

KIC 008964935

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})
008964935-01	OBS	No	0.838948	132.188285	217.8	2.364	8.2	9.9	3.24	8163	5.56	84850.18
008964935-02	OBS	No	0.612768	131.943991	140.8	7.353	9.2	9.7	3.24	8163	3.98	128994.48

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008964935-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
008964935-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED

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

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

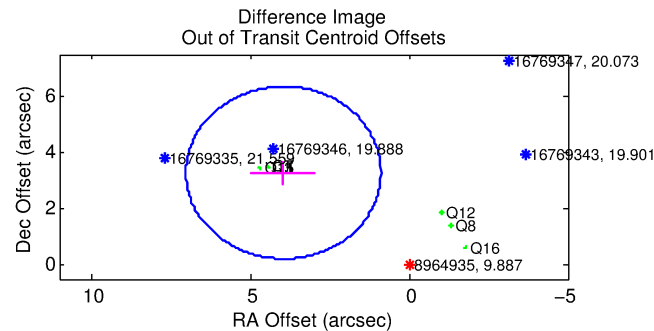
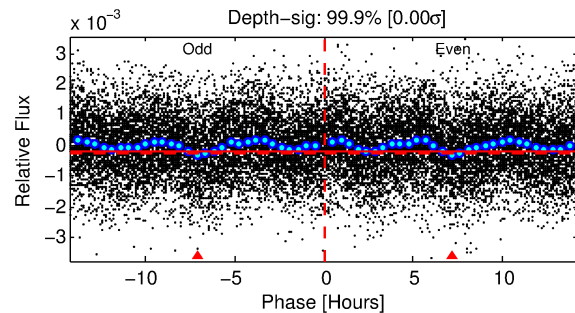
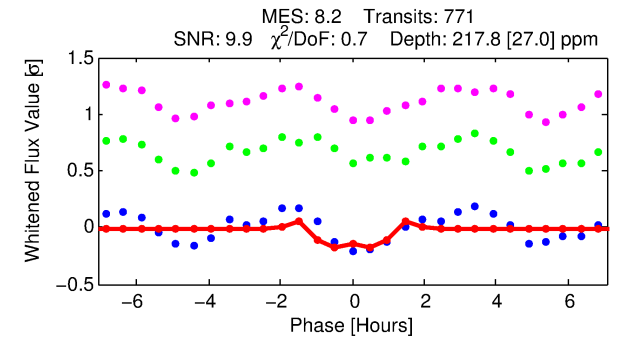
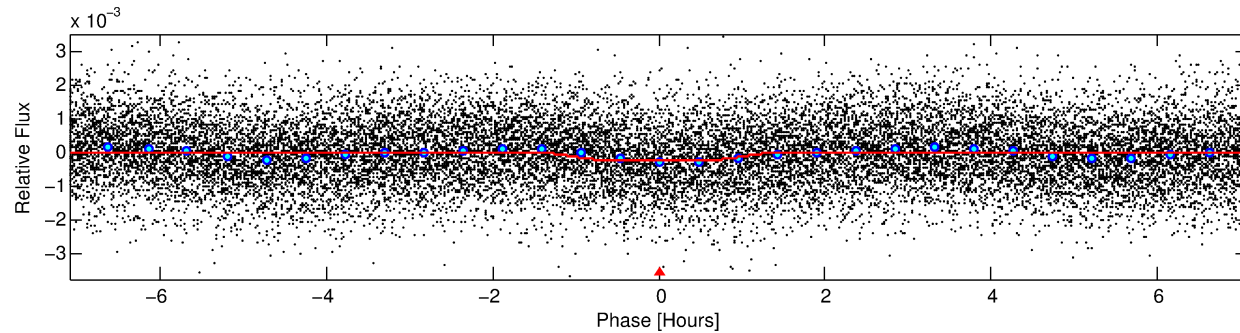
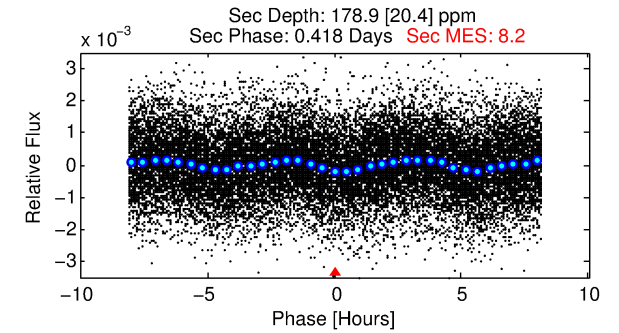
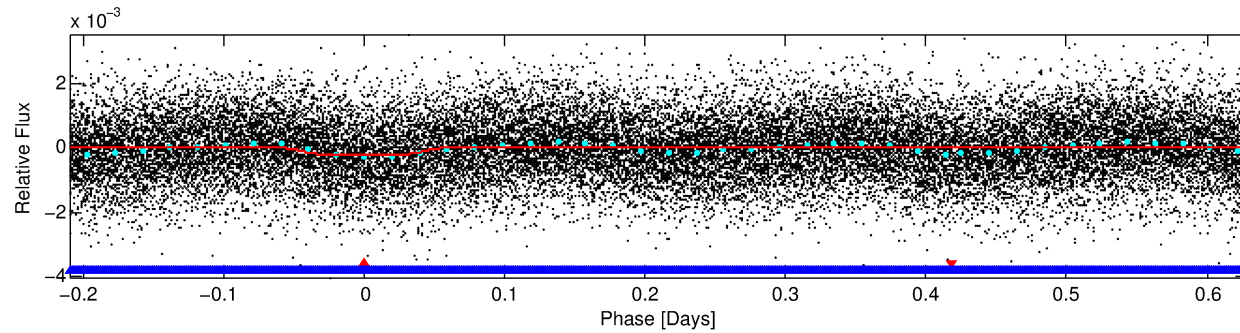
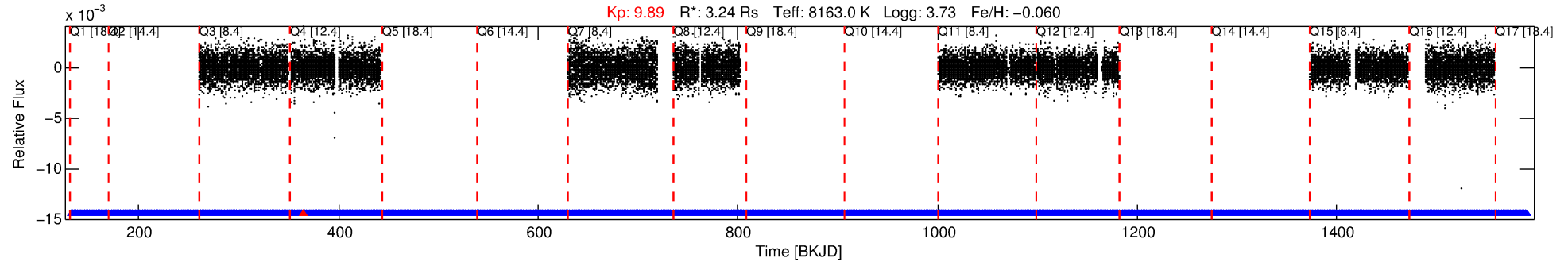
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008964935-01

No Significant Match Found

DV One-Page Summary

KIC: 8964935 Candidate: 1 of 2 Period: 0.839 d



DV Fit Results:

Period = 0.83895 [0.00001] d
Epoch = 132.1883 [0.0016] BKJD
Rp/R* = 0.0158 [0.0032]
a/R* = 1.58 [1.12]
b = 0.90 [0.25]
Seff = 84850.18 [64901.05]
Teff = 4352 [832] K
Rp = 5.56 [2.83] Re
a = 0.0222 [0.0102] AU
Ag = 1.56 [1.34] [0.42σ]
Teffp = 7522 [865] K [2.64σ]

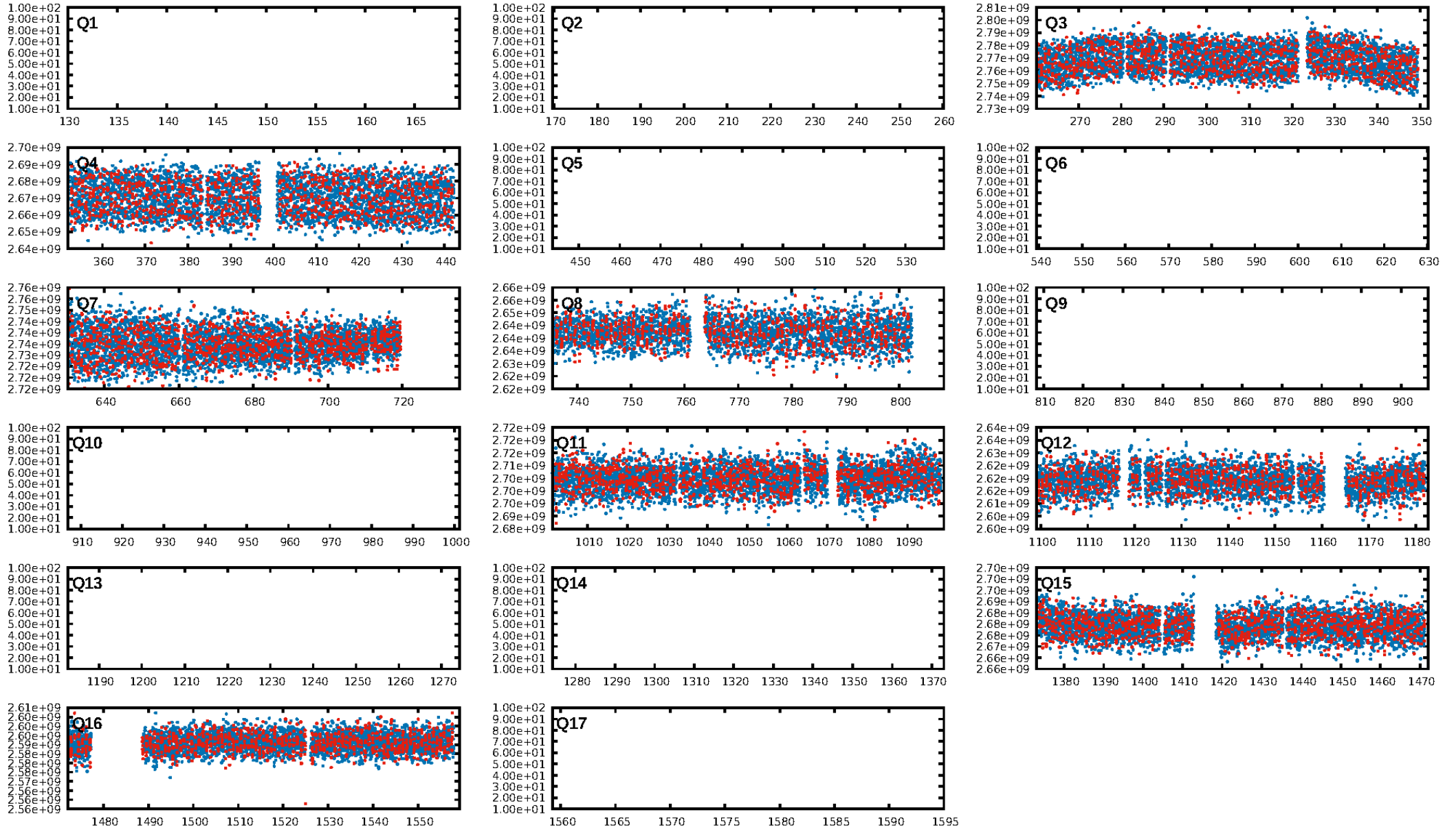
DV Diagnostic Results:

ShortPeriod-sig: 51.8% [0.70σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [770/771]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.1%
Centroid-so: 2.565 arcsec [15.18σ]
OotOffset-rm: 5.137 arcsec [5.02σ]
KicOffset-rm: 7.041 arcsec [5.83σ]
OotOffset-st: 0/4/3/0 [7]
KicOffset-st: 0/4/3/0 [7]
DiffImageQuality-fgm: 0.00 [0/7]
DiffImageOverlap-fno: 0.00 [0/8]

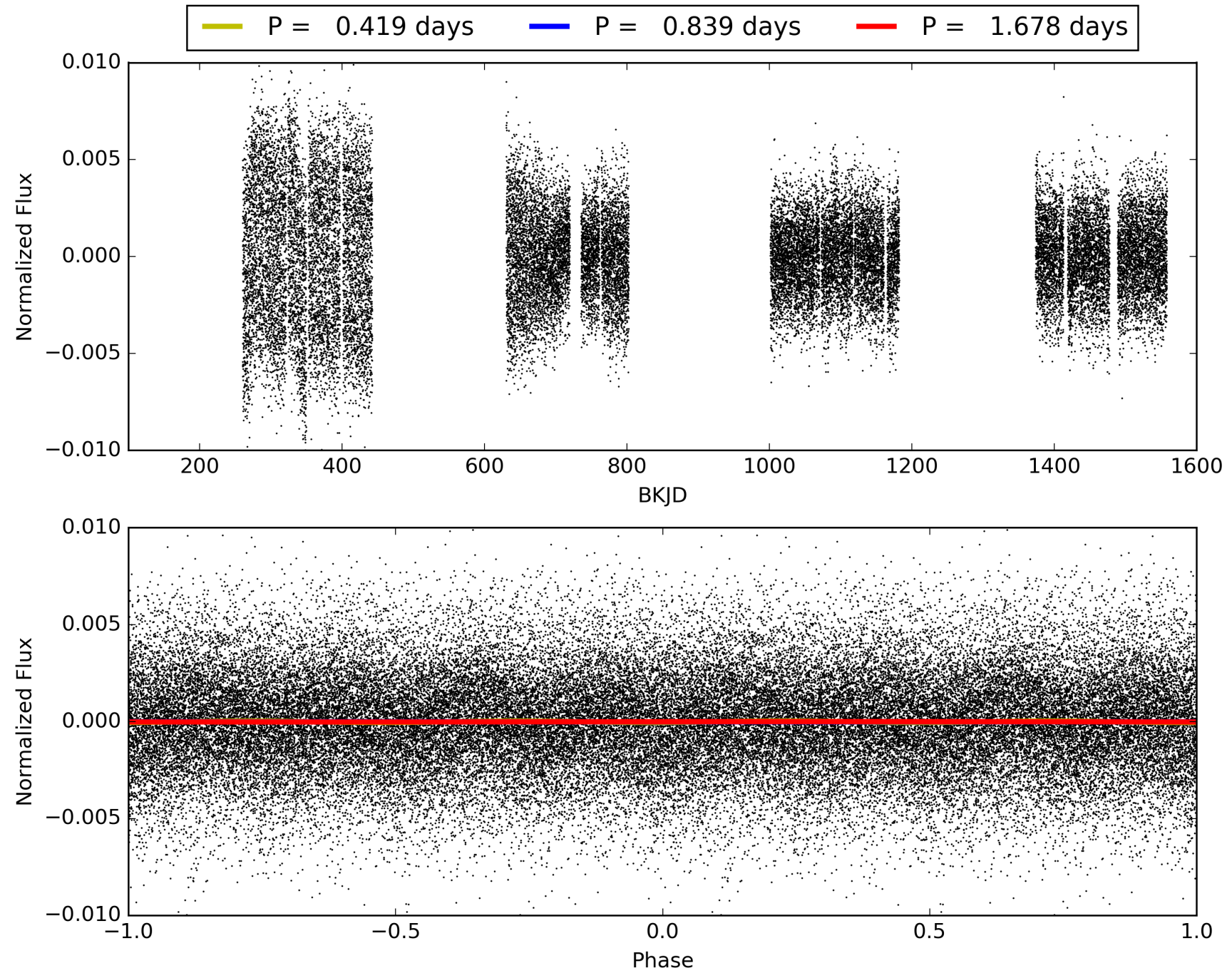
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 02:05:07 Z

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

TCE 008964935-01, PDC Light Curves

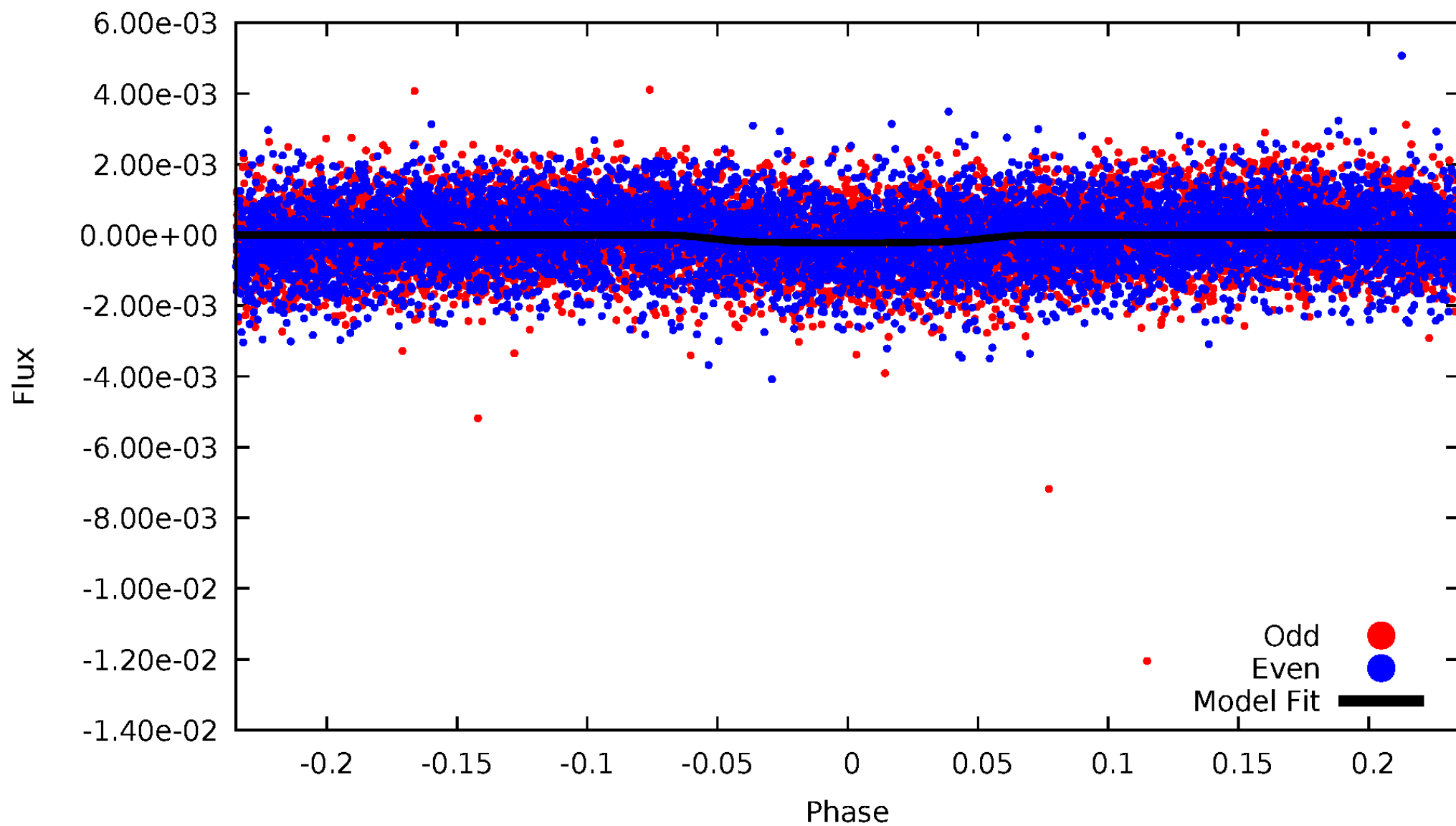


TCE 008964935-01



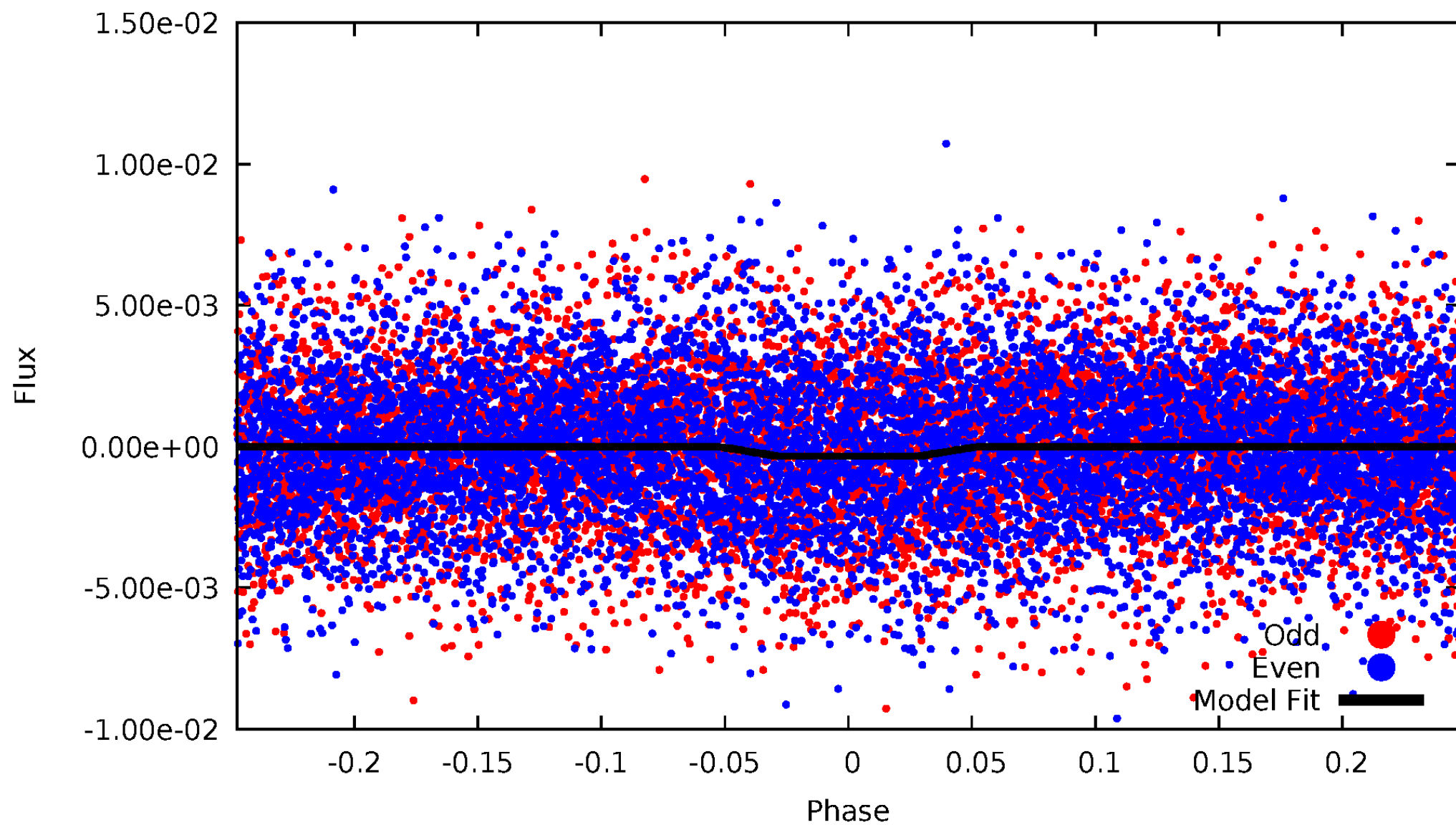
DV Odd/Even

TCE 008964935-01

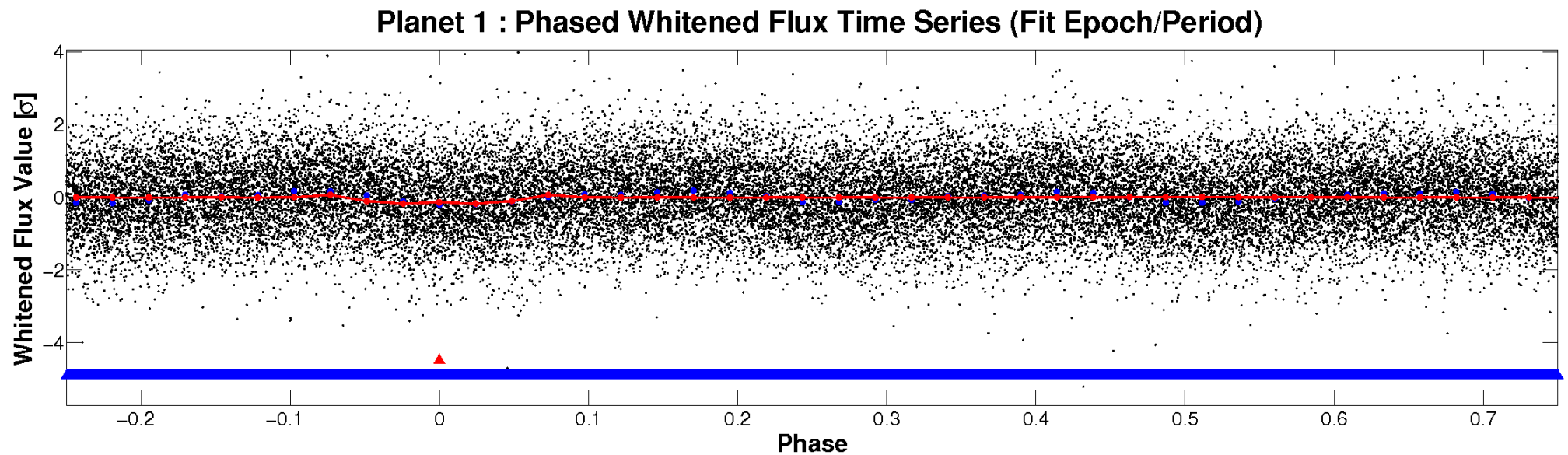
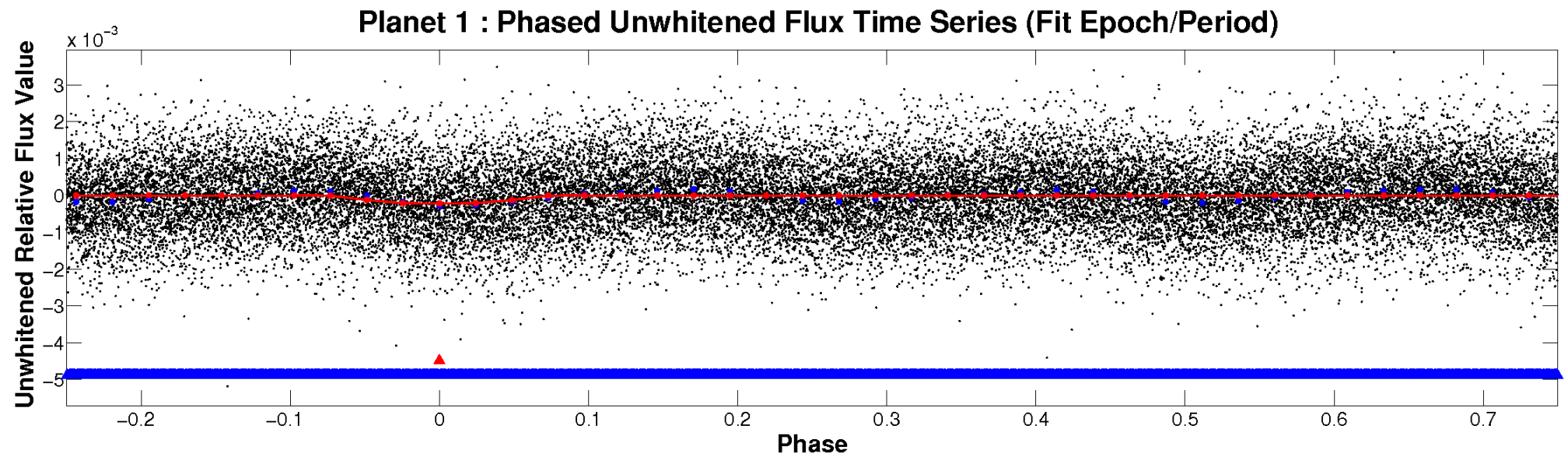


ALT Odd/Even

TCE 008964935-01

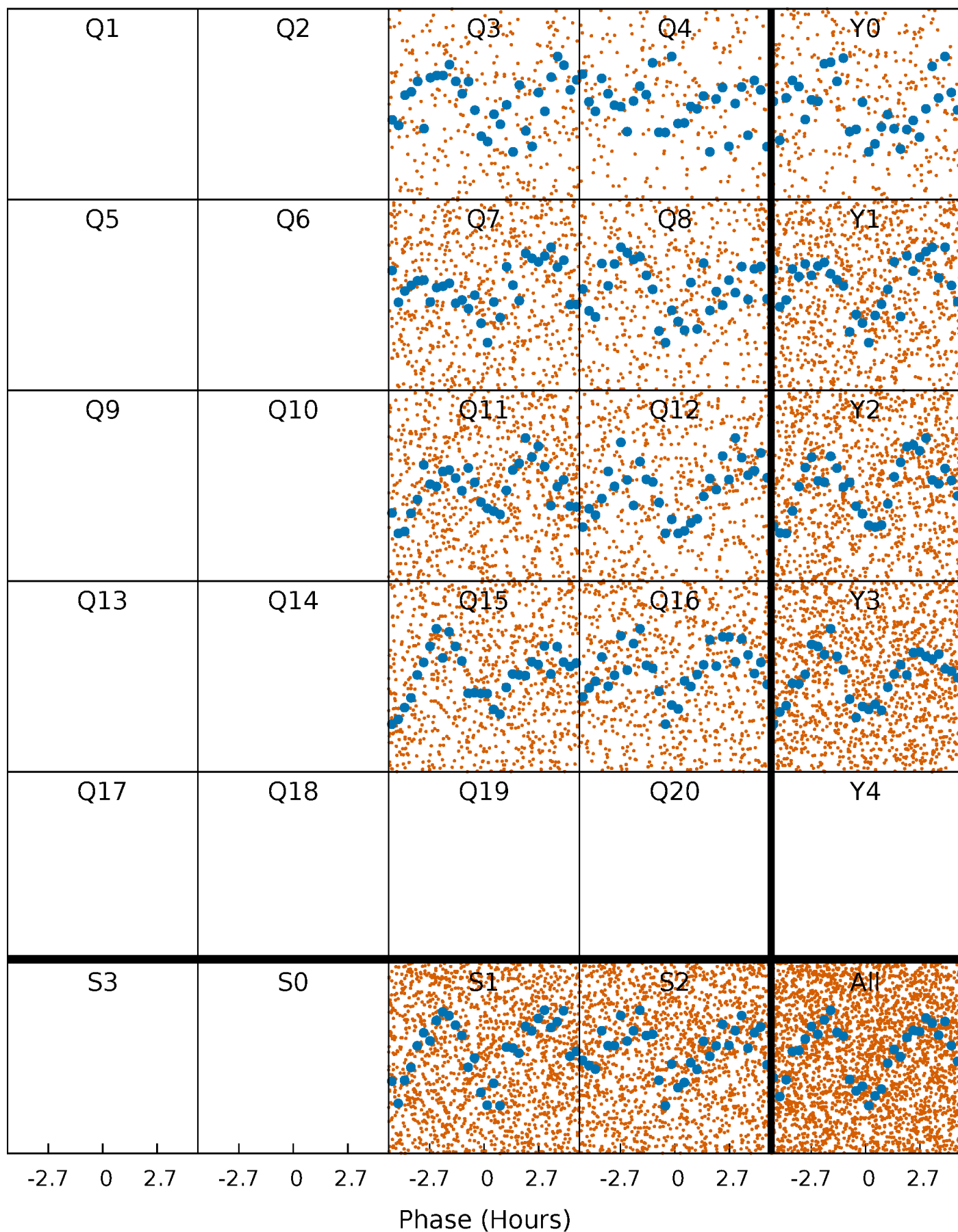


Non-Whitened Vs. Whitened Light Curve



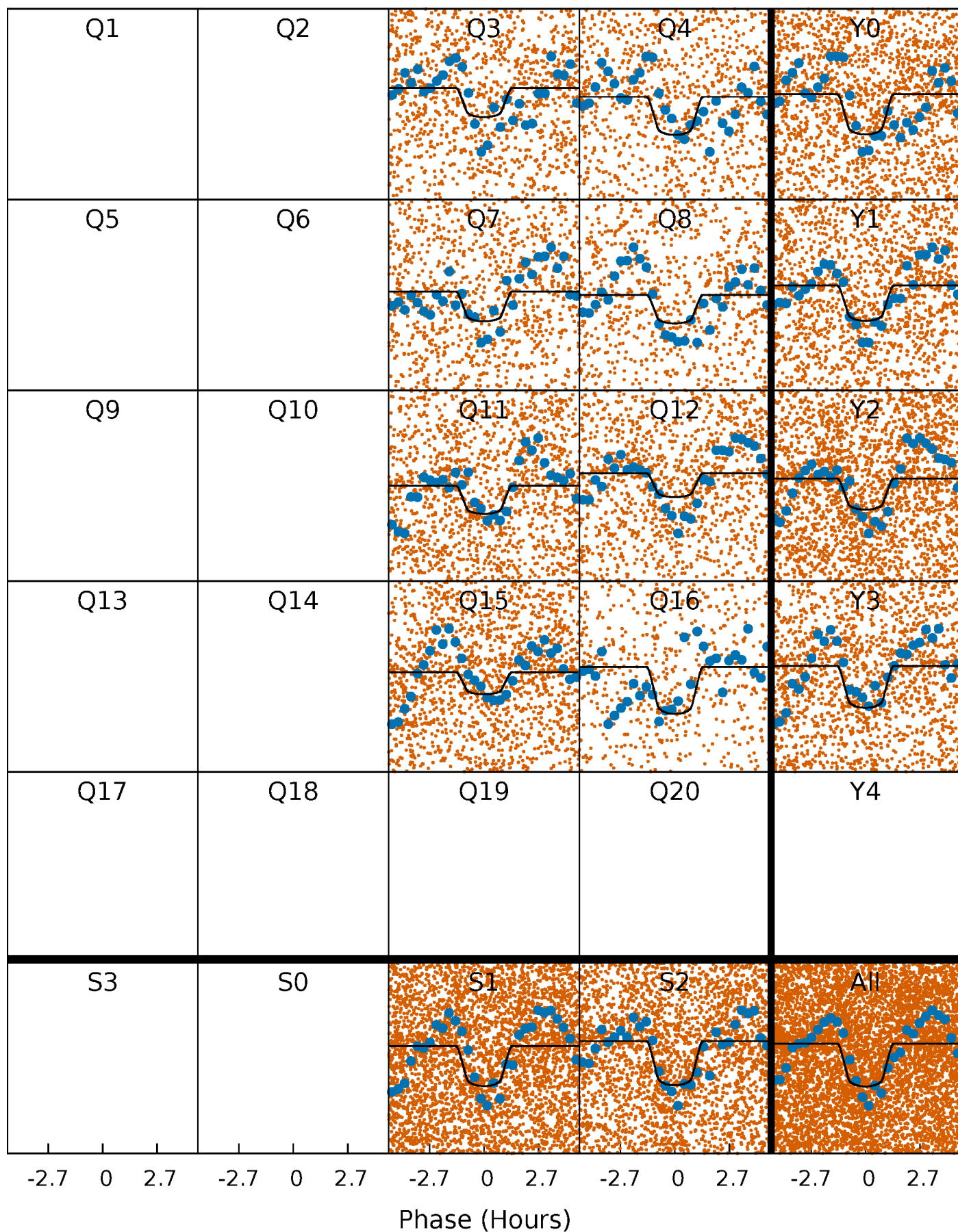
PDC Quarter-Phased Transit Curves

TCE 008964935-01 P= 0.838948 Days $T_0=132.188285$ (BKJD)



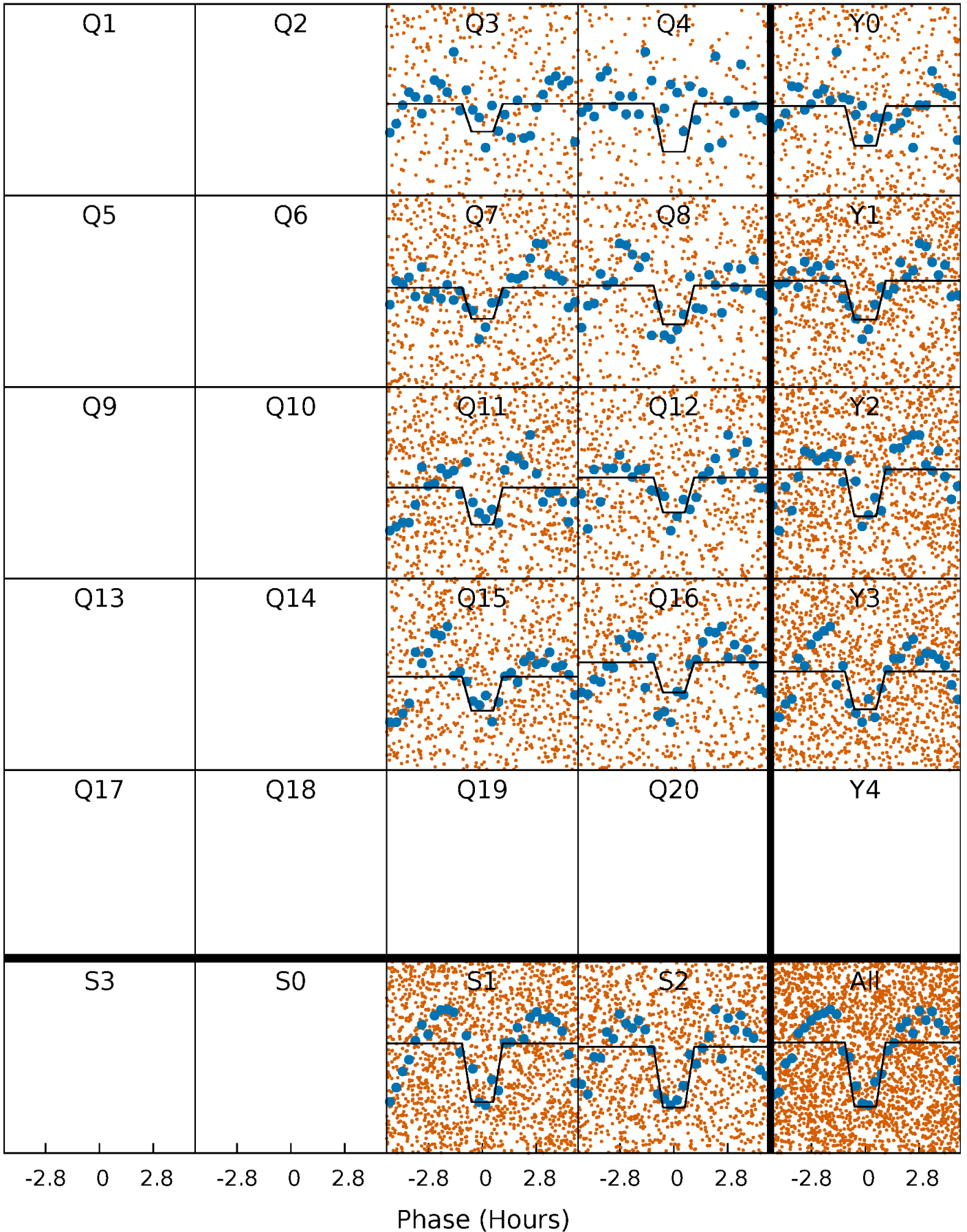
DV Quarter-Phased Transit Curves

TCE 008964935-01 P= 0.838948 Days $T_0=132.188285$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

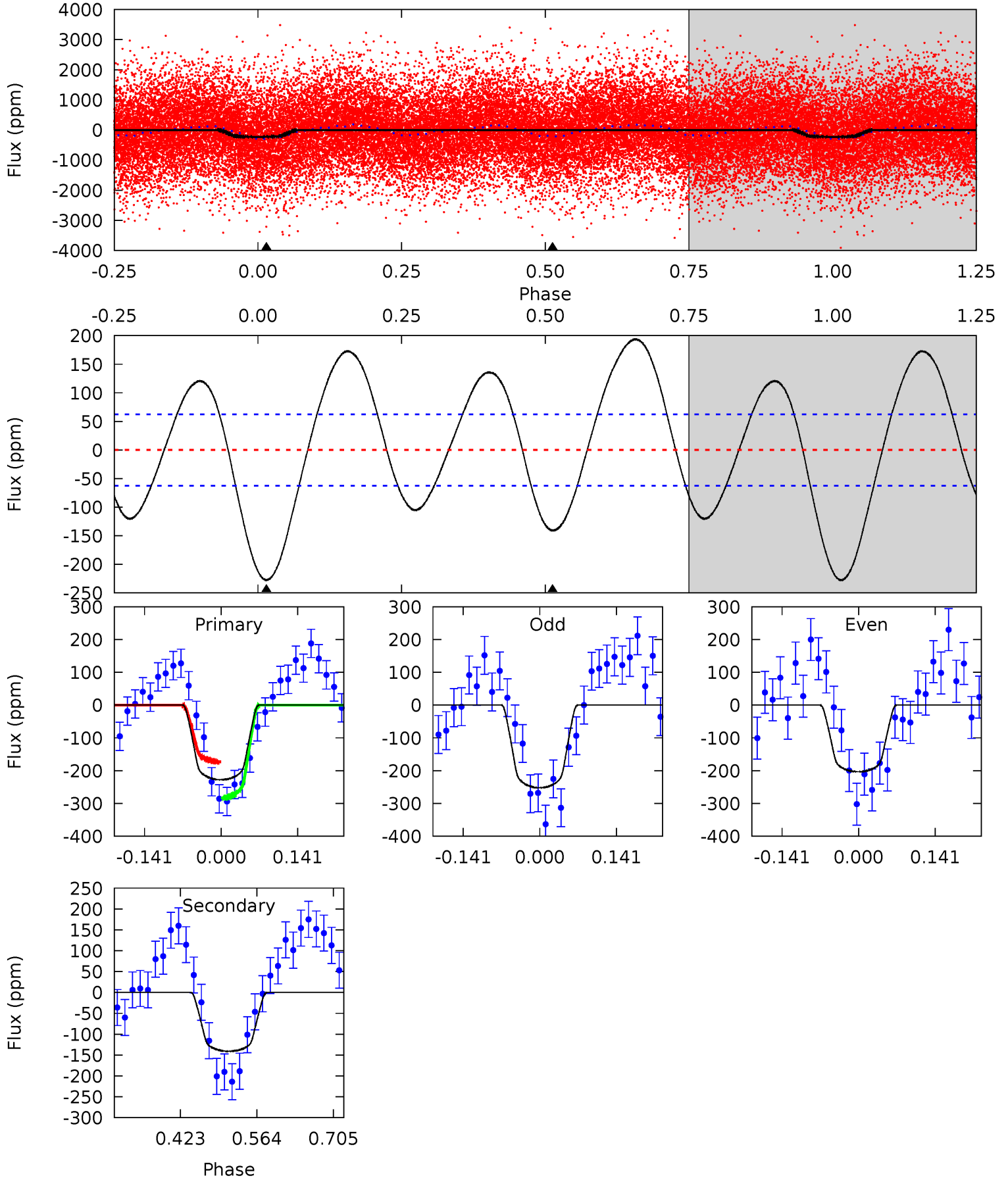
TCE 008964935-01 P= 0.838955 Days $T_0=132.186165$ (BKJD)



DV Model-Shift Uniqueness Test

008964935-01, P = 0.838948 Days, E = 132.188285 Days

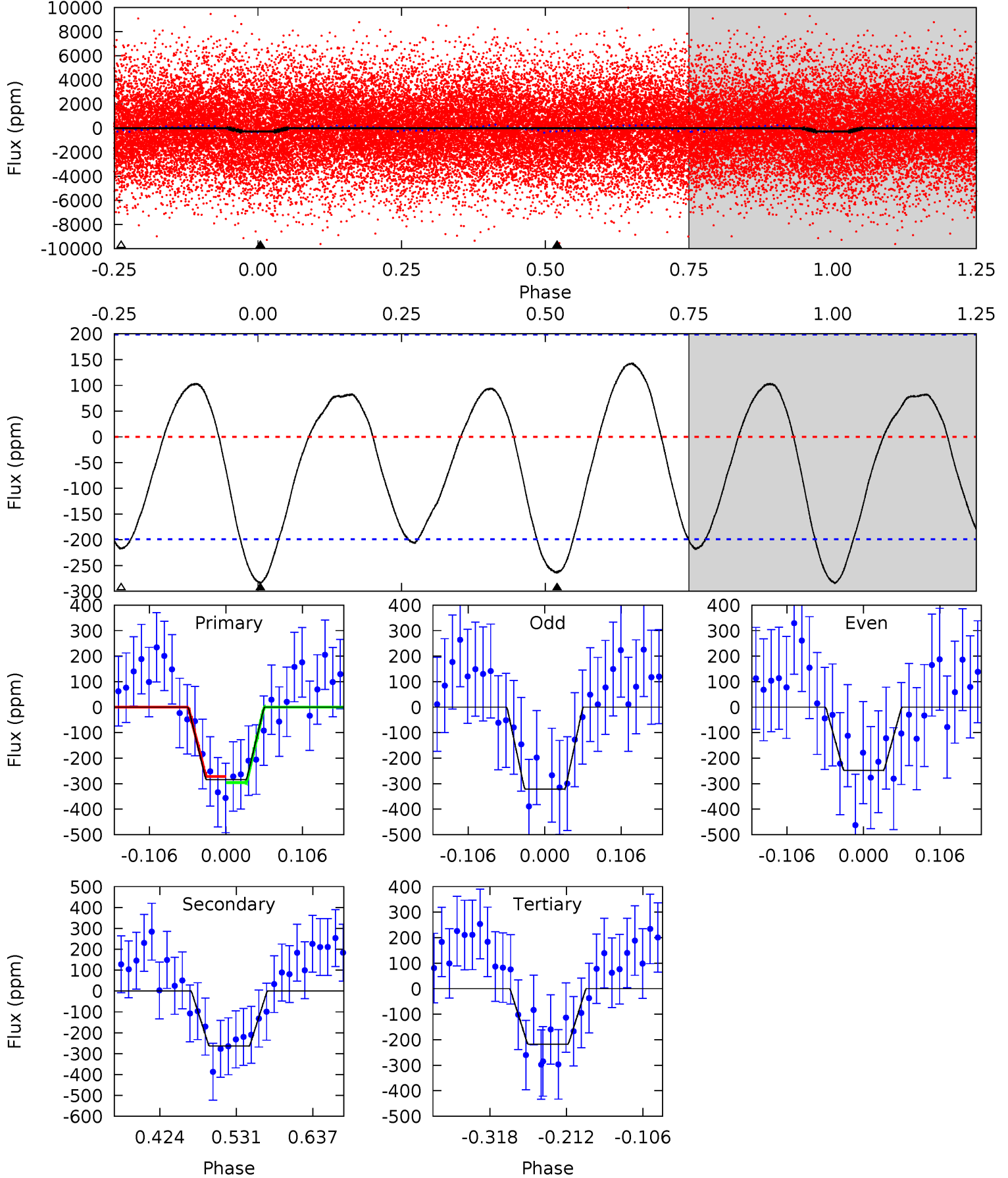
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.4	10.2	0	0	4.49	1.47	6.92	16.4	16.4	10.2	10.2	1.76	0.91	0.46	4.00



Alt Model-Shift Uniqueness Test

008964935-01, P = 0.838955 Days, E = 132.186165 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.51	6.04	4.99	0	4.55	1.62	2.61	1.52	6.51	1.05	6.04	0.85	0.82	0.33	0.27



Stellar Parameters For KIC 008964935

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8163^{+225}_{-367}	$3.732^{+0.440}_{-0.110}$	$-0.060^{+0.250}_{-0.350}$	$3.236^{+0.812}_{-1.508}$	$2.061^{+0.332}_{-0.498}$	$0.086^{+0.345}_{-0.036}$
	+3%/-4%	+12%/-3%	+417%/-583%	+25%/-47%	+16%/-24%	+403%/-43%
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 008964935-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-141 ± 14	$4.99^{+1.57}_{-1.44}$	5825^{+504}_{-667}	6474^{+1090}_{-830}	$1.497^{+1.408}_{-0.629}$
Alt.	-264 ± 44	$5.82^{+1.87}_{-1.65}$	5818^{+493}_{-696}	7142^{+1174}_{-848}	$2.033^{+1.956}_{-0.842}$

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 $A_{obs} \gg 1.0$

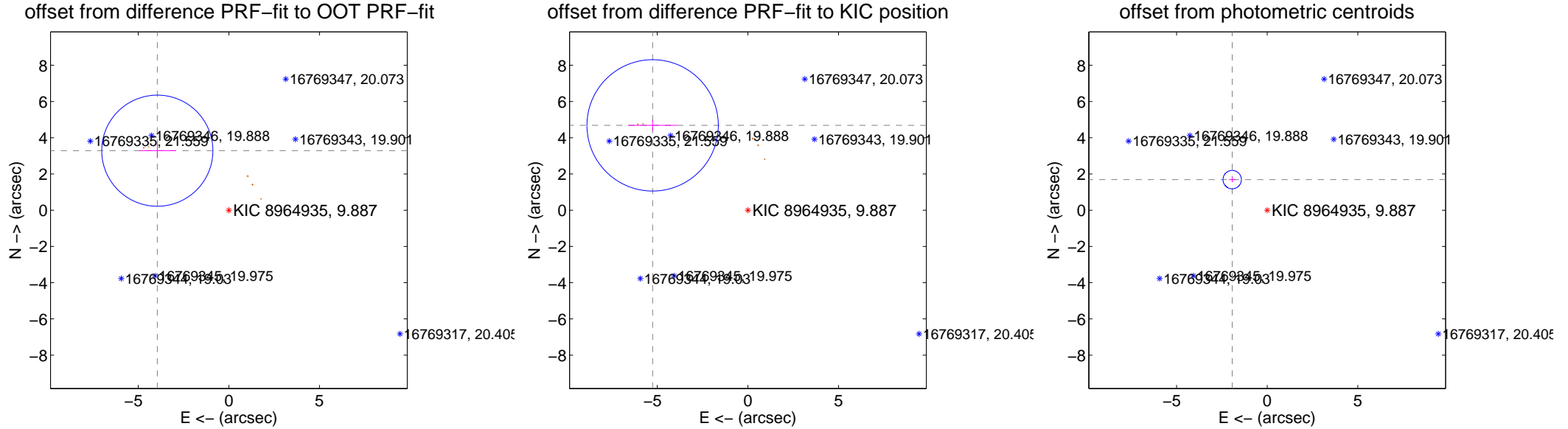
DV Centroid Data

Supplemental centroid analysis for 008964935-01. **Kepler magnitude: 9.89.** Transit SNR 9.87

There are 0 quarters with good PRF difference image offsets

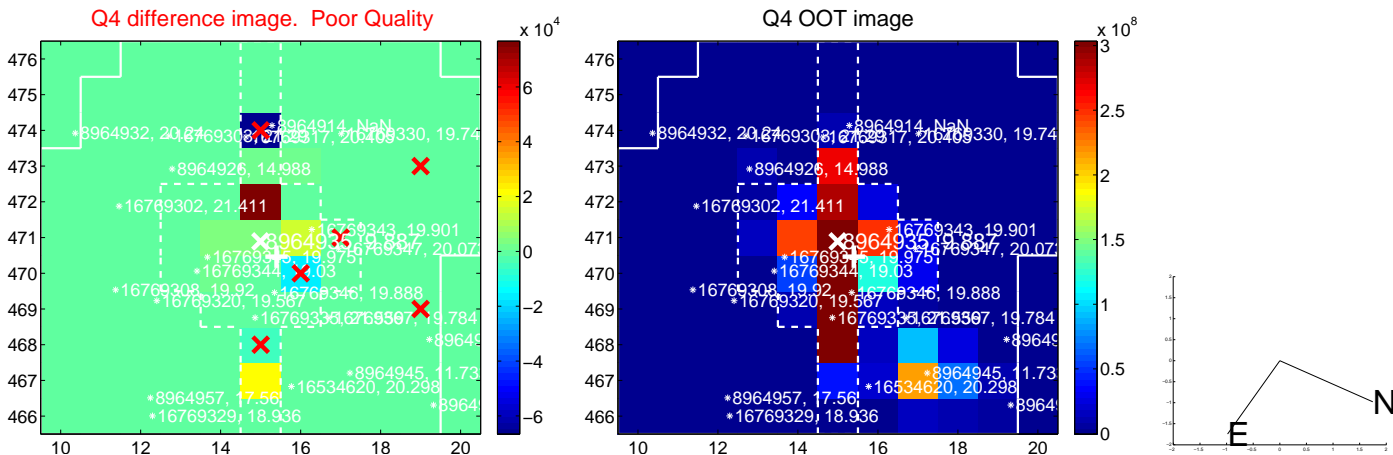
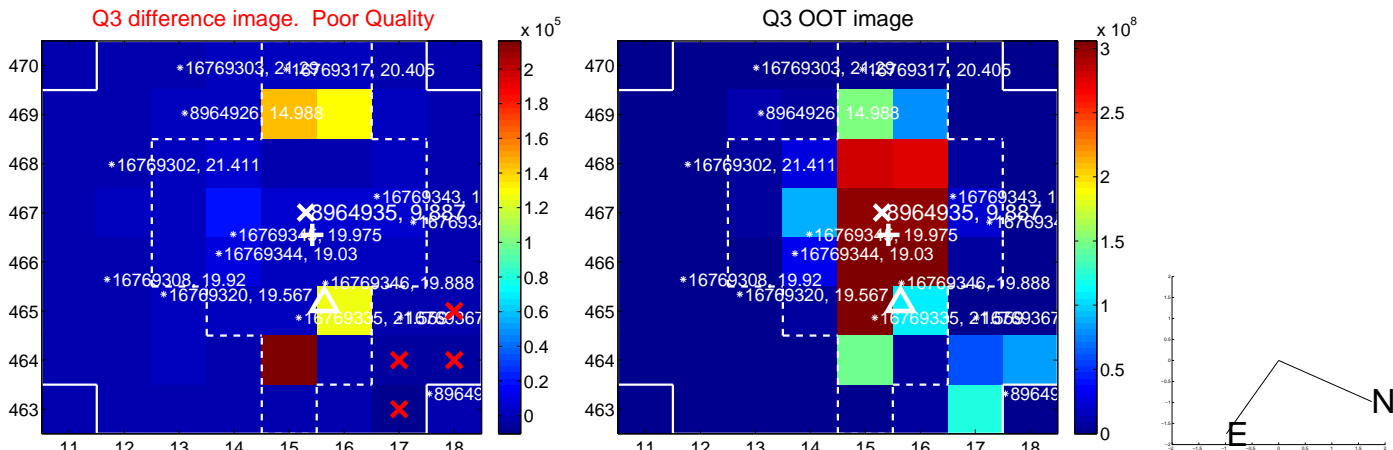
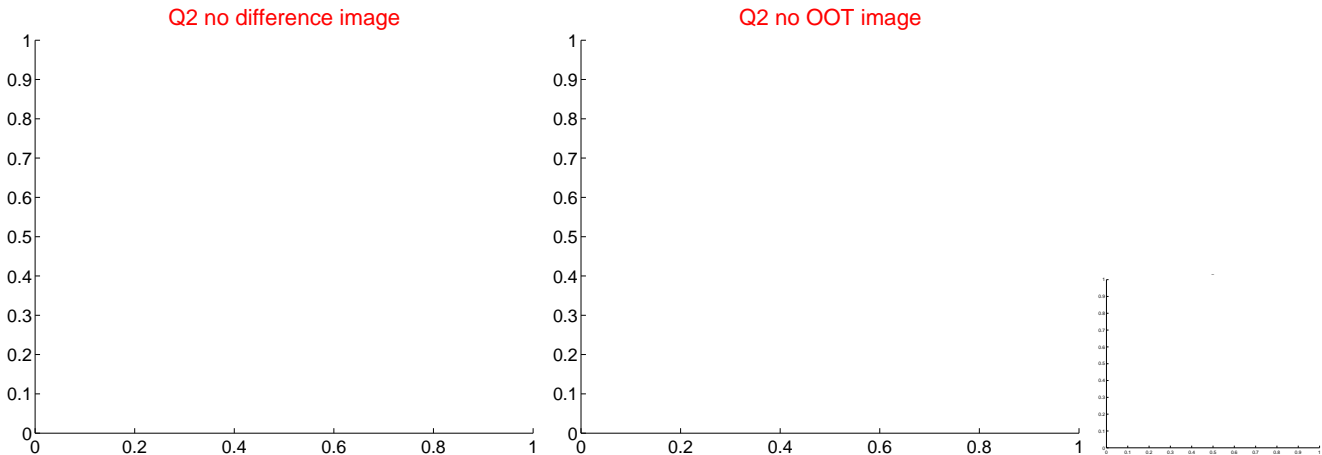
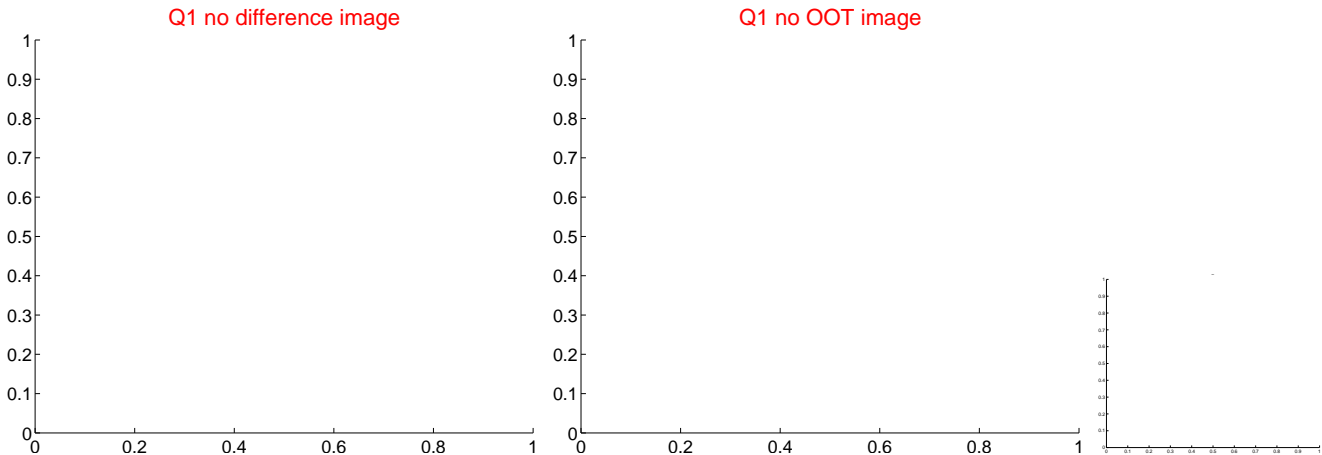
The OOT PRF centroid is offset from the target star catalog position by about 2.35 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.137 ± 1.022	5.02	3.949 ± 1.000	3.285 ± 0.409
PRF-fit source offset from KIC position	7.041 ± 1.208	5.83	5.257 ± 1.357	4.683 ± 0.316
photometric centroid source offset	2.57 ± 0.17	15.18	1.93 ± 0.19	1.69 ± 0.14

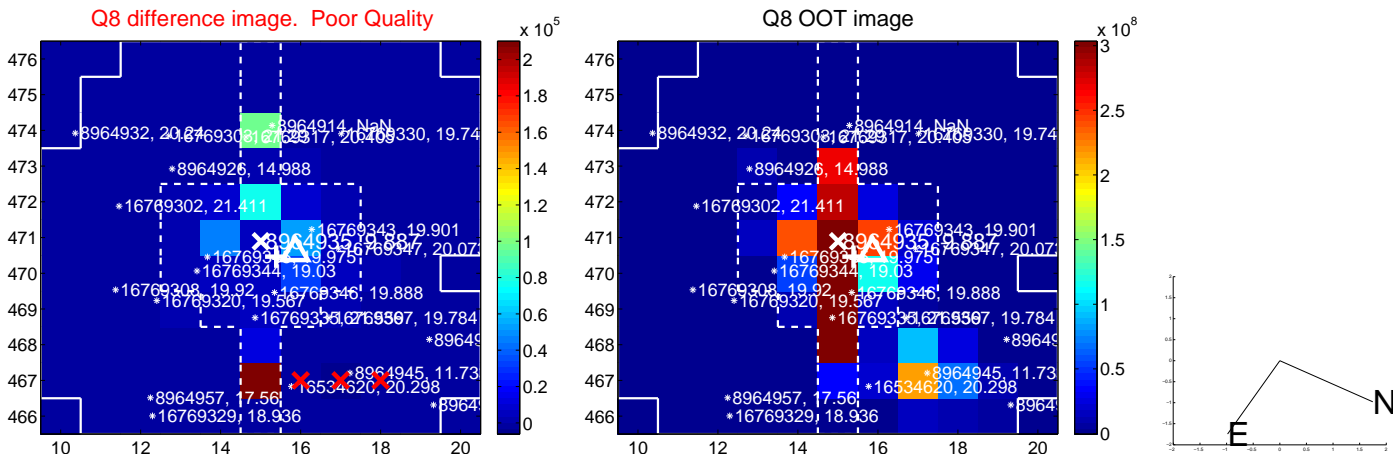
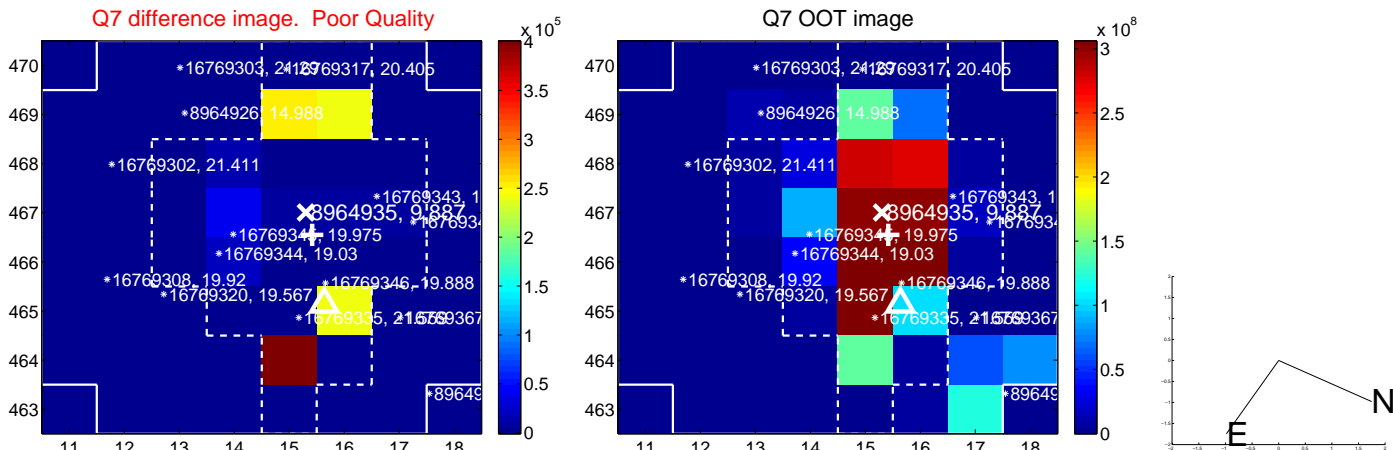
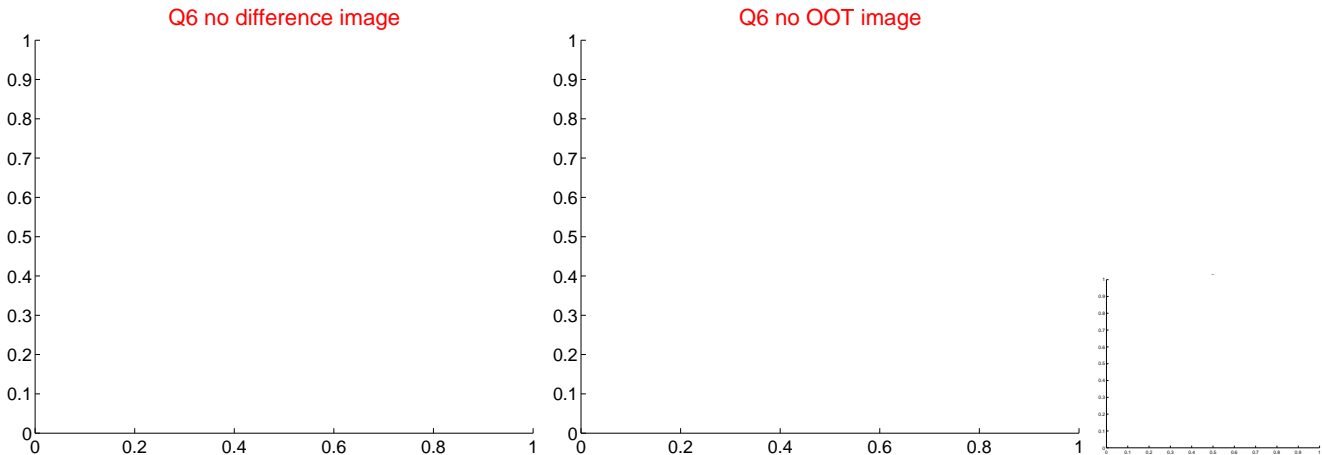
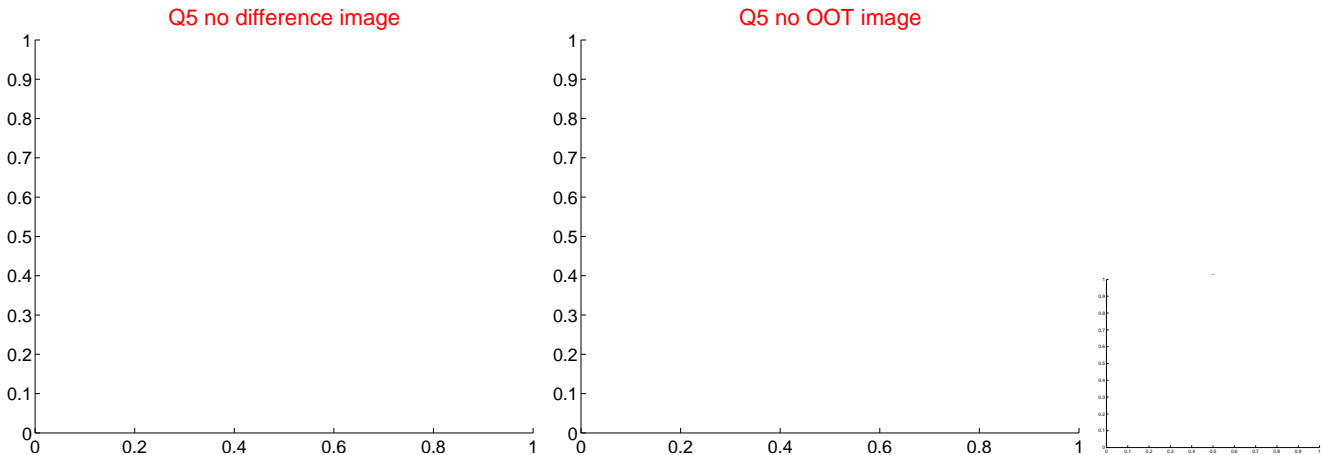


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

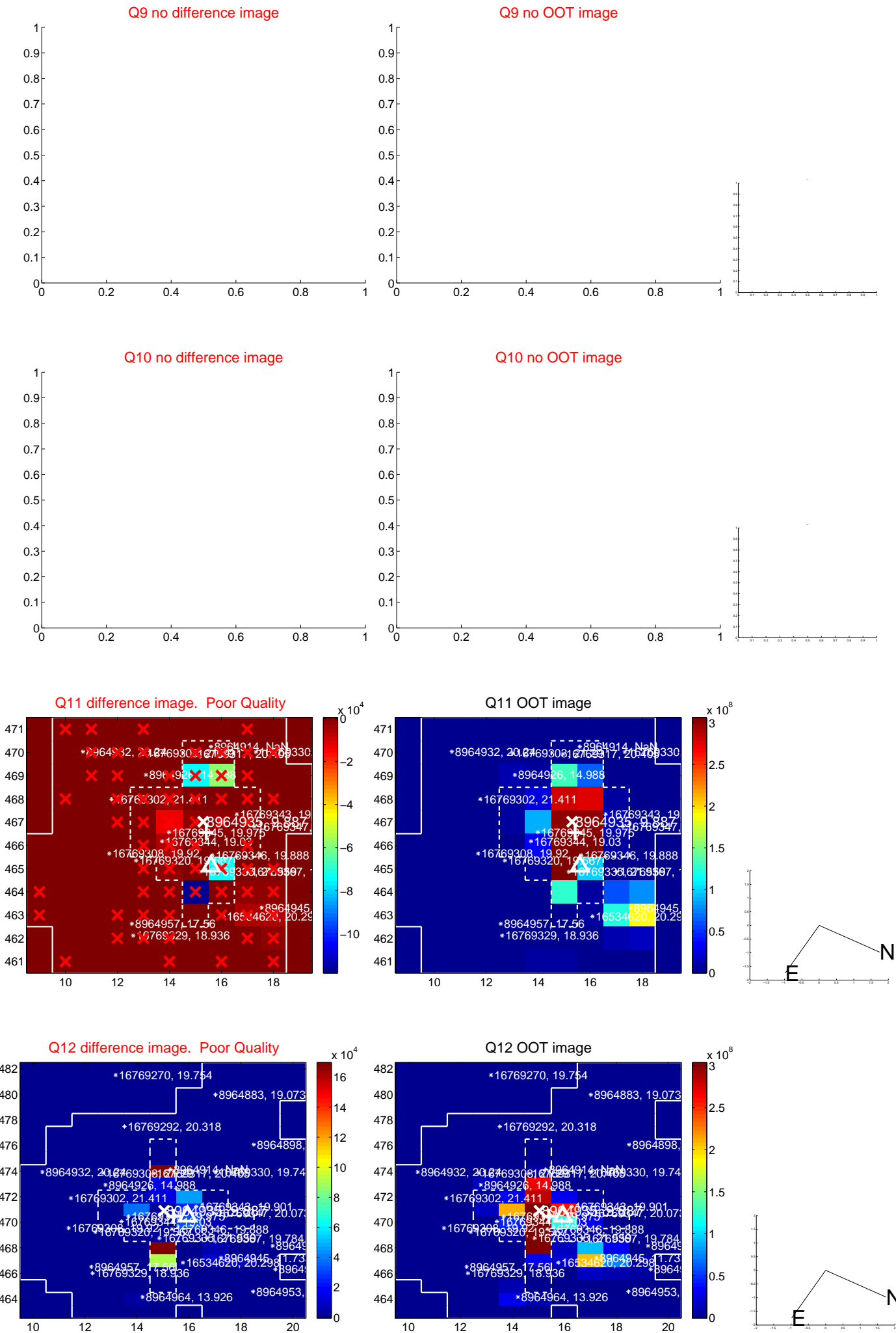
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



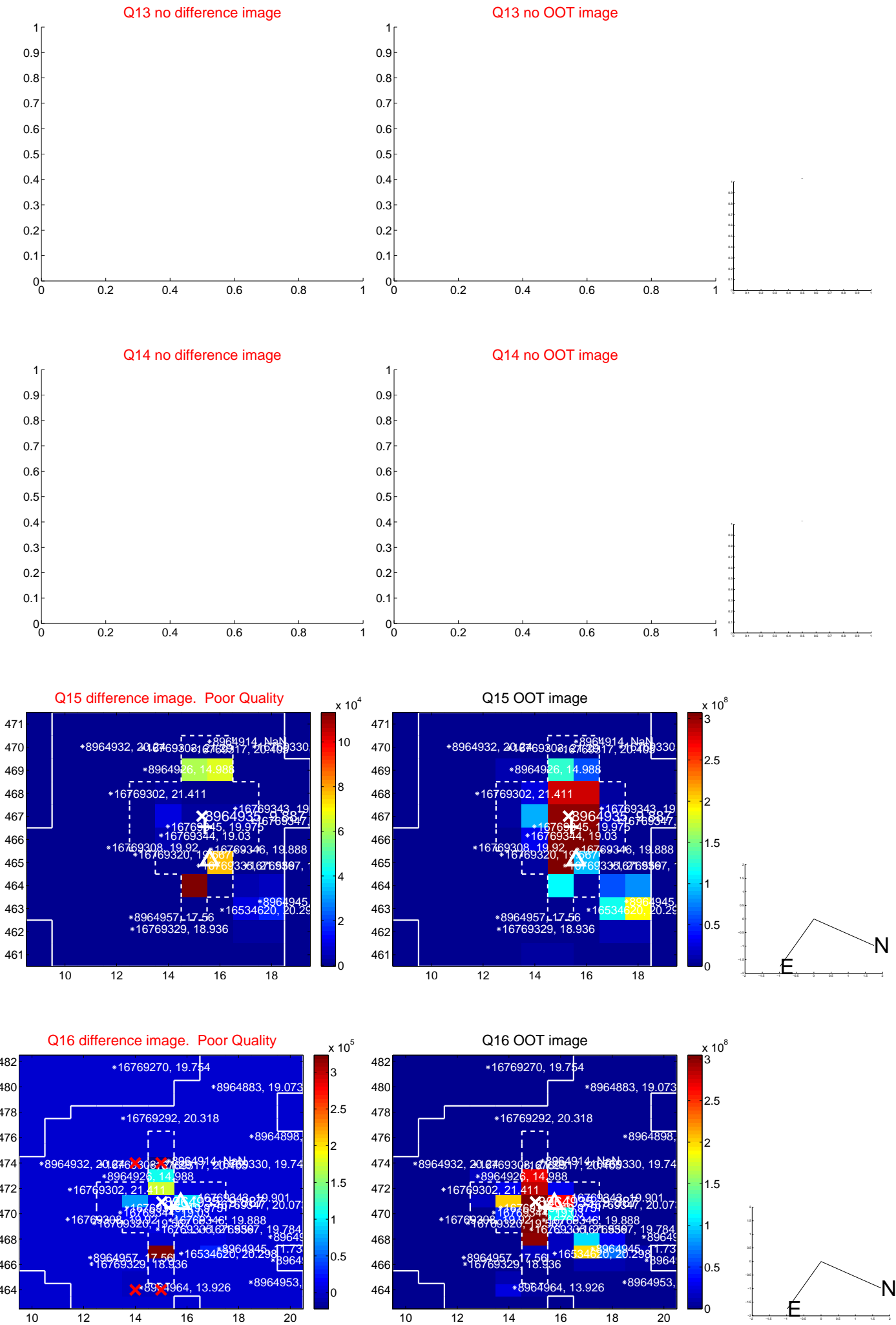
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



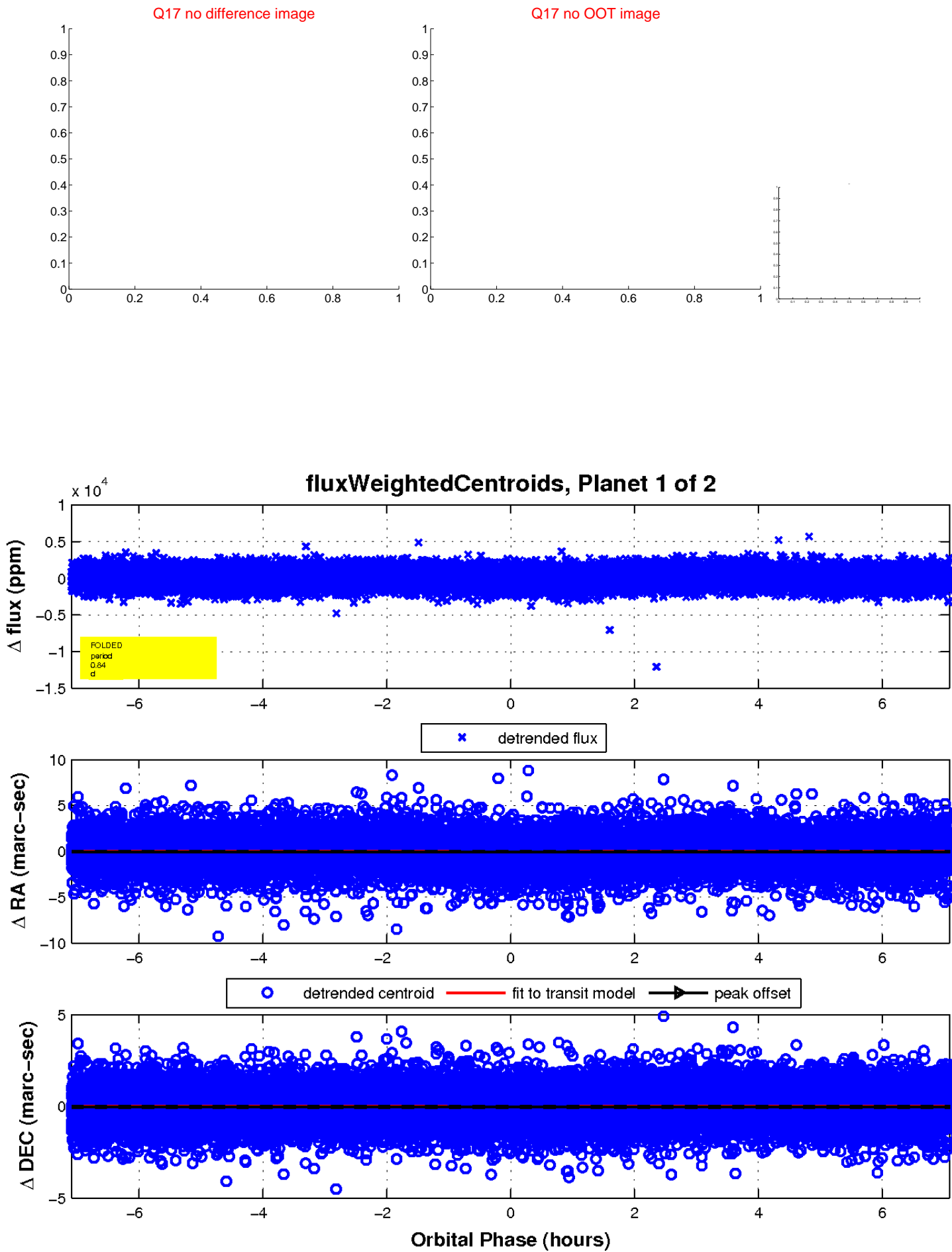
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



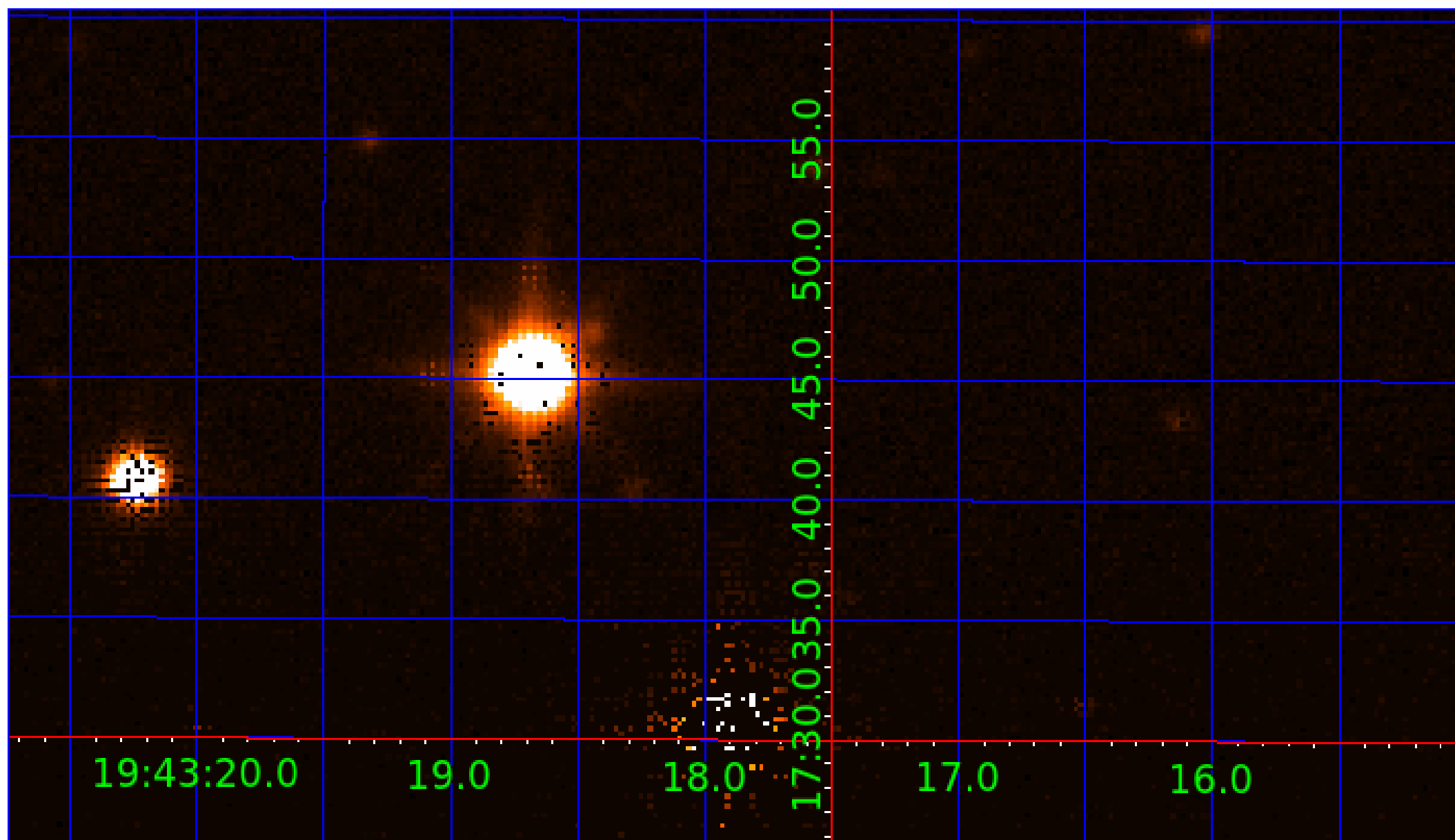
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



Right ascension

KIC 008964935

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})
008964935-01	OBS	No	0.838948	132.188285	217.8	2.364	8.2	9.9	3.24	8163	5.56	84850.18
008964935-02	OBS	No	0.612768	131.943991	140.8	7.353	9.2	9.7	3.24	8163	3.98	128994.48

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008964935-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
008964935-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED

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

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

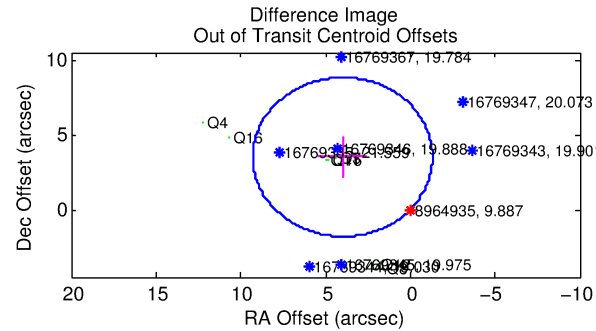
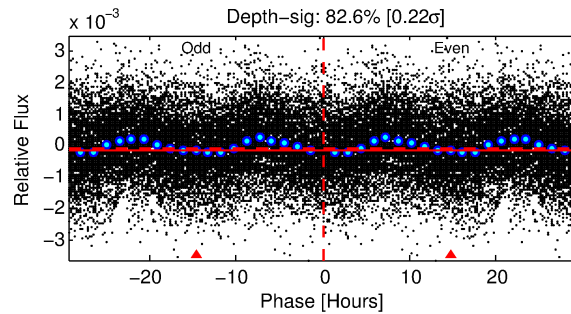
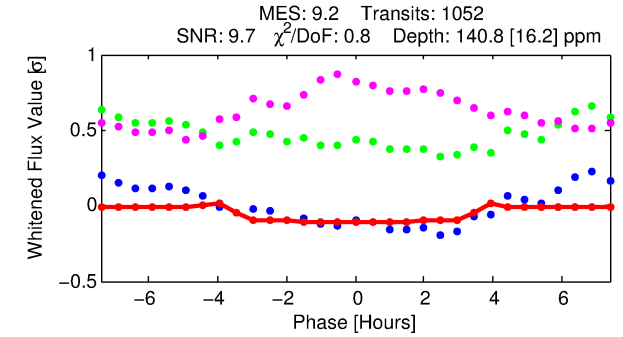
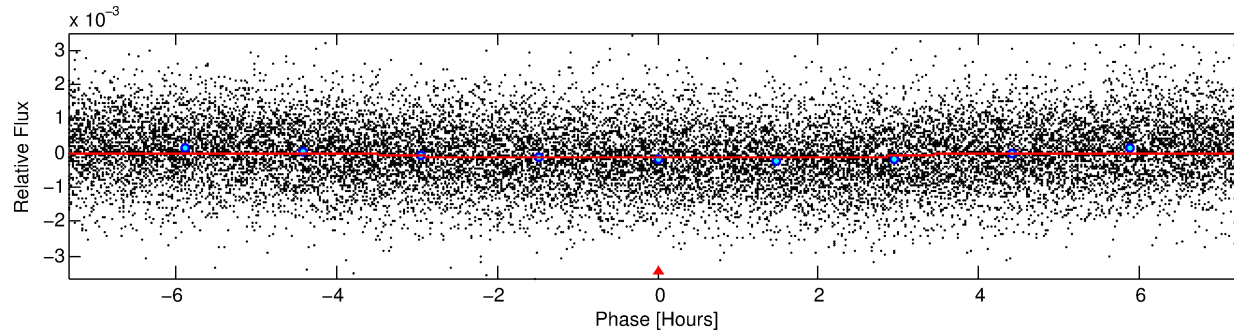
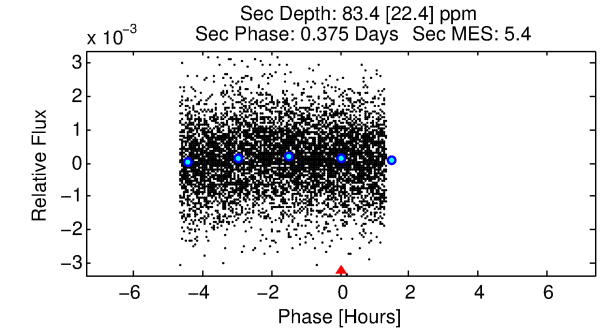
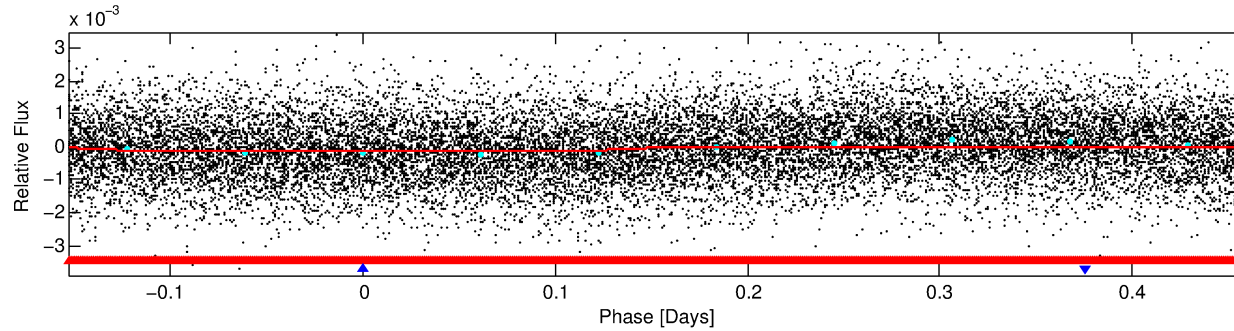
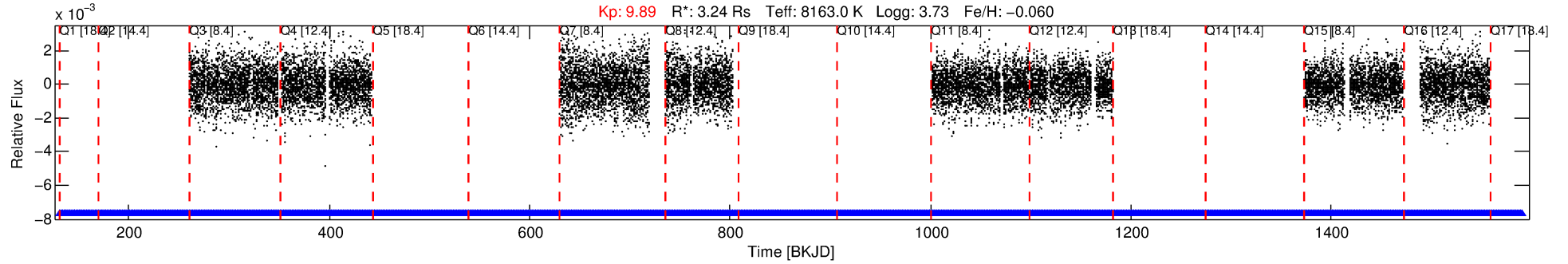
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008964935-02

No Significant Match Found

DV One-Page Summary

KIC: 8964935 Candidate: 2 of 2 Period: 0.613 d



DV Fit Results:

Period = 0.61277 [0.00001] d
Epoch = 131.9440 [0.0057] BKJD
 $R_p/R^* = 0.0113$ [0.0027]
 $a/R^* = 1.00$ [0.01]
 $b = 0.50$ [2.07]
 $\text{Seff} = 128994.48$ [98666.59]
 $T_{\text{eq}} = 4832$ [924] K
 $R_p = 3.98$ [2.08] R_e
 $a = 0.0180$ [0.0082] AU
 $A_g = 0.94$ [0.86] $[-0.07\sigma]$
 $T_{\text{eff}} = 7348$ [1050] K $[1.80\sigma]$

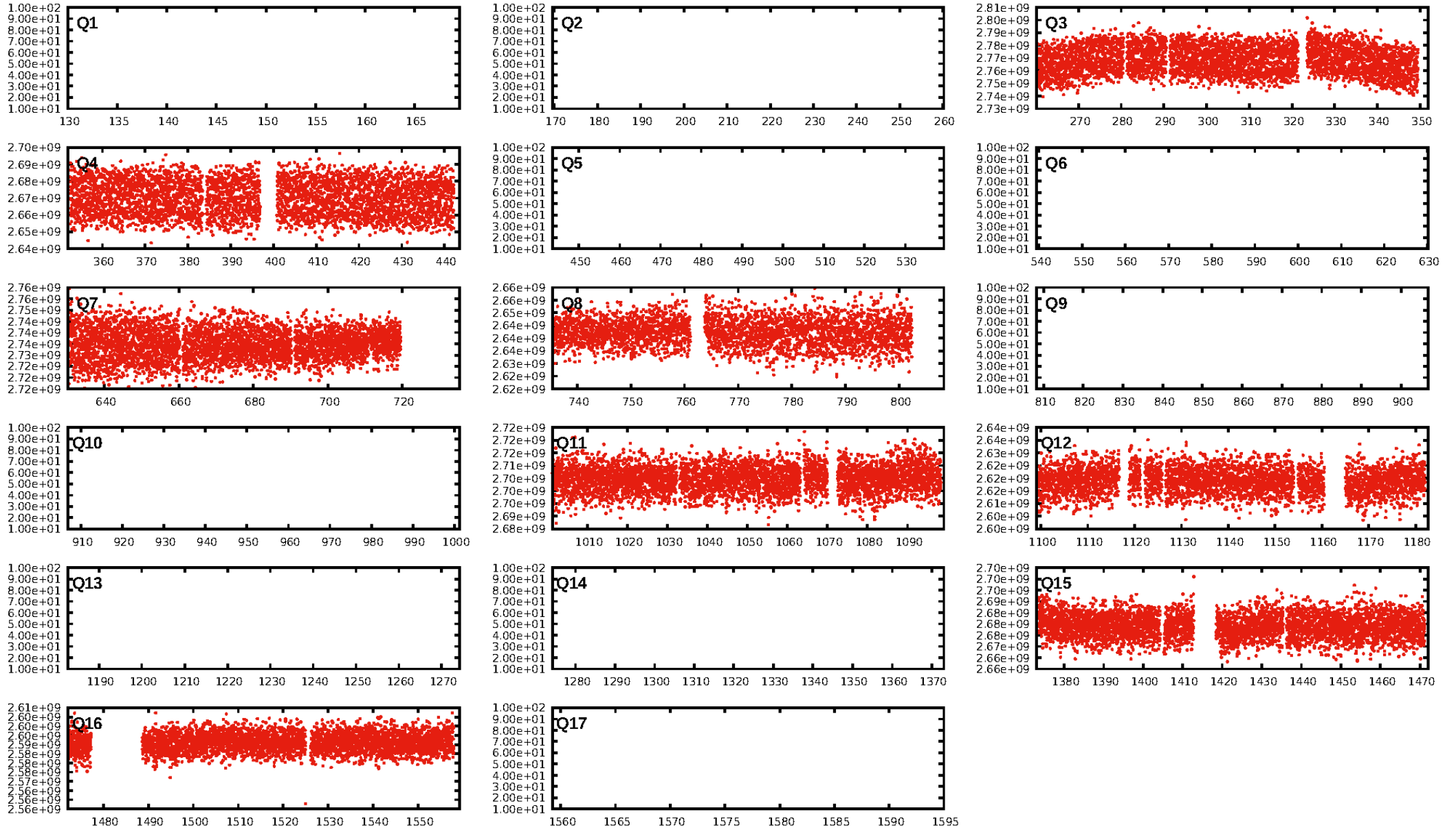
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 51.8% [0.70 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1052/1052]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.0%
Centroid-so: 2.711 arcsec [11.44 σ]
OotOffset-rm: 5.316 arcsec [3.01 σ]
KicOffset-rm: 9.491 arcsec [5.57 σ]
OotOffset-st: 0/4/4/0 [8]
KicOffset-st: 0/4/4/0 [8]
DiffImageQuality-fgm: 0.12 [1/8]
DiffImageOverlap-fno: 0.12 [1/8]

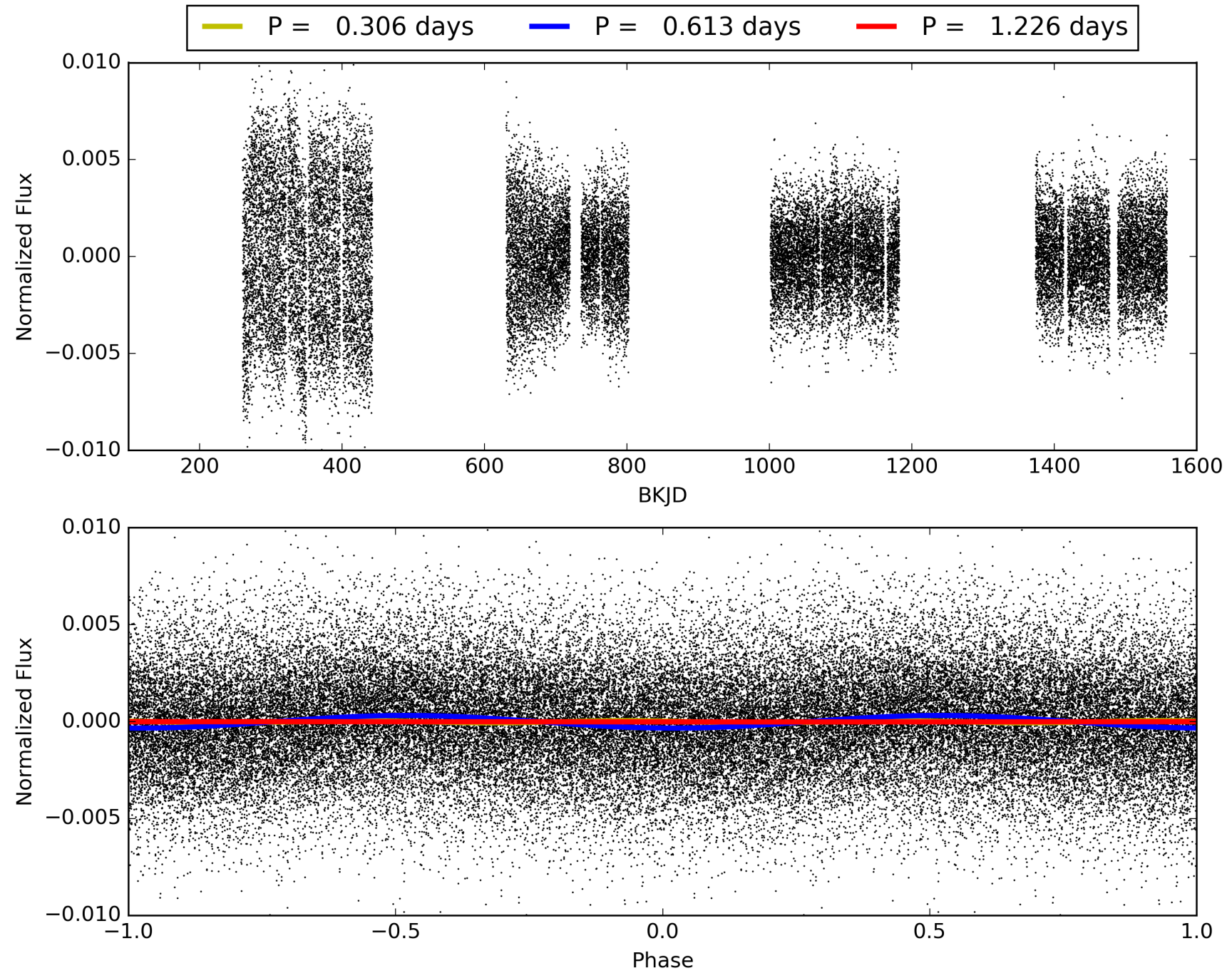
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 02:05:20 Z

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

TCE 008964935-02, PDC Light Curves

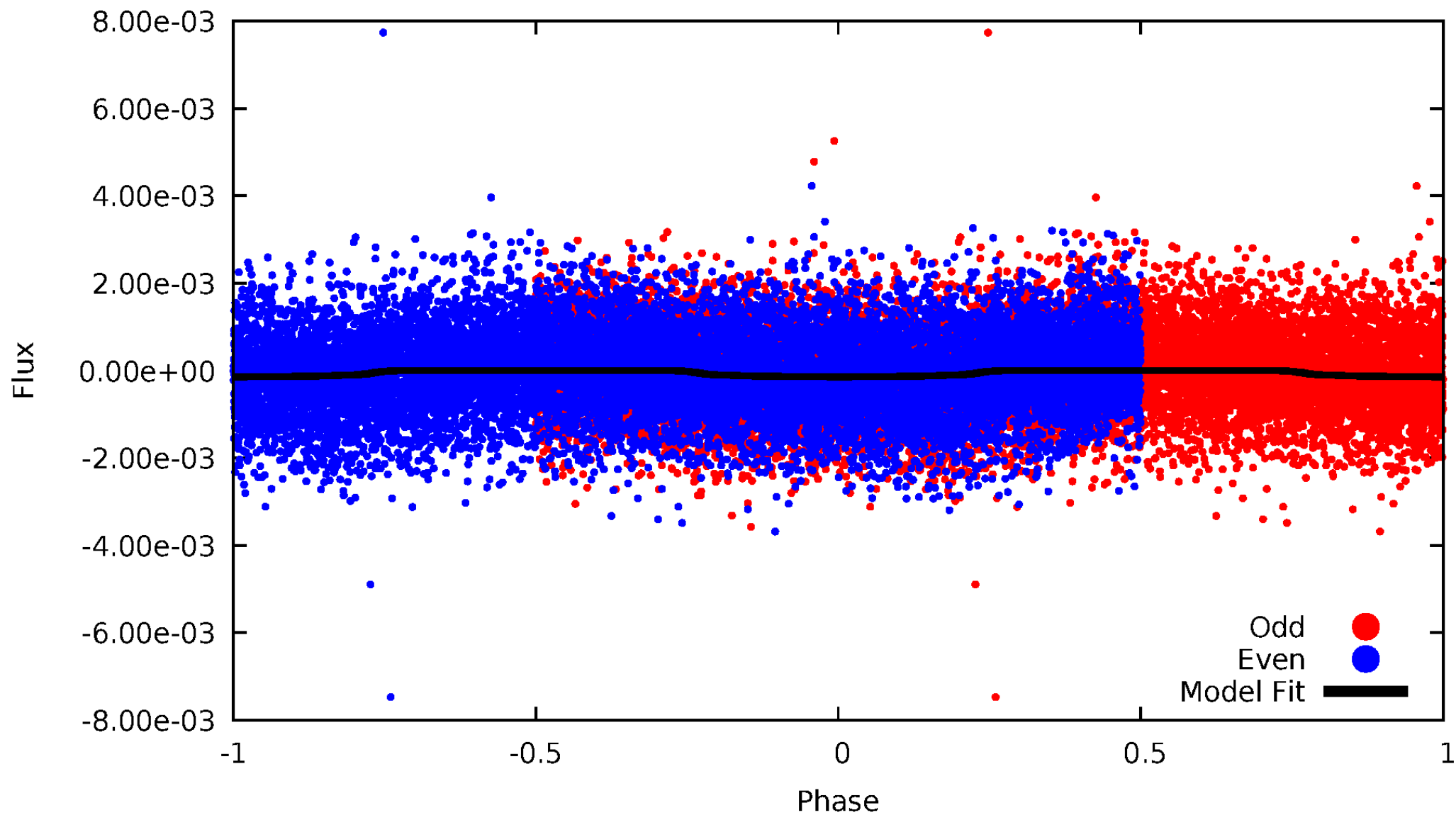


TCE 008964935-02



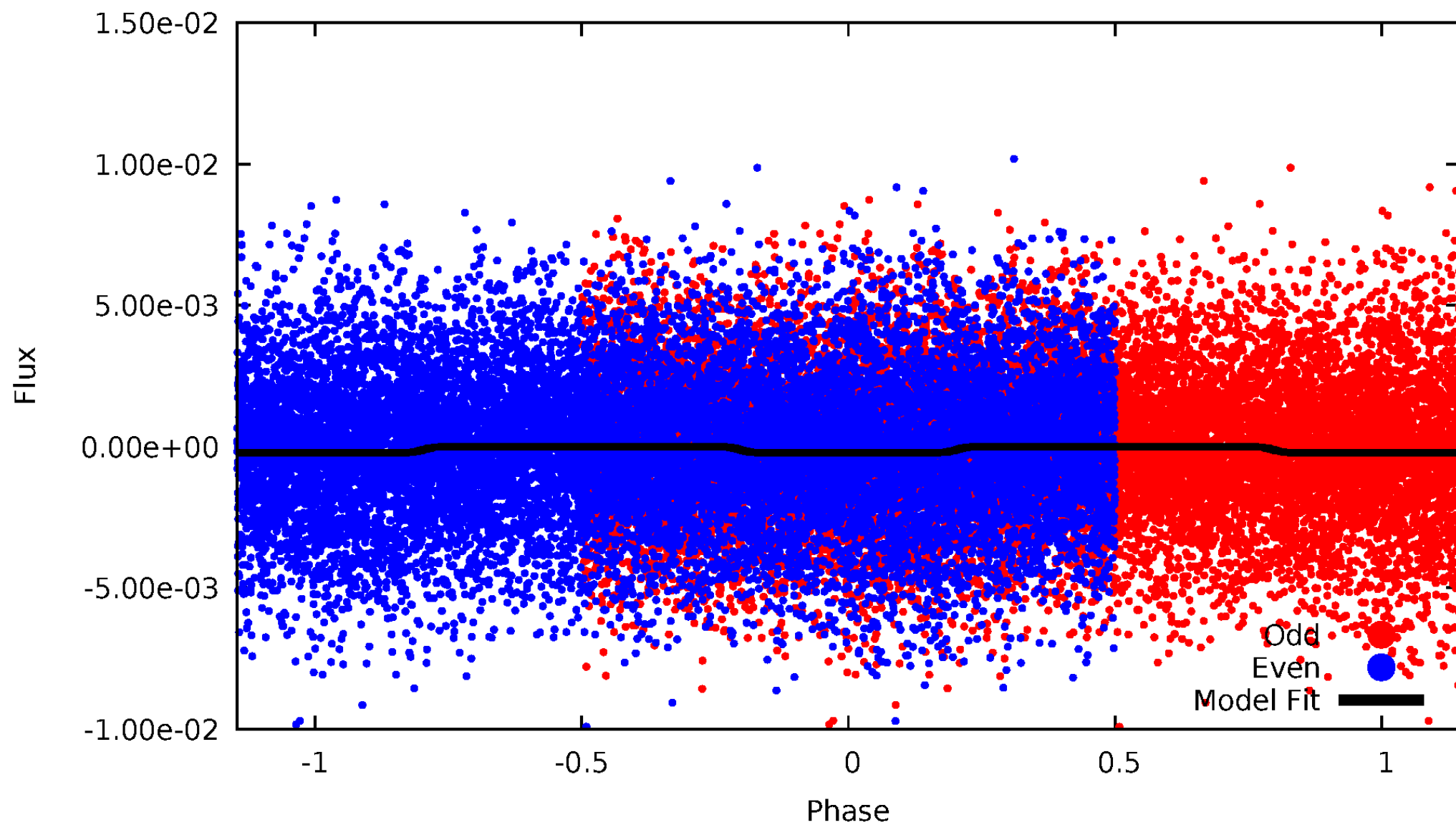
DV Odd/Even

TCE 008964935-02



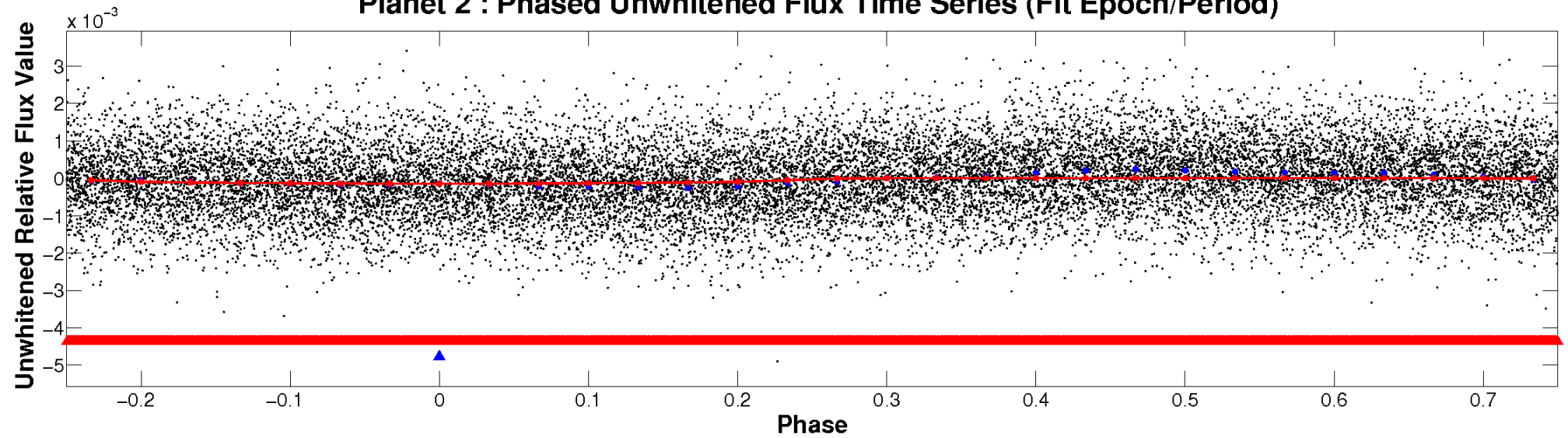
ALT Odd/Even

TCE 008964935-02

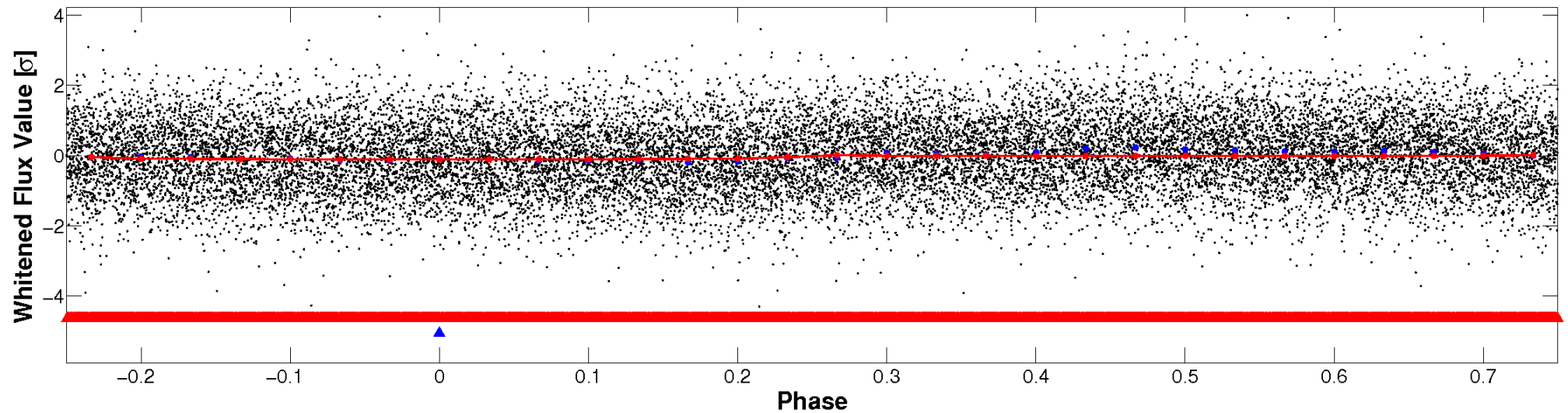


Non-Whitened Vs. Whitened Light Curve

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

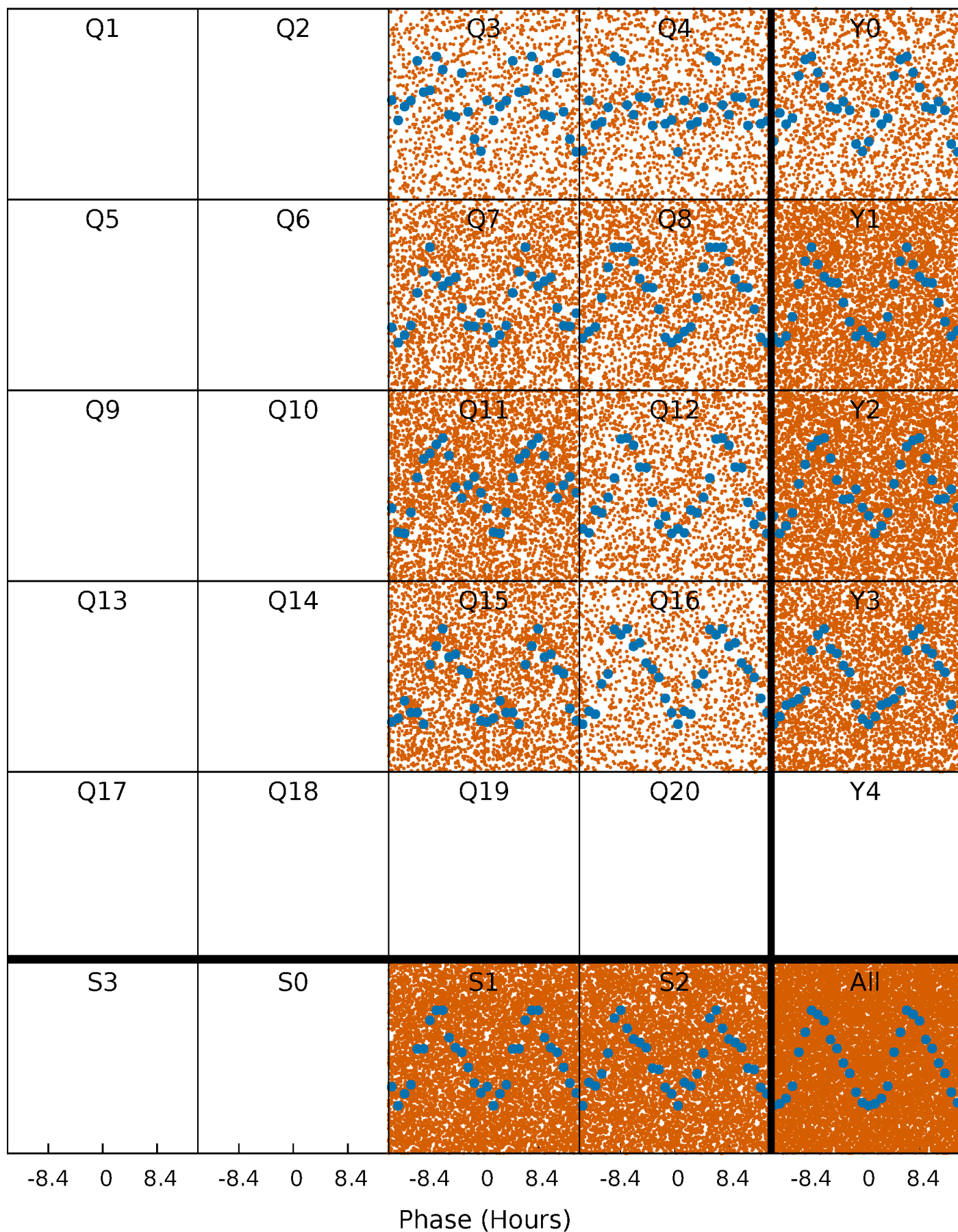


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



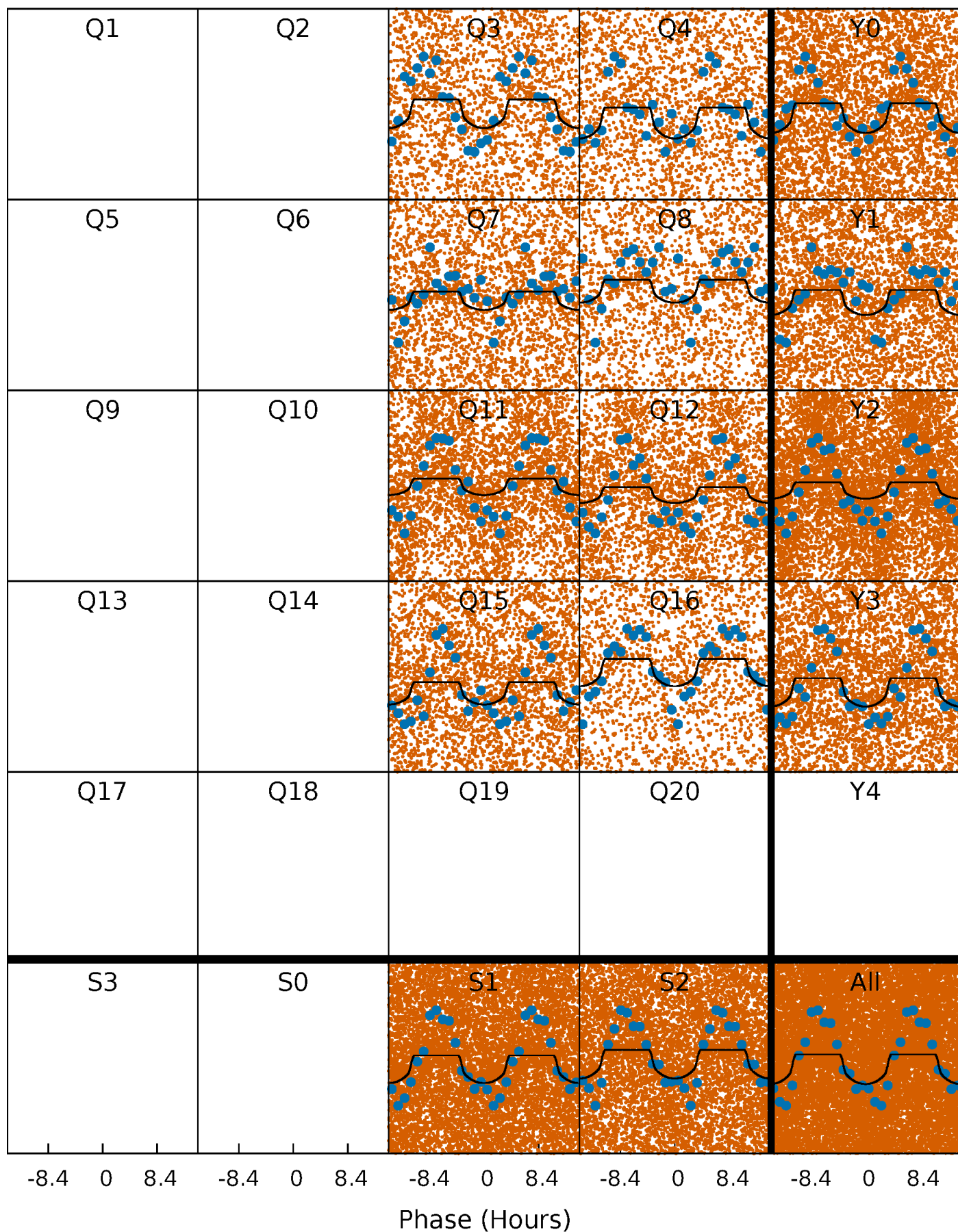
PDC Quarter-Phased Transit Curves

TCE 008964935-02 P= 0.612768 Days $T_0=131.943991$ (BKJD)



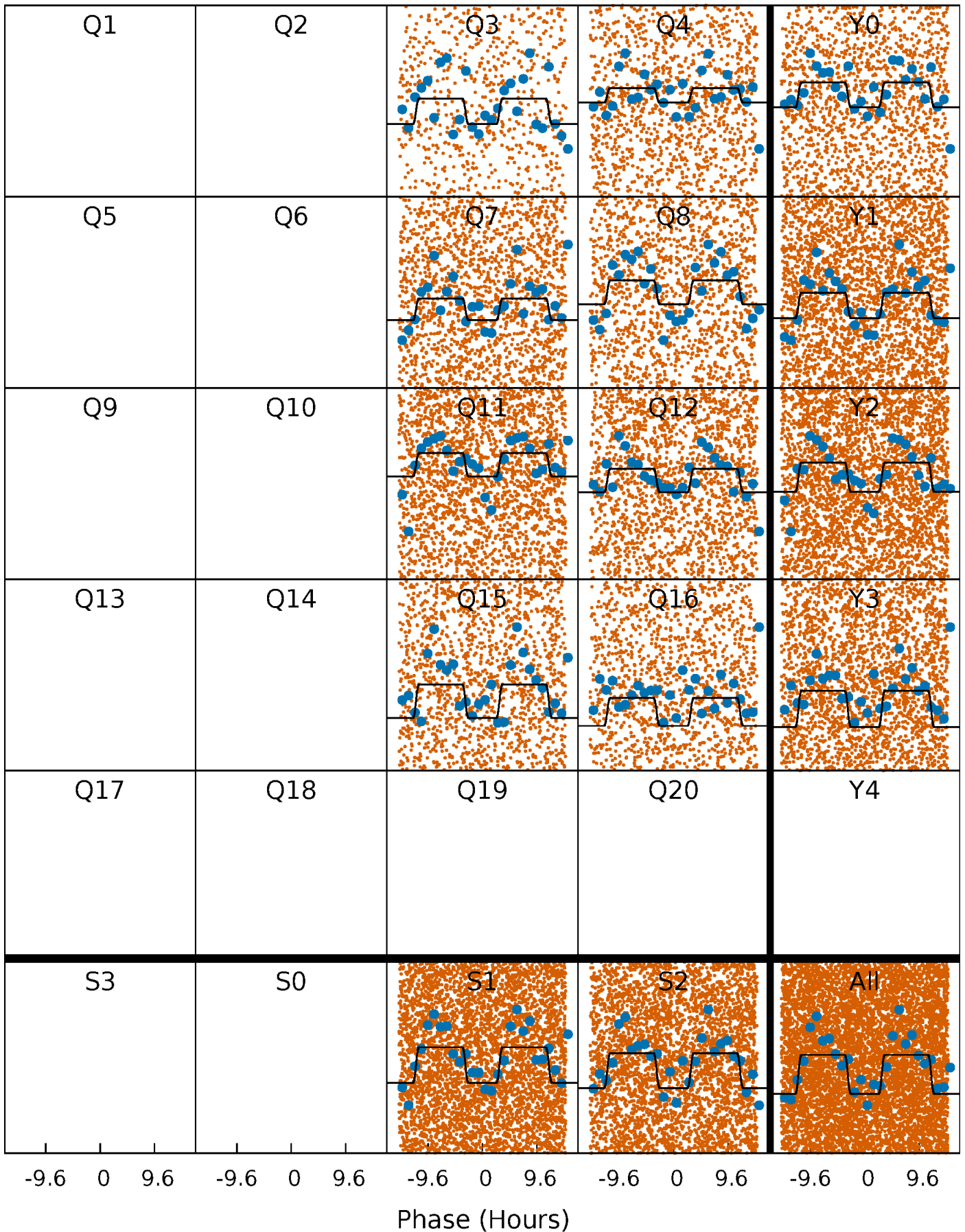
DV Quarter-Phased Transit Curves

TCE 008964935-02 P= 0.612768 Days $T_0=131.943991$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

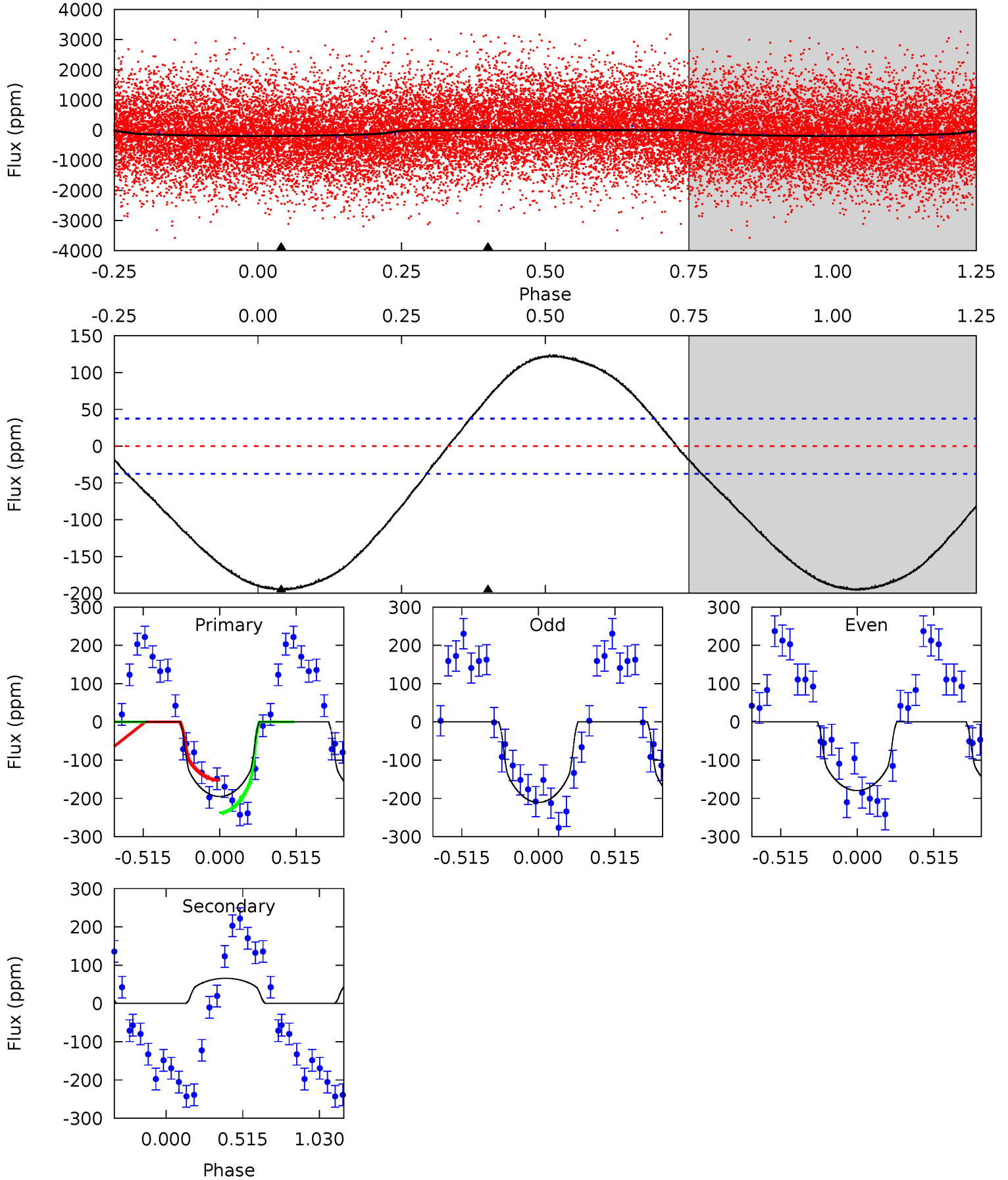
TCE 008964935-02 P= 0.612810 Days $T_0=131.927887$ (BKJD)



DV Model-Shift Uniqueness Test

008964935-02, P = 0.612768 Days, E = 131.943991 Days

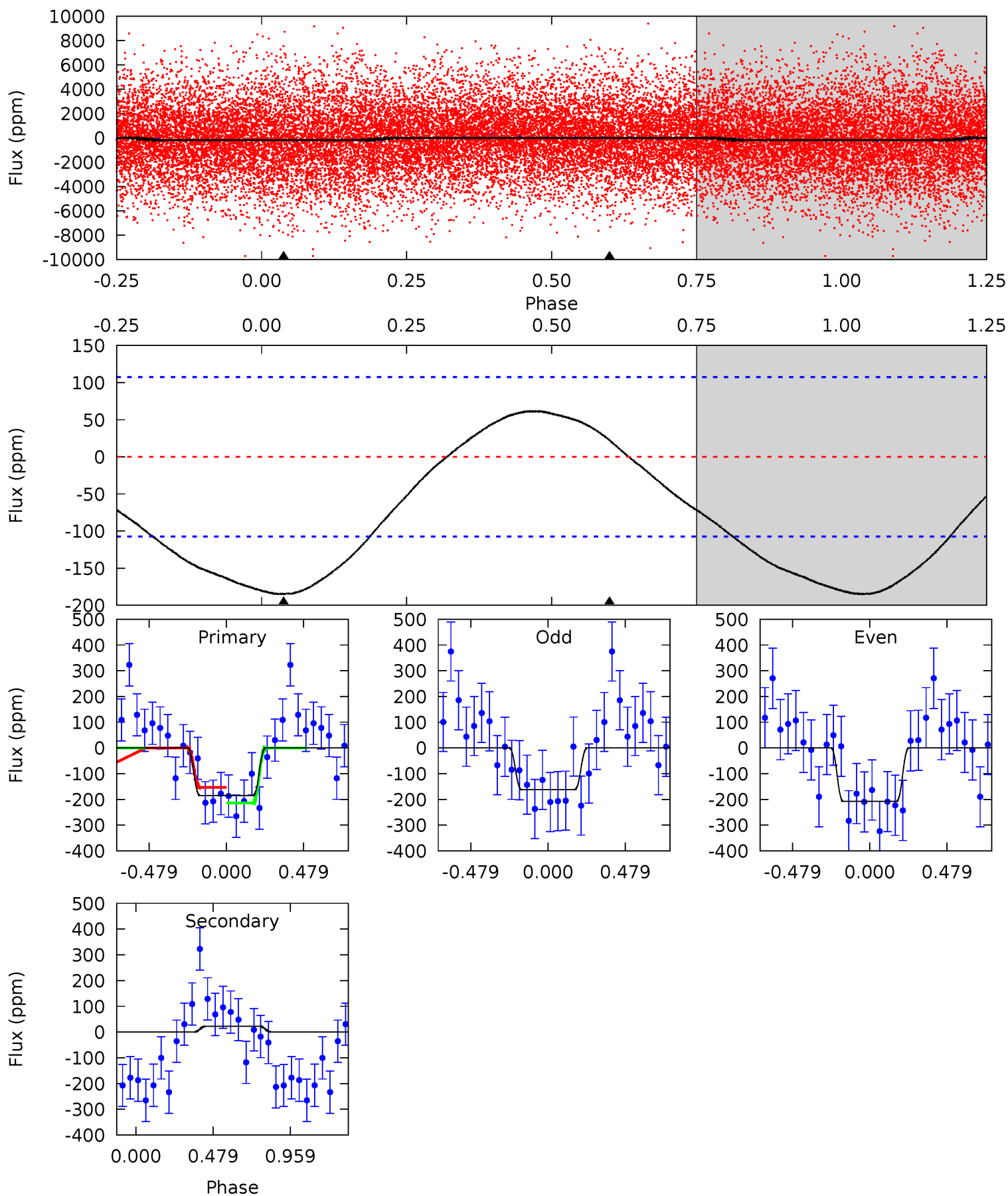
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.9	-7.37	0	0	4.21	0.65	3.09	21.9	21.9	-7.37	-7.37	1.74	1.08	0.39	4.76



Alt Model-Shift Uniqueness Test

008964935-02, P = 0.612810 Days, E = 131.927887 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.28	-0.88	0	0	4.22	0.71	0.75	7.28	7.28	-0.88	-0.88	0.91	1.22	0.25	1.20



Stellar Parameters For KIC 008964935

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8163^{+225}_{-367}	$3.732^{+0.440}_{-0.110}$	$-0.060^{+0.250}_{-0.350}$	$3.236^{+0.812}_{-1.508}$	$2.061^{+0.332}_{-0.498}$	$0.086^{+0.345}_{-0.036}$
	+3%/-4%	+12%/-3%	+417%/-583%	+25%/-47%	+16%/-24%	+403%/-43%
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 008964935-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	66 ± 9	$3.65^{+1.28}_{-1.08}$	6521^{+513}_{-757}	-7318^{+701}_{-1010}	$-0.893^{+0.405}_{-0.880}$
Alt.	22 ± 25	$4.74^{+1.31}_{-1.37}$	6467^{+546}_{-765}	-5726^{+796}_{-665}	$-0.160^{+0.182}_{-0.279}$

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 $A_{obs} \gg 1.0$

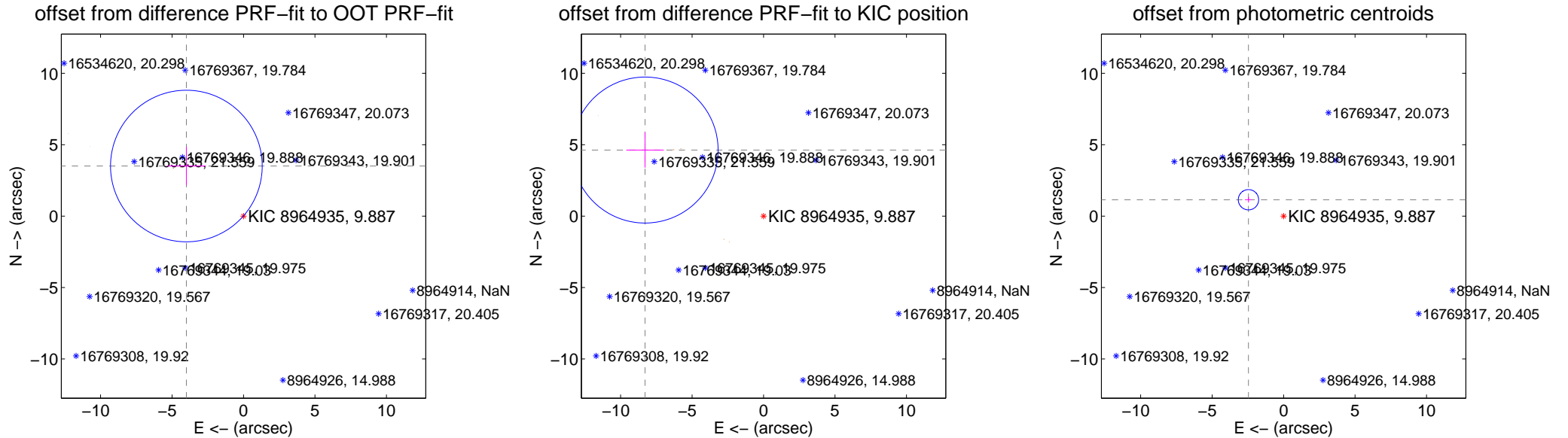
DV Centroid Data

Supplemental centroid analysis for 008964935-02. **Kepler magnitude: 9.89.** Transit SNR 9.65

There are 1 quarters with good PRF difference image offsets

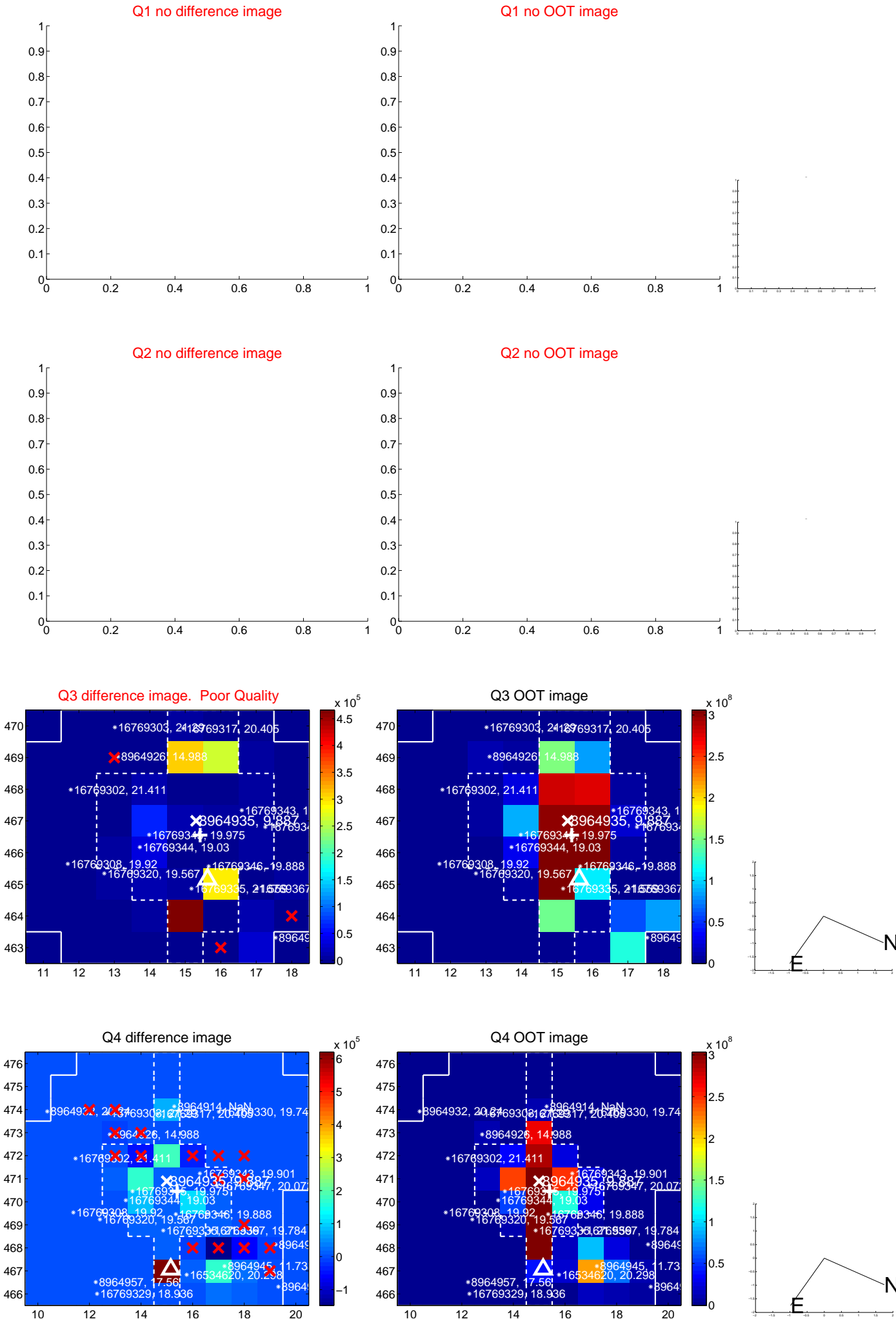
The OOT PRF centroid is offset from the target star catalog position by about 2.35 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.316 ± 1.768	3.01	3.996 ± 1.359	3.506 ± 1.328
PRF-fit source offset from KIC position	9.491 ± 1.703	5.57	8.288 ± 1.311	4.625 ± 1.235
photometric centroid source offset	2.71 ± 0.24	11.44	2.46 ± 0.24	1.15 ± 0.20

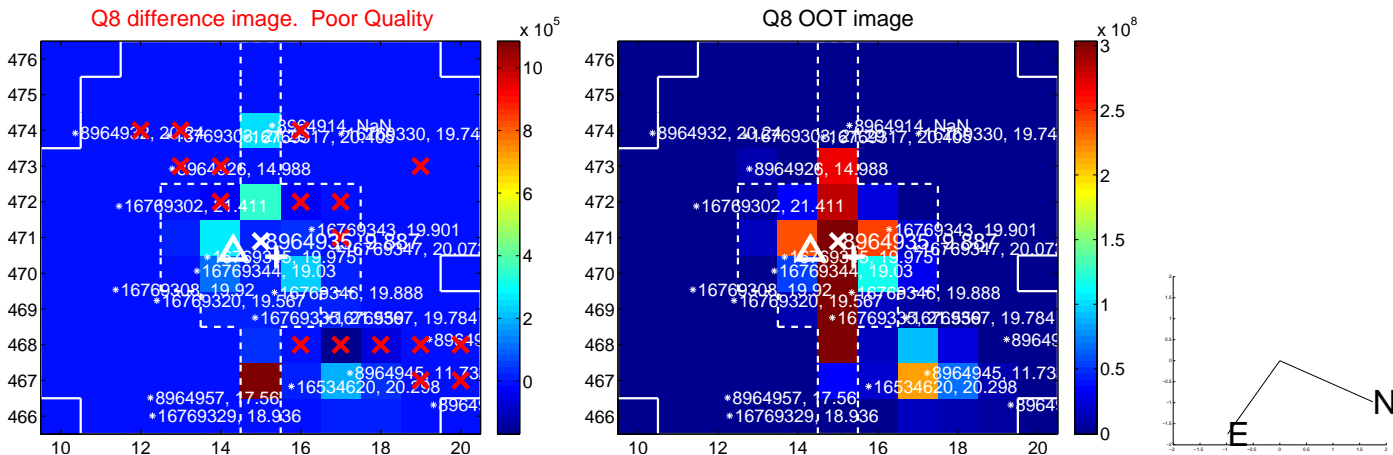
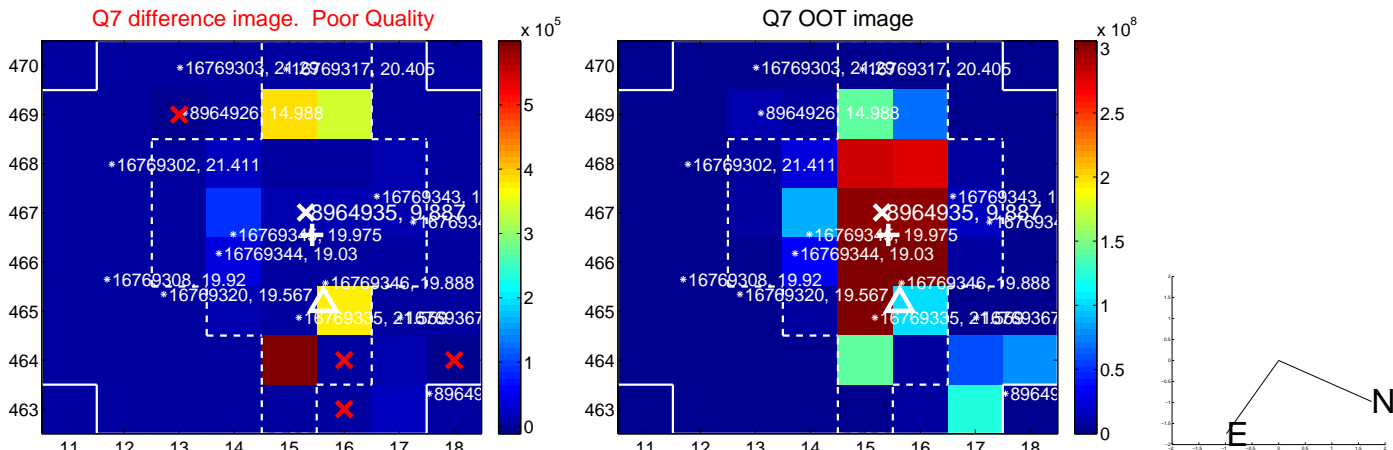
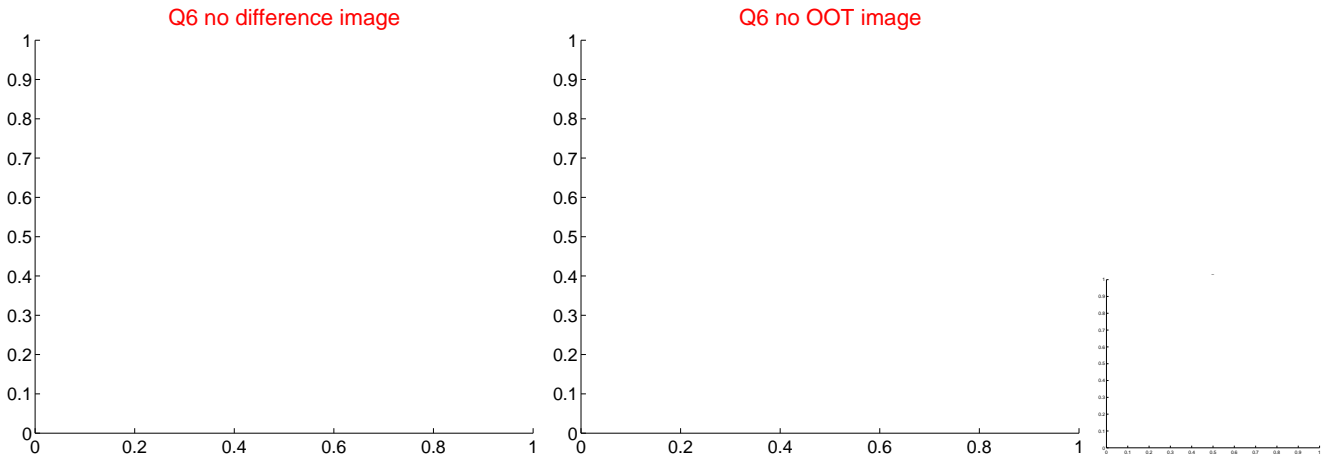
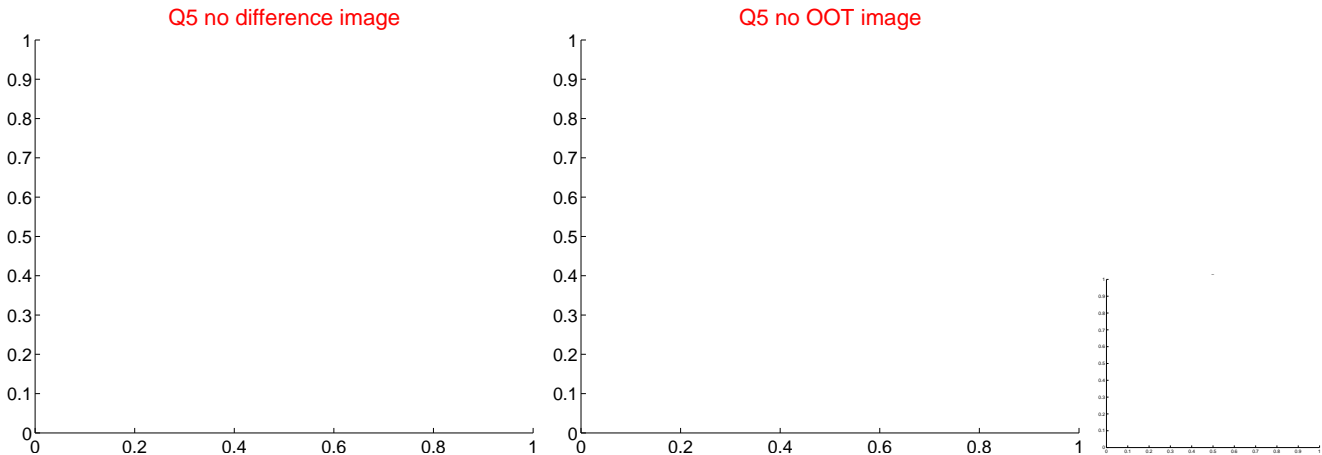


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

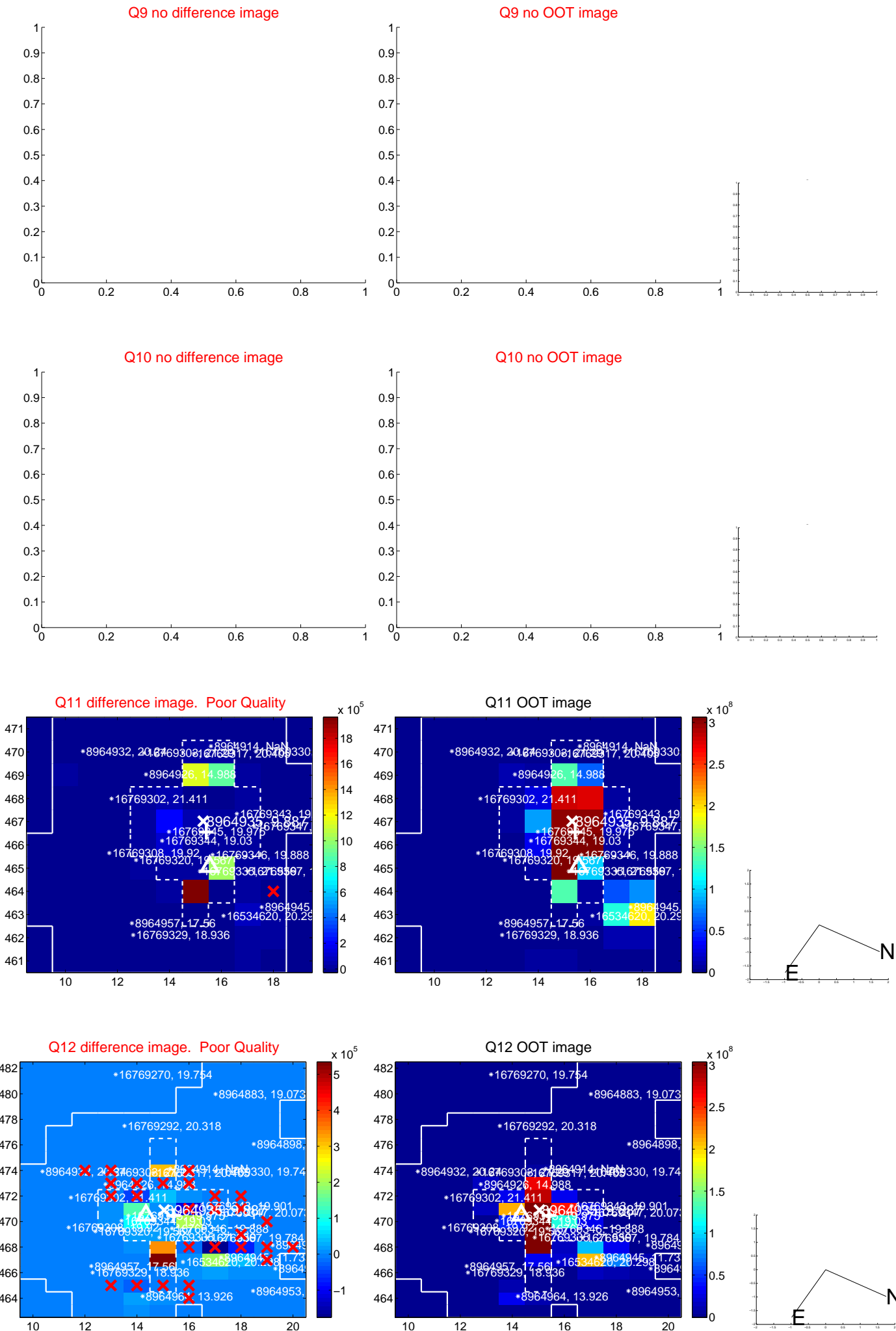
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



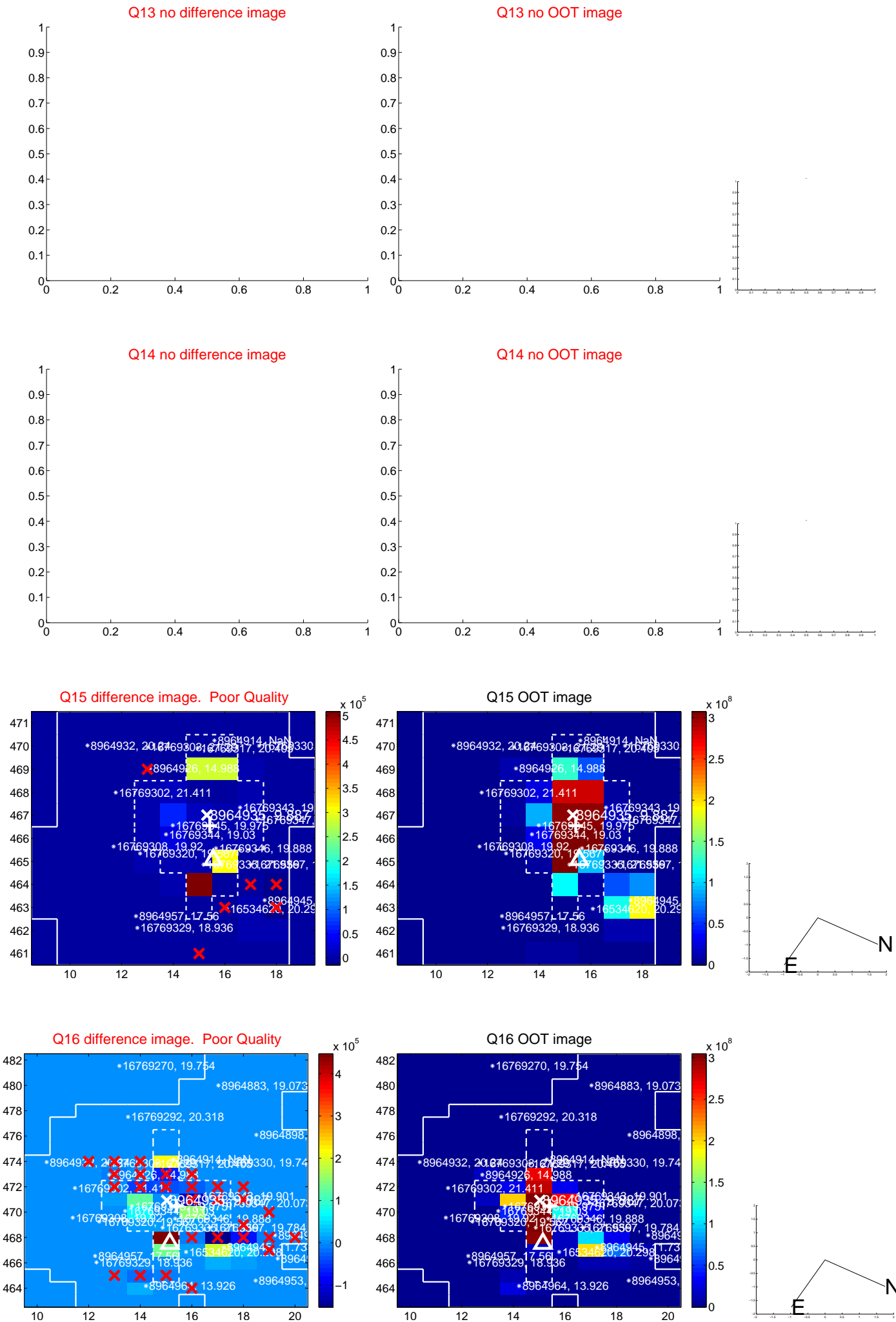
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



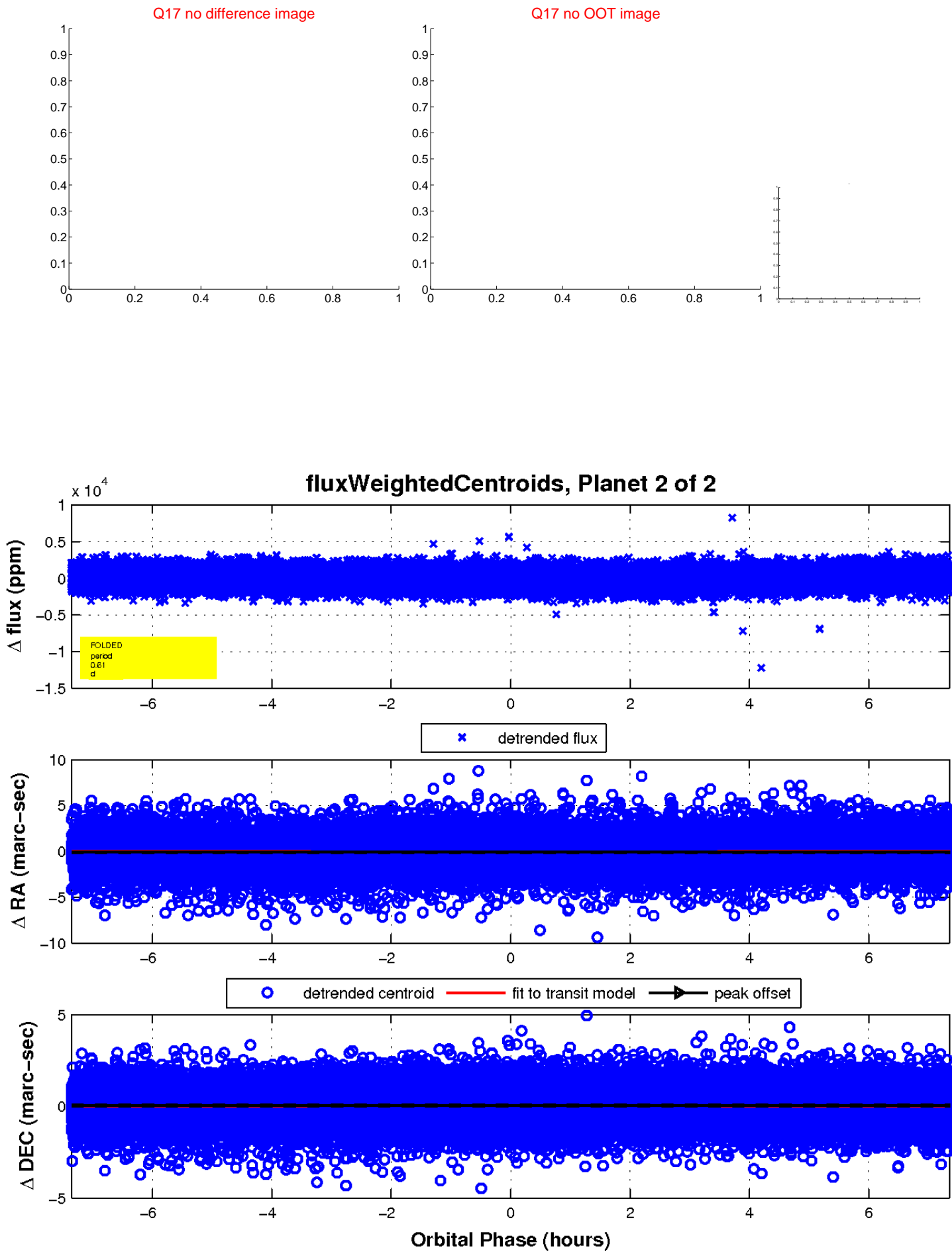
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



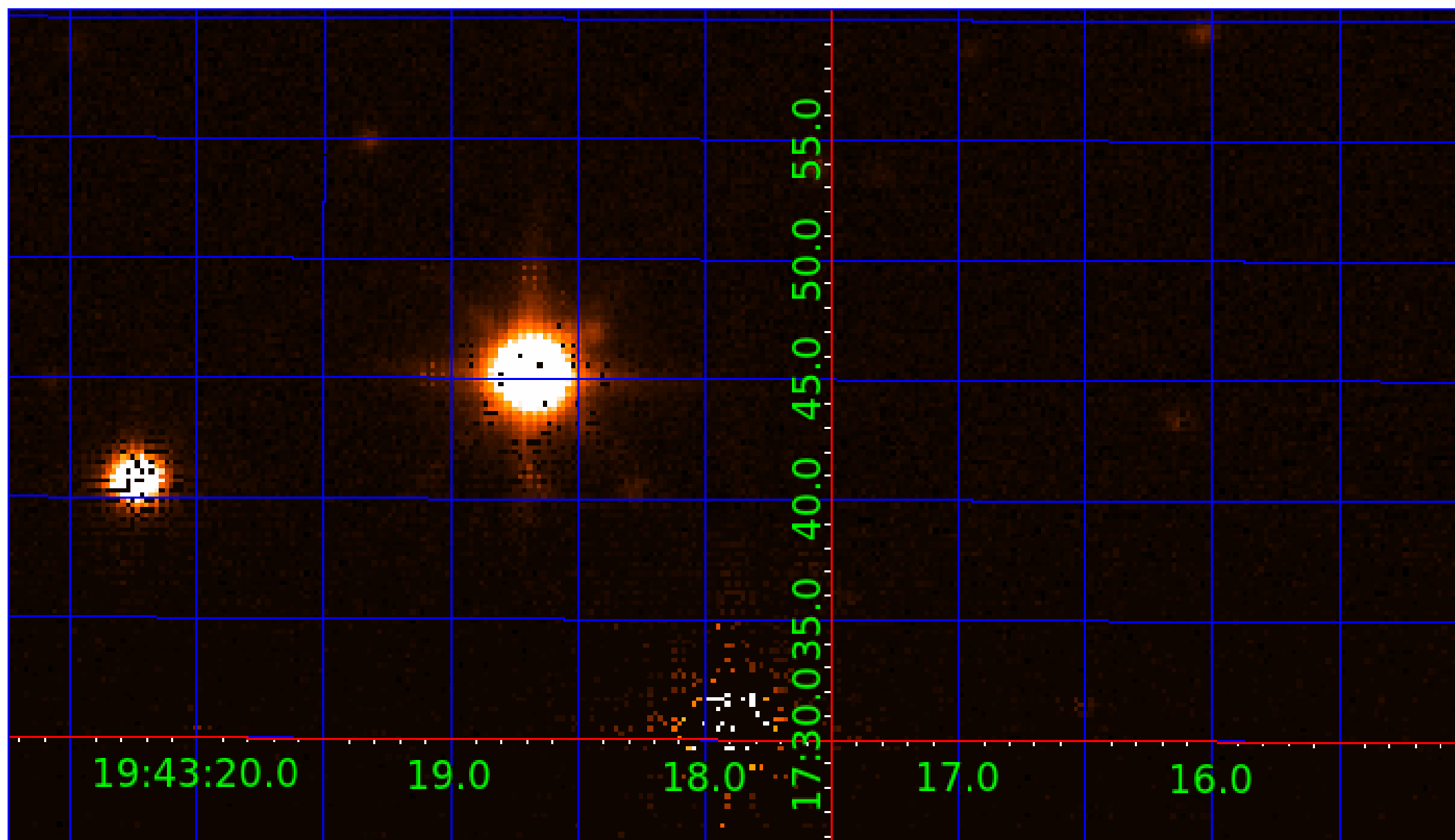
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



Right ascension