

KIC 003941283

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})
003941283-01	OBS	No	0.626173	132.088202	26.0	1.519	11.7	12.3	2.43	8014	1.45	69893.53
003941283-02	OBS	No	0.626155	131.791357	26.5	1.060	9.7	10.3	2.43	8014	1.28	69896.12

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003941283-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003941283-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

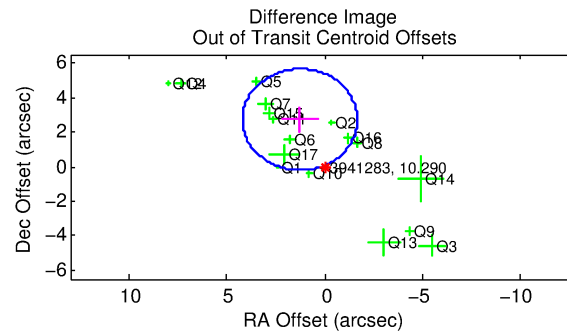
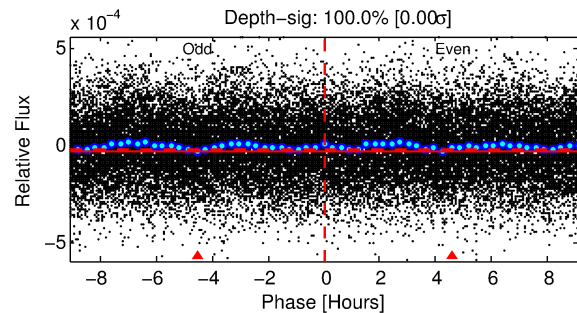
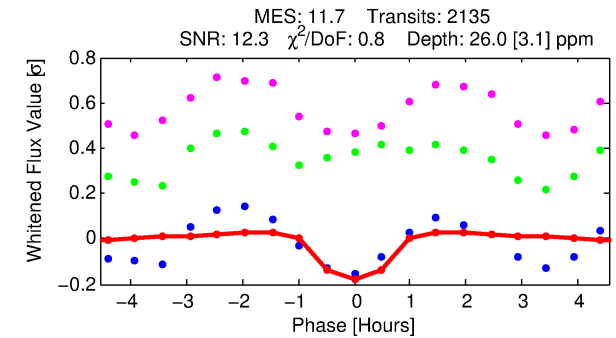
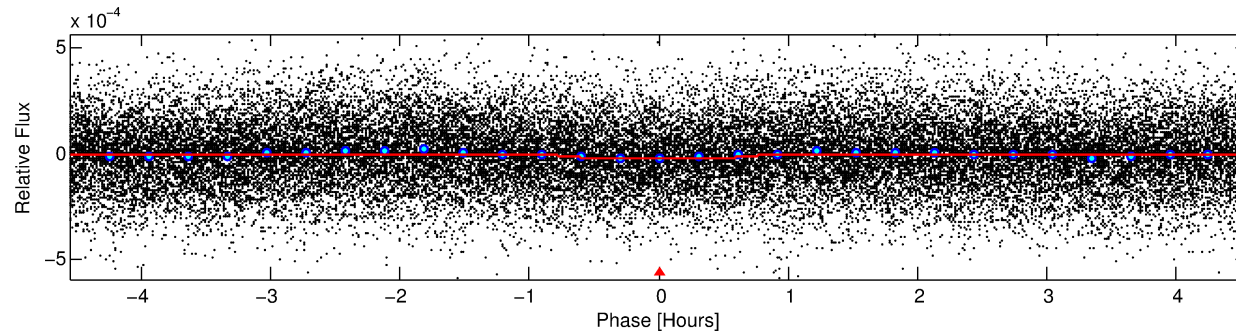
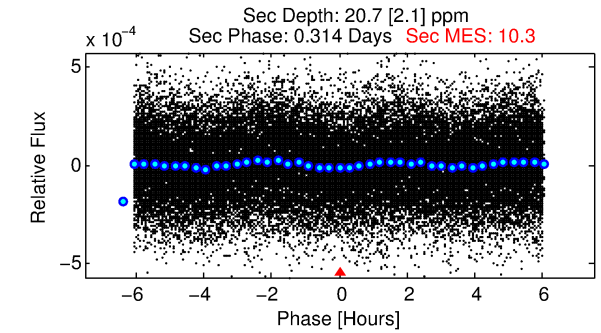
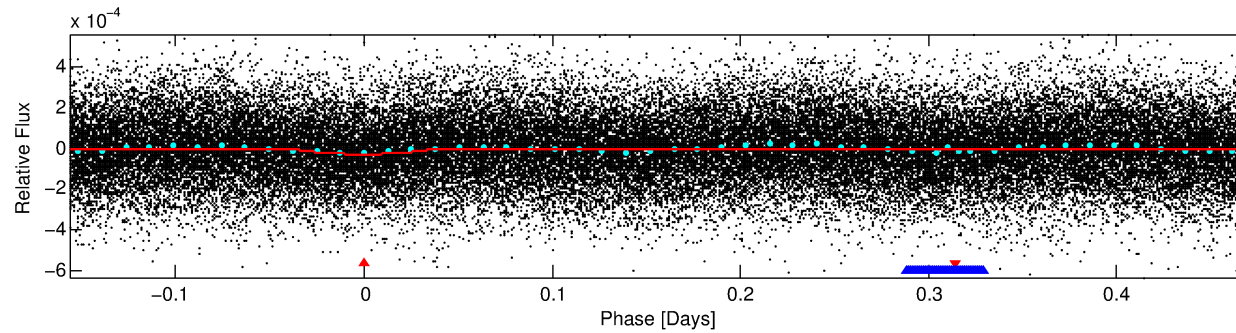
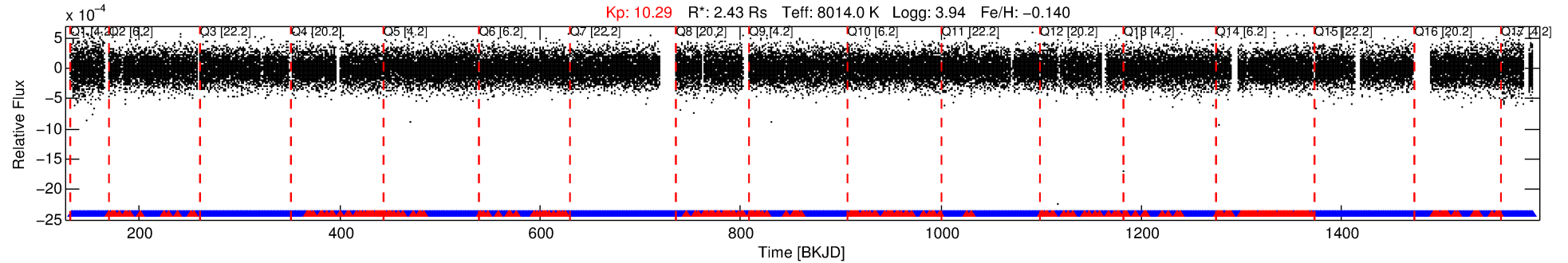
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003941283-01

No Significant Match Found

DV One-Page Summary

KIC: 3941283 Candidate: 1 of 2 Period: 0.626 d



DV Fit Results:

Period = 0.62617 [0.00001] d
Epoch = 132.0882 [0.0018] BKJD
 $R_p/R^* = 0.0055$ [0.0011]
 $a/R^* = 1.68$ [1.32]
 $b = 0.90$ [0.25]
 $S_{\text{eff}} = 69893.53$ [33696.49]
 $T_{\text{eq}} = 4146$ [500] K
 $R_p = 1.45$ [0.56] R_e
 $a = 0.0177$ [0.0052] AU
 $A_g = 1.69$ [1.05] [0.66σ]
 $T_{\text{eff}} = 7314$ [829] K [3.27σ]

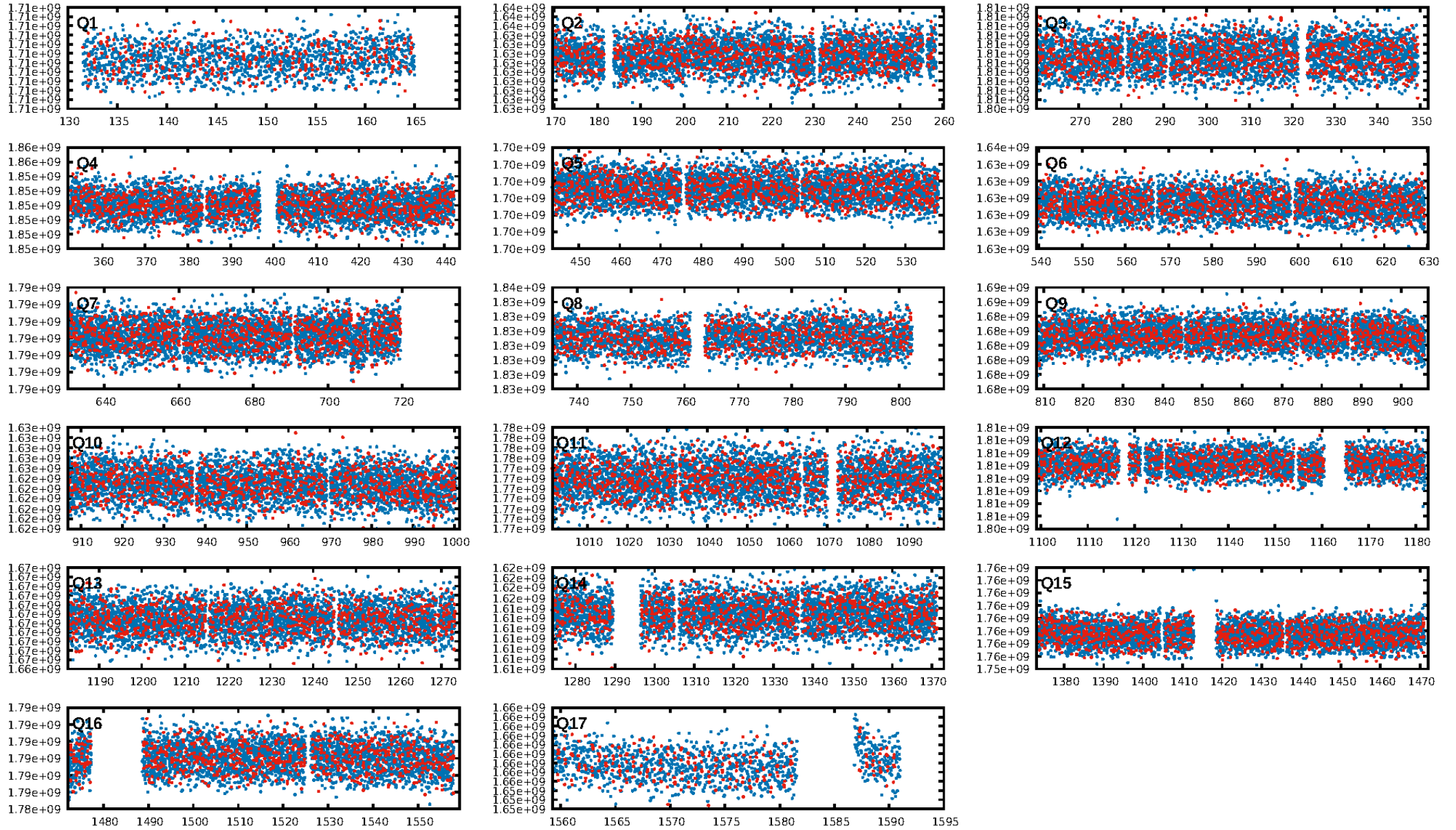
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.38e-28
RollingBand-fgt: 0.85 [1741/2041]
GhostDiagnostic-chr: 16.76
Centroid-sig: N/A
Centroid-so: 1.227 arcsec [3.08σ]
OotOffset-rm: 3.004 arcsec [3.07σ]
KicOffset-rm: 3.159 arcsec [2.90σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.24 [4/17]
DiffImageOverlap-fno: 1.00 [17/17]

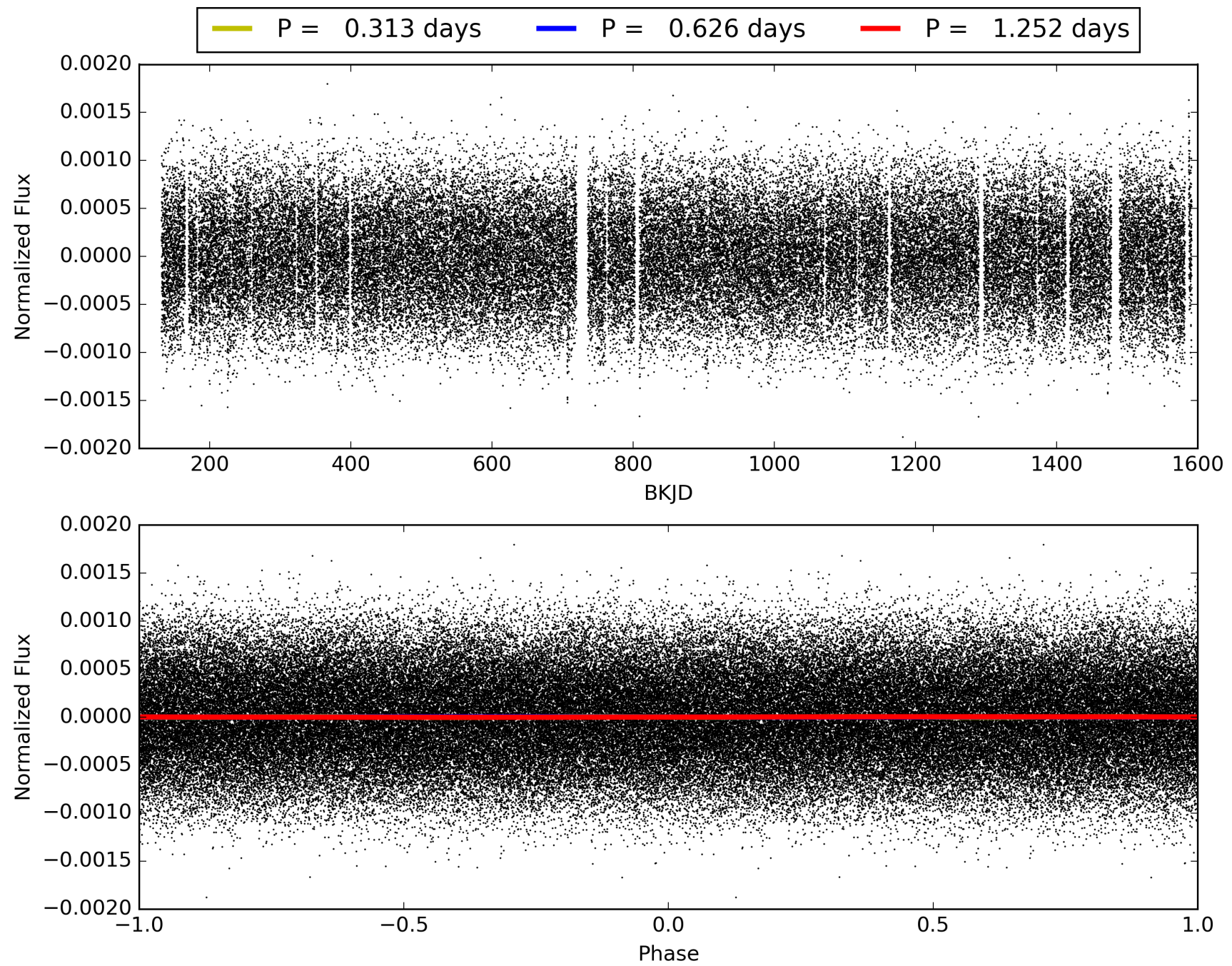
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:20:48 Z

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

TCE 003941283-01, PDC Light Curves

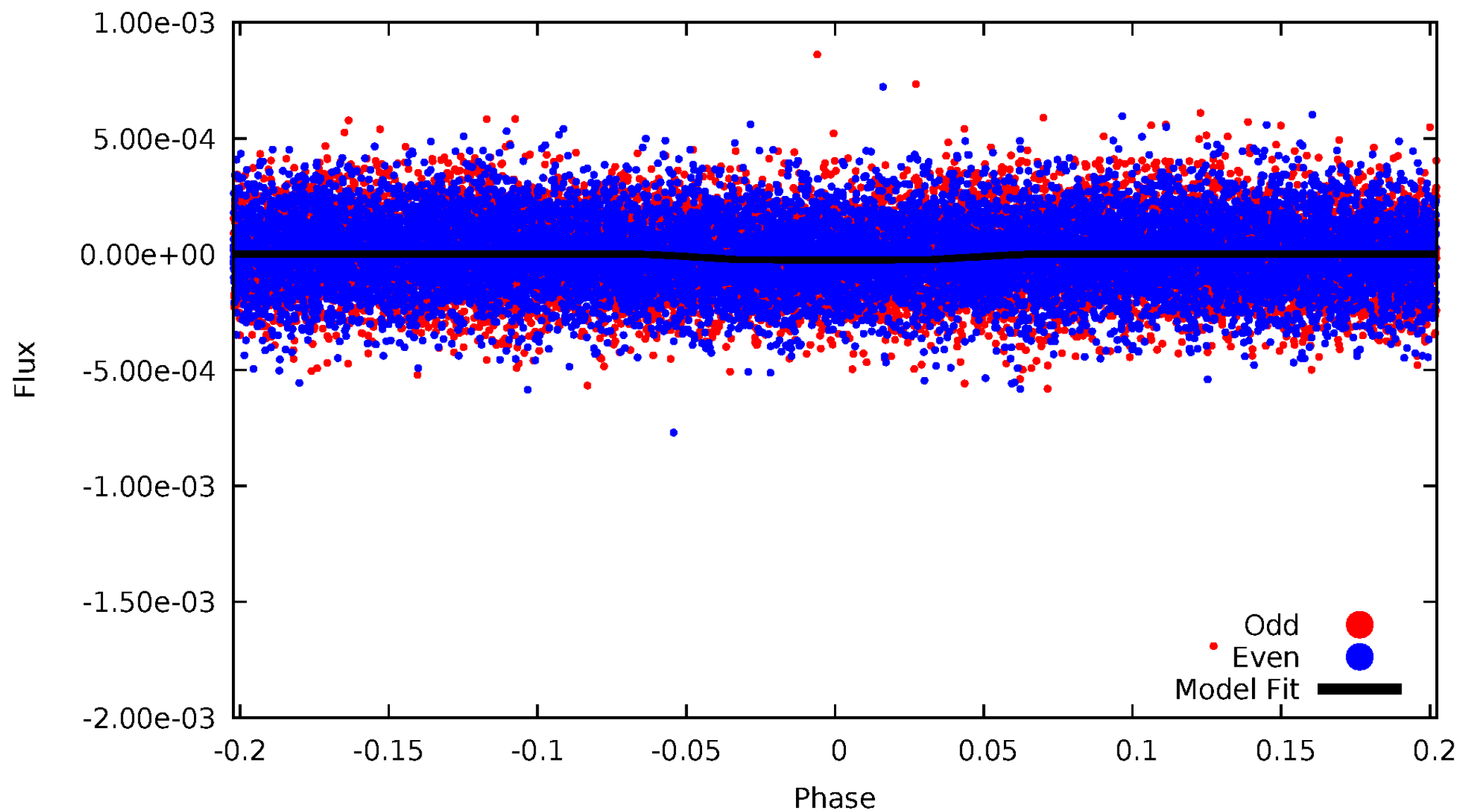


TCE 003941283-01



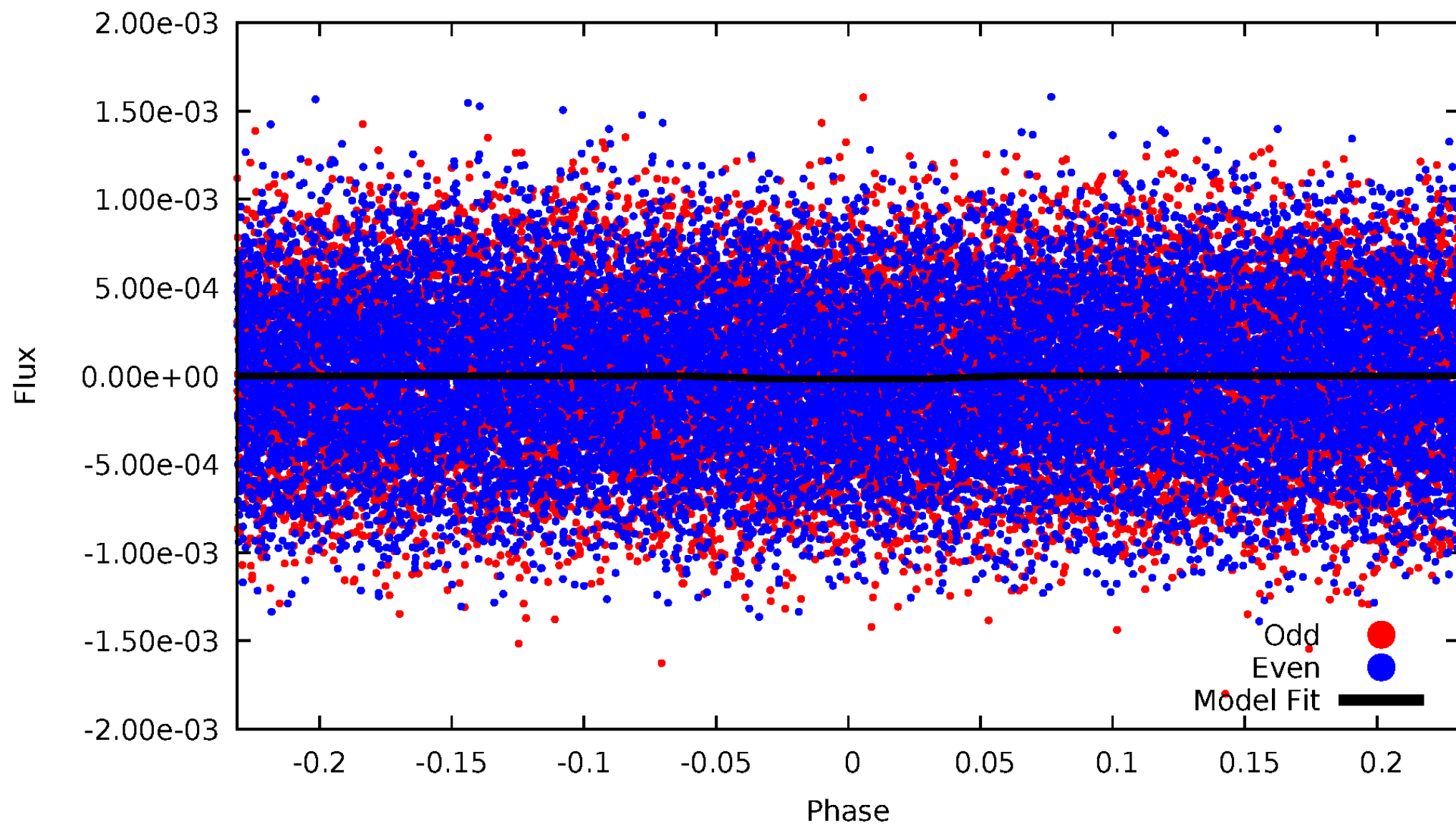
DV Odd/Even

TCE 003941283-01



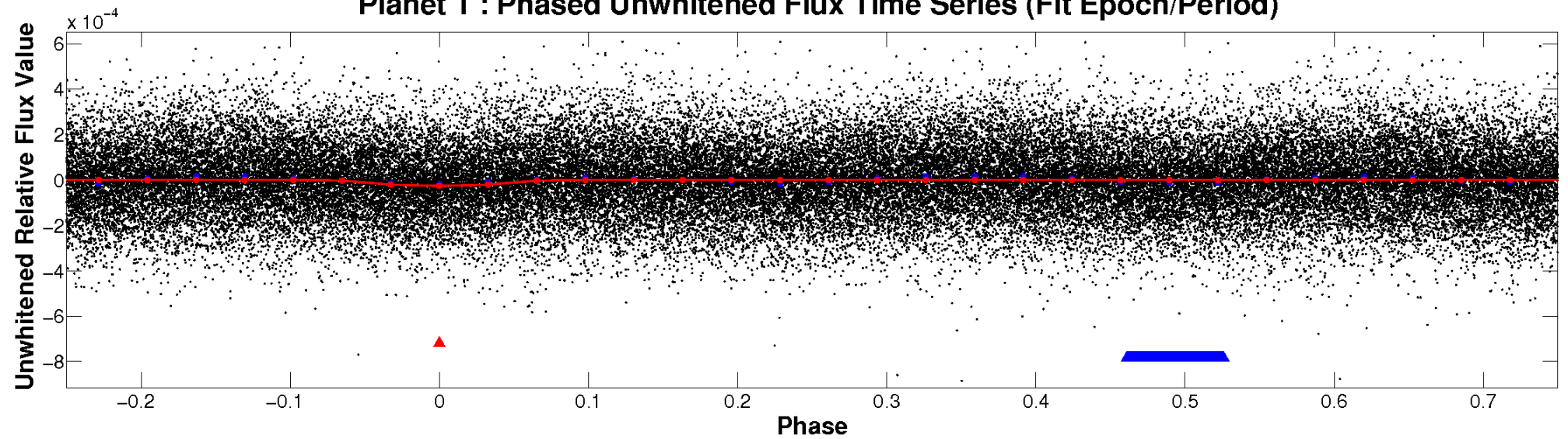
ALT Odd/Even

TCE 003941283-01

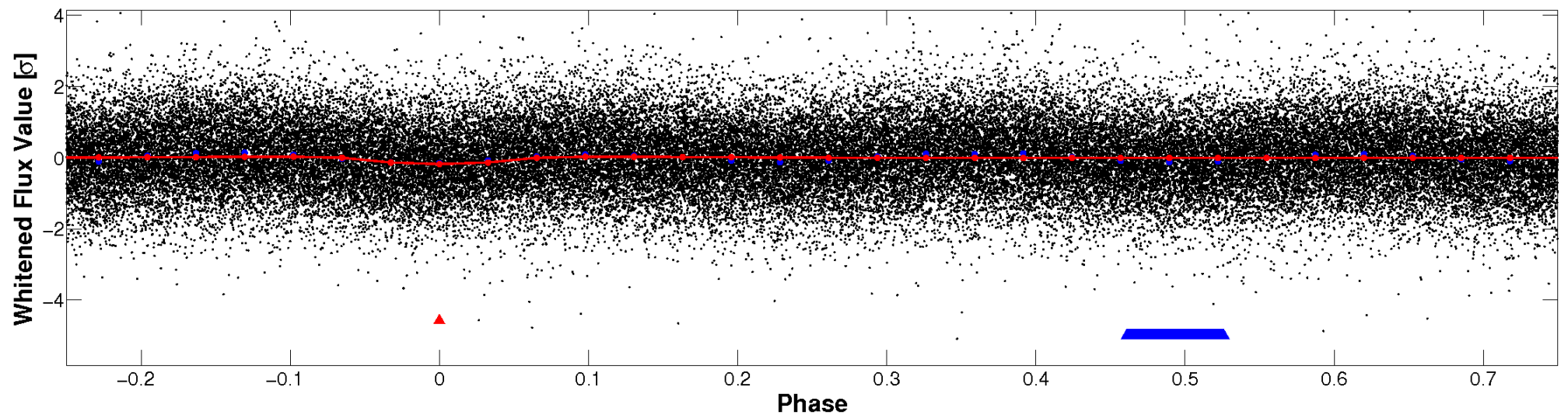


Non-Whitened Vs. Whitened Light Curve

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

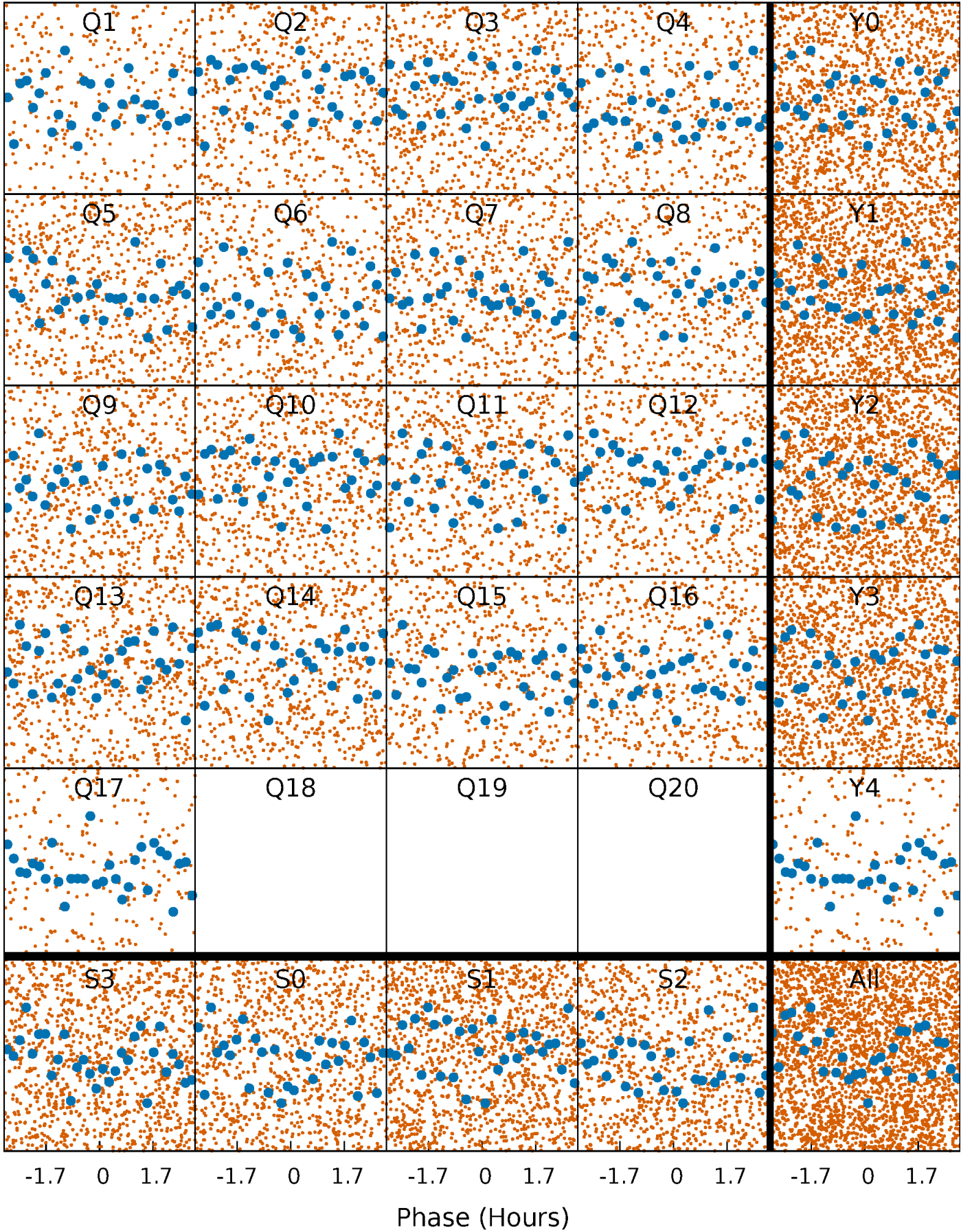


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



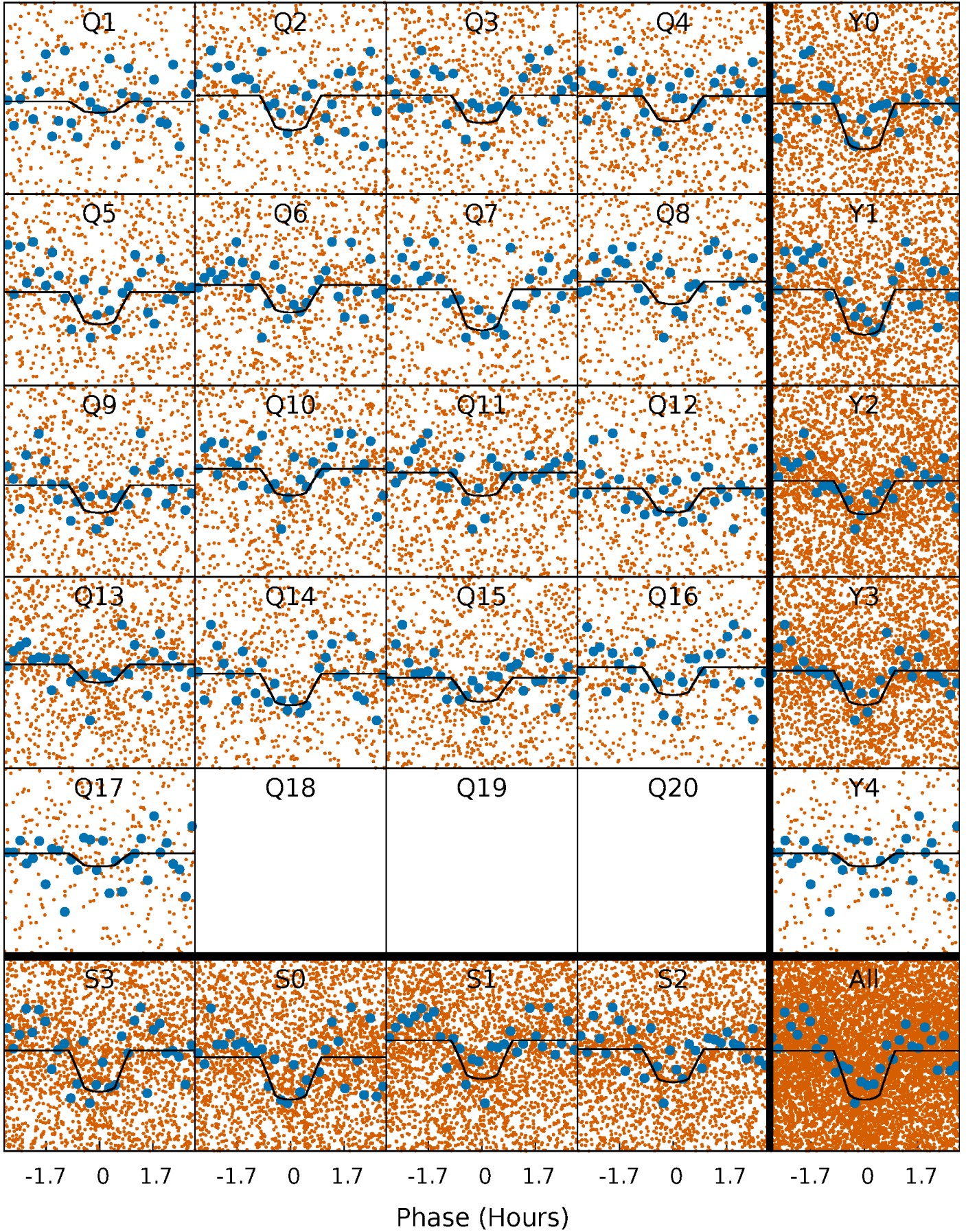
PDC Quarter-Phased Transit Curves

TCE 003941283-01 P= 0.626173 Days $T_0=132.088202$ (BKJD)



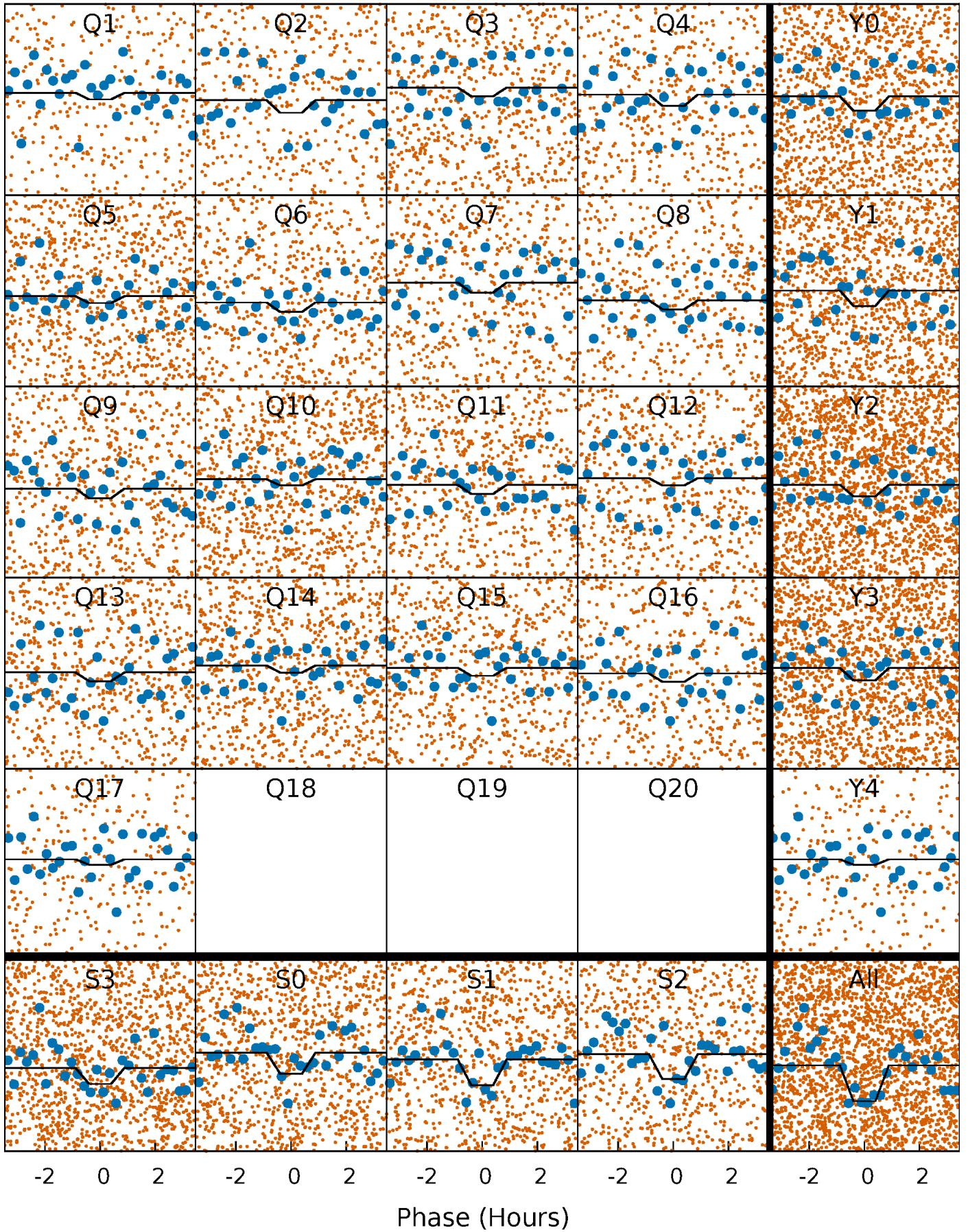
DV Quarter-Phased Transit Curves

TCE 003941283-01 P= 0.626173 Days $T_0=132.088202$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

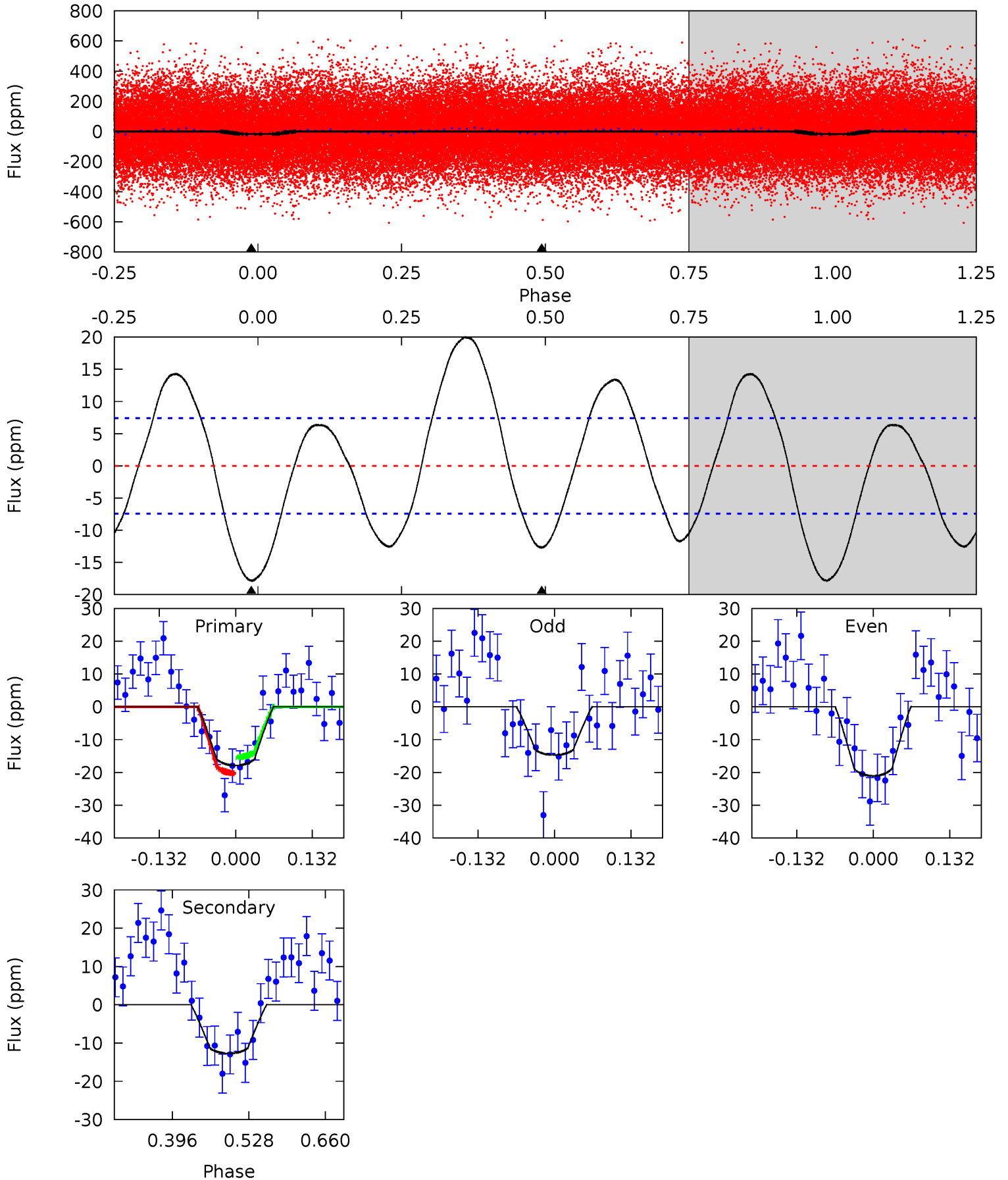
TCE 003941283-01 P= 0.626165 Days $T_0=132.091346$ (BKJD)



DV Model-Shift Uniqueness Test

003941283-01, P = 0.626173 Days, E = 131.462029 Days

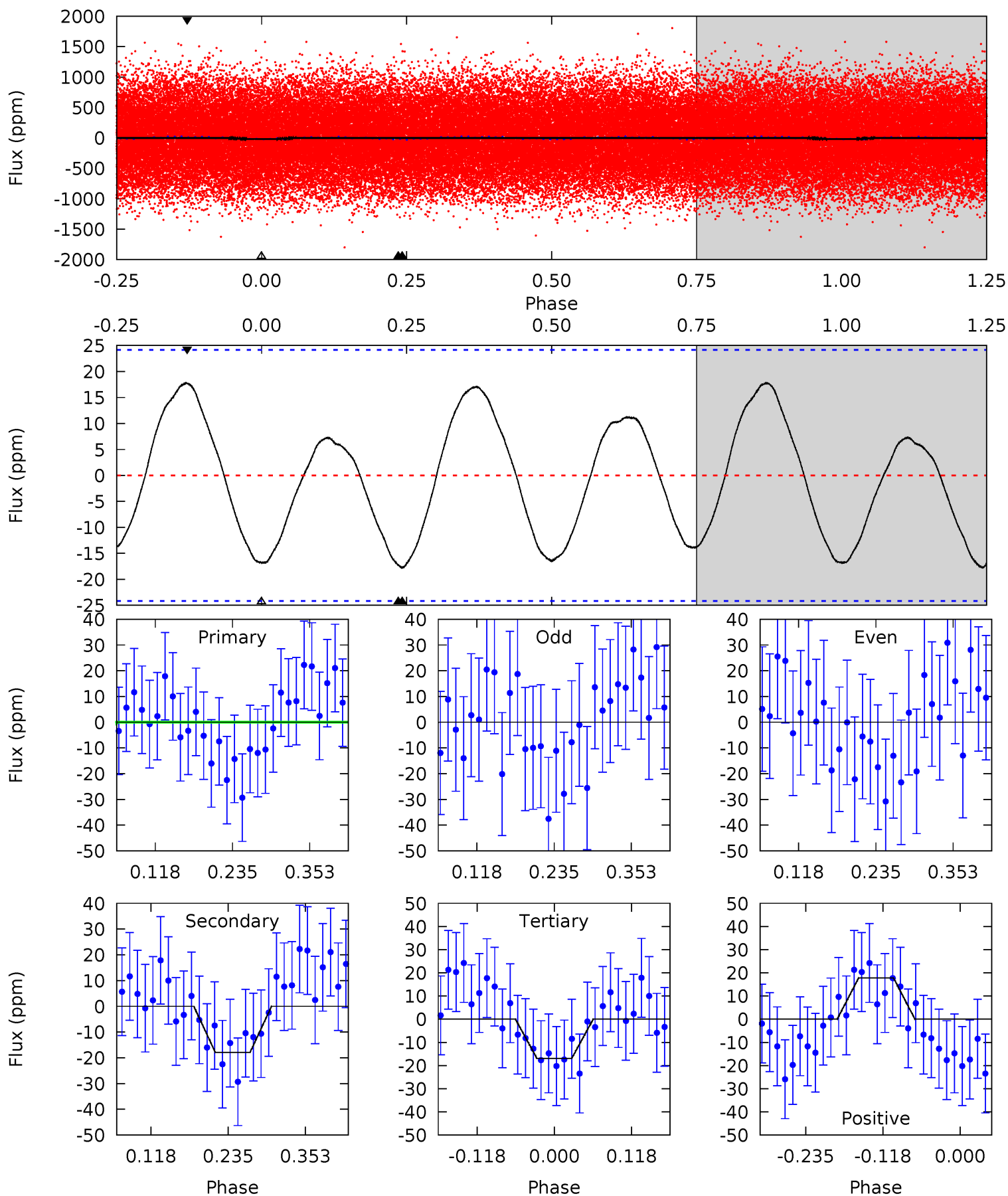
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	7.71	0	0	4.51	1.51	5.79	10.8	10.8	7.71	7.71	1.95	0.94	0.53	1.49



Alt Model-Shift Uniqueness Test

003941283-01, P = 0.626165 Days, E = 131.465181 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.26	3.35	3.17	3.34	4.53	1.56	2.02	0.09	-0.08	0.18	0.00	0.28	0.89	0.50	0.07



Stellar Parameters For KIC 003941283

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8014^{+222}_{-333}	$3.940^{+0.259}_{-0.111}$	$-0.140^{+0.200}_{-0.350}$	$2.430^{+0.424}_{-0.788}$	$1.874^{+0.098}_{-0.391}$	$0.184^{+0.315}_{-0.064}$
	+3%/-4%	+7%/-3%	+143%/-250%	+17%/-32%	+5%/-21%	+171%/-35%
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 003941283-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-13 ± 2	$1.38^{+0.34}_{-0.33}$	5679^{+385}_{-488}	5746^{+996}_{-710}	$1.127^{+0.792}_{-0.420}$
Alt.	-18 ± 5	$1.05^{+0.33}_{-0.30}$	5689^{+380}_{-453}	7667^{+2102}_{-1334}	$2.670^{+2.696}_{-1.259}$

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

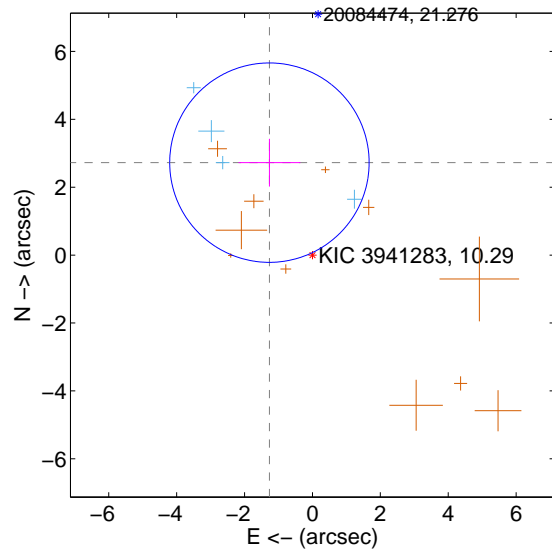
Supplemental centroid analysis for 003941283-01. **Kepler magnitude: 10.29**. Transit SNR 12.33

There are 4 quarters with good PRF difference image offsets

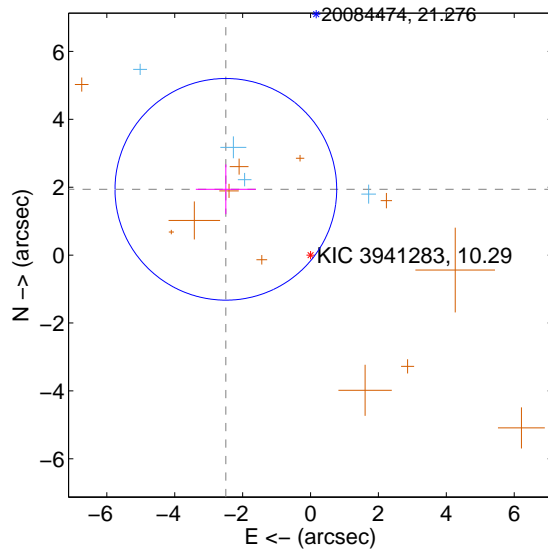
The direct PRF centroid is offset from the target star catalog position by about 1.36 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.004 ± 0.979	3.07	1.268 ± 0.911	2.724 ± 0.704
PRF-fit source offset from KIC position	3.159 ± 1.089	2.90	2.495 ± 0.886	1.938 ± 0.732
photometric centroid source offset	1.23 ± 0.40	3.08	0.96 ± 0.39	0.76 ± 0.41

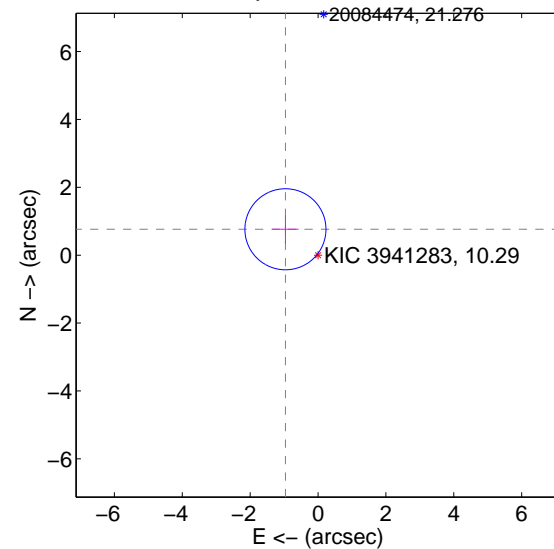
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

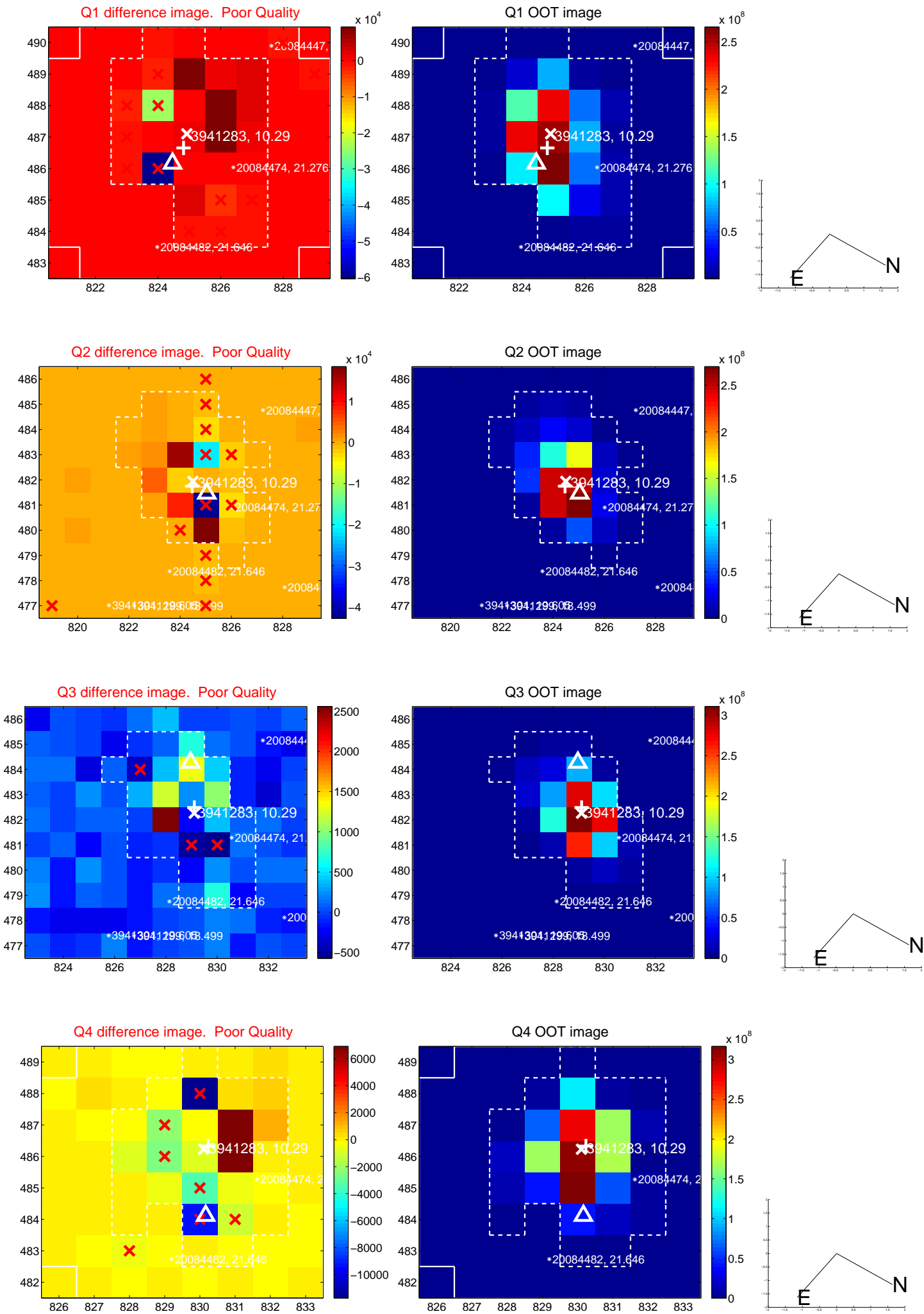


offset from photometric centroids

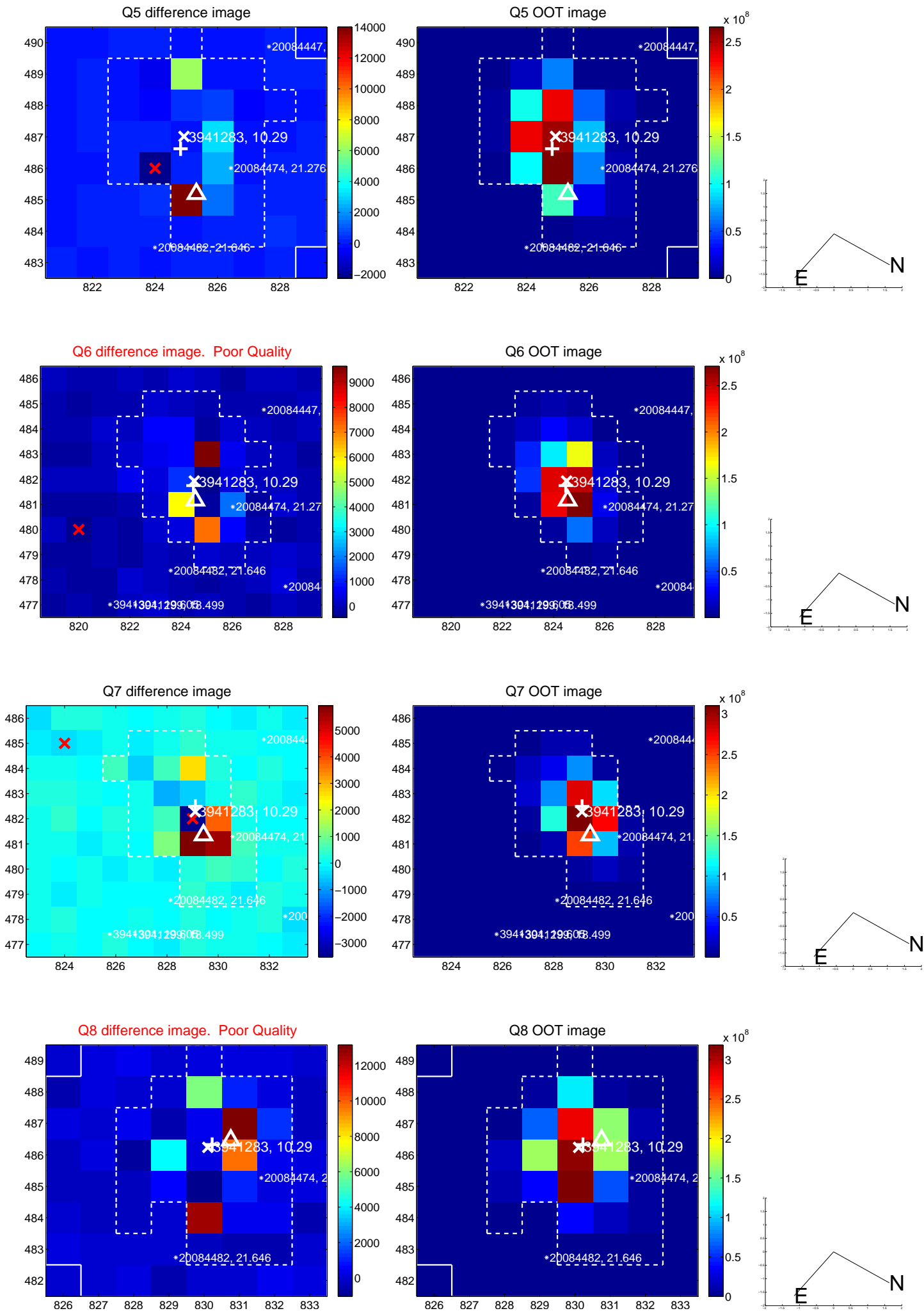


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

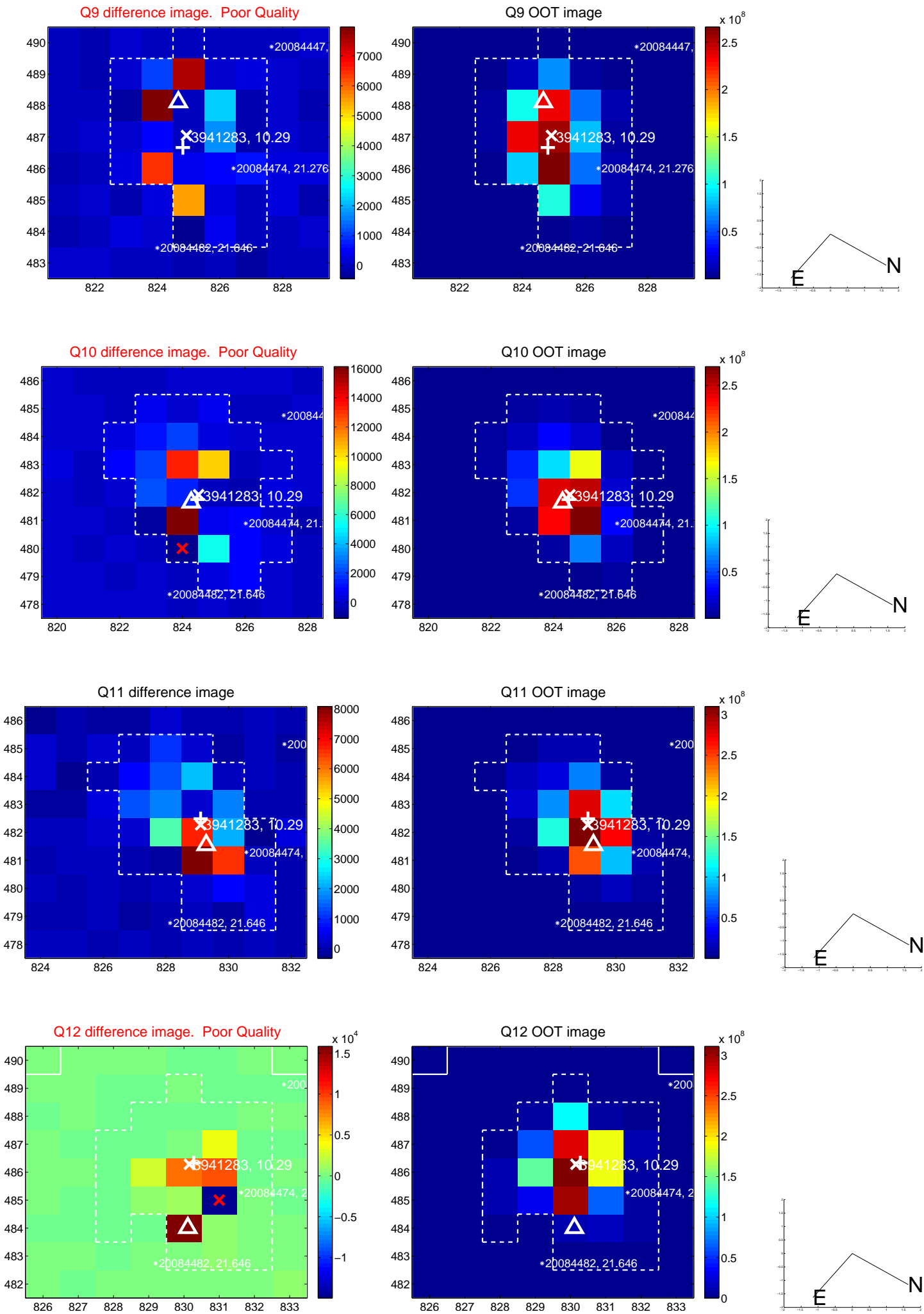
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



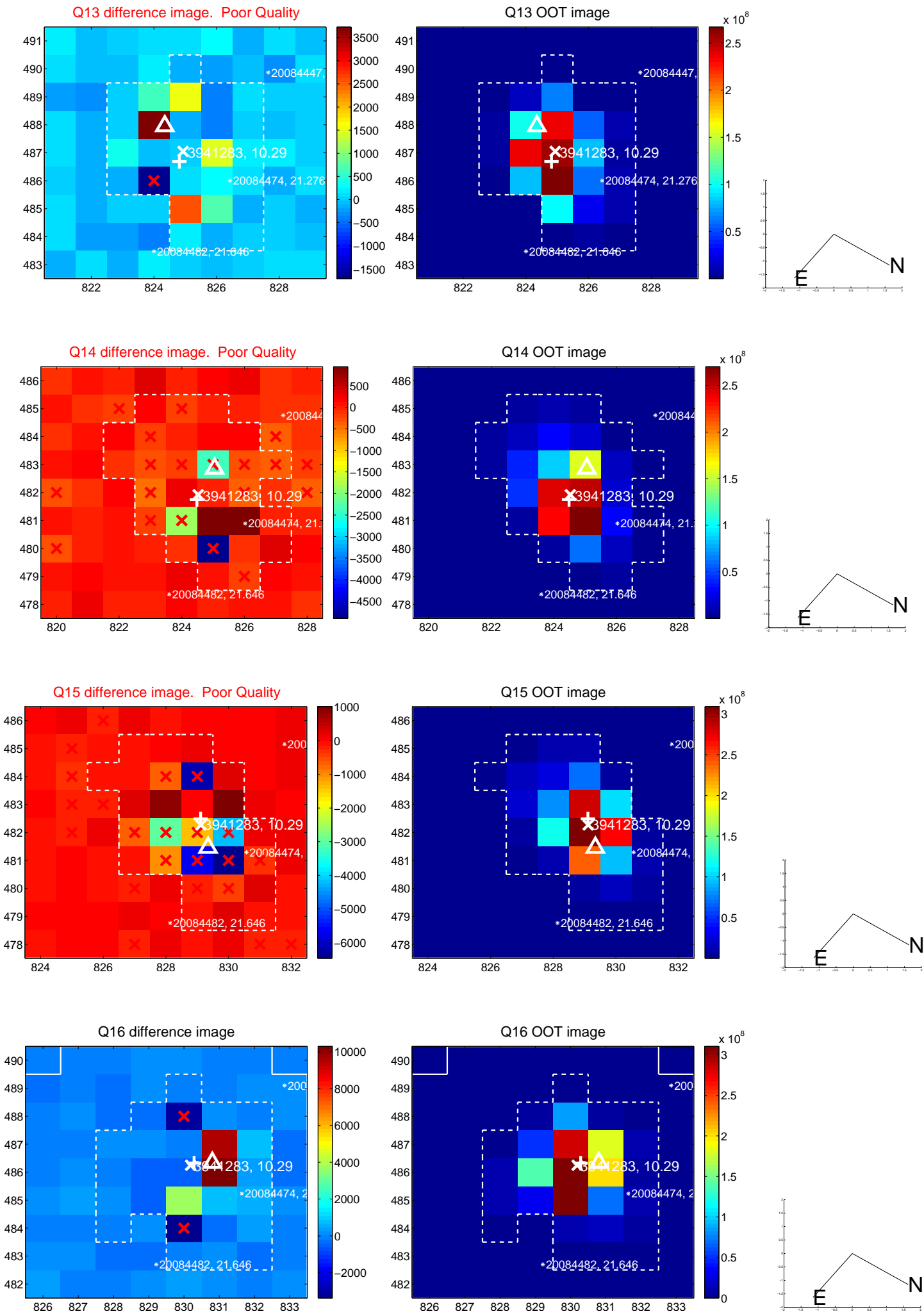
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



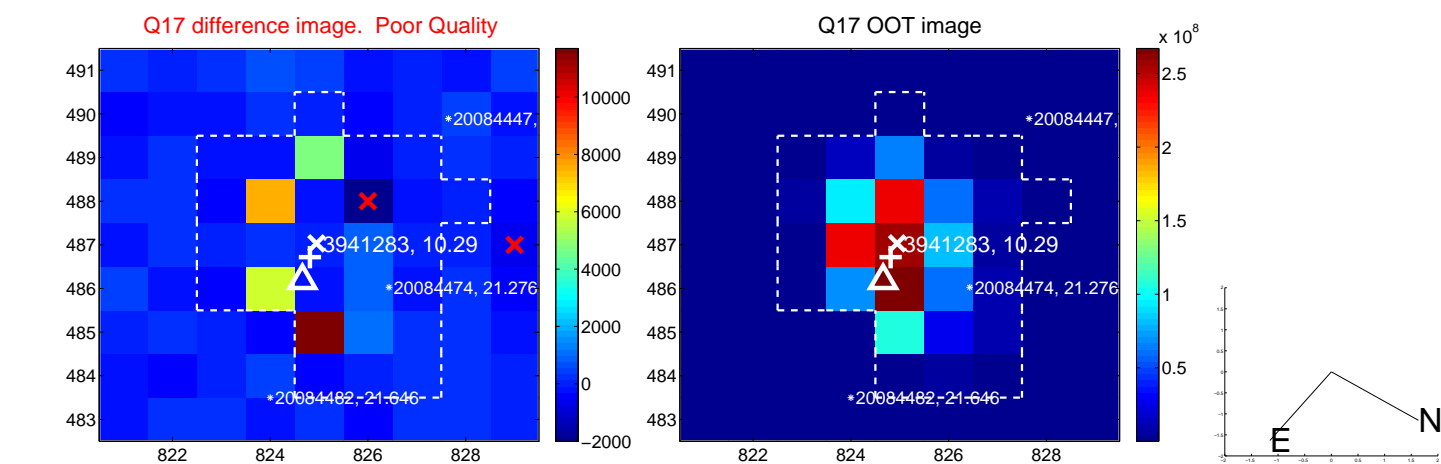
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



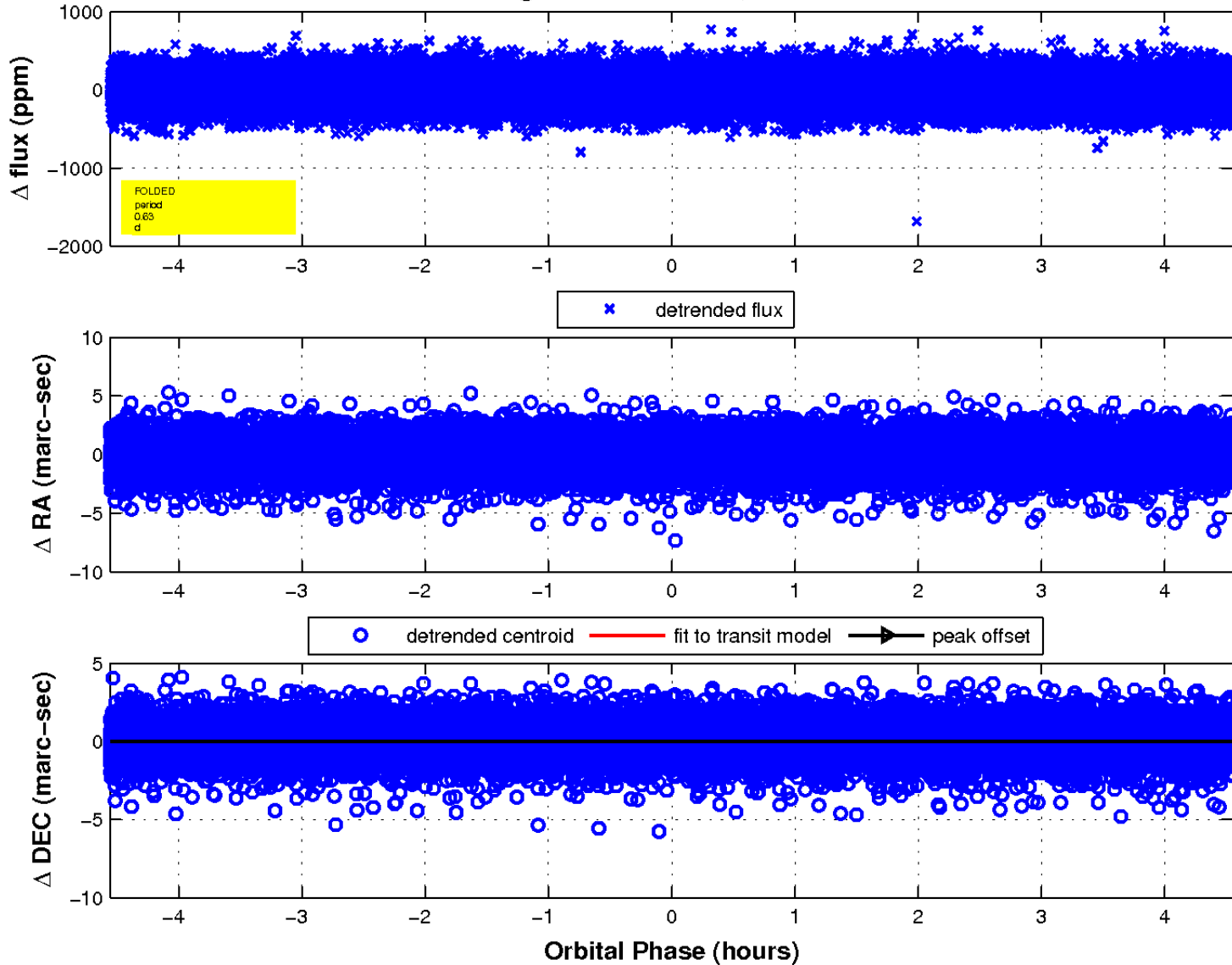
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

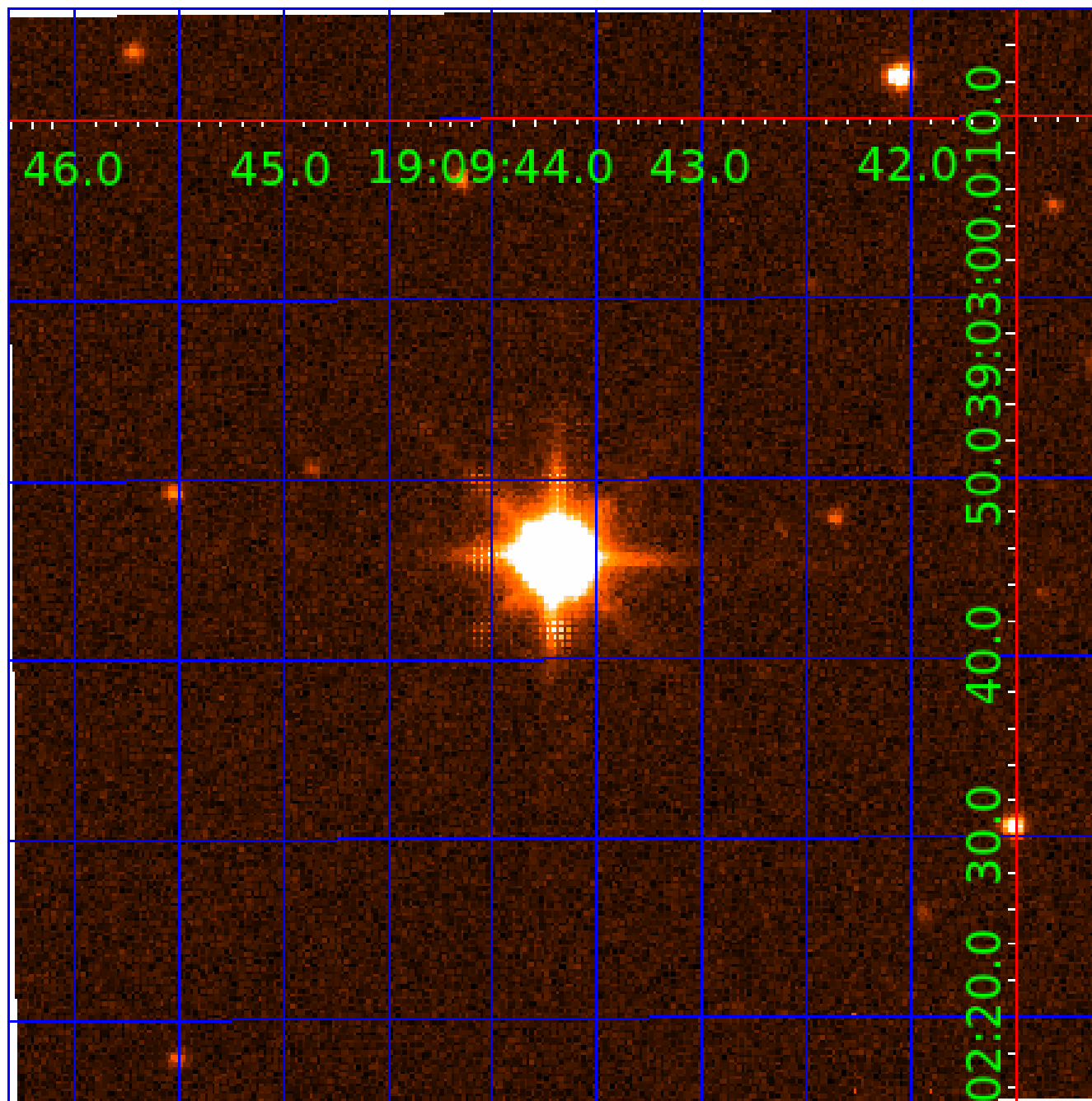


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 003941283

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})
003941283-01	OBS	No	0.626173	132.088202	26.0	1.519	11.7	12.3	2.43	8014	1.45	69893.53
003941283-02	OBS	No	0.626155	131.791357	26.5	1.060	9.7	10.3	2.43	8014	1.28	69896.12

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003941283-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003941283-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

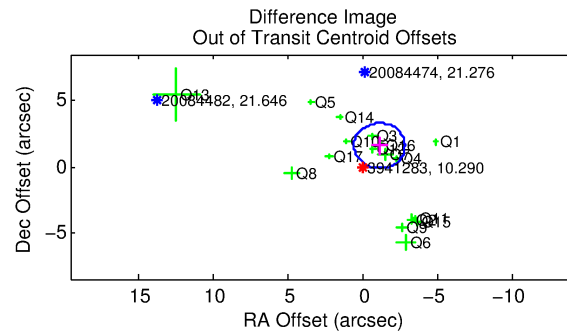
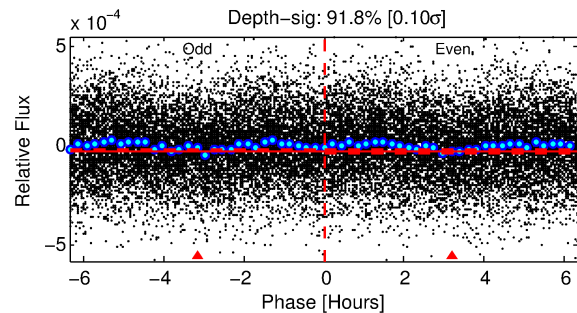
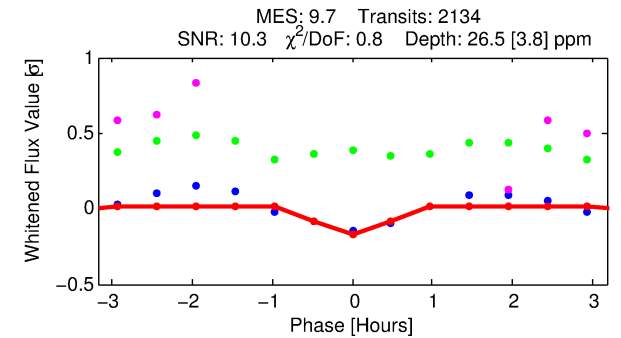
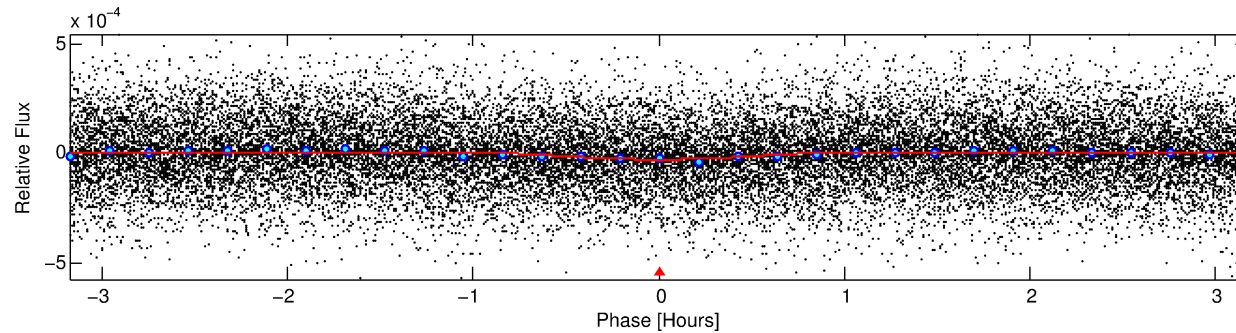
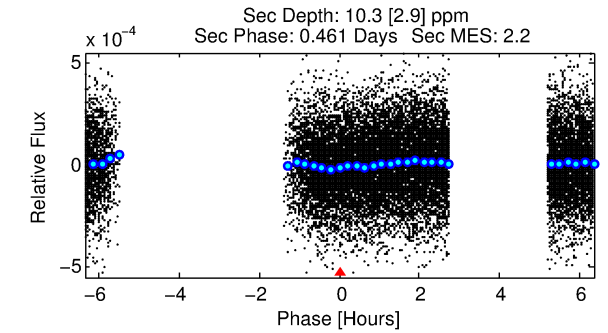
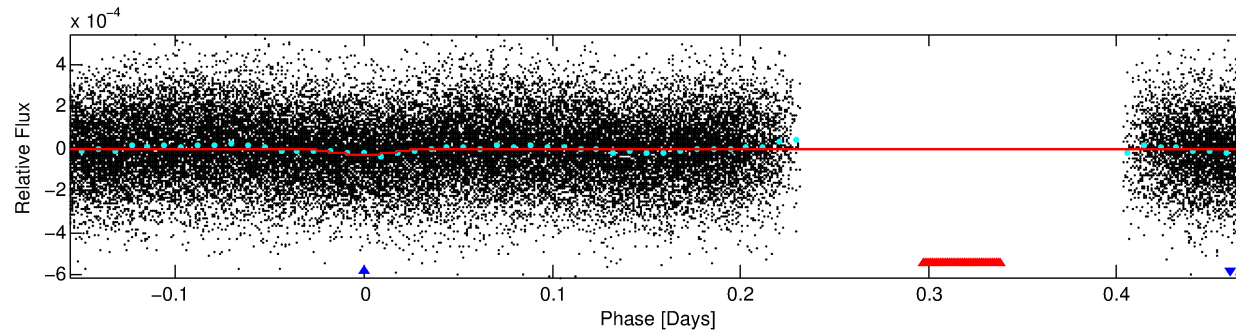
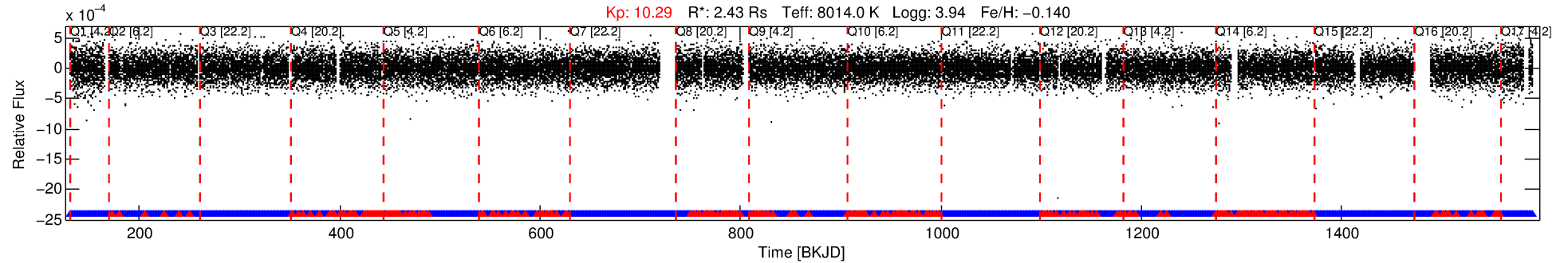
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003941283-02

No Significant Match Found

DV One-Page Summary

KIC: 3941283 Candidate: 2 of 2 Period: 0.626 d



DV Fit Results:

Period = 0.62616 [0.00001] d
Epoch = 131.7914 [0.0018] BKJD
 $R_p/R^* = 0.0048$ [0.0026]
 $a/R^* = 4.37$ [12.70]
 $b = 0.30$ [9.34]
 $S_{\text{eff}} = 69896.12$ [33697.74]
 $T_{\text{eq}} = 4146$ [500] K
 $R_p = 1.28$ [0.80] R_e
 $a = 0.0177$ [0.0052] AU
 $A_g = 1.08$ [1.30] [0.06σ]
 $T_{\text{eff}} = 6538$ [1834] K [1.26σ]

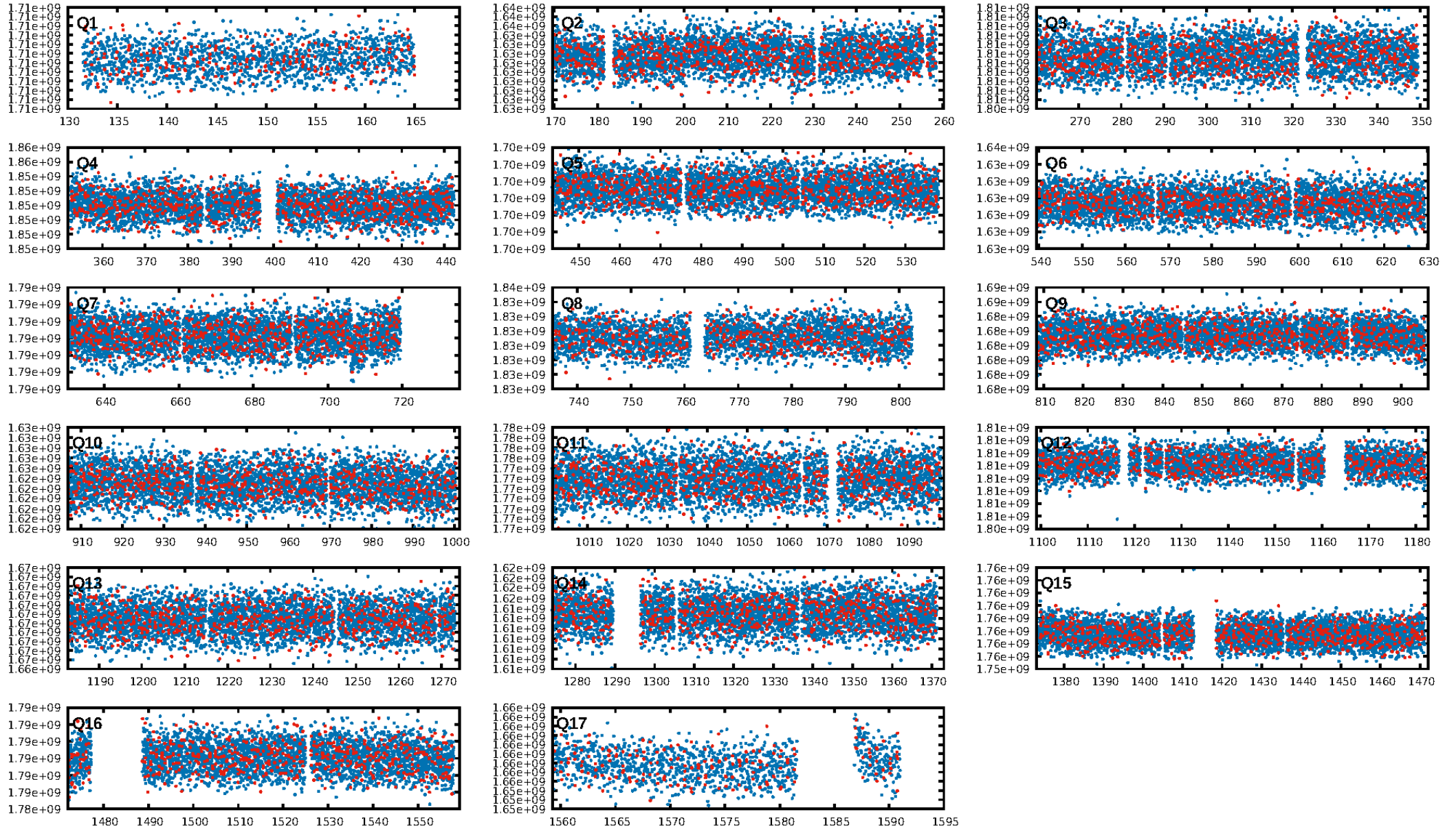
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.42e-19
RollingBand-fgt: 0.85 [1734/2037]
GhostDiagnostic-chr: 6.729
Centroid-sig: N/A
Centroid-so: 0.480 arcsec [1.07σ]
OotOffset-rm: 1.958 arcsec [3.42σ]
KicOffset-rm: 2.181 arcsec [3.82σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.12 [2/17]
DiffImageOverlap-fno: 1.00 [17/17]

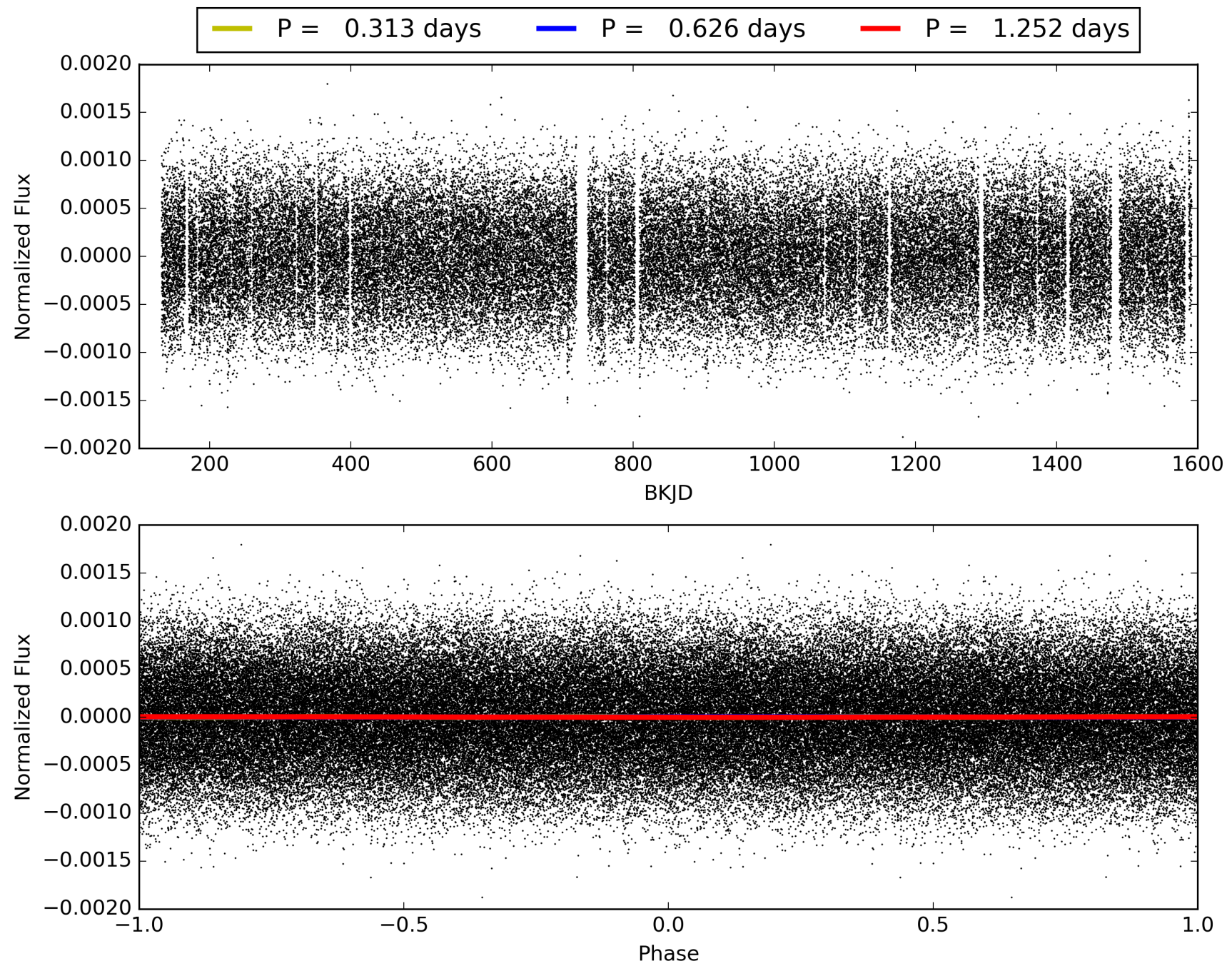
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:20:58 Z

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

TCE 003941283-02, PDC Light Curves

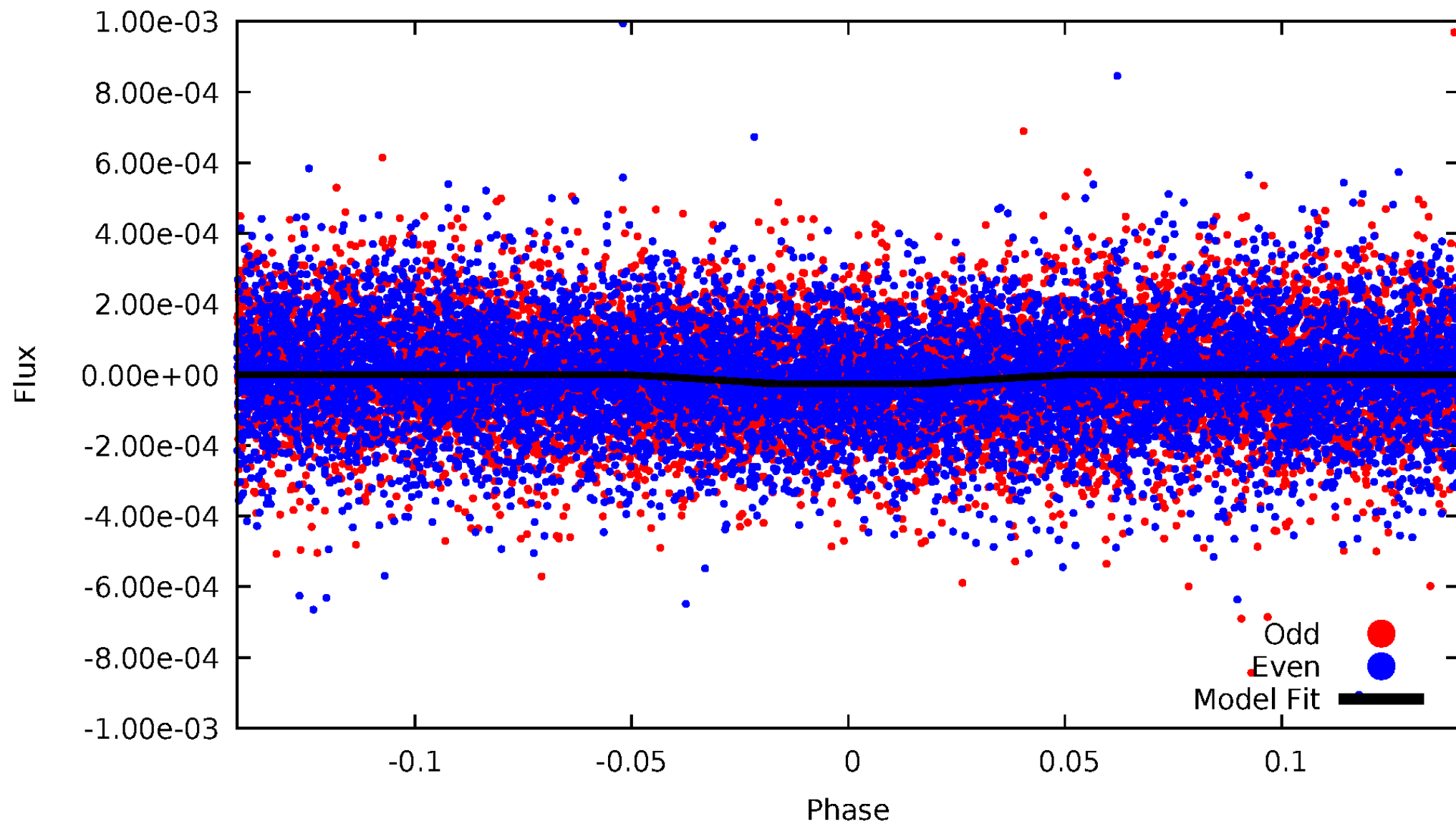


TCE 003941283-02



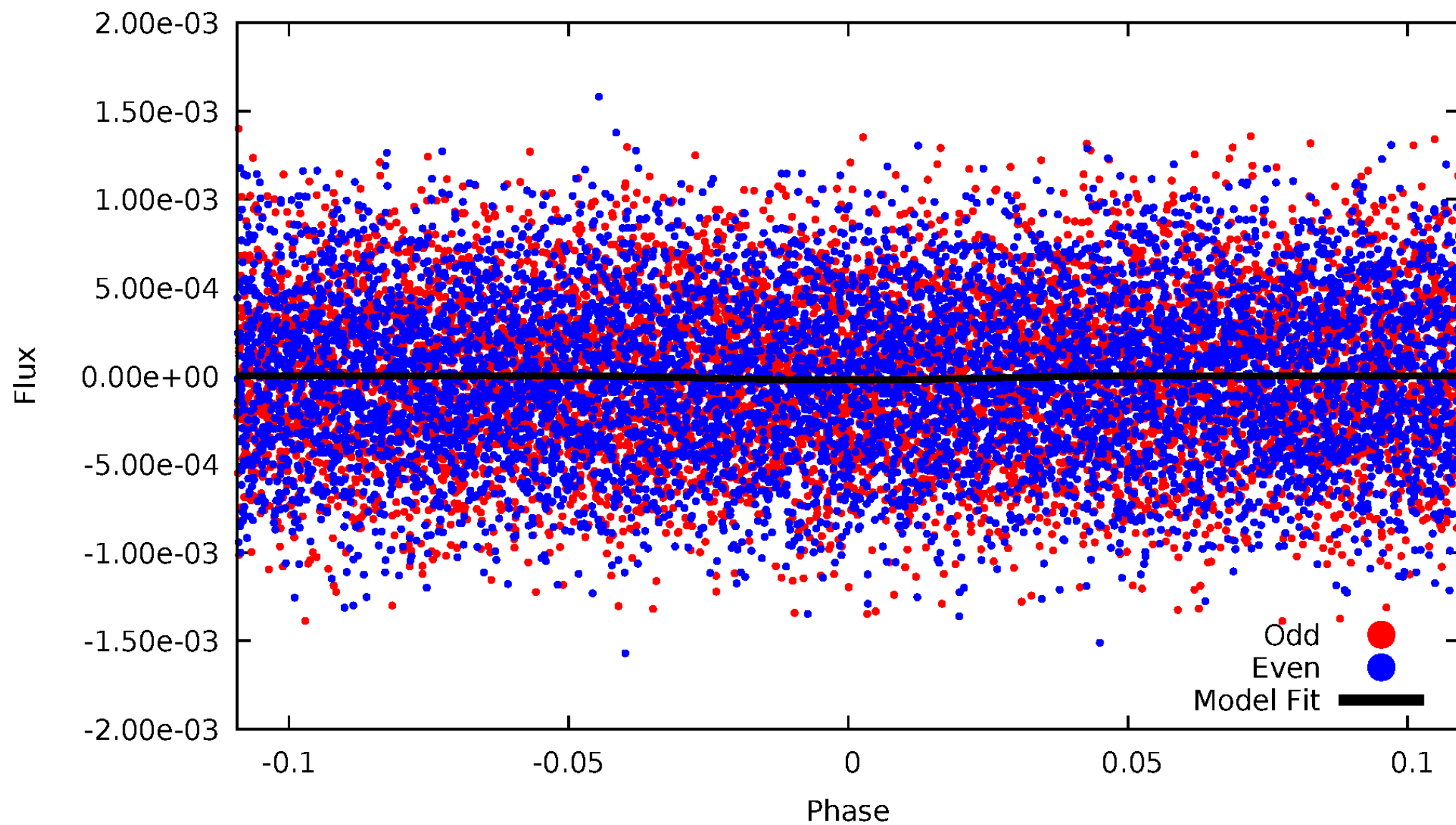
DV Odd/Even

TCE 003941283-02



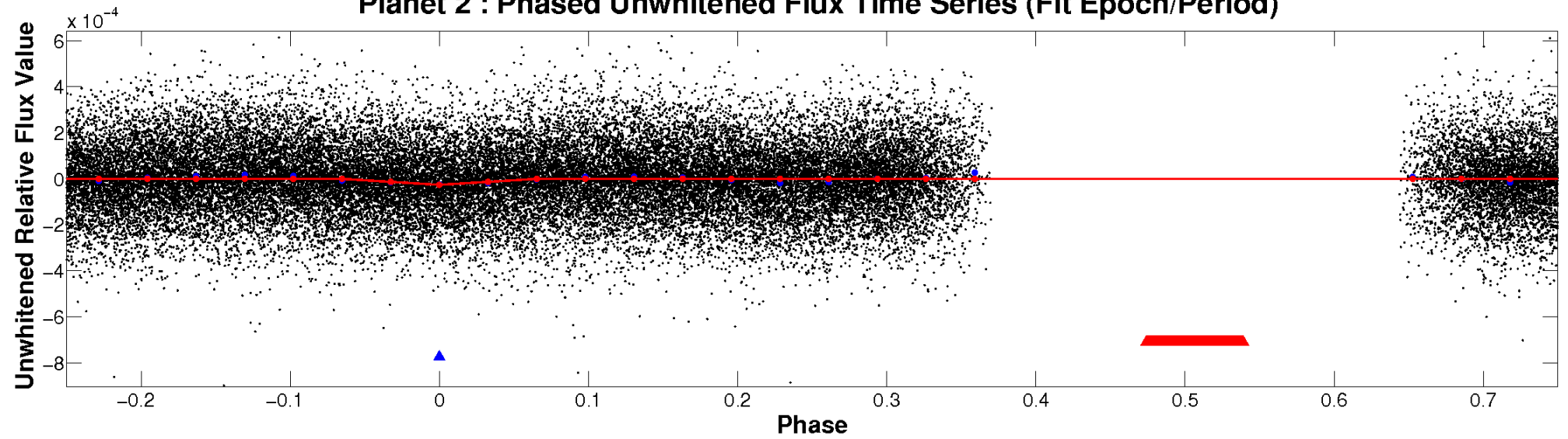
ALT Odd/Even

TCE 003941283-02

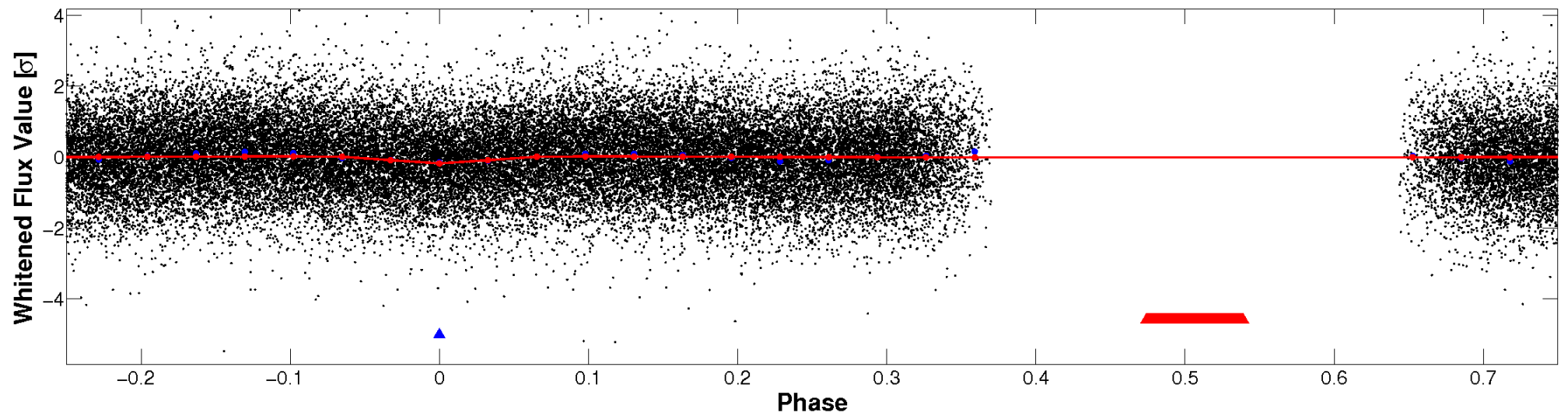


Non-Whitened Vs. Whitened Light Curve

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

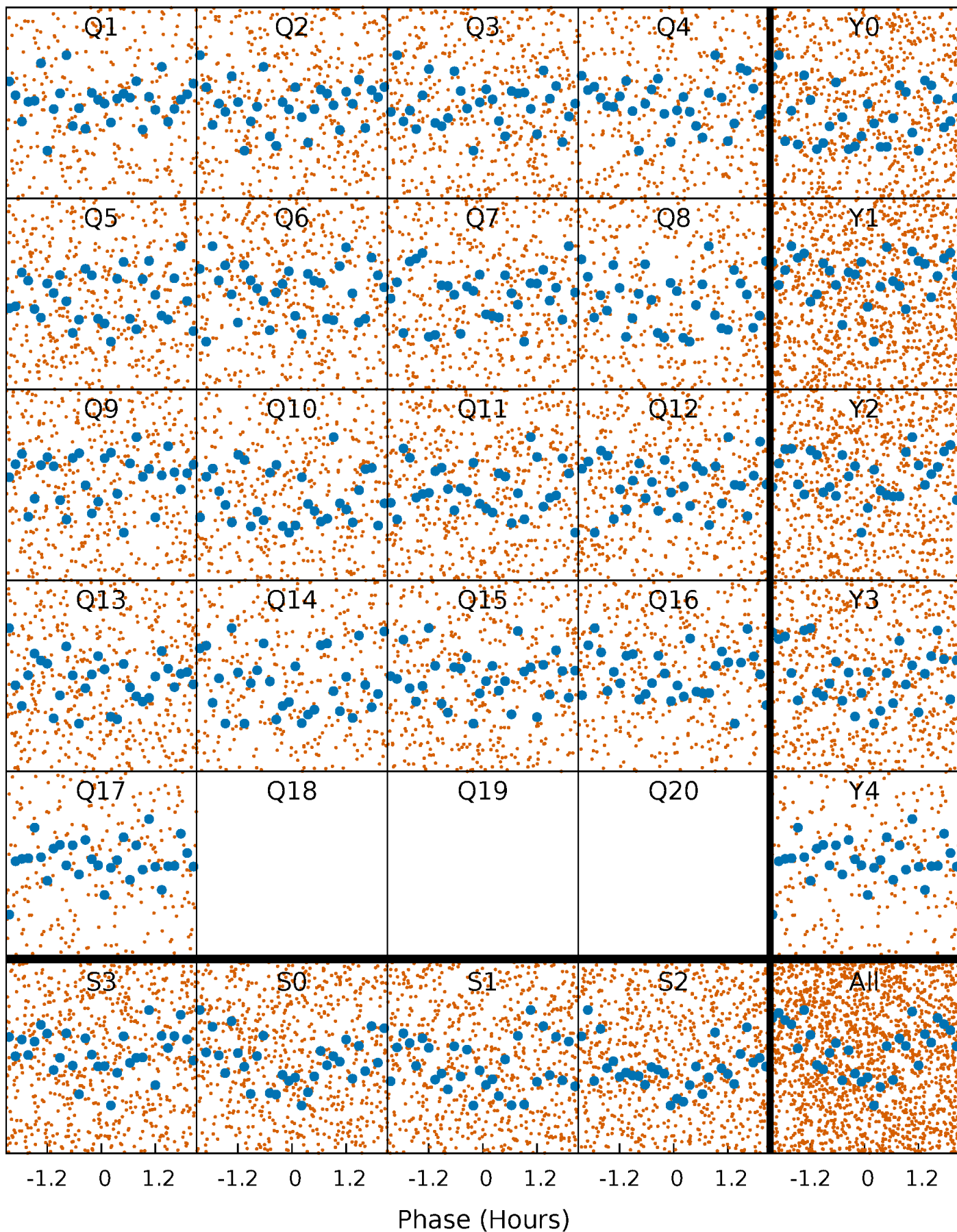


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



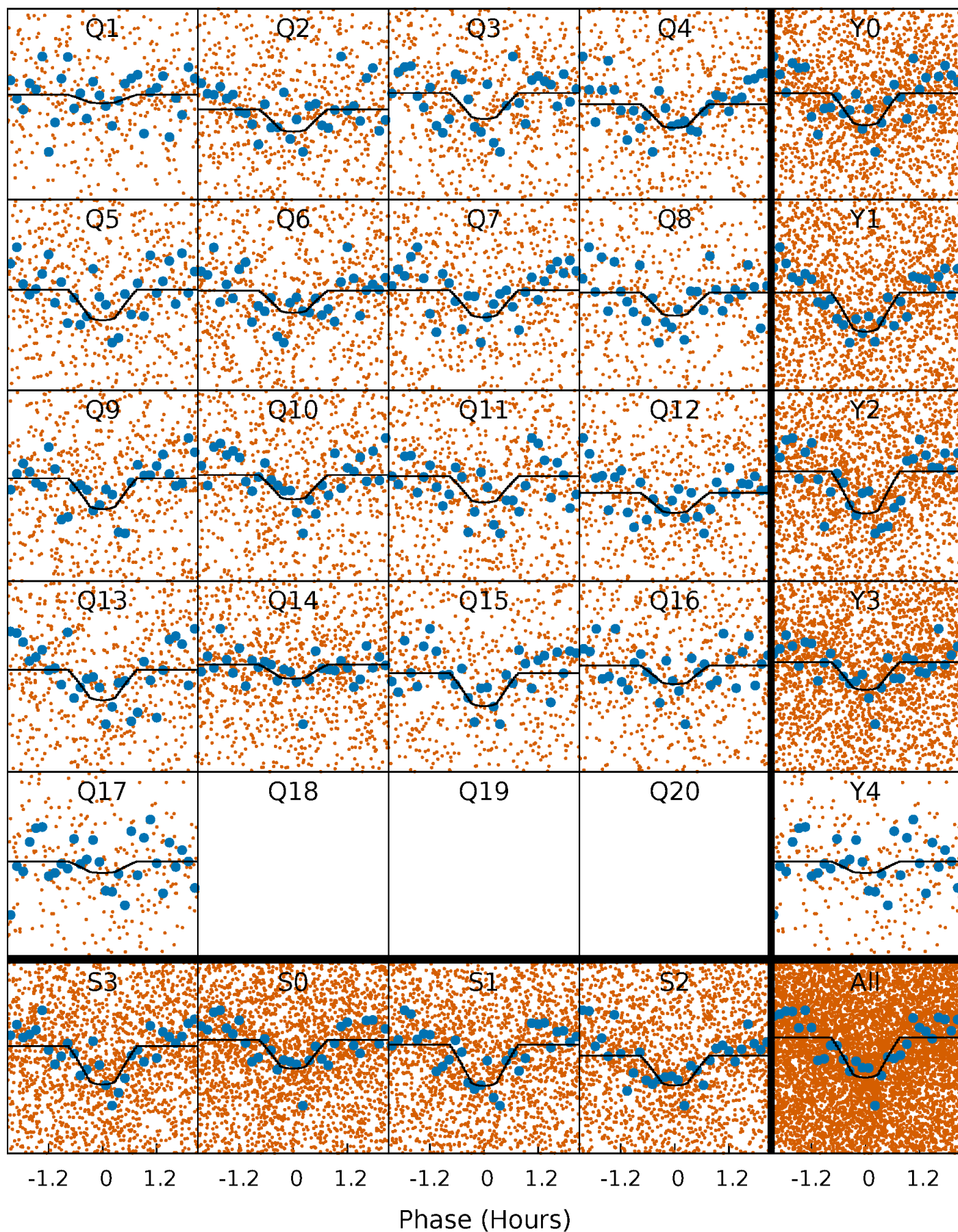
PDC Quarter-Phased Transit Curves

TCE 003941283-02 P= 0.626155 Days $T_0=131.791357$ (BKJD)



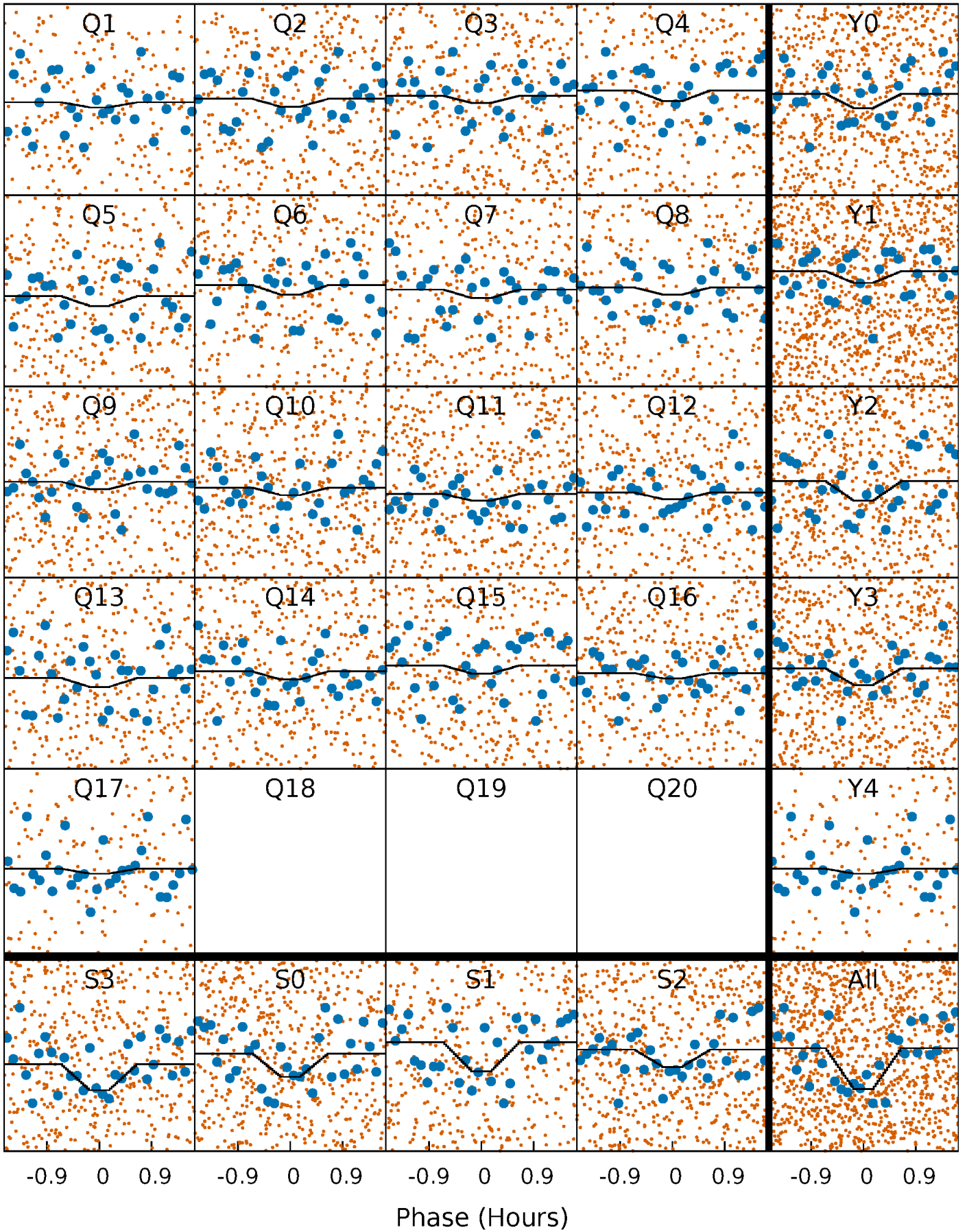
DV Quarter-Phased Transit Curves

TCE 003941283-02 P= 0.626155 Days $T_0=131.791357$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

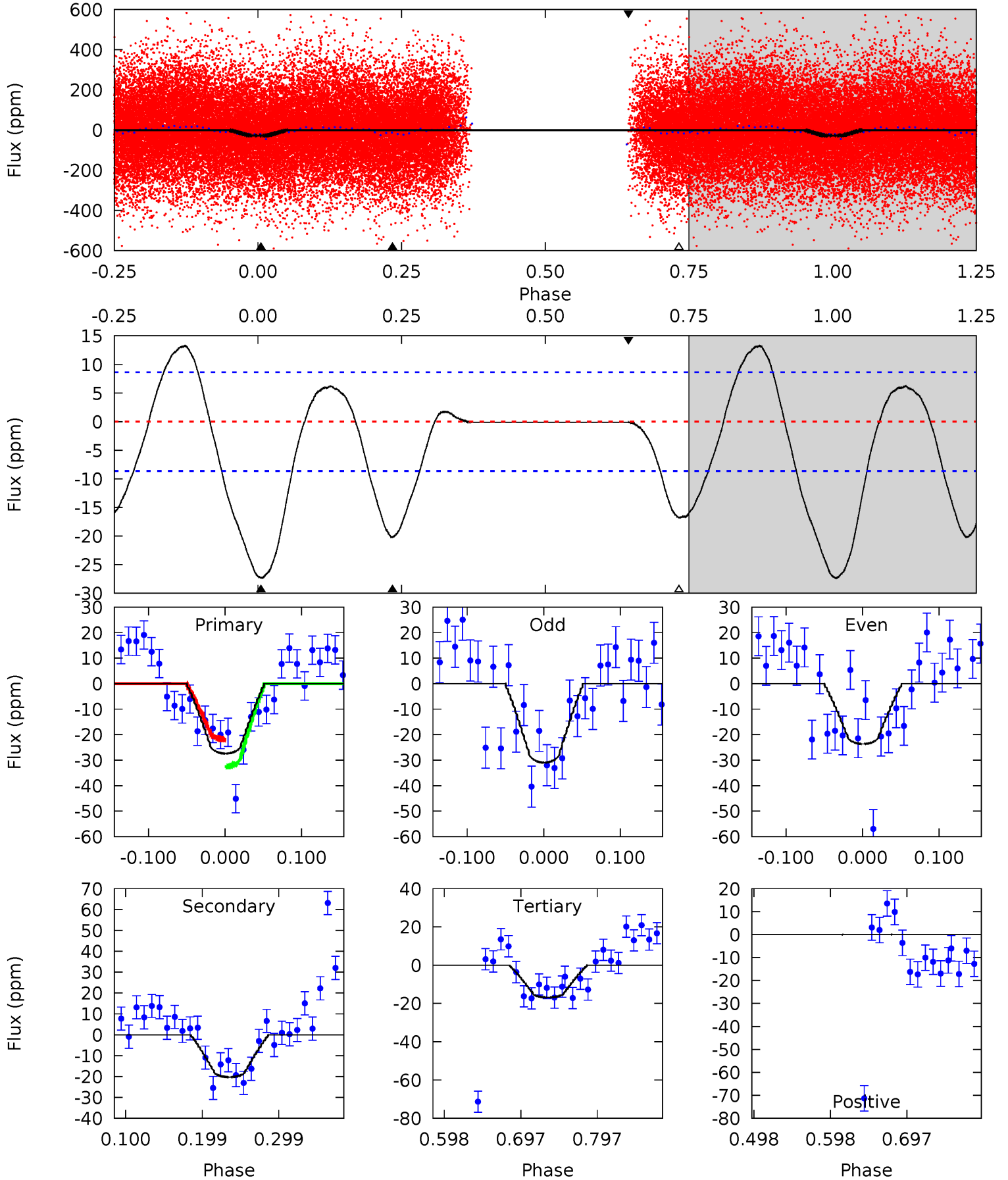
TCE 003941283-02 P= 0.626160 Days $T_0=131.791288$ (BKJD)



DV Model-Shift Uniqueness Test

003941283-02, P = 0.626155 Days, E = 131.165202 Days

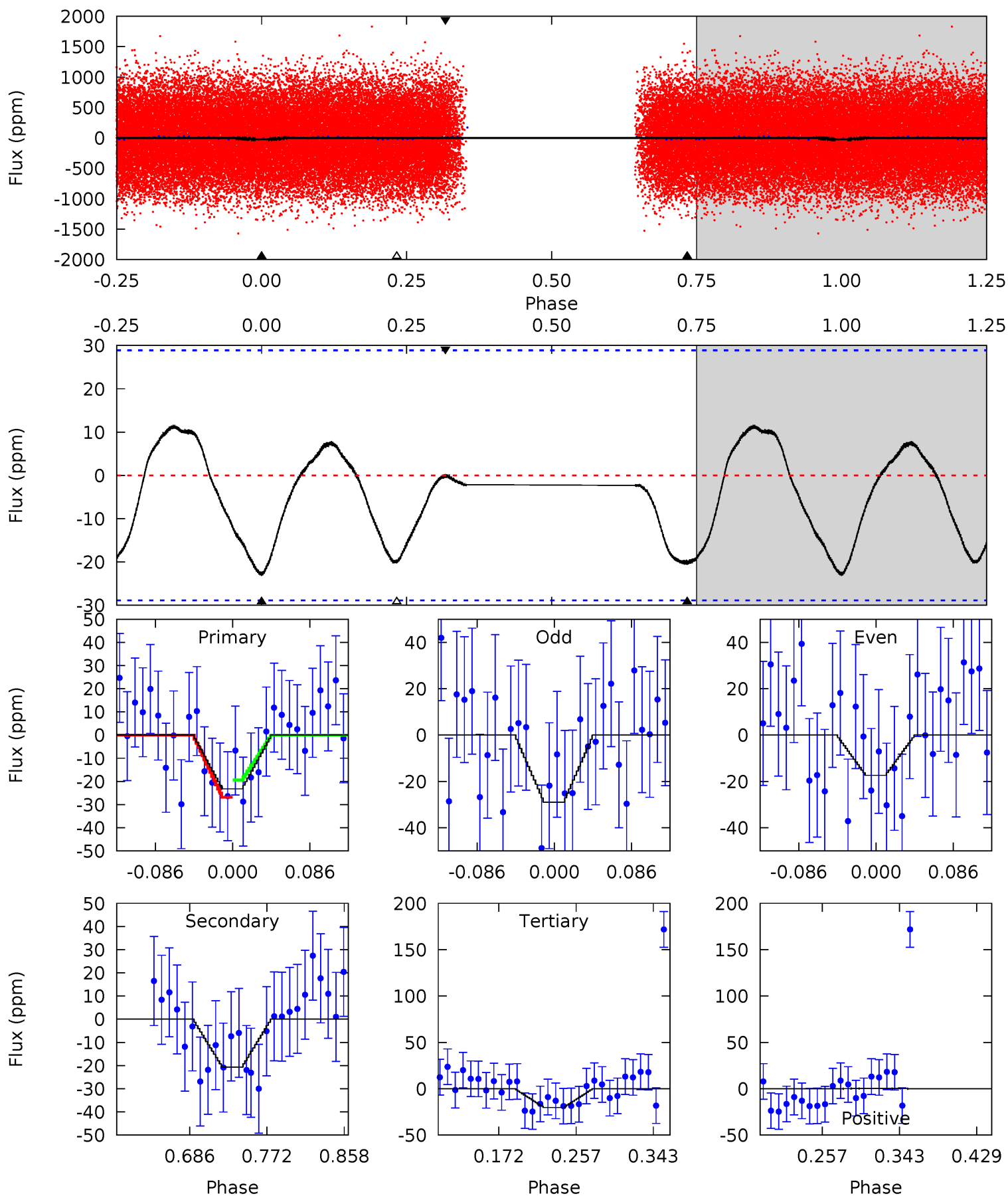
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	10.7	8.92	-0.03	4.57	1.65	5.37	5.59	14.5	1.81	10.8	1.94	1.00	0.33	2.85



Alt Model-Shift Uniqueness Test

003941283-02, P = 0.626160 Days, E = 131.165128 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.69	3.29	3.24	0.05	4.60	1.72	1.54	0.46	3.64	0.05	3.24	0.93	1.40	0.33	0.59



Stellar Parameters For KIC 003941283

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8014^{+222}_{-333}	$3.940^{+0.259}_{-0.111}$	$-0.140^{+0.200}_{-0.350}$	$2.430^{+0.424}_{-0.788}$	$1.874^{+0.098}_{-0.391}$	$0.184^{+0.315}_{-0.064}$
	+3%/-4%	+7%/-3%	+143%/-250%	+17%/-32%	+5%/-21%	+171%/-35%
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 003941283-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-20 ± 2	$1.19^{+0.74}_{-0.60}$	5666^{+381}_{-432}	7374^{+5012}_{-1883}	$2.431^{+7.363}_{-1.498}$
Alt.	-21 ± 6	$1.18^{+0.78}_{-0.60}$	5692^{+352}_{-440}	7340^{+5534}_{-2016}	$2.392^{+8.193}_{-1.577}$

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

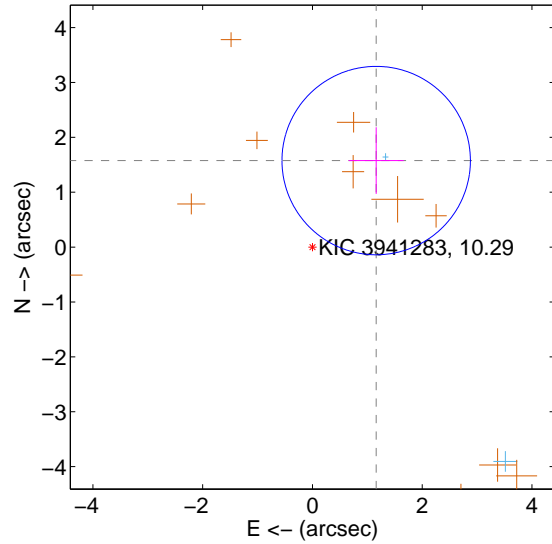
Supplemental centroid analysis for 003941283-02. **Kepler magnitude: 10.29.** Transit SNR 10.35

There are 2 quarters with good PRF difference image offsets

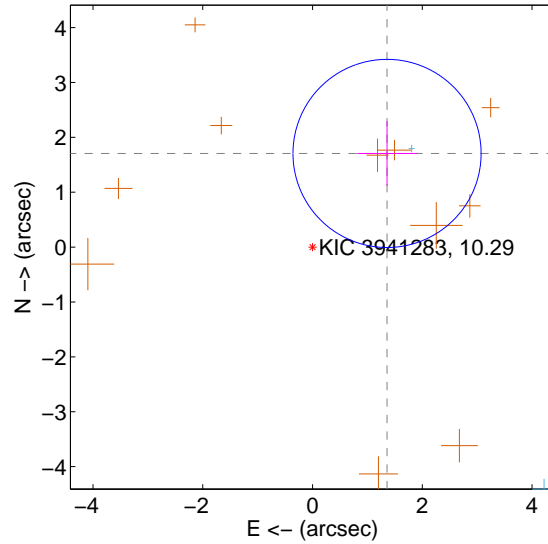
The direct PRF centroid is offset from the target star catalog position by about 1.36 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.958 ± 0.572	3.42	-1.161 ± 0.501	1.576 ± 0.607
PRF-fit source offset from KIC position	2.181 ± 0.571	3.82	-1.358 ± 0.543	1.706 ± 0.588
photometric centroid source offset	0.48 ± 0.45	1.07	0.48 ± 0.45	0.02 ± 0.47

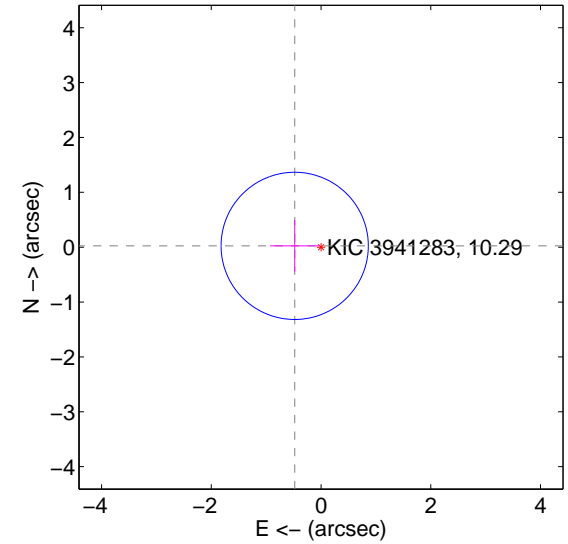
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

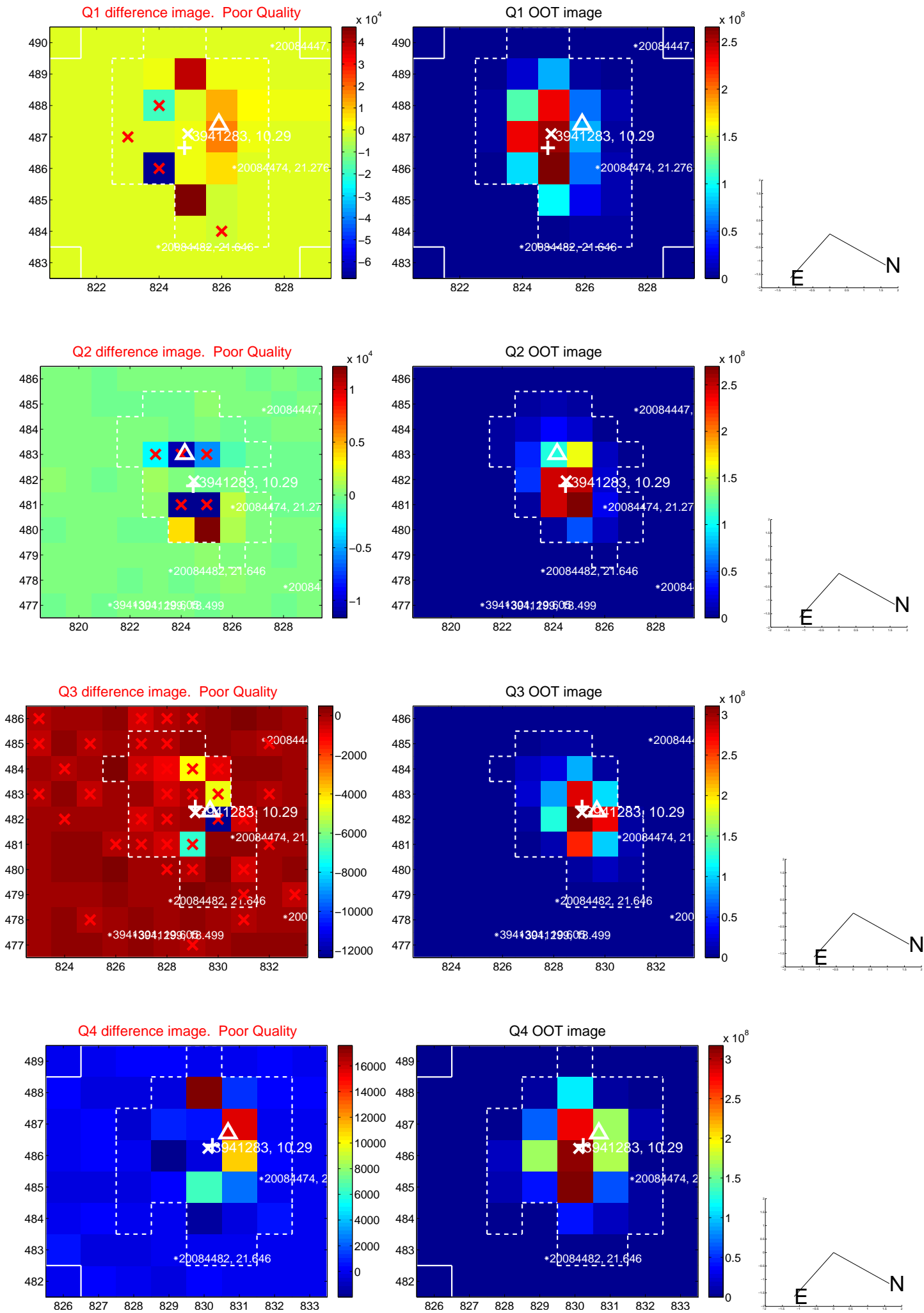


offset from photometric centroids

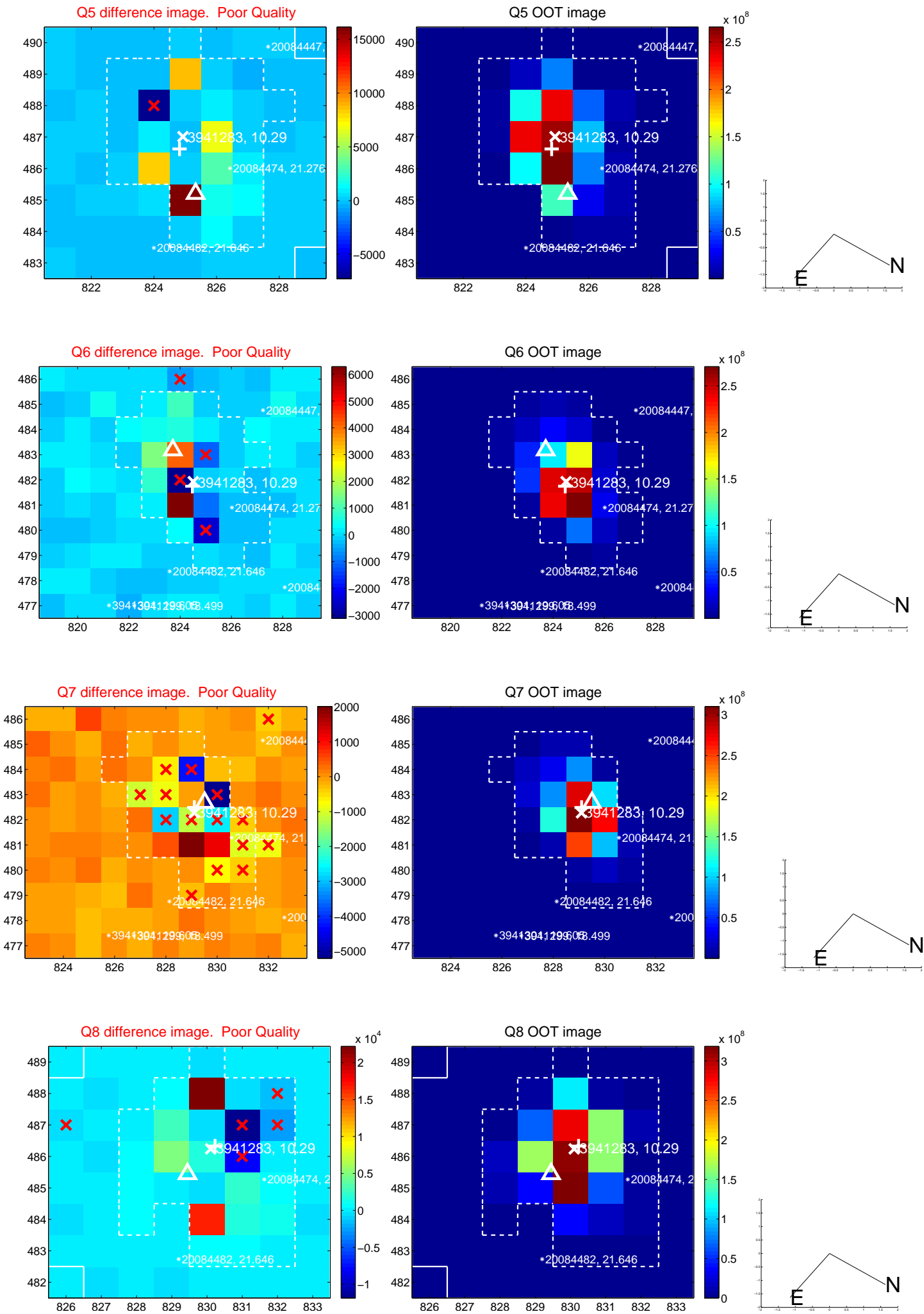


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

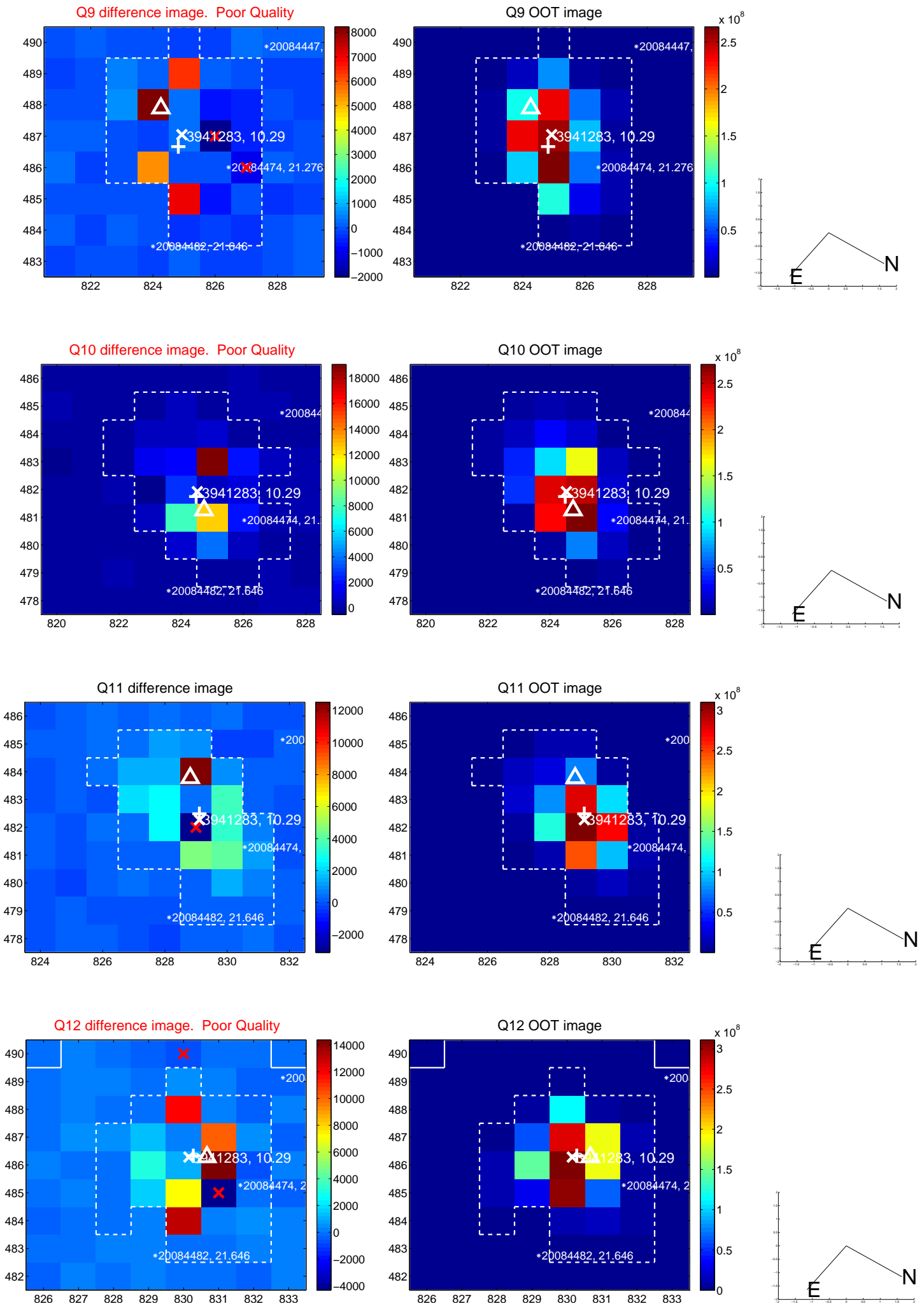
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



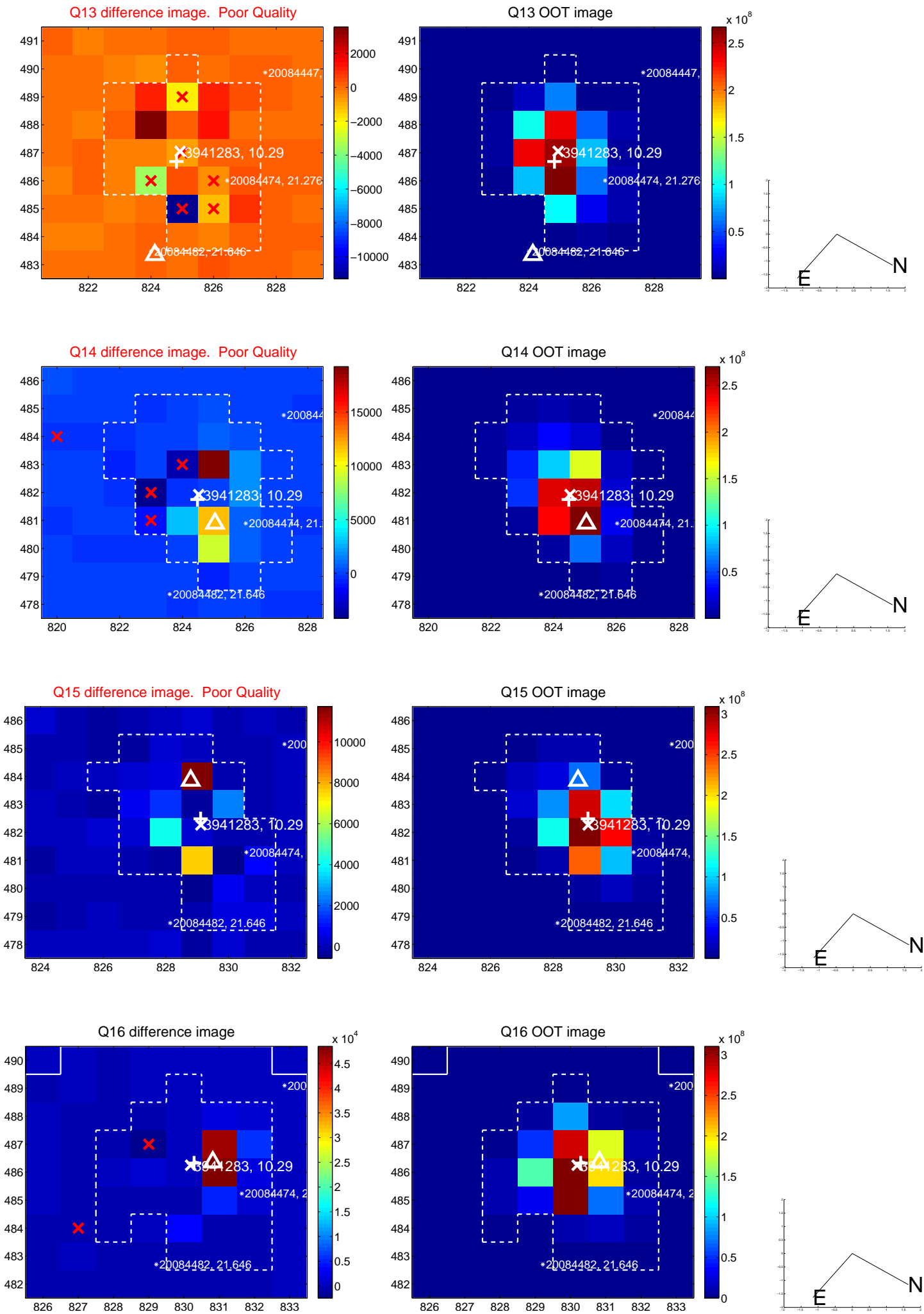
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



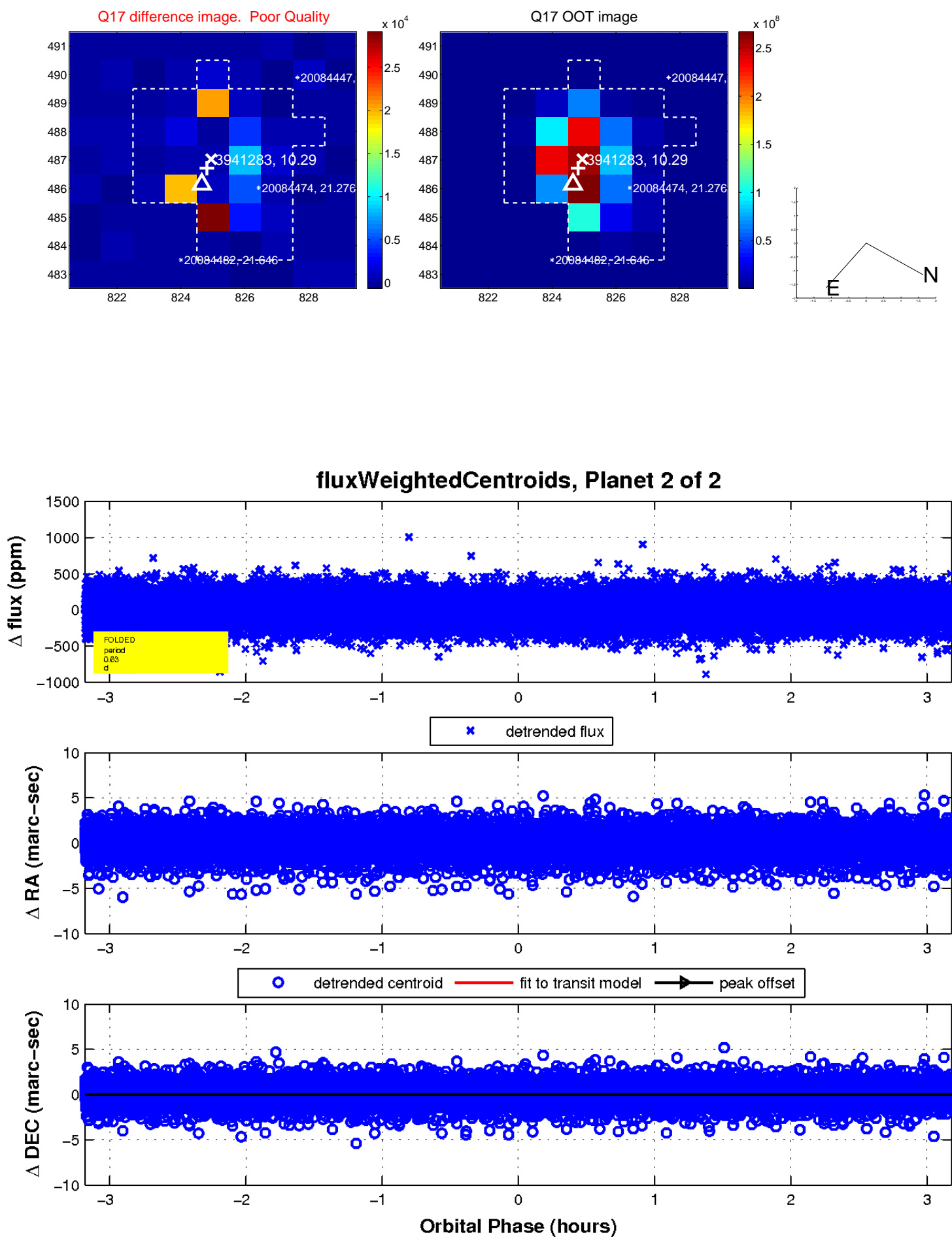
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

