

KIC 004733344

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})
004733344-01	OBS	No	0.642654	132.108980	402.9	3.370	12.5	13.5	4.23	7209	12.45	0.00
004733344-02	OBS	No	52.958320	172.420433	3467.0	2.728	10.0	9.0	4.23	7209	26.49	353.33
004733344-03	OBS	No	68.635126	135.075695	3734.3	5.724	9.6	11.1	4.23	7209	46.56	250.05

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004733344-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
004733344-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
004733344-03	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.

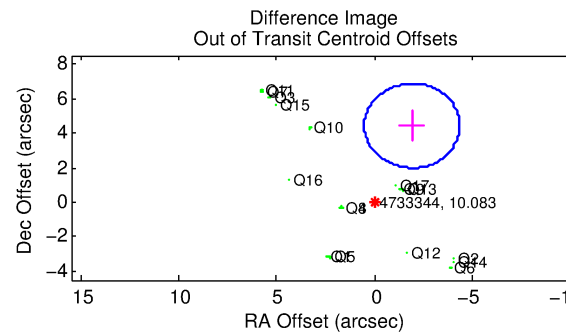
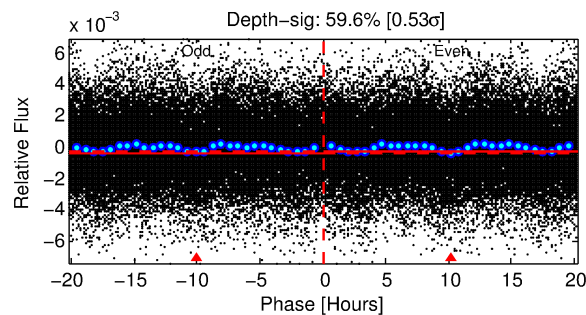
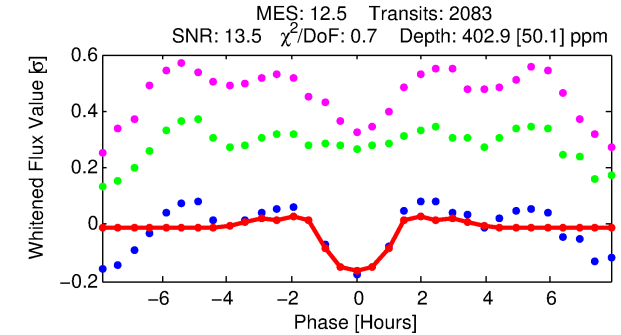
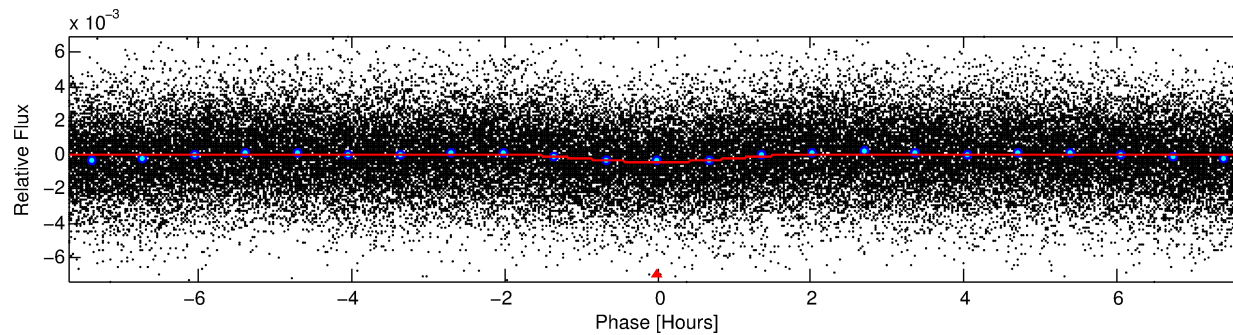
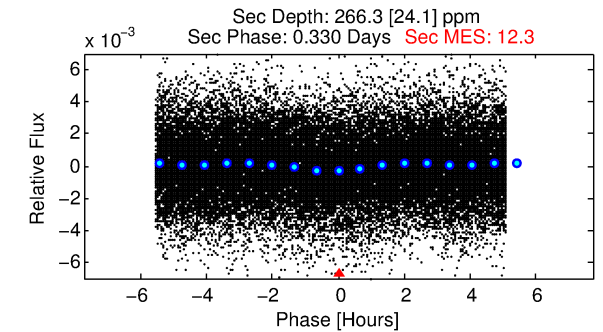
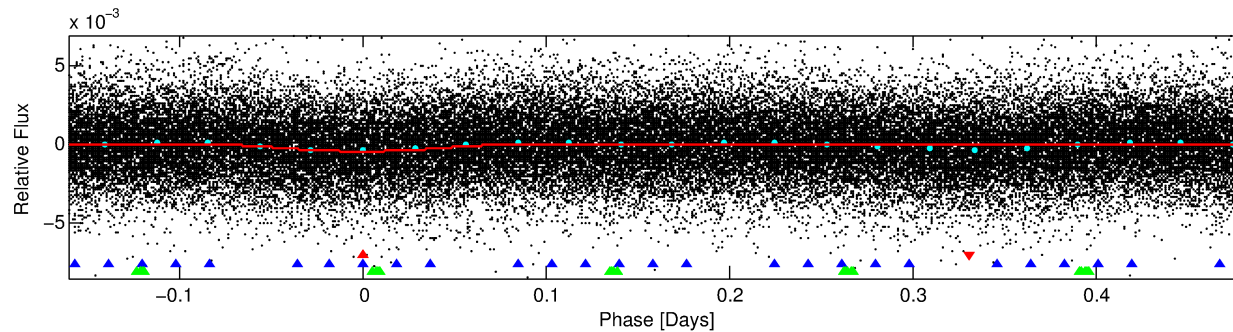
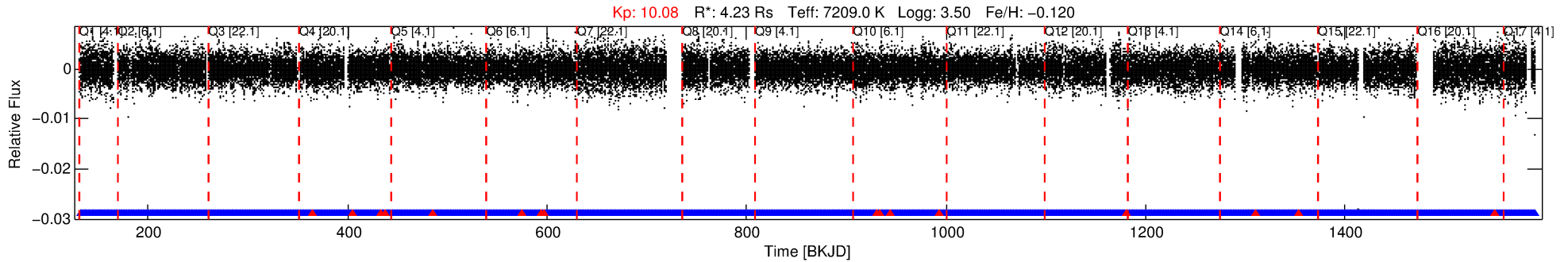
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004733344-01

No Significant Match Found

DV One-Page Summary

KIC: 4733344 Candidate: 1 of 3 Period: 0.643 d



DV Fit Results:

Period = 0.64265 [0.00001] d
Epoch = 132.1090 [0.0022] BKJD
Rp/R* = 0.0270 [0.0081]
a/R* = 1.09 [0.01]
b = 0.99 [0.02]
Seff = N/A
Teq = N/A
Rp = 12.45 [7.89] Re
a = N/A
Ag = N/A
Teffp = N/A

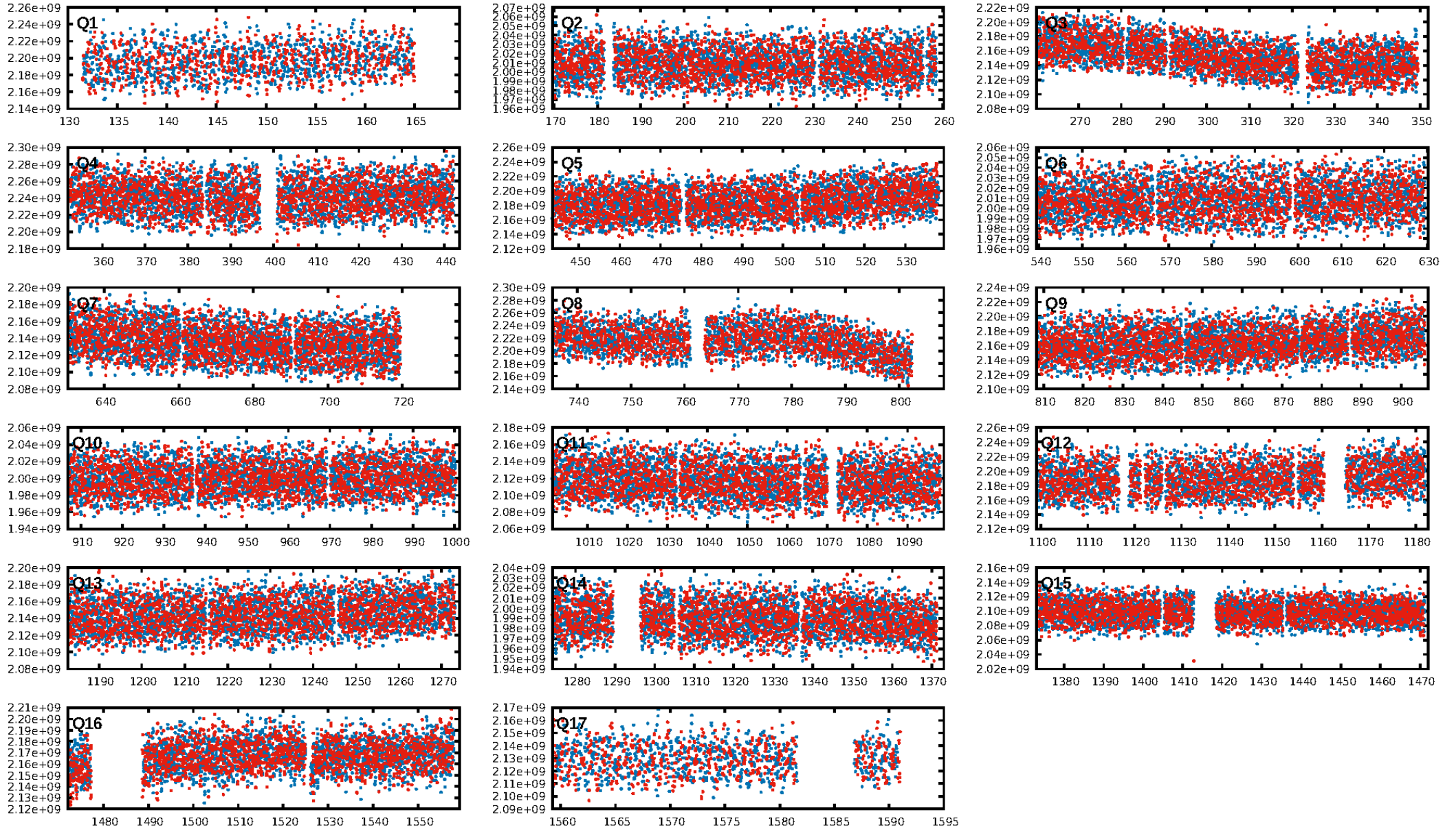
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [289.59σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.32e-17
RollingBand-fgt: 0.99 [1972/1988]
GhostDiagnostic-chr: N/A
Centroid-sig: 97.6%
Centroid-so: 0.066 arcsec [0.59σ]
OotOffset-rm: 4.818 arcsec [5.93σ]
KicOffset-rm: 4.713 arcsec [6.77σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.18 [3/17]
DiffImageOverlap-fno: 1.00 [17/17]

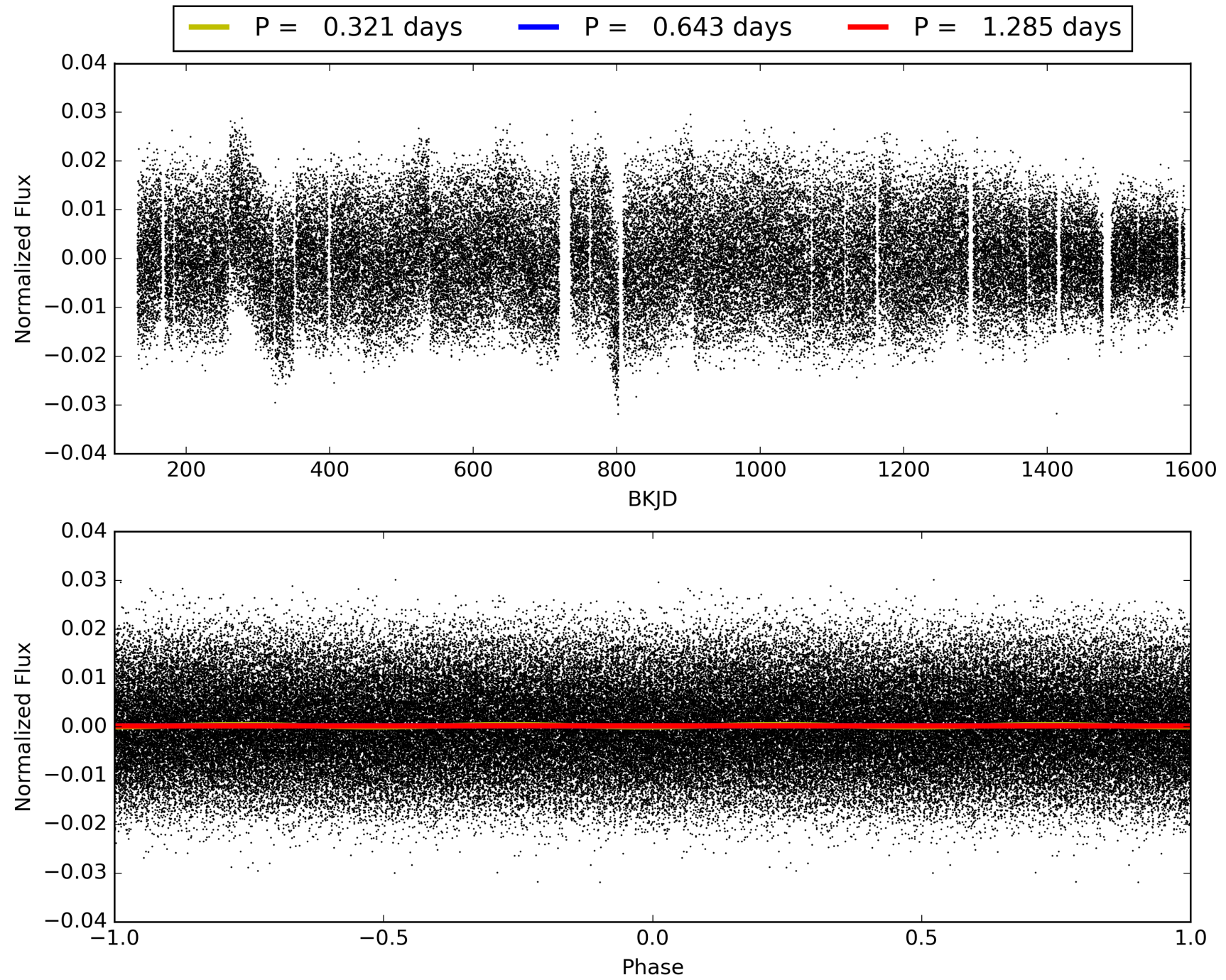
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 004733344-01, PDC Light Curves

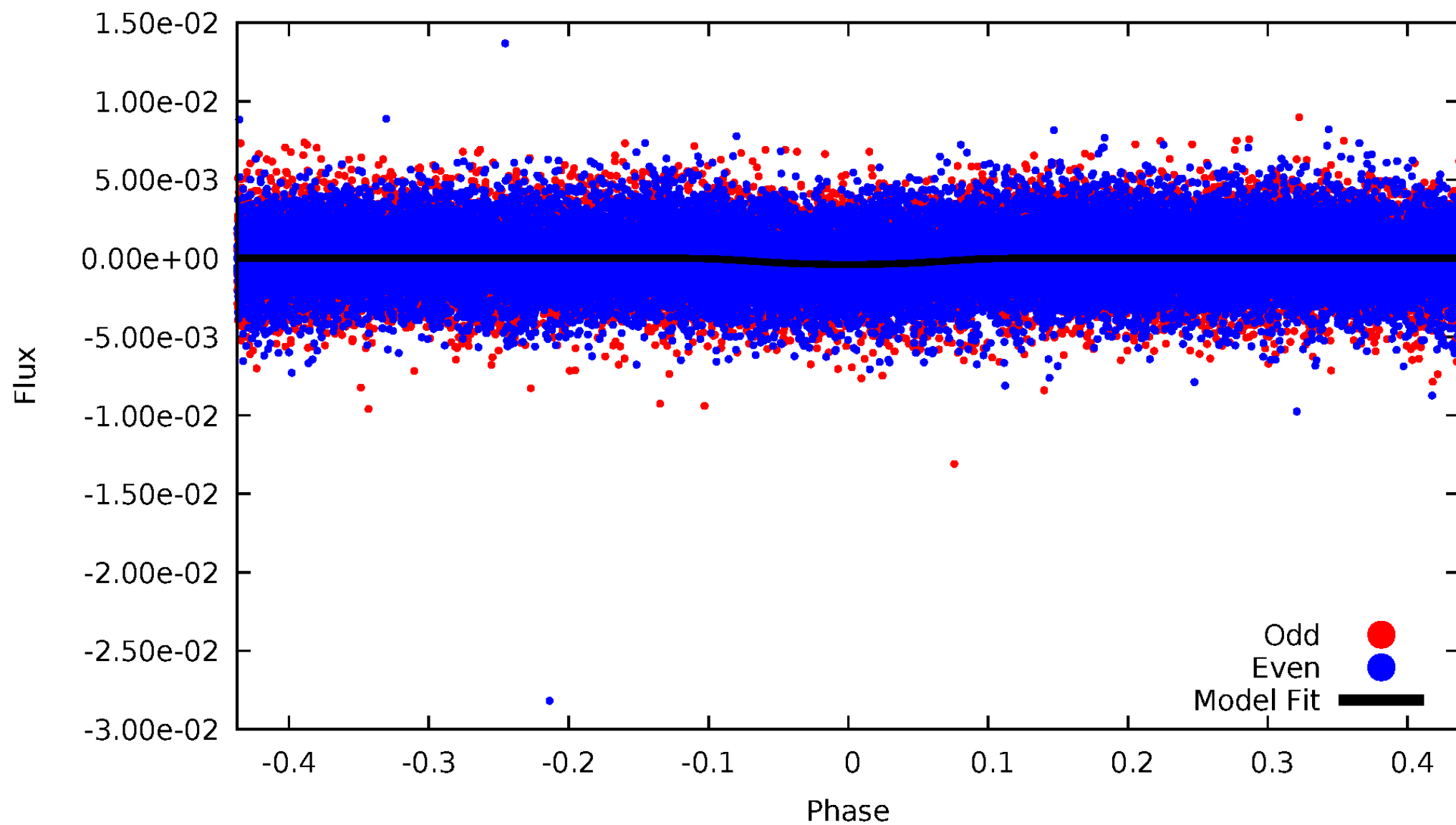


TCE 004733344-01



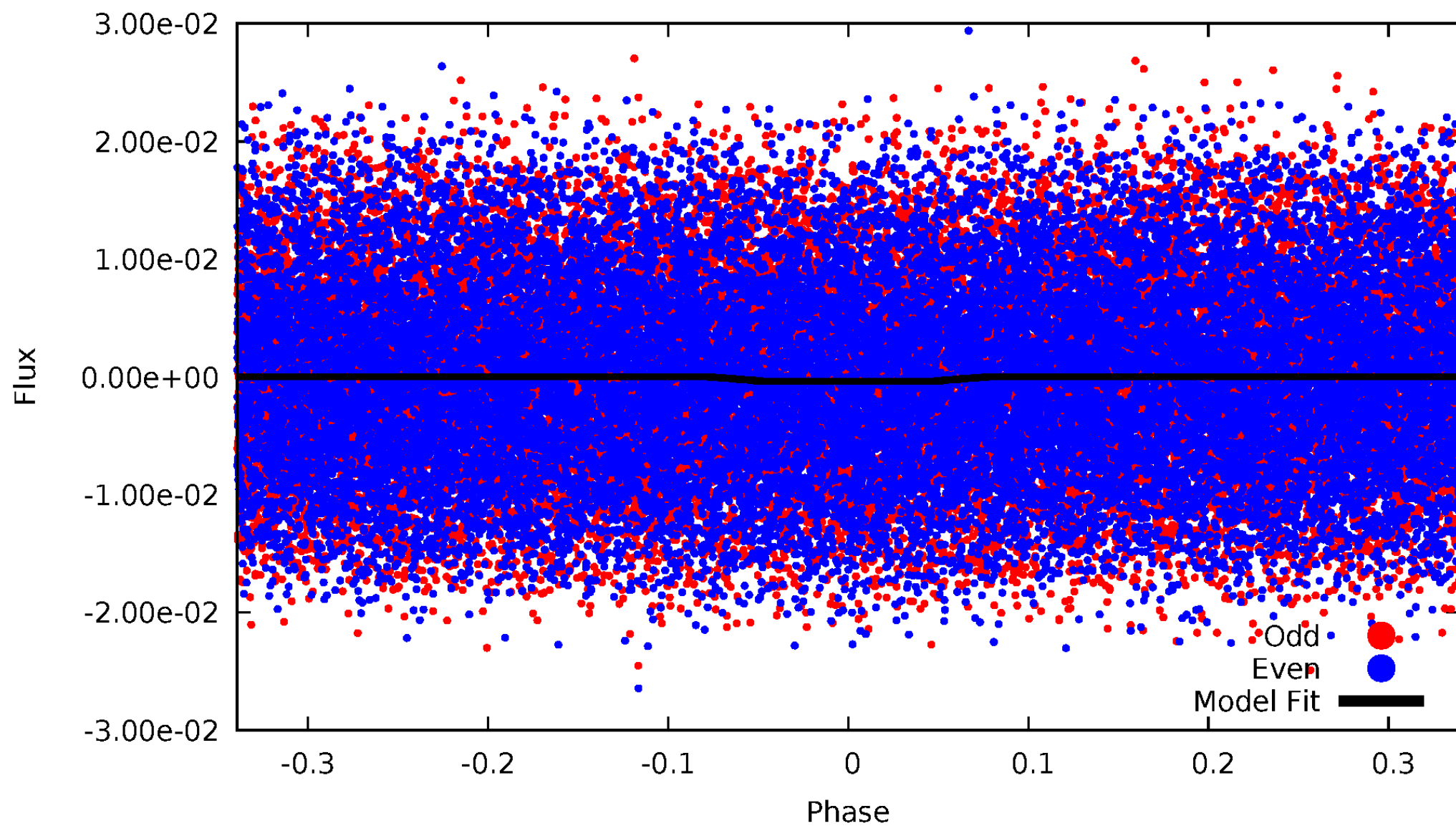
DV Odd/Even

TCE 004733344-01

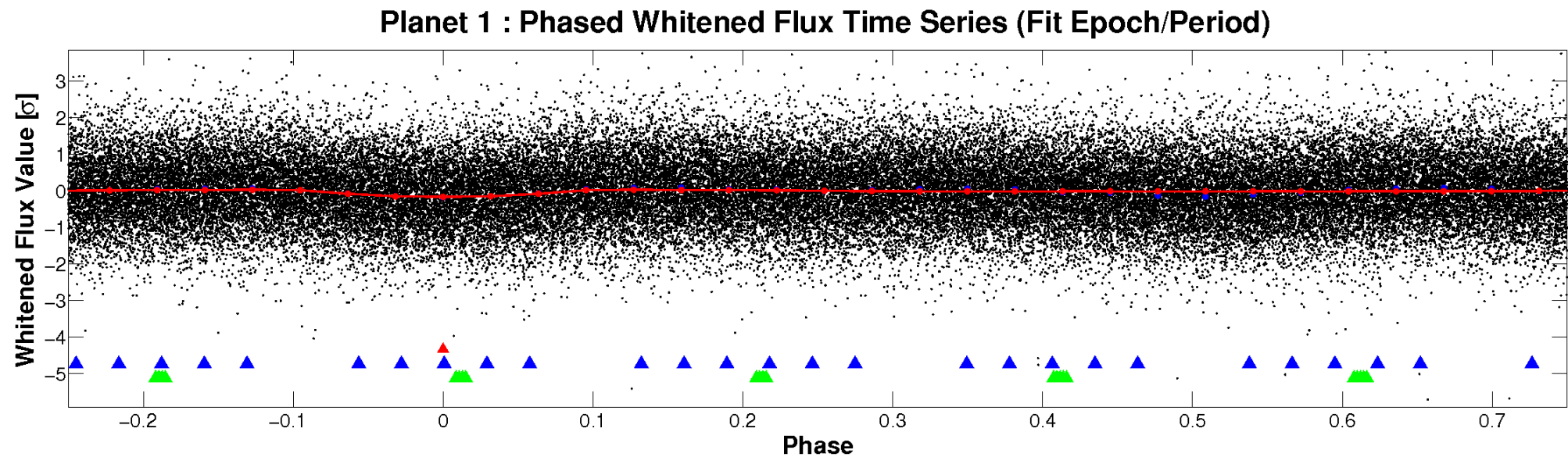
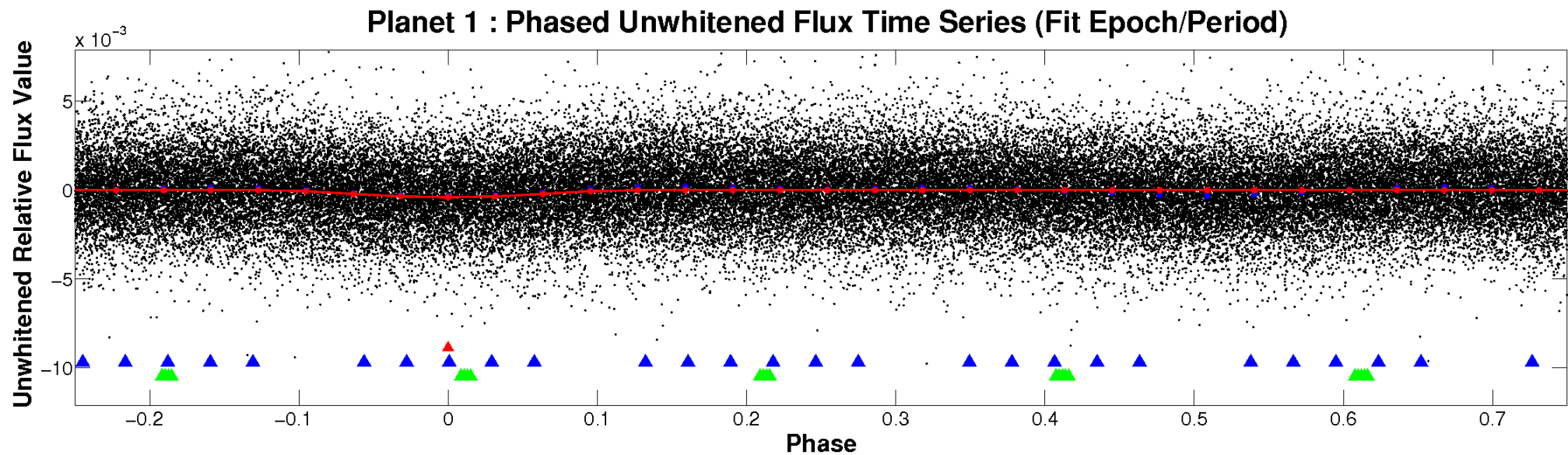


ALT Odd/Even

TCE 004733344-01

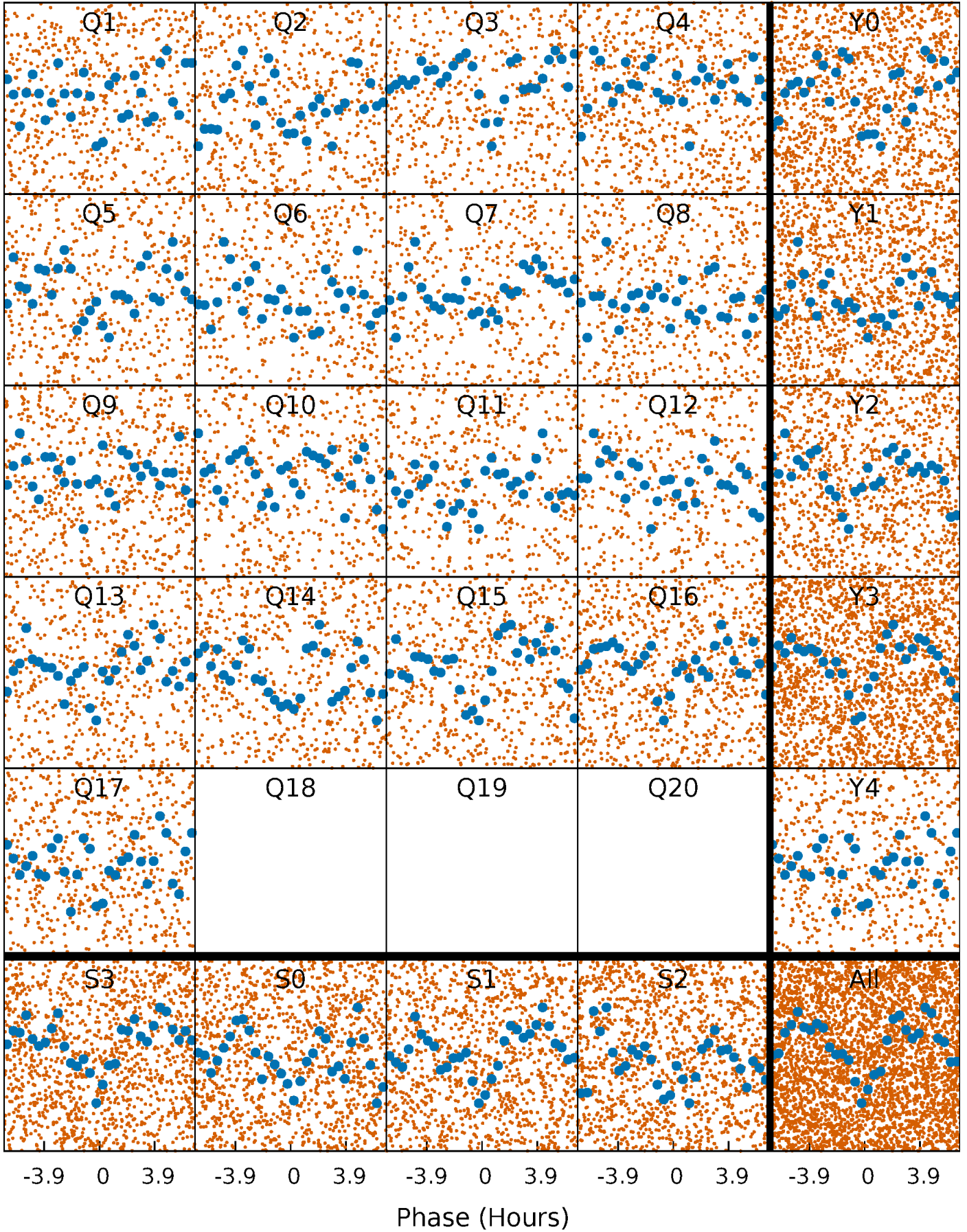


Non-Whitened Vs. Whitened Light Curve



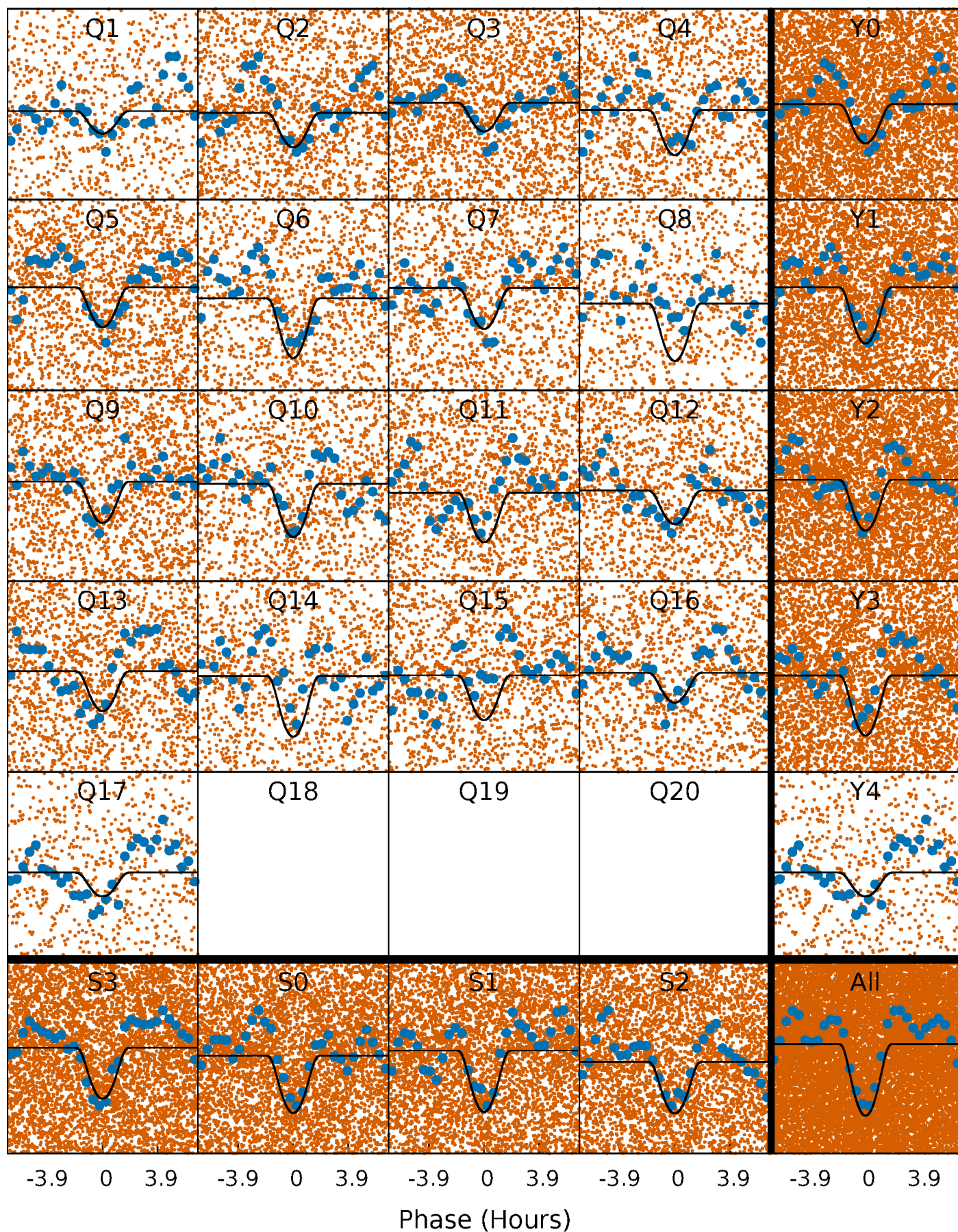
PDC Quarter-Phased Transit Curves

TCE 004733344-01 P= 0.642654 Days $T_0=132.108980$ (BKJD)



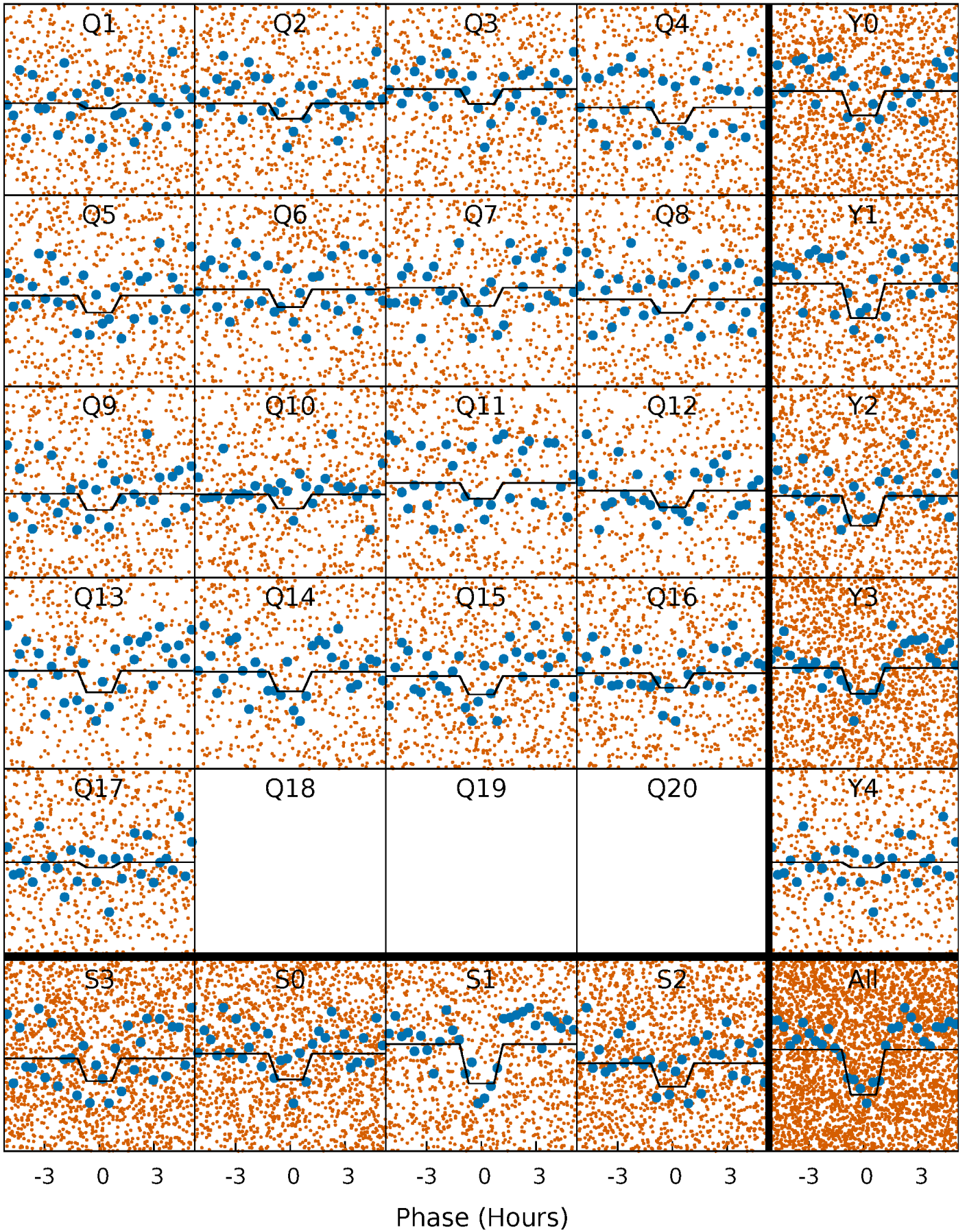
DV Quarter-Phased Transit Curves

TCE 004733344-01 P= 0.642654 Days $T_0=132.108980$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

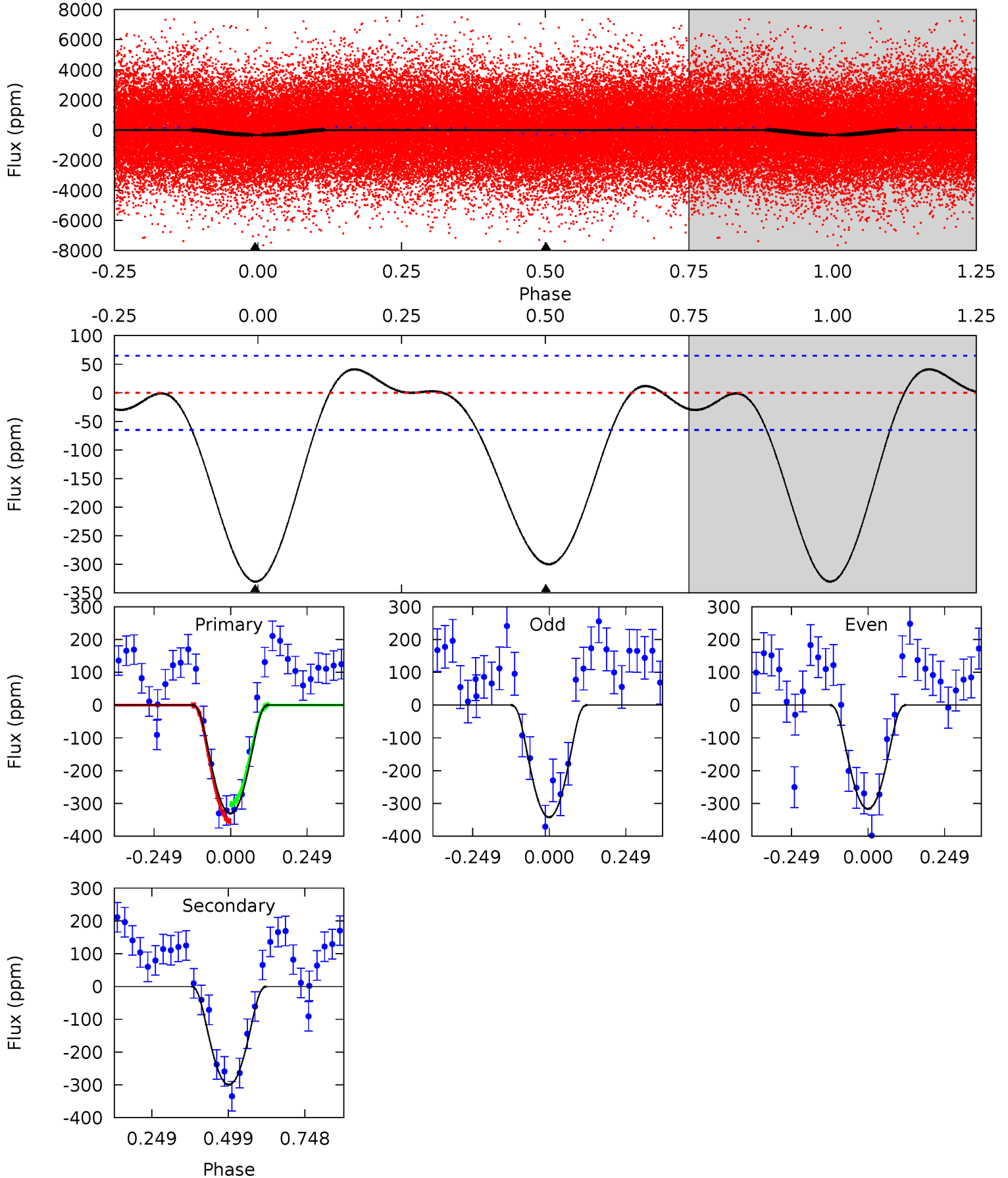
TCE 004733344-01 P= 0.642647 Days $T_0=132.117225$ (BKJD)



DV Model-Shift Uniqueness Test

004733344-01, P = 0.642654 Days, E = 131.466326 Days

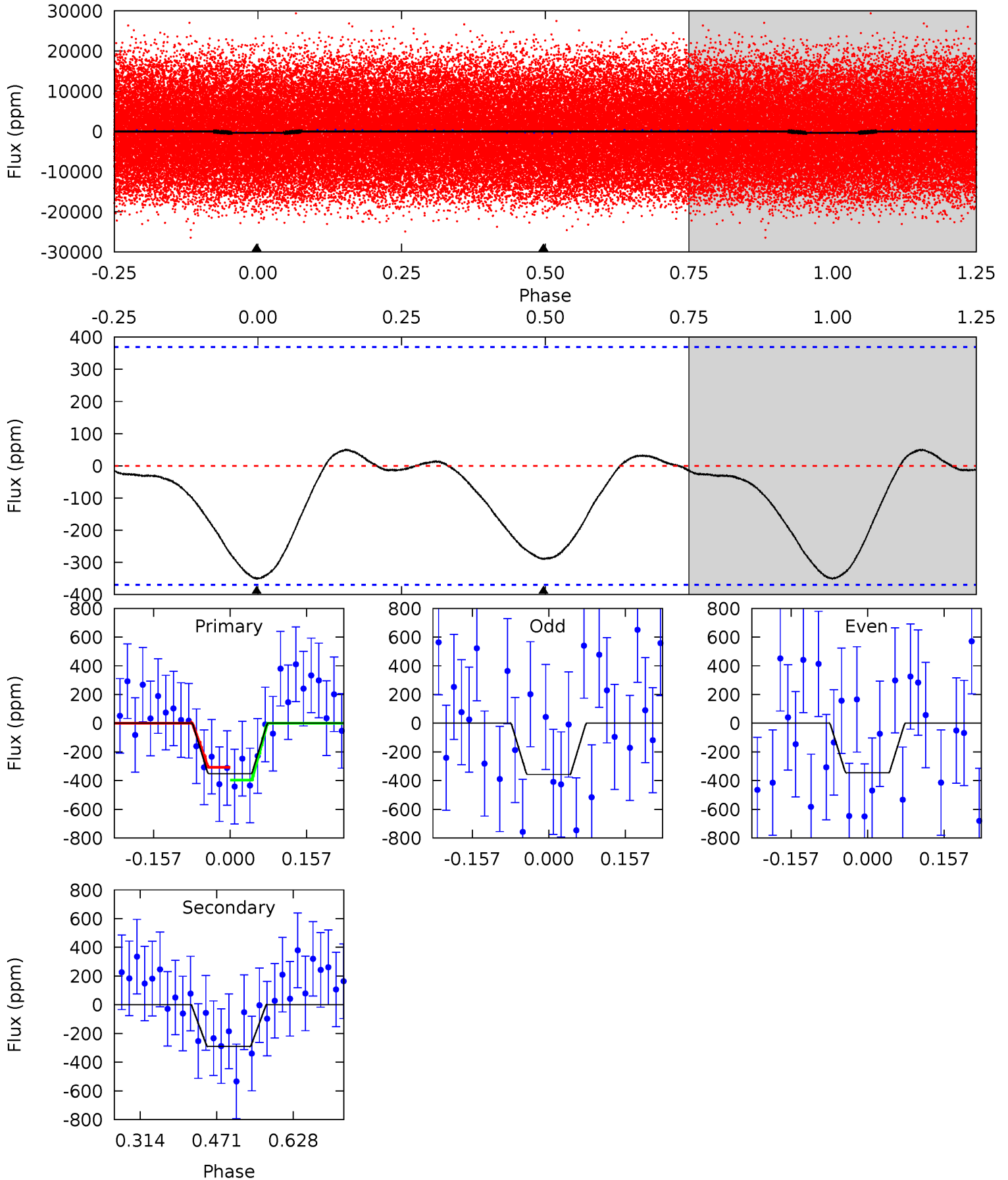
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.2	20.1	0	0	4.37	1.15	1.05	22.2	22.2	20.1	20.1	0.86	1.25	0.11	1.73



Alt Model-Shift Uniqueness Test

004733344-01, P = 0.642647 Days, E = 131.474578 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.25	3.51	0	0	4.47	1.41	0.27	4.25	4.25	3.51	3.51	0.07	1.24	0.13	0.54



Stellar Parameters For KIC 004733344

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7209^{+199}_{-324}	$3.495^{+0.594}_{-0.066}$	$-0.120^{+0.250}_{-0.300}$	$4.232^{+0.416}_{-2.360}$	$2.040^{+0.068}_{-0.582}$	$0.038^{+0.296}_{-0.008}$
	+3%/-4%	+17%/-2%	+208%/-250%	+10%/-56%	+3%/-29%	+780%/-21%
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 004733344-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-299 ± 15	$10.90^{+4.21}_{-4.26}$	6474^{+468}_{-900}	4561^{+1705}_{-8468}	$0.460^{+0.749}_{-0.216}$
Alt.	-290 ± 83	$7.46^{+4.21}_{-3.37}$	6363^{+501}_{-1058}	5878^{+3060}_{-1979}	$0.906^{+2.288}_{-0.540}$

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

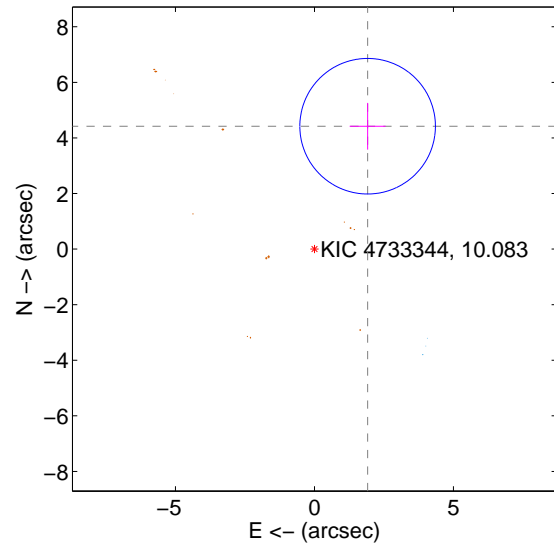
Supplemental centroid analysis for 004733344-01. **Kepler magnitude: 10.08.** Transit SNR 13.55

There are 3 quarters with good PRF difference image offsets

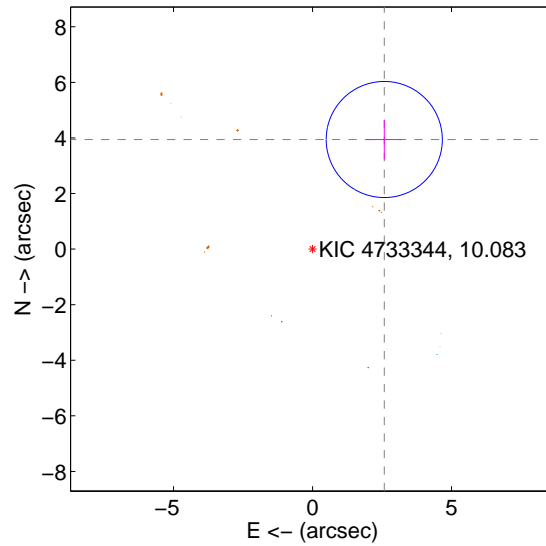
The direct PRF centroid is offset from the target star catalog position by about 1.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.818 ± 0.813	5.93	-1.913 ± 0.647	4.421 ± 0.840
PRF-fit source offset from KIC position	4.713 ± 0.696	6.77	-2.581 ± 0.651	3.944 ± 0.715
photometric centroid source offset	0.07 ± 0.11	0.59	0.06 ± 0.11	-0.02 ± 0.08

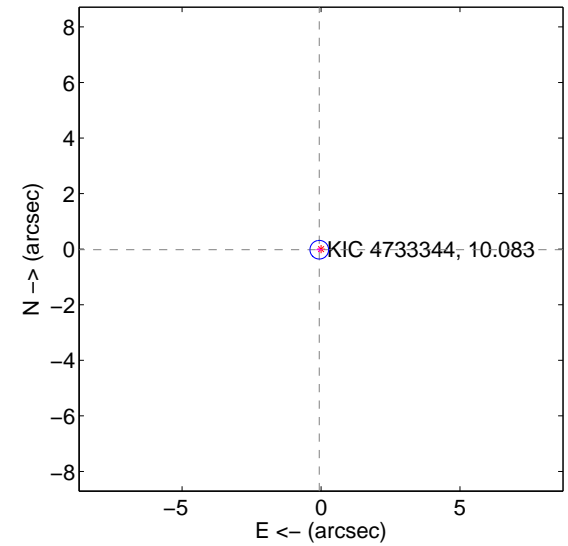
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

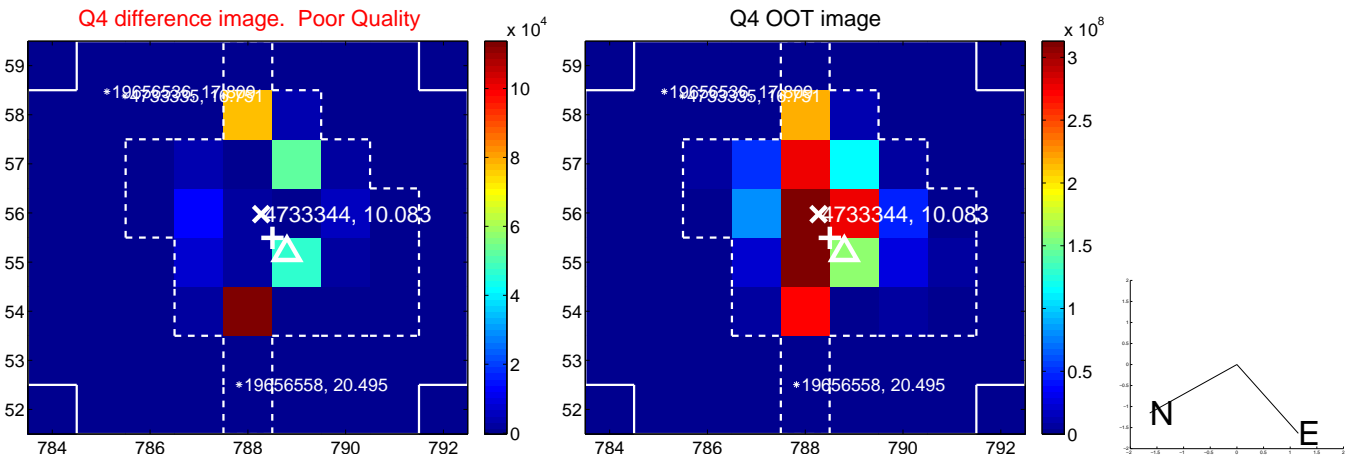
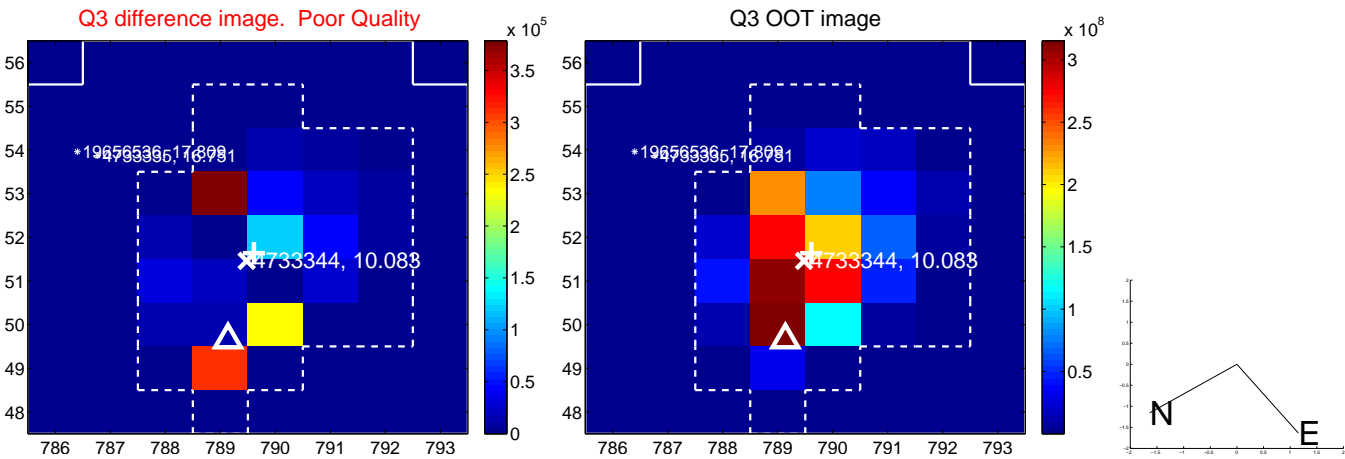
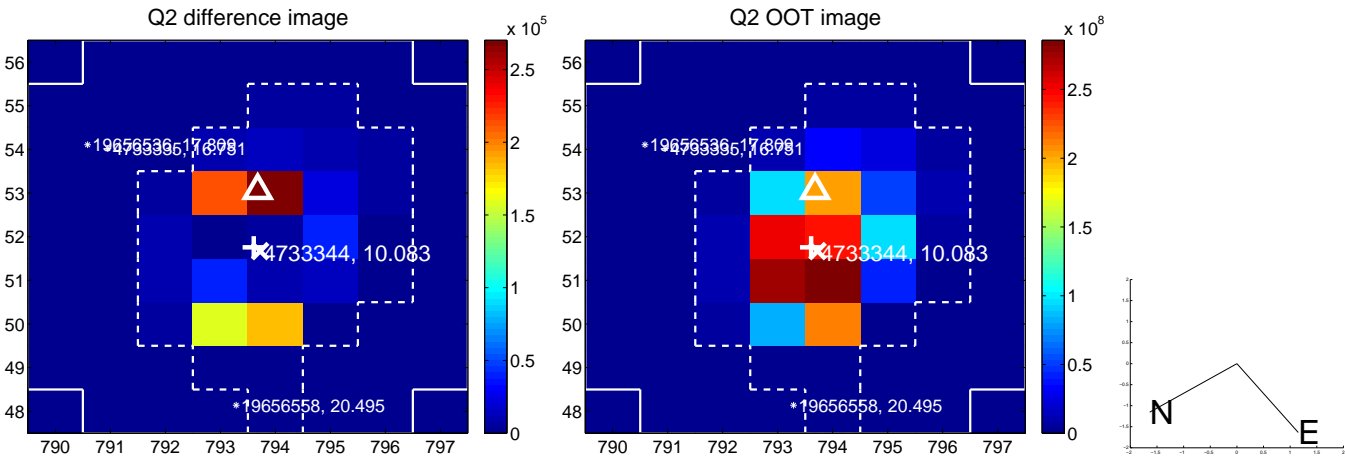
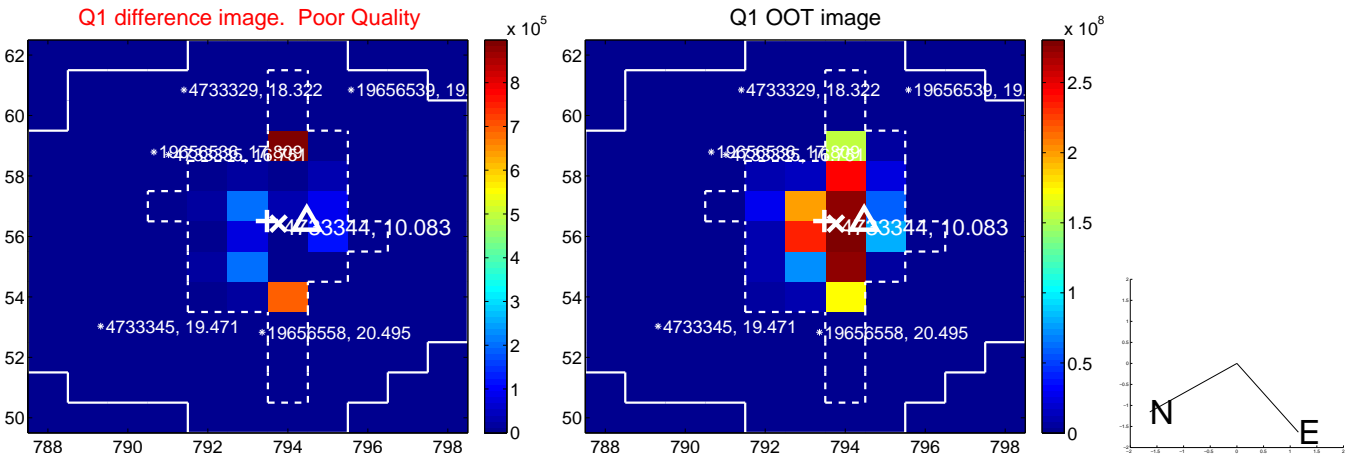


offset from photometric centroids

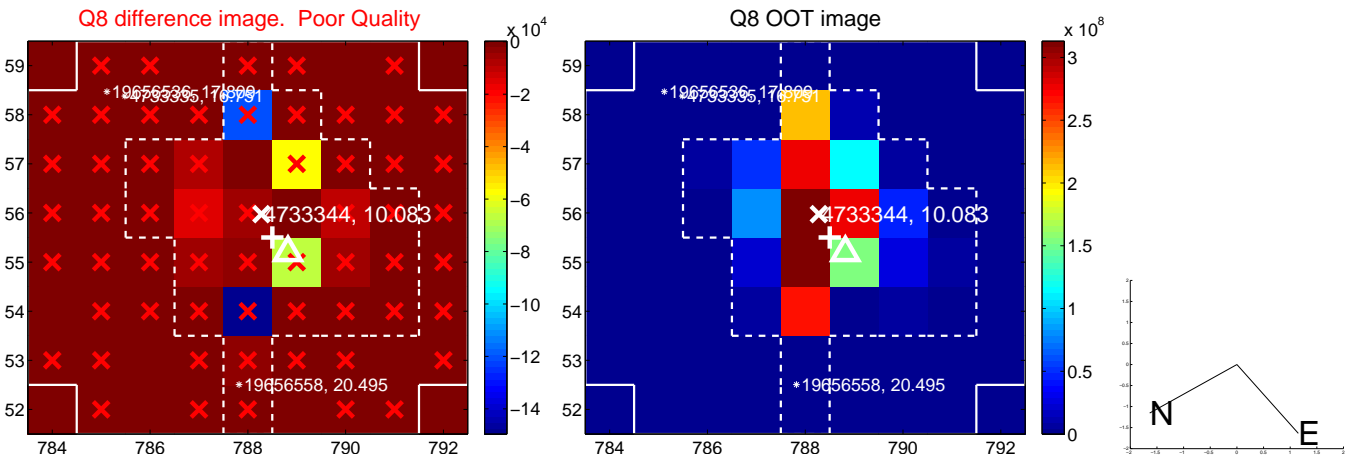
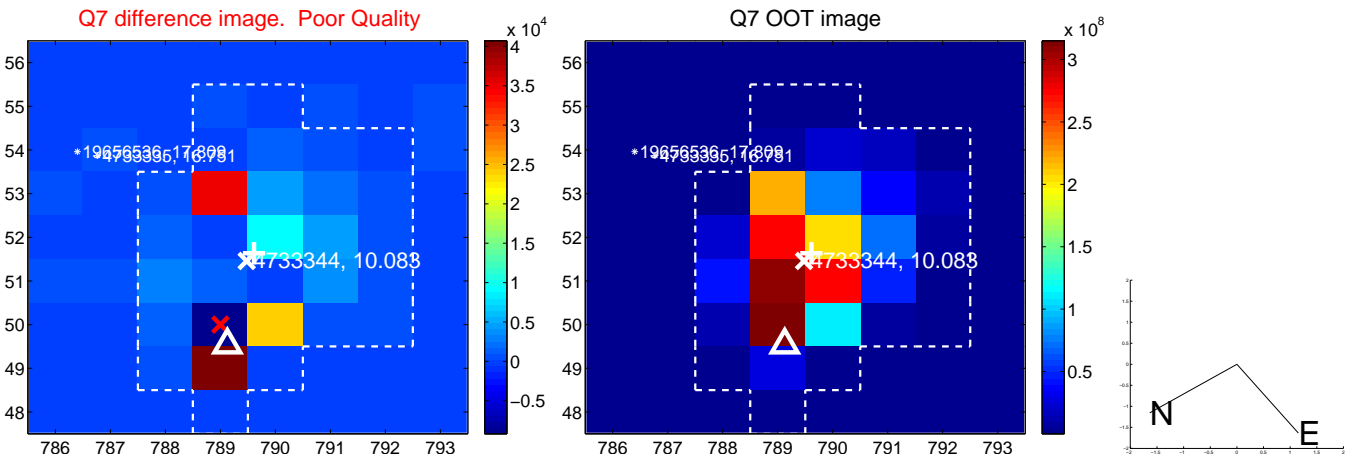
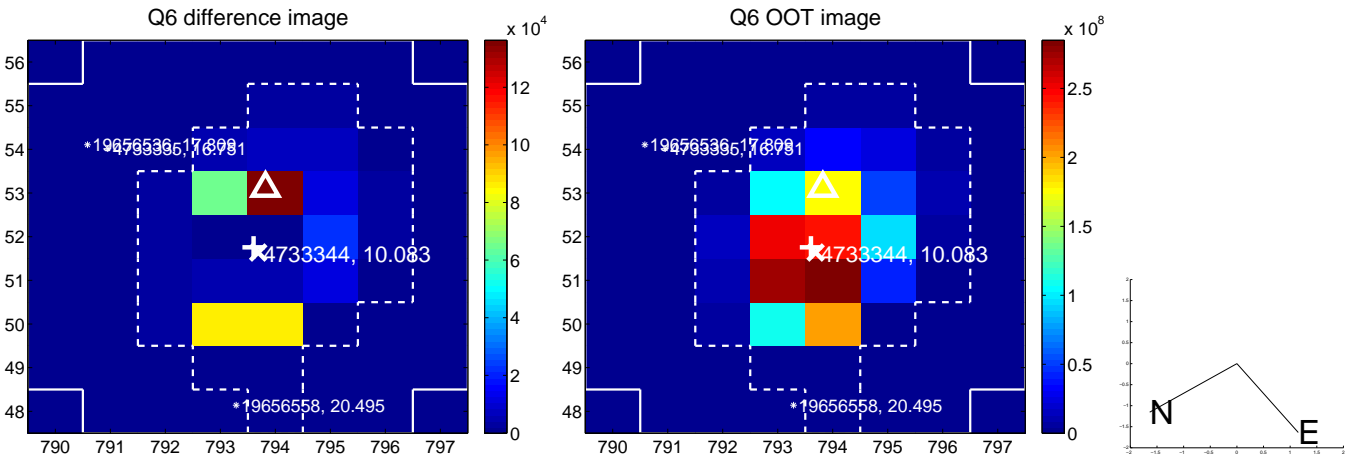
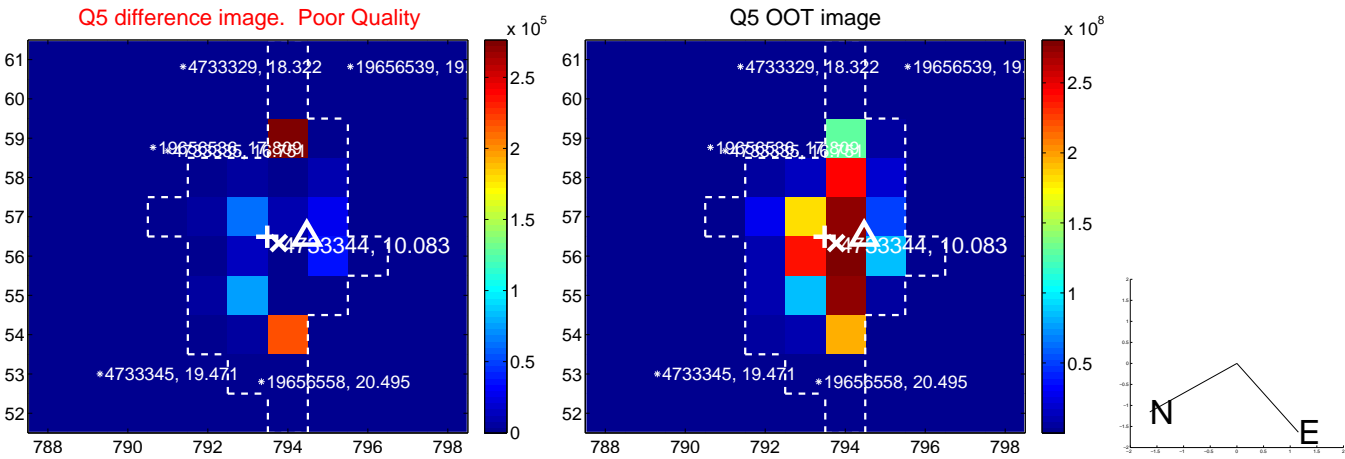


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

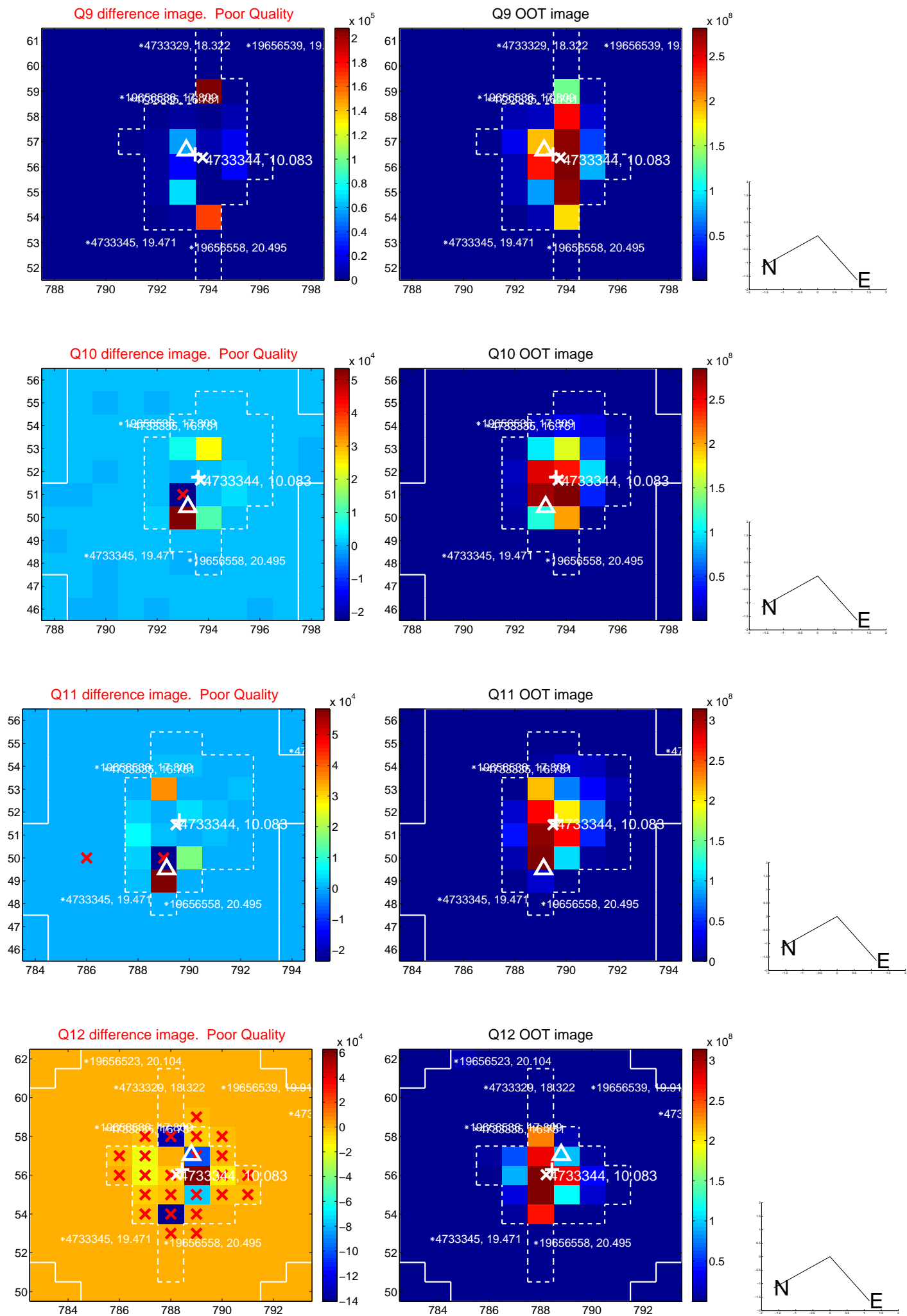
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



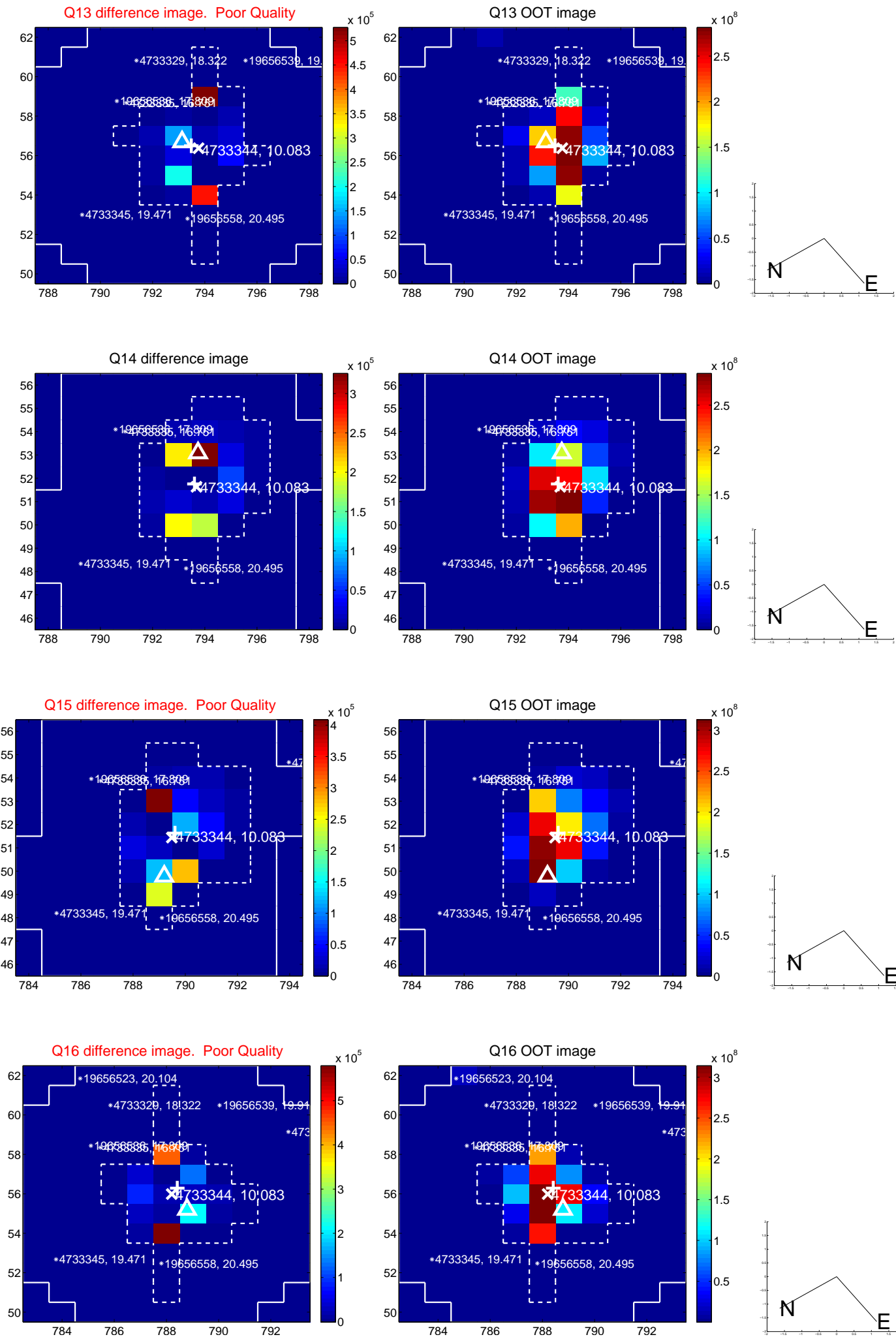
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



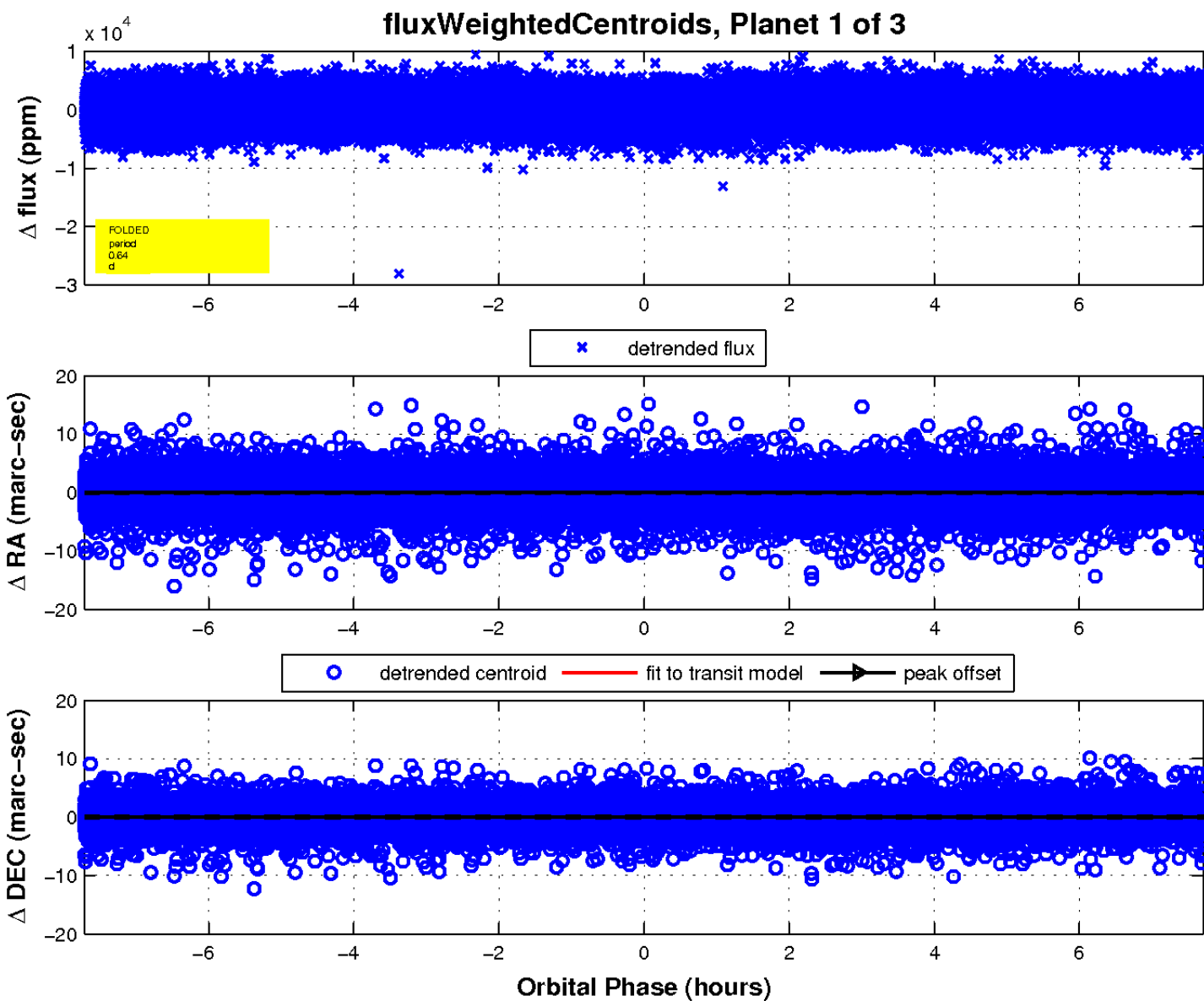
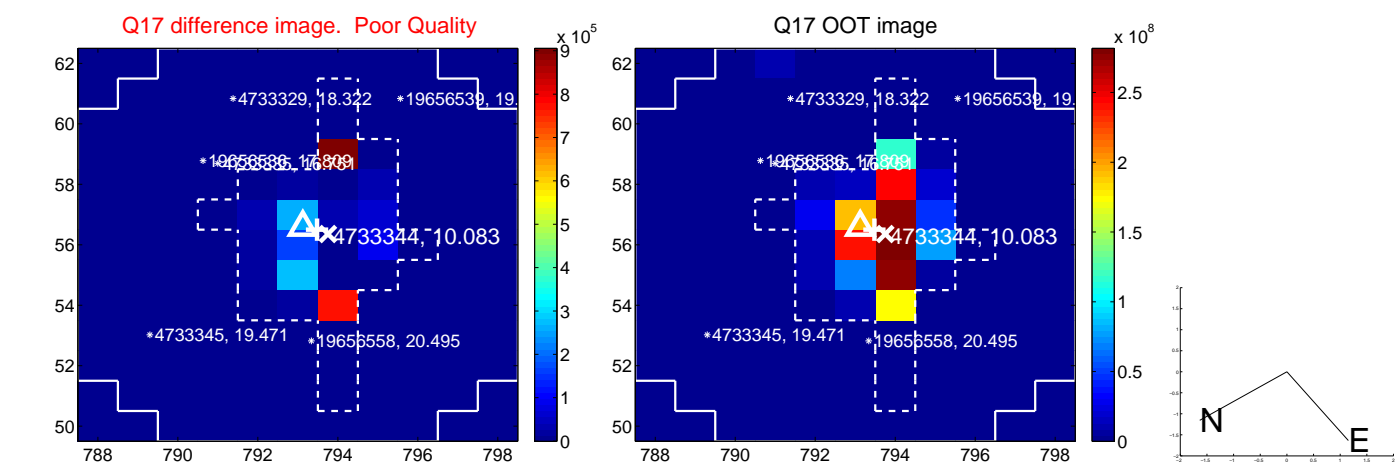
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

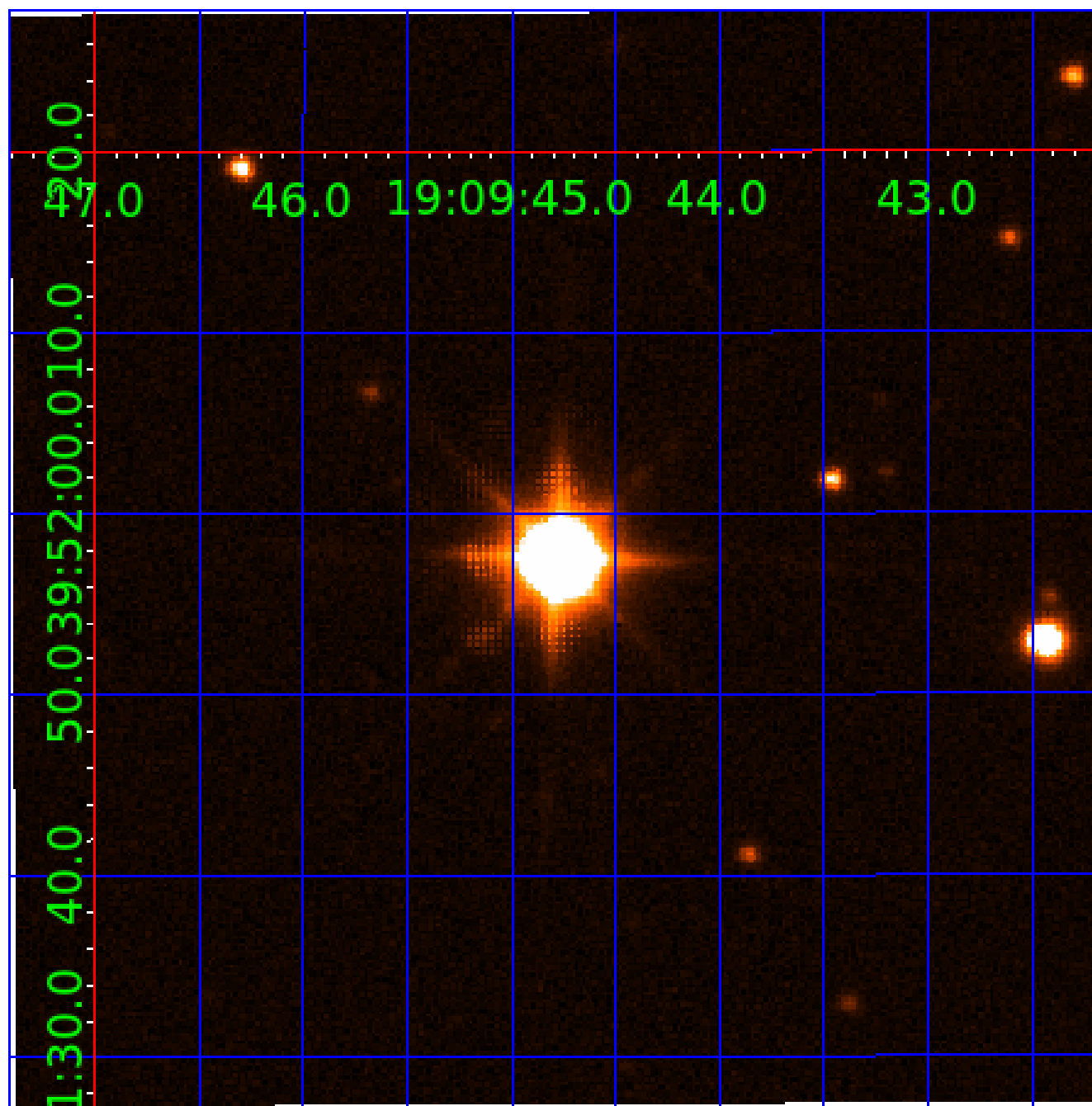


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004733344

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})
004733344-01	OBS	No	0.642654	132.108980	402.9	3.370	12.5	13.5	4.23	7209	12.45	0.00
004733344-02	OBS	No	52.958320	172.420433	3467.0	2.728	10.0	9.0	4.23	7209	26.49	353.33
004733344-03	OBS	No	68.635126	135.075695	3734.3	5.724	9.6	11.1	4.23	7209	46.56	250.05

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004733344-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
004733344-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
004733344-03	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.

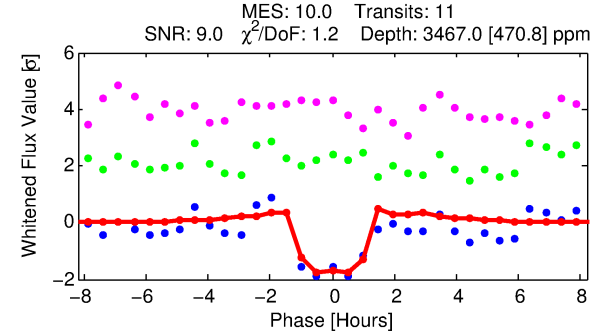
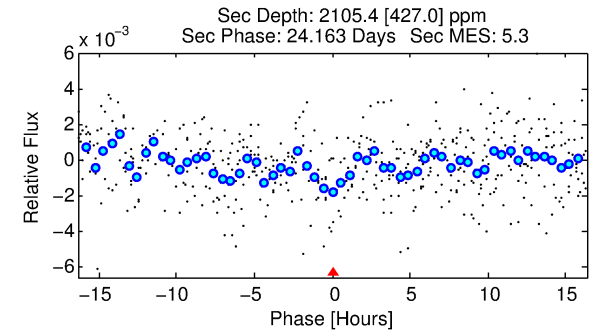
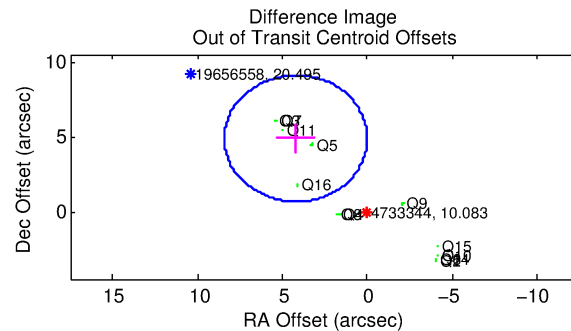
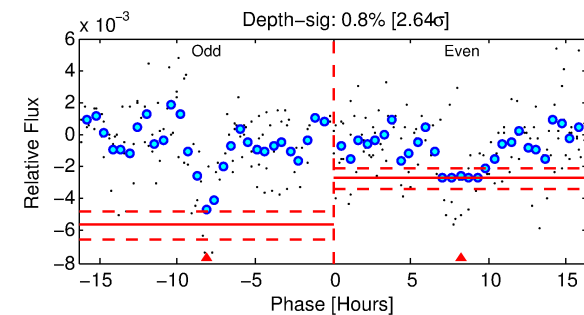
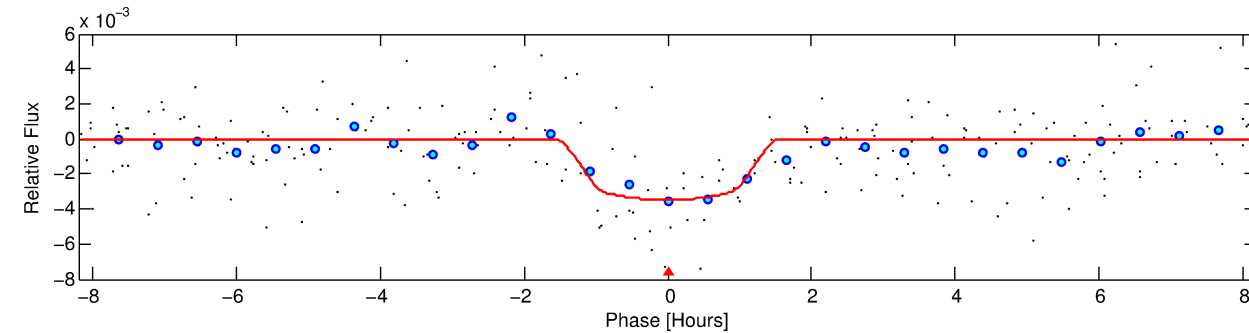
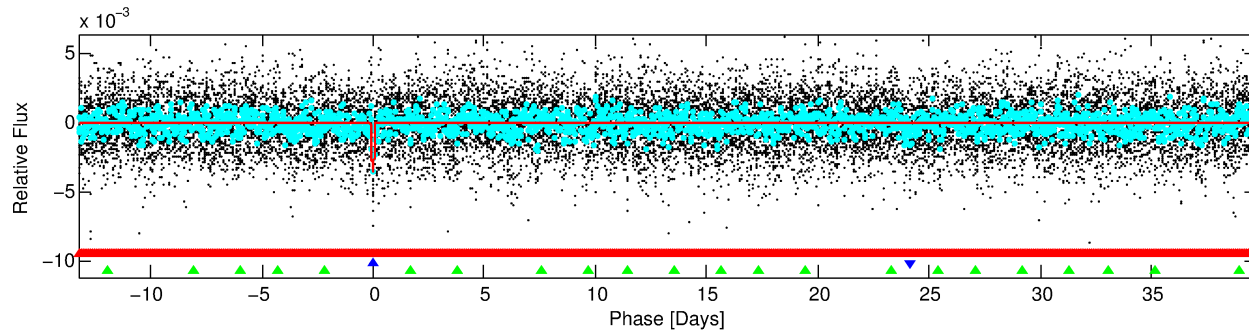
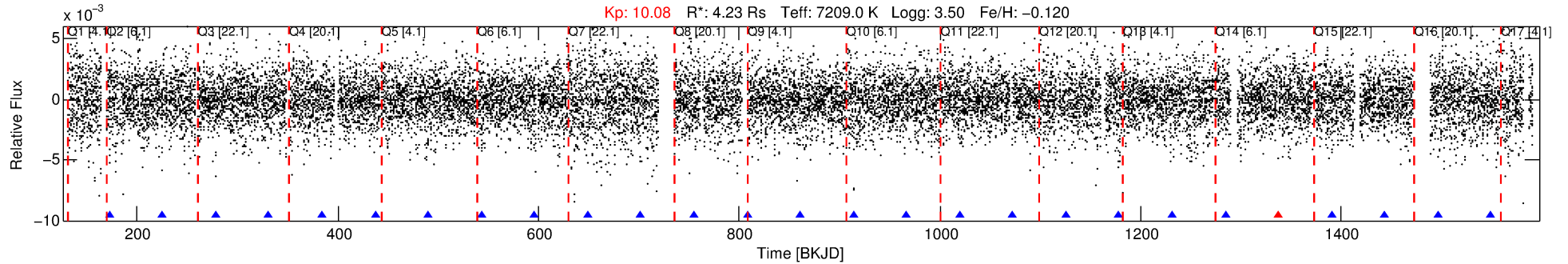
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004733344-02

No Significant Match Found

DV One-Page Summary

KIC: 4733344 Candidate: 2 of 3 Period: 52.958 d



DV Fit Results:

Period = 52.95832 [0.00037] d
Epoch = 172.4204 [0.0058] BKJD
Rp/R* = 0.0574 [0.0160]
a/R* = 122.72 [174.69]
b = 0.66 [1.24]
Seff = 353.33 [353.67]
Teq = 1106 [277] K
Rp = 26.49 [16.51] Re
a = 0.3502 [0.2060] AU
Ag = 202.43 [232.66] [0.87 σ]
Teffp = 6447 [998] K [5.16 σ]

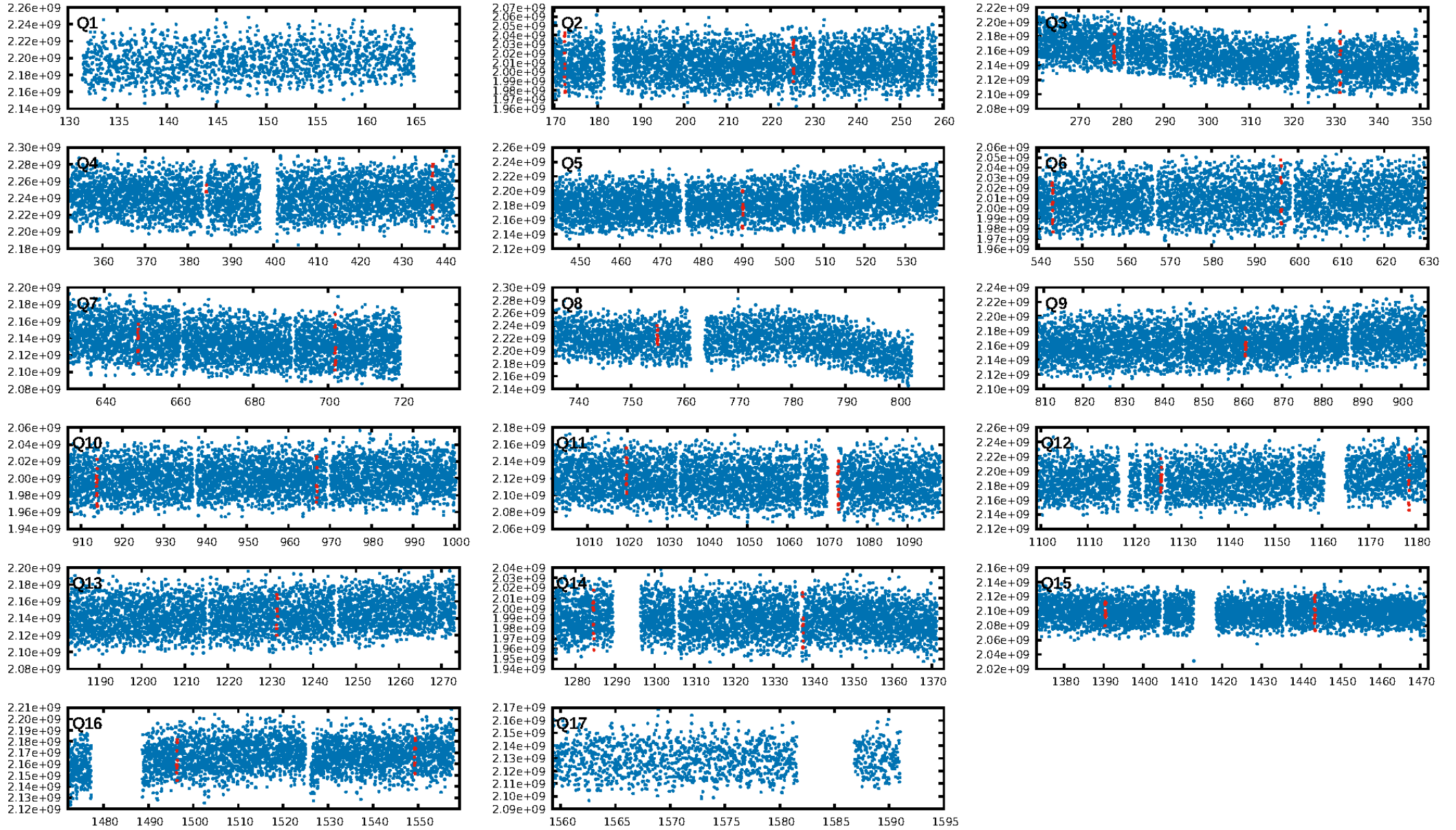
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [289.59 σ]
LongPeriod-sig: 100.0% [59.33 σ]
ModelChiSquare2-sig: 0.8%
ModelChiSquareGof-sig: 99.6%
Bootstrap-pfa: 1.56e-13
RollingBand-fgt: 0.91 [10/11]
GhostDiagnostic-chr: N/A
Centroid-sig: 1.6%
Centroid-so: 0.158 arcsec [1.81 σ]
OotOffset-rm: 6.441 arcsec [4.58 σ]
KicOffset-rm: 5.968 arcsec [4.11 σ]
OotOffset-st: 4/4/3/2 [13]
KicOffset-st: 4/4/3/2 [13]
DiffImageQuality-fgm: 0.15 [2/13]
DiffImageOverlap-fno: 0.00 [0/13]

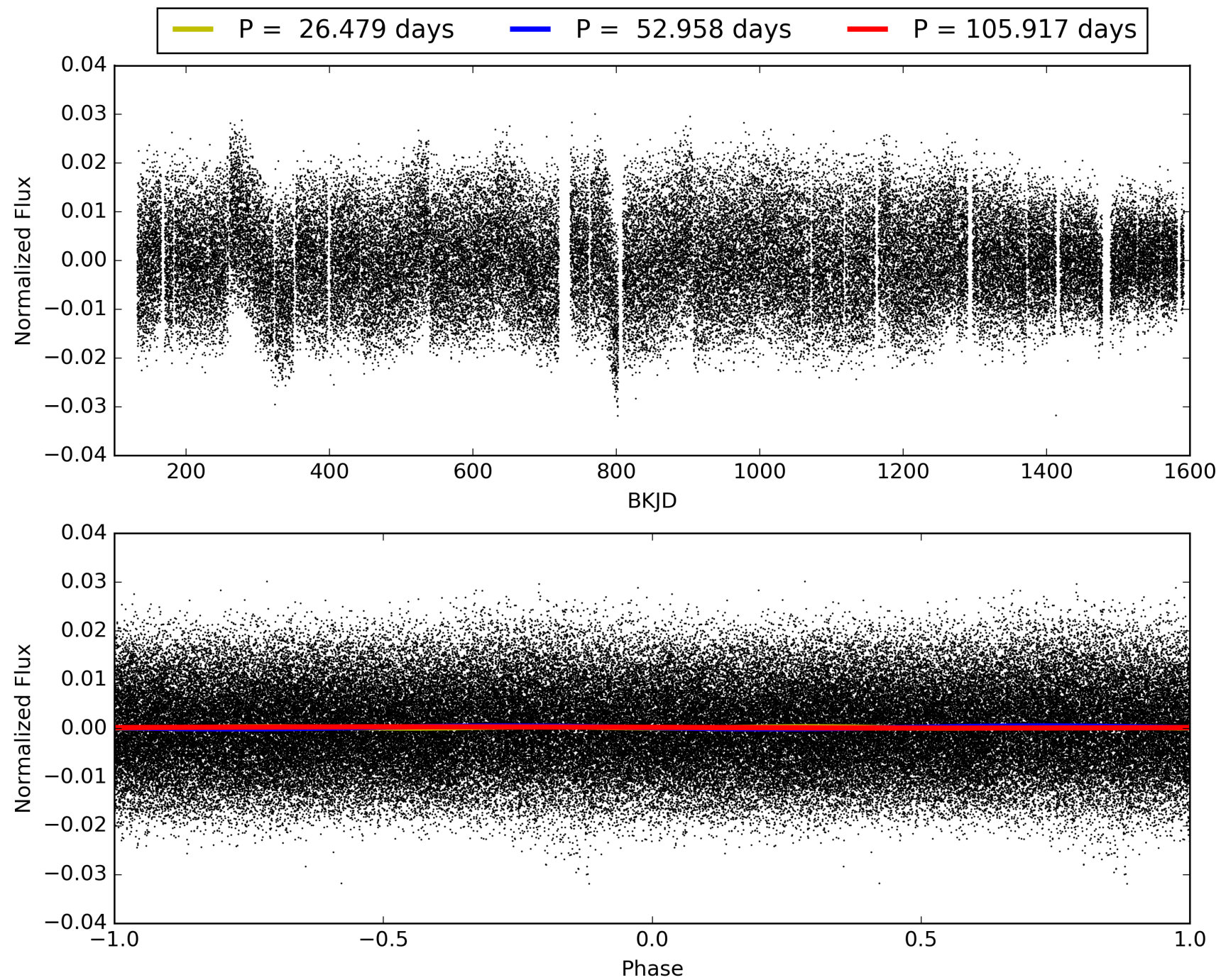
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 05:02:37 Z

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

TCE 004733344-02, PDC Light Curves

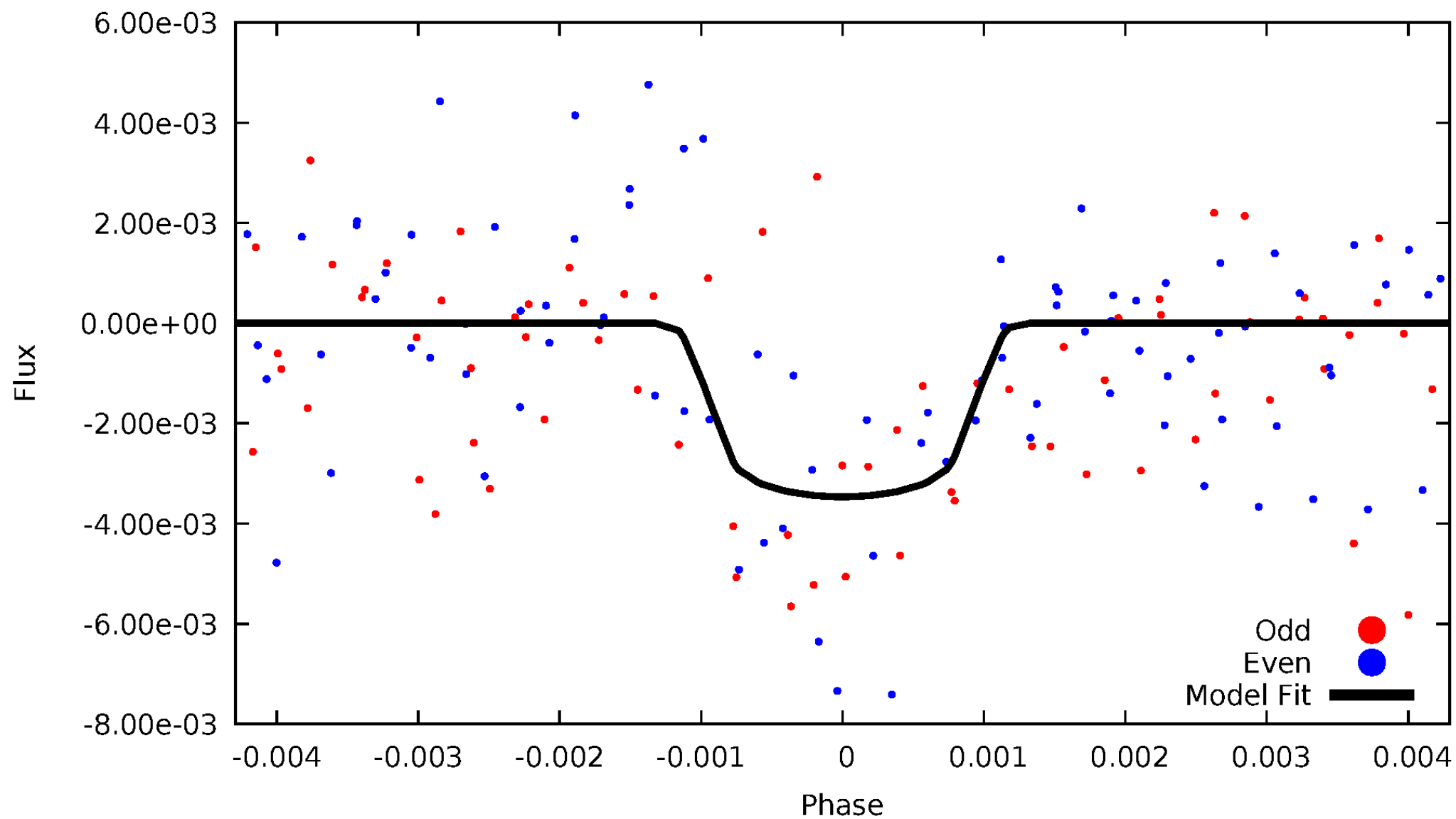


TCE 004733344-02



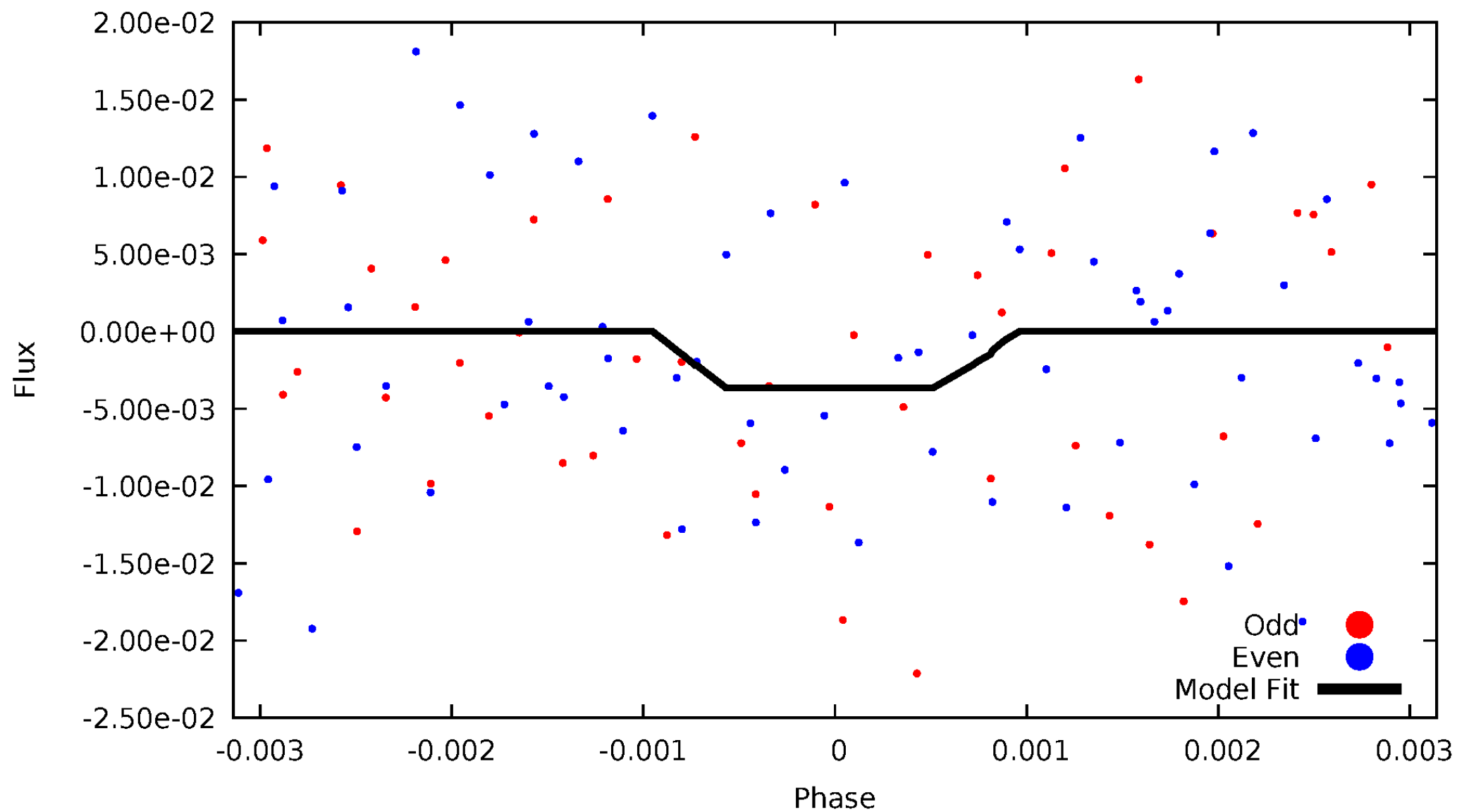
DV Odd/Even

TCE 004733344-02



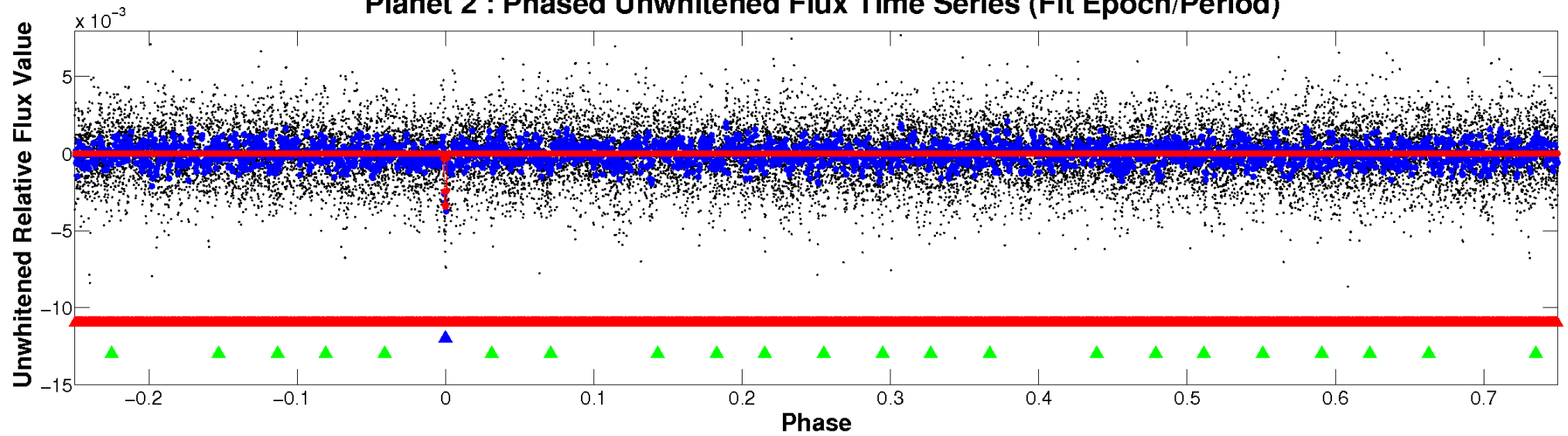
ALT Odd/Even

TCE 004733344-02

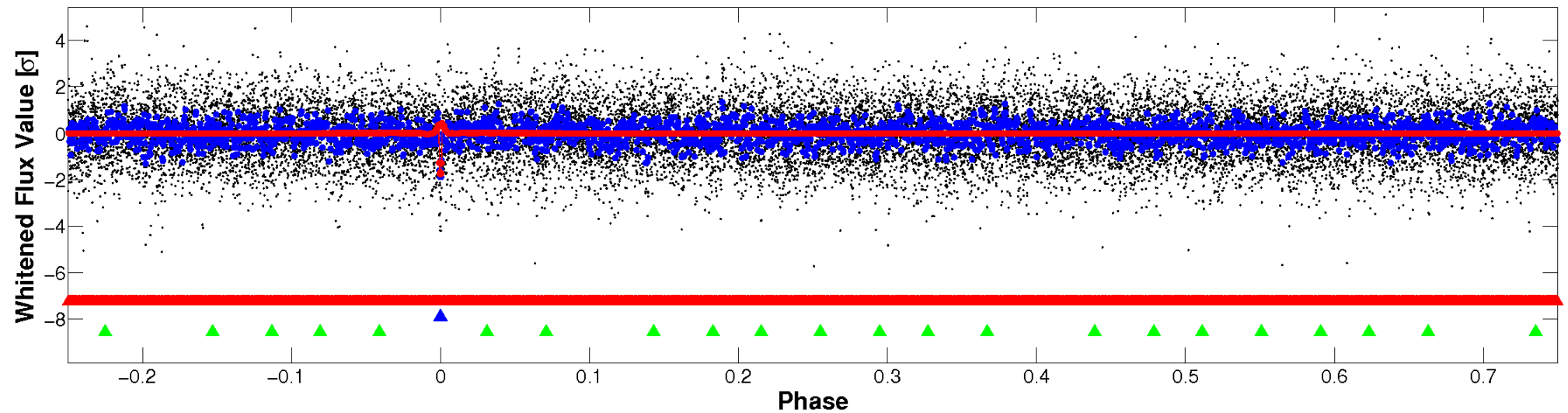


Non-Whitened Vs. Whitened Light Curve

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

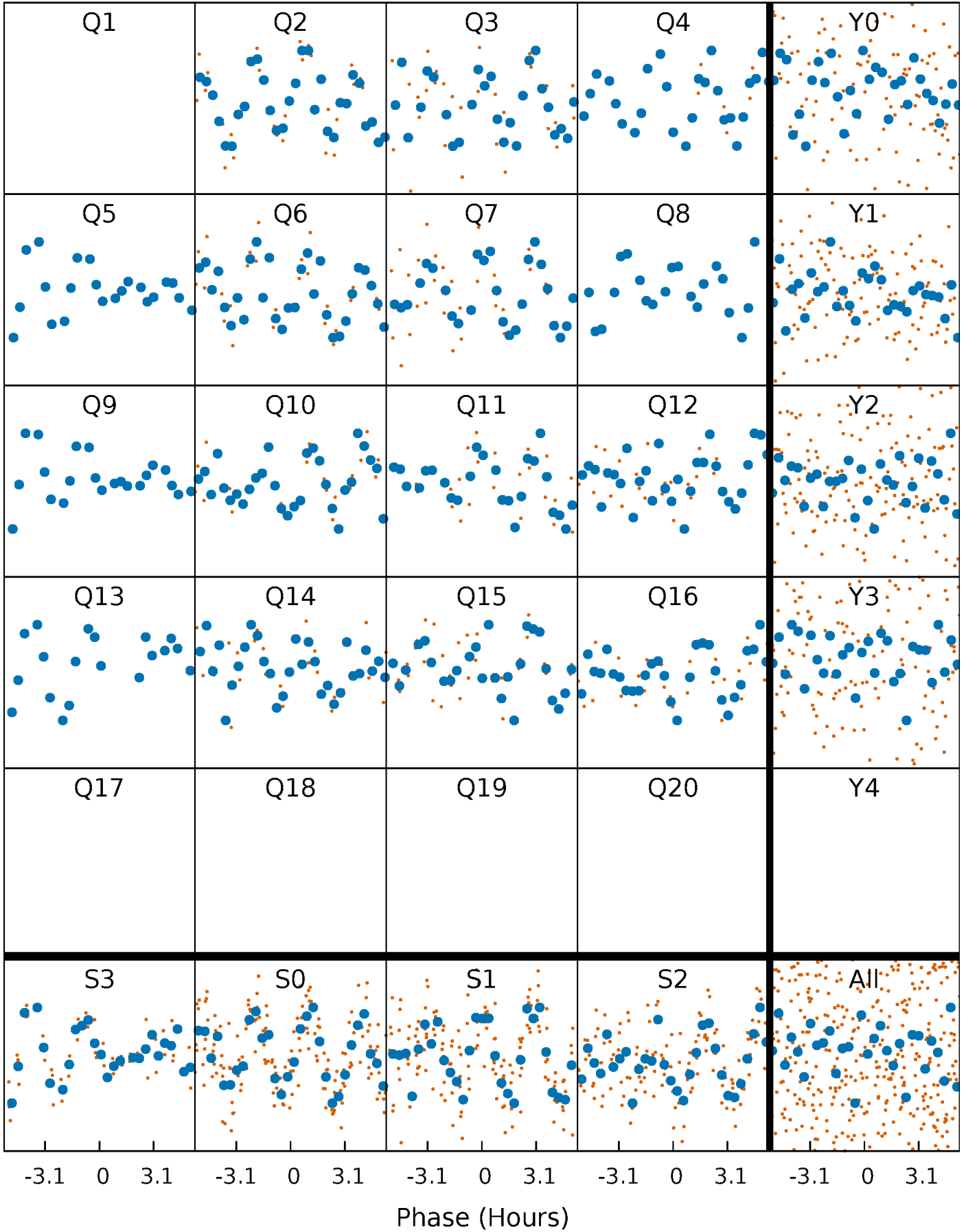


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



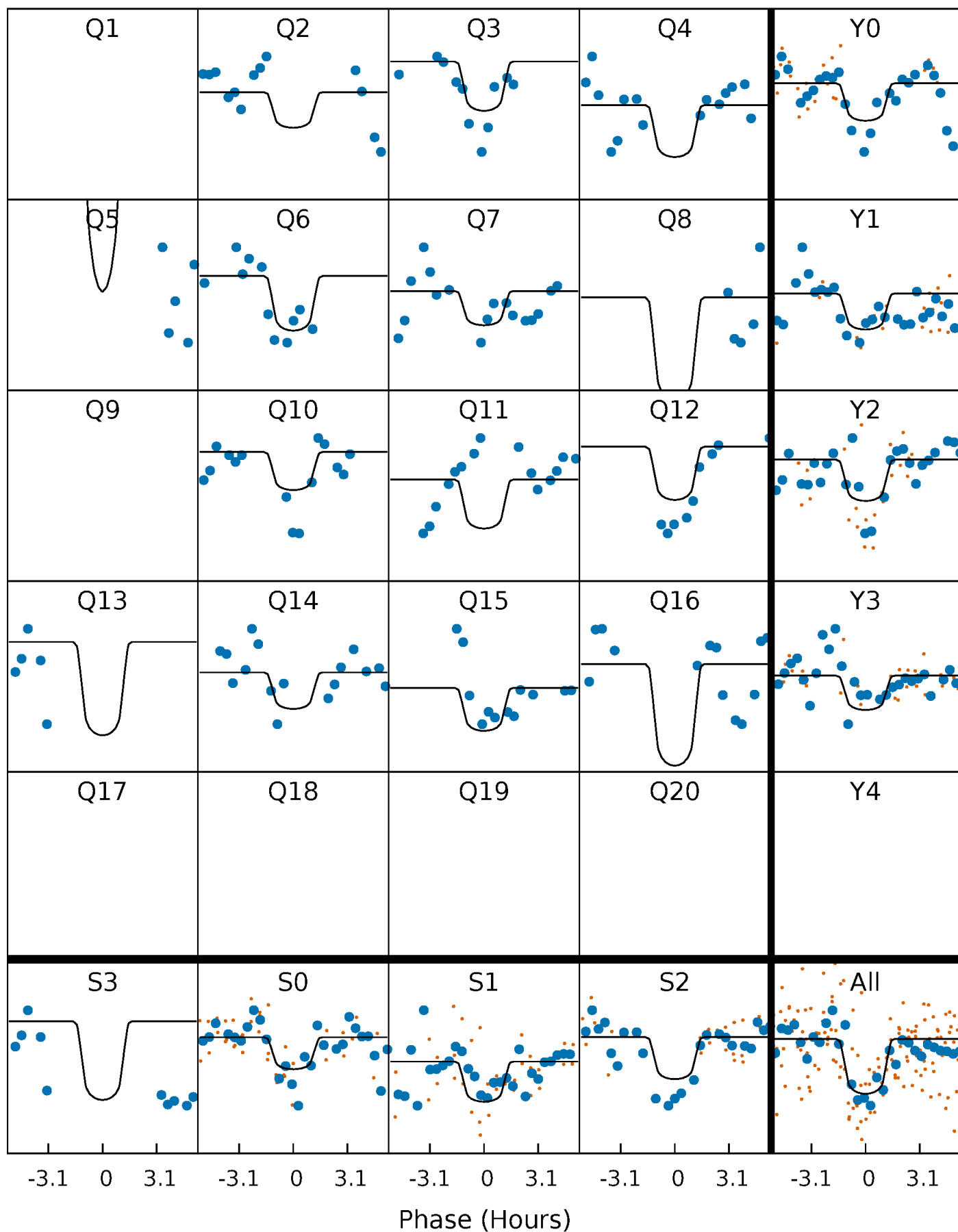
PDC Quarter-Phased Transit Curves

TCE 004733344-02 $P = 52.958320$ Days $T_0 = 172.420433$ (BKJD)



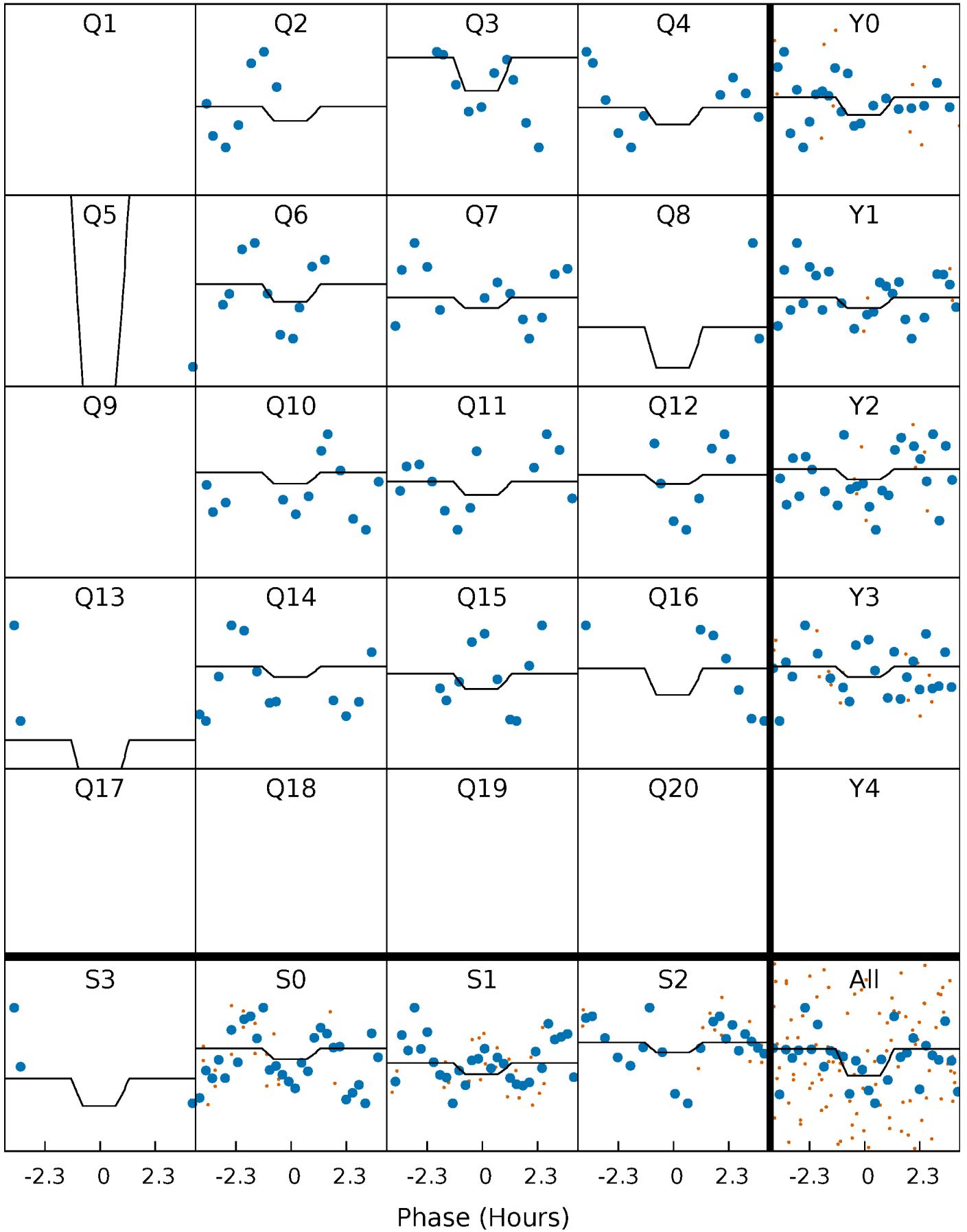
DV Quarter-Phased Transit Curves

TCE 004733344-02 P= 52.958320 Days $T_0=172.420433$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

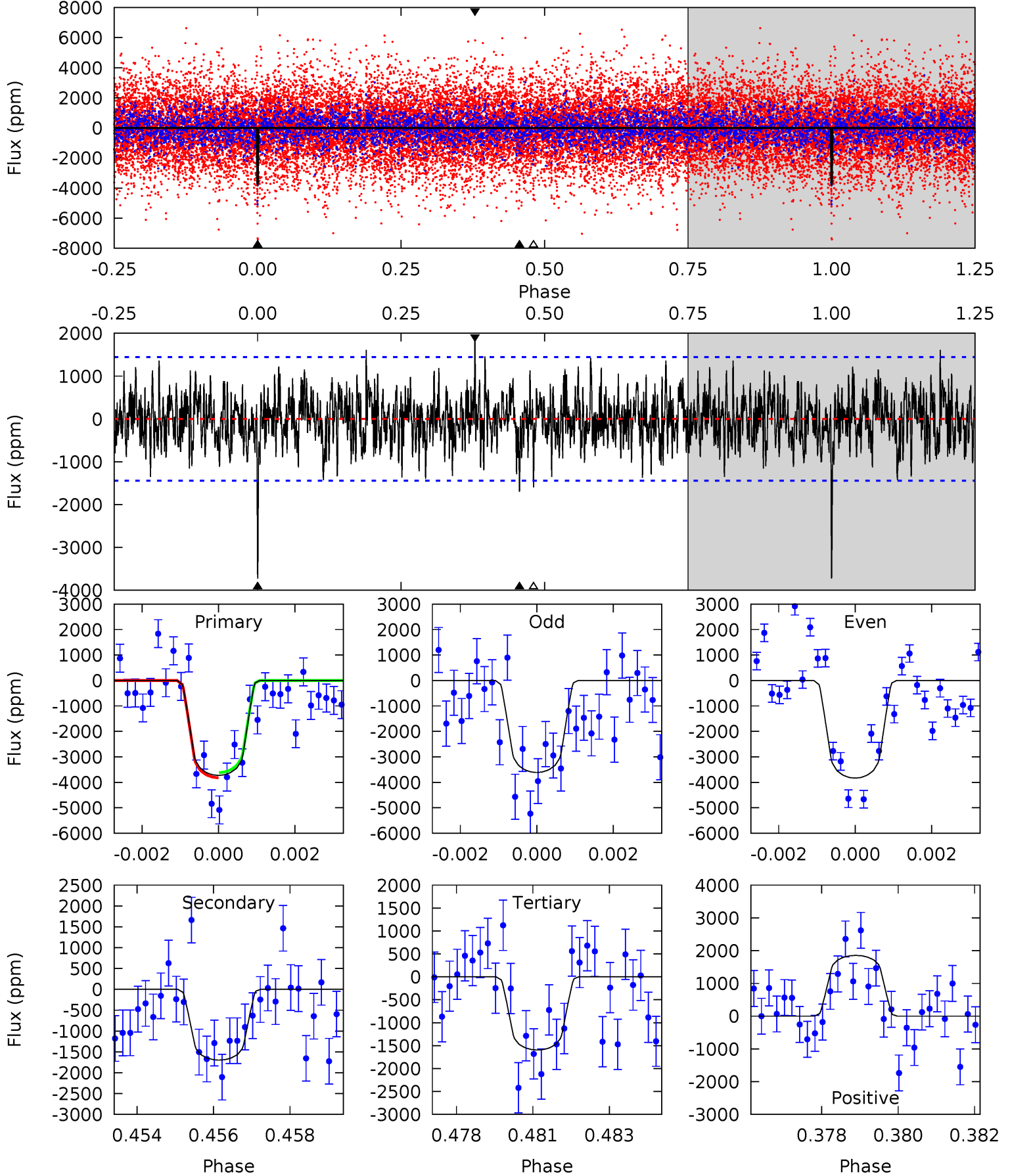
TCE 004733344-02 P= 52.959814 Days $T_0=172.390974$ (BKJD)



DV Model-Shift Uniqueness Test

004733344-02, P = 52.958320 Days, E = 119.462113 Days

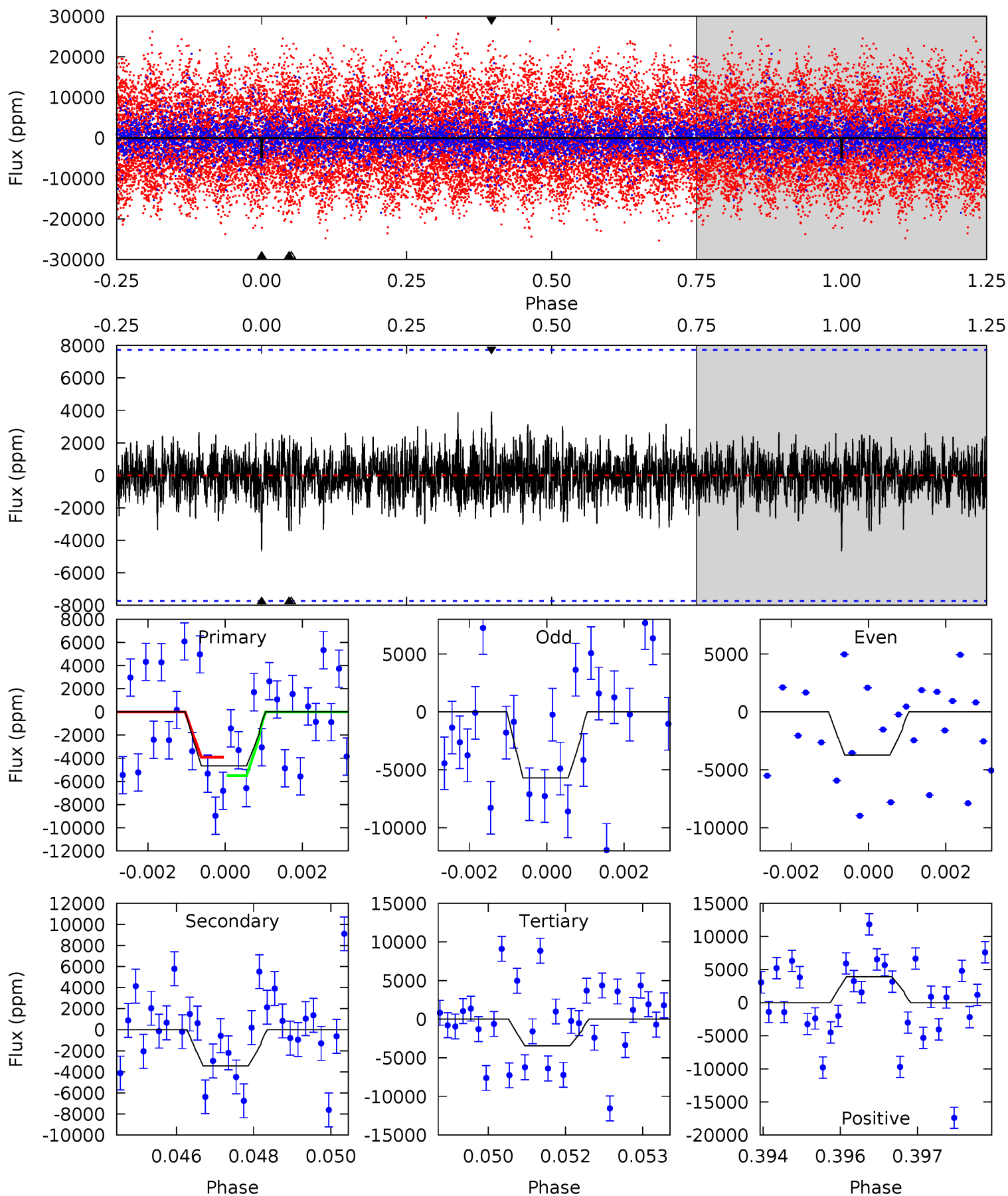
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	6.22	5.85	6.79	5.29	3.03	1.77	7.81	6.86	0.37	-0.58	0.40	0.91	0.33	0.36



Alt Model-Shift Uniqueness Test

004733344-02, P = 52.959814 Days, E = 119.431160 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.22	2.37	2.37	2.71	5.34	3.11	0.70	0.85	0.51	0.00	-0.34	0.68	0.93	0.46	0.55



Stellar Parameters For KIC 004733344

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7209^{+199}_{-324}	$3.495^{+0.594}_{-0.066}$	$-0.120^{+0.250}_{-0.300}$	$4.232^{+0.416}_{-2.360}$	$2.040^{+0.068}_{-0.582}$	$0.038^{+0.296}_{-0.008}$
	+3%/-4%	+17%/-2%	+208%/-250%	+10%/-56%	+3%/-29%	+780%/-21%
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 004733344-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1697 ± 273	$22.60^{+8.89}_{-8.54}$	1476^{+117}_{-217}	6025^{+1318}_{-723}	216^{+313}_{-105}
Alt.	-3436 ± 1448	$24.10^{+9.32}_{-8.74}$	1476^{+108}_{-211}	6902^{+1925}_{-1138}	354^{+583}_{-192}

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

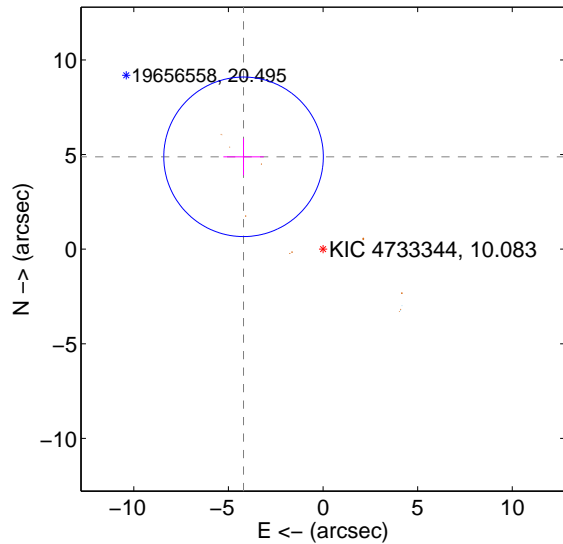
Supplemental centroid analysis for 004733344-02. **Kepler magnitude: 10.08.** Transit SNR 9.03

There are 2 quarters with good PRF difference image offsets

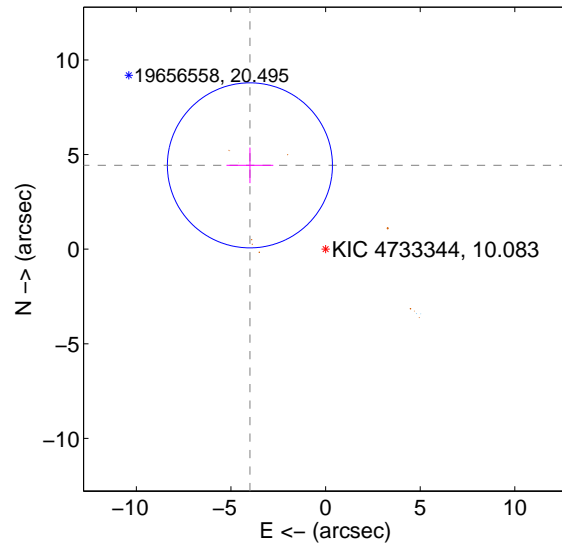
The direct PRF centroid is offset from the target star catalog position by about 1.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.441 ± 1.405	4.58	4.202 ± 1.069	4.882 ± 0.972
PRF-fit source offset from KIC position	5.968 ± 1.454	4.11	3.999 ± 1.236	4.431 ± 0.943
photometric centroid source offset	0.16 ± 0.09	1.81	0.02 ± 0.12	-0.16 ± 0.09

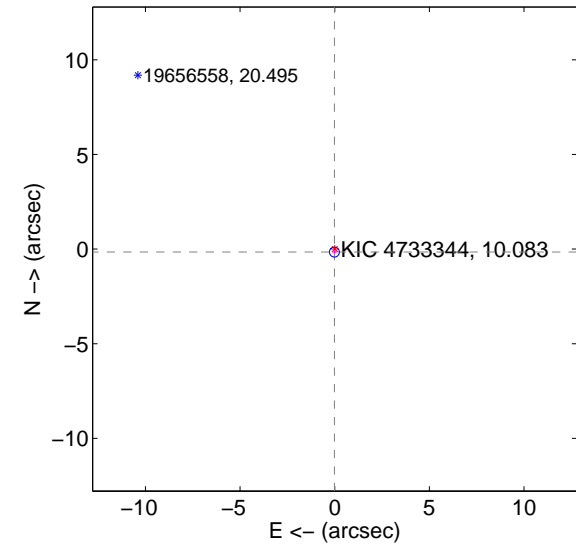
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

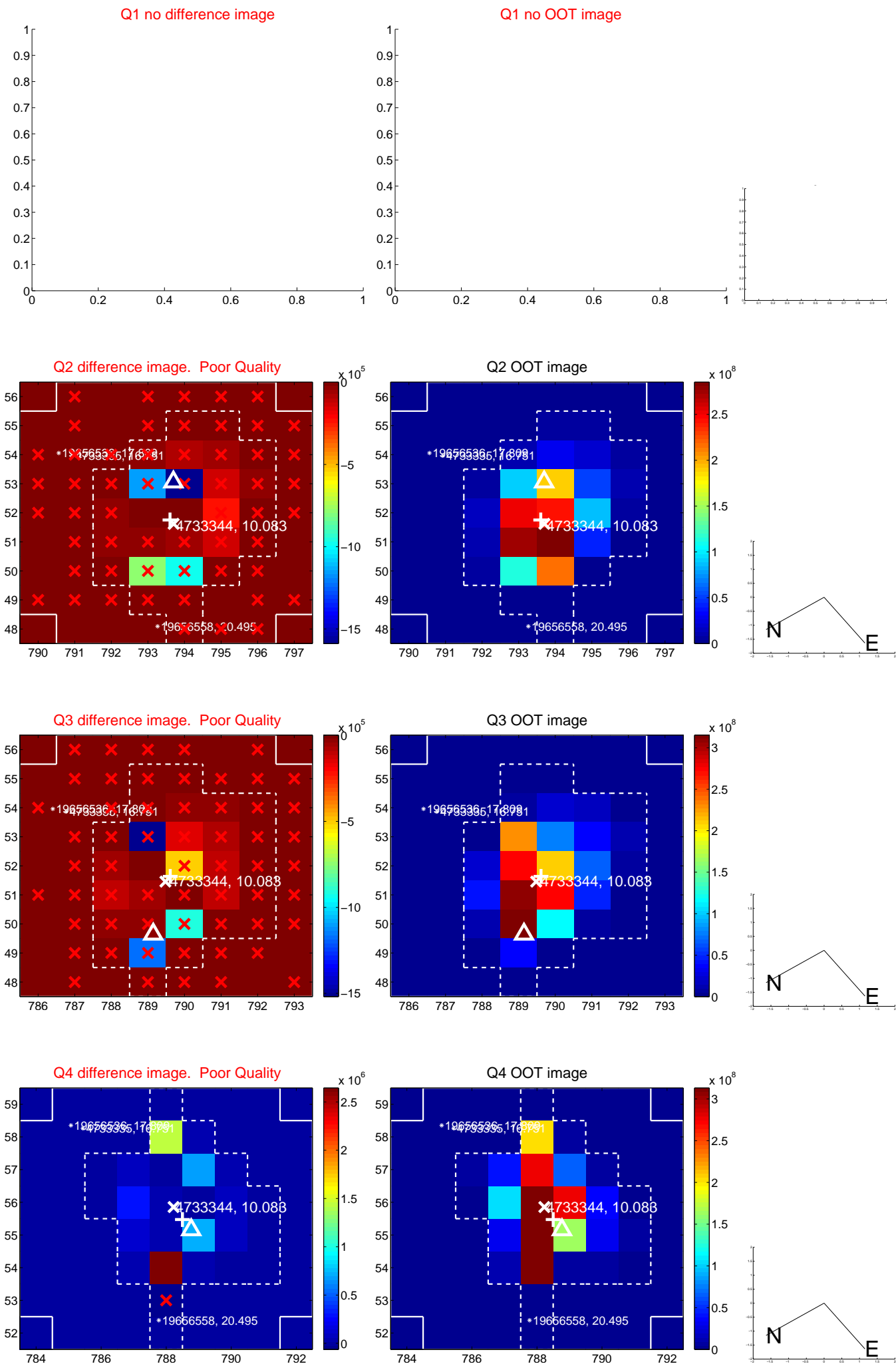


offset from photometric centroids

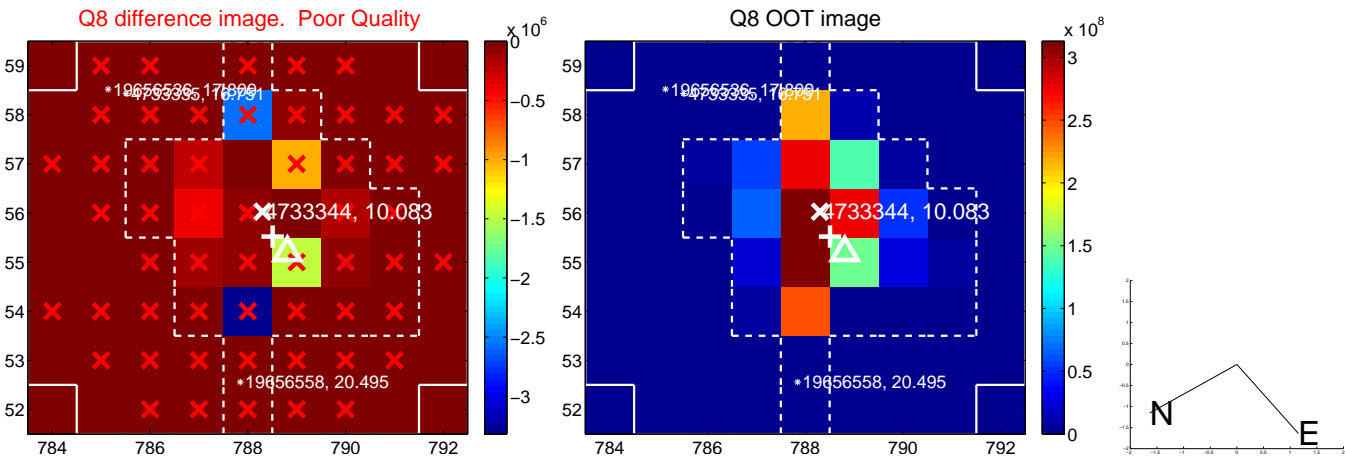
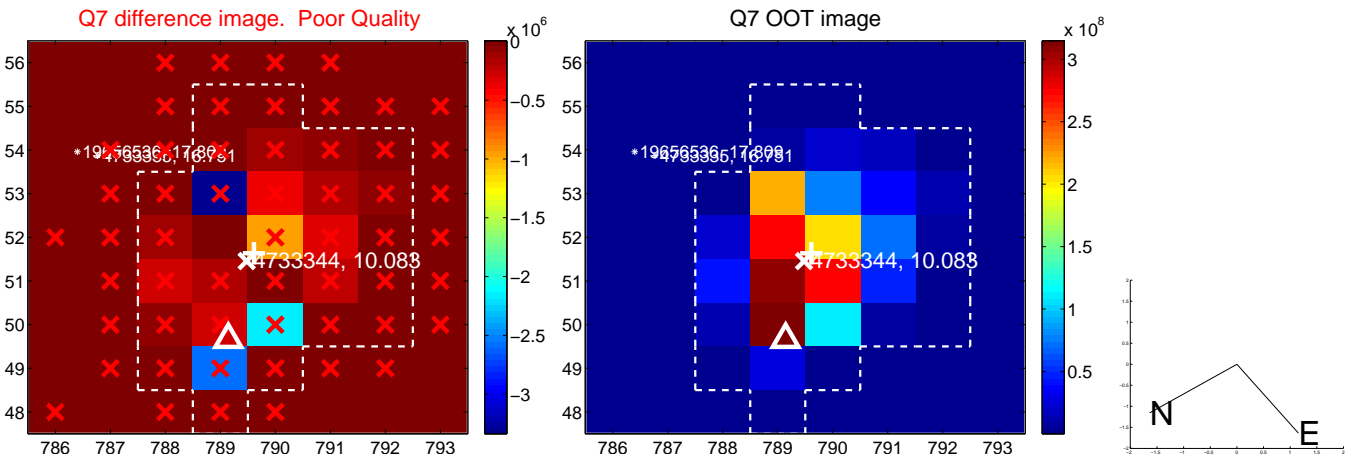
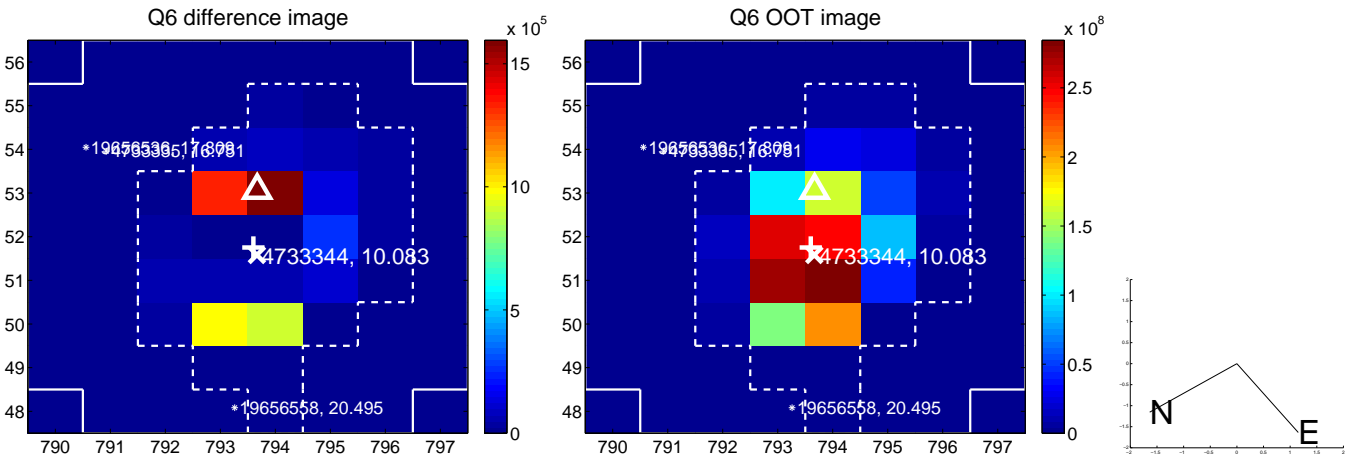
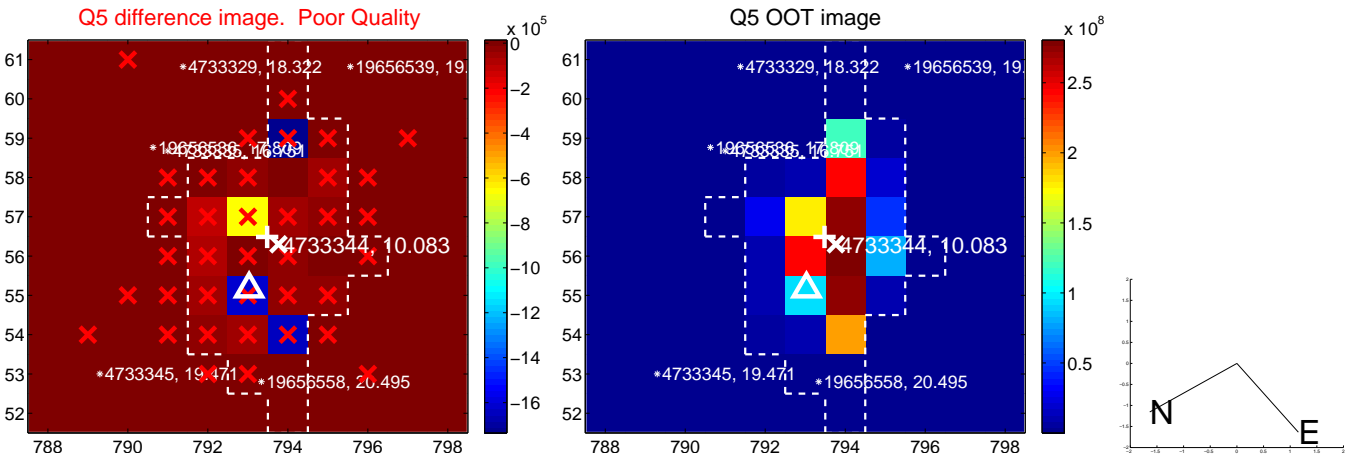


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

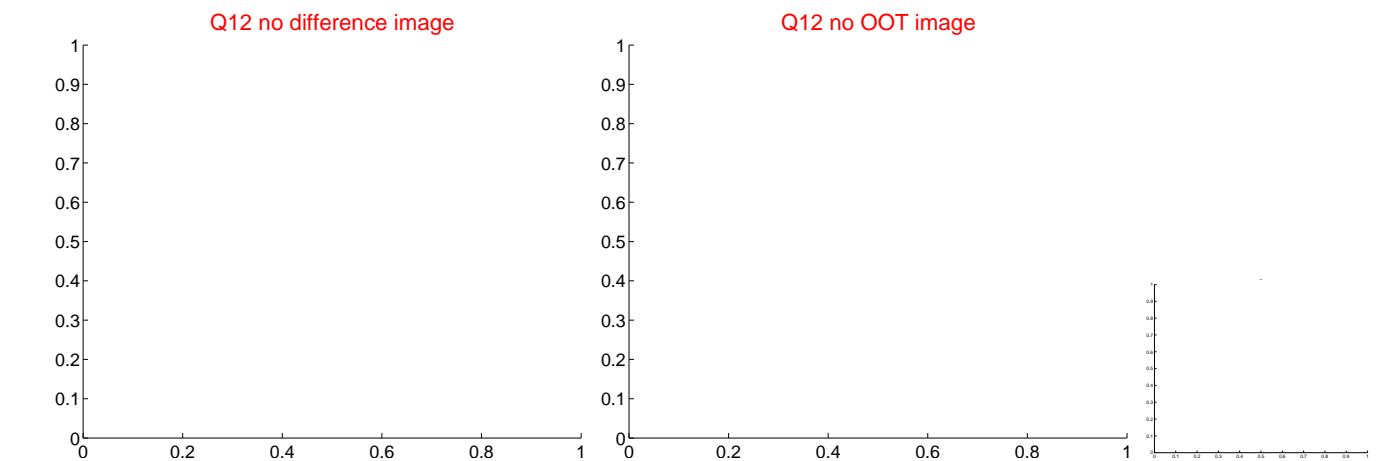
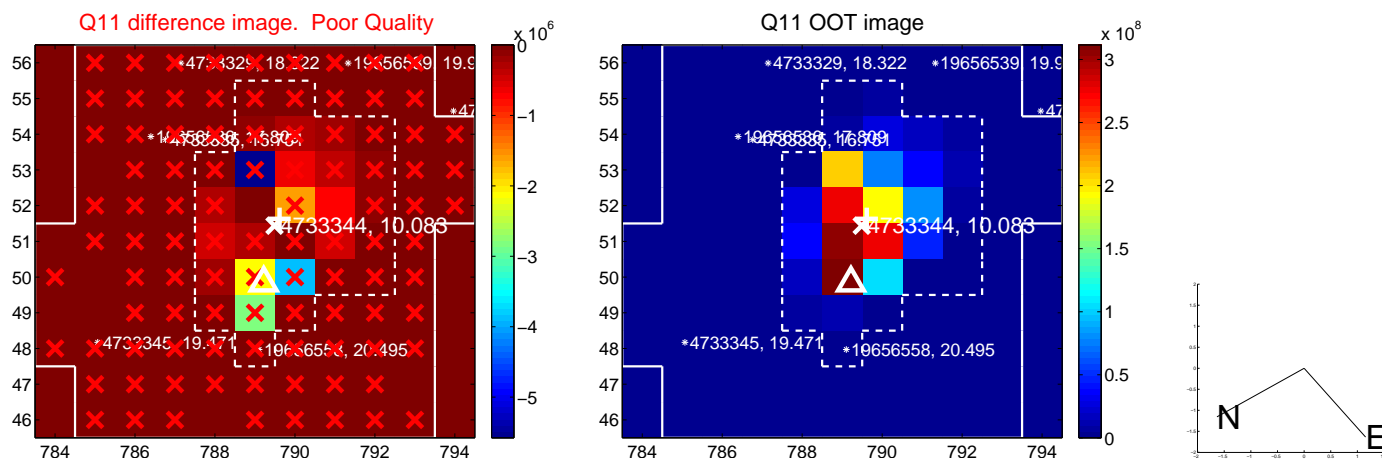
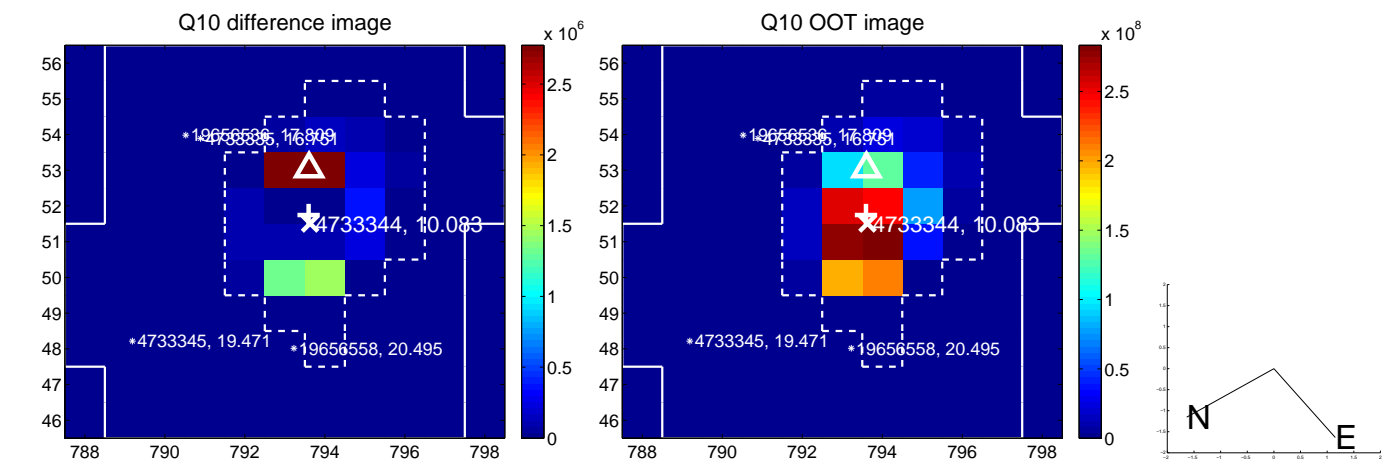
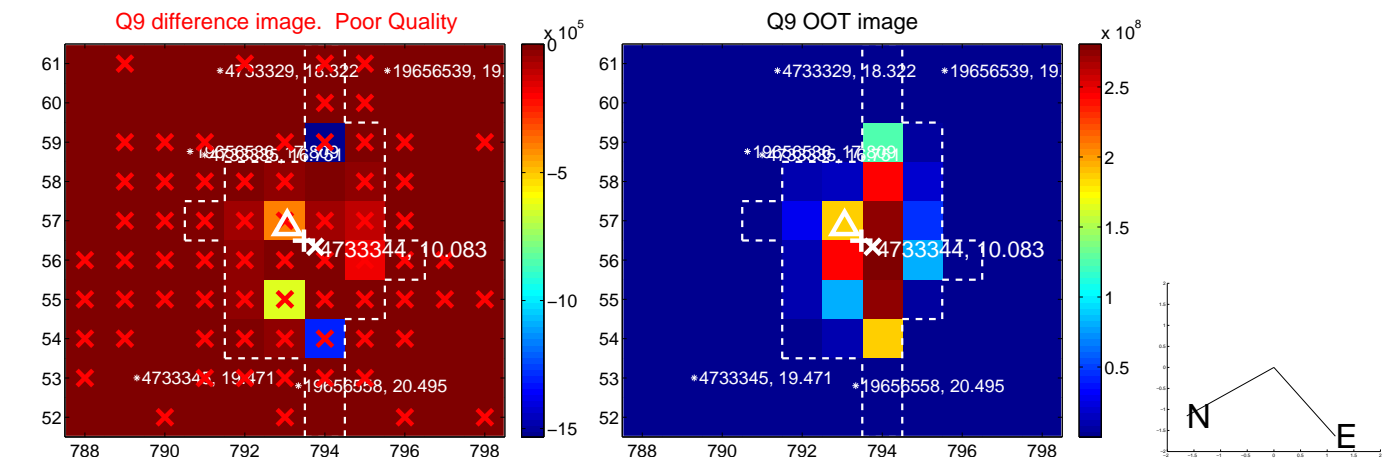
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



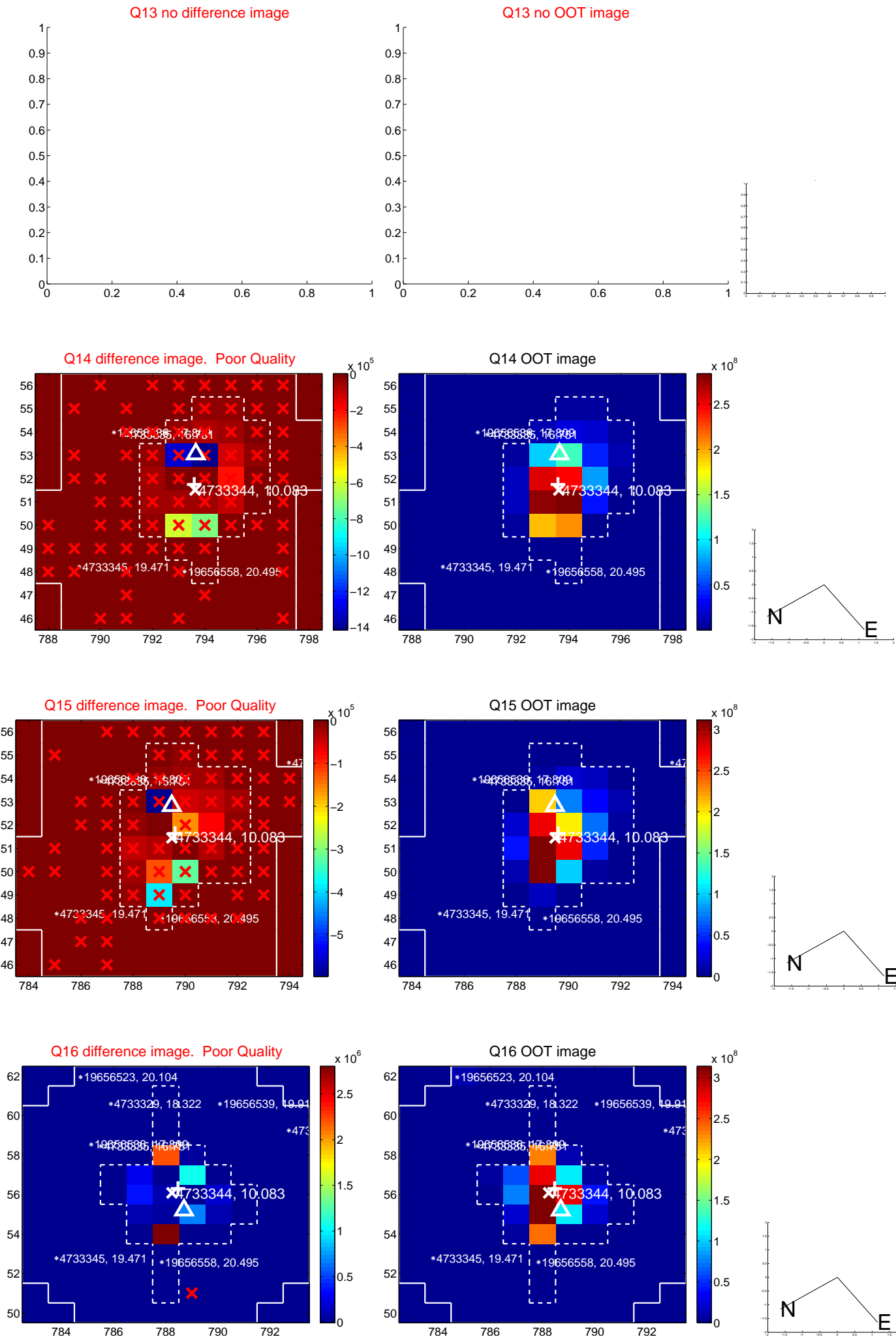
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



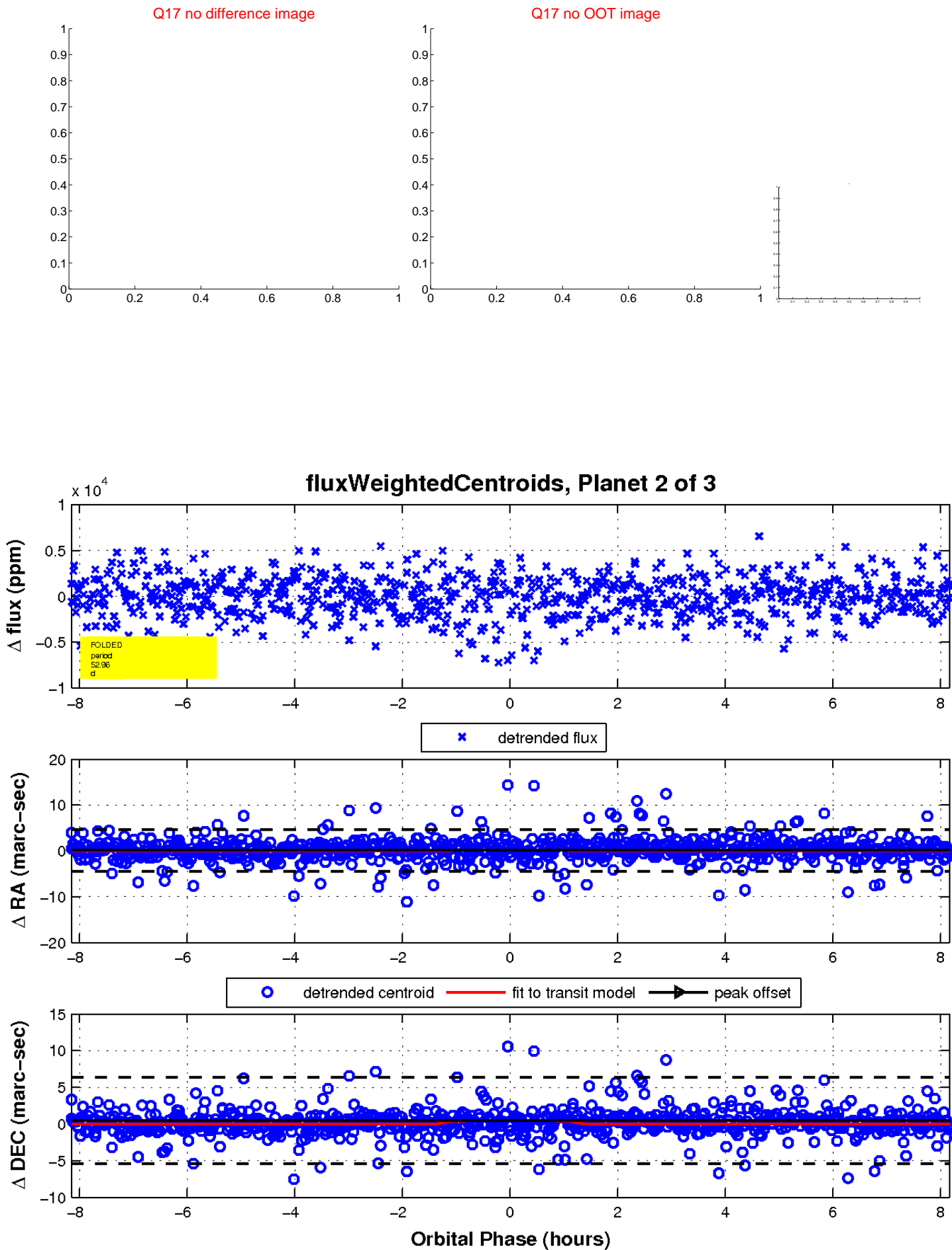
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

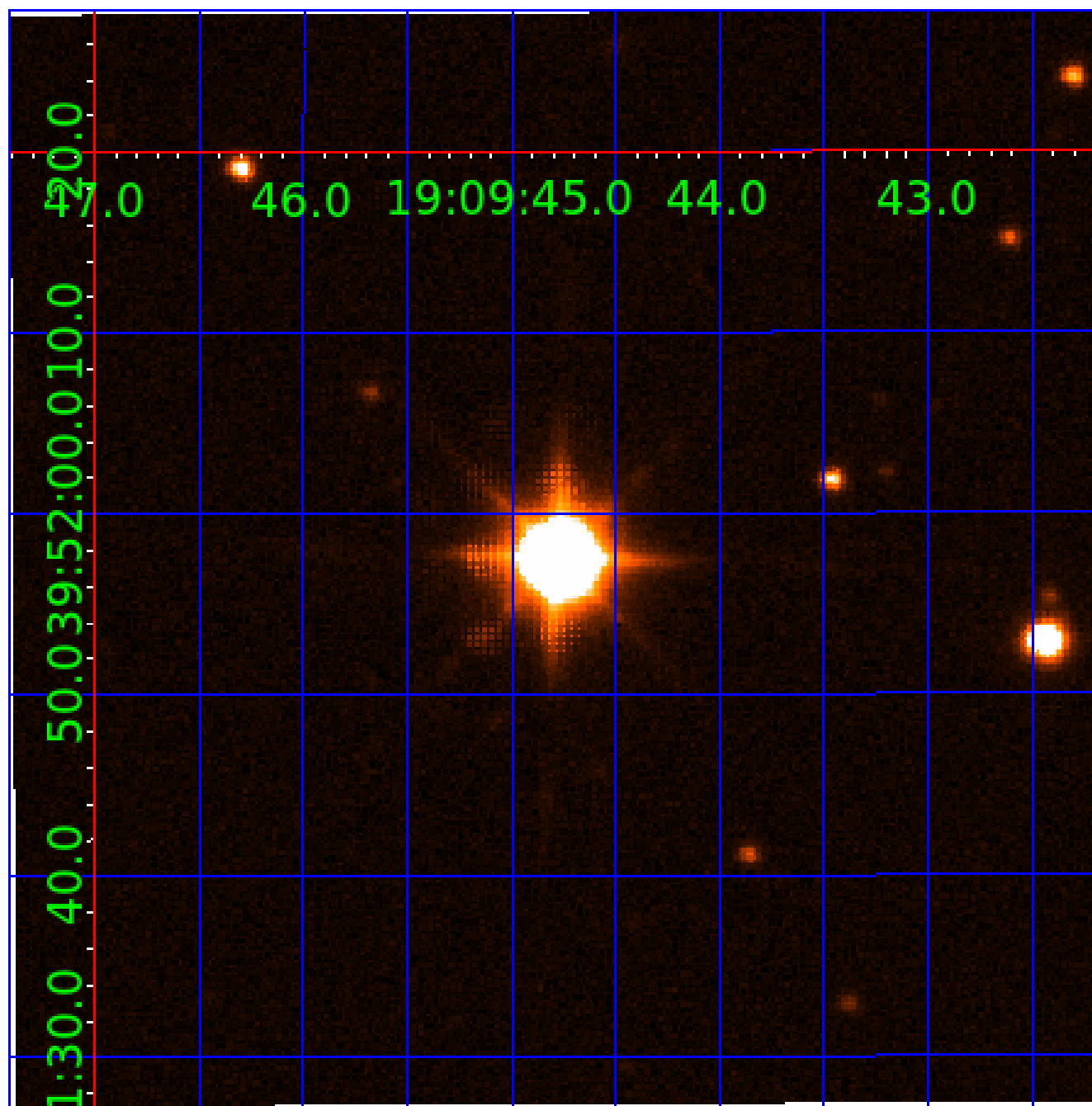


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004733344

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})
004733344-01	OBS	No	0.642654	132.108980	402.9	3.370	12.5	13.5	4.23	7209	12.45	0.00
004733344-02	OBS	No	52.958320	172.420433	3467.0	2.728	10.0	9.0	4.23	7209	26.49	353.33
004733344-03	OBS	No	68.635126	135.075695	3734.3	5.724	9.6	11.1	4.23	7209	46.56	250.05

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004733344-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
004733344-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
004733344-03	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.

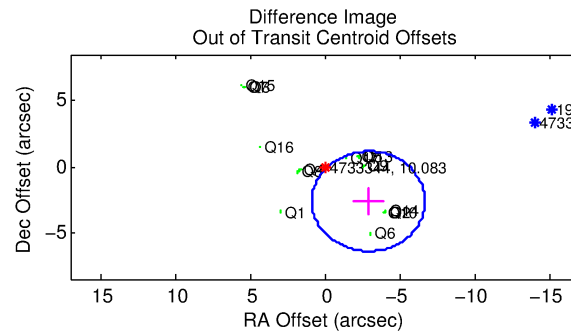
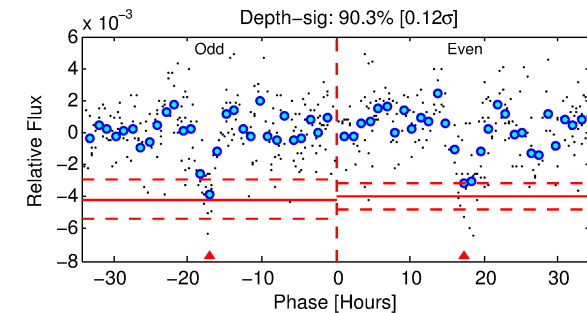
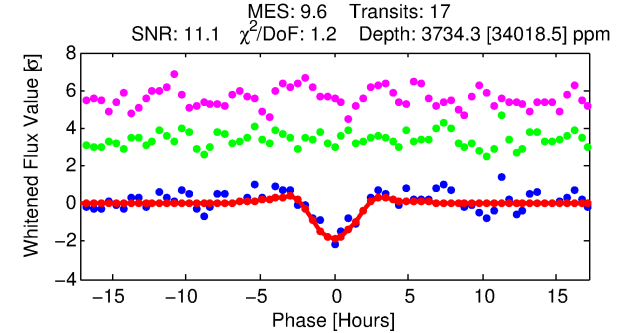
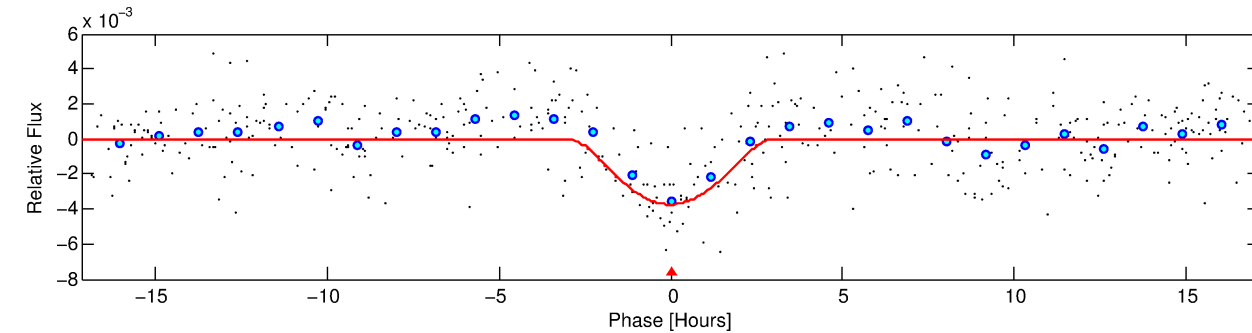
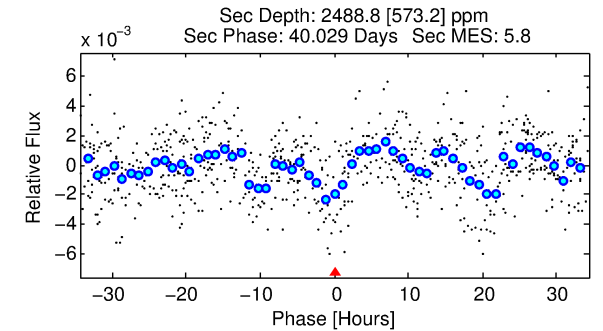
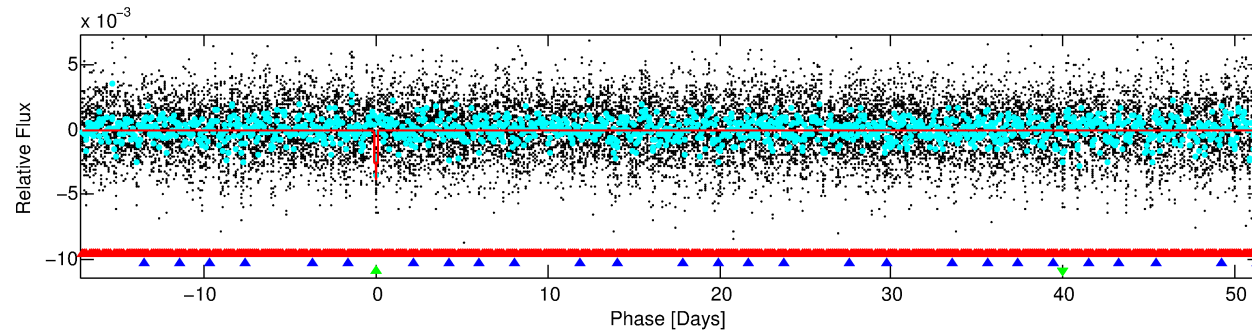
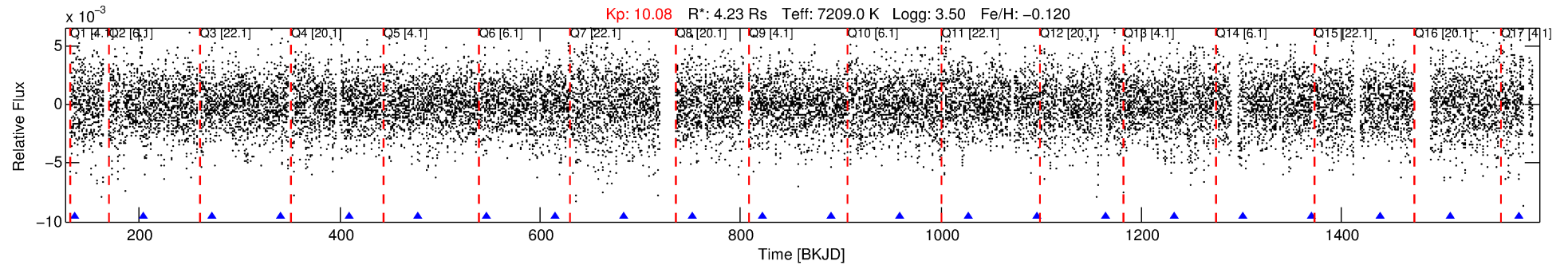
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004733344-03

No Significant Match Found

DV One-Page Summary

KIC: 4733344 Candidate: 3 of 3 Period: 68.635 d



DV Fit Results:

Period = 68.63513 [0.00104] d
Epoch = 135.0757 [0.0123] BKJD
Rp/R* = 0.1008 [0.3621]
a/R* = 42.17 [30.37]
b = 1.00 [0.11]
Seff = 250.05 [250.30]
Teq = 1014 [254] K
Rp = 46.56 [169.23] Re
a = 0.4163 [0.2449] AU
Ag = 109.47 [794.13] [0.14σ]
Teffp = 5071 [9114] K [0.44σ]

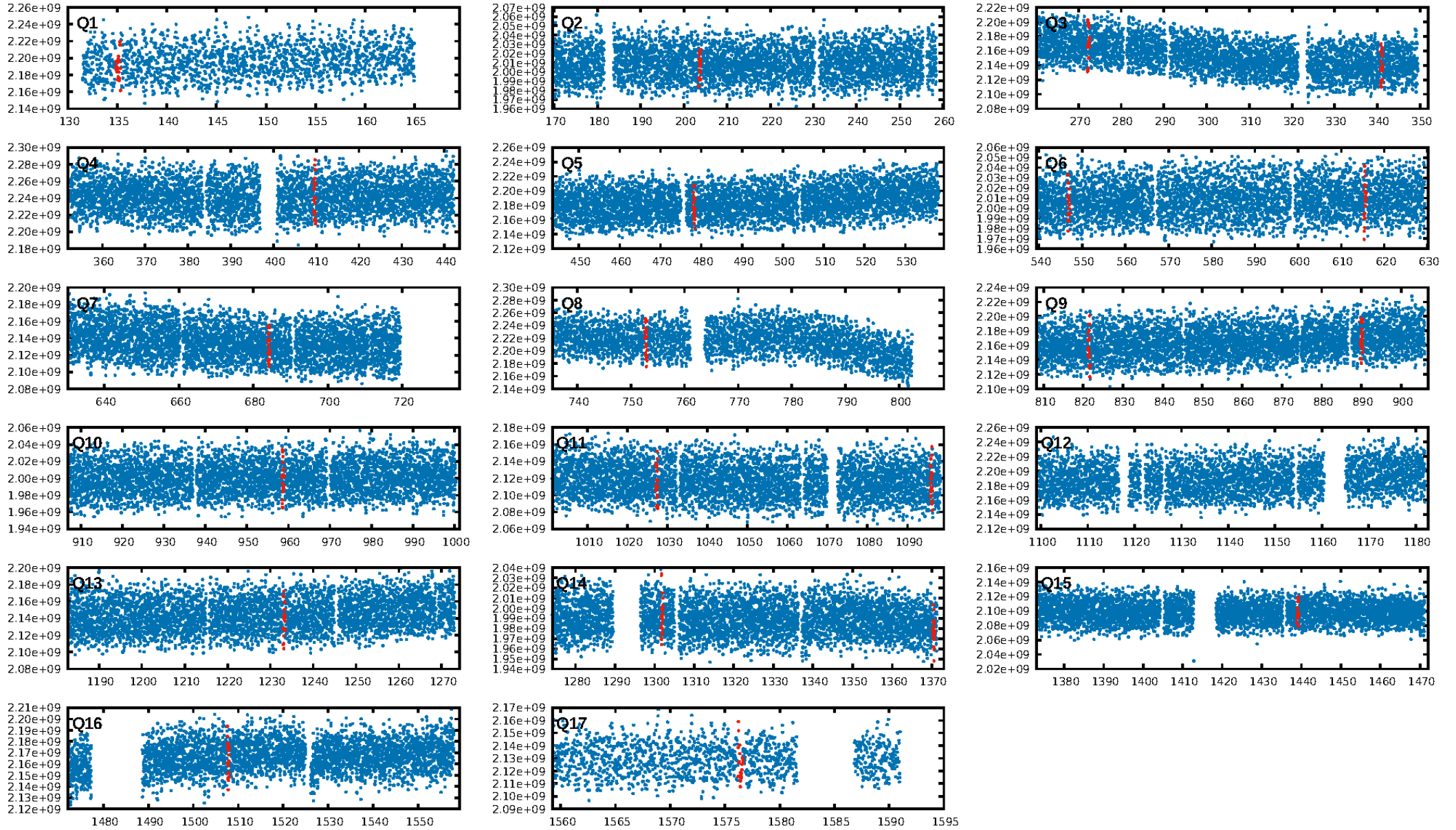
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [59.33σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.60e-12
RollingBand-fgt: 1.00 [15/15]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.0%
Centroid-so: 0.262 arcsec [2.77σ]
OotOffset-rm: 3.926 arcsec [3.12σ]
KicOffset-rm: 4.546 arcsec [3.75σ]
OotOffset-st: 4/3/3/5 [15]
KicOffset-st: 4/3/3/5 [15]
DiffImageQuality-fgm: 0.07 [1/15]
DiffImageOverlap-fno: 0.00 [0/15]

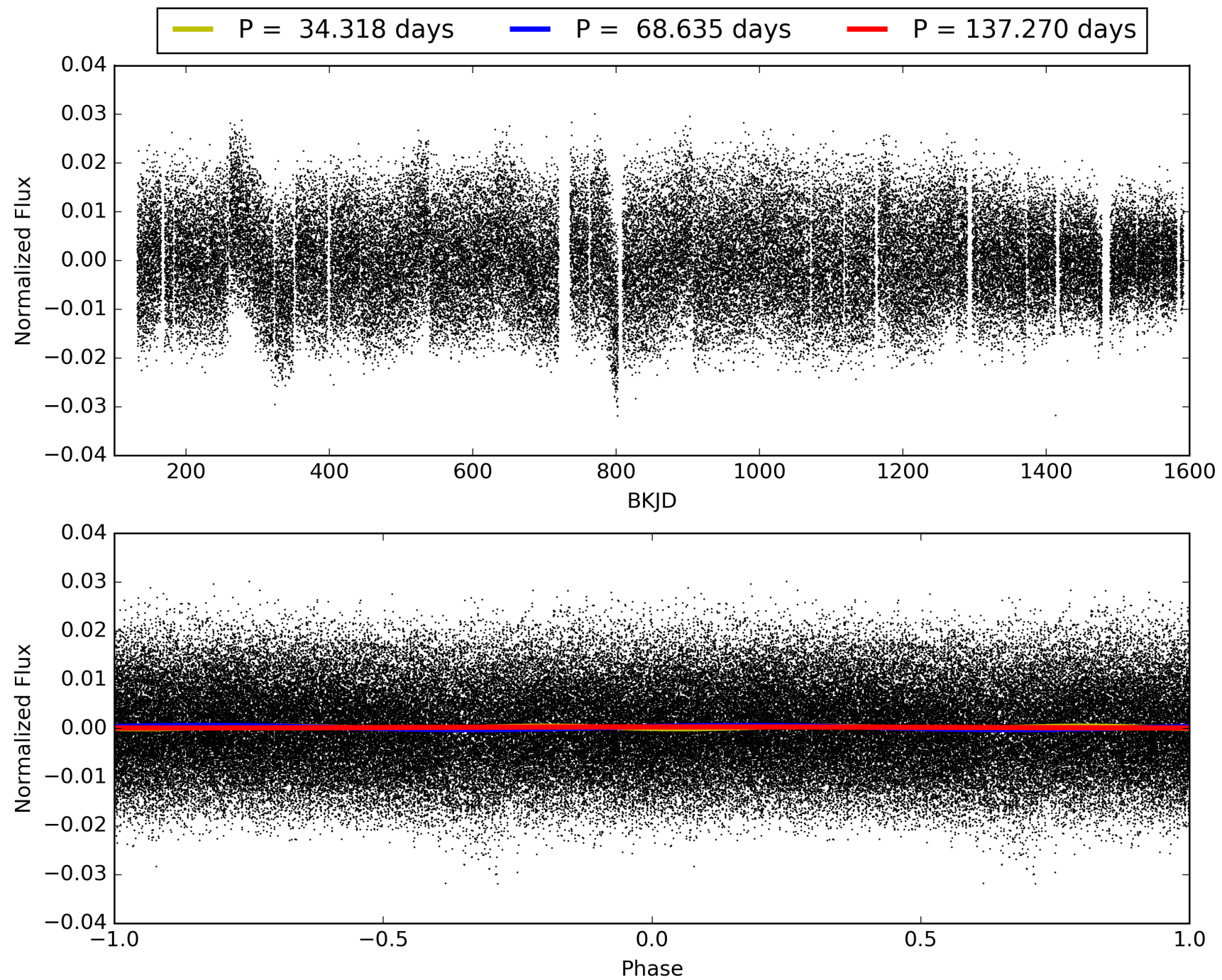
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 05:02:42 Z

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

TCE 004733344-03, PDC Light Curves

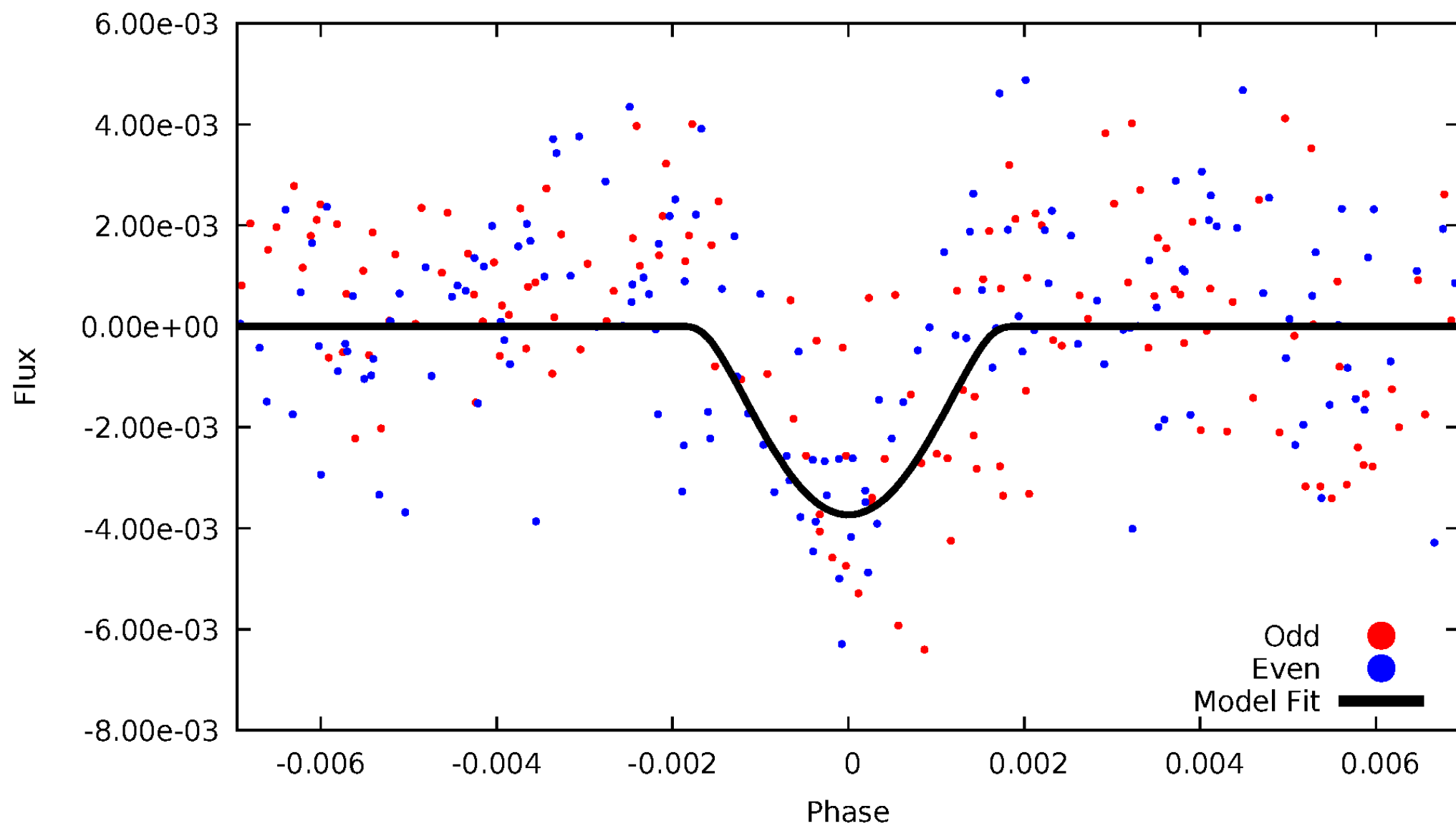


TCE 004733344-03



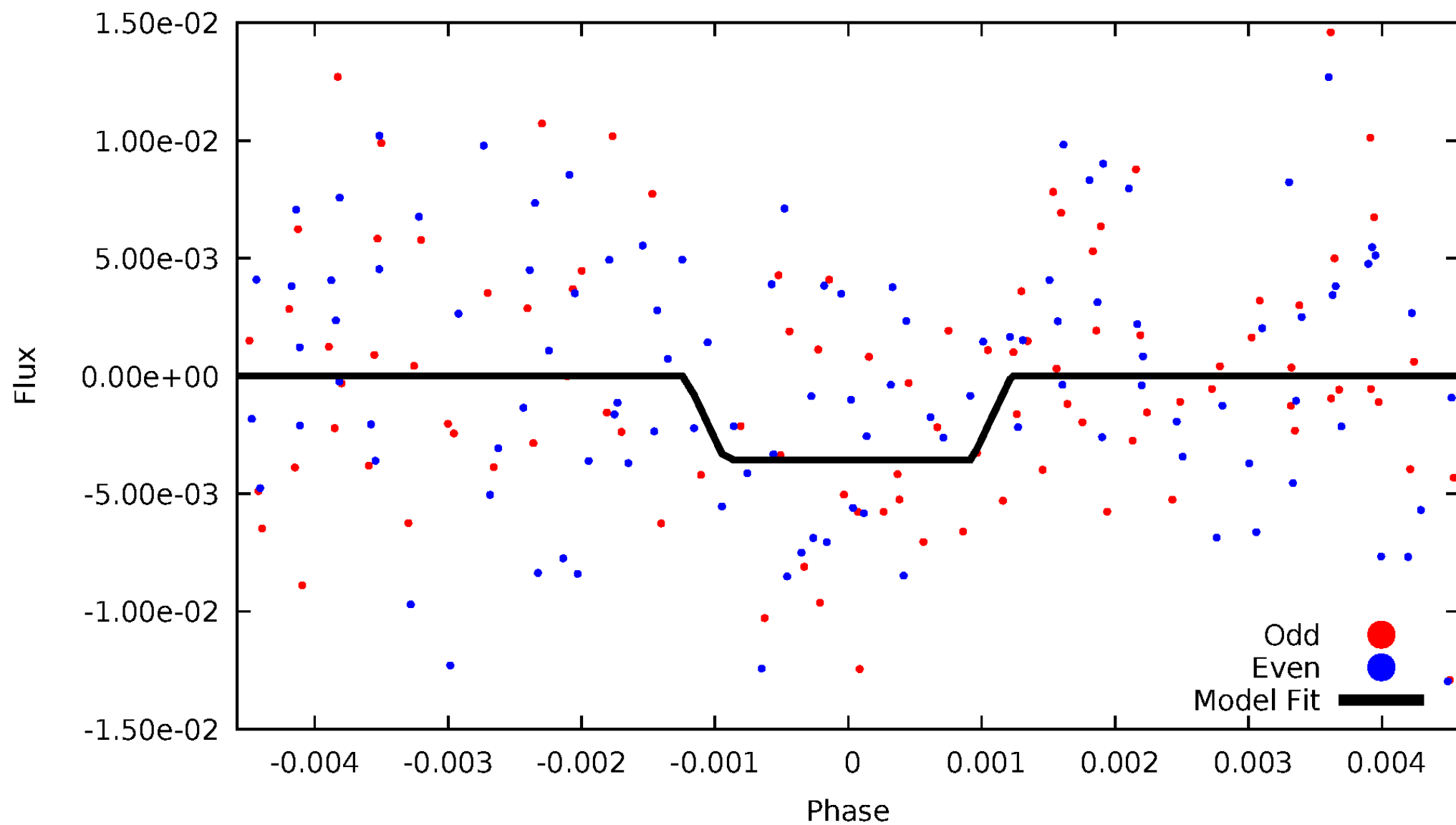
DV Odd/Even

TCE 004733344-03

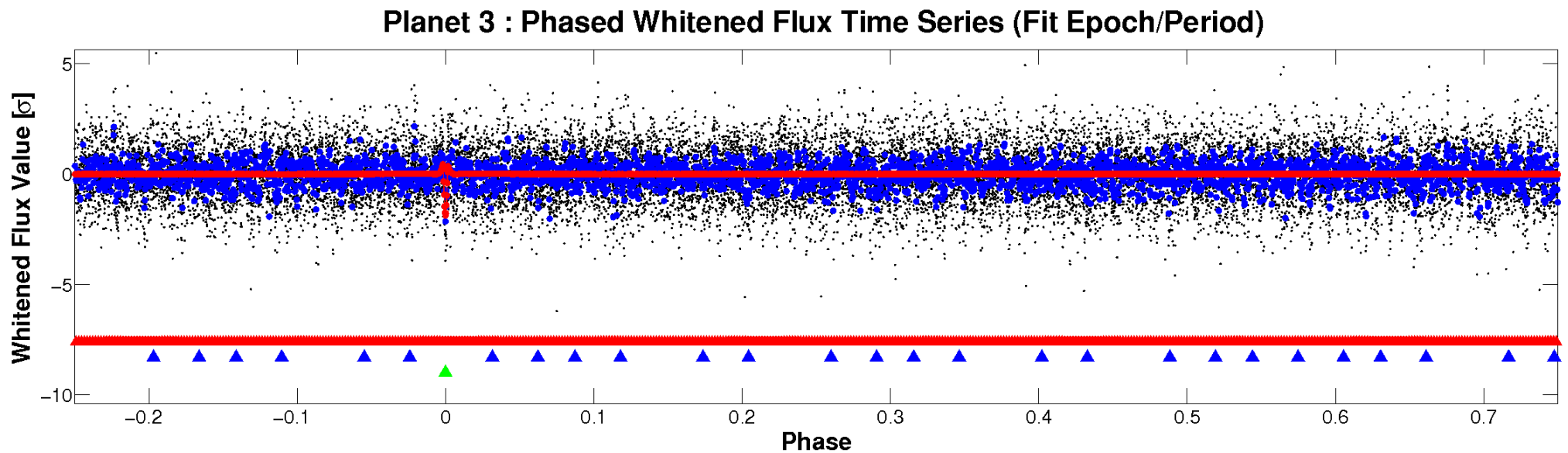
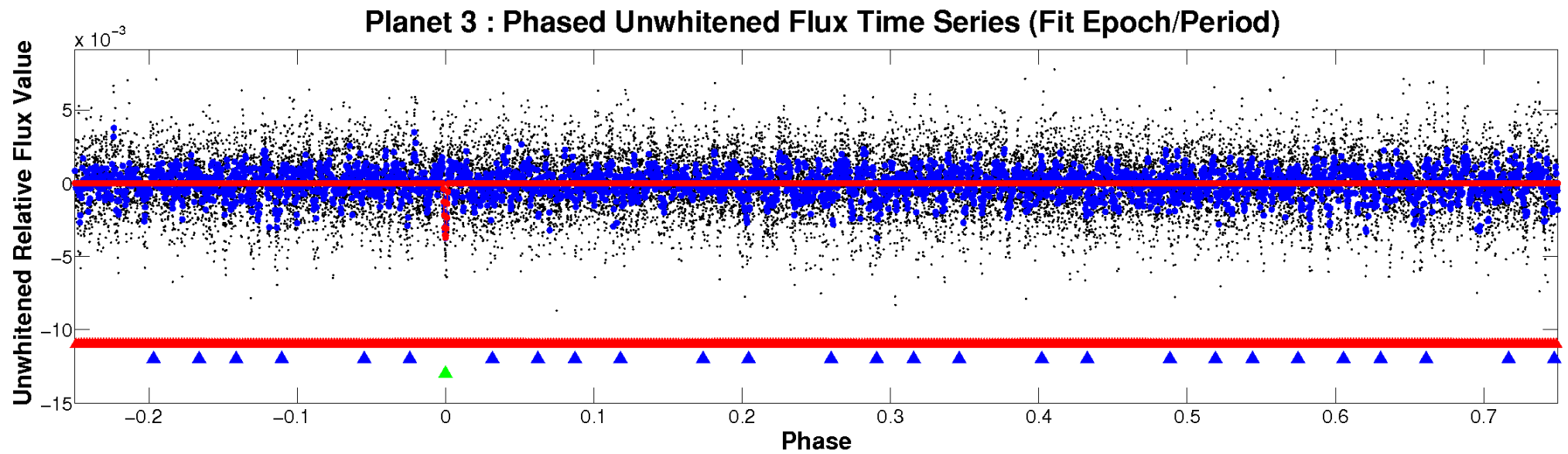


ALT Odd/Even

TCE 004733344-03

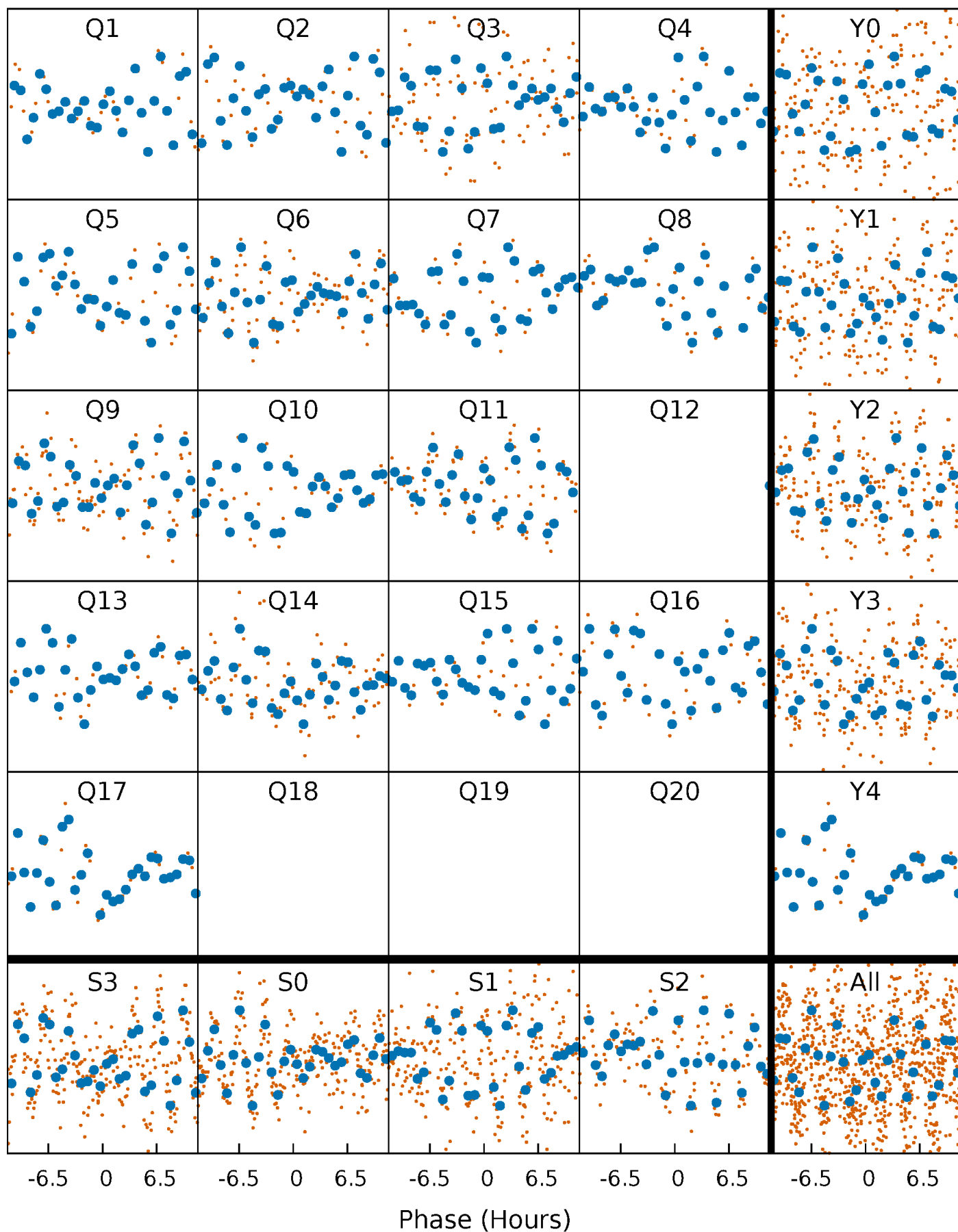


Non-Whitened Vs. Whitened Light Curve



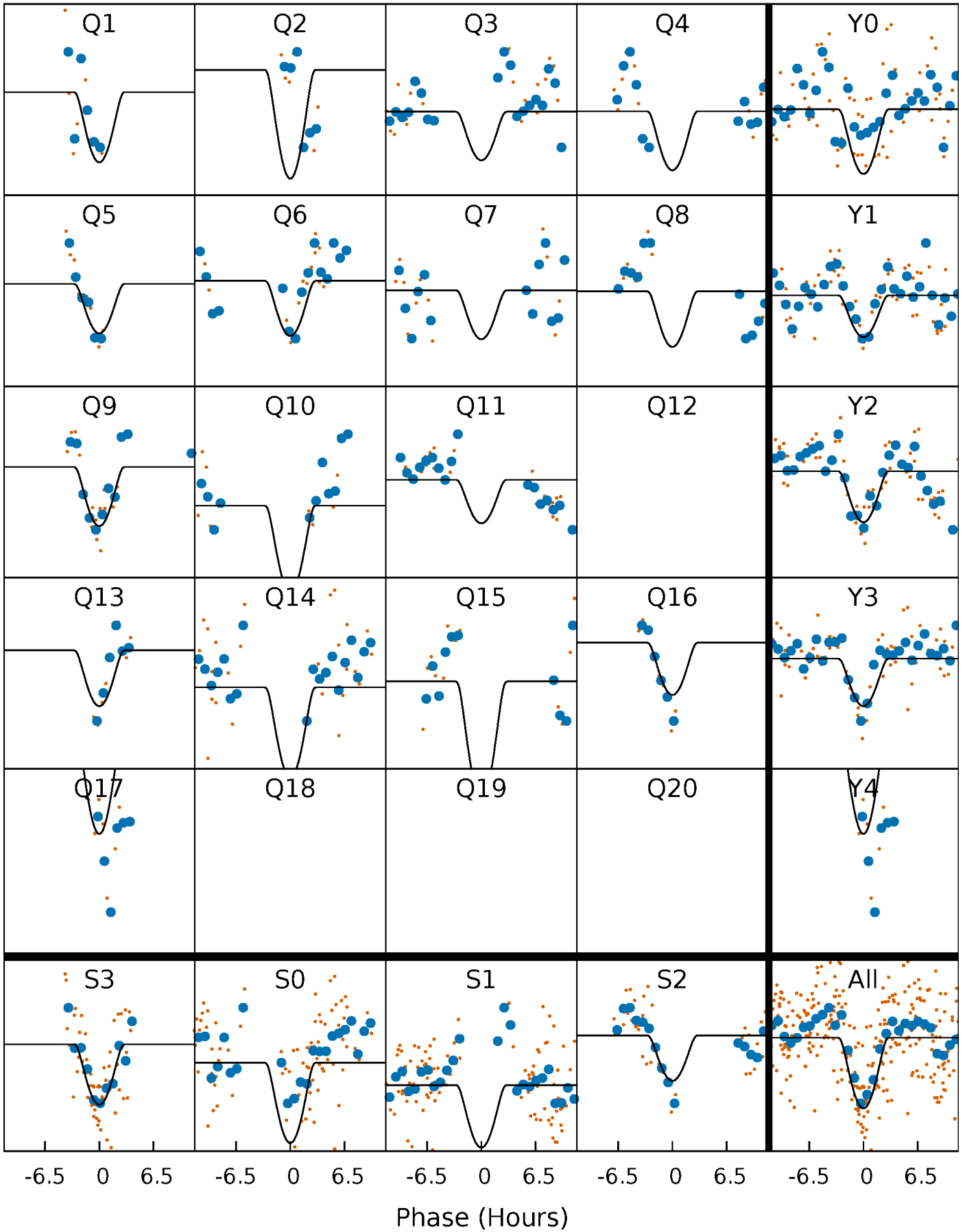
PDC Quarter-Phased Transit Curves

TCE 004733344-03 P= 68.635126 Days $T_0=135.075695$ (BKJD)



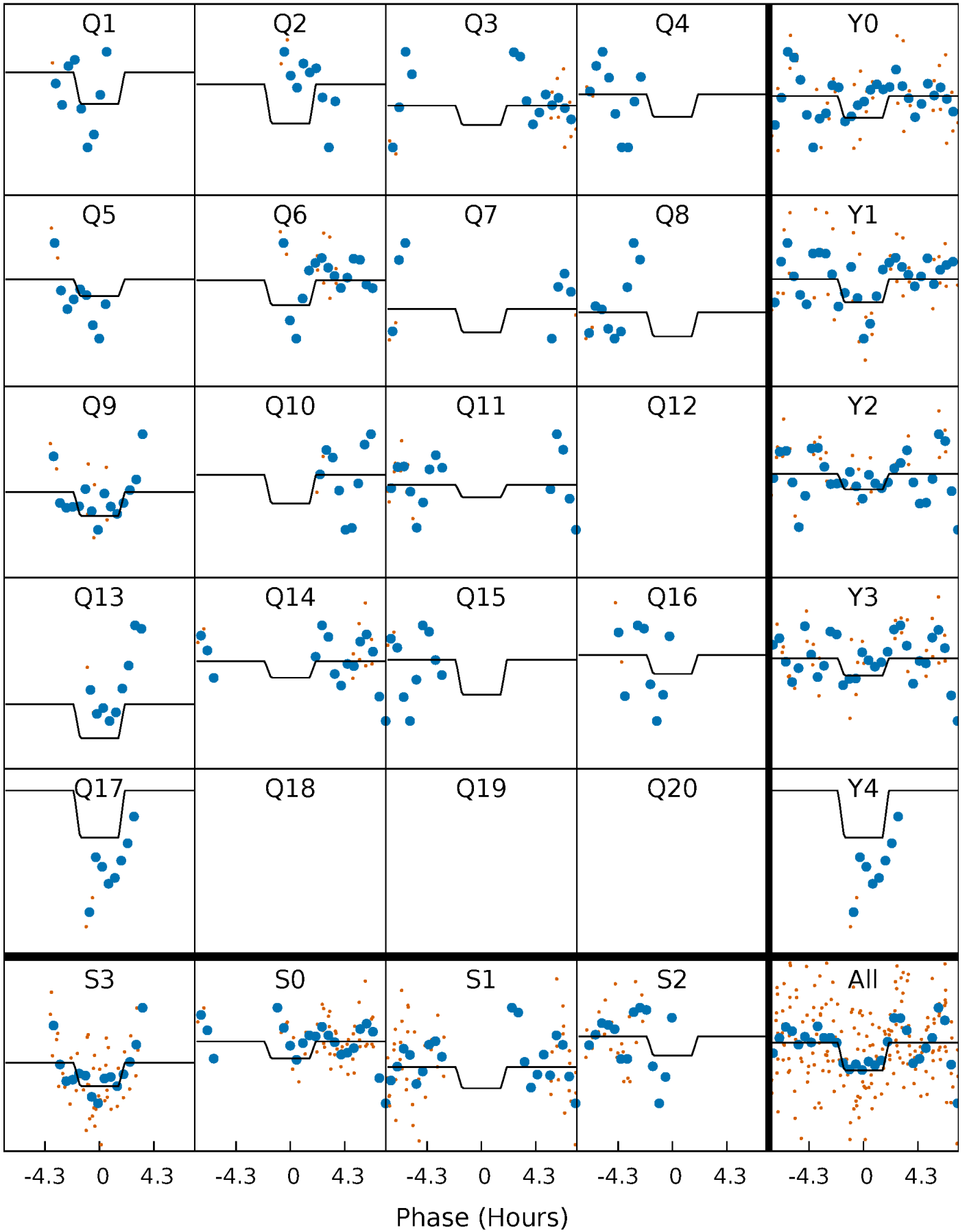
DV Quarter-Phased Transit Curves

TCE 004733344-03 P= 68.635126 Days $T_0=135.075695$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

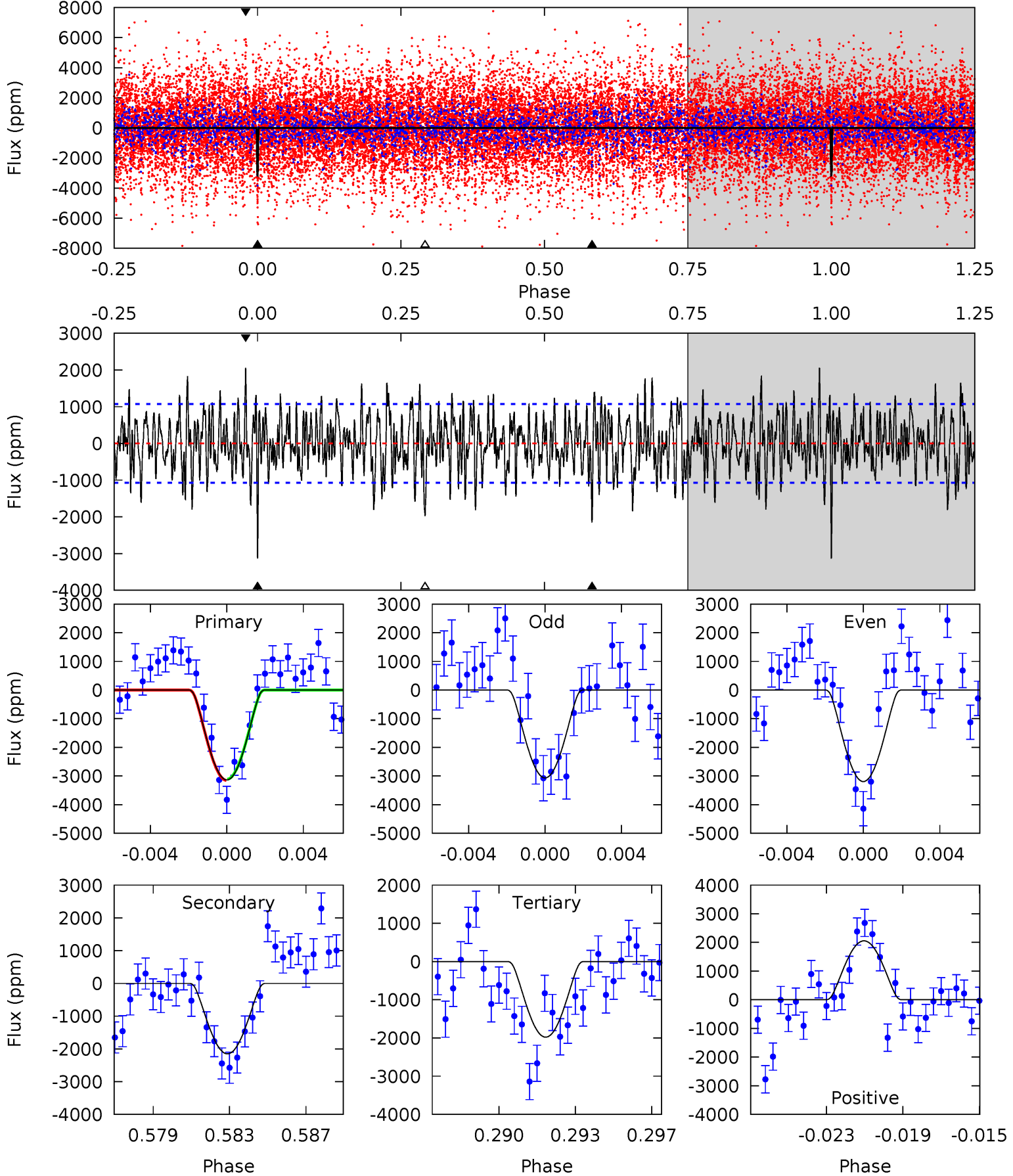
TCE 004733344-03 P= 68.636913 Days $T_0=135.059000$ (BKJD)



DV Model-Shift Uniqueness Test

004733344-03, P = 68.635126 Days, E = 66.440569 Days

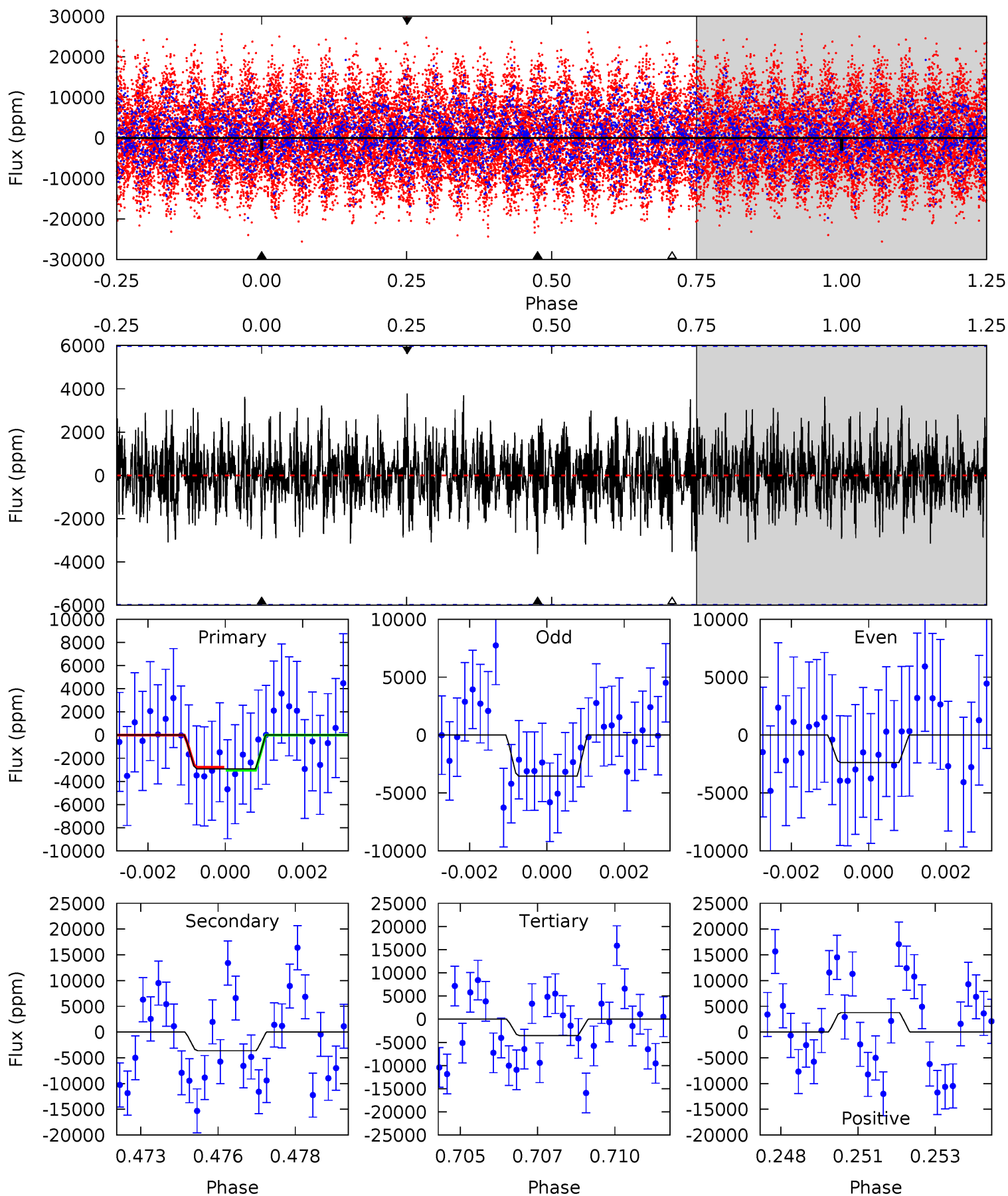
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.3	10.5	9.63	10.0	5.21	2.90	3.17	5.63	5.26	0.83	0.46	0.31	0.22	0.40	0.10



Alt Model-Shift Uniqueness Test

004733344-03, P = 68.636913 Days, E = 66.422087 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.58	3.21	3.13	3.34	5.30	3.04	0.91	-0.55	-0.76	0.08	-0.13	0.51	1.04	0.51	0.11



Stellar Parameters For KIC 004733344

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7209^{+199}_{-324}	$3.495^{+0.594}_{-0.066}$	$-0.120^{+0.250}_{-0.300}$	$4.232^{+0.416}_{-2.360}$	$2.040^{+0.068}_{-0.582}$	$0.038^{+0.296}_{-0.008}$
	+3%/-4%	+17%/-2%	+208%/-250%	+10%/-56%	+3%/-29%	+780%/-21%
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 004733344-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2150 ± 205	$108.30^{+120.28}_{-75.93}$	1348^{+105}_{-205}	3426^{+1857}_{-686}	17^{+165}_{-13}
Alt.	-3629 ± 1129	$97.04^{+118.50}_{-70.00}$	1352^{+108}_{-198}	3833^{+2788}_{-842}	34^{+460}_{-27}

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

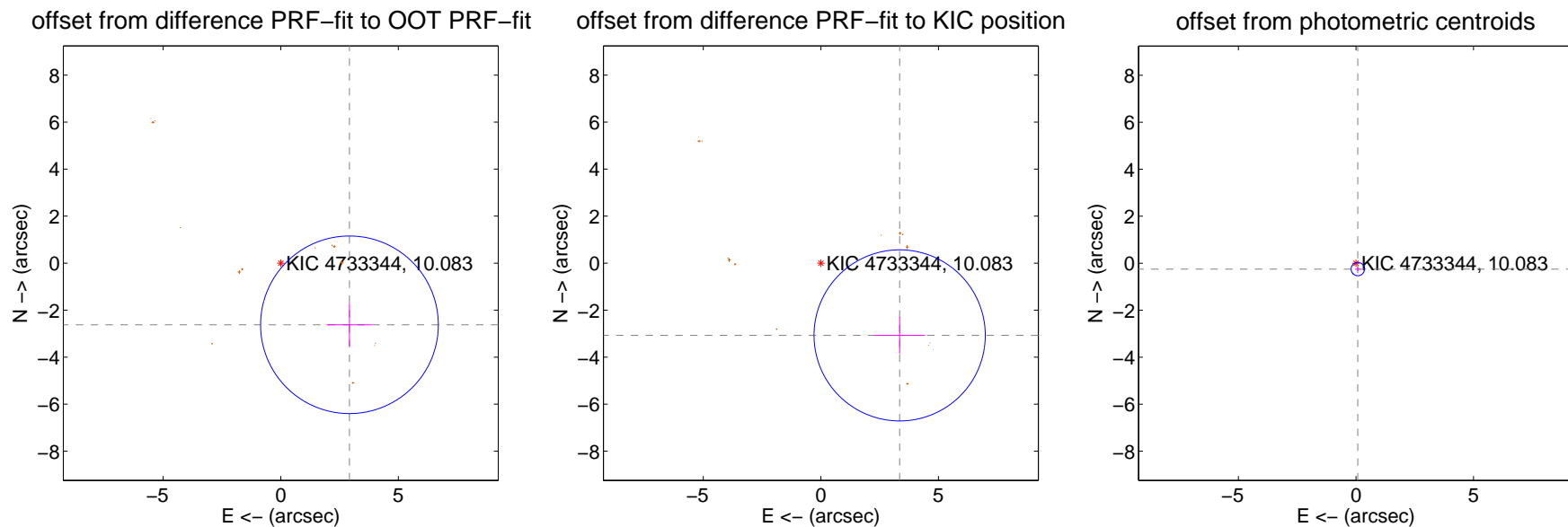
DV Centroid Data

Supplemental centroid analysis for 004733344-03. **Kepler magnitude: 10.08.** Transit SNR 11.09

There are 1 quarters with good PRF difference image offsets

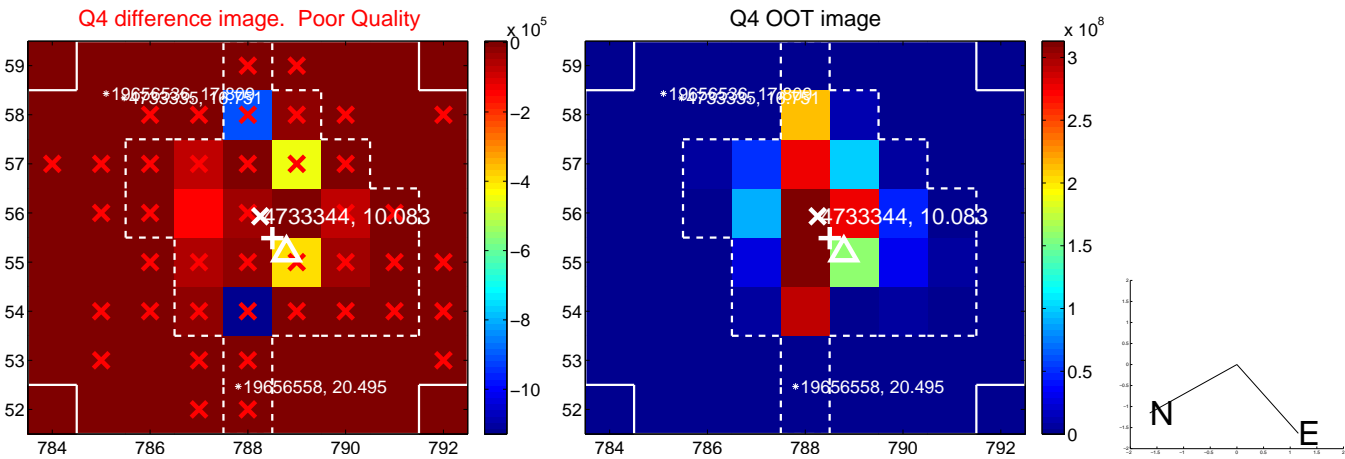
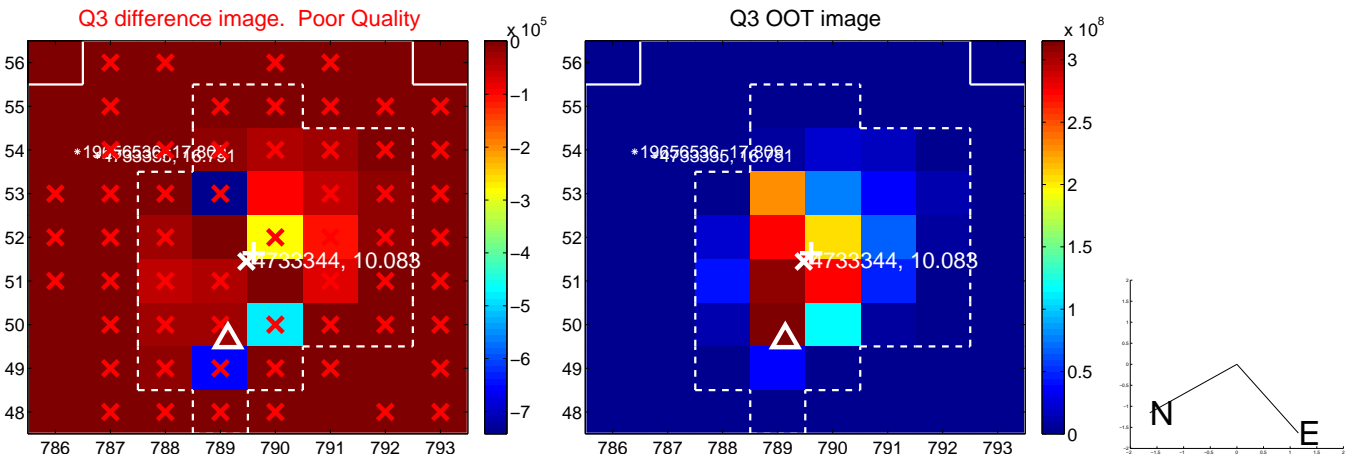
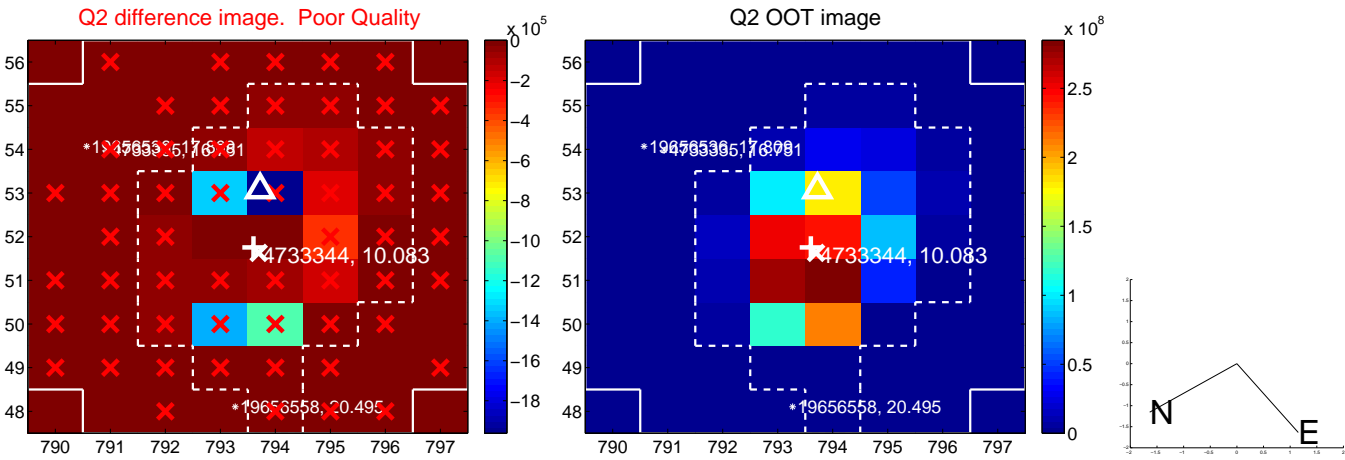
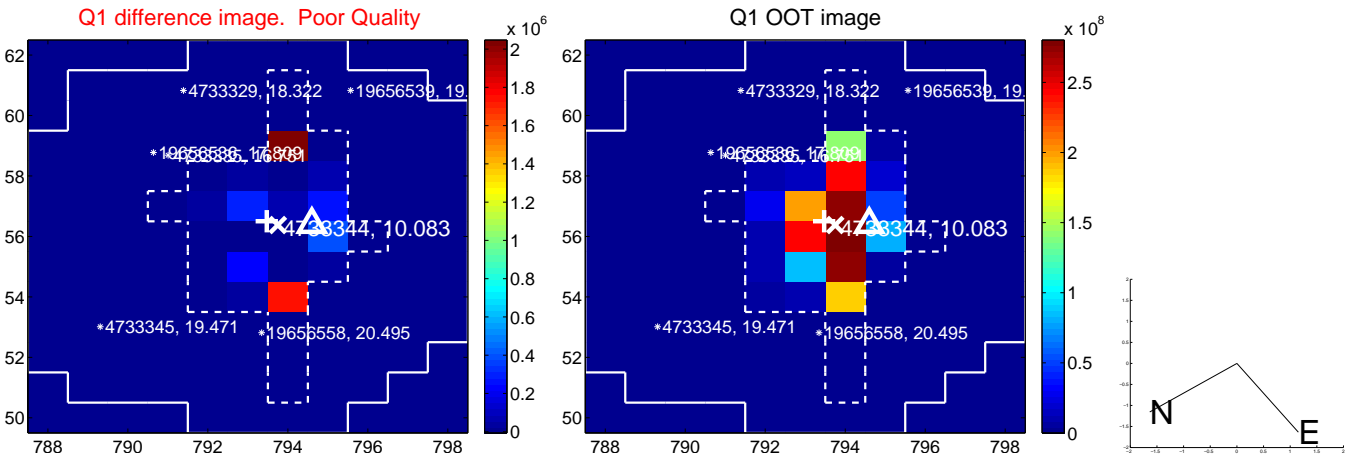
The direct PRF centroid is offset from the target star catalog position by about 1.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.926 ± 1.260	3.12	-2.921 ± 0.966	-2.623 ± 0.929
PRF-fit source offset from KIC position	4.546 ± 1.213	3.75	-3.350 ± 1.077	-3.074 ± 0.782
photometric centroid source offset	0.26 ± 0.09	2.77	-0.08 ± 0.12	-0.25 ± 0.09

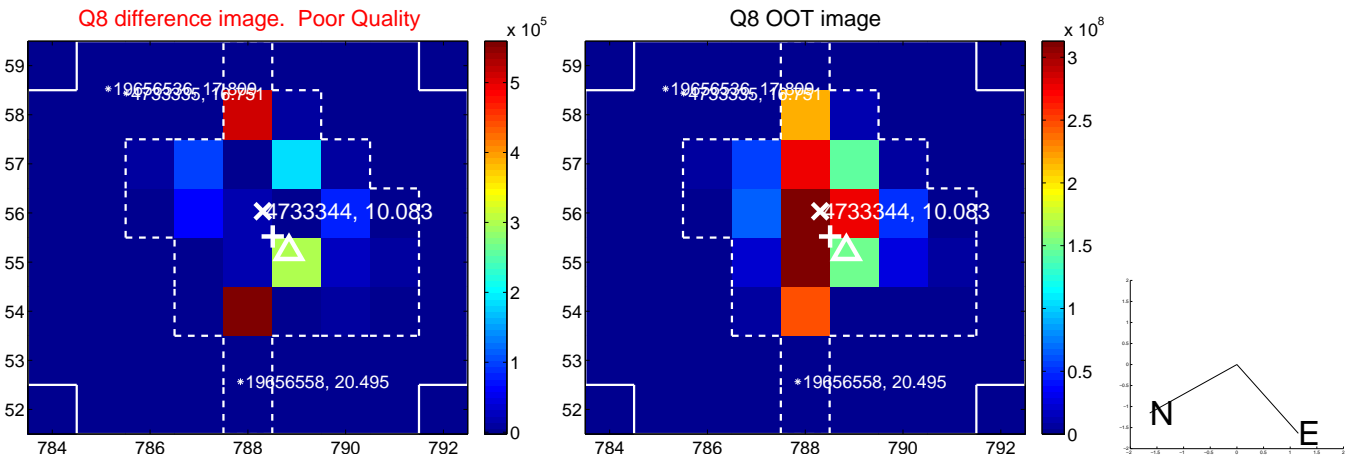
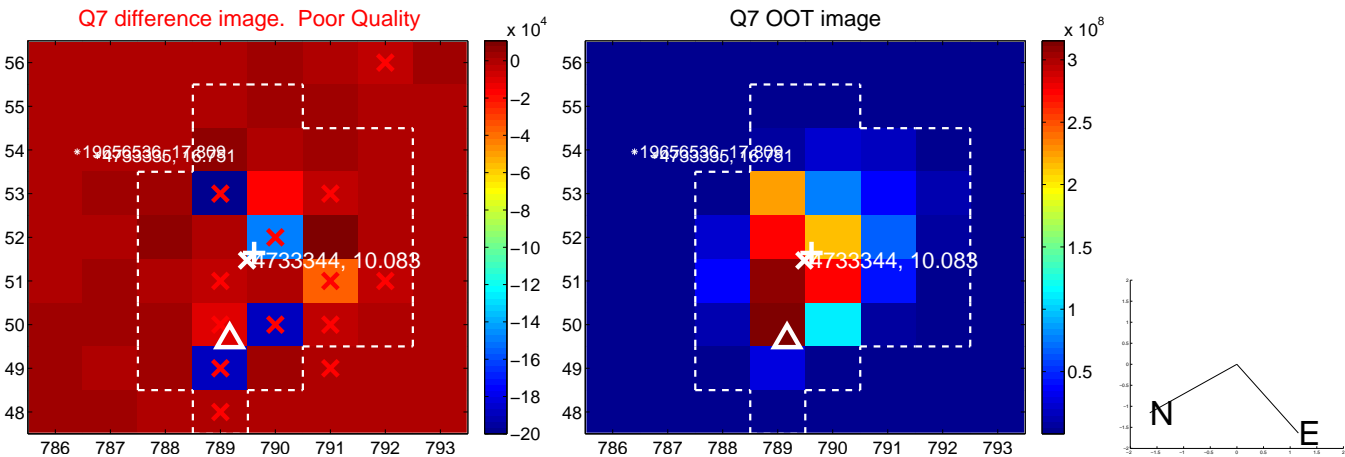
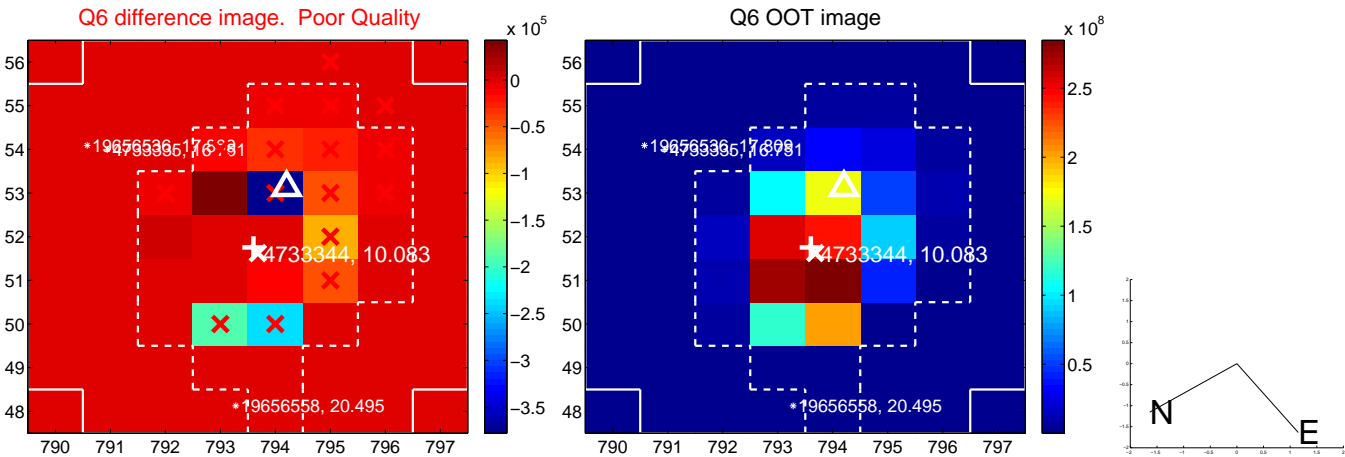
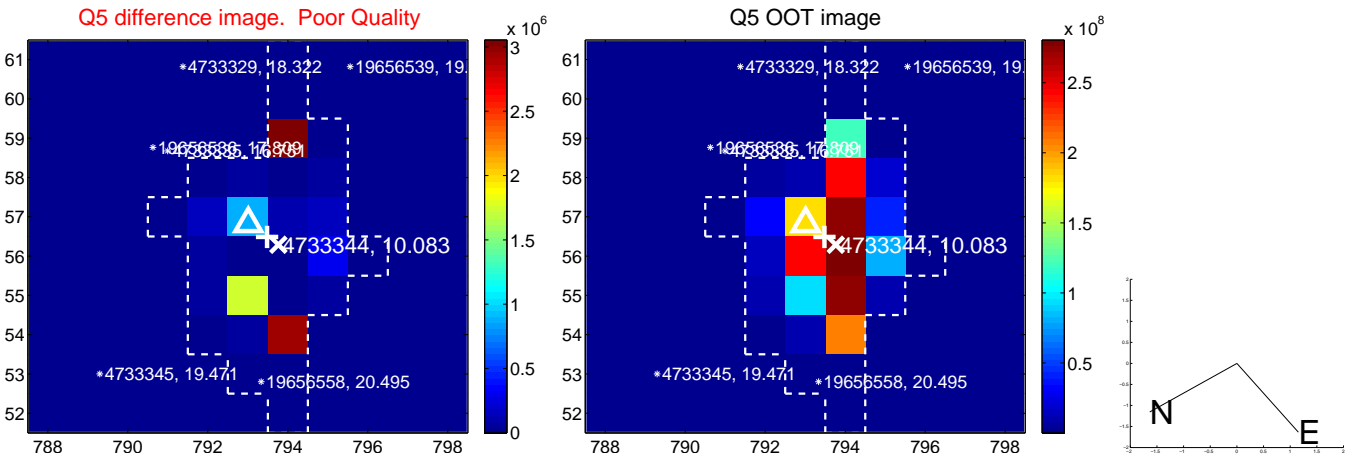


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

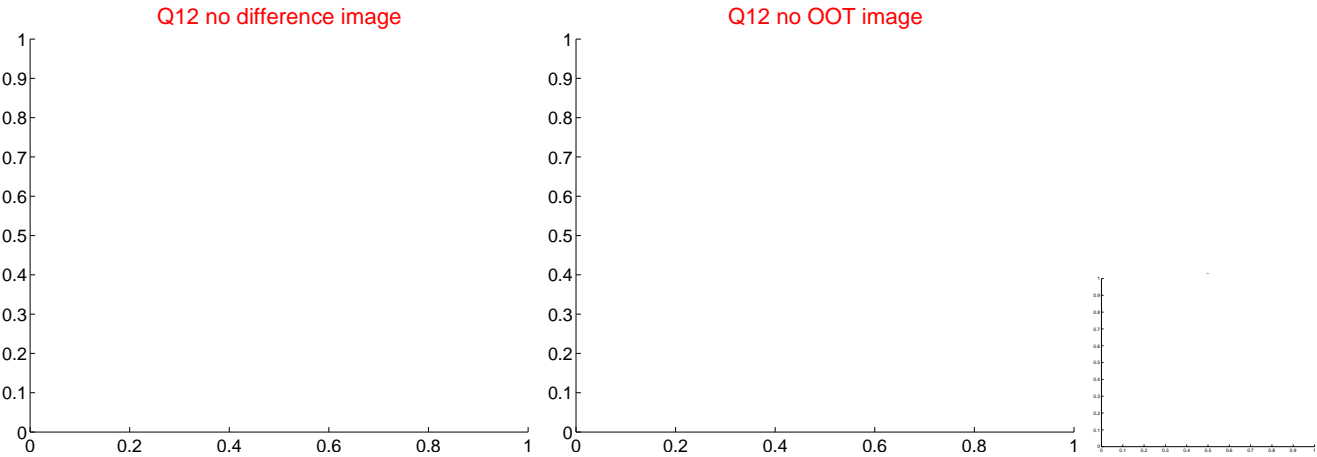
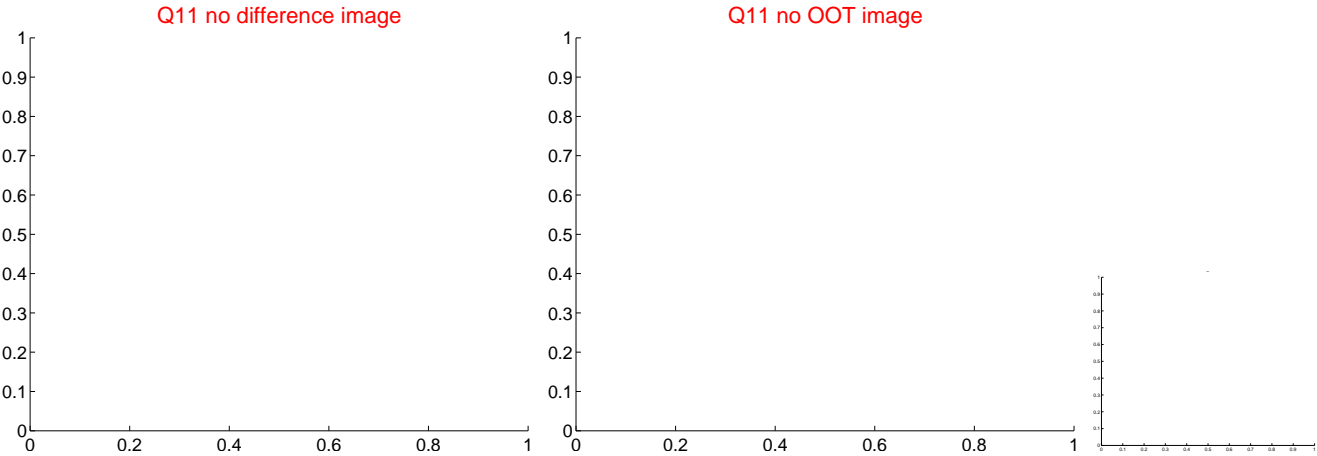
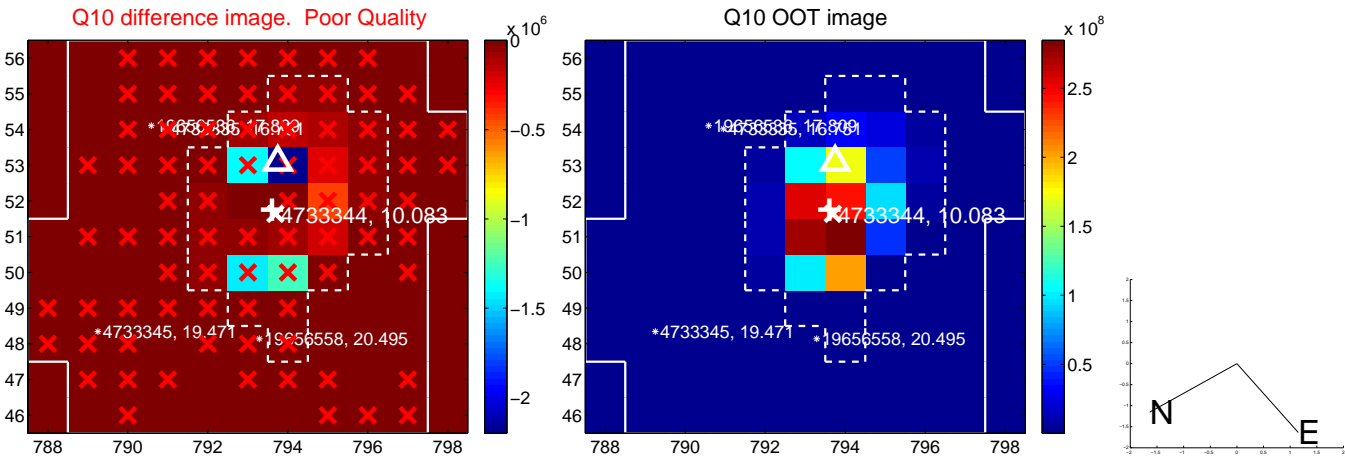
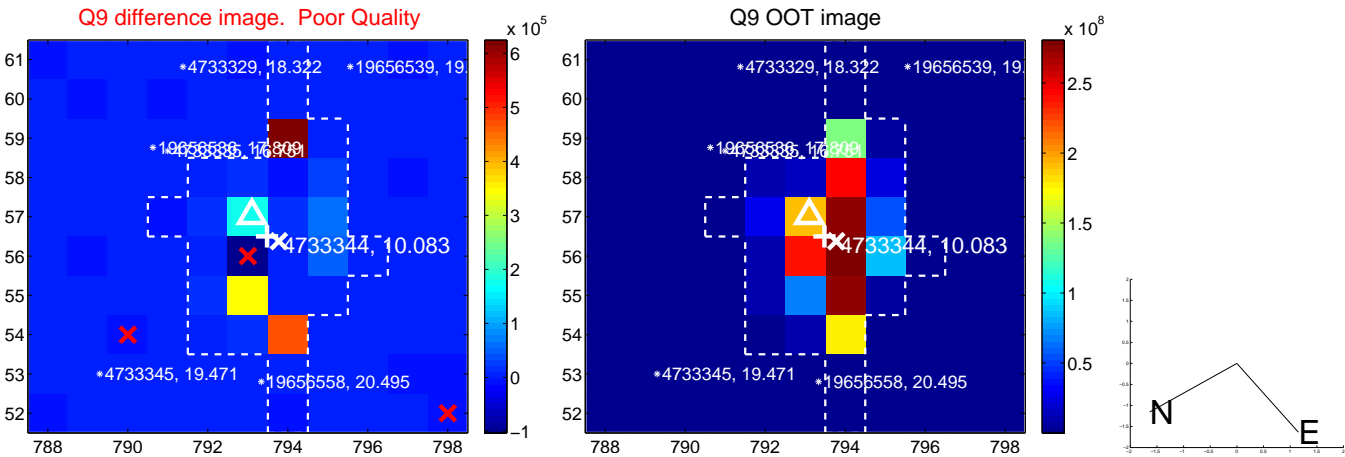
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



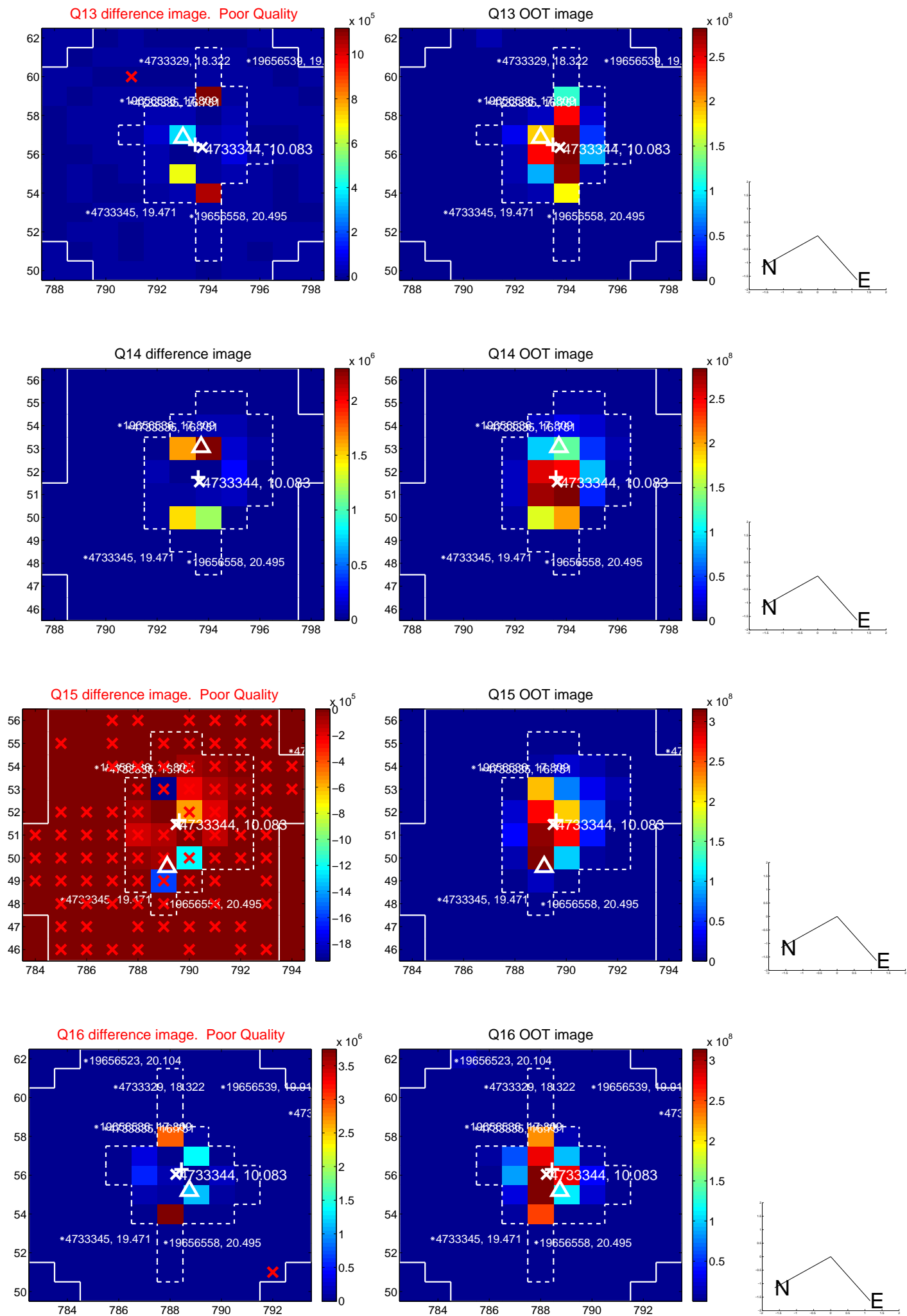
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



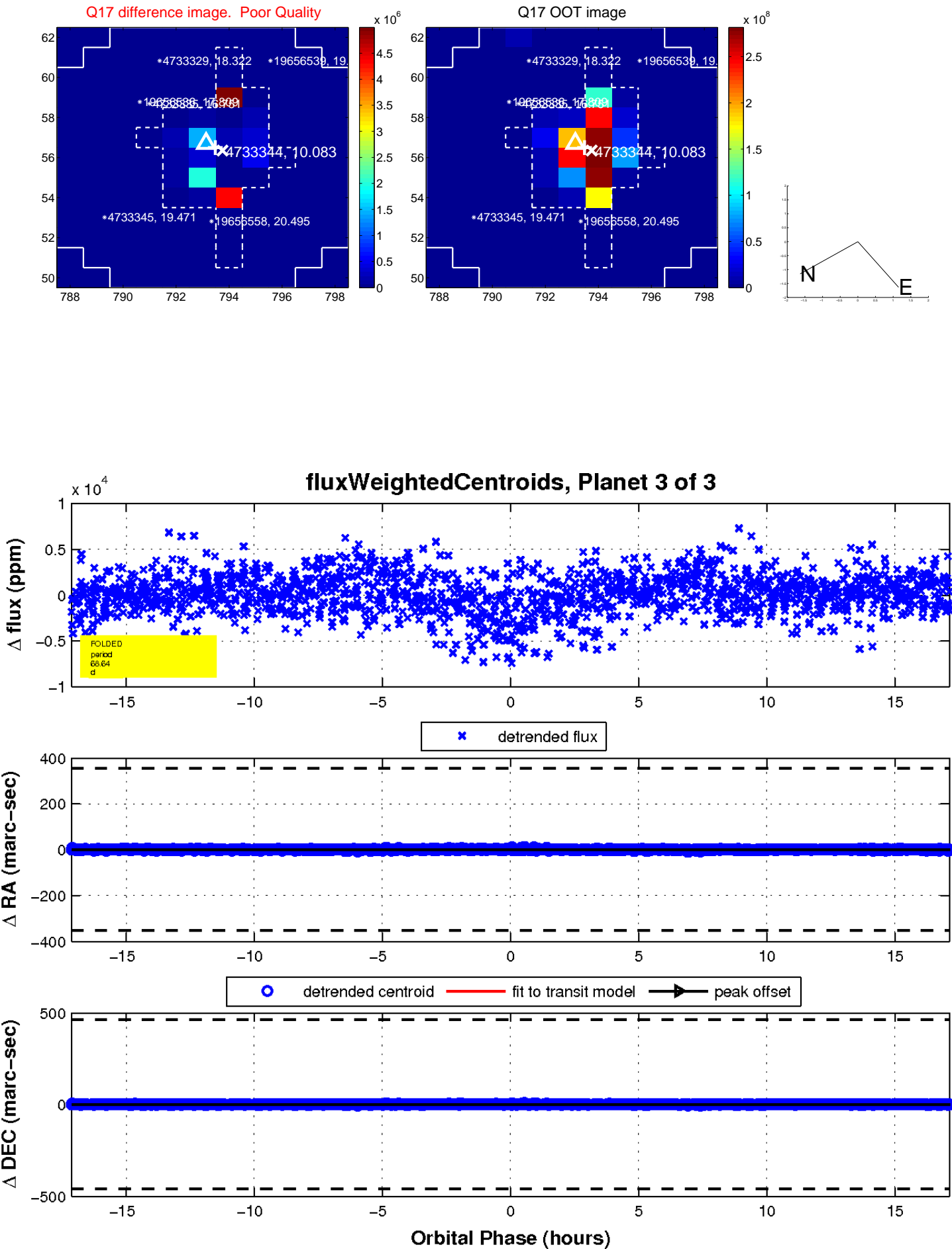
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

