

KIC 011708170

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})
011708170-01	OBS	No	2.424798	133.873066	10.8	8.262	10.8	6.6	1.51	6773	0.58	2825.55
011708170-02	OBS	No	0.808249	132.069527	13.3	3.000	11.2	-1.0	1.51	6773	0.56	12225.78
011708170-03	OBS	No	135.540619	236.824780	132.2	7.497	8.7	9.6	1.51	6773	2.15	13.22
011708170-04	OBS	No	116.195398	146.350826	151.5	0.764	8.4	3.7	1.51	6773	1.97	16.23
011708170-05	OBS	No	186.898546	211.815923	139.7	4.798	8.3	8.2	1.51	6773	2.06	8.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011708170-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011708170-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
011708170-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011708170-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
011708170-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

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

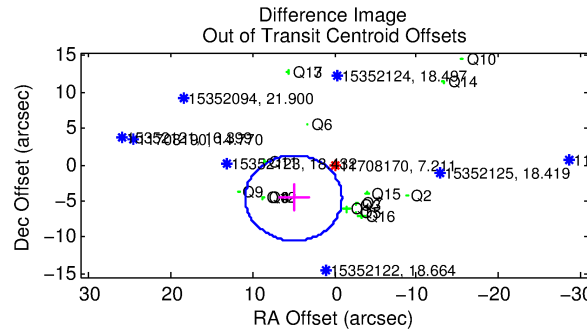
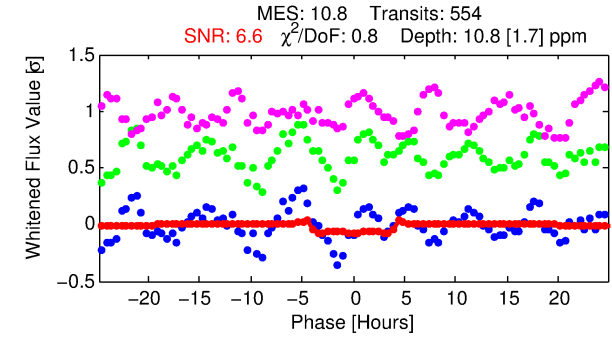
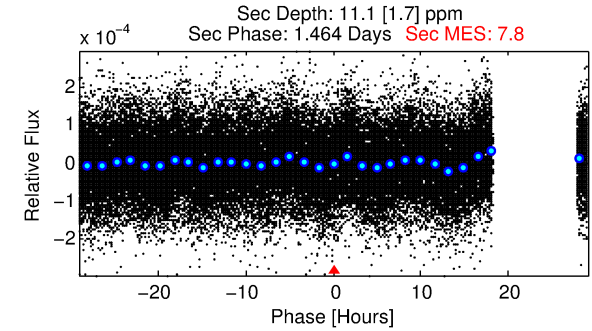
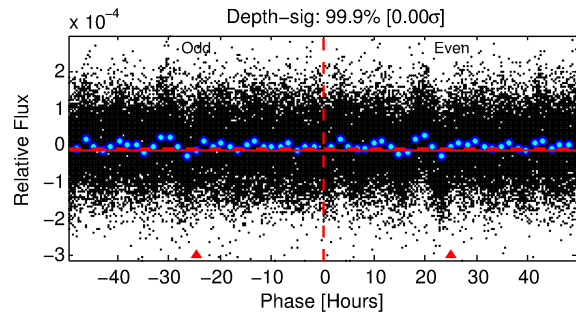
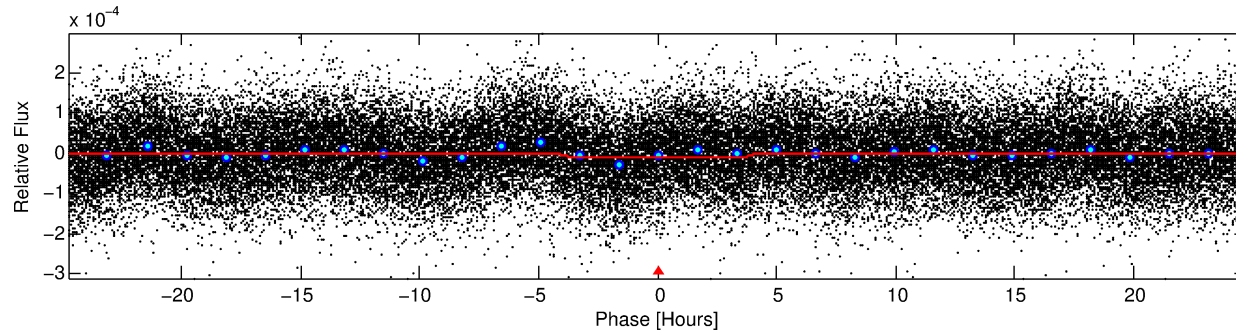
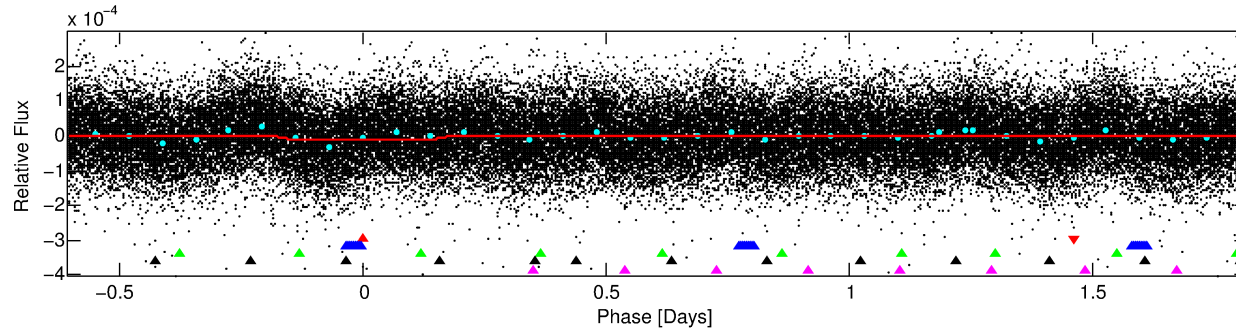
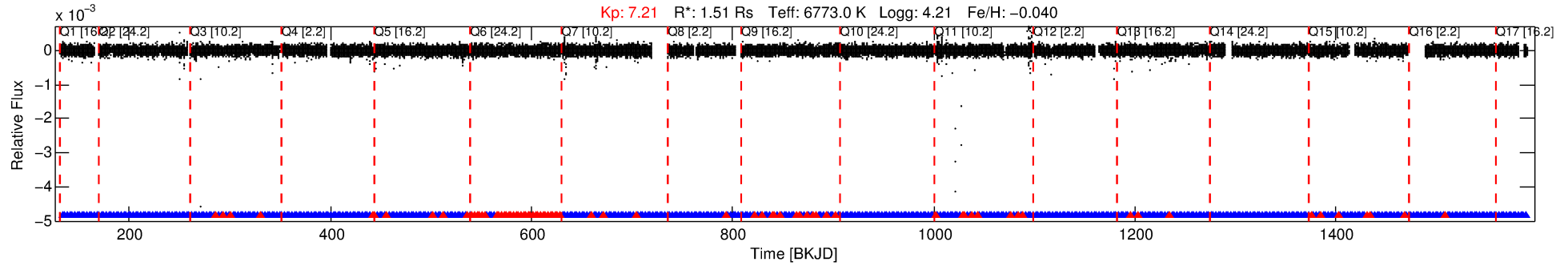
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011708170-01

No Significant Match Found

DV One-Page Summary

KIC: 11708170 Candidate: 1 of 5 Period: 2.425 d



DV Fit Results:

Period = 2.42480 [0.00003] d
Epoch = 133.8731 [0.0060] BKJD
Rp/R* = 0.0035 [0.0007]
a/R* = 1.37 [0.68]
b = 0.90 [0.23]
Seff = 2825.55 [647.73]
Teq = 1859 [107] K
Rp = 0.58 [0.15] Re
a = 0.0390 [0.0056] AU
Ag = 28.03 [13.05] [2.07 σ]
Teffp = 6614 [706] K [6.66 σ]

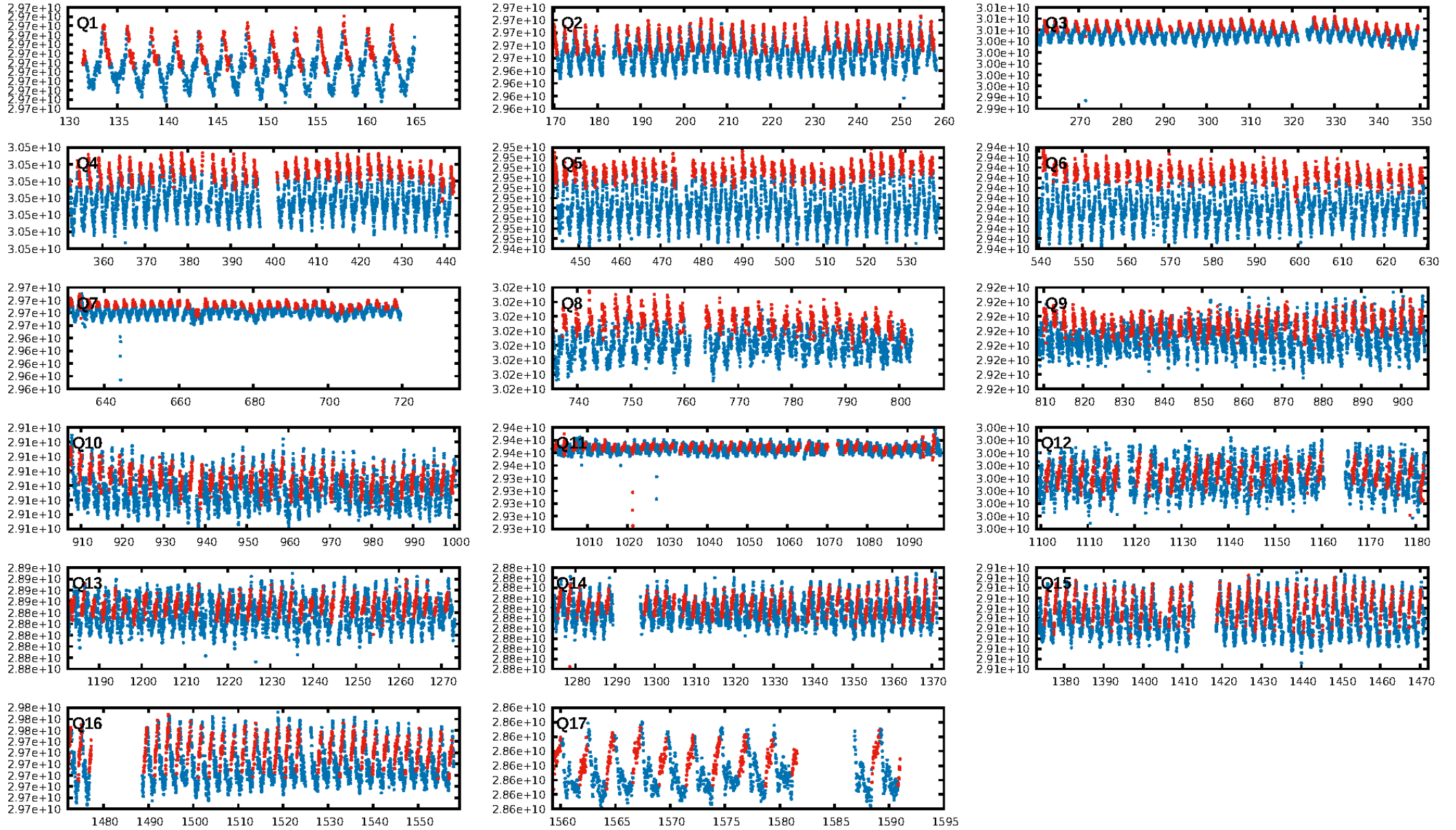
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.41 σ]
LongPeriod-sig: 100.0% [329.07 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.56e-13
RollingBand-fgt: 0.85 [451/528]
GhostDiagnostic-chr: N/A
Centroid-sig: 3.4%
Centroid-so: 4.635 arcsec [1.60 σ]
OotOffset-rm: 6.782 arcsec [3.45 σ]
KicOffset-rm: 7.813 arcsec [3.10 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 0.00 [0/17]

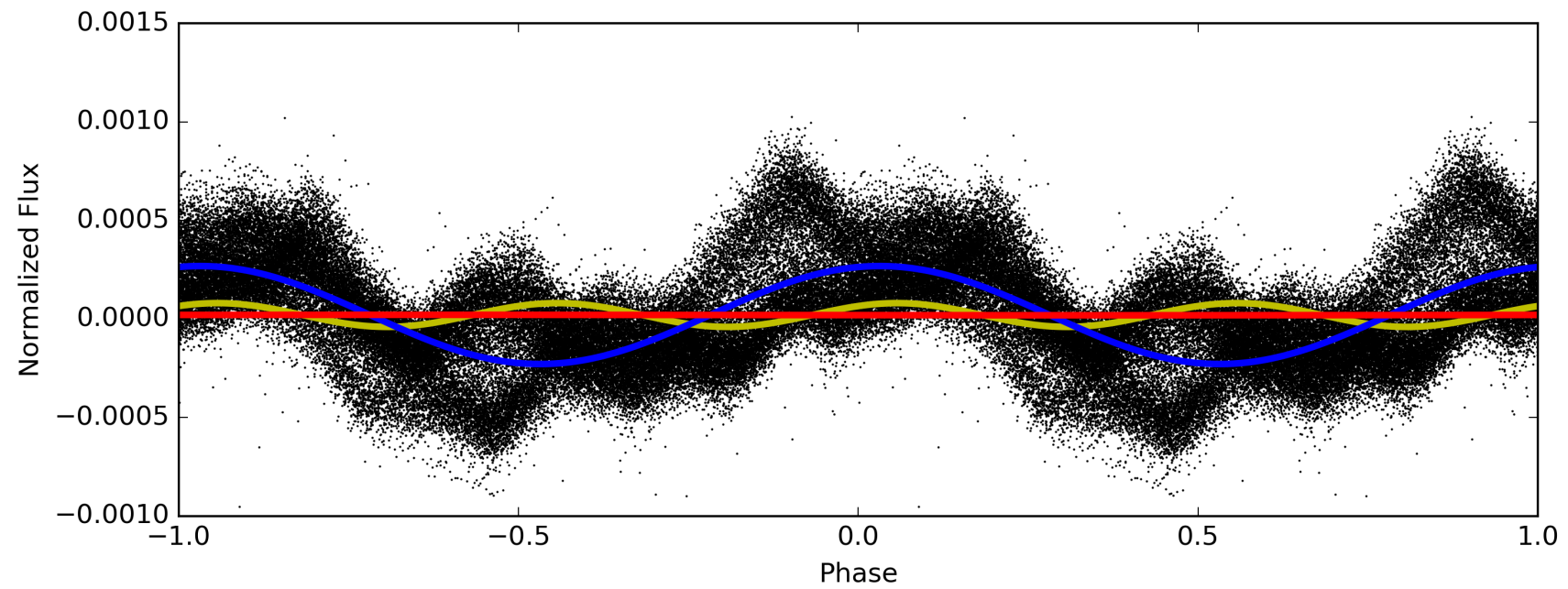
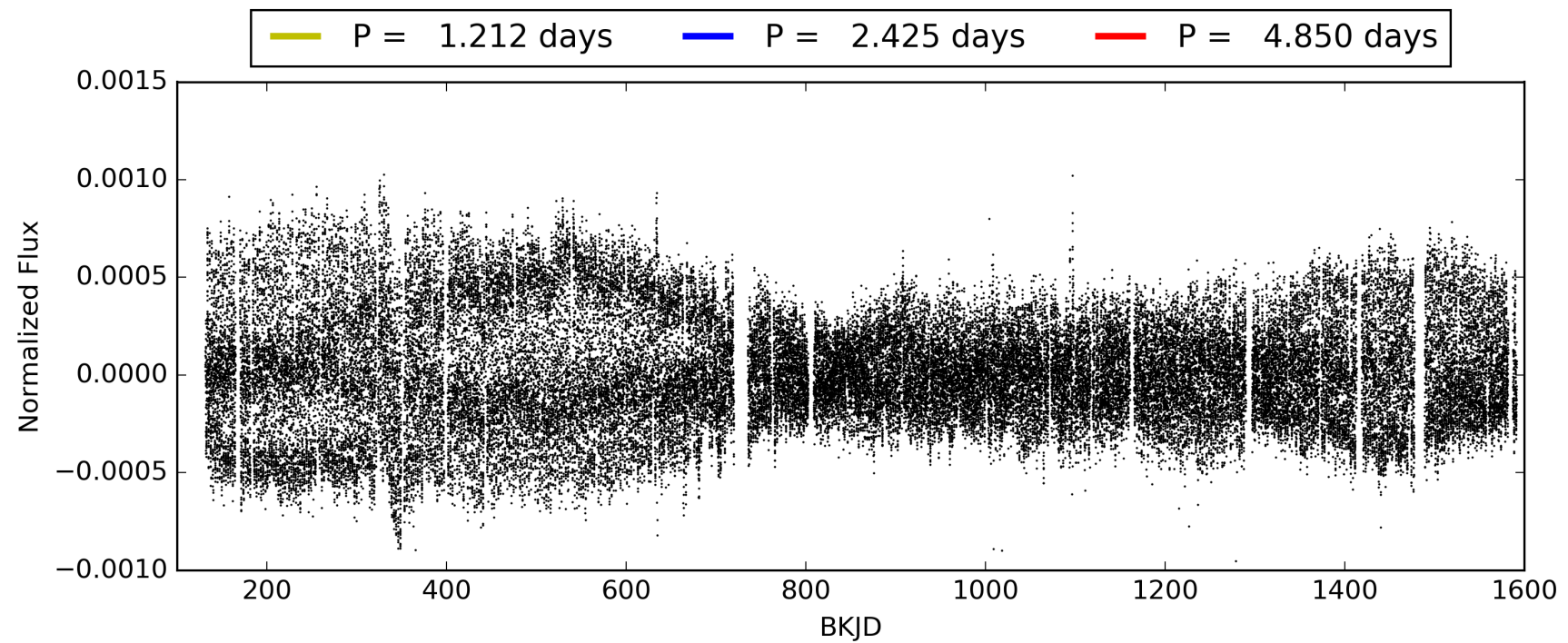
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:23:50 Z

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

TCE 011708170-01, PDC Light Curves

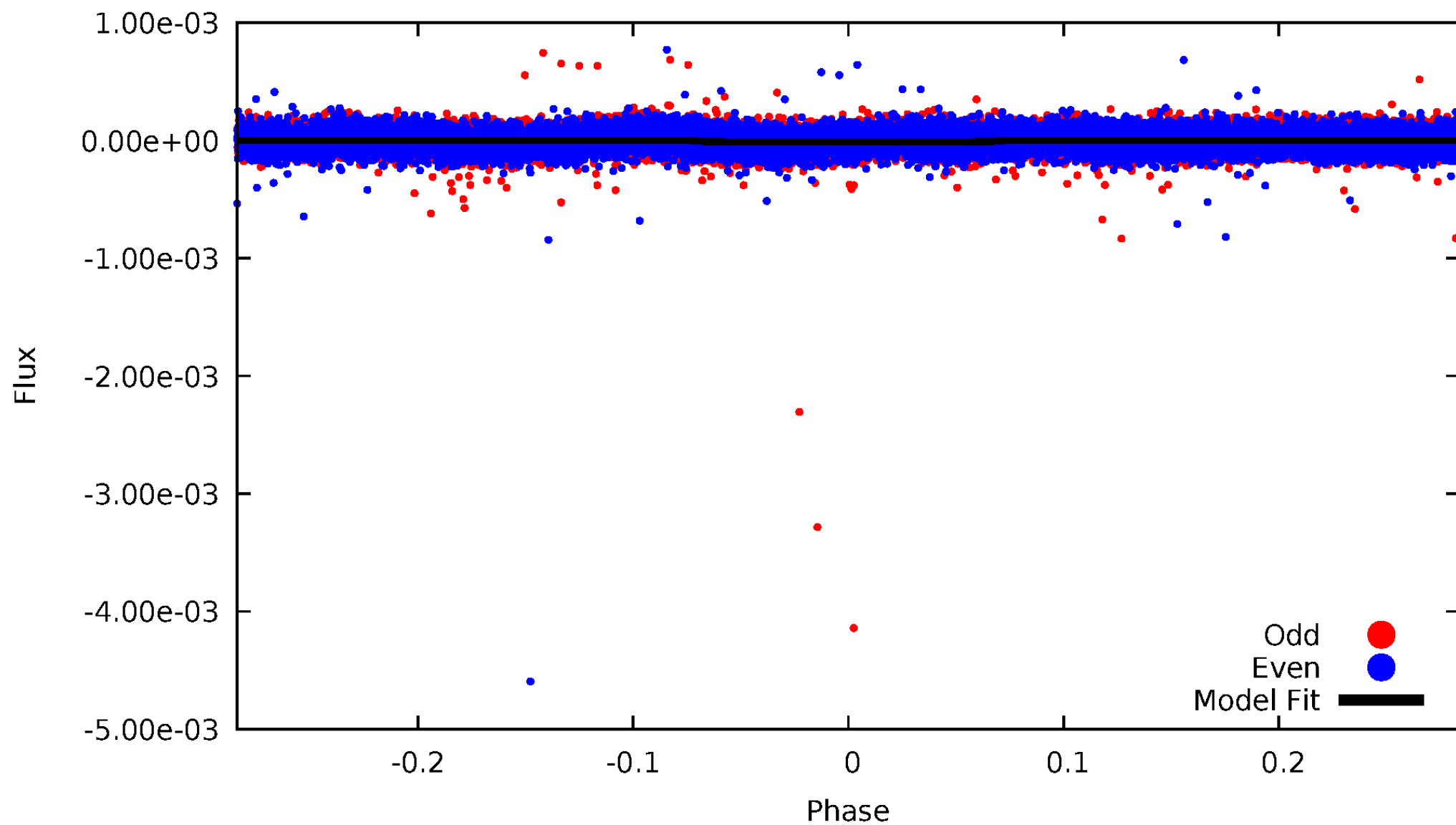


TCE 011708170-01



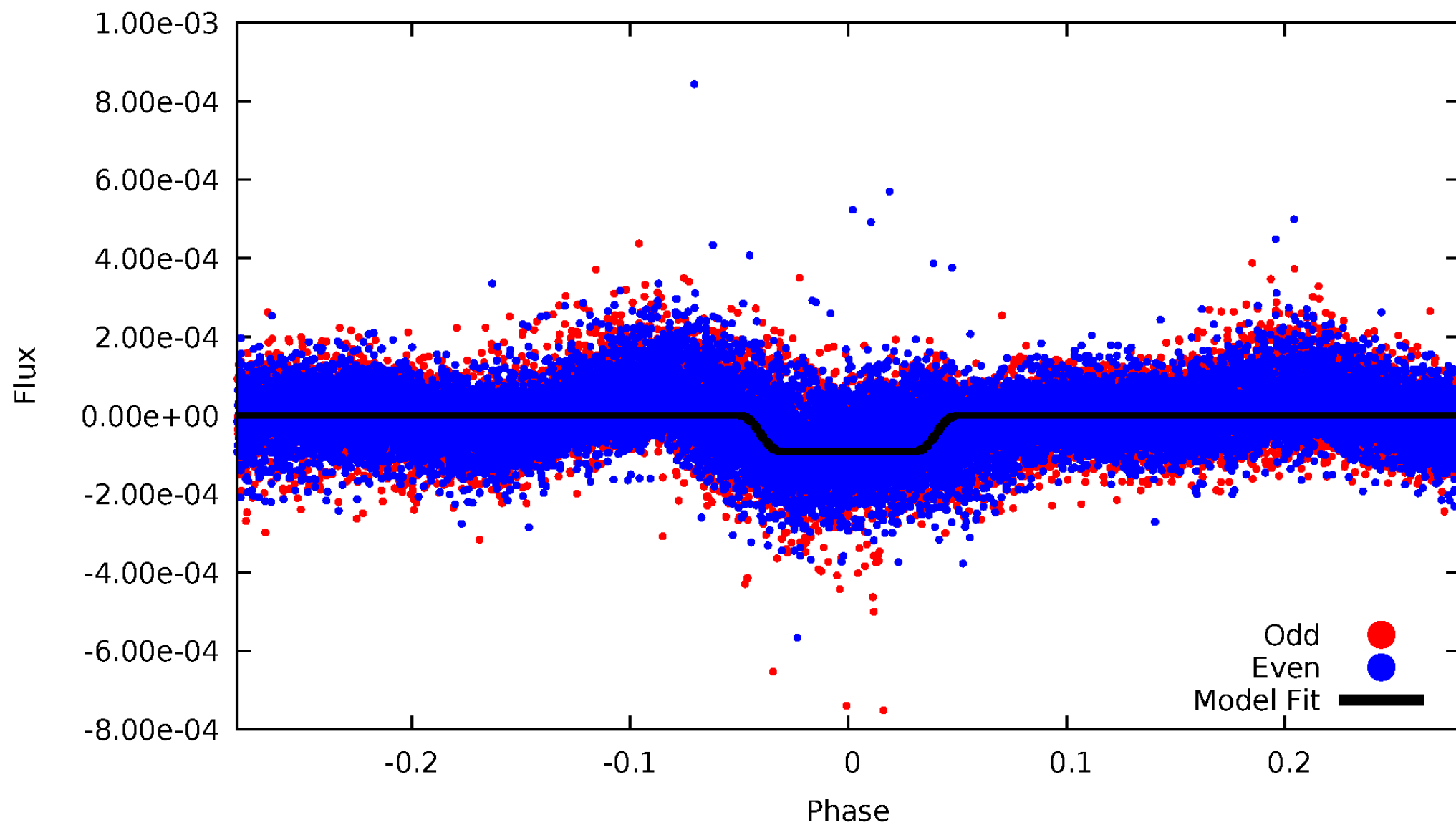
DV Odd/Even

TCE 011708170-01

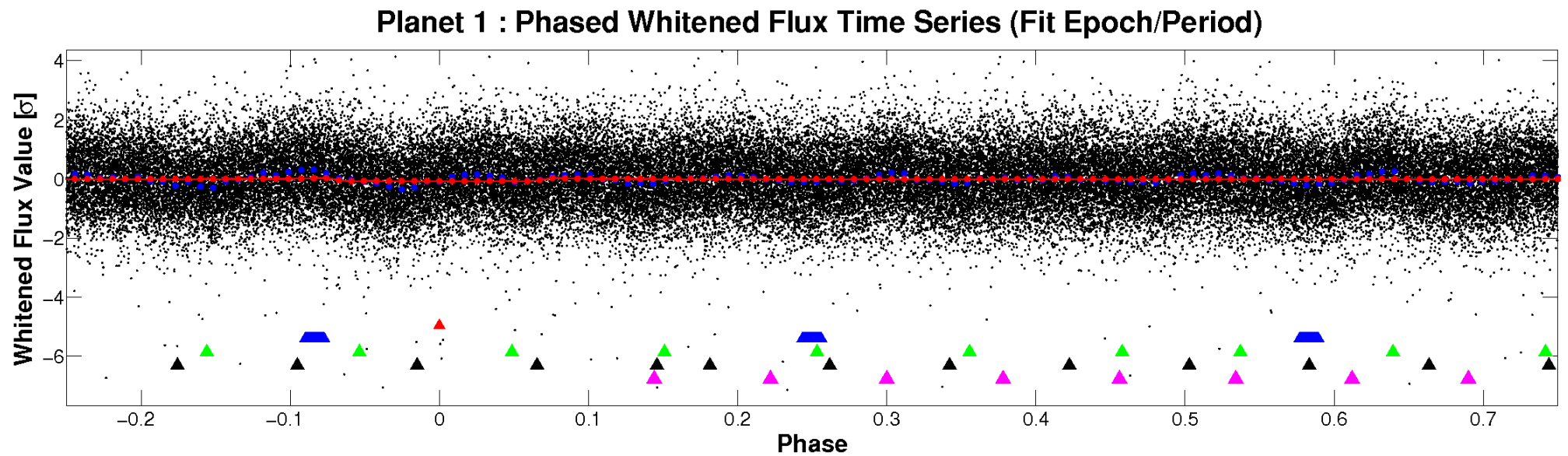
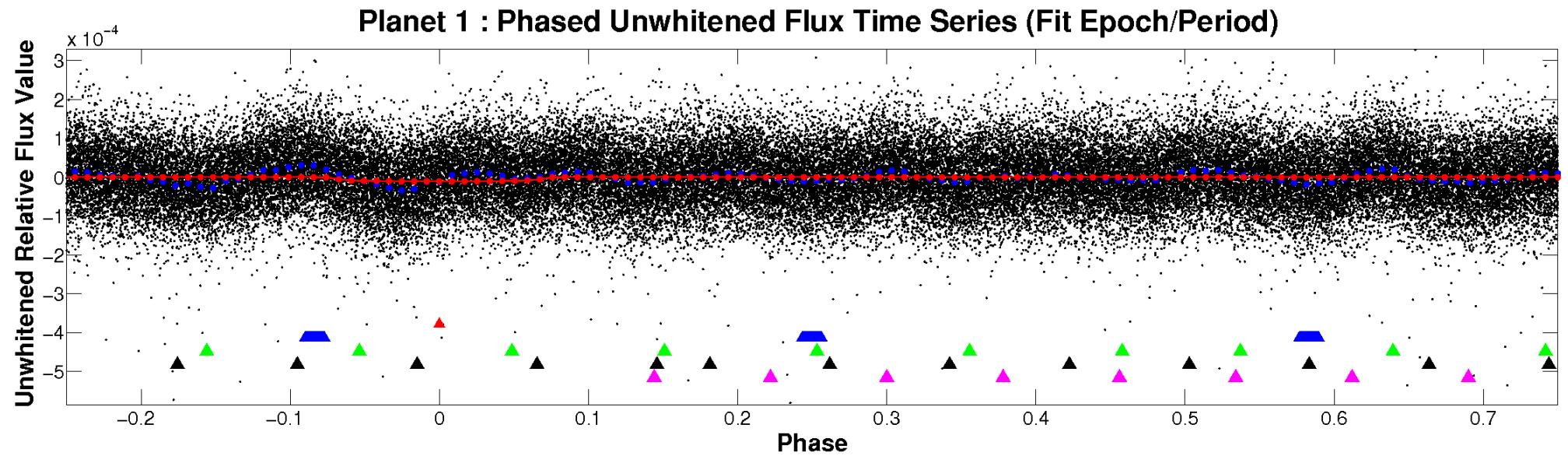


ALT Odd/Even

TCE 011708170-01

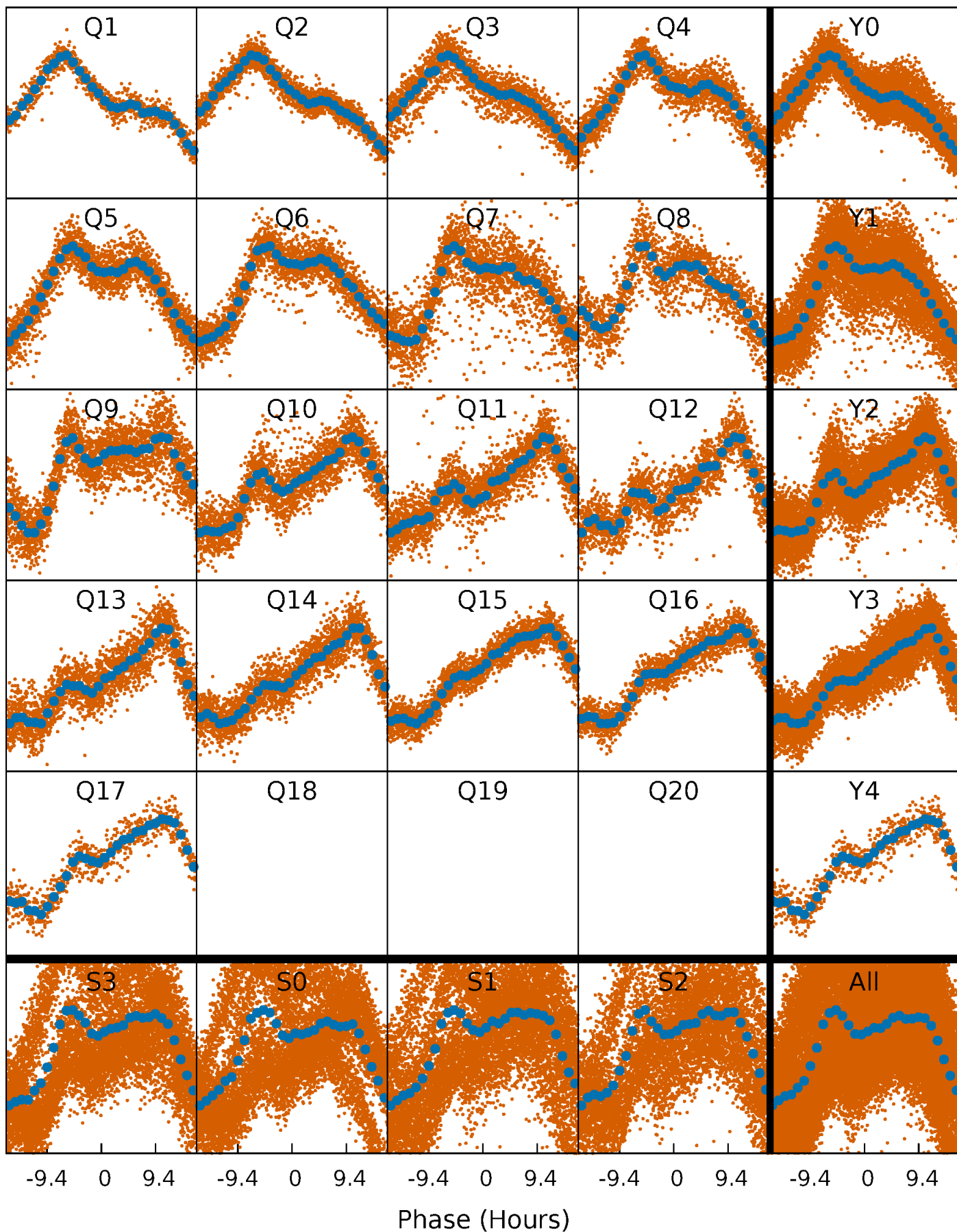


Non-Whitened Vs. Whitened Light Curve



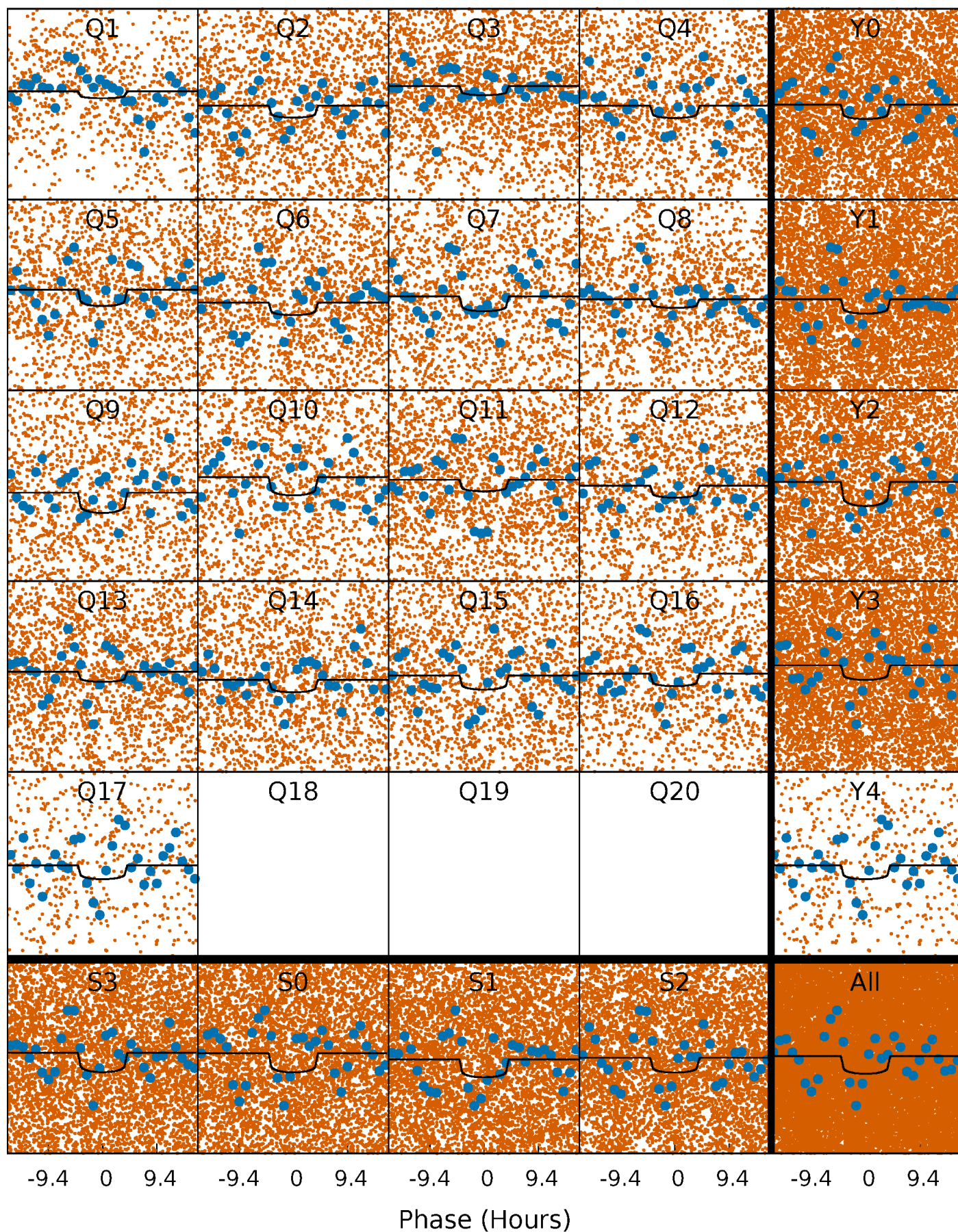
PDC Quarter-Phased Transit Curves

TCE 011708170-01 P= 2.424798 Days $T_0=133.873066$ (BKJD)



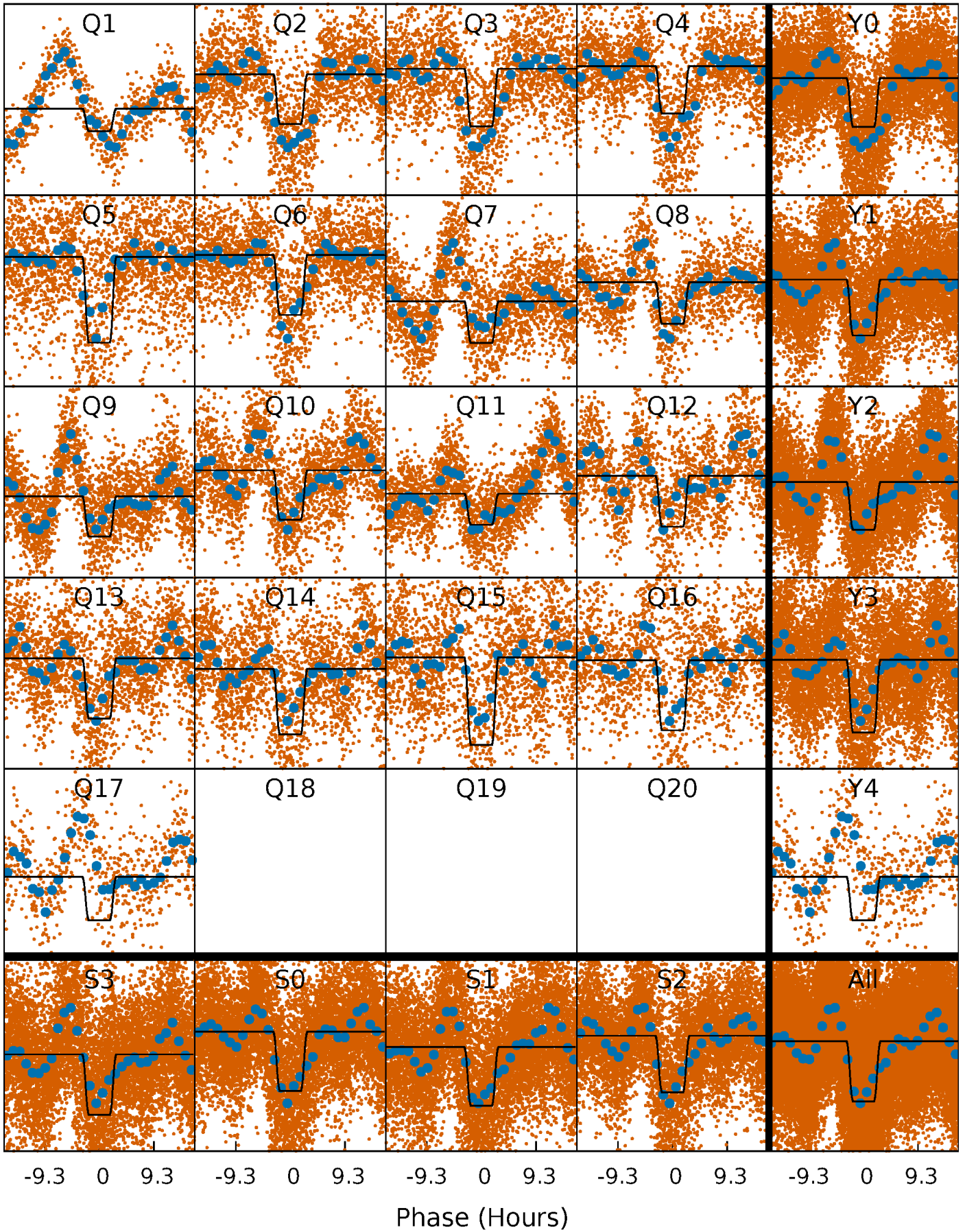
DV Quarter-Phased Transit Curves

TCE 011708170-01 P= 2.424798 Days $T_0=133.873066$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

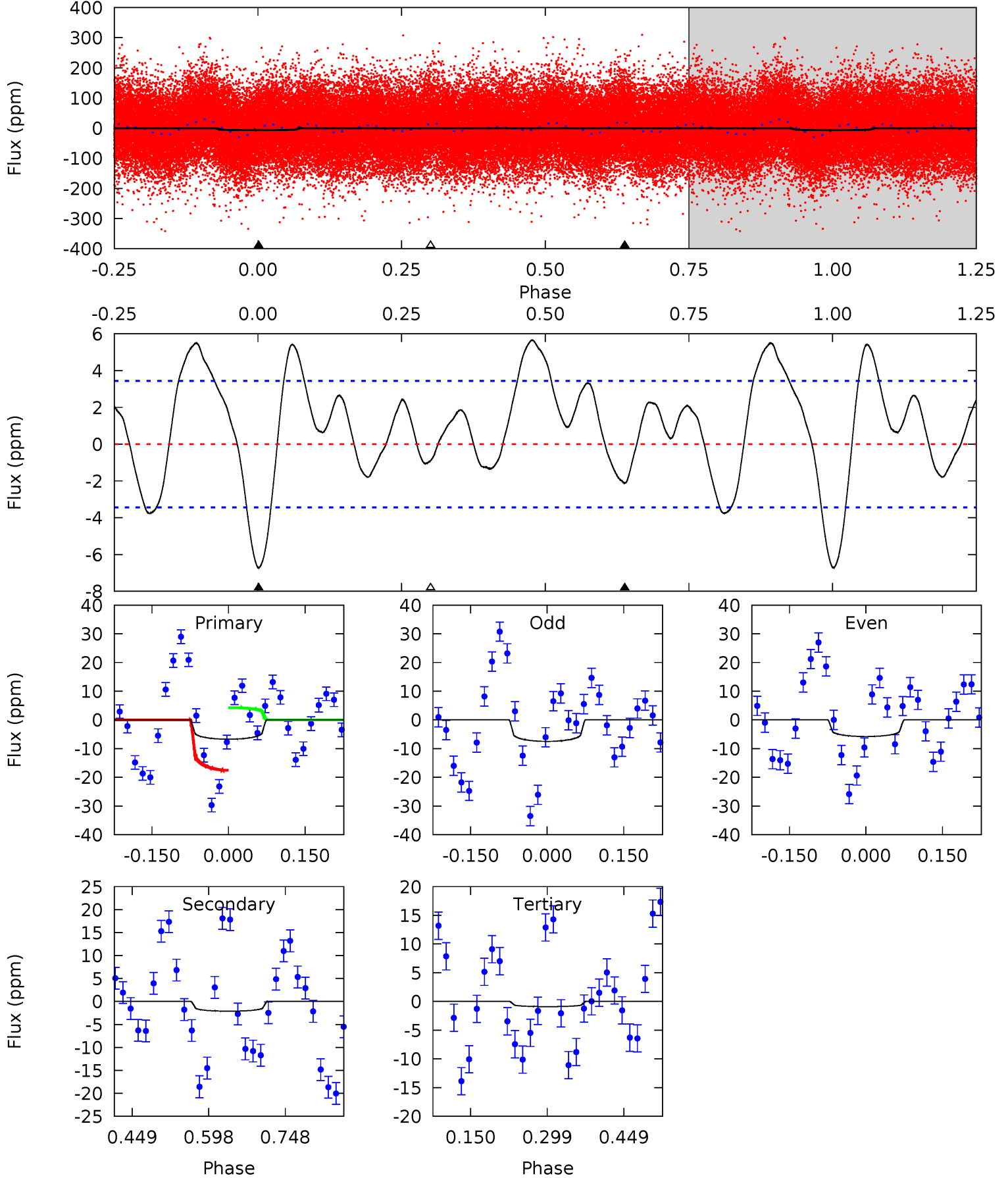
TCE 011708170-01 P= 2.424748 Days $T_0=133.857162$ (BKJD)



DV Model-Shift Uniqueness Test

011708170-01, P = 2.424798 Days, E = 131.448268 Days

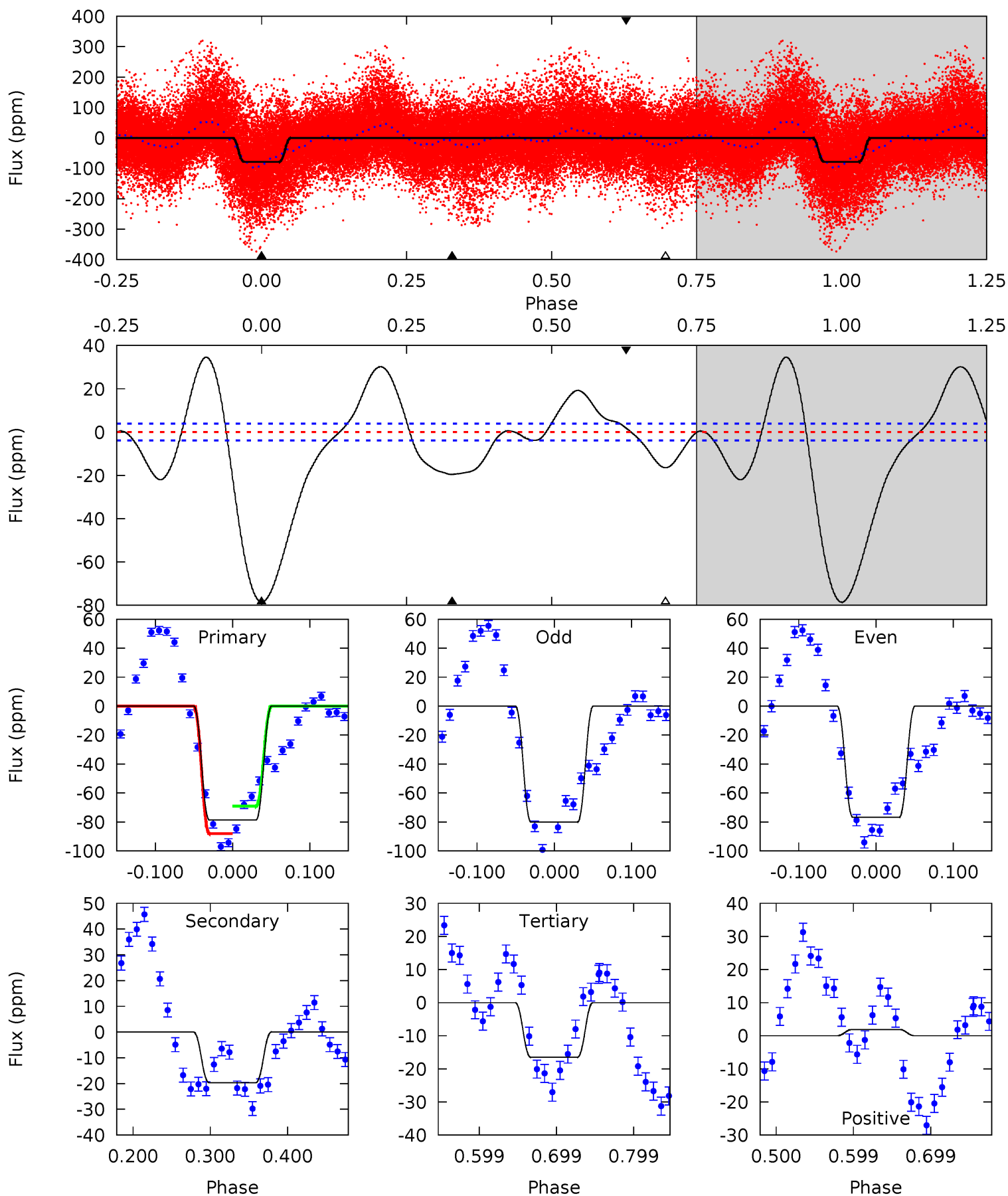
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.77	2.76	1.17	0	4.48	1.44	2.86	7.60	8.77	1.59	2.76	1.11	1.35	0.46	8.69



Alt Model-Shift Uniqueness Test

011708170-01, P = 2.424748 Days, E = 131.432414 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
92.0	23.0	19.3	2.20	4.56	1.65	15.8	72.7	89.8	3.66	20.8	1.99	0.95	0.31	11.1



Stellar Parameters For KIC 011708170

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6773^{+108}_{-162}	$4.209^{+0.076}_{-0.114}$	$-0.040^{+0.150}_{-0.150}$	$1.510^{+0.256}_{-0.170}$	$1.351^{+0.098}_{-0.109}$	$0.552^{+0.207}_{-0.178}$
	+2%/-2%	+2%/-3%	+375%/-375%	+17%/-11%	+7%/-8%	+38%/-32%
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 011708170-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2 ± 1	$0.58^{+0.13}_{-0.11}$	2603^{+118}_{-93}	4462^{+518}_{-482}	$5.193^{+3.567}_{-2.333}$
Alt.	-20 ± 1	$1.60^{+0.18}_{-0.14}$	2605^{+105}_{-102}	4664^{+164}_{-150}	$6.472^{+1.291}_{-1.267}$

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

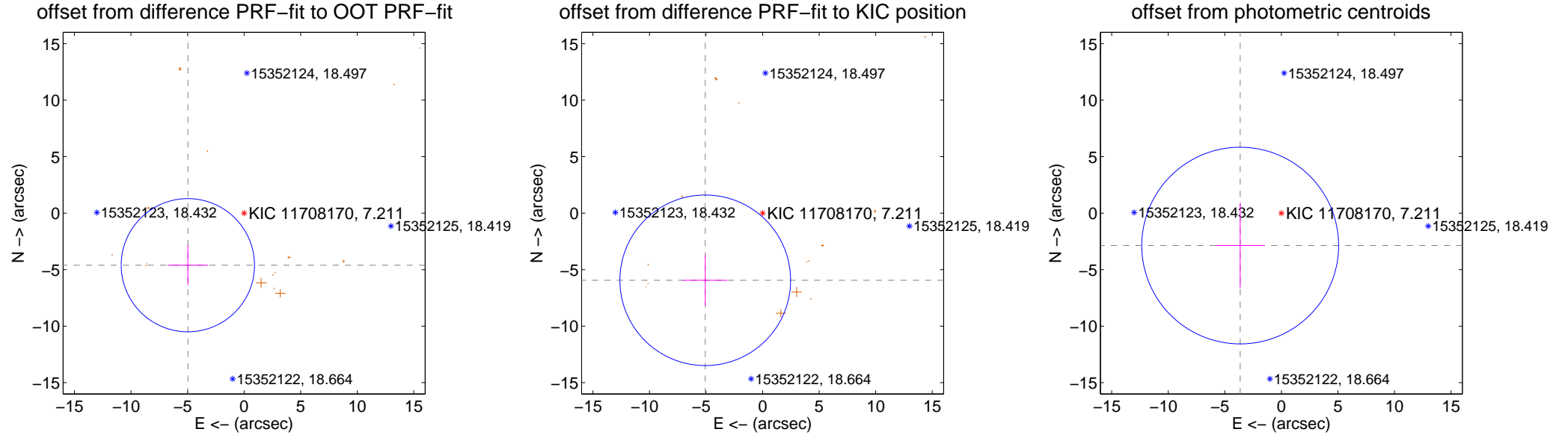
DV Centroid Data

Supplemental centroid analysis for 011708170-01. **Kepler magnitude: 7.21.** Transit SNR 6.57

There are 0 quarters with good PRF difference image offsets

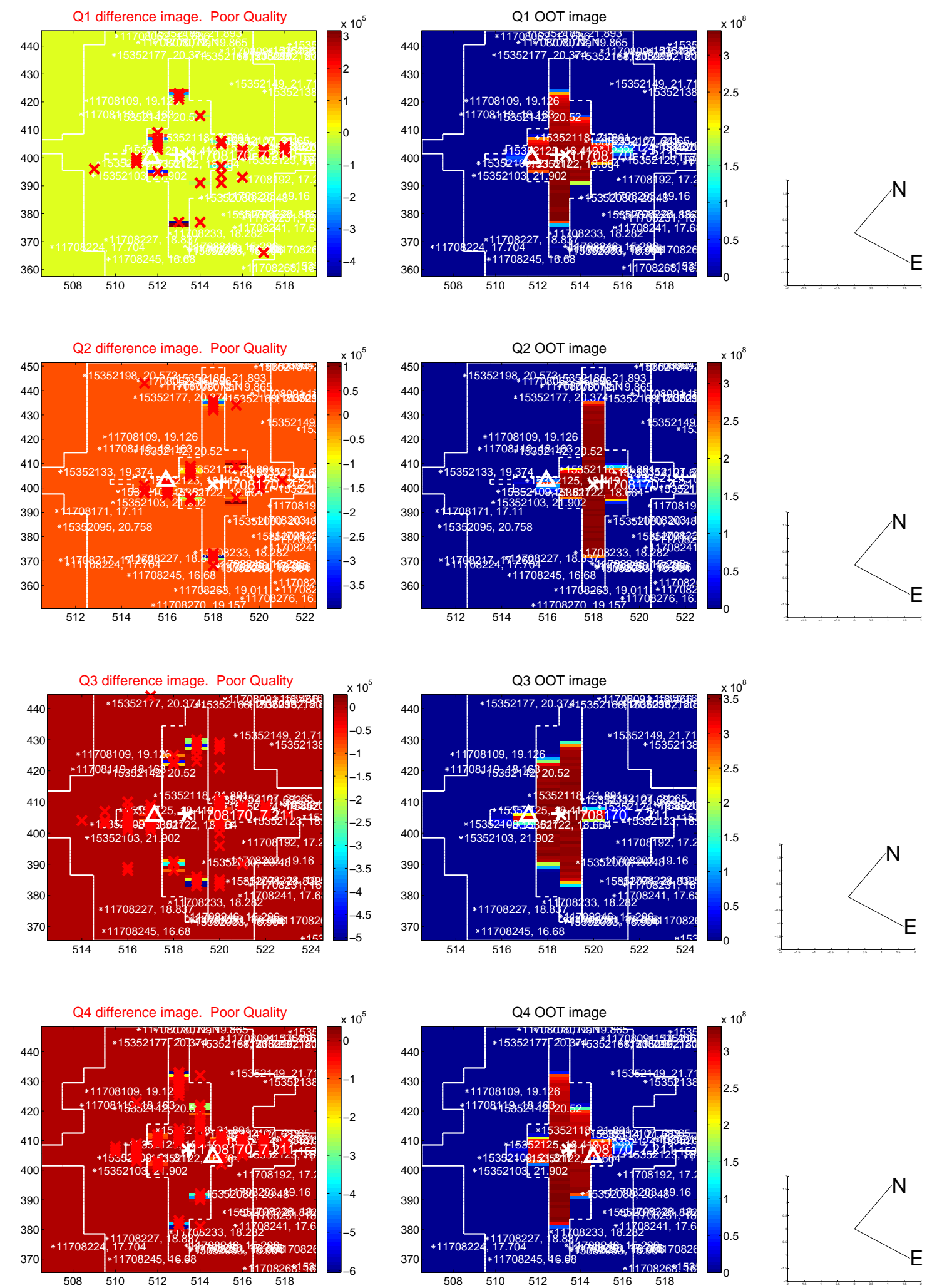
The direct PRF centroid is offset from the target star catalog position by about 1.77 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.782 ± 1.965	3.45	4.976 ± 1.800	-4.608 ± 1.771
PRF-fit source offset from KIC position	7.813 ± 2.516	3.10	5.071 ± 1.969	-5.944 ± 2.220
photometric centroid source offset	4.64 ± 2.90	1.60	3.64 ± 2.19	-2.87 ± 3.77

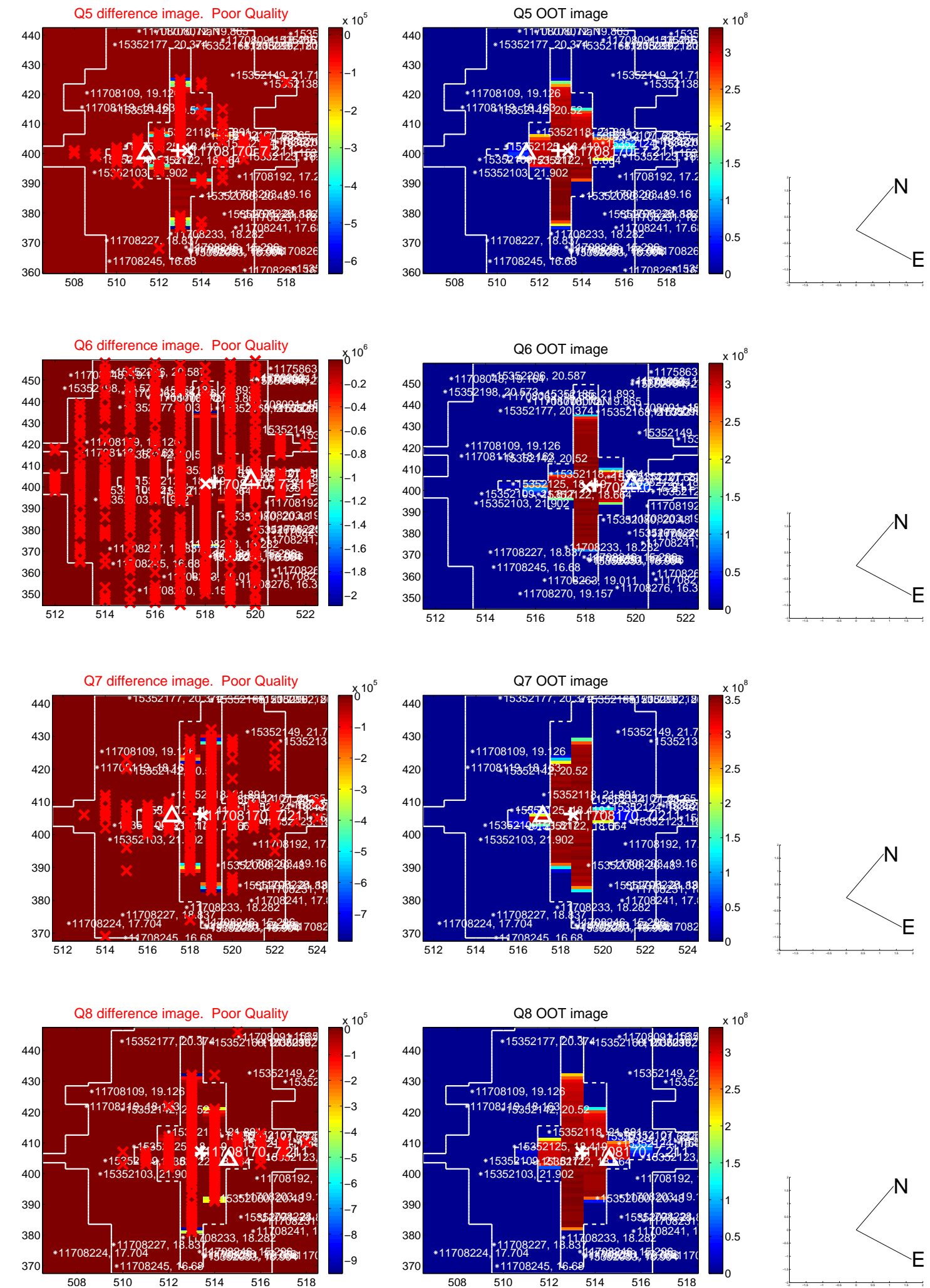


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

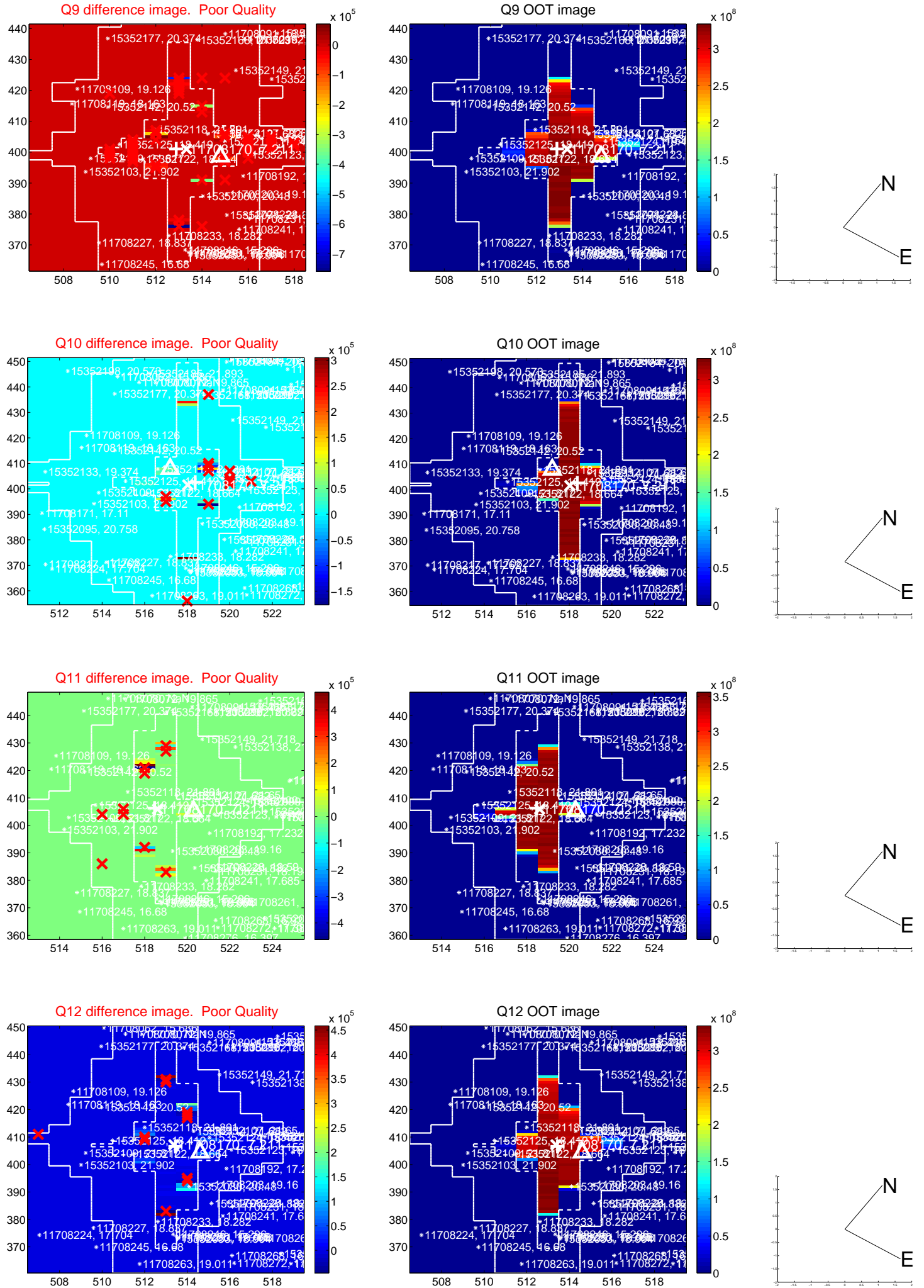
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



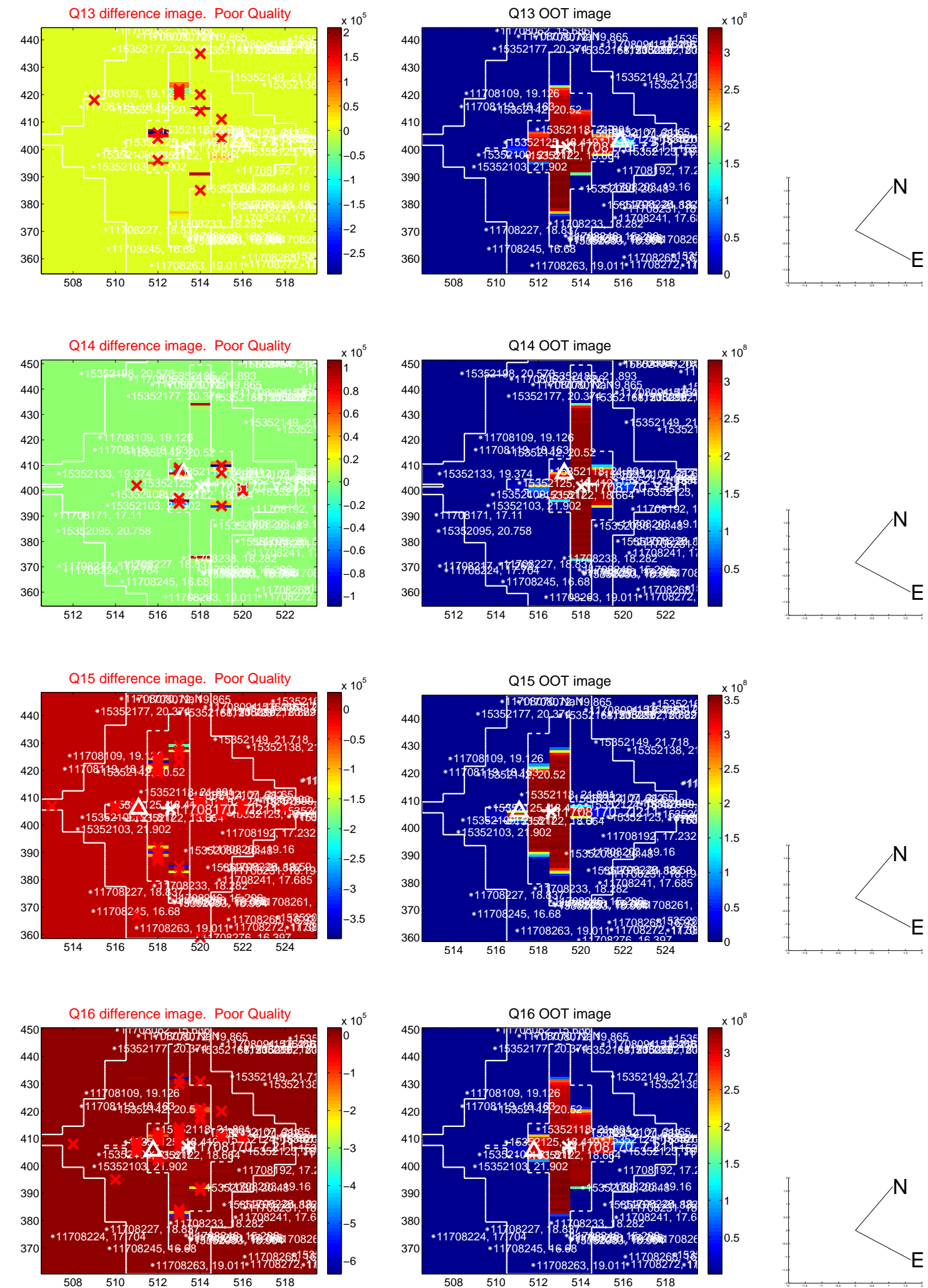
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



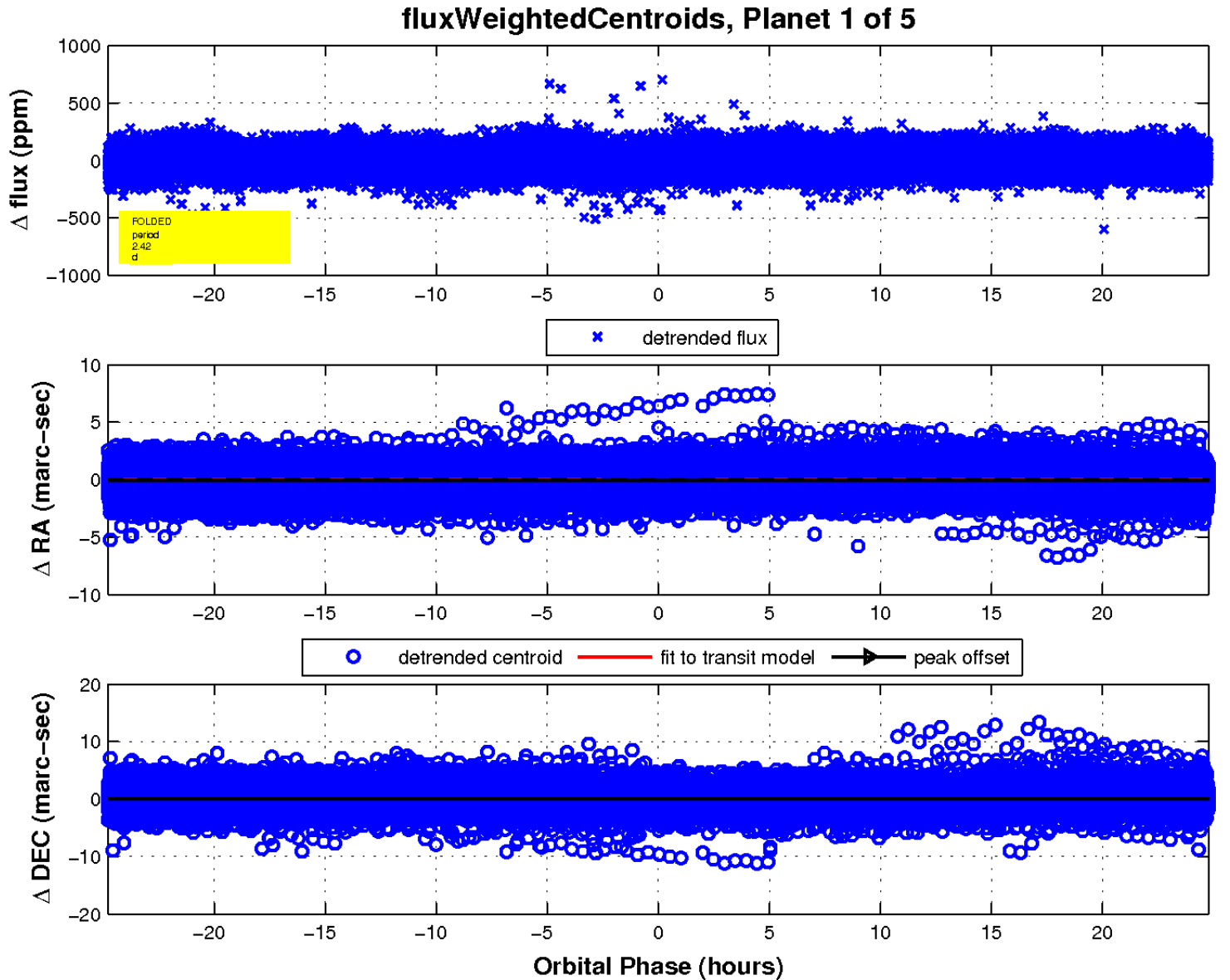
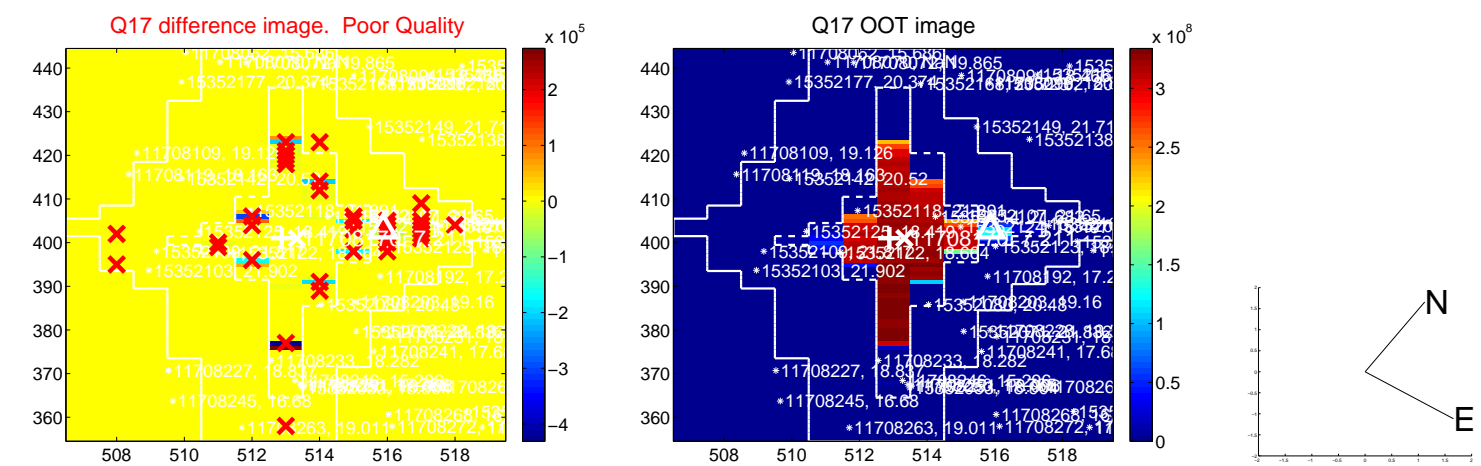
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



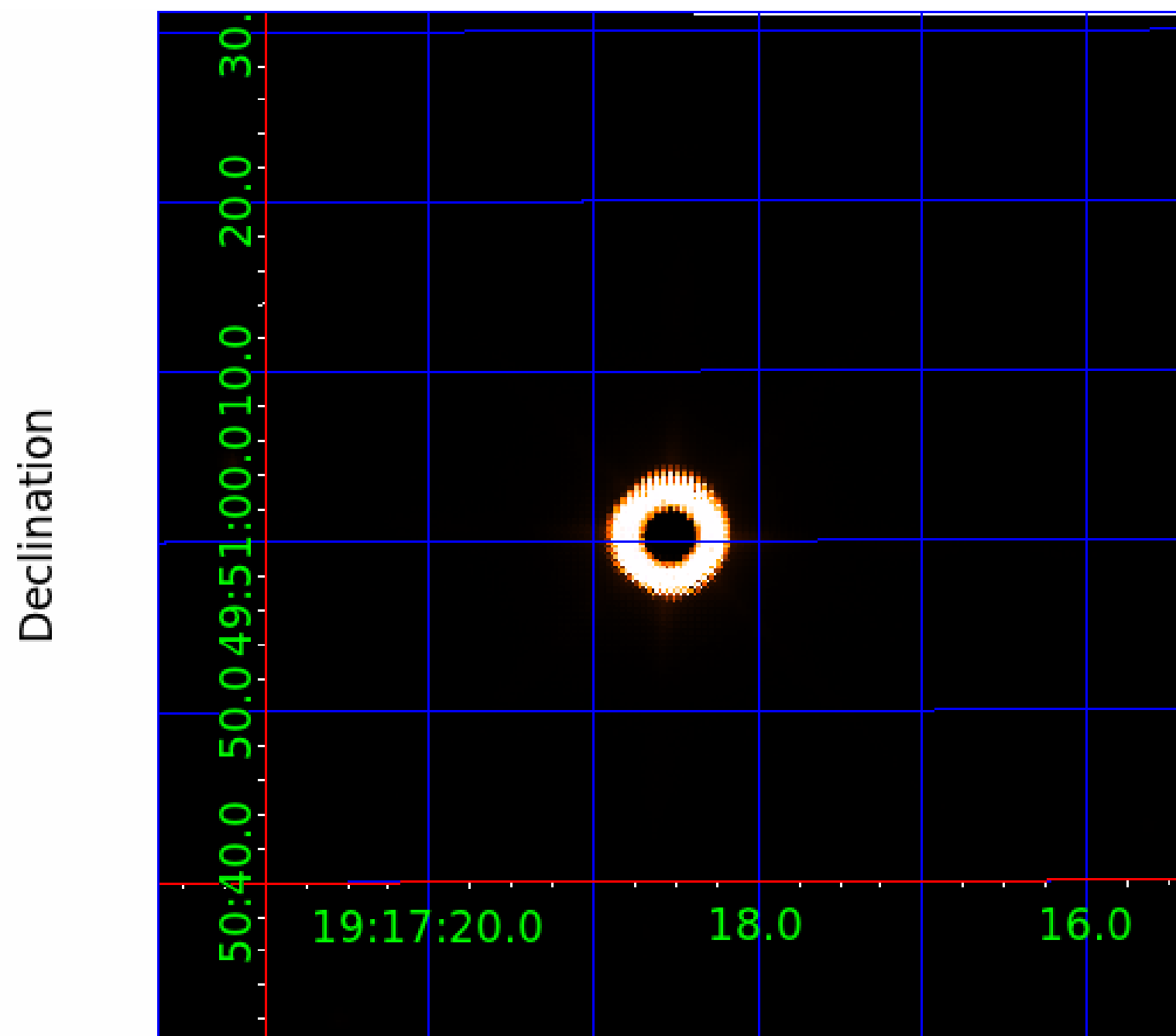
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 011708170

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})
011708170-01	OBS	No	2.424798	133.873066	10.8	8.262	10.8	6.6	1.51	6773	0.58	2825.55
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011708170-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011708170-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
011708170-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011708170-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
011708170-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

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

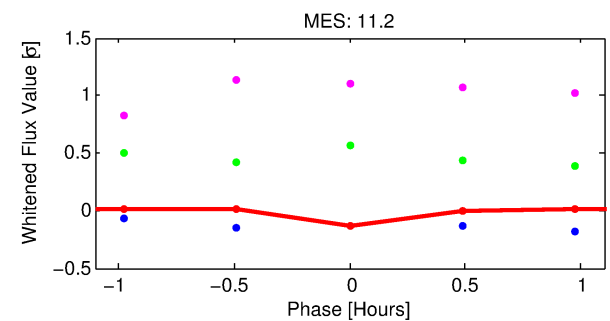
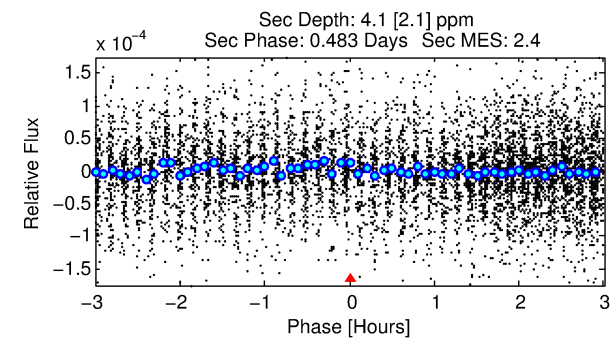
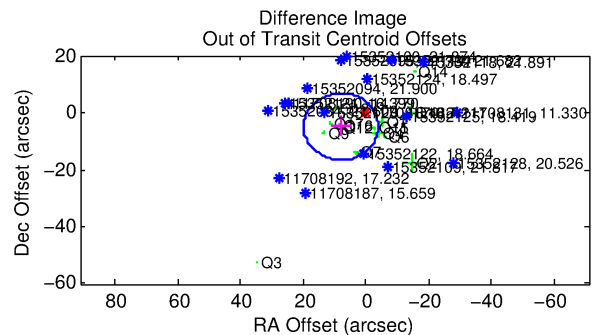
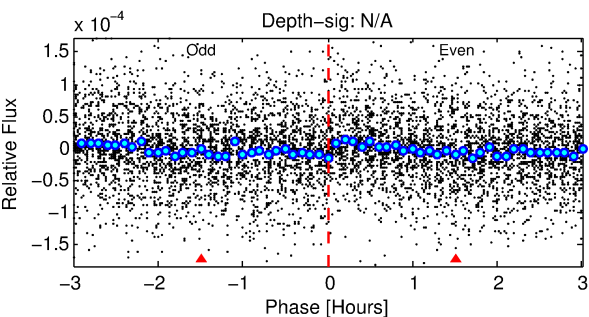
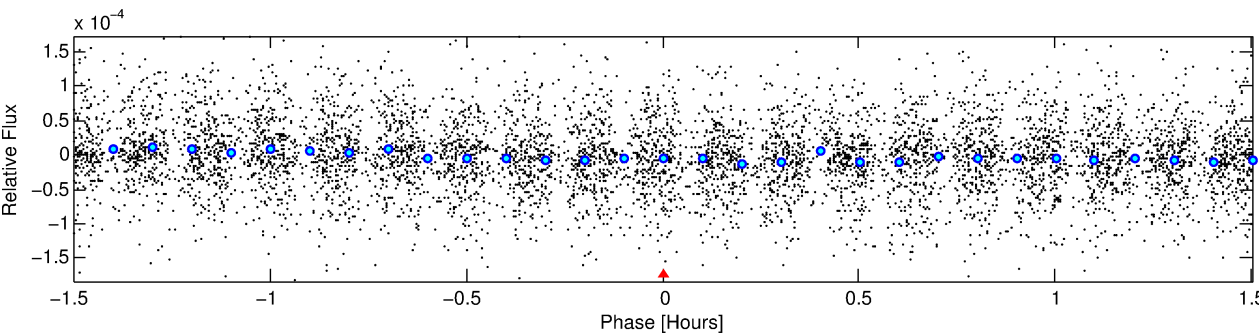
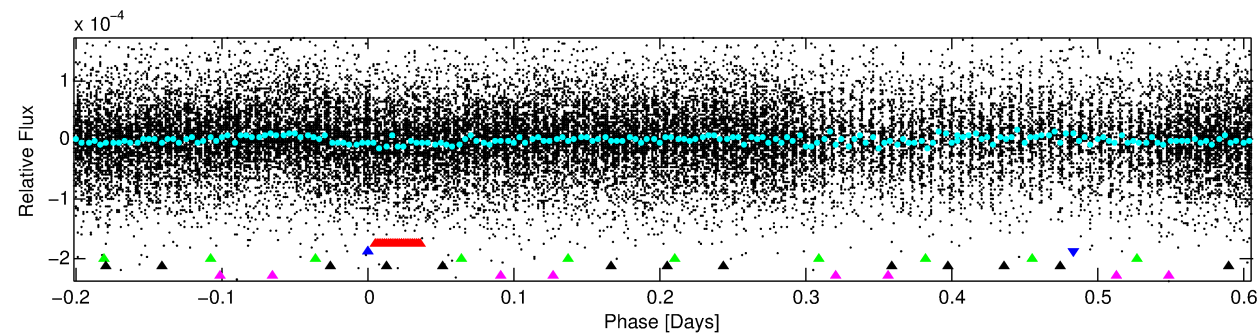
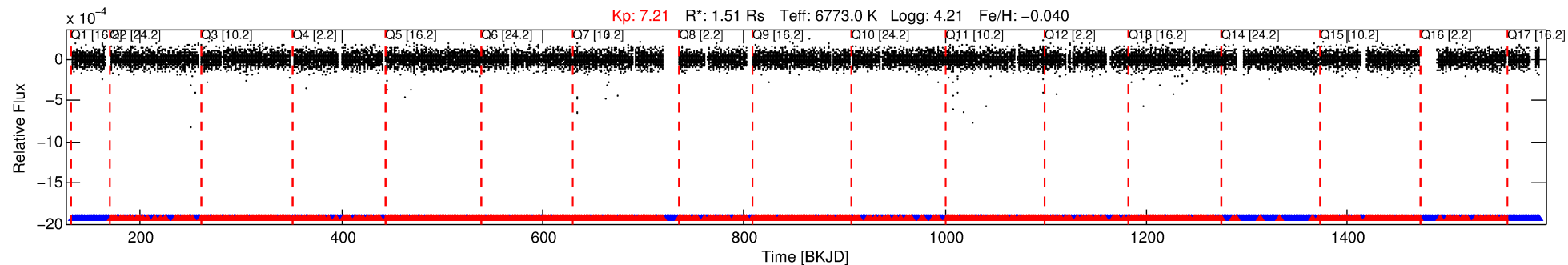
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011708170-02

No Significant Match Found

DV One-Page Summary

KIC: 11708170 Candidate: 2 of 5 Period: 0.808 d



TPS TCE Results:

Period = 0.80825 d
Epoch = 132.0695 BKJD

DV fit results are unavailable

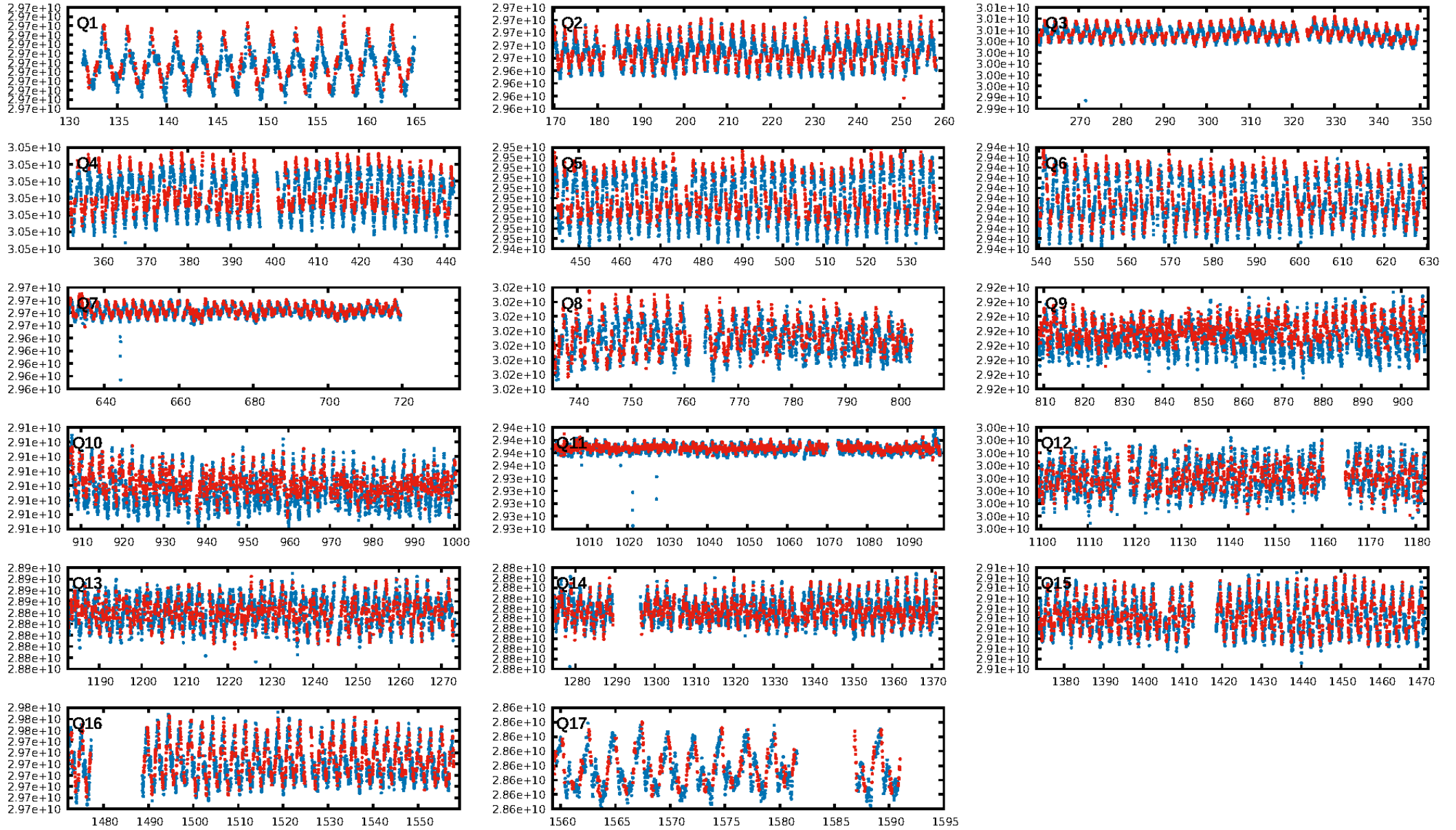
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [4.41σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.71e-13
RollingBand-fgt: 0.32 [342/1057]
GhostDiagnostic-chr: N/A
Centroid-sig: 5.3%
Centroid-so: 5.588 arcsec [1.32σ]
OotOffset-rm: 9.308 arcsec [2.36σ]
KicOffset-rm: 11.050 arcsec [2.45σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-st: 4/4/3/4 [15]
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DiffImageOverlap-fno: 1.00 [17/17]

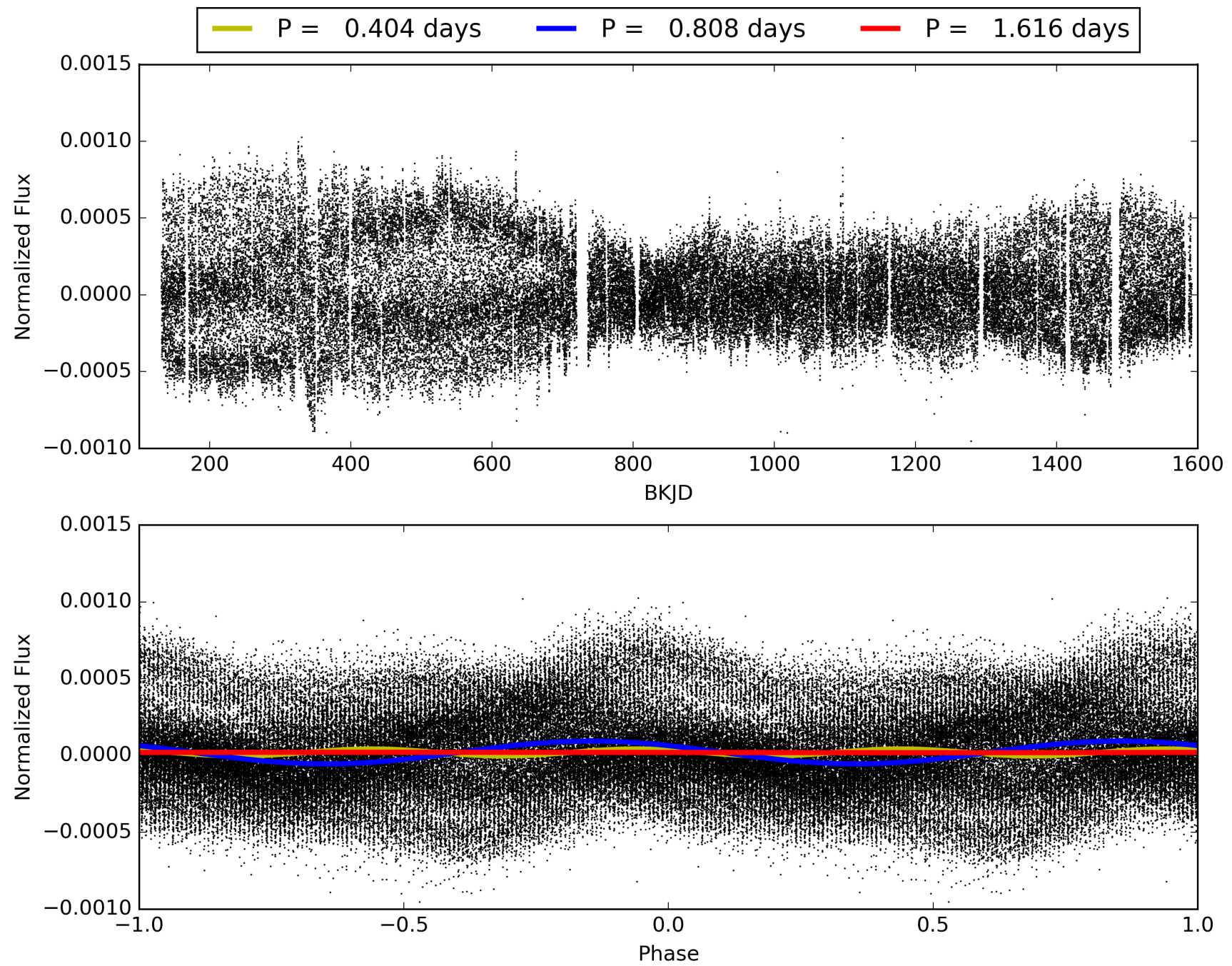
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:24:00 Z

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

TCE 011708170-02, PDC Light Curves

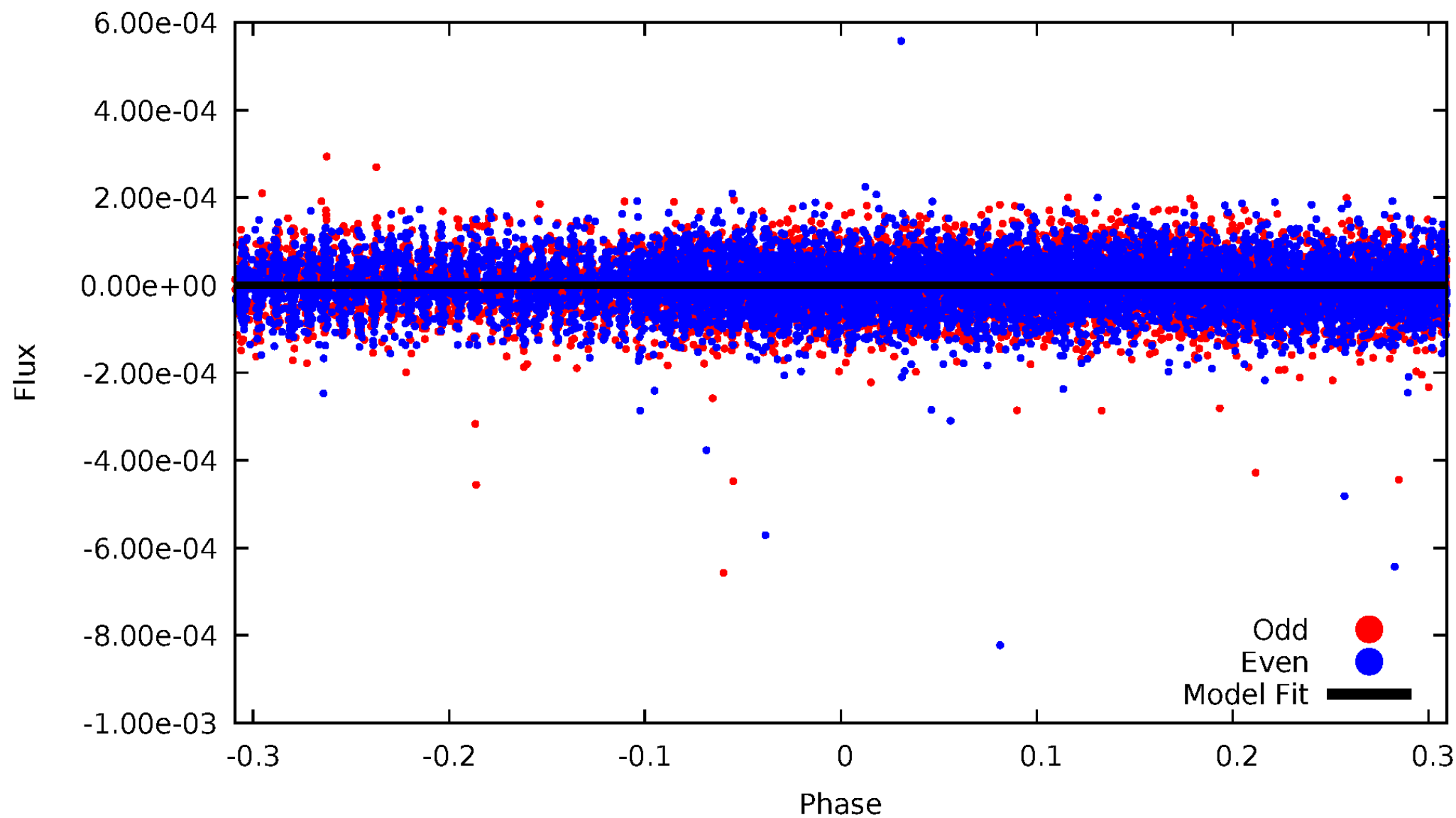


TCE 011708170-02



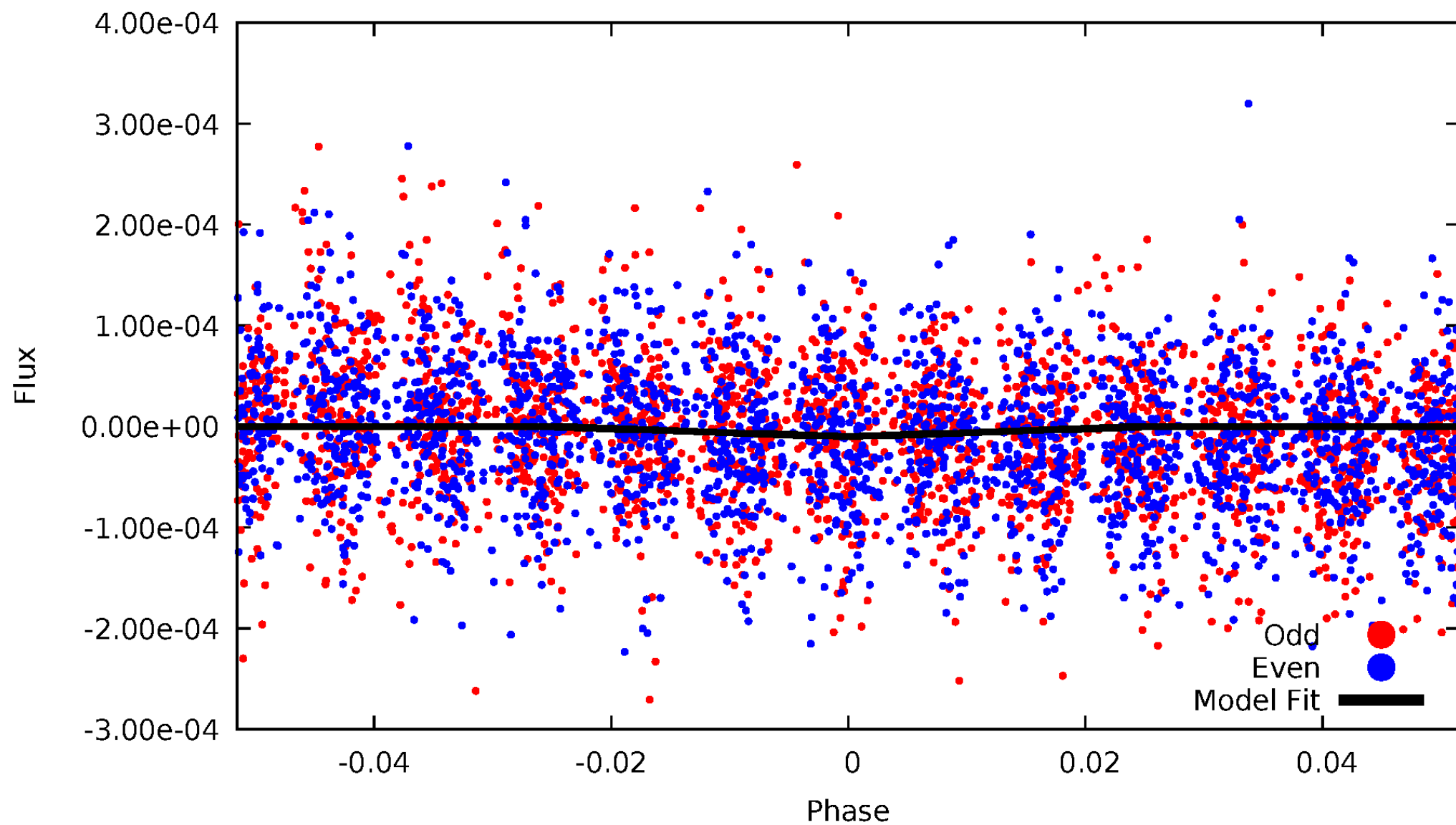
DV Odd/Even

TCE 011708170-02



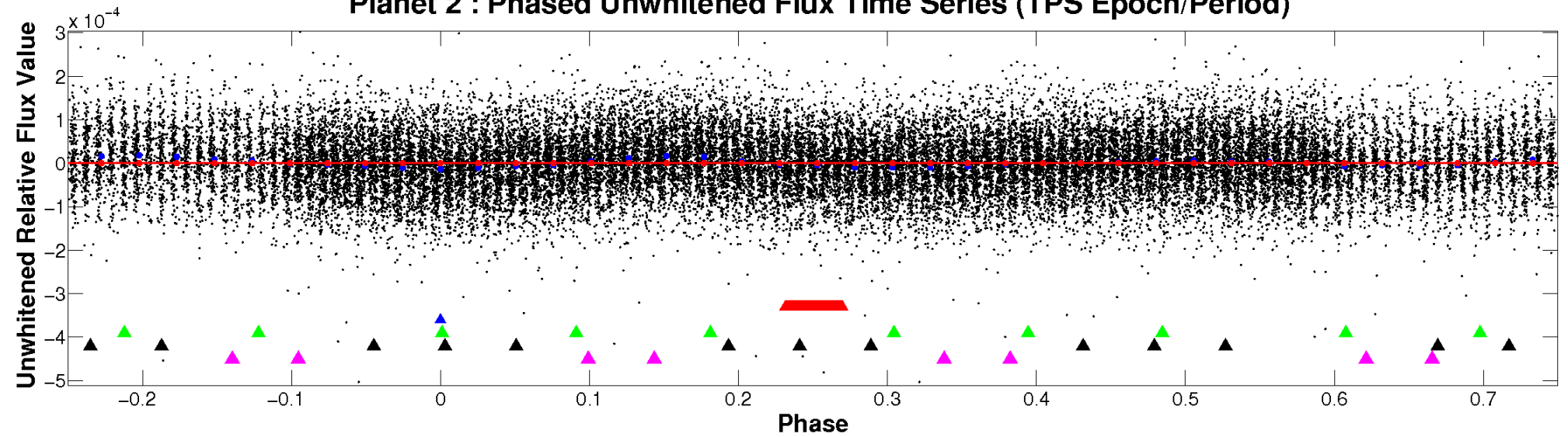
ALT Odd/Even

TCE 011708170-02

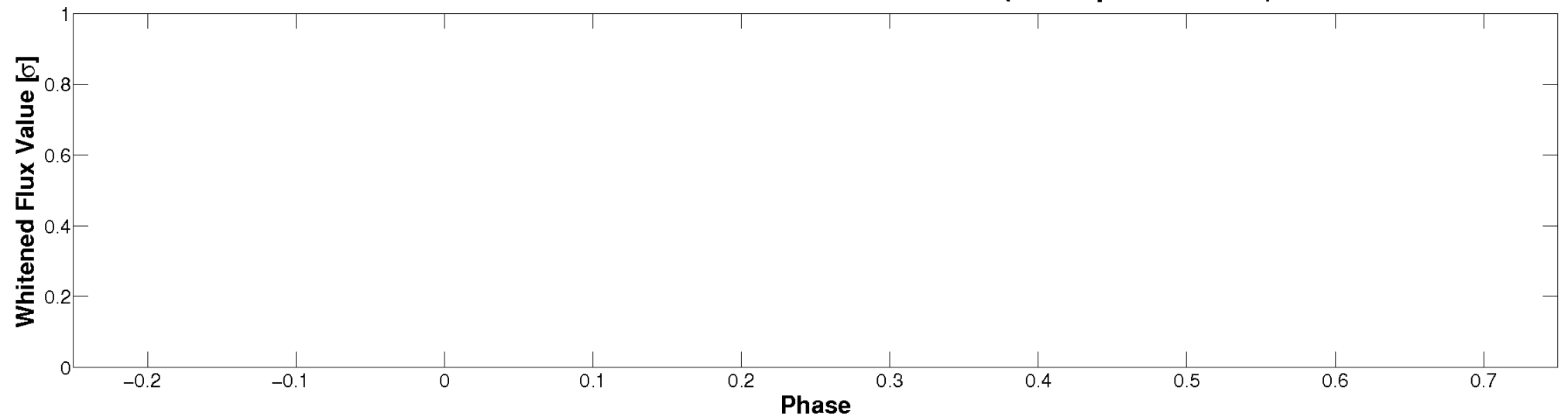


Non-Whitened Vs. Whitened Light Curve

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

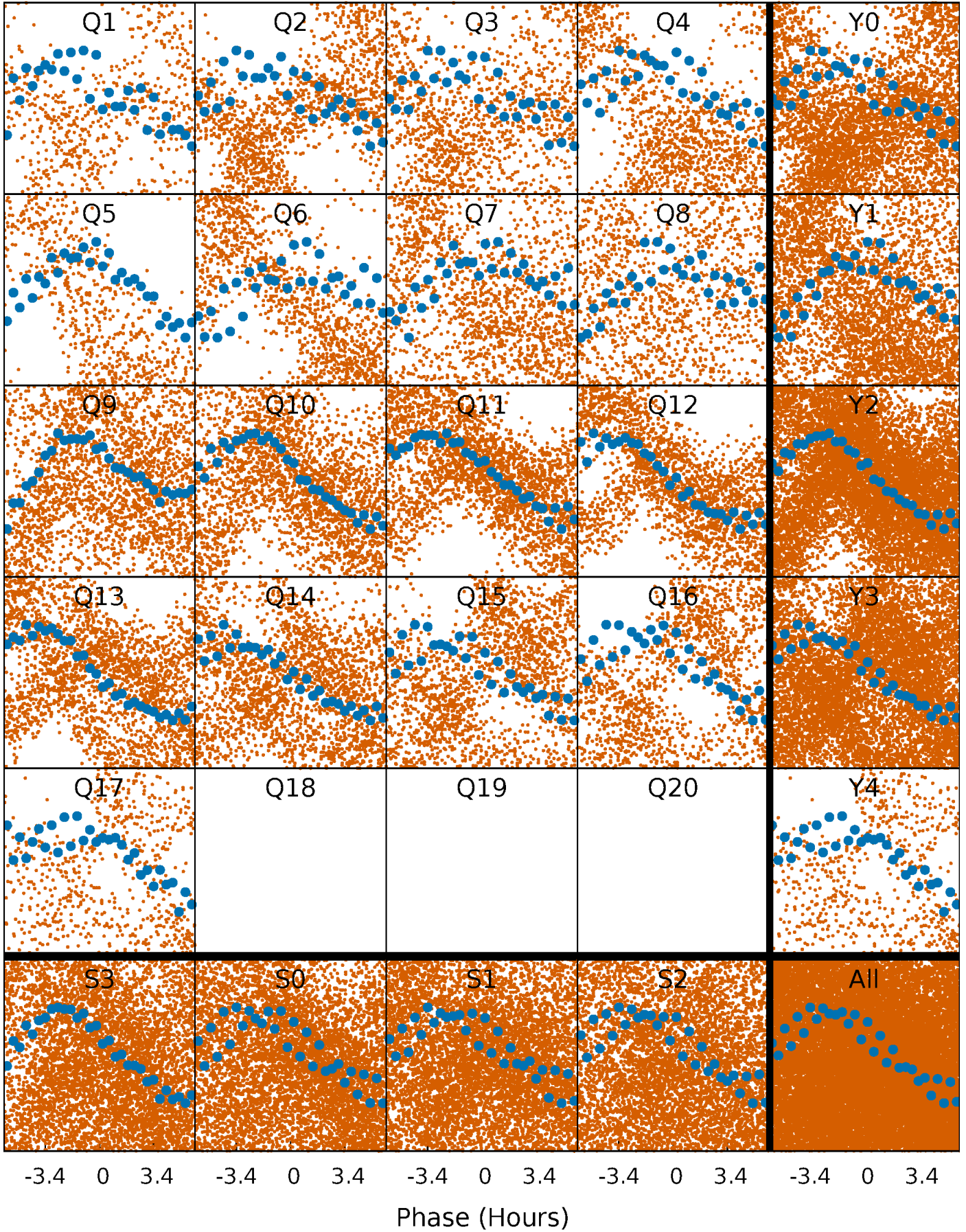


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



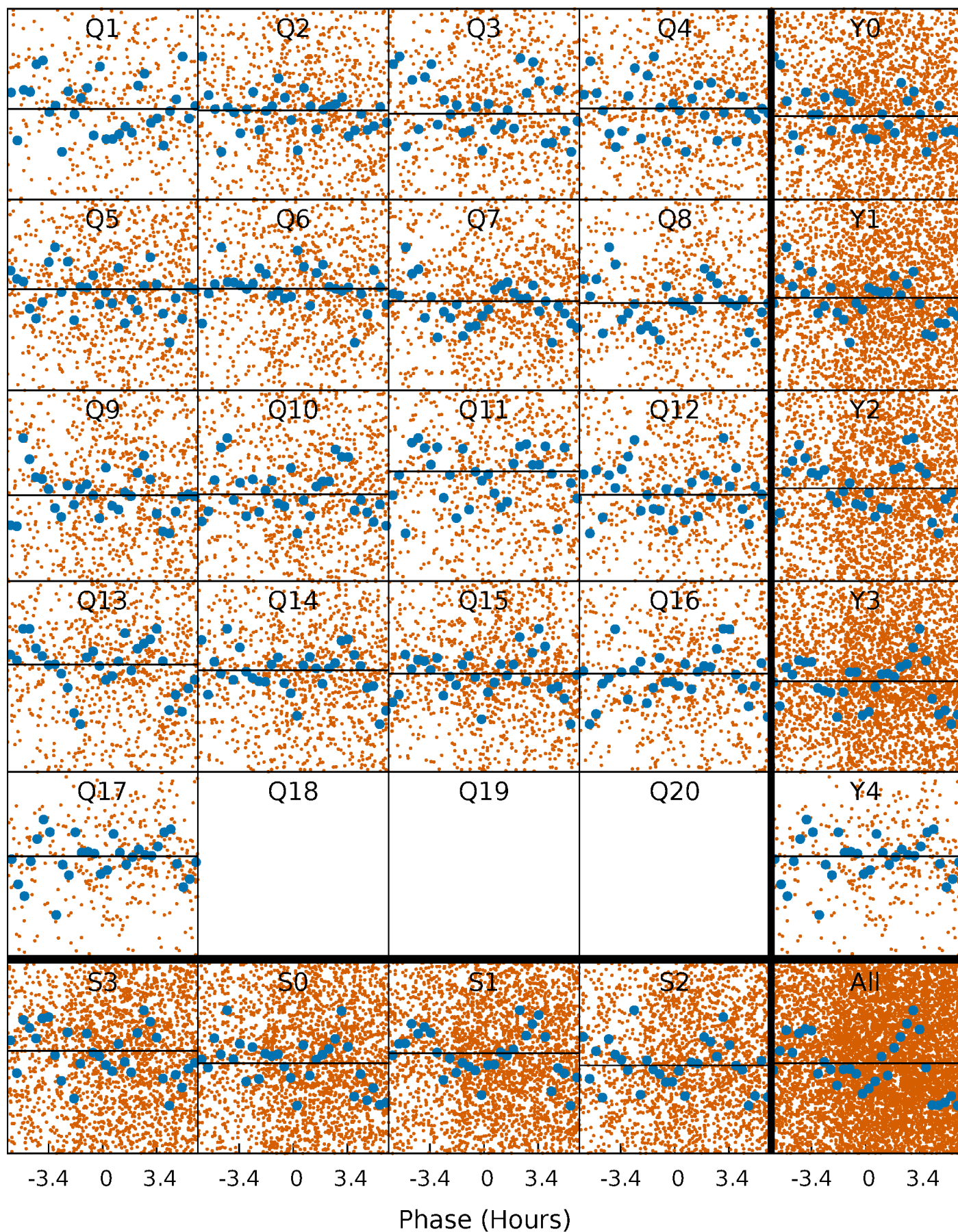
PDC Quarter-Phased Transit Curves

TCE 011708170-02 P= 0.808249 Days $T_0=132.069527$ (BKJD)



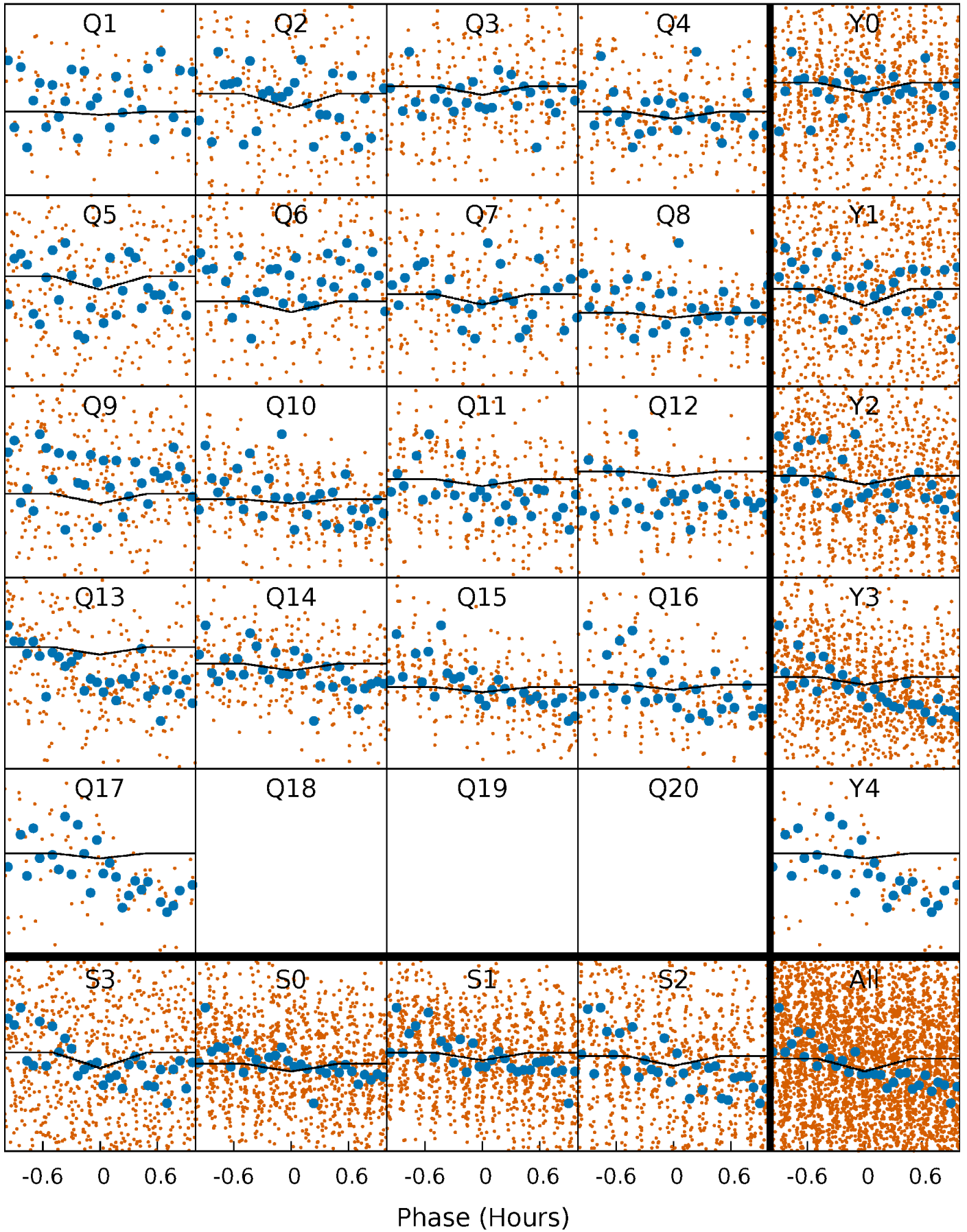
DV Quarter-Phased Transit Curves

TCE 011708170-02 P= 0.808249 Days $T_0=132.069527$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

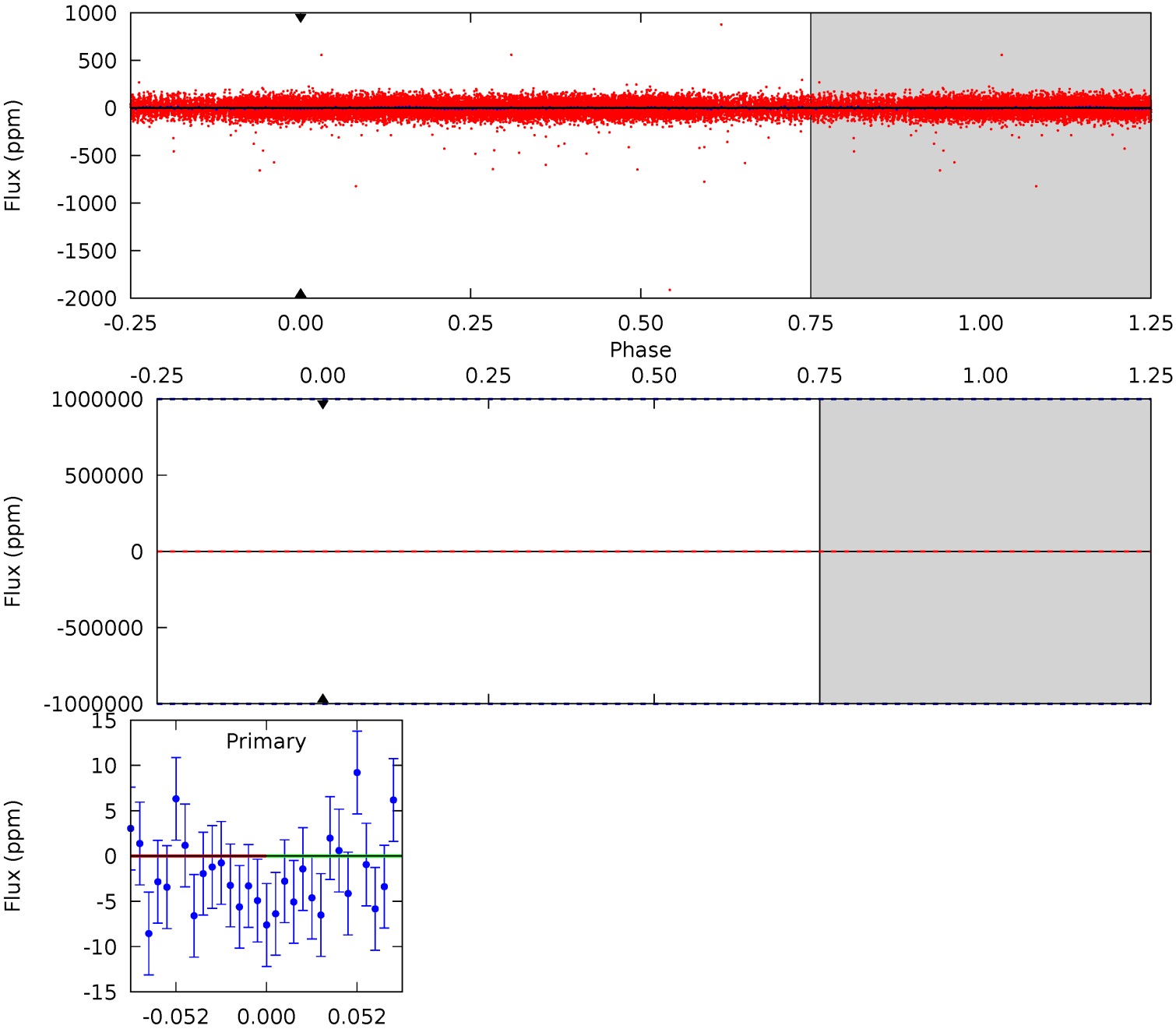
TCE 011708170-02 P= 0.808249 Days $T_0=132.251368$ (BKJD)



DV Model-Shift Uniqueness Test

011708170-02, P = 0.808249 Days, E = 131.261278 Days

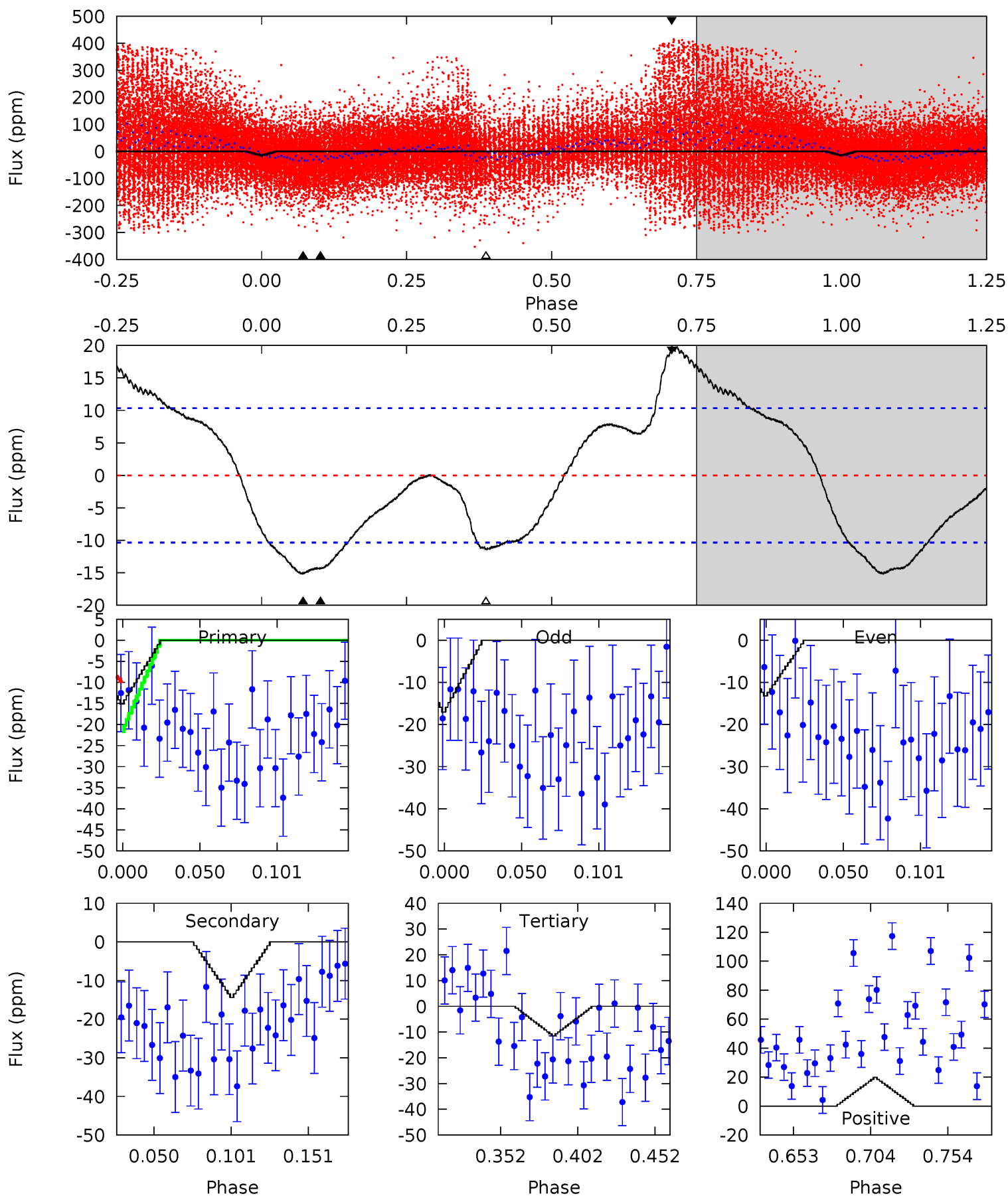
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

011708170-02, P = 0.808249 Days, E = 131.443119 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.88	6.54	5.20	9.00	4.71	1.96	3.99	1.68	-2.12	1.34	-2.46	0.88	1.22	0.57	2.52



Stellar Parameters For KIC 011708170

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6773^{+108}_{-162}	$4.209^{+0.076}_{-0.114}$	$-0.040^{+0.150}_{-0.150}$	$1.510^{+0.256}_{-0.170}$	$1.351^{+0.098}_{-0.109}$	$0.552^{+0.207}_{-0.178}$
	+2%/-2%	+2%/-3%	+375%/-375%	+17%/-11%	+7%/-8%	+38%/-32%
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 011708170-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$10.40^{+12.49}_{-7.42}$	3759^{+155}_{-149}	-5856^{+46705}_{-36320}	$-3.736^{+325.212}_{-343.778}$
Alt.	-14 ± 2	$11.60^{+11.44}_{-7.89}$	3753^{+157}_{-145}	-3461^{+517}_{-123}	$0.021^{+0.189}_{-0.016}$

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

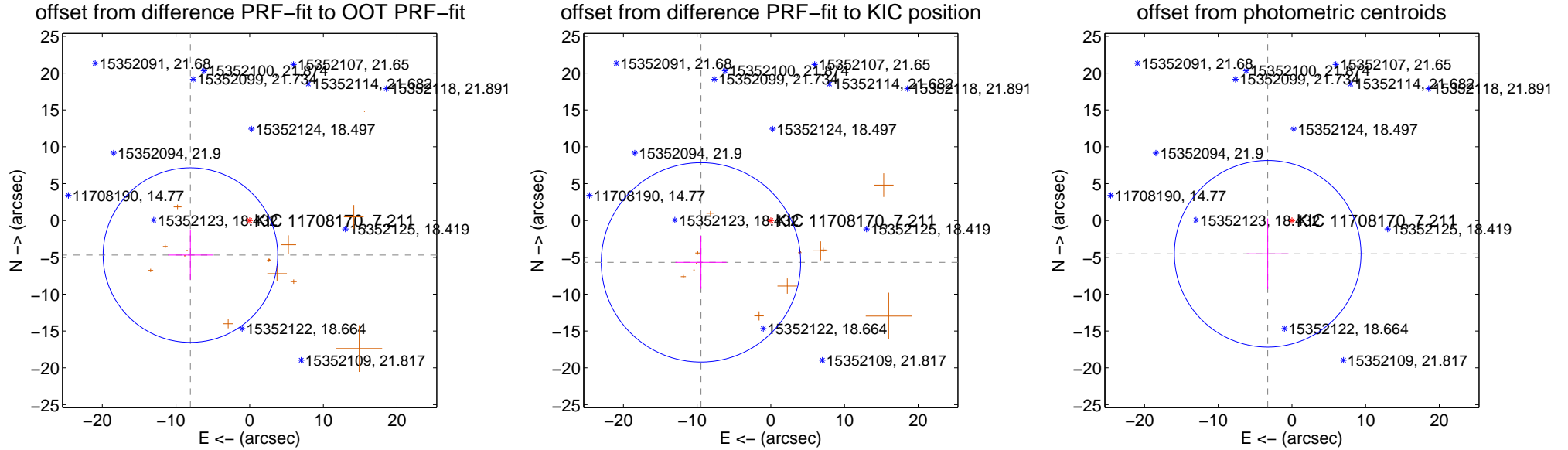
DV Centroid Data

Supplemental centroid analysis for 011708170-02. **Kepler magnitude: 7.21.** Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

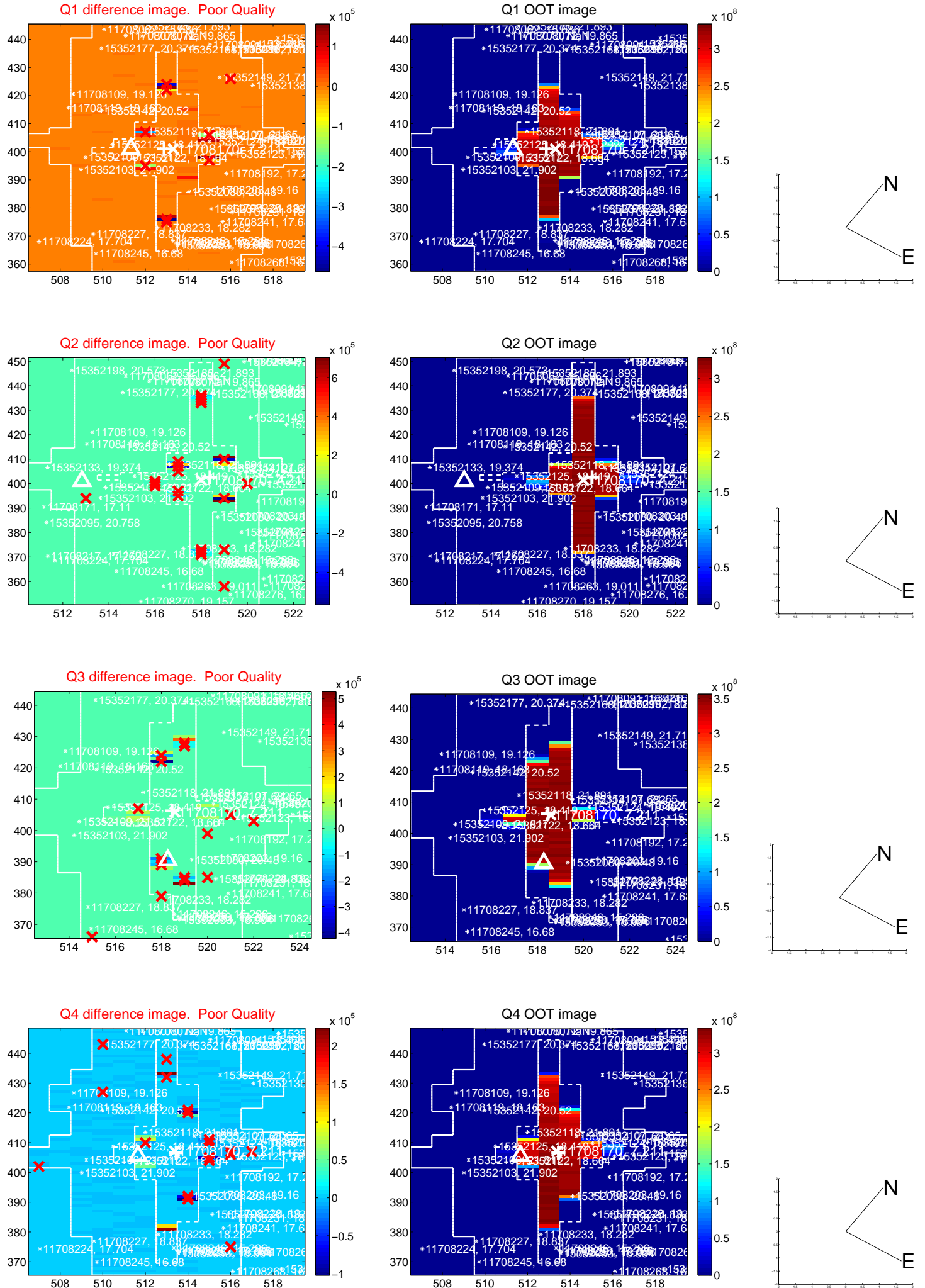
The direct PRF centroid is offset from the target star catalog position by about 1.77 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	9.308 ± 3.949	2.36	8.037 ± 3.026	-4.696 ± 3.340
PRF-fit source offset from KIC position	11.050 ± 4.509	2.45	9.478 ± 3.467	-5.681 ± 3.605
photometric centroid source offset	5.59 ± 4.22	1.32	3.29 ± 2.84	-4.52 ± 4.79

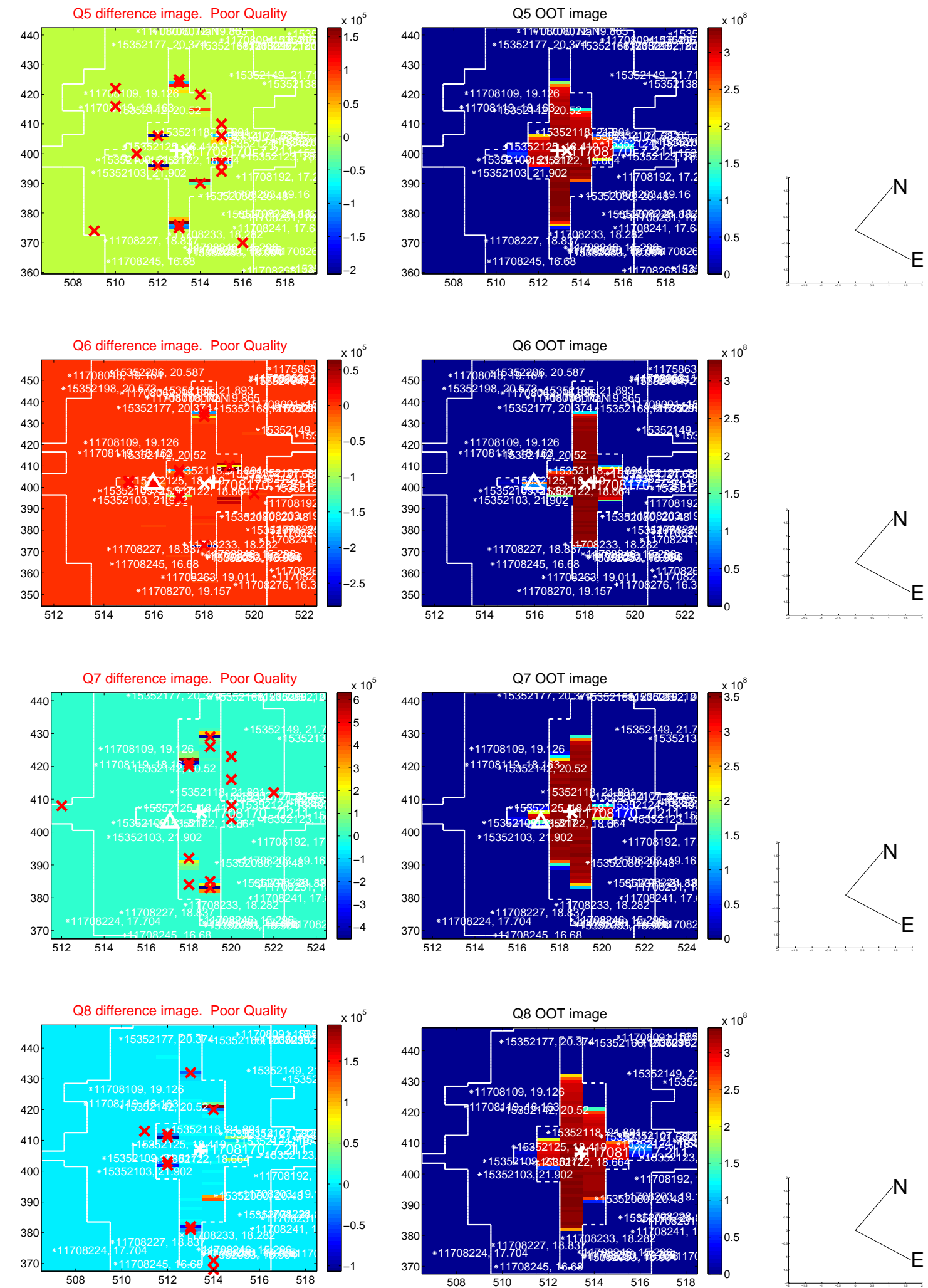


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

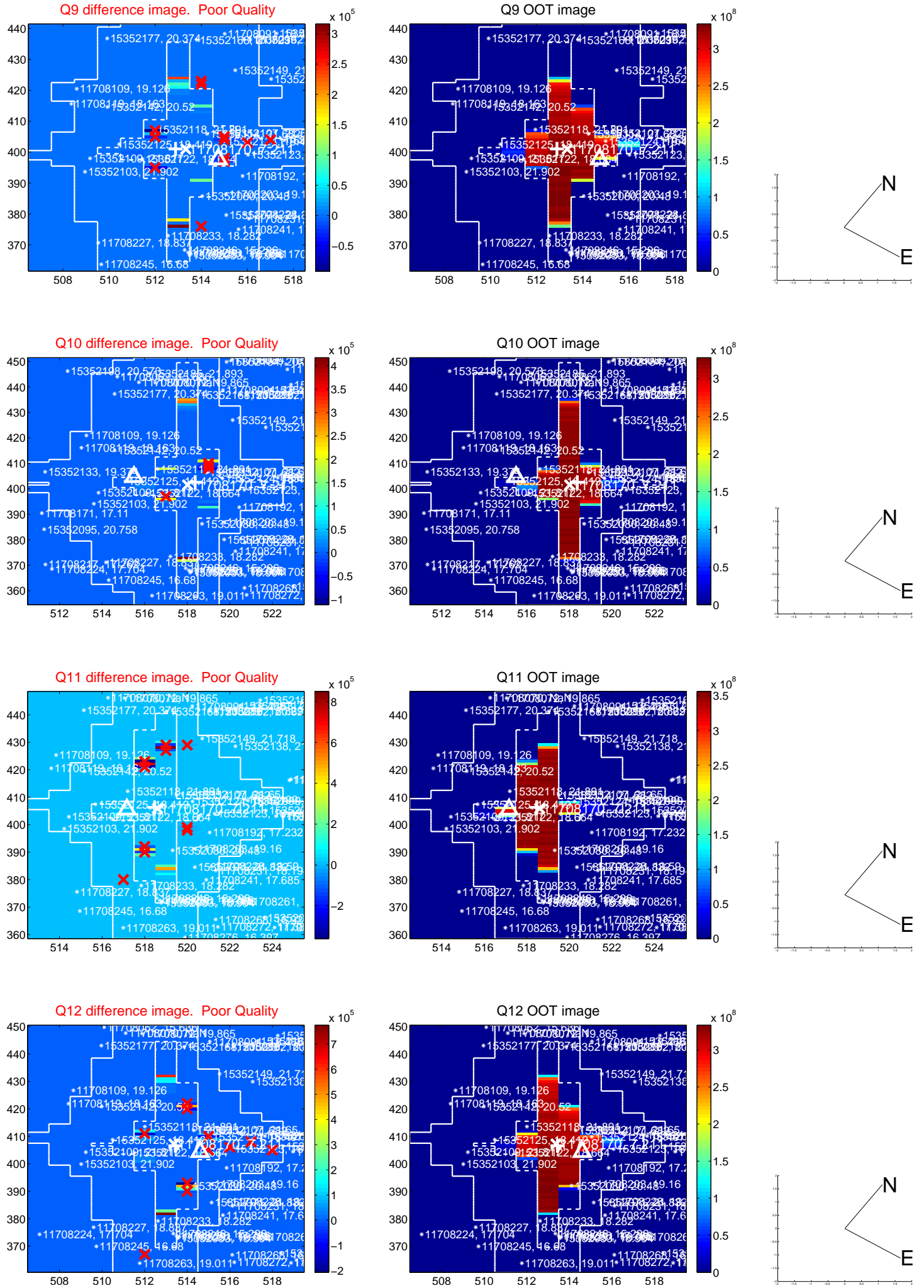
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



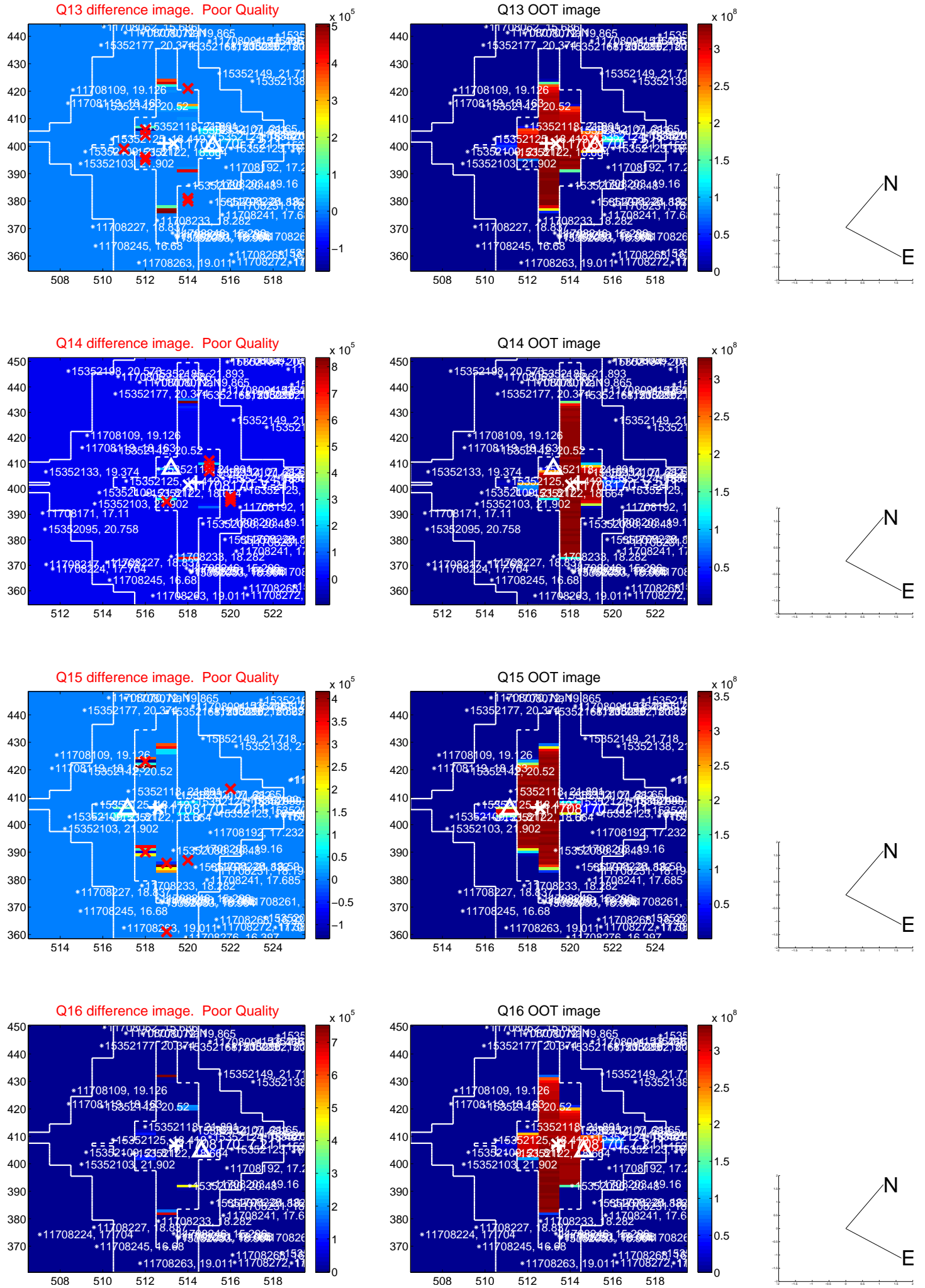
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



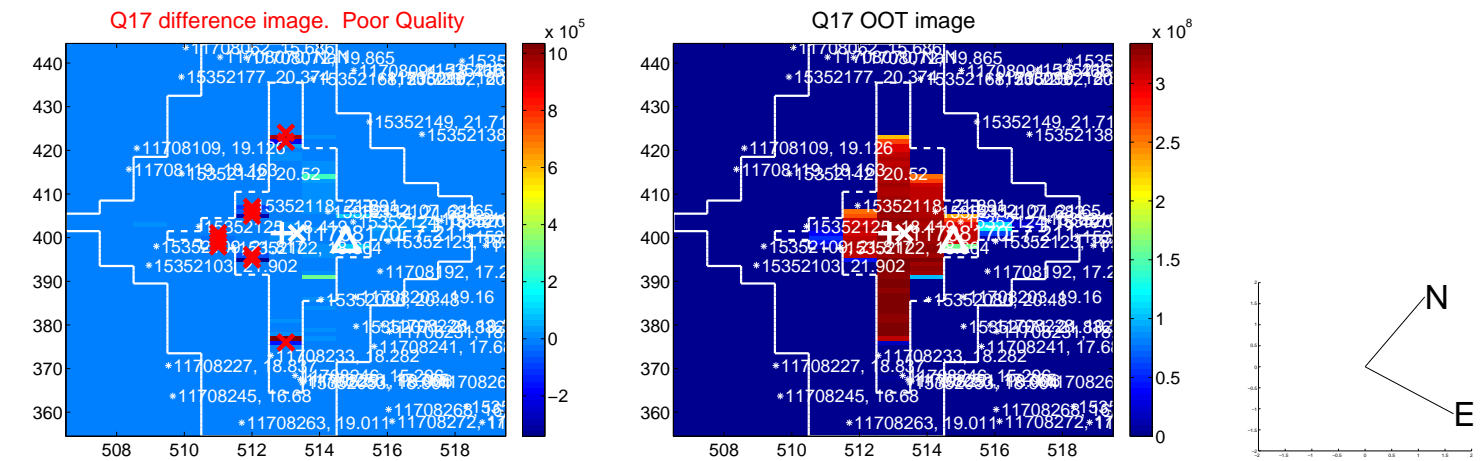
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



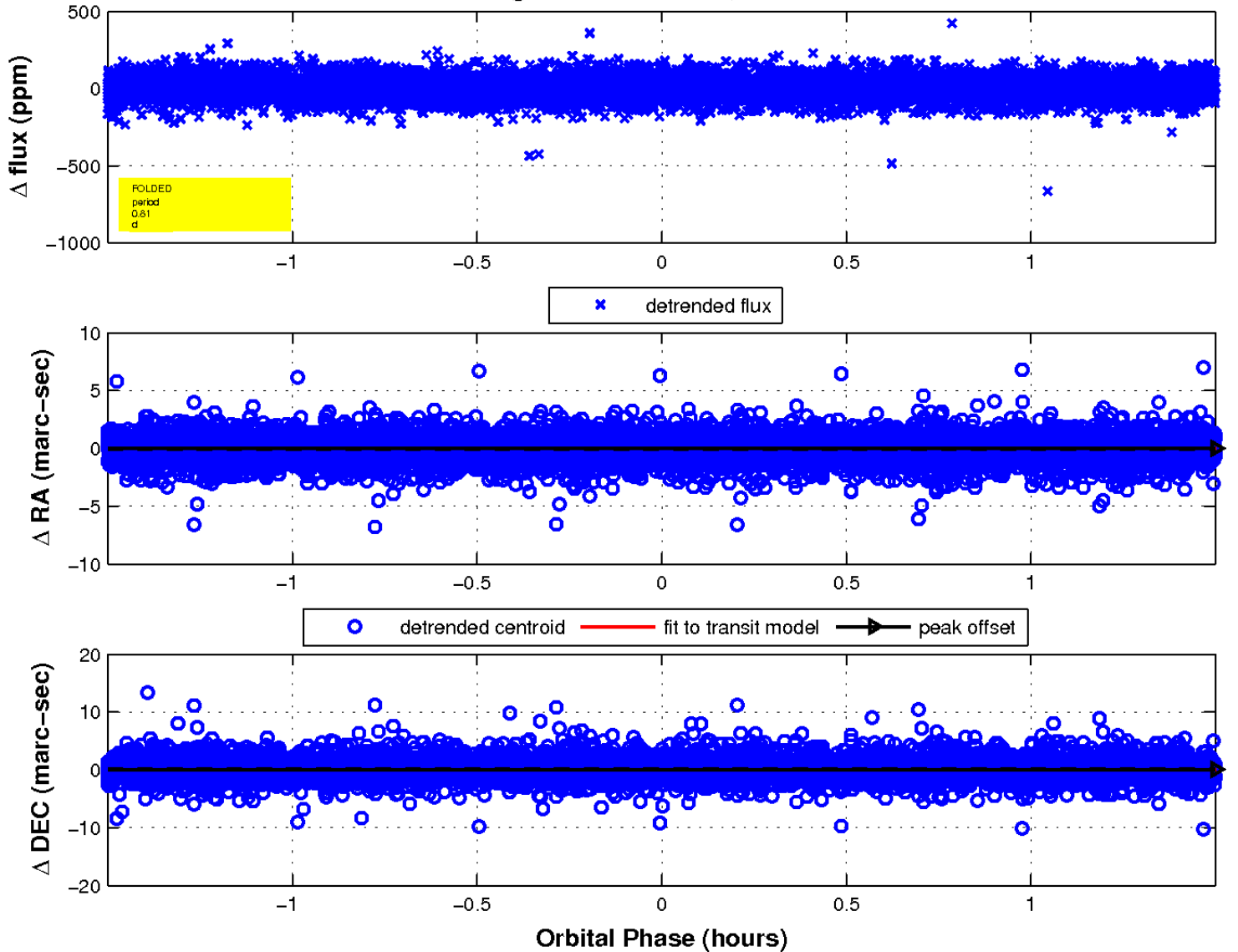
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



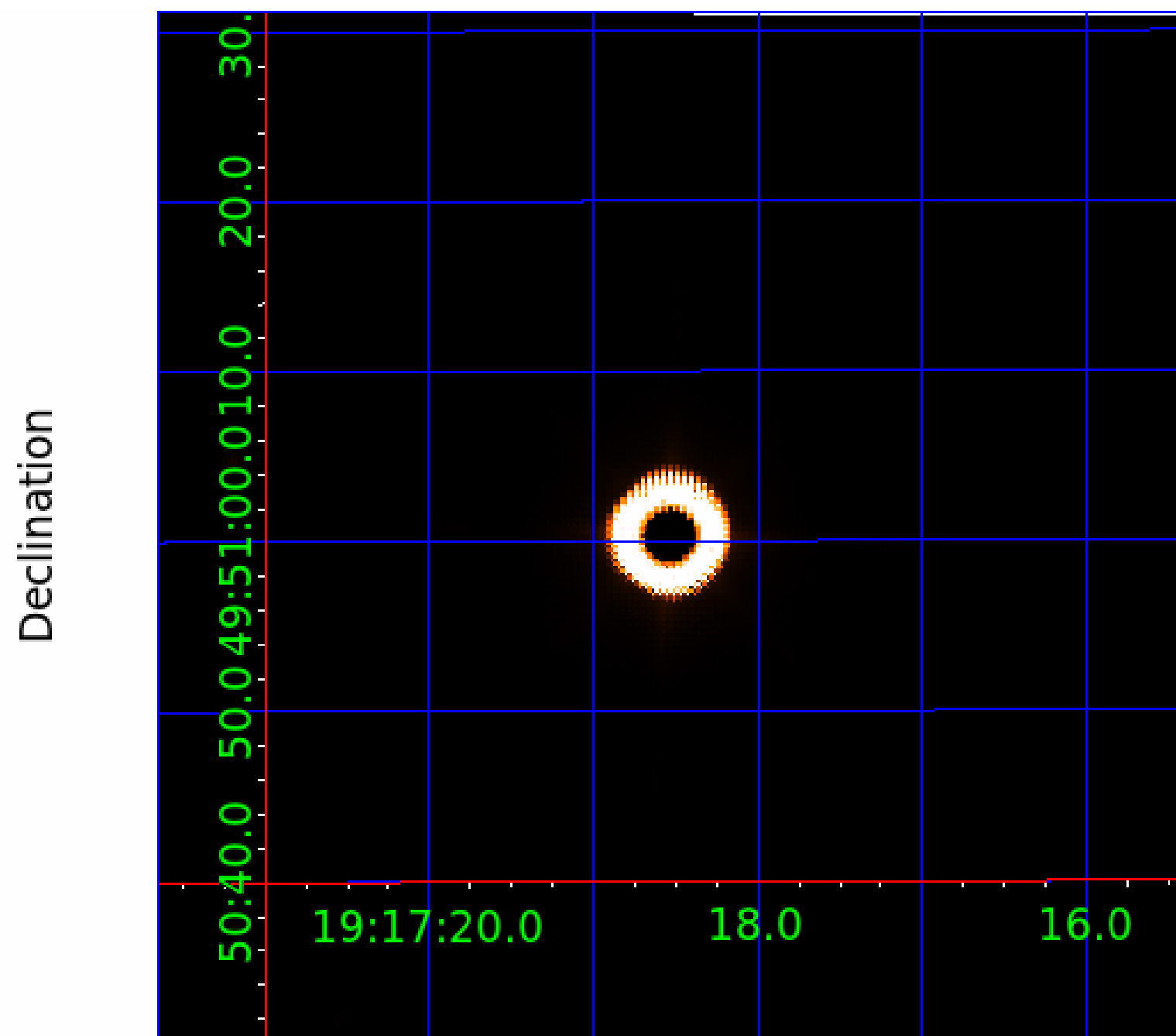
white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 2 of 5



UKIRT Image



KIC 011708170

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})
011708170-01	OBS	No	2.424798	133.873066	10.8	8.262	10.8	6.6	1.51	6773	0.58	2825.55
011708170-02	OBS	No	0.808249	132.069527	13.3	3.000	11.2	-1.0	1.51	6773	0.56	12225.78
011708170-03	OBS	No	135.540619	236.824780	132.2	7.497	8.7	9.6	1.51	6773	2.15	13.22
011708170-04	OBS	No	116.195398	146.350826	151.5	0.764	8.4	3.7	1.51	6773	1.97	16.23
011708170-05	OBS	No	186.898546	211.815923	139.7	4.798	8.3	8.2	1.51	6773	2.06	8.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011708170-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011708170-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
011708170-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011708170-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
011708170-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

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

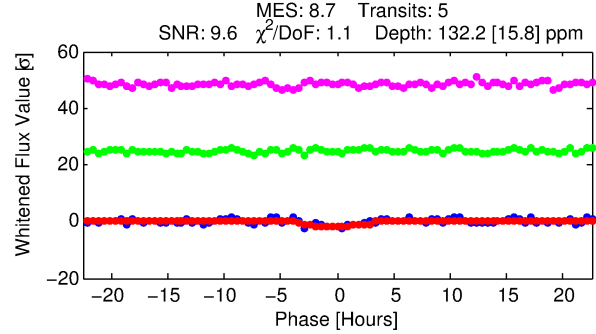
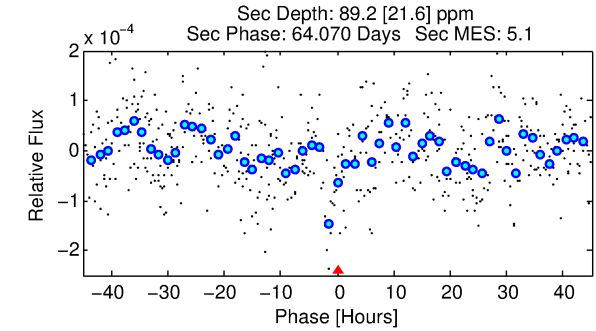
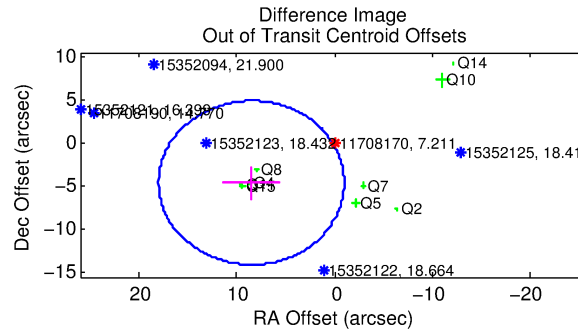
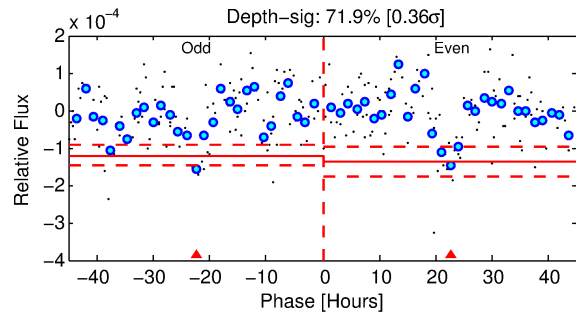
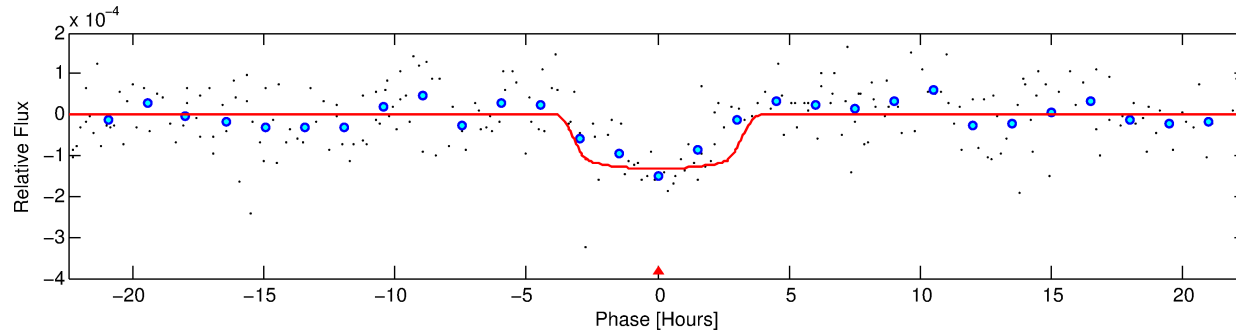
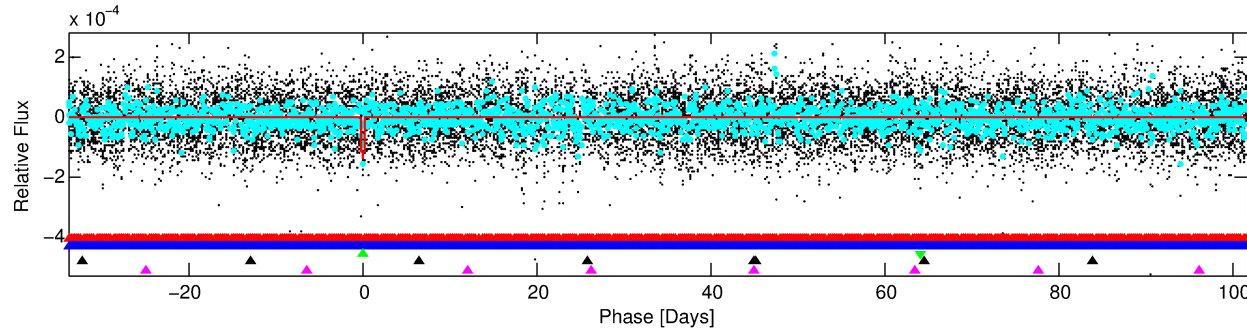
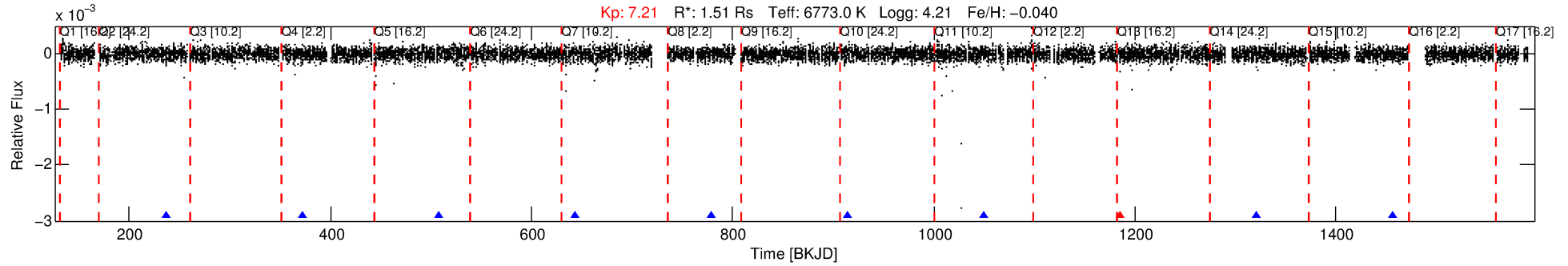
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011708170-03

No Significant Match Found

DV One-Page Summary

KIC: 11708170 Candidate: 3 of 5 Period: 135.541 d



DV Fit Results:

Period = 135.54062 [0.00212] d
Epoch = 236.8248 [0.0125] BKJD
Rp/R* = 0.0131 [0.0014]
a/R* = 46.44 [23.37]
b = 0.96 [0.05]
Seff = 13.22 [3.03]
Teq = 486 [28] K
Rp = 2.15 [0.43] Re
a = 0.5702 [0.0815] AU
Ag = 3442.42 [1322.20] [2.60σ]
Teffp = 5758 [485] K [10.86σ]

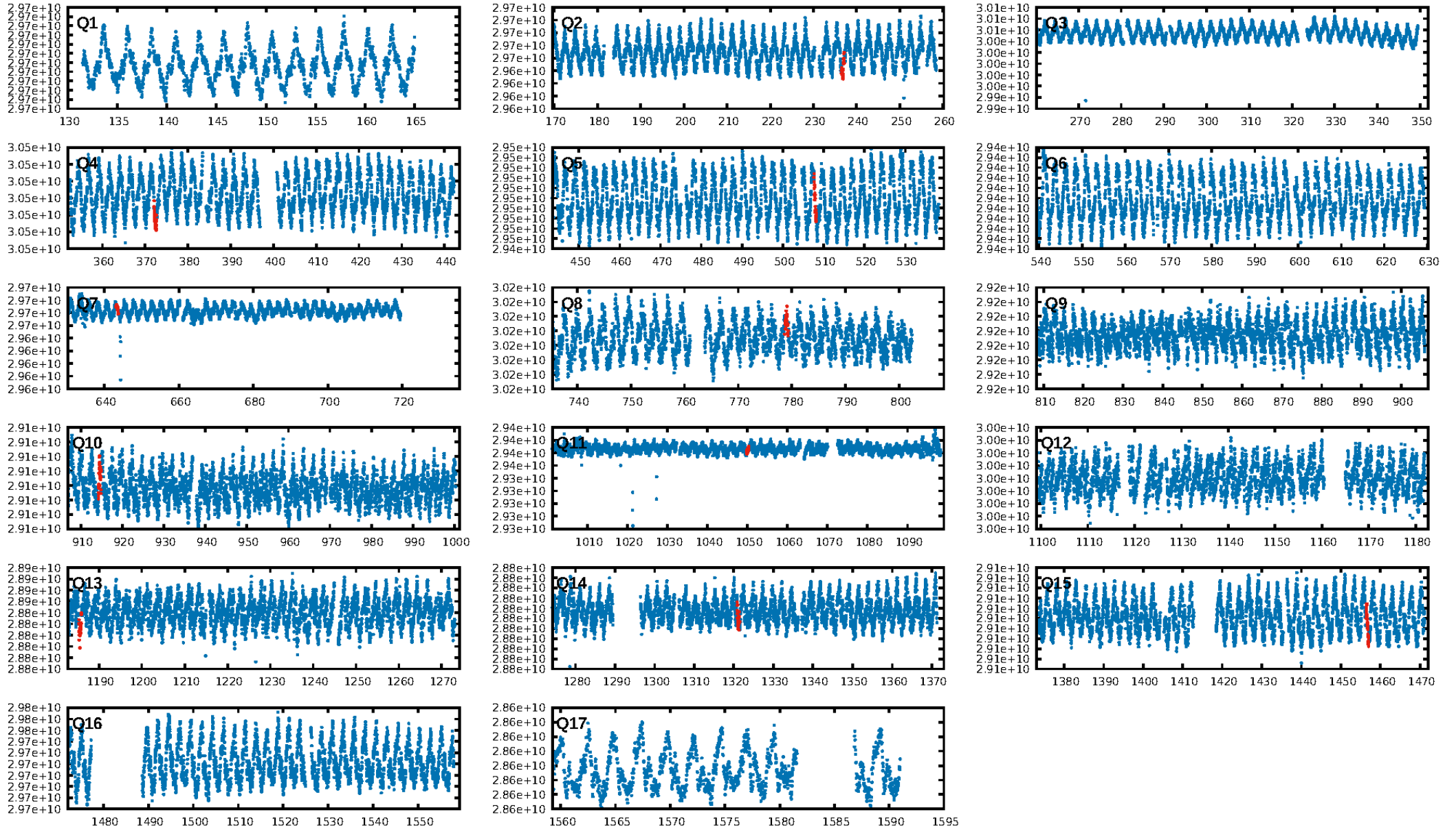
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [61.61σ]
LongPeriod-sig: 100.0% [138.48σ]
ModelChiSquare2-sig: 55.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.35e-09
RollingBand-fgt: 0.80 [4/5]
GhostDiagnostic-chr: N/A
Centroid-sig: 55.8%
Centroid-so: 1.515 arcsec [0.73σ]
OotOffset-rm: 9.663 arcsec [3.06σ]
OotOffset-st: 3/3/2/1 [9]
KicOffset-st: 3/3/2/1 [9]
DiffImageQuality-fgm: 0.00 [0/9]
DiffImageOverlap-fno: 0.00 [0/9]

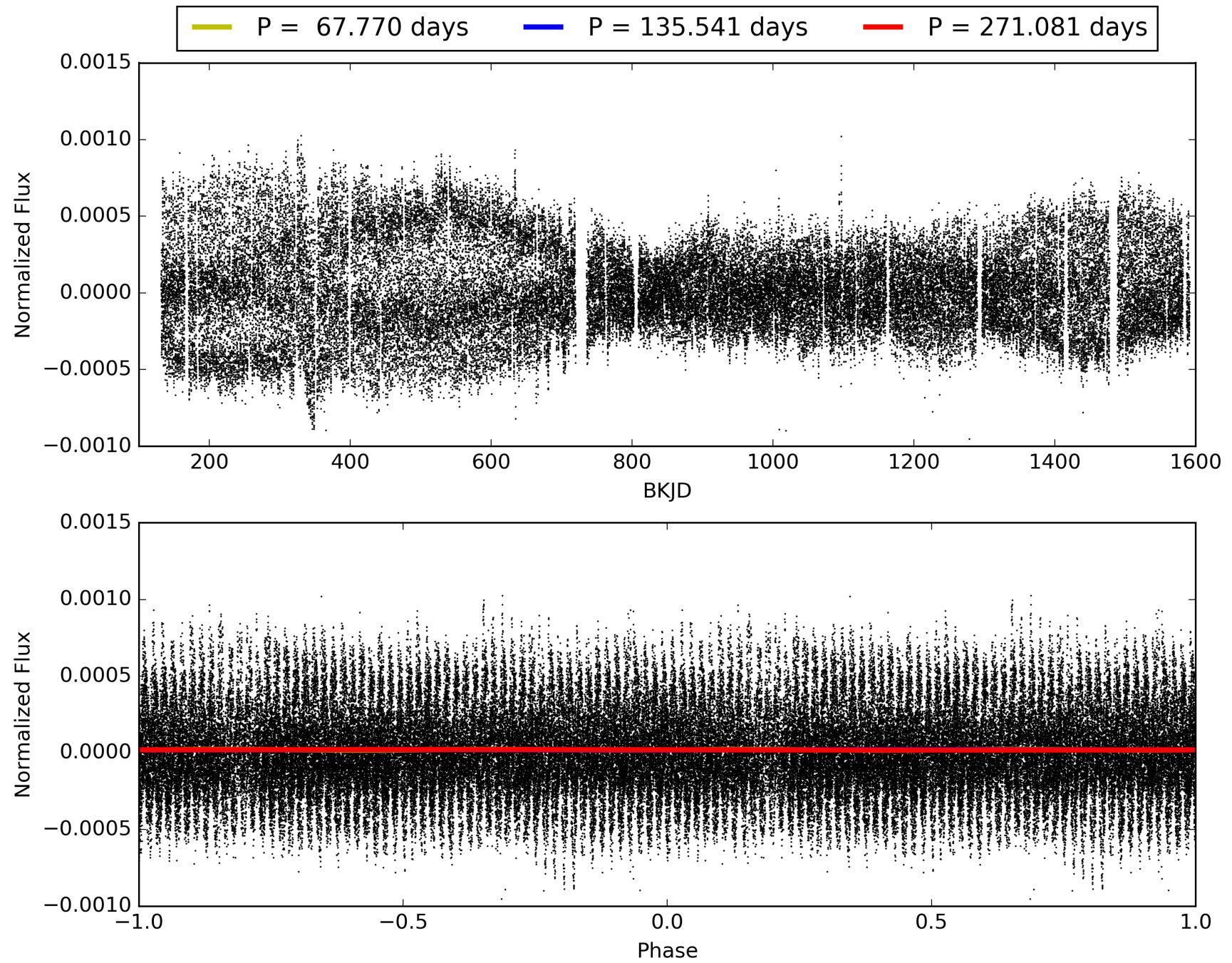
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:24:06 Z

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

TCE 011708170-03, PDC Light Curves

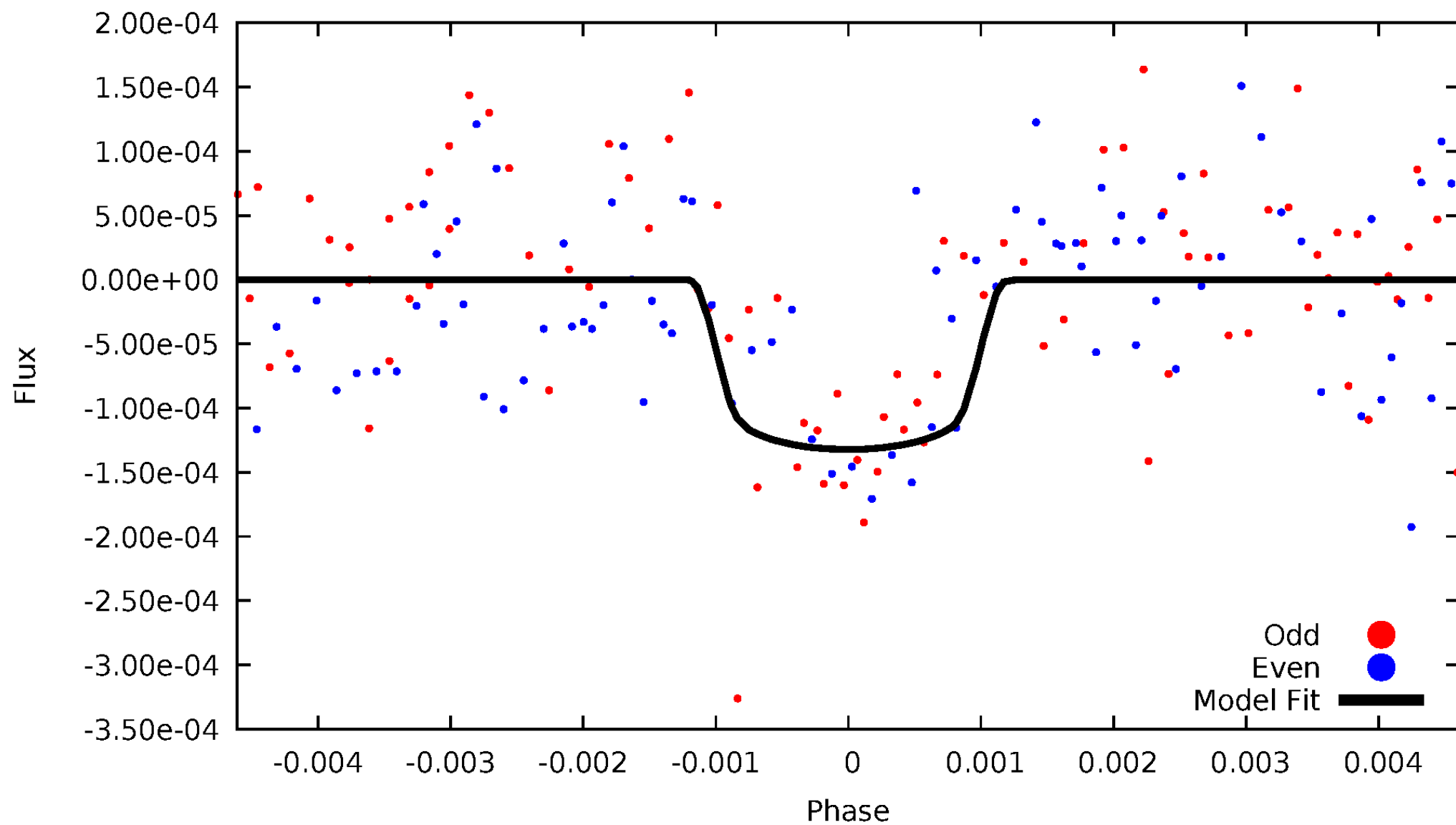


TCE 011708170-03



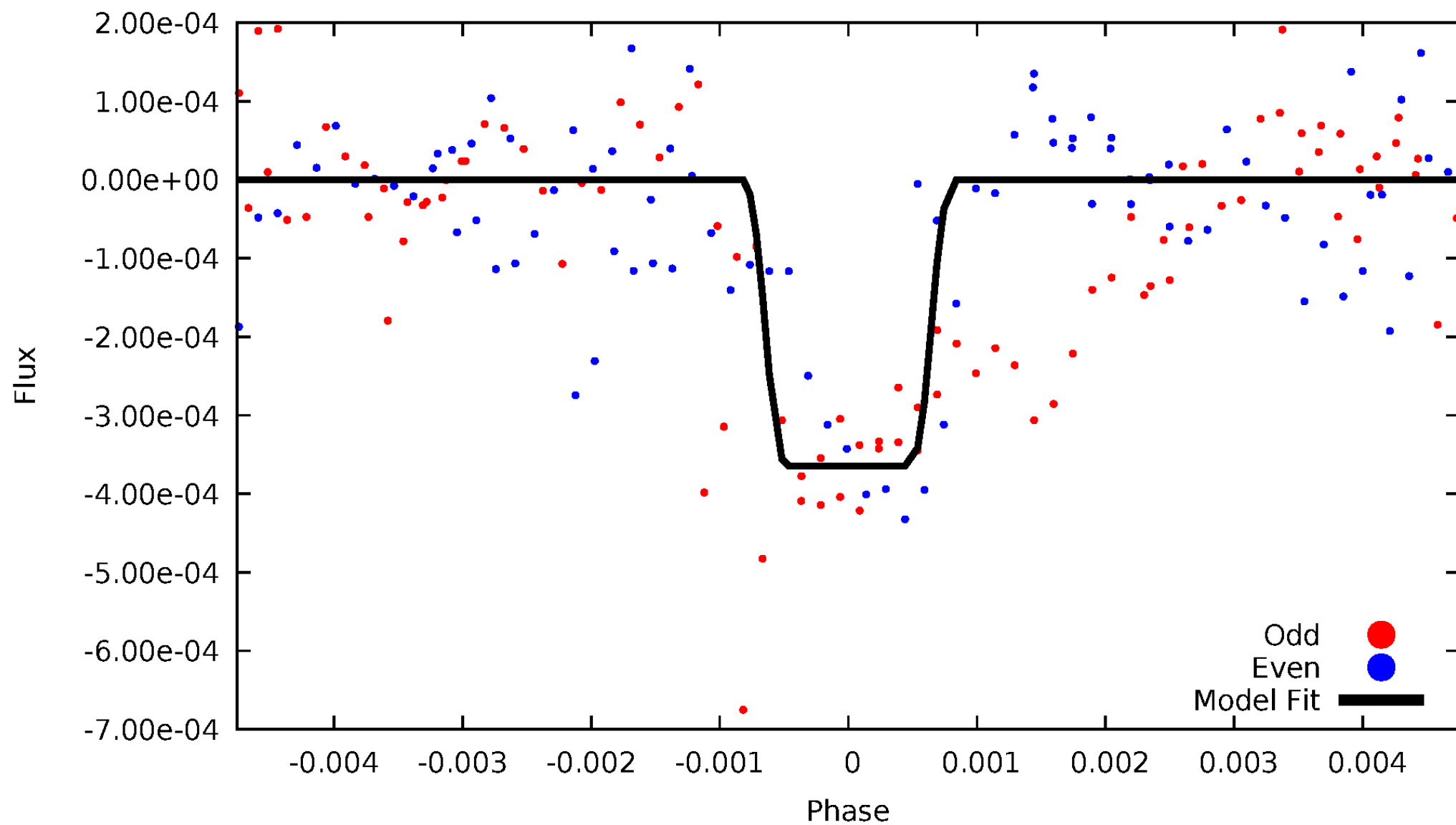
DV Odd/Even

TCE 011708170-03



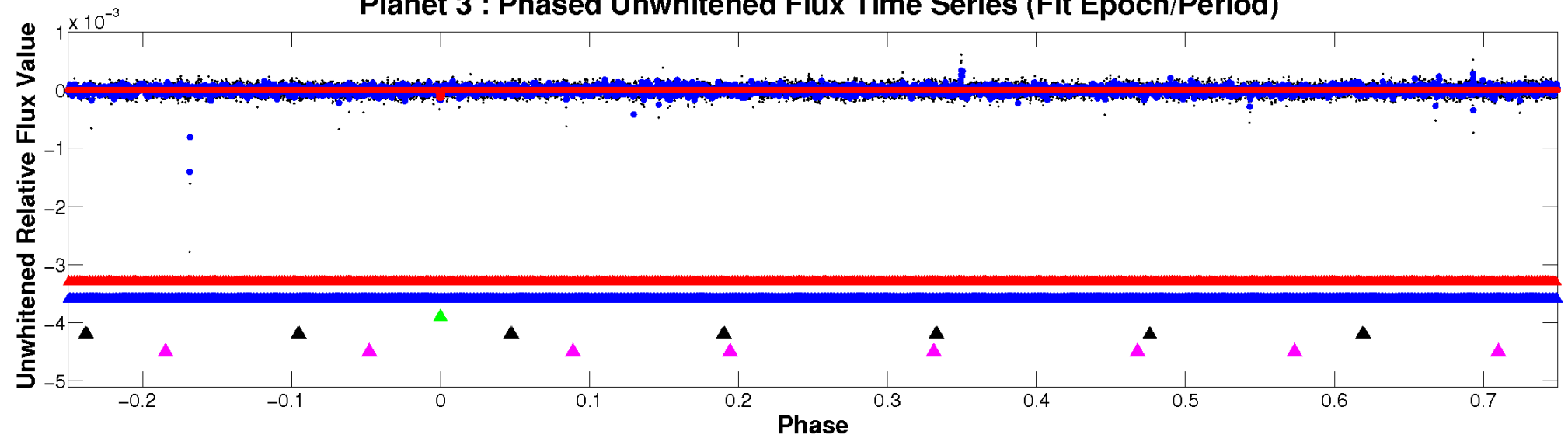
ALT Odd/Even

TCE 011708170-03

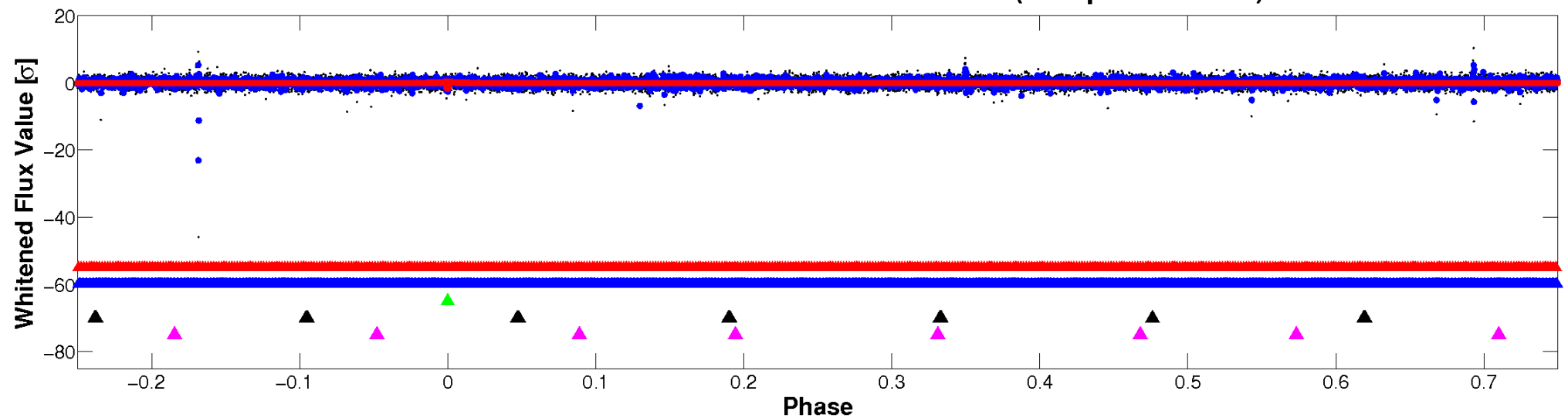


Non-Whitened Vs. Whitened Light Curve

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

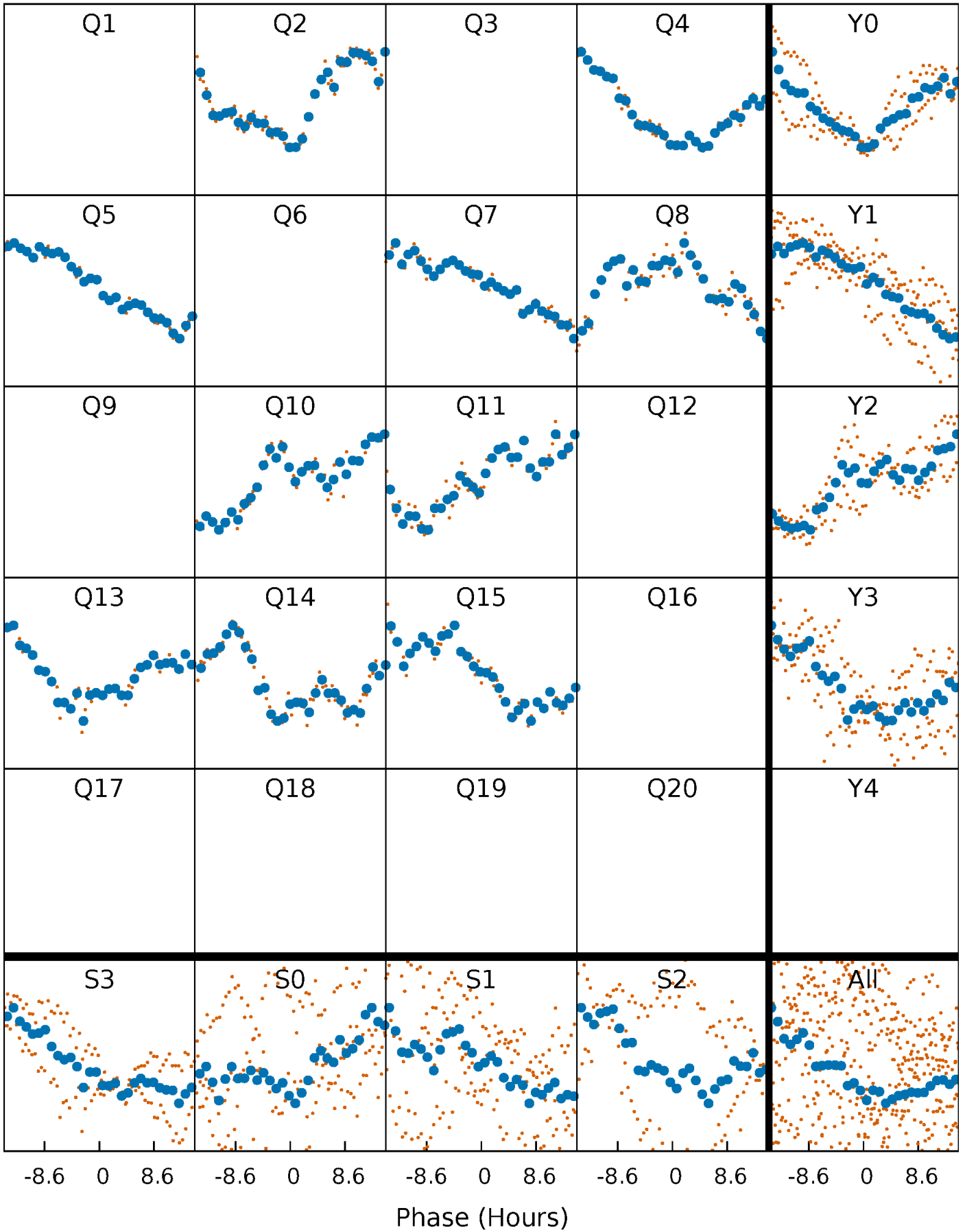


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



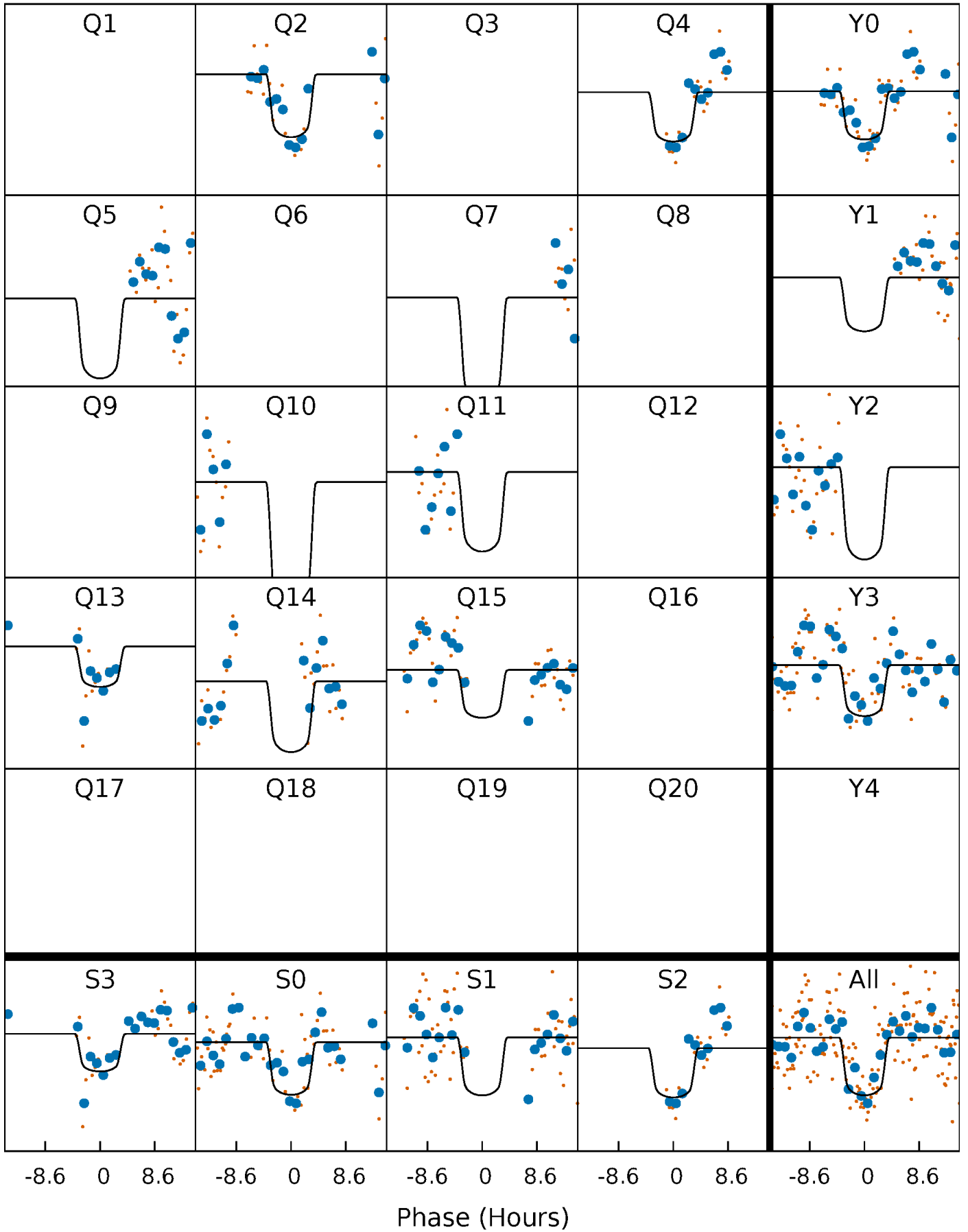
PDC Quarter-Phased Transit Curves

TCE 011708170-03 $P=135.540619$ Days $T_0=236.824780$ (BKJD)



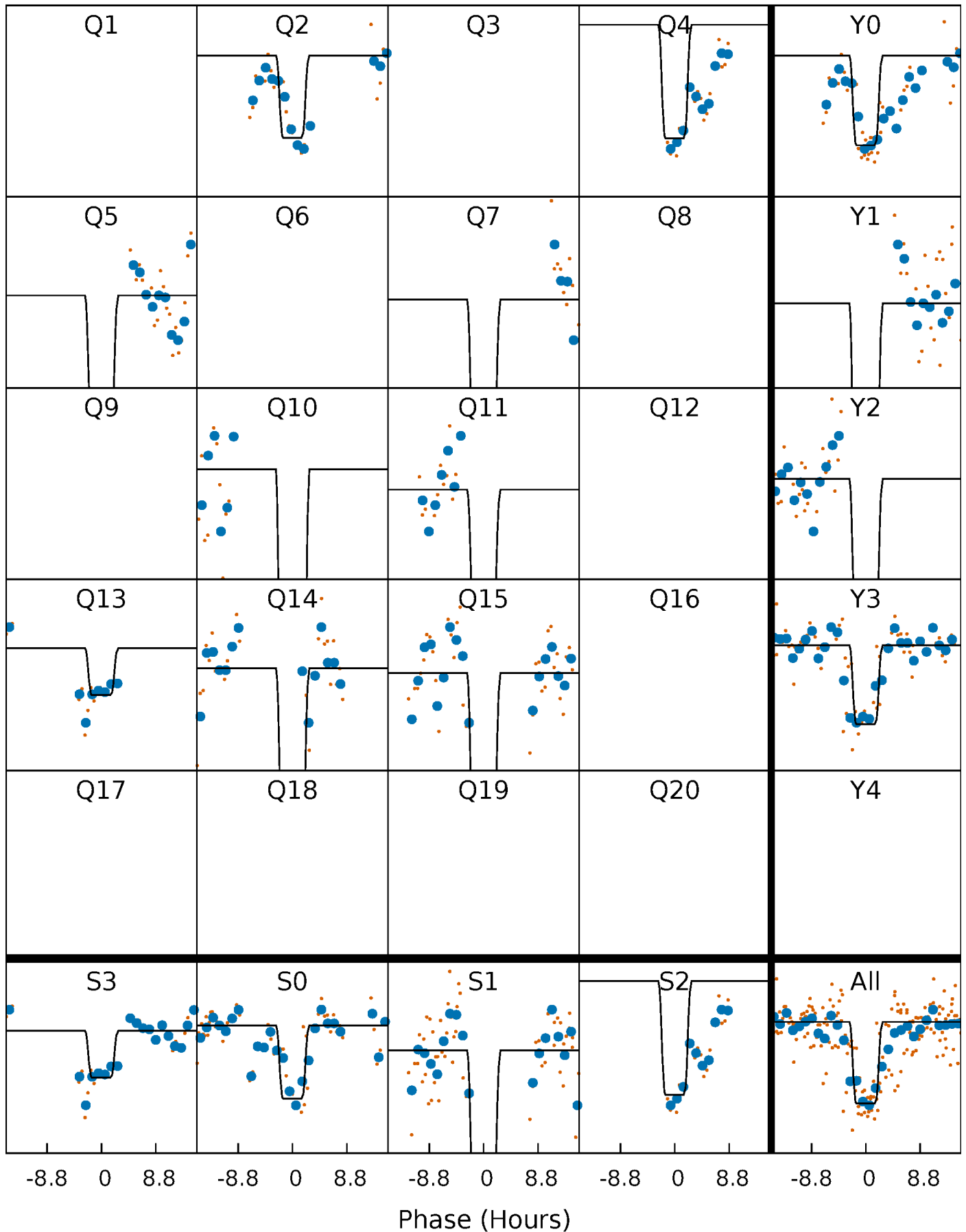
DV Quarter-Phased Transit Curves

TCE 011708170-03 P=135.540619 Days $T_0=236.824780$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

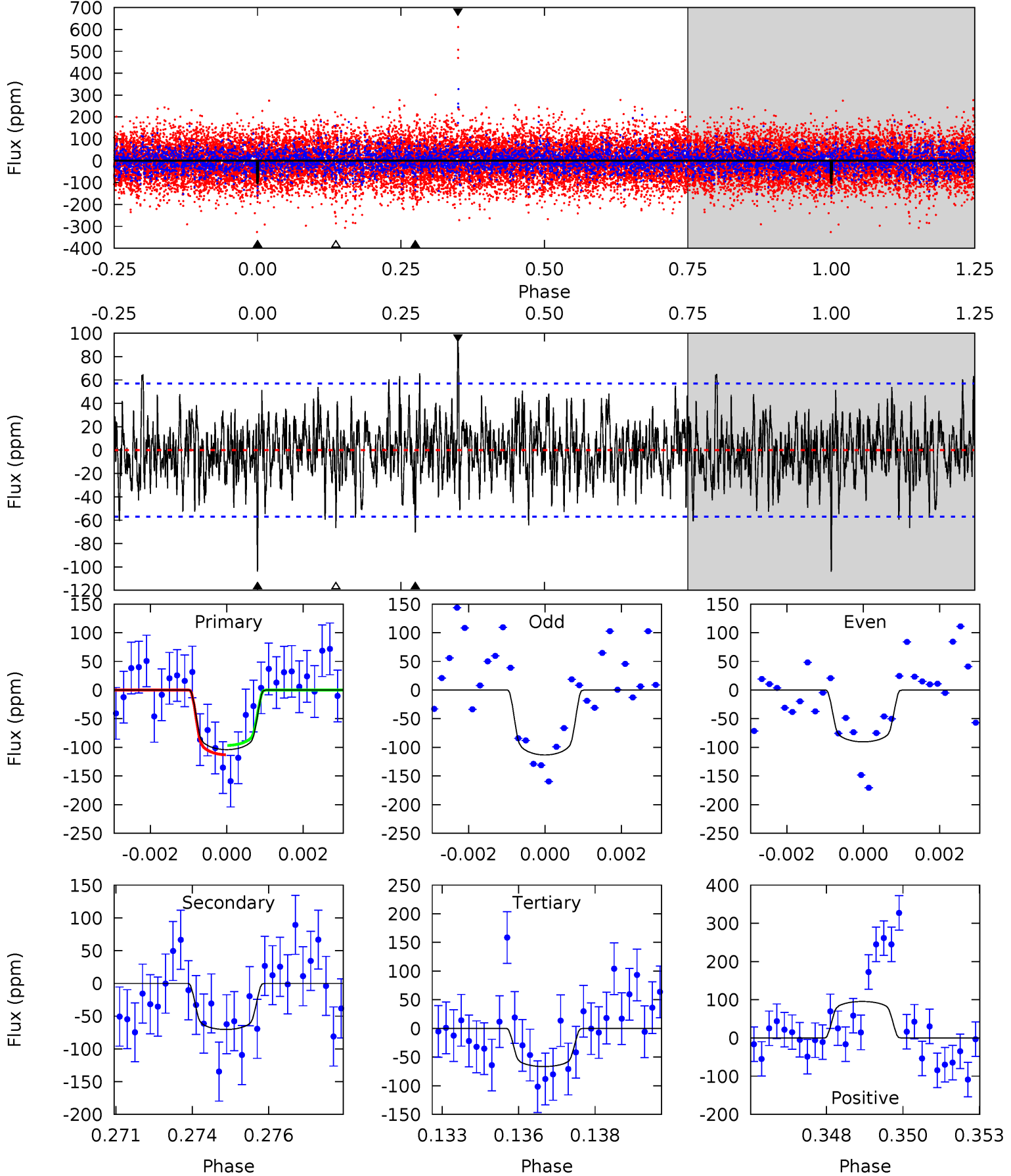
TCE 011708170-03 P=135.539535 Days $T_0=236.829865$ (BKJD)



DV Model-Shift Uniqueness Test

011708170-03, P = 135.540619 Days, E = 101.284161 Days

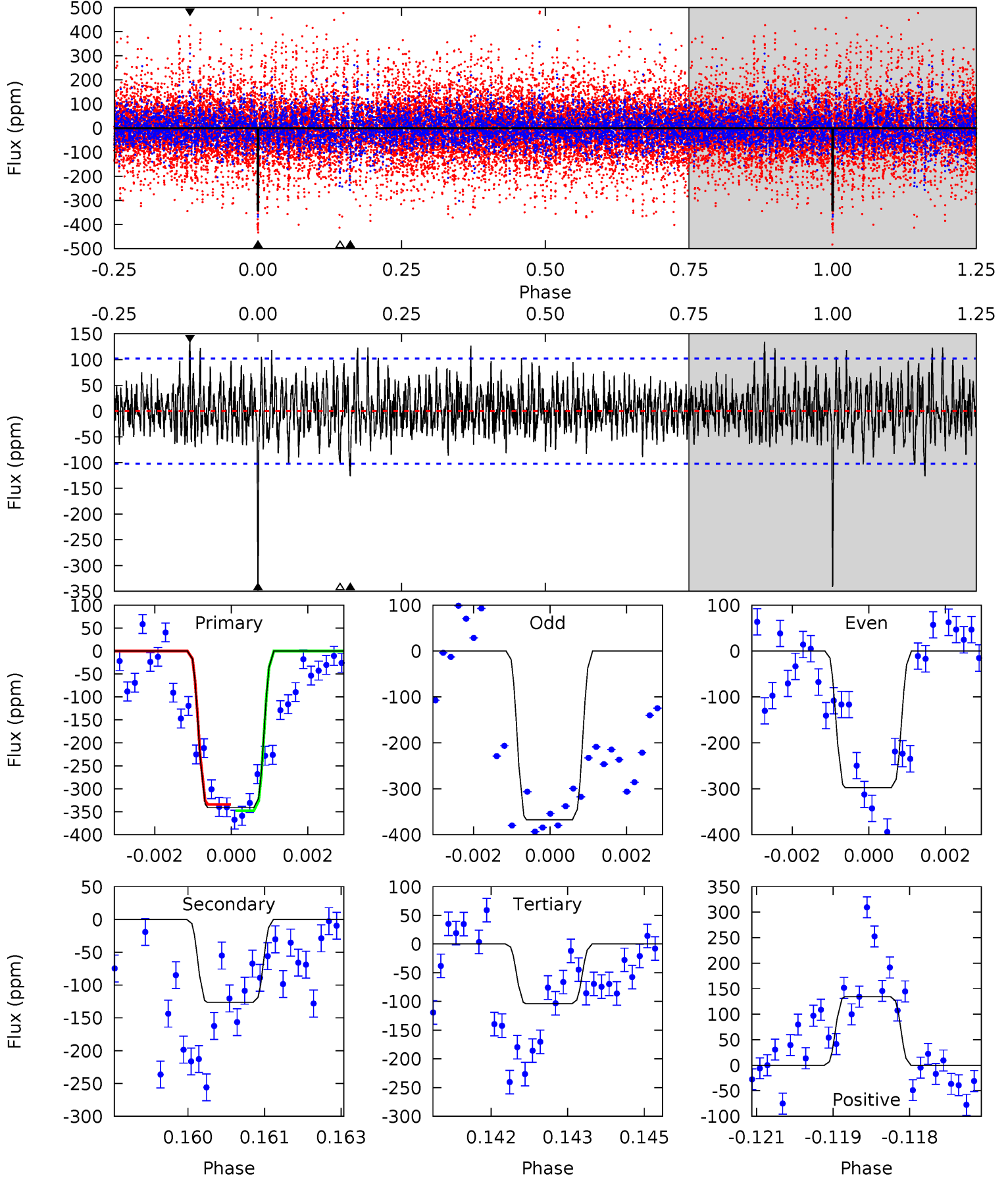
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.65	6.53	6.17	8.86	5.29	3.03	1.90	3.48	0.79	0.36	-2.33	1.04	0.71	0.48	0.76



Alt Model-Shift Uniqueness Test

011708170-03, P = 135.539535 Days, E = 101.290330 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.0	6.66	5.48	7.08	5.38	3.17	1.85	12.5	10.9	1.18	-0.41	1.77	0.79	0.28	0.37



Stellar Parameters For KIC 011708170

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6773^{+108}_{-162}	$4.209^{+0.076}_{-0.114}$	$-0.040^{+0.150}_{-0.150}$	$1.510^{+0.256}_{-0.170}$	$1.351^{+0.098}_{-0.109}$	$0.552^{+0.207}_{-0.178}$
	+2%/-2%	+2%/-3%	+375%/-375%	+17%/-11%	+7%/-8%	+38%/-32%
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 011708170-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-70 ± 11	$2.16^{+0.32}_{-0.27}$	680^{+29}_{-25}	5417^{+385}_{-315}	2632^{+979}_{-703}
Alt.	-126 ± 19	$3.18^{+0.37}_{-0.33}$	682^{+30}_{-25}	5225^{+246}_{-255}	2202^{+639}_{-511}

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 $A_{obs} \gg 1.0$

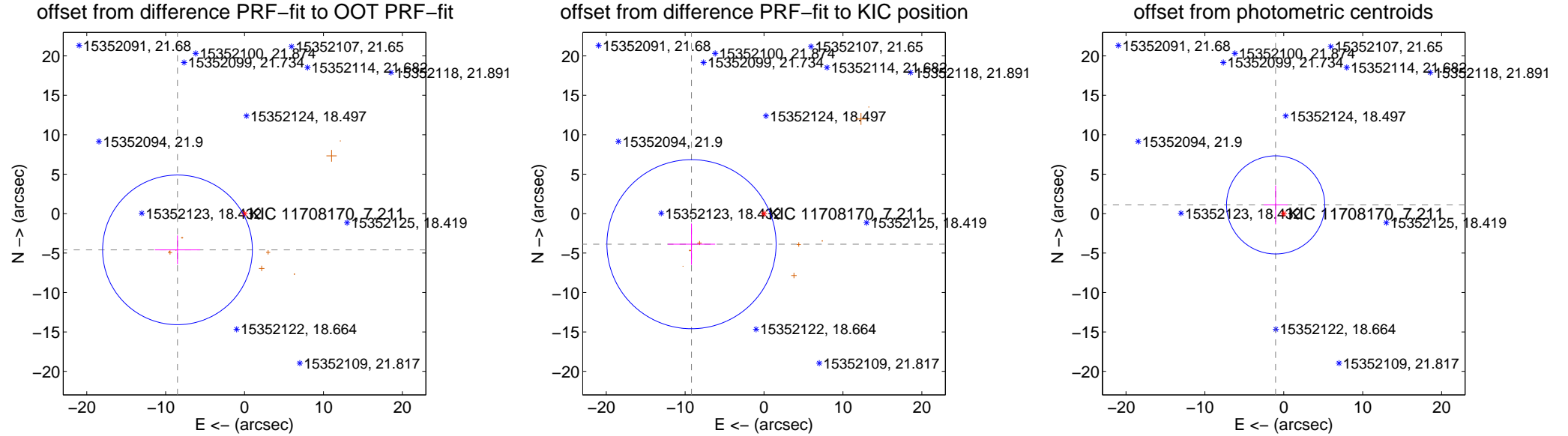
DV Centroid Data

Supplemental centroid analysis for 011708170-03. **Kepler magnitude: 7.21.** Transit SNR 9.62

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 1.75 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	9.663 \pm 3.163	3.06	8.502 \pm 2.861	-4.593 \pm 1.821
PRF-fit source offset from KIC position	9.976 \pm 3.573	2.79	9.192 \pm 3.003	-3.876 \pm 2.625
photometric centroid source offset	1.52 \pm 2.07	0.73	1.03 \pm 1.52	1.11 \pm 2.46



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.

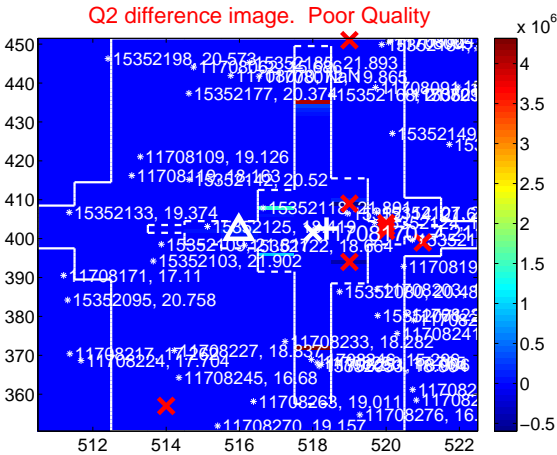
Q1 no difference image



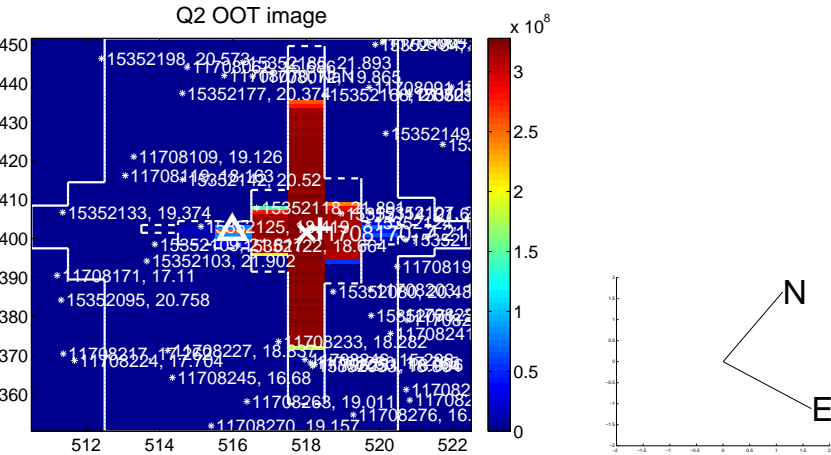
Q1 no OOT image



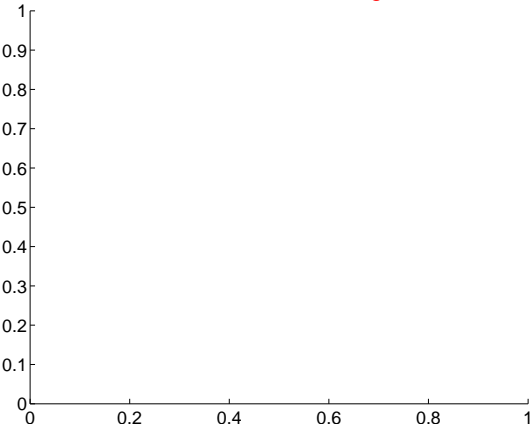
Q2 difference image. Poor Quality



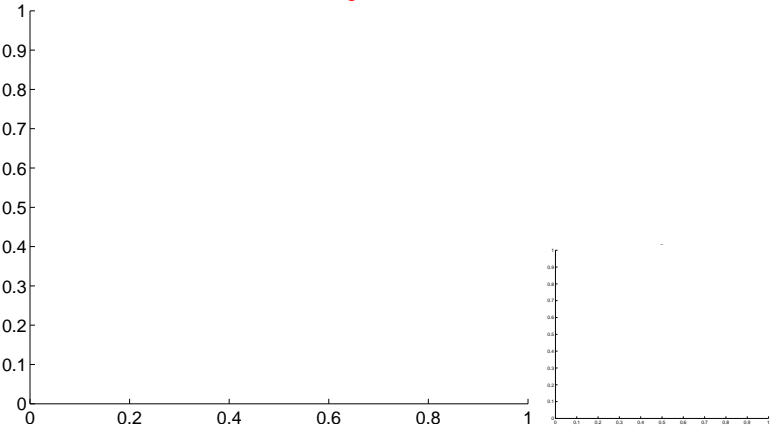
Q2 OOT image



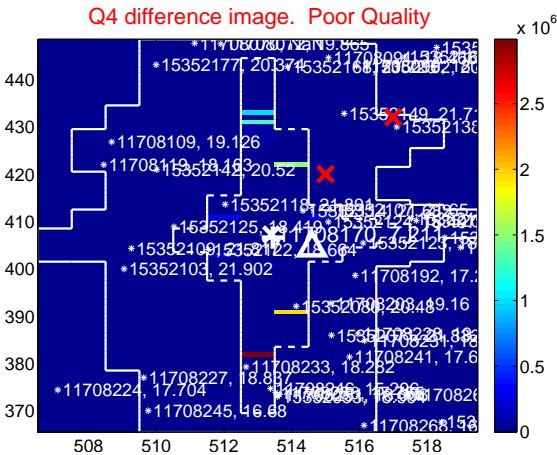
Q3 no difference image



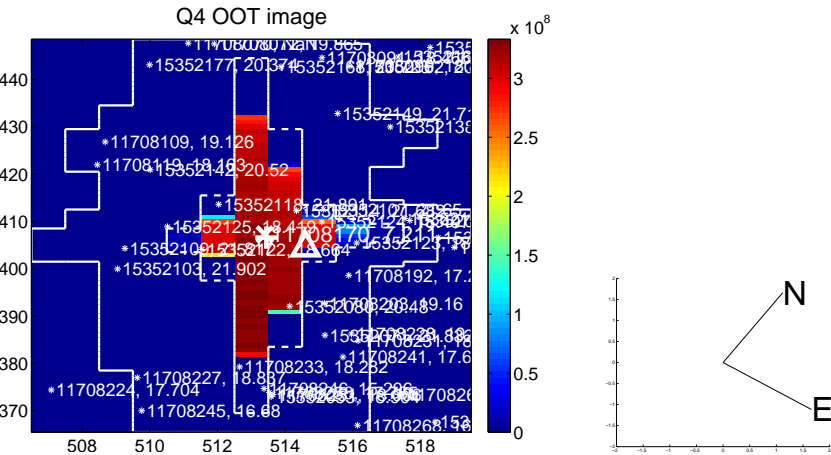
Q3 no OOT image



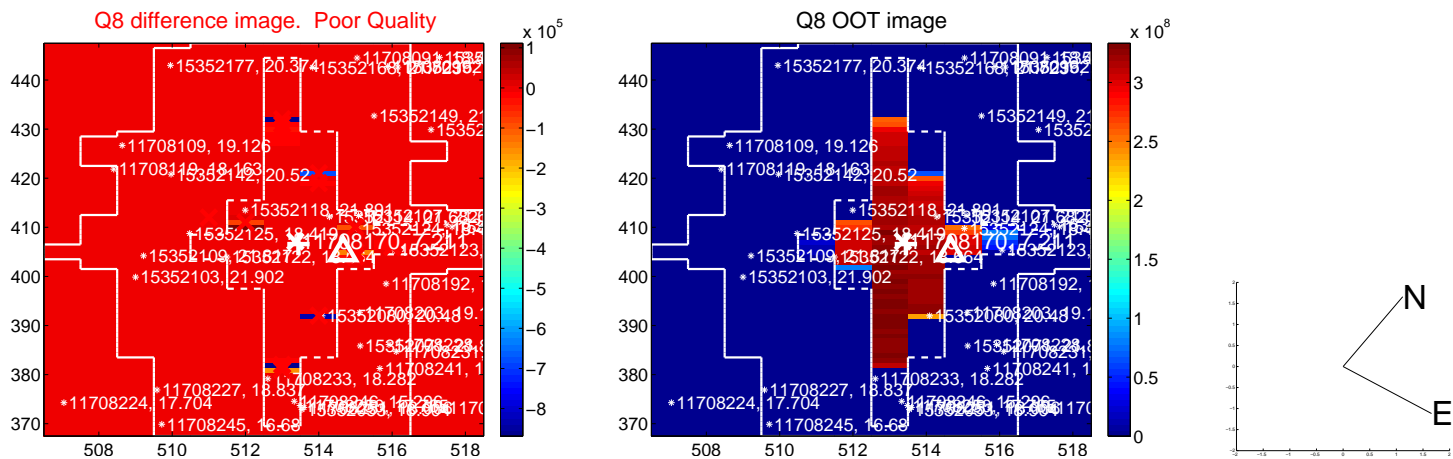
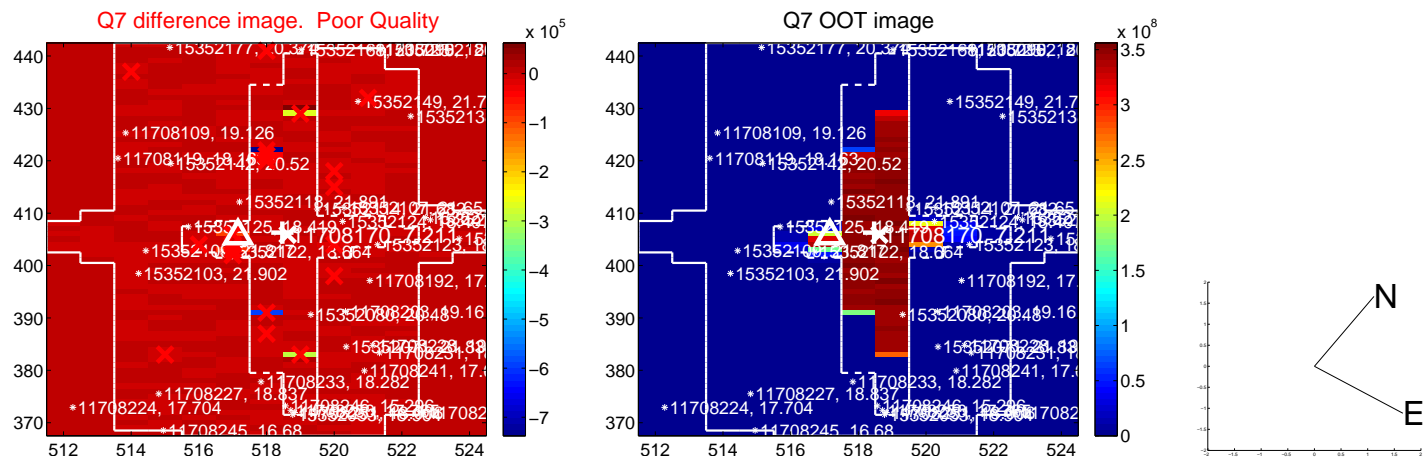
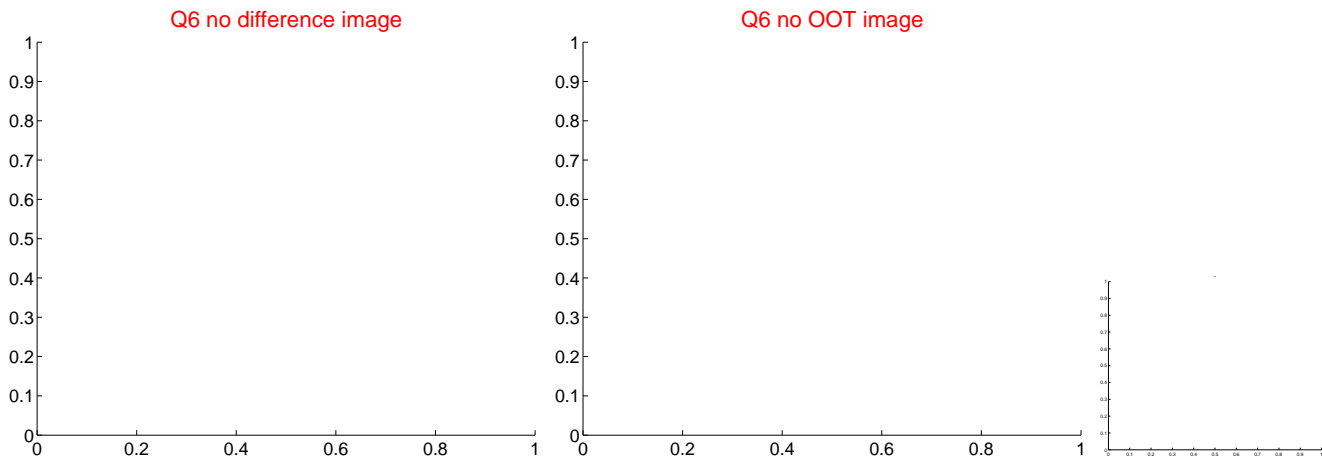
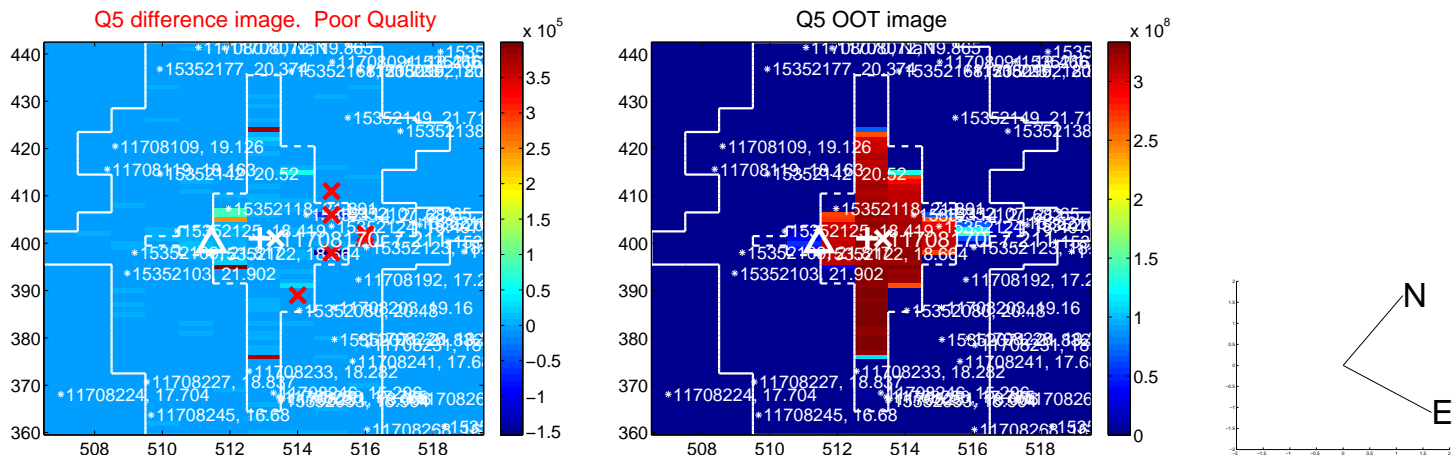
Q4 difference image. Poor Quality



Q4 OOT image

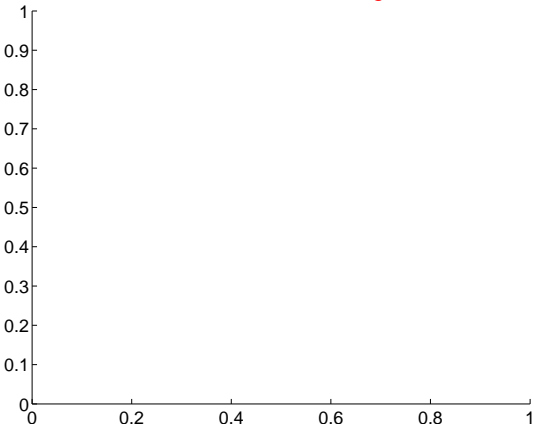


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

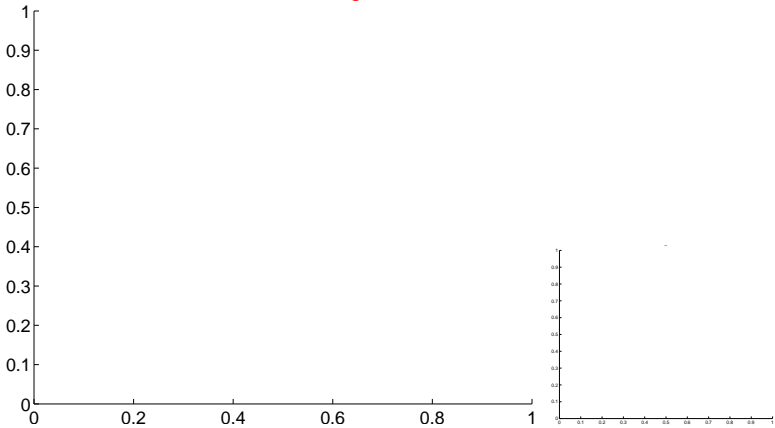


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

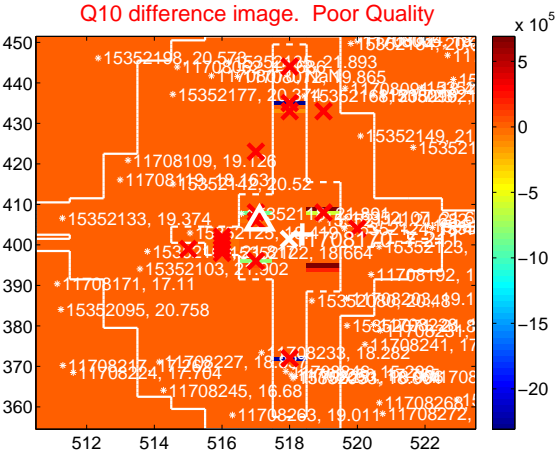
Q9 no difference image



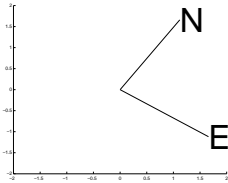
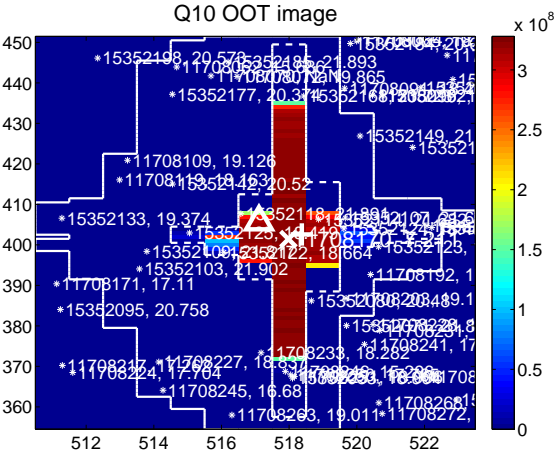
Q9 no OOT image



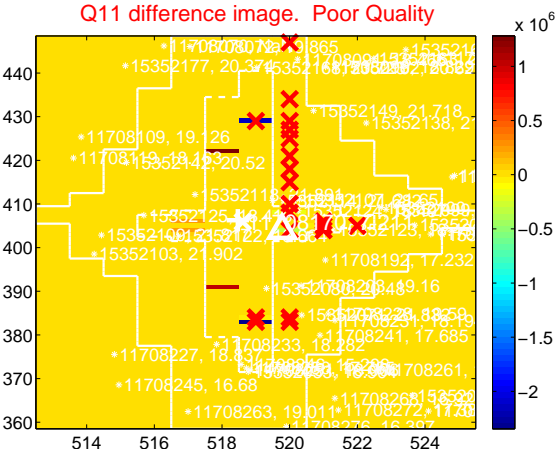
Q10 difference image. Poor Quality



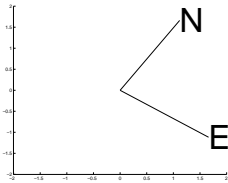
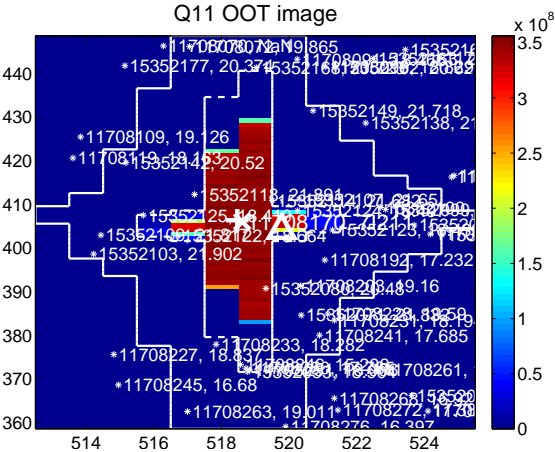
Q10 OOT image



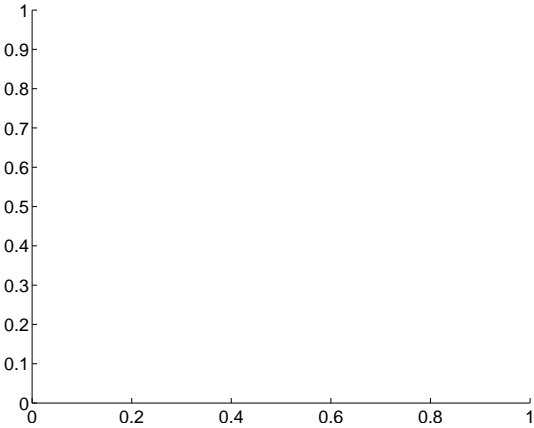
Q11 difference image. Poor Quality



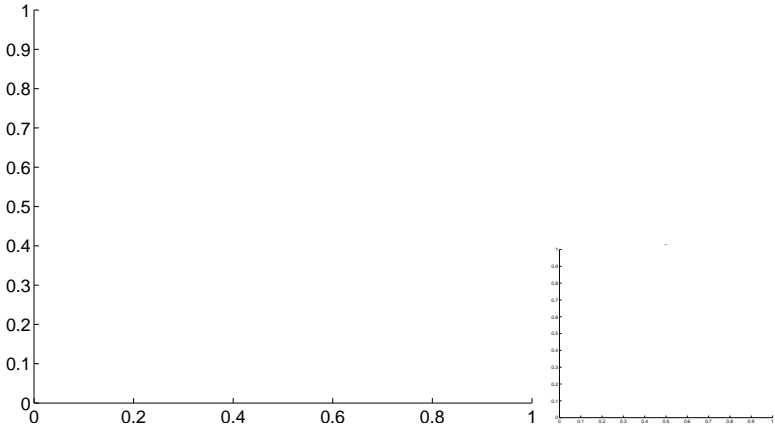
Q11 OOT image



Q12 no difference image

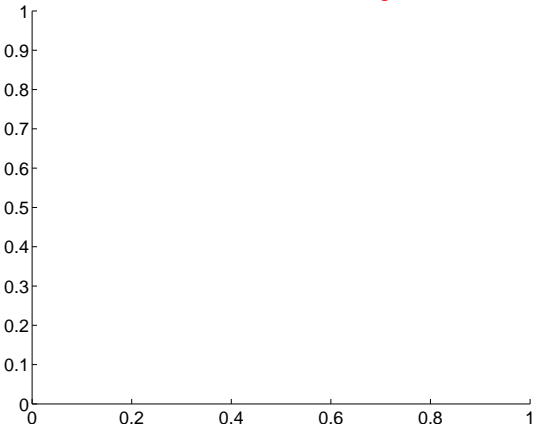


Q12 no OOT image

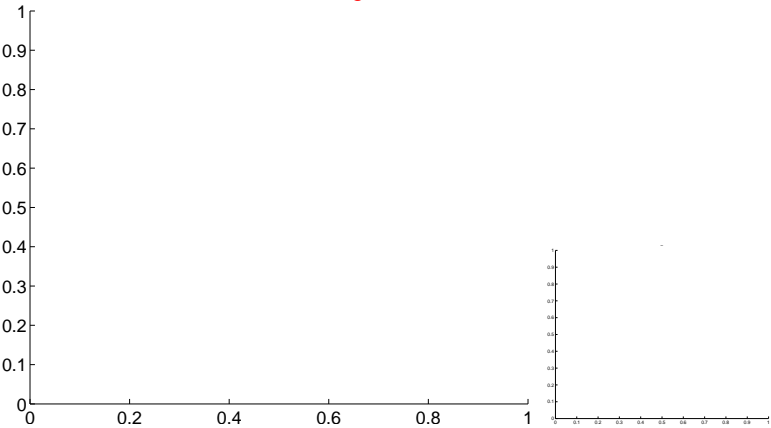


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

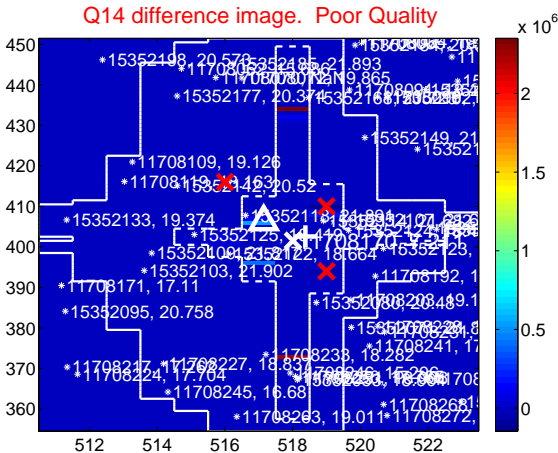
Q13 no difference image



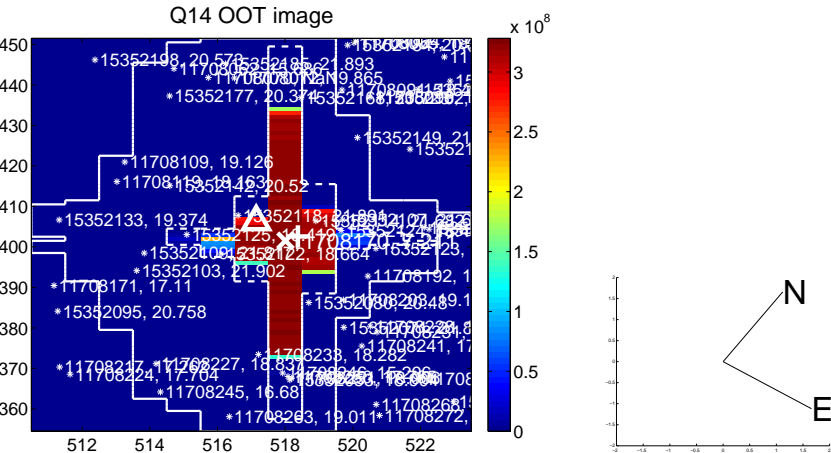
Q13 no OOT image



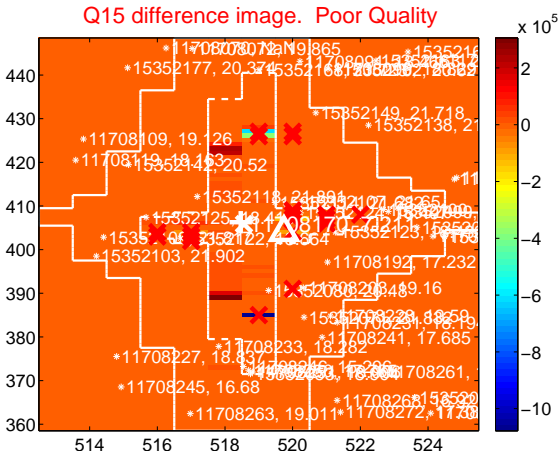
Q14 difference image. Poor Quality



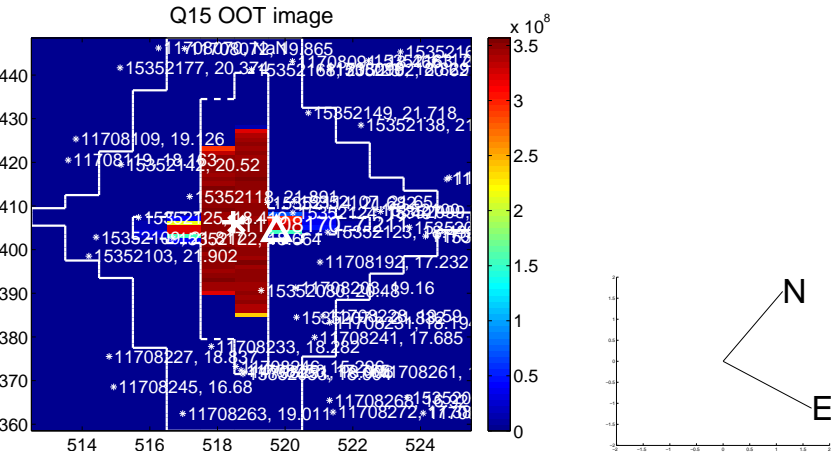
Q14 OOT image



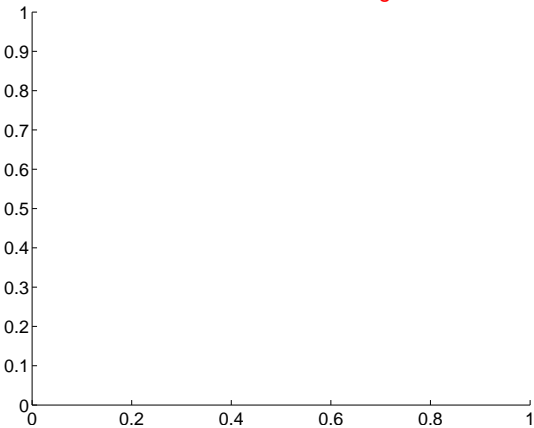
Q15 difference image. Poor Quality



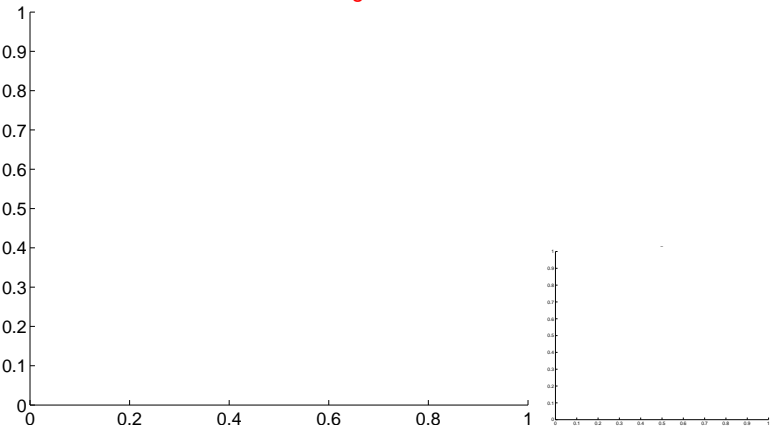
Q15 OOT image



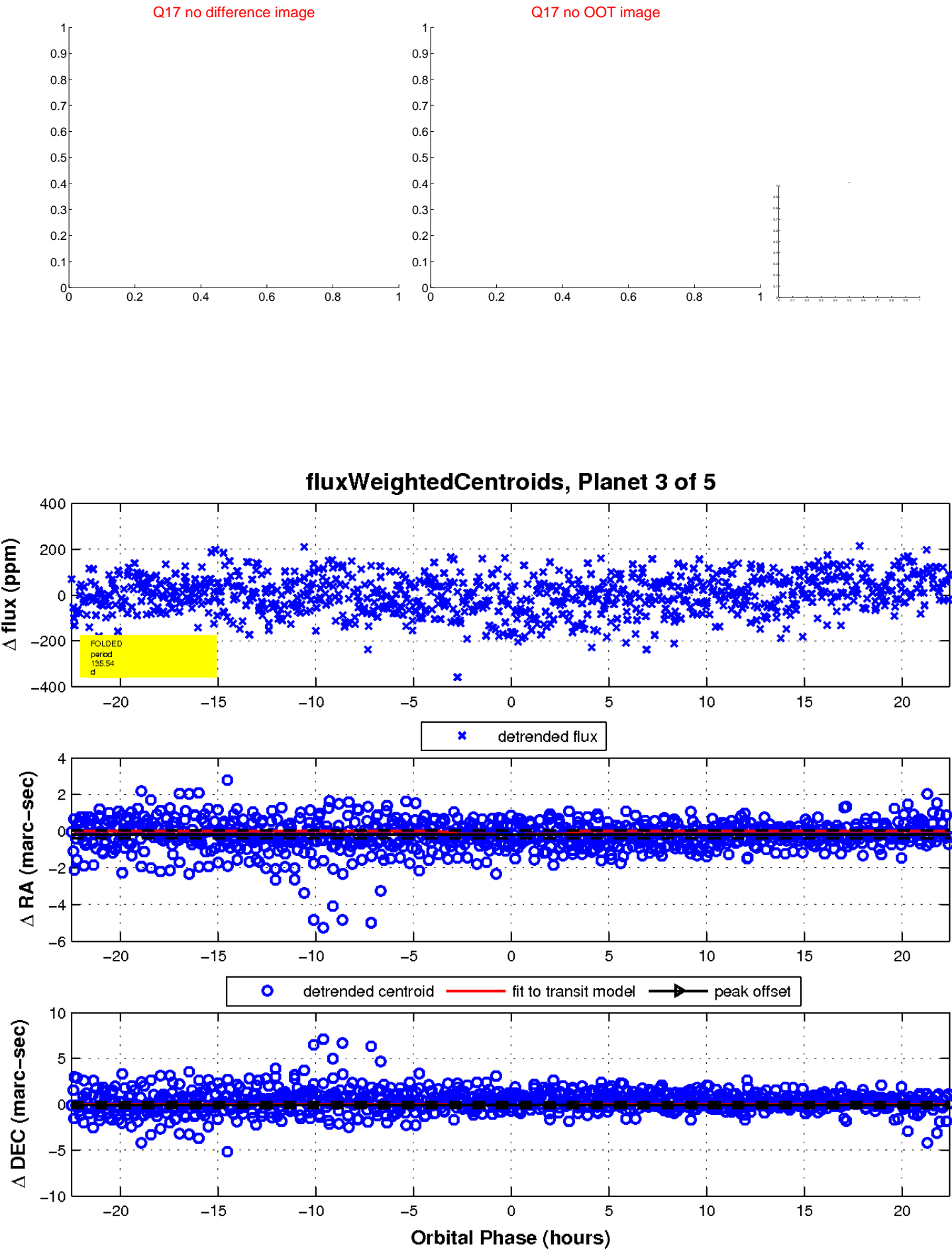
Q16 no difference image



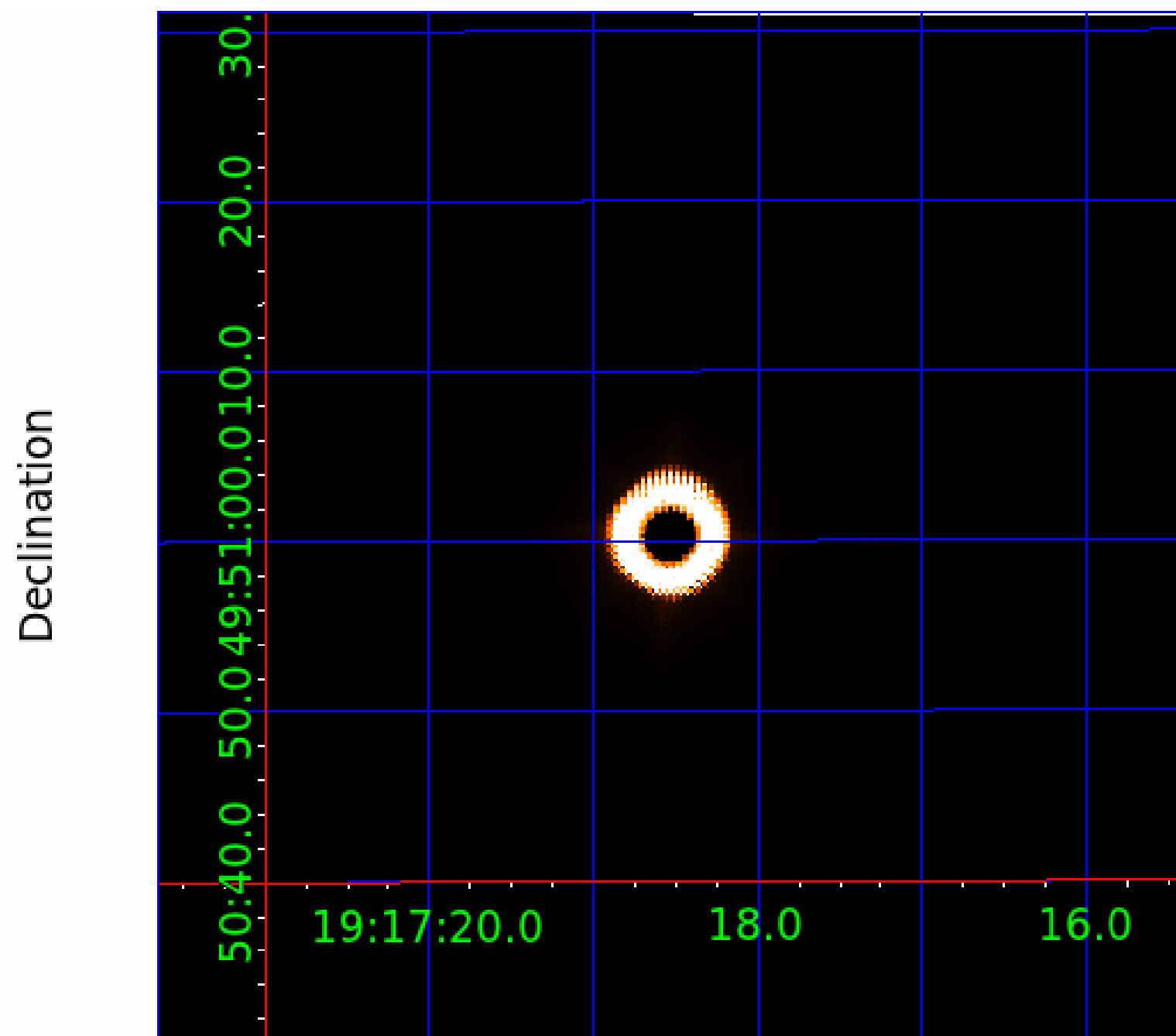
Q16 no OOT image



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



UKIRT Image



KIC 011708170

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})
011708170-01	OBS	No	2.424798	133.873066	10.8	8.262	10.8	6.6	1.51	6773	0.58	2825.55
011708170-02	OBS	No	0.808249	132.069527	13.3	3.000	11.2	-1.0	1.51	6773	0.56	12225.78
011708170-03	OBS	No	135.540619	236.824780	132.2	7.497	8.7	9.6	1.51	6773	2.15	13.22
011708170-04	OBS	No	116.195398	146.350826	151.5	0.764	8.4	3.7	1.51	6773	1.97	16.23
011708170-05	OBS	No	186.898546	211.815923	139.7	4.798	8.3	8.2	1.51	6773	2.06	8.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011708170-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011708170-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
011708170-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011708170-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
011708170-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

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

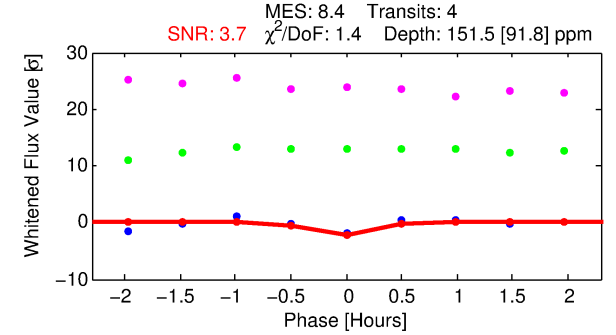
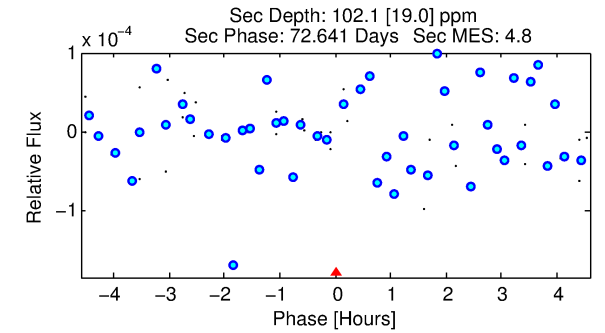
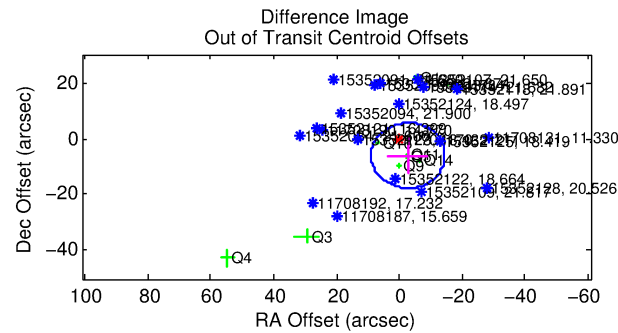
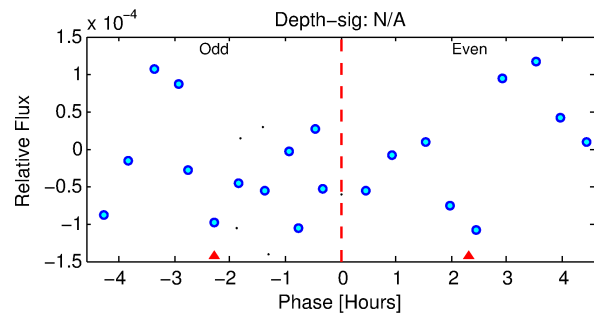
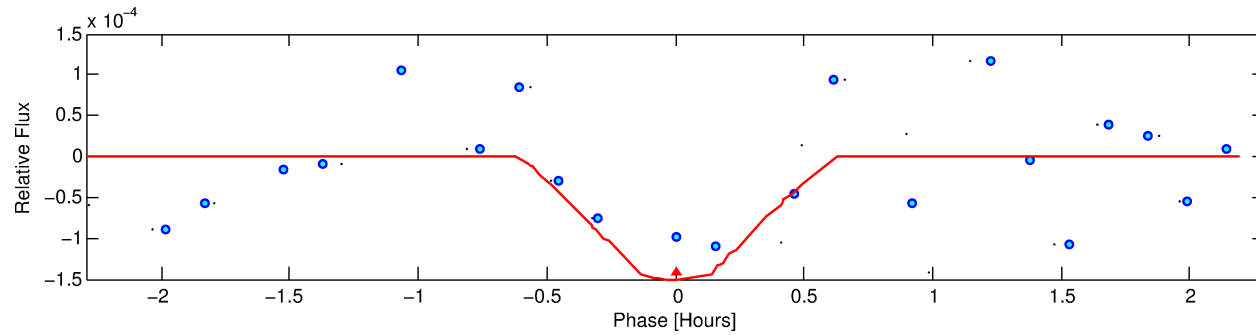
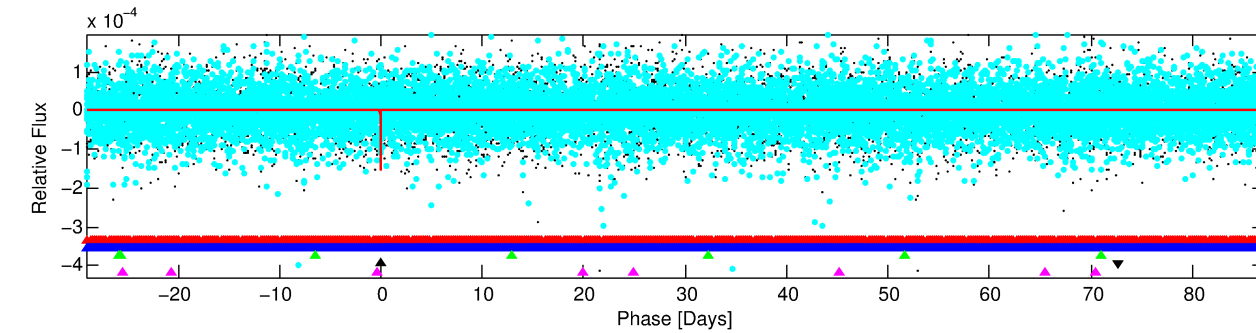
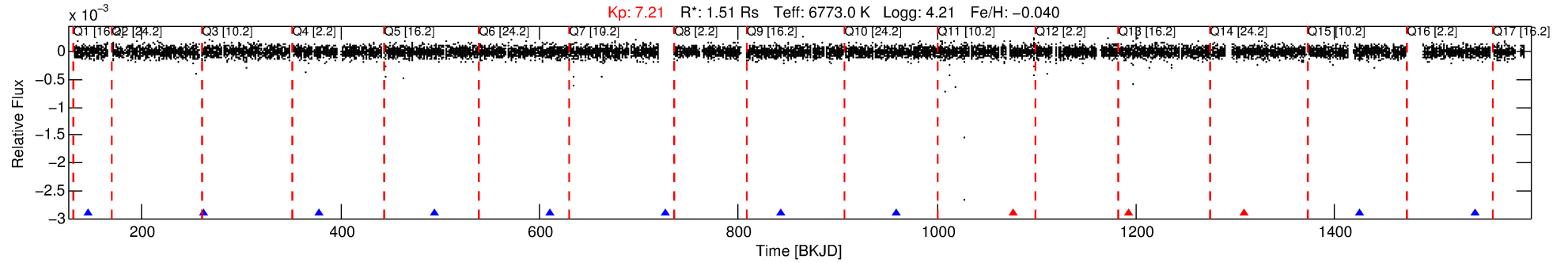
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011708170-04

No Significant Match Found

DV One-Page Summary

KIC: 11708170 Candidate: 4 of 5 Period: 116.195 d



DV Fit Results:

Period = 116.19540 [0.00112] d
Epoch = 146.3508 [0.0116] BKJD
Rp/R* = 0.0119 [0.2507]
a/R* = 978.96 [113809.43]
b = 0.56 [144.57]
Seff = 16.23 [3.72]
Teq = 512 [29] K
Rp = 1.97 [41.31] Re
a = 0.5146 [0.0736] AU
Ag = 3848.44 [161754.28] [0.02σ]
Teffp = 6233 [65494] K [0.09σ]

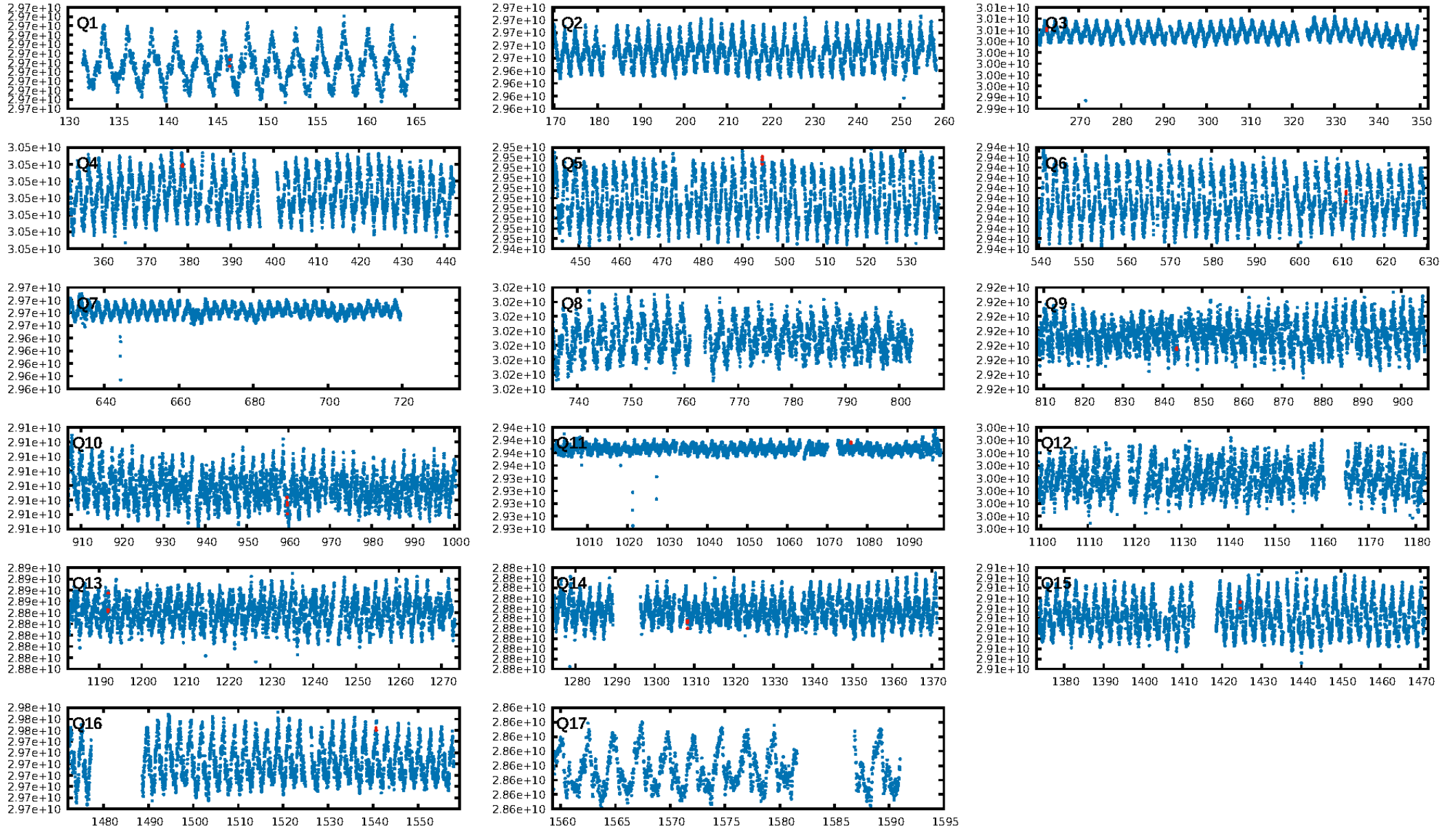
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [329.07σ]
LongPeriod-sig: 100.0% [61.61σ]
ModelChiSquare2-sig: 58.0%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: 1.17e-08
RollingBand-fgt: 0.25 [1/4]
GhostDiagnostic-chr: N/A
Centroid-sig: 53.2%
Centroid-so: 2.013 arcsec [0.89σ]
OotOffset-rm: 6.592 arcsec [1.68σ]
KicOffset-rm: 6.140 arcsec [2.74σ]
OotOffset-st: 1/2/2/4 [9]
KicOffset-st: 1/2/2/4 [9]
DiffImageQuality-fgm: 0.00 [0/9]
DiffImageOverlap-fno: 0.25 [3/12]

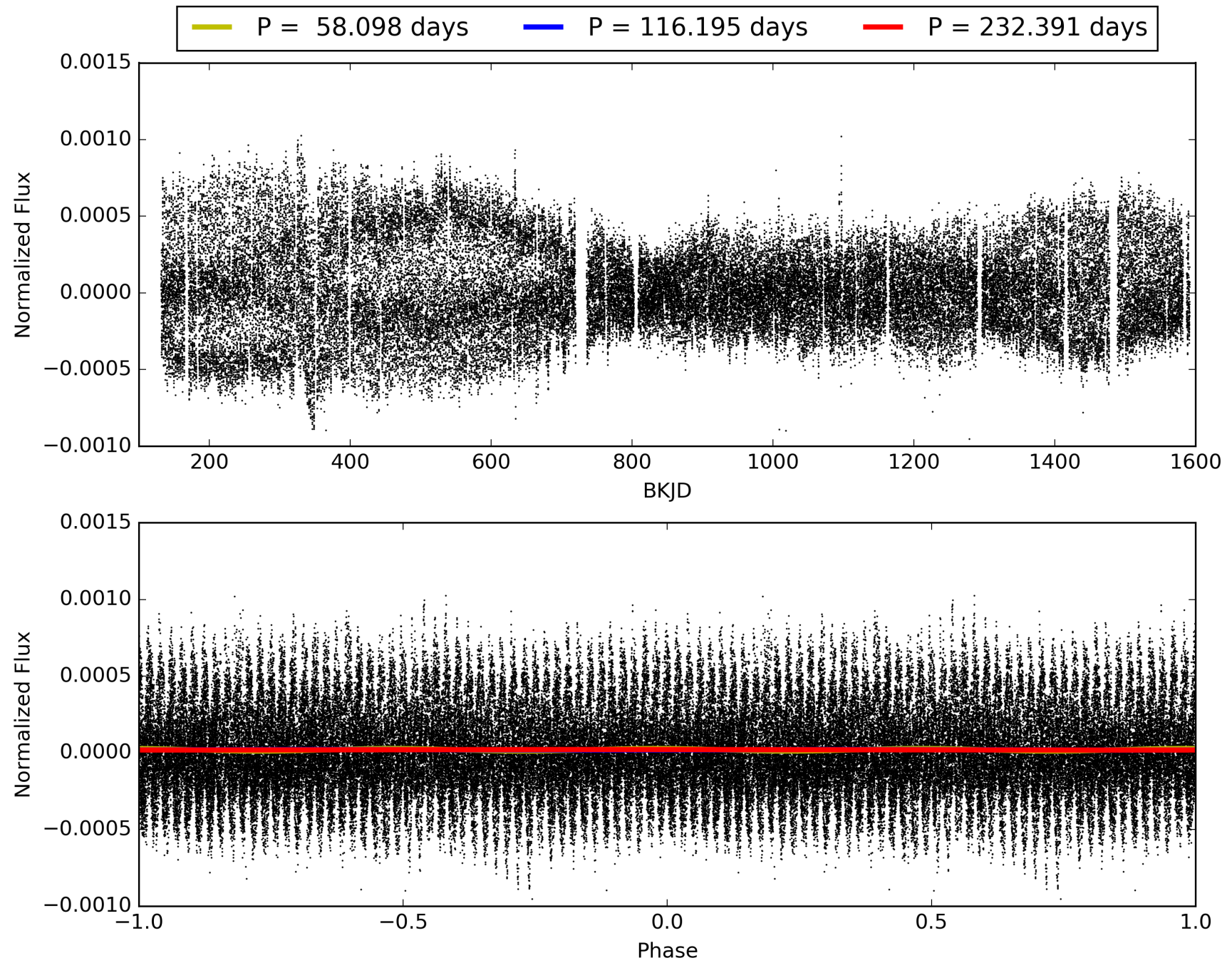
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:24:14 Z

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

TCE 011708170-04, PDC Light Curves

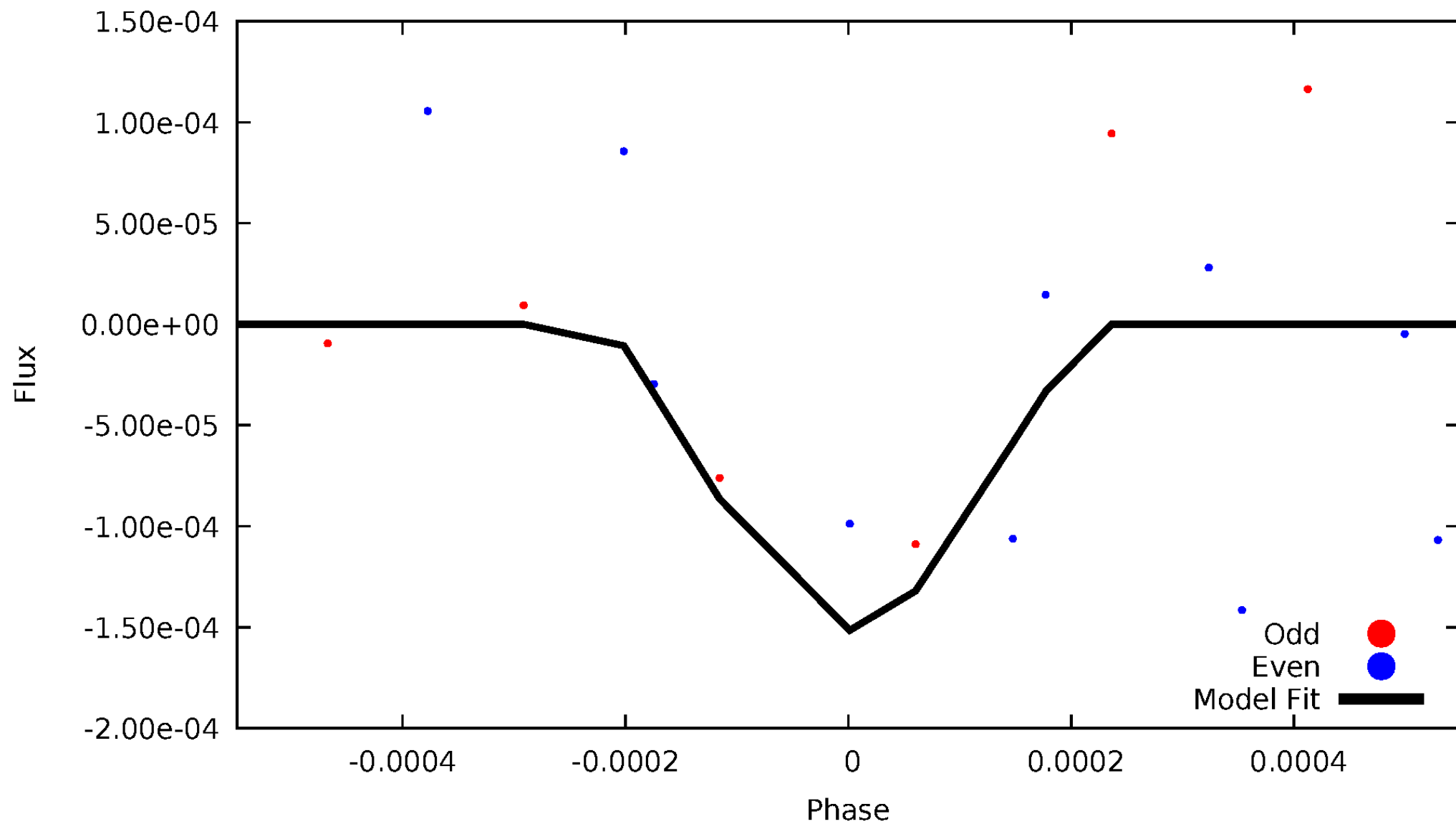


TCE 011708170-04



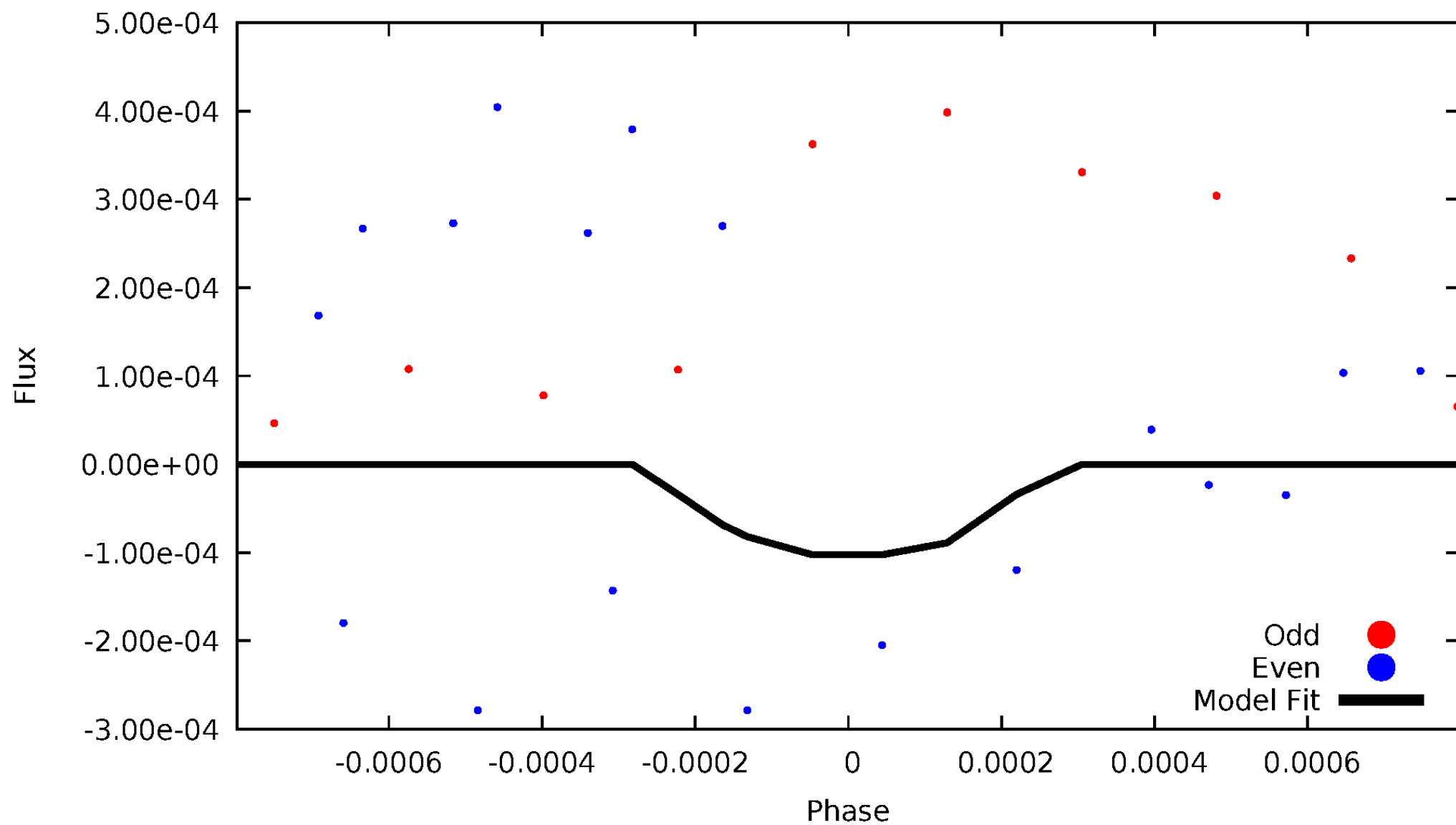
DV Odd/Even

TCE 011708170-04



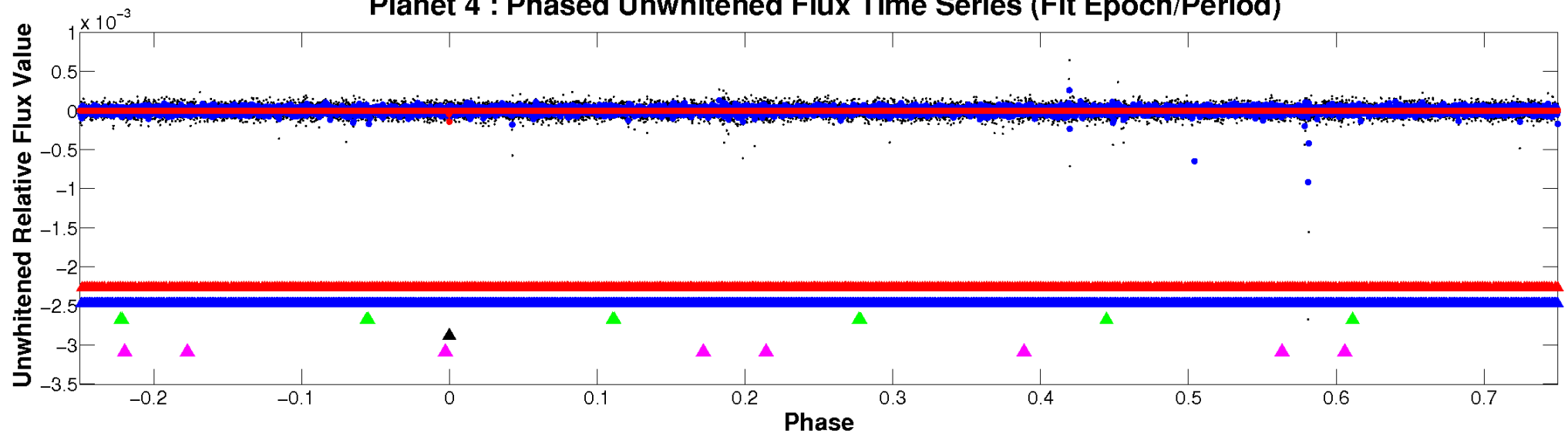
ALT Odd/Even

TCE 011708170-04

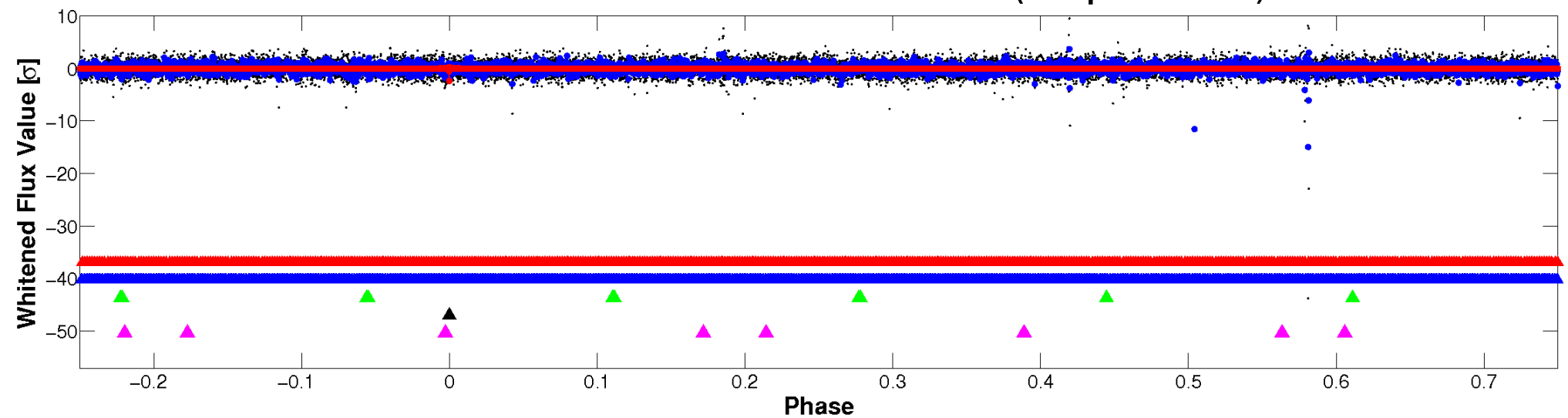


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

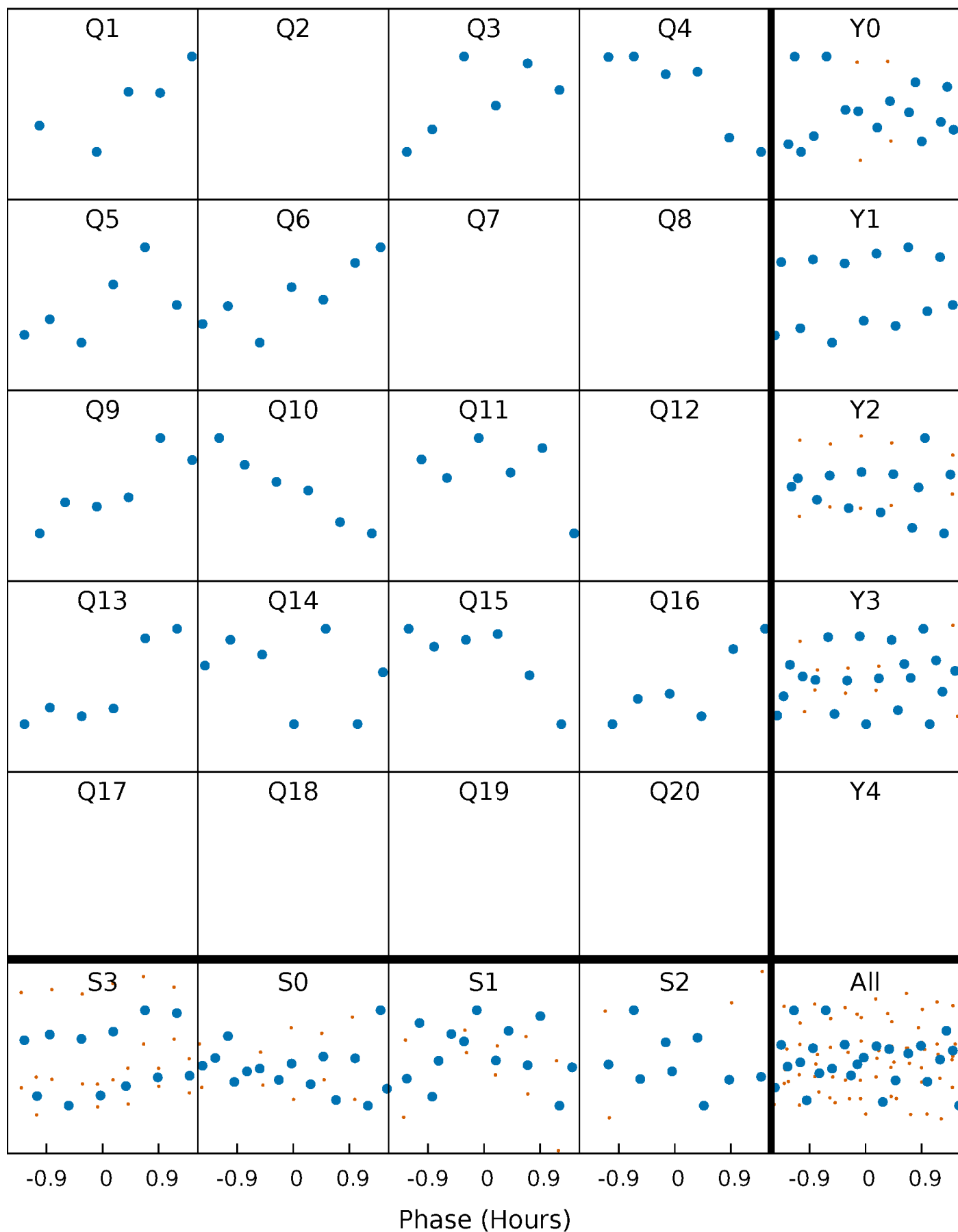


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



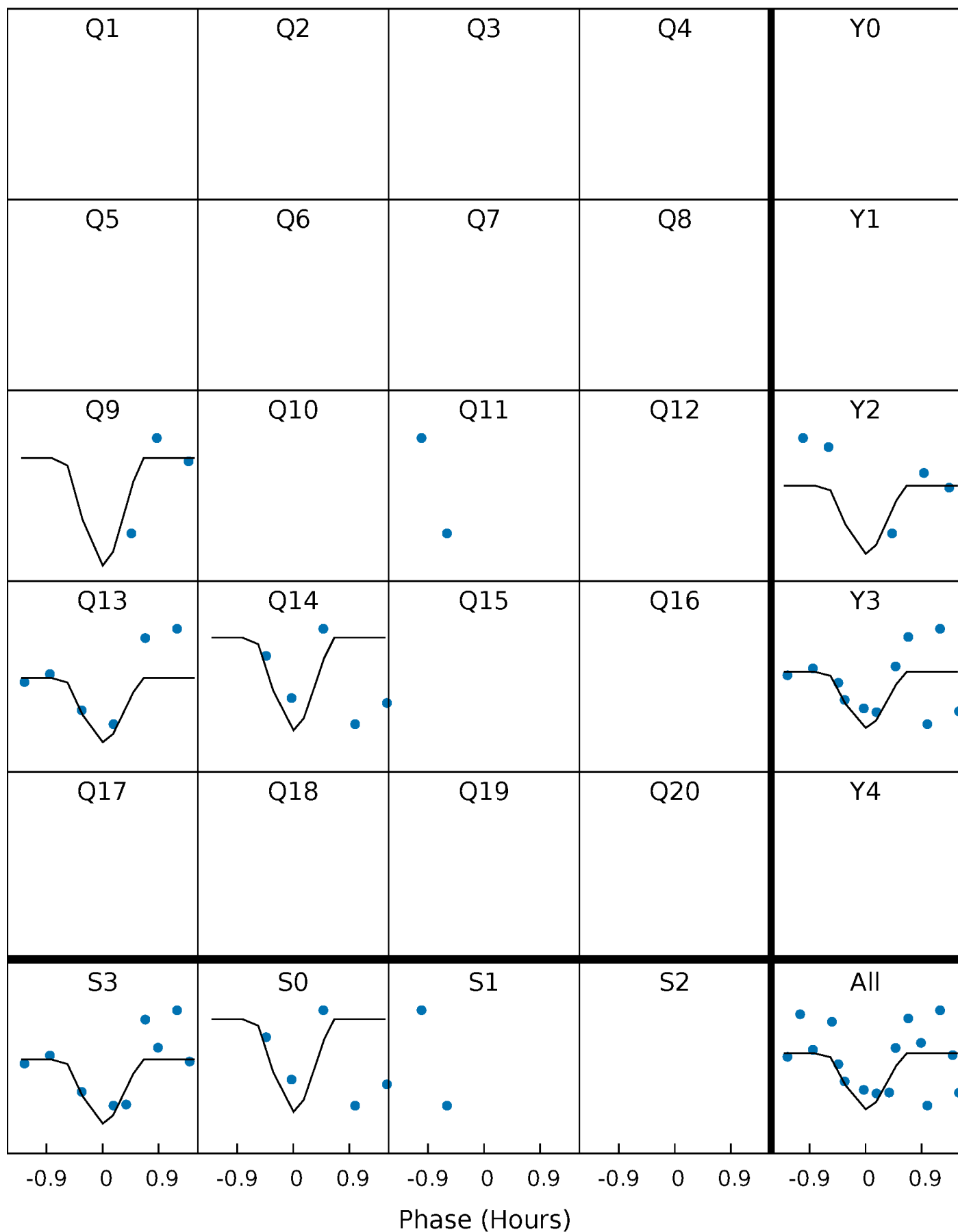
PDC Quarter-Phased Transit Curves

TCE 011708170-04 P=116.195398 Days $T_0=146.350826$ (BKJD)



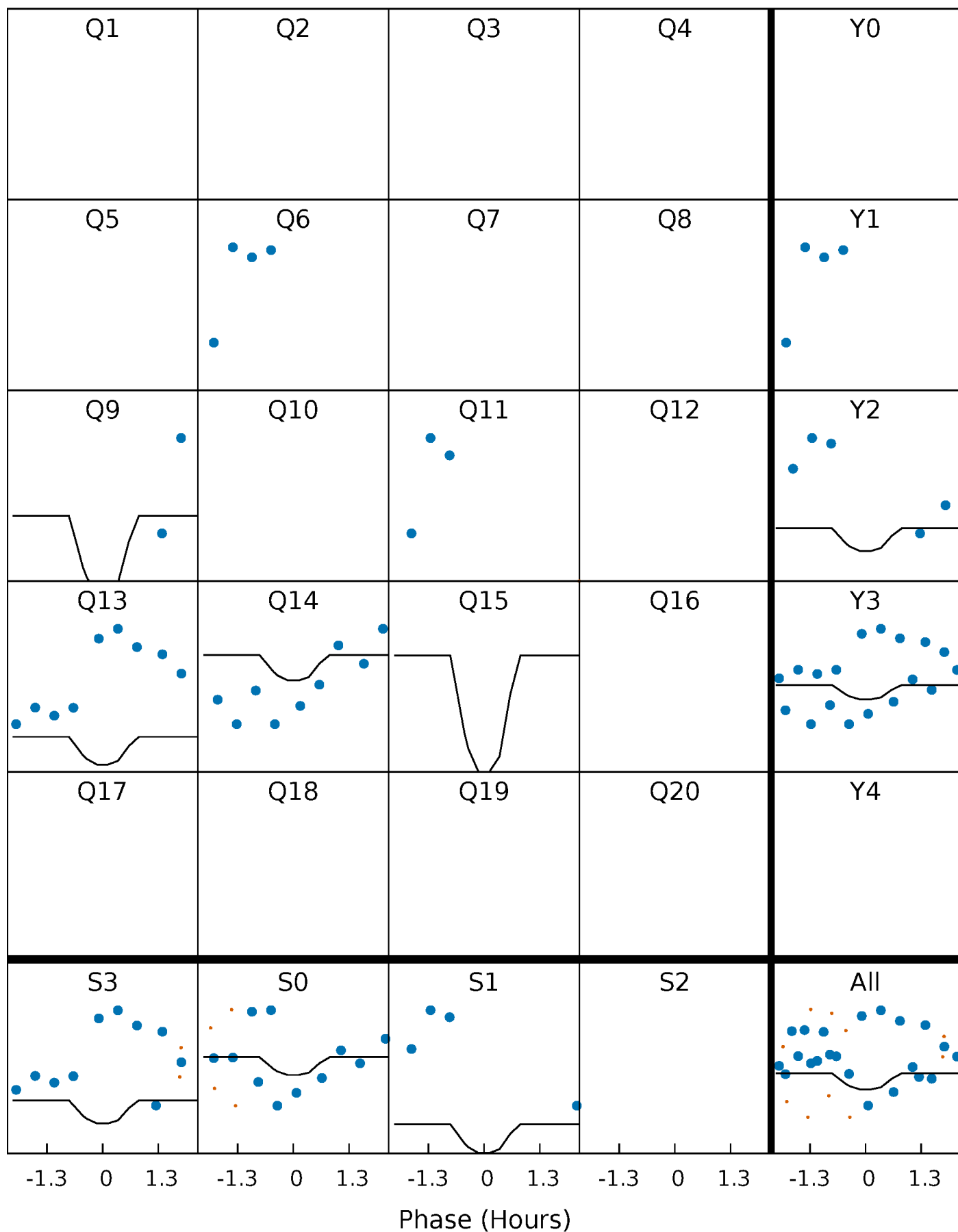
DV Quarter-Phased Transit Curves

TCE 011708170-04 P=116.195398 Days $T_0=146.350826$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

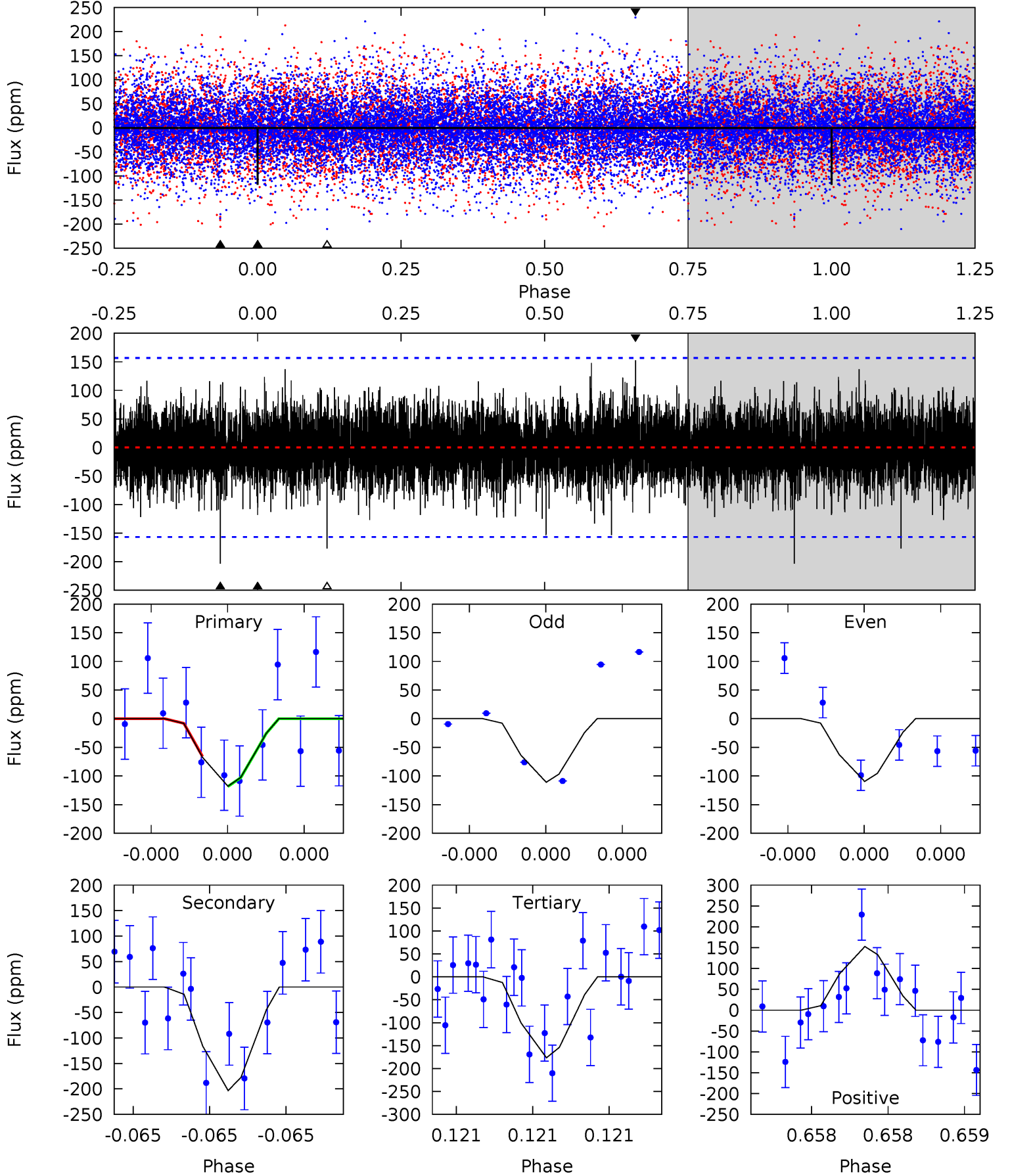
TCE 011708170-04 P=116.218872 Days $T_0=146.172436$ (BKJD)



DV Model-Shift Uniqueness Test

011708170-04, P = 116.195398 Days, E = 30.155428 Days

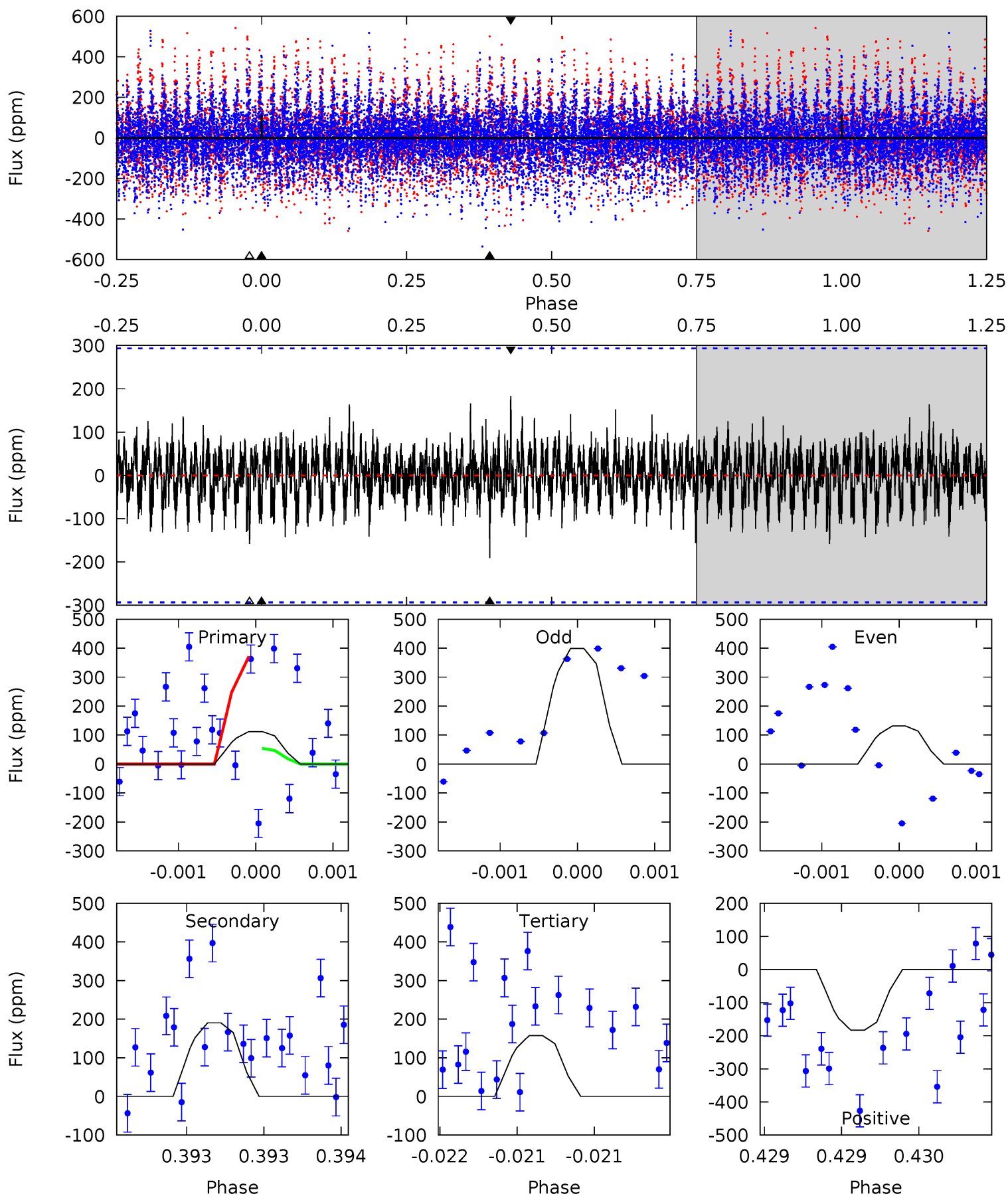
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.23	7.30	6.34	5.49	5.63	3.57	1.30	-2.11	-1.25	0.96	1.82	0.03	1.00	0.43	0.82



Alt Model-Shift Uniqueness Test

011708170-04, $P = 116.218872$ Days, $E = 29.953564$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.13	3.61	2.99	3.48	5.56	3.47	0.85	-0.86	-1.35	0.62	0.13	2.44	1.00	0.49	2.70



Stellar Parameters For KIC 011708170

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6773^{+108}_{-162}	$4.209^{+0.076}_{-0.114}$	$-0.040^{+0.150}_{-0.150}$	$1.510^{+0.256}_{-0.170}$	$1.351^{+0.098}_{-0.109}$	$0.552^{+0.207}_{-0.178}$
	+2%/-2%	+2%/-3%	+375%/-375%	+17%/-11%	+7%/-8%	+38%/-32%
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 011708170-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-203 ± 28	$29.92^{+29.20}_{-22.13}$	715^{+29}_{-26}	2674^{+1275}_{-410}	32^{+435}_{-23}
Alt.	-190 ± 53	$27.39^{+31.91}_{-19.81}$	717^{+32}_{-26}	2703^{+1291}_{-460}	35^{+429}_{-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 $A_{\text{obs}} \gg 1.0$

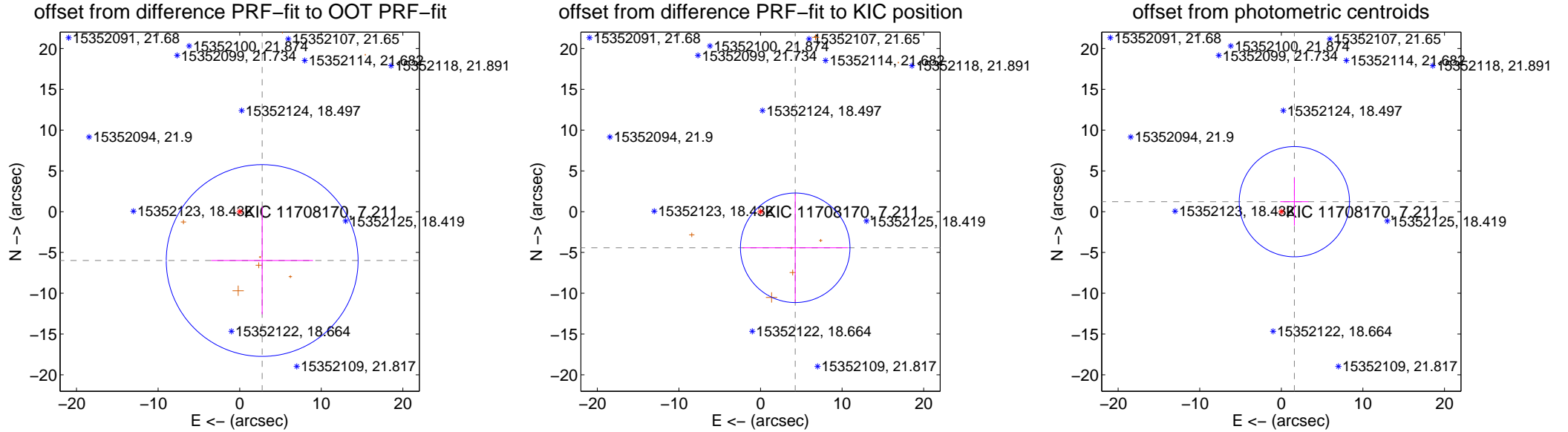
DV Centroid Data

Supplemental centroid analysis for 011708170-04. **Kepler magnitude: 7.21.** Transit SNR 3.74

There are 0 quarters with good PRF difference image offsets

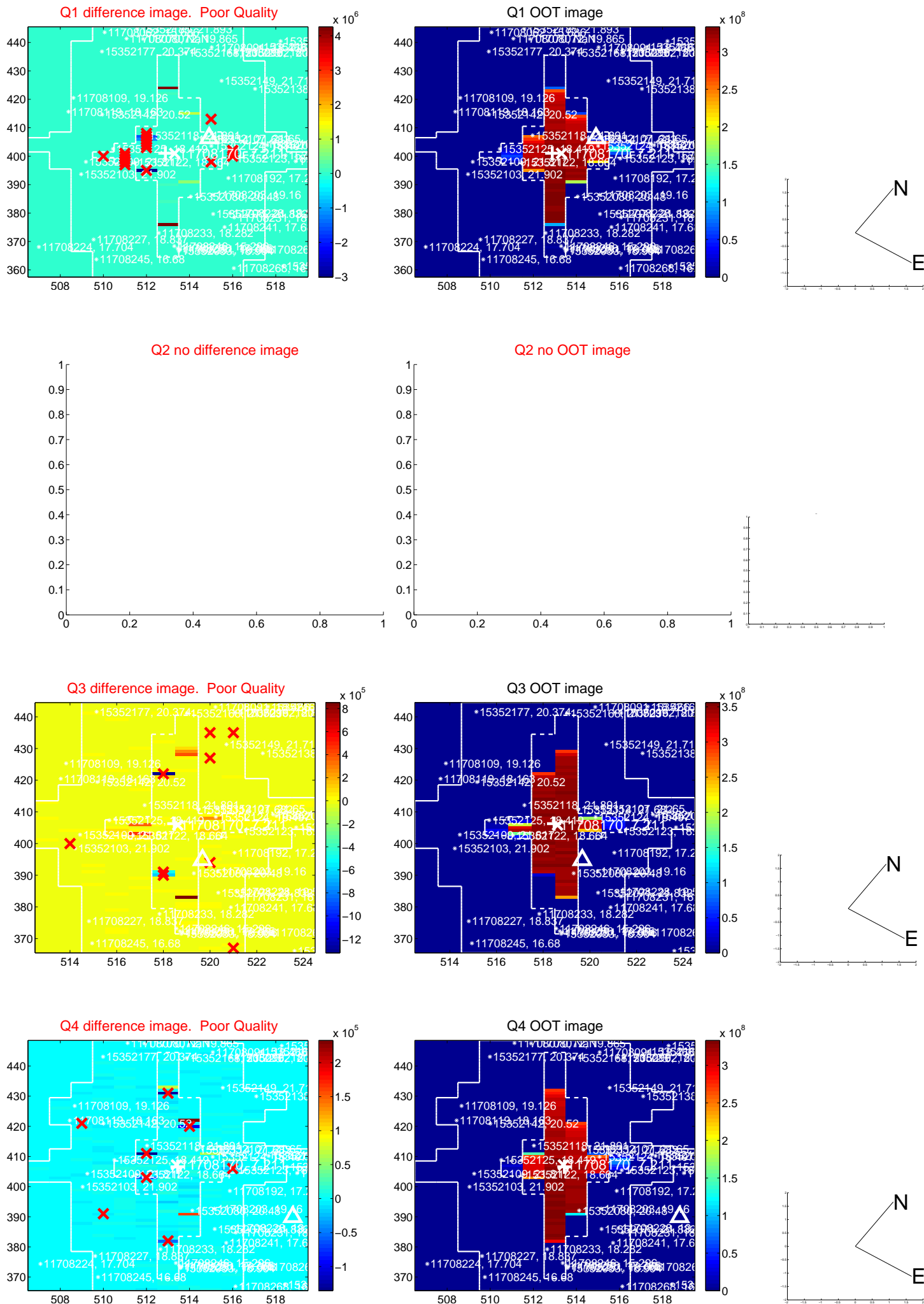
The OOT PRF centroid is offset from the target star catalog position by about 2.20 arcsec so the offset from difference PRF-fit to OOT PRF-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.592 ± 3.918	1.68	-2.756 ± 6.232	-5.988 ± 6.595
PRF-fit source offset from KIC position	6.140 ± 2.238	2.74	-4.254 ± 6.455	-4.428 ± 6.636
photometric centroid source offset	2.01 ± 2.25	0.89	-1.60 ± 1.73	1.23 ± 2.93

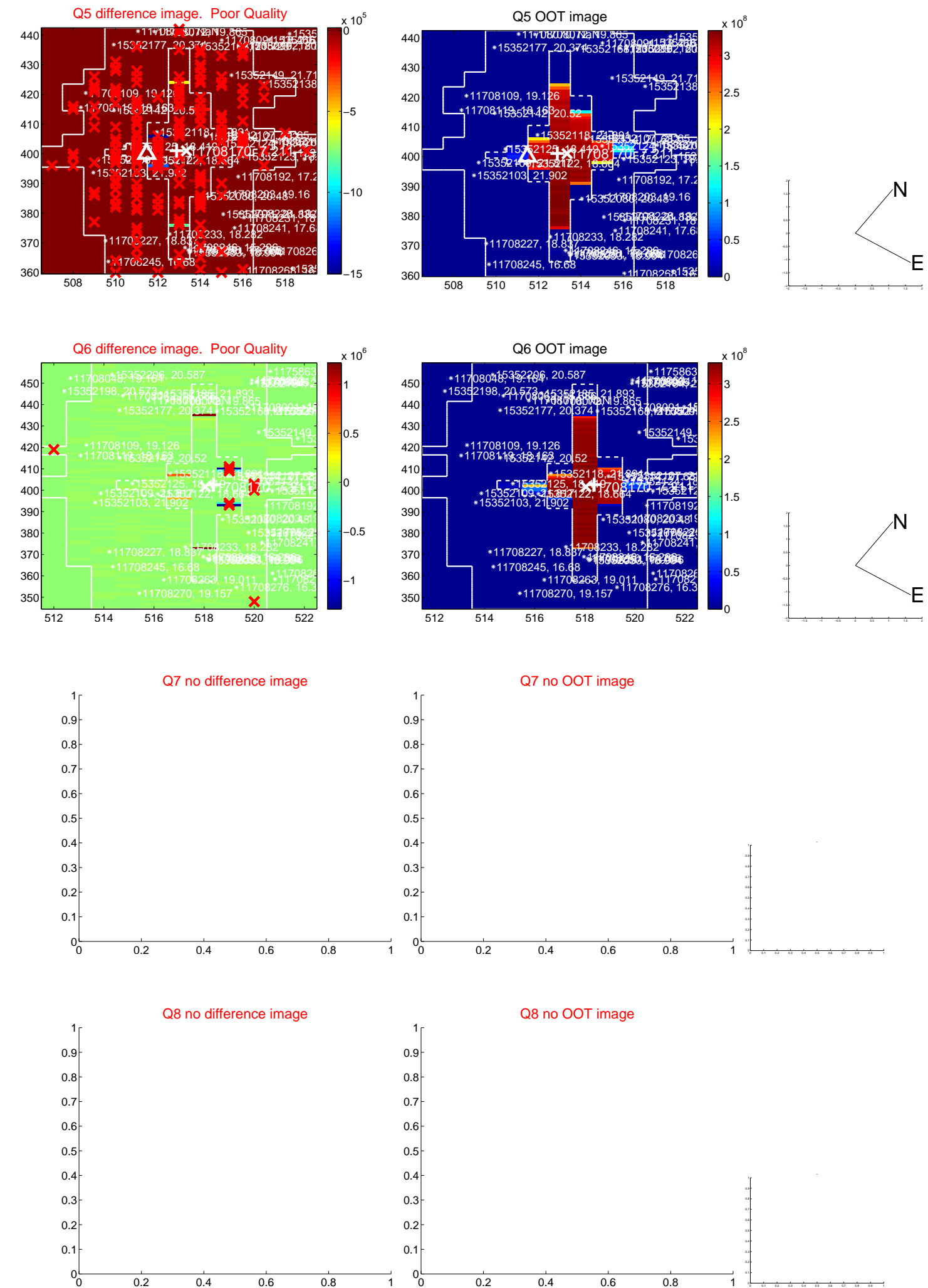


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

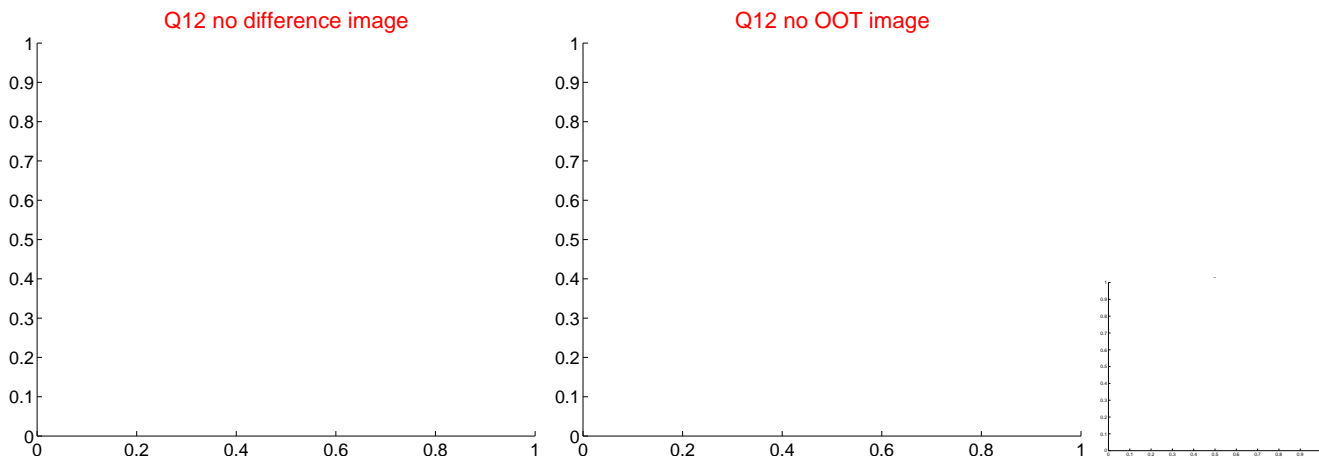
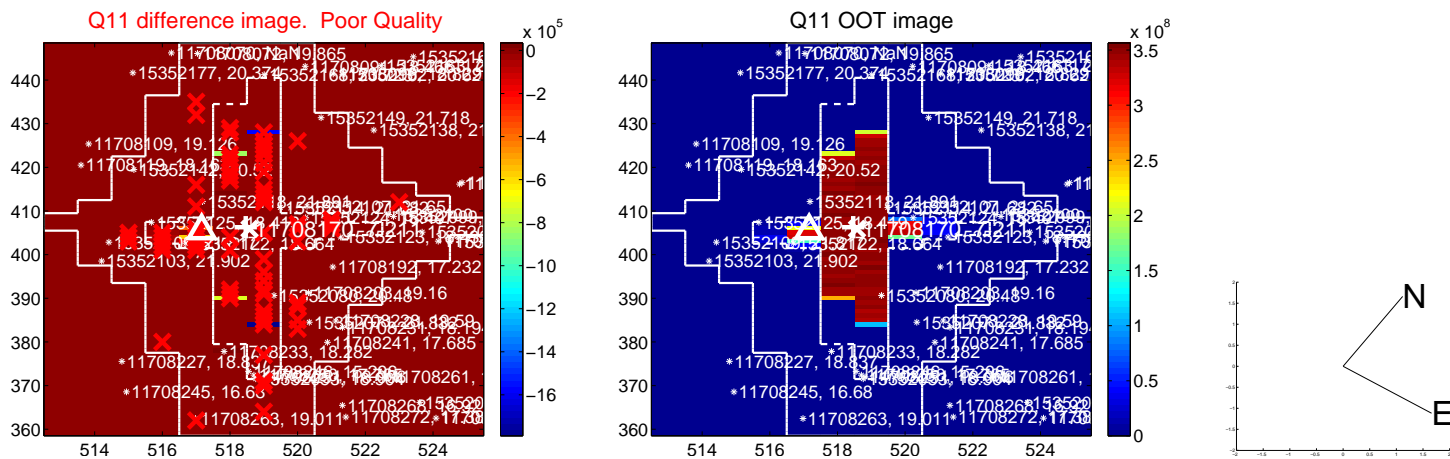
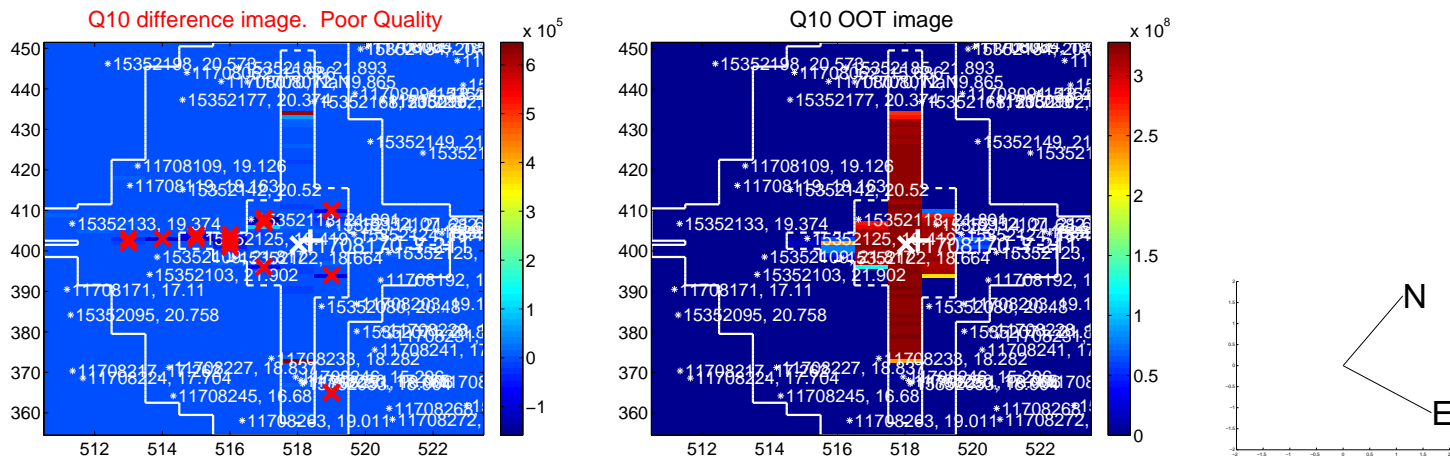
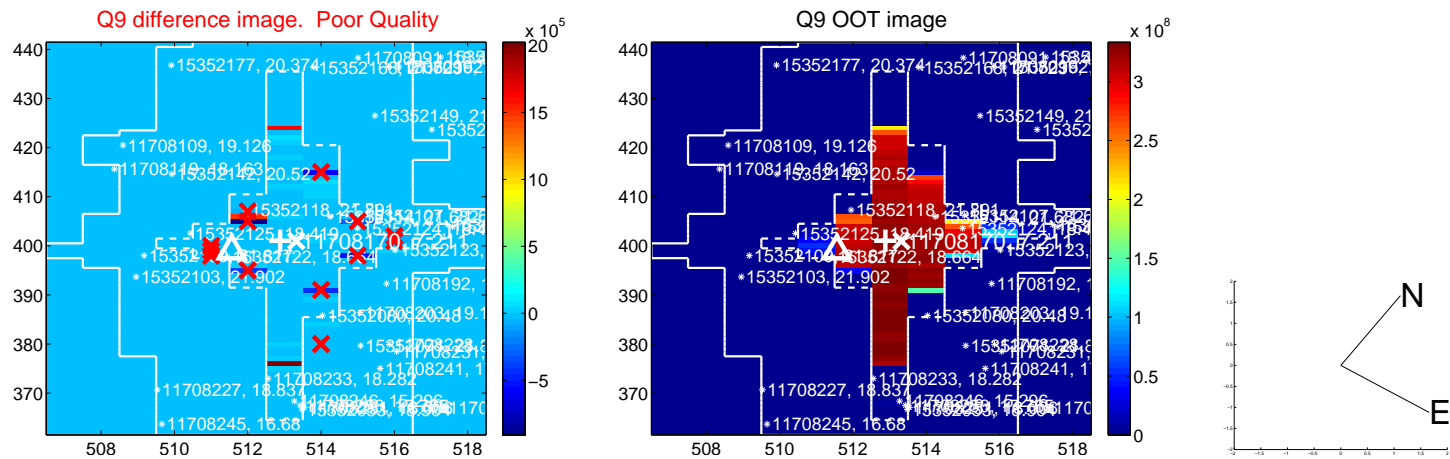
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



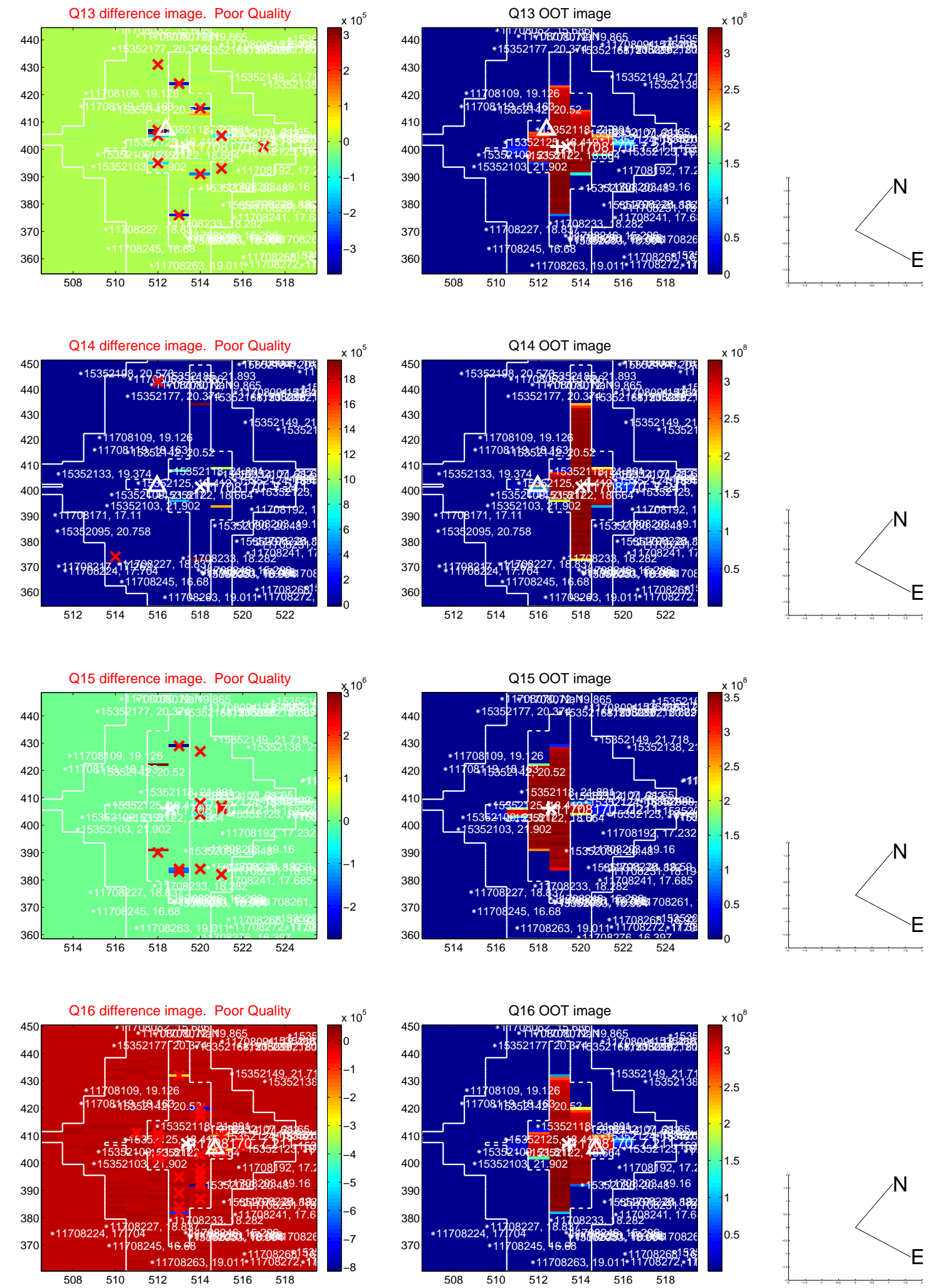
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



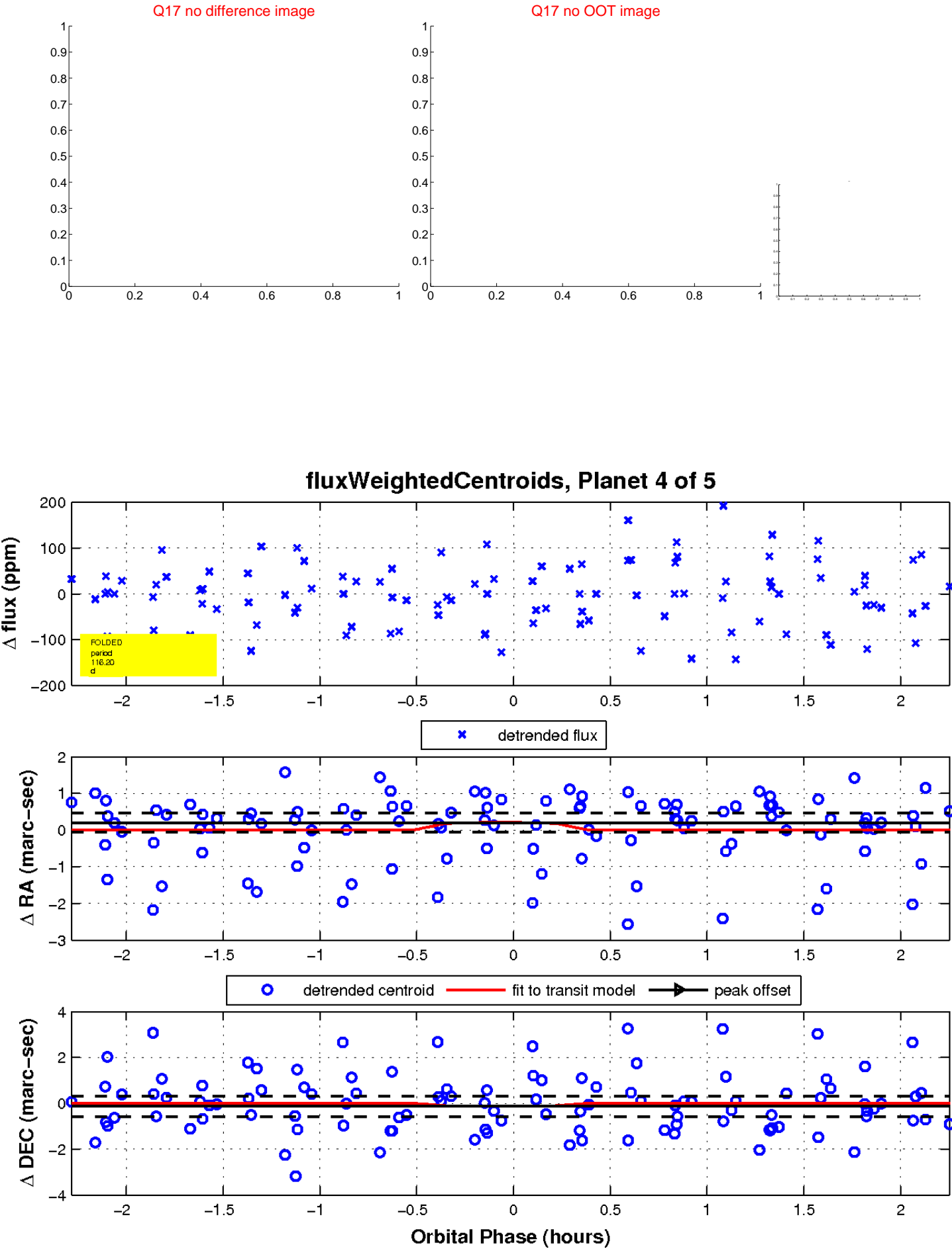
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



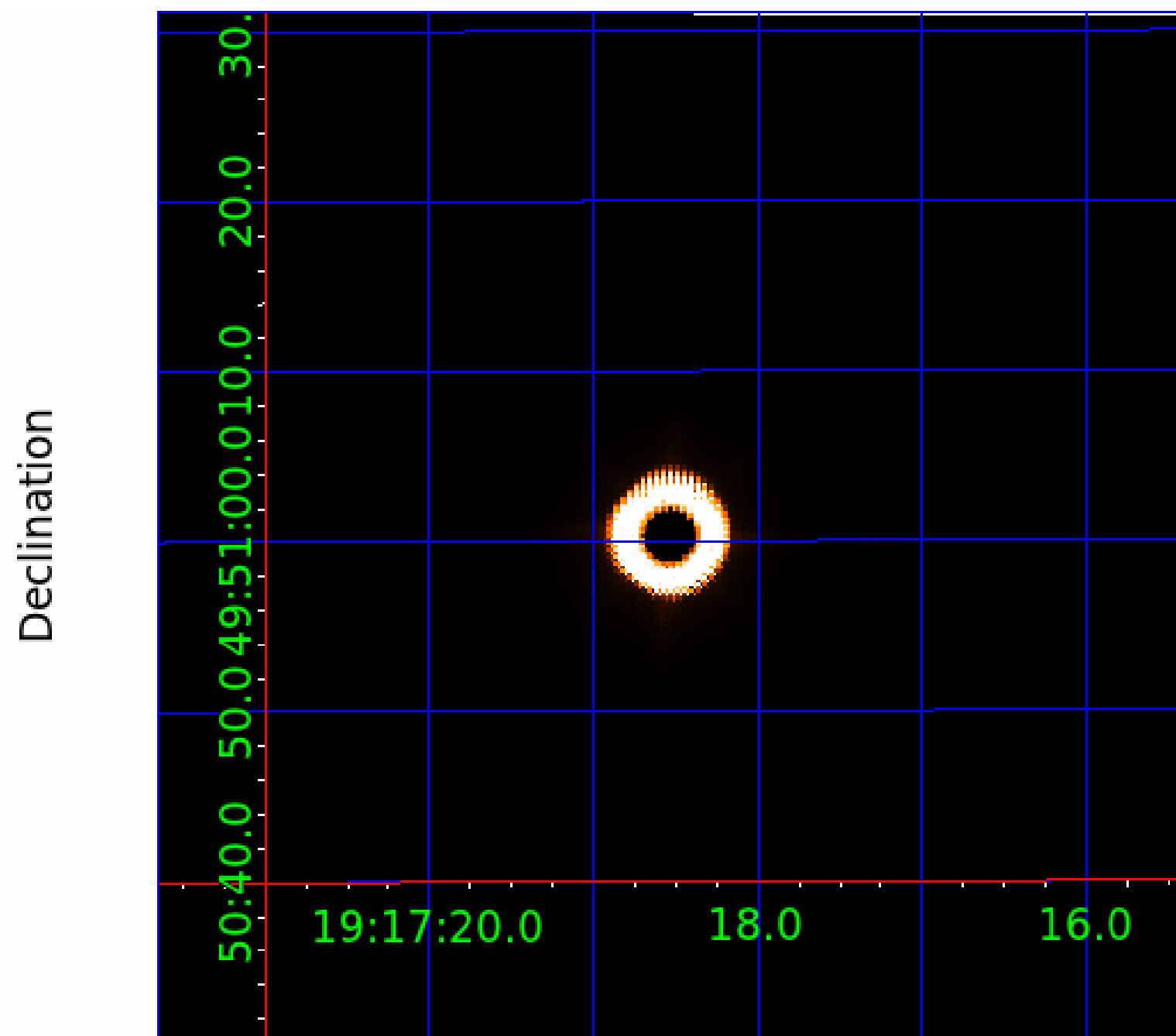
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 011708170

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})
011708170-01	OBS	No	2.424798	133.873066	10.8	8.262	10.8	6.6	1.51	6773	0.58	2825.55
011708170-02	OBS	No	0.808249	132.069527	13.3	3.000	11.2	-1.0	1.51	6773	0.56	12225.78
011708170-03	OBS	No	135.540619	236.824780	132.2	7.497	8.7	9.6	1.51	6773	2.15	13.22
011708170-04	OBS	No	116.195398	146.350826	151.5	0.764	8.4	3.7	1.51	6773	1.97	16.23
011708170-05	OBS	No	186.898546	211.815923	139.7	4.798	8.3	8.2	1.51	6773	2.06	8.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011708170-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011708170-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
011708170-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011708170-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
011708170-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

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

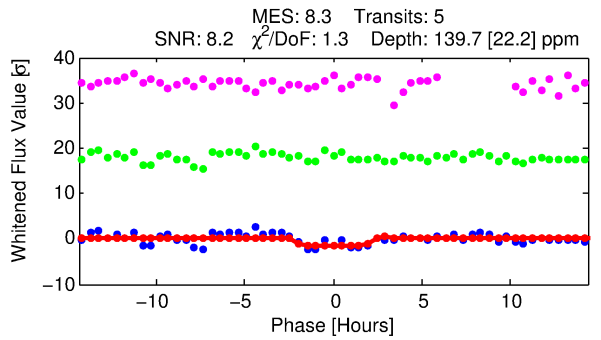
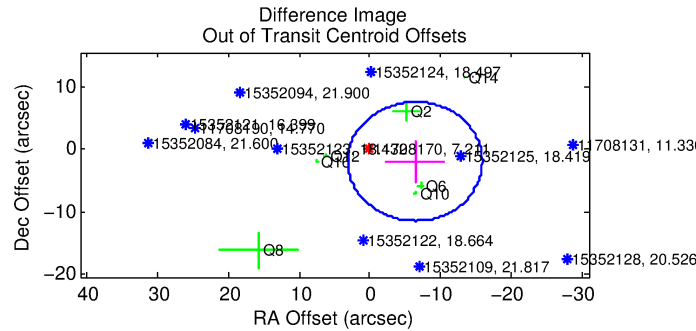
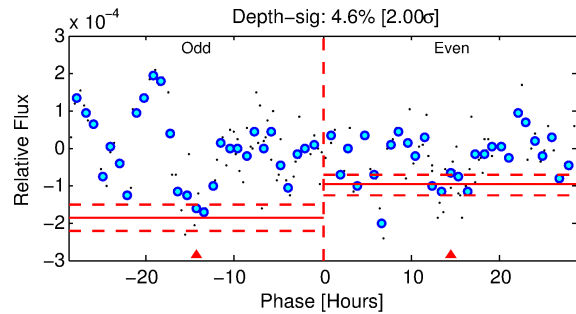
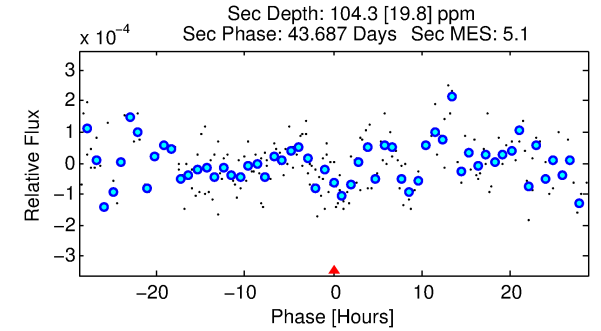
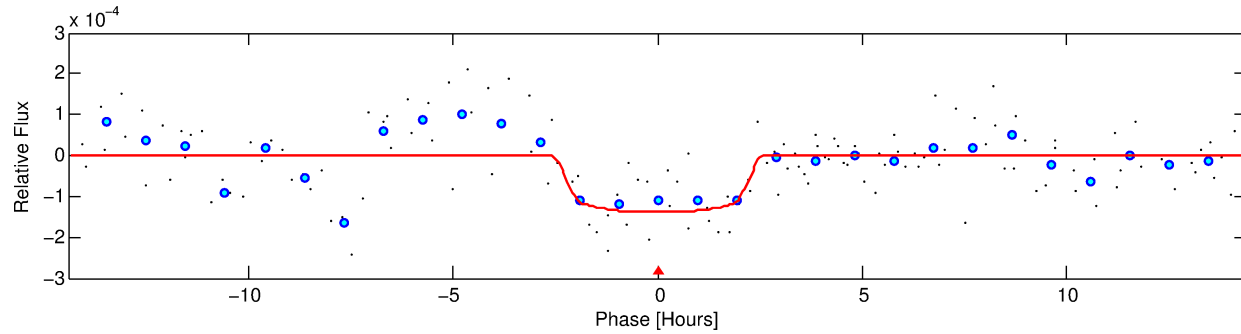
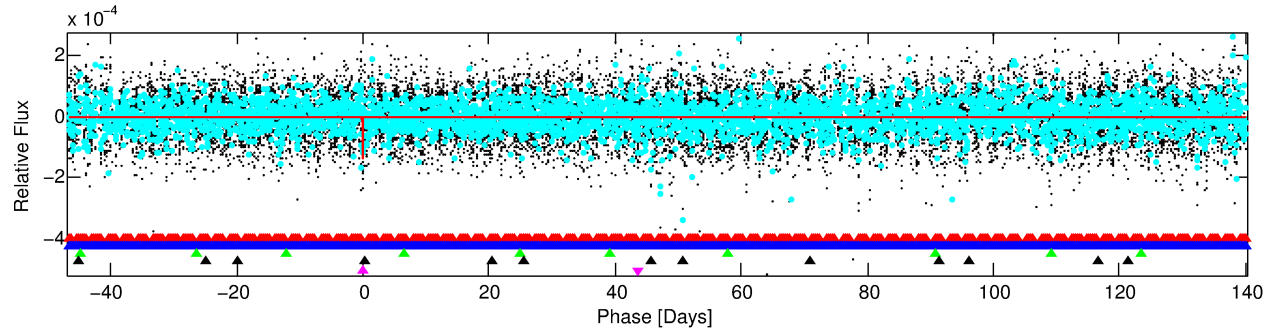
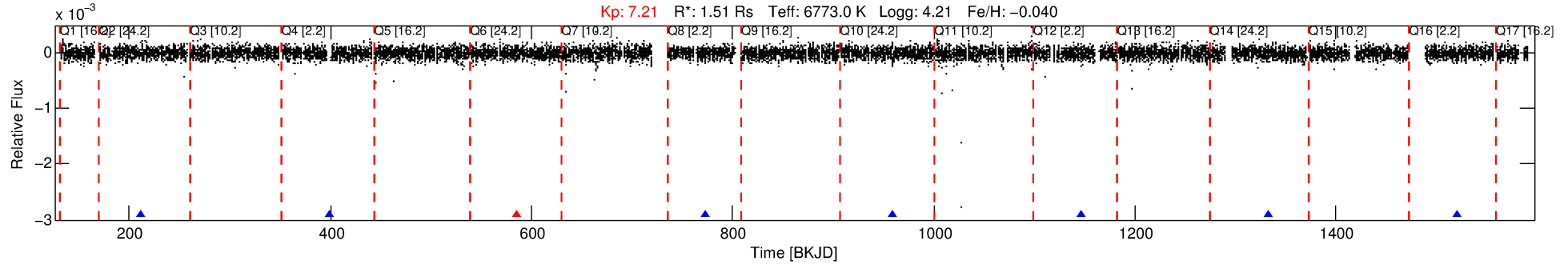
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011708170-05

No Significant Match Found

DV One-Page Summary

KIC: 11708170 Candidate: 5 of 5 Period: 186.899 d



DV Fit Results:

Period = 186.89855 [0.00316] d
Epoch = 211.8159 [0.0146] BKJD
 $R_p/R^* = 0.0125$ [0.0055]
 $a/R^* = 145.24$ [366.46]
 $b = 0.89$ [0.61]
 $\text{Seff} = 8.61$ [1.97]
 $T_{\text{eq}} = 437$ [25] K
 $R_p = 2.06$ [0.97] R_e
 $a/R^* = 0.7065$ [0.1010] AU
 $\text{Ag} = 6753.58$ [6227.08] [1.08 σ]
 $T_{\text{eff}} = 6123$ [1383] K [4.11 σ]

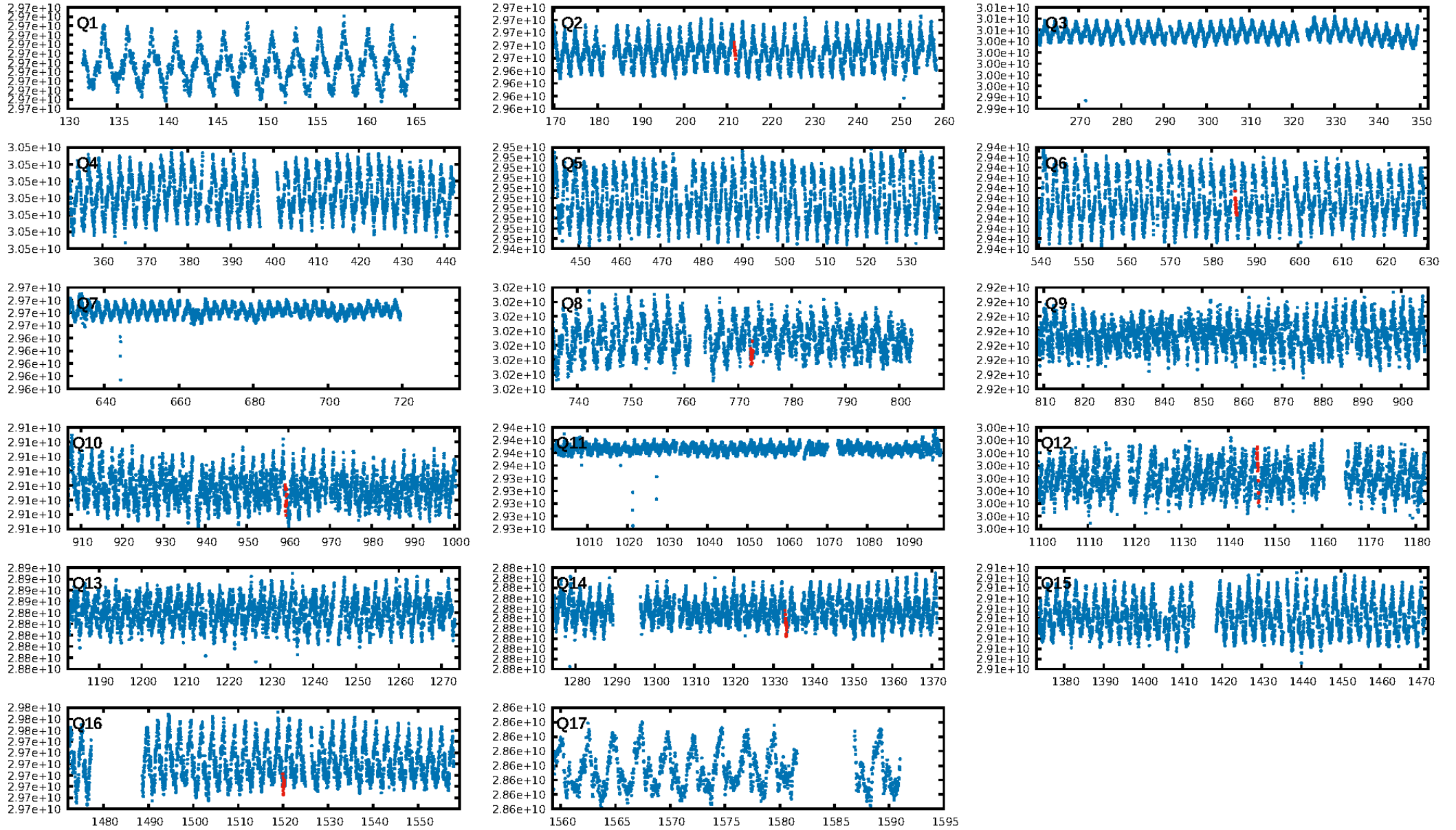
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [138.48 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 26.8%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 1.48e-08
RollingBand-fgt: 0.80 [4/5]
GhostDiagnostic-chr: N/A
Centroid-sig: 53.9%
Centroid-so: 0.993 arcsec [0.52 σ]
OotOffset-rm: 6.687 arcsec [2.11 σ]
KicOffset-rm: 8.459 arcsec [3.17 σ]
OotOffset-st: 4/0/3/0 [7]
KicOffset-st: 4/0/3/0 [7]
DiffImageQuality-fgm: 0.14 [1/7]
DiffImageOverlap-fno: 0.00 [0/7]

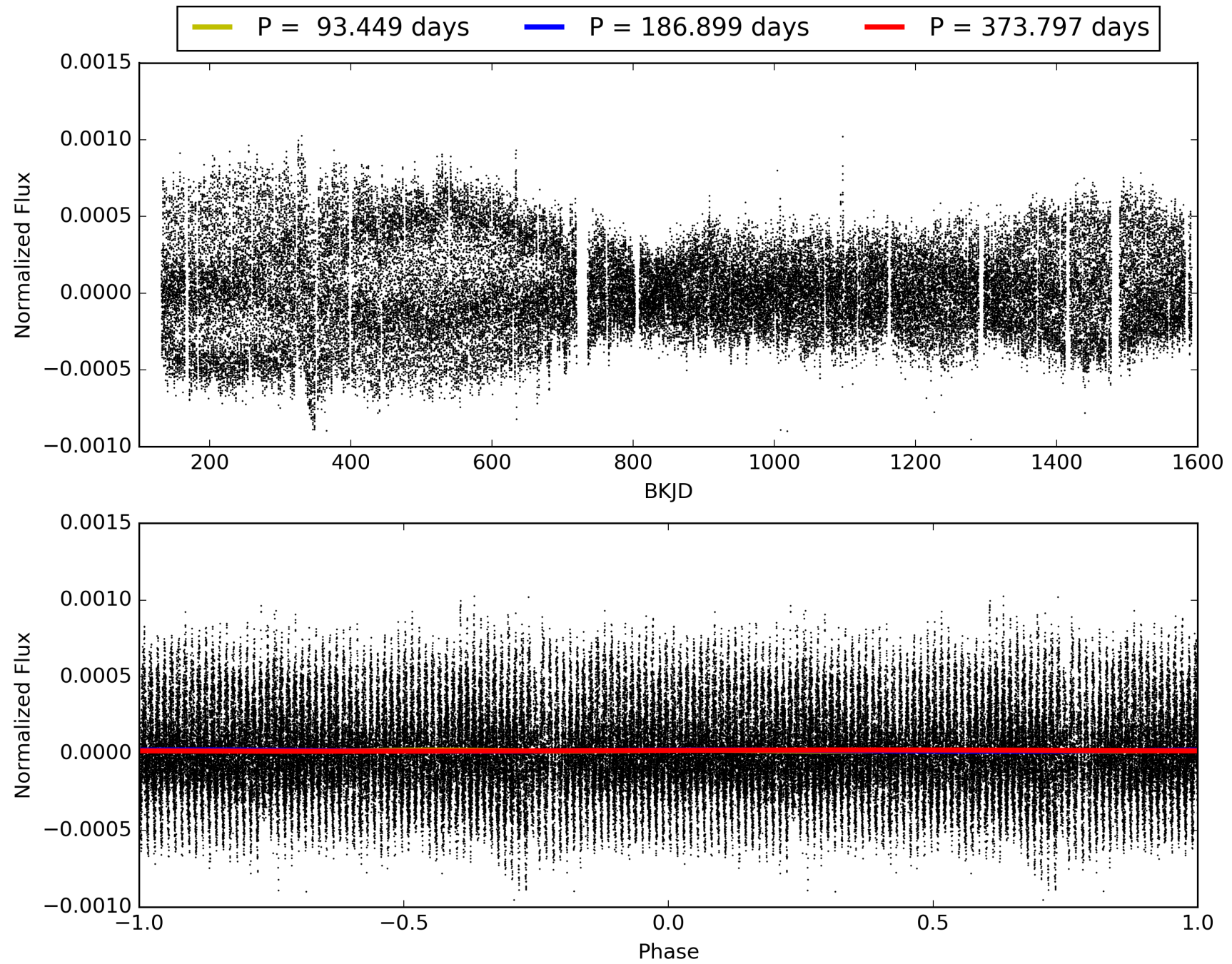
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:24:20 Z

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

TCE 011708170-05, PDC Light Curves

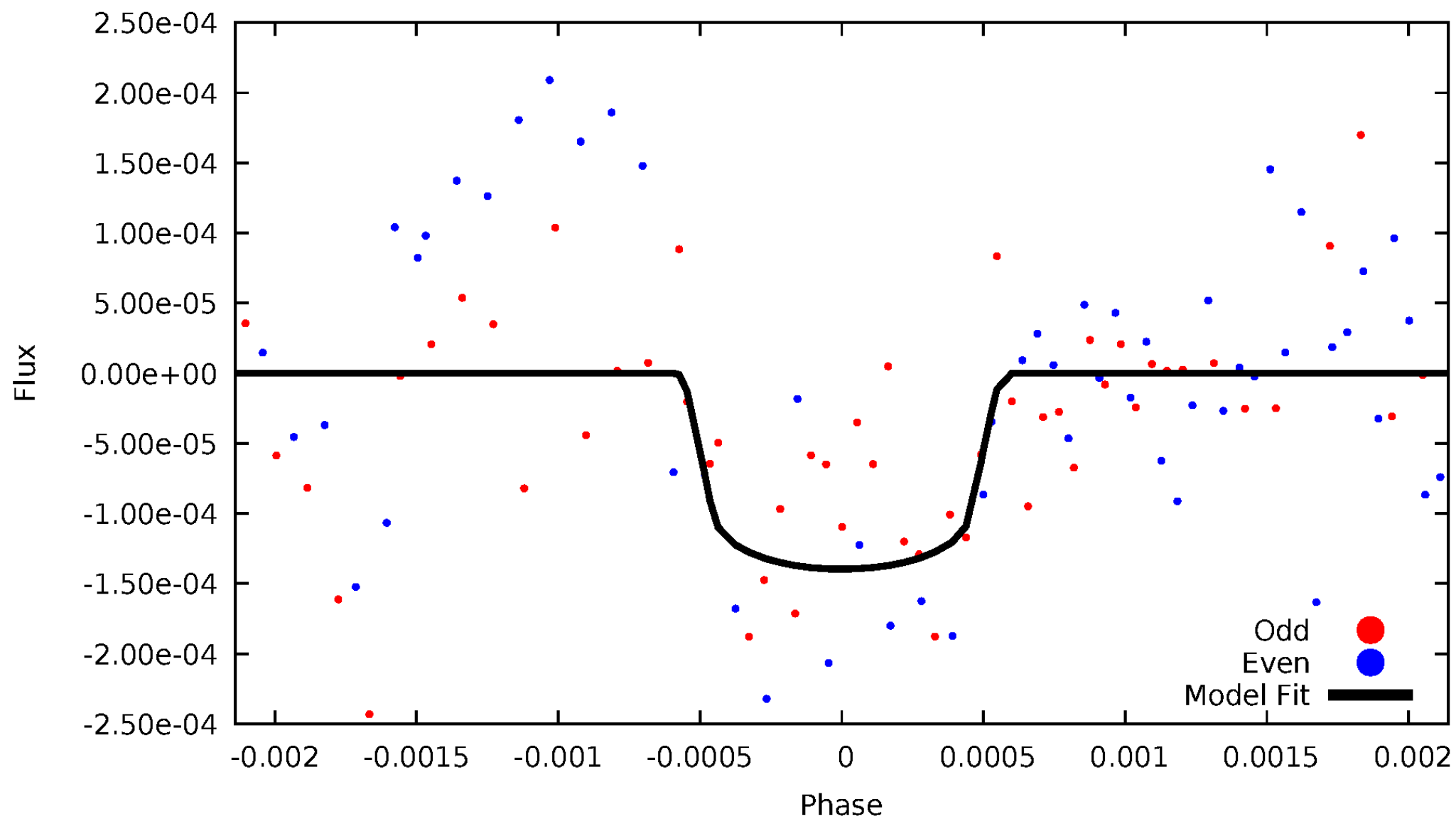


TCE 011708170-05



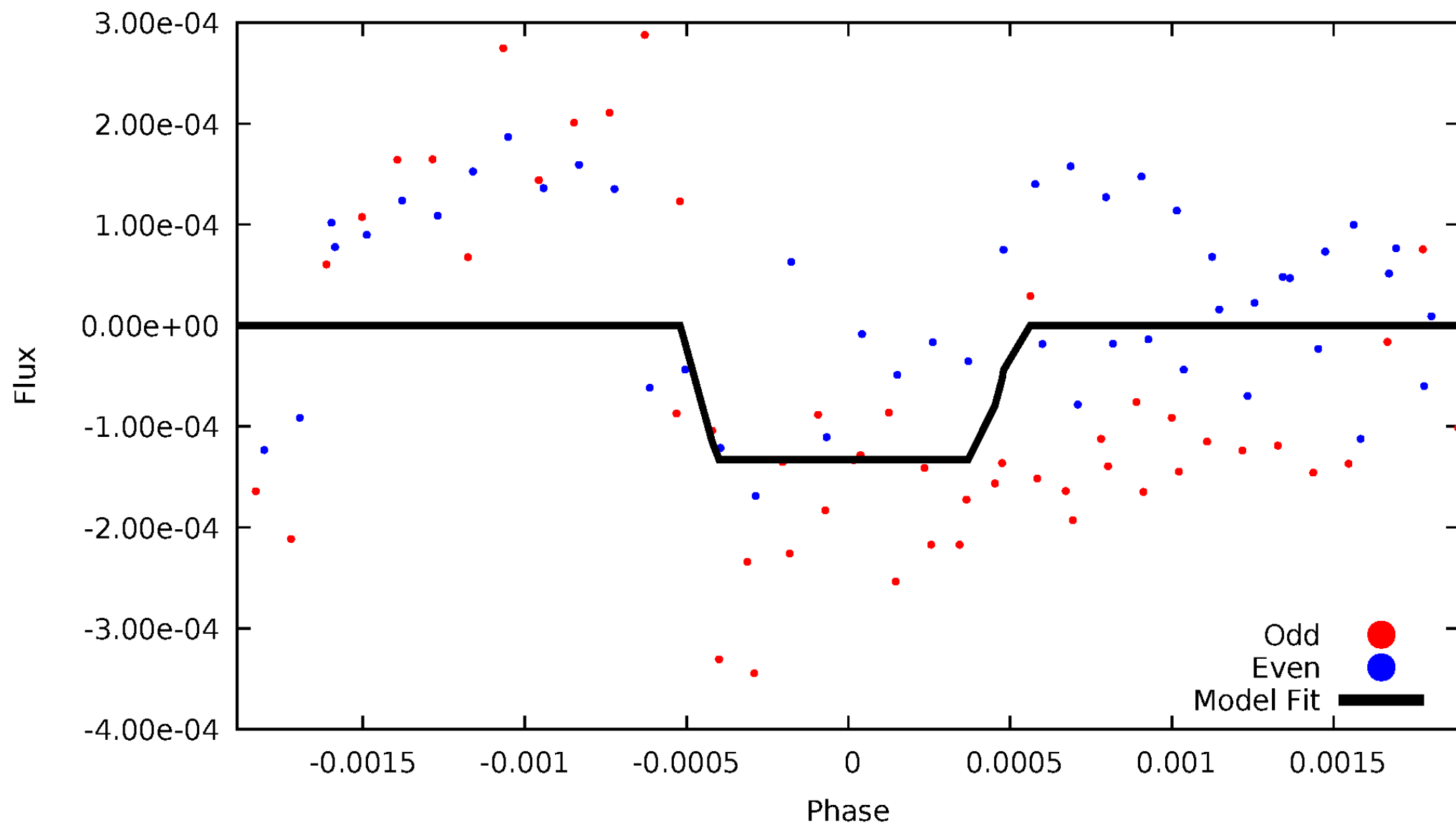
DV Odd/Even

TCE 011708170-05



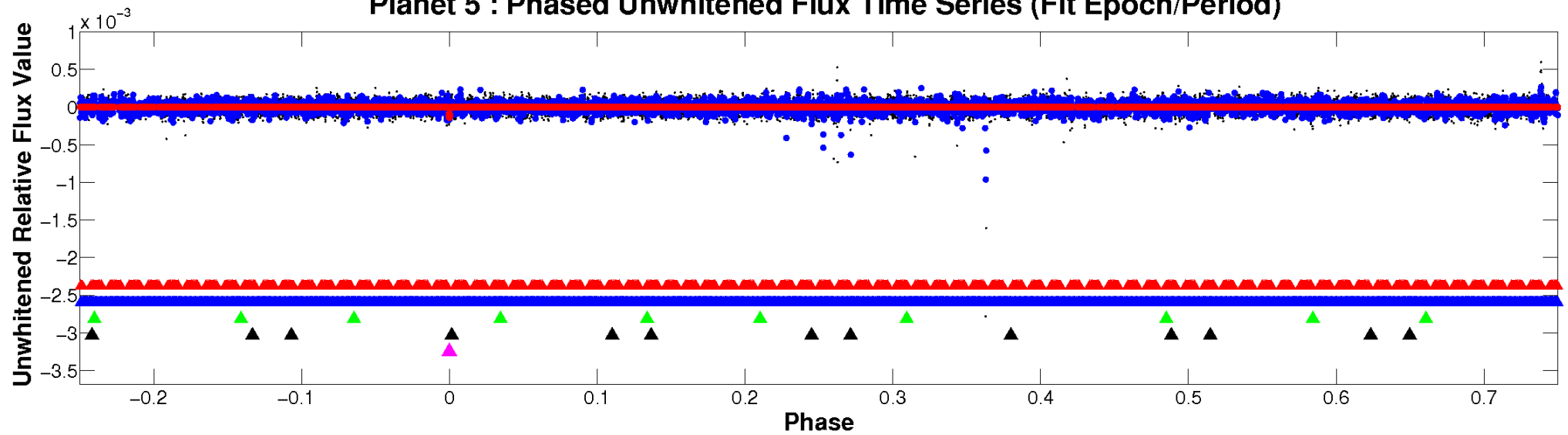
ALT Odd/Even

TCE 011708170-05

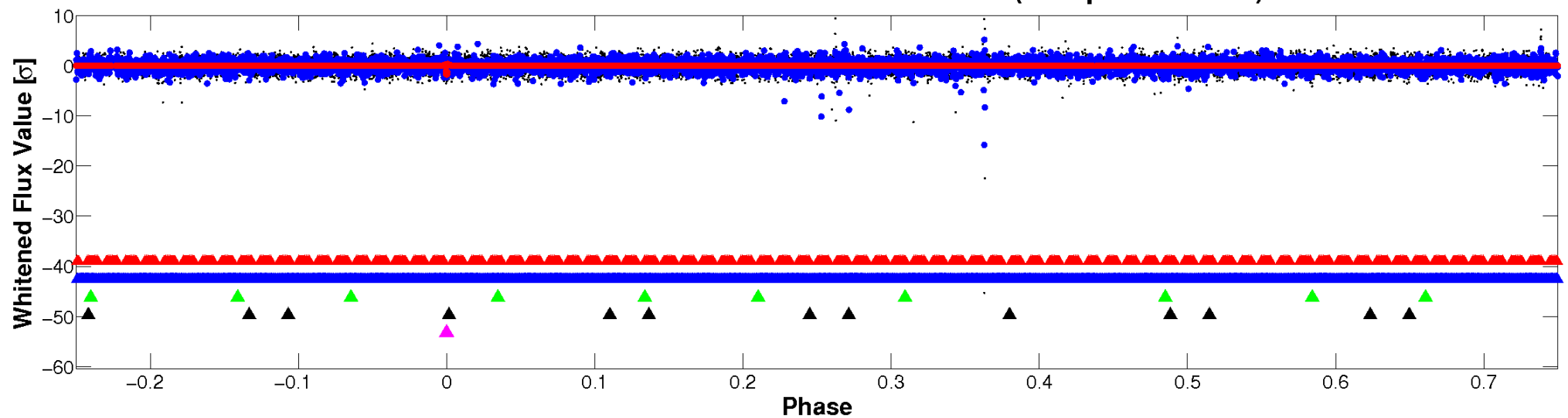


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

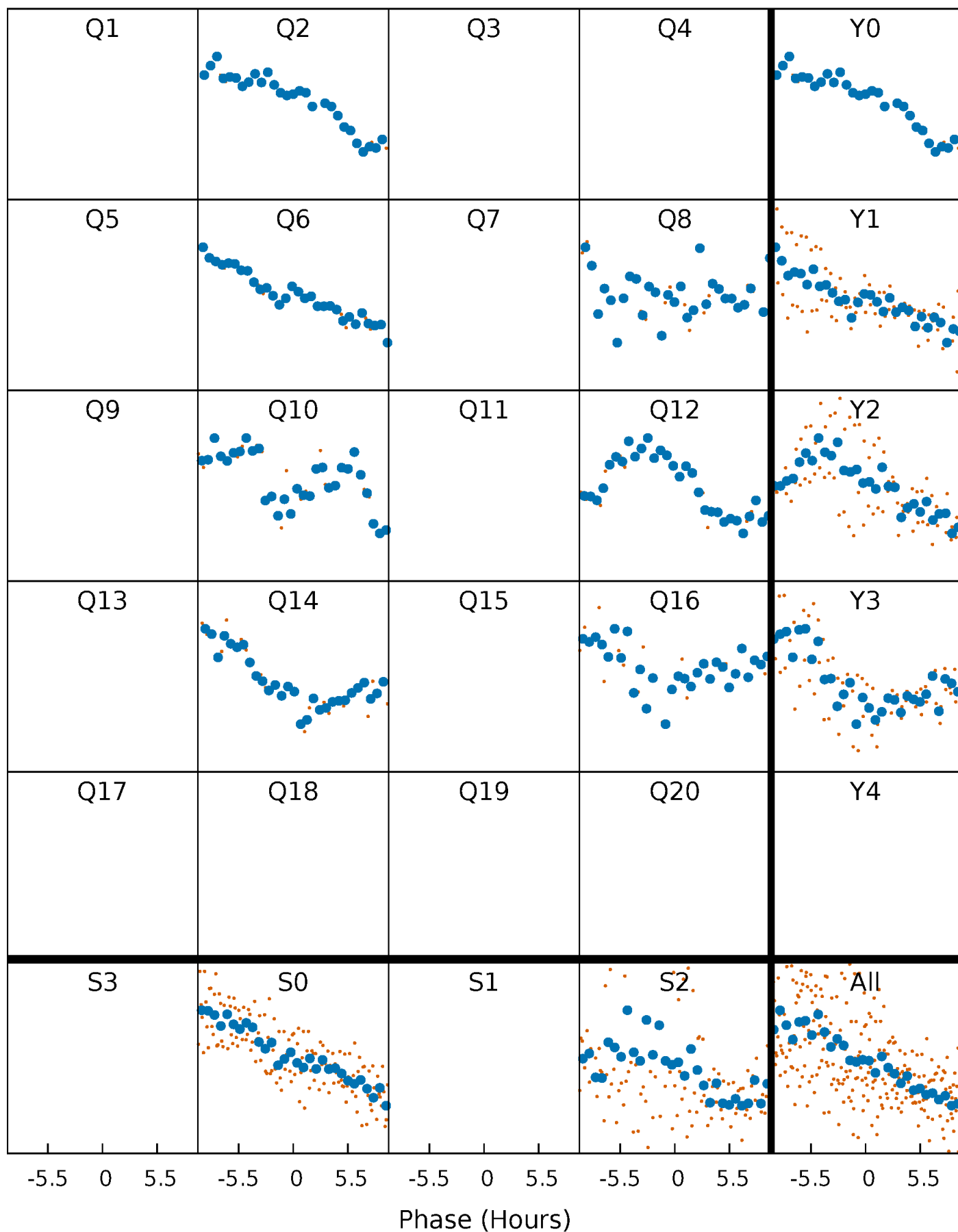


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



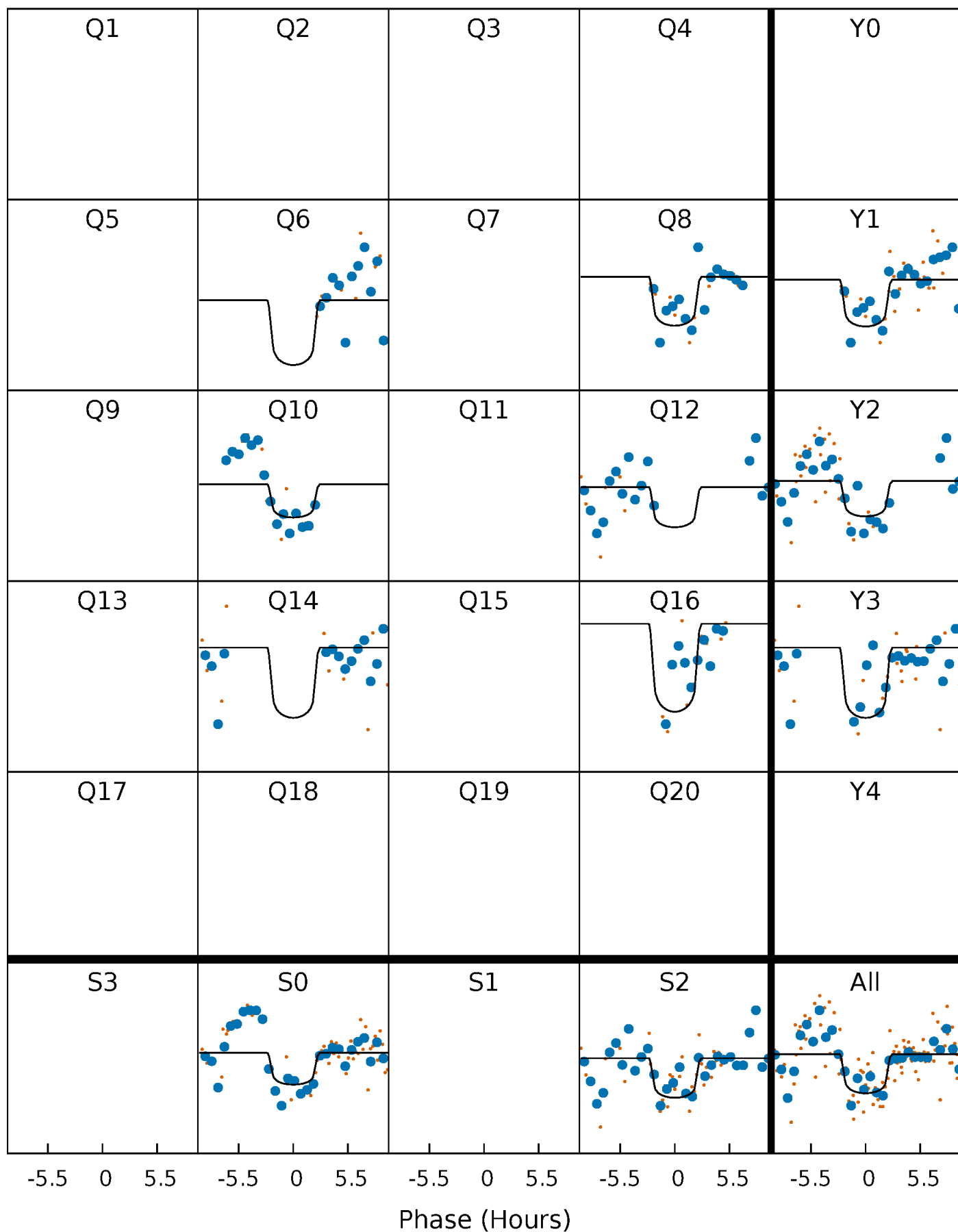
PDC Quarter-Phased Transit Curves

TCE 011708170-05 $P=186.898546$ Days $T_0=211.815923$ (BKJD)



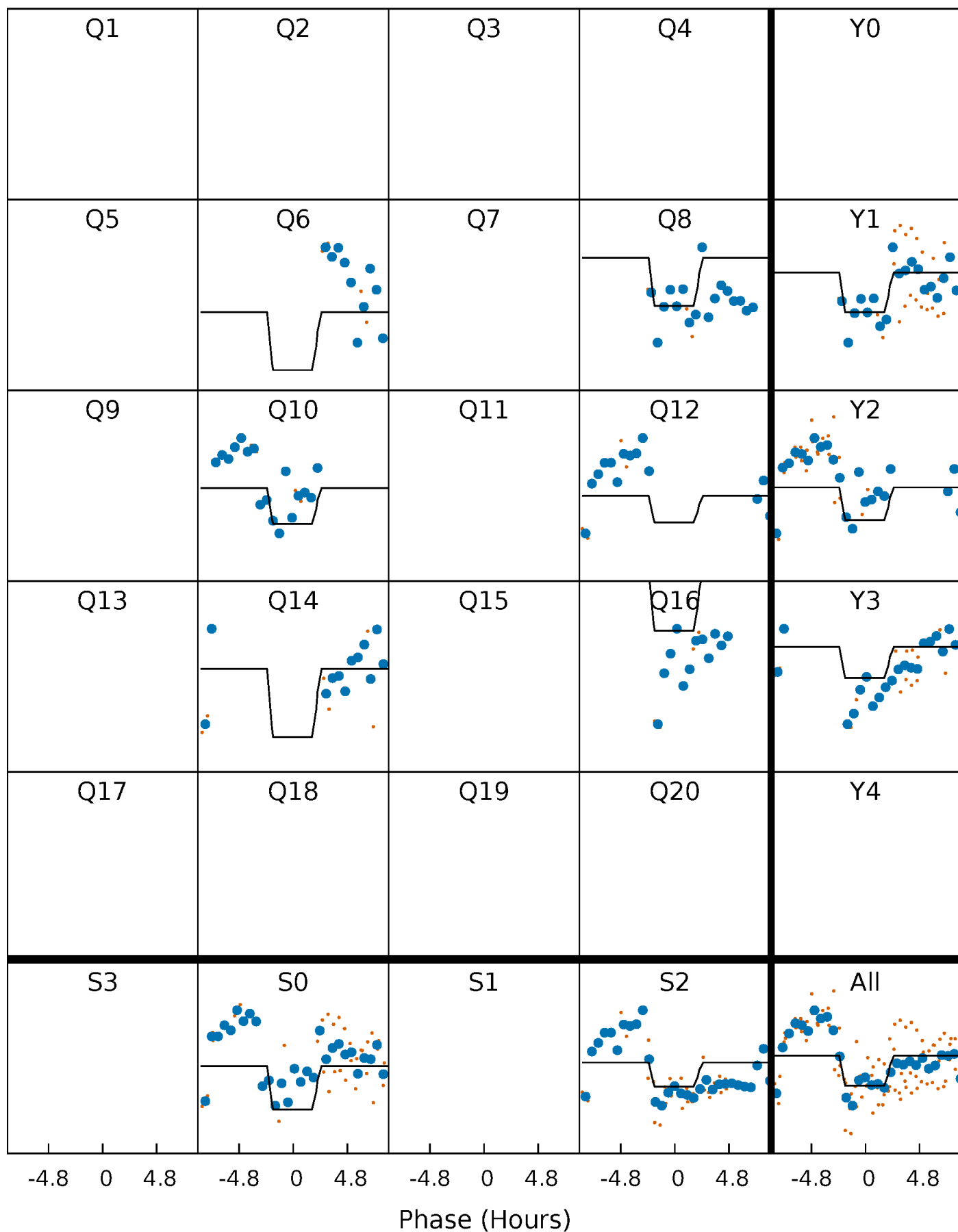
DV Quarter-Phased Transit Curves

TCE 011708170-05 $P=186.898546$ Days $T_0=211.815923$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

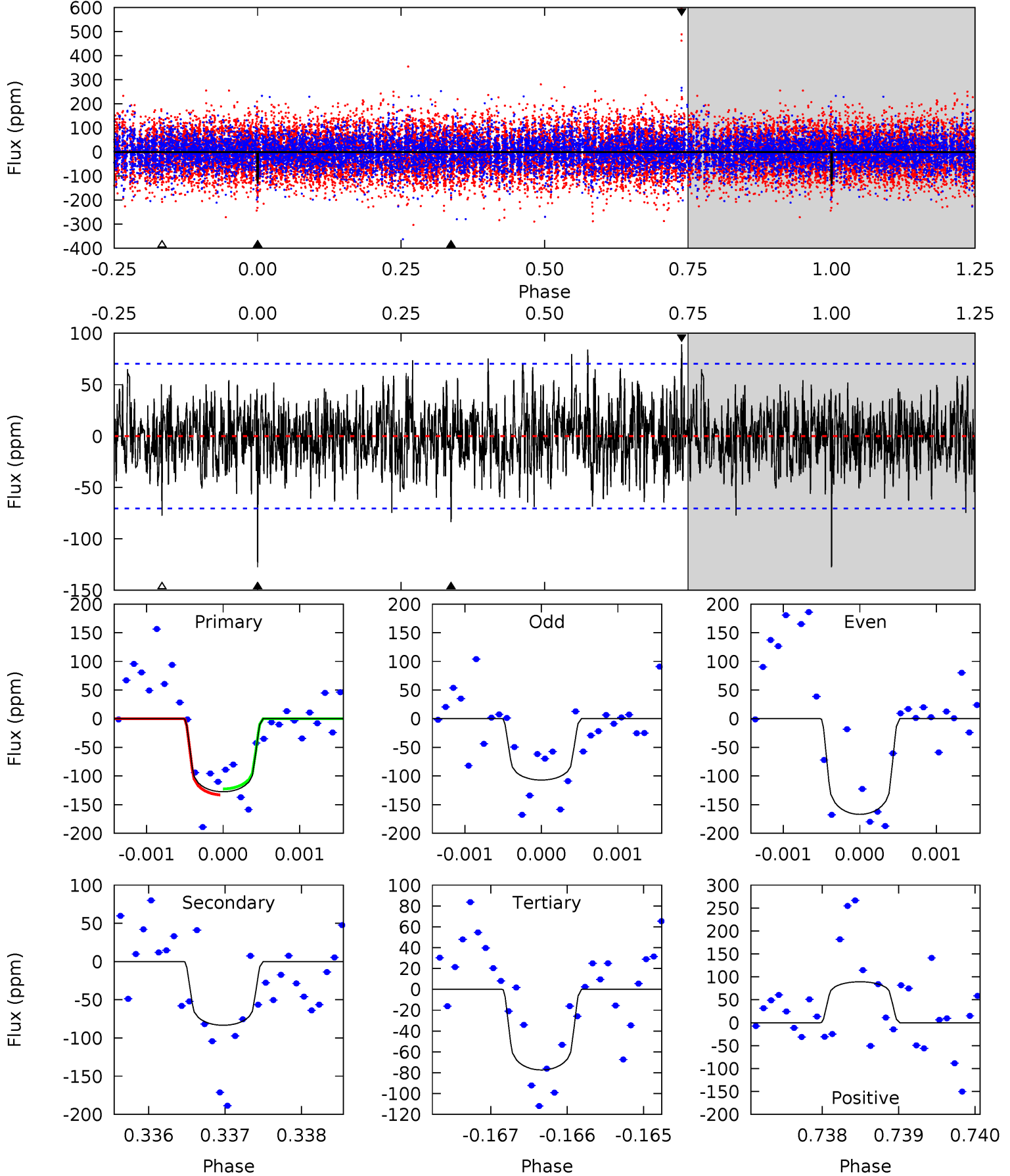
TCE 011708170-05 P=186.905108 Days $T_0=211.793523$ (BKJD)



DV Model-Shift Uniqueness Test

011708170-05, $P = 186.898546$ Days, $E = 24.917377$ Days

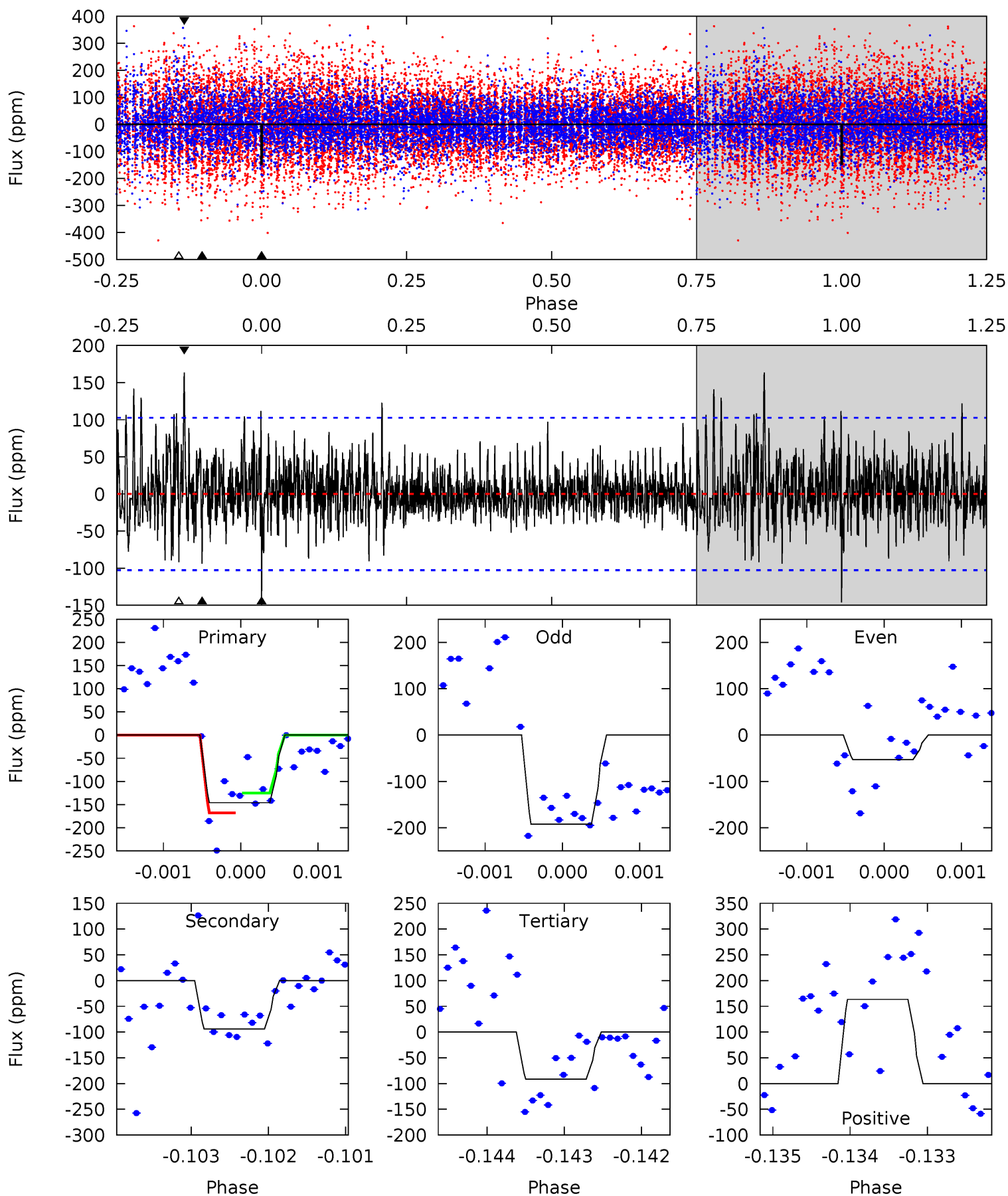
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.84	6.44	5.97	6.88	5.43	3.25	1.81	3.88	2.96	0.47	-0.45	2.22	1.11	0.41	0.40



Alt Model-Shift Uniqueness Test

011708170-05, P = 186.905108 Days, E = 24.888415 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.75	4.99	4.87	8.67	5.45	3.30	1.52	2.88	-0.93	0.12	-3.69	3.66	0.97	0.53	1.13



Stellar Parameters For KIC 011708170

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6773^{+108}_{-162}	$4.209^{+0.076}_{-0.114}$	$-0.040^{+0.150}_{-0.150}$	$1.510^{+0.256}_{-0.170}$	$1.351^{+0.098}_{-0.109}$	$0.552^{+0.207}_{-0.178}$
	+2%/-2%	+2%/-3%	+375%/-375%	+17%/-11%	+7%/-8%	+38%/-32%
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 011708170-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-83 ± 13	$2.07^{+0.94}_{-0.92}$	611^{+29}_{-24}	5740^{+2086}_{-836}	5224^{+11599}_{-2724}
Alt.	-94 ± 19	$1.93^{+0.95}_{-0.90}$	611^{+28}_{-22}	6154^{+2497}_{-1049}	6834^{+16328}_{-3693}

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 $A_{obs} \gg 1.0$

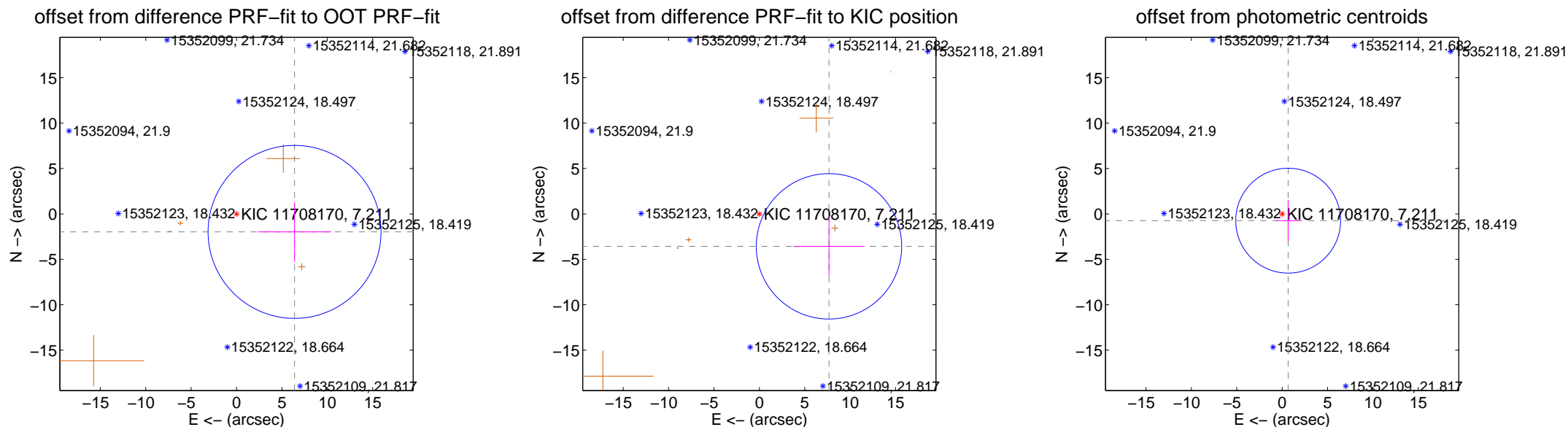
DV Centroid Data

Supplemental centroid analysis for 011708170-05. **Kepler magnitude: 7.21.** Transit SNR 8.20

There are 1 quarters with good PRF difference image offsets

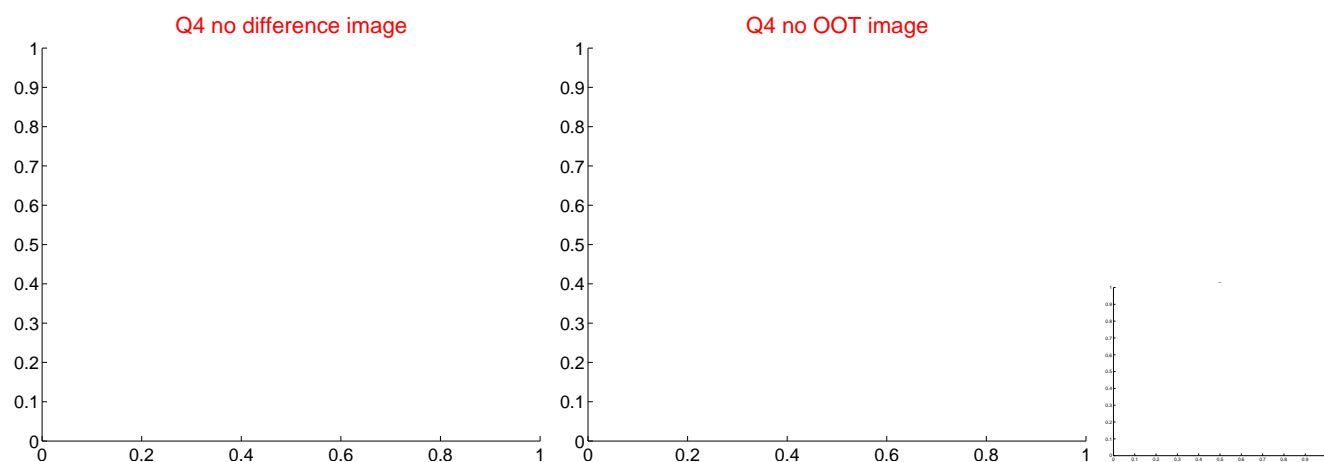
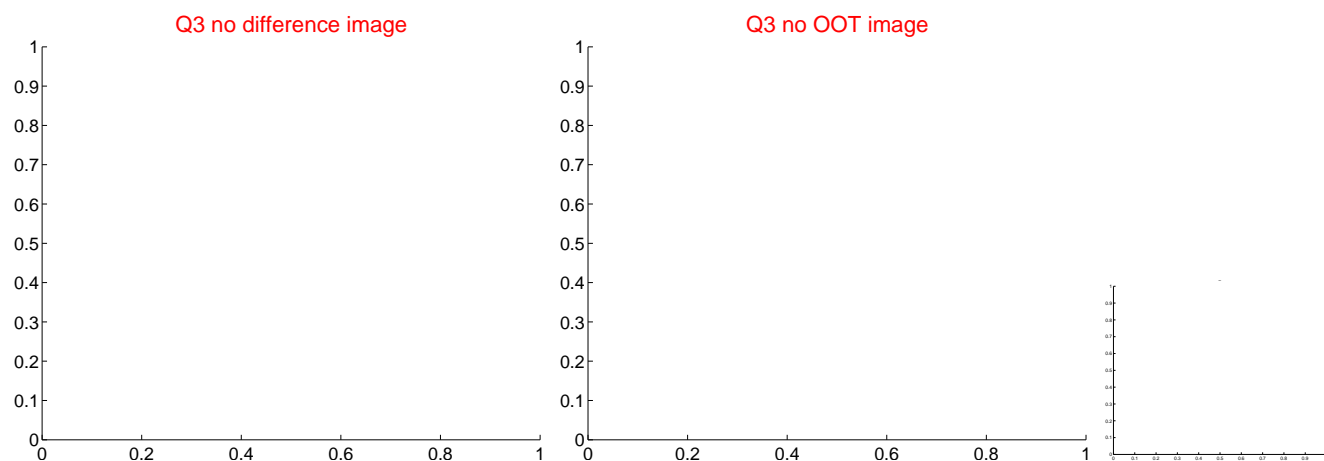
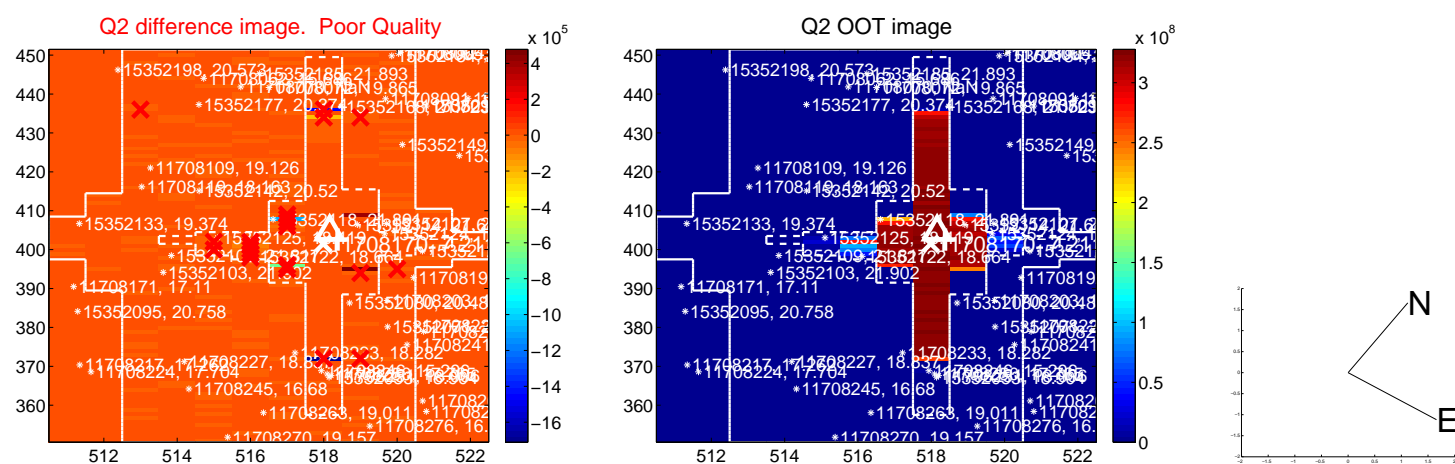
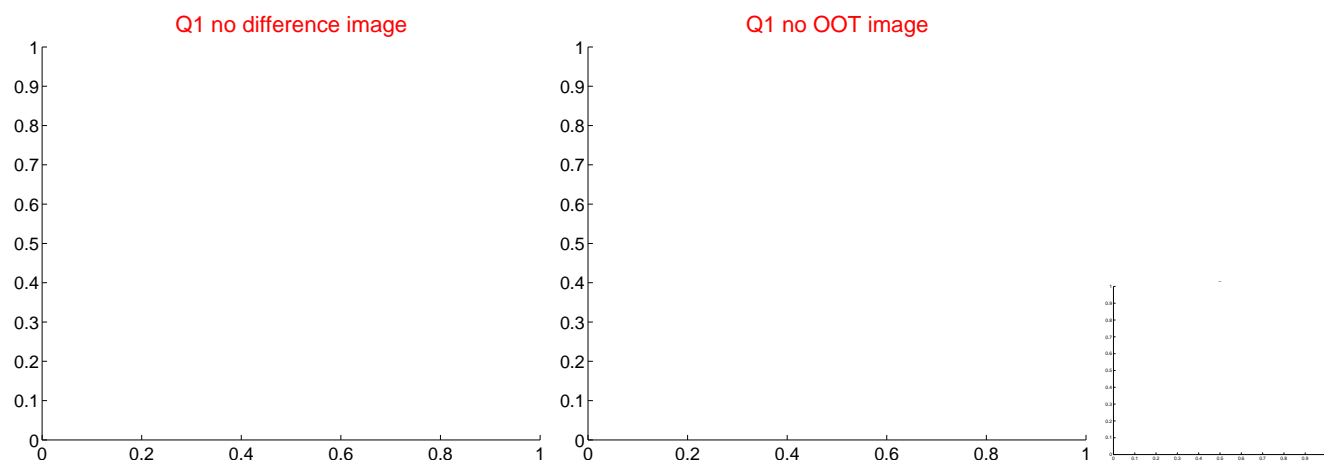
The OOT PRF centroid is offset from the target star catalog position by about 2.42 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.687 ± 3.175	2.11	-6.388 ± 4.036	-1.977 ± 3.282
PRF-fit source offset from KIC position	8.459 ± 2.669	3.17	-7.670 ± 3.934	-3.569 ± 3.245
photometric centroid source offset	0.99 ± 1.93	0.52	-0.66 ± 1.40	-0.74 ± 2.26



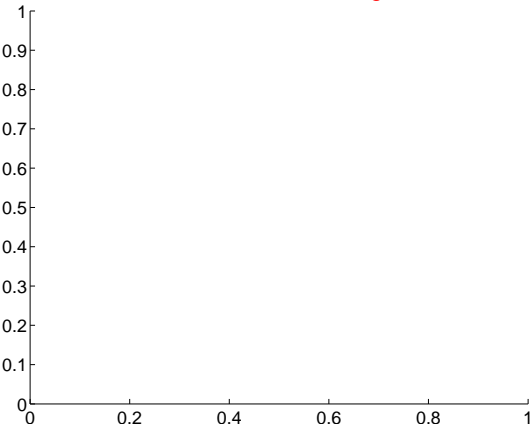
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

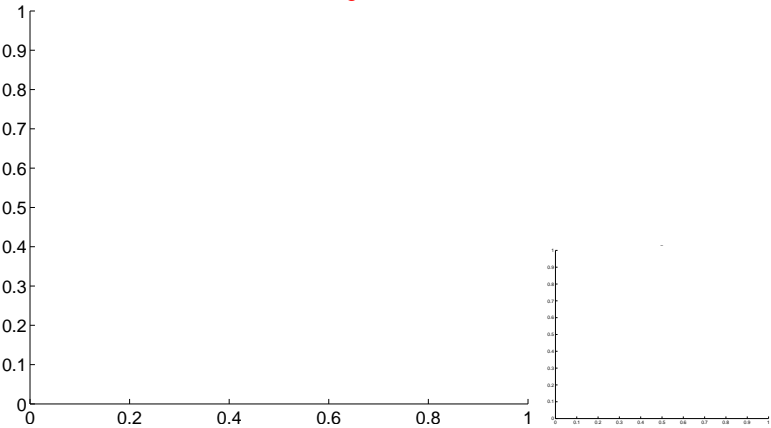


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

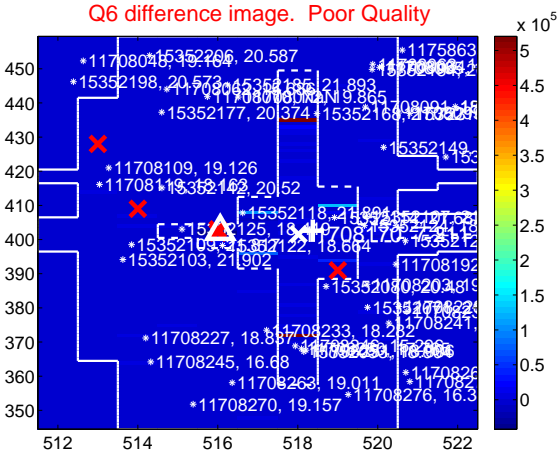
Q5 no difference image



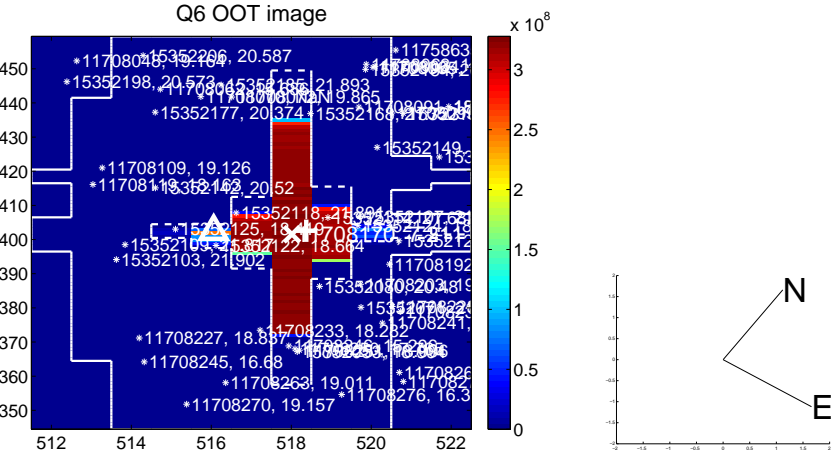
Q5 no OOT image



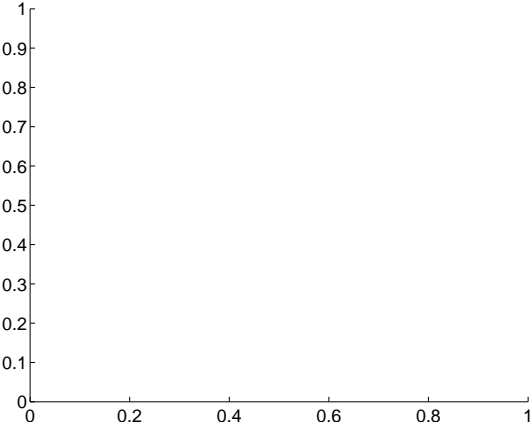
Q6 difference image. Poor Quality



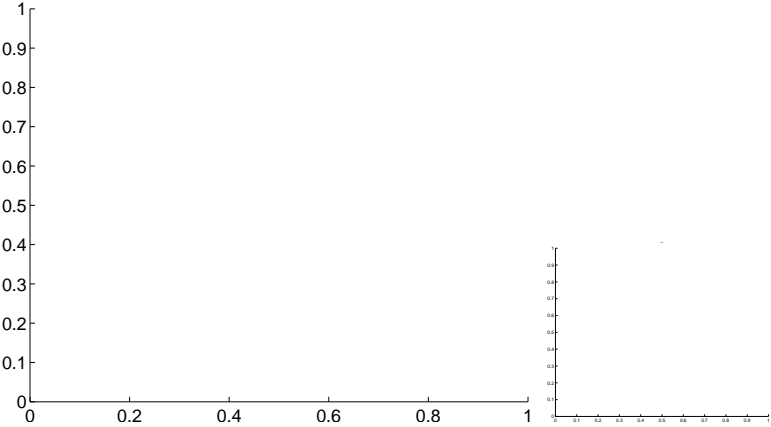
Q6 OOT image



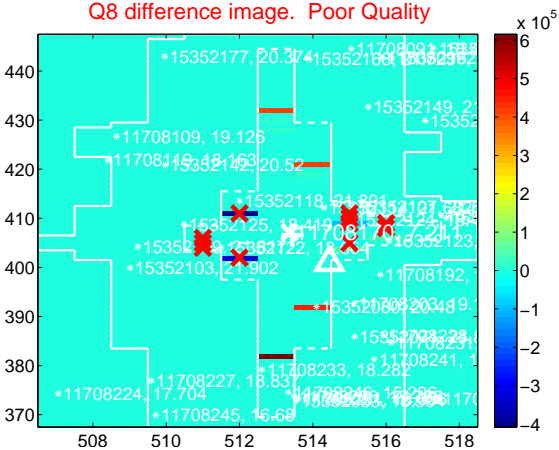
Q7 no difference image



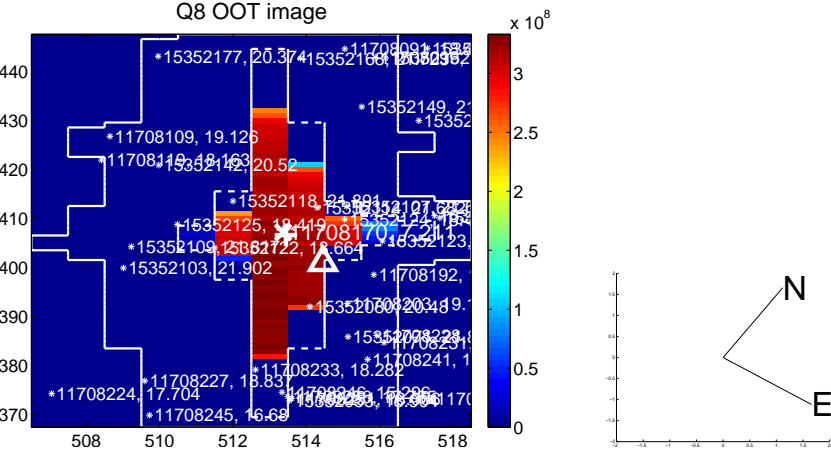
Q7 no OOT image



Q8 difference image. Poor Quality

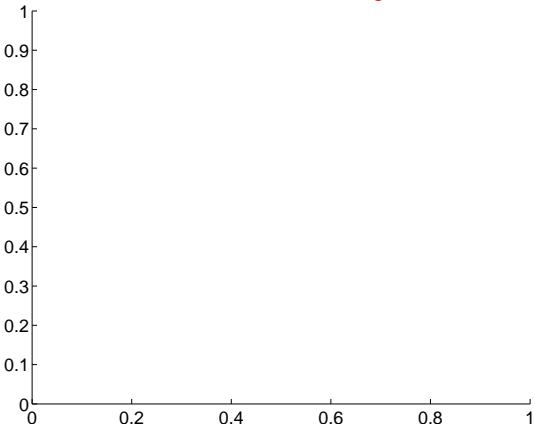


Q8 OOT image



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

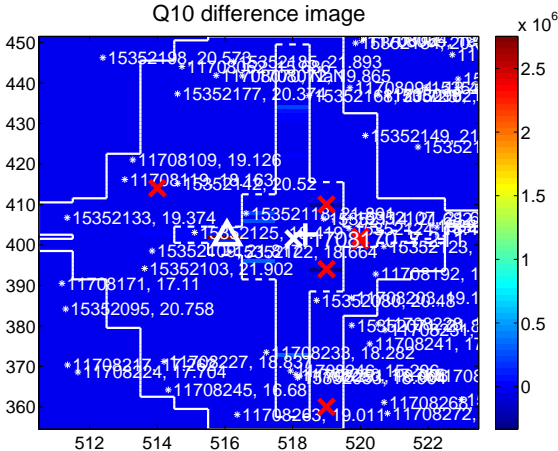
Q9 no difference image



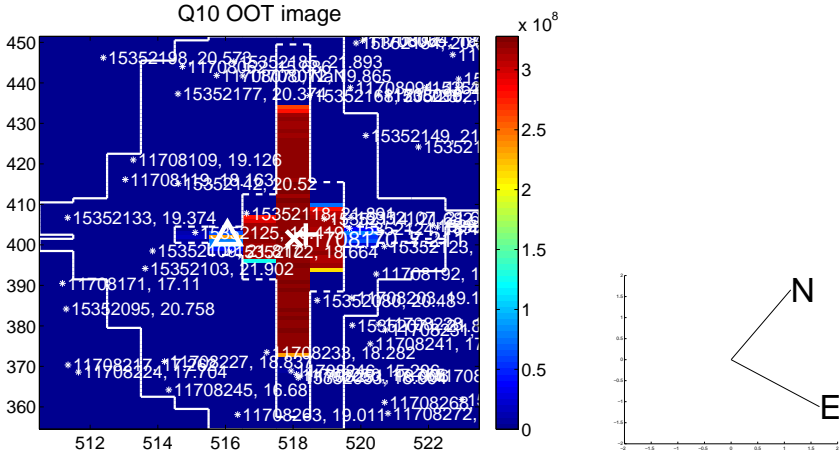
Q9 no OOT image



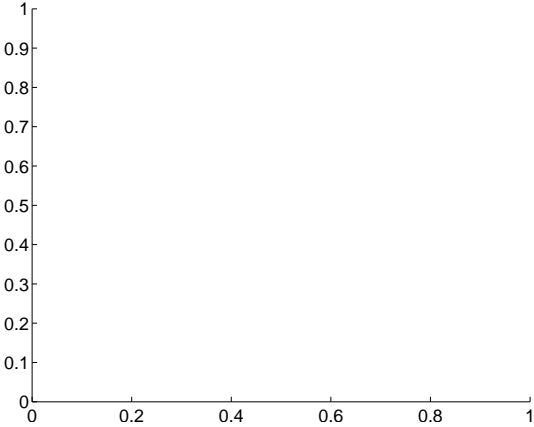
Q10 difference image



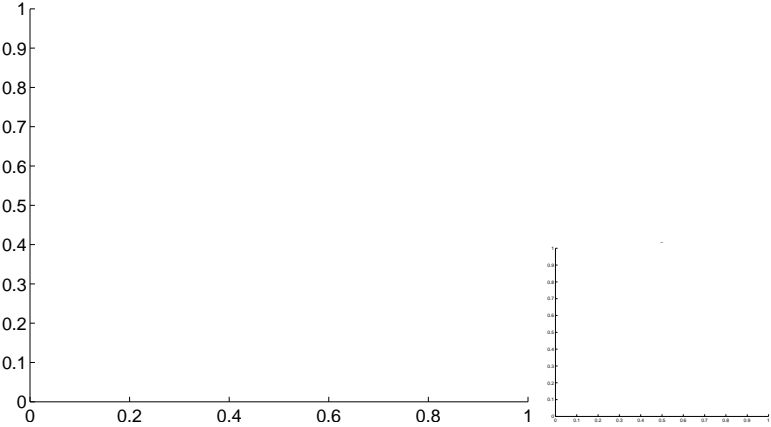
Q10 OOT image



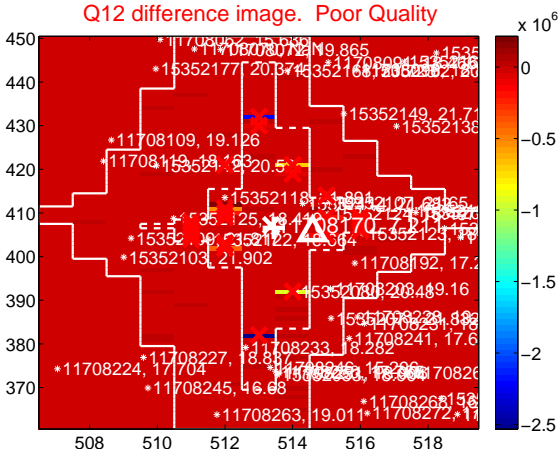
Q11 no difference image



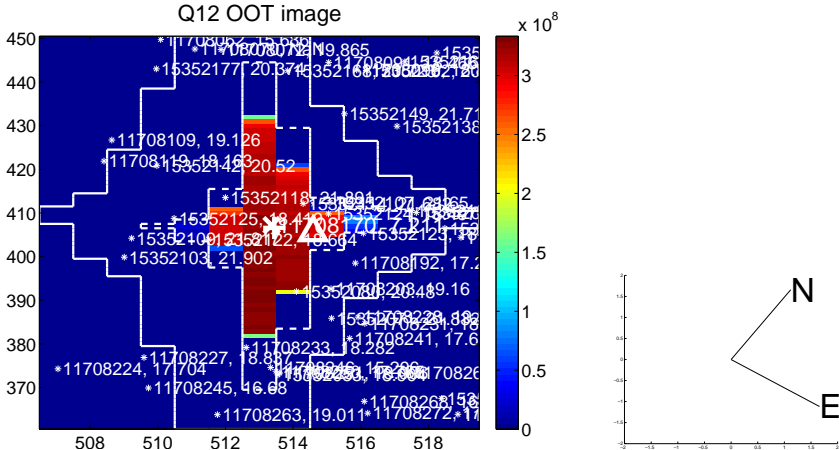
Q11 no OOT image



Q12 difference image. Poor Quality

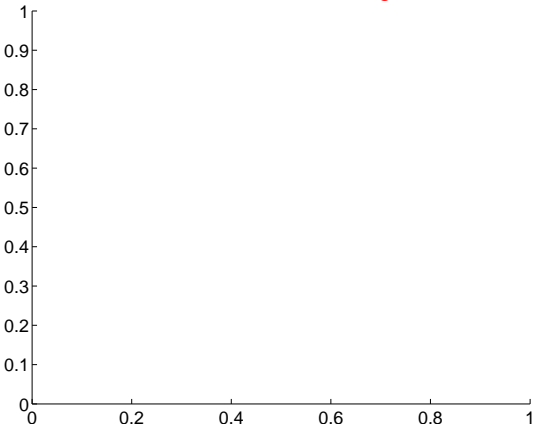


Q12 OOT image

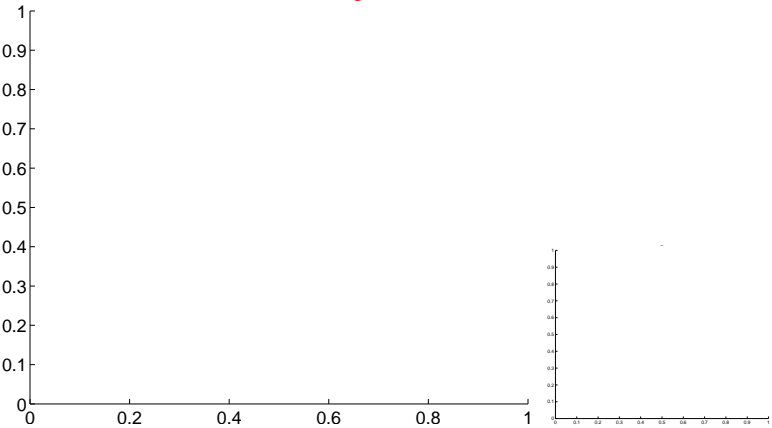


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

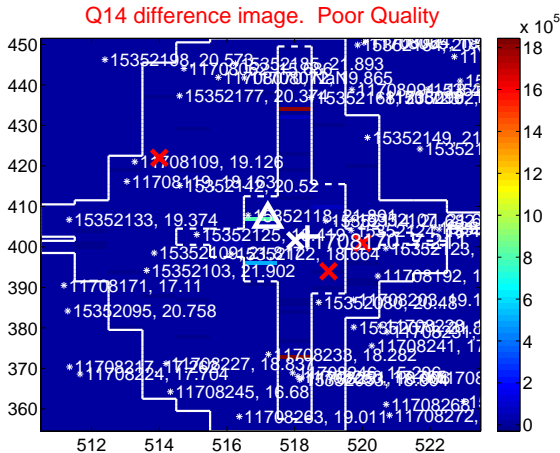
Q13 no difference image



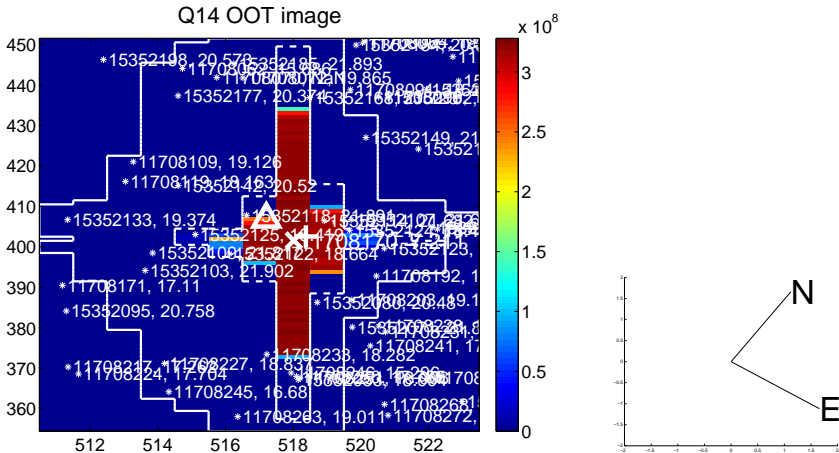
Q13 no OOT image



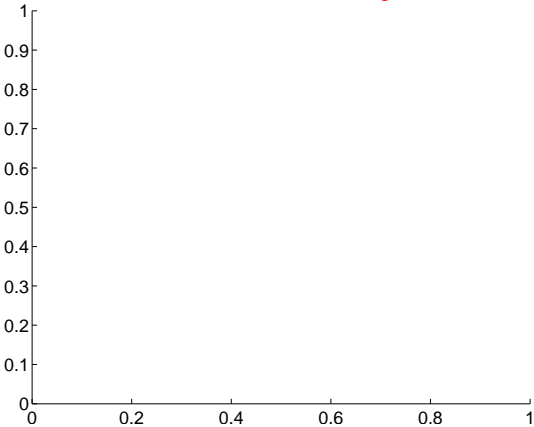
Q14 difference image. Poor Quality



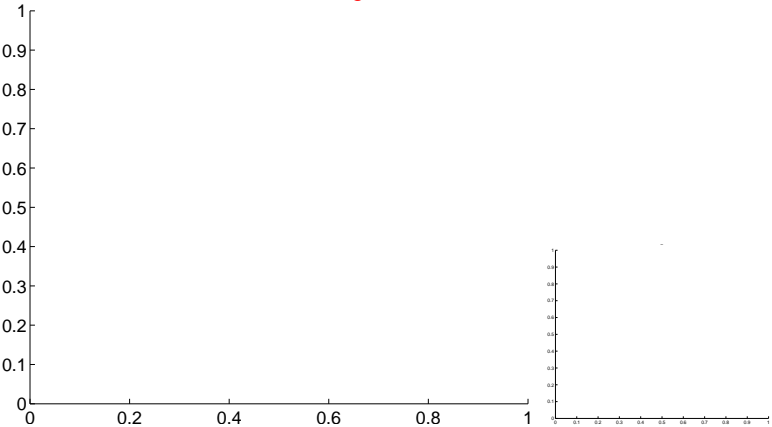
Q14 OOT image



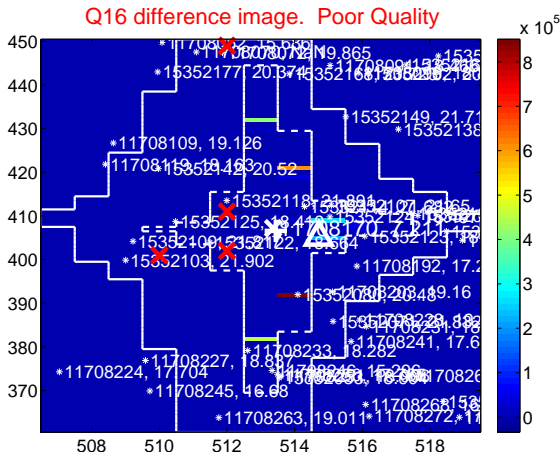
Q15 no difference image



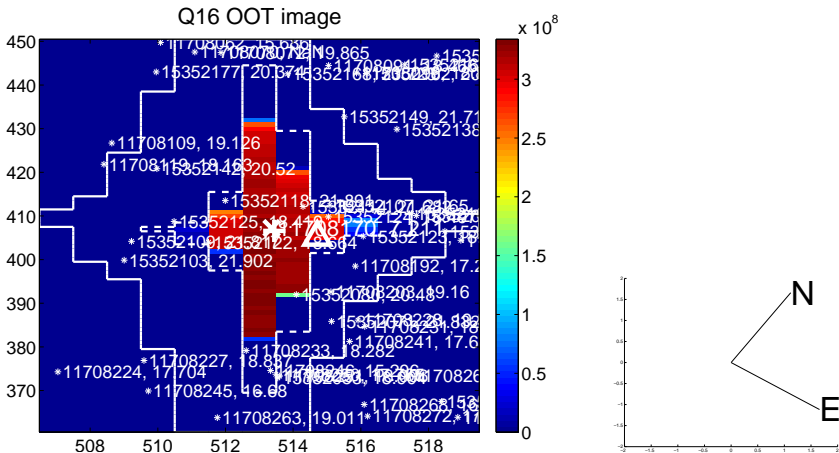
Q15 no OOT image



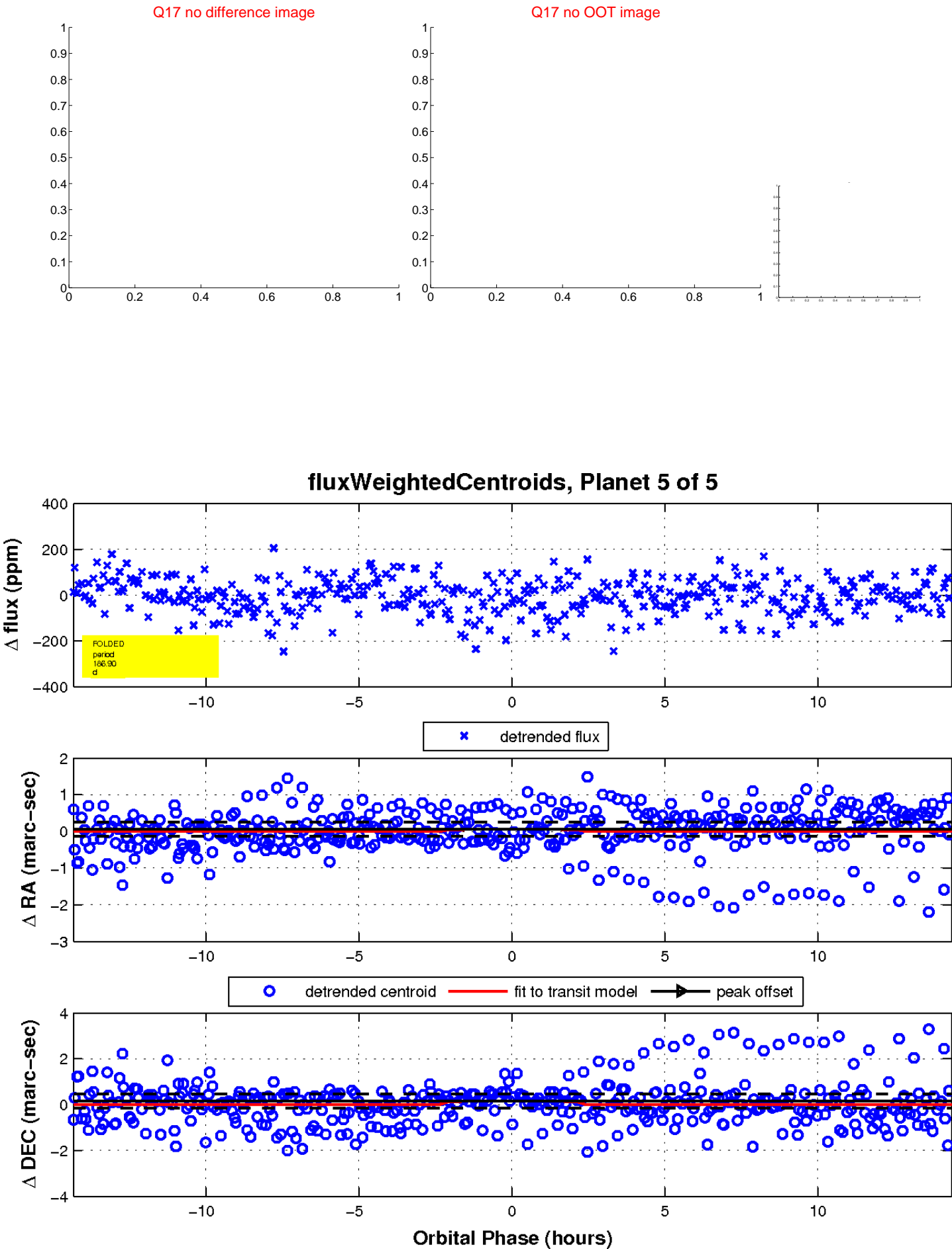
Q16 difference image. Poor Quality



Q16 OOT image



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



UKIRT Image

