

KIC 006806695

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})
006806695-01	OBS	4061.01	0.855917	132.074552	102.5	1.740	16.1	16.2	0.76	5437	0.92	1791.64
006806695-02	OBS	No	0.855913	131.650883	93.8	1.725	13.6	15.1	0.76	5437	0.88	1791.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006806695-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_RESOLVED_OFFSET
006806695-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET

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 006806695-01

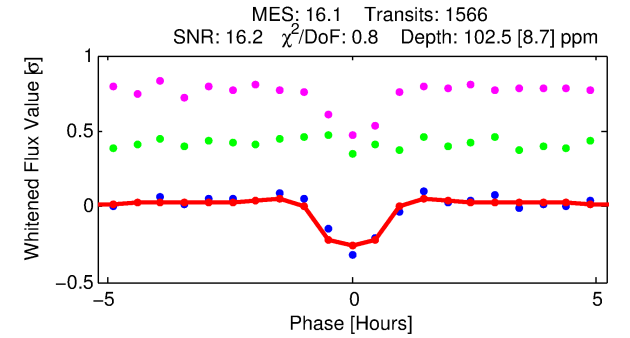
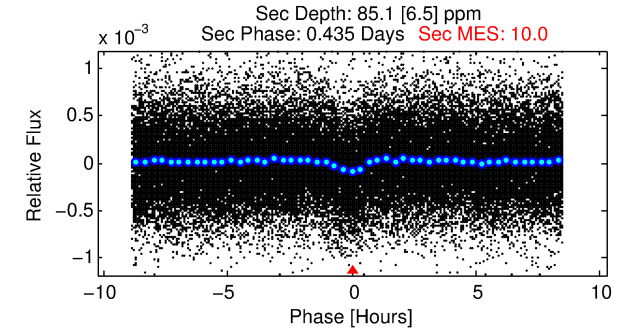
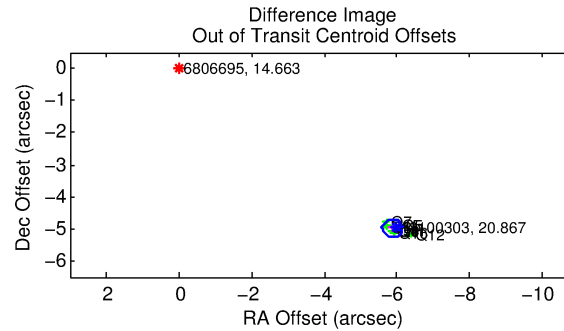
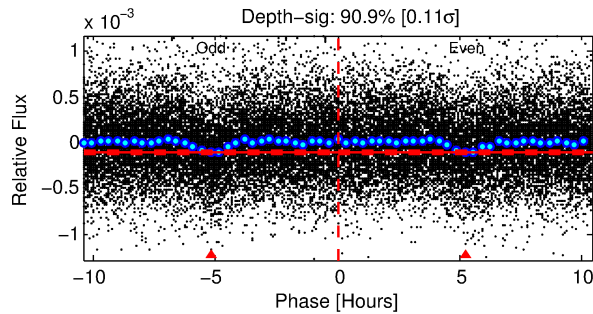
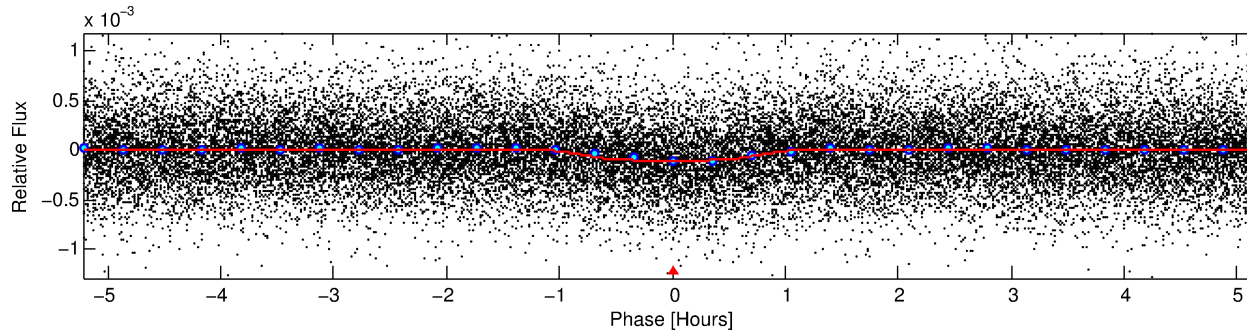
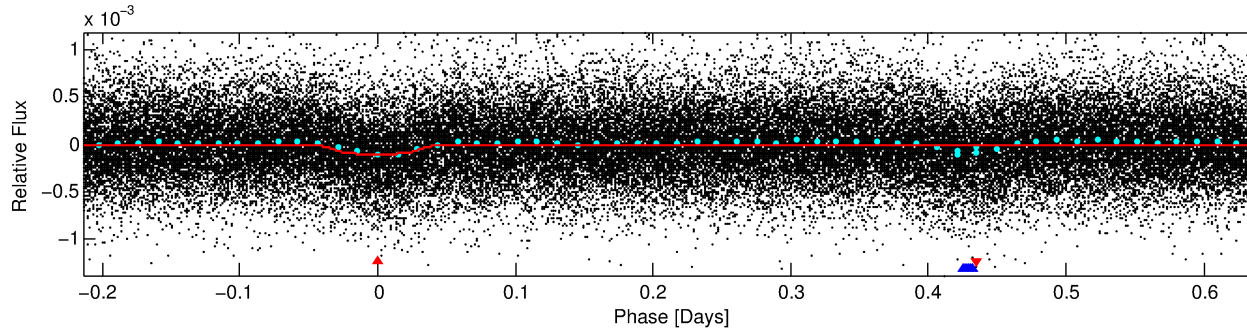
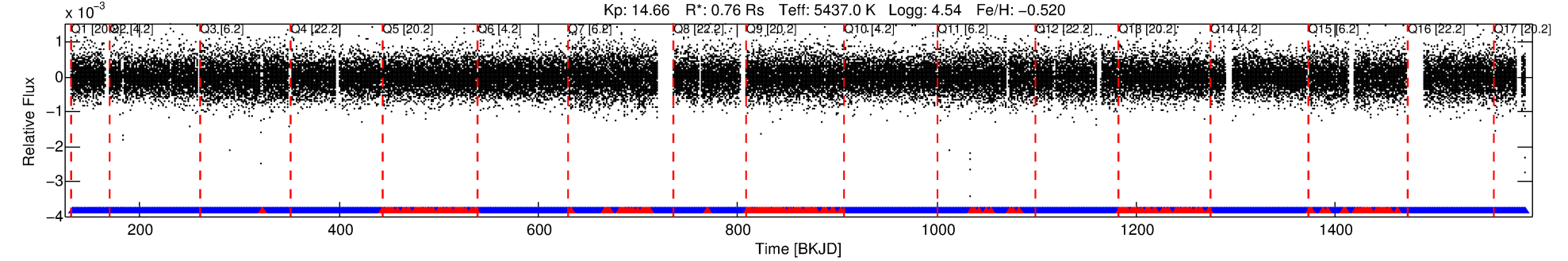
No Significant Match Found

DV One-Page Summary

KIC: 6806695 Candidate: 1 of 2 Period: 0.856 d

KOI: K04061 Corr: No Ephemeris Match

Kp: 14.66 R*: 0.76 Rs Teff: 5437.0 K Logg: 4.54 Fe/H: -0.520



DV Fit Results:

Period = 0.85592 [0.00001] d
Epoch = 132.0746 [0.0013] BKJD
Rp/R* = 0.0112 [0.0052]
a/R* = 1.93 [3.12]
b = 0.91 [0.45]
Seff = 1791.64 [381.76]
Teq = 1659 [88] K
Rp = 0.92 [0.45] Re
a = 0.0159 [0.0019] AU
Ag = 13.81 [13.23] [0.97σ]
Teffp = 4945 [1177] K [2.78σ]

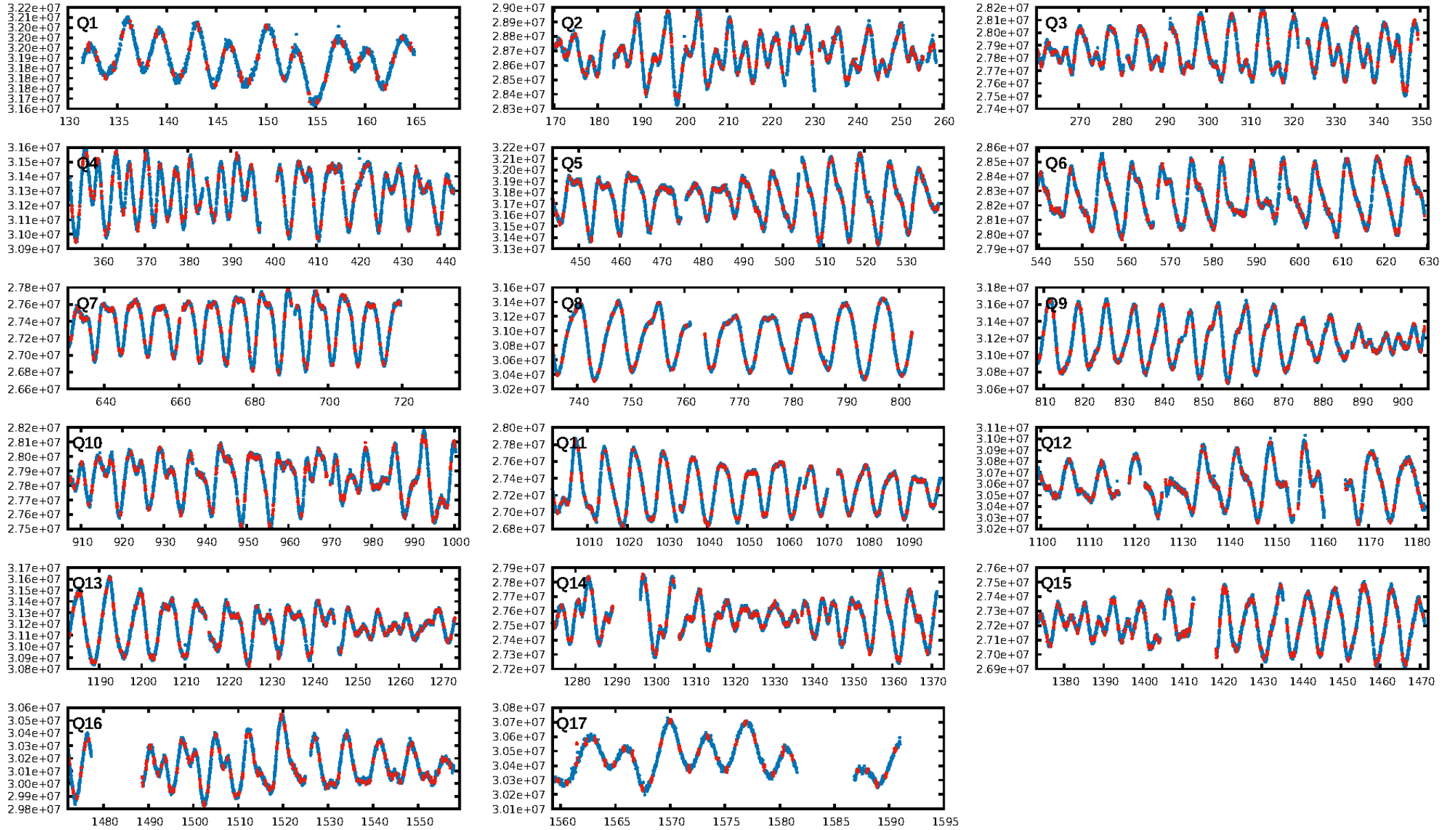
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.53e-61
RollingBand-fgt: 0.87 [1295/1496]
GhostDiagnostic-chr: -2.705
Centroid-sig: 0.0%
Centroid-so: 4.084 arcsec [5.12σ]
OotOffset-rm: 7.704 arcsec [81.35σ]
KicOffset-rm: 7.703 arcsec [86.72σ]
OotOffset-st: 0/4/4/1 [9]
KicOffset-st: 0/4/4/1 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 1.00 [17/17]

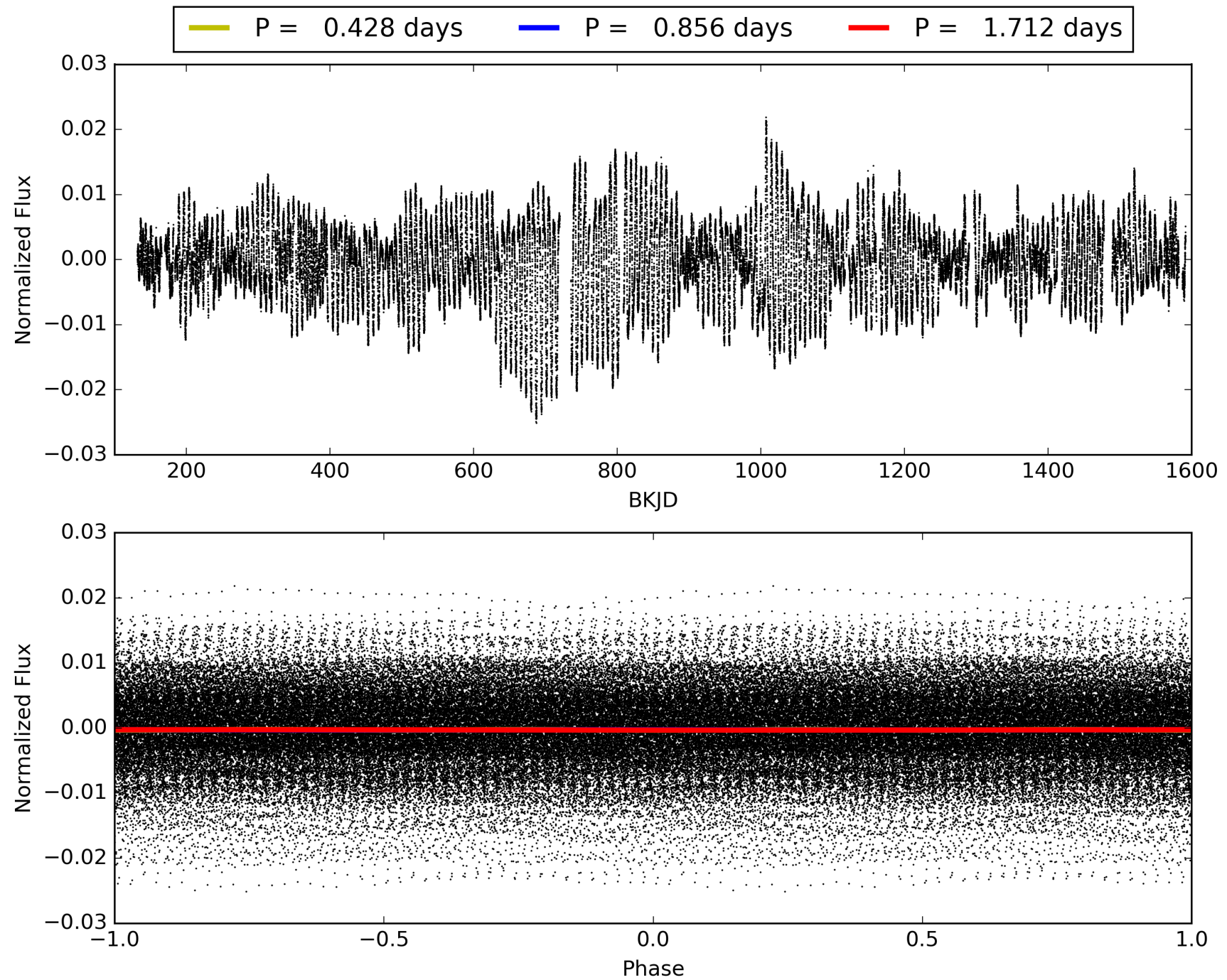
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:15:34 Z

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

TCE 006806695-01, PDC Light Curves

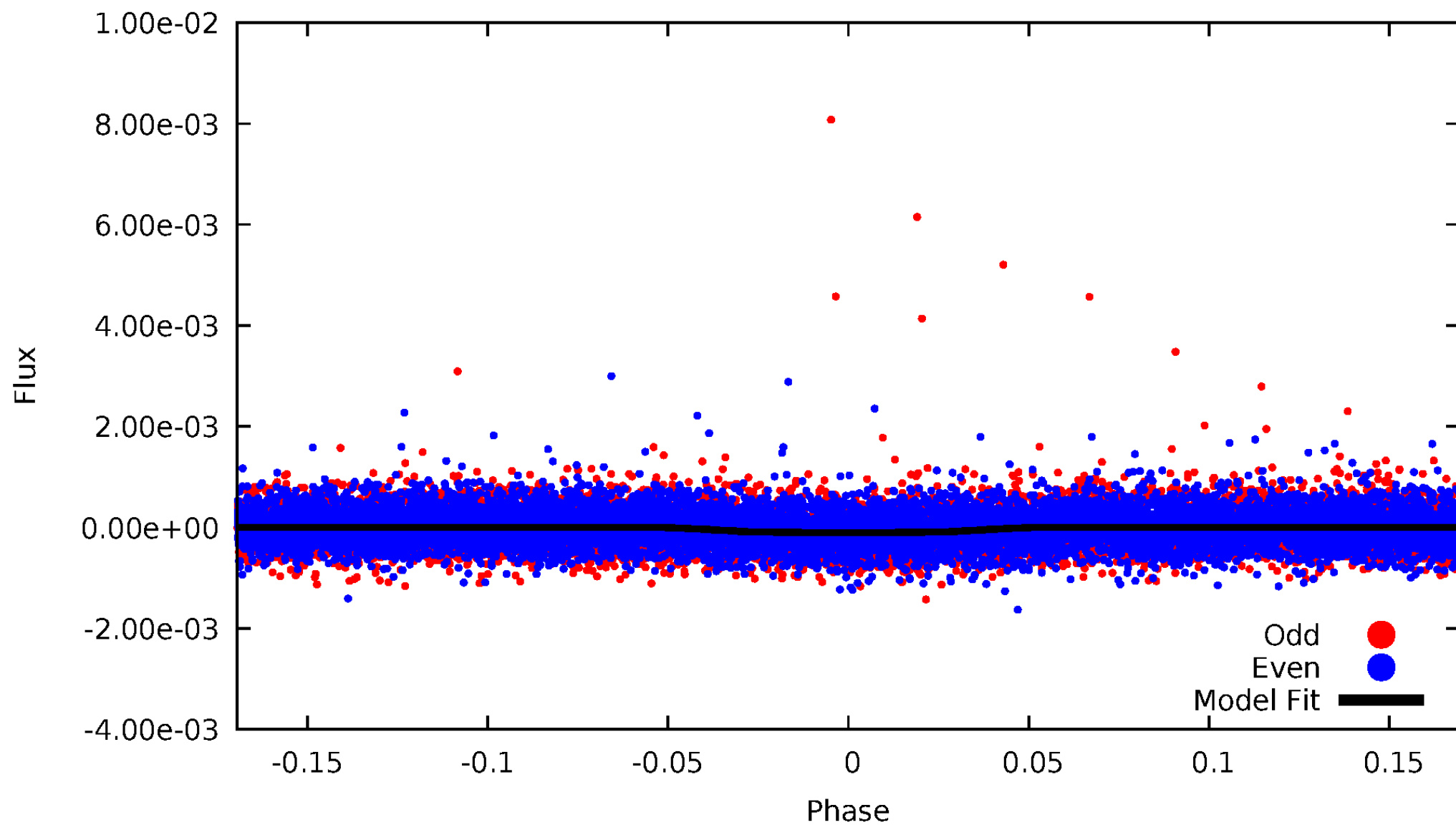


TCE 006806695-01



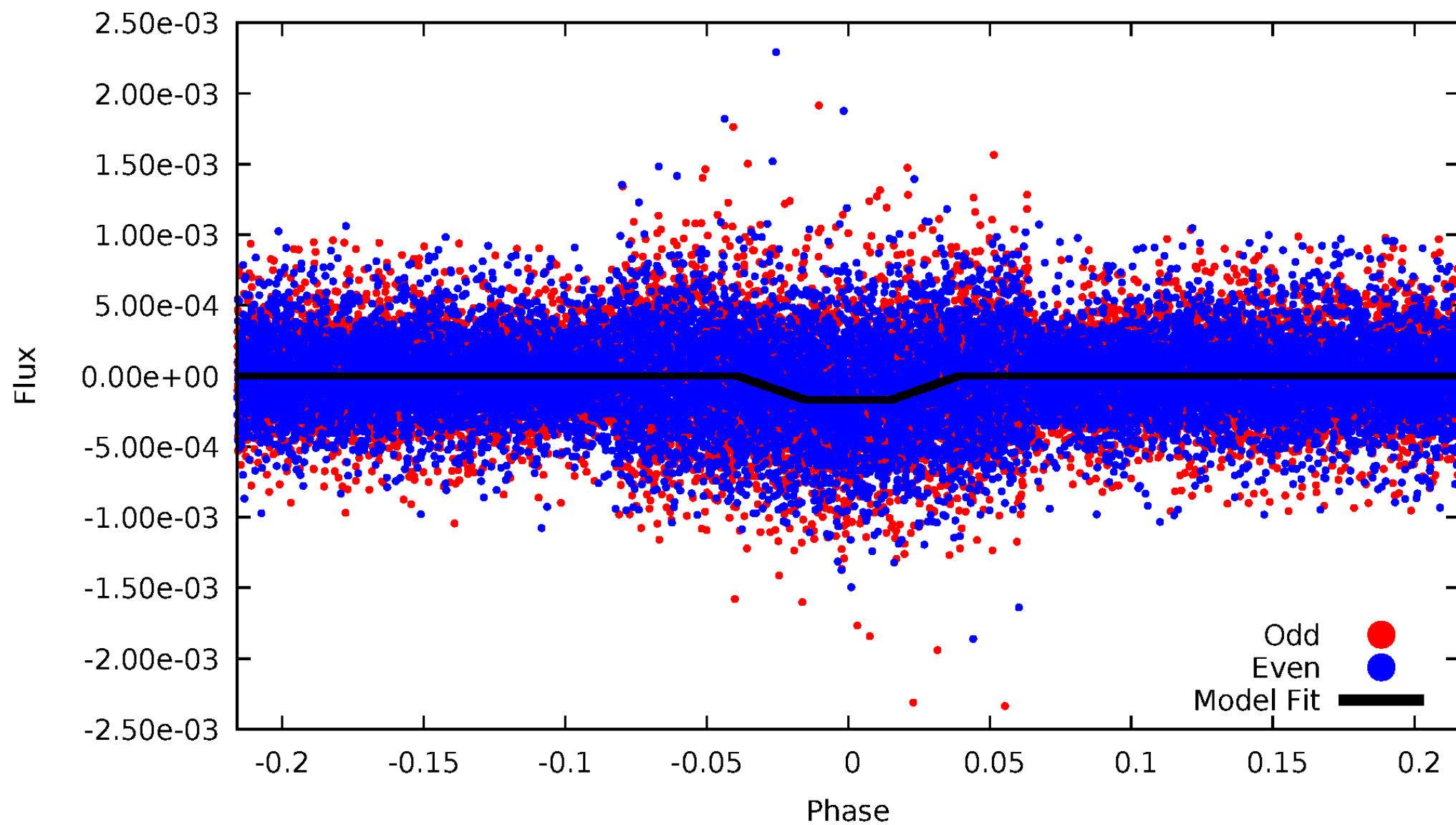
DV Odd/Even

TCE 006806695-01



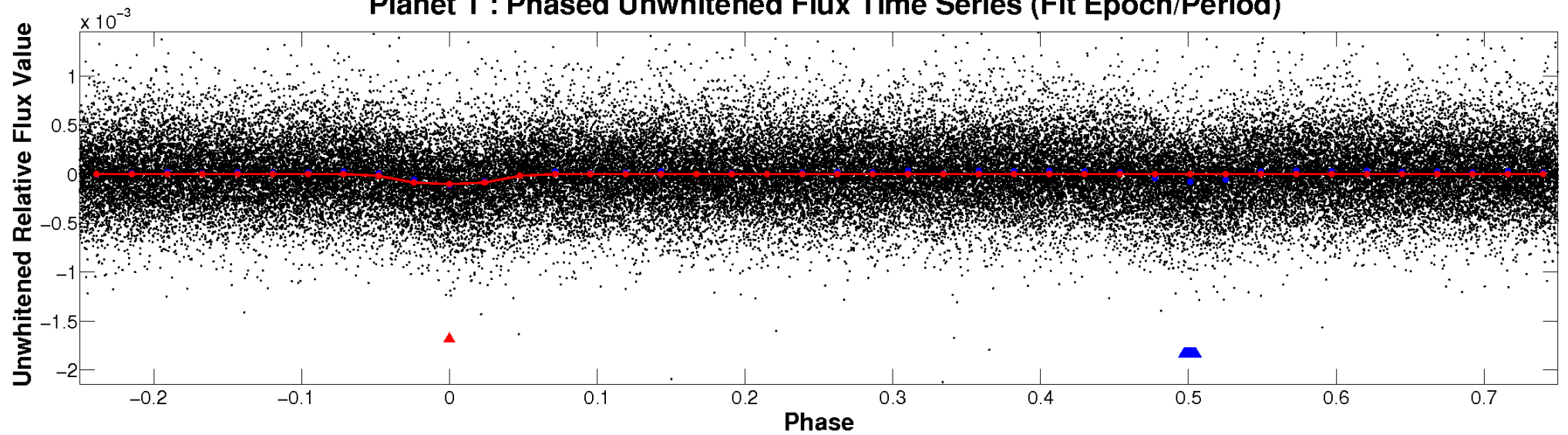
ALT Odd/Even

TCE 006806695-01

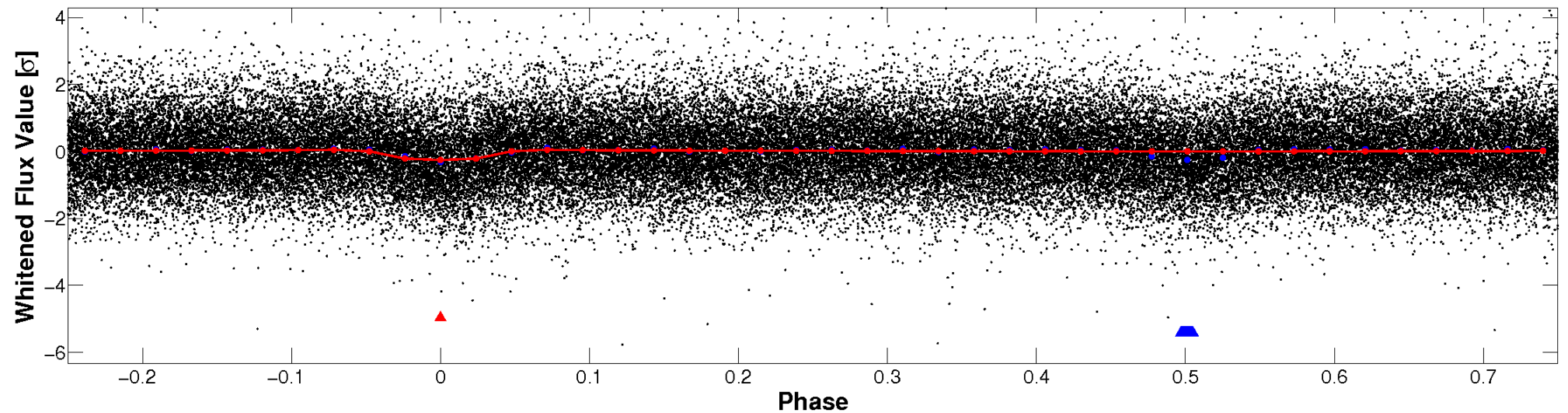


Non-Whitened Vs. Whitened Light Curve

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

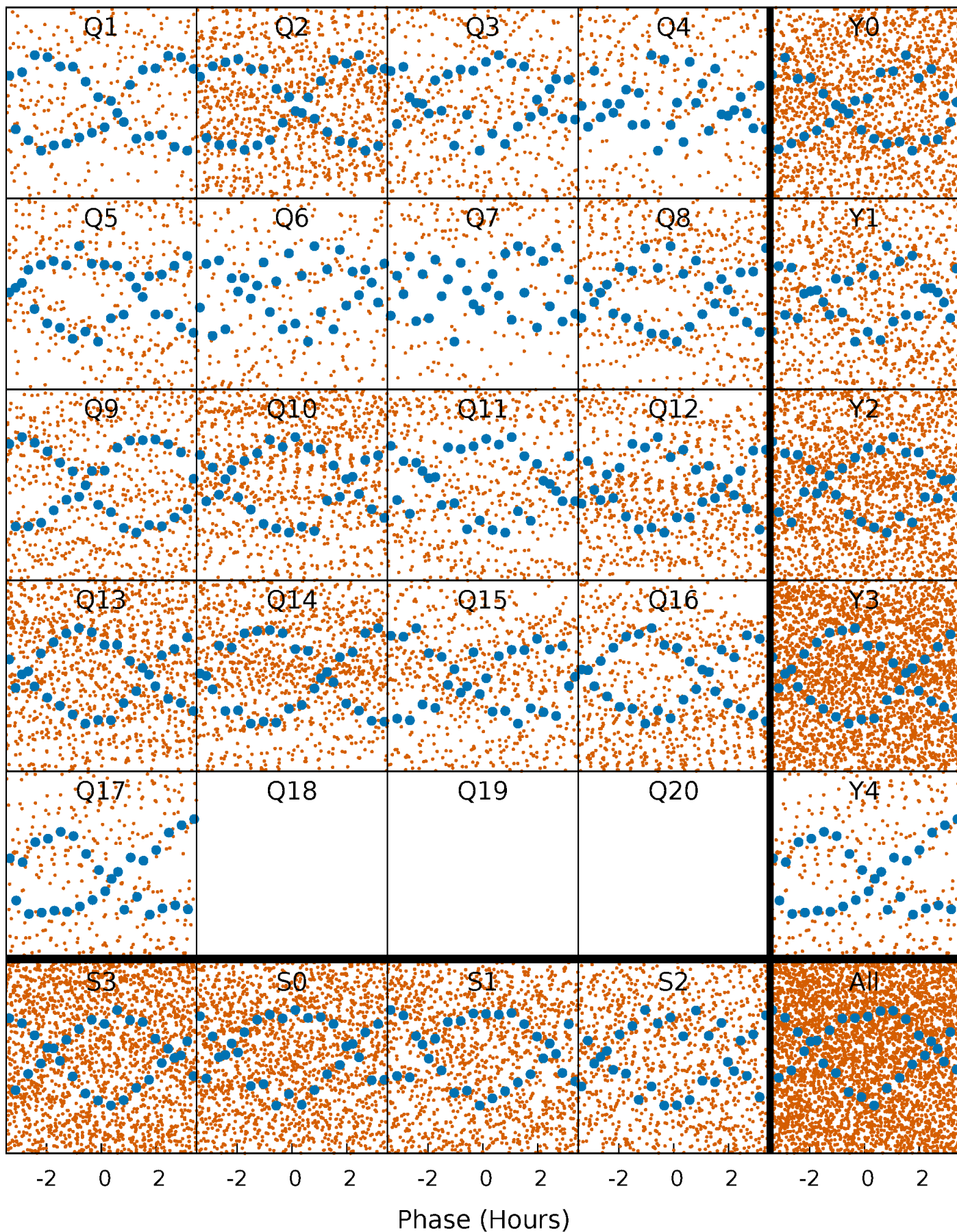


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



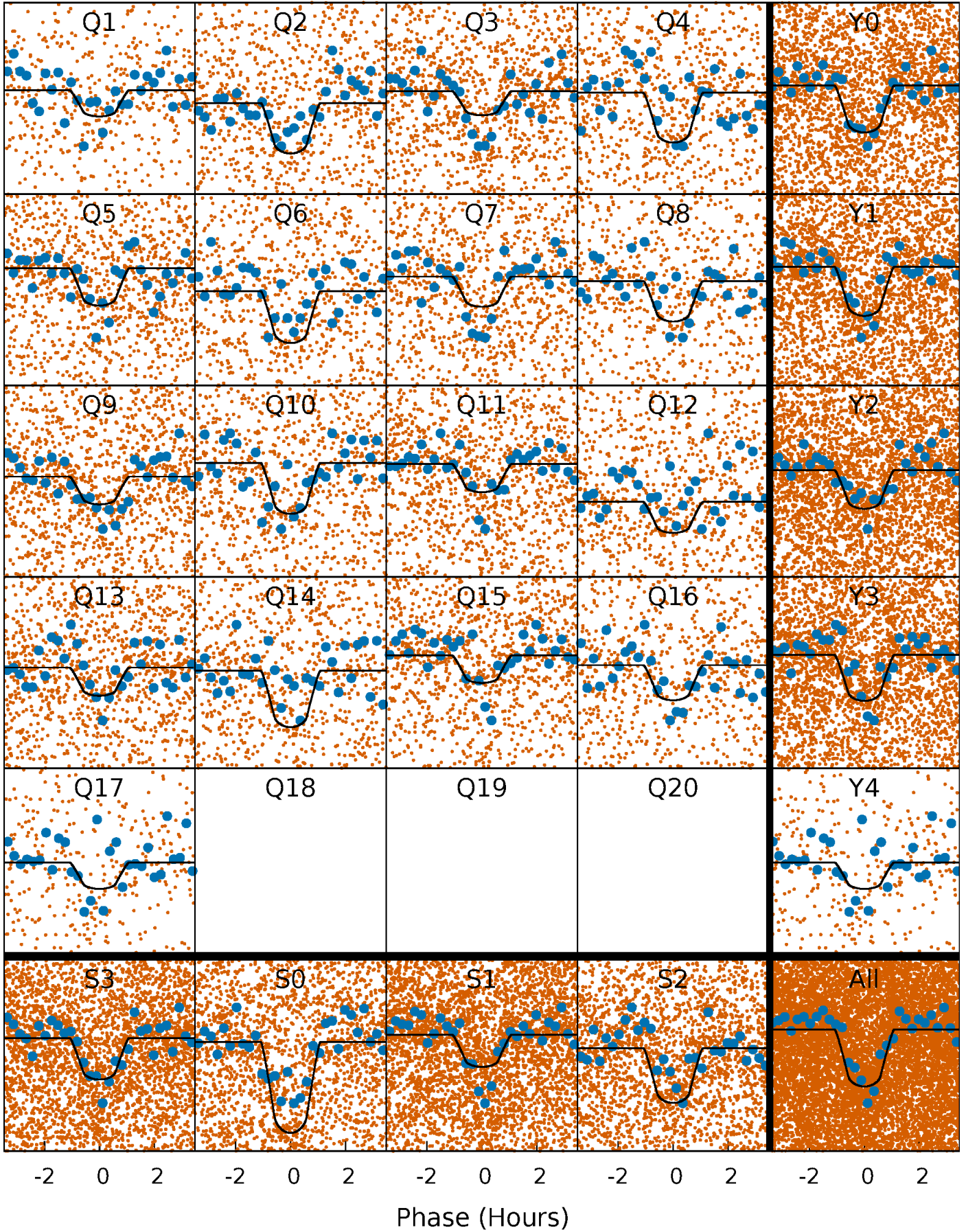
PDC Quarter-Phased Transit Curves

TCE 006806695-01 P= 0.855917 Days $T_0=132.074552$ (BKJD)



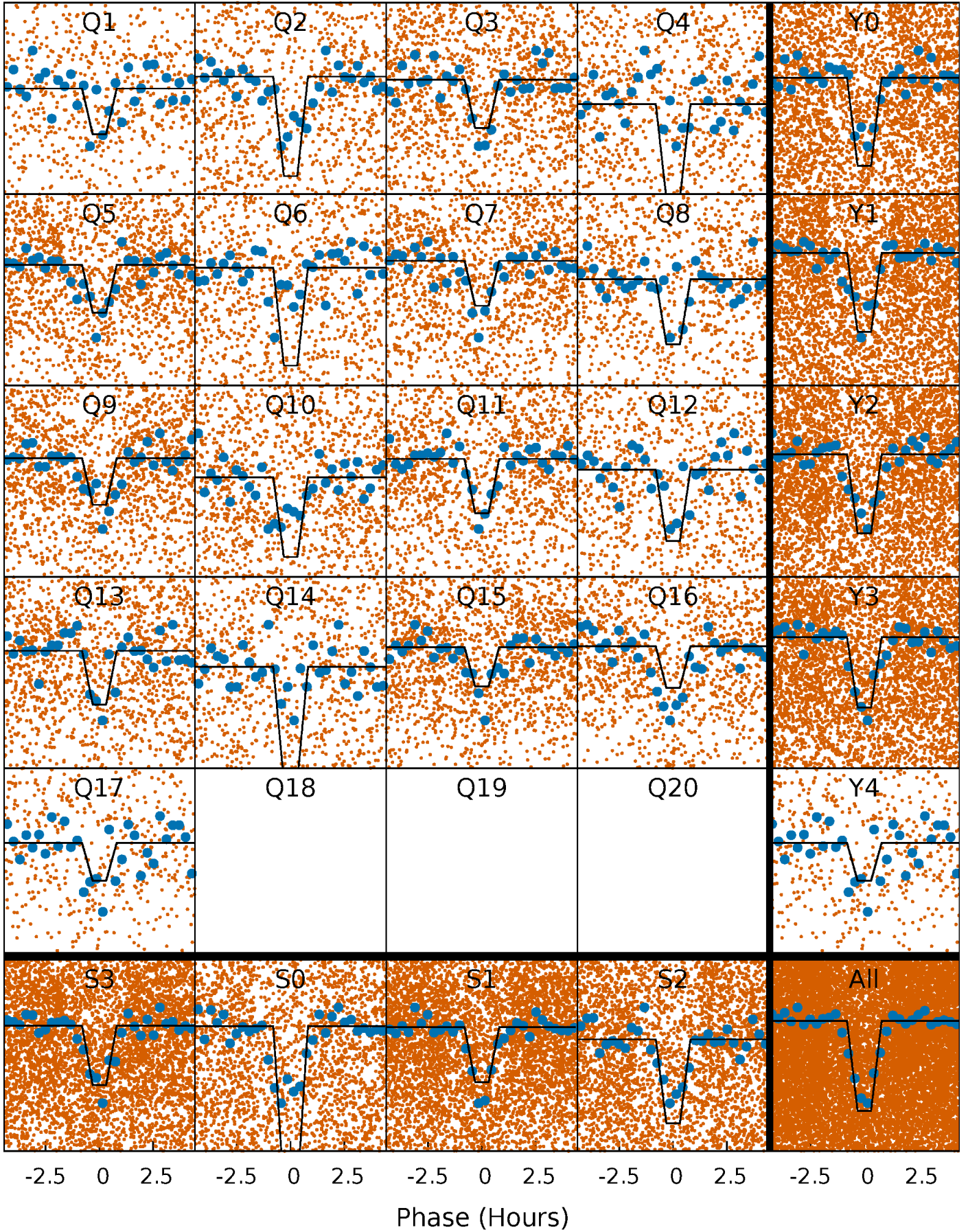
DV Quarter-Phased Transit Curves

TCE 006806695-01 P= 0.855917 Days $T_0=132.074552$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

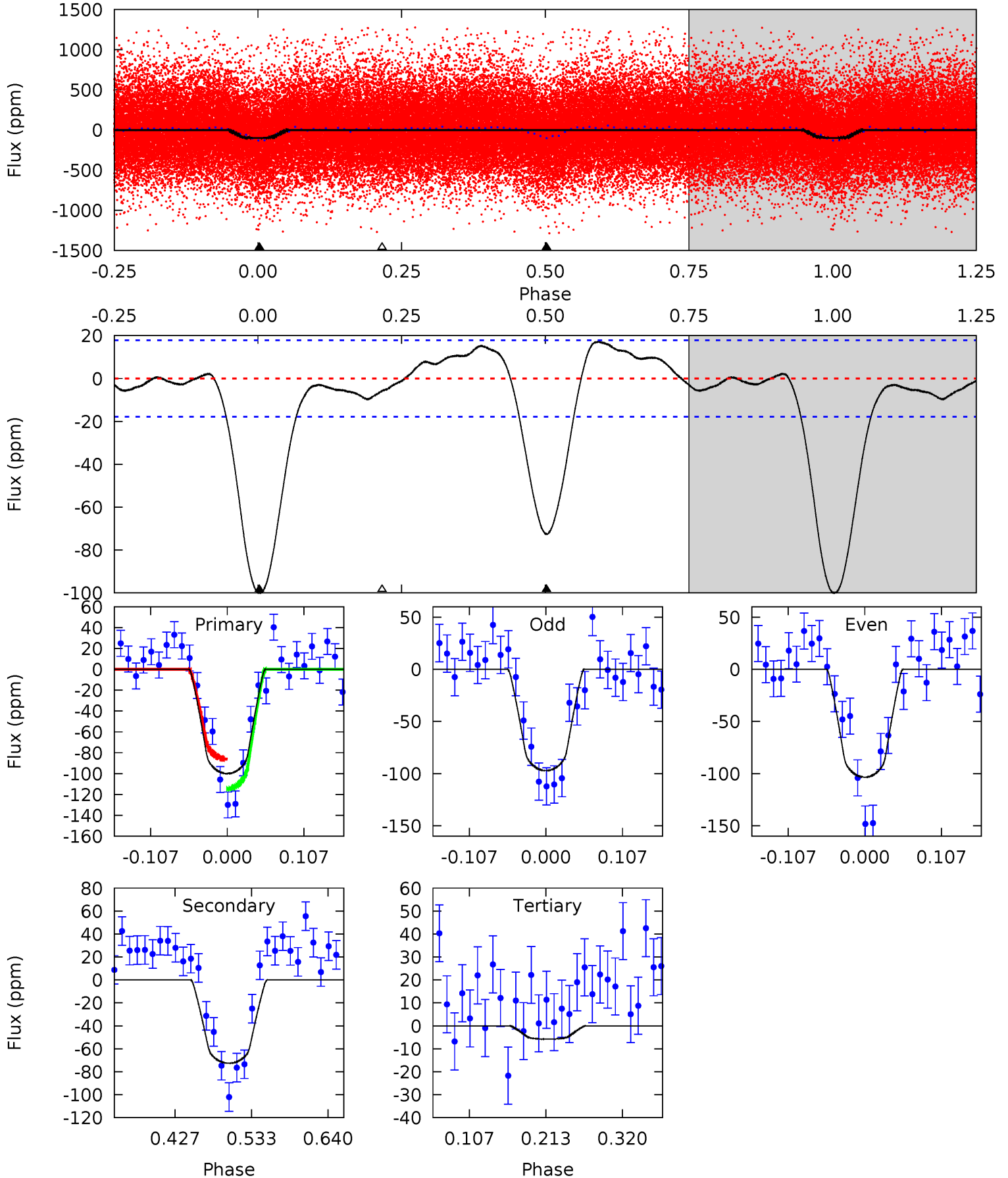
TCE 006806695-01 P= 0.855924 Days $T_0=132.071609$ (BKJD)



DV Model-Shift Uniqueness Test

006806695-01, P = 0.855917 Days, E = 131.218635 Days

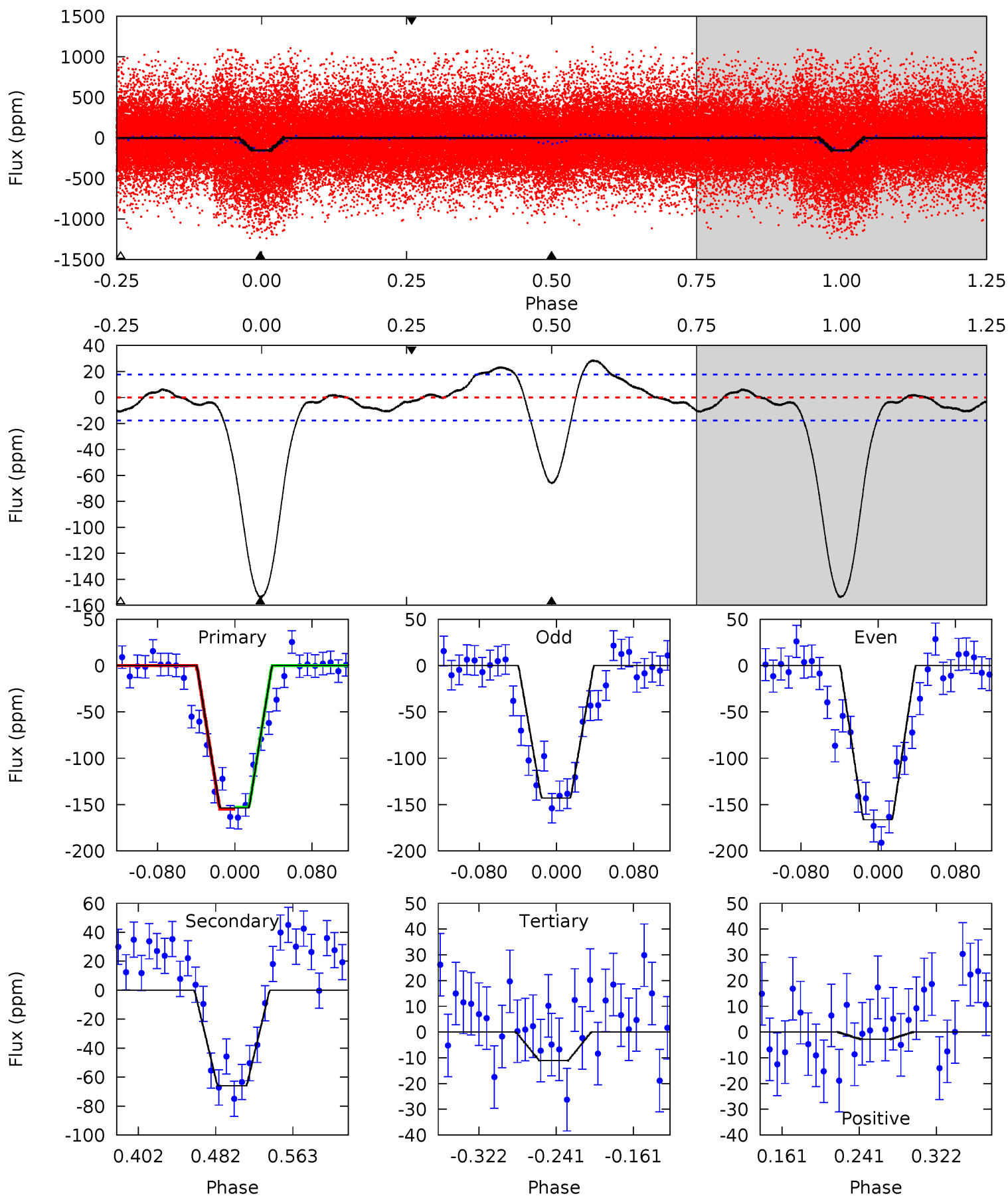
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.5	18.5	1.48	0	4.55	1.61	1.84	24.0	25.5	17.0	18.5	0.80	1.00	0.15	3.63



Alt Model-Shift Uniqueness Test

006806695-01, P = 0.855924 Days, E = 131.215685 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
40.2	17.2	2.89	-0.74	4.61	1.75	2.36	37.3	40.9	14.3	18.0	3.06	1.07	0.16	0.29



Stellar Parameters For KIC 006806695

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5437^{+178}_{-146}	$4.539^{+0.081}_{-0.090}$	$-0.520^{+0.300}_{-0.300}$	$0.759^{+0.109}_{-0.090}$	$0.727^{+0.097}_{-0.045}$	$2.339^{+0.891}_{-0.645}$
	+3%/-3%	+2%/-2%	+58%/-58%	+14%/-12%	+13%/-6%	+38%/-28%
Source	PHO1	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 006806695-01 / KOI 4061.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-73 ± 4	$0.96^{+0.48}_{-0.45}$	2325^{+116}_{-99}	4776^{+1491}_{-705}	11^{+26}_{-6}
Alt.	-66 ± 4	$1.08^{+0.46}_{-0.44}$	2327^{+115}_{-98}	4448^{+1116}_{-582}	$7.891^{+14.046}_{-4.036}$

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

DV Centroid Data

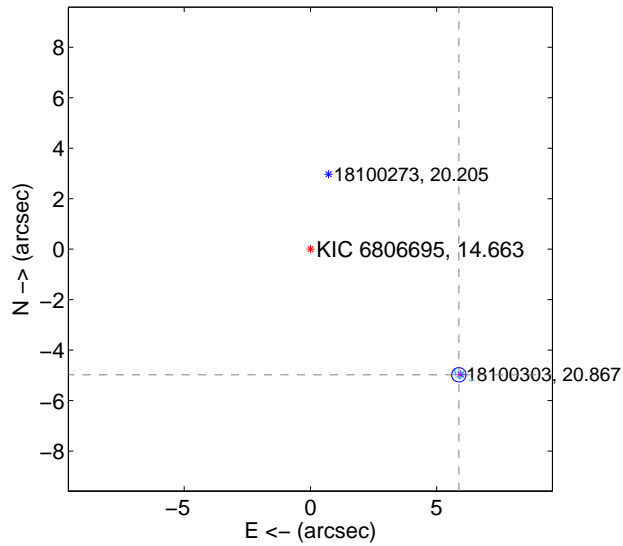
Supplemental centroid analysis for 006806695-01. Kepler magnitude: 14.66. Transit SNR 16.15

There are 9 quarters with good PRF difference image offsets

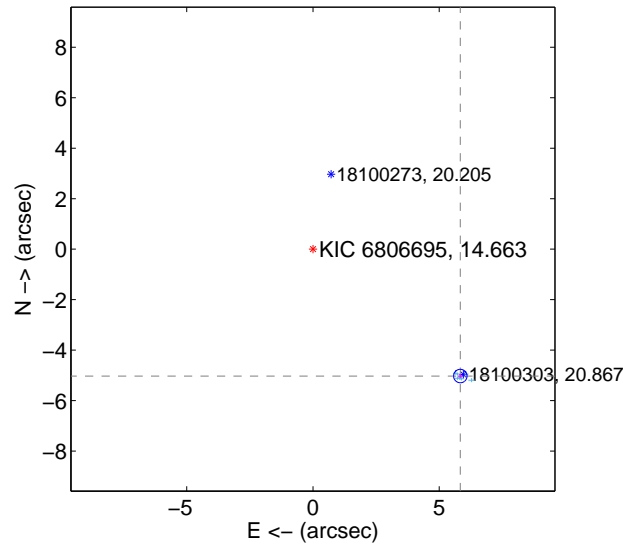
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.704 ± 0.095	81.35	-5.880 ± 0.092	-4.978 ± 0.076
PRF-fit source offset from KIC position	7.703 ± 0.089	86.72	-5.837 ± 0.094	-5.027 ± 0.073
photometric centroid source offset	4.08 ± 0.80	5.12	-3.62 ± 0.81	-1.88 ± 0.75

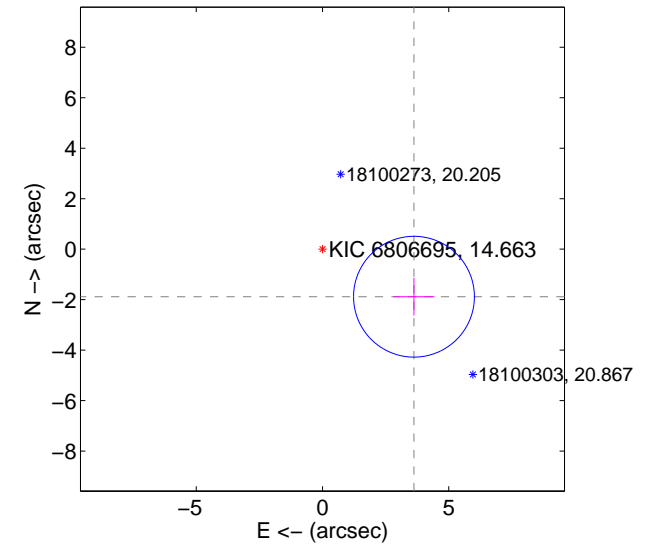
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

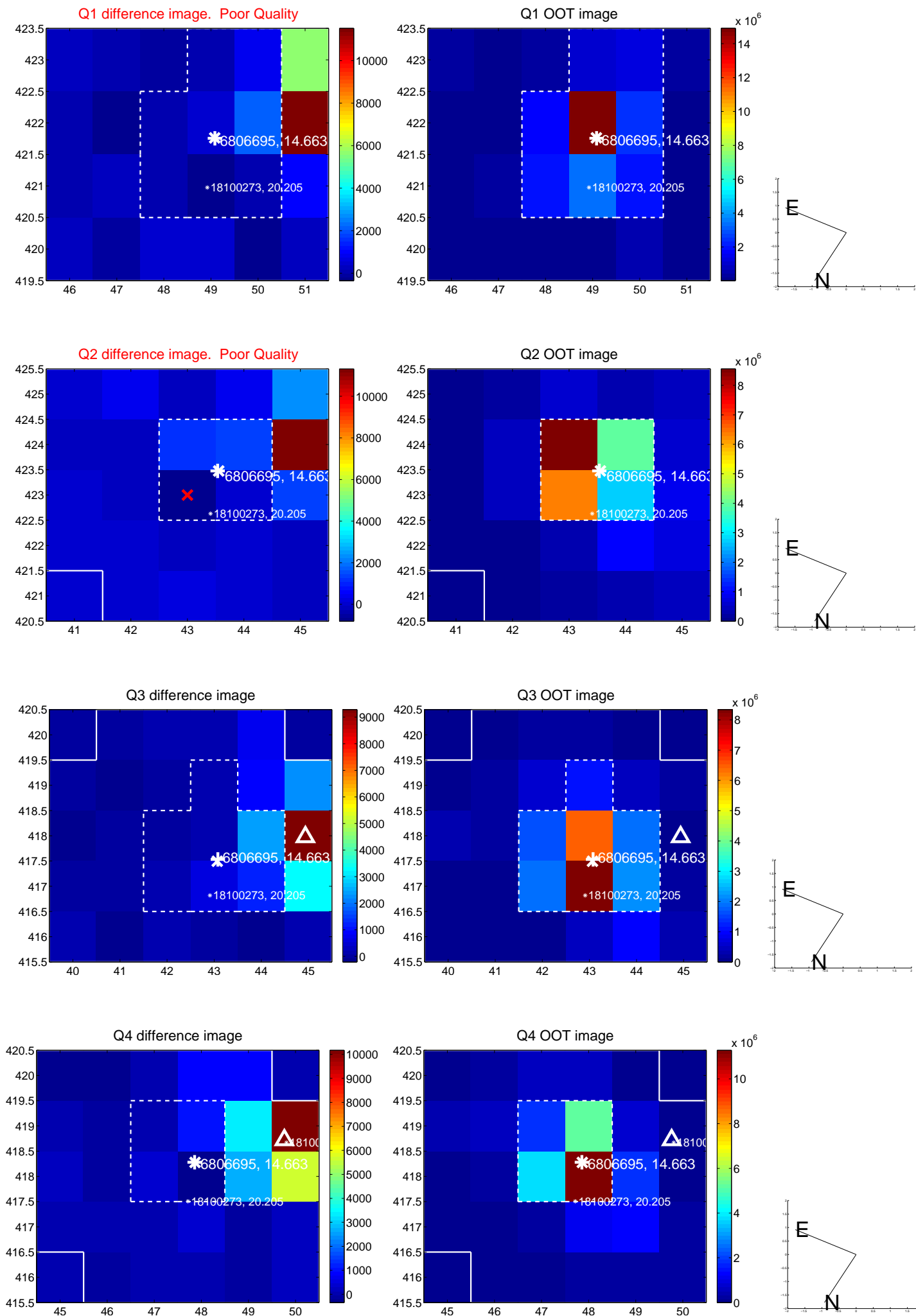


offset from photometric centroids

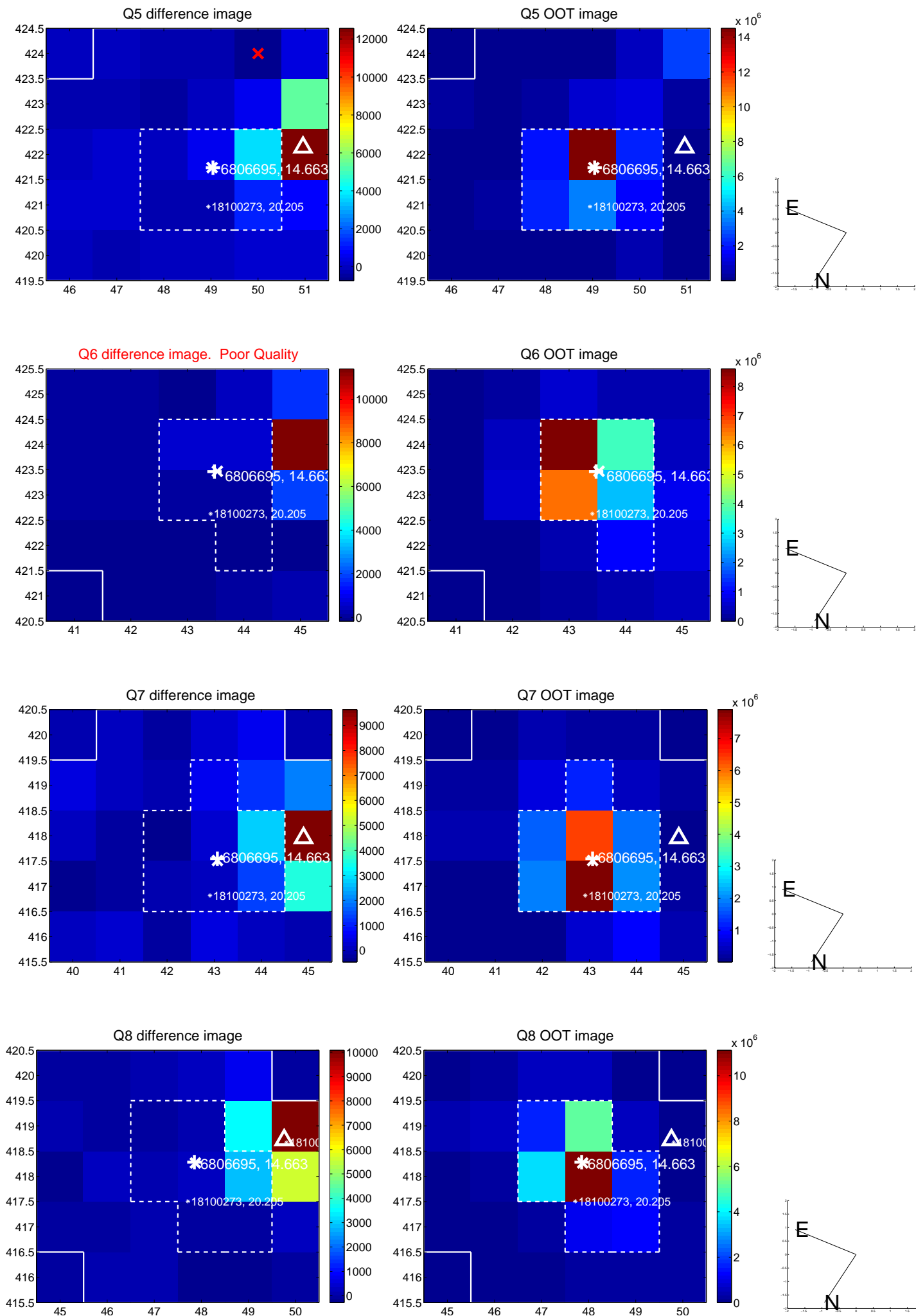


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

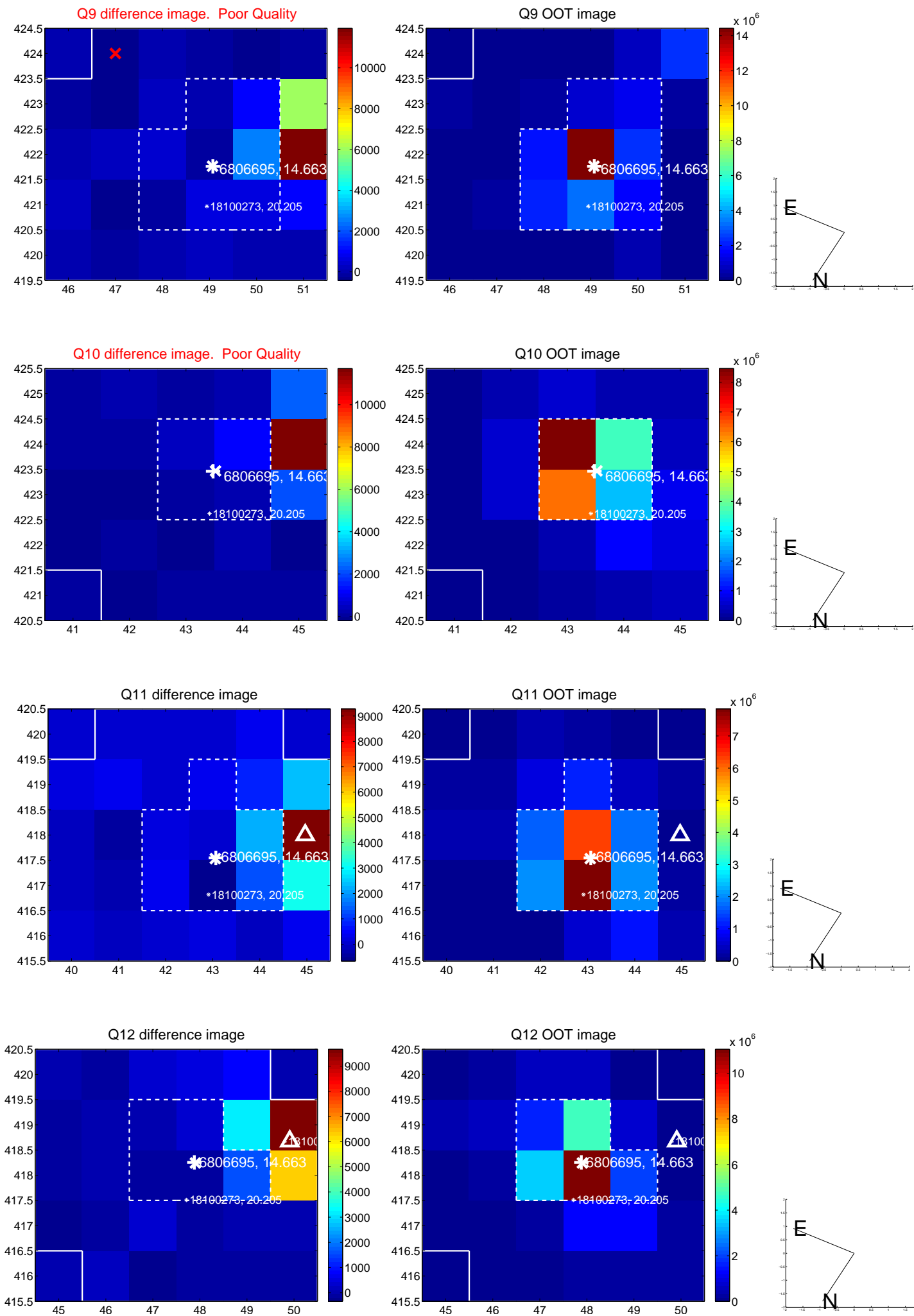
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



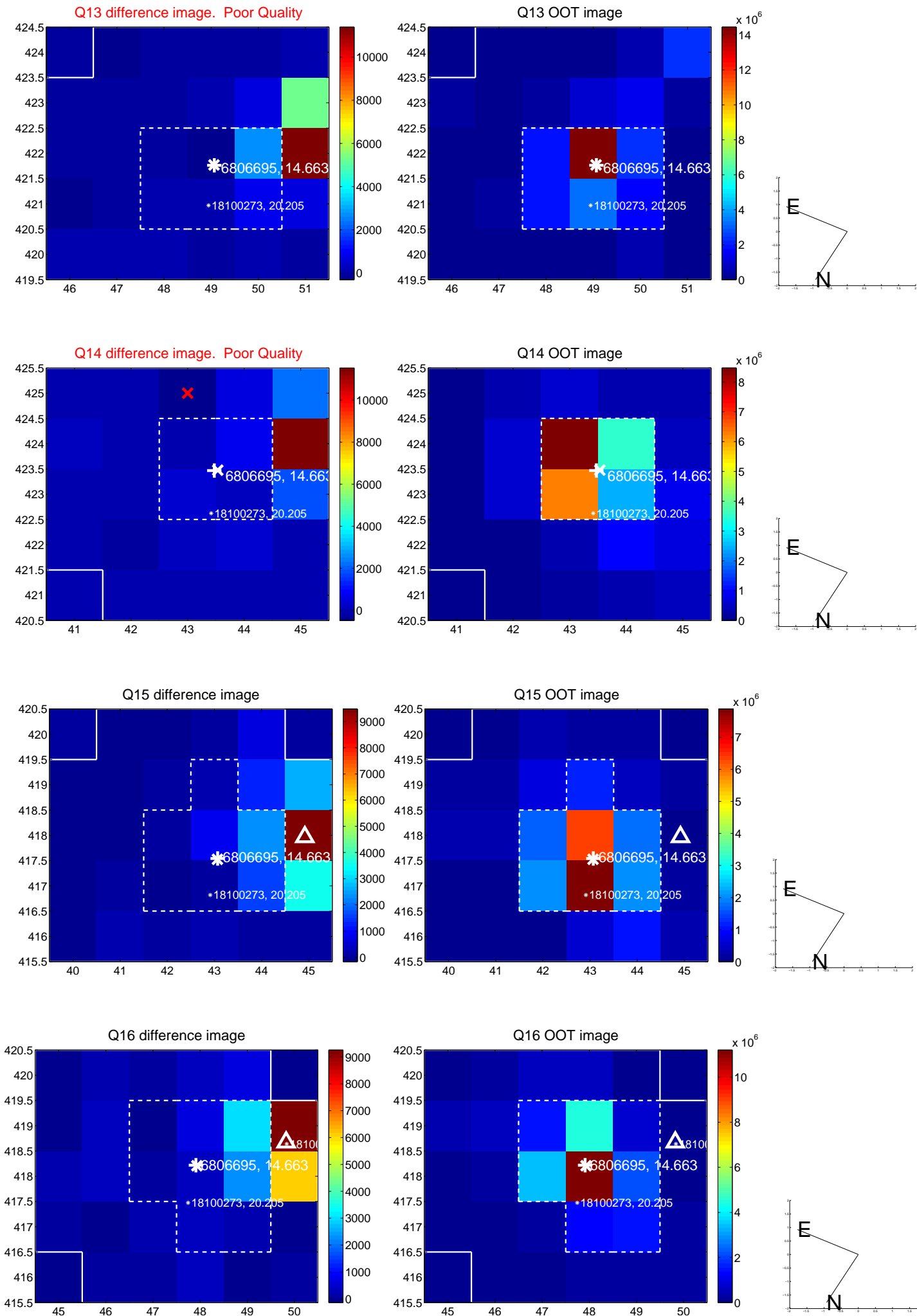
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



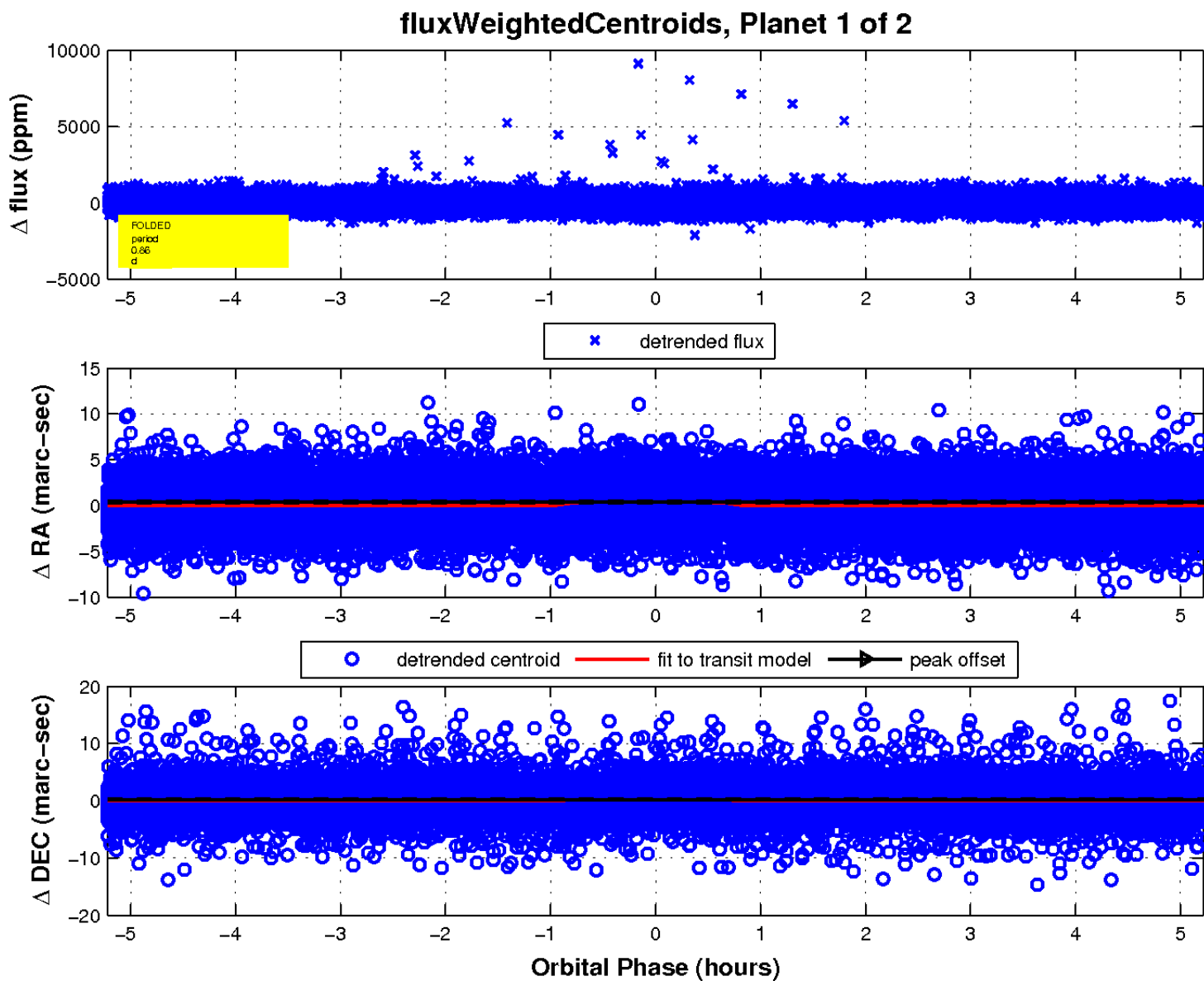
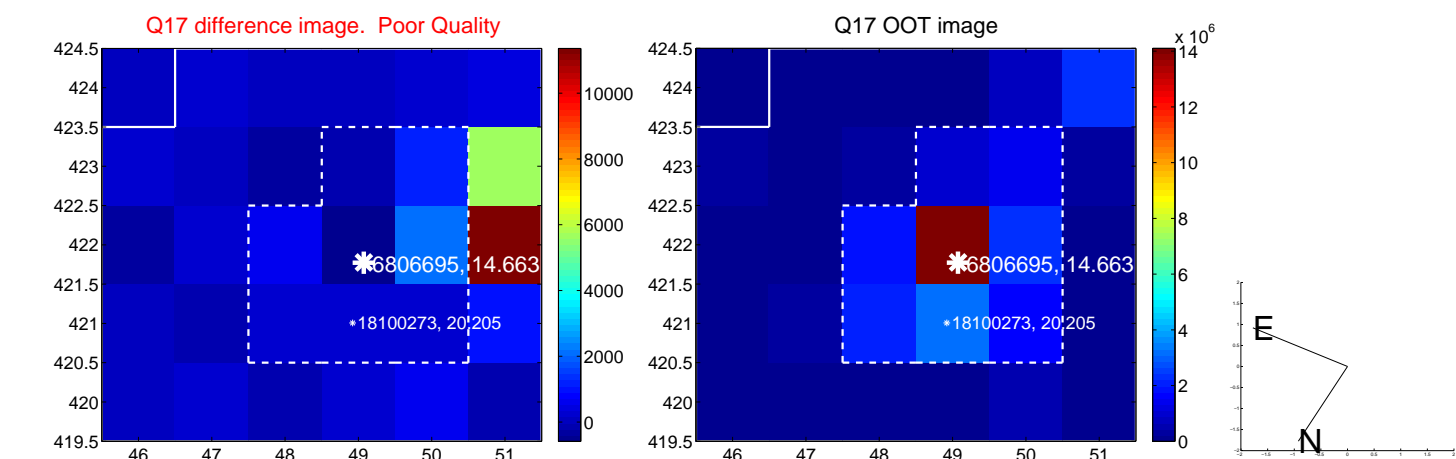
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



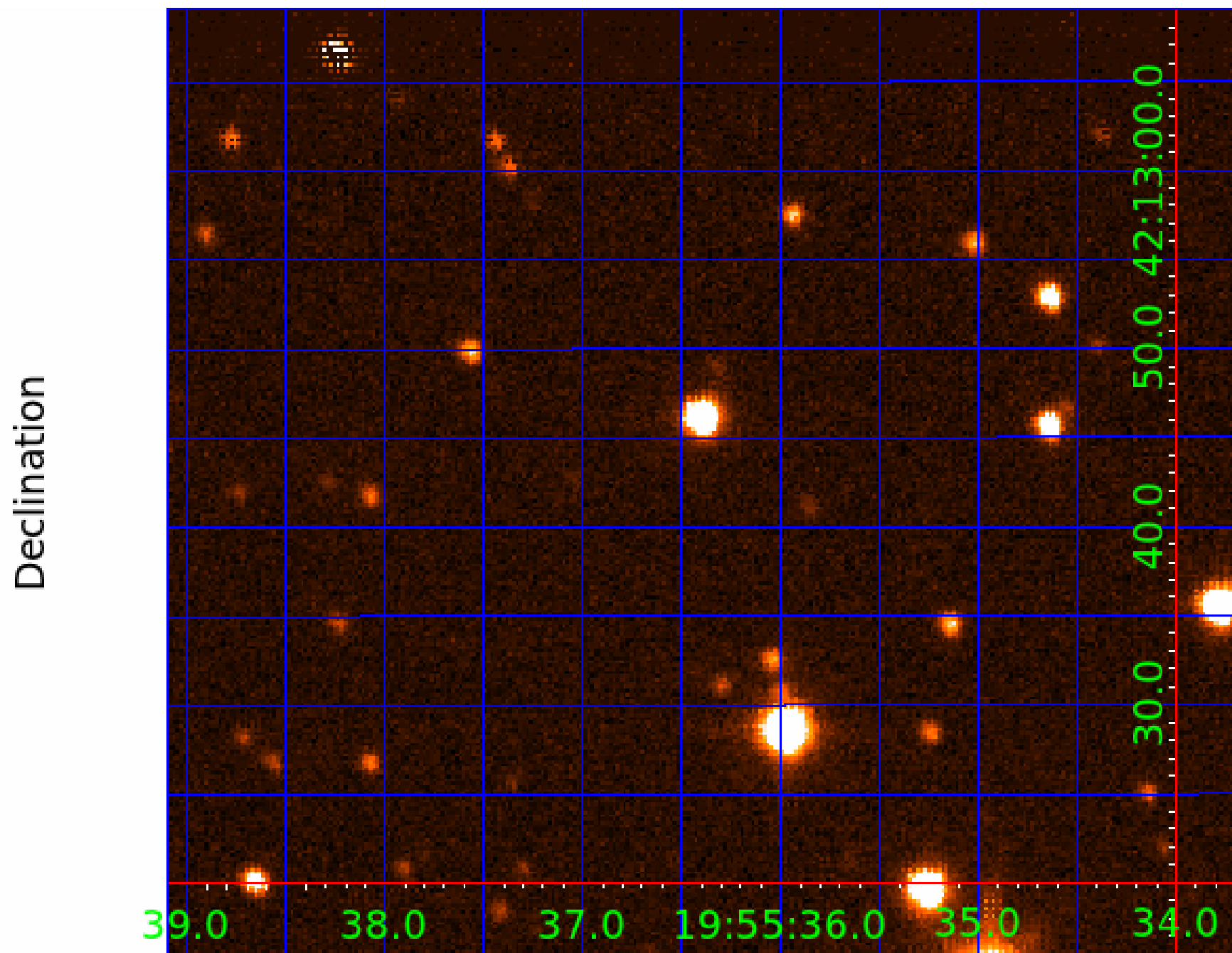
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 006806695

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})
006806695-01	OBS	4061.01	0.855917	132.074552	102.5	1.740	16.1	16.2	0.76	5437	0.92	1791.64
006806695-02	OBS	No	0.855913	131.650883	93.8	1.725	13.6	15.1	0.76	5437	0.88	1791.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006806695-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_RESOLVED_OFFSET
006806695-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET

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 006806695-02

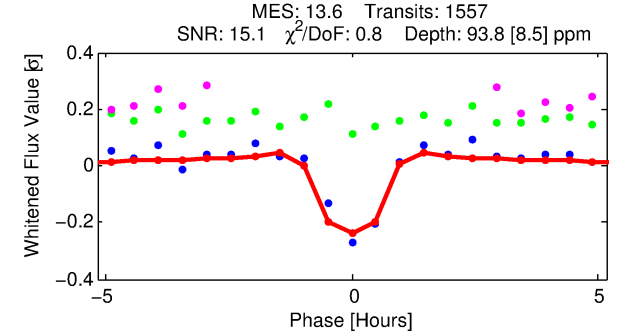
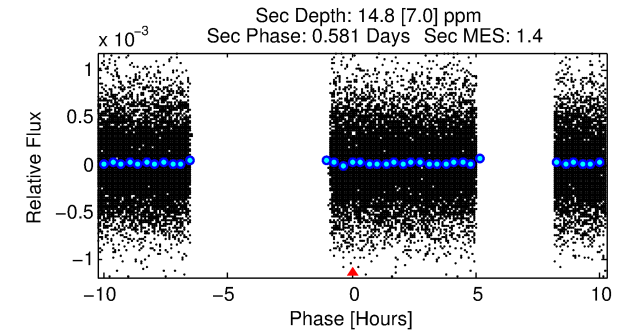
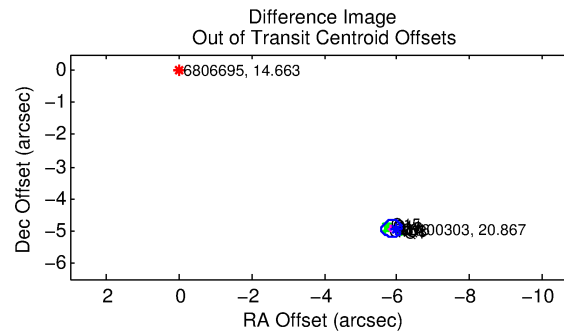
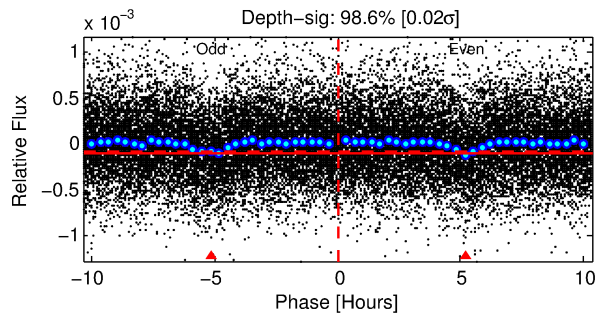
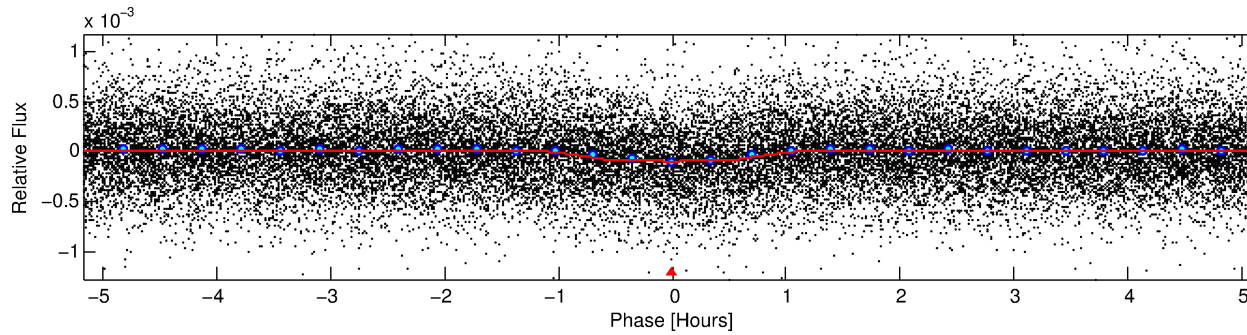
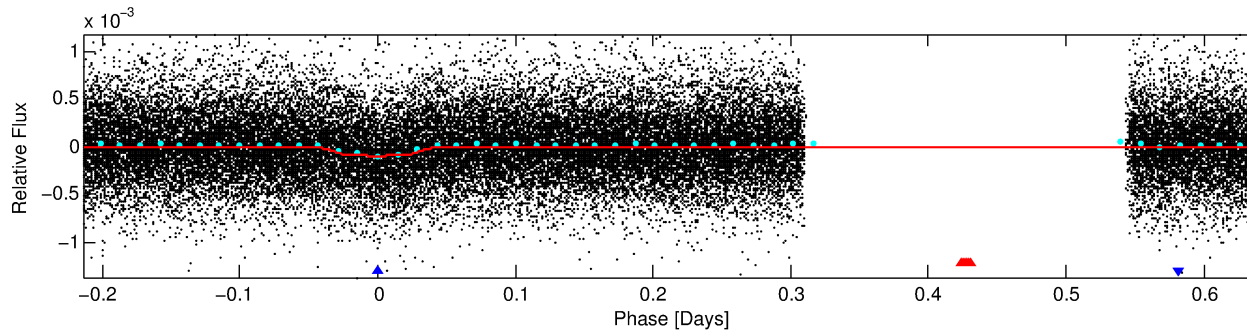
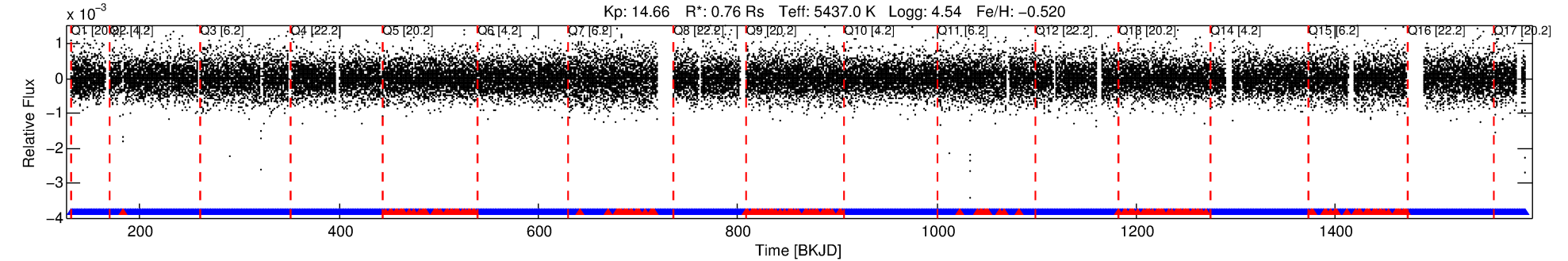
No Significant Match Found

DV One-Page Summary

KIC: 6806695 Candidate: 2 of 2 Period: 0.856 d

KOI: K04061.01 Corr: 0.919

Kp: 14.66 R*: 0.76 Rs Teff: 5437.0 K Logg: 4.54 Fe/H: -0.520



DV Fit Results:

Period = 0.85591 [0.00001] d
Epoch = 131.6509 [0.0014] BKJD
Rp/R* = 0.0106 [0.0049]
a/R* = 1.97 [3.13]
b = 0.90 [0.45]
Seff = 1791.65 [381.76]
Teq = 1659 [88] K
Rp = 0.88 [0.42] Re
a = 0.0159 [0.0019] AU
Ag = 2.65 [2.77] [0.60σ]
Teffp = 3272 [851] K [1.89σ]

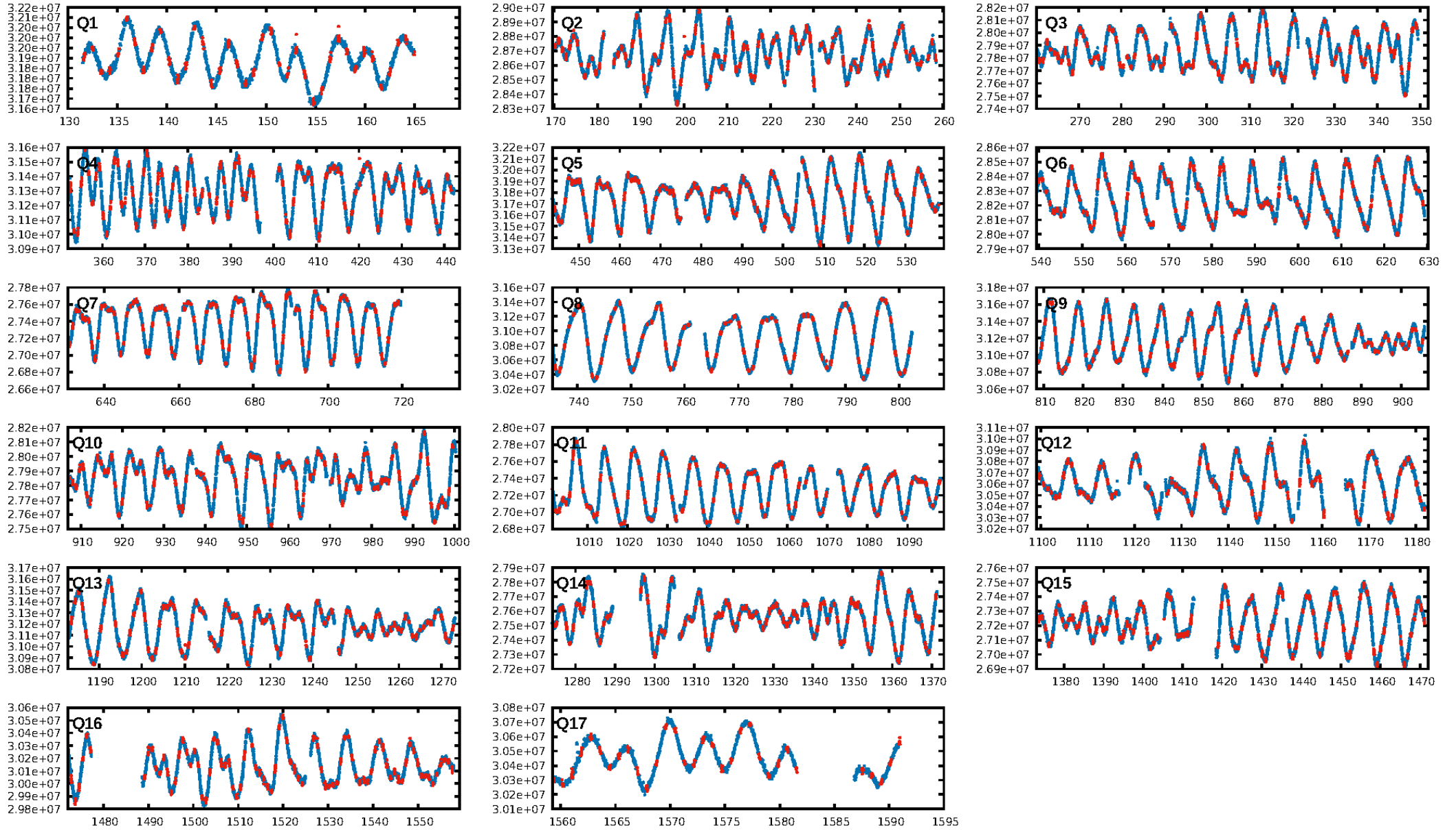
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.89e-44
RollingBand-fgt: 0.87 [1295/1486]
GhostDiagnostic-chr: -4.064
Centroid-sig: 0.0%
Centroid-so: 2.232 arcsec [2.69σ]
OotOffset-rm: 7.655 arcsec [85.11σ]
KicOffset-rm: 7.651 arcsec [87.26σ]
OotOffset-st: 0/4/4/0 [8]
KicOffset-st: 0/4/4/0 [8]
DiffImageQuality-fgm: 1.00 [8/8]
DiffImageOverlap-fno: 1.00 [17/17]

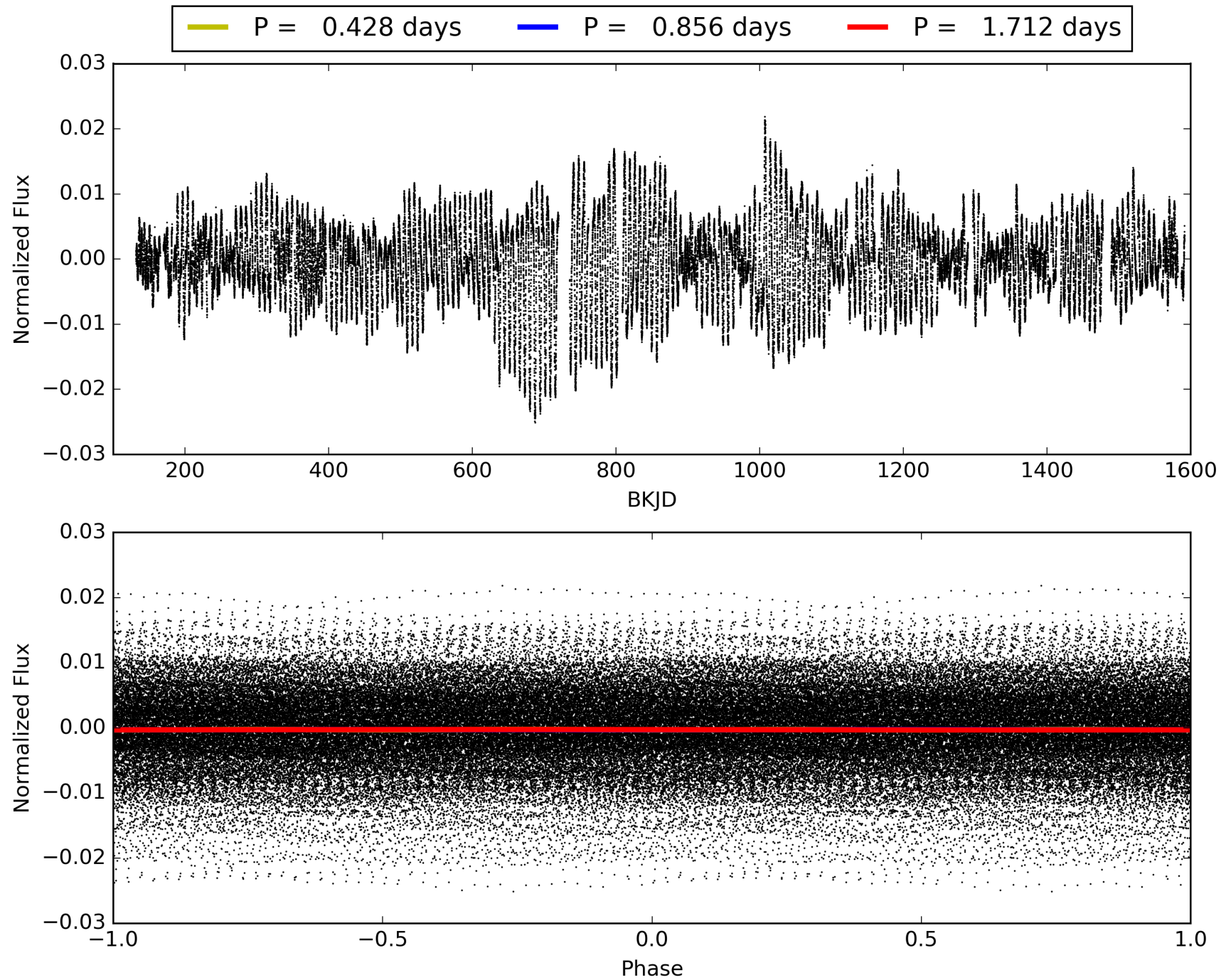
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:15:43 Z

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

TCE 006806695-02, PDC Light Curves

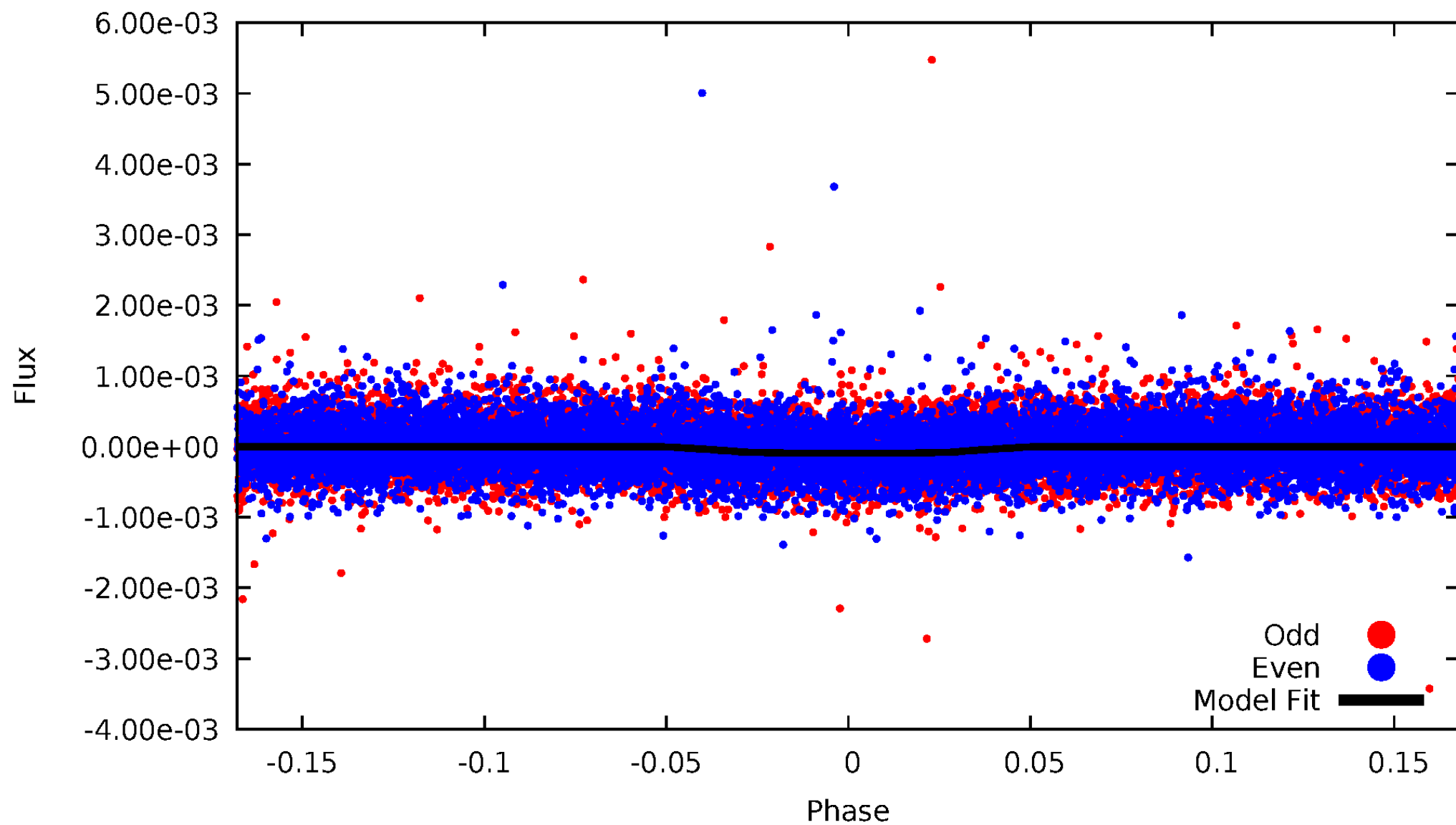


TCE 006806695-02



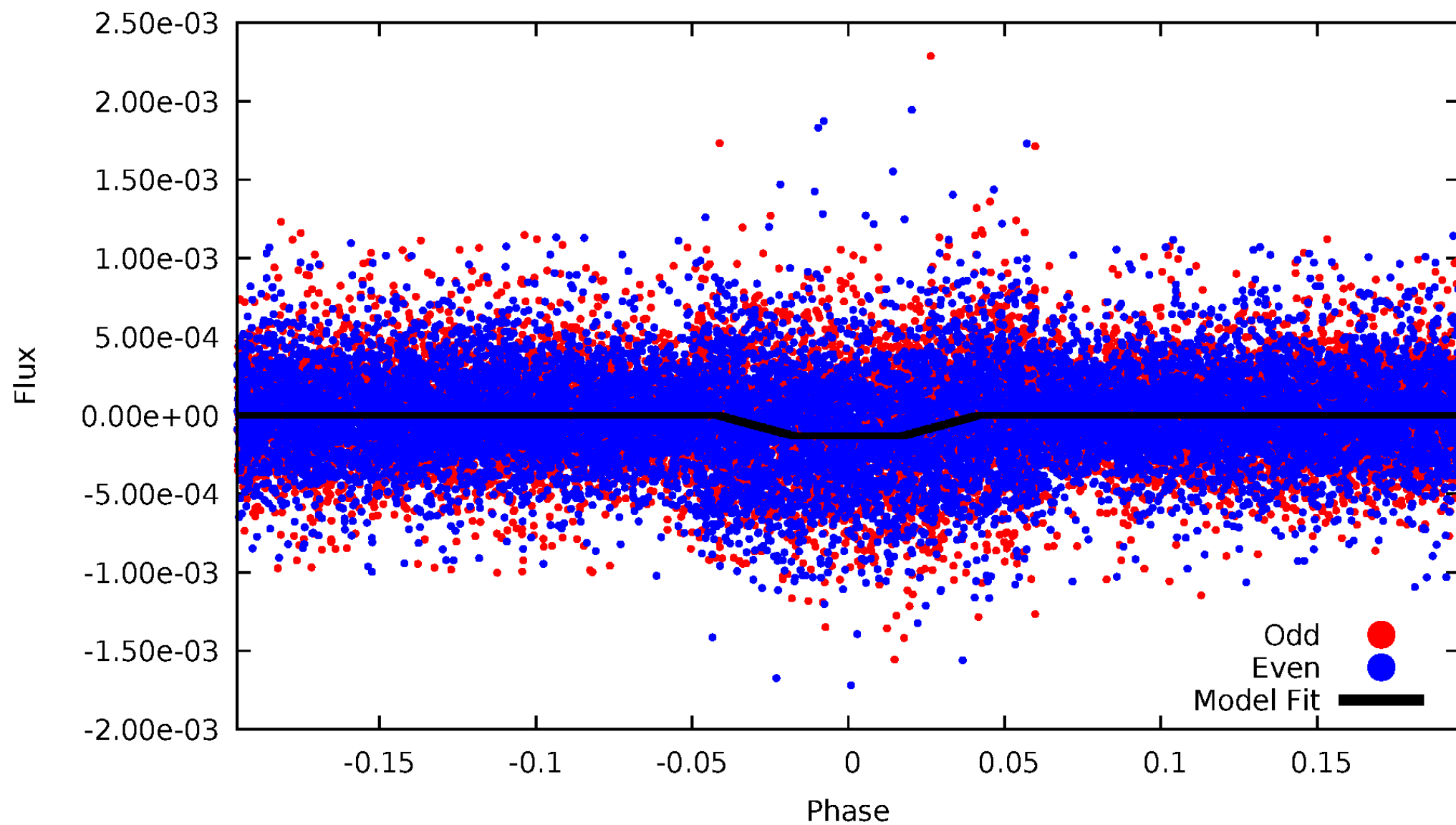
DV Odd/Even

TCE 006806695-02



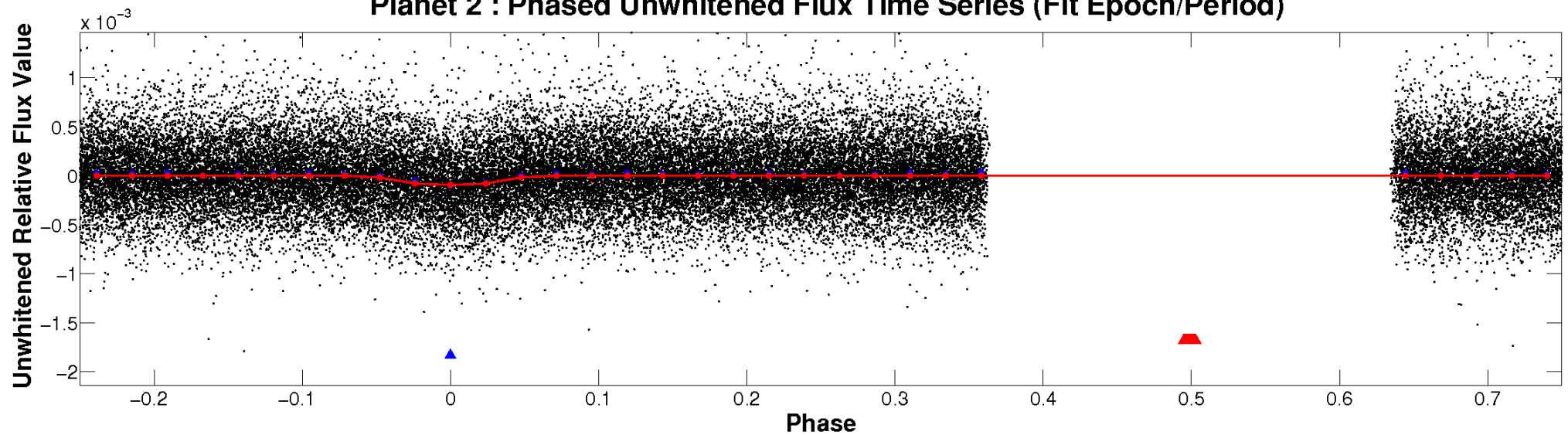
ALT Odd/Even

TCE 006806695-02

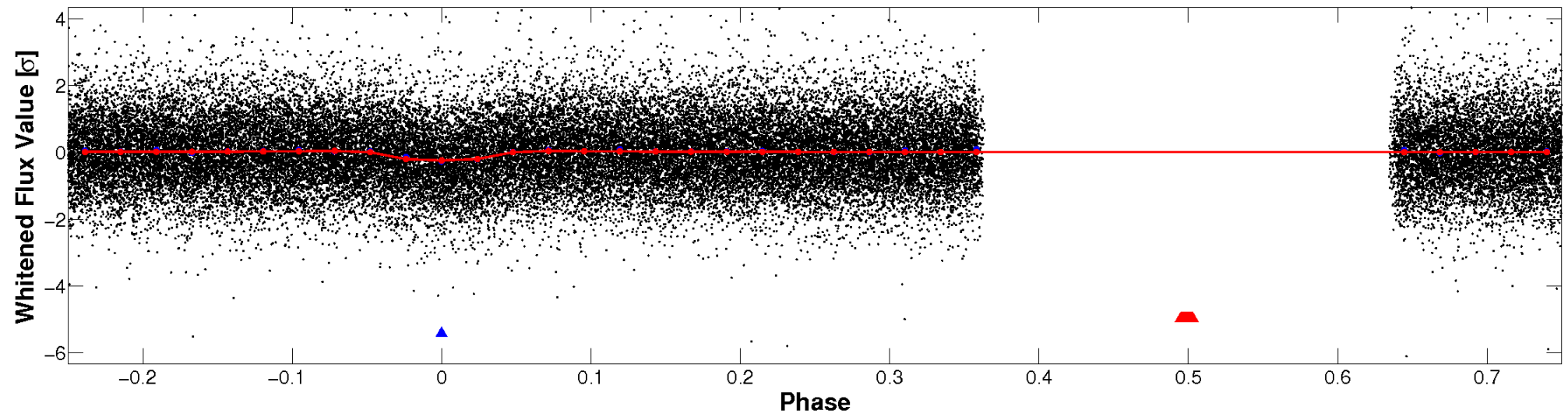


Non-Whitened Vs. Whitened Light Curve

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

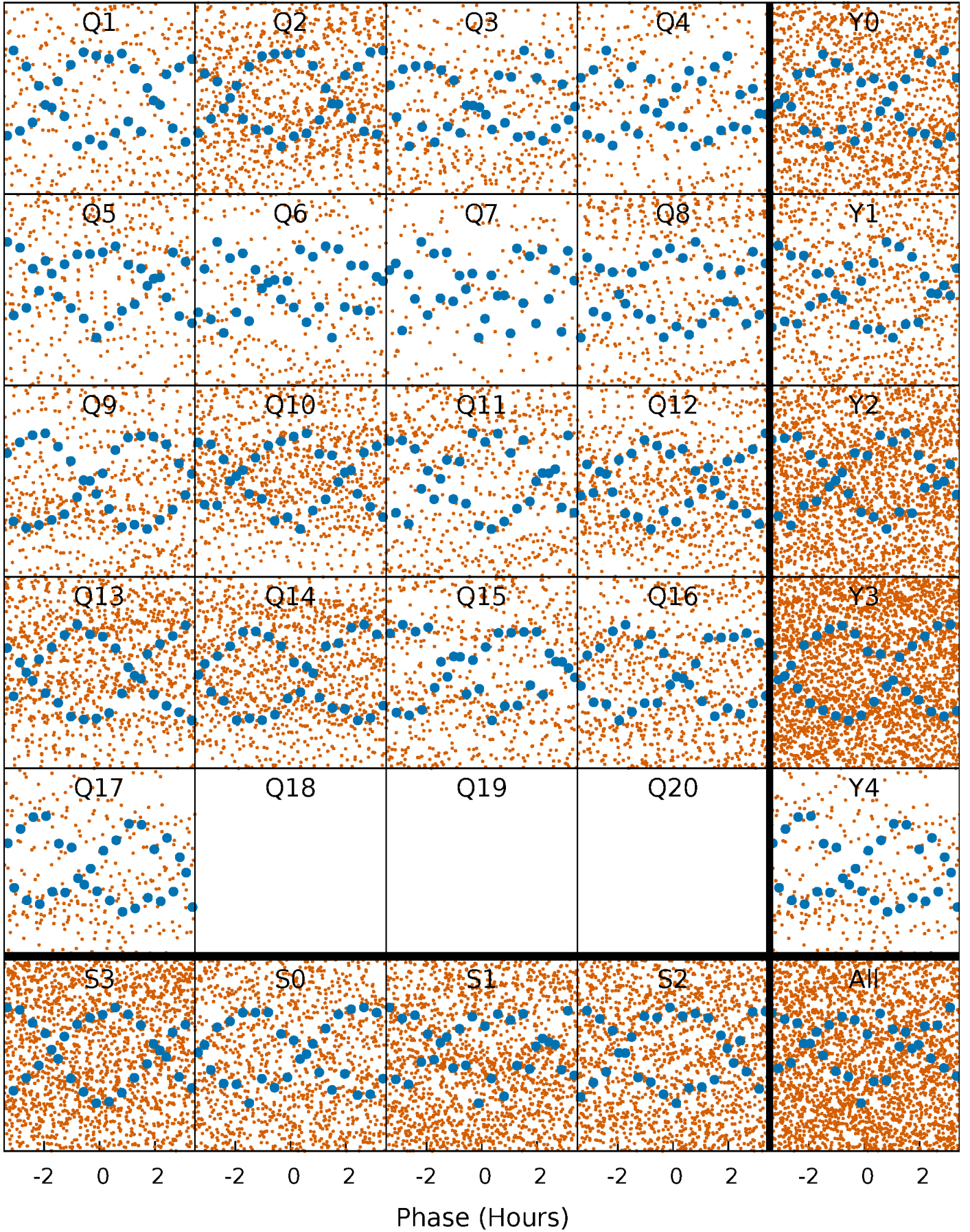


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



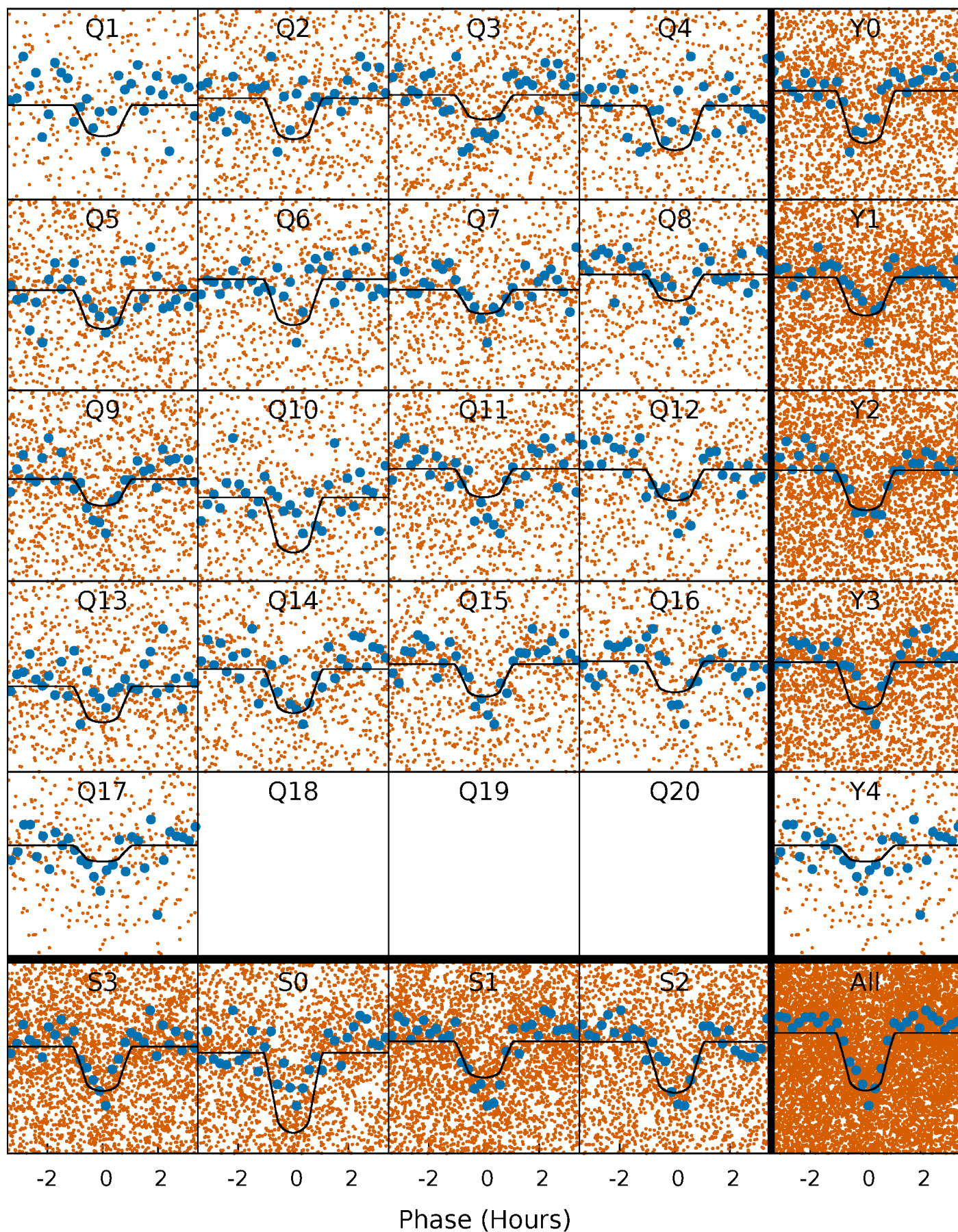
PDC Quarter-Phased Transit Curves

TCE 006806695-02 $P = 0.855913$ Days $T_0 = 131.650883$ (BKJD)



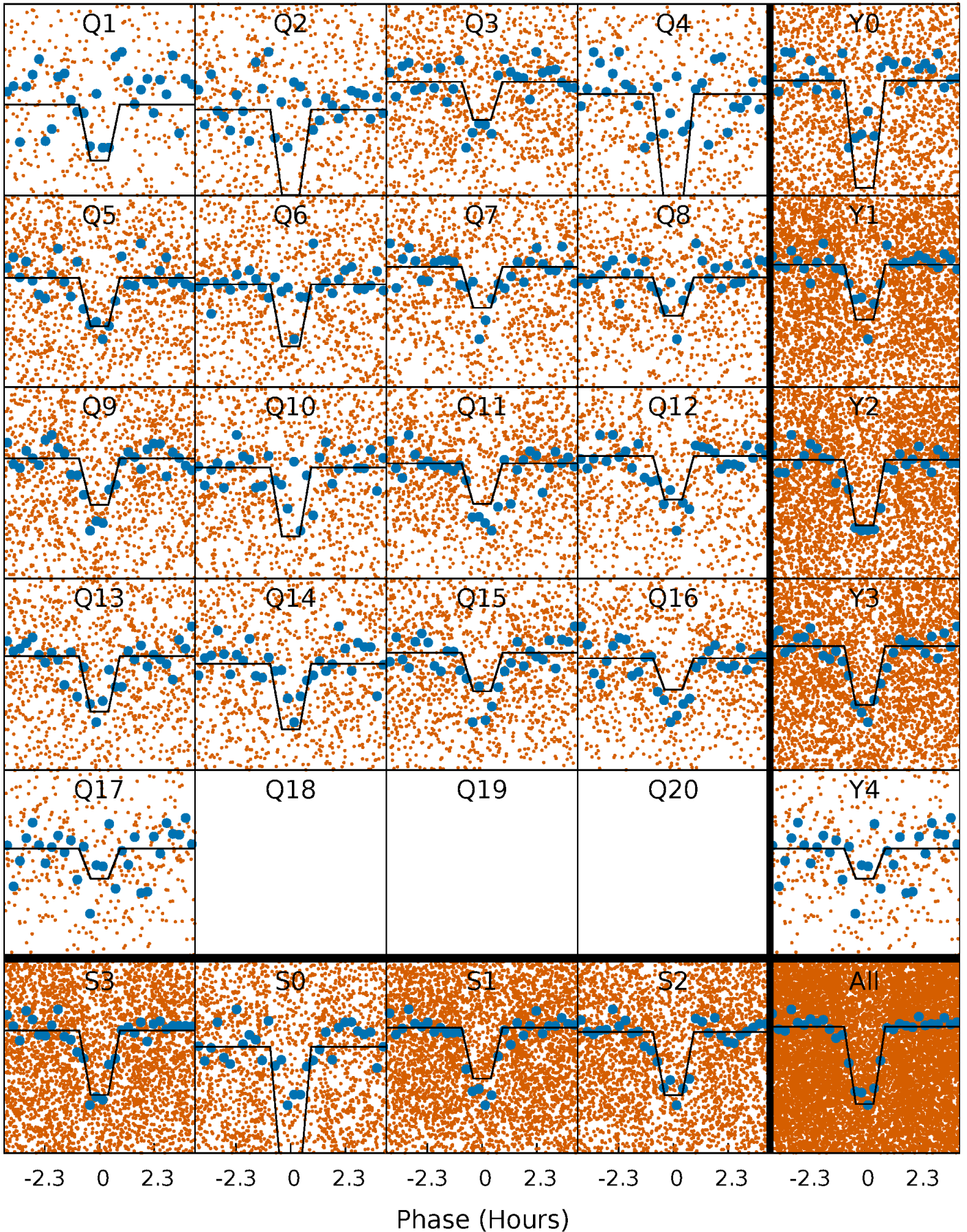
DV Quarter-Phased Transit Curves

TCE 006806695-02 P= 0.855913 Days $T_0=131.650883$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

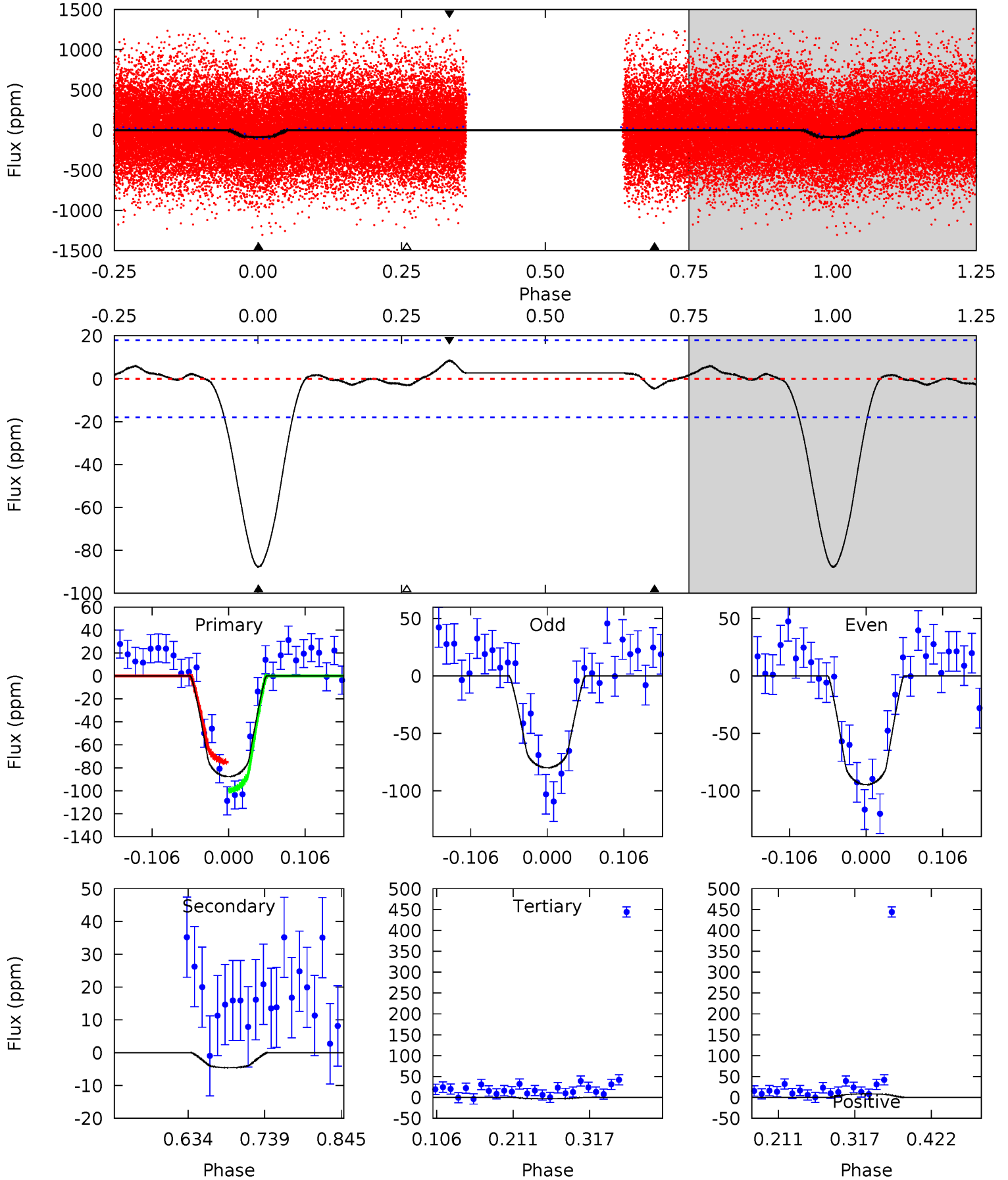
TCE 006806695-02 P= 0.855917 Days $T_0=131.649833$ (BKJD)



DV Model-Shift Uniqueness Test

006806695-02, P = 0.855913 Days, E = 130.794970 Days

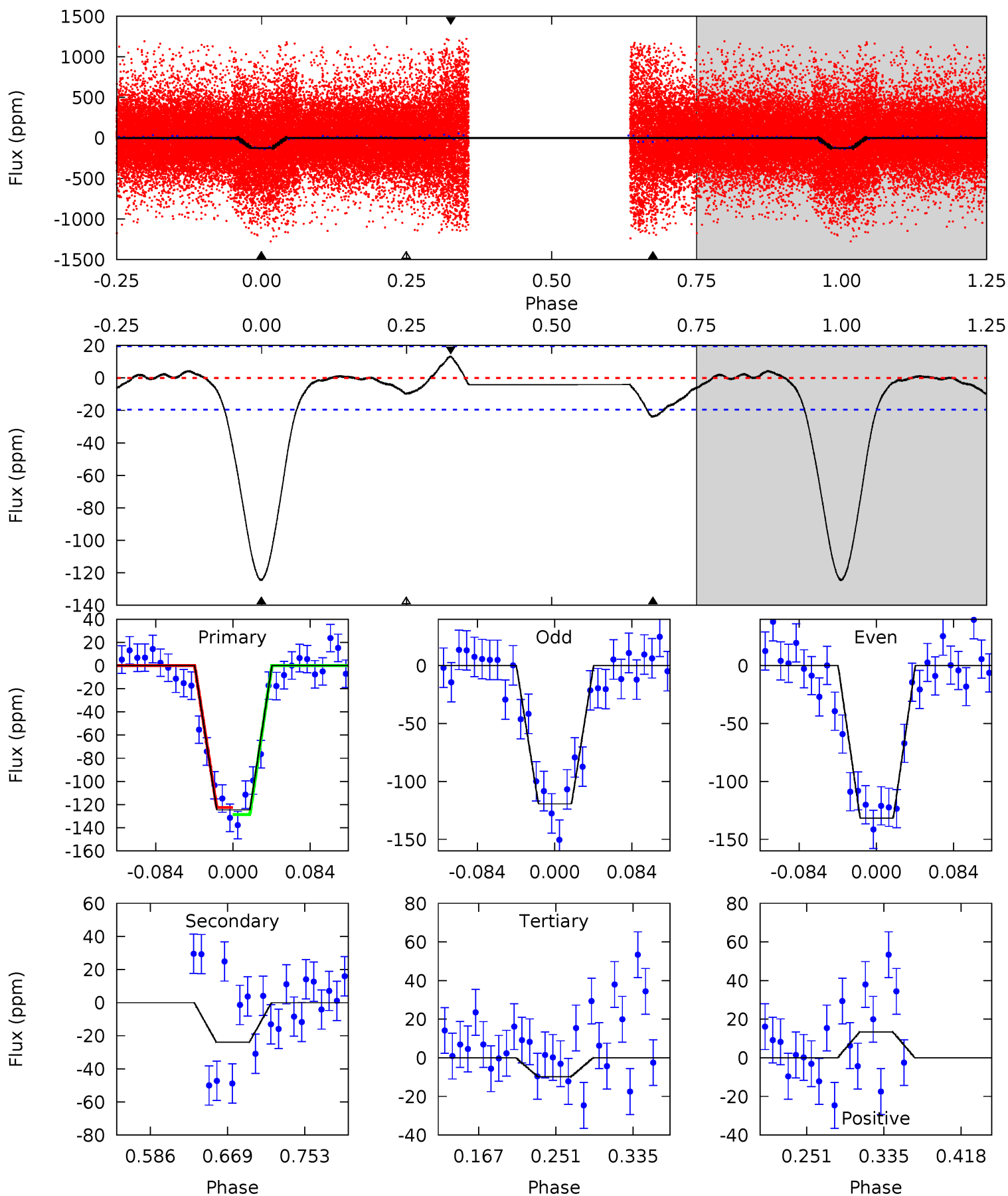
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.2	1.16	0.78	2.12	4.55	1.62	0.71	21.4	20.1	0.39	-0.95	1.88	0.92	0.09	3.13



Alt Model-Shift Uniqueness Test

006806695-02, P = 0.855917 Days, E = 130.793916 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.4	5.63	2.31	3.16	4.60	1.73	1.03	27.0	26.2	3.32	2.47	1.46	1.03	0.10	0.79



Stellar Parameters For KIC 006806695

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5437^{+178}_{-146}	$4.539^{+0.081}_{-0.090}$	$-0.520^{+0.300}_{-0.300}$	$0.759^{+0.109}_{-0.090}$	$0.727^{+0.097}_{-0.045}$	$2.339^{+0.891}_{-0.645}$
	+3%/-3%	+2%/-2%	+58%/-58%	+14%/-12%	+13%/-6%	+38%/-28%
Source	PHO1	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 006806695-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-5 ± 4	$0.90^{+0.43}_{-0.38}$	2327^{+109}_{-101}	2771^{+846}_{-5379}	$0.688^{+1.915}_{-0.619}$
Alt.	-24 ± 4	$0.94^{+0.41}_{-0.42}$	2325^{+114}_{-93}	3848^{+1052}_{-484}	$3.692^{+8.675}_{-1.895}$

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 $A_{obs} \gg 1.0$

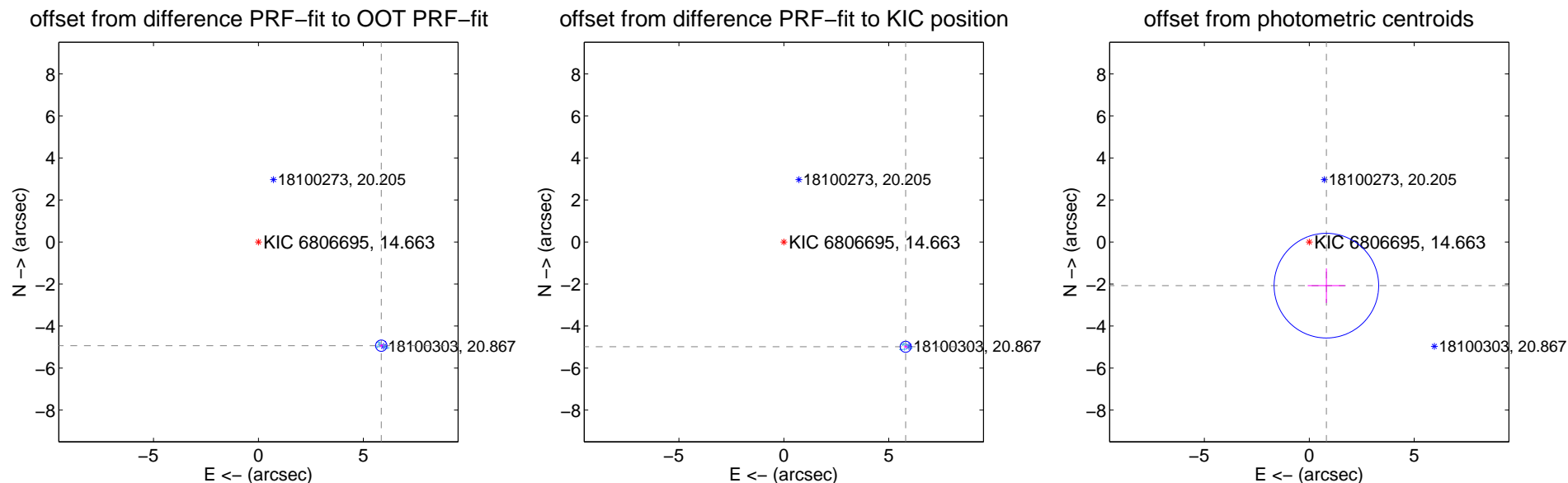
DV Centroid Data

Supplemental centroid analysis for 006806695-02. Kepler magnitude: 14.66. Transit SNR 15.06

There are 8 quarters with good PRF difference image offsets

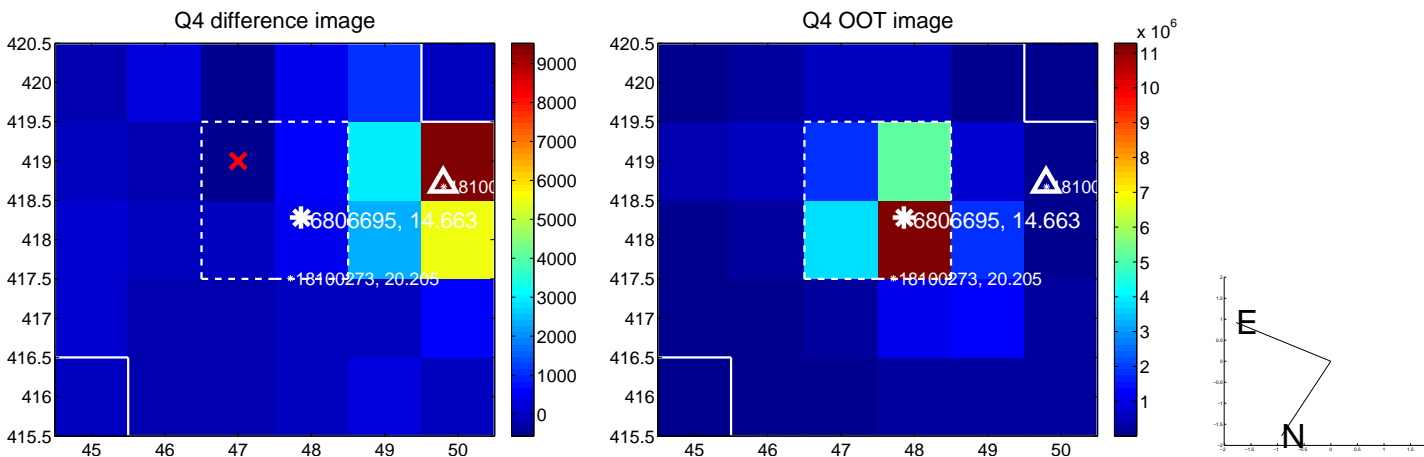
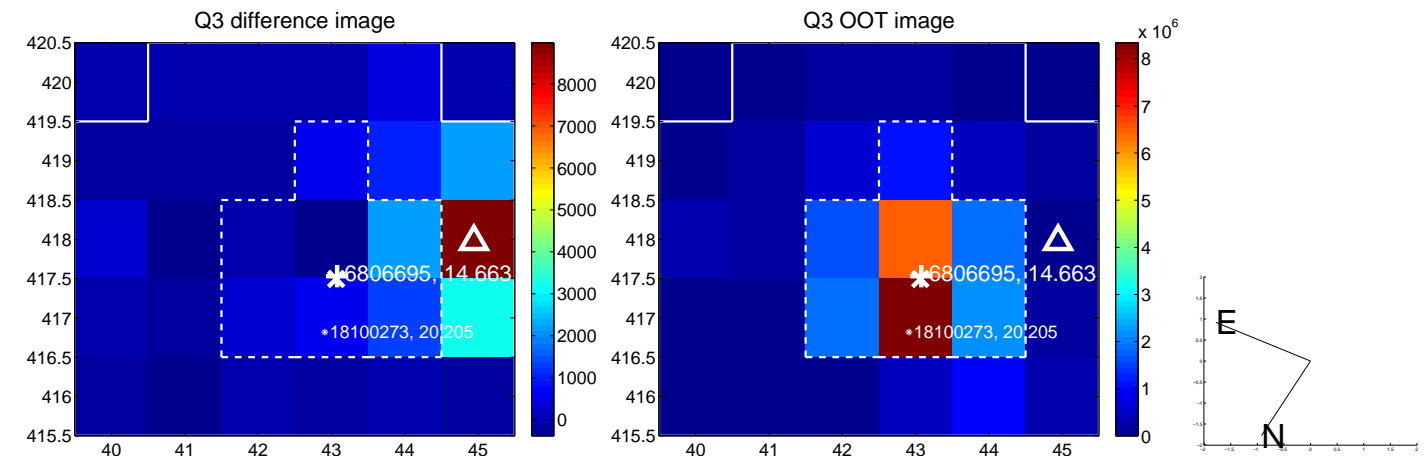
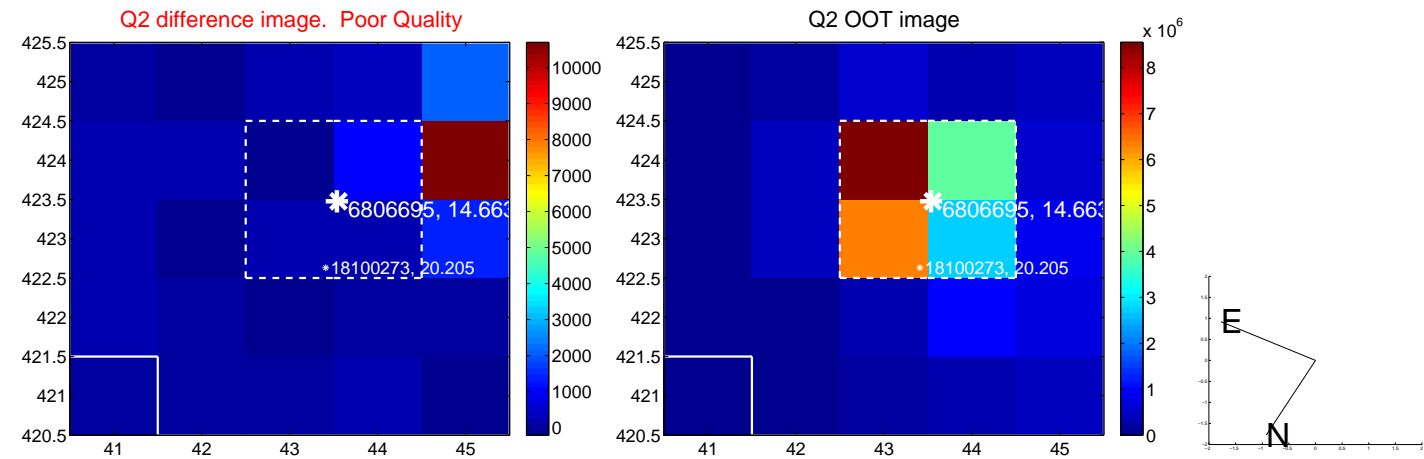
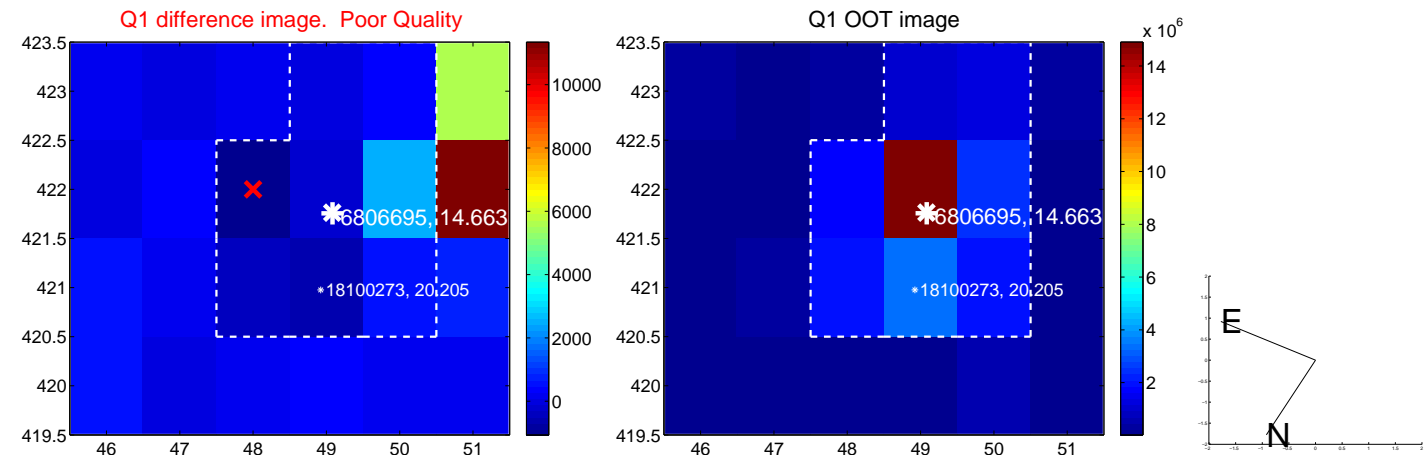
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.655 ± 0.090	85.11	-5.853 ± 0.098	-4.934 ± 0.077
PRF-fit source offset from KIC position	7.651 ± 0.088	87.26	-5.803 ± 0.094	-4.986 ± 0.078
photometric centroid source offset	2.23 ± 0.83	2.69	-0.82 ± 0.89	-2.08 ± 0.82

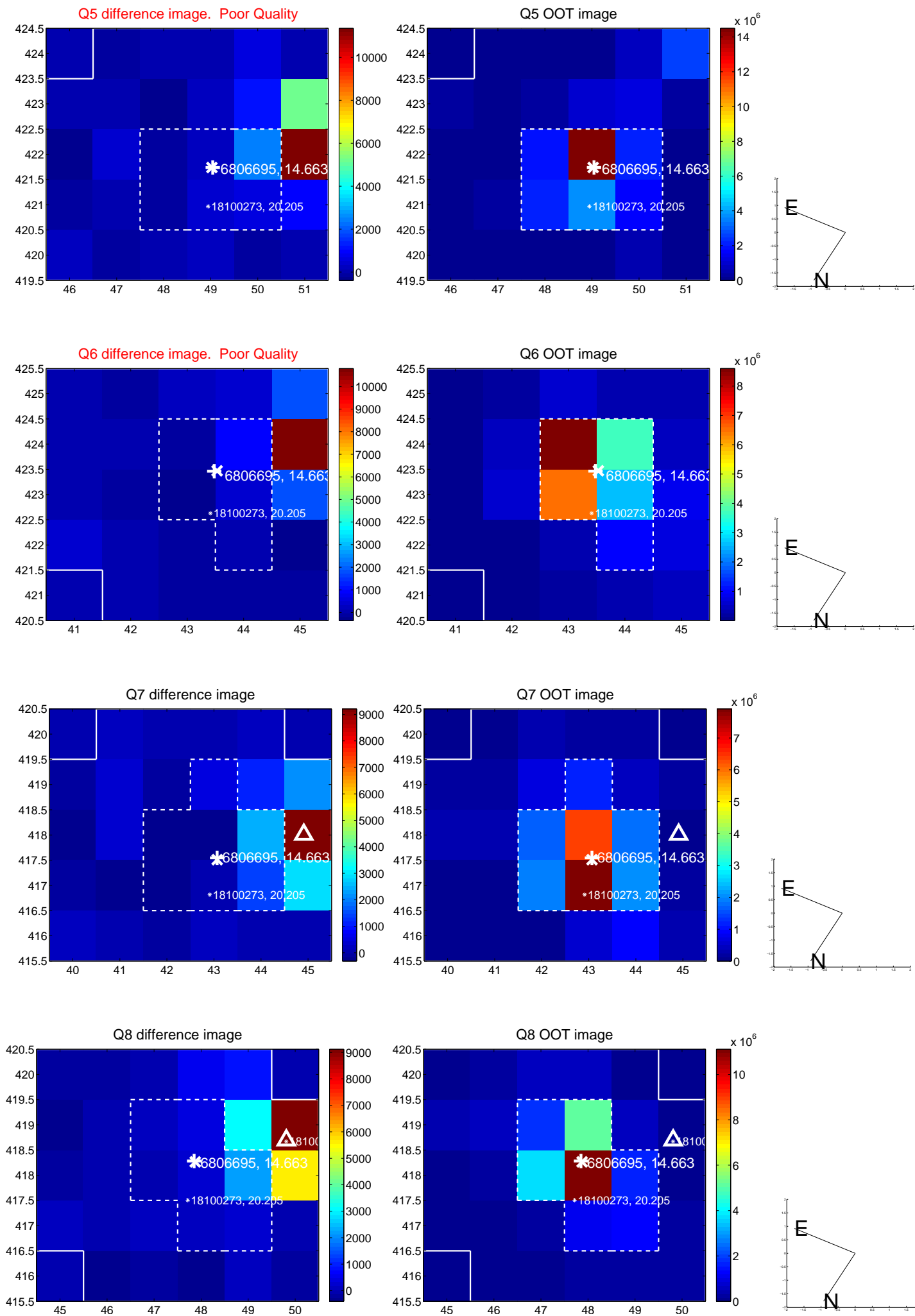


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

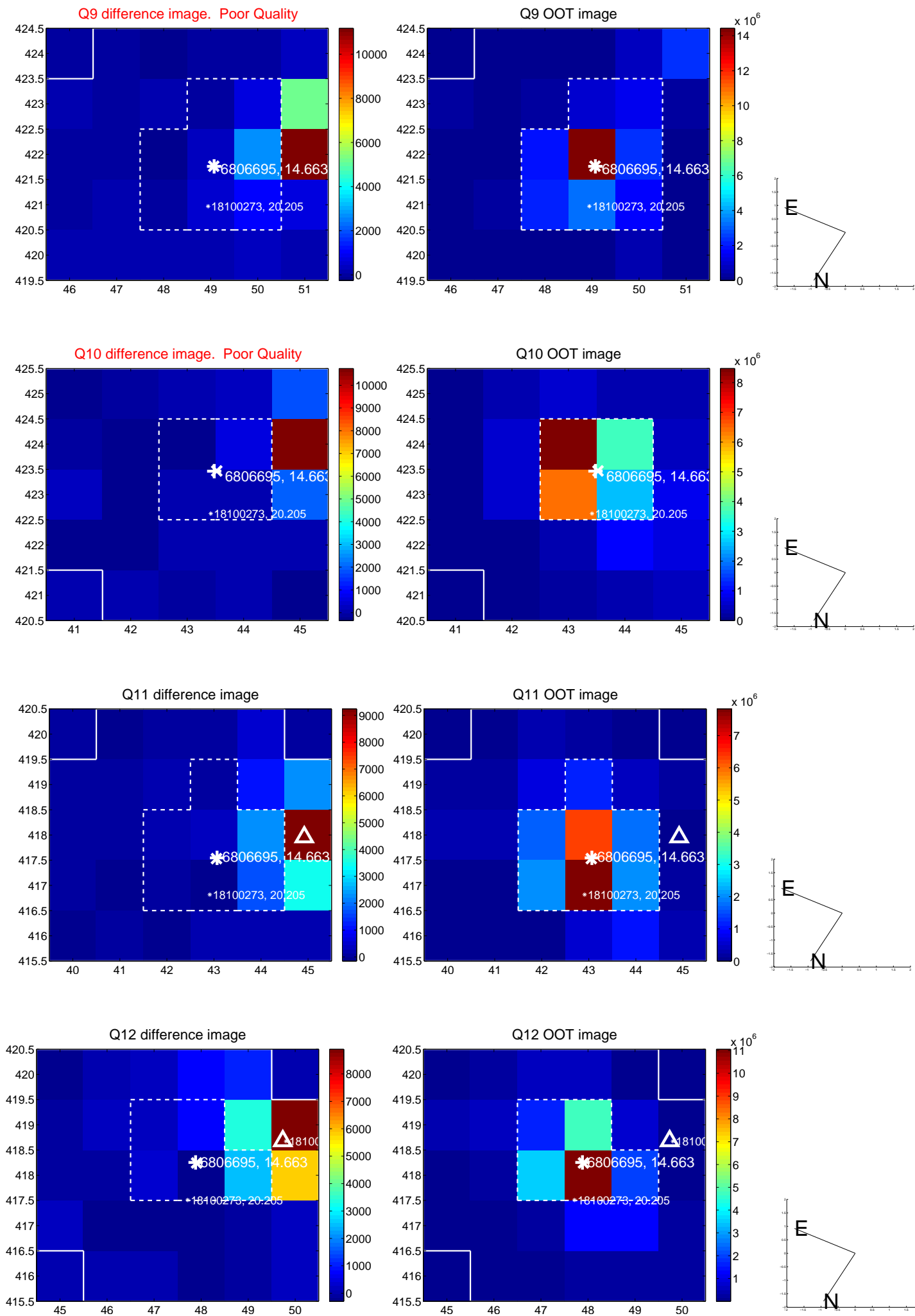
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



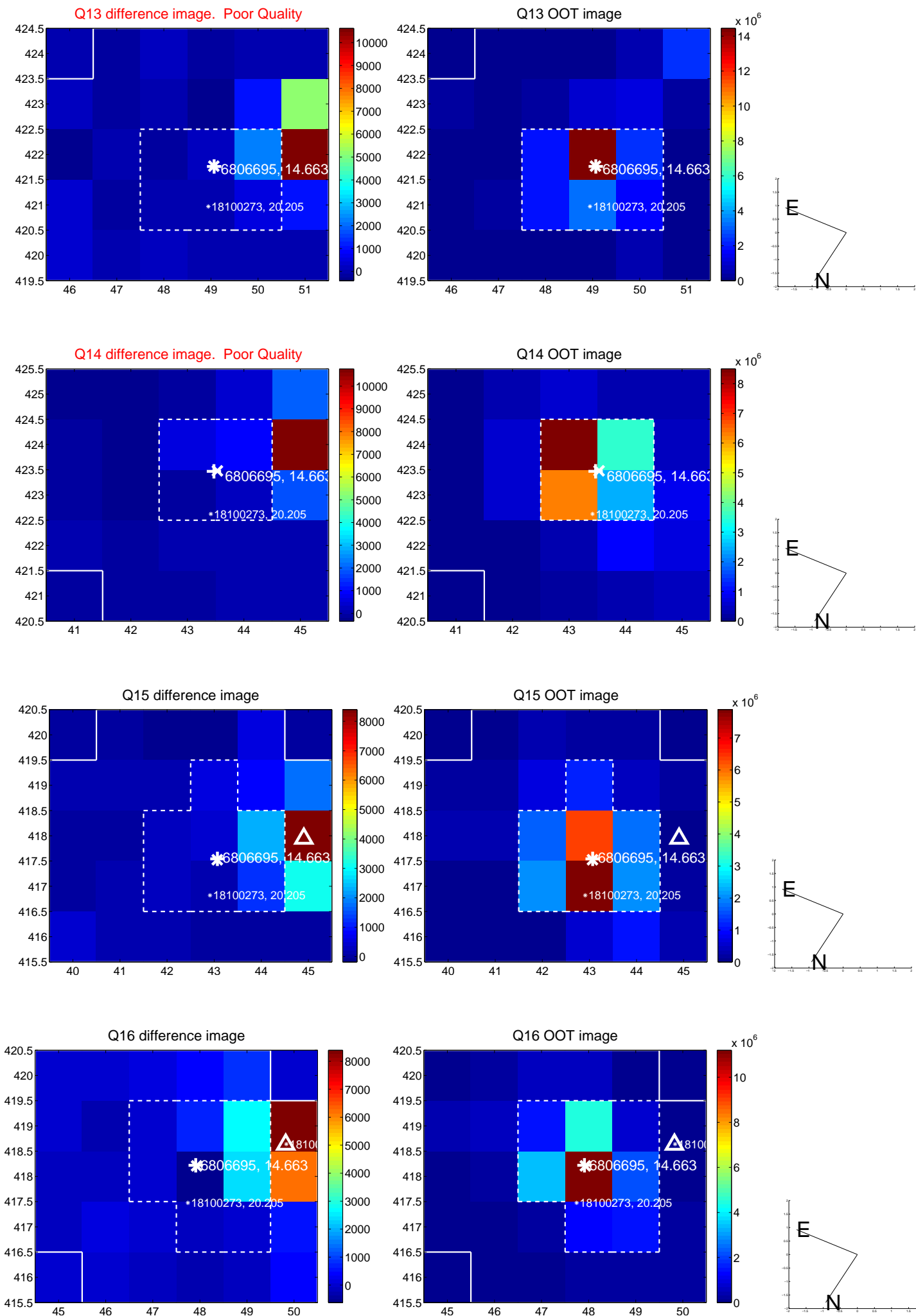
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



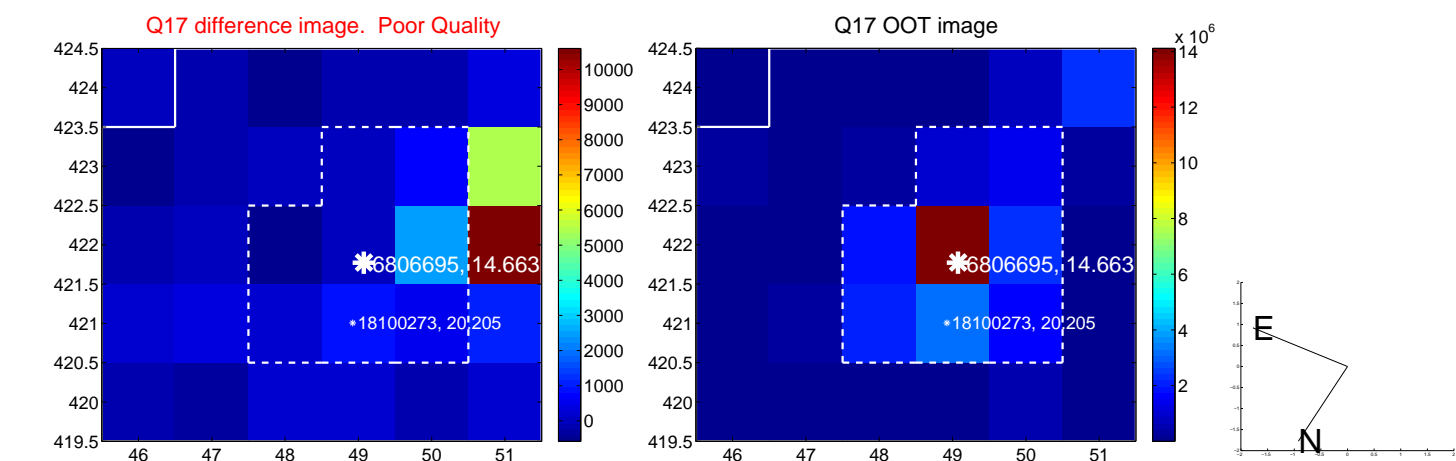
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



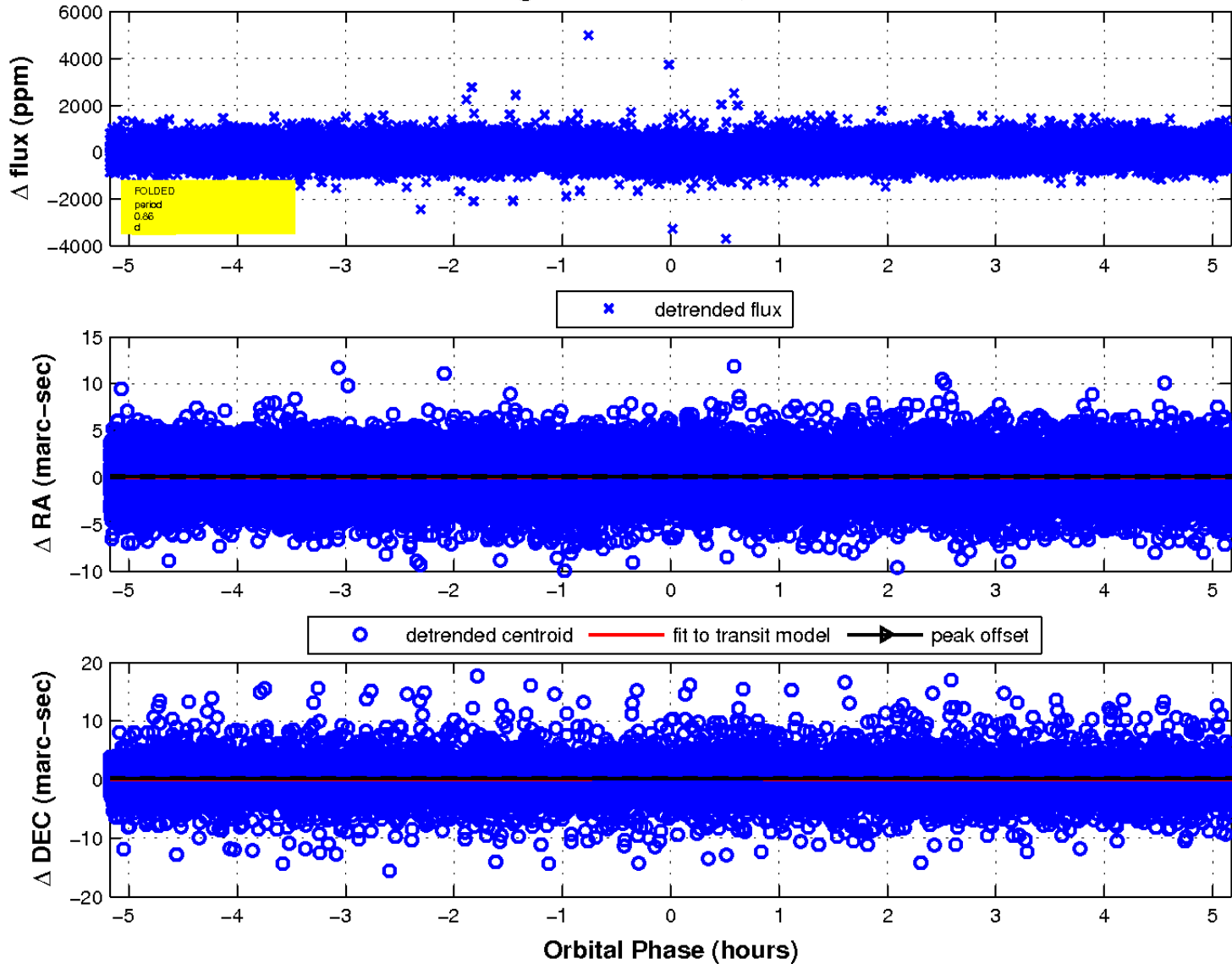
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

