

# KIC 007217483

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007217483-01	OBS	No	1.183083	131.744838	57.4	7.072	11.9	12.6	2.38	7163	1.83	19872.20
007217483-02	OBS	No	2.242946	131.780060	117.5	1.373	10.9	6.4	2.38	7163	2.65	8469.18

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007217483-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
007217483-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST

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

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

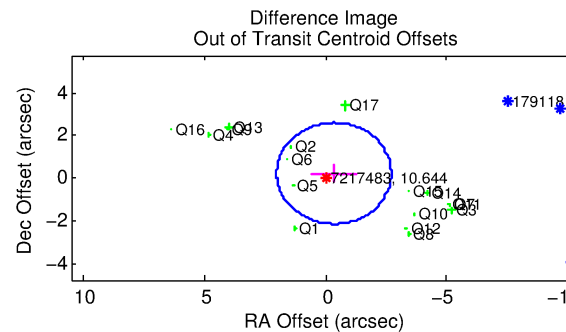
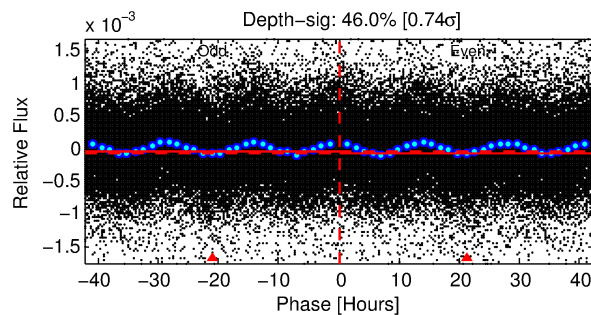
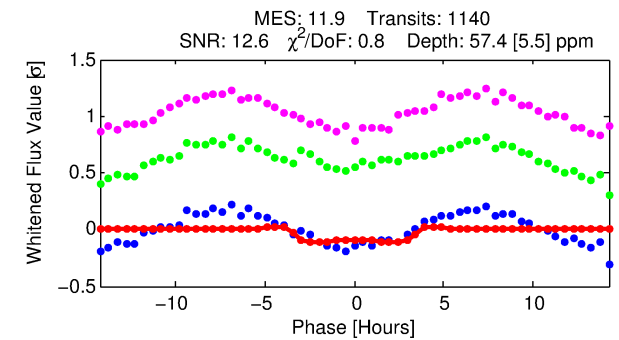
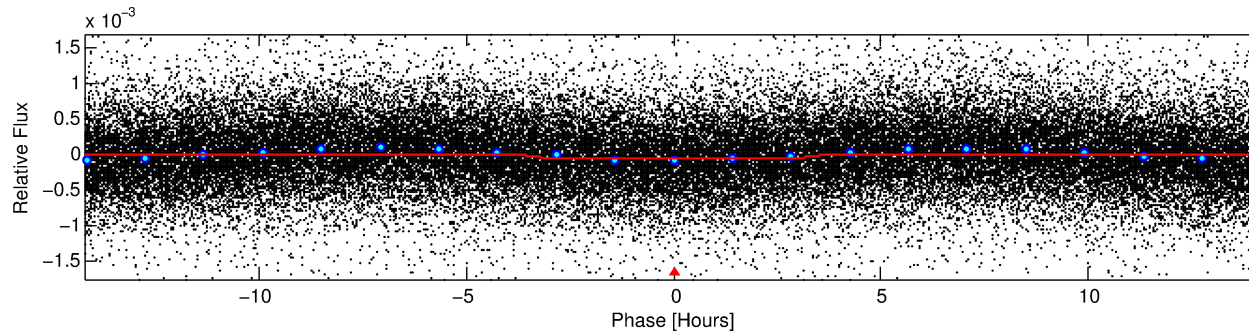
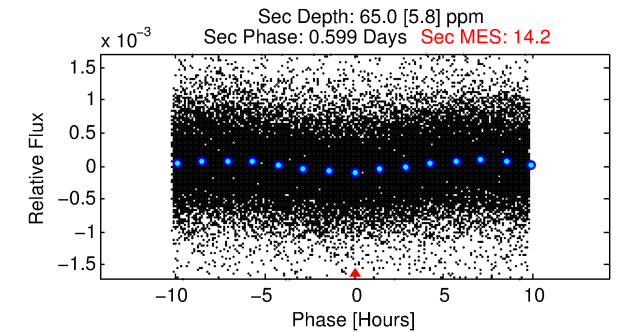
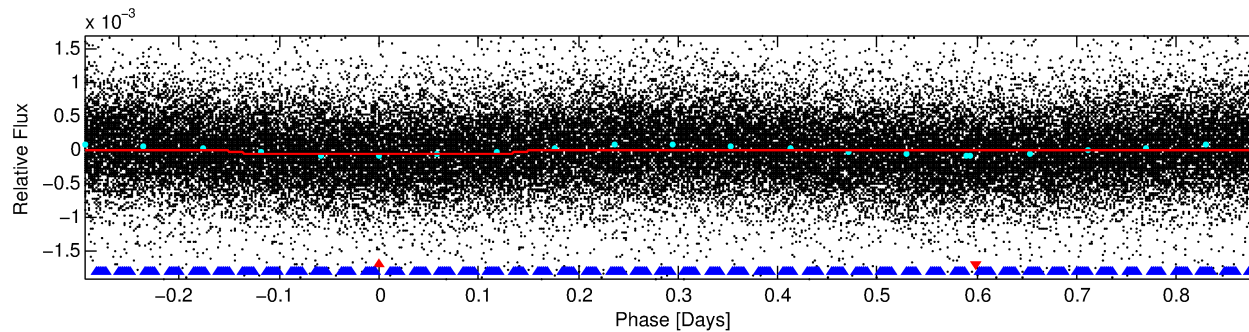
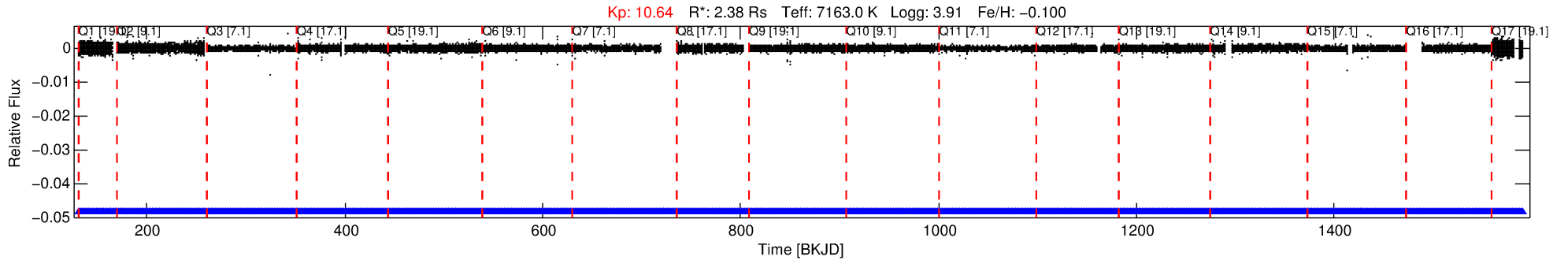
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007217483-01

No Significant Match Found

# DV One-Page Summary

KIC: 7217483 Candidate: 1 of 2 Period: 1.183 d



## DV Fit Results:

Period = 1.18308 [0.00001] d  
Epoch = 131.7448 [0.0043] BKJD  
Rp/R\* = 0.0070 [0.0046]  
a/R\* = 1.43 [2.78]  
b = 0.02 [157.86]  
Seff = 19872.20 [11144.97]  
Teff = 3028 [424] K  
Rp = 1.83 [1.37] Re  
a = 0.0260 [0.0088] AU  
Ag = 7.23 [10.28] [0.61σ]  
Teffp = 7675 [2557] K [1.79σ]

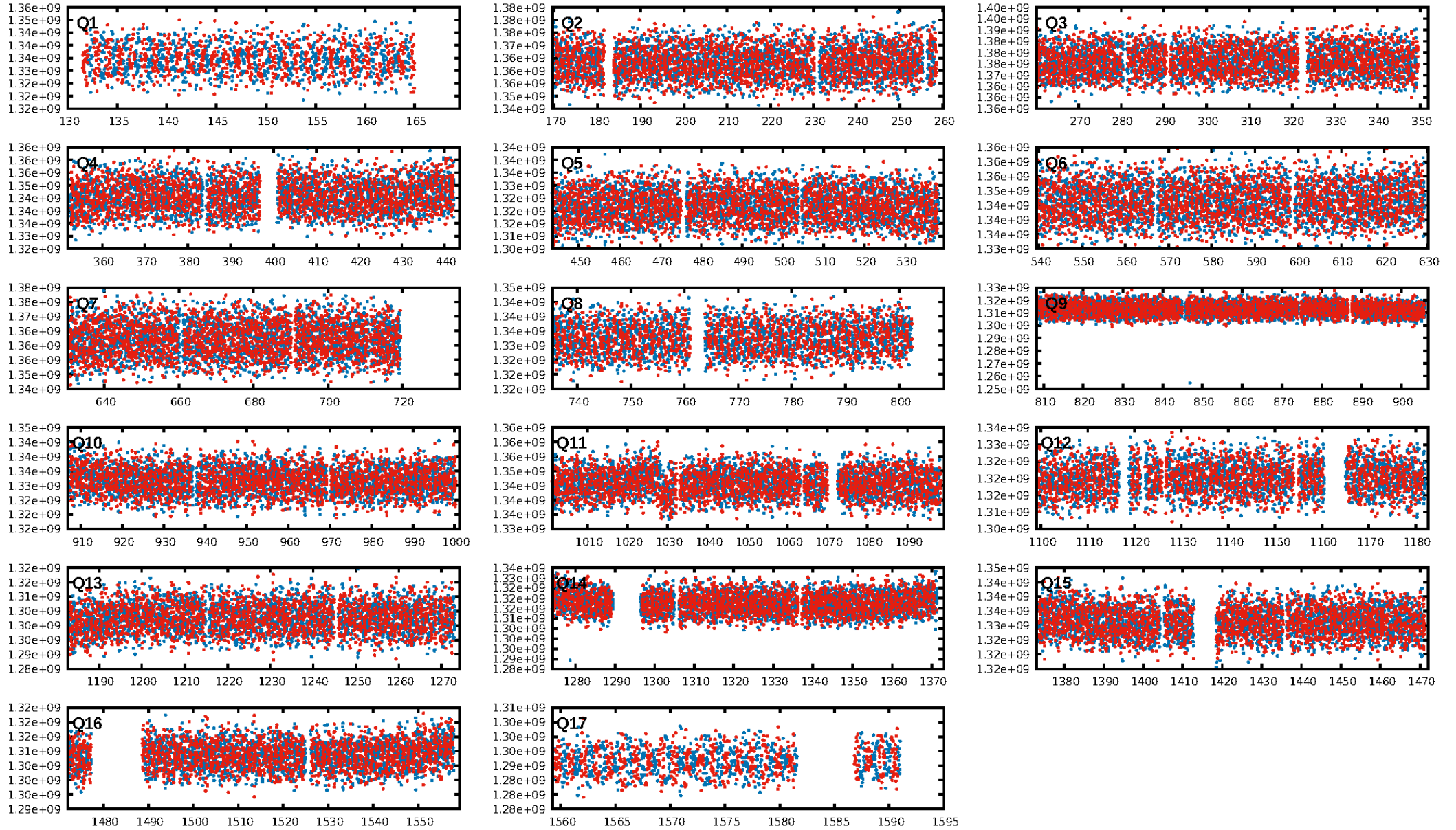
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [3.53σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 7.60e-22  
RollingBand-fgt: 1.00 [1088/1088]  
GhostDiagnostic-chr: 2.168  
Centroid-sig: 0.0%  
Centroid-so: 0.641 arcsec [2.50σ]  
OotOffset-rm: 0.418 arcsec [0.53σ]  
KicOffset-rm: 0.263 arcsec [0.36σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.18 [3/17]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:14:09 Z

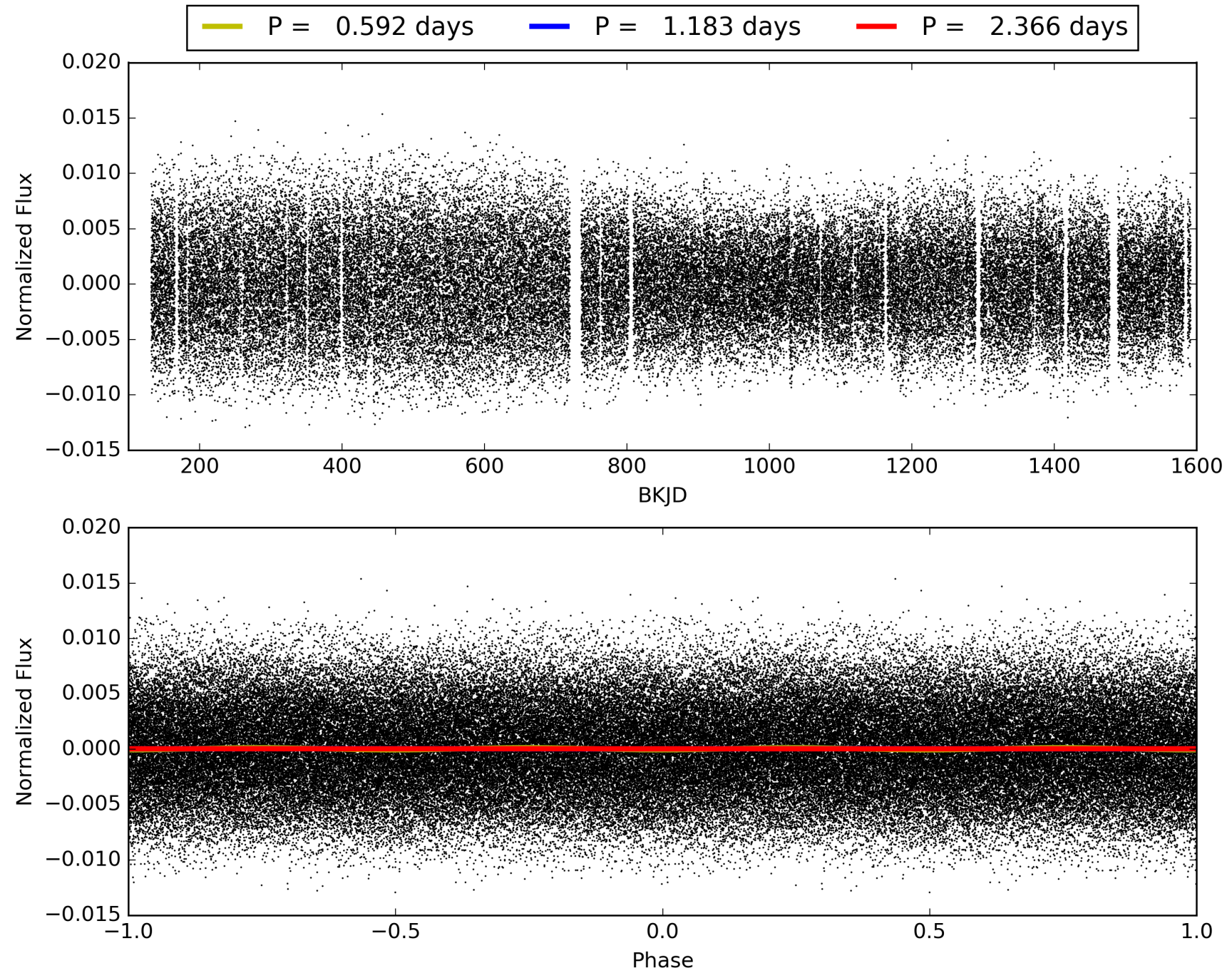
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007217483-01, PDC Light Curves



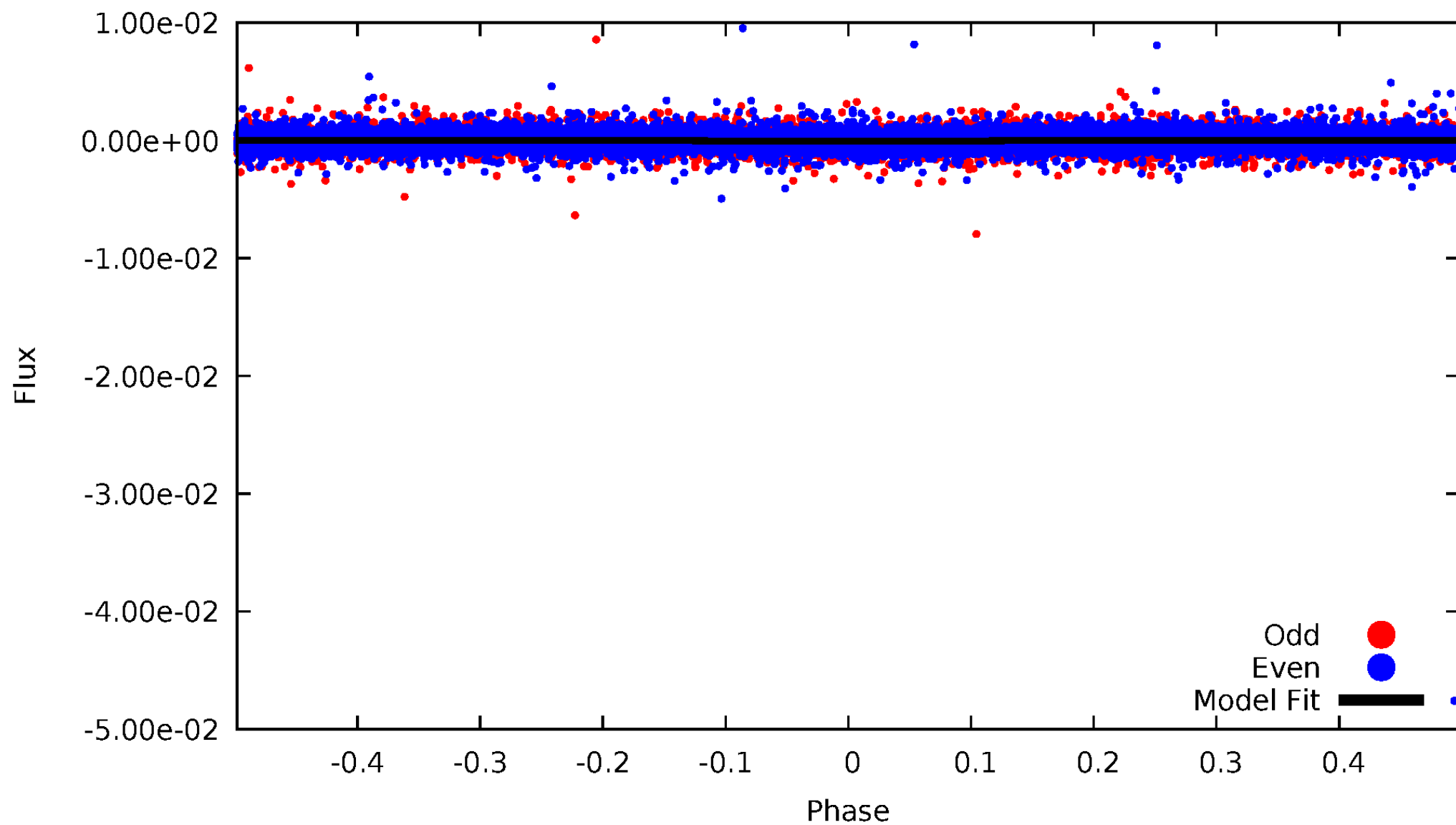


TCE 007217483-01



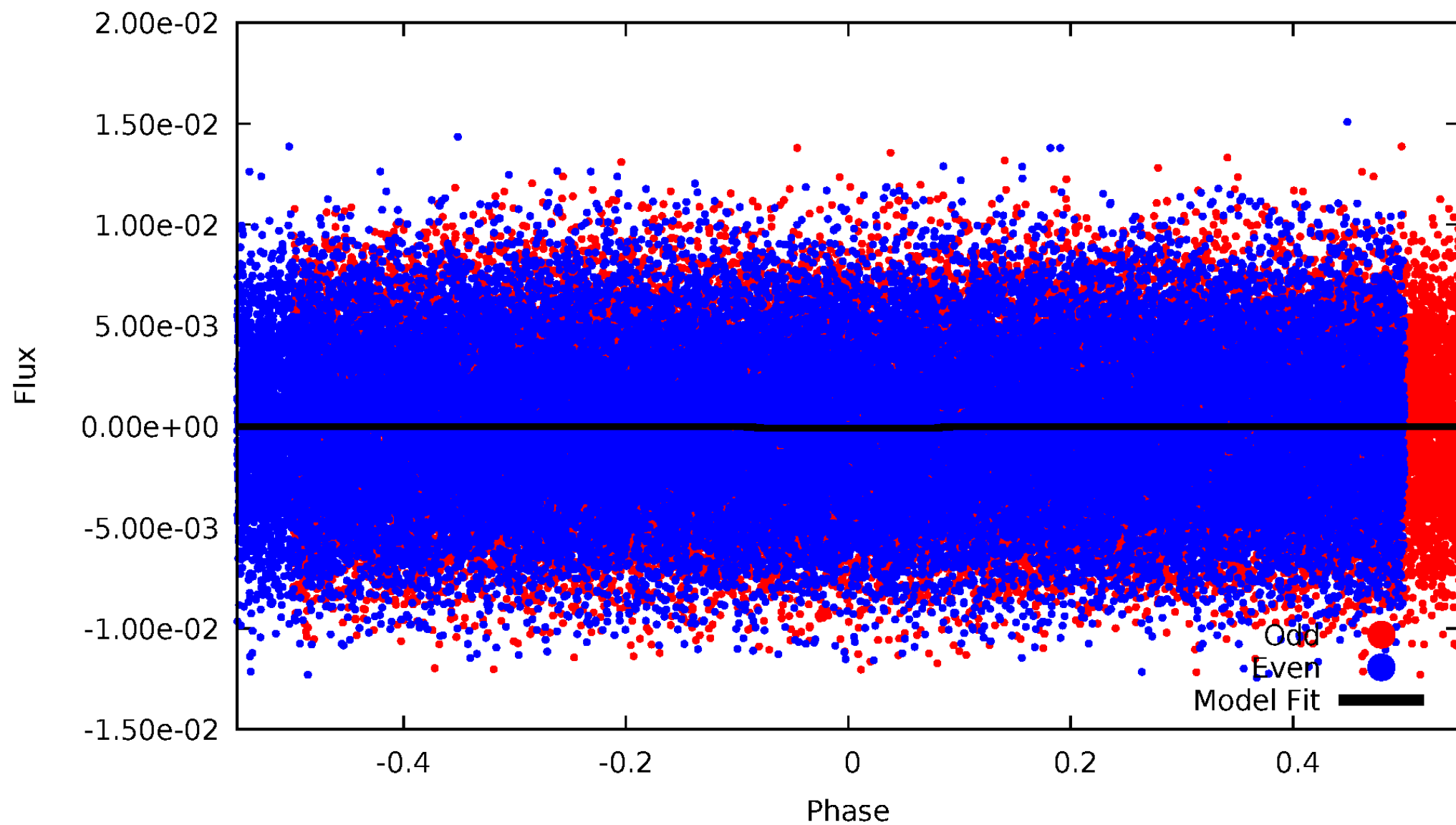
# DV Odd/Even

TCE 007217483-01



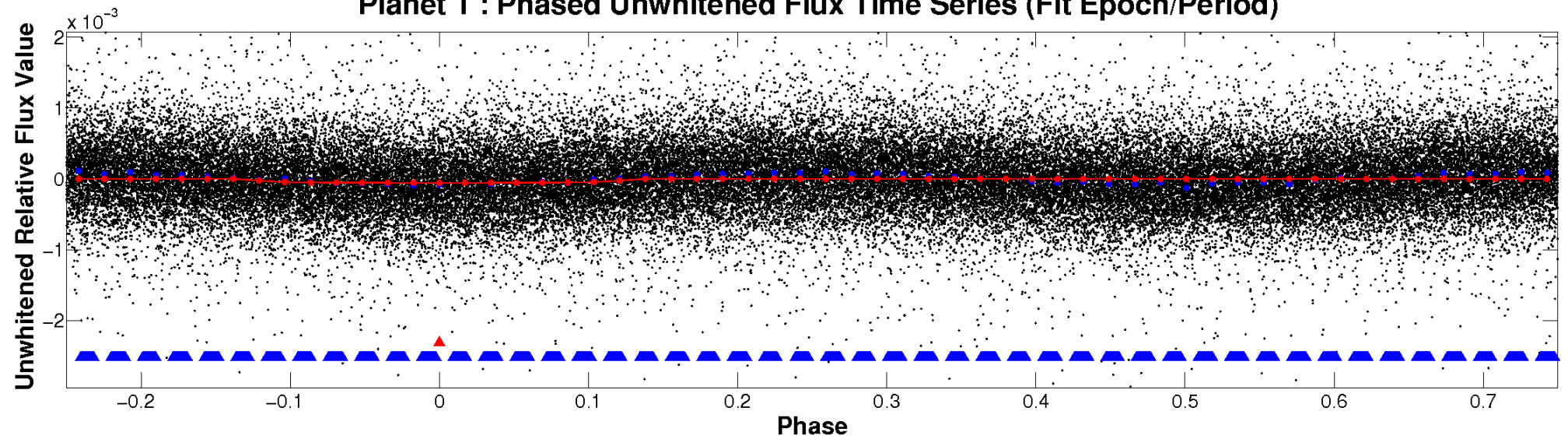
# ALT Odd/Even

TCE 007217483-01

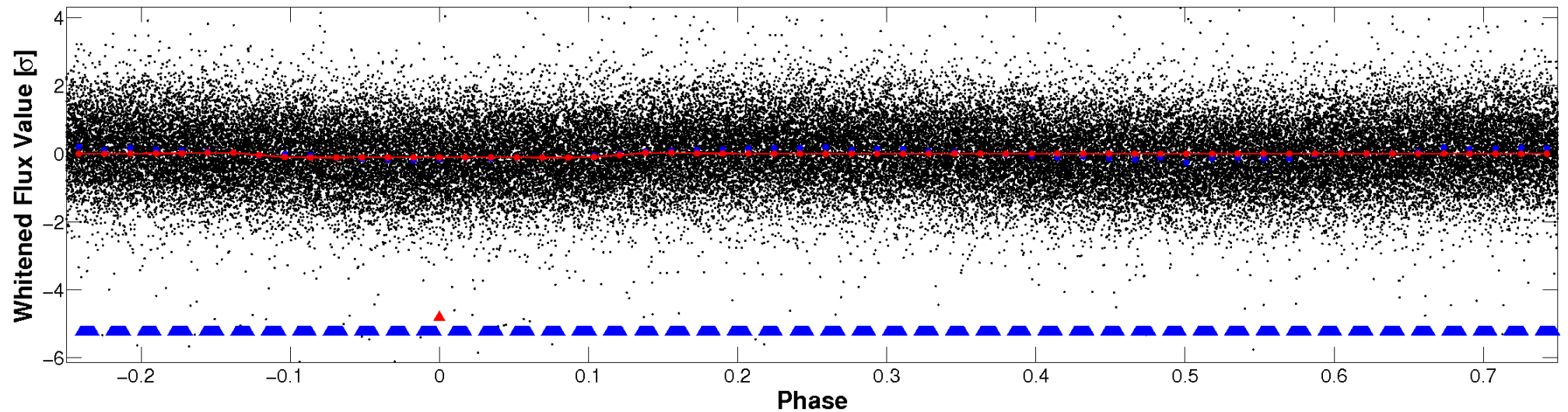


# Non-Whitened Vs. Whitened Light Curve

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



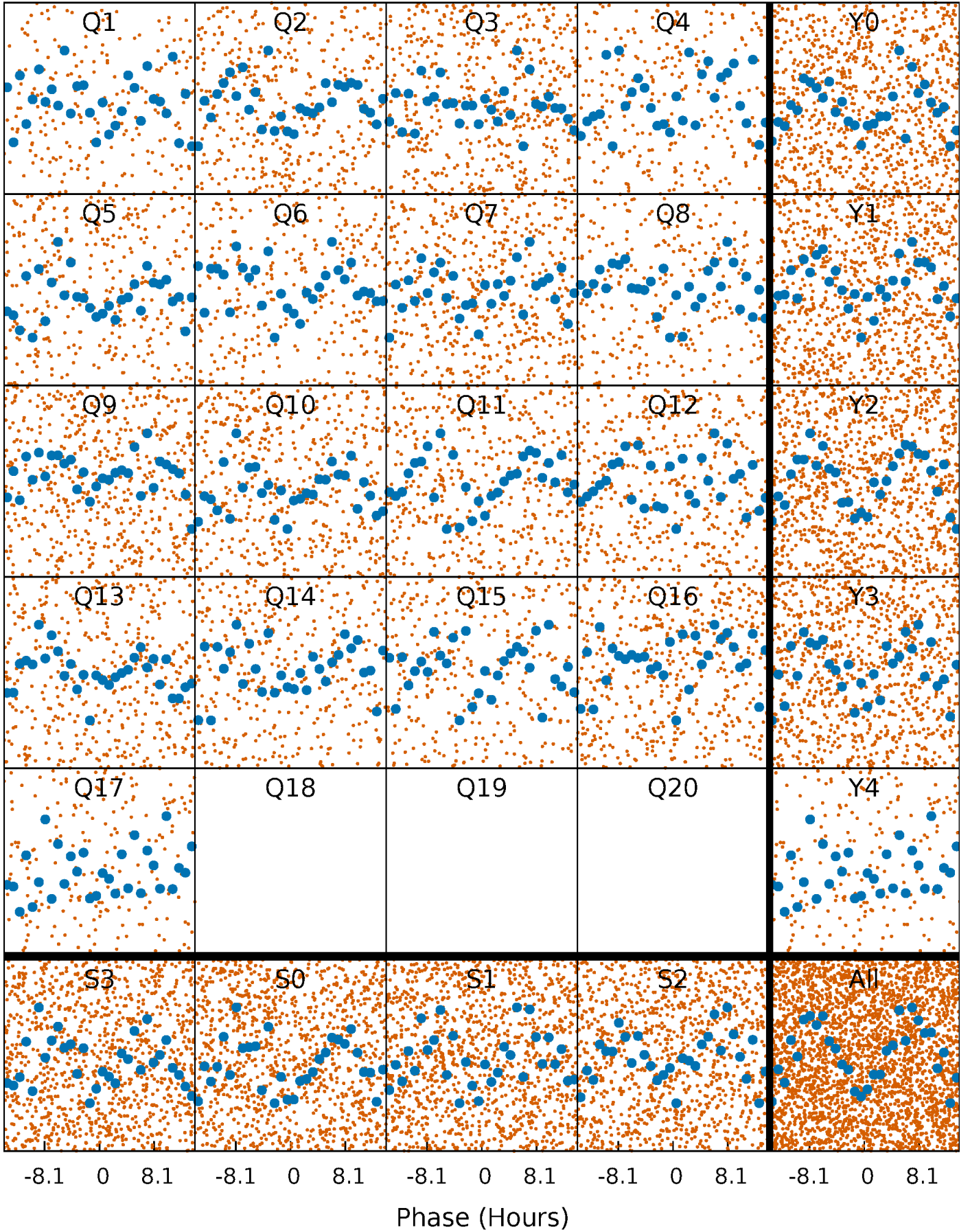
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

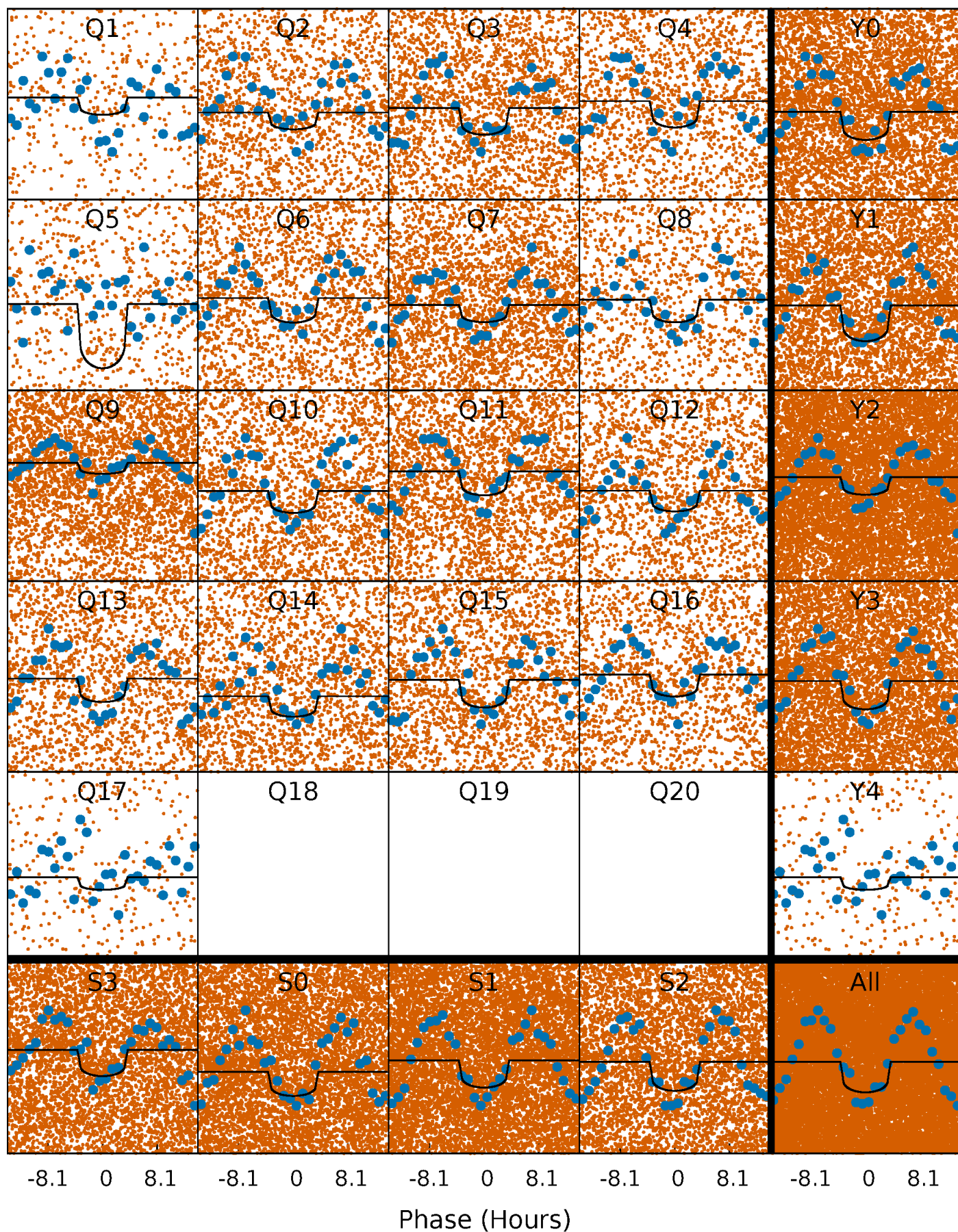
TCE 007217483-01   P= 1.183083 Days    $T_0=131.744838$  (BKJD)





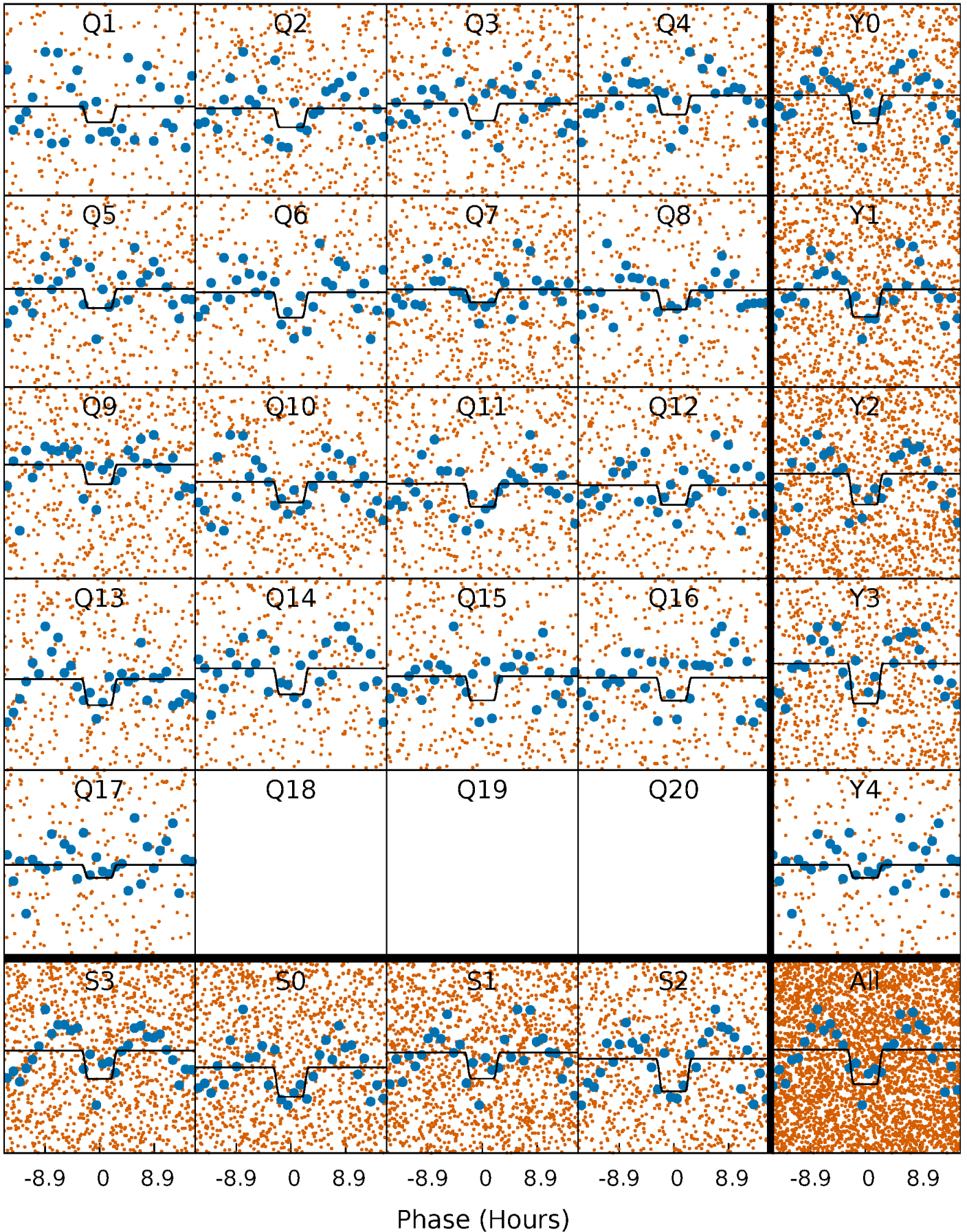
# DV Quarter-Phased Transit Curves

TCE 007217483-01 P= 1.183083 Days  $T_0=131.744838$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

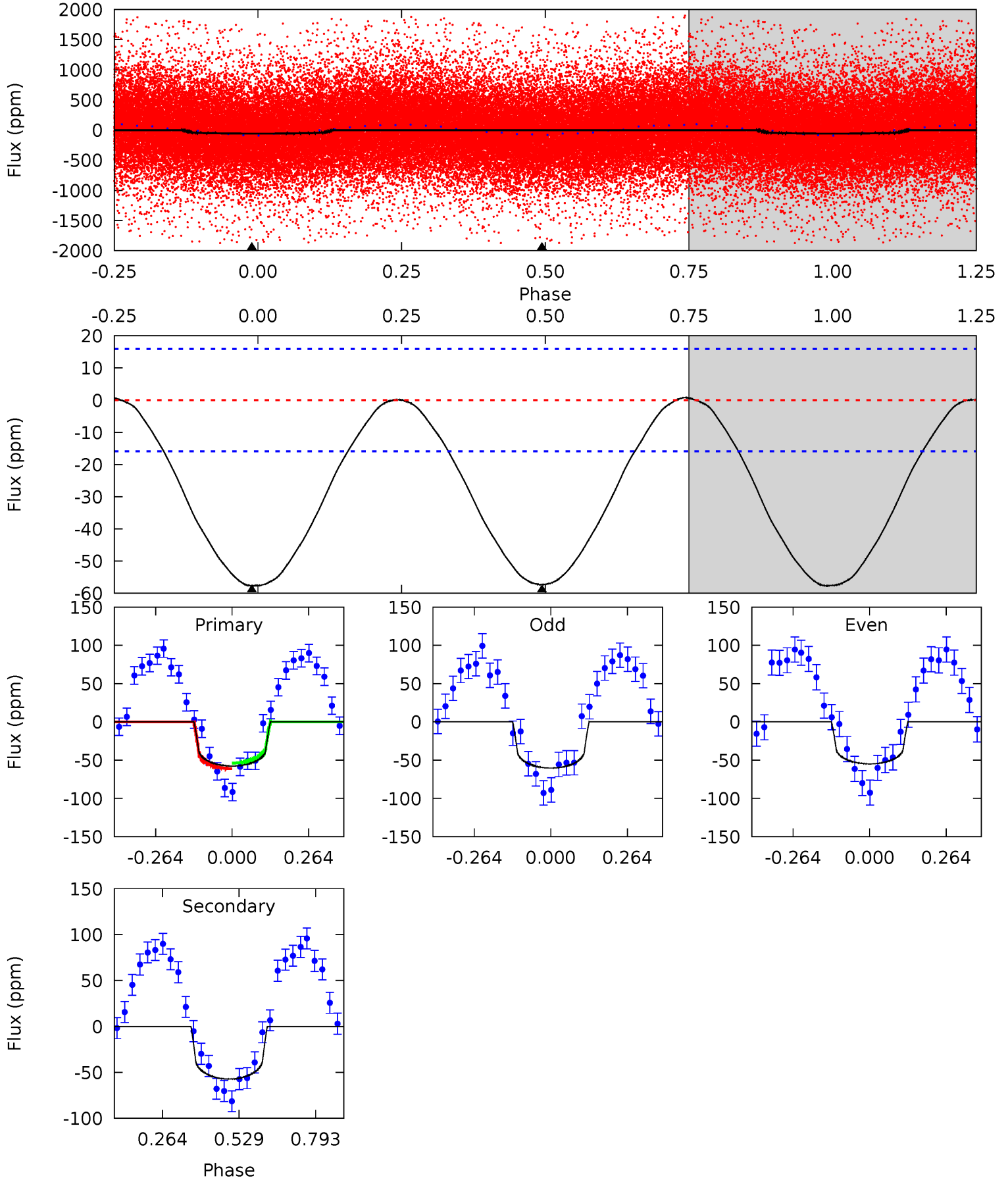
TCE 007217483-01 P= 1.183094 Days  $T_0=131.726233$  (BKJD)



# DV Model-Shift Uniqueness Test

007217483-01, P = 1.183083 Days, E = 130.561755 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
15.8	15.7	0	0	4.36	1.12	0.16	15.8	15.8	15.7	15.7	0.76	1.03	0.01	1.05

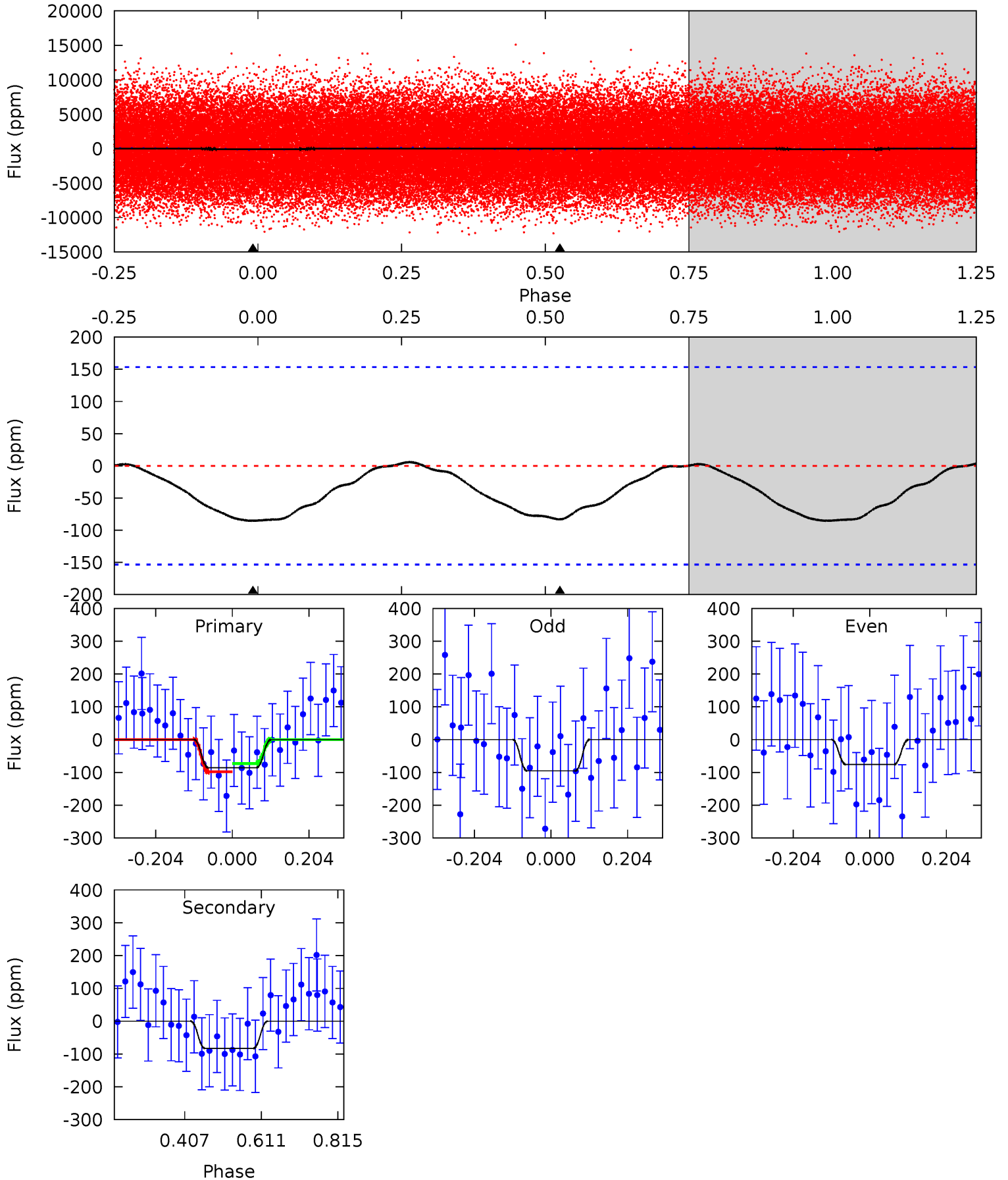




# Alt Model-Shift Uniqueness Test

007217483-01, P = 1.183094 Days, E = 130.543139 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
2.46	2.39	0	0	4.41	1.27	0.11	2.46	2.46	2.39	2.39	0.28	1.25	0.06	0.35





### Stellar Parameters For KIC 007217483

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7163^{+225}_{-325}$	$3.906^{+0.308}_{-0.132}$	$-0.100^{+0.250}_{-0.350}$	$2.385^{+0.574}_{-0.862}$	$1.669^{+0.183}_{-0.366}$	$0.173^{+0.388}_{-0.068}$
	+3%/-5%	+8%/-3%	+250%/-350%	+24%/-36%	+11%/-22%	+224%/-40%
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 007217483-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-57 \pm 4$	$1.79^{+1.17}_{-0.99}$	$4150^{+307}_{-400}$	$7080^{+5431}_{-1662}$	$6.399^{+24.778}_{-4.104}$
Alt.	$-83 \pm 35$	$2.47^{+1.31}_{-1.07}$	$4128^{+336}_{-373}$	$6518^{+2921}_{-1457}$	$4.864^{+11.473}_{-3.173}$

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

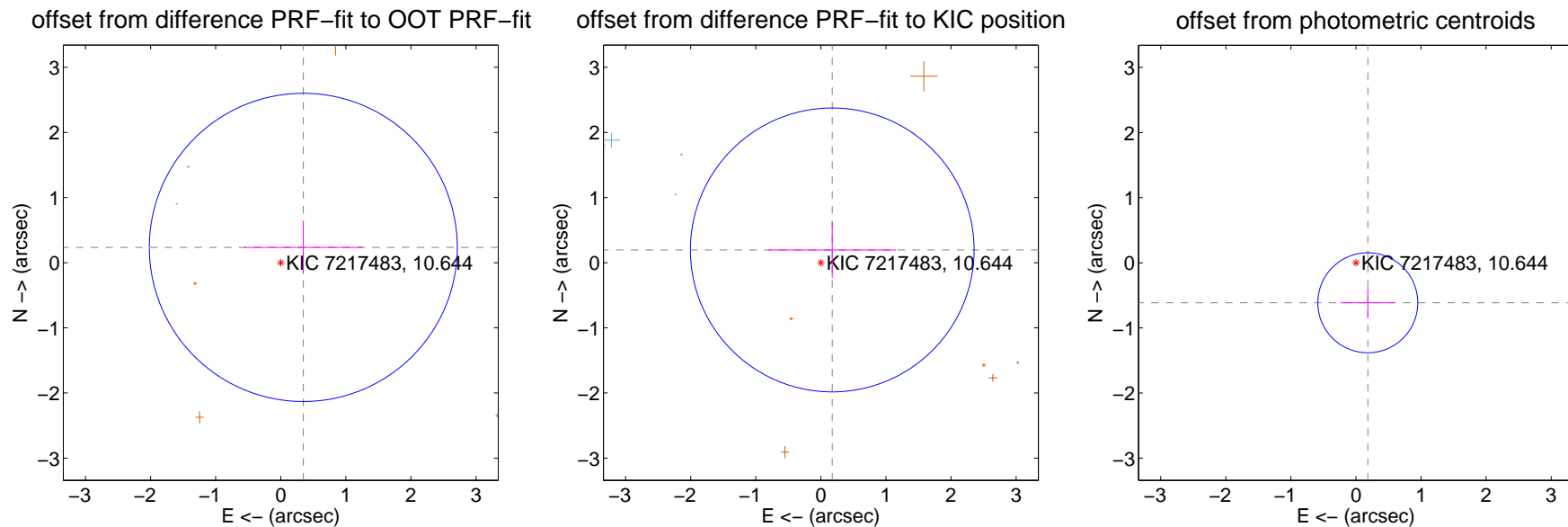
## DV Centroid Data

Supplemental centroid analysis for 007217483-01. **Kepler magnitude: 10.64.** Transit SNR 12.63

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

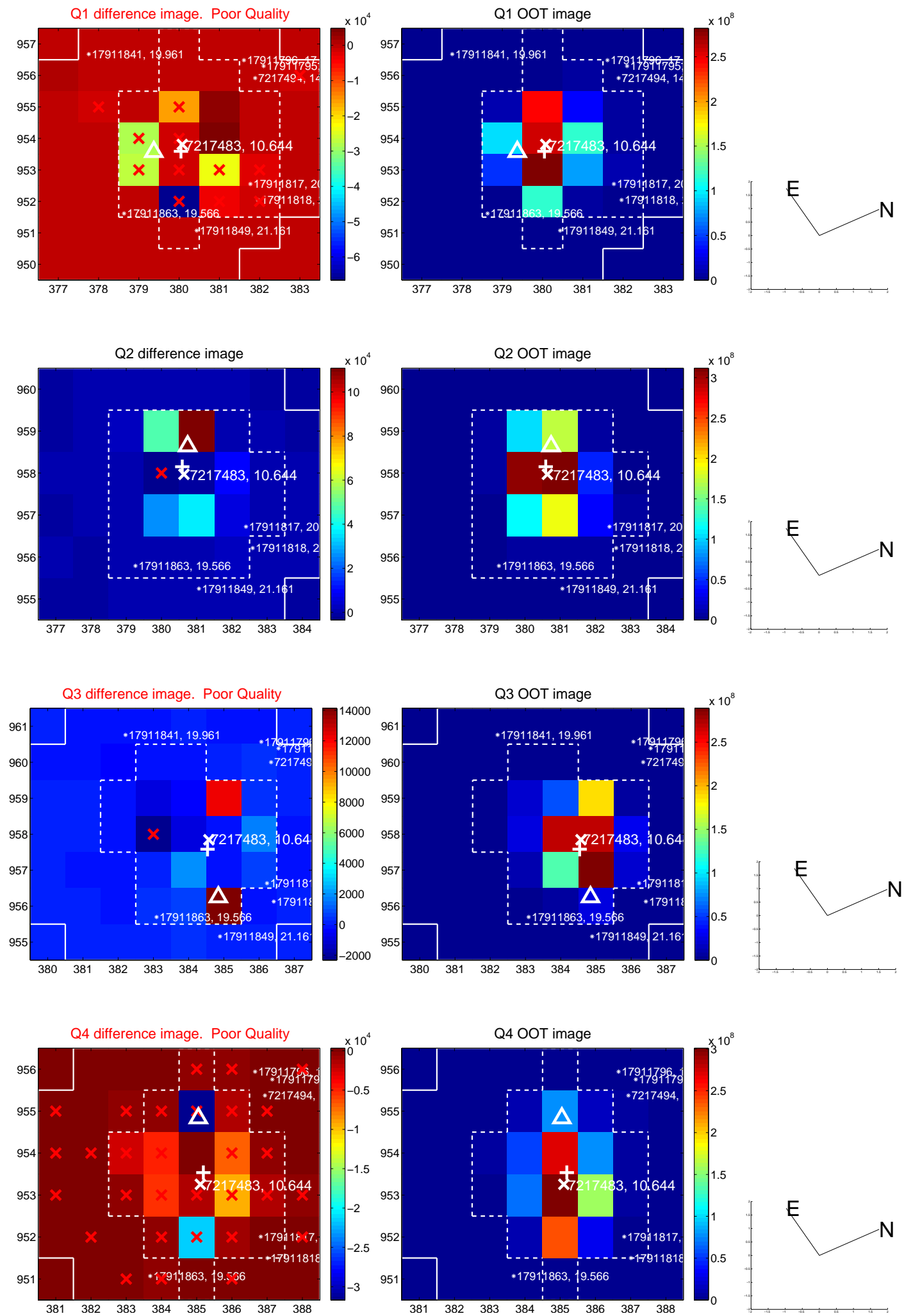
The direct PRF centroid is offset from the target star catalog position by about 0.92 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.418 \pm 0.789$	0.53	$-0.346 \pm 0.912$	$0.235 \pm 0.406$
PRF-fit source offset from KIC position	$0.263 \pm 0.726$	0.36	$-0.175 \pm 0.979$	$0.196 \pm 0.428$
photometric centroid source offset	$0.64 \pm 0.26$	2.50	$-0.18 \pm 0.42$	$-0.61 \pm 0.24$

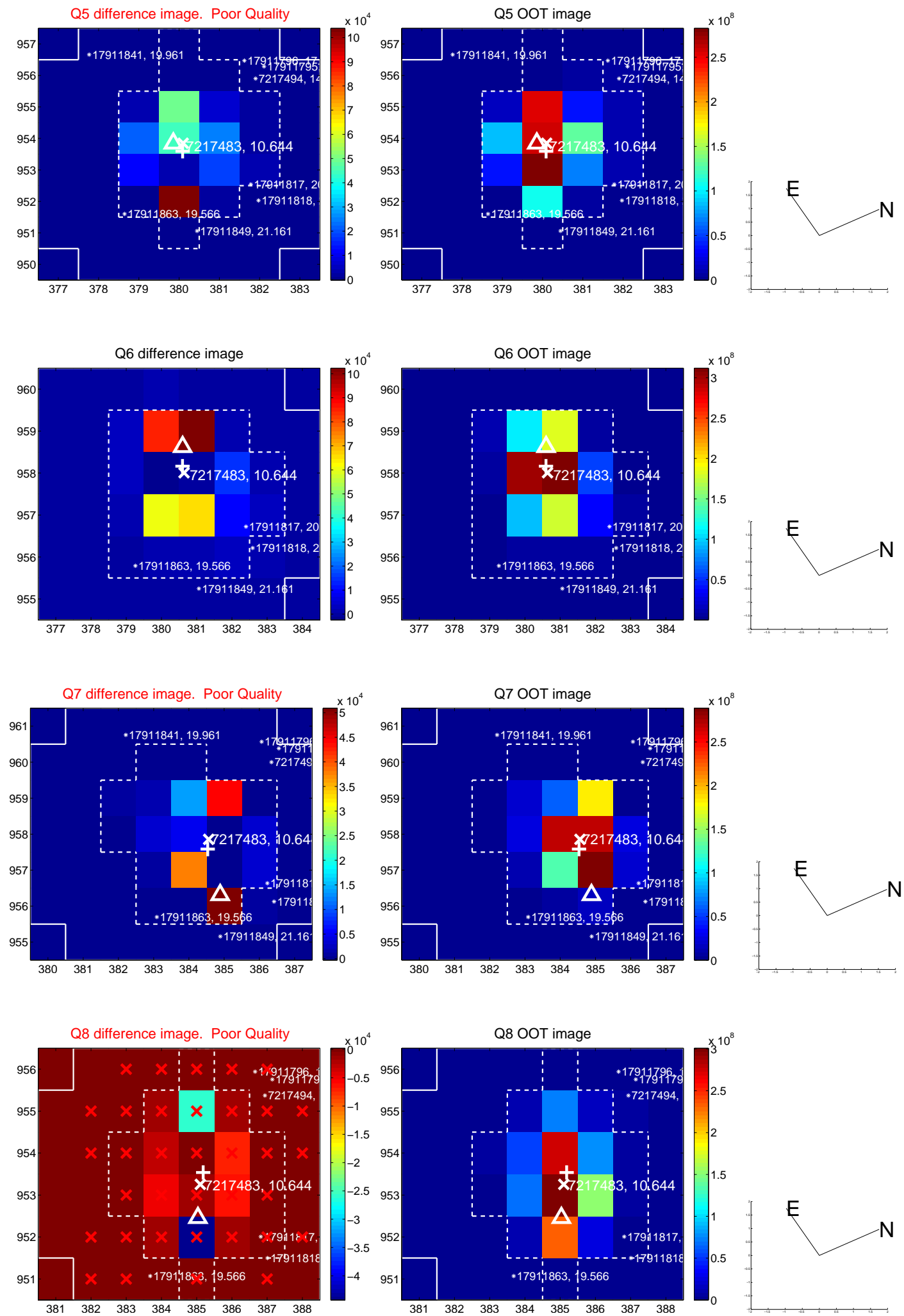


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

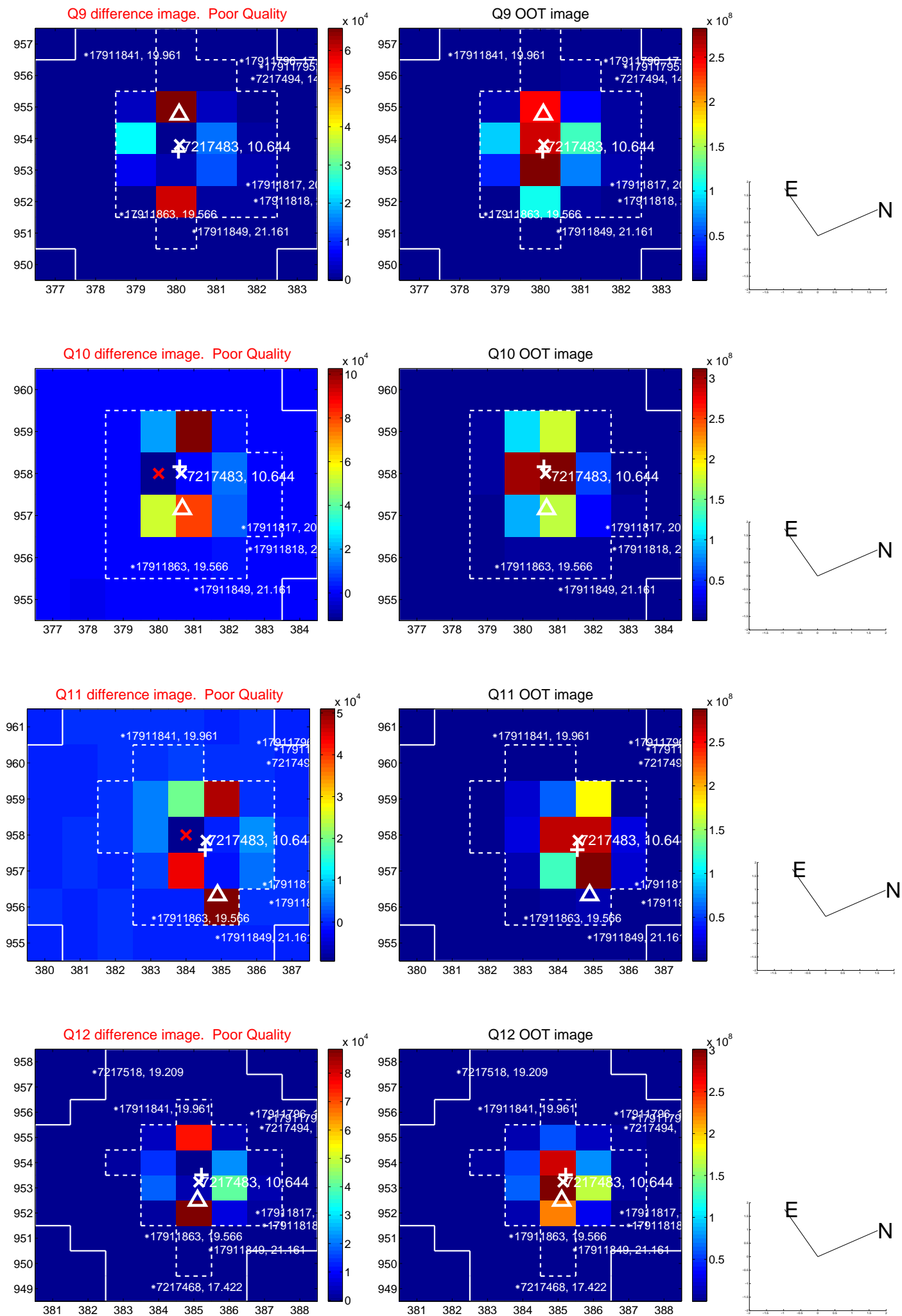


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

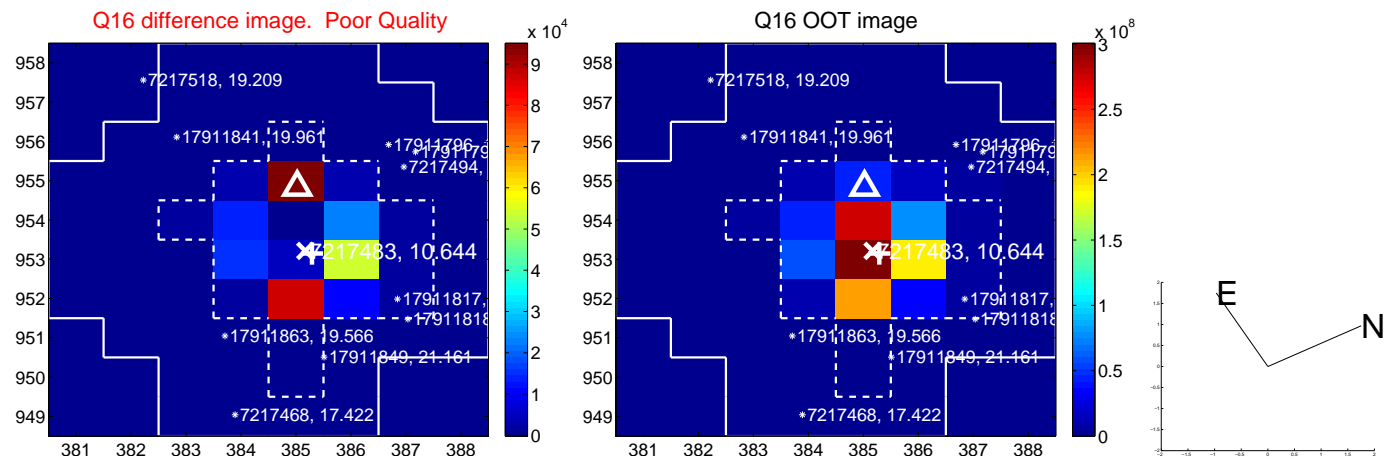
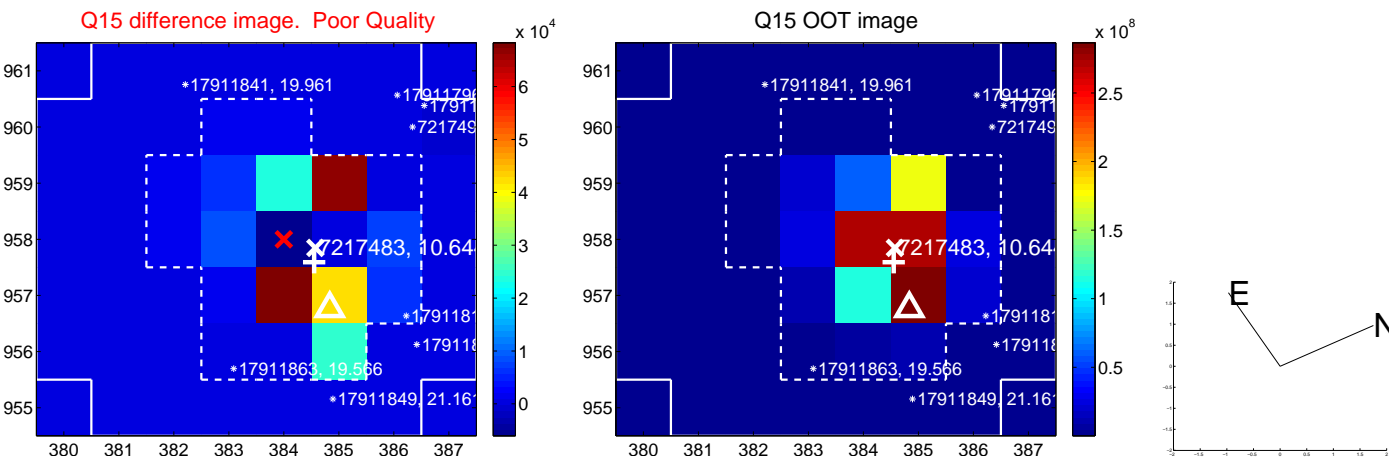
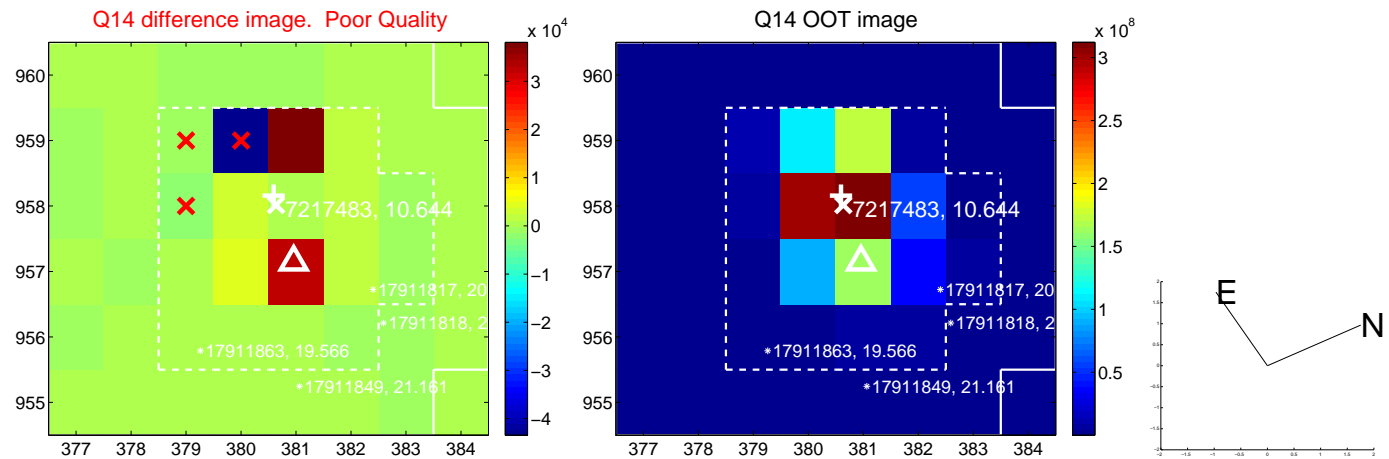
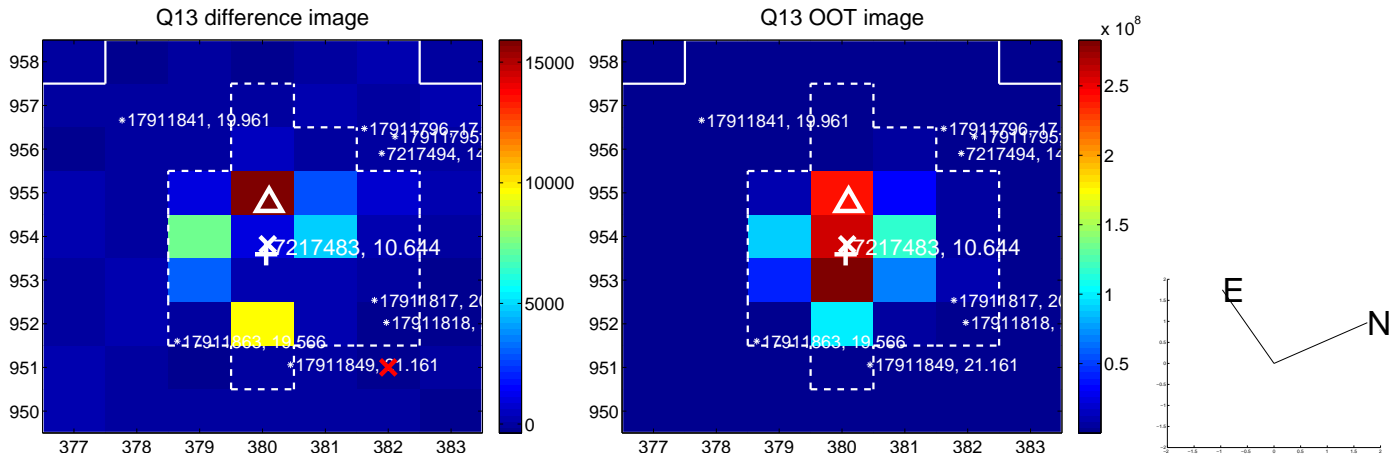




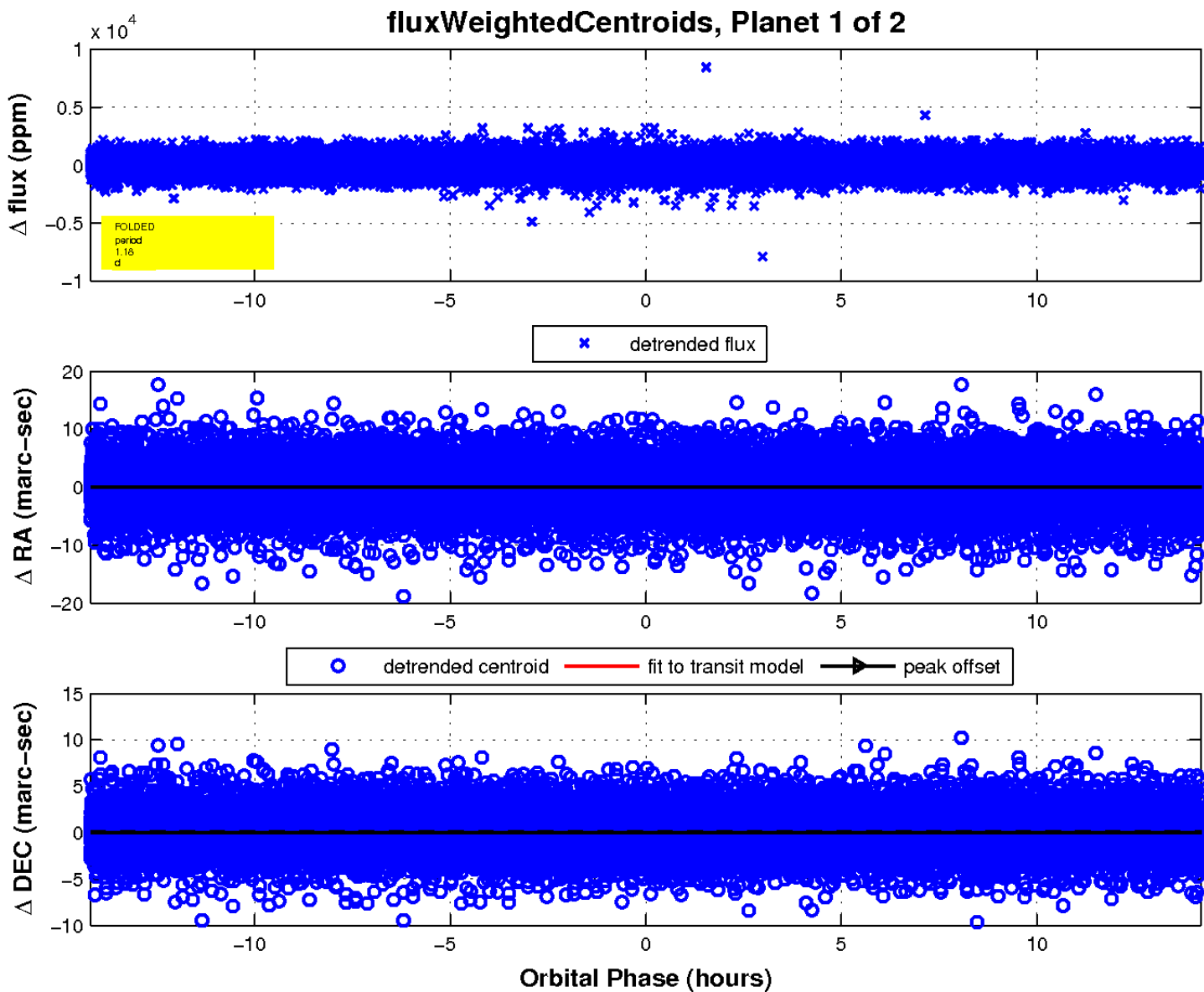
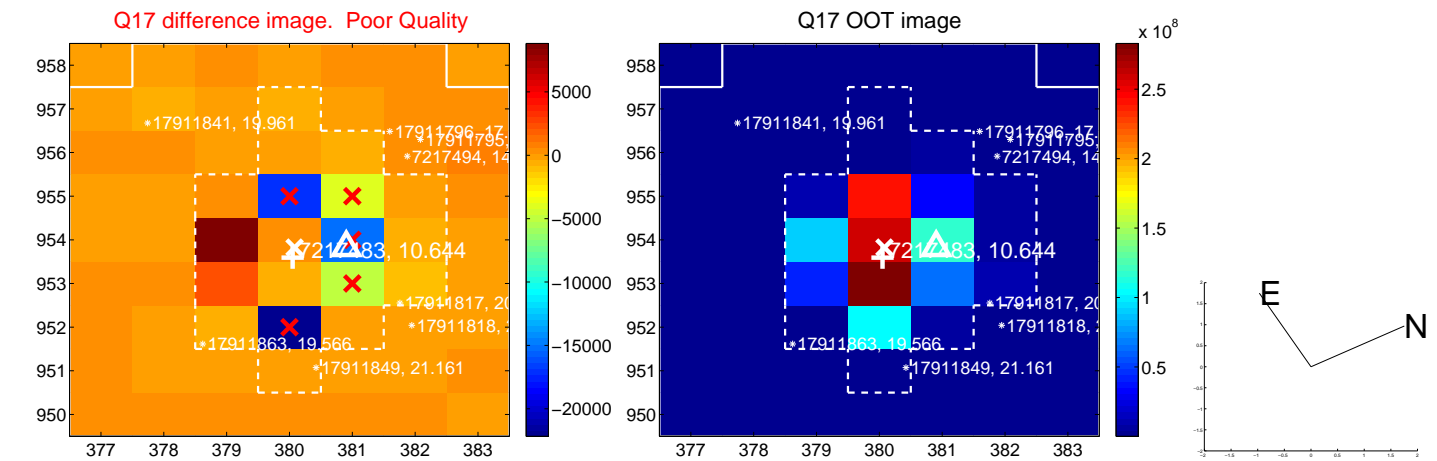
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

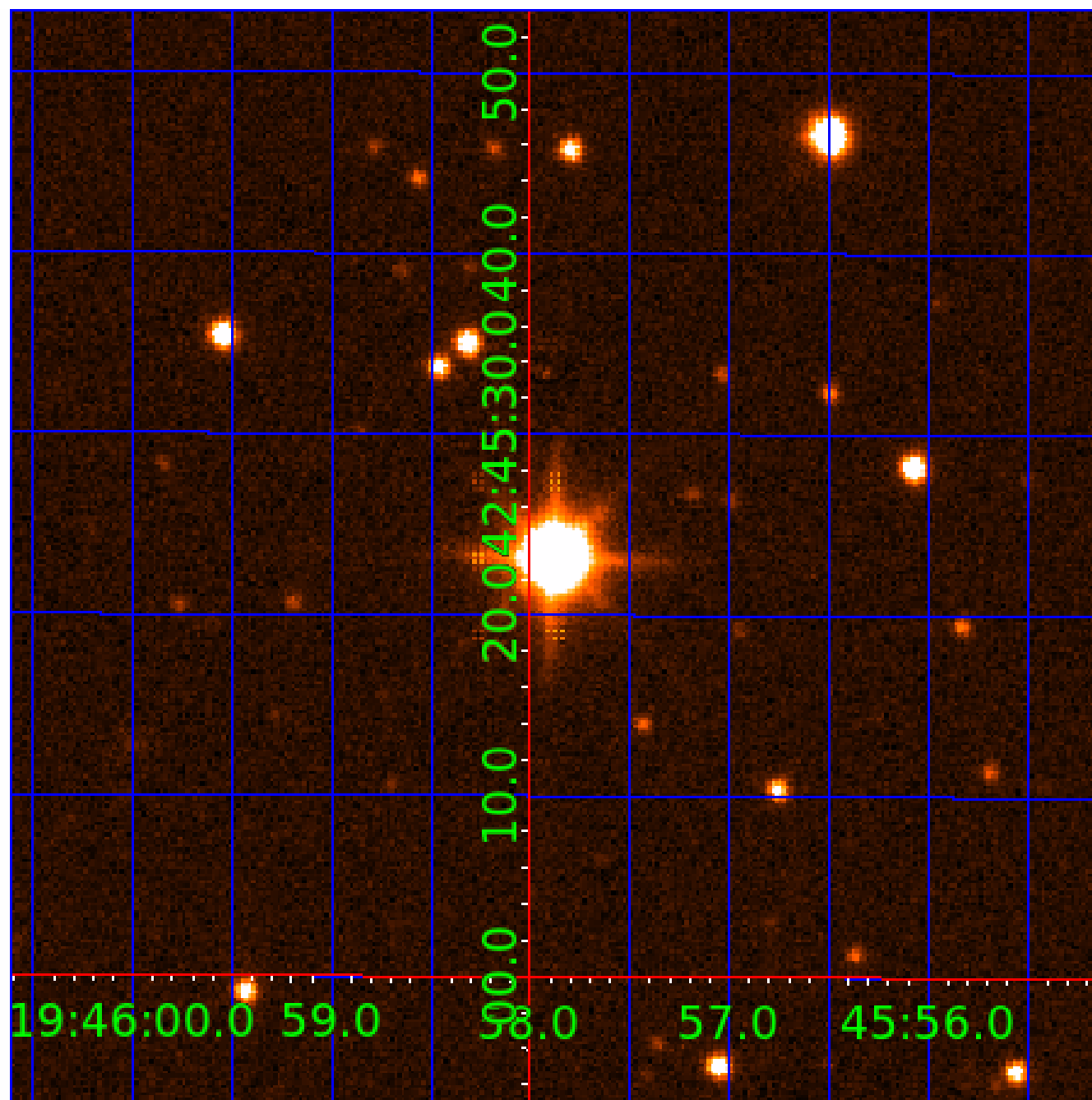


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 007217483

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007217483-01	OBS	No	1.183083	131.744838	57.4	7.072	11.9	12.6	2.38	7163	1.83	19872.20
007217483-02	OBS	No	2.242946	131.780060	117.5	1.373	10.9	6.4	2.38	7163	2.65	8469.18

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007217483-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
007217483-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST

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

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

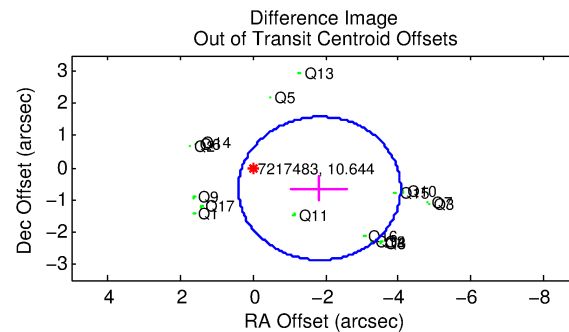
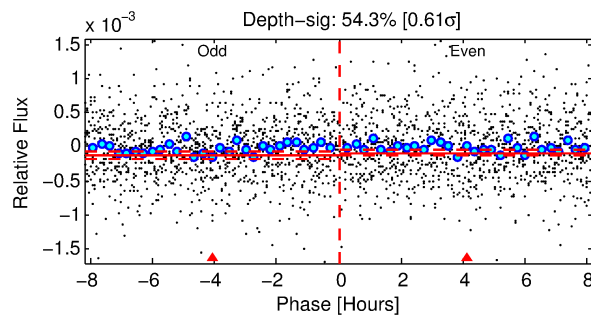
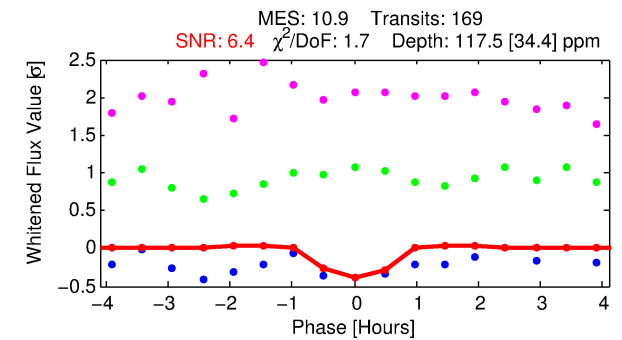
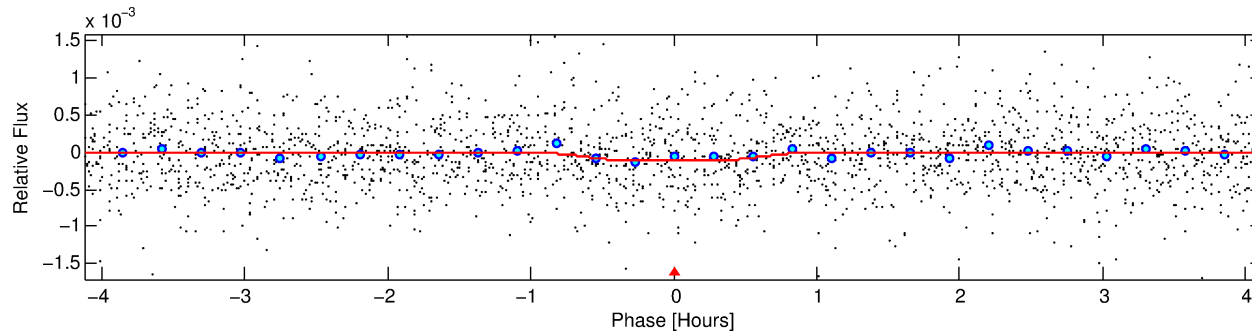
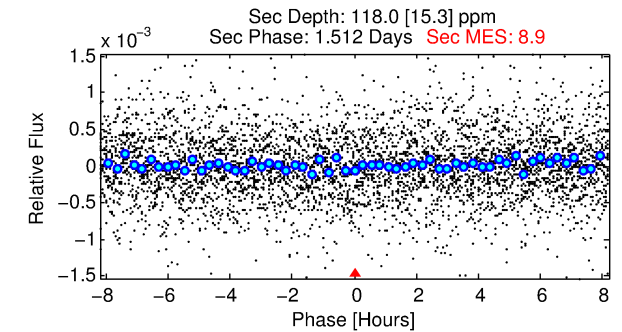
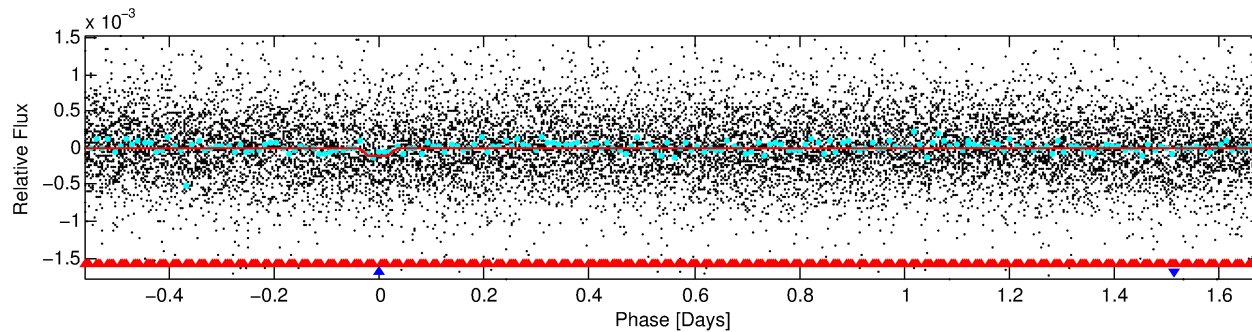
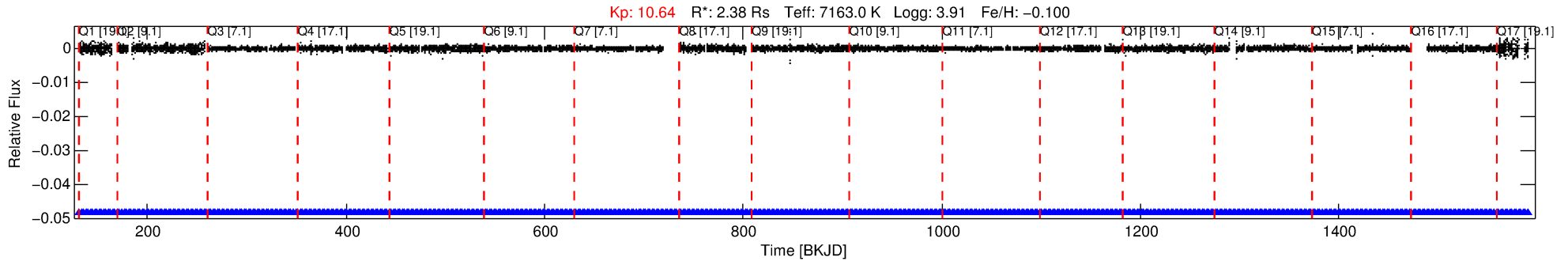
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007217483-02

No Significant Match Found

# DV One-Page Summary

KIC: 7217483 Candidate: 2 of 2 Period: 2.243 d



## DV Fit Results:

Period = 2.24295 [0.00003] d  
Epoch = 131.7801 [0.0056] BKJD  
Rp/R\* = 0.0102 [0.0207]  
a/R\* = 12.09 [142.37]  
b = 0.29 [37.50]  
Seff = 8469.18 [4749.79]  
Teq = 2446 [343] K  
Rp = 2.65 [5.48] Re  
a = 0.0398 [0.0134] AU  
Ag = 14.69 [60.48] [0.23σ]  
Teffp = 7405 [7564] K [0.65σ]

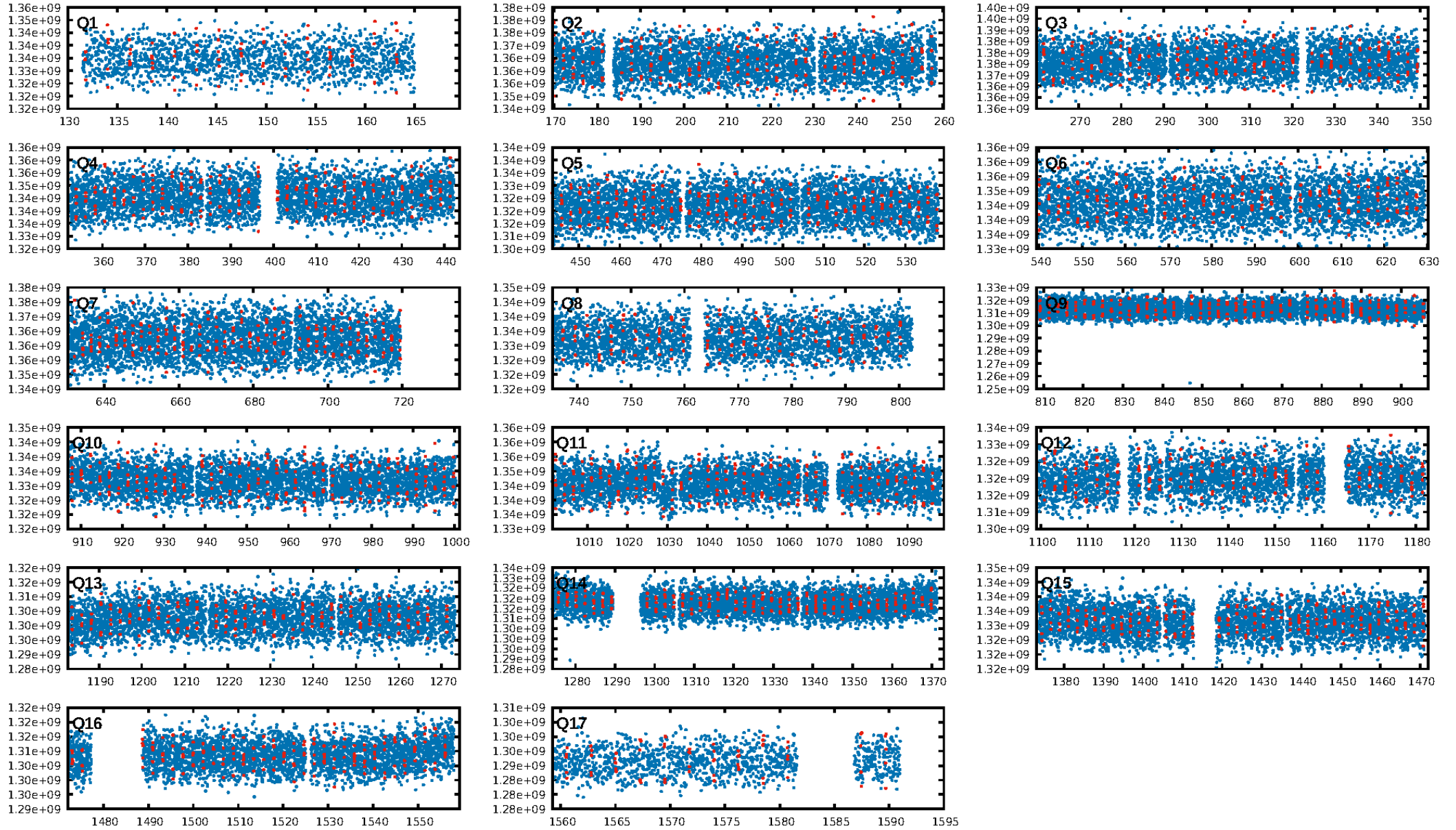
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [3.53σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 6.0%  
ModelChiSquareGof-sig: 64.9%  
Bootstrap-pfa: 7.56e-21  
RollingBand-fgt: 1.00 [161/161]  
GhostDiagnostic-chr: -0.1403  
Centroid-sig: 17.3%  
Centroid-so: 0.733 arcsec [1.49σ]  
OotOffset-rm: 1.947 arcsec [2.62σ]  
KicOffset-rm: 2.690 arcsec [3.81σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
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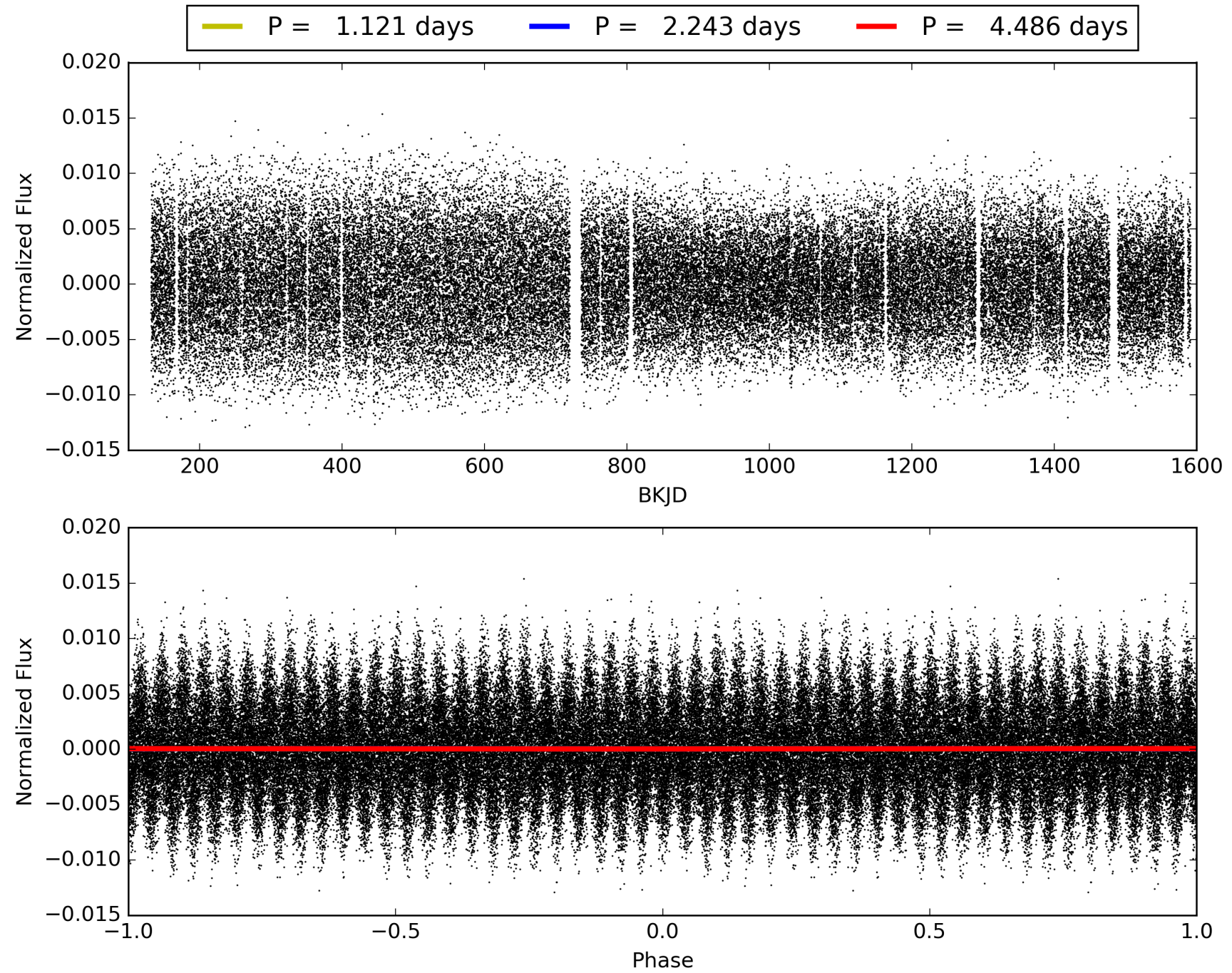
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:14:19 Z

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

# TCE 007217483-02, PDC Light Curves



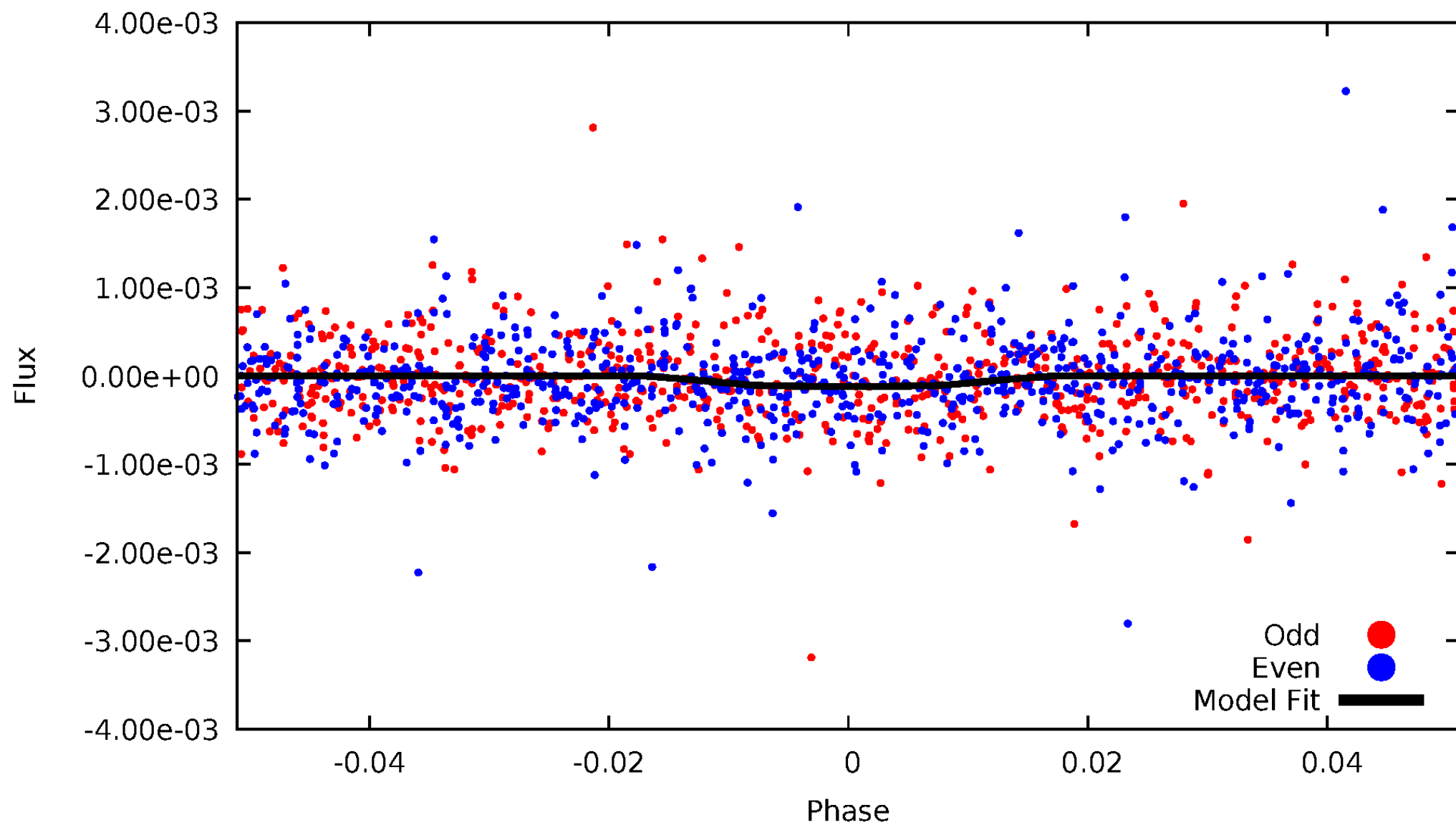
# TCE 007217483-02





DV Odd/Even

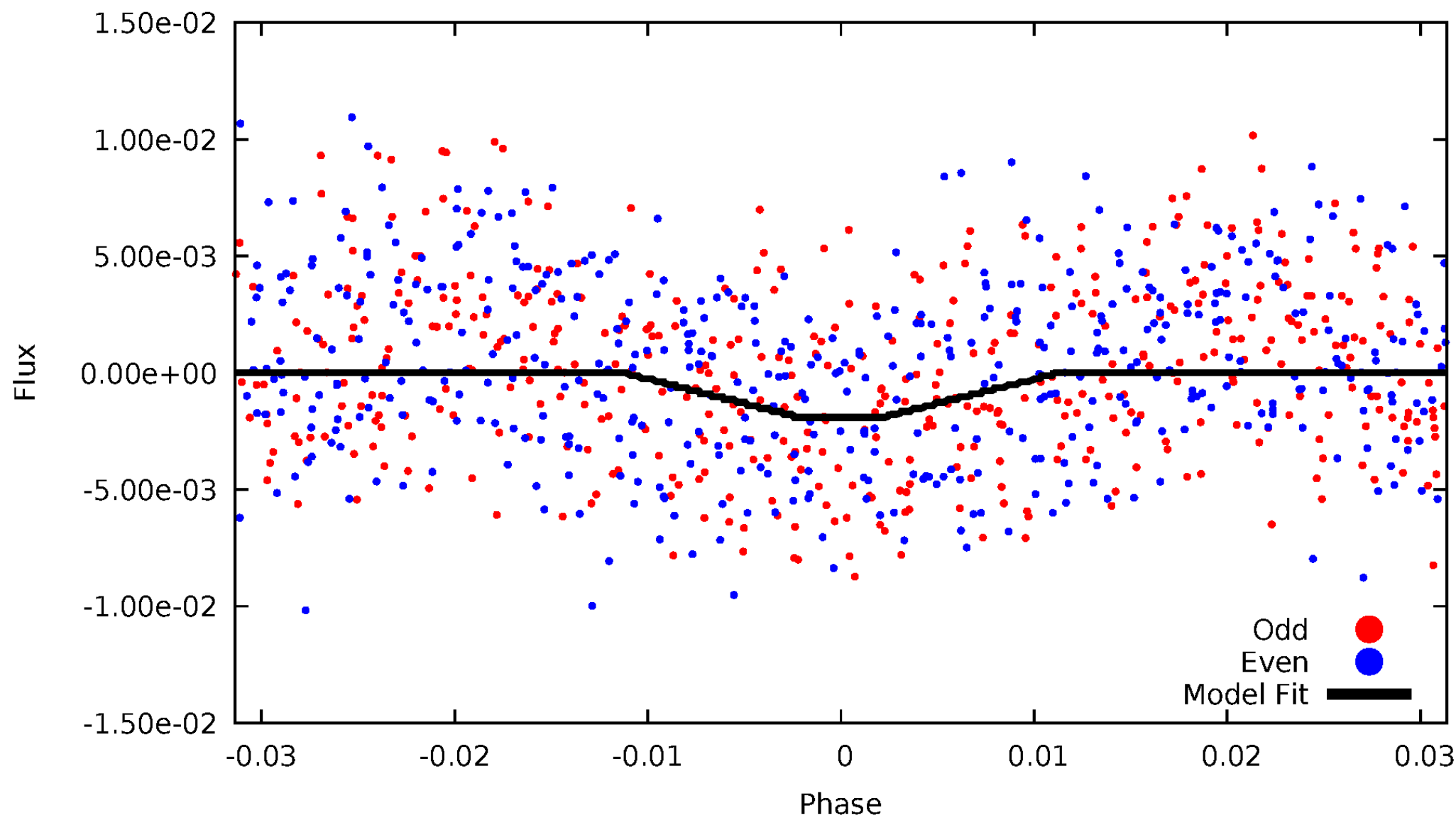
TCE 007217483-02





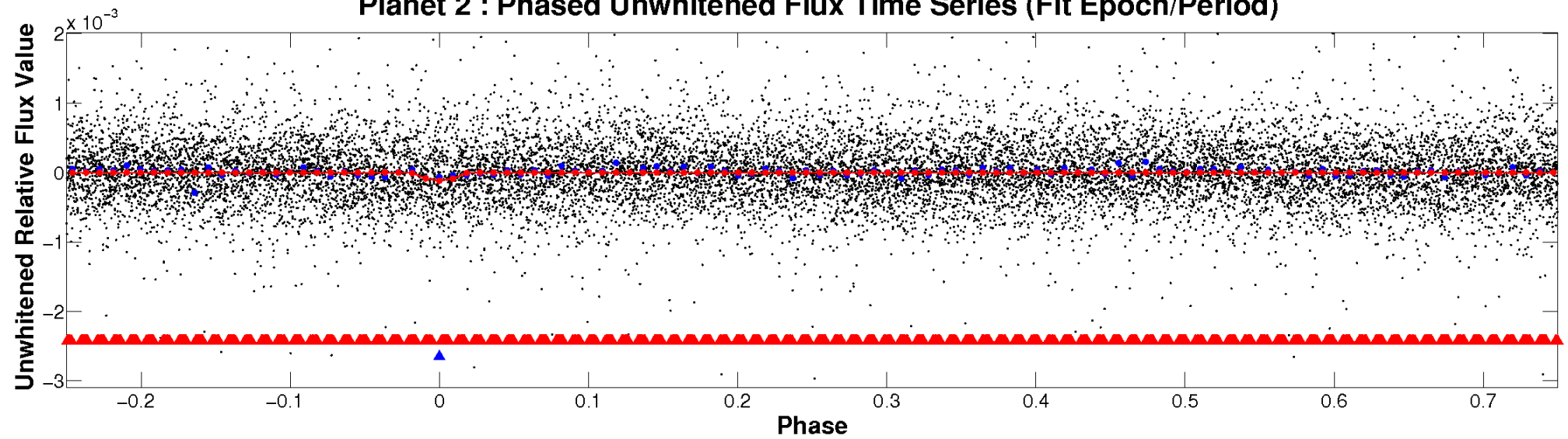
# ALT Odd/Even

TCE 007217483-02

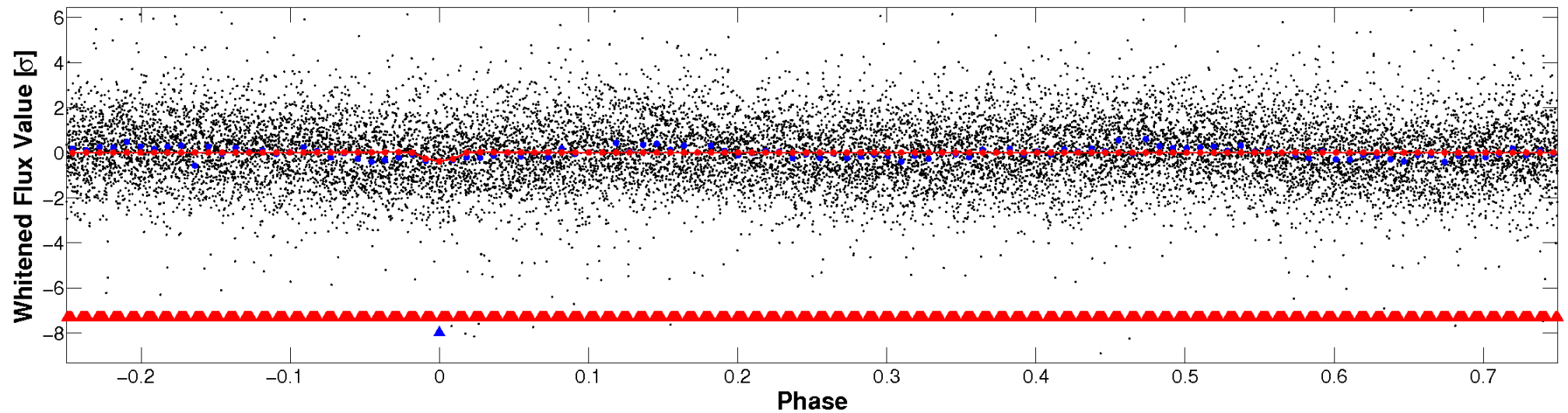


# Non-Whitened Vs. Whitened Light Curve

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

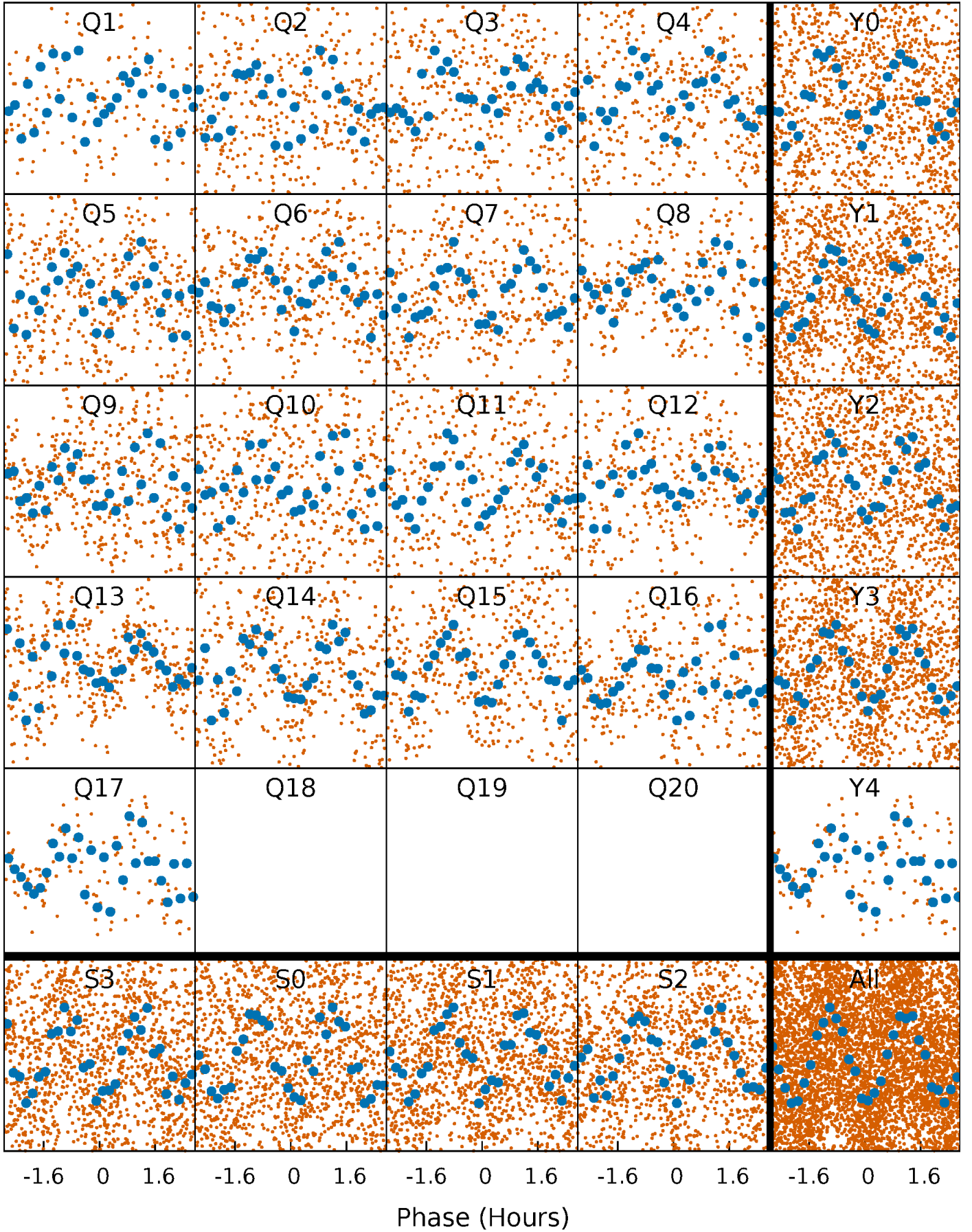


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



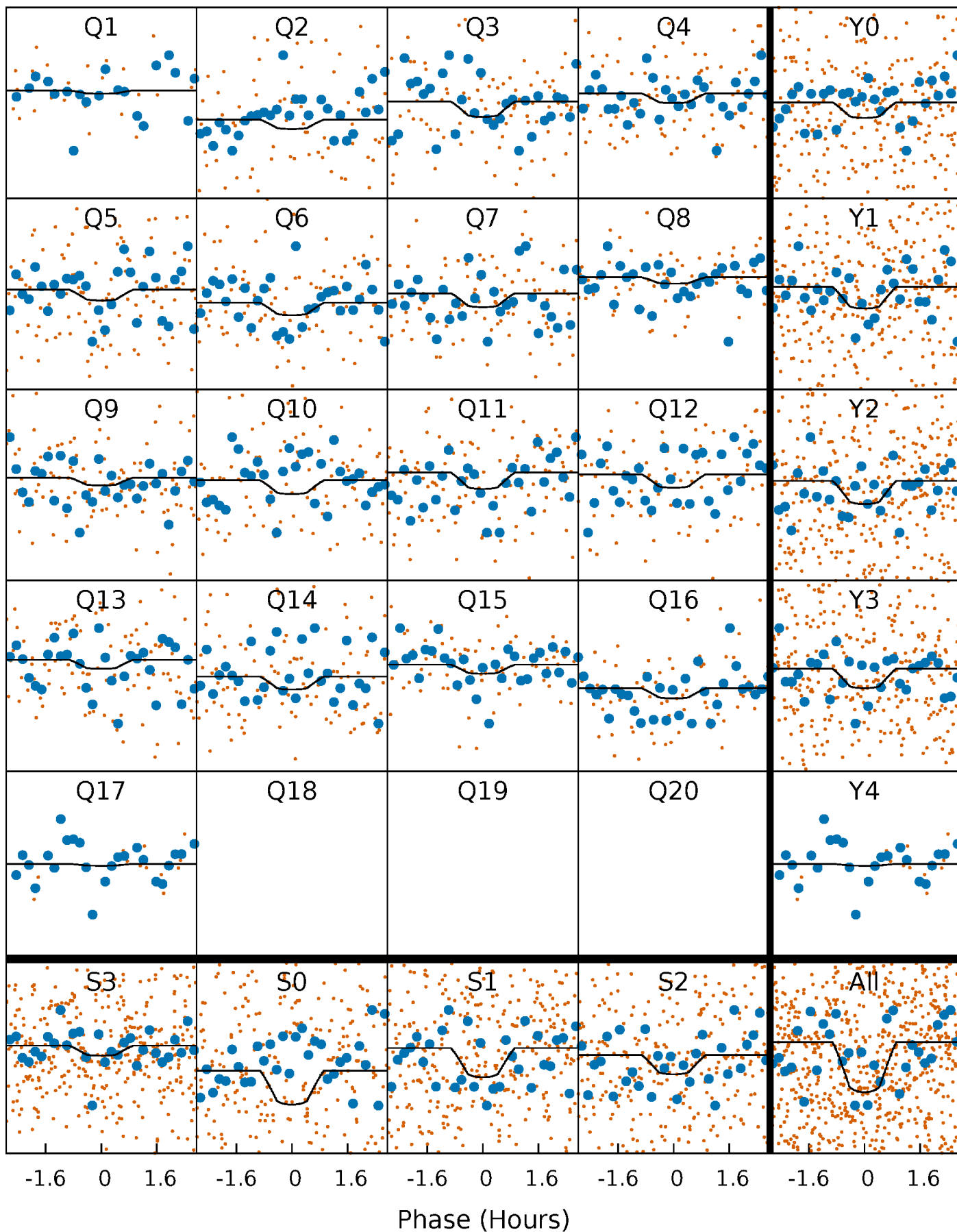
# PDC Quarter-Phased Transit Curves

TCE 007217483-02   P= 2.242946 Days    $T_0=131.780060$  (BKJD)



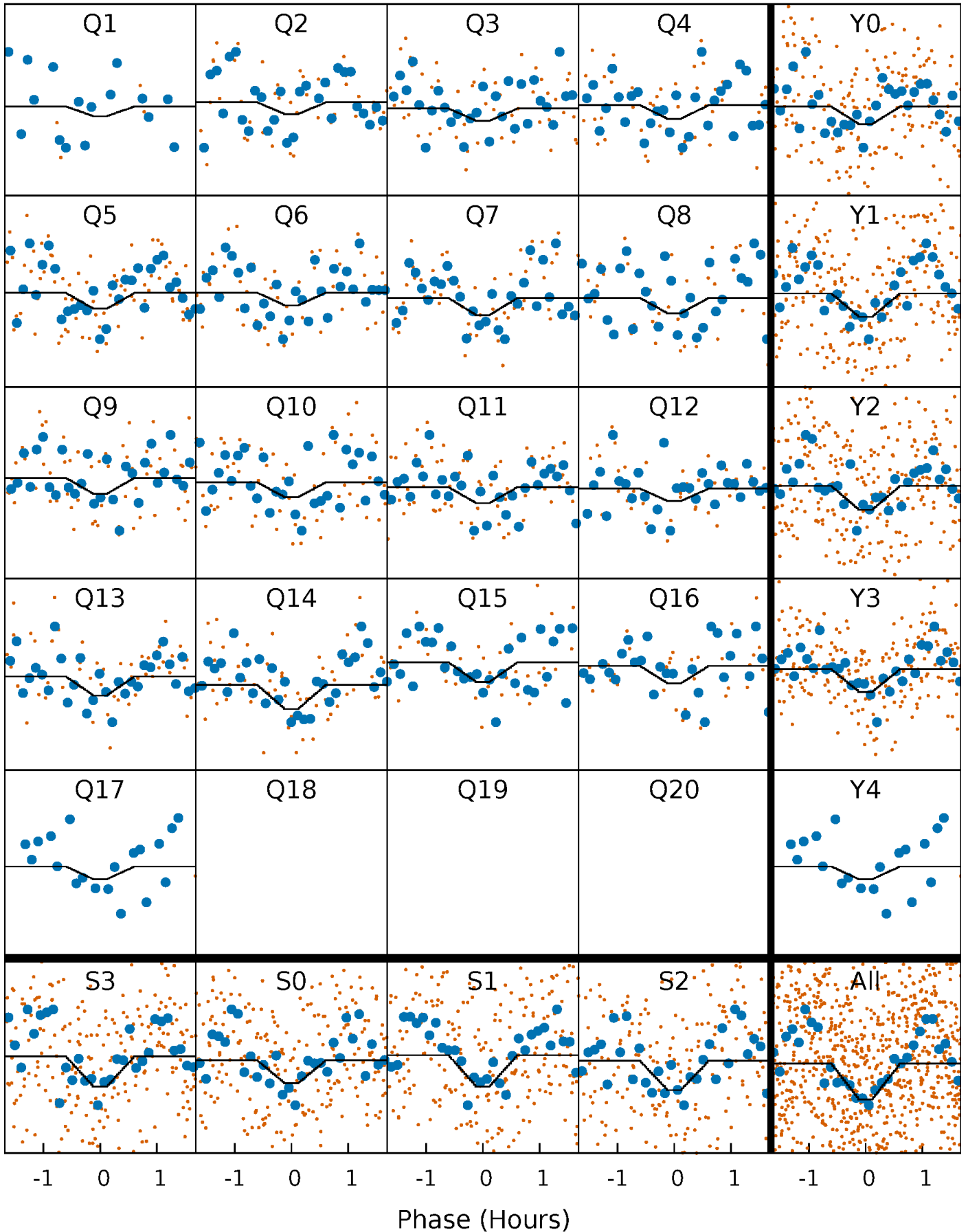
# DV Quarter-Phased Transit Curves

TCE 007217483-02   P= 2.242946 Days    $T_0=131.780060$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 007217483-02     $P = 2.242922$  Days     $T_0 = 131.792957$  (BKJD)

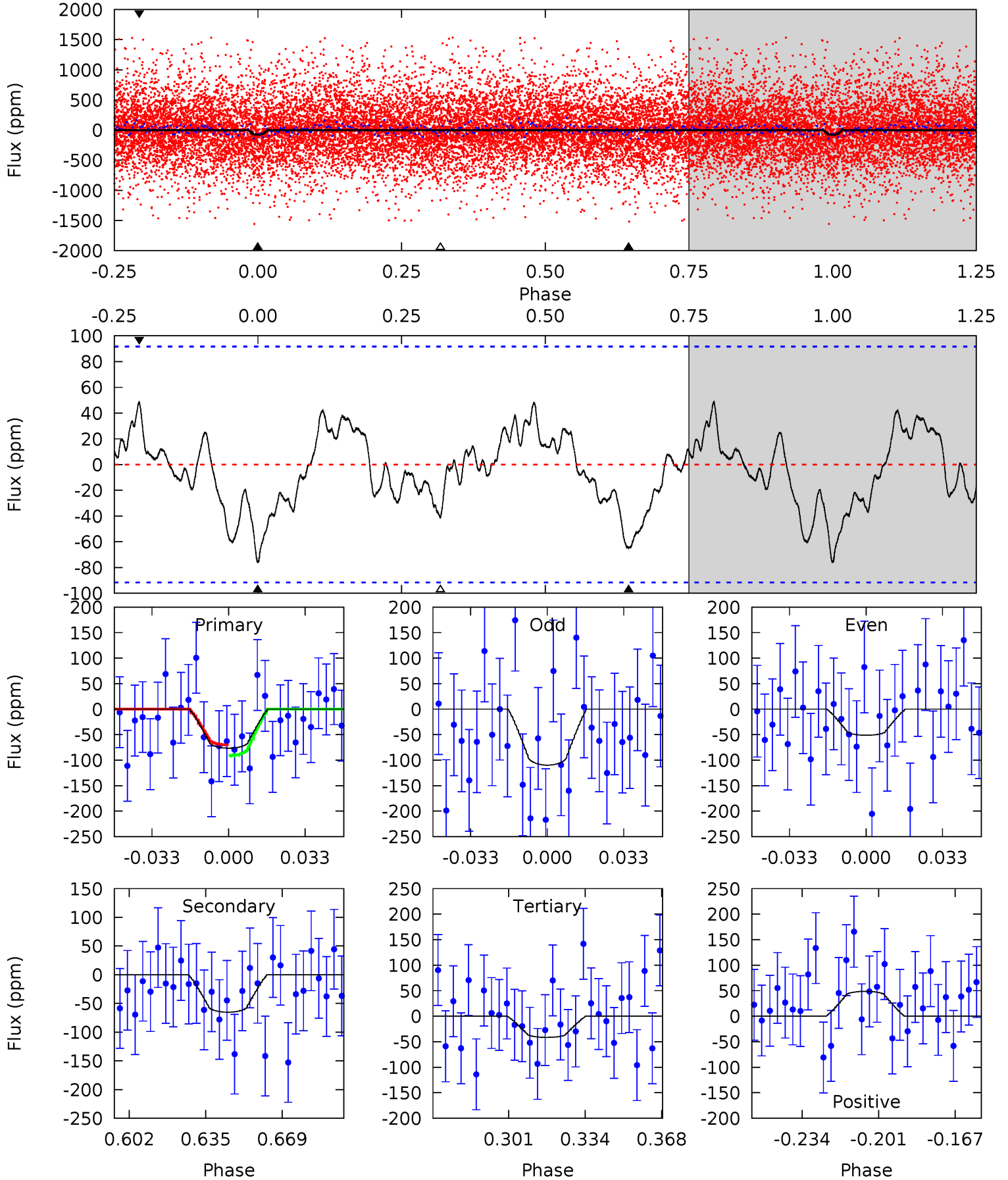




# DV Model-Shift Uniqueness Test

007217483-02, P = 2.242946 Days, E = 131.780060 Days

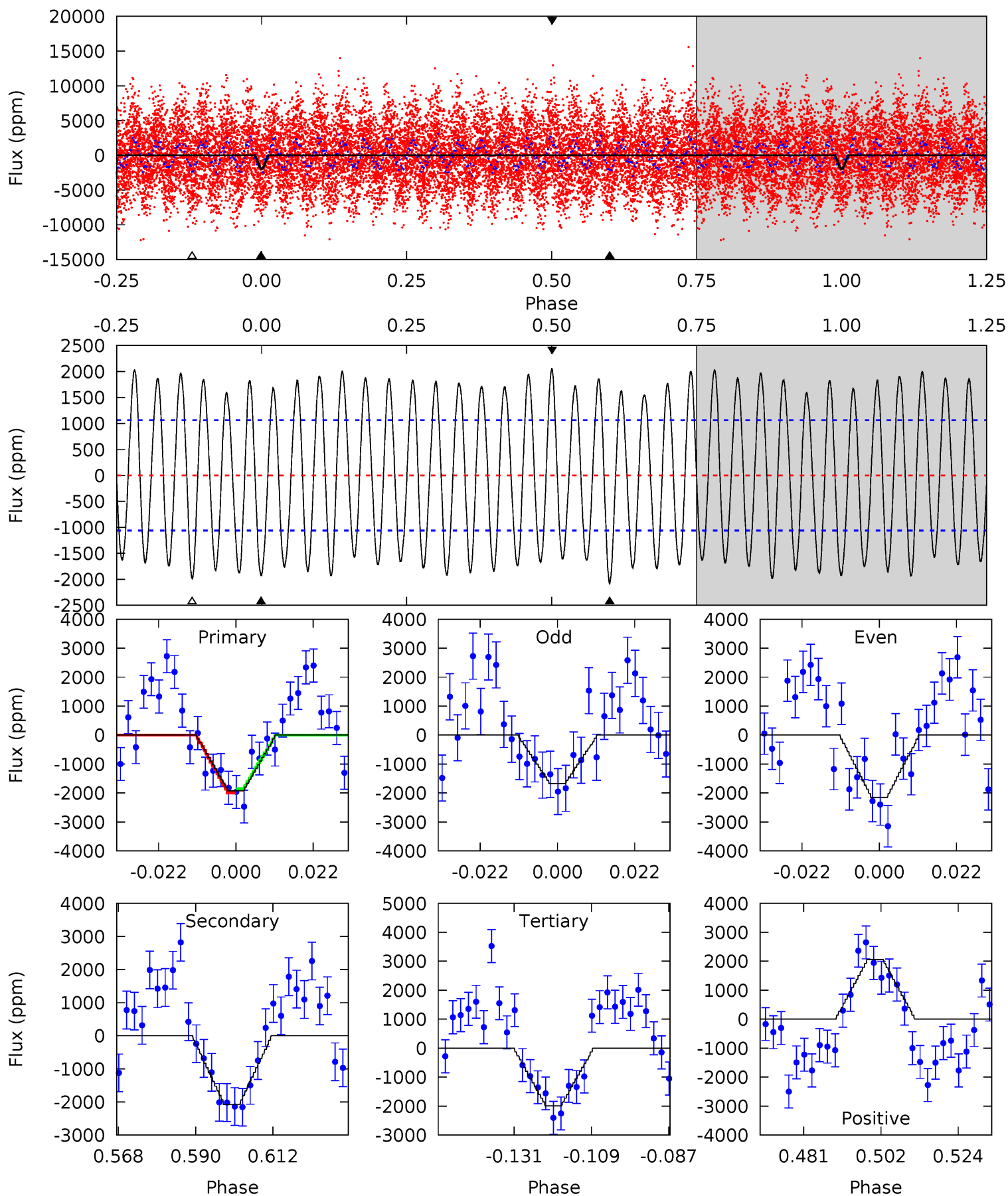
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.00	3.41	2.17	2.55	4.79	2.13	1.17	1.83	1.45	1.24	0.86	1.54	1.04	0.39	0.55



# Alt Model-Shift Uniqueness Test

007217483-02, P = 2.242922 Days, E = 131.792957 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
8.85	9.54	9.16	9.46	4.87	2.29	5.80	-0.30	-0.60	0.39	0.09	1.11	0.87	0.50	0.34



### Stellar Parameters For KIC 007217483

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7163^{+225}_{-325}$	$3.906^{+0.308}_{-0.132}$	$-0.100^{+0.250}_{-0.350}$	$2.385^{+0.574}_{-0.862}$	$1.669^{+0.183}_{-0.366}$	$0.173^{+0.388}_{-0.068}$
	+3%/-5%	+8%/-3%	+250%/-350%	+24%/-36%	+11%/-22%	+224%/-40%
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 007217483-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-65 \pm 19$	$4.58^{+4.47}_{-3.18}$	$3342^{+258}_{-296}$	$4642^{+3867}_{-1308}$	$2.551^{+24.358}_{-1.914}$
Alt.	$-2077 \pm 218$	$10.50^{+5.94}_{-5.04}$	$3335^{+242}_{-299}$	$7292^{+3502}_{-1449}$	$16^{+41}_{-10}$

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

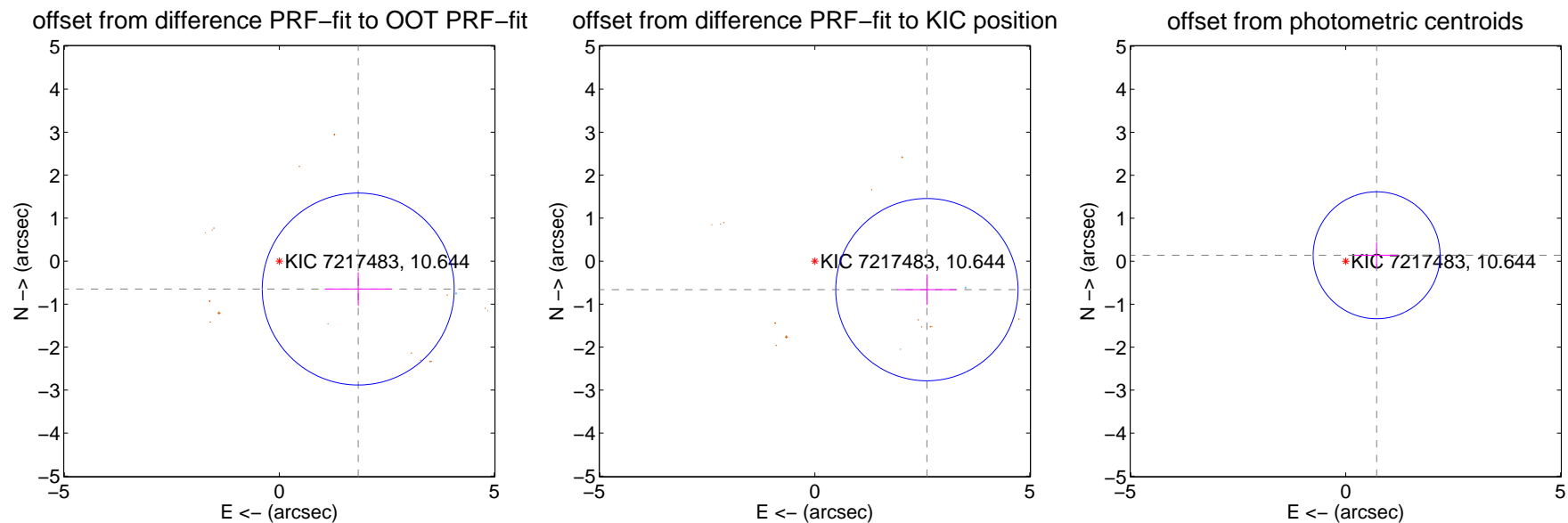
## DV Centroid Data

Supplemental centroid analysis for 007217483-02. **Kepler magnitude: 10.64.** Transit SNR 6.44

**There are 2 quarters with good PRF difference image offsets**

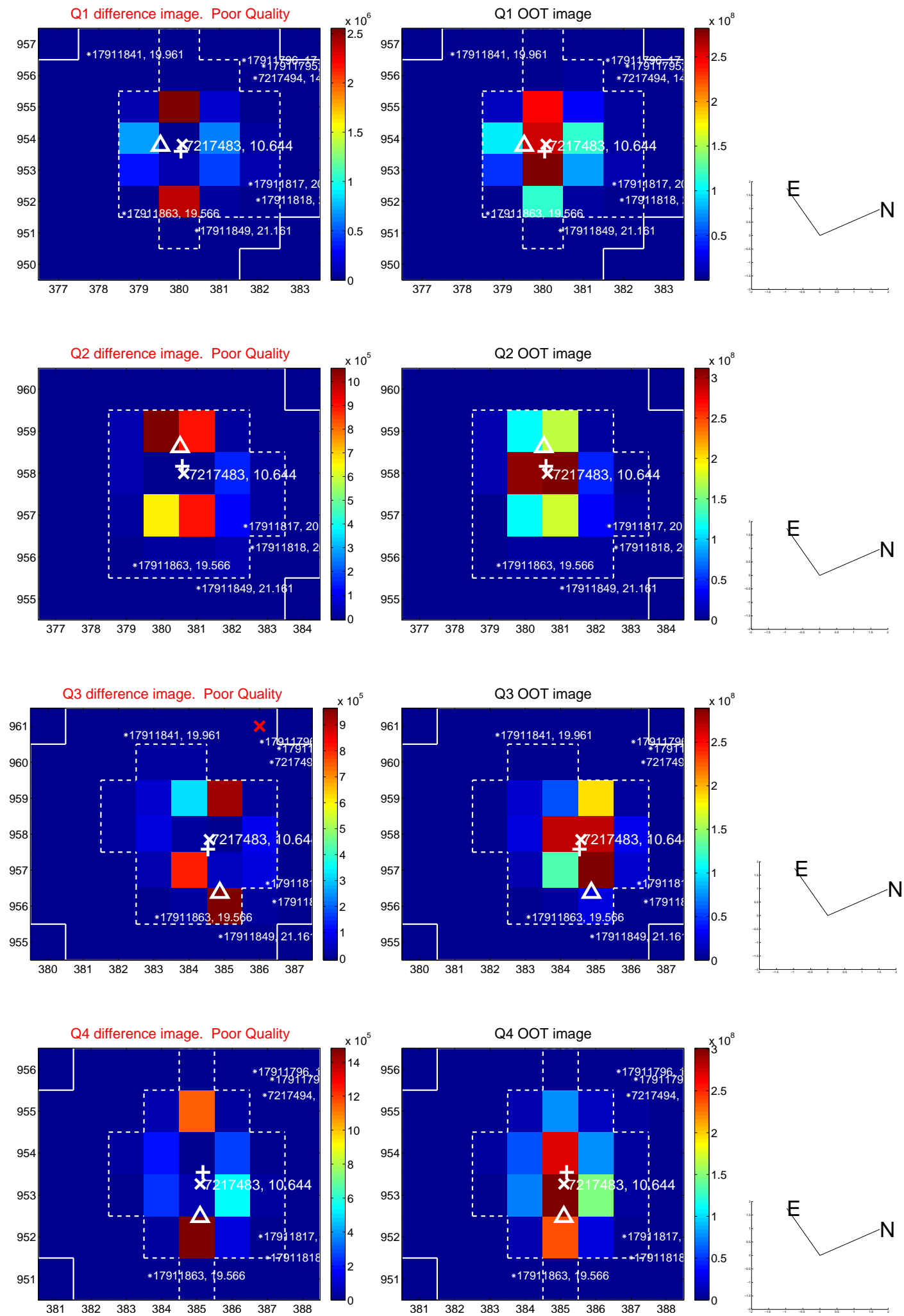
The direct PRF centroid is offset from the target star catalog position by about 0.93 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.947 \pm 0.744$	2.62	$-1.836 \pm 0.777$	$-0.649 \pm 0.386$
PRF-fit source offset from KIC position	<b><math>2.690 \pm 0.707</math></b>	<b>3.81</b>	$-2.607 \pm 0.687$	$-0.663 \pm 0.355$
photometric centroid source offset	$0.73 \pm 0.49$	1.49	$-0.72 \pm 0.50$	$0.14 \pm 0.30$



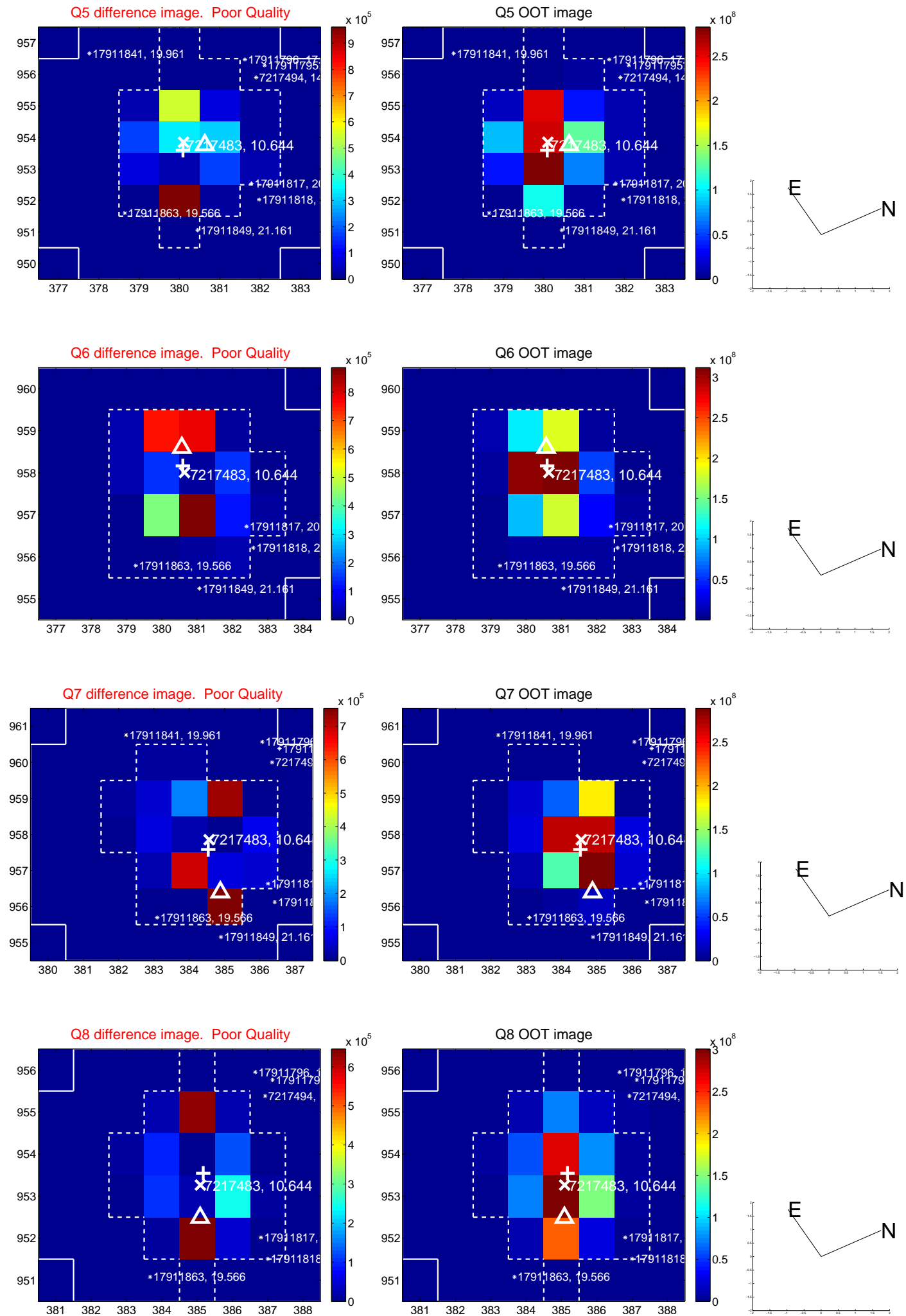
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

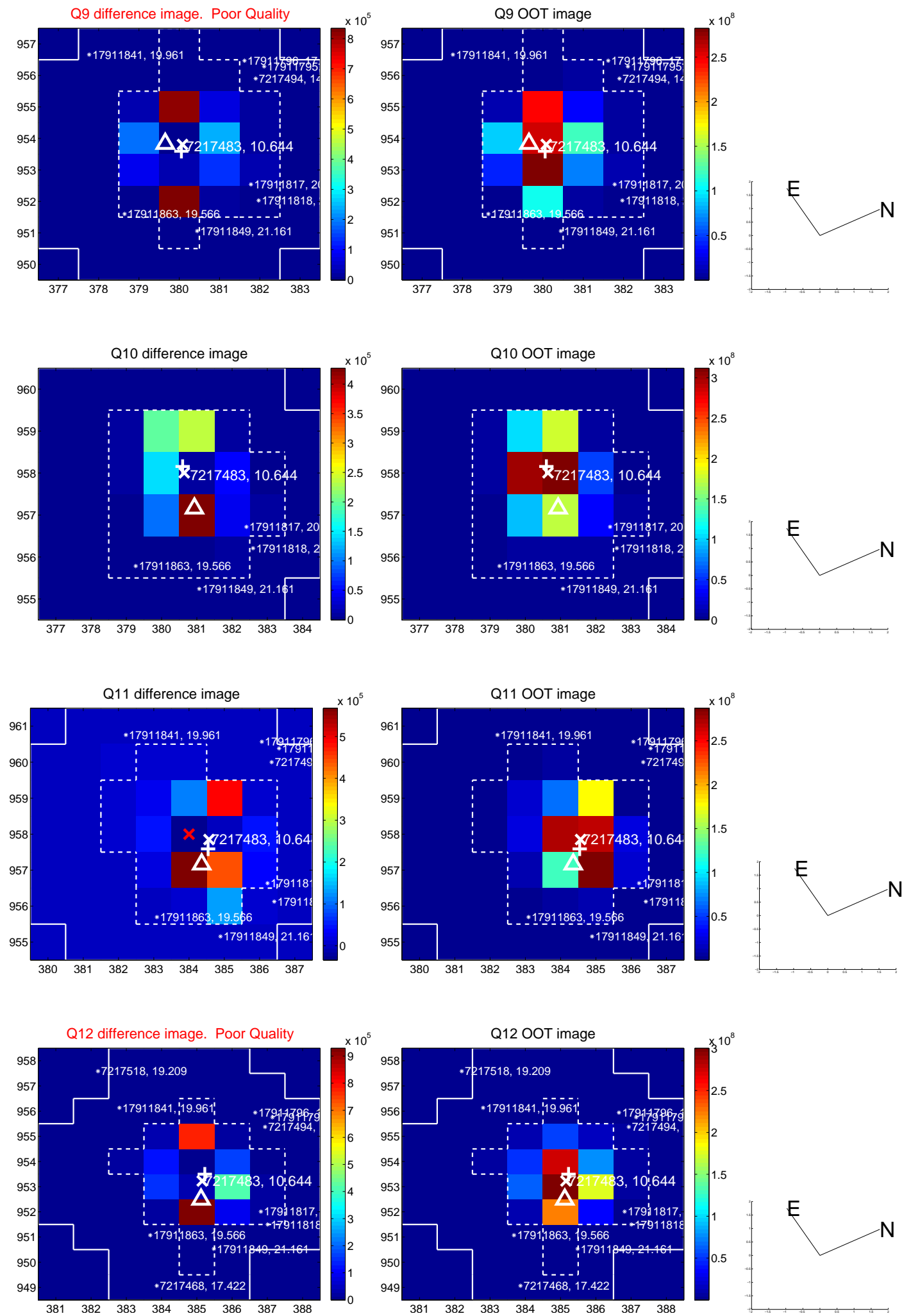




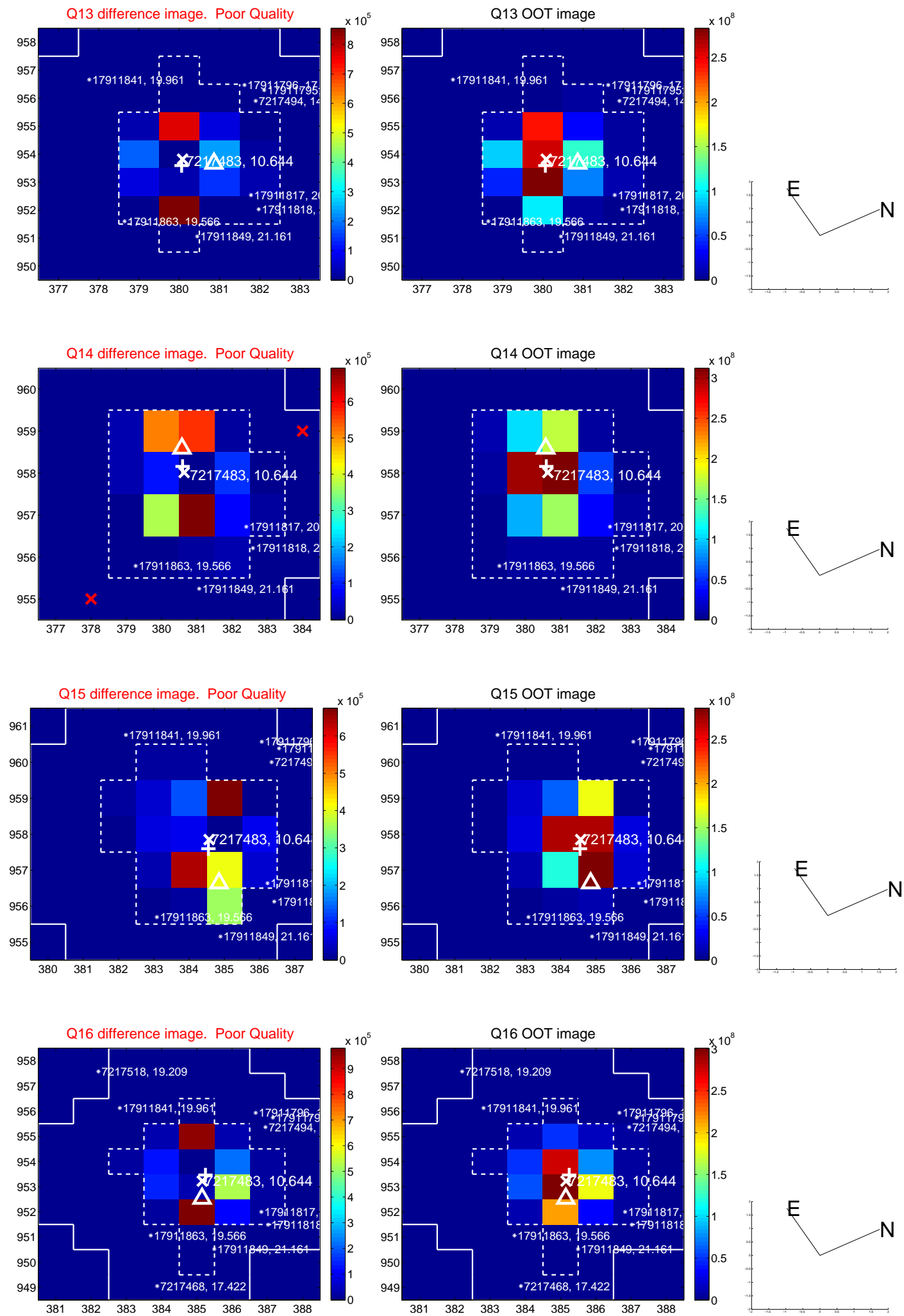
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



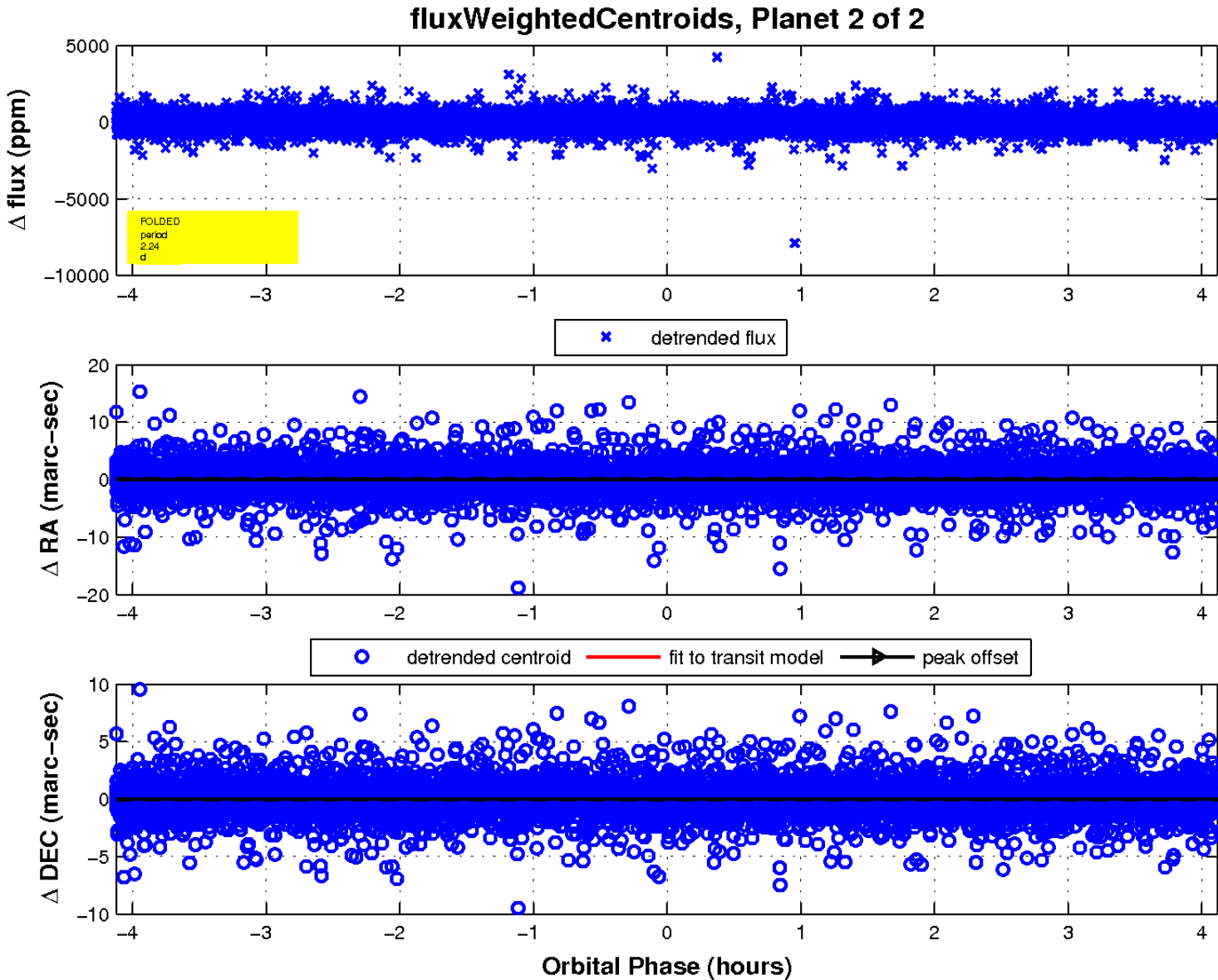
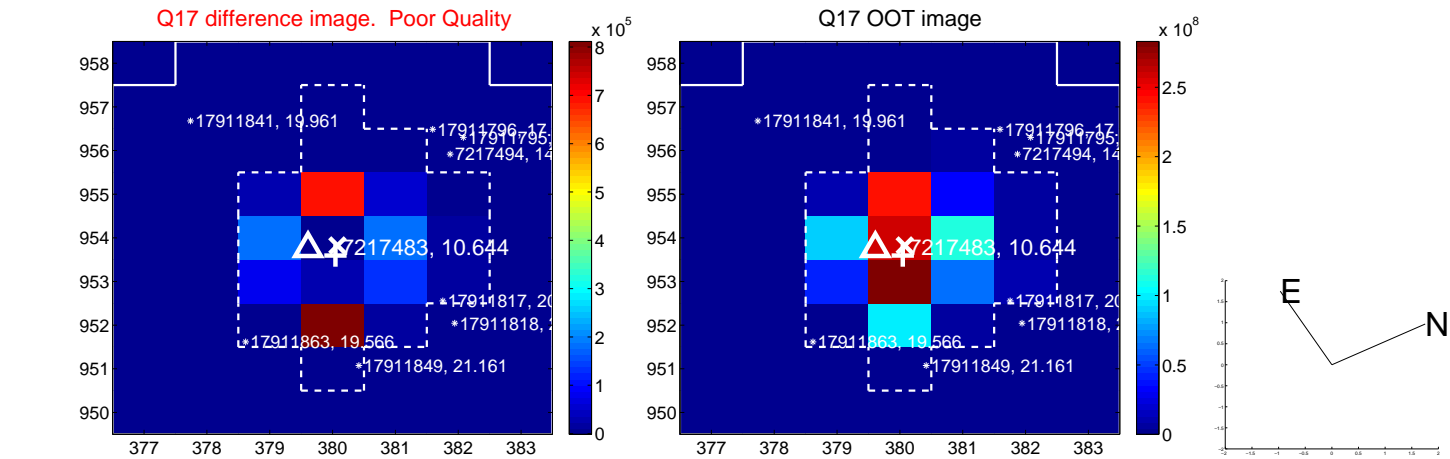
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

