

KIC 007748238

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})
007748238-01	OBS	No	0.528387	131.596453	36.8	1.060	13.1	9.9	1.88	7244	1.19	40796.04
007748238-02	OBS	No	1.064746	132.106578	105.1	4.338	10.8	10.6	1.88	7244	2.24	16028.50
007748238-03	OBS	No	1.064705	131.916680	70.4	8.892	11.0	6.2	1.88	7244	1.69	16029.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007748238-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
007748238-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
007748238-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

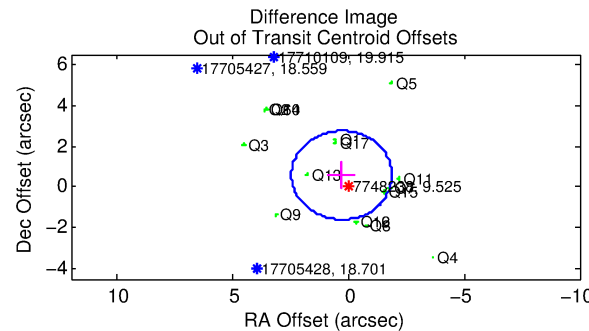
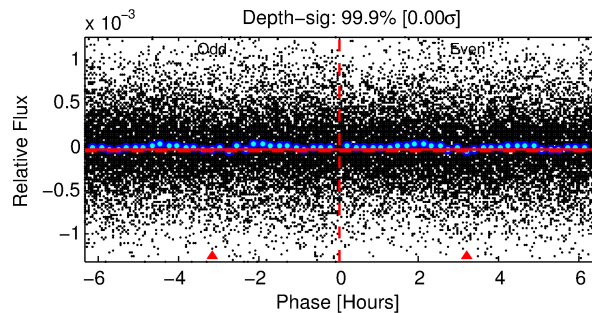
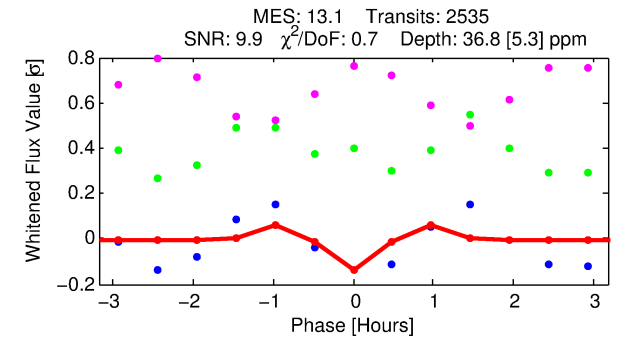
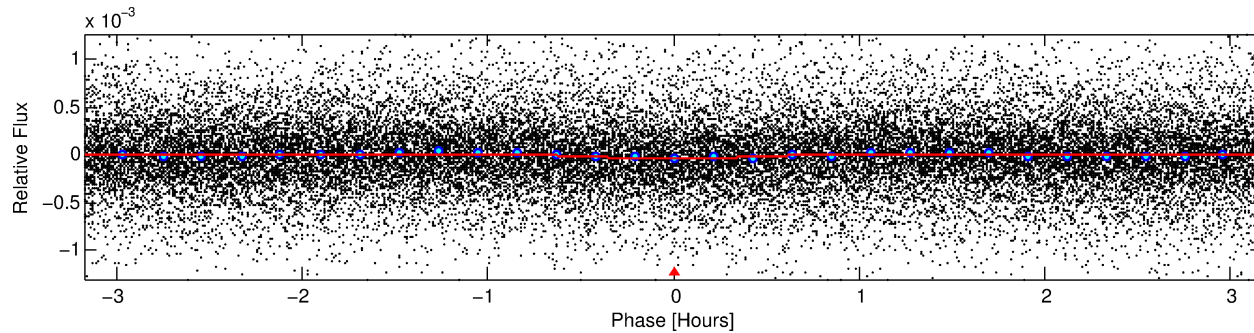
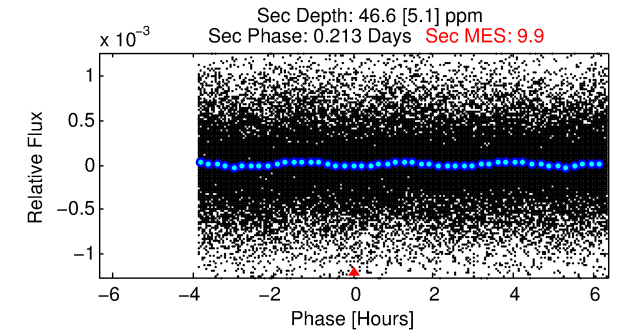
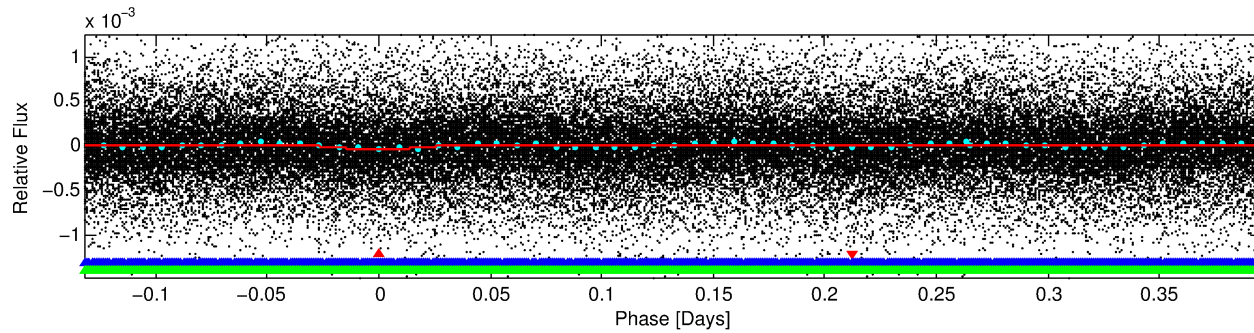
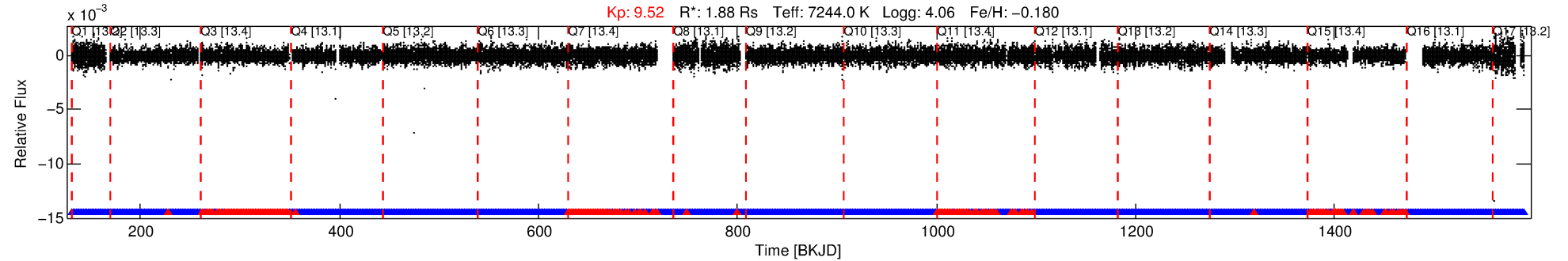
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007748238-01

No Significant Match Found

DV One-Page Summary

KIC: 7748238 Candidate: 1 of 3 Period: 0.528 d



DV Fit Results:

Period = 0.52839 [0.00001] d
Epoch = 131.5965 [0.0010] BKJD
Rp/R* = 0.0058 [0.0012]
a/R* = 3.51 [3.65]
b = 0.44 [2.09]
Seff = 40796.04 [10241.03]
Teq = 3624 [227] K
Rp = 1.18 [0.33] Re
a = 0.0146 [0.0024] AU
Ag = 3.92 [1.90] [1.54σ]
Teffp = 7882 [847] K [4.86σ]

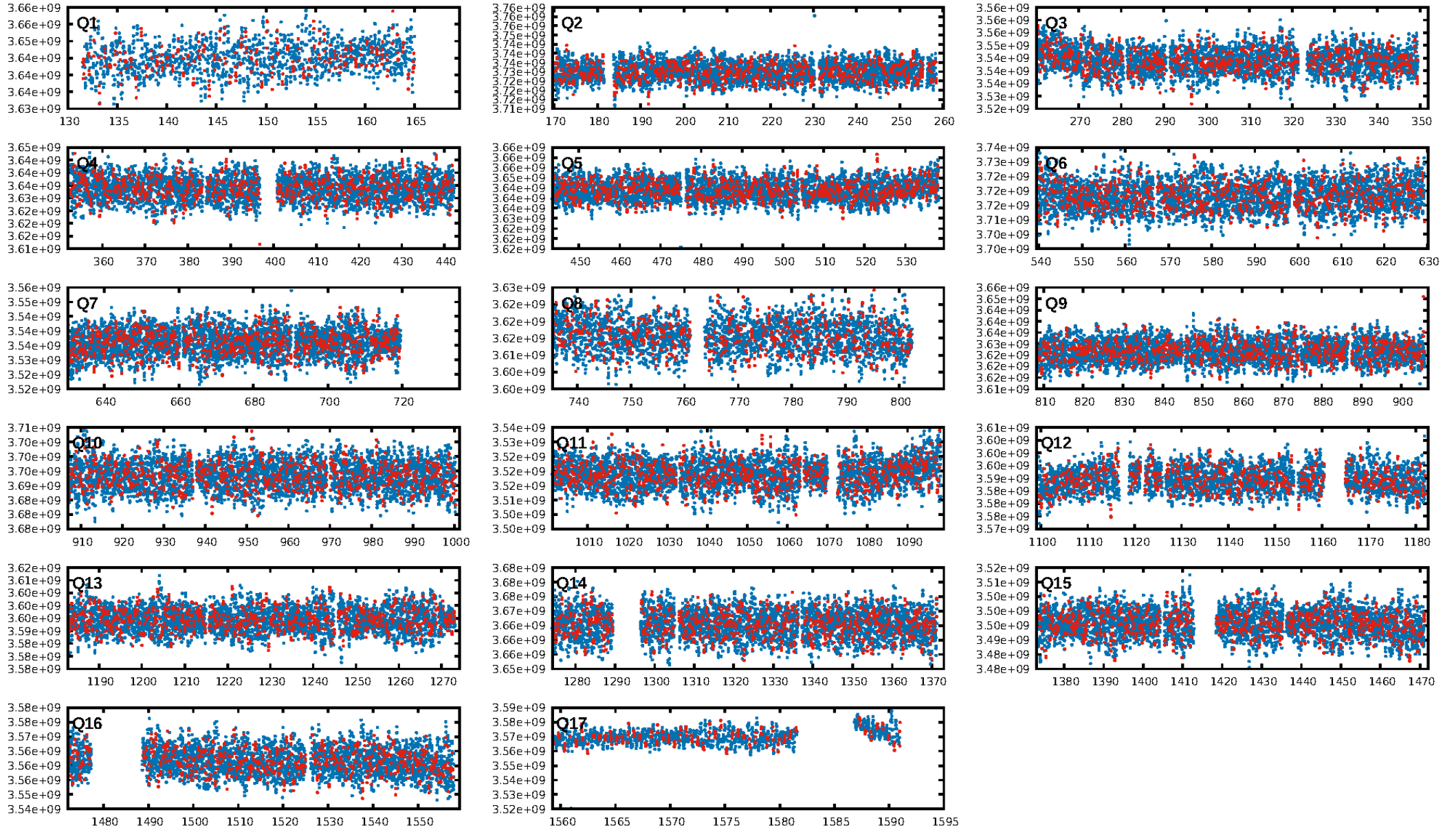
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 84.9% [1.44σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.88 [2132/2421]
GhostDiagnostic-chr: N/A
Centroid-sig: 40.8%
Centroid-so: 1.091 arcsec [2.15σ]
OotOffset-rm: 0.653 arcsec [0.90σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 1.240 arcsec [1.16σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 1.00 [17/17]

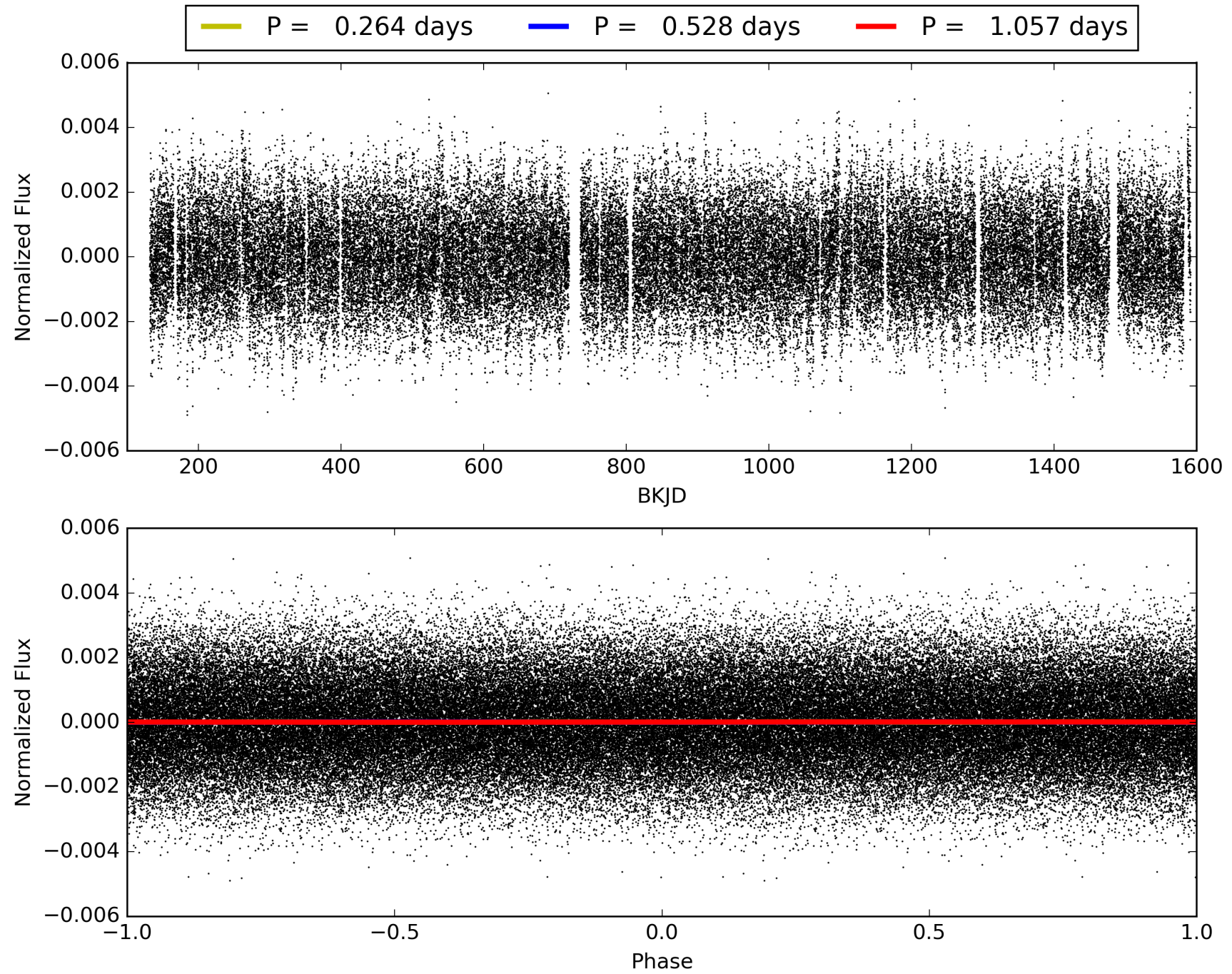
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:41:30 Z

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

TCE 007748238-01, PDC Light Curves

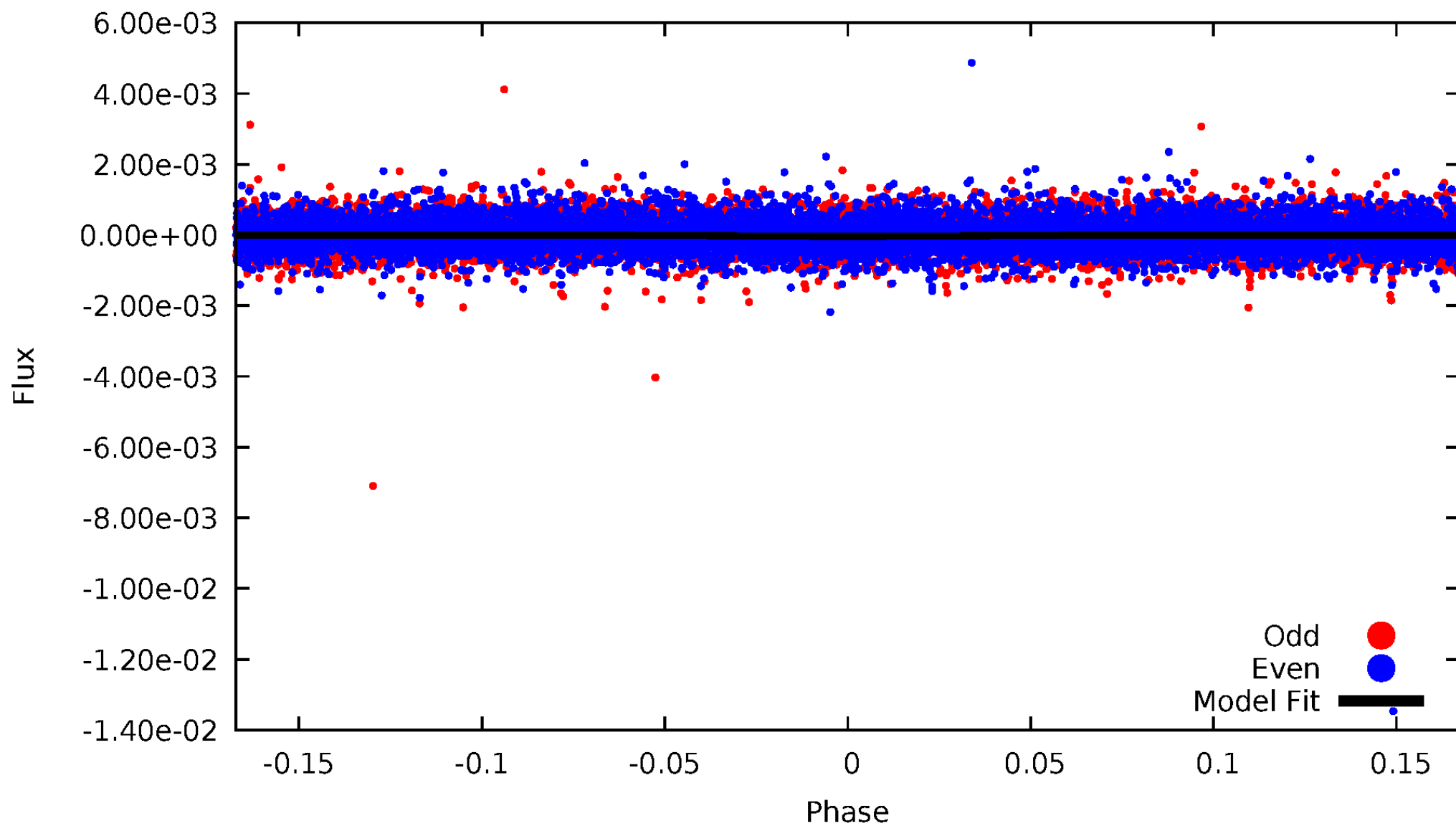


TCE 007748238-01



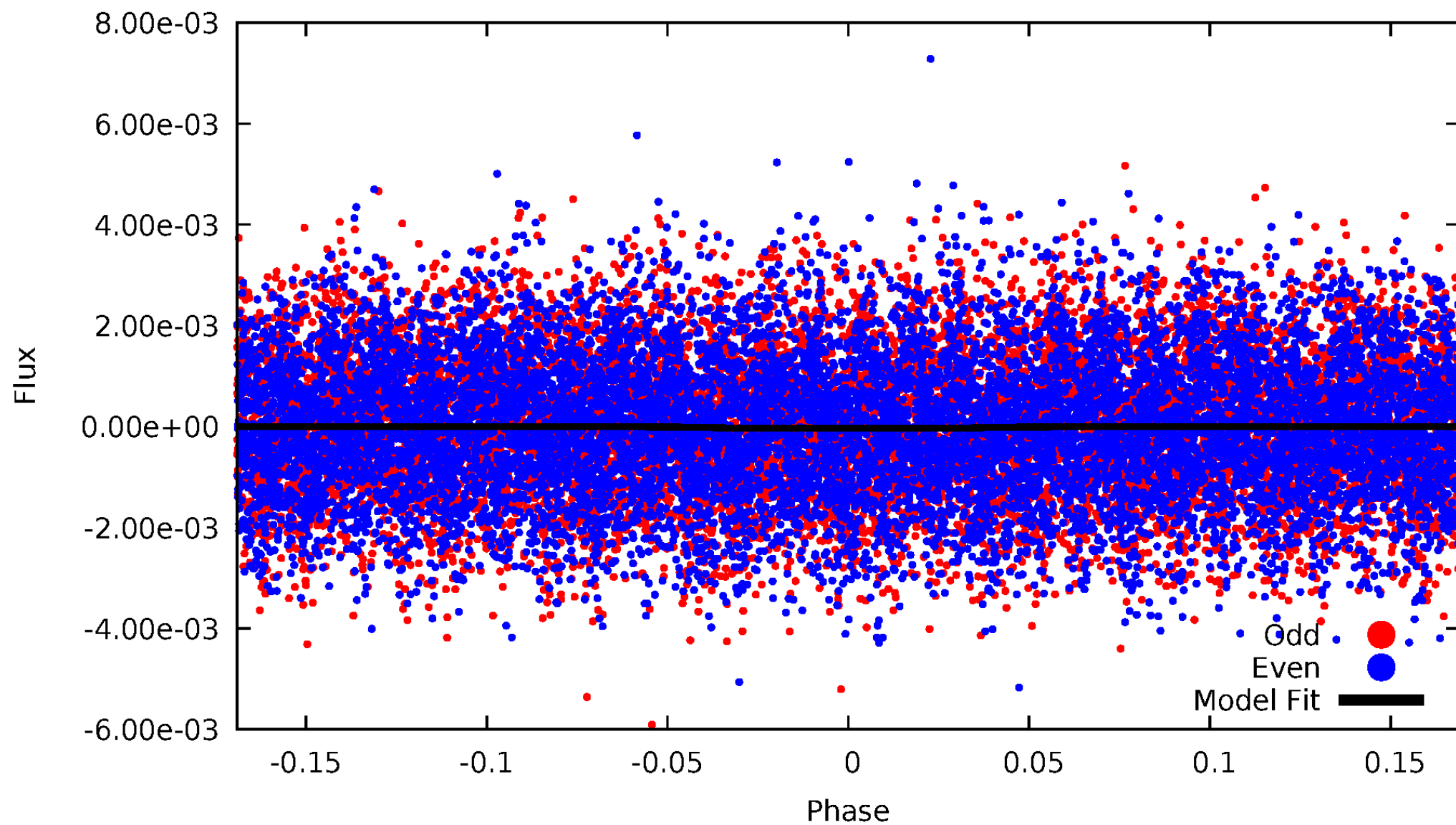
DV Odd/Even

TCE 007748238-01

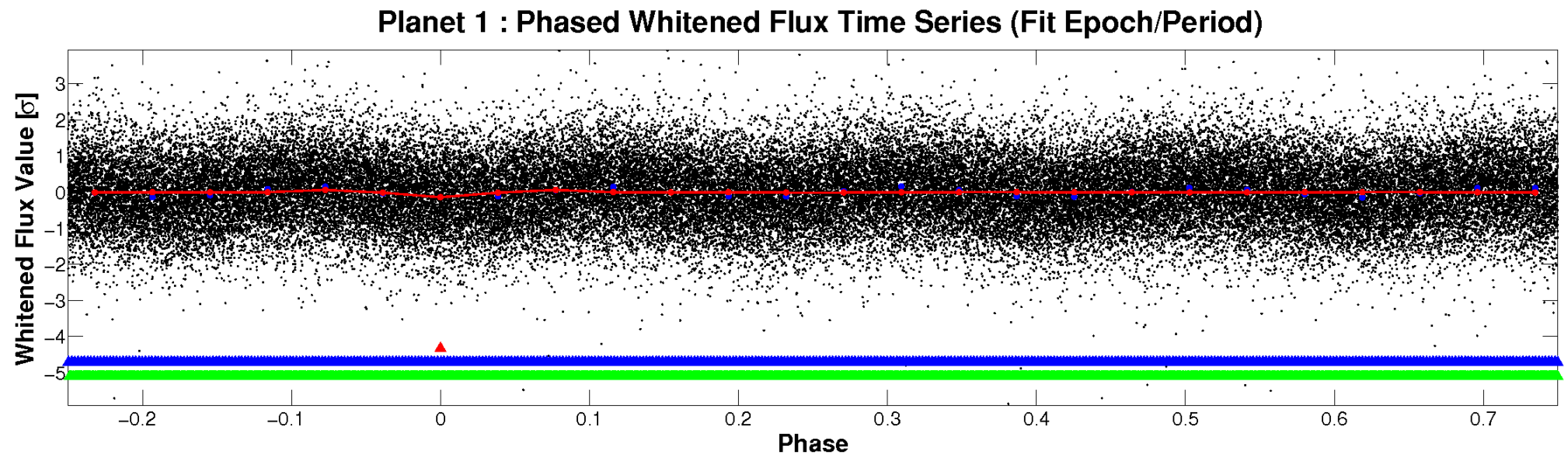
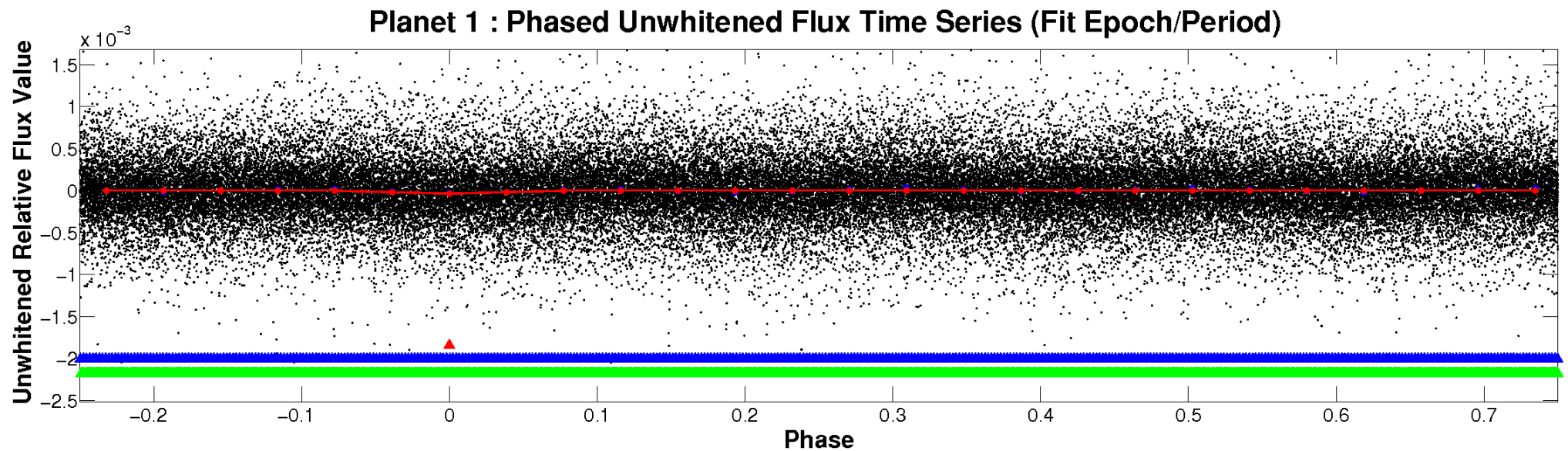


ALT Odd/Even

TCE 007748238-01

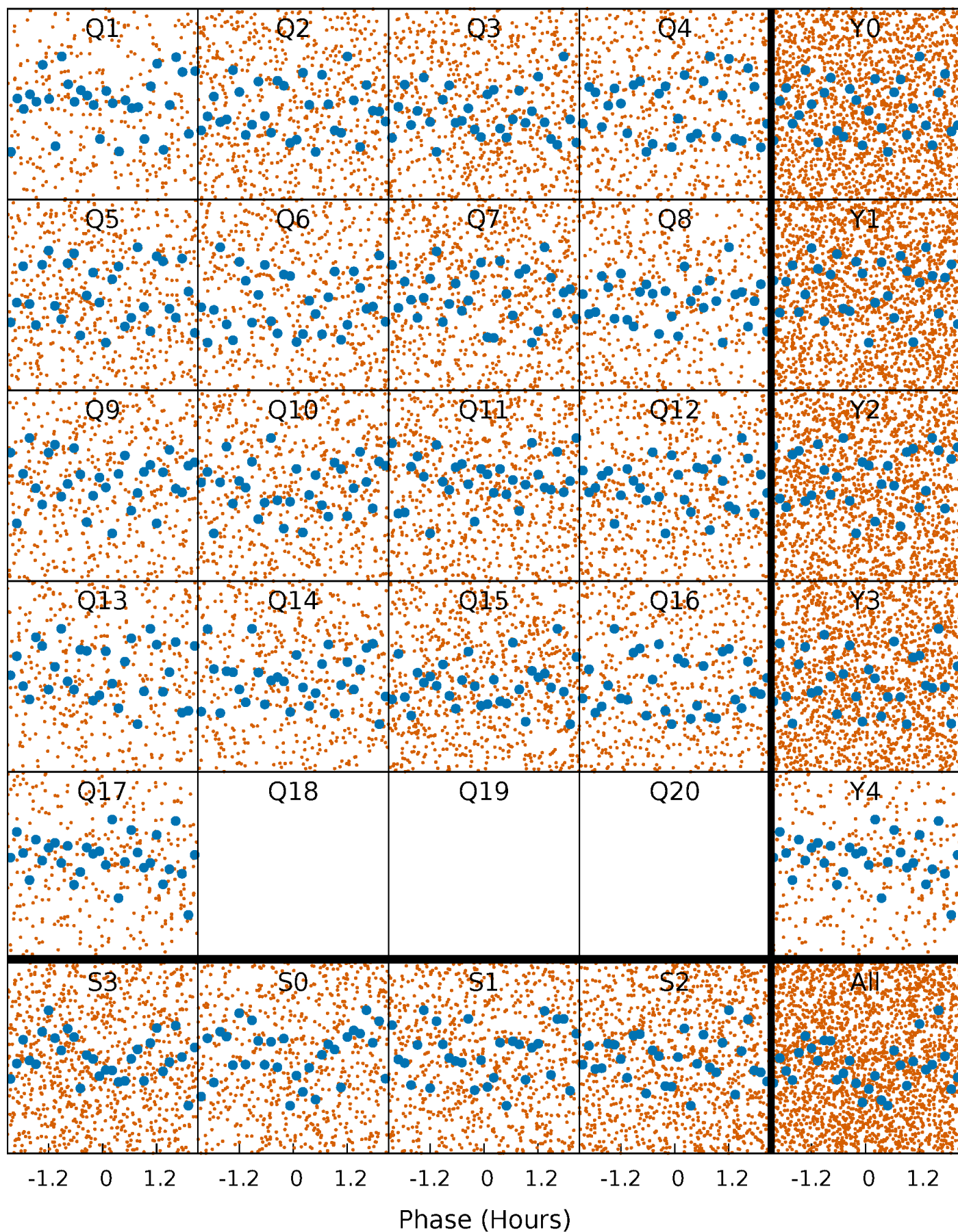


Non-Whitened Vs. Whitened Light Curve



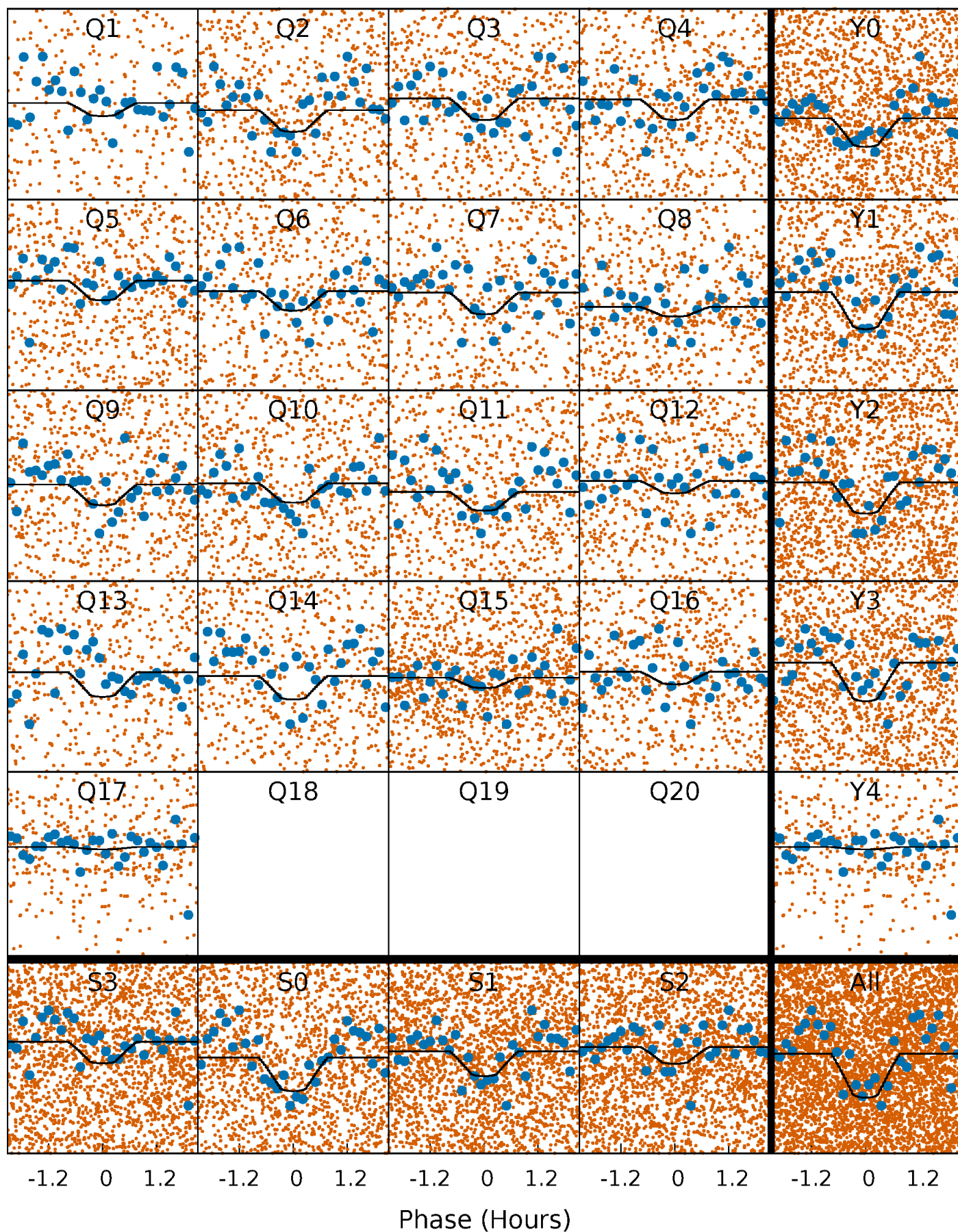
PDC Quarter-Phased Transit Curves

TCE 007748238-01 P= 0.528387 Days $T_0=131.596453$ (BKJD)



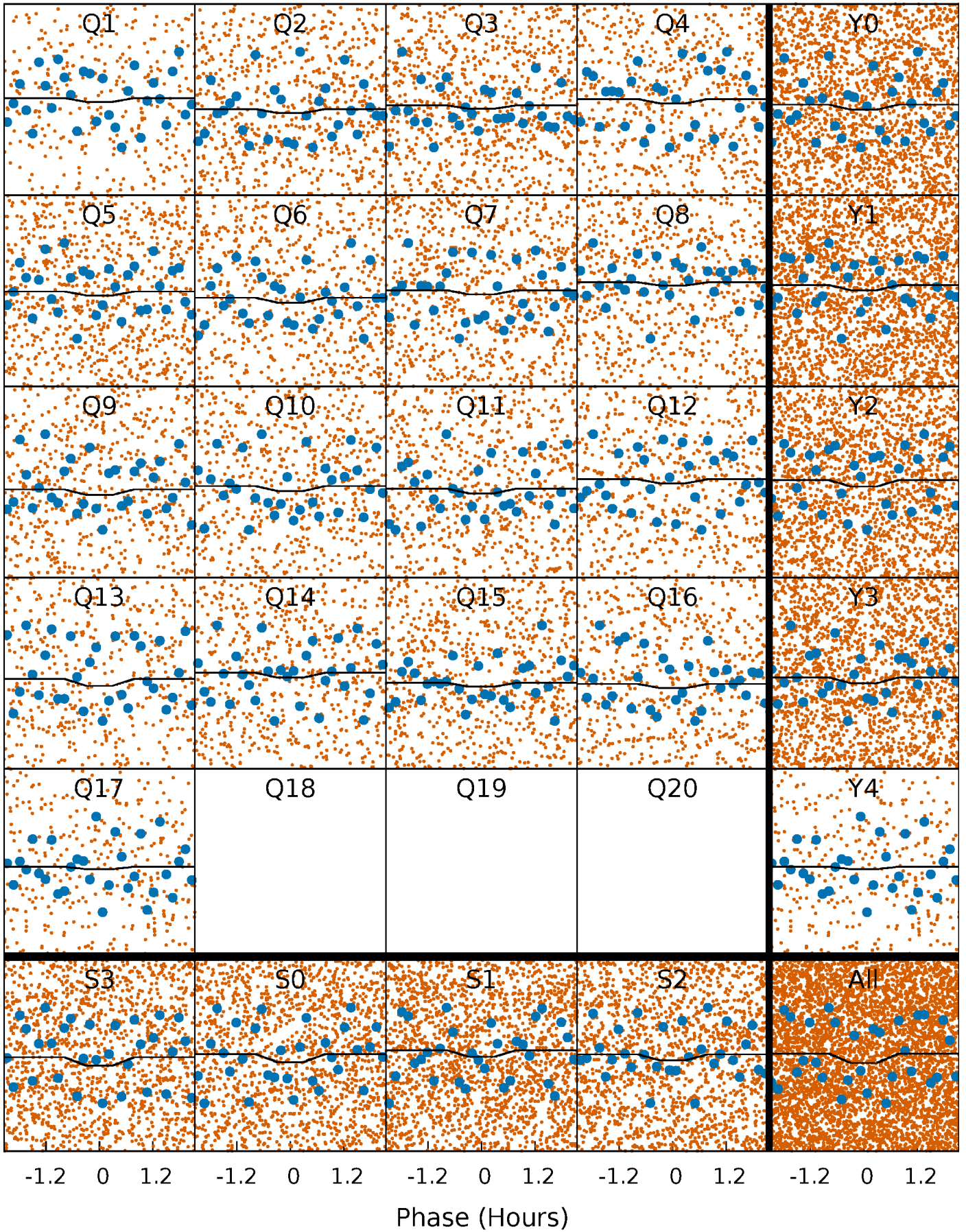
DV Quarter-Phased Transit Curves

TCE 007748238-01 P= 0.528387 Days $T_0=131.596453$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

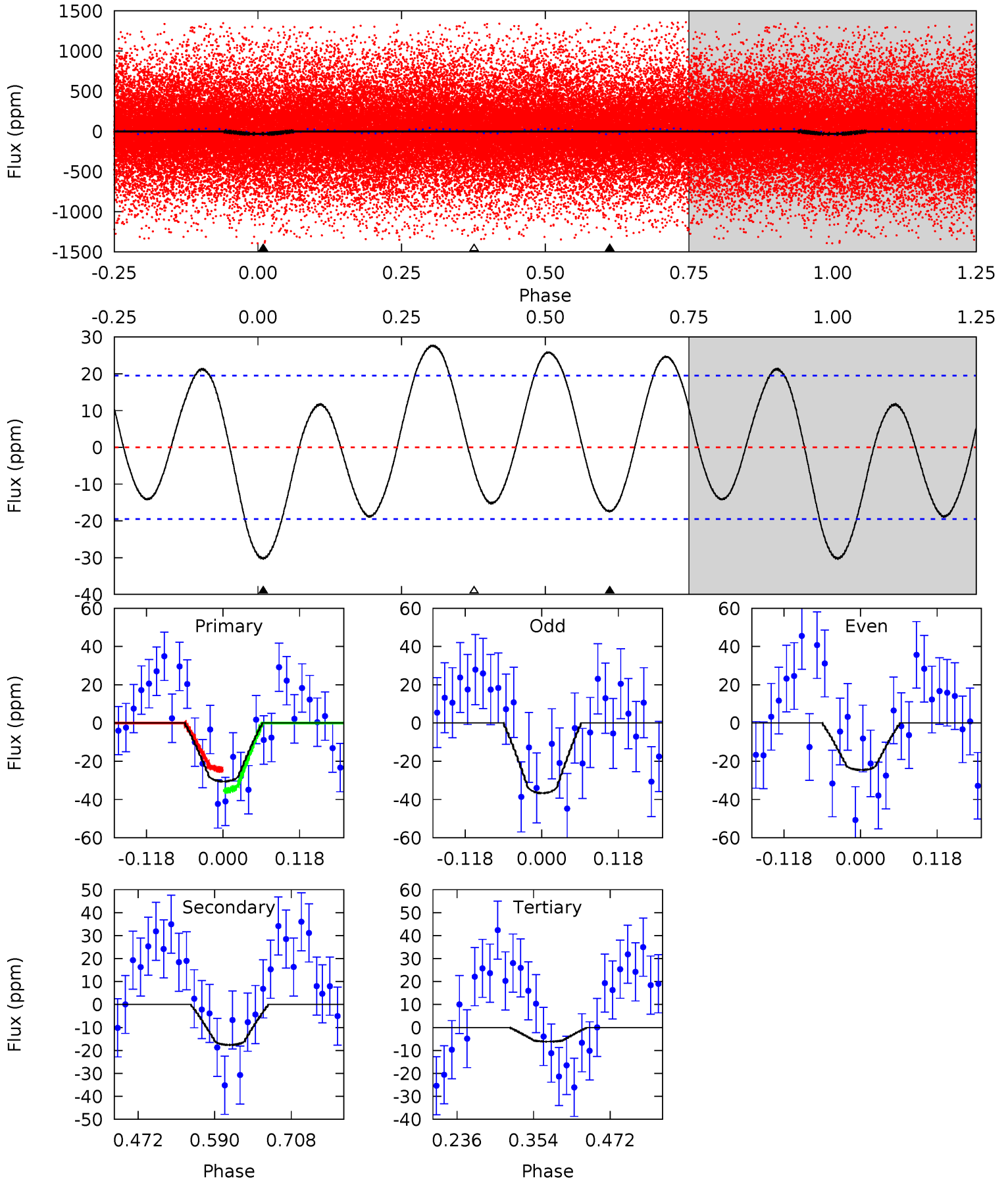
TCE 007748238-01 P= 0.528393 Days $T_0=131.594741$ (BKJD)



DV Model-Shift Uniqueness Test

007748238-01, P = 0.528387 Days, E = 131.068066 Days

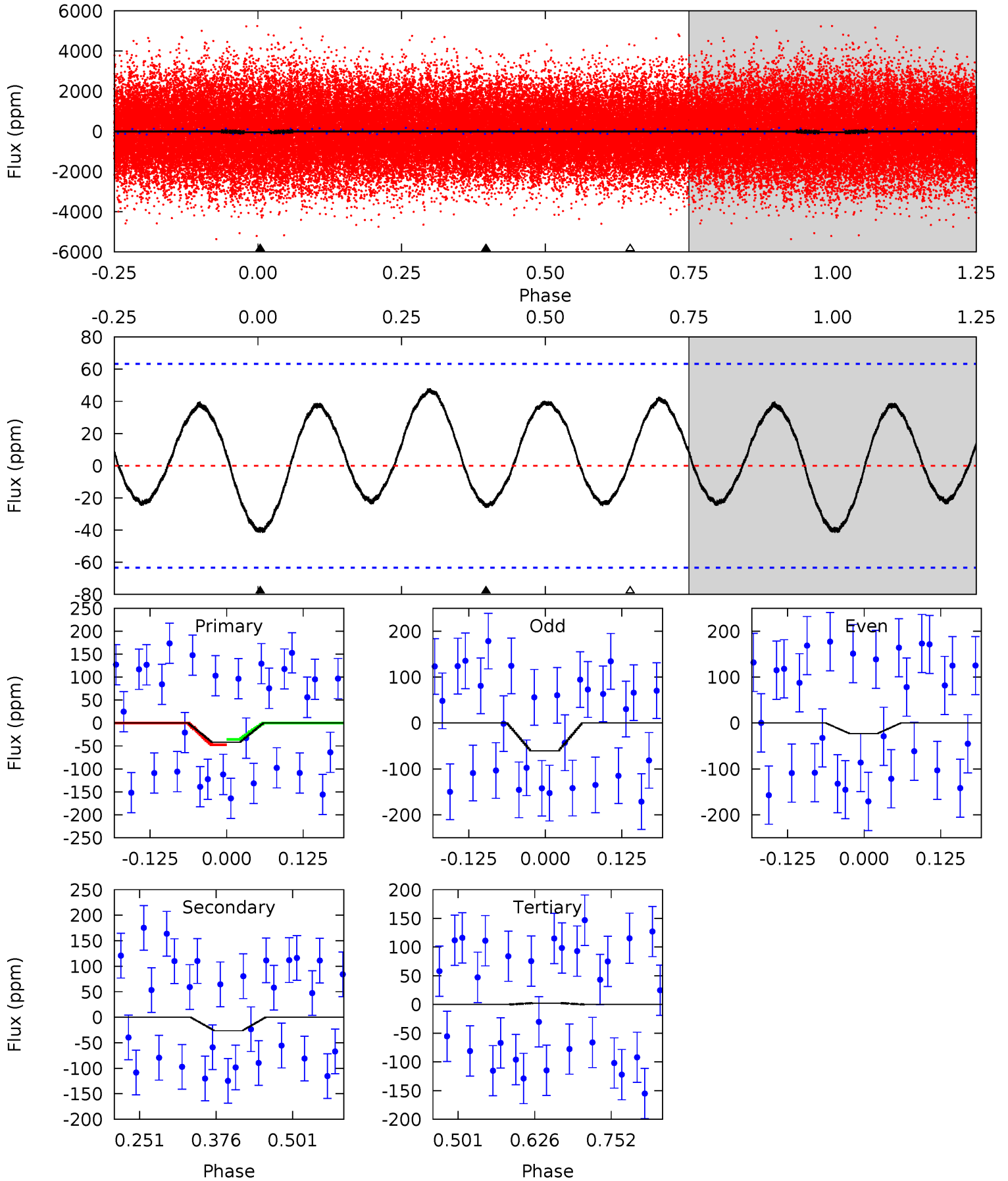
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.10	4.09	1.43	0	4.53	1.56	3.24	5.67	7.10	2.66	4.09	1.41	0.68	0.48	1.29



Alt Model-Shift Uniqueness Test

007748238-01, P = 0.528393 Days, E = 131.066348 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.98	1.87	-0.18	0	4.52	1.53	1.43	3.16	2.98	2.05	1.87	1.32	1.26	0.54	0.36



Stellar Parameters For KIC 007748238

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7244^{+145}_{-145}	$4.064^{+0.132}_{-0.120}$	$-0.180^{+0.150}_{-0.150}$	$1.882^{+0.352}_{-0.288}$	$1.495^{+0.145}_{-0.118}$	$0.316^{+0.185}_{-0.107}$
	+2%/-2%	+3%/-3%	+83%/-83%	+19%/-15%	+10%/-8%	+59%/-34%
Source	SPE4	SPE4	SPE4	DSEP		

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

Secondary Eclipse Parameters for KIC 007748238-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-18 ± 4	$1.19^{+0.28}_{-0.27}$	5055^{+274}_{-248}	5713^{+947}_{-717}	$1.417^{+1.069}_{-0.518}$
Alt.	-26 ± 14	$1.25^{+0.30}_{-0.25}$	5067^{+244}_{-249}	6208^{+1350}_{-1323}	$1.911^{+1.687}_{-1.090}$

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

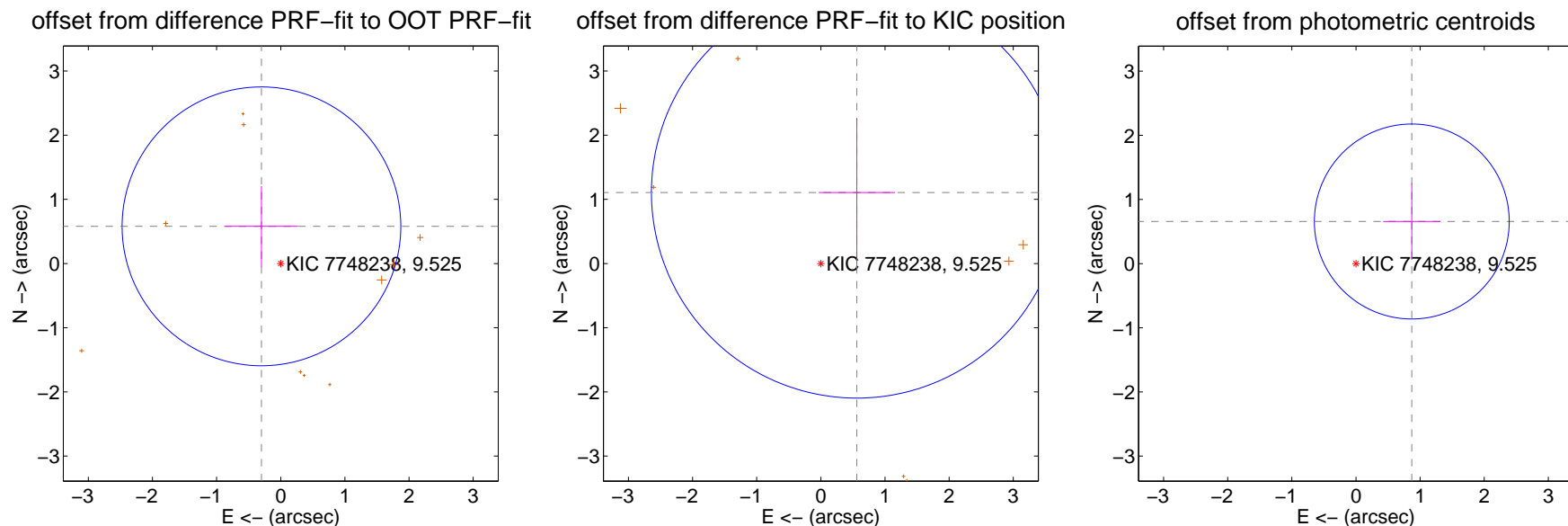
DV Centroid Data

Supplemental centroid analysis for 007748238-01. **Kepler magnitude: 9.53.** Transit SNR 9.92

There are 0 quarters with good PRF difference image offsets

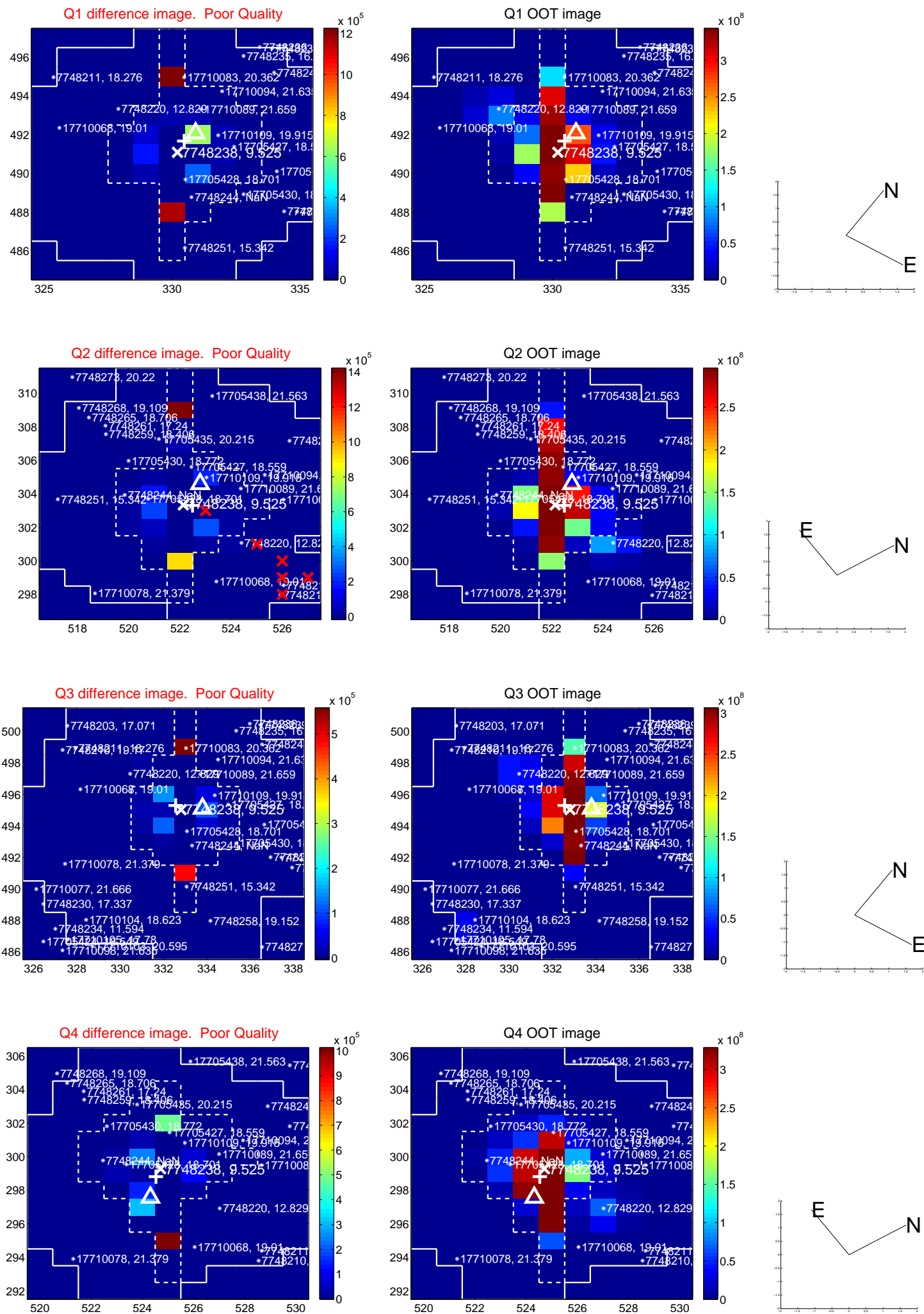
The OOT PRF centroid is offset from the target star catalog position by about 2.61 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.653 ± 0.724	0.90	0.301 ± 0.568	0.580 ± 0.628
PRF-fit source offset from KIC position	1.240 ± 1.068	1.16	-0.561 ± 0.595	1.106 ± 1.159
photometric centroid source offset	1.09 ± 0.51	2.15	-0.87 ± 0.45	0.66 ± 0.60

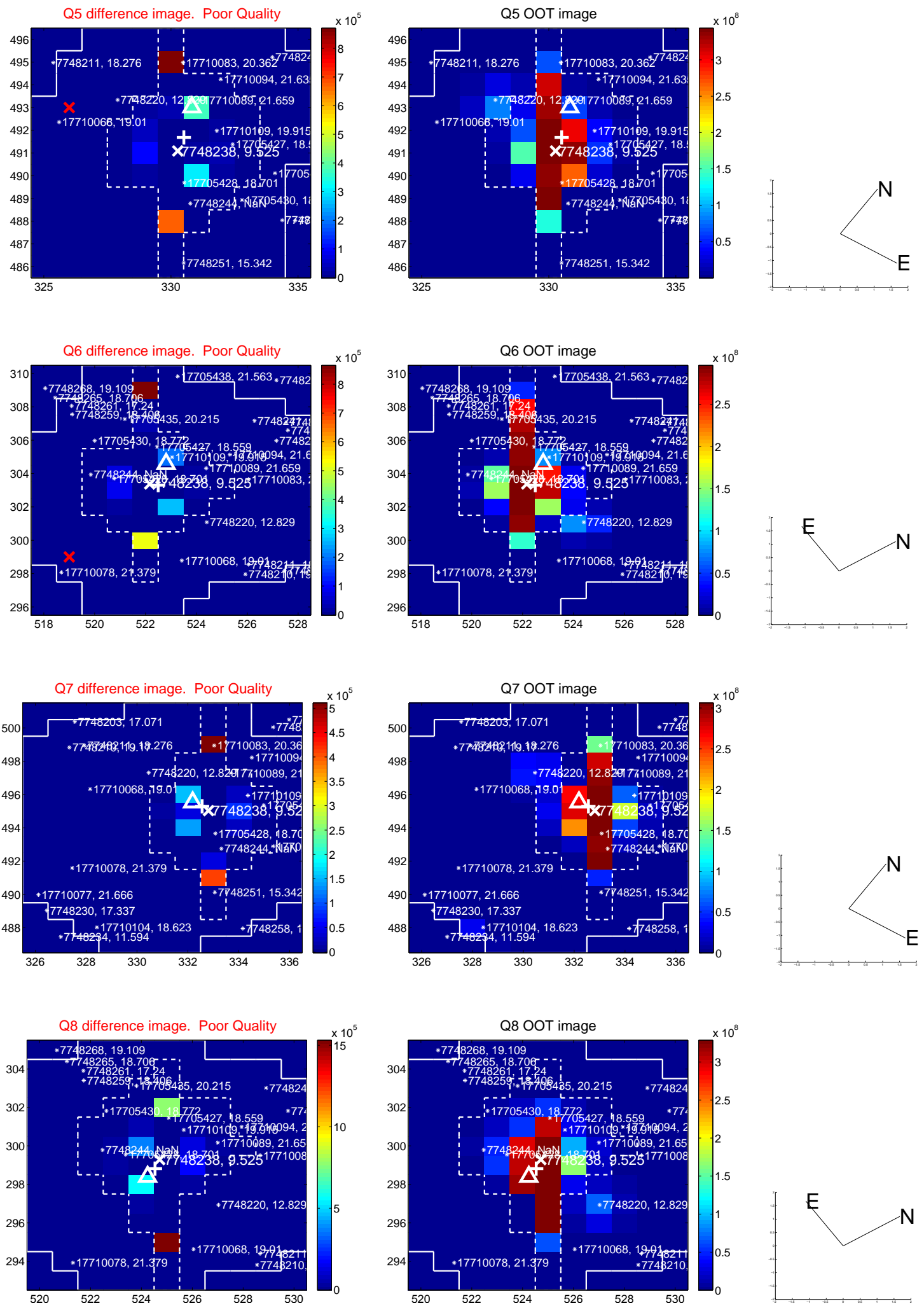


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

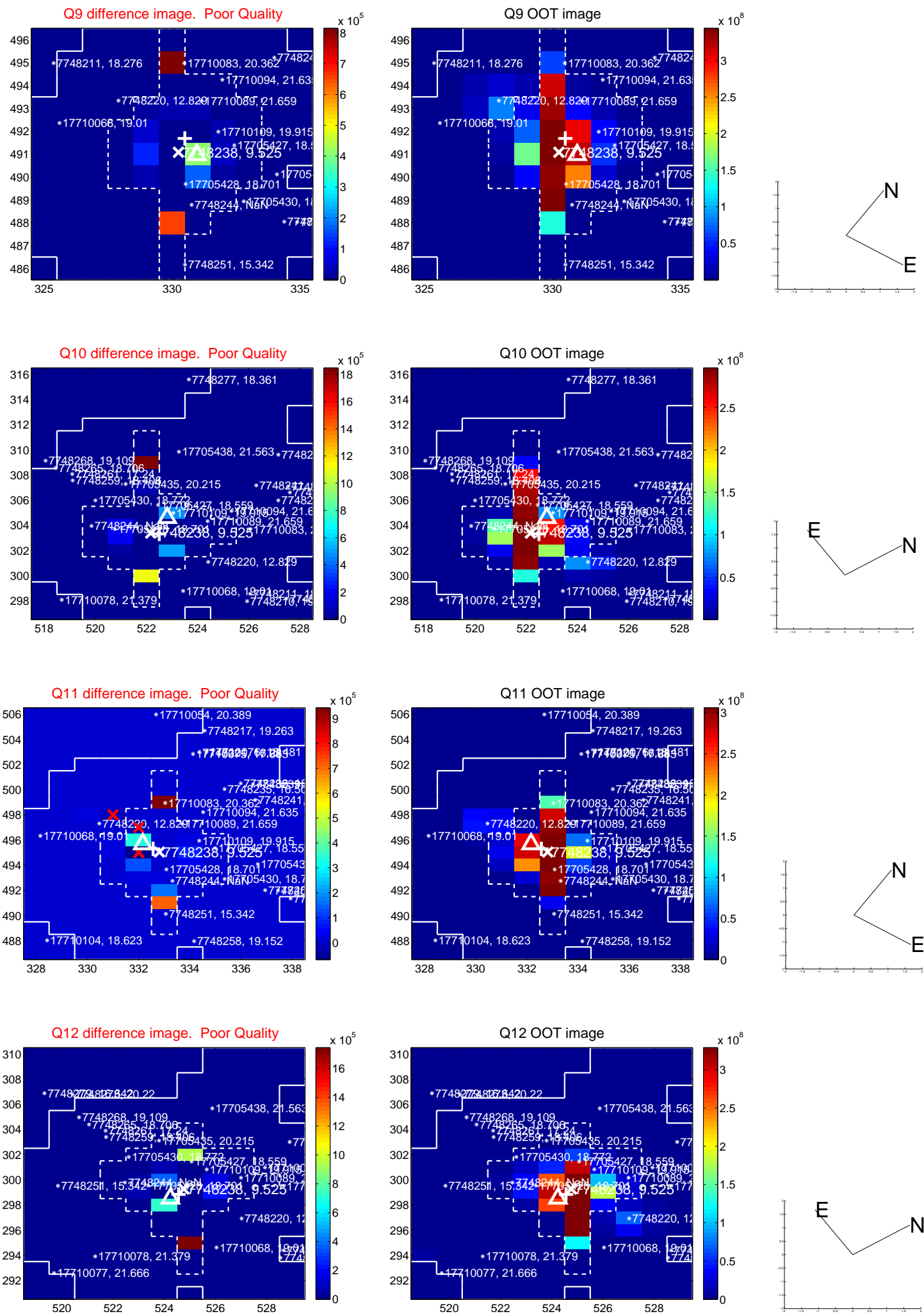
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



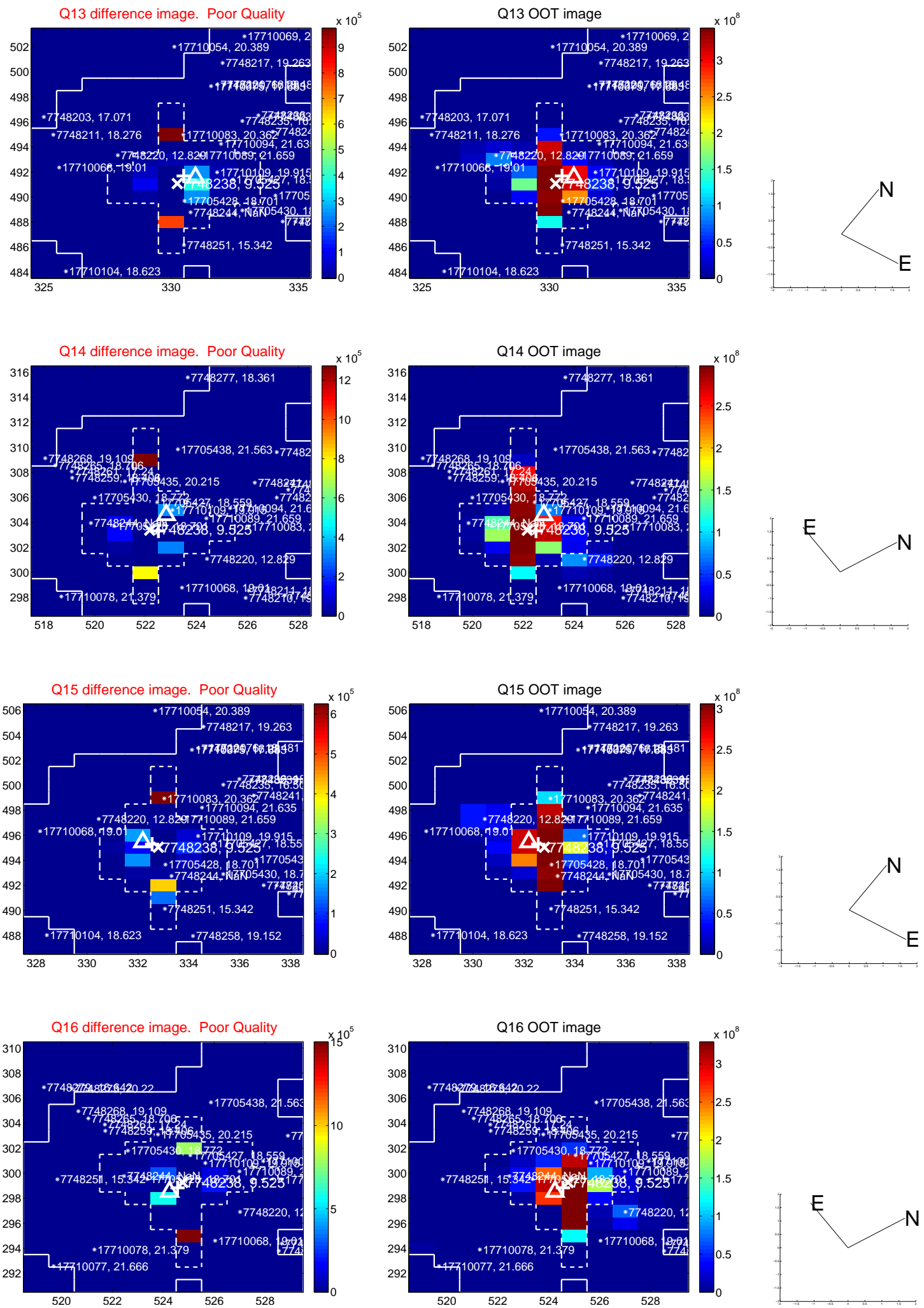
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



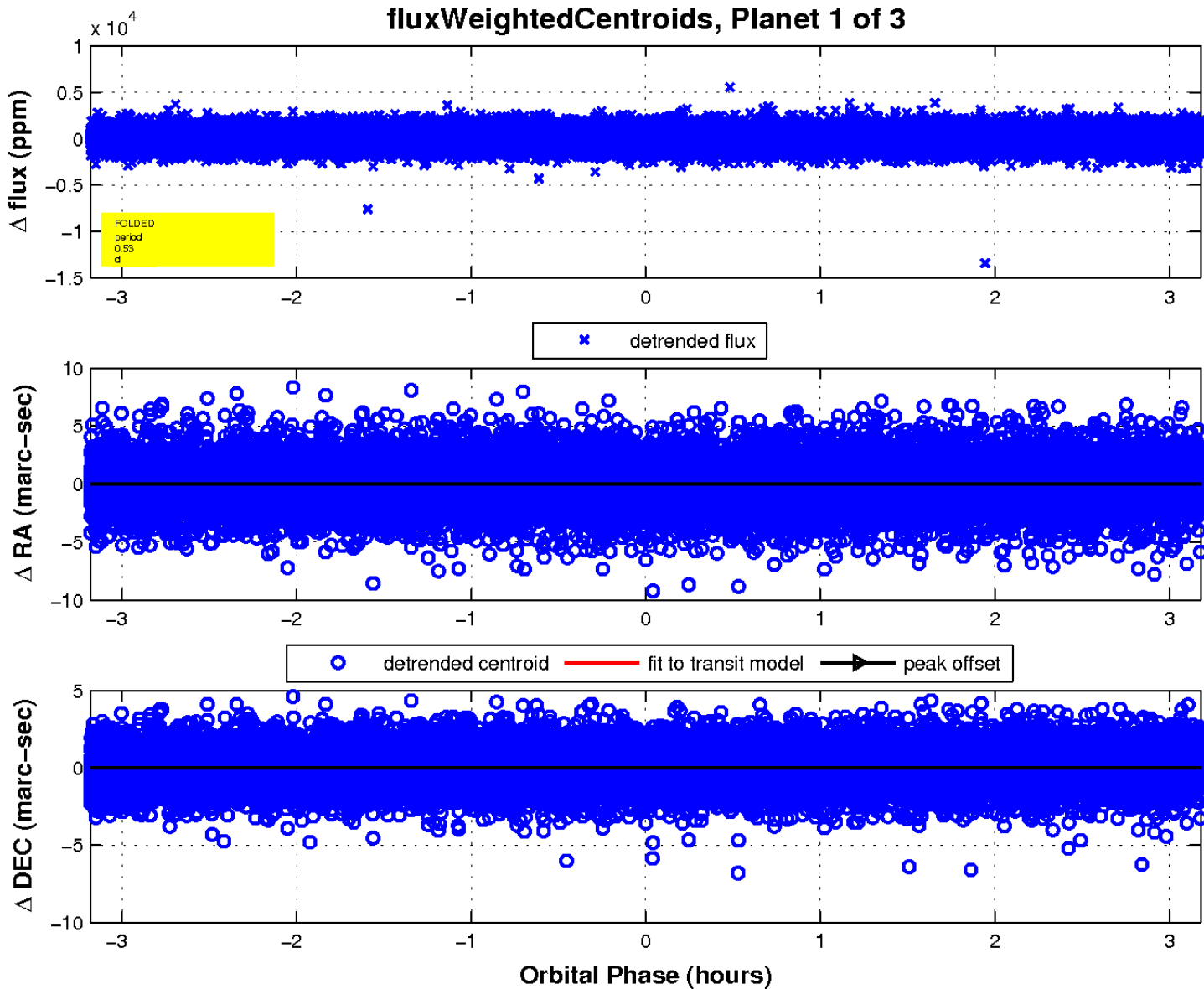
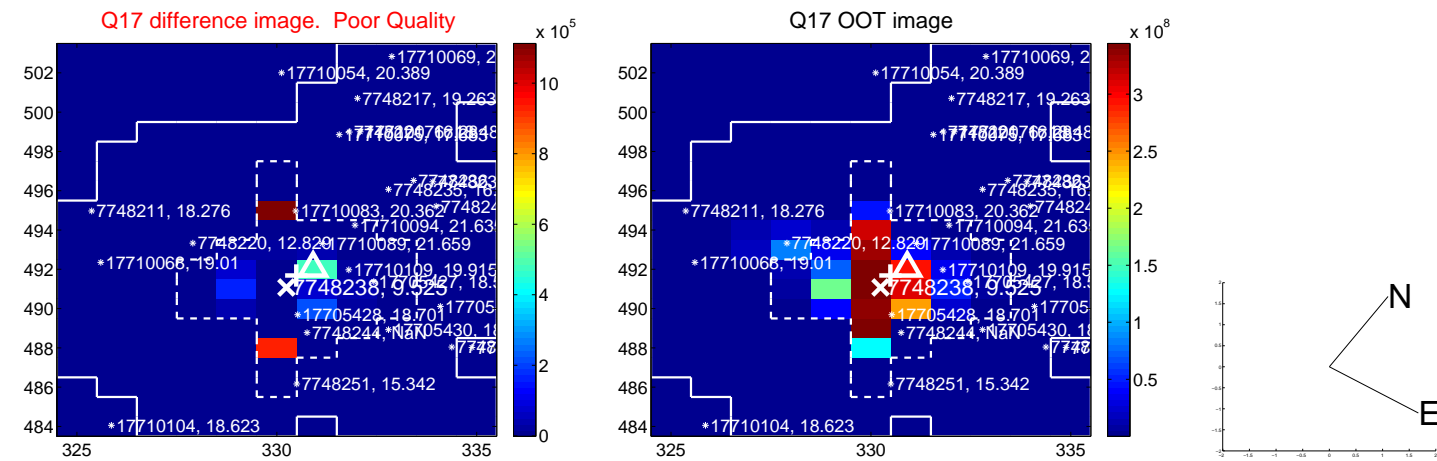
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

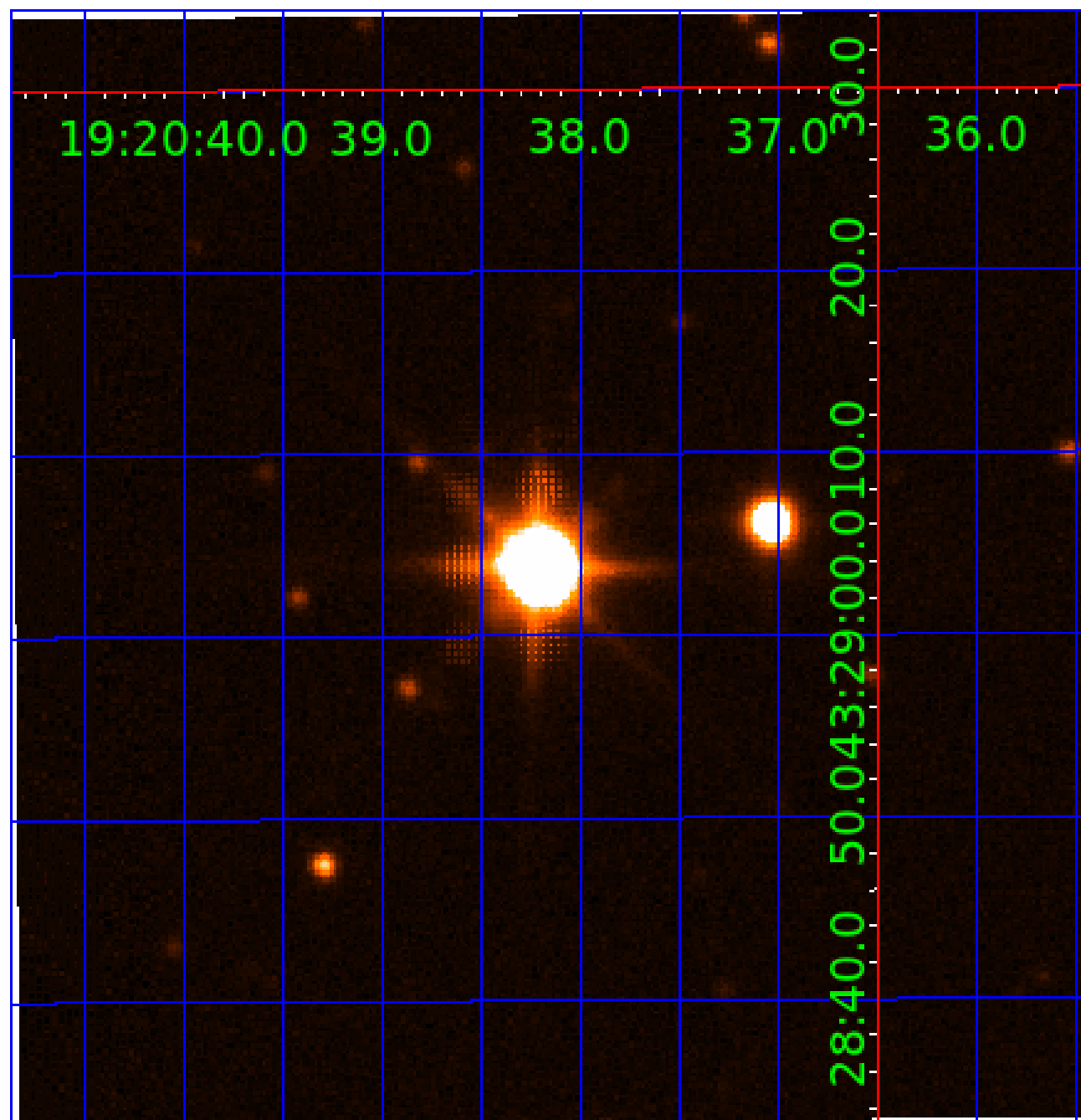


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007748238

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})
007748238-01	OBS	No	0.528387	131.596453	36.8	1.060	13.1	9.9	1.88	7244	1.19	40796.04
007748238-02	OBS	No	1.064746	132.106578	105.1	4.338	10.8	10.6	1.88	7244	2.24	16028.50
007748238-03	OBS	No	1.064705	131.916680	70.4	8.892	11.0	6.2	1.88	7244	1.69	16029.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007748238-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
007748238-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
007748238-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

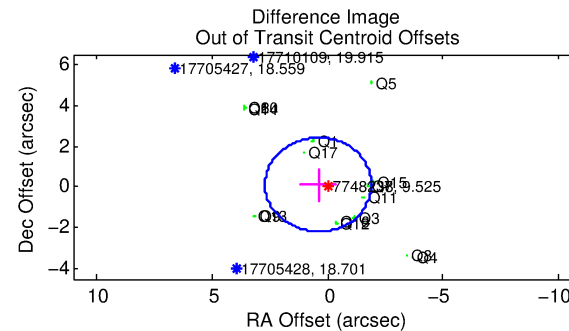
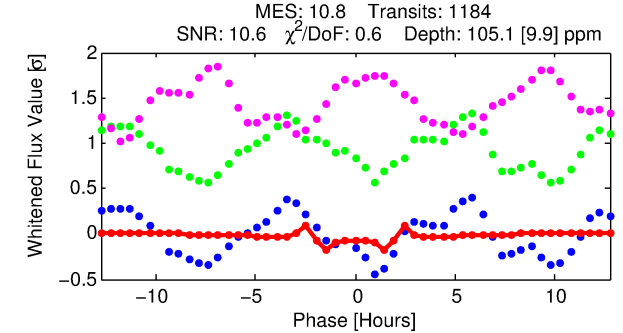
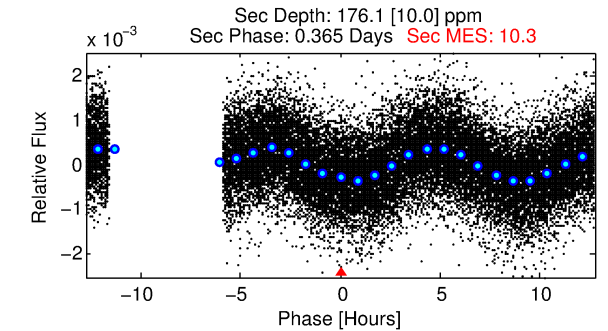
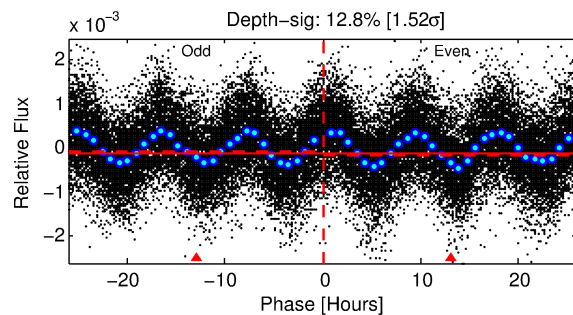
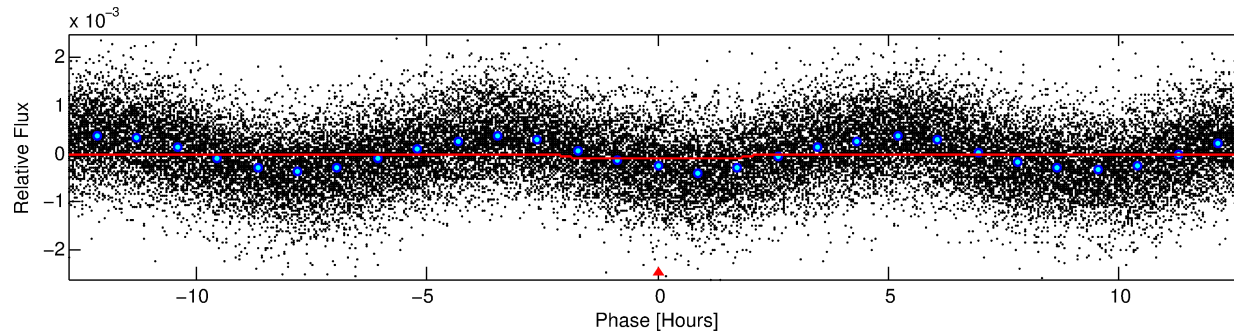
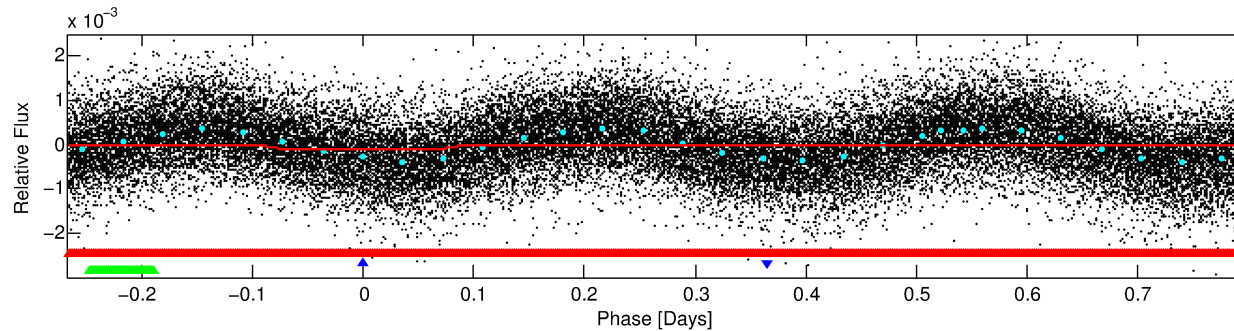
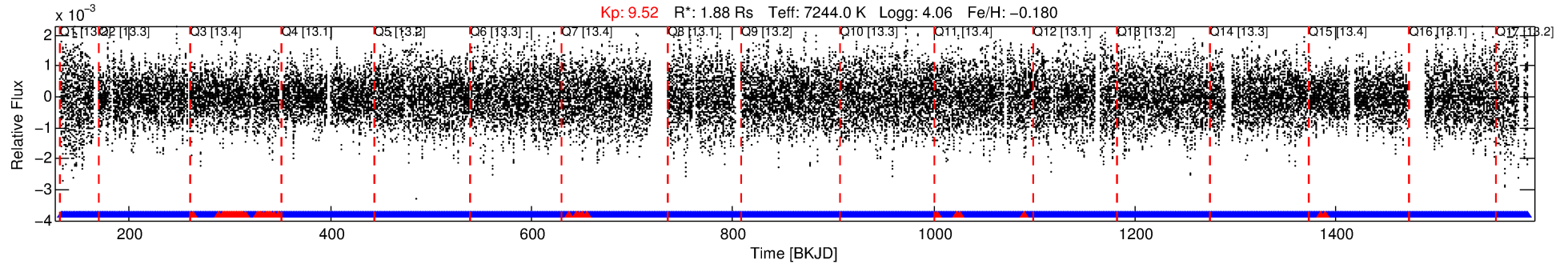
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007748238-02

No Significant Match Found

DV One-Page Summary

KIC: 7748238 Candidate: 2 of 3 Period: 1.065 d



DV Fit Results:

Period = 1.06475 [0.00001] d
Epoch = 132.1066 [0.0013] BKJD
Rp/R* = 0.0109 [0.0011]
a/R* = 1.28 [0.26]
b = 0.90 [0.11]
Seff = 16028.51 [4023.64]
Teq = 2869 [180] K
Rp = 2.24 [0.48] Re
a = 0.0233 [0.0038] AU
Ag = 10.56 [3.36] [2.84σ]
Teffp = 7997 [452] K [10.54σ]

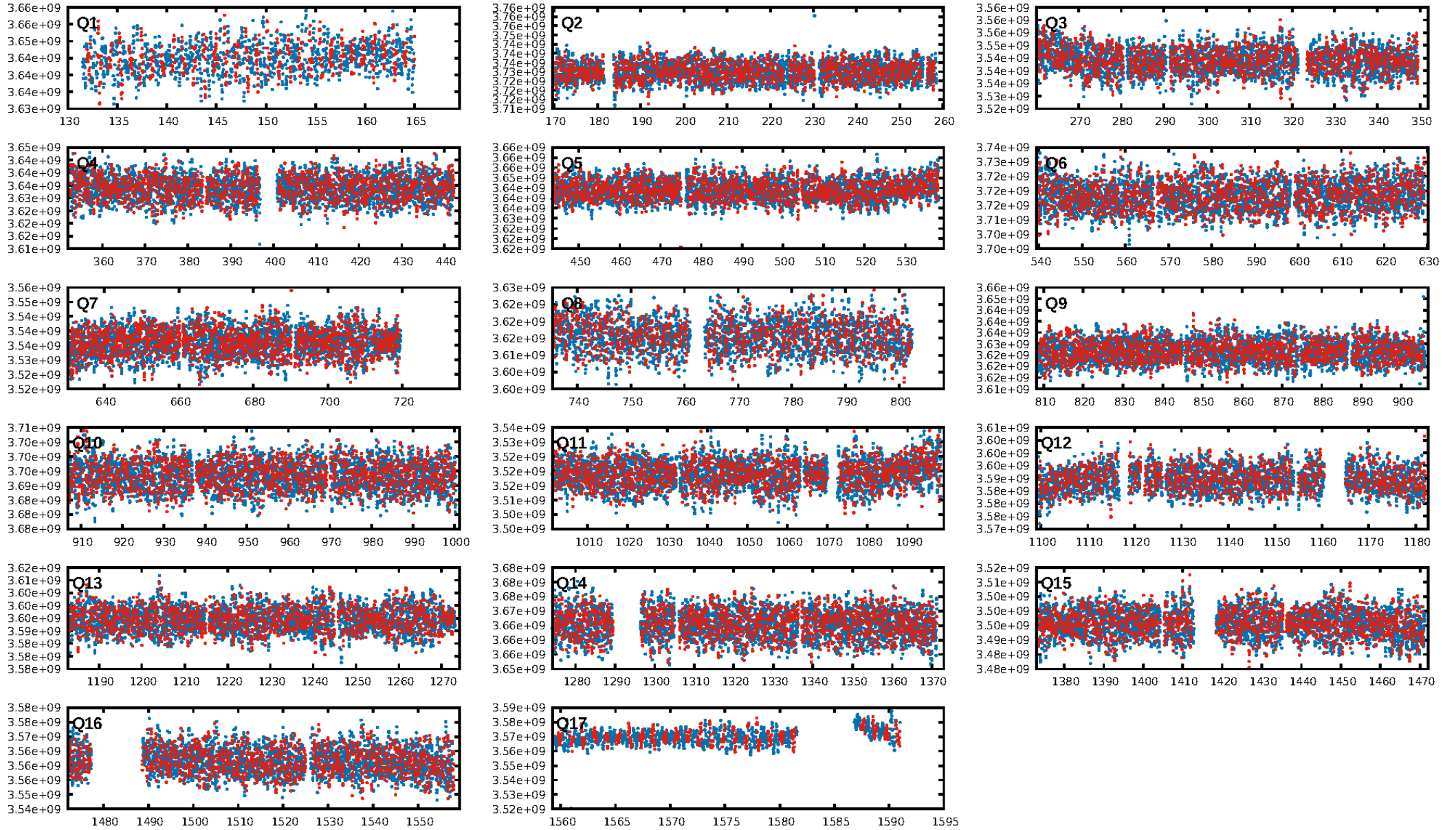
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.96 [1088/1132]
GhostDiagnostic-chr: N/A
Centroid-sig: 46.2%
Centroid-so: 0.649 arcsec [2.66σ]
OotOffset-rm: 0.418 arcsec [0.55σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 1.220 arcsec [1.22σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 0.00 [0/17]

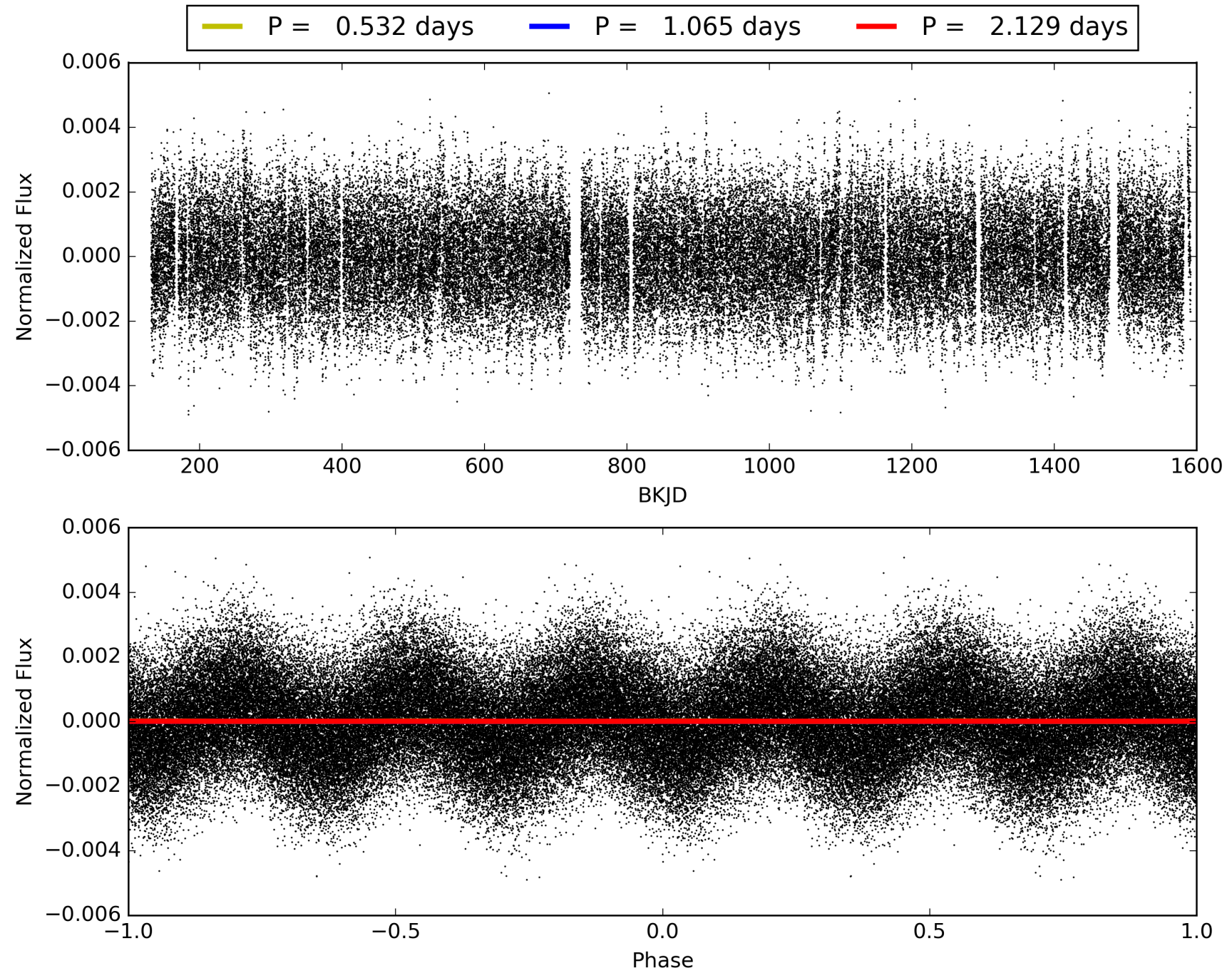
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:41:41 Z

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

TCE 007748238-02, PDC Light Curves

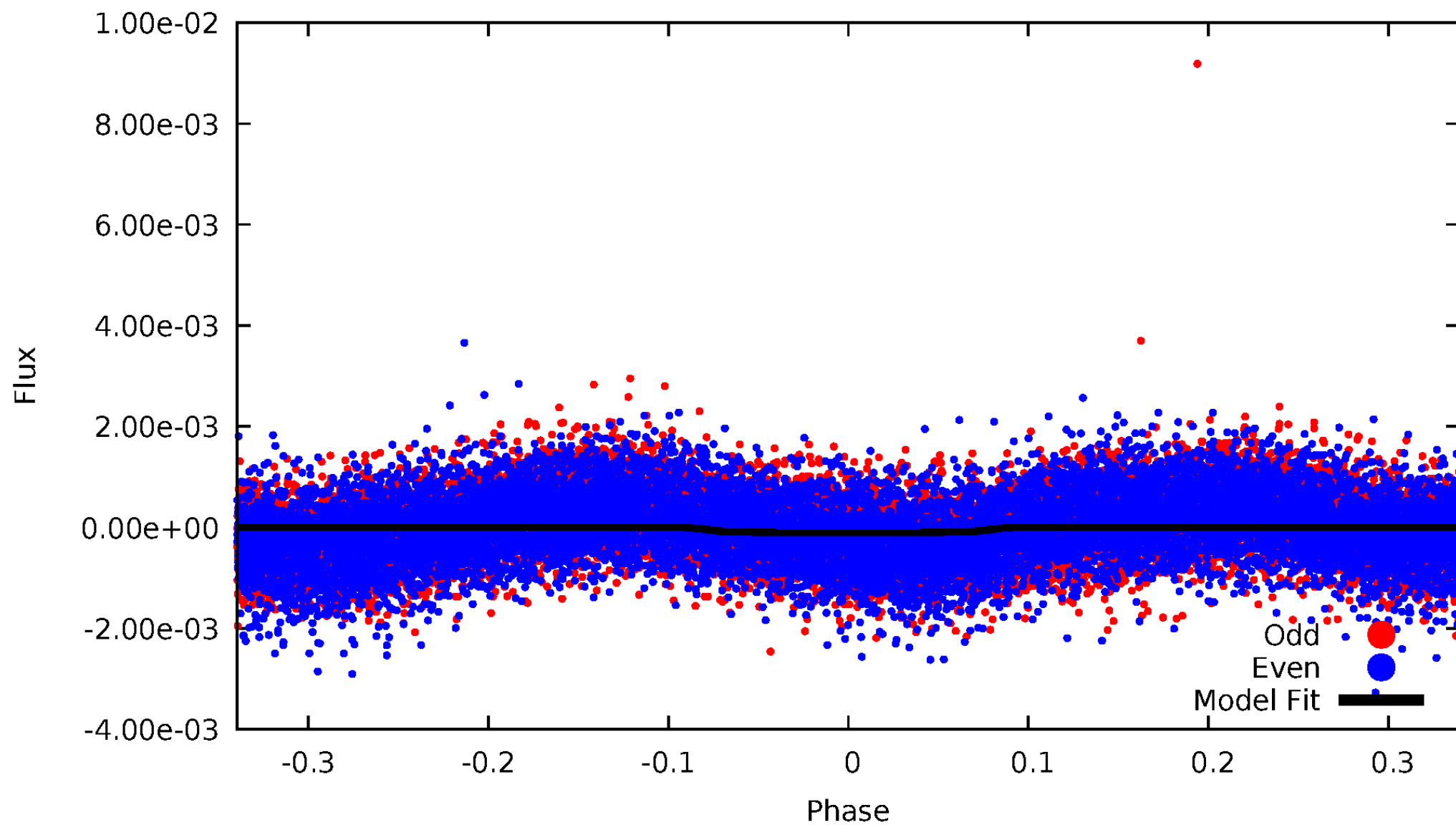


TCE 007748238-02



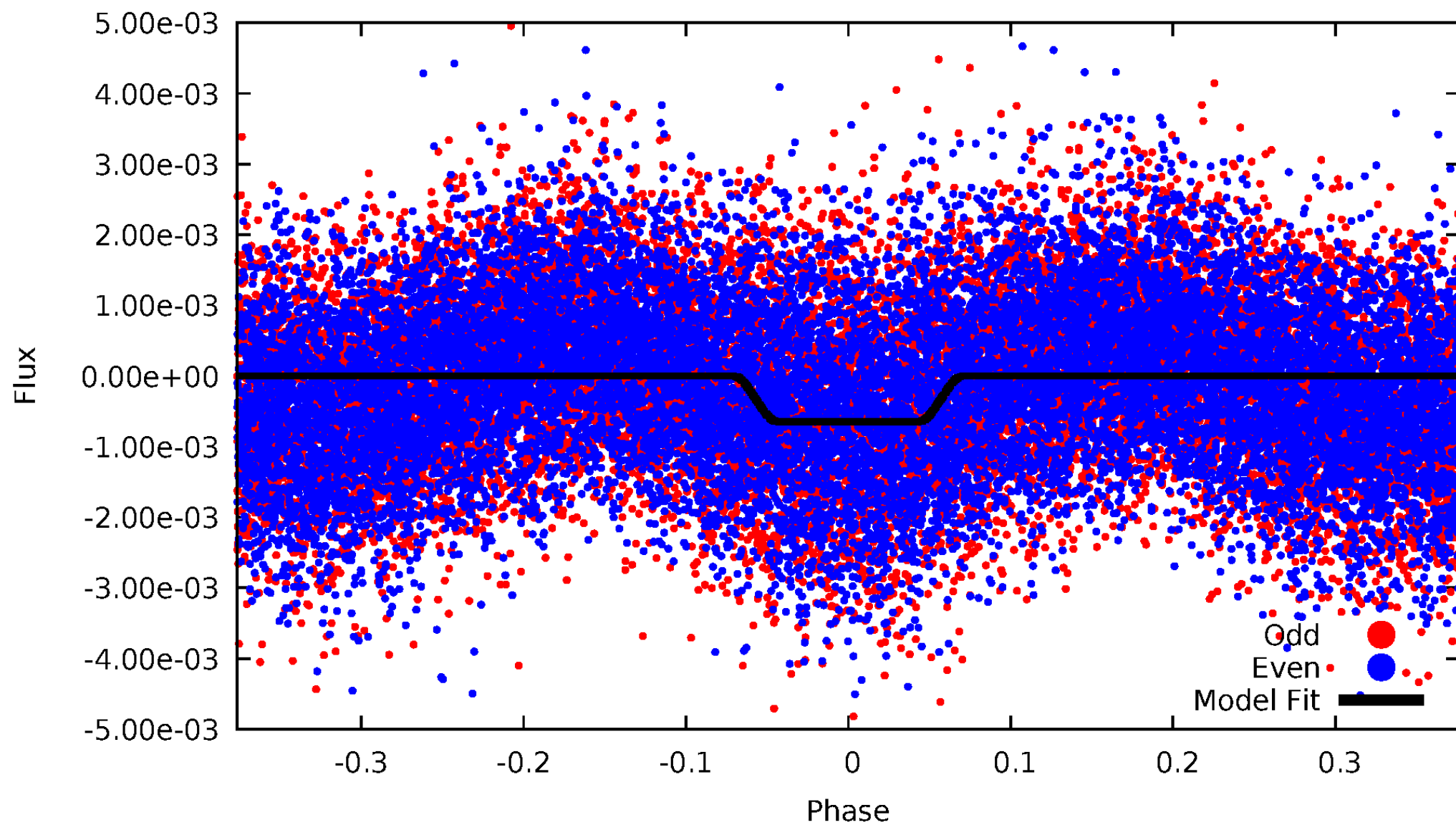
DV Odd/Even

TCE 007748238-02



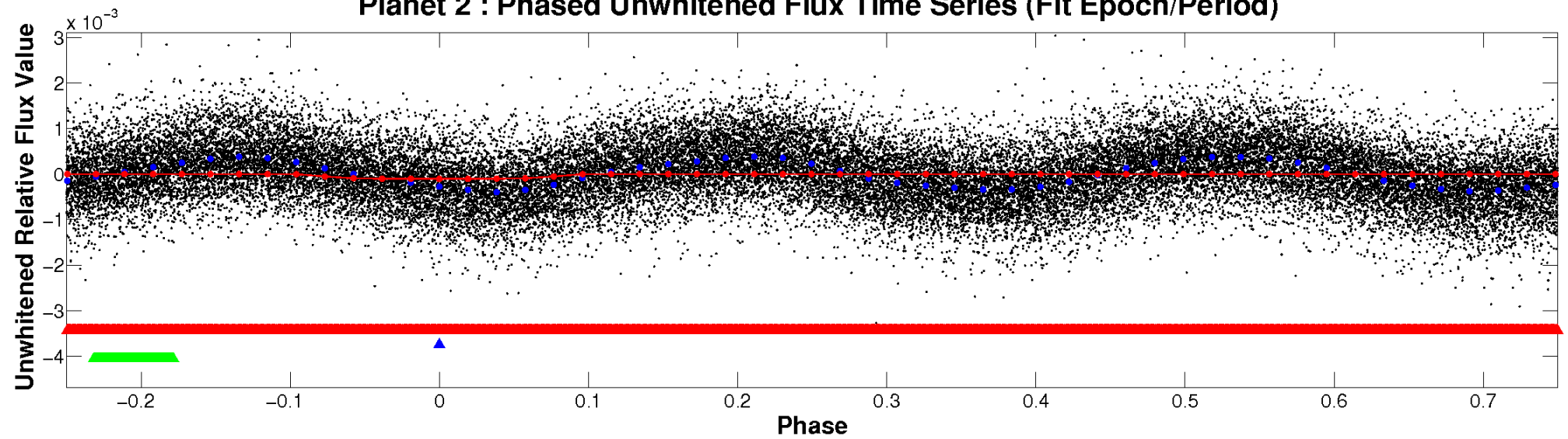
ALT Odd/Even

TCE 007748238-02

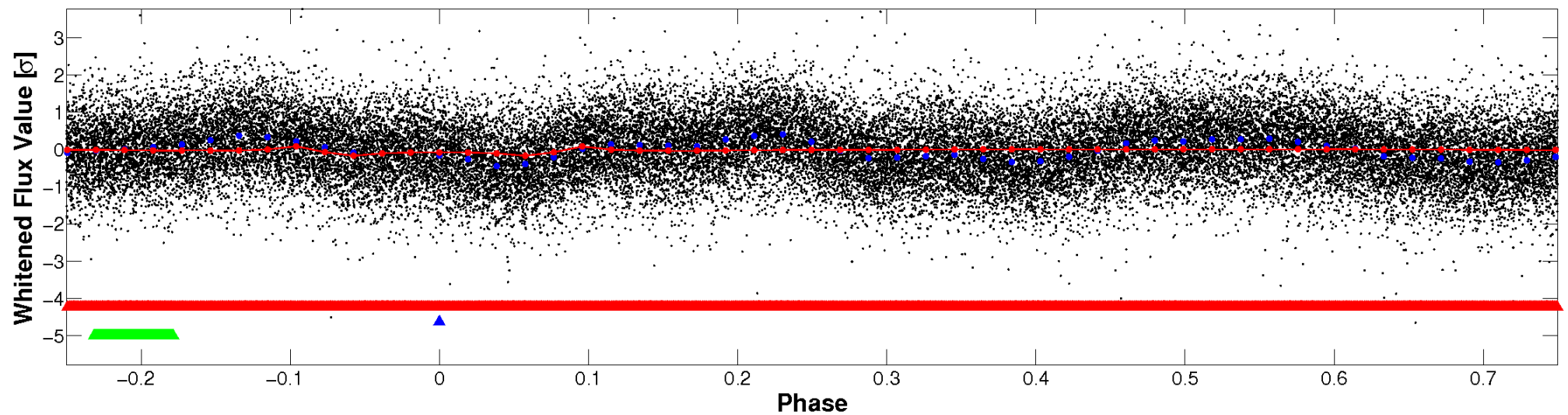


Non-Whitened Vs. Whitened Light Curve

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

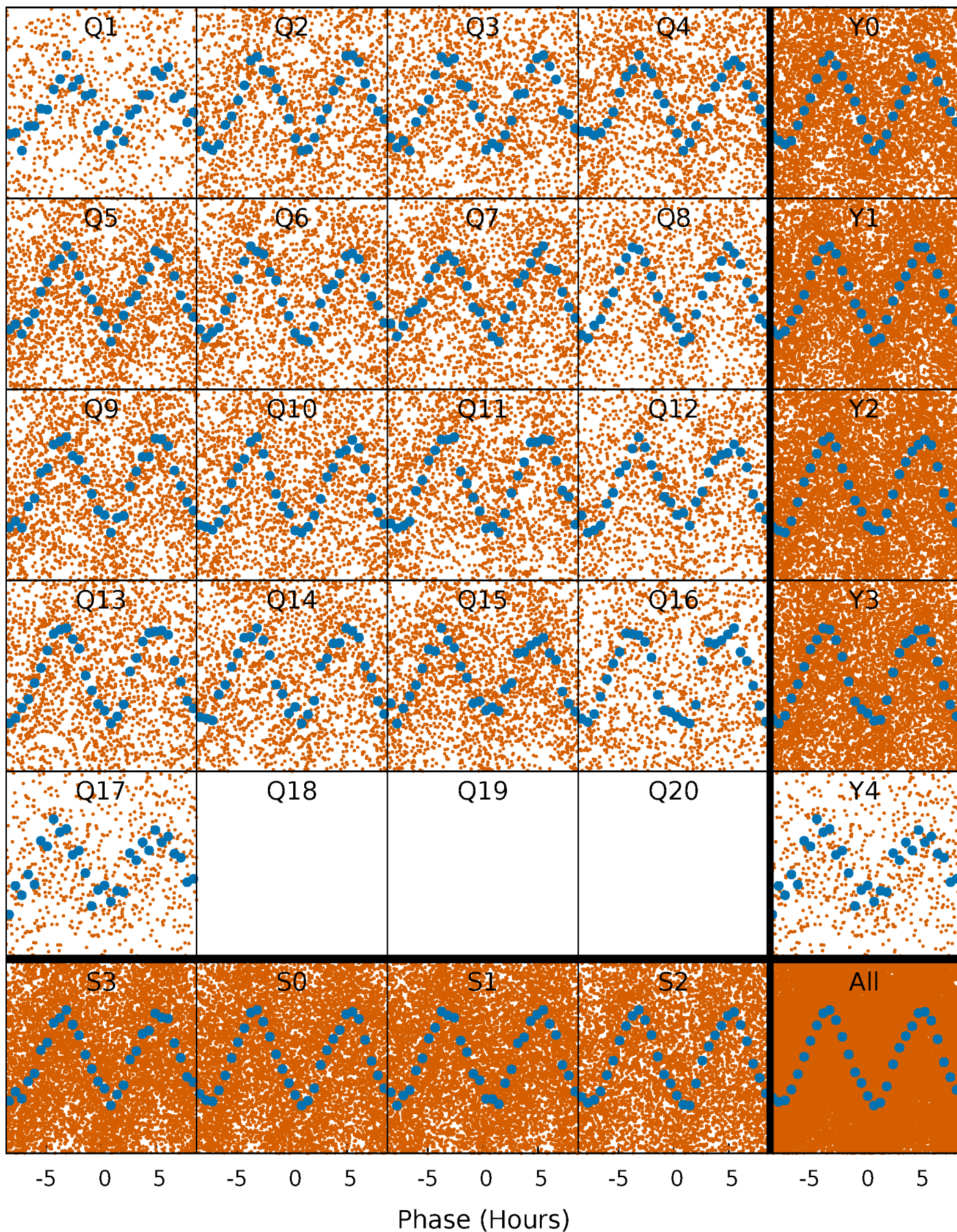


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



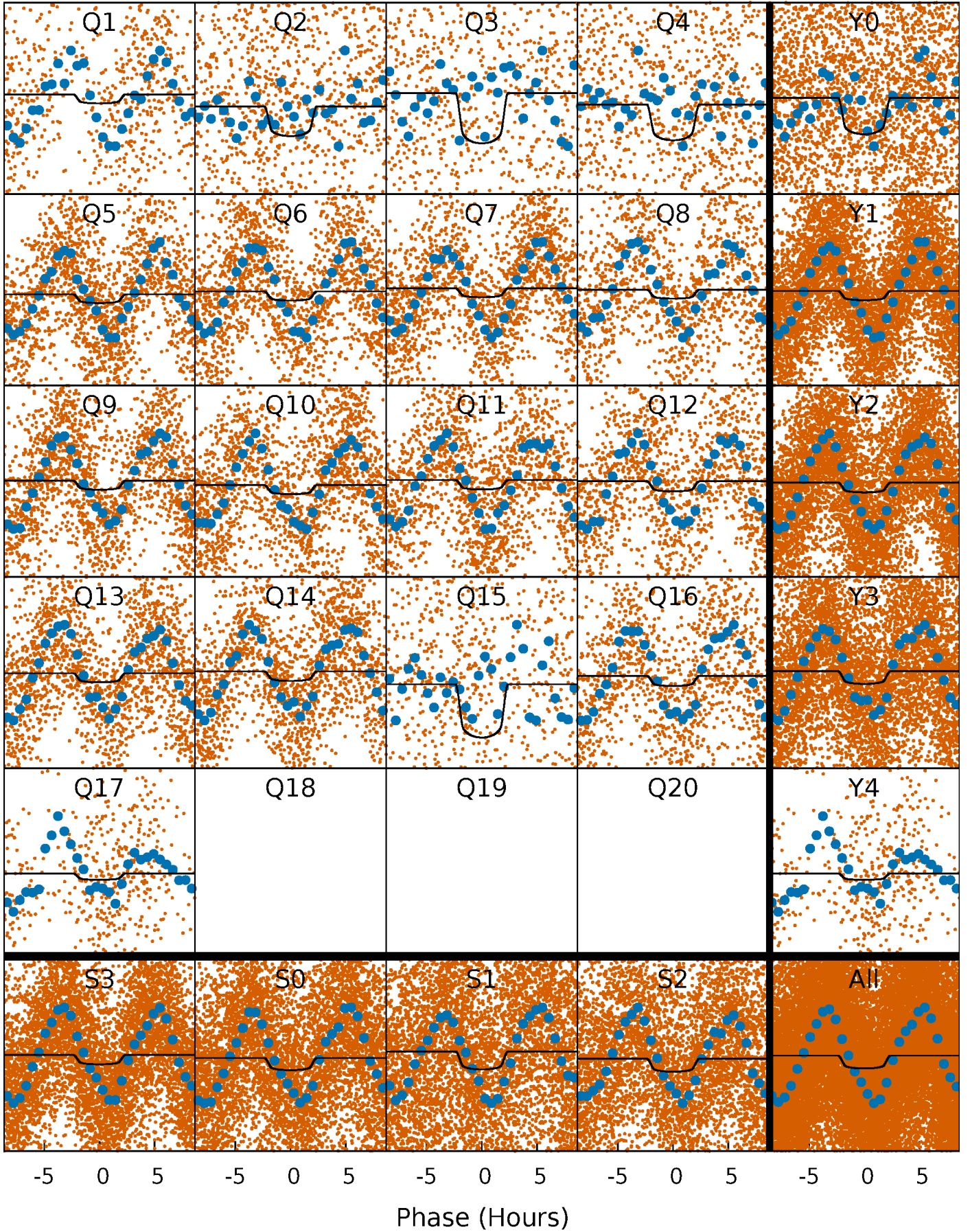
PDC Quarter-Phased Transit Curves

TCE 007748238-02 P= 1.064746 Days $T_0=132.106578$ (BKJD)



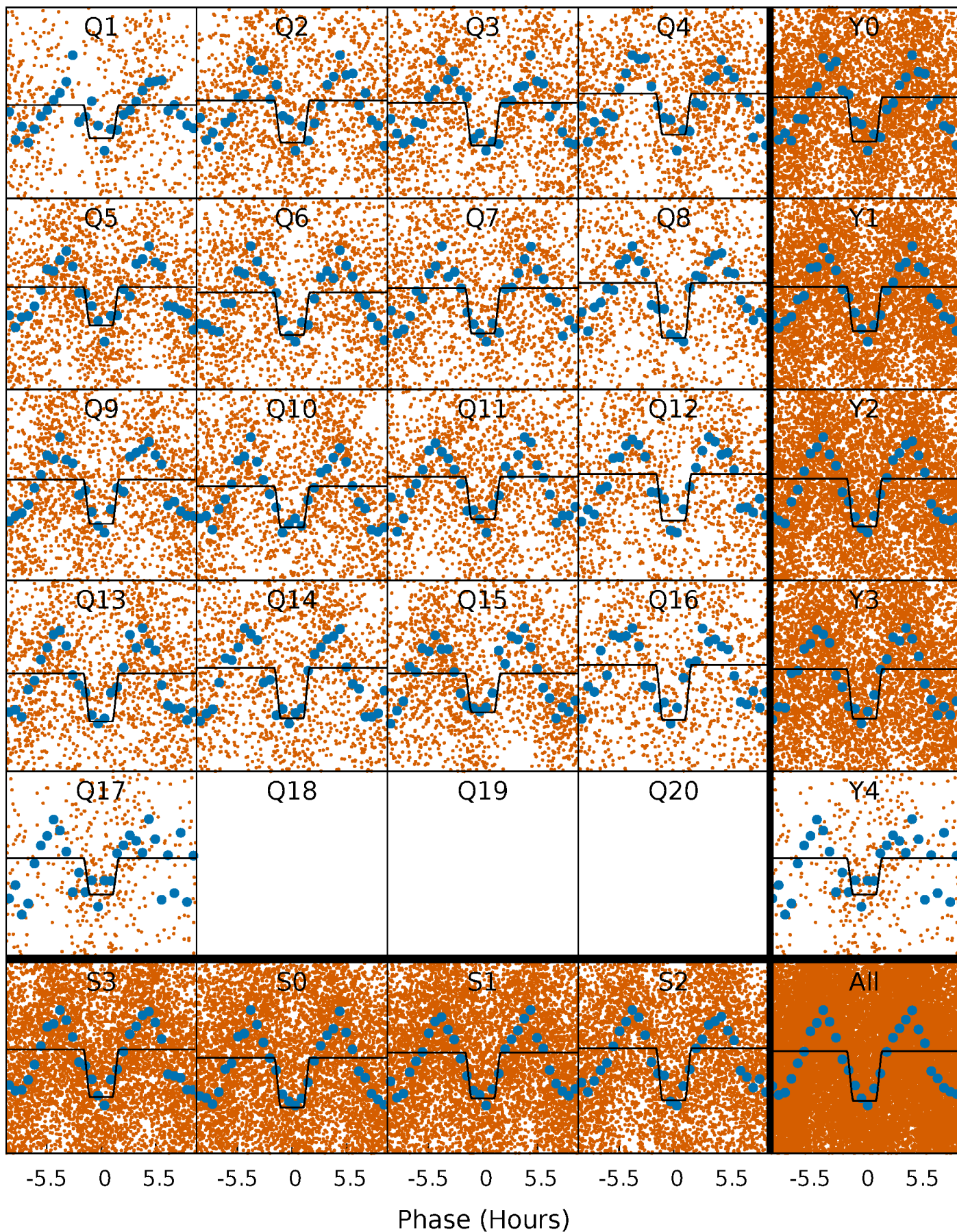
DV Quarter-Phased Transit Curves

TCE 007748238-02 P= 1.064746 Days $T_0=132.106578$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

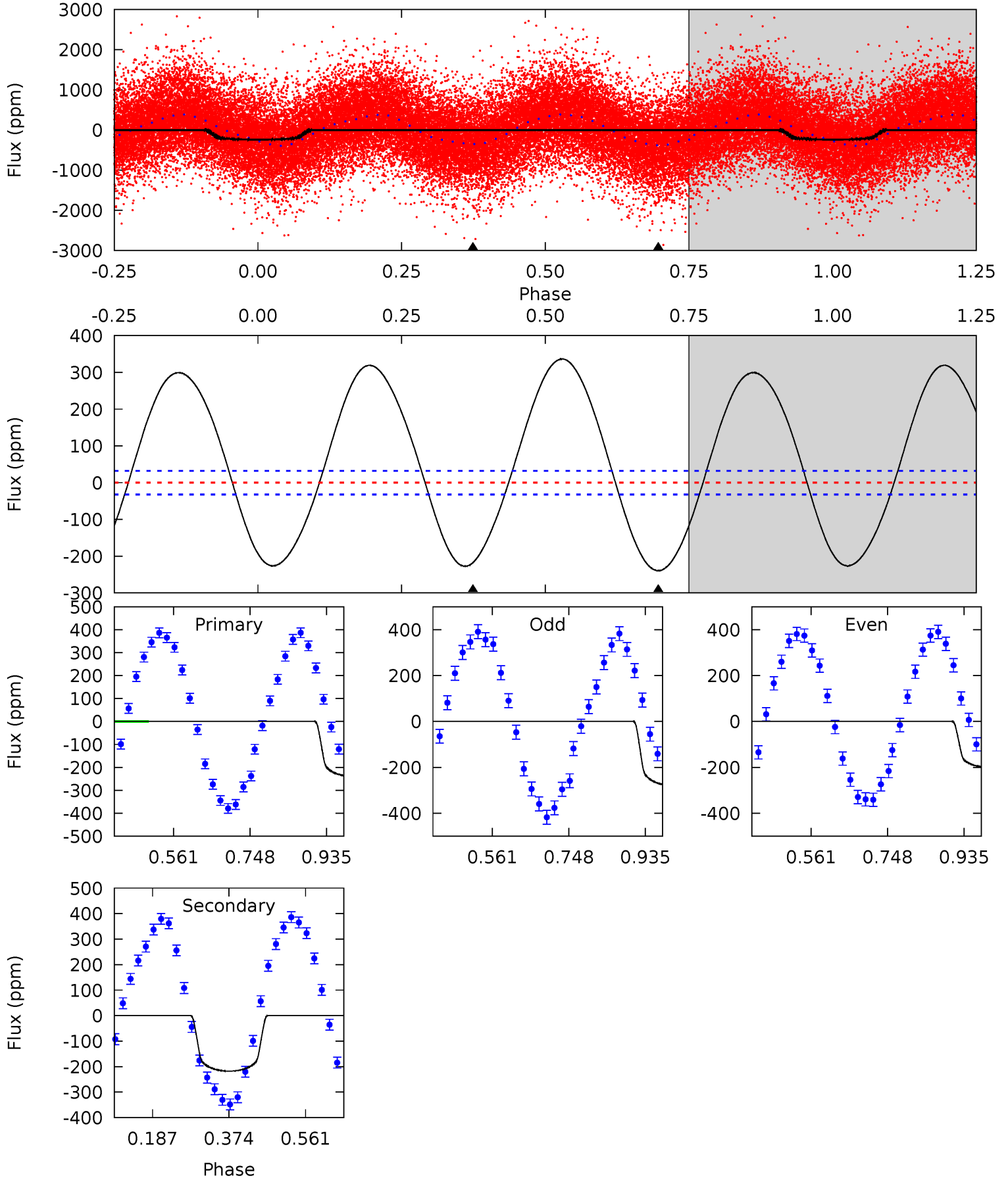
TCE 007748238-02 P= 1.064774 Days $T_0=132.121495$ (BKJD)



DV Model-Shift Uniqueness Test

007748238-02, P = 1.064746 Days, E = 131.041832 Days

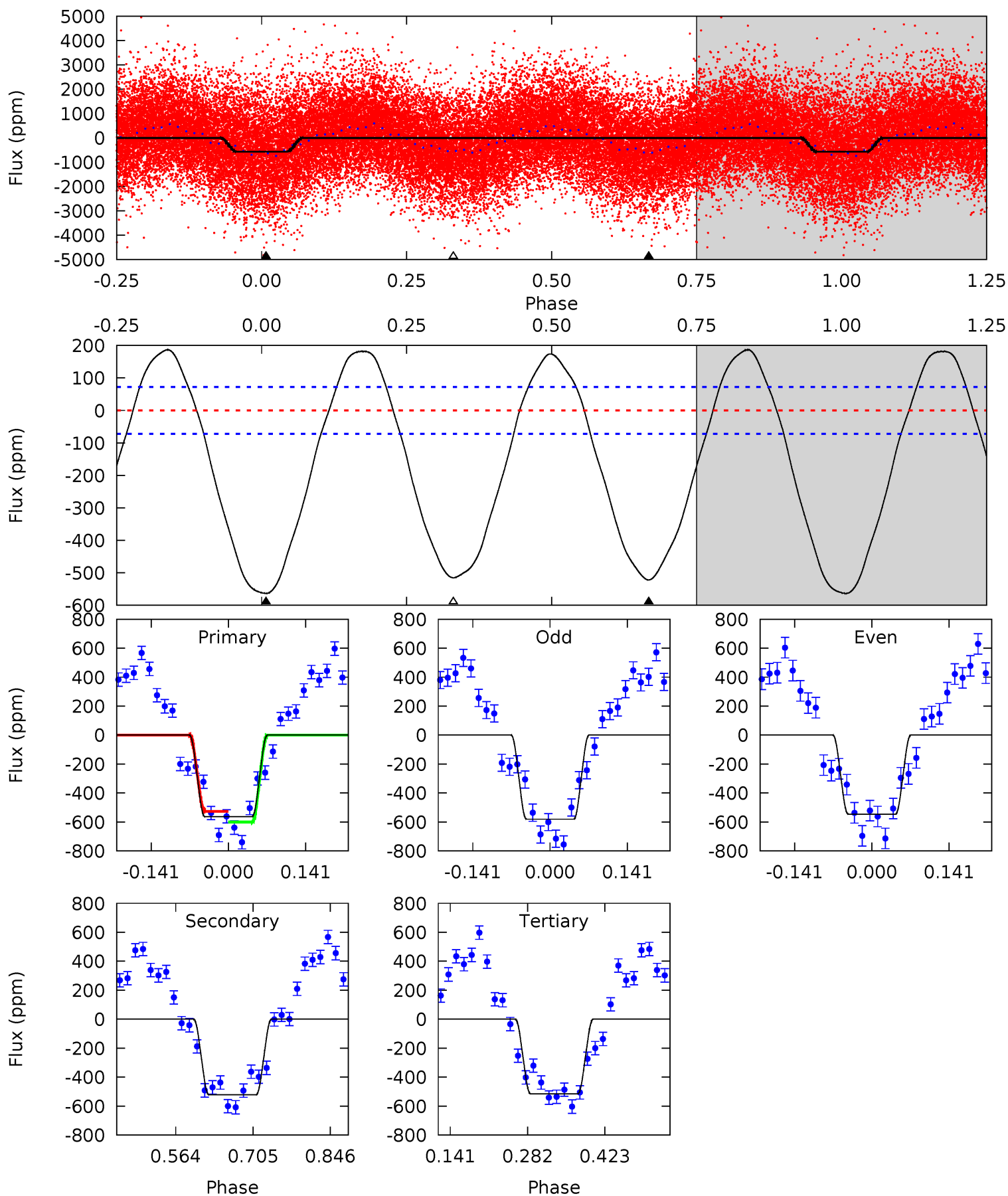
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.9	30.0	0	0	4.43	1.32	24.9	32.9	32.9	30.0	30.0	5.17	1.07	0.58	19.1



Alt Model-Shift Uniqueness Test

007748238-02, P = 1.064774 Days, E = 131.056721 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.2	32.6	32.2	0	4.49	1.47	16.2	3.02	35.2	0.42	32.6	1.11	0.96	0.25	2.32



Stellar Parameters For KIC 007748238

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7244^{+145}_{-145}	$4.064^{+0.132}_{-0.120}$	$-0.180^{+0.150}_{-0.150}$	$1.882^{+0.352}_{-0.288}$	$1.495^{+0.145}_{-0.118}$	$0.316^{+0.185}_{-0.107}$
	+2%/-2%	+3%/-3%	+83%/-83%	+19%/-15%	+10%/-8%	+59%/-34%
Source	SPE4	SPE4	SPE4	DSEP		

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

Secondary Eclipse Parameters for KIC 007748238-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-218 ± 7	$2.24^{+0.33}_{-0.31}$	3993^{+204}_{-182}	8644^{+690}_{-565}	13^{+5}_{-3}
Alt.	-522 ± 16	$5.23^{+0.58}_{-0.54}$	4013^{+202}_{-190}	6733^{+227}_{-200}	$5.762^{+1.333}_{-1.088}$

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

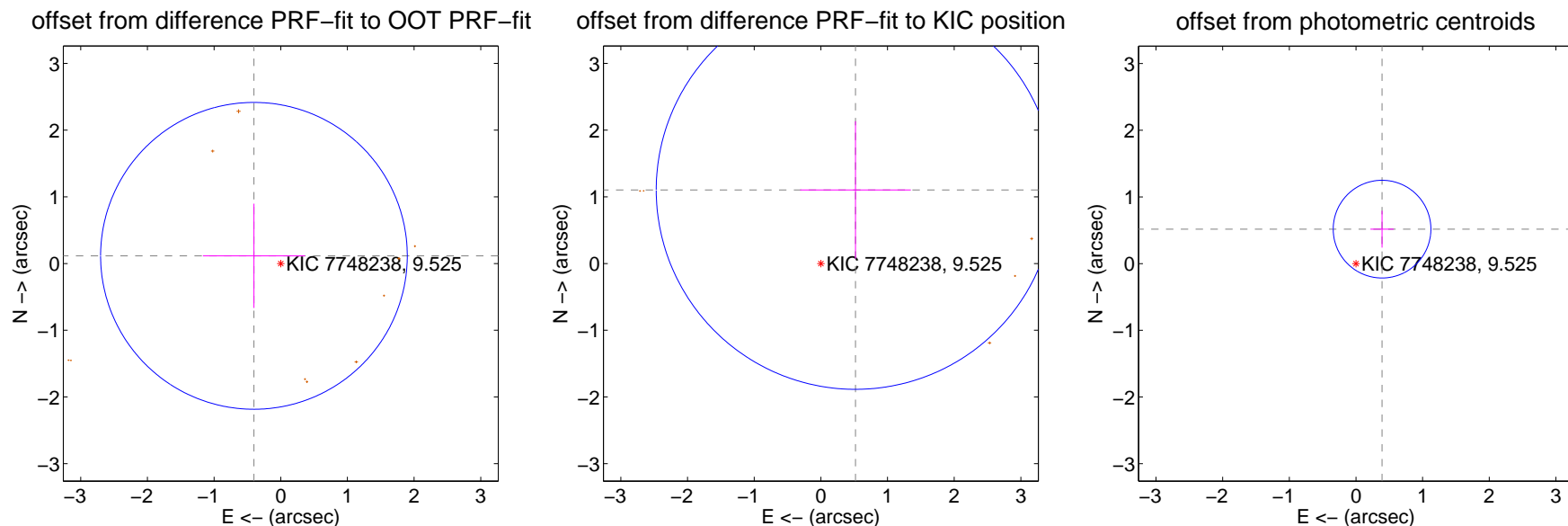
DV Centroid Data

Supplemental centroid analysis for 007748238-02. **Kepler magnitude: 9.53.** Transit SNR 10.56

There are 0 quarters with good PRF difference image offsets

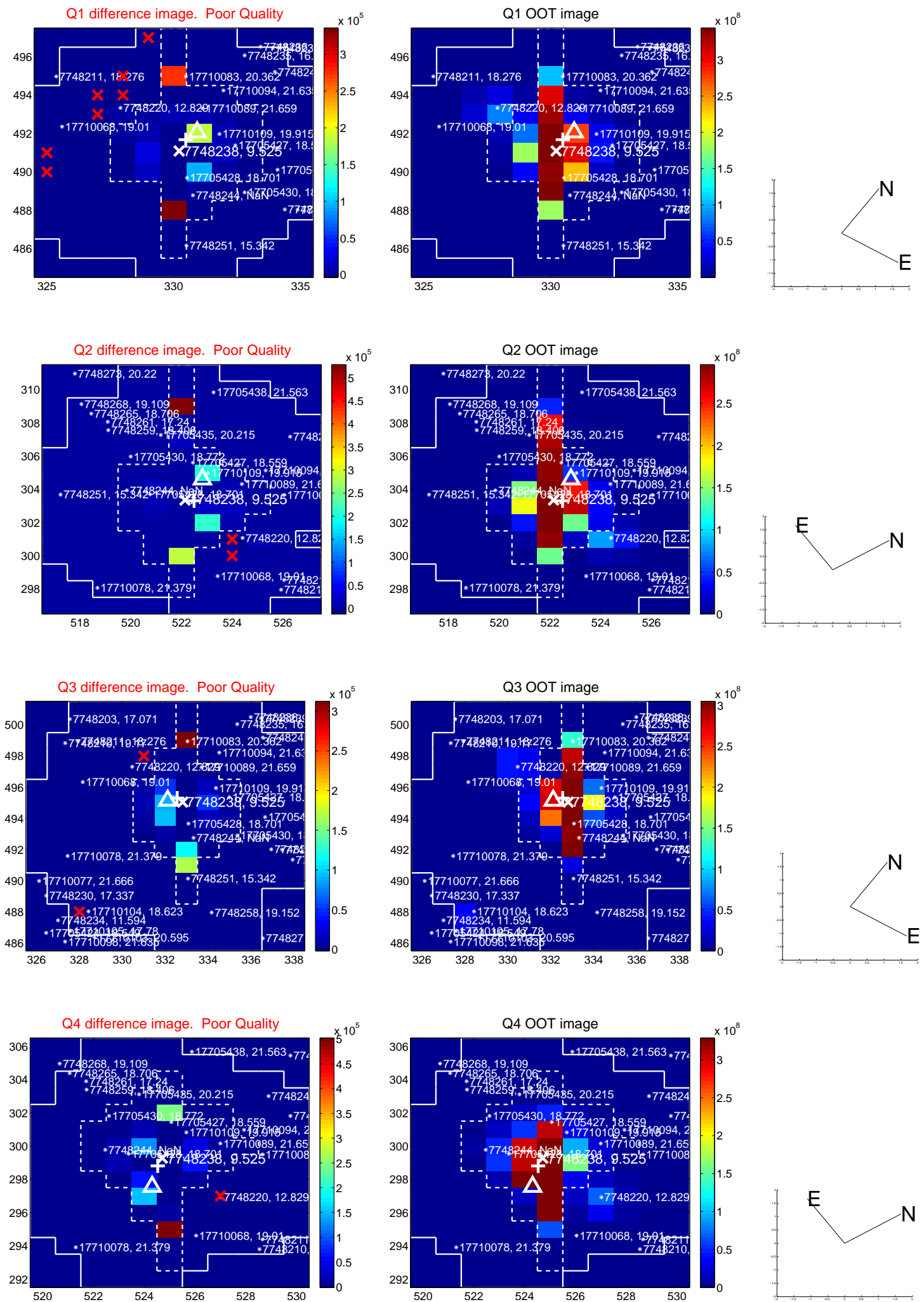
The OOT PRF centroid is offset from the target star catalog position by about 2.61 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.418 ± 0.767	0.55	0.402 ± 0.765	0.115 ± 0.782
PRF-fit source offset from KIC position	1.220 ± 0.996	1.22	-0.520 ± 0.830	1.104 ± 1.030
photometric centroid source offset	0.65 ± 0.24	2.66	-0.39 ± 0.17	0.52 ± 0.28

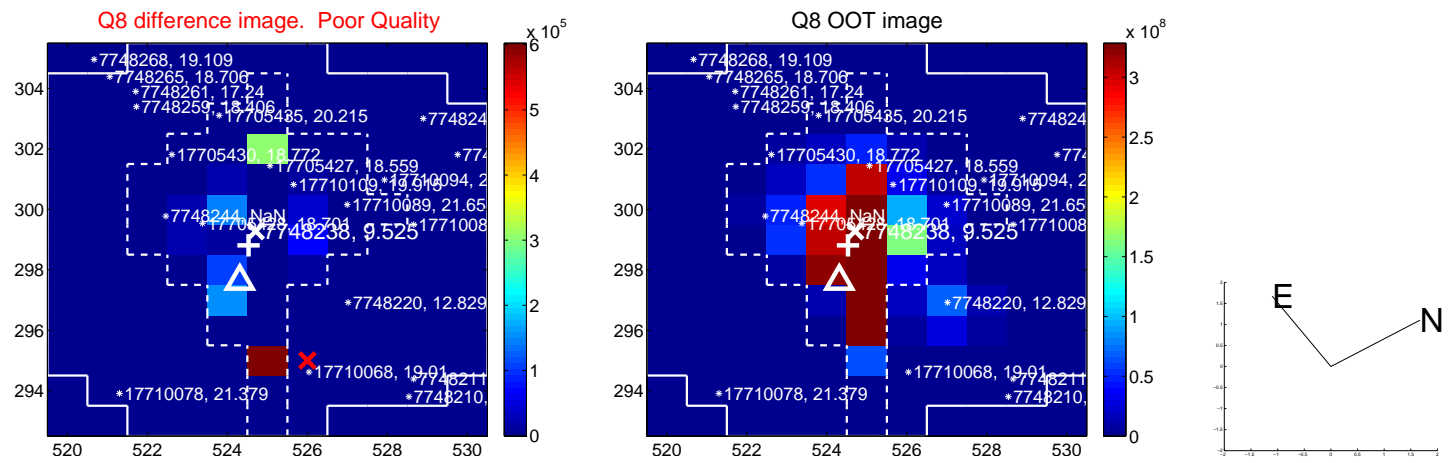
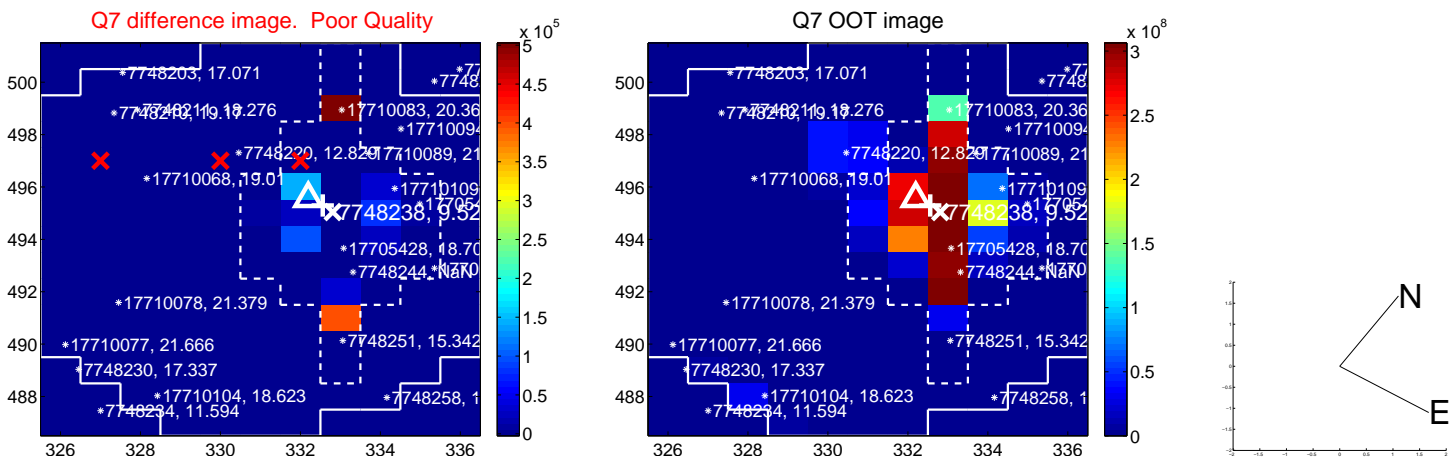
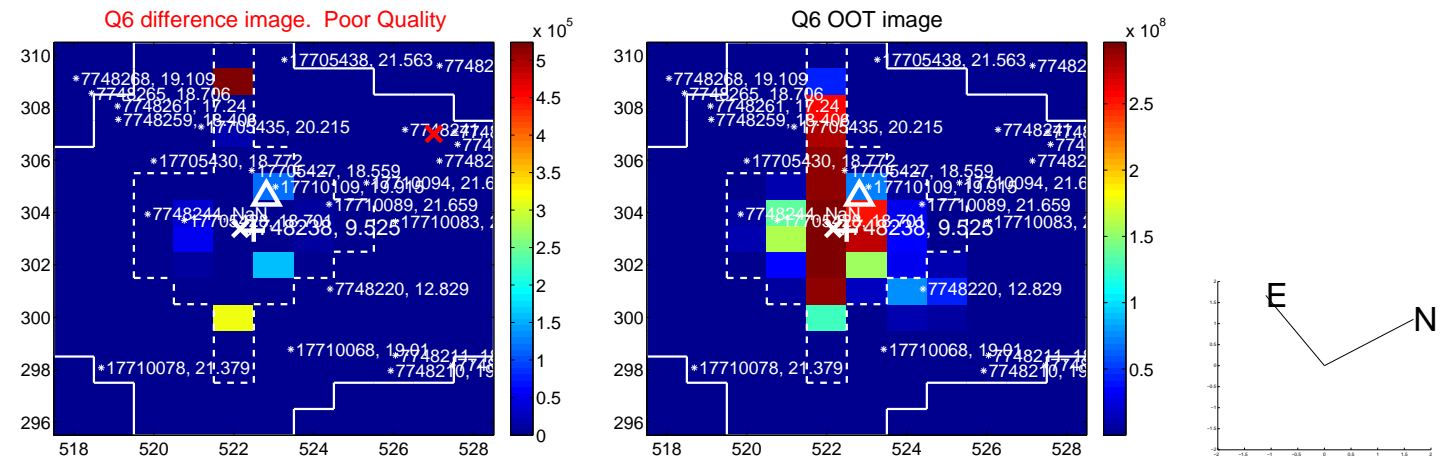
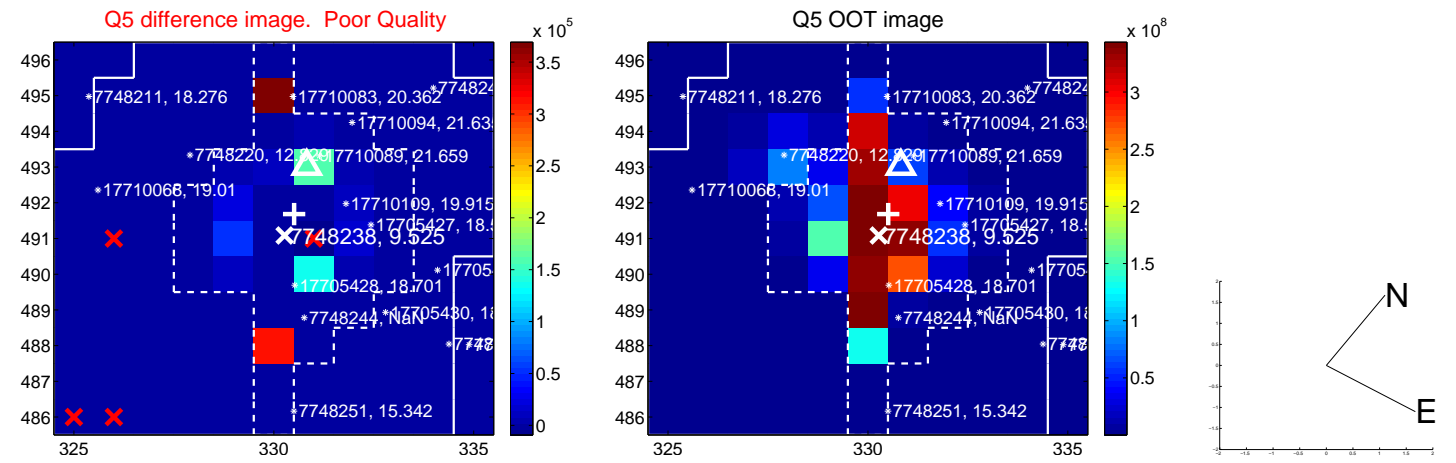


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

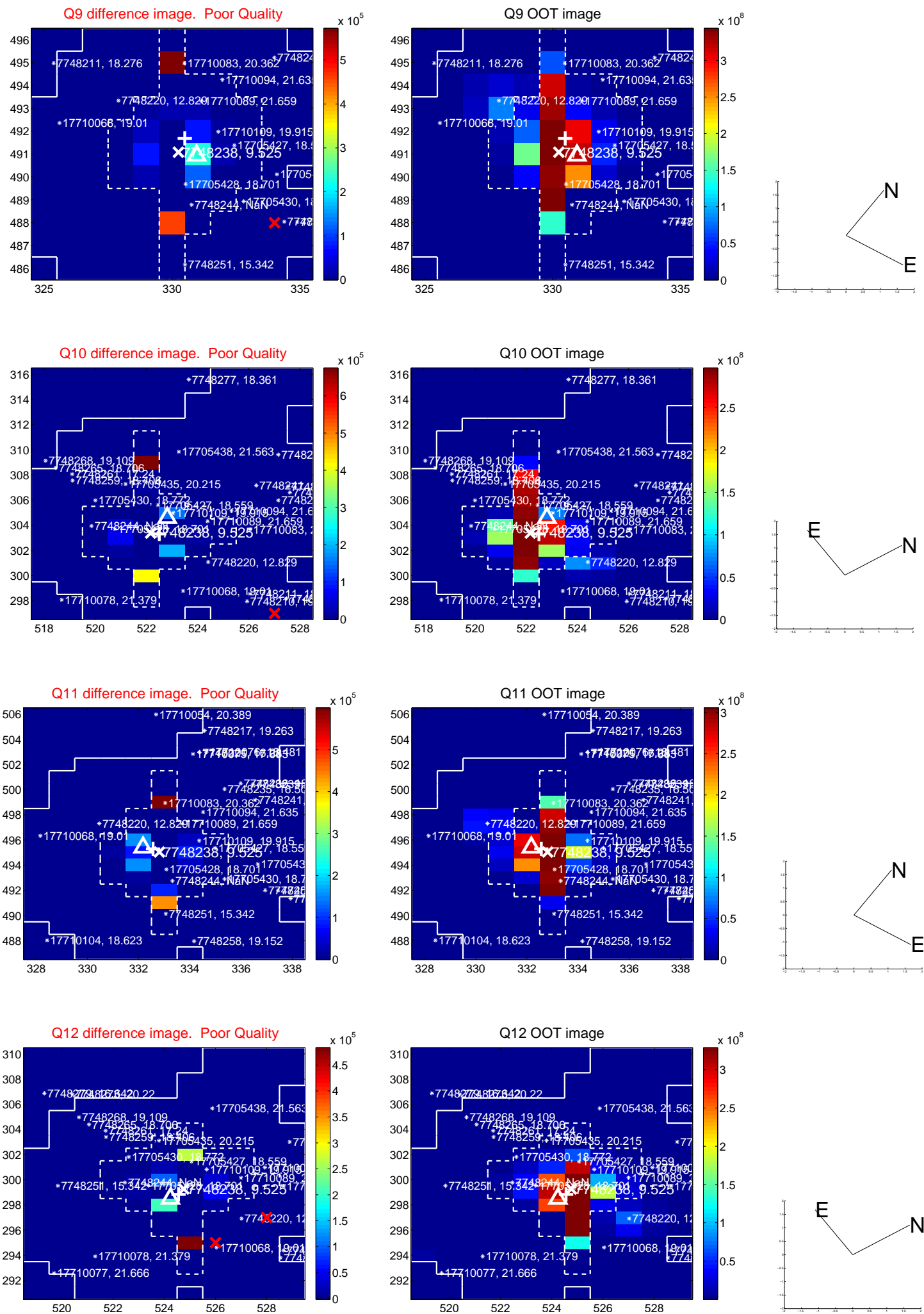
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



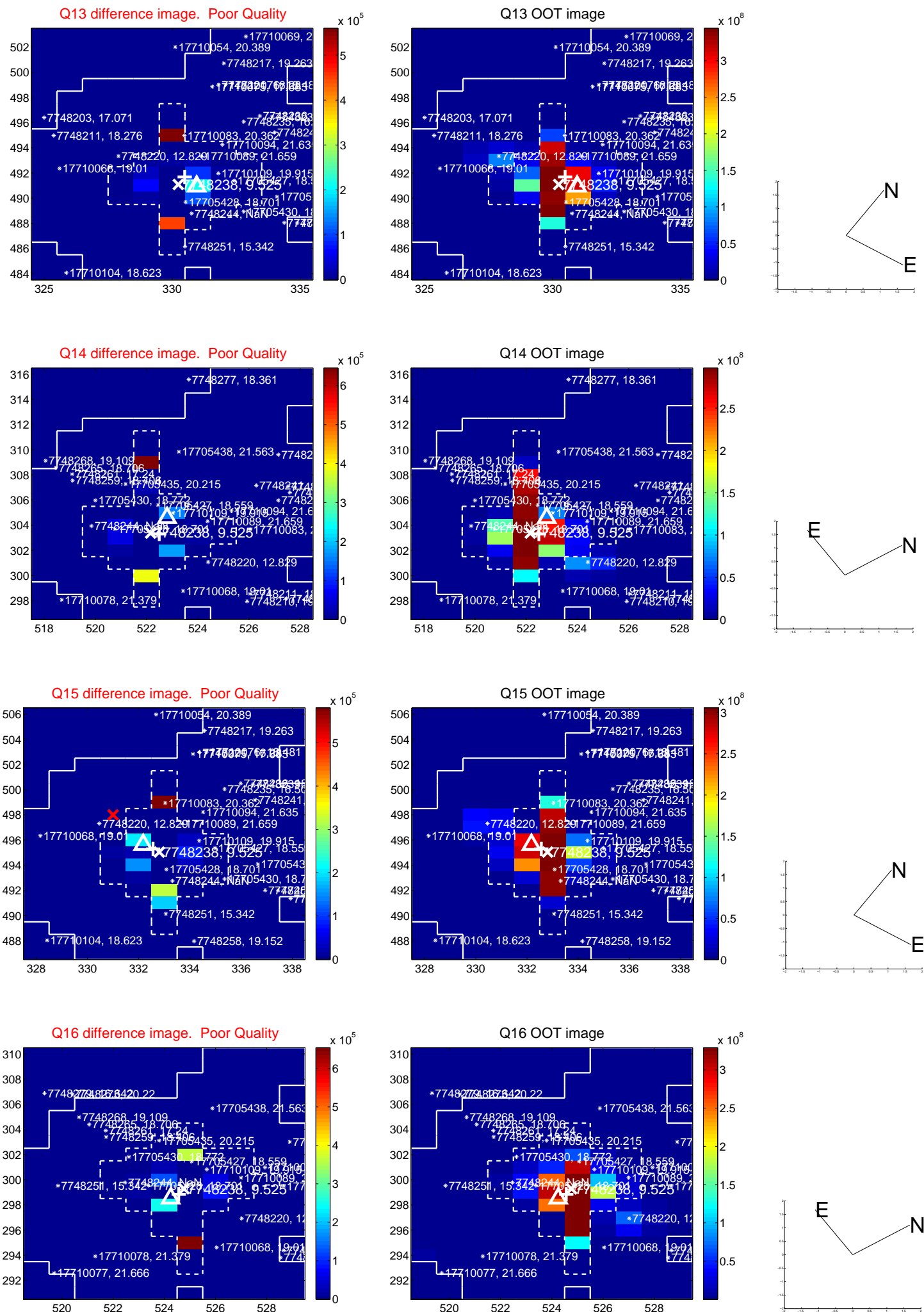
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



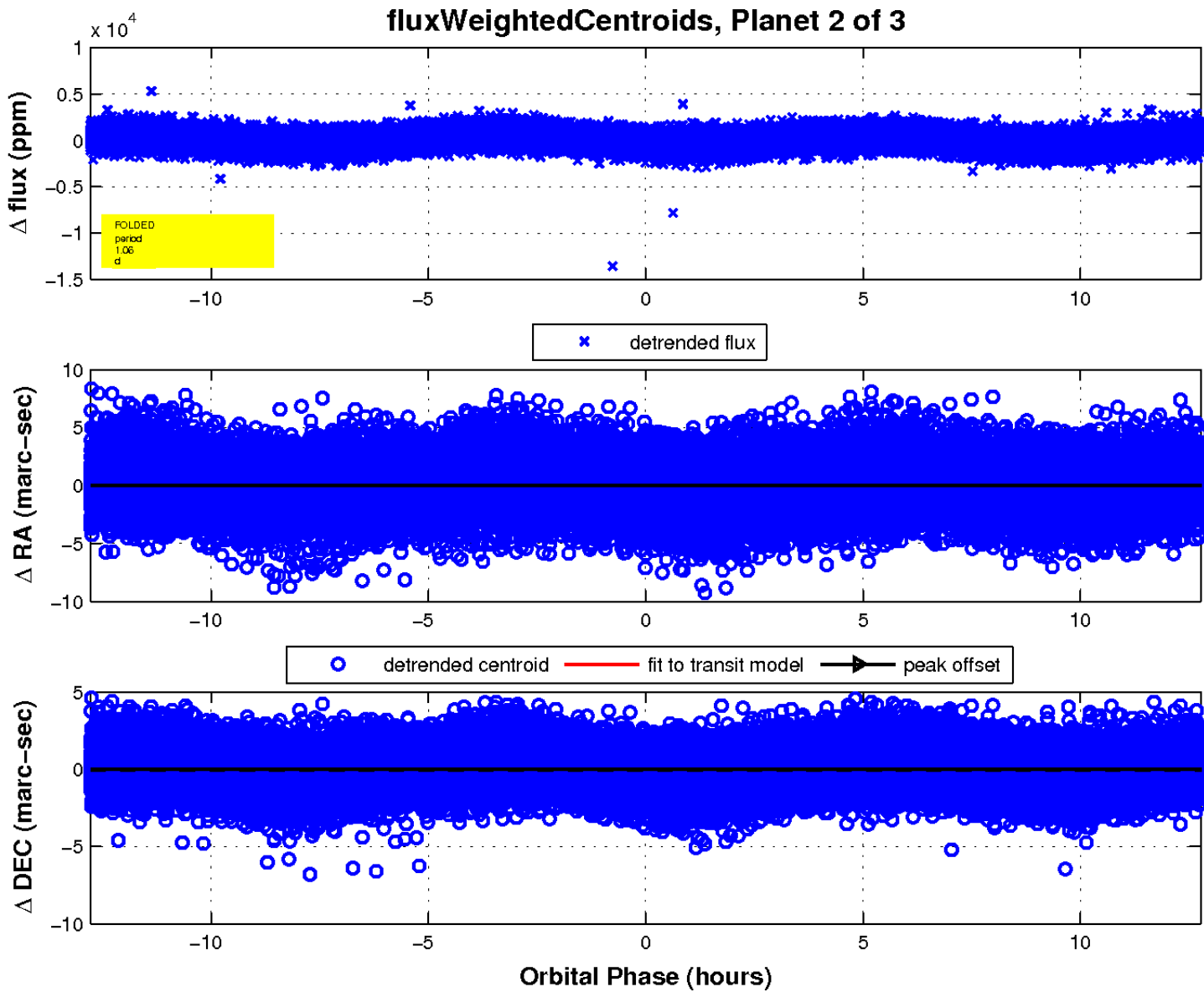
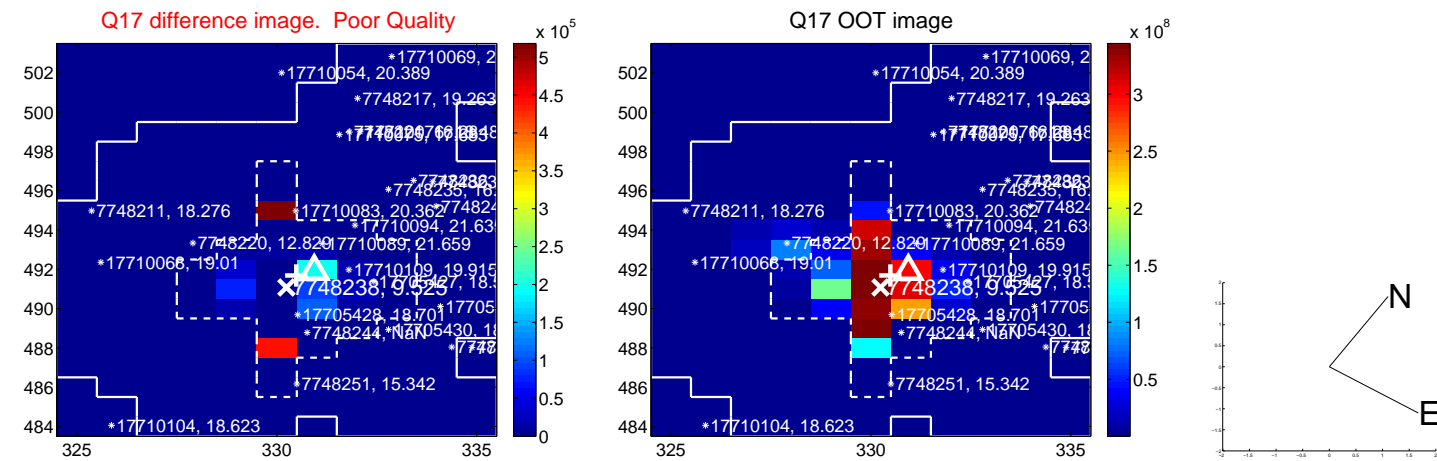
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

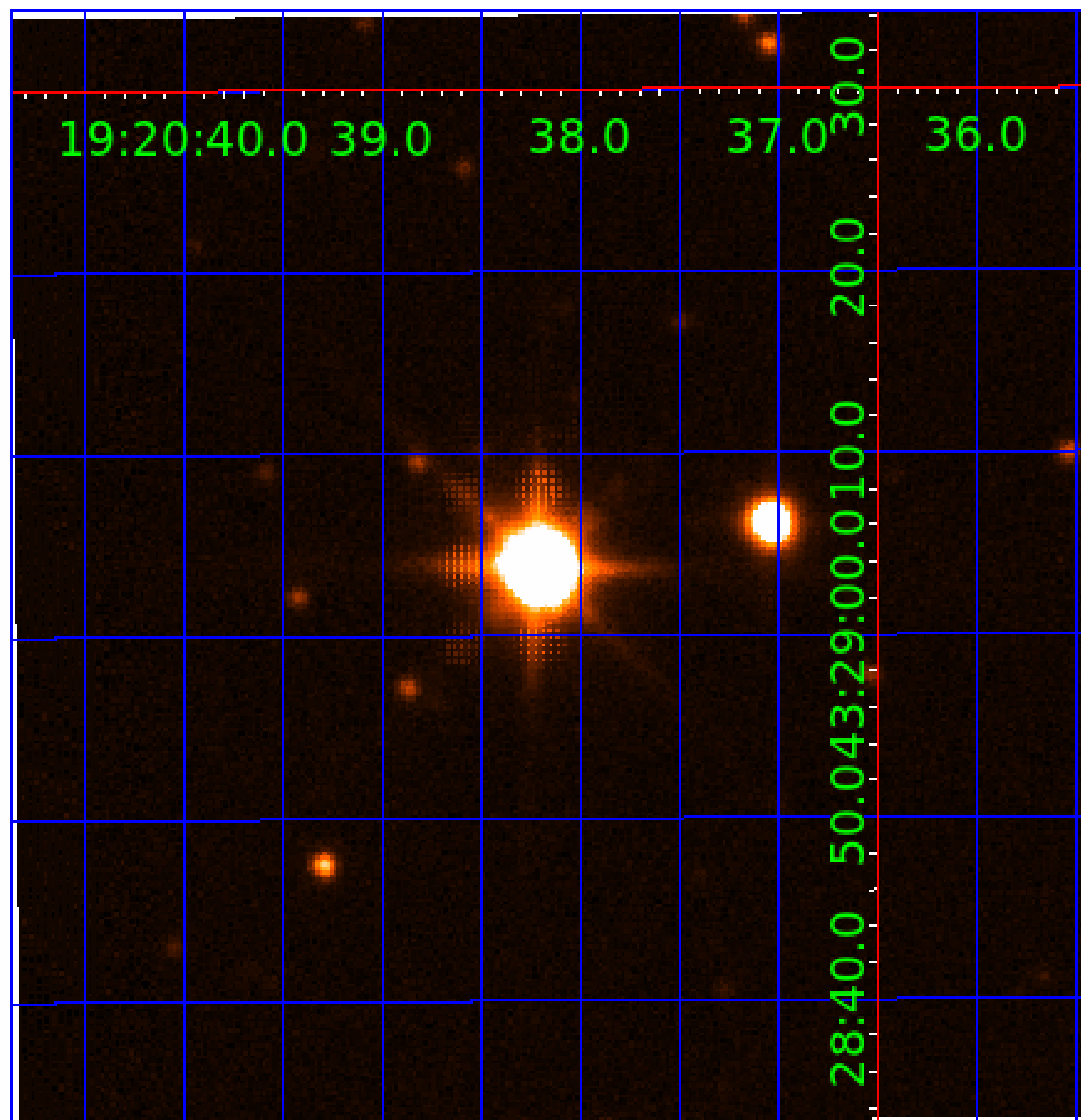


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007748238

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})
007748238-01	OBS	No	0.528387	131.596453	36.8	1.060	13.1	9.9	1.88	7244	1.19	40796.04
007748238-02	OBS	No	1.064746	132.106578	105.1	4.338	10.8	10.6	1.88	7244	2.24	16028.50
007748238-03	OBS	No	1.064705	131.916680	70.4	8.892	11.0	6.2	1.88	7244	1.69	16029.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007748238-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
007748238-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
007748238-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

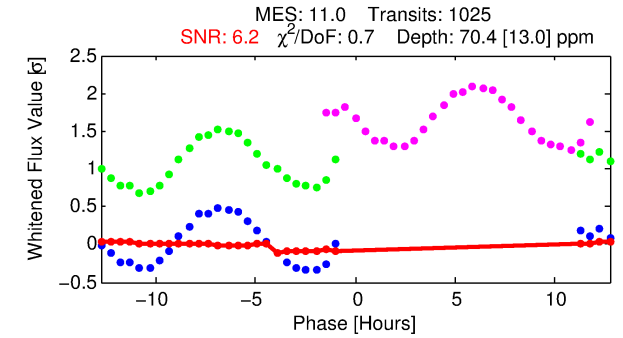
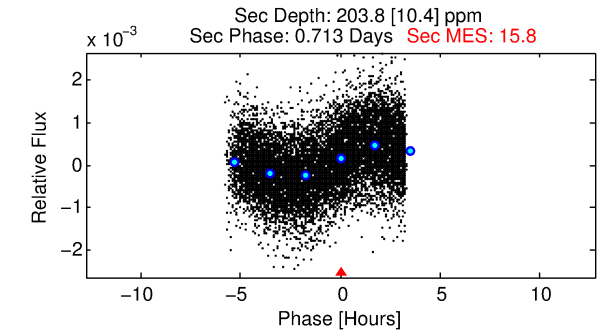
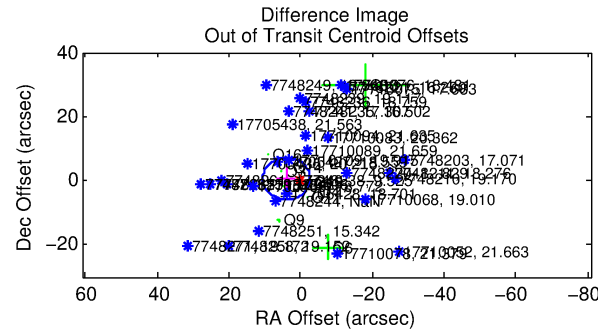
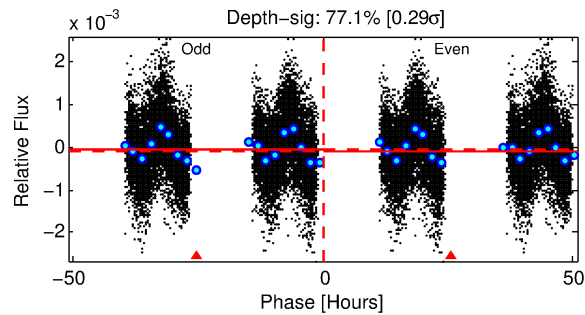
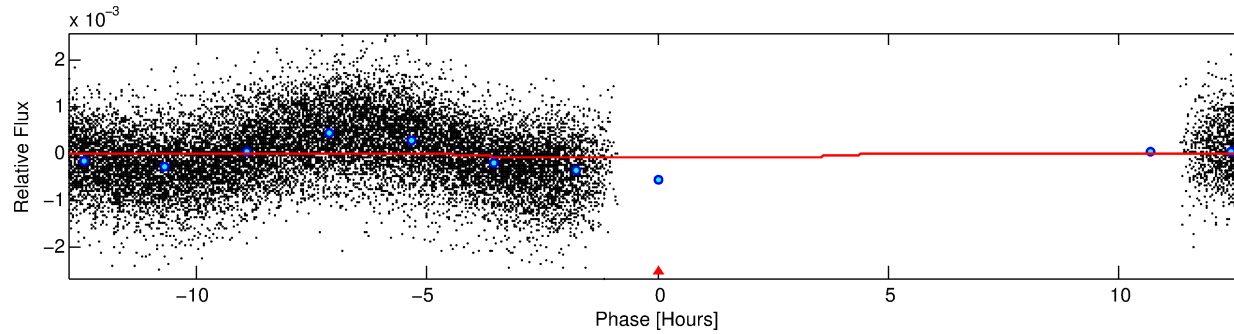
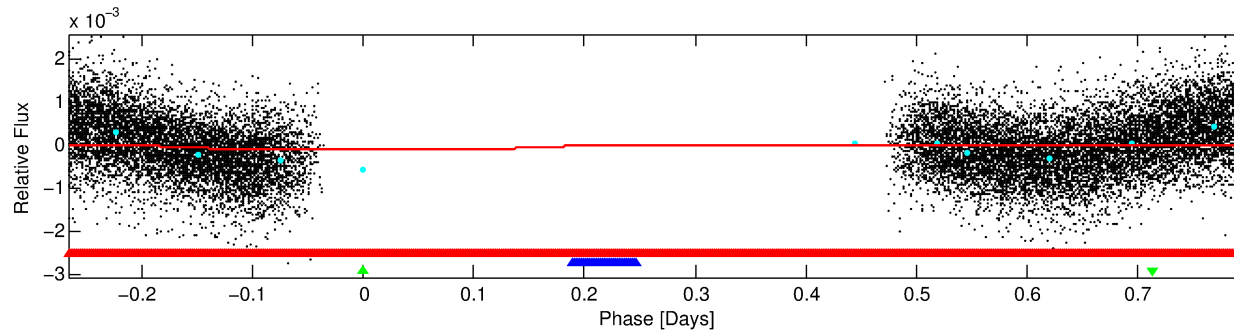
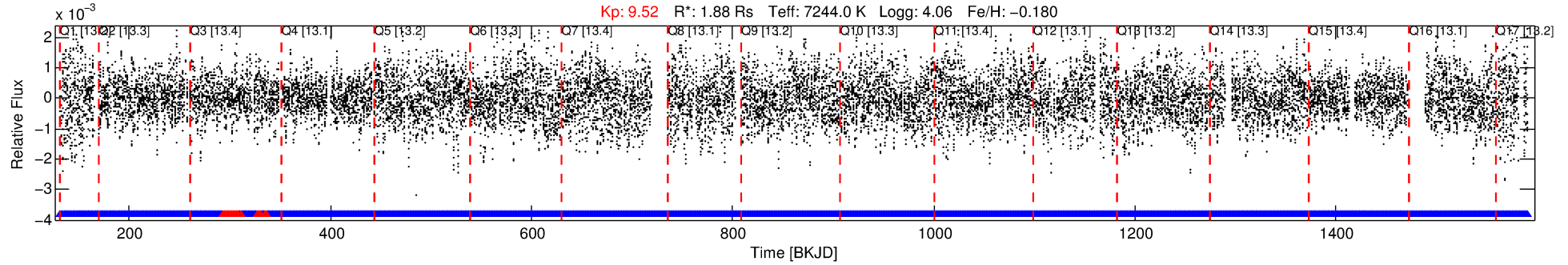
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007748238-03

No Significant Match Found

DV One-Page Summary

KIC: 7748238 Candidate: 3 of 3 Period: 1.065 d



DV Fit Results:

Period = 1.06470 [0.00003] d
Epoch = 131.9167 [0.0245] BKJD
Rp/R* = 0.0082 [0.0054]
a/R* = 1.08 [0.57]
b = 0.68 [3.16]
Seff = 16029.34 [4023.85]
Teq = 2869 [180] K
Rp = 1.69 [1.16] Re
a = 0.0233 [0.0038] AU
Ag = 21.50 [28.90] [0.71 σ]
Teffp = 9552 [3165] K [2.11 σ]

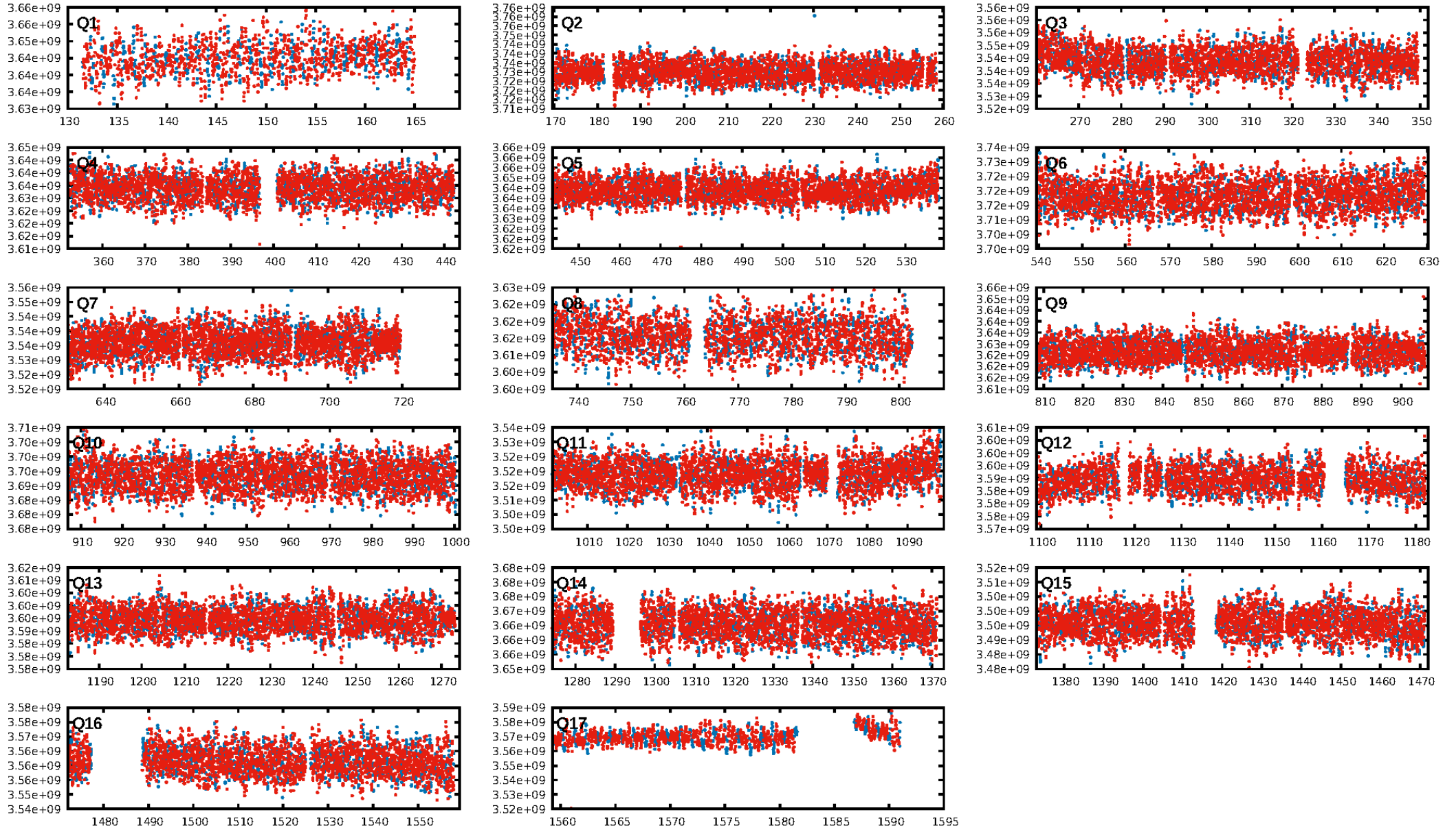
DV Diagnostic Results:

ShortPeriod-sig: 84.9% [1.44 σ]
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.98 [947/968]
GhostDiagnostic-chr: N/A
Centroid-sig: 42.6%
Centroid-so: 0.807 arcsec [2.96 σ]
OotOffset-rm: 4.099 arcsec [1.86 σ]
OotOffset-st: 2/4/2/3 [11]
KicOffset-rm: 4.700 arcsec [1.93 σ]
KicOffset-st: 2/4/2/3 [11]
DiffImageQuality-fgm: 0.18 [2/11]
DiffImageOverlap-fno: 0.00 [0/17]

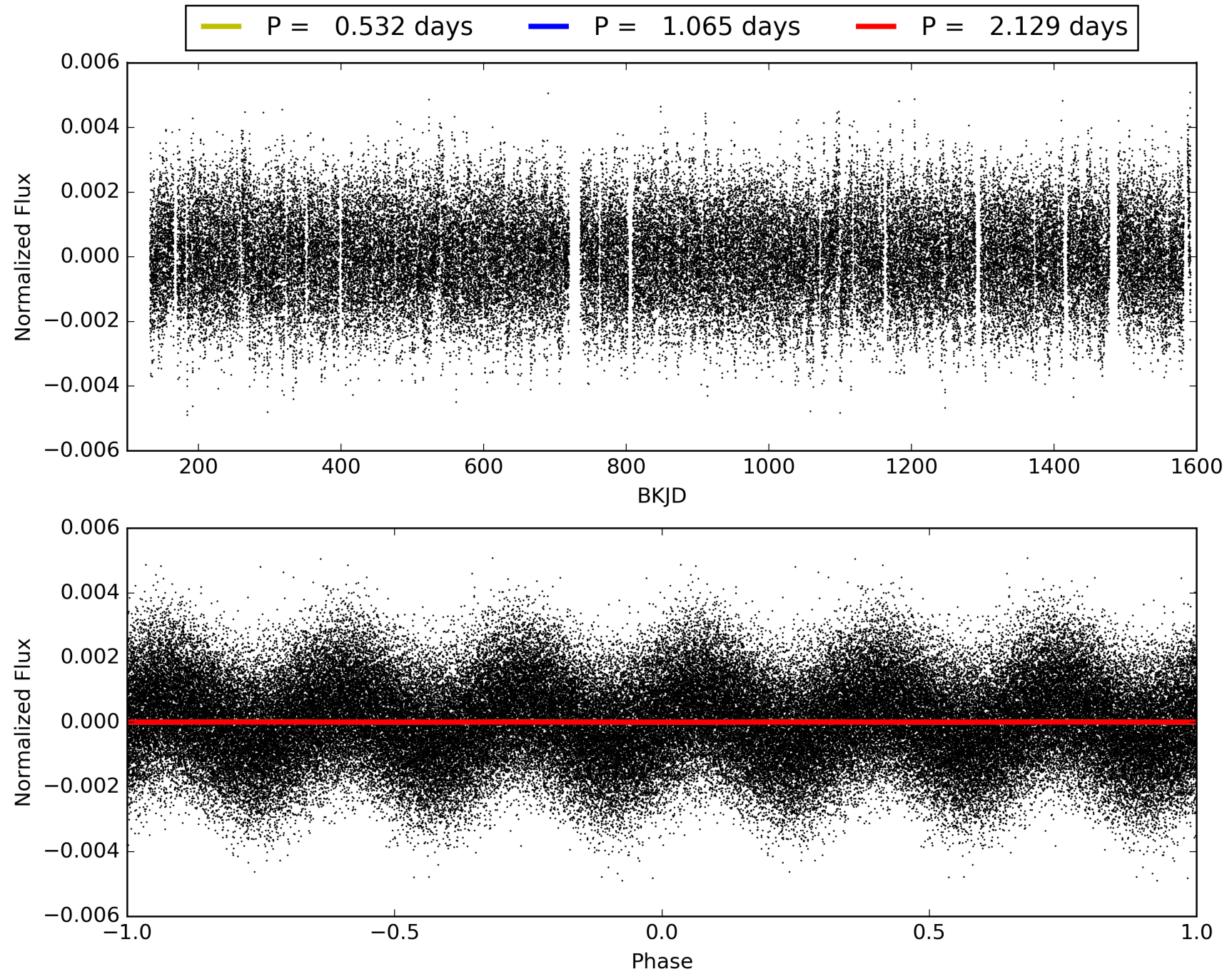
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:41:54 Z

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

TCE 007748238-03, PDC Light Curves

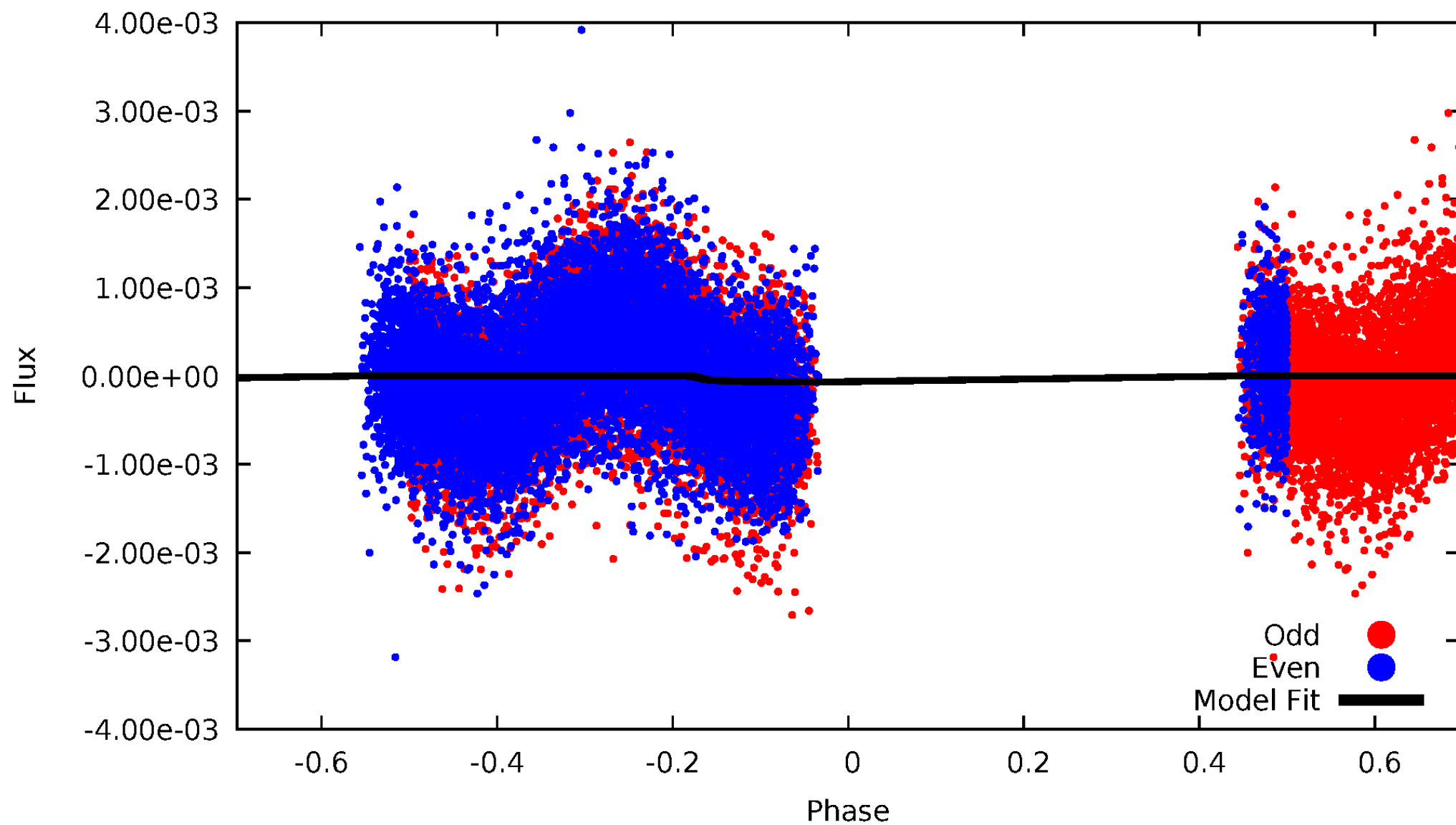


TCE 007748238-03



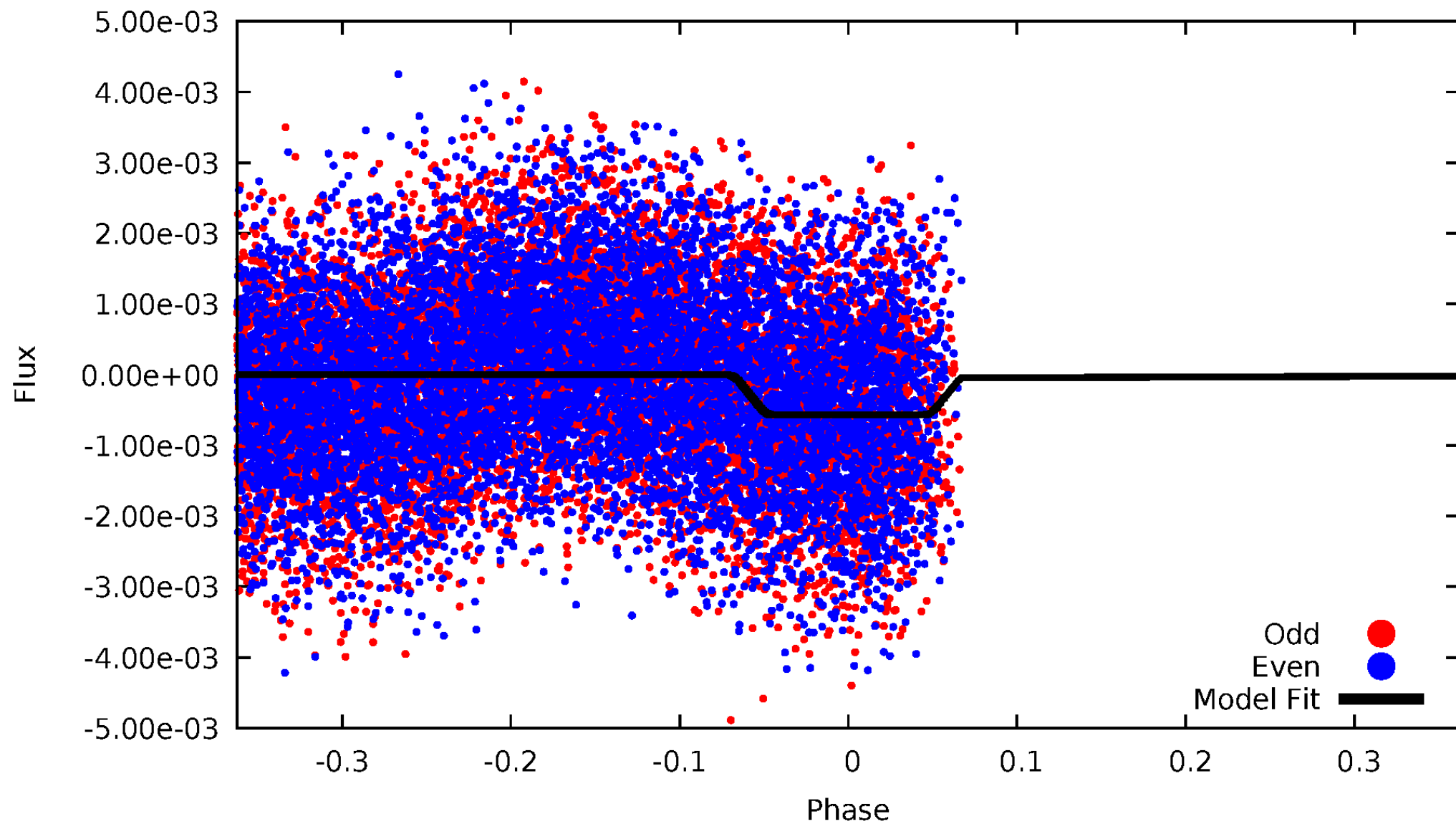
DV Odd/Even

TCE 007748238-03



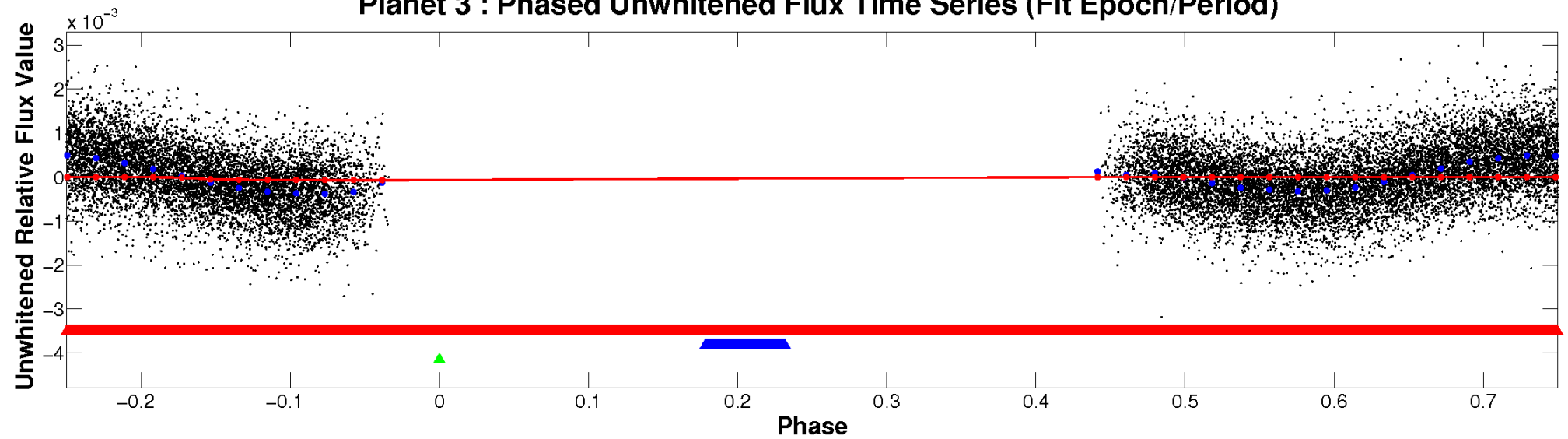
ALT Odd/Even

TCE 007748238-03

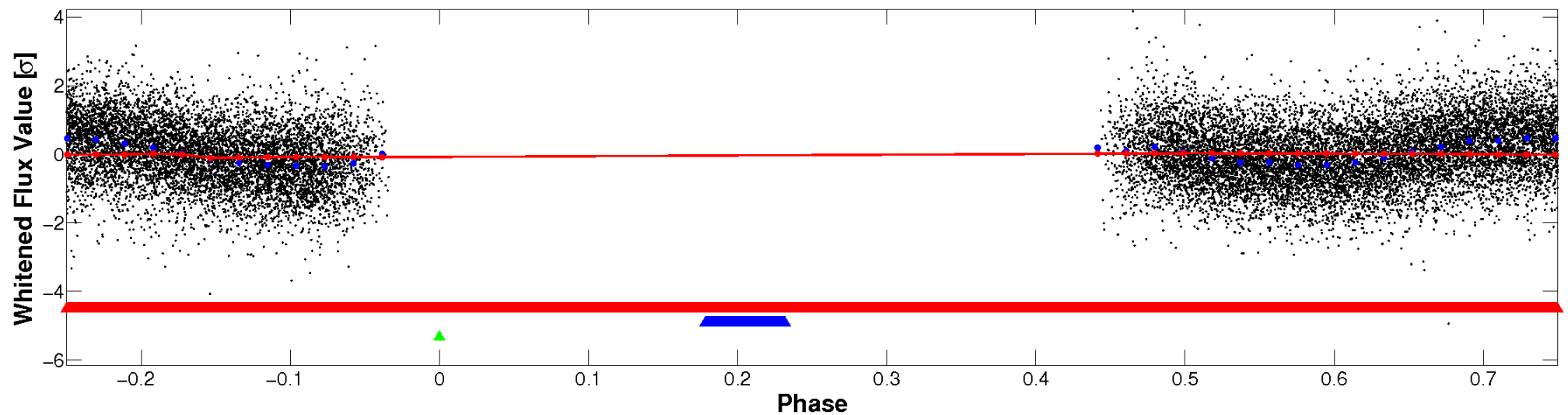


Non-Whitened Vs. Whitened Light Curve

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

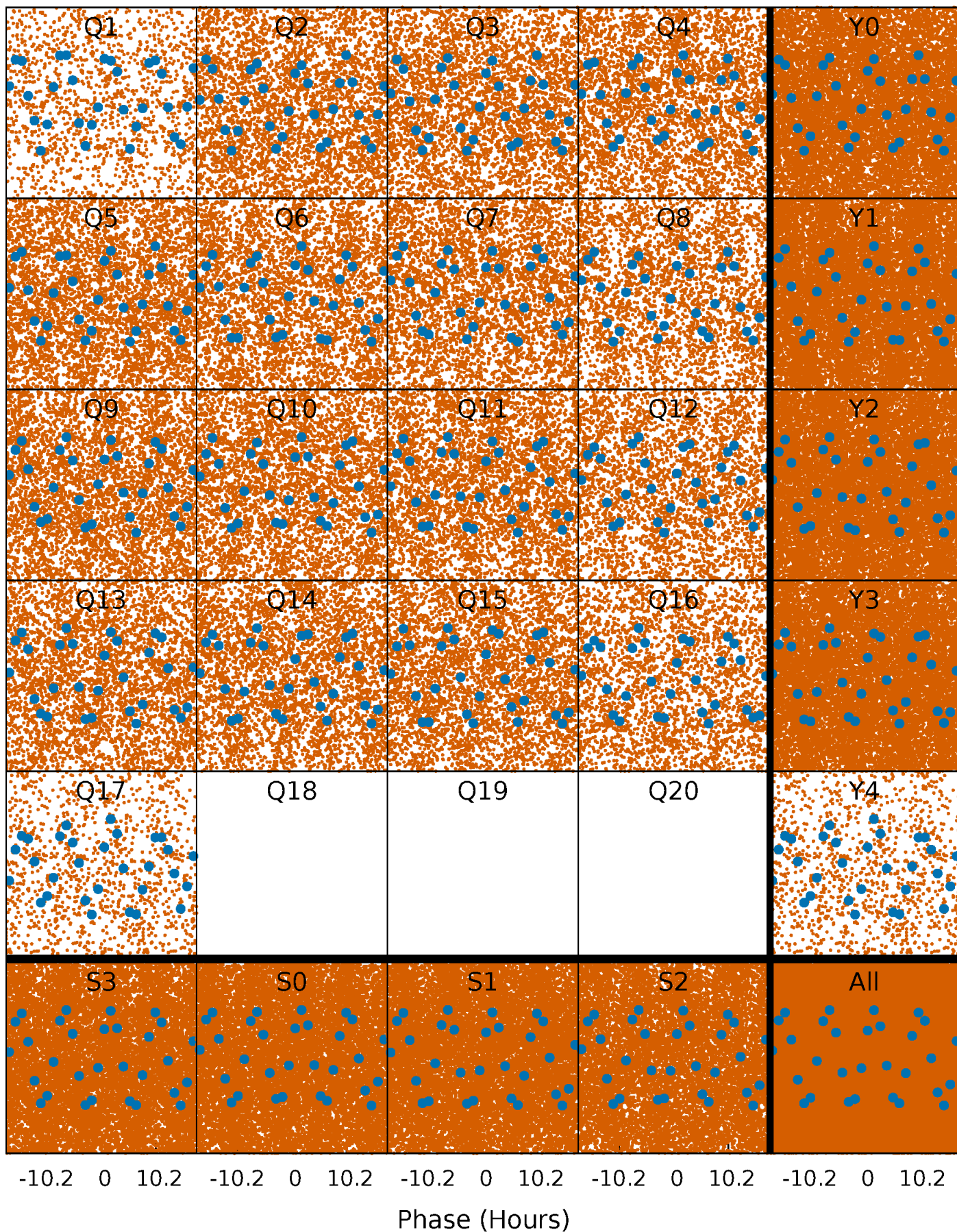


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



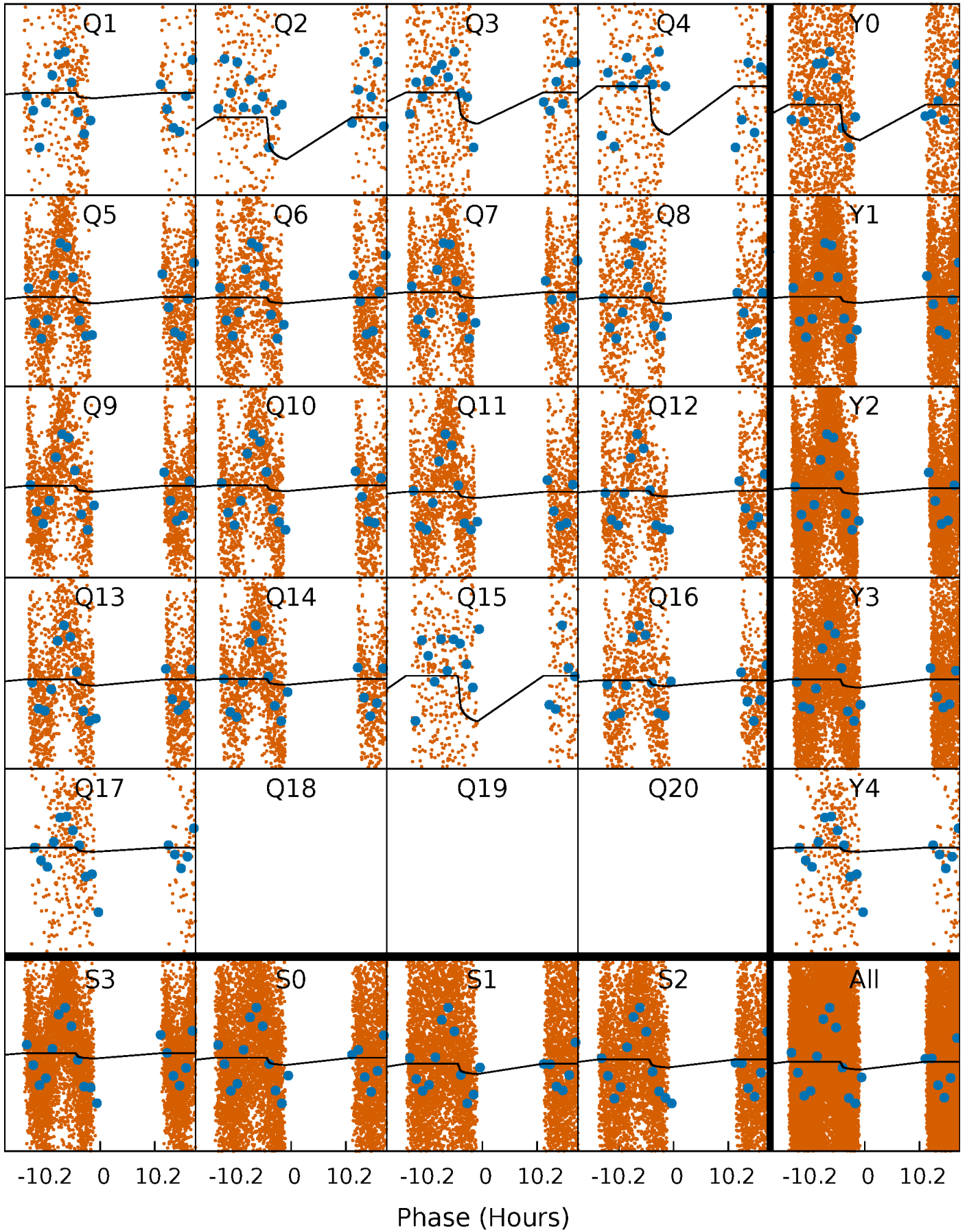
PDC Quarter-Phased Transit Curves

TCE 007748238-03 P= 1.064705 Days $T_0=131.916680$ (BKJD)



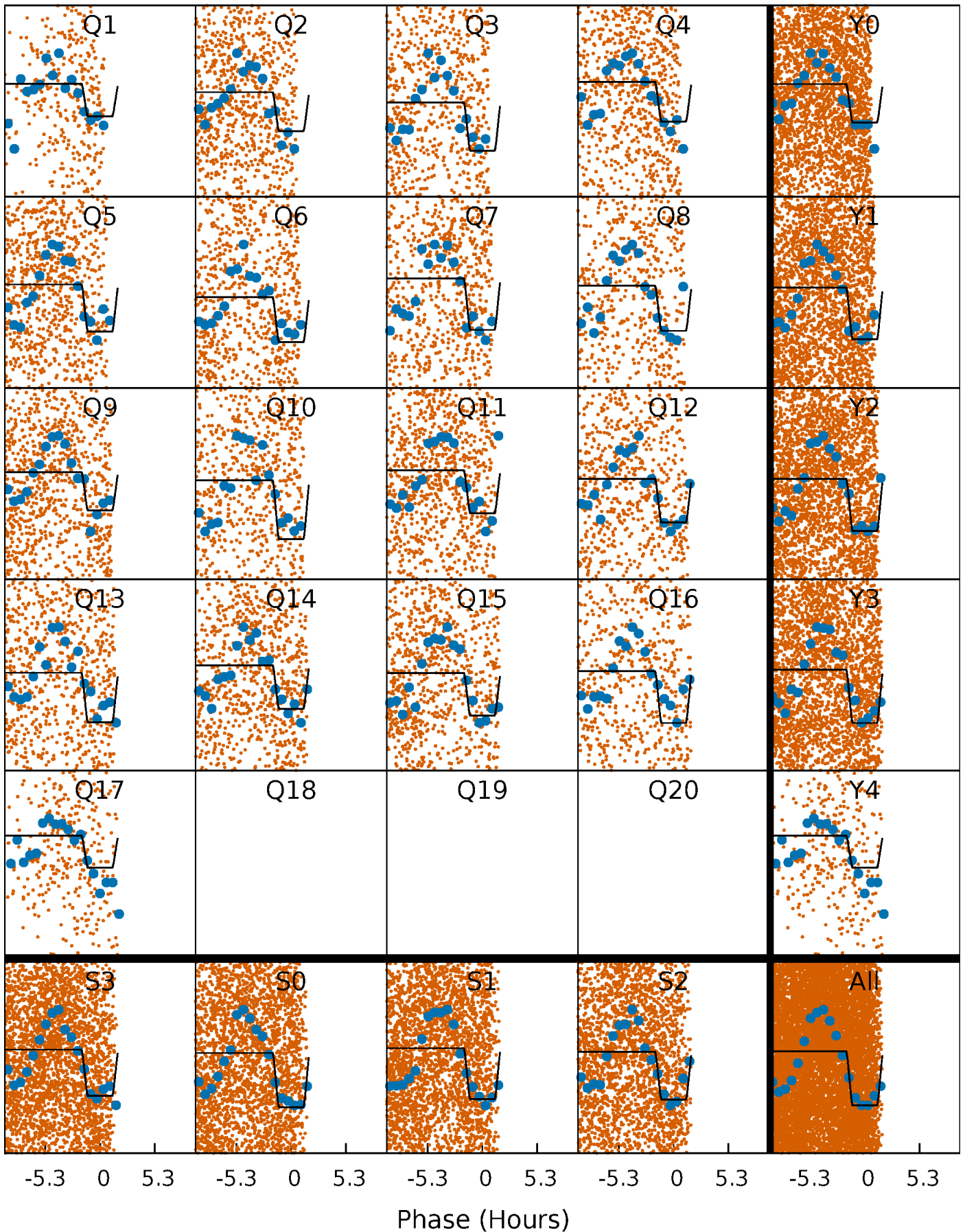
DV Quarter-Phased Transit Curves

TCE 007748238-03 P= 1.064705 Days $T_0=131.916680$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

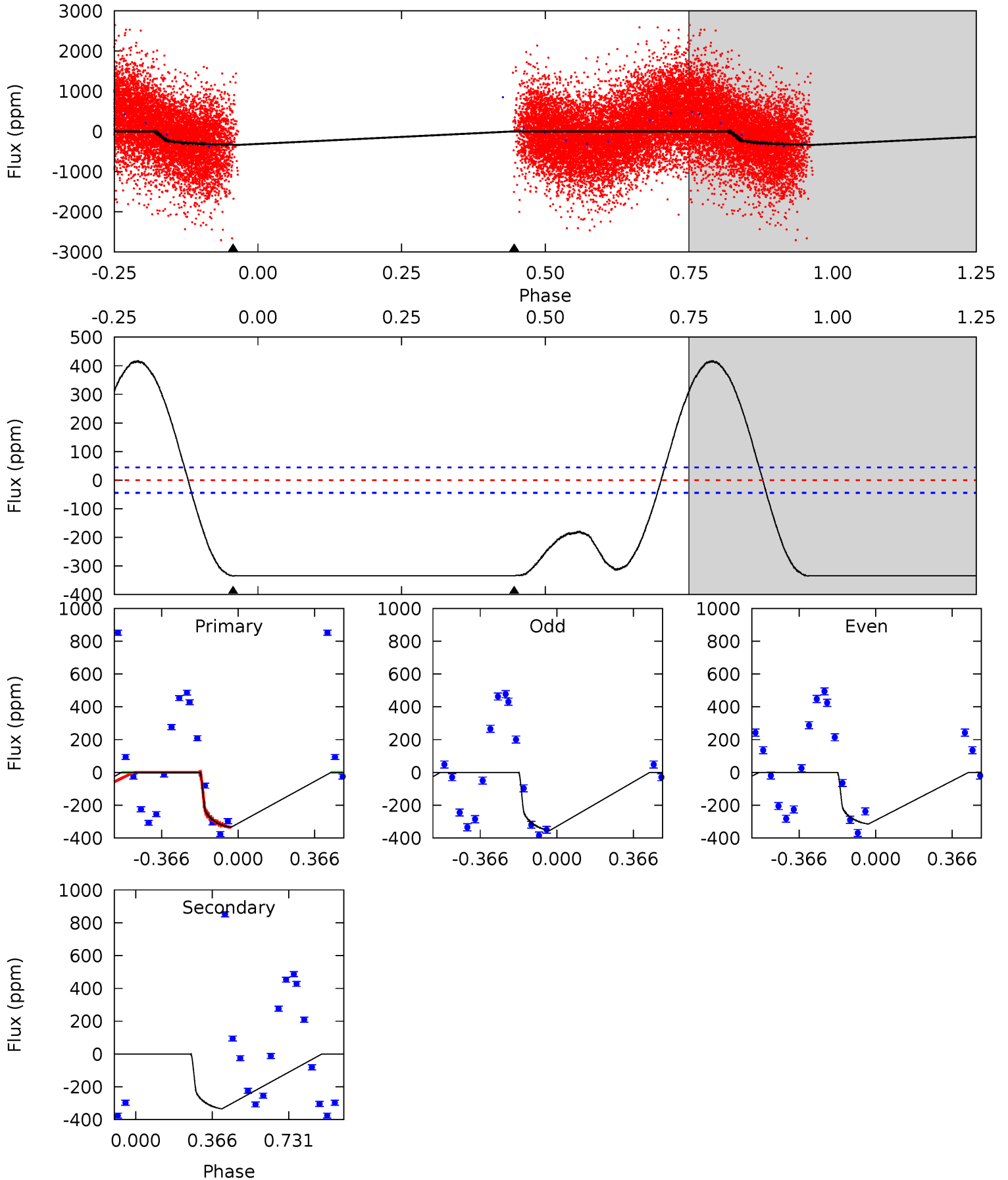
TCE 007748238-03 P= 1.064707 Days $T_0=131.806554$ (BKJD)



DV Model-Shift Uniqueness Test

007748238-03, P = 1.064705 Days, E = 130.851975 Days

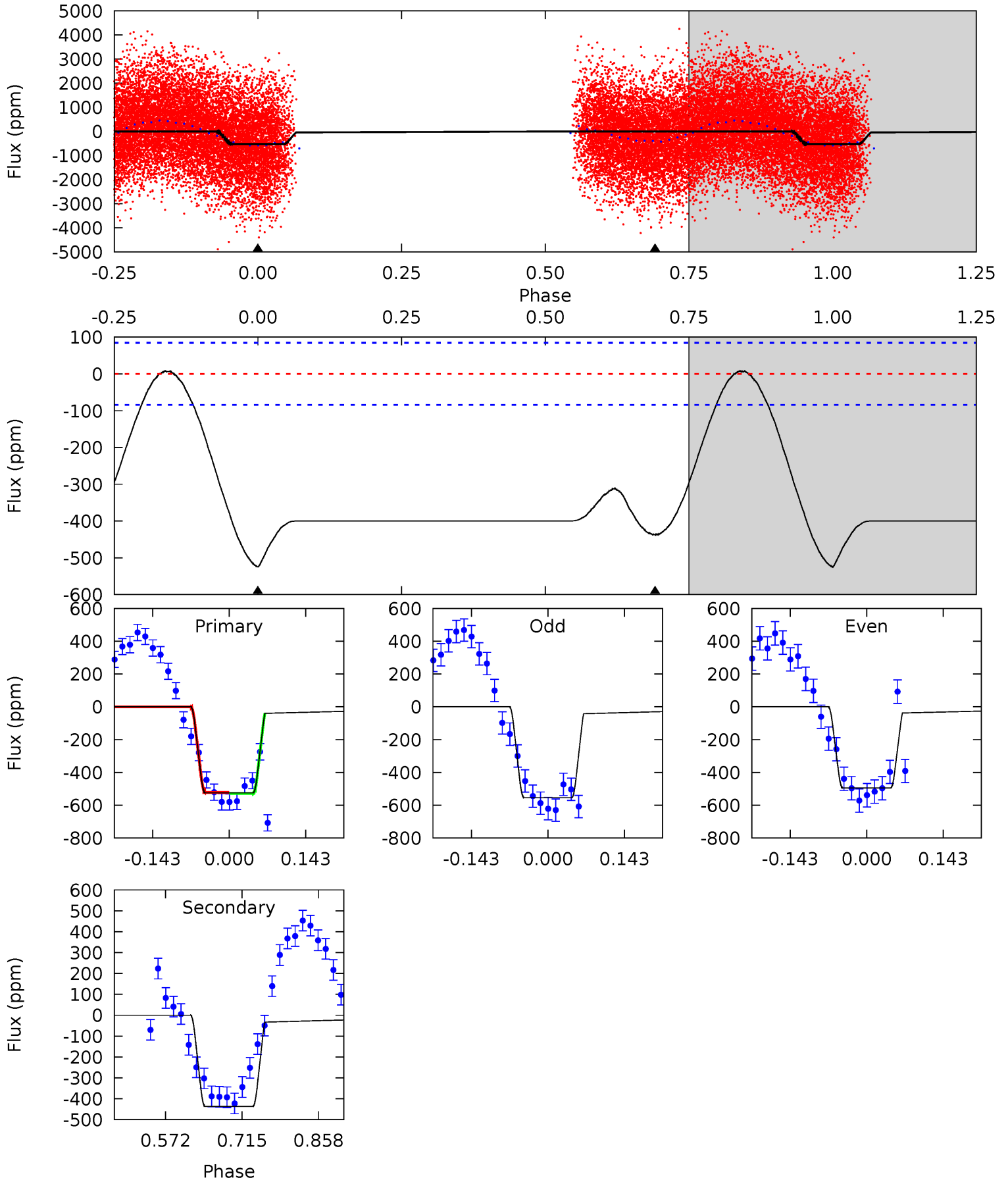
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.2	32.1	0	0	4.28	0.90	9.41	32.2	32.2	32.1	32.1	2.06	0	0.55	0



Alt Model-Shift Uniqueness Test

007748238-03, P = 1.064707 Days, E = 130.741847 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.0	23.3	0	0	4.49	1.46	3.93	28.0	28.0	23.3	23.3	1.55	1.05	0.01	0.17



Stellar Parameters For KIC 007748238

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7244^{+145}_{-145}	$4.064^{+0.132}_{-0.120}$	$-0.180^{+0.150}_{-0.150}$	$1.882^{+0.352}_{-0.288}$	$1.495^{+0.145}_{-0.118}$	$0.316^{+0.185}_{-0.107}$
	+2%/-2%	+3%/-3%	+83%/-83%	+19%/-15%	+10%/-8%	+59%/-34%
Source	SPE4	SPE4	SPE4	DSEP		

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

Secondary Eclipse Parameters for KIC 007748238-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-334 ± 10	$1.74^{+1.15}_{-1.02}$	4005^{+203}_{-203}	12325^{+19082}_{-3864}	34^{+160}_{-21}
Alt.	-437 ± 19	$4.90^{+1.29}_{-1.21}$	4009^{+205}_{-188}	6672^{+1050}_{-773}	$5.510^{+4.285}_{-2.071}$

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 $A_{obs} \gg 1.0$

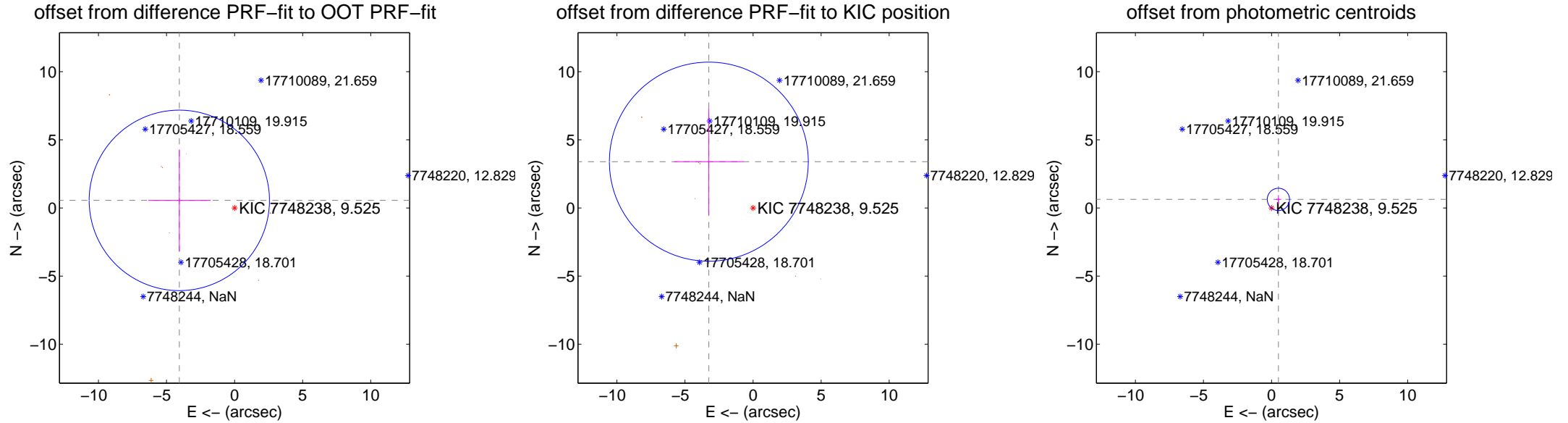
DV Centroid Data

Supplemental centroid analysis for 007748238-03. **Kepler magnitude: 9.53.** Transit SNR 6.19

There are 2 quarters with good PRF difference image offsets

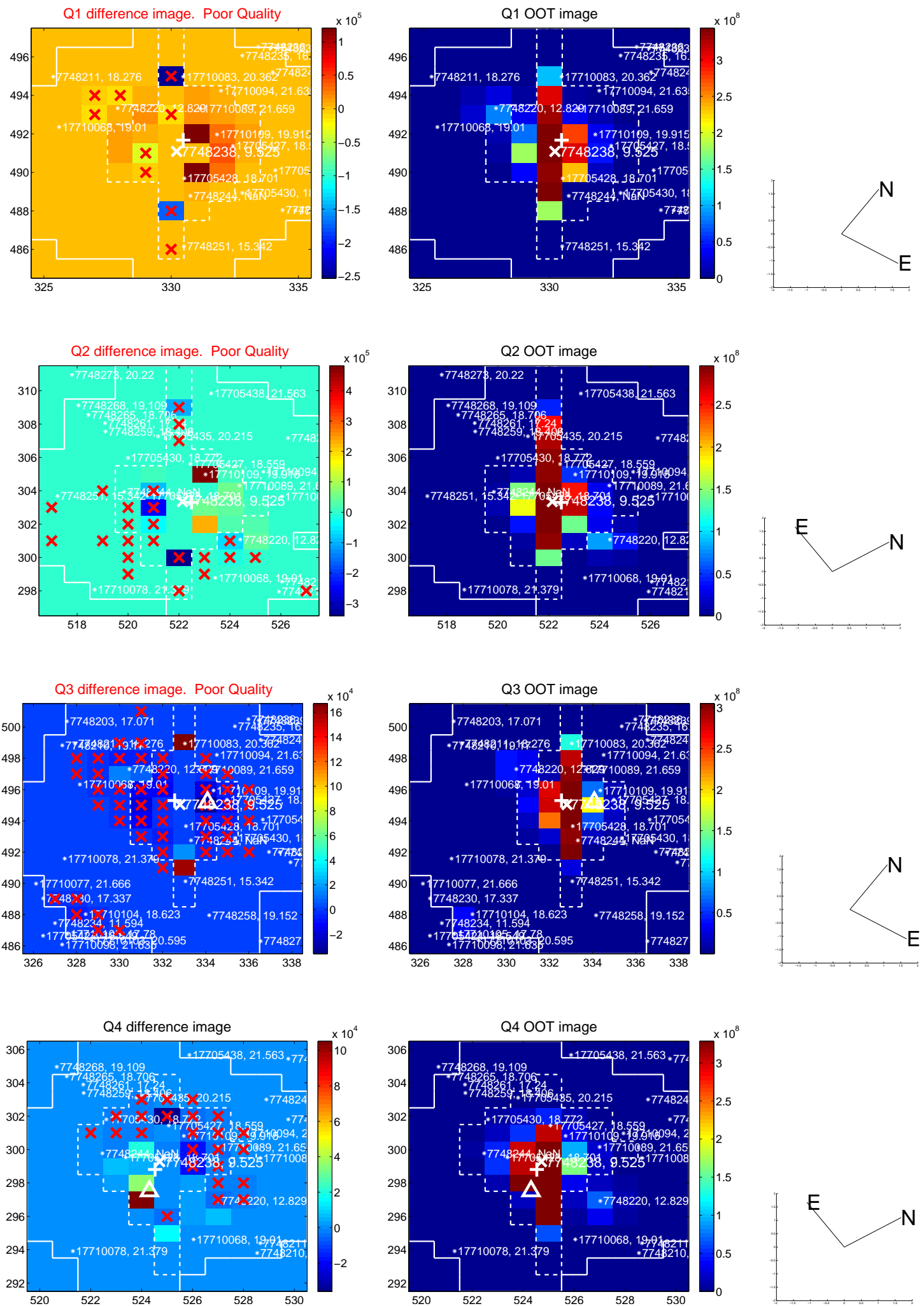
The direct PRF centroid is offset from the target star catalog position by about 1.93 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.099 ± 2.208	1.86	4.061 ± 2.289	0.556 ± 3.735
PRF-fit source offset from KIC position	4.700 ± 2.435	1.93	3.249 ± 2.558	3.397 ± 3.916
photometric centroid source offset	0.81 ± 0.27	2.96	-0.51 ± 0.20	0.63 ± 0.31

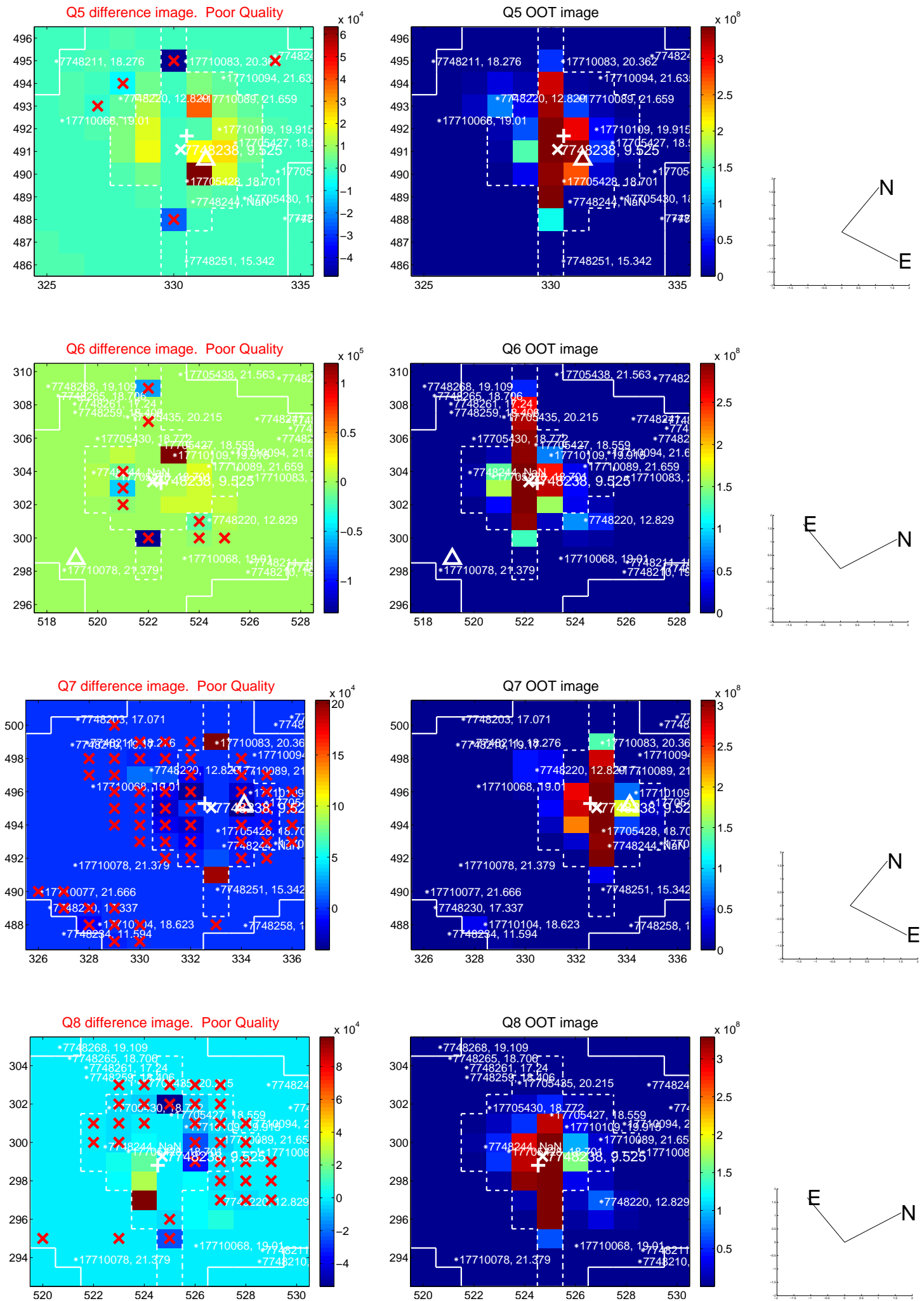


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

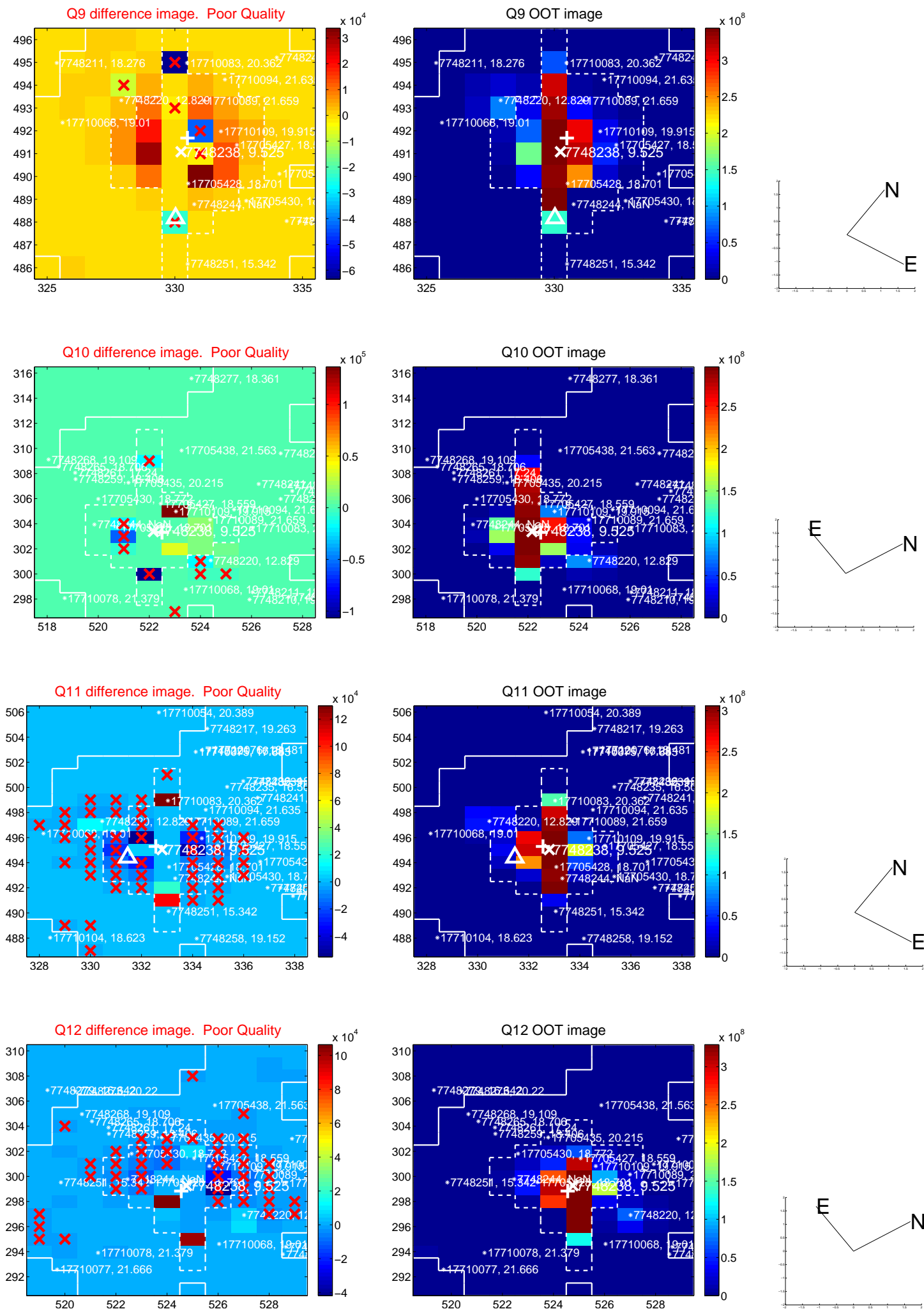
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



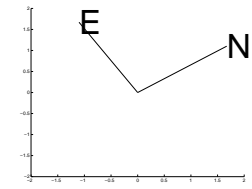
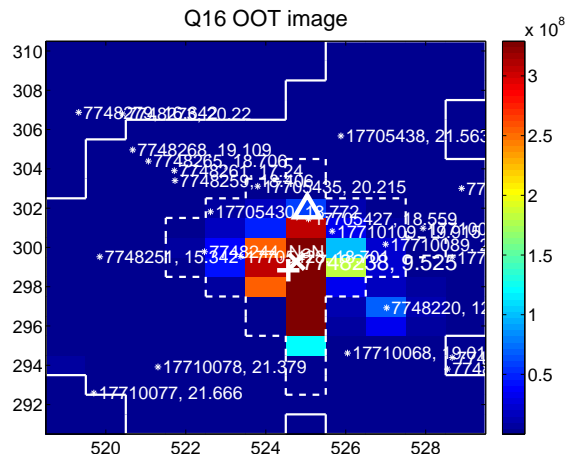
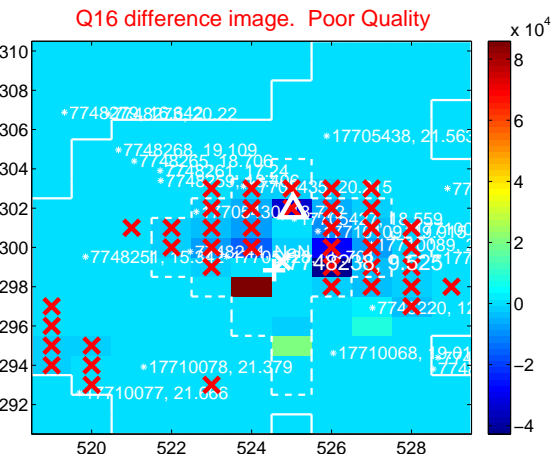
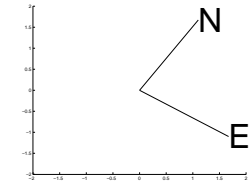
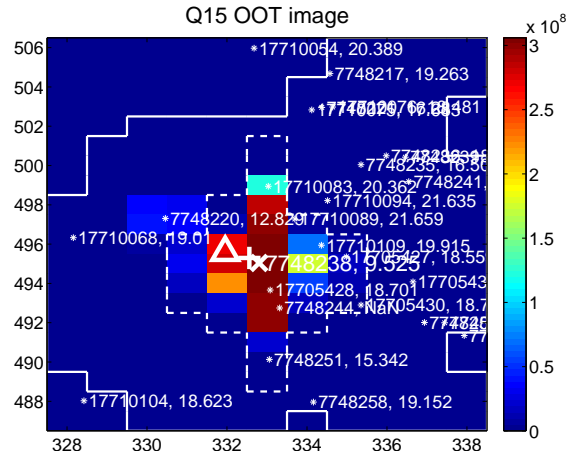
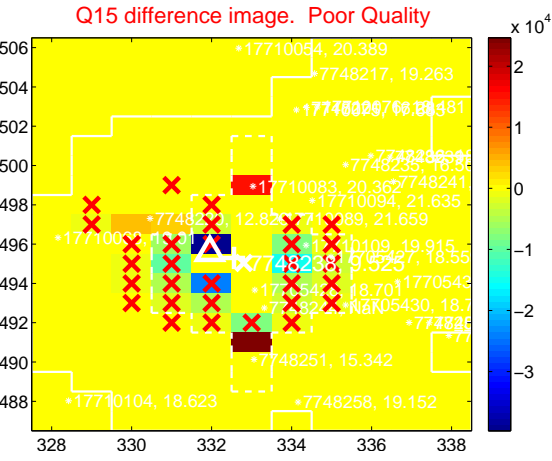
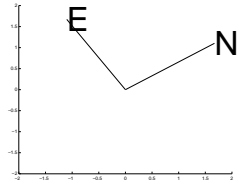
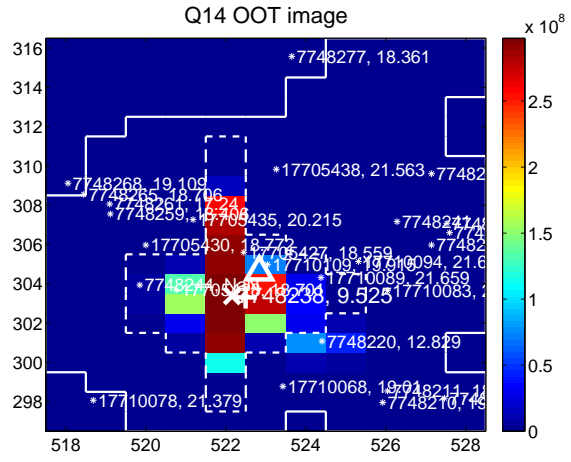
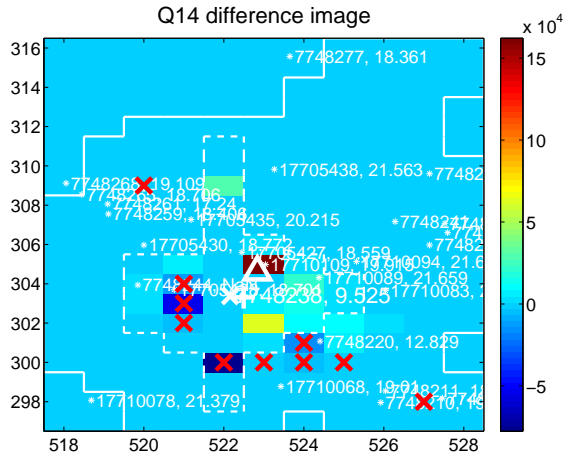
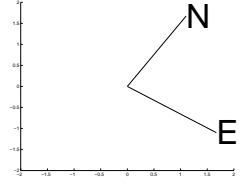
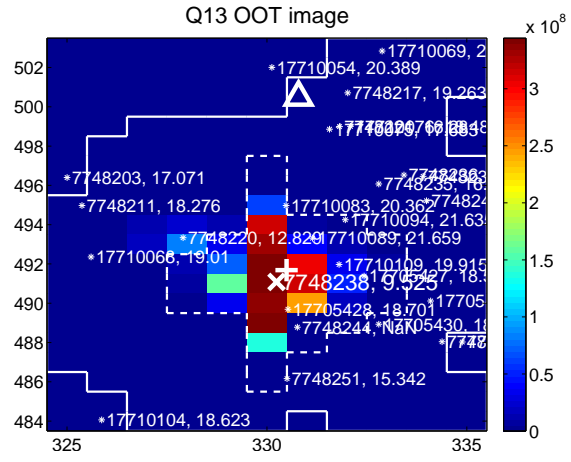
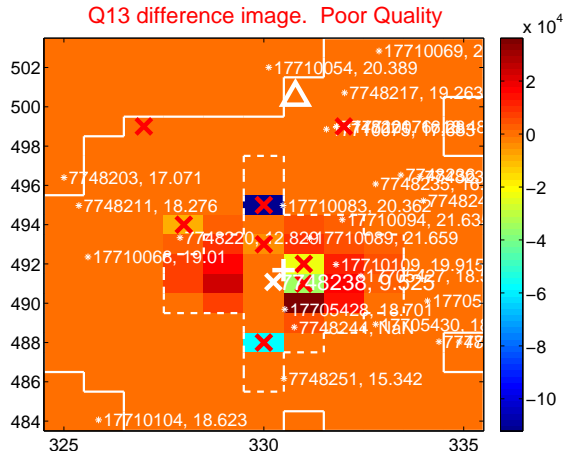
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



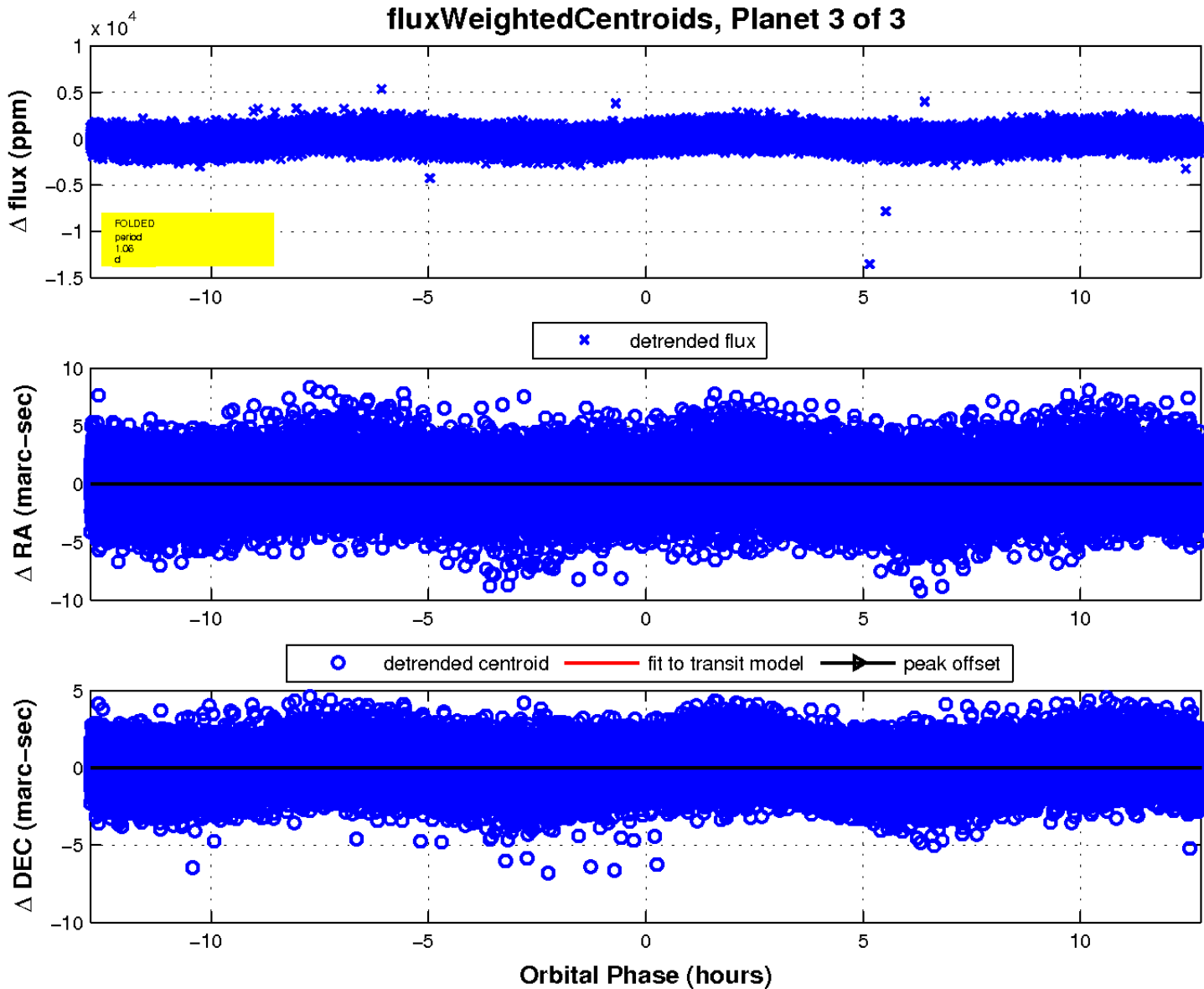
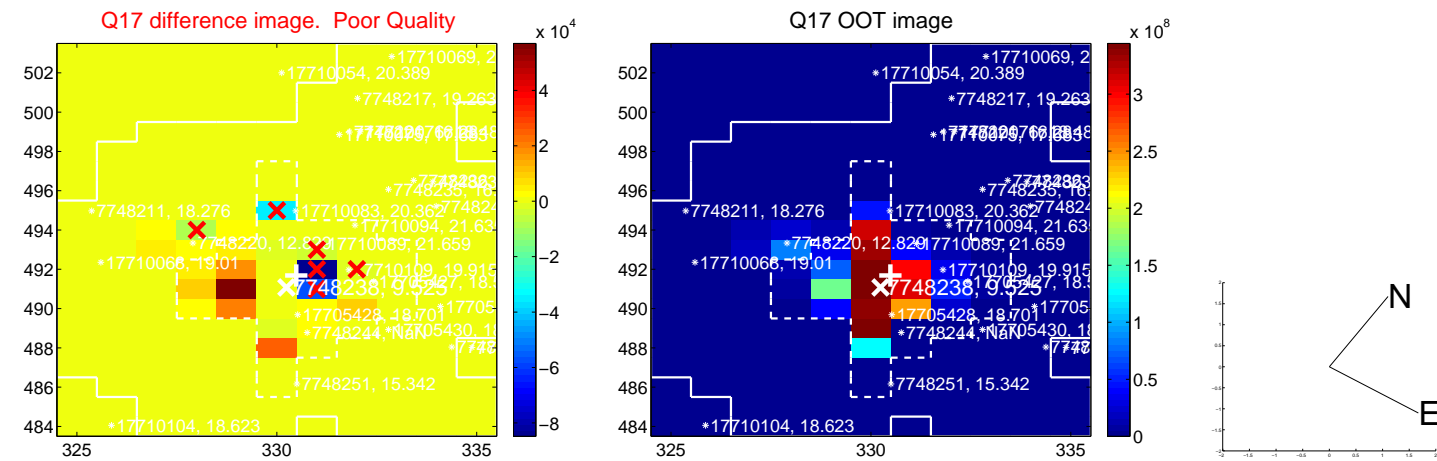
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

