

# KIC 003868284

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003868284-01	OBS	No	0.542638	131.936005	246.4	0.977	9.0	11.1	3.41	7687	6.27	127153.04
003868284-02	OBS	No	0.824824	132.258240	444.3	0.954	8.7	12.1	3.41	7687	7.33	72754.24
003868284-03	OBS	No	0.824834	132.050235	339.1	1.158	7.5	9.7	3.41	7687	7.34	72752.98

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003868284-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
003868284-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003868284-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

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

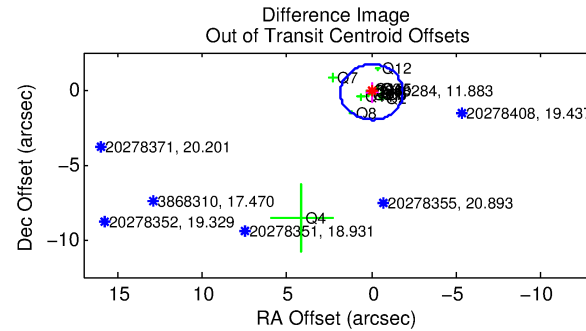
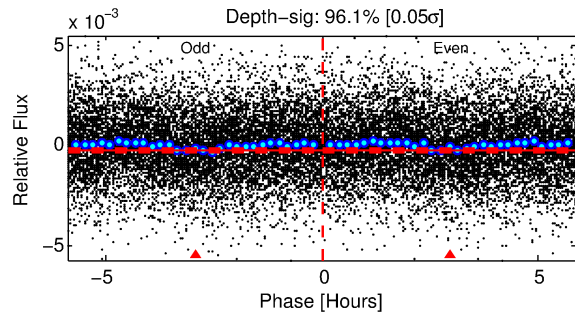
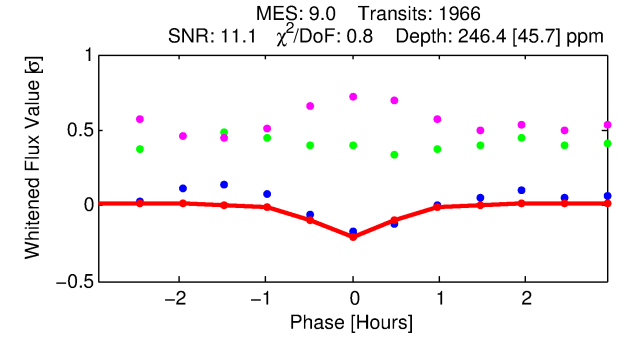
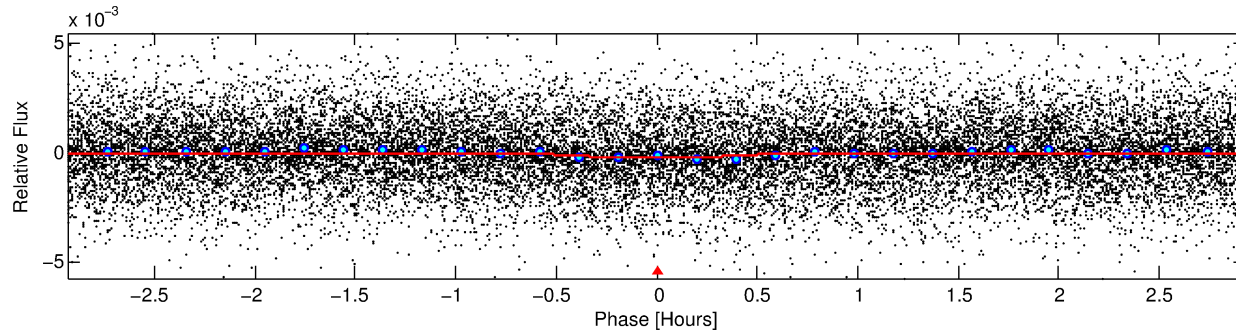
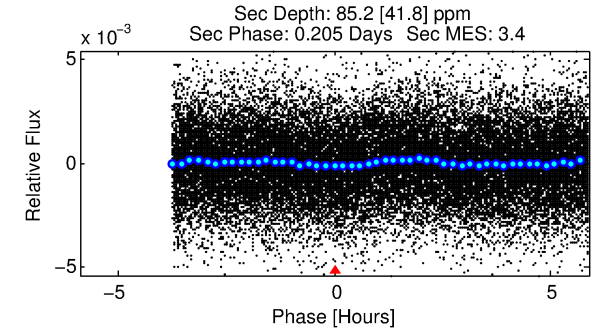
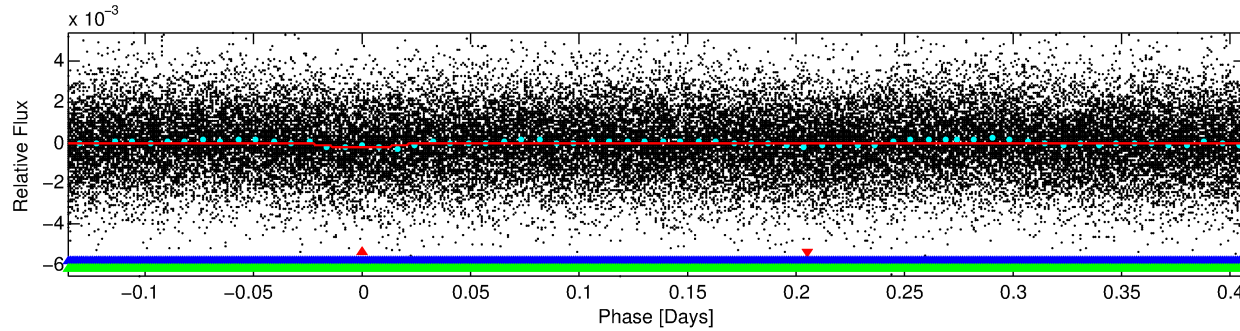
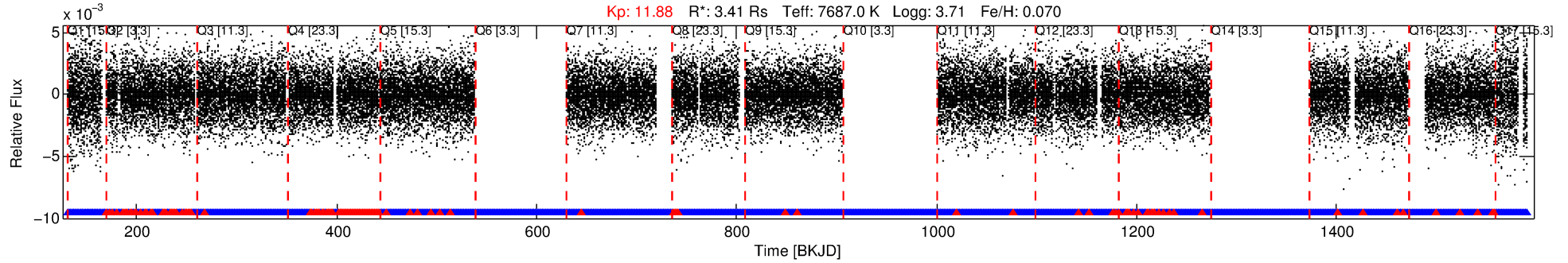
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003868284-01

No Significant Match Found

# DV One-Page Summary

KIC: 3868284 Candidate: 1 of 3 Period: 0.543 d



## DV Fit Results:

Period = 0.54264 [0.00001] d  
Epoch = 131.9360 [0.0019] BKJD  
Rp/R\* = 0.0169 [0.0114]  
a/R\* = 2.22 [7.23]  
b = 0.90 [0.88]  
Seff = 127153.04 [89748.24]  
Teq = 4815 [850] K  
Rp = 6.27 [5.07] Re  
a = 0.0169 [0.0072] AU  
Ag = 0.34 [0.54] [-1.22σ]  
Teffp = 5687 [2054] K [0.39σ]

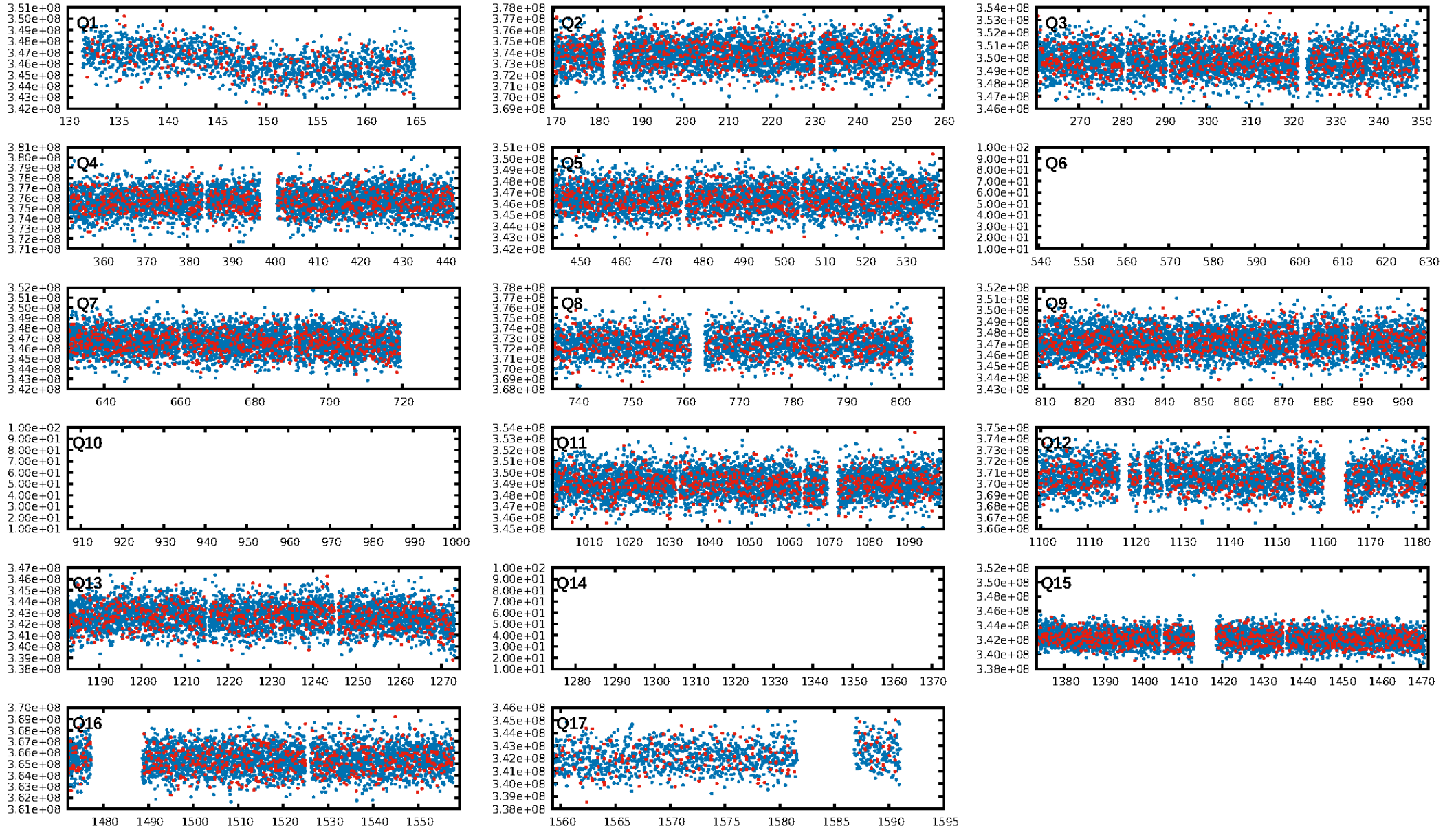
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [4.96σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.57e-34  
RollingBand-fgt: 0.90 [1672/1857]  
GhostDiagnostic-chr: 1.448  
Centroid-sig: N/A  
Centroid-so: 0.252 arcsec [2.74σ]  
OotOffset-rm: 0.156 arcsec [0.25σ]  
KicOffset-rm: 0.170 arcsec [0.33σ]  
OotOffset-st: 1/4/4/5 [14]  
KicOffset-st: 1/4/4/5 [14]  
DiffImageQuality-fgm: 0.71 [10/14]  
DiffImageOverlap-fno: 1.00 [14/14]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:24:47 Z

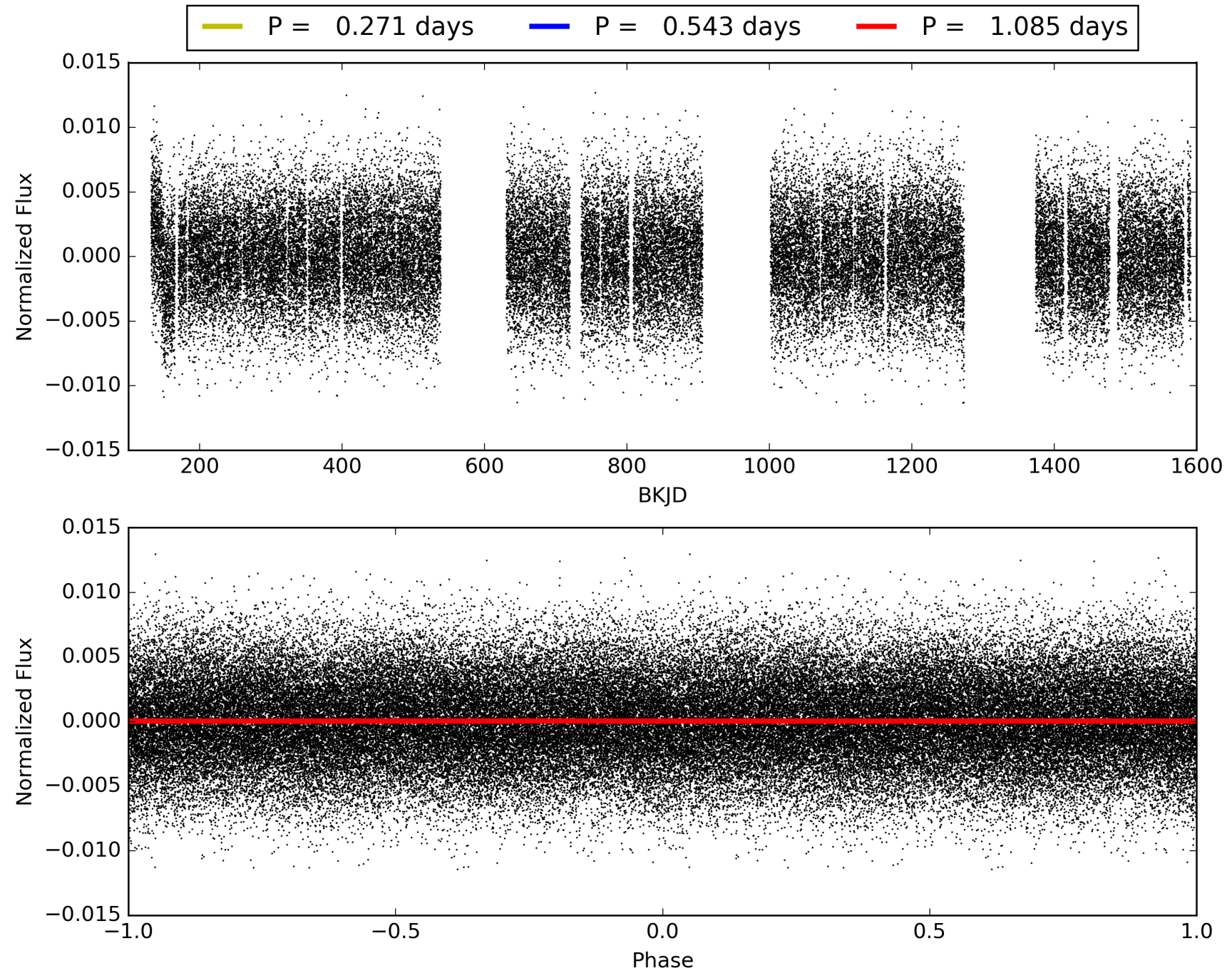
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 003868284-01, PDC Light Curves





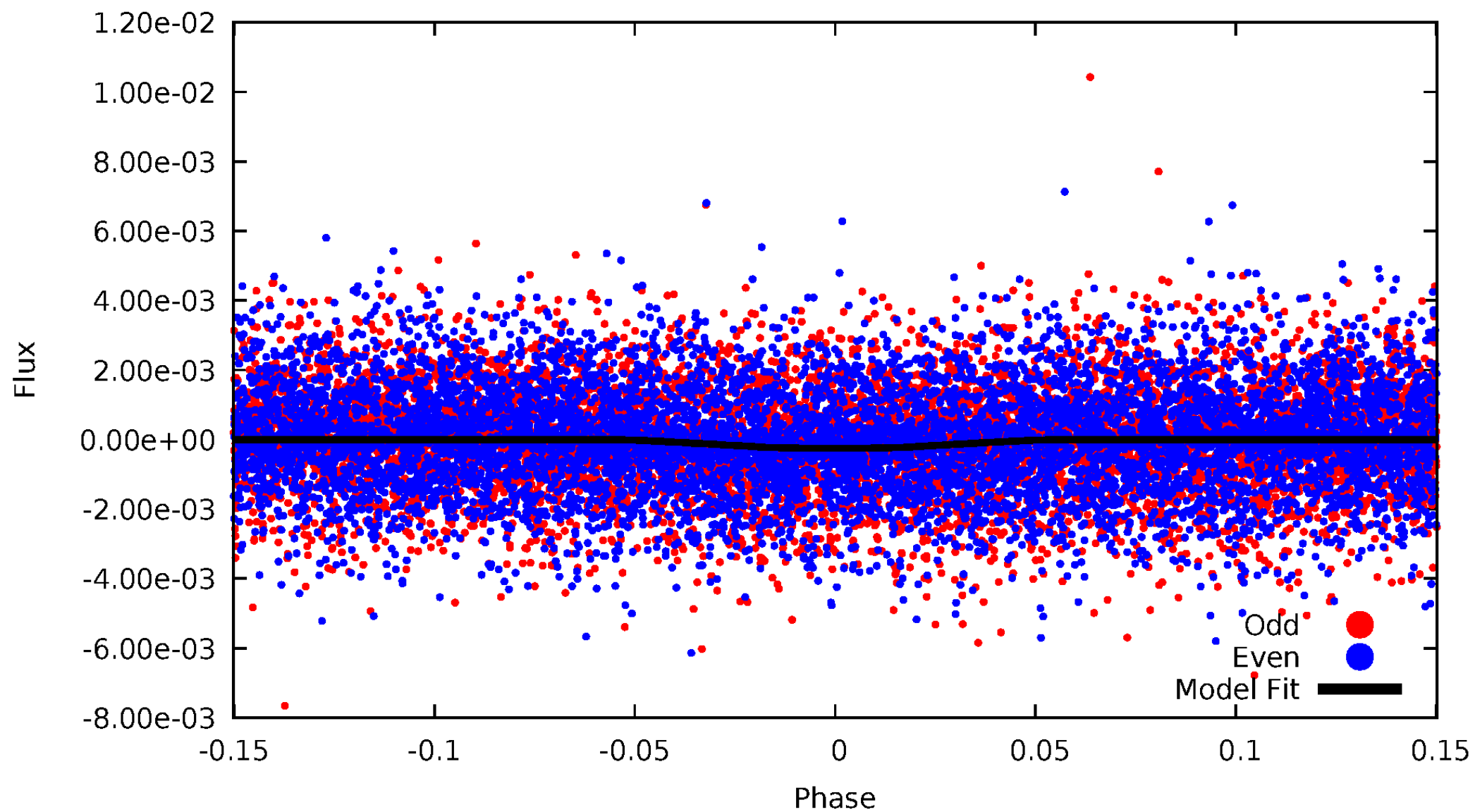
TCE 003868284-01





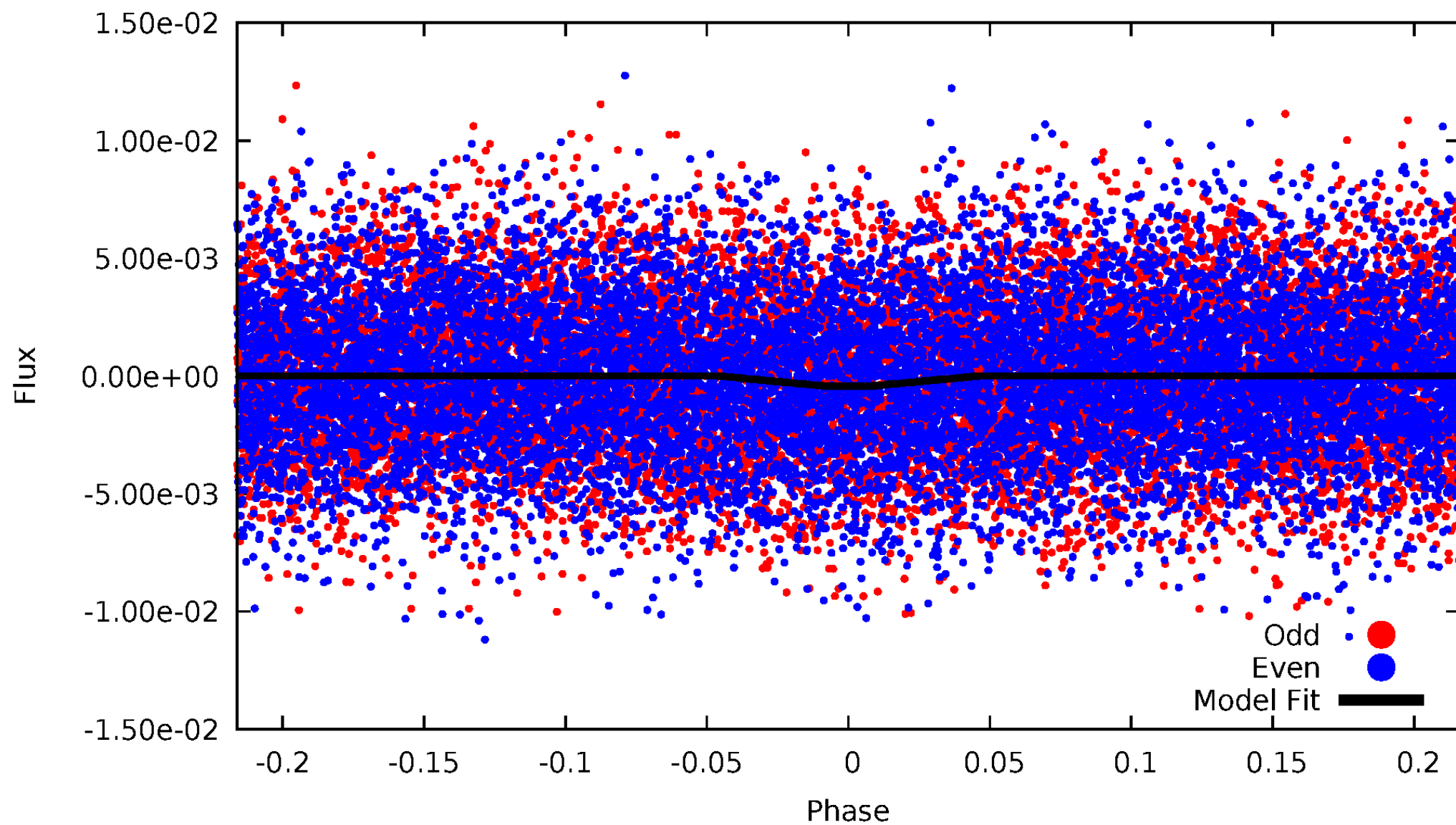
# DV Odd/Even

TCE 003868284-01



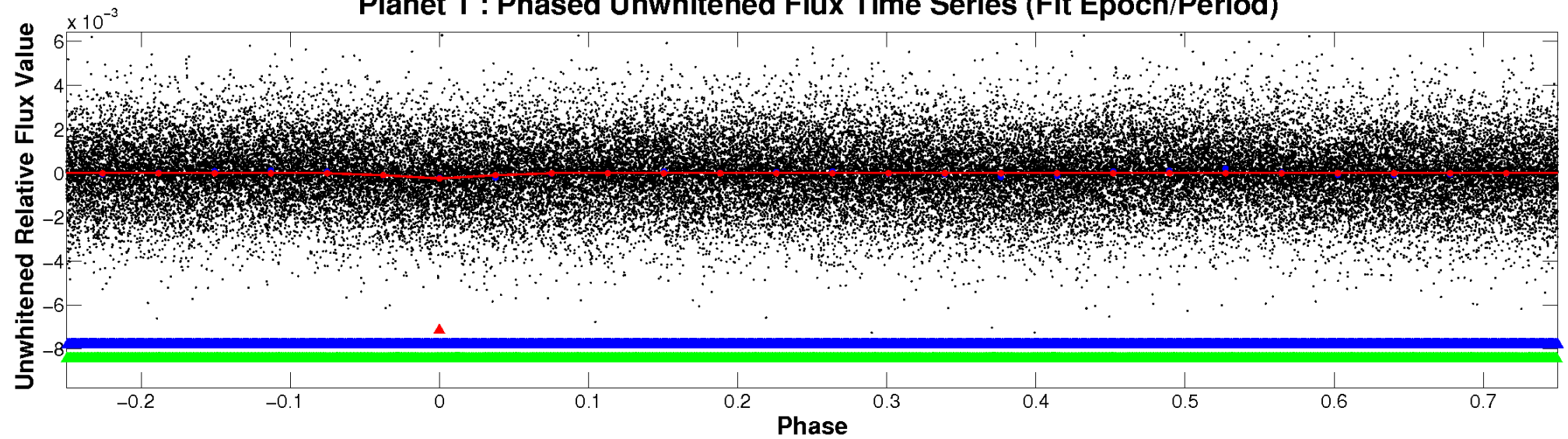
# ALT Odd/Even

TCE 003868284-01

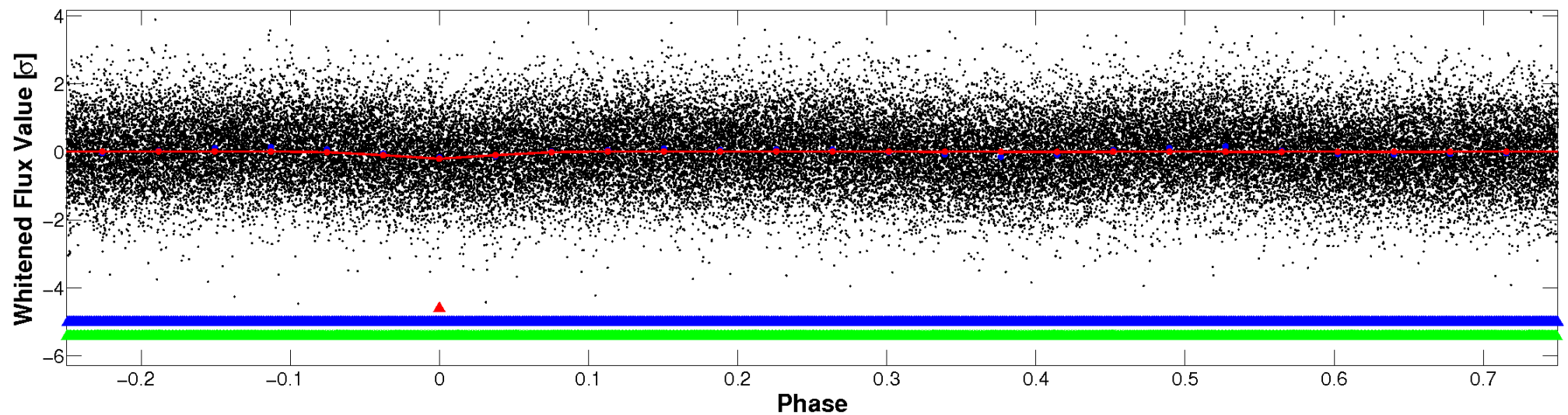


# Non-Whitened Vs. Whitened Light Curve

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



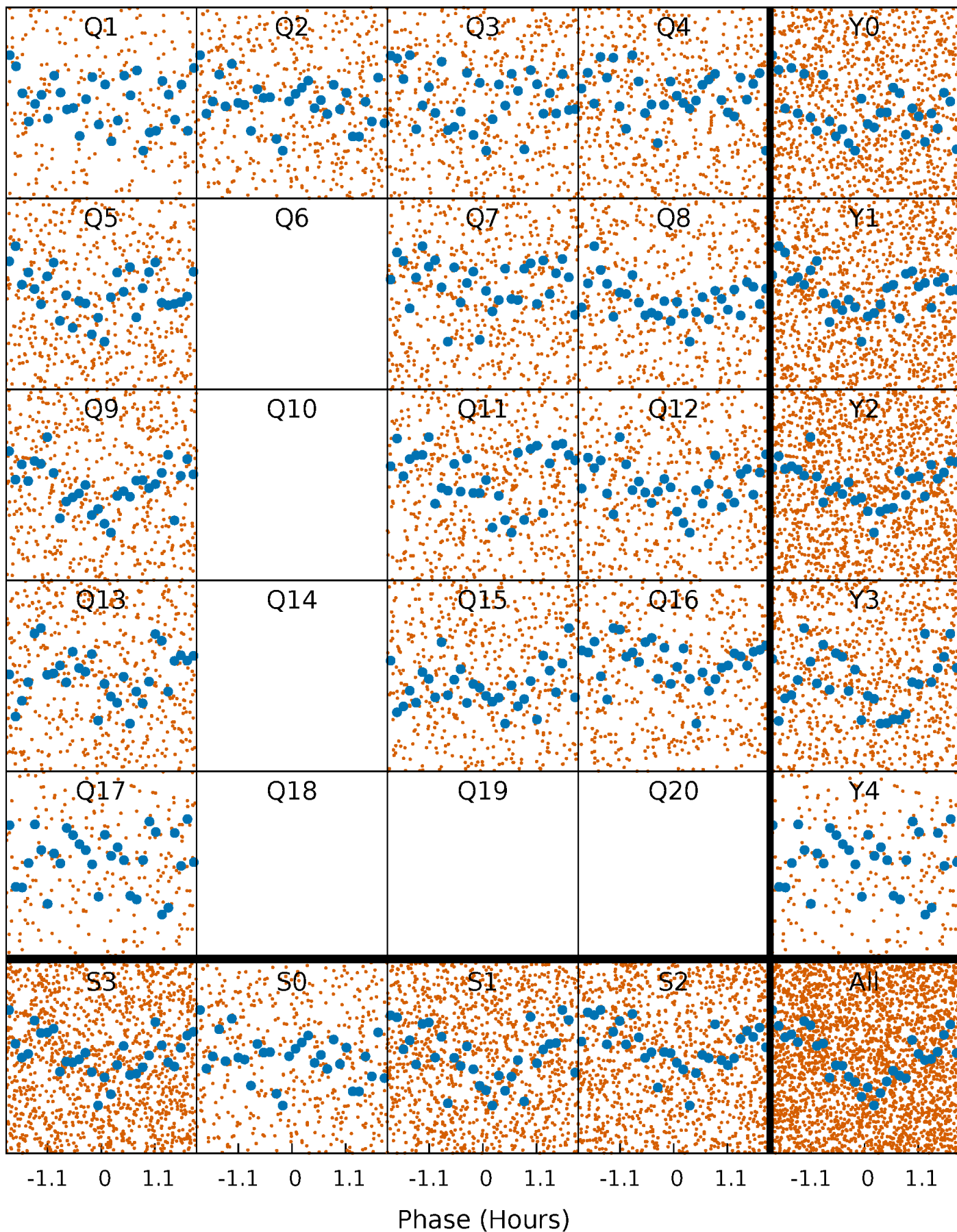
## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)





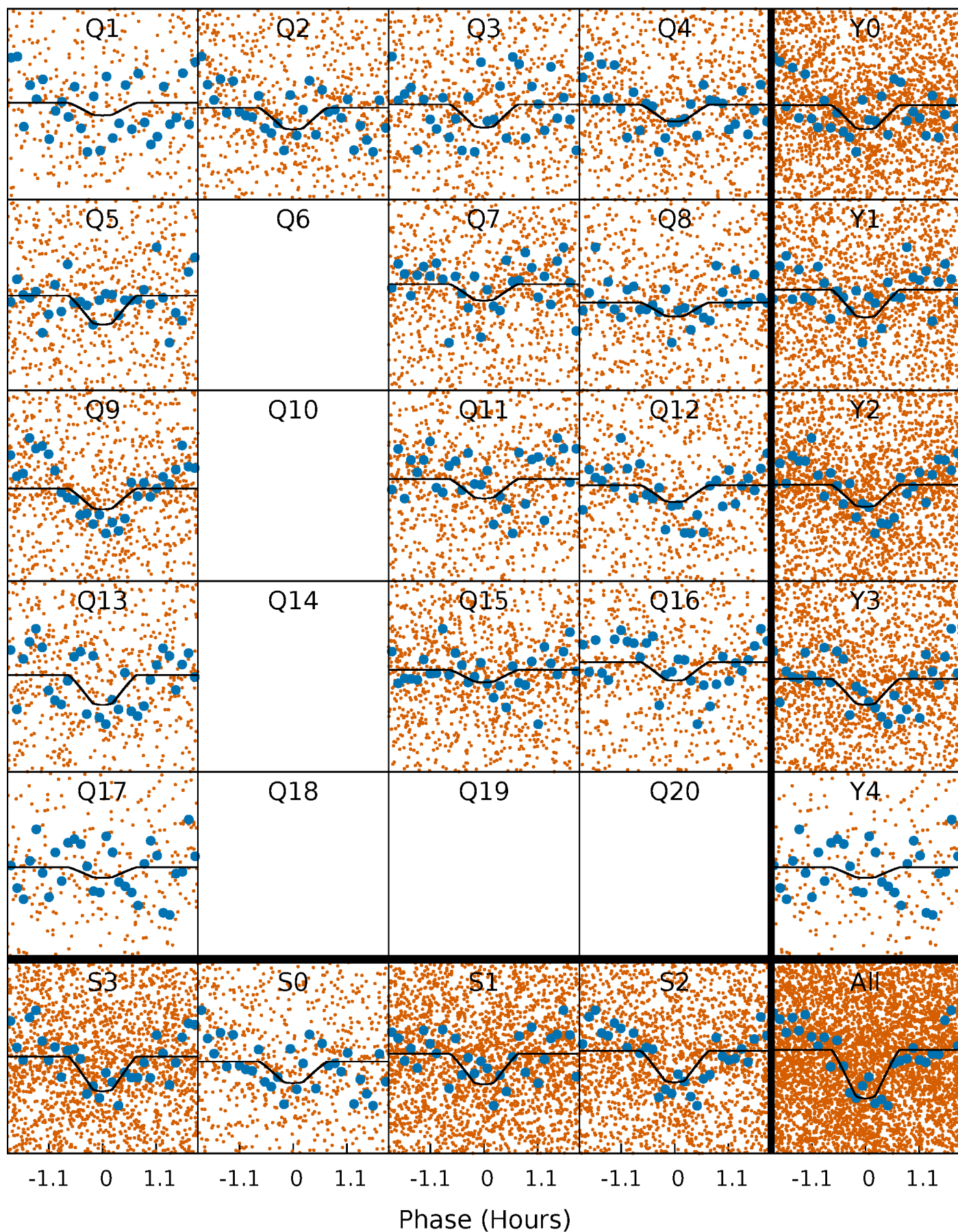
# PDC Quarter-Phased Transit Curves

TCE 003868284-01 P= 0.542638 Days  $T_0=131.936005$  (BKJD)



# DV Quarter-Phased Transit Curves

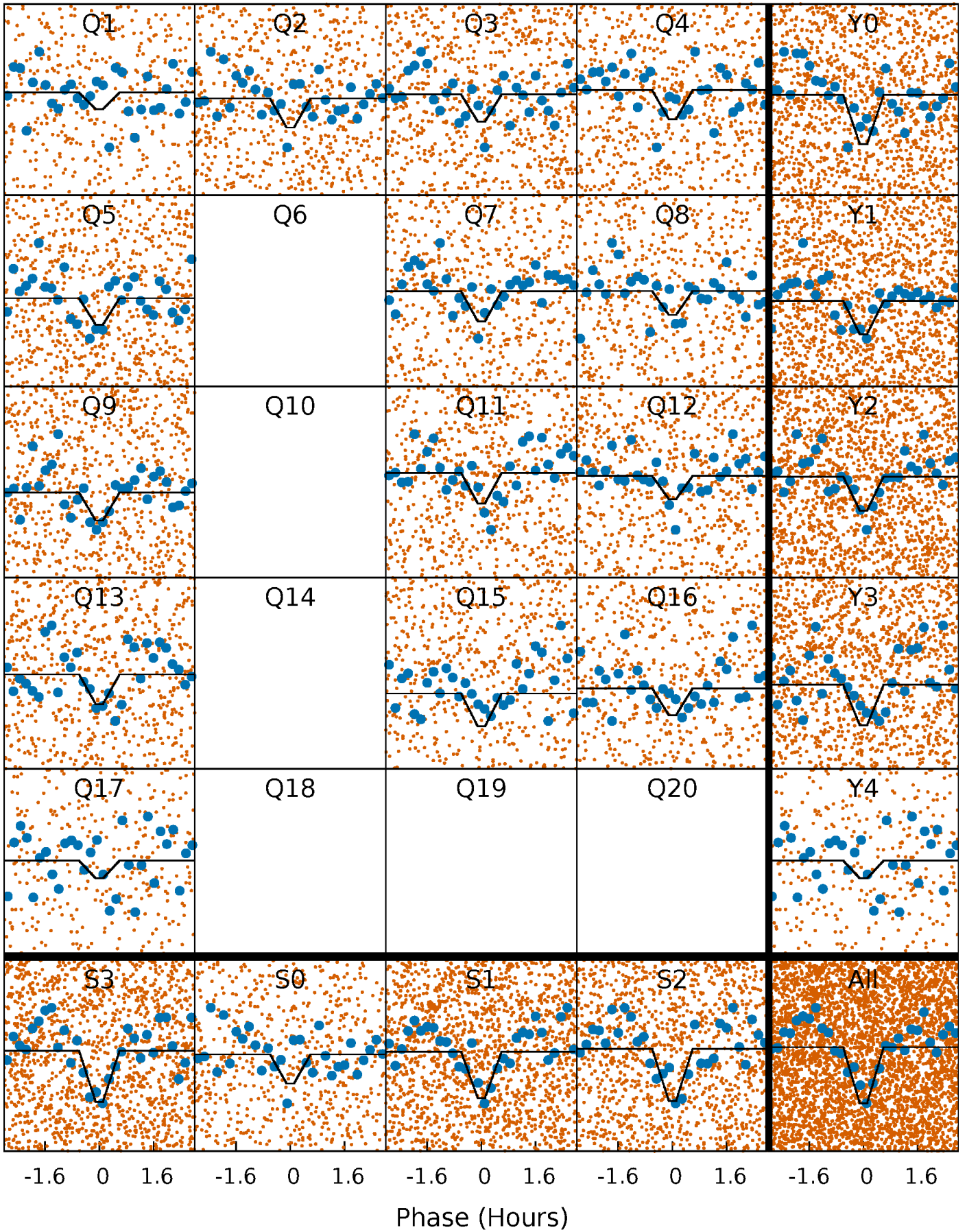
TCE 003868284-01   P= 0.542638 Days    $T_0=131.936005$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 003868284-01 P= 0.542643 Days  $T_0=131.933205$  (BKJD)

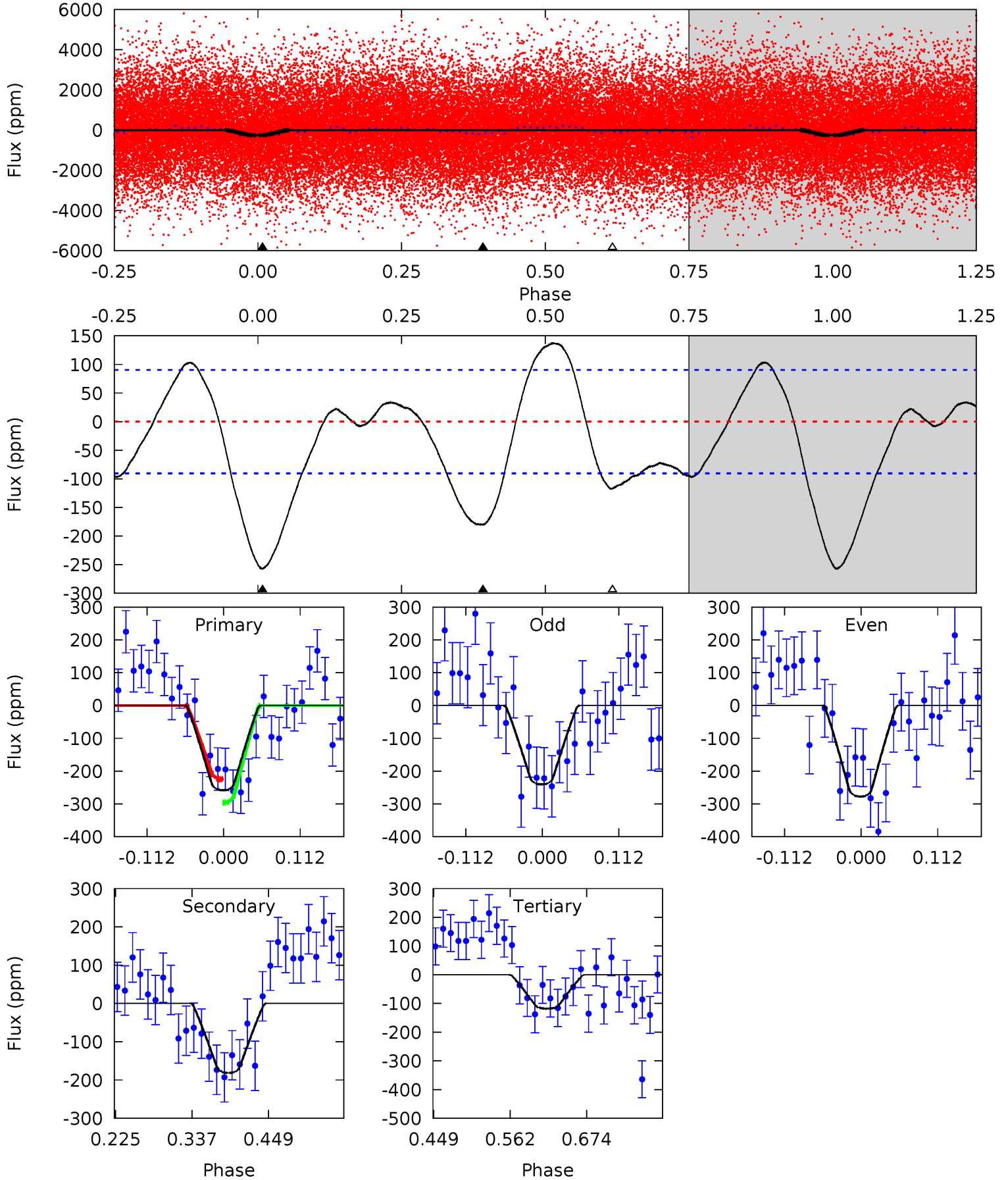




# DV Model-Shift Uniqueness Test

003868284-01, P = 0.542638 Days, E = 131.393367 Days

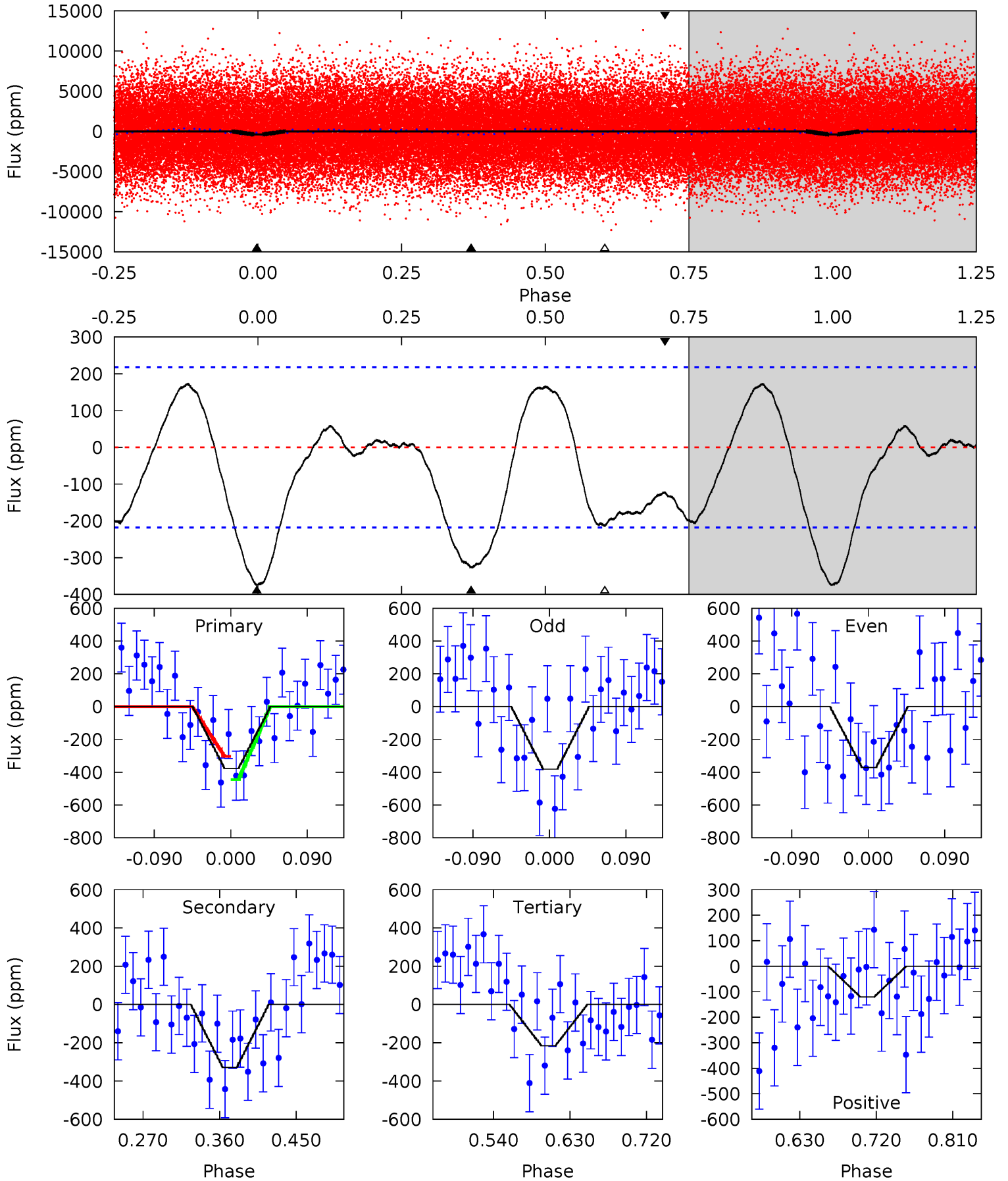
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	9.12	5.93	0	4.54	1.59	3.66	7.05	13.0	3.19	9.12	0.94	1.02	0.35	1.81



# Alt Model-Shift Uniqueness Test

003868284-01, P = 0.542643 Days, E = 131.390562 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
7.93	6.92	4.53	-2.53	4.59	1.70	2.57	3.39	10.5	2.39	9.45	0.11	1.10	0.32	1.49



### Stellar Parameters For KIC 003868284

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7687^{+212}_{-345}$	$3.713^{+0.400}_{-0.100}$	$0.070^{+0.200}_{-0.350}$	$3.409^{+0.545}_{-1.525}$	$2.189^{+0.270}_{-0.585}$	$0.078^{+0.304}_{-0.024}$
	+3%/-4%	+11%/-3%	+286%/-500%	+16%/-45%	+12%/-27%	+390%/-30%
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 003868284-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-181 \pm 20$	$6.42^{+4.00}_{-3.80}$	$6539^{+458}_{-665}$	$5448^{+4970}_{-9048}$	$0.696^{+3.178}_{-0.435}$
Alt.	$-329 \pm 47$	$7.06^{+3.87}_{-3.59}$	$6536^{+455}_{-717}$	$6406^{+4332}_{-2007}$	$1.010^{+3.398}_{-0.597}$

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



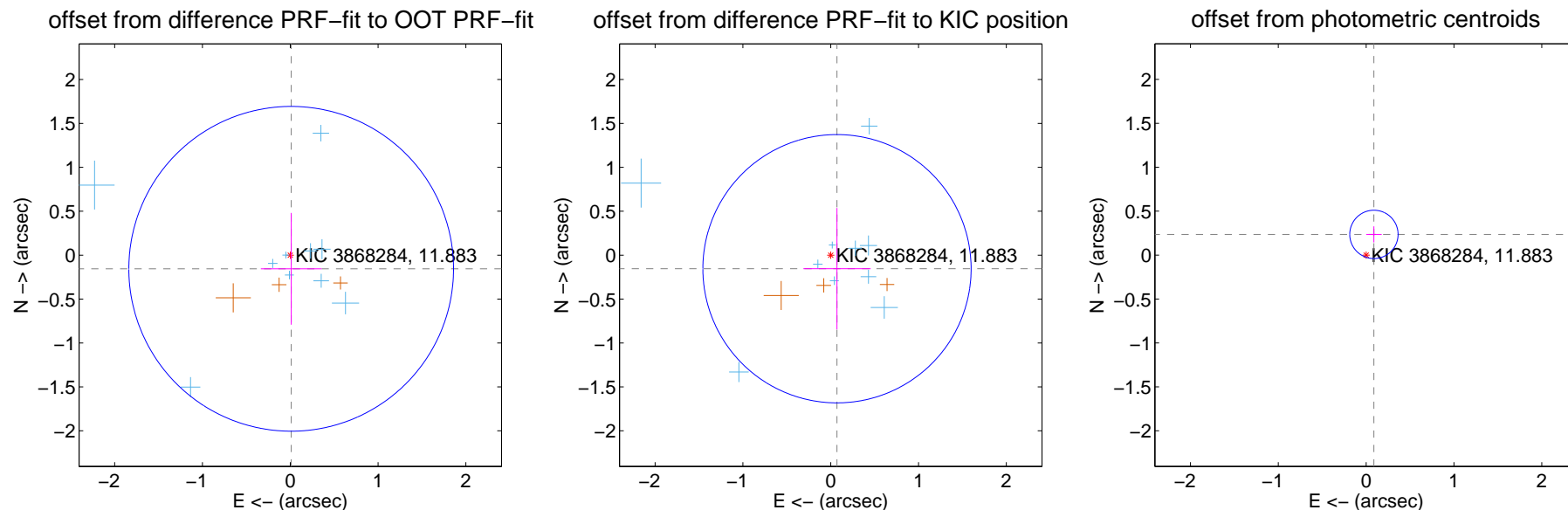
## DV Centroid Data

Supplemental centroid analysis for 003868284-01. **Kepler magnitude: 11.88.** Transit SNR 11.10

There are 10 quarters with good PRF difference image offsets

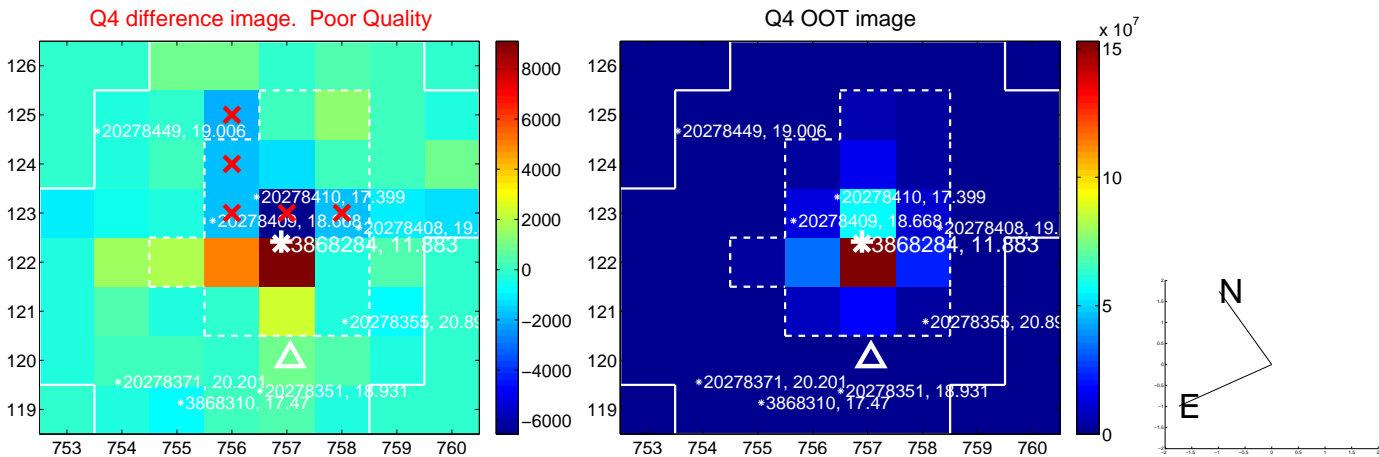
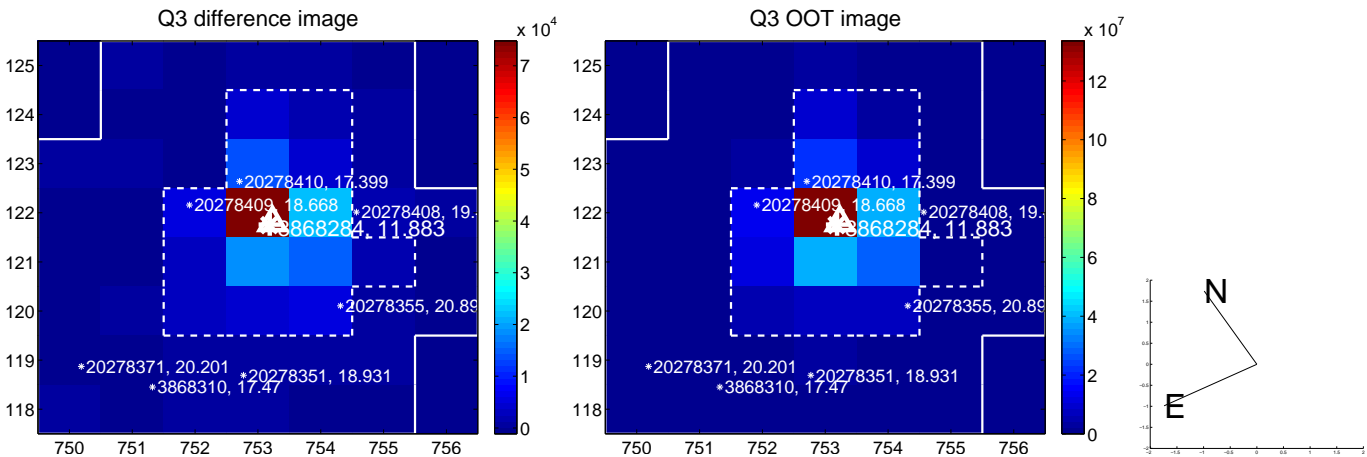
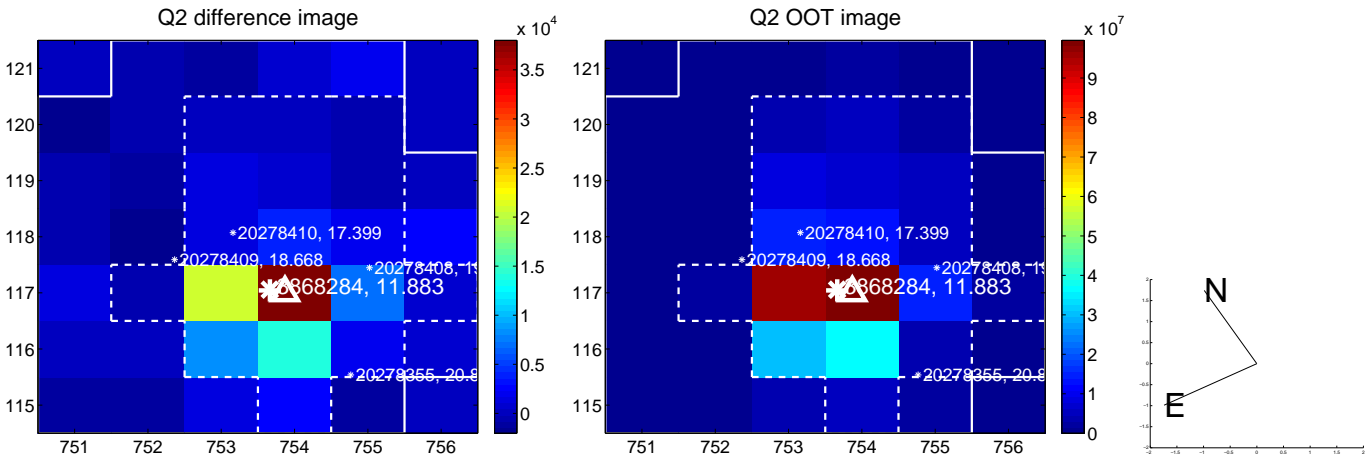
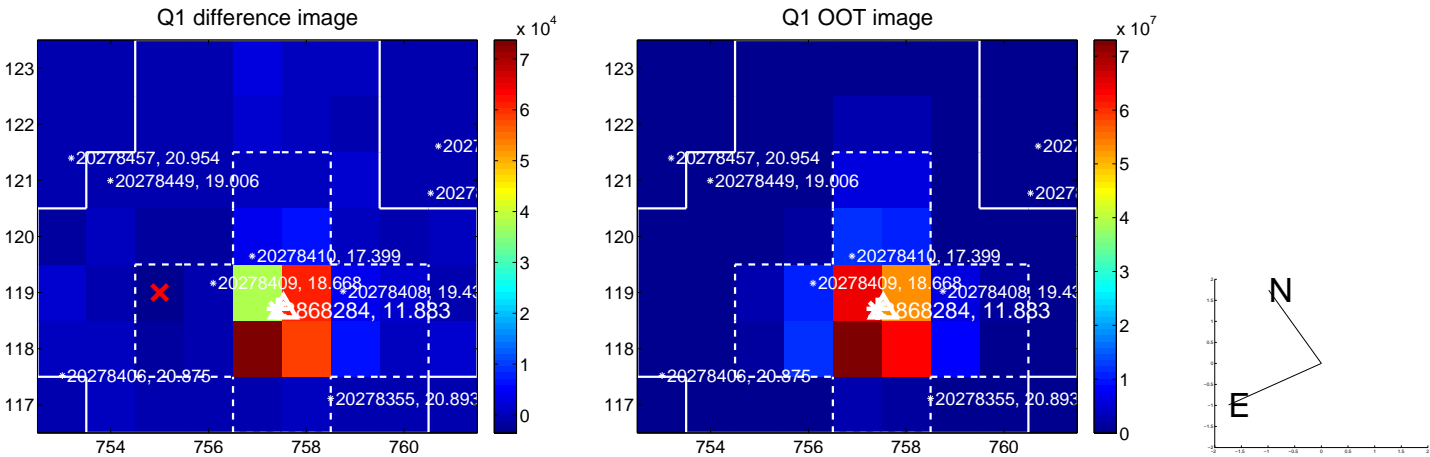
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.156 \pm 0.616$	0.25	$-0.011 \pm 0.346$	$-0.155 \pm 0.636$
PRF-fit source offset from KIC position	$0.170 \pm 0.509$	0.33	$-0.071 \pm 0.383$	$-0.155 \pm 0.691$
photometric centroid source offset	$0.25 \pm 0.09$	2.74	$-0.09 \pm 0.09$	$0.24 \pm 0.09$

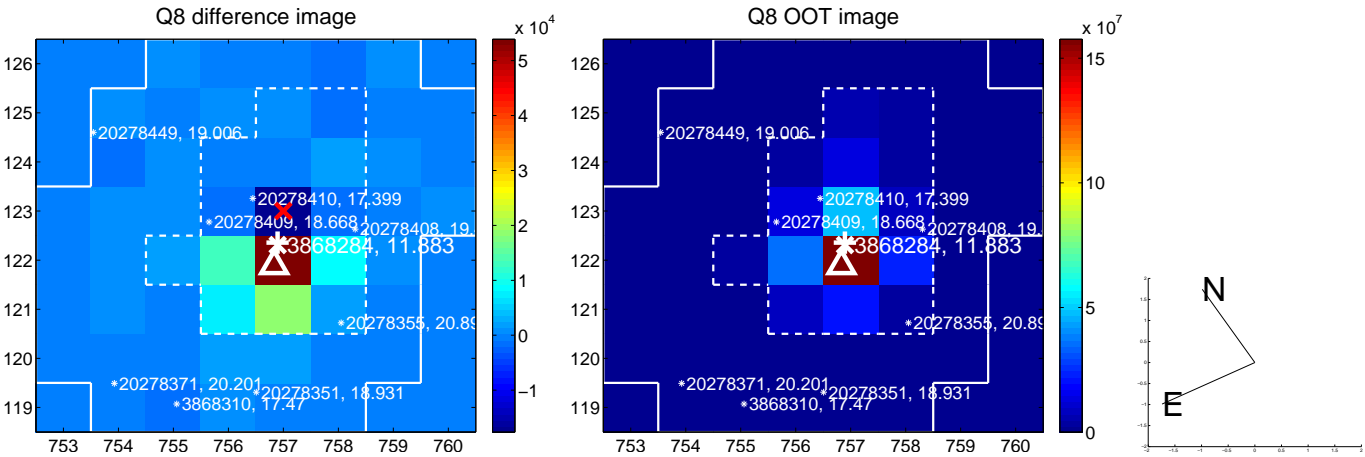
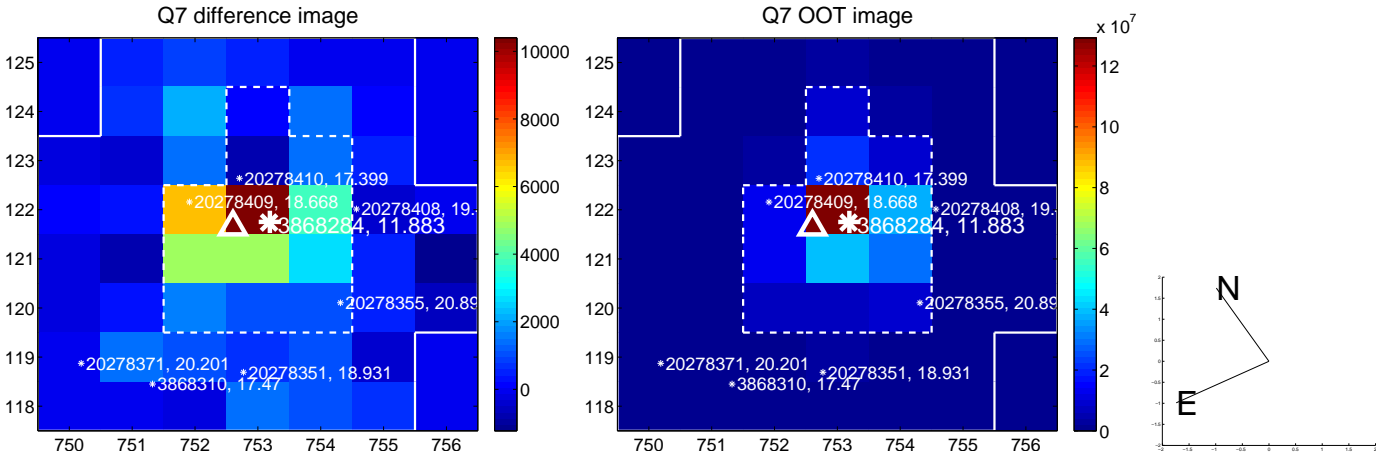
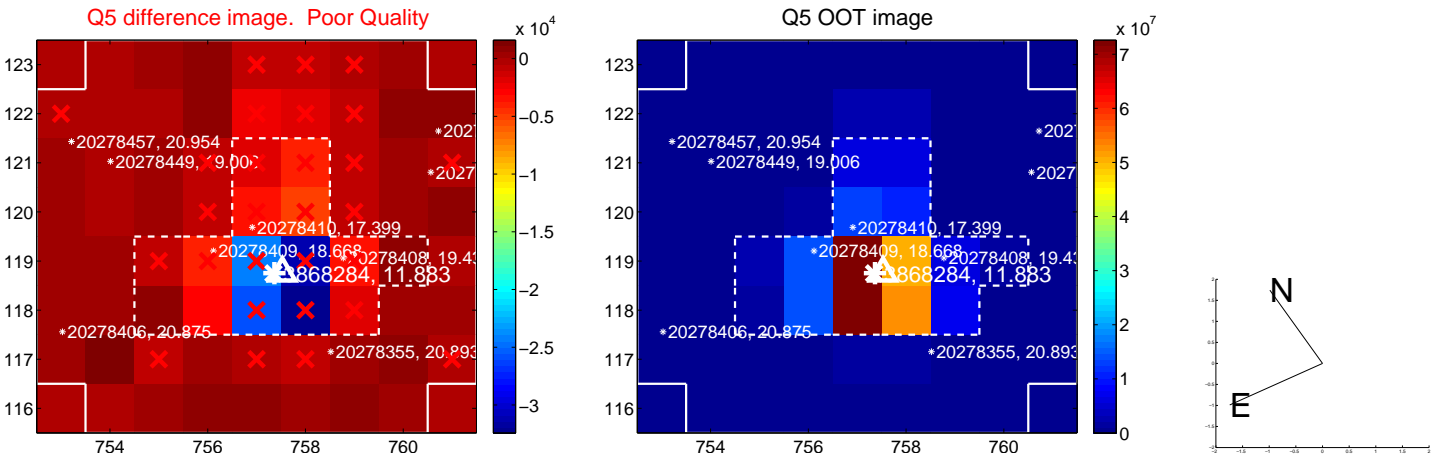


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

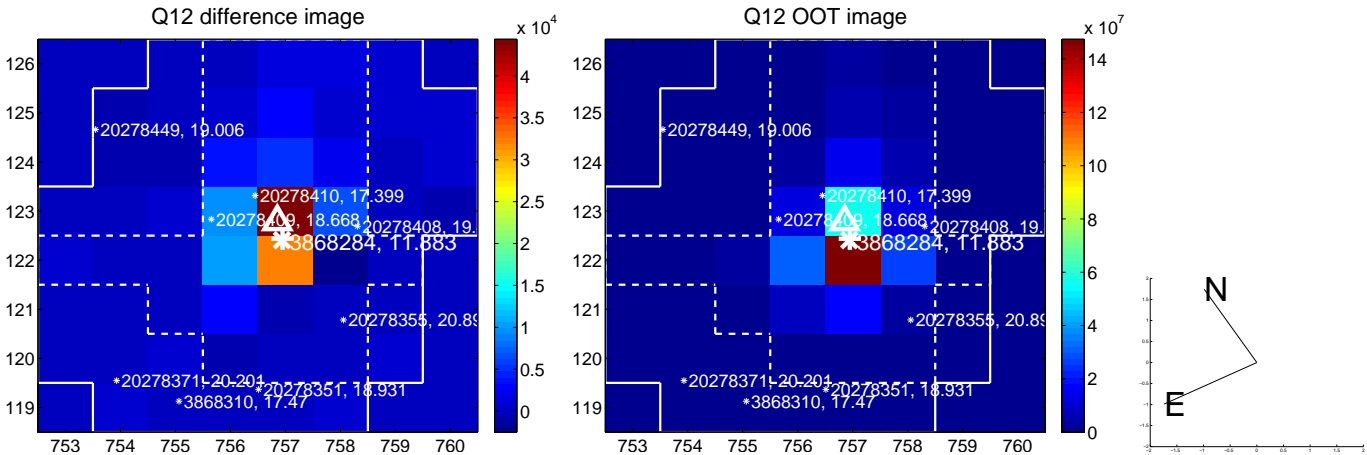
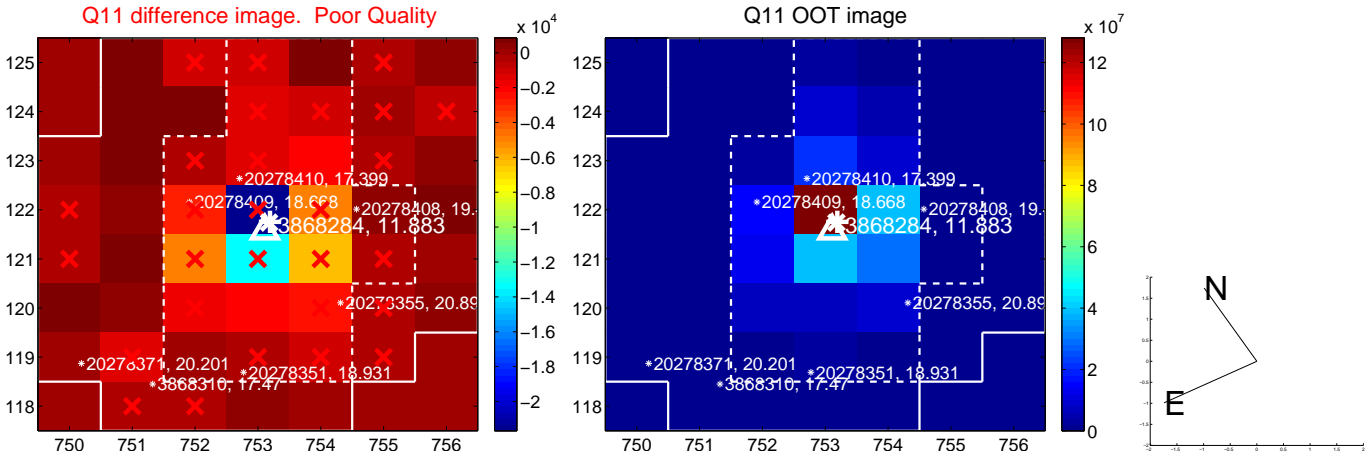
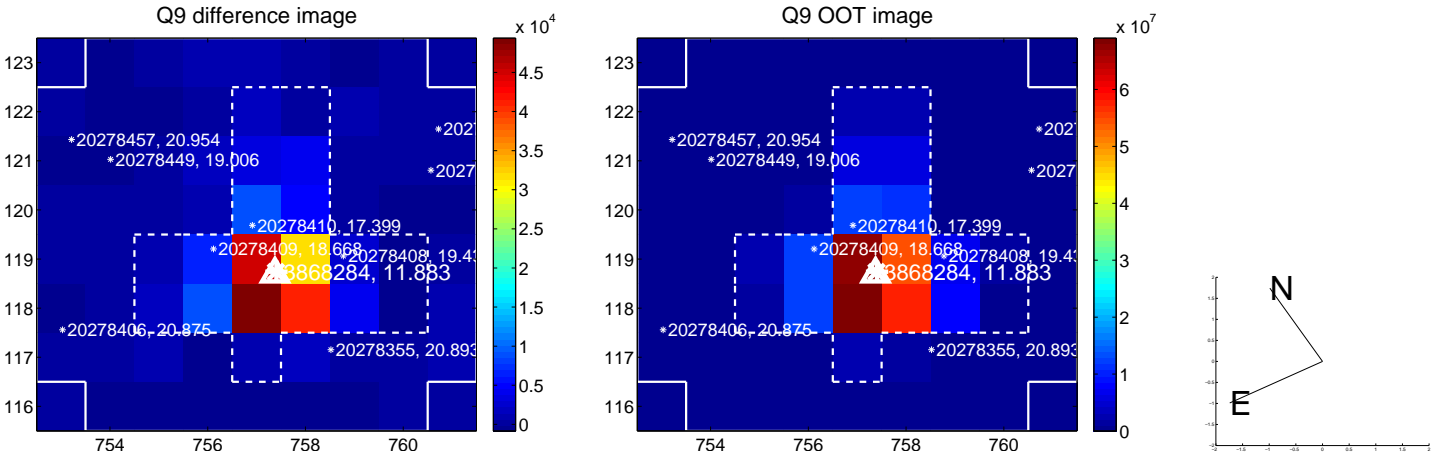


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

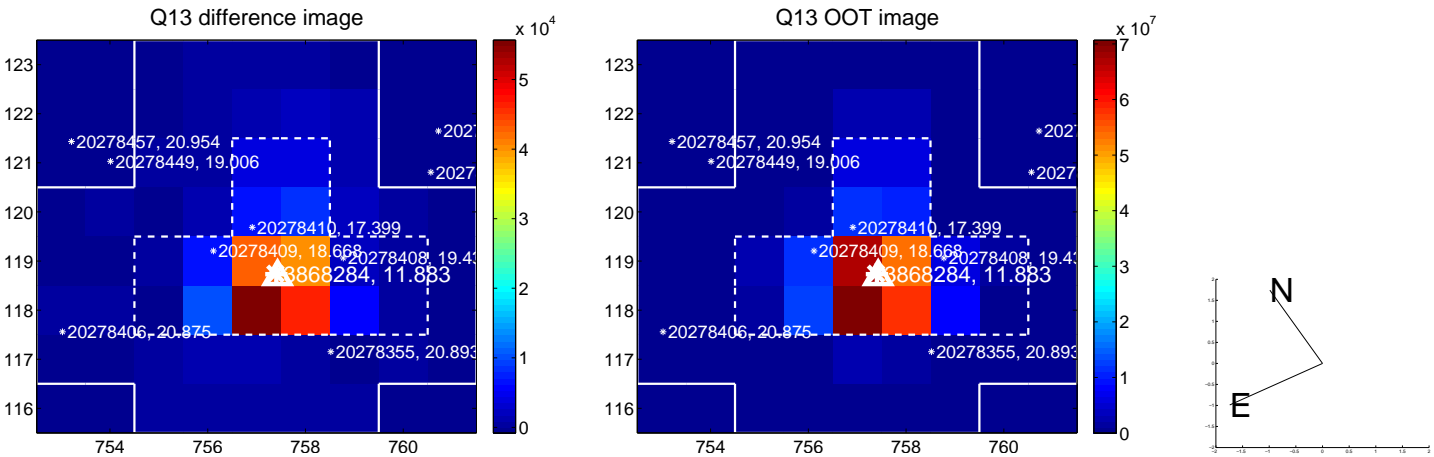




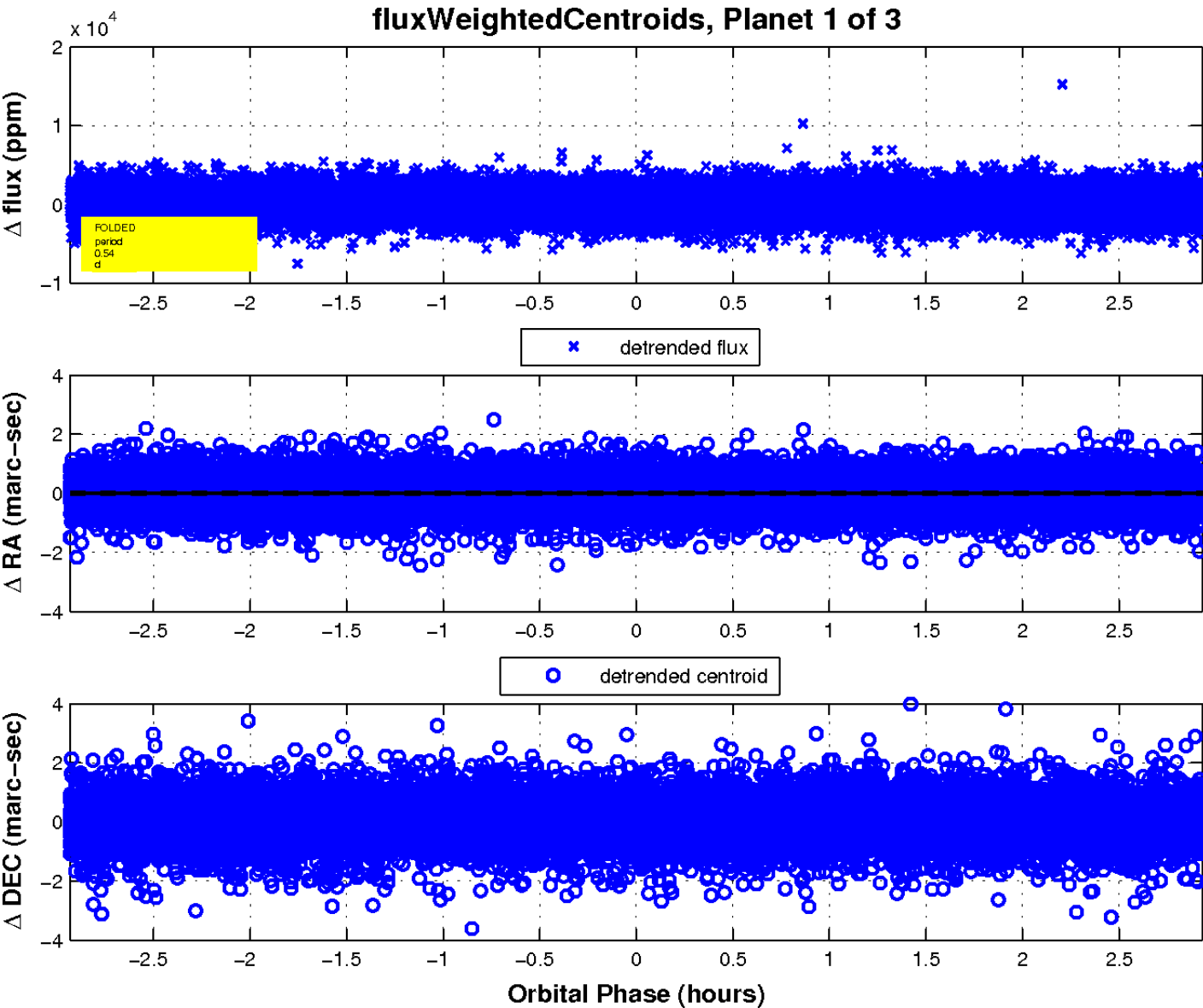
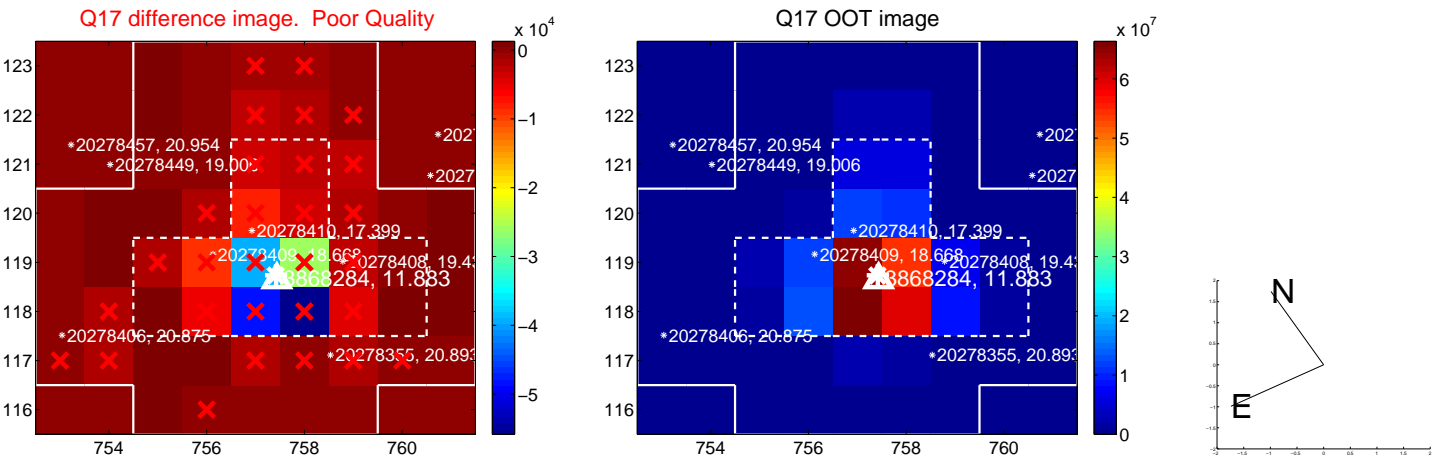
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

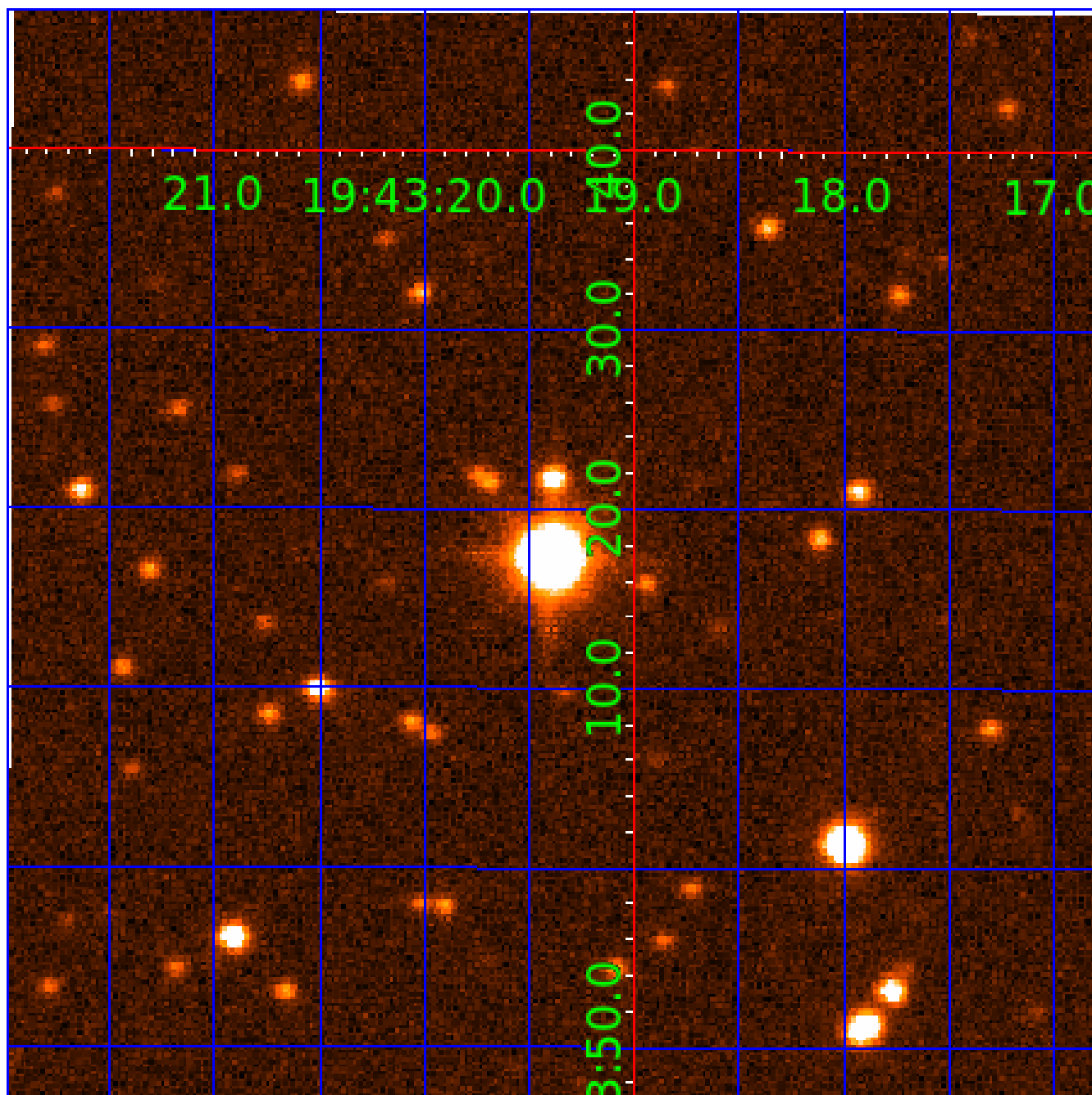


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 003868284

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003868284-01	OBS	No	0.542638	131.936005	246.4	0.977	9.0	11.1	3.41	7687	6.27	127153.04
003868284-02	OBS	No	0.824824	132.258240	444.3	0.954	8.7	12.1	3.41	7687	7.33	72754.24
003868284-03	OBS	No	0.824834	132.050235	339.1	1.158	7.5	9.7	3.41	7687	7.34	72752.98

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003868284-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
003868284-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003868284-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

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

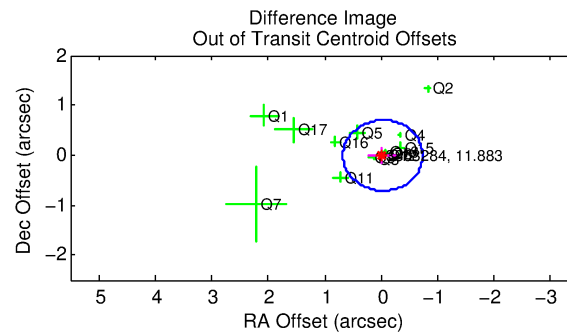
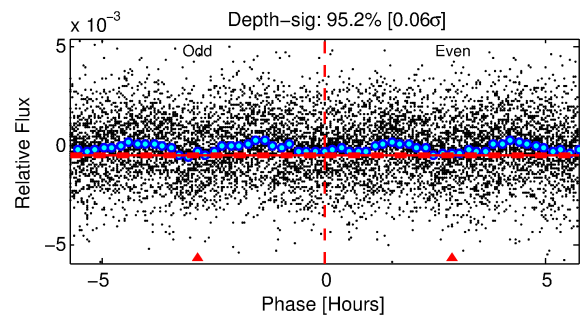
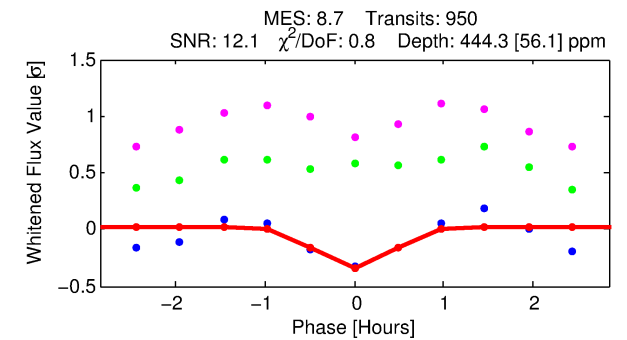
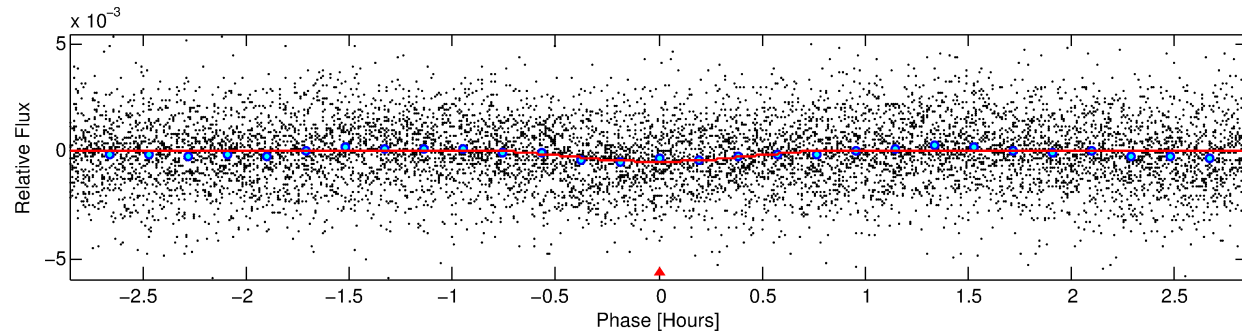
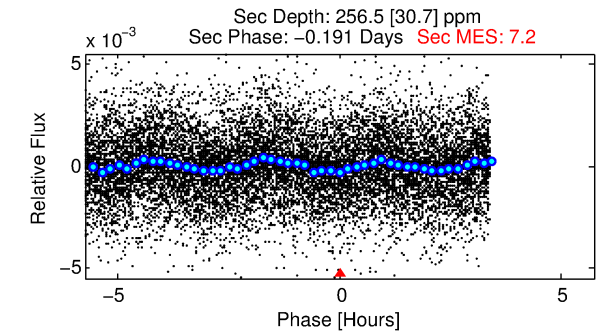
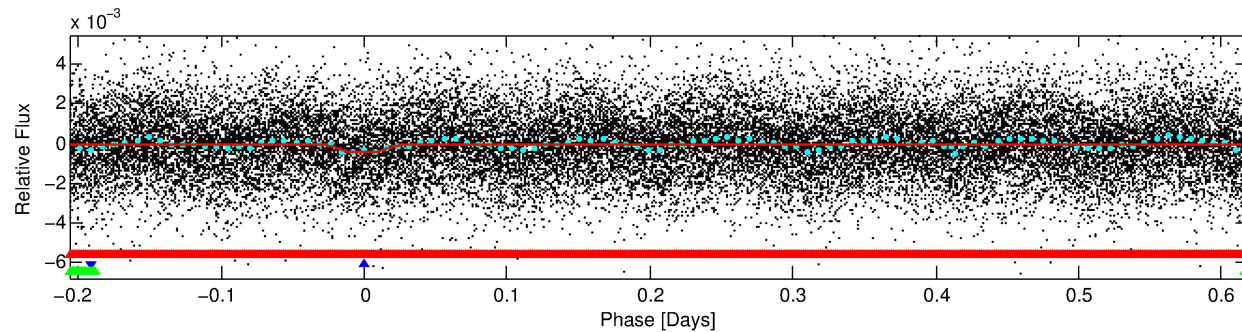
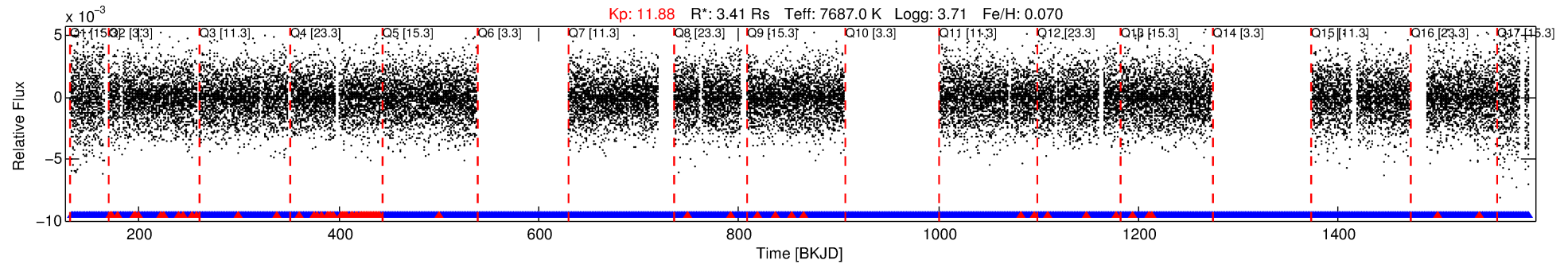
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003868284-02

No Significant Match Found

# DV One-Page Summary

KIC: 3868284 Candidate: 2 of 3 Period: 0.825 d



## DV Fit Results:

Period = 0.82482 [0.00001] d  
Epoch = 132.2582 [0.0017] BKJD  
 $R_p/R^* = 0.0197$  [0.0160]  
 $a/R^* = 6.73$  [30.40]  
 $b = 0.10$  [45.92]  
 $S_{\text{eff}} = 72754.24$  [51352.02]  
 $T_{\text{eq}} = 4188$  [739] K  
 $R_p = 7.33$  [6.80]  $R_{\text{e}}$   
 $a = 0.0224$  [0.0096] AU  
 $A_g = 1.31$  [2.32] [0.13σ]  
 $T_{\text{eff}} = 6931$  [2844] K [0.93σ]

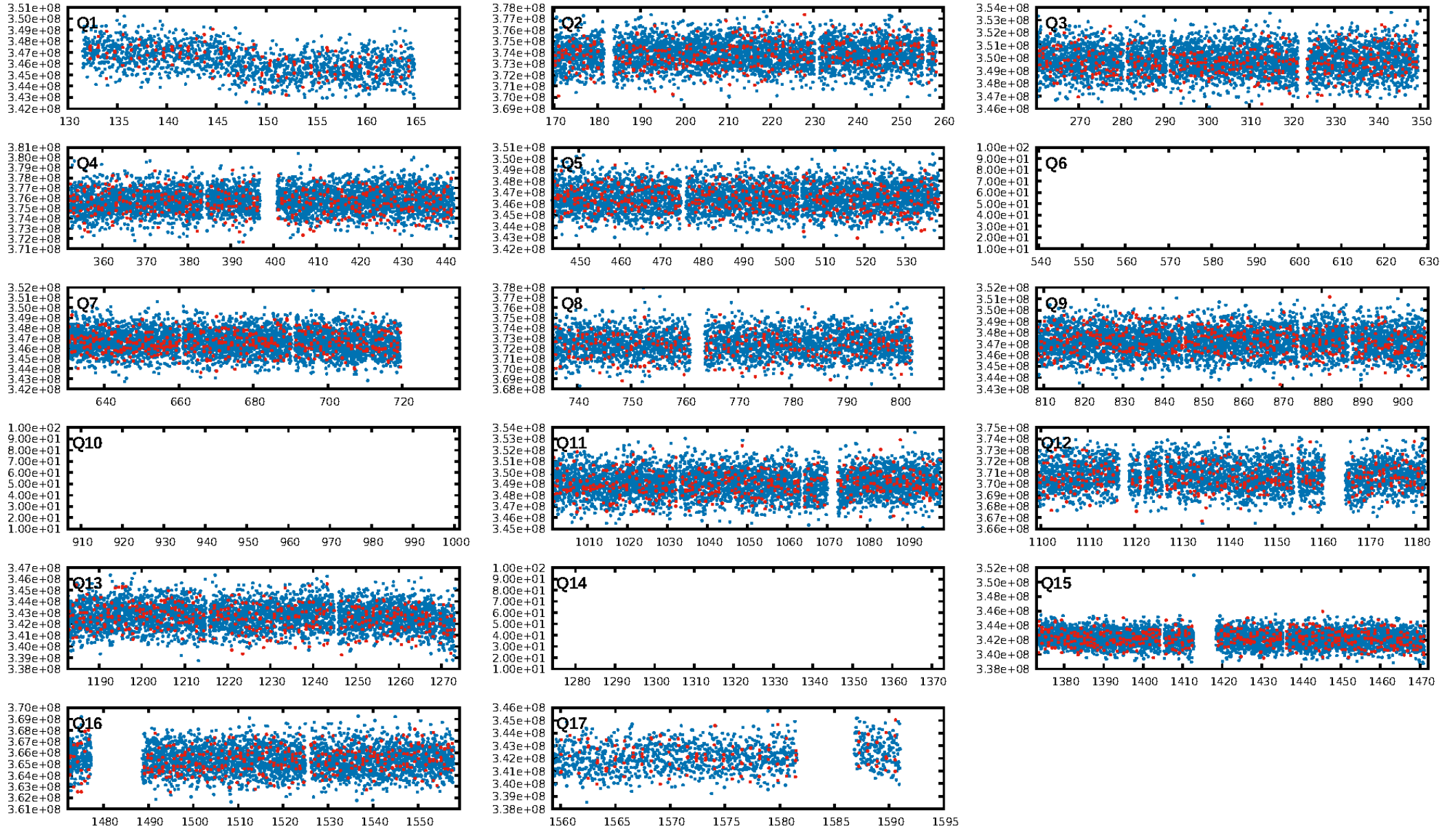
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.96σ]  
**LongPeriod-sig: 0.0% [0.00σ]**  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.98e-29  
RollingBand-fgt: 0.92 [823/897]  
**GhostDiagnostic-chr: 0.7171**  
Centroid-sig: N/A  
**Centroid-so: 0.224 arcsec [3.67σ]**  
OotOffset-rm: 0.026 arcsec [0.11σ]  
KicOffset-rm: 0.117 arcsec [0.48σ]  
OotOffset-st: 1/4/4/5 [14]  
KicOffset-st: 1/4/4/5 [14]  
DiffImageQuality-fgm: 0.93 [13/14]  
DiffImageOverlap-fno: 0.00 [0/14]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:24:59 Z

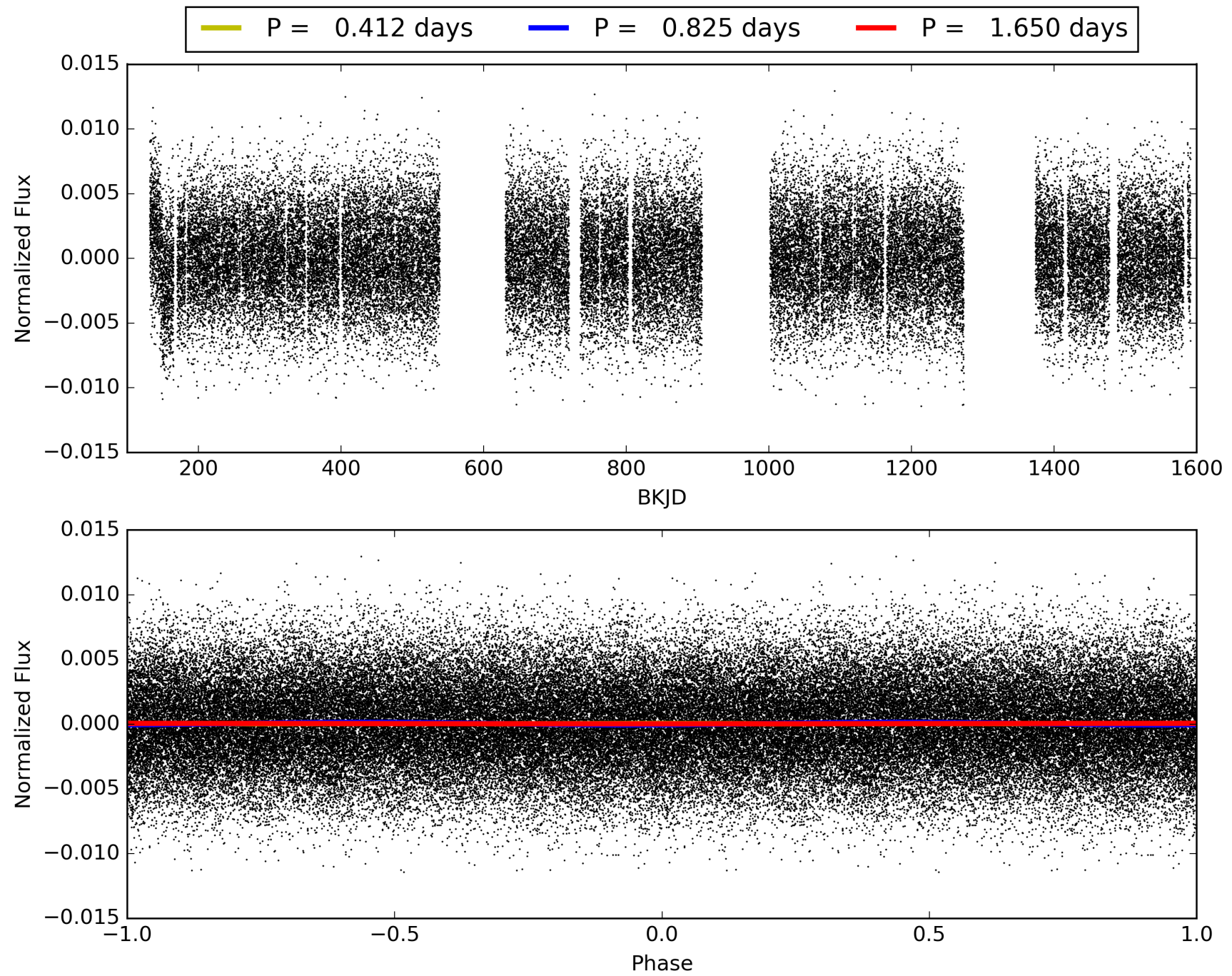
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 003868284-02, PDC Light Curves





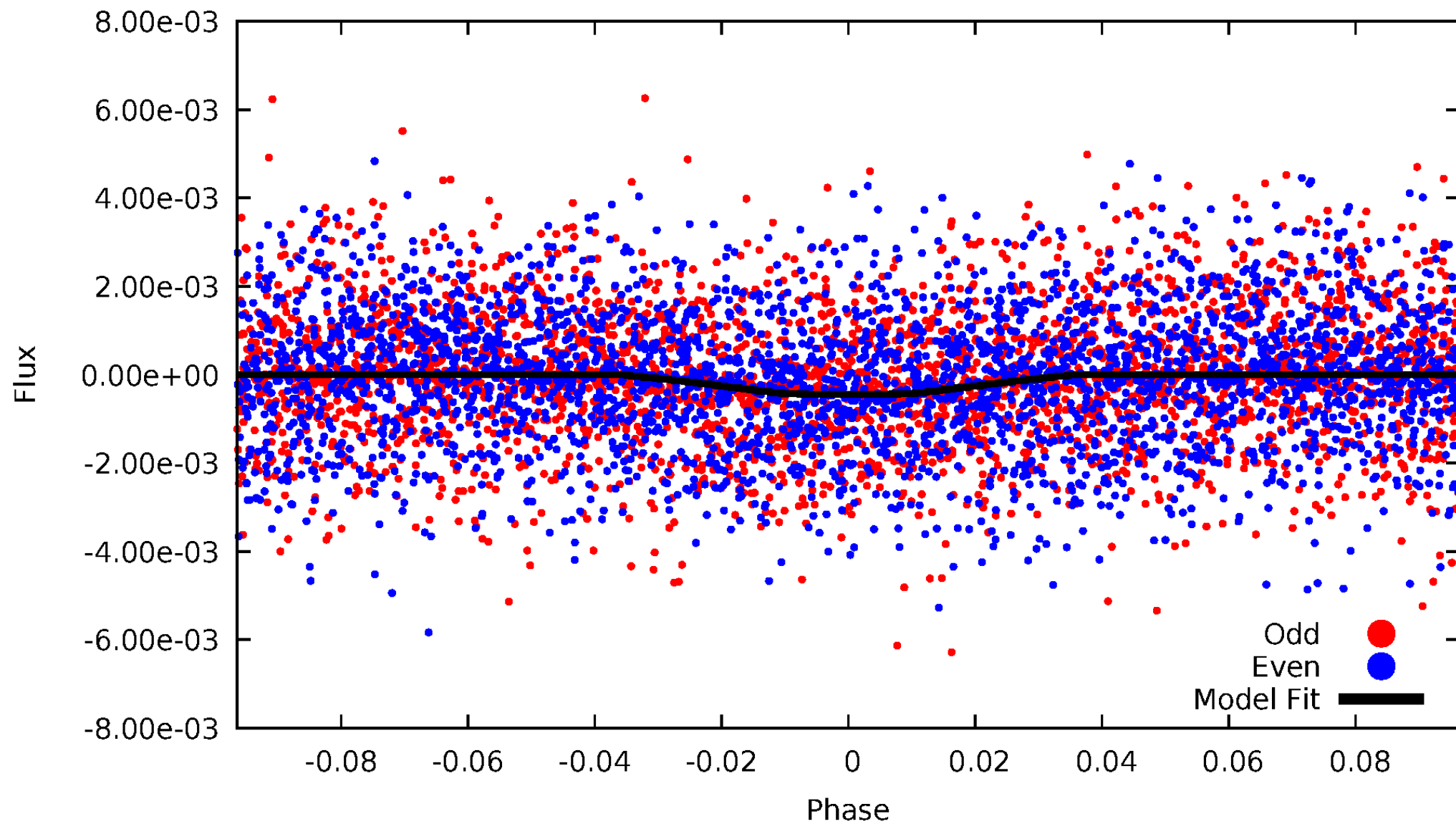
TCE 003868284-02





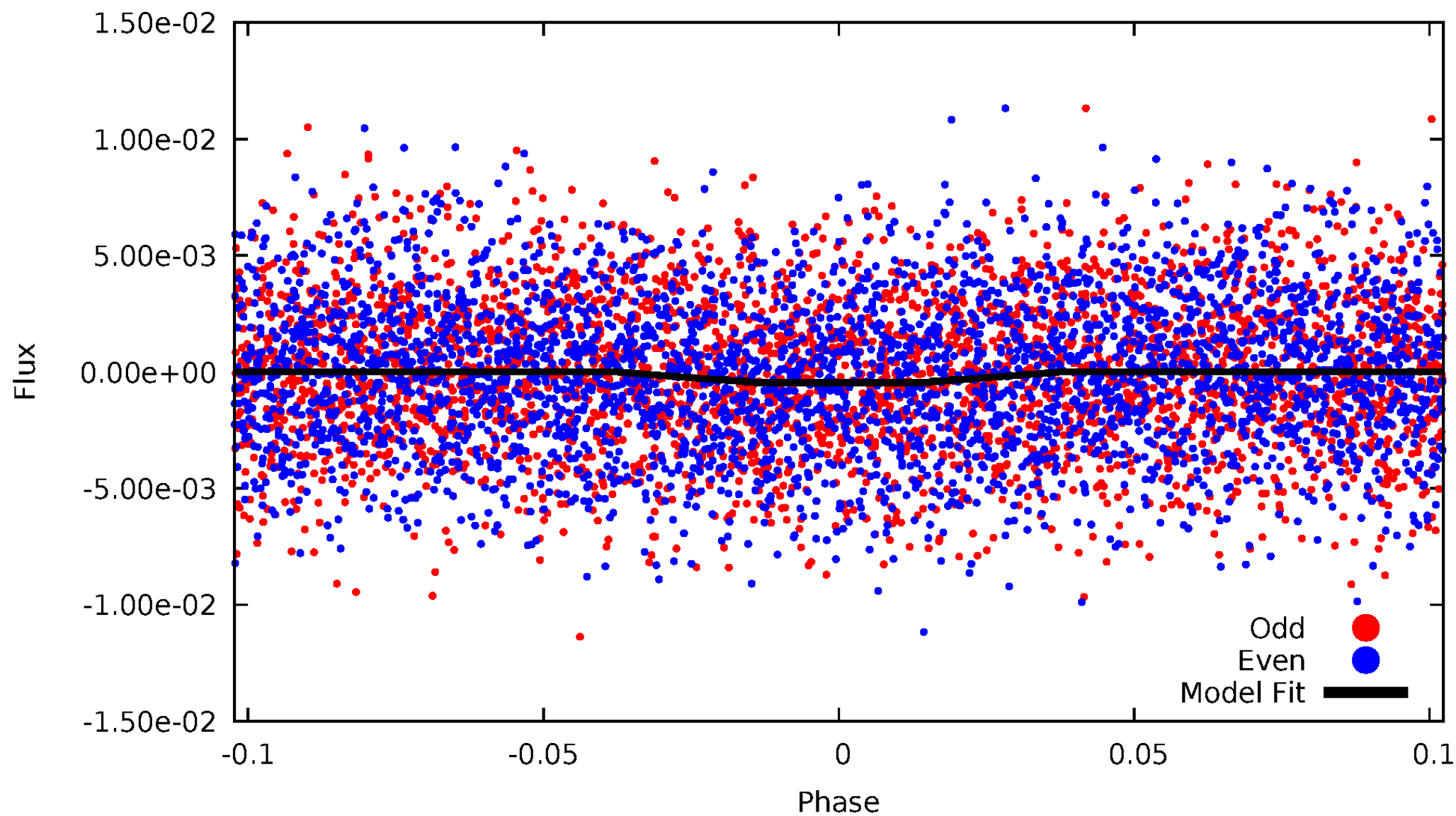
# DV Odd/Even

TCE 003868284-02



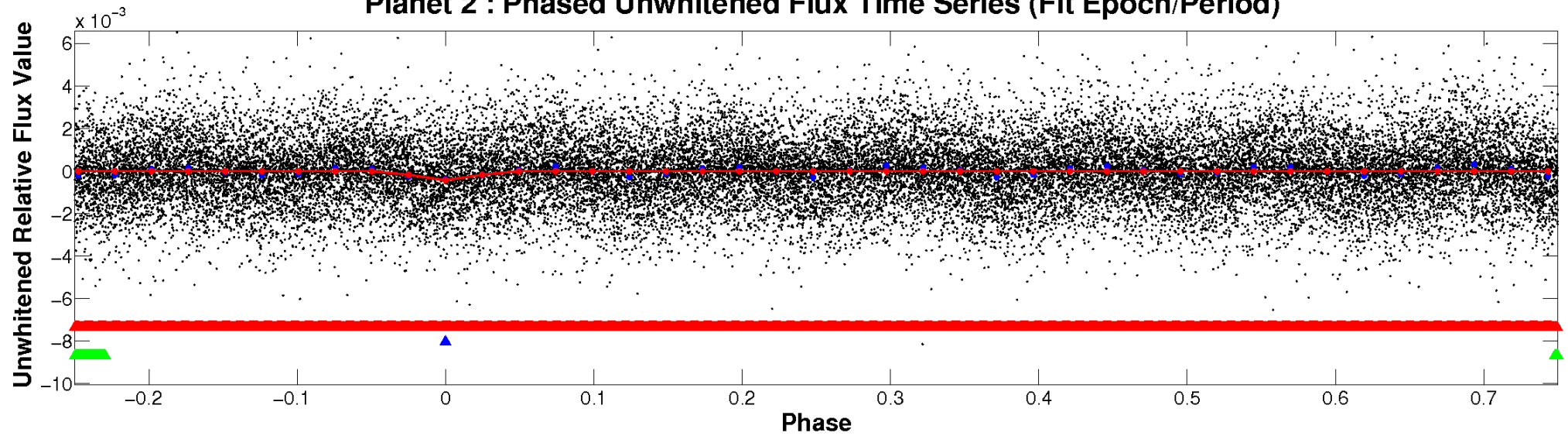
ALT Odd/Even

TCE 003868284-02

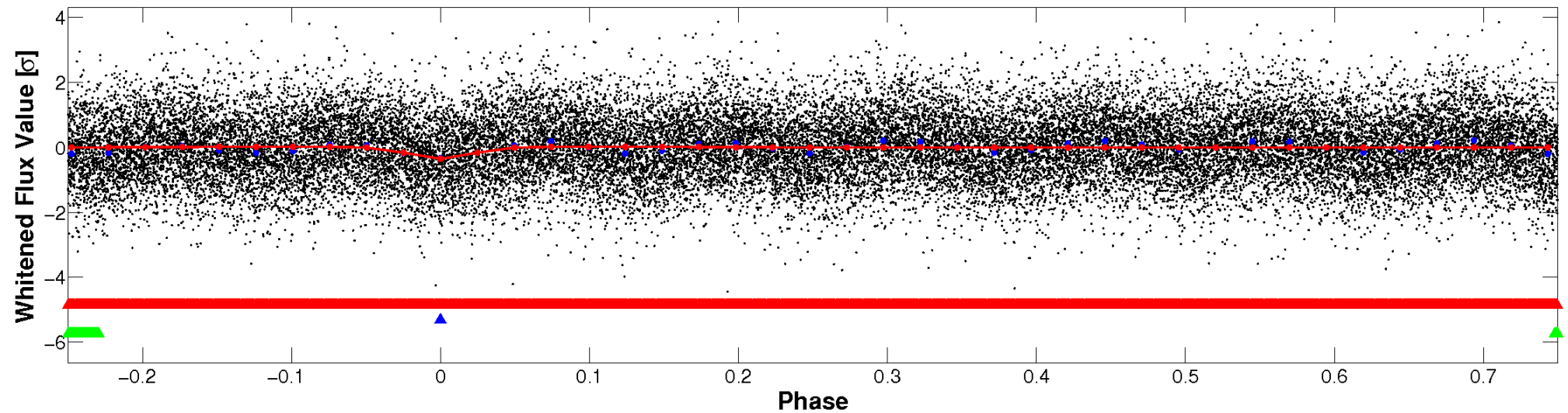


# Non-Whitened Vs. Whitened Light Curve

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

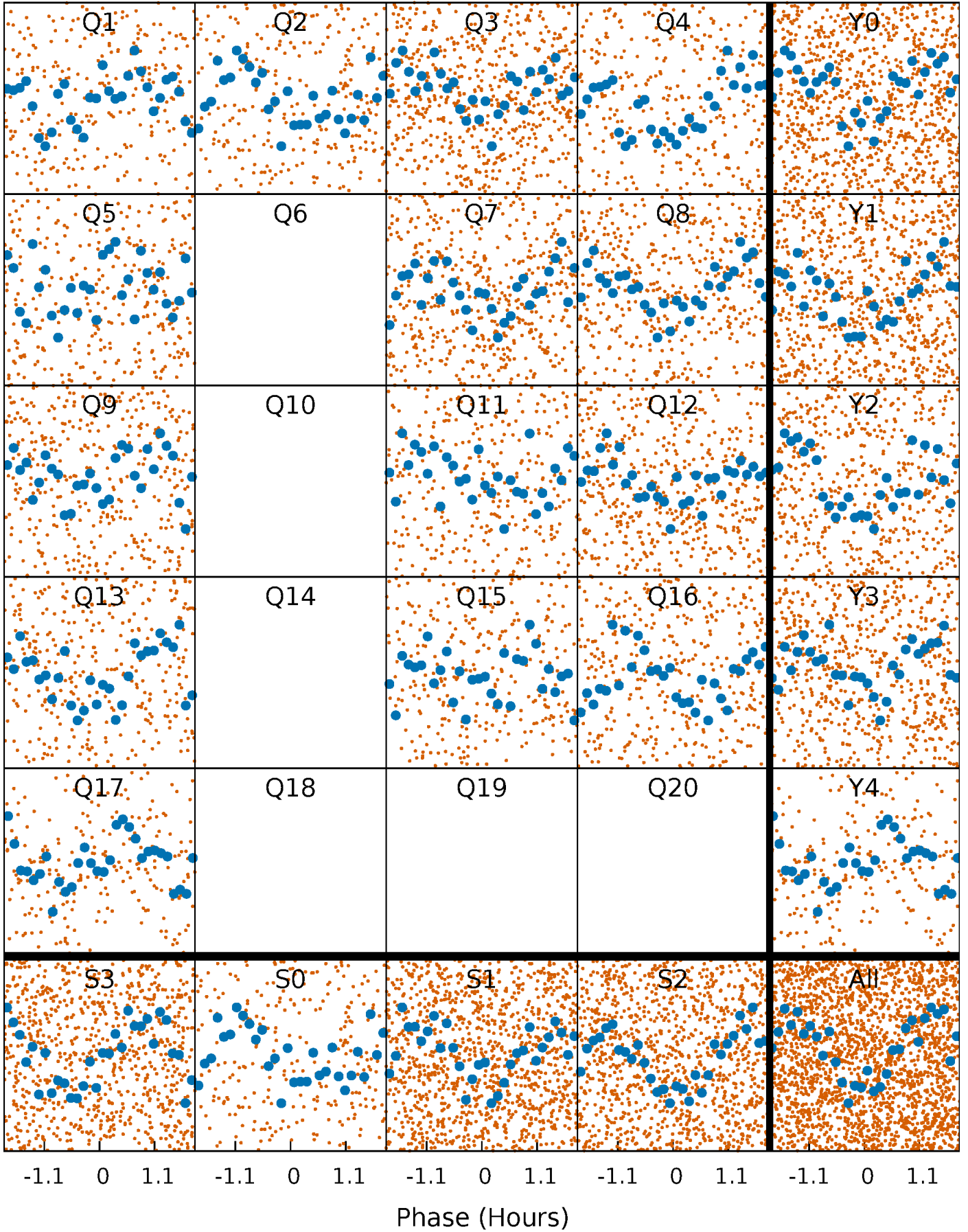


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

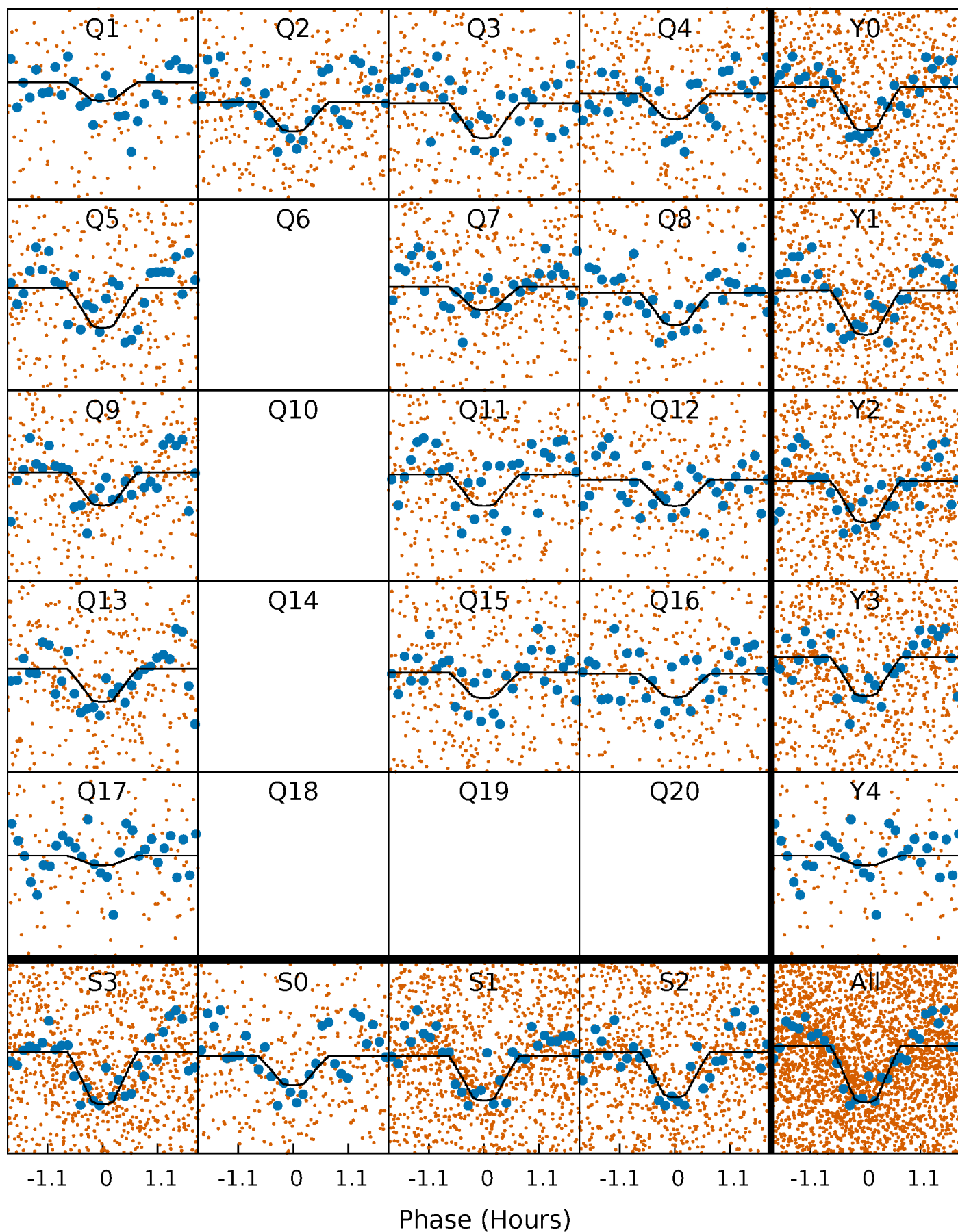
TCE 003868284-02   P= 0.824824 Days    $T_0=132.258240$  (BKJD)





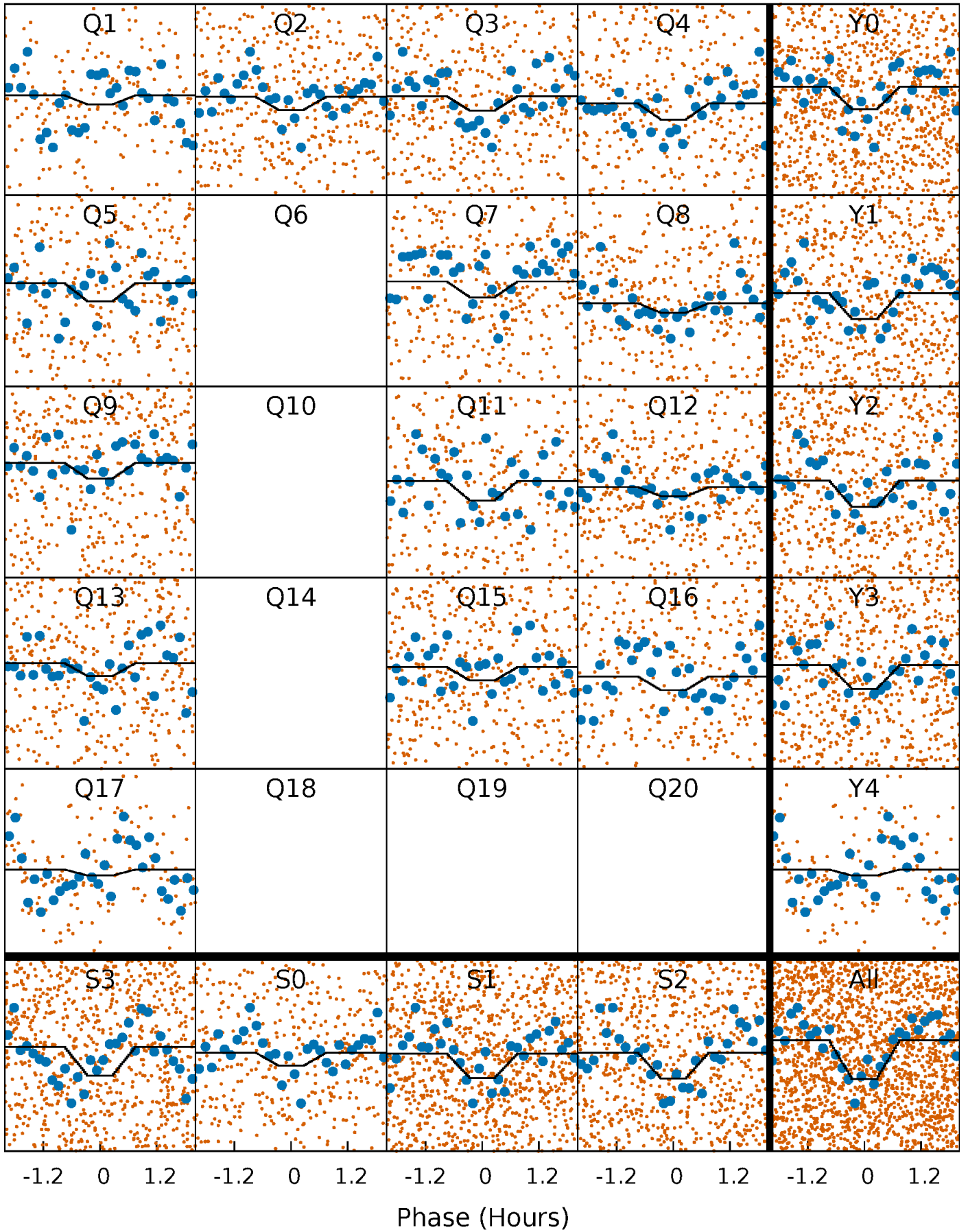
# DV Quarter-Phased Transit Curves

TCE 003868284-02   P= 0.824824 Days    $T_0=132.258240$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

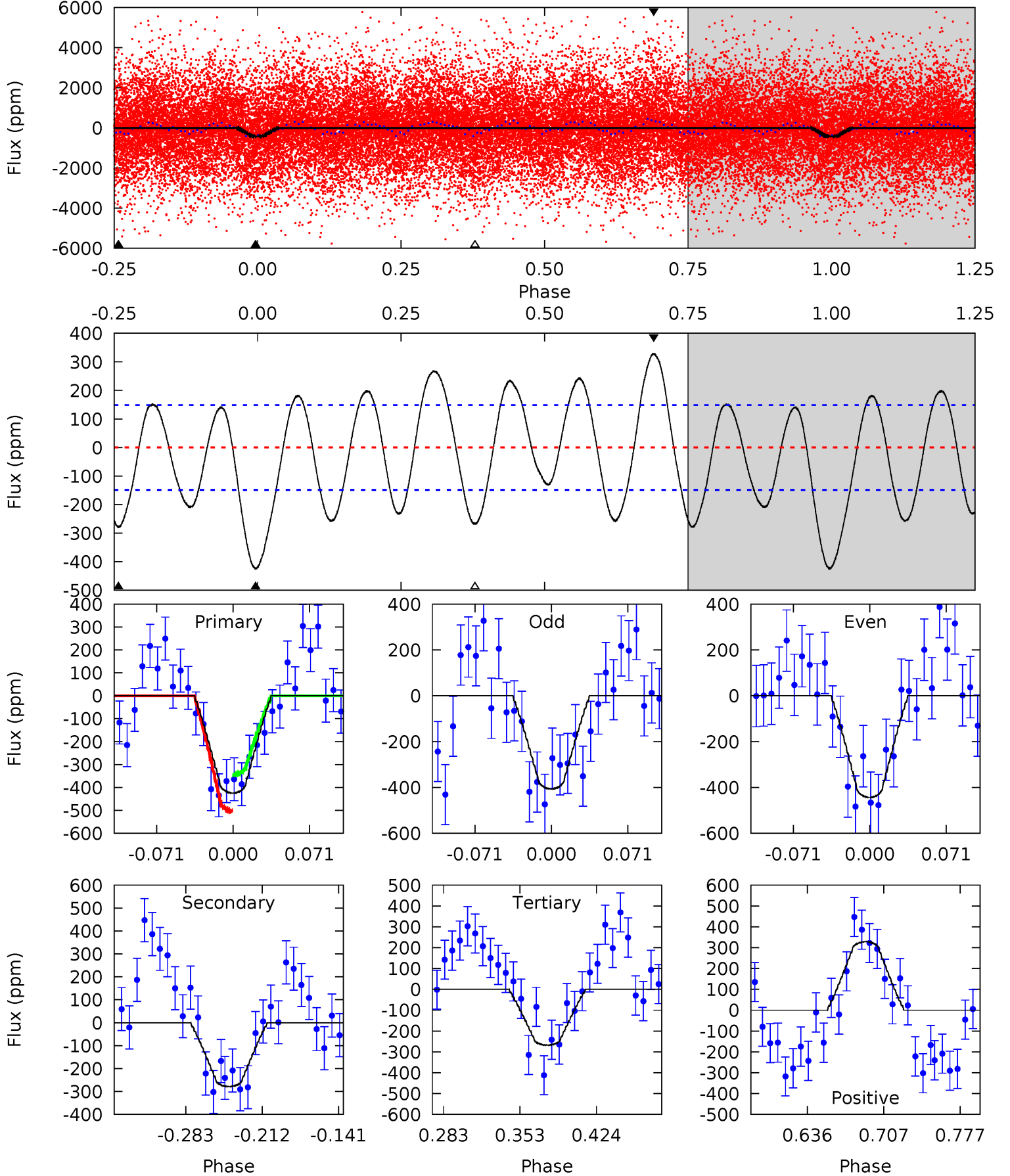
TCE 003868284-02   P= 0.824823 Days    $T_0=132.258951$  (BKJD)



# DV Model-Shift Uniqueness Test

003868284-02, P = 0.824824 Days, E = 131.433416 Days

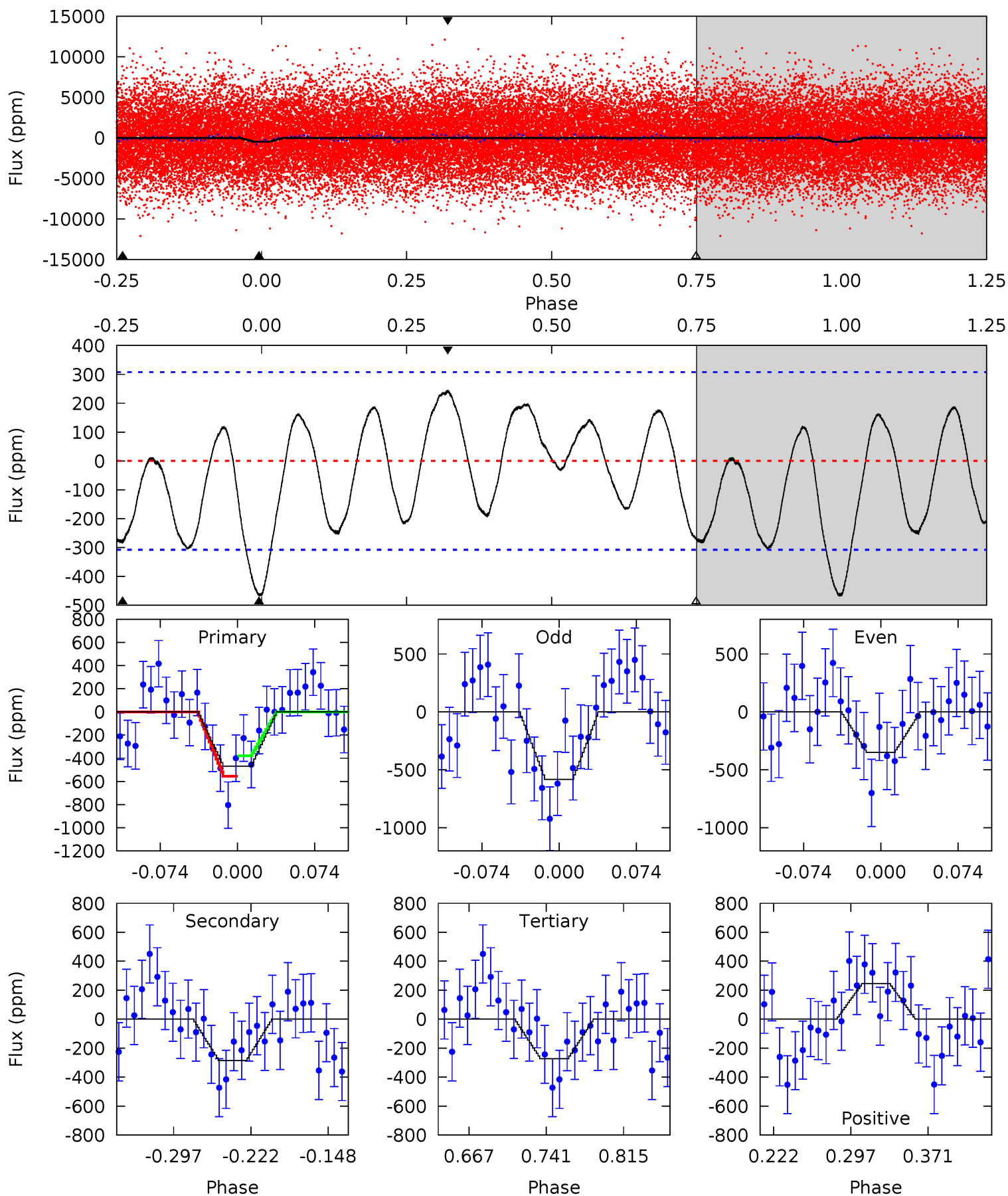
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	8.70	8.36	10.2	4.64	1.81	5.28	4.90	3.01	0.34	-1.55	0.59	0.98	0.44	2.50



# Alt Model-Shift Uniqueness Test

003868284-02, P = 0.824823 Days, E = 131.434128 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
7.05	4.29	4.09	3.69	4.63	1.79	2.23	2.95	3.35	0.19	0.60	1.74	1.00	0.34	1.31





### Stellar Parameters For KIC 003868284

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7687^{+212}_{-345}$	$3.713^{+0.400}_{-0.100}$	$0.070^{+0.200}_{-0.350}$	$3.409^{+0.545}_{-1.525}$	$2.189^{+0.270}_{-0.585}$	$0.078^{+0.304}_{-0.024}$
	+3%/-4%	+11%/-3%	+286%/-500%	+16%/-45%	+12%/-27%	+390%/-30%
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 003868284-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-279 \pm 32$	$7.41^{+5.12}_{-4.52}$	$5666^{+416}_{-675}$	$6127^{+5239}_{-1913}$	$1.410^{+7.002}_{-0.933}$
Alt.	$-285 \pm 66$	$7.62^{+5.48}_{-4.05}$	$5671^{+405}_{-548}$	$5986^{+4407}_{-1986}$	$1.297^{+4.810}_{-0.868}$

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

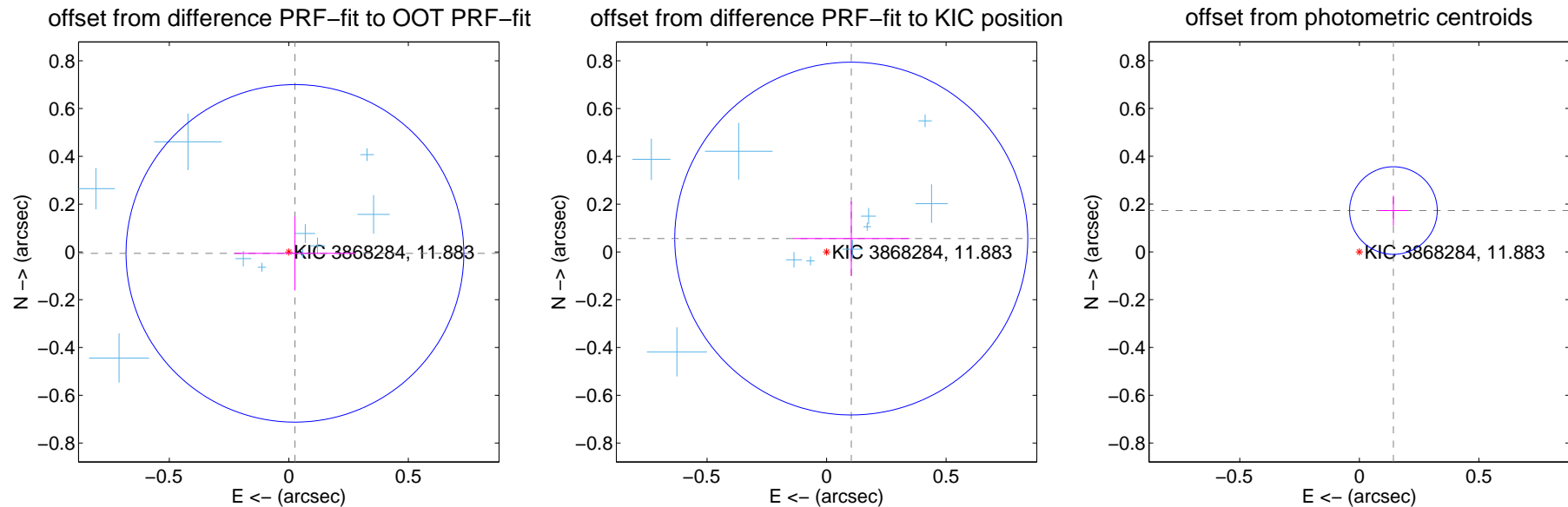
## DV Centroid Data

Supplemental centroid analysis for 003868284-02. **Kepler magnitude: 11.88.** Transit SNR 12.06

There are 13 quarters with good PRF difference image offsets

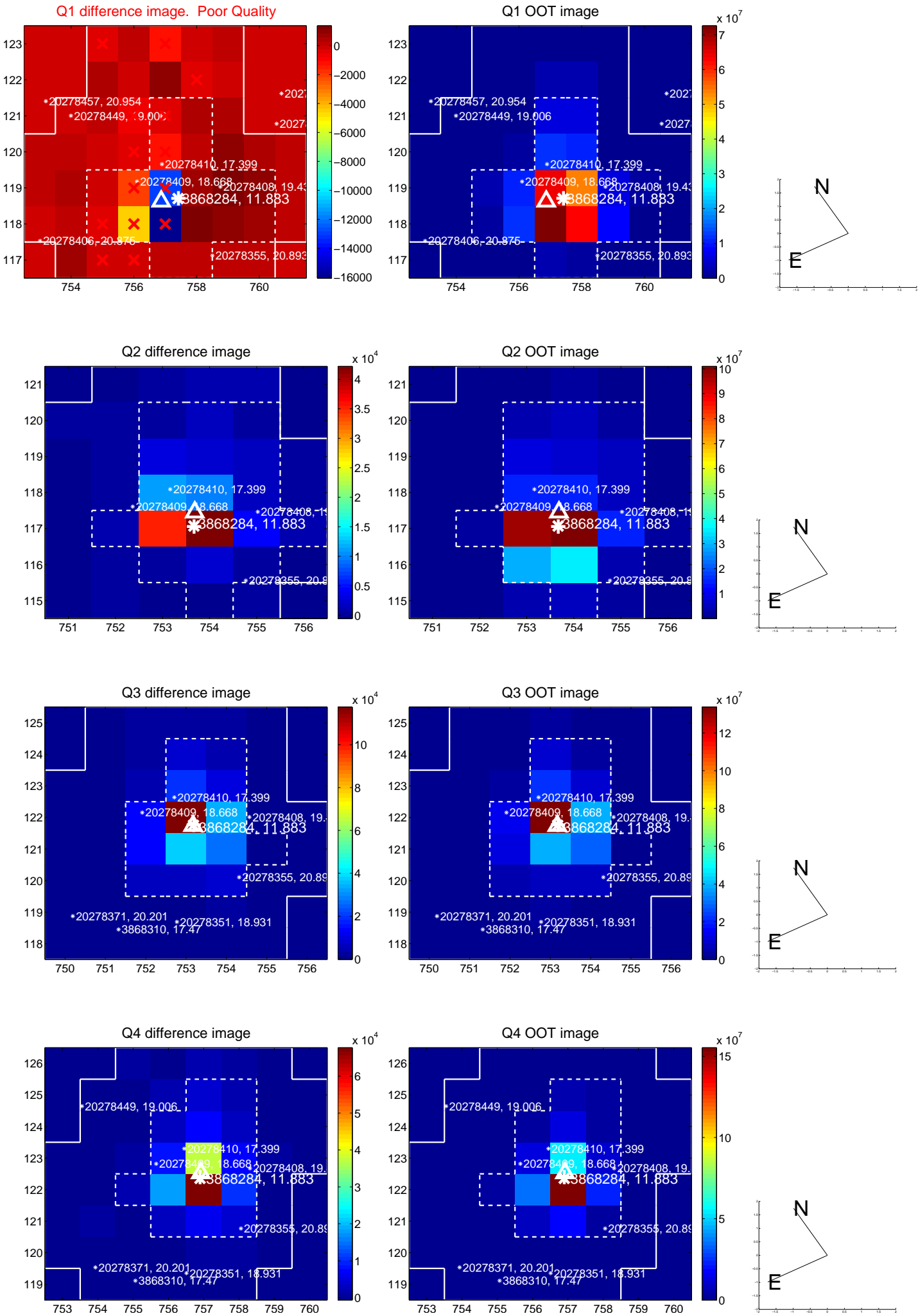
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.026 \pm 0.235$	0.11	$-0.026 \pm 0.254$	$-0.006 \pm 0.154$
PRF-fit source offset from KIC position	$0.117 \pm 0.246$	0.48	$-0.103 \pm 0.244$	$0.056 \pm 0.156$
photometric centroid source offset	<b><math>0.22 \pm 0.06</math></b>	<b>3.67</b>	$-0.14 \pm 0.06$	$0.17 \pm 0.06$

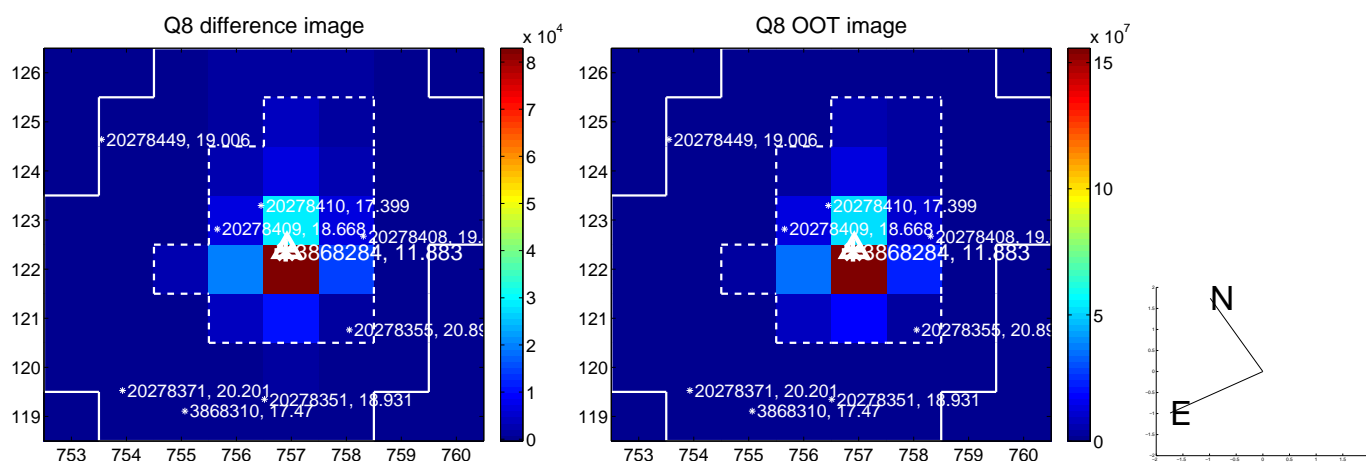
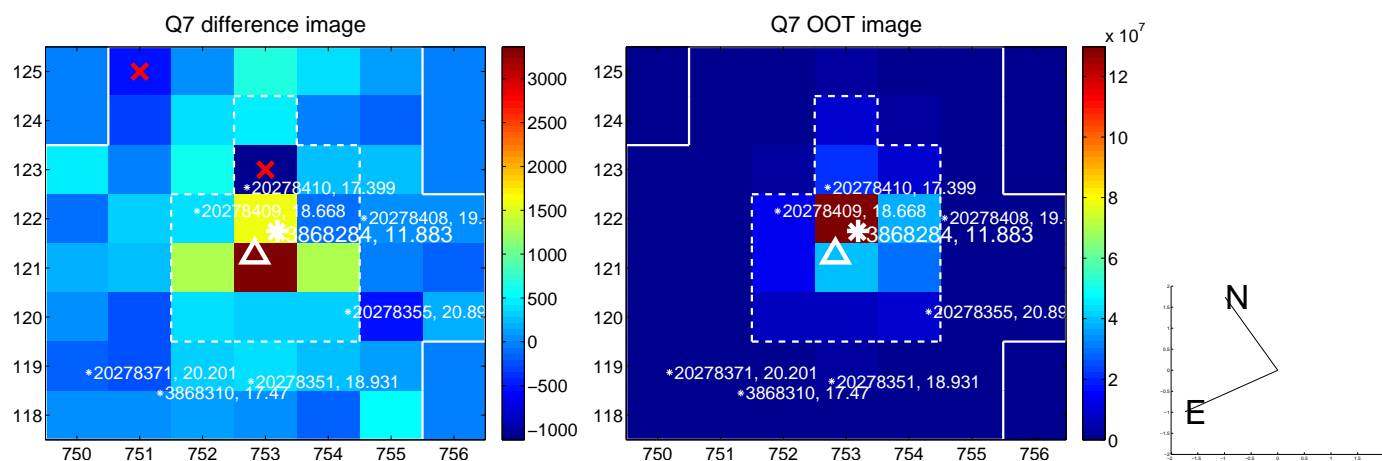
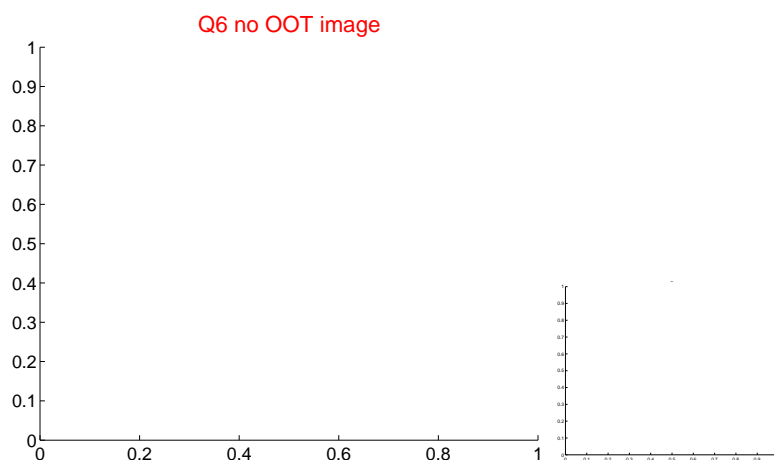
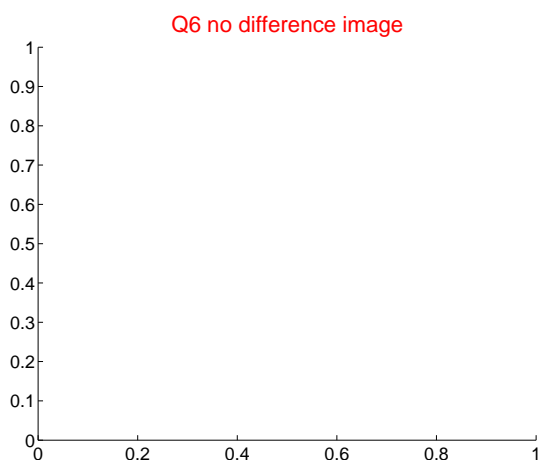
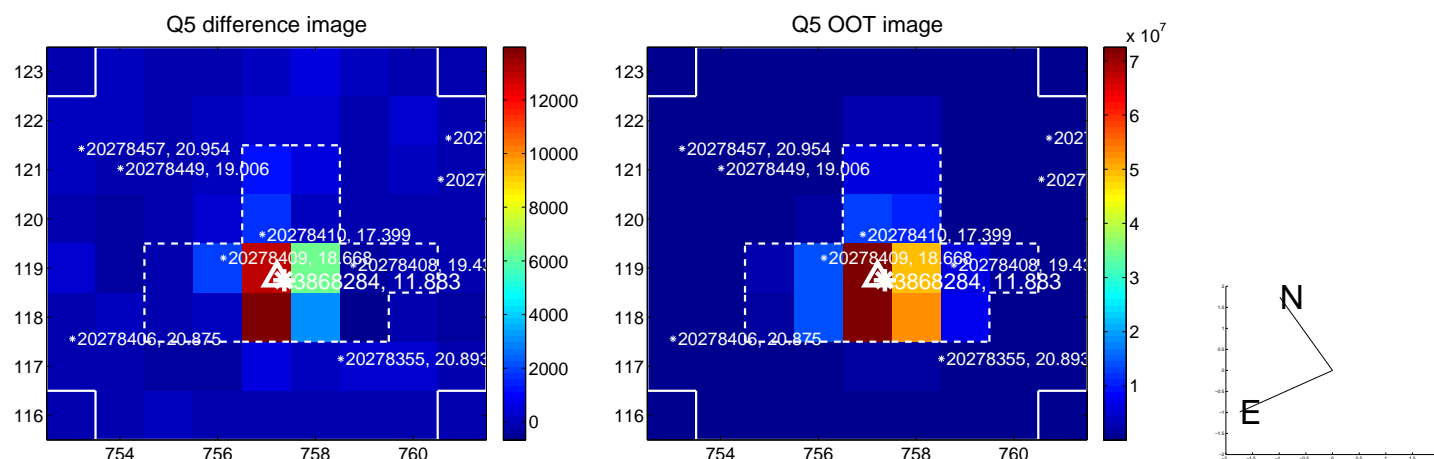


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

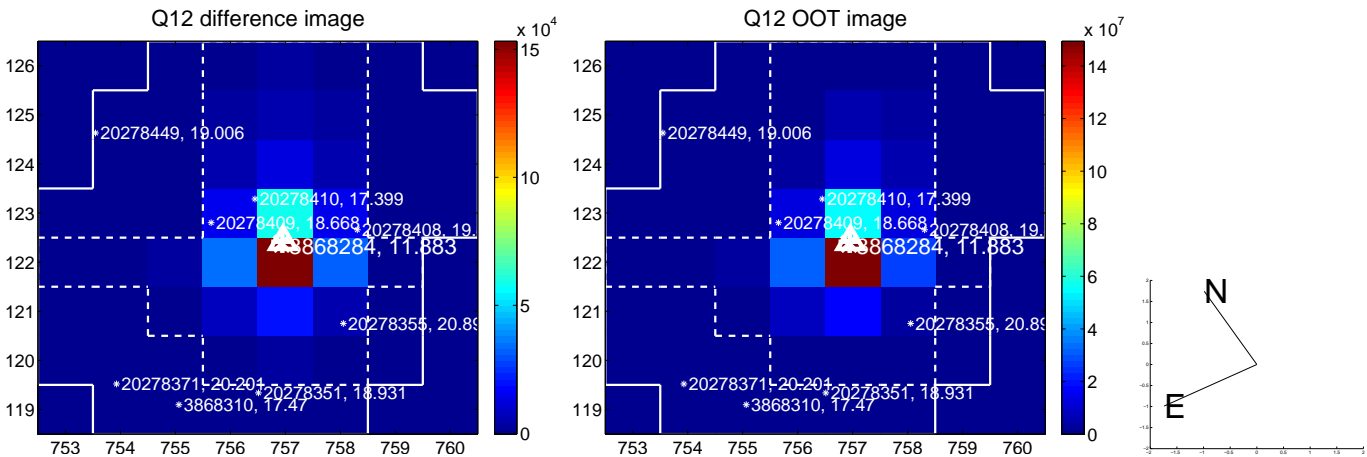
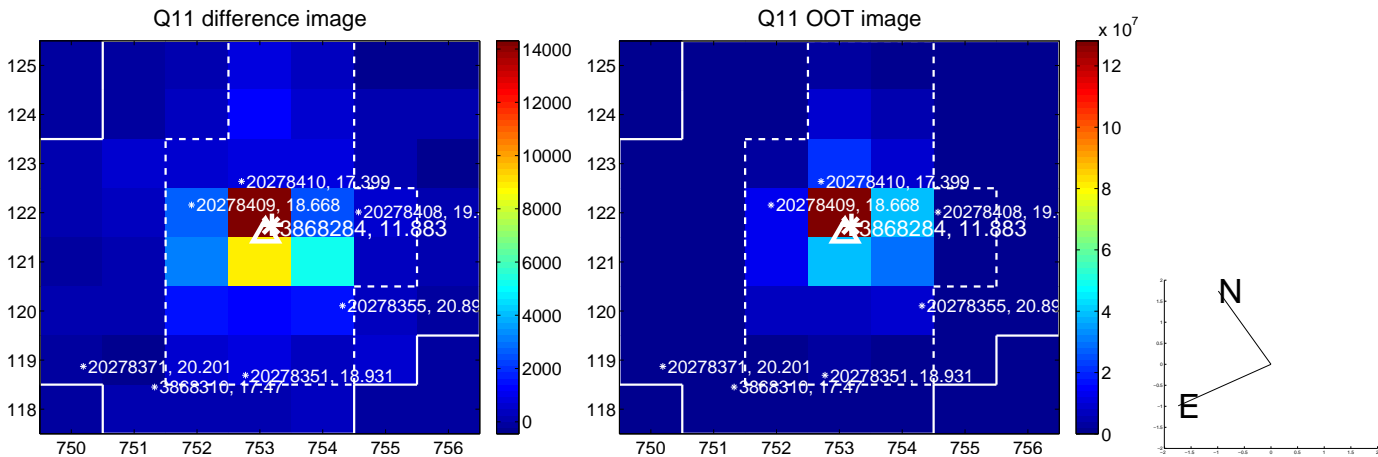
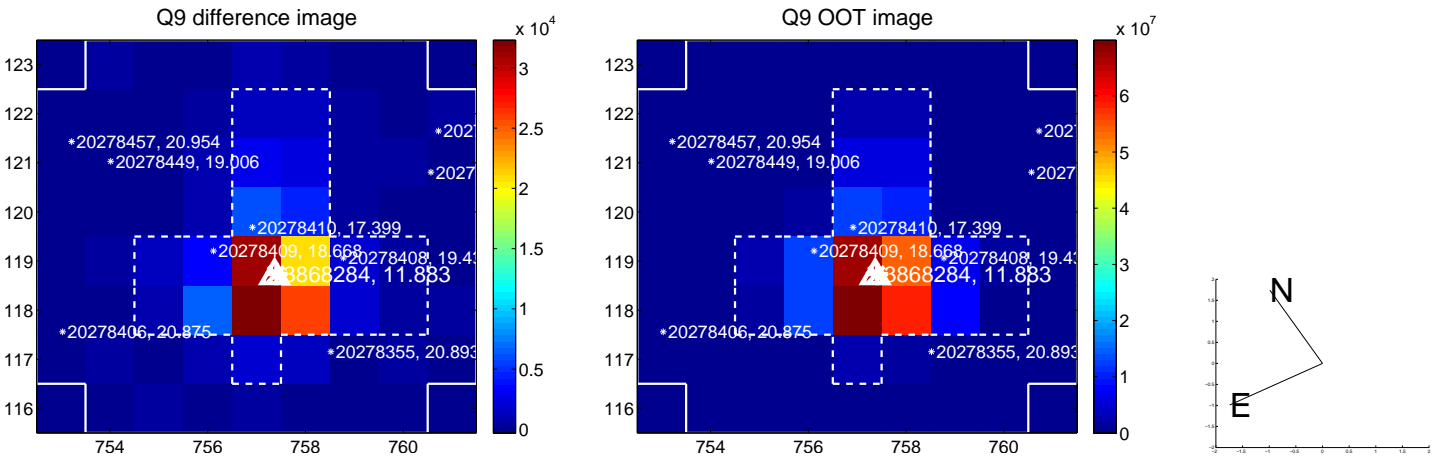
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

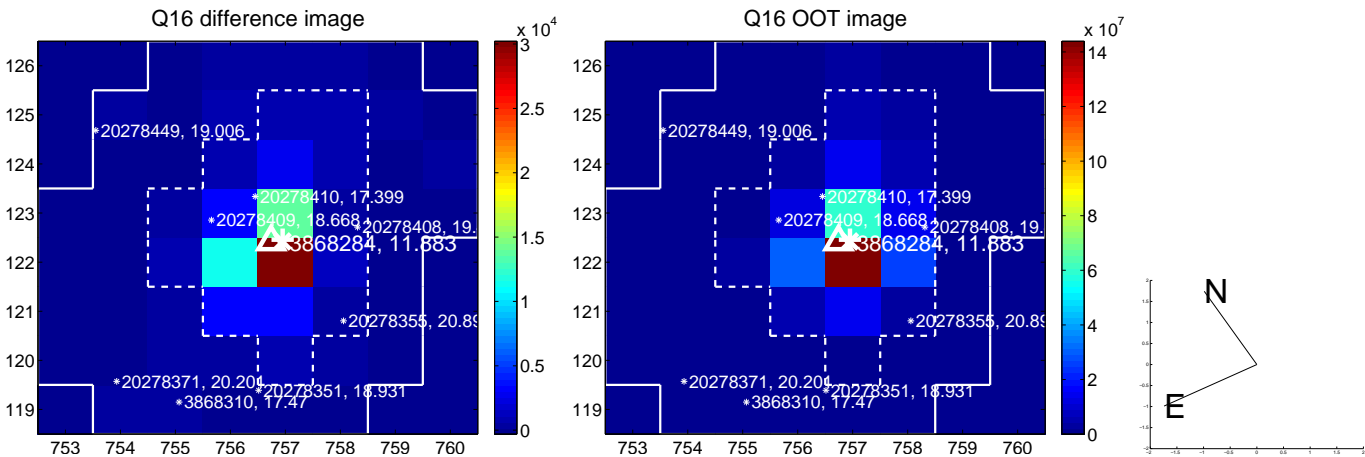
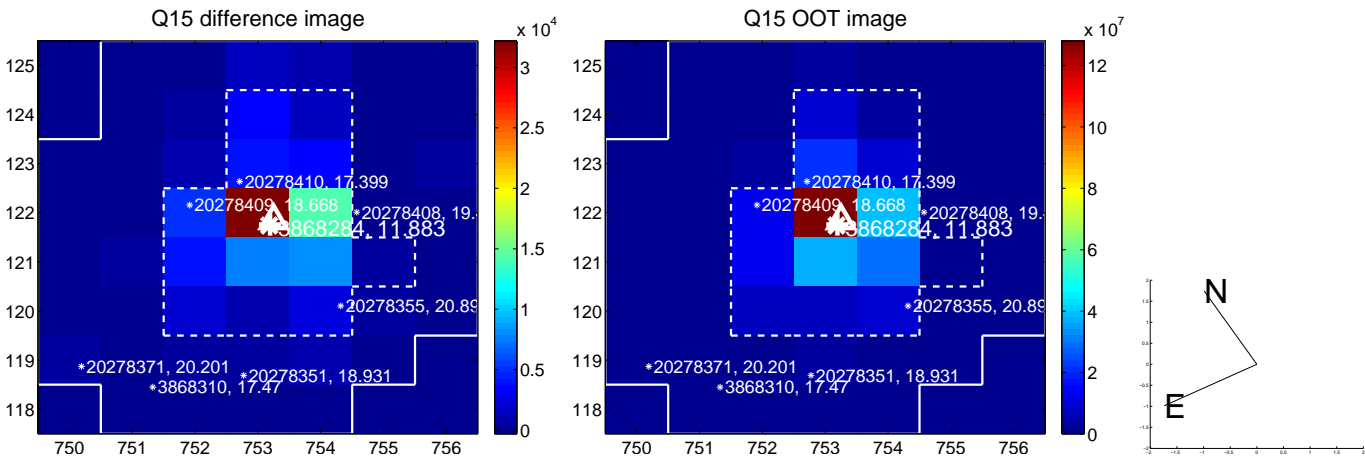
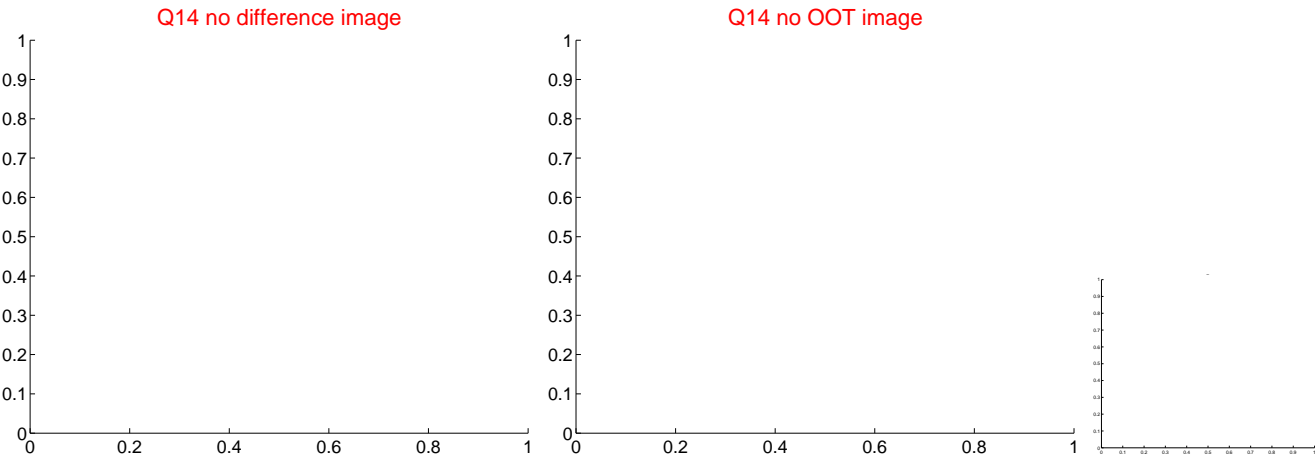
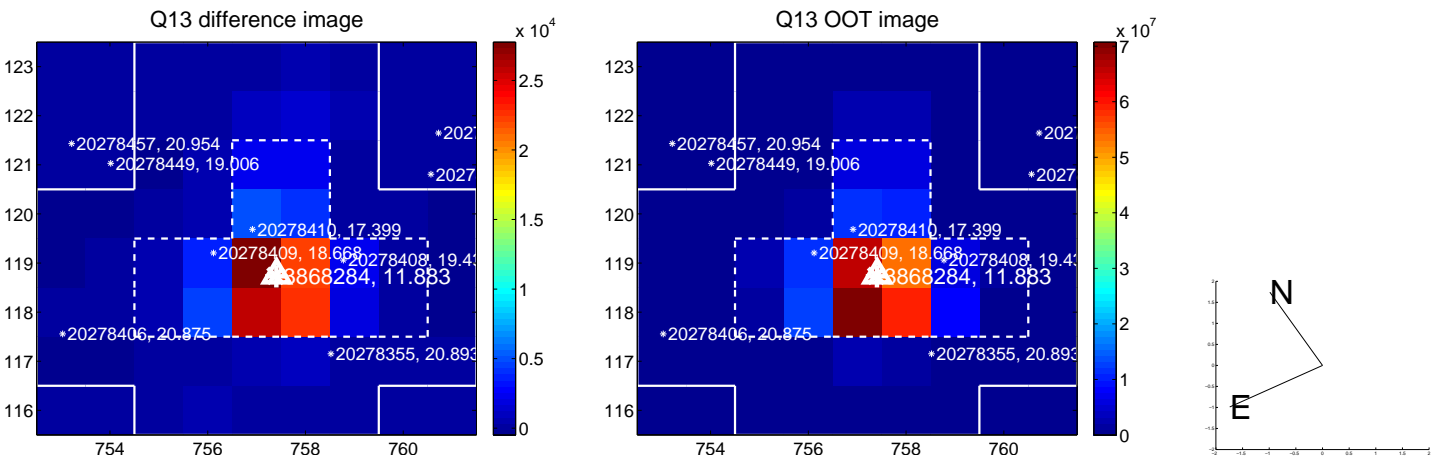


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

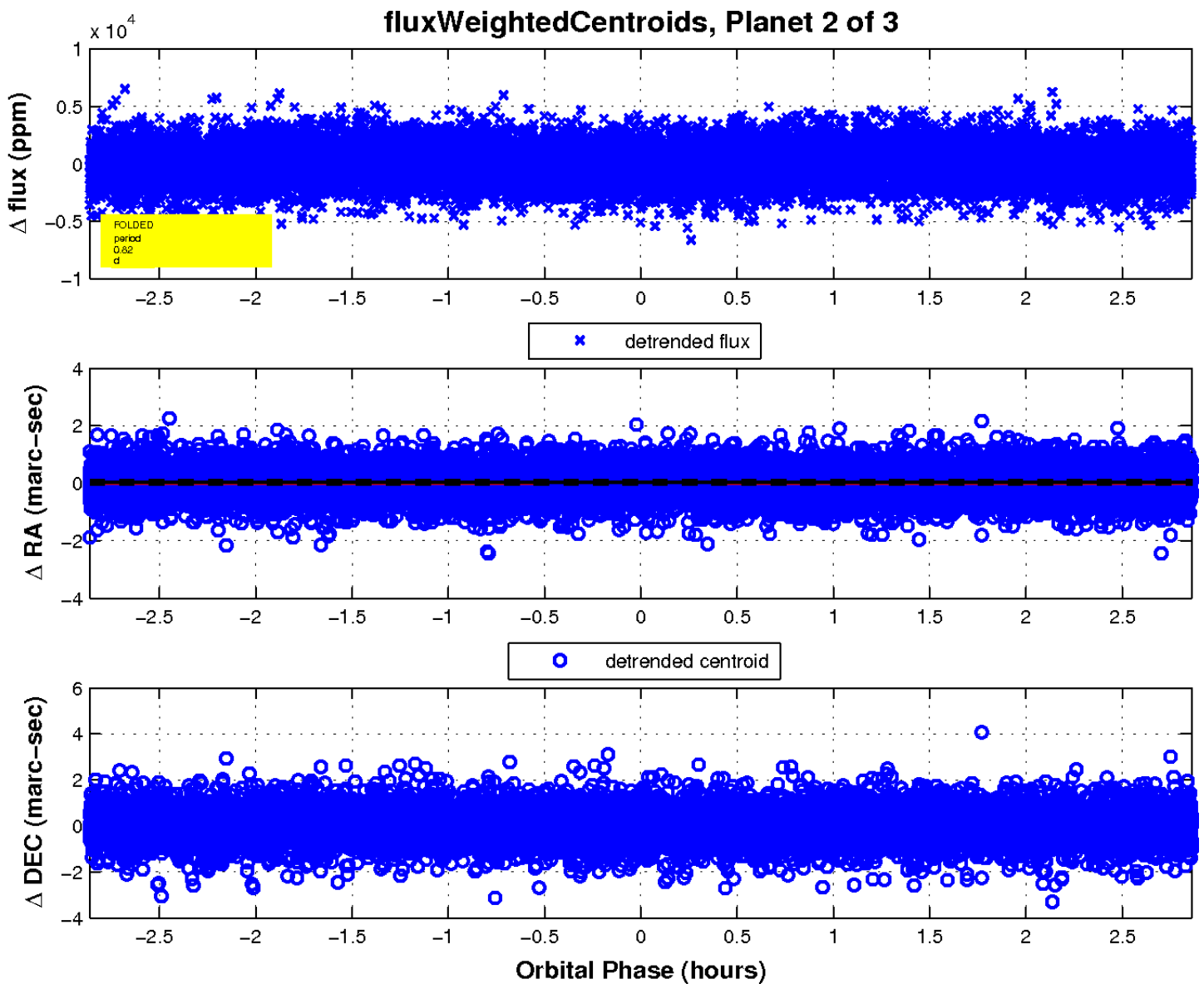
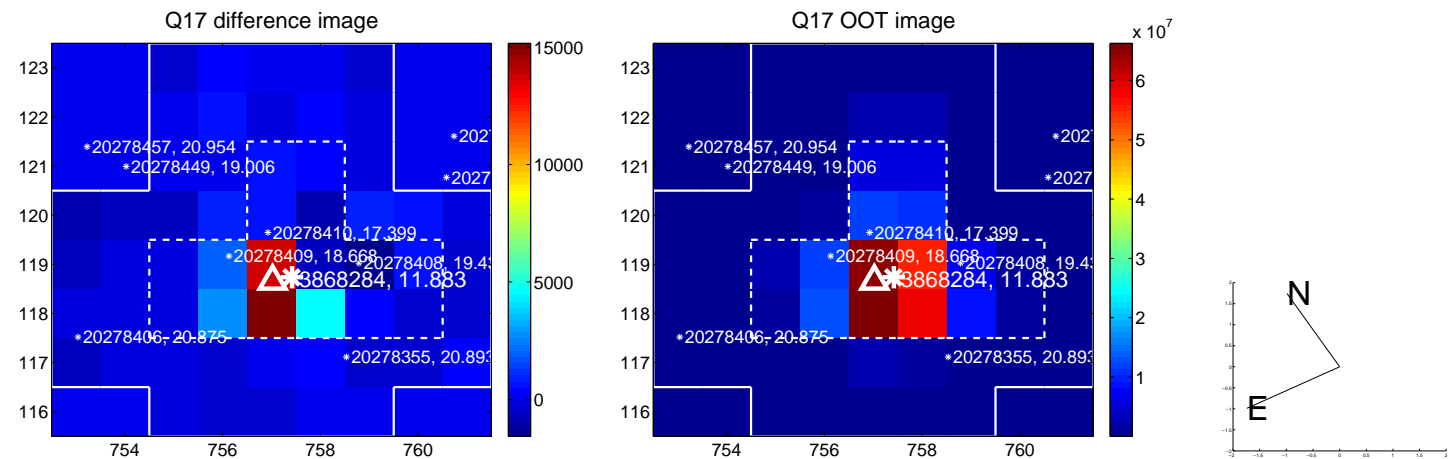




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

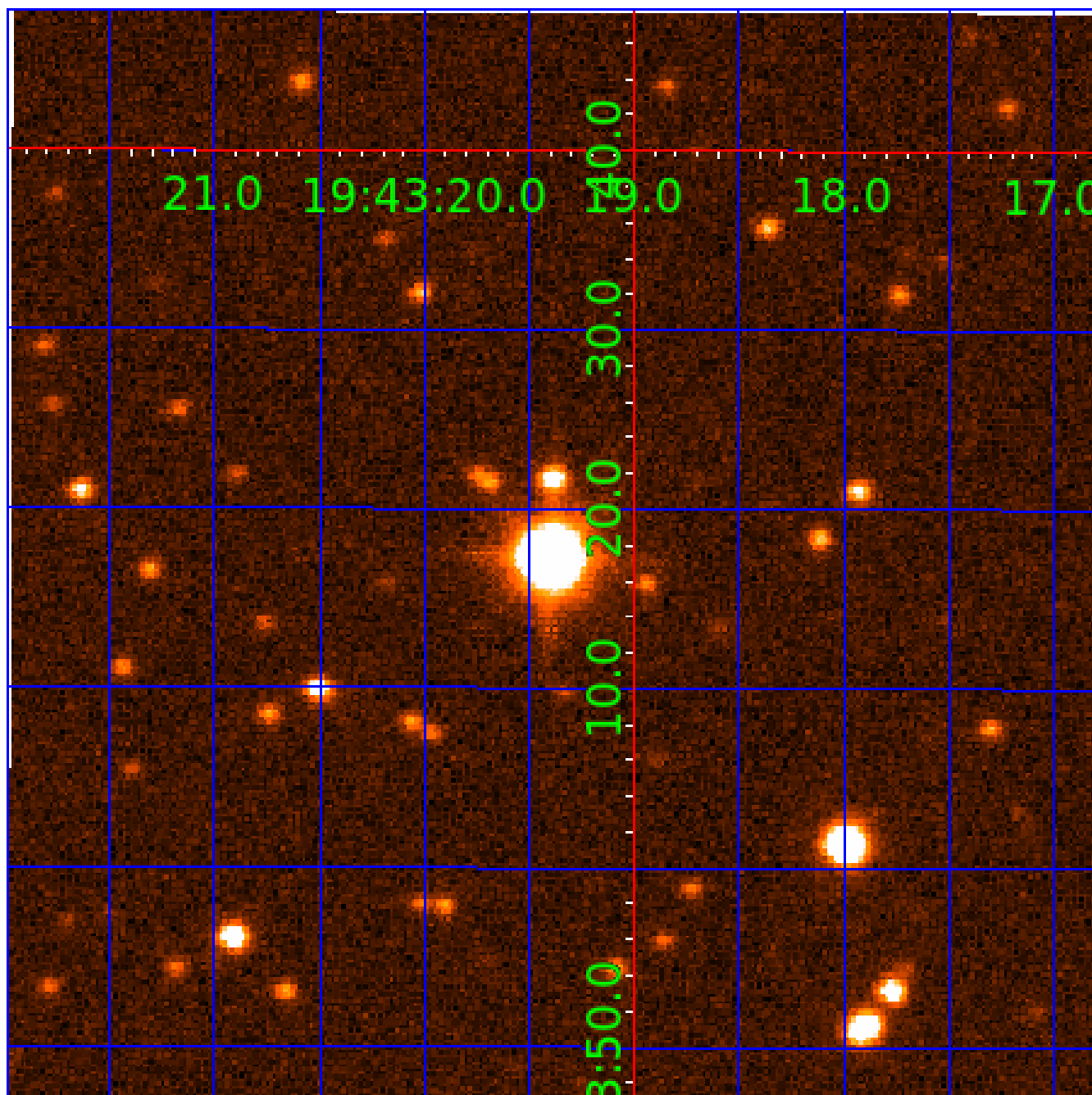


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\Delta$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 003868284

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003868284-01	OBS	No	0.542638	131.936005	246.4	0.977	9.0	11.1	3.41	7687	6.27	127153.04
003868284-02	OBS	No	0.824824	132.258240	444.3	0.954	8.7	12.1	3.41	7687	7.33	72754.24
003868284-03	OBS	No	0.824834	132.050235	339.1	1.158	7.5	9.7	3.41	7687	7.34	72752.98

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003868284-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
003868284-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003868284-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

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

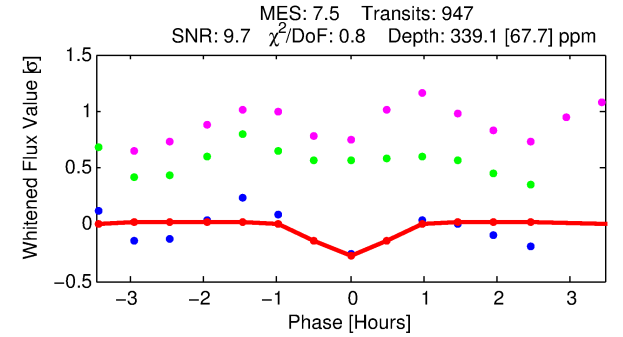
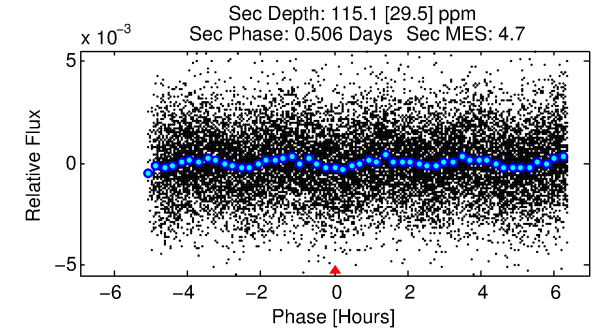
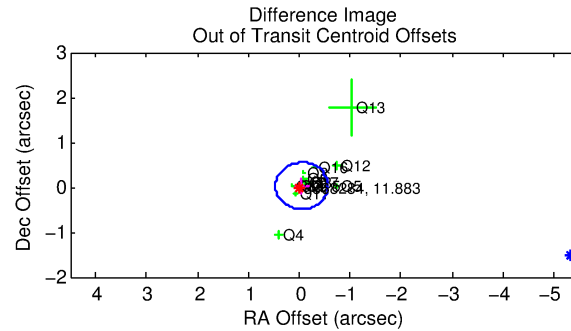
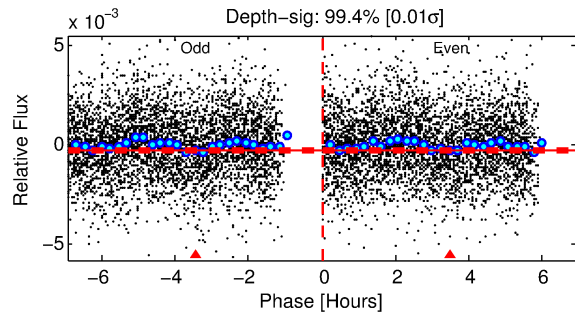
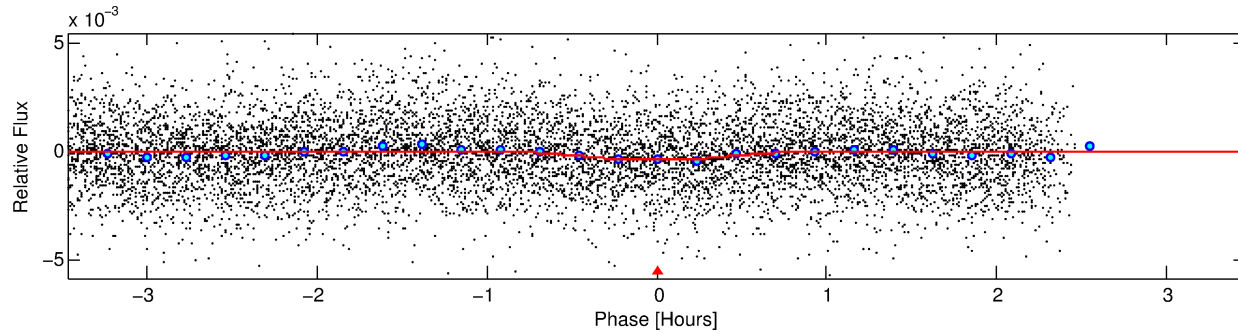
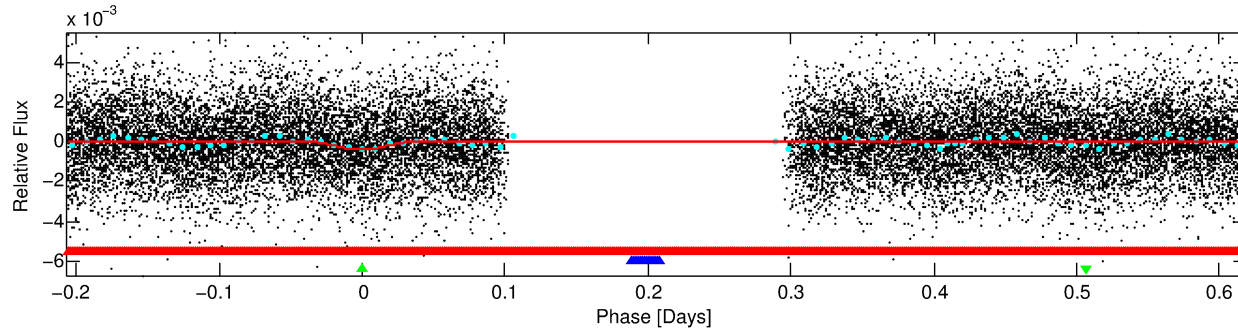
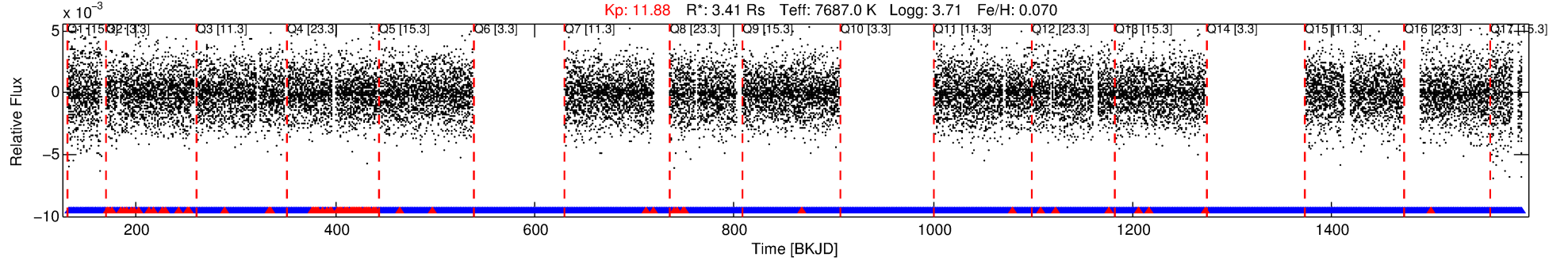
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 003868284-03

No Significant Match Found

# DV One-Page Summary

KIC: 3868284 Candidate: 3 of 3 Period: 0.825 d



## DV Fit Results:

Period = 0.82483 [0.00001] d  
Epoch = 132.0502 [0.0023] BKJD  
Rp/R\* = 0.0197 [0.0156]  
a/R\* = 2.77 [11.51]  
b = 0.90 [1.02]  
Seff = 72752.98 [51351.13]  
Teq = 4188 [739] K  
Rp = 7.34 [6.68] Re  
a = 0.0224 [0.0096] AU  
Ag = 0.59 [1.02] [-0.40 $\sigma$ ]  
Teff = 5668 [2288] K [0.62 $\sigma$ ]

## DV Diagnostic Results:

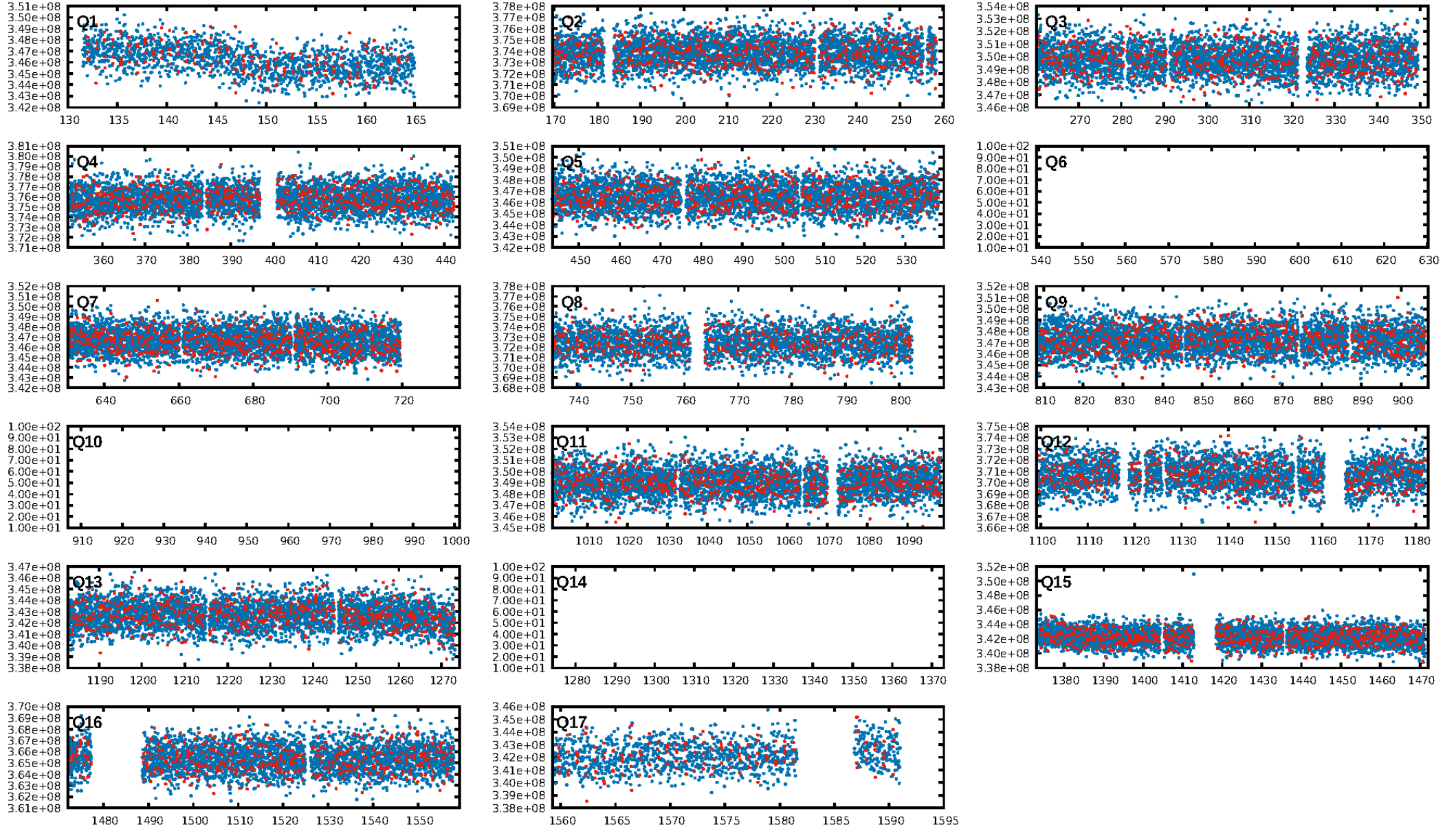
ShortPeriod-sig: 0.0% [0.00 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 6.10e-23  
RollingBand-fgt: 0.91 [814/893]  
GhostDiagnostic-chr: 1.179  
Centroid-sig: N/A  
Centroid-so: 0.202 arcsec [2.75 $\sigma$ ]  
OotOffset-rm: 0.058 arcsec [0.33 $\sigma$ ]  
KicOffset-rm: 0.108 arcsec [0.61 $\sigma$ ]  
OotOffset-st: 1/4/4/5 [14]  
KicOffset-st: 1/4/4/5 [14]  
DiffImageQuality-fgm: 0.71 [10/14]  
DiffImageOverlap-fno: 0.00 [0/14]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:25:12 Z

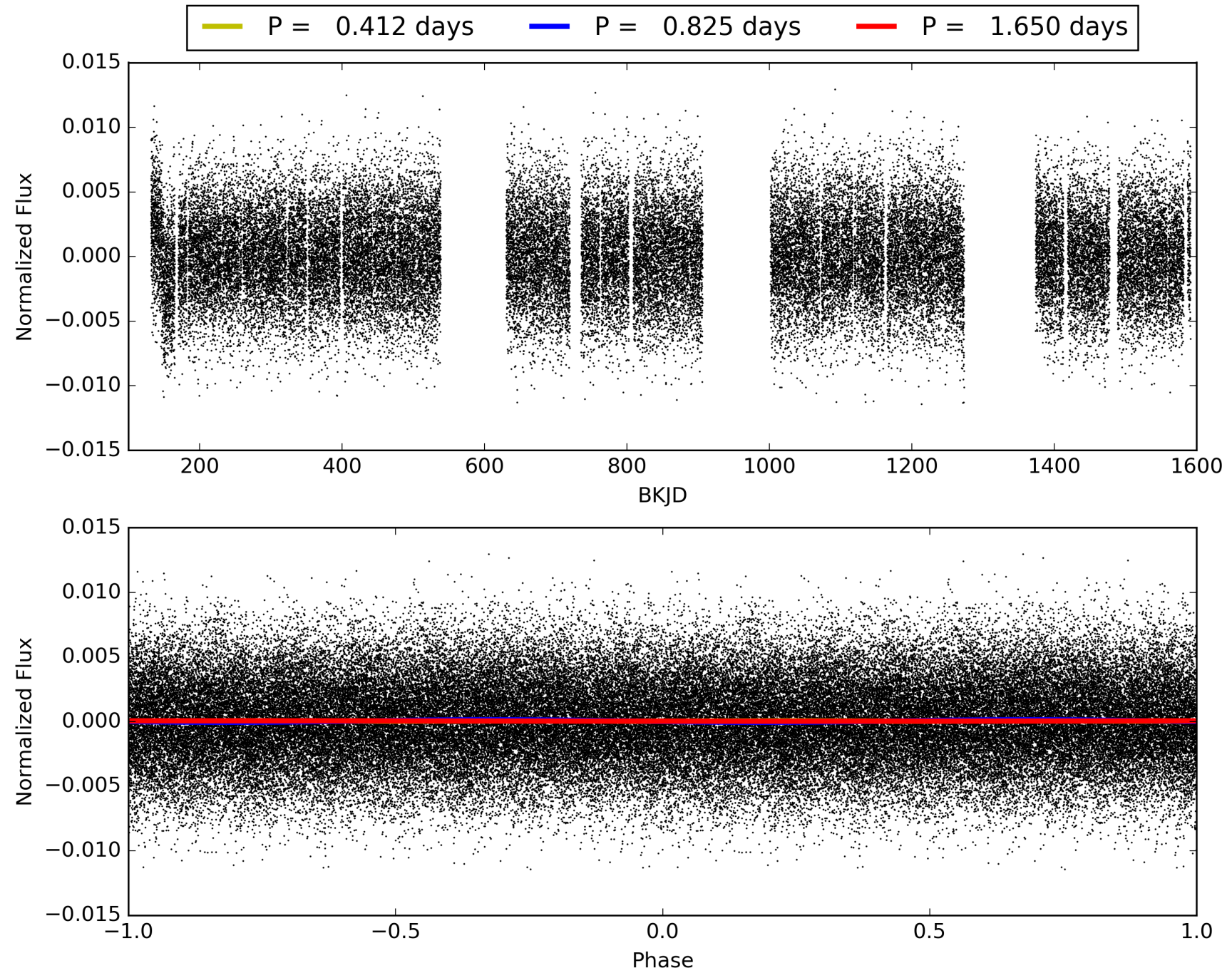
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 003868284-03, PDC Light Curves

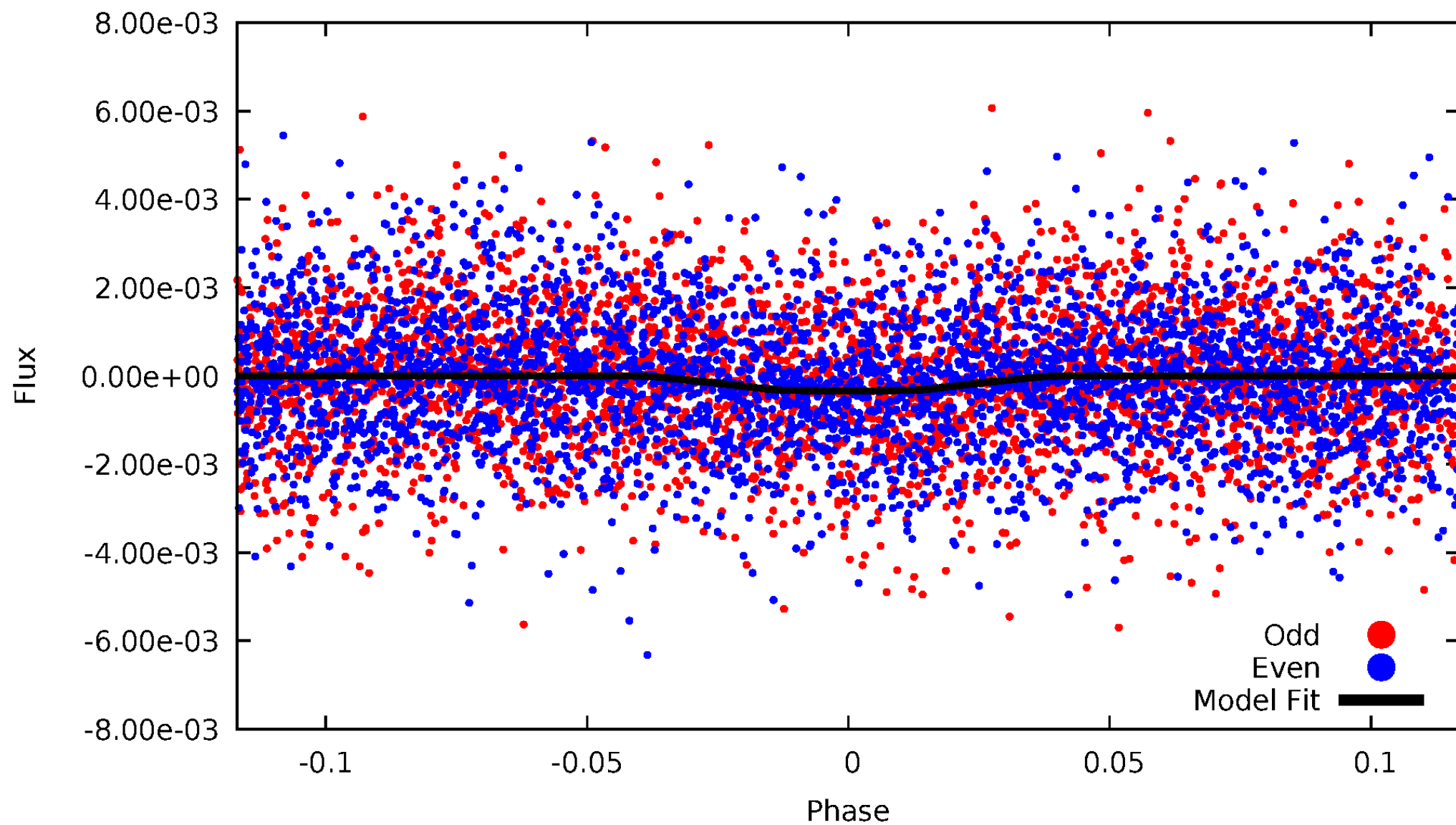


TCE 003868284-03



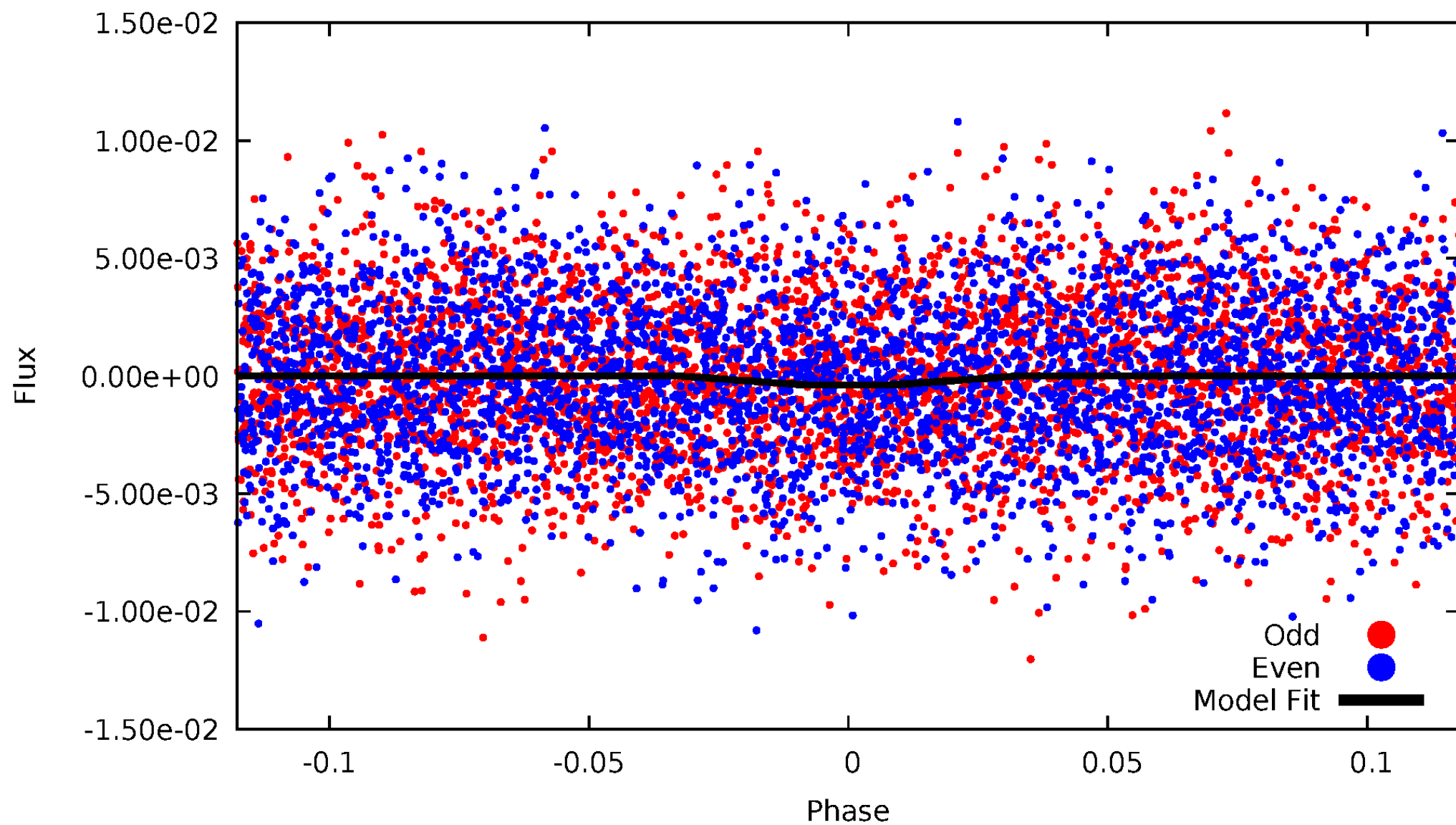
DV Odd/Even

TCE 003868284-03



# ALT Odd/Even

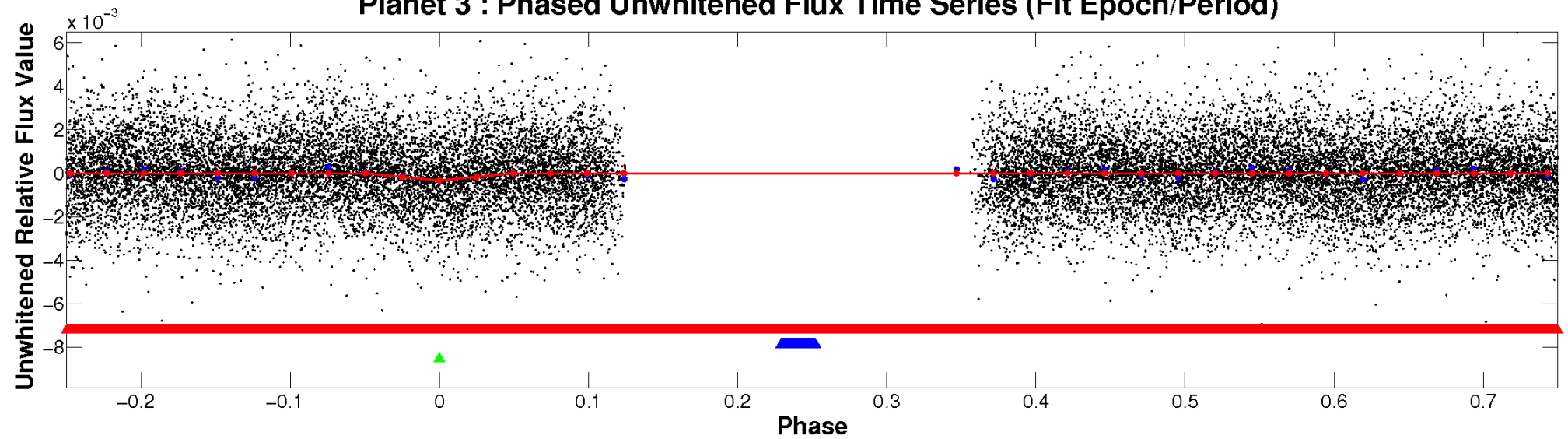
TCE 003868284-03



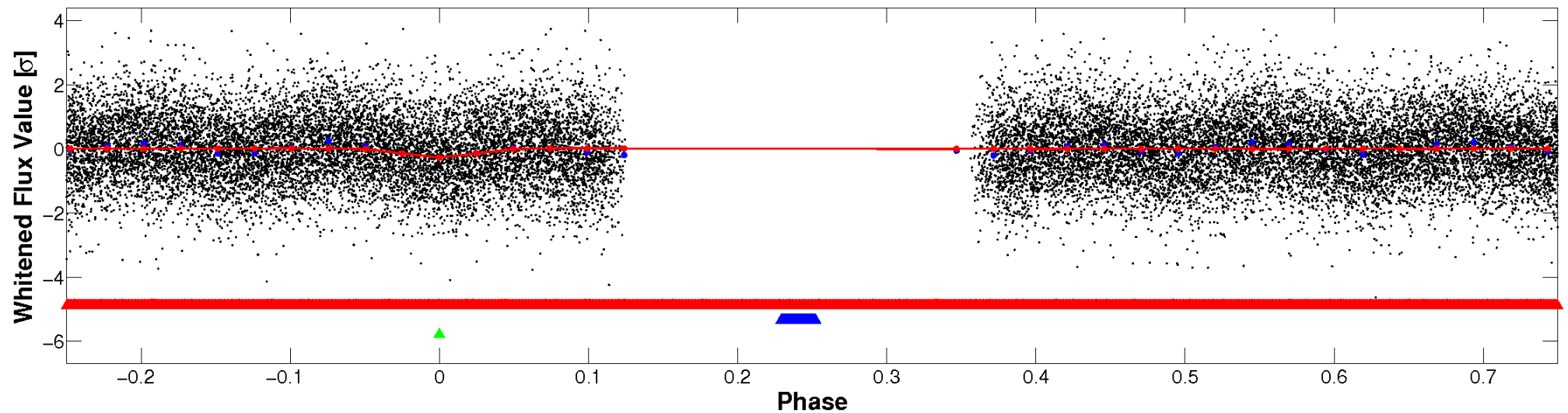


# Non-Whitened Vs. Whitened Light Curve

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



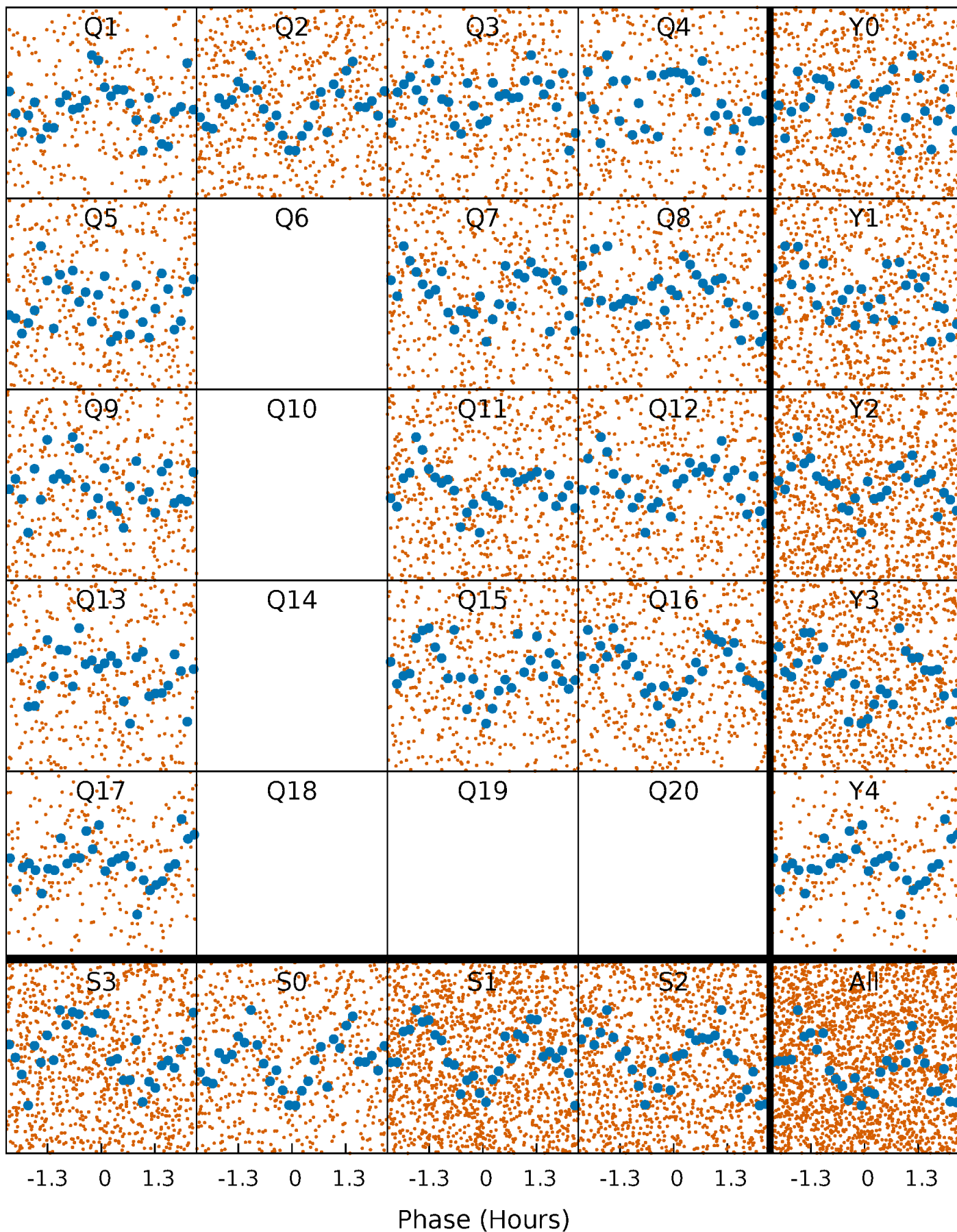
## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)





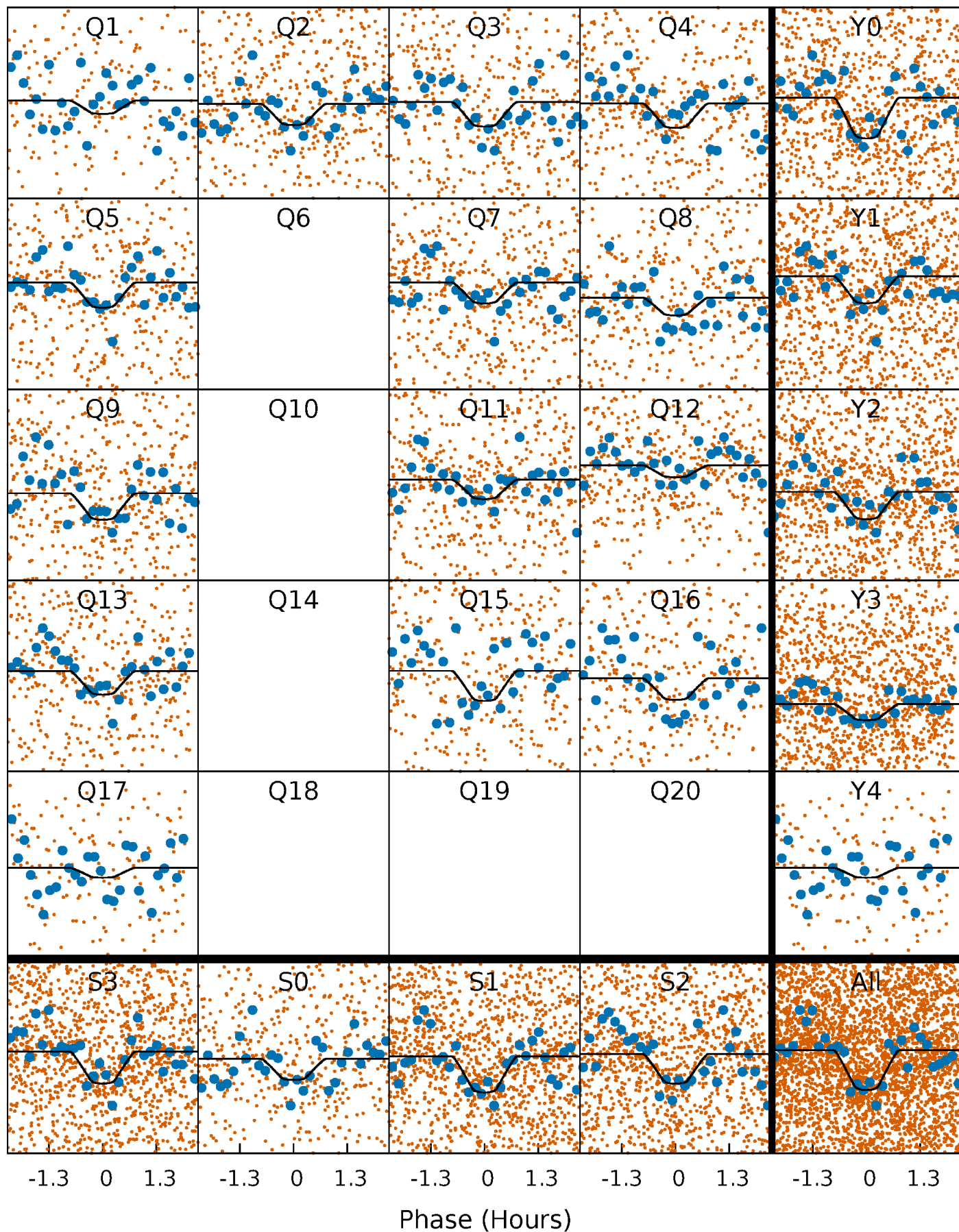
# PDC Quarter-Phased Transit Curves

TCE 003868284-03   P= 0.824834 Days    $T_0=132.050234$  (BKJD)



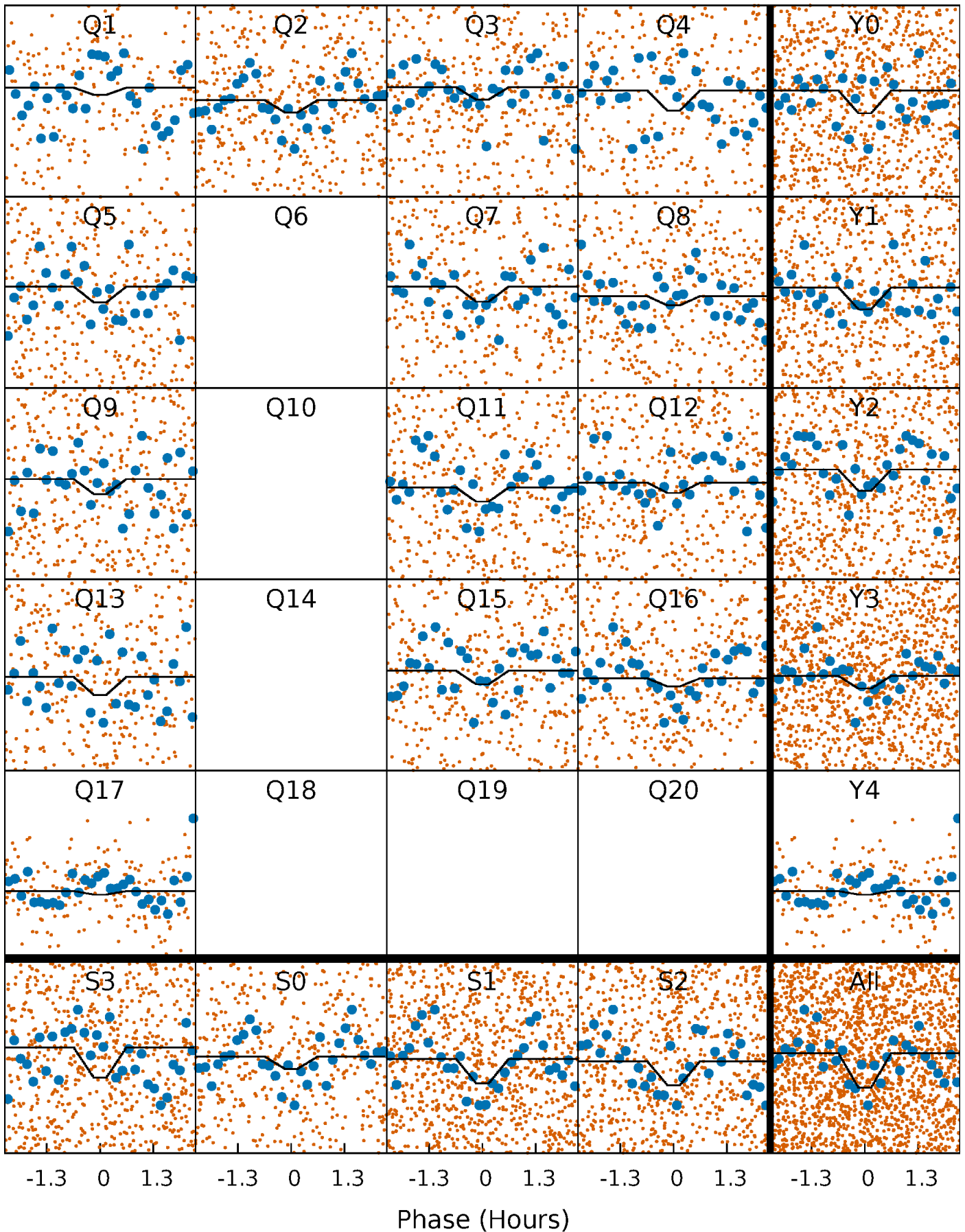
# DV Quarter-Phased Transit Curves

TCE 003868284-03   P= 0.824834 Days    $T_0=132.050234$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 003868284-03 P= 0.824830 Days  $T_0=132.049370$  (BKJD)

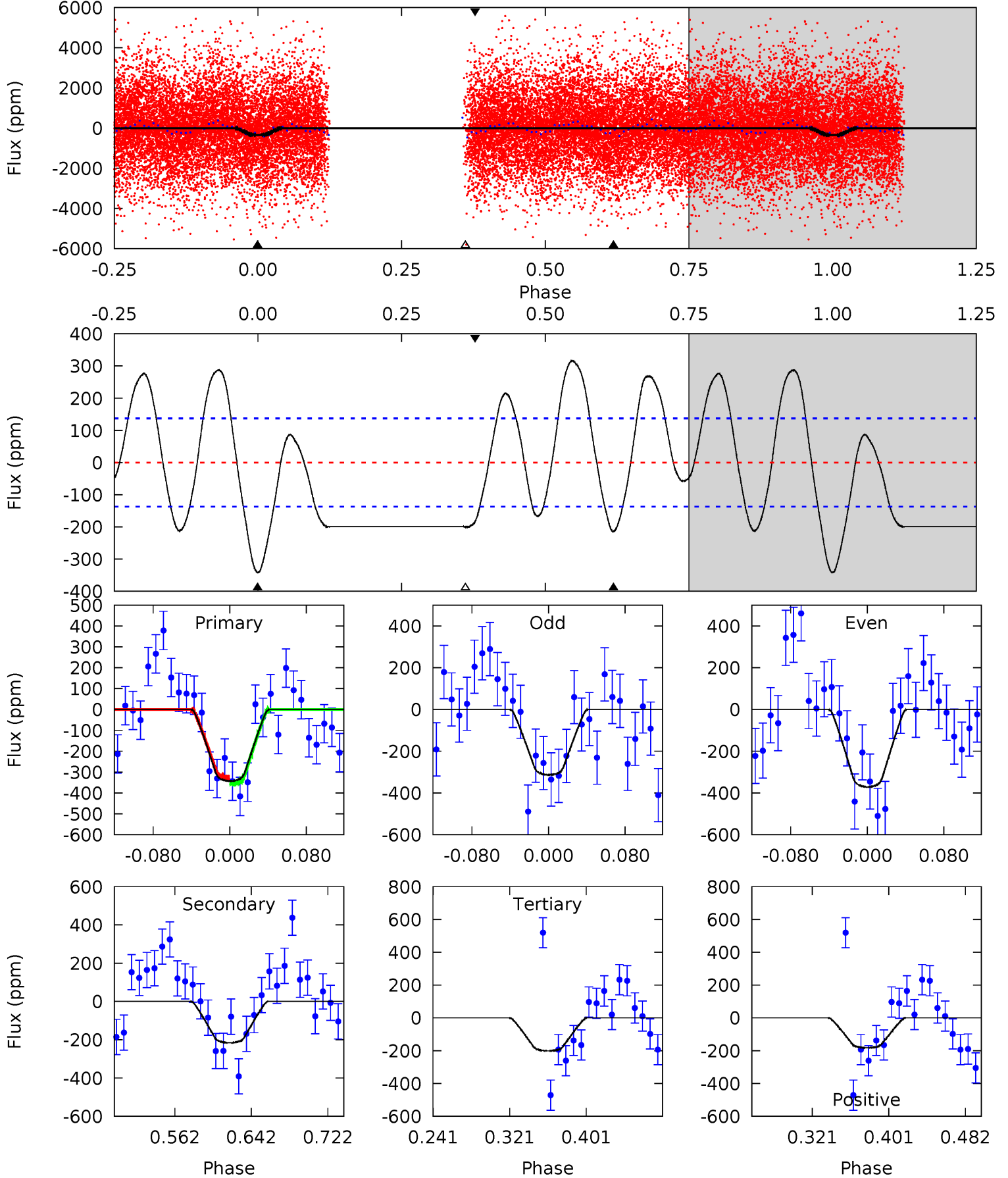




# DV Model-Shift Uniqueness Test

003868284-03, P = 0.824834 Days, E = 131.225400 Days

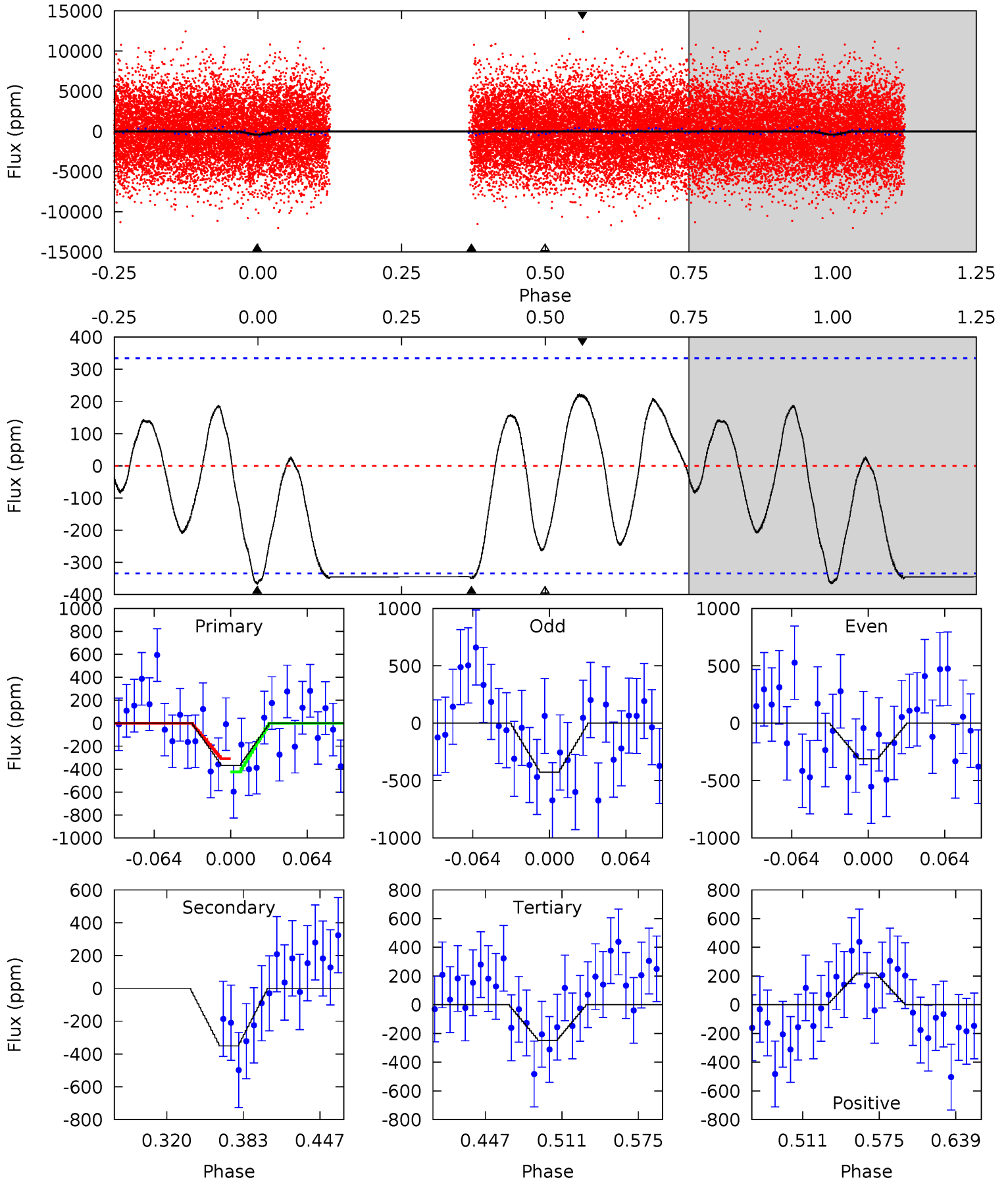
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	7.26	6.77	-6.15	4.61	1.75	5.00	4.77	17.7	0.48	13.4	0.97	0.94	0.48	0.45



# Alt Model-Shift Uniqueness Test

003868284-03, P = 0.824830 Days, E = 131.224540 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.12	4.89	3.46	3.08	4.66	1.85	2.13	1.66	2.04	1.43	1.81	0.81	0.79	0.38	0.80





### Stellar Parameters For KIC 003868284

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7687^{+212}_{-345}$	$3.713^{+0.400}_{-0.100}$	$0.070^{+0.200}_{-0.350}$	$3.409^{+0.545}_{-1.525}$	$2.189^{+0.270}_{-0.585}$	$0.078^{+0.304}_{-0.024}$
	+3%/-4%	+11%/-3%	+286%/-500%	+16%/-45%	+12%/-27%	+390%/-30%
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 003868284-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-216 \pm 30$	$7.18^{+5.44}_{-4.10}$	$5692^{+408}_{-648}$	$5733^{+4399}_{-2171}$	$1.094^{+5.466}_{-0.724}$
Alt.	$-350 \pm 72$	$7.34^{+5.56}_{-4.23}$	$5698^{+400}_{-631}$	$6647^{+5603}_{-2152}$	$1.817^{+7.656}_{-1.267}$

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

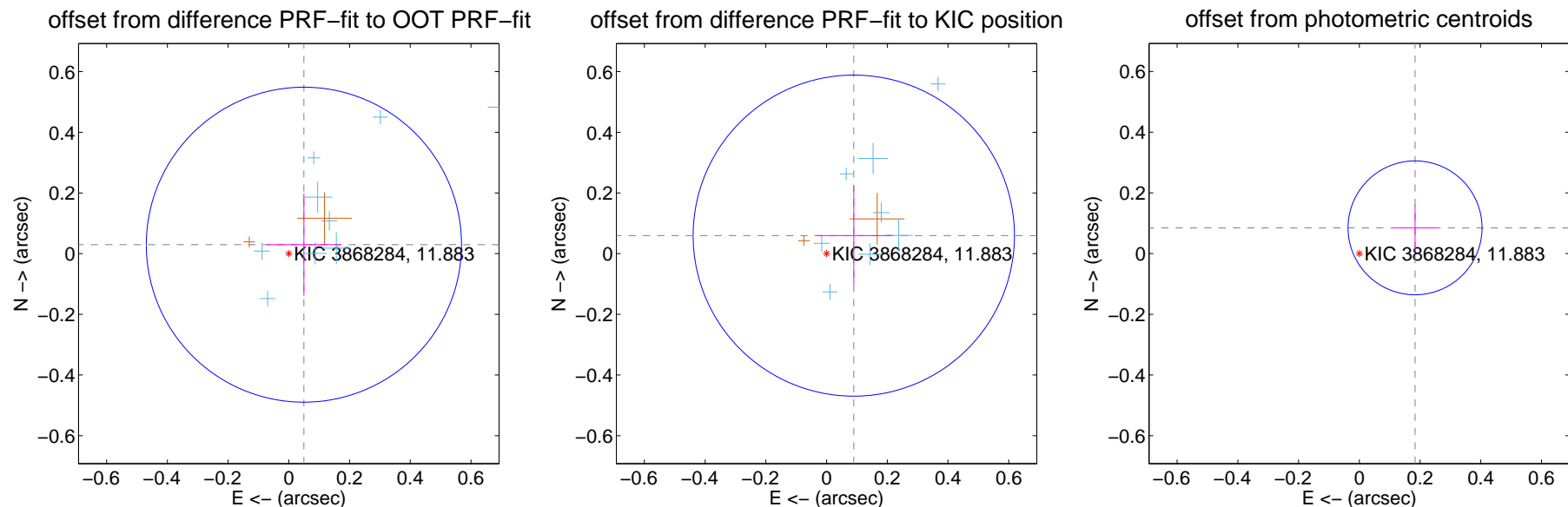
## DV Centroid Data

Supplemental centroid analysis for 003868284-03. **Kepler magnitude: 11.88.** Transit SNR 9.74

There are 10 quarters with good PRF difference image offsets

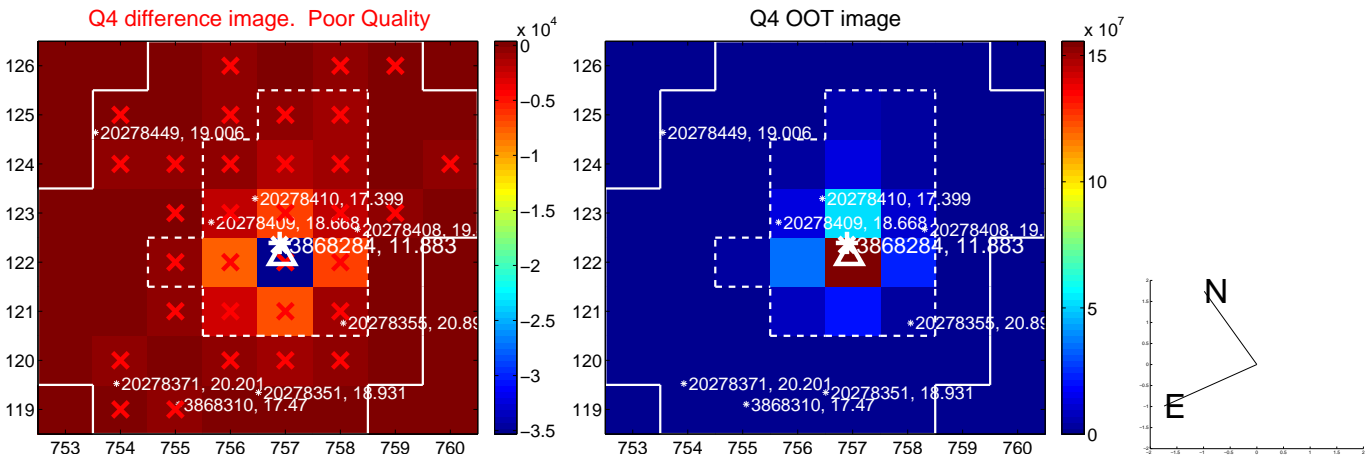
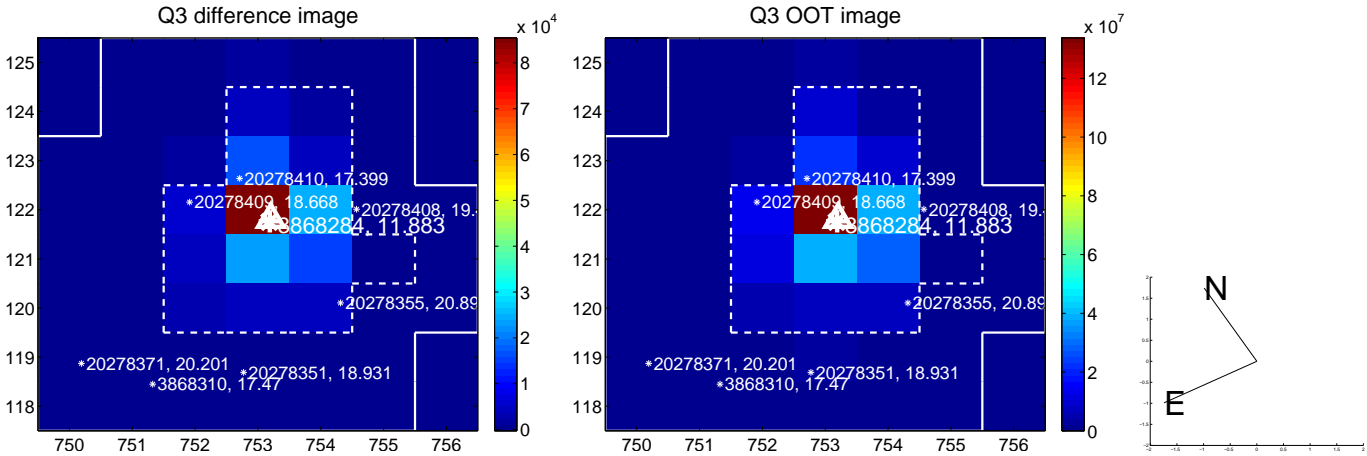
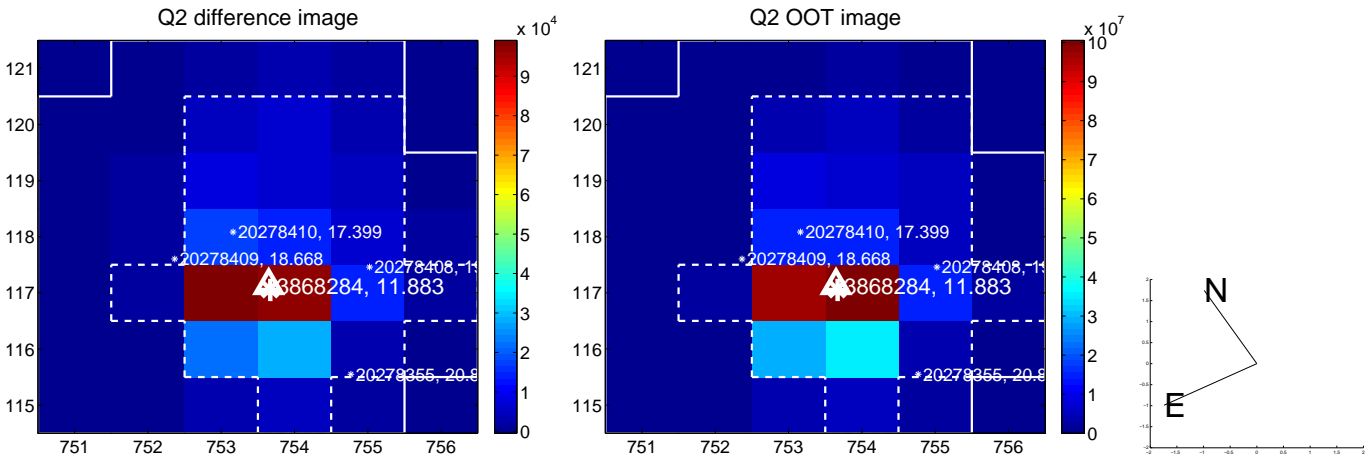
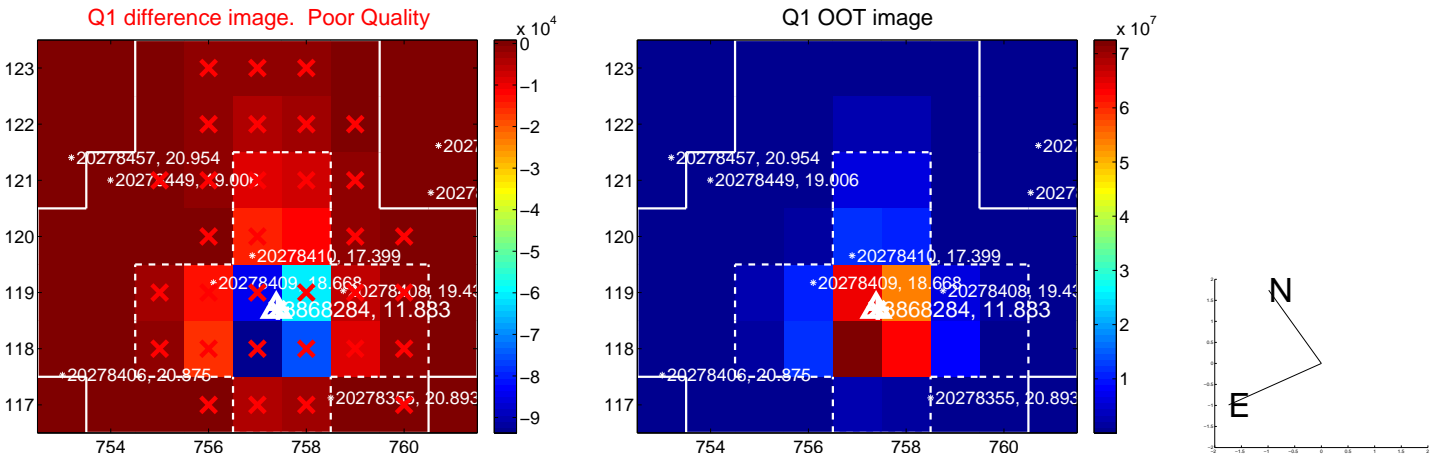
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.058 \pm 0.173$	0.33	$-0.050 \pm 0.123$	$0.030 \pm 0.169$
PRF-fit source offset from KIC position	$0.108 \pm 0.176$	0.61	$-0.090 \pm 0.125$	$0.059 \pm 0.164$
photometric centroid source offset	$0.20 \pm 0.07$	2.75	$-0.18 \pm 0.07$	$0.08 \pm 0.08$

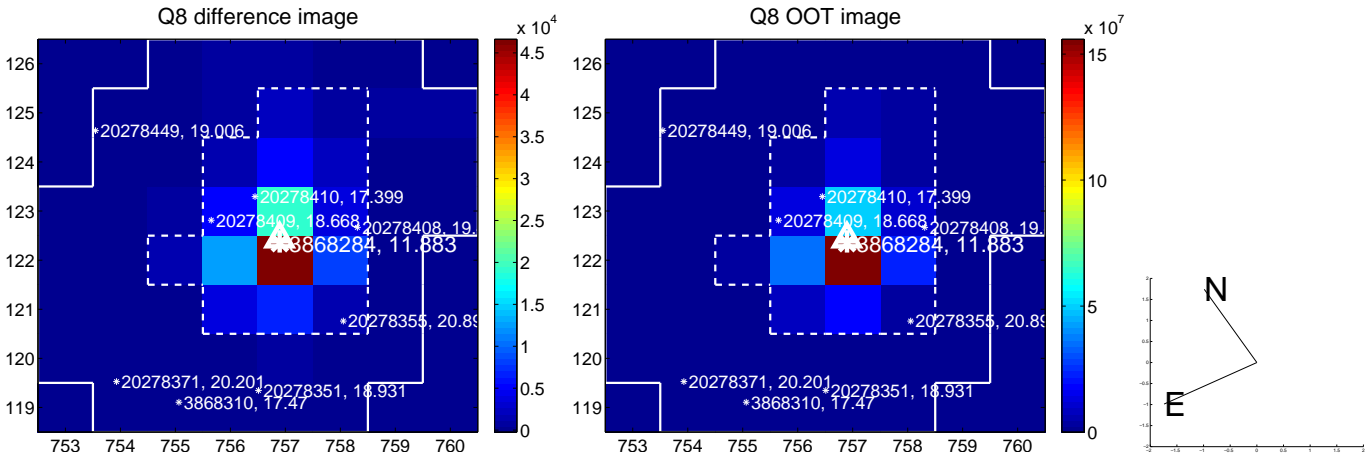
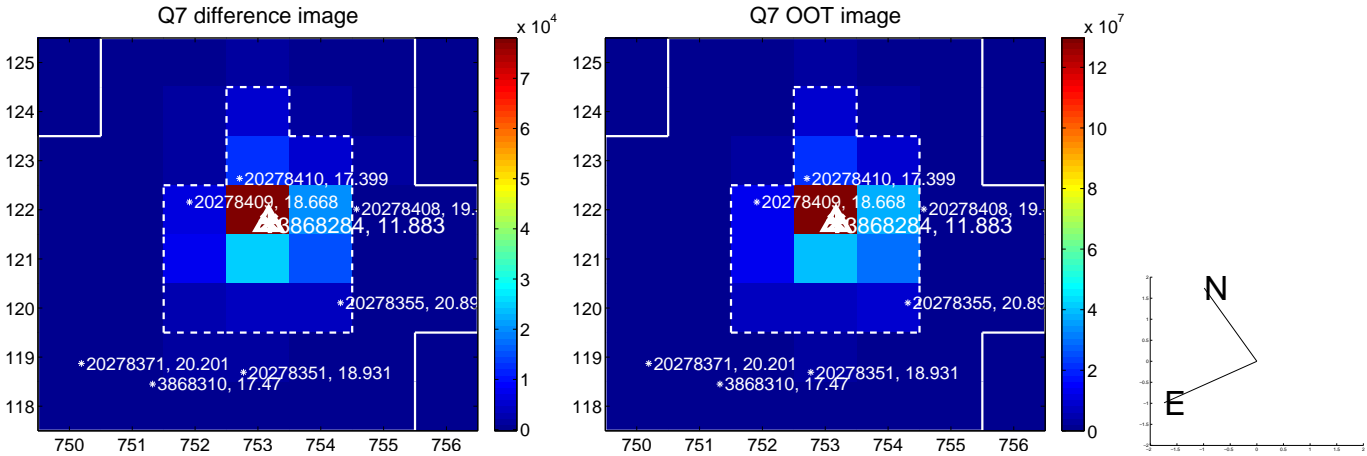
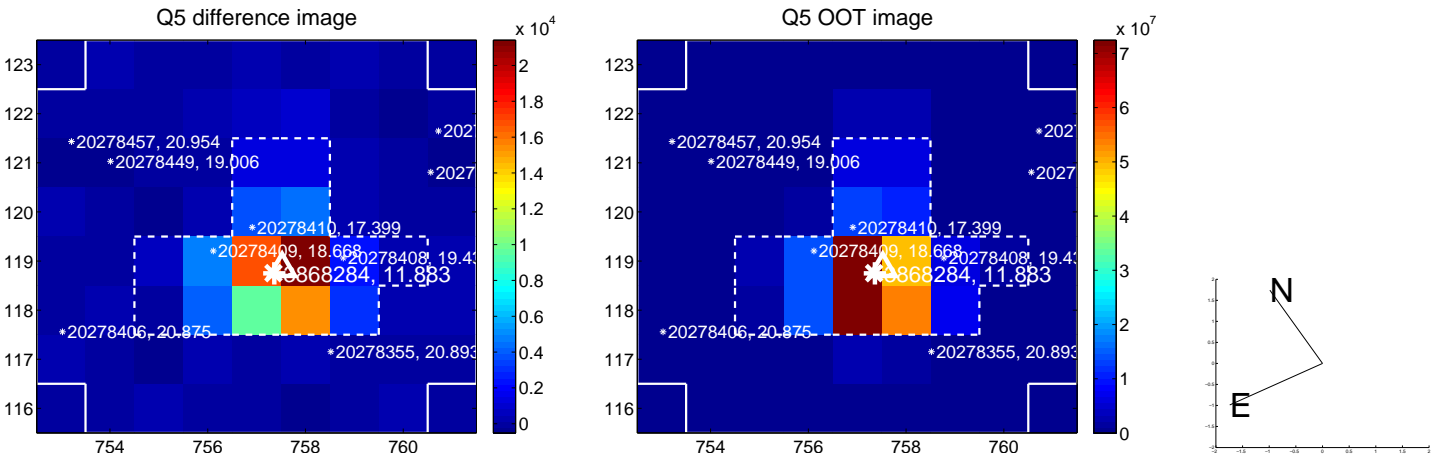


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

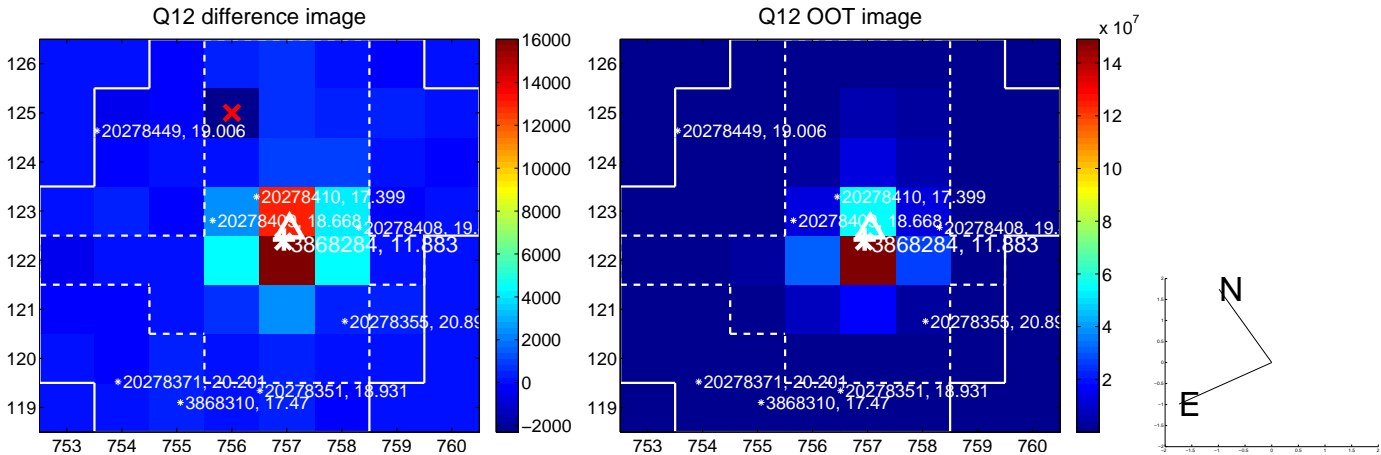
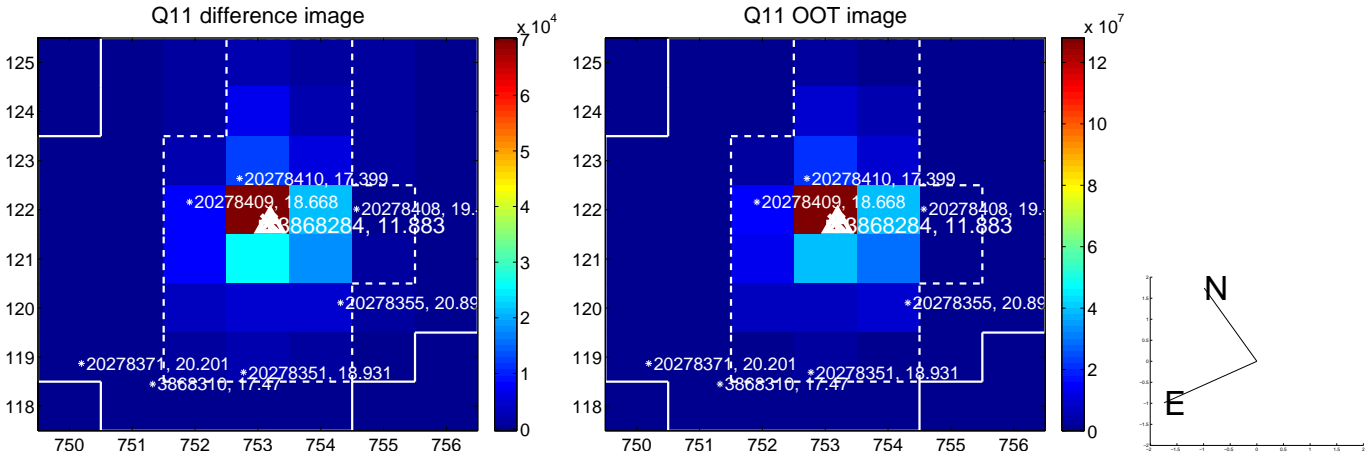
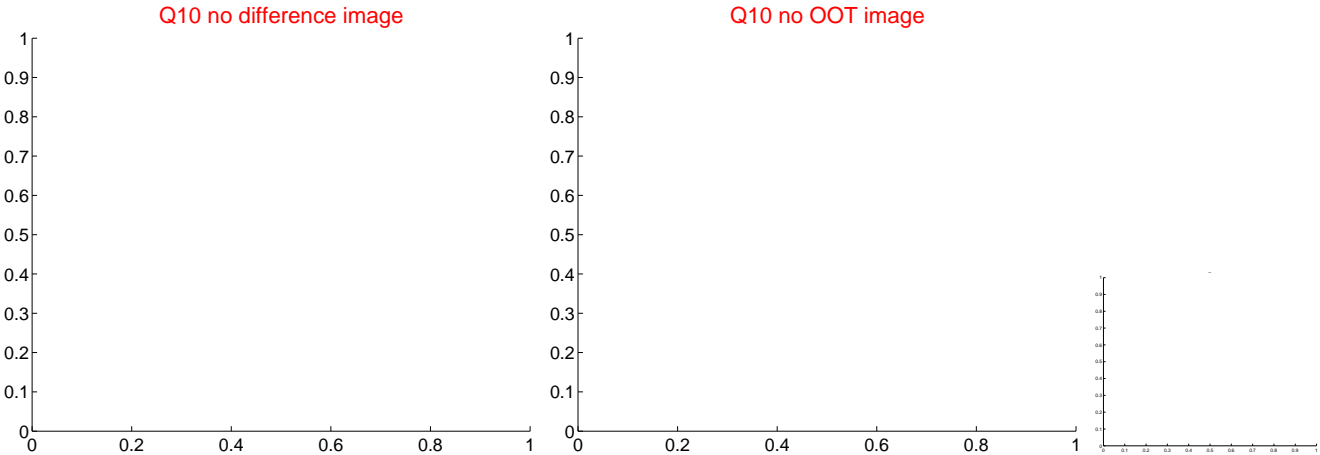
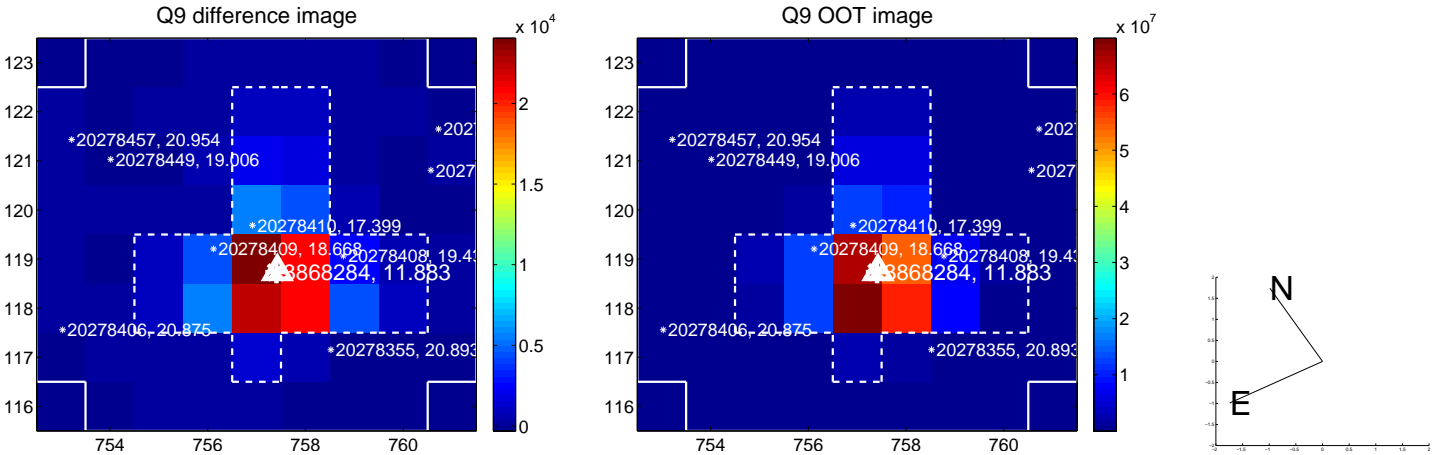
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

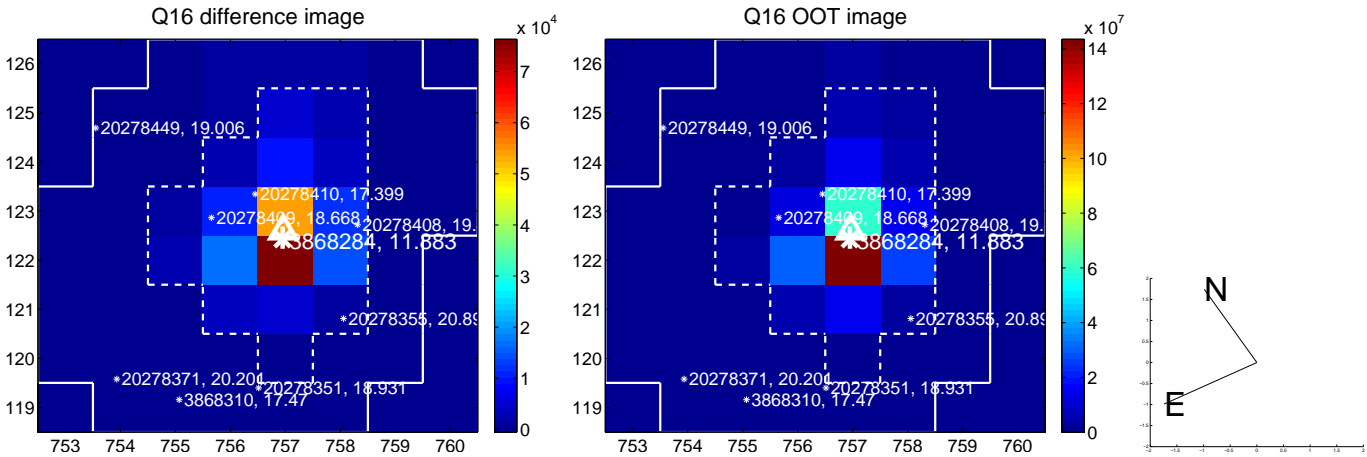
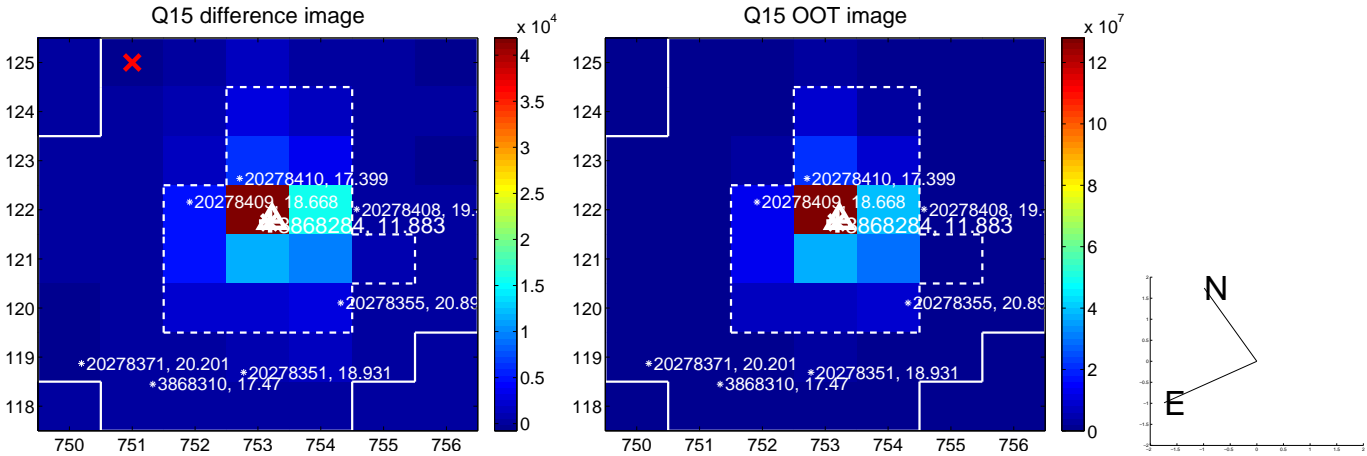
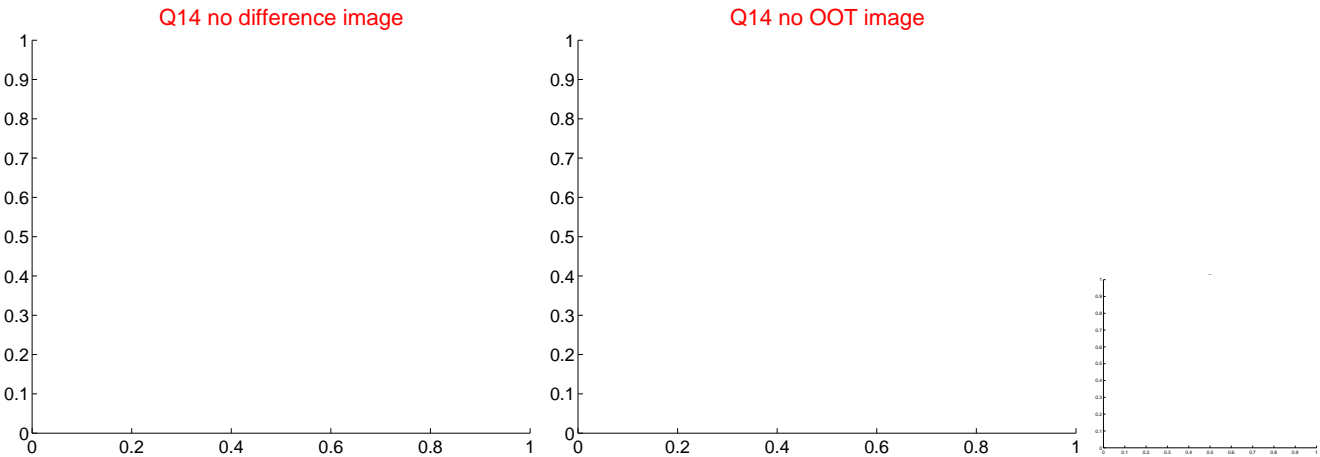
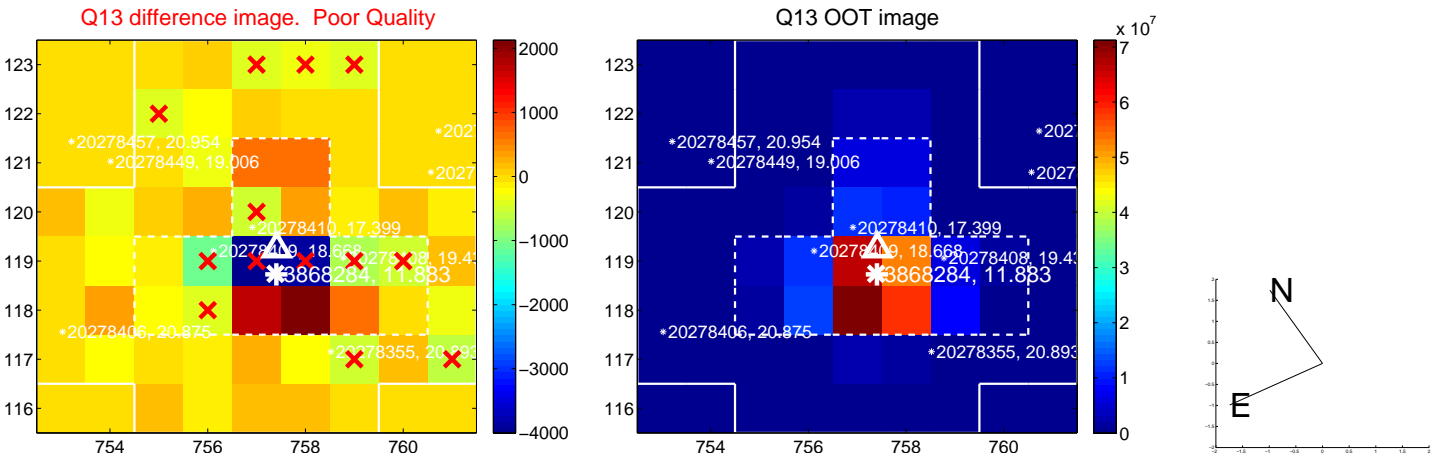


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

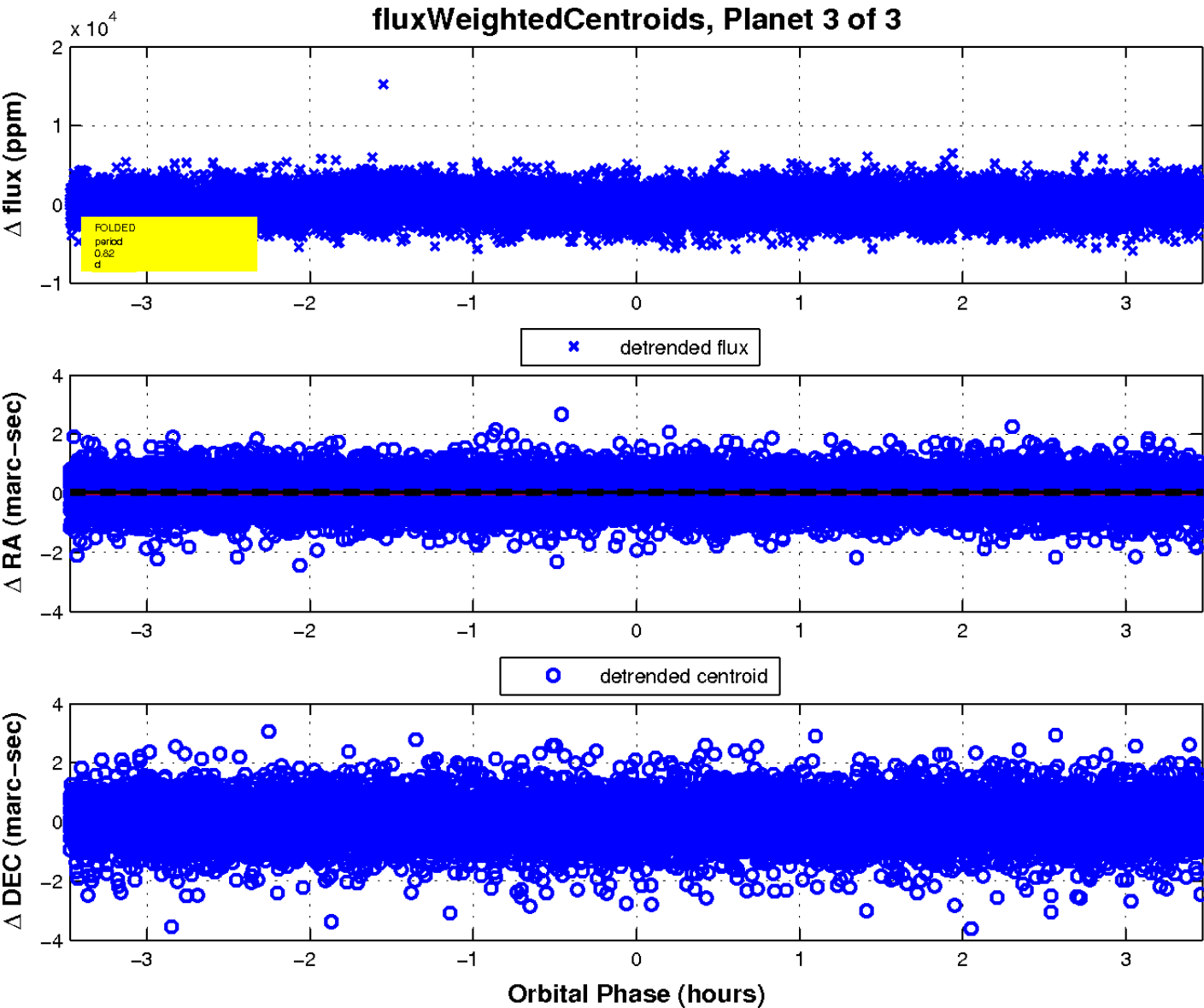
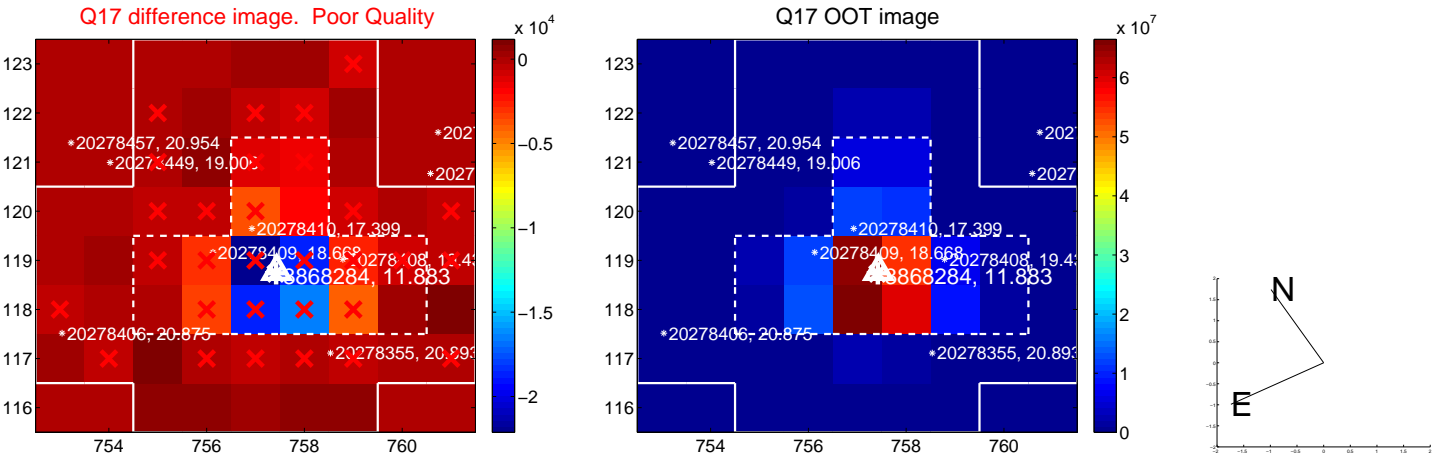




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

