

# KIC 006778063

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006778063-01	OBS	No	0.701482	131.745585	238.4	2.837	20.3	19.6	1.69	7368	3.03	27125.36
006778063-02	OBS	No	0.701464	131.946591	145.9	4.862	12.8	9.7	1.69	7368	2.19	27126.30
006778063-03	OBS	No	0.860664	132.030447	470.5	2.135	12.7	9.5	1.69	7368	3.76	20651.53

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006778063-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006778063-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD
006778063-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST

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

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

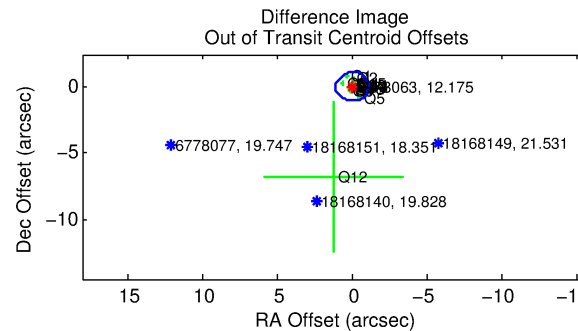
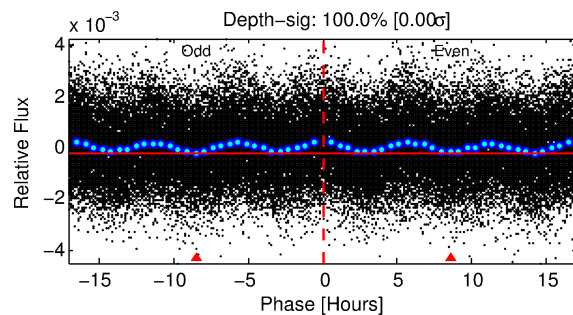
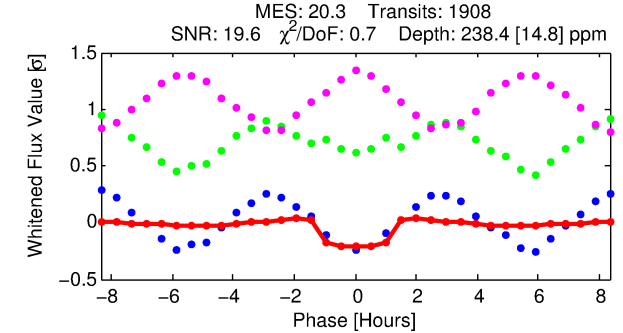
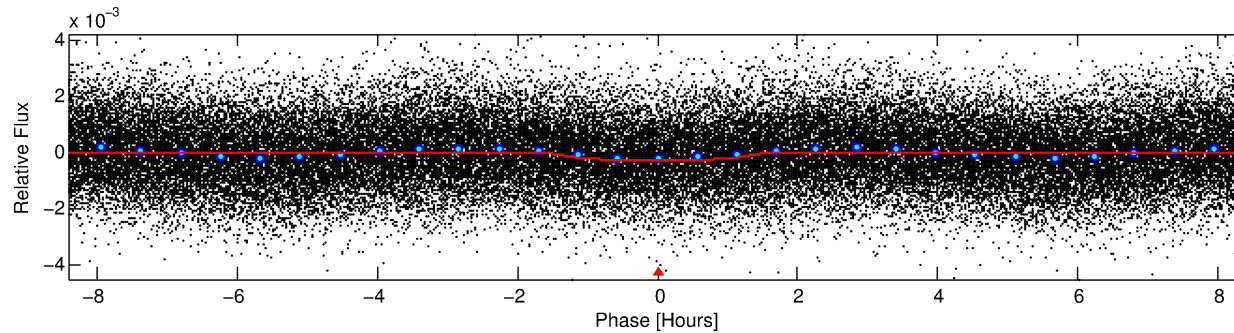
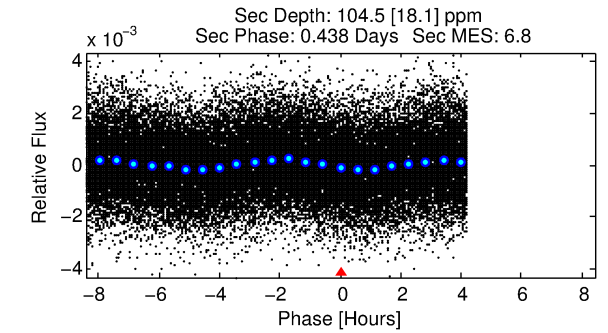
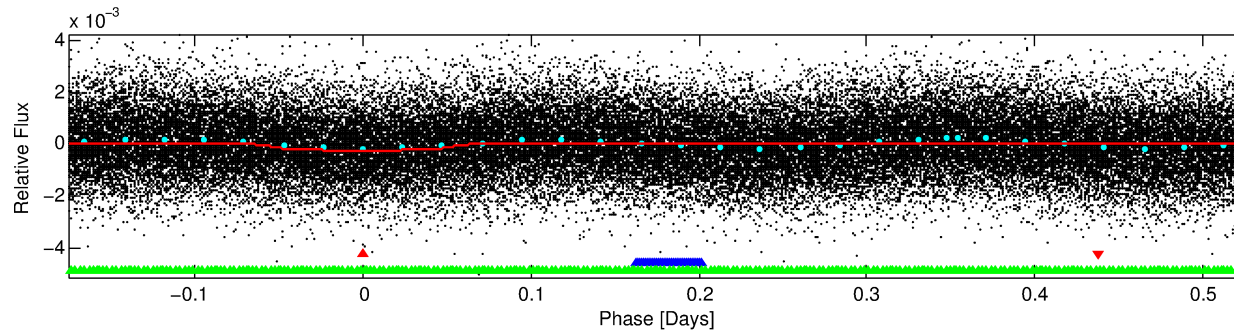
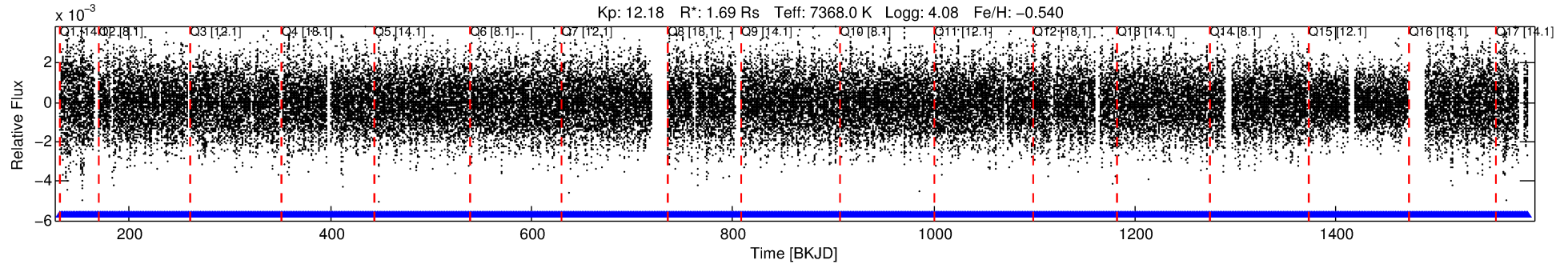
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006778063-01

No Significant Match Found

# DV One-Page Summary

KIC: 6778063 Candidate: 1 of 3 Period: 0.701 d



## DV Fit Results:

Period = 0.70148 [0.00000] d  
Epoch = 131.7456 [0.0013] BKJD  
Rp/R\* = 0.0164 [0.0020]  
a/R\* = 1.30 [0.38]  
b = 0.90 [0.16]  
Seff = 27125.36 [11475.04]  
Teq = 3272 [346] K  
Rp = 3.03 [0.90] Re  
a = 0.0167 [0.0042] AU  
Ag = 1.75 [0.86] [0.87σ]  
Teffp = 5817 [488] K [4.25σ]

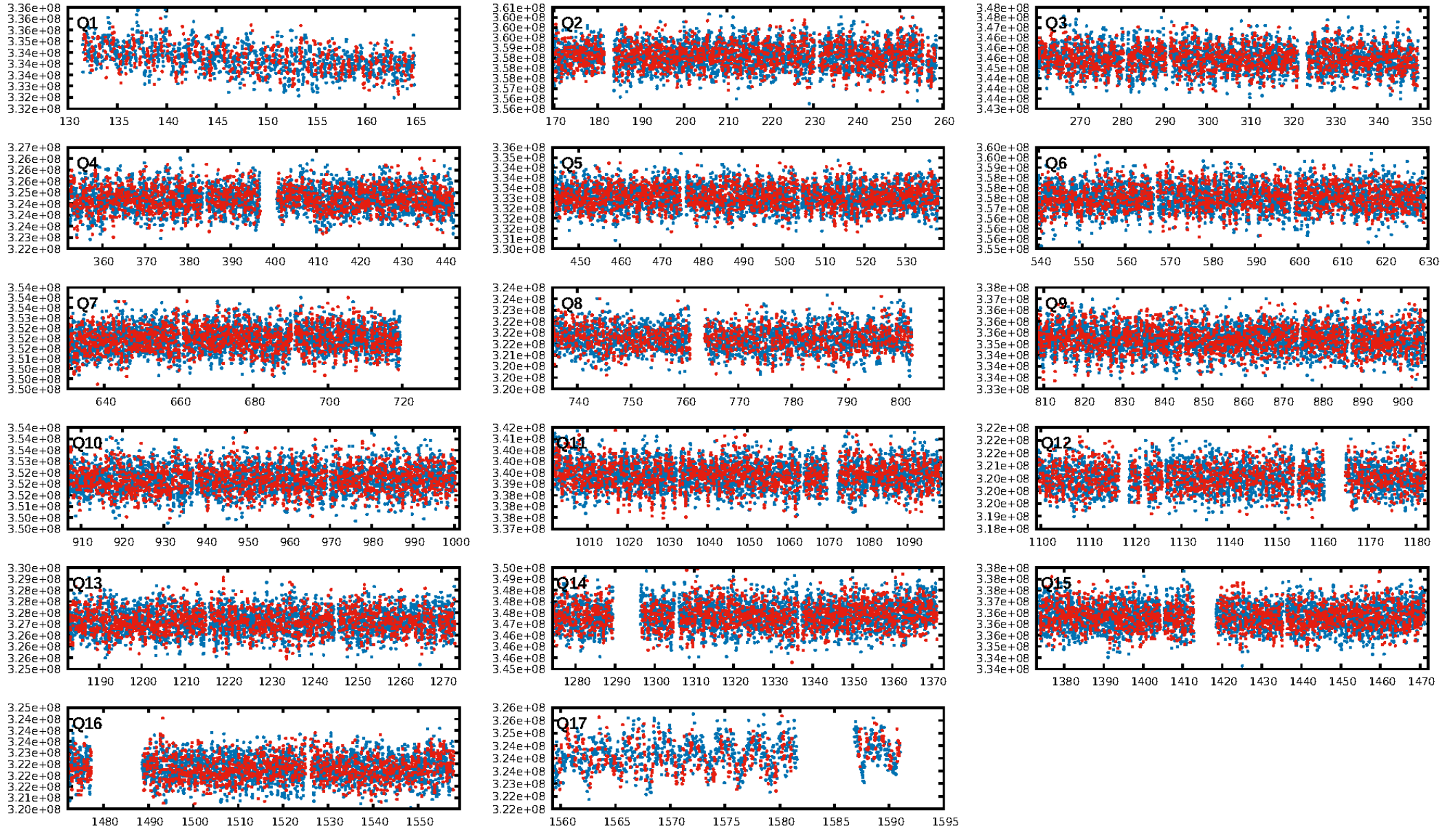
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: 71.8% [1.08σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.50e-130  
RollingBand-fgt: 1.00 [1822/1822]  
GhostDiagnostic-chr: 3.409  
Centroid-sig: 10.8%  
Centroid-so: 0.099 arcsec [2.68σ]  
OotOffset-rm: 0.083 arcsec [0.23σ]  
KicOffset-rm: 0.084 arcsec [0.30σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.94 [16/17]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 11:06:59 Z

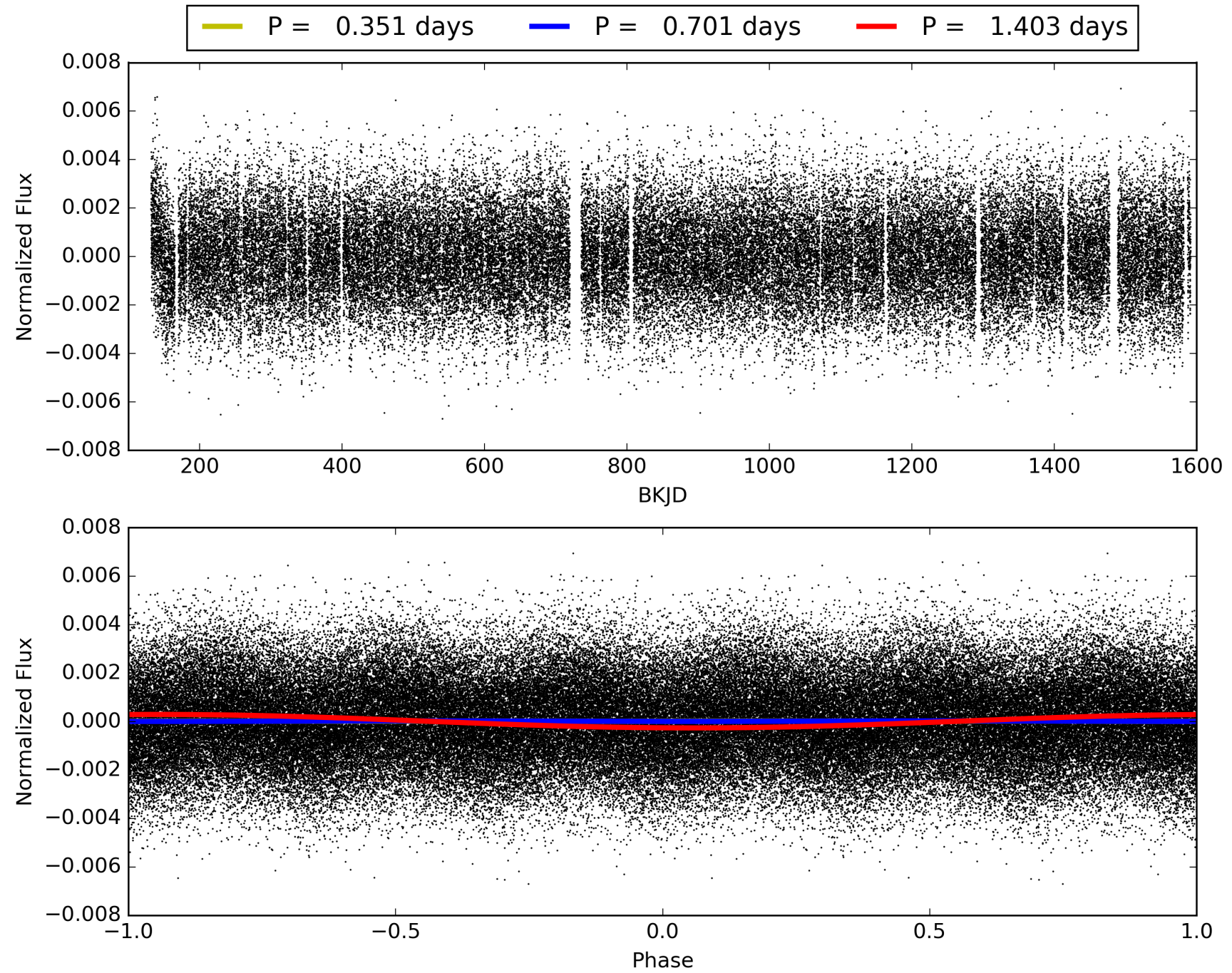
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 006778063-01, PDC Light Curves





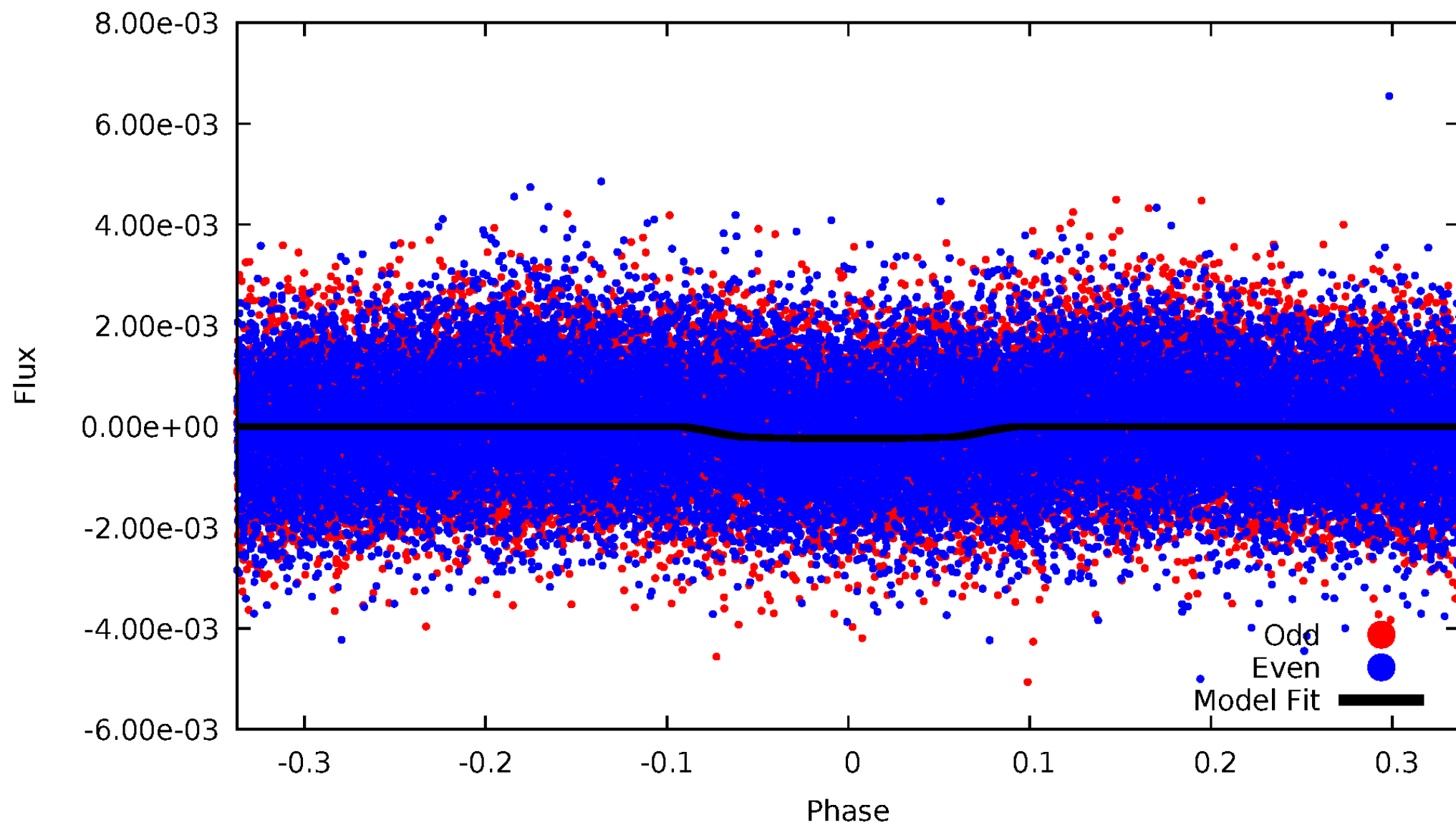
TCE 006778063-01





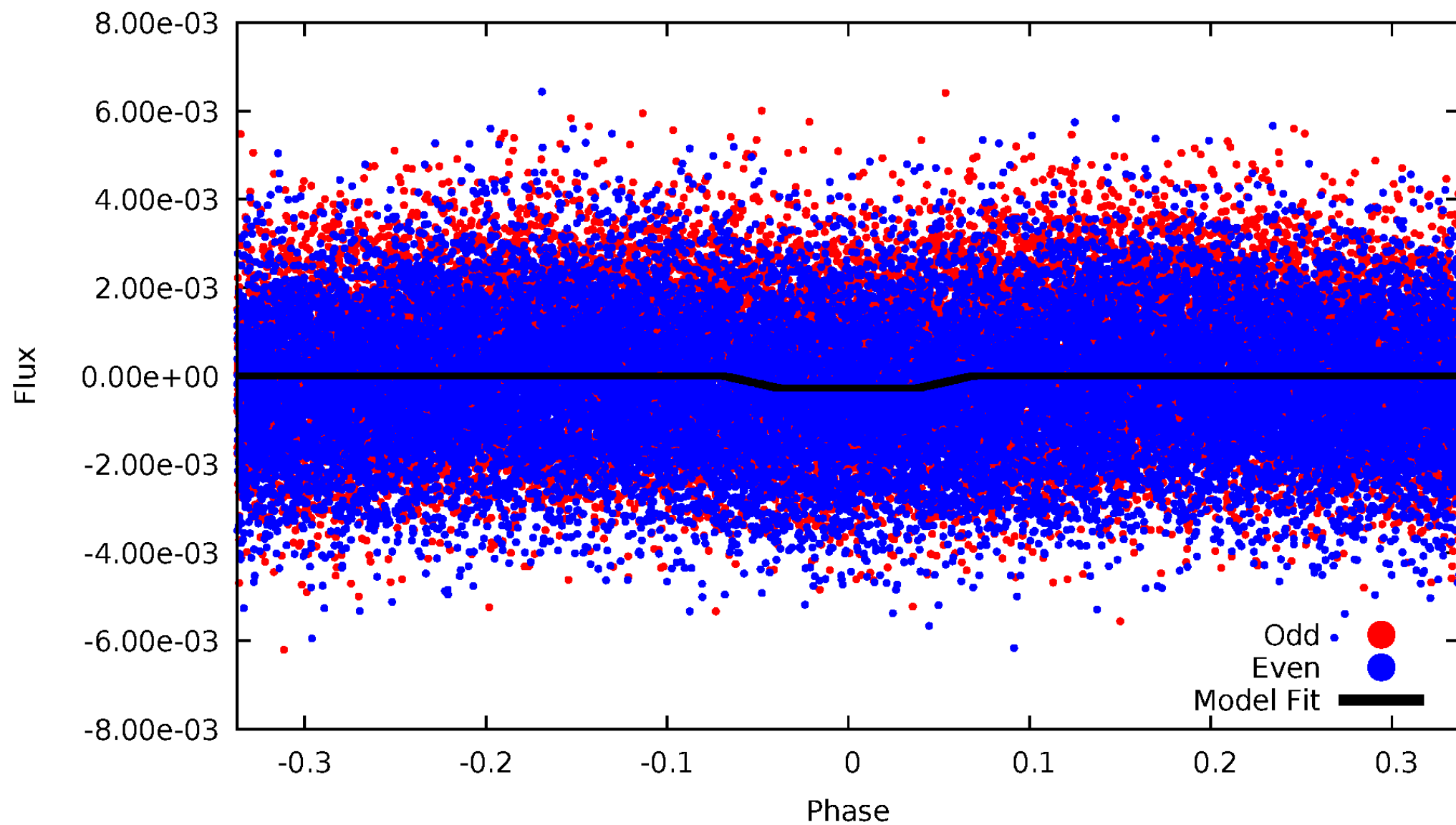
# DV Odd/Even

TCE 006778063-01



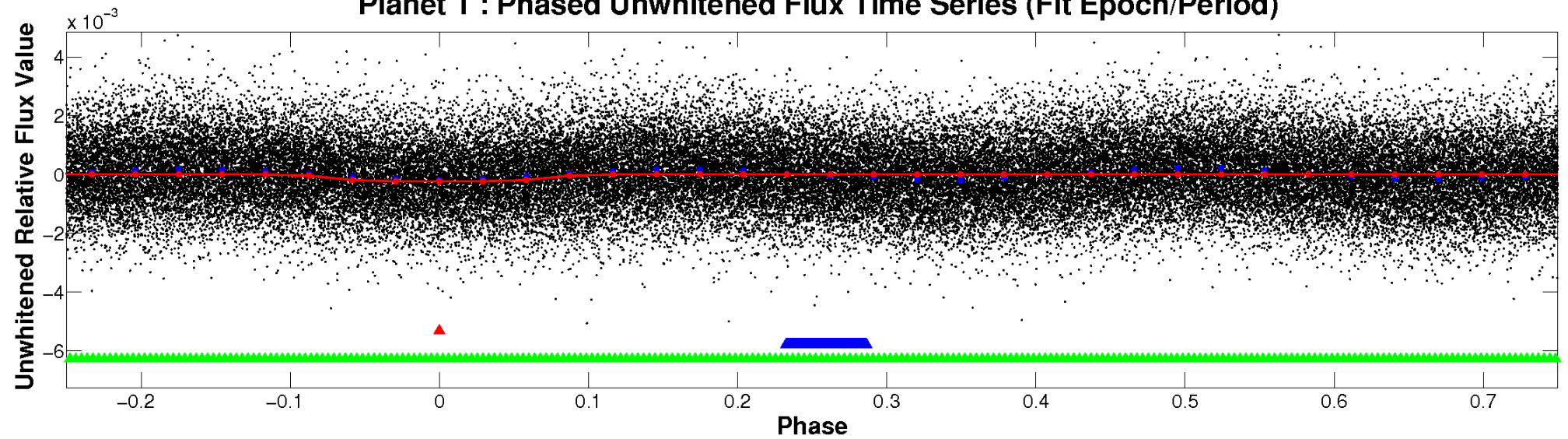
# ALT Odd/Even

TCE 006778063-01

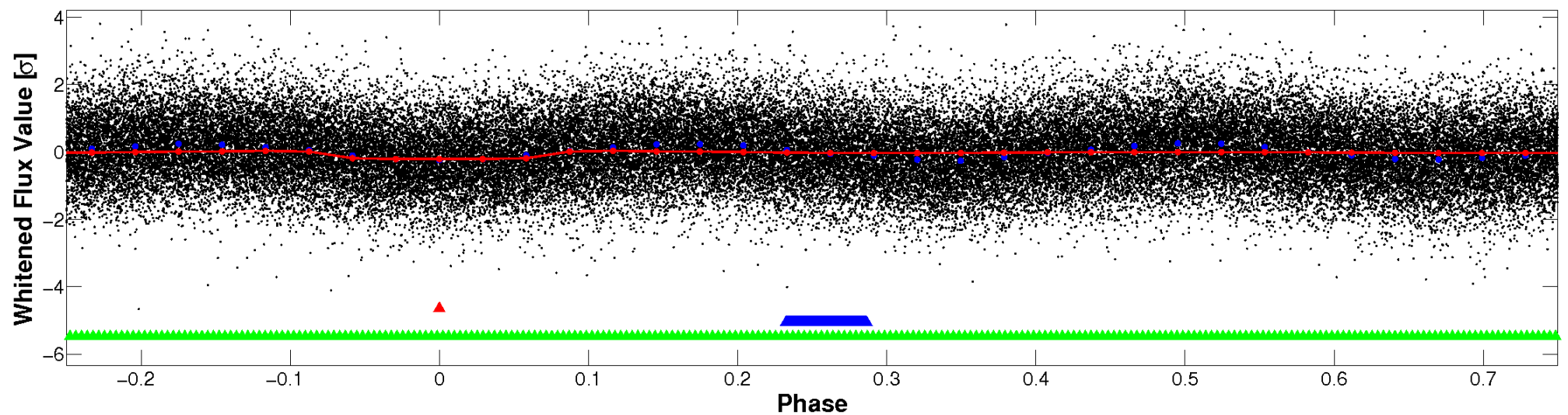


# Non-Whitened Vs. Whitened Light Curve

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



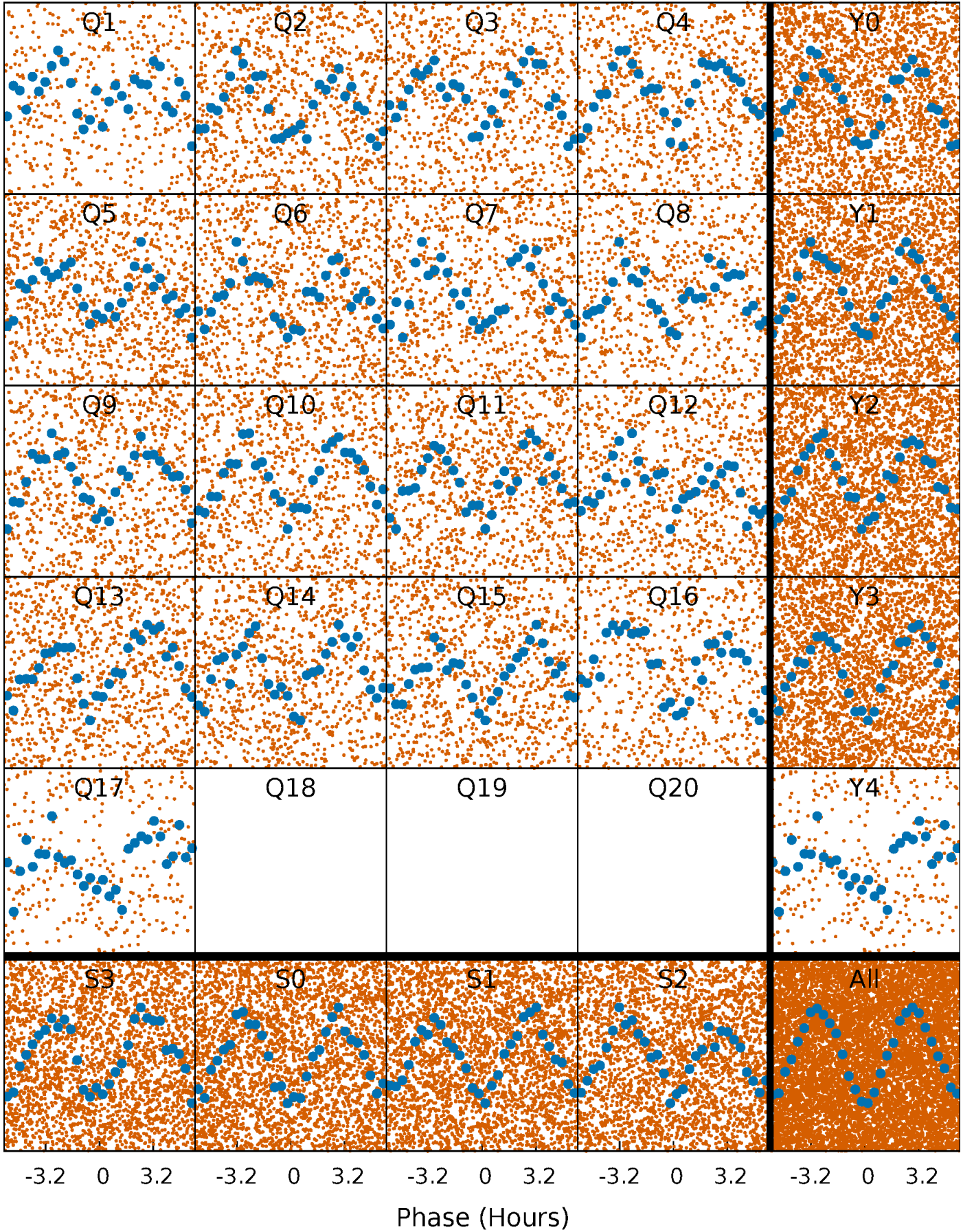
## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)





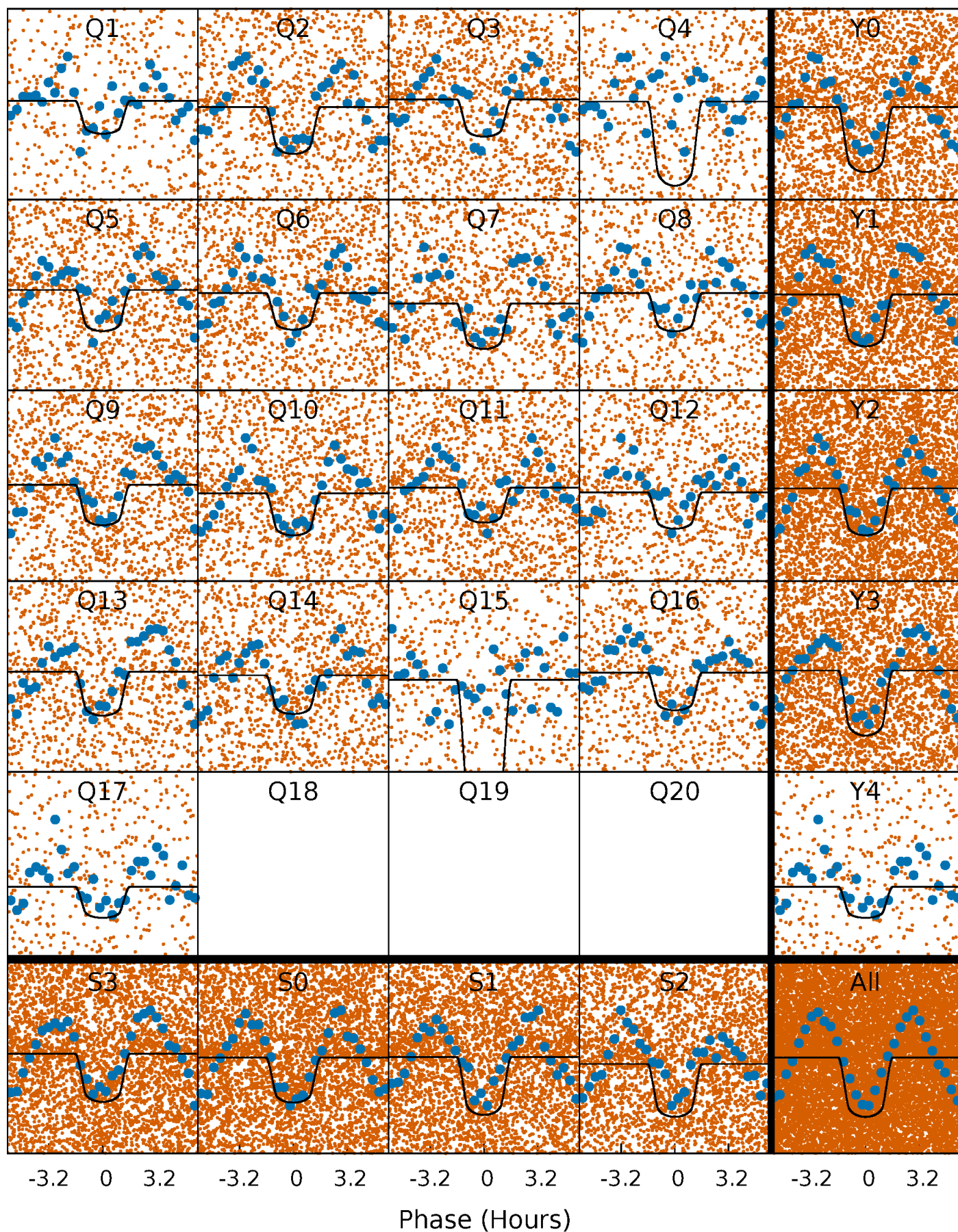
# PDC Quarter-Phased Transit Curves

TCE 006778063-01 P= 0.701482 Days  $T_0=131.745585$  (BKJD)



# DV Quarter-Phased Transit Curves

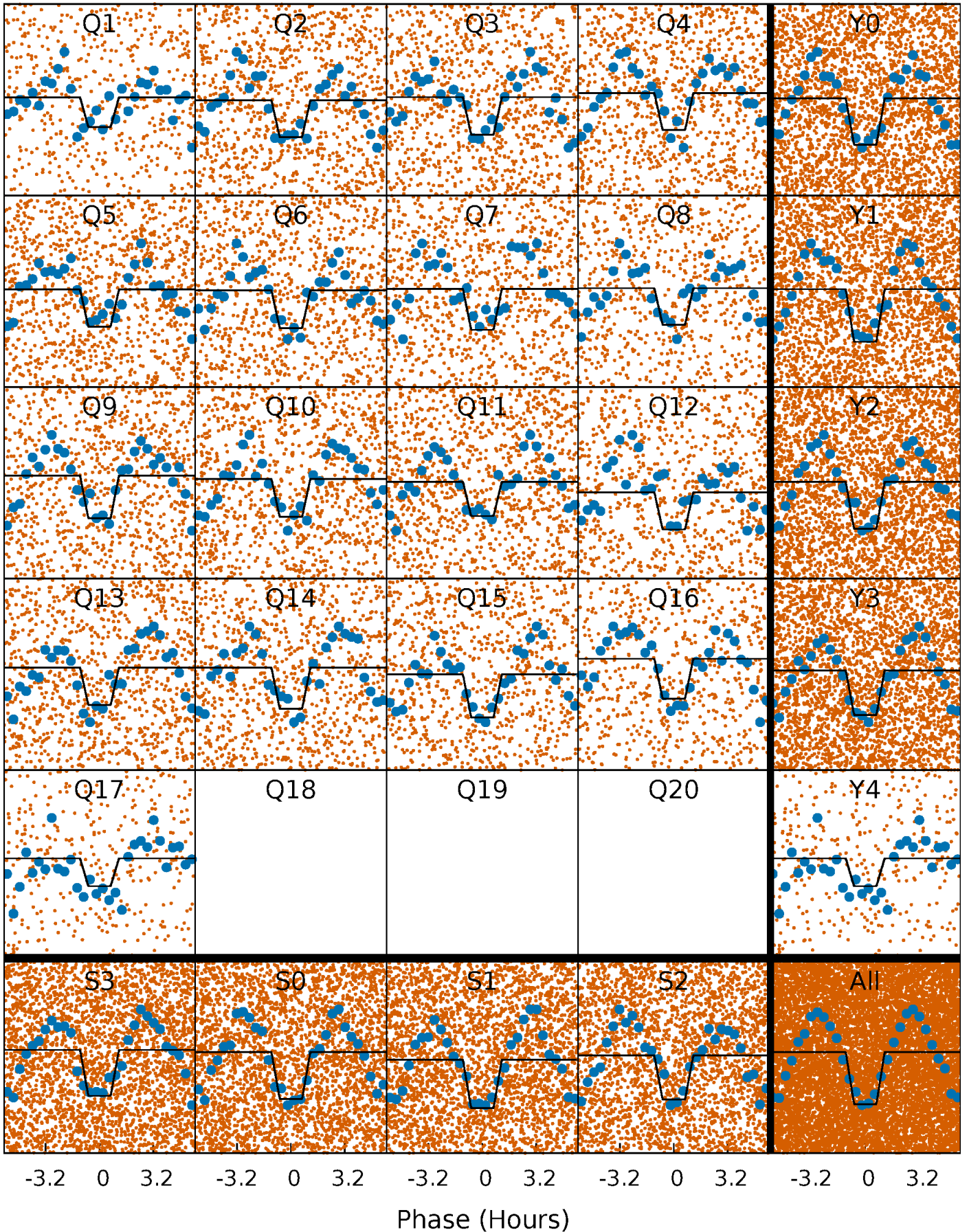
TCE 006778063-01 P= 0.701482 Days  $T_0=131.745585$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 006778063-01 P= 0.701482 Days  $T_0=131.745573$  (BKJD)

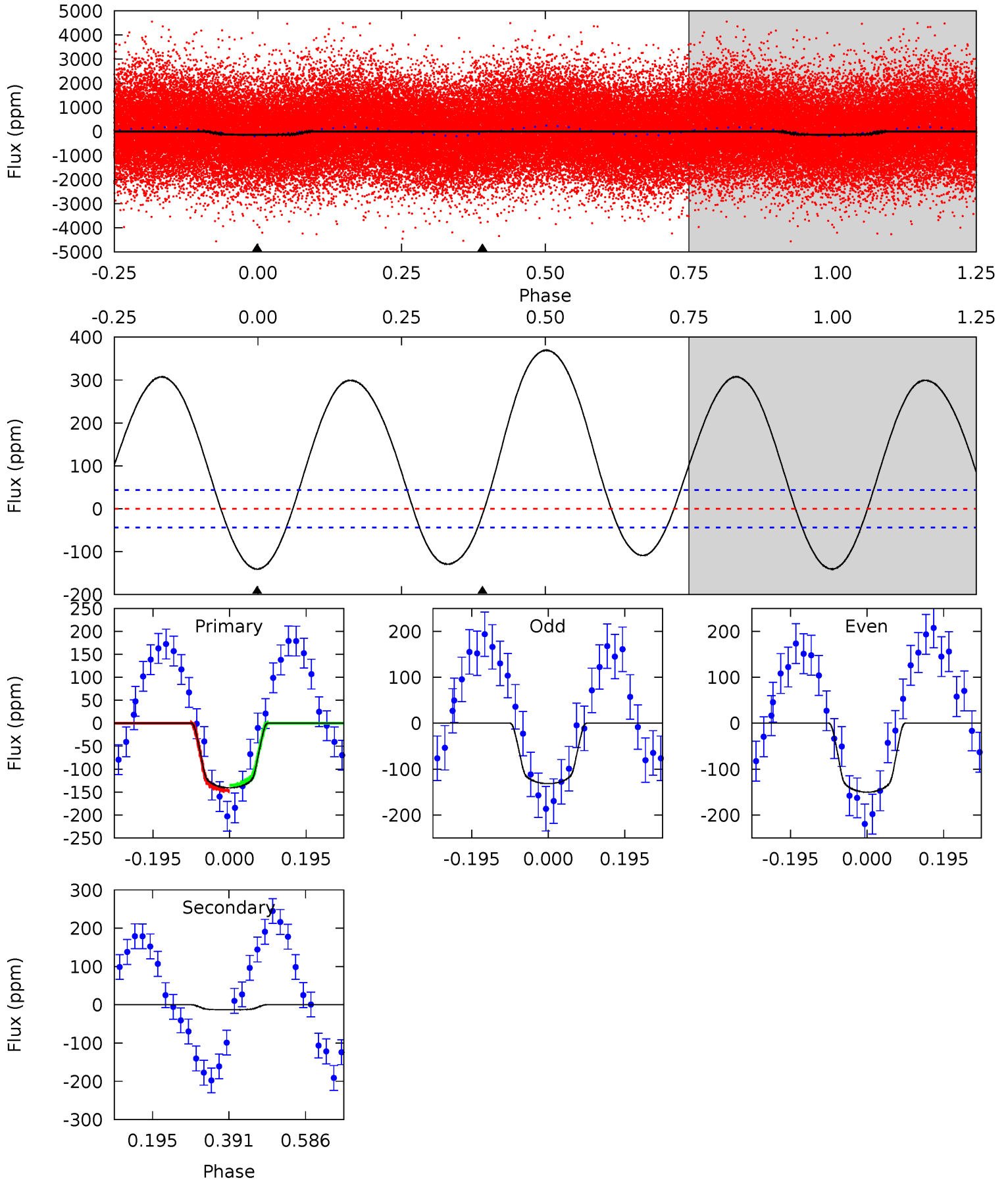




# DV Model-Shift Uniqueness Test

006778063-01, P = 0.701482 Days, E = 131.044103 Days

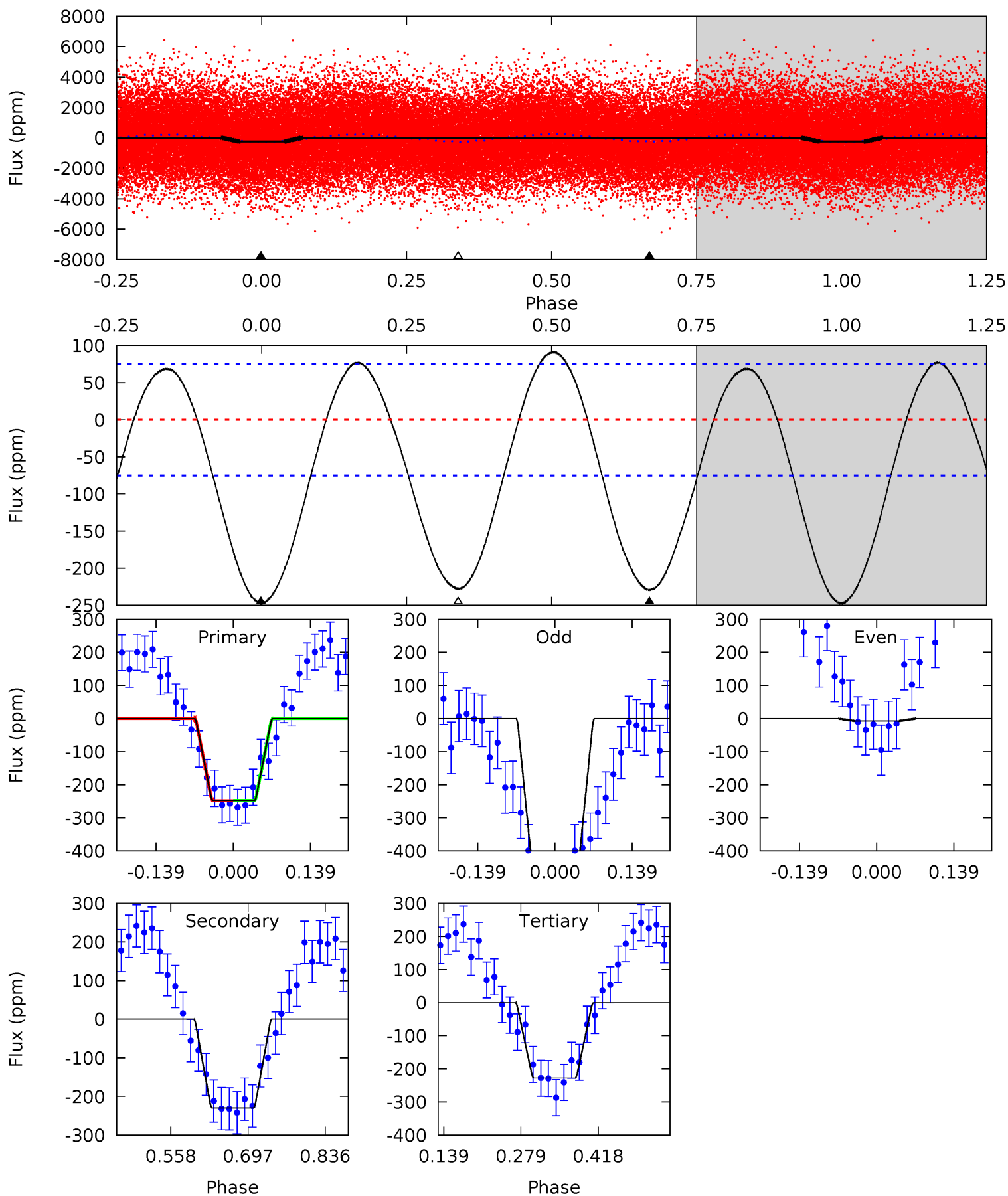
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.3	1.34	0	0	4.42	1.30	12.0	14.3	14.3	1.34	1.34	0.95	1.00	0.72	0.59



# Alt Model-Shift Uniqueness Test

006778063-01, P = 0.701482 Days, E = 131.044091 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.8	13.7	13.6	0	4.49	1.48	6.75	1.18	14.8	0.11	13.7	14.4	1.02	0.27	0.01



### Stellar Parameters For KIC 006778063

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7368^{+233}_{-285}$	$4.082^{+0.228}_{-0.152}$	$-0.540^{+0.300}_{-0.300}$	$1.693^{+0.458}_{-0.458}$	$1.264^{+0.211}_{-0.154}$	$0.367^{+0.481}_{-0.154}$
	+3%/-4%	+6%/-4%	+56%/-56%	+27%/-27%	+17%/-12%	+131%/-42%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 006778063-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-13 \pm 10$	$2.98^{+0.57}_{-0.50}$	$4545^{+322}_{-374}$	$-3159^{+6681}_{-755}$	$0.233^{+0.221}_{-0.174}$
Alt.	$-230 \pm 17$	$3.02^{+0.53}_{-0.56}$	$4533^{+326}_{-336}$	$6875^{+590}_{-522}$	$3.922^{+1.762}_{-1.108}$

$T_{max}$  = 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

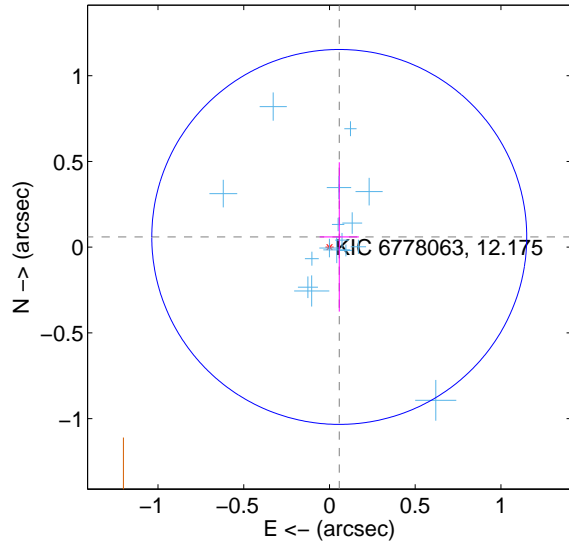
Supplemental centroid analysis for 006778063-01. Kepler magnitude: 12.18. Transit SNR 19.57

There are 16 quarters with good PRF difference image offsets

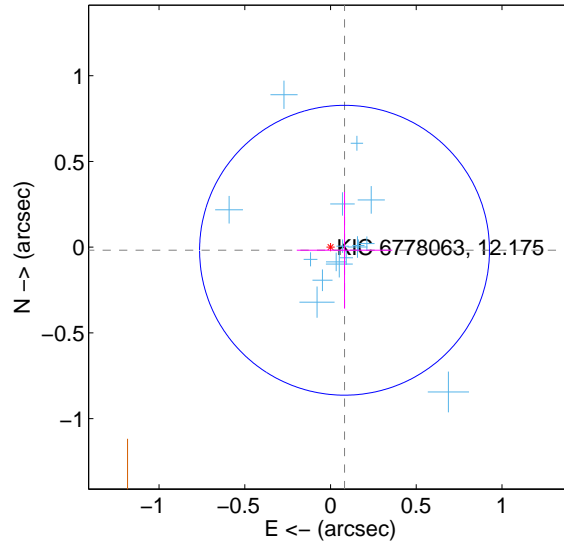
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.083 \pm 0.364$	0.23	$-0.057 \pm 0.114$	$0.060 \pm 0.435$
PRF-fit source offset from KIC position	$0.084 \pm 0.282$	0.30	$-0.082 \pm 0.279$	$-0.018 \pm 0.340$
photometric centroid source offset	$0.10 \pm 0.04$	2.68	$-0.10 \pm 0.04$	$-0.02 \pm 0.04$

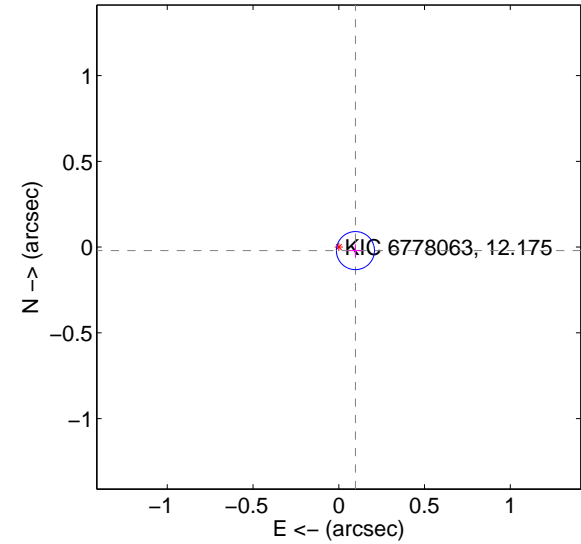
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

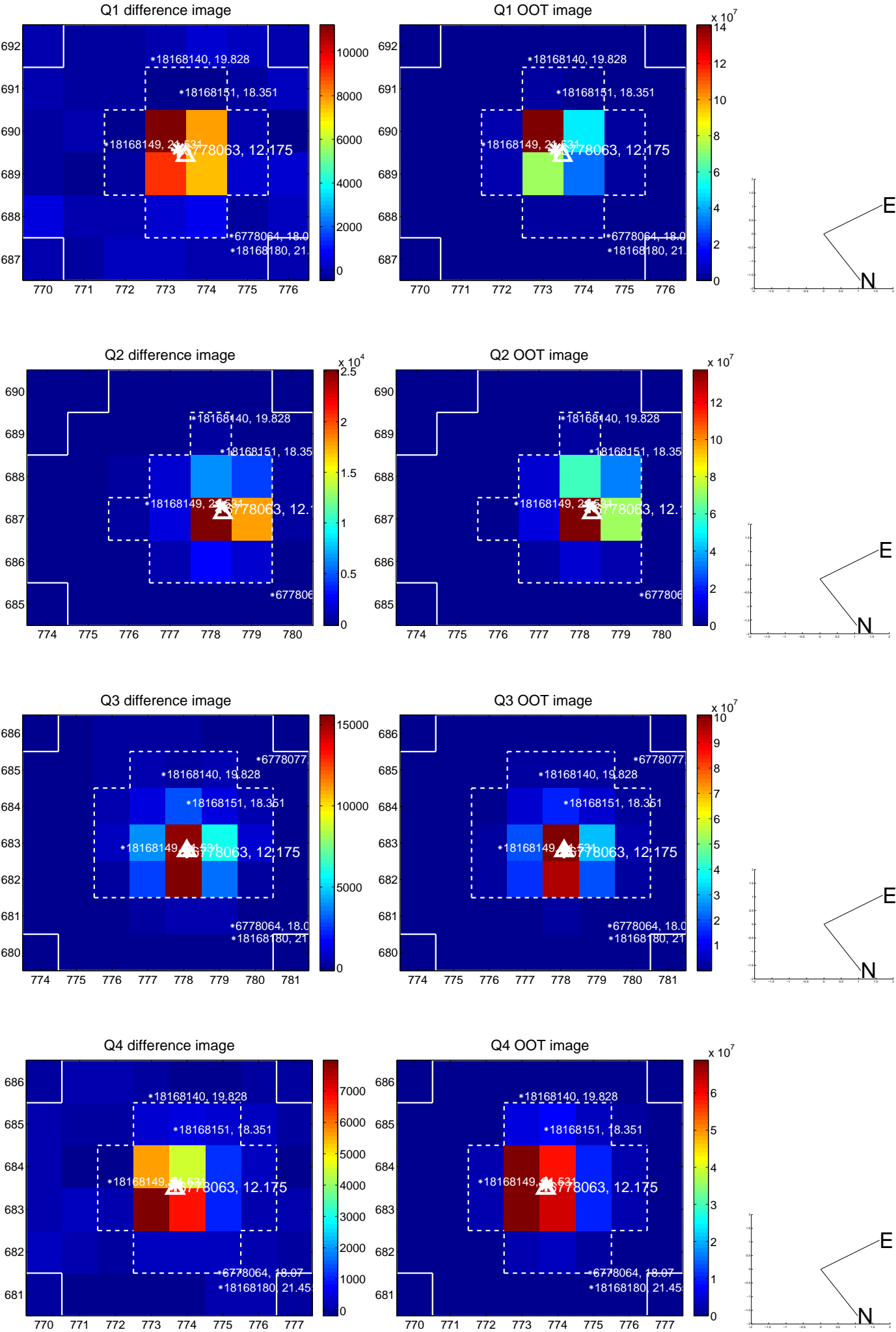


offset from photometric centroids

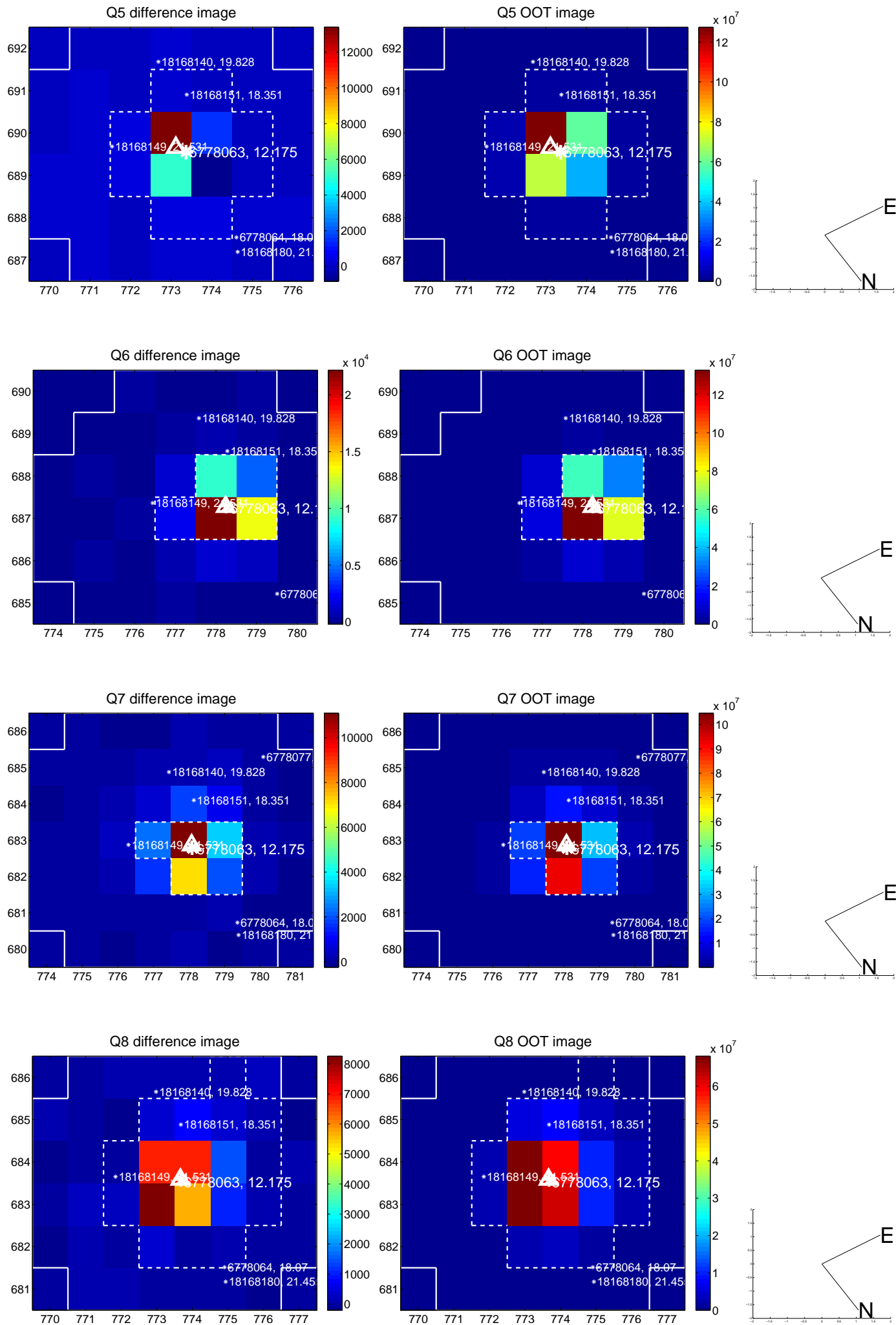


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

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

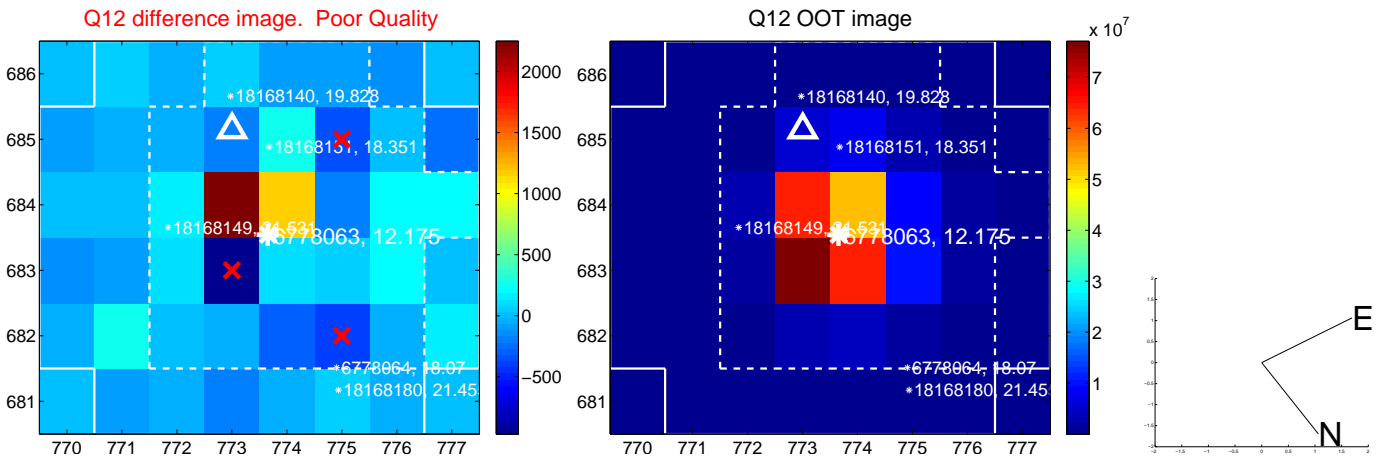
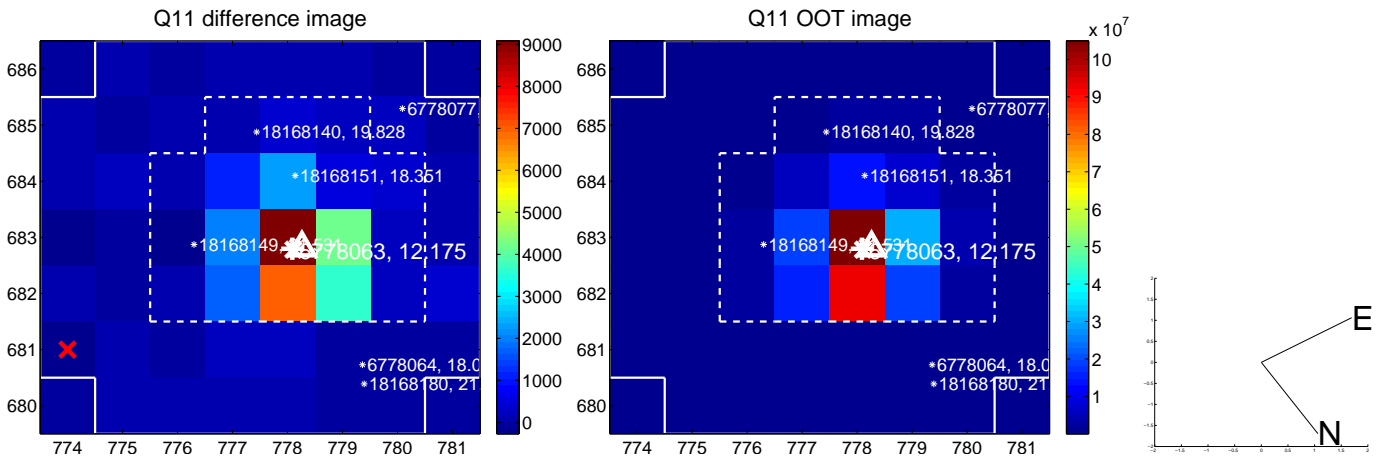
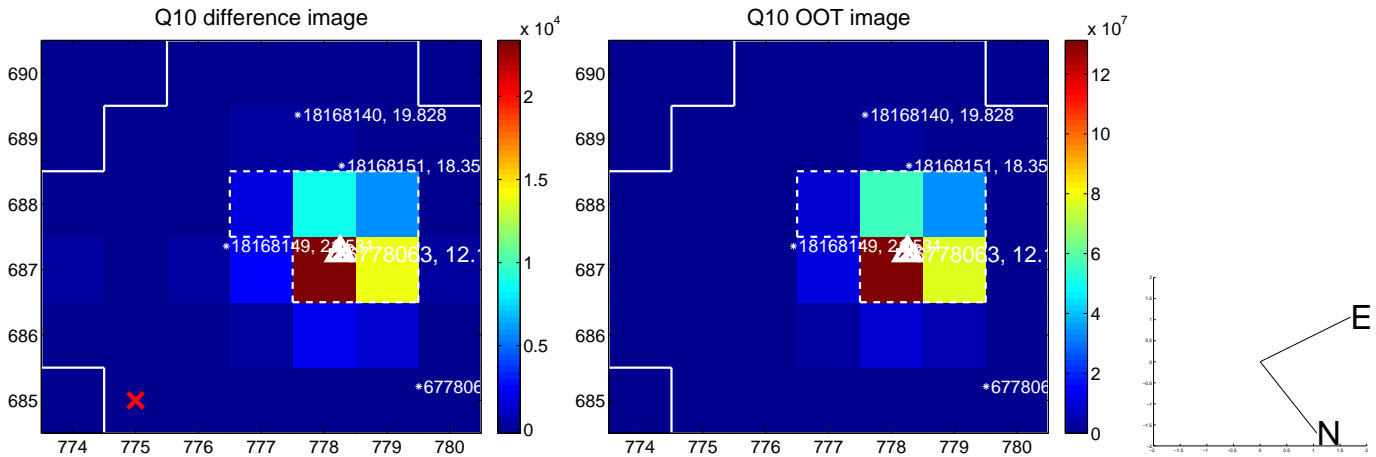
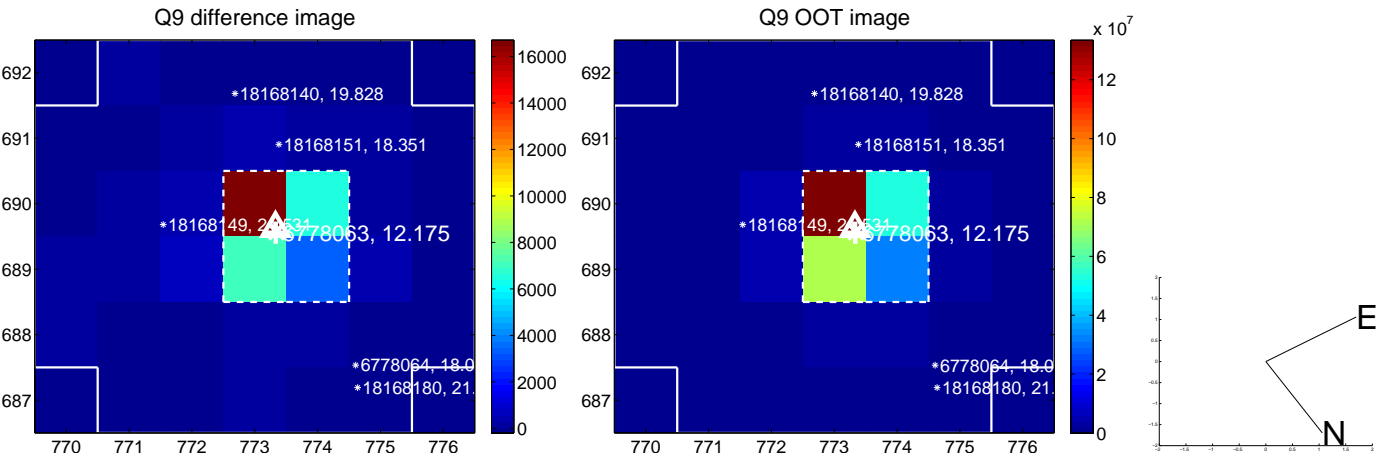


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

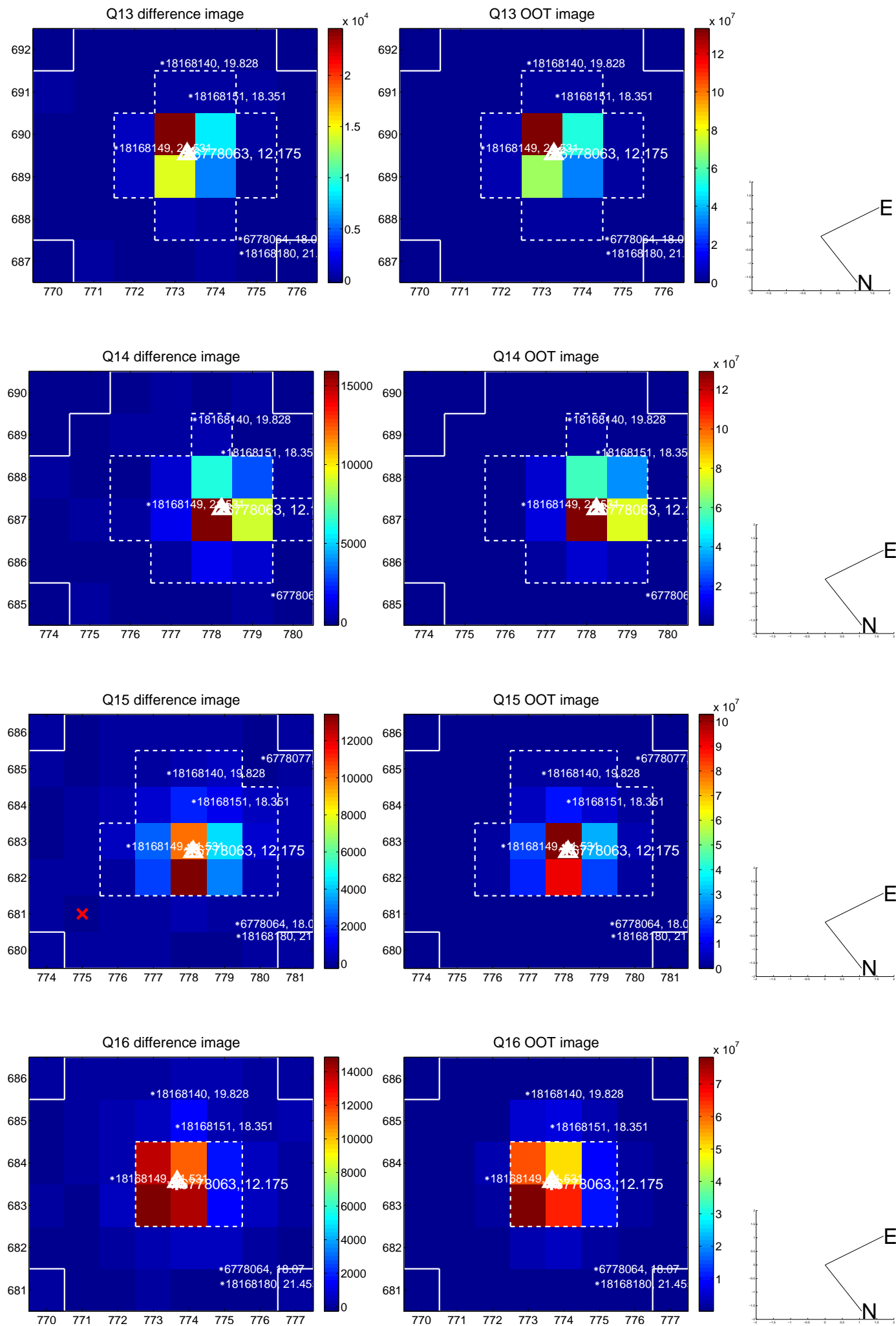




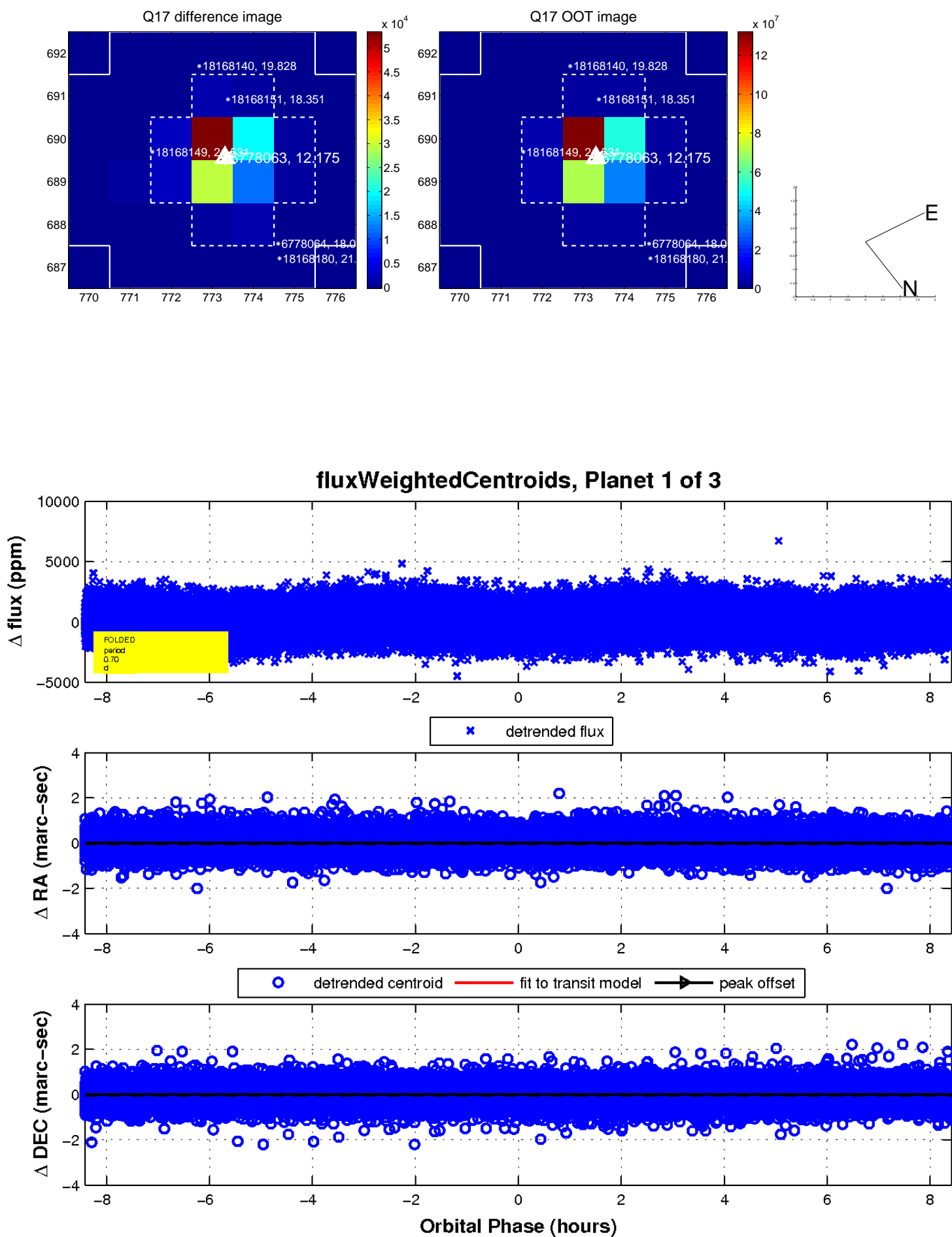
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

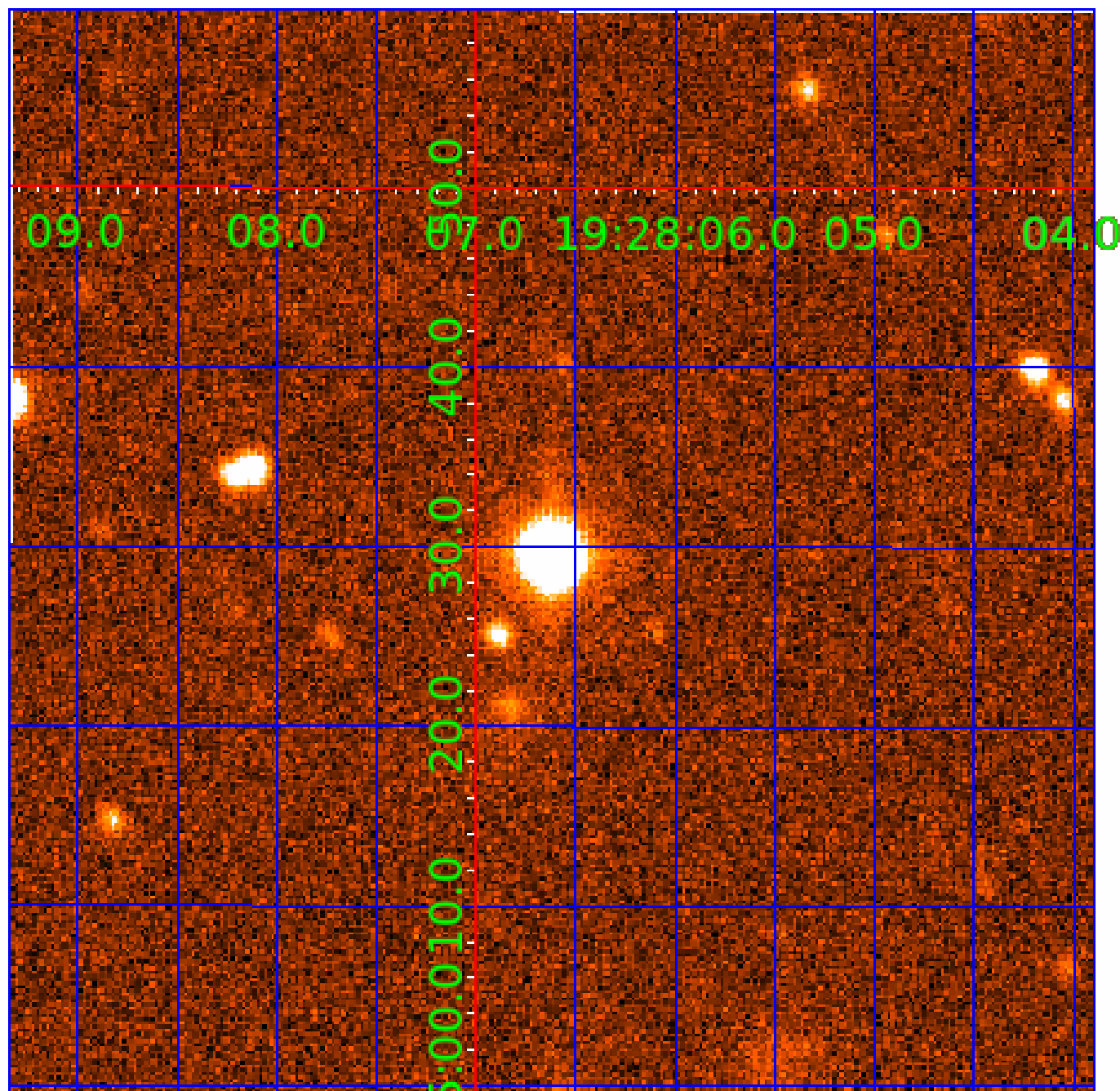


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 006778063

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006778063-01	OBS	No	0.701482	131.745585	238.4	2.837	20.3	19.6	1.69	7368	3.03	27125.36
006778063-02	OBS	No	0.701464	131.946591	145.9	4.862	12.8	9.7	1.69	7368	2.19	27126.30
006778063-03	OBS	No	0.860664	132.030447	470.5	2.135	12.7	9.5	1.69	7368	3.76	20651.53

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006778063-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006778063-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD
006778063-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST

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

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

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

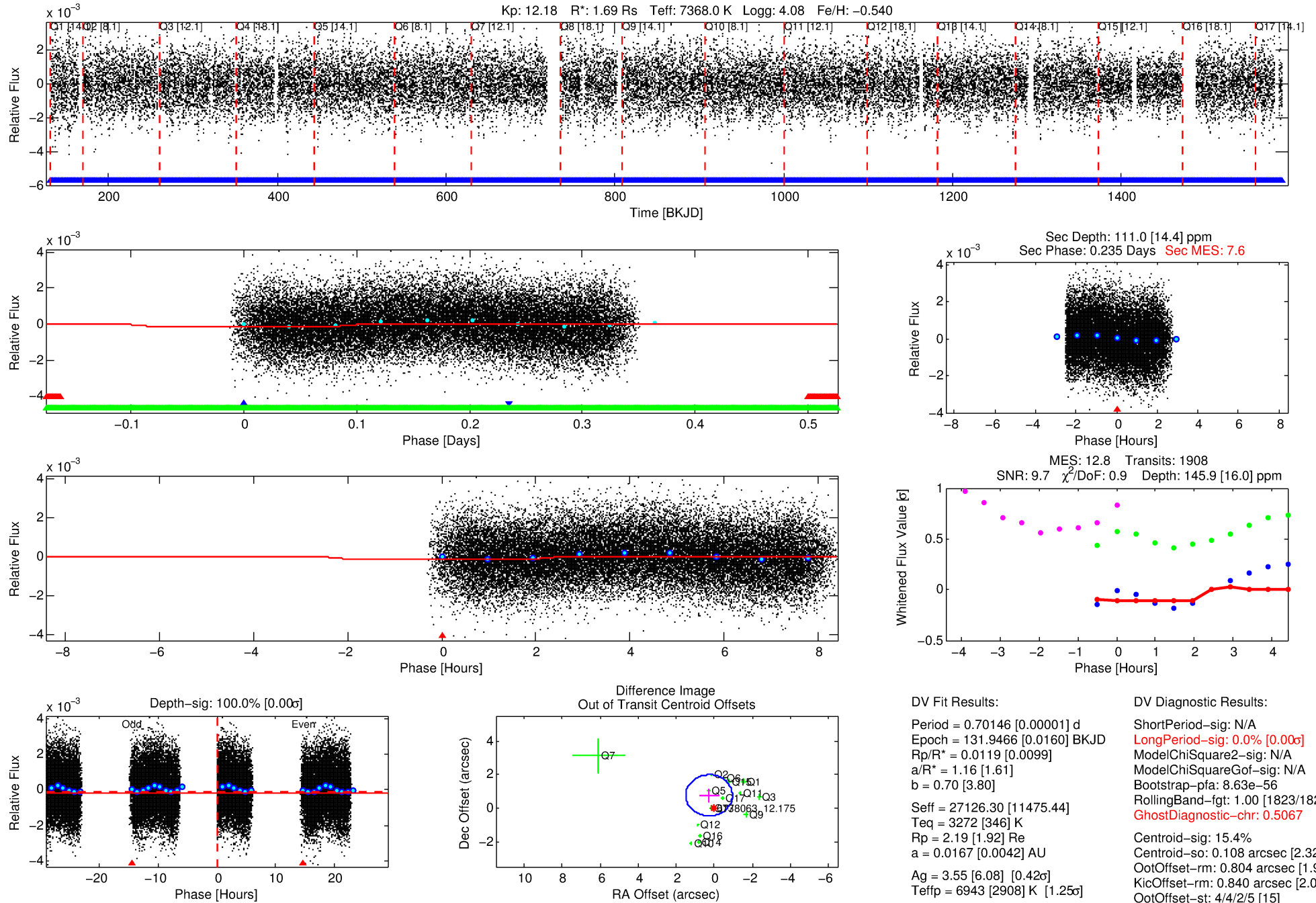
## Ephemeris Match Information For 006778063-02

No Significant Match Found



# DV One-Page Summary

KIC: 6778063 Candidate: 2 of 3 Period: 0.701 d



## DV Fit Results:

Period = 0.70146 [0.00001] d  
Epoch = 131.9466 [0.0160] BKJD  
Rp/R\* = 0.0119 [0.0099]  
a/R\* = 1.16 [1.61]  
b = 0.70 [3.80]  
Seff = 27126.30 [11475.44]  
Teq = 3272 [346] K  
Rp = 2.19 [1.92] Re  
a = 0.0167 [0.0042] AU  
Ag = 3.55 [6.08] [0.42 $\sigma$ ]  
Teffp = 6943 [2908] K [1.25 $\sigma$ ]

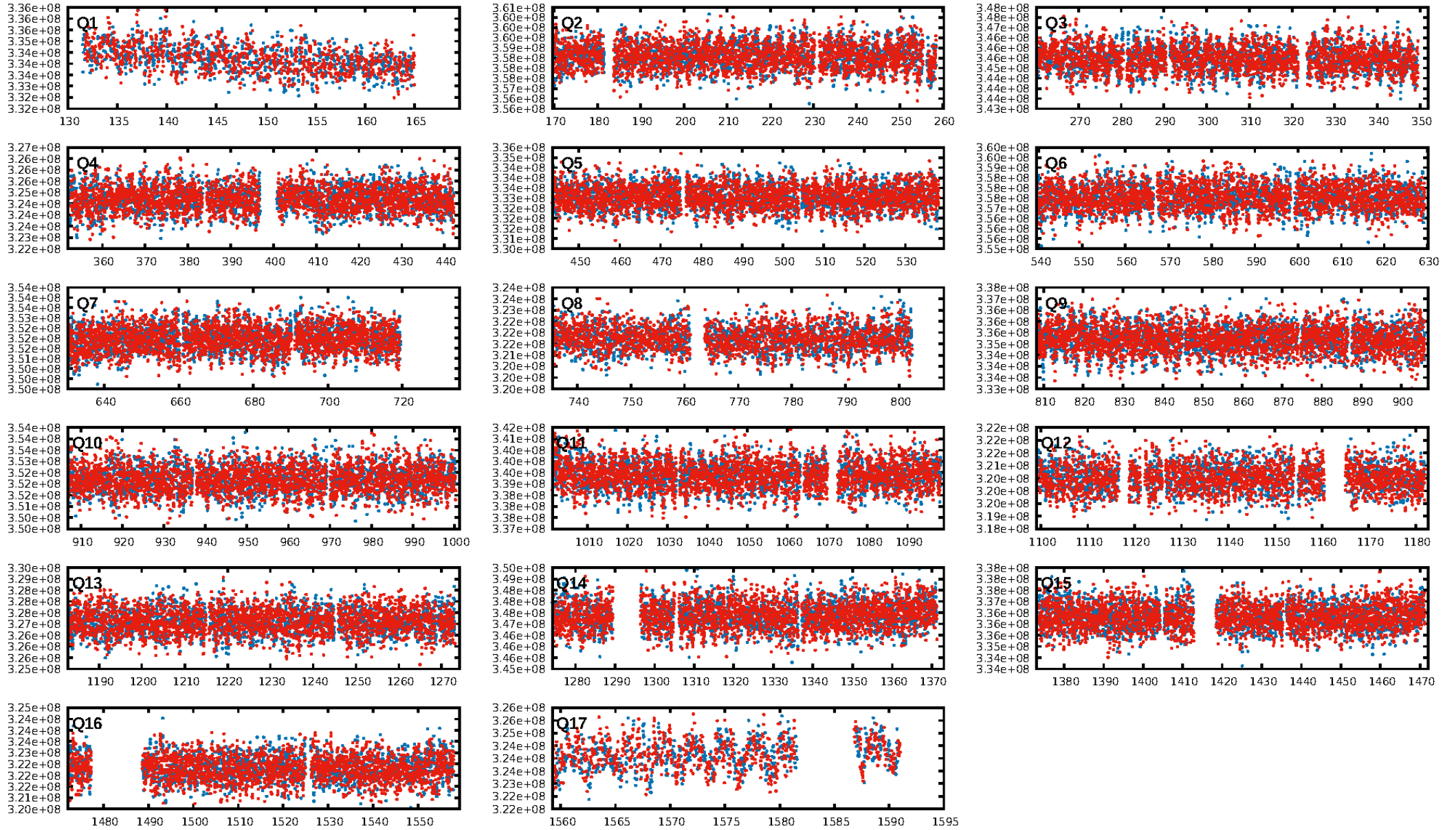
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
**LongPeriod-sig: 0.0% [0.00 $\sigma$ ]**  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 8.63e-56  
RollingBand-fgt: 1.00 [1823/1823]  
**GhostDiagnostic-chr: 0.5067**  
Centroid-sig: 15.4%  
Centroid-so: 0.108 arcsec [2.32 $\sigma$ ]  
OotOffset-rm: 0.804 arcsec [1.96 $\sigma$ ]  
OotOffset-st: 4/4/2/5 [15]  
KicOffset-rm: 0.840 arcsec [2.04 $\sigma$ ]  
KicOffset-st: 4/4/2/5 [15]  
DiffImageQuality-fgm: 0.47 [7/15]  
DiffImageOverlap-fno: 0.00 [0/17]

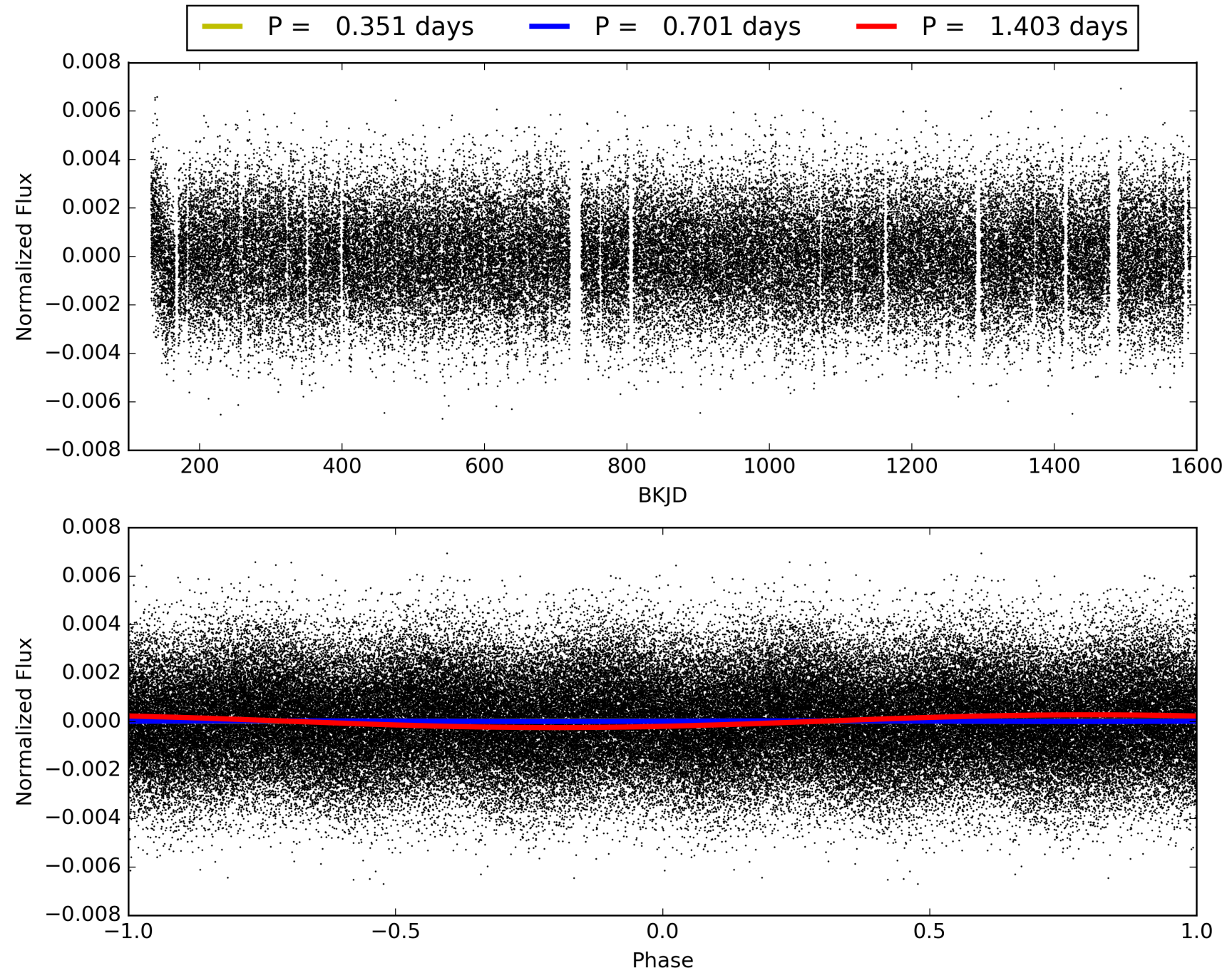
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 11:07:14 Z

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

# TCE 006778063-02, PDC Light Curves



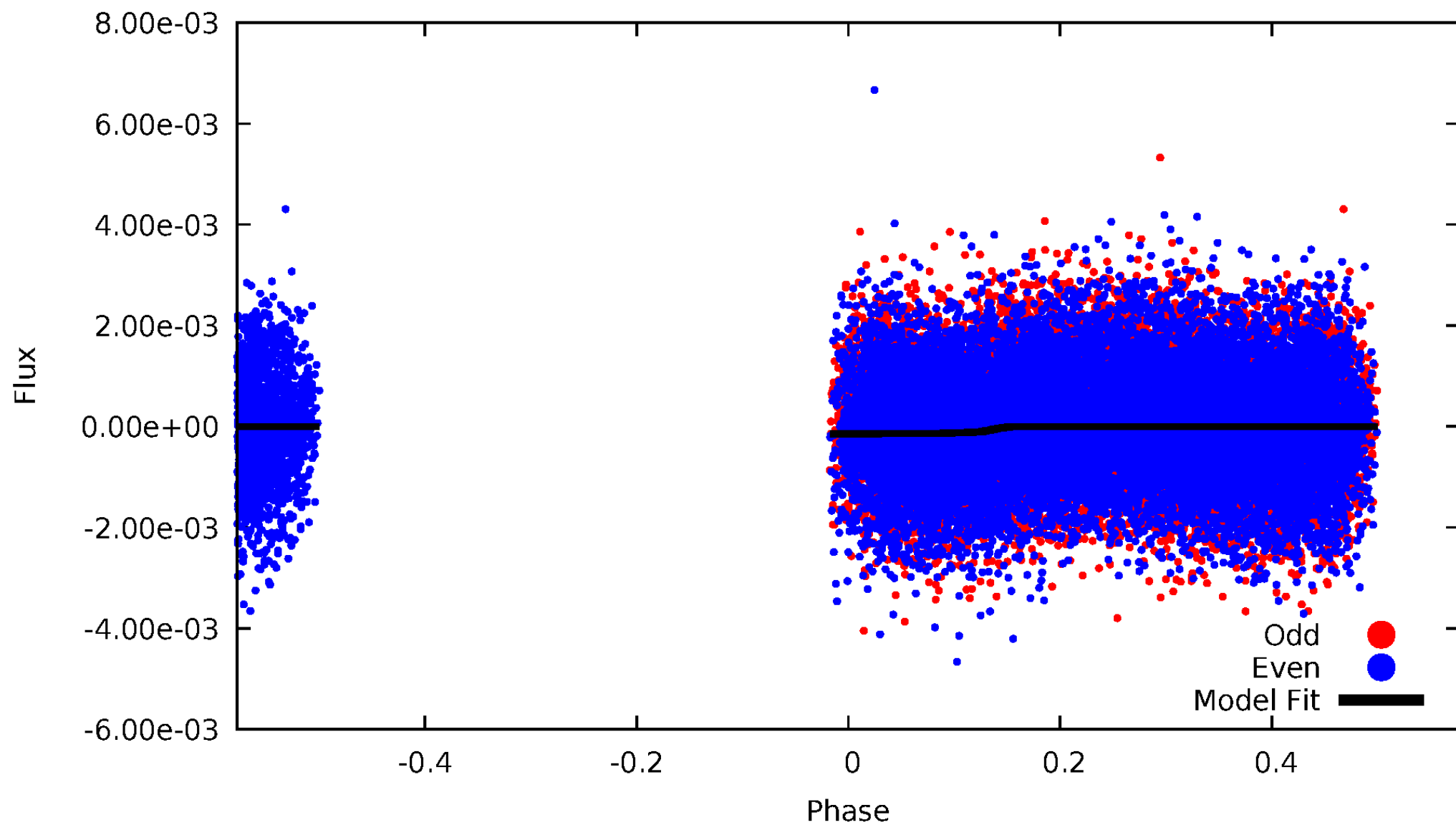
TCE 006778063-02





# DV Odd/Even

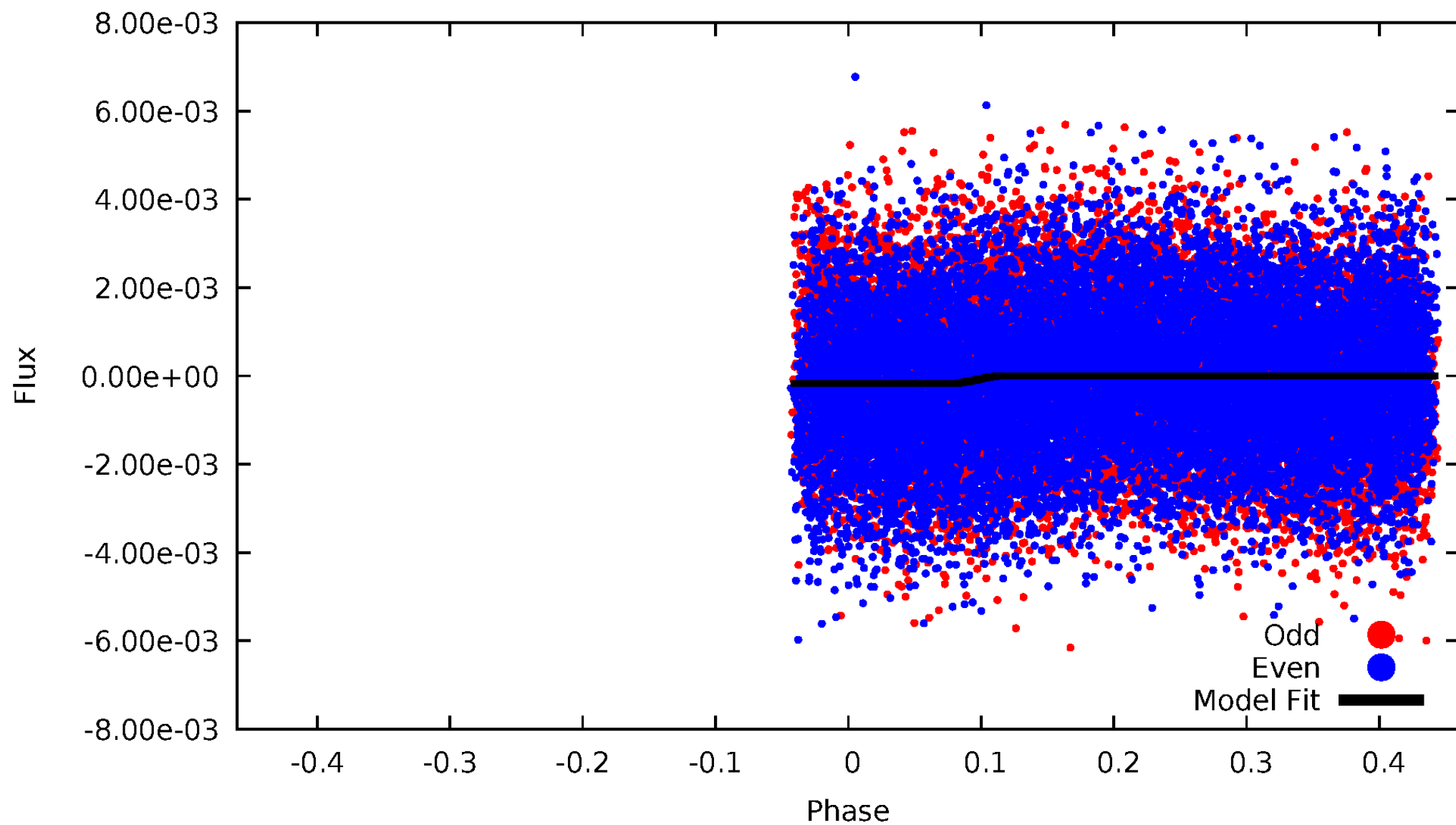
TCE 006778063-02





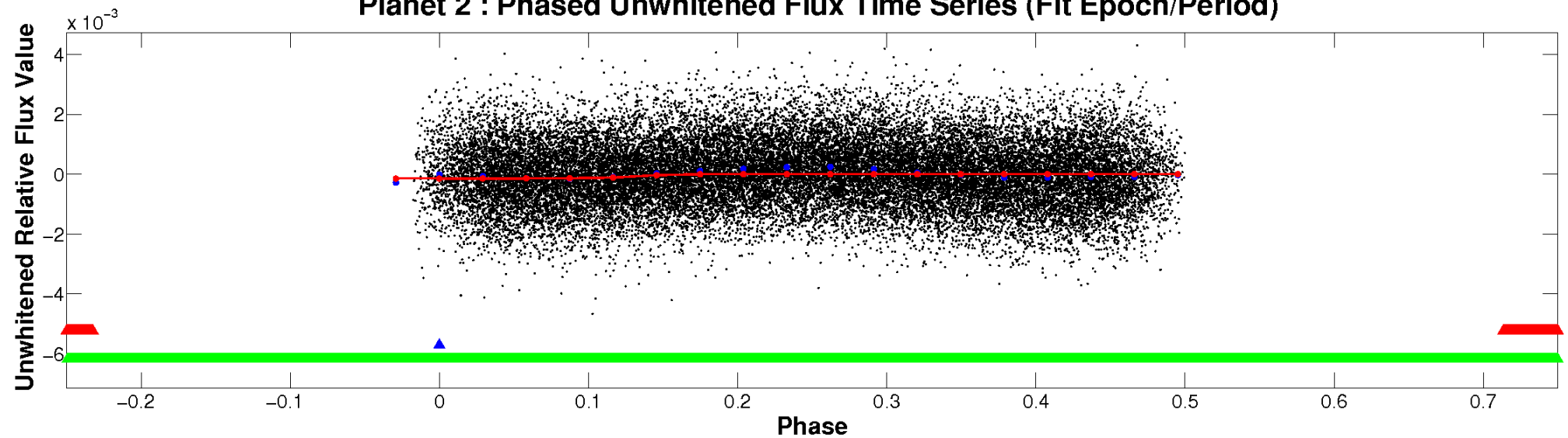
# ALT Odd/Even

TCE 006778063-02

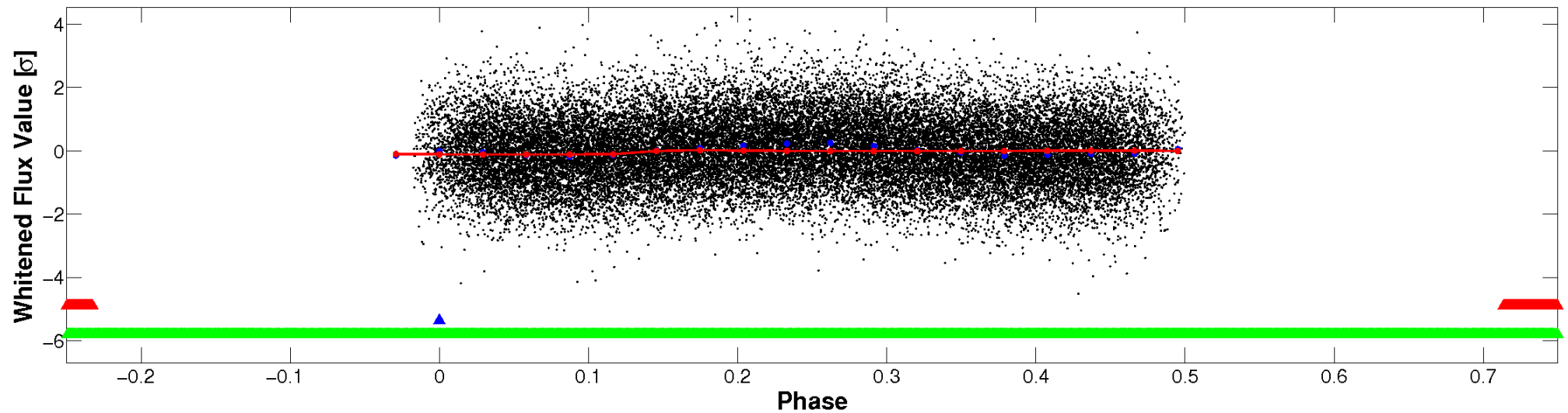


# Non-Whitened Vs. Whitened Light Curve

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

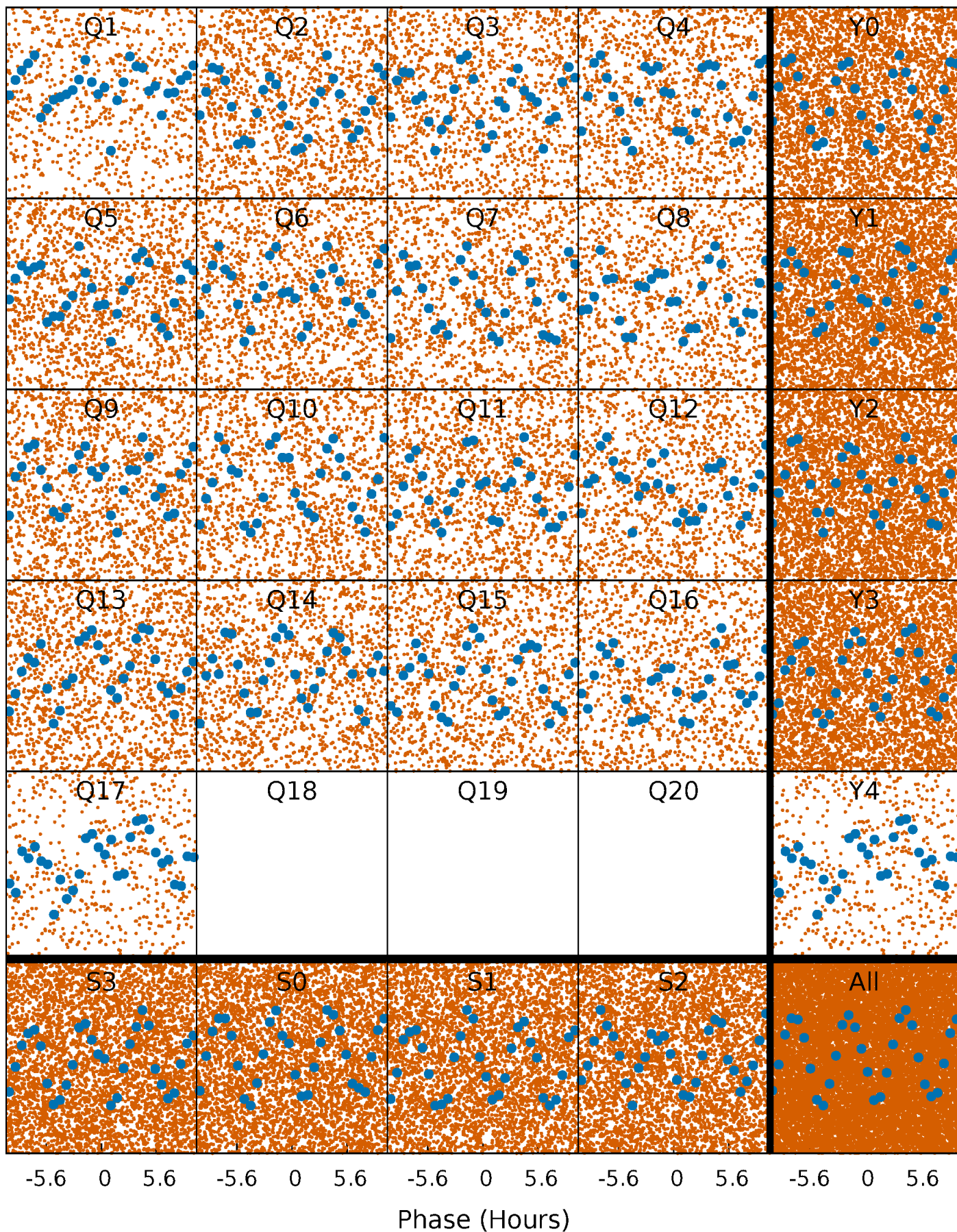


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

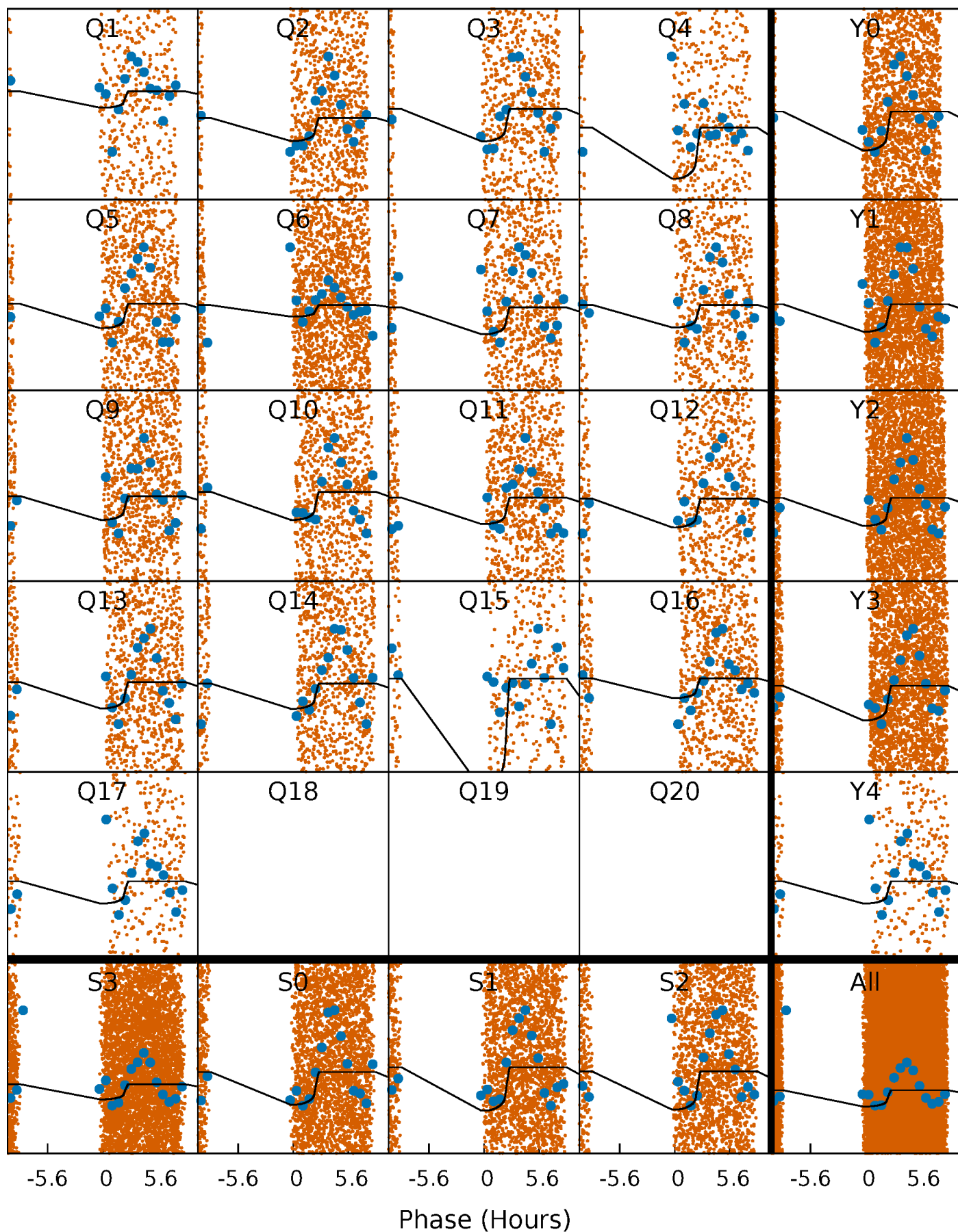
TCE 006778063-02 P= 0.701464 Days  $T_0=131.946591$  (BKJD)





# DV Quarter-Phased Transit Curves

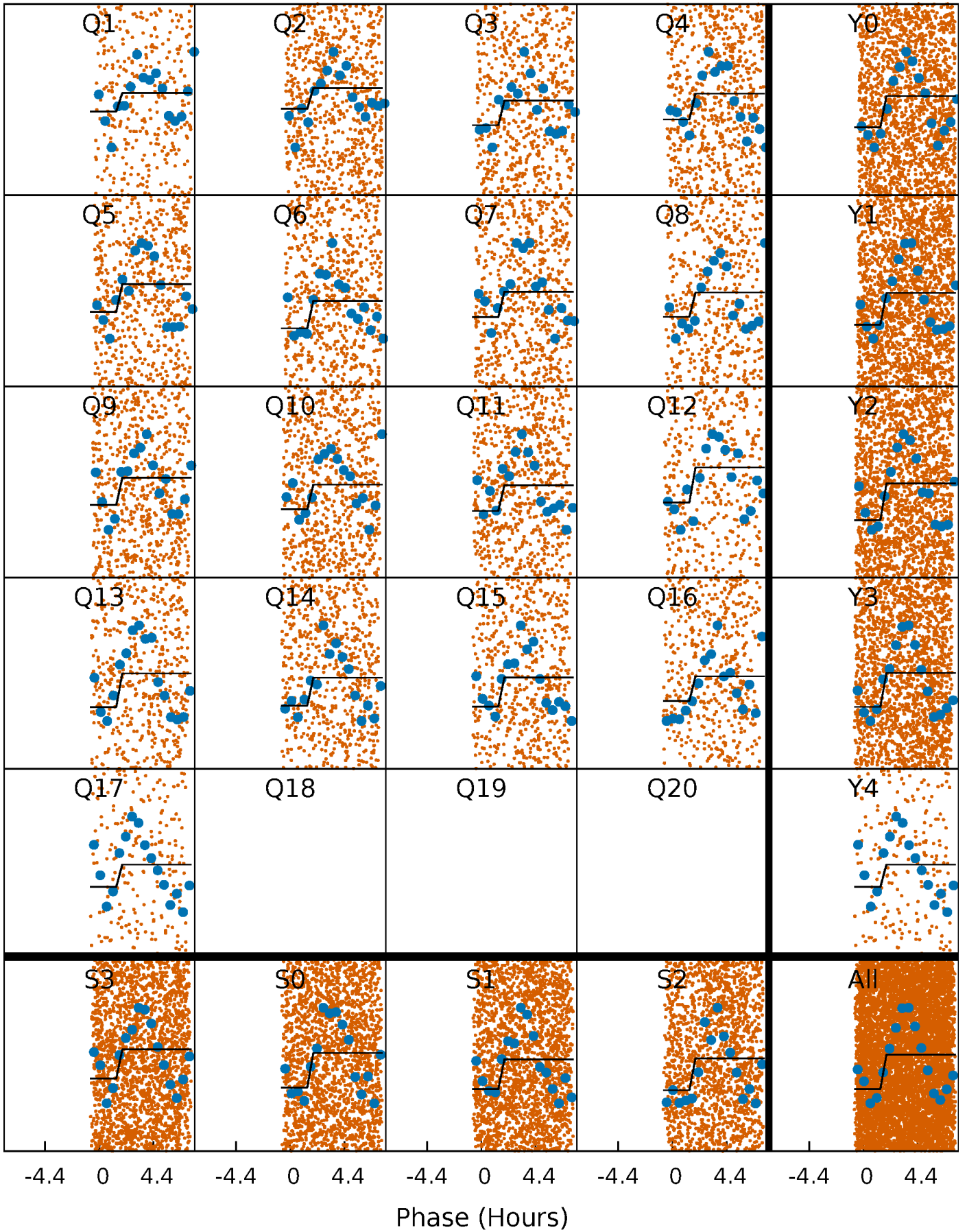
TCE 006778063-02   P= 0.701464 Days    $T_0=131.946591$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

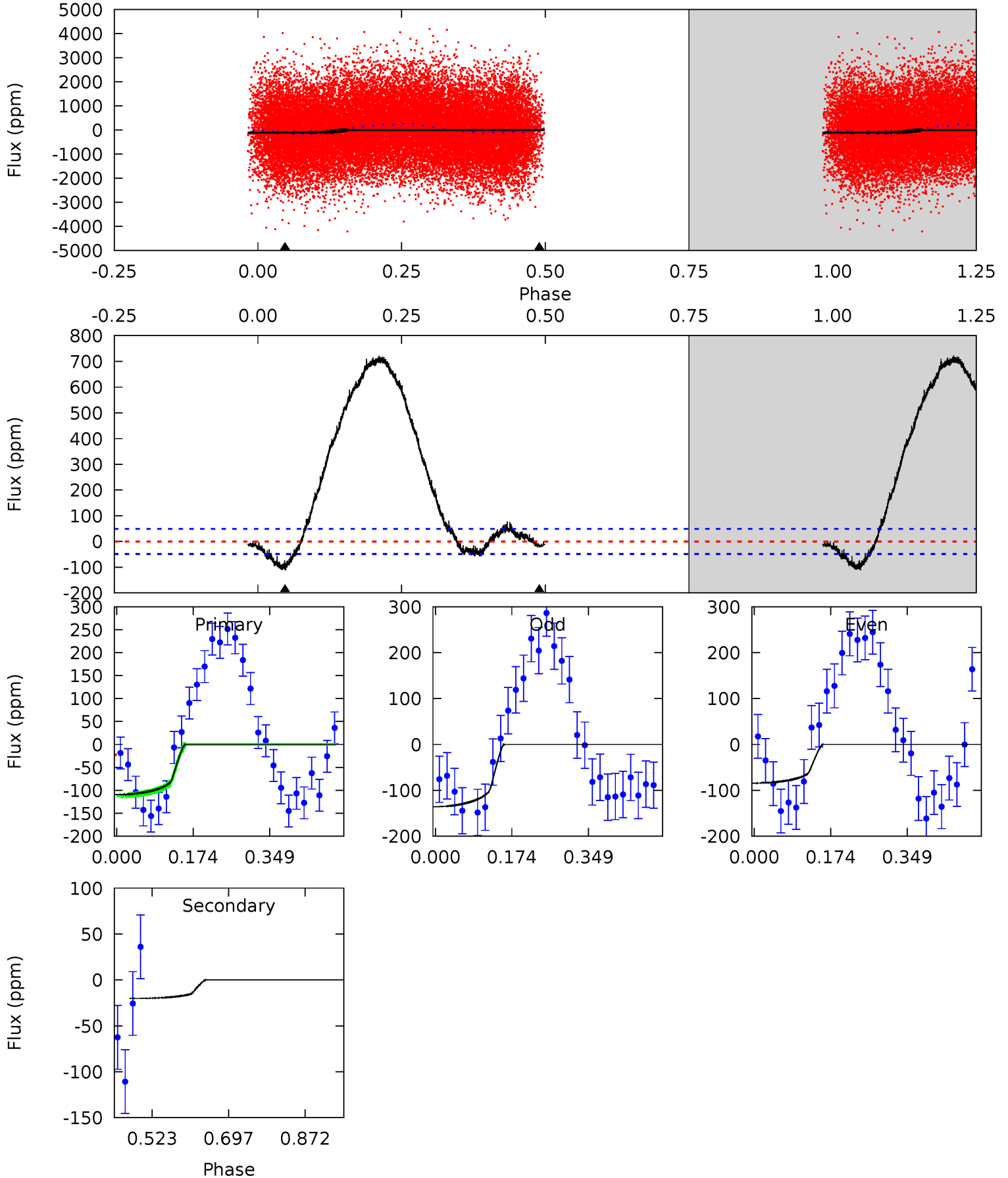
TCE 006778063-02 P= 0.701490 Days  $T_0=131.947222$  (BKJD)



# DV Model-Shift Uniqueness Test

006778063-02, P = 0.701464 Days, E = 131.245127 Days

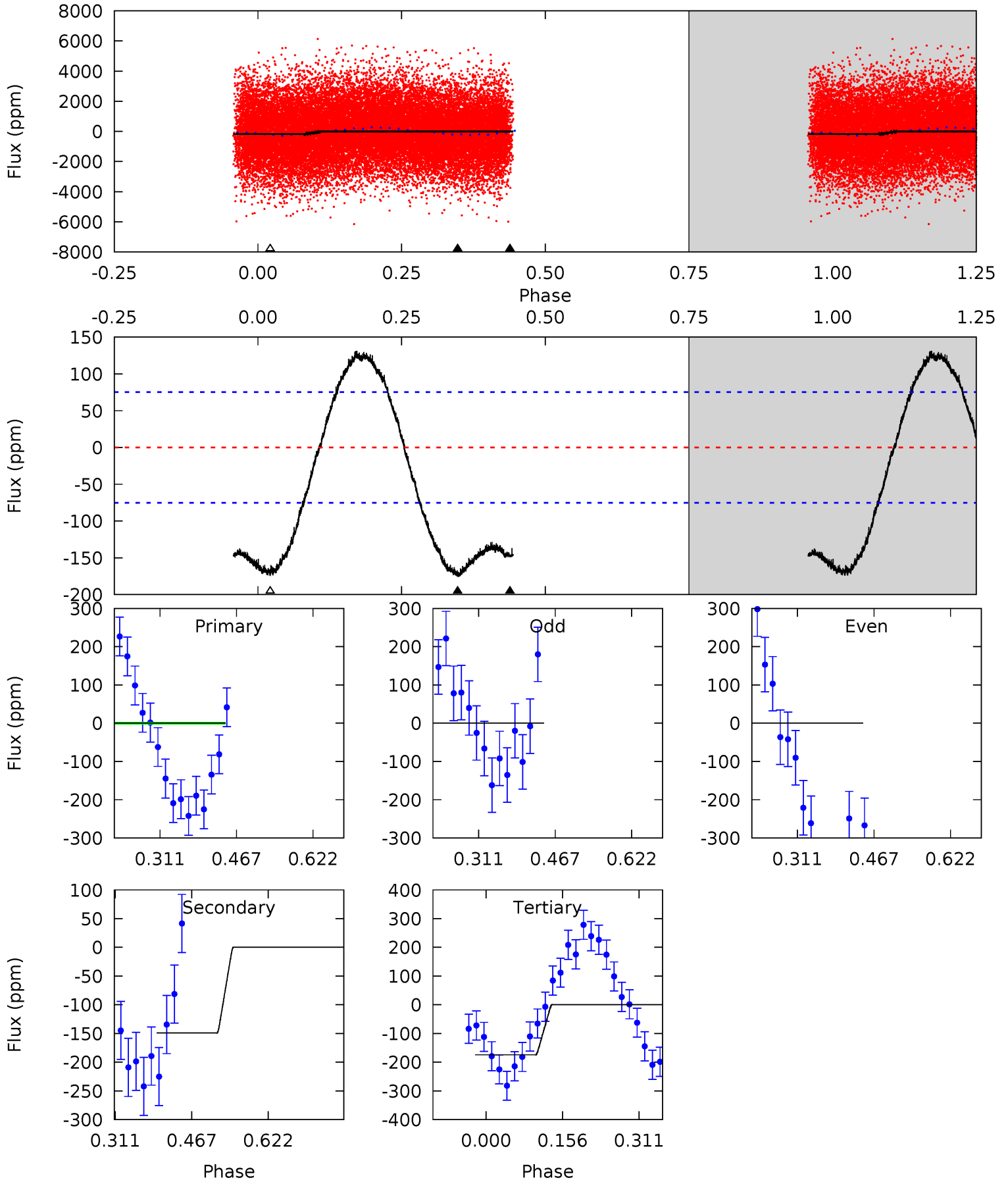
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.98	1.83	0	0	4.45	1.36	3.23	9.98	9.98	1.83	1.83	2.35	1.19	0.87	1.17



# Alt Model-Shift Uniqueness Test

006778063-02, P = 0.701490 Days, E = 131.245732 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
10.4	8.85	10.3	0	4.47	1.42	6.55	0.05	10.4	-1.49	8.85	10.6	1.19	0.43	3.05



### Stellar Parameters For KIC 006778063

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7368^{+233}_{-285}$	$4.082^{+0.228}_{-0.152}$	$-0.540^{+0.300}_{-0.300}$	$1.693^{+0.458}_{-0.458}$	$1.264^{+0.211}_{-0.154}$	$0.367^{+0.481}_{-0.154}$
	+3%/-4%	+6%/-4%	+56%/-56%	+27%/-27%	+17%/-12%	+131%/-42%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 006778063-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-20 \pm 11$	$2.38^{+1.65}_{-1.44}$	$4512^{+375}_{-359}$	$3791^{+2584}_{-7425}$	$0.523^{+2.796}_{-0.387}$
Alt.	$-149 \pm 17$	$2.53^{+1.79}_{-1.51}$	$4532^{+339}_{-357}$	$6624^{+6470}_{-1664}$	$3.631^{+19.033}_{-2.380}$

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



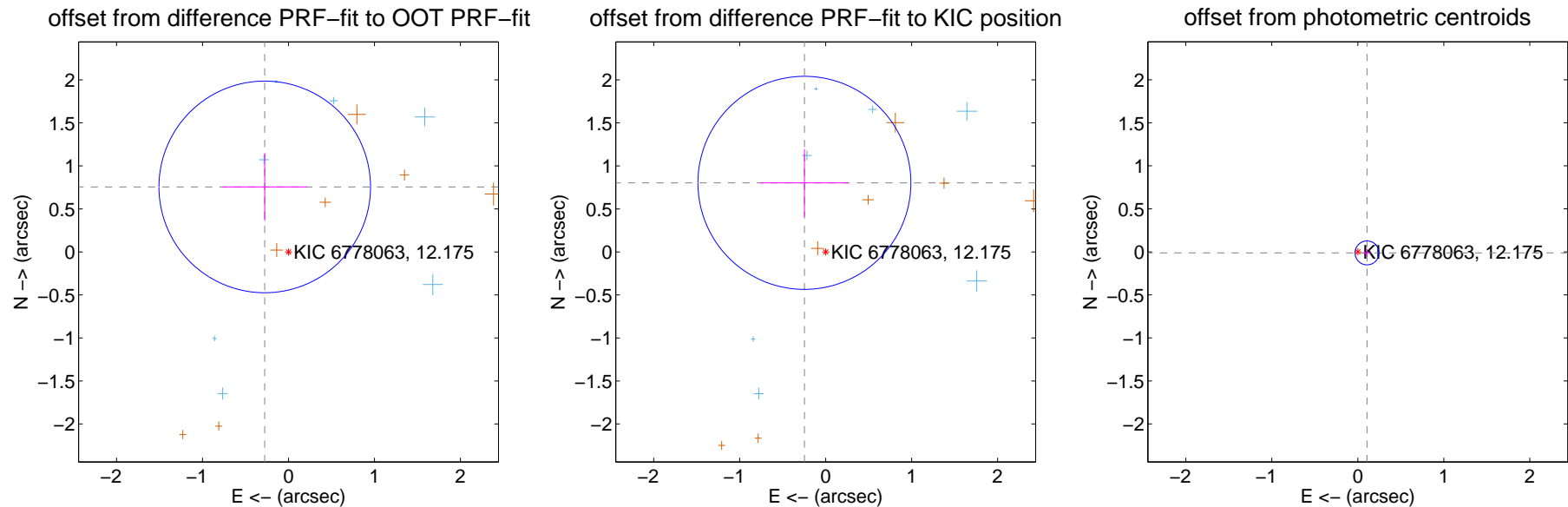
## DV Centroid Data

Supplemental centroid analysis for 006778063-02. Kepler magnitude: 12.18. Transit SNR 9.72

There are 7 quarters with good PRF difference image offsets

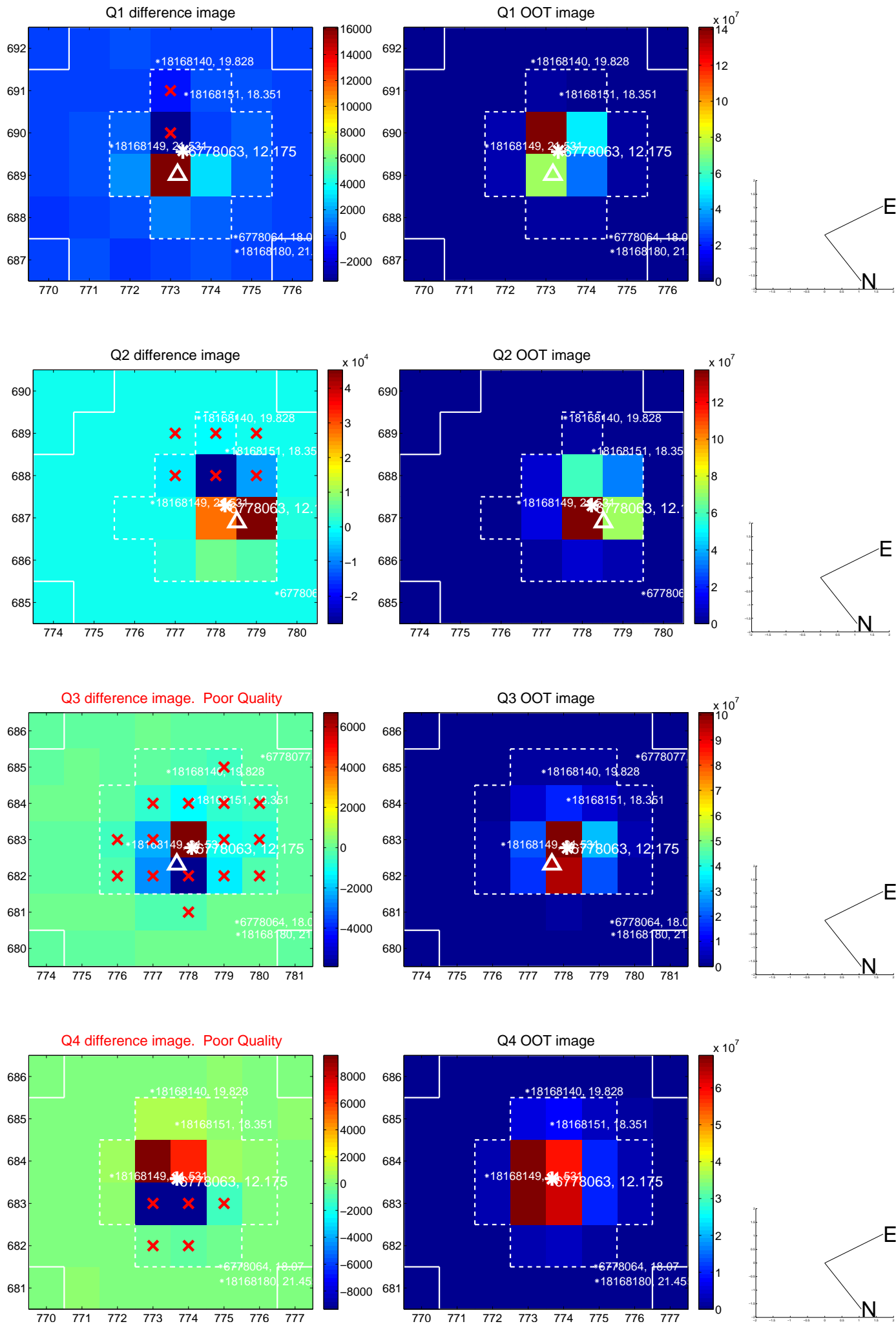
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.804 \pm 0.410$	1.96	$0.276 \pm 0.491$	$0.756 \pm 0.394$
PRF-fit source offset from KIC position	$0.840 \pm 0.413$	2.04	$0.247 \pm 0.512$	$0.803 \pm 0.392$
photometric centroid source offset	$0.11 \pm 0.05$	2.32	$-0.11 \pm 0.05$	$-0.01 \pm 0.05$

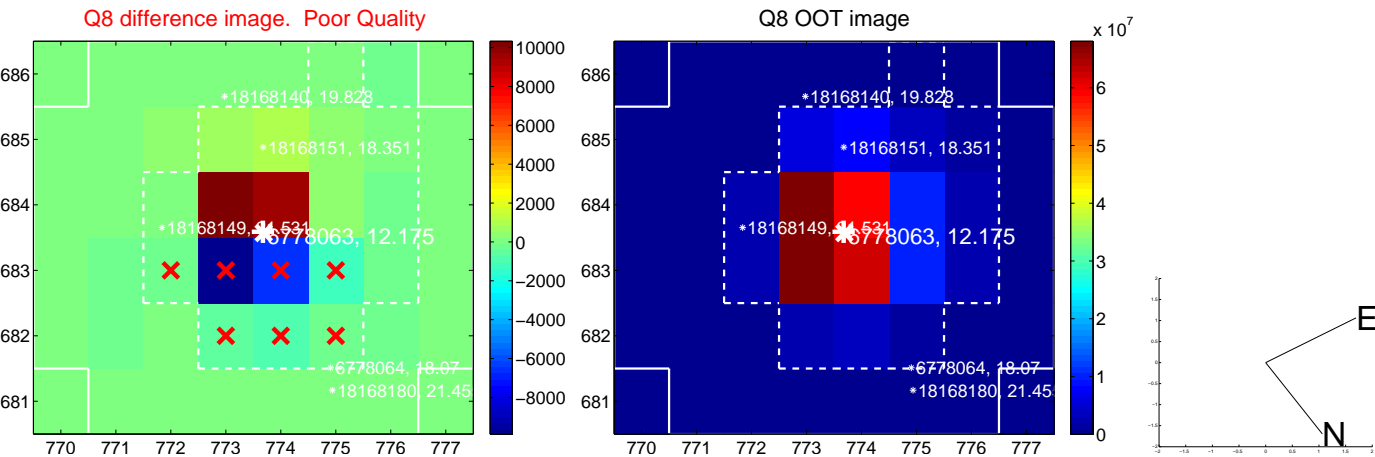
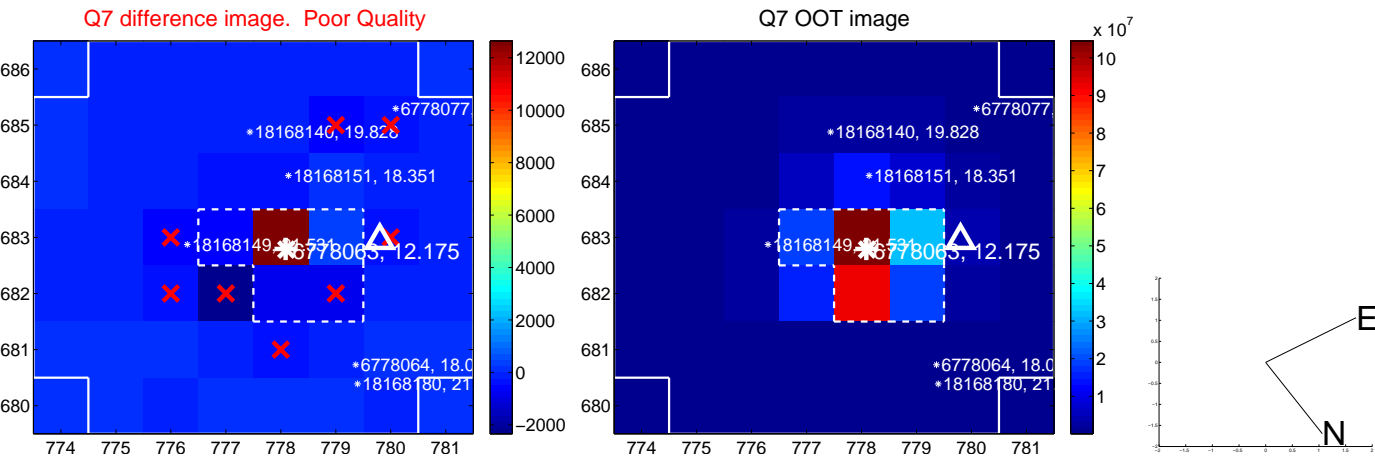
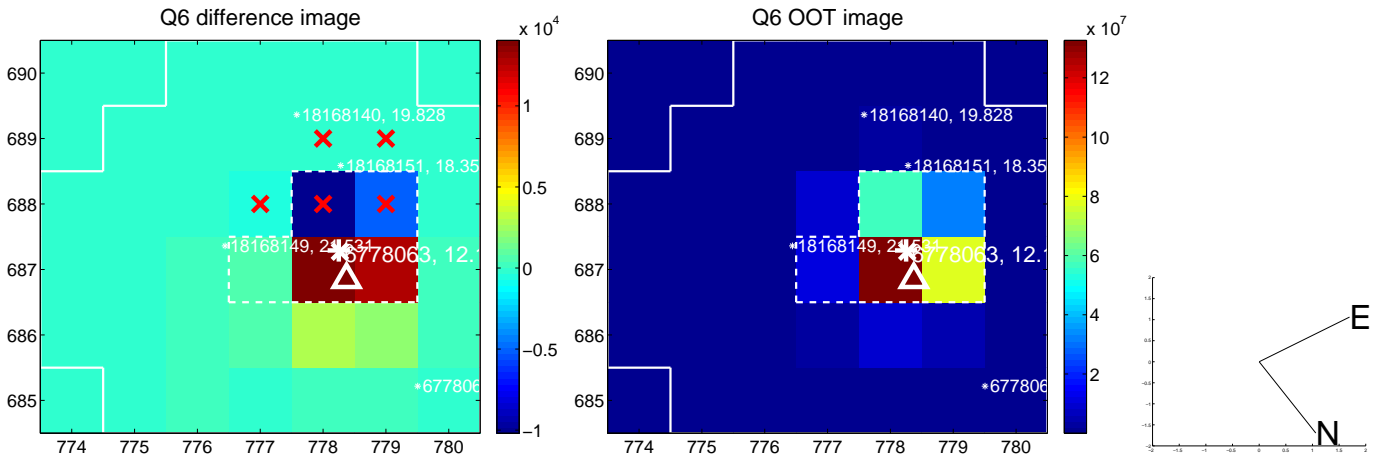
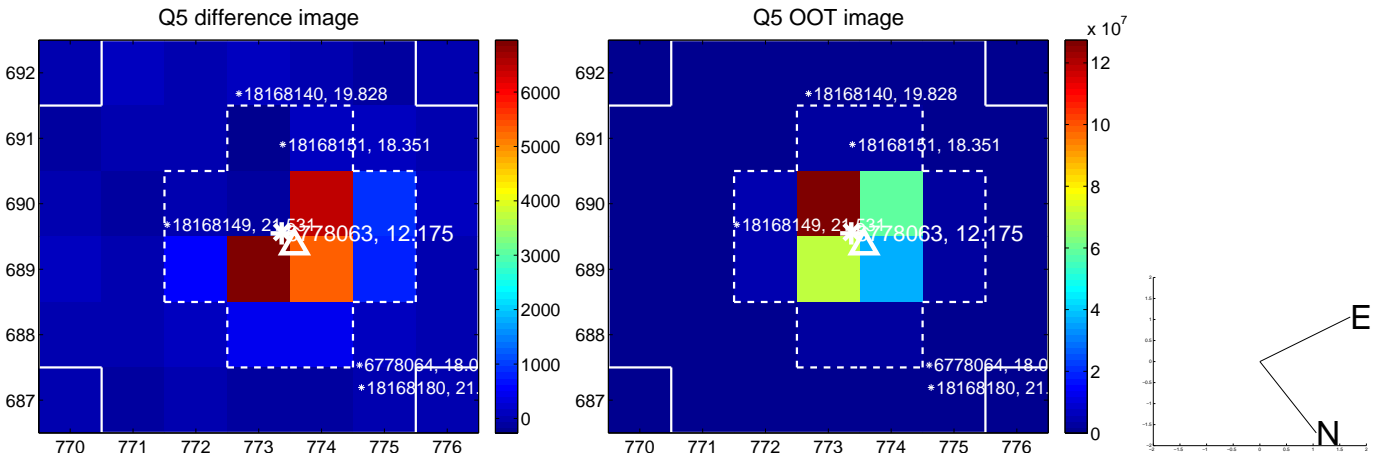


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

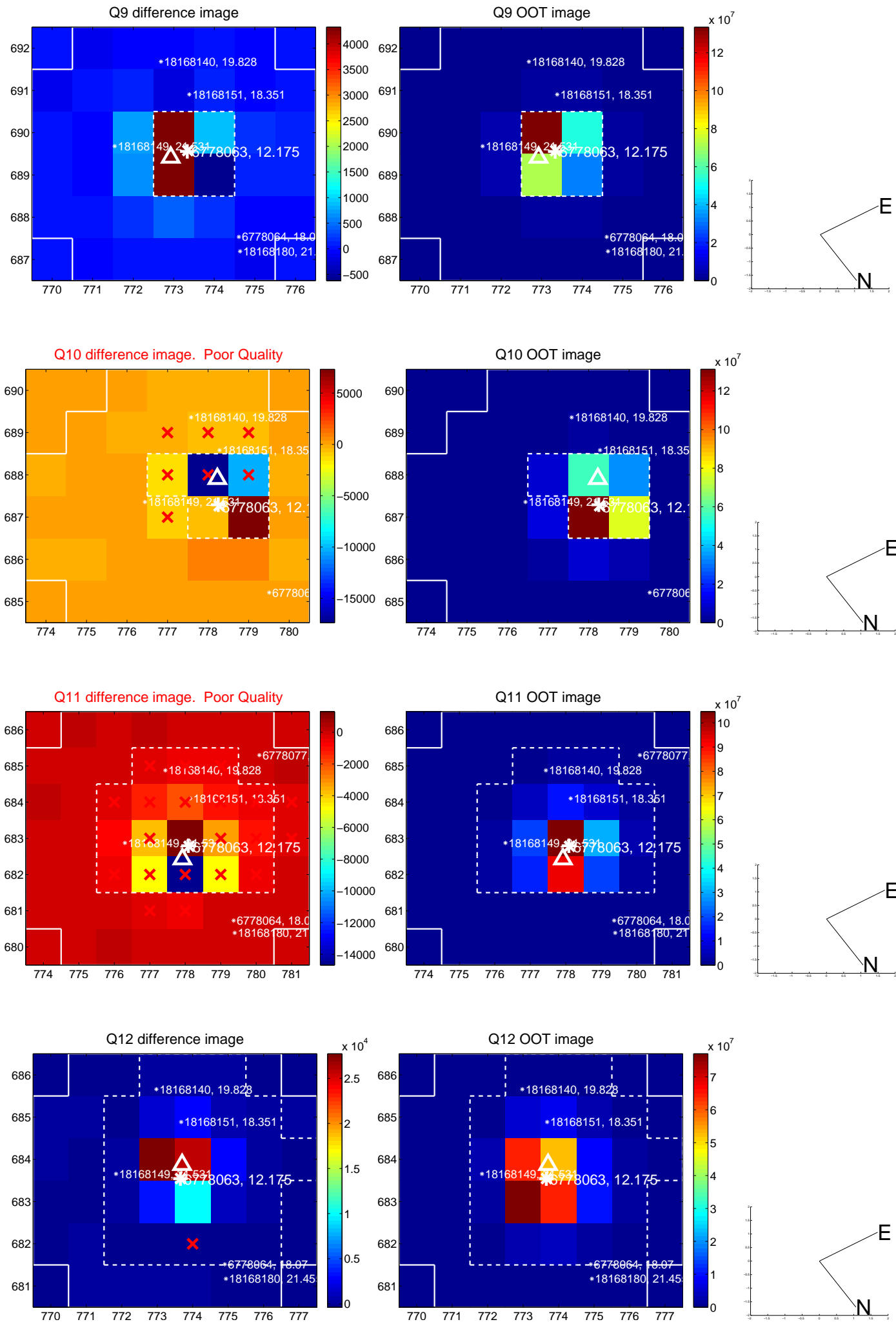
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



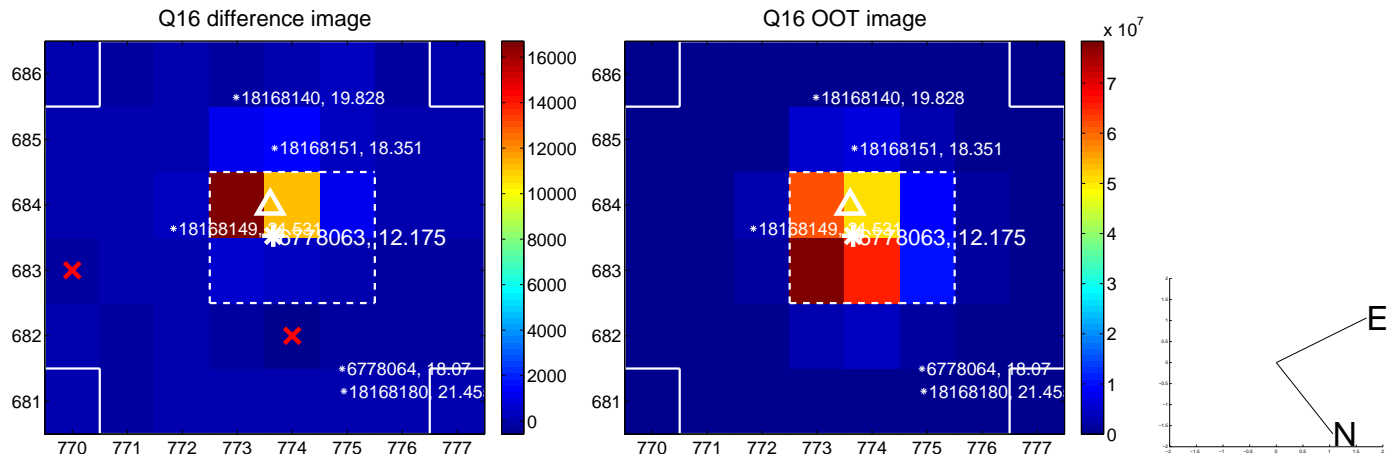
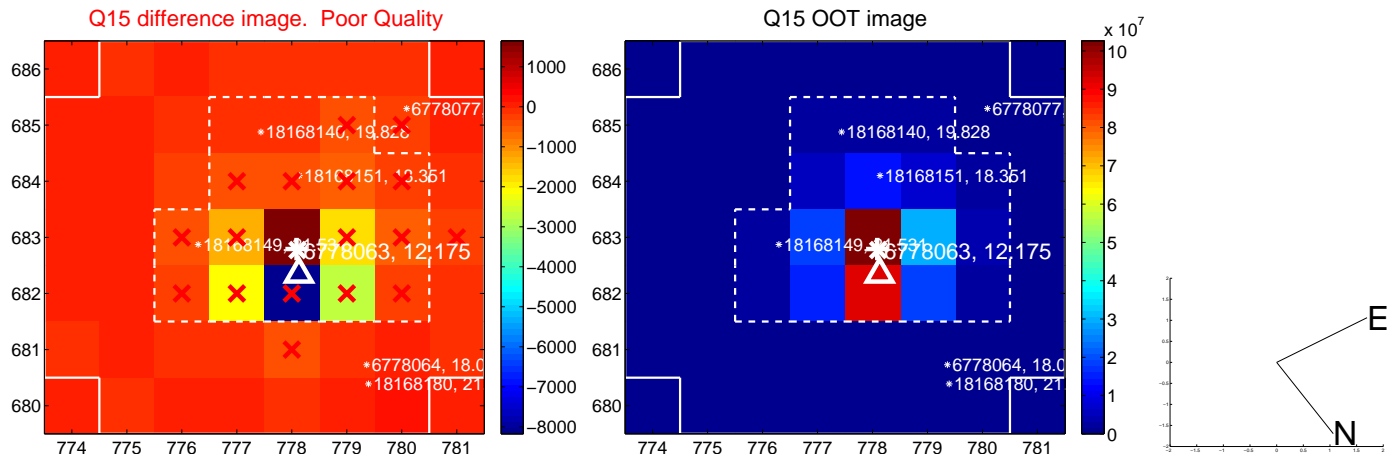
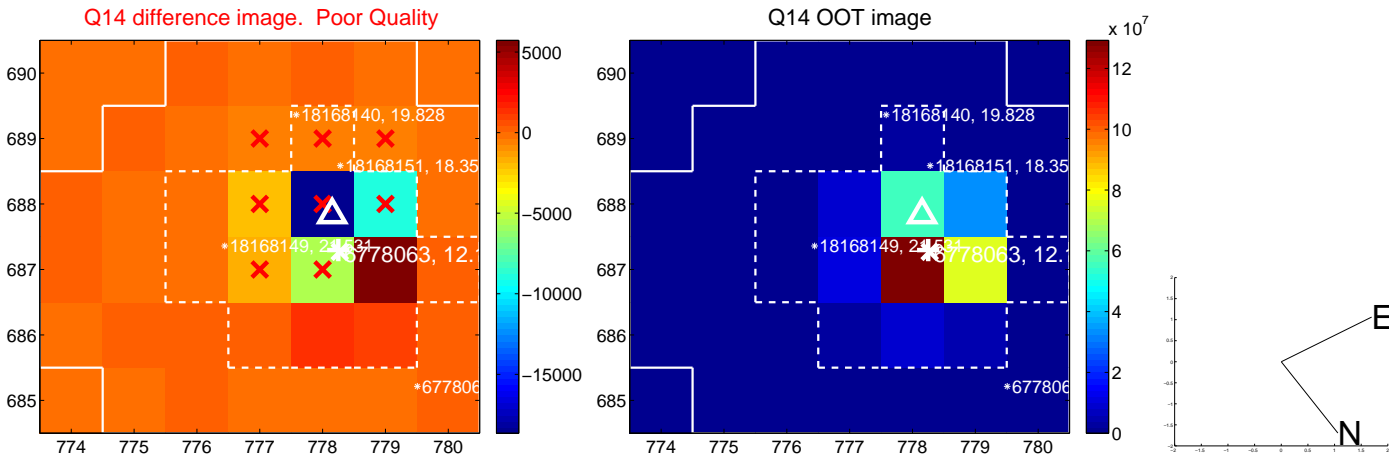
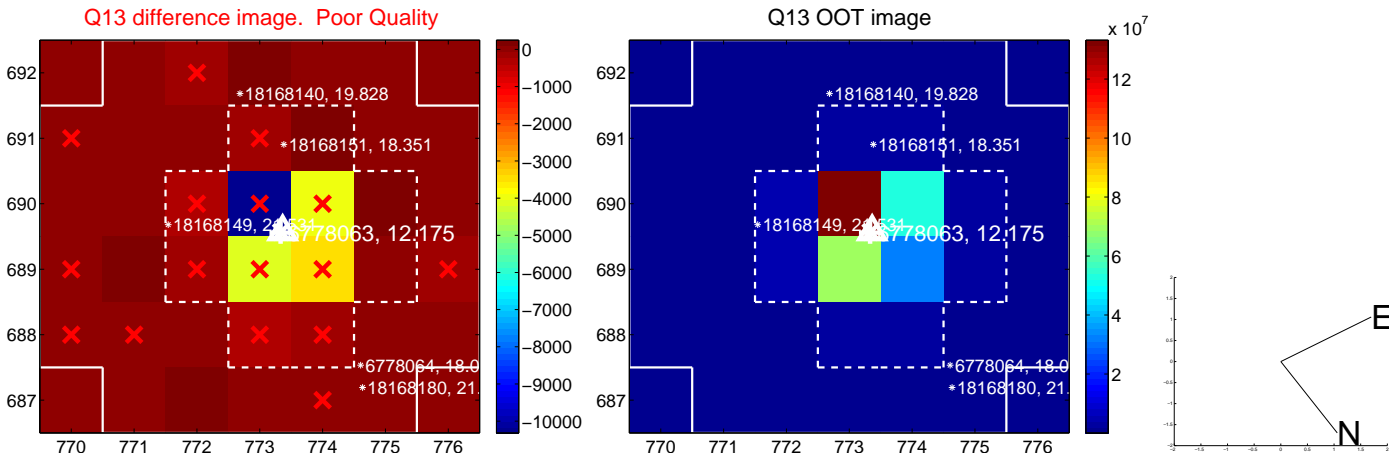
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

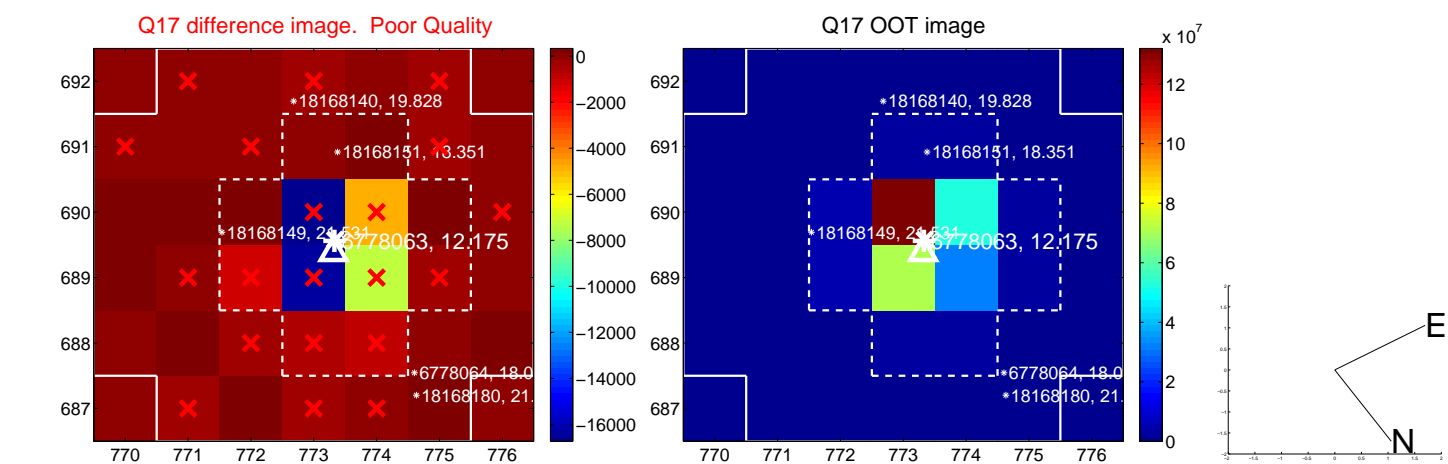


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

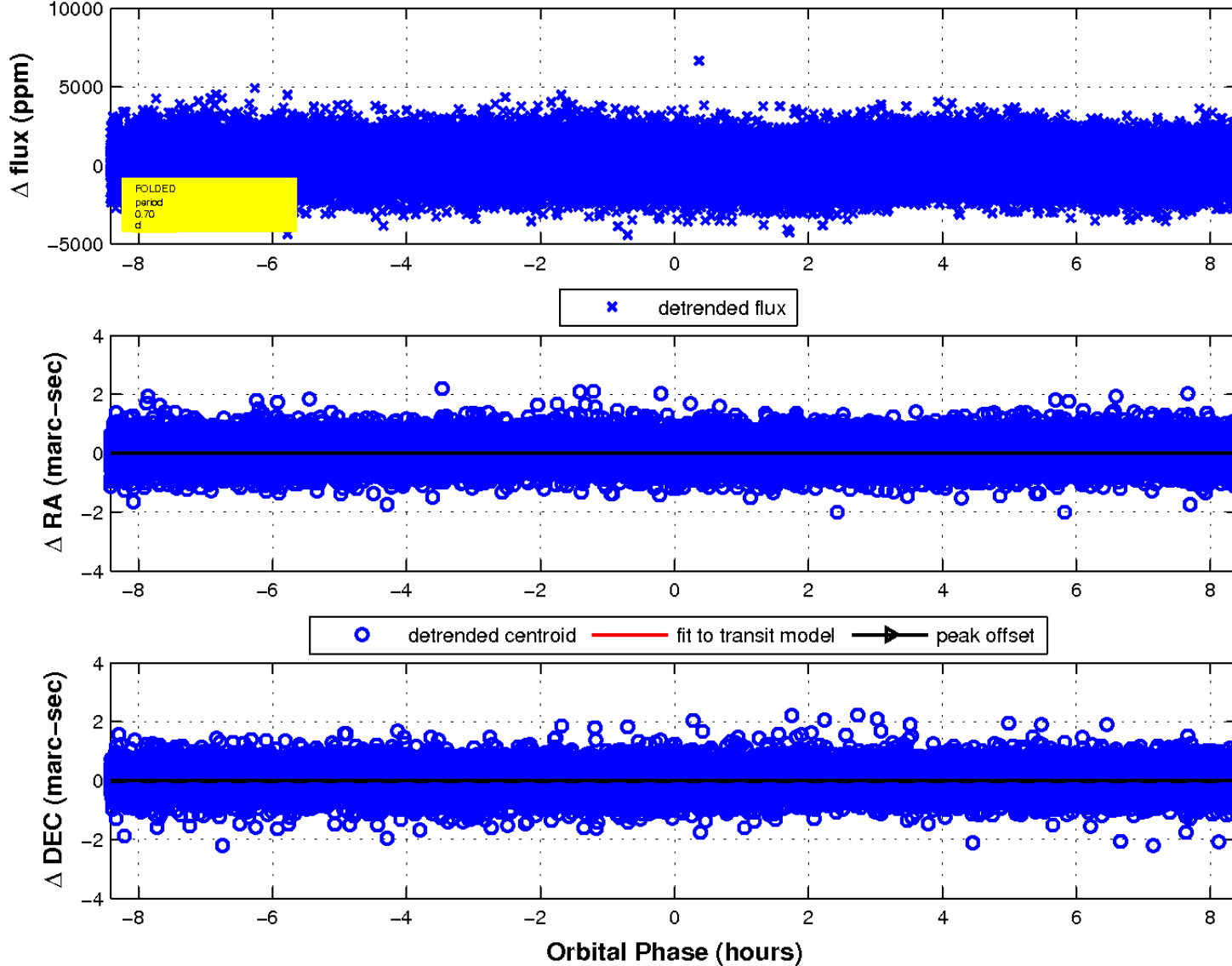




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

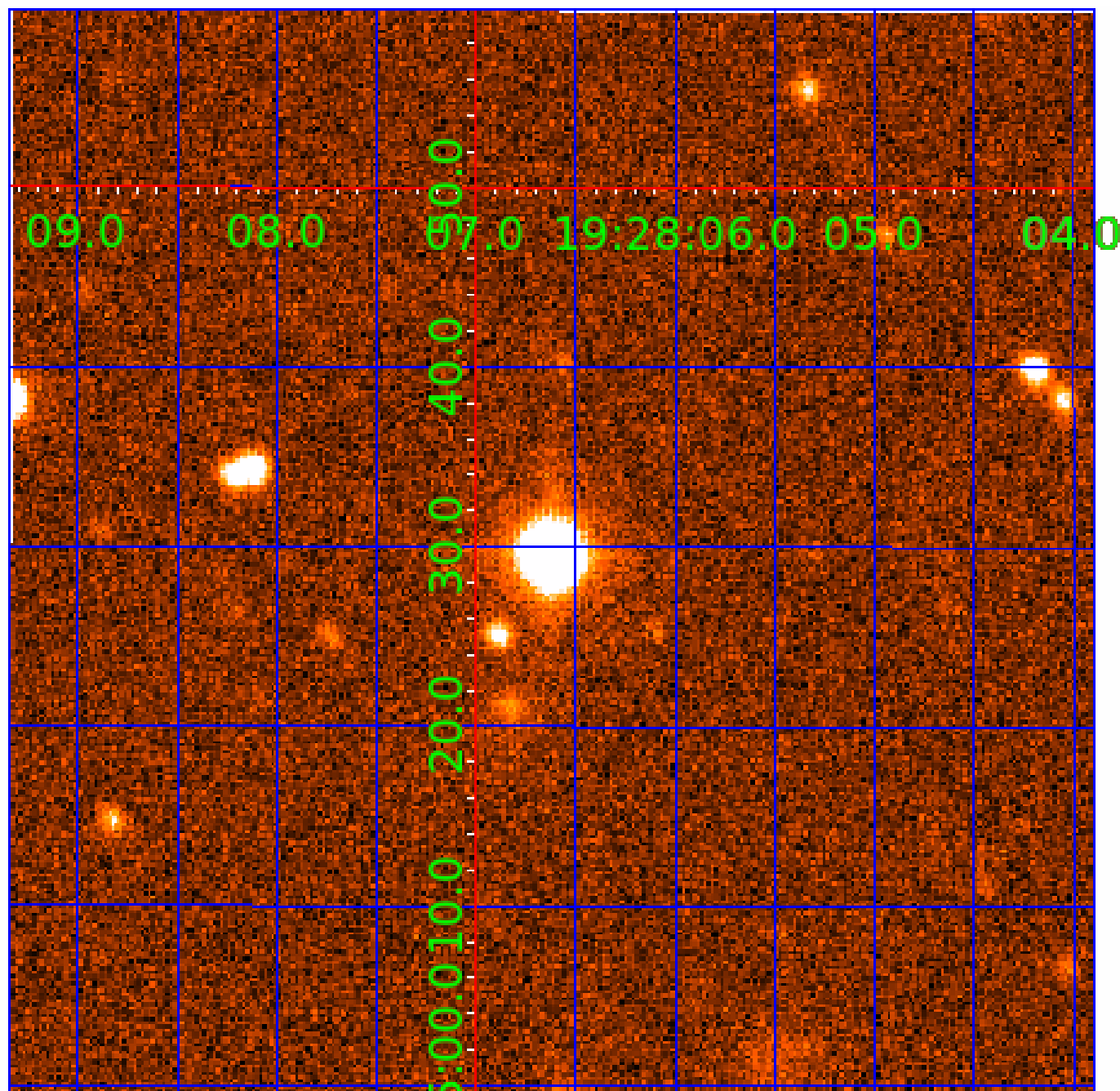


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



# KIC 006778063

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006778063-01	OBS	No	0.701482	131.745585	238.4	2.837	20.3	19.6	1.69	7368	3.03	27125.36
006778063-02	OBS	No	0.701464	131.946591	145.9	4.862	12.8	9.7	1.69	7368	2.19	27126.30
006778063-03	OBS	No	0.860664	132.030447	470.5	2.135	12.7	9.5	1.69	7368	3.76	20651.53

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006778063-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006778063-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD
006778063-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST

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

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

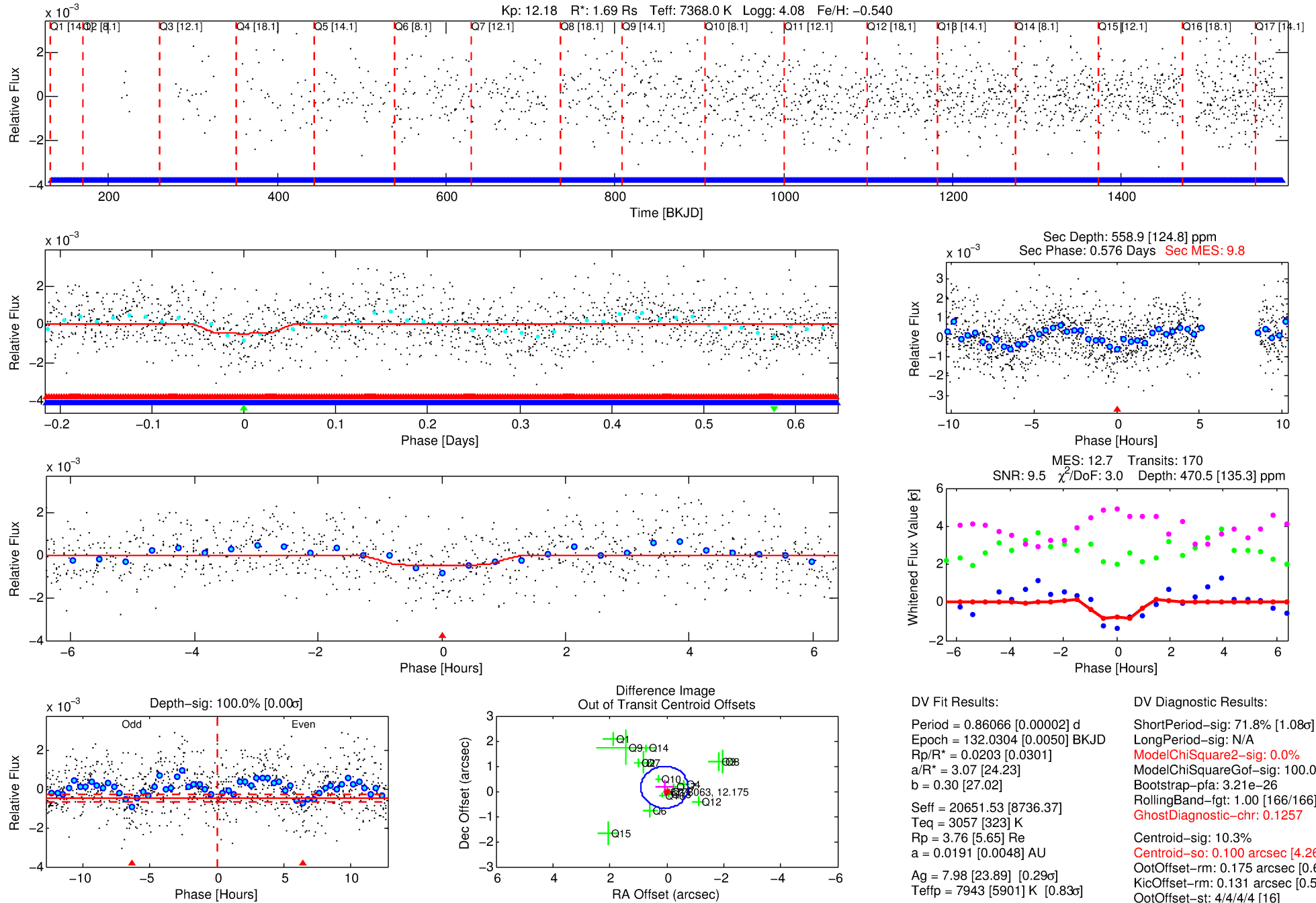
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006778063-03

No Significant Match Found

# DV One-Page Summary

KIC: 6778063 Candidate: 3 of 3 Period: 0.861 d



## DV Fit Results:

Period = 0.86066 [0.00002] d  
Epoch = 132.0304 [0.0050] BKJD  
Rp/R\* = 0.0203 [0.0301]  
a/R\* = 3.07 [24.23]  
b = 0.30 [27.02]  
Seff = 20651.53 [8736.37]  
Teq = 3057 [323] K  
Rp = 3.76 [5.65] Re  
a = 0.0191 [0.0048] AU  
Ag = 7.98 [23.89] [0.29σ]  
Teff = 7943 [5901] K [0.83σ]

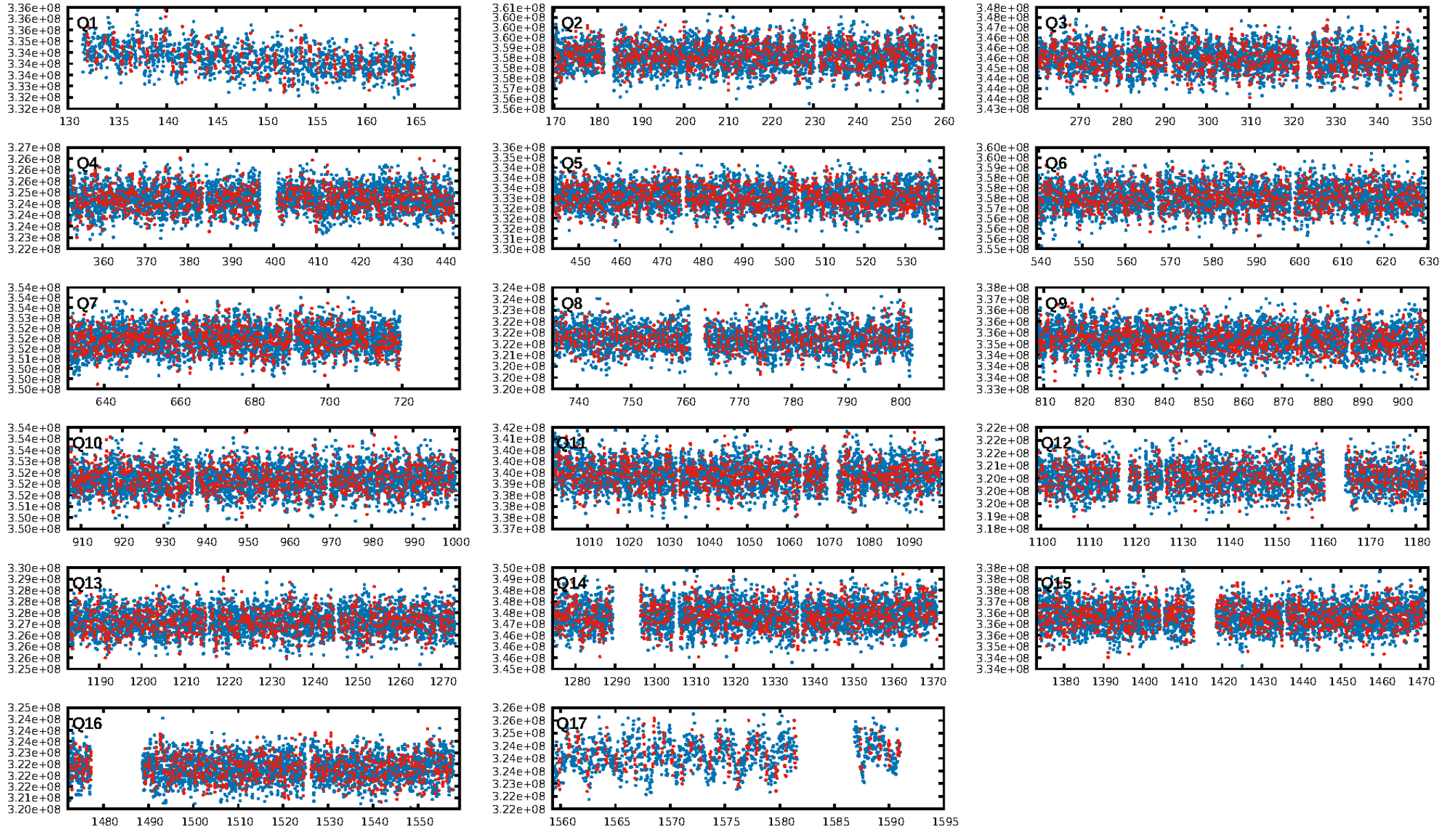
## DV Diagnostic Results:

ShortPeriod-sig: 71.8% [1.08σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.21e-26  
RollingBand-fgt: 1.00 [166/166]  
GhostDiagnostic-chr: 0.1257  
Centroid-sig: 10.3%  
Centroid-so: 0.100 arcsec [4.26σ]  
OotOffset-rm: 0.175 arcsec [0.63σ]  
KicOffset-rm: 0.131 arcsec [0.52σ]  
OotOffset-st: 4/4/4/4 [16]  
KicOffset-st: 4/4/4/4 [16]  
DiffImageQuality-fgm: 0.50 [8/16]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 11:07:23 Z

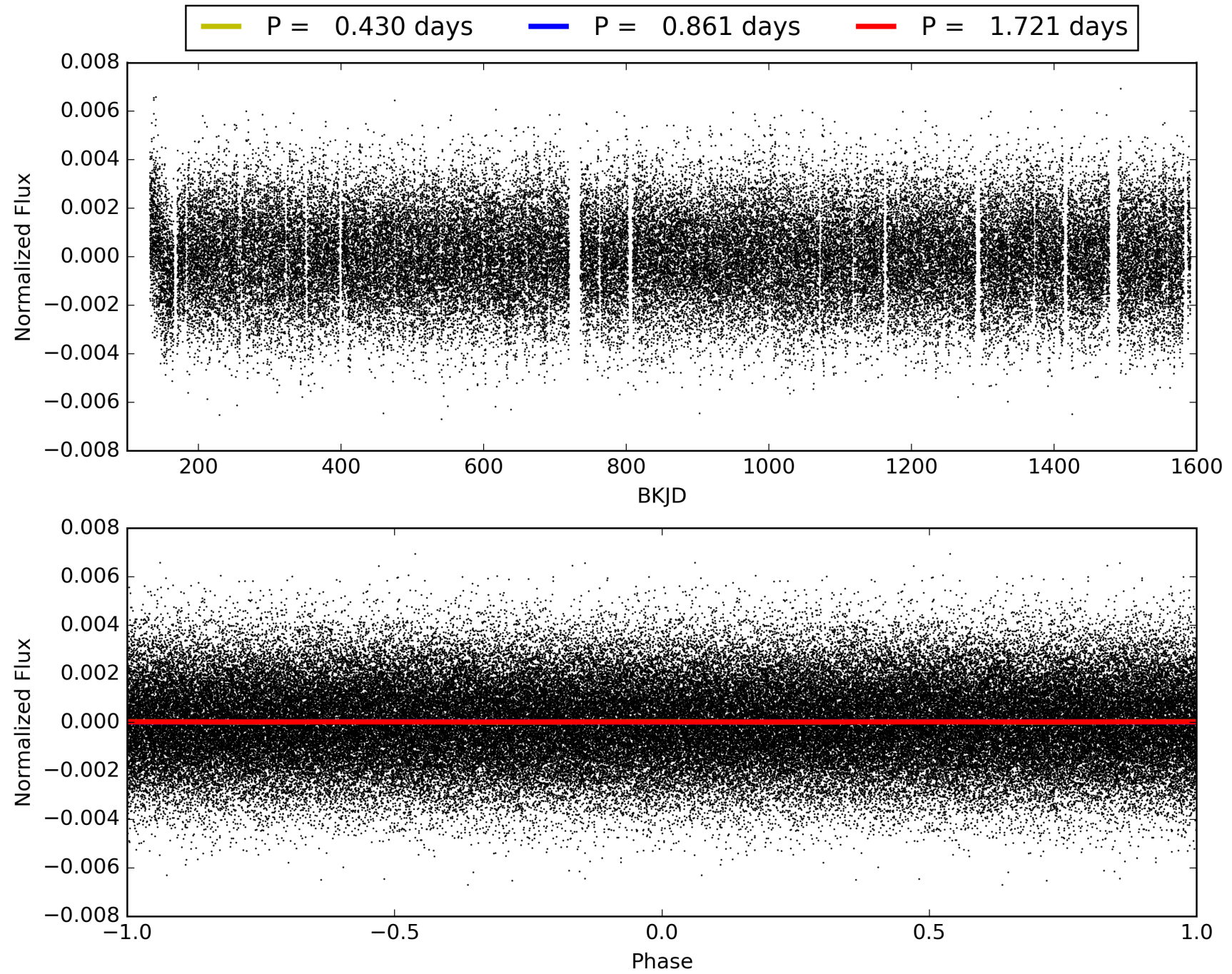
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 006778063-03, PDC Light Curves



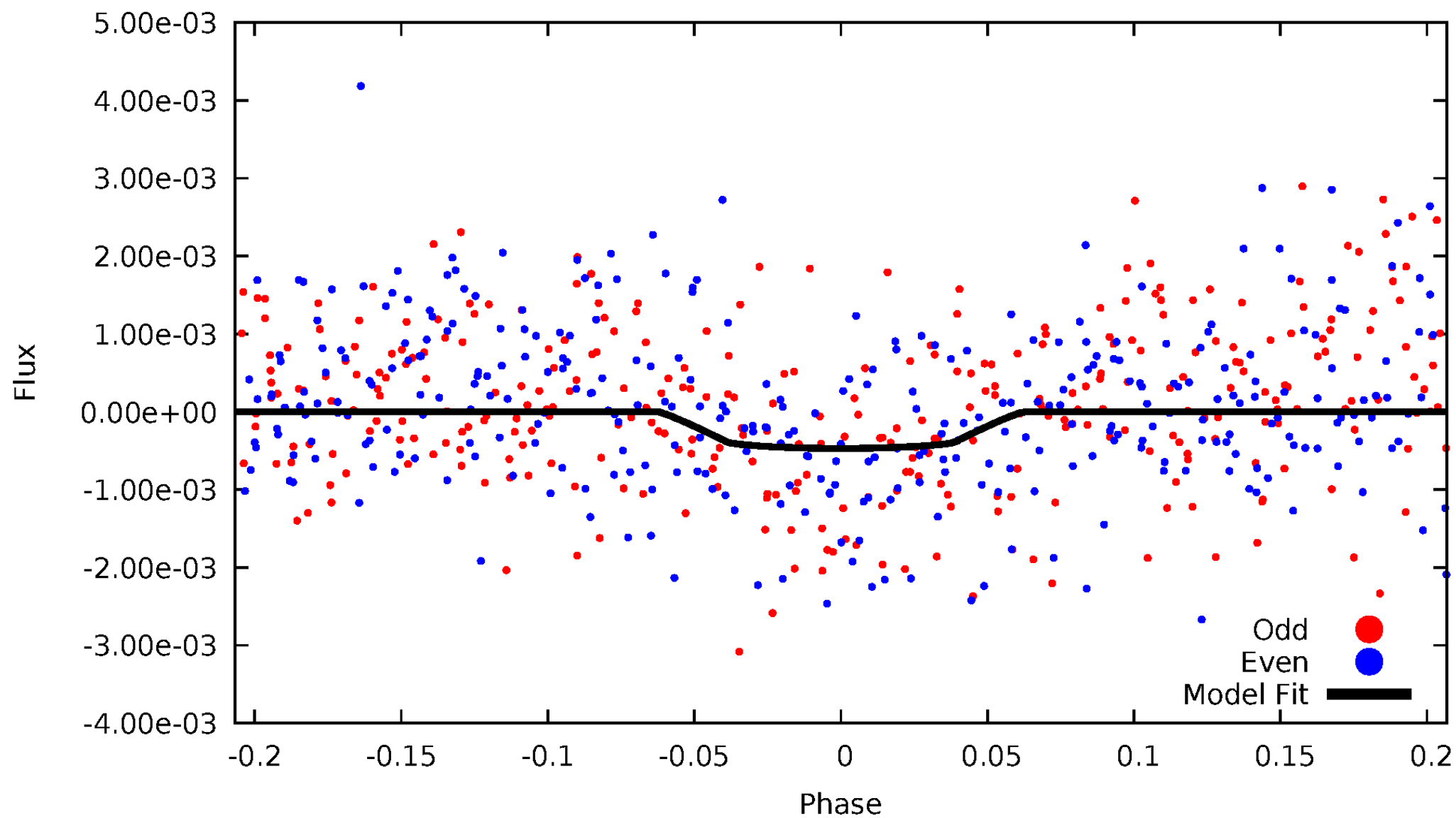


TCE 006778063-03



# DV Odd/Even

TCE 006778063-03



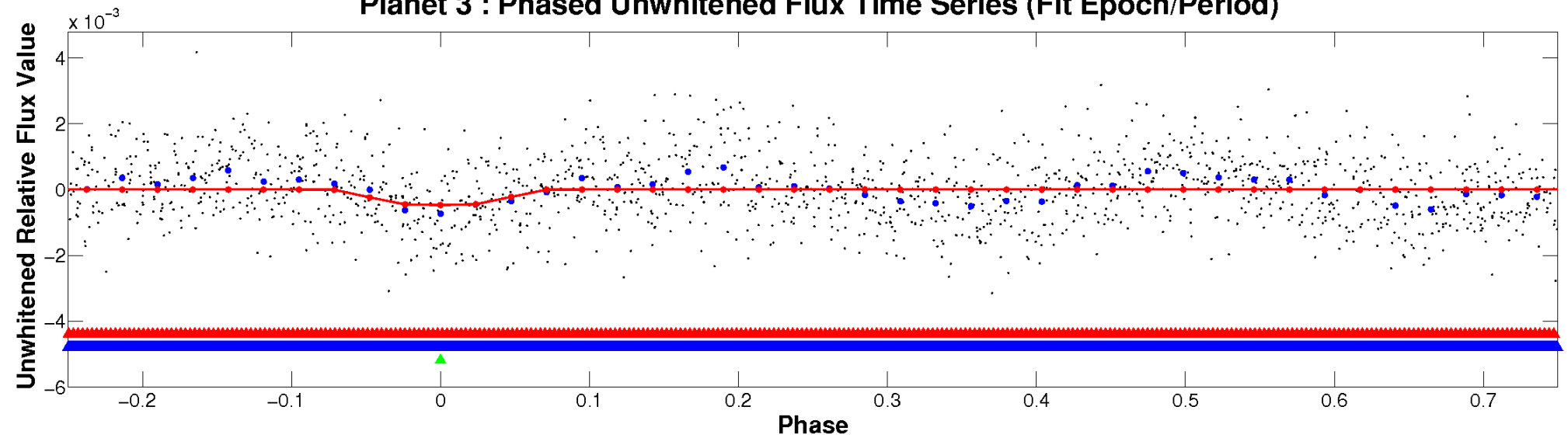


ALT Odd/Even

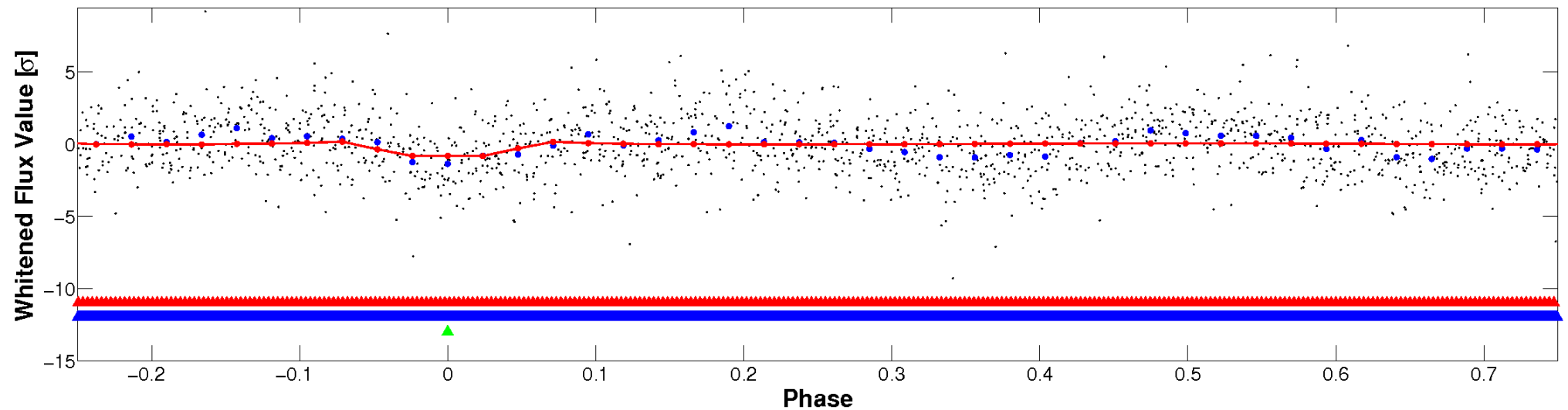
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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



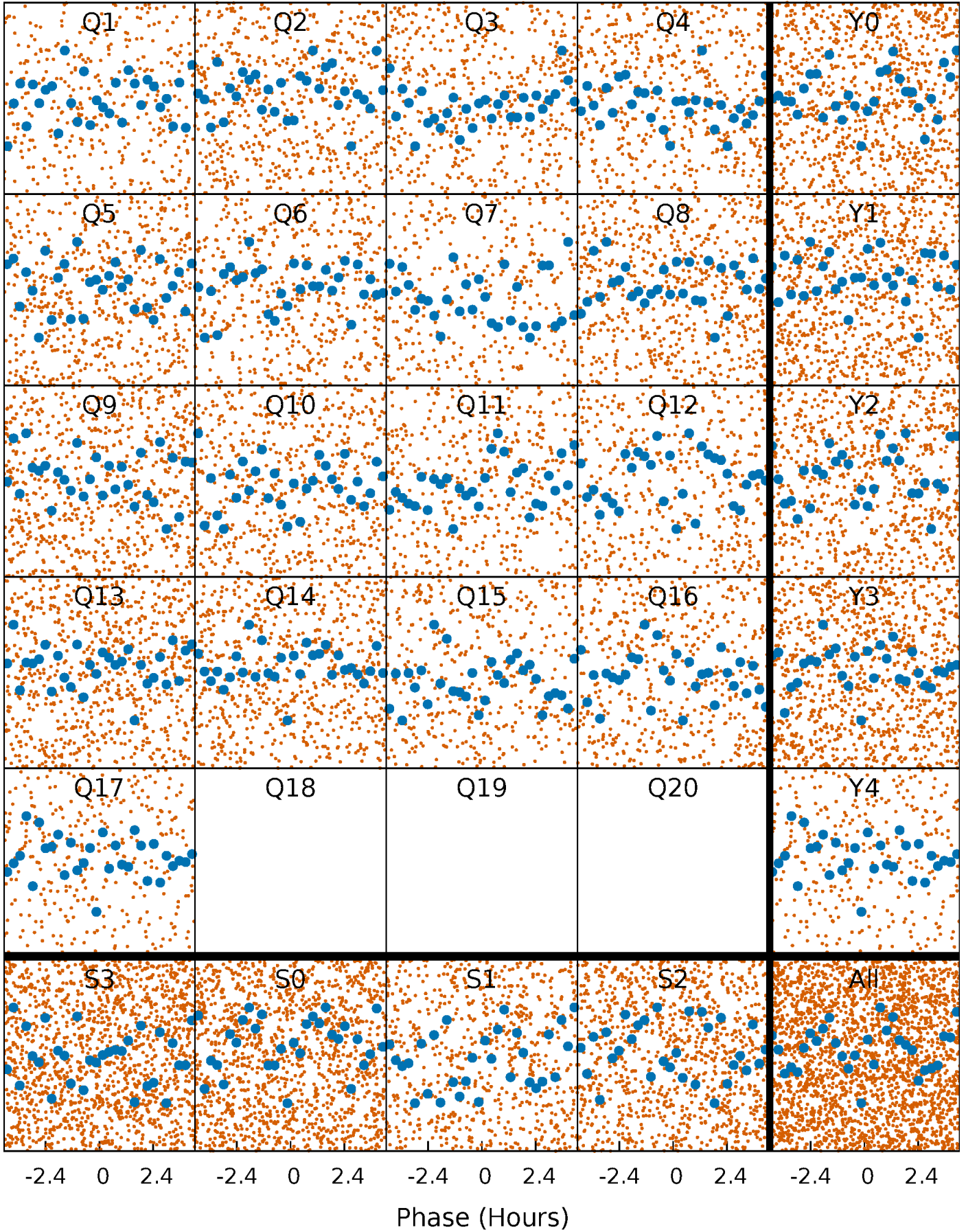
## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)





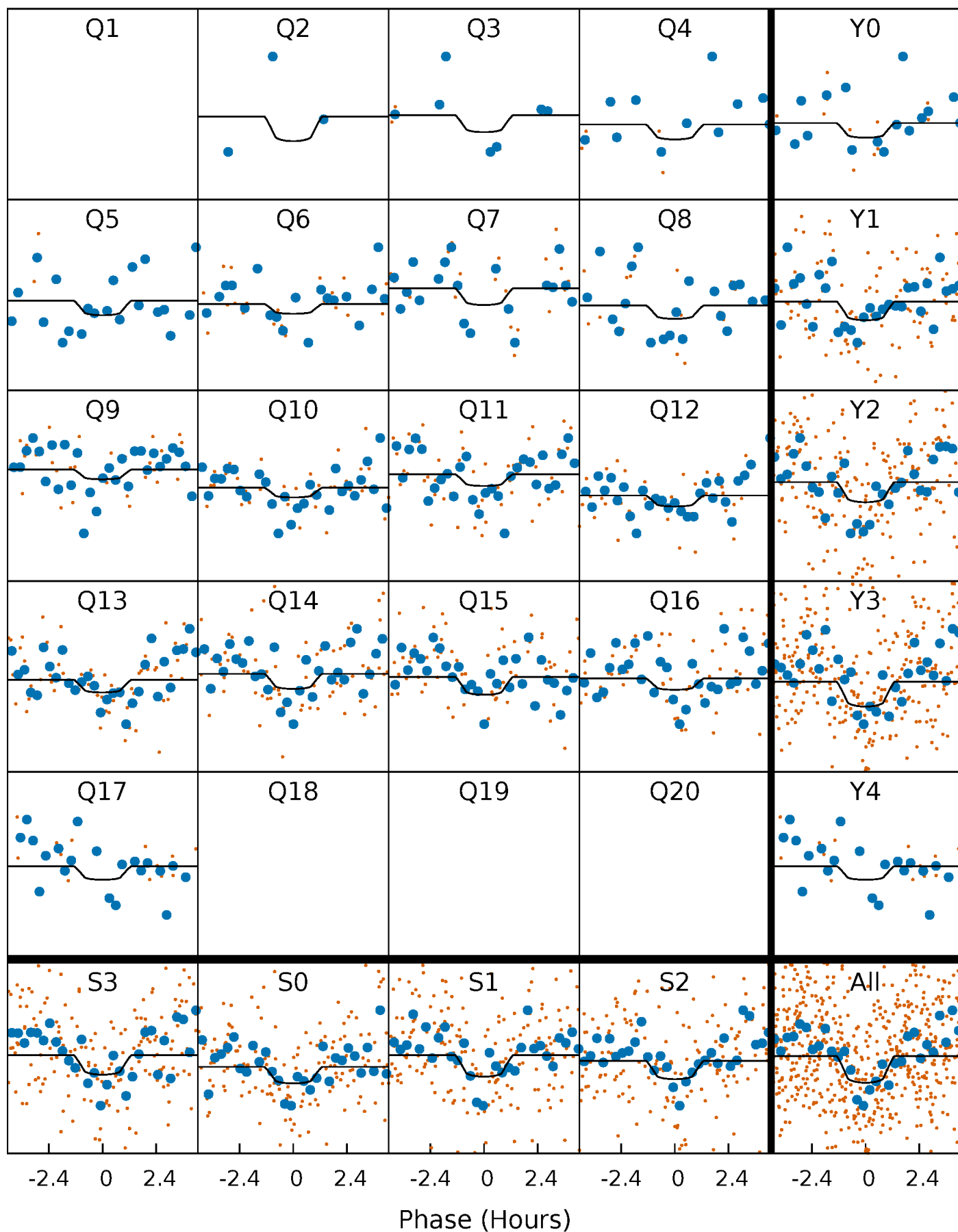
# PDC Quarter-Phased Transit Curves

TCE 006778063-03 P= 0.860664 Days  $T_0=132.030447$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 006778063-03 P= 0.860664 Days  $T_0=132.030447$  (BKJD)

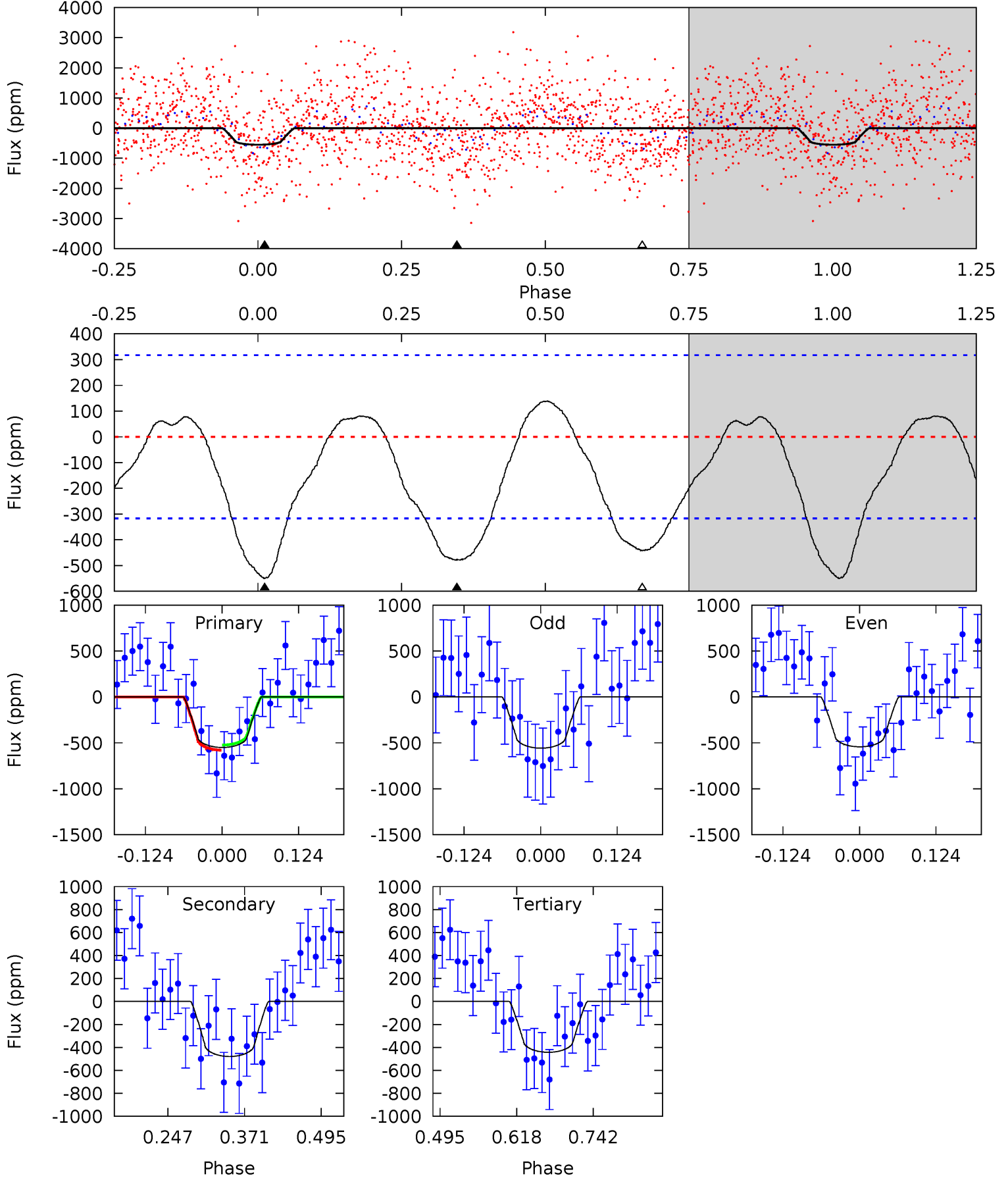


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

006778063-03, P = 0.860664 Days, E = 132.030447 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
7.84	6.83	6.31	0	4.52	1.54	2.77	1.54	7.84	0.52	6.83	0.10	0.76	0.20	0.39



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.



### Stellar Parameters For KIC 006778063

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7368^{+233}_{-285}$	$4.082^{+0.228}_{-0.152}$	$-0.540^{+0.300}_{-0.300}$	$1.693^{+0.458}_{-0.458}$	$1.264^{+0.211}_{-0.154}$	$0.367^{+0.481}_{-0.154}$
	+3%/-4%	+6%/-4%	+56%/-56%	+27%/-27%	+17%/-12%	+131%/-42%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 006778063-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-479 \pm 70$	$5.34^{+5.27}_{-3.52}$	$4251^{+296}_{-344}$	$6091^{+6083}_{-1726}$	$3.386^{+26.513}_{-2.474}$
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  $A_{obs} \gg 1.0$

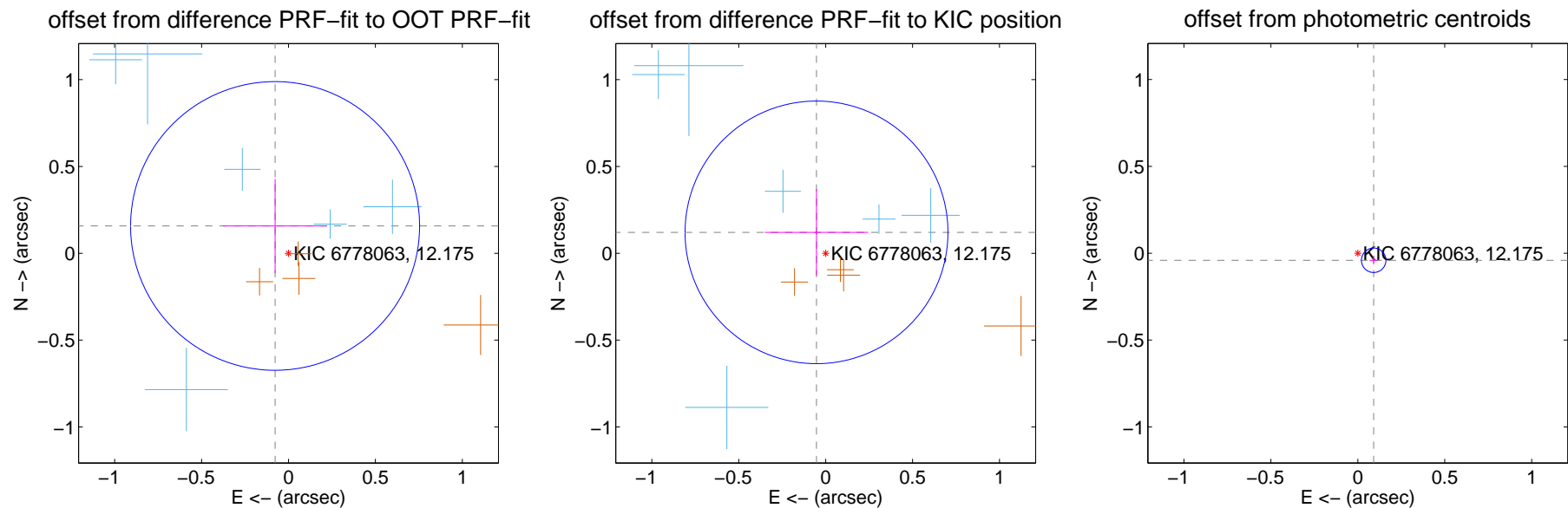
## DV Centroid Data

Supplemental centroid analysis for 006778063-03. Kepler magnitude: 12.18. Transit SNR 9.49

There are 8 quarters with good PRF difference image offsets

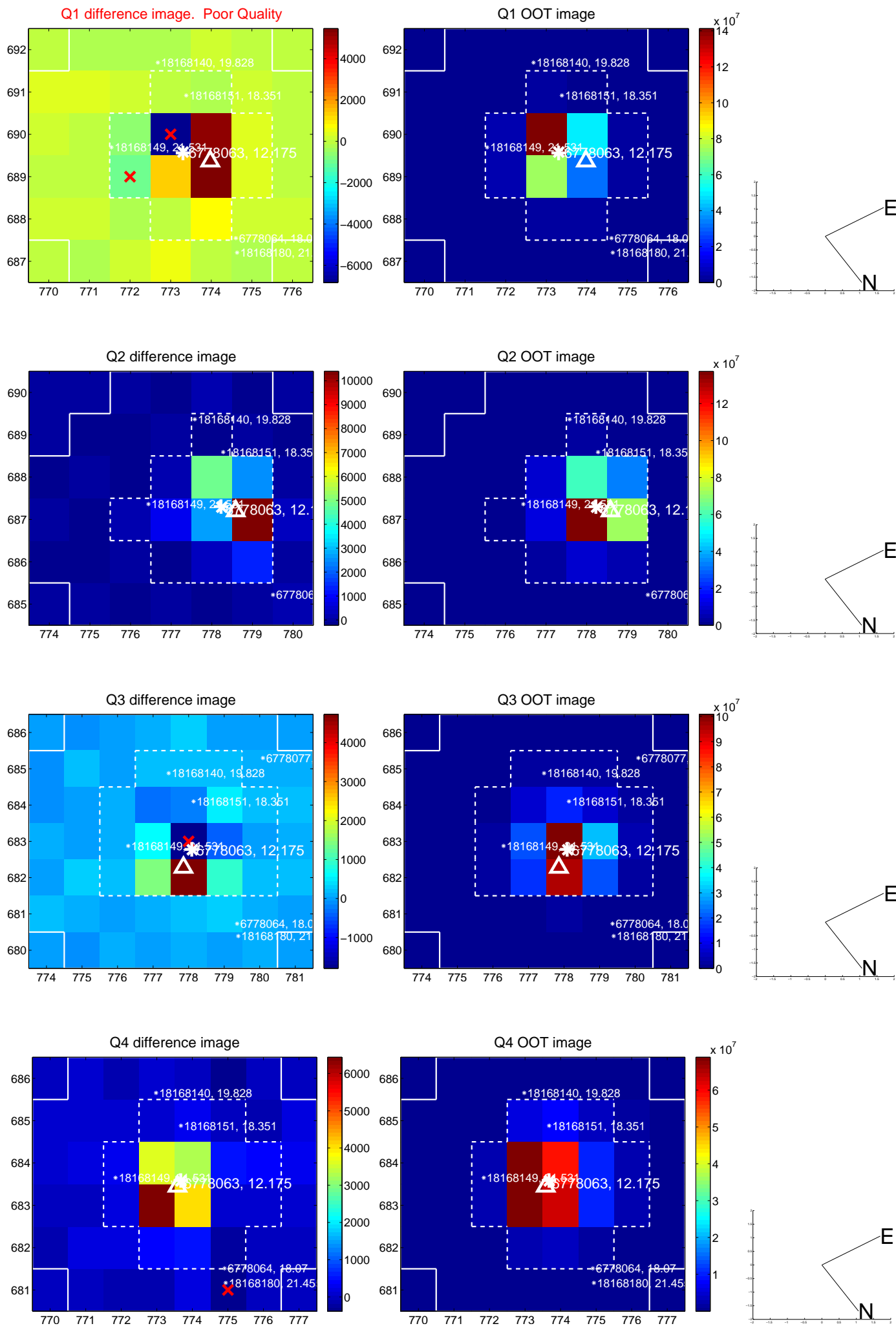
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.175 \pm 0.277$	0.63	$0.077 \pm 0.300$	$0.157 \pm 0.271$
PRF-fit source offset from KIC position	$0.131 \pm 0.252$	0.52	$0.053 \pm 0.297$	$0.120 \pm 0.248$
photometric centroid source offset	$0.10 \pm 0.02$	4.26	$-0.09 \pm 0.02$	$-0.04 \pm 0.02$

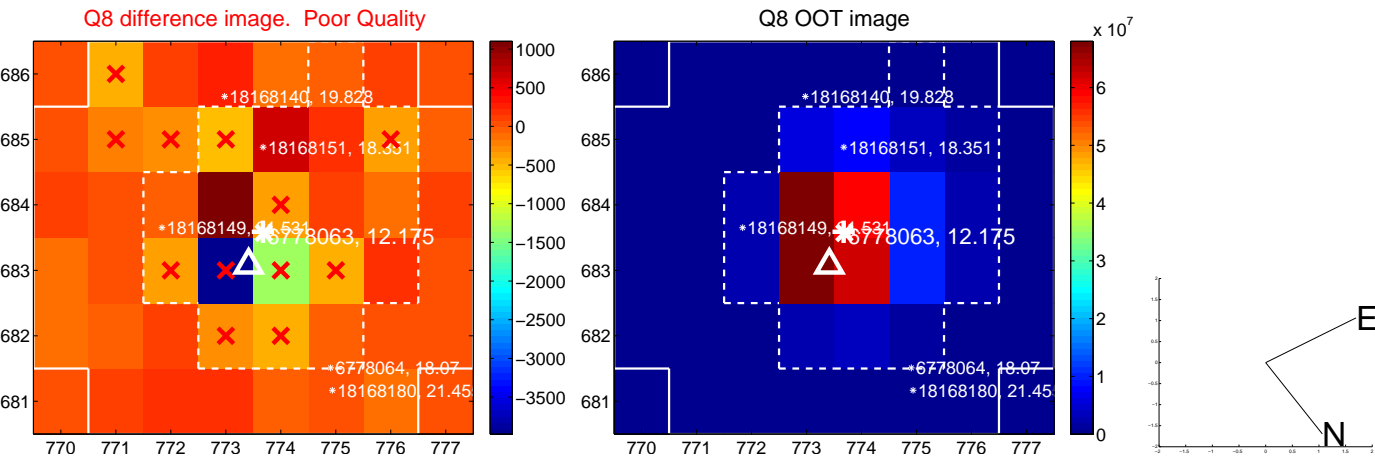
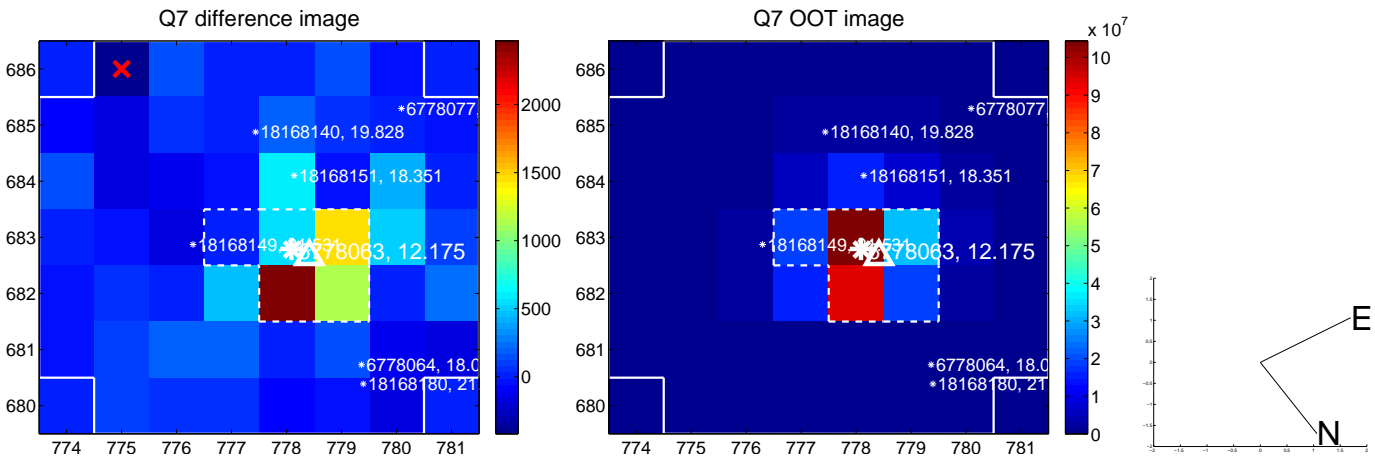
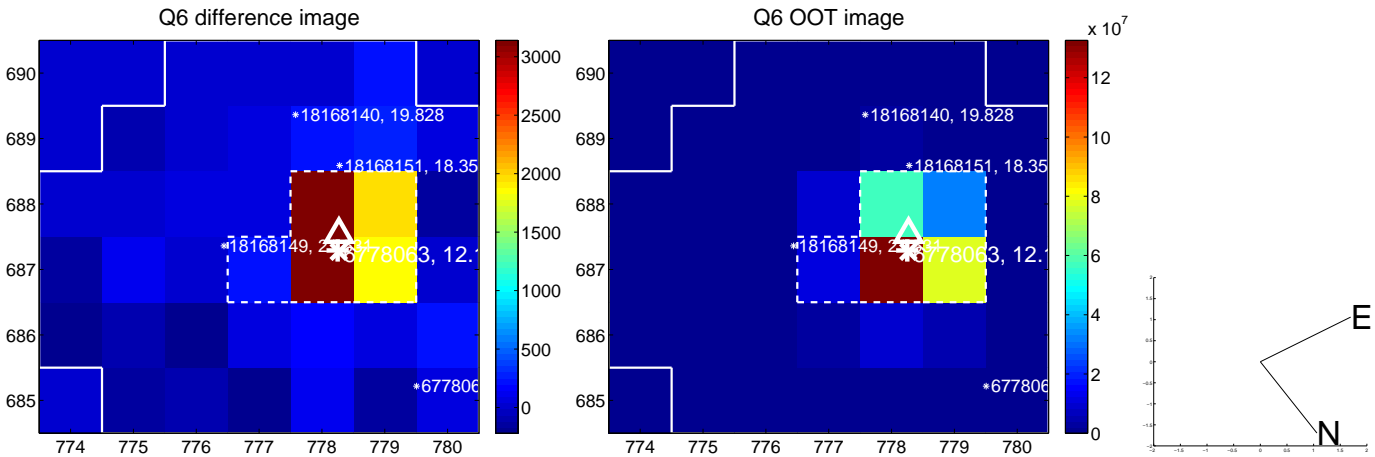
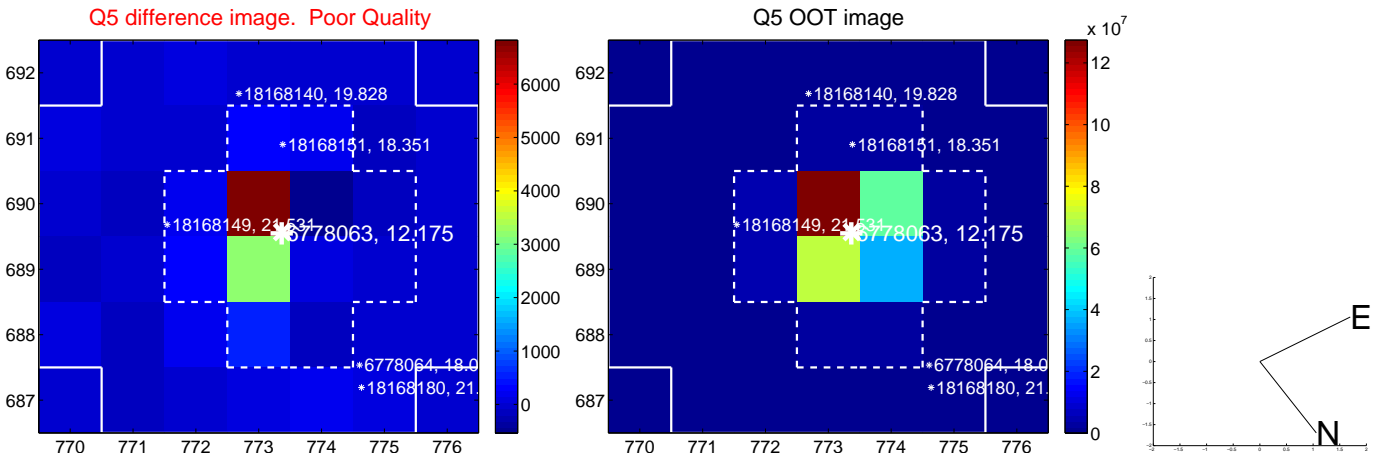


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

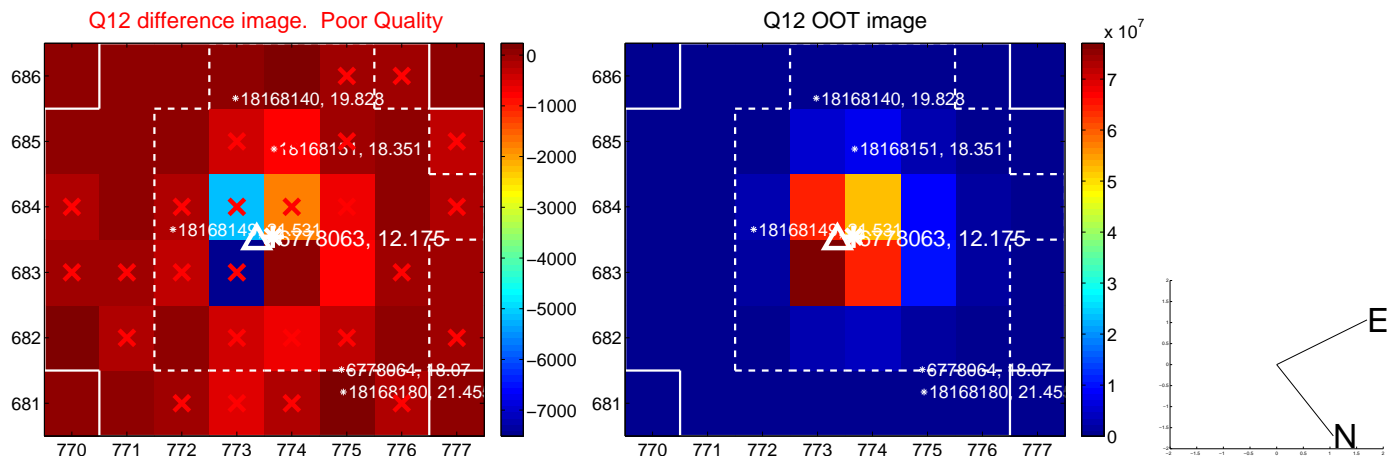
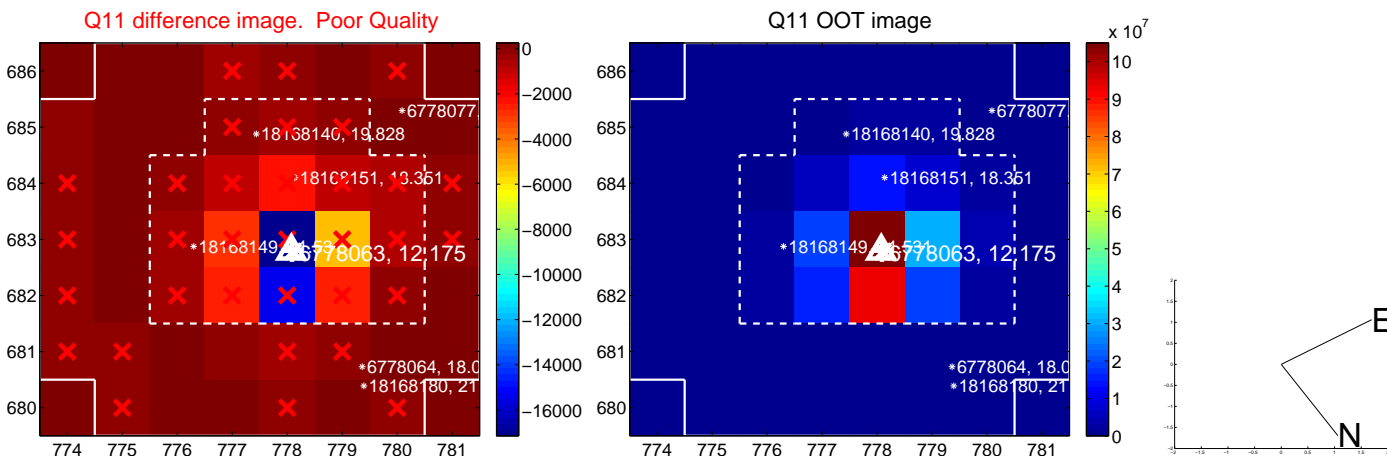
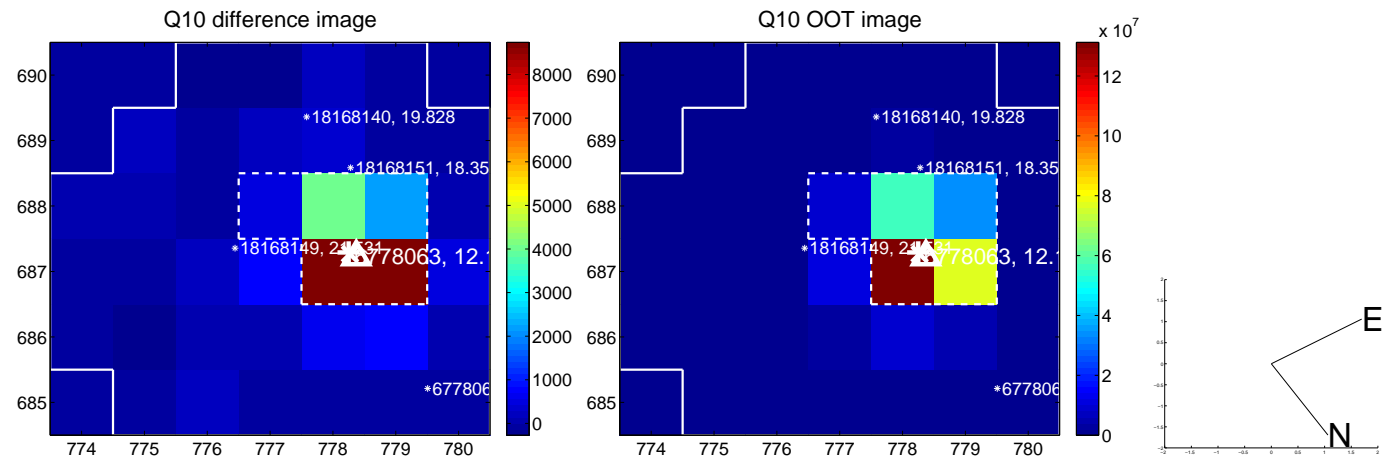
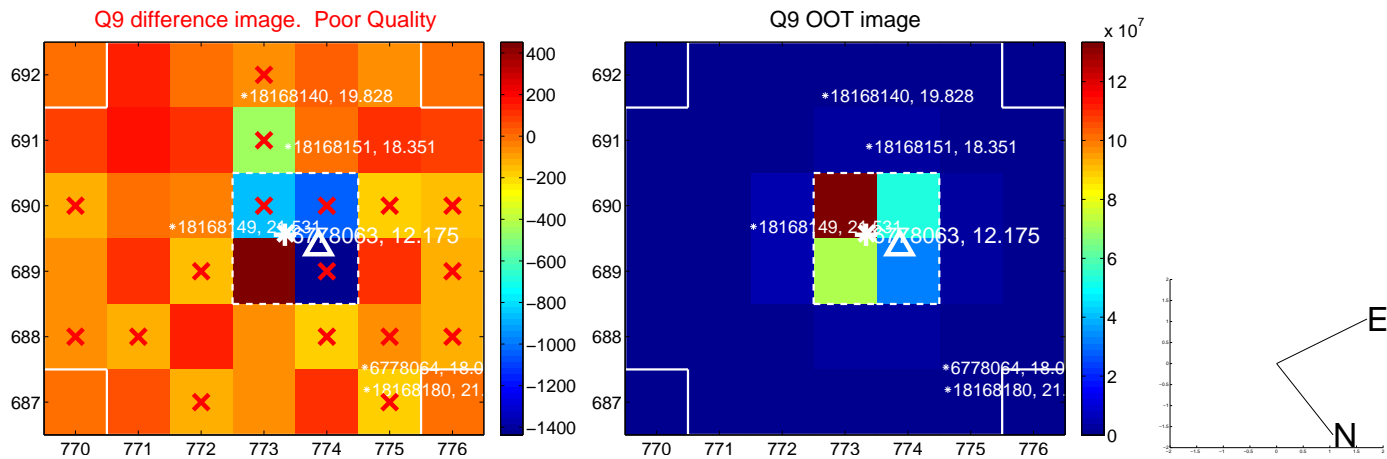
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

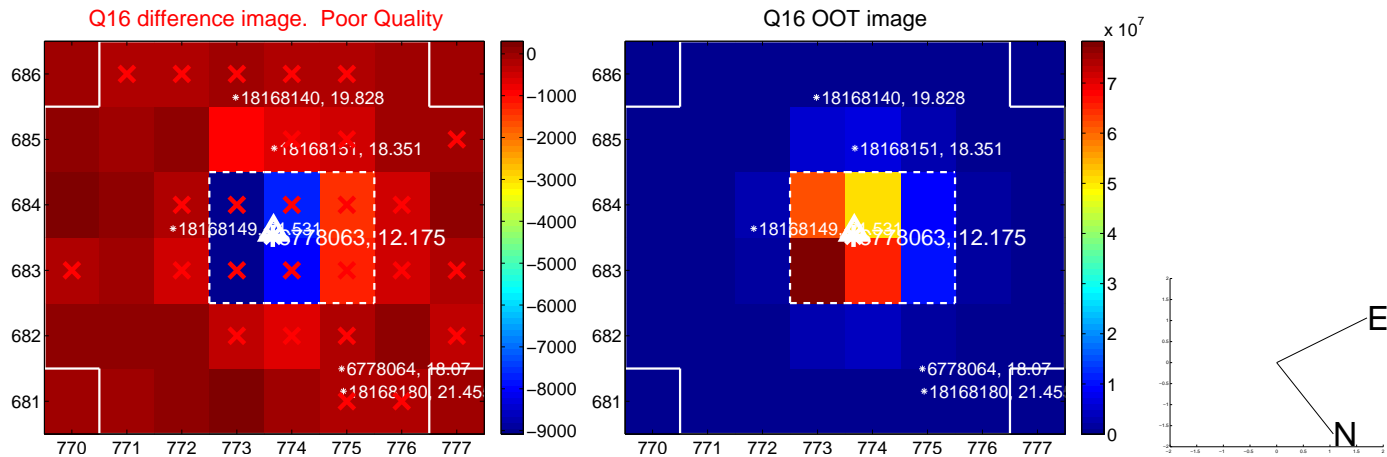
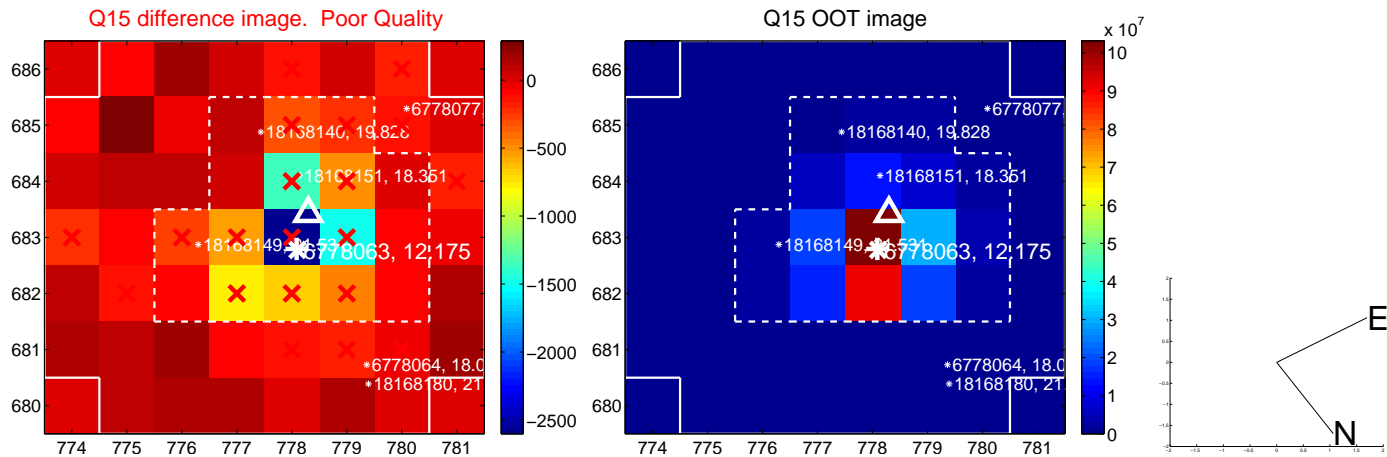
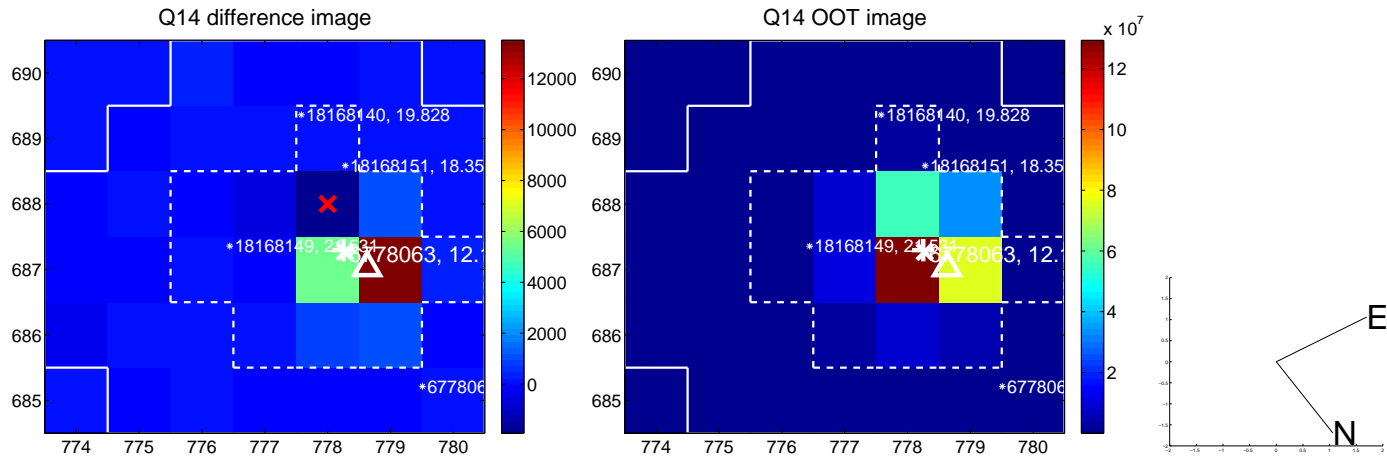
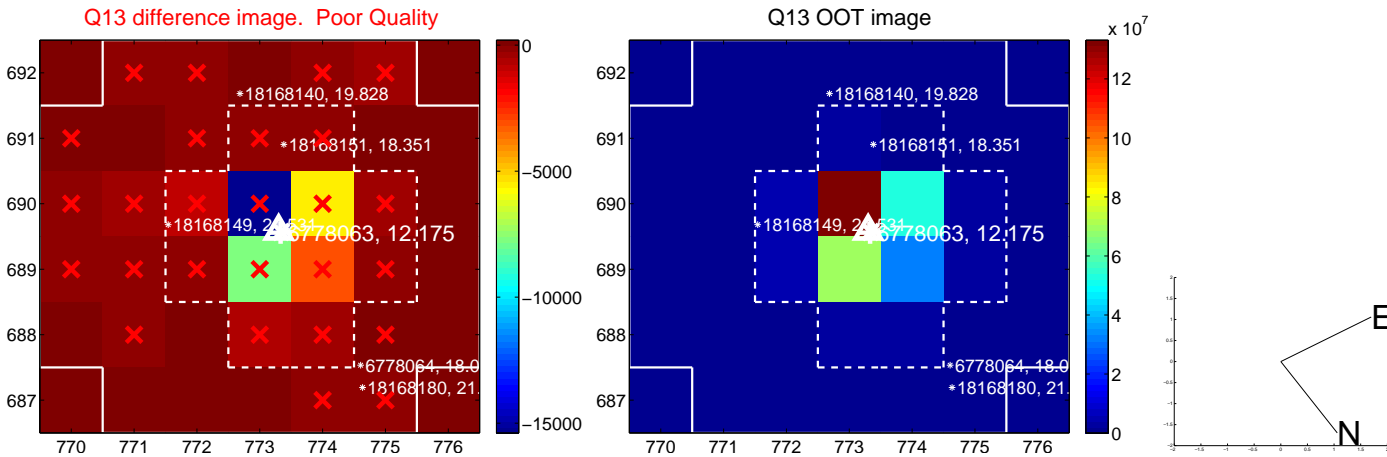


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

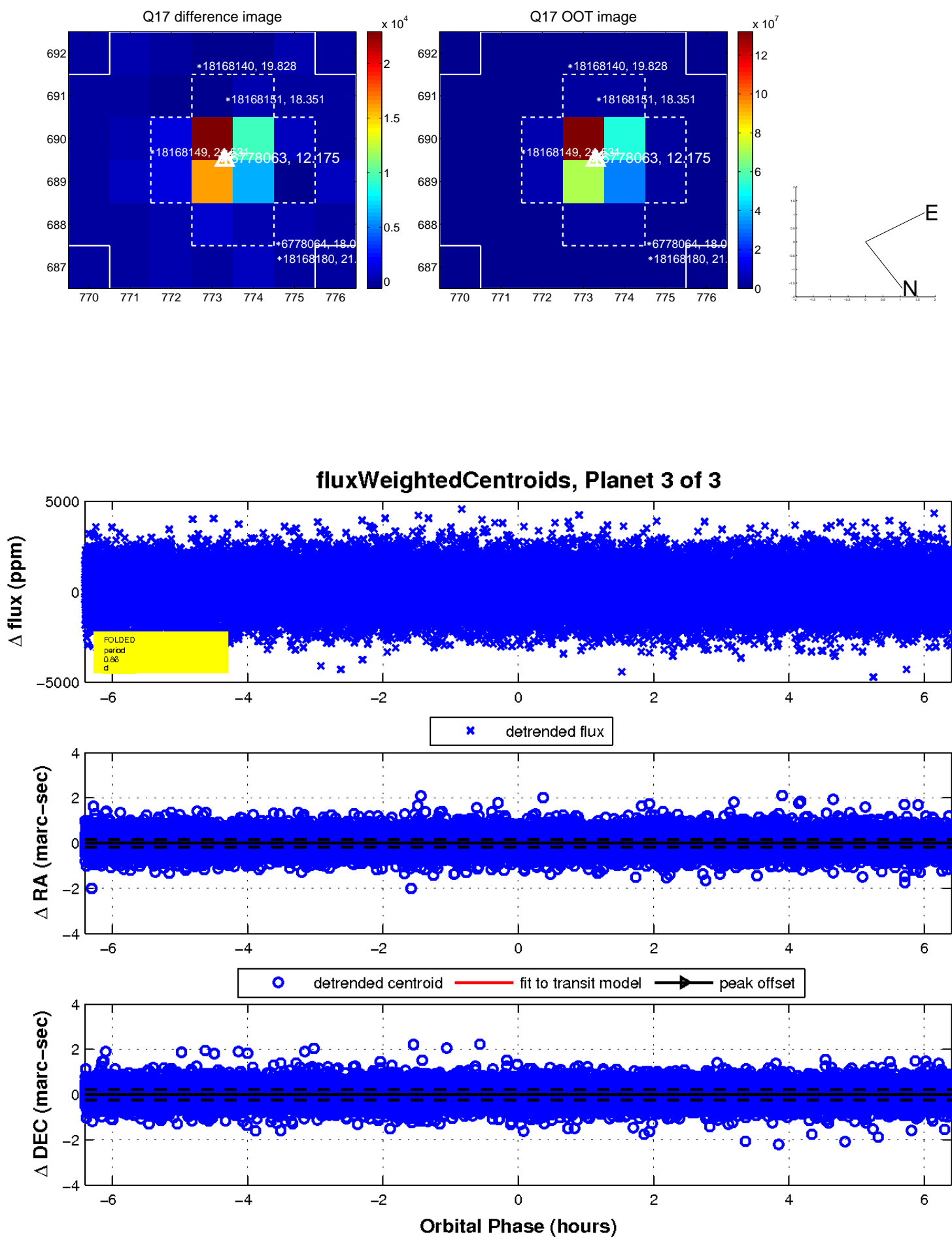




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

