

# KIC 008183404

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008183404-01	OBS	No	2.369573	132.705900	39.7	4.508	11.0	10.5	1.26	6781	0.93	2190.41
008183404-02	OBS	No	1.184555	132.361126	0.0	1.179	7.8	0.0	1.26	6781	0.00	5520.94

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008183404-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008183404-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—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.

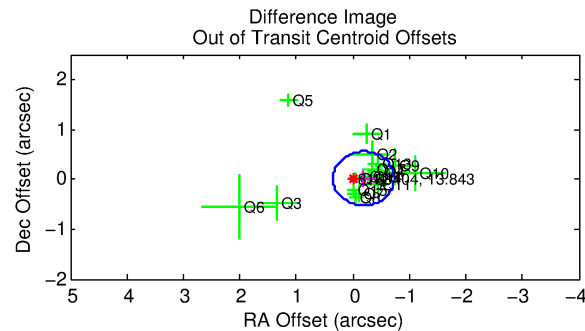
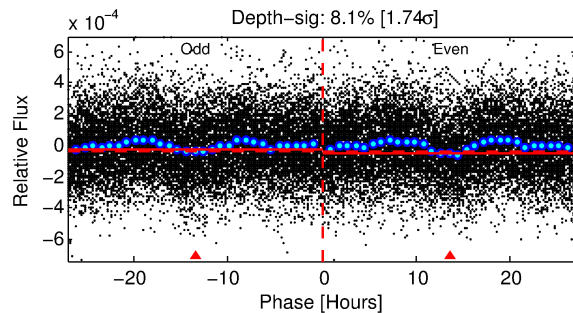
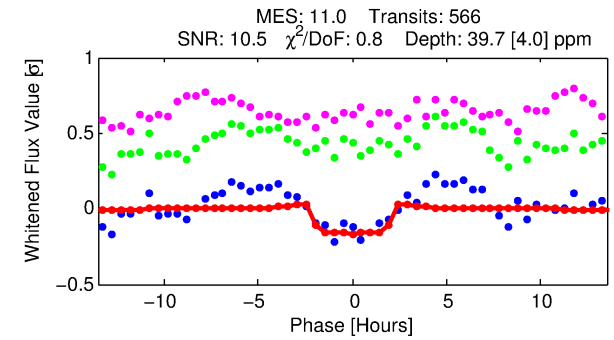
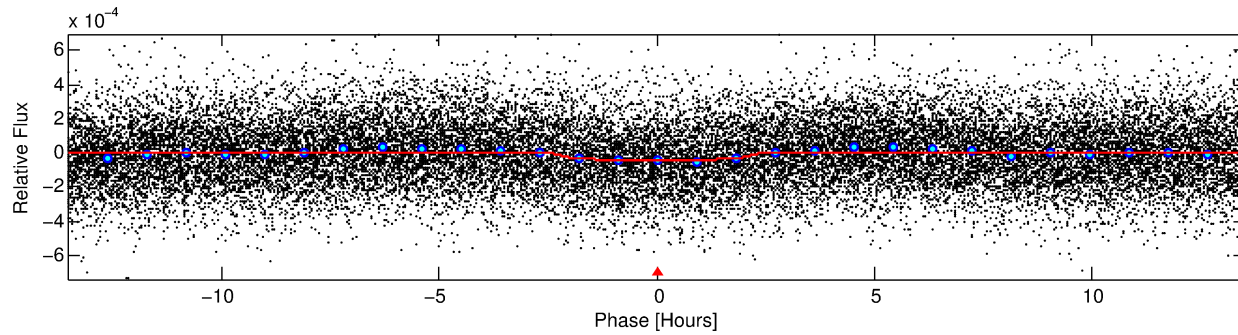
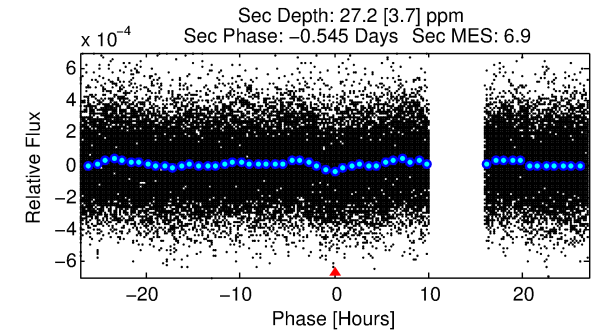
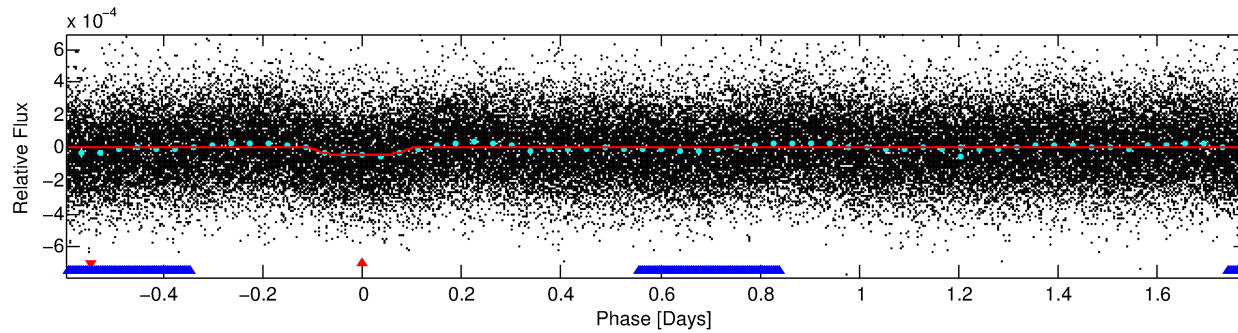
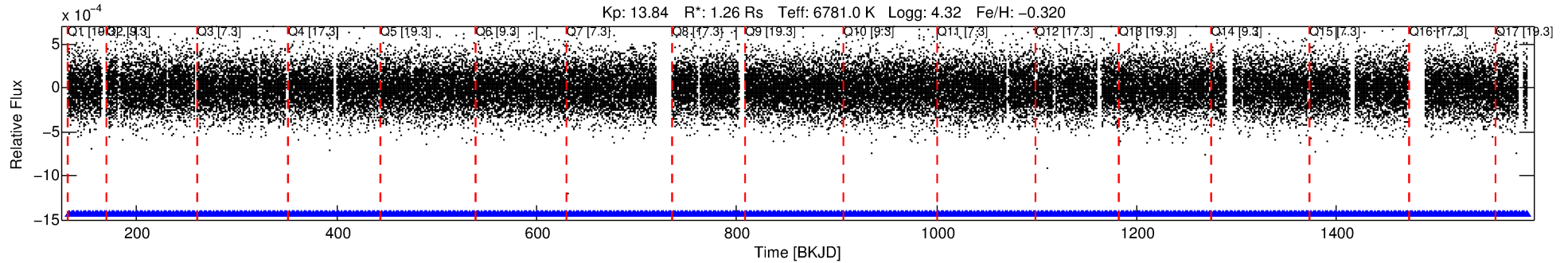
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008183404-01

No Significant Match Found

# DV One-Page Summary

KIC: 8183404 Candidate: 1 of 2 Period: 2.370 d



## DV Fit Results:

Period = 2.36957 [0.00002] d  
Epoch = 132.7059 [0.0043] BKJD  
Rp/R\* = 0.0068 [0.0018]  
a/R\* = 1.95 [2.32]  
b = 0.91 [0.30]  
Seff = 2190.41 [867.67]  
Teq = 1744 [173] K  
Rp = 0.93 [0.38] Re  
a = 0.0370 [0.0095] AU  
Ag = 23.62 [15.59] [1.45σ]  
Teffp = 5946 [849] K [4.85σ]

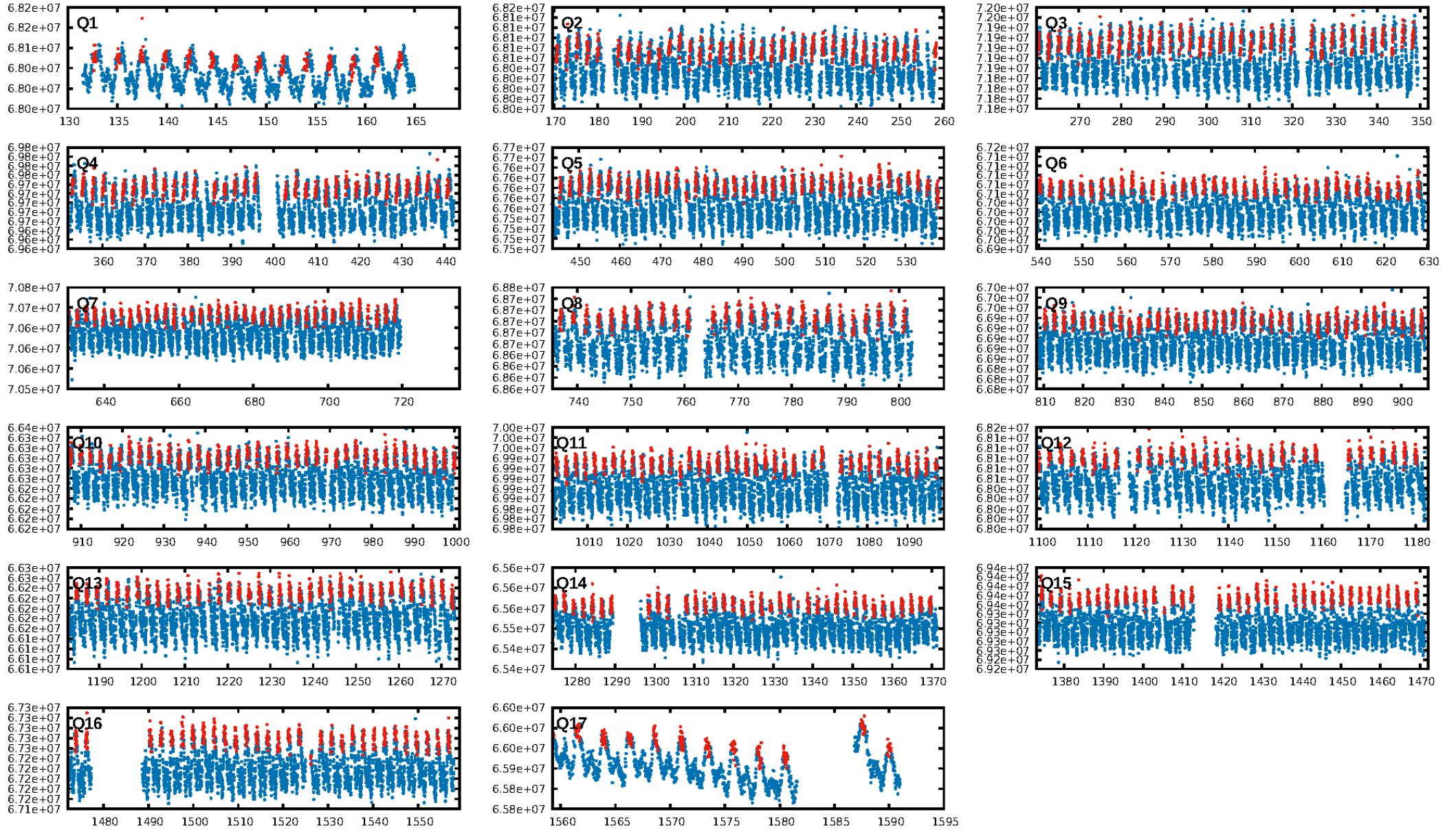
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [6.10σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.45e-22  
RollingBand-fgt: 1.00 [540/540]  
GhostDiagnostic-chr: -3.126  
Centroid-sig: 13.2%  
Centroid-so: 0.997 arcsec [1.17σ]  
OotOffset-rm: 0.186 arcsec [1.03σ]  
KicOffset-rm: 0.247 arcsec [1.21σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.00 [0/17]  
DiffImageOverlap-fno: 0.71 [12/17]

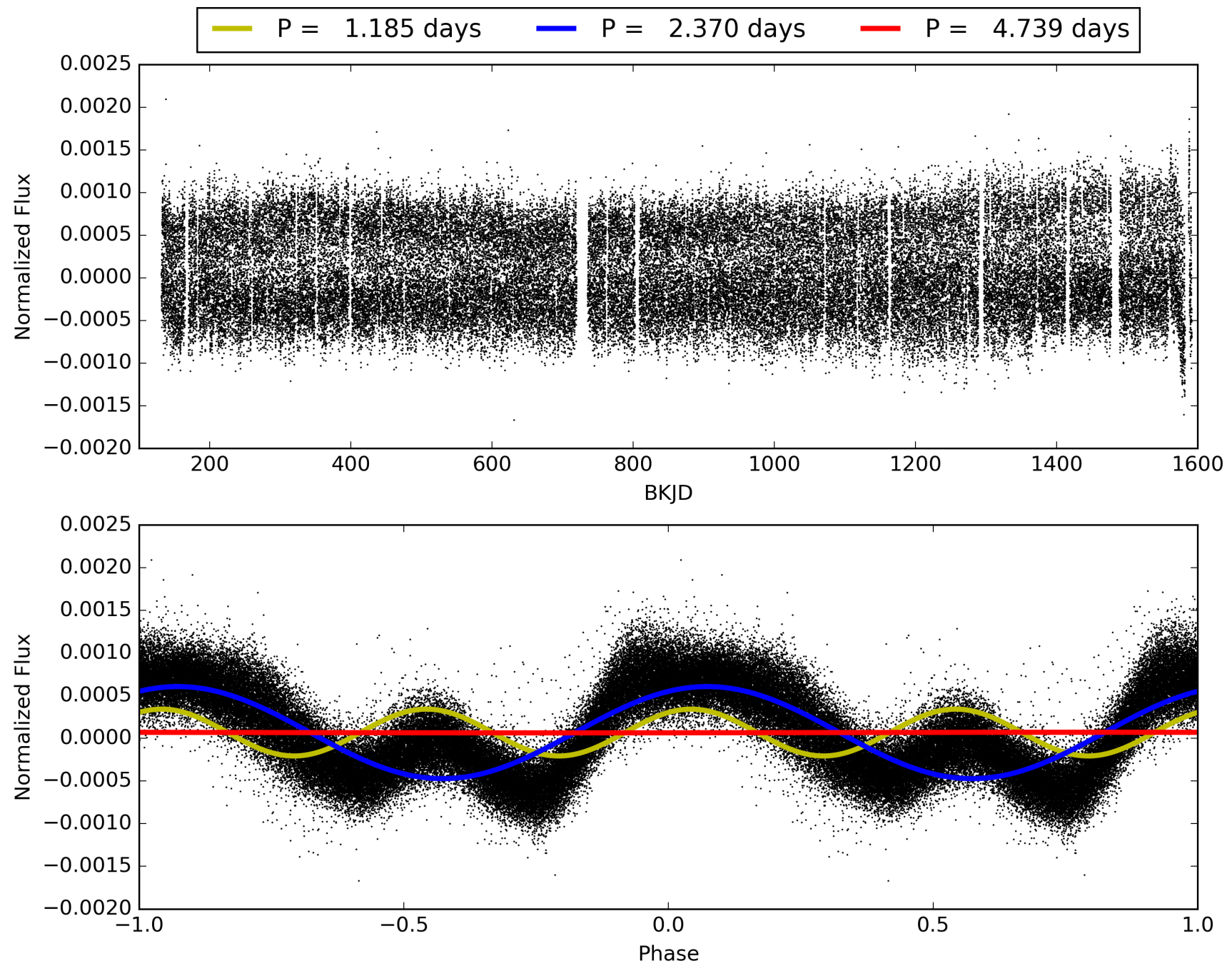
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:47:33 Z

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

# TCE 008183404-01, PDC Light Curves



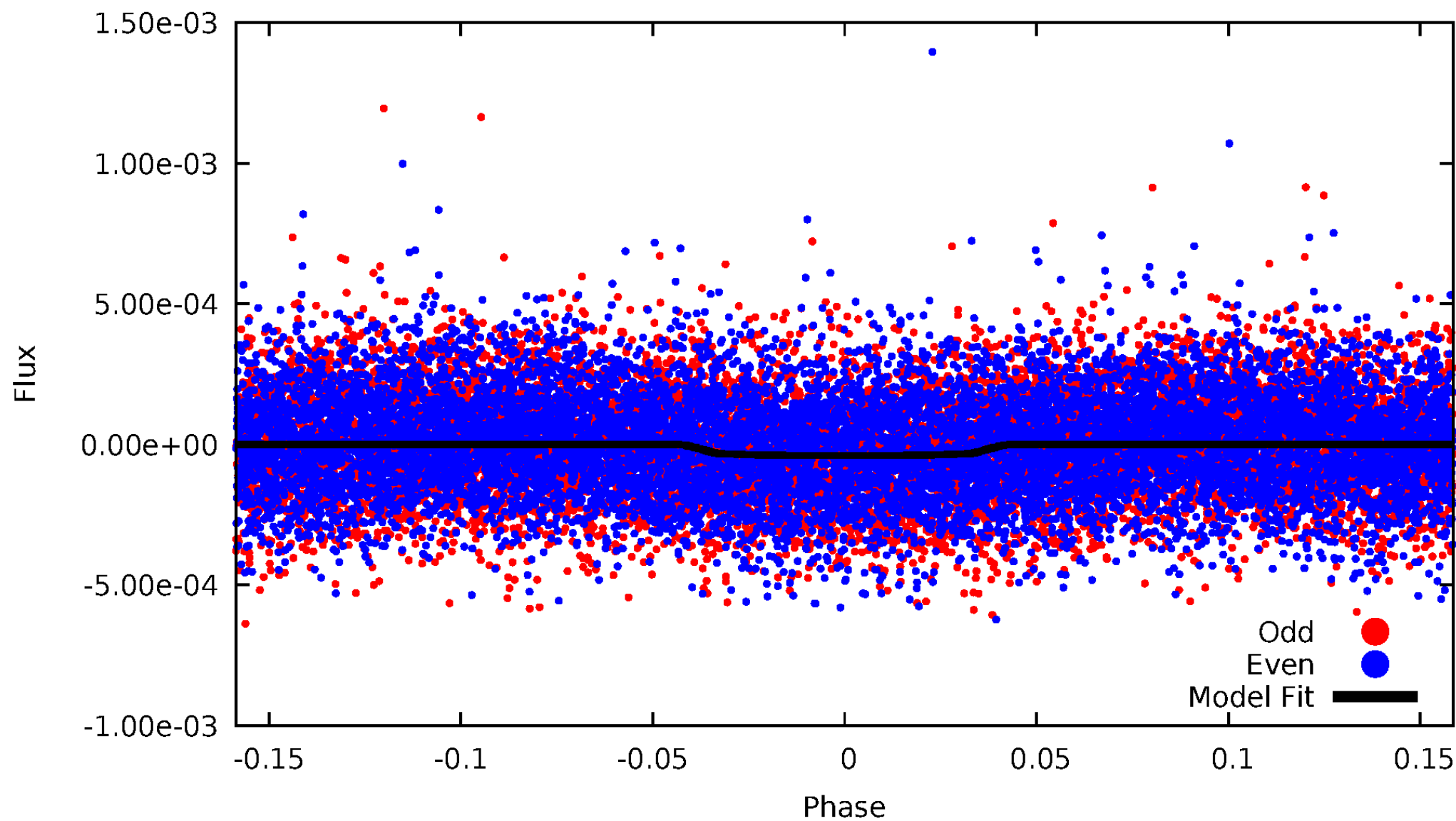
TCE 008183404-01





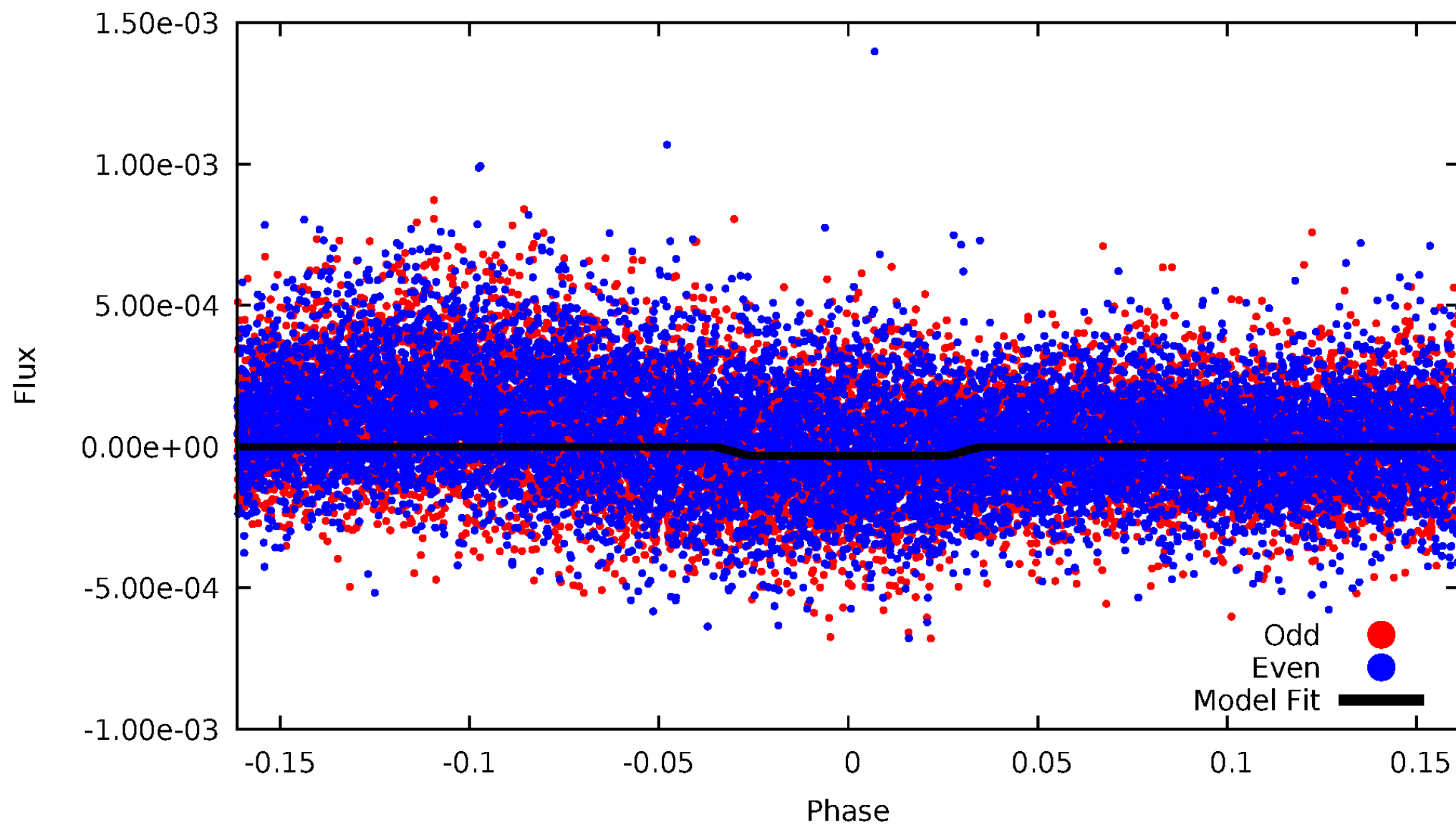
# DV Odd/Even

TCE 008183404-01



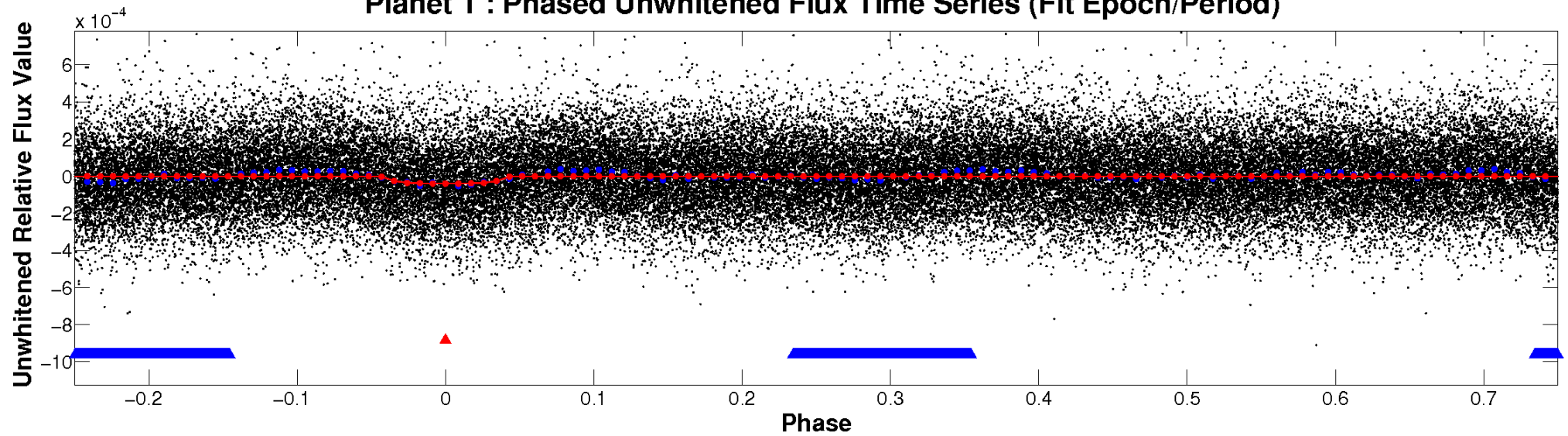
# ALT Odd/Even

TCE 008183404-01

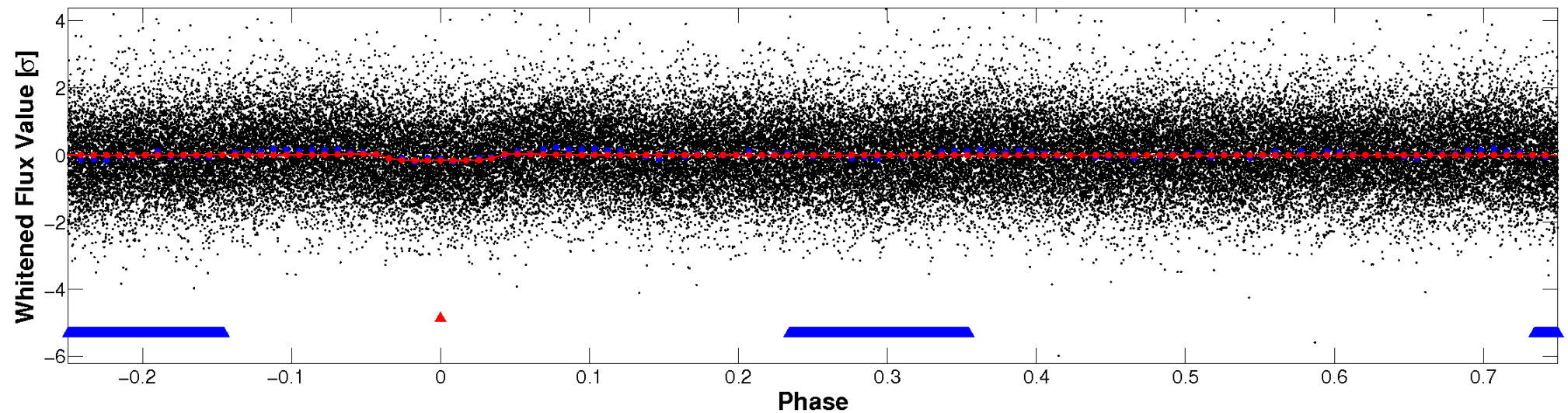


# Non-Whitened Vs. Whitened Light Curve

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

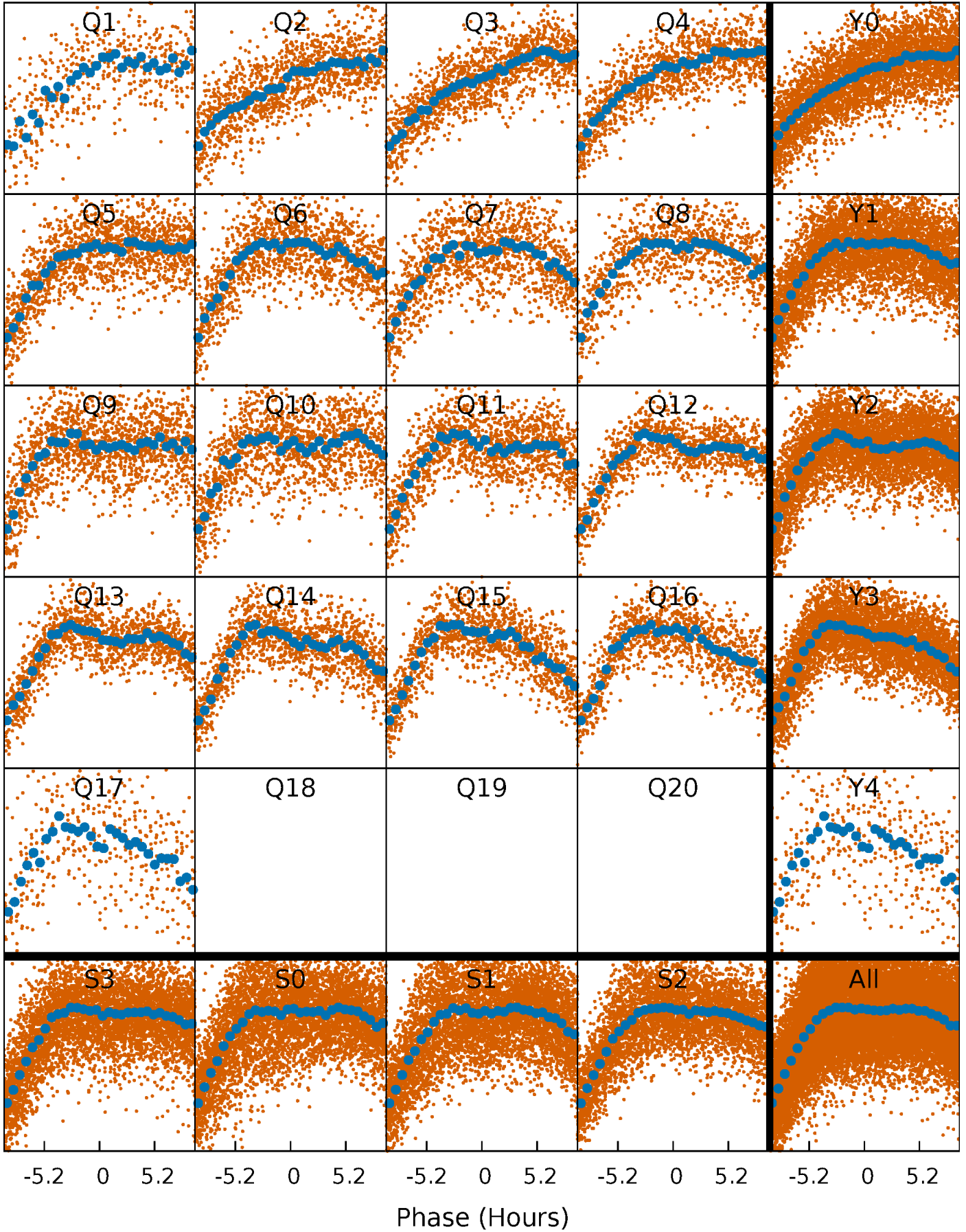


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

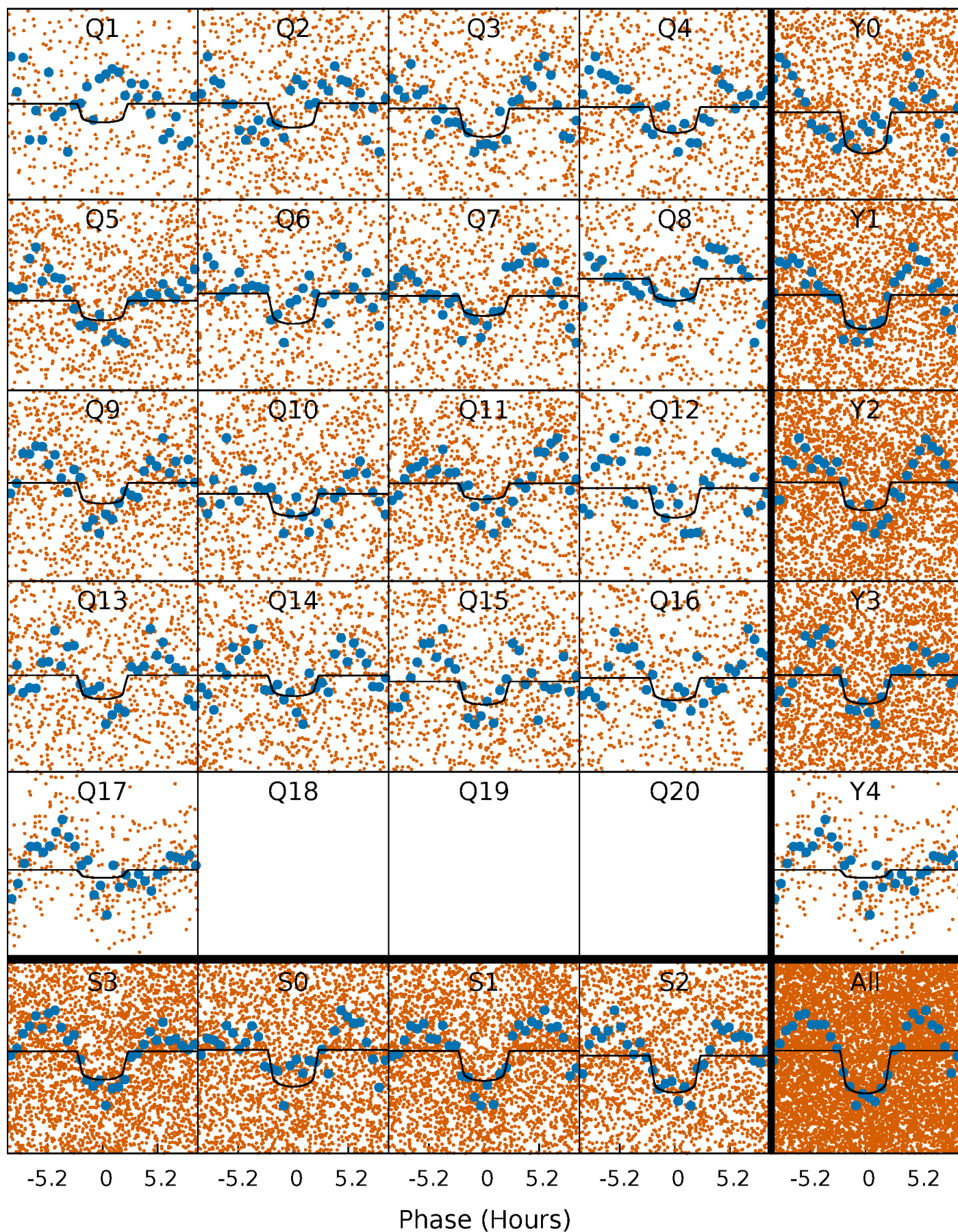
TCE 008183404-01   P= 2.369573 Days    $T_0=132.705900$  (BKJD)





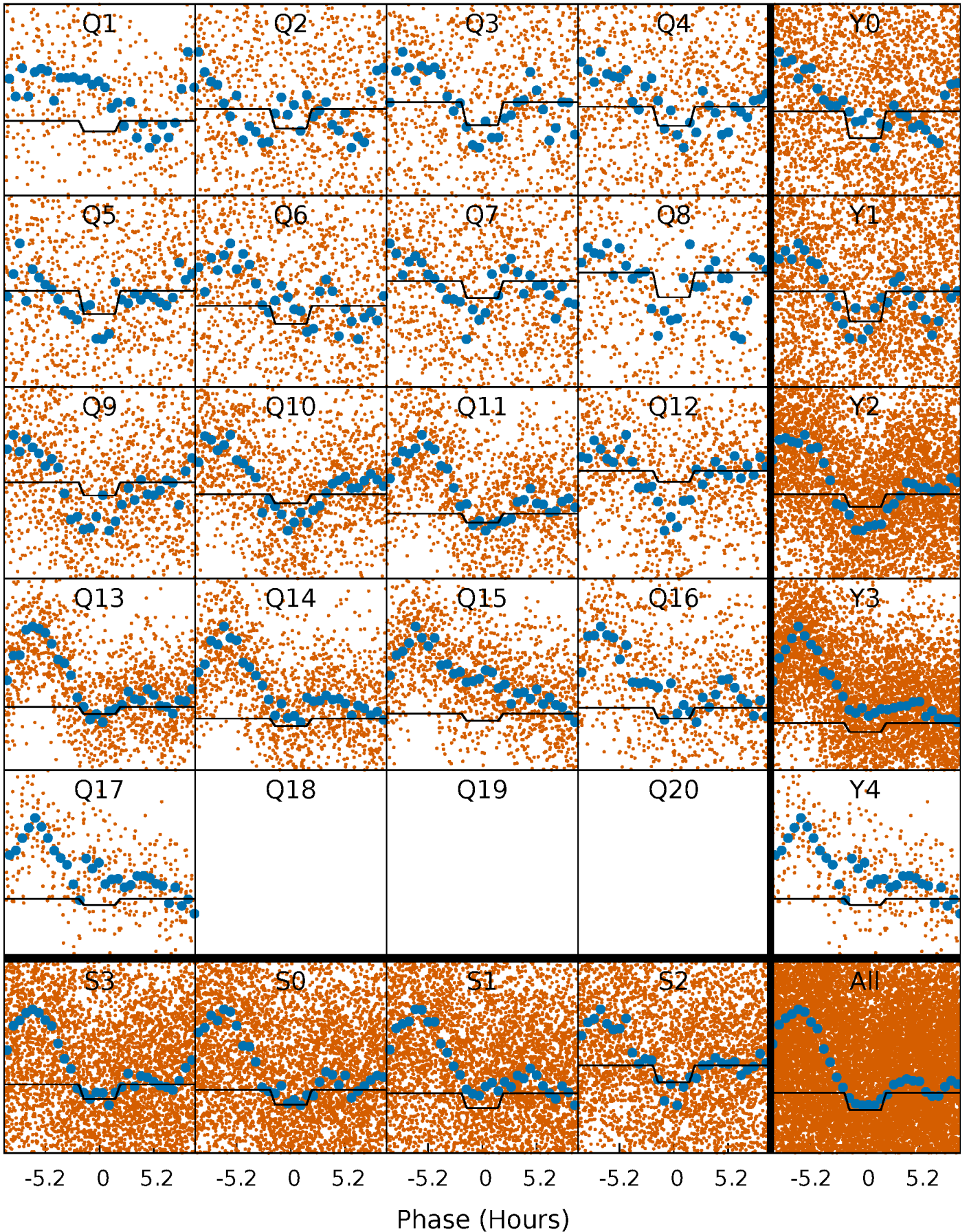
# DV Quarter-Phased Transit Curves

TCE 008183404-01 P= 2.369573 Days  $T_0=132.705900$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 008183404-01 P= 2.369682 Days  $T_0=132.743361$  (BKJD)

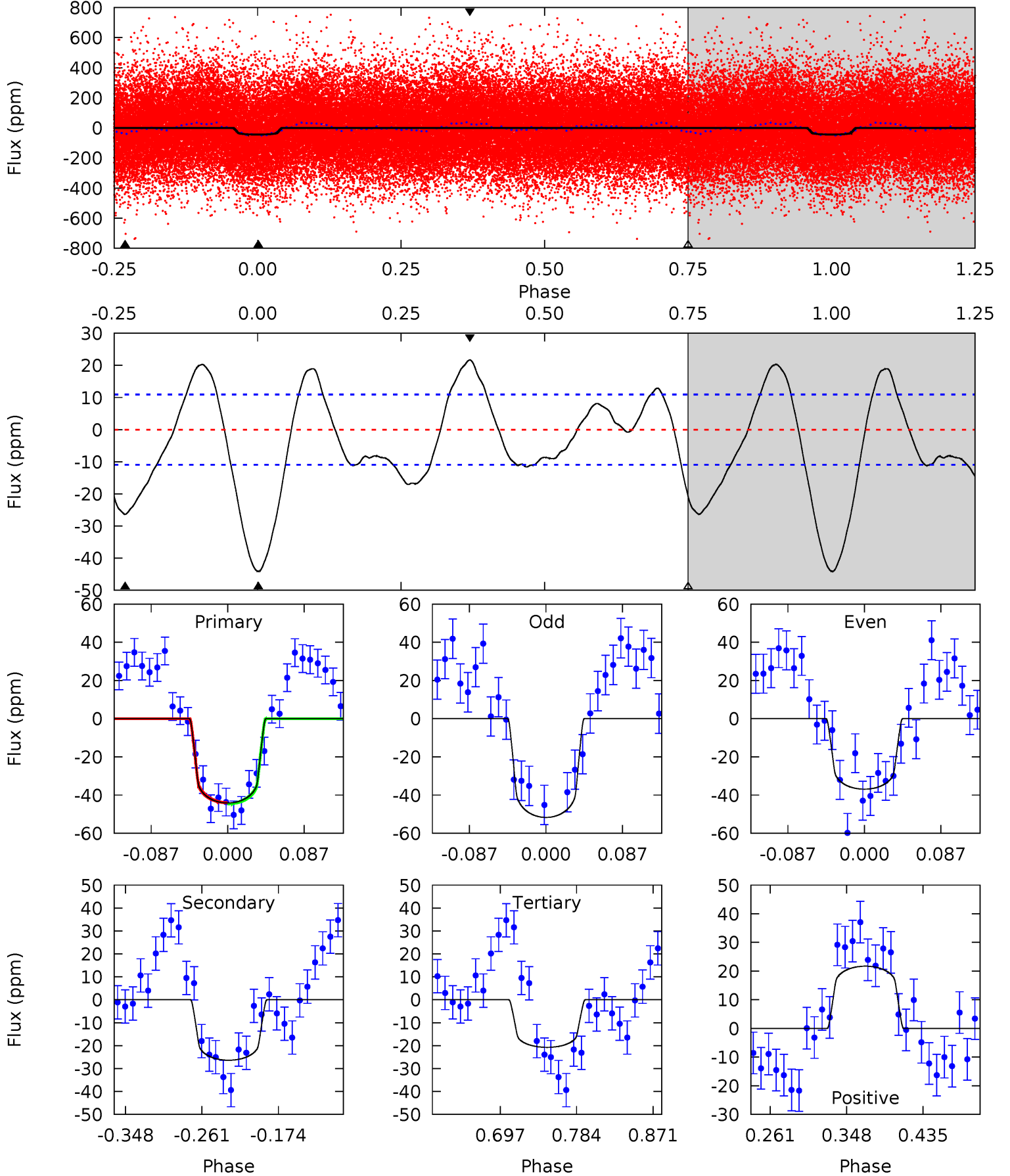




# DV Model-Shift Uniqueness Test

008183404-01, P = 2.369573 Days, E = 130.336327 Days

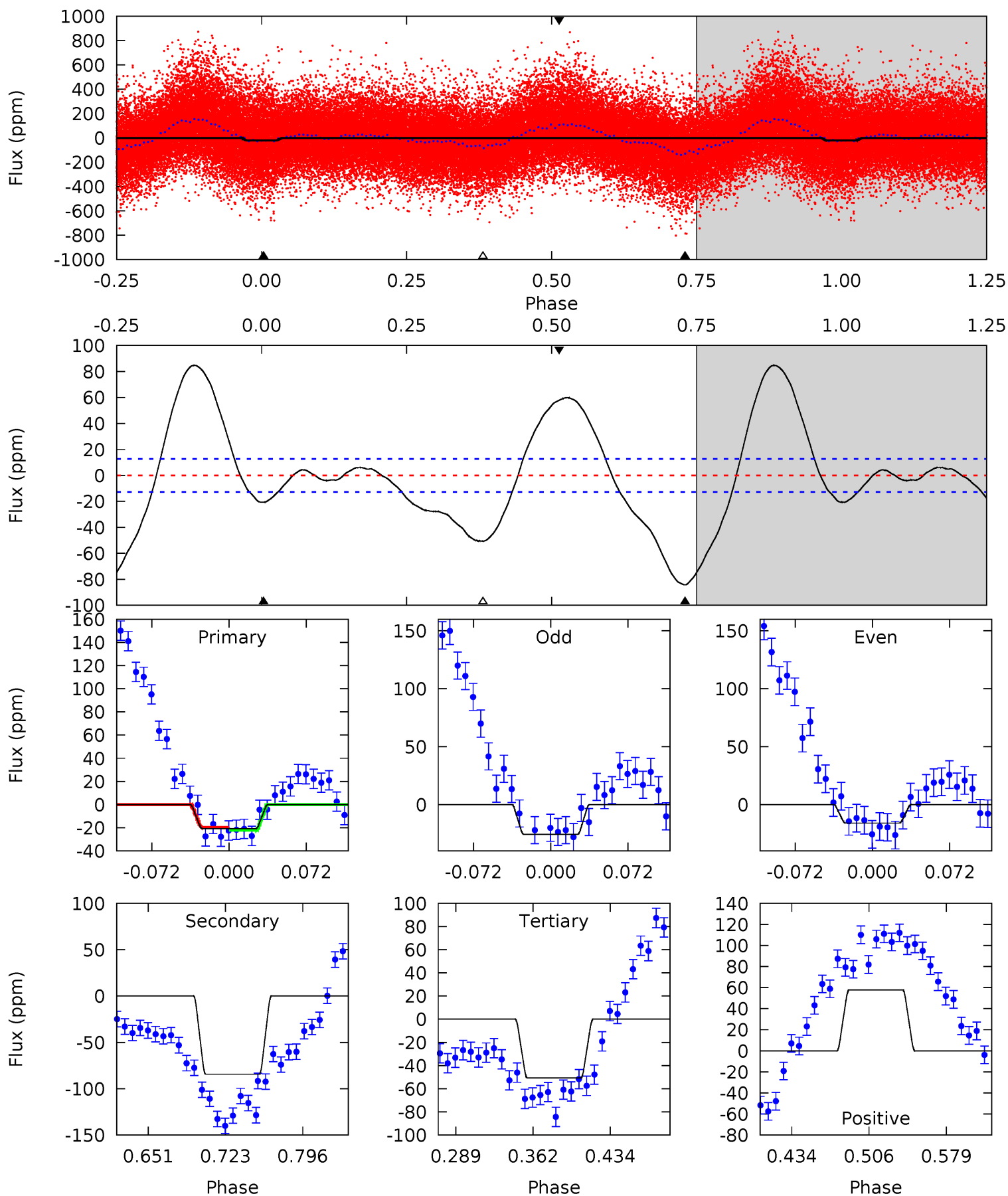
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.5	11.1	8.72	9.12	4.59	1.71	4.62	9.83	9.42	2.36	1.96	3.11	0.97	0.33	0.12



# Alt Model-Shift Uniqueness Test

008183404-01, P = 2.369682 Days, E = 130.373679 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
7.54	30.7	18.5	21.1	4.63	1.80	13.7	-10.9	-13.5	12.3	9.67	1.78	0.68	0.50	0.47





### Stellar Parameters For KIC 008183404

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6781^{+189}_{-260}$	$4.319^{+0.084}_{-0.196}$	$-0.320^{+0.250}_{-0.300}$	$1.259^{+0.391}_{-0.196}$	$1.212^{+0.175}_{-0.193}$	$0.856^{+0.387}_{-0.451}$
	+3%/-4%	+2%/-5%	+78%/-94%	+31%/-16%	+14%/-16%	+45%/-53%
Source	PHO1	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 008183404-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-26 \pm 2$	$0.95^{+0.32}_{-0.28}$	$2476^{+182}_{-134}$	$5868^{+1199}_{-634}$	$22^{+22}_{-10}$
Alt.	$-84 \pm 3$	$0.79^{+0.27}_{-0.25}$	$2464^{+176}_{-137}$	$9068^{+2978}_{-1439}$	$98^{+120}_{-43}$

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

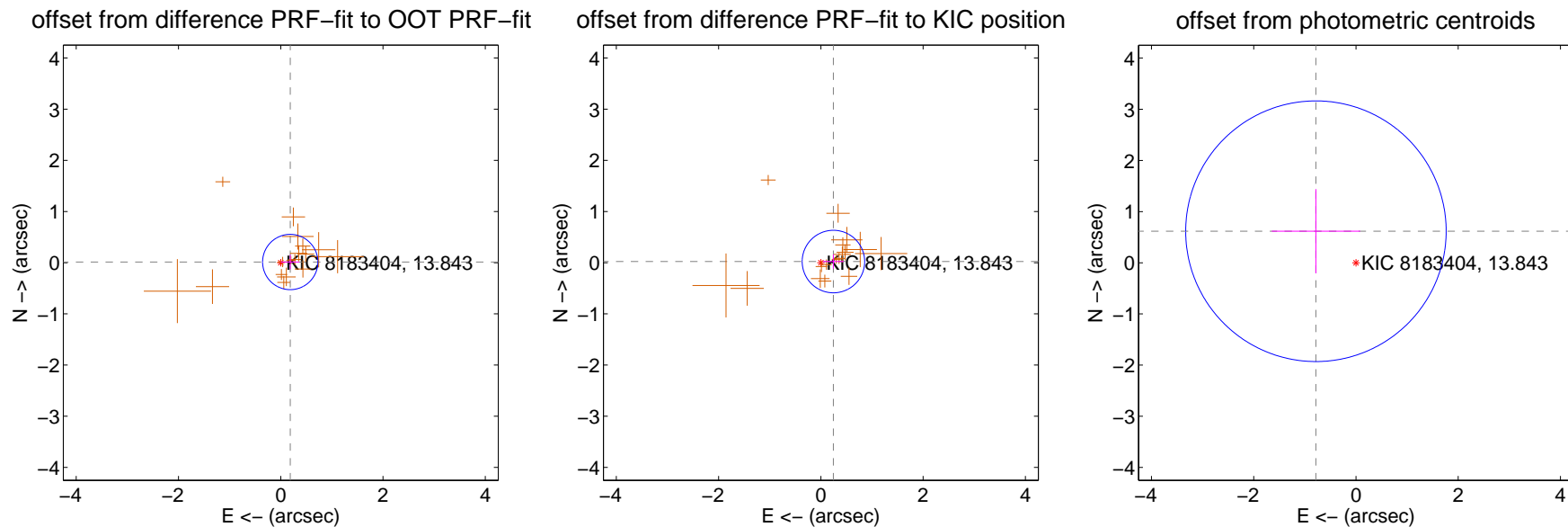
## DV Centroid Data

Supplemental centroid analysis for 008183404-01. Kepler magnitude: 13.84. Transit SNR 10.55

There are 0 quarters with good PRF difference image offsets

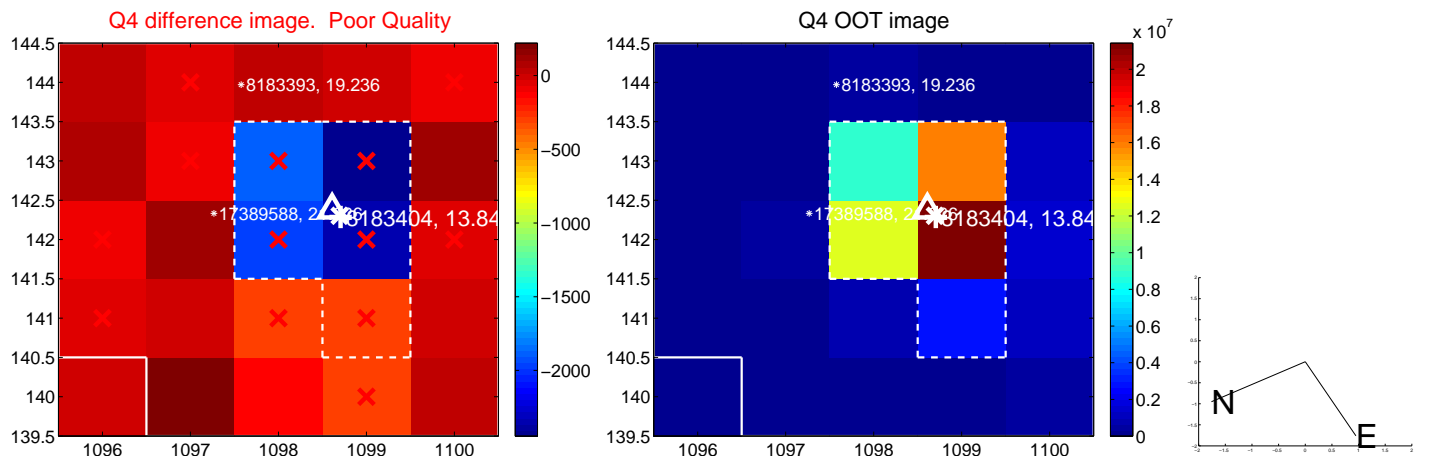
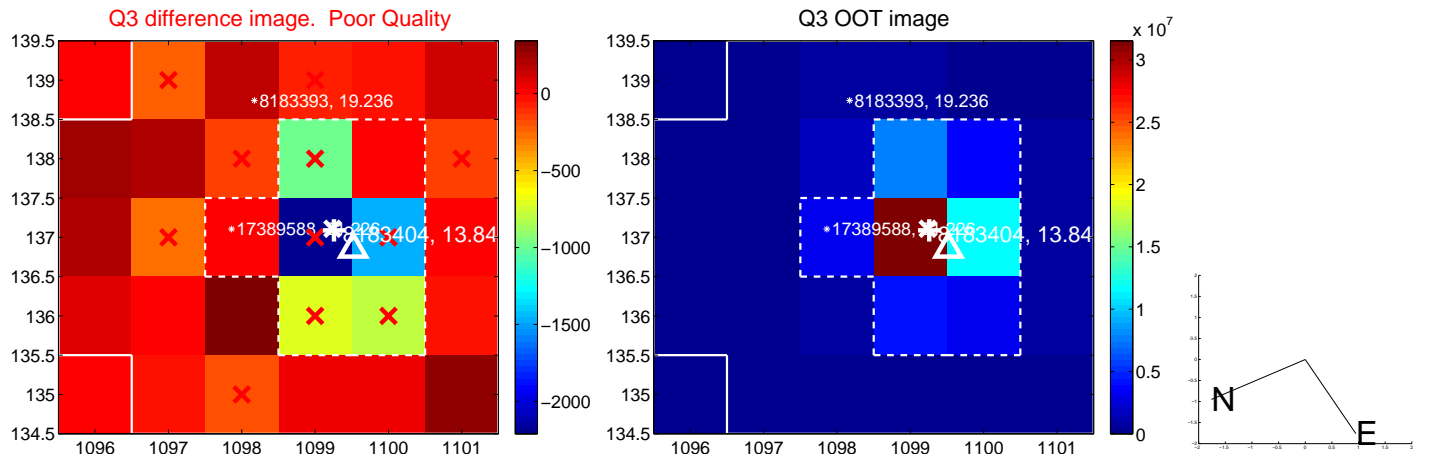
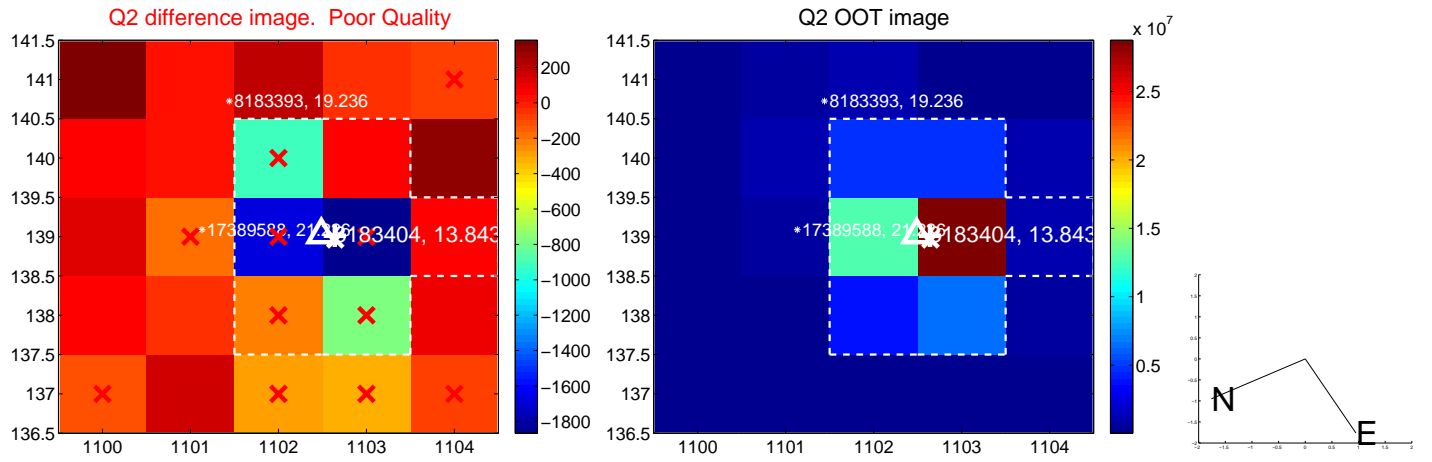
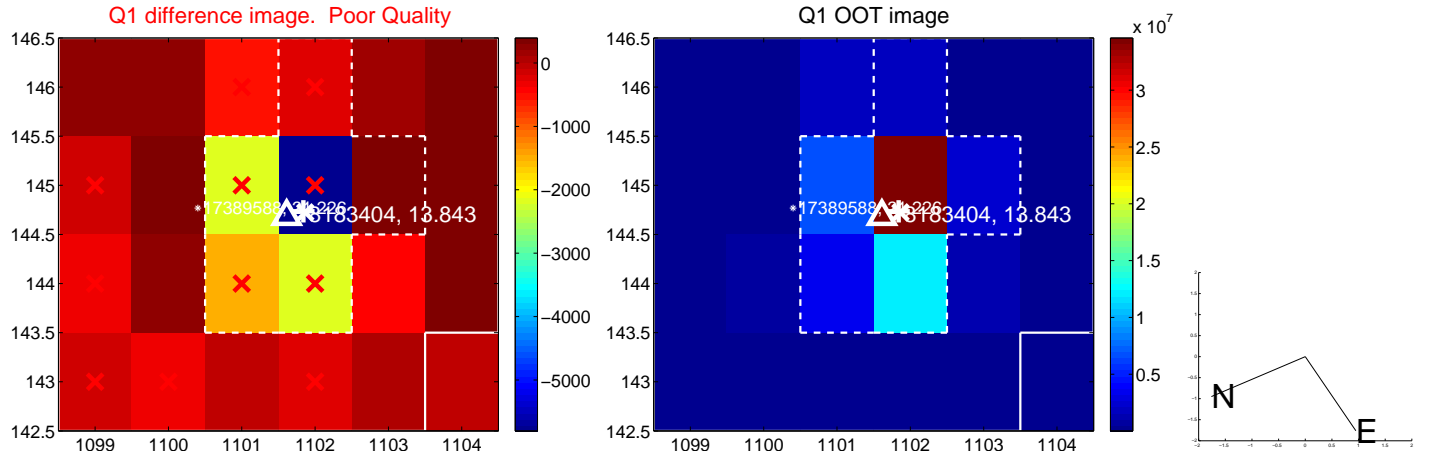
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.186 \pm 0.180$	1.03	$-0.185 \pm 0.180$	$0.013 \pm 0.143$
PRF-fit source offset from KIC position	$0.247 \pm 0.204$	1.21	$-0.246 \pm 0.203$	$0.022 \pm 0.140$
photometric centroid source offset	$1.00 \pm 0.85$	1.17	$0.78 \pm 0.86$	$0.62 \pm 0.82$

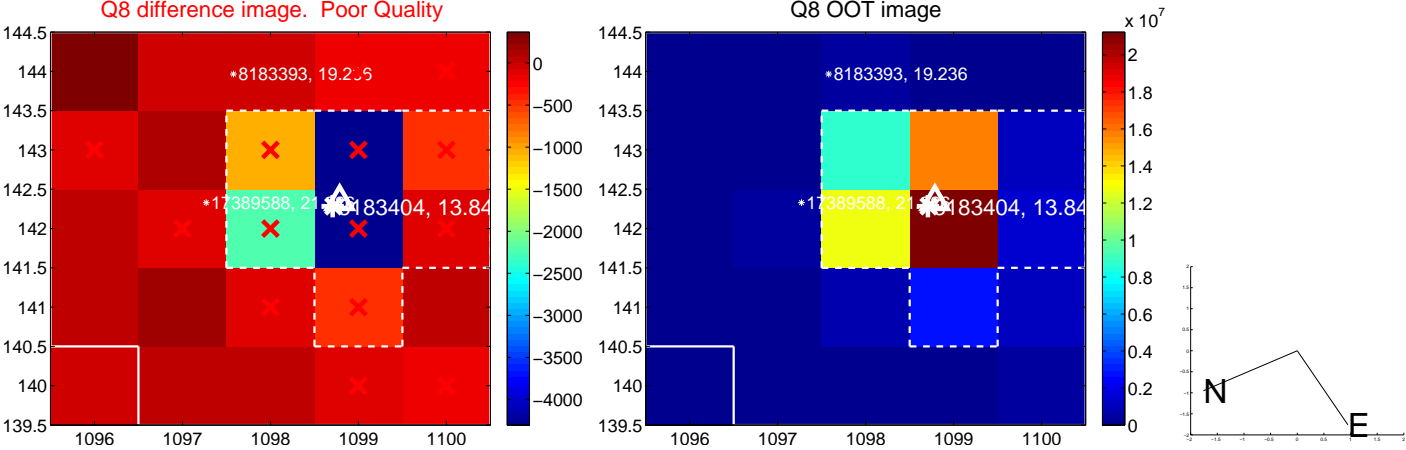
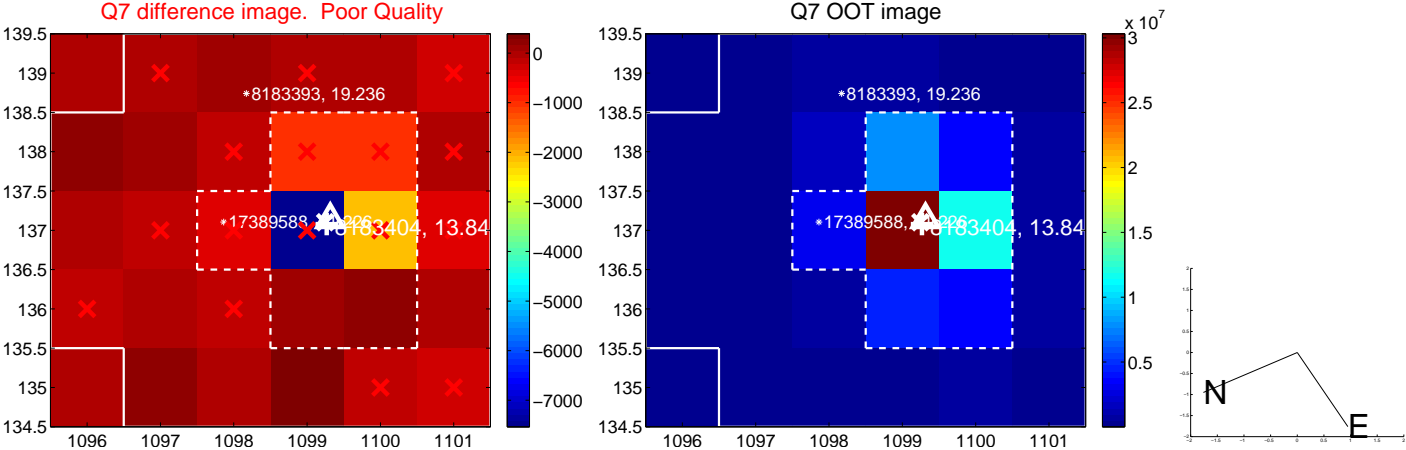
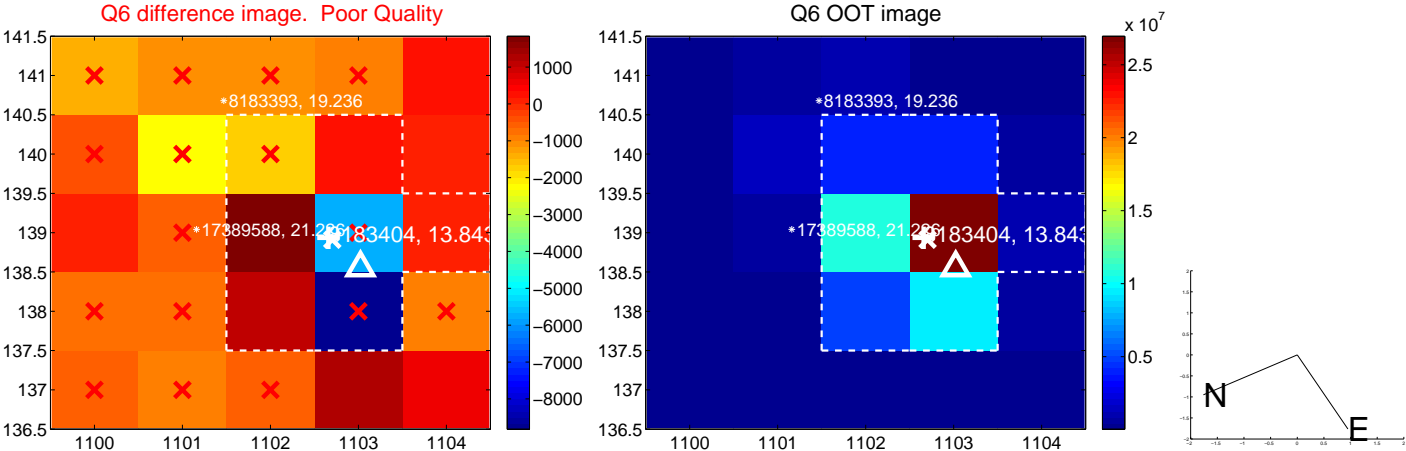
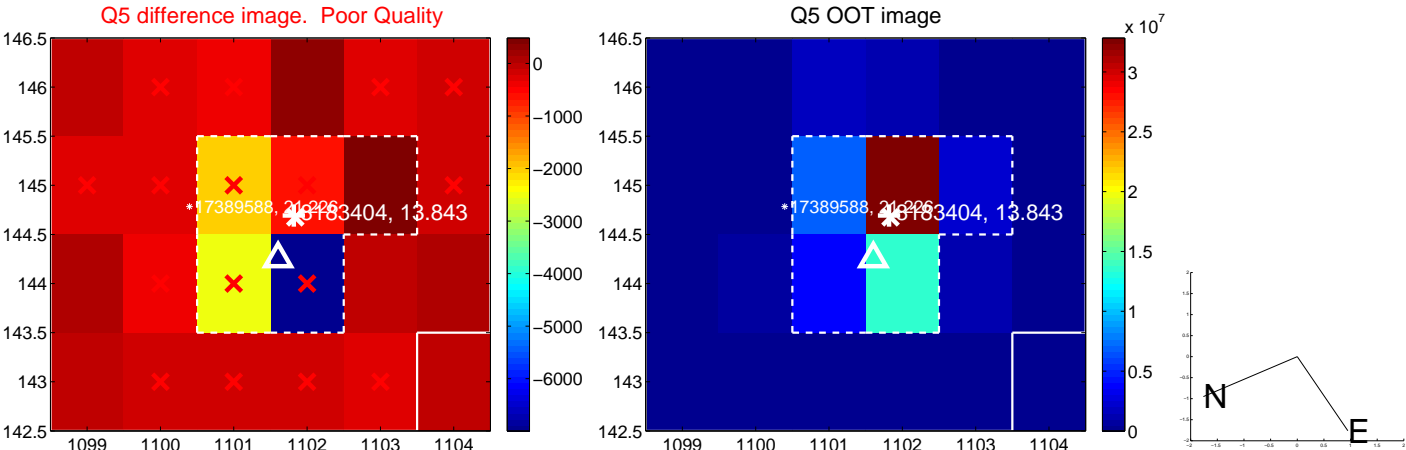


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

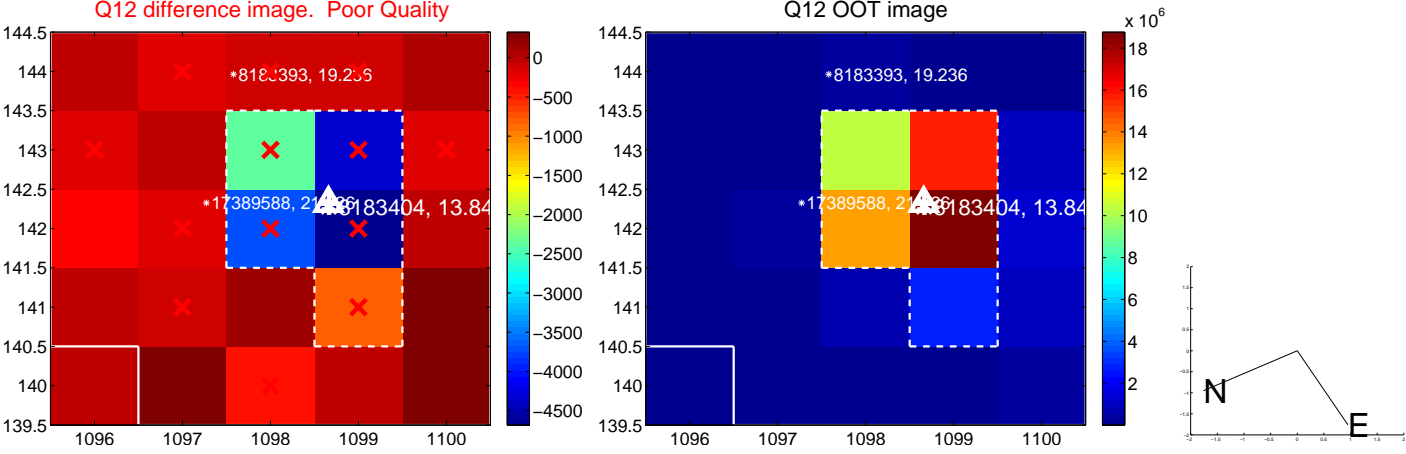
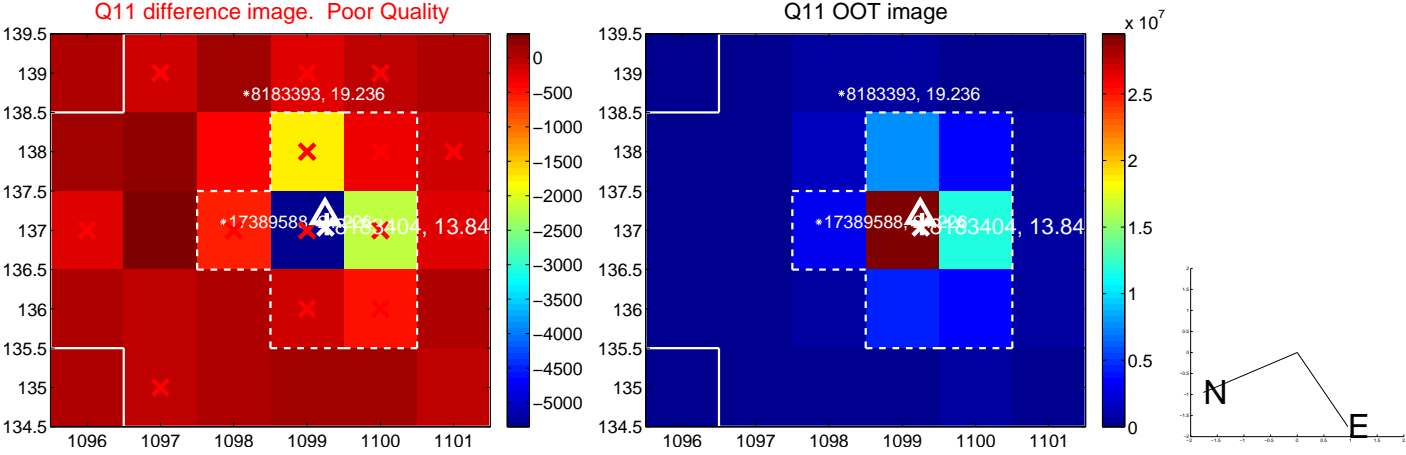
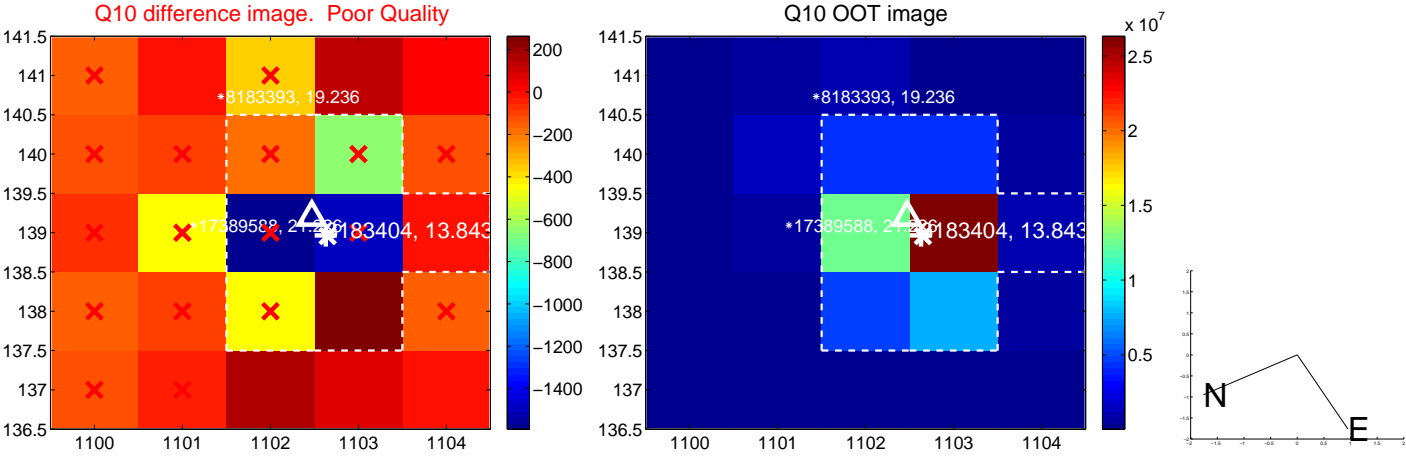
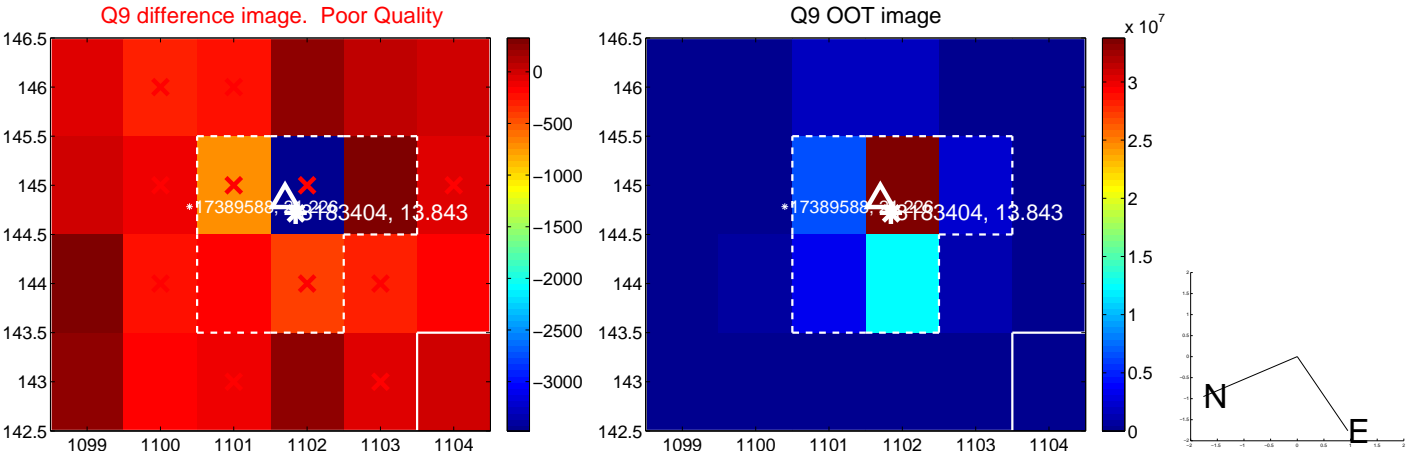


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

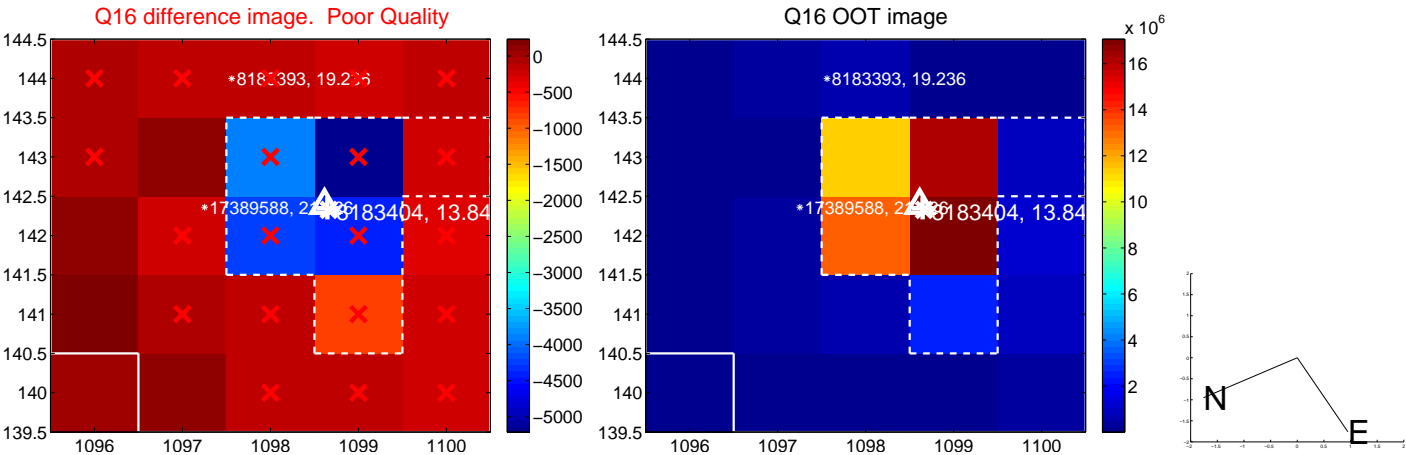
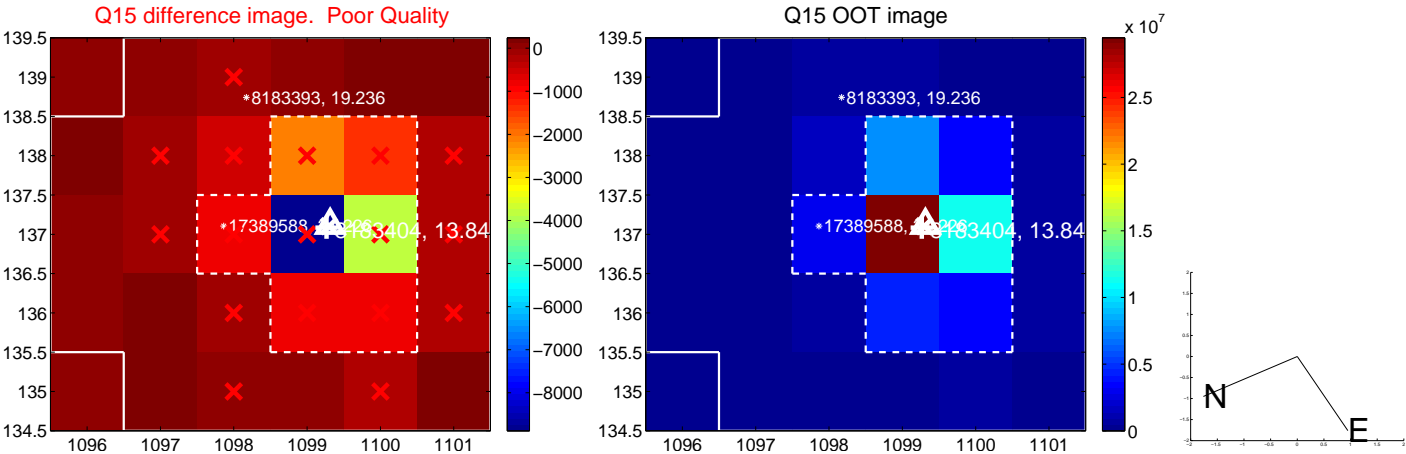
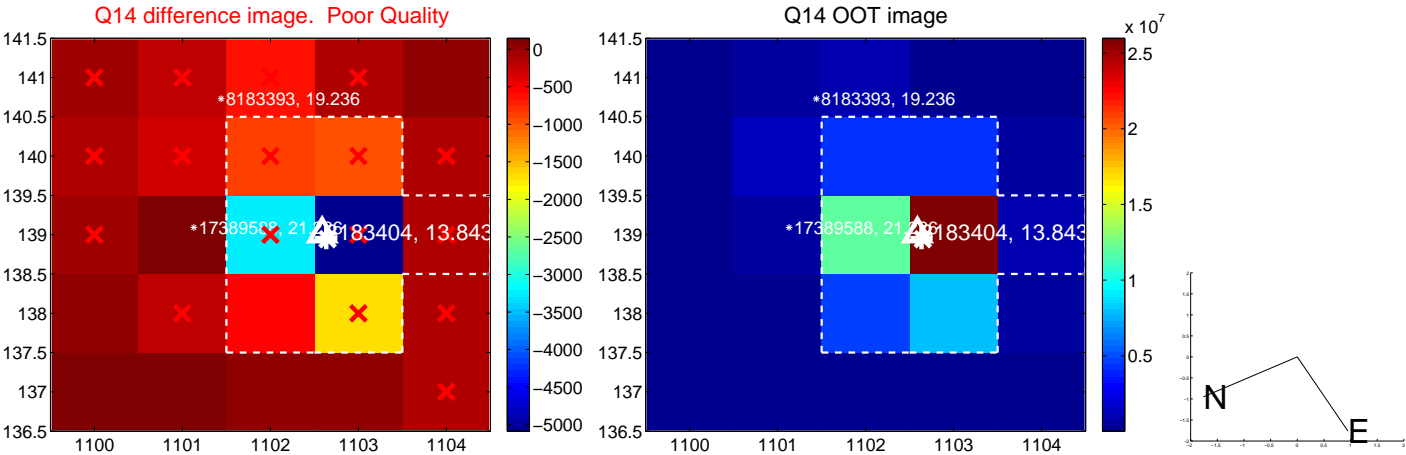
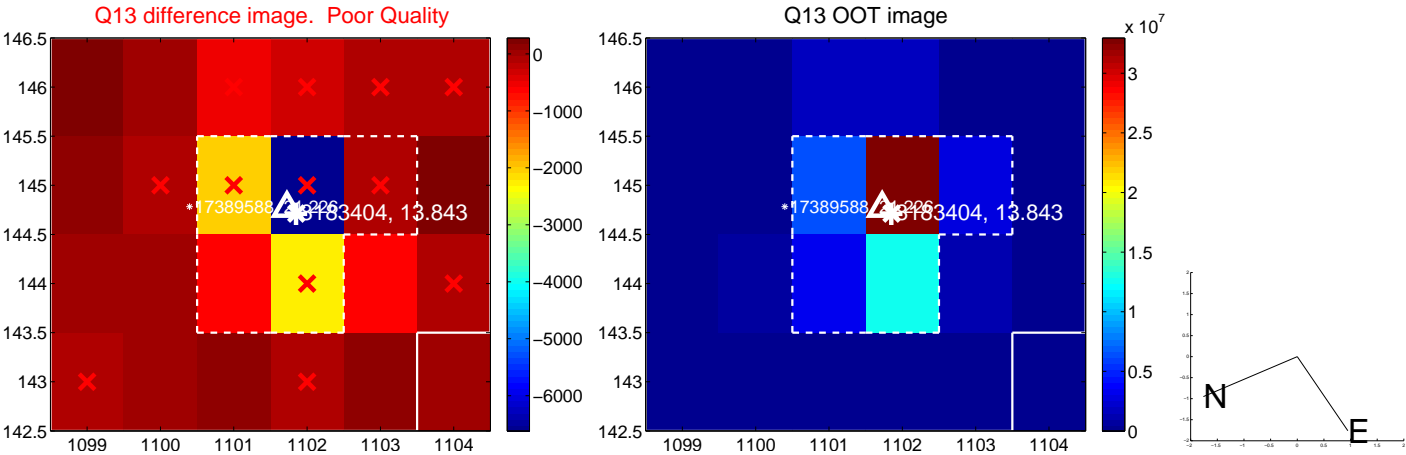




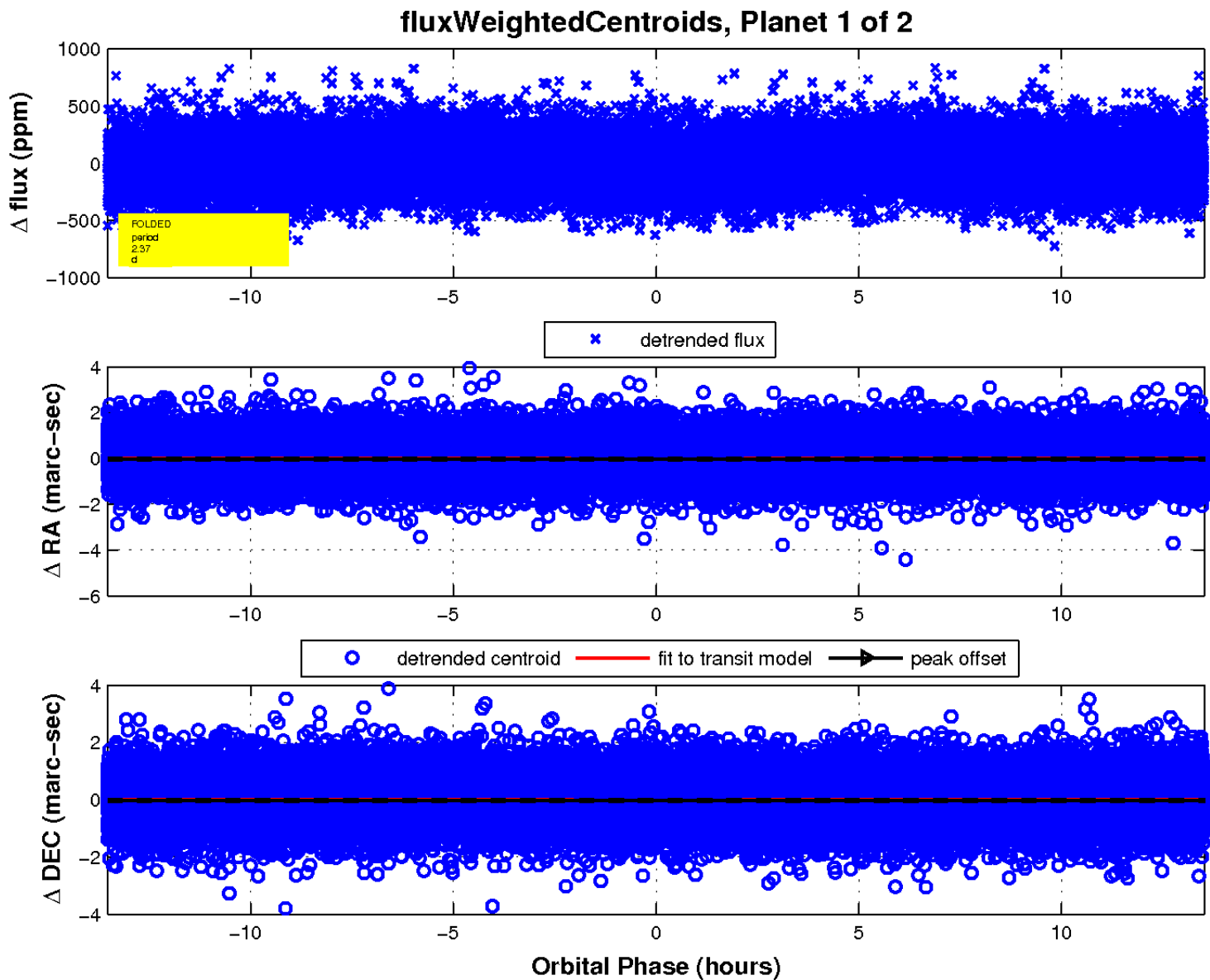
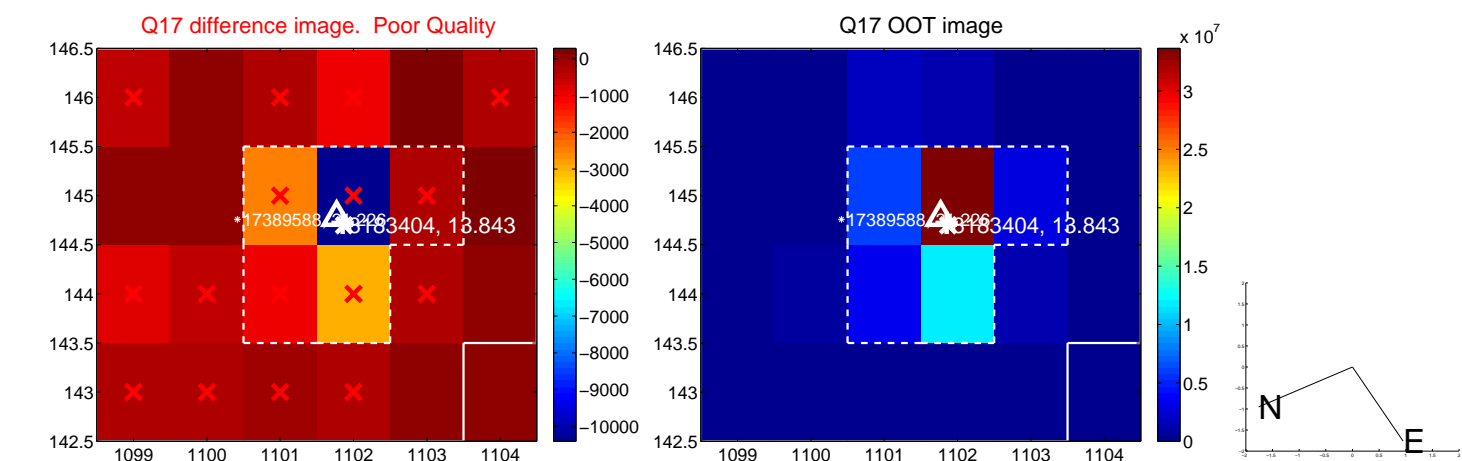
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

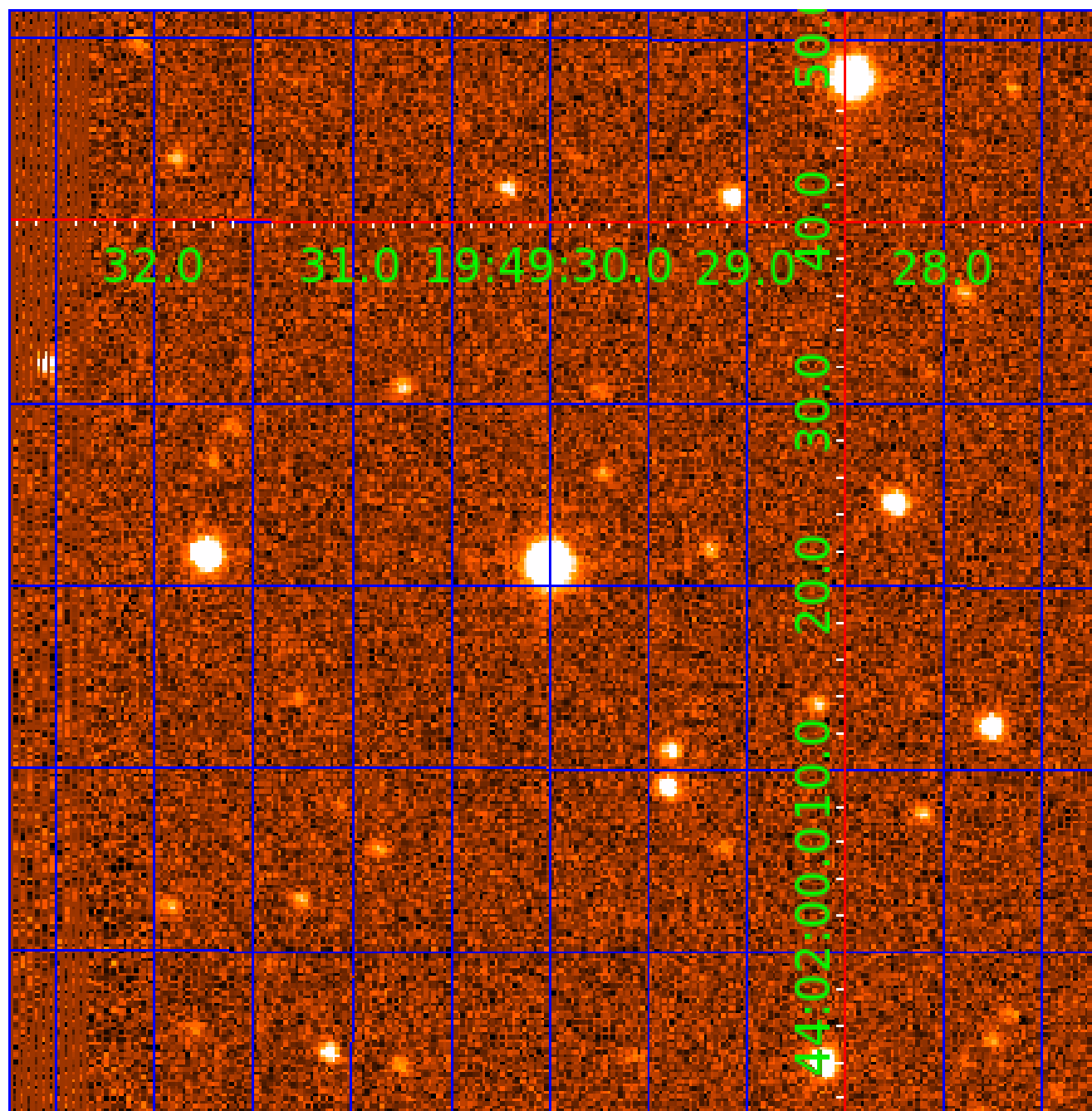


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 008183404

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008183404-01	OBS	No	2.369573	132.705900	39.7	4.508	11.0	10.5	1.26	6781	0.93	2190.41
008183404-02	OBS	No	1.184555	132.361126	0.0	1.179	7.8	0.0	1.26	6781	0.00	5520.94

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008183404-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008183404-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—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.

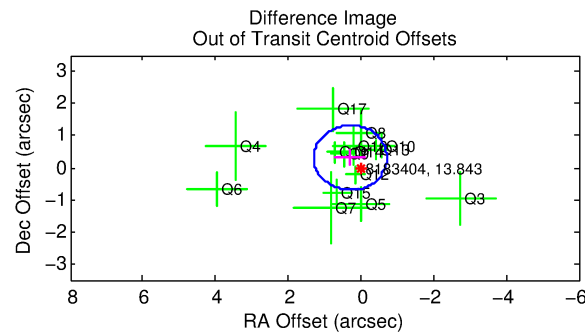
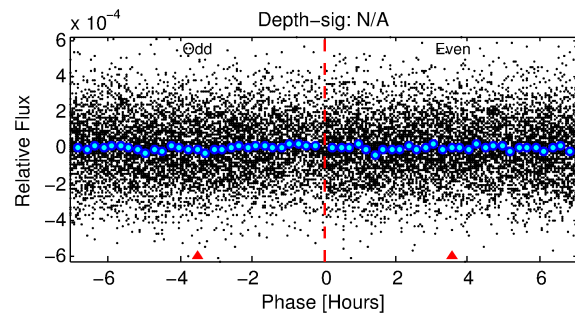
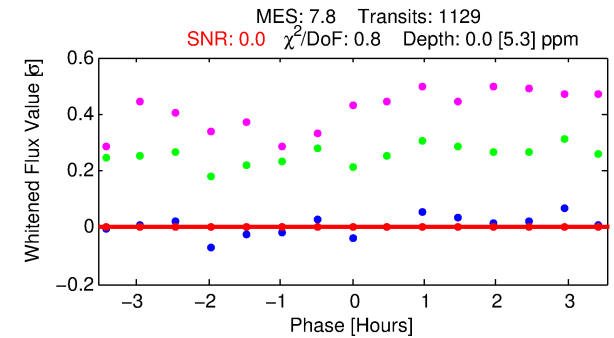
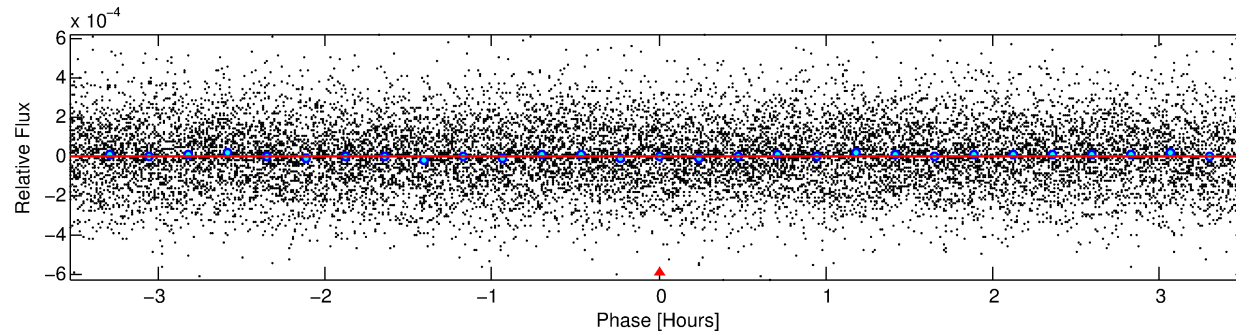
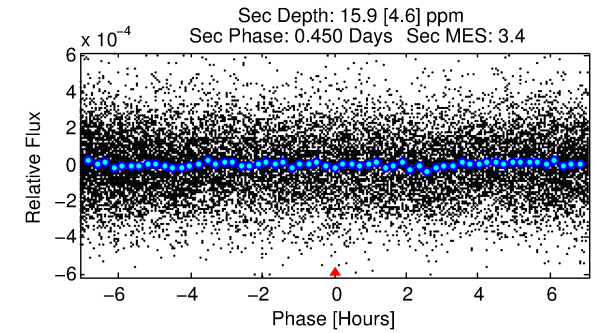
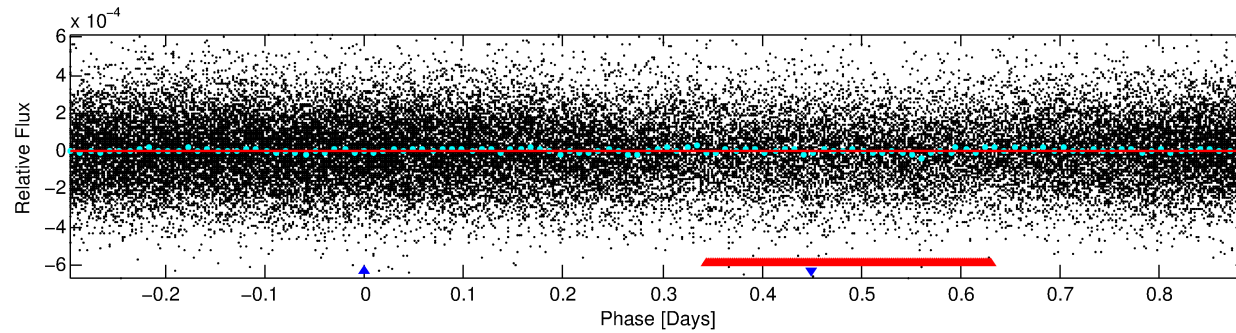
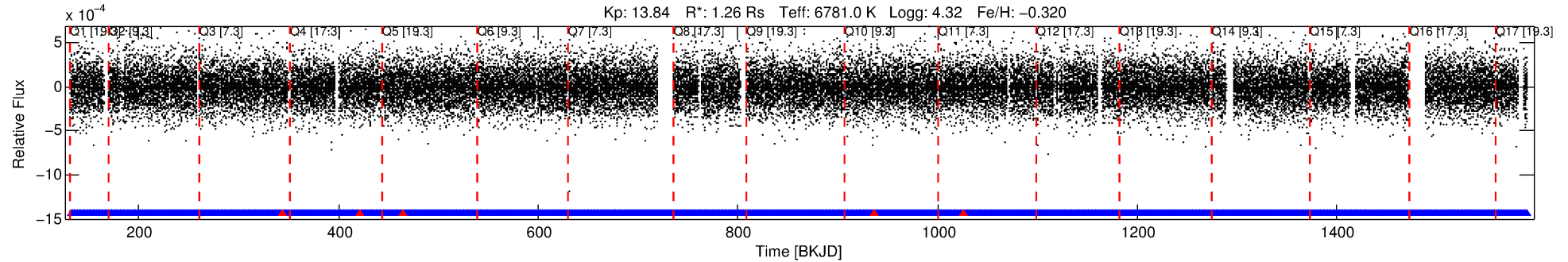
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008183404-02

No Significant Match Found

# DV One-Page Summary

KIC: 8183404 Candidate: 2 of 2 Period: 1.185 d



## DV Fit Results:

Period = 1.18456 [1.28069] d  
Epoch = 132.3611 [244.1521] BKJD  
Rp/R\* = 0.0000 [0.1992]  
a/R\* = 1.25 [1628.81]  
b = 1.00 [58.36]  
Seff = 5520.94 [8253.67]  
Teq = 2198 [821] K  
Rp = 0.00 [27.37] Re  
a = 0.0233 [0.0178] AU  
Ag = 464821.19 [7950972327.22] [0.00σ]  
Teffp = 88734 [379480183] K [0.00σ]

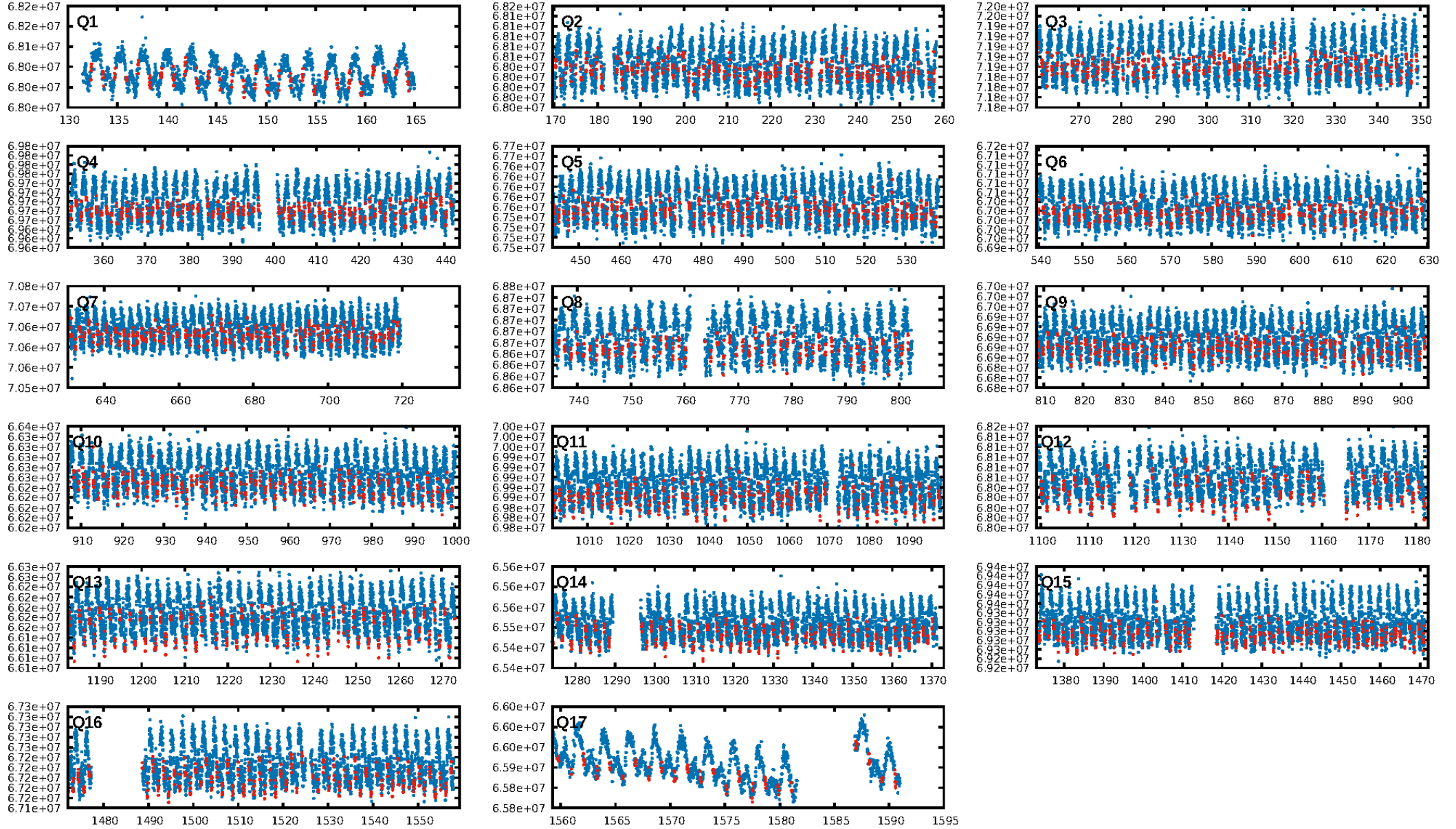
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [6.10σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.30e-13  
RollingBand-fgt: 1.00 [1073/1078]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.432 arcsec [1.28σ]  
KicOffset-rm: 0.381 arcsec [1.18σ]  
OotOffset-st: 3/4/4/4 [15]  
KicOffset-st: 3/4/4/4 [15]  
DiffImageQuality-fgm: 0.87 [13/15]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:47:43 Z

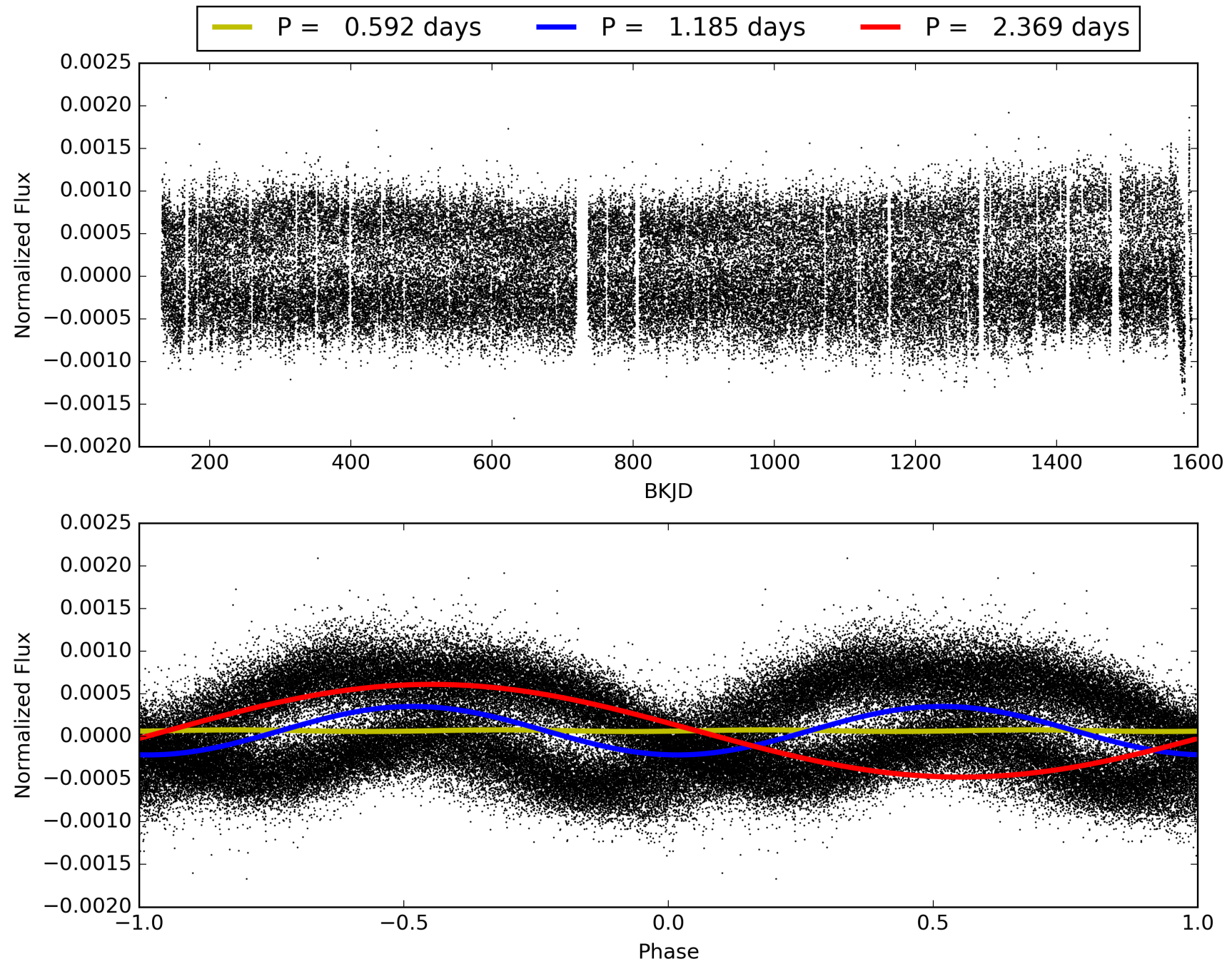
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008183404-02, PDC Light Curves





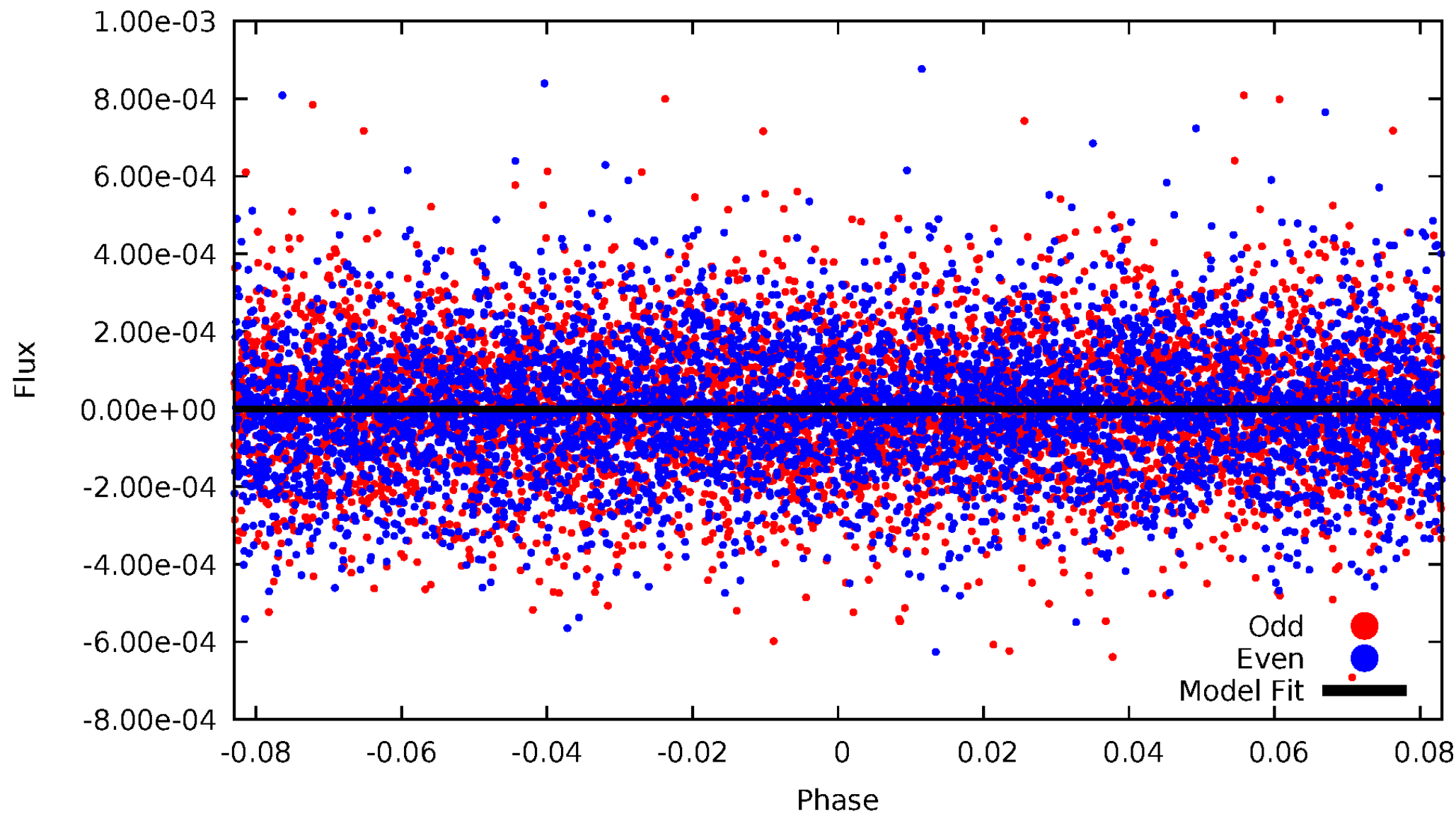
TCE 008183404-02





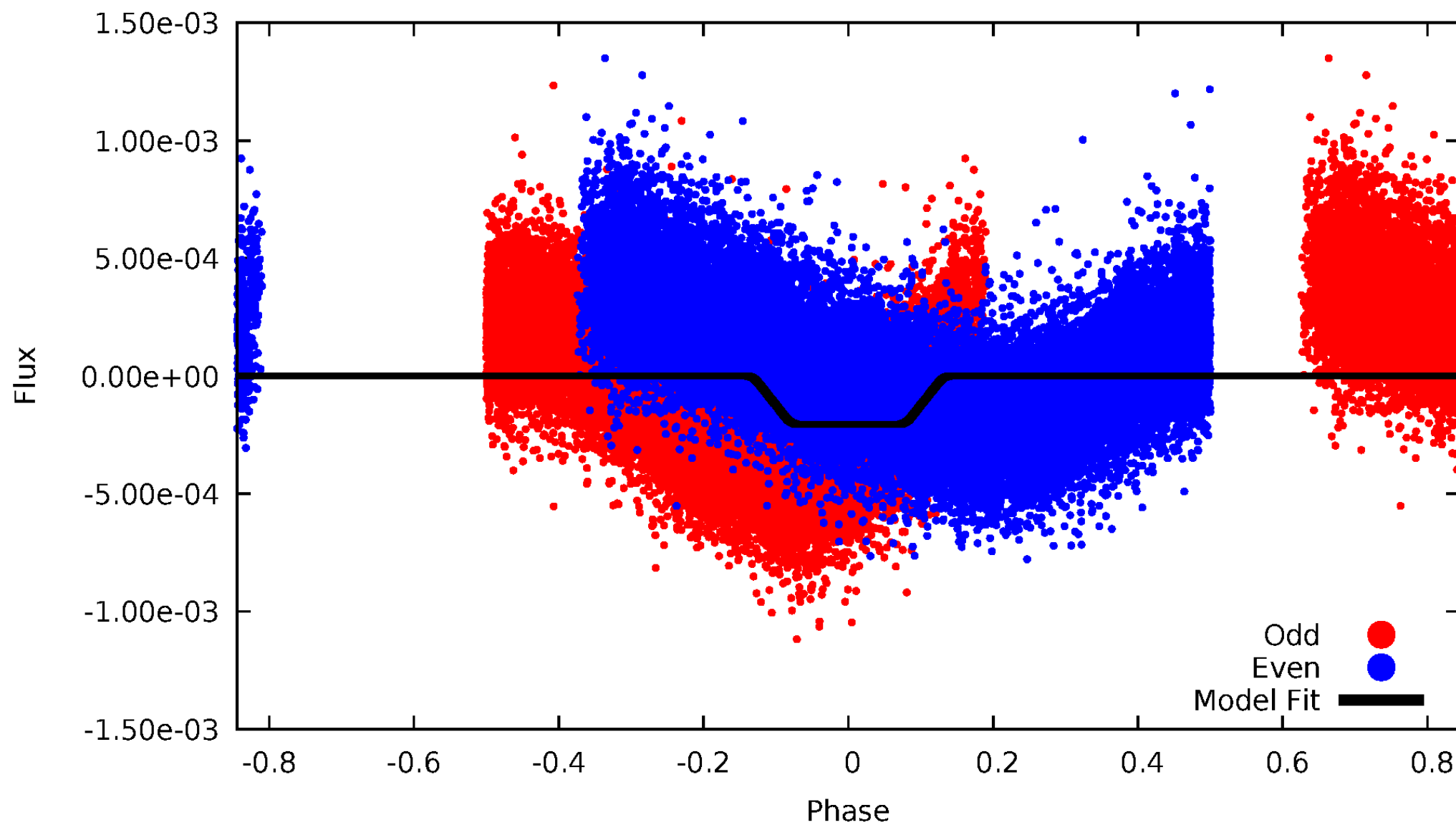
# DV Odd/Even

TCE 008183404-02



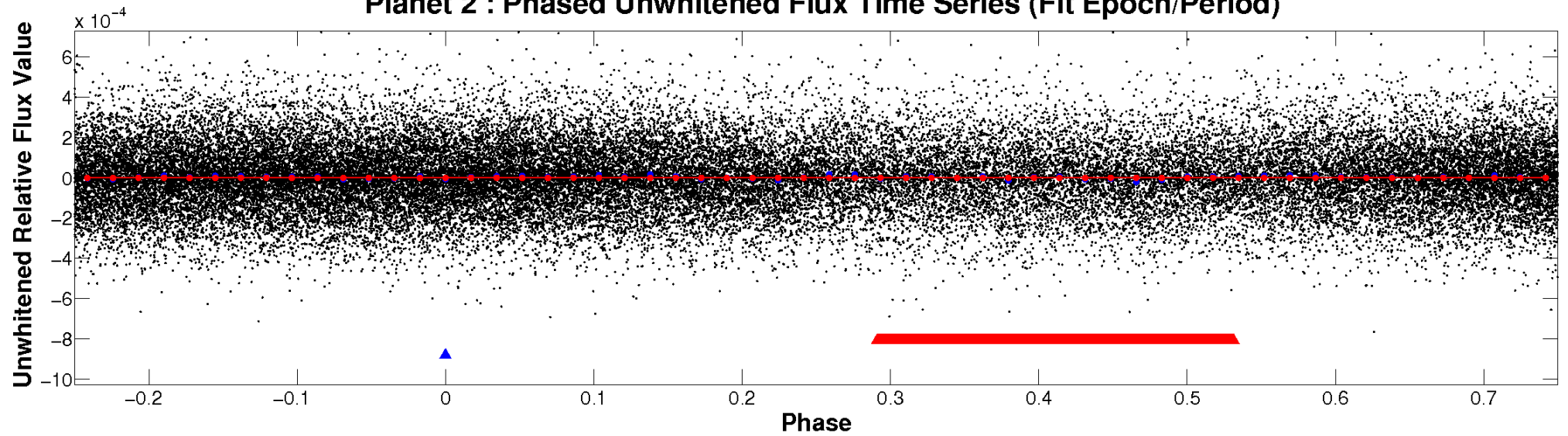
# ALT Odd/Even

TCE 008183404-02

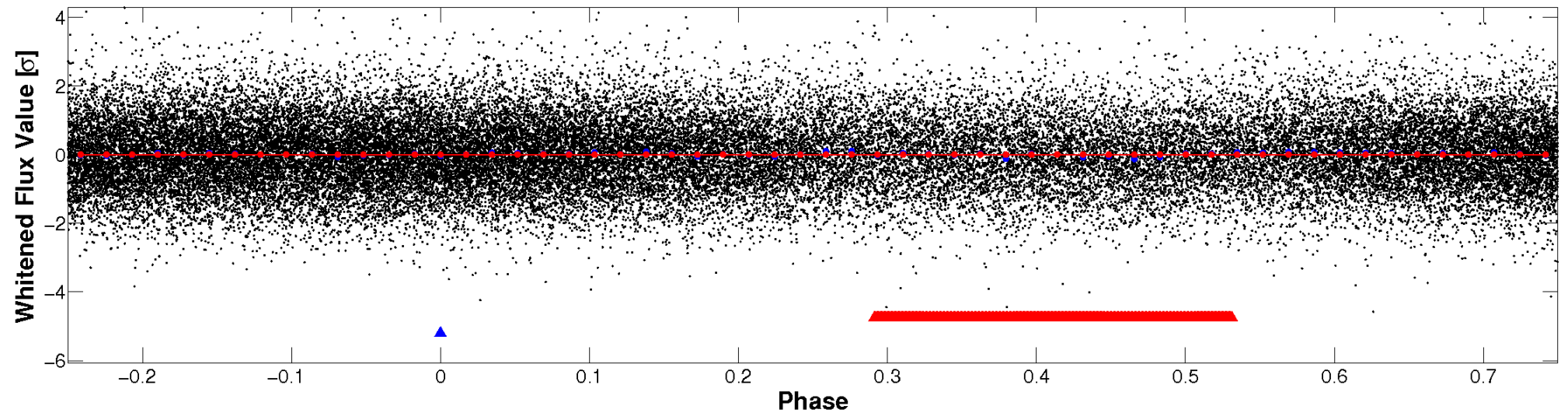


# Non-Whitened Vs. Whitened Light Curve

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

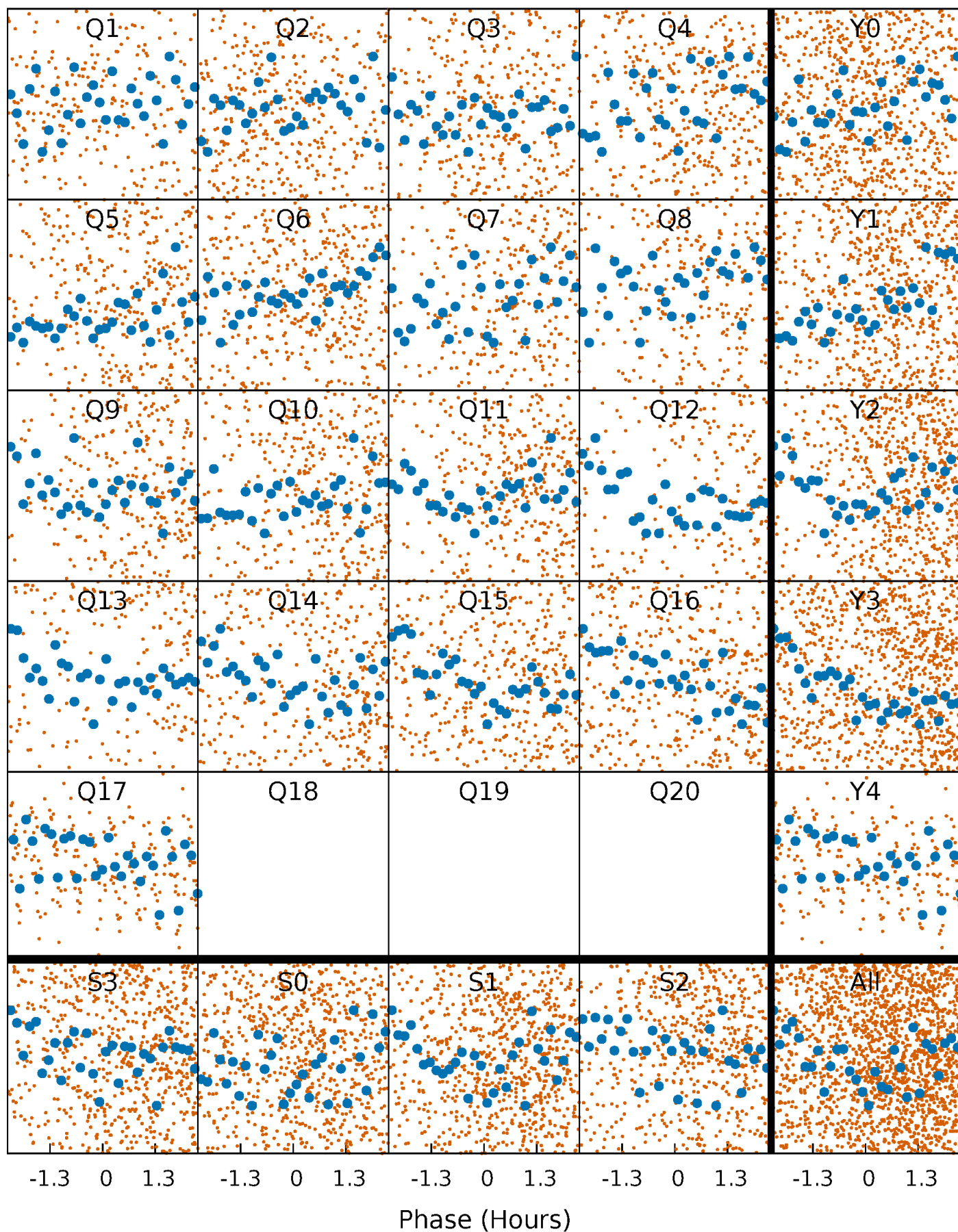


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

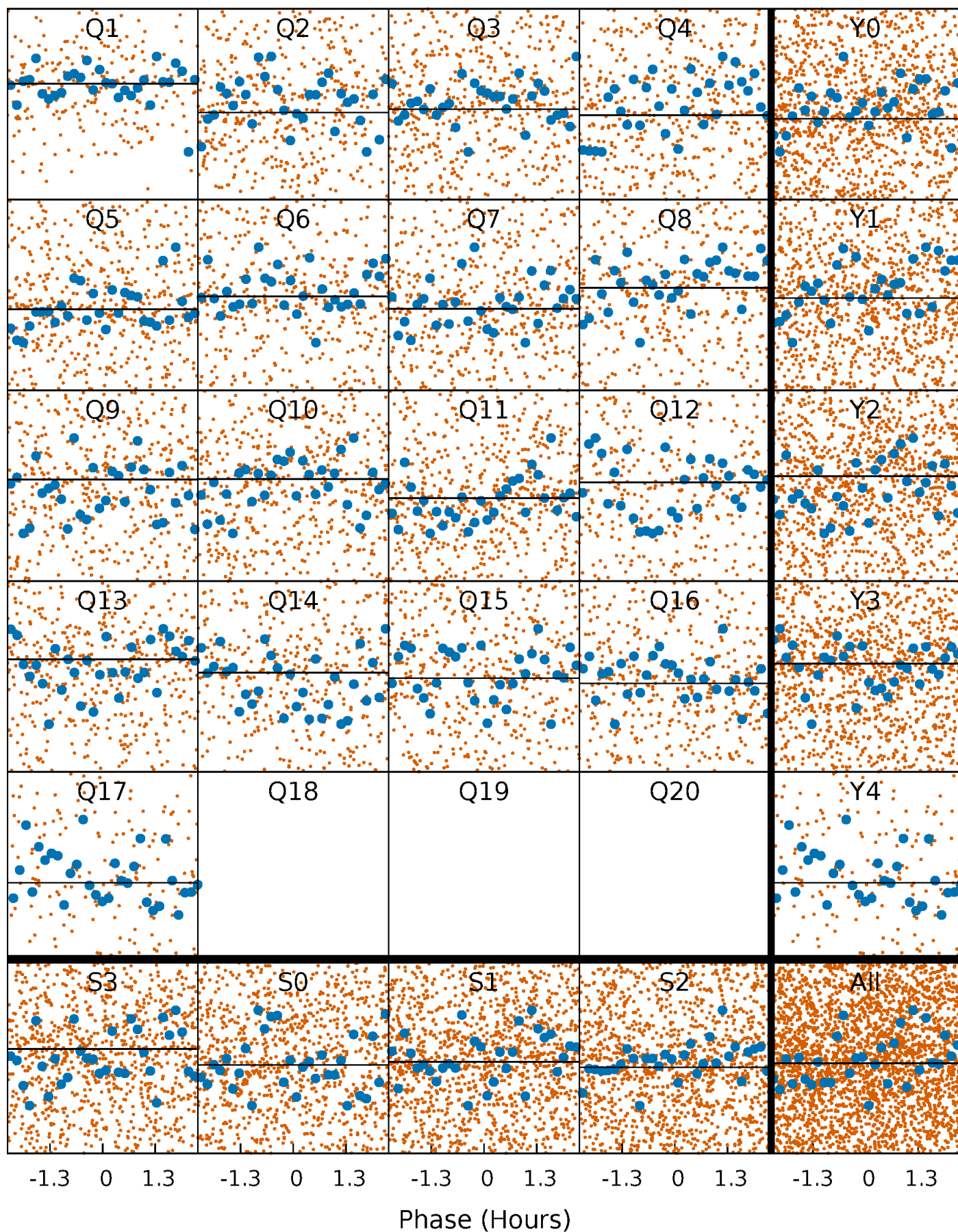
TCE 008183404-02 P= 1.184555 Days  $T_0=132.361126$  (BKJD)





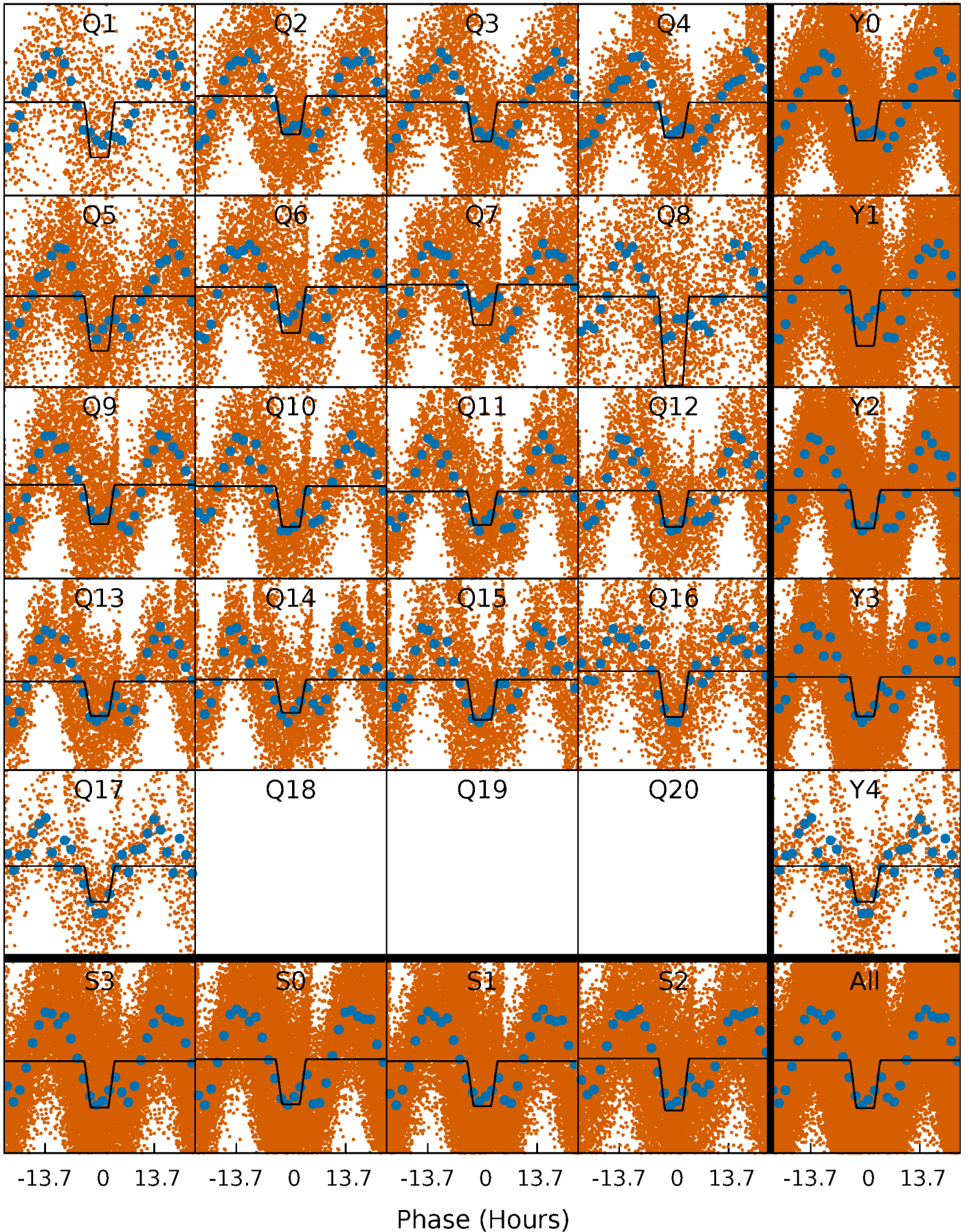
# DV Quarter-Phased Transit Curves

TCE 008183404-02 P= 1.184555 Days  $T_0=132.361126$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 008183404-02   P= 1.184727 Days    $T_0=132.258483$  (BKJD)

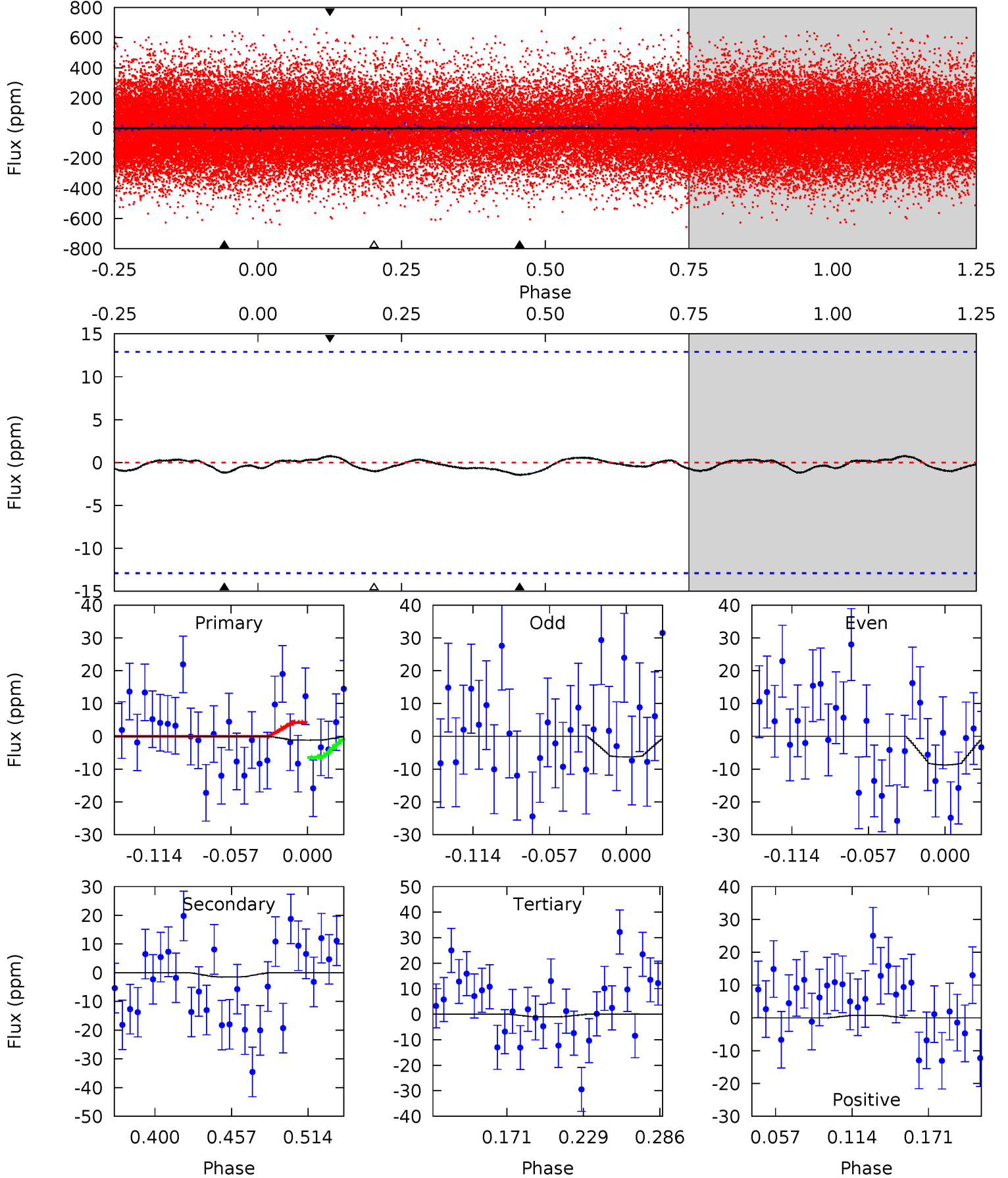




# DV Model-Shift Uniqueness Test

008183404-02, P = 1.184555 Days, E = 131.176571 Days

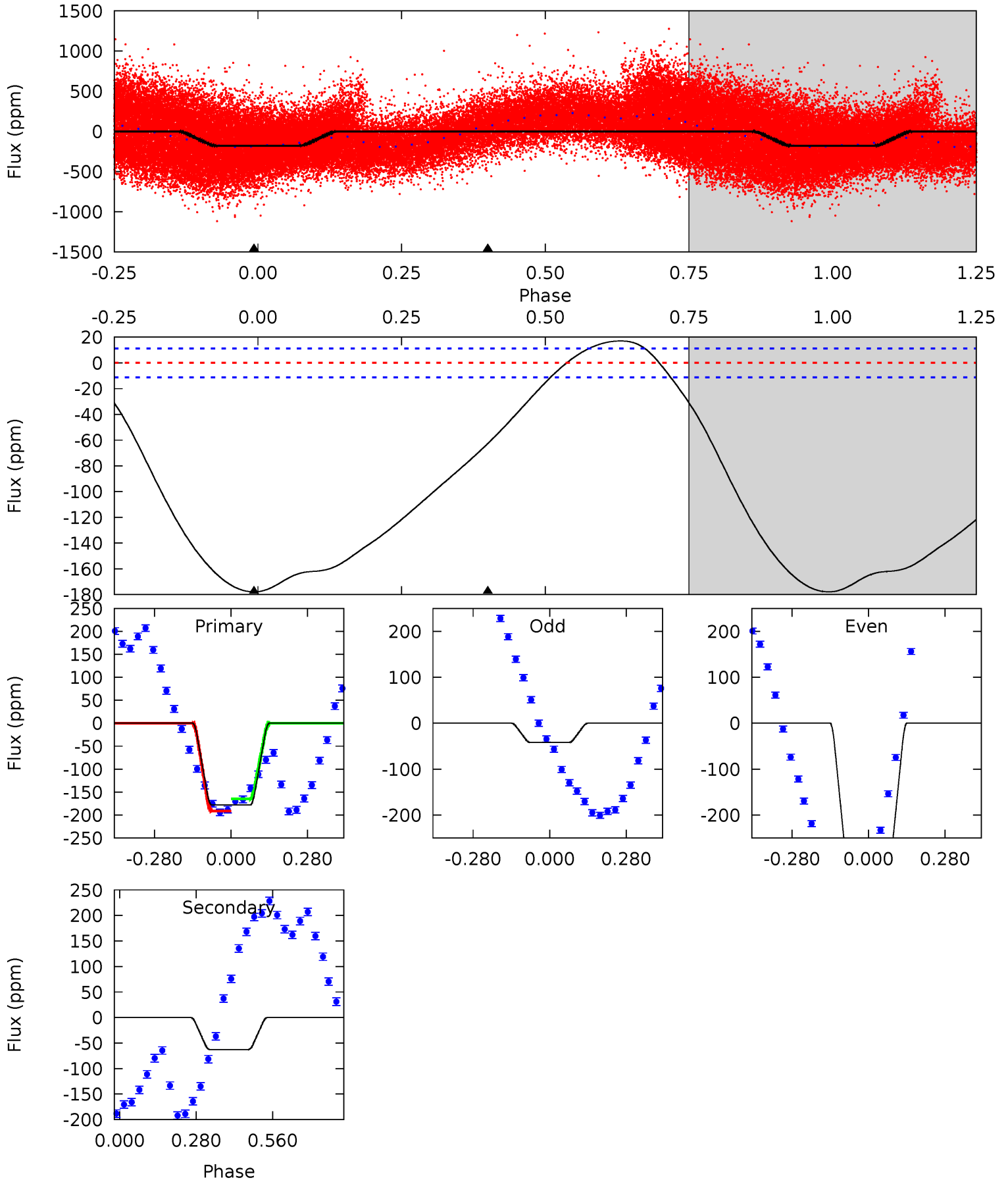
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.43	0.53	0.37	0.28	4.68	1.90	0.16	0.06	0.15	0.16	0.25	0.44	-0.51	0.35	0.40



# Alt Model-Shift Uniqueness Test

008183404-02, P = 1.184727 Days, E = 131.073756 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
68.9	24.3	0	0	4.34	1.08	4.41	68.9	68.9	24.3	24.3	62.3	1.00	0.09	6.02



### Stellar Parameters For KIC 008183404

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6781^{+189}_{-260}$	$4.319^{+0.084}_{-0.196}$	$-0.320^{+0.250}_{-0.300}$	$1.259^{+0.391}_{-0.196}$	$1.212^{+0.175}_{-0.193}$	$0.856^{+0.387}_{-0.451}$
	+3%/-4%	+2%/-5%	+78%/-94%	+31%/-16%	+14%/-16%	+45%/-53%
Source	PHO1	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 008183404-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-1 \pm 3$	$20.10^{+20.25}_{-14.42}$	$2874^{+1121}_{-520}$	$-2992^{+330}_{-715}$	$0.001^{+0.013}_{-0.002}$
Alt.	$-63 \pm 3$	$19.04^{+21.13}_{-13.67}$	$2944^{+1062}_{-540}$	$-2812^{+6044}_{-769}$	$0.060^{+0.771}_{-0.050}$

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

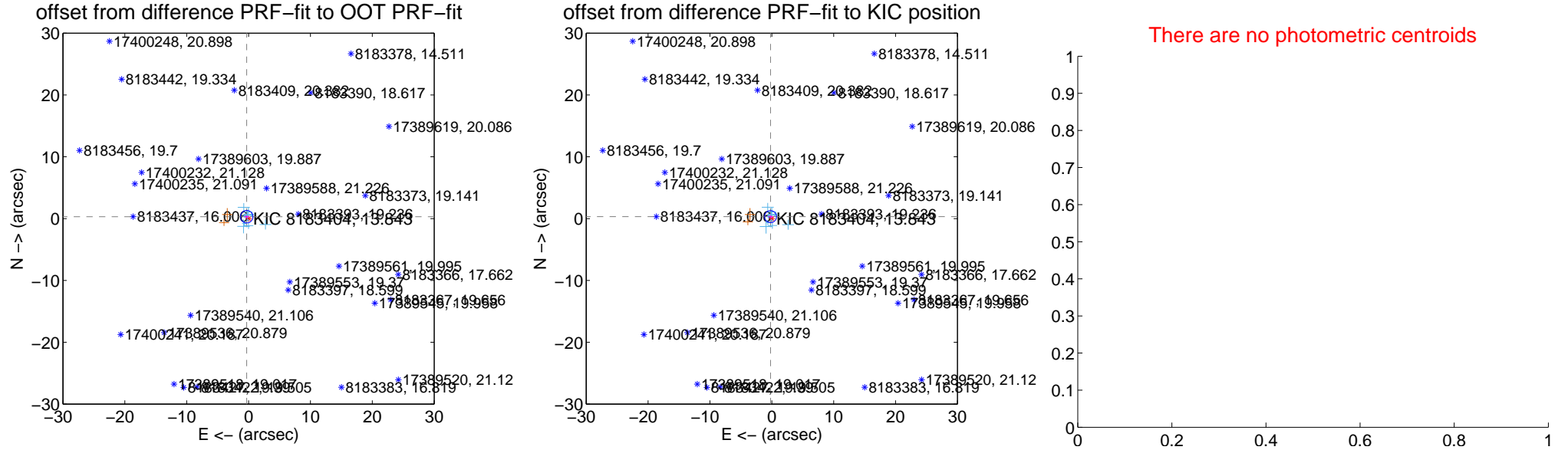
## DV Centroid Data

Supplemental centroid analysis for 008183404-02. Kepler magnitude: 13.84. Transit SNR 0.00

There are 13 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

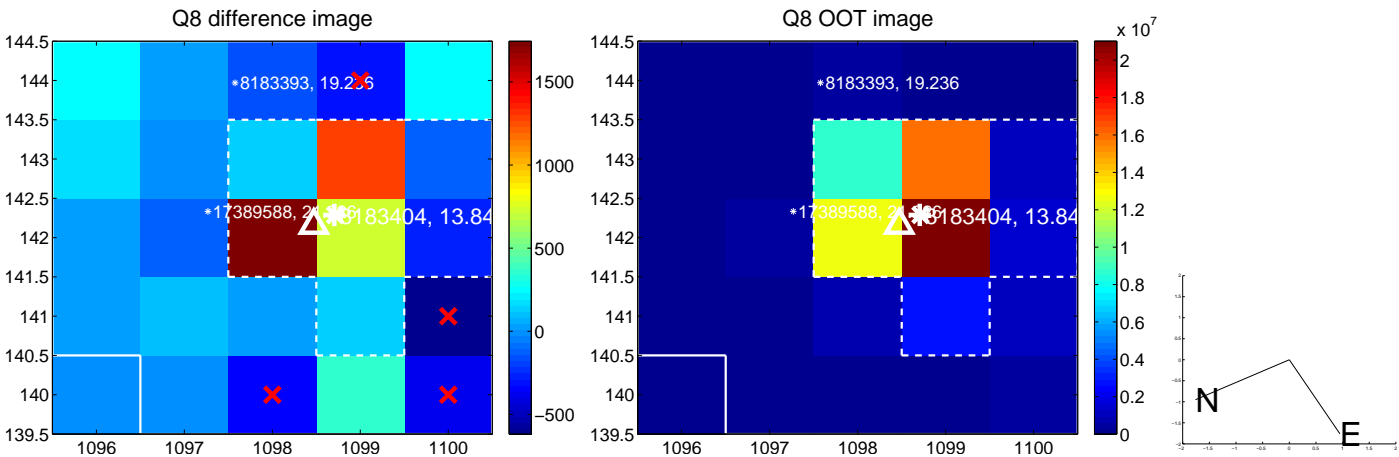
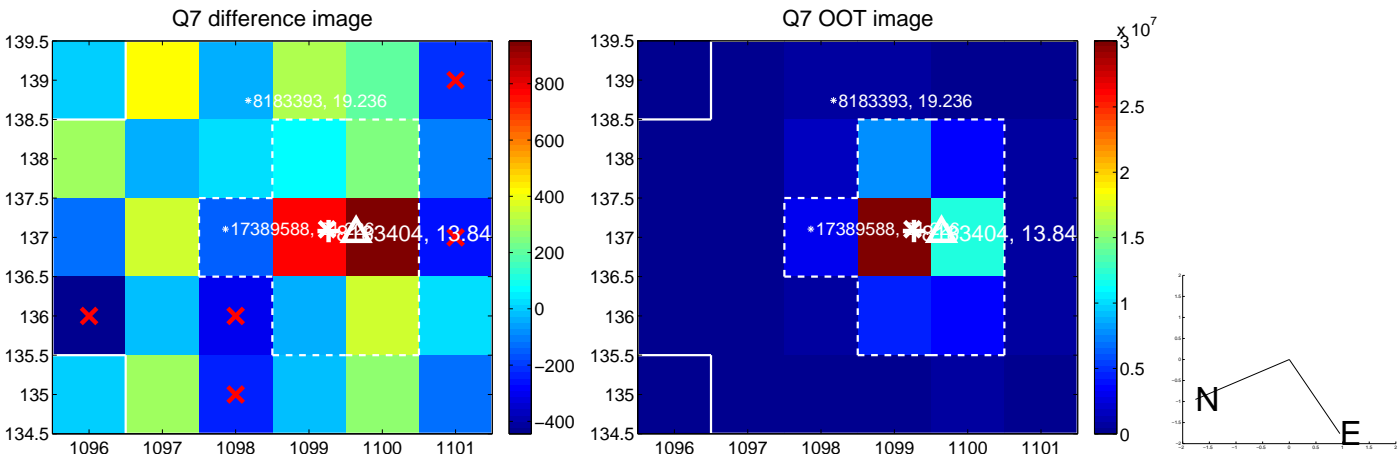
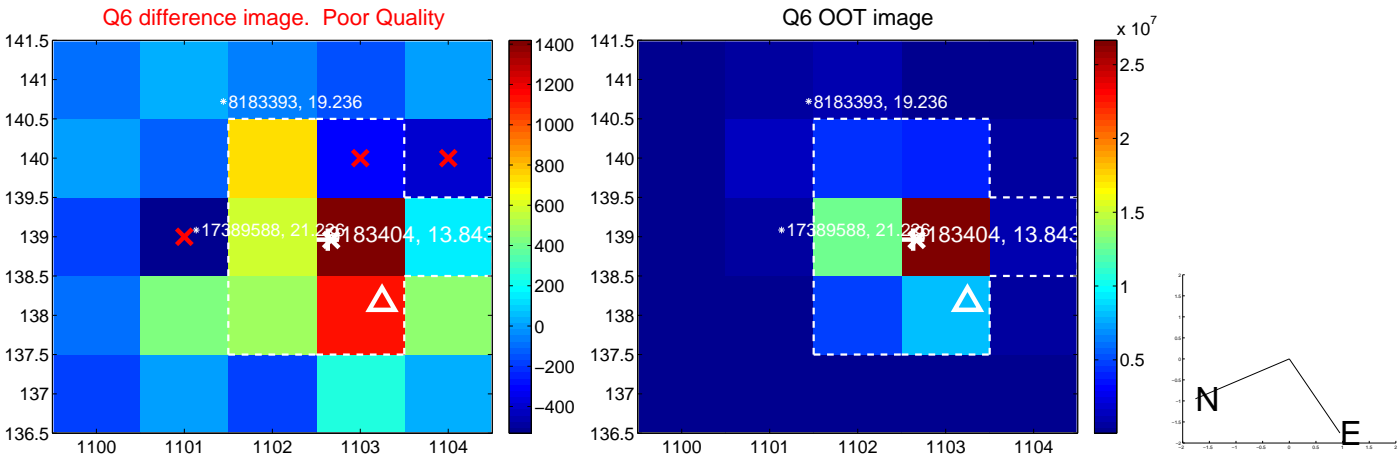
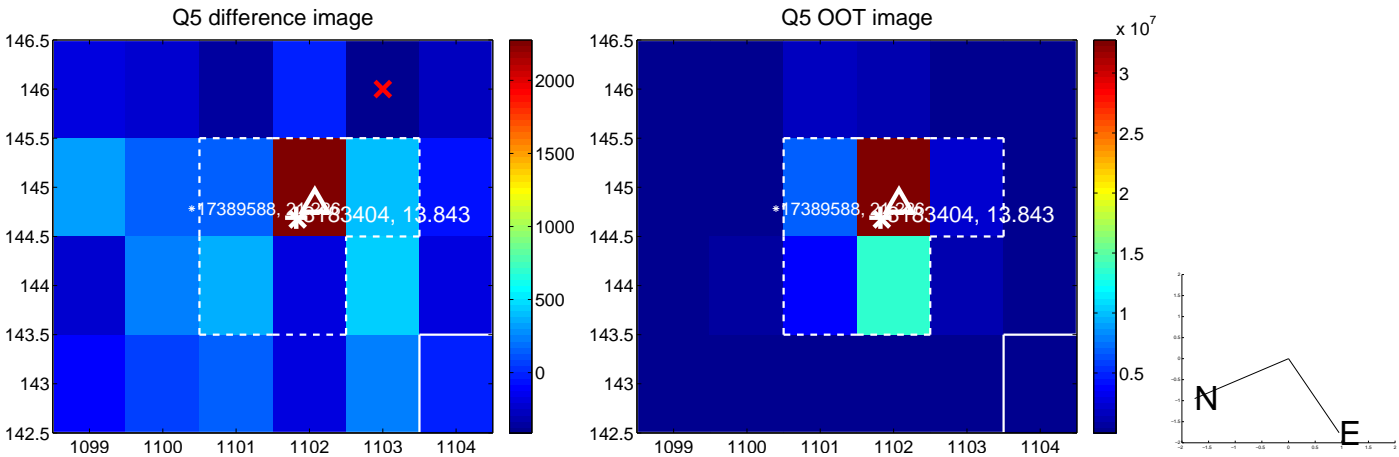
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.432 \pm 0.336$	1.28	$0.298 \pm 0.400$	$0.312 \pm 0.241$
PRF-fit source offset from KIC position	$0.381 \pm 0.323$	1.18	$0.207 \pm 0.407$	$0.320 \pm 0.236$
photometric centroid source offset	—	—	—	—



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

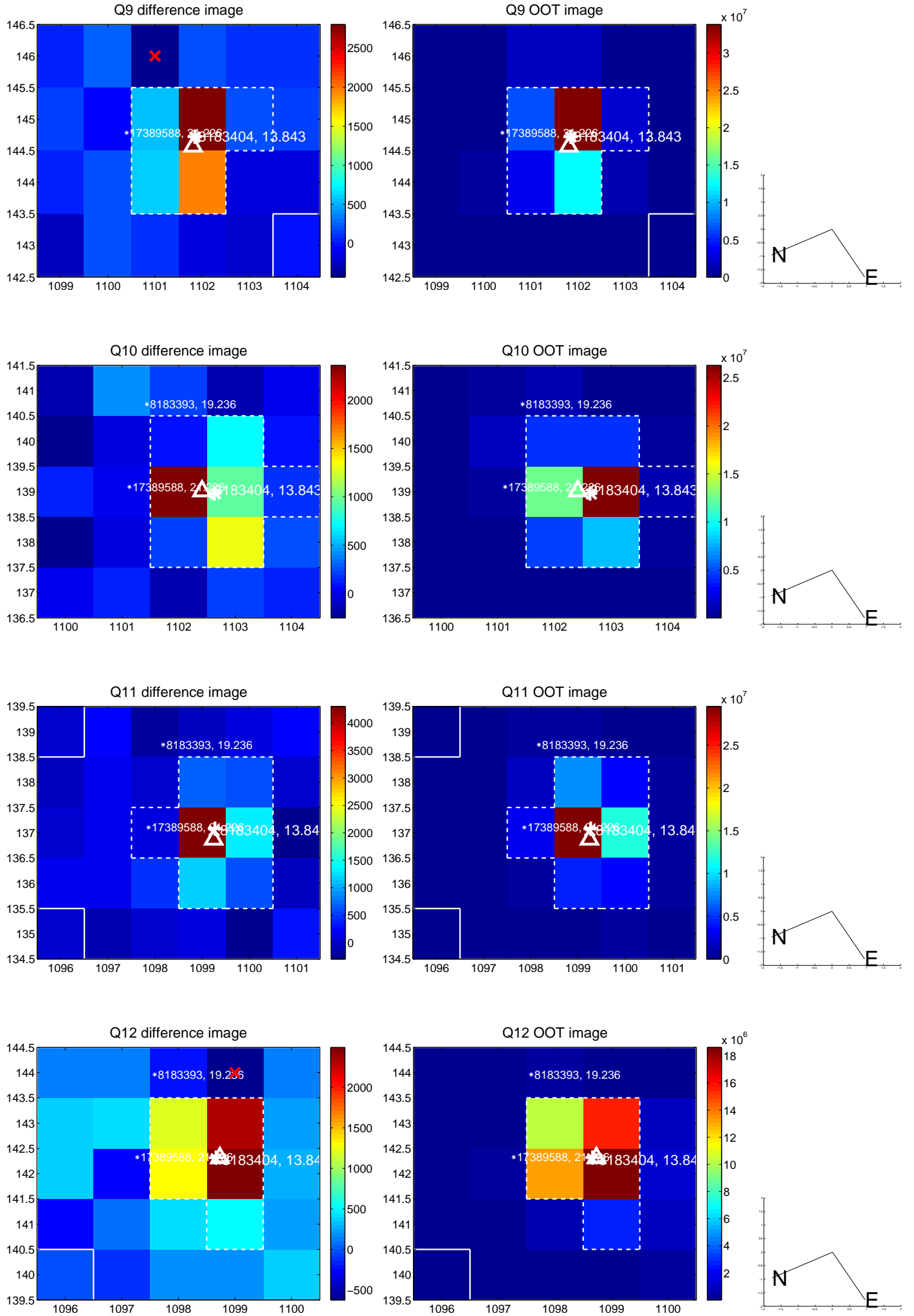


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

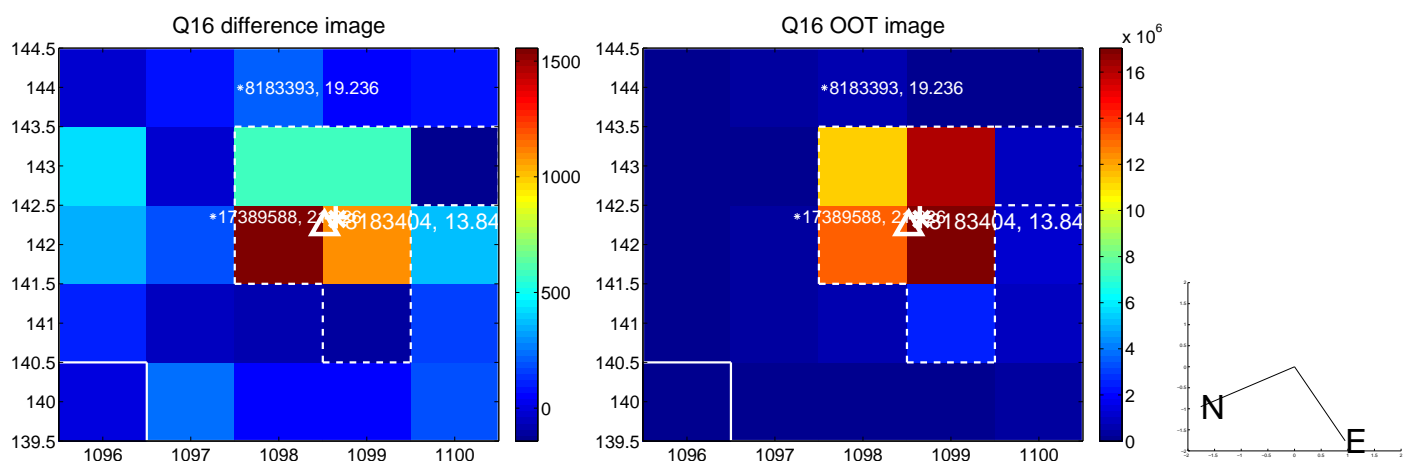
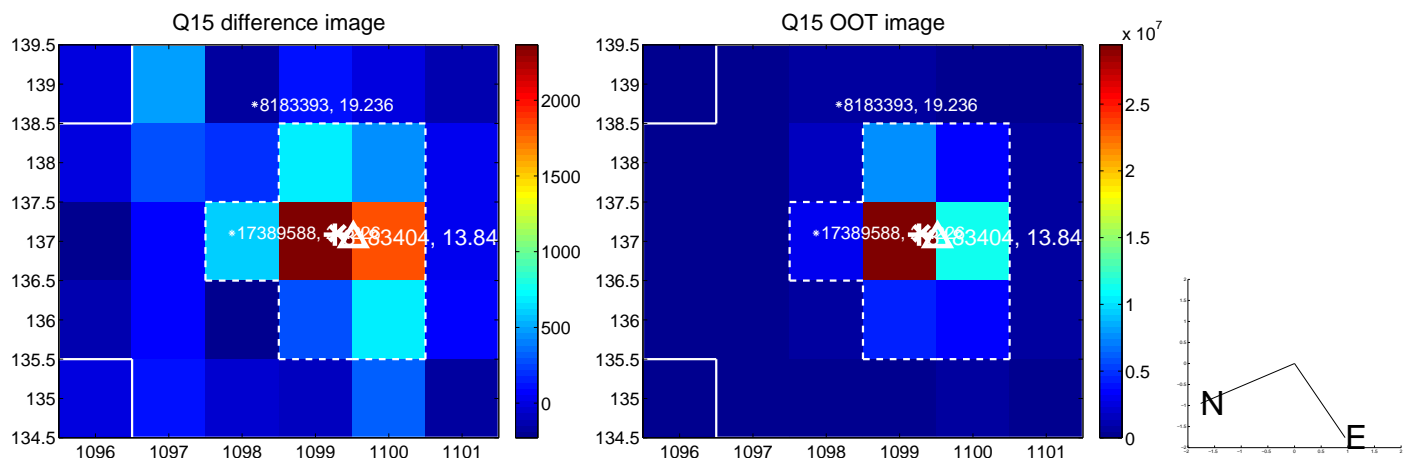
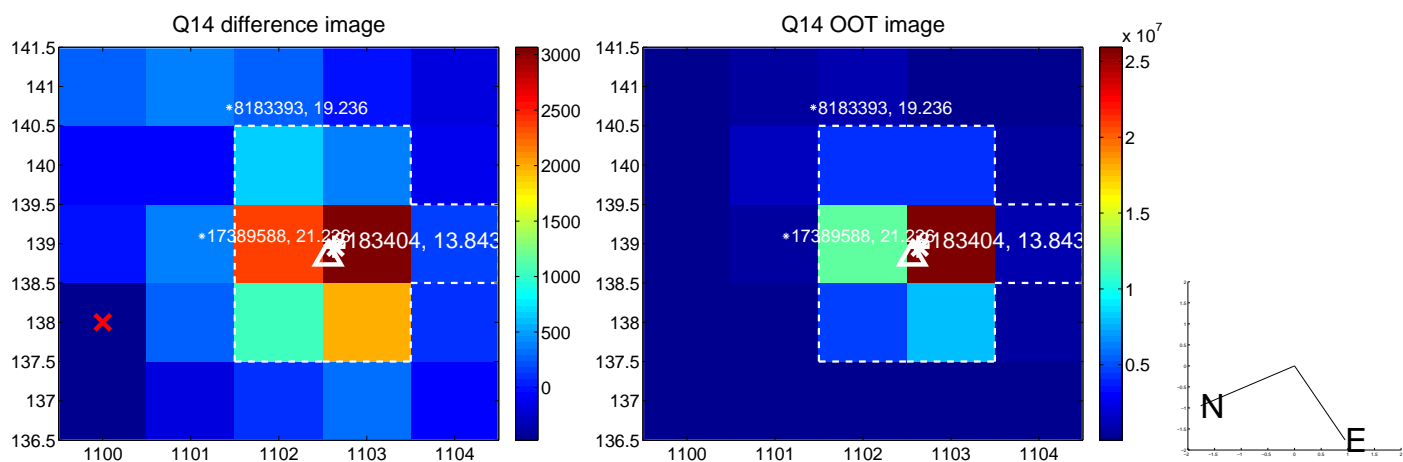
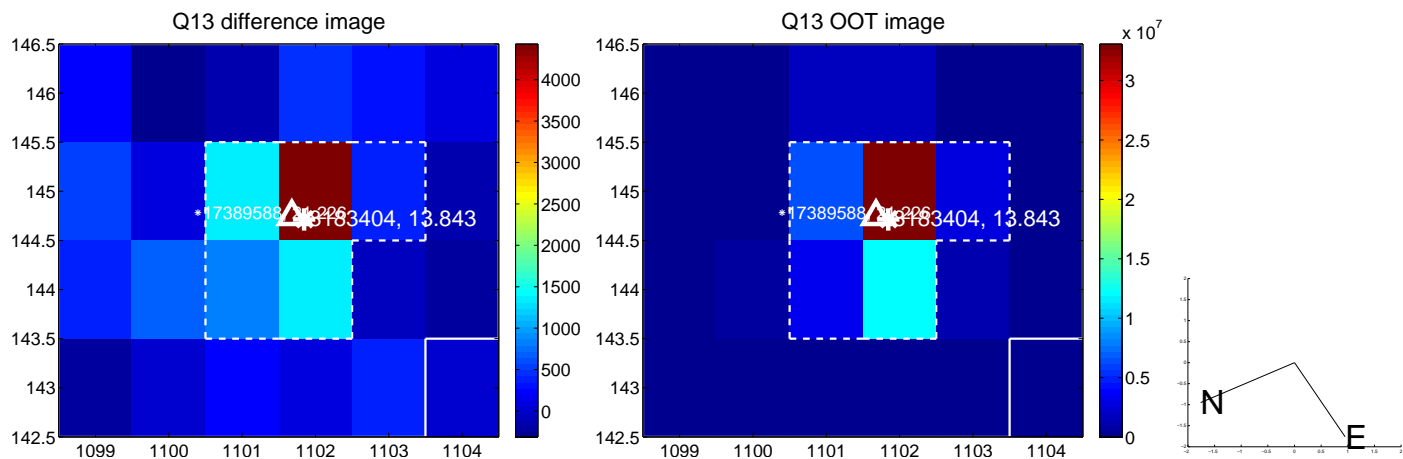




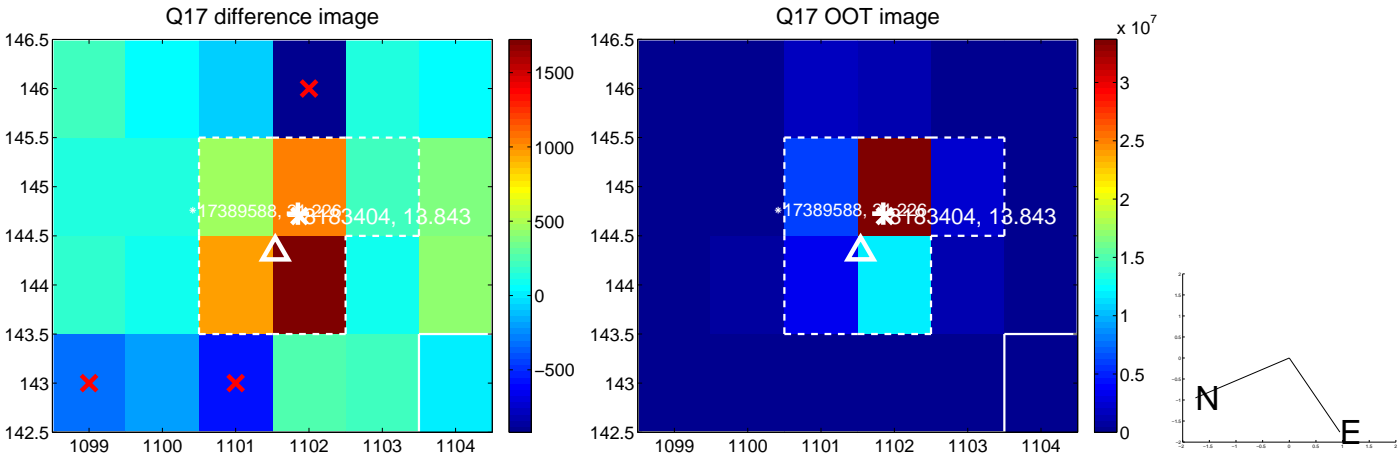
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination

