

# KIC 008488717

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008488717-01	OBS	No	3.254177	134.657762	44.9	10.500	11.0	-1.0	2.49	10816	1.72	20943.74
008488717-02	OBS	No	392.181561	166.891538	0.0	3.418	17.7	0.0	2.49	10816	0.03	35.18
008488717-03	OBS	No	351.542882	247.409300	92.1	16.746	10.4	7.1	2.49	10816	2.84	40.71

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008488717-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
008488717-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008488717-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

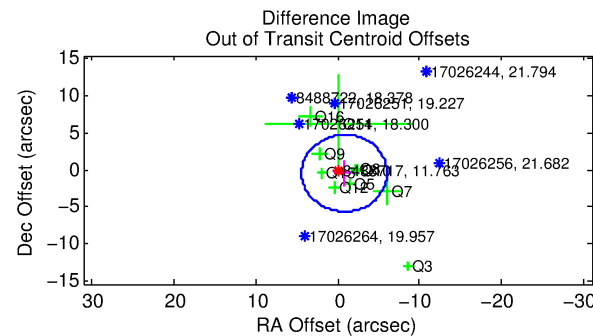
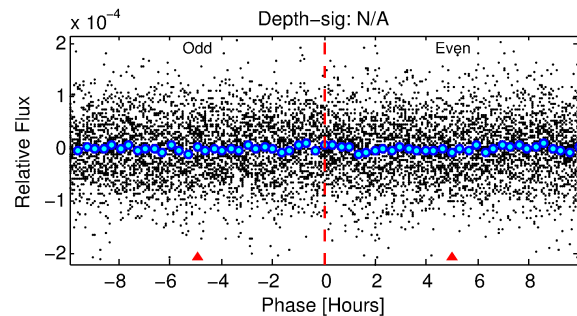
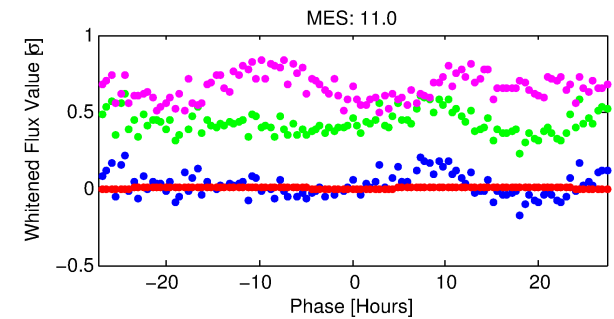
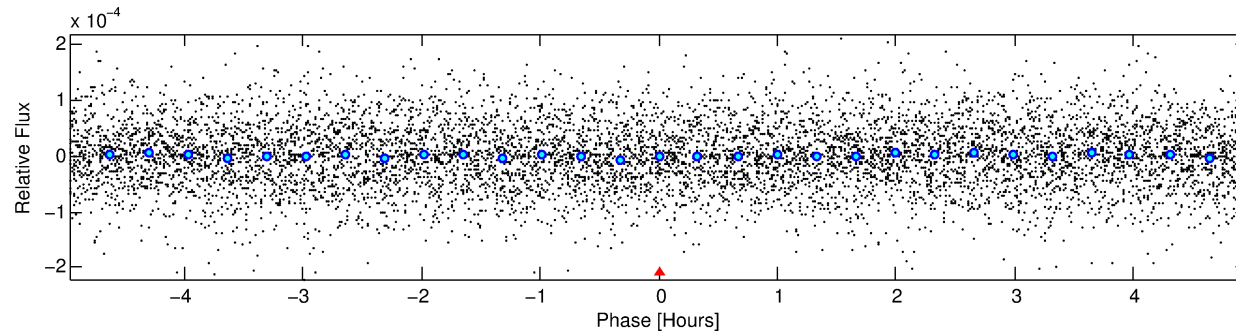
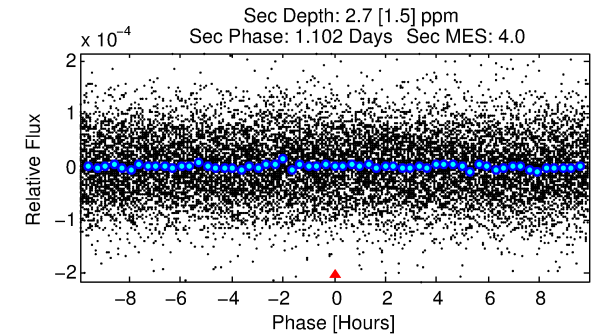
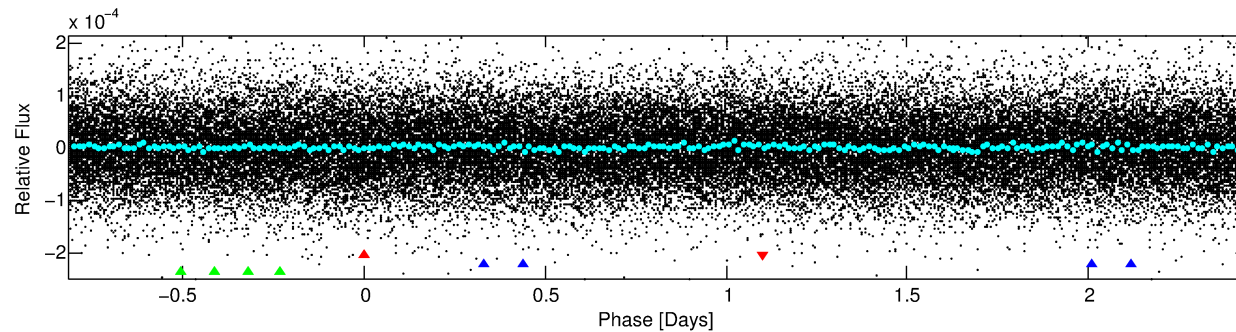
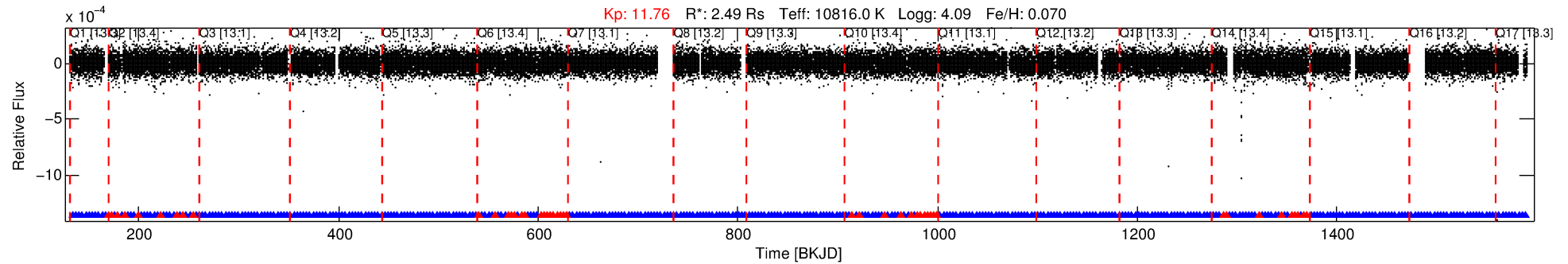
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008488717-01

No Significant Match Found

# DV One-Page Summary

KIC: 8488717 Candidate: 1 of 3 Period: 3.254 d



TPS TCE Results:

Period = 3.25418 d  
Epoch = 134.6578 BKJD

DV fit results are unavailable

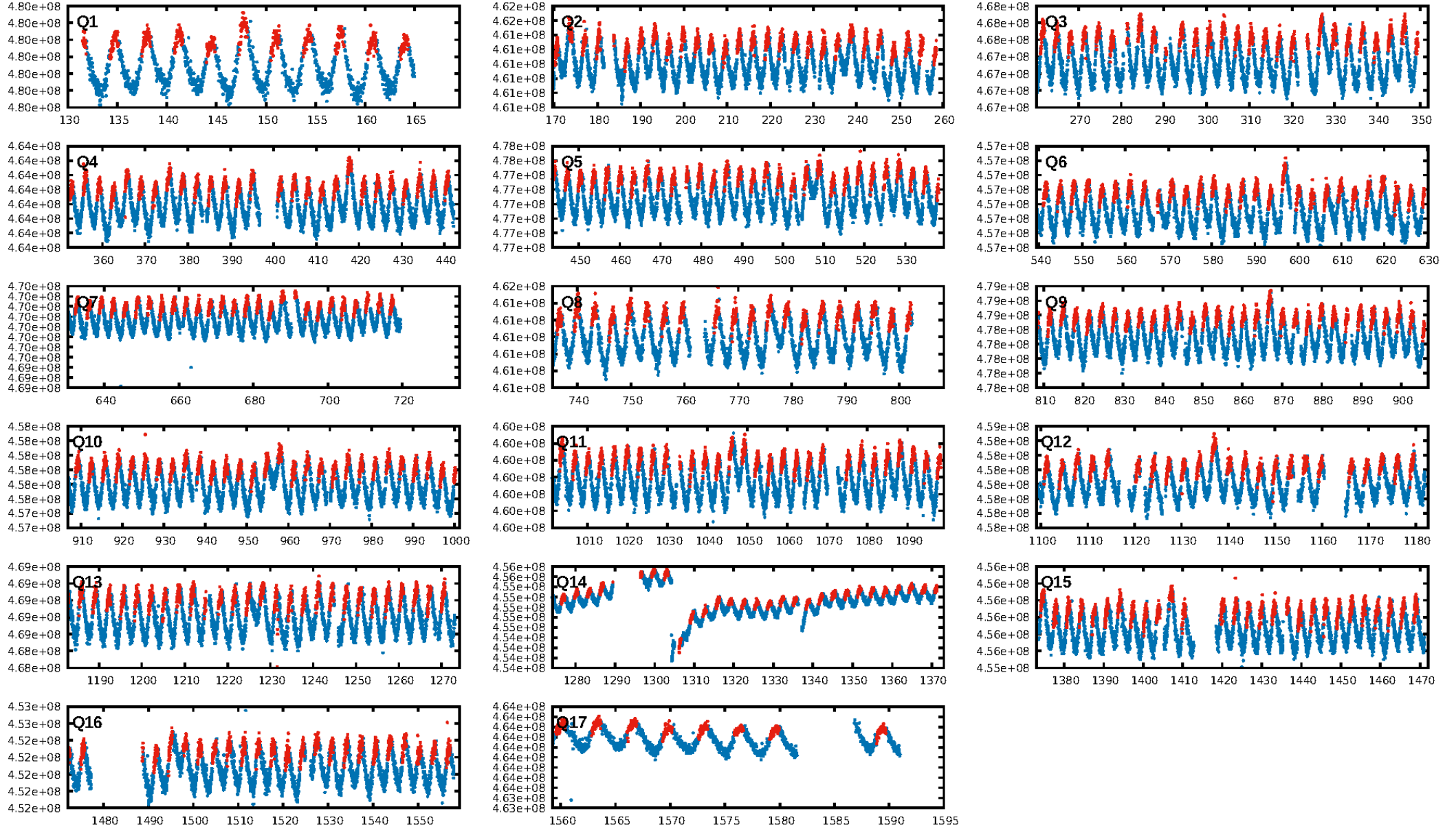
DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [422.91σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.10e-22  
RollingBand-fgt: 0.88 [349/395]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.933 arcsec [0.54σ]  
KicOffset-rm: 0.804 arcsec [0.46σ]  
OotOffset-st: 1/4/3/2 [10]  
KicOffset-st: 1/4/3/2 [10]  
DiffImageQuality-fgm: 0.30 [3/10]  
DiffImageOverlap-fno: 1.00 [17/17]

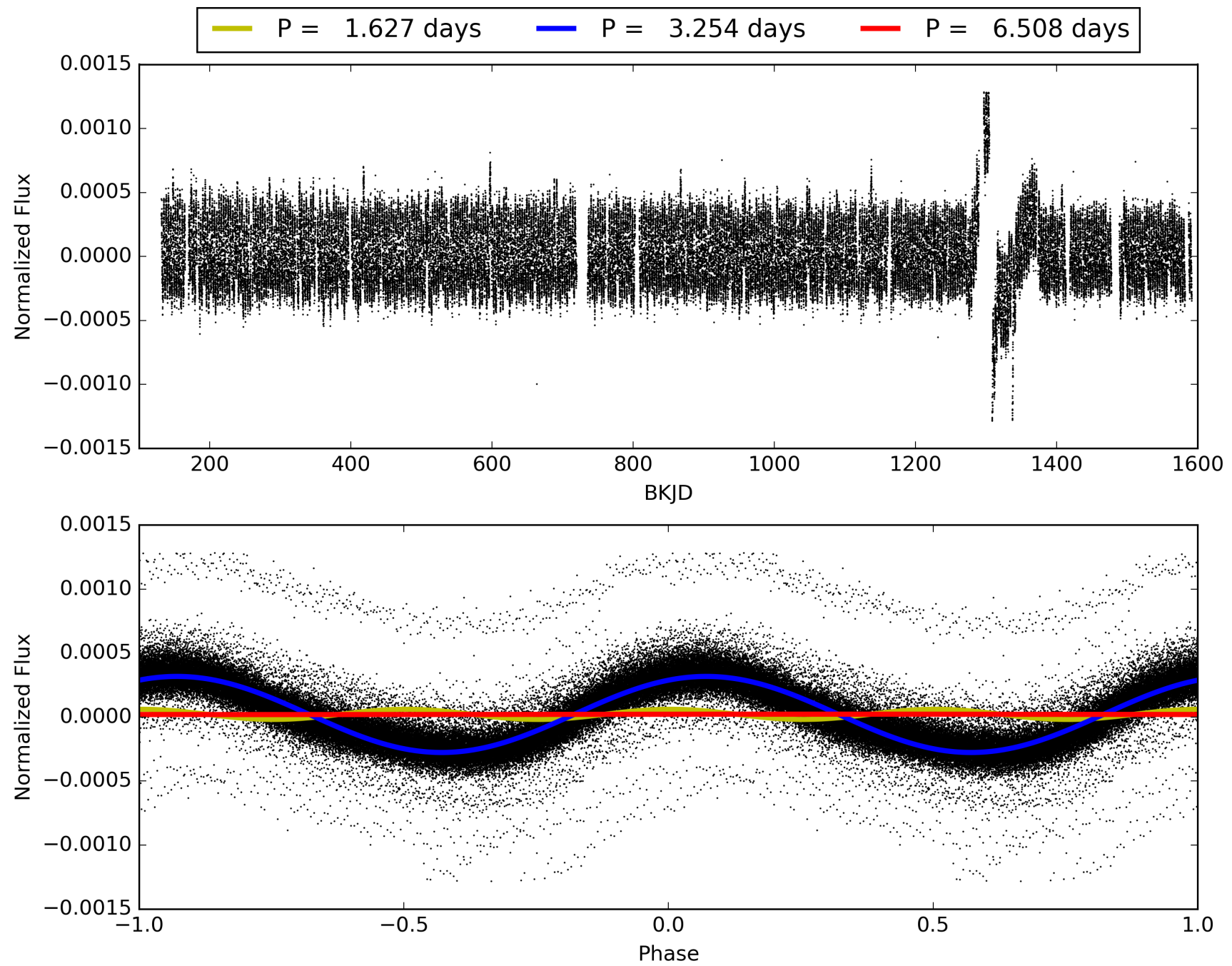
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:30:12 Z

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

# TCE 008488717-01, PDC Light Curves

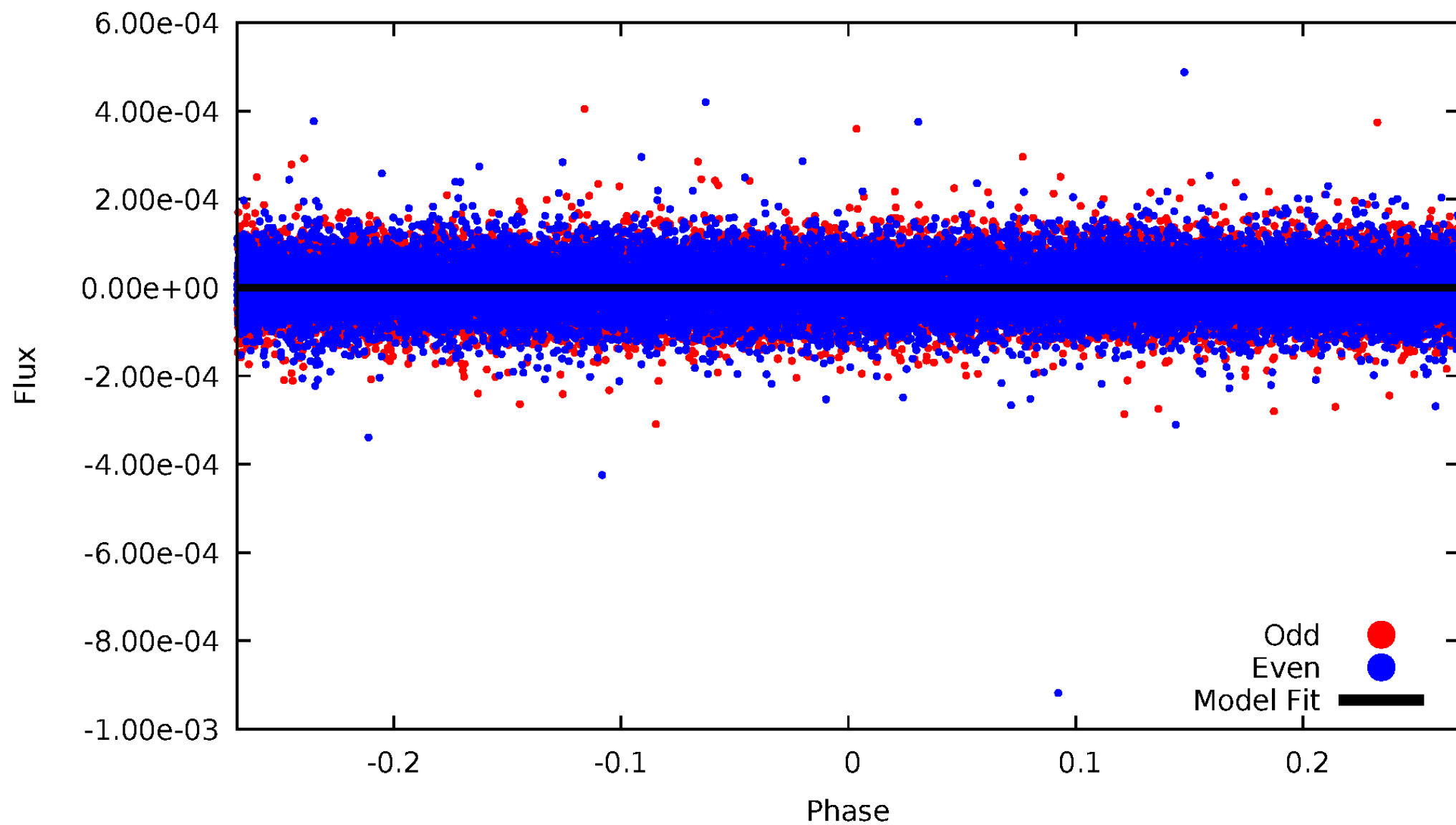


# TCE 008488717-01



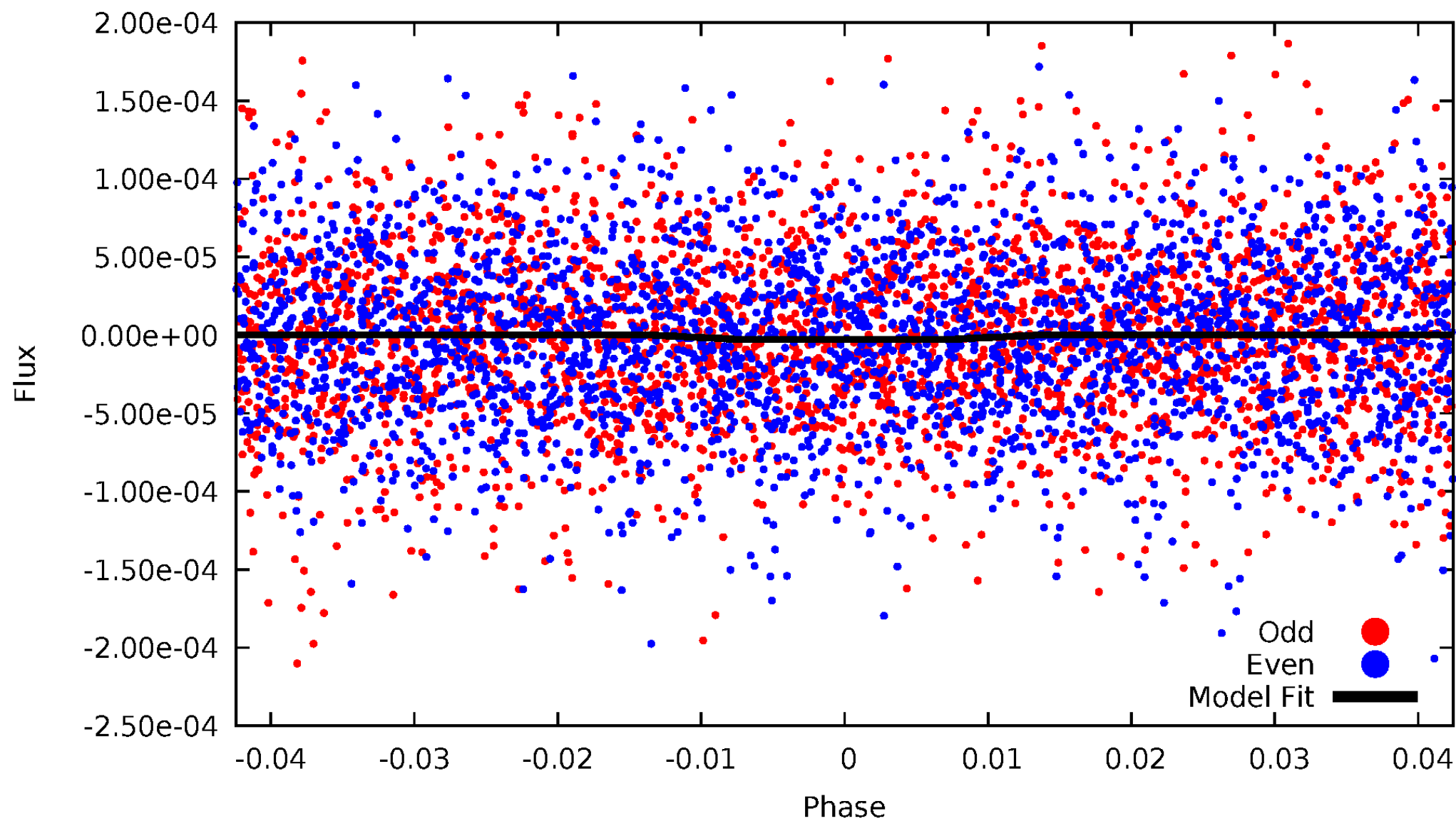
# DV Odd/Even

TCE 008488717-01



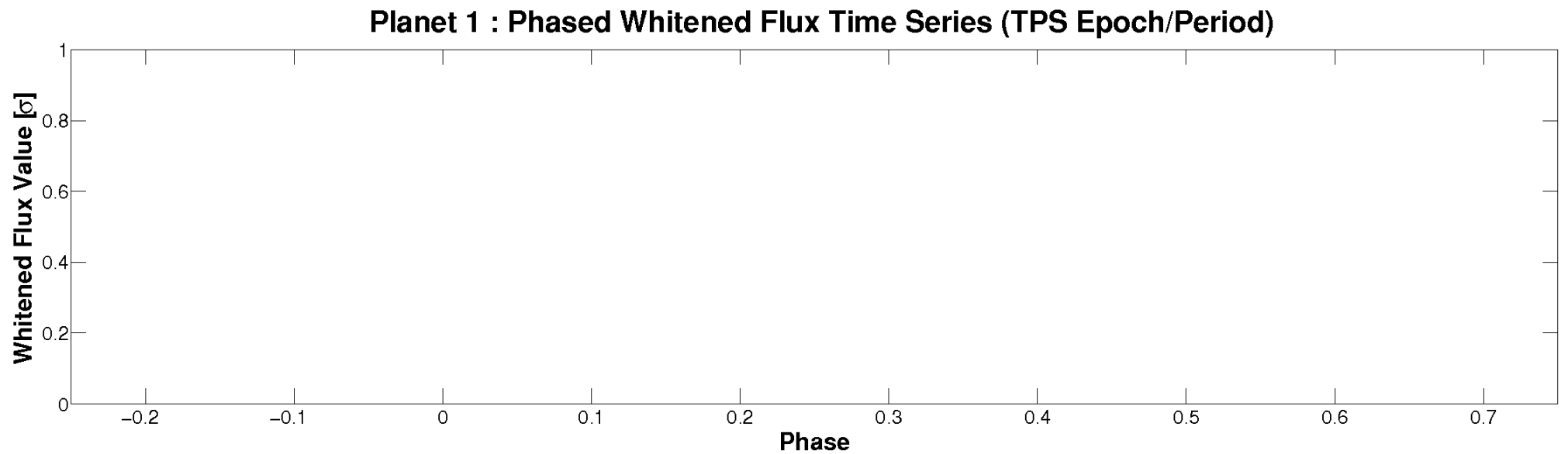
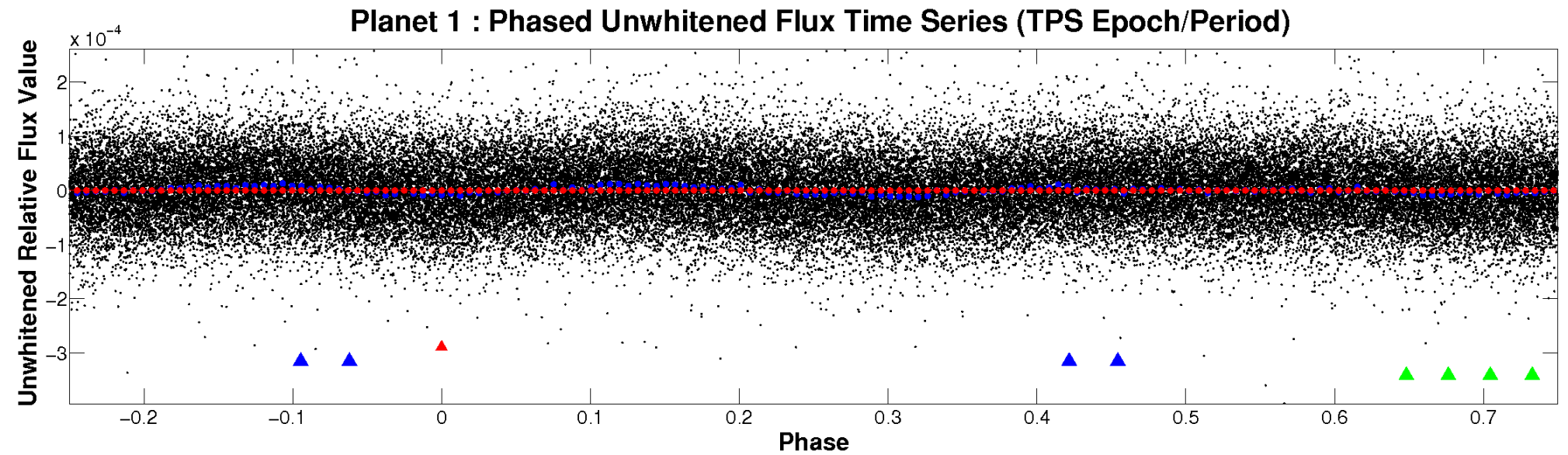
# ALT Odd/Even

TCE 008488717-01



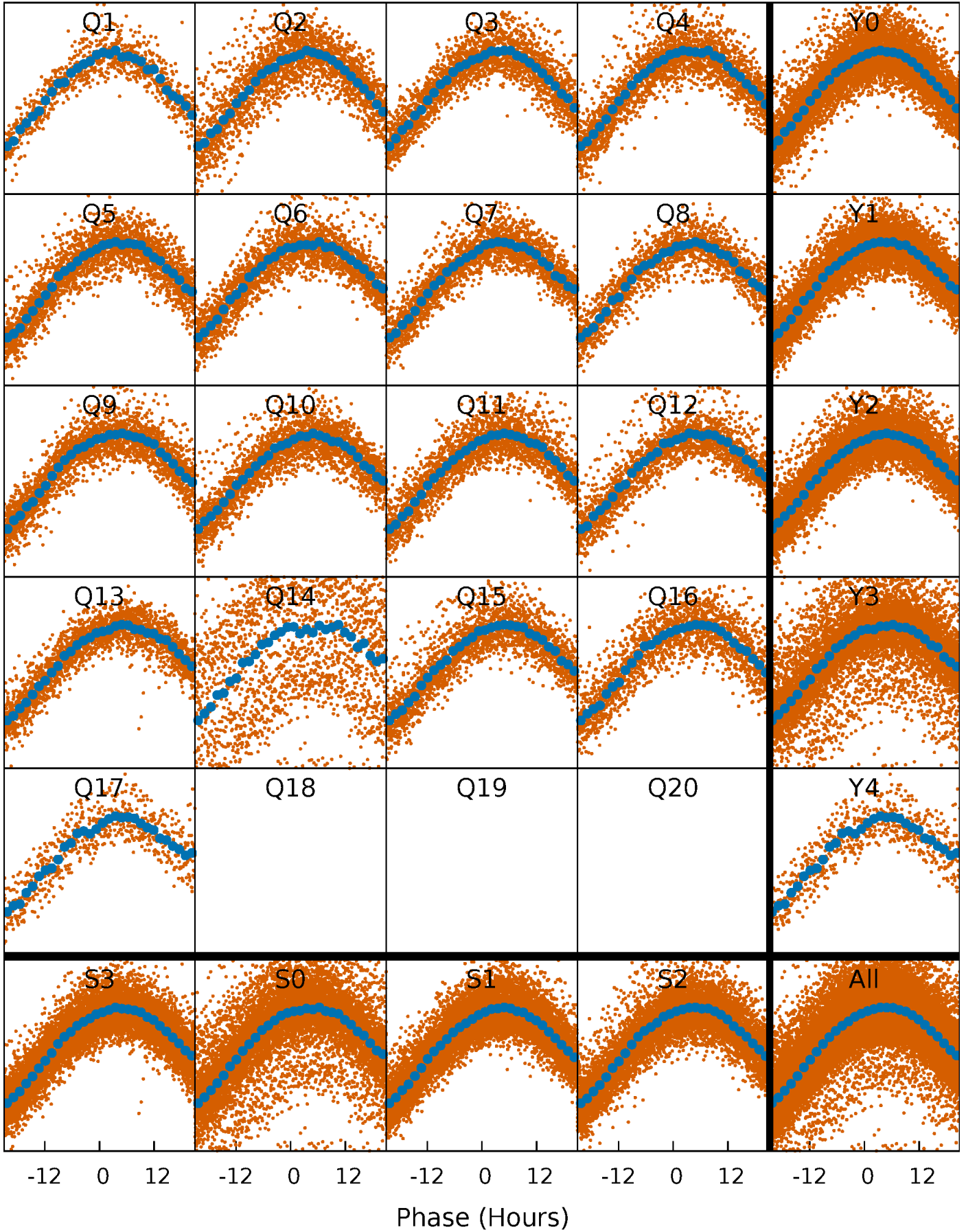


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

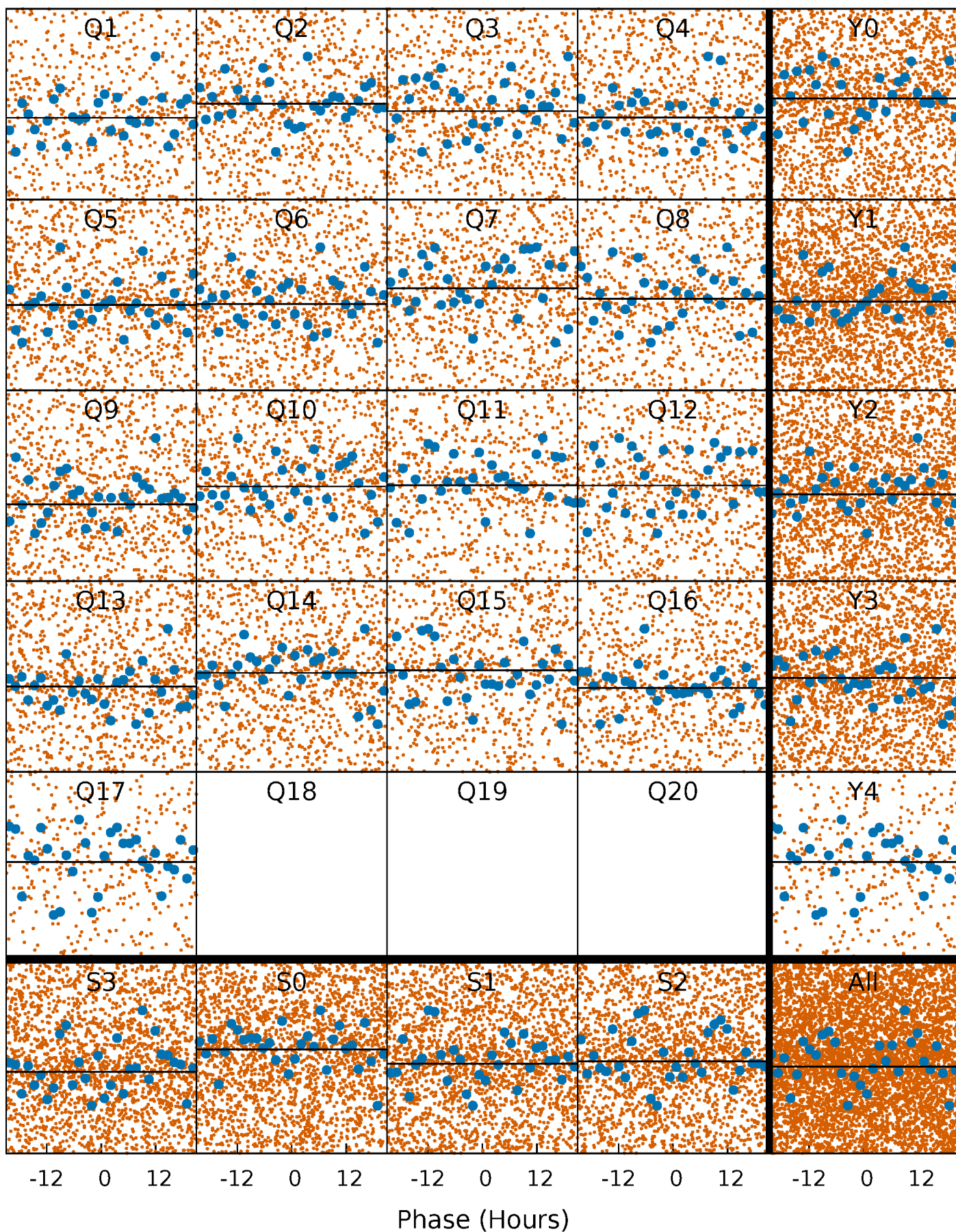
TCE 008488717-01   P= 3.254177 Days    $T_0=134.657762$  (BKJD)





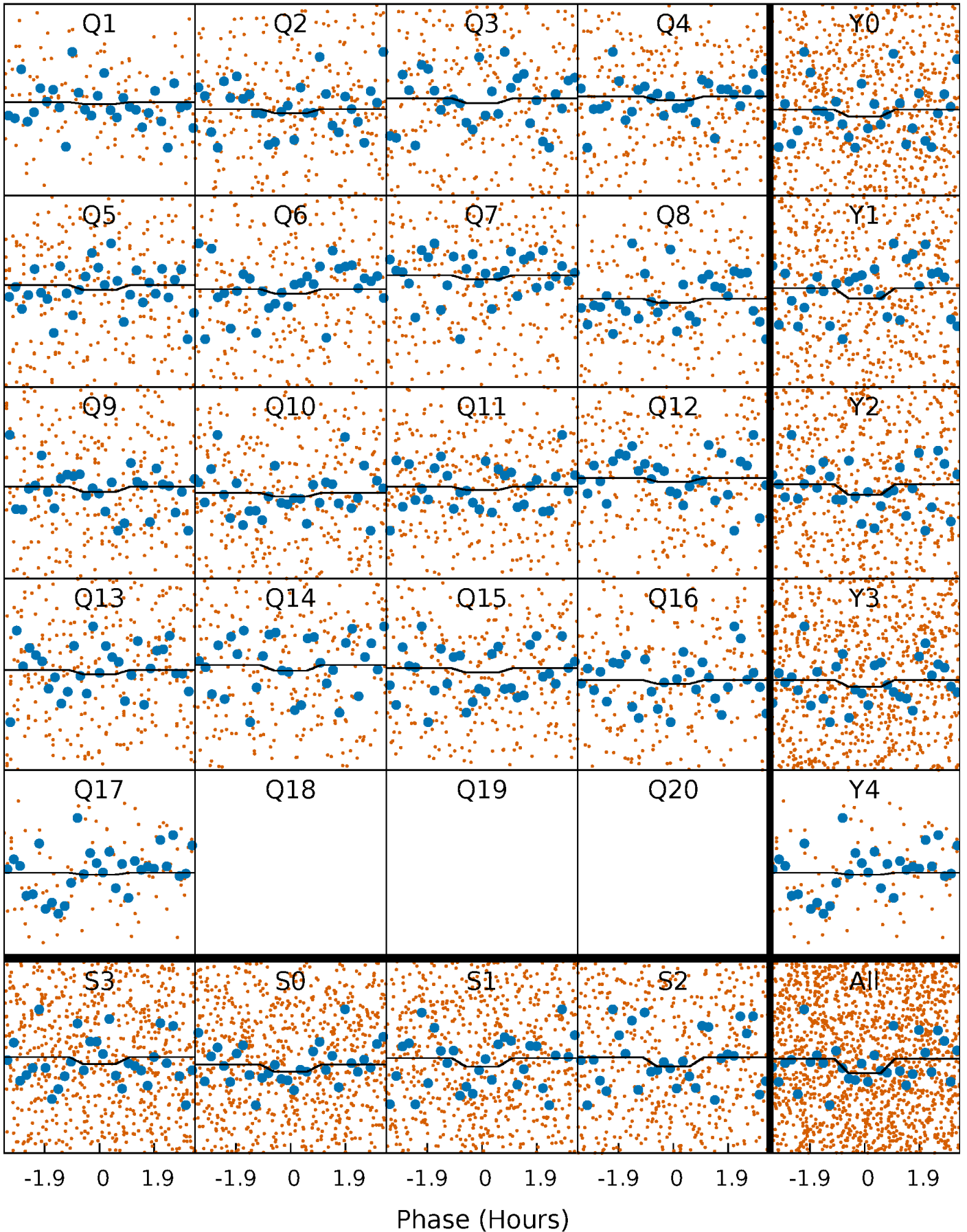
# DV Quarter-Phased Transit Curves

TCE 008488717-01 P= 3.254177 Days  $T_0=134.657762$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

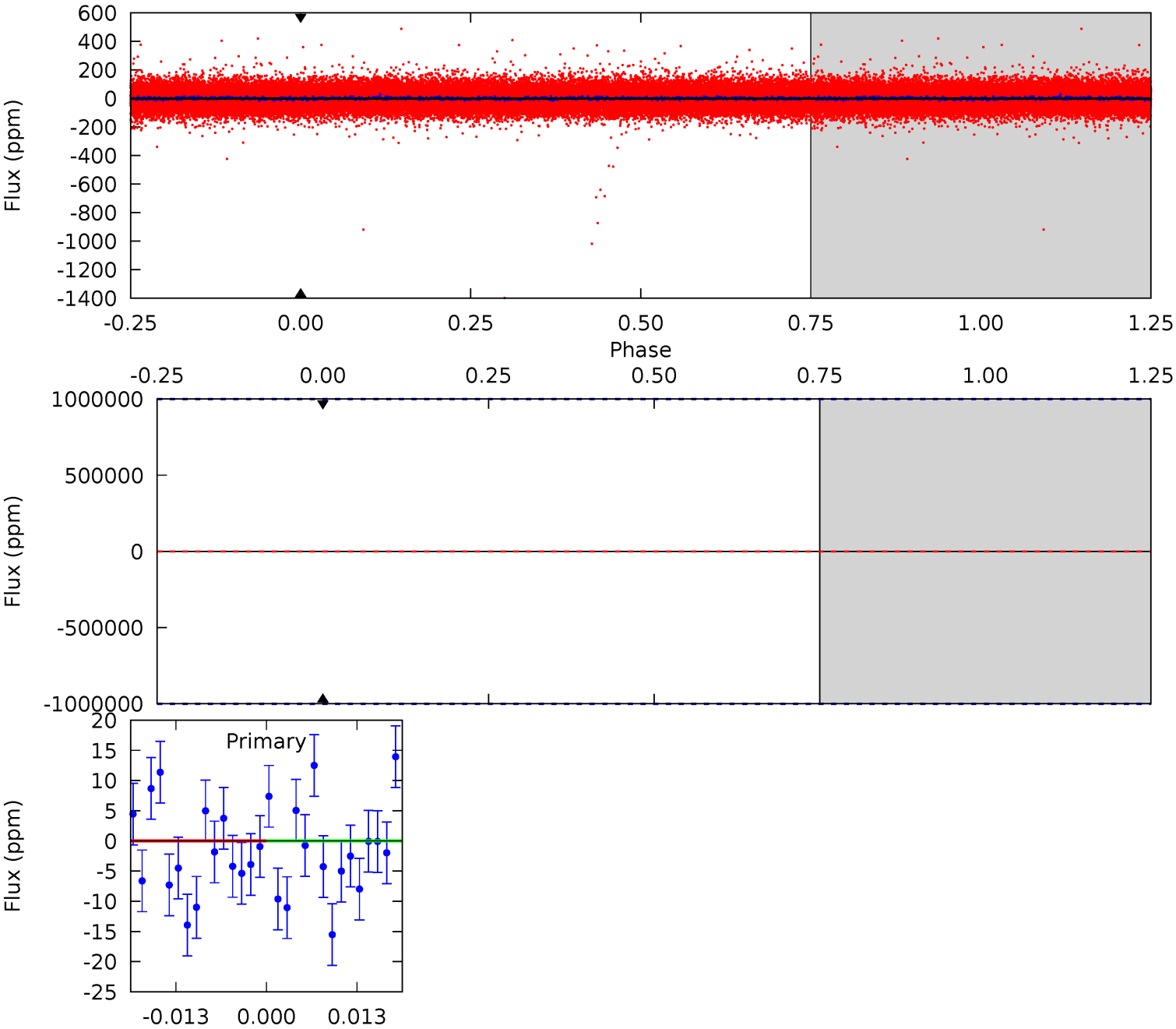
TCE 008488717-01 P= 3.254177 Days  $T_0=134.018602$  (BKJD)



DV Model-Shift Uniqueness Test

008488717-01, P = 3.254177 Days, E = 131.403585 Days

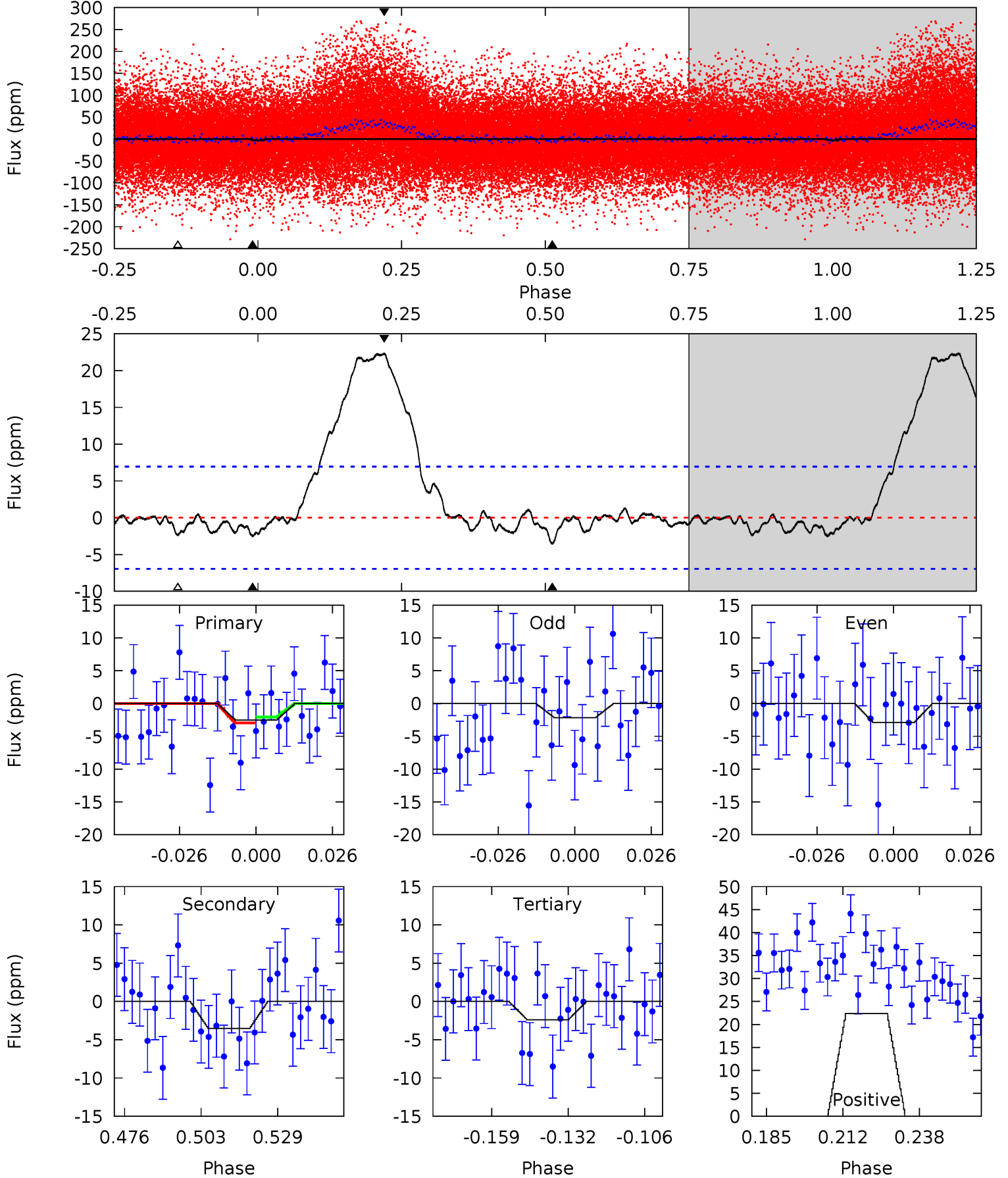
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

008488717-01, P = 3.254177 Days, E = 130.764425 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
1.75	2.45	1.66	15.6	4.84	2.22	4.97	0.09	-13.8	0.79	-13.1	0.26	3.26	0.86	0.30



### Stellar Parameters For KIC 008488717

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$10816^{+304}_{-457}$	$4.086^{+0.210}_{-0.210}$	$0.070^{+0.050}_{-0.600}$	$2.493^{+0.797}_{-0.797}$	$2.760^{+0.323}_{-0.645}$	$0.251^{+0.351}_{-0.125}$
	+3%/-4%	+5%/-5%	+71%/-857%	+32%/-32%	+12%/-23%	+140%/-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 008488717-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$18.42^{+20.45}_{-12.39}$	$4304^{+379}_{-347}$	$-5449^{+123000}_{-103054}$	$-2.238^{+1049.783}_{-1020.474}$
Alt.	$-4 \pm 1$	$18.06^{+22.95}_{-12.72}$	$4280^{+399}_{-380}$	$-3497^{+575}_{-243}$	$0.019^{+0.204}_{-0.015}$

$T_{max}$  = 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

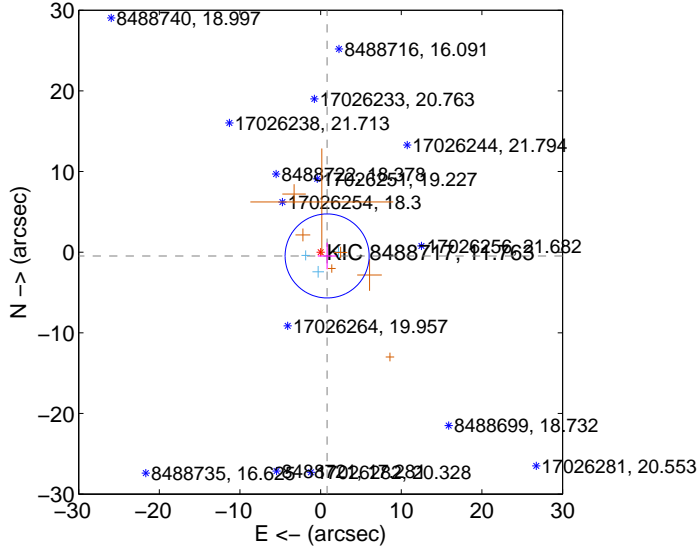
Supplemental centroid analysis for 008488717-01. **Kepler magnitude: 11.76.** Transit SNR -1.00

**There are 3 quarters with good PRF difference image offsets**

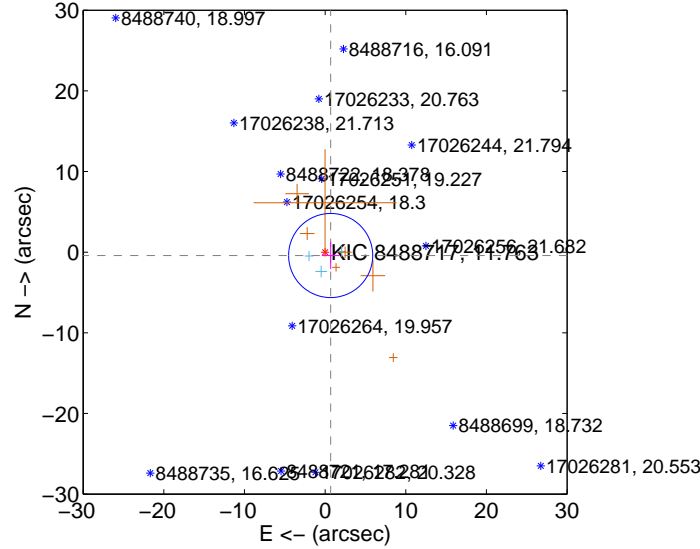
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.933 \pm 1.737$	0.54	$-0.807 \pm 1.151$	$-0.469 \pm 1.652$
PRF-fit source offset from KIC position	$0.804 \pm 1.738$	0.46	$-0.688 \pm 1.104$	$-0.415 \pm 1.698$
photometric centroid source offset	—	—	—	—

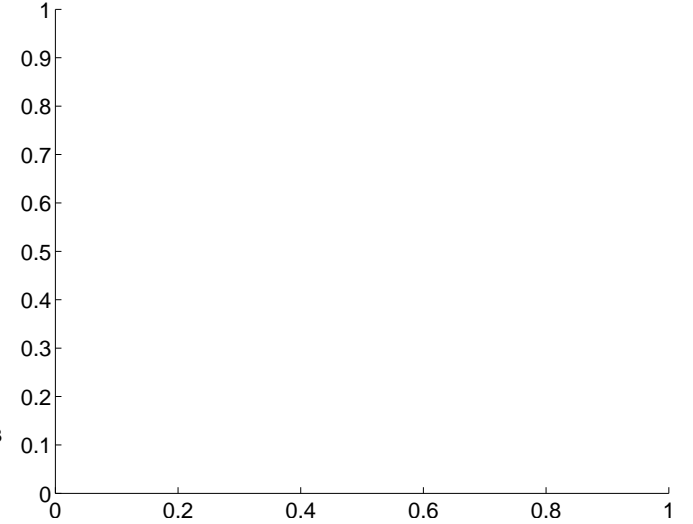
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

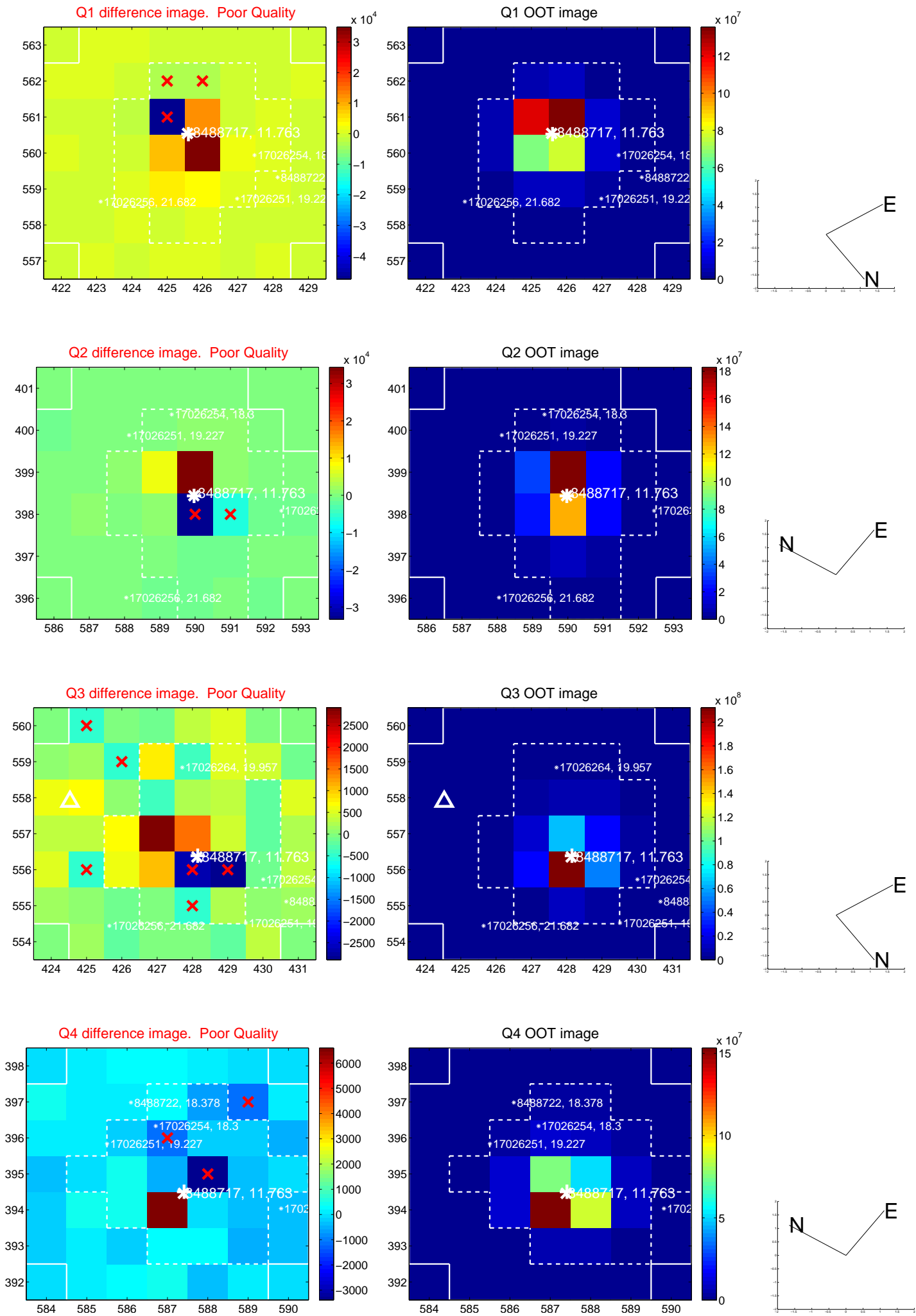


**There are no photometric centroids**

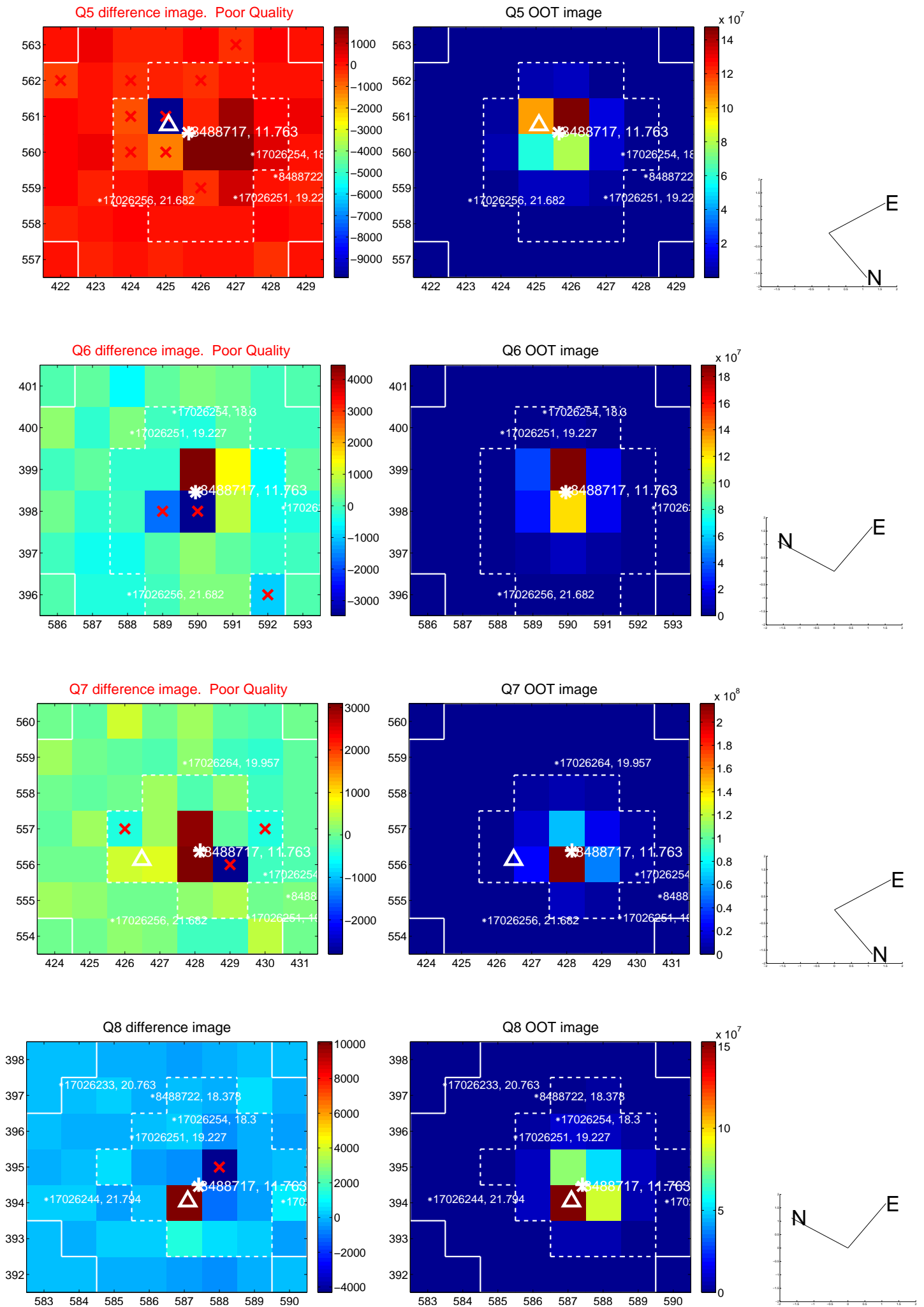


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

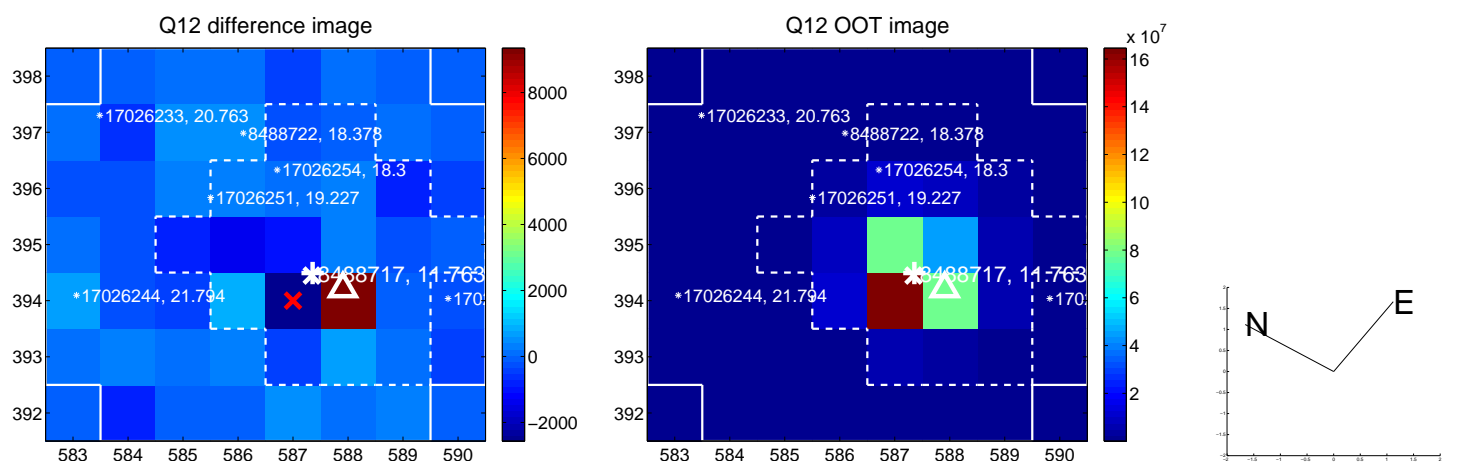
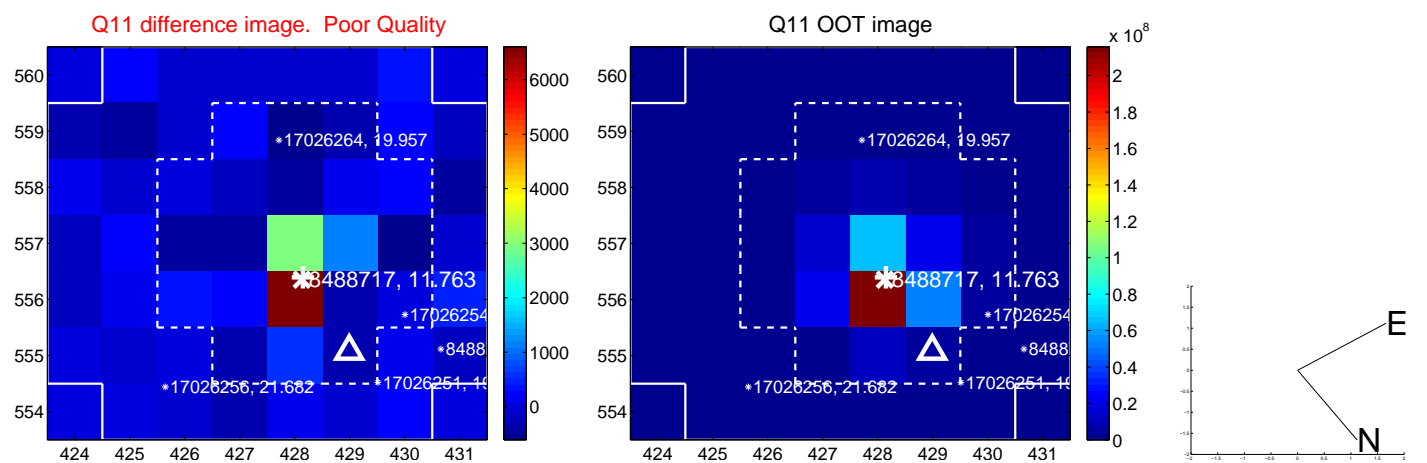
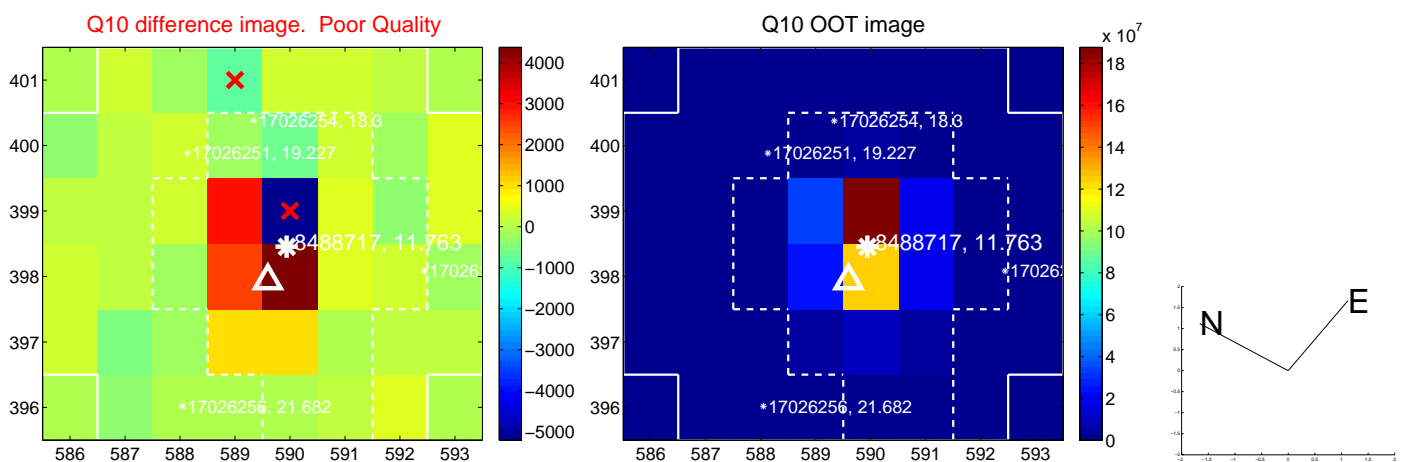
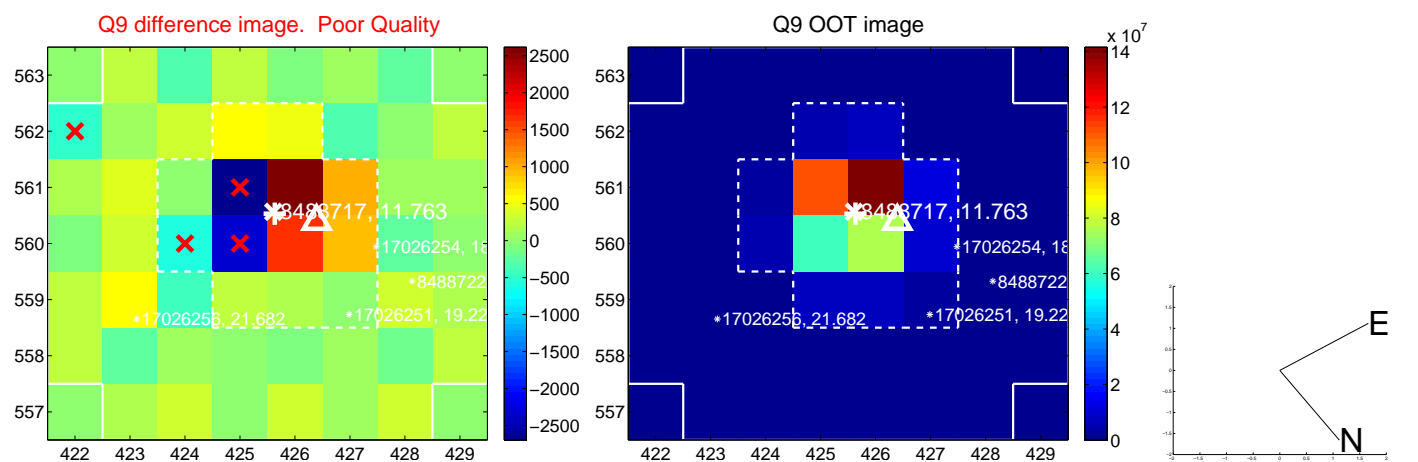
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



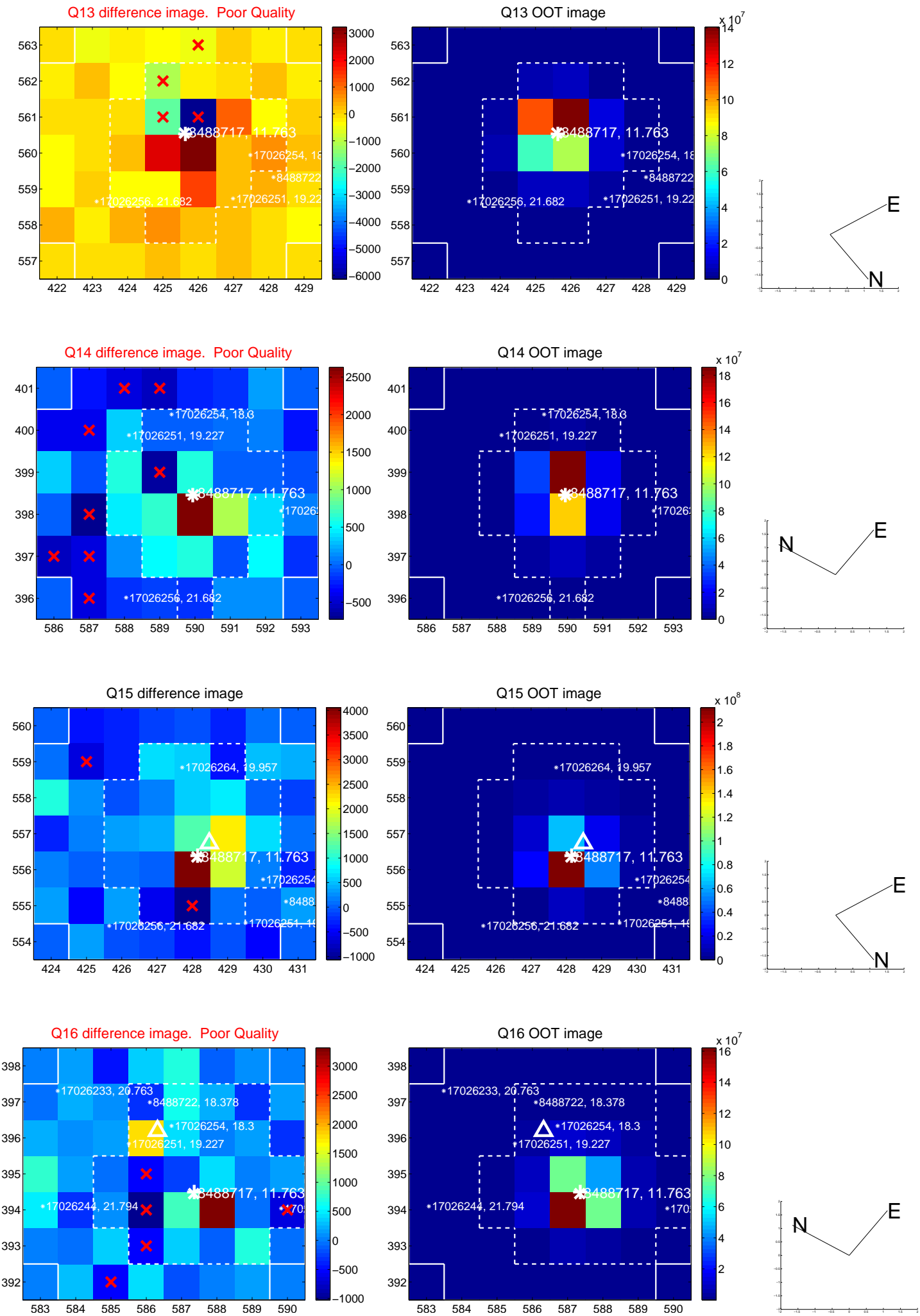
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

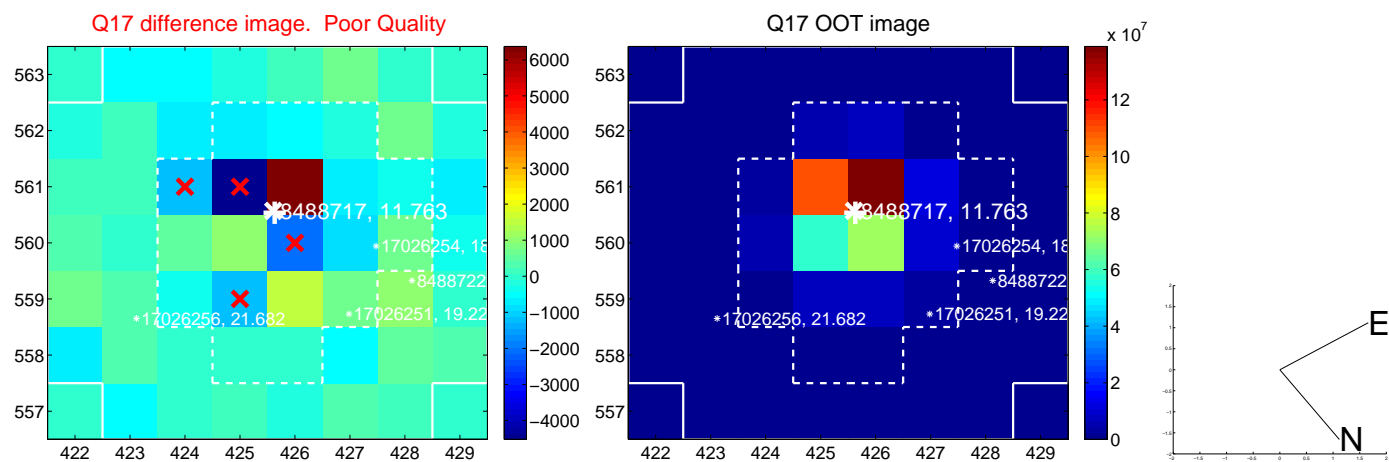


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



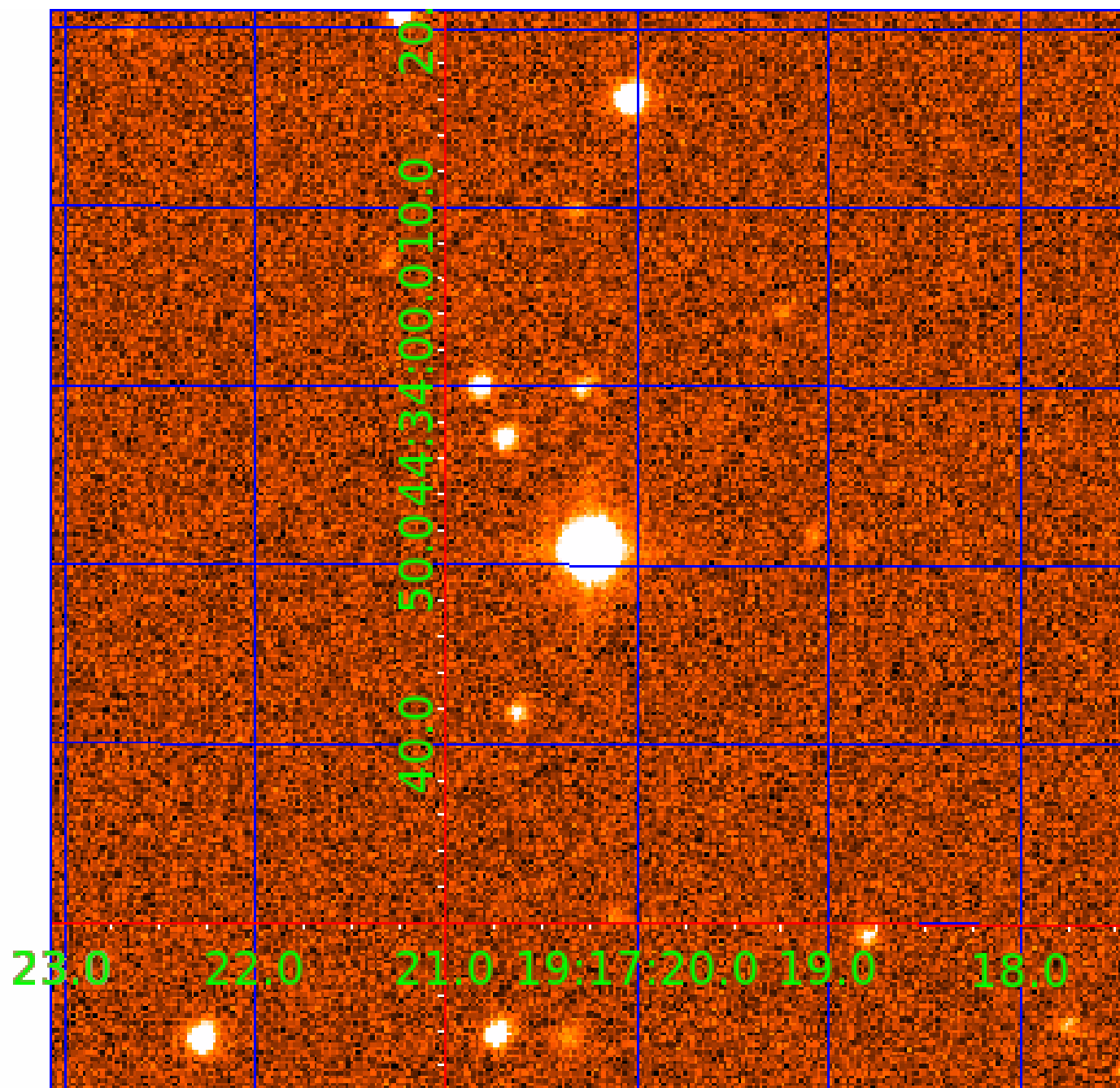


folded centroid time series figure for this object.



# UKIRT Image

Declination



# KIC 008488717

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008488717-01	OBS	No	3.254177	134.657762	44.9	10.500	11.0	-1.0	2.49	10816	1.72	20943.74
008488717-02	OBS	No	392.181561	166.891538	0.0	3.418	17.7	0.0	2.49	10816	0.03	35.18
008488717-03	OBS	No	351.542882	247.409300	92.1	16.746	10.4	7.1	2.49	10816	2.84	40.71

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008488717-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
008488717-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008488717-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

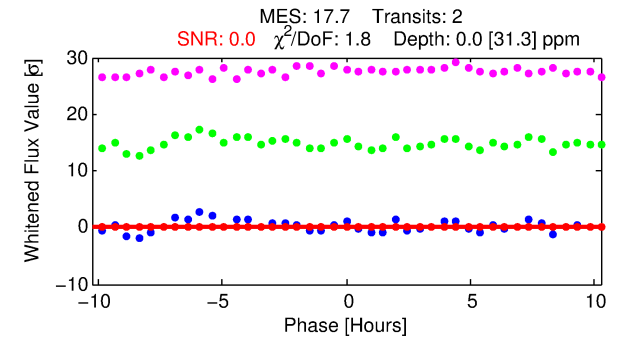
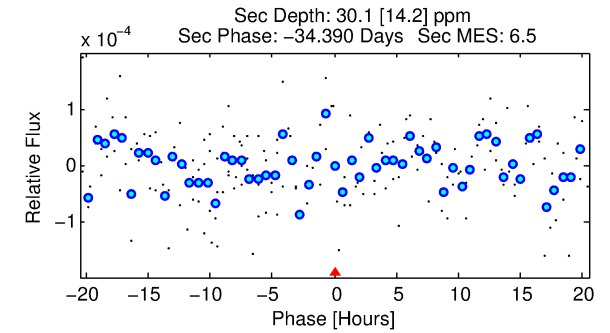
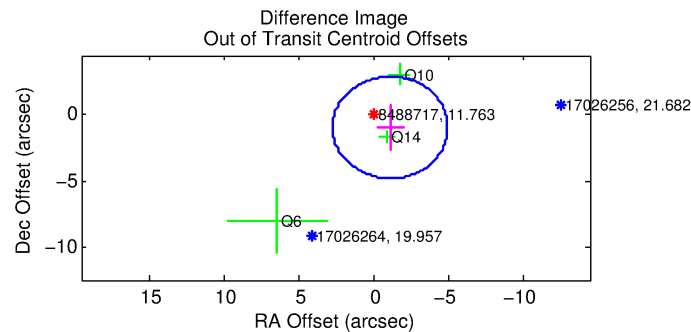
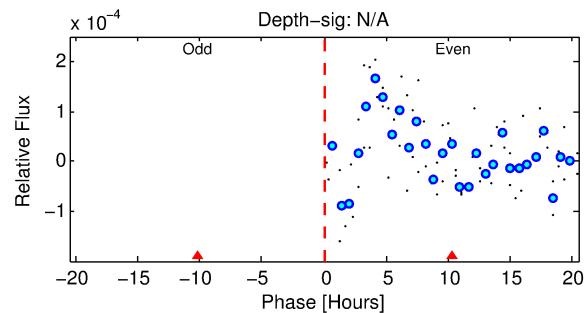
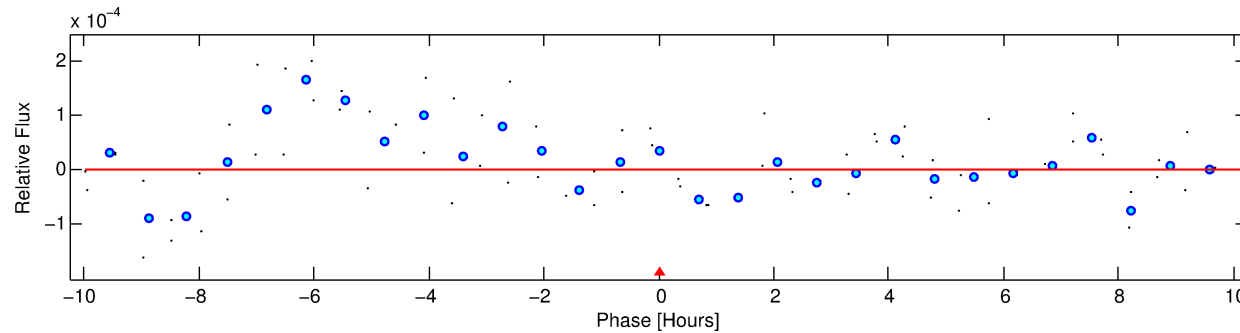
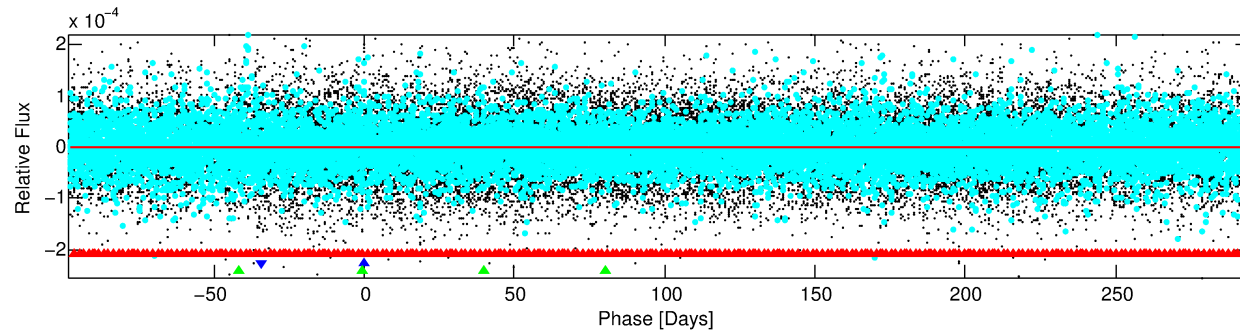
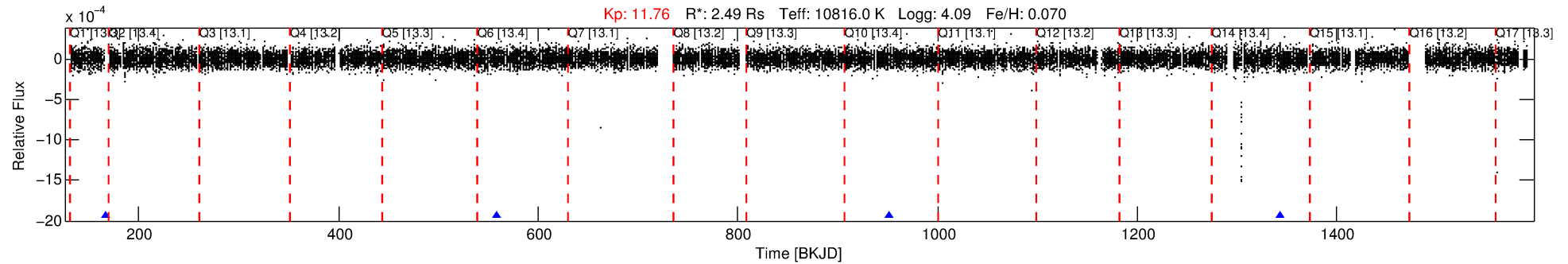
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008488717-02

No Significant Match Found

# DV One-Page Summary

KIC: 8488717 Candidate: 2 of 3 Period: 392.182 d



## DV Fit Results:

Period = 392.18156 [230.18818] d  
 Epoch = 166.8915 [180.7045] BKJD  
 Rp/R\* = 0.0001 [1.2710]  
 a/R\* = 449.48 [46879185.00]  
 b = 0.86 [30543.79]  
 Seff = 35.18 [31.28]  
 Teq = 621 [138] K  
 Rp = 0.03 [345.76] Re  
 a = 1.4718 [0.6974] AU  
 Ag = 39190566.22 [896487997937.98] [10.000]  
 Tefp = 75970 [434461643] K [0.000]

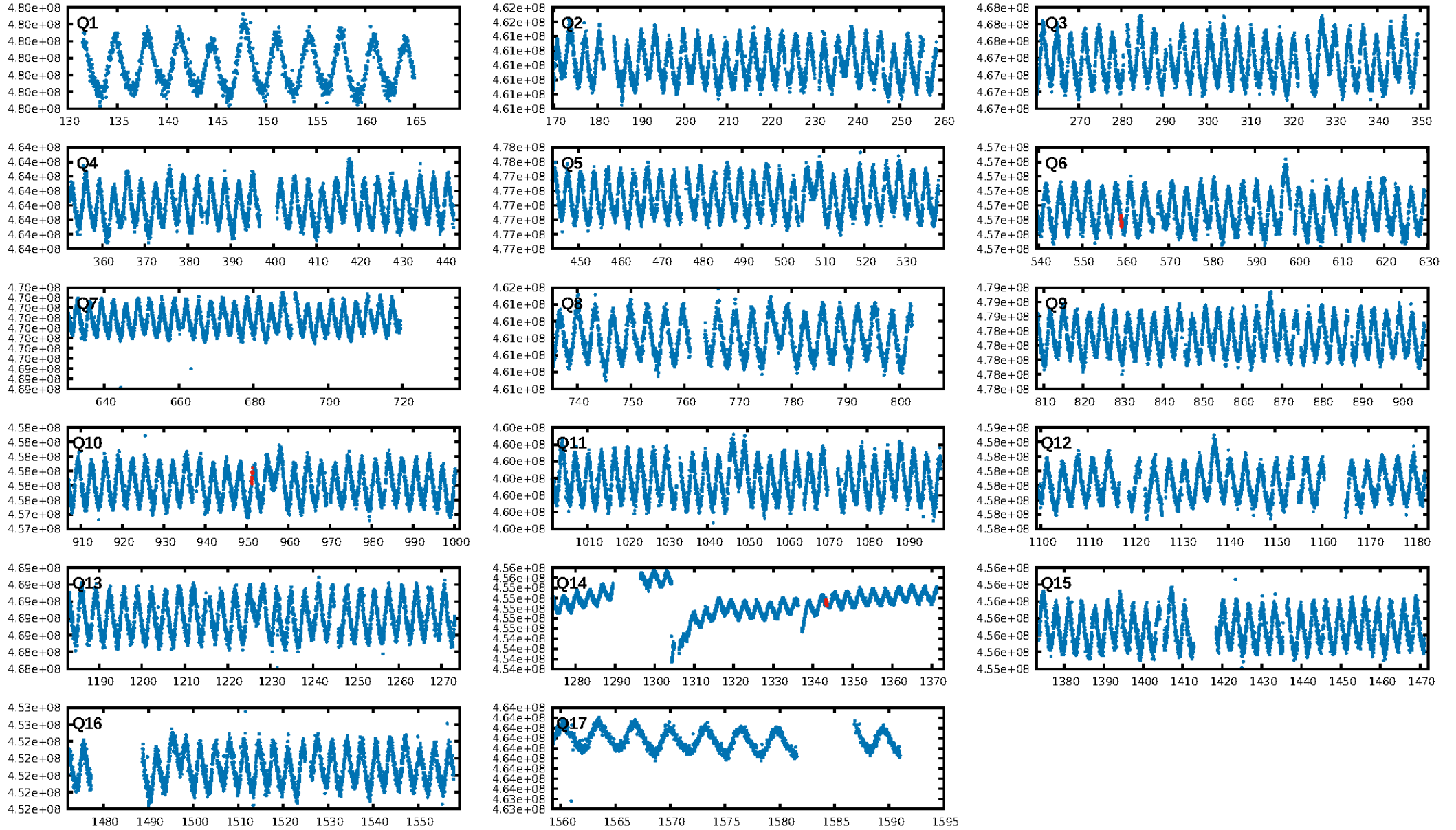
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [57.07e]  
 LongPeriod-sig: N/A  
 ModelChiSquare2-sig: 95.3%  
 ModelChiSquareGof-sig: 66.7%  
 Bootstrap-pfa: 3.05e-31  
 RollingBand-fgt: 1.00 [2/2]  
 GhostDiagnostic-chr: N/A  
 Centroid-sig: N/A  
 Centroid-so: N/A  
 OutOffset-rm: 1.488 arcsec [1.16e]  
 KicOffset-rm: 1.499 arcsec [1.18e]  
 OutOffset-st: 3/0/0/0 [3]  
 KicOffset-st: 3/0/0/0 [3]  
 DiffImageQuality-fgm: 0.33 [1/3]  
 DiffImageOverlap-fno: 1.00 [3/3]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:30:26 Z

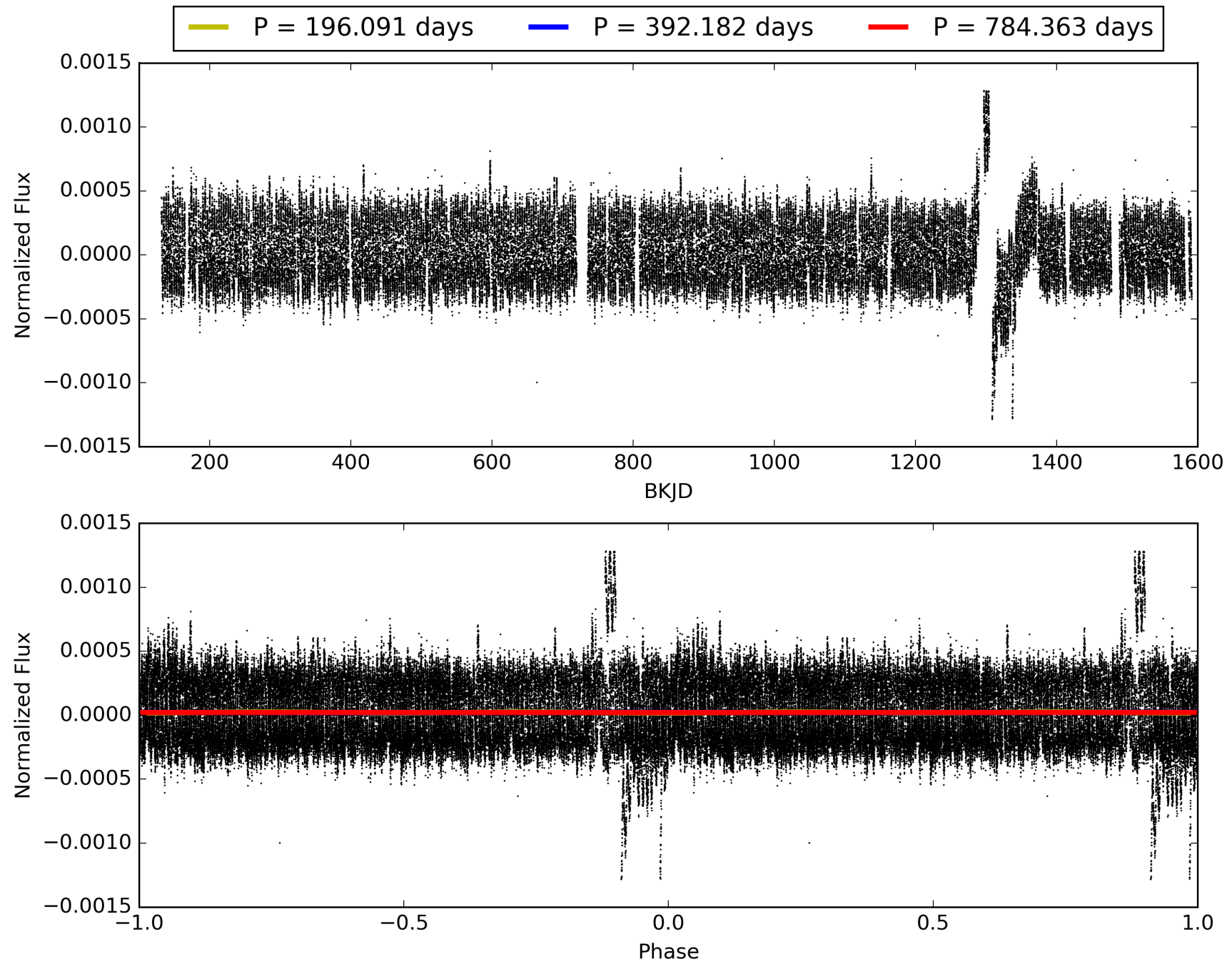
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008488717-02, PDC Light Curves



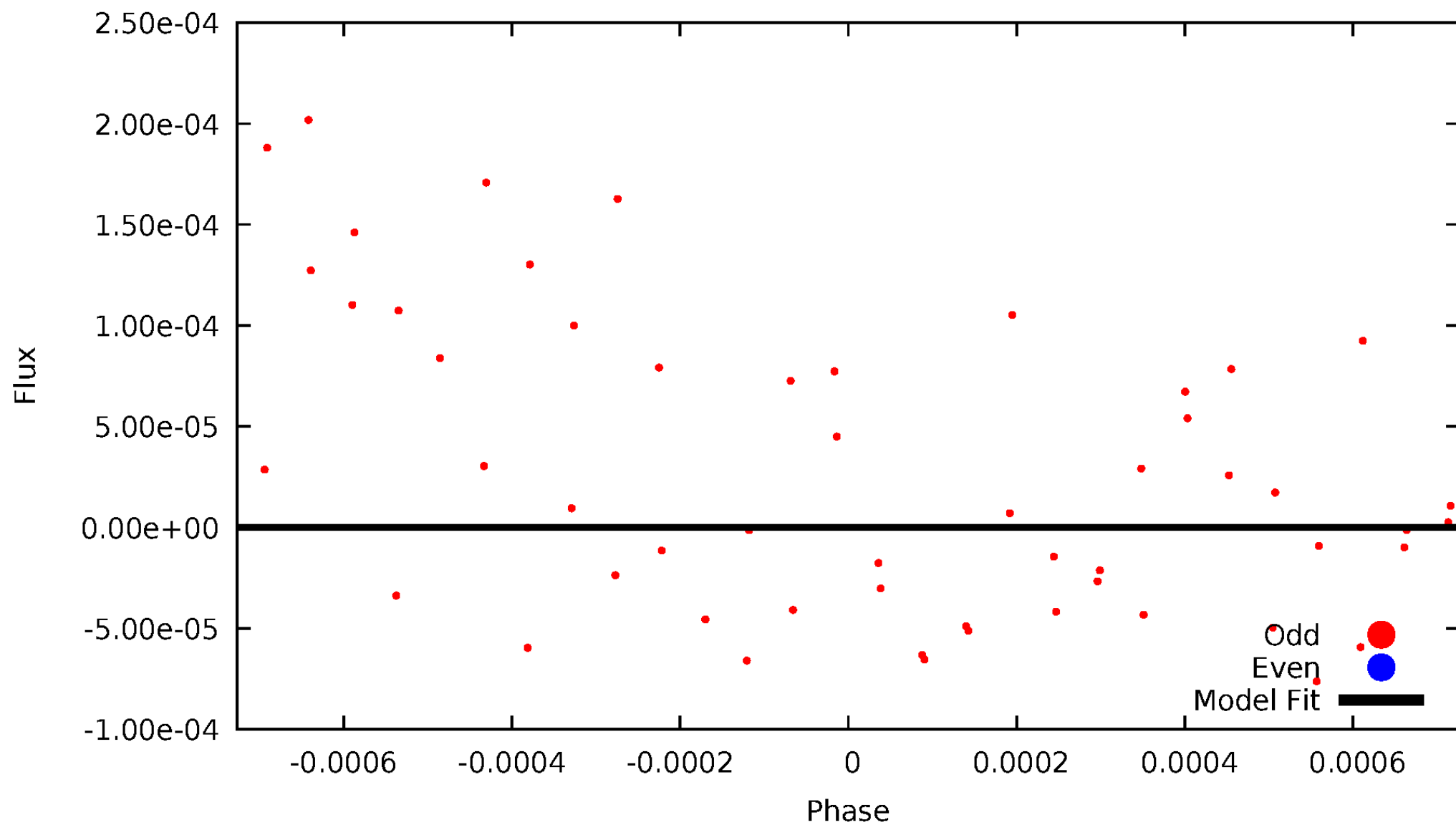


TCE 008488717-02



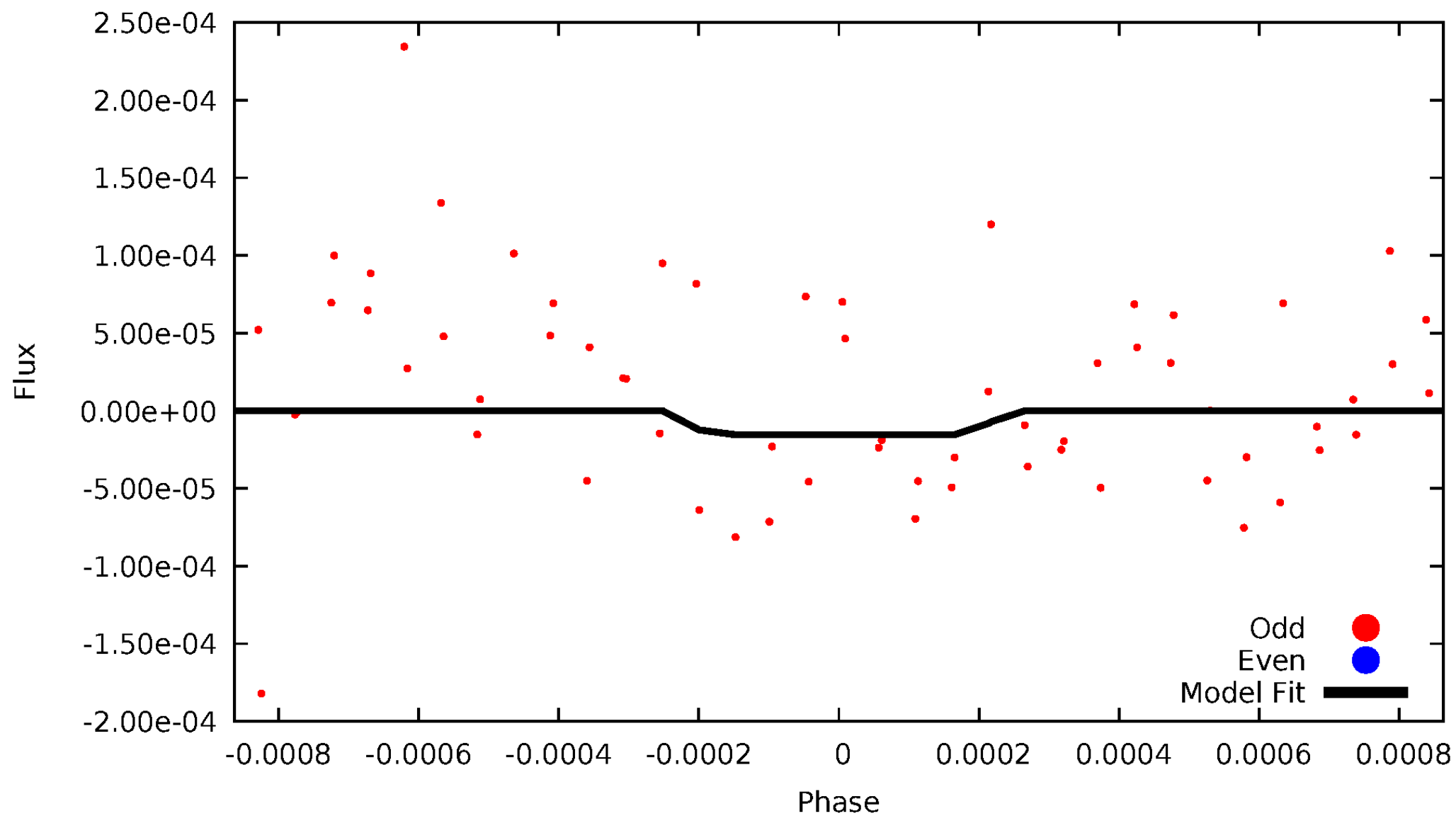
# DV Odd/Even

TCE 008488717-02



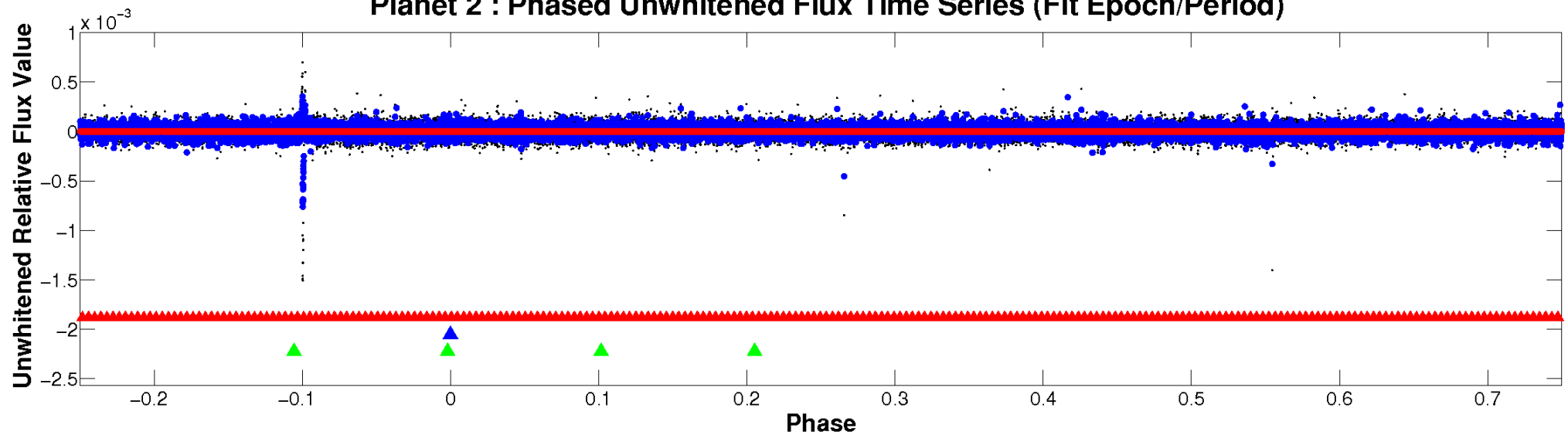
# ALT Odd/Even

TCE 008488717-02

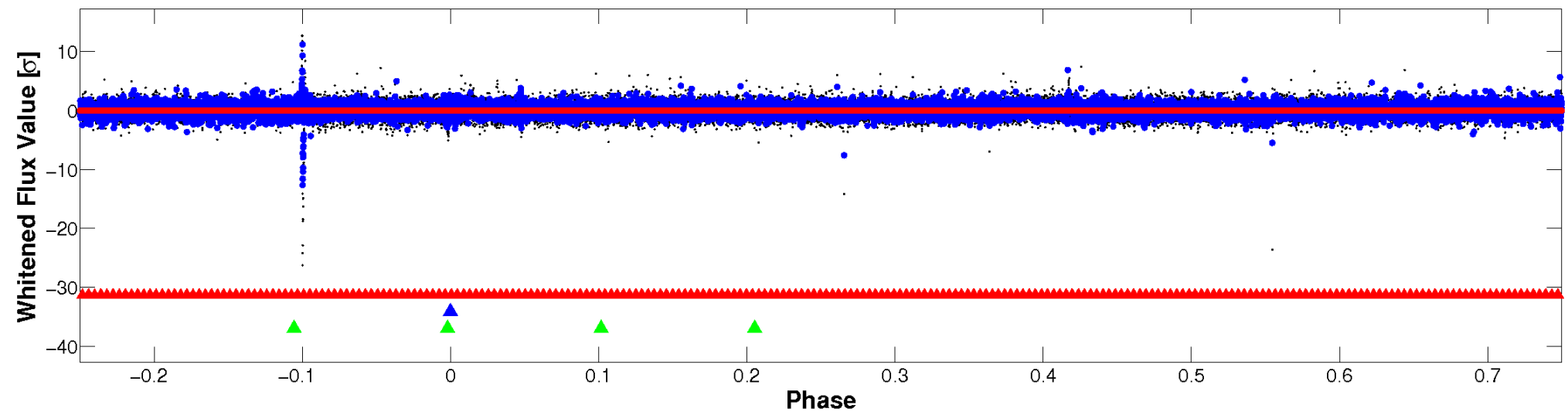


# Non-Whitened Vs. Whitened Light Curve

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

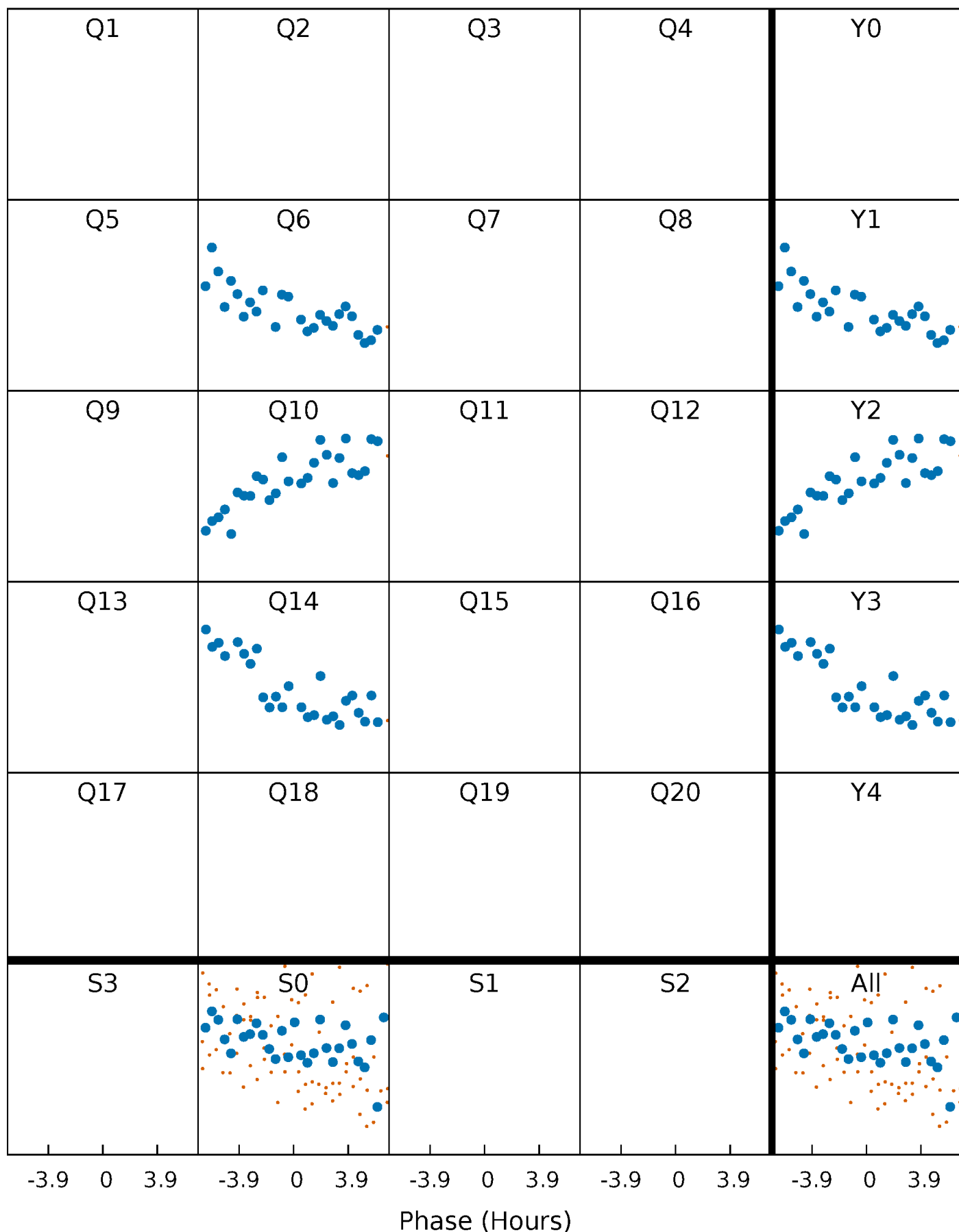


**Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

TCE 008488717-02 P=392.181561 Days  $T_0=166.891538$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 008488717-02 P=392.181561 Days  $T_0=166.891538$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

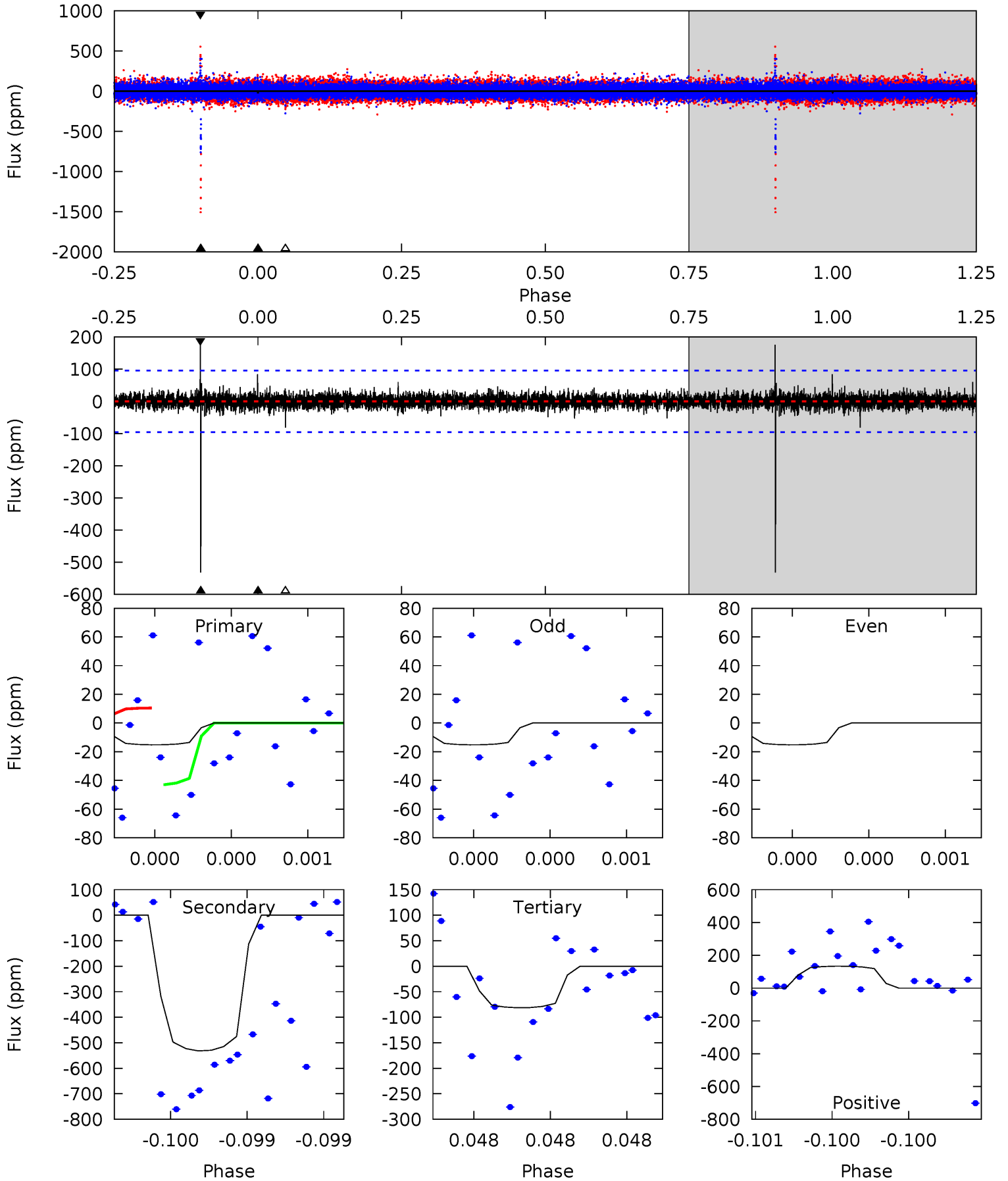
TCE 008488717-02 P=392.181317 Days  $T_0=166.883408$  (BKJD)



# DV Model-Shift Uniqueness Test

008488717-02, P = 392.181561 Days, E = 166.891538 Days

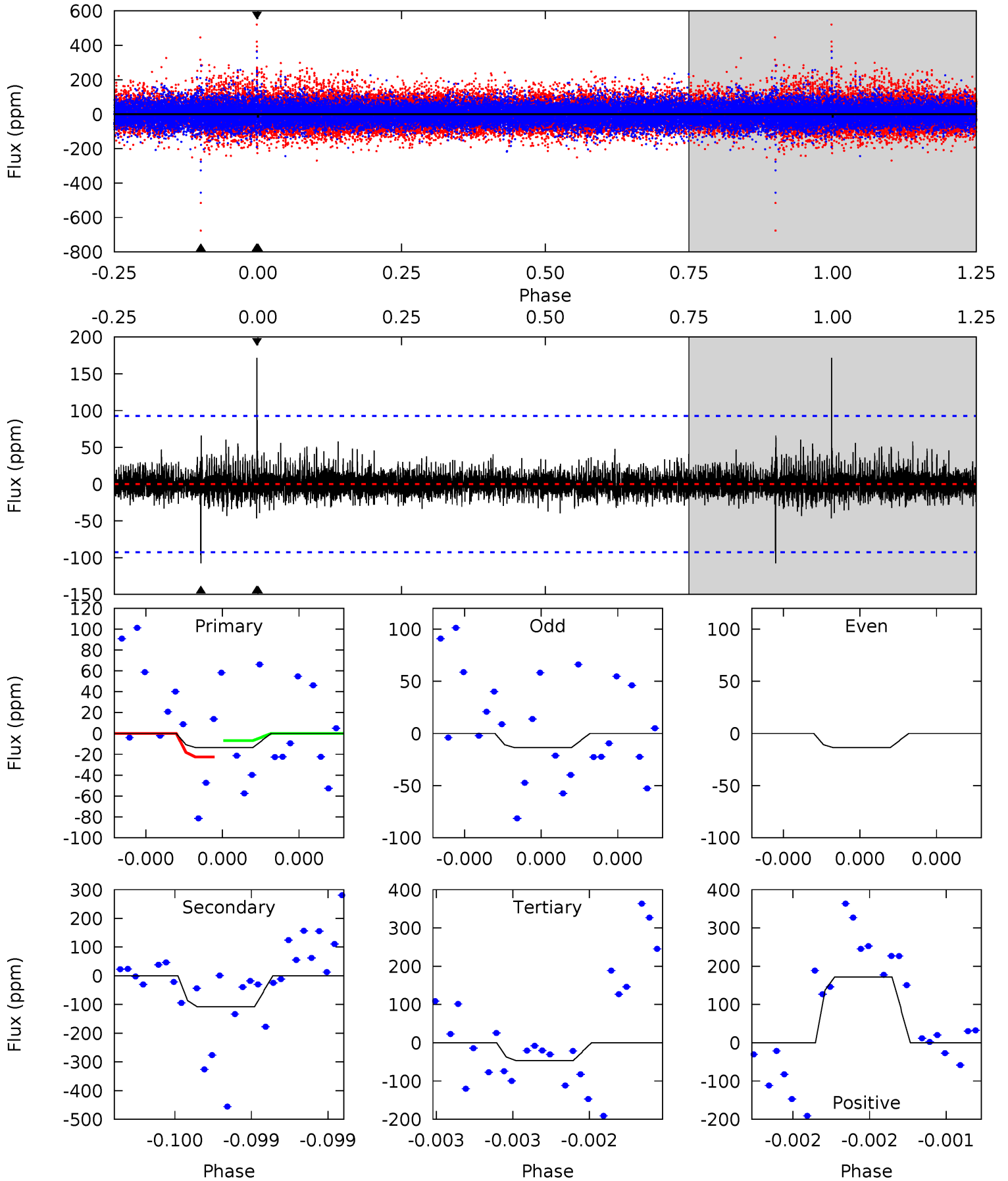
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.90	31.4	4.81	7.91	5.65	3.60	0.79	-3.91	-7.01	26.6	23.5	0	1.00	0.25	0.91



# Alt Model-Shift Uniqueness Test

008488717-02, P = 392.181317 Days, E = 166.883408 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
0.81	6.51	2.81	10.4	5.60	3.53	0.72	-2.00	-9.57	3.70	-3.87	0	1.00	0.61	0.46



### Stellar Parameters For KIC 008488717

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$10816^{+304}_{-457}$	$4.086^{+0.210}_{-0.210}$	$0.070^{+0.050}_{-0.600}$	$2.493^{+0.797}_{-0.797}$	$2.760^{+0.323}_{-0.645}$	$0.251^{+0.351}_{-0.125}$
	+3%/-4%	+5%/-5%	+71%/-857%	+32%/-32%	+12%/-23%	+140%/-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 008488717-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	-532±17	$232.06^{+259.51}_{-159.15}$	$857^{+244}_{-136}$	$2434^{+874}_{-397}$	$11^{+109}_{-9}$
Alt.	-108±17	$224.78^{+252.45}_{-161.06}$	$857^{+256}_{-126}$	$2014^{+739}_{-457}$	$2.412^{+27.434}_{-2.021}$

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

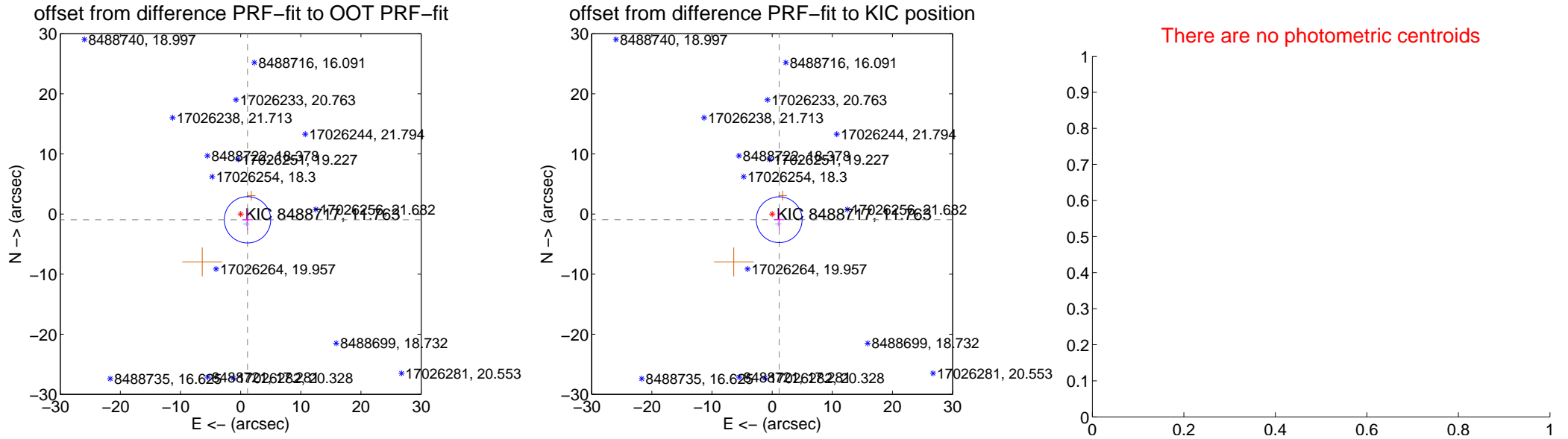
## DV Centroid Data

Supplemental centroid analysis for 008488717-02. **Kepler magnitude: 11.76.** Transit SNR 0.00

**There are 1 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	$1.488 \pm 1.285$	1.16	$-1.137 \pm 0.879$	$-0.960 \pm 1.698$
PRF-fit source offset from KIC position	$1.499 \pm 1.270$	1.18	$-1.165 \pm 0.882$	$-0.942 \pm 1.701$
photometric centroid source offset	—	—	—	—



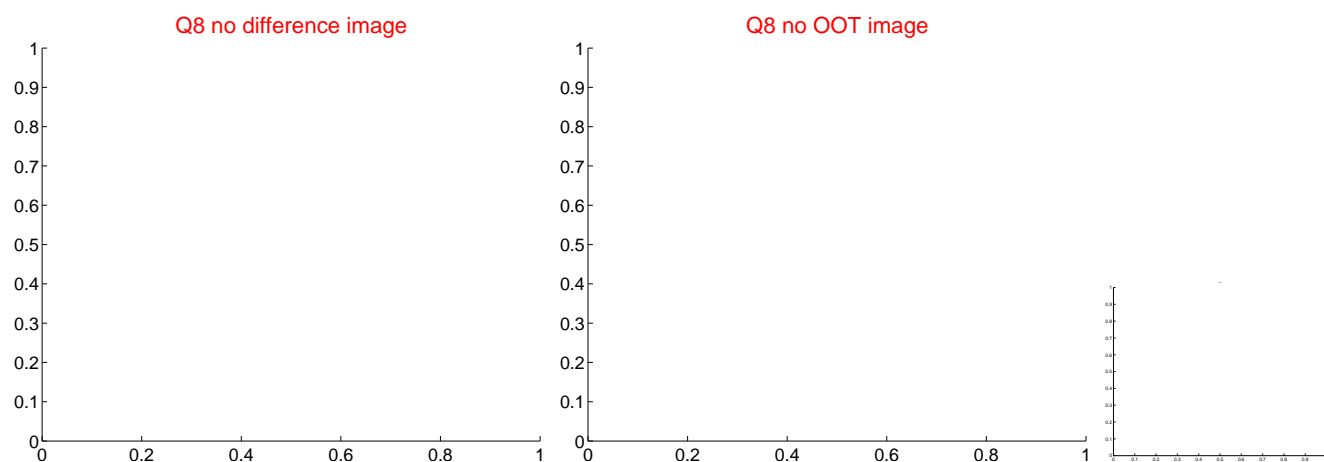
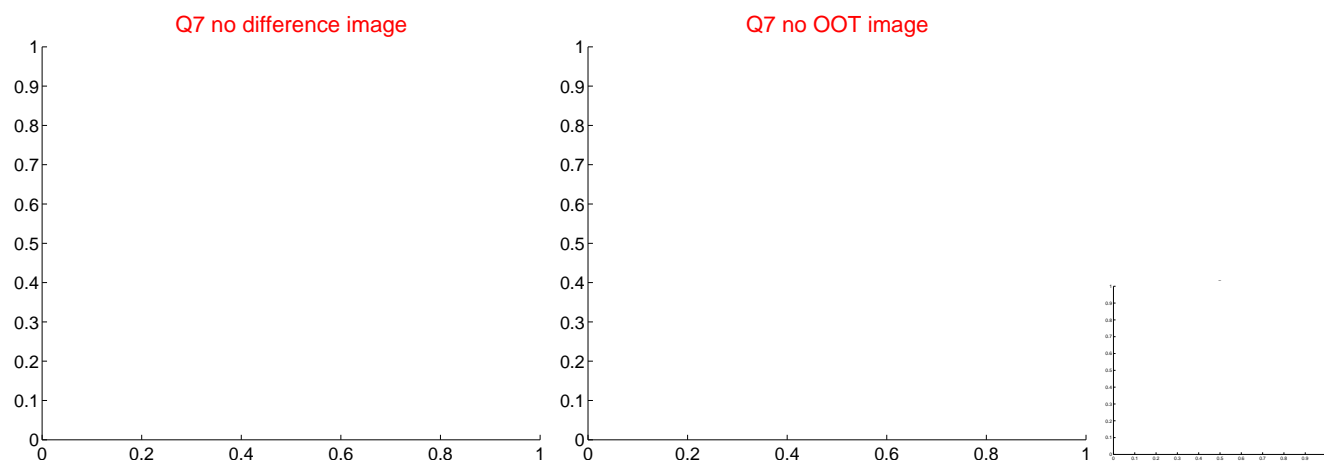
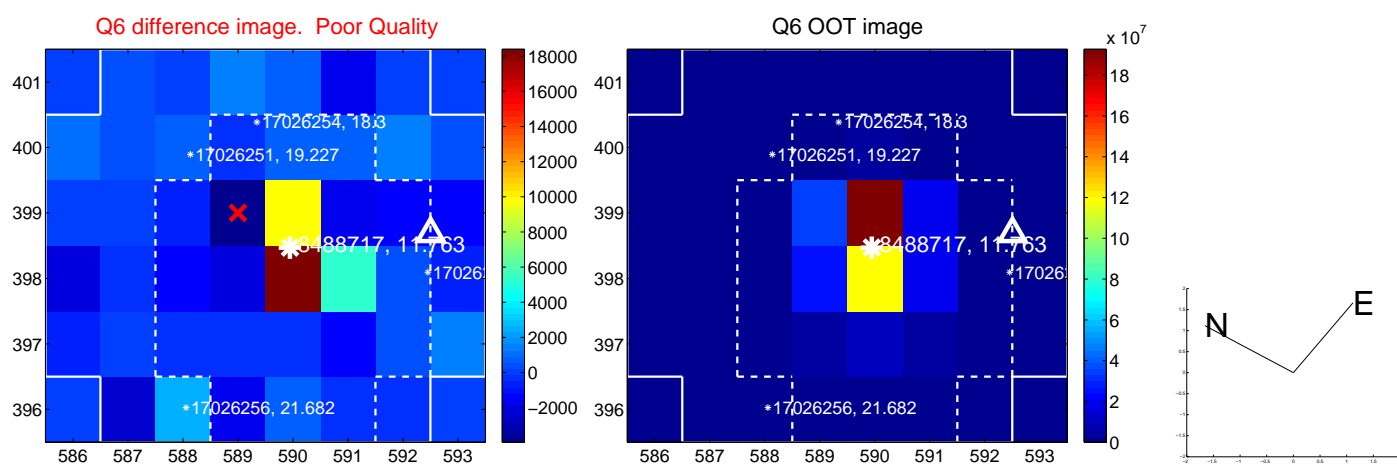
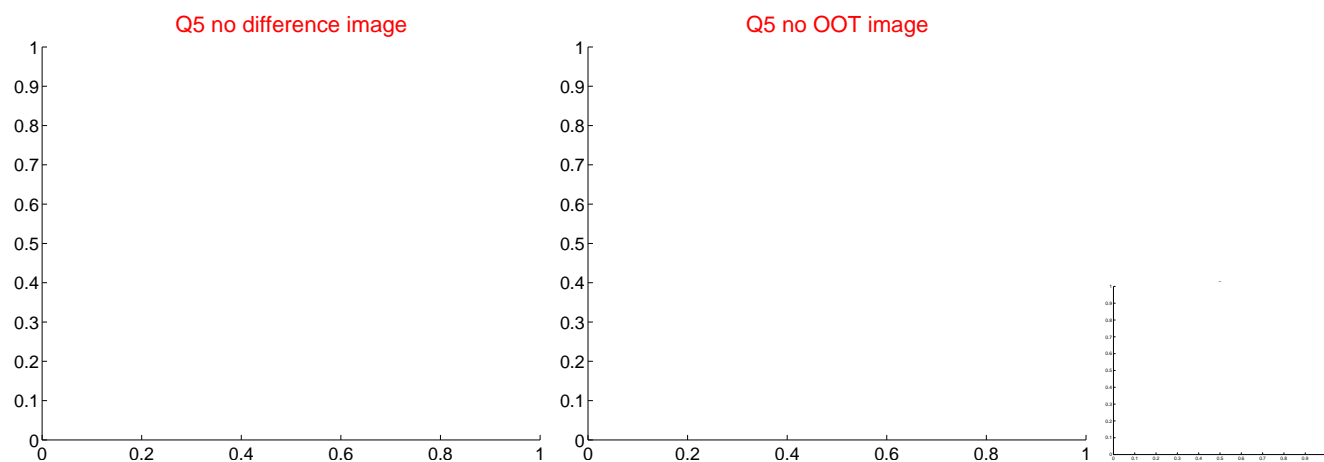
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



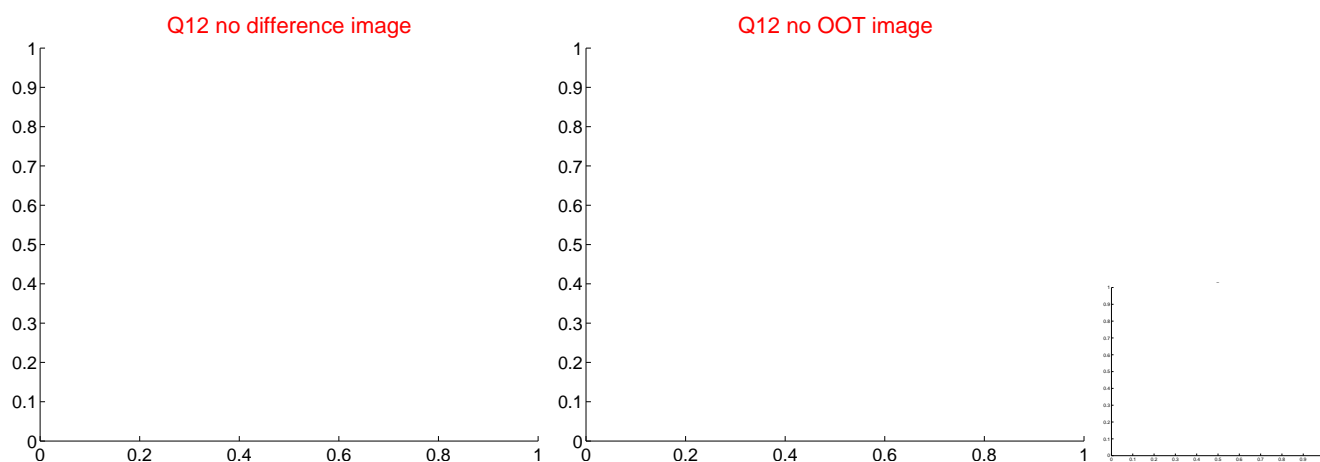
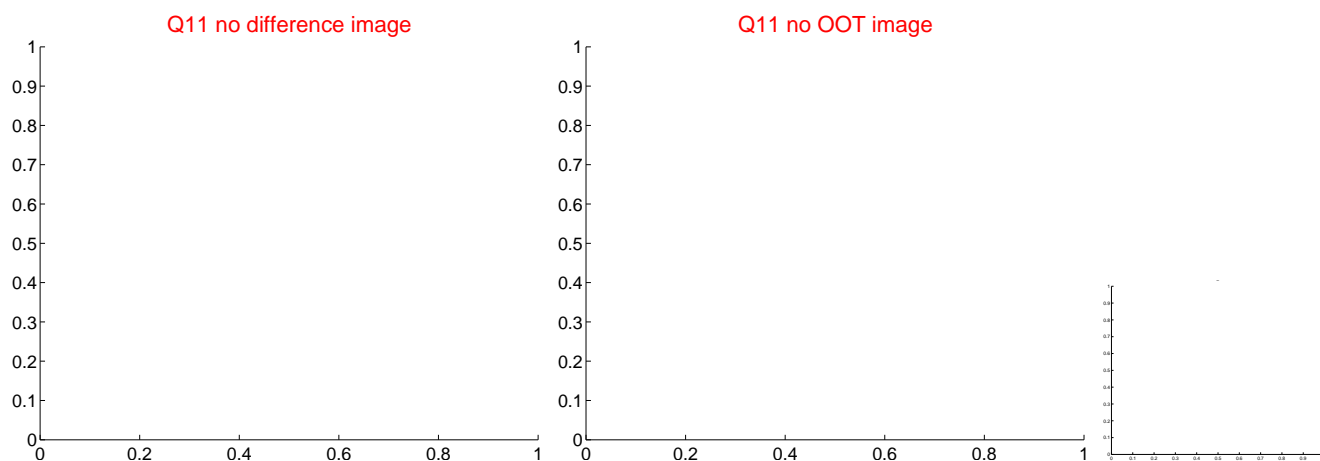
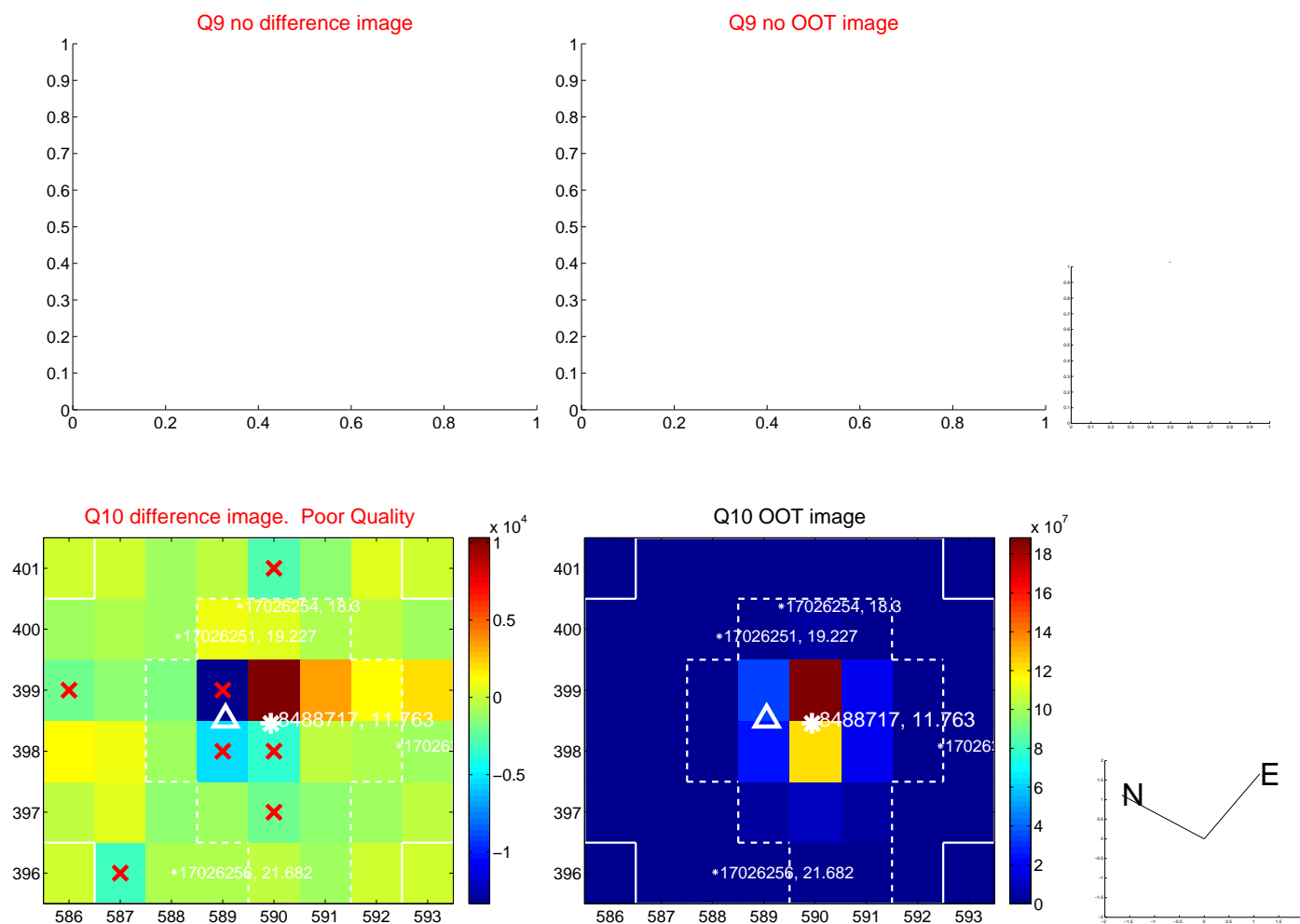
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.

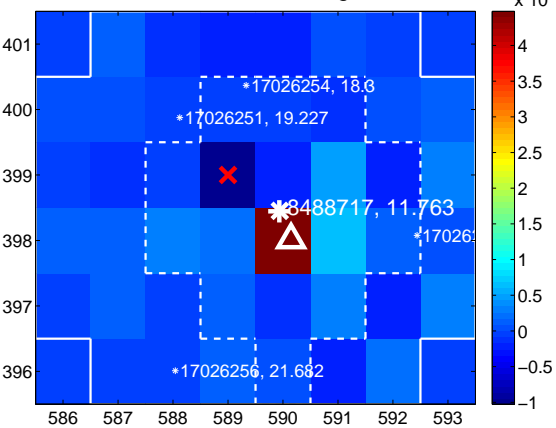
Q13 no difference image



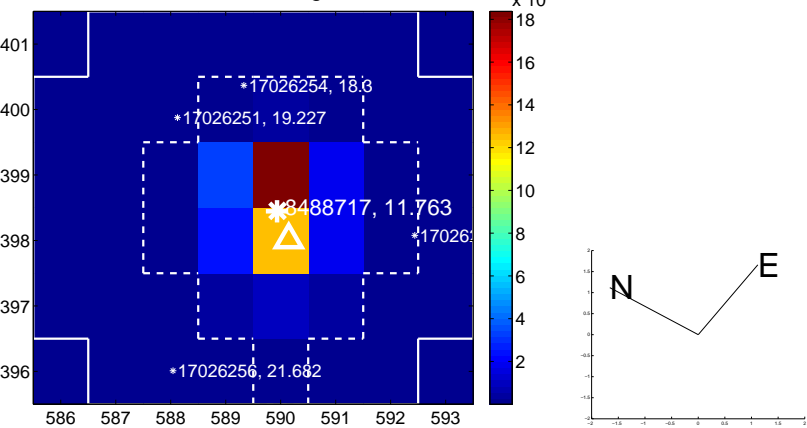
Q13 no OOT image



Q14 difference image



Q14 OOT image



Q15 no difference image



Q15 no OOT image



Q16 no difference image



Q16 no OOT image



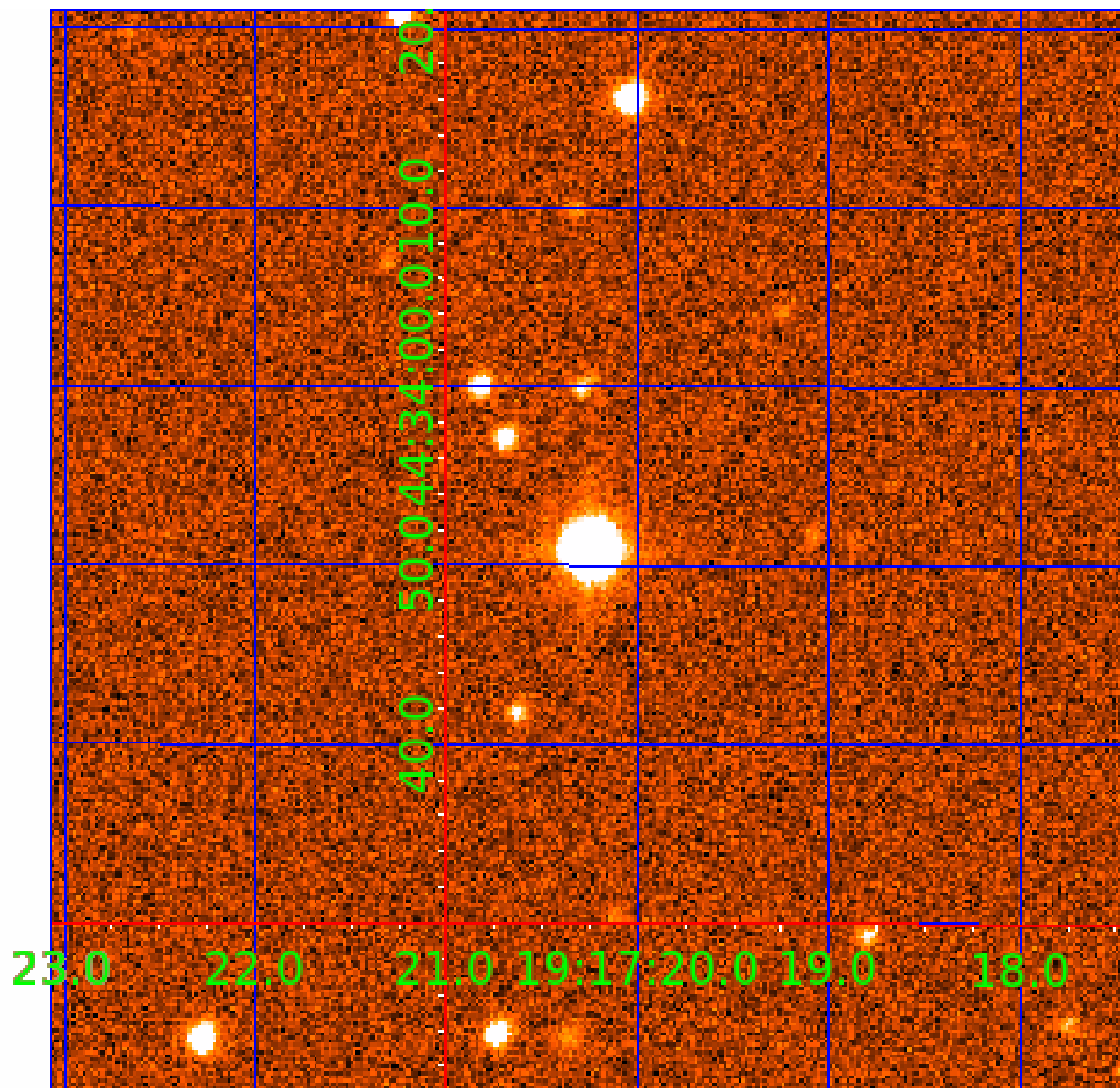
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

# UKIRT Image

Declination





# KIC 008488717

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008488717-01	OBS	No	3.254177	134.657762	44.9	10.500	11.0	-1.0	2.49	10816	1.72	20943.74
008488717-02	OBS	No	392.181561	166.891538	0.0	3.418	17.7	0.0	2.49	10816	0.03	35.18
008488717-03	OBS	No	351.542882	247.409300	92.1	16.746	10.4	7.1	2.49	10816	2.84	40.71

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008488717-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
008488717-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008488717-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

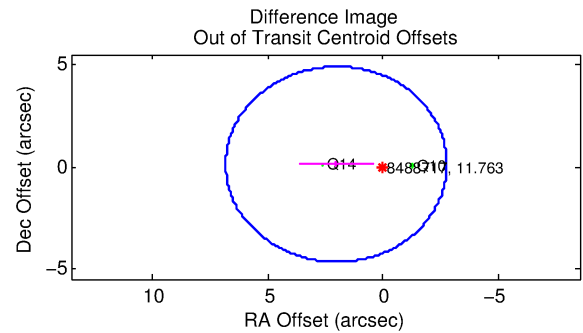
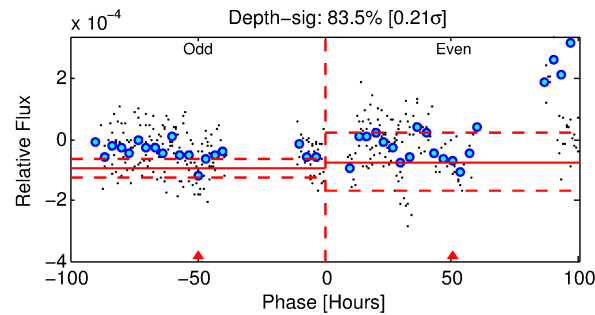
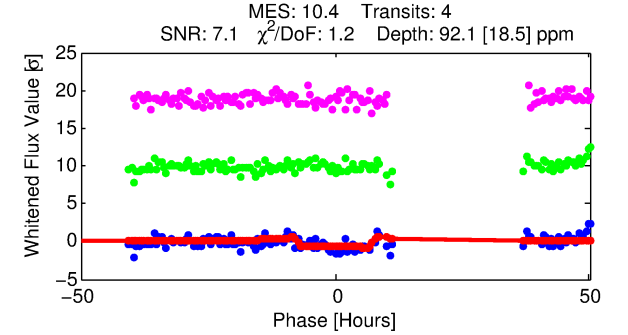
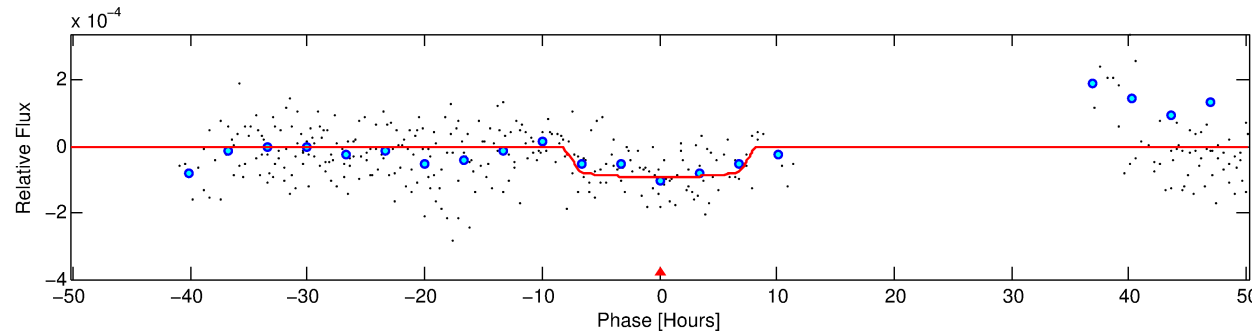
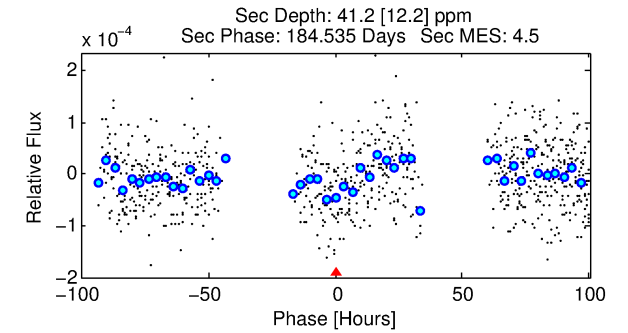
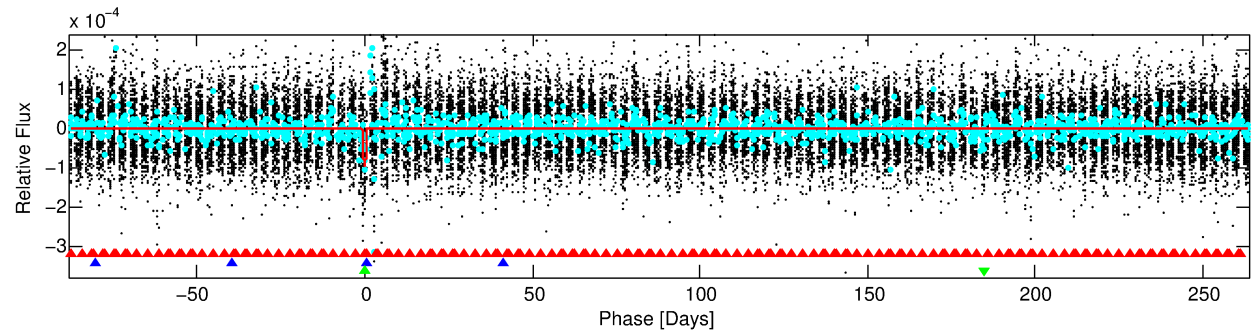
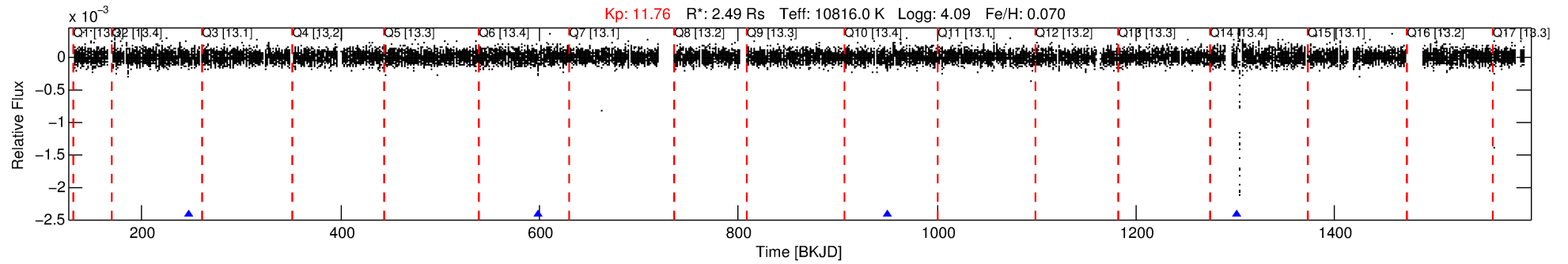
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008488717-03

No Significant Match Found

# DV One-Page Summary

KIC: 8488717 Candidate: 3 of 3 Period: 351.543 d



## DV Fit Results:

Period = 351.54288 [0.01848] d  
Epoch = 247.4093 [0.0273] BKJD  
Rp/R\* = 0.0105 [0.0013]  
a/R\* = 54.52 [28.26]  
b = 0.95 [0.05]  
Seff = 40.71 [17.17]  
Teff = 644 [68] K  
Rp = 2.84 [0.97] Re  
a = 1.3682 [0.3656] AU  
Ag = 5253.40 [2859.00] [1.84σ]  
Teffp = 8478 [888] K [8.80σ]

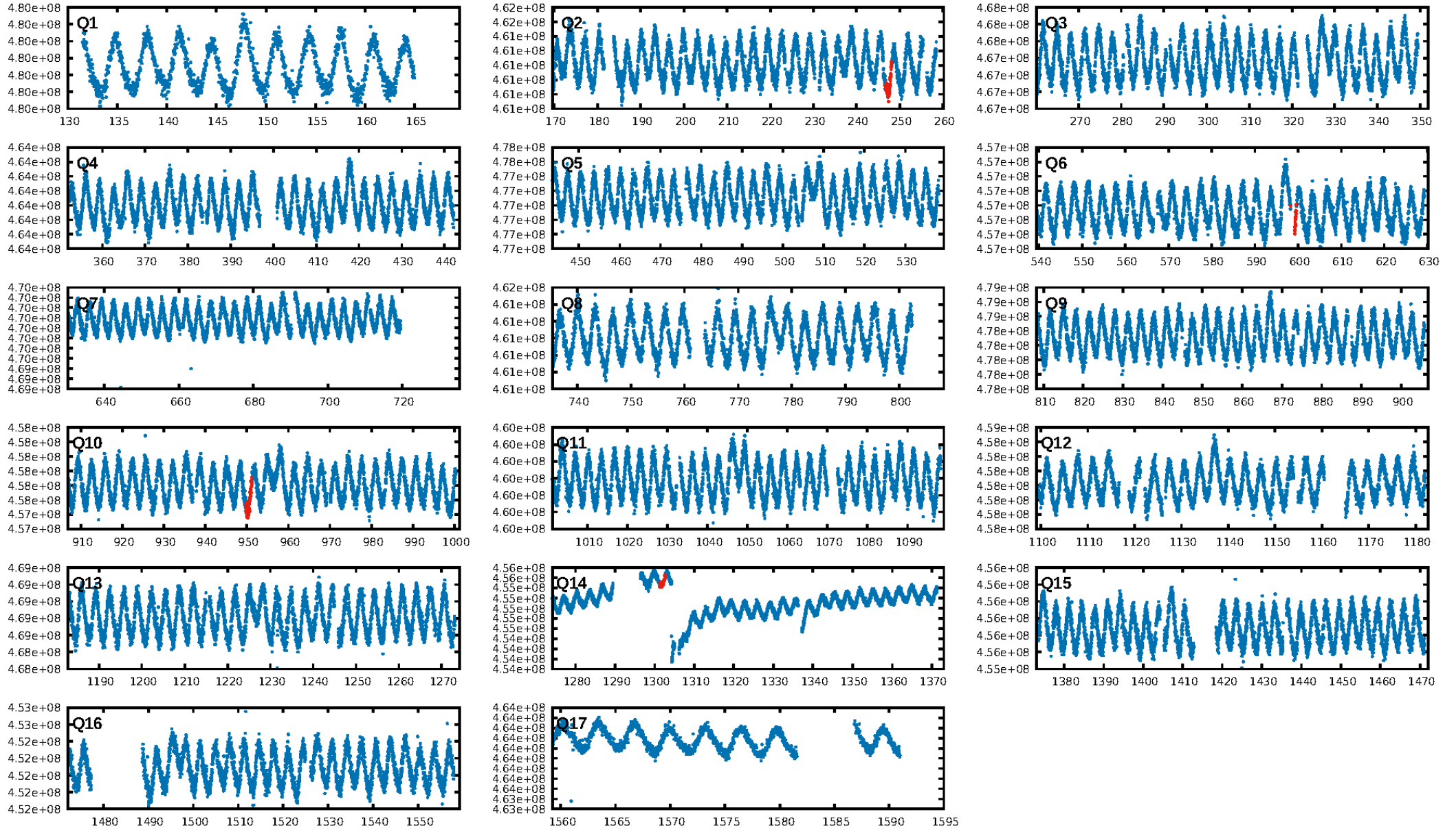
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [422.91σ]  
LongPeriod-sig: 100.0% [57.07σ]  
ModelChiSquare2-sig: 4.2%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.49e-15  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -0.03557  
Centroid-sig: 1.2%  
Centroid-so: 3.718 arcsec [1.69σ]  
OotOffset-rm: 2.033 arcsec [1.27σ]  
OotOffset-st: 2/0/0/0 [2]  
KicOffset-rm: 2.002 arcsec [1.27σ]  
KicOffset-st: 2/0/0/0 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 0.00 [0/3]

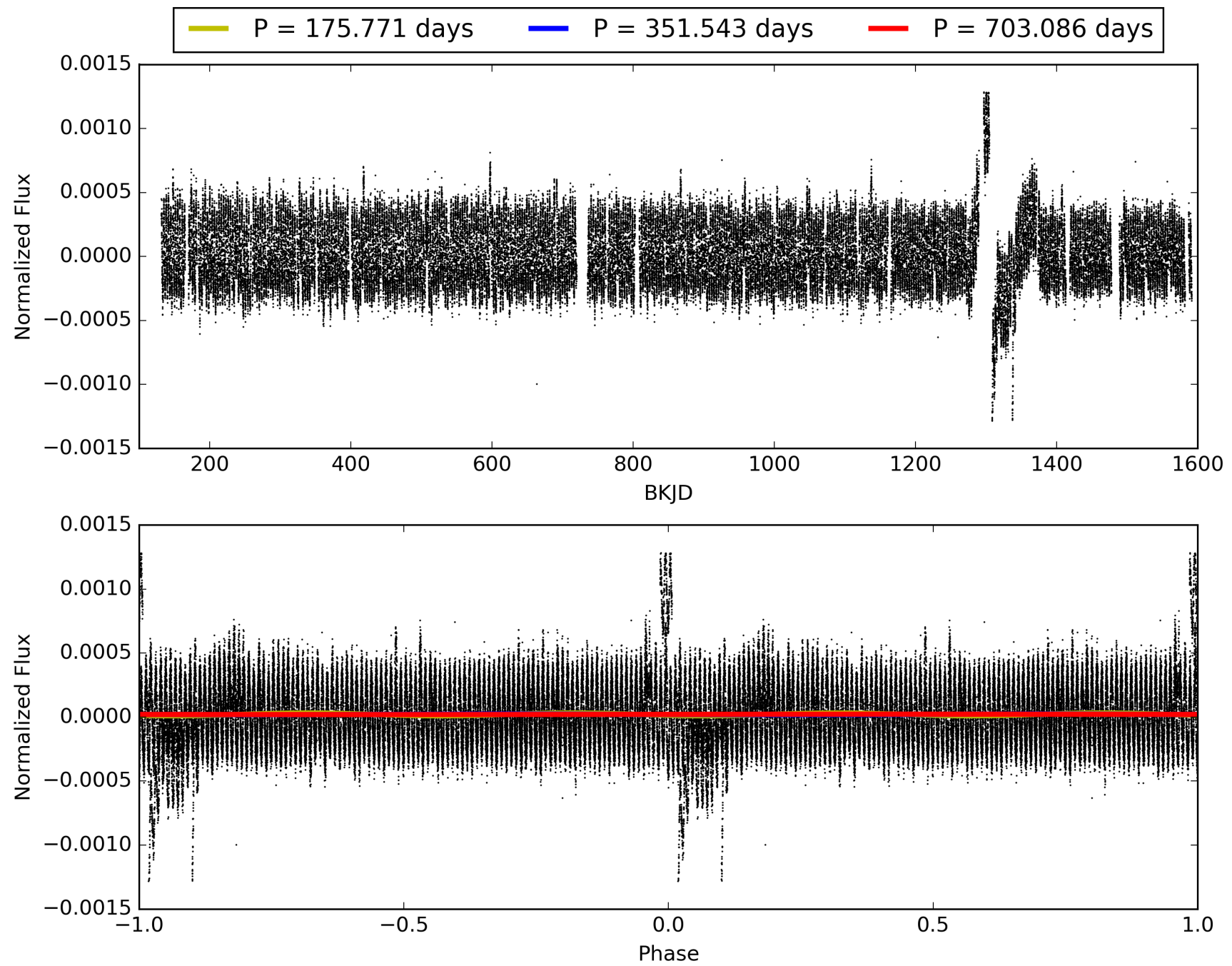
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:30:33 Z

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

# TCE 008488717-03, PDC Light Curves

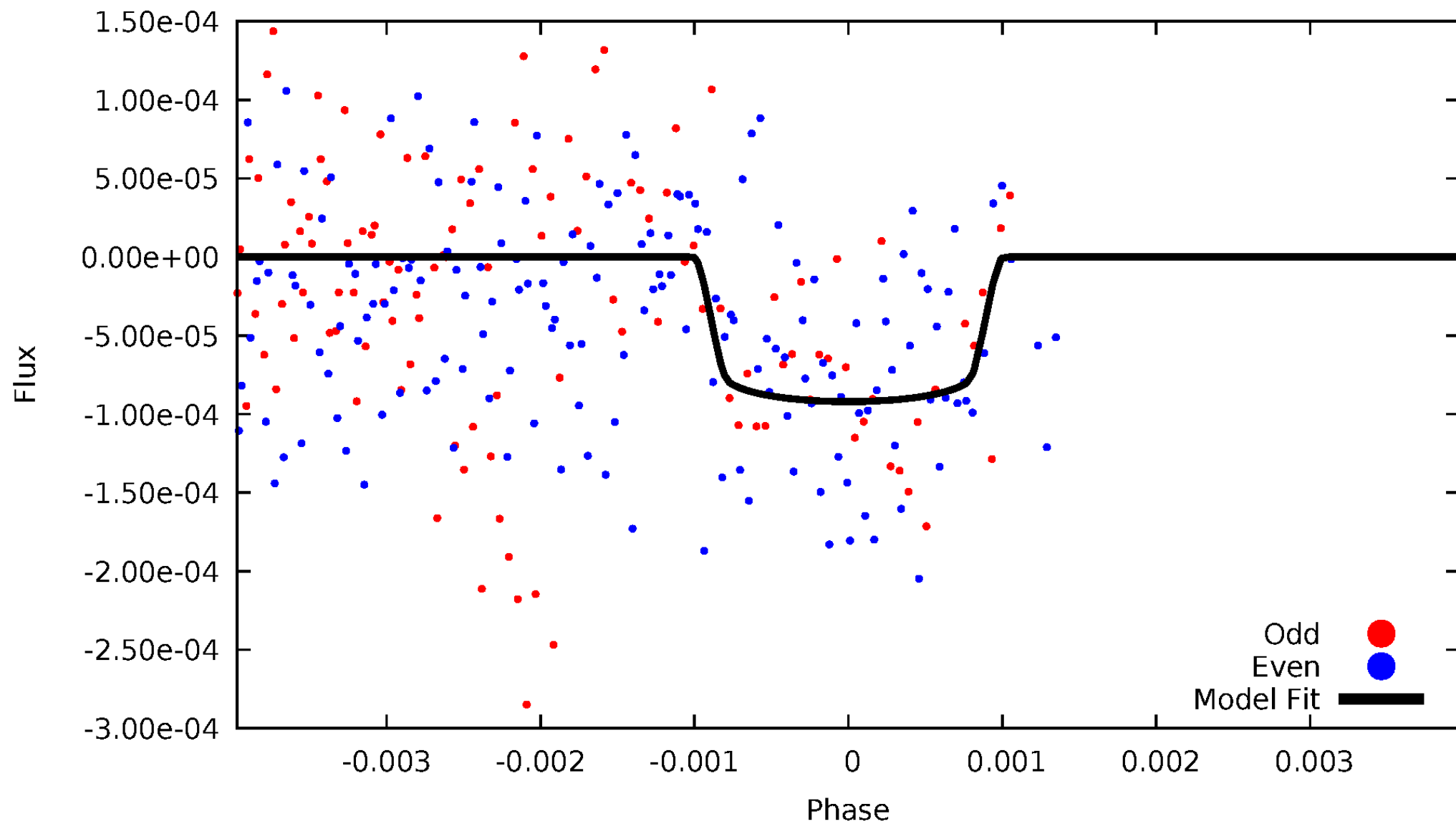


TCE 008488717-03



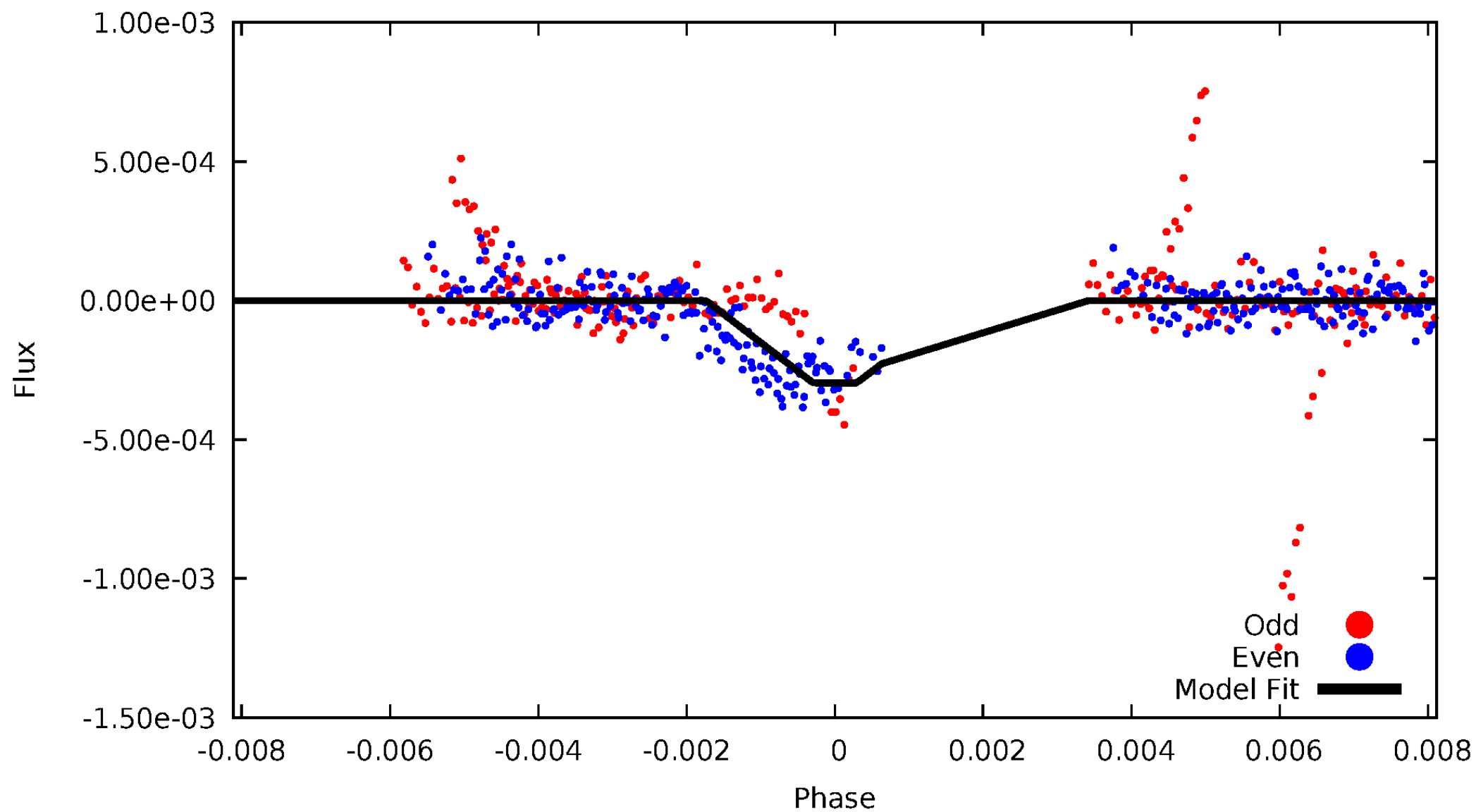
# DV Odd/Even

TCE 008488717-03



# ALT Odd/Even

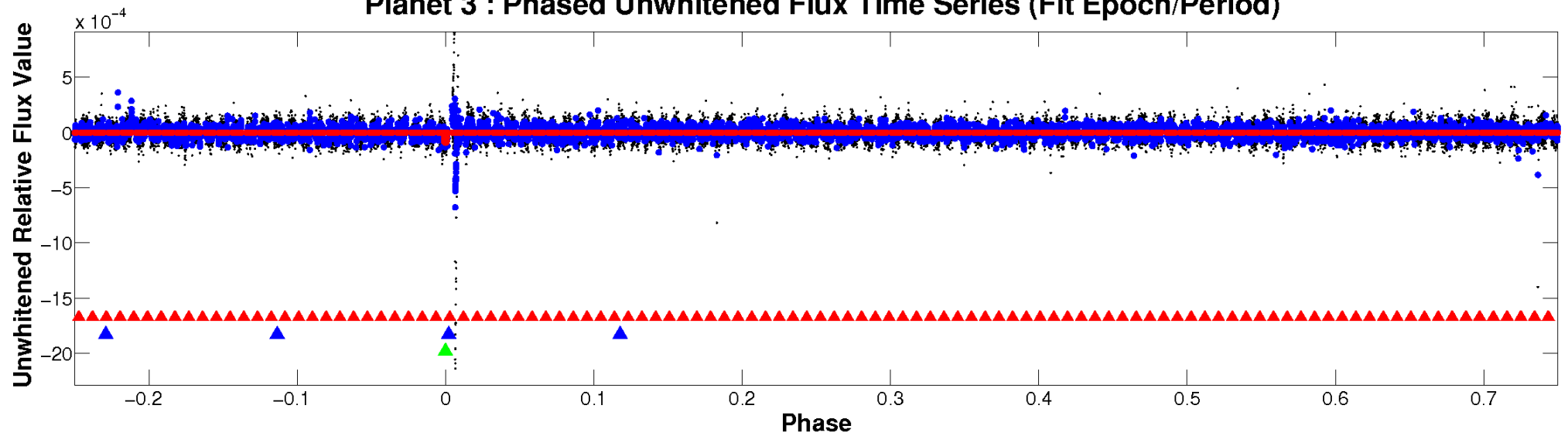
TCE 008488717-03



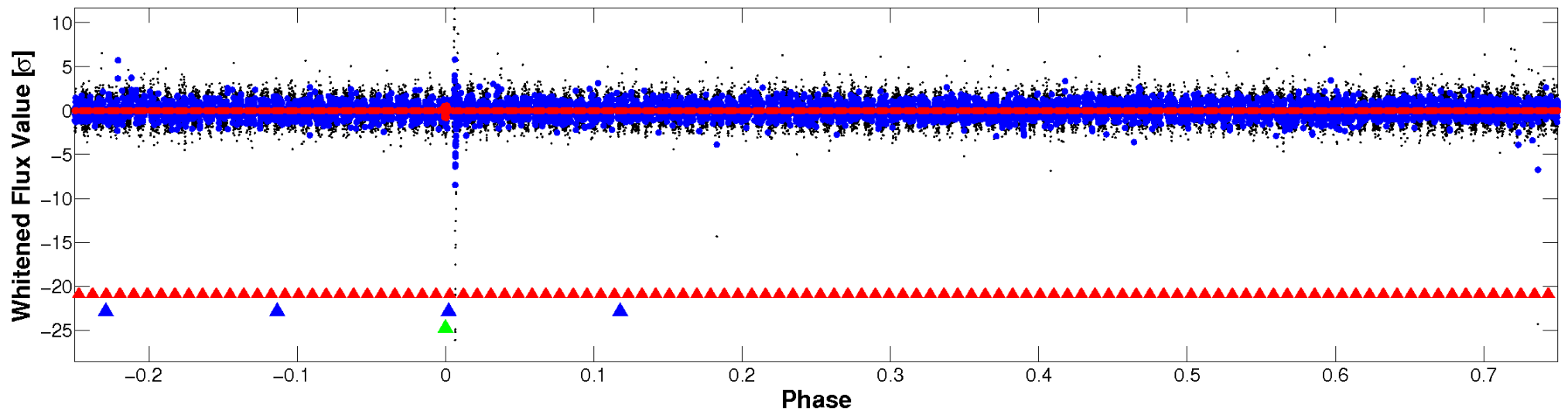


# Non-Whitened Vs. Whitened Light Curve

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

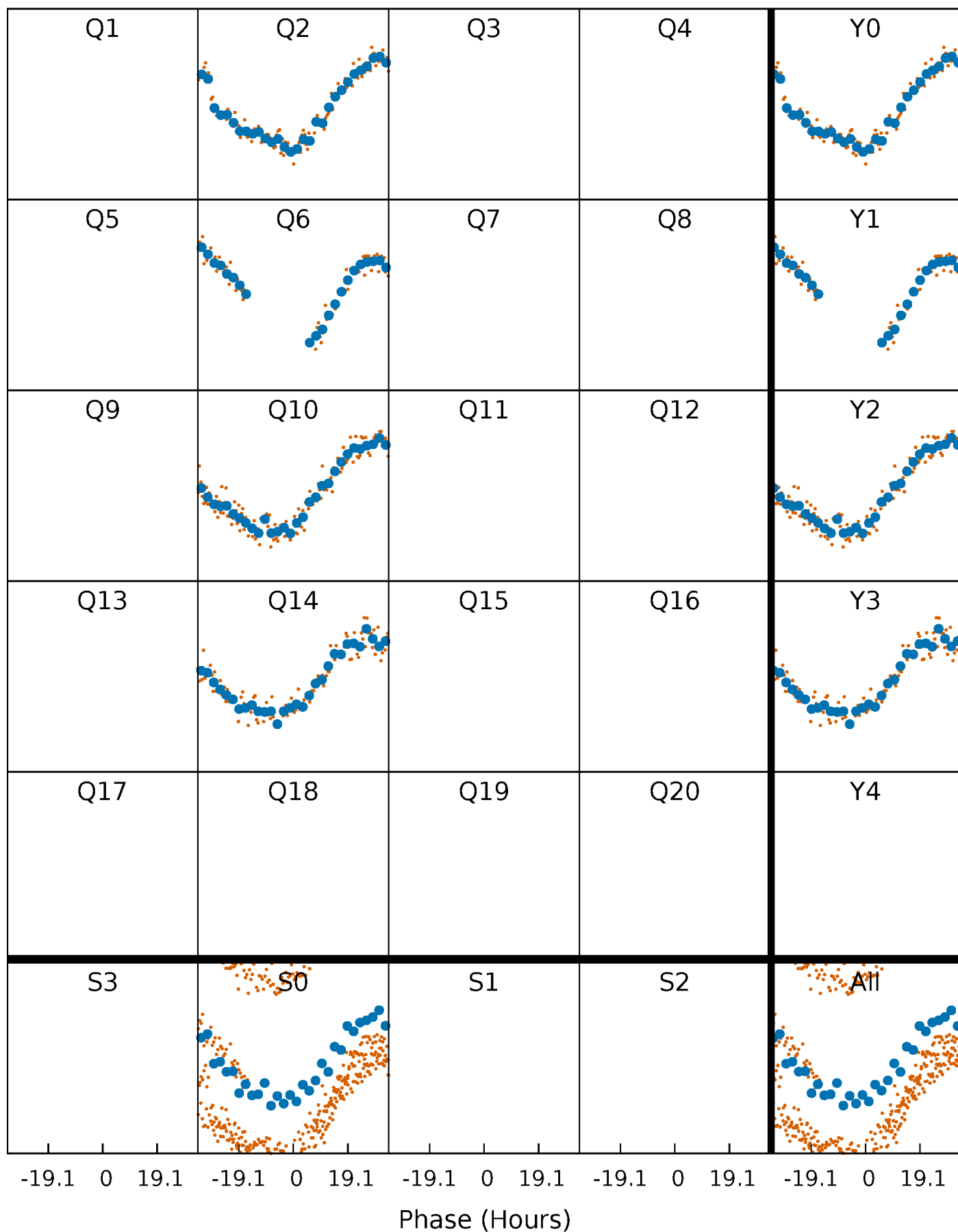


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



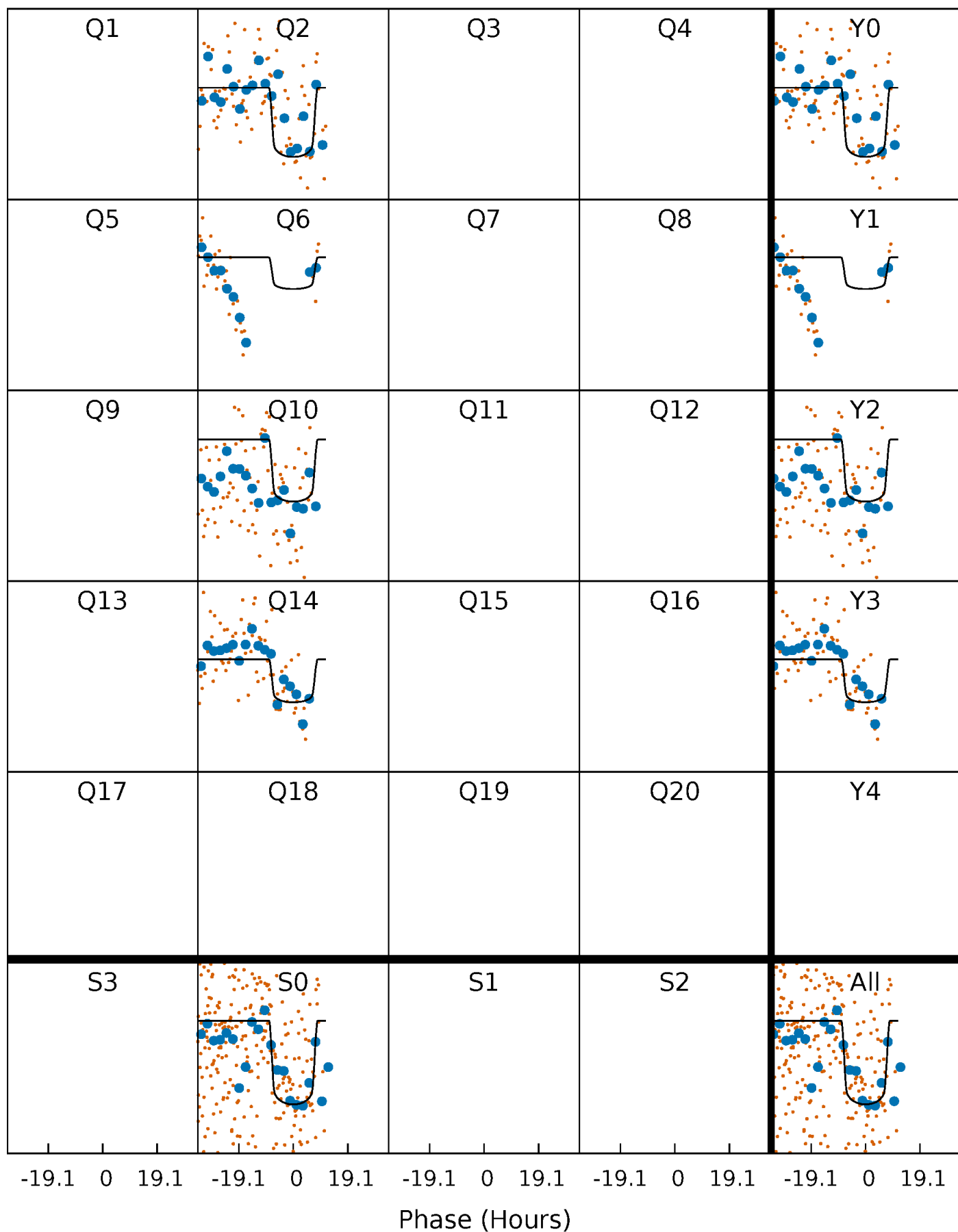
# PDC Quarter-Phased Transit Curves

TCE 008488717-03 P=351.542882 Days  $T_0=247.409300$  (BKJD)



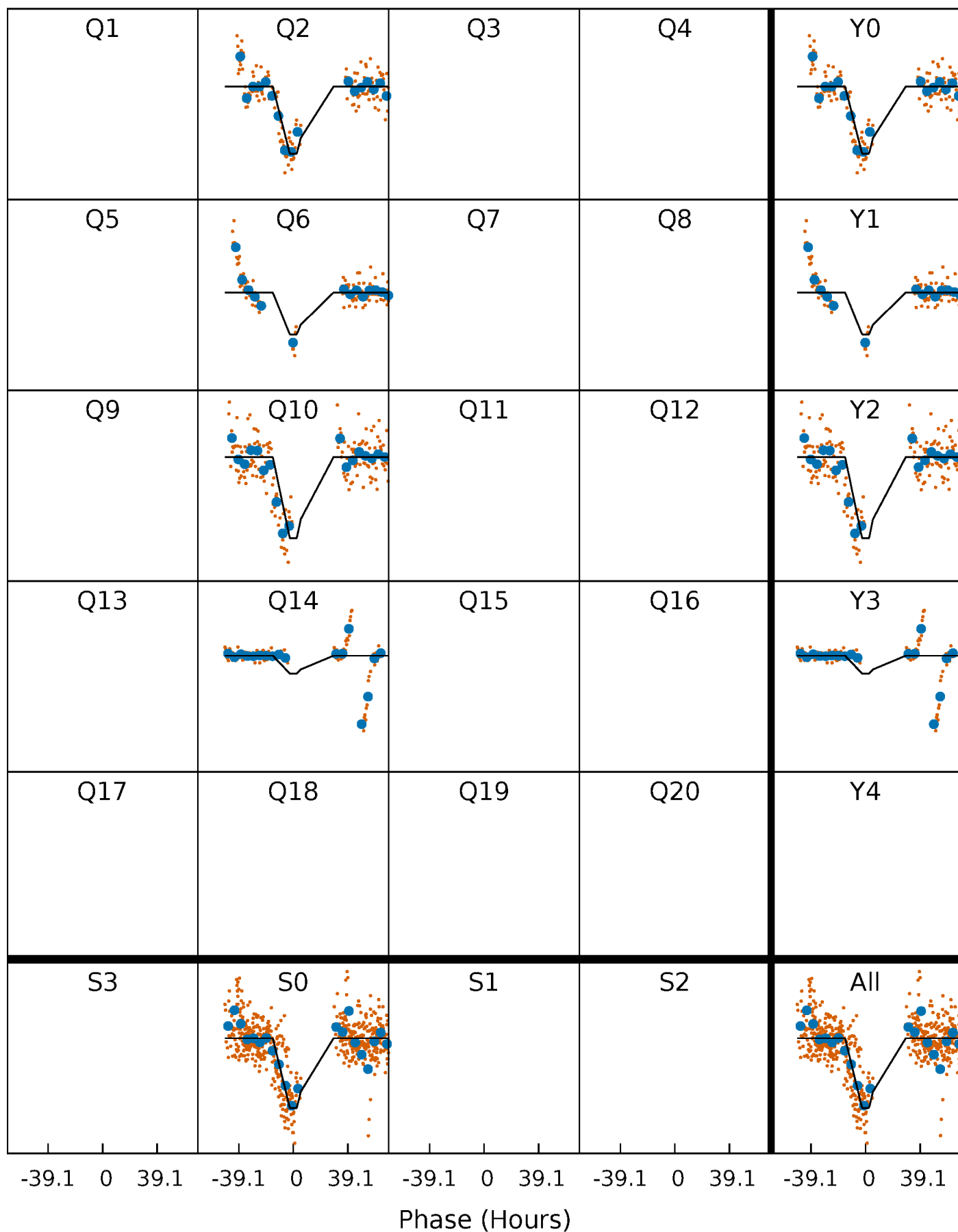
# DV Quarter-Phased Transit Curves

TCE 008488717-03 P=351.542882 Days  $T_0=247.409300$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

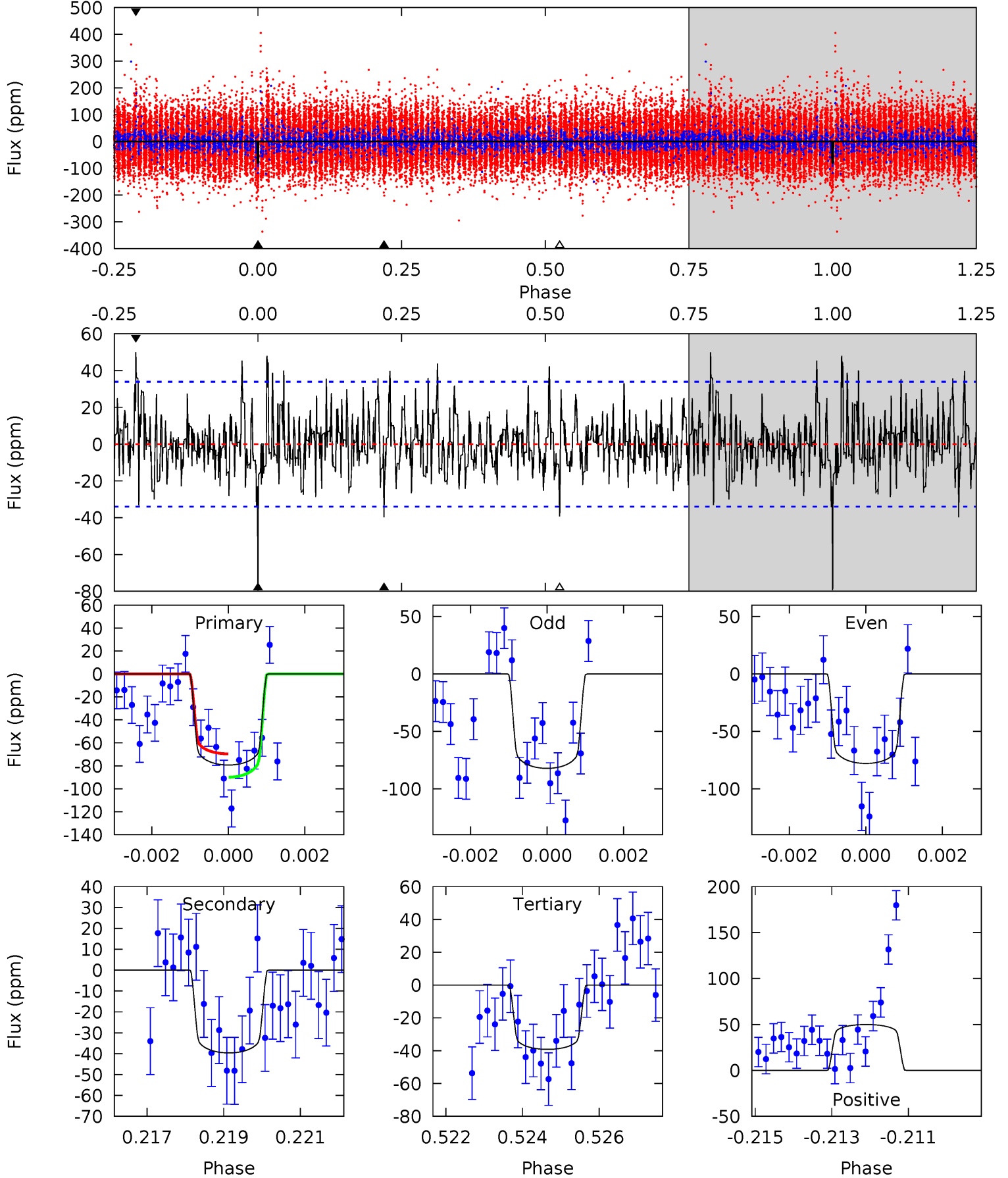
TCE 008488717-03 P=351.573022 Days  $T_0=247.661908$  (BKJD)



# DV Model-Shift Uniqueness Test

008488717-03, P = 351.542882 Days, E = 247.409300 Days

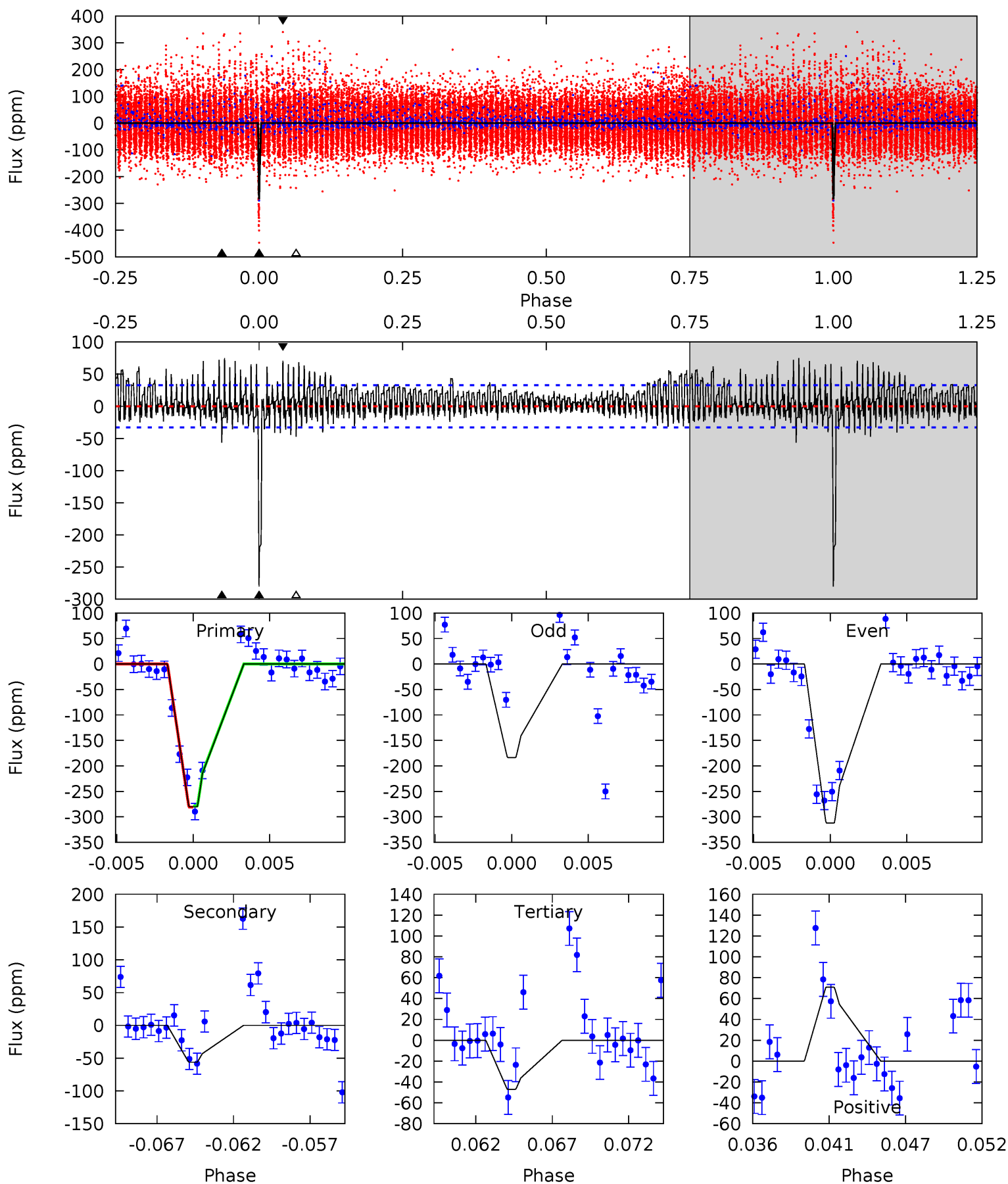
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.4	6.22	6.15	7.84	5.33	3.09	2.00	6.30	4.61	0.07	-1.61	0.32	1.01	0.39	1.59



# Alt Model-Shift Uniqueness Test

008488717-03, P = 351.573022 Days, E = 247.661908 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.0	8.84	7.39	11.1	5.15	2.80	2.50	36.6	32.9	1.45	-2.28	9.28	0.81	0.21	0.11



### Stellar Parameters For KIC 008488717

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$10816^{+304}_{-457}$	$4.086^{+0.210}_{-0.210}$	$0.070^{+0.050}_{-0.600}$	$2.493^{+0.797}_{-0.797}$	$2.760^{+0.323}_{-0.645}$	$0.251^{+0.351}_{-0.125}$
	+3%/-4%	+5%/-5%	+71%/-857%	+32%/-32%	+12%/-23%	+140%/-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 008488717-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-40 \pm 6$	$2.88^{+0.60}_{-0.60}$	$905^{+78}_{-83}$	$7608^{+807}_{-643}$	$4826^{+2848}_{-1572}$
Alt.	$-56 \pm 6$	$4.70^{+0.89}_{-0.83}$	$904^{+80}_{-77}$	$6383^{+364}_{-314}$	$2569^{+1048}_{-793}$

$T_{max}$  = 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

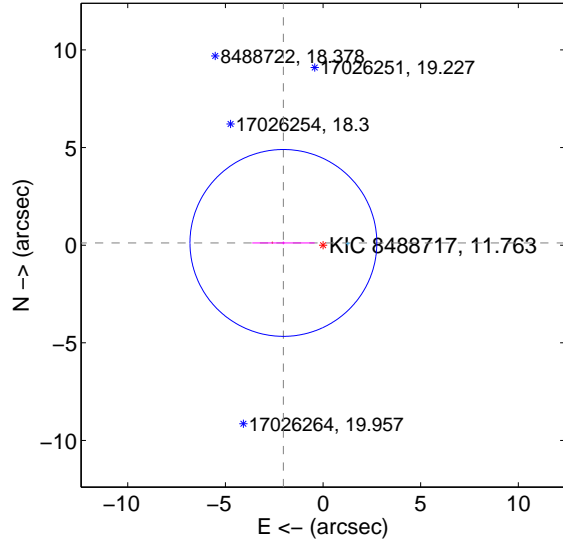
Supplemental centroid analysis for 008488717-03. **Kepler magnitude: 11.76.** Transit SNR 7.12

**There are 1 quarters with good PRF difference image offsets**

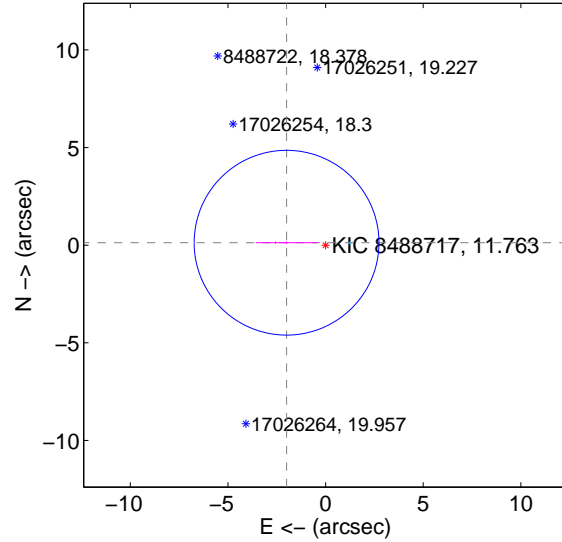
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.033 \pm 1.594$	1.27	$2.029 \pm 1.597$	$0.115 \pm 0.071$
PRF-fit source offset from KIC position	$2.002 \pm 1.577$	1.27	$1.998 \pm 1.580$	$0.126 \pm 0.069$
photometric centroid source offset	$3.72 \pm 2.20$	1.69	$2.27 \pm 2.36$	$-2.95 \pm 2.10$

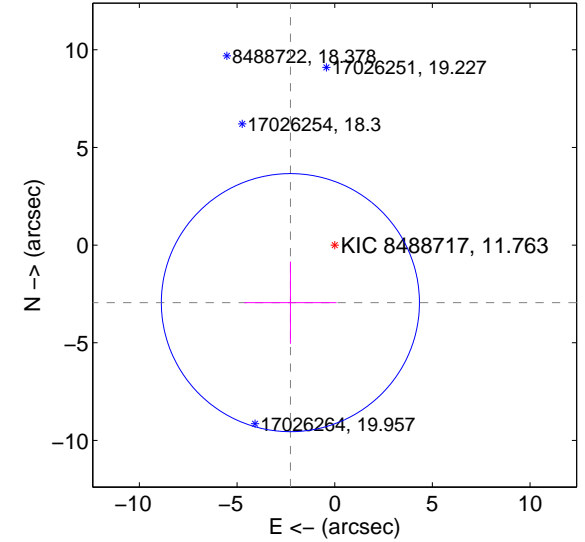
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

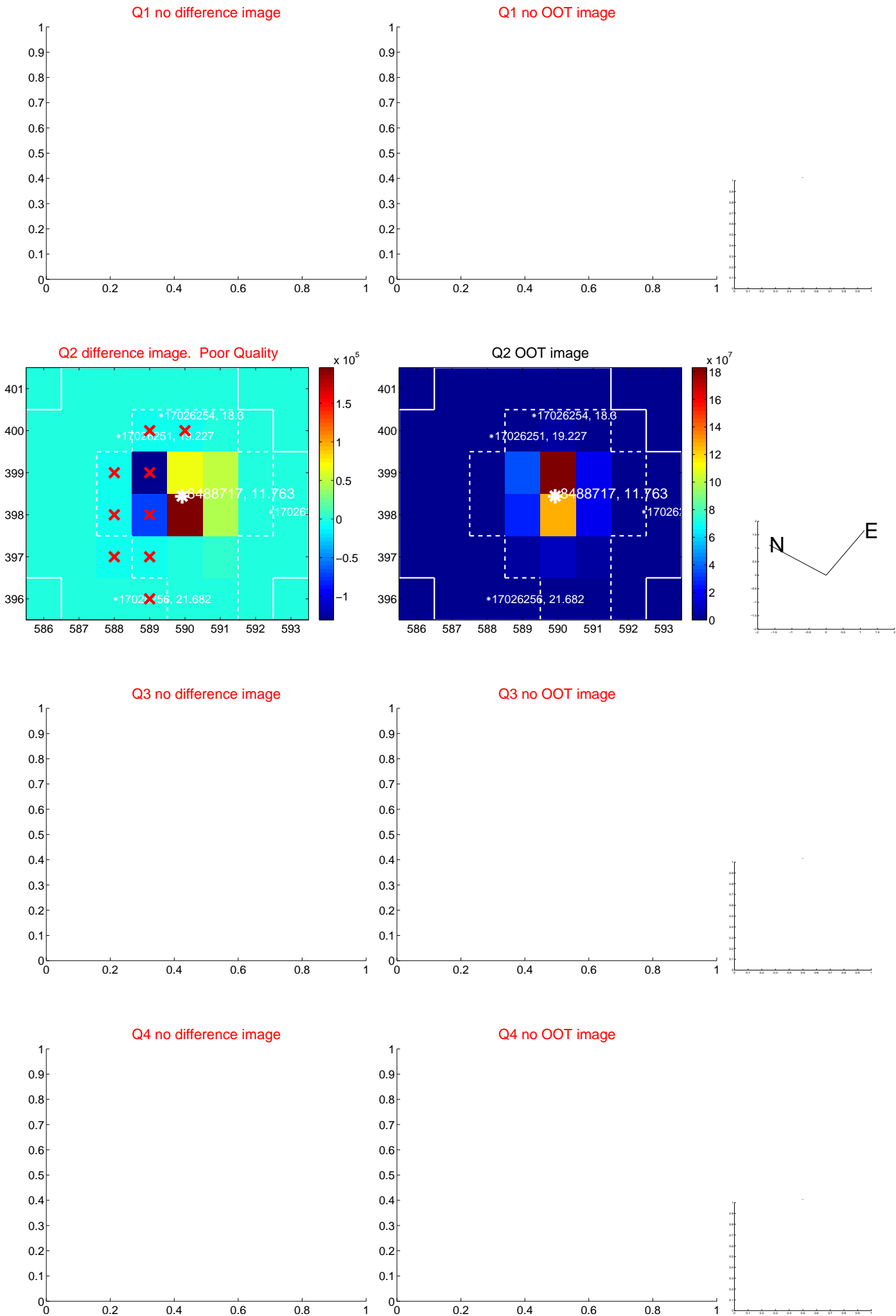


offset from photometric centroids

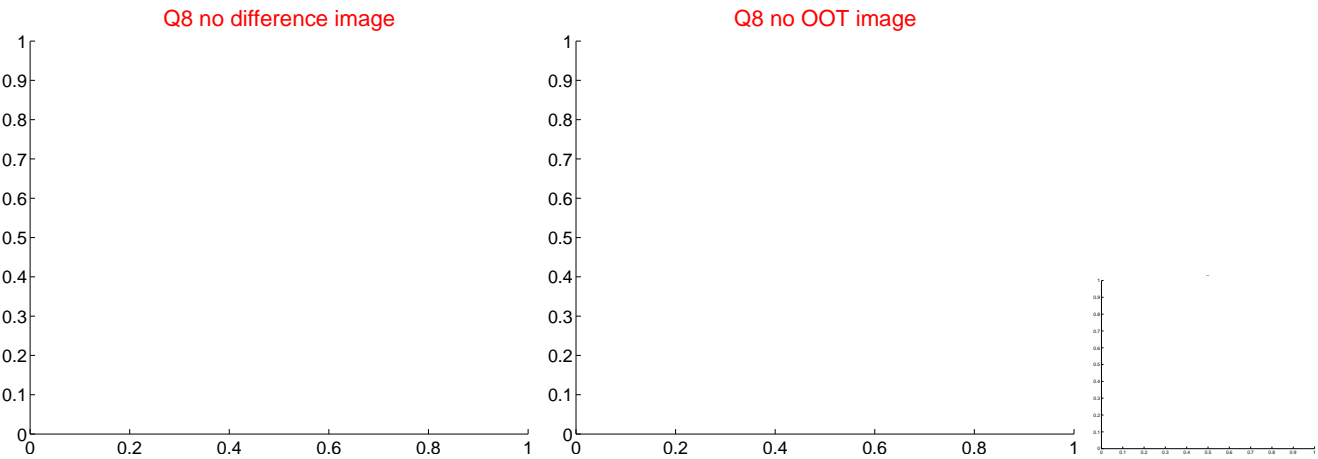
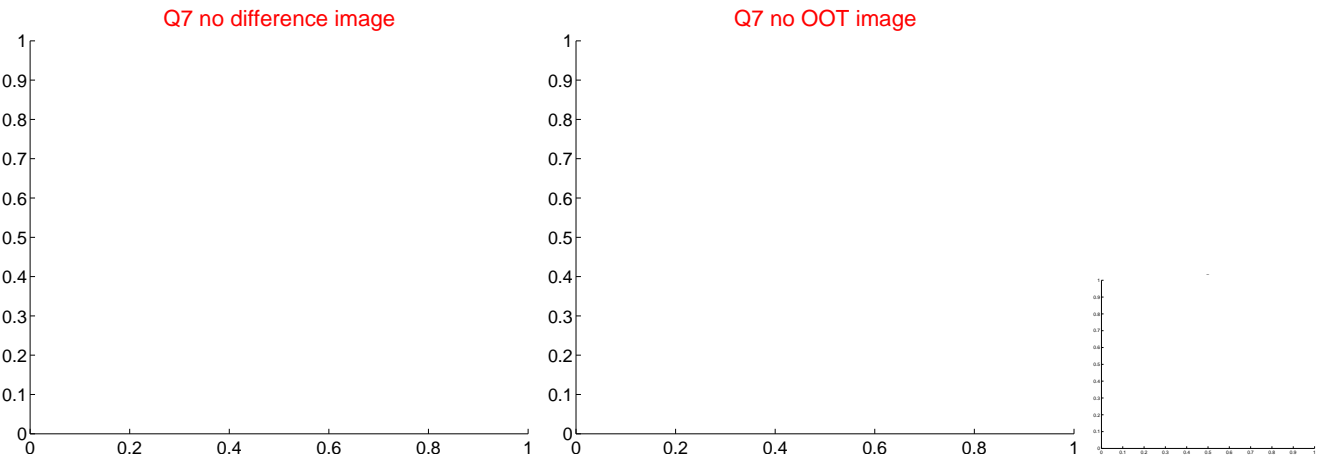
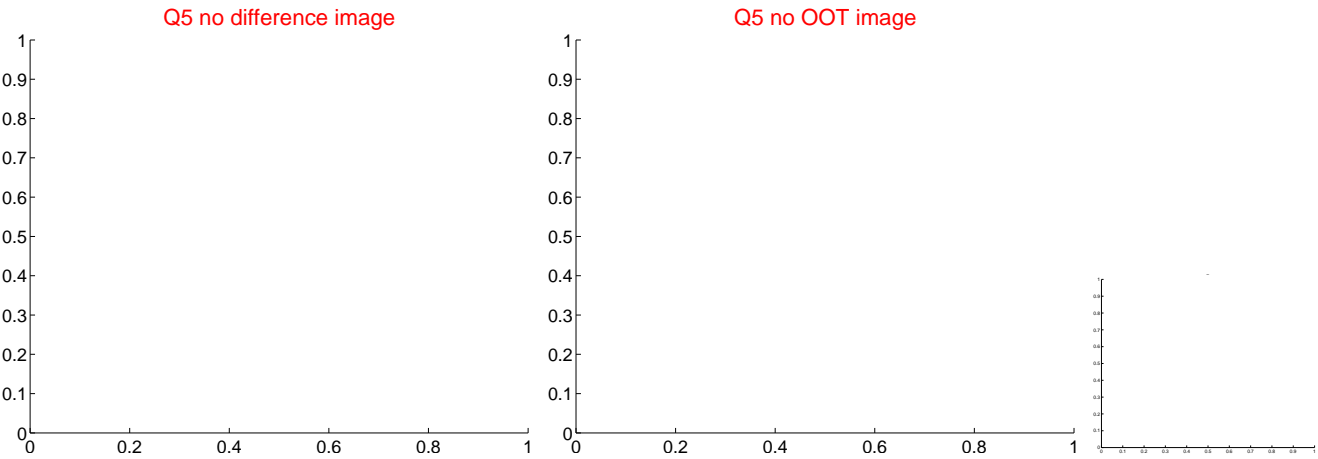


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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



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

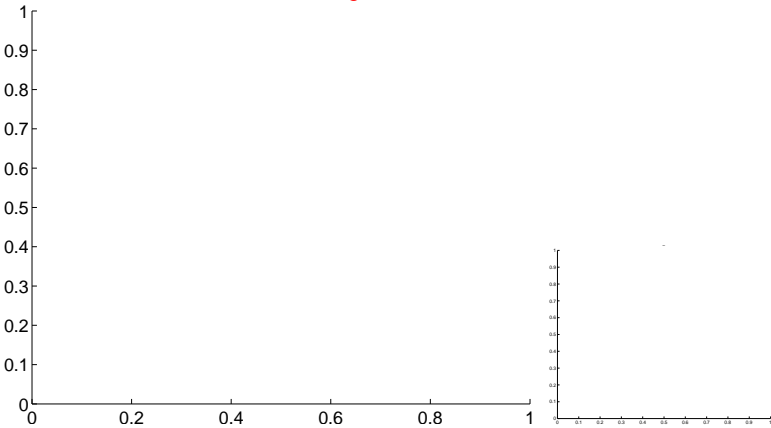


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

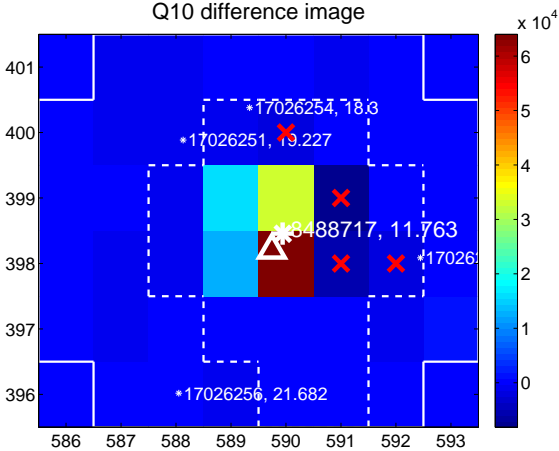
Q9 no difference image



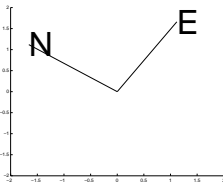
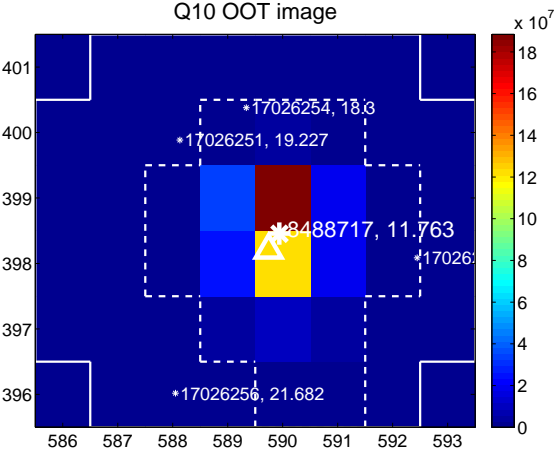
Q9 no OOT image



Q10 difference image



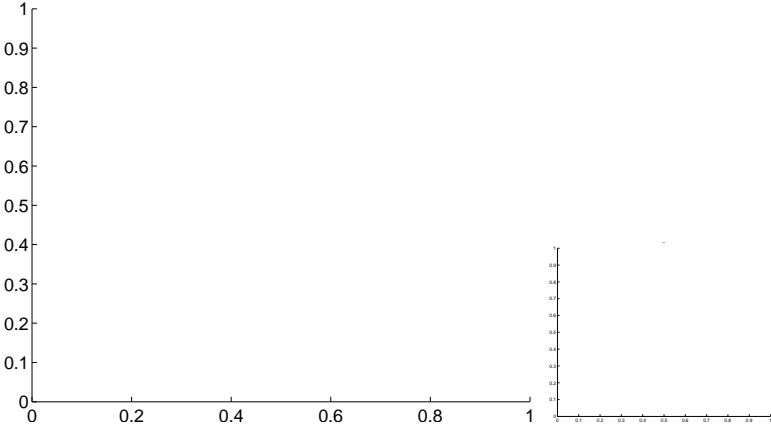
Q10 OOT image



Q11 no difference image



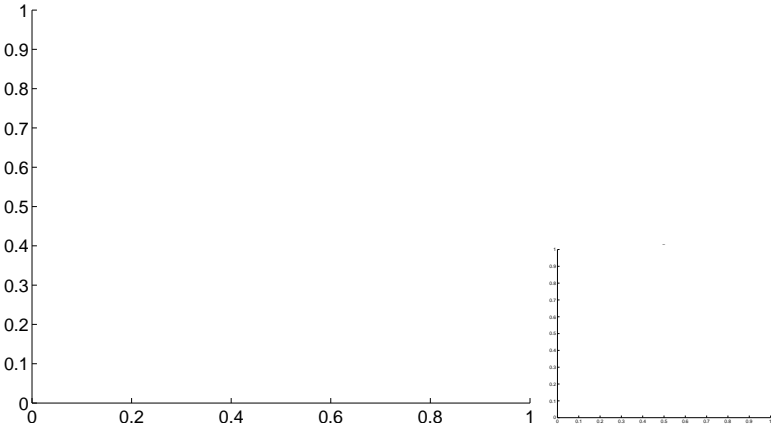
Q11 no OOT image



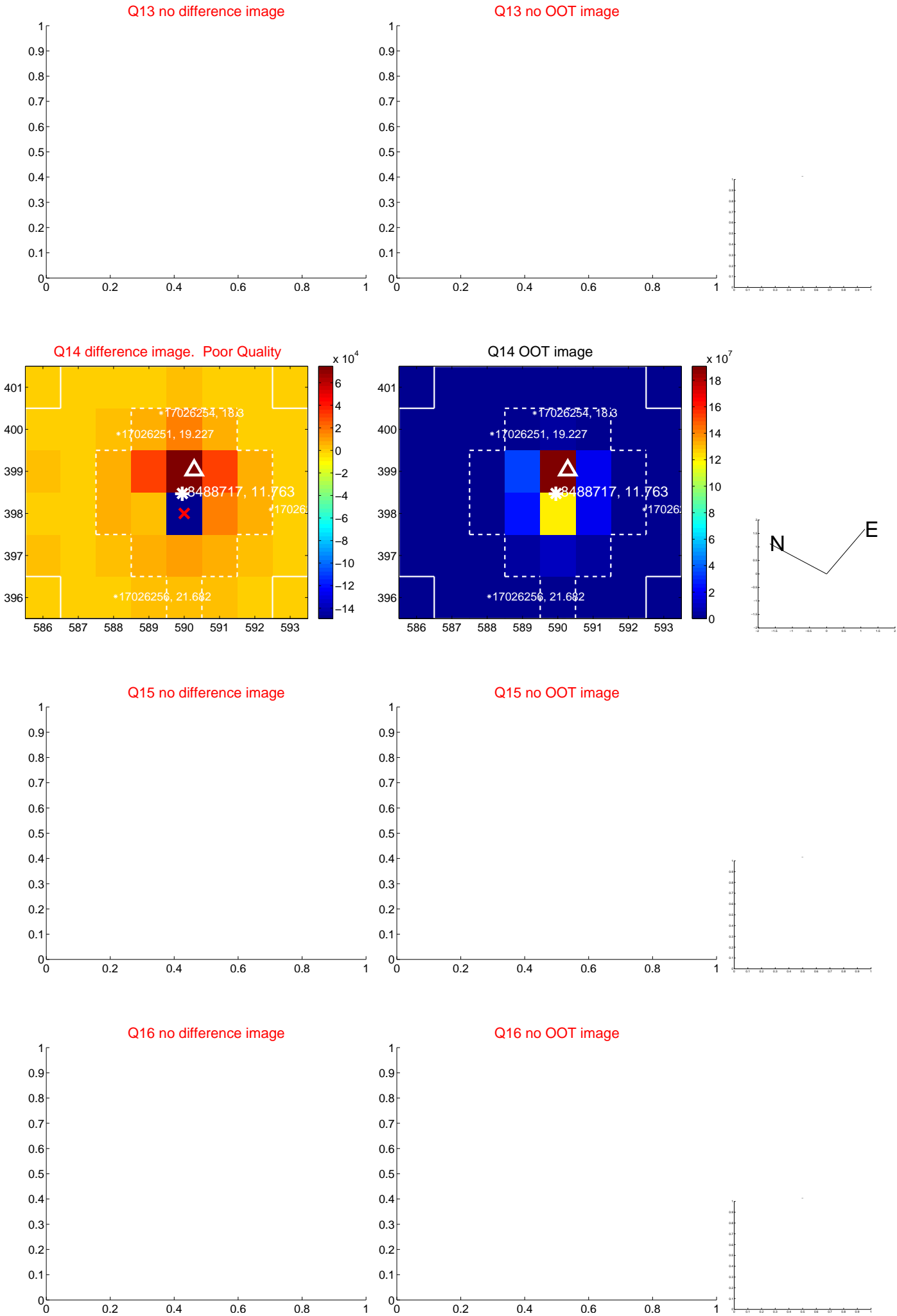
Q12 no difference image



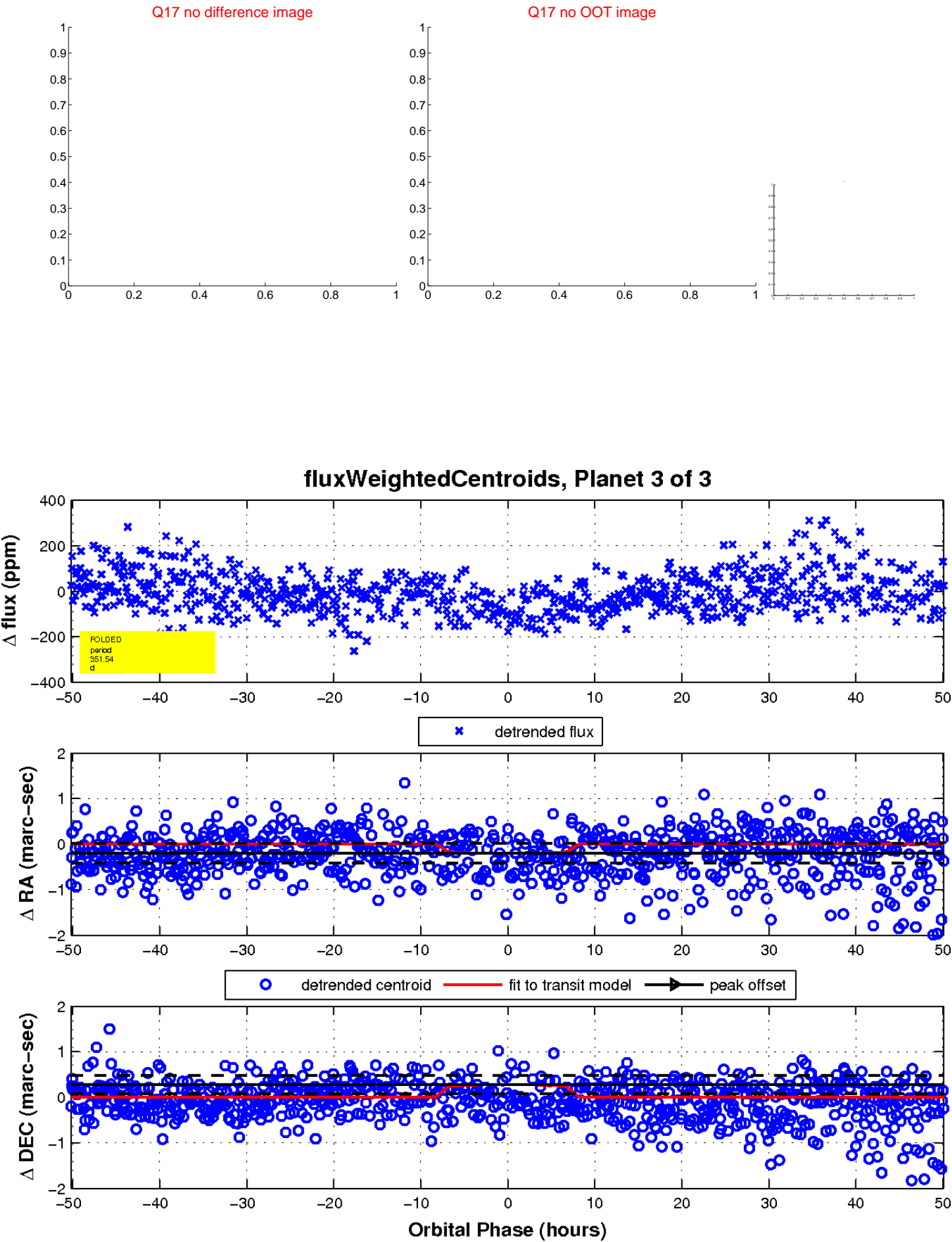
Q12 no OOT image



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

