

KIC 003234843

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})
003234843-01	OBS	3057.01	29.727088	134.659001	1071.4	3.740	16.3	17.8	0.88	5815	3.58	22.75
003234843-02	OBS	3057.02	10.613606	140.859339	555.3	3.809	16.2	17.8	0.88	5815	2.45	89.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003234843-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
003234843-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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

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

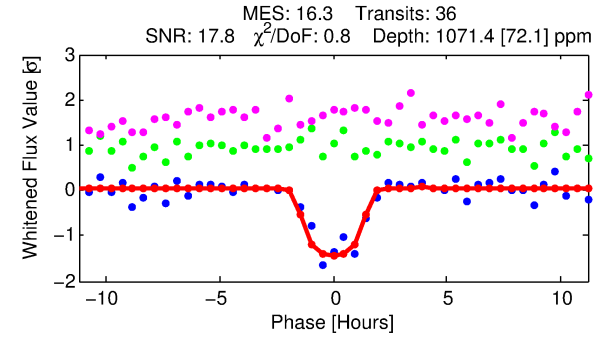
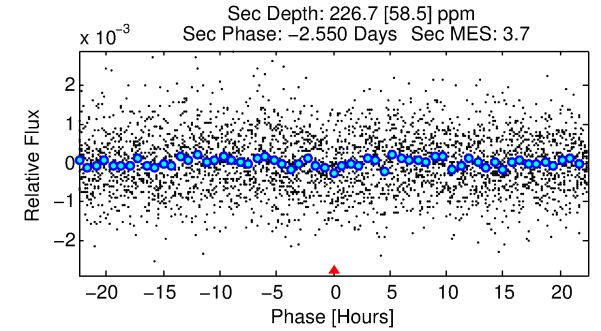
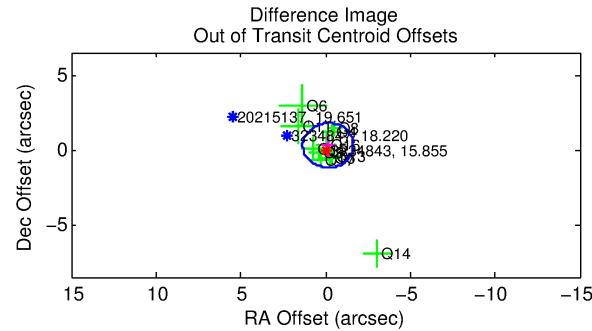
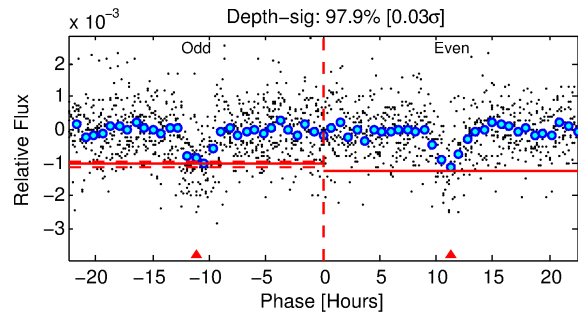
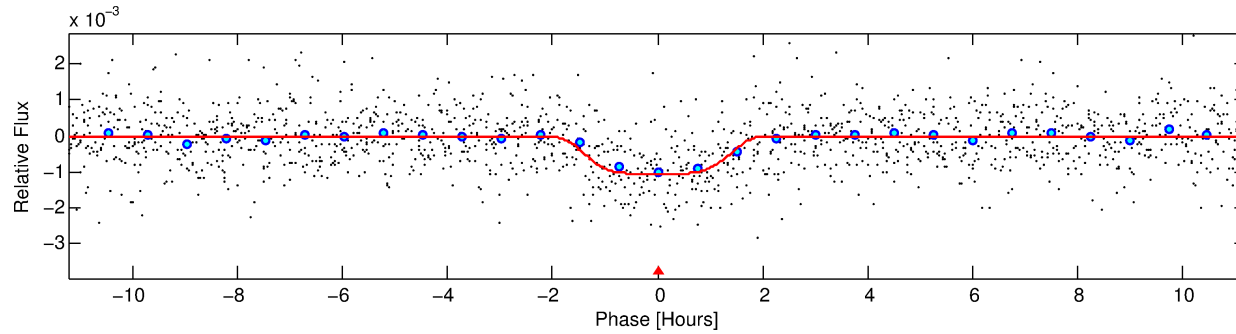
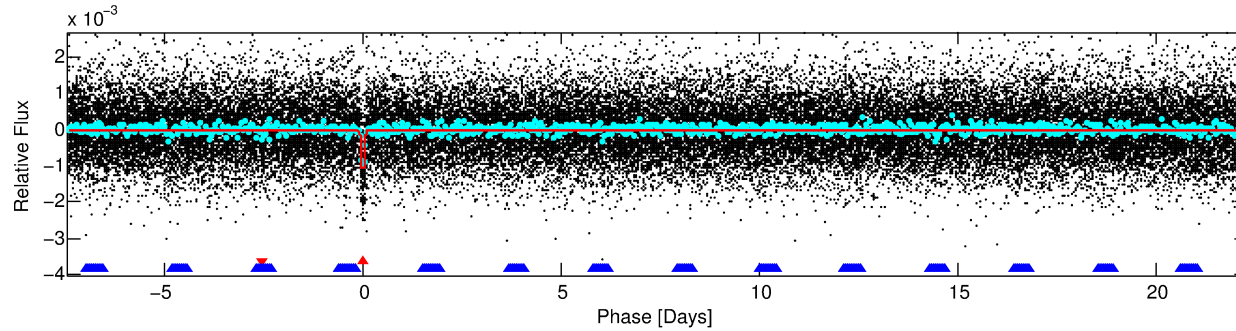
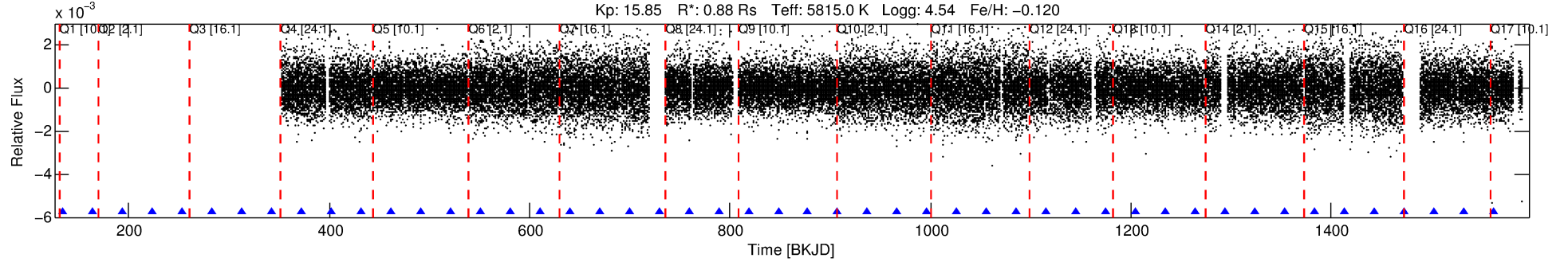
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003234843-01

No Significant Match Found

DV One-Page Summary

KIC: 3234843 Candidate: 1 of 2 Period: 29.727 d
KOI: K03057.01 Name: Kepler-405c Corr: 0.954



DV Fit Results:

Period = 29.72709 [0.00022] d
Epoch = 134.6590 [0.0063] BKJD
Rp/R* = 0.0374 [0.0023]
a/R* = 26.75 [5.14]
b = 0.94 [0.03]
Seff = 22.75 [8.72]
Teq = 557 [53] K
Rp = 3.58 [1.10] Re
a = 0.1861 [0.0463] AU
Ag = 337.18 [154.20] [2.18σ]
Teffp = 3689 [294] K [10.48σ]

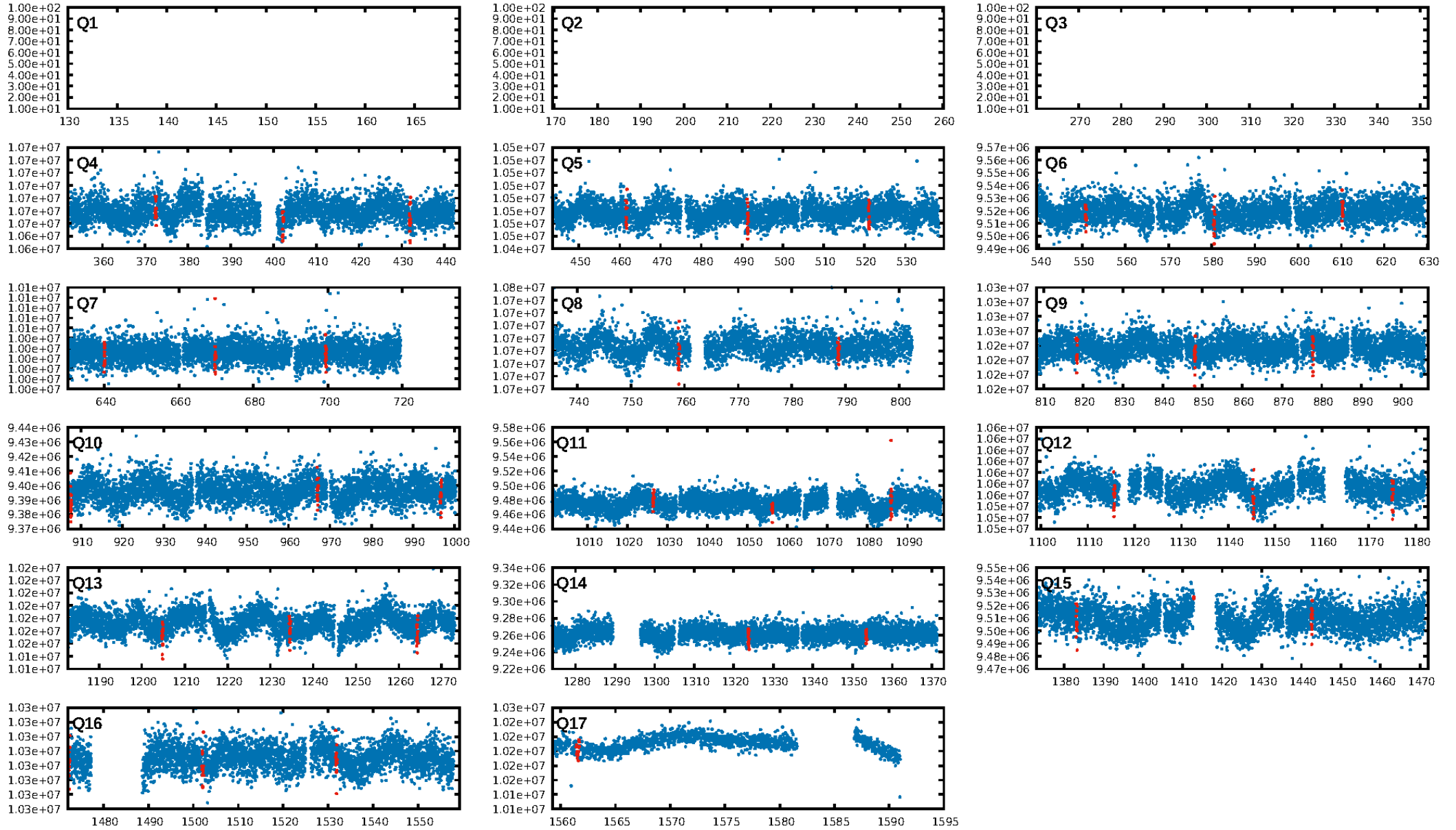
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [85.94σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 83.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.79e-56
RollingBand-fgt: 1.00 [35/35]
GhostDiagnostic-chr: 7.952
Centroid-sig: 0.3%
Centroid-so: 2.013 arcsec [2.56σ]
OotOffset-rm: 0.326 arcsec [0.66σ]
KicOffset-rm: 0.274 arcsec [0.40σ]
OotOffset-st: 2/2/3/4 [11]
KicOffset-st: 2/2/3/4 [11]
DiffImageQuality-fgm: 0.73 [8/11]
DiffImageOverlap-fno: 1.00 [14/14]

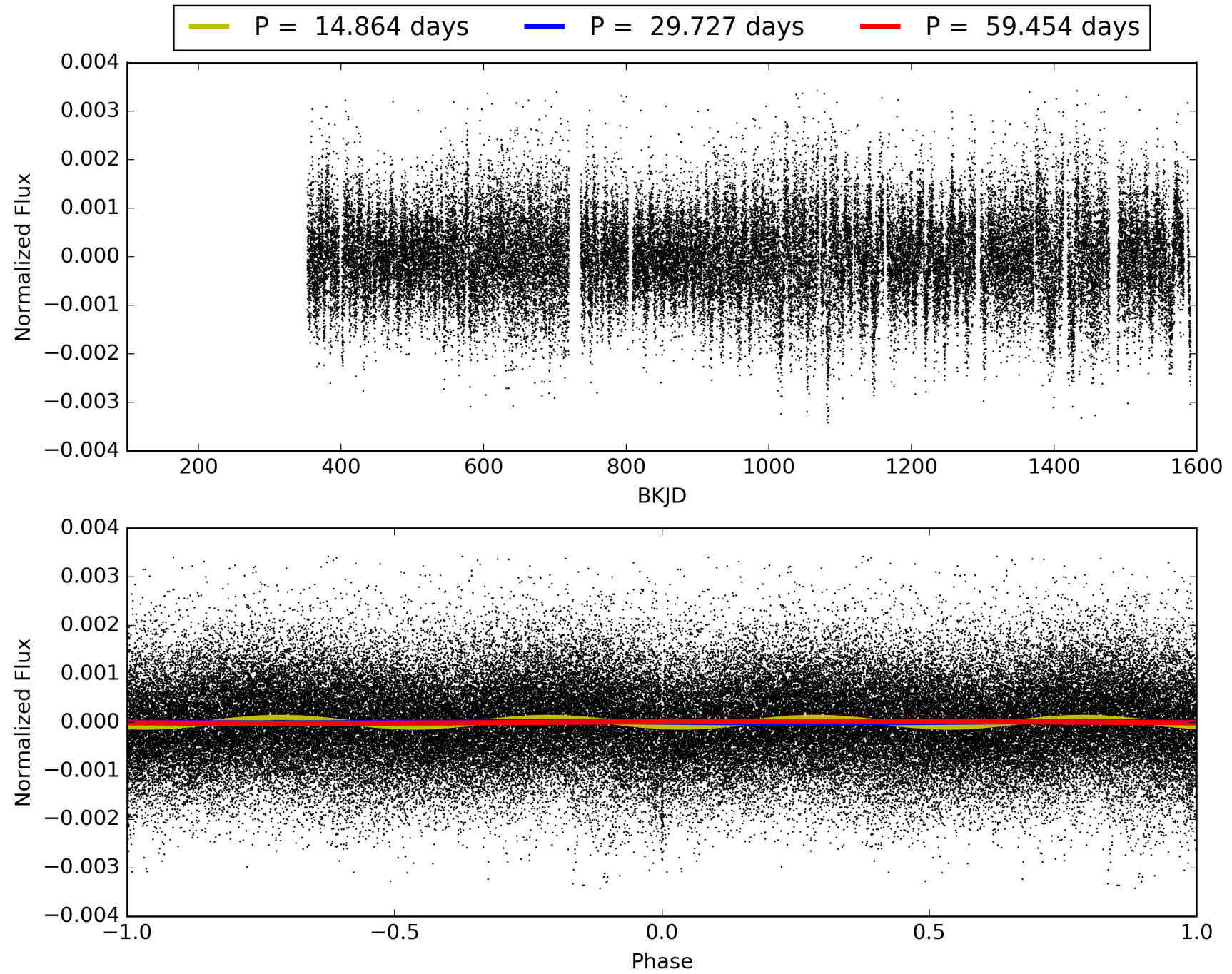
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:51:45 Z

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

TCE 003234843-01, PDC Light Curves

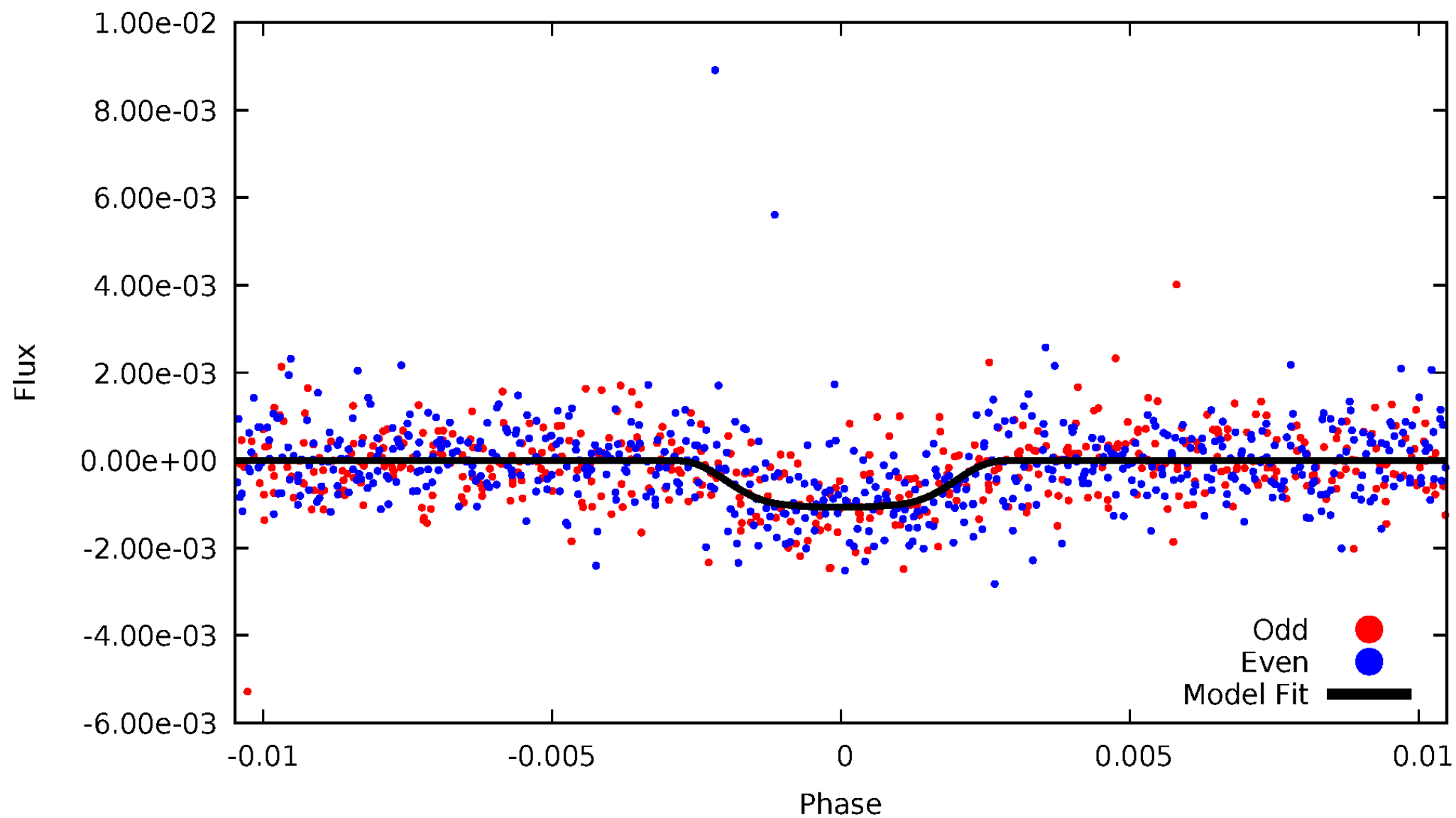


TCE 003234843-01



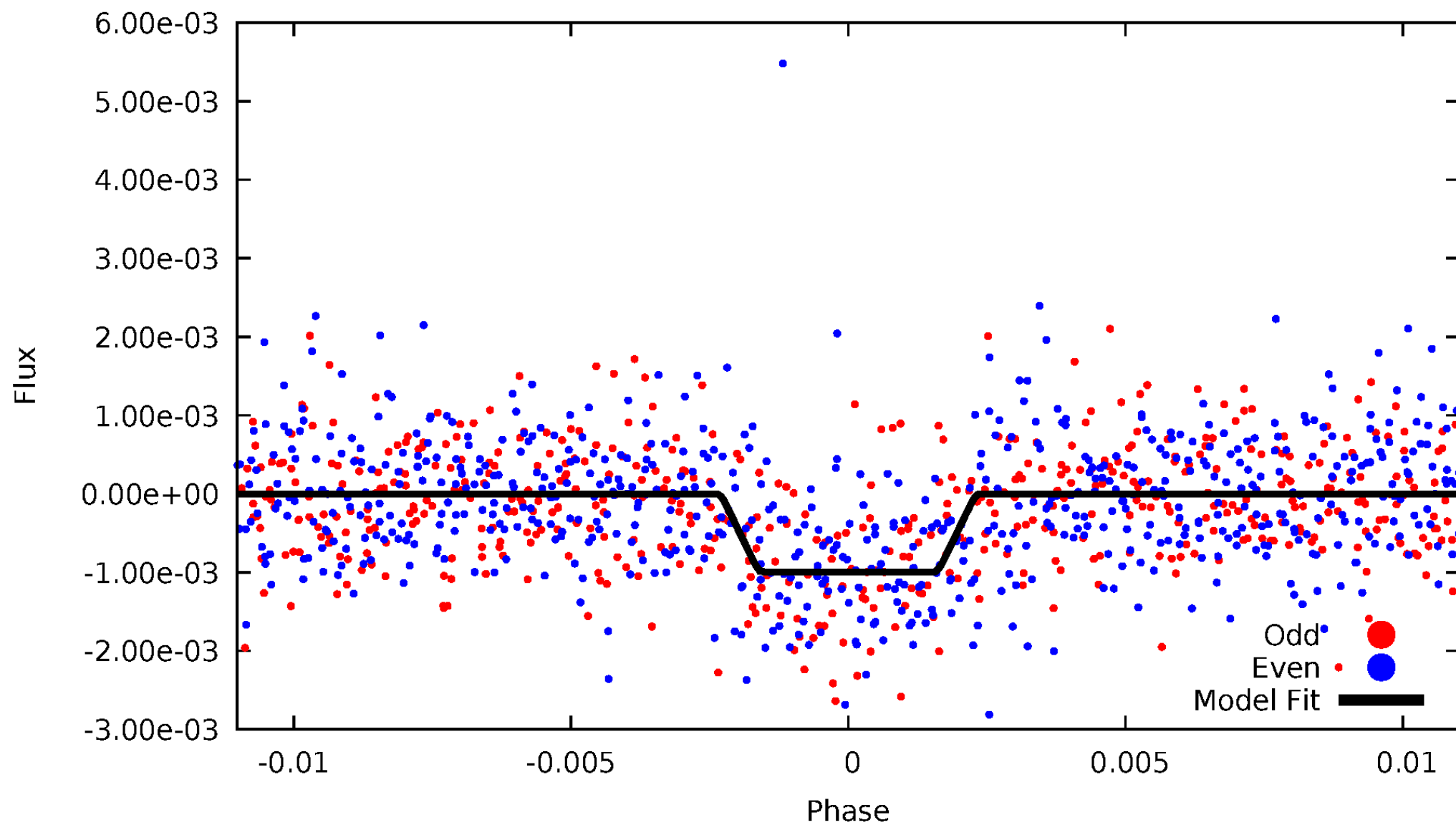
DV Odd/Even

TCE 003234843-01



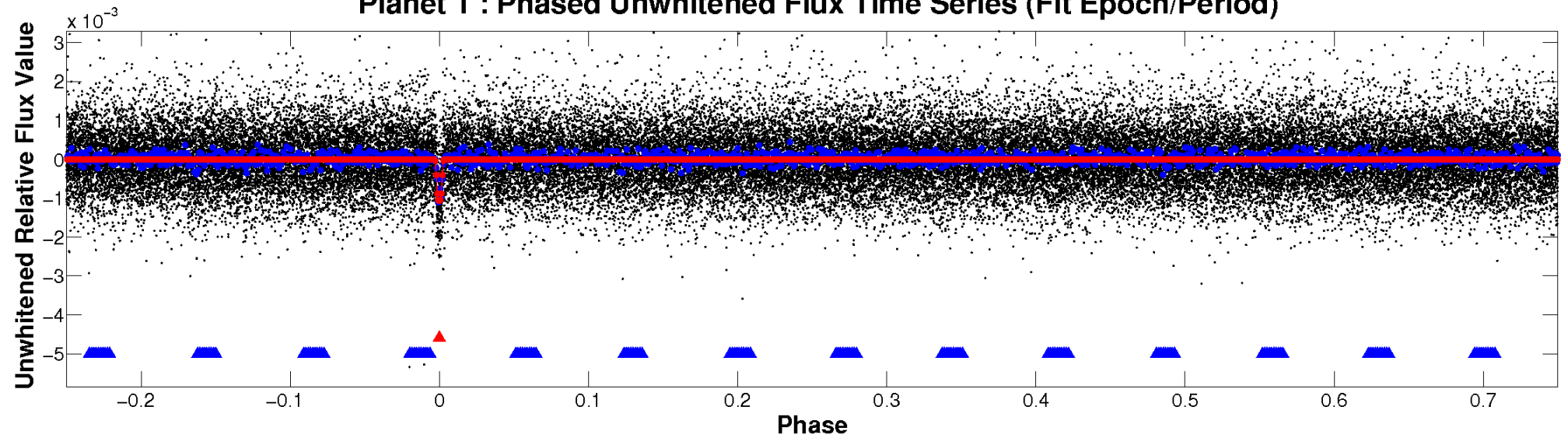
ALT Odd/Even

TCE 003234843-01

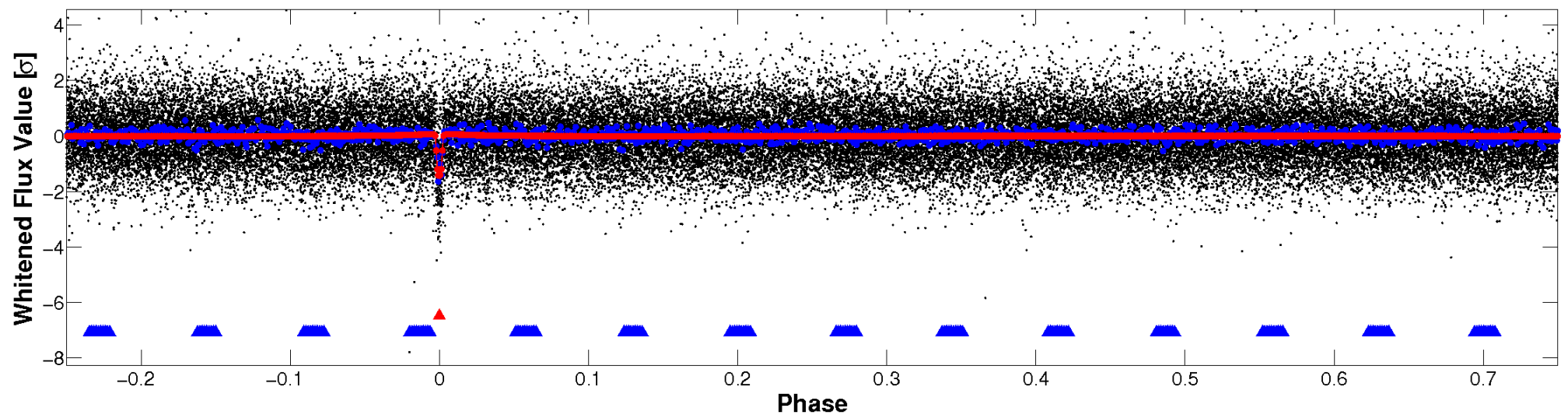


Non-Whitened Vs. Whitened Light Curve

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

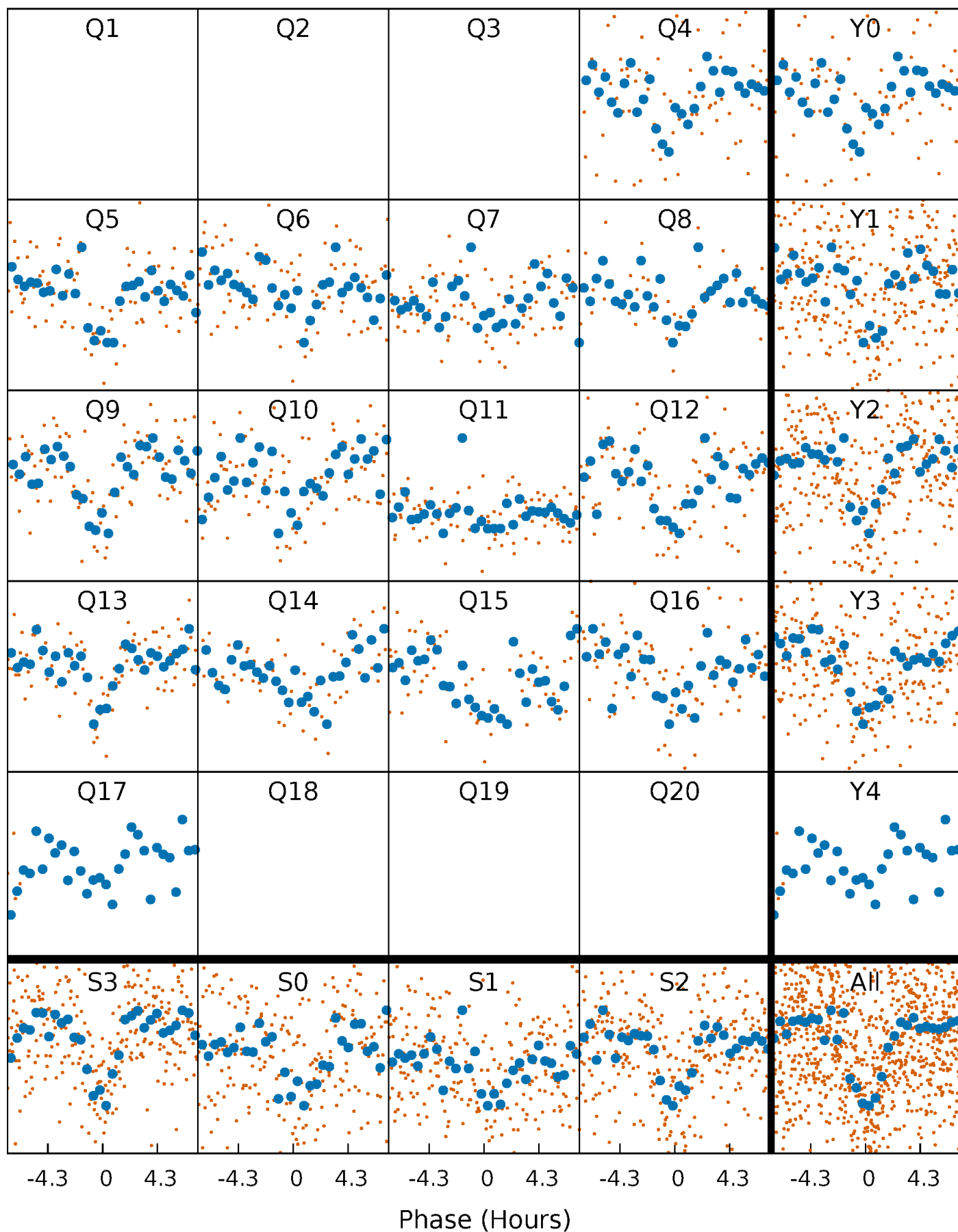


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



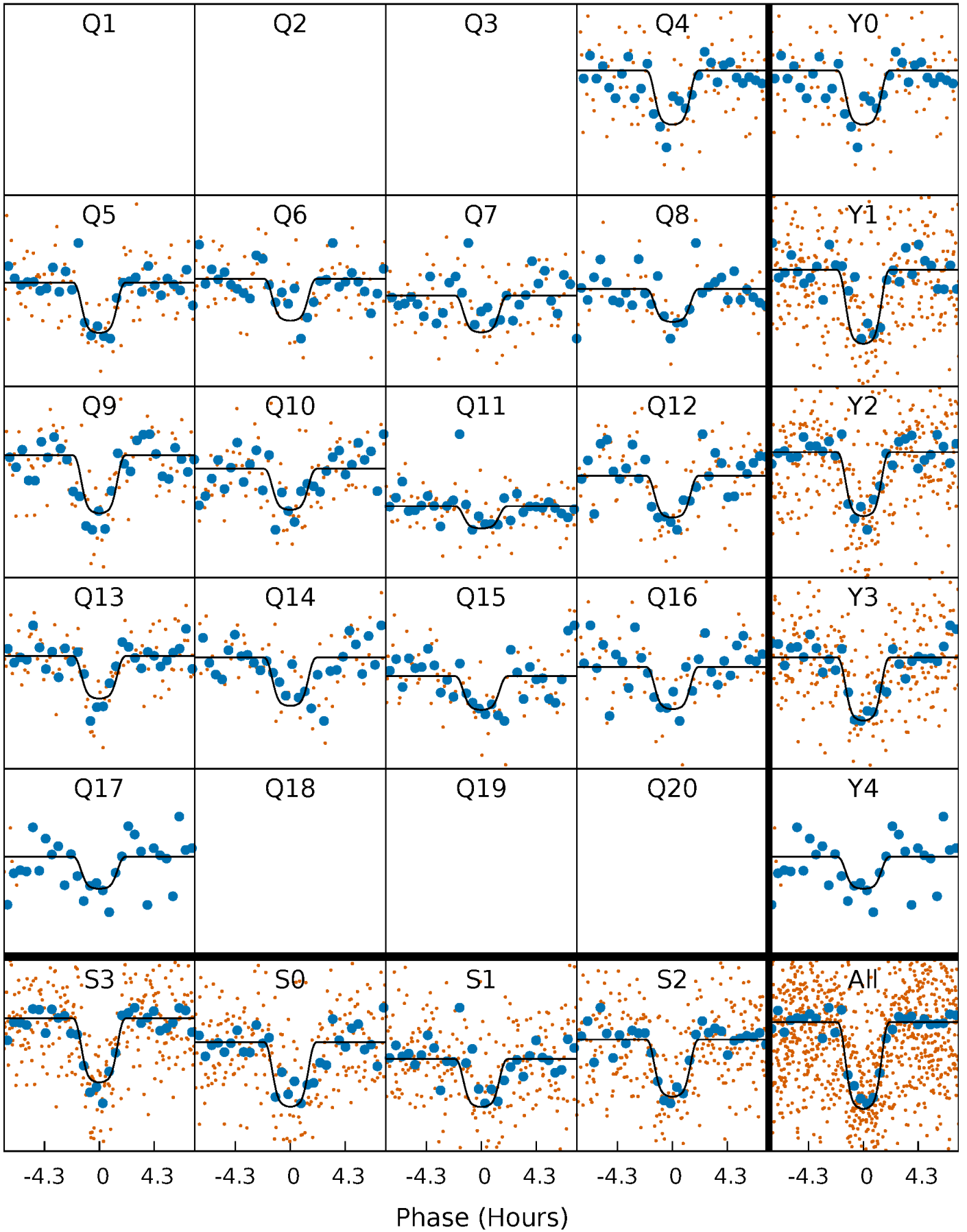
PDC Quarter-Phased Transit Curves

TCE 003234843-01 P= 29.727088 Days $T_0=134.659001$ (BKJD)



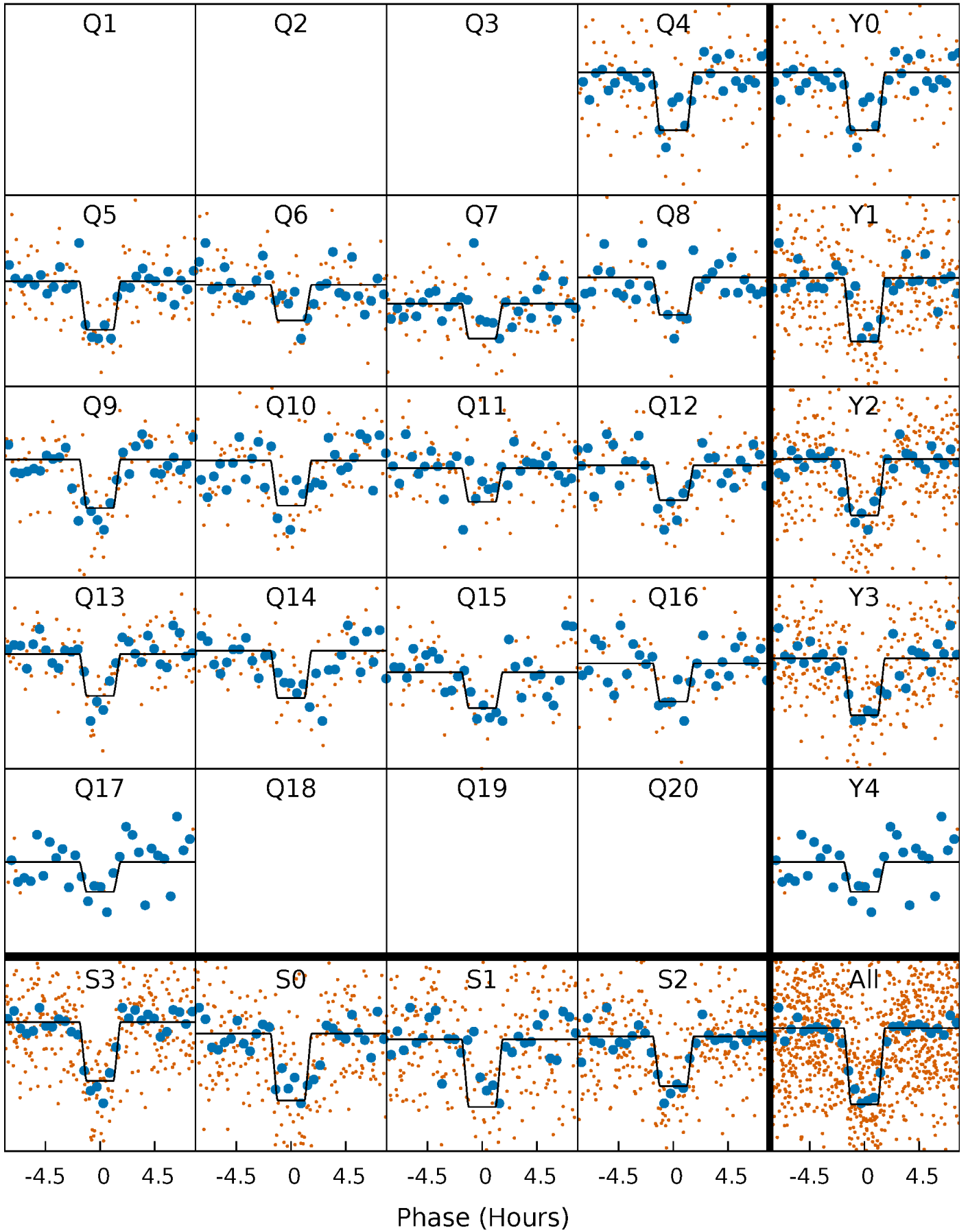
DV Quarter-Phased Transit Curves

TCE 003234843-01 P= 29.727088 Days $T_0=134.659001$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

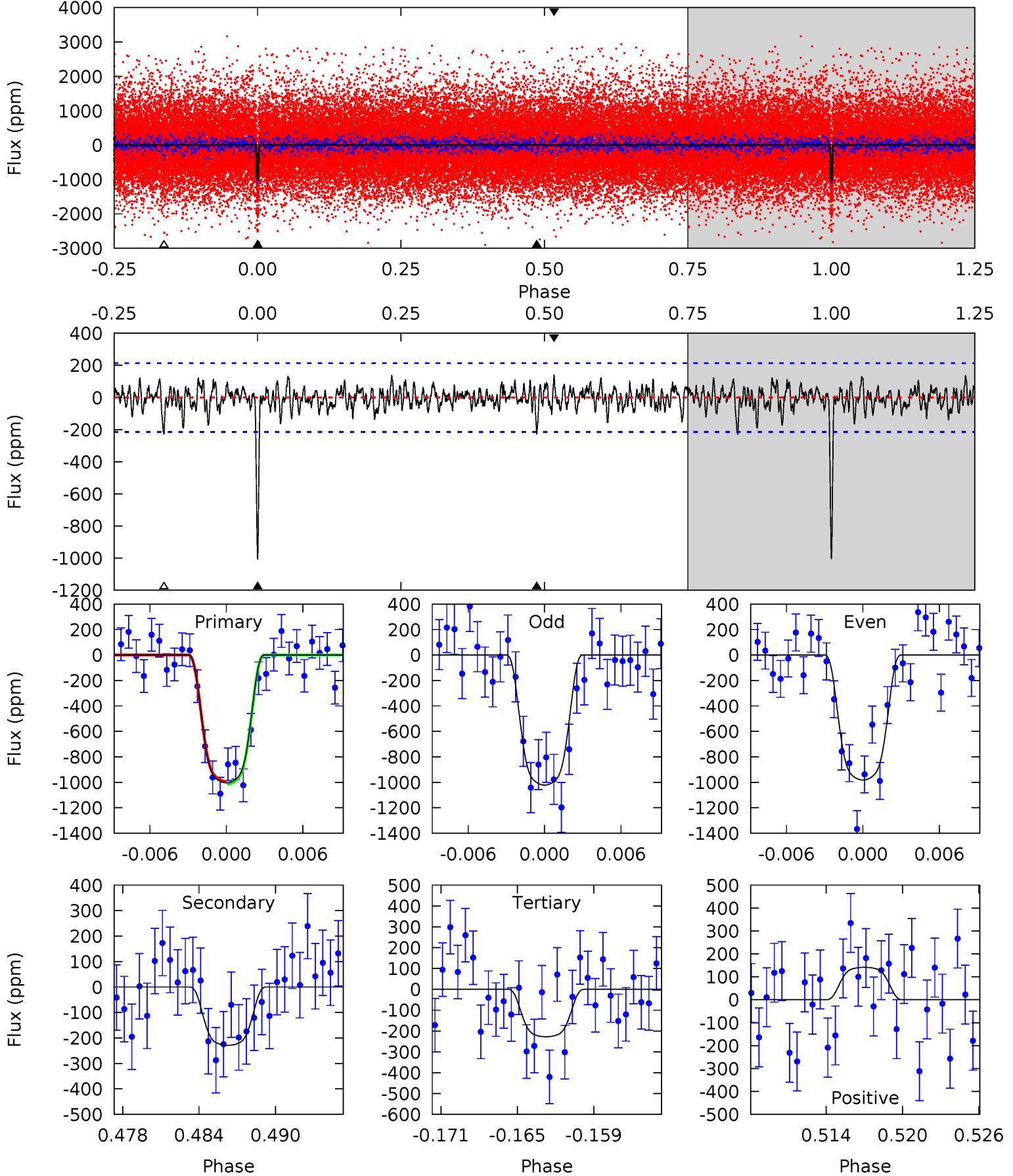
TCE 003234843-01 P= 29.727183 Days $T_0=134.658532$ (BKJD)



DV Model-Shift Uniqueness Test

003234843-01, P = 29.727088 Days, E = 134.659001 Days

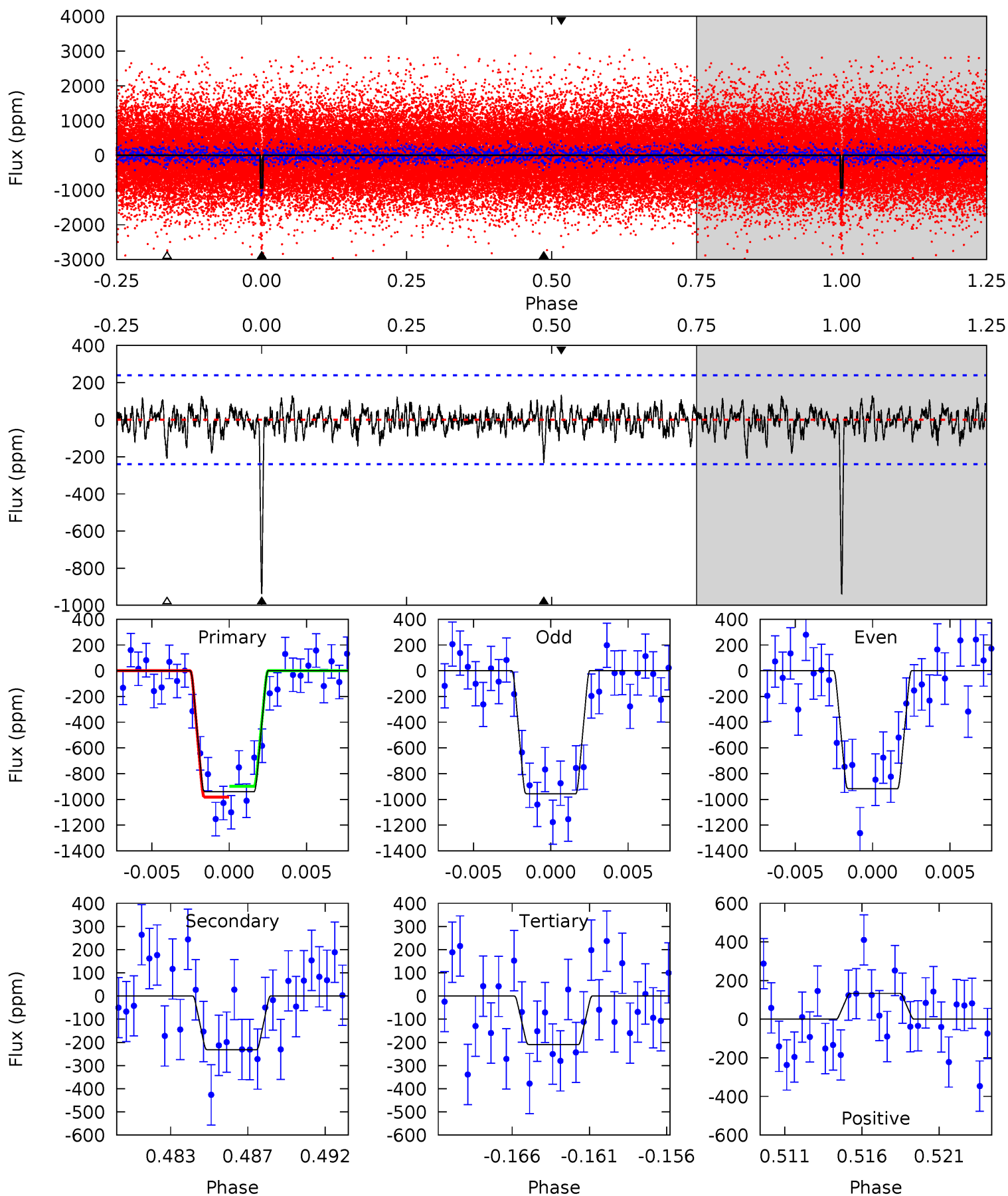
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.1	5.48	5.45	3.39	5.13	2.75	1.28	18.6	20.7	0.03	2.09	0.48	0.93	0.12	0.27



Alt Model-Shift Uniqueness Test

003234843-01, P = 29.727183 Days, E = 134.658532 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.3	5.00	4.52	2.88	5.17	2.82	1.06	15.7	17.4	0.48	2.13	0.43	0.95	0.12	0.90



Stellar Parameters For KIC 003234843

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5815^{+163}_{-204}	$4.540^{+0.048}_{-0.192}$	$-0.120^{+0.300}_{-0.300}$	$0.877^{+0.264}_{-0.083}$	$0.973^{+0.111}_{-0.122}$	$2.032^{+0.417}_{-1.074}$
	+3%/-4%	+1%/-4%	+250%/-250%	+30%/-9%	+11%/-13%	+21%/-53%
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 003234843-01 / KOI 3057.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-229 ± 42	$3.68^{+0.57}_{-0.34}$	795^{+47}_{-38}	4010^{+182}_{-180}	311^{+90}_{-84}
Alt.	-232 ± 46	$3.15^{+0.53}_{-0.35}$	797^{+54}_{-42}	4248^{+224}_{-211}	430^{+139}_{-125}

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 $A_{obs} \gg 1.0$

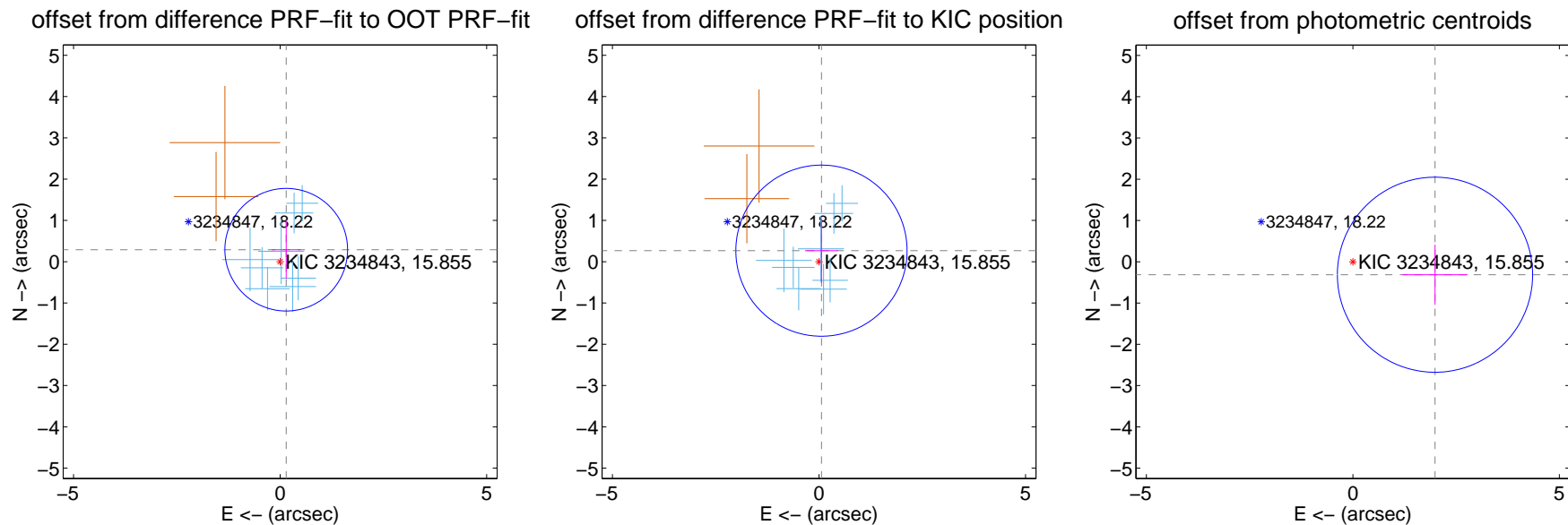
DV Centroid Data

Supplemental centroid analysis for 003234843-01. Kepler magnitude: 15.86. Transit SNR 17.80

There are 8 quarters with good PRF difference image offsets

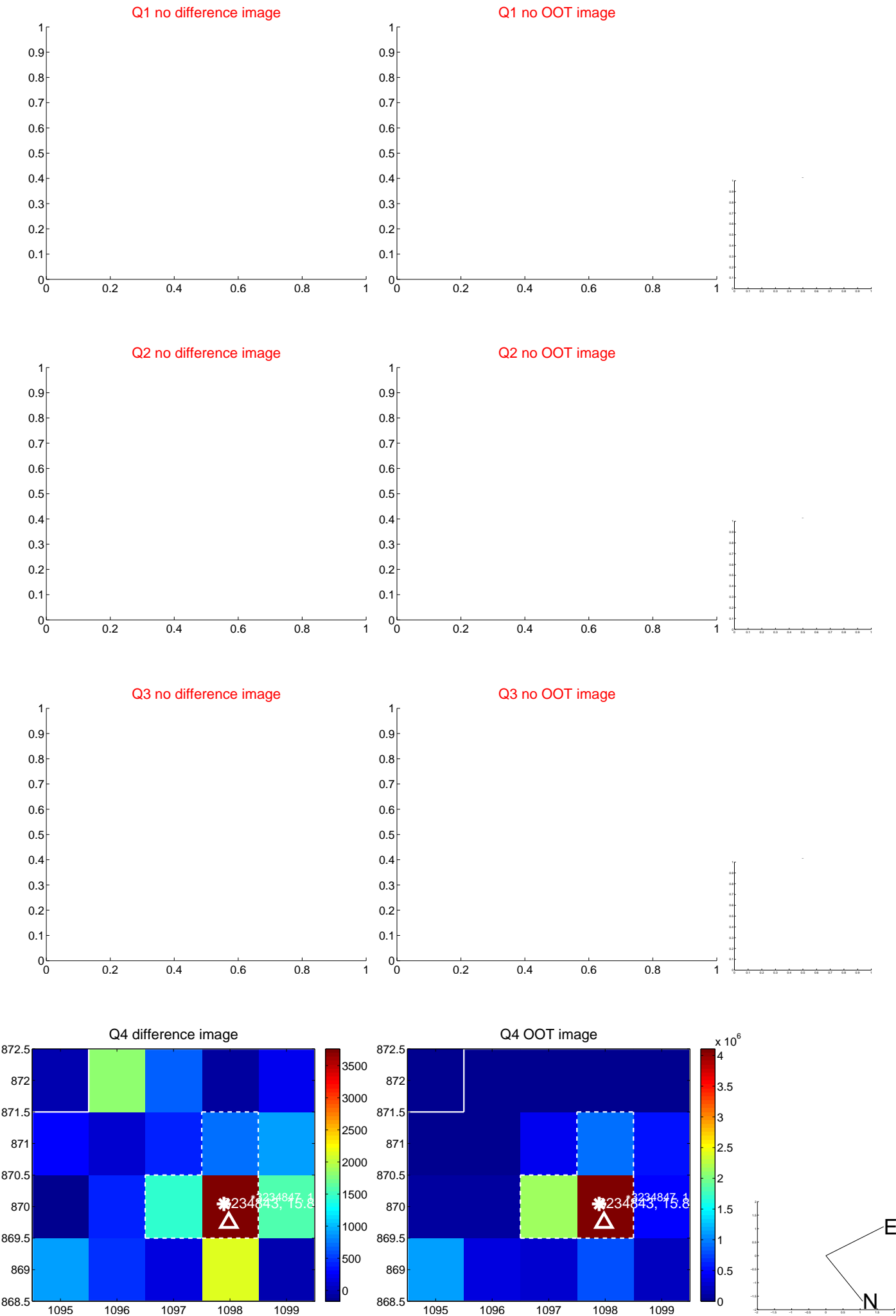
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.326 ± 0.495	0.66	-0.148 ± 0.353	0.290 ± 0.702
PRF-fit source offset from KIC position	0.274 ± 0.691	0.40	-0.060 ± 0.396	0.267 ± 0.780
photometric centroid source offset	2.01 ± 0.79	2.56	-1.99 ± 0.79	-0.31 ± 0.73

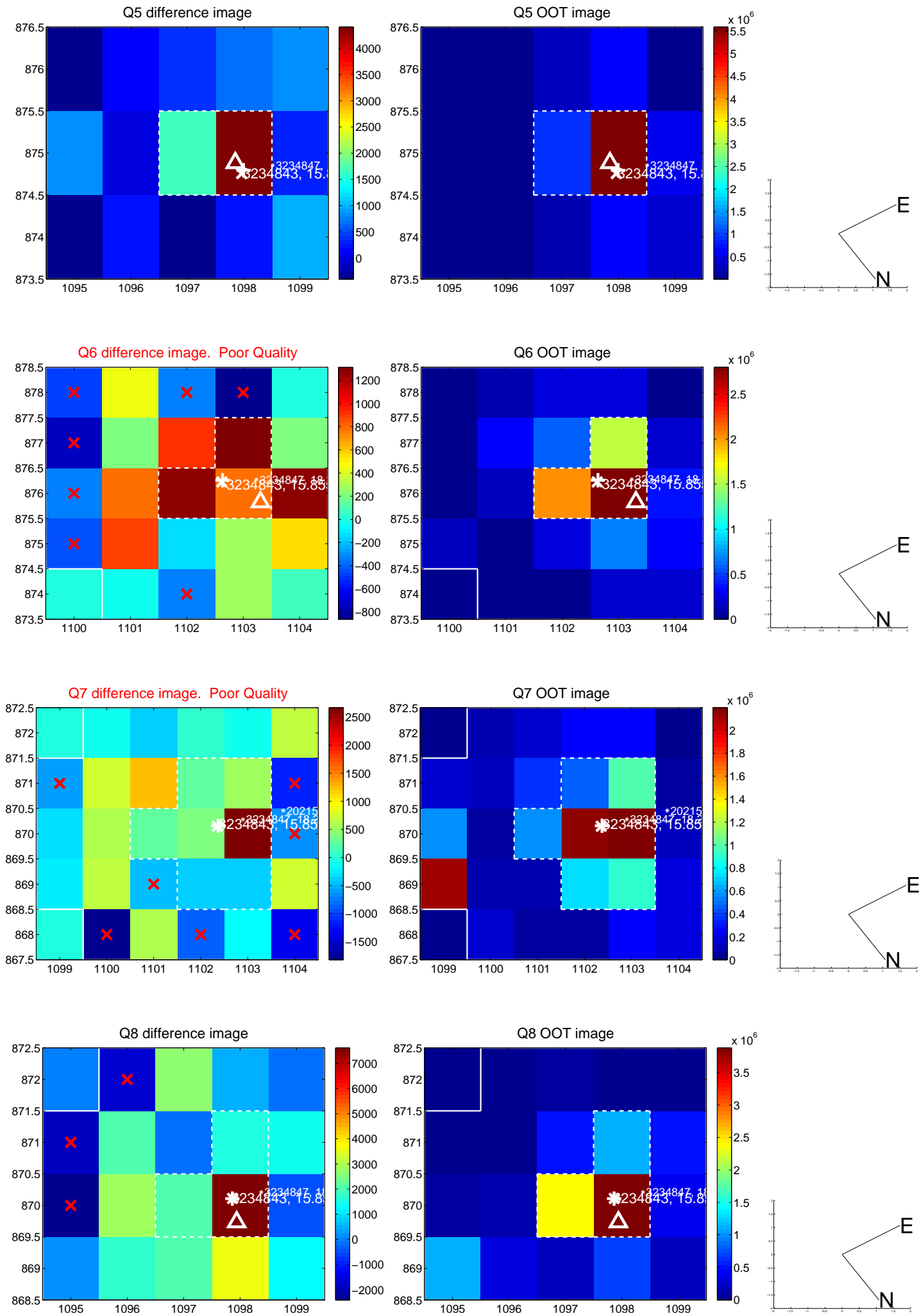


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

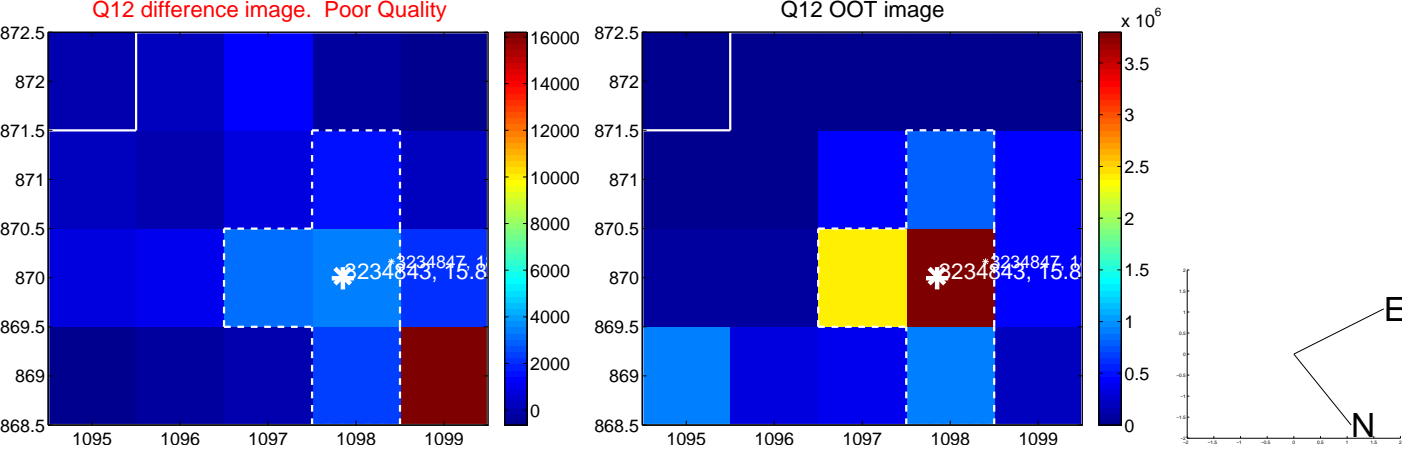
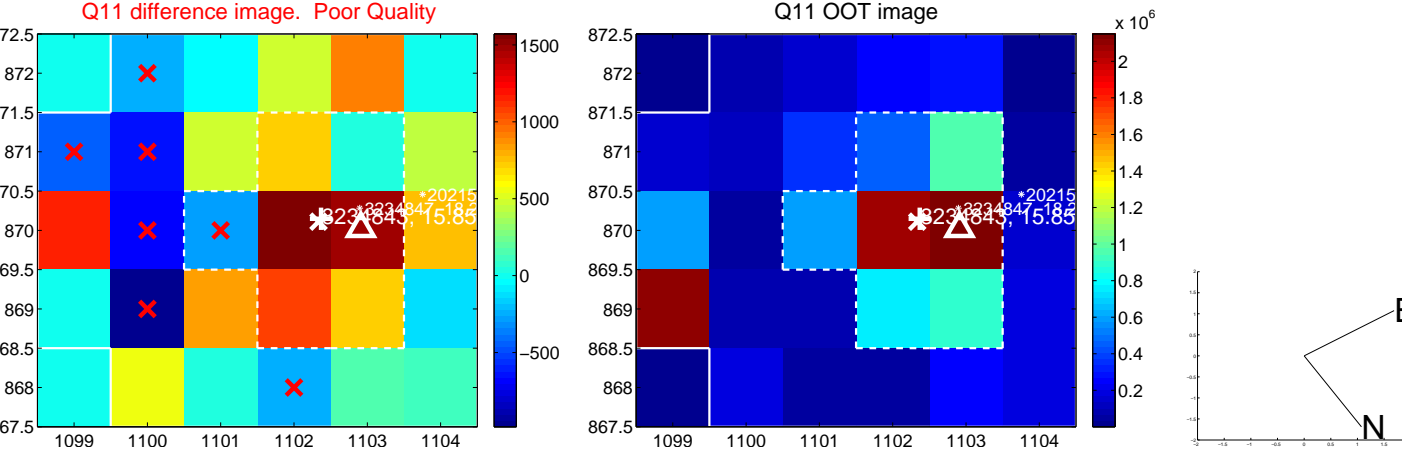
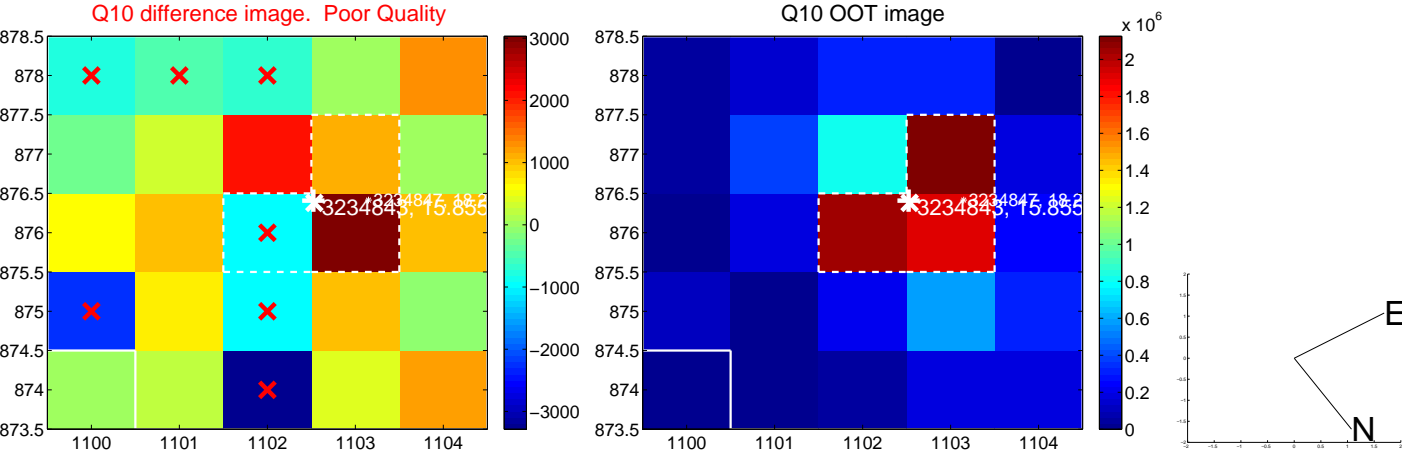
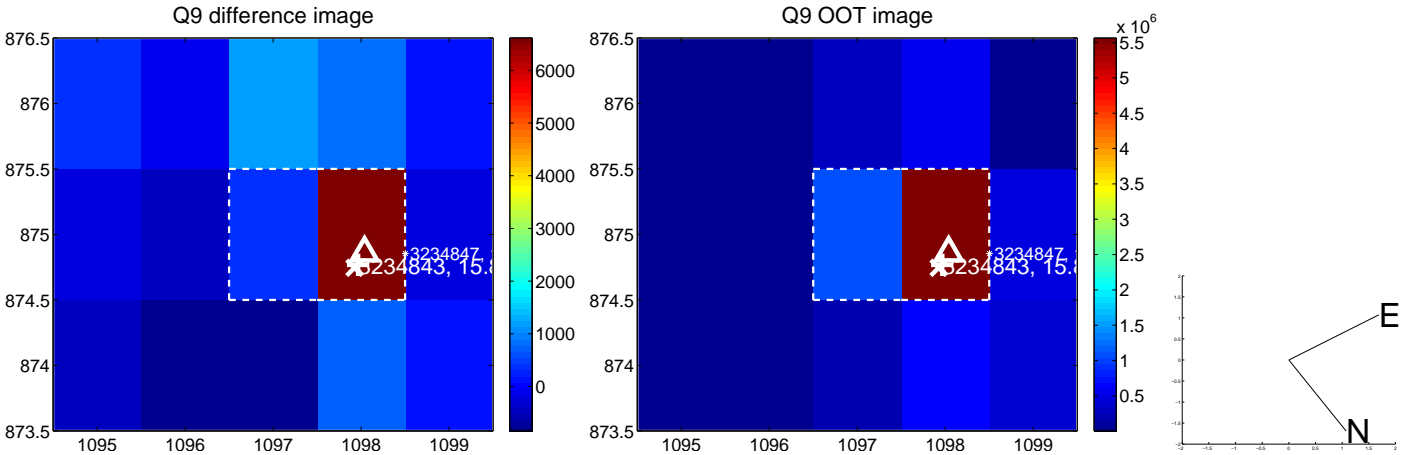
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



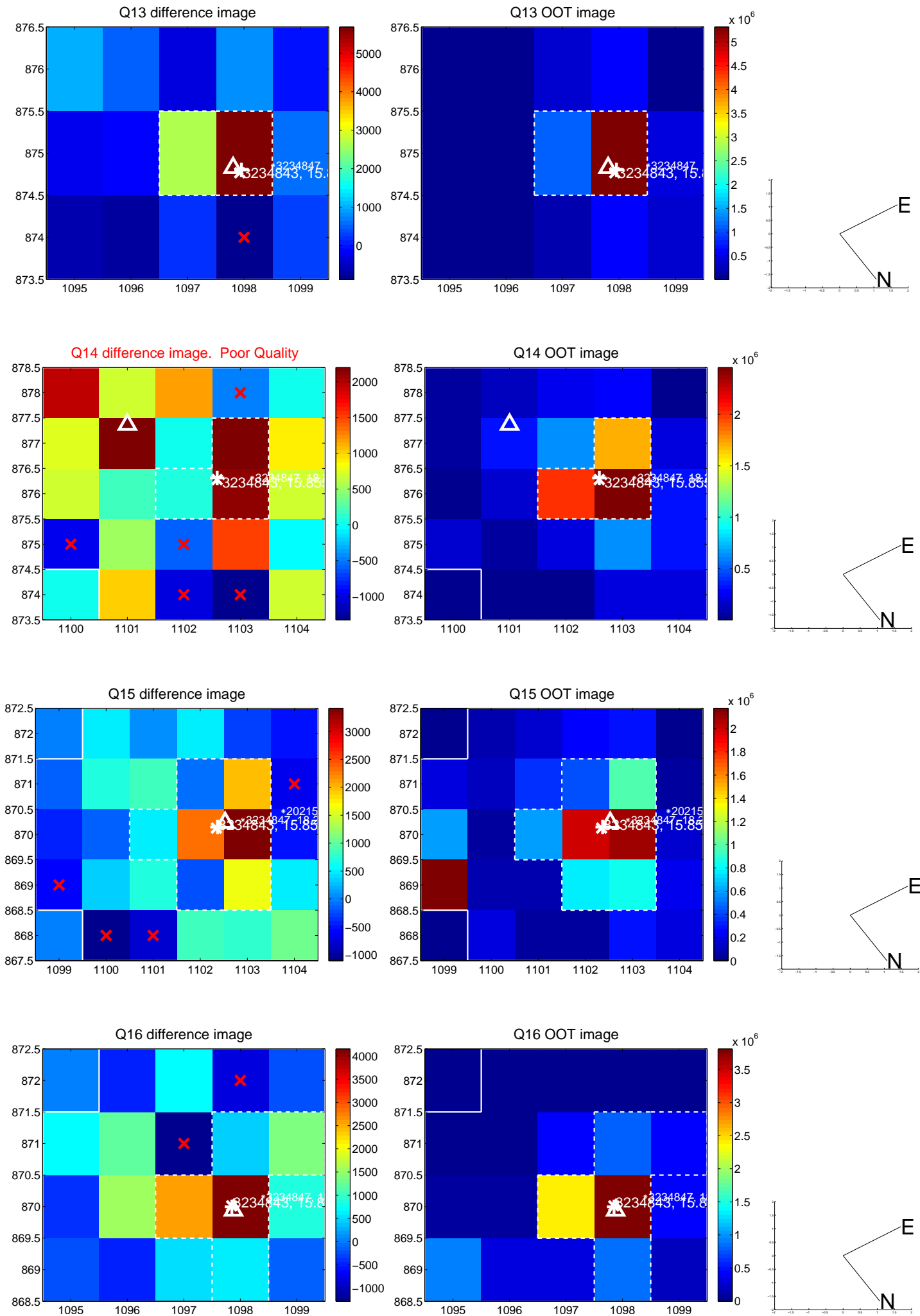
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



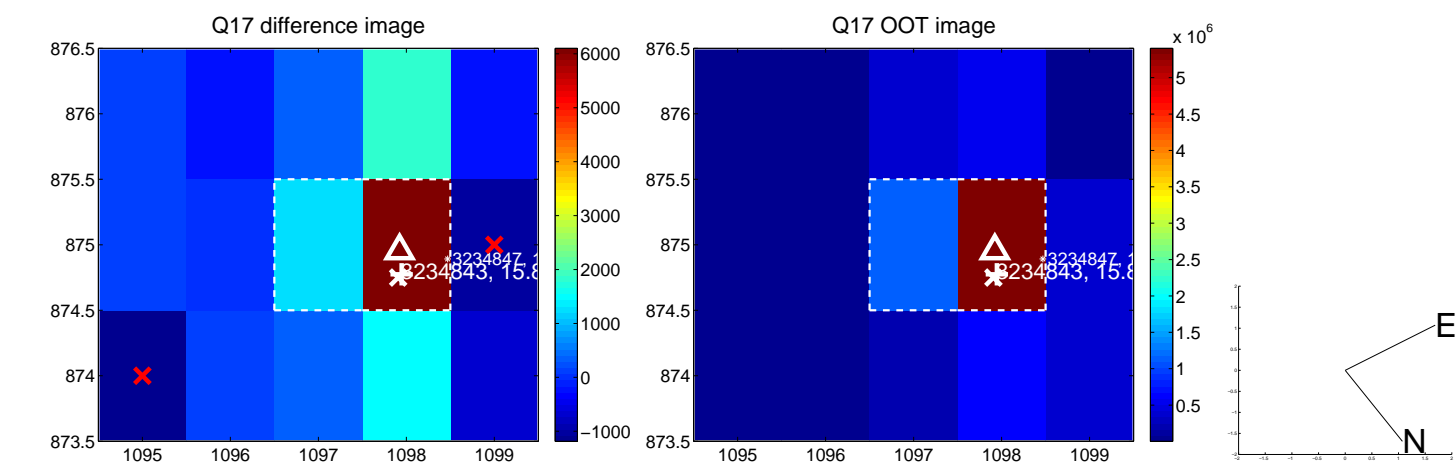
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



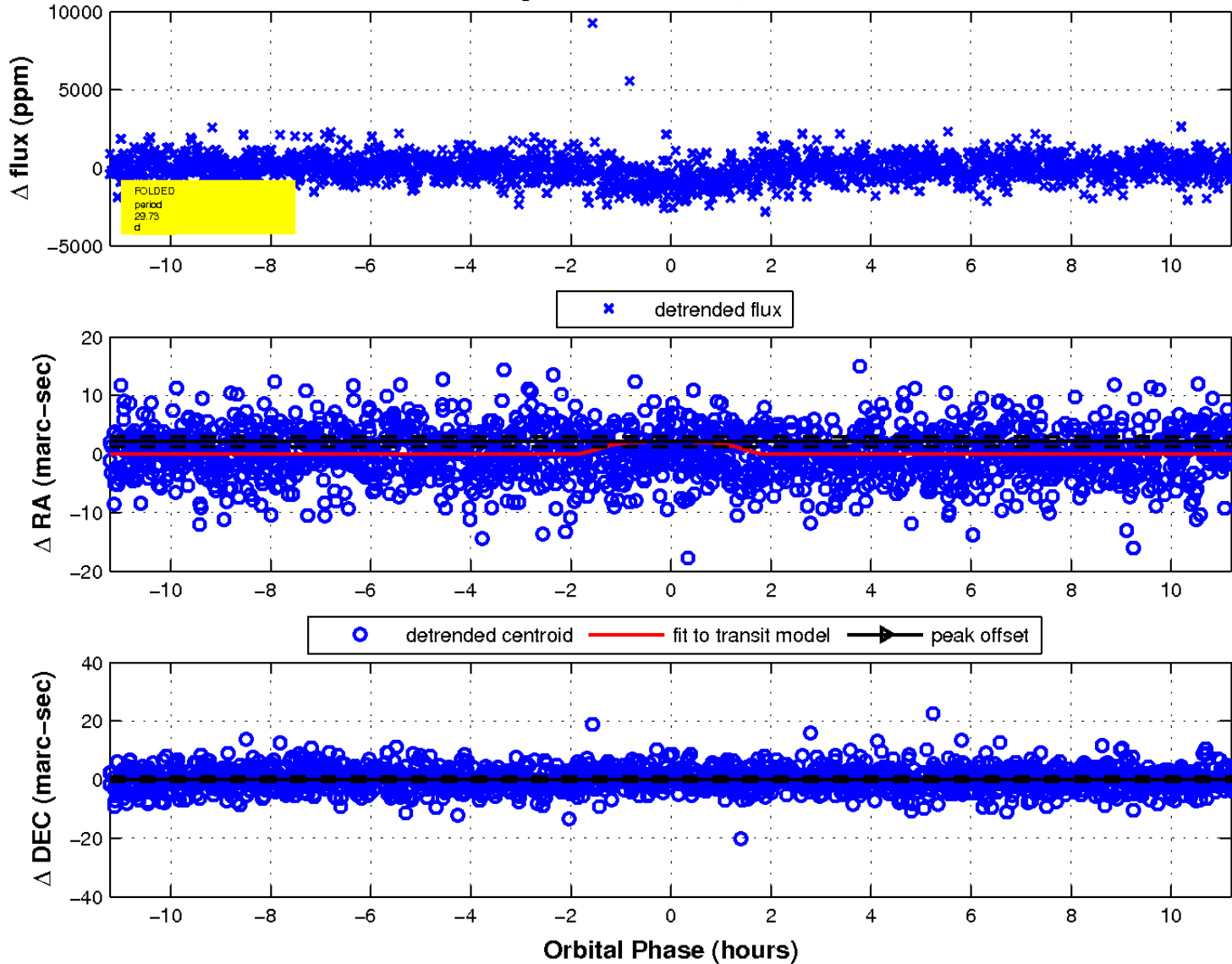
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

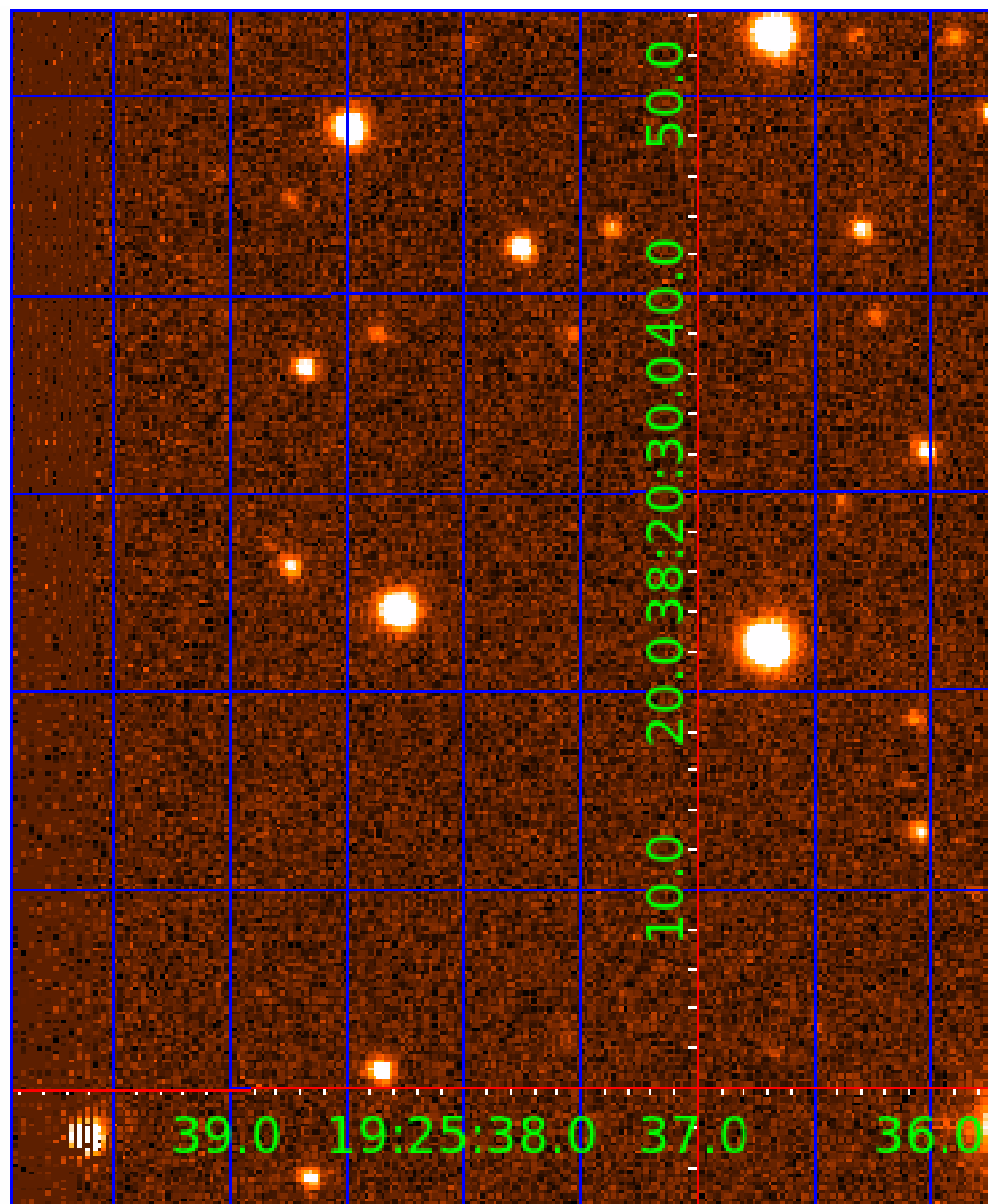


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 003234843

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})
003234843-01	OBS	3057.01	29.727088	134.659001	1071.4	3.740	16.3	17.8	0.88	5815	3.58	22.75
003234843-02	OBS	3057.02	10.613606	140.859339	555.3	3.809	16.2	17.8	0.88	5815	2.45	89.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003234843-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
003234843-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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

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

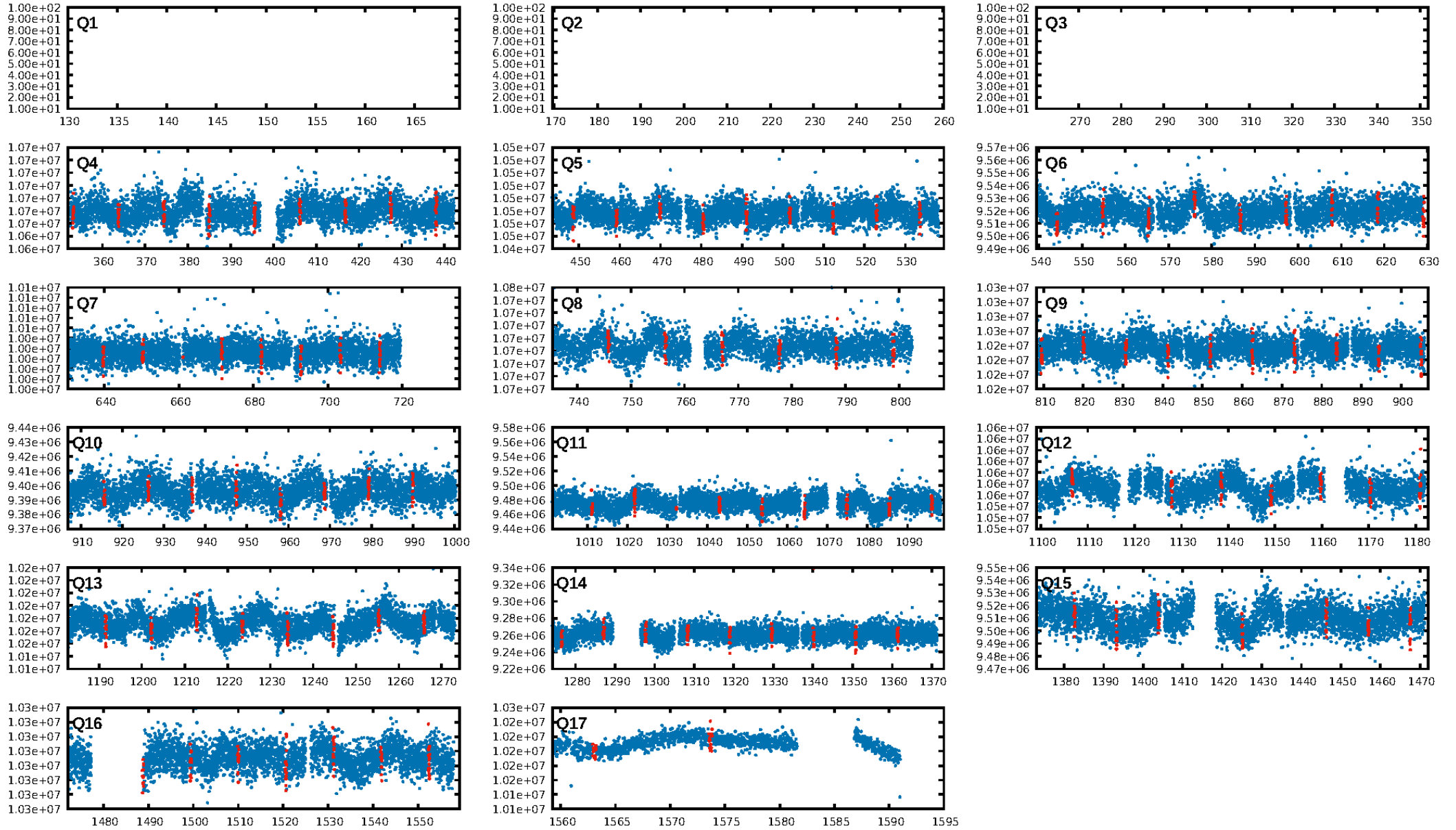
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003234843-02

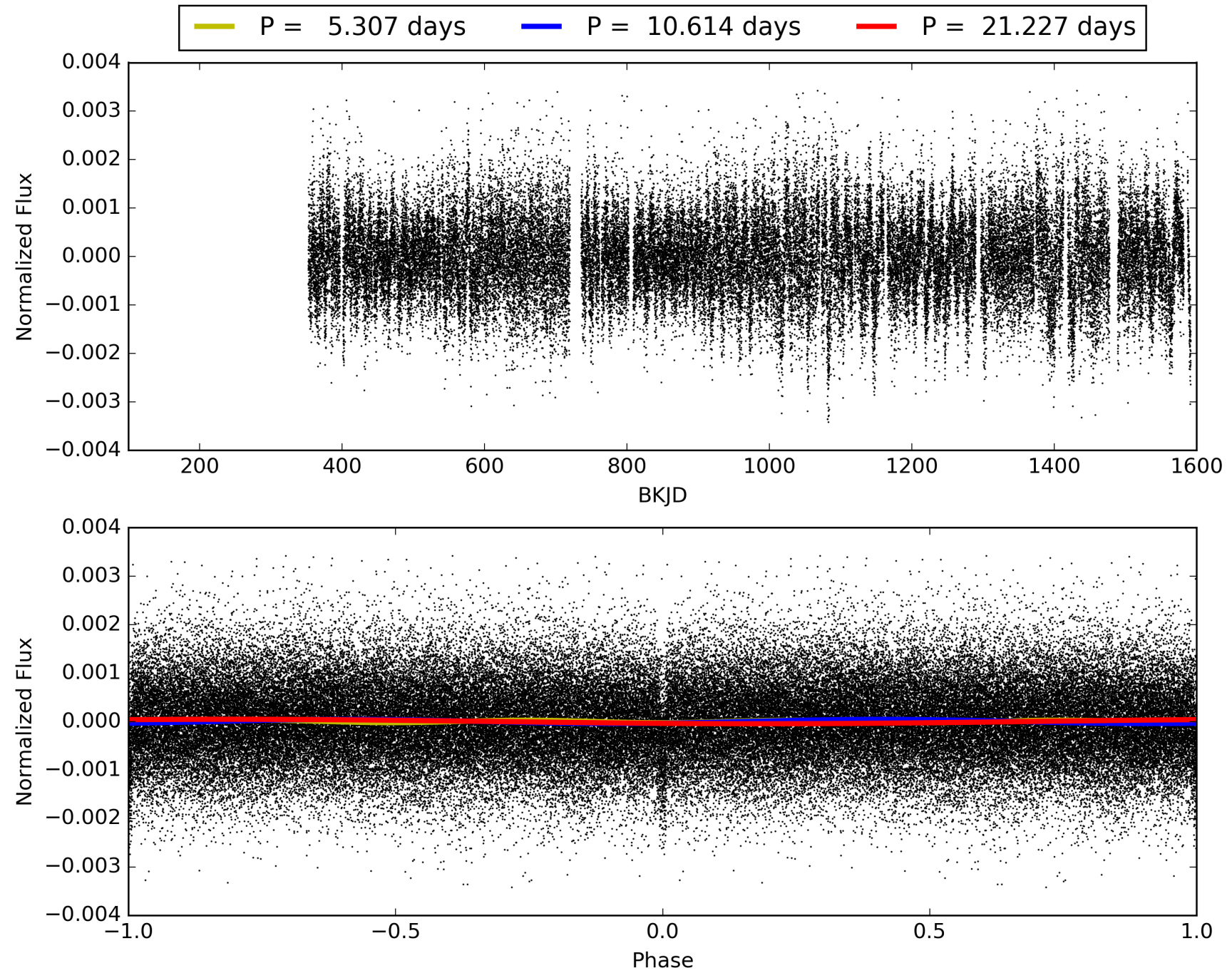
No Significant Match Found

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

TCE 003234843-02, PDC Light Curves

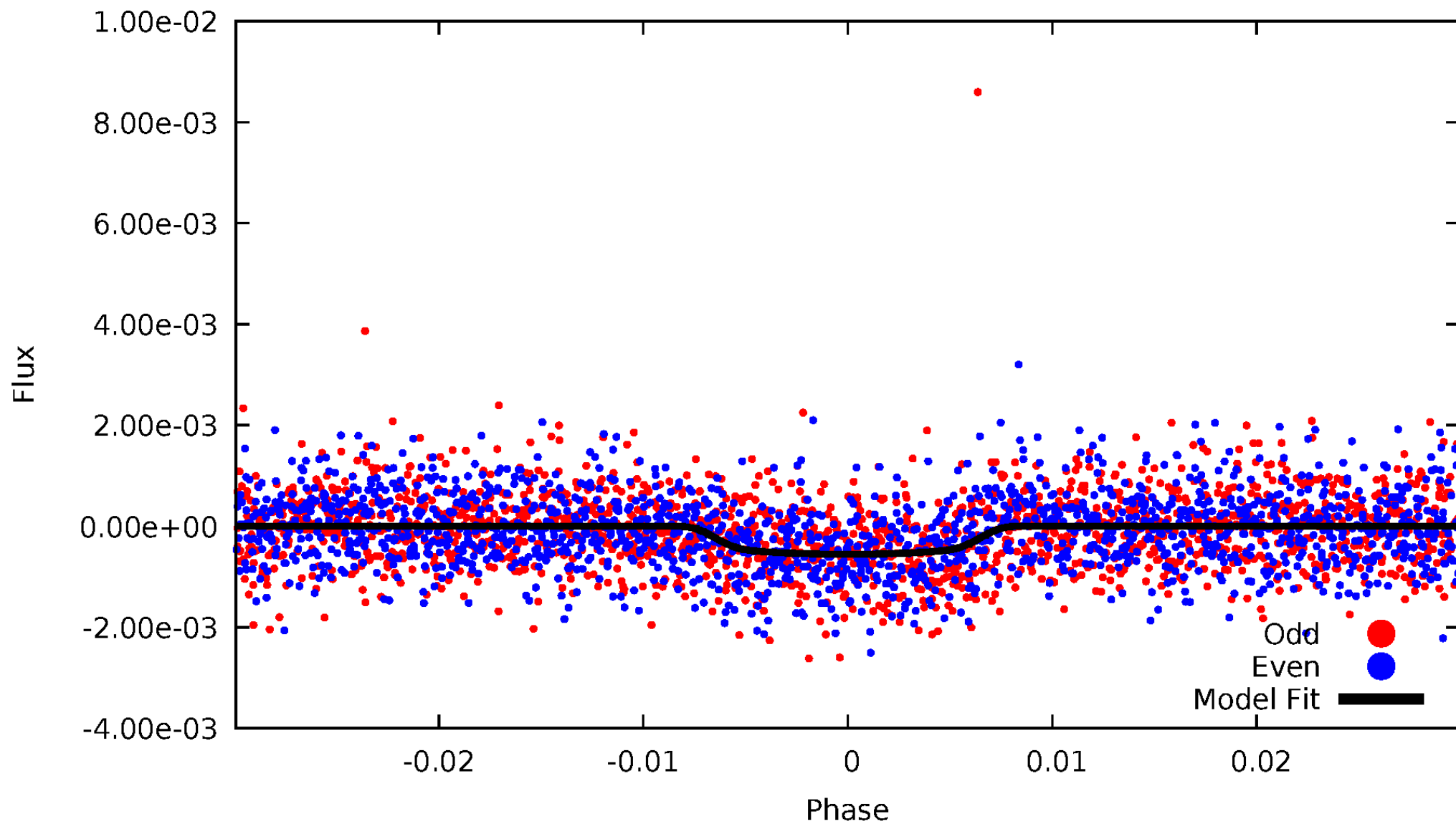


TCE 003234843-02



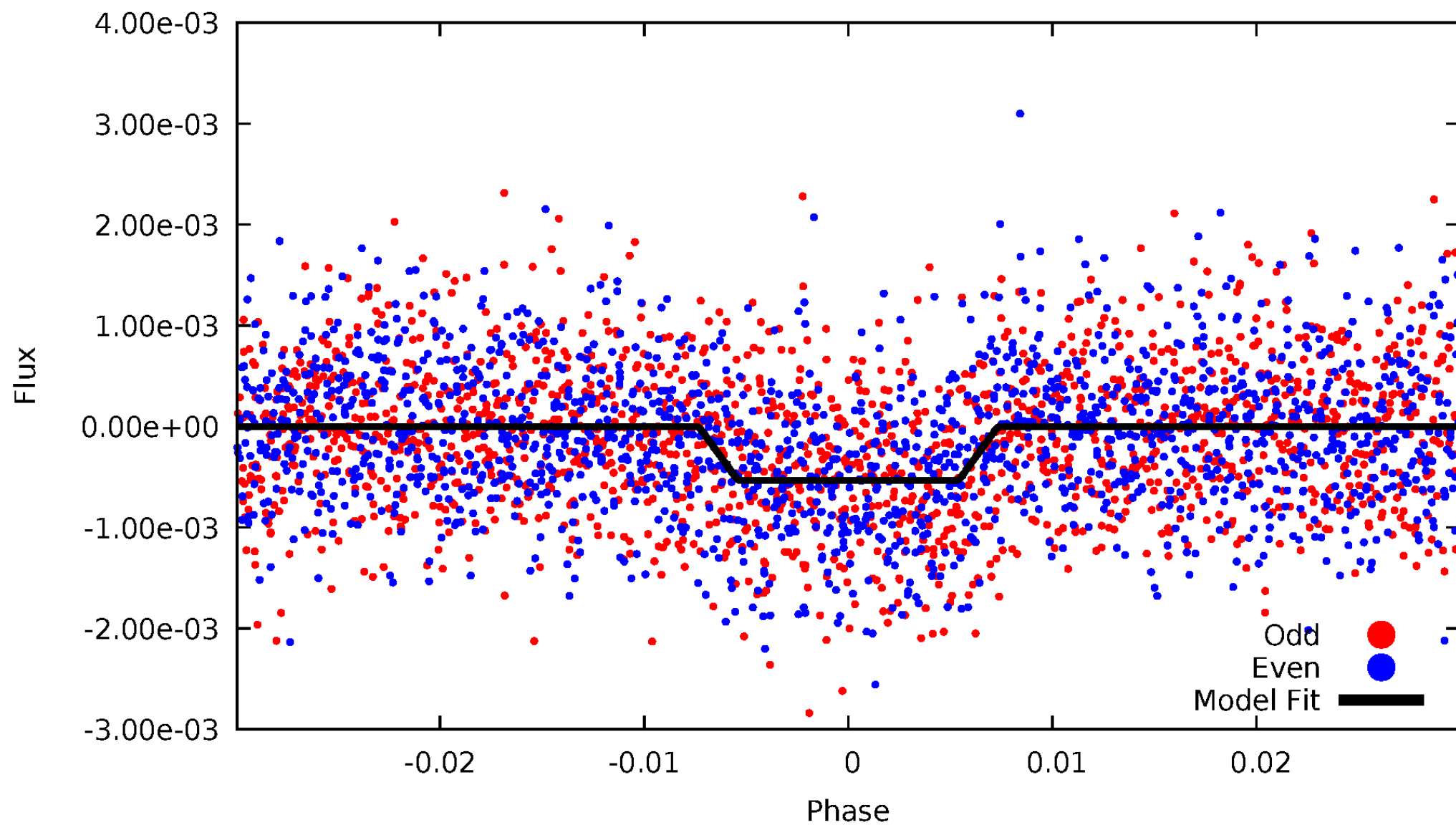
DV Odd/Even

TCE 003234843-02



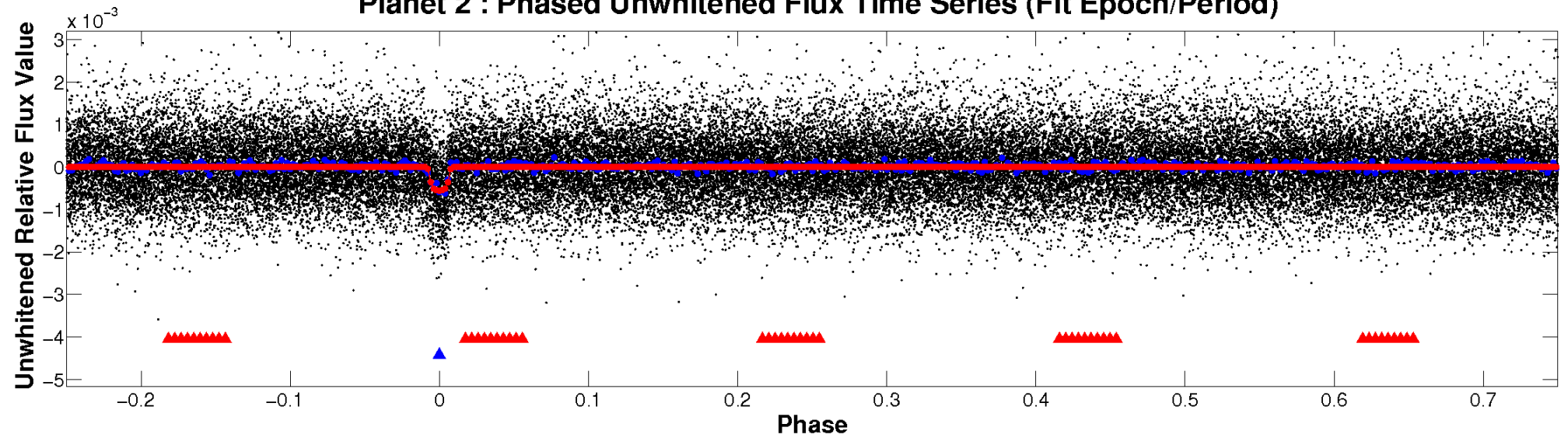
ALT Odd/Even

TCE 003234843-02

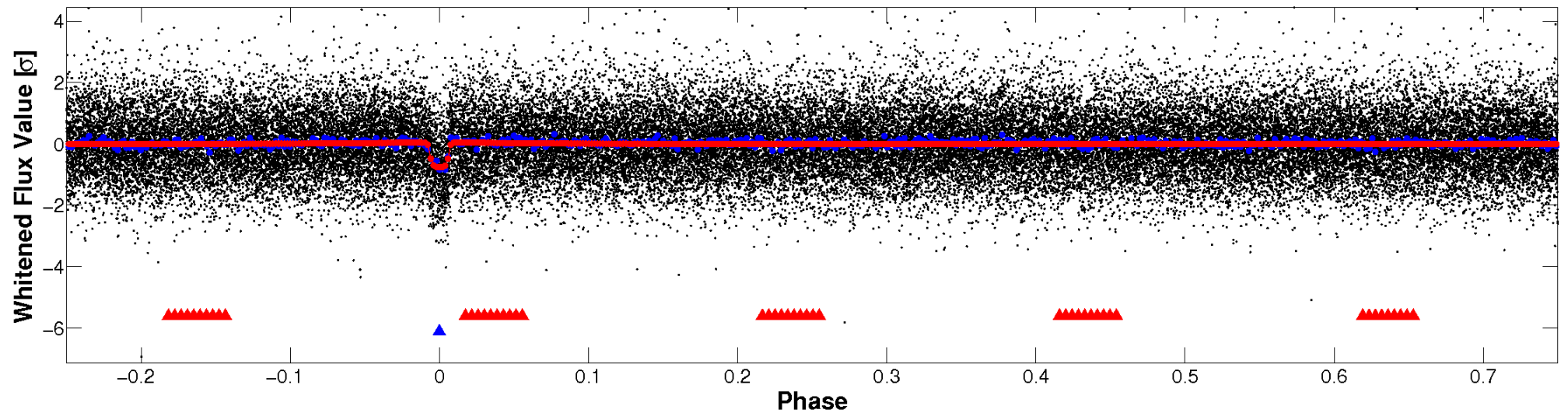


Non-Whitened Vs. Whitened Light Curve

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

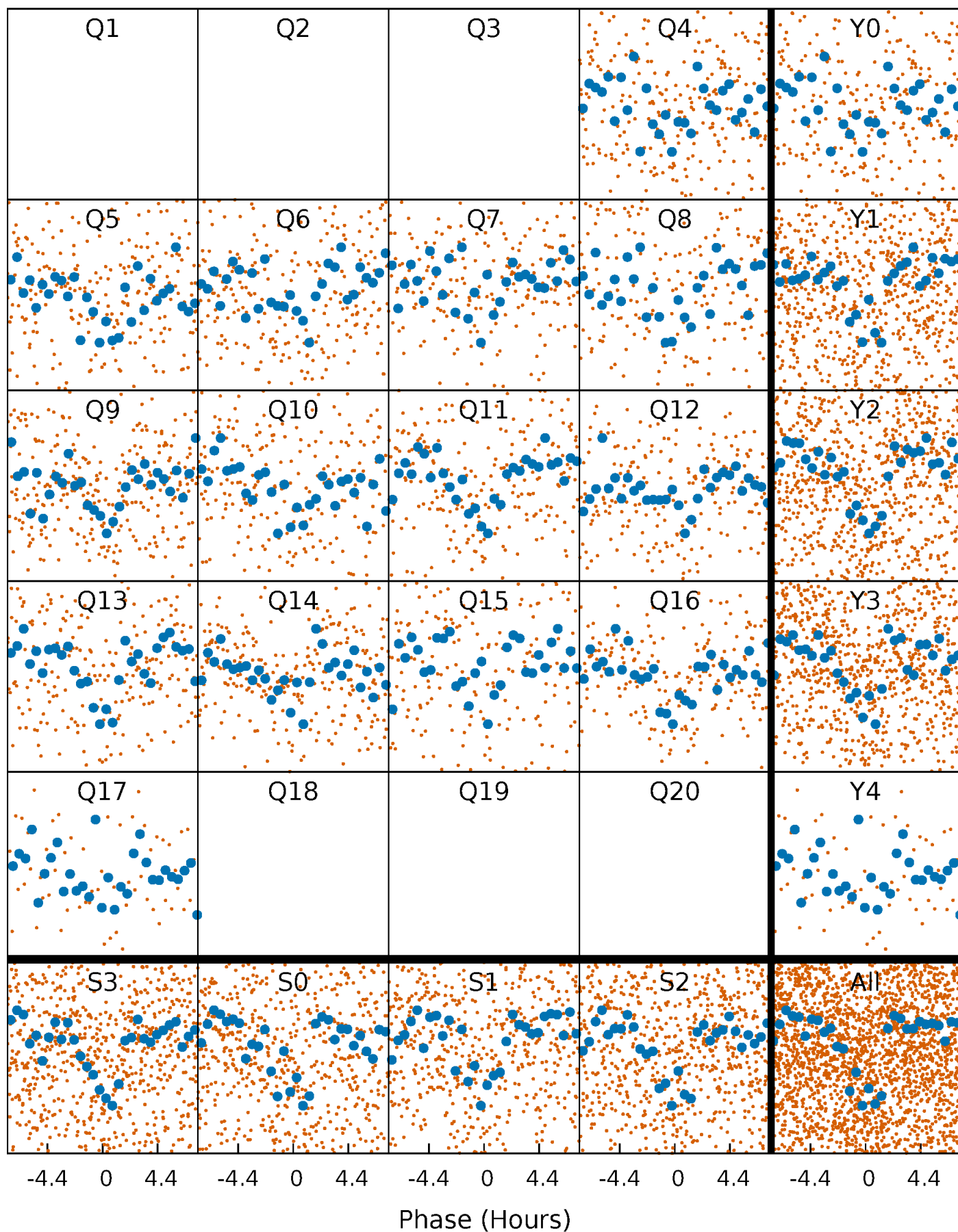


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



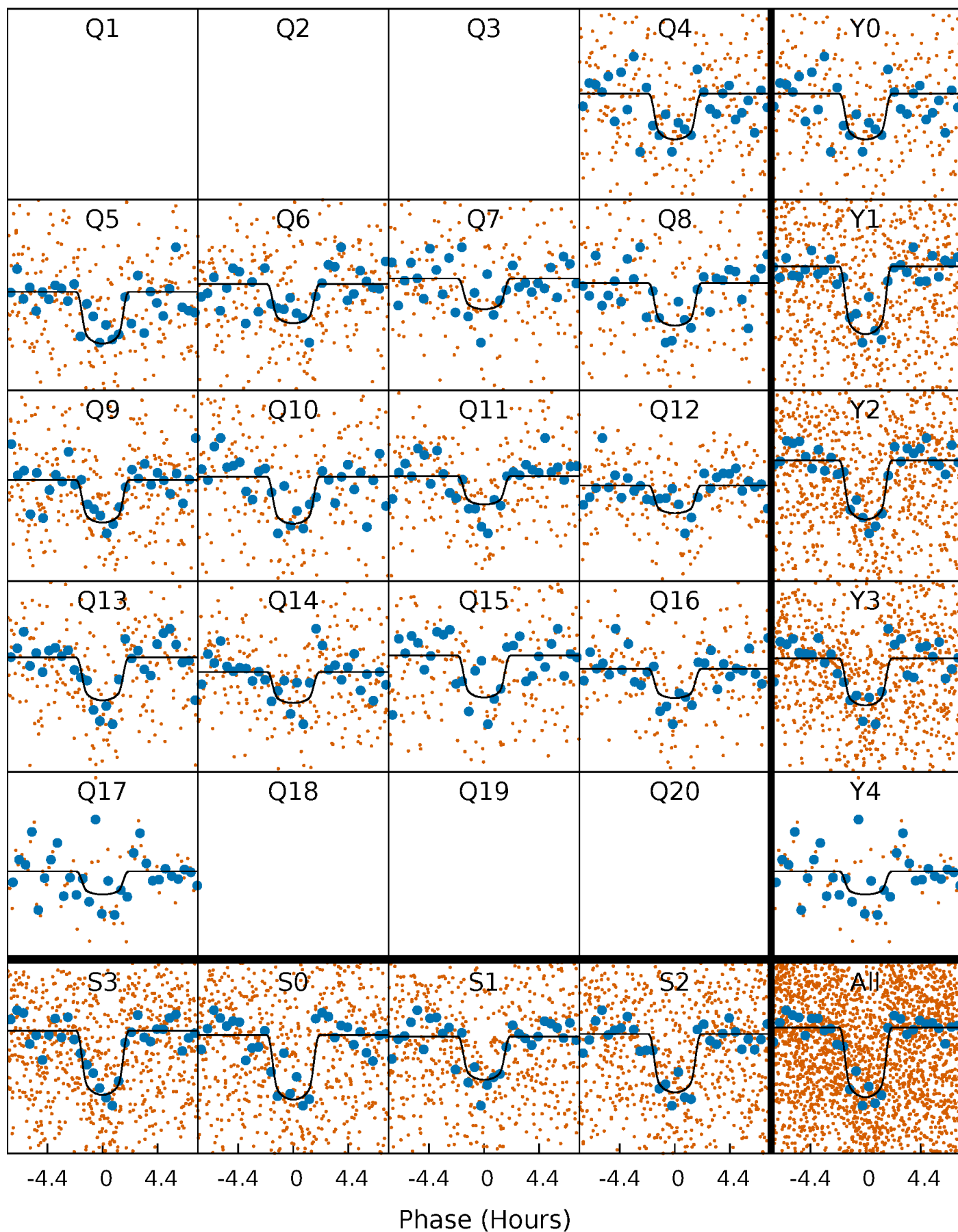
PDC Quarter-Phased Transit Curves

TCE 003234843-02 P= 10.613606 Days $T_0=140.859339$ (BKJD)



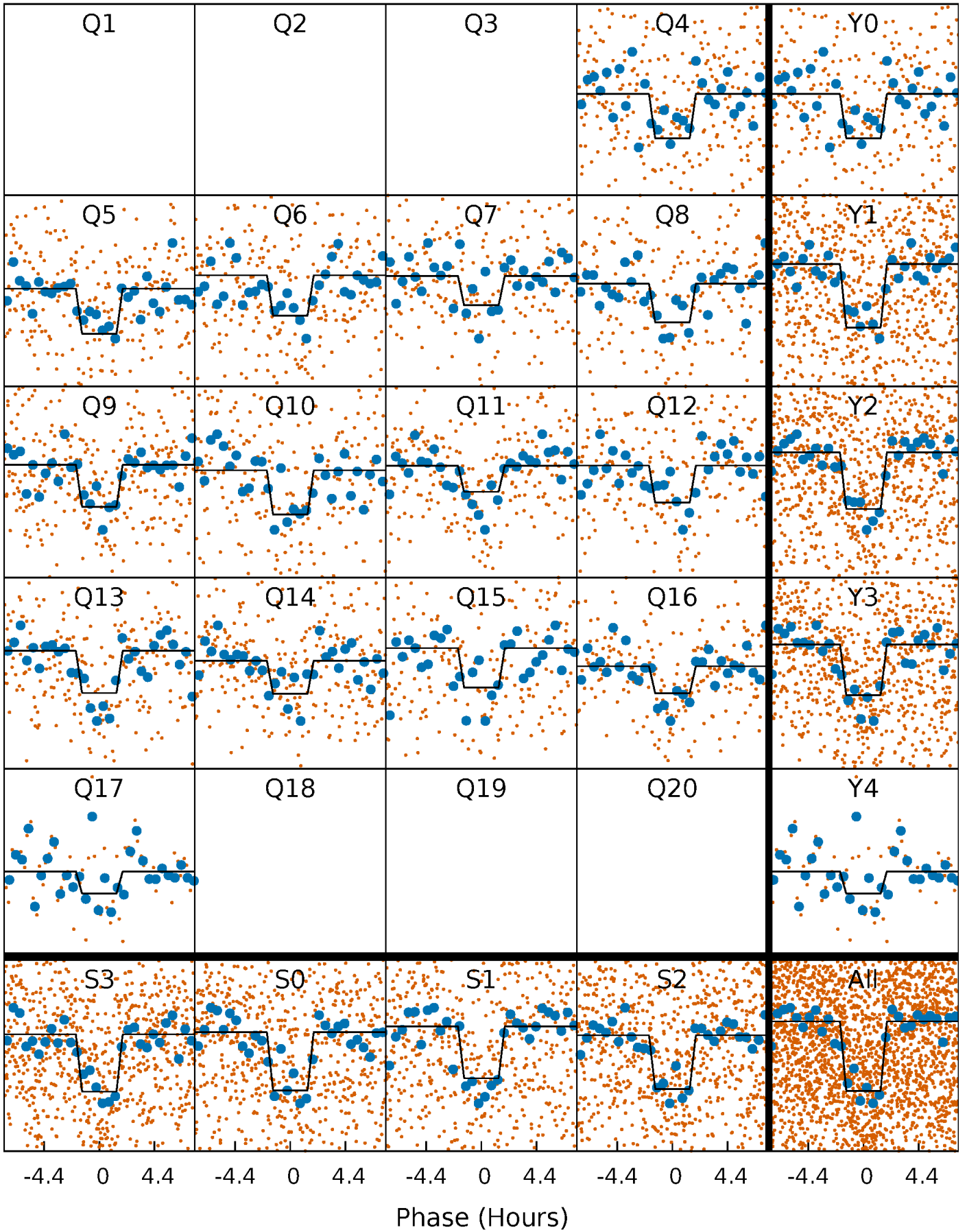
DV Quarter-Phased Transit Curves

TCE 003234843-02 P= 10.613606 Days $T_0=140.859339$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

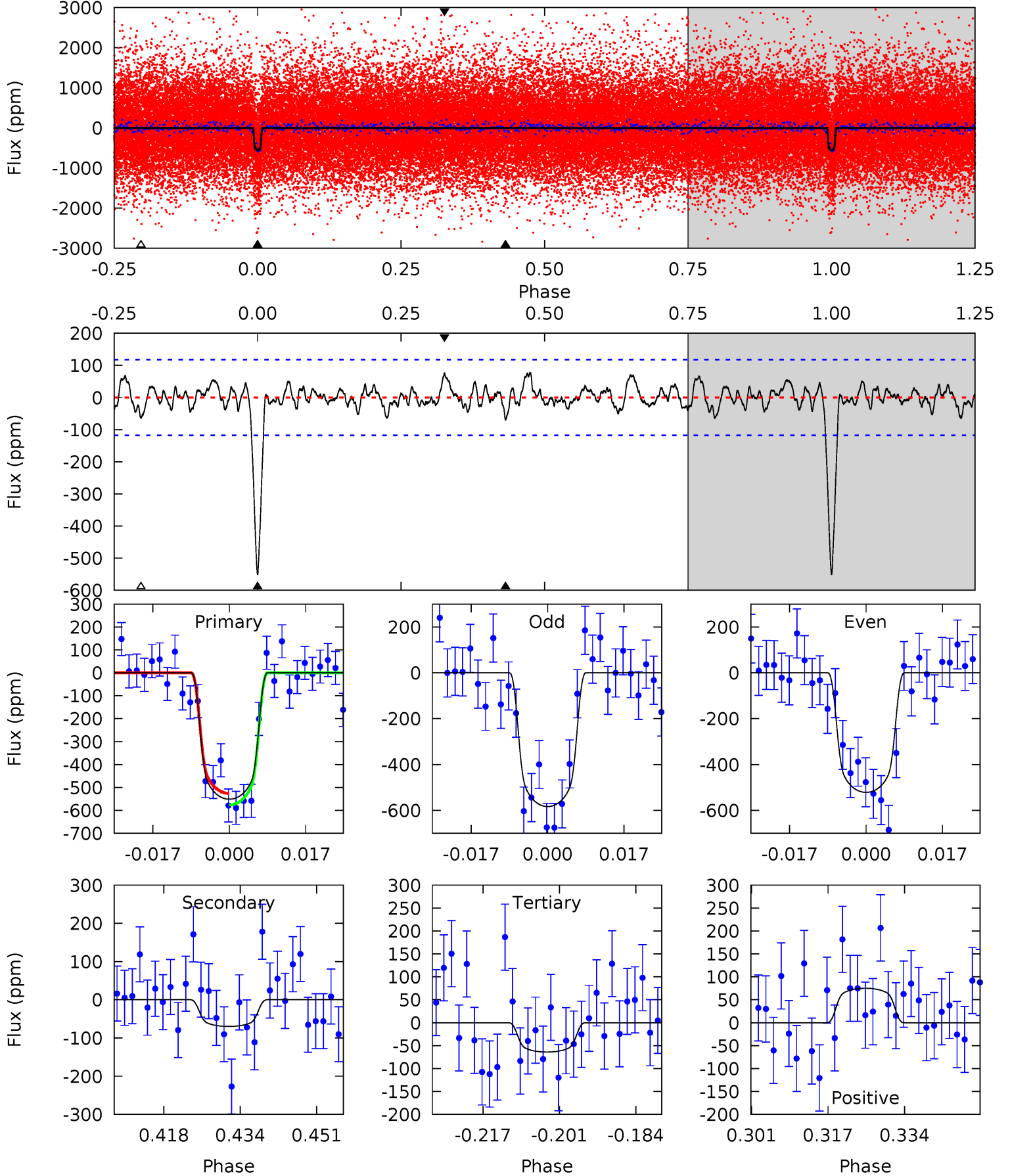
TCE 003234843-02 P= 10.613638 Days $T_0=140.855606$ (BKJD)



DV Model-Shift Uniqueness Test

003234843-02, P = 10.613606 Days, E = 140.859339 Days

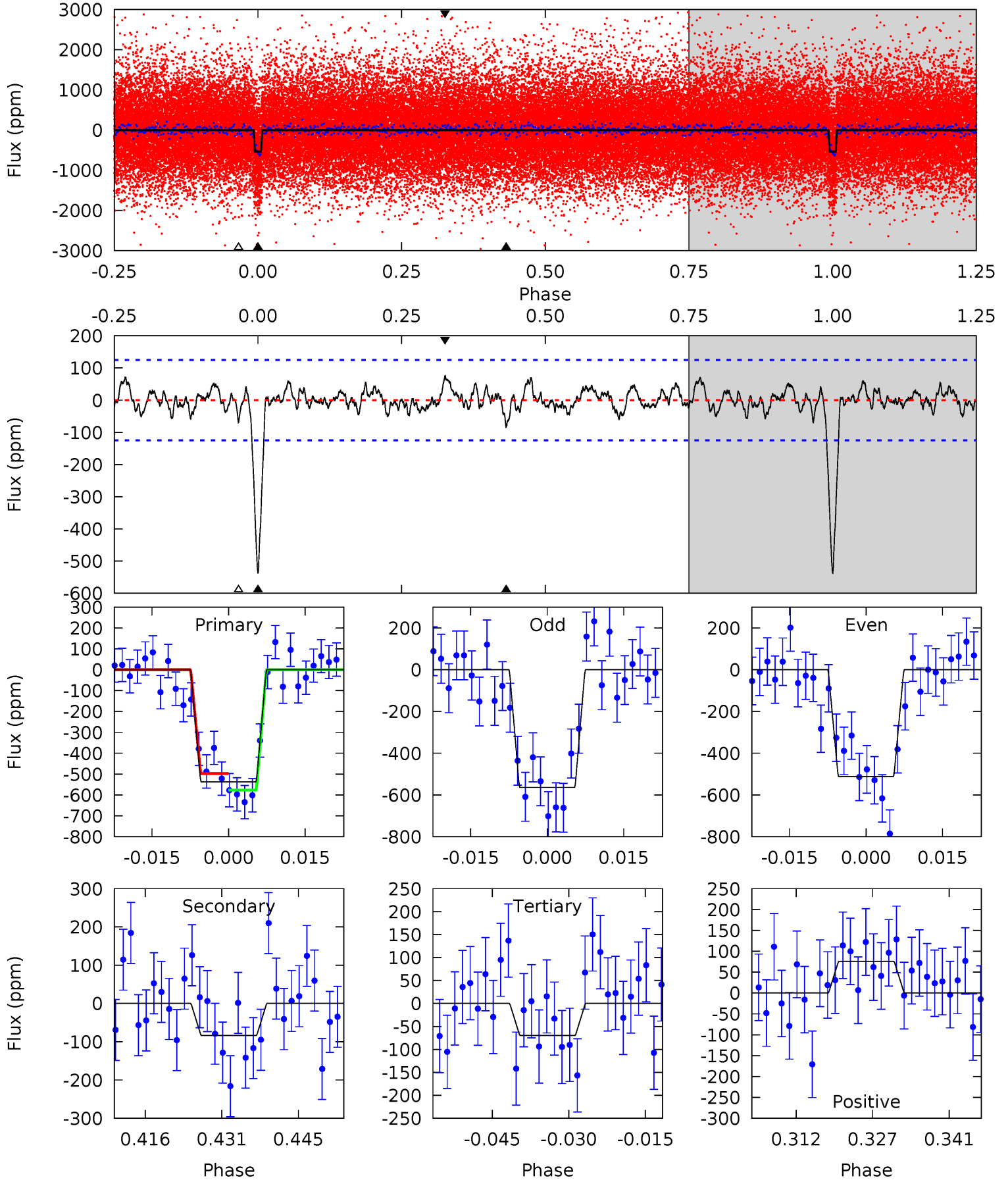
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.1	2.93	2.68	3.15	4.93	2.39	1.12	20.4	19.9	0.25	-0.22	1.30	1.04	0.12	1.05



Alt Model-Shift Uniqueness Test

003234843-02, P = 10.613638 Days, E = 140.855606 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.3	3.31	2.76	3.00	4.95	2.44	1.03	18.5	18.3	0.55	0.31	1.04	1.05	0.12	1.56



Stellar Parameters For KIC 003234843

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5815^{+163}_{-204}	$4.540^{+0.048}_{-0.192}$	$-0.120^{+0.300}_{-0.300}$	$0.877^{+0.264}_{-0.083}$	$0.973^{+0.111}_{-0.122}$	$2.032^{+0.417}_{-1.074}$
	+3%/-4%	+1%/-4%	+250%/-250%	+30%/-9%	+11%/-13%	+21%/-53%
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 003234843-02 / KOI 3057.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-70 ± 24	$2.55^{+0.53}_{-0.44}$	1118^{+76}_{-56}	3705^{+317}_{-276}	50^{+32}_{-21}
Alt.	-84 ± 25	$2.30^{+0.48}_{-0.43}$	1120^{+76}_{-53}	3982^{+341}_{-338}	73^{+46}_{-30}

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 $A_{obs} \gg 1.0$

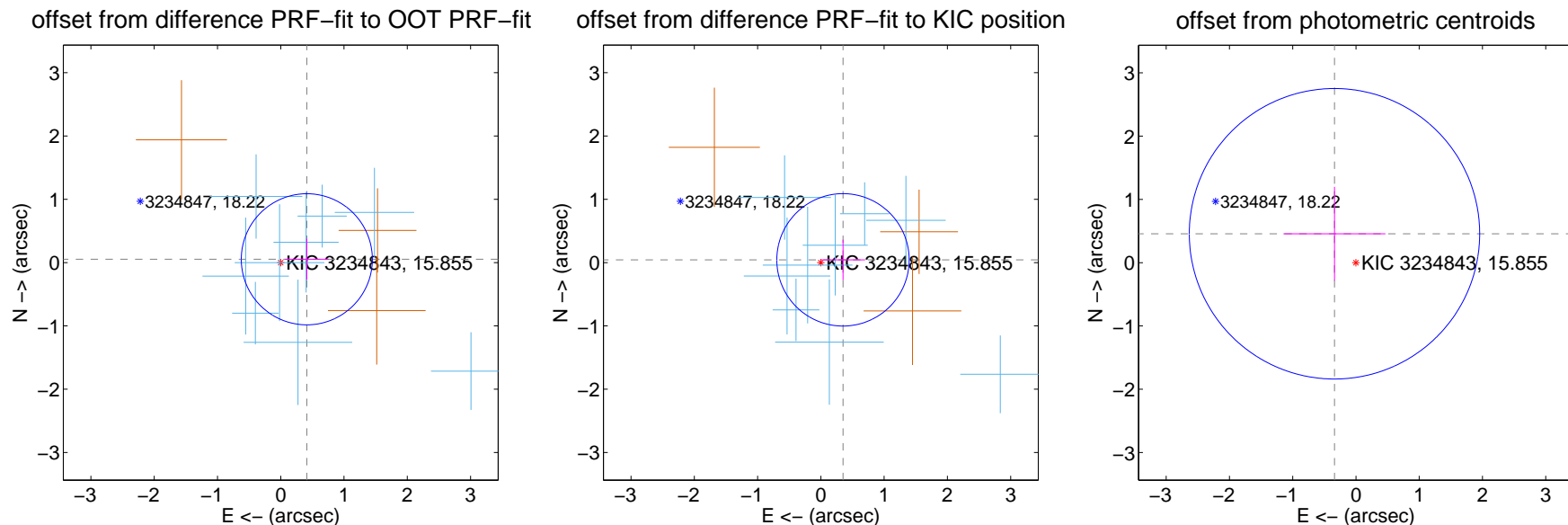
DV Centroid Data

Supplemental centroid analysis for 003234843-02. Kepler magnitude: 15.86. Transit SNR 17.82

There are 9 quarters with good PRF difference image offsets

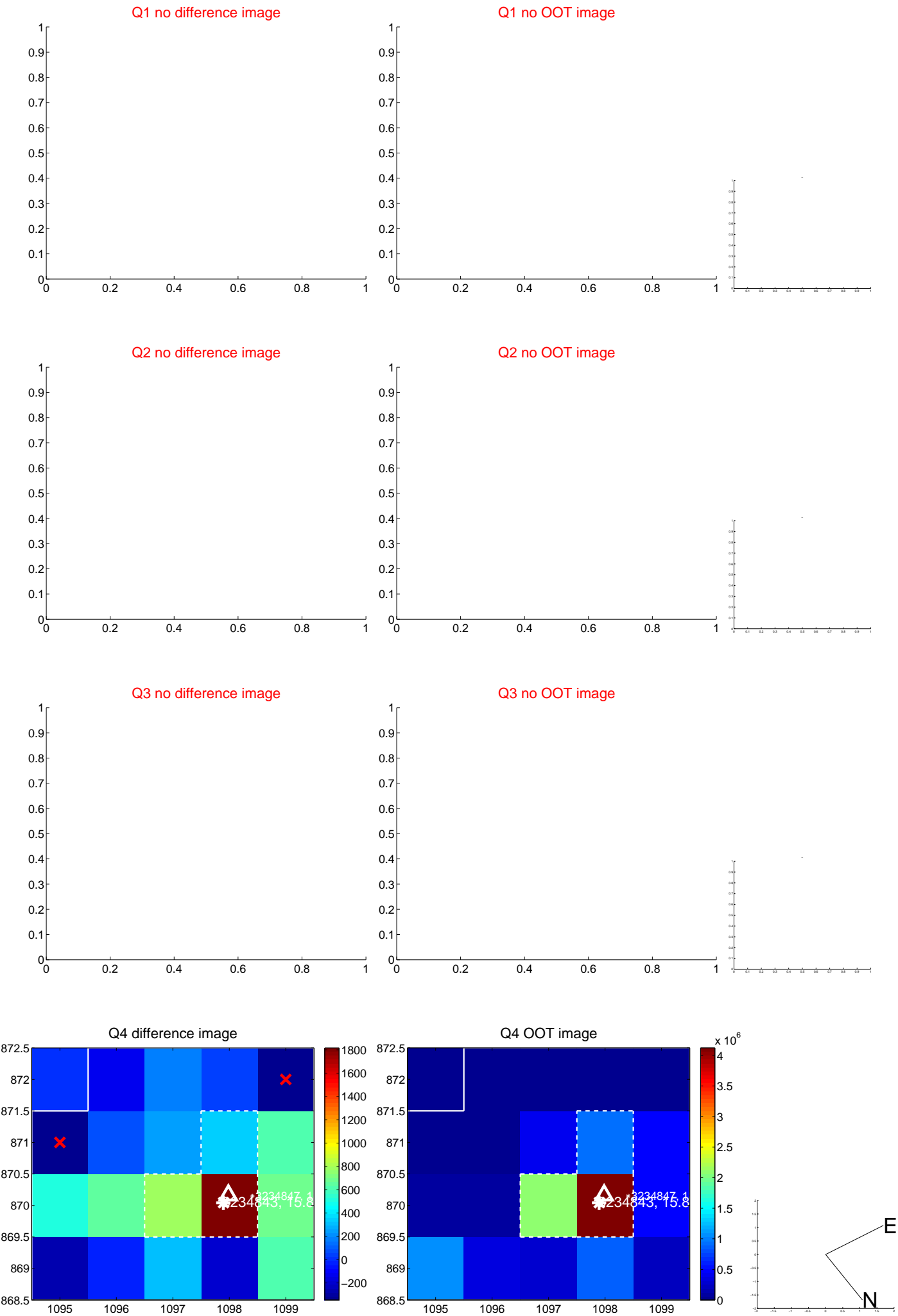
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.415 ± 0.345	1.20	-0.412 ± 0.345	0.052 ± 0.323
PRF-fit source offset from KIC position	0.352 ± 0.349	1.01	-0.350 ± 0.349	0.043 ± 0.318
photometric centroid source offset	0.57 ± 0.76	0.74	0.34 ± 0.81	0.46 ± 0.74

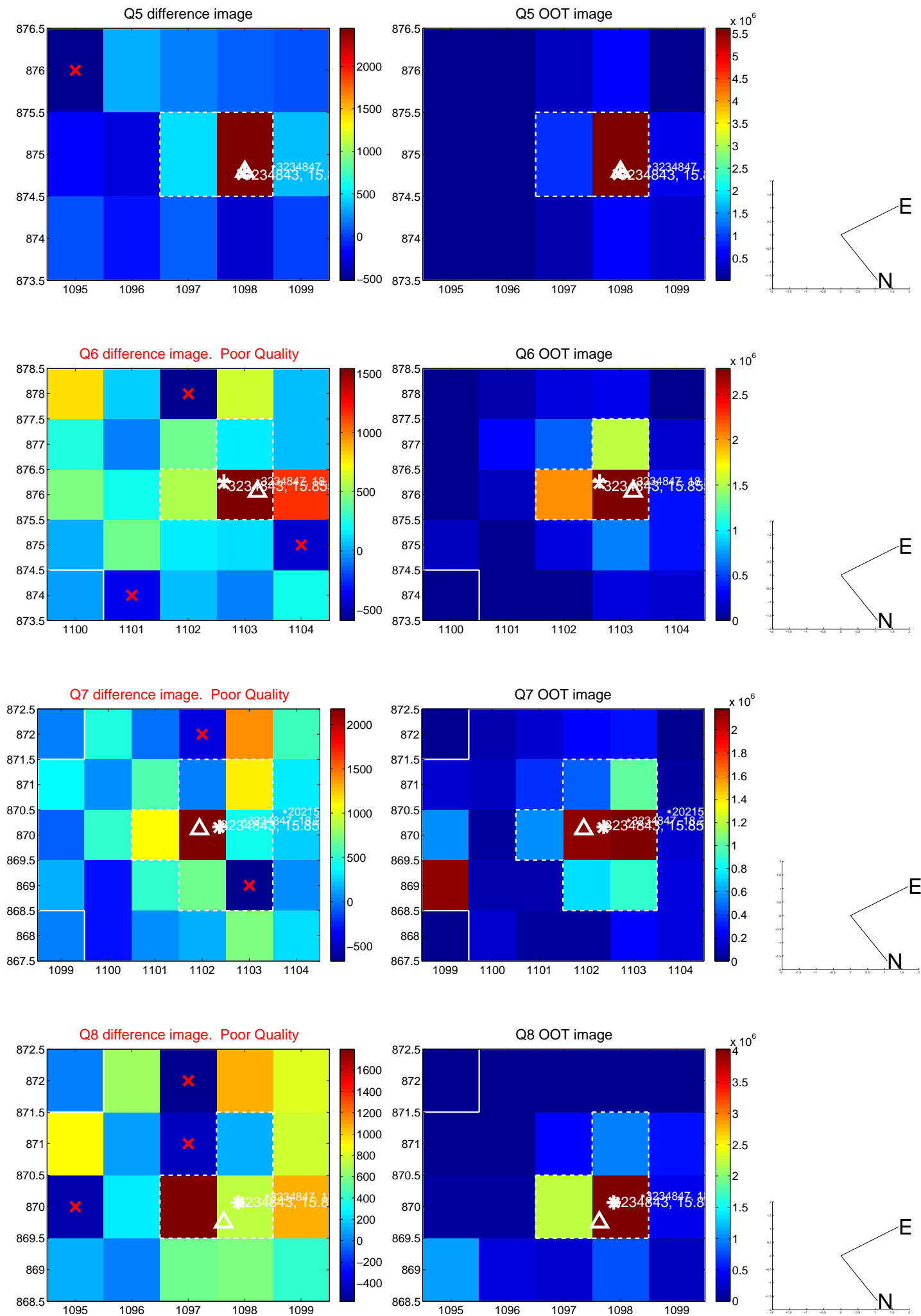


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

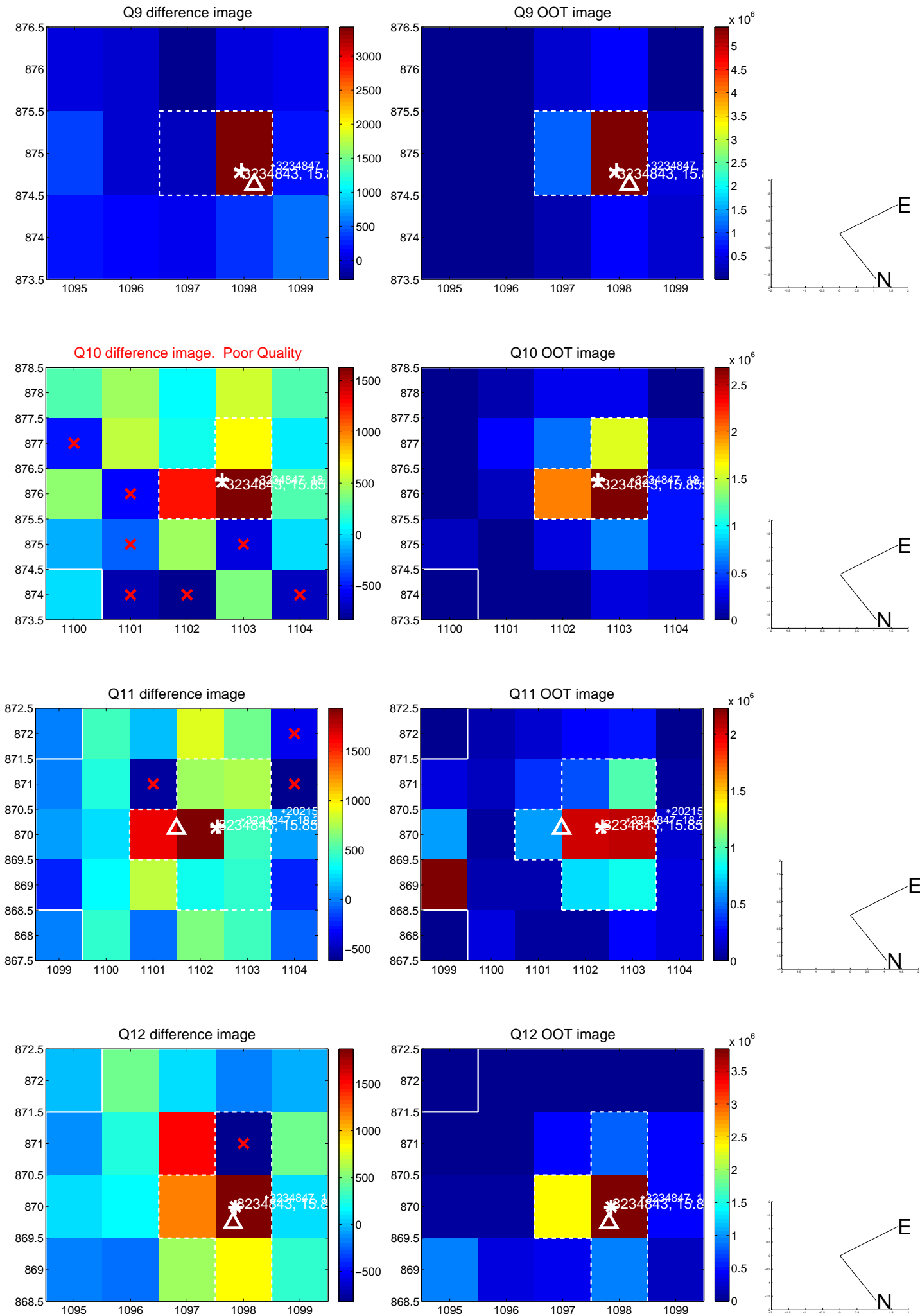
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



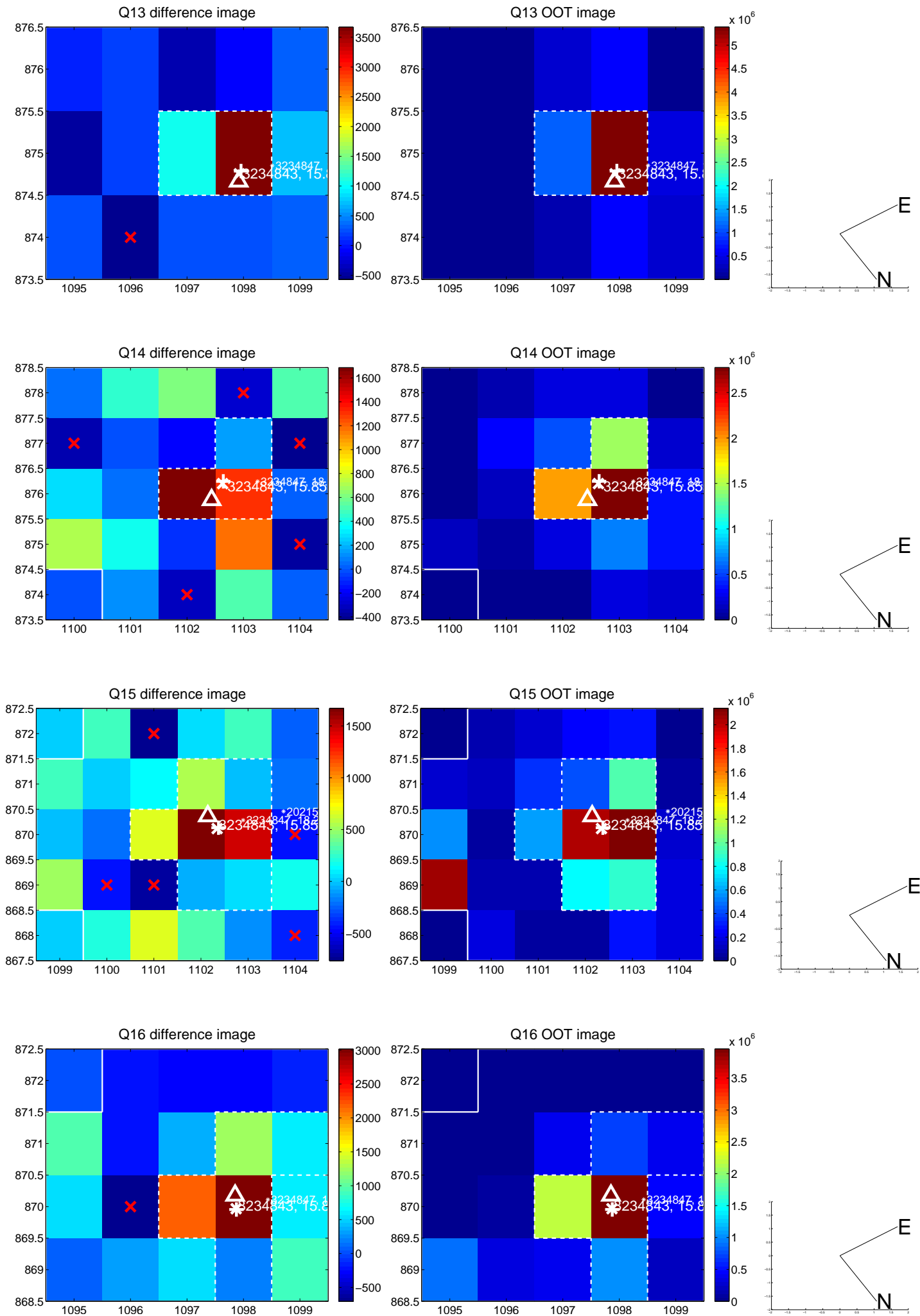
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



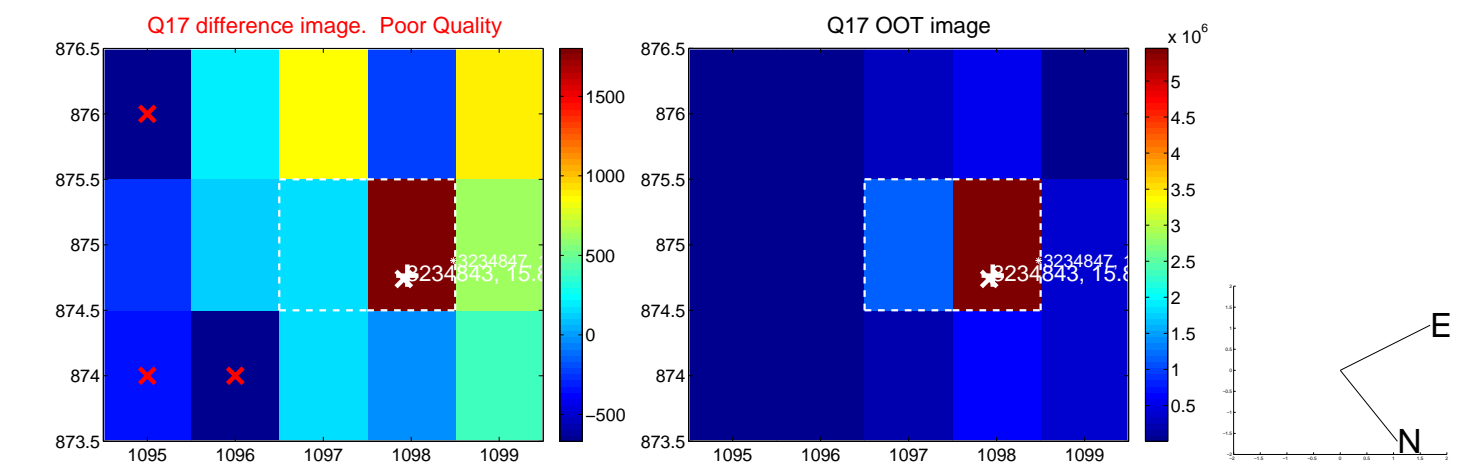
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



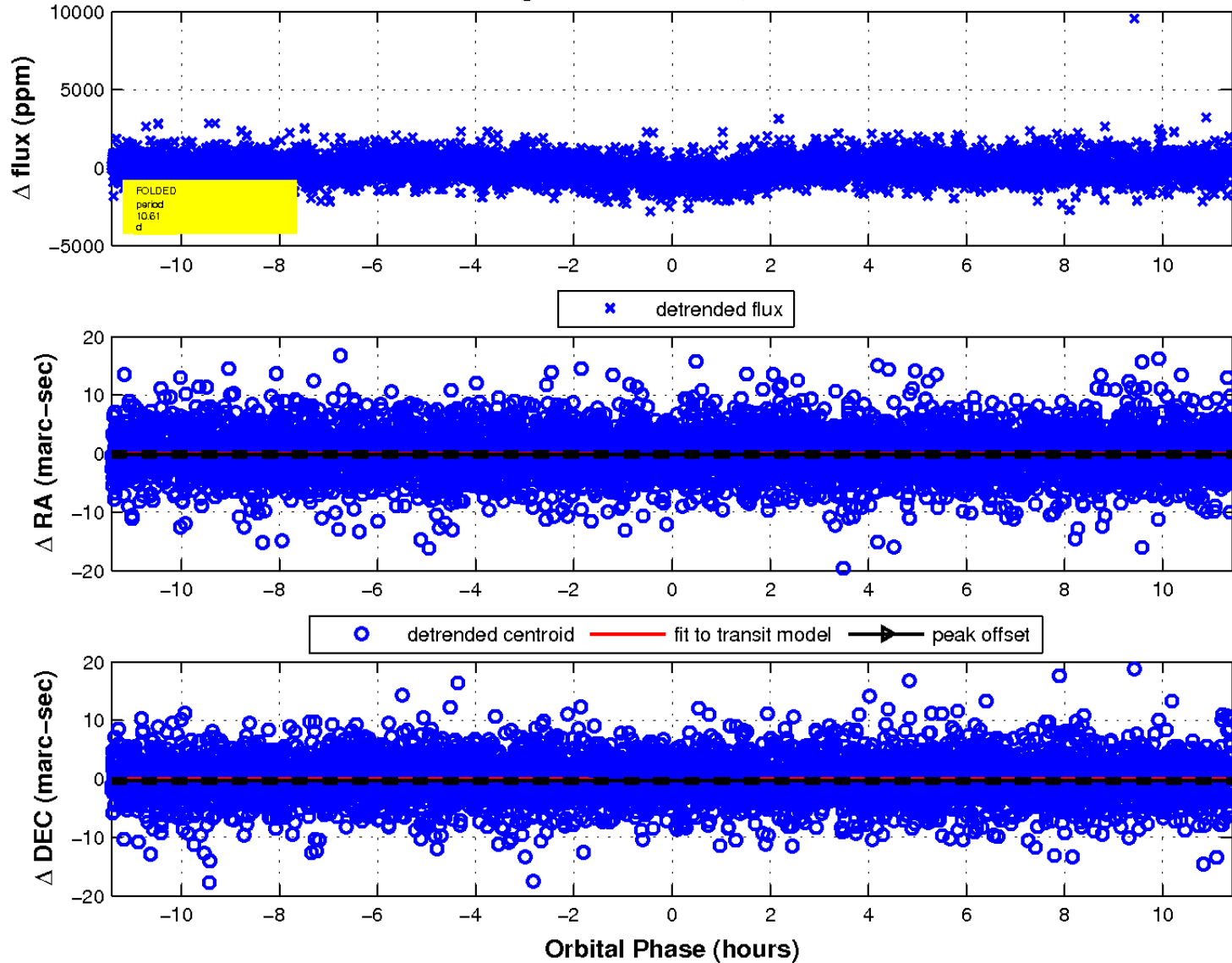
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

