

# KIC 002719125

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
002719125-01	OBS	No	1.844958	131.816217	16.4	7.578	11.9	11.7	1.77	7370	0.73	7279.22
002719125-02	OBS	No	1.844889	132.286695	17.8	22.139	9.8	13.1	1.77	7370	0.87	7279.58

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002719125-01	OBS	FP	0.00	1	0	0	0	LPP_DV
002719125-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_FEW_MEAS

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

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

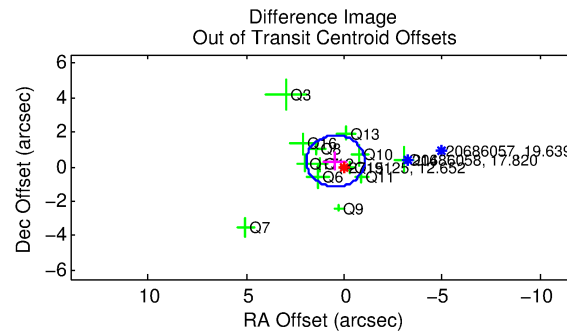
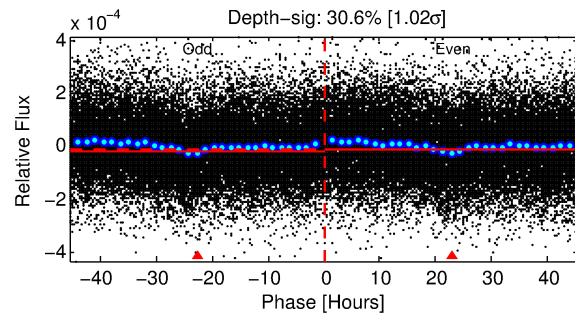
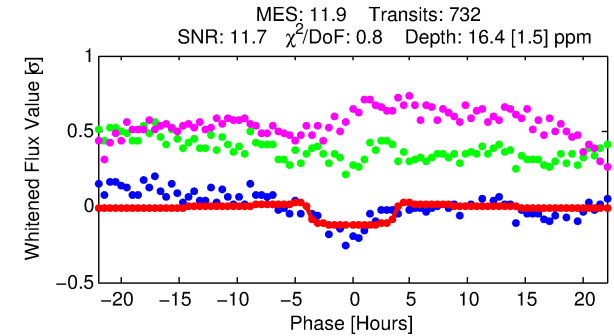
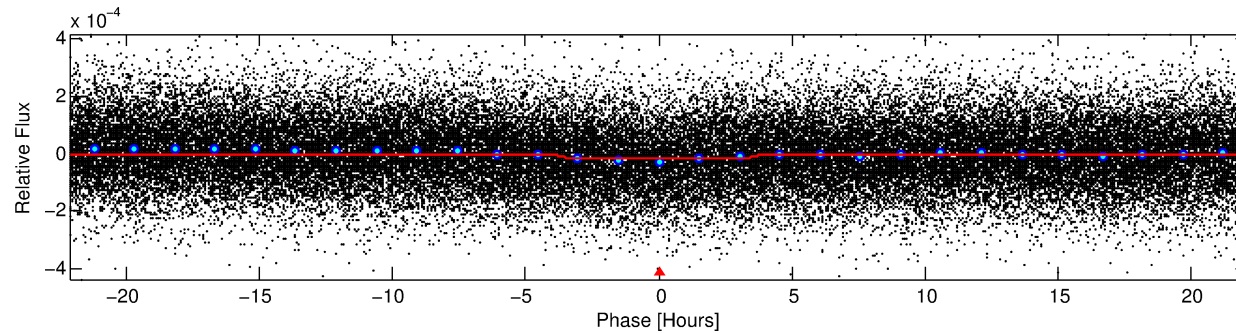
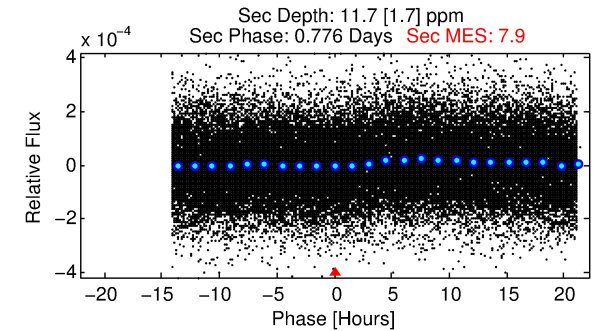
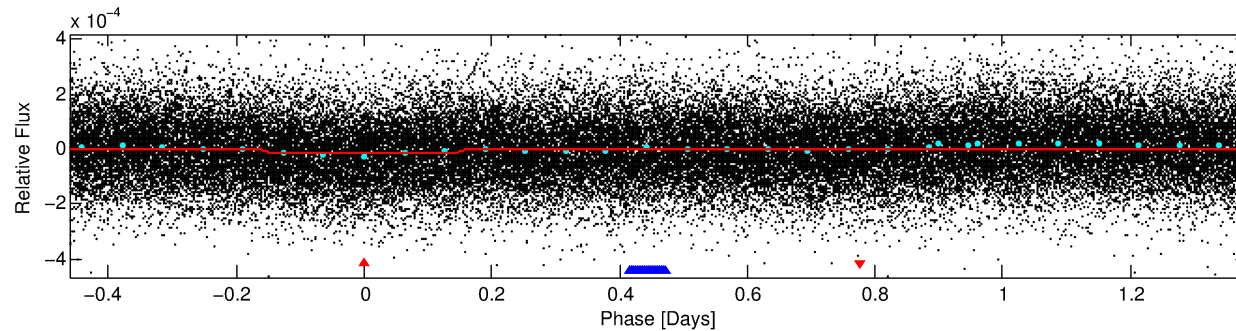
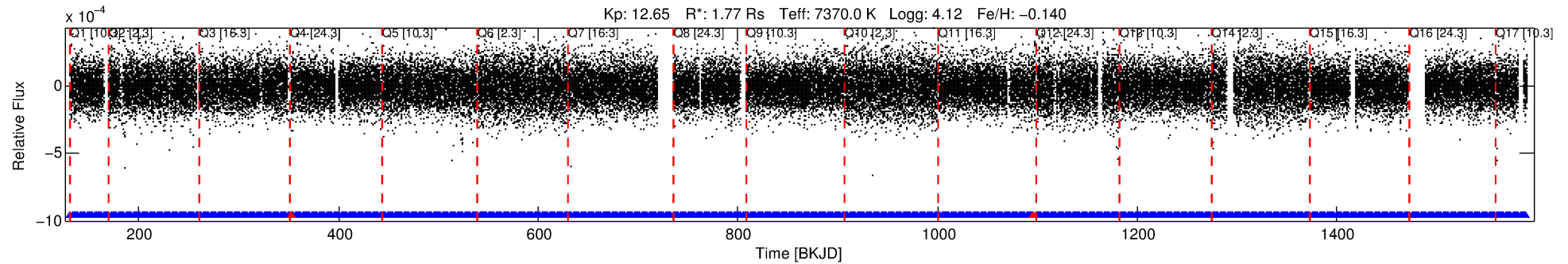
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 002719125-01

No Significant Match Found

# DV One-Page Summary

KIC: 2719125 Candidate: 1 of 2 Period: 1.845 d



## DV Fit Results:

Period = 1.84496 [0.00002] d  
Epoch = 131.8162 [0.0058] BKJD  
Rp/R\* = 0.0038 [0.0027]  
a/R\* = 1.96 [6.07]  
b = 0.01 [818.05]  
Seff = 7279.22 [2799.59]  
Teq = 2355 [226] K  
Rp = 0.73 [0.58] Re  
a = 0.0338 [0.0084] AU  
Ag = 13.89 [20.93] [0.62σ]  
Teffp = 7030 [2595] K [1.79σ]

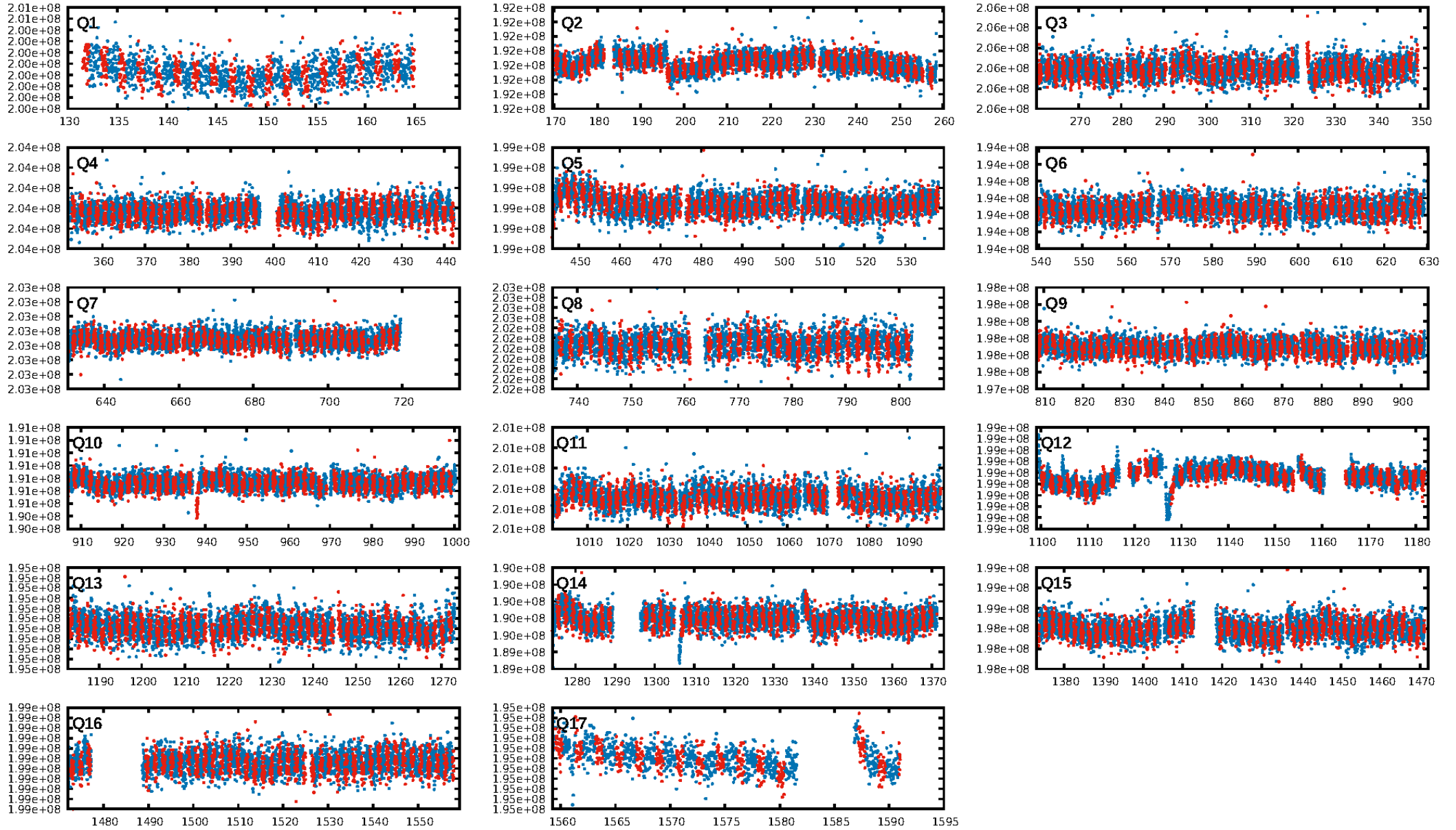
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [697/699]  
GhostDiagnostic-chr: 4.215  
Centroid-sig: 1.4%  
Centroid-so: 1.745 arcsec [1.68σ]  
OotOffset-rm: 0.566 arcsec [1.14σ]  
OotOffset-st: 3/4/3/3 [13]  
KicOffset-rm: 0.616 arcsec [1.26σ]  
KicOffset-st: 3/4/3/3 [13]  
DiffImageQuality-fgm: 0.85 [11/13]  
DiffImageOverlap-fno: 0.00 [0/17]

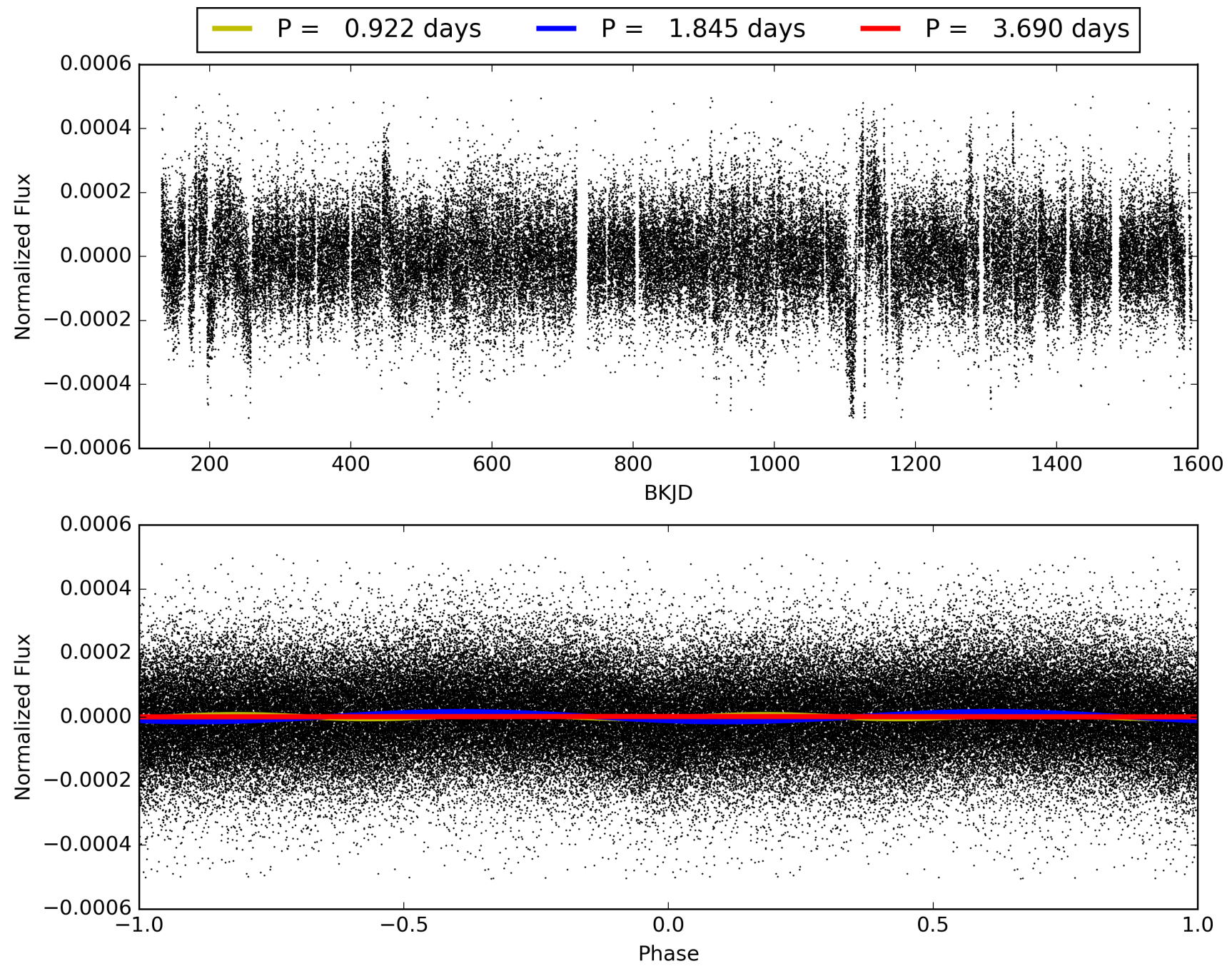
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:09:26 Z

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

# TCE 002719125-01, PDC Light Curves



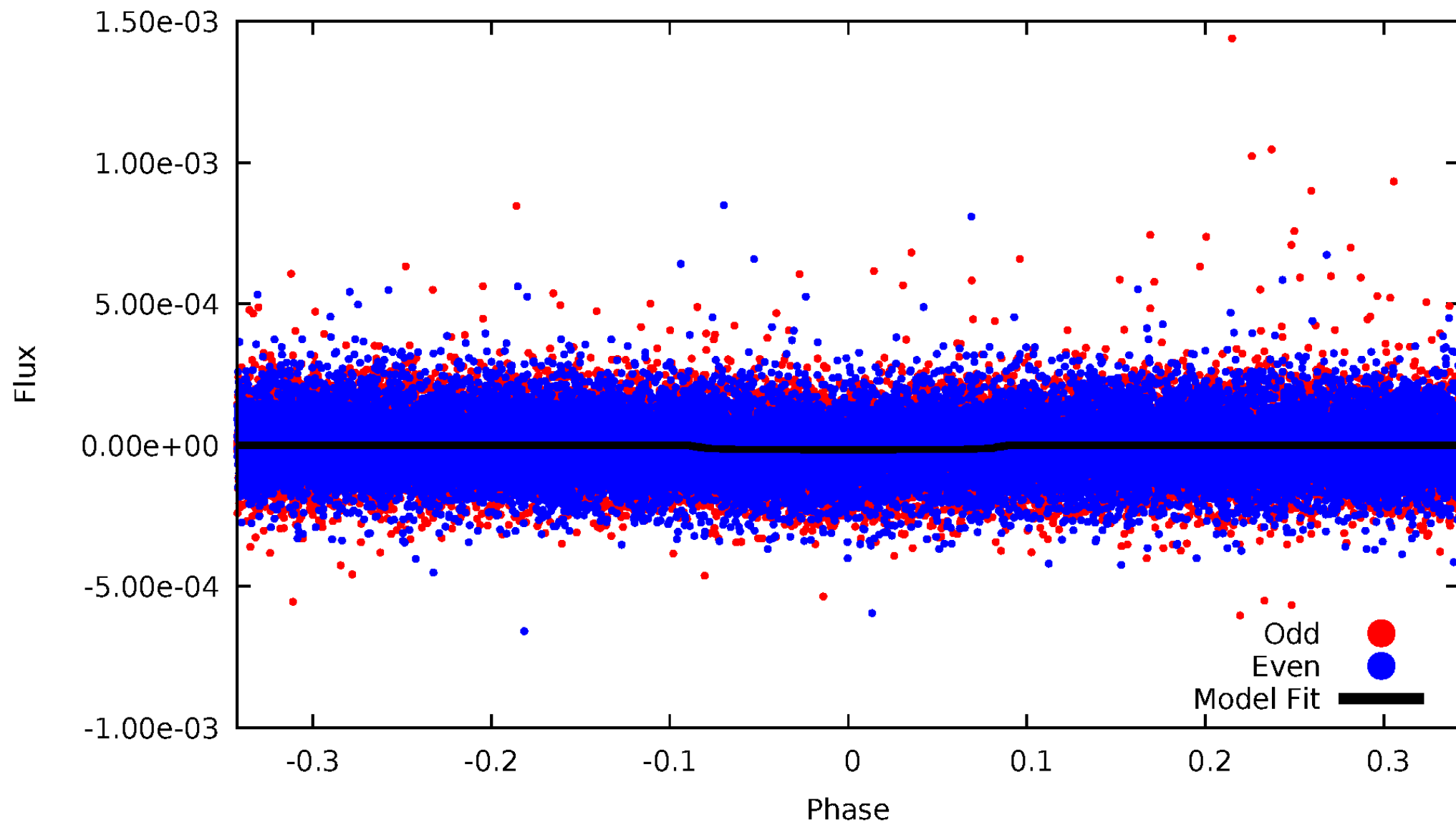
# TCE 002719125-01





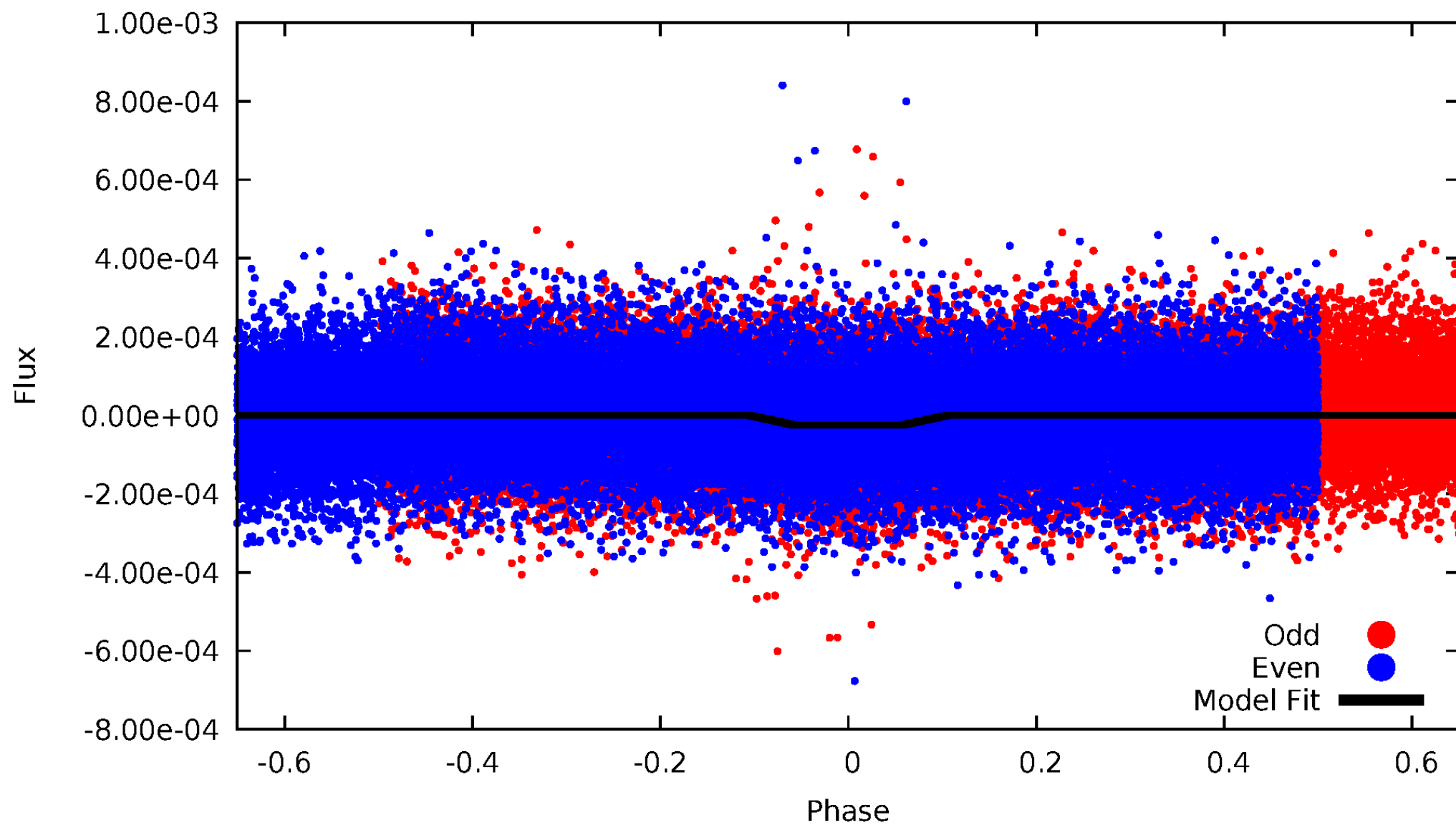
# DV Odd/Even

TCE 002719125-01



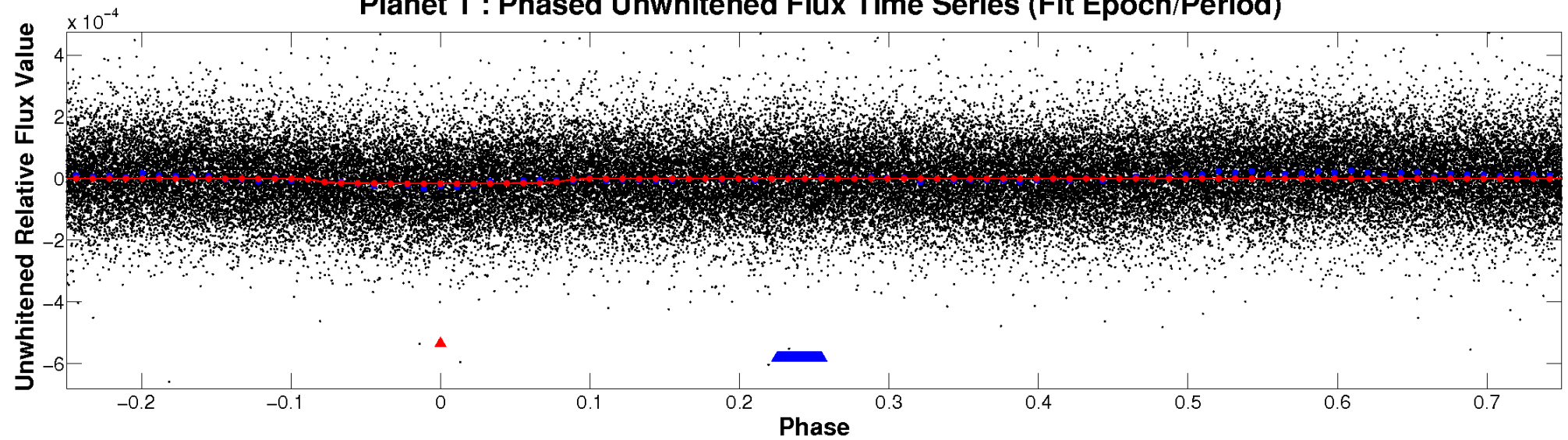
# ALT Odd/Even

TCE 002719125-01

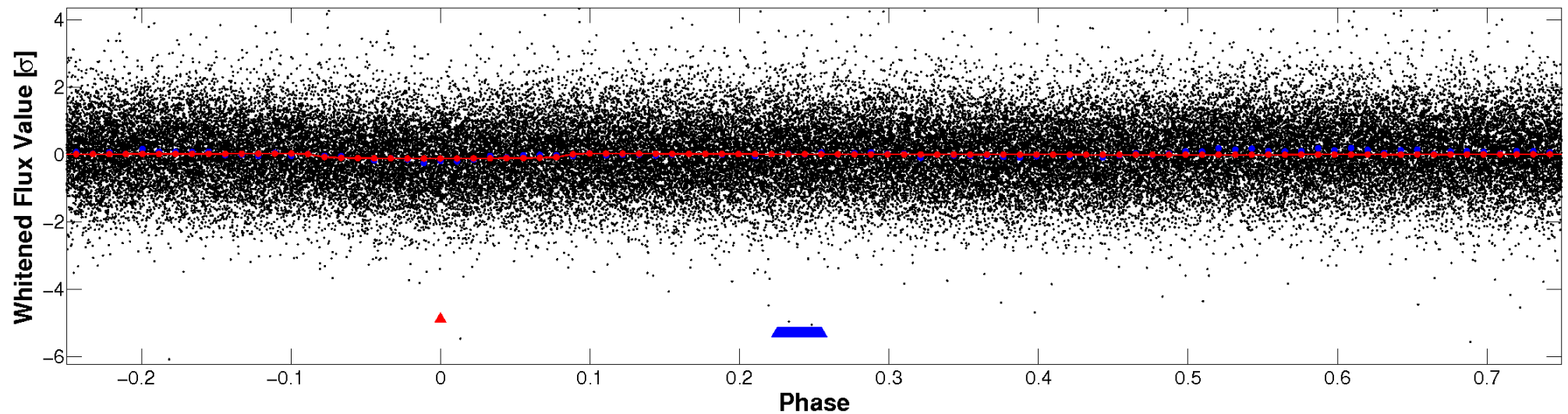


# Non-Whitened Vs. Whitened Light Curve

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

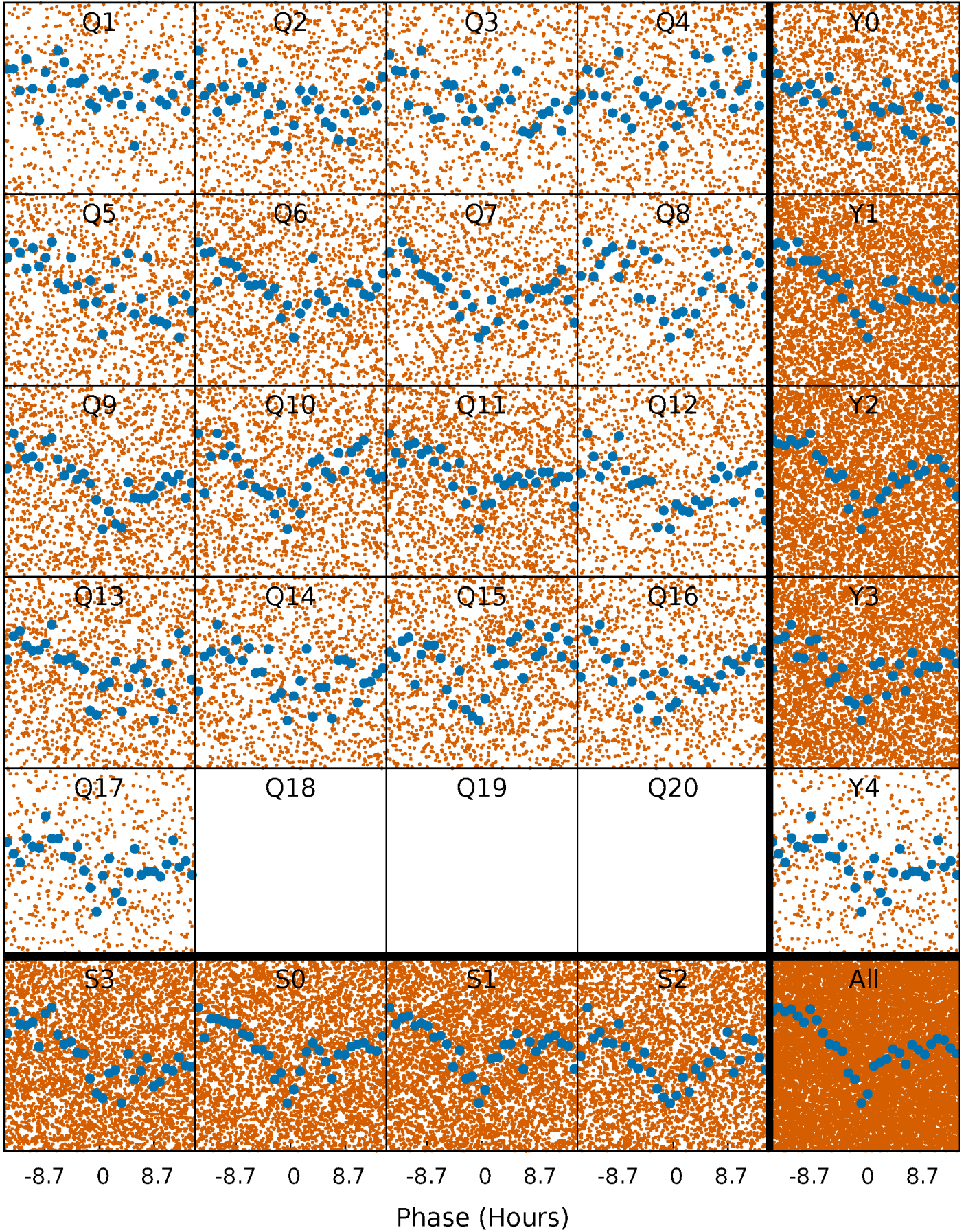


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

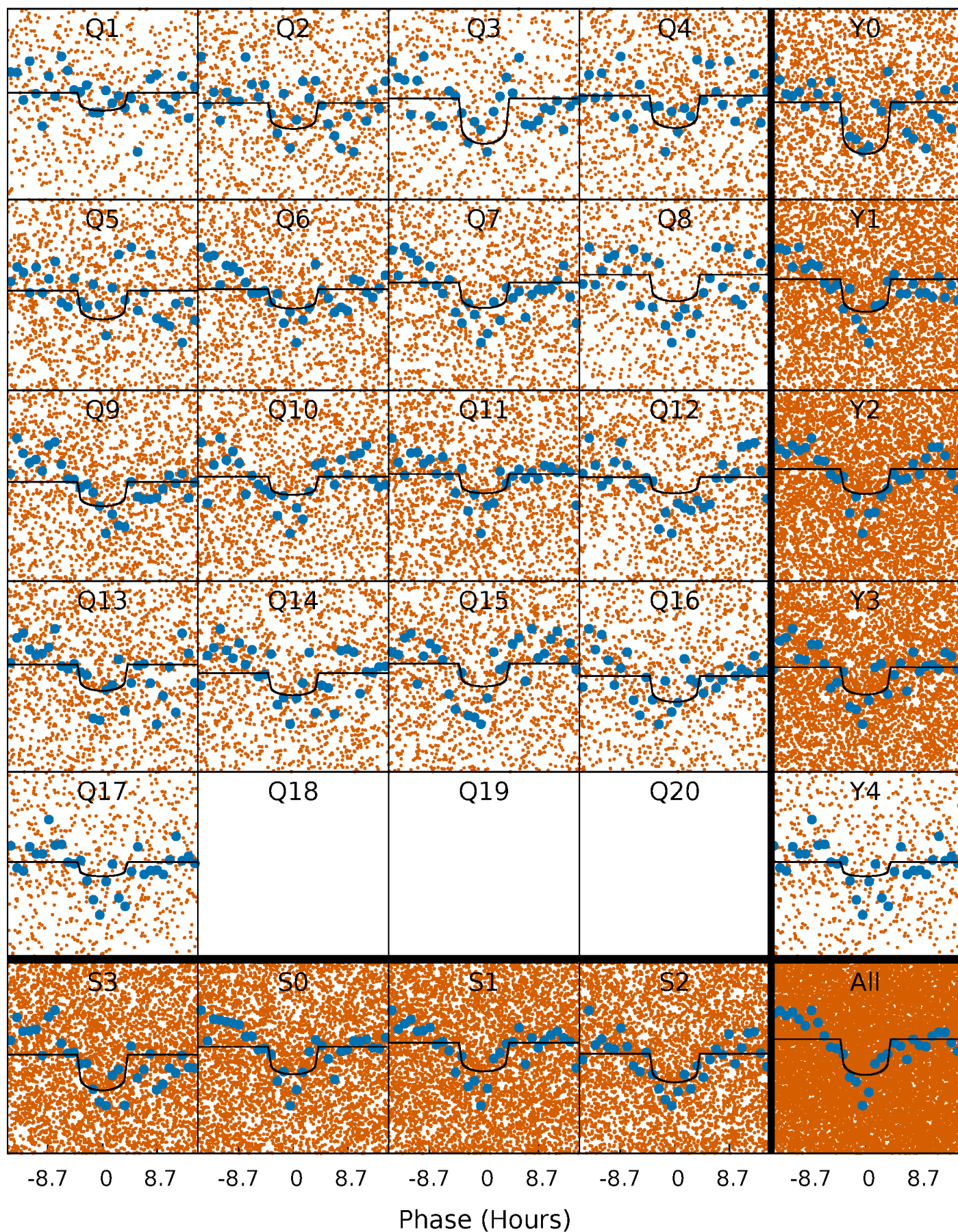
TCE 002719125-01 P= 1.844959 Days  $T_0=131.816217$  (BKJD)





# DV Quarter-Phased Transit Curves

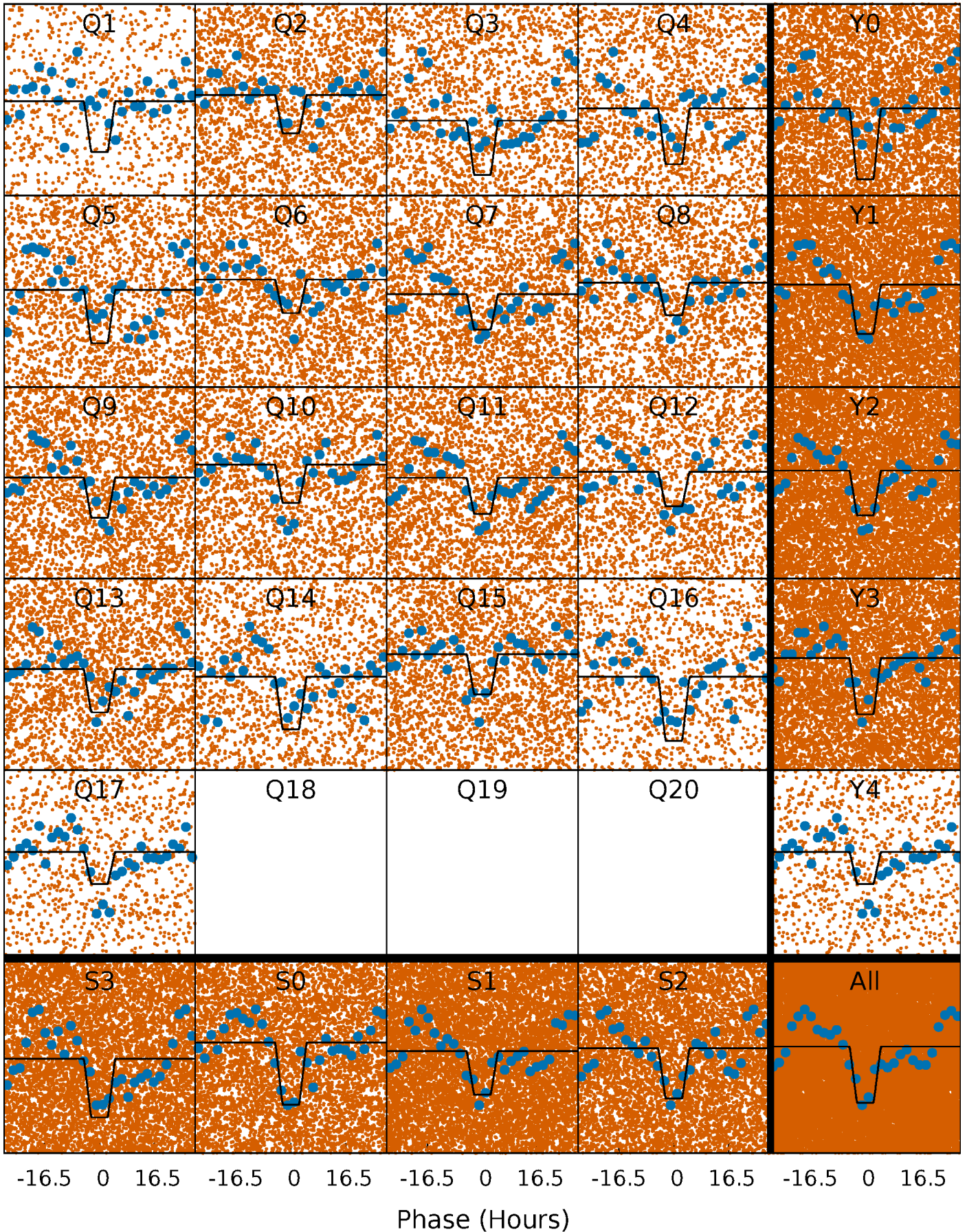
TCE 002719125-01 P= 1.844959 Days  $T_0=131.816217$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

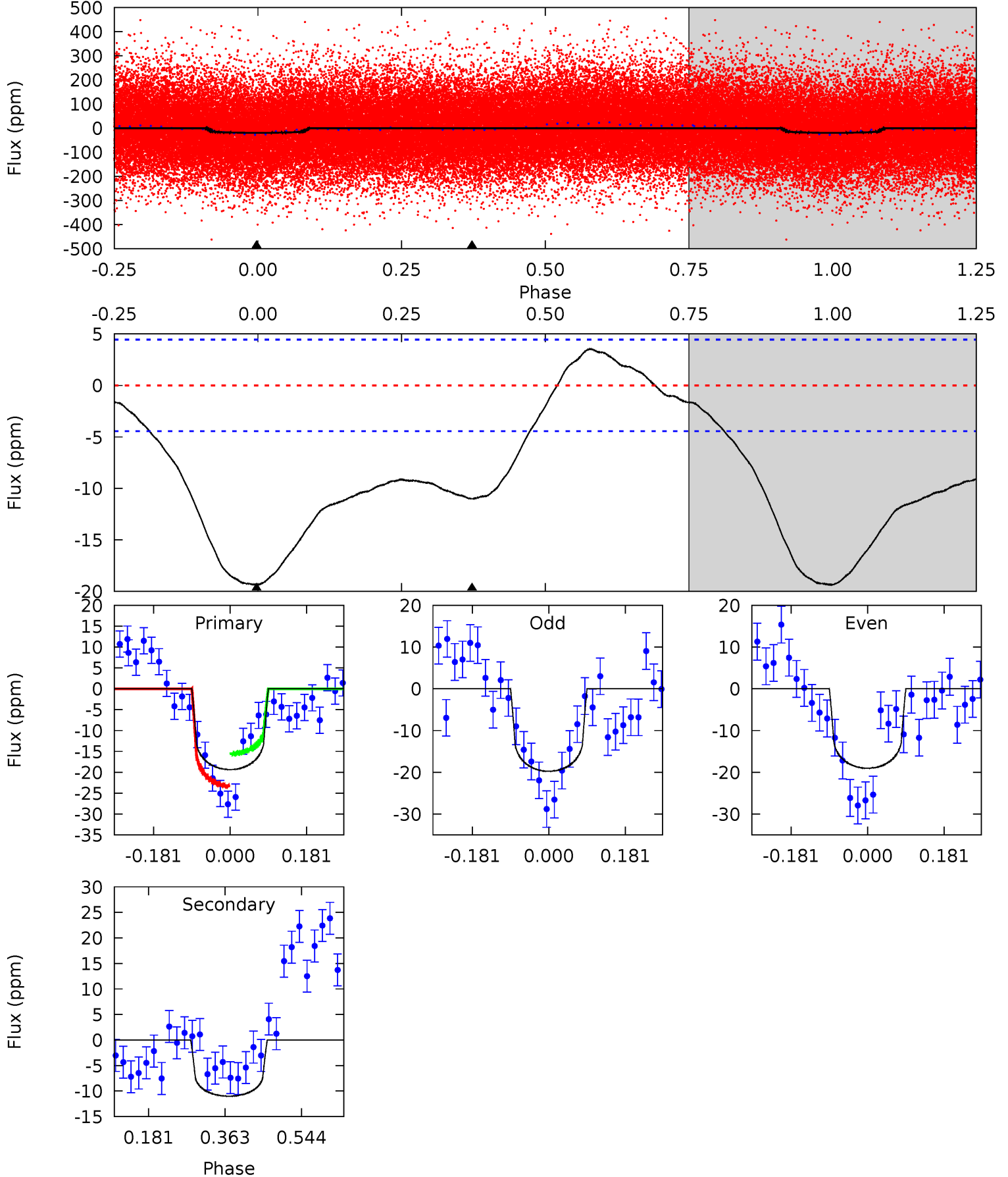
TCE 002719125-01 P= 1.844902 Days  $T_0=131.843727$  (BKJD)



# DV Model-Shift Uniqueness Test

002719125-01, P = 1.844959 Days, E = 129.971258 Days

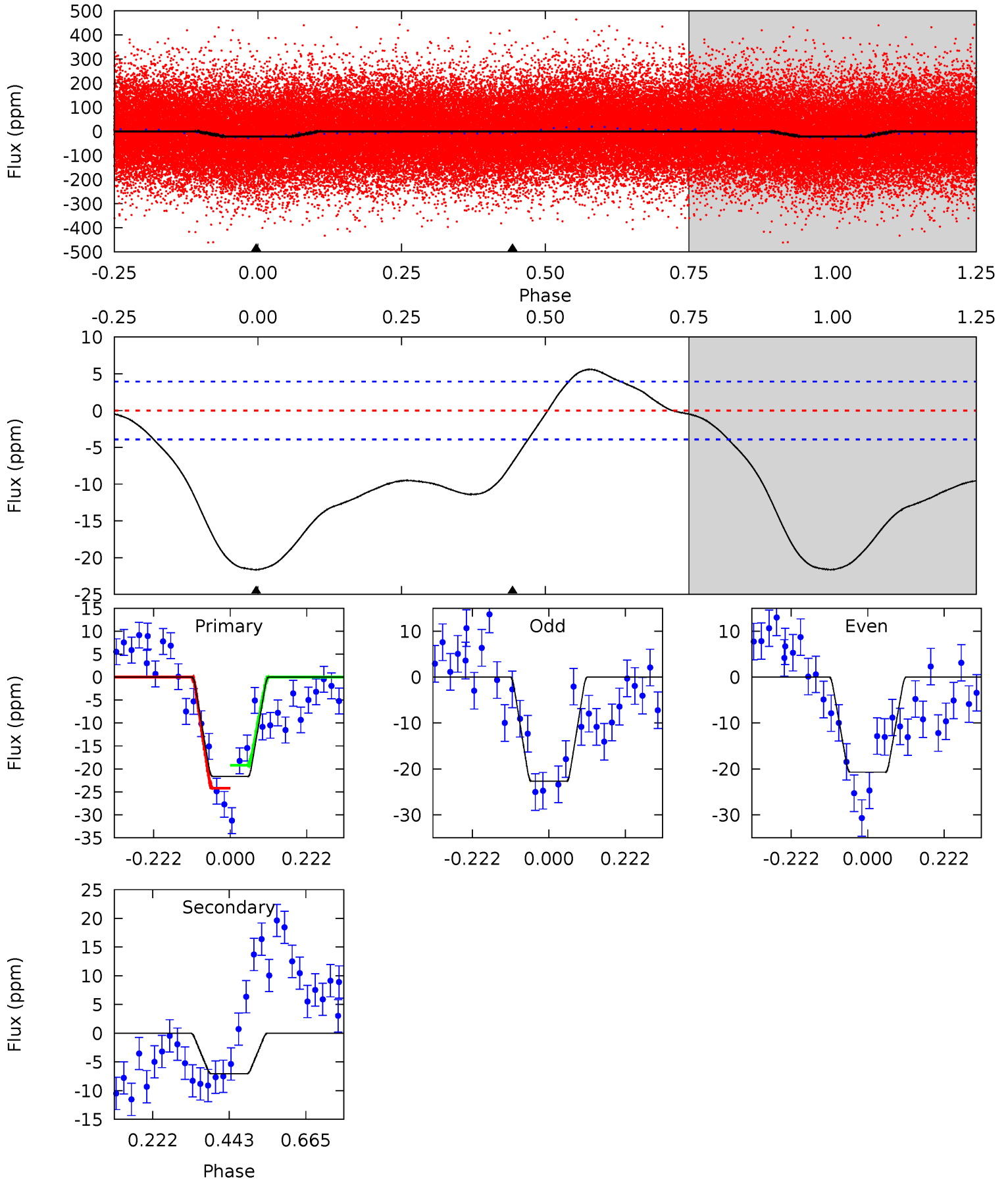
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.3	11.0	0	0	4.44	1.34	3.18	19.3	19.3	11.0	11.0	0.36	0.99	0.15	3.88



# Alt Model-Shift Uniqueness Test

002719125-01, P = 1.844902 Days, E = 129.998825 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
24.1	7.89	0	0	4.39	1.22	2.22	24.1	24.1	7.89	7.89	1.10	1.02	0.21	2.81





### Stellar Parameters For KIC 002719125

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7370^{+230}_{-307}$	$4.120^{+0.149}_{-0.182}$	$-0.140^{+0.250}_{-0.350}$	$1.774^{+0.546}_{-0.409}$	$1.511^{+0.222}_{-0.247}$	$0.381^{+0.297}_{-0.194}$
	+3%/-4%	+4%/-4%	+179%/-250%	+31%/-23%	+15%/-16%	+78%/-51%
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 002719125-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-11 \pm 1$	$0.79^{+0.50}_{-0.44}$	$3304^{+257}_{-238}$	$6562^{+4391}_{-1439}$	$11^{+42}_{-7}$
Alt.	$-7 \pm 1$	$1.00^{+0.54}_{-0.48}$	$3297^{+266}_{-221}$	$5160^{+2216}_{-871}$	$4.432^{+12.966}_{-2.593}$

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

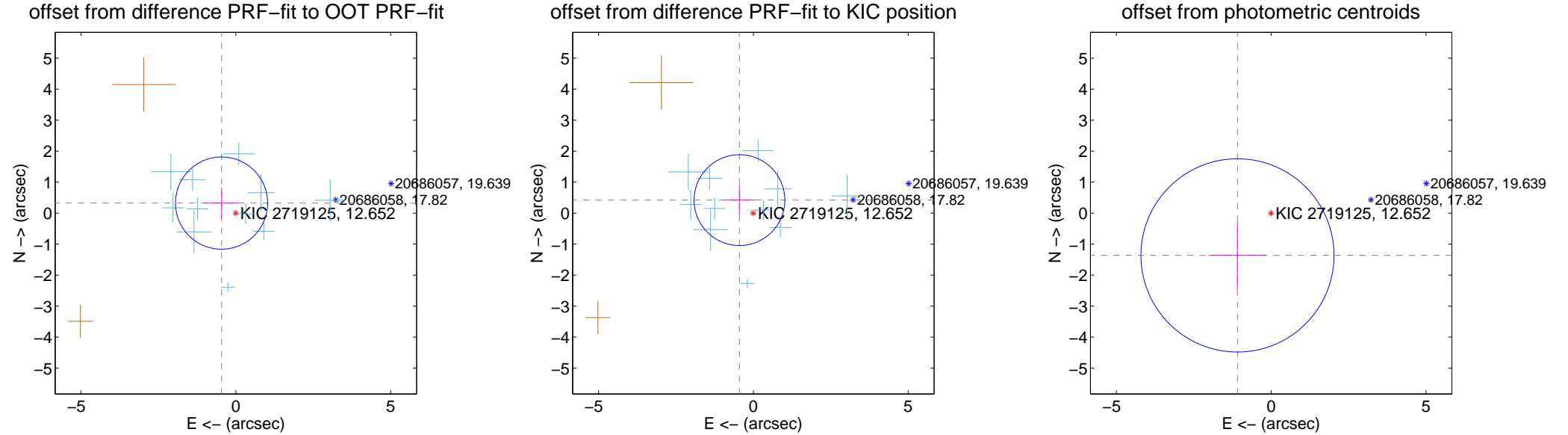
## DV Centroid Data

Supplemental centroid analysis for 002719125-01. Kepler magnitude: 12.65. Transit SNR 11.67

There are 11 quarters with good PRF difference image offsets

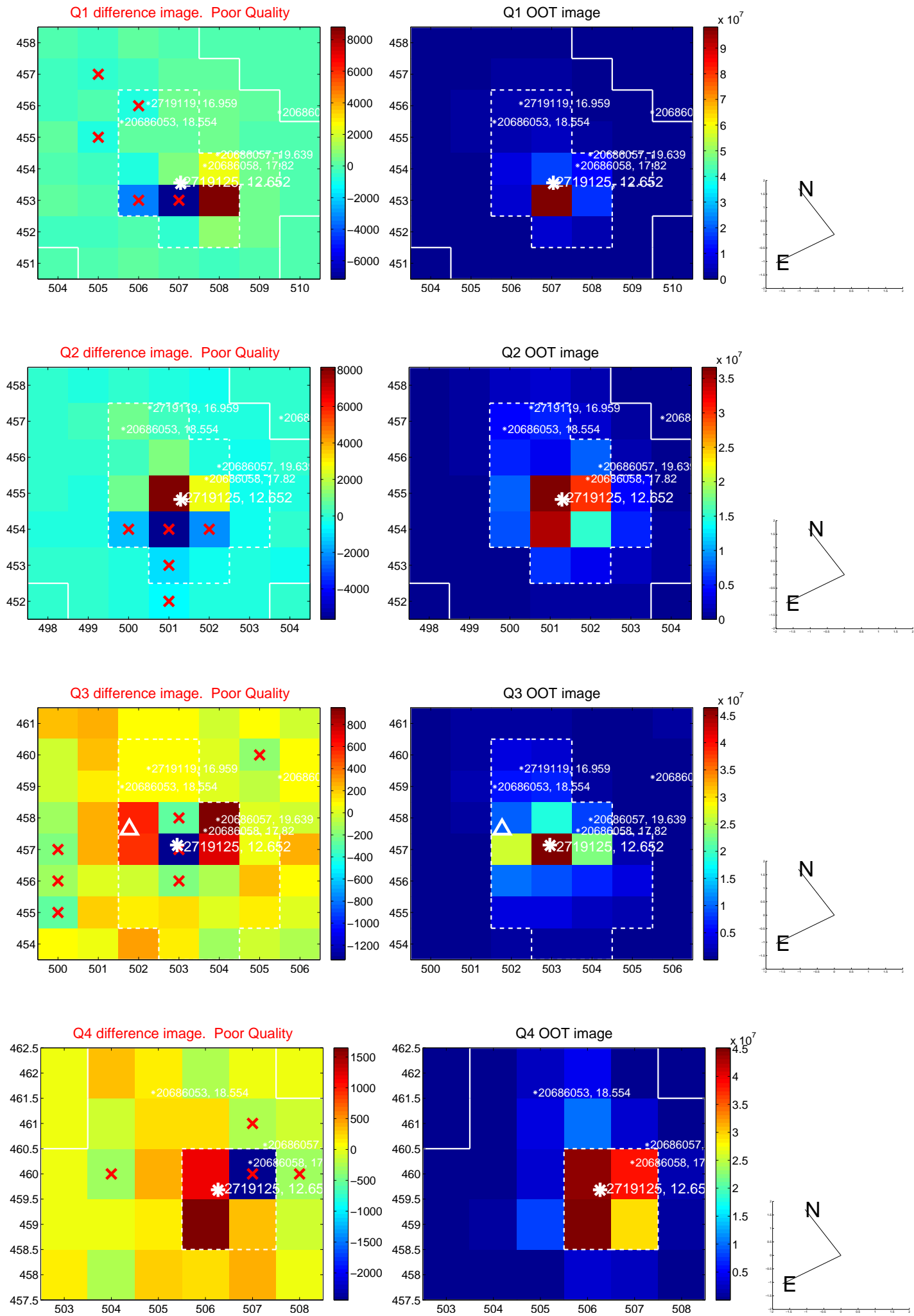
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.566 \pm 0.496$	1.14	$0.464 \pm 0.557$	$0.324 \pm 0.495$
PRF-fit source offset from KIC position	$0.616 \pm 0.488$	1.26	$0.450 \pm 0.514$	$0.420 \pm 0.493$
photometric centroid source offset	$1.74 \pm 1.04$	1.68	$1.09 \pm 0.94$	$-1.36 \pm 1.10$

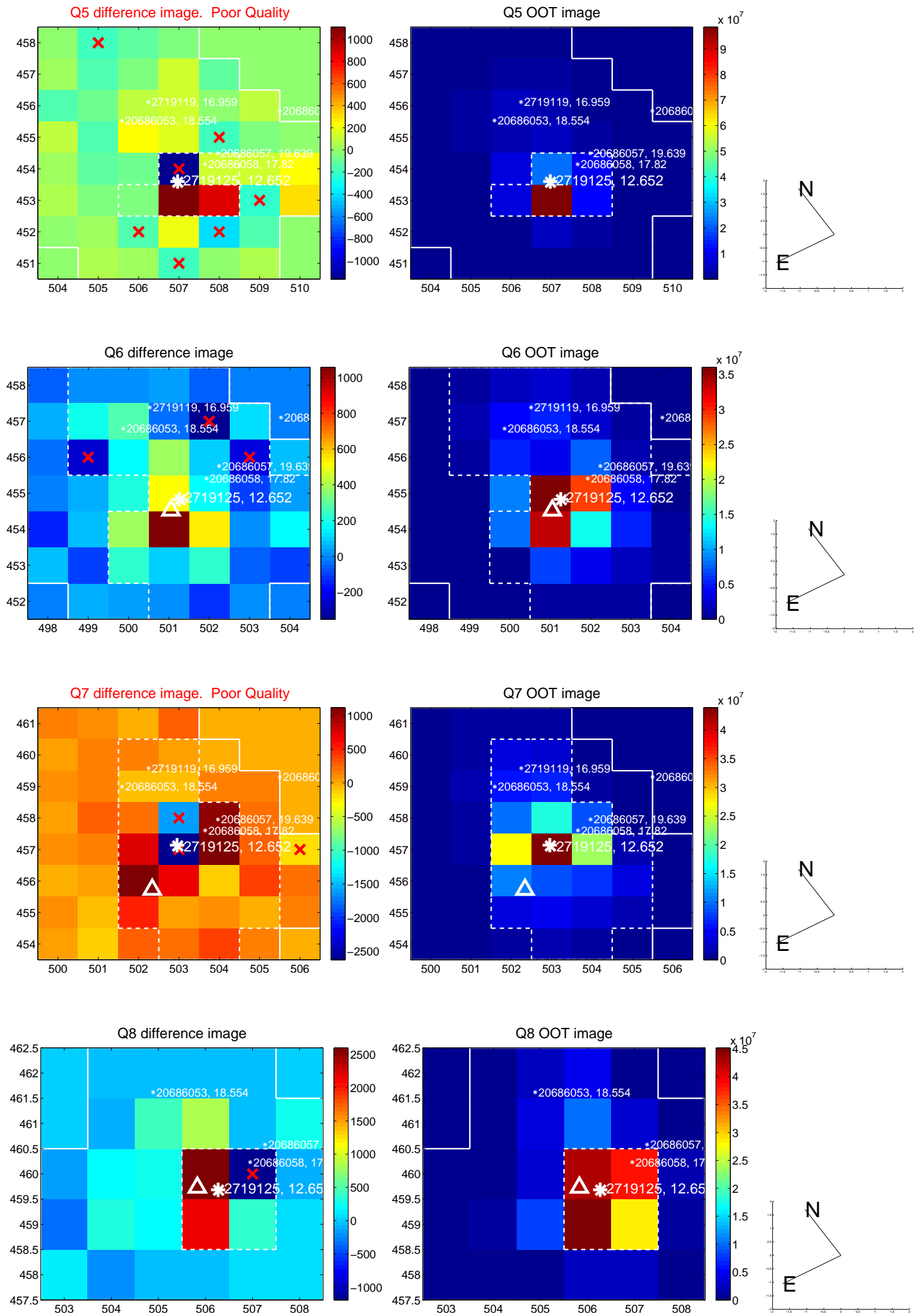


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

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

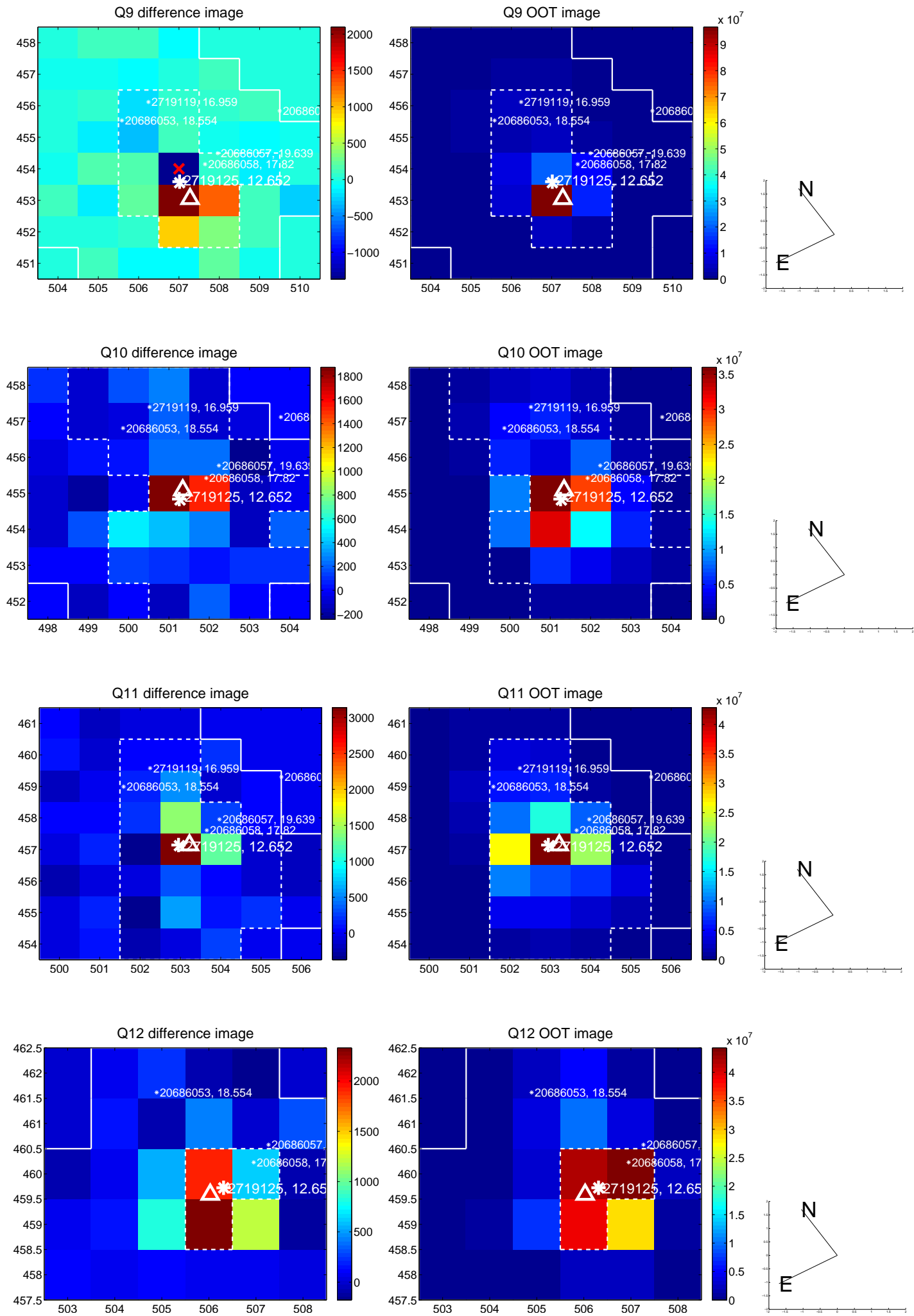


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

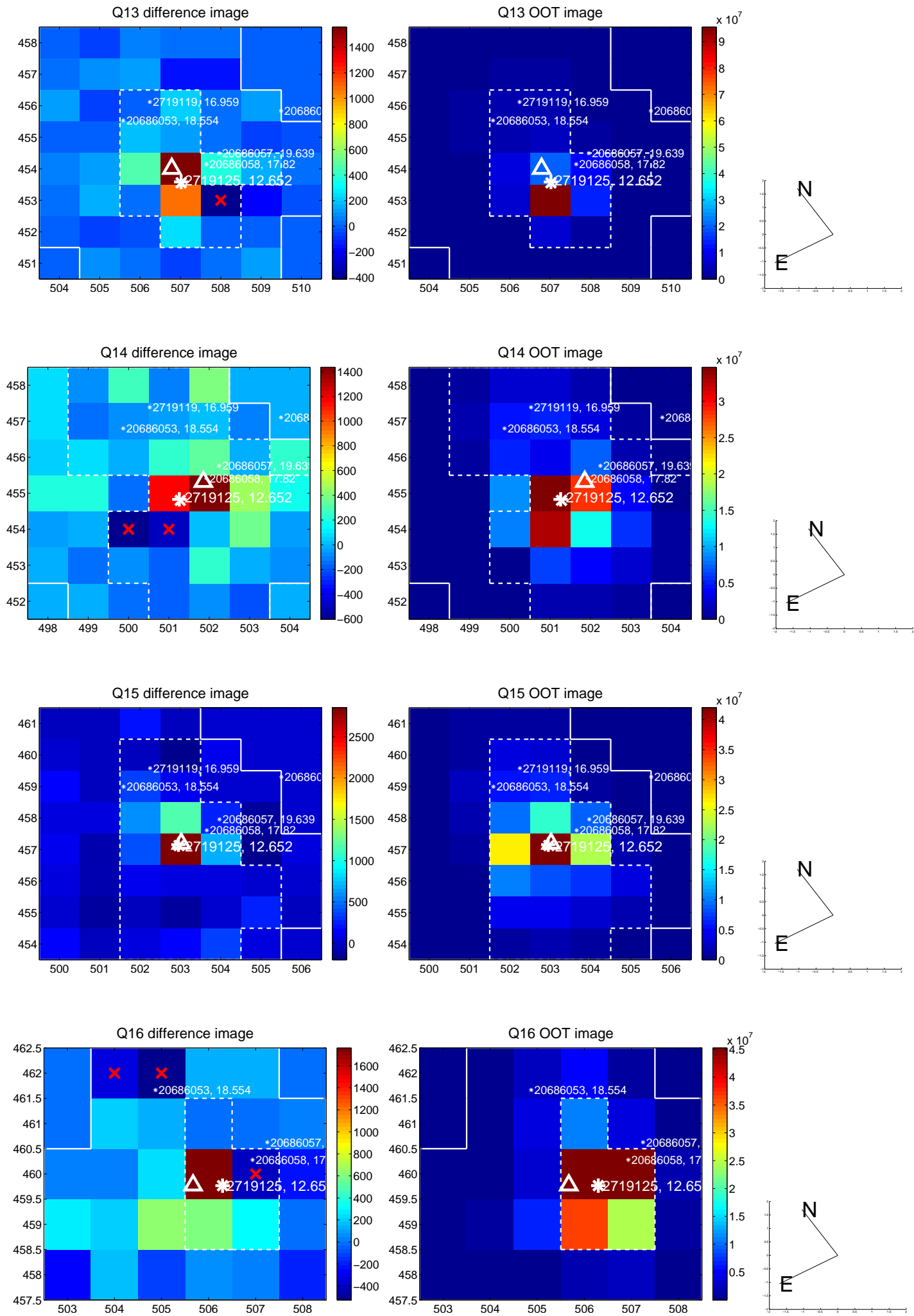




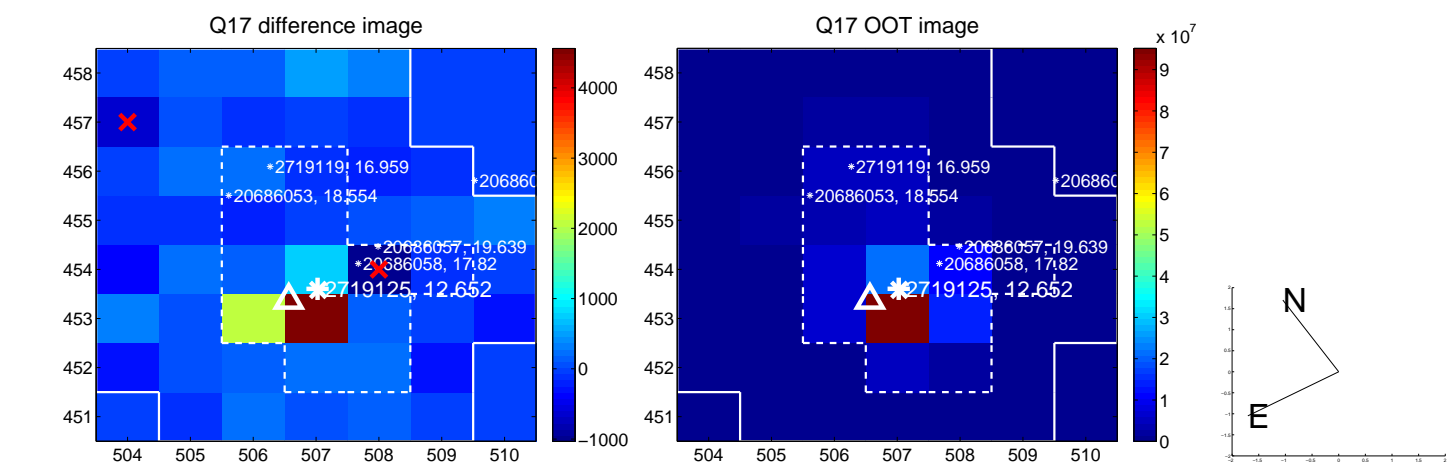
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



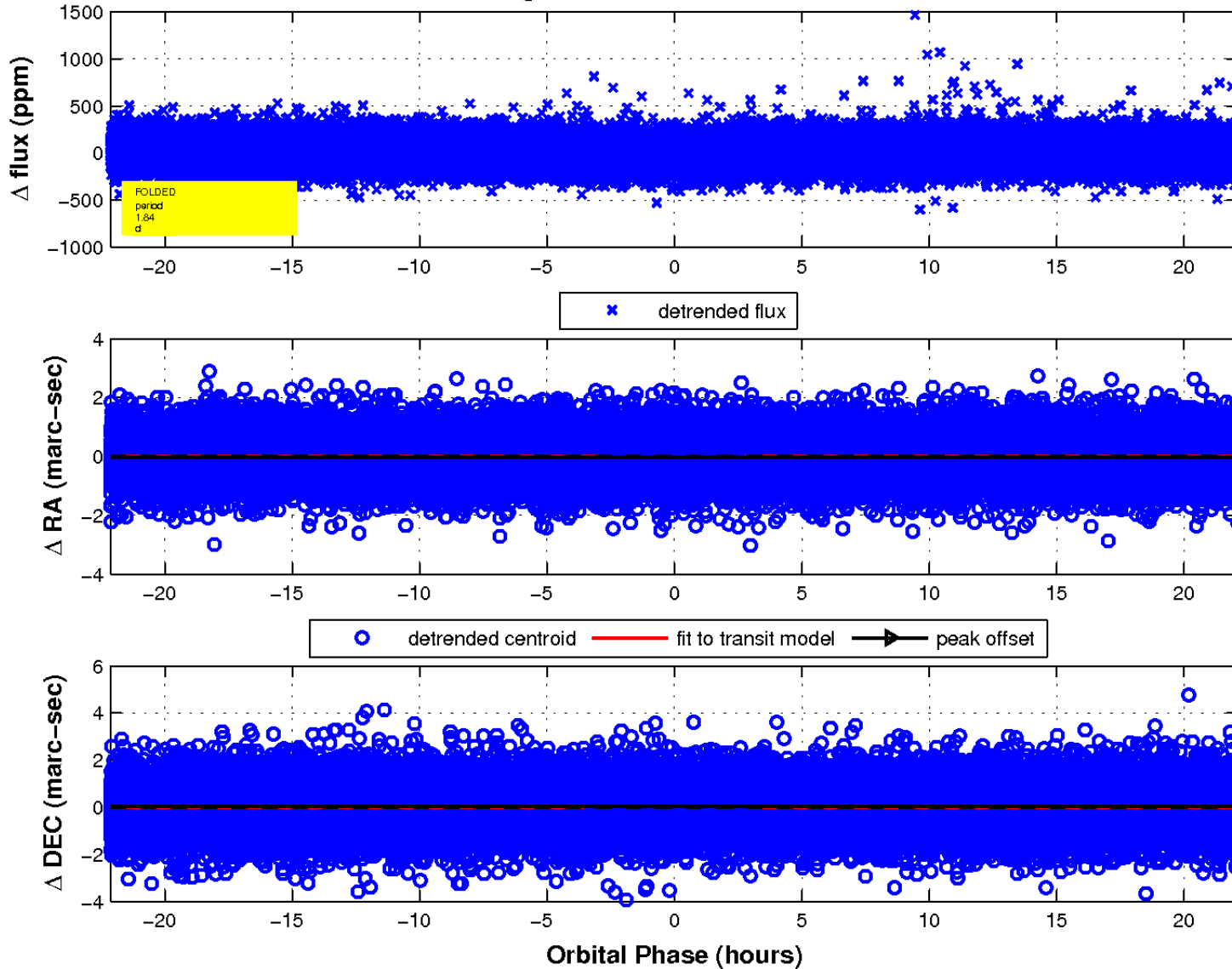
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

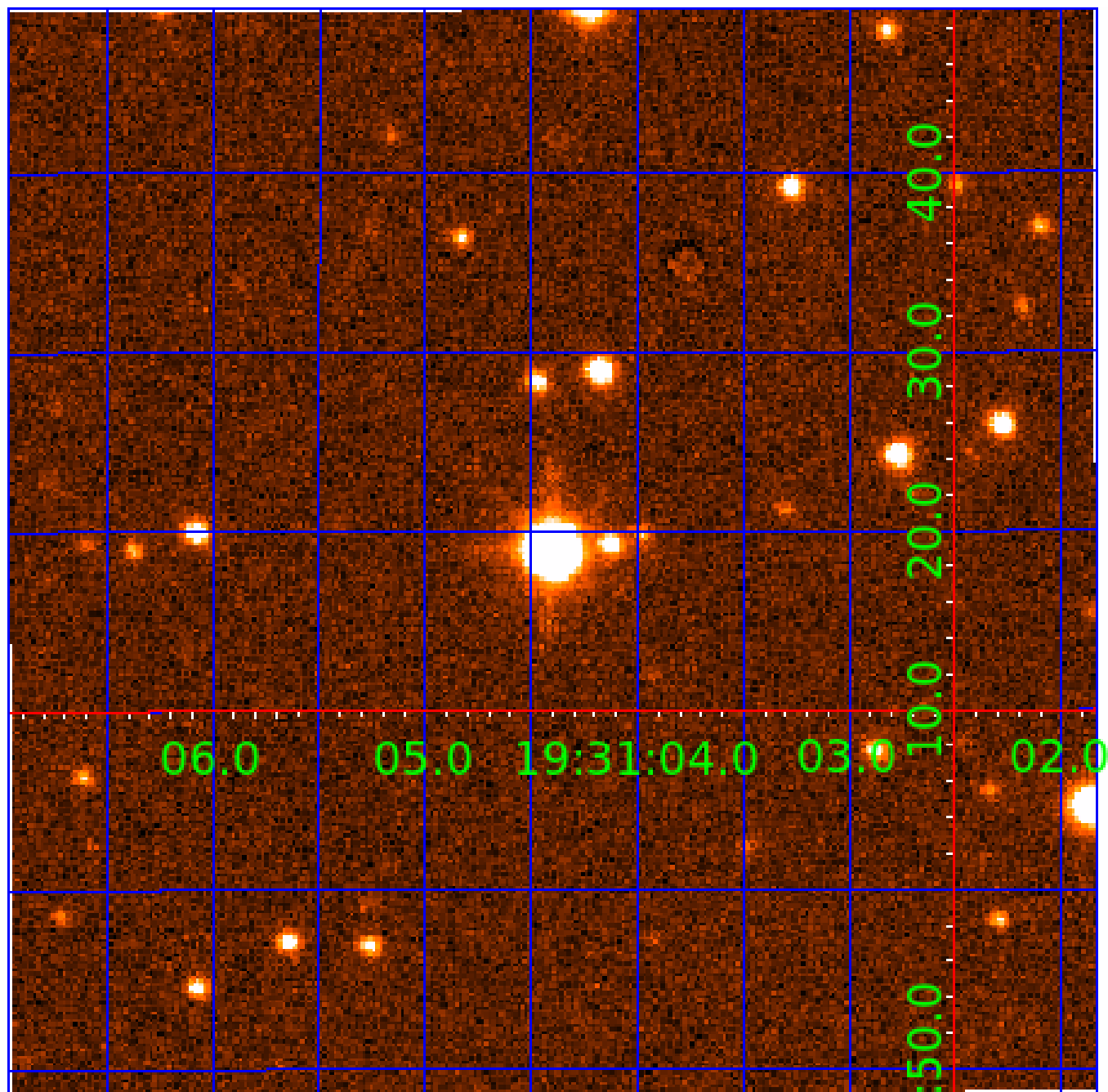


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination





# KIC 002719125

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
002719125-01	OBS	No	1.844958	131.816217	16.4	7.578	11.9	11.7	1.77	7370	0.73	7279.22
002719125-02	OBS	No	1.844889	132.286695	17.8	22.139	9.8	13.1	1.77	7370	0.87	7279.58

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002719125-01	OBS	FP	0.00	1	0	0	0	LPP_DV
002719125-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_FEW_MEAS

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

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

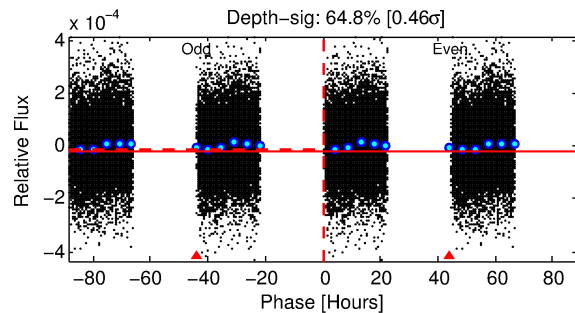
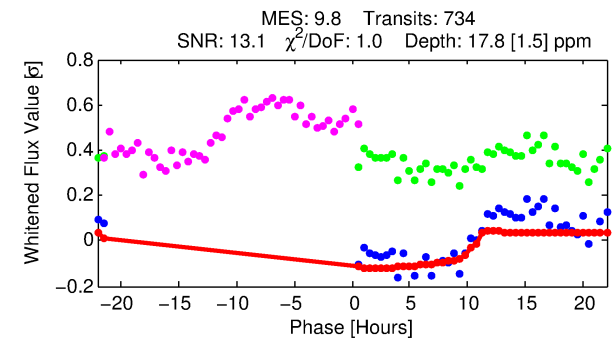
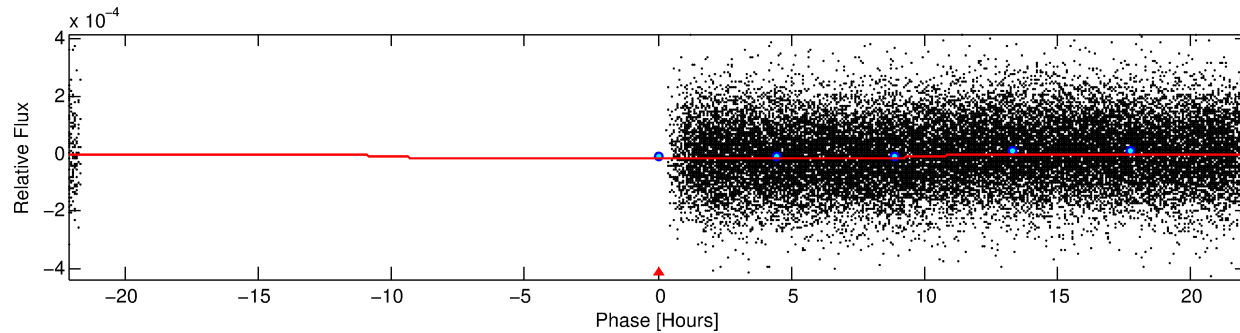
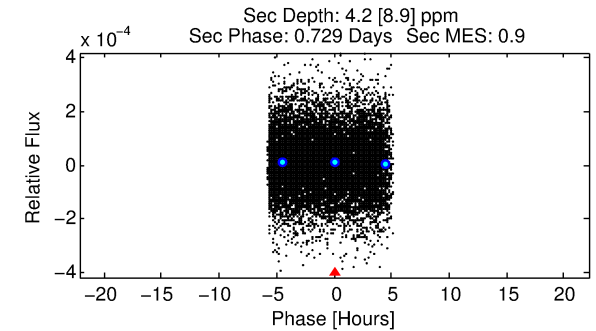
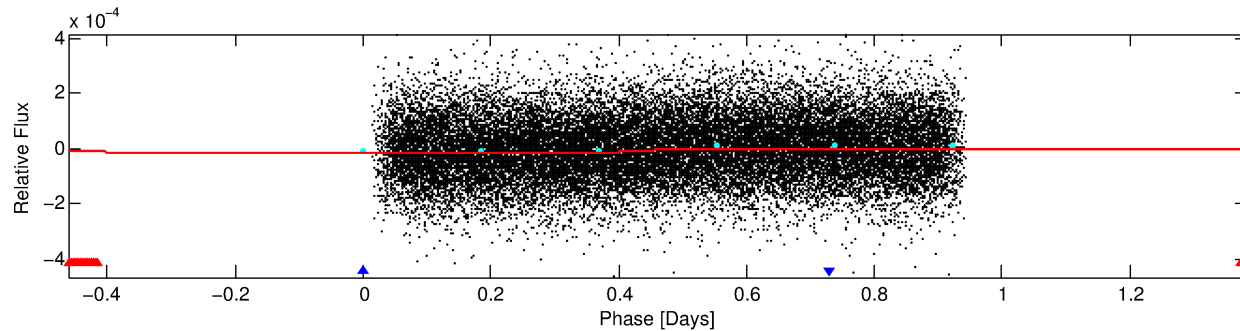
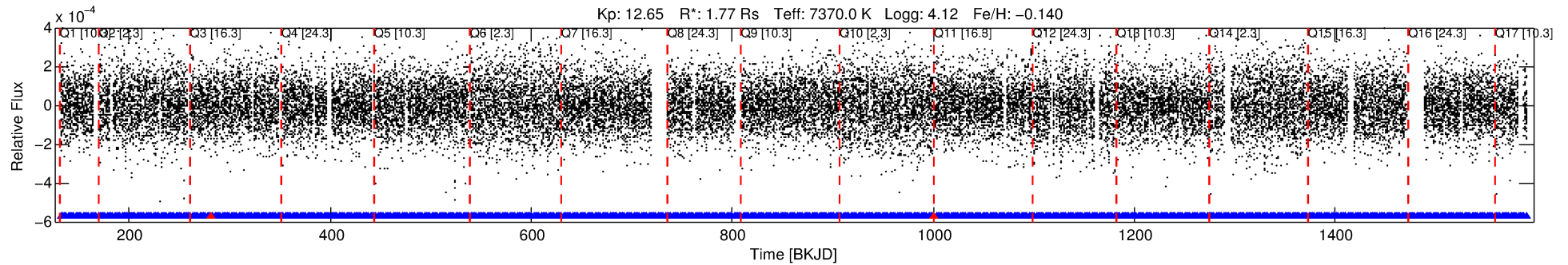
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 002719125-02

No Significant Match Found

# DV One-Page Summary

KIC: 2719125 Candidate: 2 of 2 Period: 1.845 d



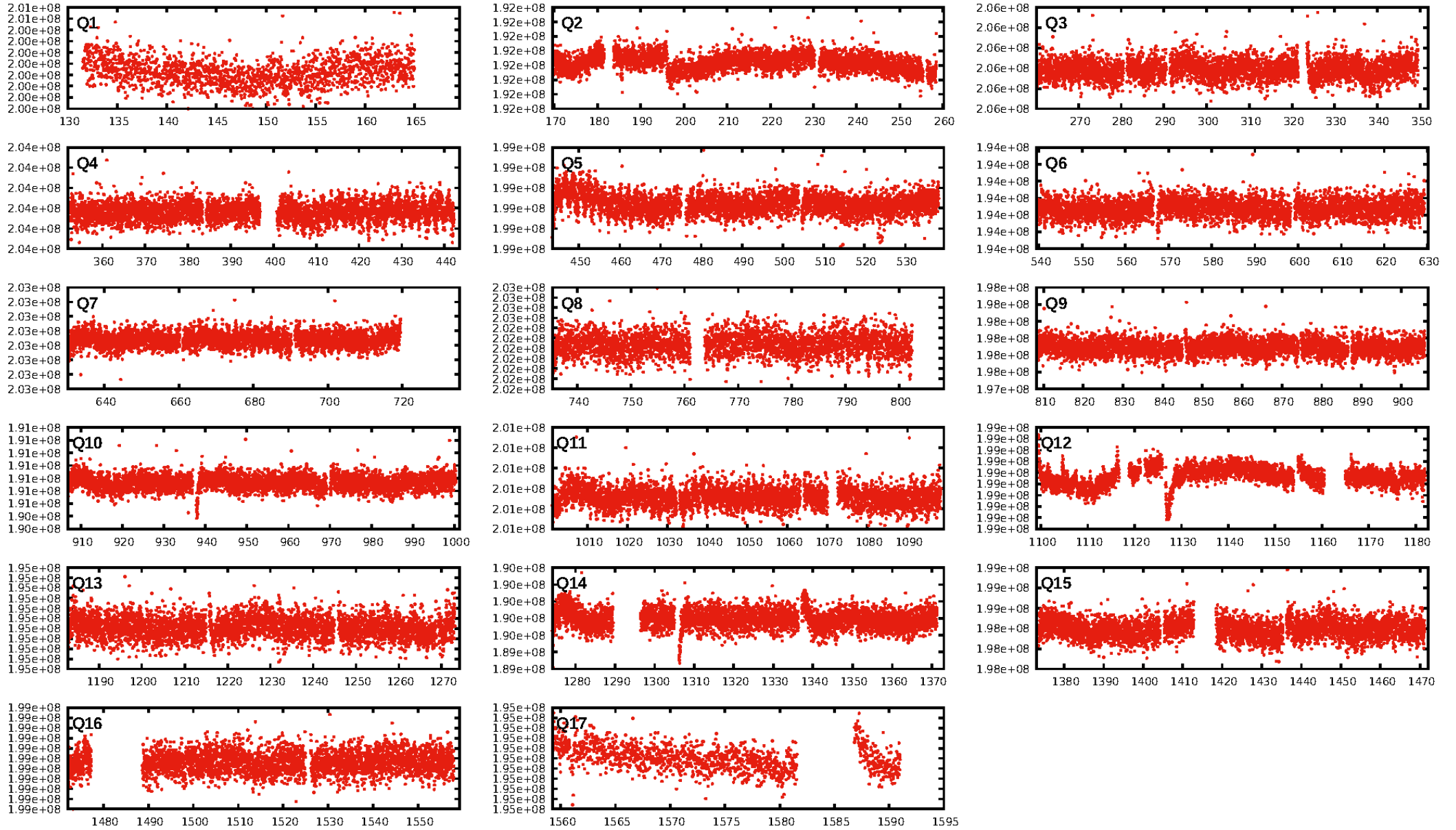
## DV Fit Results:

Period = 1.84489 [0.00004] d  
Epoch = 132.2867 [0.0183] BKJD  
Rp/R\* = 0.0045 [0.0006]  
a/R\* = 1.00 [0.00]  
b = 0.90 [0.18]  
Seff = 7279.58 [2799.73]  
Teq = 2355 [226] K  
Rp = 0.87 [0.29] Re  
a = 0.0338 [0.0084] AU  
Ag = 3.44 [7.51] [0.33σ]  
Teffp = 4961 [2677] K [0.97σ]

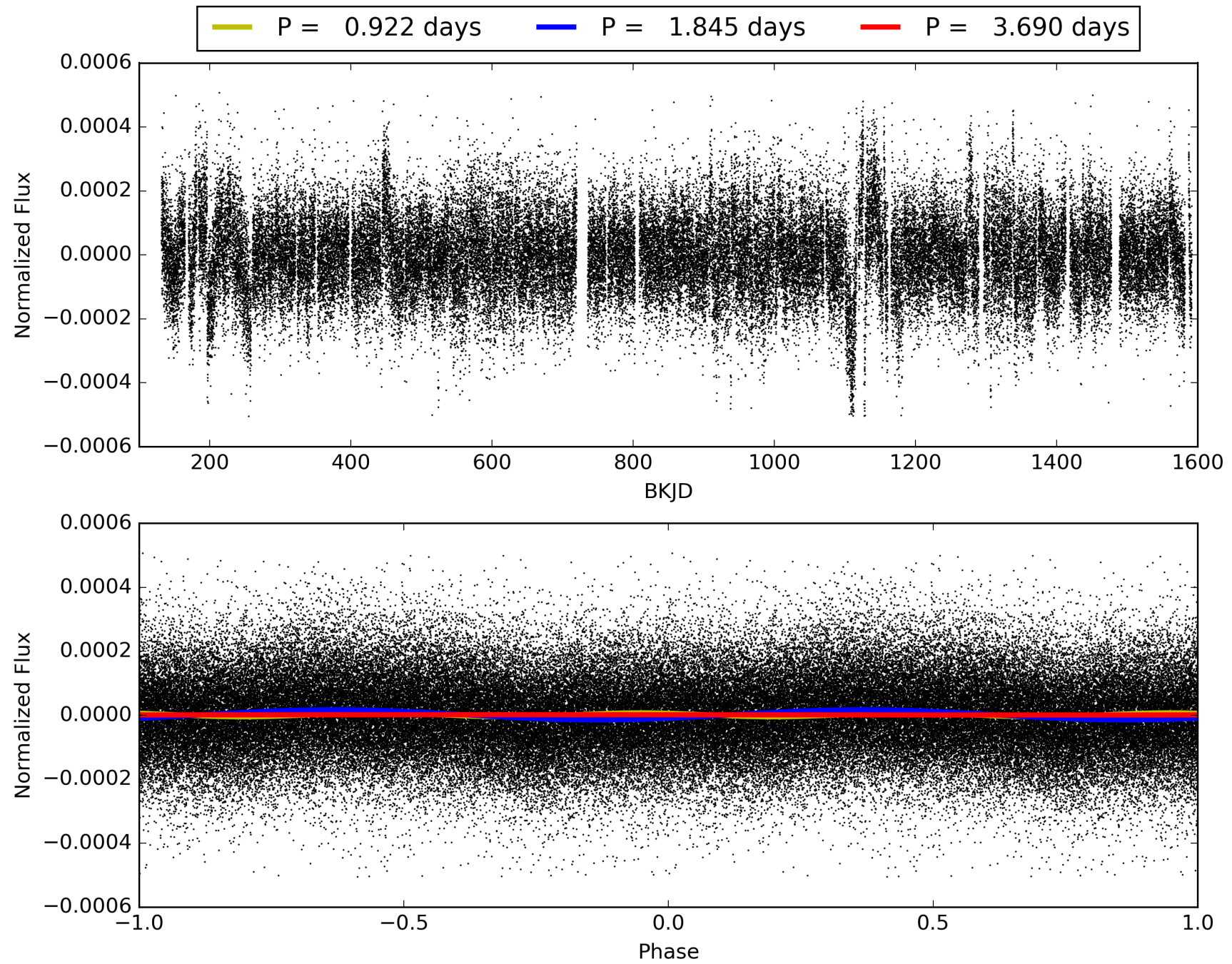
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [700/702]  
GhostDiagnostic-chr: 3.598  
Centroid-sig: 4.0%  
Centroid-so: 0.935 arcsec [1.47σ]  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0 [0]  
KicOffset-st: 0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 0.00 [0/17]

# TCE 002719125-02, PDC Light Curves



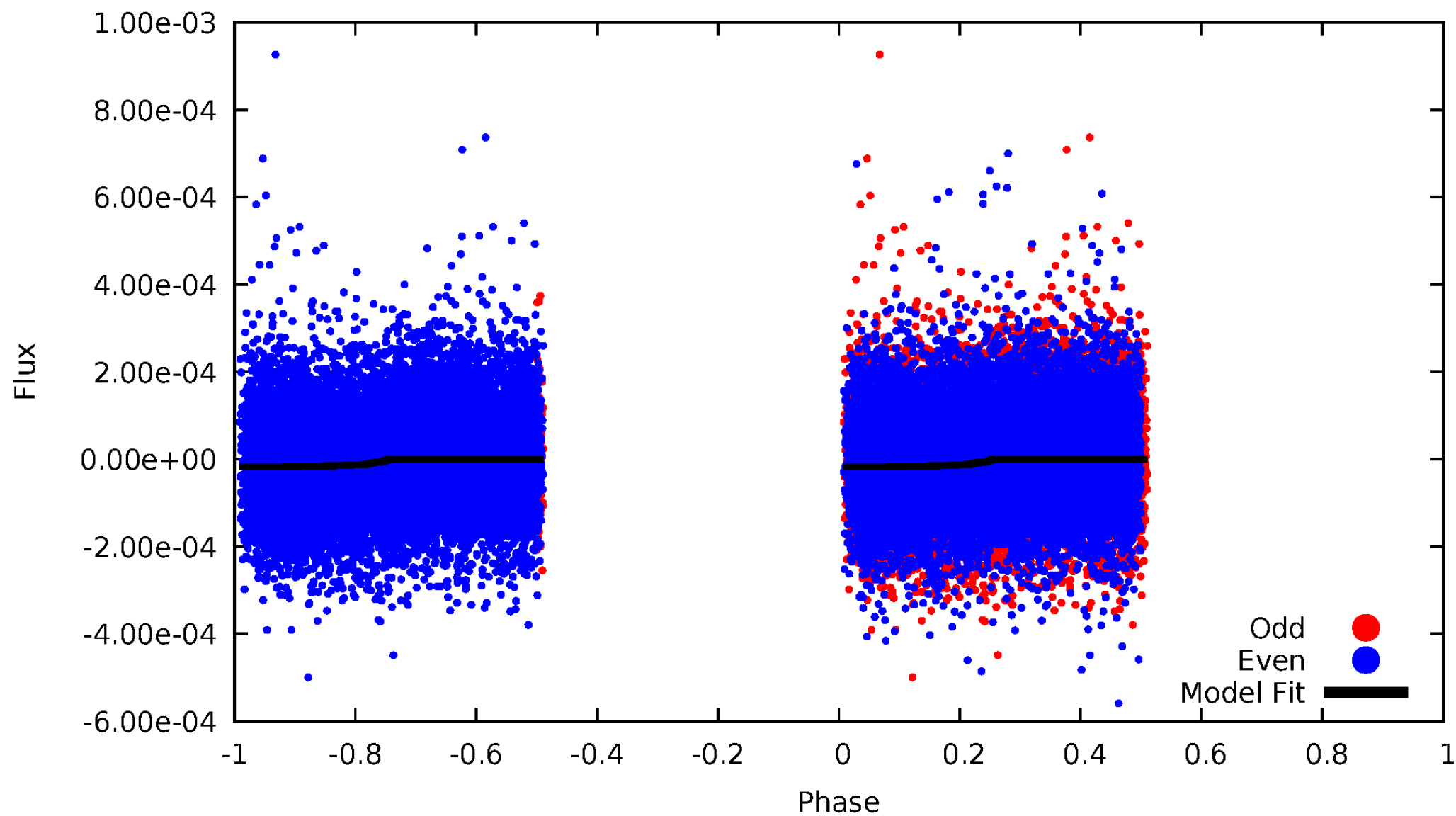
TCE 002719125-02





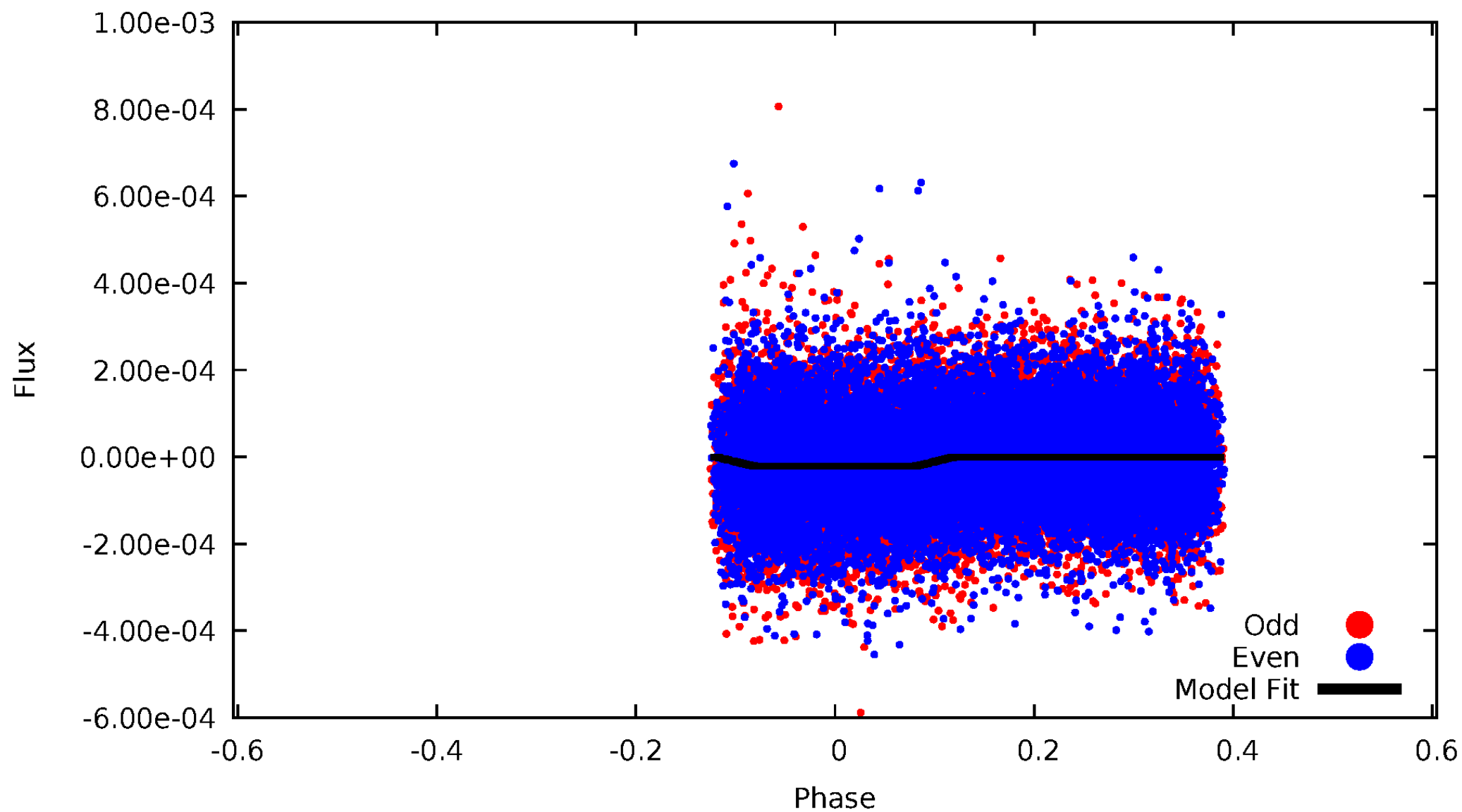
DV Odd/Even

TCE 002719125-02



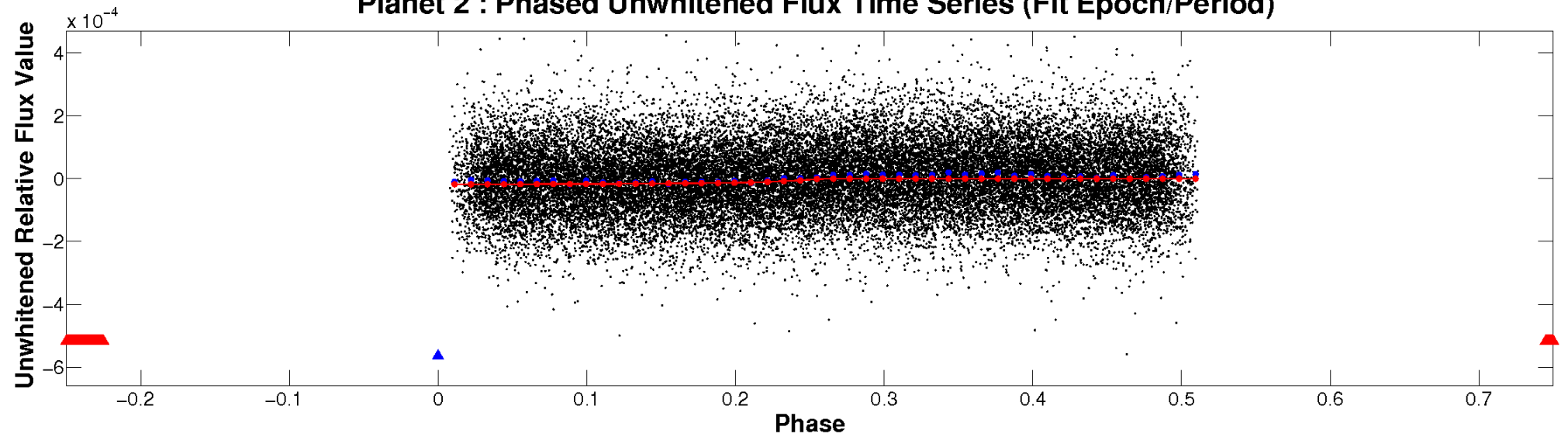
# ALT Odd/Even

TCE 002719125-02

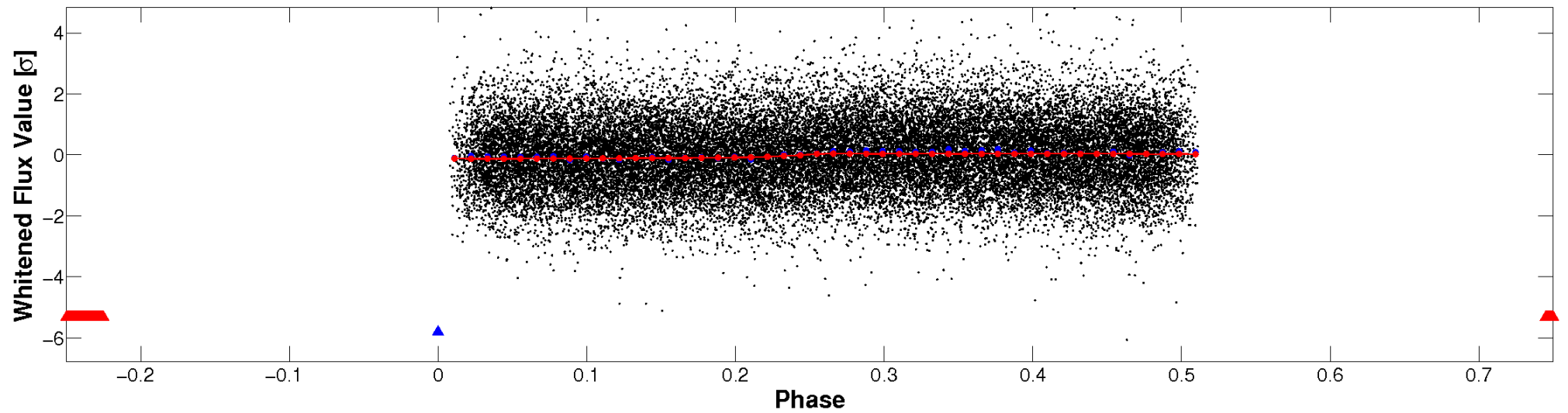


# Non-Whitened Vs. Whitened Light Curve

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

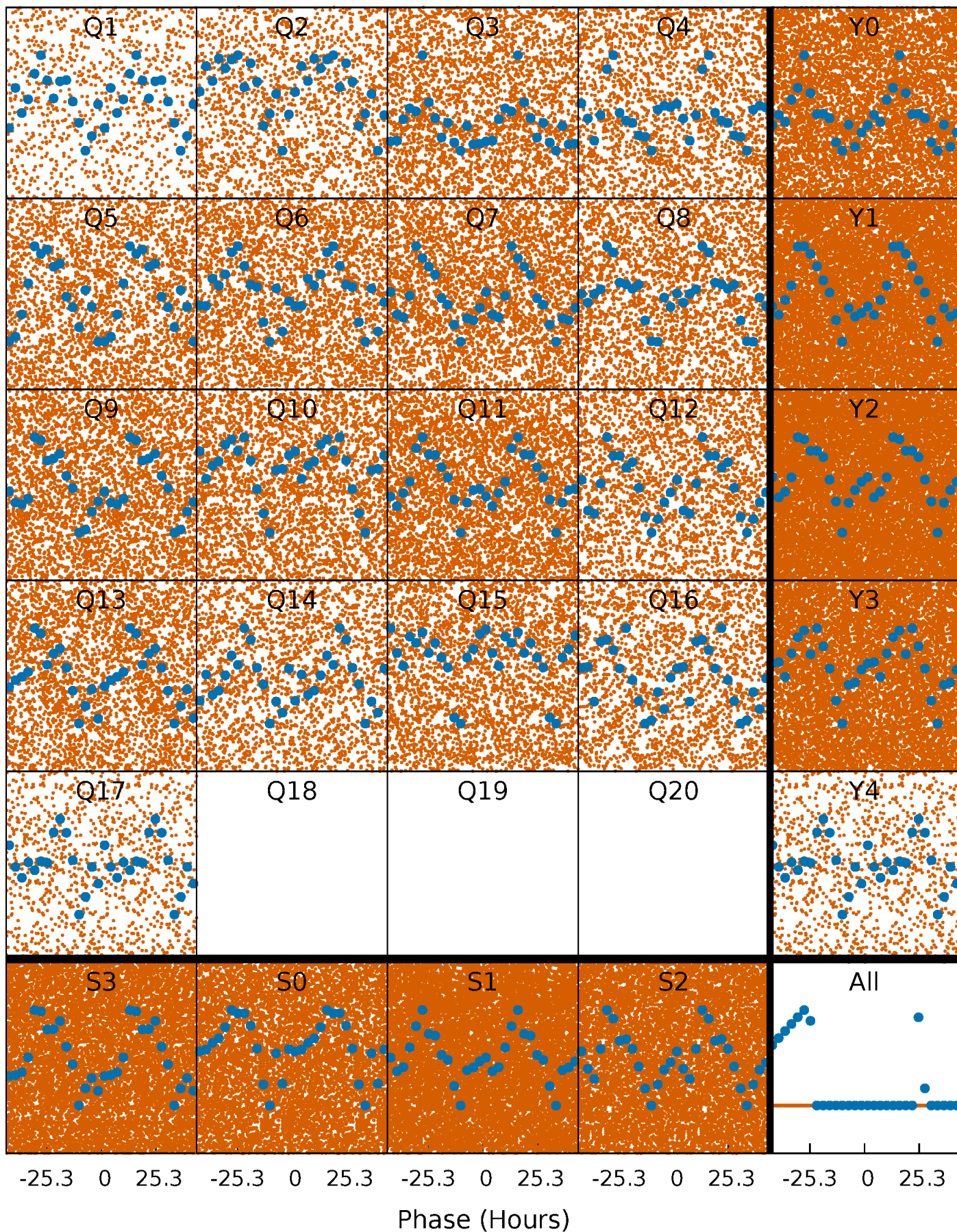


**Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

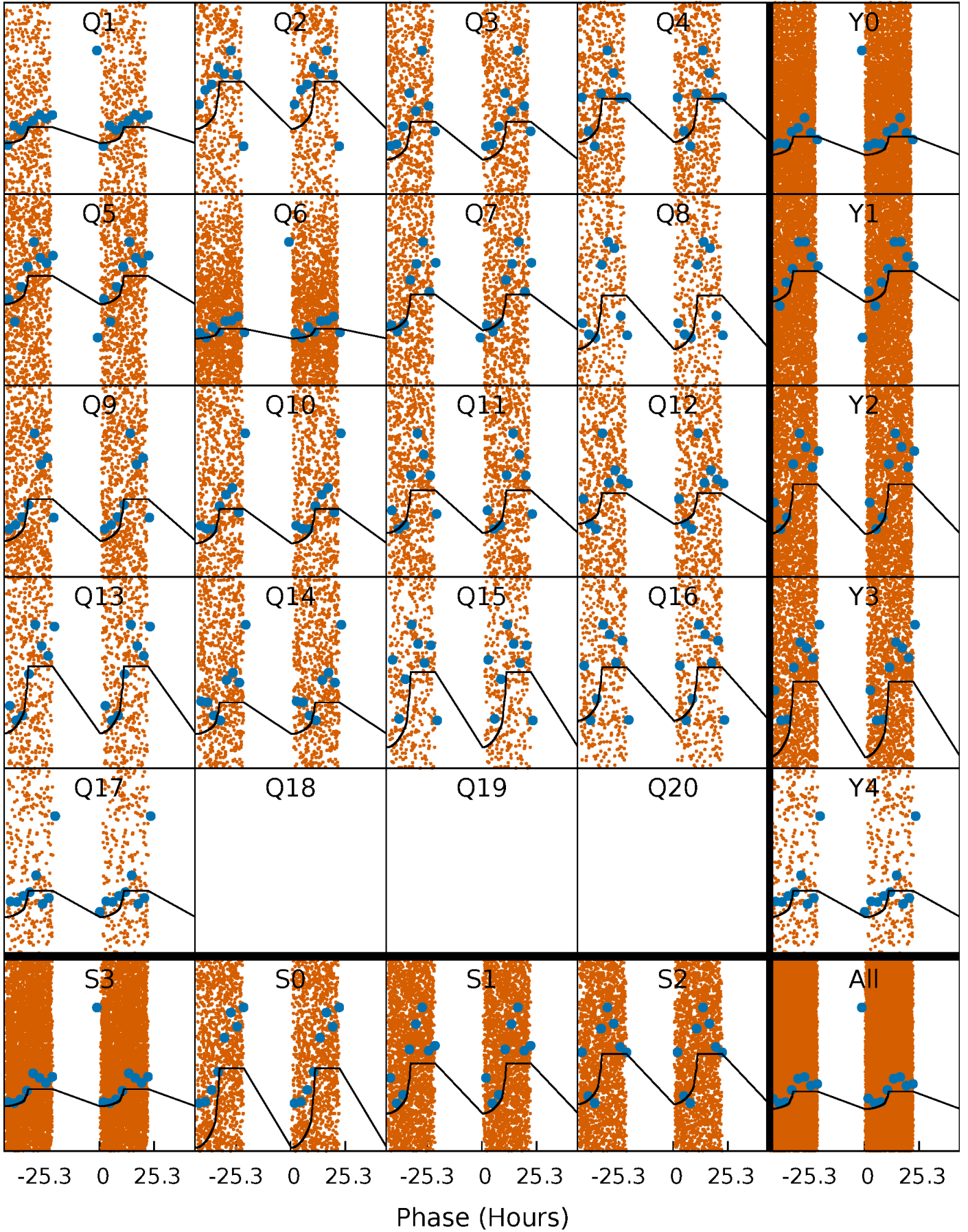
TCE 002719125-02   P= 1.844889 Days    $T_0=132.286695$  (BKJD)





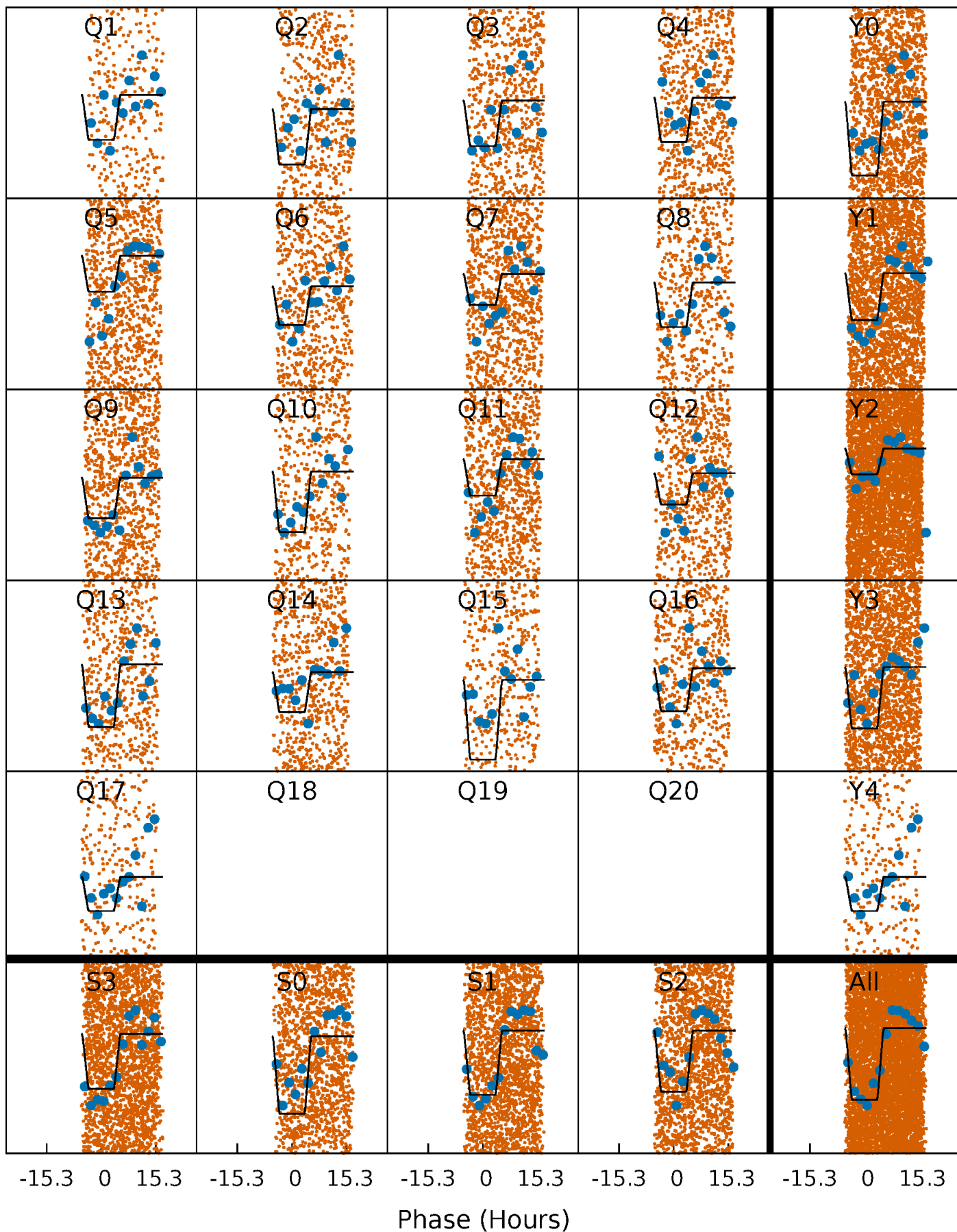
# DV Quarter-Phased Transit Curves

TCE 002719125-02   P= 1.844889 Days    $T_0=132.286695$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 002719125-02 P= 1.845058 Days  $T_0=132.455045$  (BKJD)

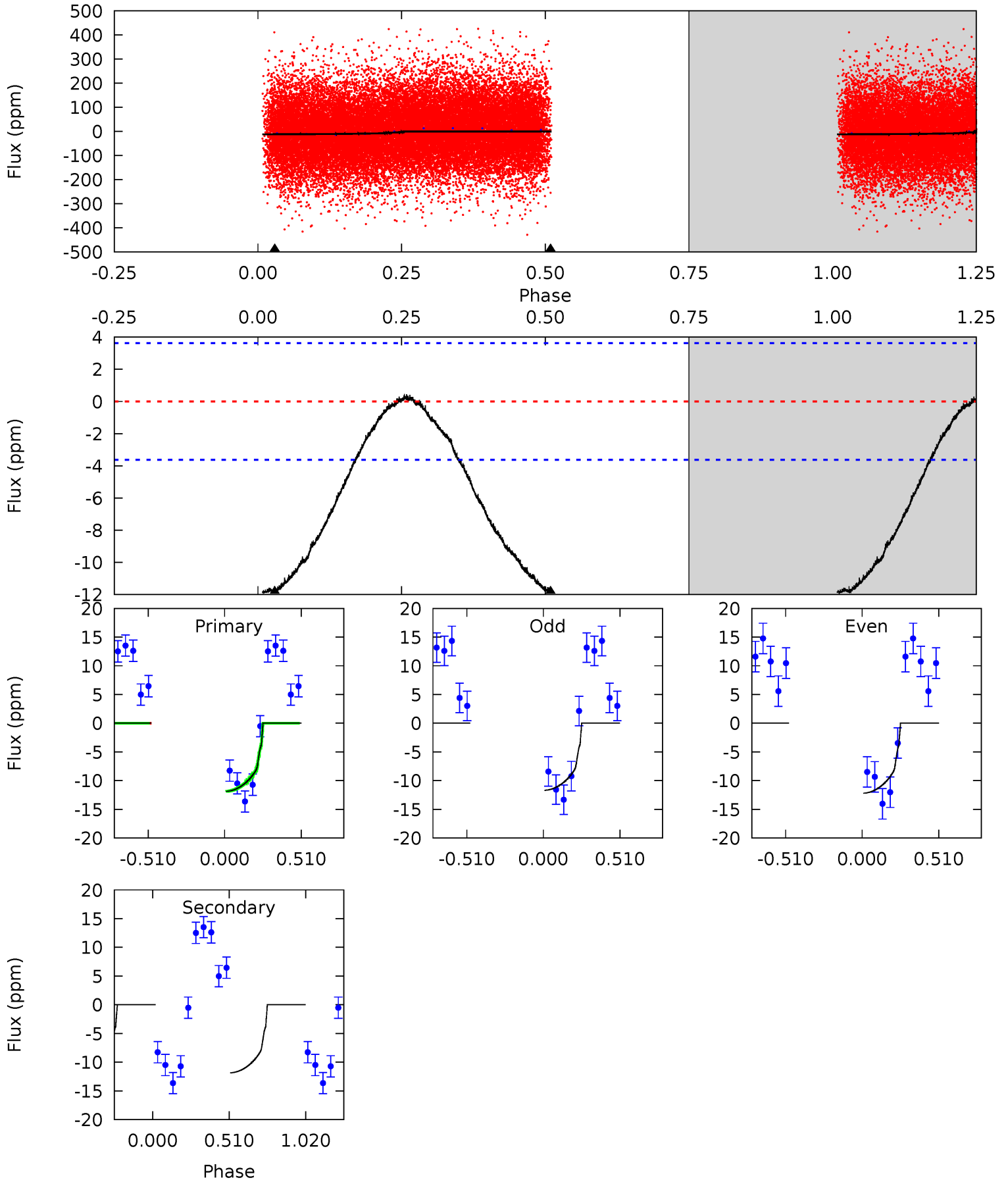




# DV Model-Shift Uniqueness Test

002719125-02, P = 1.844889 Days, E = 132.286695 Days

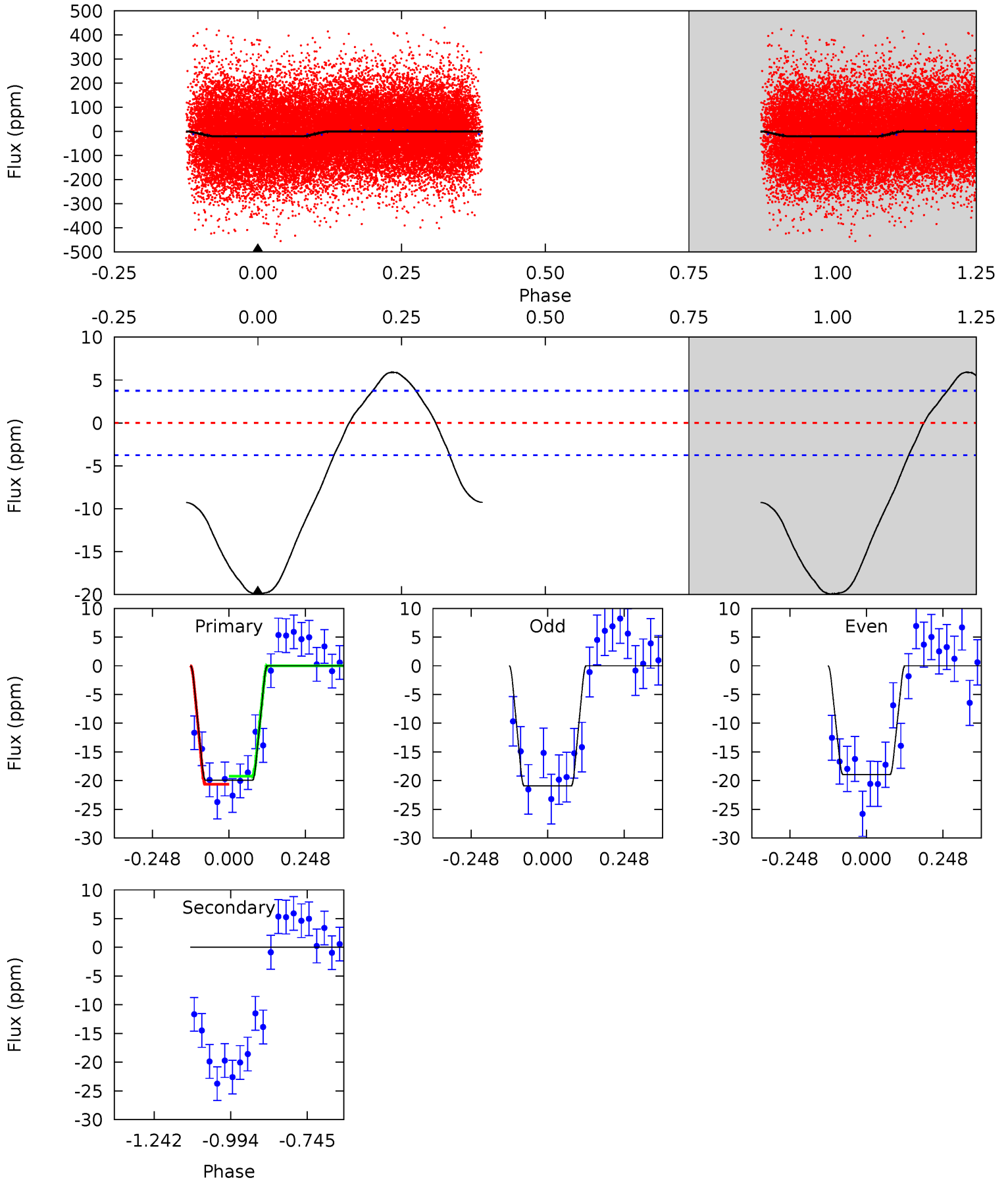
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	13.8	0	0	4.21	0.66	0.31	13.8	13.8	13.8	13.8	0.30	0.76	0.04	0



# Alt Model-Shift Uniqueness Test

002719125-02, P = 1.845058 Days, E = 130.609987 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
23.2	0	0	0	4.37	1.15	5.34	23.2	23.2	0	0	1.17	0.97	0.23	0.76



### Stellar Parameters For KIC 002719125

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7370^{+230}_{-307}$	$4.120^{+0.149}_{-0.182}$	$-0.140^{+0.250}_{-0.350}$	$1.774^{+0.546}_{-0.409}$	$1.511^{+0.222}_{-0.247}$	$0.381^{+0.297}_{-0.194}$
	+3%/-4%	+4%/-4%	+179%/-250%	+31%/-23%	+15%/-16%	+78%/-51%
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 002719125-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-12 \pm 1$	$0.88^{+0.19}_{-0.16}$	$3303^{+271}_{-234}$	$6279^{+573}_{-463}$	$9.494^{+4.753}_{-2.968}$
Alt.	$0 \pm 1$	$0.90^{+0.17}_{-0.16}$	$3306^{+267}_{-218}$	$-3172^{+6586}_{-777}$	$0.042^{+0.675}_{-0.681}$

$T_{max}$  = 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

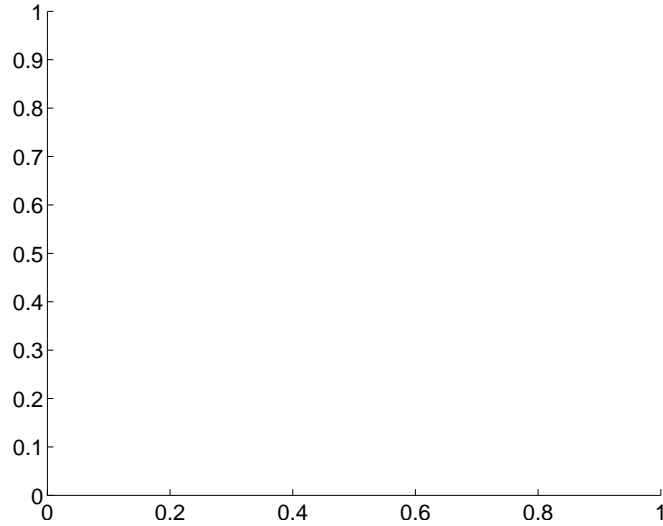
Supplemental centroid analysis for 002719125-02. Kepler magnitude: 12.65. Transit SNR 13.14

There are 0 quarters with good PRF difference image offsets

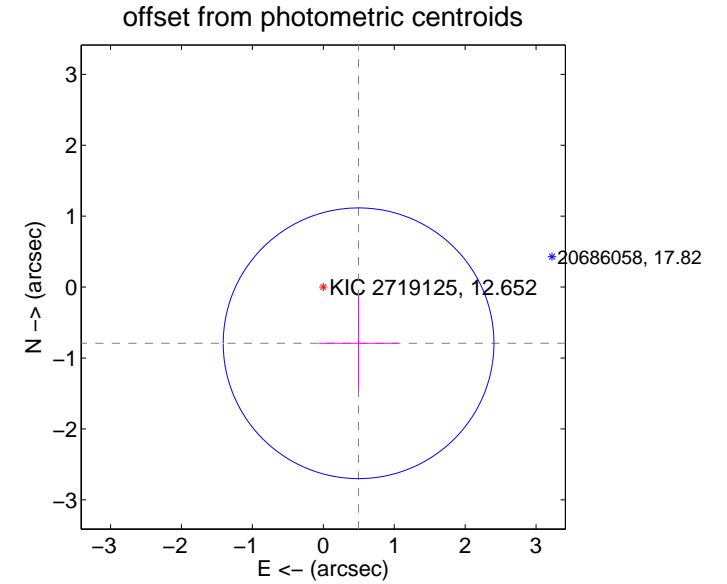
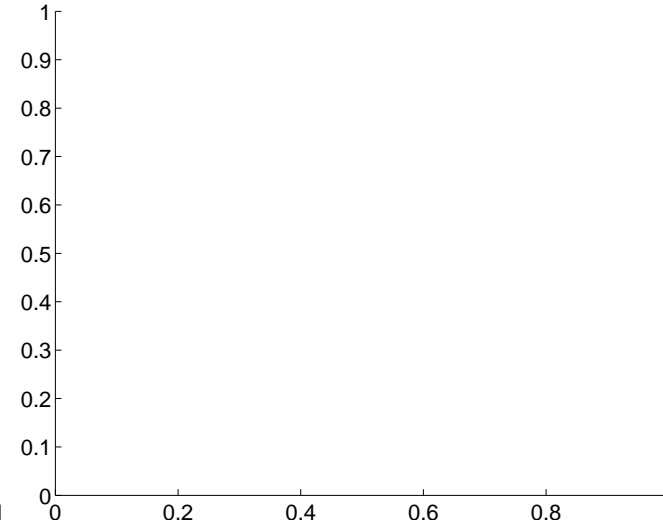
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	$0.94 \pm 0.64$	1.47	$-0.50 \pm 0.56$	$-0.79 \pm 0.66$

There is no PRF-fit offset from OOT-fit

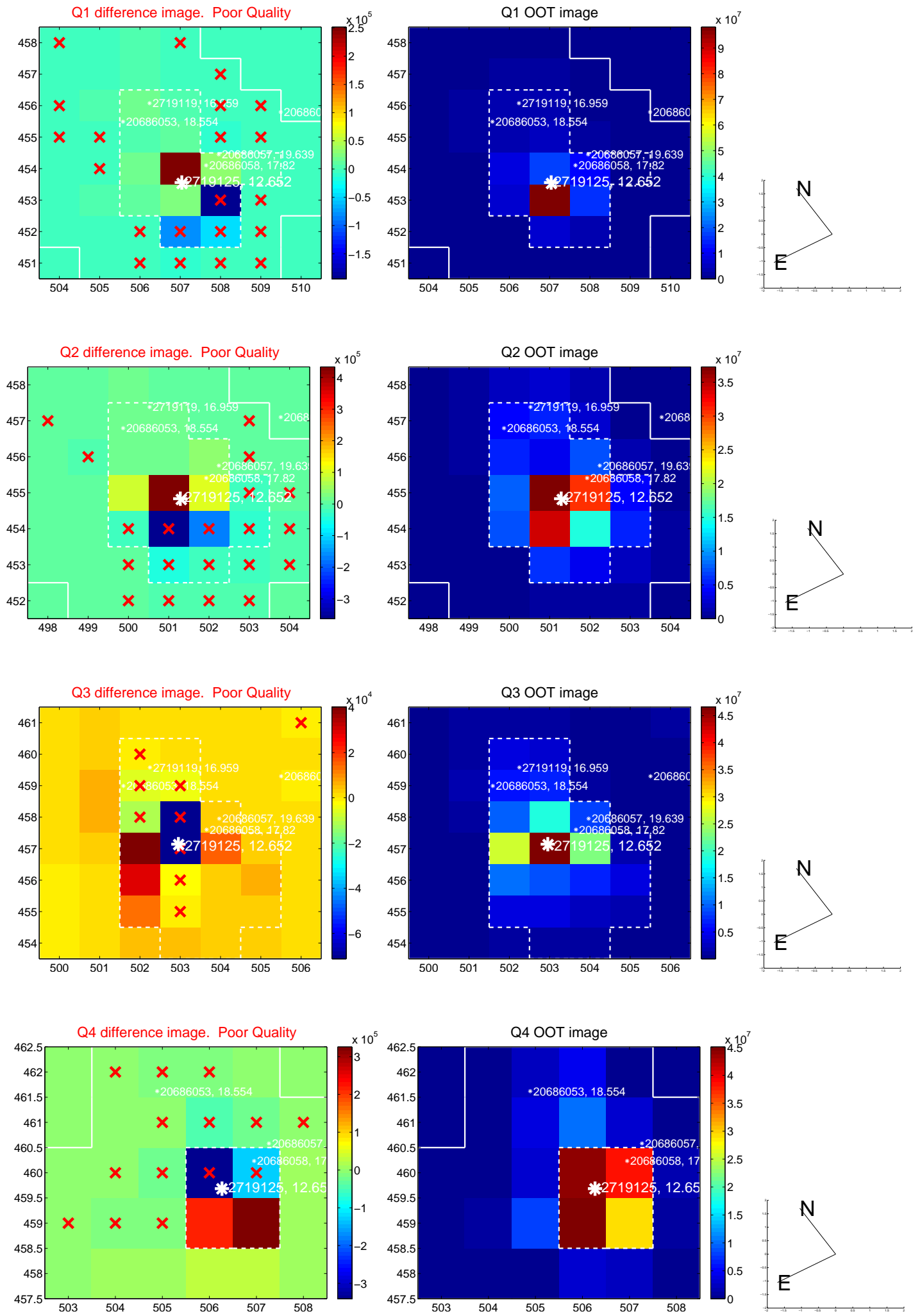


There is no PRF-fit offset from KIC

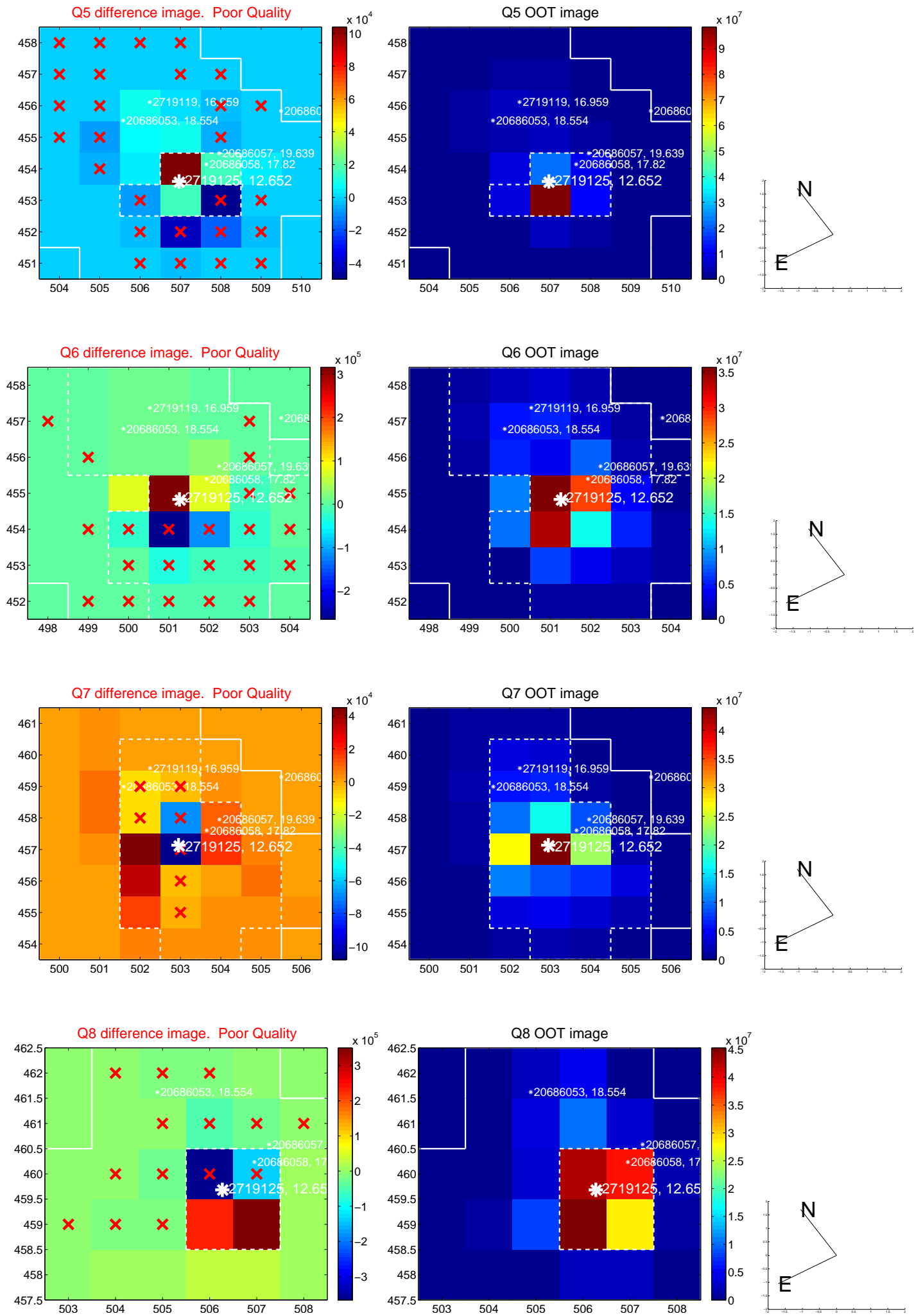


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

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

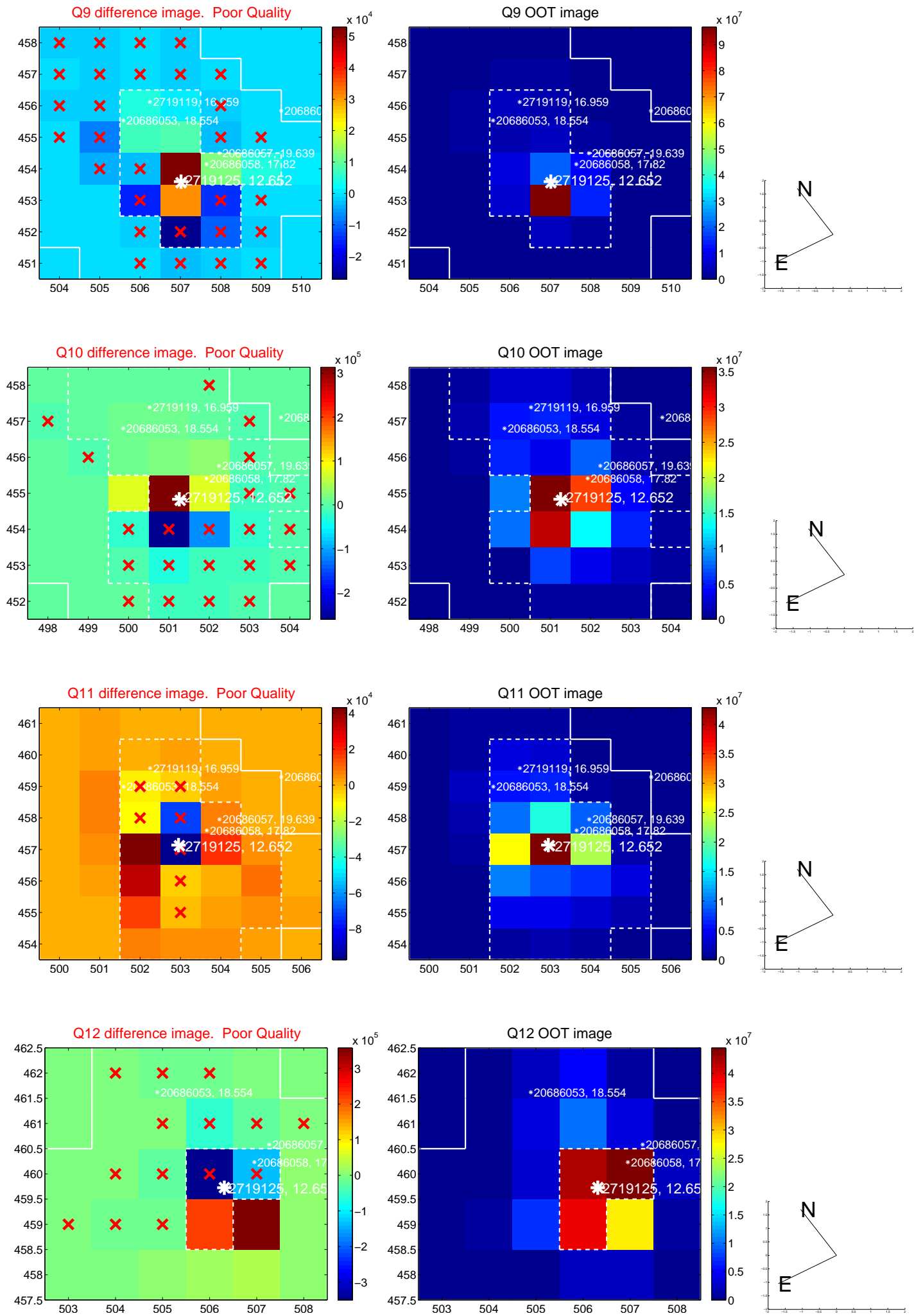


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

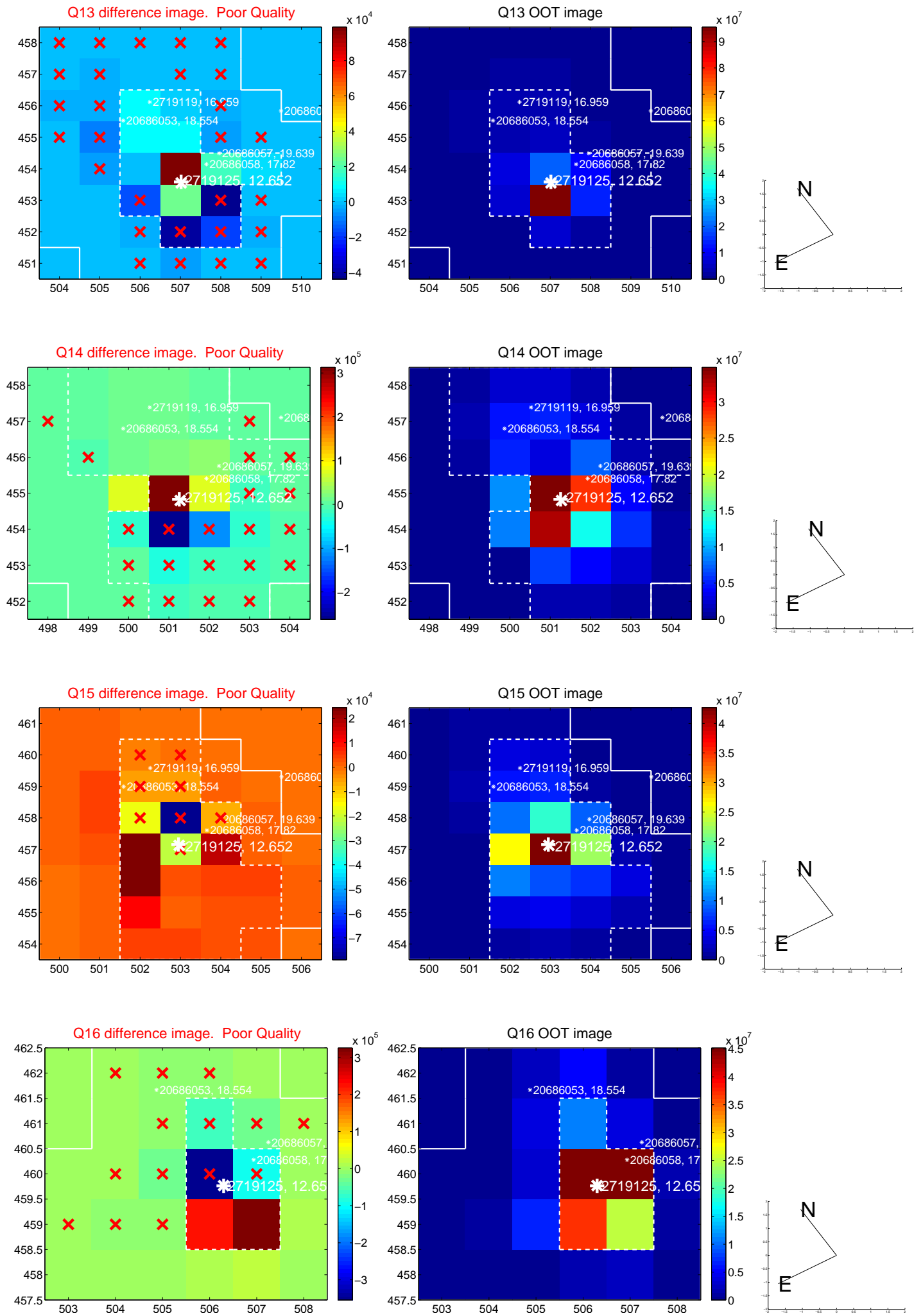




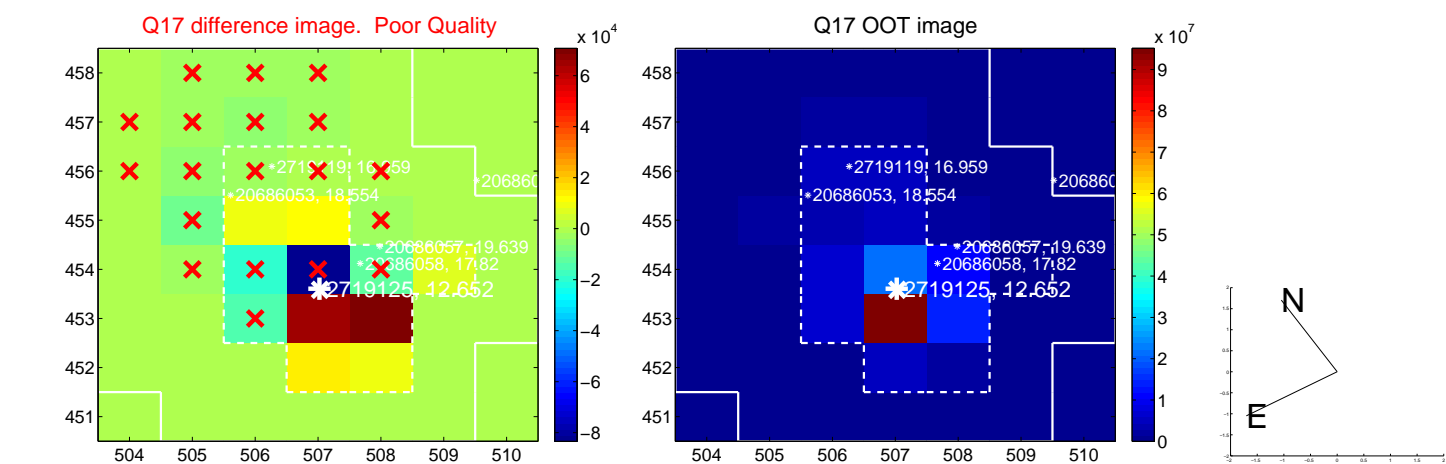
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



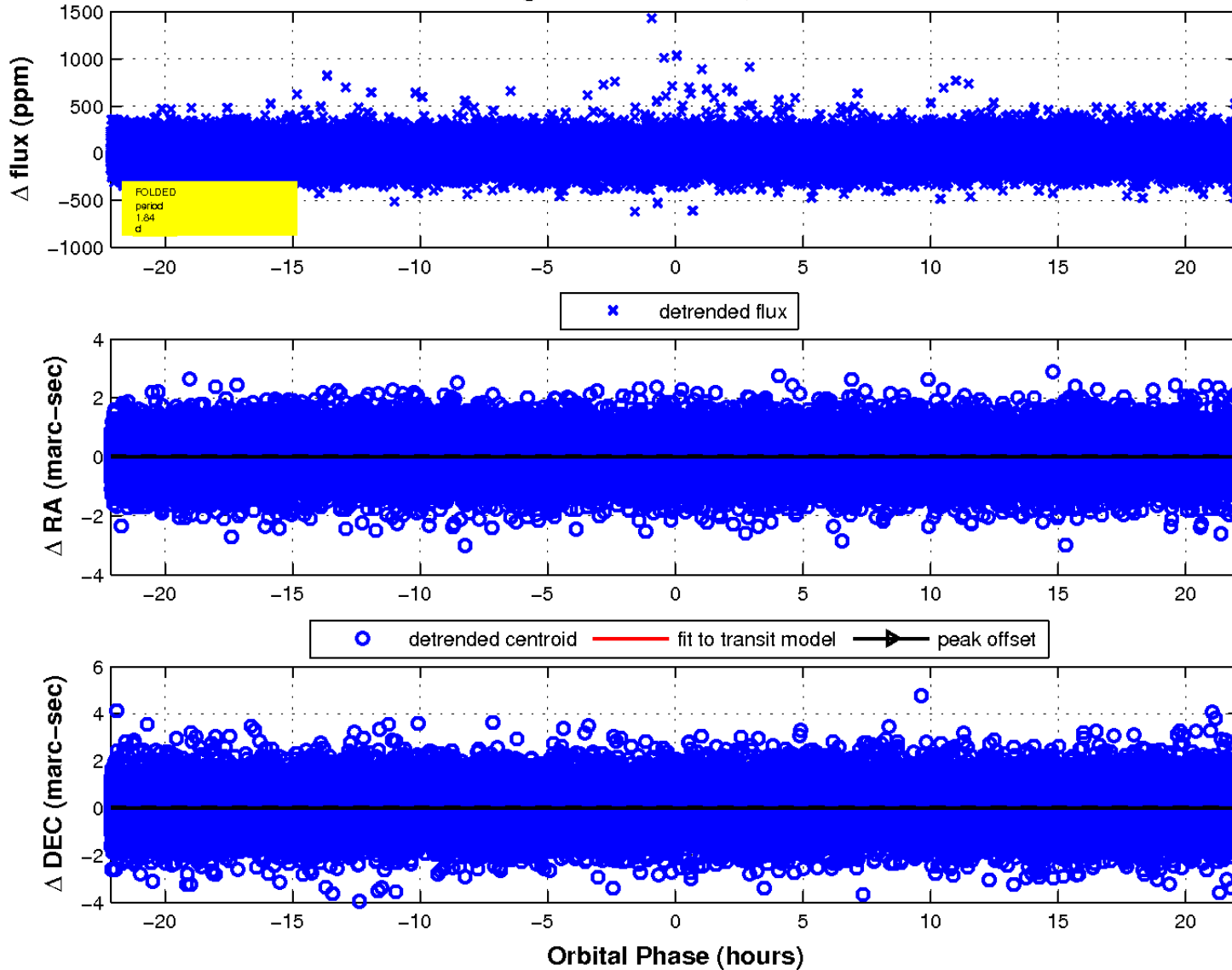
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

