

KIC 008109934

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})
008109934-01	OBS	No	1.549338	132.753438	15.4	11.479	9.5	4.6	2.10	6489	0.88	8240.39
008109934-02	OBS	No	31.232576	145.914701	288.6	1.692	11.7	9.2	2.10	6489	4.02	150.20
008109934-03	OBS	No	38.664891	159.951492	296.3	5.362	10.3	11.0	2.10	6489	4.03	112.99

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008109934-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
008109934-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
008109934-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_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.

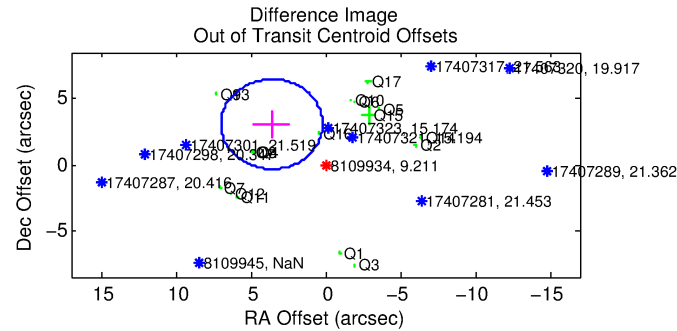
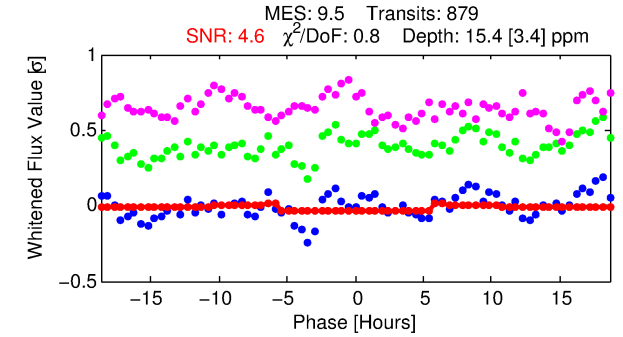
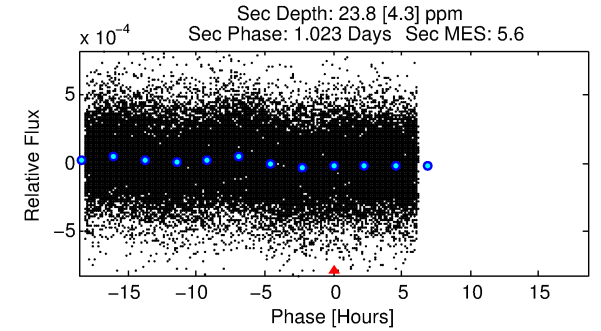
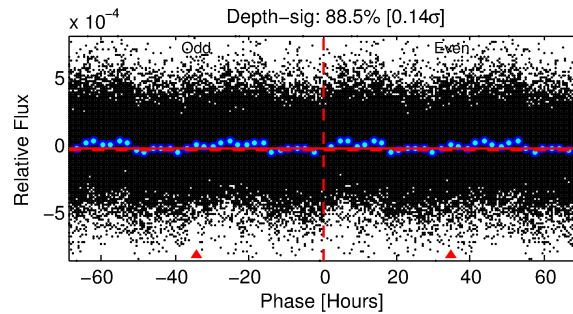
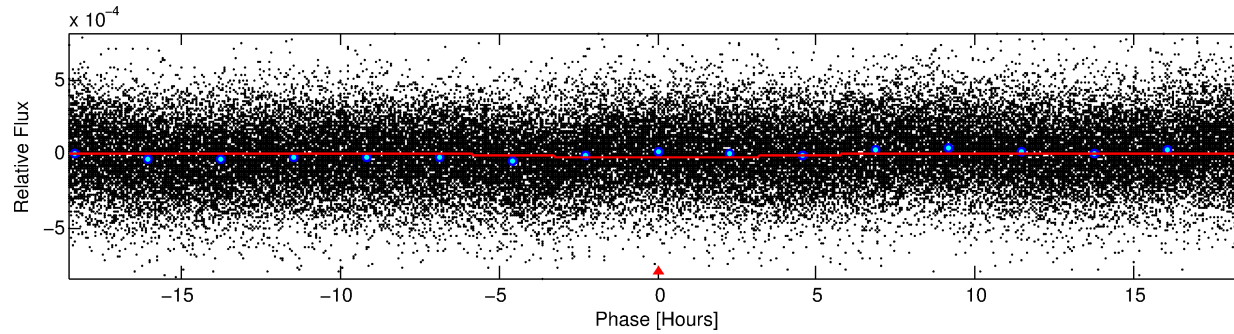
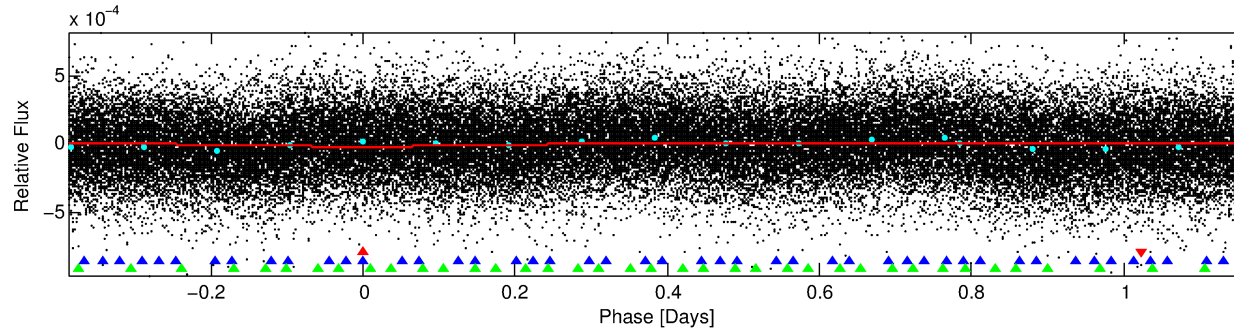
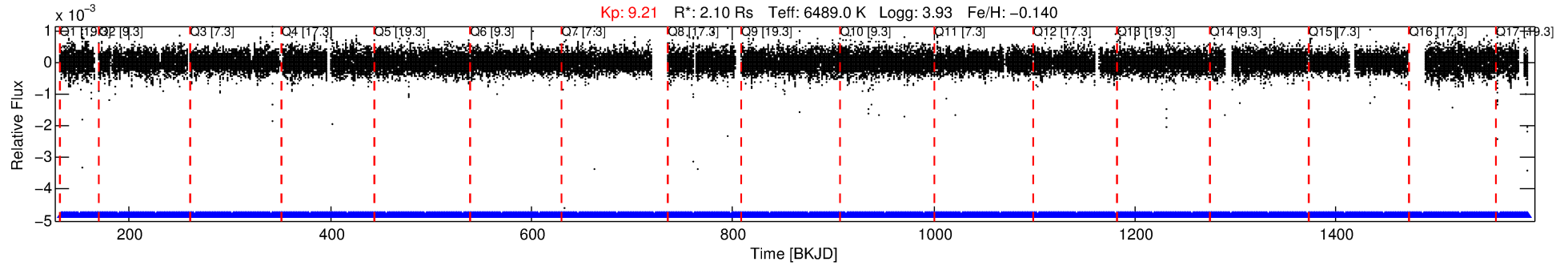
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008109934-01

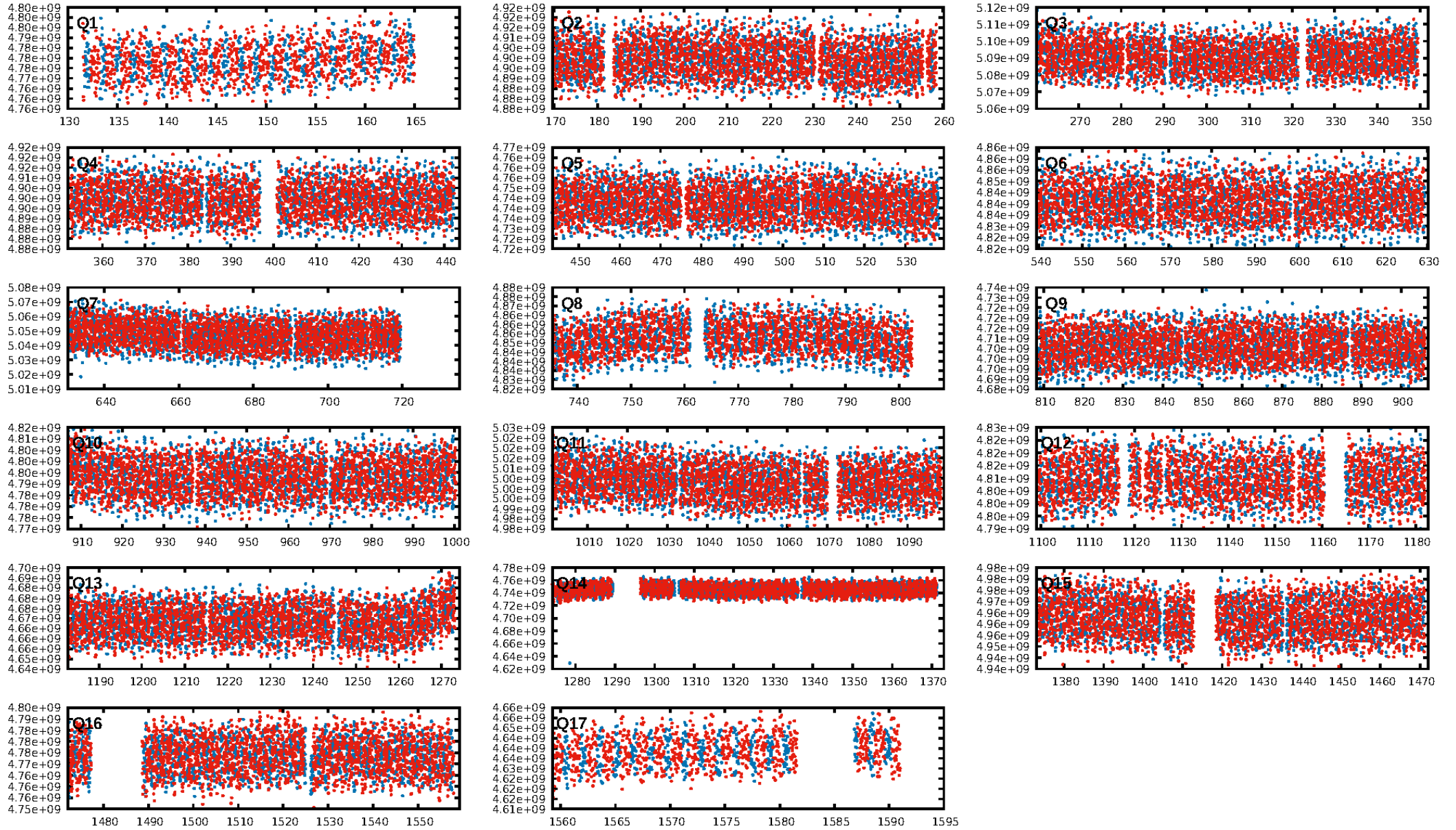
No Significant Match Found

DV One-Page Summary

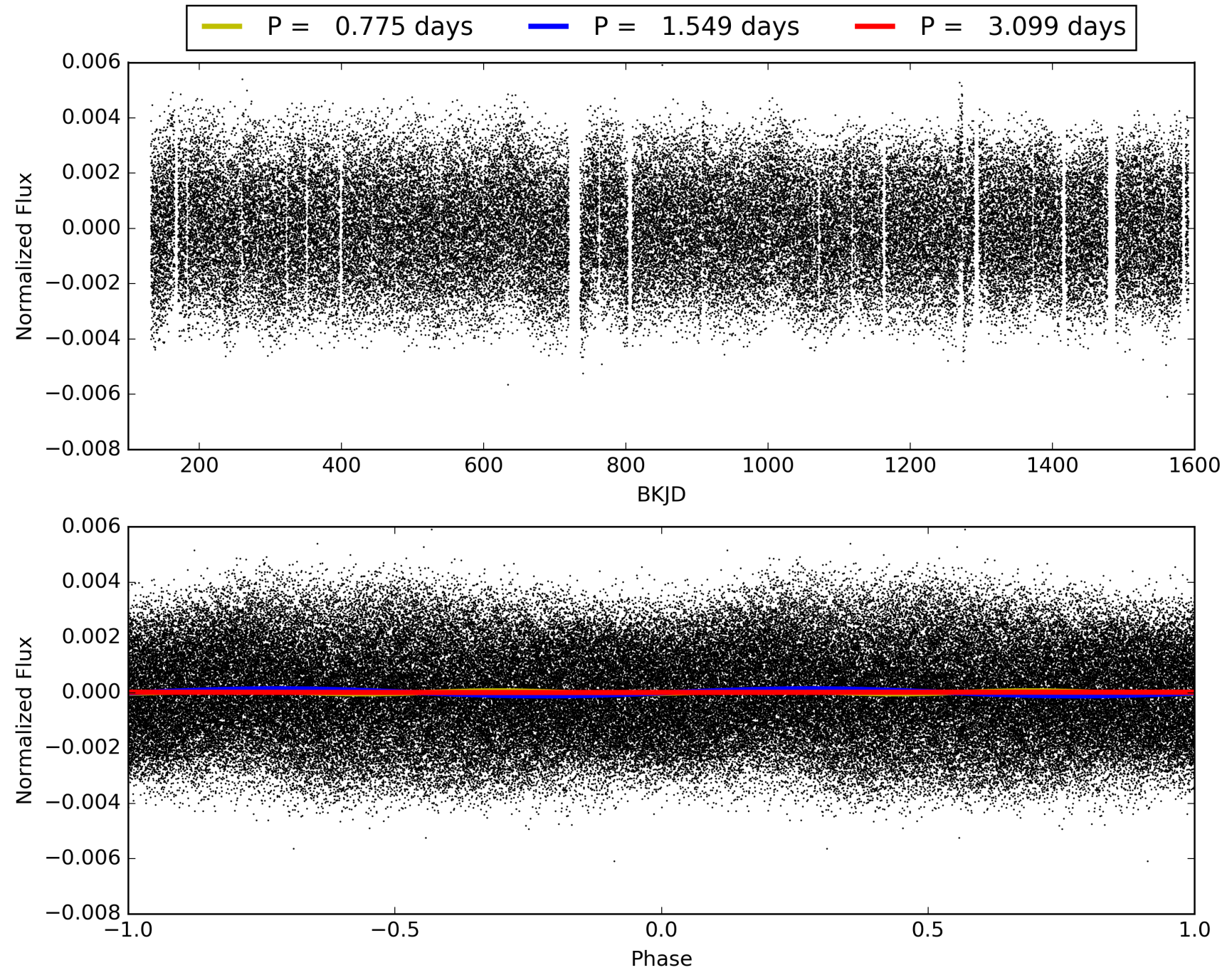
KIC: 8109934 Candidate: 1 of 3 Period: 1.549 d



TCE 008109934-01, PDC Light Curves

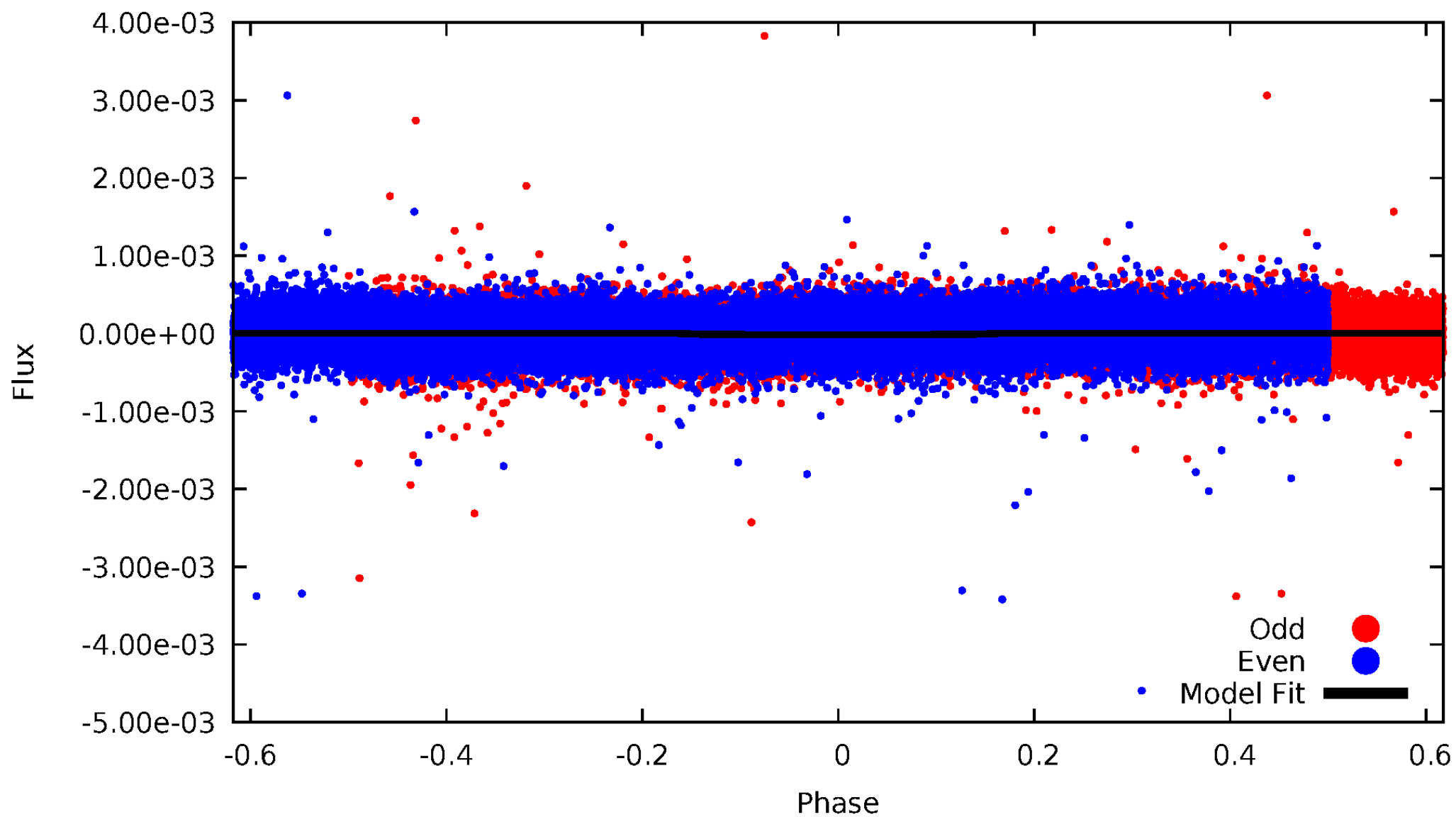


TCE 008109934-01



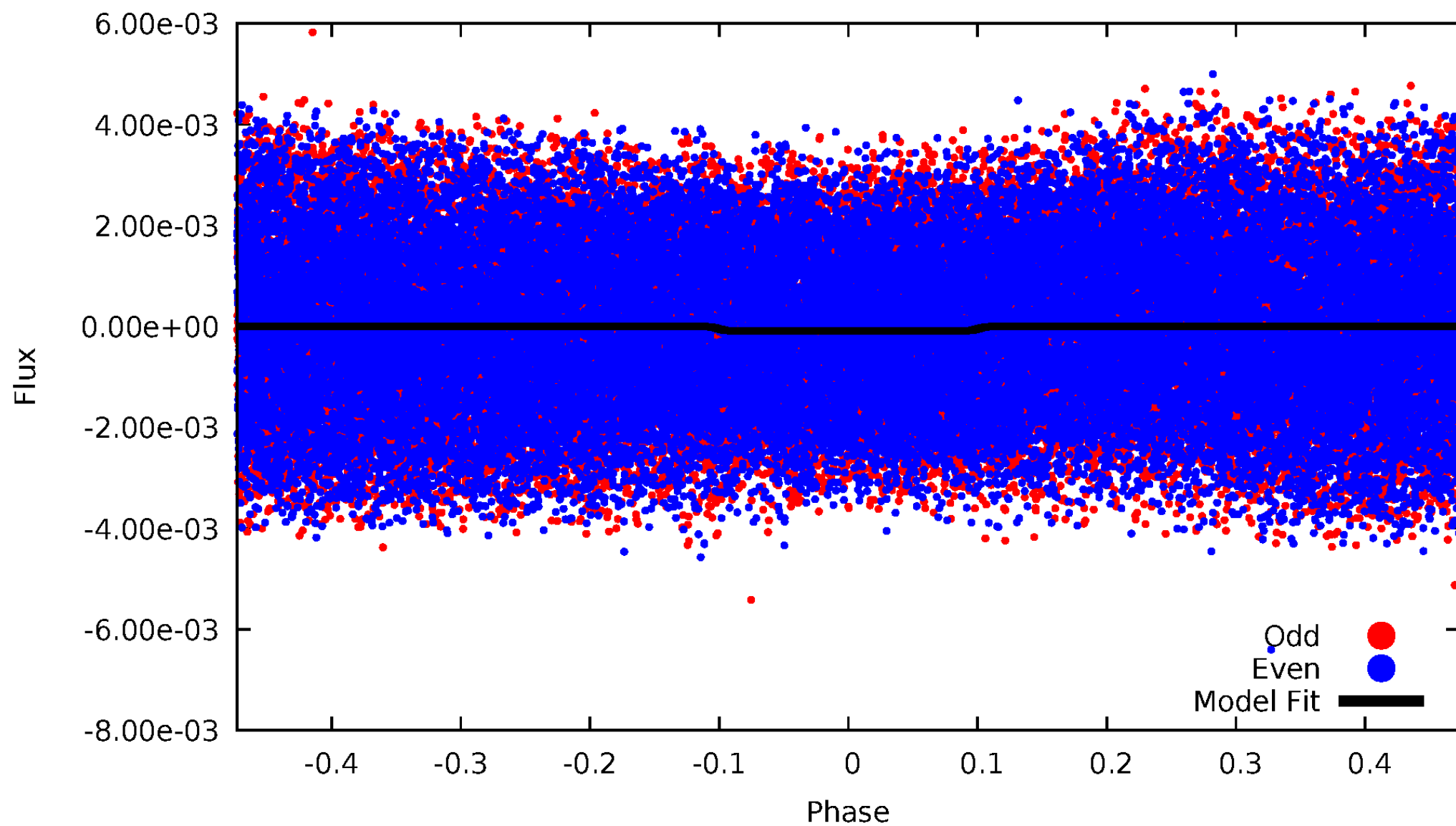
DV Odd/Even

TCE 008109934-01

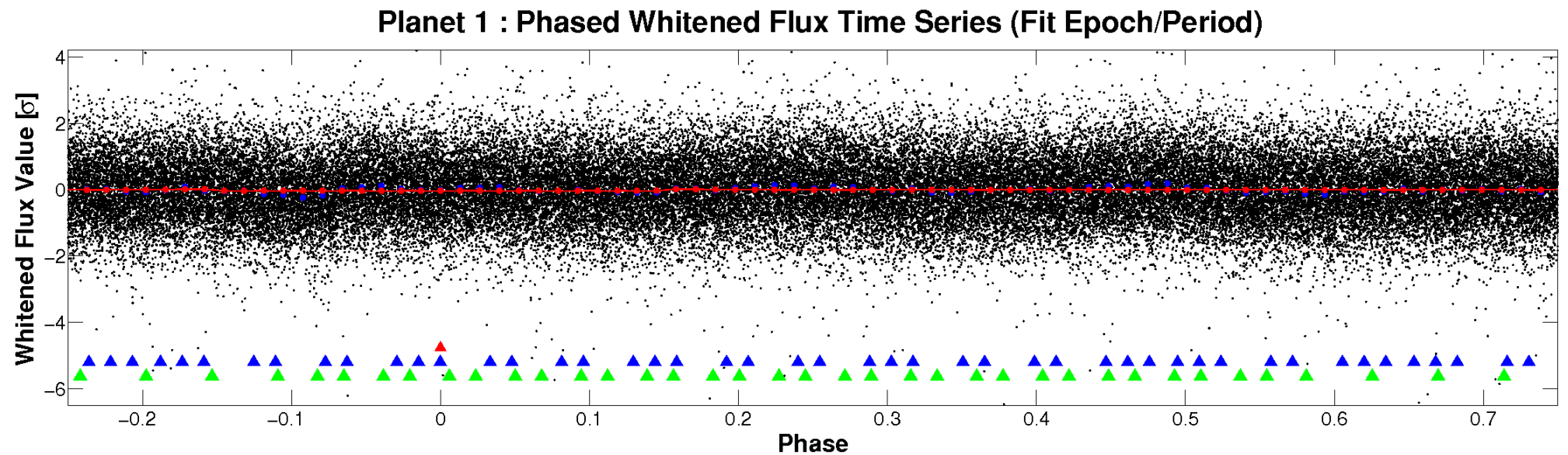
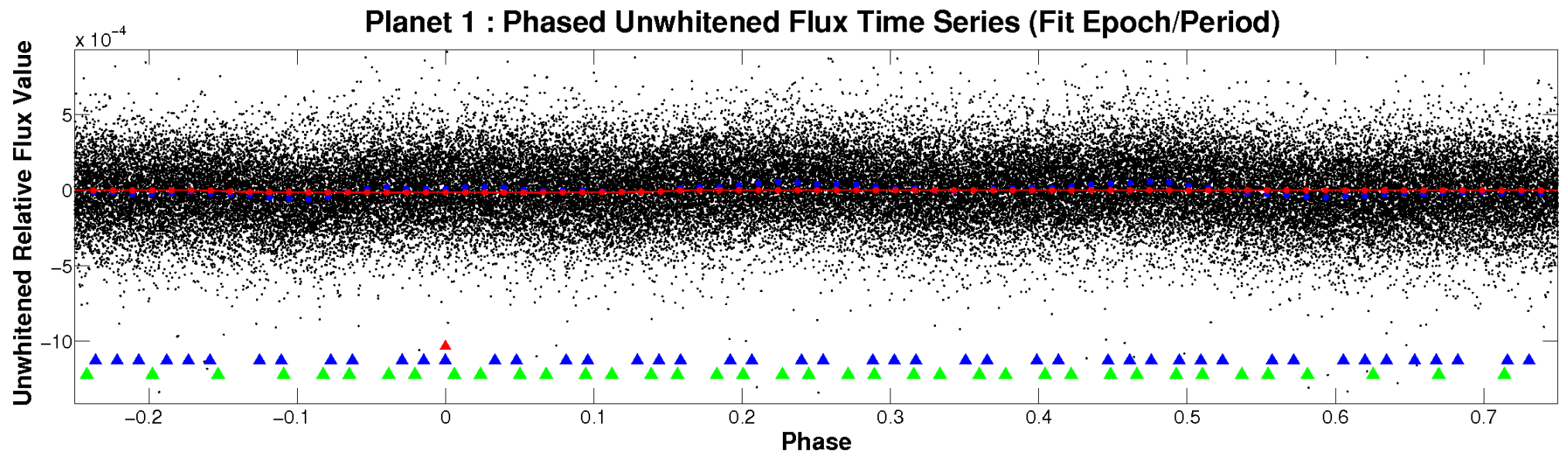


ALT Odd/Even

TCE 008109934-01

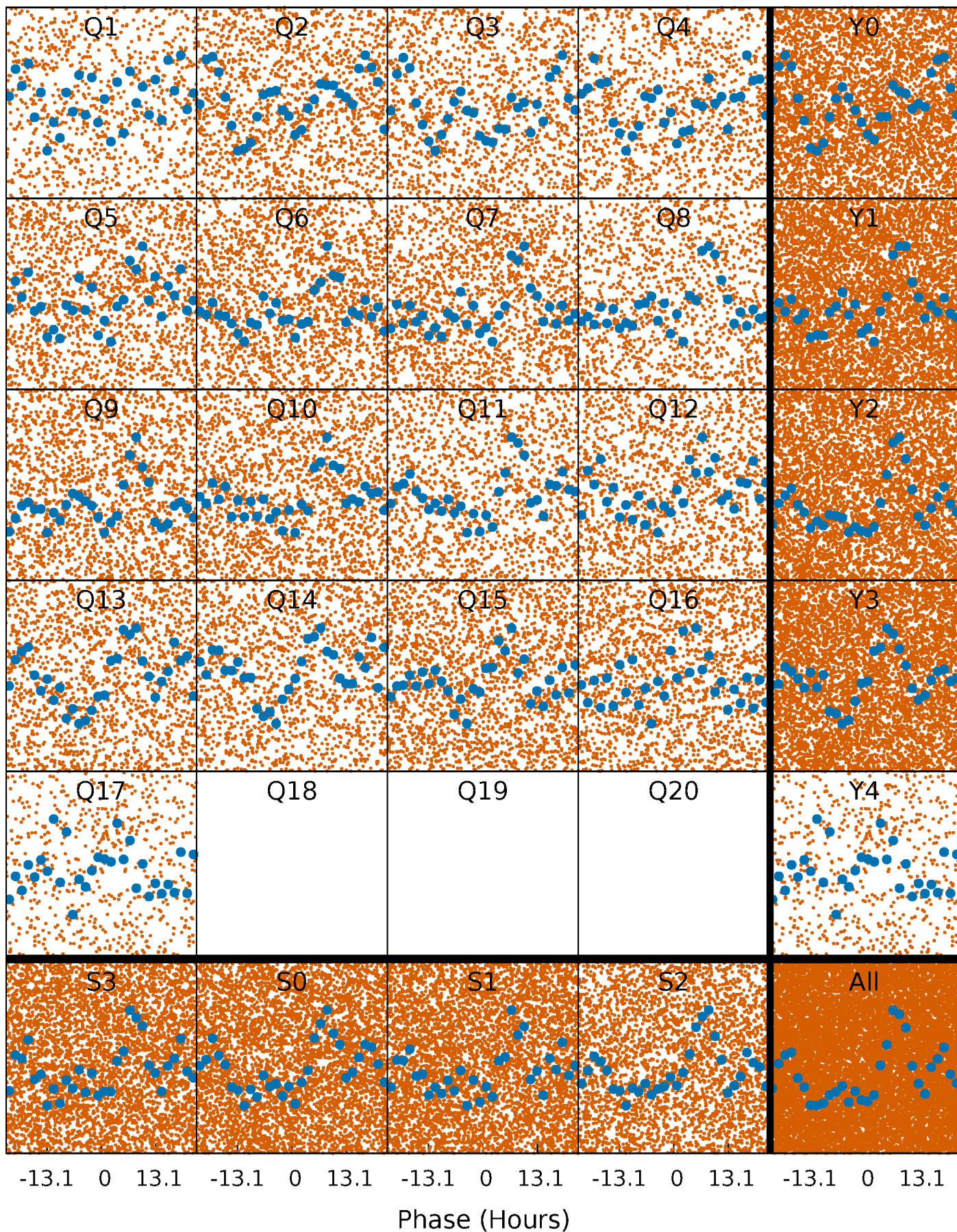


Non-Whitened Vs. Whitened Light Curve



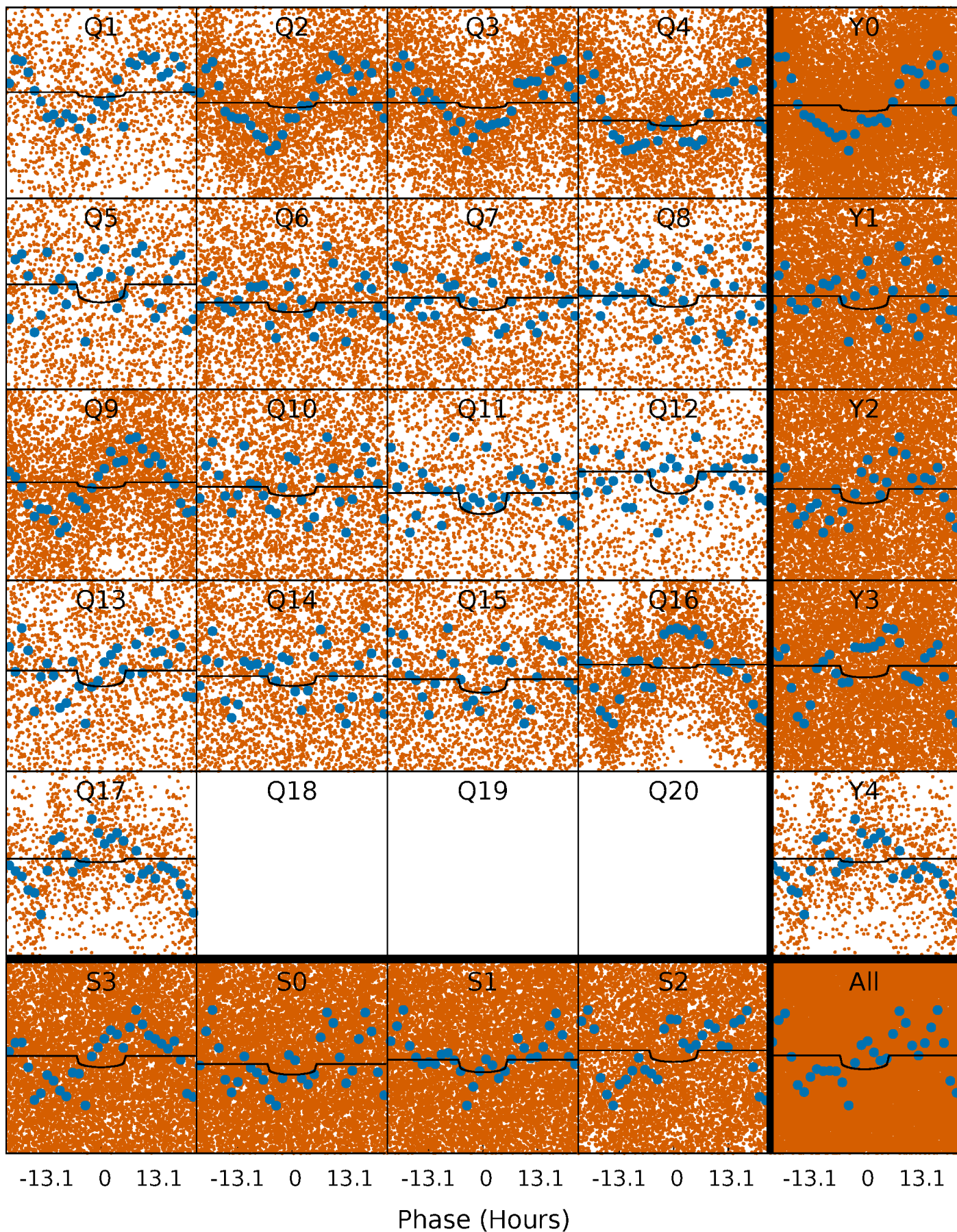
PDC Quarter-Phased Transit Curves

TCE 008109934-01 P= 1.549338 Days $T_0=132.753438$ (BKJD)



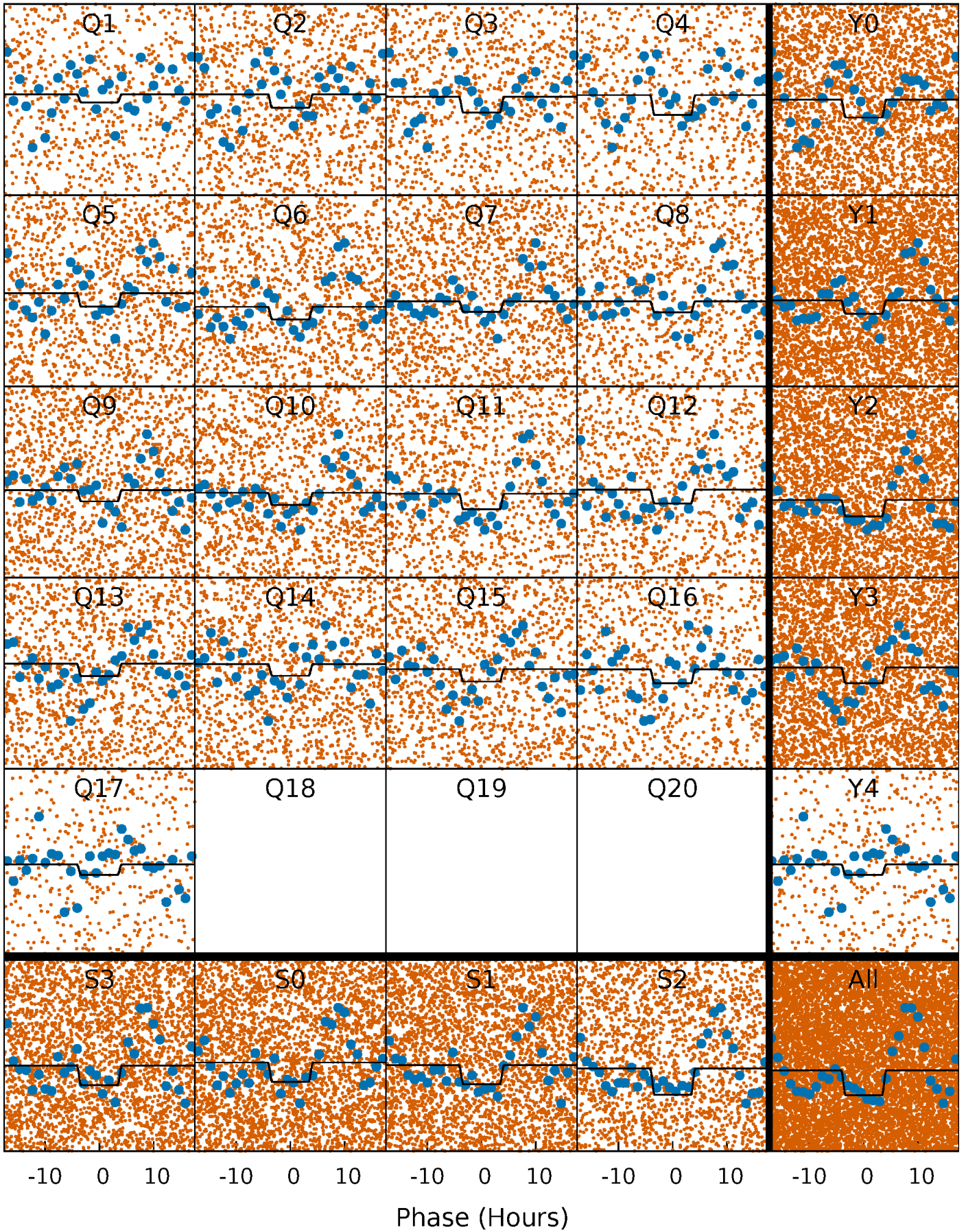
DV Quarter-Phased Transit Curves

TCE 008109934-01 P= 1.549338 Days $T_0=132.753438$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

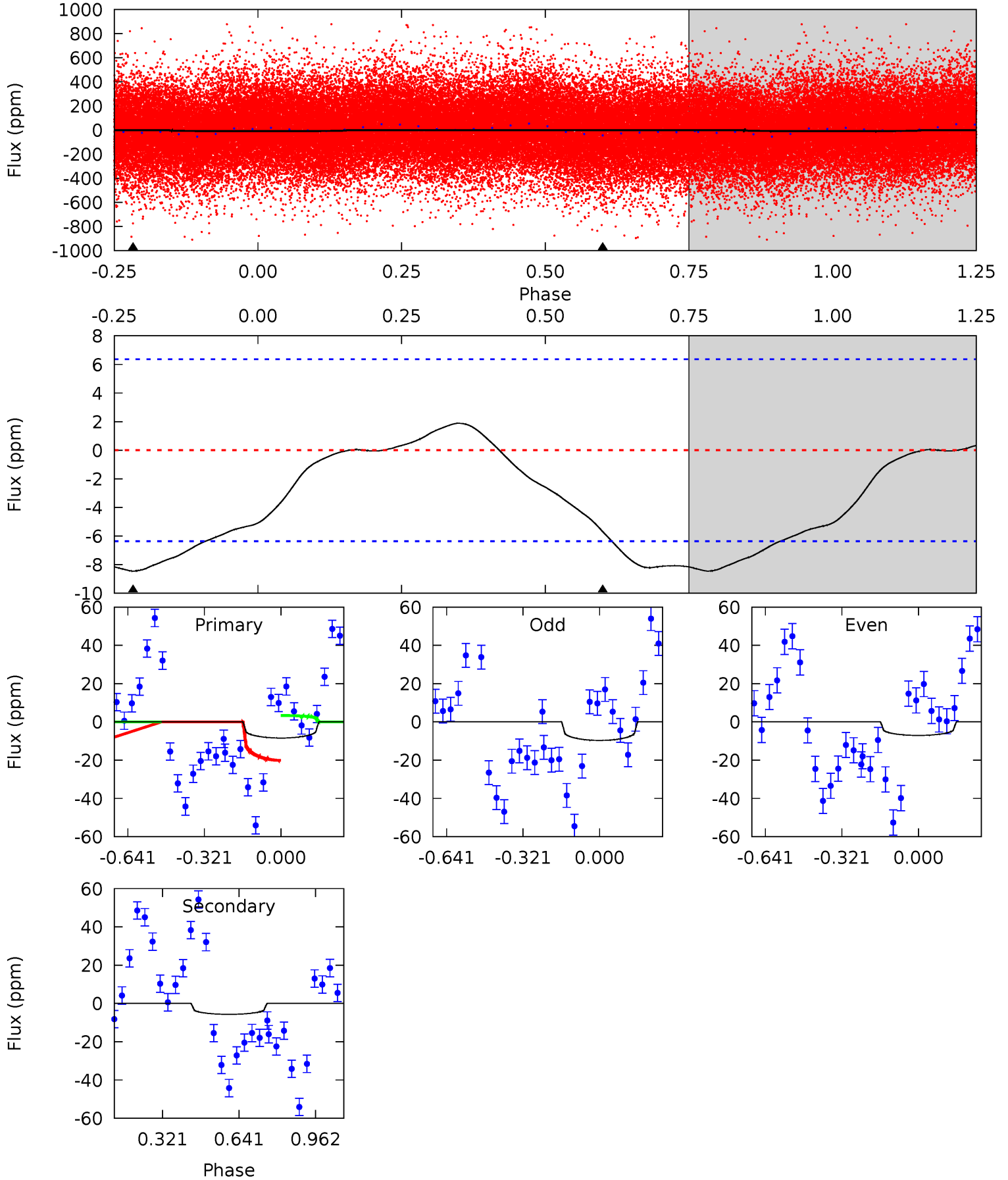
TCE 008109934-01 P= 1.549349 Days $T_0=132.722673$ (BKJD)



DV Model-Shift Uniqueness Test

008109934-01, P = 1.549338 Days, E = 131.204100 Days

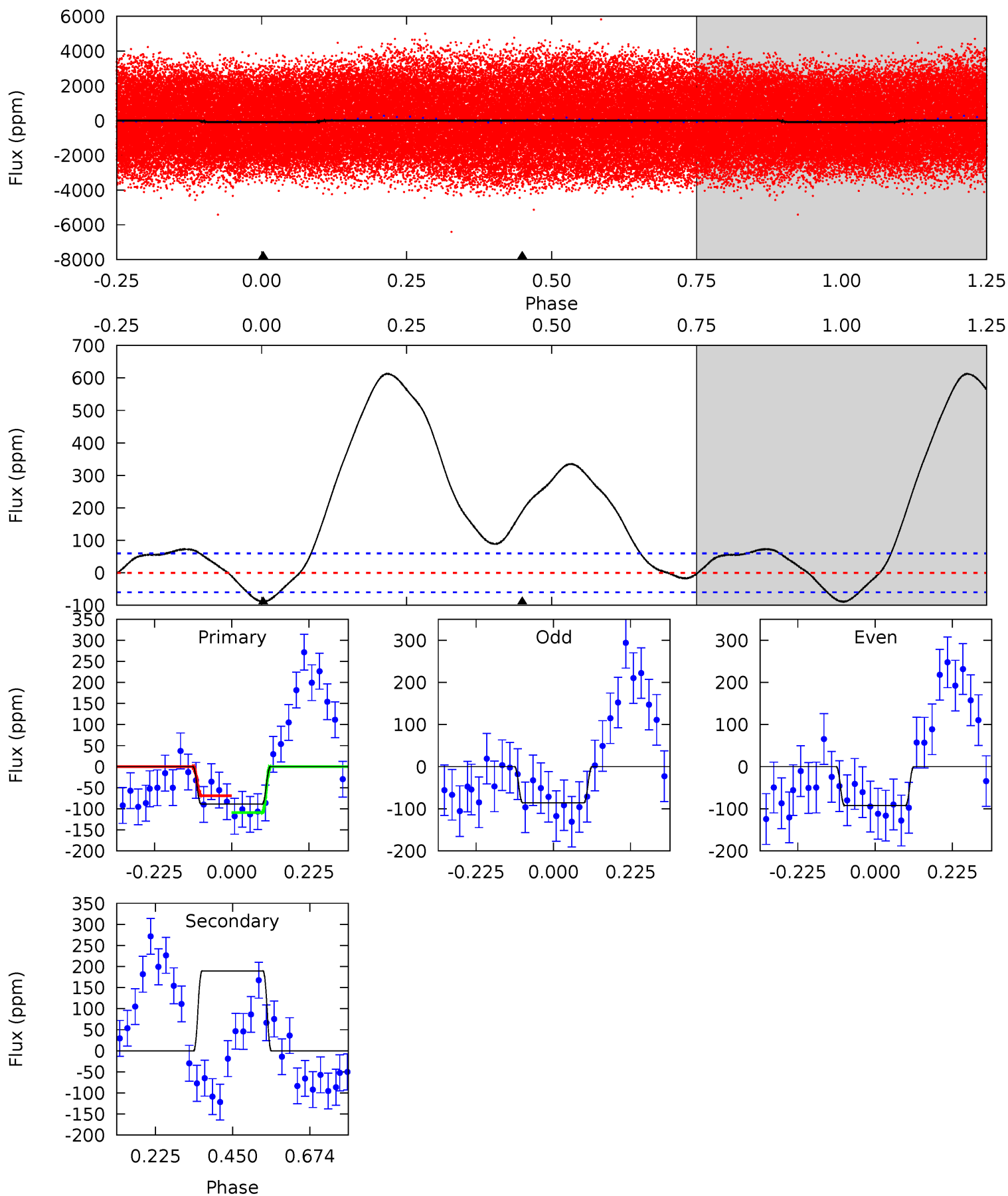
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.73	3.86	0	0	4.31	0.99	0.22	5.73	5.73	3.86	3.86	0.89	0.59	0.18	5.64



Alt Model-Shift Uniqueness Test

008109934-01, P = 1.549349 Days, E = 131.173324 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	-13.9	0	0	4.39	1.21	1.11	6.51	6.51	-13.9	-13.9	0.23	1.06	0.87	1.51



Stellar Parameters For KIC 008109934

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6489^{+181}_{-227}	$3.932^{+0.382}_{-0.153}$	$-0.140^{+0.250}_{-0.300}$	$2.098^{+0.570}_{-0.856}$	$1.374^{+0.193}_{-0.289}$	$0.210^{+0.594}_{-0.091}$
	+3%/-3%	+10%/-4%	+179%/-214%	+27%/-41%	+14%/-21%	+283%/-43%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008109934-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-6 ± 1	$0.86^{+0.59}_{-0.48}$	3342^{+281}_{-391}	4934^{+2530}_{-1004}	$3.460^{+15.404}_{-2.271}$
Alt.	189 ± 14	$2.02^{+0.69}_{-0.61}$	3316^{+276}_{-354}	-8110^{+1170}_{-1633}	$-21.656^{+9.553}_{-23.111}$

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

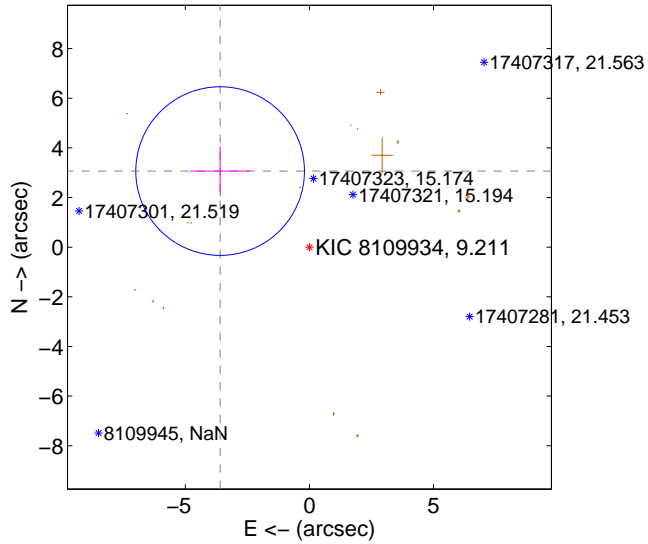
Supplemental centroid analysis for 008109934-01. **Kepler magnitude: 9.21.** Transit SNR 4.58

There are 0 quarters with good PRF difference image offsets

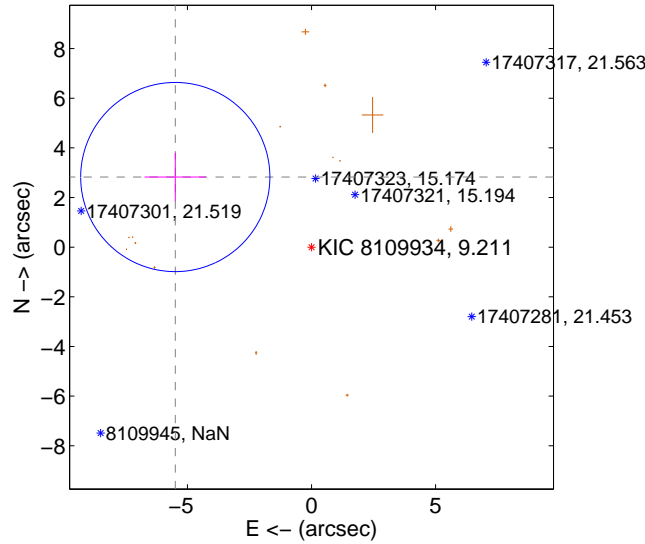
The OOT PRF centroid is offset from the target star catalog position by about 3.96 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.726 ± 1.132	4.17	3.597 ± 1.213	3.065 ± 1.002
PRF-fit source offset from KIC position	6.172 ± 1.270	4.86	5.488 ± 1.239	2.825 ± 0.975
photometric centroid source offset	0.69 ± 1.33	0.52	-0.68 ± 1.35	-0.13 ± 0.71

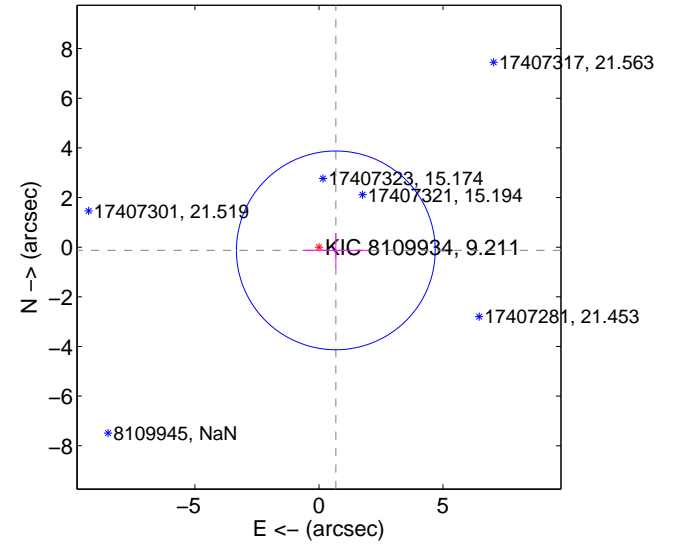
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

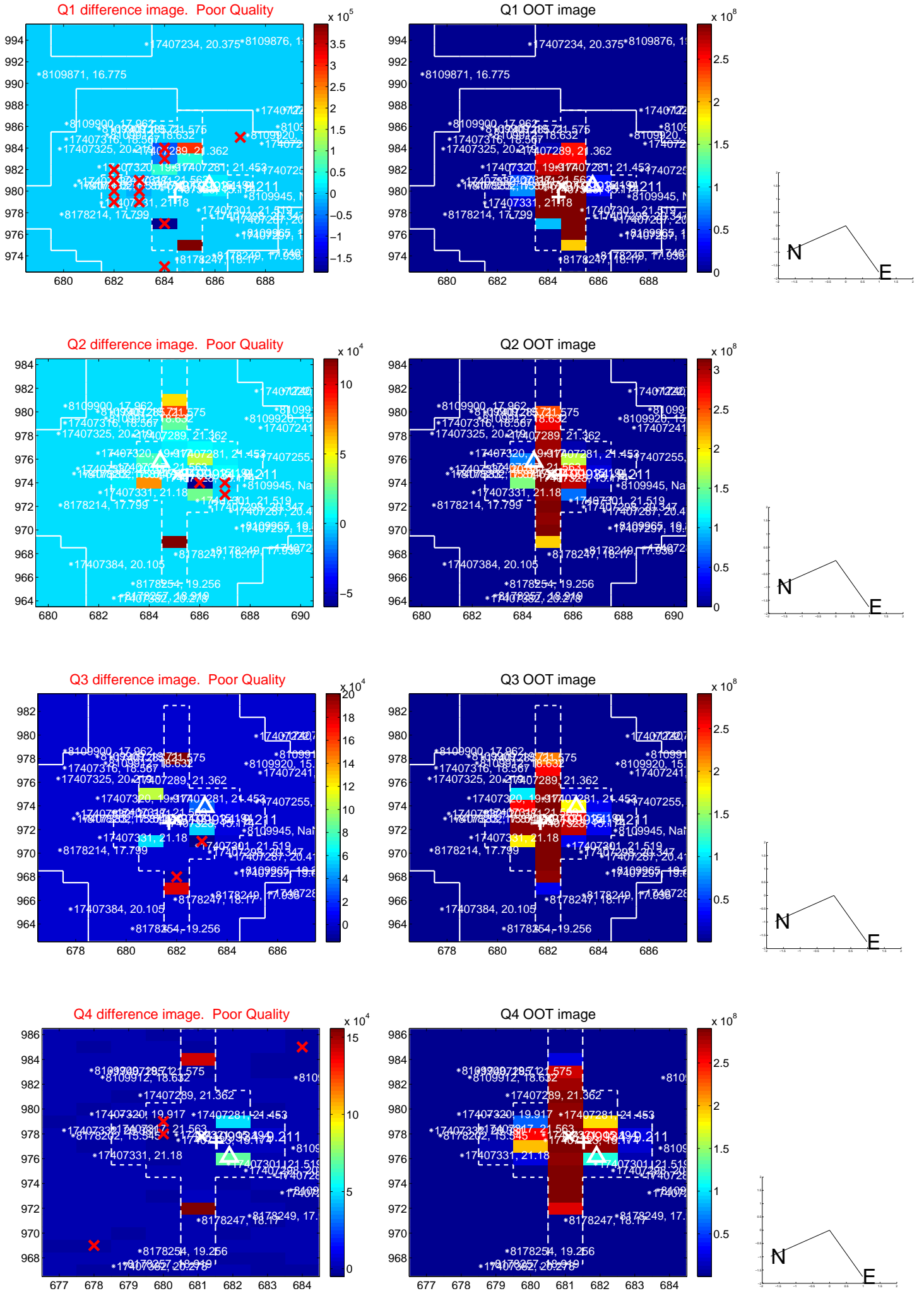


offset from photometric centroids

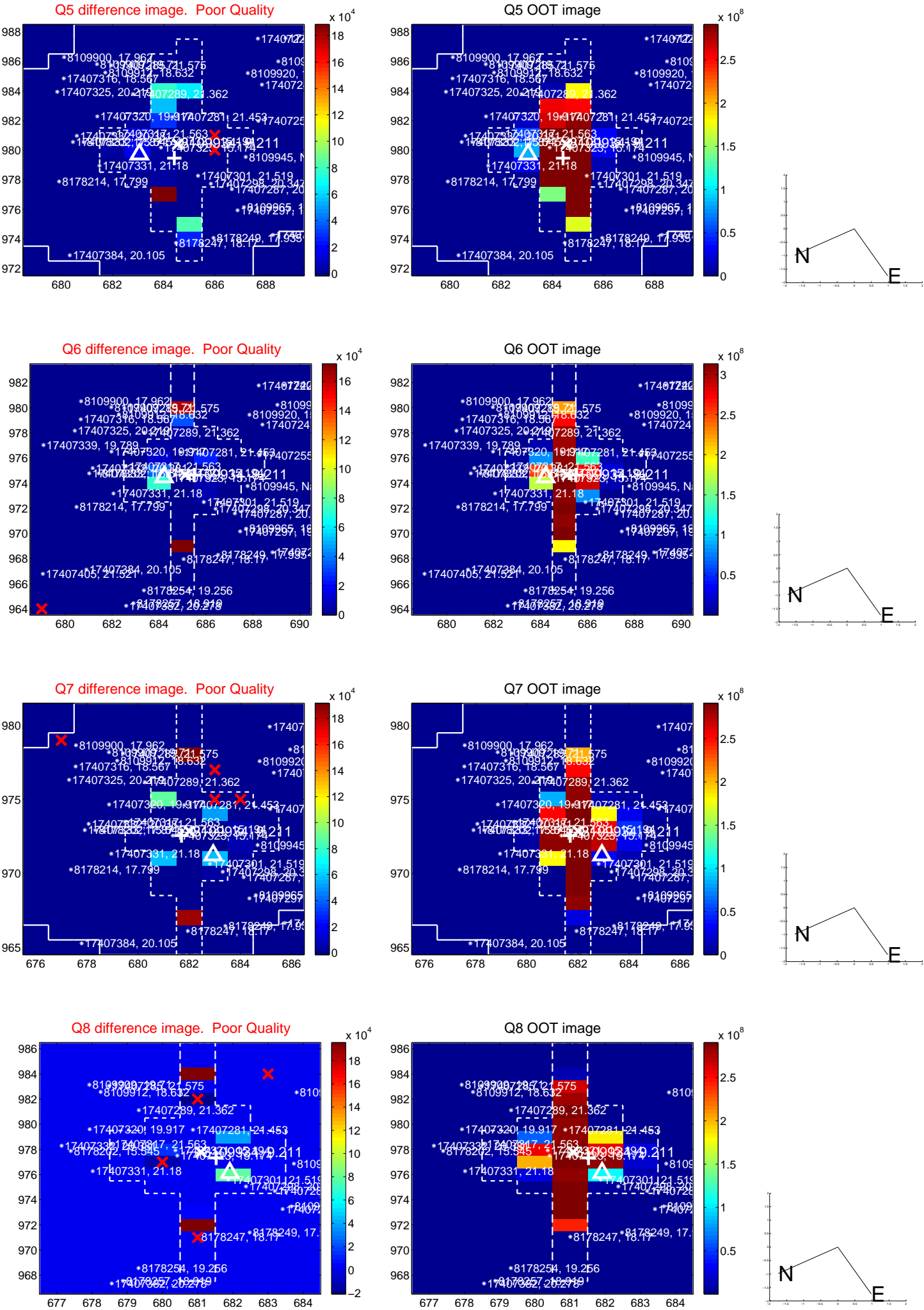


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

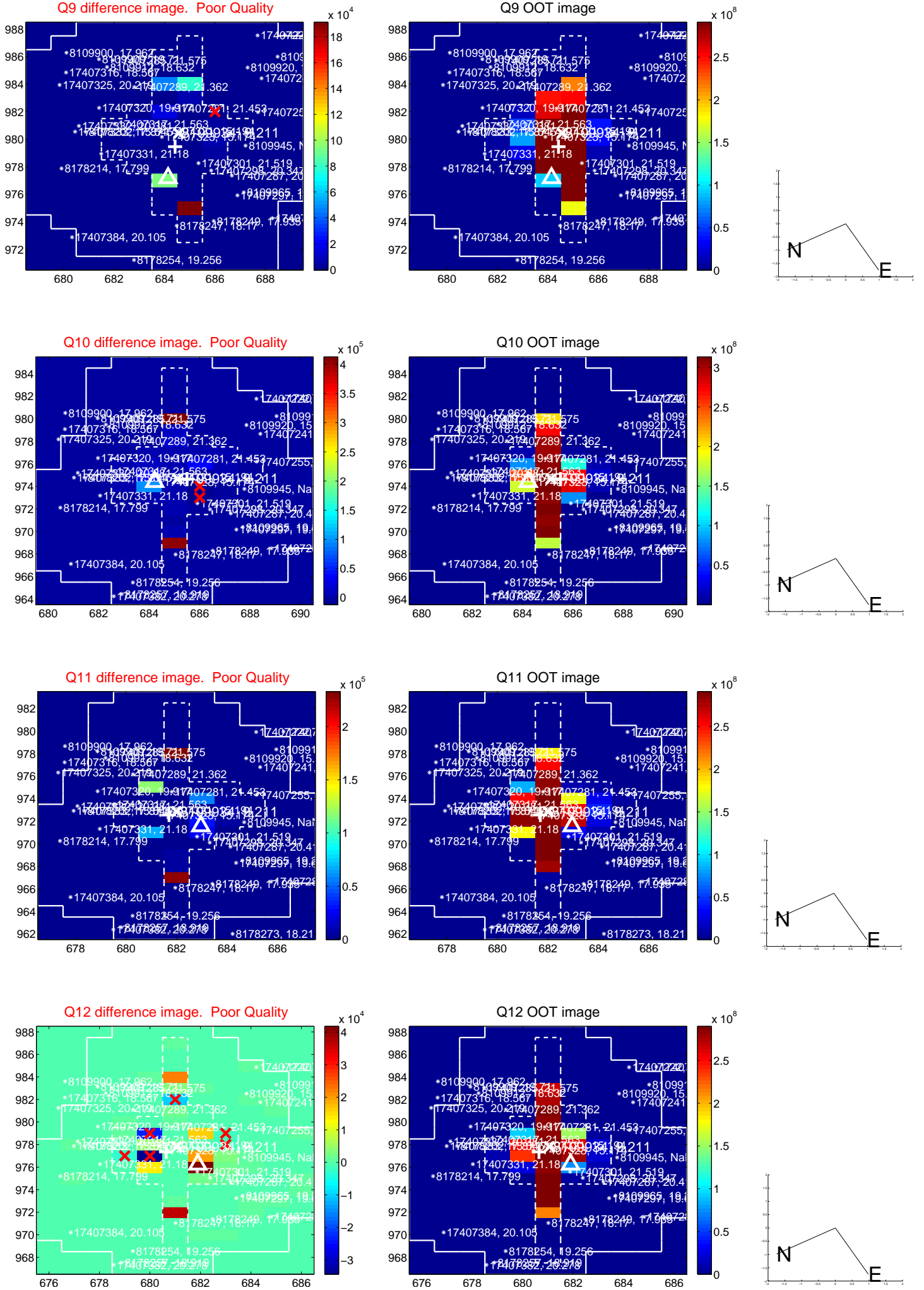
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



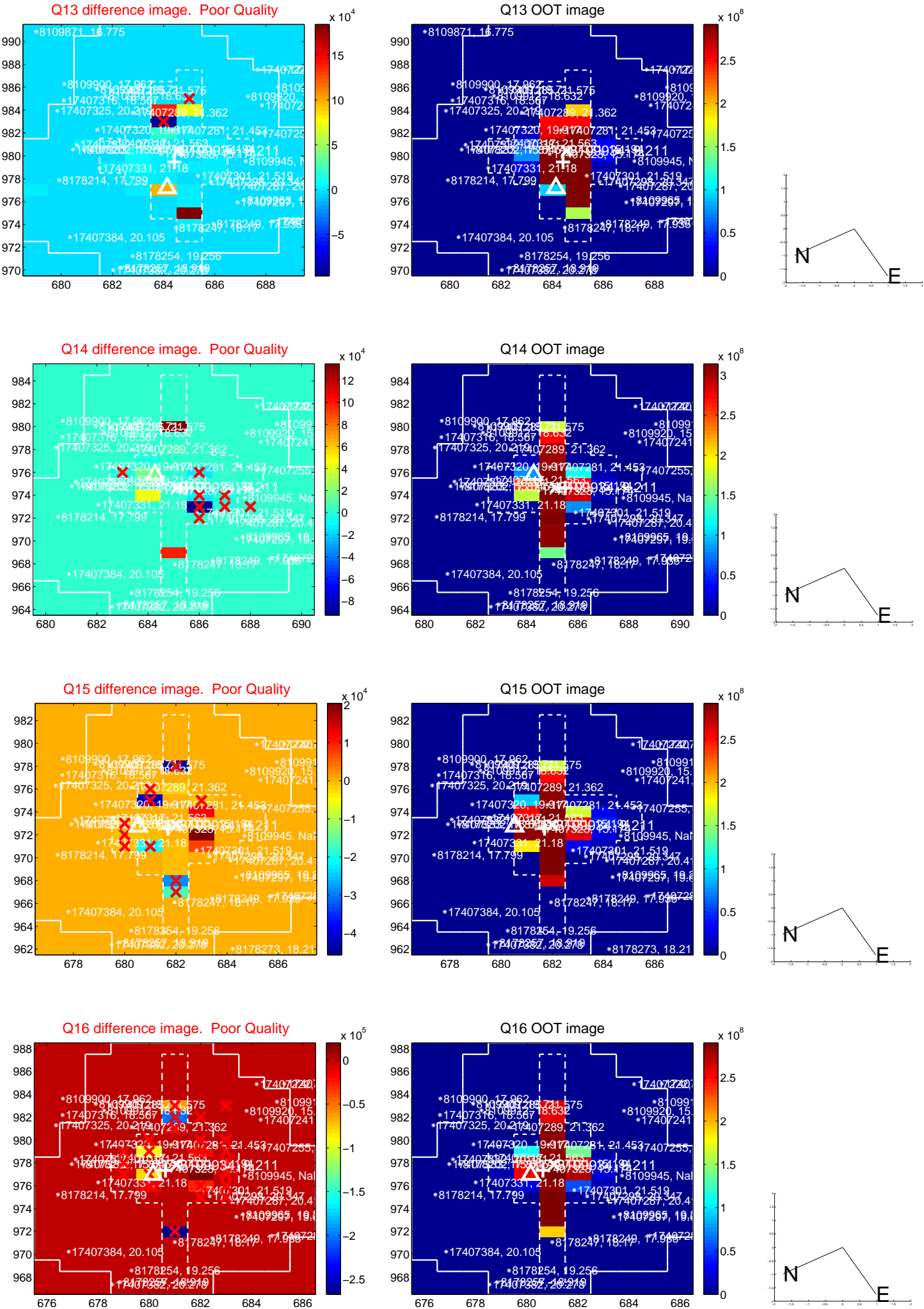
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



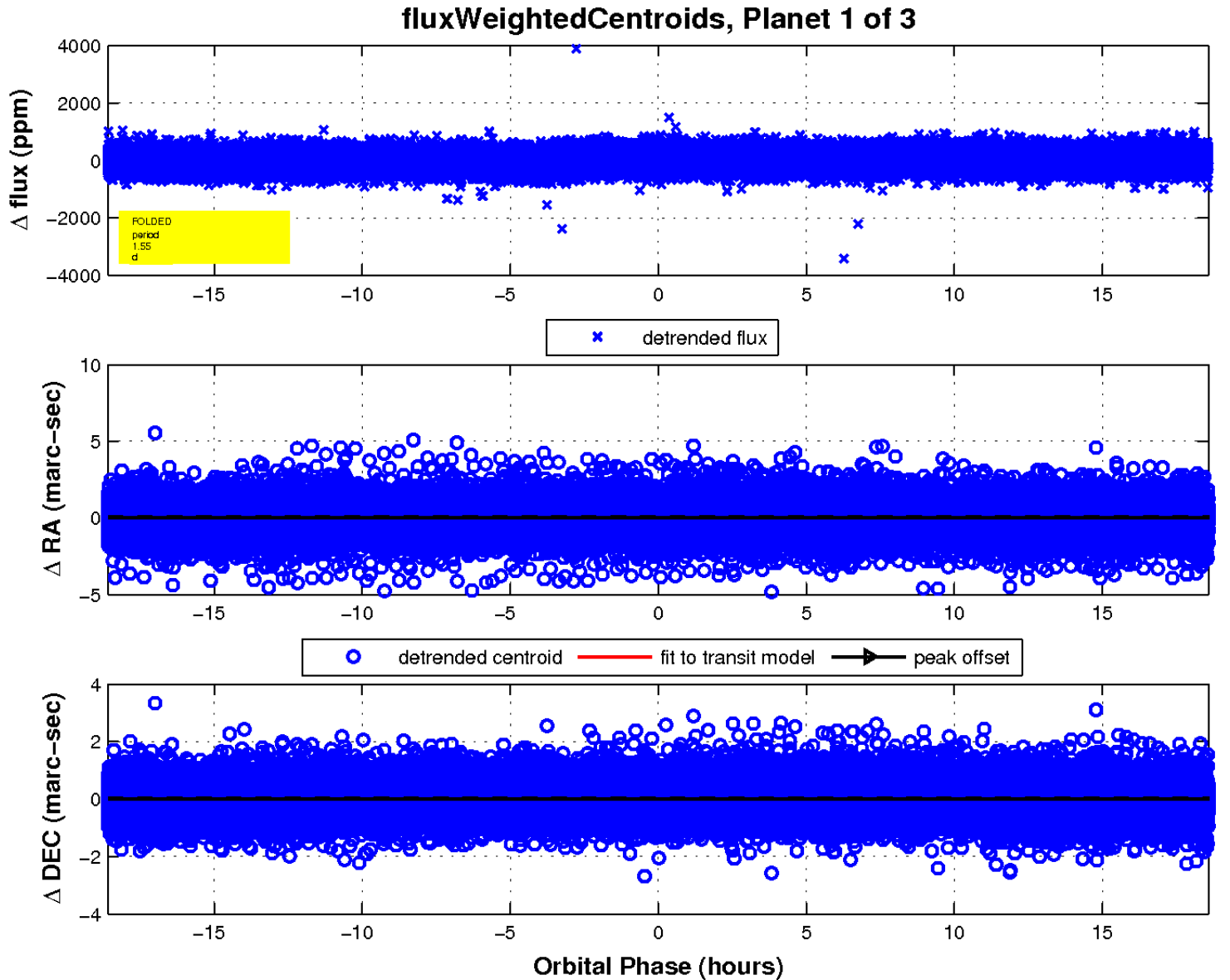
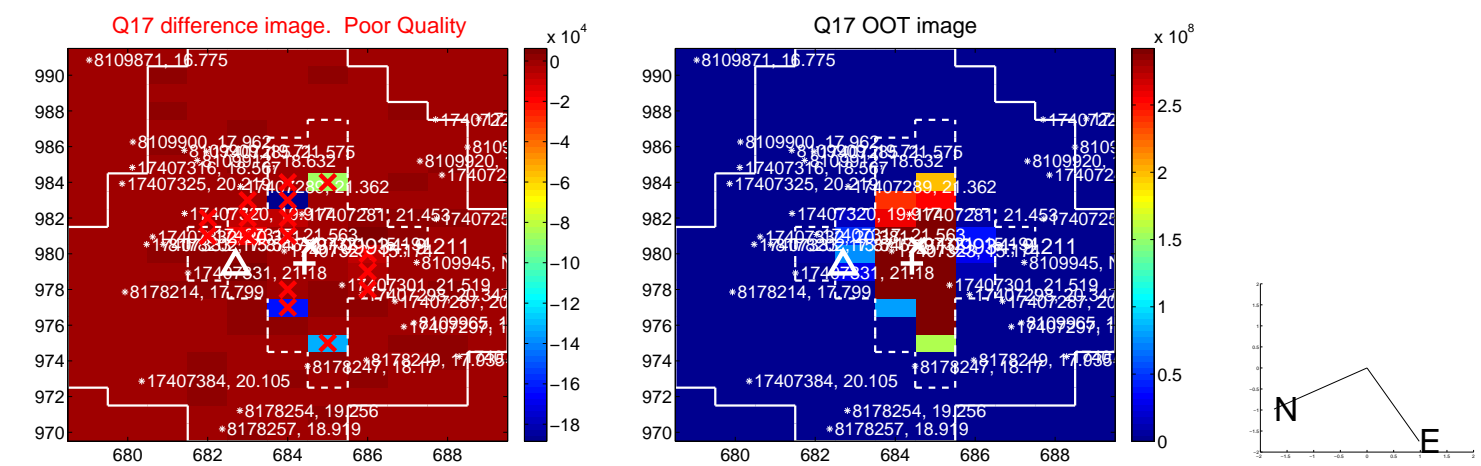
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

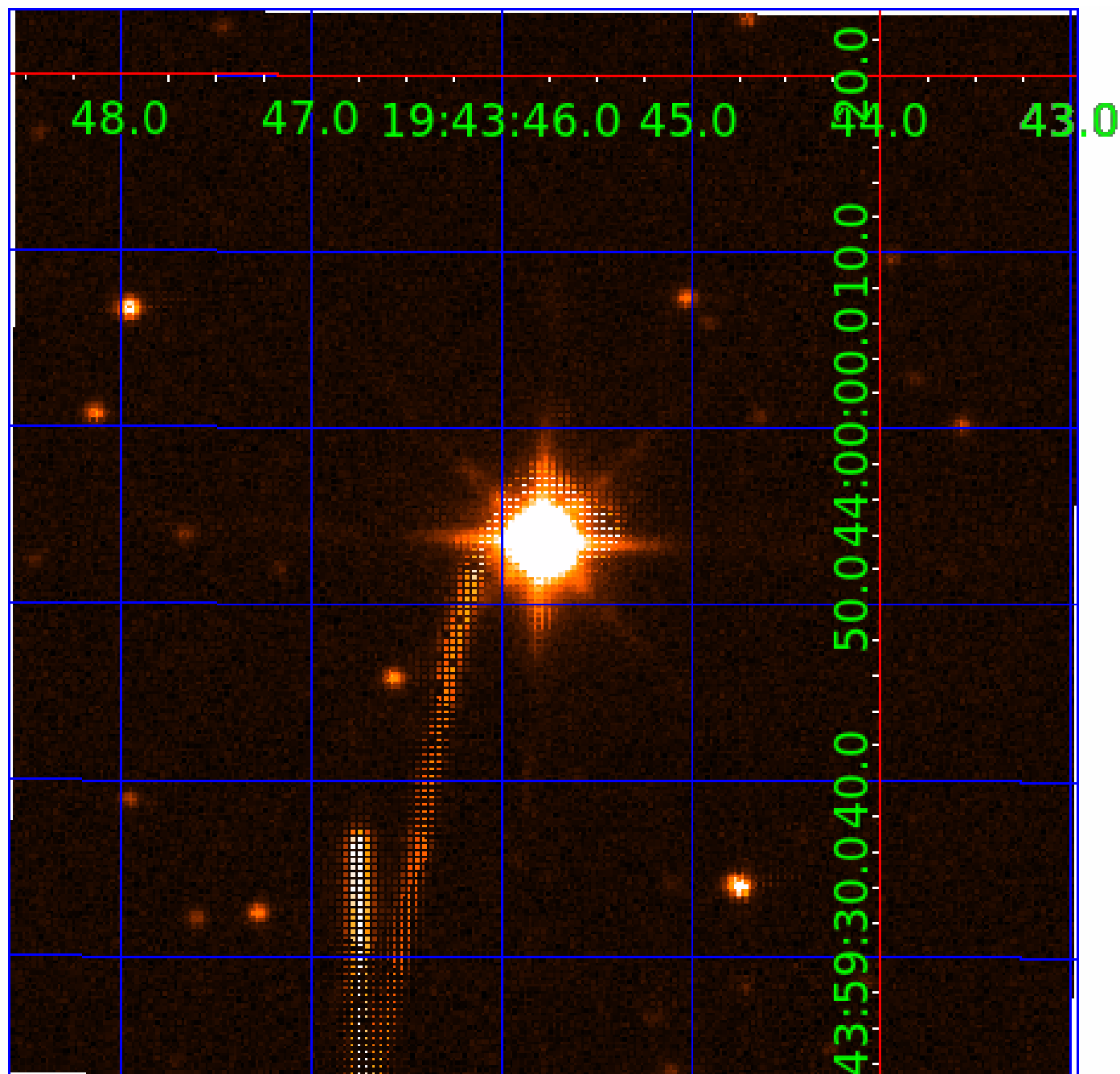


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008109934

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})
008109934-01	OBS	No	1.549338	132.753438	15.4	11.479	9.5	4.6	2.10	6489	0.88	8240.39
008109934-02	OBS	No	31.232576	145.914701	288.6	1.692	11.7	9.2	2.10	6489	4.02	150.20
008109934-03	OBS	No	38.664891	159.951492	296.3	5.362	10.3	11.0	2.10	6489	4.03	112.99

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008109934-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
008109934-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
008109934-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_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.

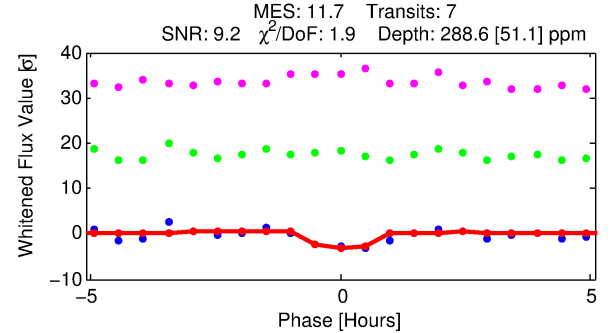
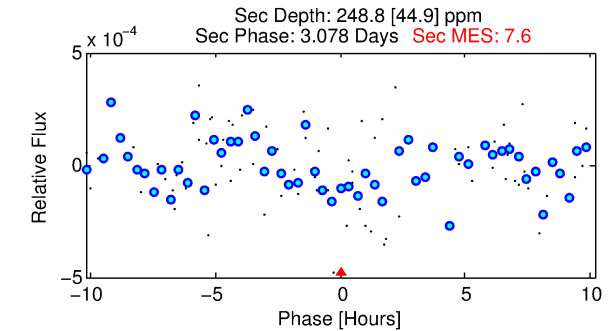
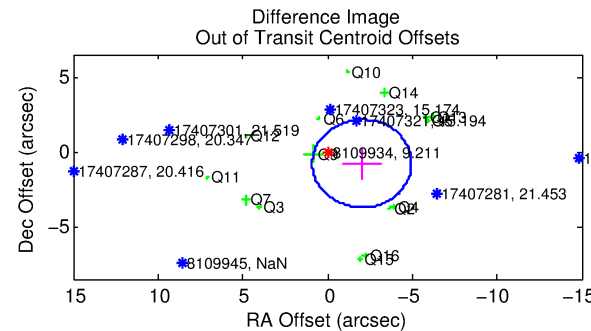
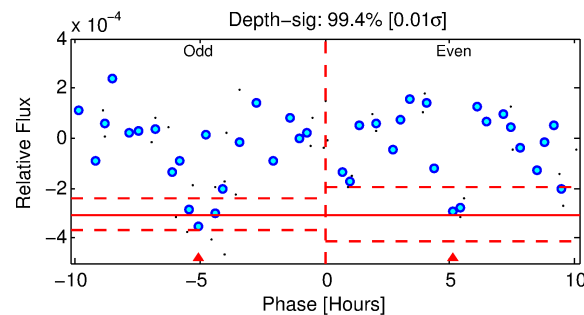
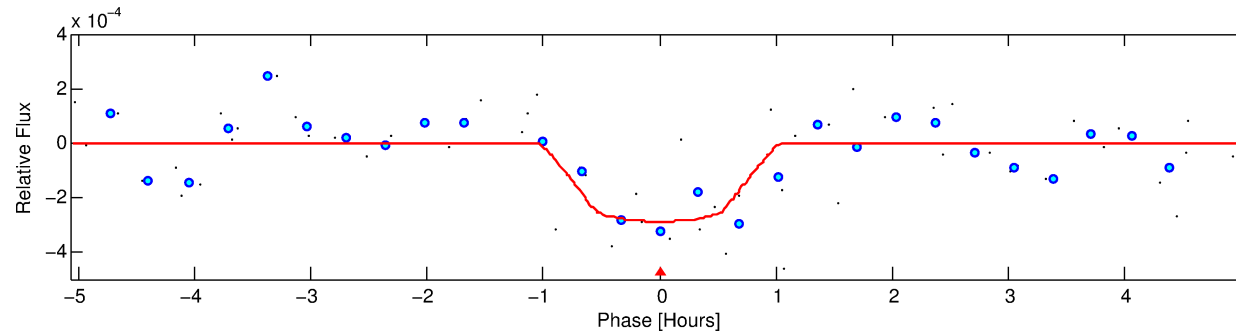
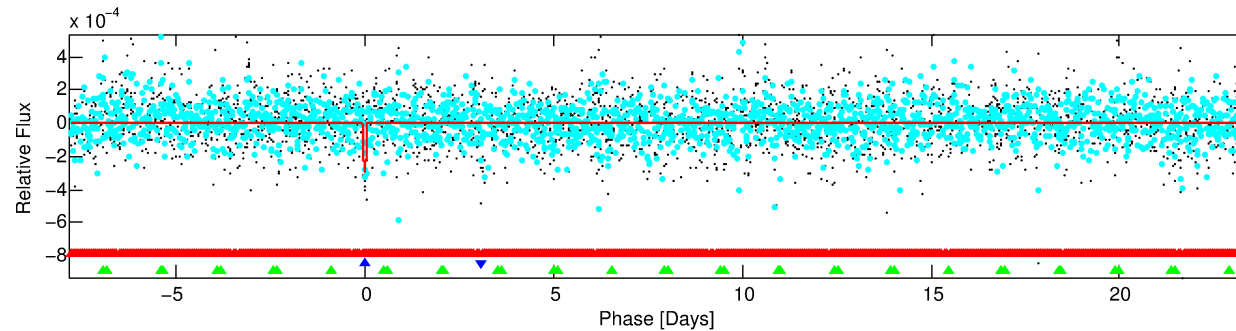
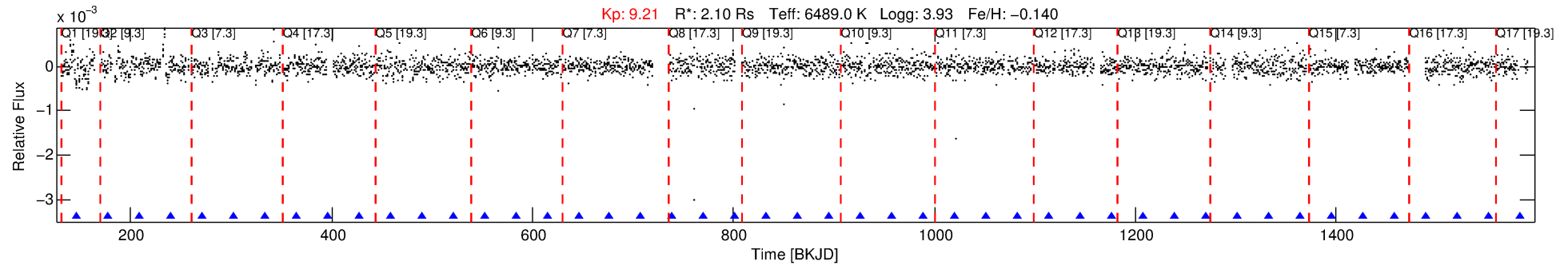
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008109934-02

No Significant Match Found

DV One-Page Summary

KIC: 8109934 Candidate: 2 of 3 Period: 31.233 d



DV Fit Results:

Period = 31.23258 [0.00026] d
Epoch = 145.9147 [0.0073] BKJD
Rp/R* = 0.0176 [0.0137]
a/R* = 81.02 [350.56]
a/R* = 0.84 [1.53]
Seff = 150.20 [99.34]
Teq = 893 [148] K
Rp = 4.02 [3.53] Re
a = 0.2158 [0.0863] AU
Ag = 394.52 [668.43] [0.59 σ]
Teffp = 6151 [2418] K [2.17 σ]

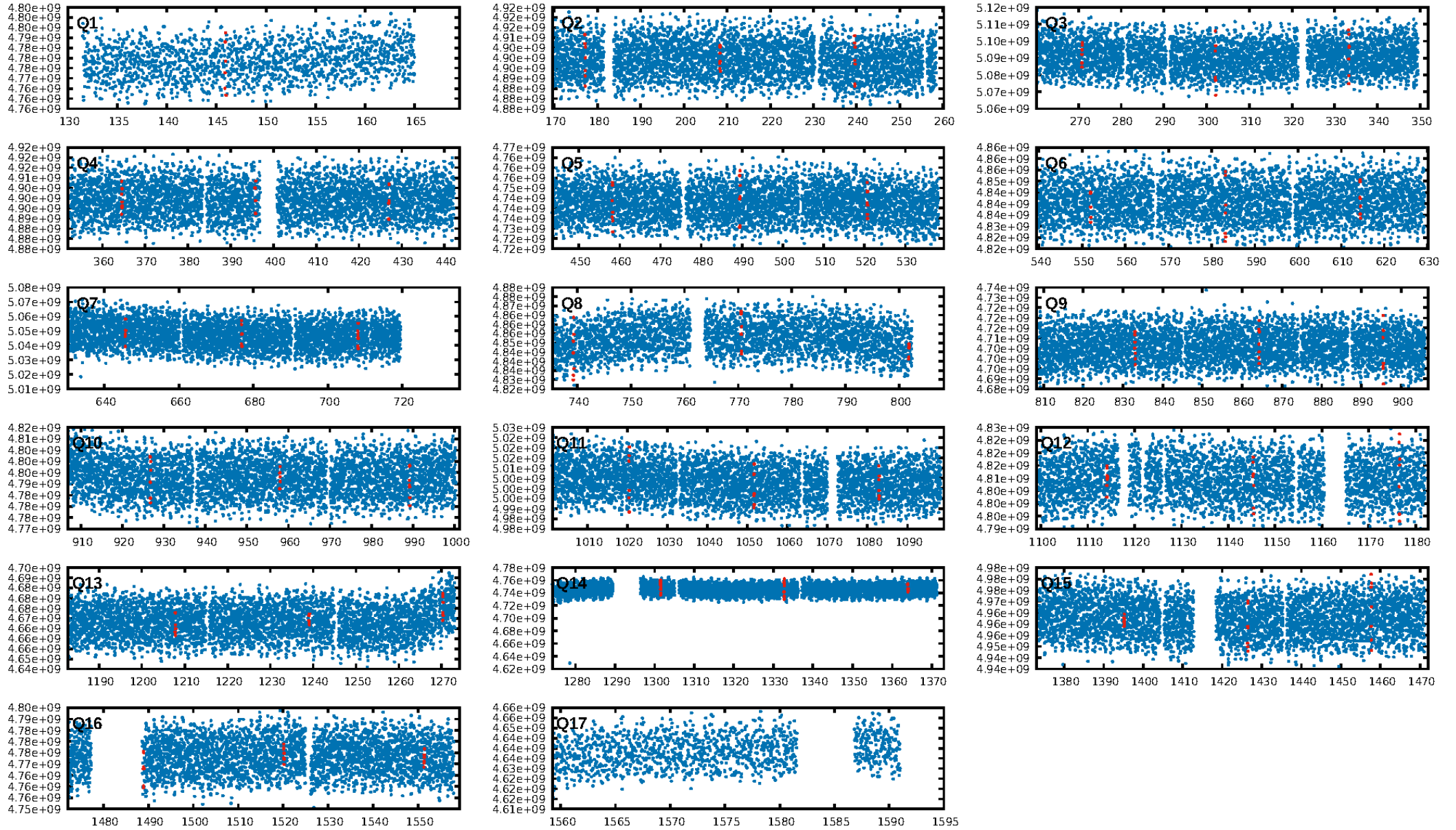
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [61.40 σ]
LongPeriod-sig: 100.0% [31.73 σ]
ModelChiSquare2-sig: 5.6%
ModelChiSquareGof-sig: 97.3%
Bootstrap-pfa: 2.69e-09
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: N/A
Centroid-sig: 36.1%
Centroid-so: 1.311 arcsec [3.71 σ]
OotOffset-rm: 2.173 arcsec [2.23 σ]
KicOffset-rm: 1.291 arcsec [1.27 σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-st: 4/4/3/4 [15]
DiffImageQuality-fgm: 0.00 [0/15]
DiffImageOverlap-fno: 0.75 [12/16]

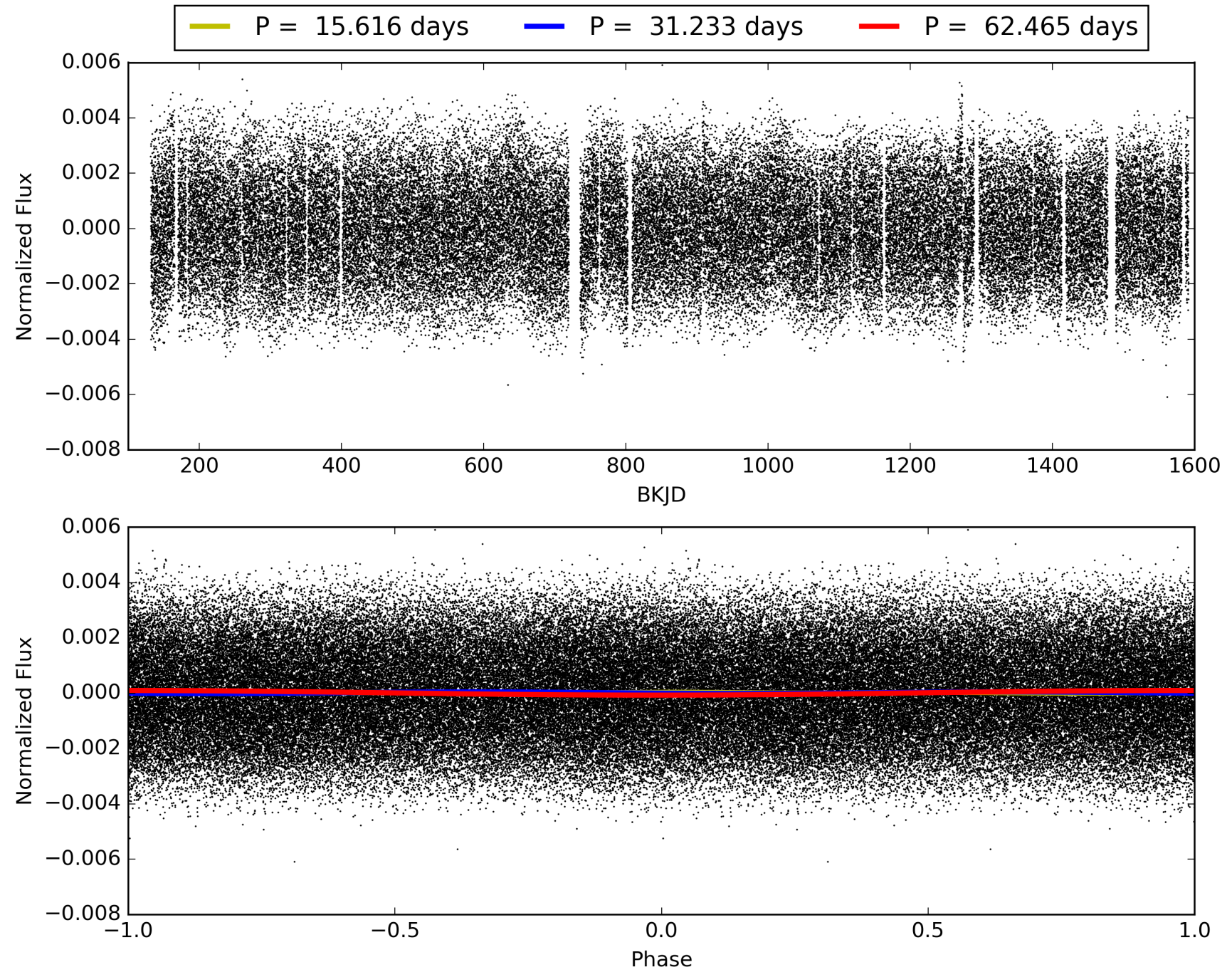
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:19:56 Z

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

TCE 008109934-02, PDC Light Curves

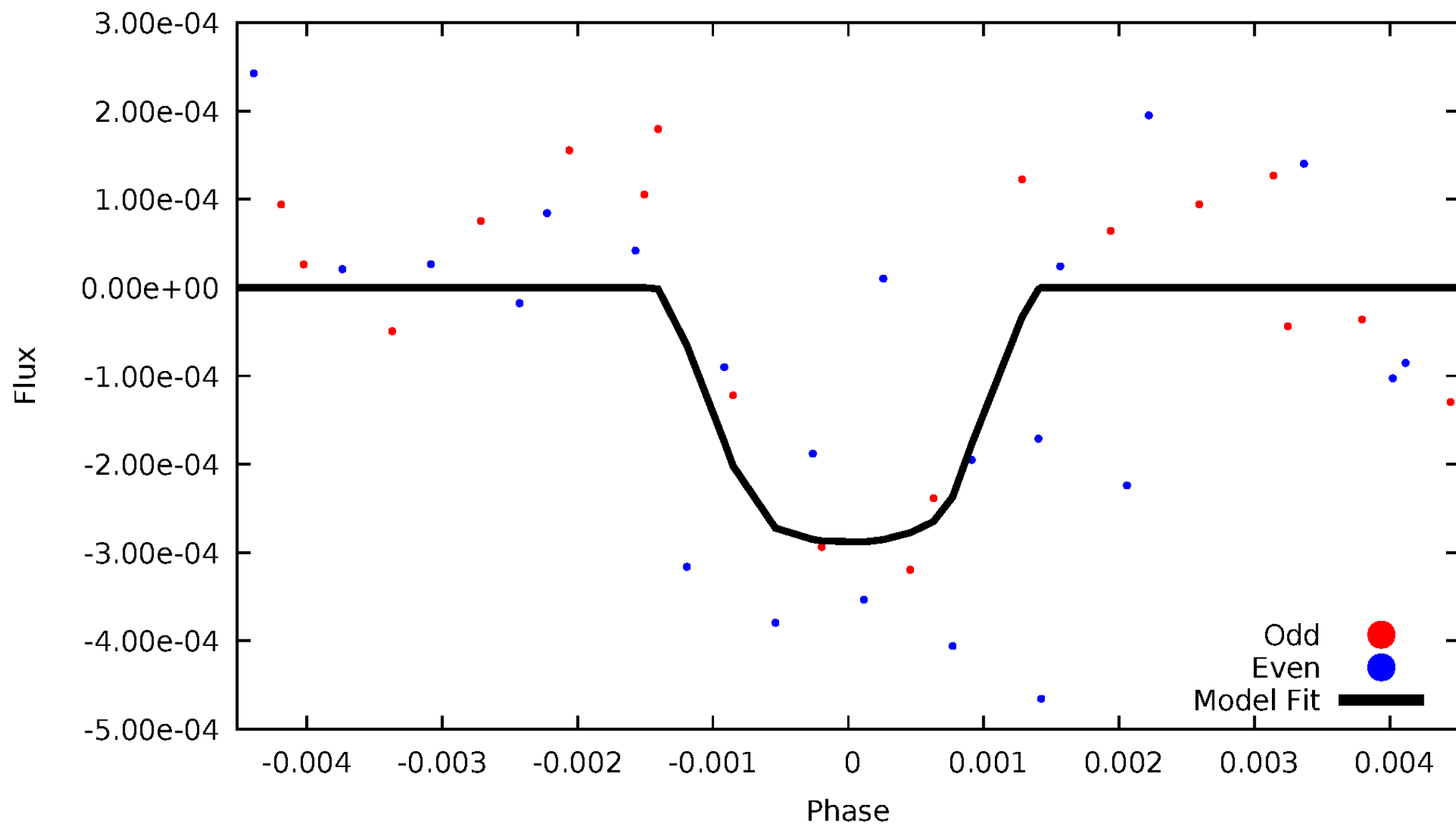


TCE 008109934-02



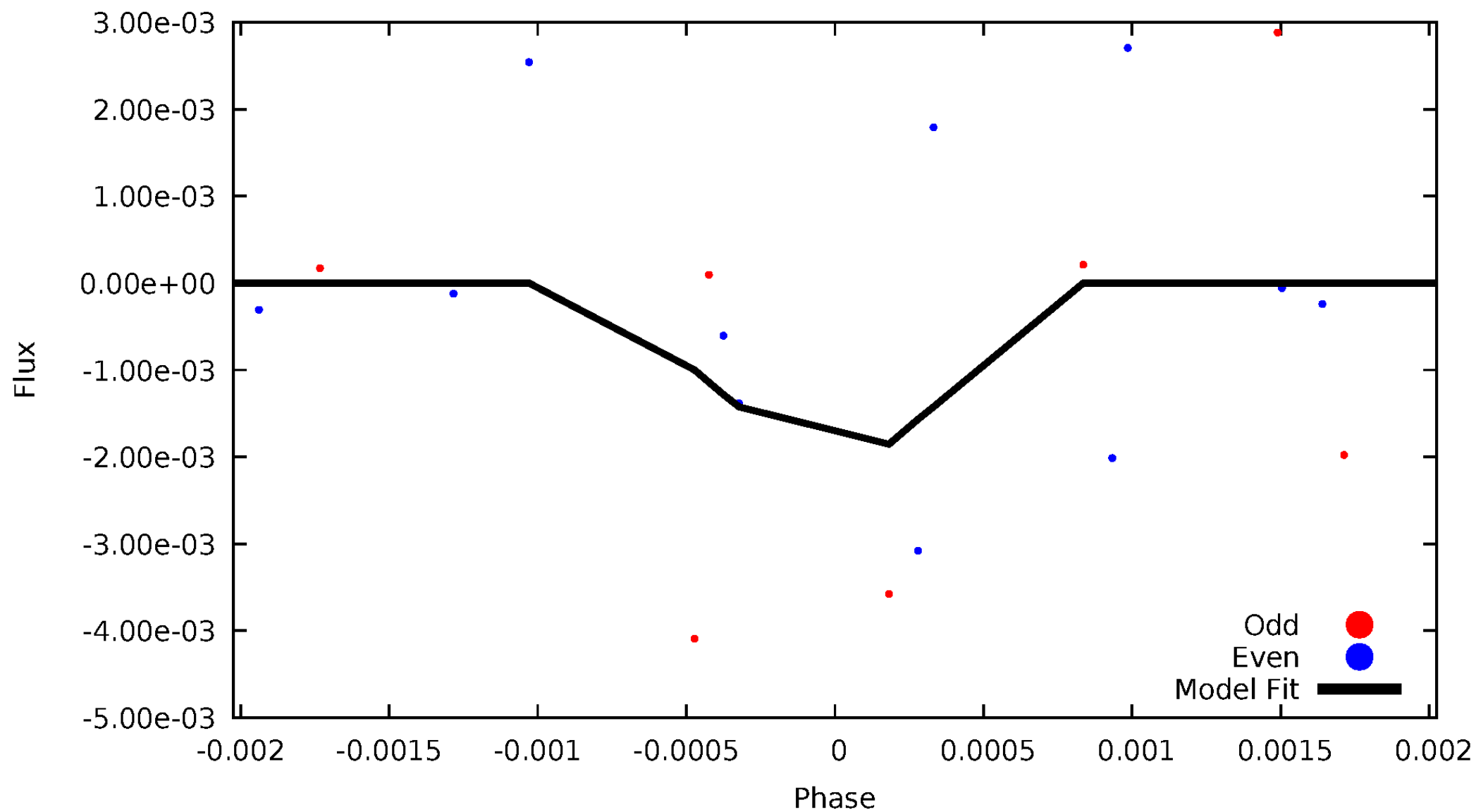
DV Odd/Even

TCE 008109934-02



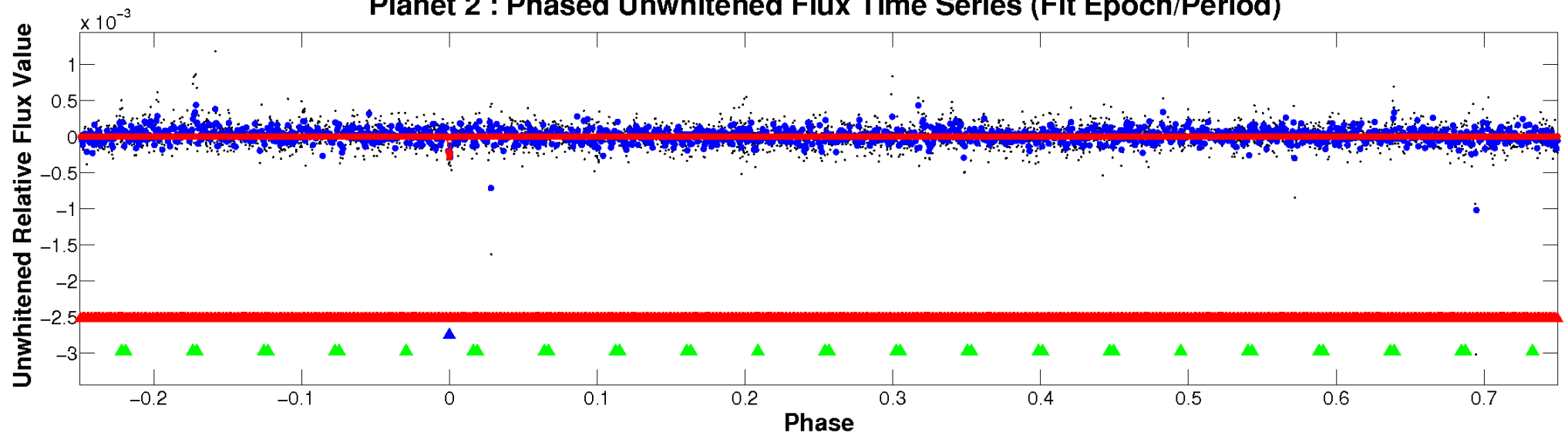
ALT Odd/Even

TCE 008109934-02

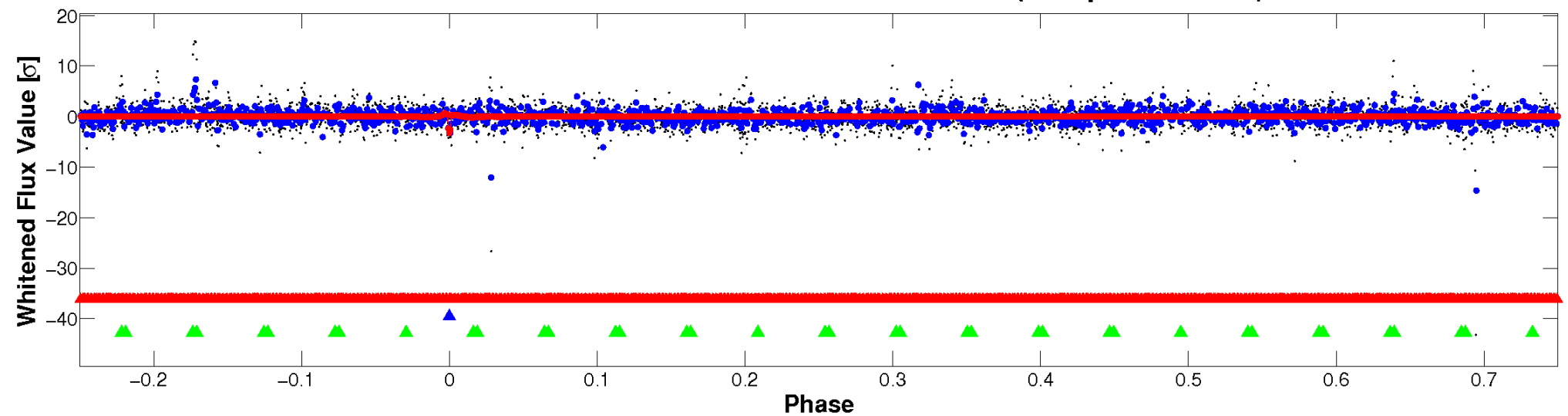


Non-Whitened Vs. Whitened Light Curve

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

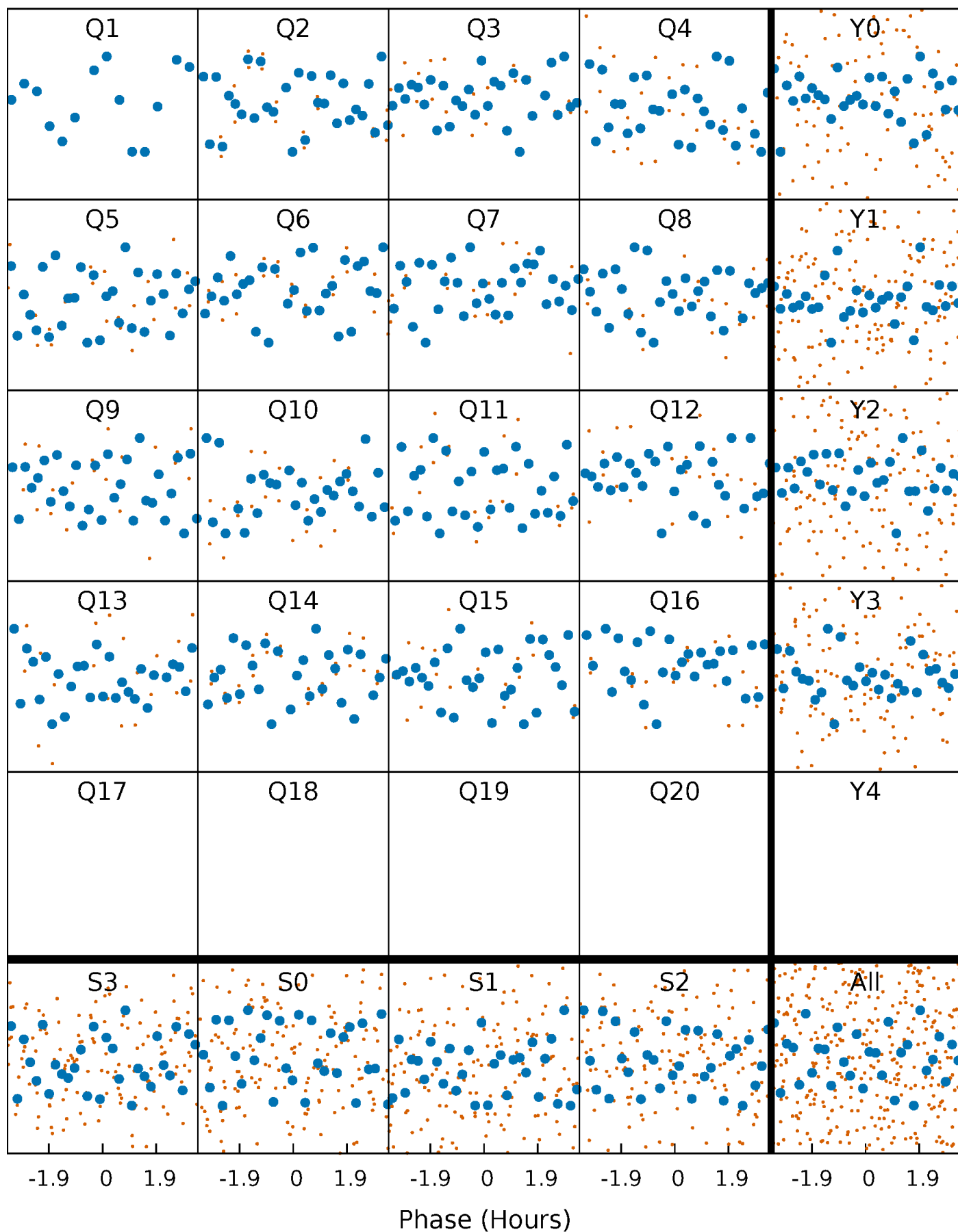


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



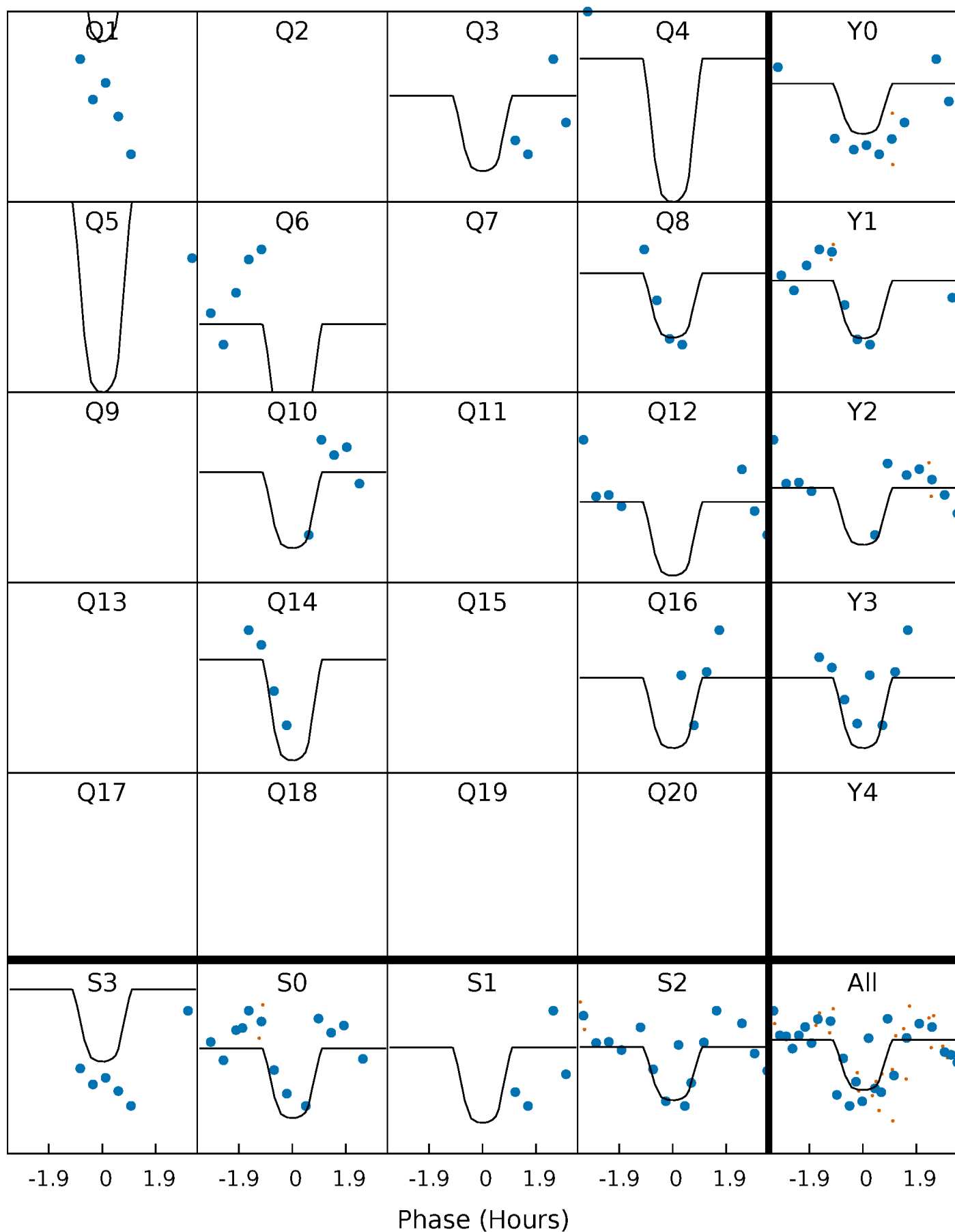
PDC Quarter-Phased Transit Curves

TCE 008109934-02 P= 31.232576 Days $T_0=145.914701$ (BKJD)



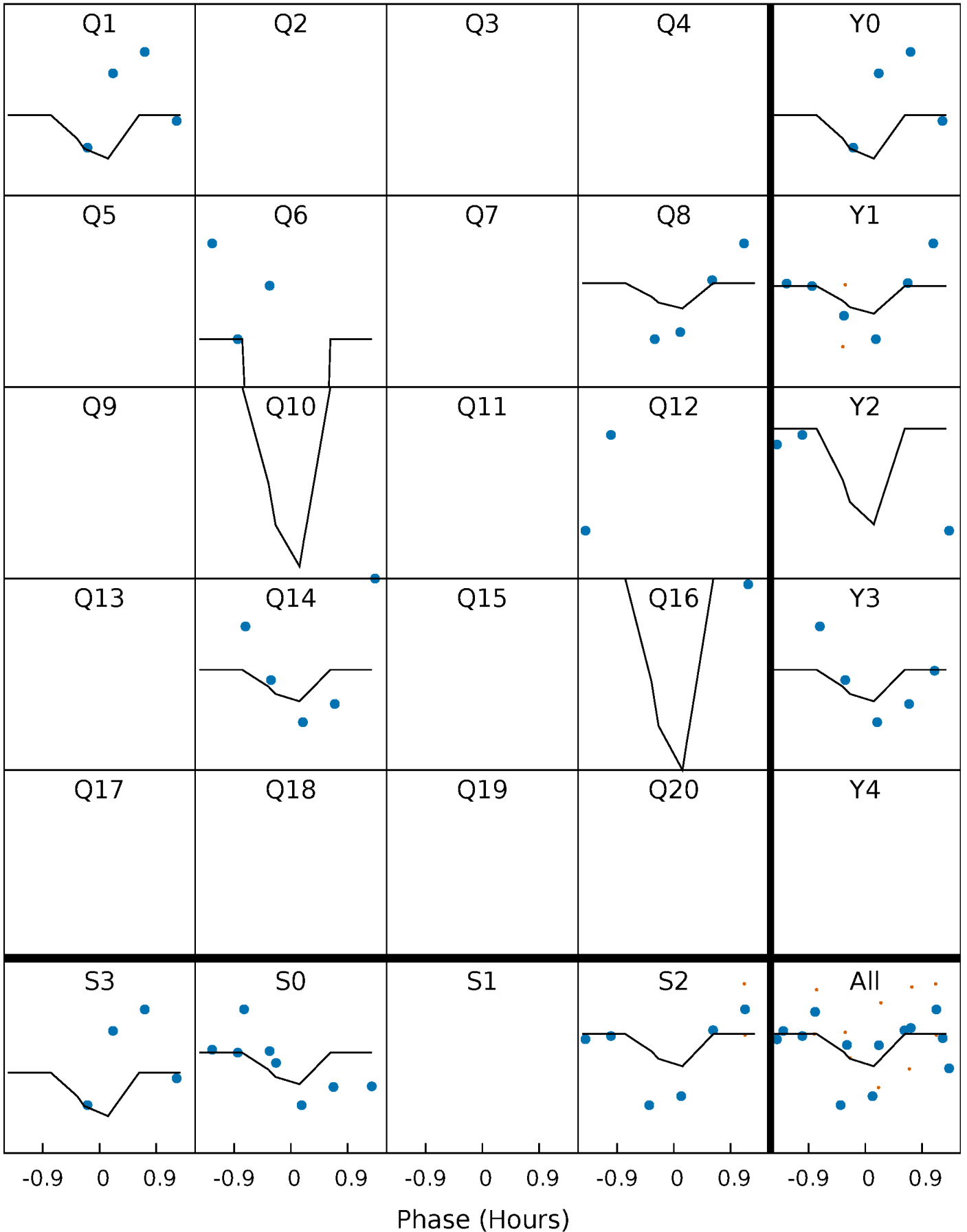
DV Quarter-Phased Transit Curves

TCE 008109934-02 P= 31.232576 Days $T_0=145.914701$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

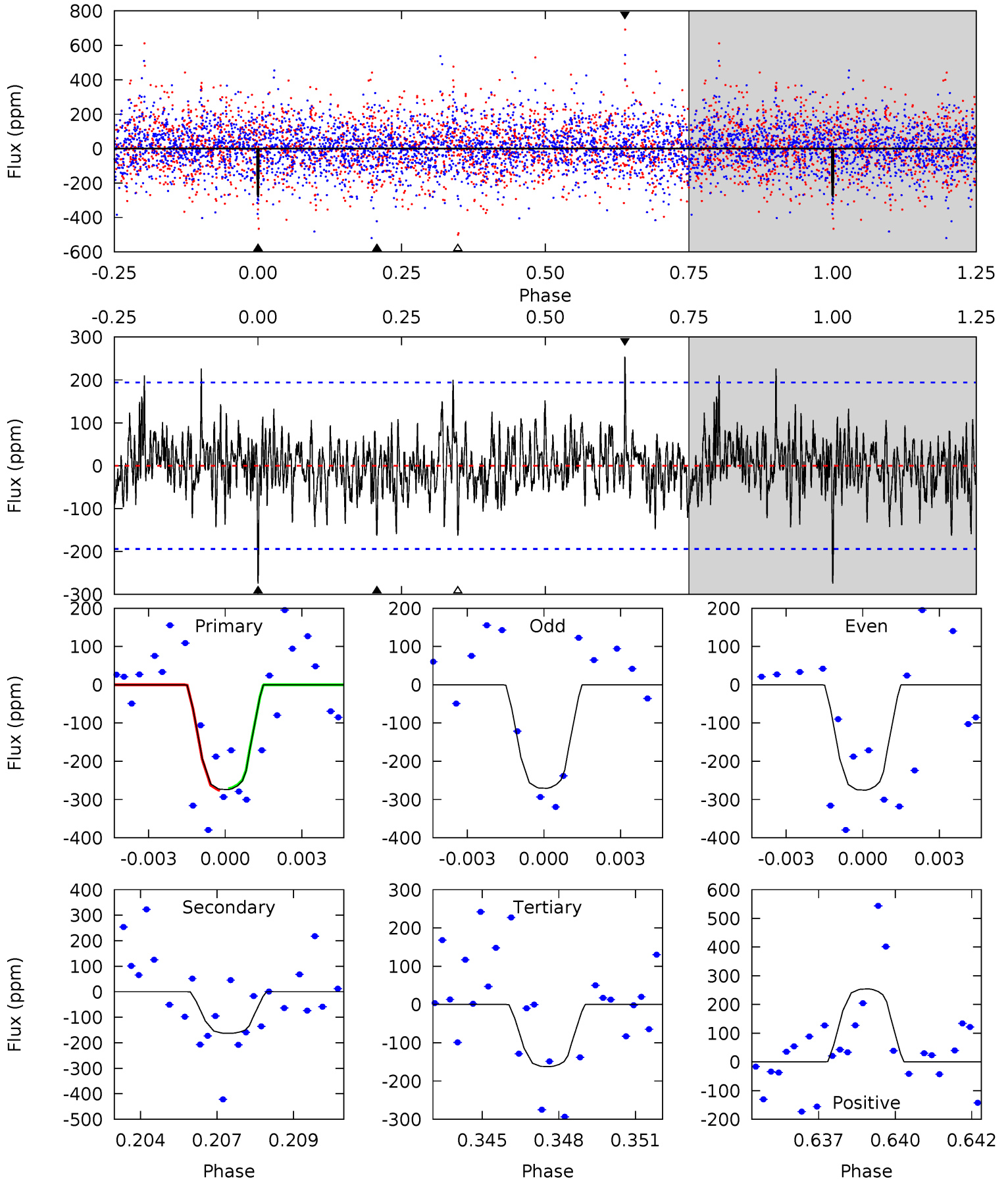
TCE 008109934-02 P= 31.232308 Days $T_0=145.887515$ (BKJD)



DV Model-Shift Uniqueness Test

008109934-02, $P = 31.232576$ Days, $E = 114.682125$ Days

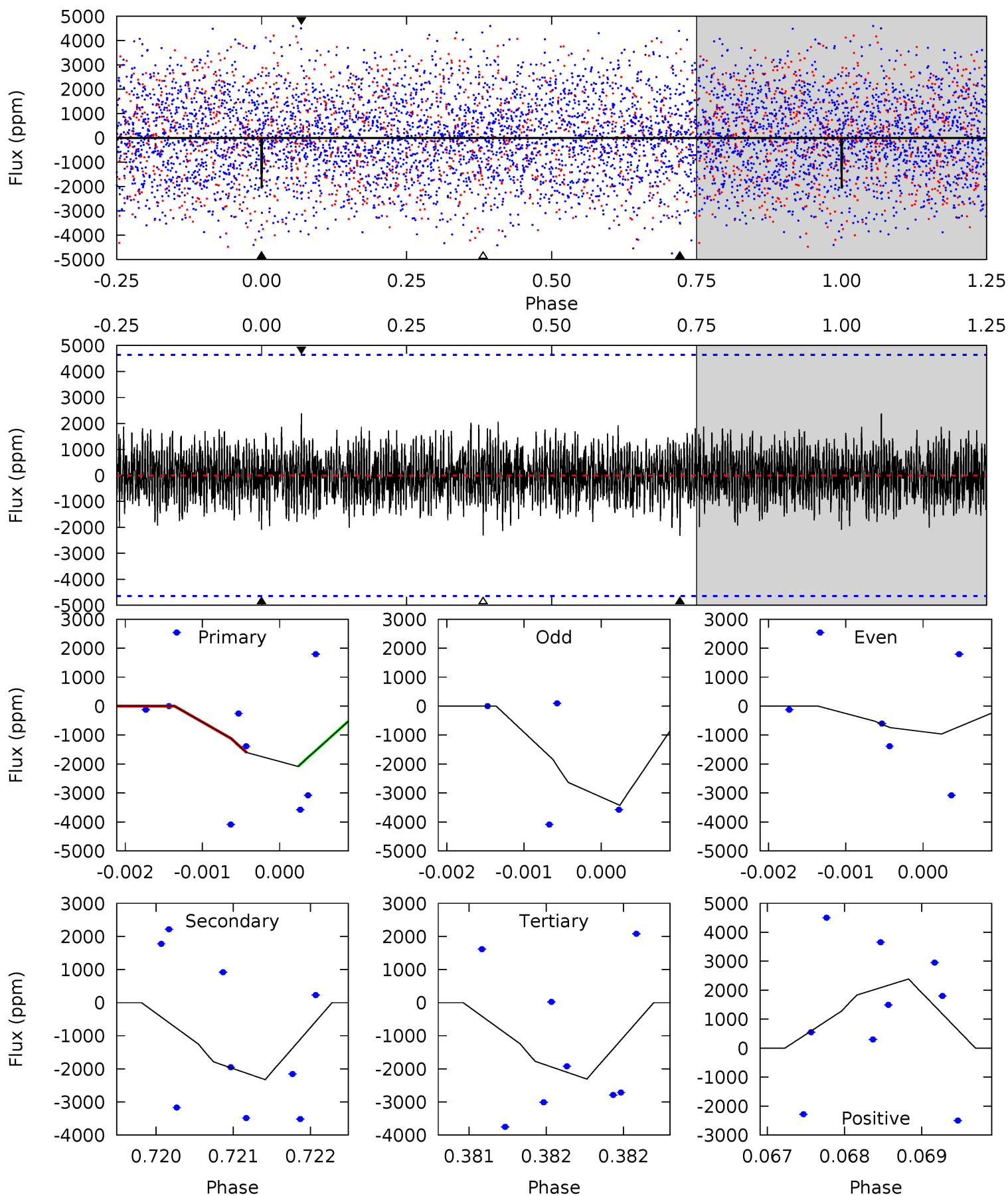
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.44	4.42	4.40	6.90	5.26	2.99	1.47	3.03	0.54	0.02	-2.48	0.06	1.01	0.48	0.06



Alt Model-Shift Uniqueness Test

008109934-02, P = 31.232308 Days, E = 114.655207 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.47	2.76	2.74	2.83	5.50	3.37	0.89	-0.27	-0.36	0.02	-0.07	1.27	0.89	0.51	0.28



Stellar Parameters For KIC 008109934

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6489^{+181}_{-227}	$3.932^{+0.382}_{-0.153}$	$-0.140^{+0.250}_{-0.300}$	$2.098^{+0.570}_{-0.856}$	$1.374^{+0.193}_{-0.289}$	$0.210^{+0.594}_{-0.091}$
	+3%/-3%	+10%/-4%	+179%/-214%	+27%/-41%	+14%/-21%	+283%/-43%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008109934-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-163 ± 37	$3.89^{+3.30}_{-2.33}$	1231^{+94}_{-144}	5368^{+3607}_{-1138}	258^{+1544}_{-185}
Alt.	-2326 ± 844	$9.76^{+3.97}_{-3.20}$	1219^{+111}_{-129}	6601^{+1550}_{-1060}	597^{+803}_{-337}

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 $A_{\text{obs}} \gg 1.0$

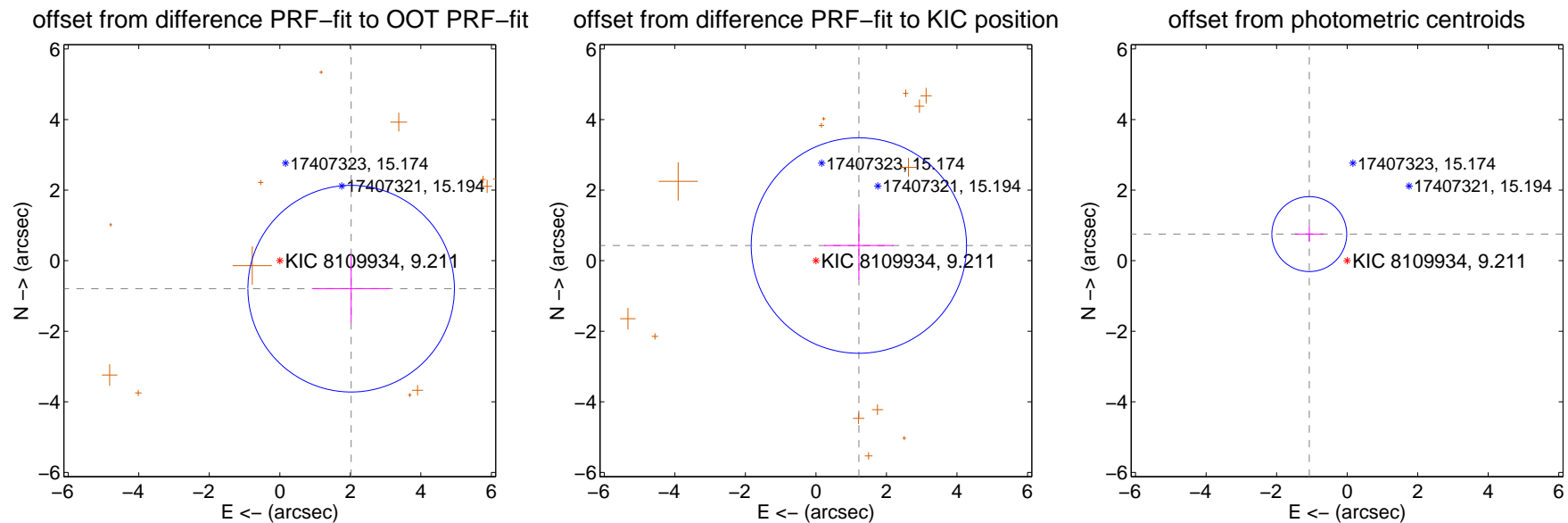
DV Centroid Data

Supplemental centroid analysis for 008109934-02. **Kepler magnitude: 9.21.** Transit SNR 9.24

There are 0 quarters with good PRF difference image offsets

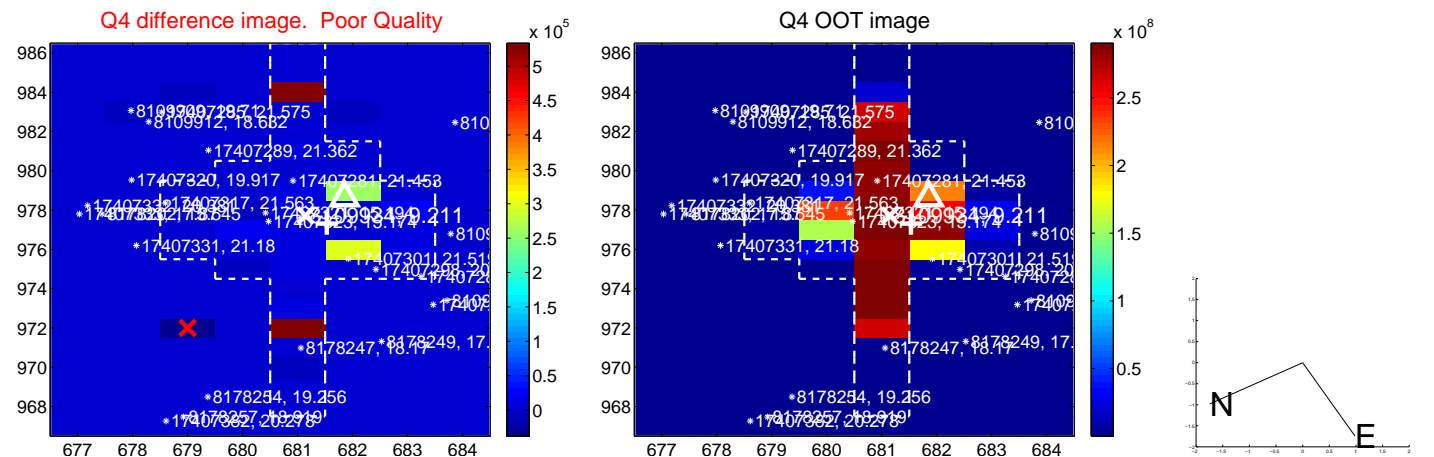
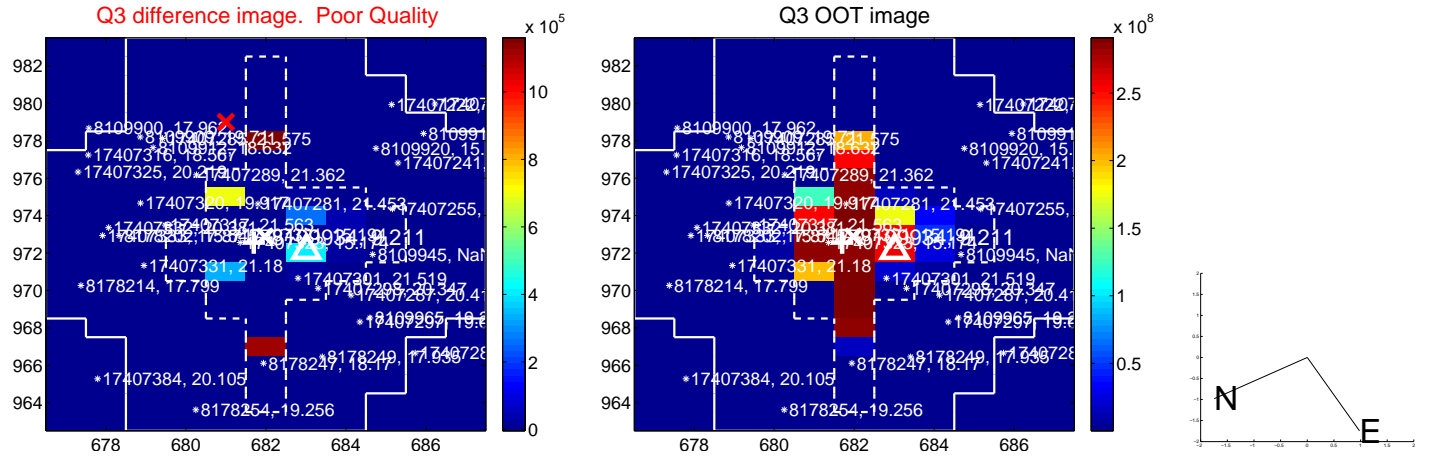
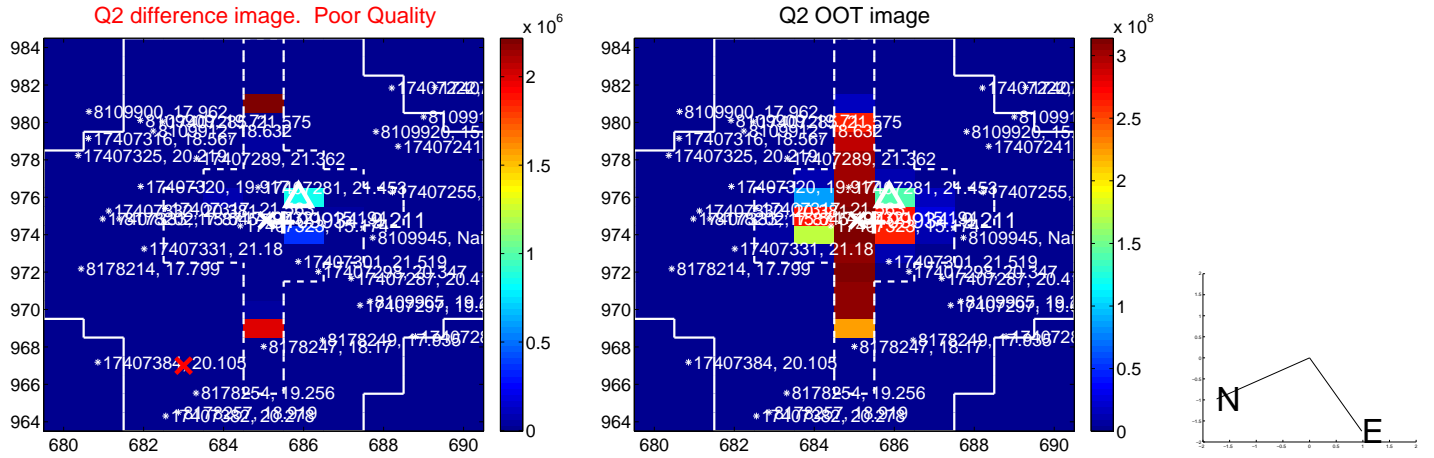
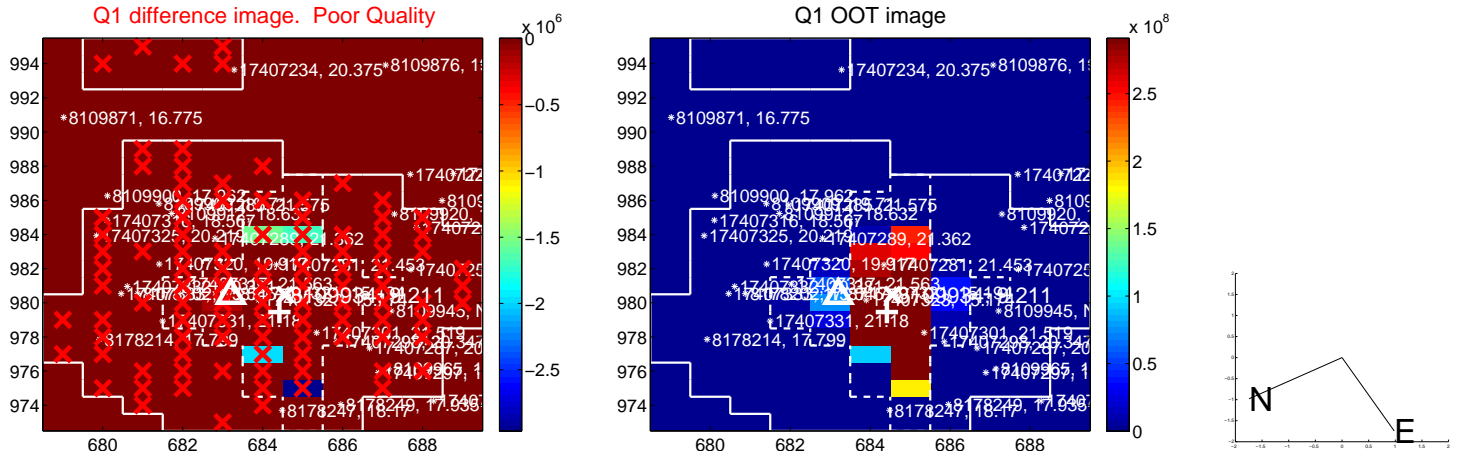
The OOT PRF centroid is offset from the target star catalog position by about 2.69 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.173 ± 0.976	2.23	-2.023 ± 1.088	-0.793 ± 0.959
PRF-fit source offset from KIC position	1.291 ± 1.017	1.27	-1.217 ± 0.978	0.429 ± 0.955
photometric centroid source offset	1.31 ± 0.35	3.71	1.07 ± 0.40	0.75 ± 0.22

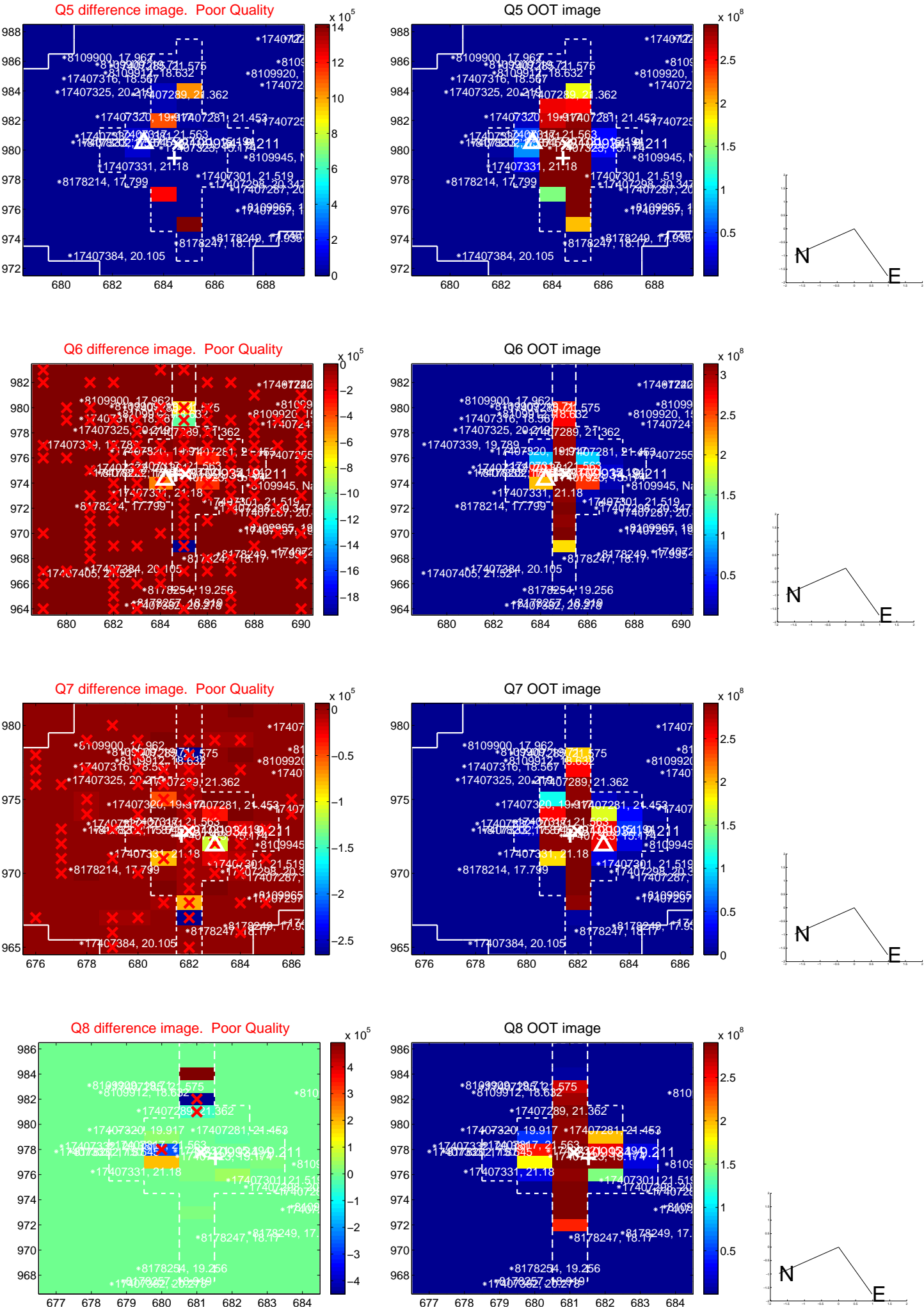


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

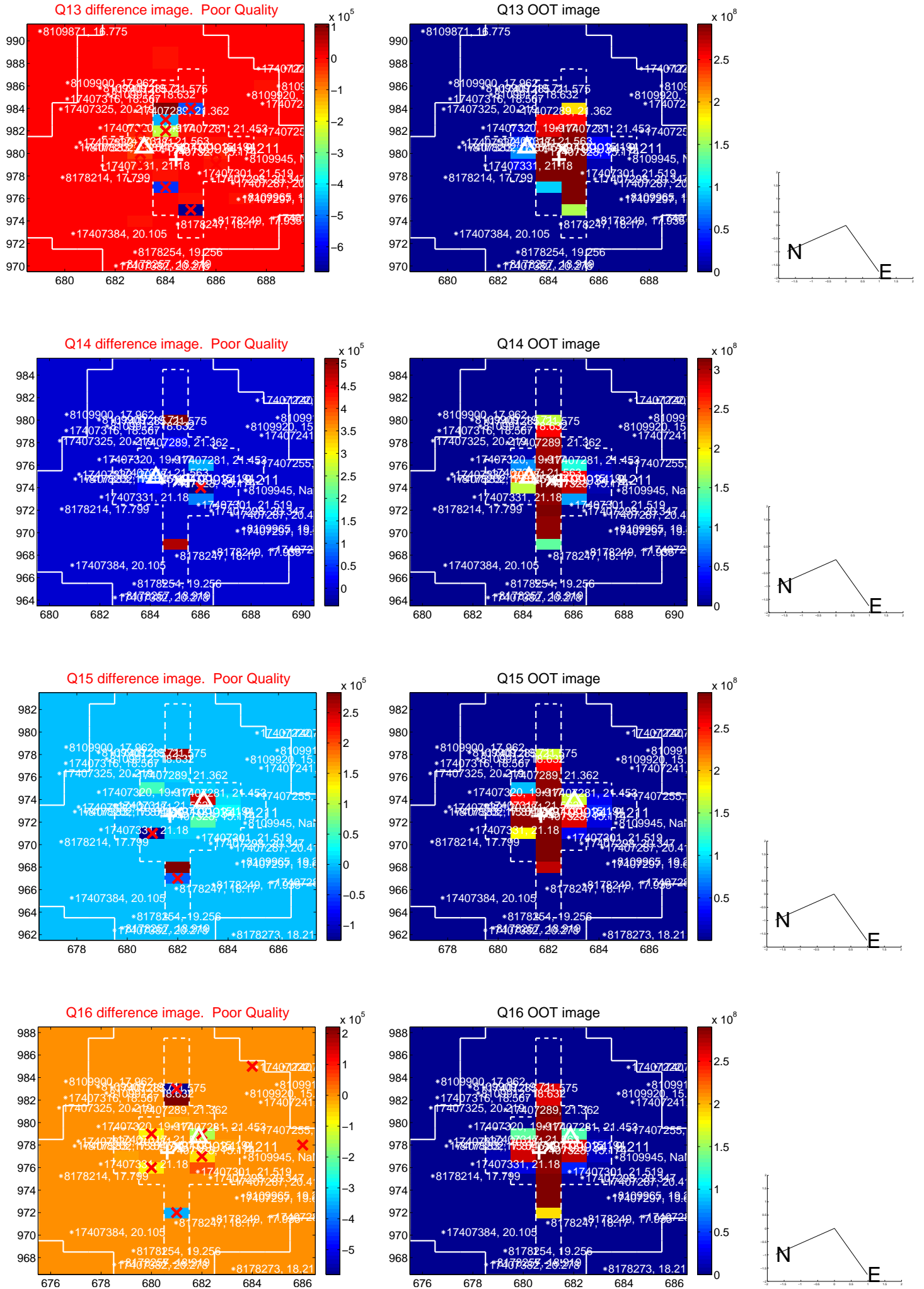
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



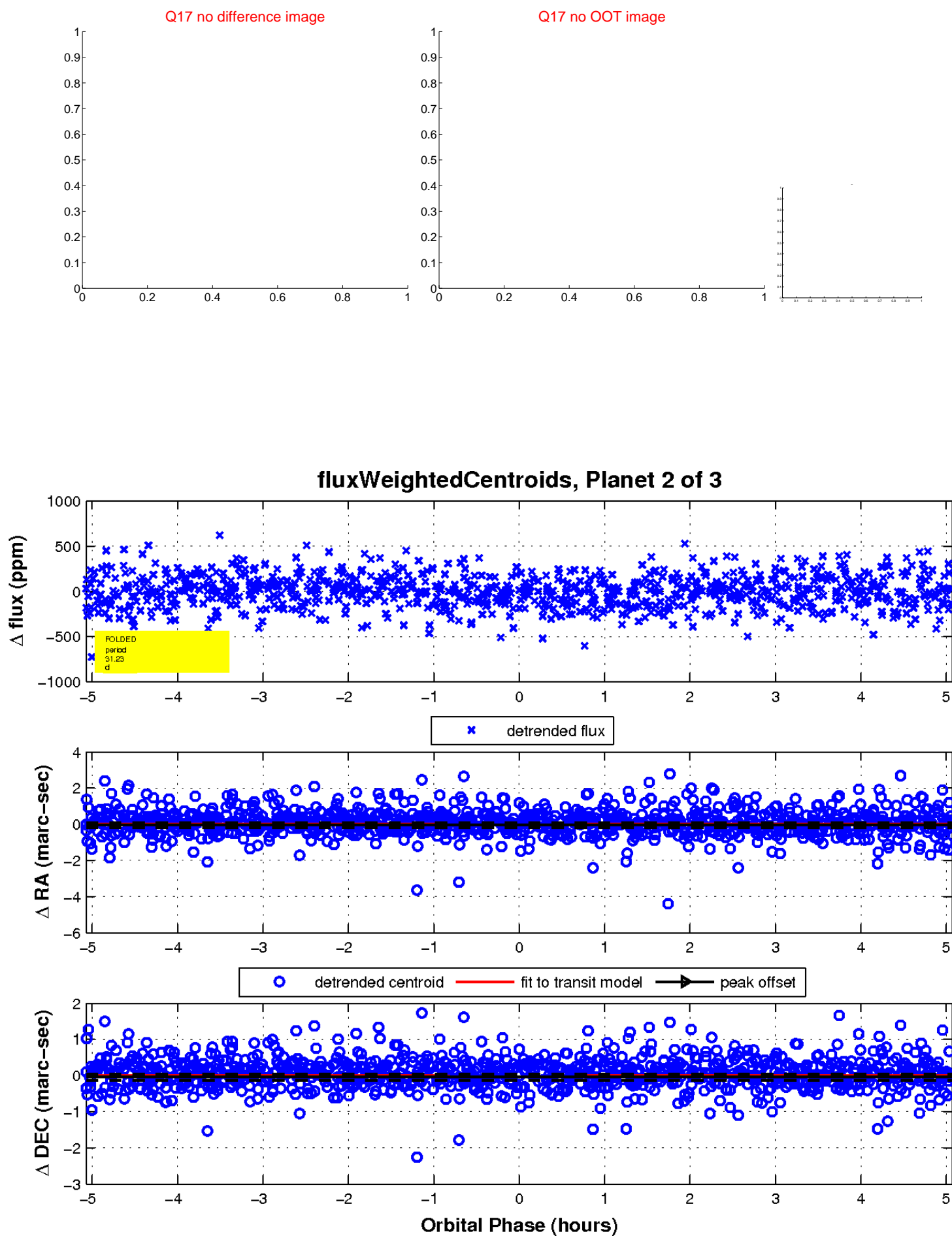
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

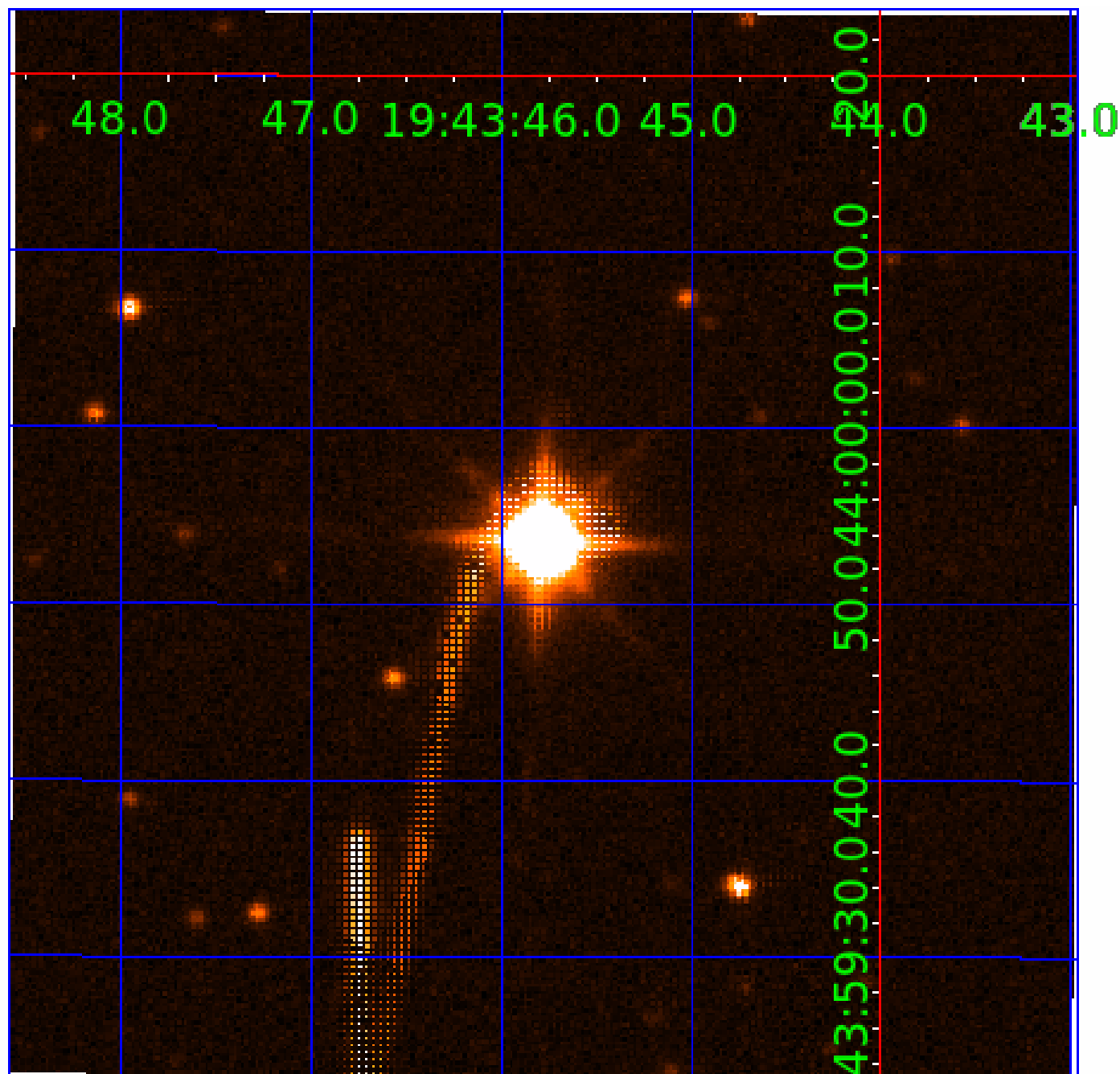


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008109934

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})
008109934-01	OBS	No	1.549338	132.753438	15.4	11.479	9.5	4.6	2.10	6489	0.88	8240.39
008109934-02	OBS	No	31.232576	145.914701	288.6	1.692	11.7	9.2	2.10	6489	4.02	150.20
008109934-03	OBS	No	38.664891	159.951492	296.3	5.362	10.3	11.0	2.10	6489	4.03	112.99

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008109934-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
008109934-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
008109934-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_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.

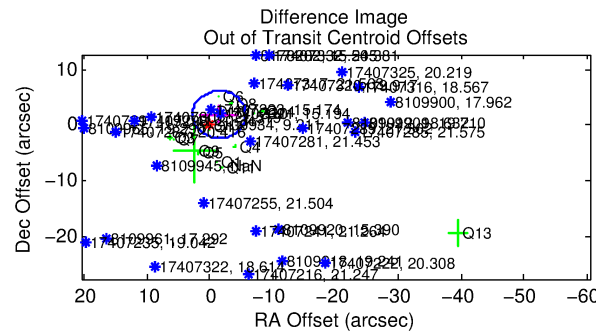
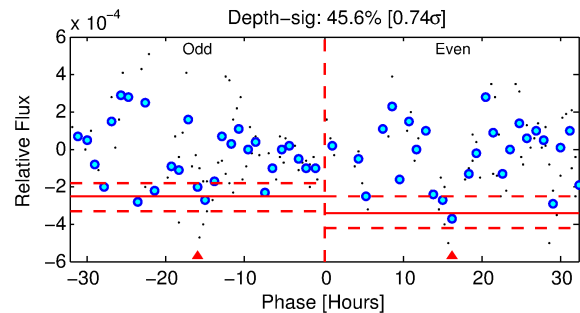
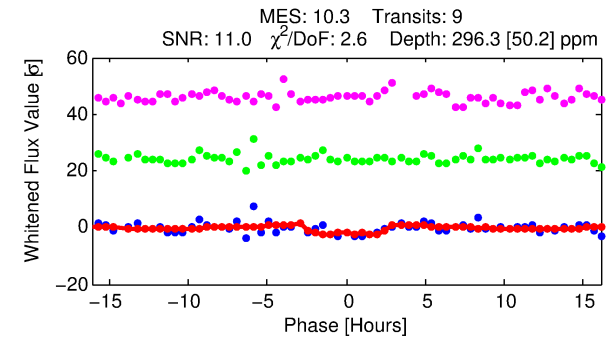
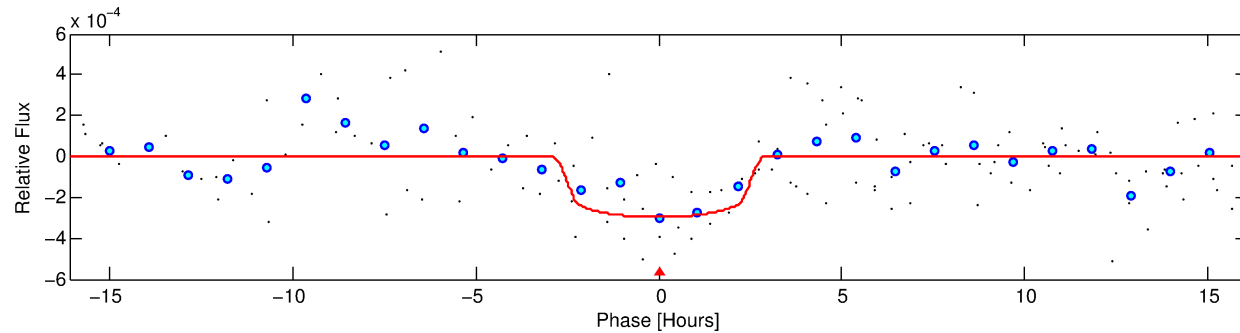
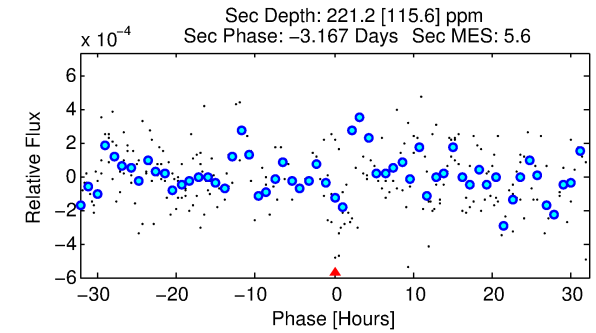
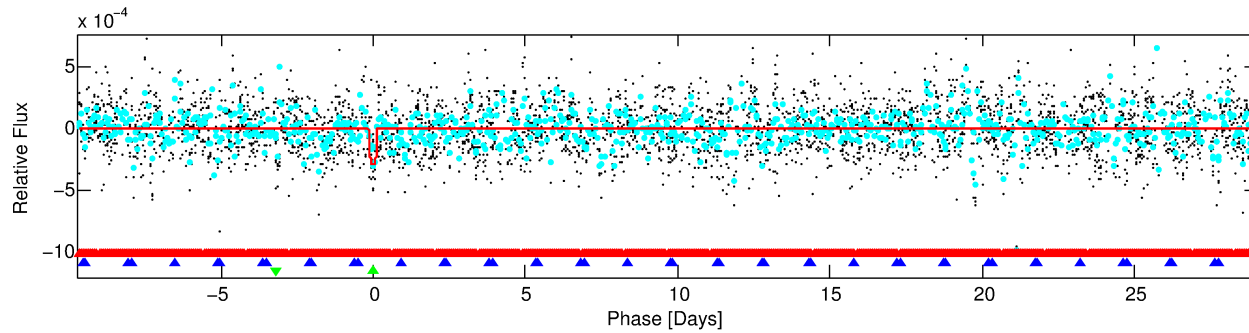
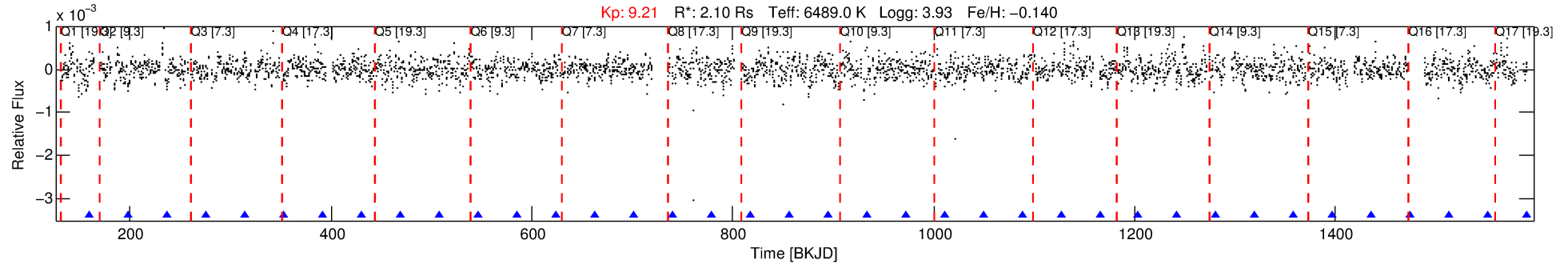
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008109934-03

No Significant Match Found

DV One-Page Summary

KIC: 8109934 Candidate: 3 of 3 Period: 38.665 d



DV Fit Results:

Period = 38.66489 [0.00056] d
Epoch = 159.9515 [0.0117] BKJD
Rp/R* = 0.0176 [0.0068]
a/R* = 32.99 [66.37]
b = 0.82 [0.80]
Seff = 112.99 [74.73]
Teq = 831 [137] K
Rp = 4.03 [2.27] Re
a = 0.2488 [0.0995] AU
Ag = 464.00 [527.98] [0.88 σ]
Teff = 5966 [1412] K [3.62 σ]

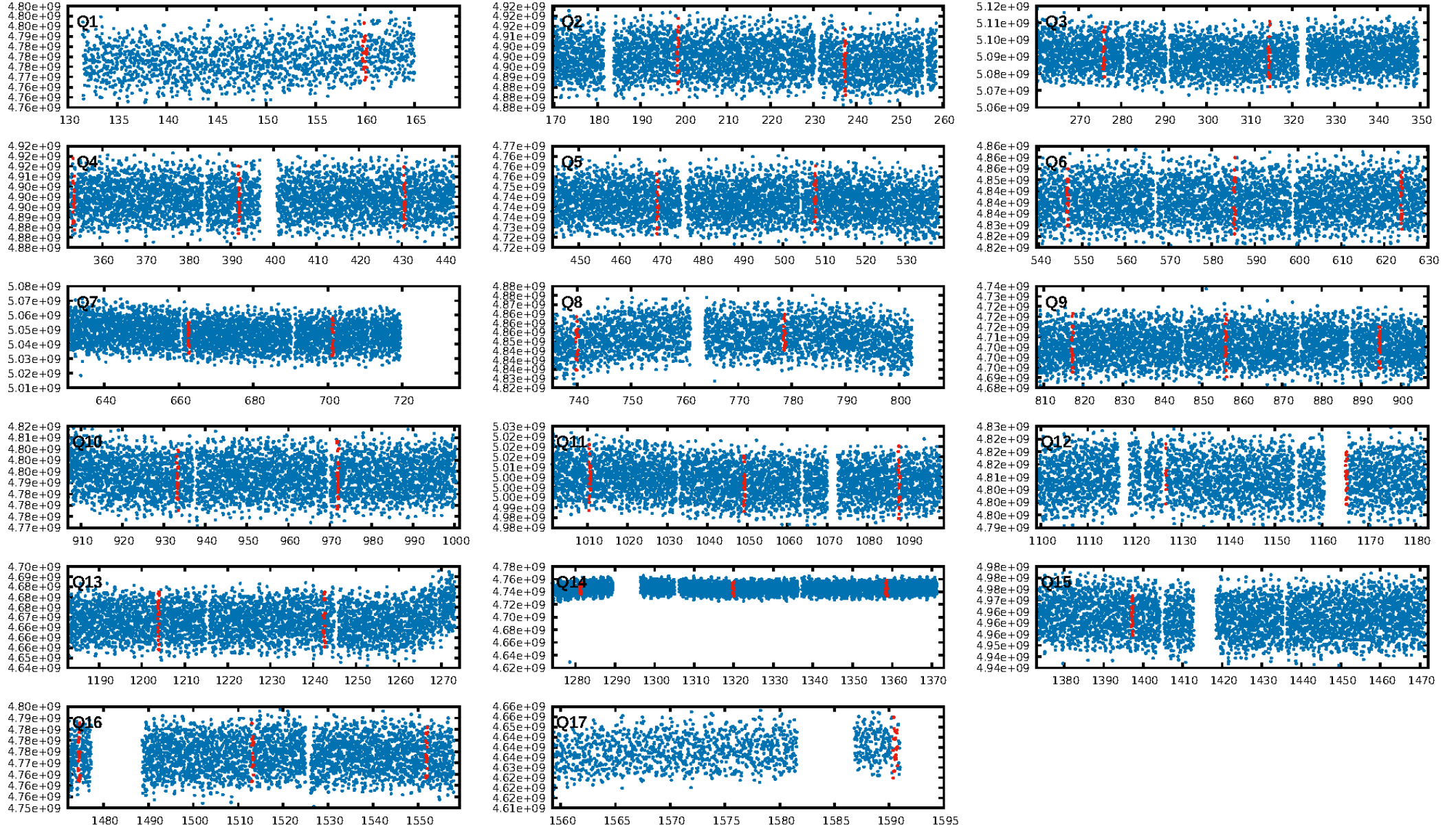
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [31.73 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.63e-40
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: N/A
Centroid-sig: 11.7%
Centroid-so: 1.199 arcsec [4.03 σ]
OotOffset-rm: 2.369 arcsec [1.68 σ]
KicOffset-rm: 1.843 arcsec [0.61 σ]
OotOffset-st: 3/3/3/5 [14]
KicOffset-st: 3/3/3/5 [14]
DiffImageQuality-fgm: 0.00 [0/14]
DiffImageOverlap-fno: 0.13 [2/15]

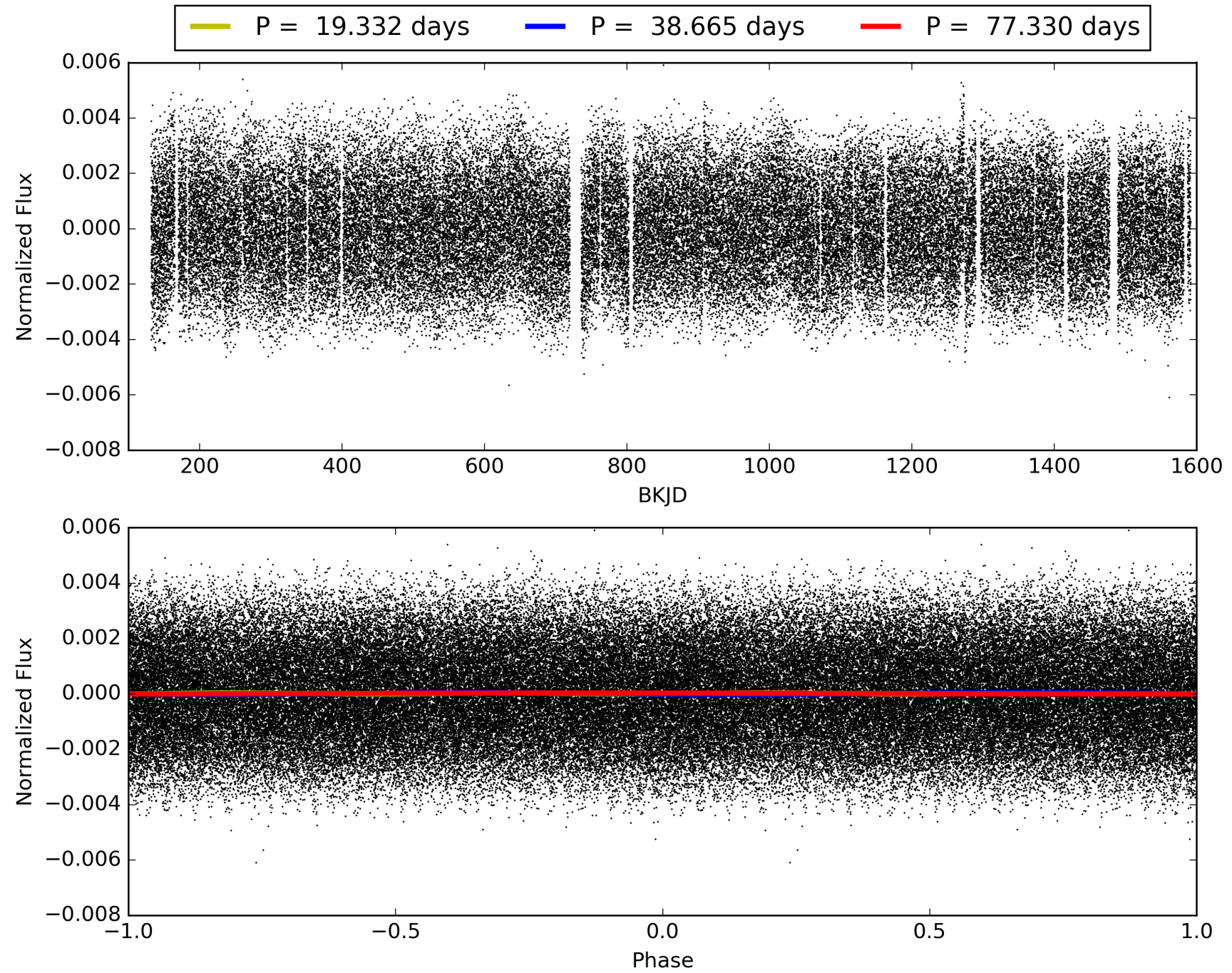
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:19:59 Z

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

TCE 008109934-03, PDC Light Curves

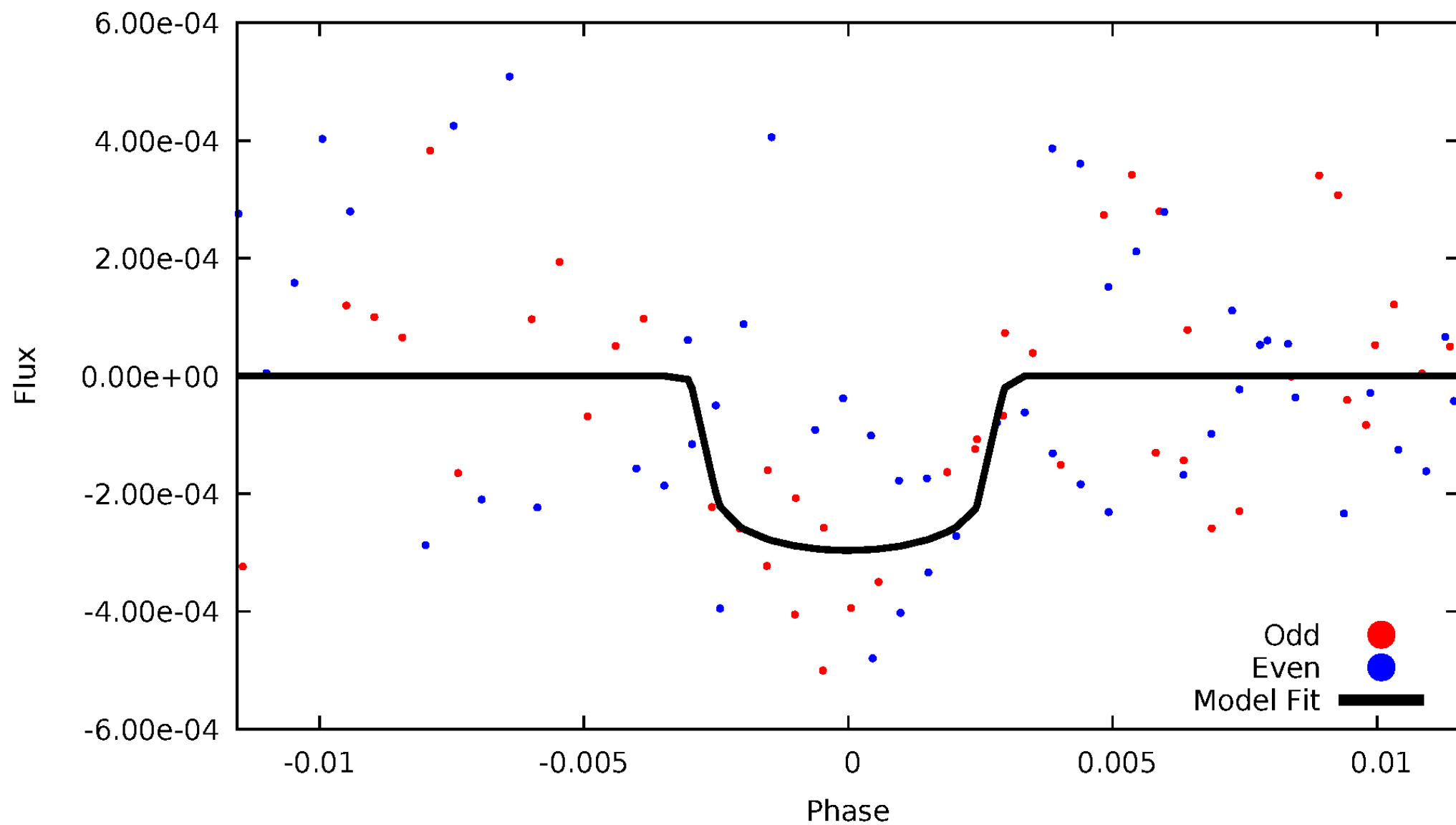


TCE 008109934-03



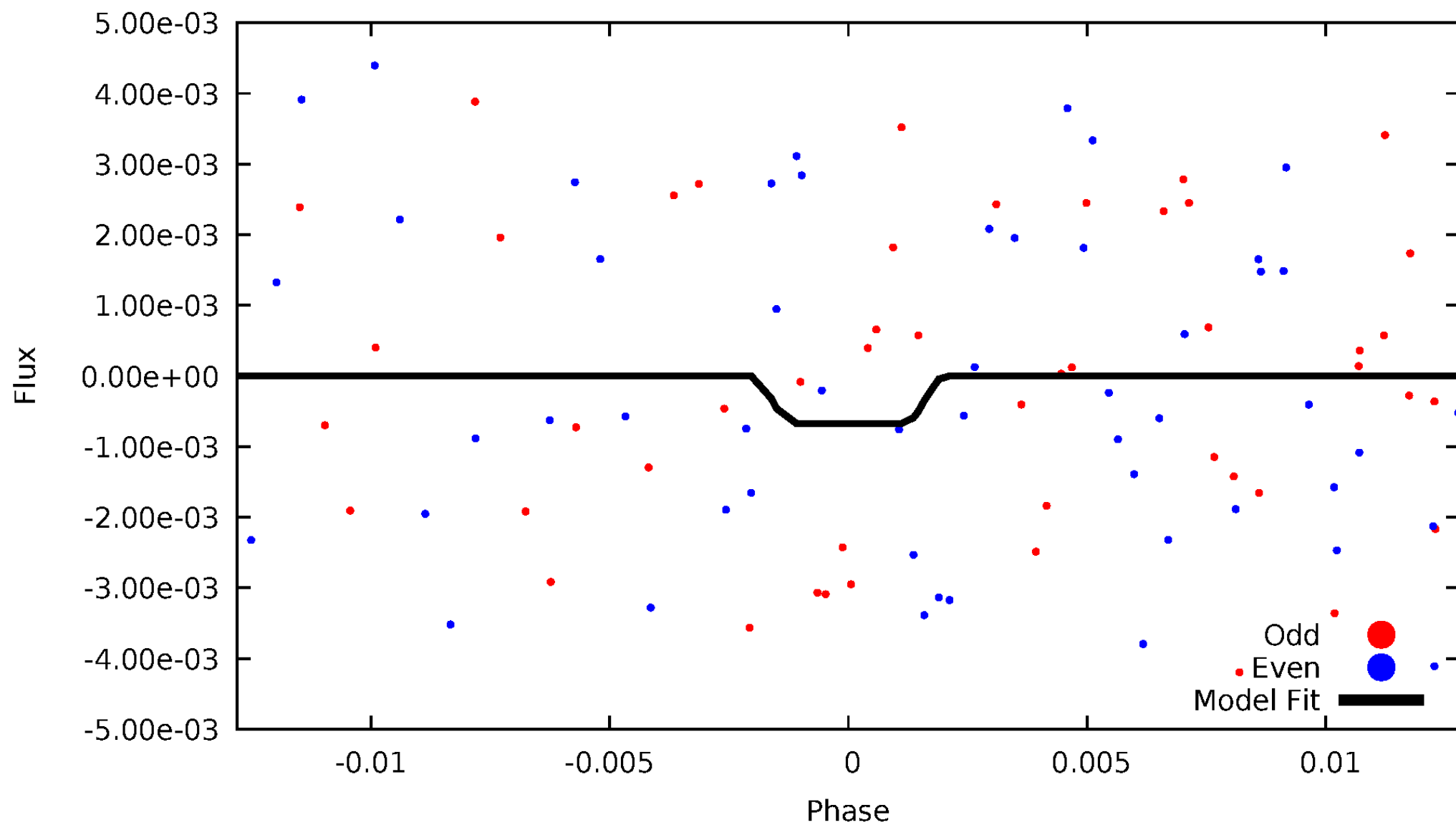
DV Odd/Even

TCE 008109934-03



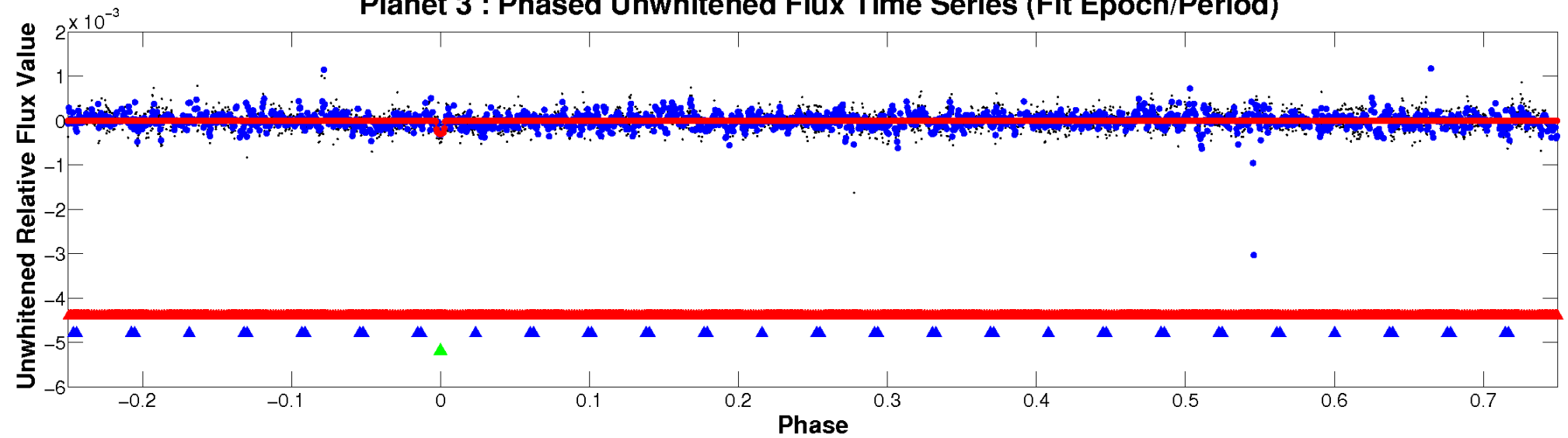
ALT Odd/Even

TCE 008109934-03

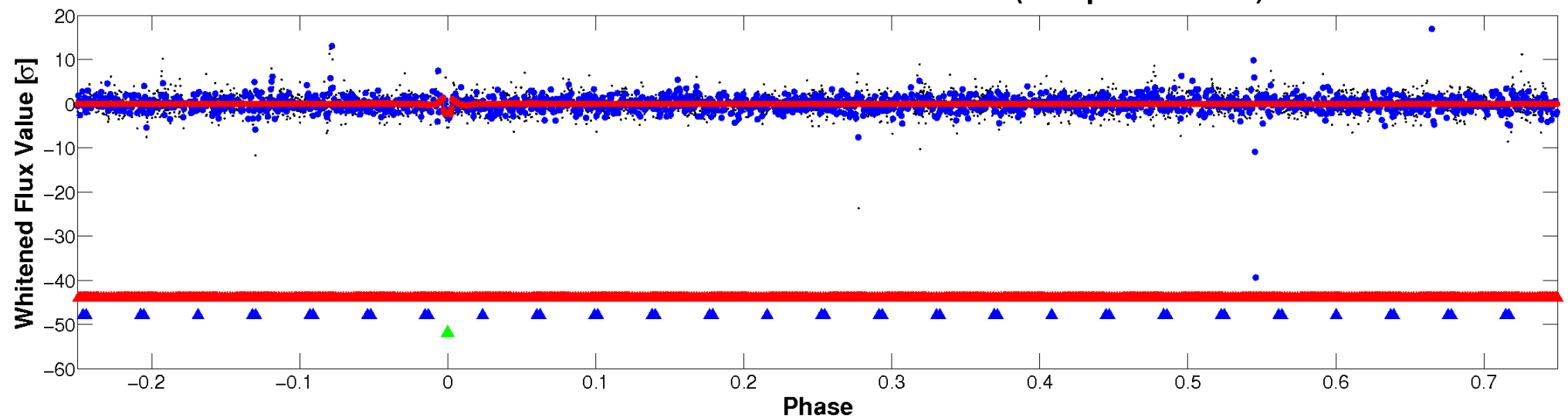


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

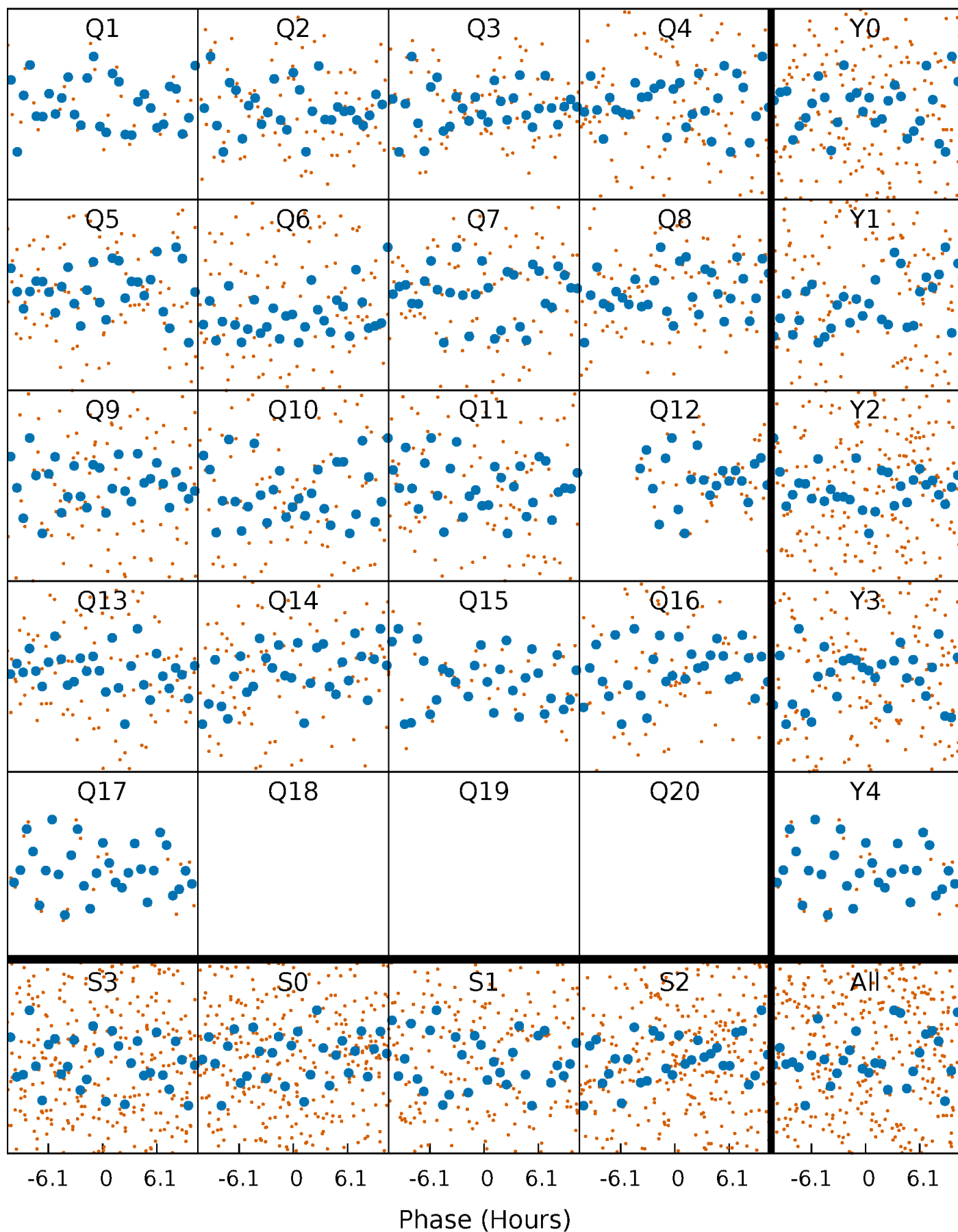


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



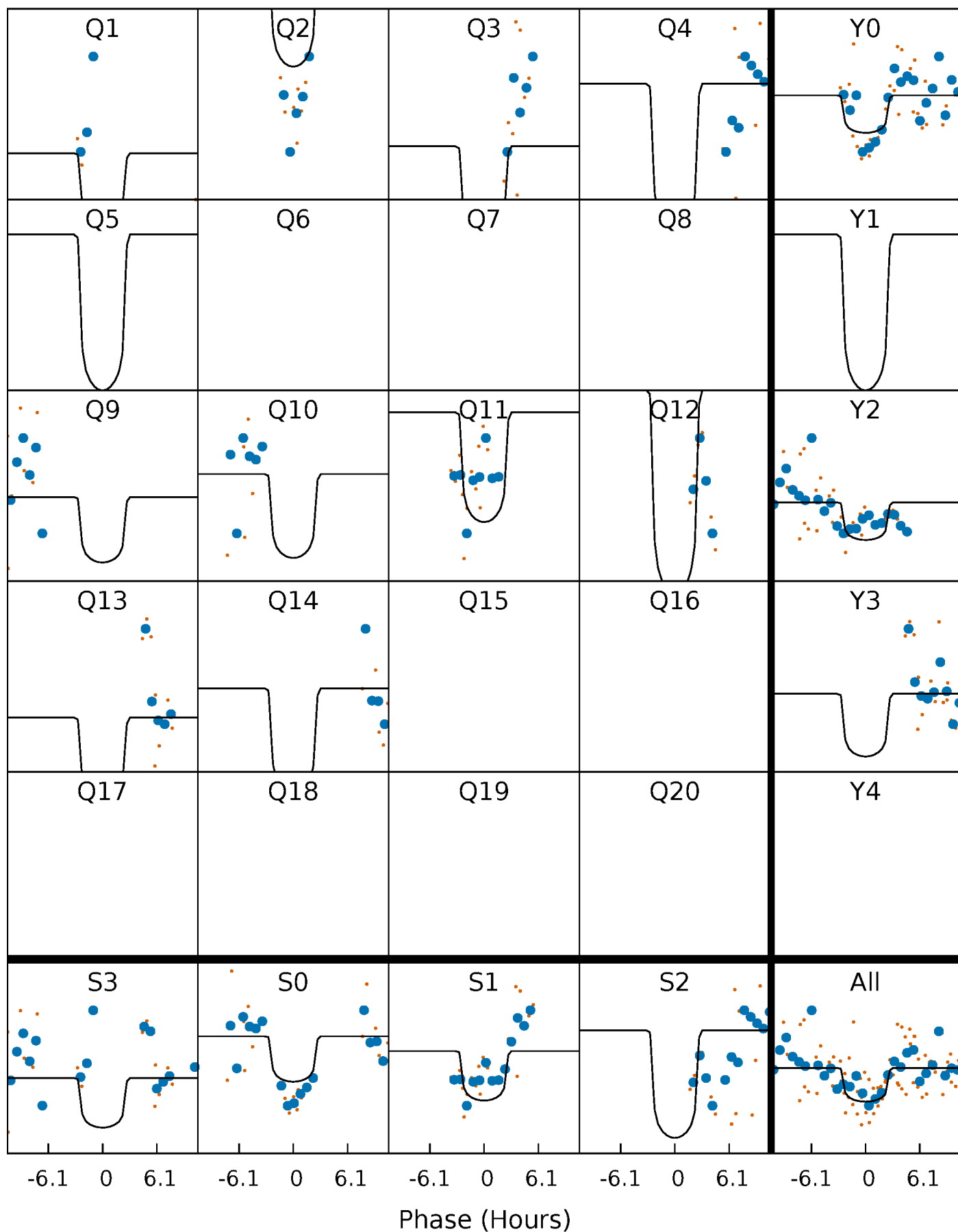
PDC Quarter-Phased Transit Curves

TCE 008109934-03 P= 38.664891 Days $T_0=159.951492$ (BKJD)



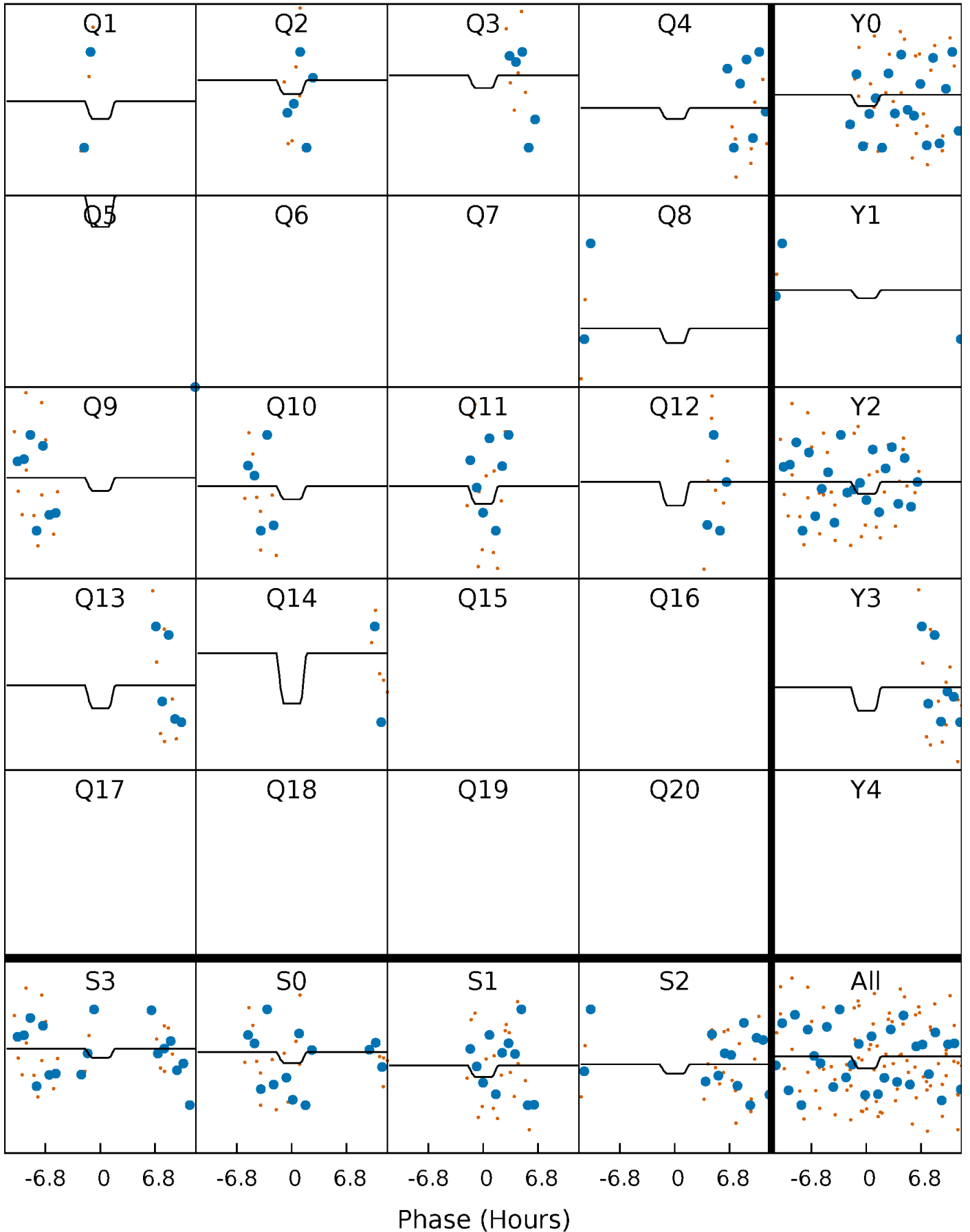
DV Quarter-Phased Transit Curves

TCE 008109934-03 P= 38.664891 Days $T_0=159.951492$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

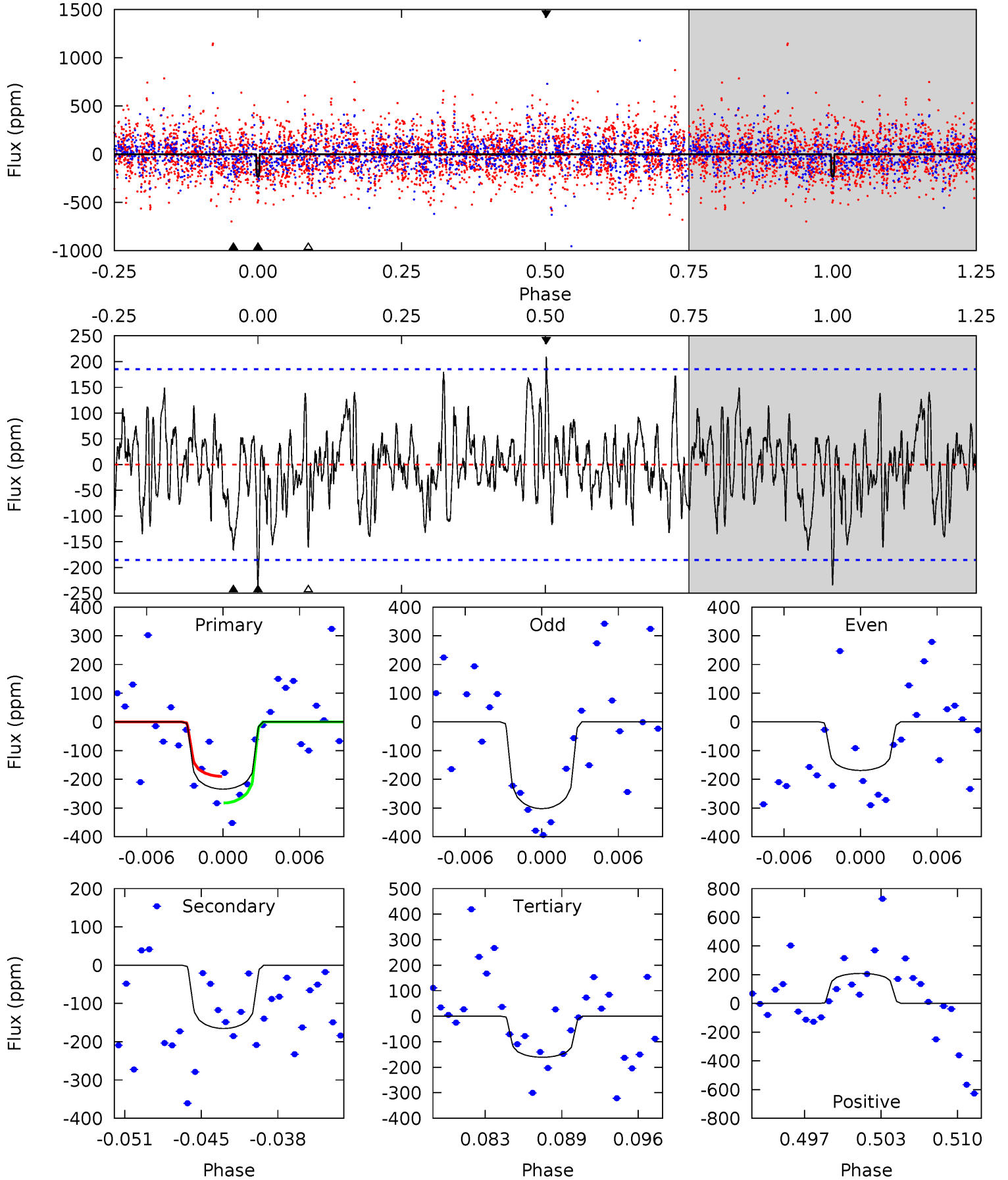
TCE 008109934-03 P= 38.662442 Days $T_0=159.933148$ (BKJD)



DV Model-Shift Uniqueness Test

008109934-03, P = 38.664891 Days, E = 121.286601 Days

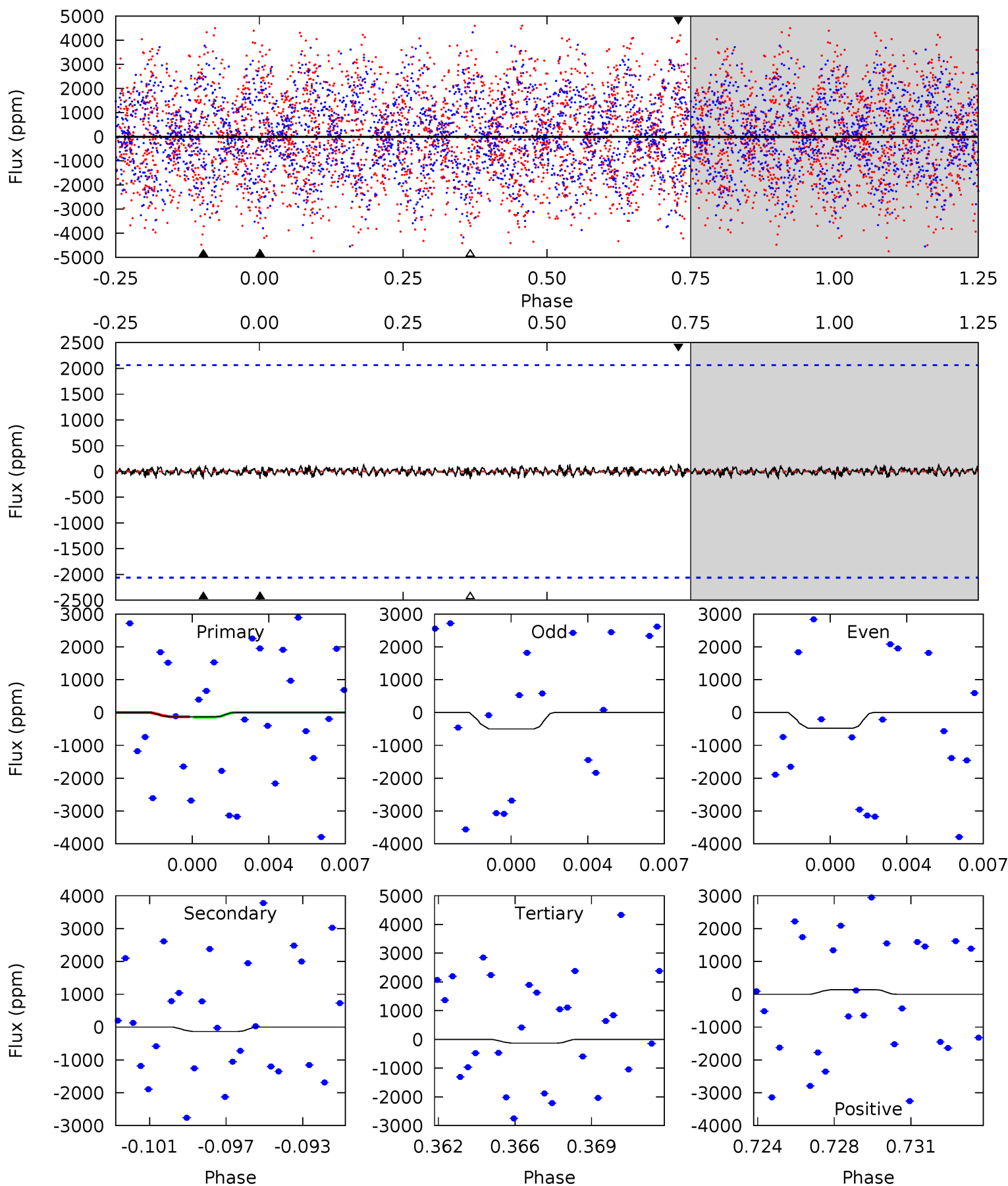
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.47	4.56	4.44	5.77	5.11	2.73	1.62	2.03	0.69	0.13	-1.21	1.85	1.07	0.47	1.29



Alt Model-Shift Uniqueness Test

008109934-03, P = 38.662442 Days, E = 121.270706 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.34	0.34	0.33	0.35	5.21	2.90	0.11	0.01	-0.01	0.01	-0.01	0.03	0.62	0.51	0.02



Stellar Parameters For KIC 008109934

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6489^{+181}_{-227}	$3.932^{+0.382}_{-0.153}$	$-0.140^{+0.250}_{-0.300}$	$2.098^{+0.570}_{-0.856}$	$1.374^{+0.193}_{-0.289}$	$0.210^{+0.594}_{-0.091}$
	+3%/-3%	+10%/-4%	+179%/-214%	+27%/-41%	+14%/-21%	+283%/-43%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008109934-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-165 ± 36	$3.81^{+1.77}_{-1.52}$	1136^{+98}_{-121}	5482^{+1520}_{-786}	382^{+683}_{-216}
Alt.	-135 ± 395	$5.53^{+2.03}_{-1.81}$	1129^{+99}_{-124}	4566^{+1828}_{-9666}	146^{+621}_{-440}

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 $A_{\text{obs}} \gg 1.0$

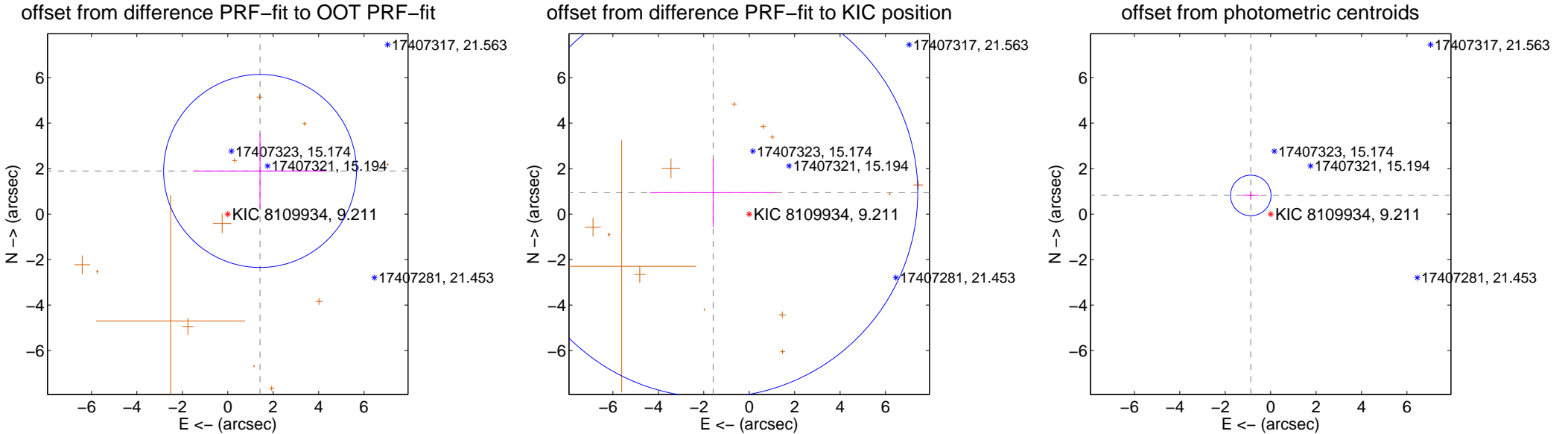
DV Centroid Data

Supplemental centroid analysis for 008109934-03. **Kepler magnitude: 9.21.** Transit SNR 11.02

There are 0 quarters with good PRF difference image offsets

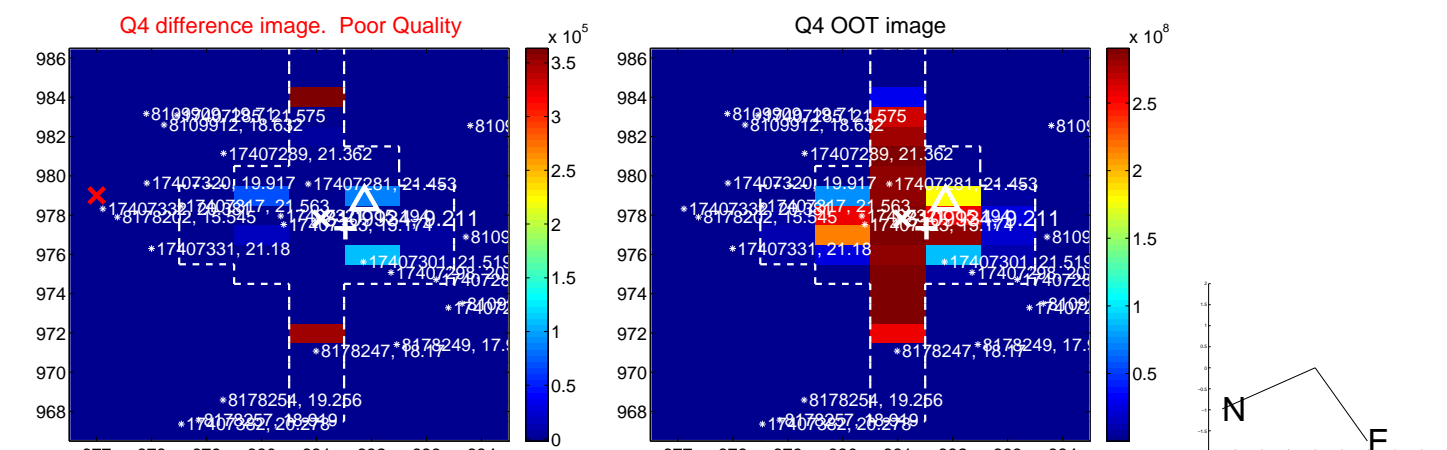
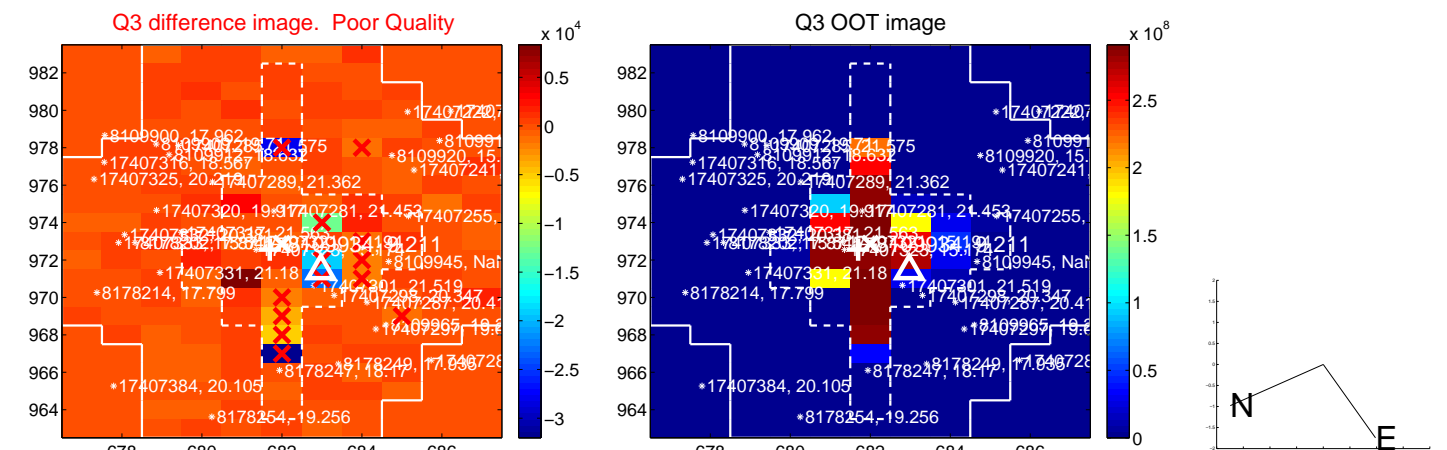
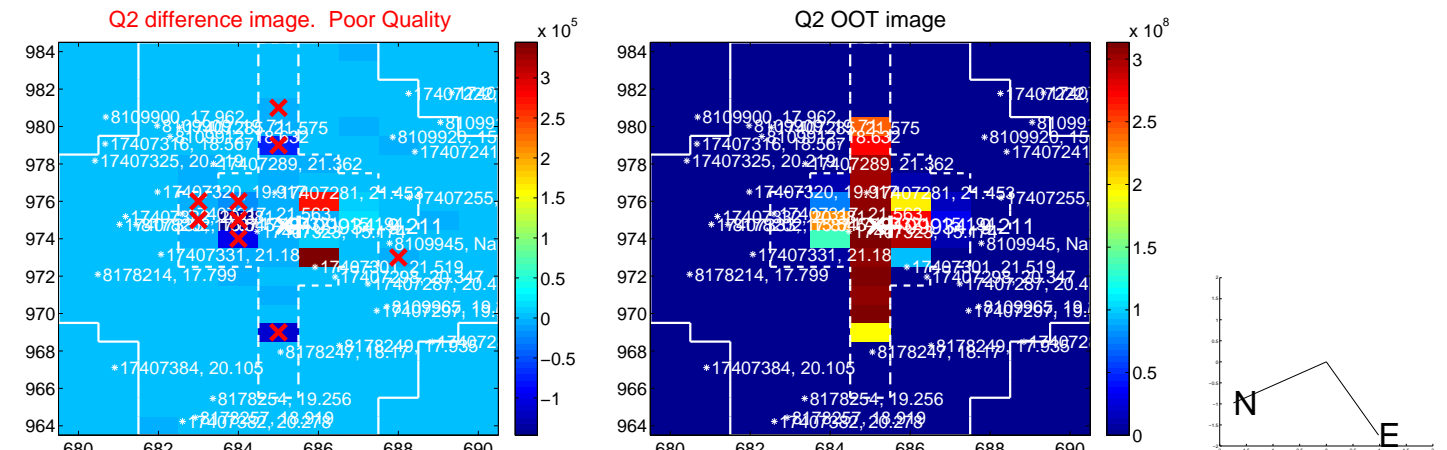
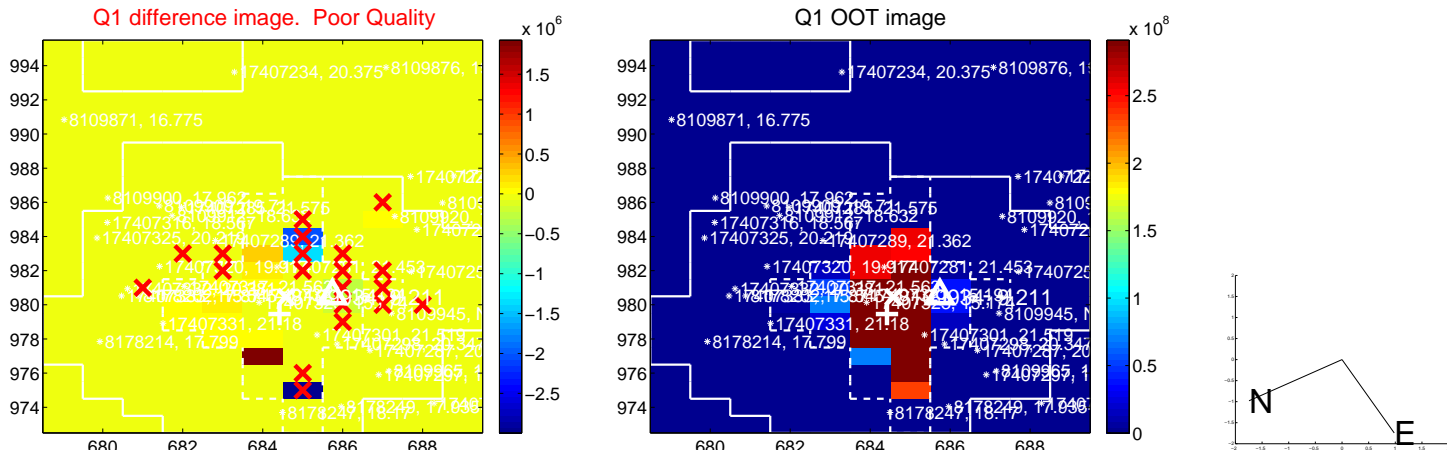
The OOT PRF centroid is offset from the target star catalog position by about 4.01 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.369 ± 1.414	1.68	-1.421 ± 2.923	1.896 ± 1.657
PRF-fit source offset from KIC position	1.843 ± 3.001	0.61	1.586 ± 2.791	0.939 ± 1.506
photometric centroid source offset	1.20 ± 0.30	4.03	0.88 ± 0.36	0.82 ± 0.19

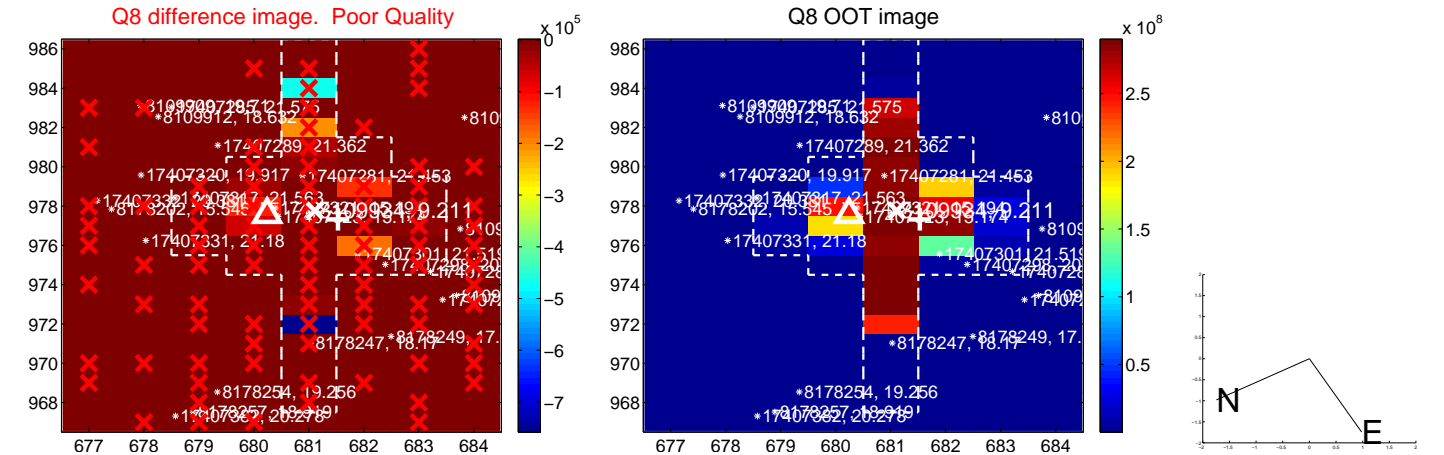
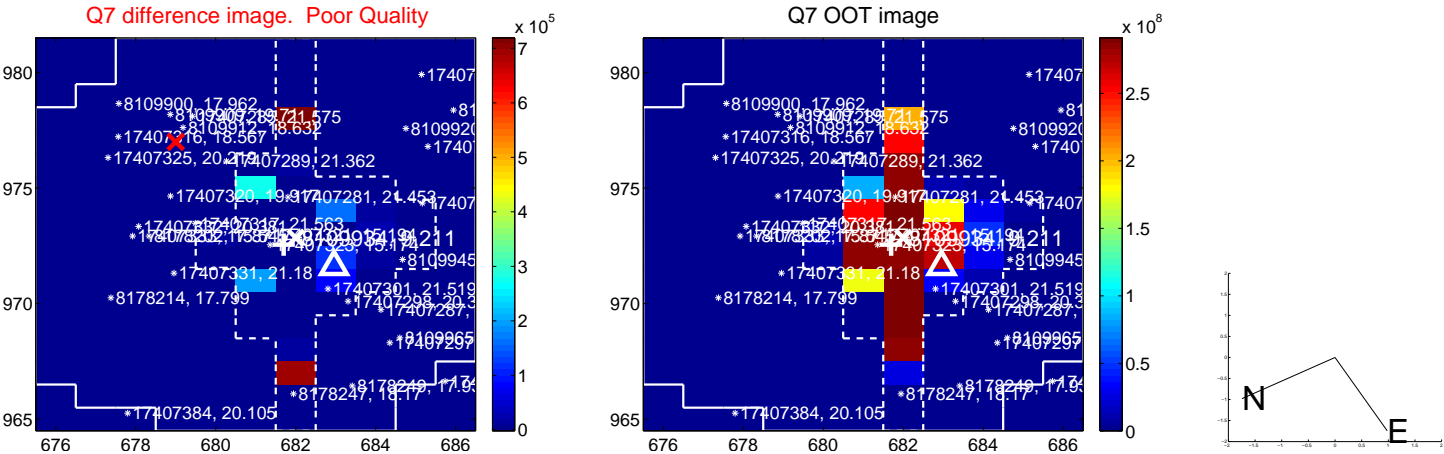
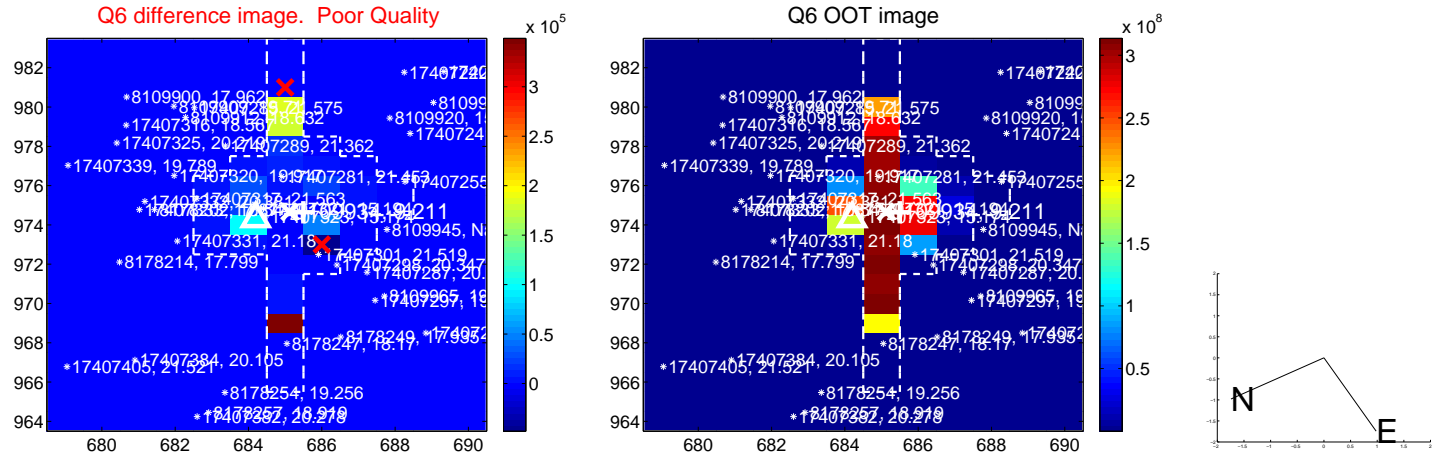
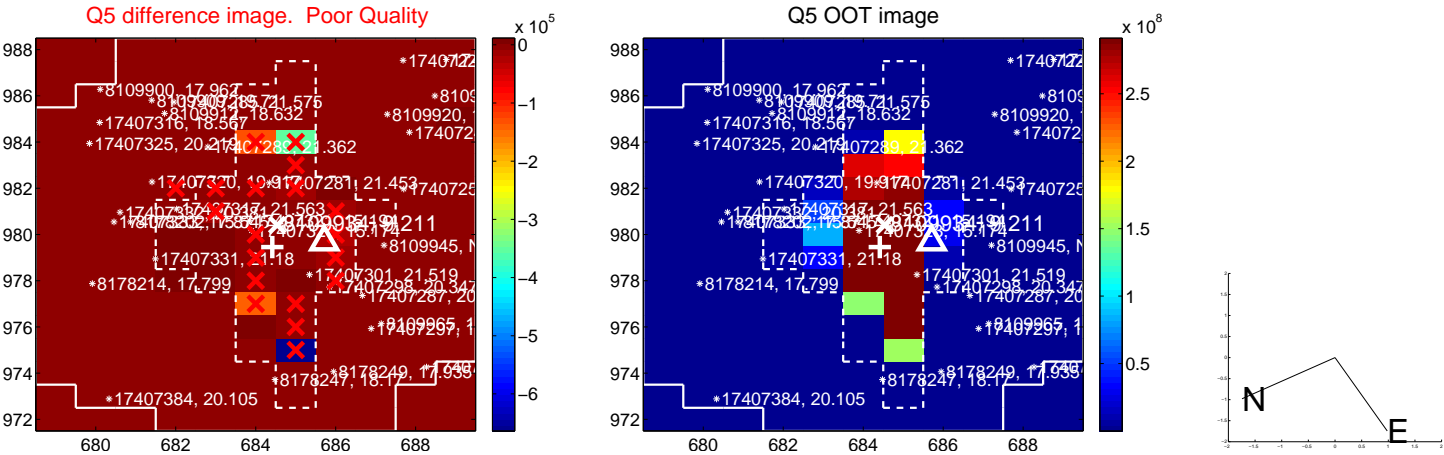


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

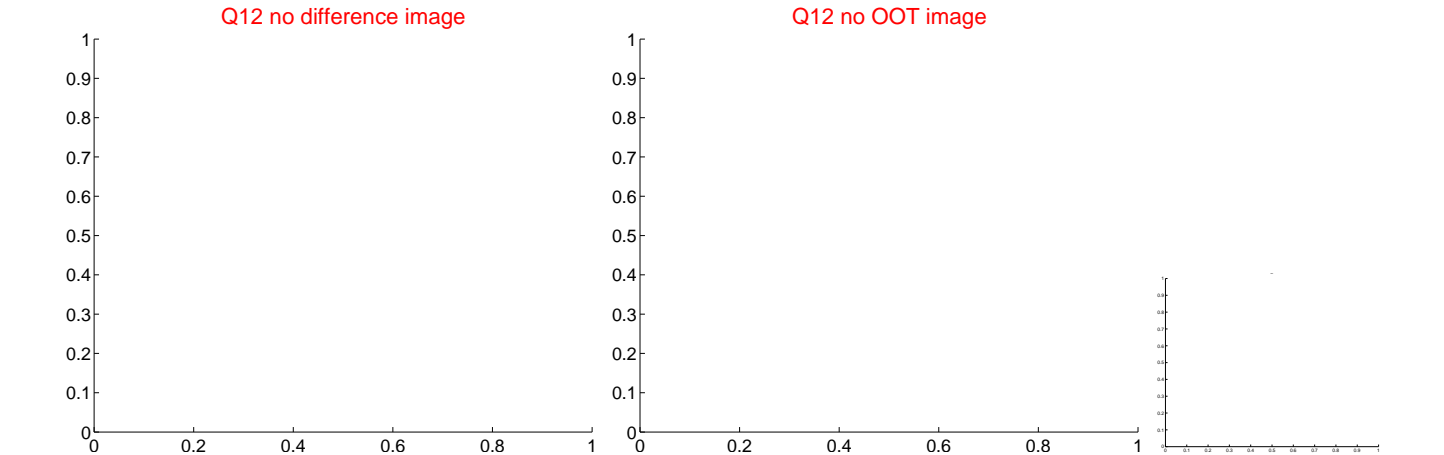
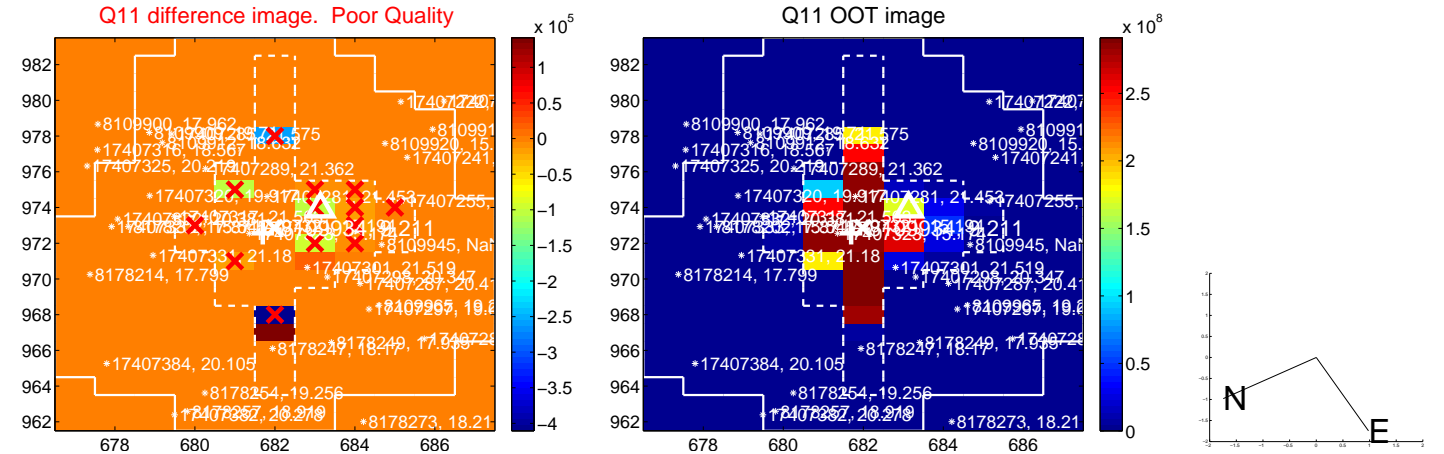
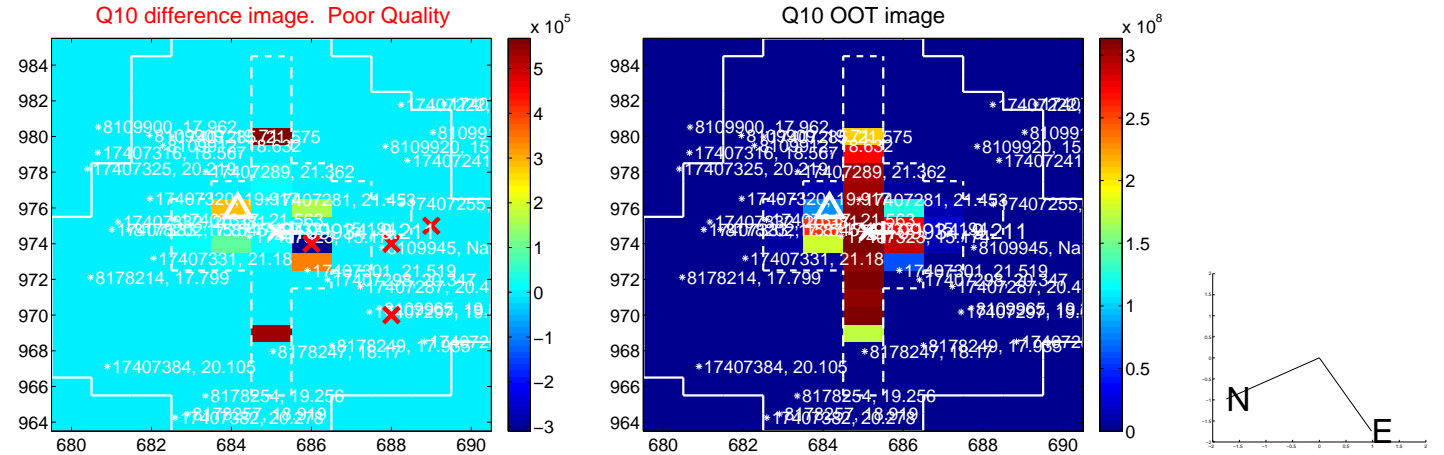
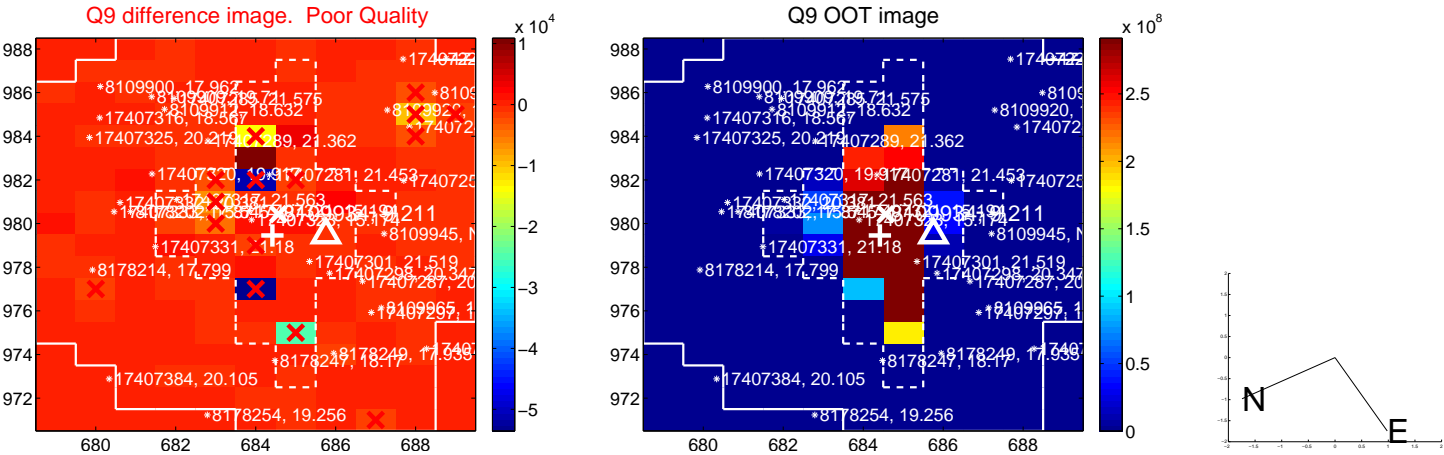
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



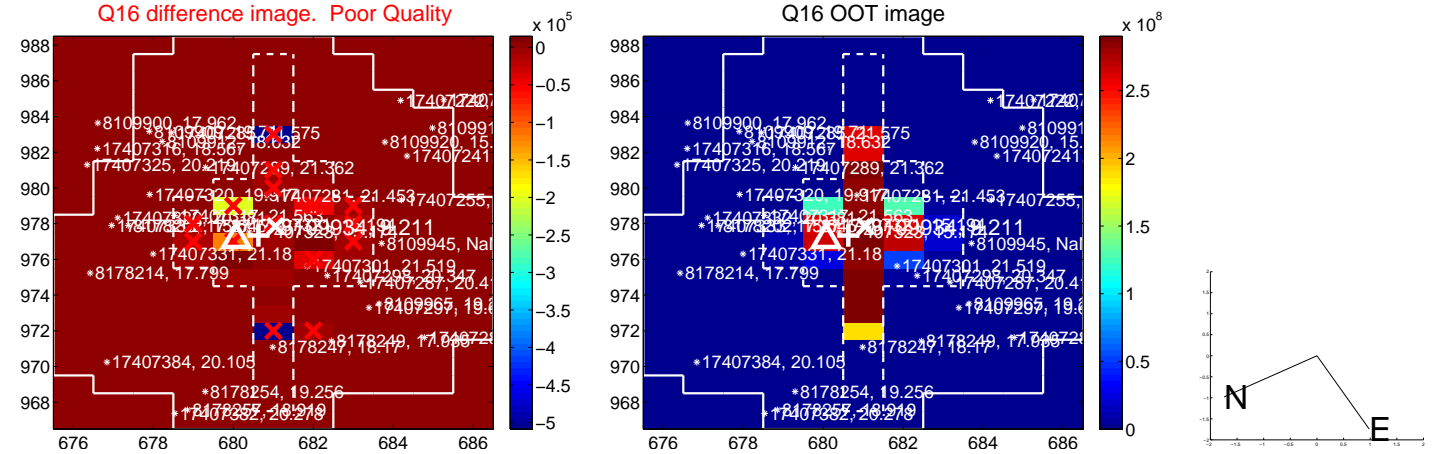
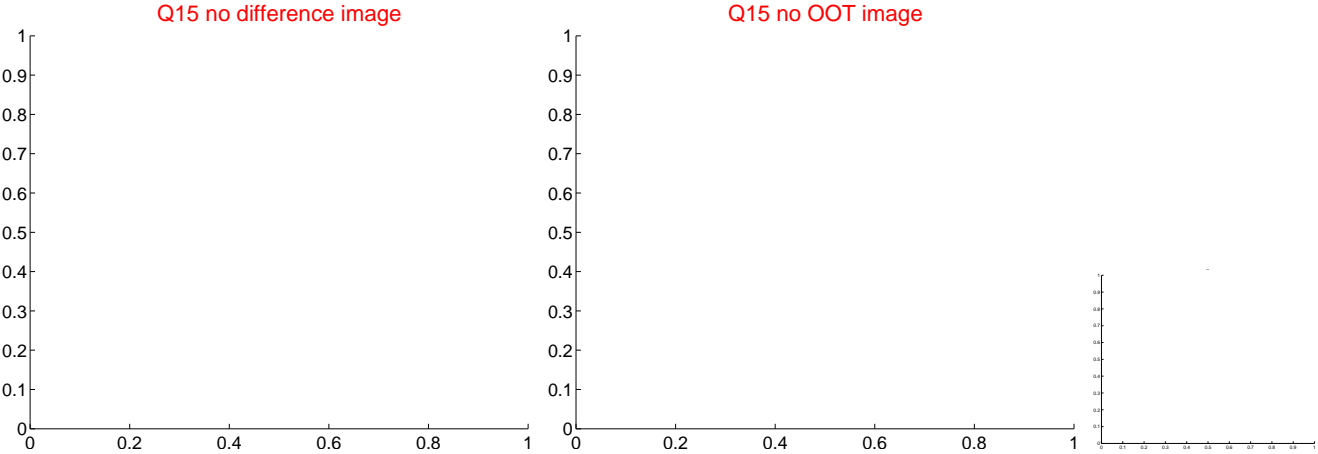
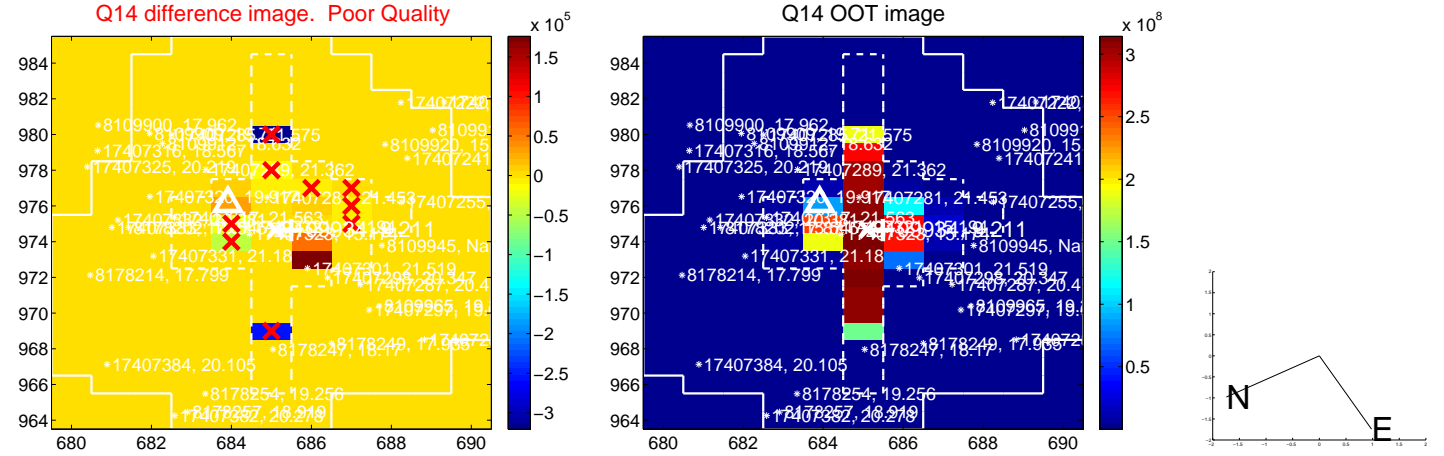
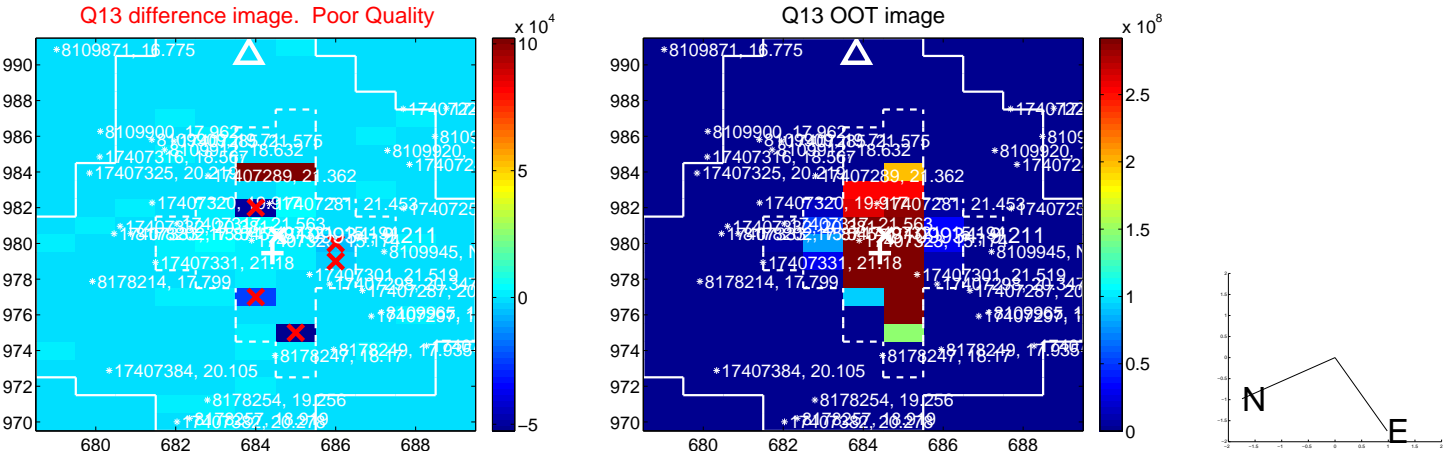
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



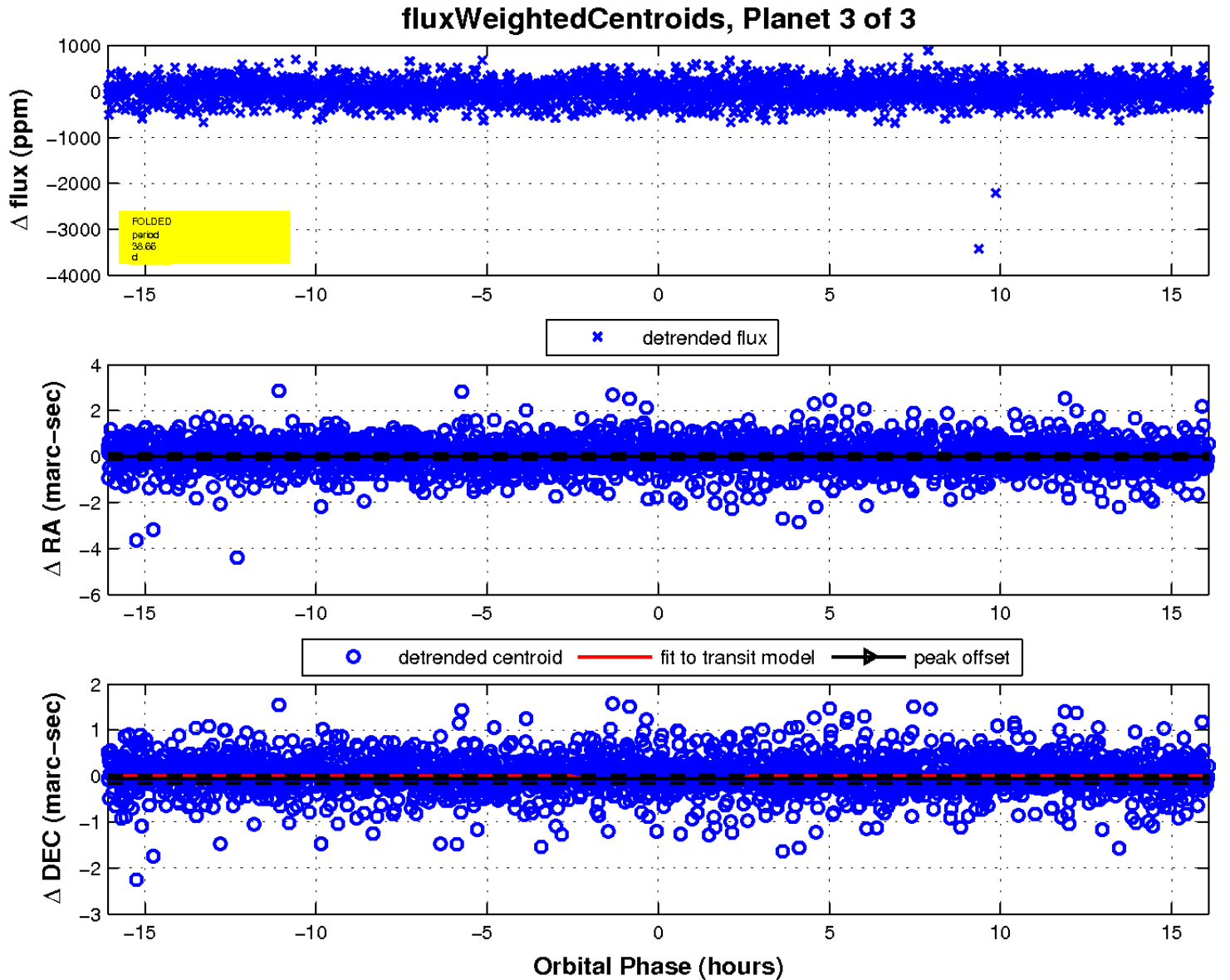
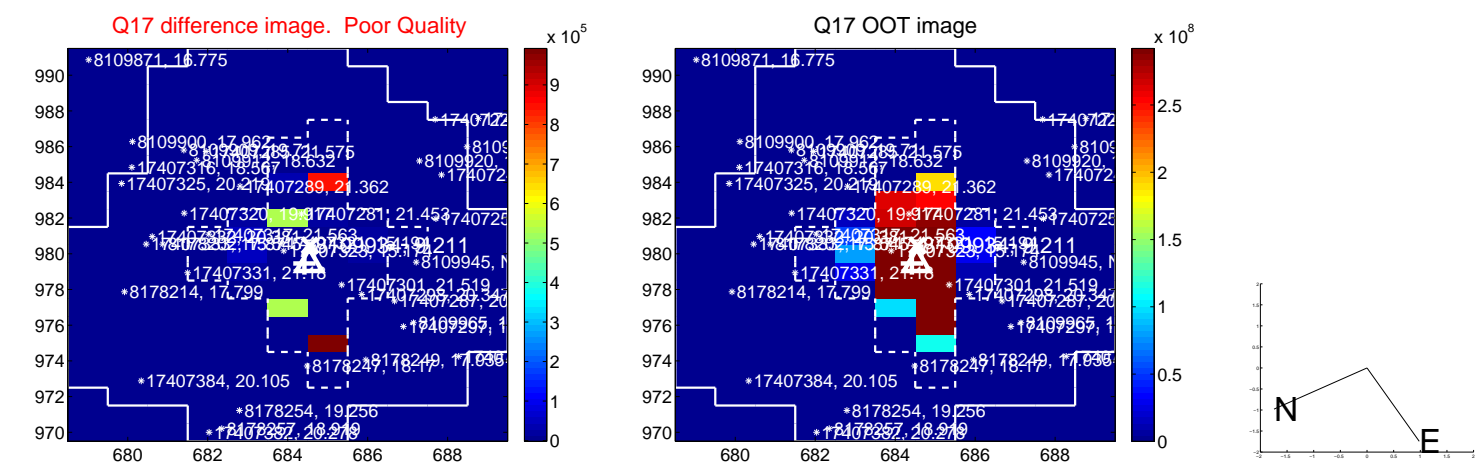
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

