

# KIC 006362386

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006362386-01	OBS	6146.01	4.592402	133.139764	87473.4	4.959	11840.3	10218.6	1.72	7201	52.21	1876.88
006362386-02	OBS	No	2.296183	133.145149	2806.1	4.893	407.9	381.8	1.72	7201	10.43	4729.50
006362386-04	OBS	No	188.374327	135.382774	837.3	10.804	23.2	7.8	1.72	7201	9.25	13.27

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006362386-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
006362386-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
006362386-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_UNCERTAIN

**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.

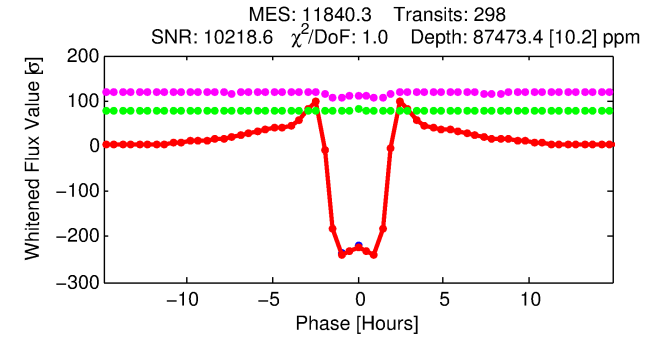
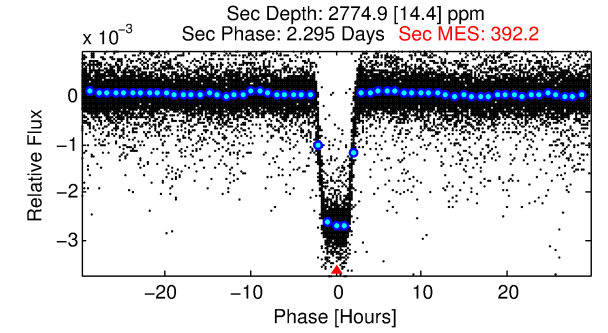
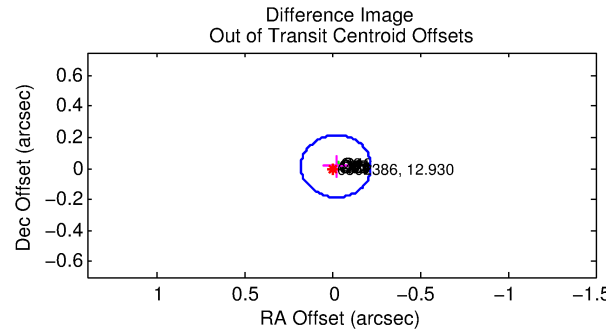
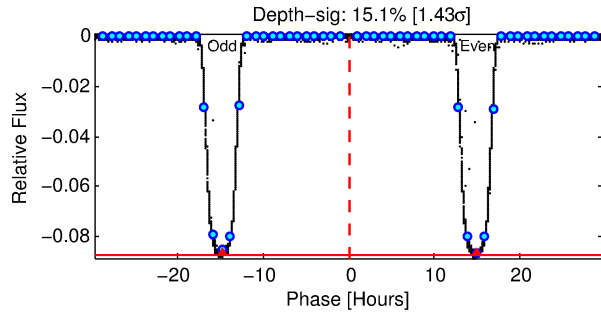
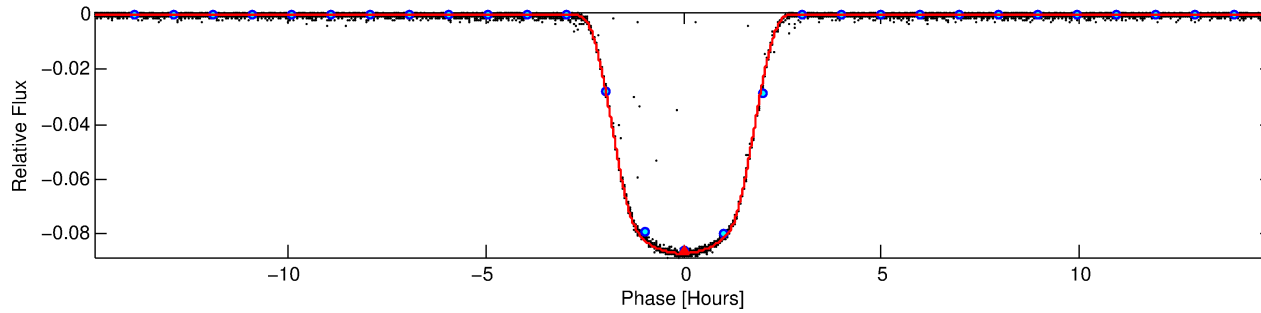
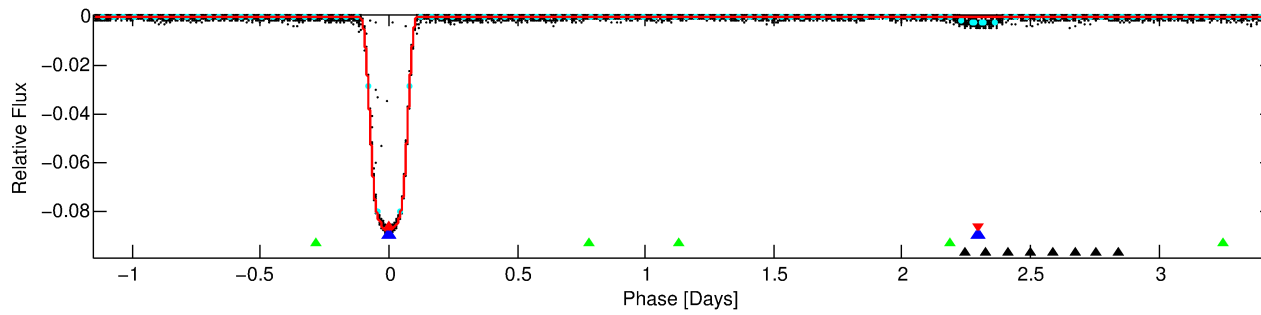
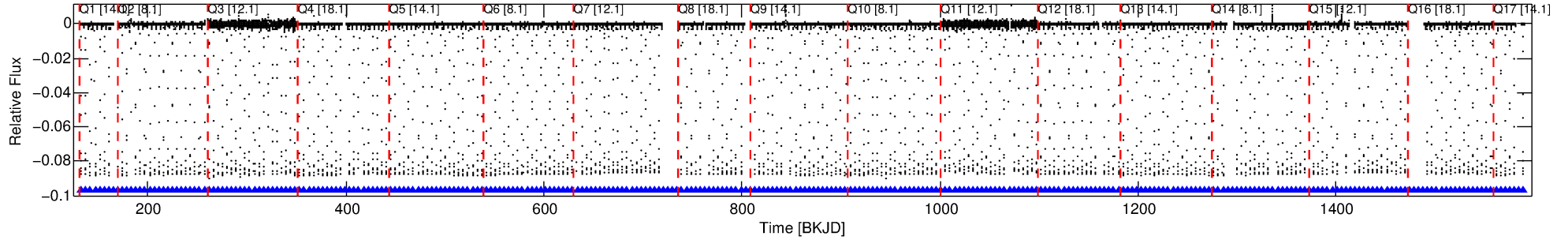
## Ephemeris Match Information For 006362386-01

No Significant Match Found

# DV One-Page Summary

KIC: 6362386 Candidate: 1 of 4 Period: 4.592 d  
KOI: K06146.01 Corr: 1.000

Kp: 12.93 R\*: 1.72 Rs Teff: 7201.0 K Logg: 4.14 Fe/H: -0.080



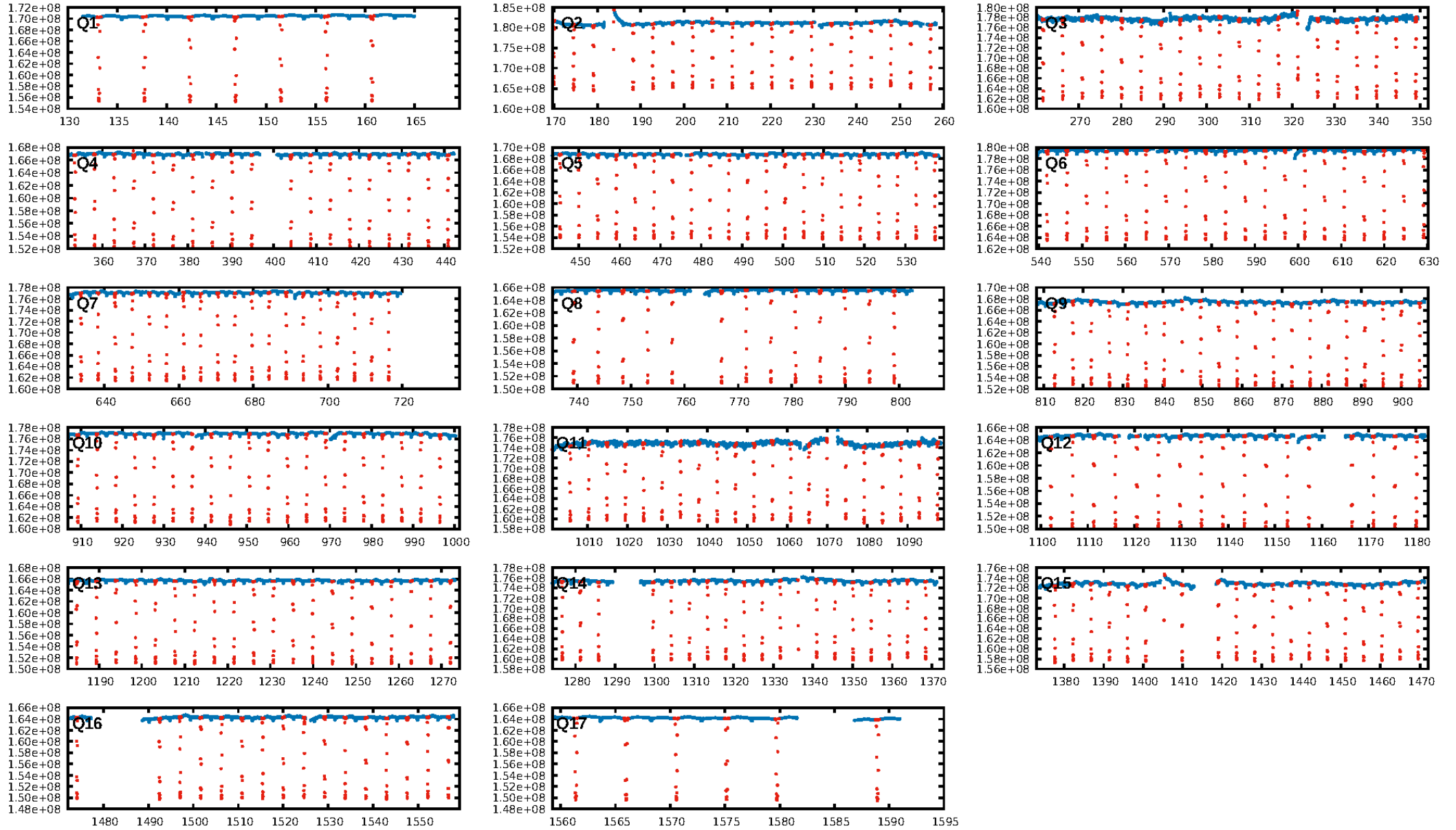
## DV Fit Results:

Period = 4.59240 [0.00000] d  
Epoch = 133.1398 [0.0000] BKJD  
Rp/R\* = 0.2775 [0.0000]  
a/R\* = 8.85 [0.00]  
b = 0.28 [0.00]  
Seff = 1876.88 [767.88]  
Teff = 1678 [172] K  
Rp = 52.21 [16.54] Re  
a = 0.0618 [0.0161] AU  
Ag = 2.14 [0.79] [1.44σ]  
Teffp = 3137 [137] K [6.64σ]

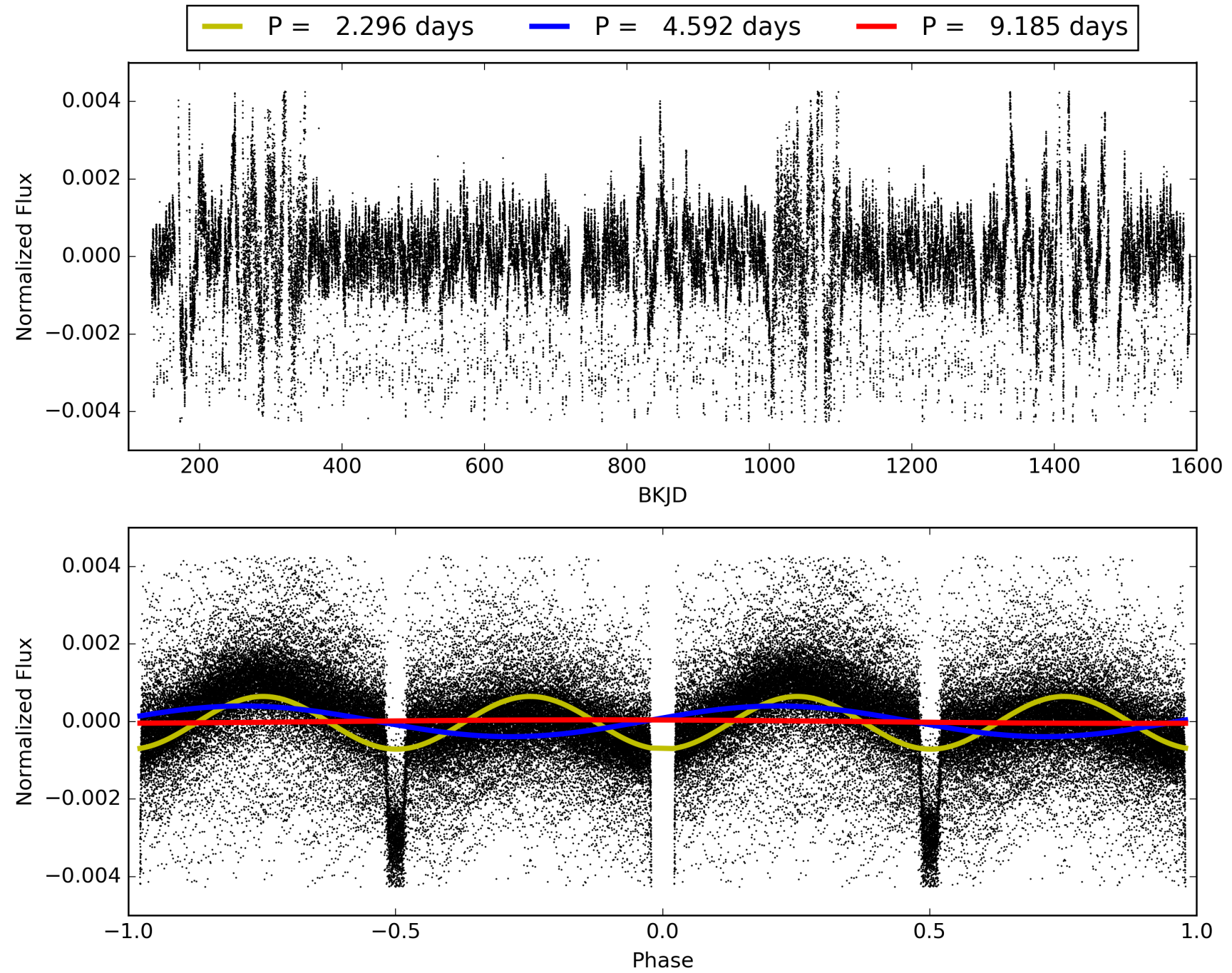
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [7.91σ]  
LongPeriod-sig: 100.0% [371.04σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [285/285]  
GhostDiagnostic-chr: 7.148  
Centroid-sig: N/A  
Centroid-so: 0.078 arcsec [141.13σ]  
OotOffset-rm: 0.023 arcsec [0.35σ]  
KicOffset-rm: 0.034 arcsec [0.50σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 0.00 [0/17]

# TCE 006362386-01, PDC Light Curves

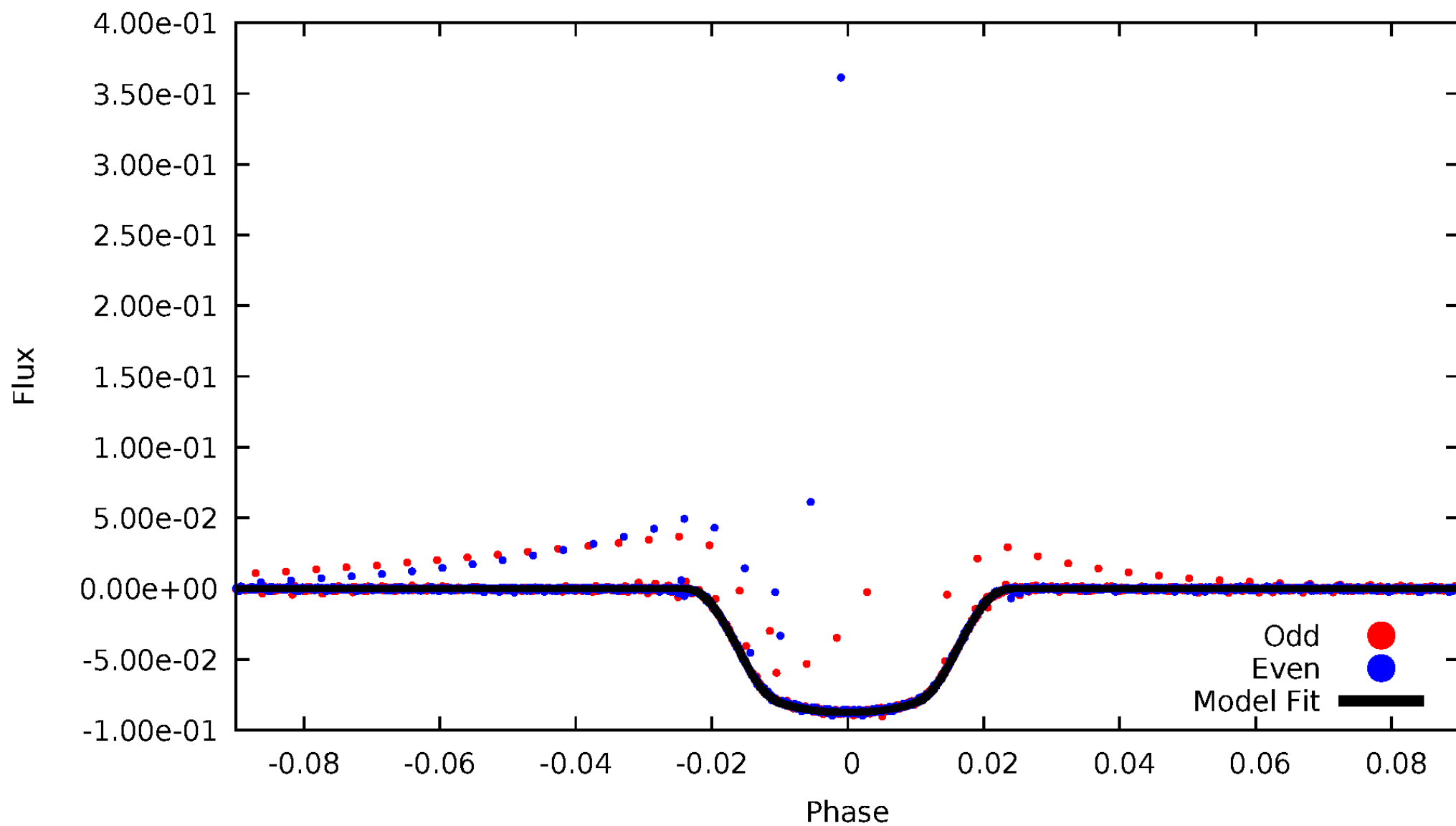


TCE 006362386-01



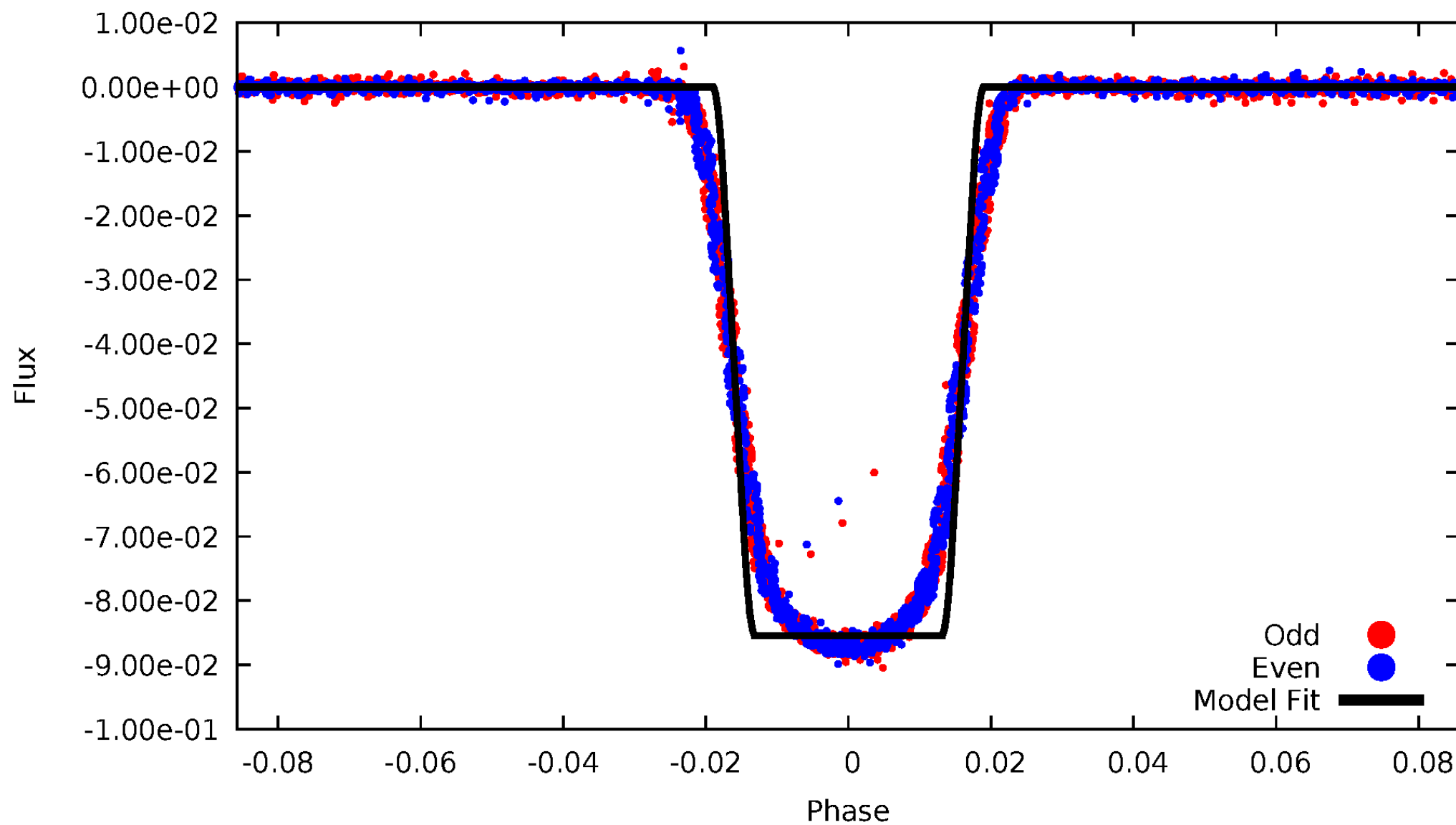
# DV Odd/Even

TCE 006362386-01



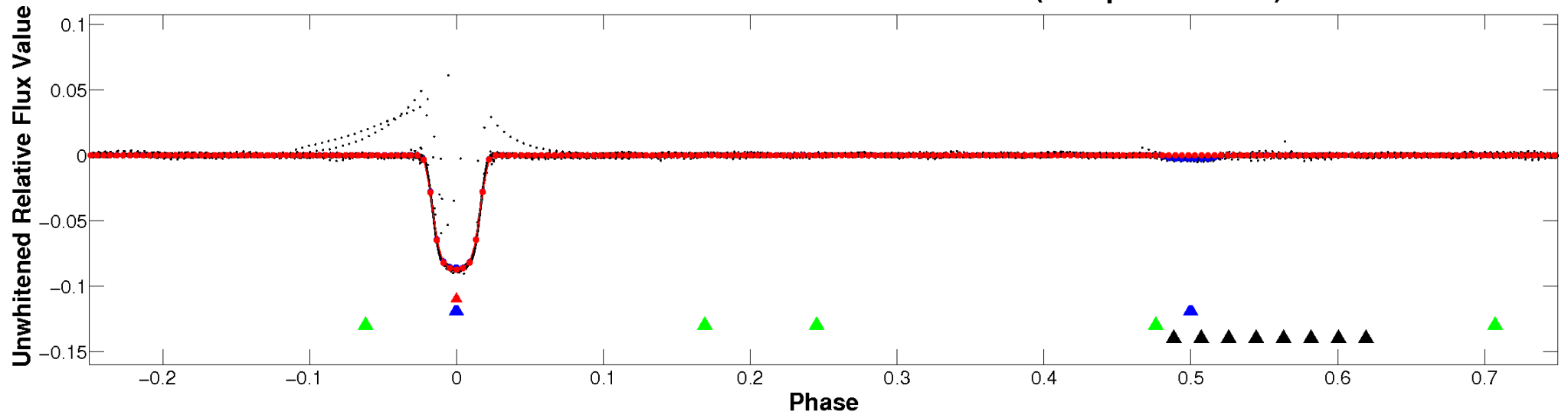
# ALT Odd/Even

TCE 006362386-01

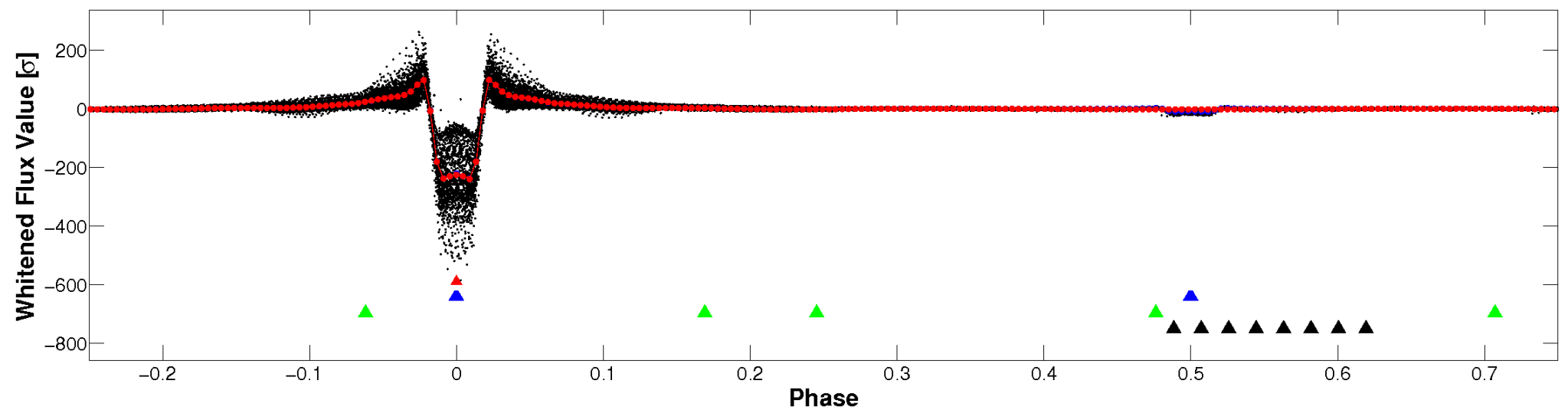


# Non-Whitened Vs. Whitened Light Curve

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

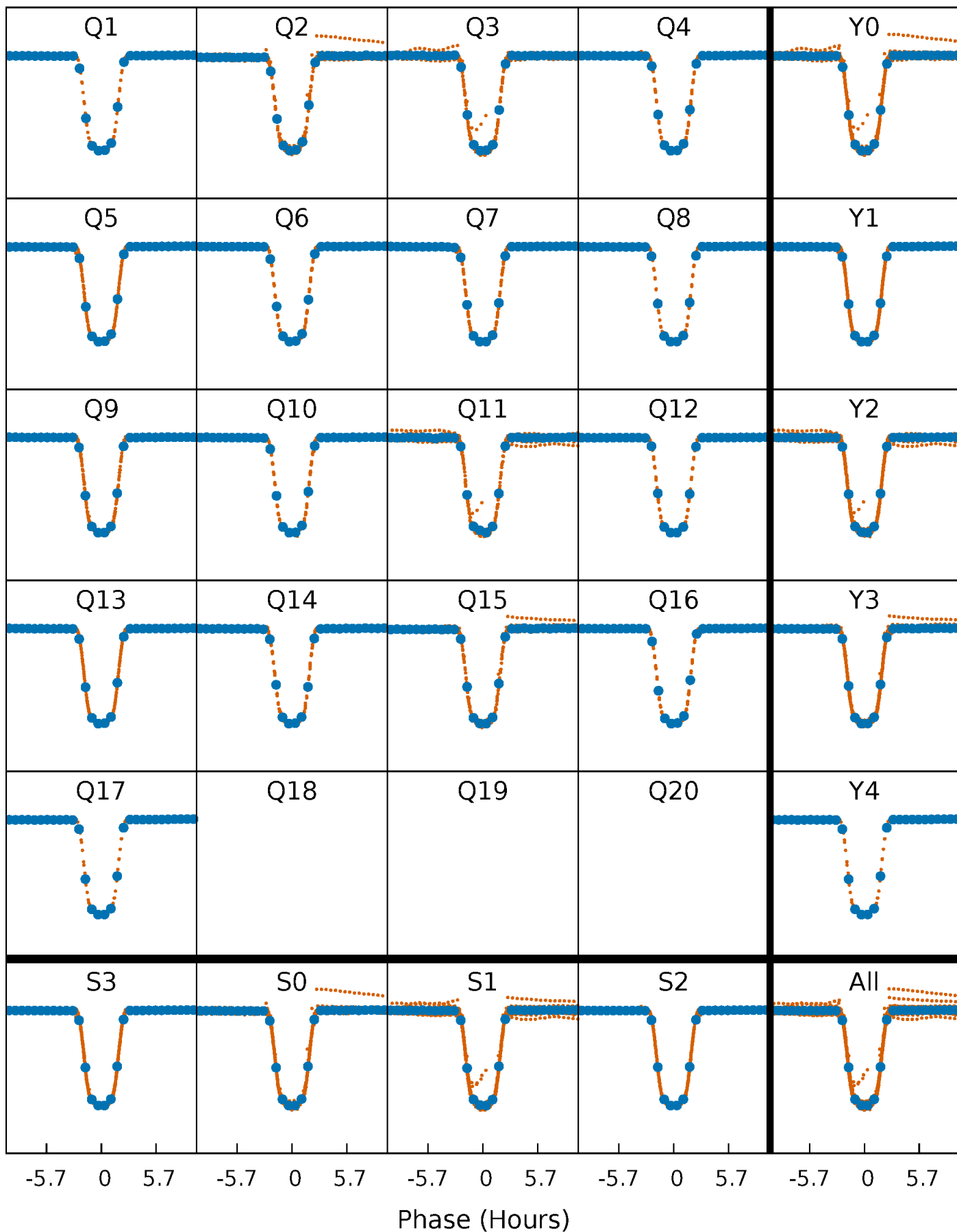


## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



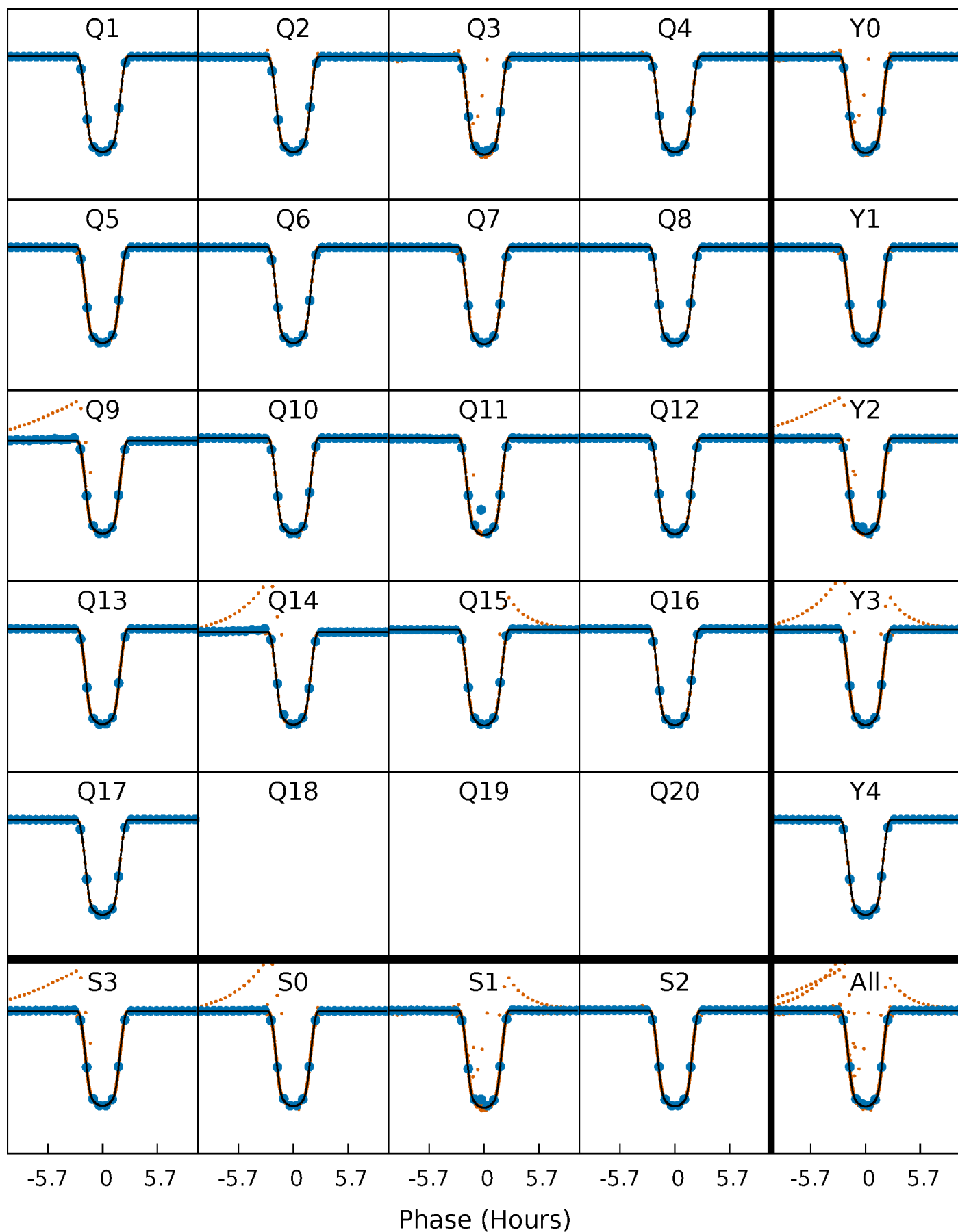
# PDC Quarter-Phased Transit Curves

TCE 006362386-01   P= 4.592402 Days    $T_0=133.139765$  (BKJD)



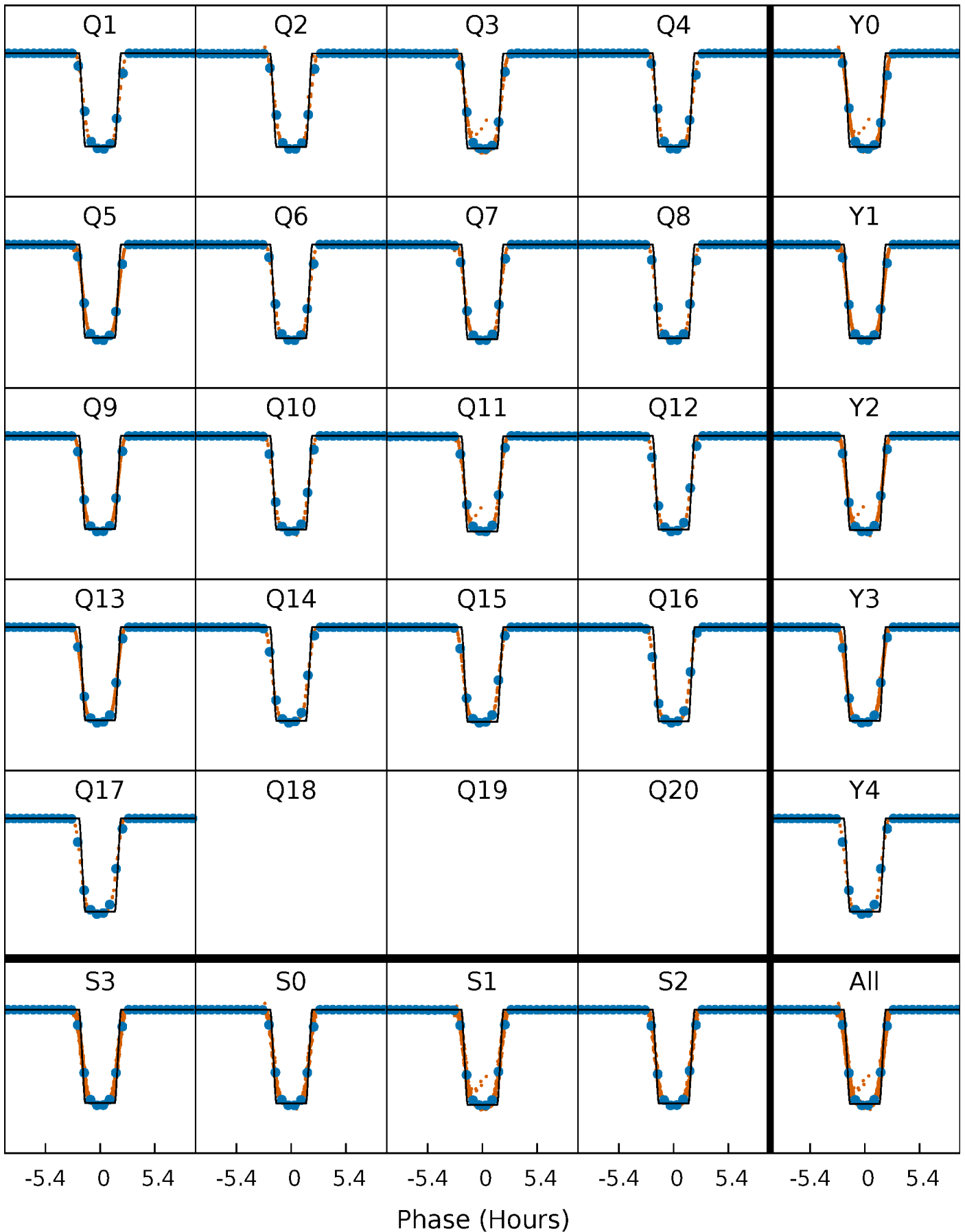
# DV Quarter-Phased Transit Curves

TCE 006362386-01 P= 4.592402 Days  $T_0=133.139765$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

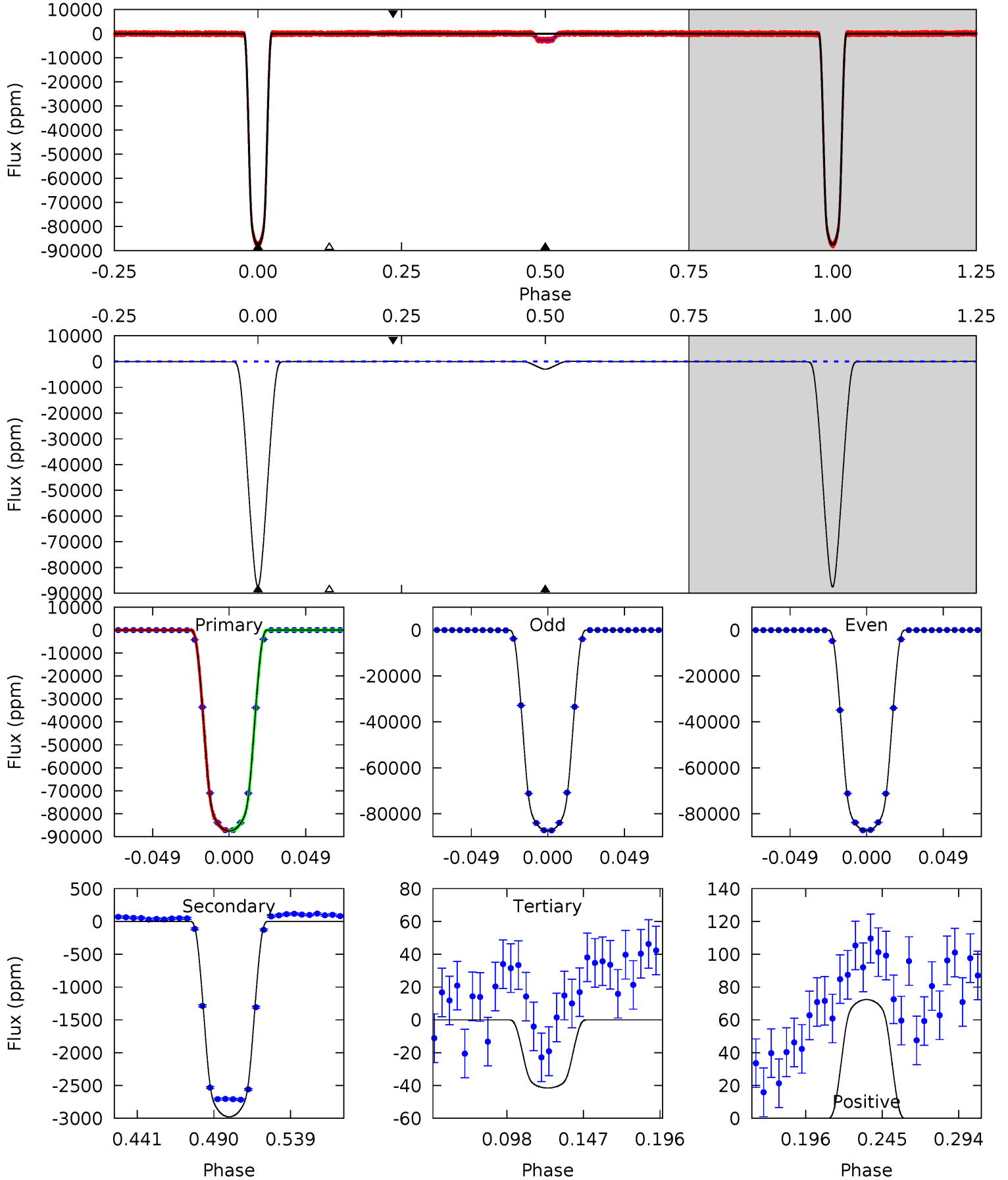
TCE 006362386-01   P= 4.592435 Days    $T_0=133.134857$  (BKJD)



# DV Model-Shift Uniqueness Test

006362386-01, P = 4.592402 Days, E = 128.547363 Days

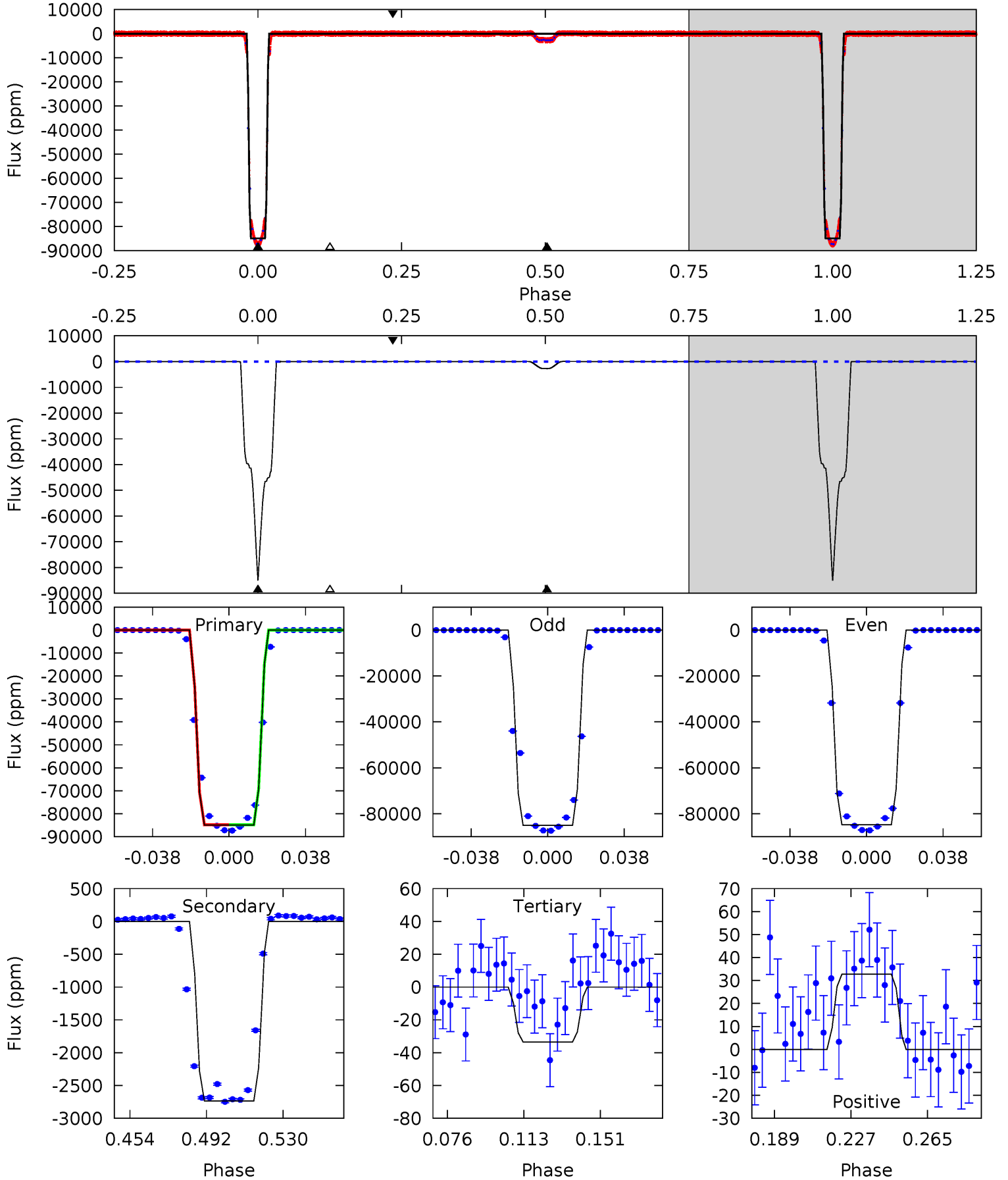
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17451	594.1	8.29	14.4	4.71	1.97	7.01	17442	17436	585.8	579.6	8.39	0.98	0.00	1.28



# Alt Model-Shift Uniqueness Test

006362386-01, P = 4.592435 Days, E = 128.542422 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
11282	363.2	4.45	4.35	4.76	2.08	2.40	11278	11278	358.7	358.8	16.4	1.00	0.00	3.67



### Stellar Parameters For KIC 006362386

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7201^{+228}_{-314}$	$4.138^{+0.132}_{-0.198}$	$-0.080^{+0.250}_{-0.350}$	$1.724^{+0.546}_{-0.364}$	$1.488^{+0.218}_{-0.239}$	$0.409^{+0.316}_{-0.206}$
	+3%/-4%	+3%/-5%	+312%/-438%	+32%/-21%	+15%/-16%	+77%/-50%
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 006362386-01 / KOI 6146.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-2978 \pm 5$	$53.02^{+9.11}_{-6.29}$	$2363^{+195}_{-158}$	$3523^{+69}_{-91}$	$2.207^{+0.554}_{-0.560}$
Alt.	$-2734 \pm 8$	$55.74^{+9.21}_{-6.38}$	$2365^{+187}_{-152}$	$3398^{+65}_{-85}$	$1.815^{+0.483}_{-0.450}$

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

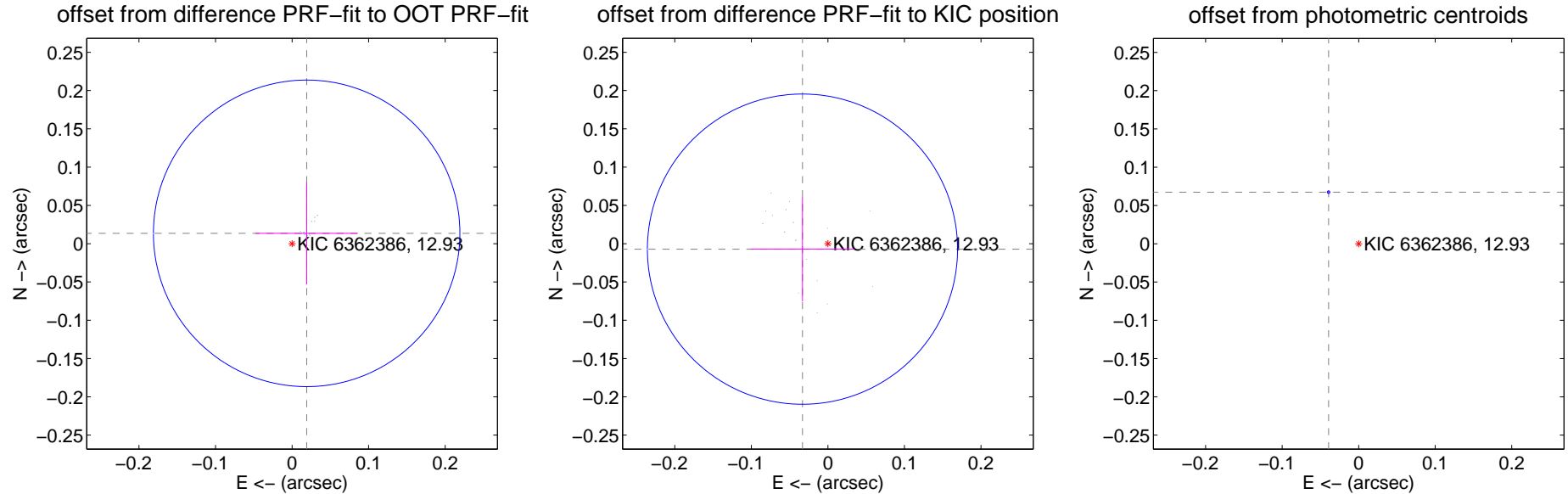
## DV Centroid Data

Supplemental centroid analysis for 006362386-01. Kepler magnitude: 12.93. Transit SNR 10218.61

There are 17 quarters with good PRF difference image offsets

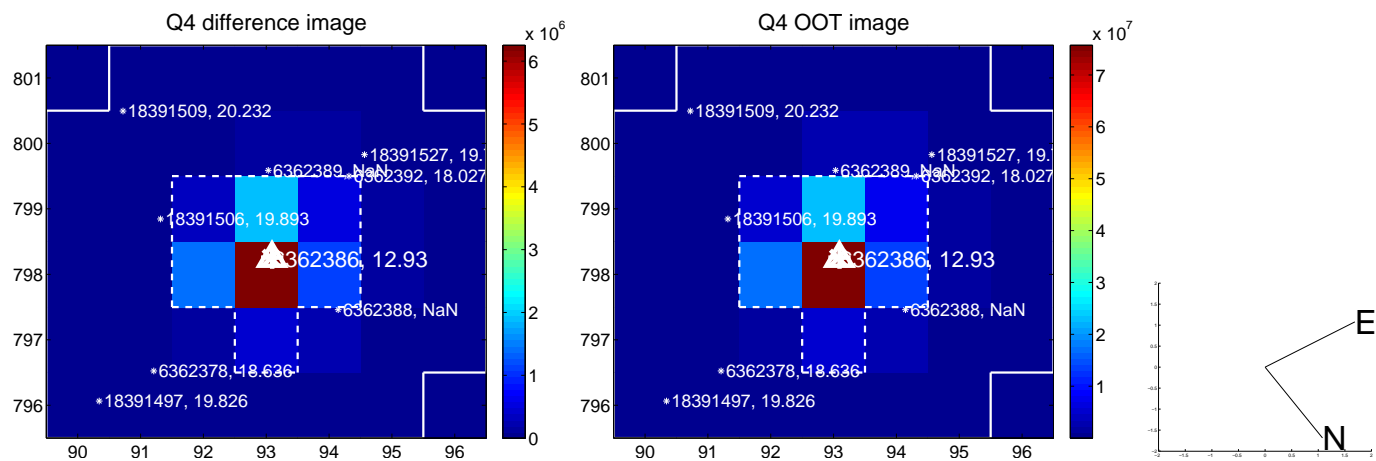
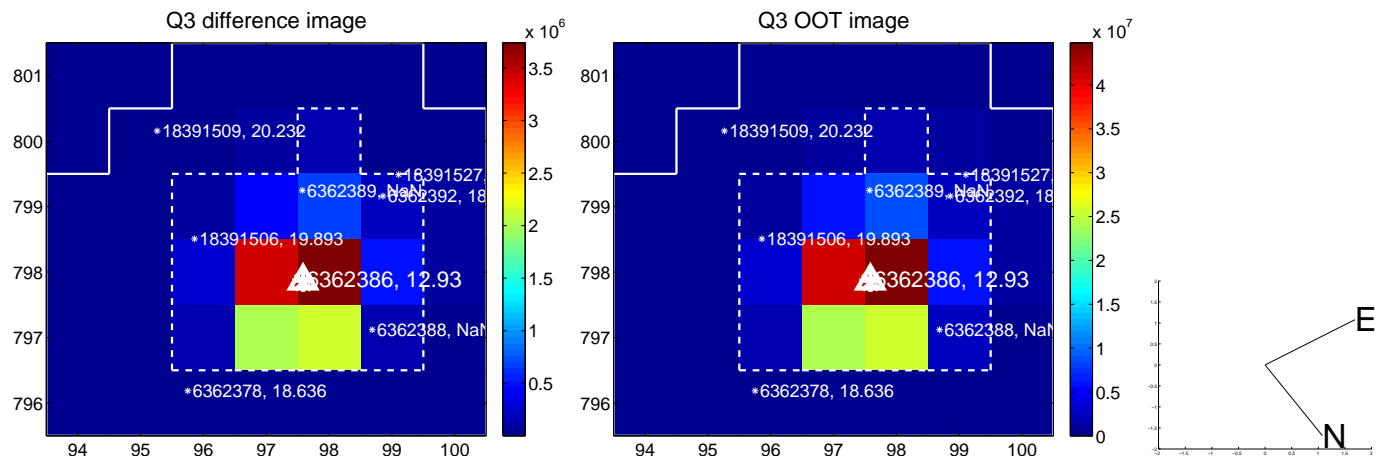
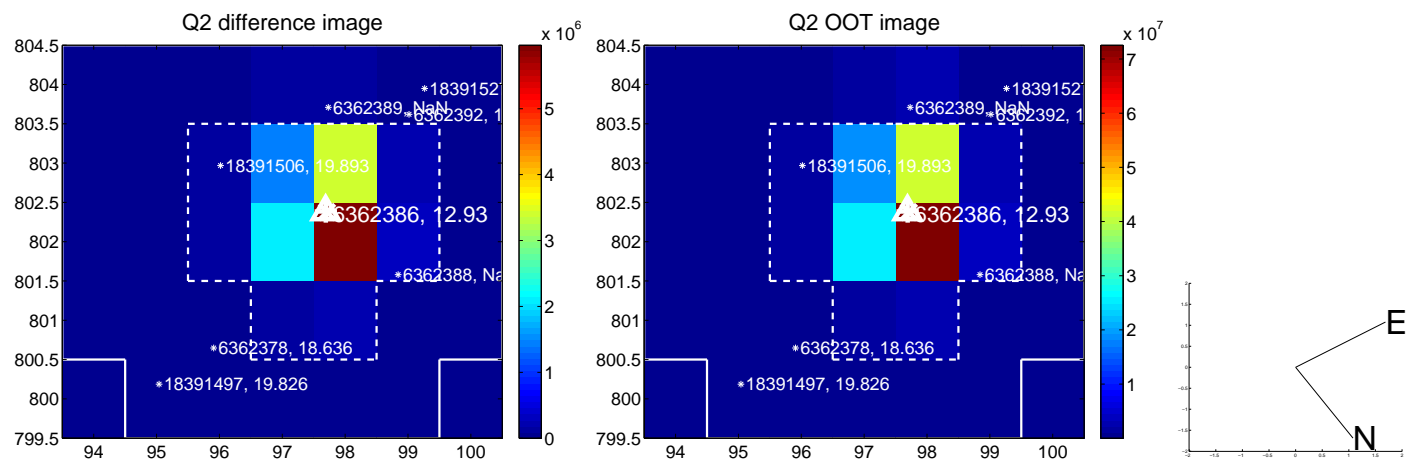
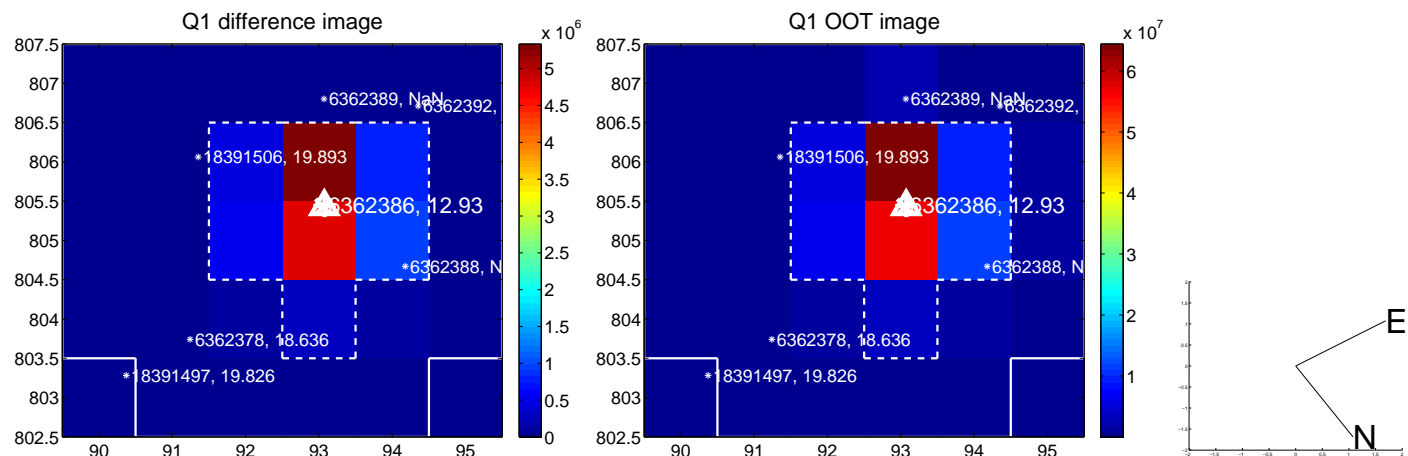
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.023 \pm 0.067$	0.35	$-0.019 \pm 0.067$	$0.014 \pm 0.067$
PRF-fit source offset from KIC position	$0.034 \pm 0.068$	0.50	$0.033 \pm 0.068$	$-0.007 \pm 0.068$
photometric centroid source offset	$0.08 \pm 0.00$	141.13	$0.04 \pm 0.00$	$0.07 \pm 0.00$

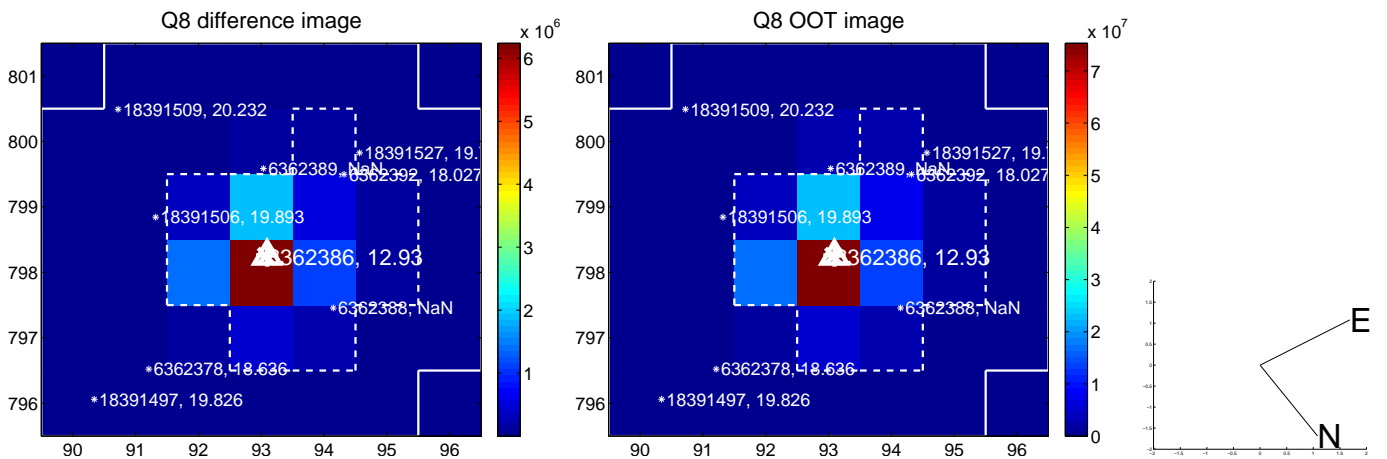
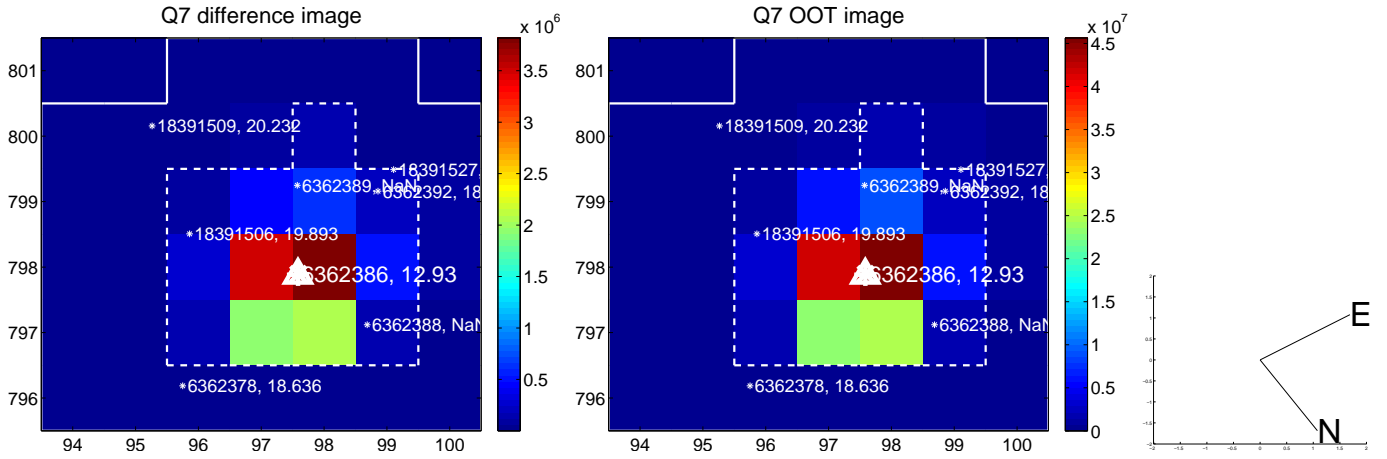
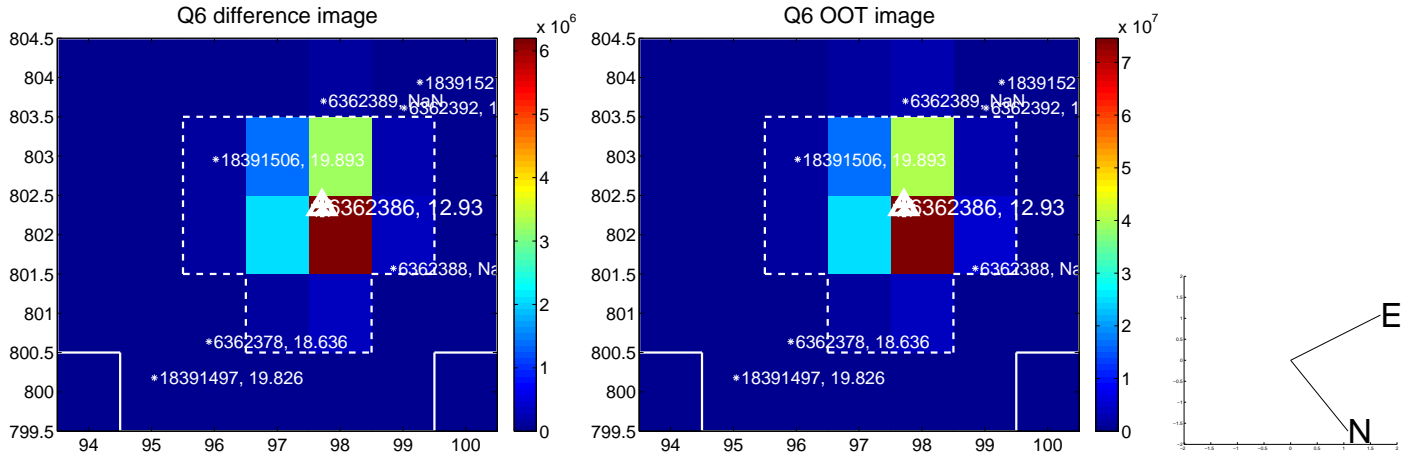
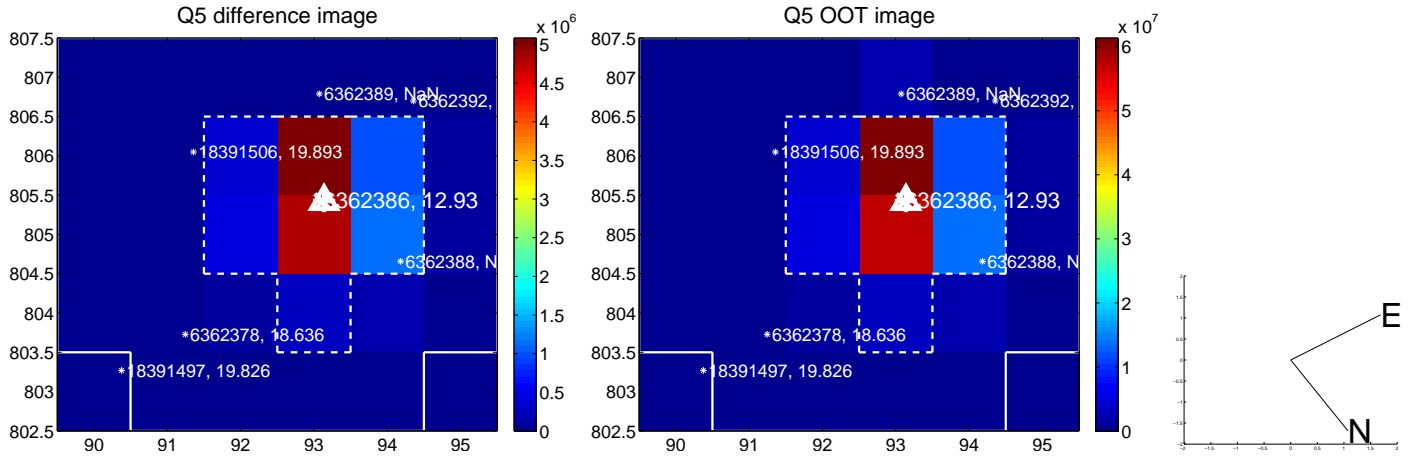


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

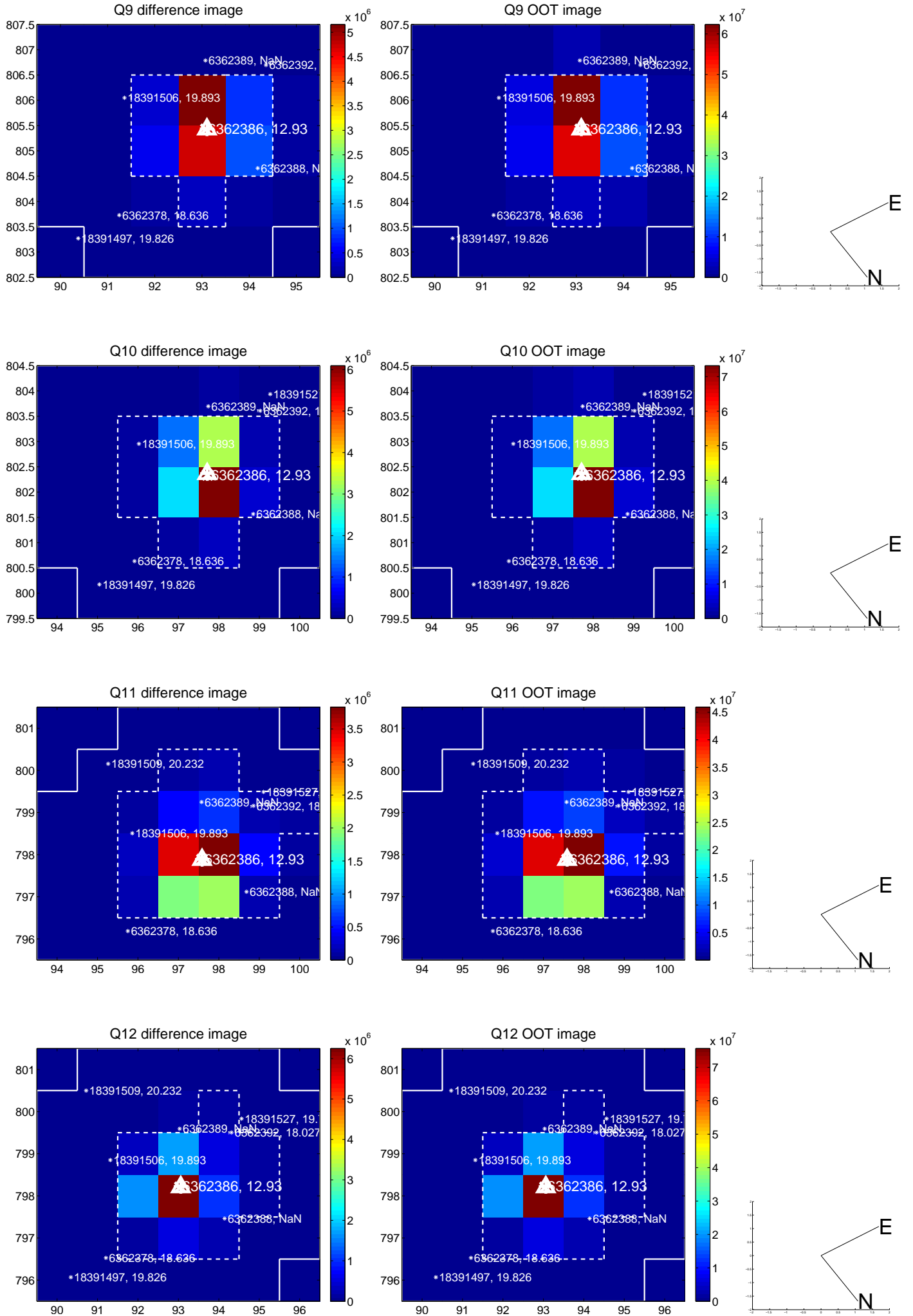
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



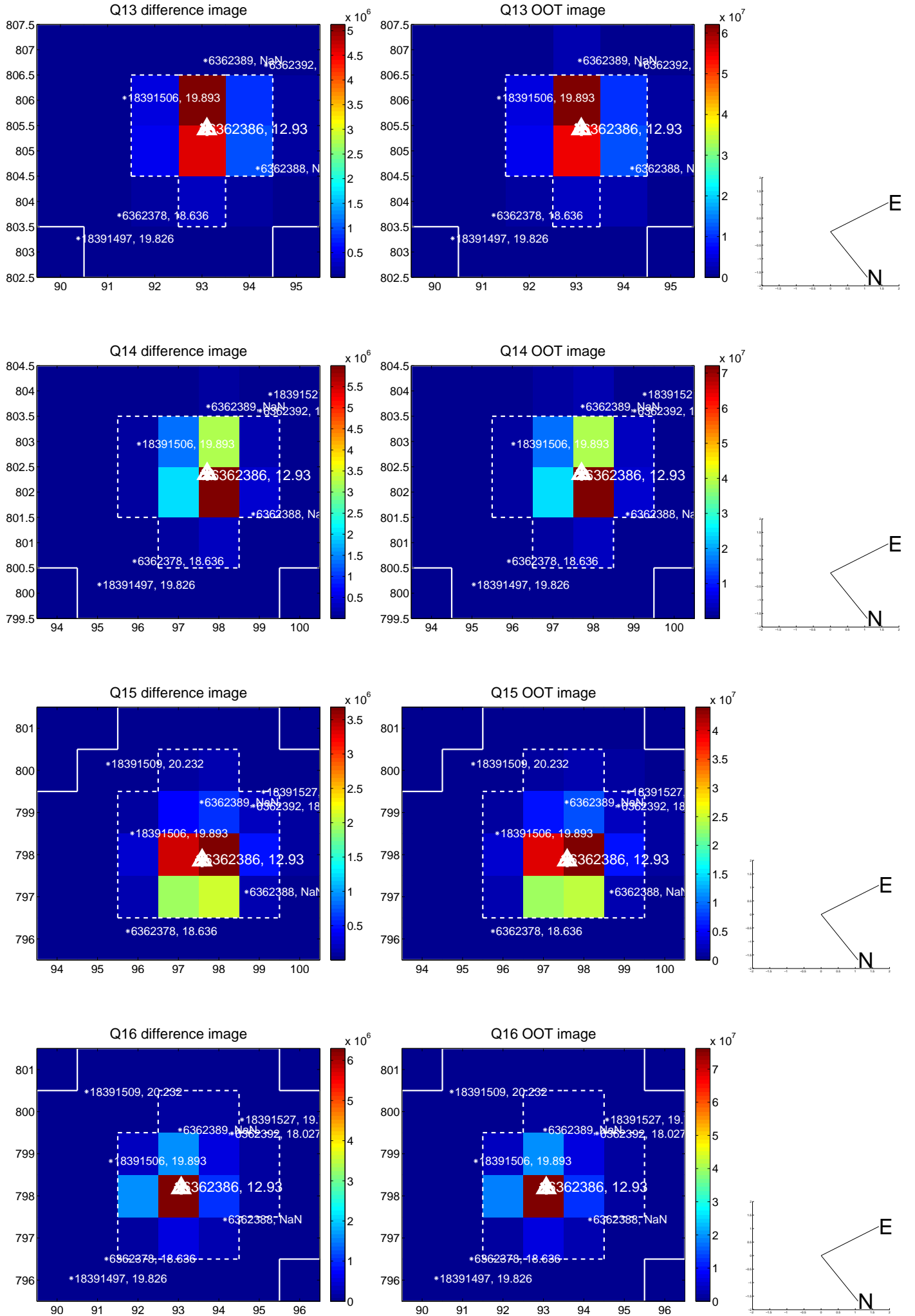
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



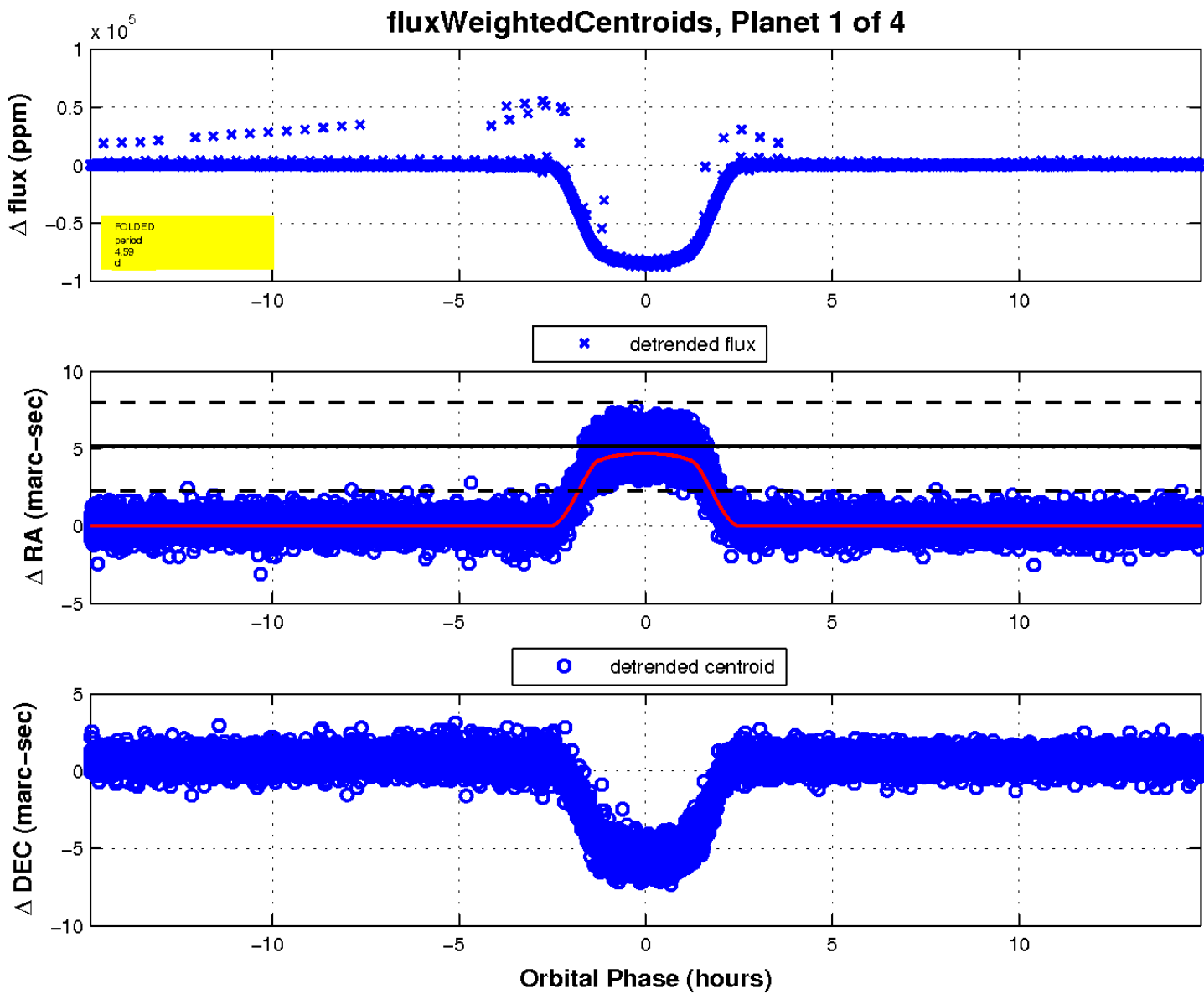
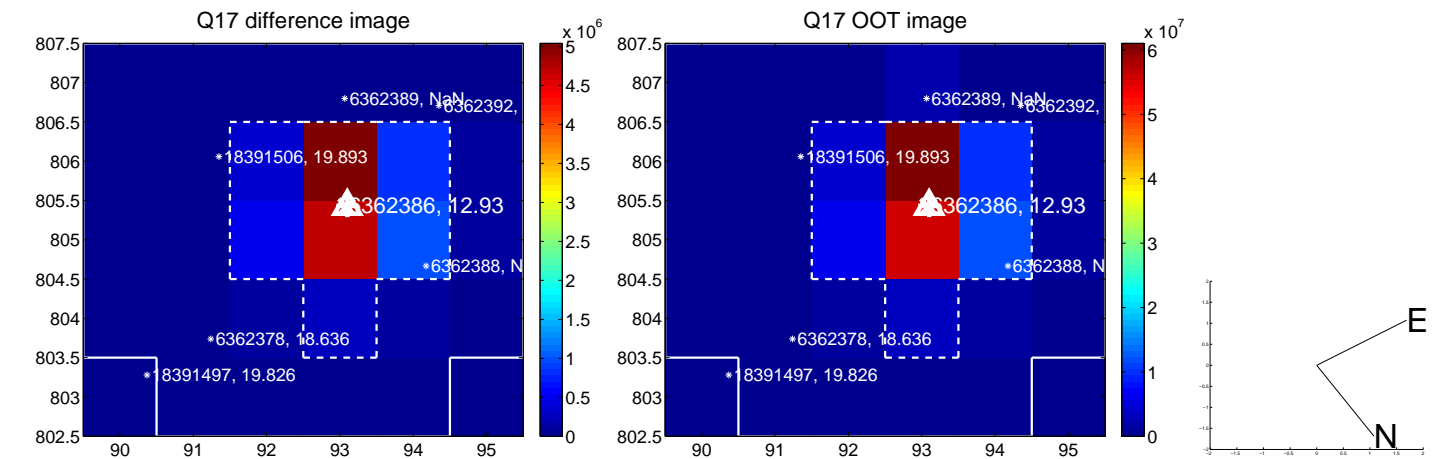
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

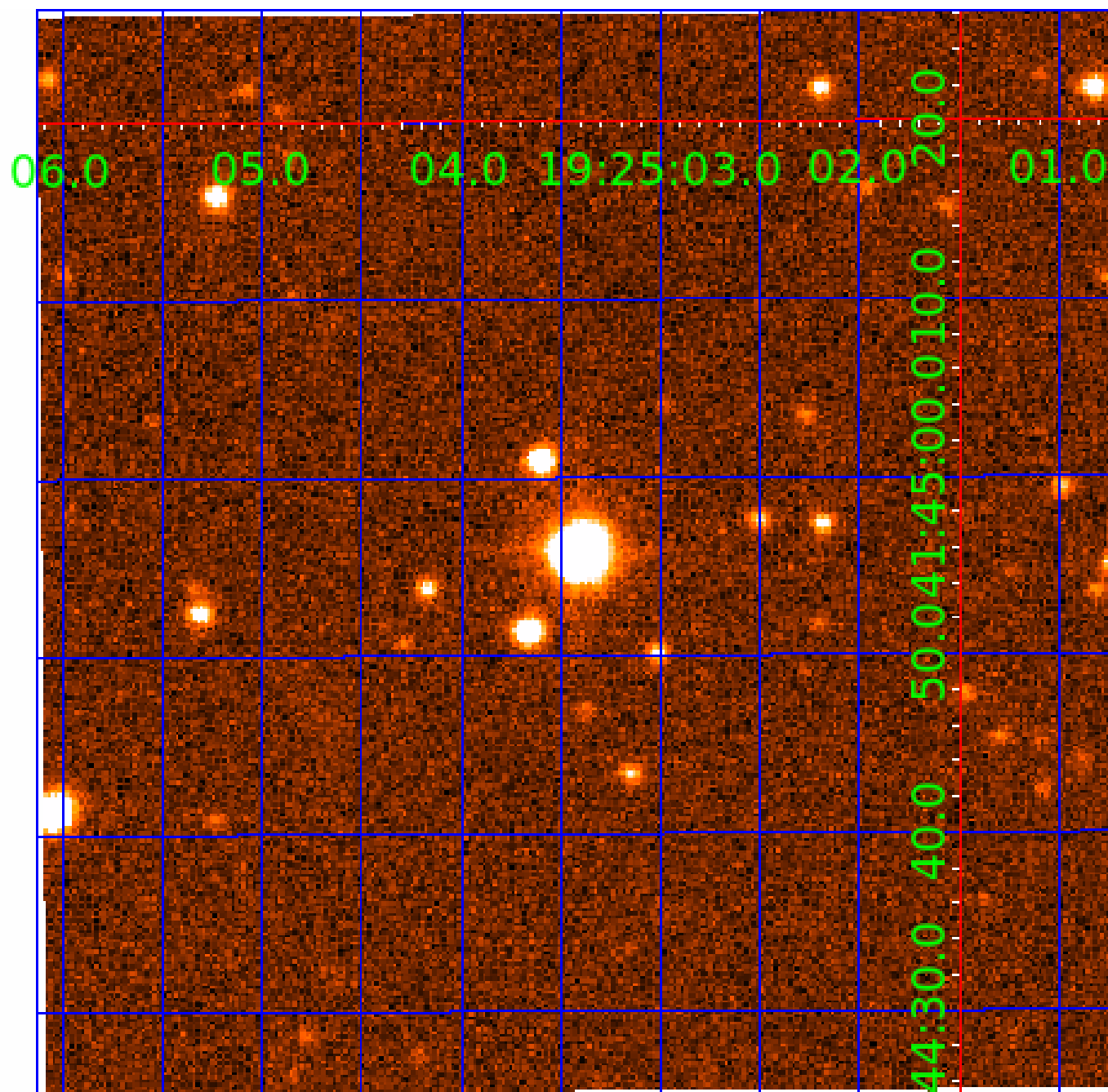


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 006362386

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006362386-01	OBS	6146.01	4.592402	133.139764	87473.4	4.959	11840.3	10218.6	1.72	7201	52.21	1876.88
006362386-02	OBS	No	2.296183	133.145149	2806.1	4.893	407.9	381.8	1.72	7201	10.43	4729.50
006362386-04	OBS	No	188.374327	135.382774	837.3	10.804	23.2	7.8	1.72	7201	9.25	13.27

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006362386-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
006362386-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
006362386-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_UNCERTAIN

**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.

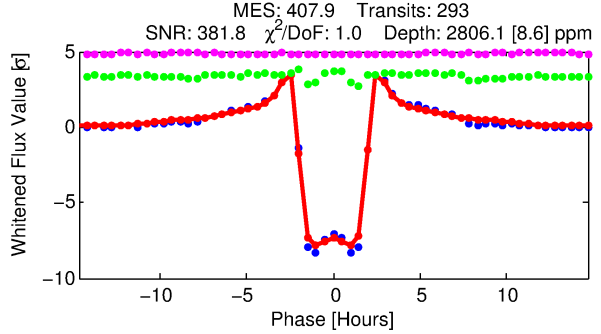
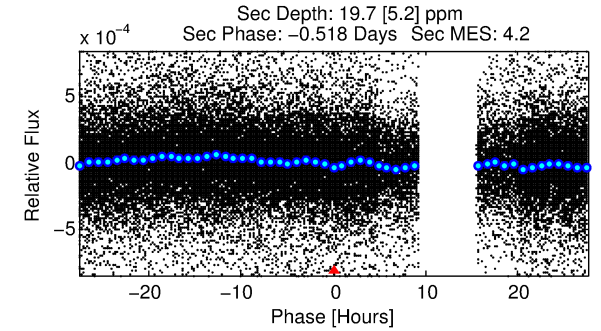
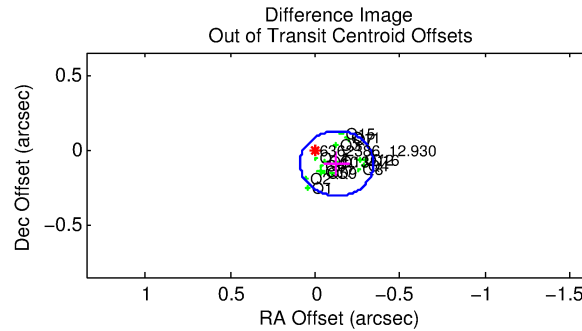
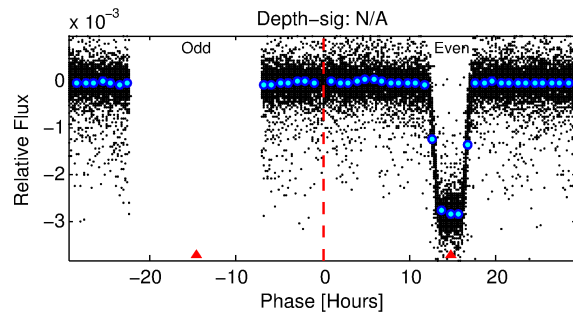
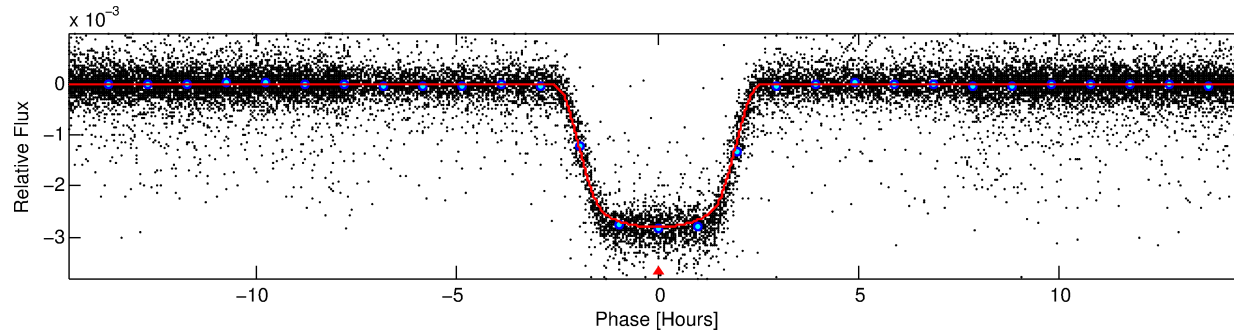
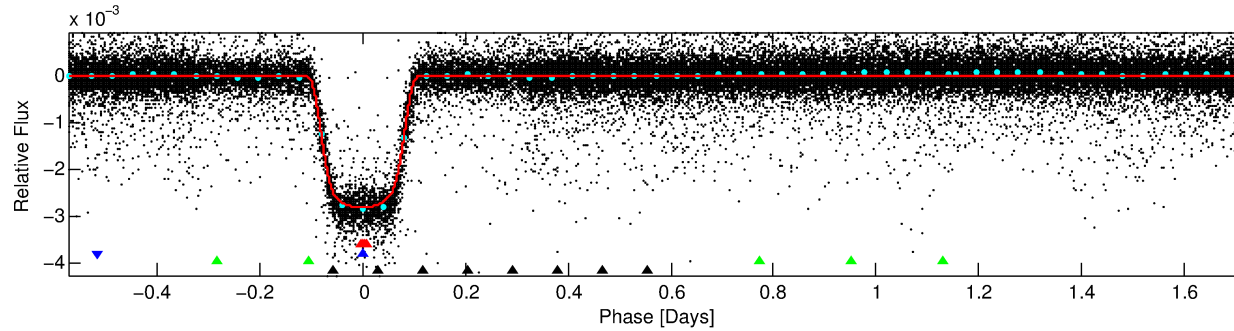
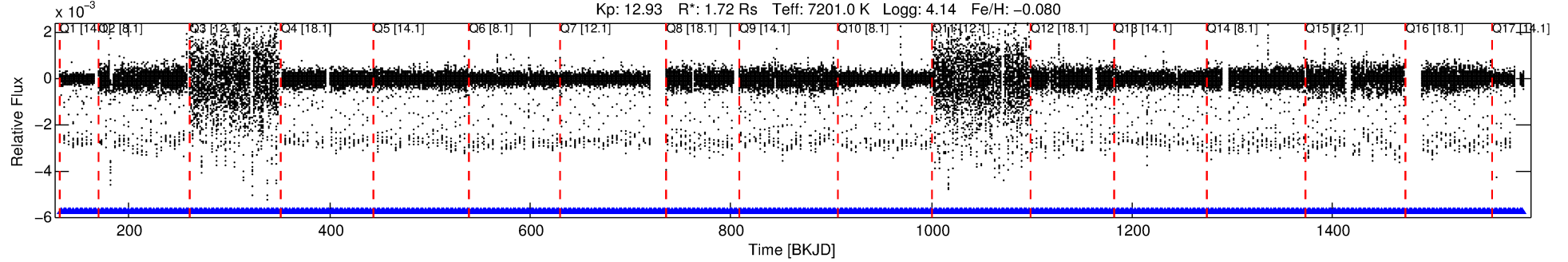
## Ephemeris Match Information For 006362386-02

No Significant Match Found

# DV One-Page Summary

KIC: 6362386 Candidate: 2 of 4 Period: 2.296 d  
KOI: K06146 Corr: No Ephemeris Match

Kp: 12.93 R\*: 1.72 Rs Teff: 7201.0 K Logg: 4.14 Fe/H: -0.080



## DV Fit Results:

Period = 2.29618 [0.00000] d  
Epoch = 133.1451 [0.0001] BKJD  
Rp/R\* = 0.0554 [0.0001]  
a/R\* = 2.32 [0.01]  
b = 0.87 [0.00]  
Seff = 4729.50 [1934.95]  
Teq = 2115 [216] K  
Rp = 10.43 [3.30] Re  
a = 0.0389 [0.0101] AU  
Ag = 0.15 [0.07] [-12.36σ]  
Teffp = 2038 [161] K [-0.28σ]

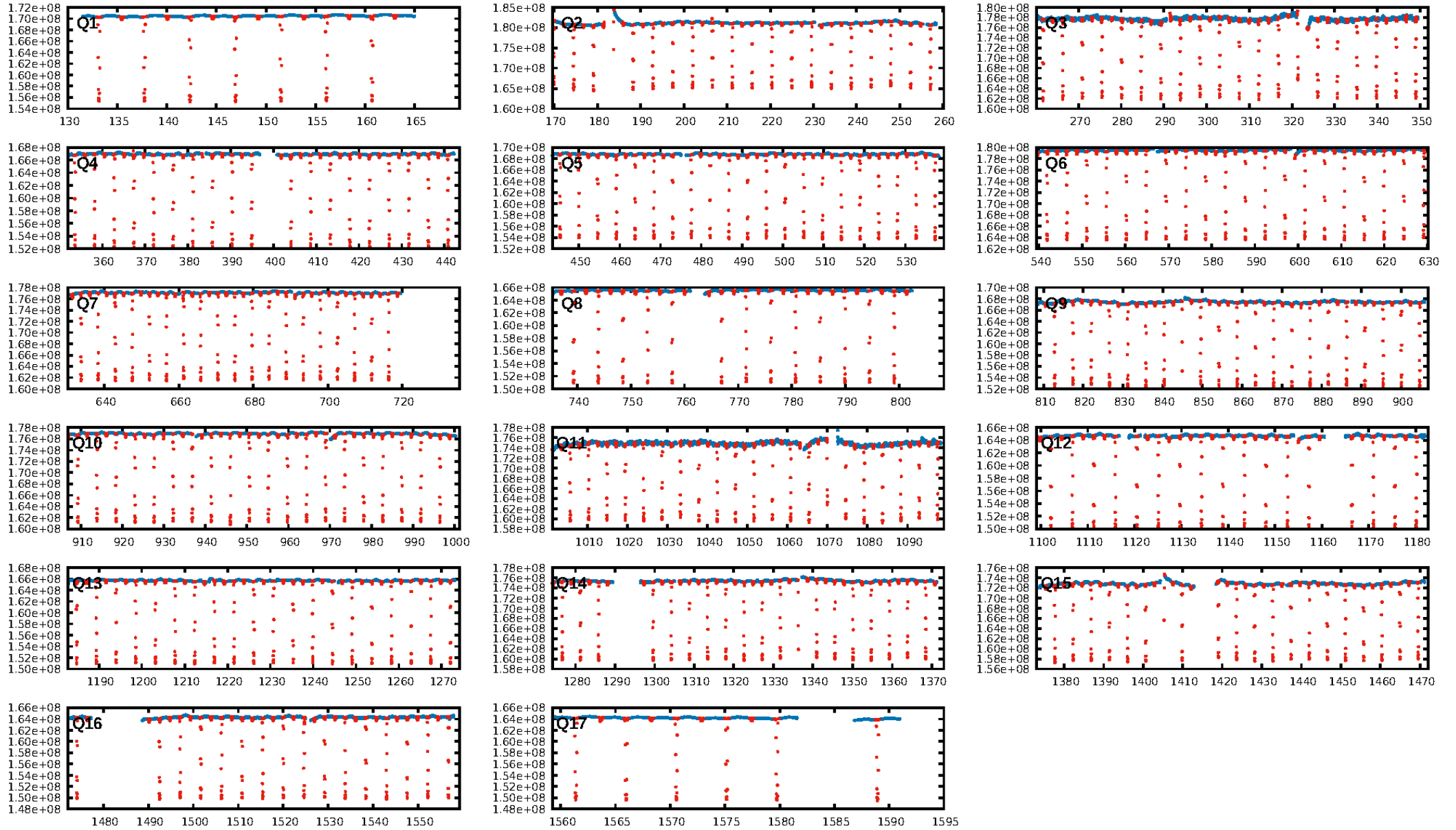
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [7.91σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [282/282]  
GhostDiagnostic-chr: 3.795  
Centroid-sig: N/A  
Centroid-so: 0.023 arcsec [2.17σ]  
OotOffset-rm: 0.157 arcsec [2.18σ]  
KicOffset-rm: 0.130 arcsec [1.79σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

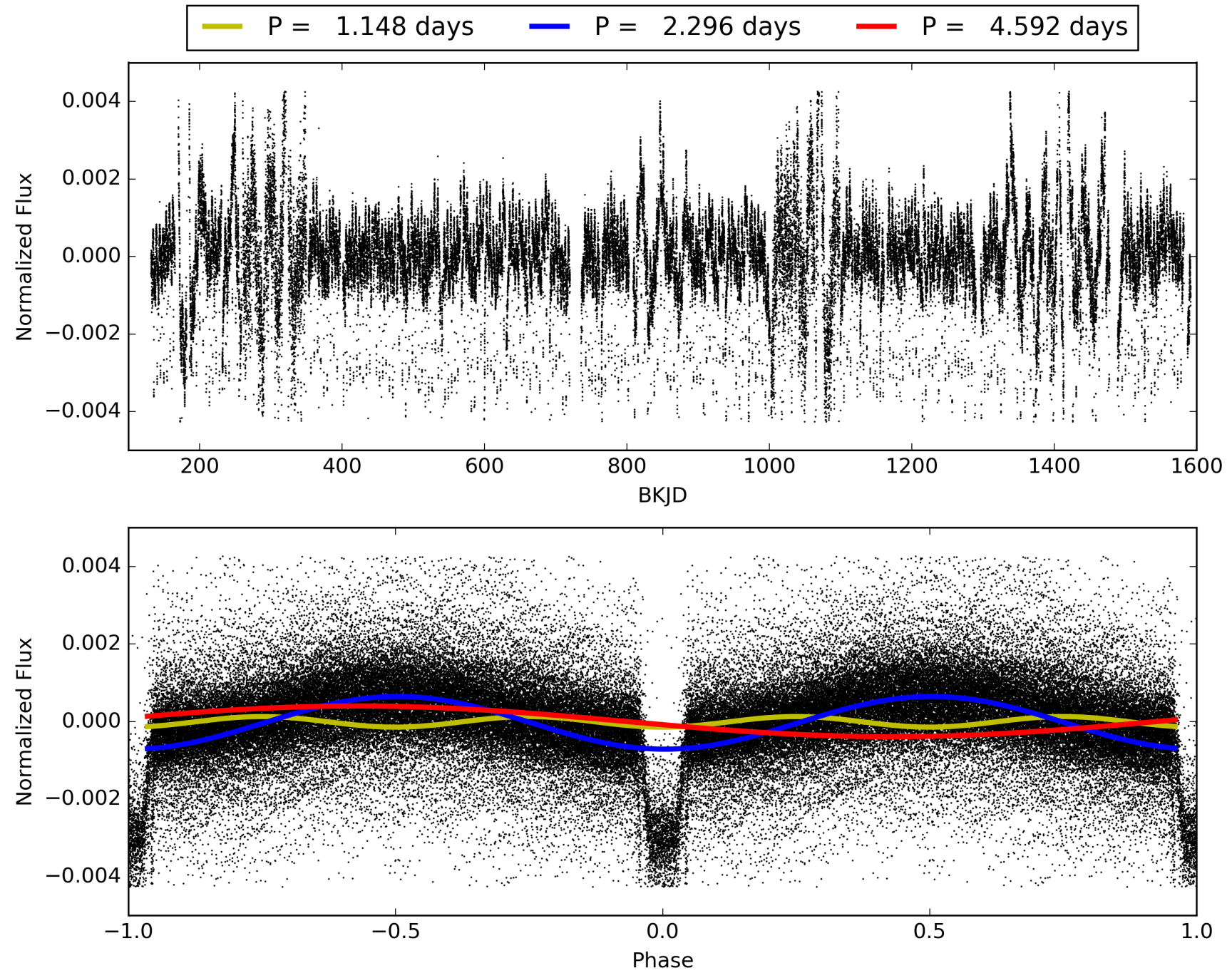
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:11:07 Z

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

# TCE 006362386-02, PDC Light Curves

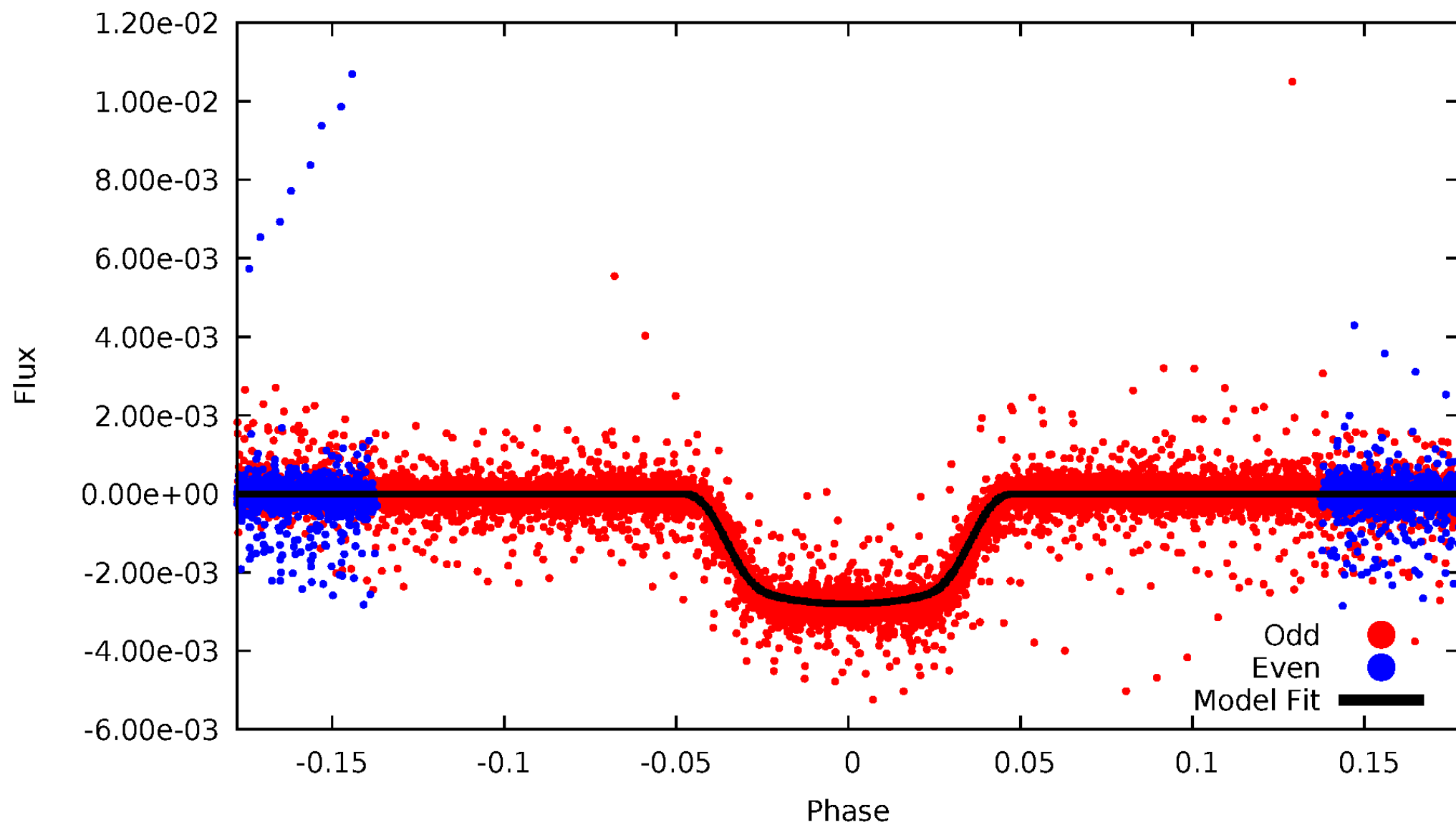


TCE 006362386-02



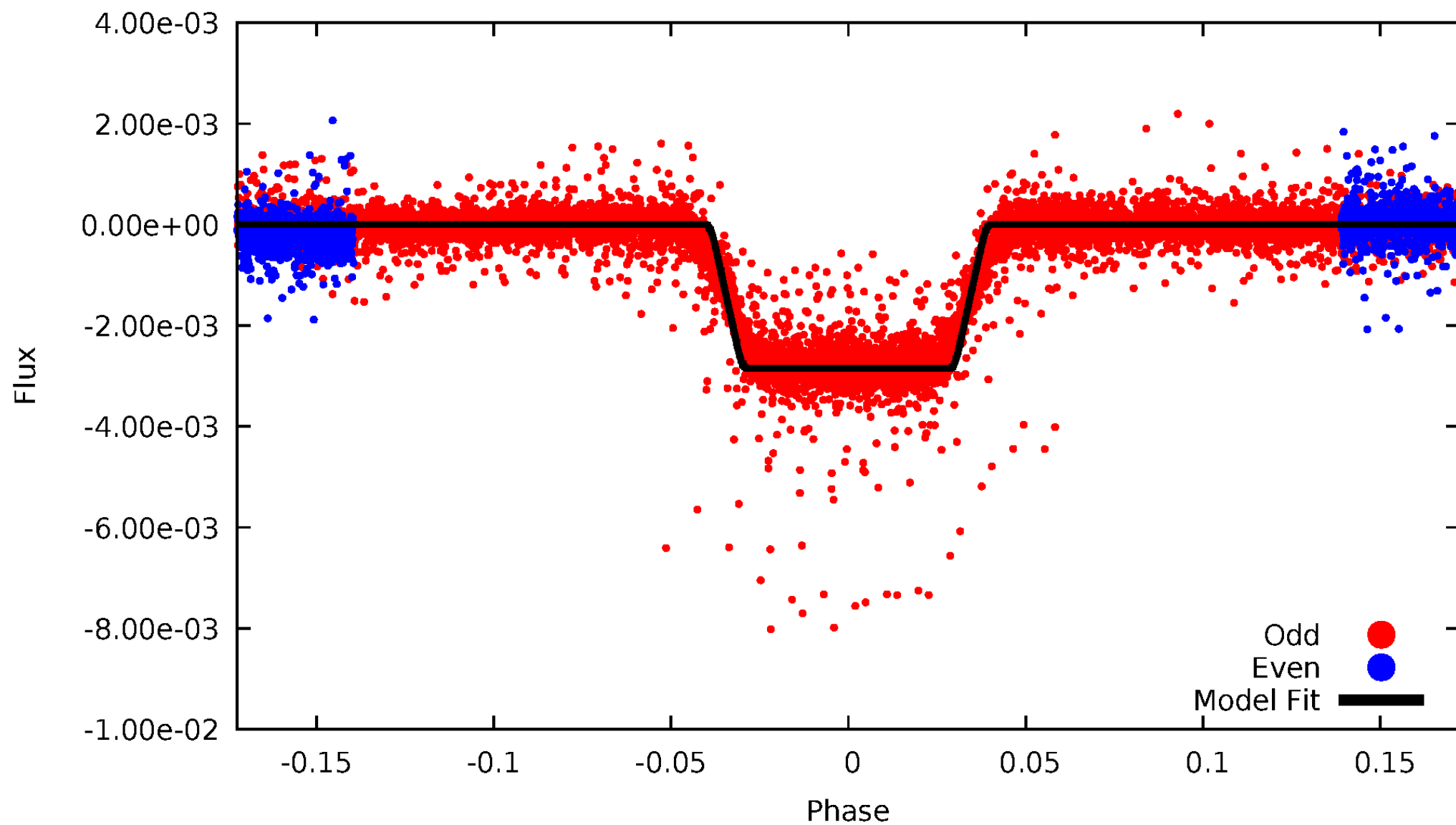
# DV Odd/Even

TCE 006362386-02



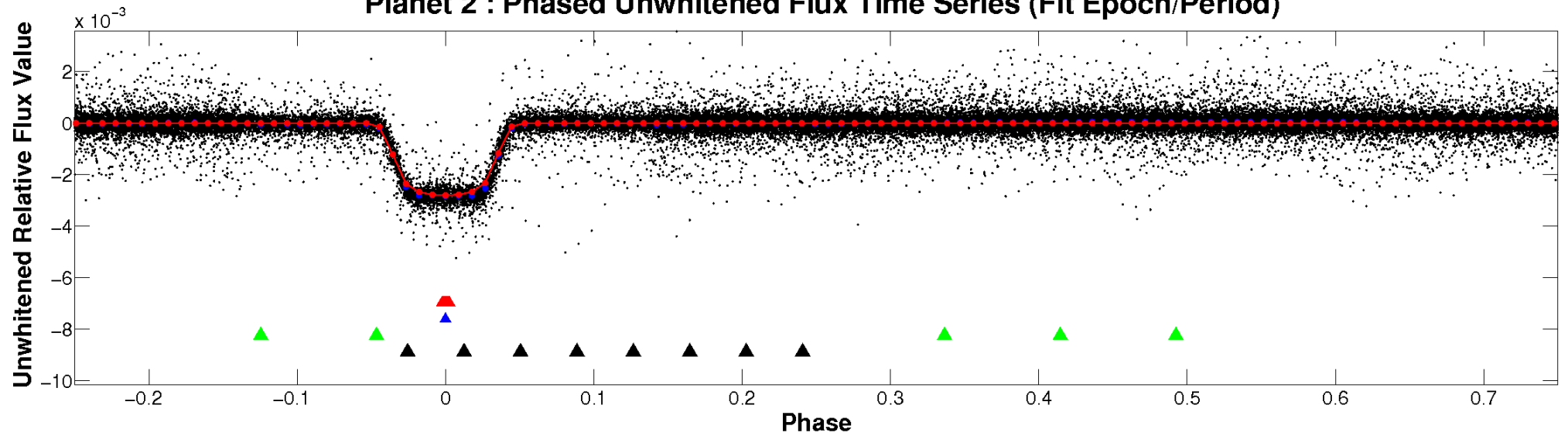
# ALT Odd/Even

TCE 006362386-02

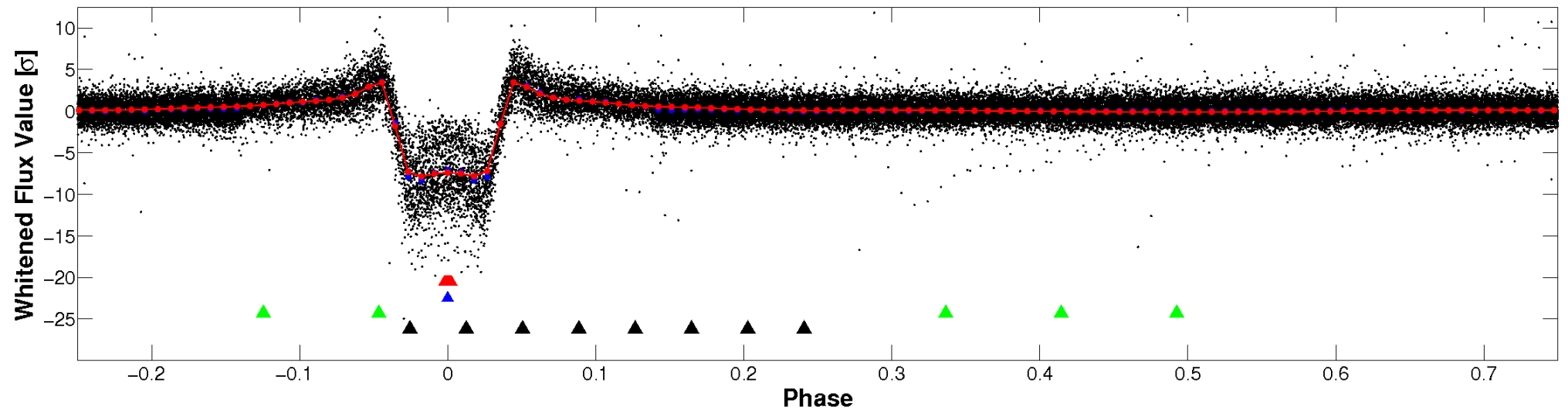


# Non-Whitened Vs. Whitened Light Curve

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

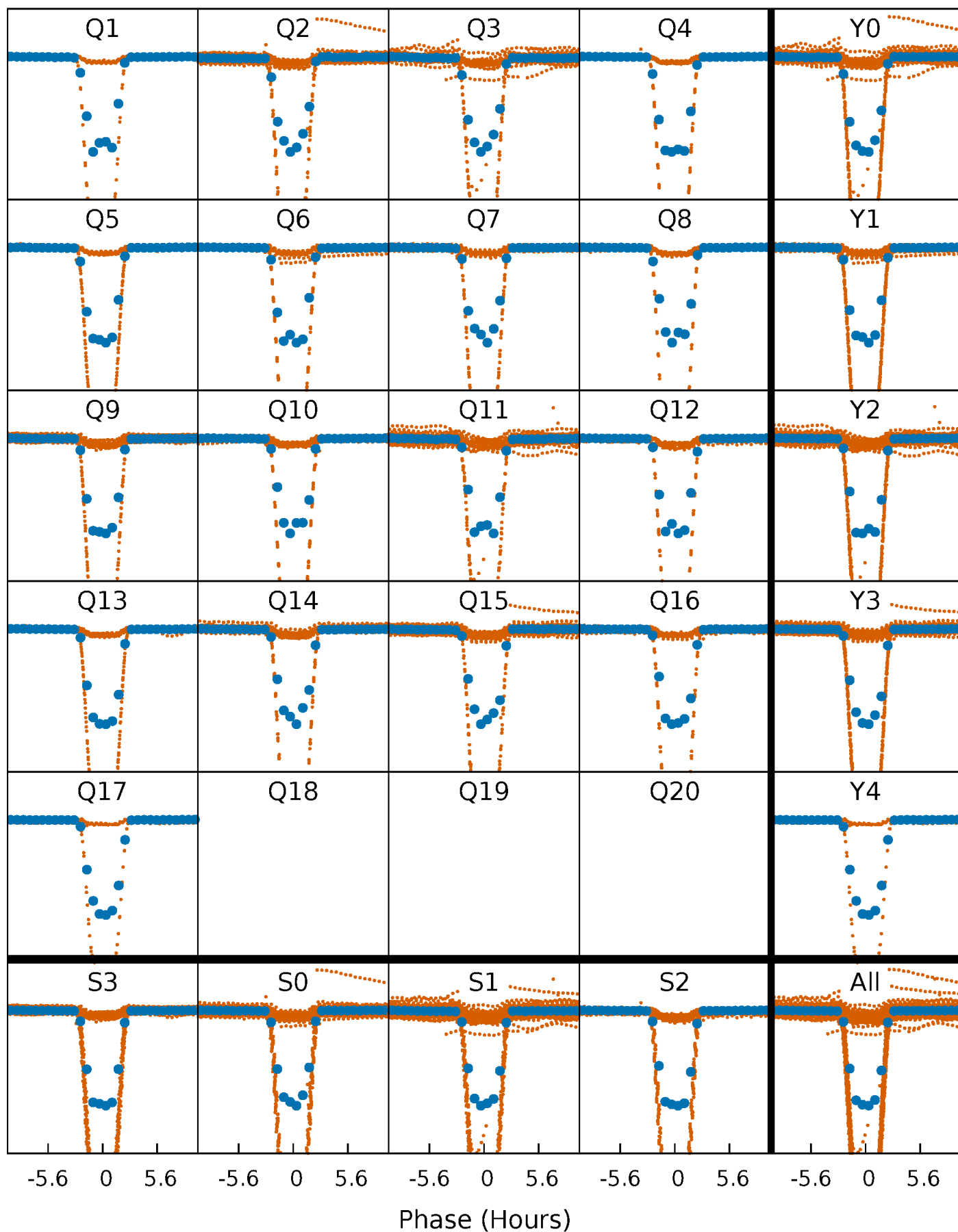


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



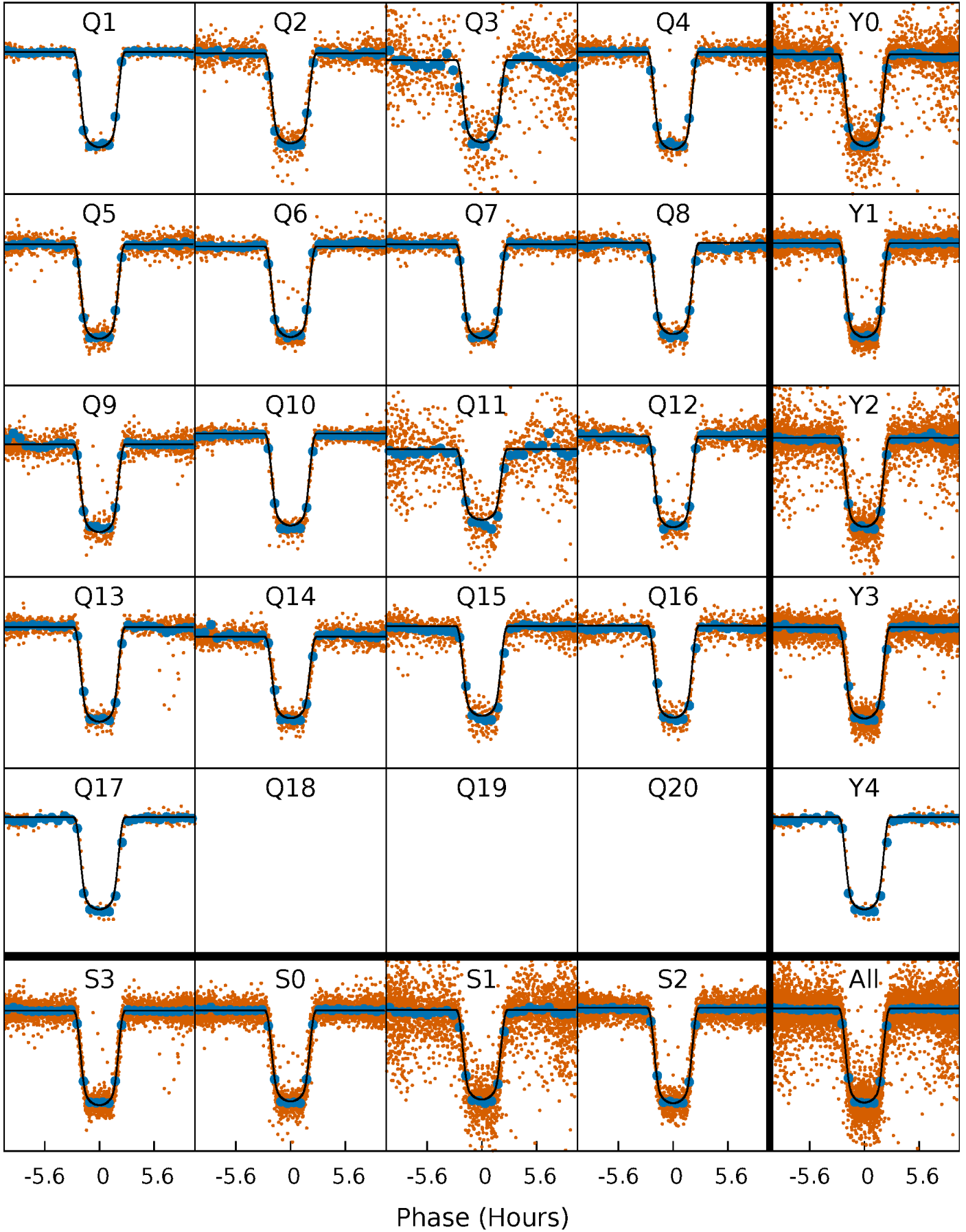
# PDC Quarter-Phased Transit Curves

TCE 006362386-02 P= 2.296183 Days  $T_0=133.145149$  (BKJD)



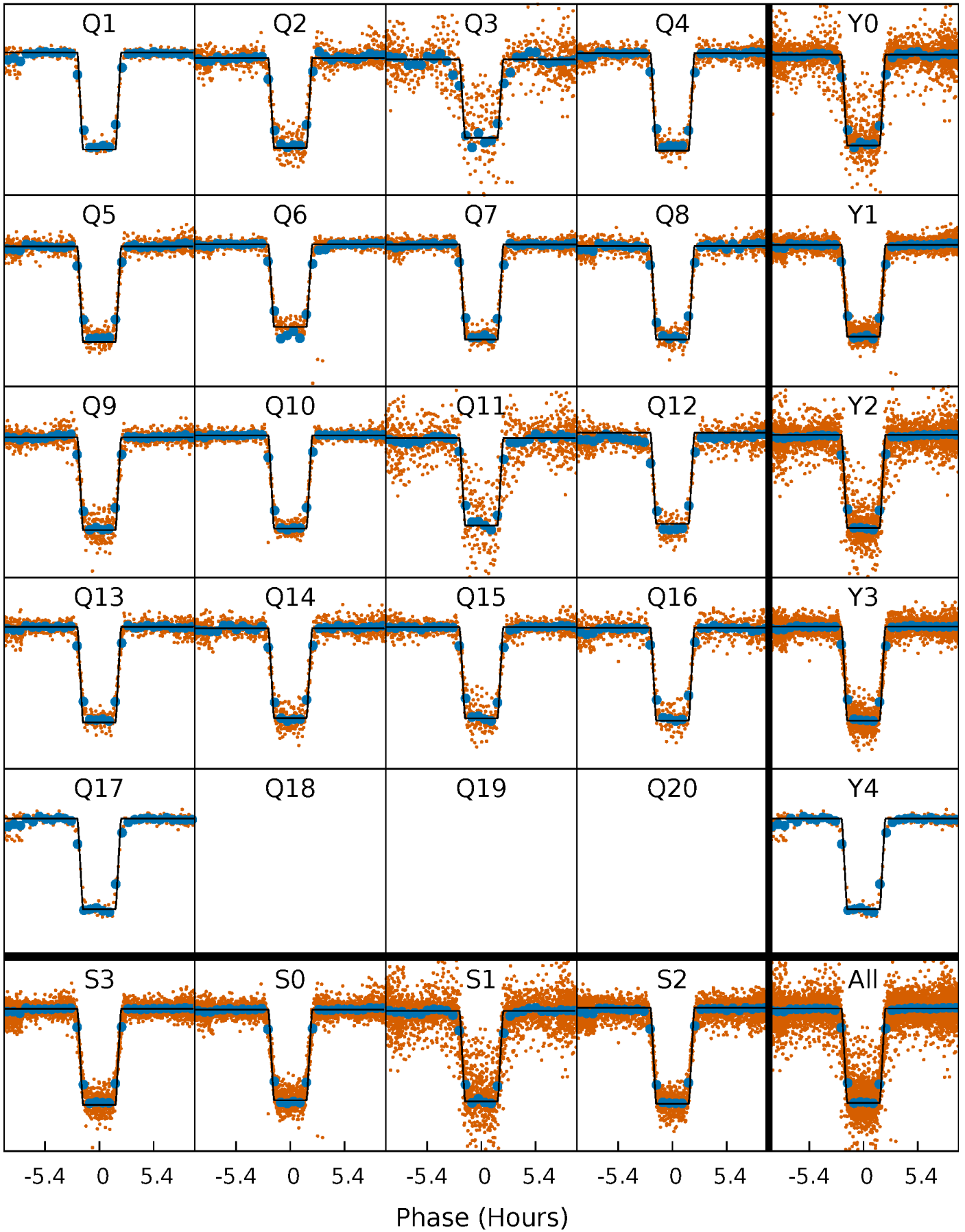
# DV Quarter-Phased Transit Curves

TCE 006362386-02   P= 2.296183 Days    $T_0=133.145149$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

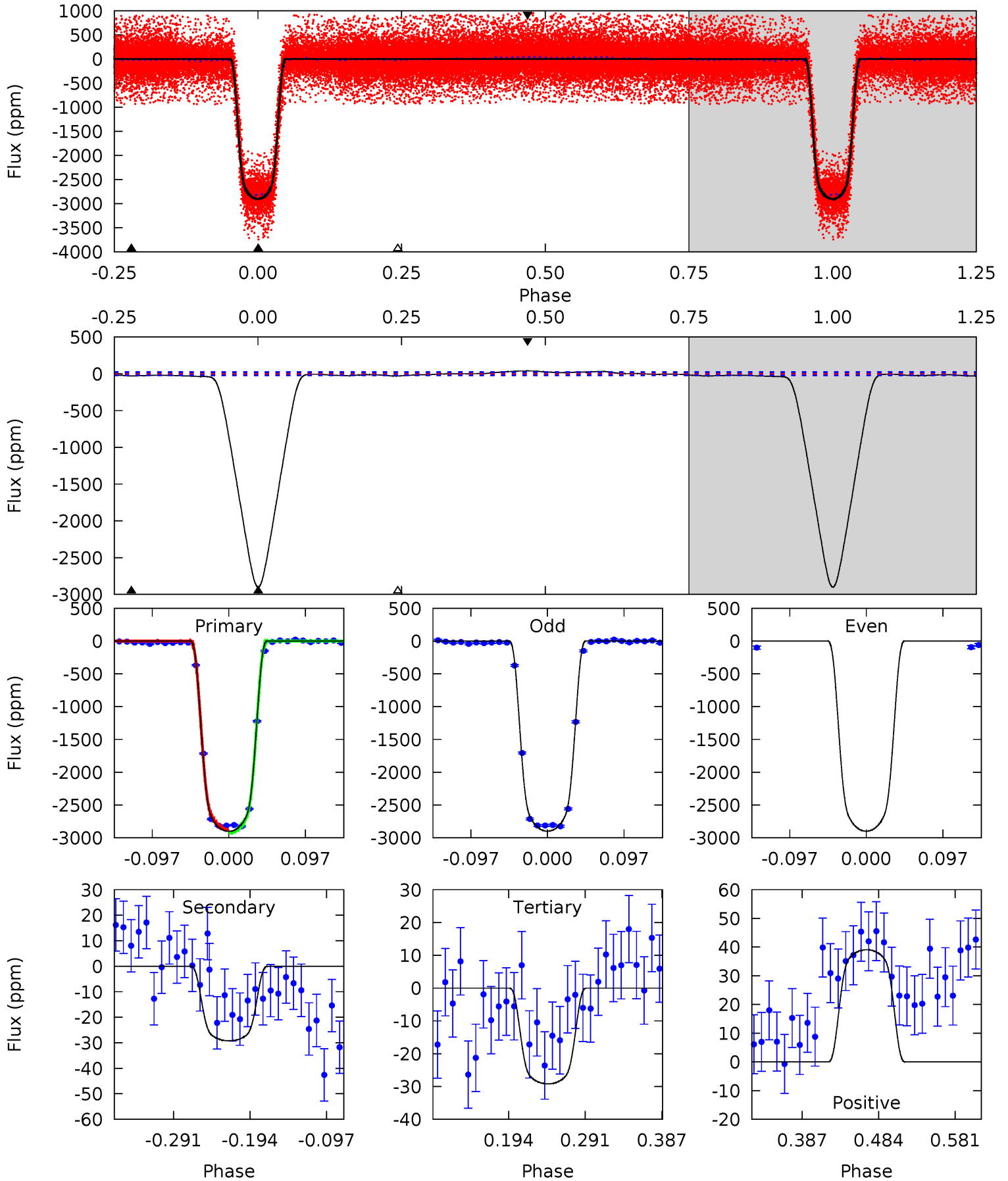
TCE 006362386-02   P= 2.296199 Days    $T_0=133.140650$  (BKJD)



# DV Model-Shift Uniqueness Test

006362386-02, P = 2.296183 Days, E = 130.848966 Days

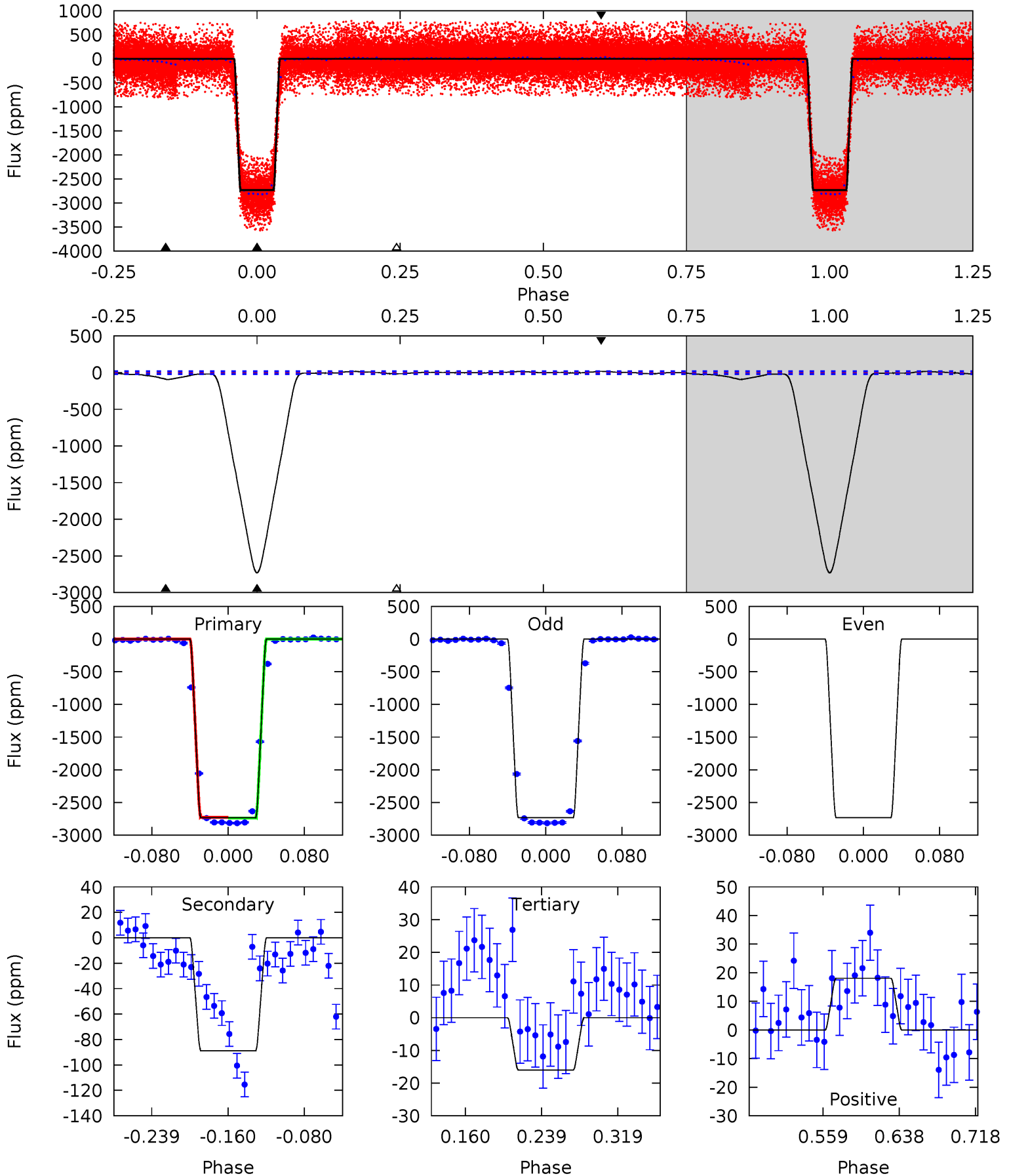
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
623.1	6.28	6.27	8.39	4.57	1.66	4.25	616.8	614.7	0.01	-2.11	0	1.00	0.01	5.27



# Alt Model-Shift Uniqueness Test

006362386-02, P = 2.296199 Days, E = 130.844451 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
647.8	21.1	3.79	4.28	4.61	1.75	1.87	644.0	643.5	17.3	16.8	0	1.01	0.01	1.19



### Stellar Parameters For KIC 006362386

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7201^{+228}_{-314}$	$4.138^{+0.132}_{-0.198}$	$-0.080^{+0.250}_{-0.350}$	$1.724^{+0.546}_{-0.364}$	$1.488^{+0.218}_{-0.239}$	$0.409^{+0.316}_{-0.206}$
	+3%/-4%	+3%/-5%	+312%/-438%	+32%/-21%	+15%/-16%	+77%/-50%
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 006362386-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-29 \pm 5$	$10.52^{+1.87}_{-1.18}$	$2975^{+231}_{-205}$	$-2583^{+494}_{-288}$	$0.215^{+0.068}_{-0.063}$
Alt.	$-89 \pm 4$	$10.06^{+1.79}_{-1.12}$	$2977^{+234}_{-193}$	$3195^{+100}_{-145}$	$0.709^{+0.170}_{-0.174}$

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

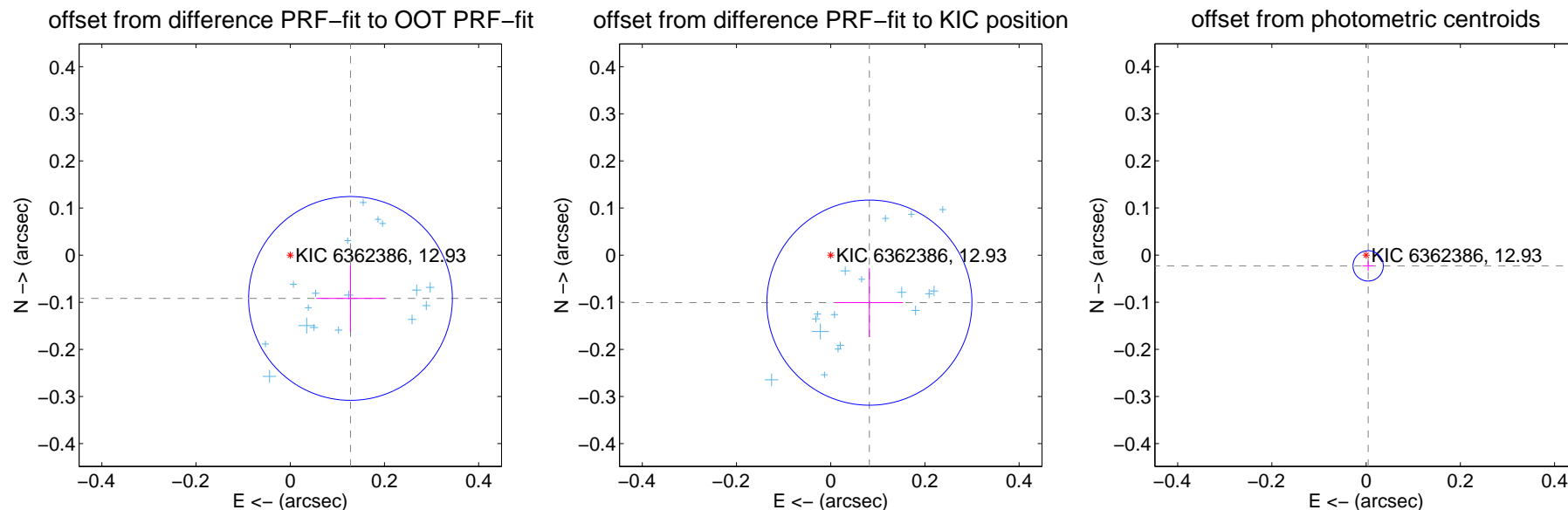
## DV Centroid Data

Supplemental centroid analysis for 006362386-02. Kepler magnitude: 12.93. Transit SNR 381.85

There are 17 quarters with good PRF difference image offsets

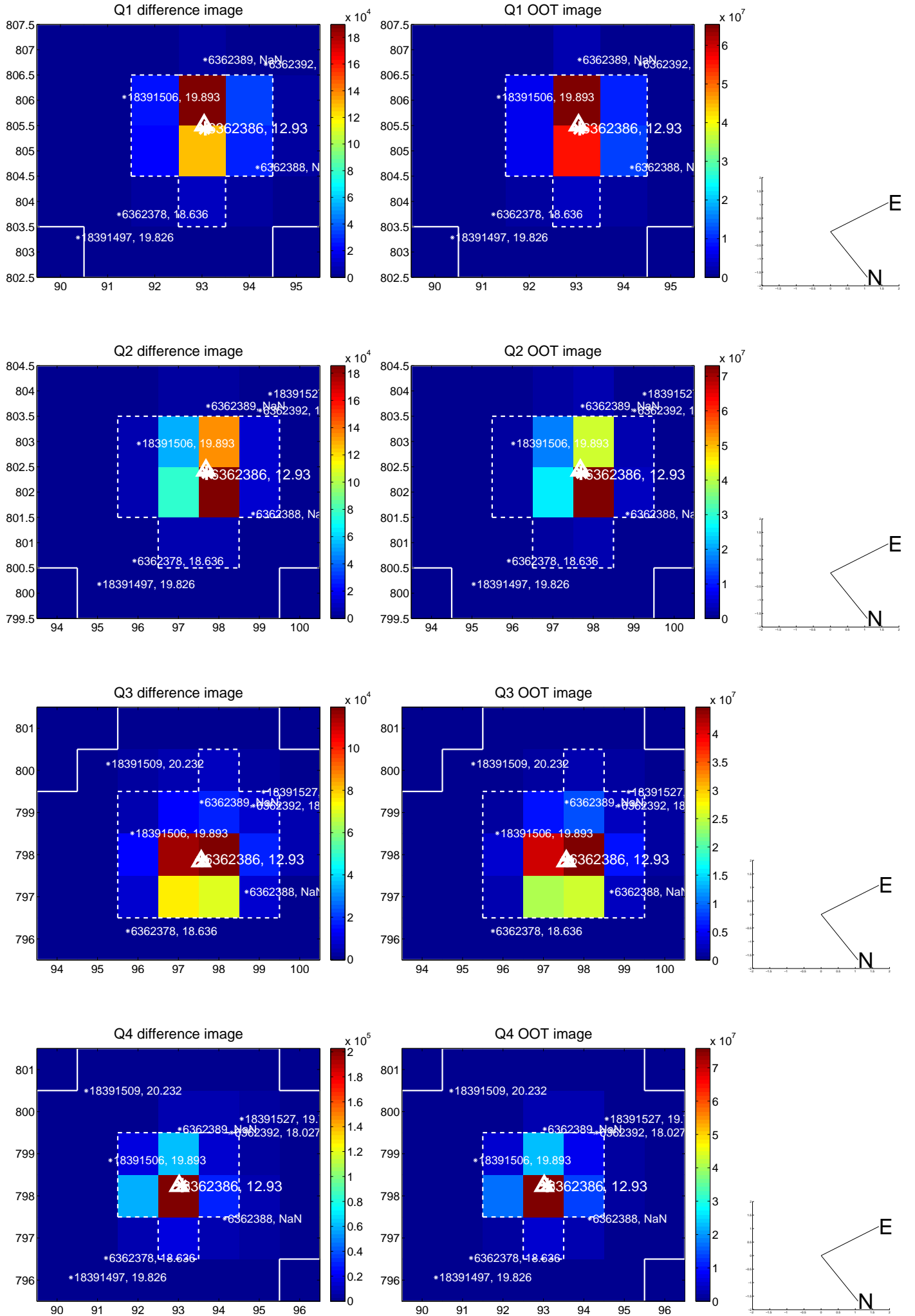
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.157 \pm 0.072$	2.18	$-0.128 \pm 0.073$	$-0.092 \pm 0.071$
PRF-fit source offset from KIC position	$0.130 \pm 0.073$	1.79	$-0.082 \pm 0.072$	$-0.101 \pm 0.073$
photometric centroid source offset	$0.02 \pm 0.01$	2.17	$-0.00 \pm 0.01$	$-0.02 \pm 0.01$

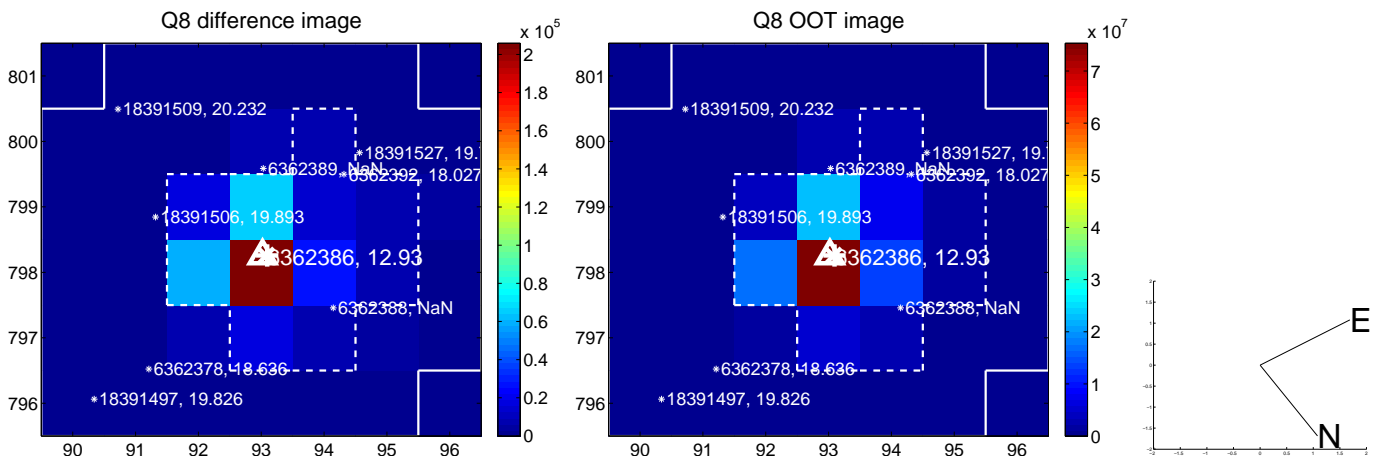
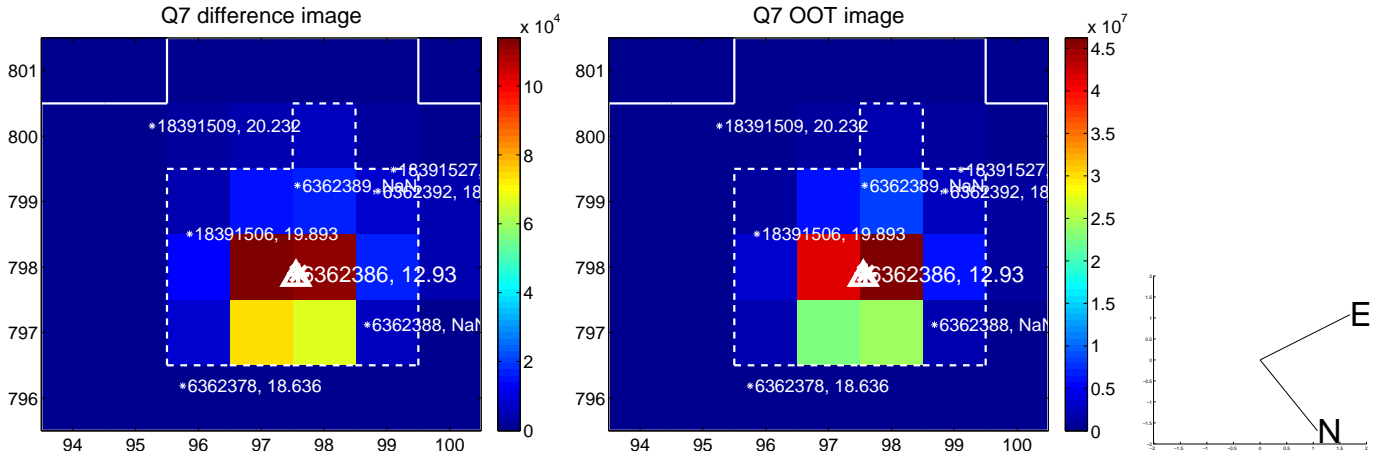
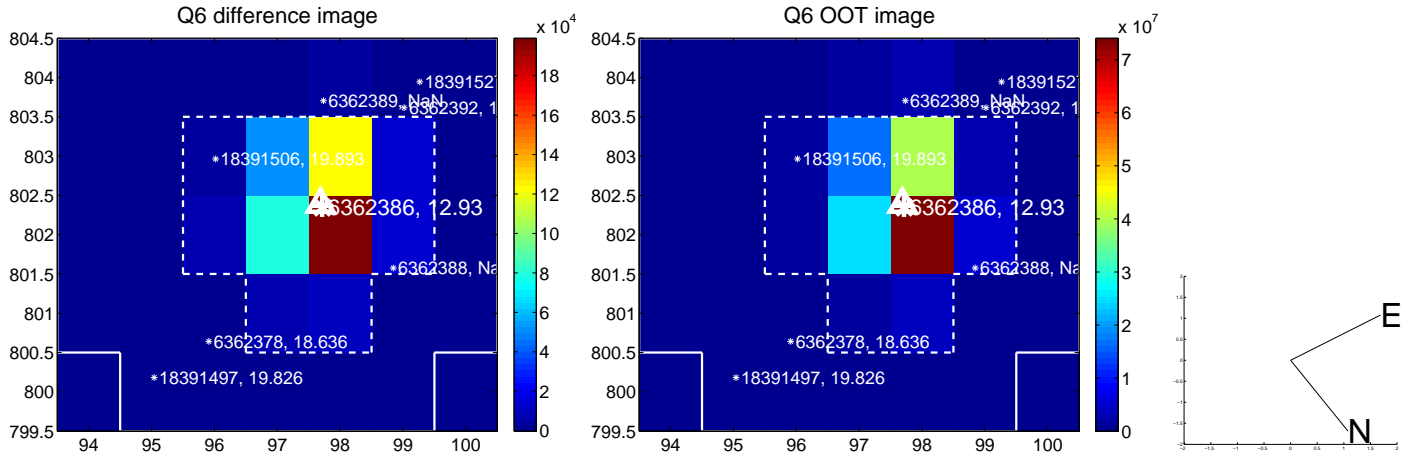
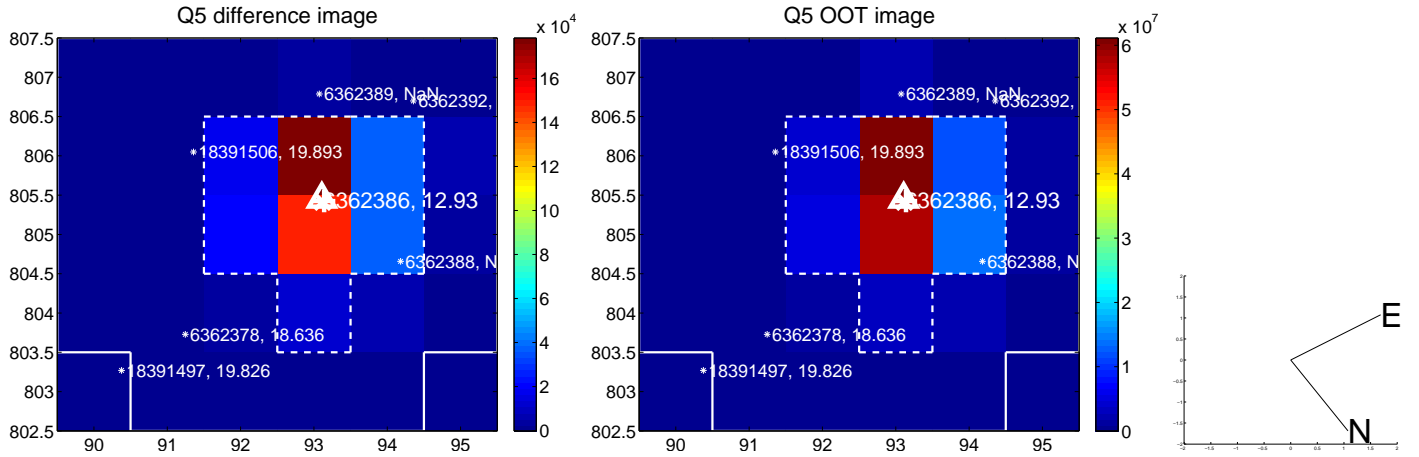


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

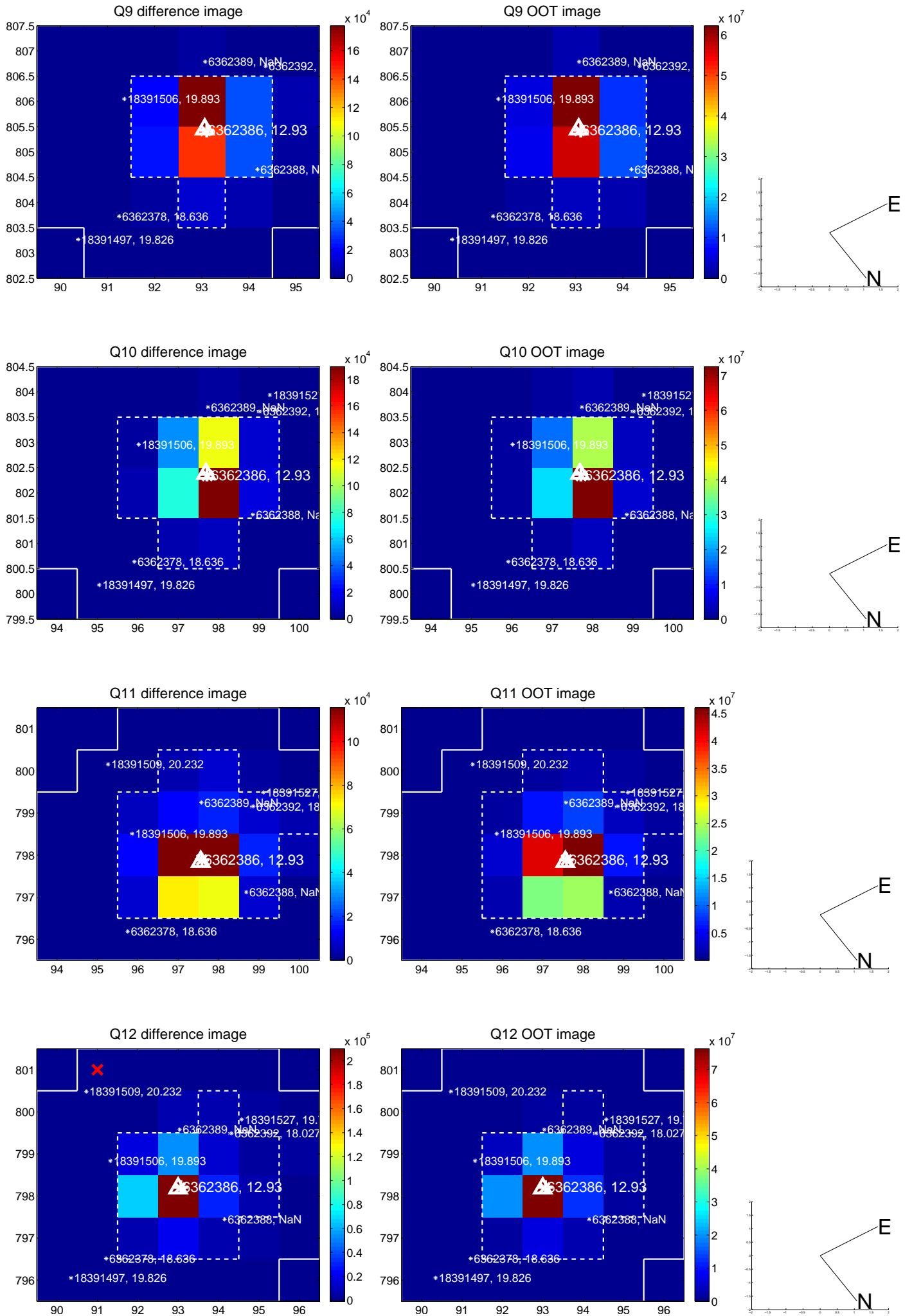
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



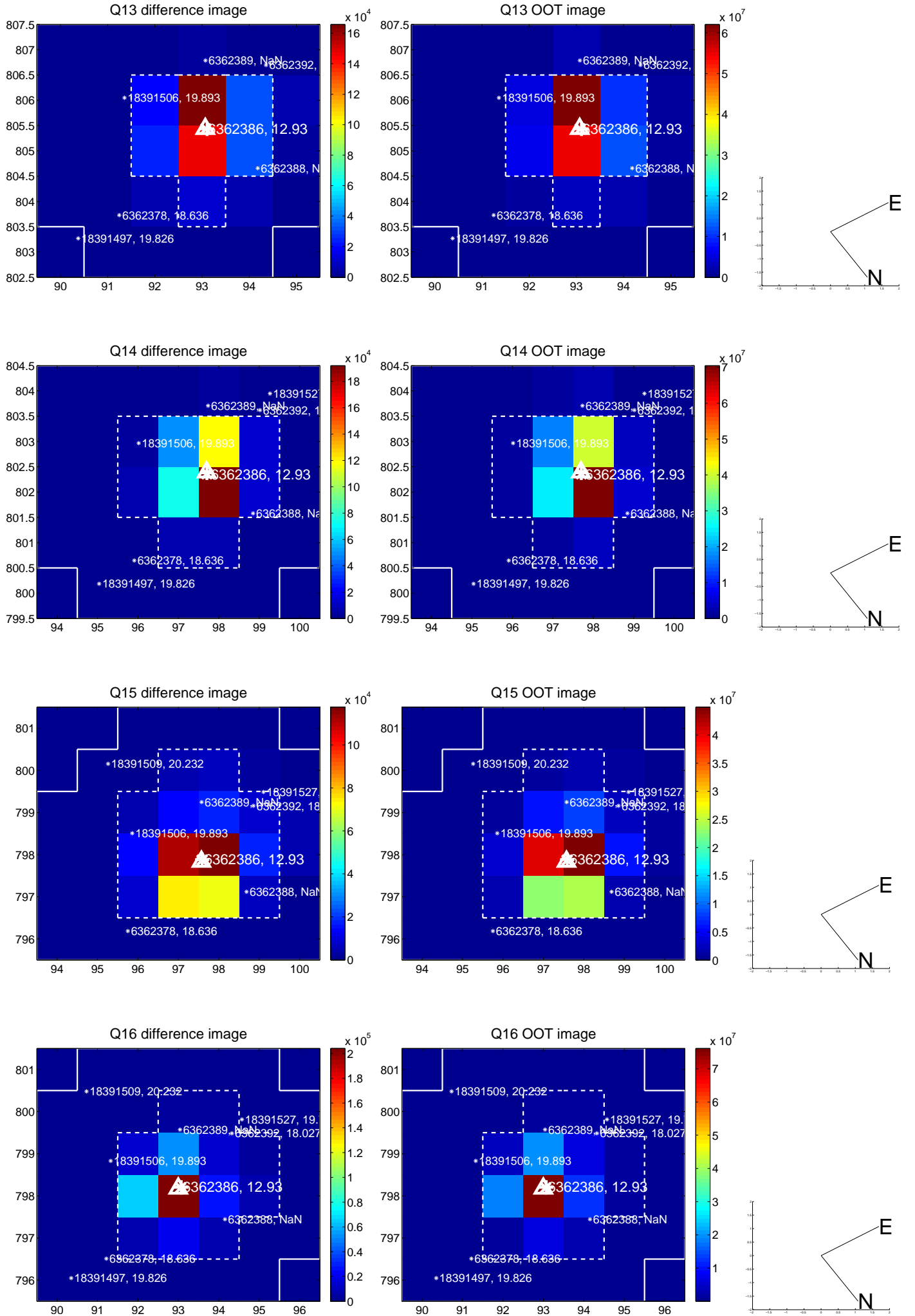
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



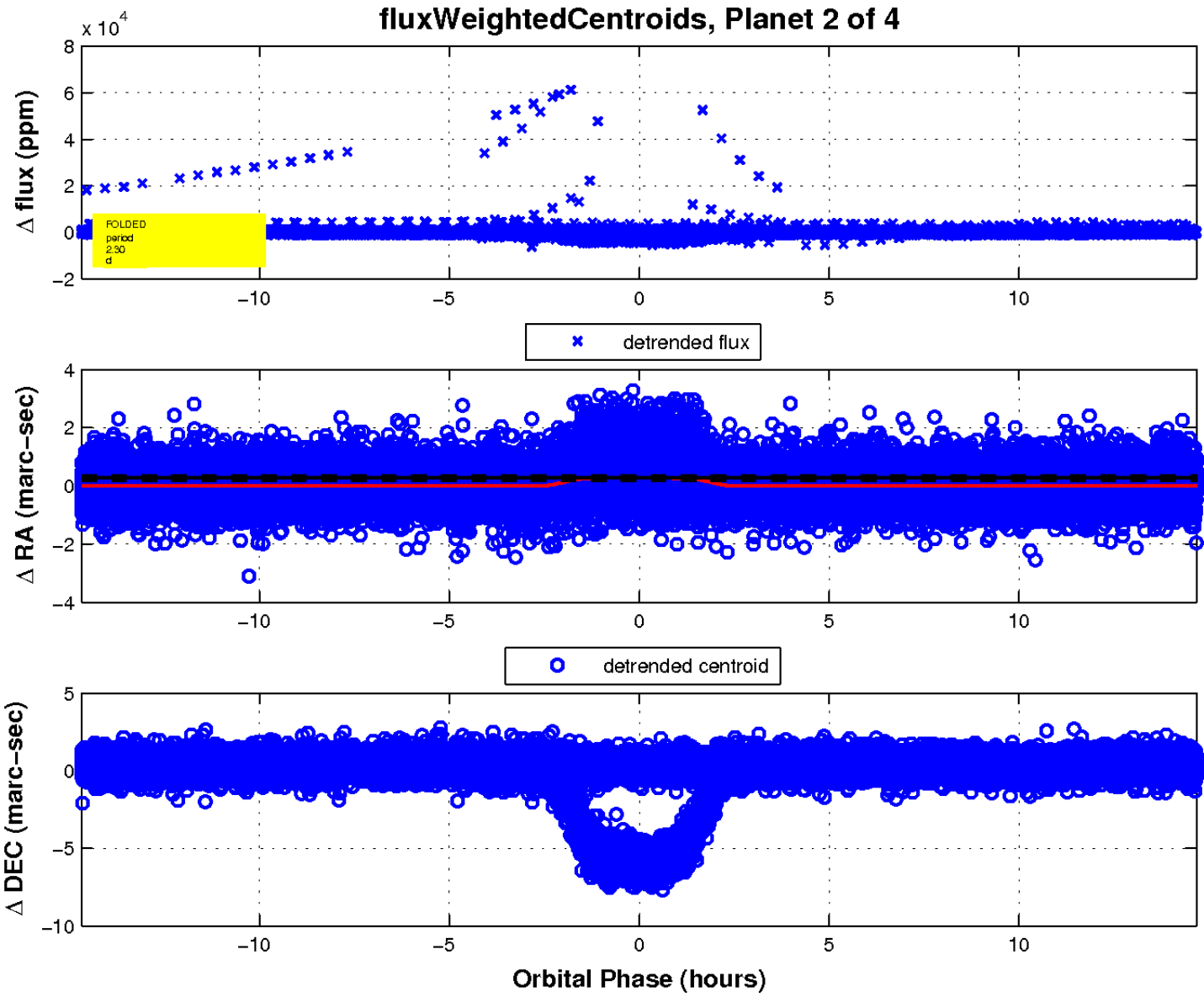
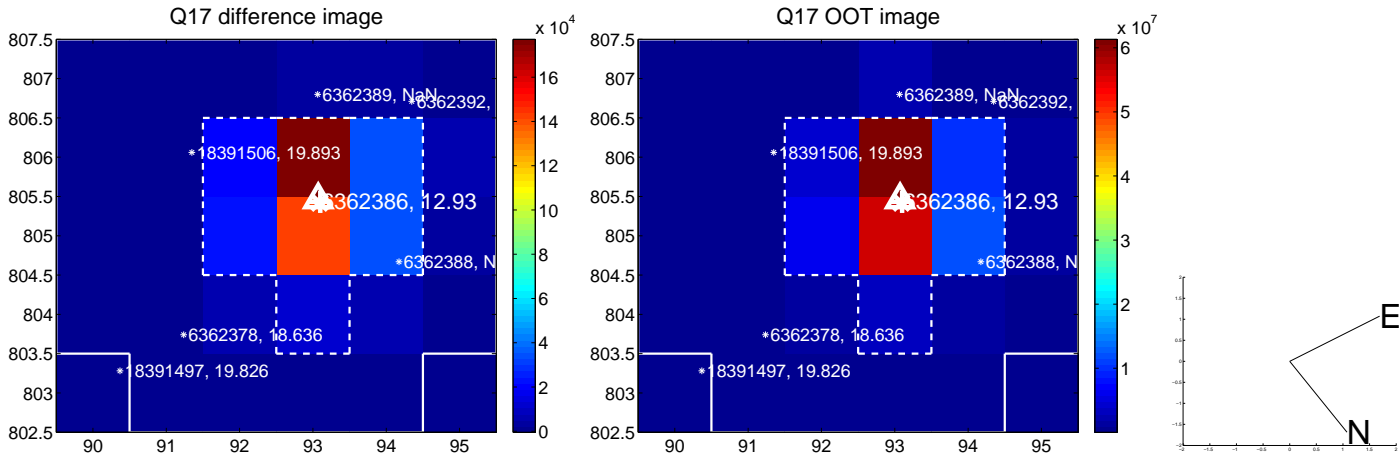
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

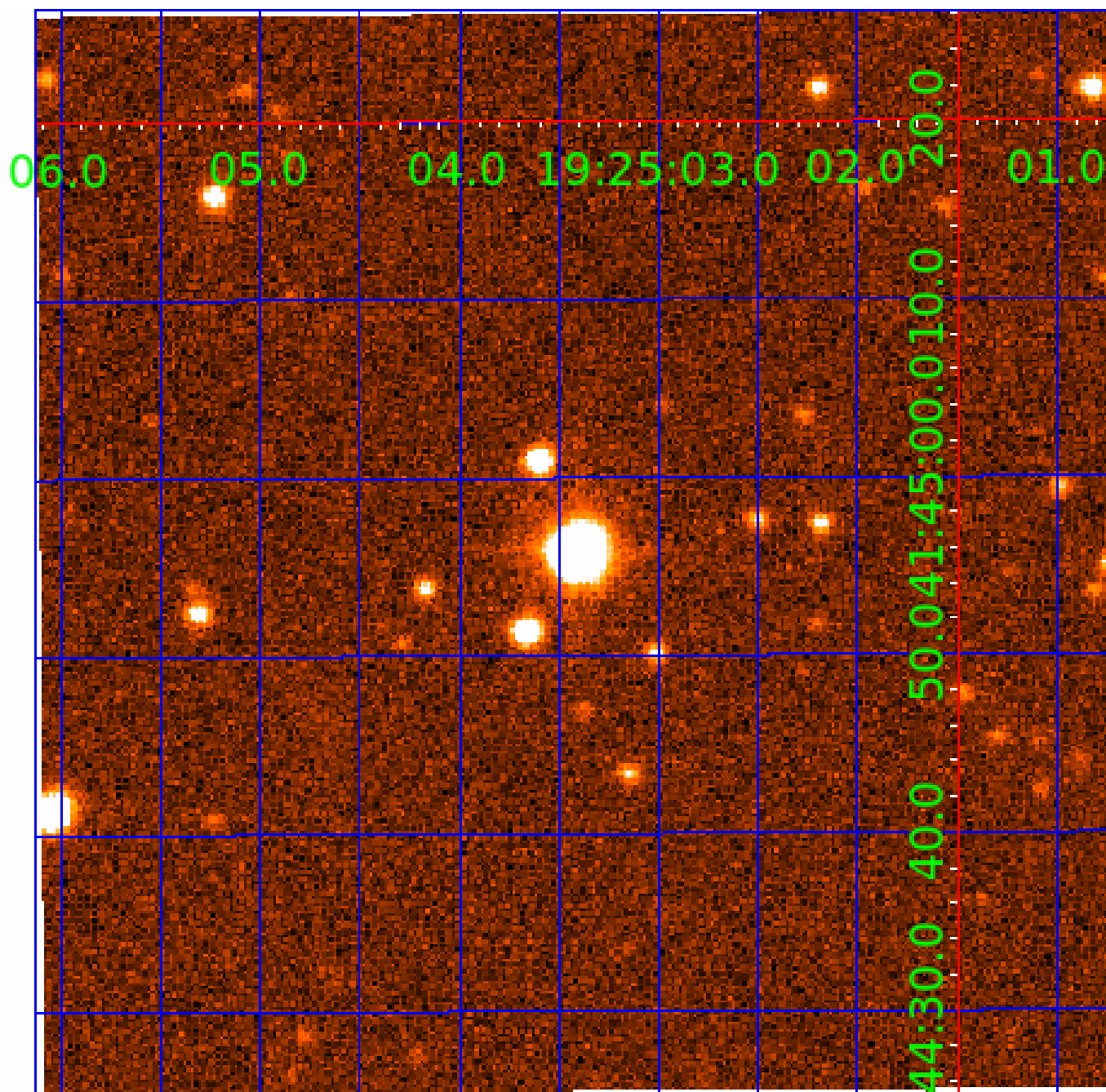


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 006362386

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006362386-01	OBS	6146.01	4.592402	133.139764	87473.4	4.959	11840.3	10218.6	1.72	7201	52.21	1876.88
006362386-02	OBS	No	2.296183	133.145149	2806.1	4.893	407.9	381.8	1.72	7201	10.43	4729.50
006362386-04	OBS	No	188.374327	135.382774	837.3	10.804	23.2	7.8	1.72	7201	9.25	13.27

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006362386-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
006362386-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
006362386-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_UNCERTAIN

**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.

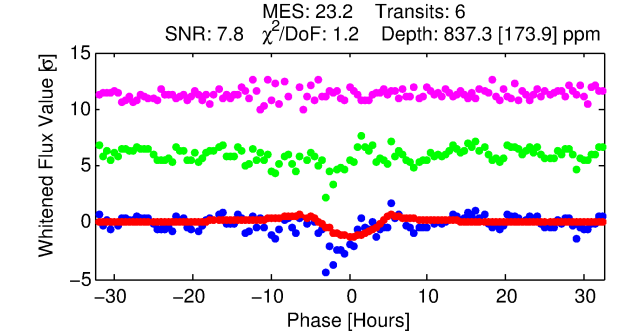
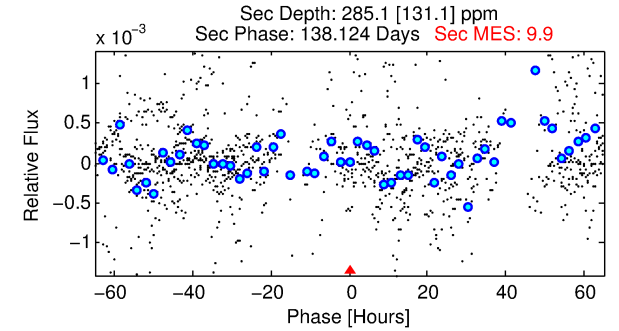
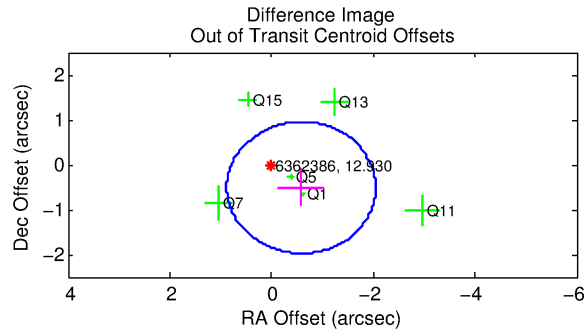
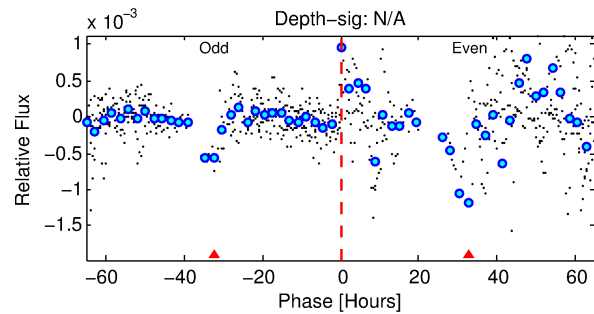
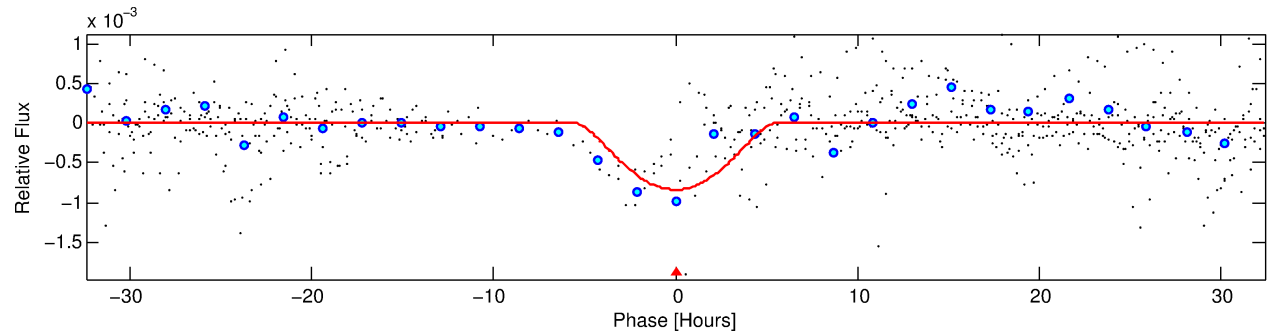
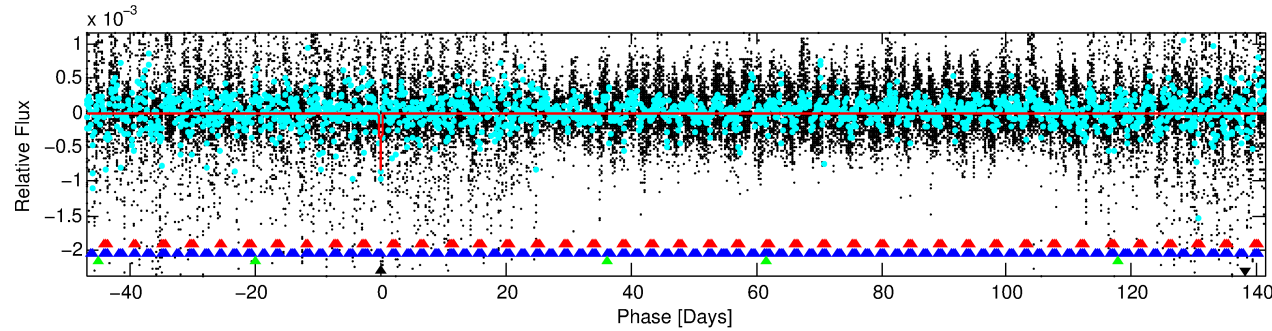
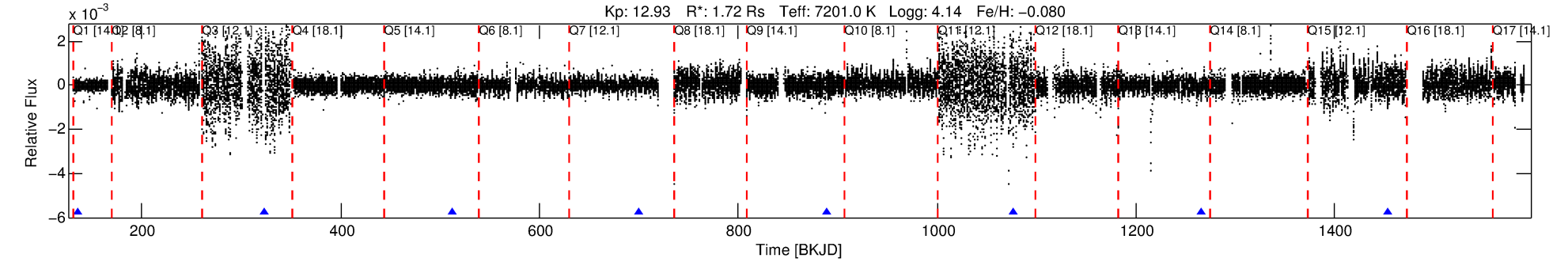
## Ephemeris Match Information For 006362386-04

No Significant Match Found

# DV One-Page Summary

KIC: 6362386 Candidate: 4 of 4 Period: 188.374 d  
KOI: K06146 Corr: No Ephemeris Match

Kp: 12.93 R\*: 1.72 Rs Teff: 7201.0 K Logg: 4.14 Fe/H: -0.080



## DV Fit Results:

Period = 188.37433 [0.00857] d  
Epoch = 135.3828 [0.0486] BKJD  
Rp/R\* = 0.0492 [0.1194]  
a/R\* = 42.52 [25.04]  
b = 1.00 [0.18]  
Seff = 13.27 [5.43]  
Teff = 487 [50] K  
Rp = 9.25 [22.65] Re  
a = 0.7346 [0.1911] AU  
Ag = 989.99 [4844.49] [0.20σ]  
Teffp = 4221 [5152] K [0.72σ]

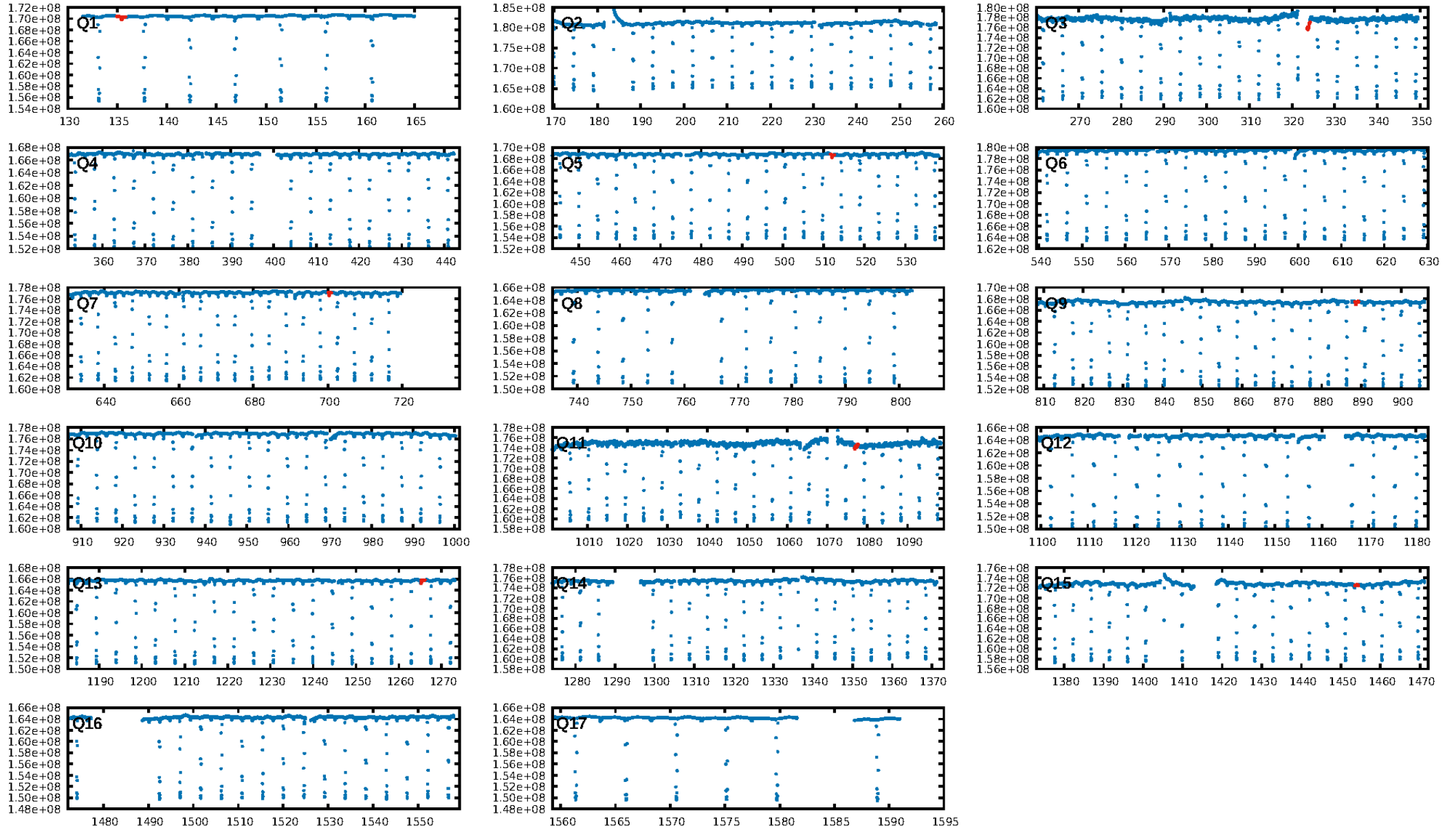
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [371.04σ]  
LongPeriod-sig: 100.0% [40.66σ]  
ModelChiSquare2-sig: 7.1%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [6/6]  
GhostDiagnostic-chr: 2.348  
Centroid-sig: N/A  
Centroid-so: 0.461 arcsec [2.26σ]  
OotOffset-rm: 0.777 arcsec [1.59σ]  
KicOffset-rm: 0.724 arcsec [1.87σ]  
OotOffset-st: 0/3/0/3 [6]  
KicOffset-st: 0/3/0/3 [6]  
DiffImageQuality-fgm: 0.50 [3/6]  
DiffImageOverlap-fno: 0.00 [0/7]

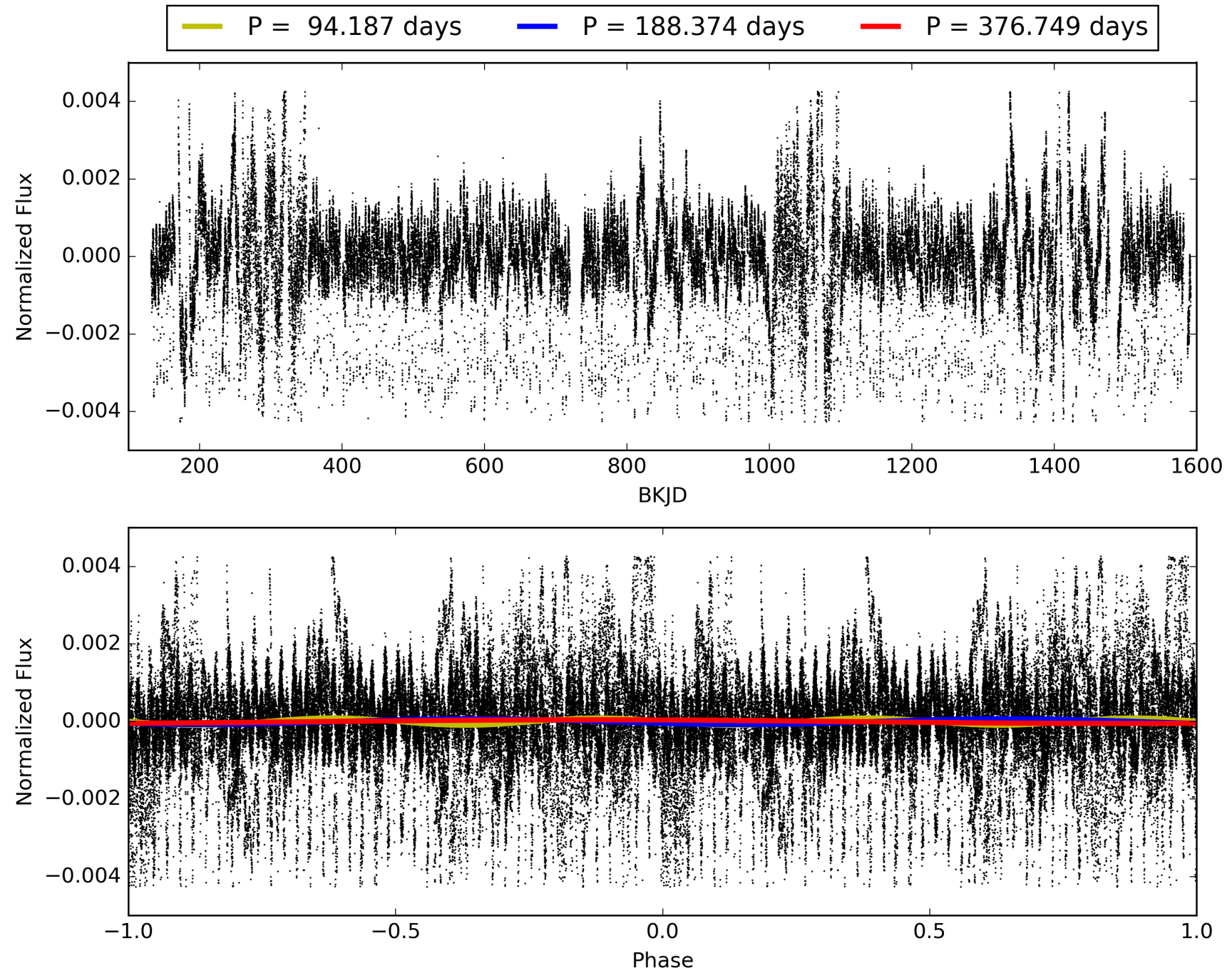
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:11:23 Z

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

# TCE 006362386-04, PDC Light Curves

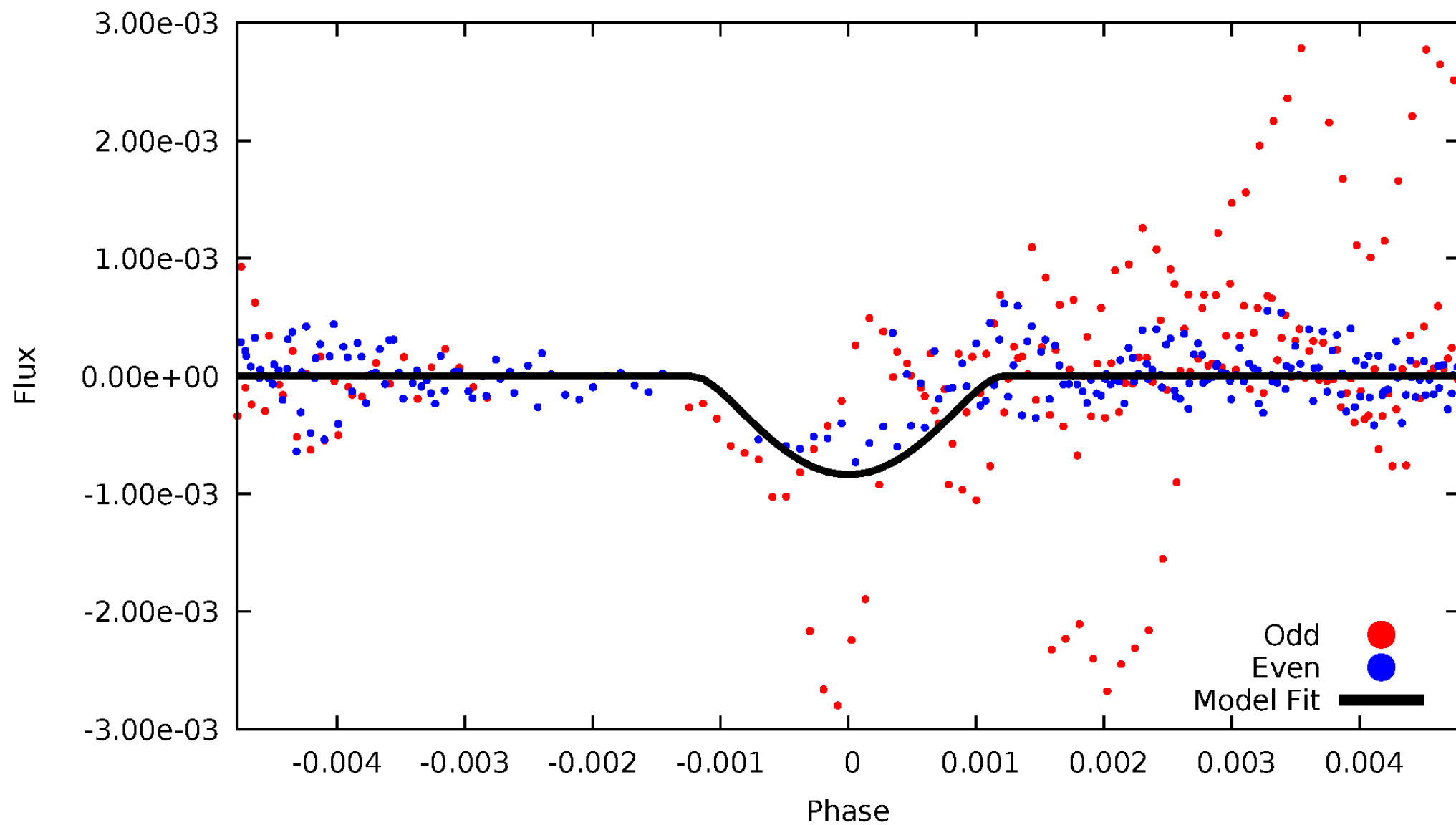


TCE 006362386-04



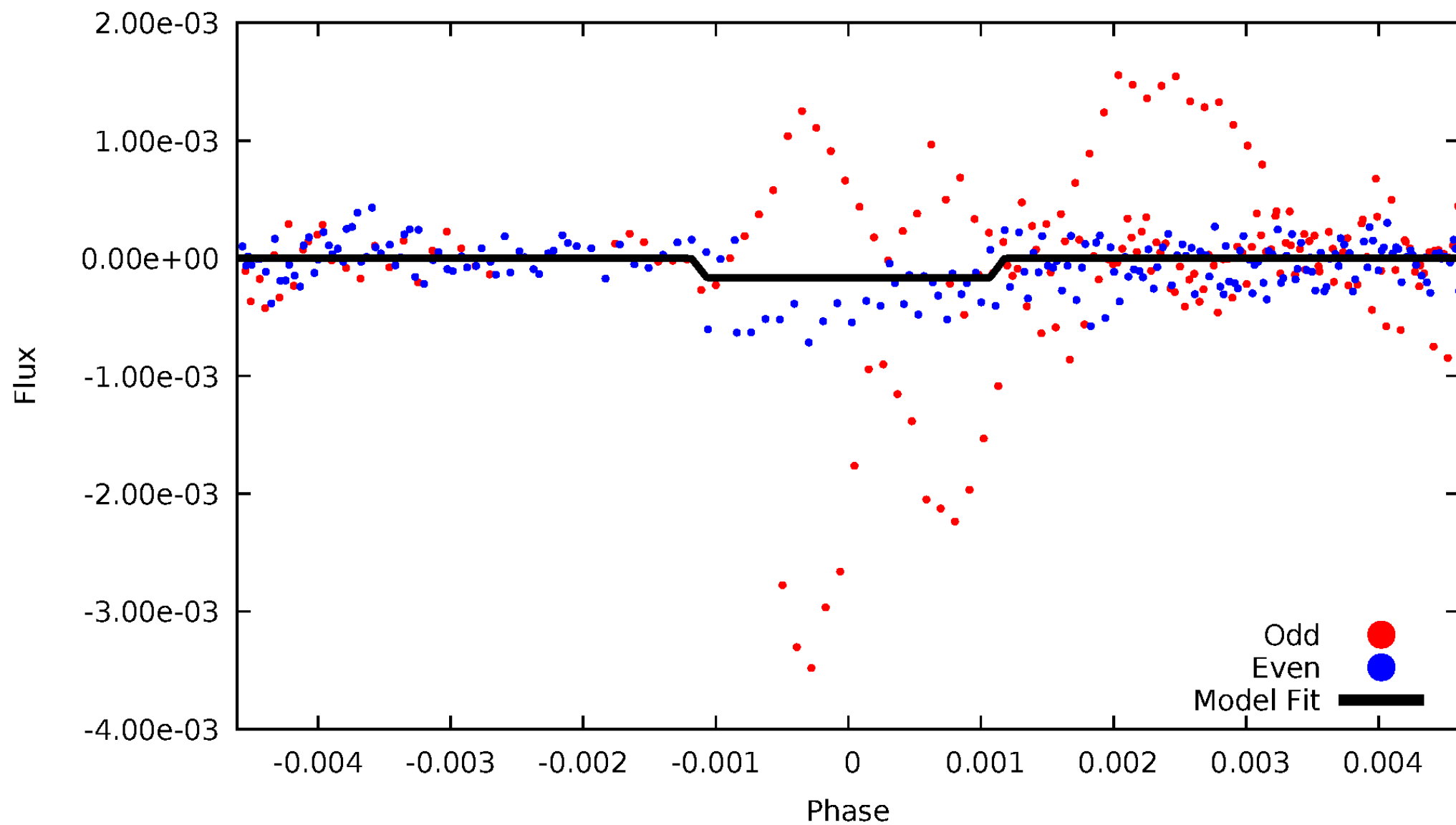
# DV Odd/Even

TCE 006362386-04



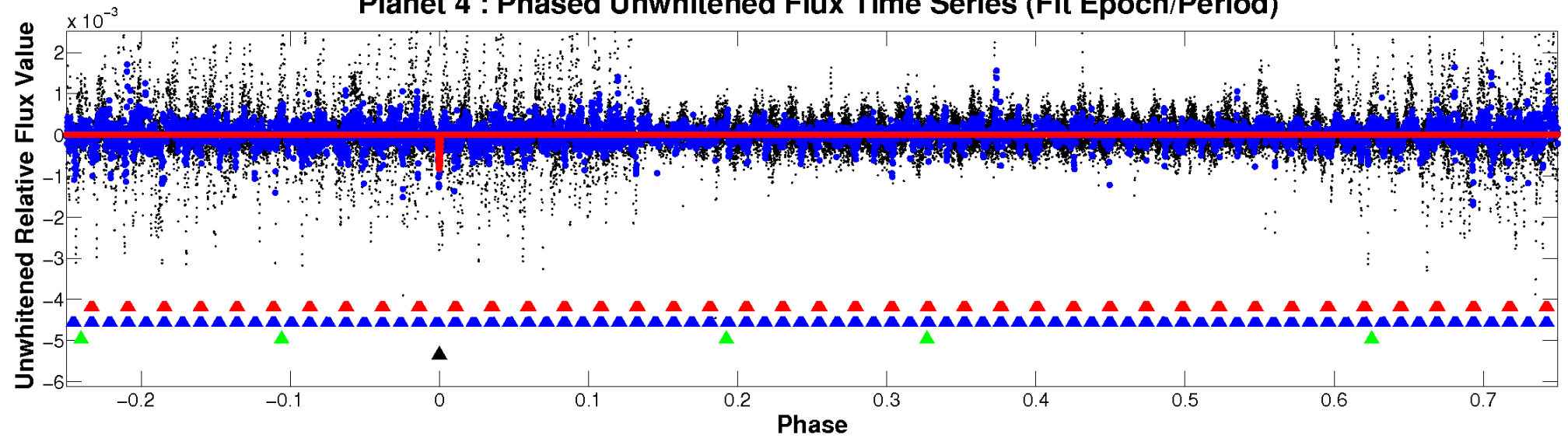
# ALT Odd/Even

TCE 006362386-04

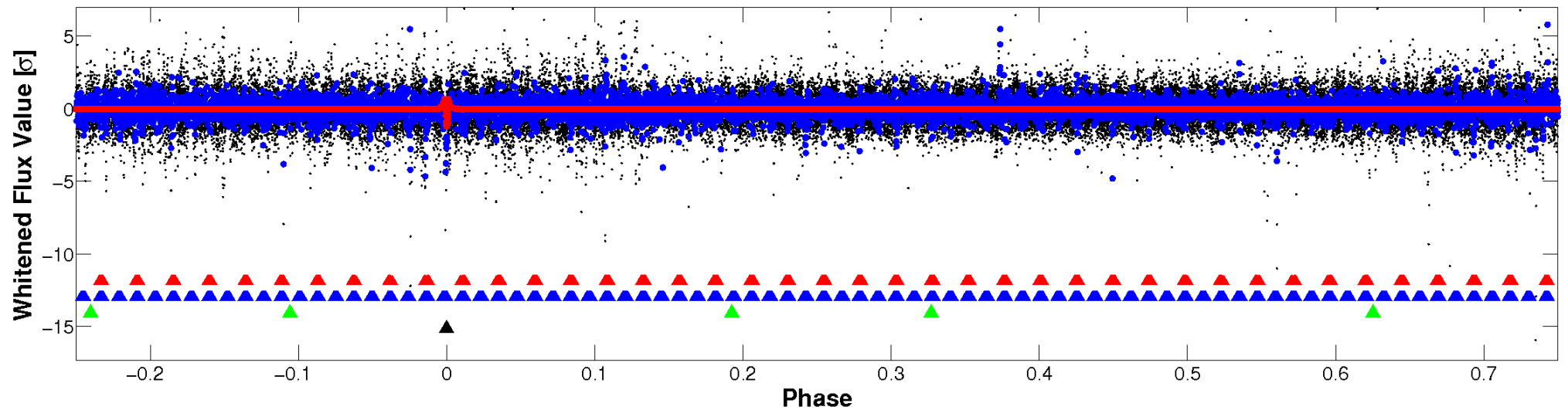


# Non-Whitened Vs. Whitened Light Curve

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

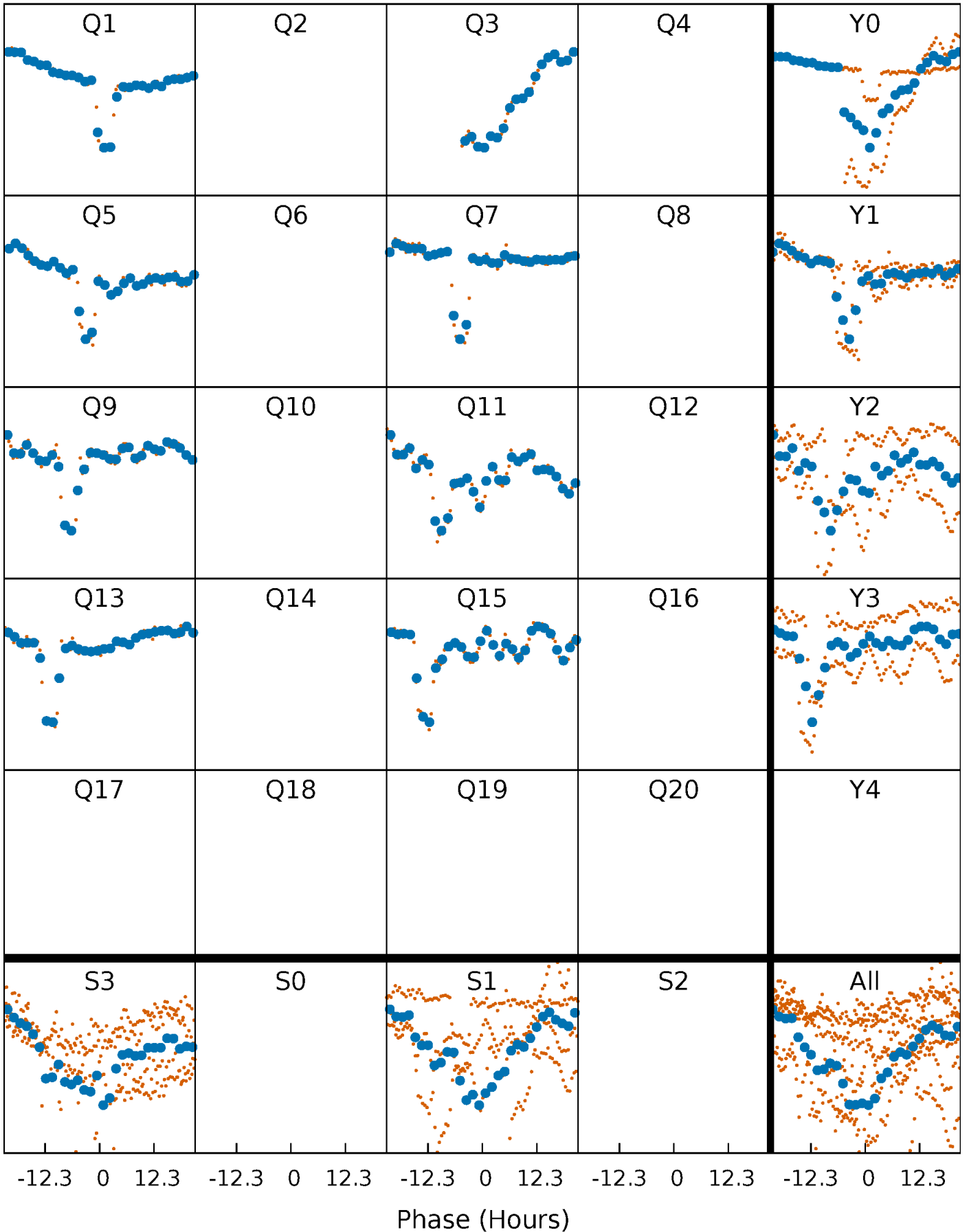


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



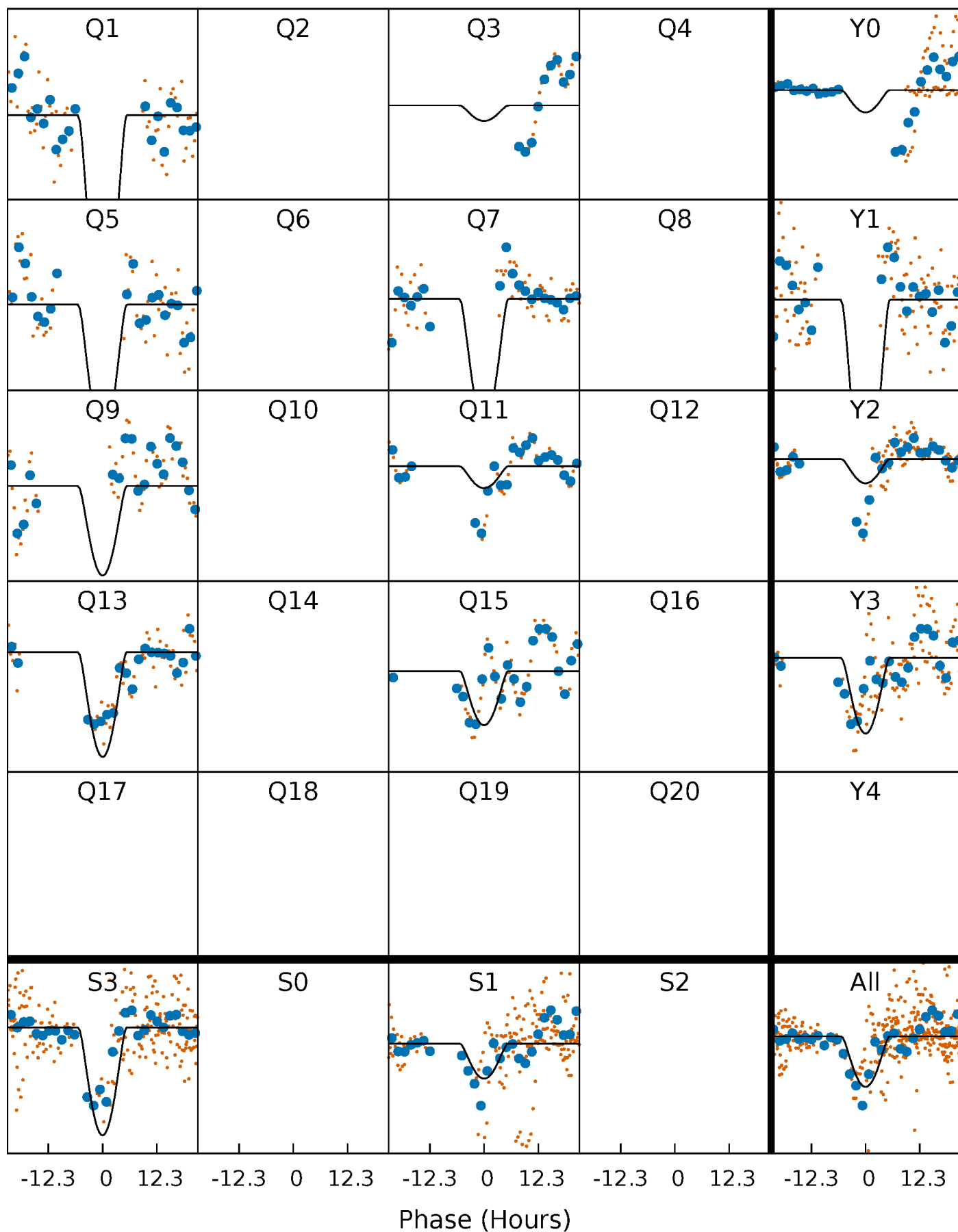
# PDC Quarter-Phased Transit Curves

TCE 006362386-04     $P=188.374327$  Days     $T_0=135.382774$  (BKJD)



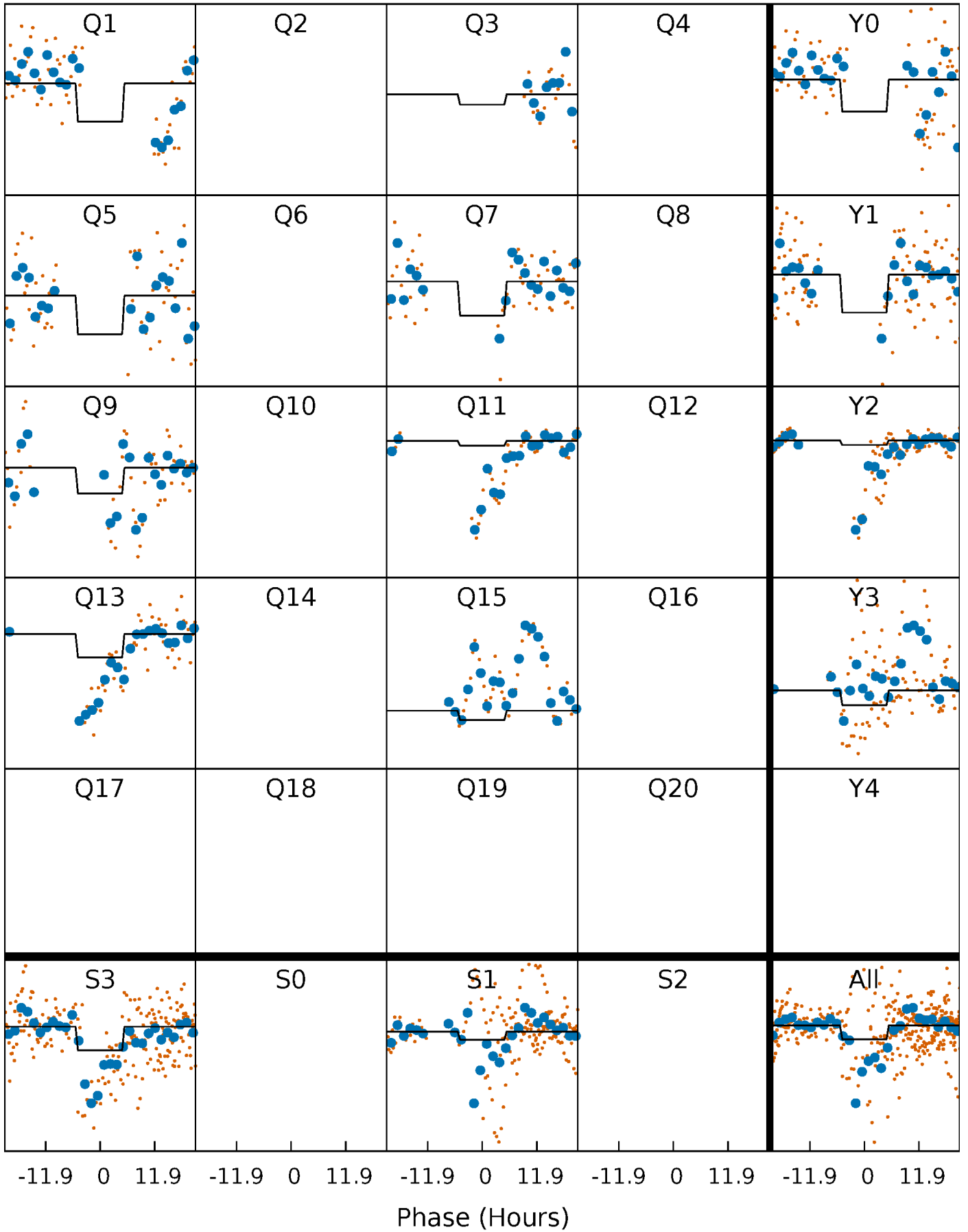
# DV Quarter-Phased Transit Curves

TCE 006362386-04     $P=188.374327$  Days     $T_0=135.382774$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

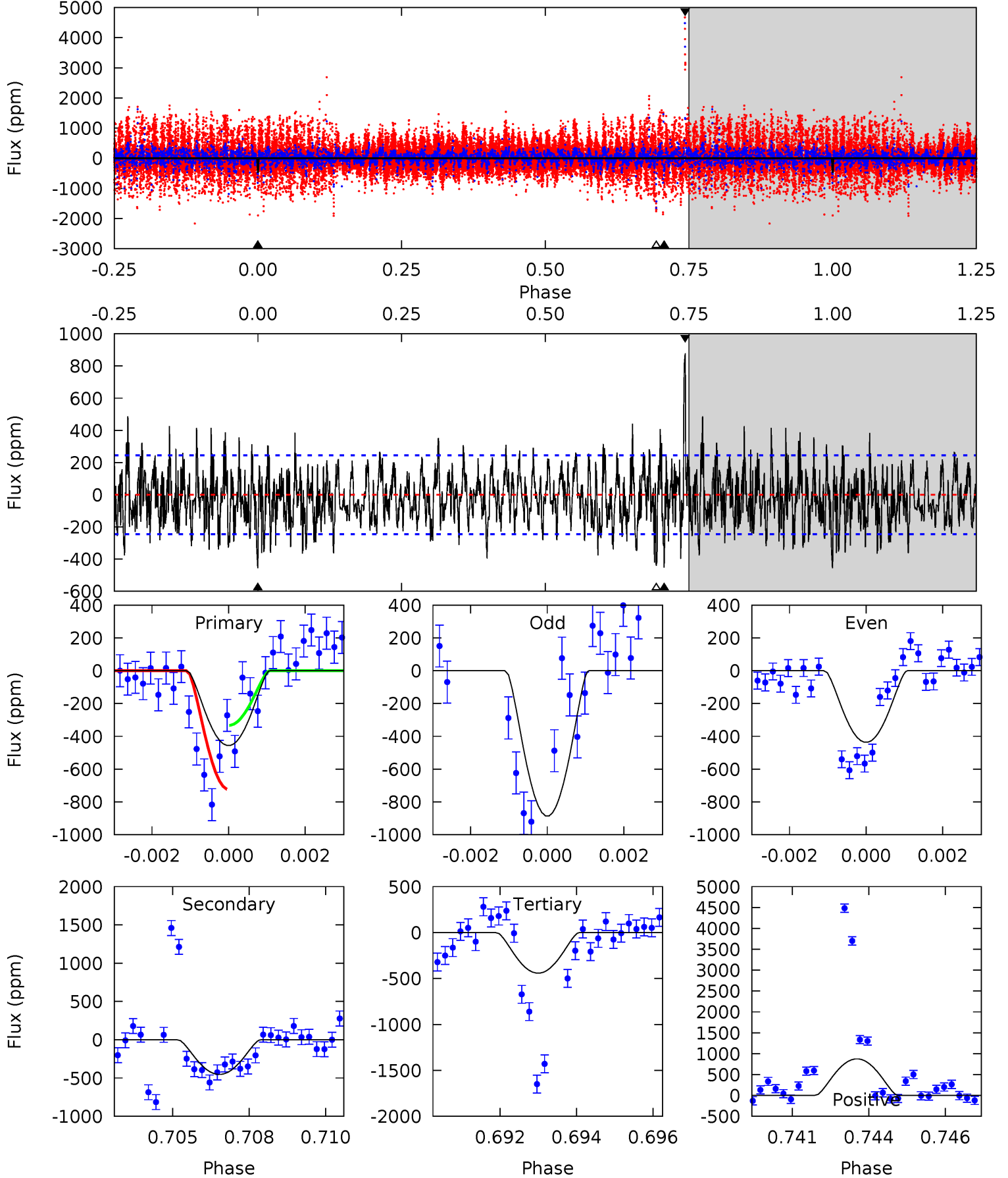
TCE 006362386-04     $P=188.404234$  Days     $T_0=135.270216$  (BKJD)



# DV Model-Shift Uniqueness Test

006362386-04, P = 188.374327 Days, E = 135.382774 Days

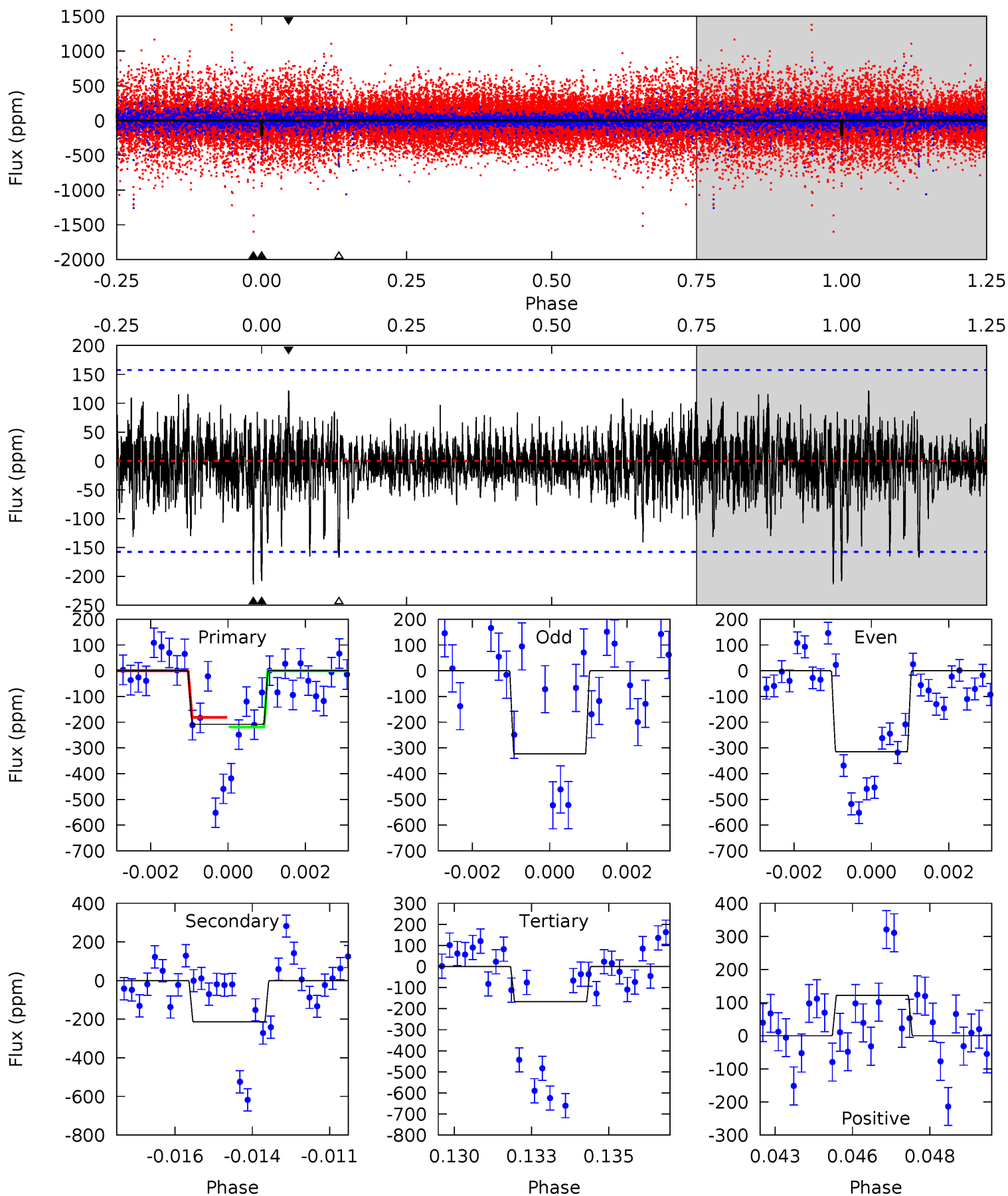
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.85	9.77	9.53	18.9	5.31	3.06	3.00	0.31	-9.03	0.24	-9.10	4.50	1.57	0.66	3.38



# Alt Model-Shift Uniqueness Test

006362386-04, P = 188.404234 Days, E = 135.270216 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
7.00	7.19	5.63	4.11	5.30	3.05	1.09	1.36	2.89	1.55	3.08	0.14	1.62	0.36	0.60



### Stellar Parameters For KIC 006362386

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7201^{+228}_{-314}$	$4.138^{+0.132}_{-0.198}$	$-0.080^{+0.250}_{-0.350}$	$1.724^{+0.546}_{-0.364}$	$1.488^{+0.218}_{-0.239}$	$0.409^{+0.316}_{-0.206}$
	+3%/-4%	+3%/-5%	+312%/-438%	+32%/-21%	+15%/-16%	+77%/-50%
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 006362386-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-452 \pm 46$	$19.00^{+21.07}_{-12.64}$	$685^{+59}_{-48}$	$3697^{+1936}_{-727}$	$368^{+2758}_{-282}$
Alt.	$-213 \pm 30$	$15.82^{+18.05}_{-10.99}$	$684^{+57}_{-47}$	$3468^{+1981}_{-680}$	$246^{+2578}_{-193}$

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

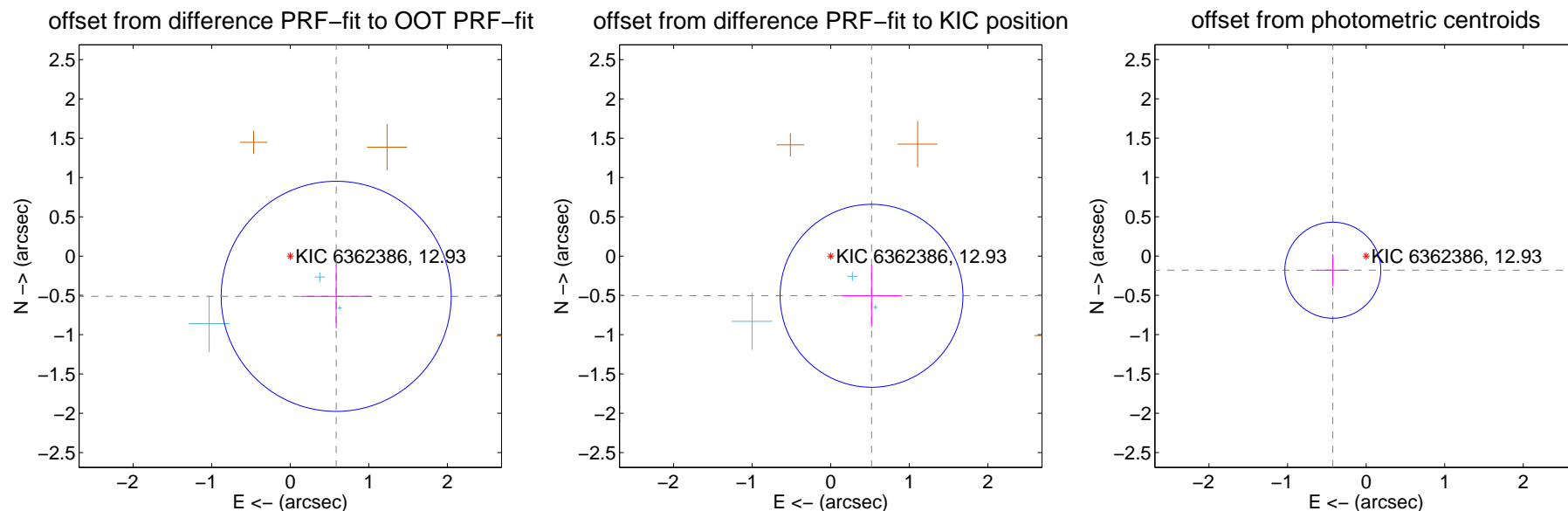
## DV Centroid Data

Supplemental centroid analysis for 006362386-04. Kepler magnitude: 12.93. Transit SNR 7.79

There are 3 quarters with good PRF difference image offsets

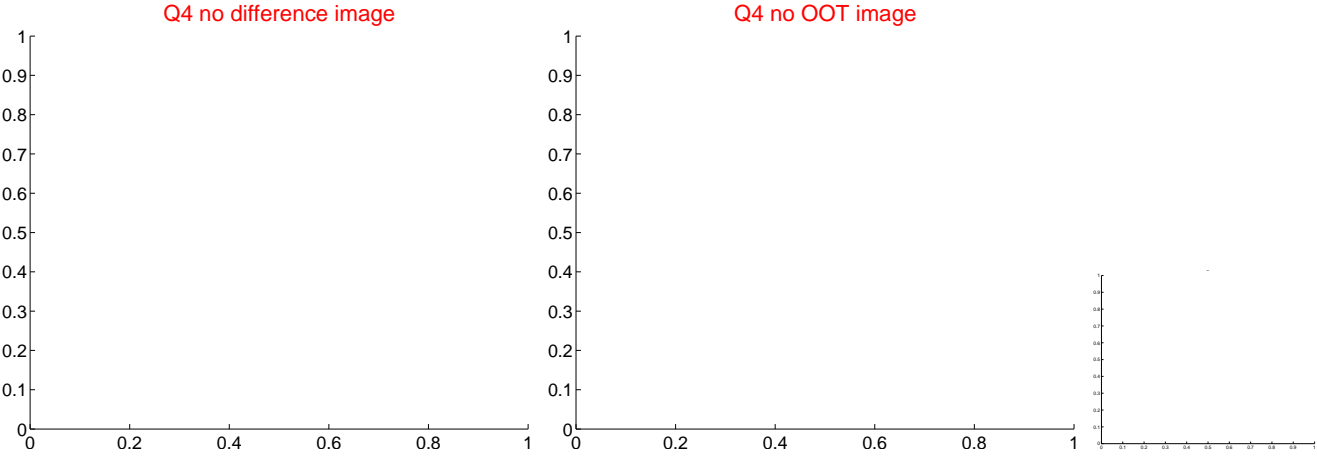
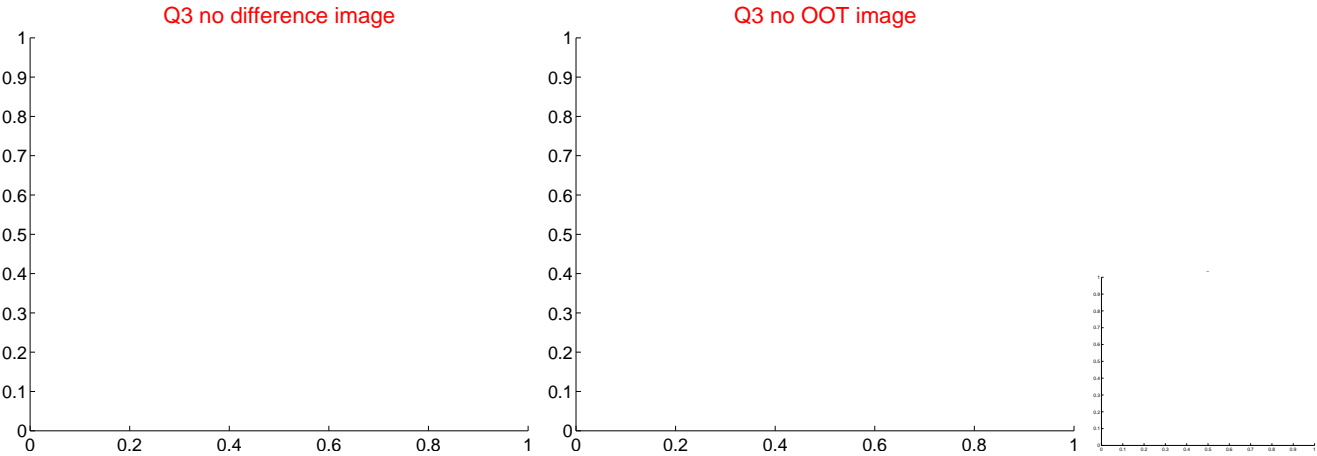
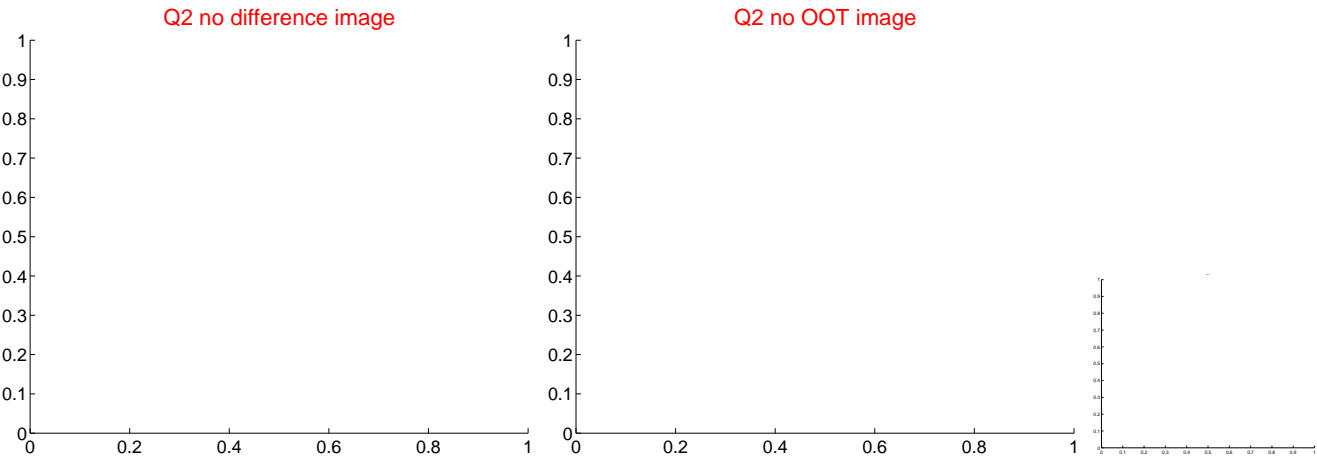
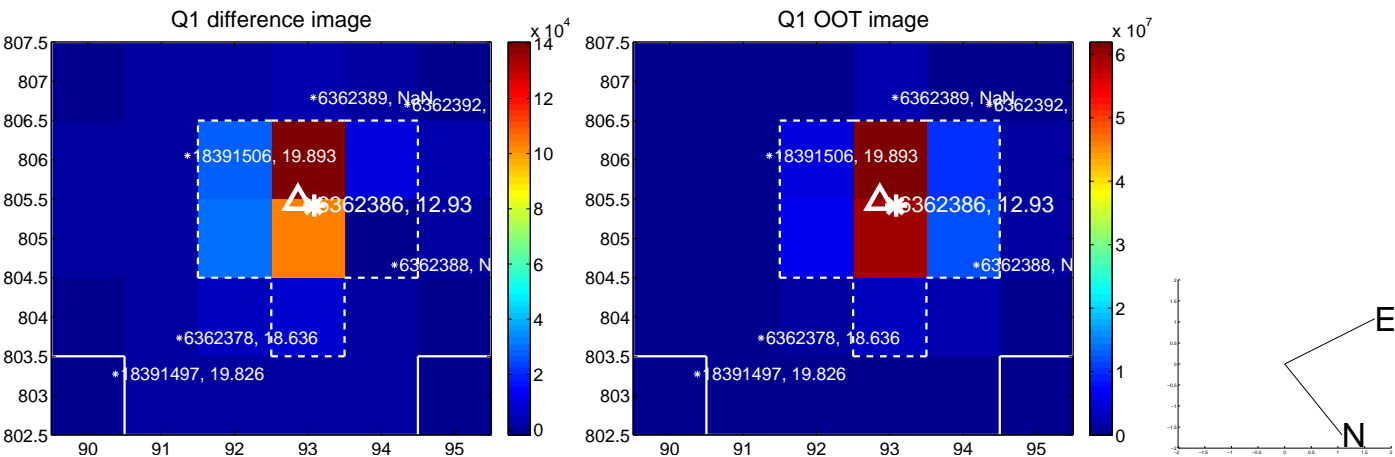
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.777 \pm 0.488$	1.59	$-0.584 \pm 0.452$	$-0.512 \pm 0.404$
PRF-fit source offset from KIC position	$0.724 \pm 0.388$	1.87	$-0.519 \pm 0.387$	$-0.505 \pm 0.392$
photometric centroid source offset	$0.46 \pm 0.20$	2.26	$0.42 \pm 0.20$	$-0.18 \pm 0.20$

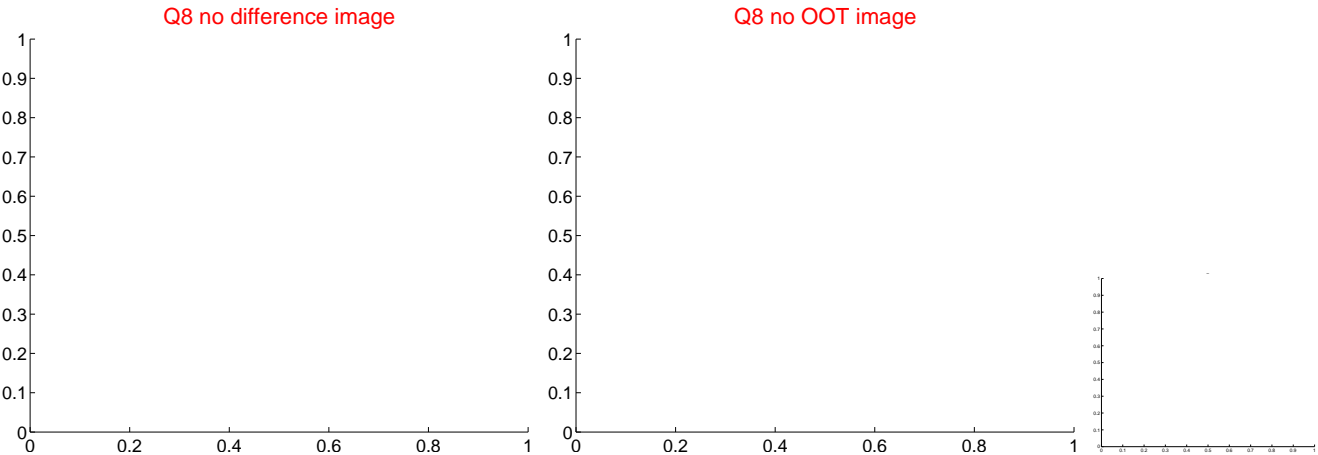
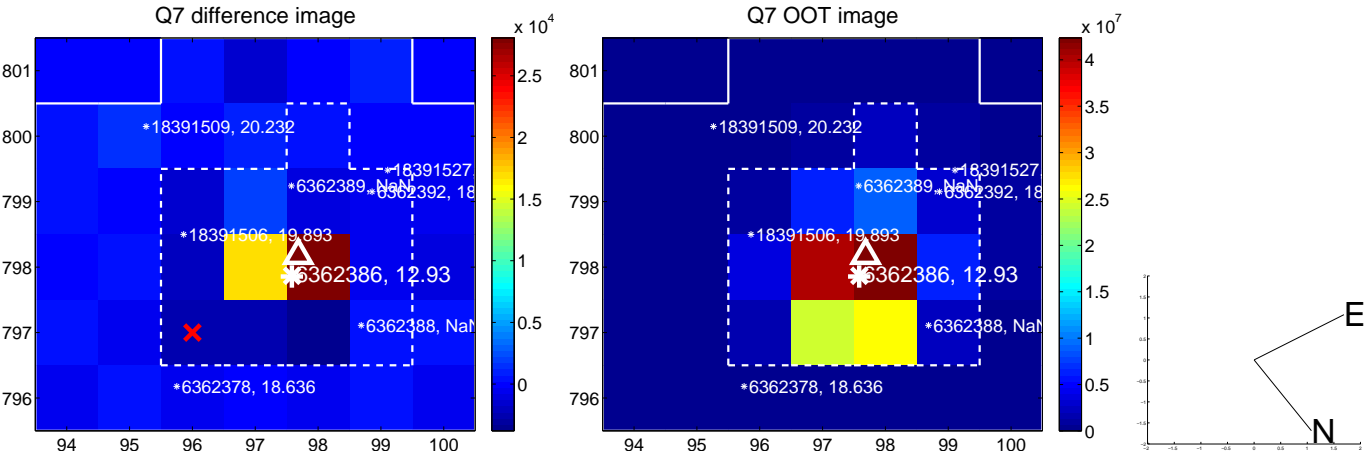
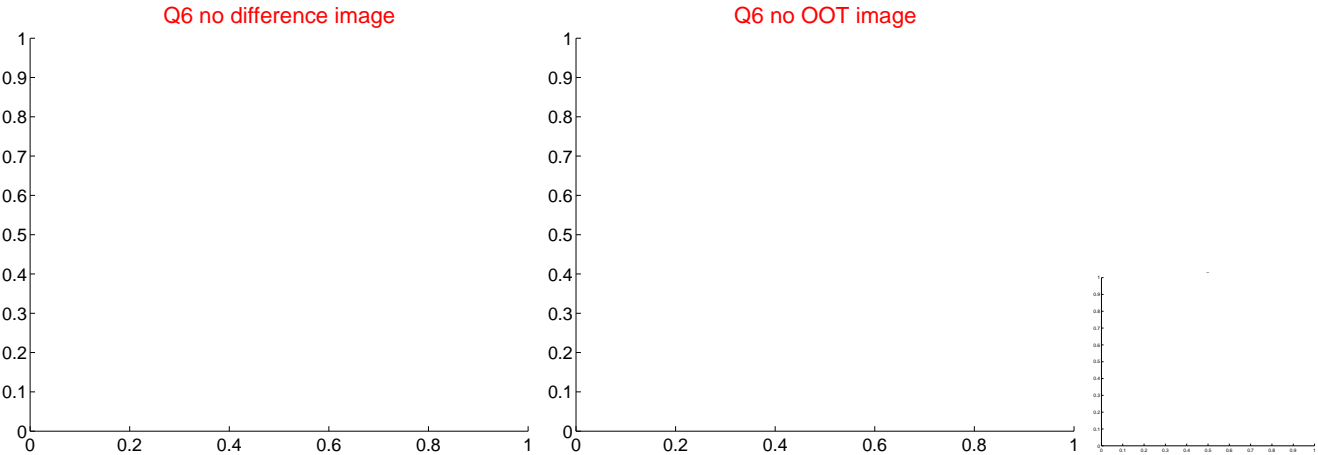
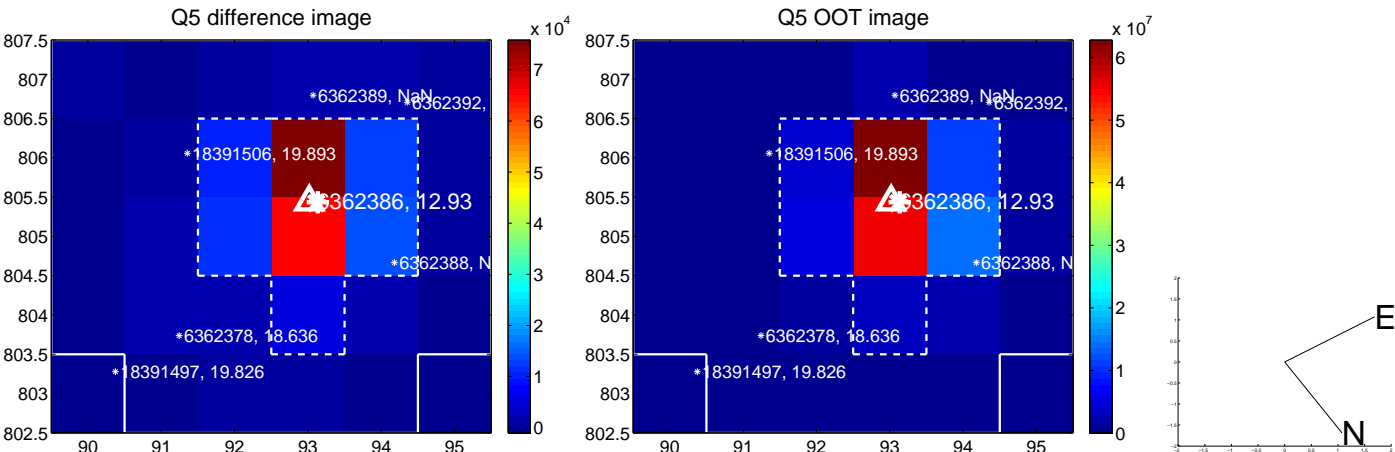


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

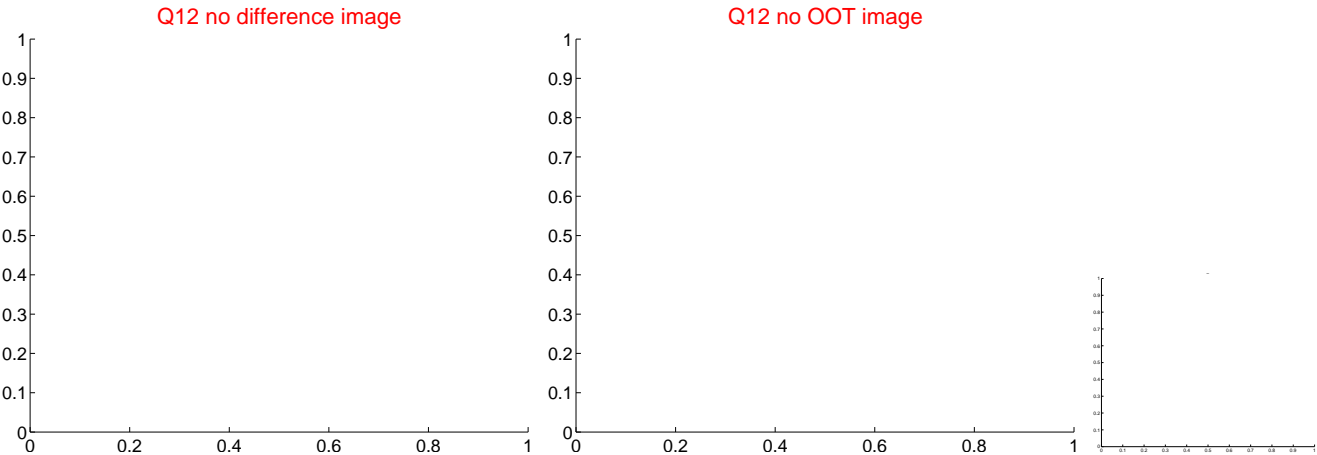
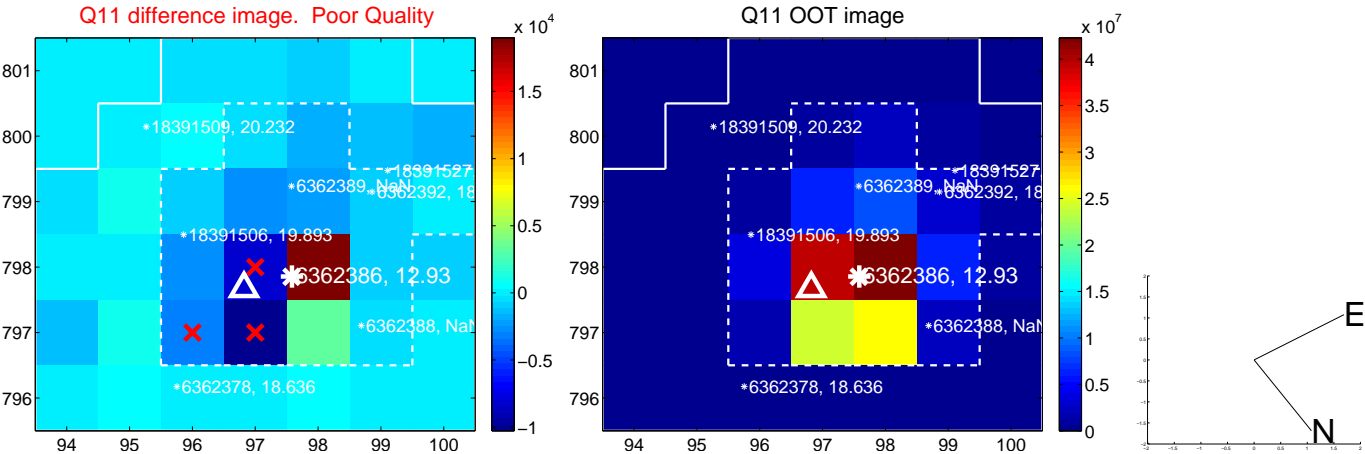
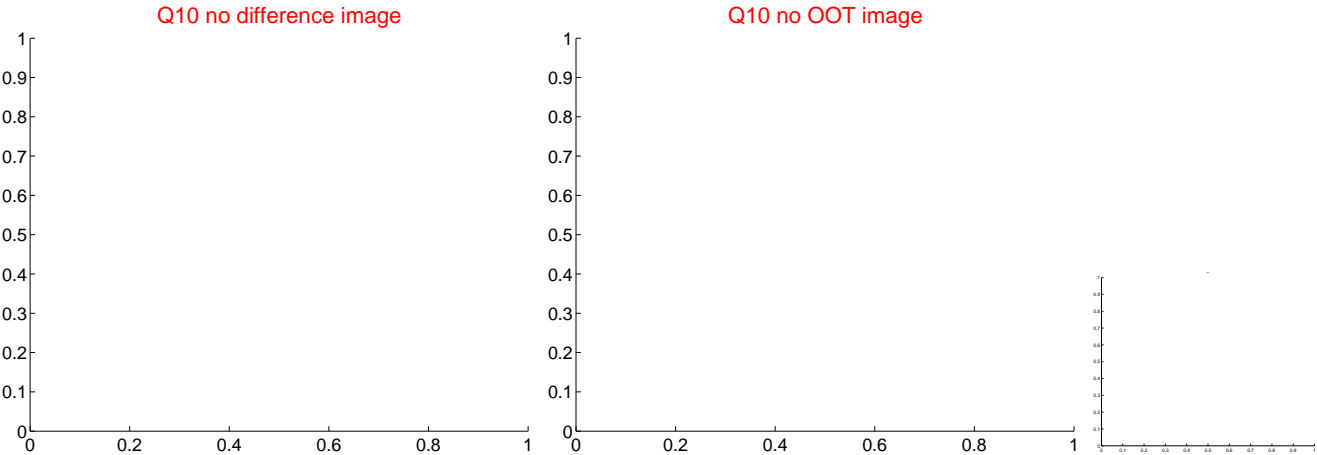
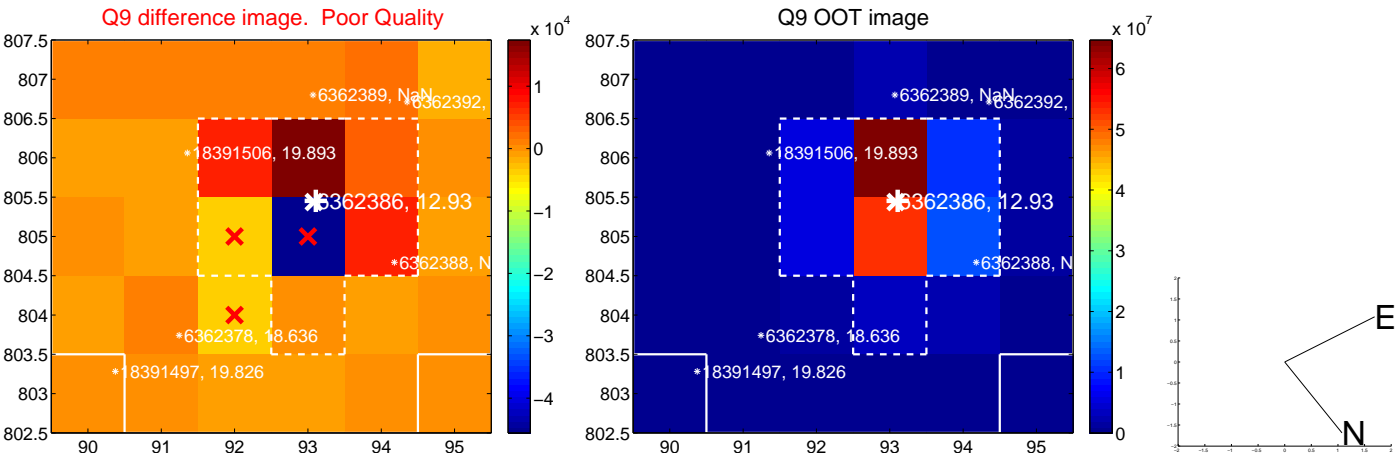
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



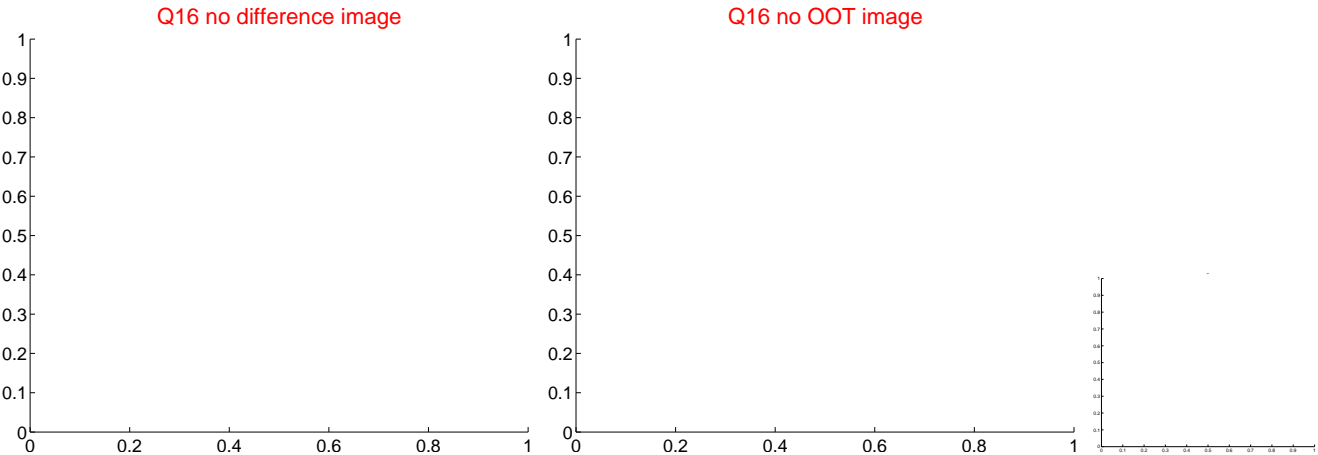
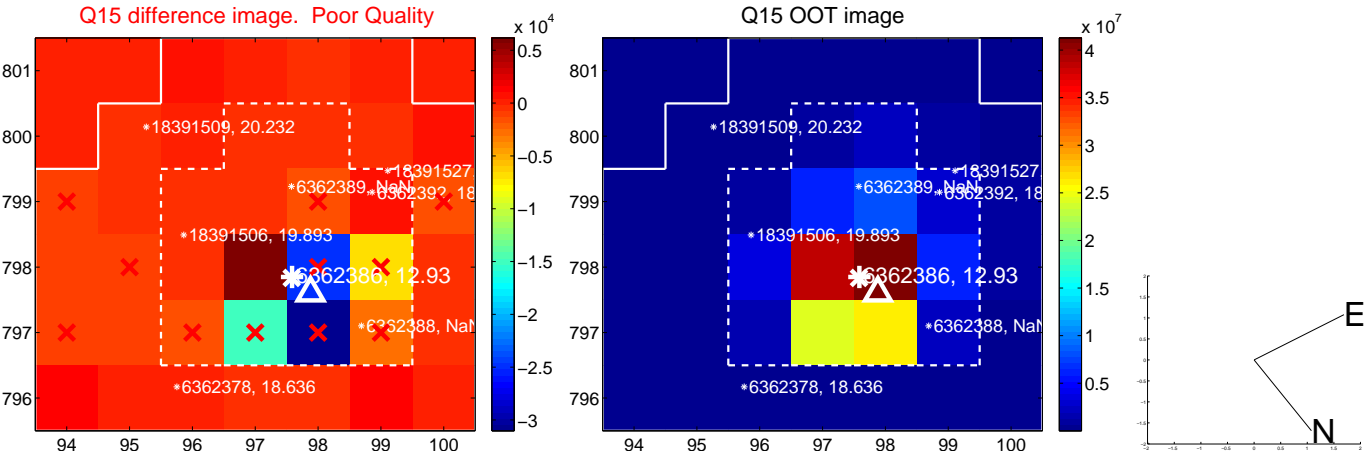
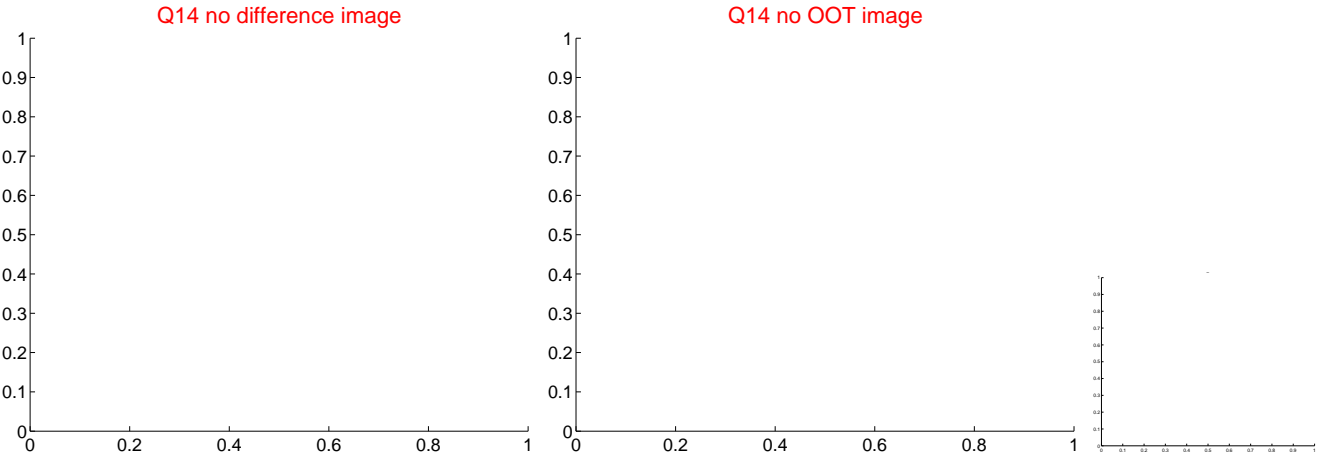
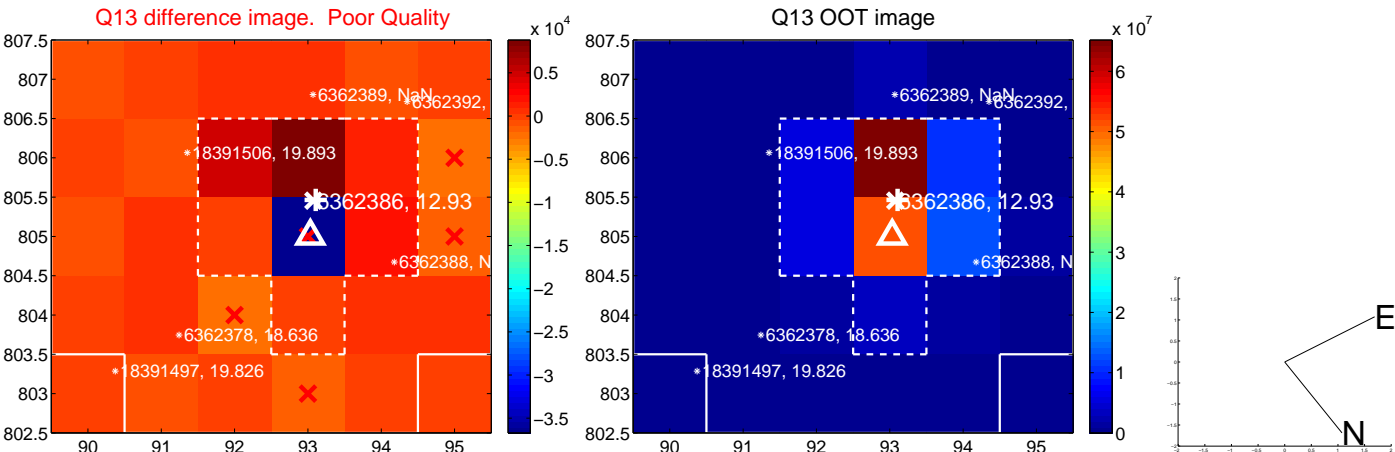
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



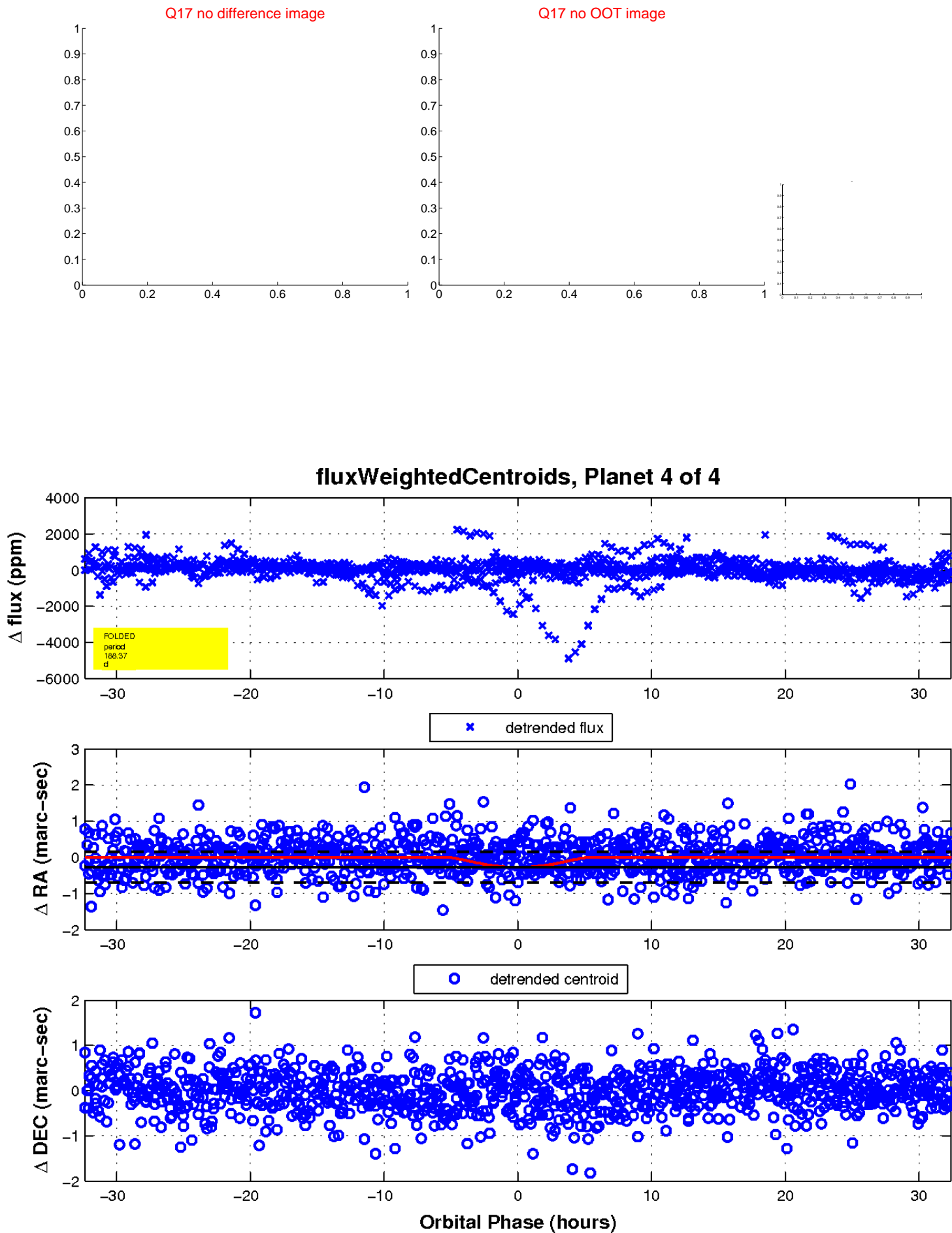
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

