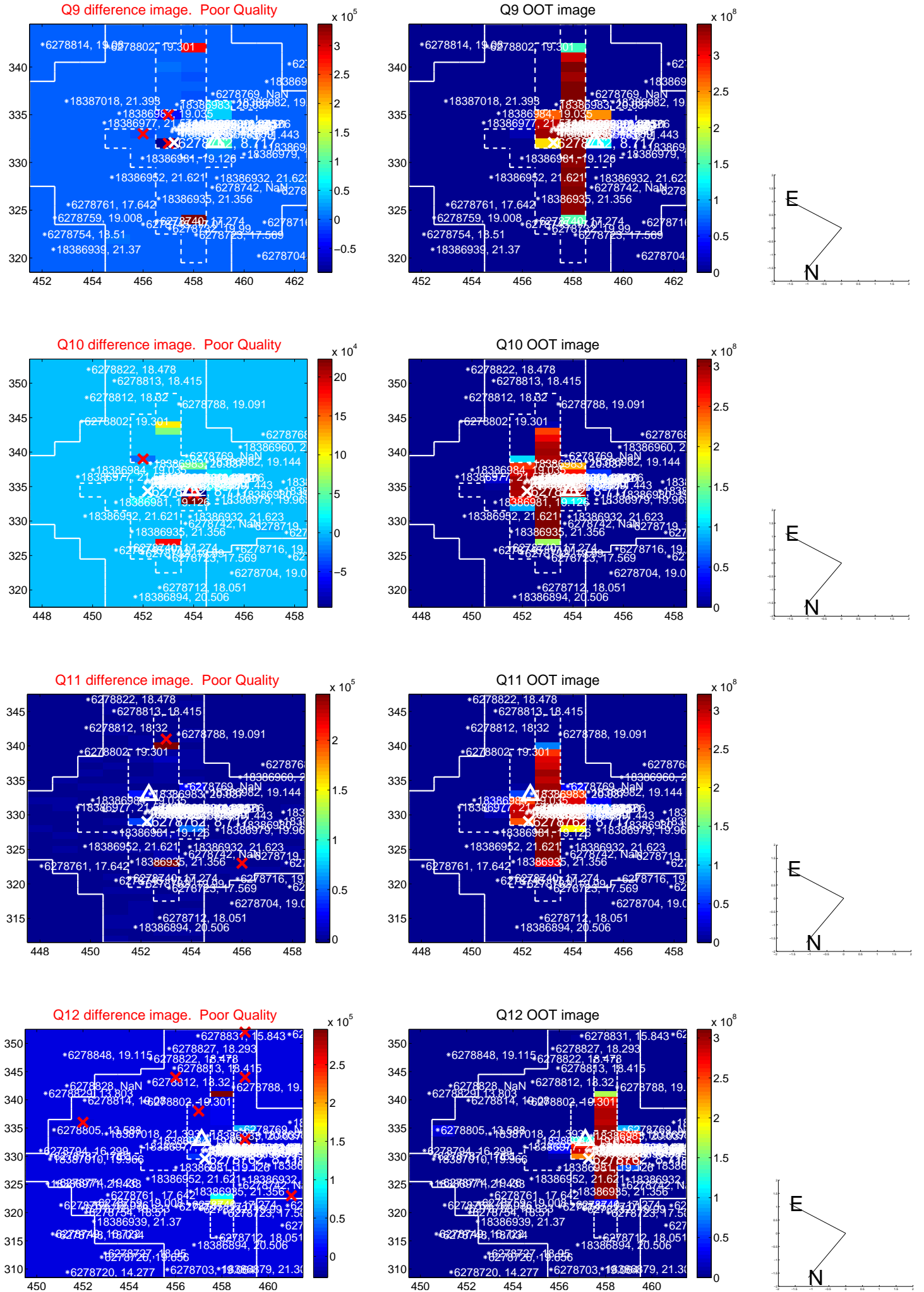


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

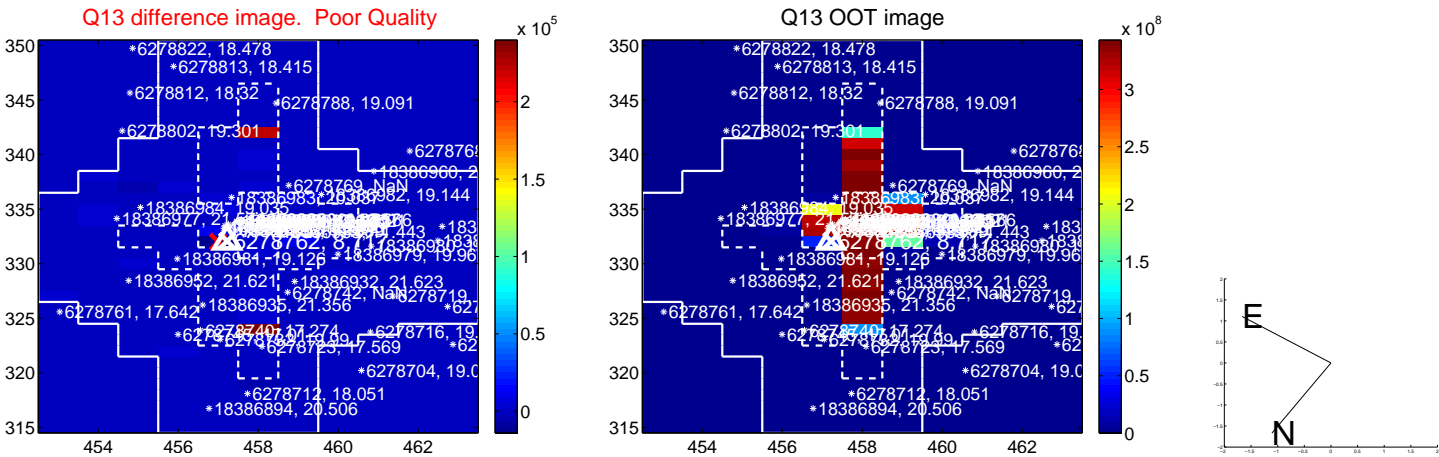




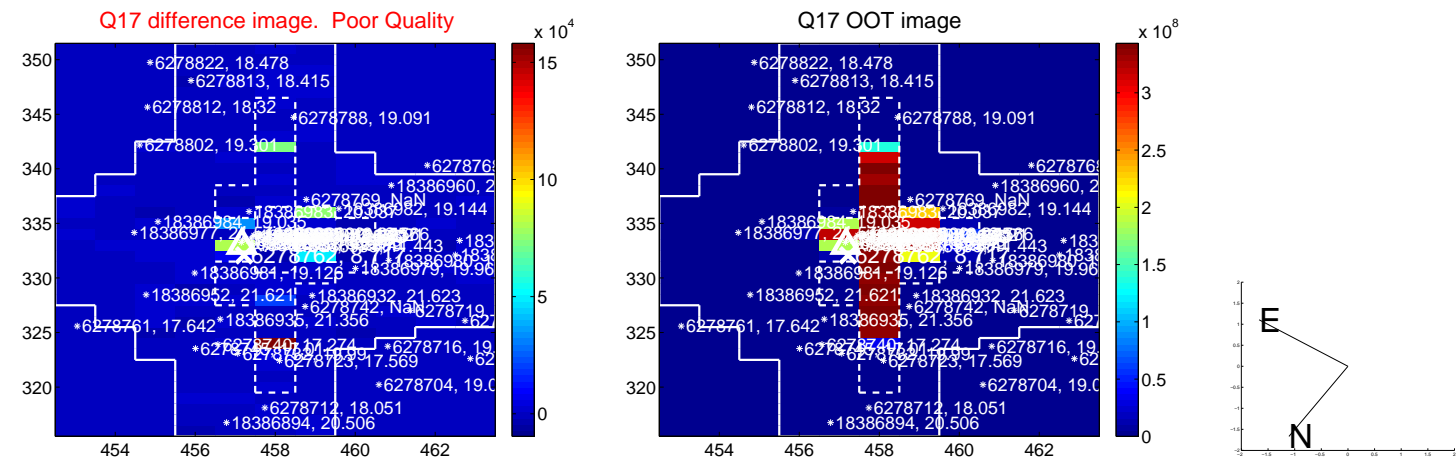
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



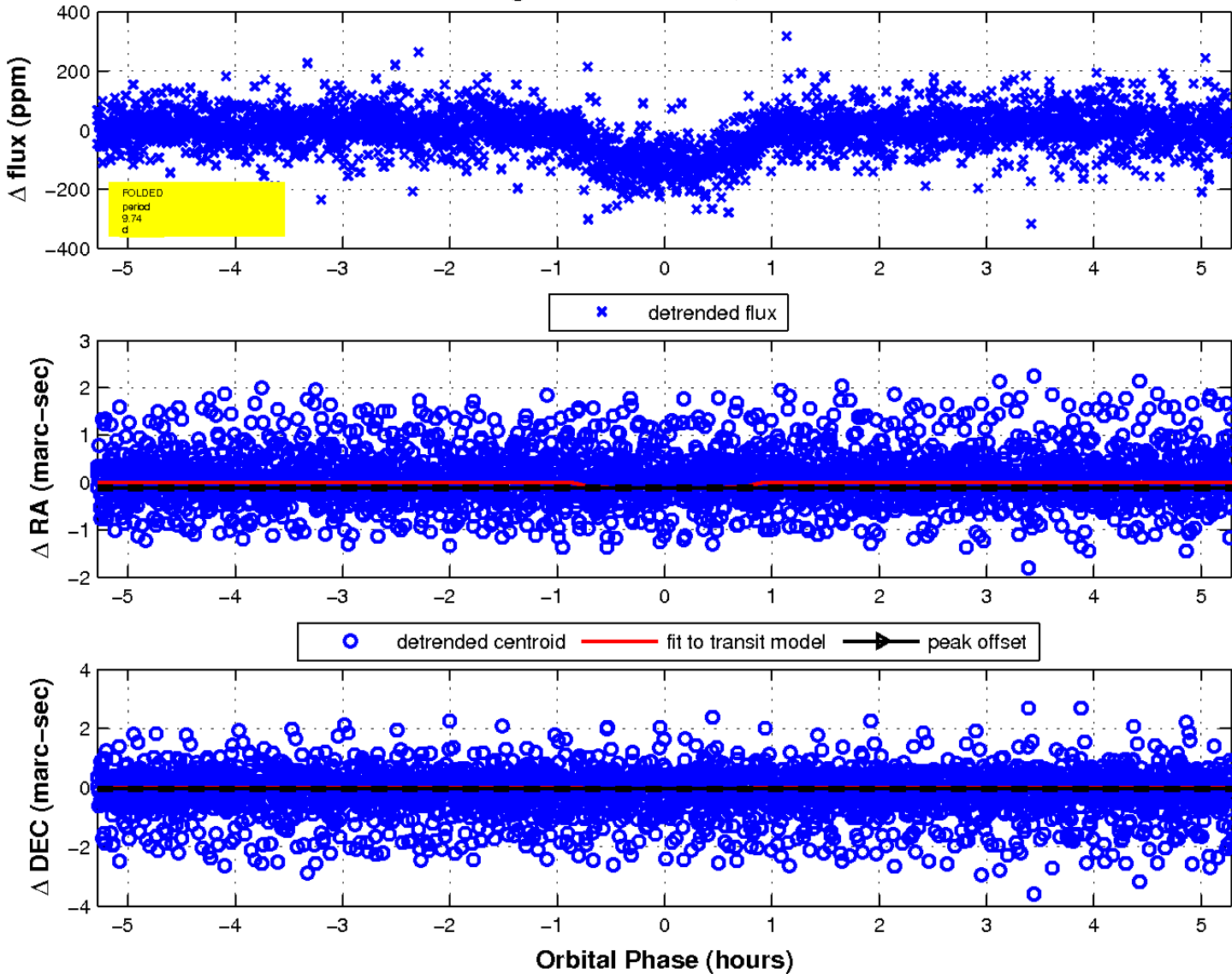
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

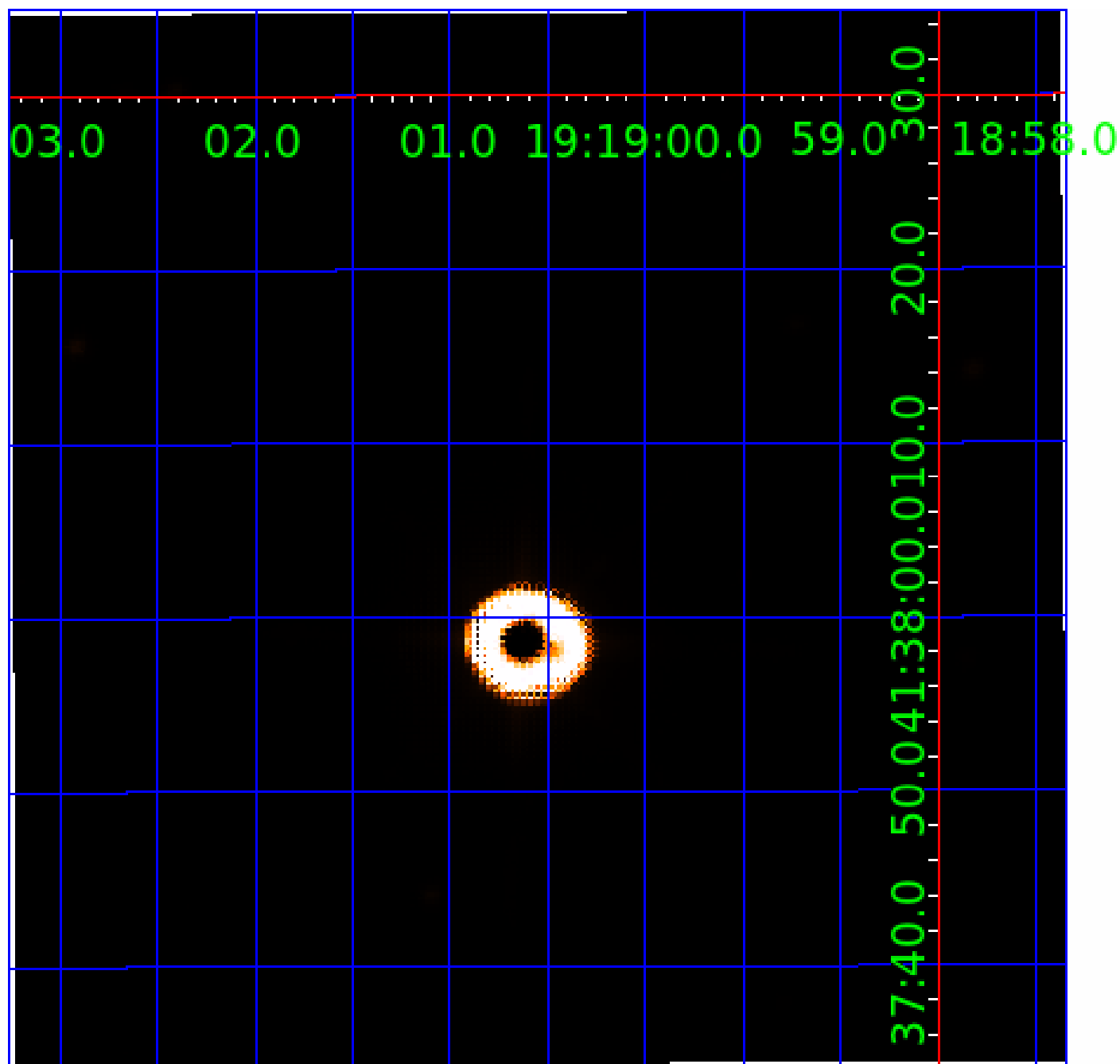


fluxWeightedCentroids, Planet 1 of 5



UKIRT Image

Declination



# KIC 006278762

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006278762-01	OBS	3158.05	9.740496	134.878351	122.6	1.762	31.8	38.1	0.72	5051	0.99	48.63
006278762-02	OBS	3158.04	7.743518	135.091938	83.6	2.963	30.2	33.0	0.72	5051	0.80	66.03
006278762-03	OBS	3158.03	6.189430	134.784170	76.9	2.300	29.6	31.9	0.72	5051	0.78	89.02
006278762-04	OBS	3158.02	4.545889	131.521874	69.0	1.825	27.6	31.0	0.72	5051	0.69	134.34
006278762-05	OBS	3158.01	3.600136	133.250777	119.0	2.000	22.8	-1.0	0.72	5051	0.77	183.34

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006278762-01	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
006278762-02	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
006278762-03	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
006278762-04	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
006278762-05	OBS	PC	1.00	0	0	0	0	CENT_SATURATED

**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 006278762-02

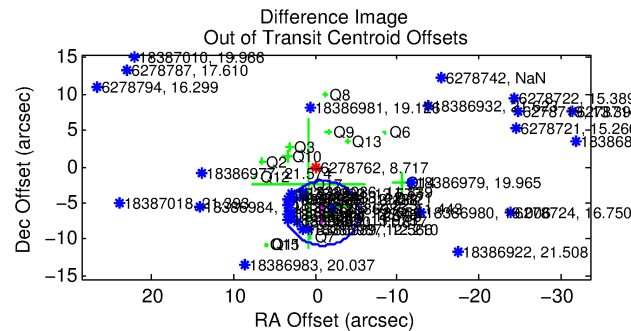
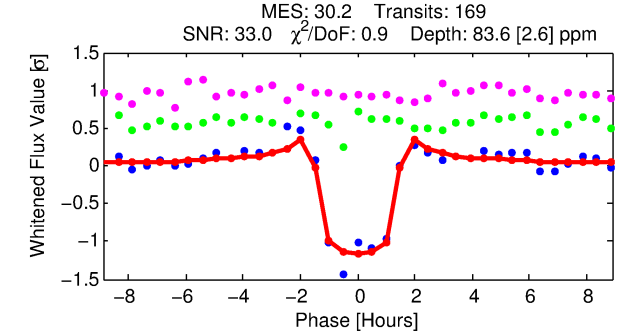
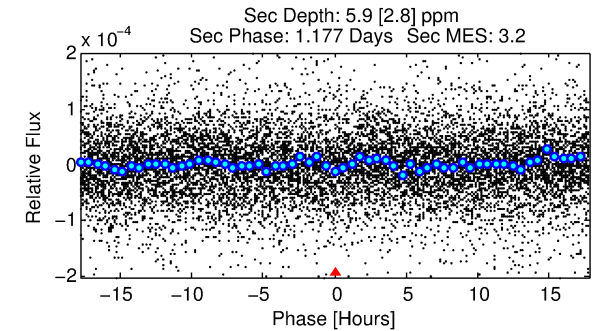
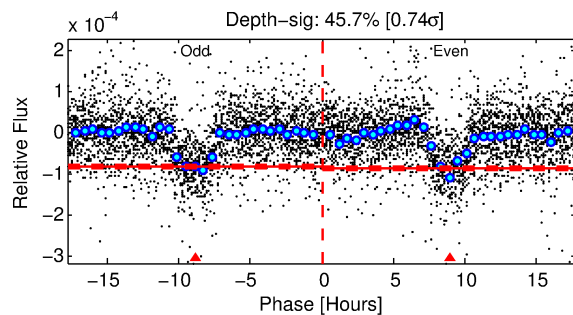
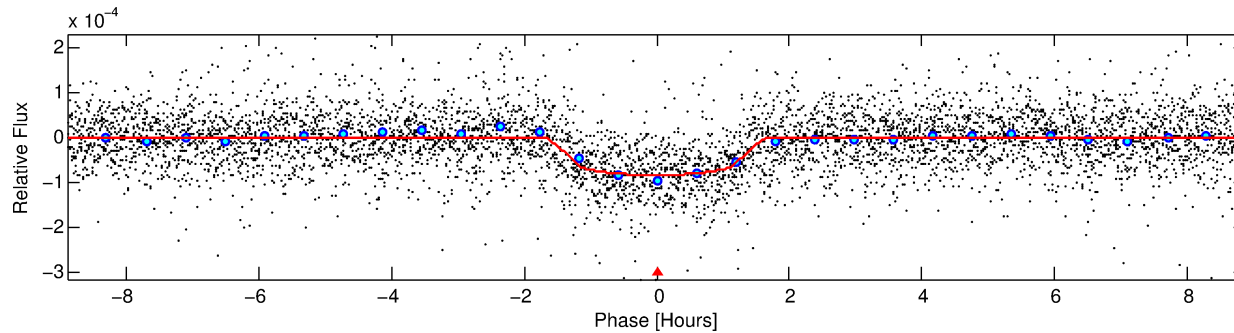
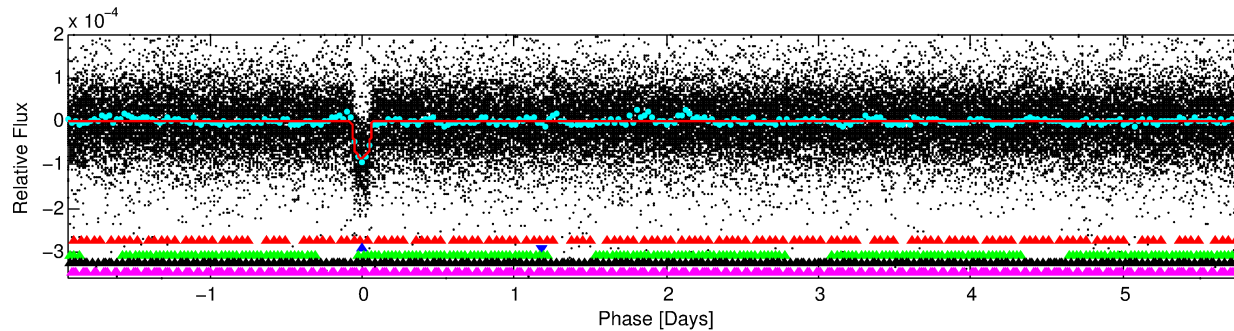
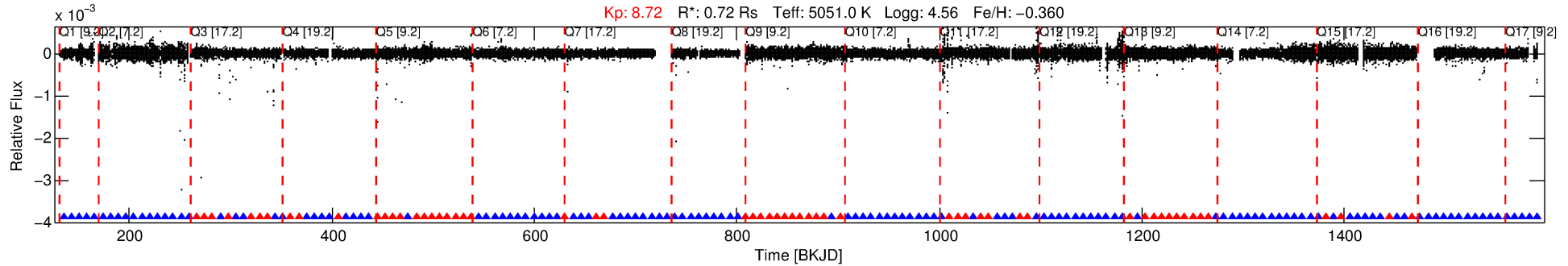
No Significant Match Found



# DV One-Page Summary

KIC: 6278762 Candidate: 2 of 5 Period: 7.744 d  
KOI: K03158.04 Name: Kepler-444e Corr: 0.967

Kp: 8.72 R\*: 0.72 Rs Teff: 5051.0 K Logg: 4.56 Fe/H: -0.360



## DV Fit Results:

Period = 7.74352 [0.00002] d  
Epoch = 135.0919 [0.0015] BKJD  
Rp/R\* = 0.0101 [0.0017]  
b/R\* = 9.21 [6.36]  
b = 0.90 [0.15]  
Seff = 66.04 [10.44]  
Teq = 727 [29] K  
Rp = 0.80 [0.15] Re  
a = 0.0678 [0.0040] AU  
Ag = 23.45 [13.83] [1.62σ]  
Teff = 2473 [372] K [4.68σ]

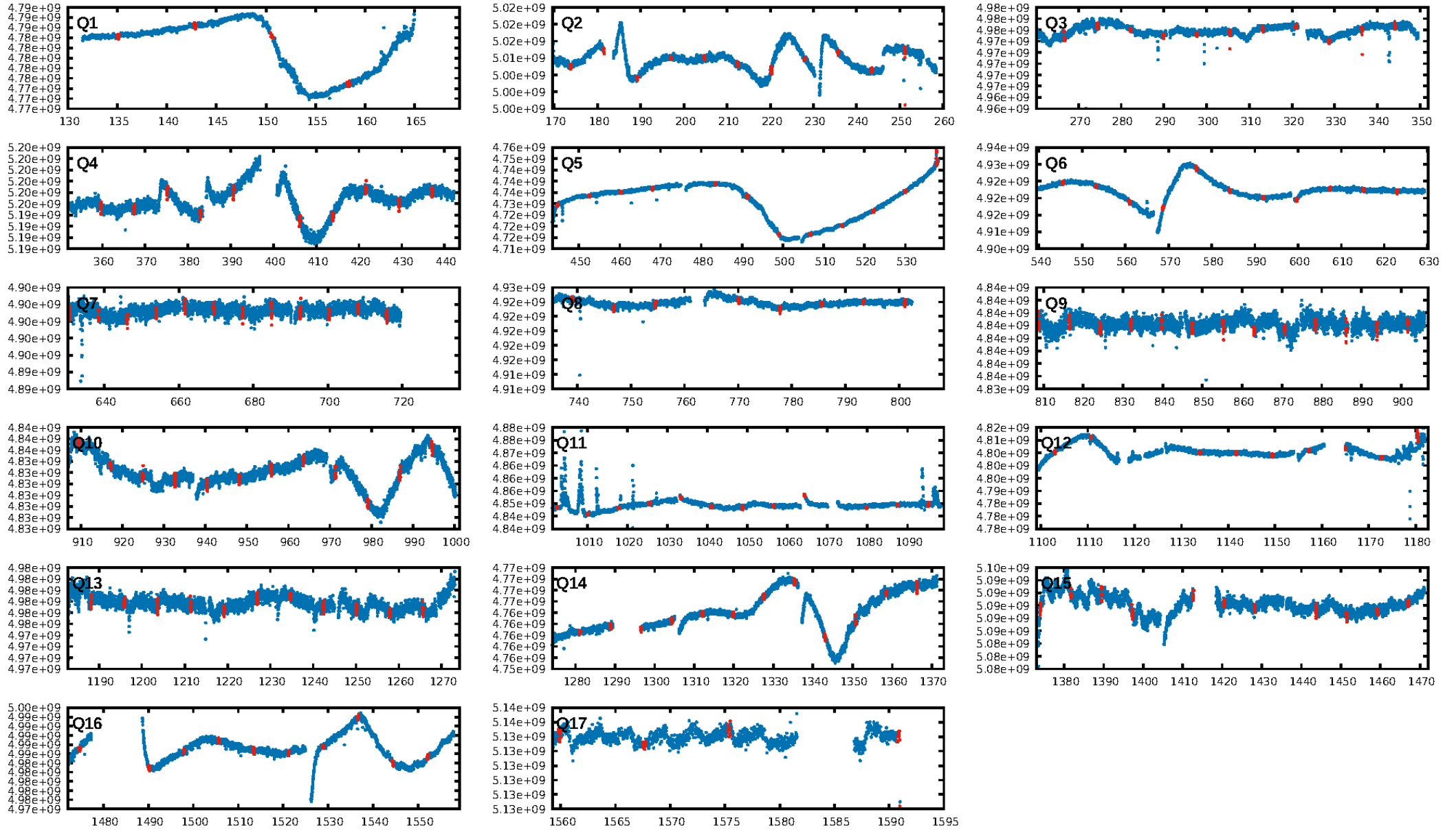
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [9.94σ]  
LongPeriod-sig: 100.0% [13.90σ]  
ModelChiSquare2-sig: 43.8%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.64 [103/161]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 32.1%  
Centroid-so: 6.696 arcsec [14.62σ]  
OotOffset-rm: 6.499 arcsec [4.40σ]  
KicOffset-rm: 13.376 arcsec [8.11σ]  
OotOffset-st: 4/4/4/4 [16]  
KicOffset-st: 4/4/4/4 [16]  
DiffImageQuality-fgm: 0.00 [0/16]  
DiffImageOverlap-fno: 1.00 [17/17]

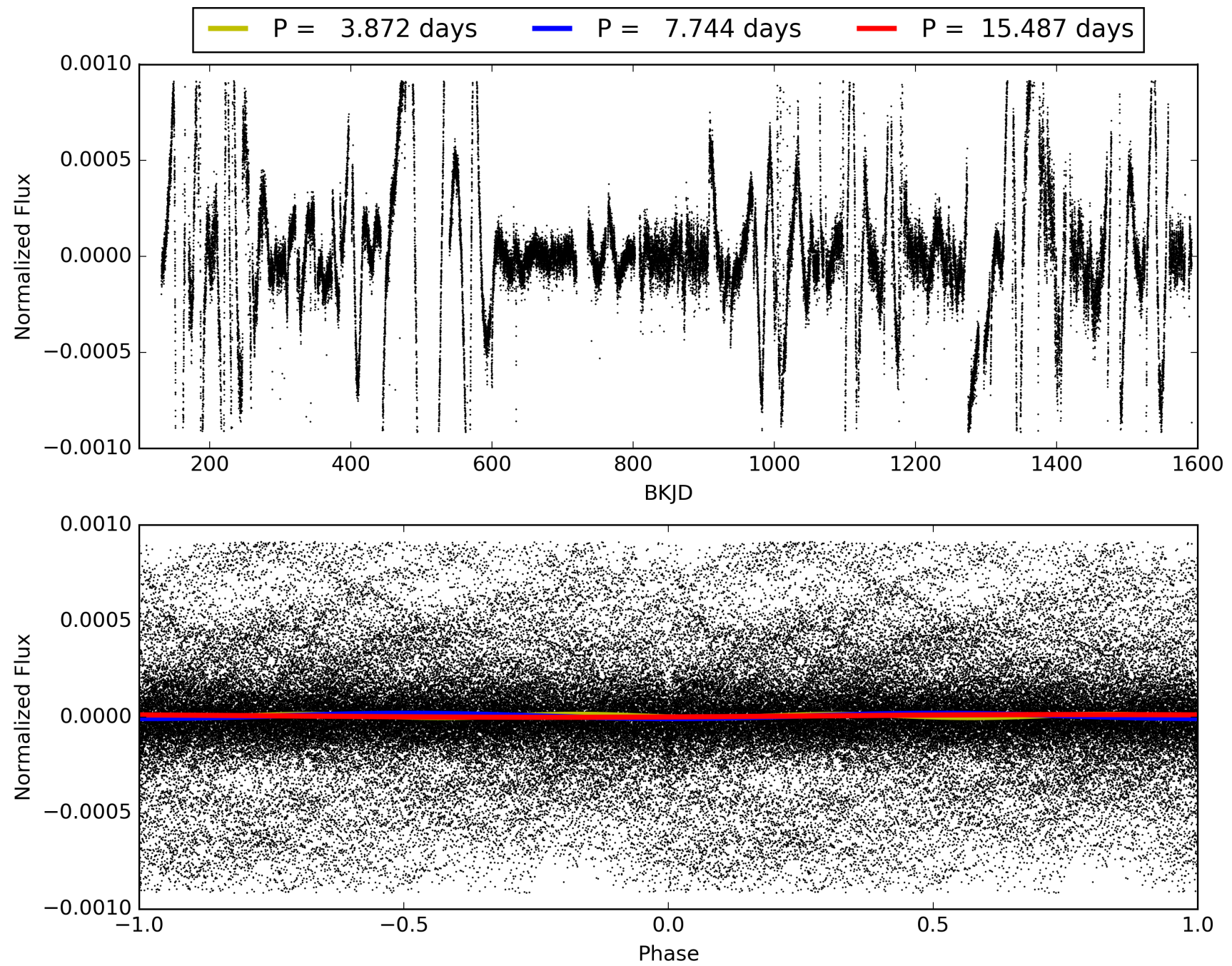
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:45:01 Z

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

# TCE 006278762-02, PDC Light Curves

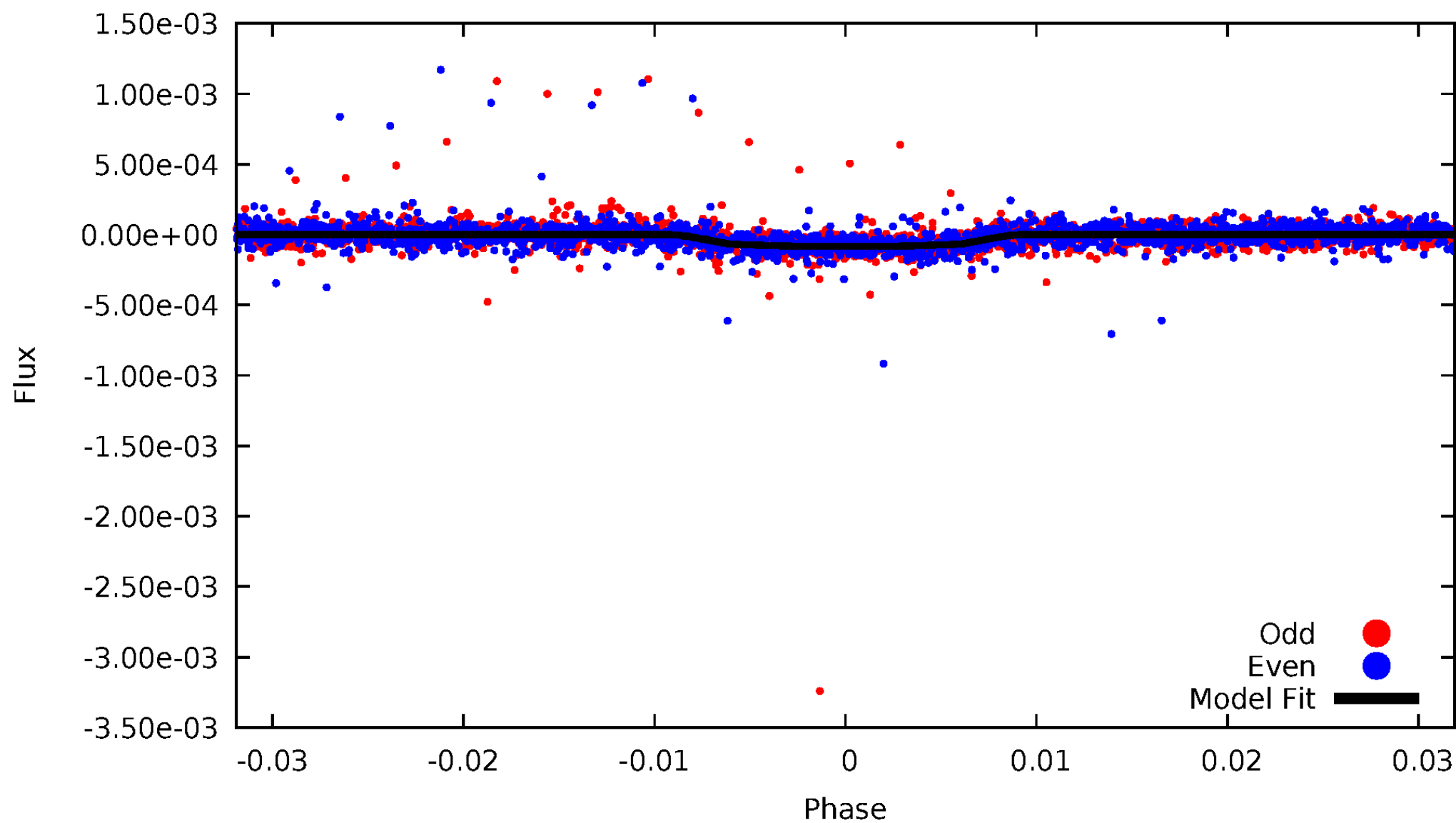


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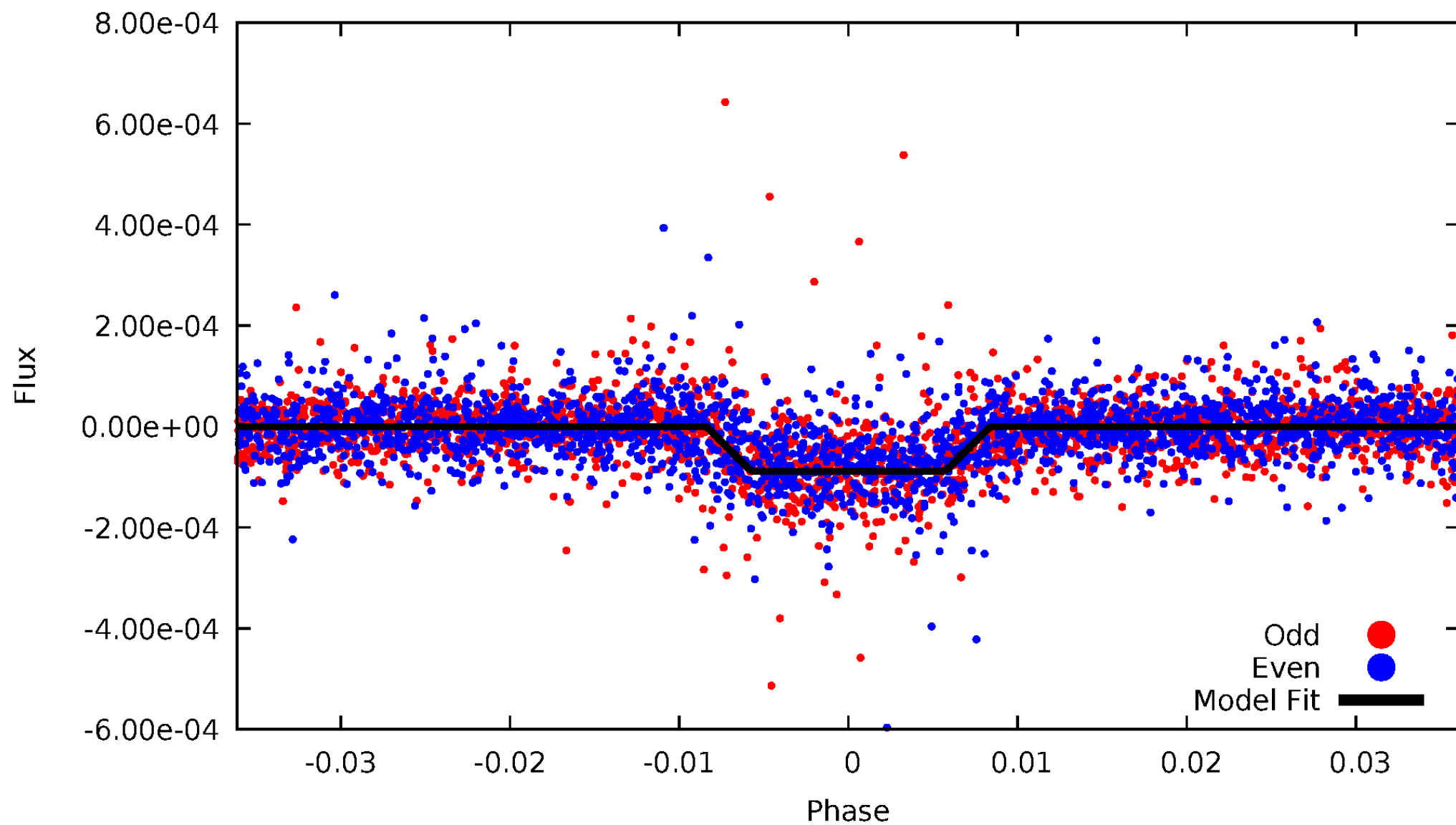
DV Odd/Even

TCE 006278762-02



# ALT Odd/Even

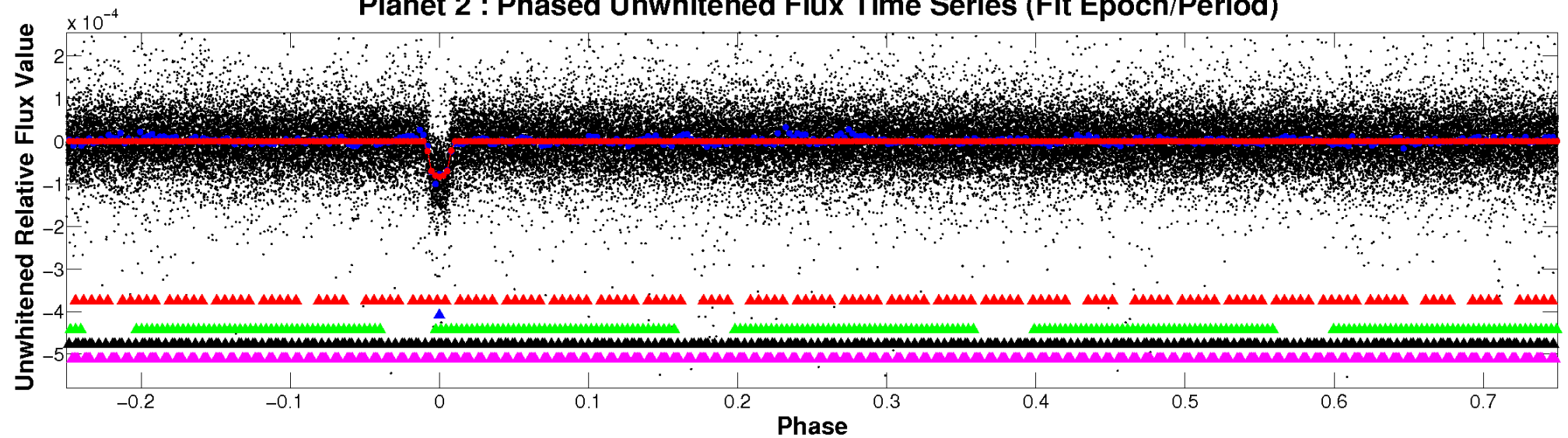
TCE 006278762-02



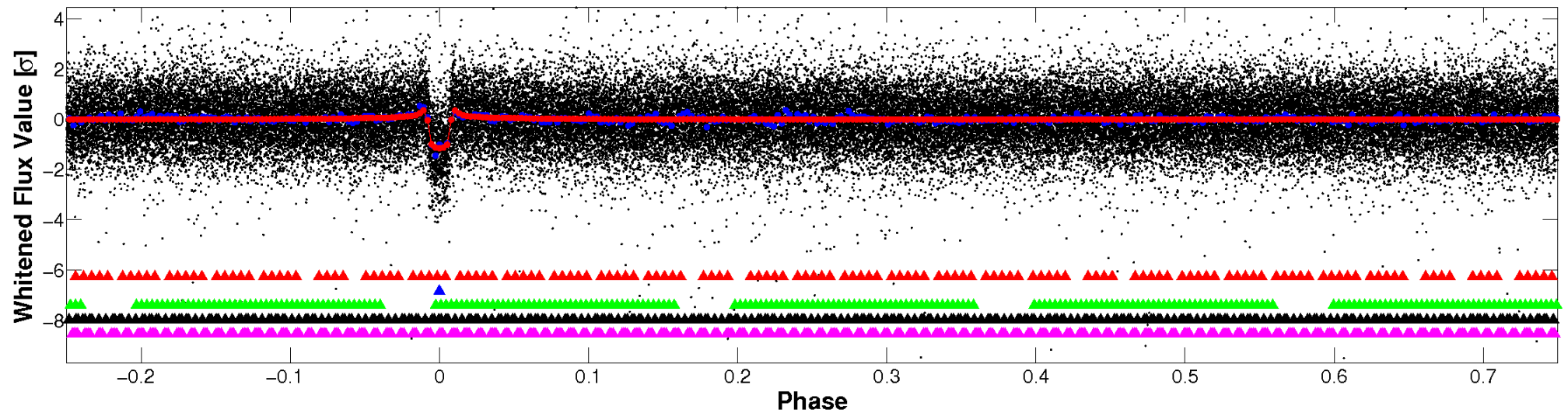


# Non-Whitened Vs. Whitened Light Curve

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



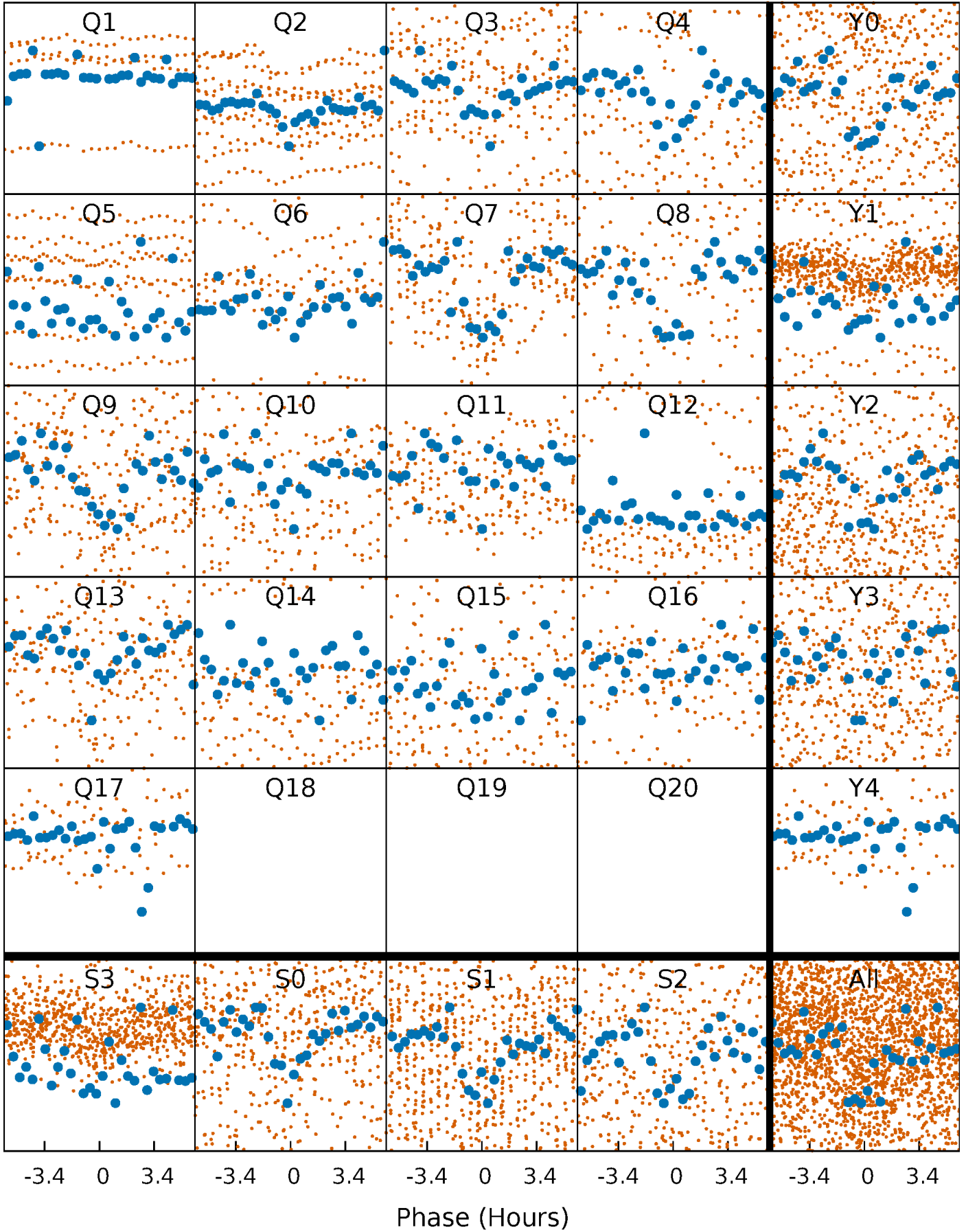
## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)





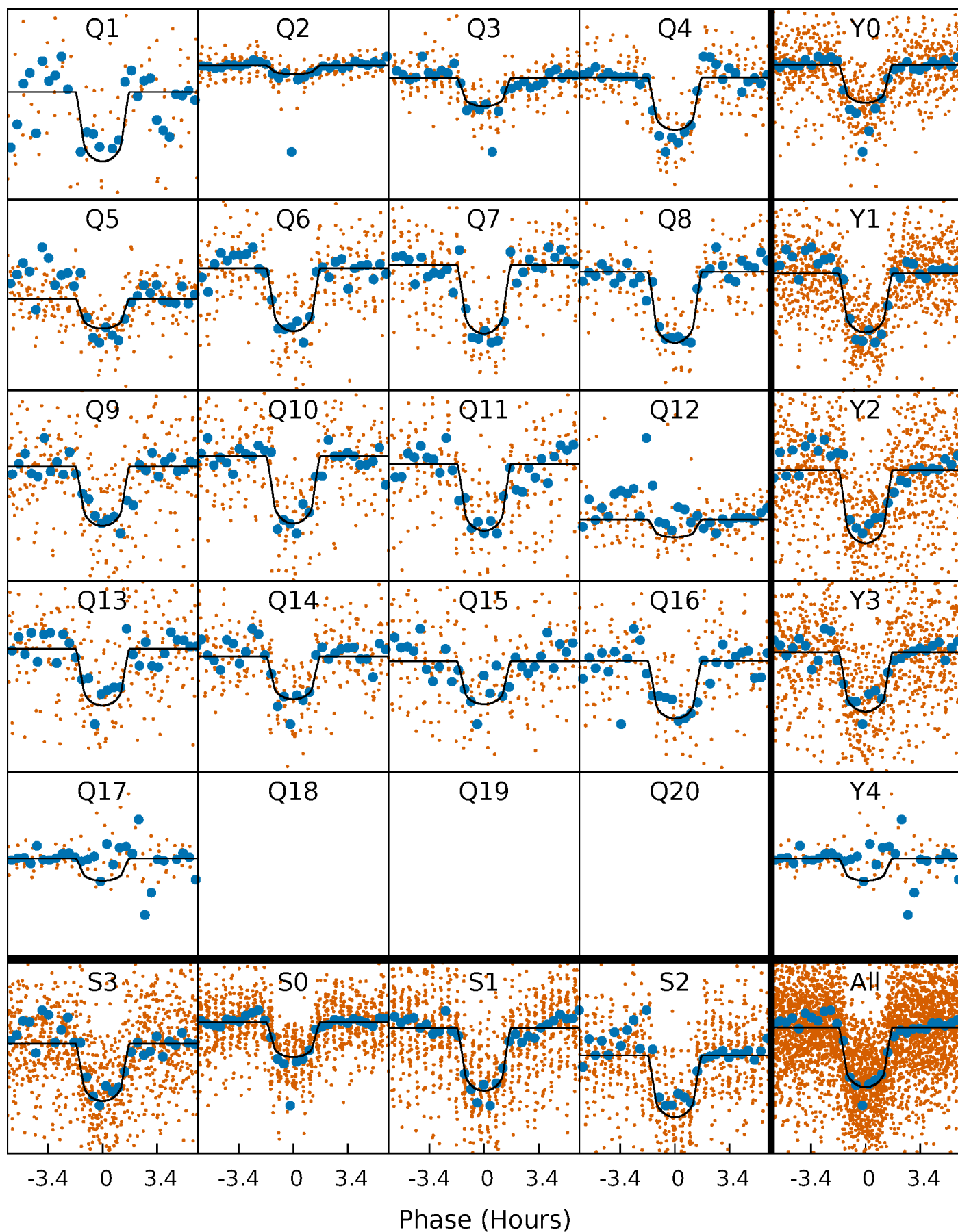
# PDC Quarter-Phased Transit Curves

TCE 006278762-02 P= 7.743518 Days  $T_0=135.091938$  (BKJD)



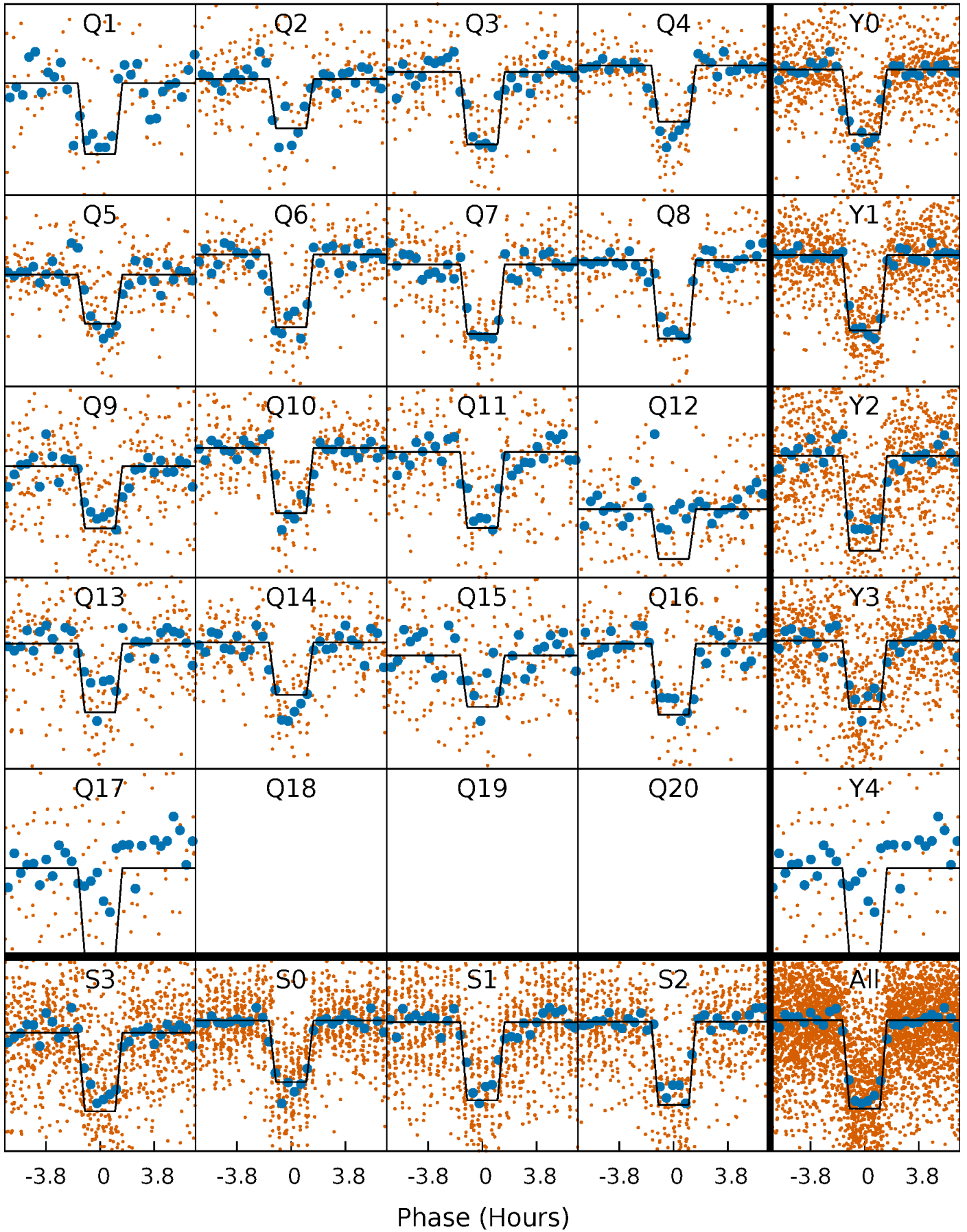
# DV Quarter-Phased Transit Curves

TCE 006278762-02 P= 7.743518 Days  $T_0=135.091938$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

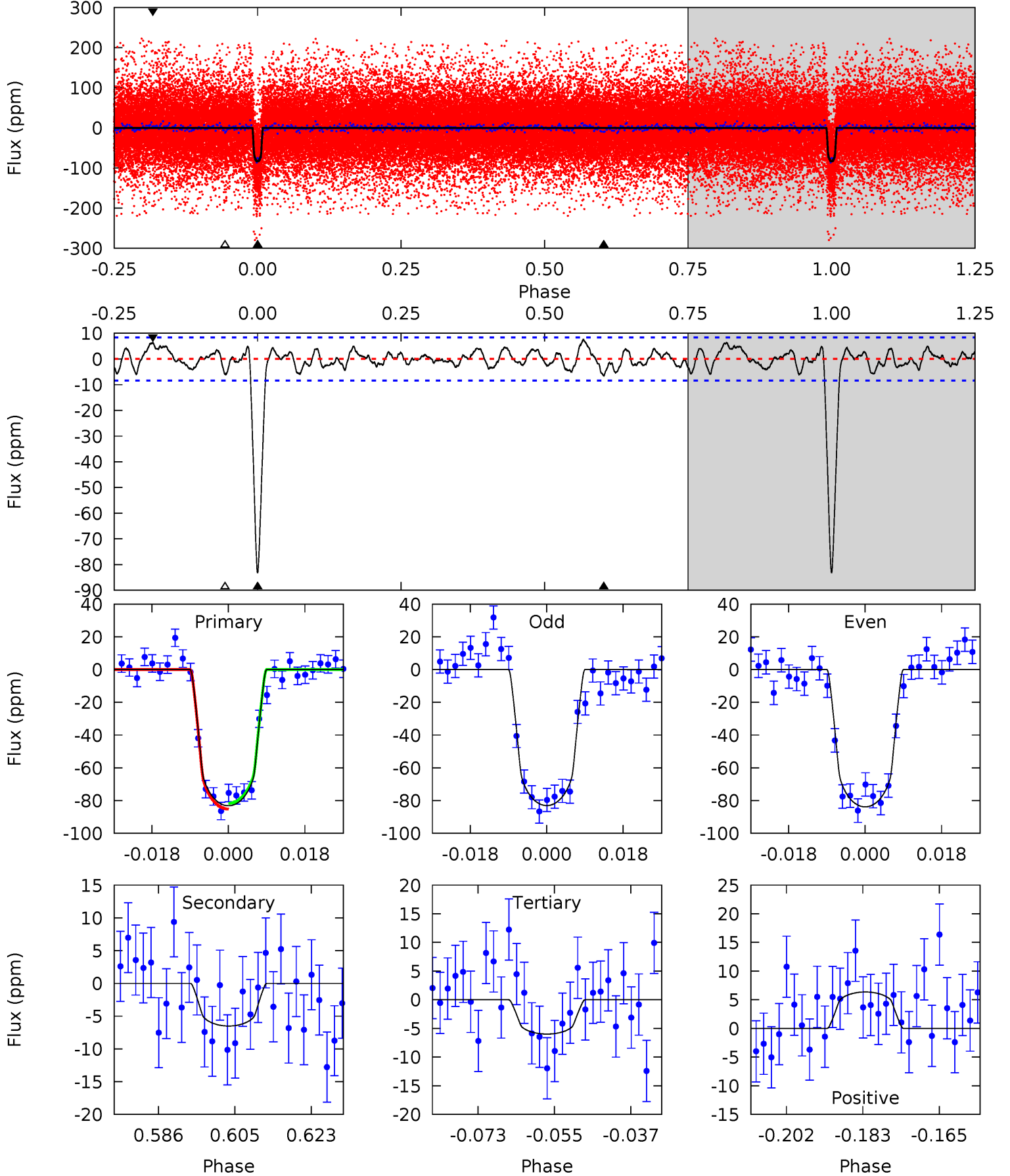
TCE 006278762-02   P= 7.743455 Days    $T_0=135.097321$  (BKJD)



# DV Model-Shift Uniqueness Test

006278762-02, P = 7.743518 Days, E = 127.348420 Days

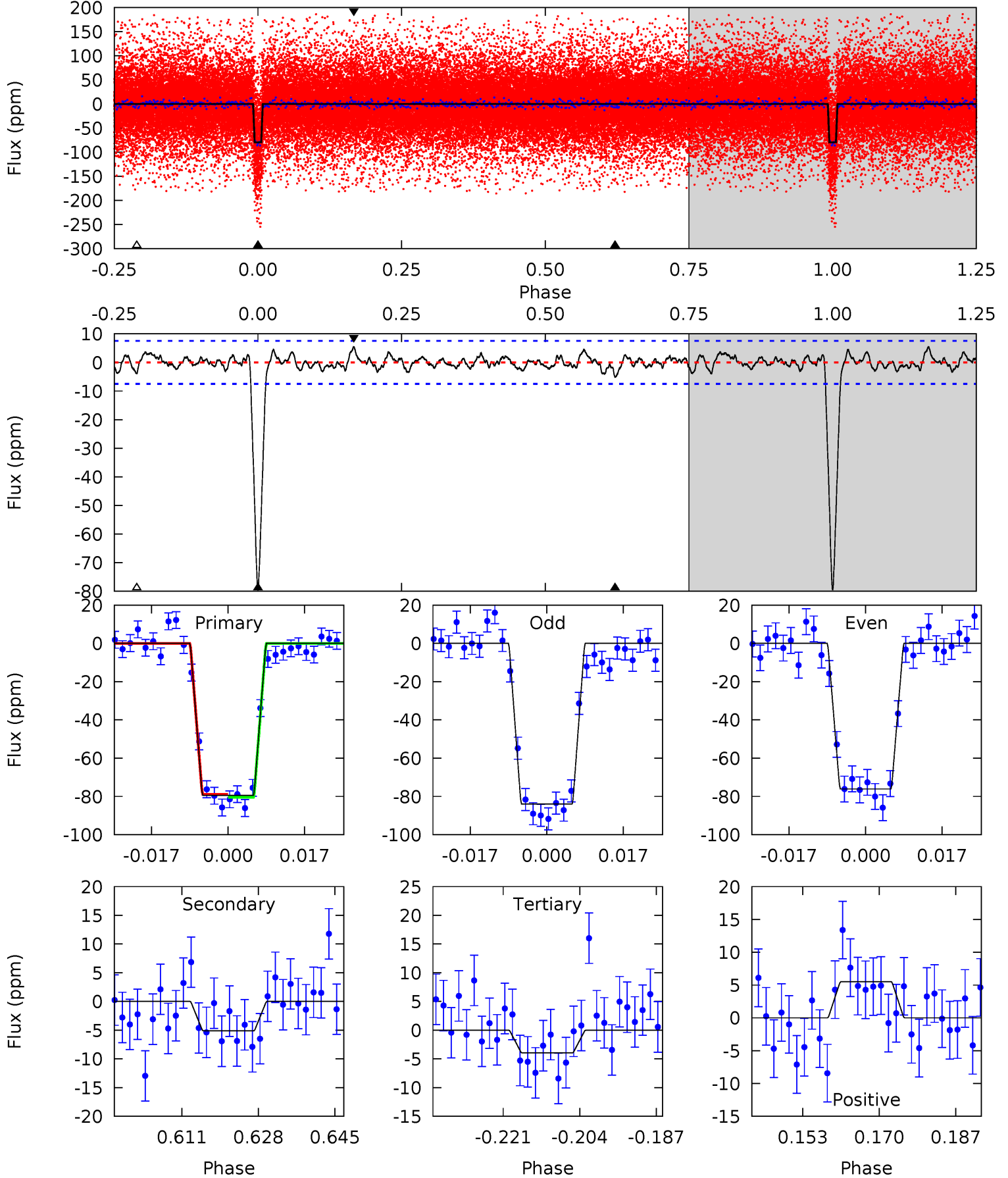
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
48.9	3.82	3.52	3.73	4.91	2.36	1.56	45.4	45.1	0.31	0.09	0.24	1.01	0.08	1.03



# Alt Model-Shift Uniqueness Test

006278762-02, P = 7.743455 Days, E = 127.353866 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
52.1	3.36	2.60	3.60	4.92	2.39	1.09	49.5	48.5	0.76	-0.24	2.58	1.01	0.06	0.49





### Stellar Parameters For KIC 006278762

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5051^{+177}_{-141}$	$4.562^{+0.033}_{-0.023}$	$-0.360^{+0.350}_{-0.150}$	$0.721^{+0.057}_{-0.031}$	$0.692^{+0.099}_{-0.026}$	$2.601^{+0.317}_{-0.283}$
	+4%/-3%	+1%/-1%	+97%/-42%	+8%/-4%	+14%/-4%	+12%/-11%
Source	SPE69	AST69	SPE69	DSEP		

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

### Secondary Eclipse Parameters for KIC 006278762-02 / KOI 3158.04

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-7 \pm 2$	$0.79^{+0.13}_{-0.13}$	$1014^{+37}_{-29}$	$3115^{+225}_{-190}$	$26^{+15}_{-9}$
Alt.	$-5 \pm 2$	$0.75^{+0.14}_{-0.14}$	$1015^{+35}_{-32}$	$3073^{+219}_{-215}$	$23^{+14}_{-9}$

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



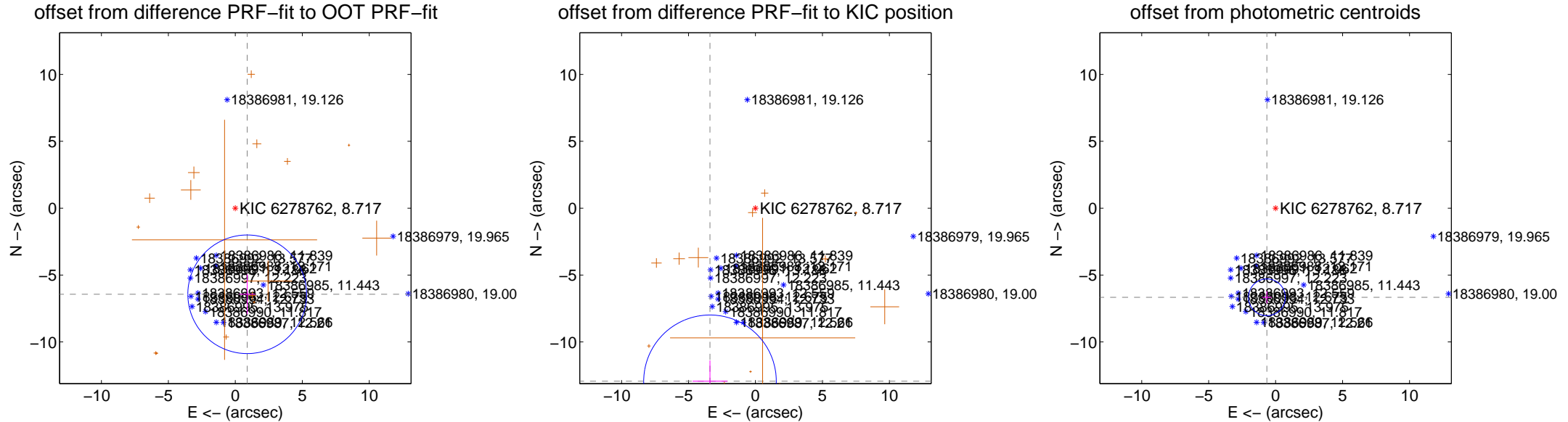
## DV Centroid Data

Supplemental centroid analysis for 006278762-02. **Kepler magnitude: 8.72.** Transit SNR 32.95

There are 0 quarters with good PRF difference image offsets

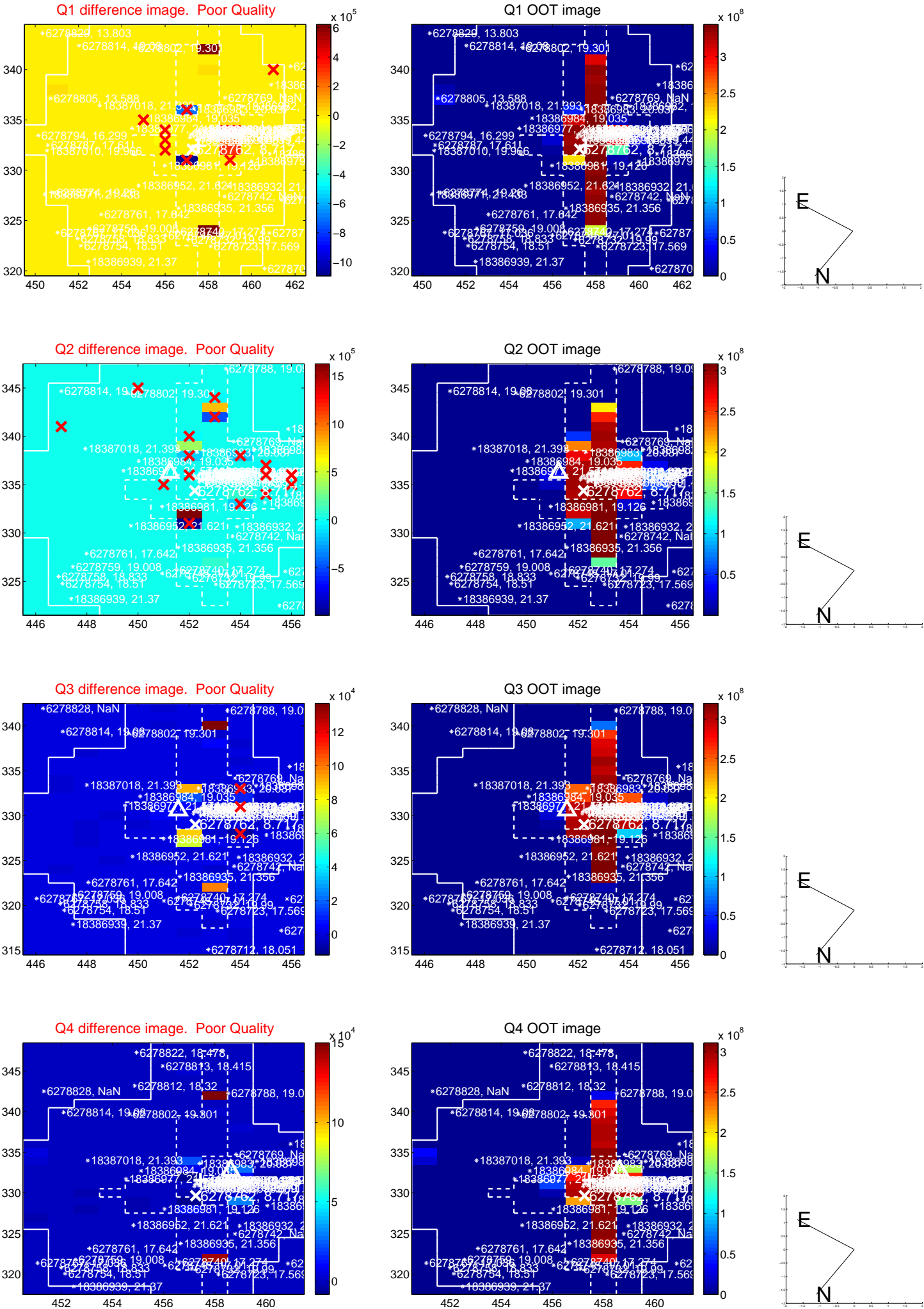
The OOT PRF centroid is offset from the target star catalog position by about 7.45 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>6.499 \pm 1.478</math></b>	<b>4.40</b>	$-0.886 \pm 0.596$	$-6.438 \pm 1.490$
PRF-fit source offset from KIC position	<b><math>13.376 \pm 1.650</math></b>	<b>8.11</b>	$3.397 \pm 1.302$	$-12.937 \pm 1.554$
photometric centroid source offset	<b><math>6.70 \pm 0.46</math></b>	<b>14.62</b>	$0.65 \pm 0.35$	$-6.66 \pm 0.46$

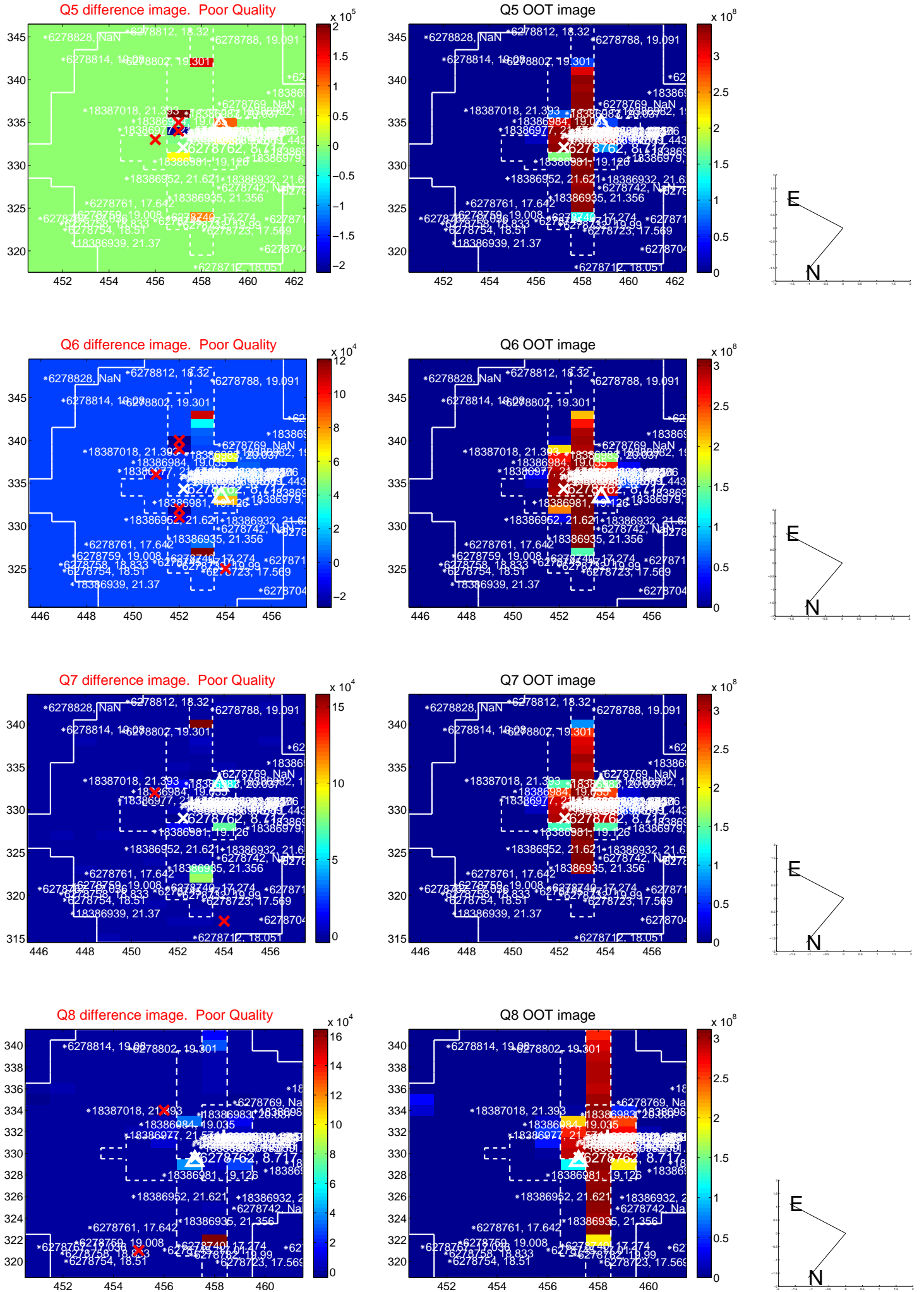


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

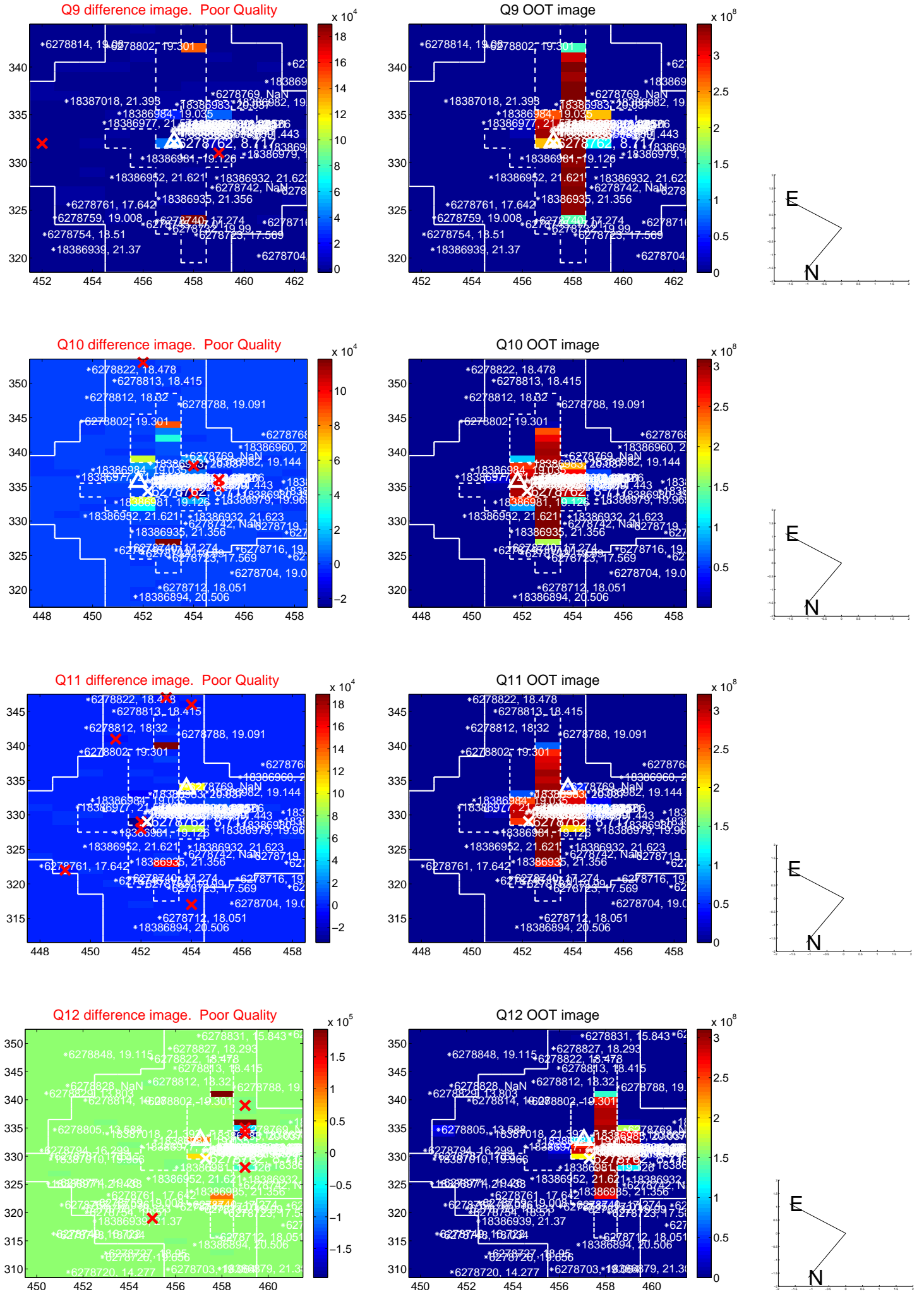
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

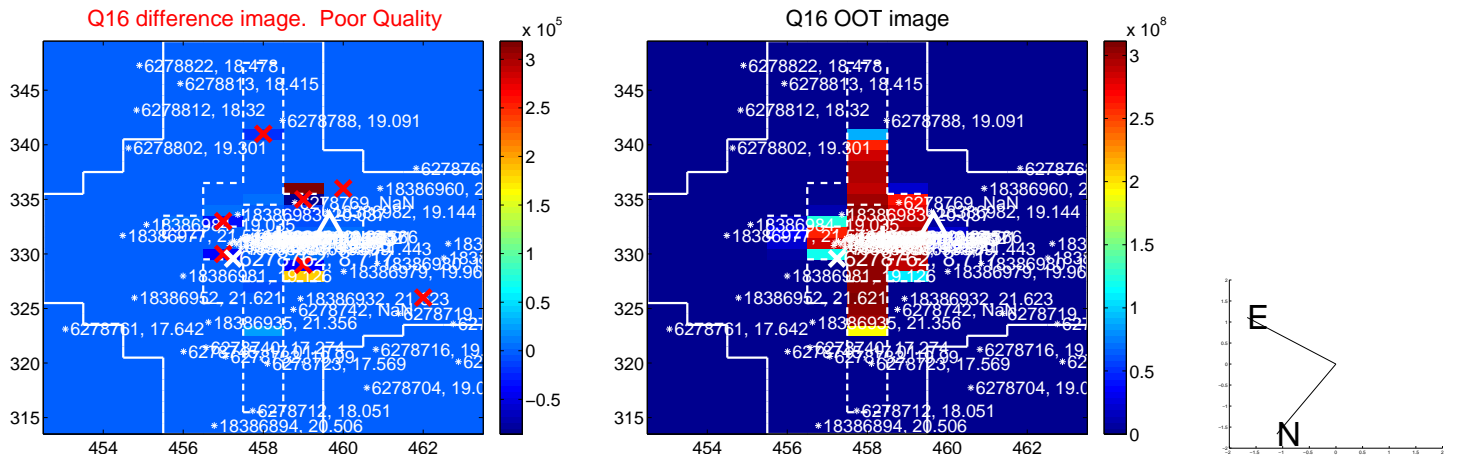
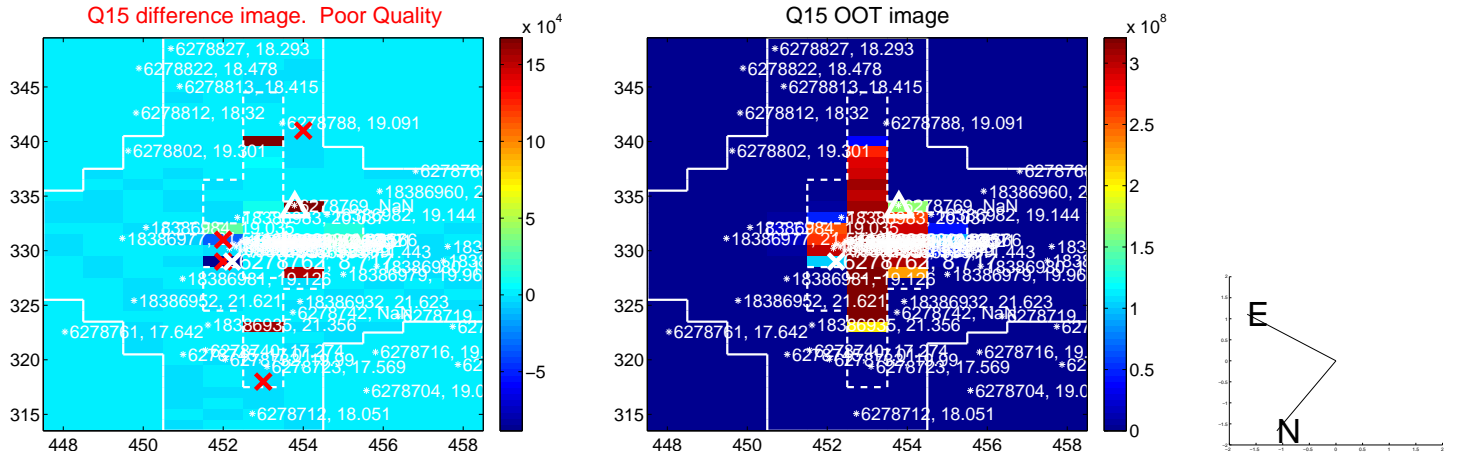
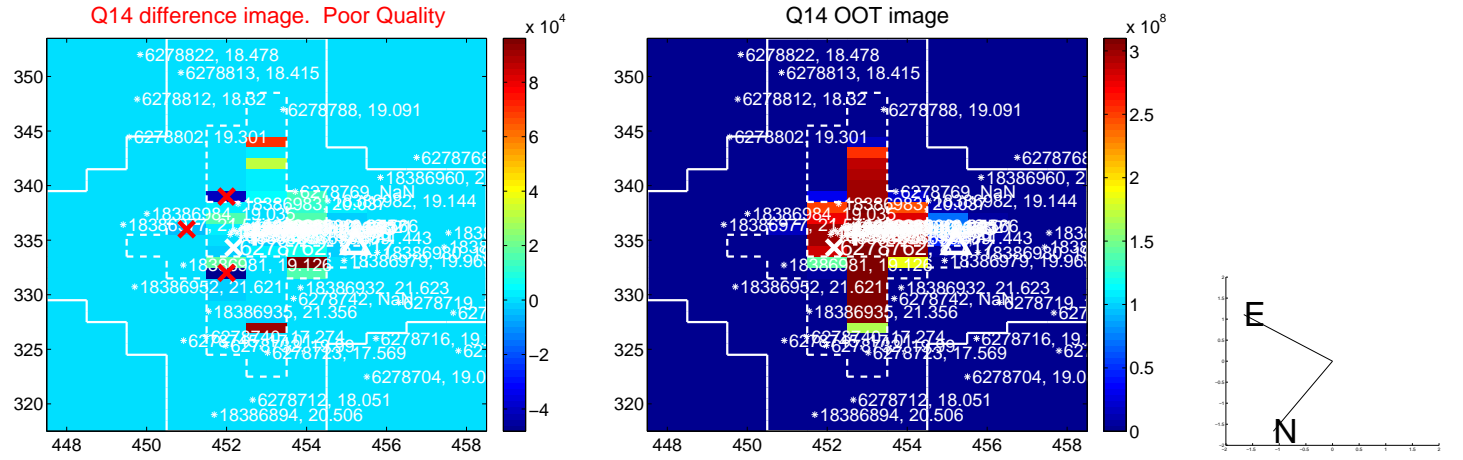
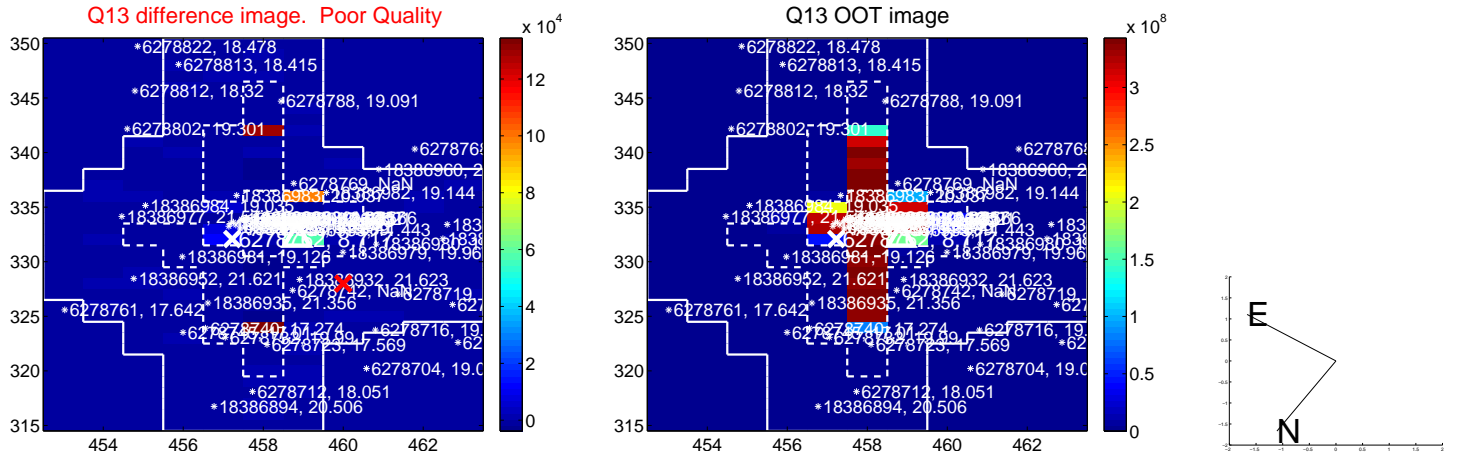


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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

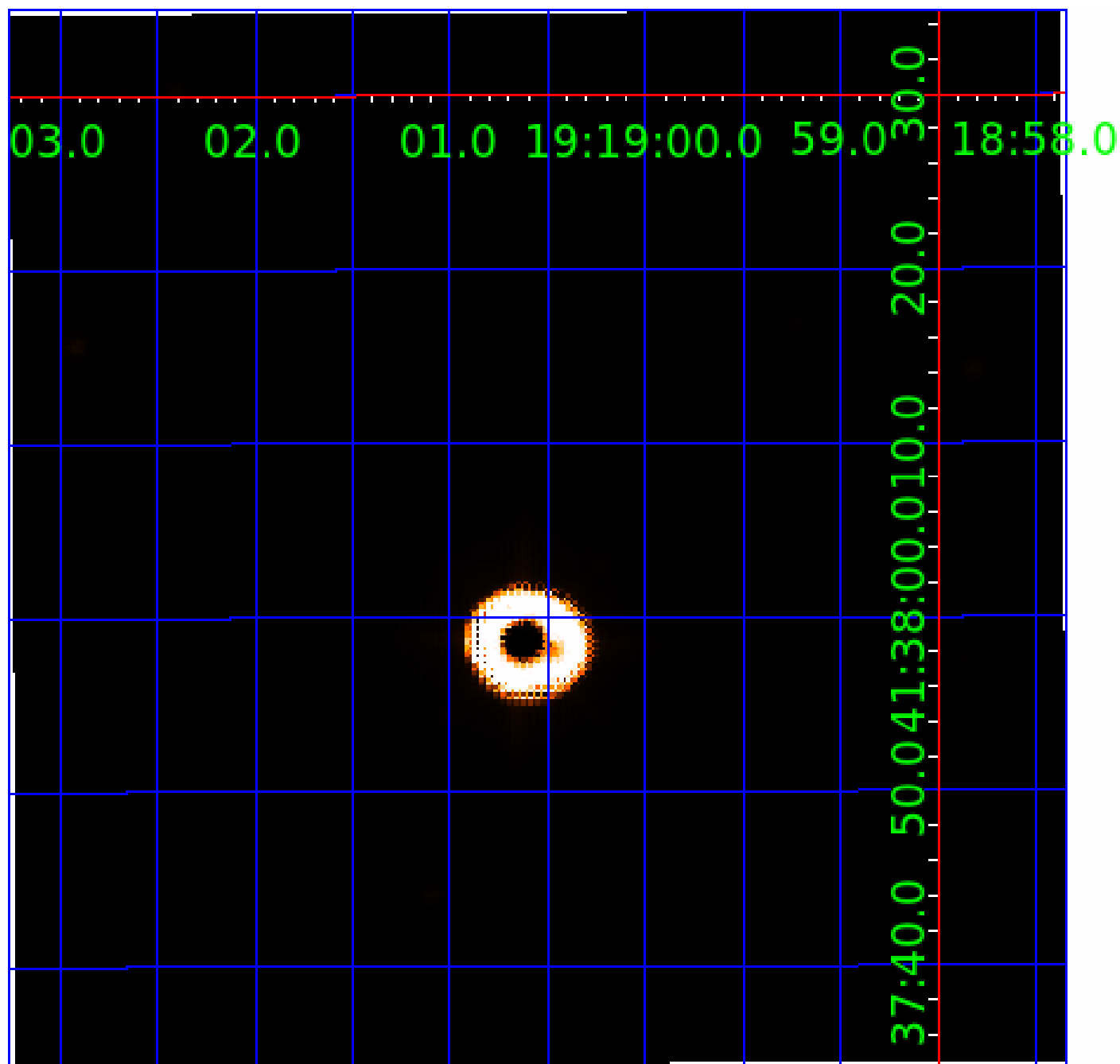






UKIRT Image

Declination



# KIC 006278762

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006278762-01	OBS	3158.05	9.740496	134.878351	122.6	1.762	31.8	38.1	0.72	5051	0.99	48.63
006278762-02	OBS	3158.04	7.743518	135.091938	83.6	2.963	30.2	33.0	0.72	5051	0.80	66.03
006278762-03	OBS	3158.03	6.189430	134.784170	76.9	2.300	29.6	31.9	0.72	5051	0.78	89.02
006278762-04	OBS	3158.02	4.545889	131.521874	69.0	1.825	27.6	31.0	0.72	5051	0.69	134.34
006278762-05	OBS	3158.01	3.600136	133.250777	119.0	2.000	22.8	-1.0	0.72	5051	0.77	183.34

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006278762-01	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
006278762-02	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
006278762-03	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
006278762-04	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
006278762-05	OBS	PC	1.00	0	0	0	0	CENT_SATURATED

**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.

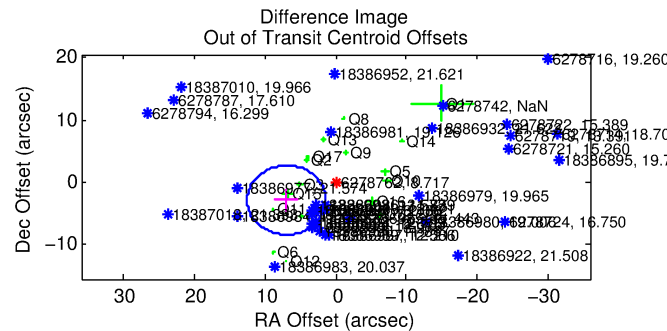
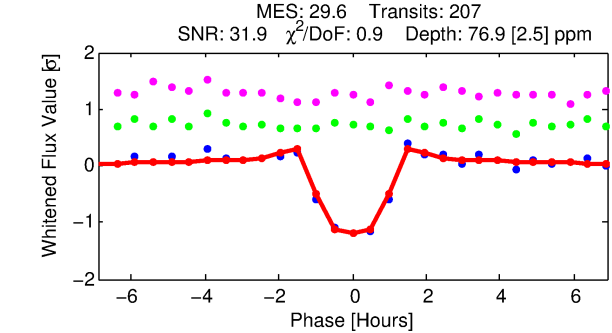
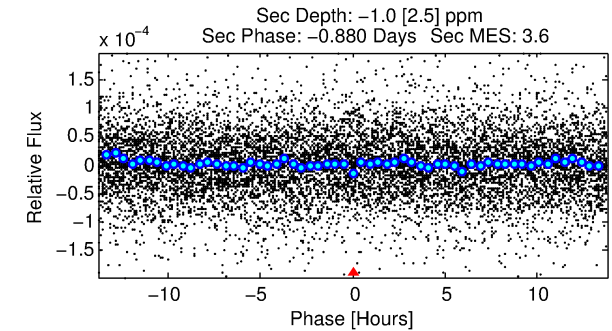
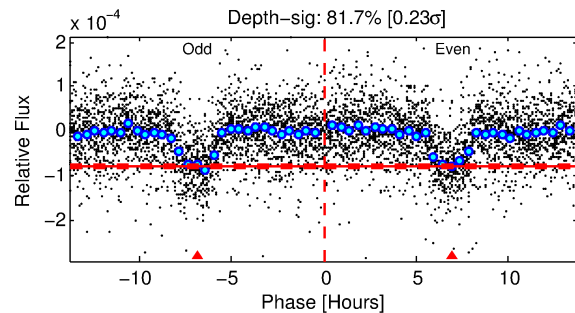
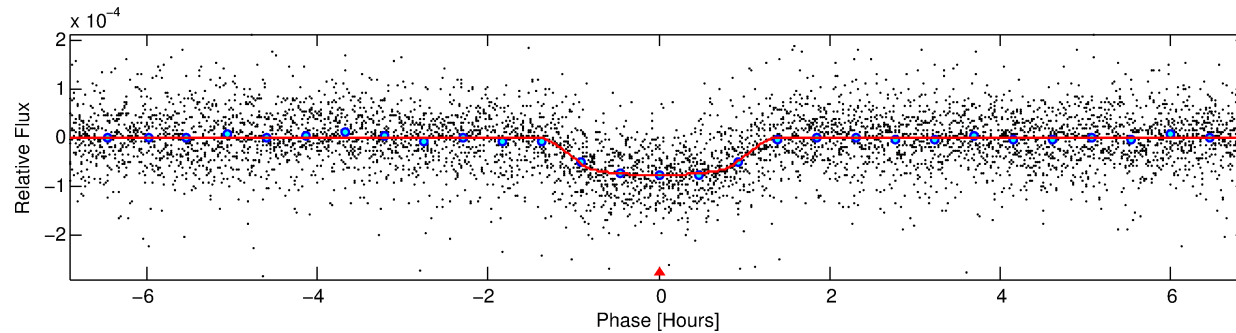
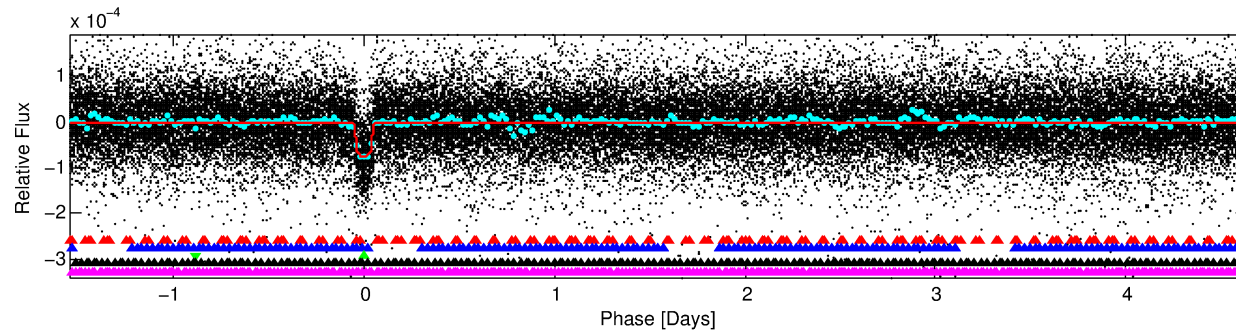
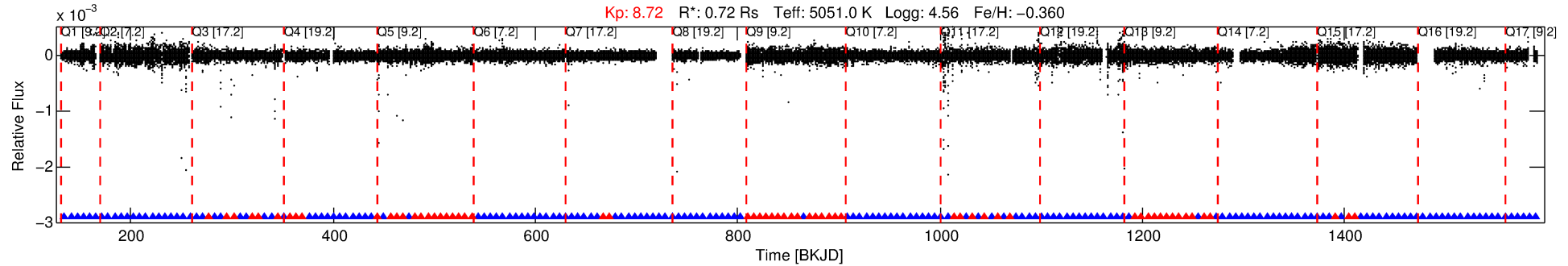
## Ephemeris Match Information For 006278762-03

No Significant Match Found

# DV One-Page Summary

KIC: 6278762 Candidate: 3 of 5 Period: 6.189 d  
KOI: K03158.03 Name: Kepler-444d Corr: 0.979

Kp: 8.72 R\*: 0.72 Rs Teff: 5051.0 K Logg: 4.56 Fe/H: -0.360



## DV Fit Results:

Period = 6.18943 [0.00001] d  
Epoch = 134.7842 [0.0013] BKJD  
Rp/R\* = 0.0099 [0.0018]  
a/R\* = 8.96 [6.77]  
b = 0.91 [0.14]  
Seff = 89.02 [14.07]  
Teq = 783 [31] K  
Rp = 0.78 [0.15] Re  
a = 0.0584 [0.0034] AU  
Ag = N/A  
Teffp = N/A

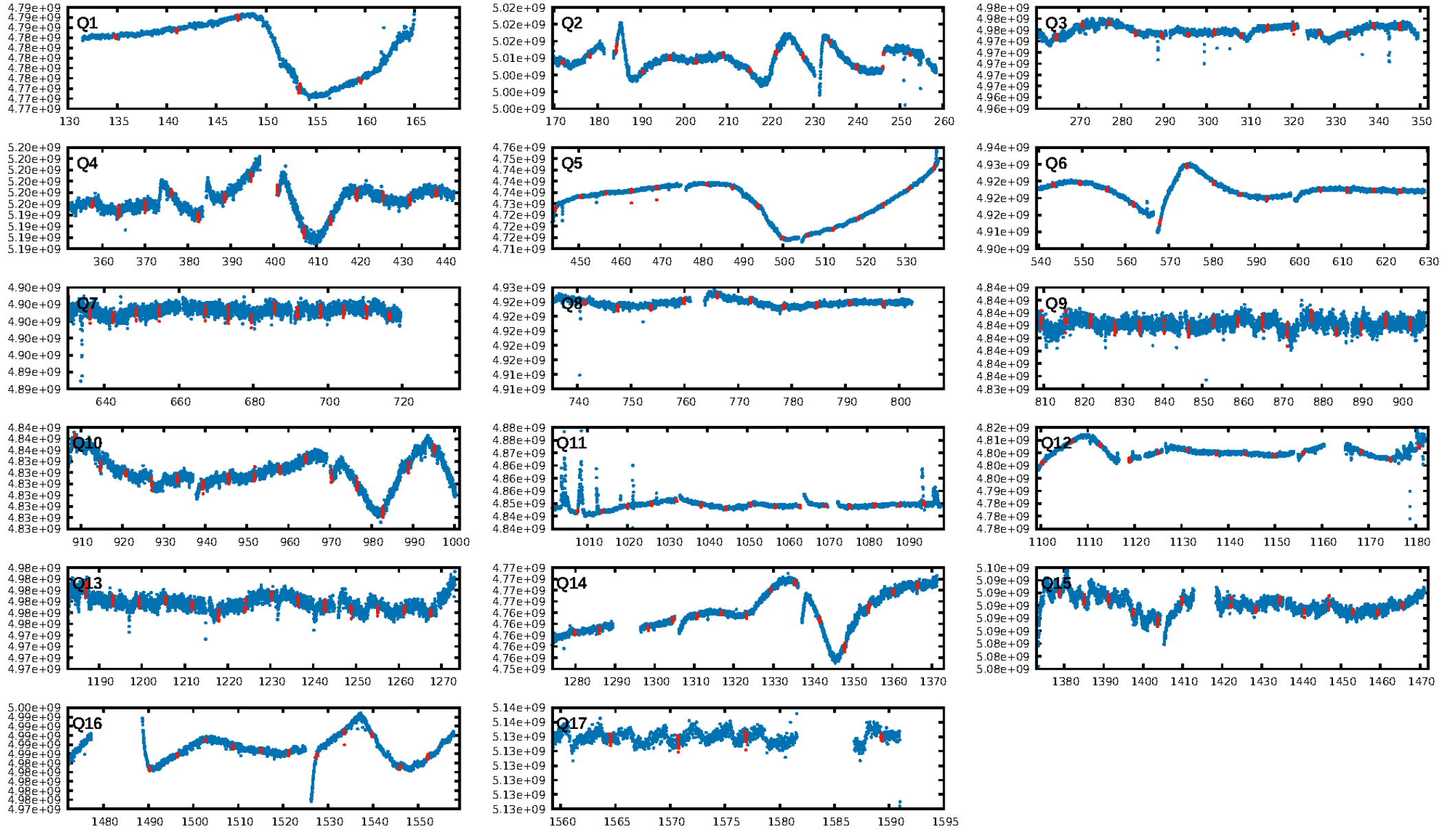
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [13.44σ]  
LongPeriod-sig: 100.0% [9.94σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.69 [137/198]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 30.3%  
Centroid-so: 6.751 arcsec [14.60σ]  
OotOffset-rm: 7.561 arcsec [4.09σ]  
KicOffset-rm: 12.956 arcsec [5.43σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.06 [1/17]  
DiffImageOverlap-fno: 1.00 [17/17]

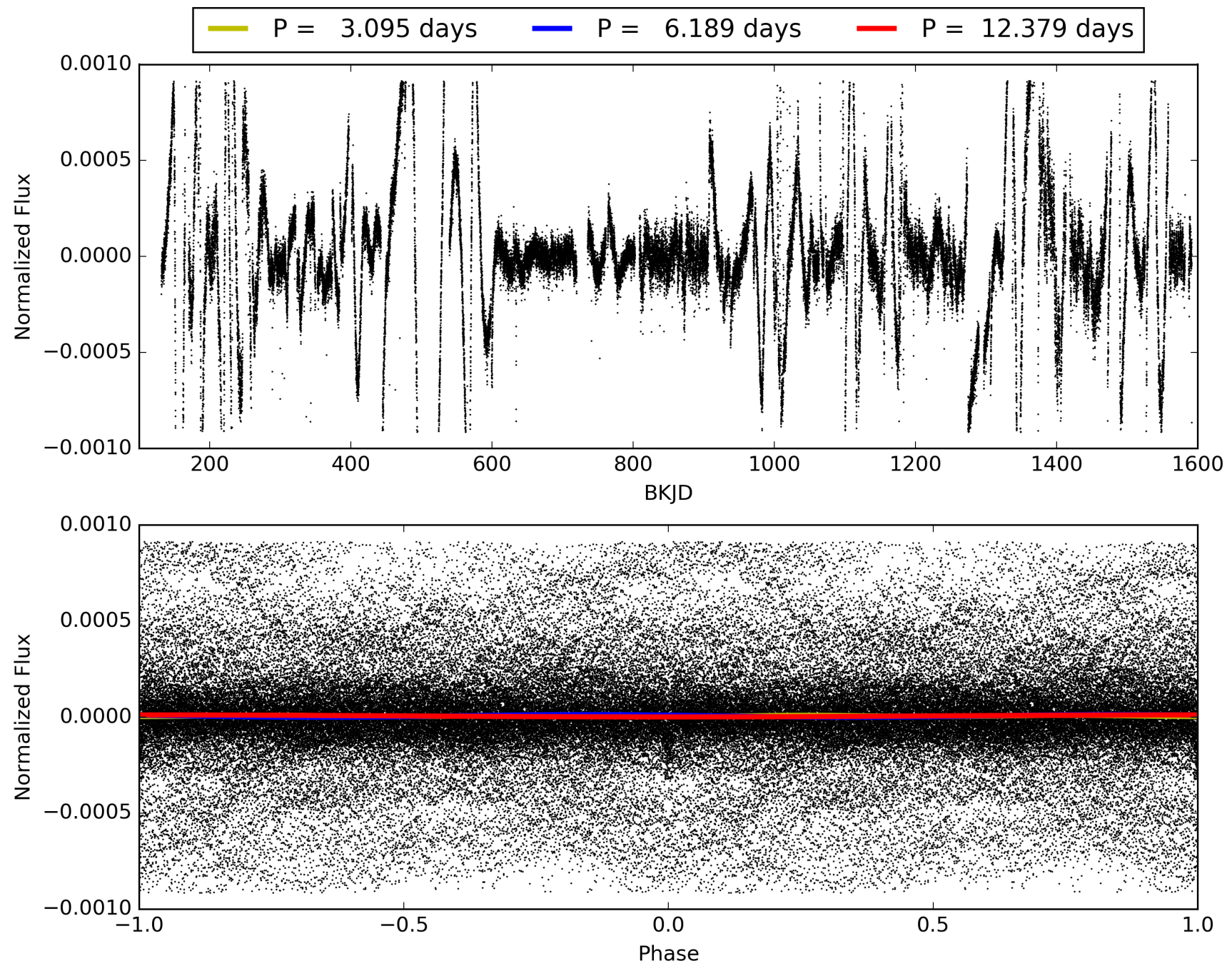
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:45:08 Z

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

# TCE 006278762-03, PDC Light Curves

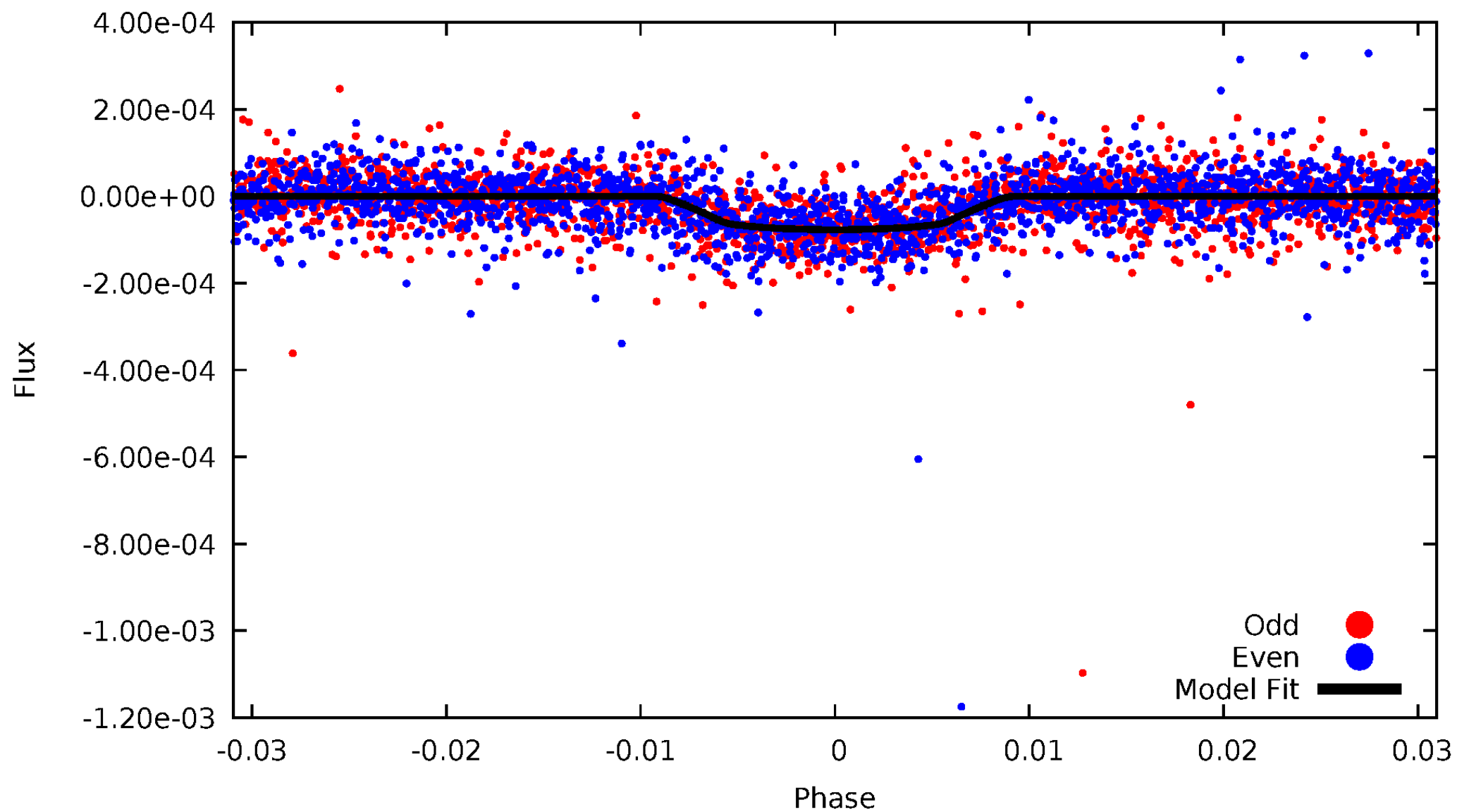


TCE 006278762-03



DV Odd/Even

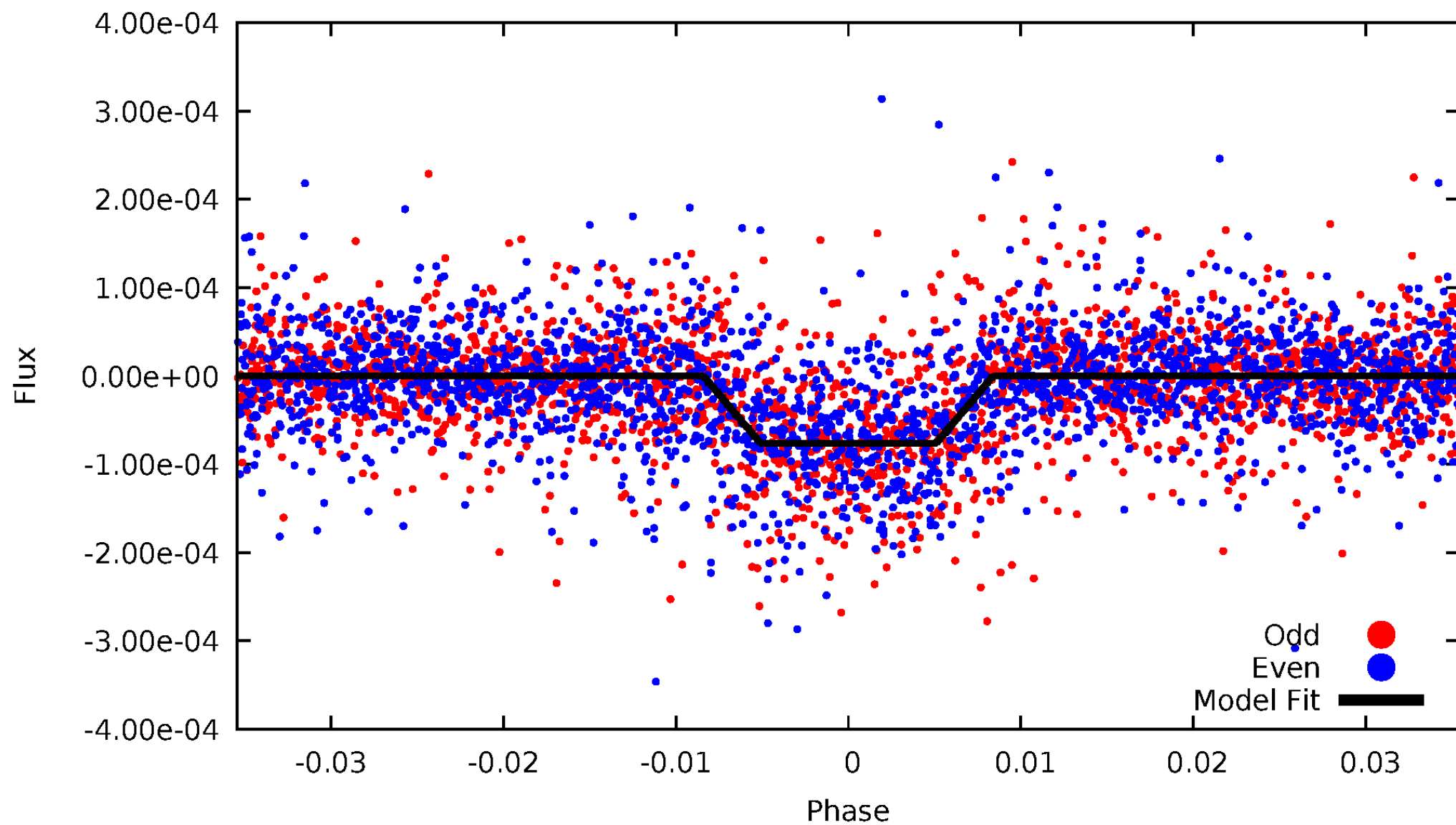
TCE 006278762-03





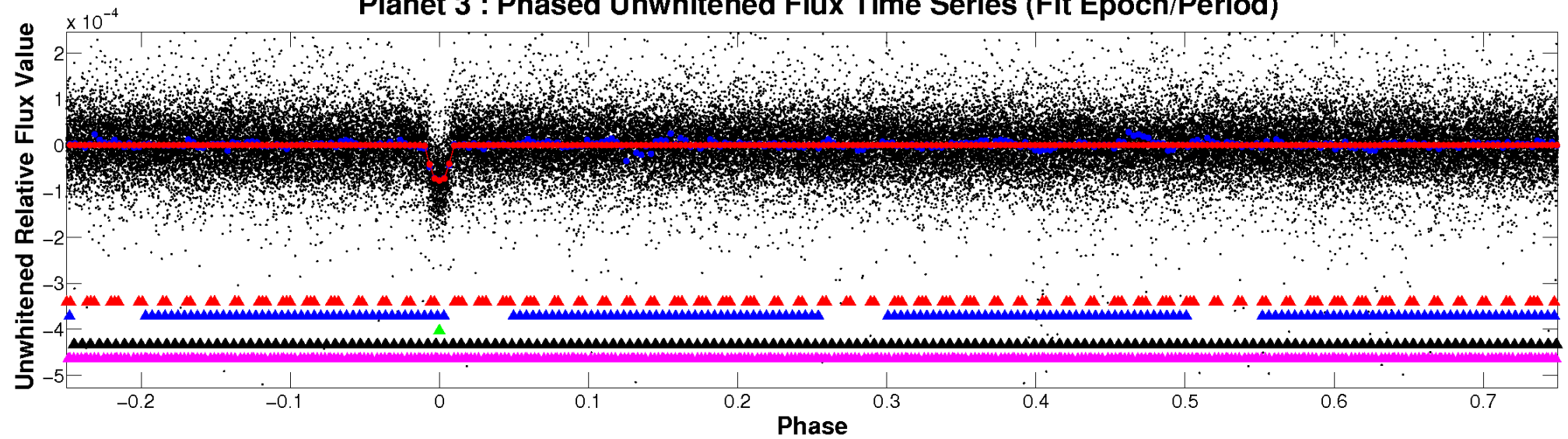
# ALT Odd/Even

TCE 006278762-03

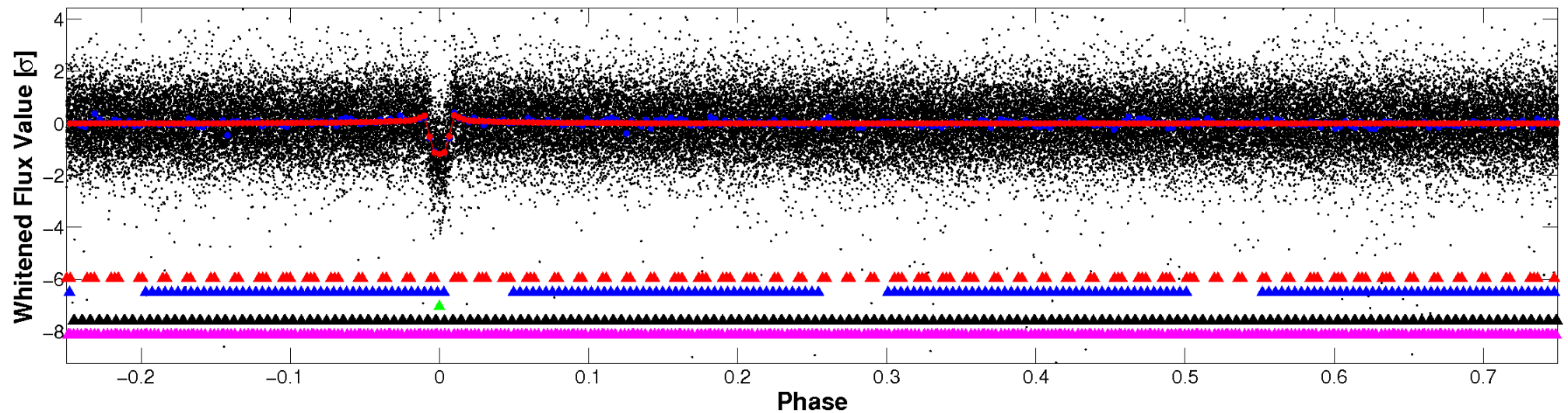


# Non-Whitened Vs. Whitened Light Curve

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

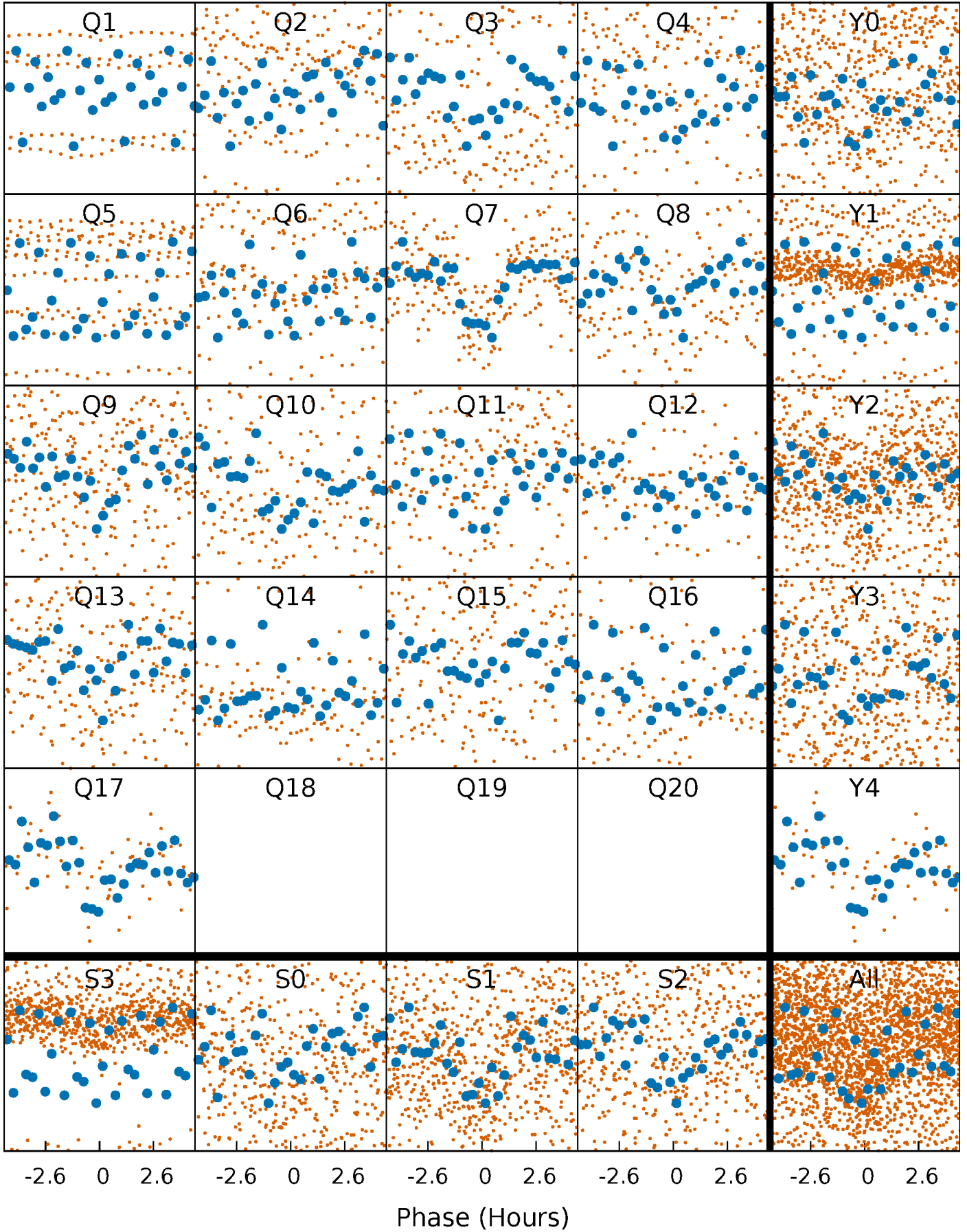


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



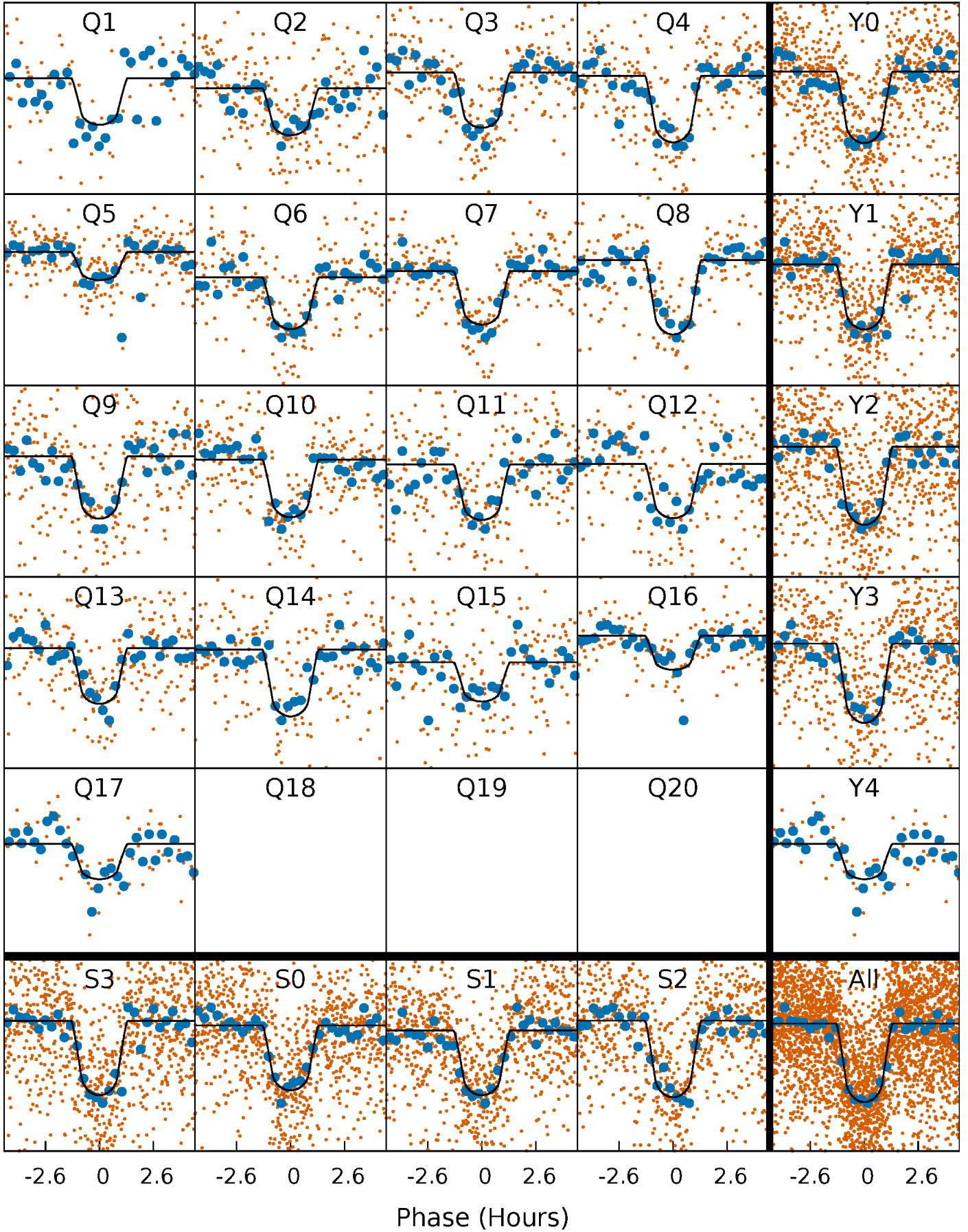
# PDC Quarter-Phased Transit Curves

TCE 006278762-03 P= 6.189430 Days  $T_0=134.784170$  (BKJD)



# DV Quarter-Phased Transit Curves

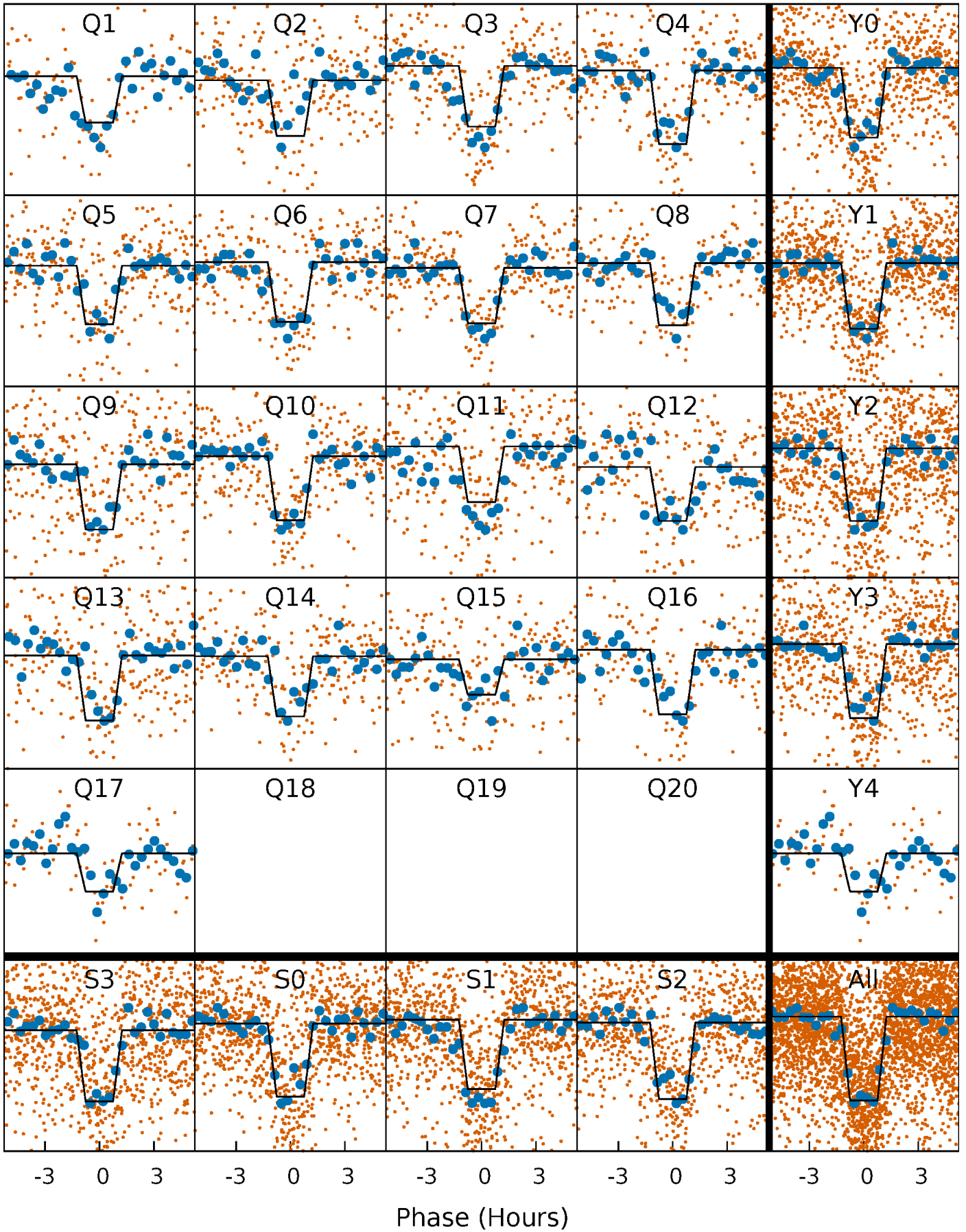
TCE 006278762-03 P= 6.189430 Days  $T_0=134.784170$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 006278762-03 P= 6.189368 Days  $T_0=134.787165$  (BKJD)

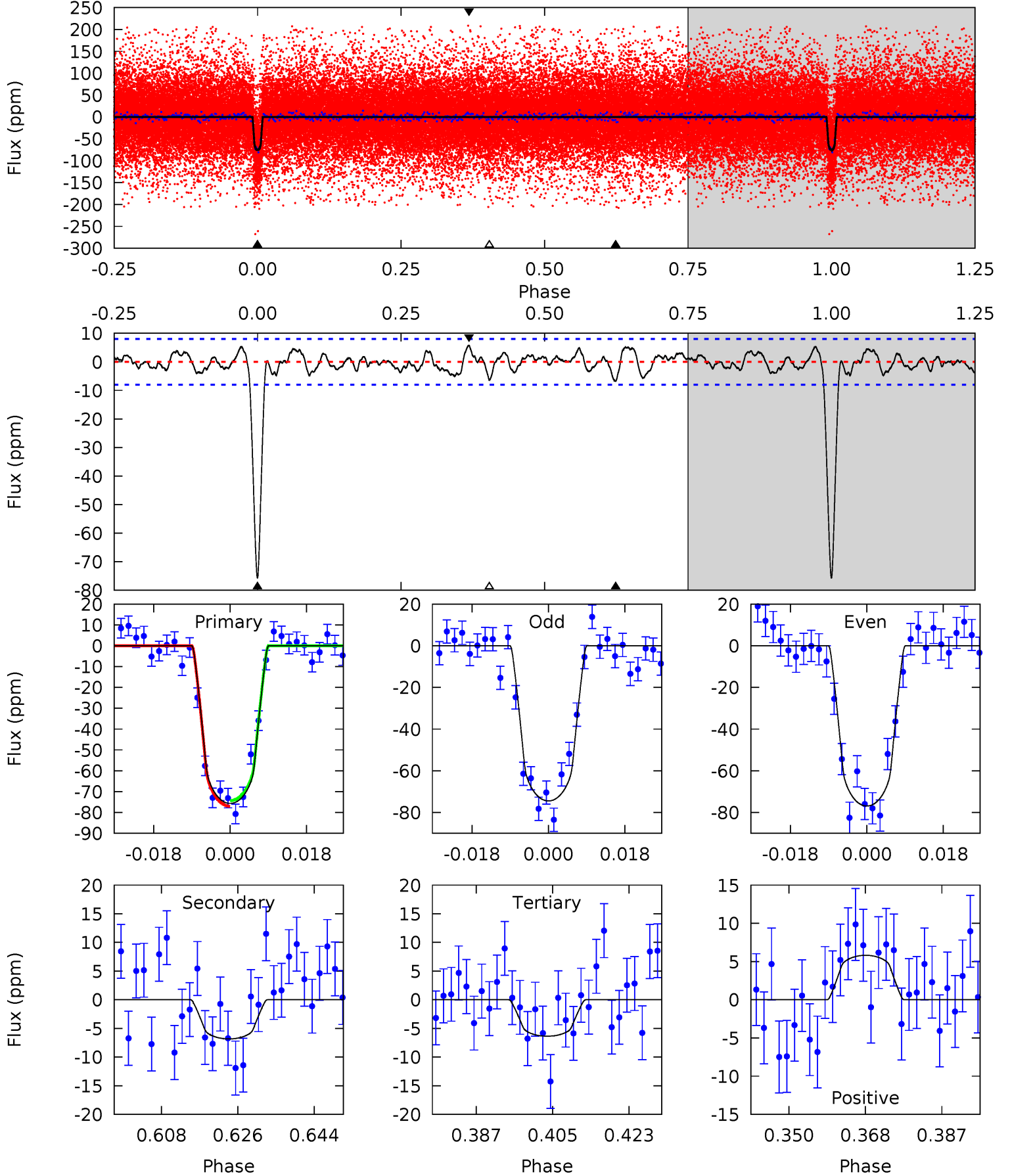




# DV Model-Shift Uniqueness Test

006278762-03, P = 6.189430 Days, E = 128.594740 Days

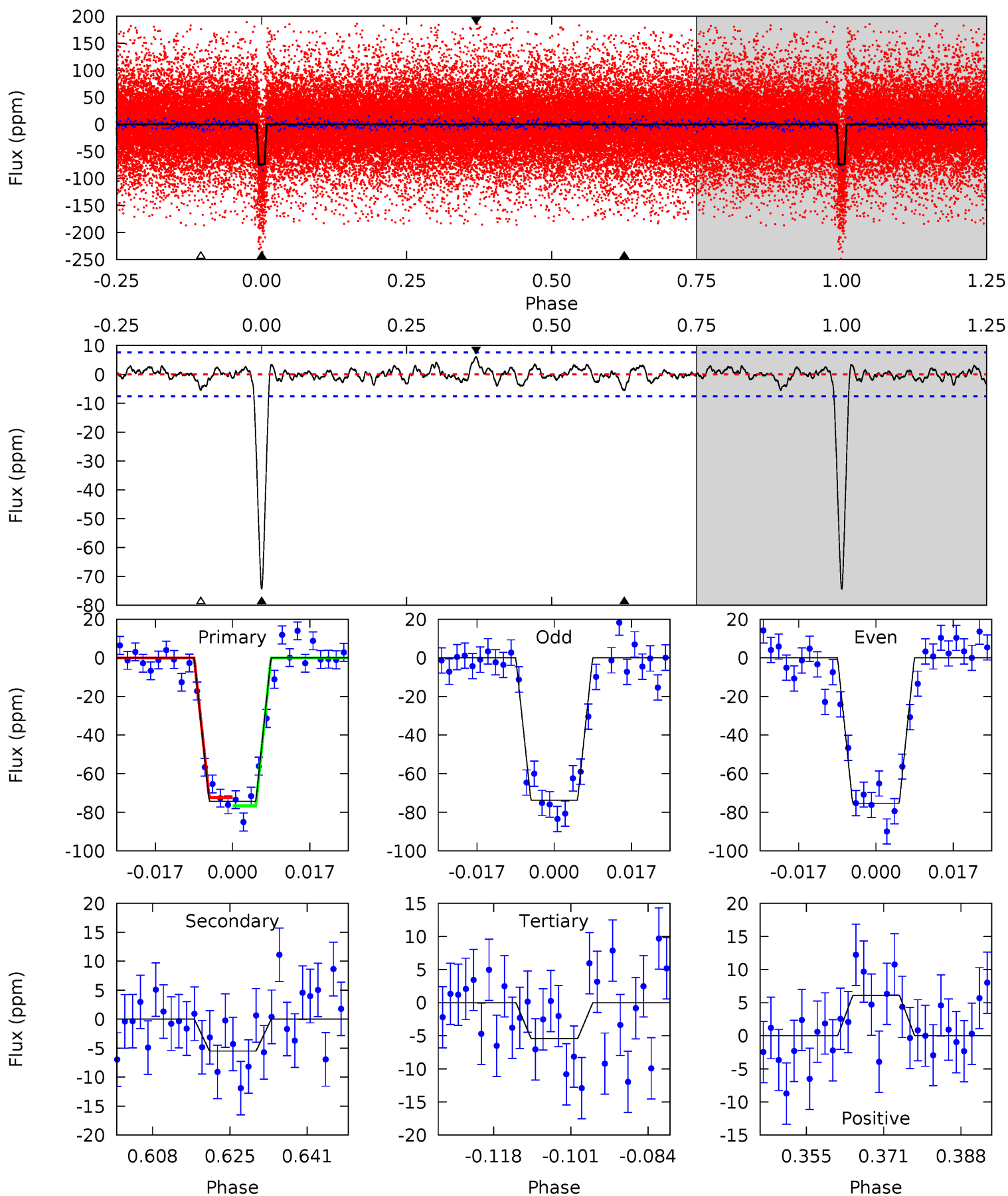
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
46.2	4.17	3.88	3.55	4.91	2.36	1.49	42.3	42.7	0.29	0.62	0.75	1.00	0.07	0.84



# Alt Model-Shift Uniqueness Test

006278762-03, P = 6.189368 Days, E = 128.597797 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
48.4	3.58	3.53	3.98	4.92	2.39	1.13	44.8	44.4	0.05	-0.39	0.50	1.00	0.08	1.41



### Stellar Parameters For KIC 006278762

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5051^{+177}_{-141}$	$4.562^{+0.033}_{-0.023}$	$-0.360^{+0.350}_{-0.150}$	$0.721^{+0.057}_{-0.031}$	$0.692^{+0.099}_{-0.026}$	$2.601^{+0.317}_{-0.283}$
	+4%/-3%	+1%/-1%	+97%/-42%	+8%/-4%	+14%/-4%	+12%/-11%
Source	SPE69	AST69	SPE69	DSEP		

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

### Secondary Eclipse Parameters for KIC 006278762-03 / KOI 3158.03

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-7 \pm 2$	$0.78^{+0.14}_{-0.13}$	$1092^{+39}_{-32}$	$3162^{+223}_{-219}$	$21^{+11}_{-8}$
Alt.	$-6 \pm 2$	$0.68^{+0.14}_{-0.14}$	$1093^{+38}_{-35}$	$3176^{+290}_{-236}$	$22^{+16}_{-9}$

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

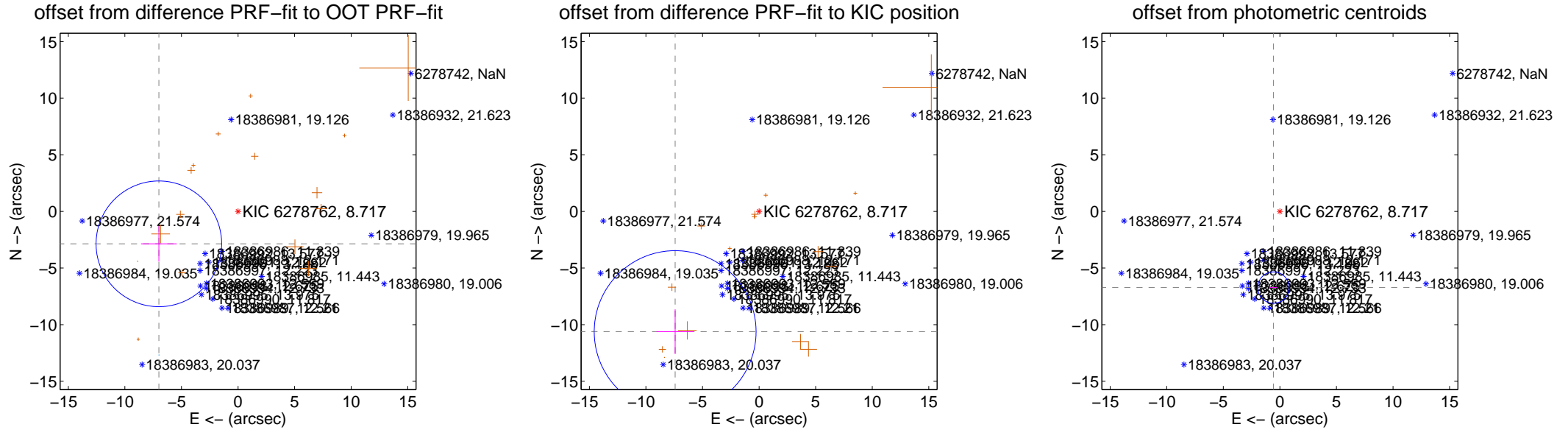
## DV Centroid Data

Supplemental centroid analysis for 006278762-03. **Kepler magnitude: 8.72.** Transit SNR 31.94

There are 1 quarters with good PRF difference image offsets

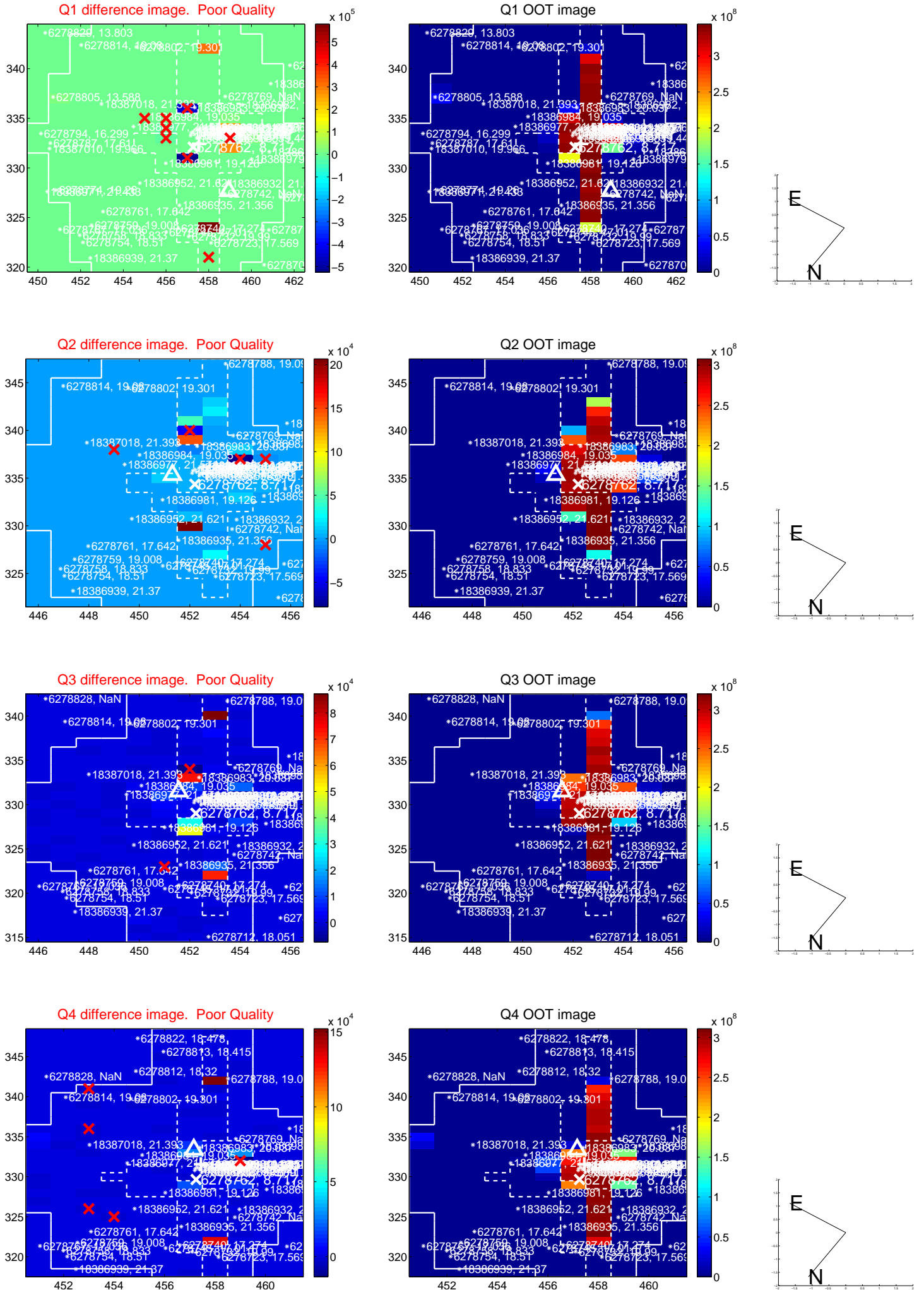
The OOT PRF centroid is offset from the target star catalog position by about 7.46 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>7.561 \pm 1.850</math></b>	<b>4.09</b>	$6.997 \pm 1.578$	$-2.864 \pm 1.580$
PRF-fit source offset from KIC position	<b><math>12.956 \pm 2.384</math></b>	<b>5.43</b>	$7.419 \pm 1.654$	$-10.621 \pm 1.974$
photometric centroid source offset	<b><math>6.75 \pm 0.46</math></b>	<b>14.60</b>	$0.57 \pm 0.35$	$-6.73 \pm 0.46$



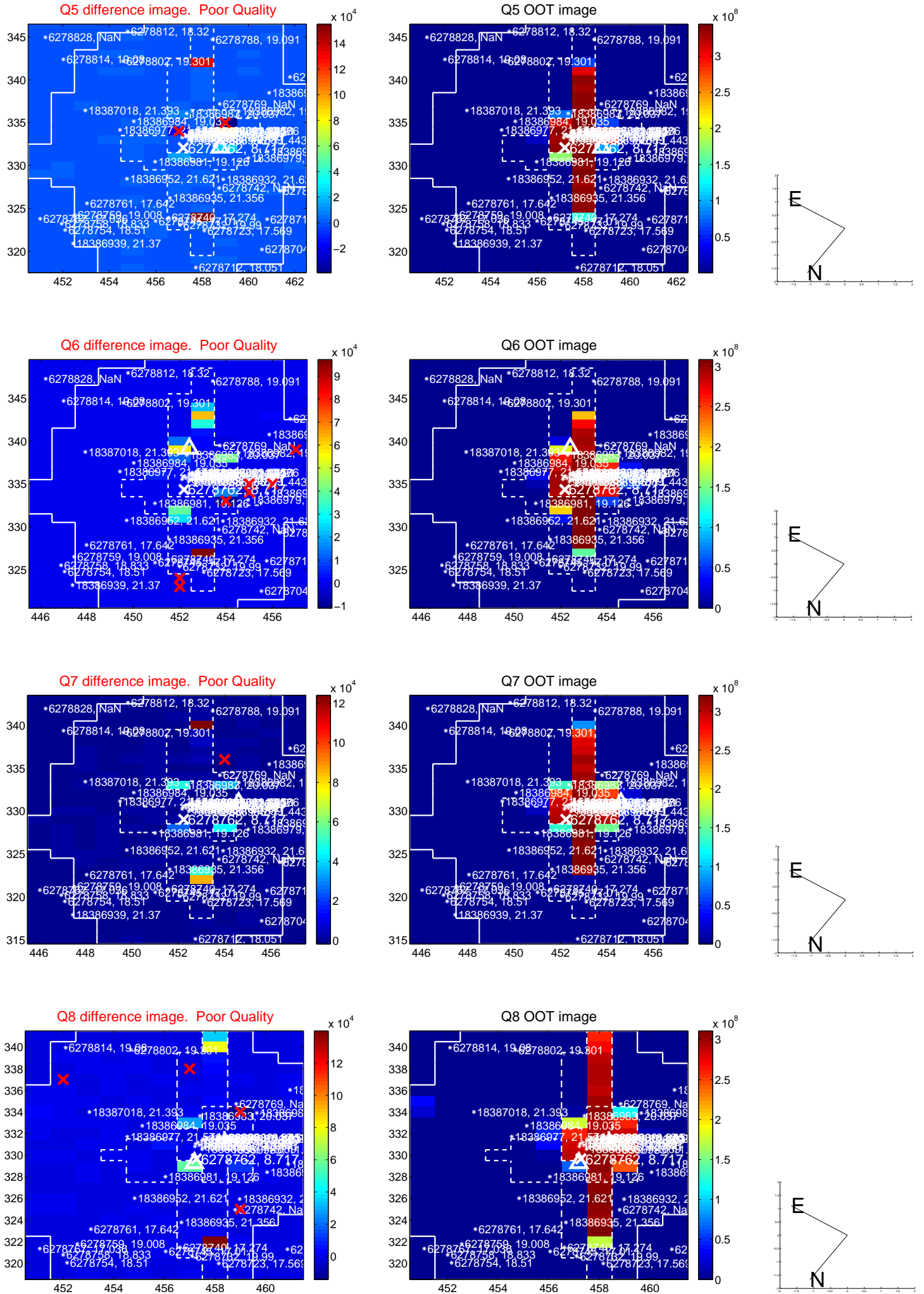
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

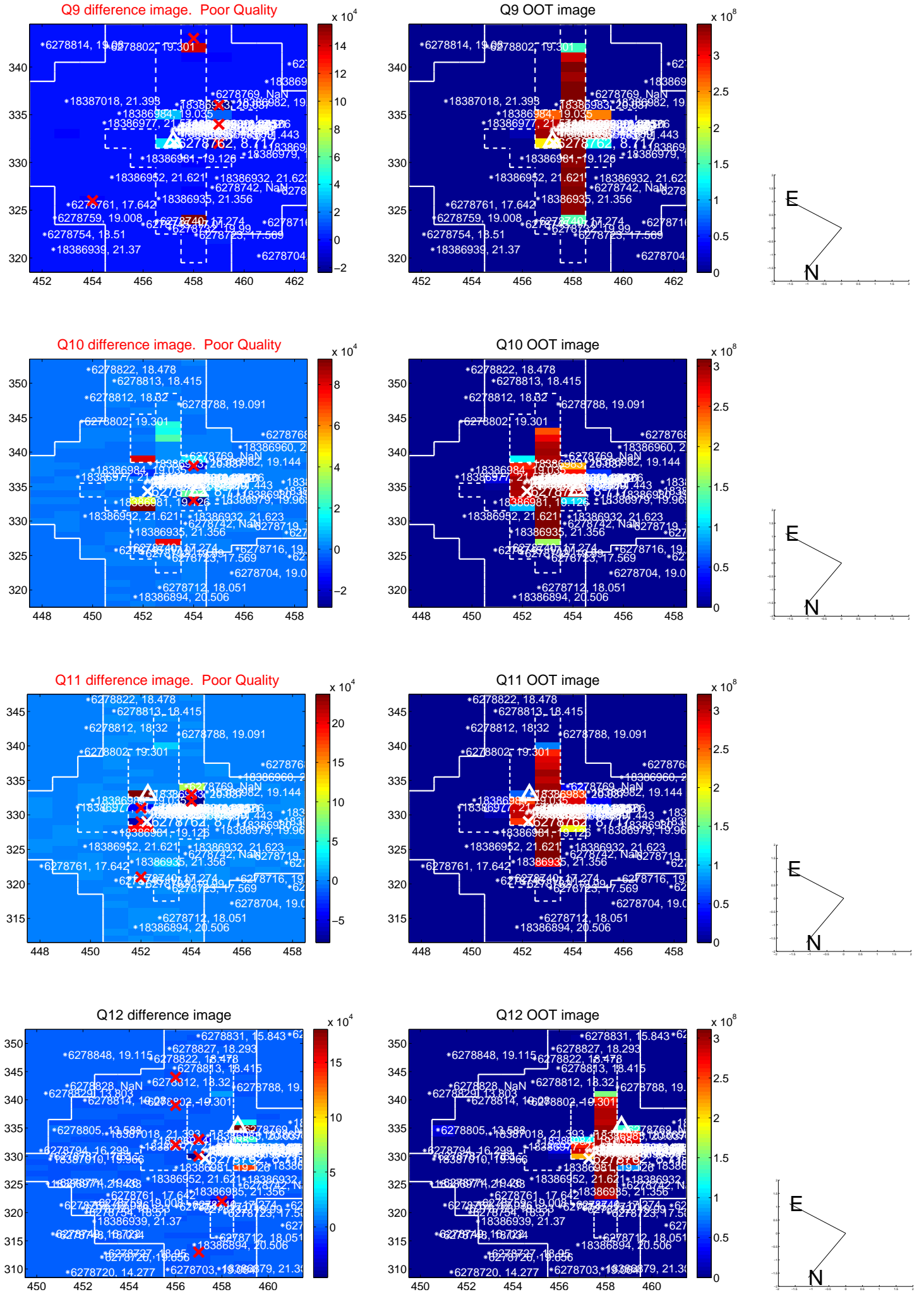




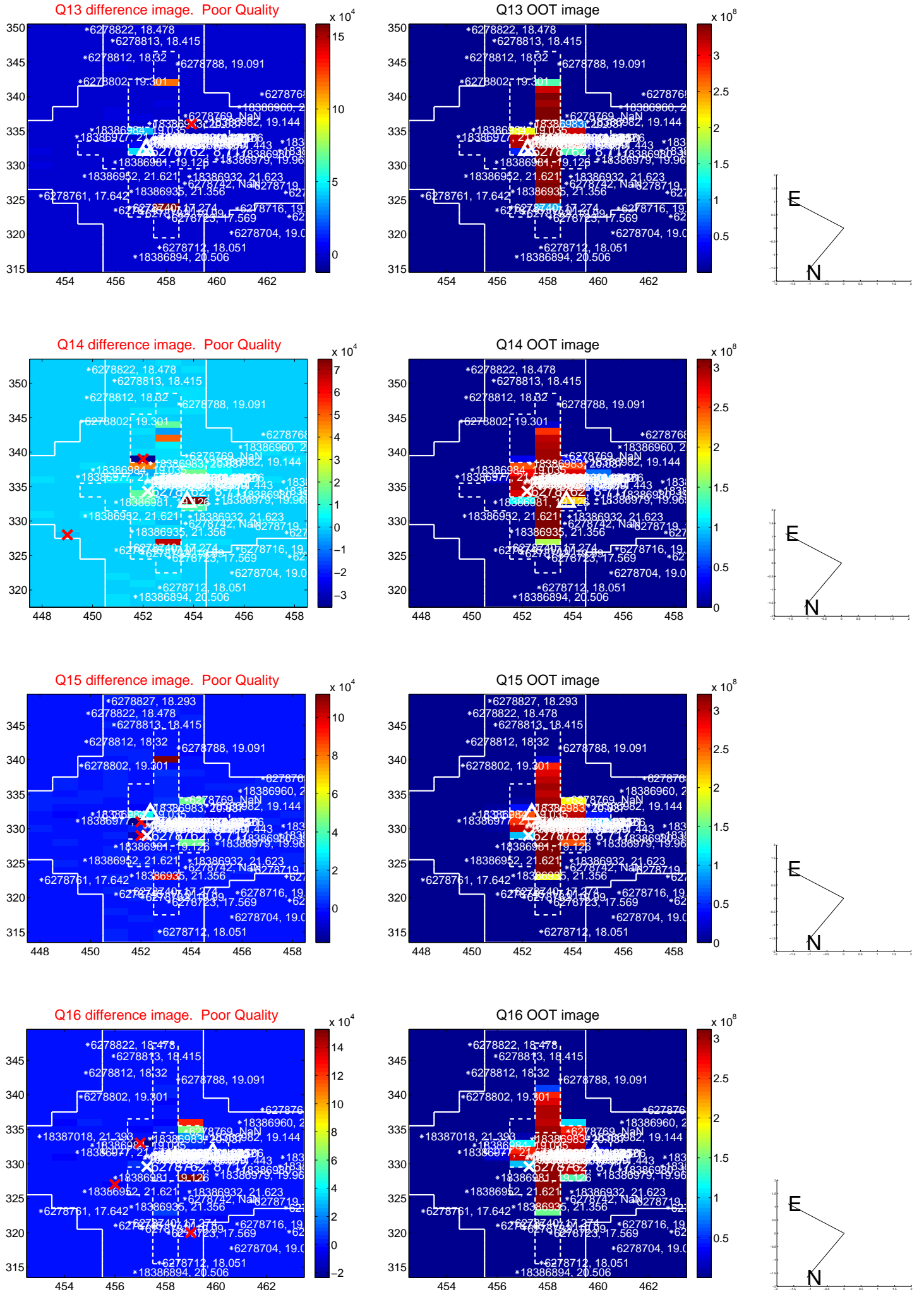
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white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



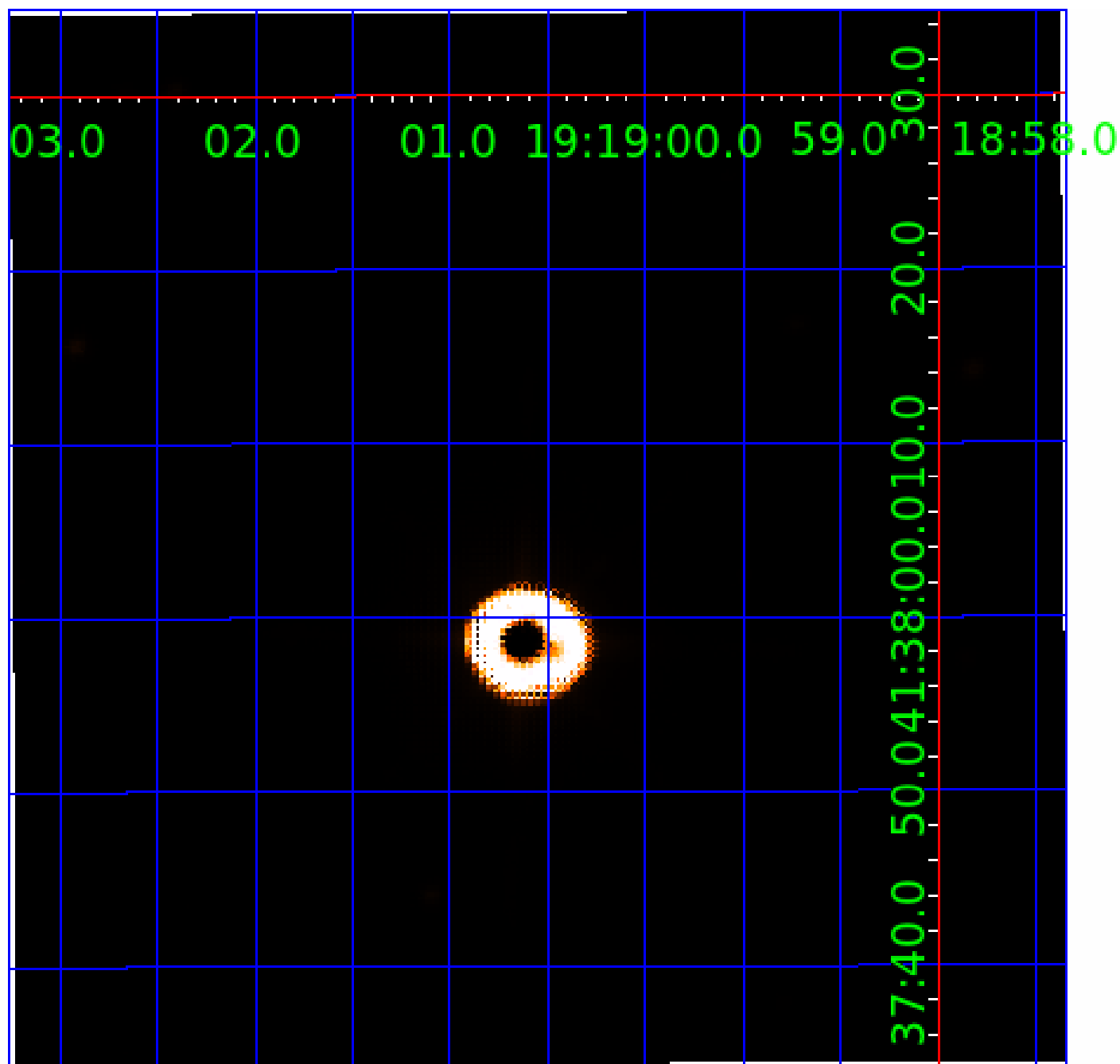
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





UKIRT Image

Declination





# KIC 006278762

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006278762-01	OBS	3158.05	9.740496	134.878351	122.6	1.762	31.8	38.1	0.72	5051	0.99	48.63
006278762-02	OBS	3158.04	7.743518	135.091938	83.6	2.963	30.2	33.0	0.72	5051	0.80	66.03
006278762-03	OBS	3158.03	6.189430	134.784170	76.9	2.300	29.6	31.9	0.72	5051	0.78	89.02
006278762-04	OBS	3158.02	4.545889	131.521874	69.0	1.825	27.6	31.0	0.72	5051	0.69	134.34
006278762-05	OBS	3158.01	3.600136	133.250777	119.0	2.000	22.8	-1.0	0.72	5051	0.77	183.34

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006278762-01	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
006278762-02	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
006278762-03	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
006278762-04	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
006278762-05	OBS	PC	1.00	0	0	0	0	CENT_SATURATED

**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.

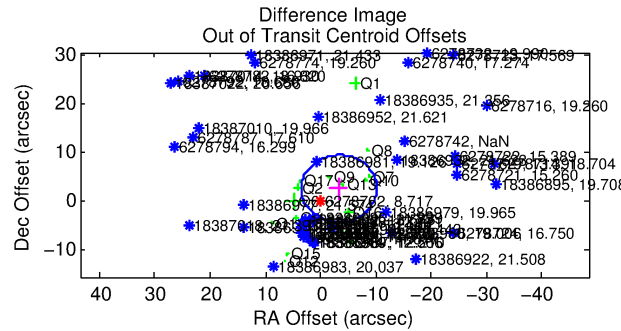
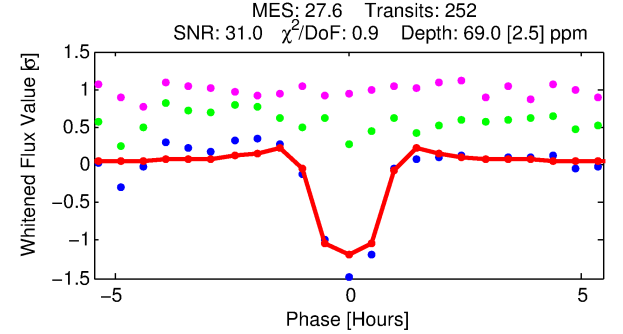
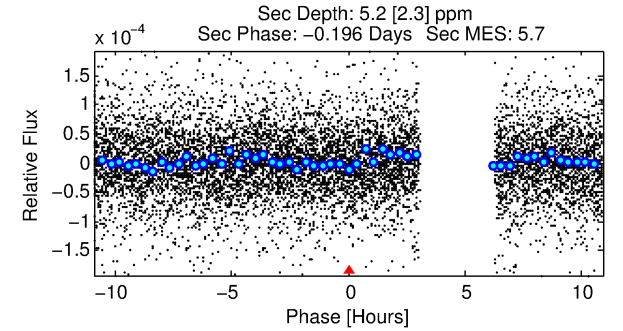
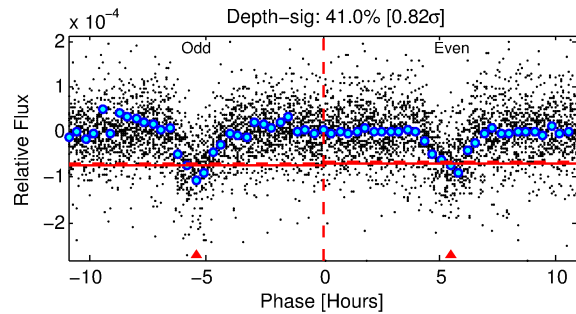
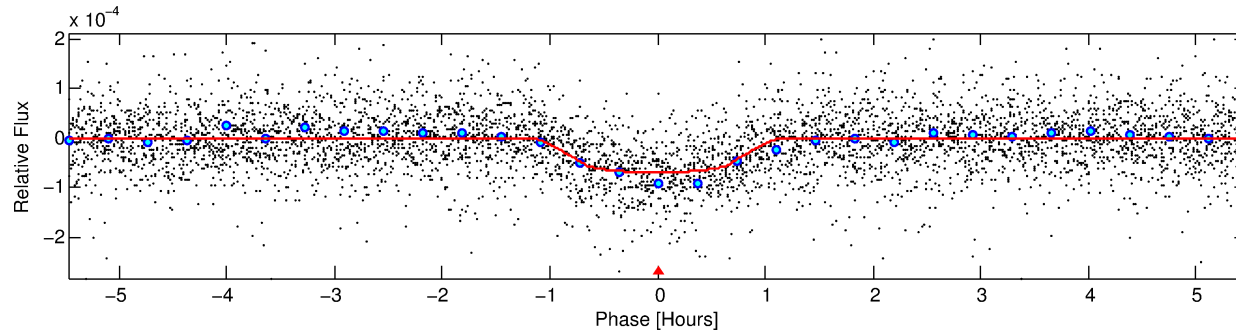
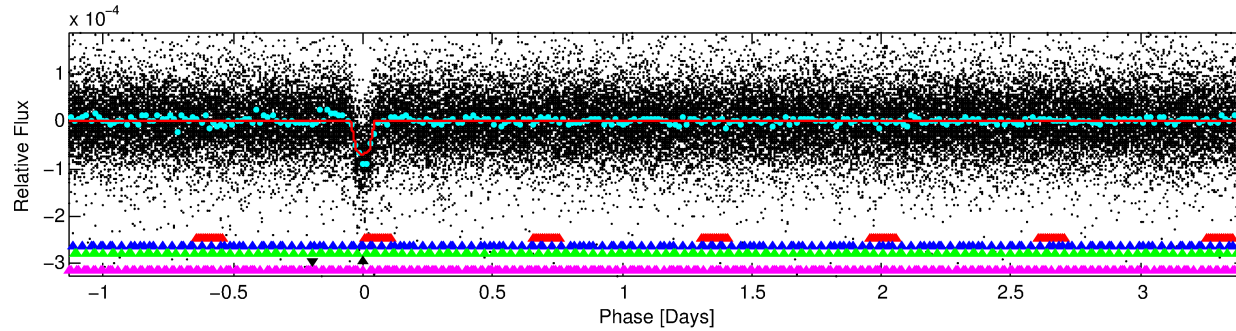
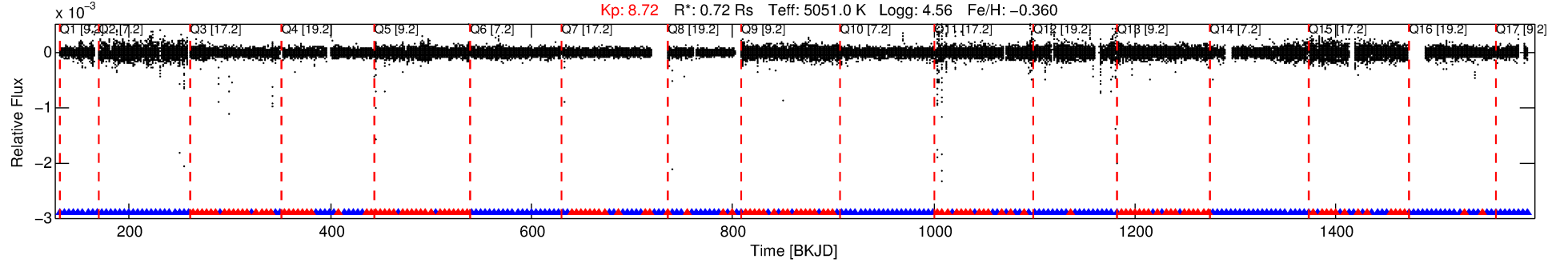
## Ephemeris Match Information For 006278762-04

No Significant Match Found

# DV One-Page Summary

KIC: 6278762 Candidate: 4 of 5 Period: 4.546 d  
KOI: K03158.02 Name: Kepler-444c Corr: 0.975

Kp: 8.72 R\*: 0.72 Rs Teff: 5051.0 K Logg: 4.56 Fe/H: -0.360



## DV Fit Results:

Period = 4.54589 [0.00001] d  
Epoch = 131.5219 [0.0011] BKJD  
Rp/R\* = 0.0087 [0.0016]  
a/R\* = 10.81 [7.80]  
b = 0.83 [0.27]  
Seff = 134.34 [21.24]  
Teq = 868 [34] K  
Rp = 0.69 [0.14] Re  
a = 0.0475 [0.0028] AU  
Ag = 13.75 [7.99] [1.60σ]  
Teffp = 2585 [383] K [4.46σ]

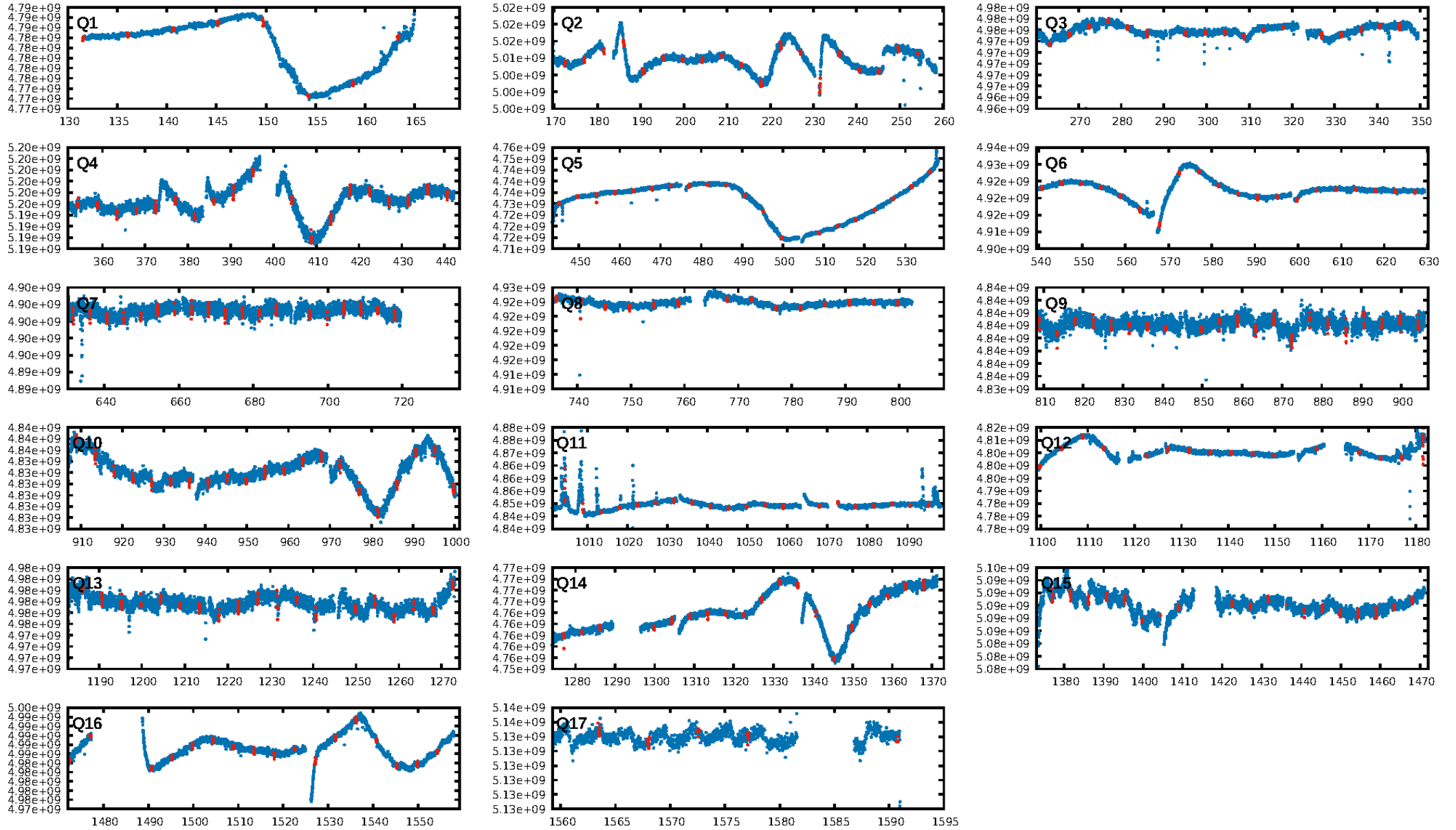
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [8.38σ]  
LongPeriod-sig: 100.0% [13.44σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.50 [119/240]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 5.3%  
Centroid-so: 6.022 arcsec [12.95σ]  
OotOffset-rm: 4.190 arcsec [1.84σ]  
KicOffset-rm: 4.004 arcsec [2.23σ]  
OotOffset-st: 4/4/4/4 [16]  
KicOffset-st: 4/4/4/4 [16]  
DiffImageQuality-fgm: 0.00 [0/16]  
DiffImageOverlap-fno: 1.00 [17/17]

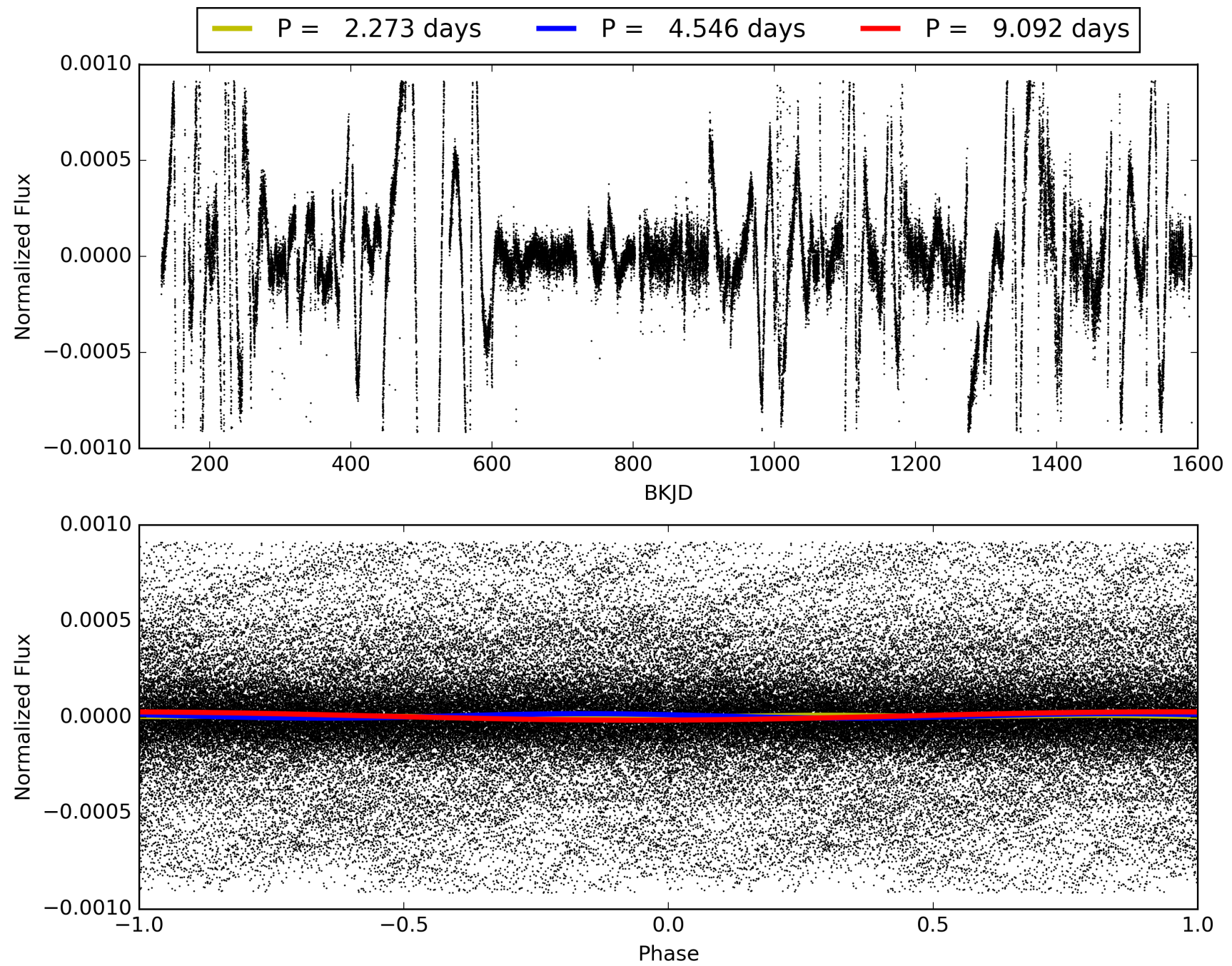
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:45:15 Z

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

# TCE 006278762-04, PDC Light Curves

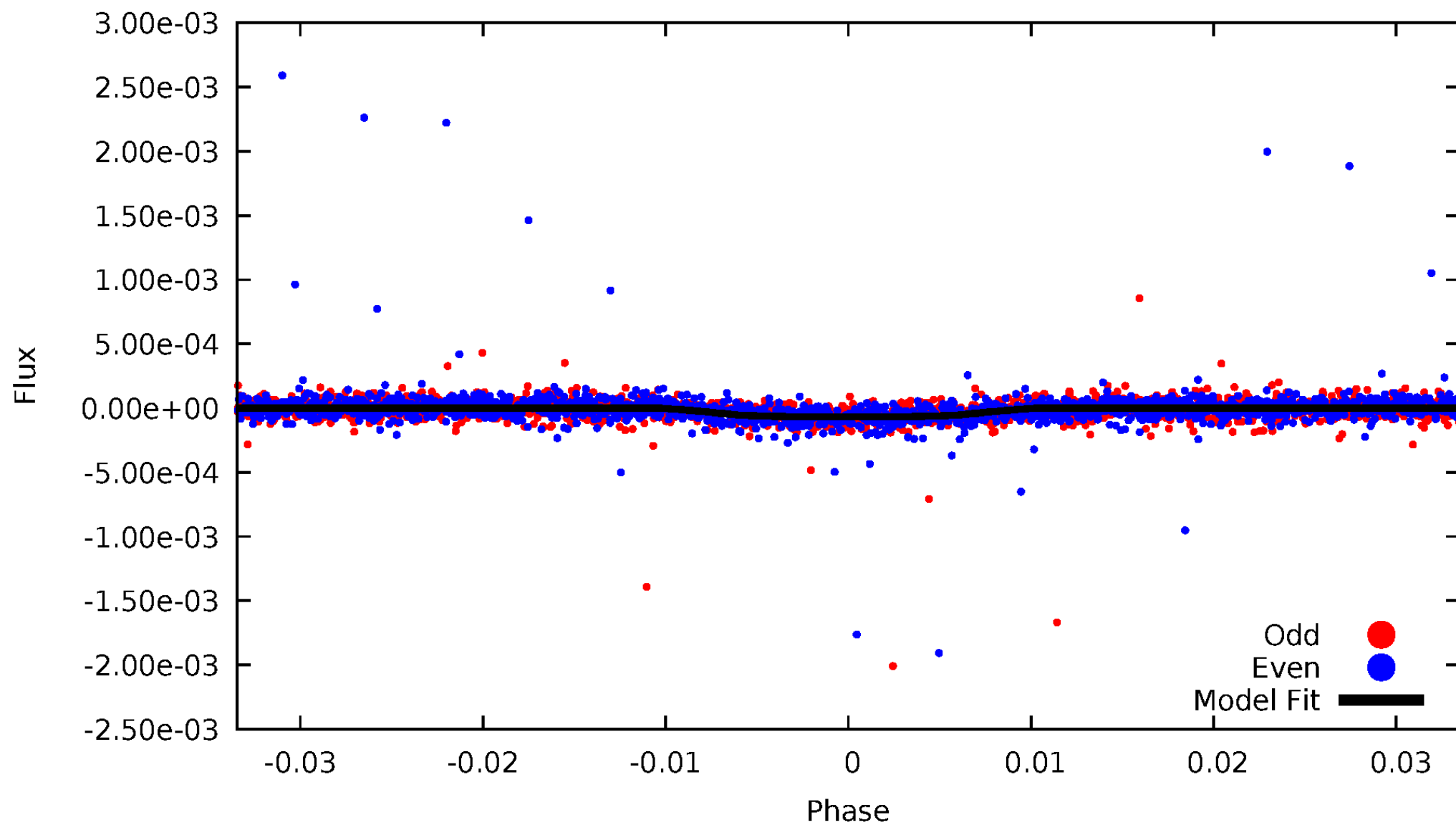


TCE 006278762-04



# DV Odd/Even

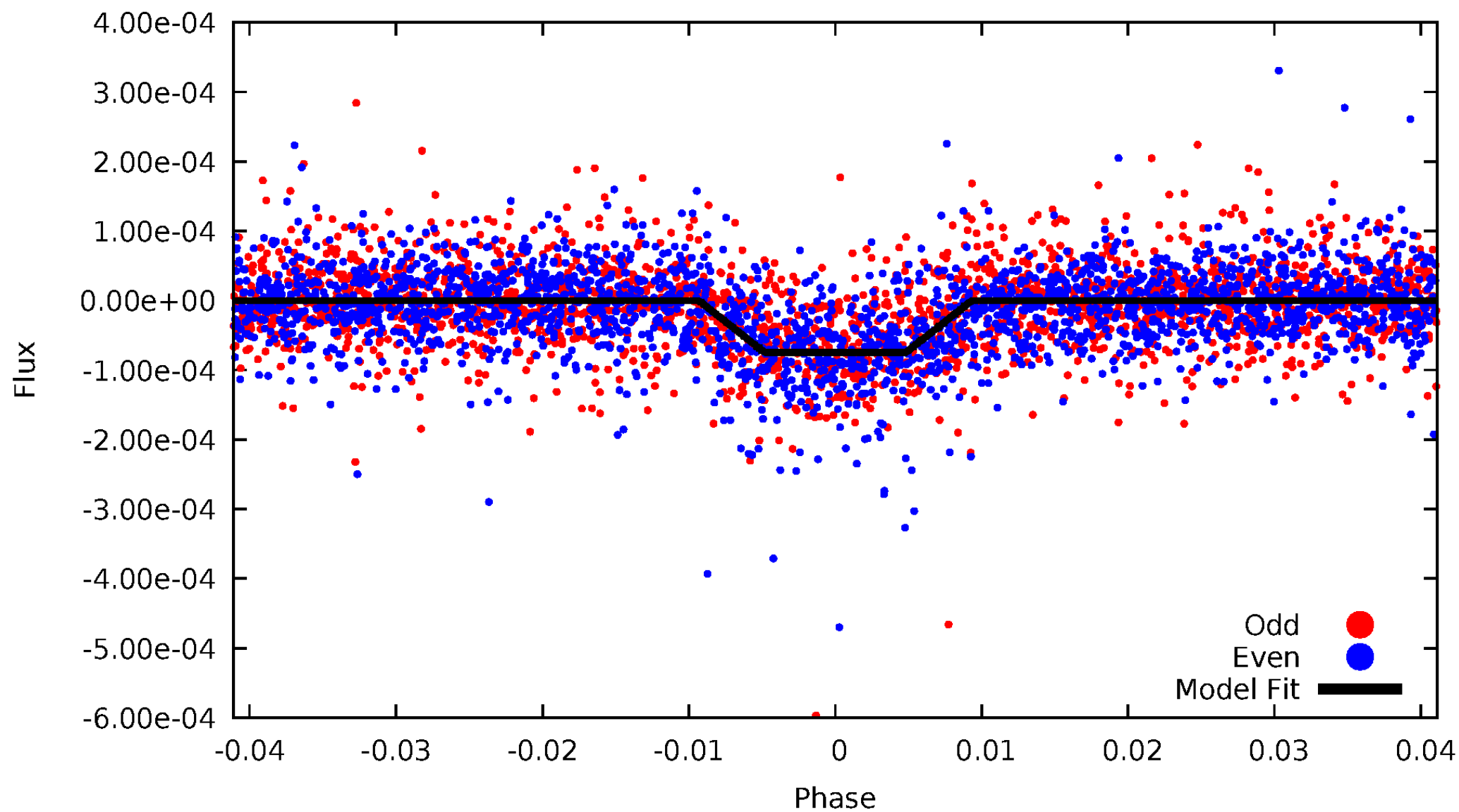
TCE 006278762-04





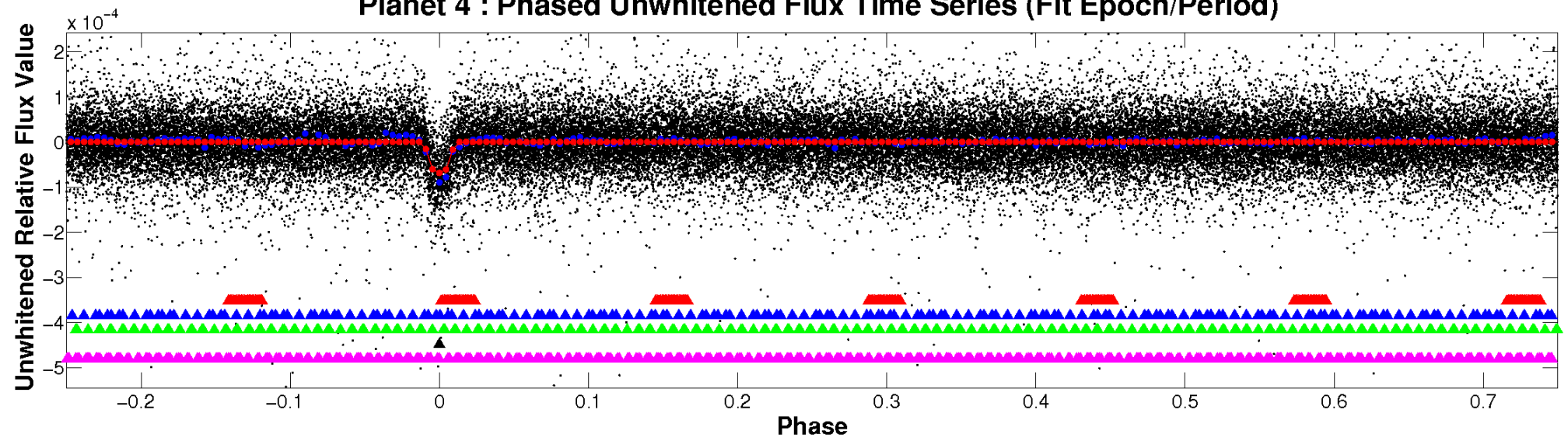
# ALT Odd/Even

TCE 006278762-04

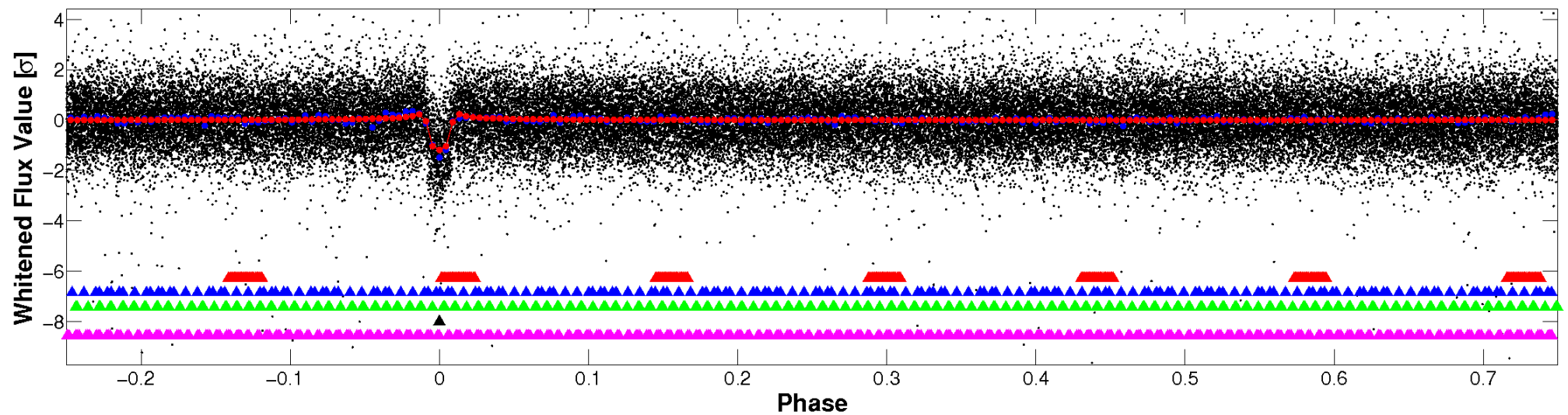


# Non-Whitened Vs. Whitened Light Curve

## Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

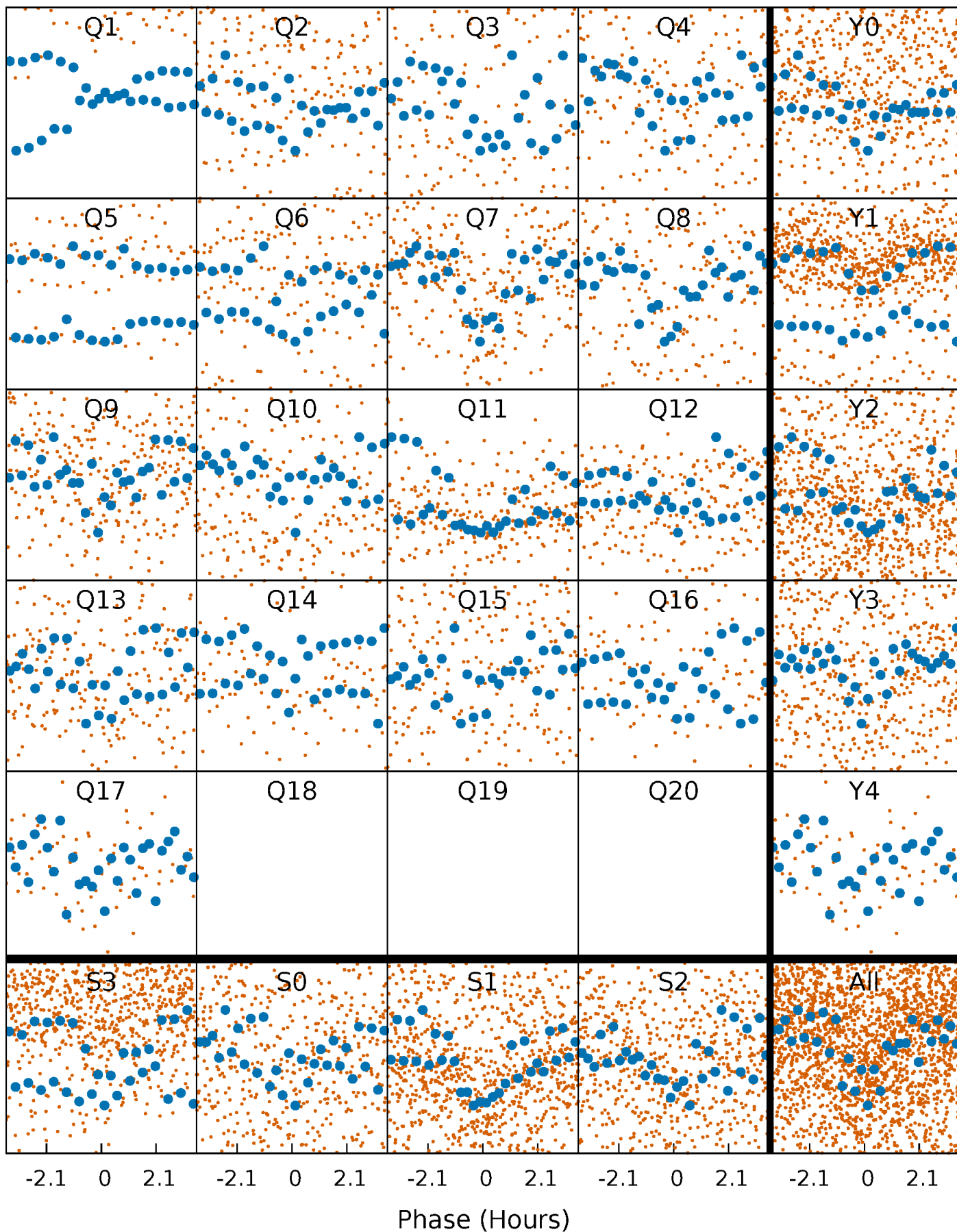


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



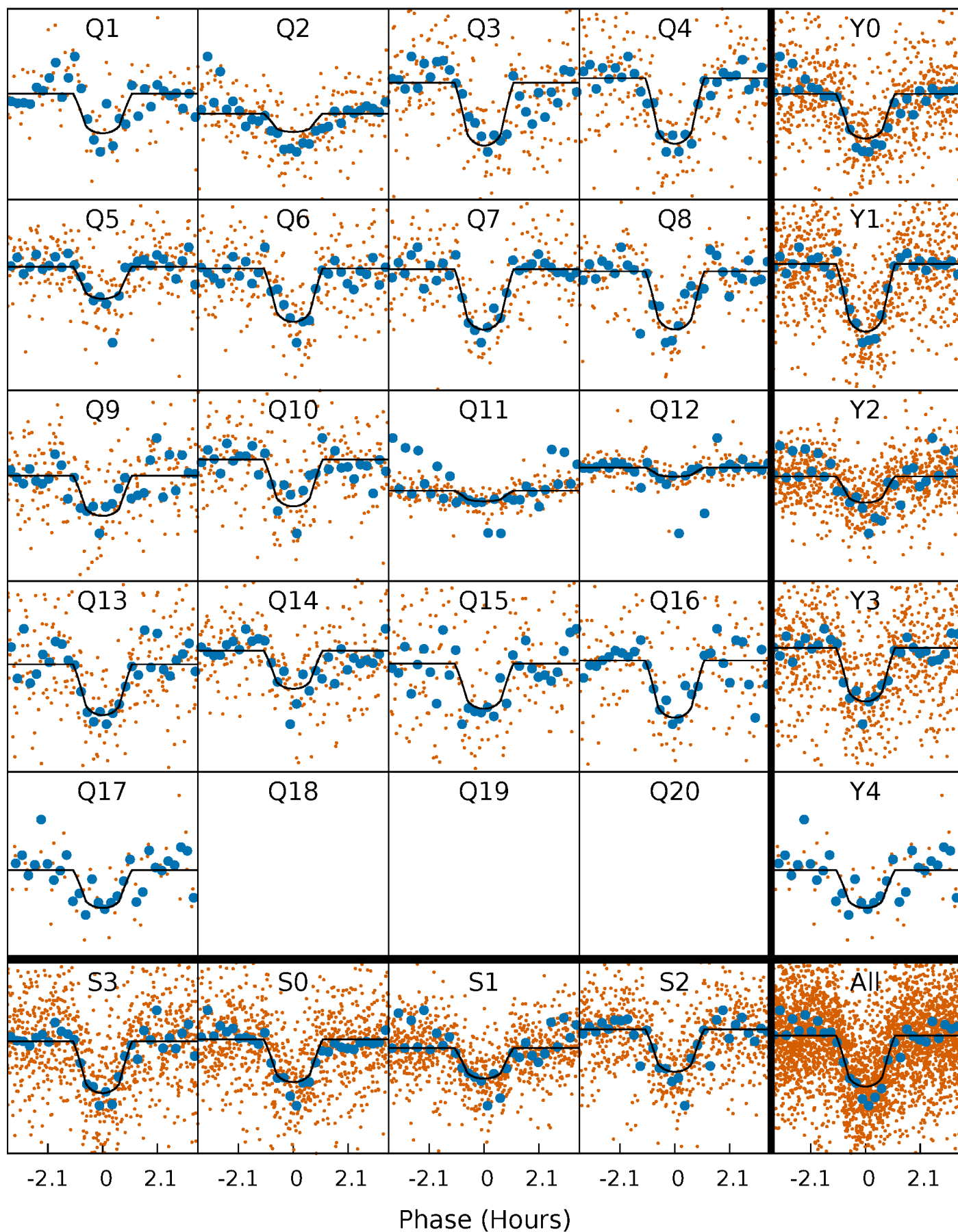
# PDC Quarter-Phased Transit Curves

TCE 006278762-04   P= 4.545889 Days    $T_0=131.521874$  (BKJD)



# DV Quarter-Phased Transit Curves

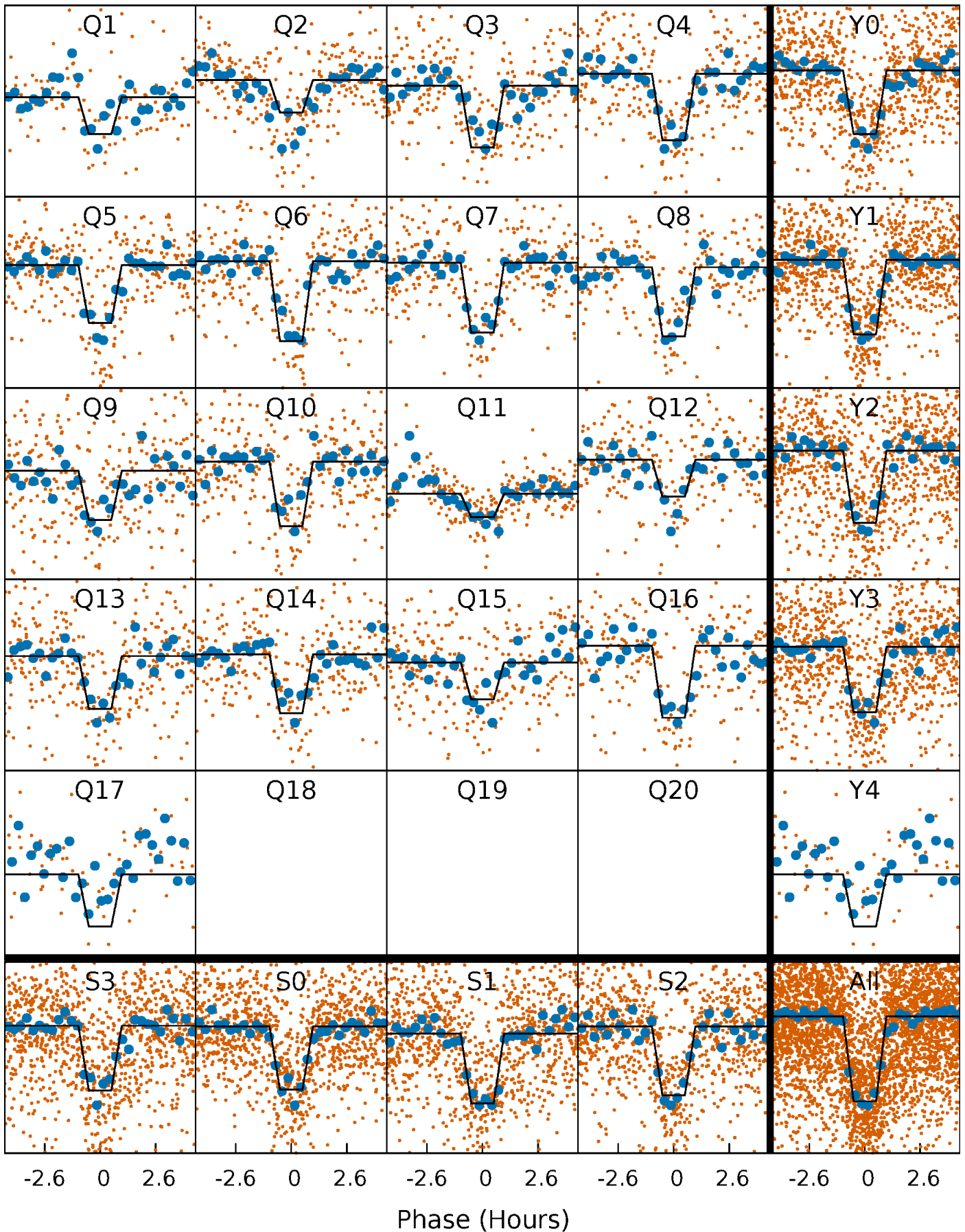
TCE 006278762-04     $P = 4.545889$  Days     $T_0 = 131.521874$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 006278762-04 P= 4.545854 Days  $T_0=131.526778$  (BKJD)

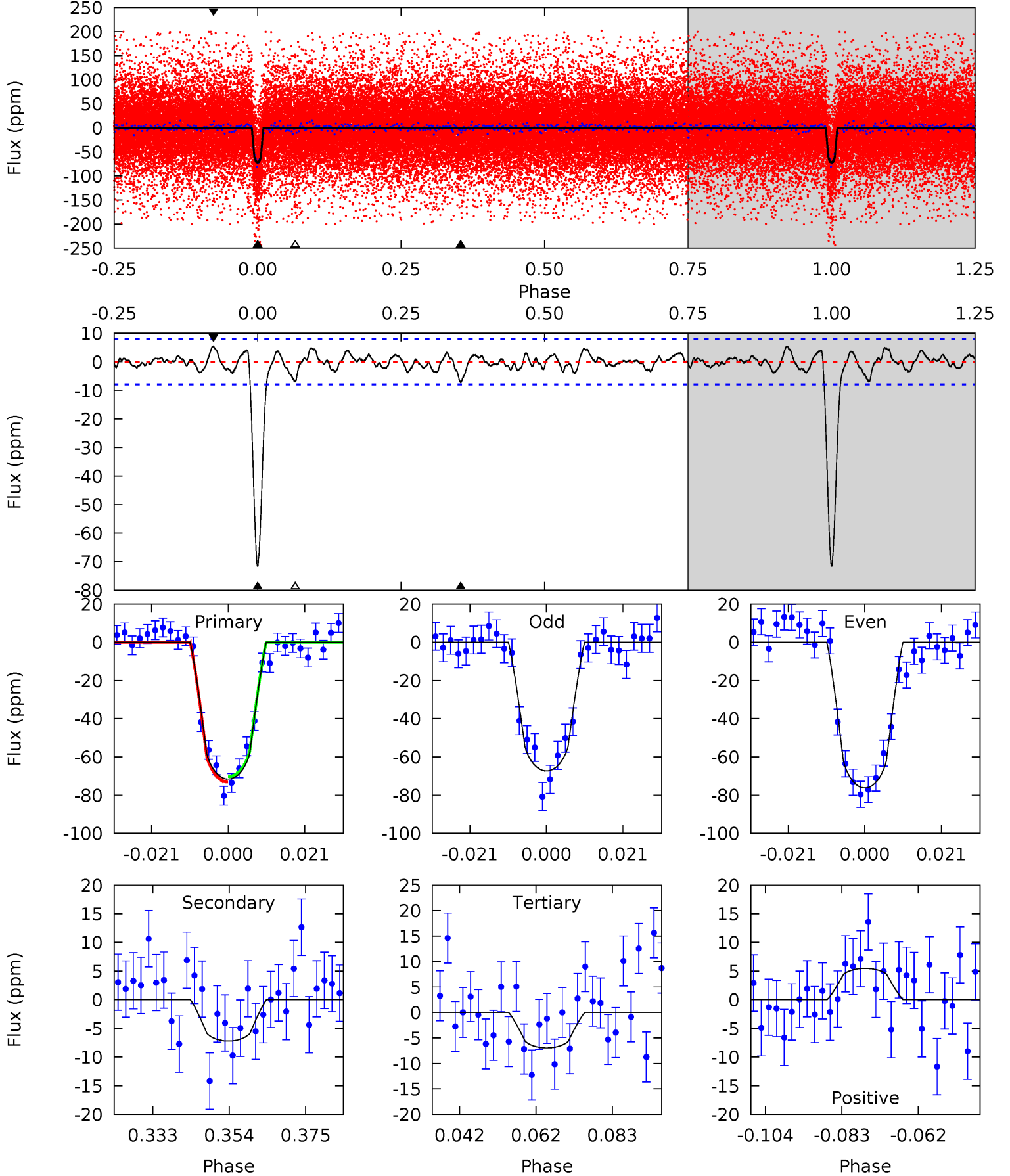




# DV Model-Shift Uniqueness Test

006278762-04, P = 4.545889 Days, E = 126.975985 Days

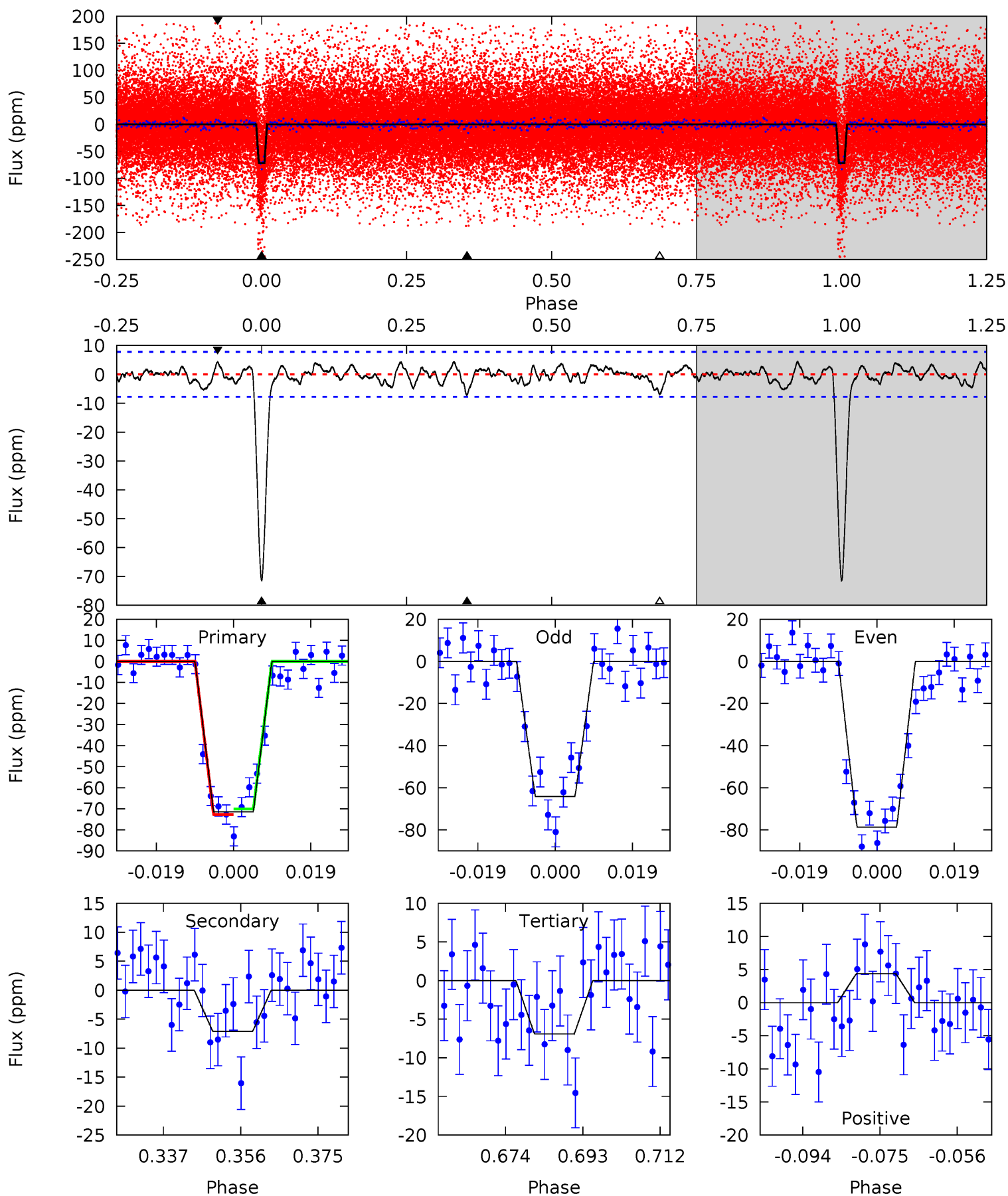
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.3	4.46	4.30	3.38	4.88	2.31	1.26	40.0	40.9	0.15	1.08	2.78	1.26	0.07	0.87



# Alt Model-Shift Uniqueness Test

006278762-04, P = 4.545854 Days, E = 126.980924 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
45.2	4.50	4.37	2.75	4.90	2.35	1.32	40.8	42.4	0.13	1.75	4.63	1.11	0.06	0.83



### Stellar Parameters For KIC 006278762

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5051^{+177}_{-141}$	$4.562^{+0.033}_{-0.023}$	$-0.360^{+0.350}_{-0.150}$	$0.721^{+0.057}_{-0.031}$	$0.692^{+0.099}_{-0.026}$	$2.601^{+0.317}_{-0.283}$
	+4%/-3%	+1%/-1%	+97%/-42%	+8%/-4%	+14%/-4%	+12%/-11%
Source	SPE69	AST69	SPE69	DSEP		

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

### Secondary Eclipse Parameters for KIC 006278762-04 / KOI 3158.02

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-7 \pm 2$	$0.69^{+0.13}_{-0.13}$	$1209^{+47}_{-37}$	$3308^{+254}_{-228}$	$19^{+10}_{-7}$
Alt.	$-7 \pm 2$	$0.68^{+0.14}_{-0.13}$	$1211^{+47}_{-38}$	$3304^{+291}_{-212}$	$19^{+11}_{-7}$

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

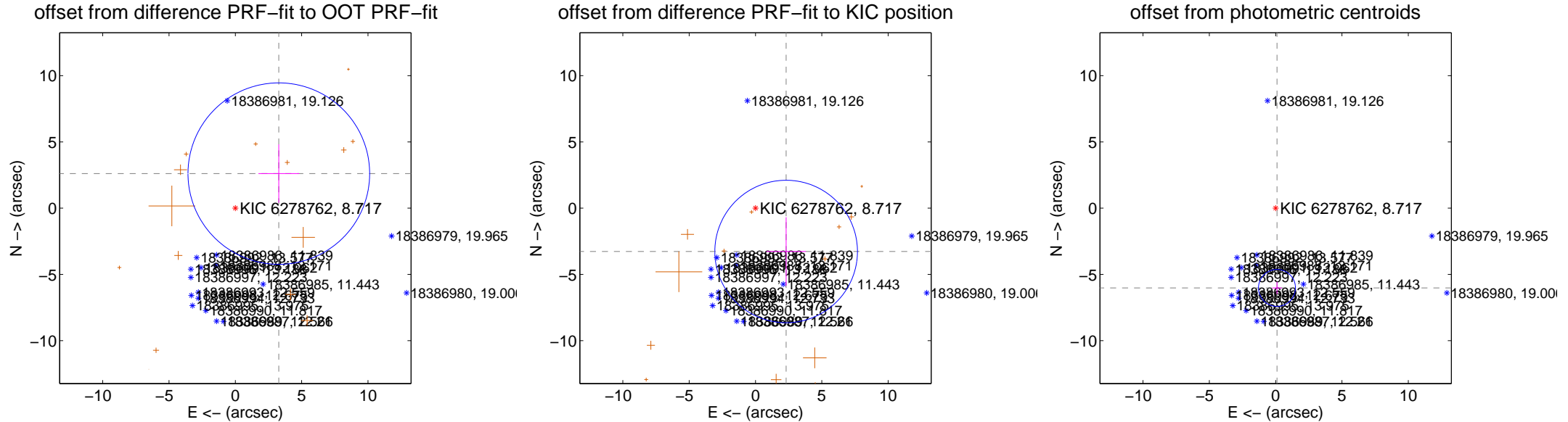
## DV Centroid Data

Supplemental centroid analysis for 006278762-04. **Kepler magnitude: 8.72.** Transit SNR 31.01

There are 0 quarters with good PRF difference image offsets

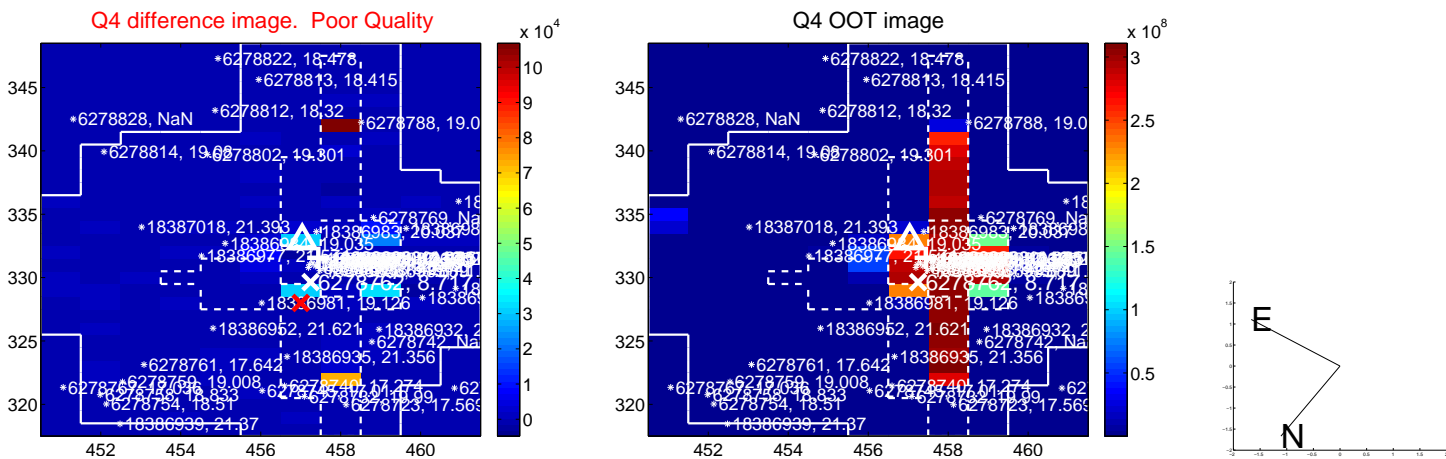
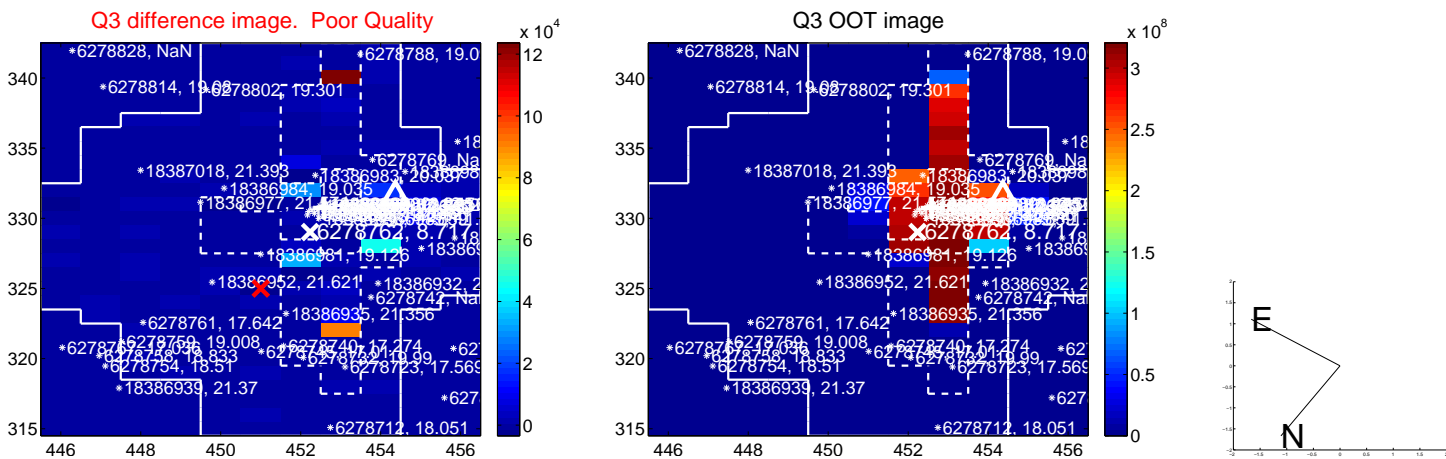
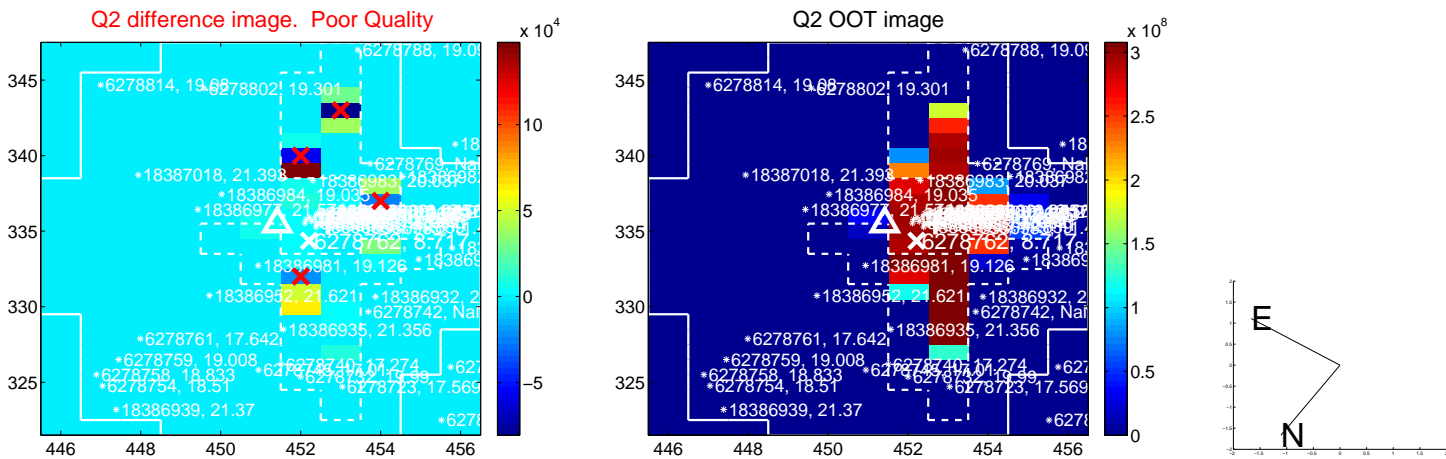
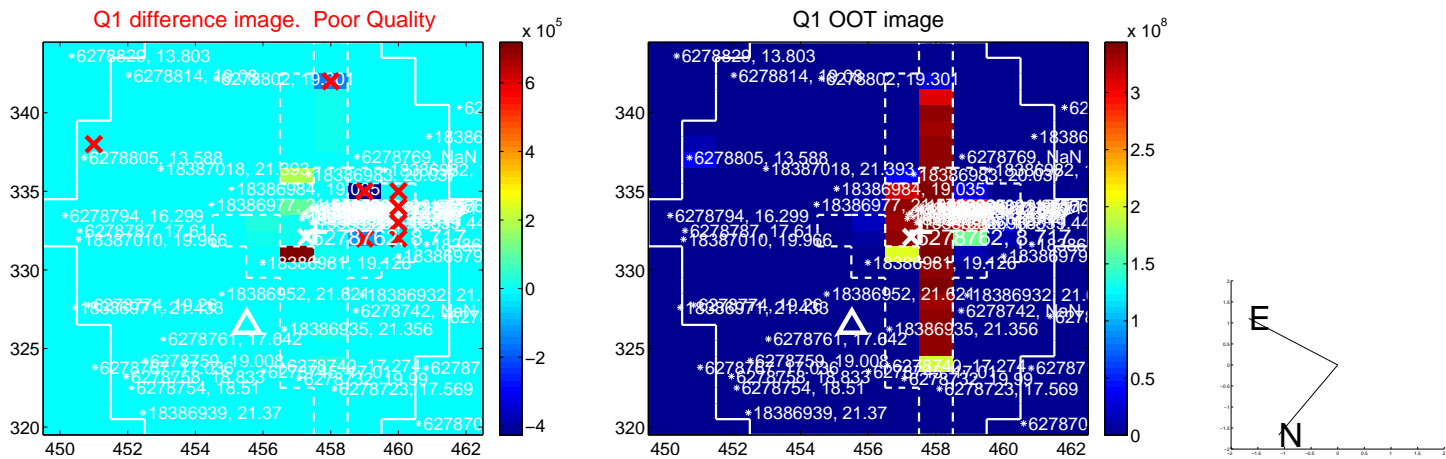
The OOT PRF centroid is offset from the target star catalog position by about 7.44 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.190 \pm 2.283$	1.84	$-3.279 \pm 1.539$	$2.610 \pm 2.207$
PRF-fit source offset from KIC position	$4.004 \pm 1.792$	2.23	$-2.311 \pm 1.490$	$-3.270 \pm 2.581$
photometric centroid source offset	<b><math>6.02 \pm 0.46</math></b>	<b>12.95</b>	$-0.10 \pm 0.36$	$-6.02 \pm 0.46$



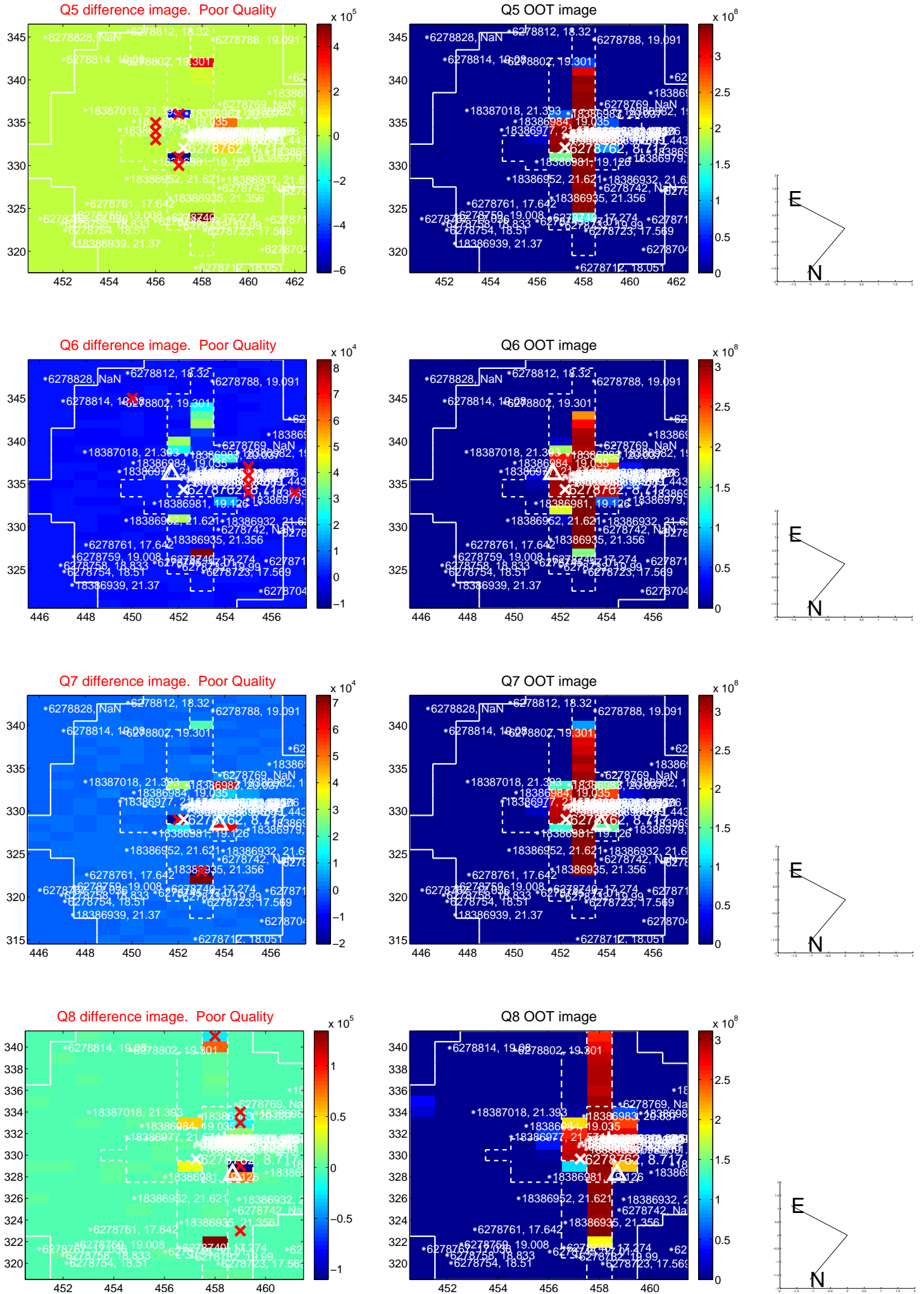
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

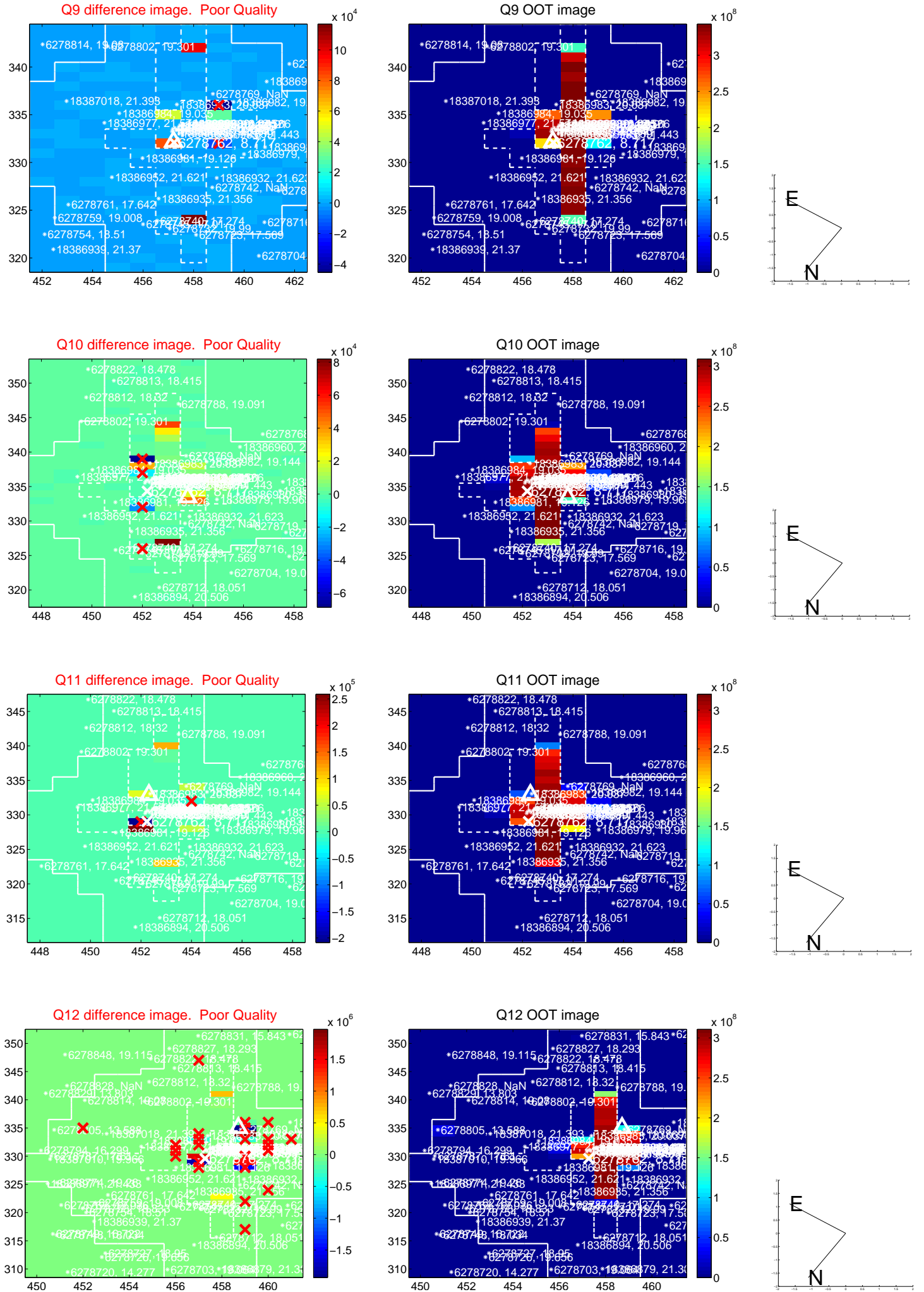




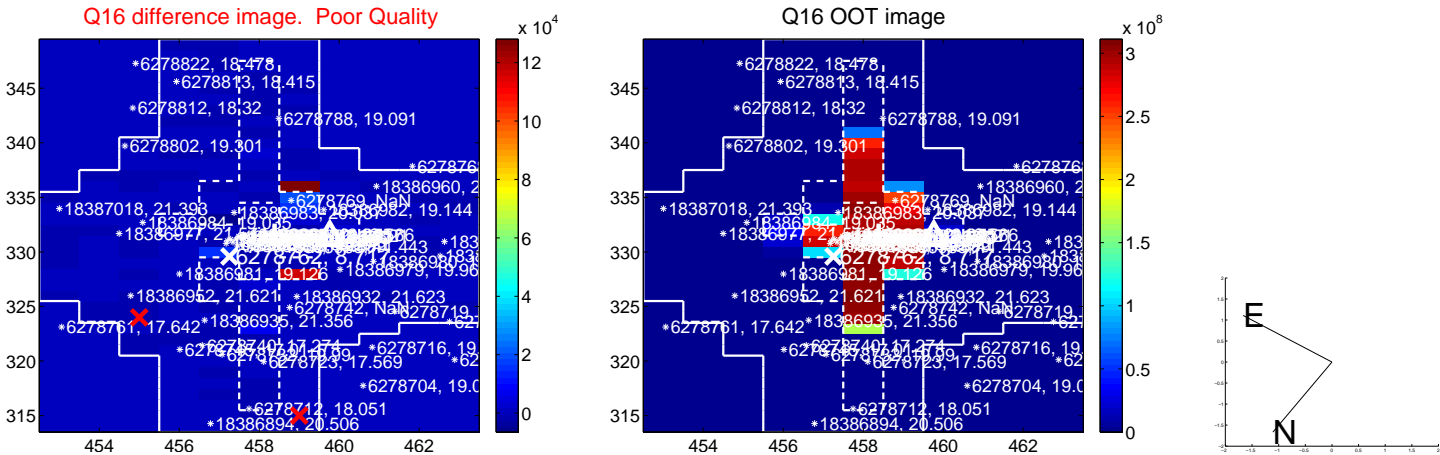
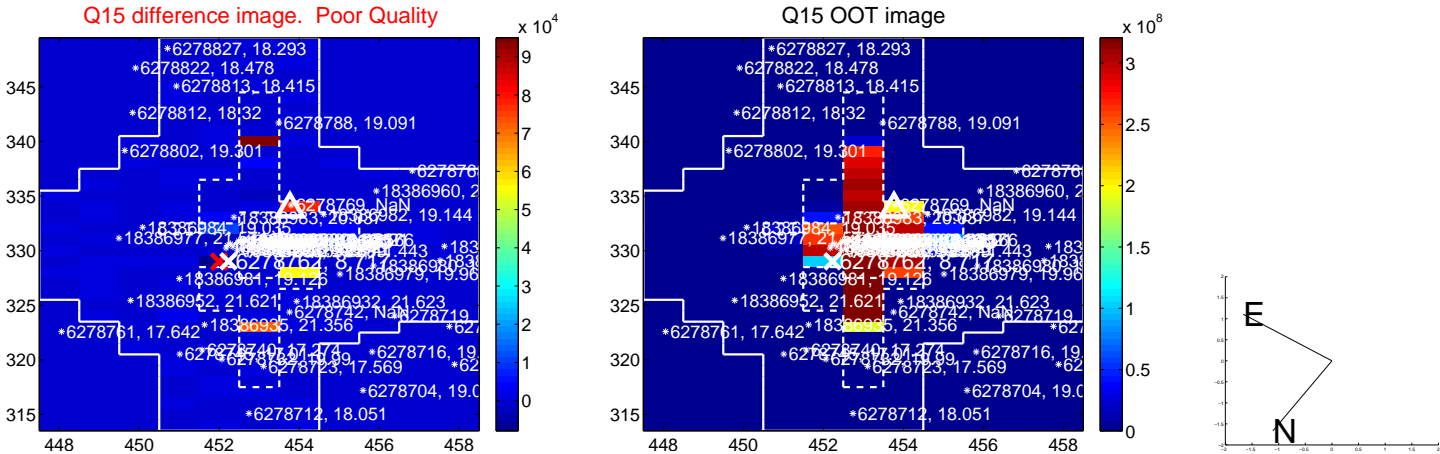
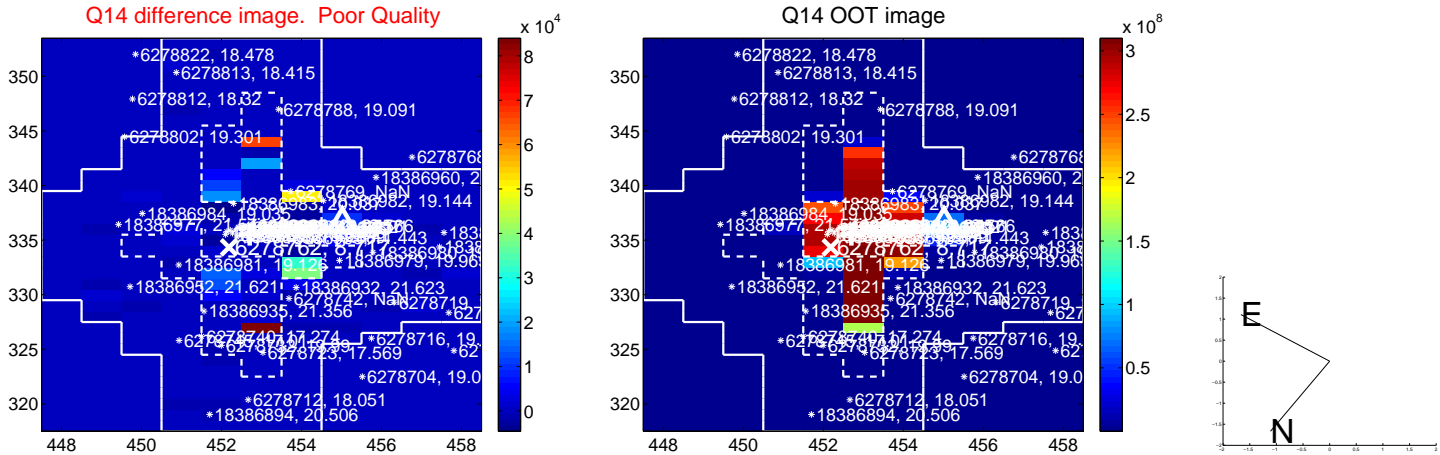
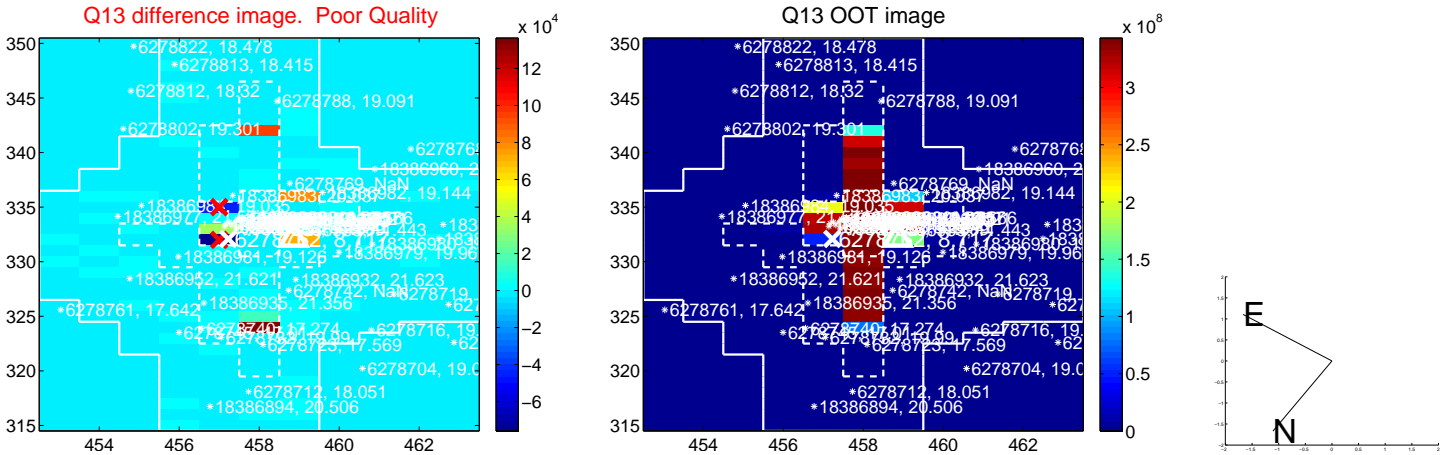
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



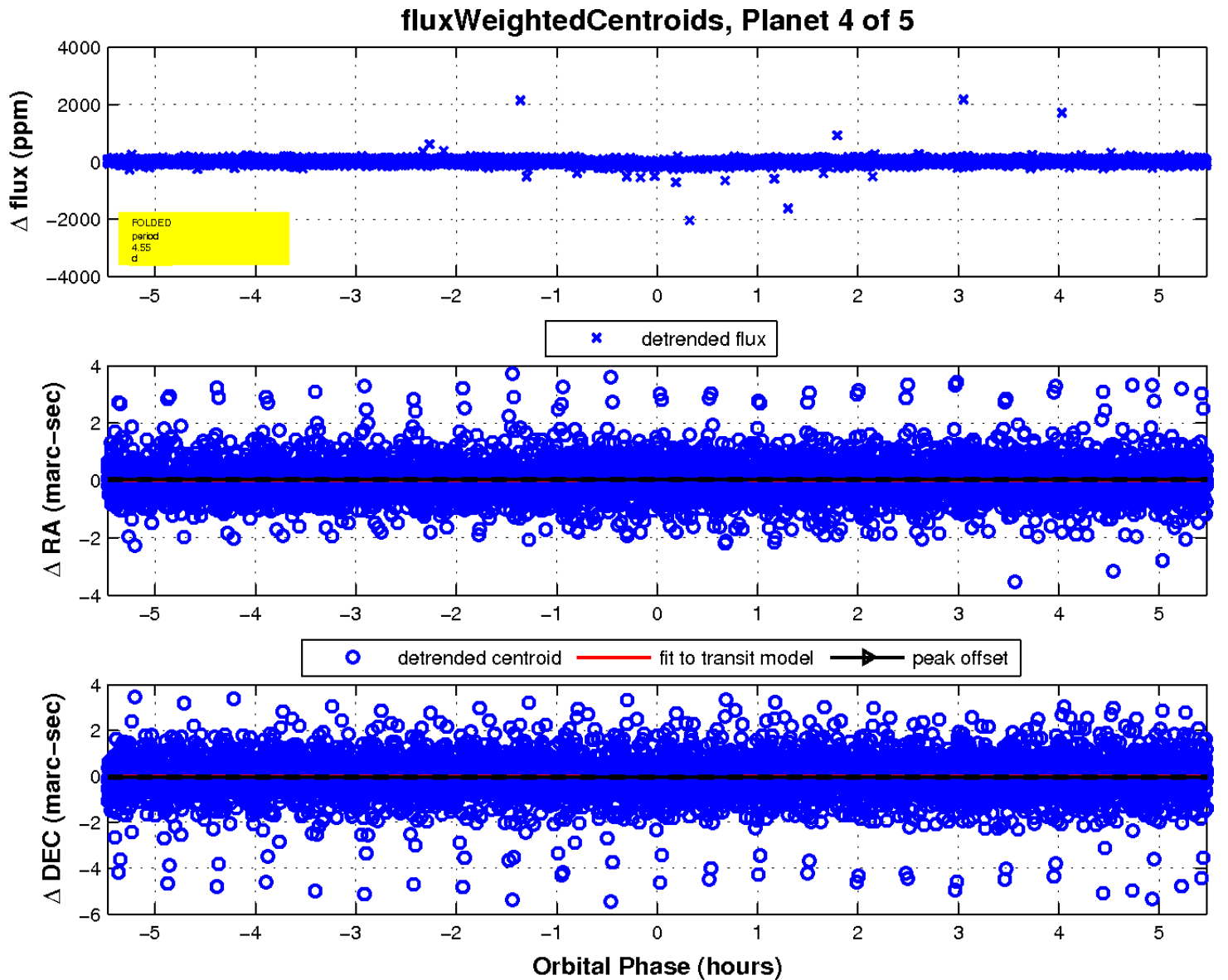
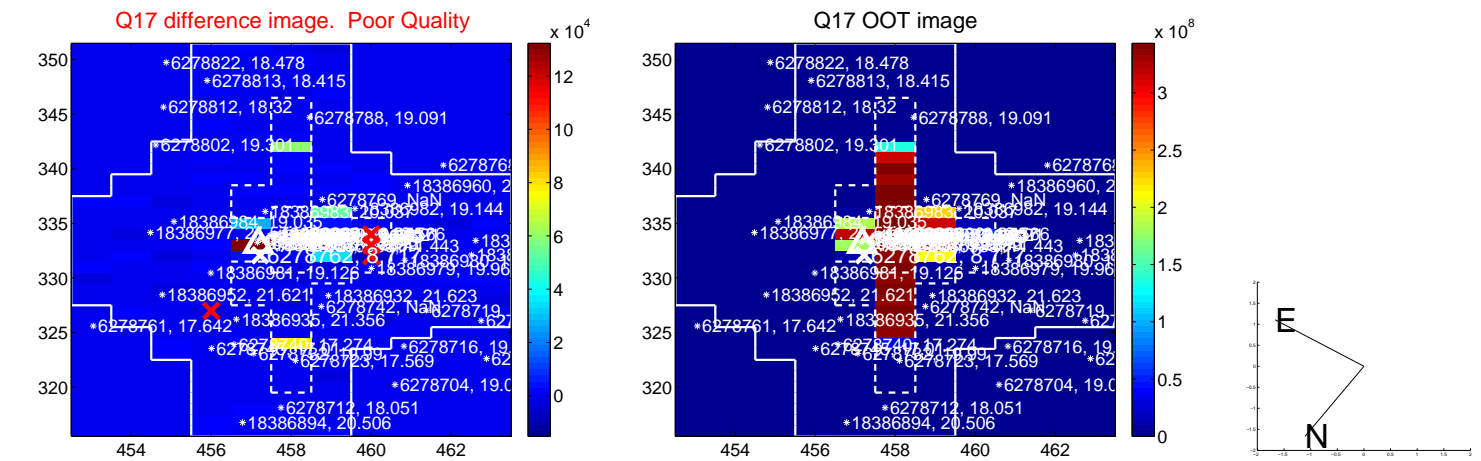
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

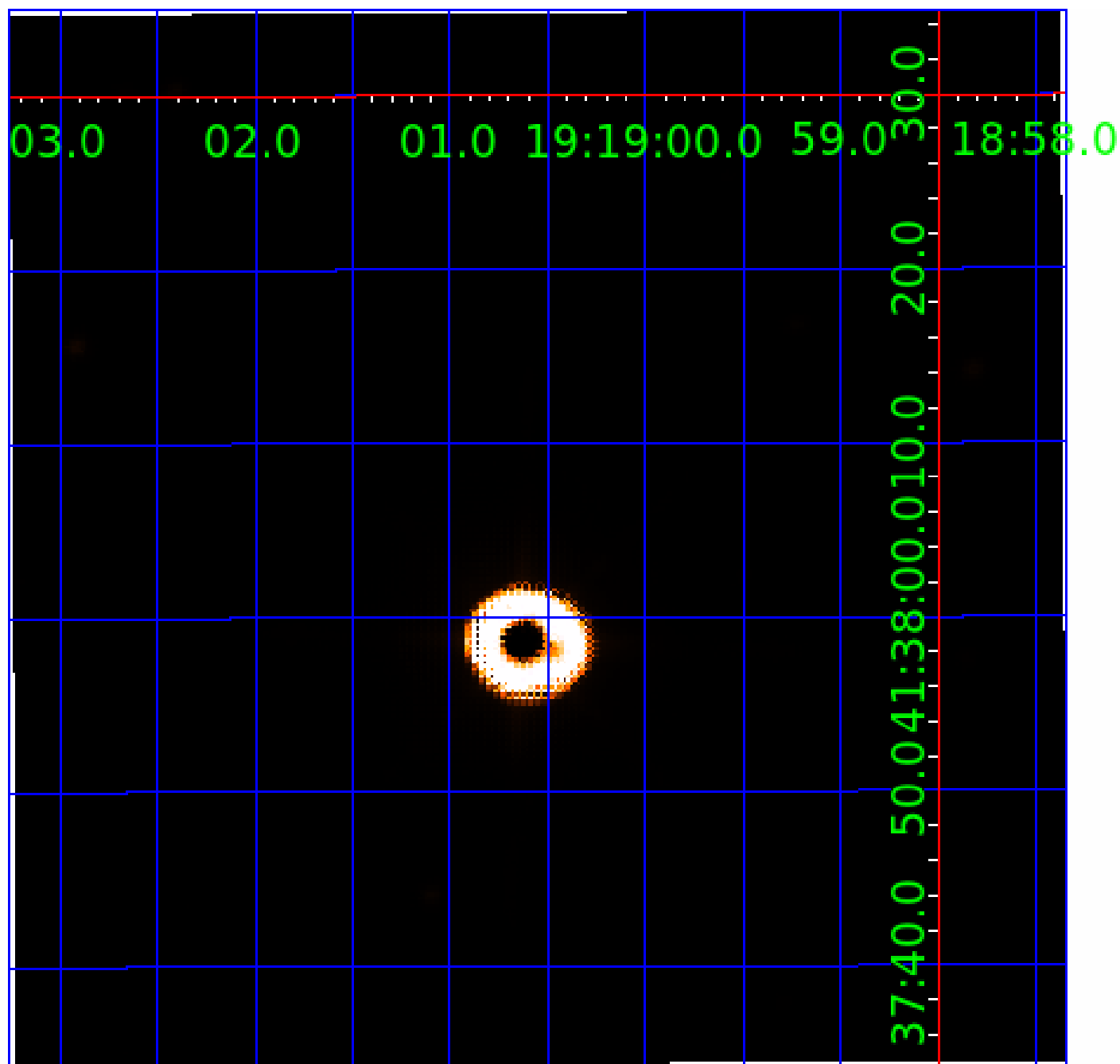


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\Delta$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 006278762

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006278762-01	OBS	3158.05	9.740496	134.878351	122.6	1.762	31.8	38.1	0.72	5051	0.99	48.63
006278762-02	OBS	3158.04	7.743518	135.091938	83.6	2.963	30.2	33.0	0.72	5051	0.80	66.03
006278762-03	OBS	3158.03	6.189430	134.784170	76.9	2.300	29.6	31.9	0.72	5051	0.78	89.02
006278762-04	OBS	3158.02	4.545889	131.521874	69.0	1.825	27.6	31.0	0.72	5051	0.69	134.34
006278762-05	OBS	3158.01	3.600136	133.250777	119.0	2.000	22.8	-1.0	0.72	5051	0.77	183.34

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006278762-01	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
006278762-02	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
006278762-03	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
006278762-04	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
006278762-05	OBS	PC	1.00	0	0	0	0	CENT_SATURATED

**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.

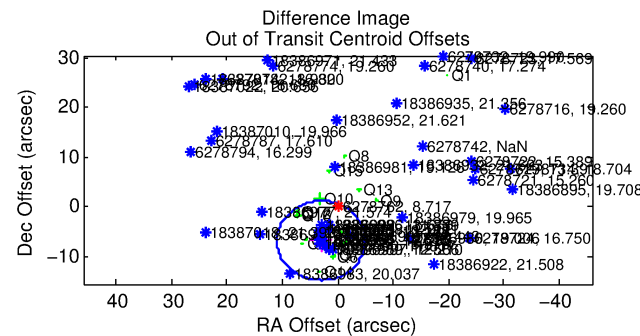
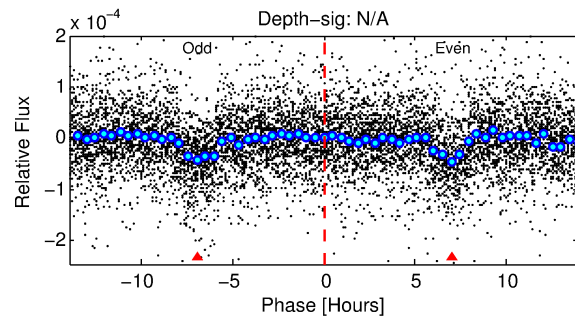
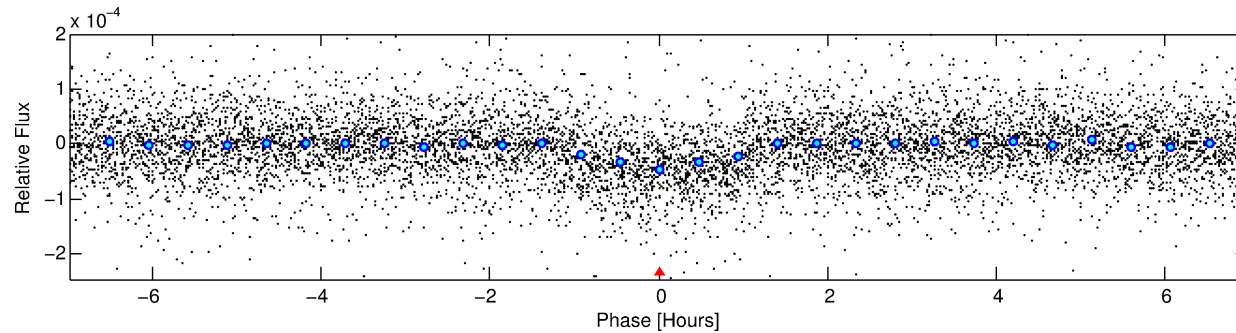
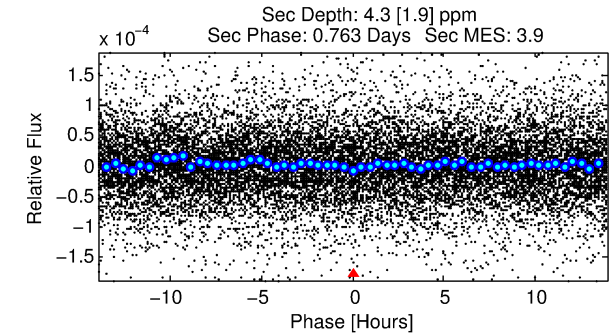
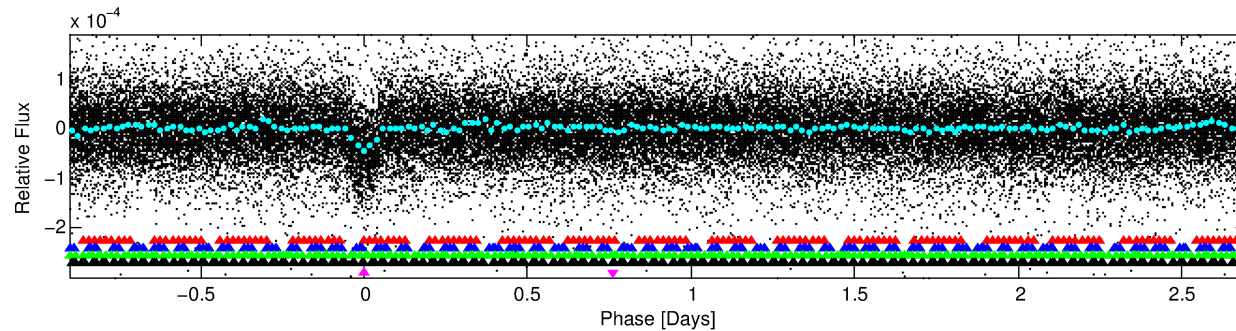
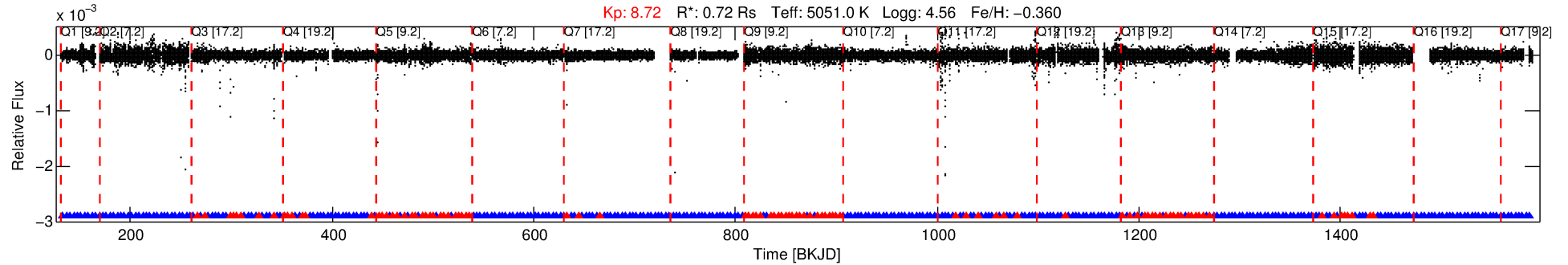
## Ephemeris Match Information For 006278762-05

No Significant Match Found

# DV One-Page Summary

KIC: 6278762 Candidate: 5 of 5 Period: 3.600 d  
KOI: K03158.01 Name: Kepler-444b Corr: 0.944

Kp: 8.72 R\*: 0.72 Rs Teff: 5051.0 K Logg: 4.56 Fe/H: -0.360



## TPS TCE Results:

Period = 3.60014 d  
Epoch = 133.2508 BKJD

DV fit results are unavailable

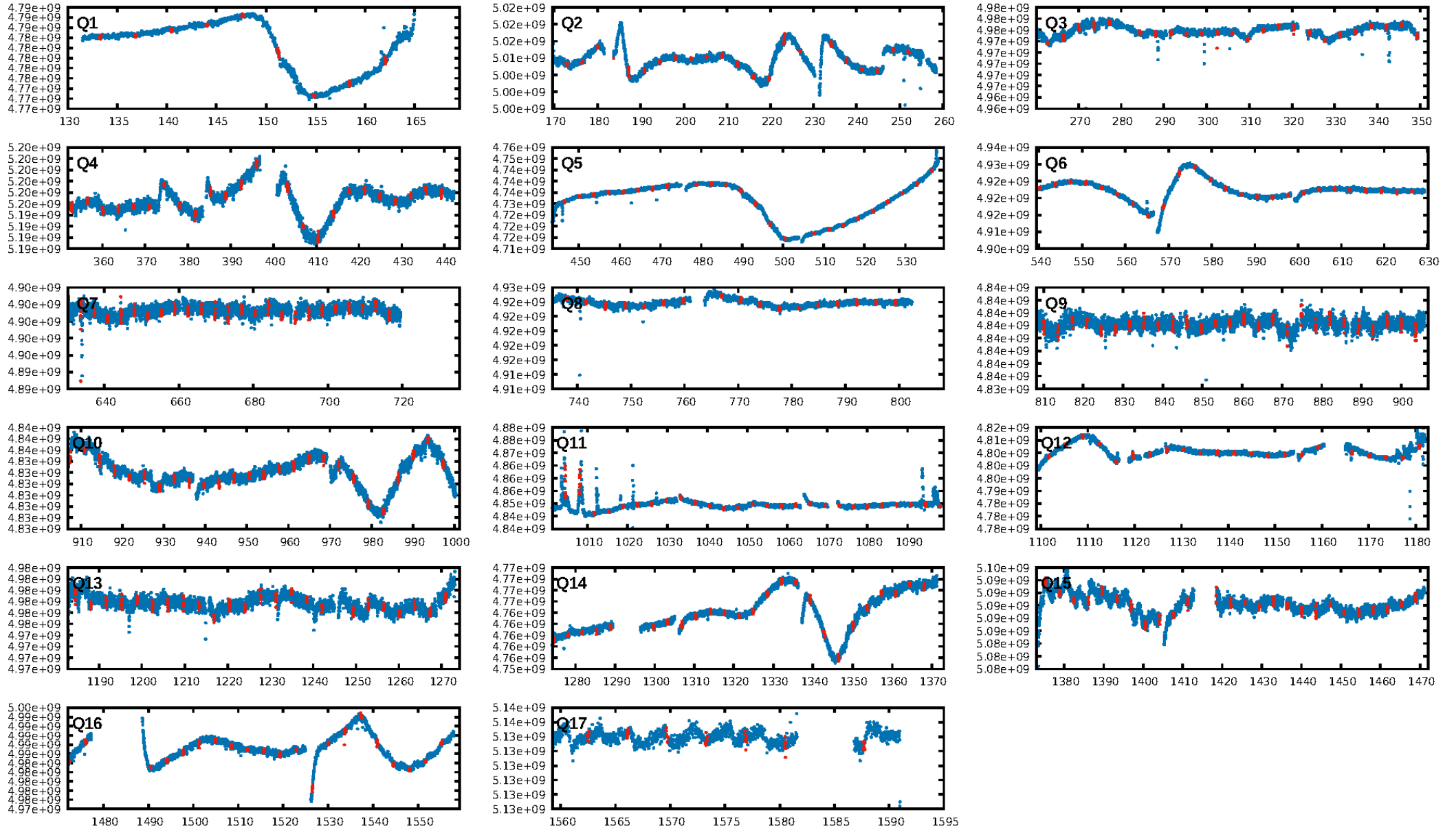
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [8.38σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.70 [223/317]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 18.3%  
Centroid-so: 5.904 arcsec [10.45σ]  
OotOffset-rm: 7.407 arcsec [2.78σ]  
KicOffset-rm: 12.780 arcsec [4.50σ]  
OotOffset-st: 3/4/4/5 [16]  
KicOffset-st: 3/4/4/5 [16]  
DiffImageQuality-fgm: 0.00 [0/16]  
DiffImageOverlap-fno: 1.00 [17/17]

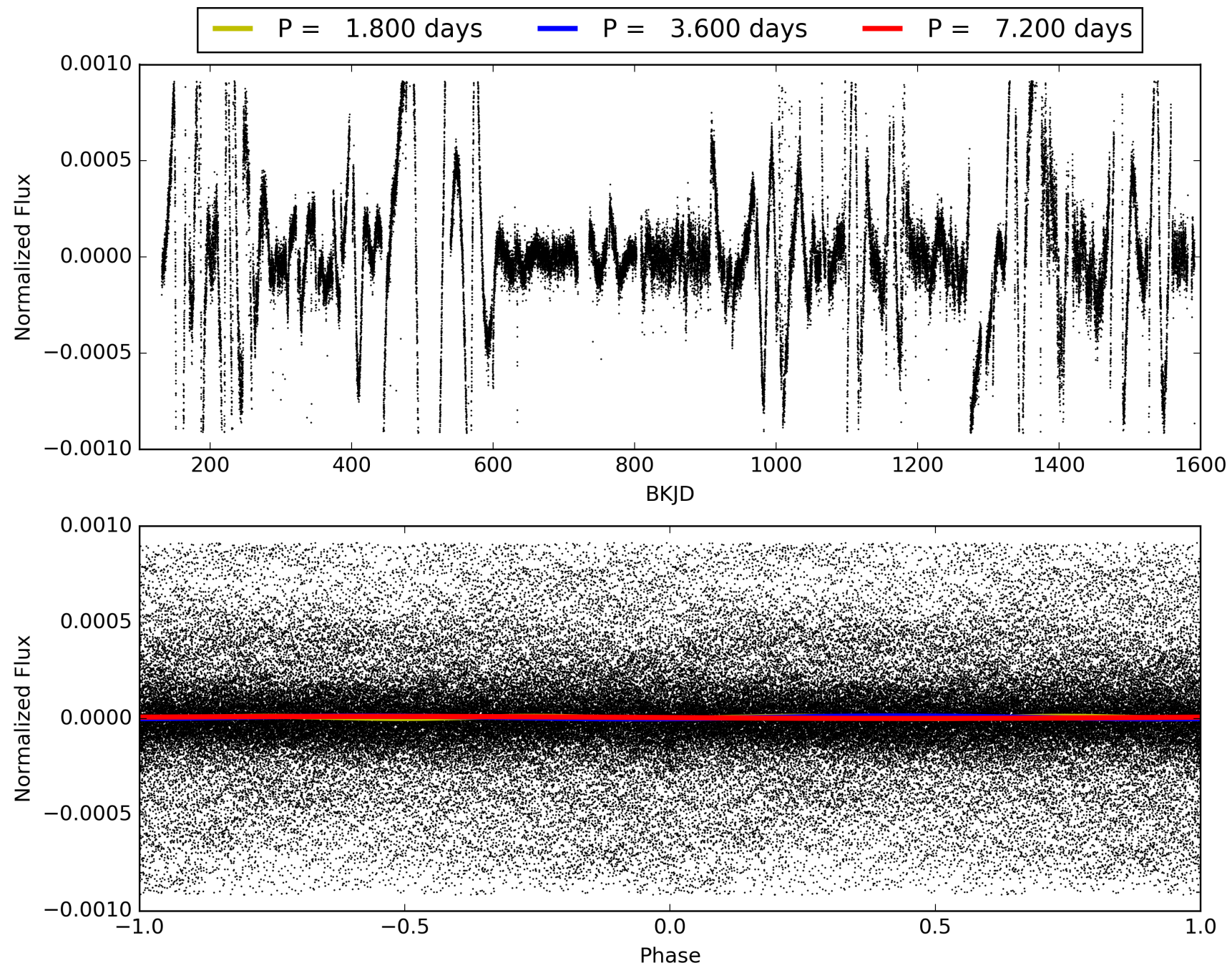
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:45:21 Z

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

# TCE 006278762-05, PDC Light Curves

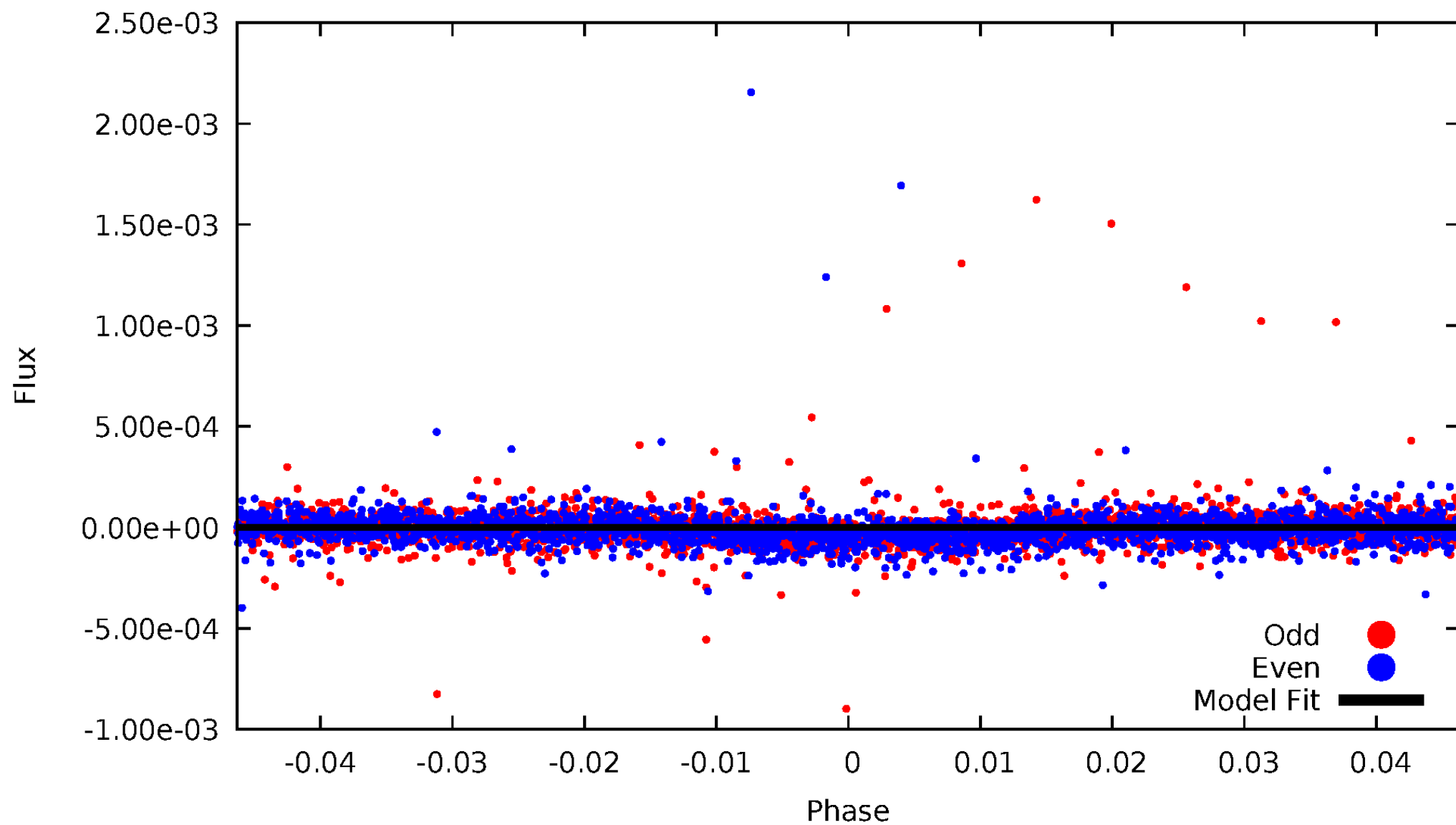


TCE 006278762-05



# DV Odd/Even

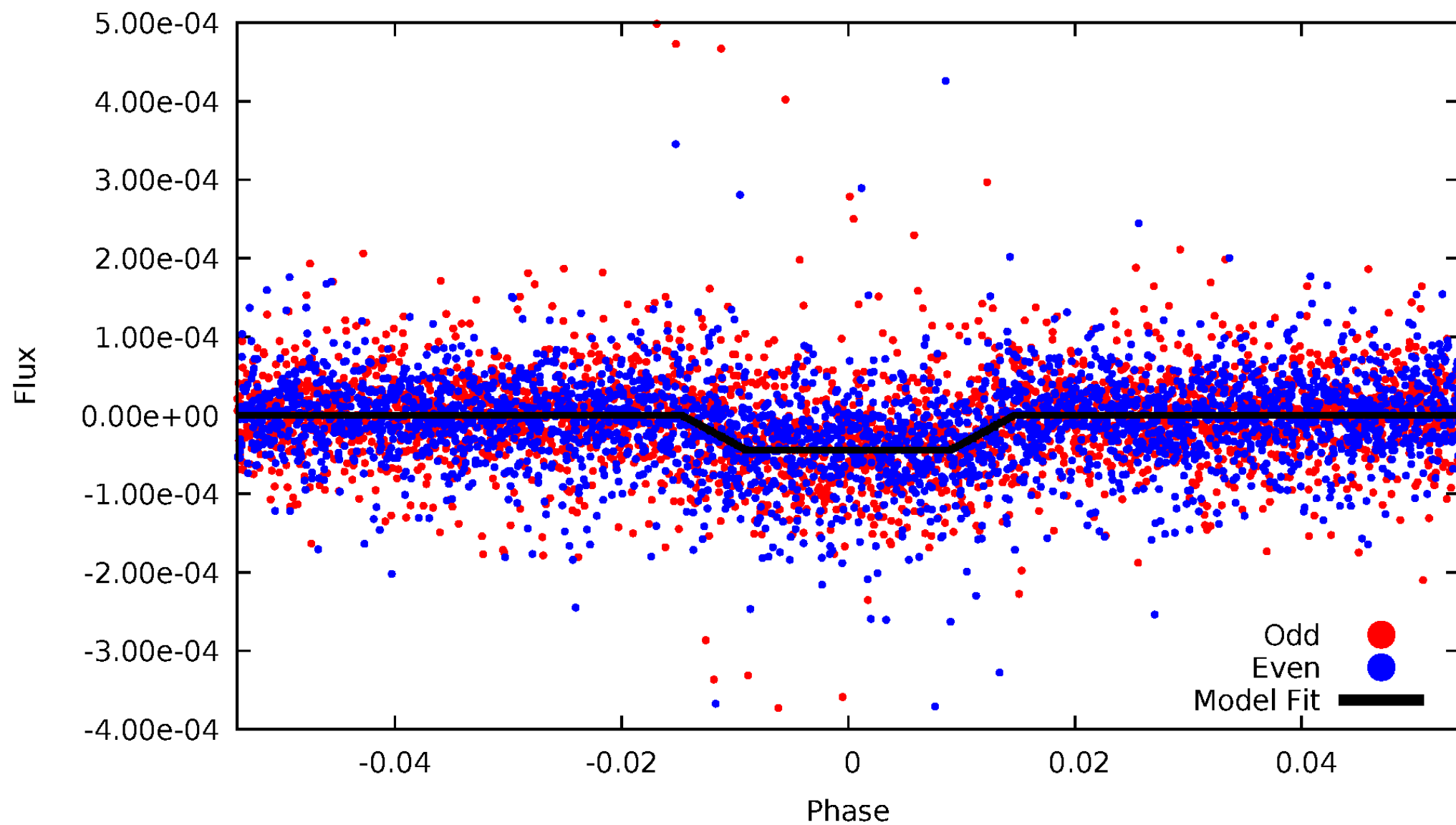
TCE 006278762-05



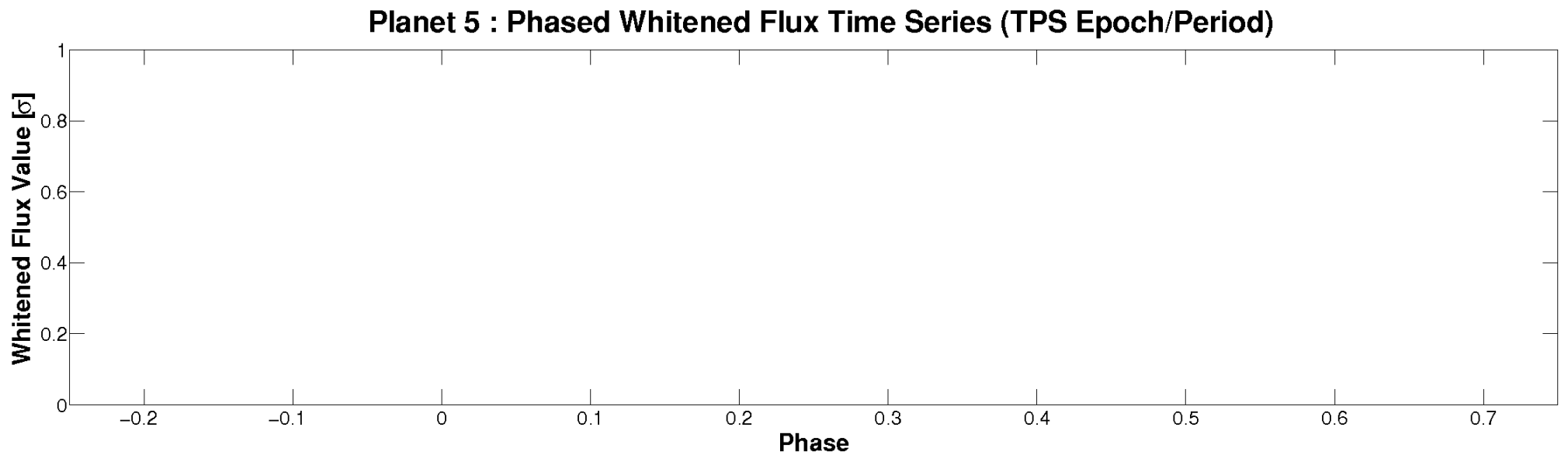
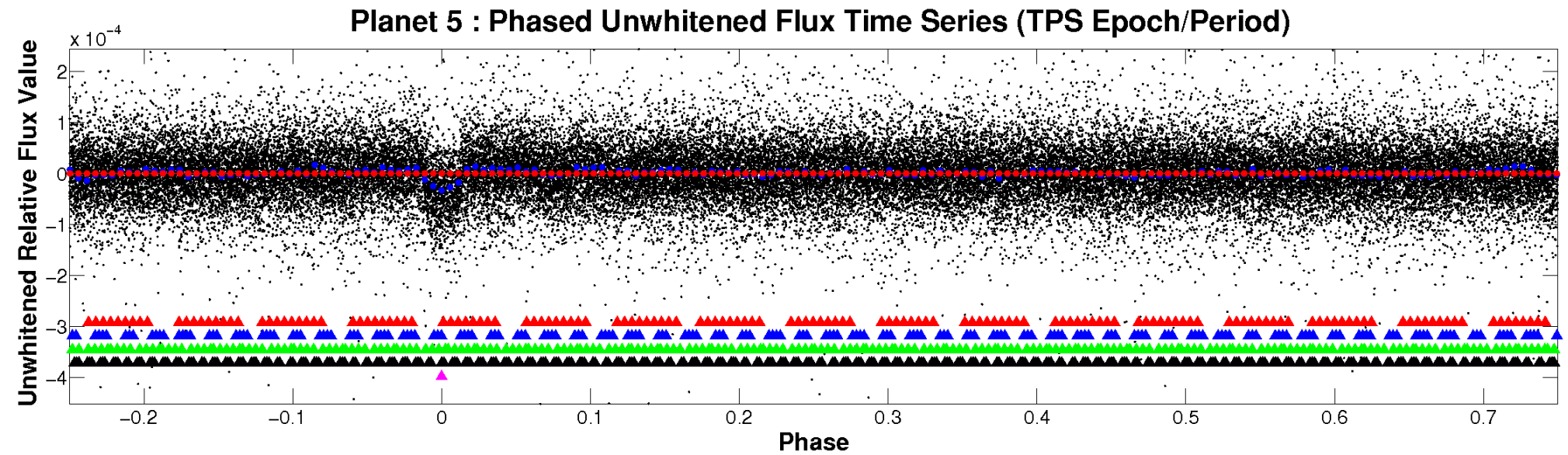


# ALT Odd/Even

TCE 006278762-05

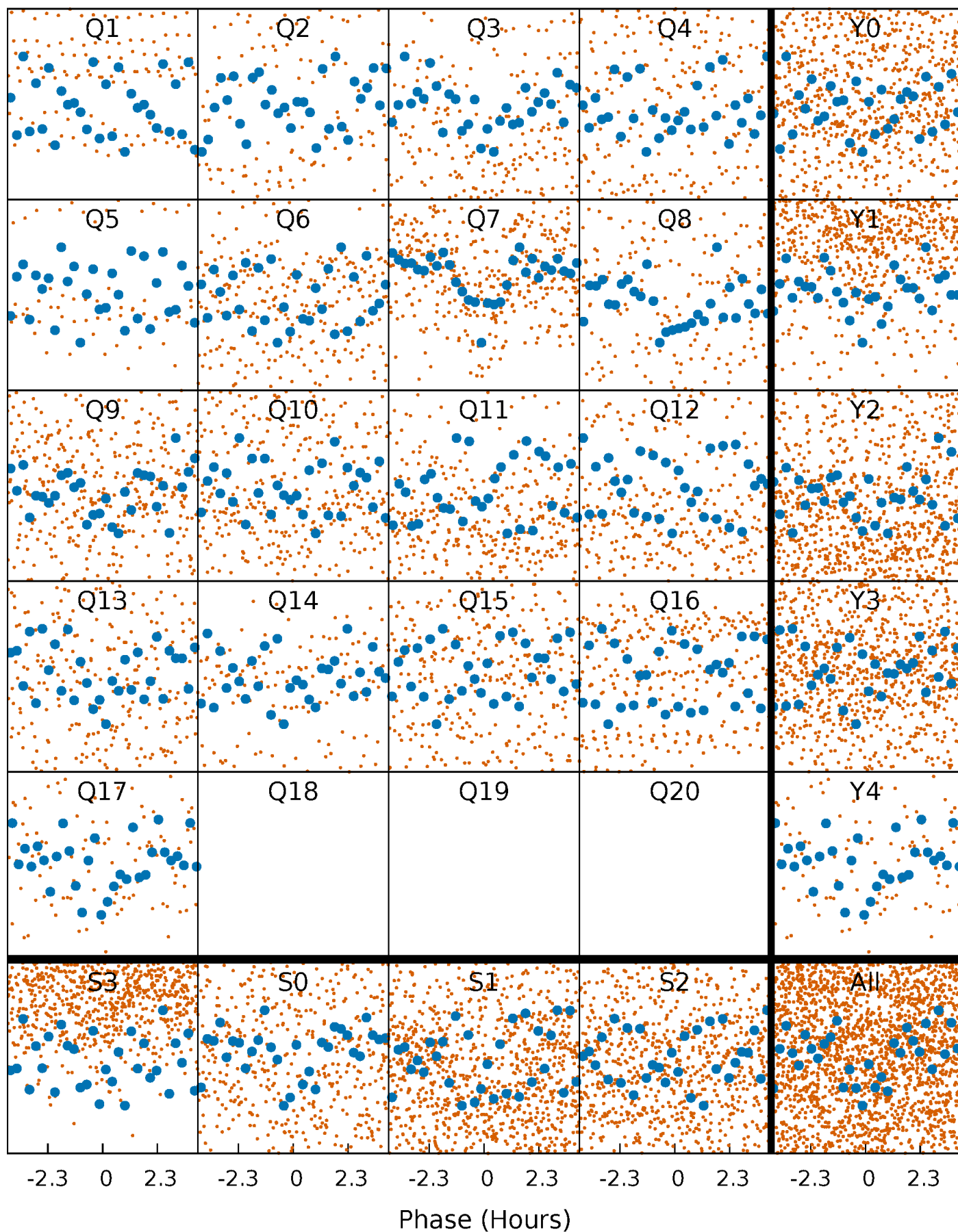


# Non-Whitened Vs. Whitened Light Curve



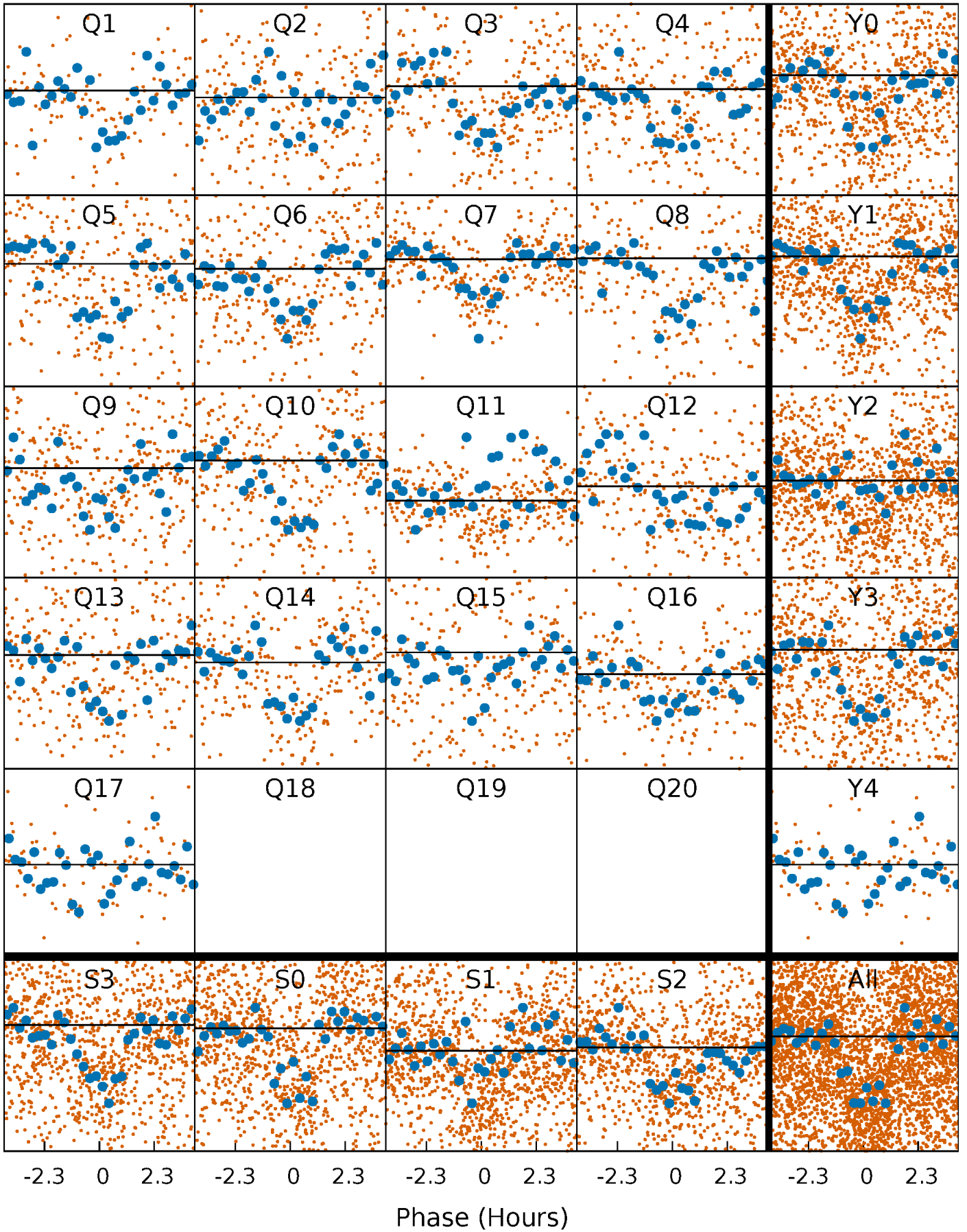
# PDC Quarter-Phased Transit Curves

TCE 006278762-05   P= 3.600136 Days    $T_0=133.250777$  (BKJD)



# DV Quarter-Phased Transit Curves

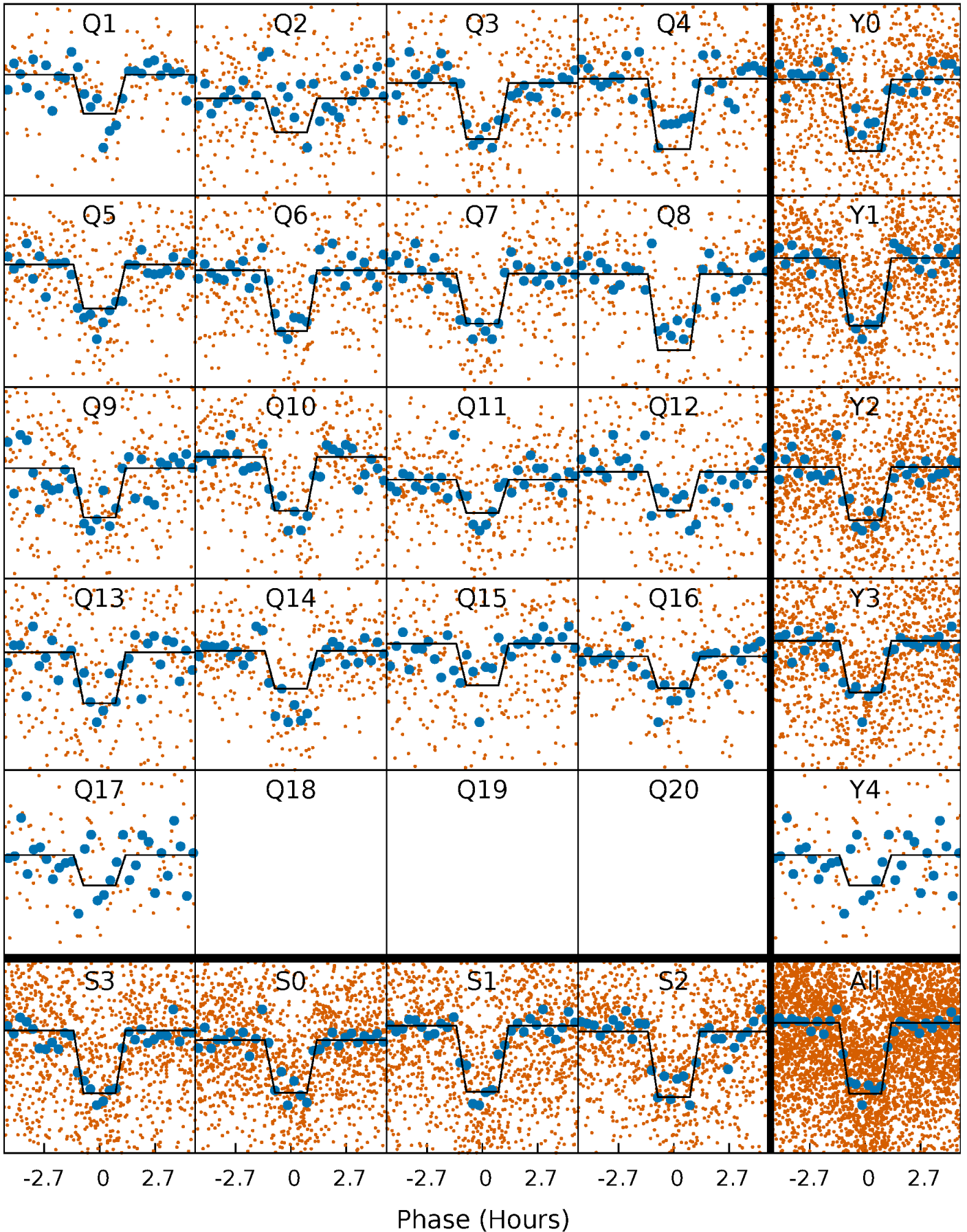
TCE 006278762-05 P= 3.600136 Days  $T_0=133.250777$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 006278762-05 P= 3.600136 Days  $T_0=133.254642$  (BKJD)

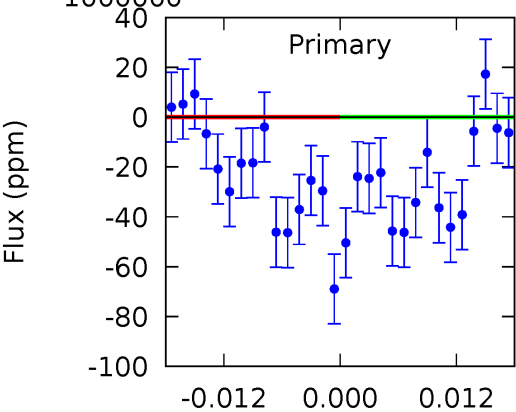
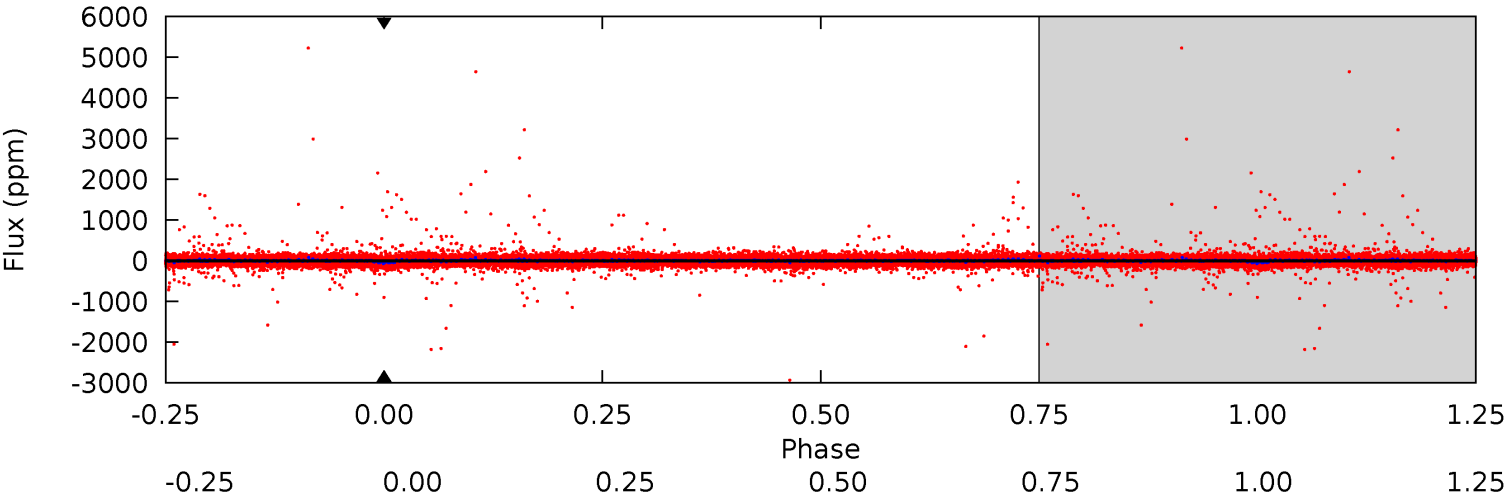




DV Model-Shift Uniqueness Test

006278762-05, P = 3.600136 Days, E = 129.650641 Days

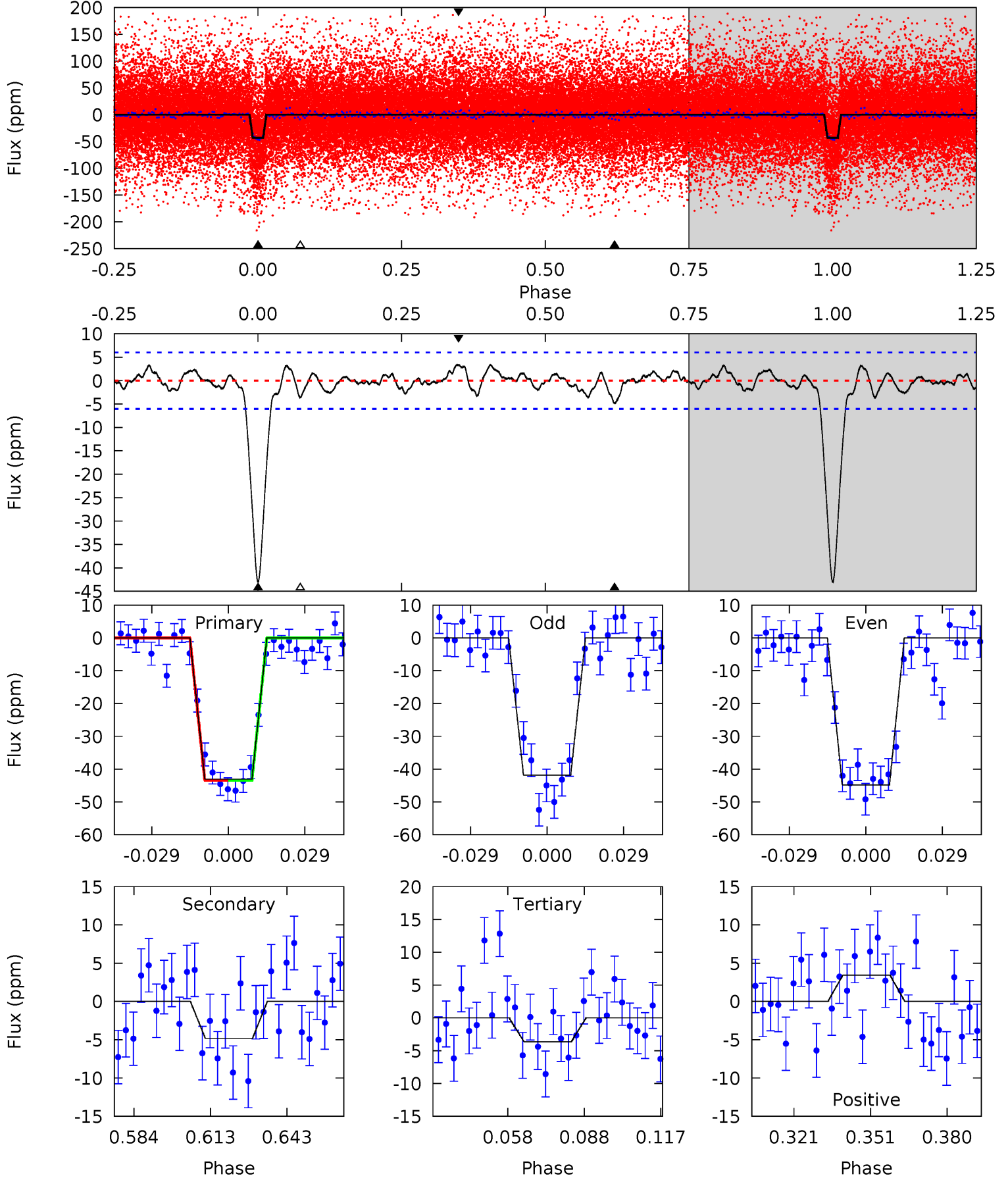
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

006278762-05, P = 3.600136 Days, E = 129.654506 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
34.5	3.86	2.91	2.75	4.82	2.18	1.18	31.6	31.7	0.95	1.11	1.20	0.92	0.07	0.00



### Stellar Parameters For KIC 006278762

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5051^{+177}_{-141}$	$4.562^{+0.033}_{-0.023}$	$-0.360^{+0.350}_{-0.150}$	$0.721^{+0.057}_{-0.031}$	$0.692^{+0.099}_{-0.026}$	$2.601^{+0.317}_{-0.283}$
	+4%/-3%	+1%/-1%	+97%/-42%	+8%/-4%	+14%/-4%	+12%/-11%
Source	SPE69	AST69	SPE69	DSEP		

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

### Secondary Eclipse Parameters for KIC 006278762-05 / KOI 3158.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$5.30^{+6.22}_{-3.68}$	$1308^{+46}_{-41}$	$-3298^{+20921}_{-12223}$	$-15.425^{+5770.374}_{-4986.252}$
Alt.	$-5 \pm 1$	$5.67^{+5.75}_{-3.92}$	$1309^{+46}_{-39}$	$-1914^{+4292}_{-113}$	$0.142^{+1.311}_{-0.110}$

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

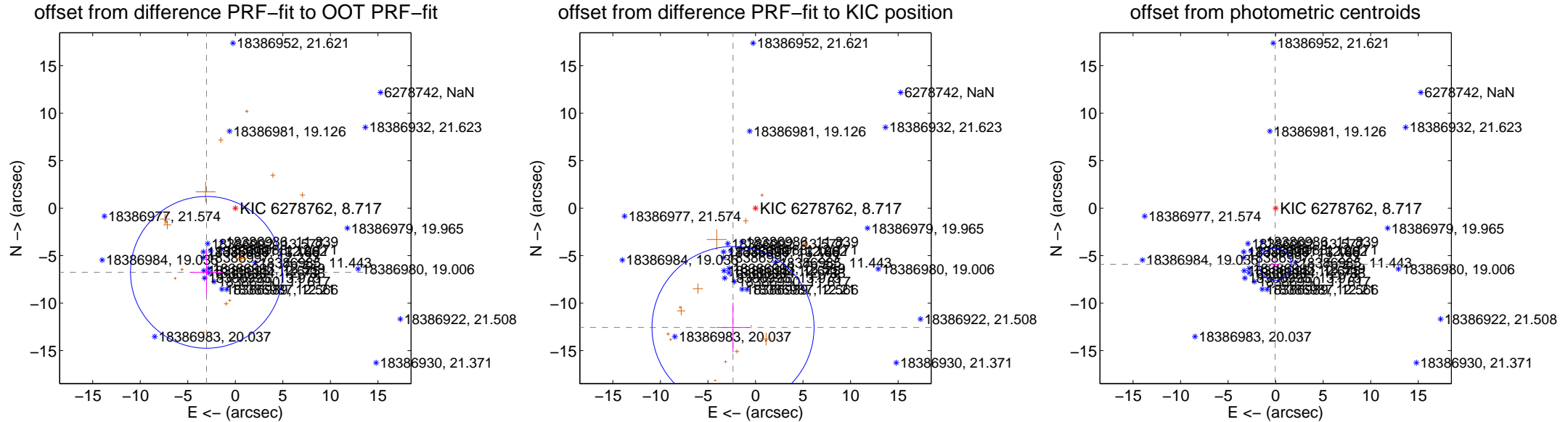
## DV Centroid Data

Supplemental centroid analysis for 006278762-05. **Kepler magnitude: 8.72.** Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

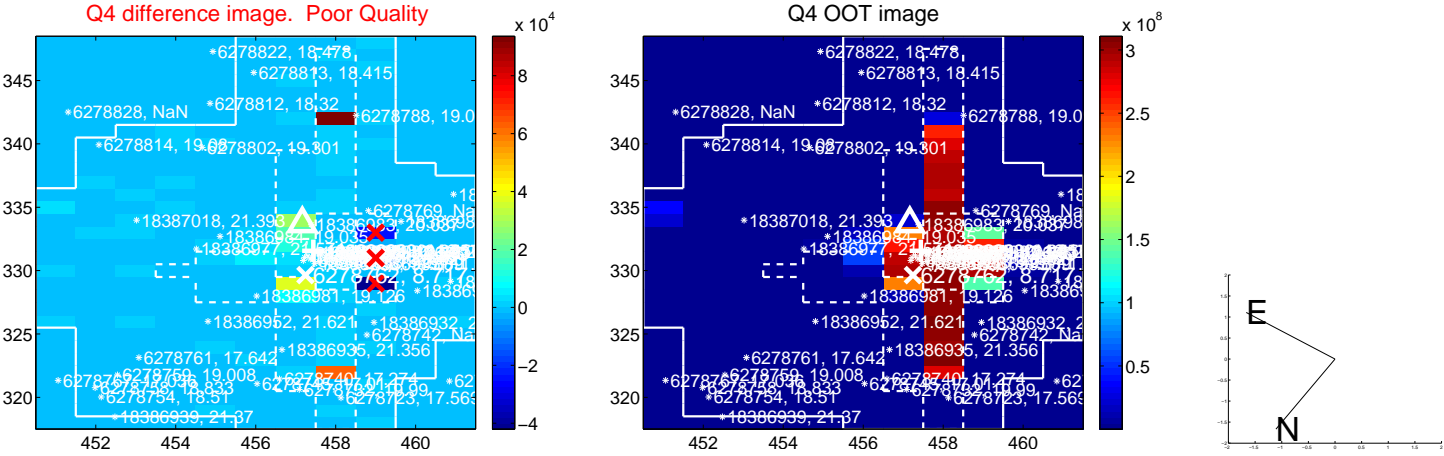
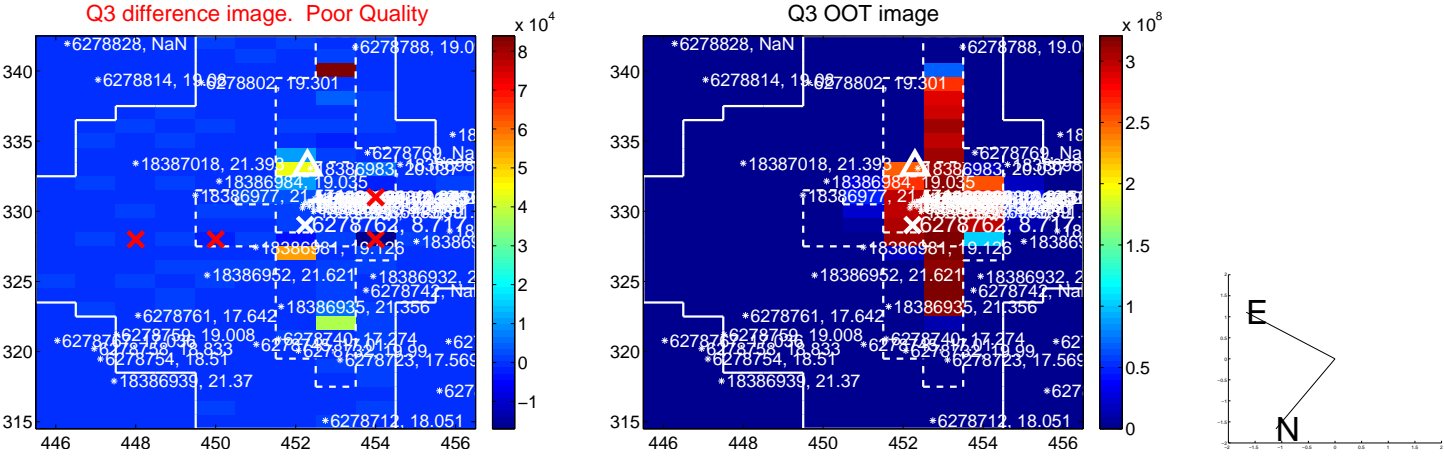
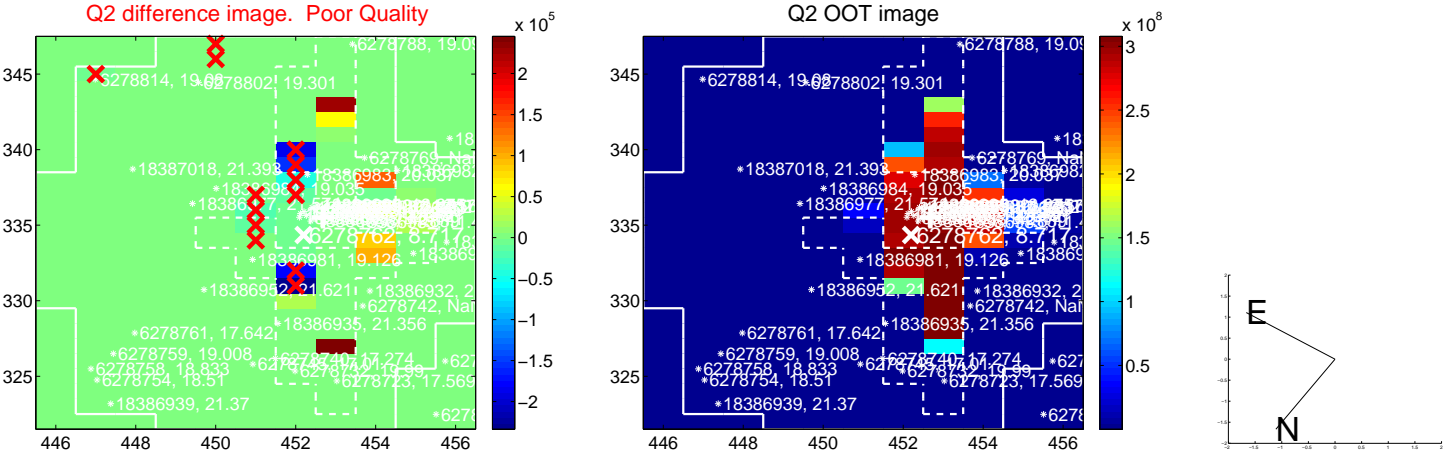
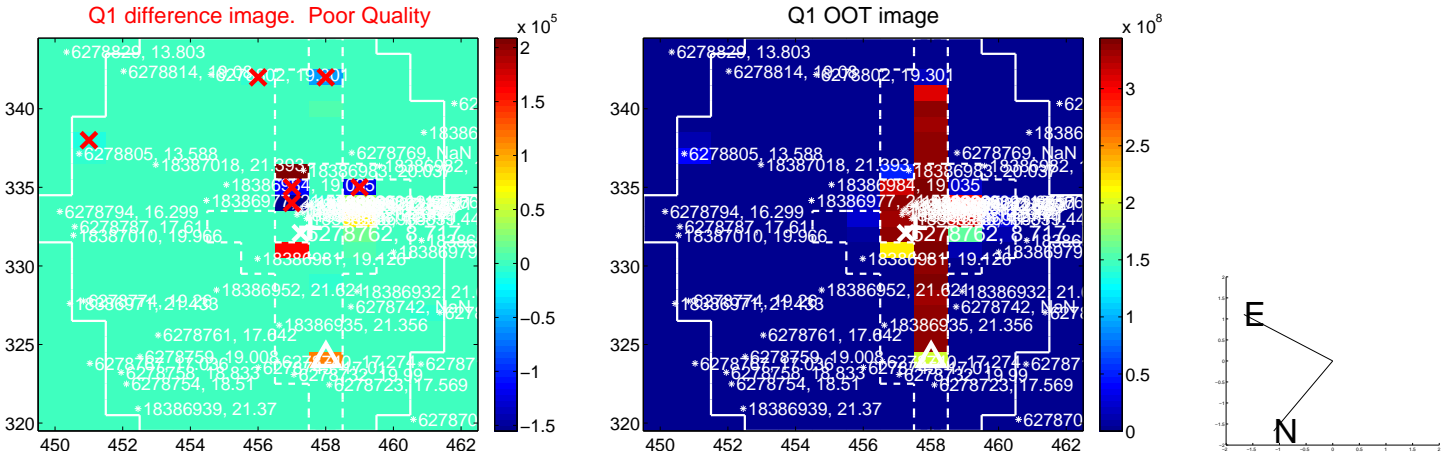
The OOT PRF centroid is offset from the target star catalog position by about 7.44 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$7.407 \pm 2.664$	2.78	$3.033 \pm 1.705$	$-6.757 \pm 2.329$
PRF-fit source offset from KIC position	$12.780 \pm 2.841$	4.50	$2.363 \pm 1.741$	$-12.560 \pm 2.614$
photometric centroid source offset	$5.90 \pm 0.57$	10.45	$0.06 \pm 0.43$	$-5.90 \pm 0.57$



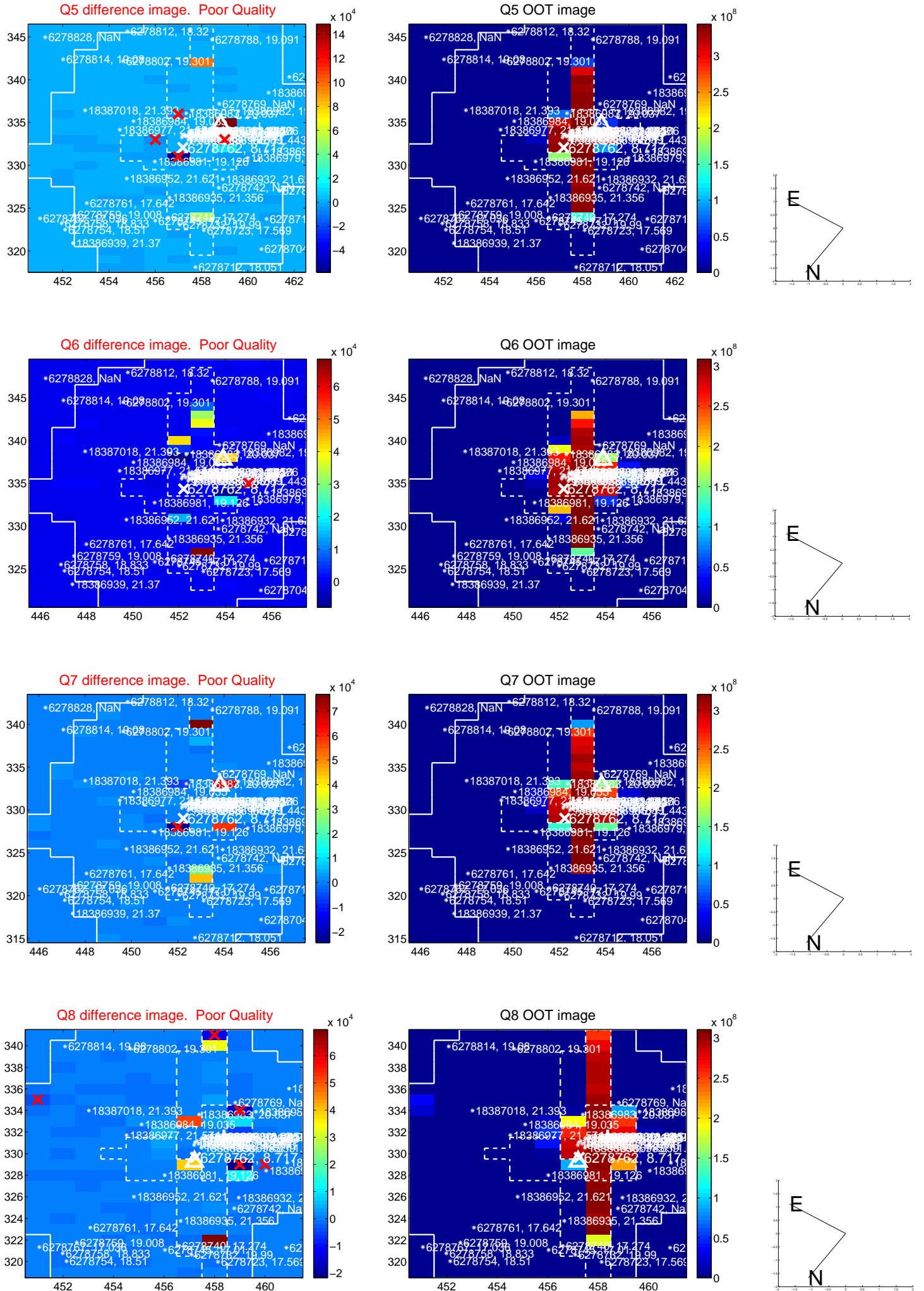
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

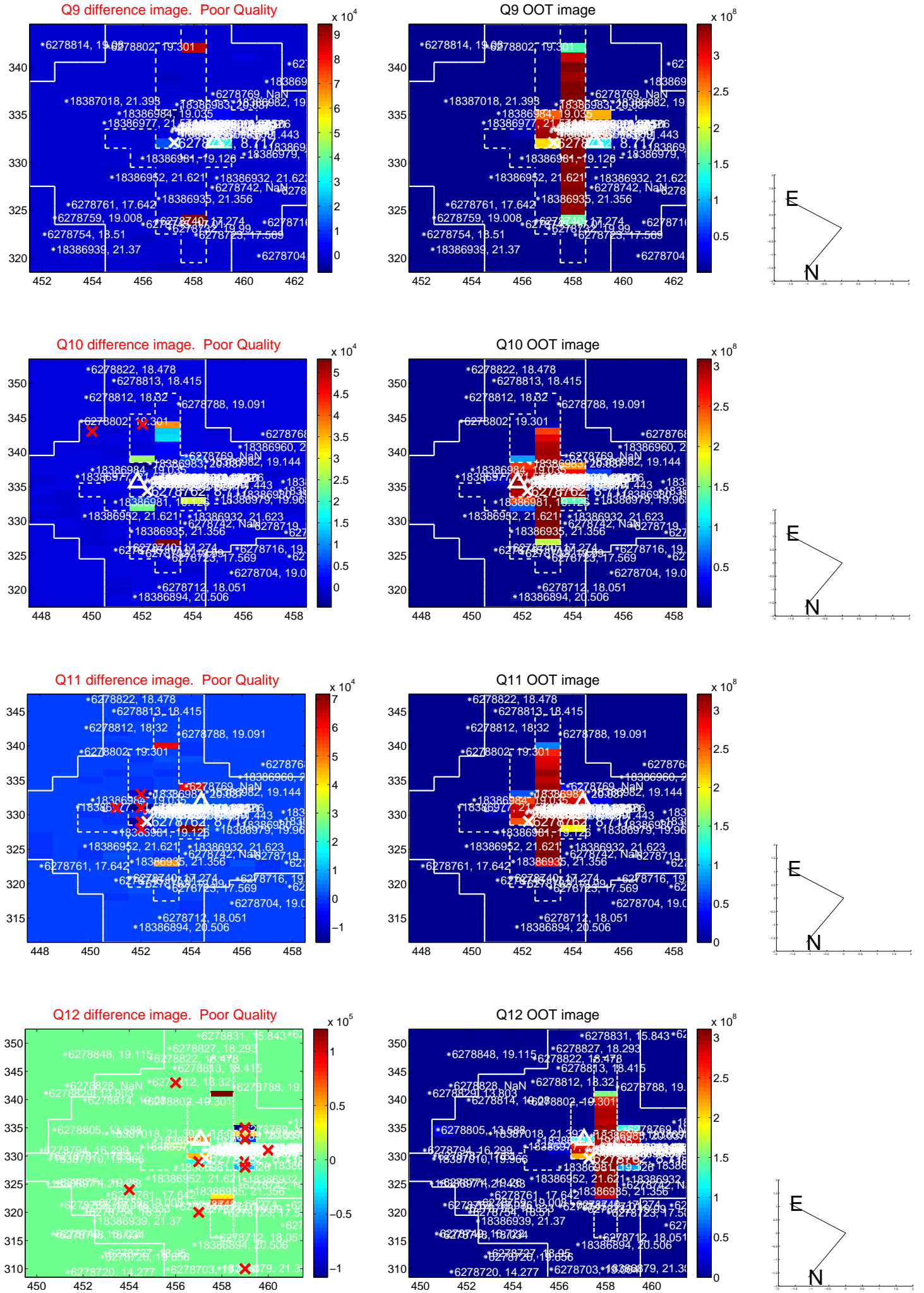




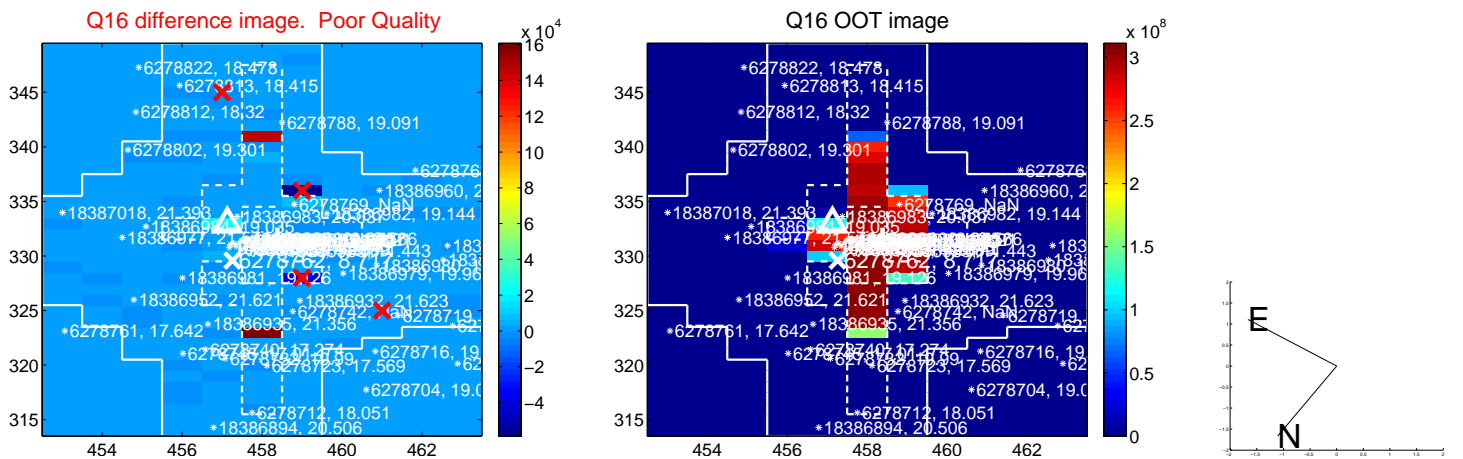
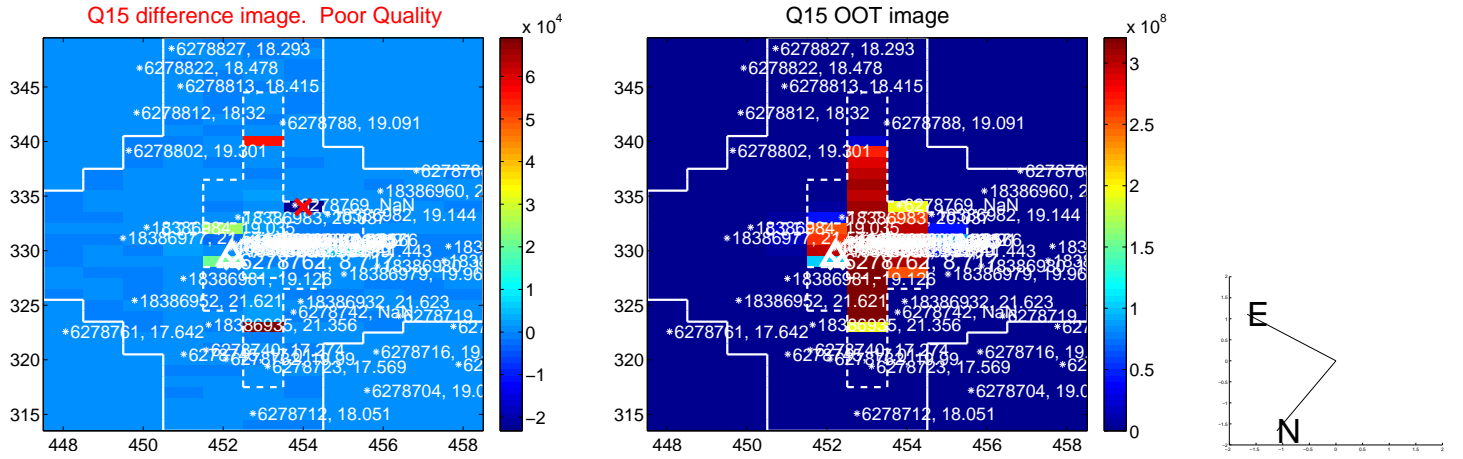
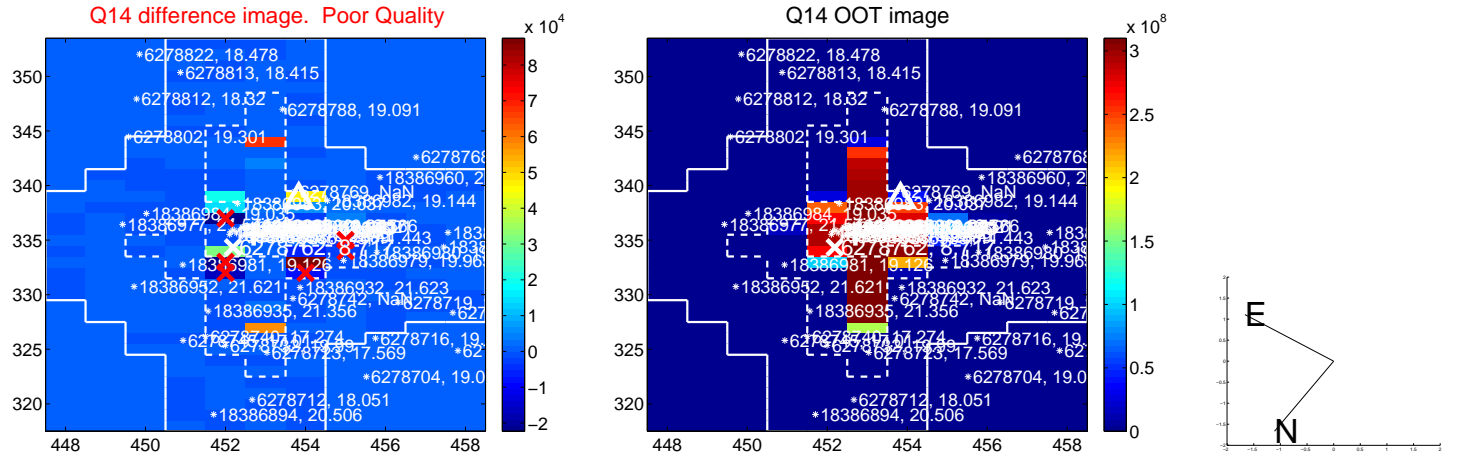
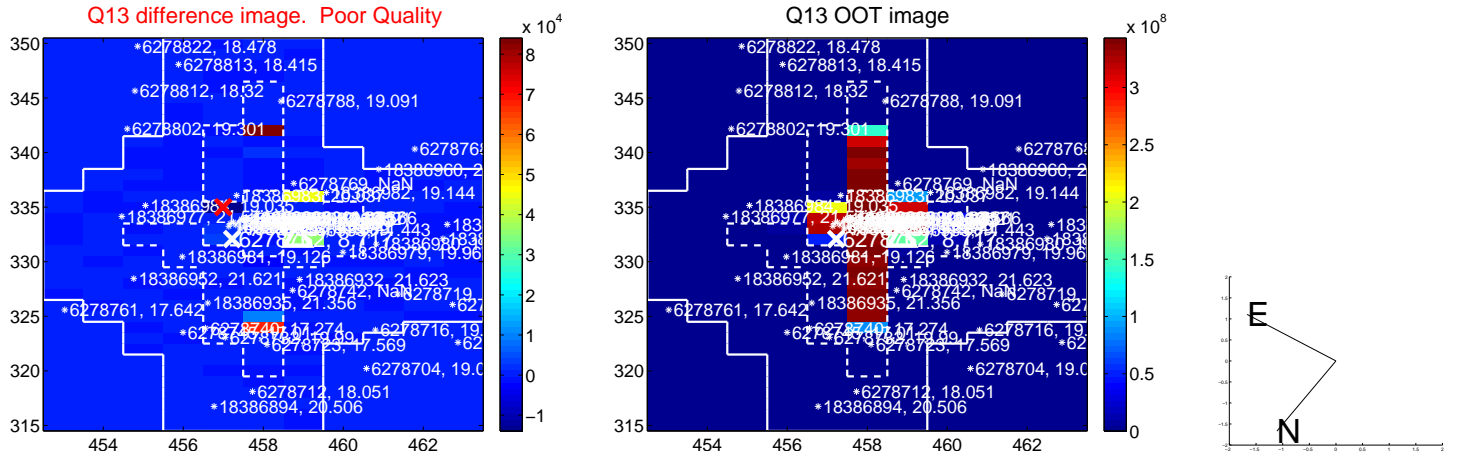
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



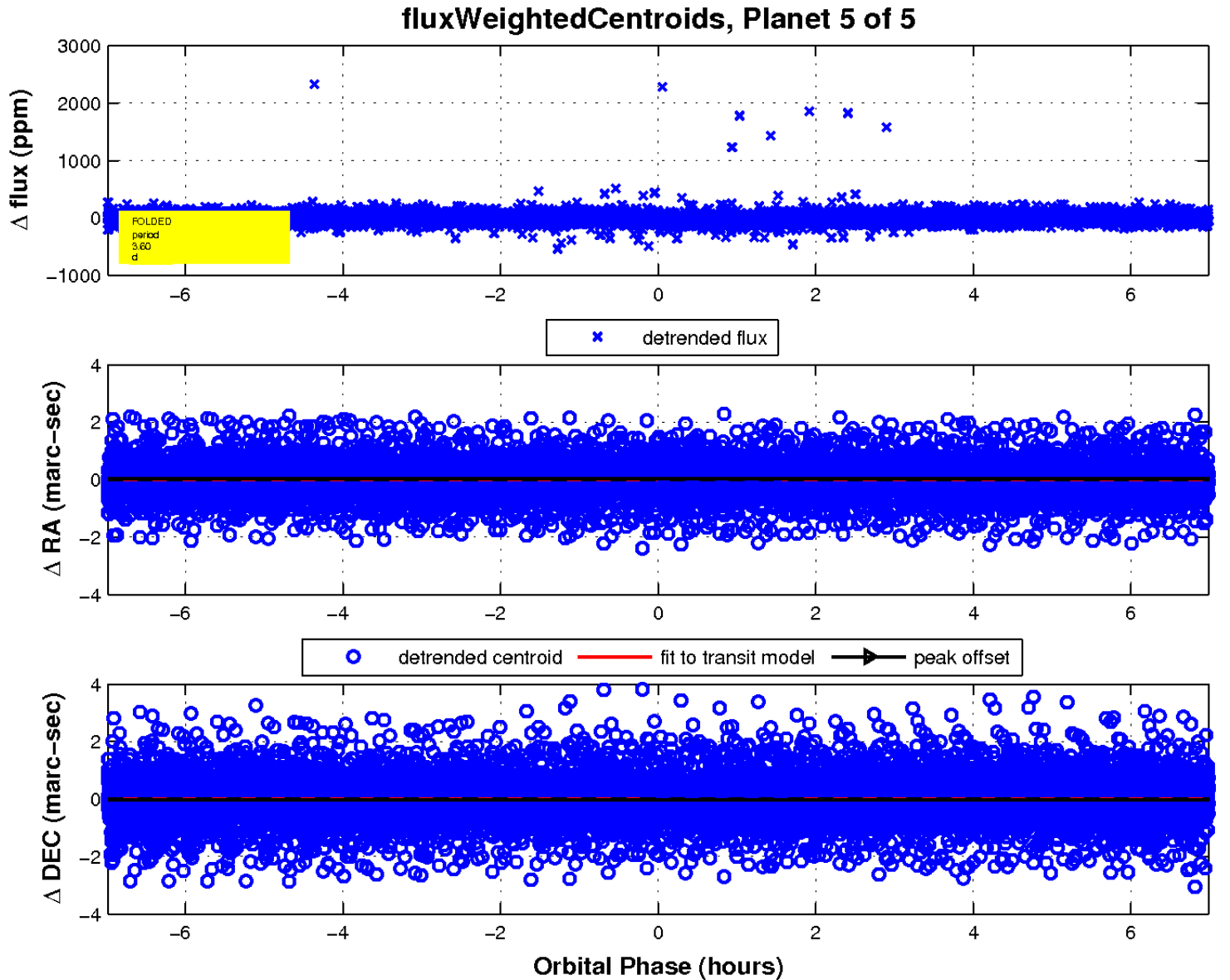
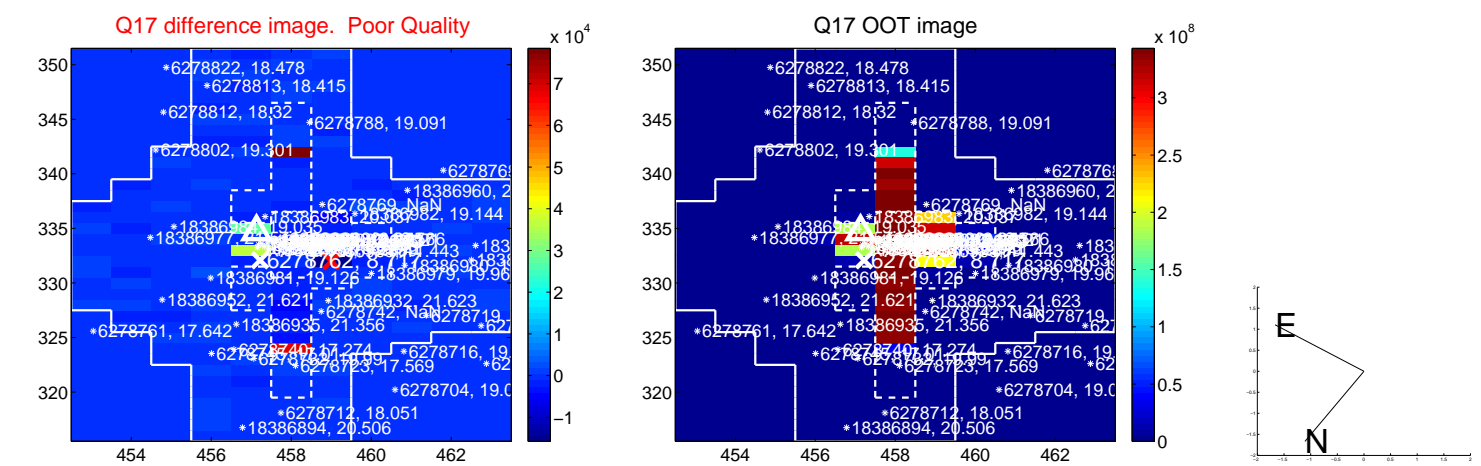
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UKIRT Image

Declination

