

KIC 011709124

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})
011709124-01	OBS	0435.01	20.549791	137.848211	1563.5	5.574	93.7	96.0	0.97	5688	4.09	44.17
011709124-02	OBS	0435.05	62.302555	179.099592	841.3	7.600	33.3	33.1	0.97	5688	3.09	10.07
011709124-03	OBS	No	207.656092	241.824270	130.5	16.317	50.7	2.3	0.97	5688	1.38	2.02
011709124-04	OBS	0435.04	3.932747	134.652254	232.0	3.019	24.8	26.5	0.97	5688	1.75	400.51
011709124-05	OBS	0435.03	33.040544	161.223174	569.1	3.506	21.2	21.4	0.97	5688	2.65	23.45
011709124-06	OBS	0435.06	9.919405	136.870975	185.5	4.603	14.6	15.3	0.97	5688	1.57	116.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011709124-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
011709124-02	OBS	PC	0.92	0	0	0	0	CENT_KIC_POS
011709124-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
011709124-04	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
011709124-05	OBS	PC	0.88	0	0	0	0	CENT_KIC_POS
011709124-06	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

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 011709124-01

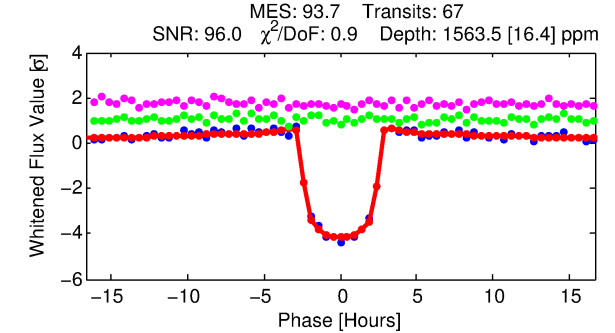
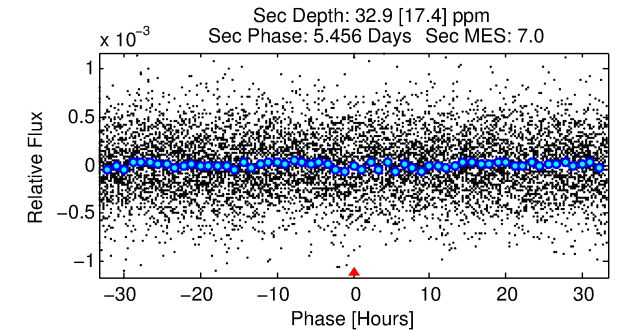
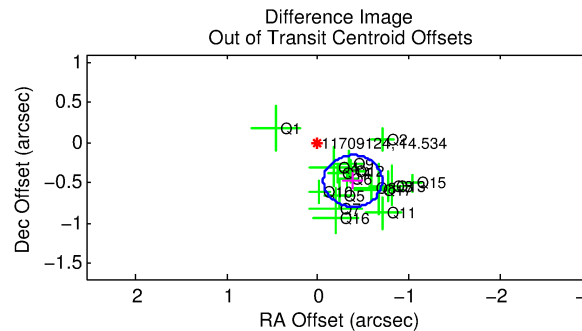
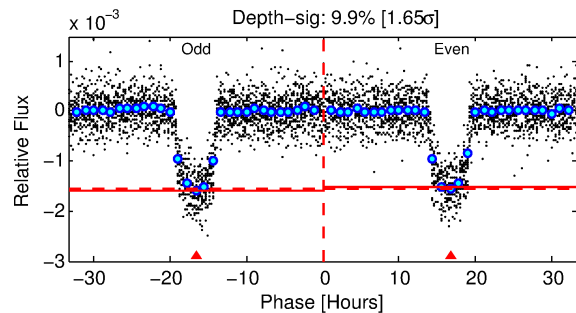
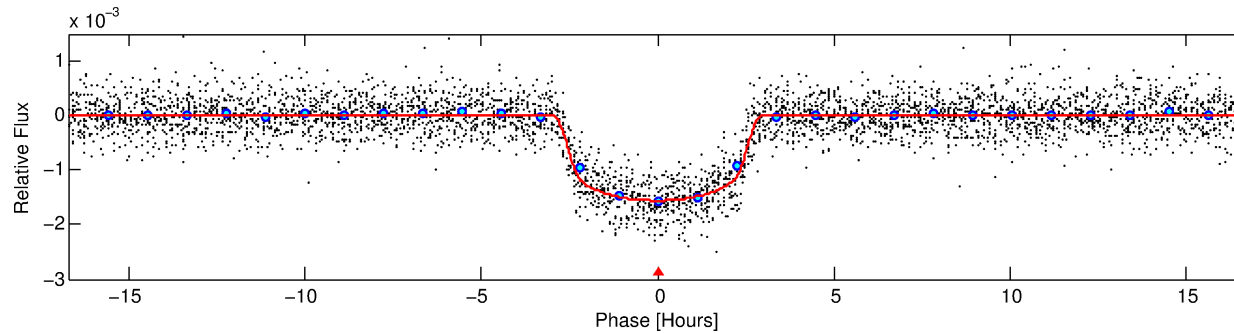
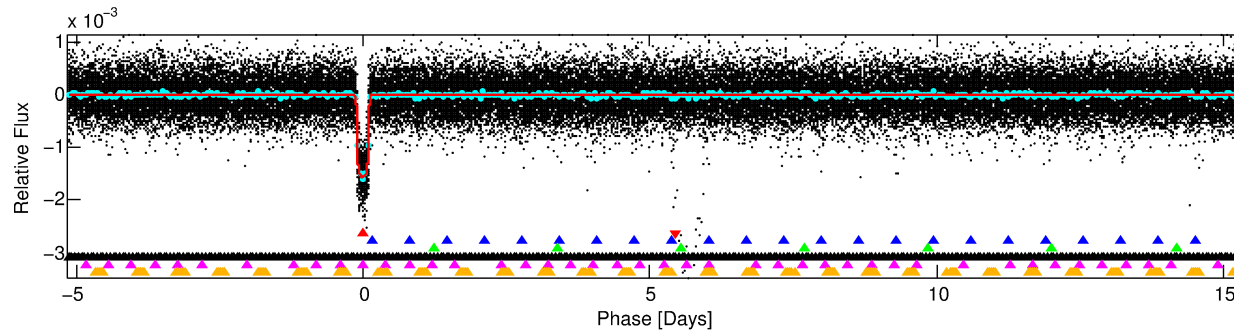
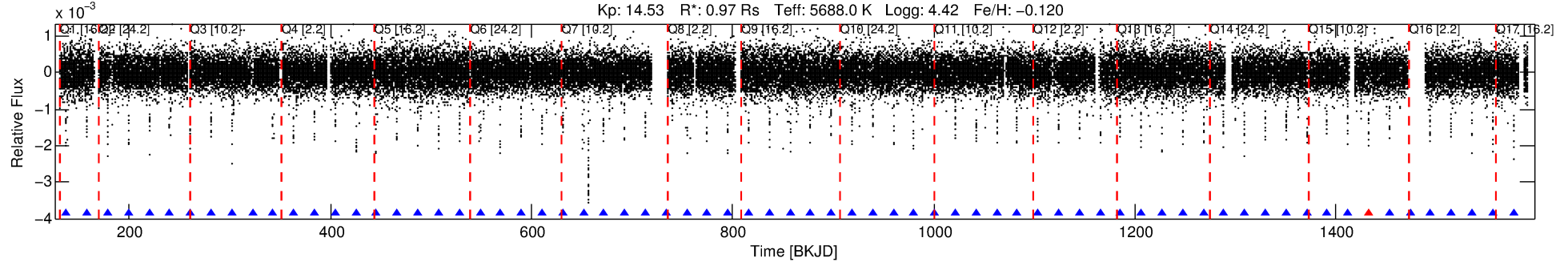
No Significant Match Found

DV One-Page Summary

KIC: 11709124 Candidate: 1 of 6 Period: 20.550 d

KOI: K00435.01 Corr: 0.990

Kp: 14.53 R*: 0.97 Rs Teff: 5688.0 K Logg: 4.42 Fe/H: -0.120



DV Fit Results:

Period = 20.54979 [0.00003] d
Epoch = 137.8482 [0.0010] BKJD
Rp/R* = 0.0386 [0.0017]
a/R* = 21.89 [4.05]
b = 0.69 [0.14]
Seff = 44.17 [8.59]
Teff = 657 [32] K
Rp = 4.09 [0.58] Re
a = 0.1415 [0.0167] AU
Ag = 21.67 [12.26] [1.69σ]
Teffp = 2193 [298] K [5.13σ]

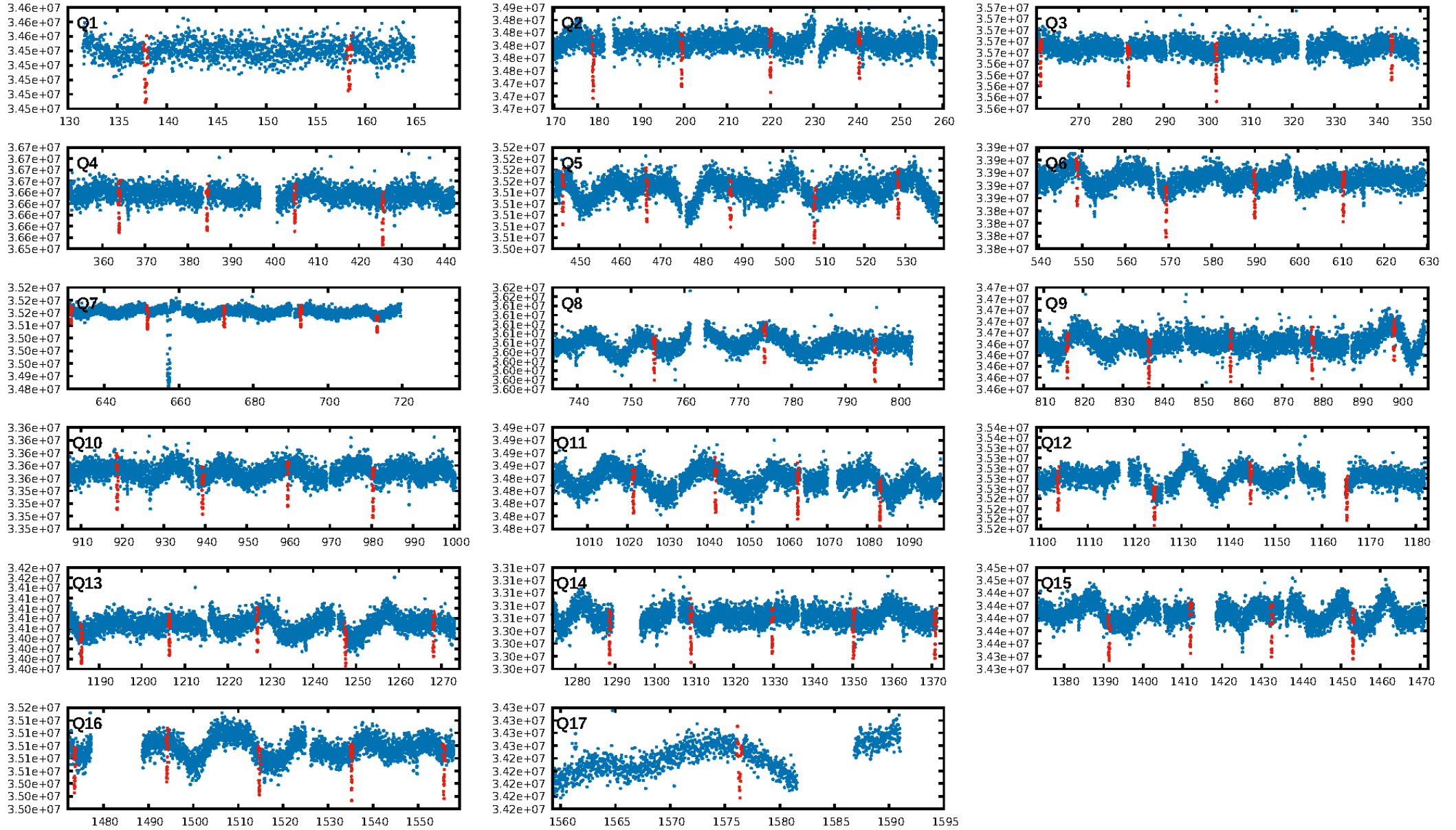
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [35.29σ]
LongPeriod-sig: 100.0% [45.53σ]
ModelChiSquare2-sig: 97.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.98 [63/64]
GhostDiagnostic-chr: 3.602
Centroid-sig: 0.0%
Centroid-so: 0.232 arcsec [2.09σ]
OotOffset-rm: 0.614 arcsec [5.71σ]
KicOffset-rm: 0.249 arcsec [2.62σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

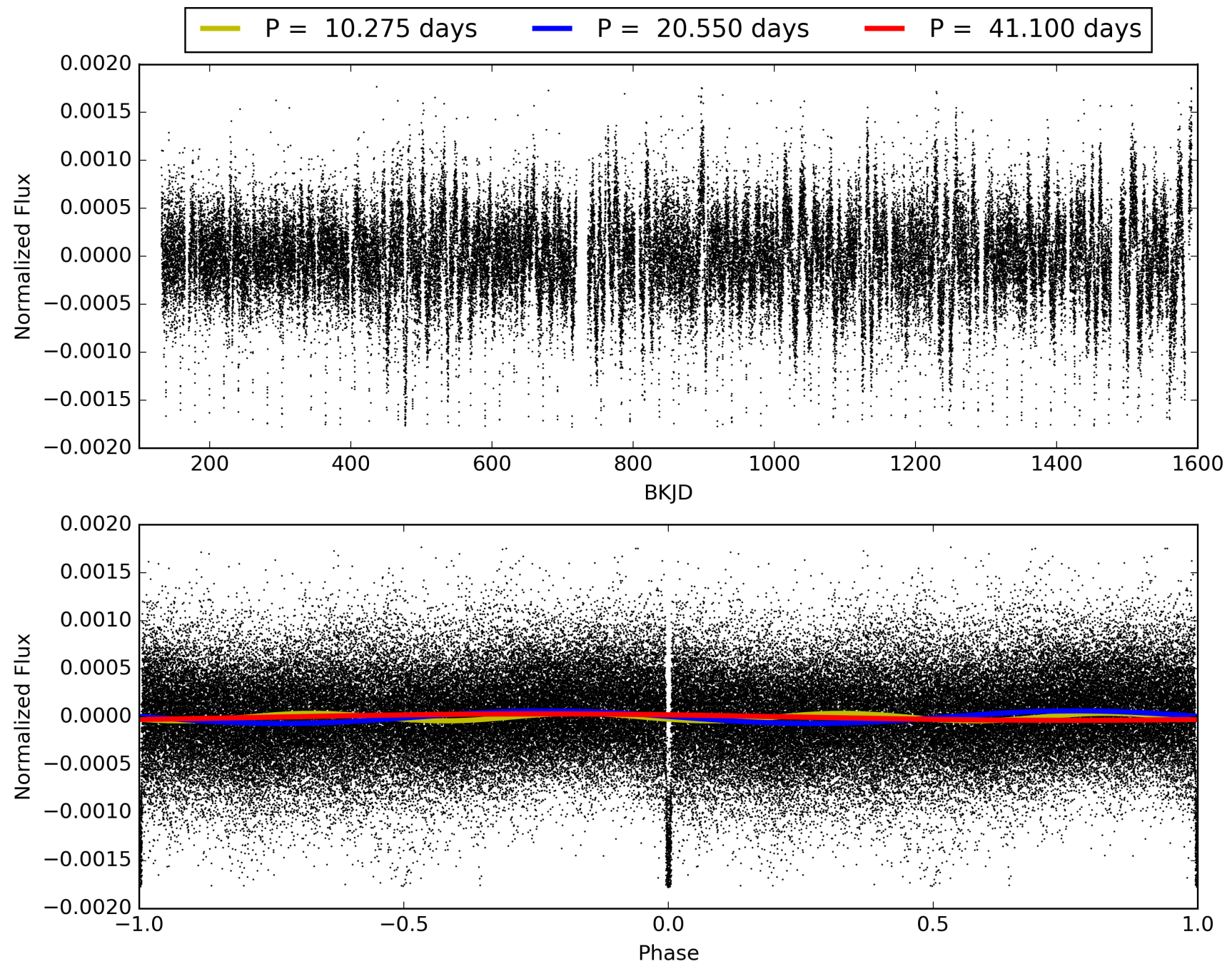
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:37:33 Z

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

TCE 011709124-01, PDC Light Curves

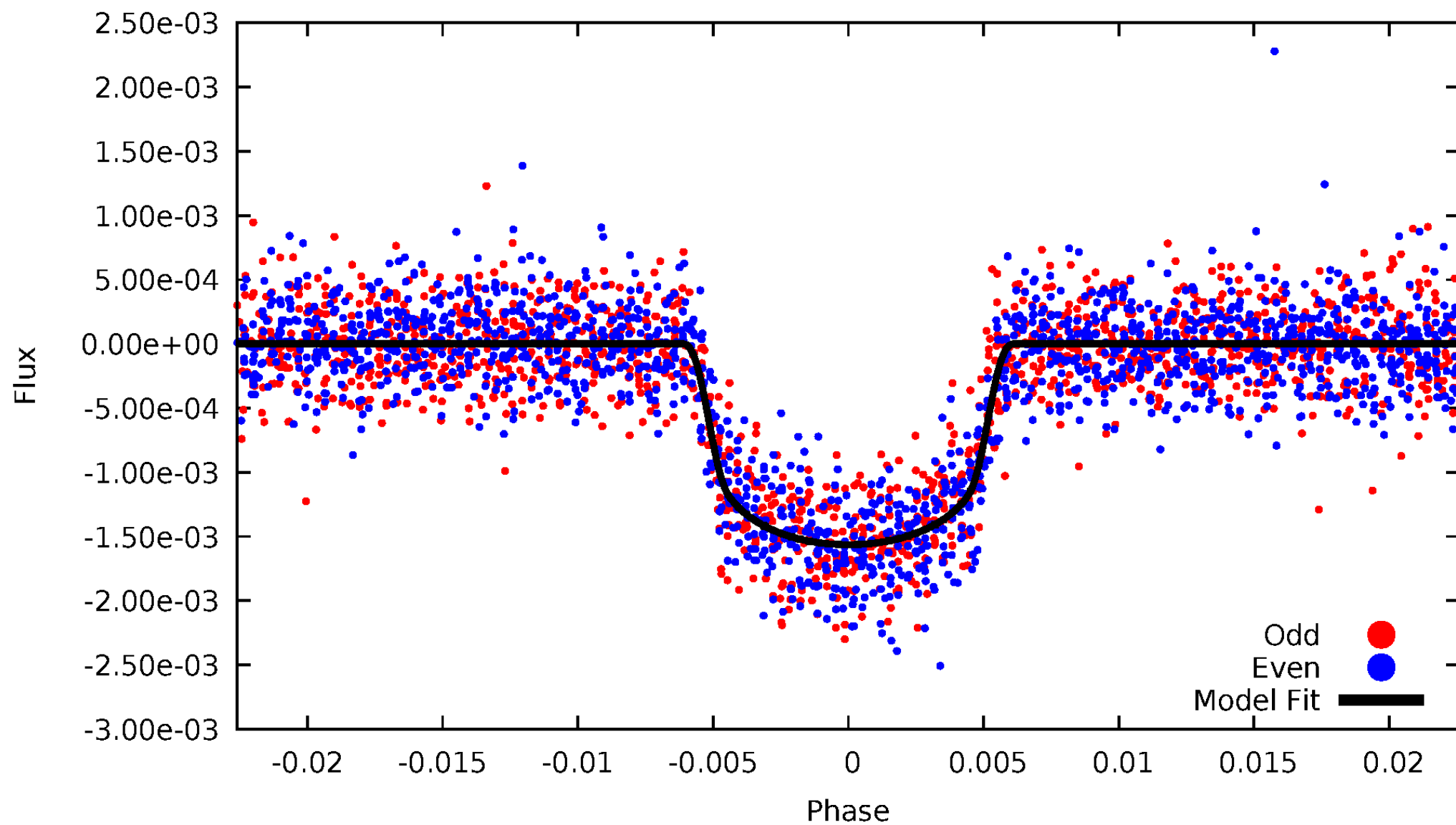


TCE 011709124-01



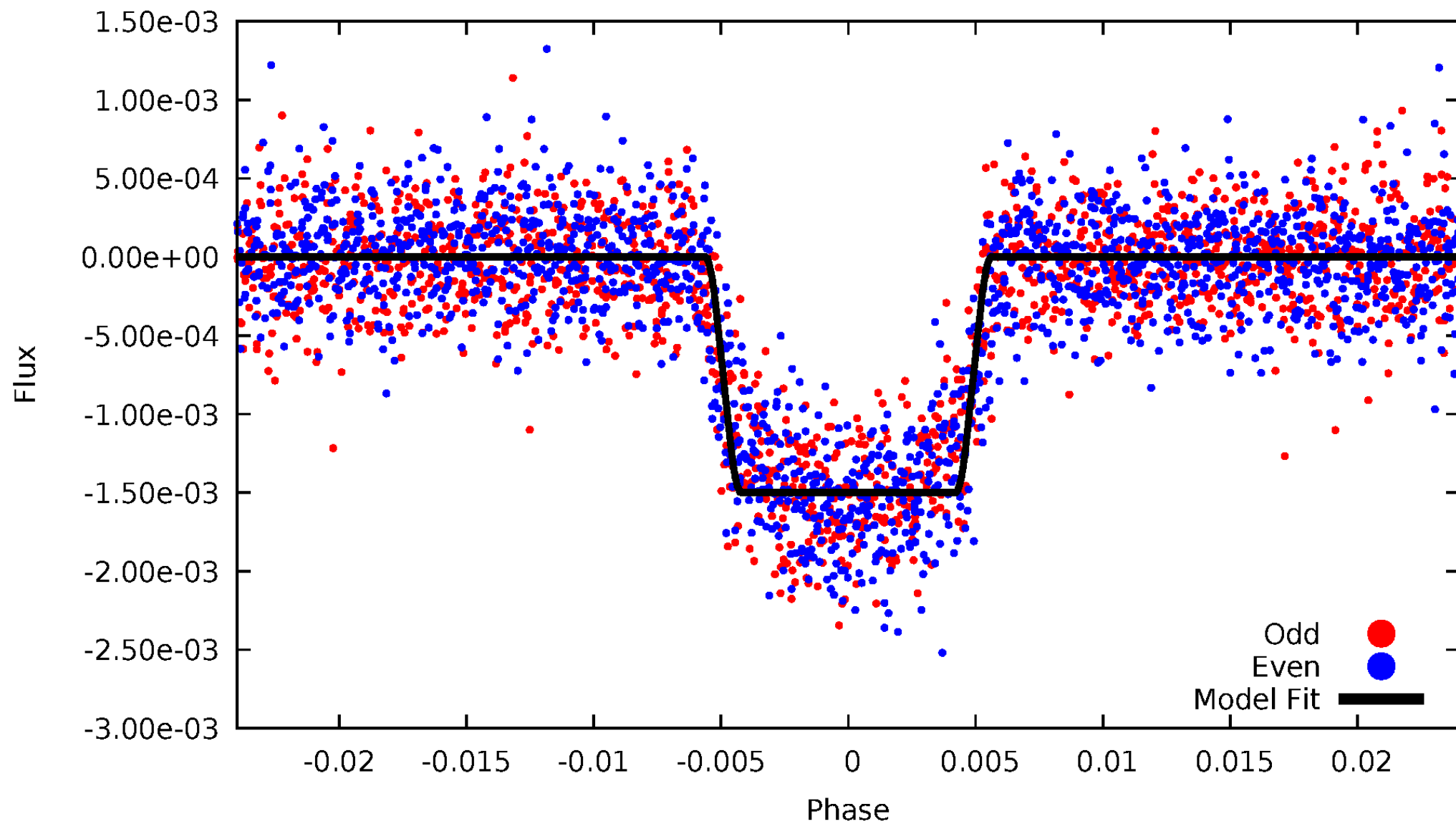
DV Odd/Even

TCE 011709124-01



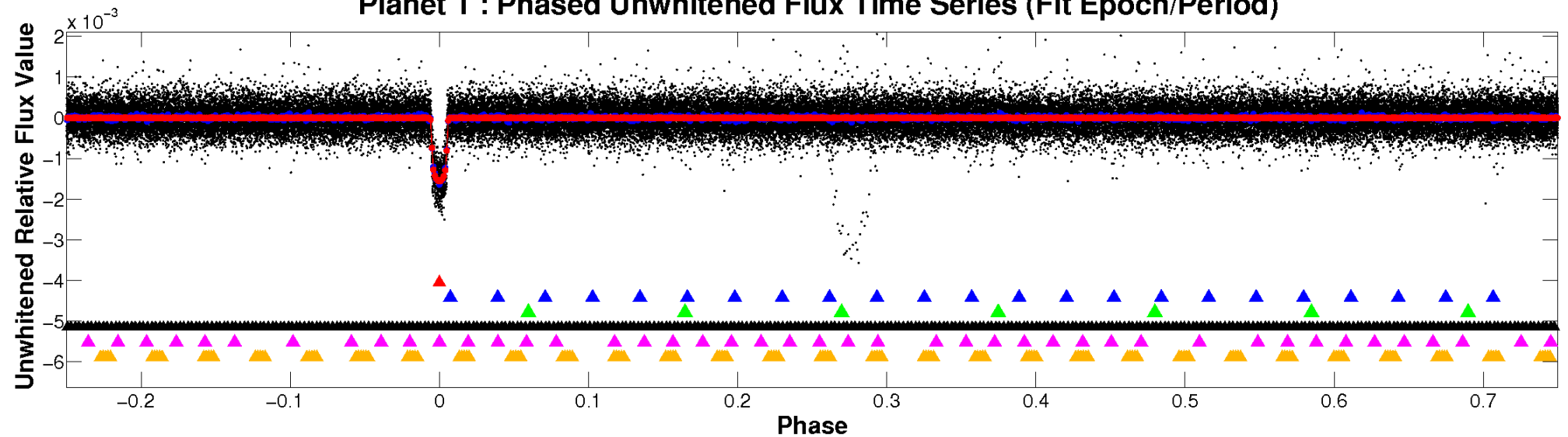
ALT Odd/Even

TCE 011709124-01

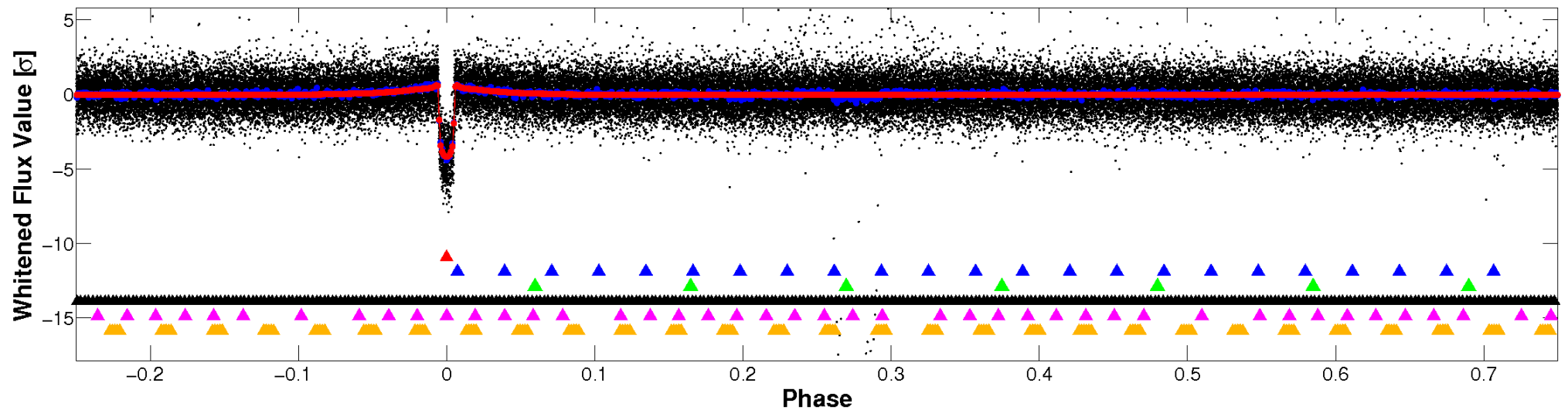


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

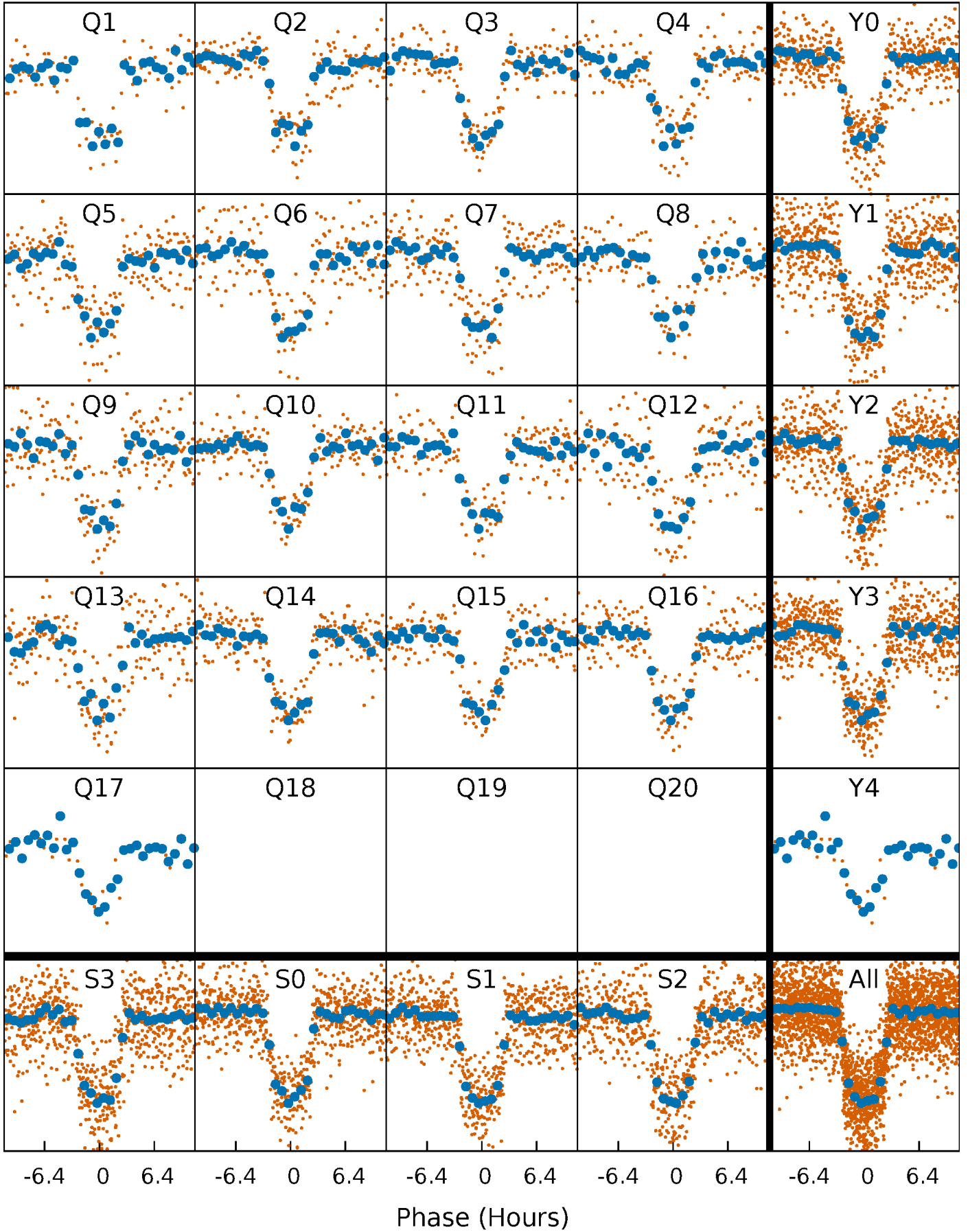


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



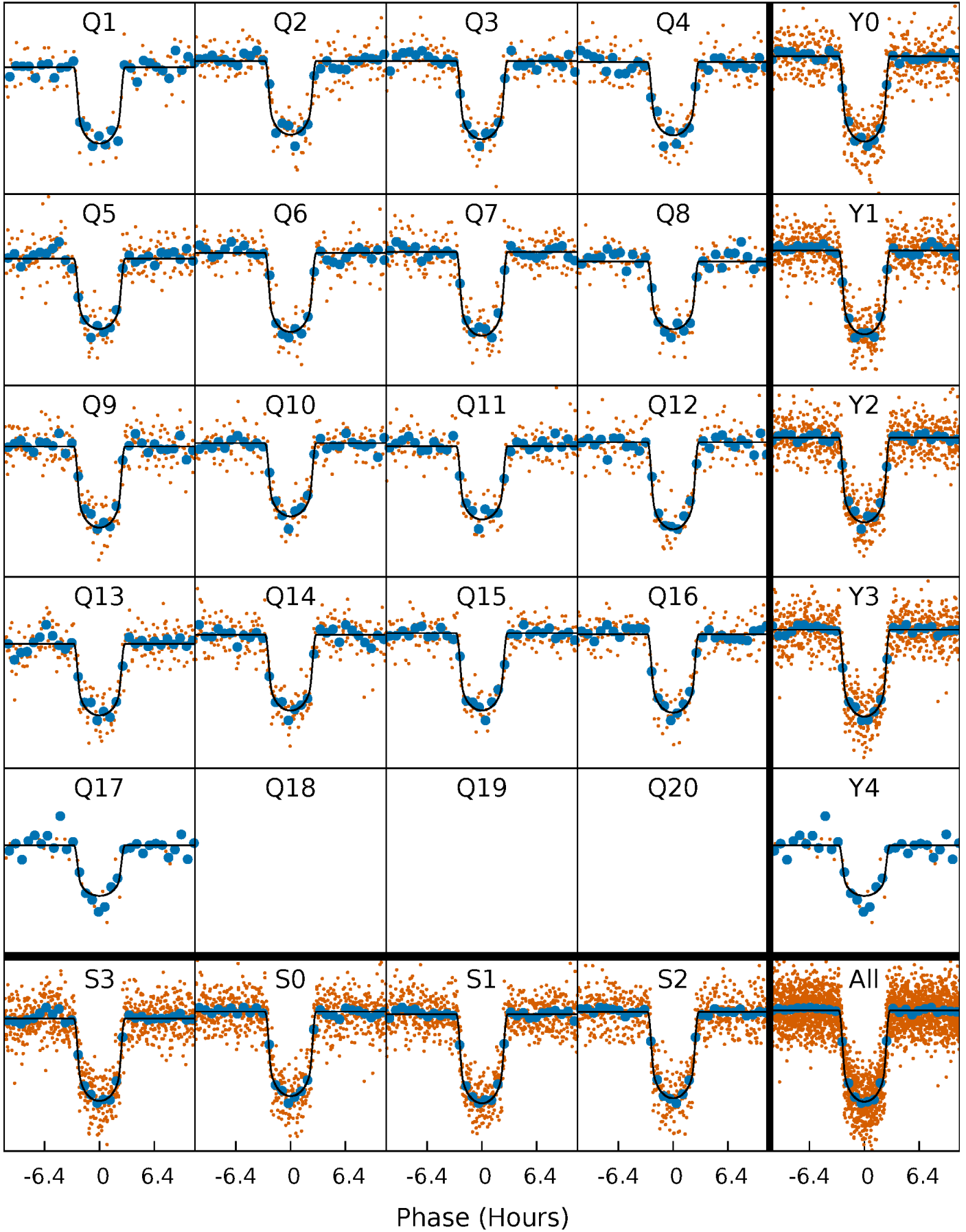
PDC Quarter-Phased Transit Curves

TCE 011709124-01 P= 20.549791 Days $T_0=137.848211$ (BKJD)



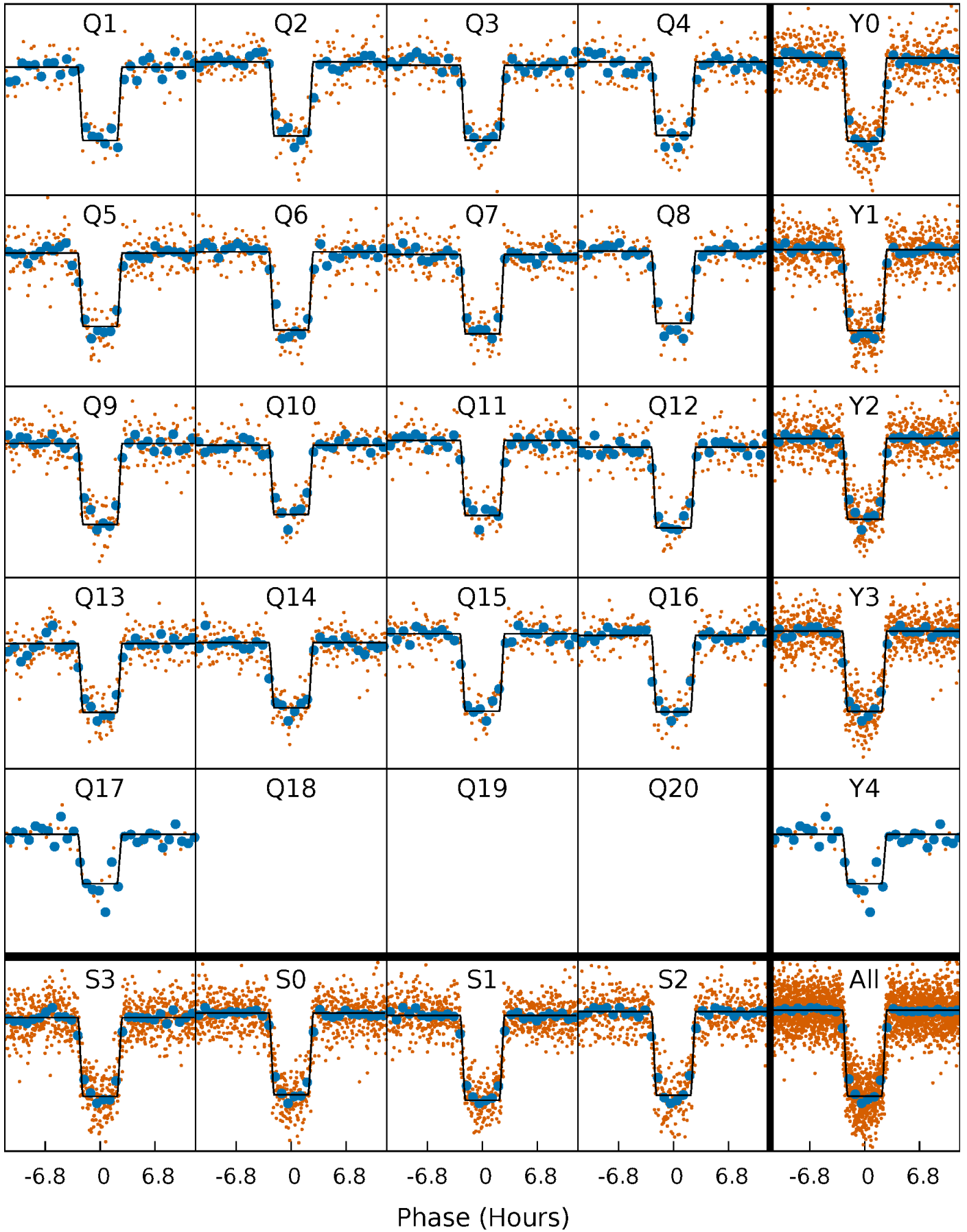
DV Quarter-Phased Transit Curves

TCE 011709124-01 P= 20.549791 Days $T_0=137.848211$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

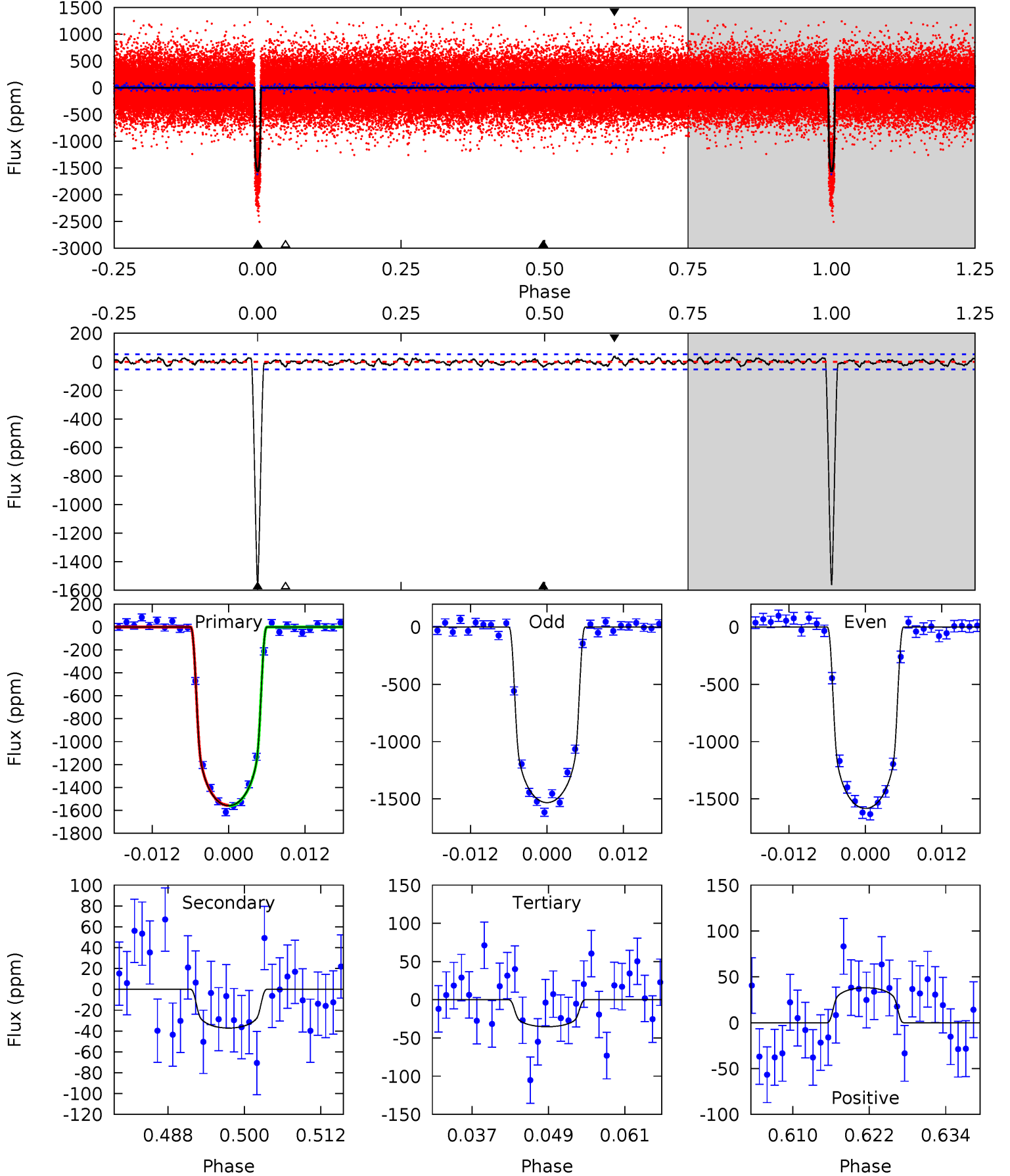
TCE 011709124-01 P= 20.550011 Days $T_0=137.840504$ (BKJD)



DV Model-Shift Uniqueness Test

011709124-01, P = 20.549791 Days, E = 117.298420 Days

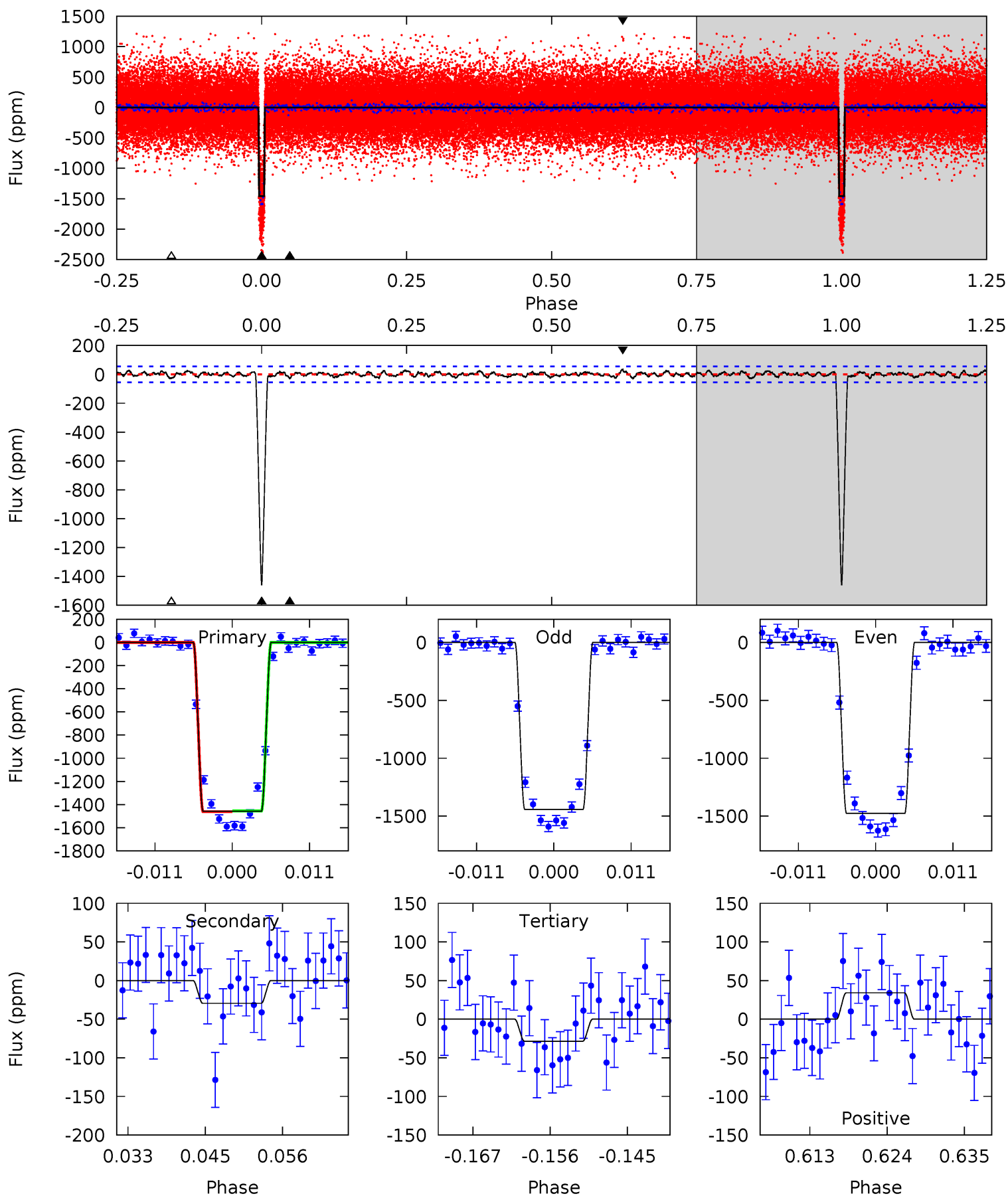
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
146.3	3.49	3.31	3.58	4.99	2.51	1.23	143.0	142.7	0.18	-0.09	2.40	1.00	0.02	0.23



Alt Model-Shift Uniqueness Test

011709124-01, $P = 20.550011$ Days, $E = 117.290493$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
133.1	2.69	2.60	3.11	5.01	2.54	1.03	130.5	130.0	0.09	-0.42	1.57	1.00	0.02	0.26



Stellar Parameters For KIC 011709124

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5688^{+113}_{-101}	$4.415^{+0.100}_{-0.100}$	$-0.120^{+0.150}_{-0.150}$	$0.971^{+0.130}_{-0.095}$	$0.895^{+0.071}_{-0.052}$	$1.377^{+0.567}_{-0.434}$
	+2%/-2%	+2%/-2%	+125%/-125%	+13%/-10%	+8%/-6%	+41%/-32%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 011709124-01 / KOI 0435.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-37 ± 11	$4.08^{+0.38}_{-0.33}$	918^{+37}_{-36}	2941^{+124}_{-151}	25^{+9}_{-8}
Alt.	-29 ± 11	$4.10^{+0.36}_{-0.32}$	918^{+35}_{-35}	2834^{+140}_{-169}	19^{+8}_{-7}

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

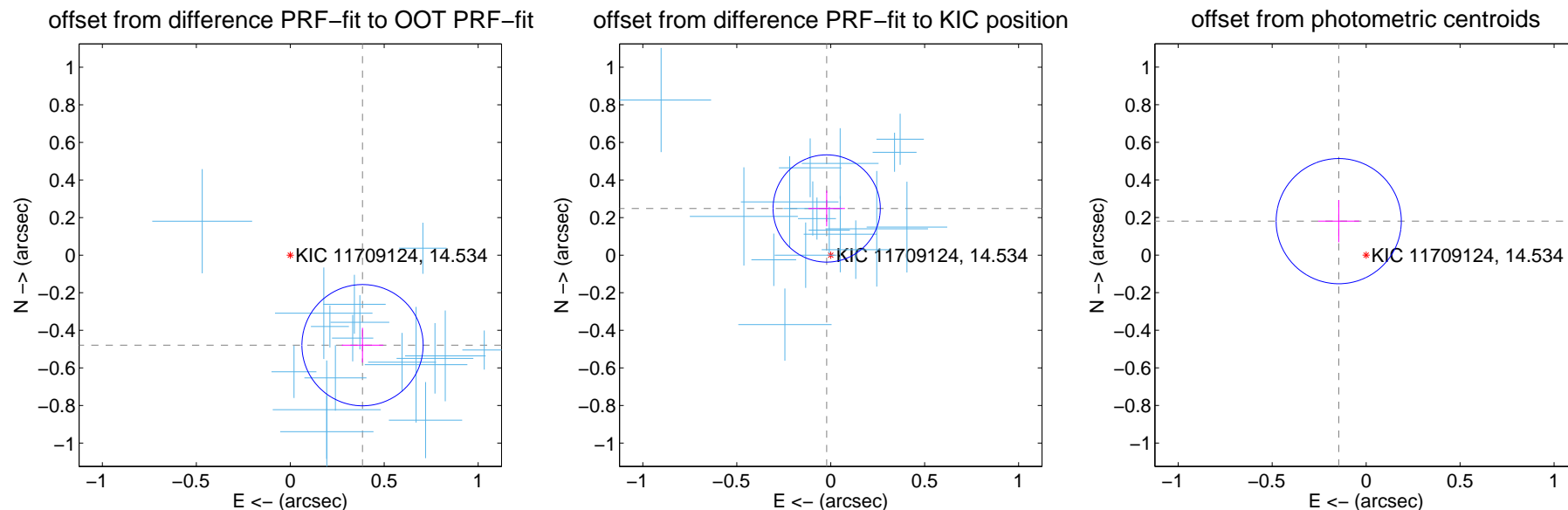
DV Centroid Data

Supplemental centroid analysis for 011709124-01. Kepler magnitude: 14.53. Transit SNR 95.99

There are 17 quarters with good PRF difference image offsets

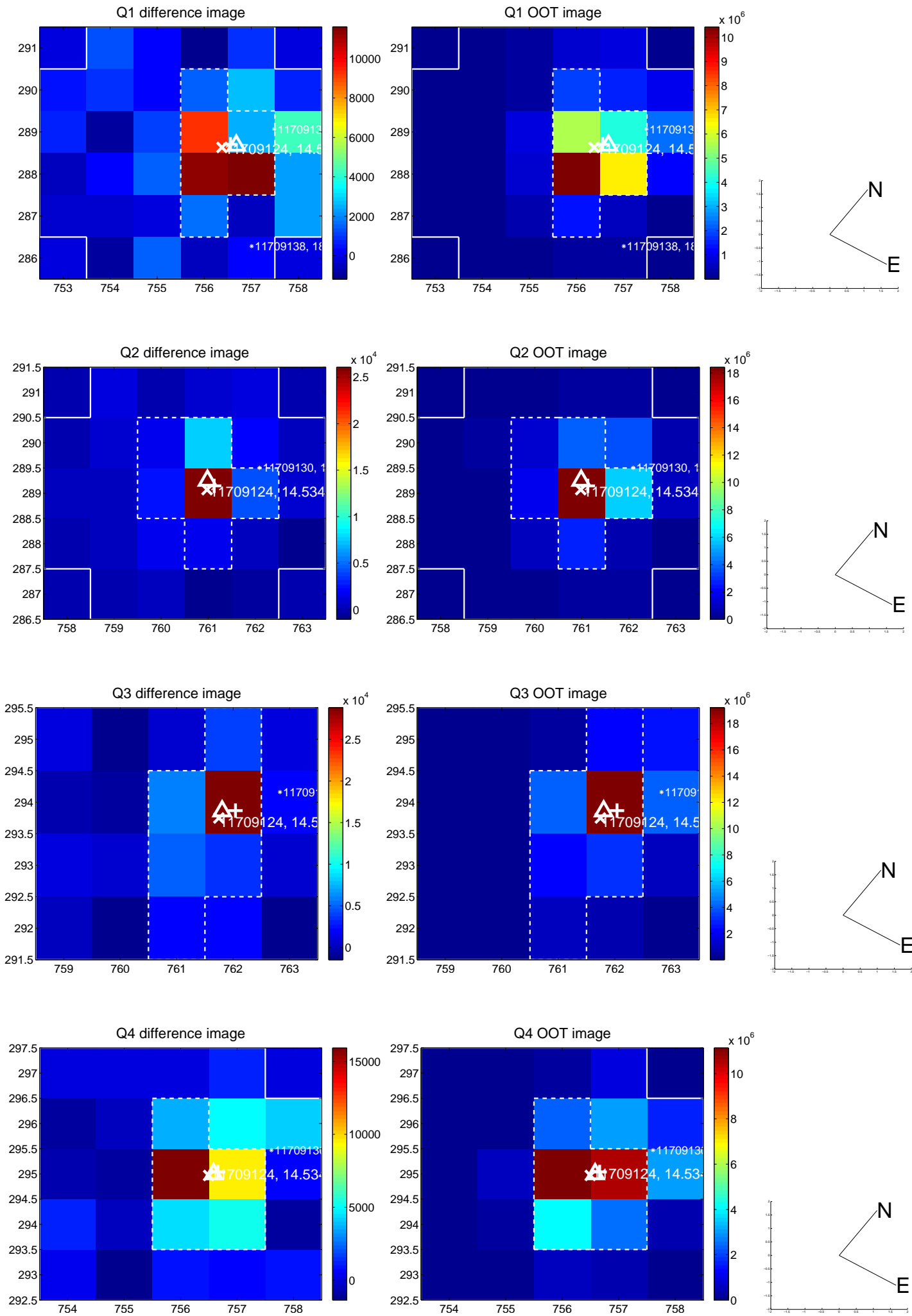
The direct PRF centroid is offset from the target star catalog position by about 0.84 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.614 ± 0.108	5.71	-0.385 ± 0.111	-0.479 ± 0.092
PRF-fit source offset from KIC position	0.249 ± 0.095	2.62	0.022 ± 0.097	0.248 ± 0.095
photometric centroid source offset	0.23 ± 0.11	2.09	0.15 ± 0.11	0.18 ± 0.11

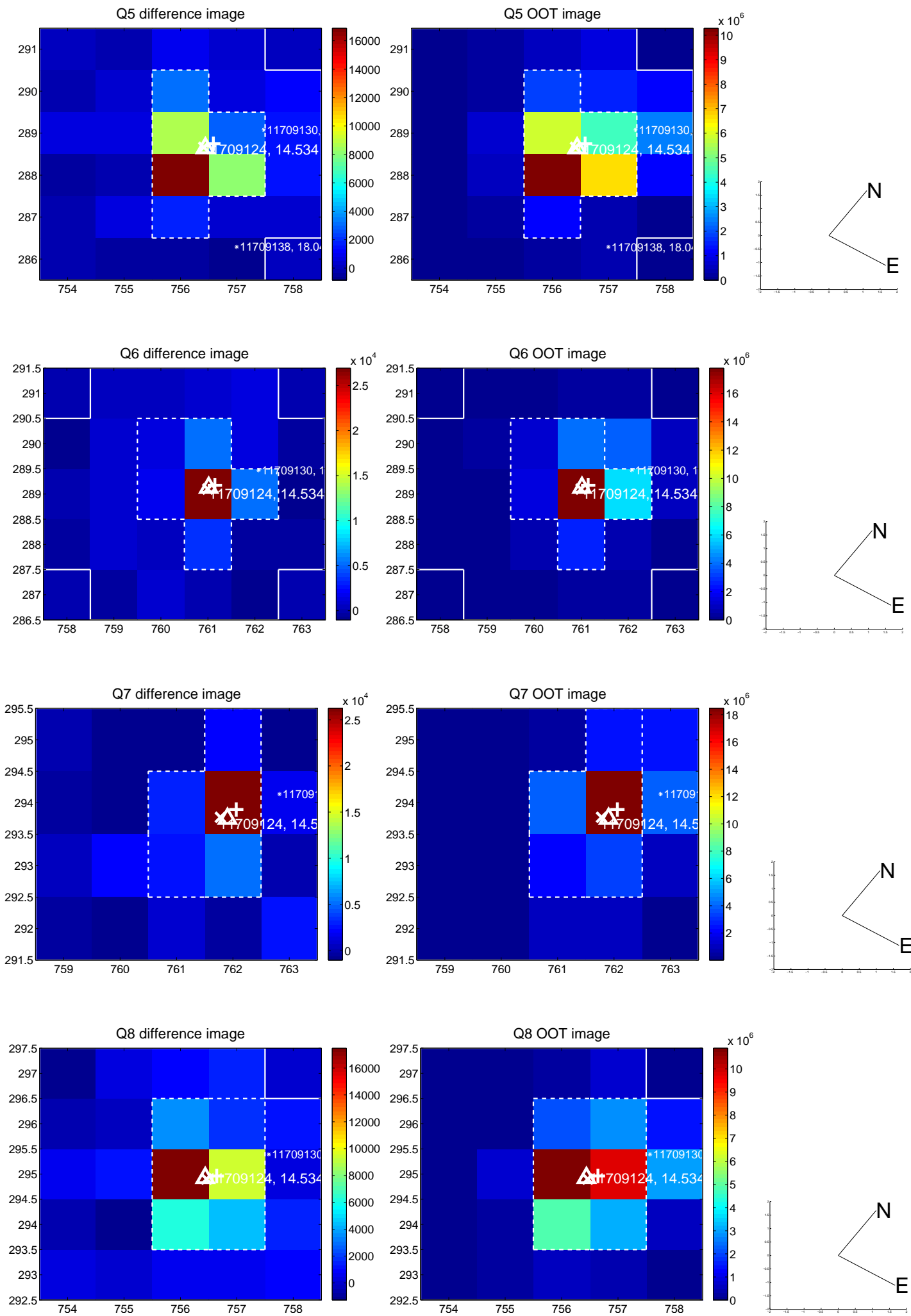


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

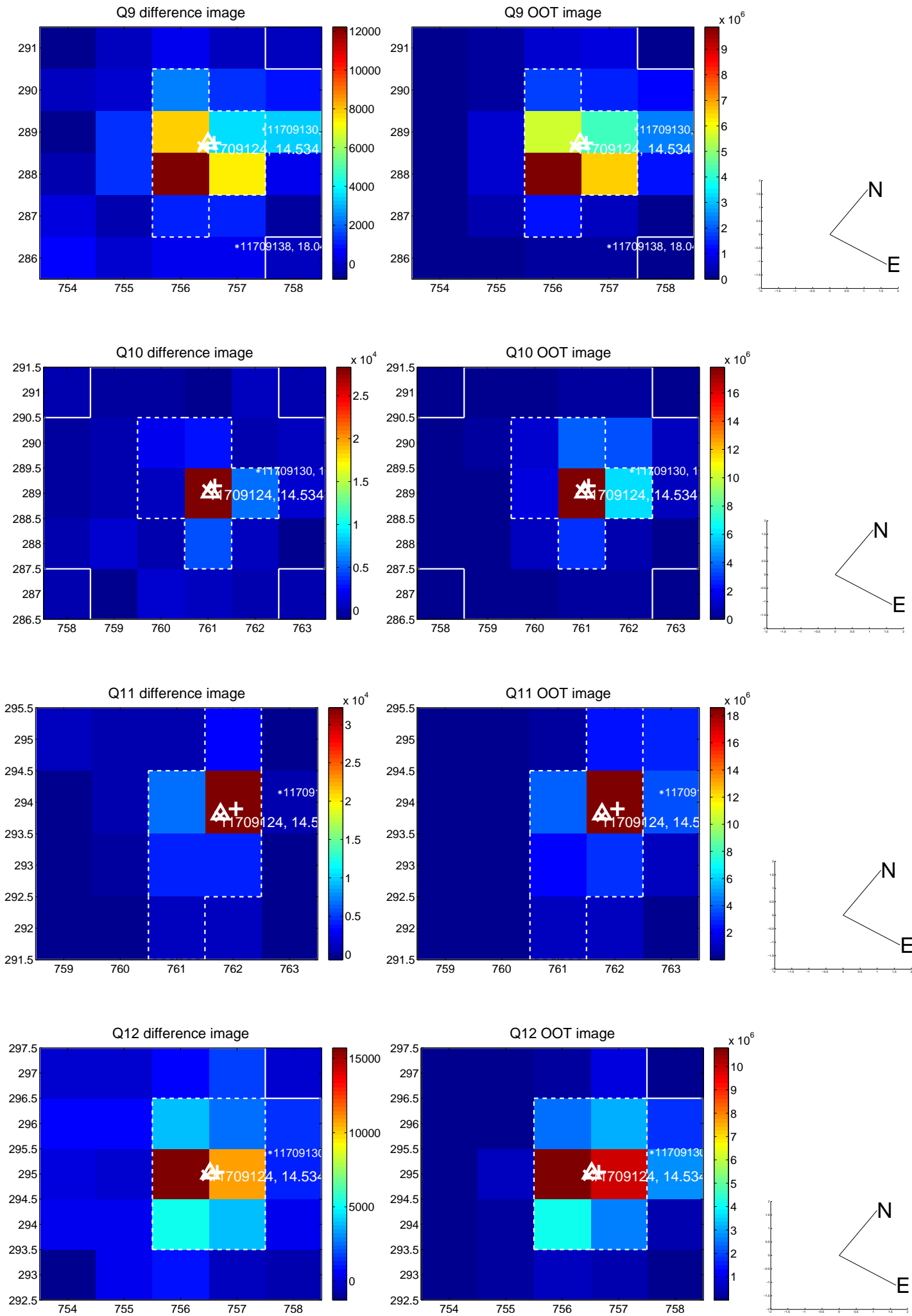
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



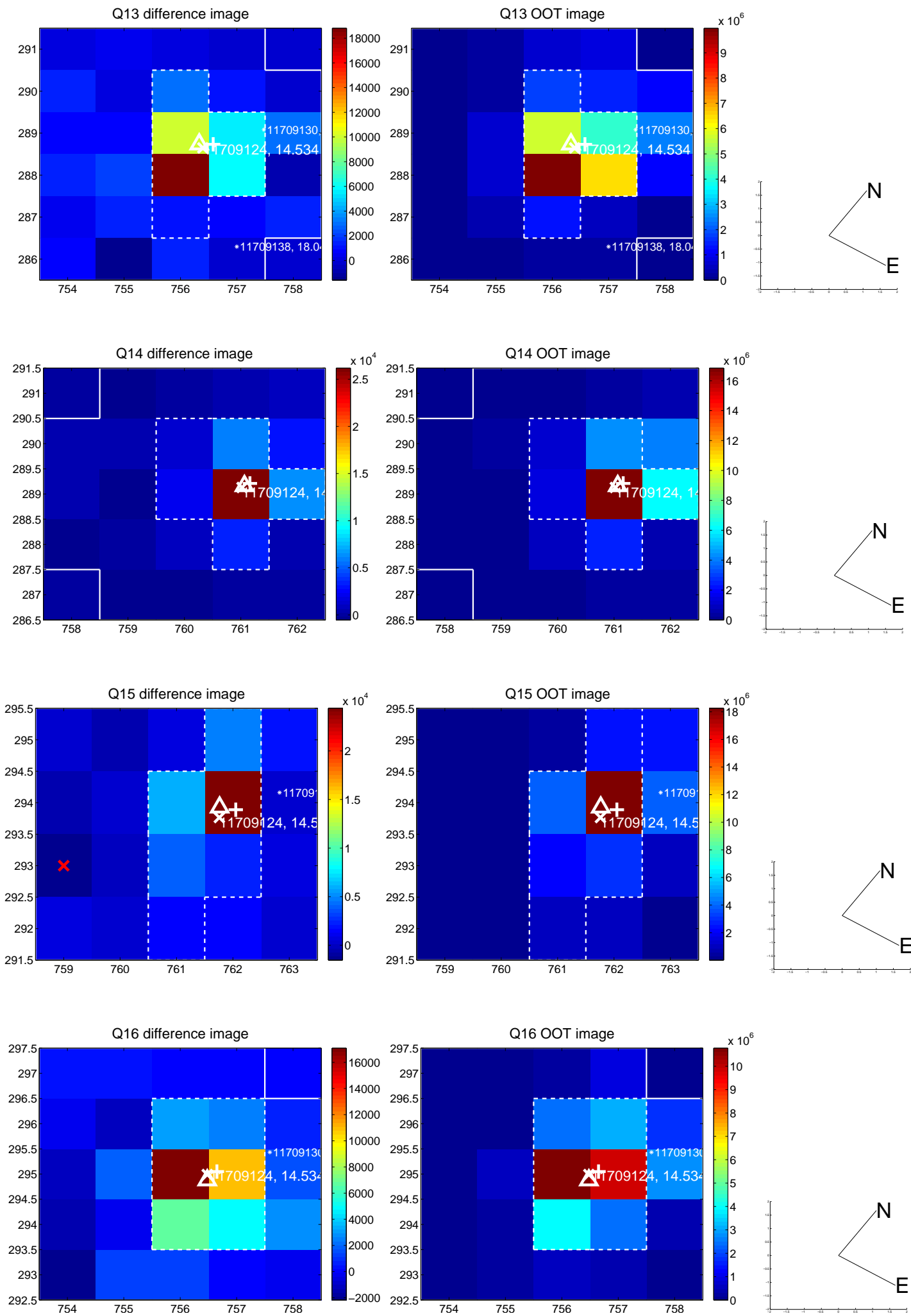
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



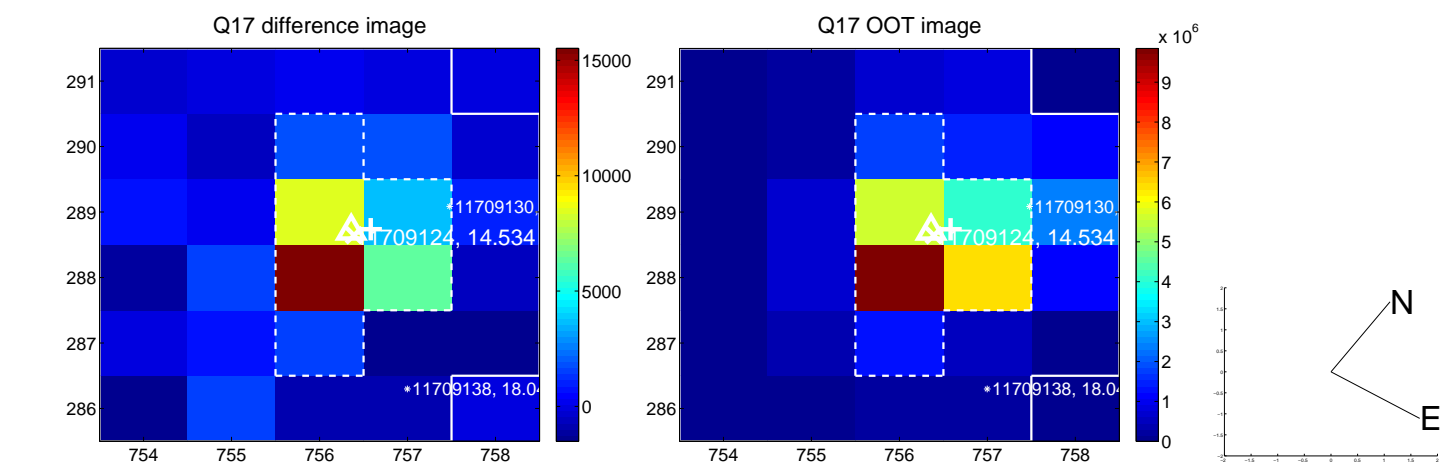
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



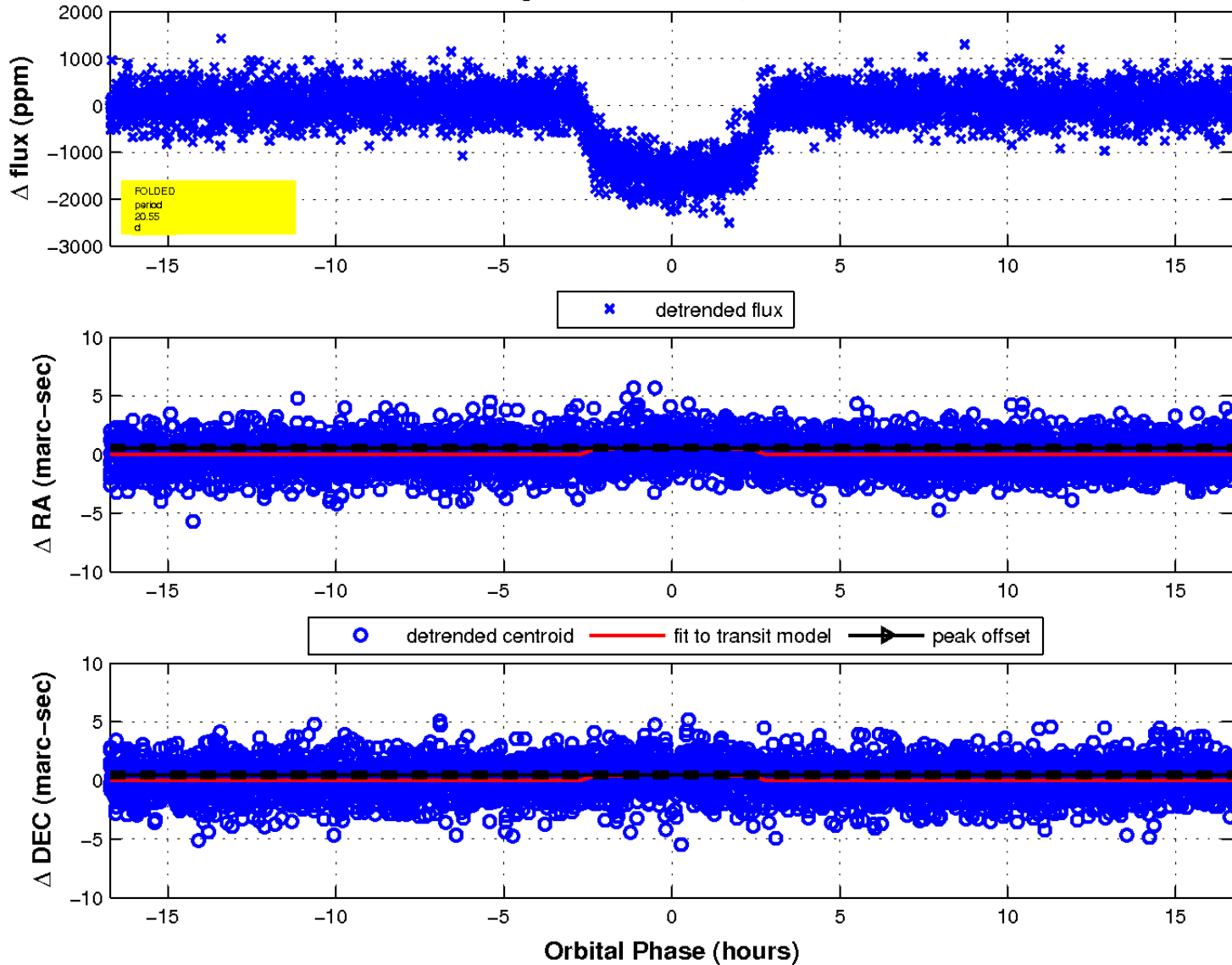
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

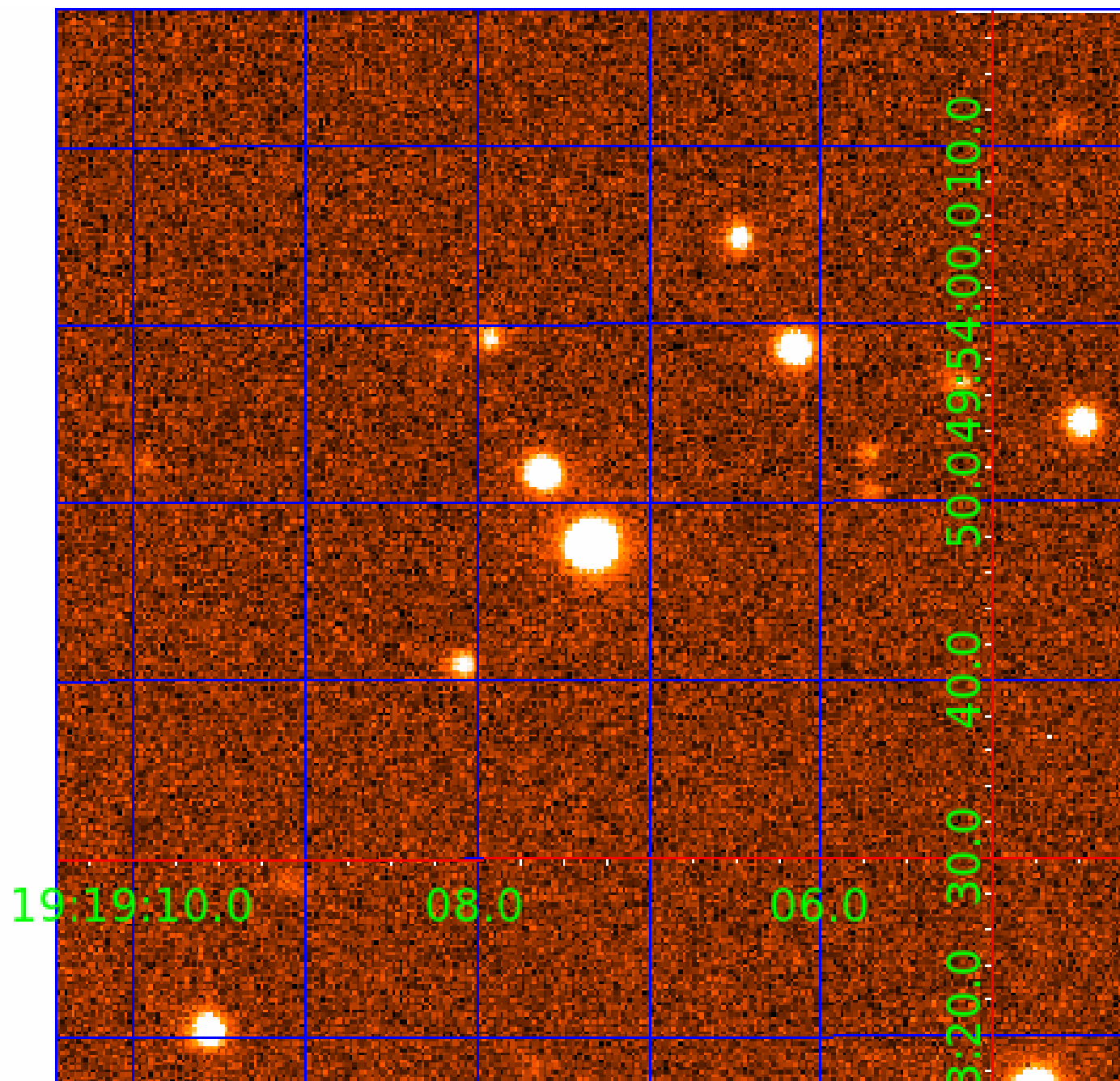


fluxWeightedCentroids, Planet 1 of 6



UKIRT Image

Declination



KIC 011709124

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})
011709124-01	OBS	0435.01	20.549791	137.848211	1563.5	5.574	93.7	96.0	0.97	5688	4.09	44.17
011709124-02	OBS	0435.05	62.302555	179.099592	841.3	7.600	33.3	33.1	0.97	5688	3.09	10.07
011709124-03	OBS	No	207.656092	241.824270	130.5	16.317	50.7	2.3	0.97	5688	1.38	2.02
011709124-04	OBS	0435.04	3.932747	134.652254	232.0	3.019	24.8	26.5	0.97	5688	1.75	400.51
011709124-05	OBS	0435.03	33.040544	161.223174	569.1	3.506	21.2	21.4	0.97	5688	2.65	23.45
011709124-06	OBS	0435.06	9.919405	136.870975	185.5	4.603	14.6	15.3	0.97	5688	1.57	116.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011709124-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
011709124-02	OBS	PC	0.92	0	0	0	0	CENT_KIC_POS
011709124-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
011709124-04	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
011709124-05	OBS	PC	0.88	0	0	0	0	CENT_KIC_POS
011709124-06	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

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

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

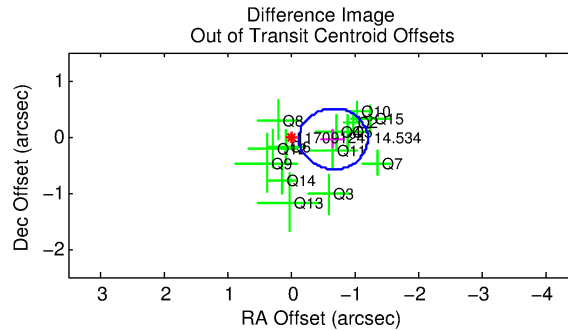
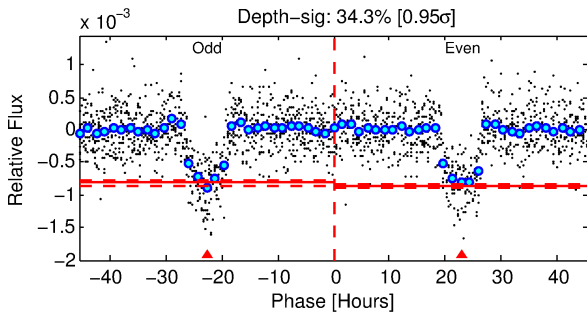
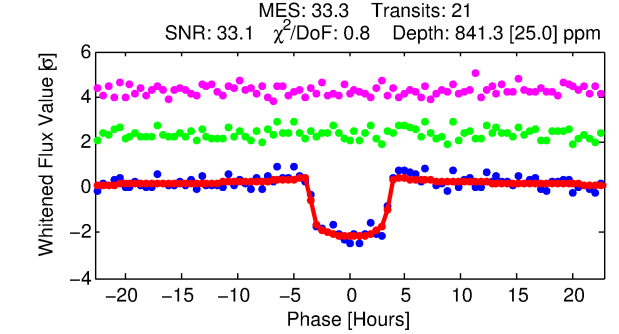
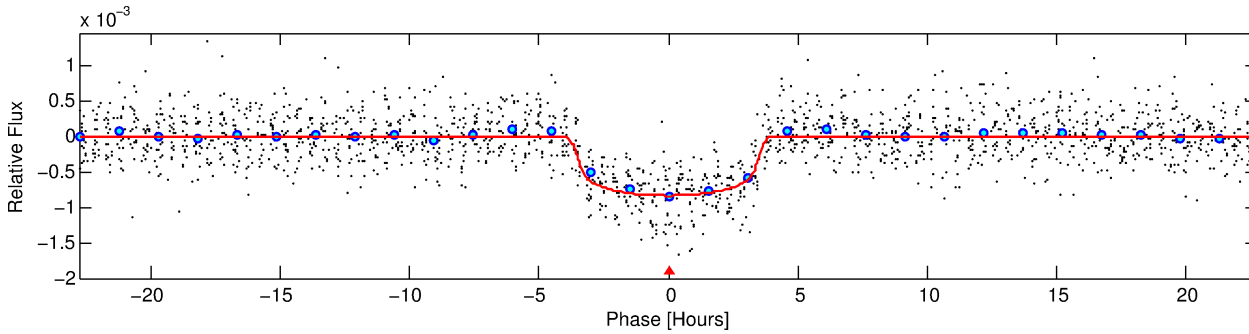
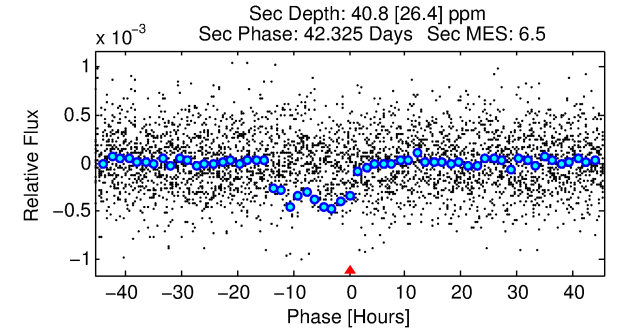
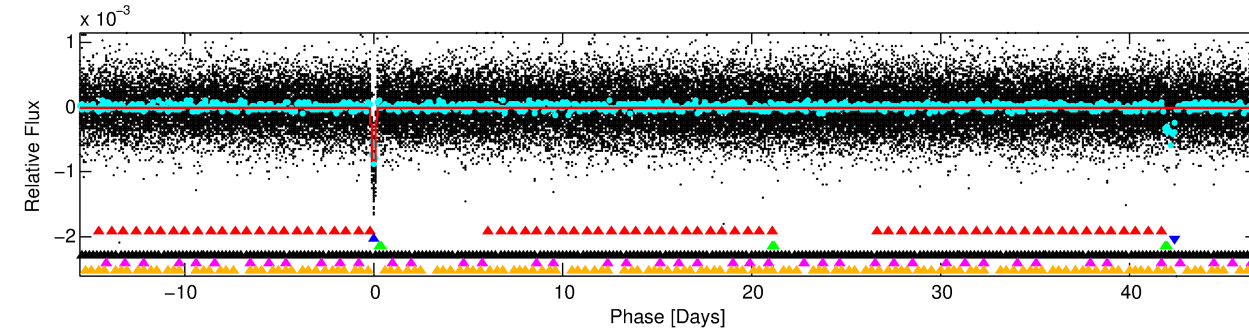
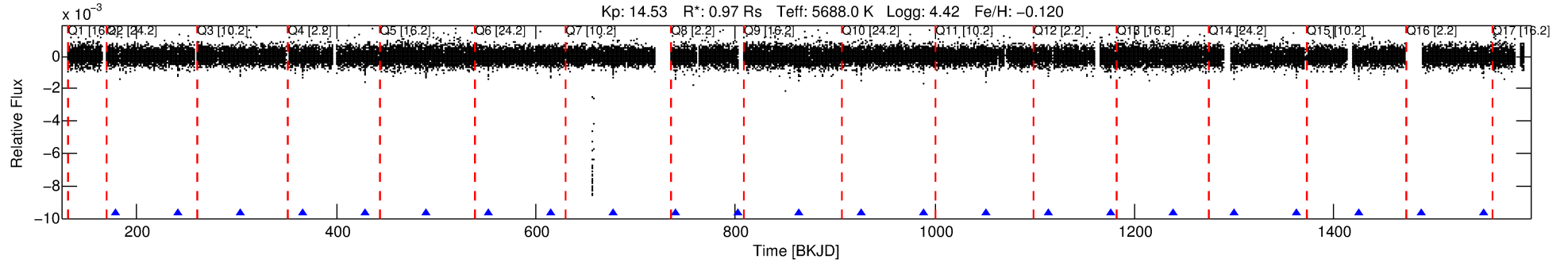
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011709124-02

No Significant Match Found

DV One-Page Summary

KIC: 11709124 Candidate: 2 of 6 Period: 62.303 d
KOI: K00435.05 Name: Kepler-154c Corr: 0.994



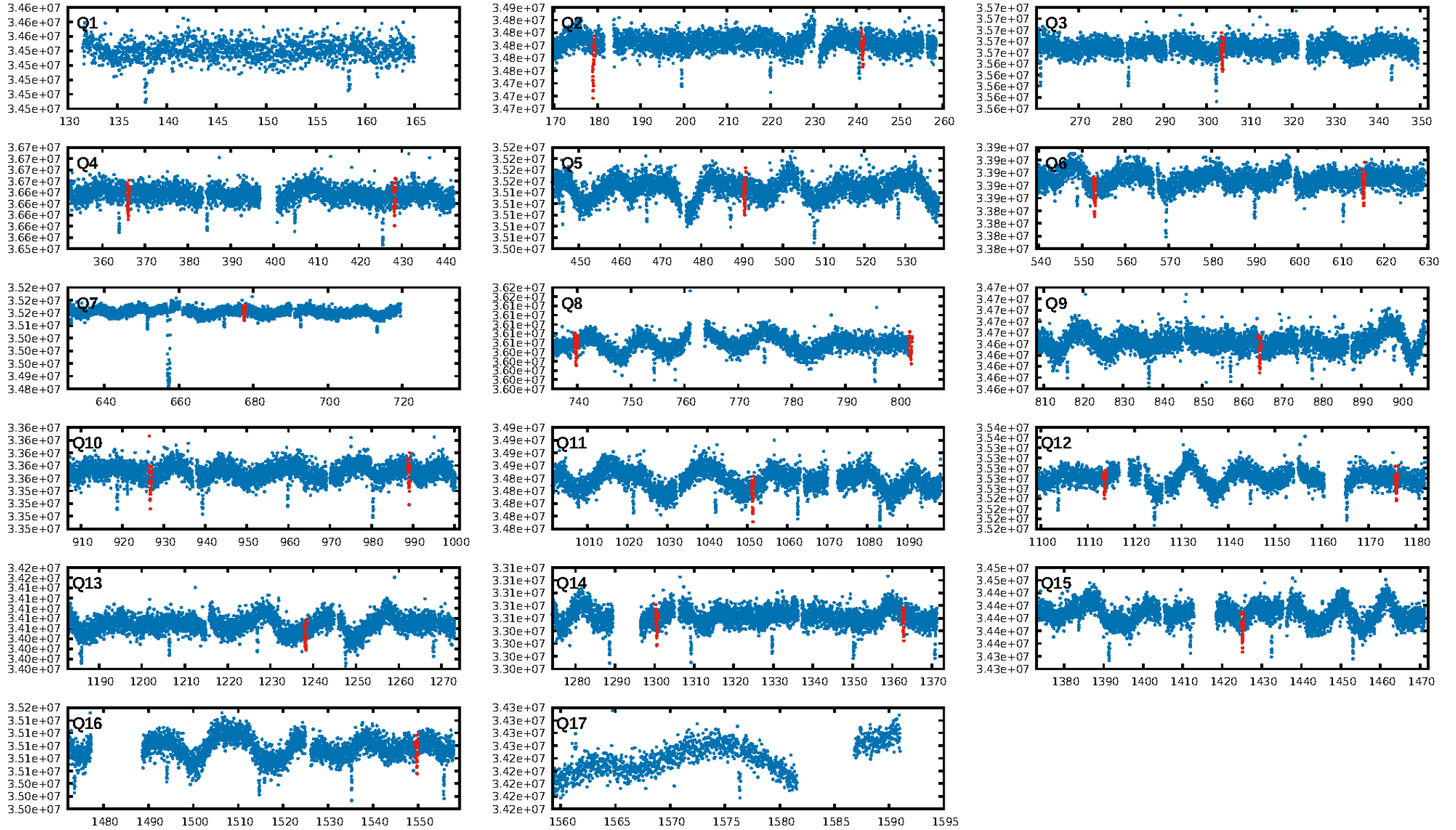
DV Fit Results:

Period = 62.30256 [0.00031] d
Epoch = 179.0996 [0.0038] BKJD
Rp/R* = 0.0292 [0.0026]
a/R* = 42.37 [16.47]
b = 0.78 [0.20]
Seff = 10.07 [1.96]
Teff = 454 [22] K
Rp = 3.09 [0.50] Re
a = 0.2964 [0.0349] AU
Ag = 206.43 [143.16] [1.43σ]
Teffp = 2662 [449] K [4.91σ]

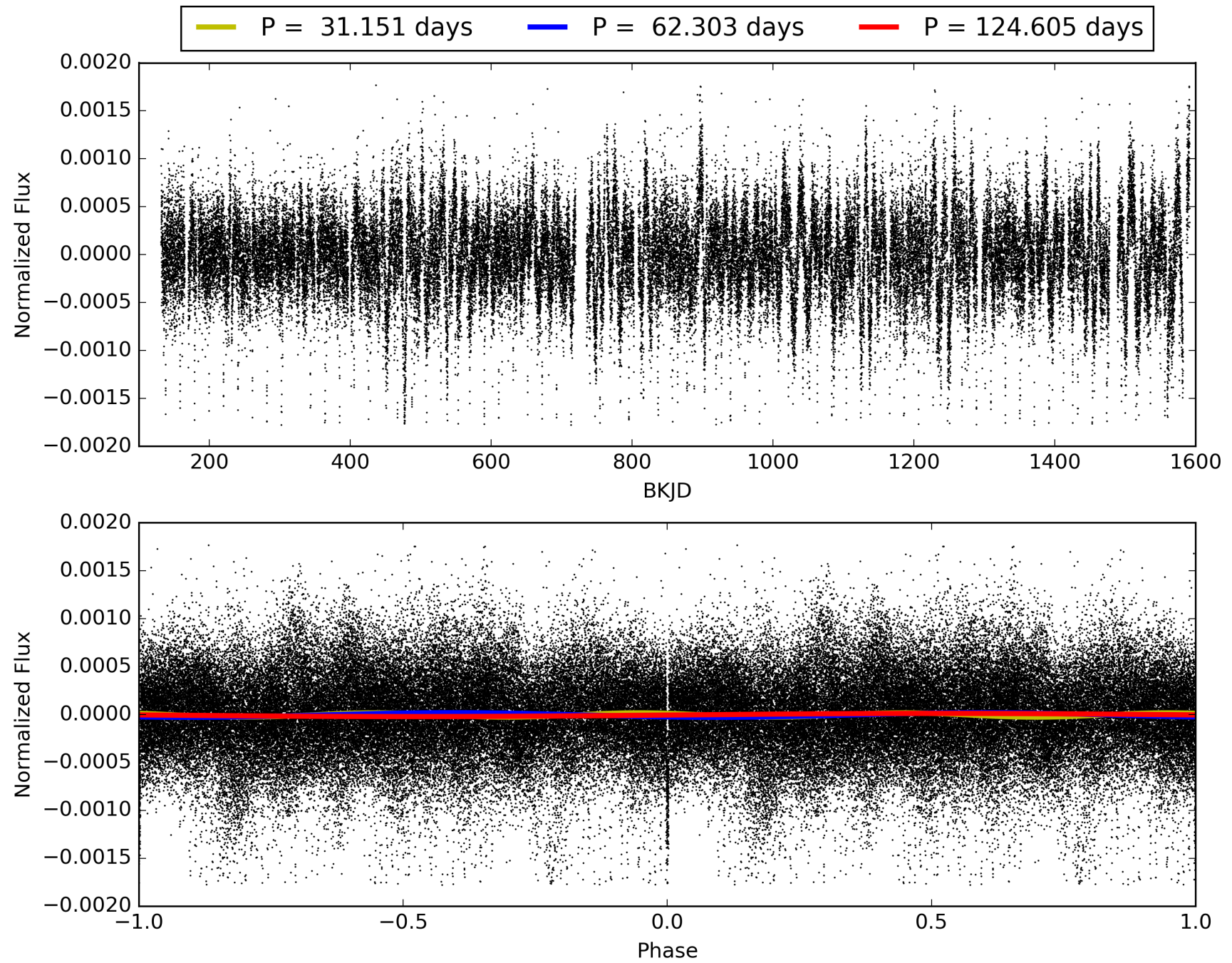
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [83.91σ]
LongPeriod-sig: 100.0% [193.81σ]
ModelChiSquare2-sig: 78.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.16e-207
RollingBand-fgt: 1.00 [21/21]
GhostDiagnostic-chr: 4.179
Centroid-sig: 50.6%
Centroid-so: 0.558 arcsec [1.83σ]
OotOffset-rm: 0.672 arcsec [3.73σ]
KicOffset-rm: 0.715 arcsec [4.38σ]
OotOffset-st: 4/4/3/3 [14]
KicOffset-st: 4/4/3/3 [14]
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DiffImageOverlap-fno: 0.43 [6/14]

TCE 011709124-02, PDC Light Curves

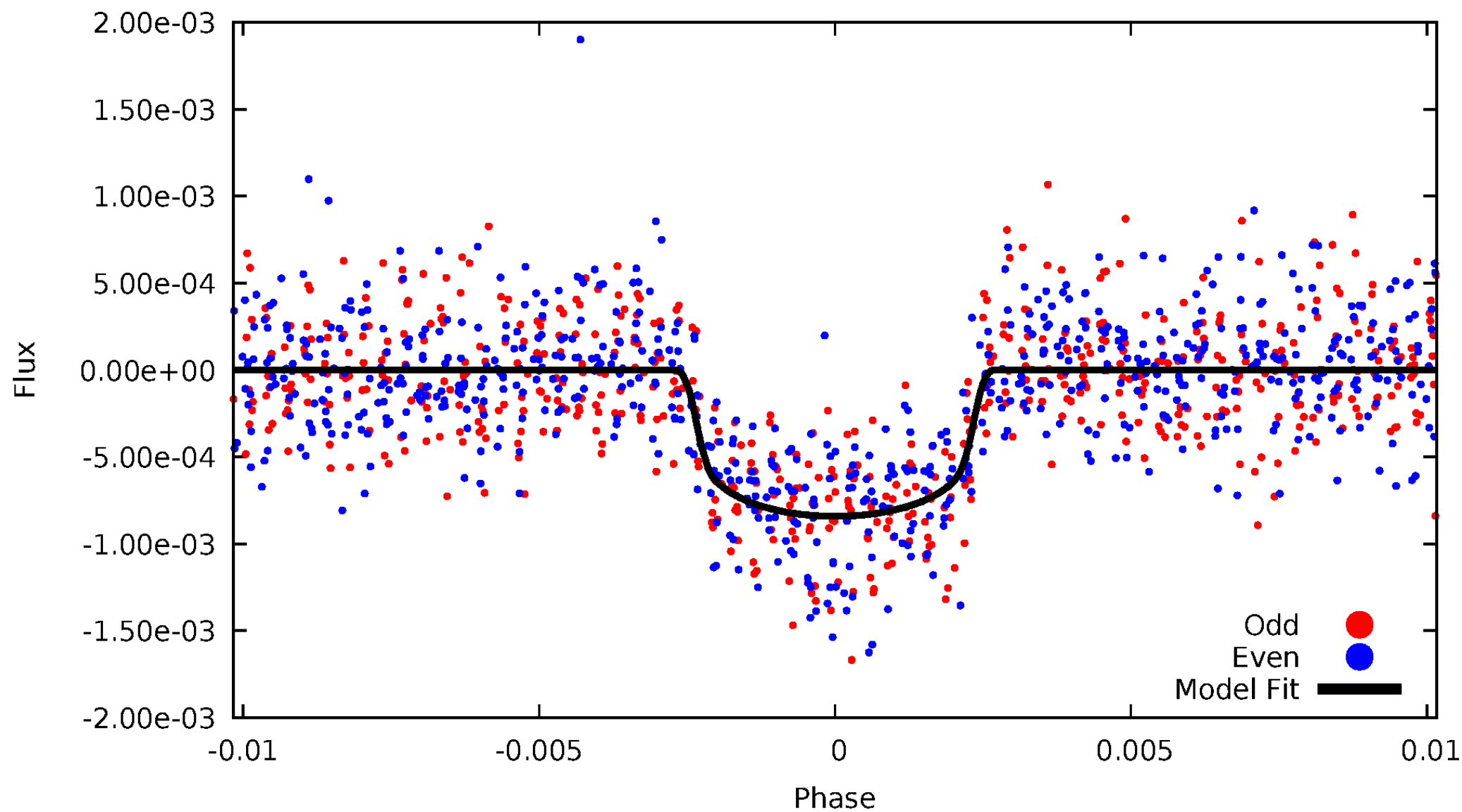


TCE 011709124-02



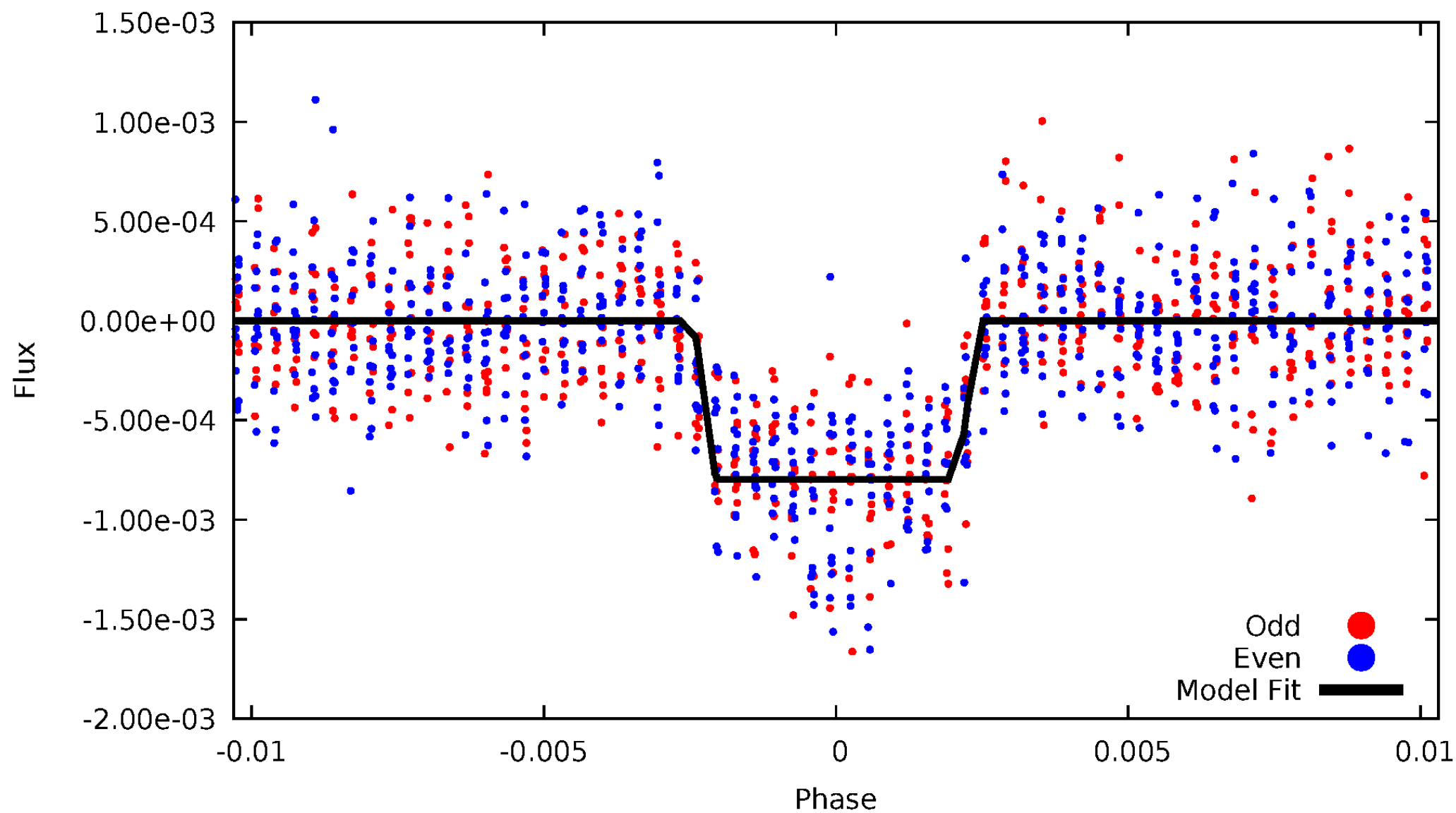
DV Odd/Even

TCE 011709124-02



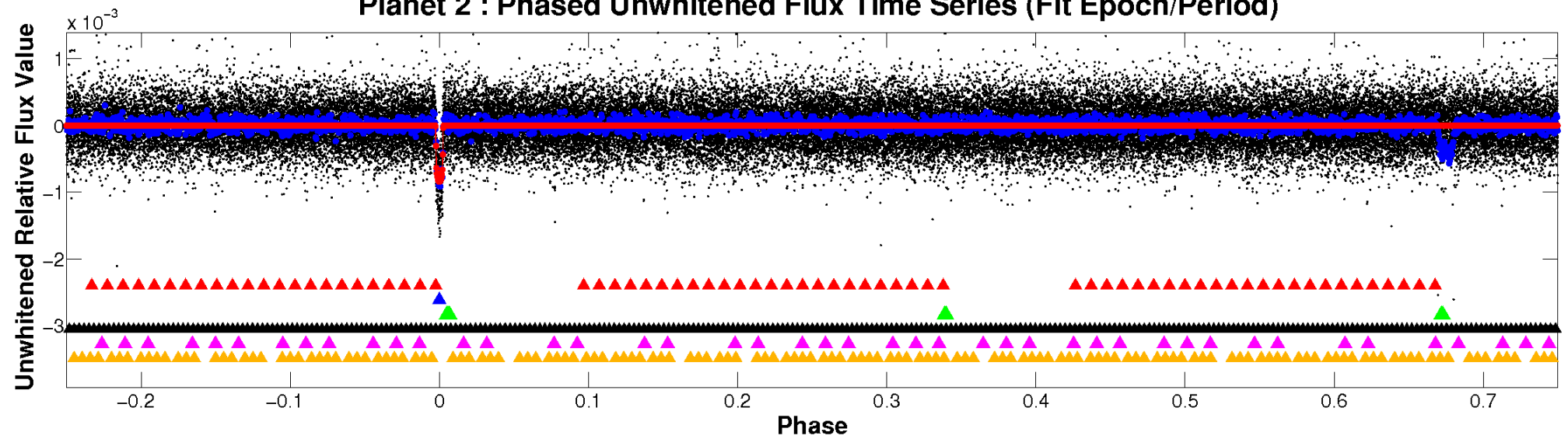
ALT Odd/Even

TCE 011709124-02

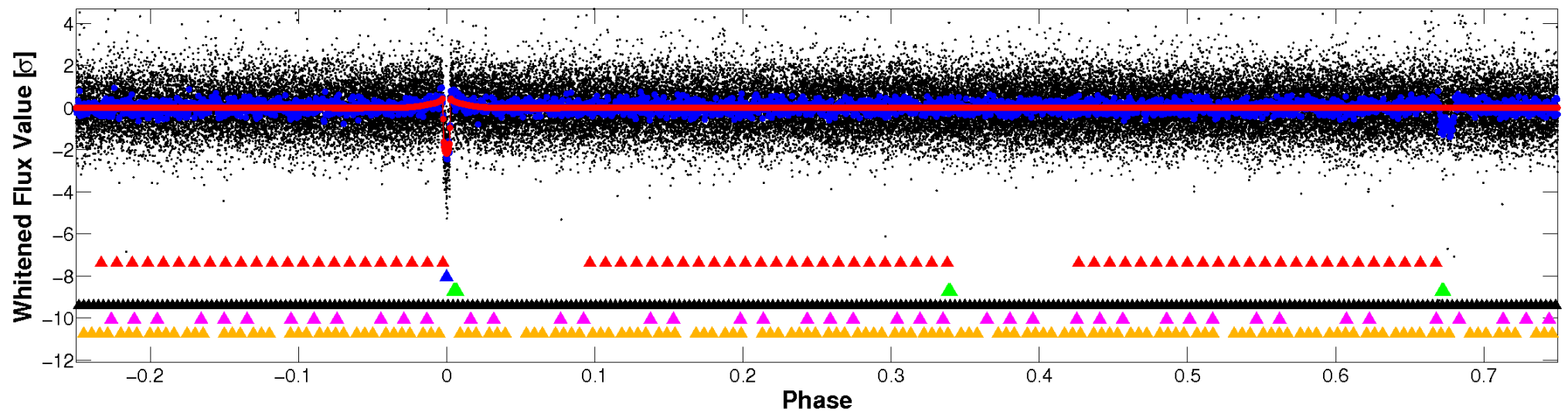


Non-Whitened Vs. Whitened Light Curve

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

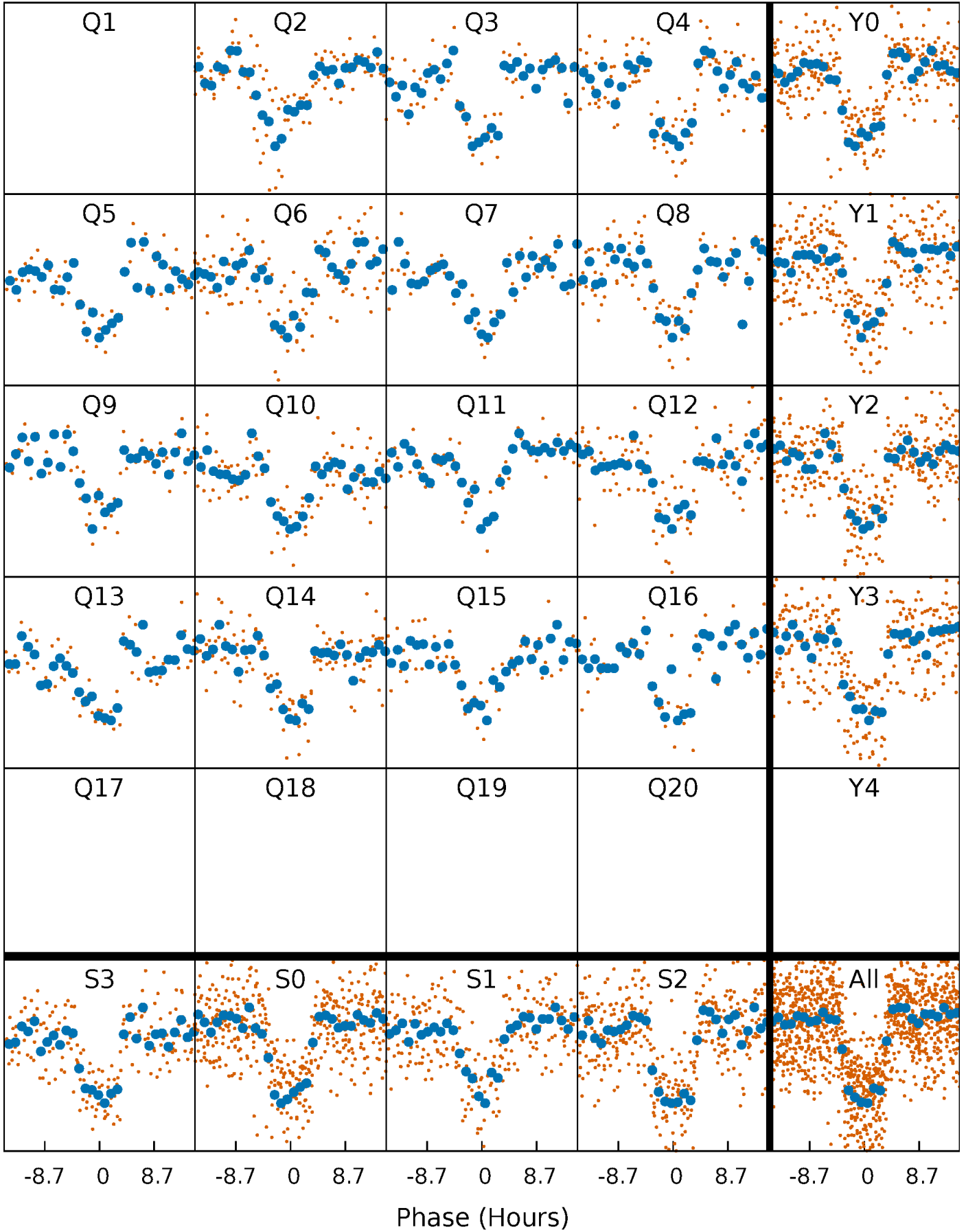


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



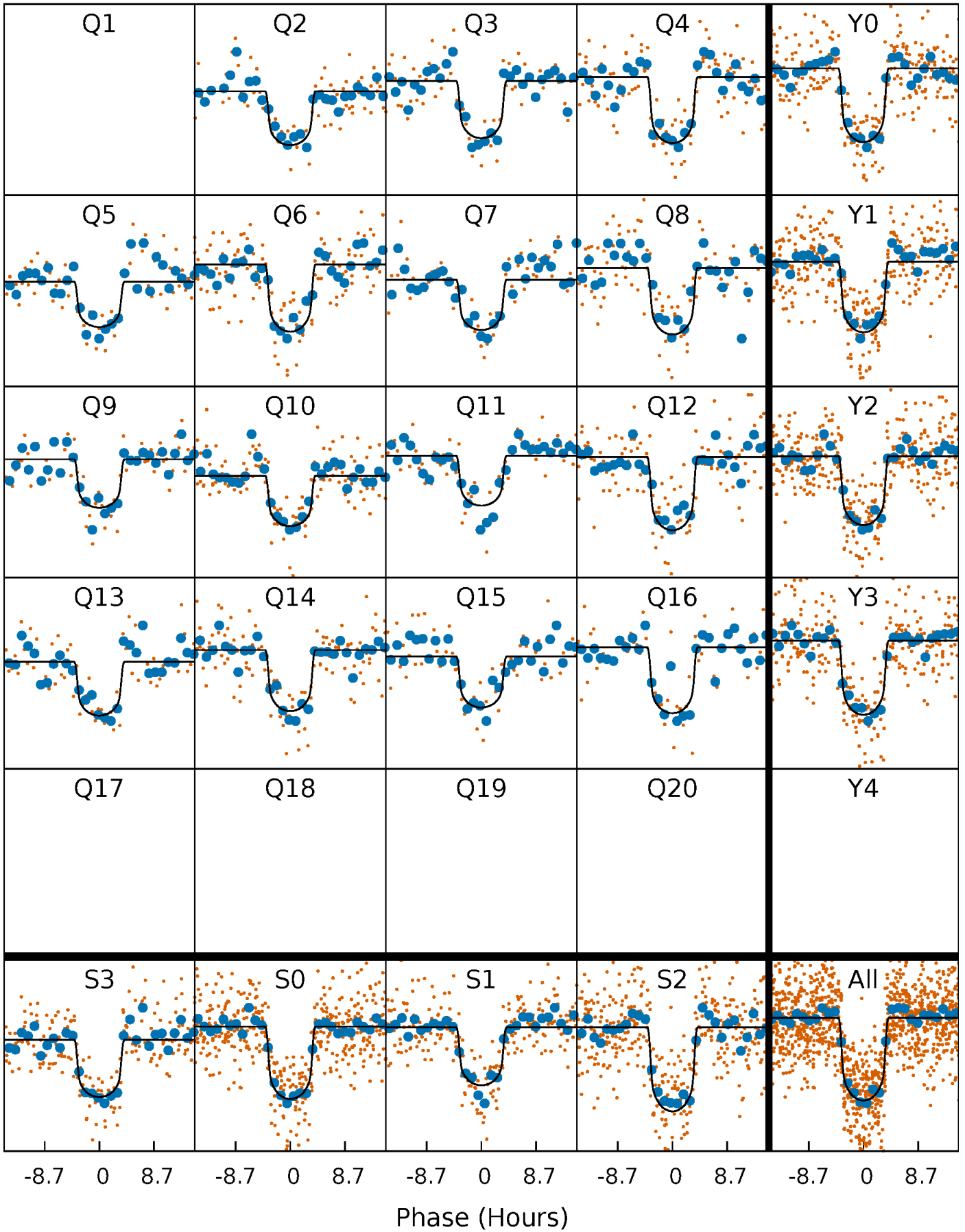
PDC Quarter-Phased Transit Curves

TCE 011709124-02 P= 62.302555 Days $T_0=179.099592$ (BKJD)



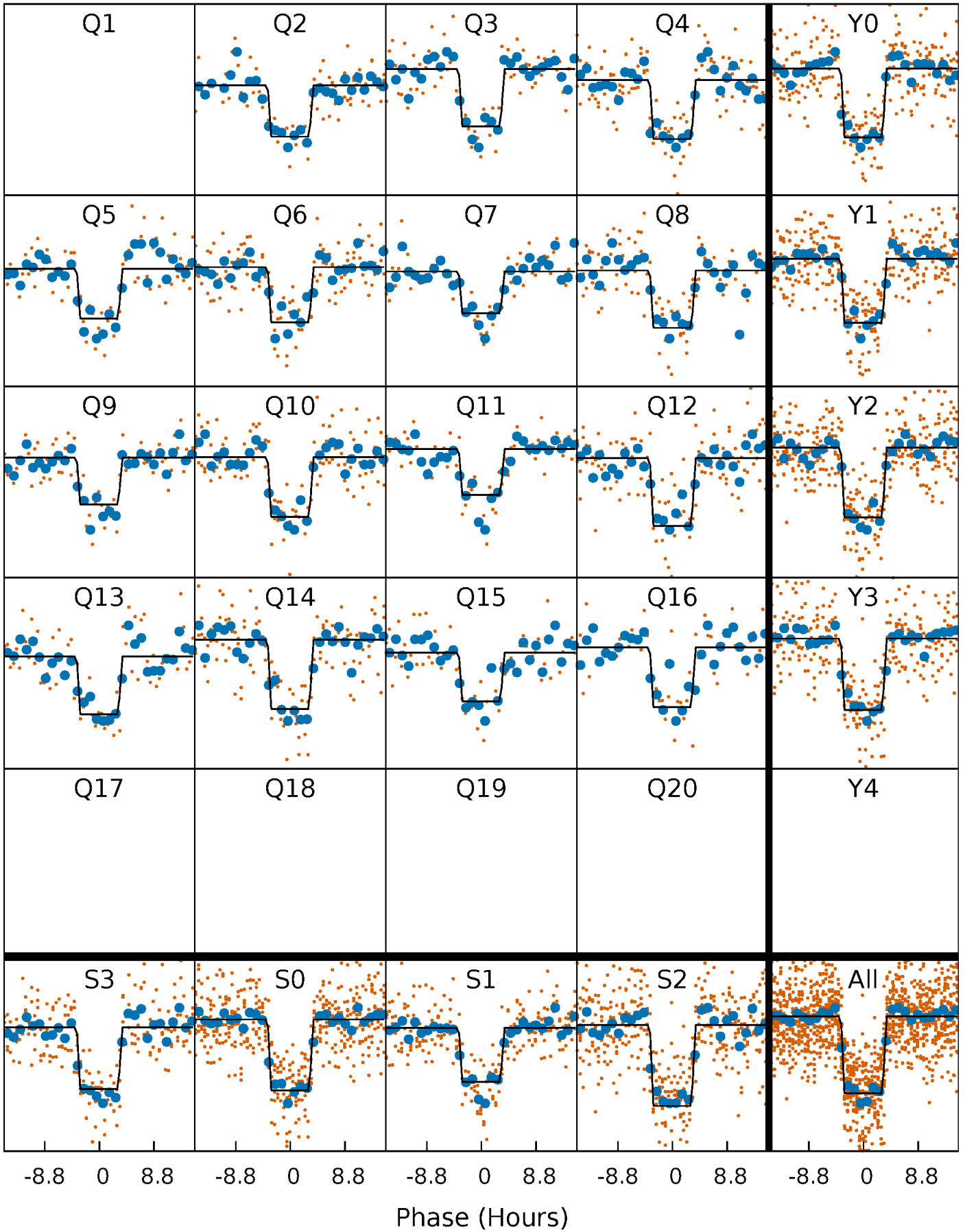
DV Quarter-Phased Transit Curves

TCE 011709124-02 P= 62.302555 Days $T_0=179.099592$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

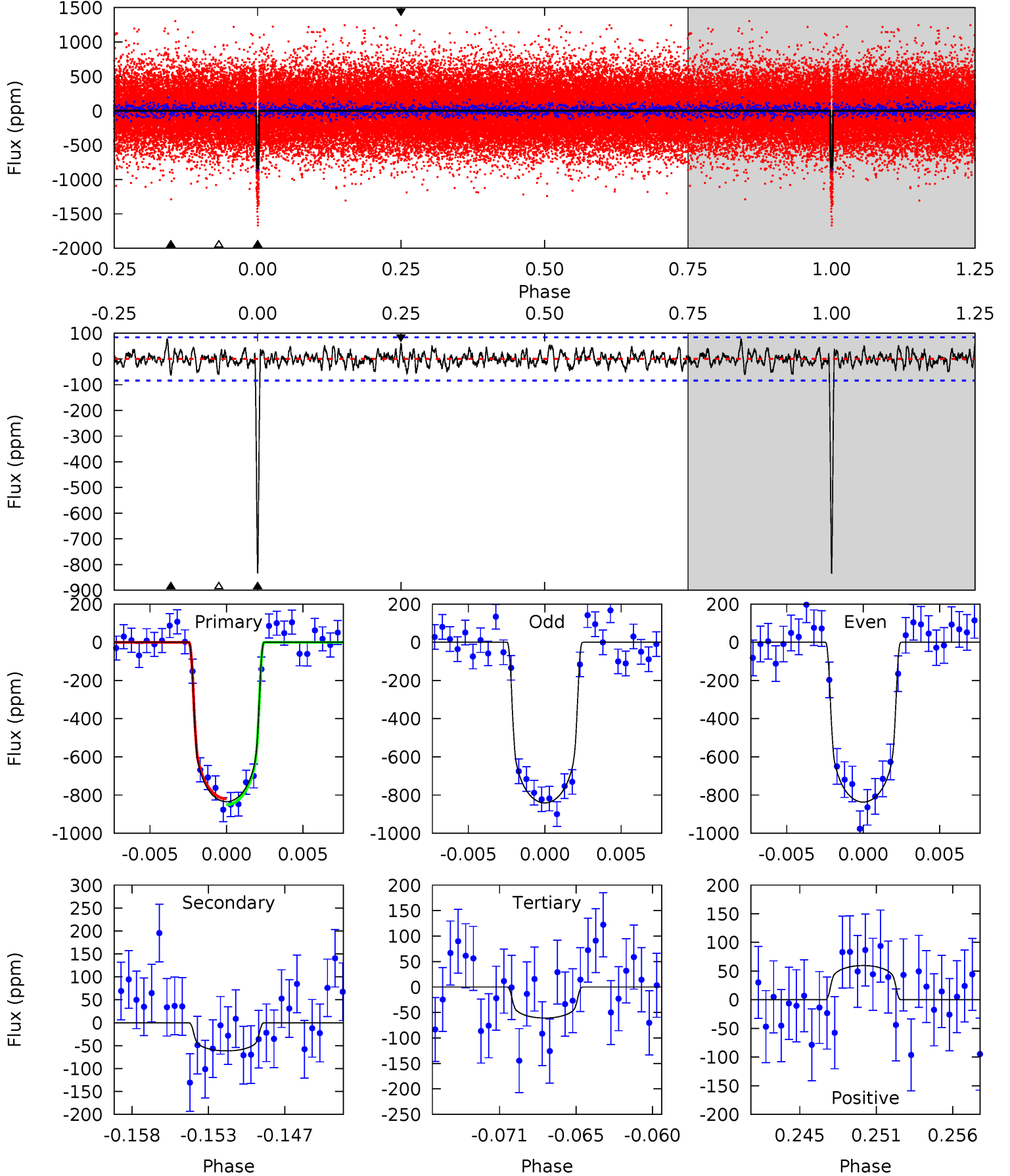
TCE 011709124-02 P= 62.302028 Days $T_0=179.106561$ (BKJD)



DV Model-Shift Uniqueness Test

011709124-02, P = 62.302555 Days, E = 116.797037 Days

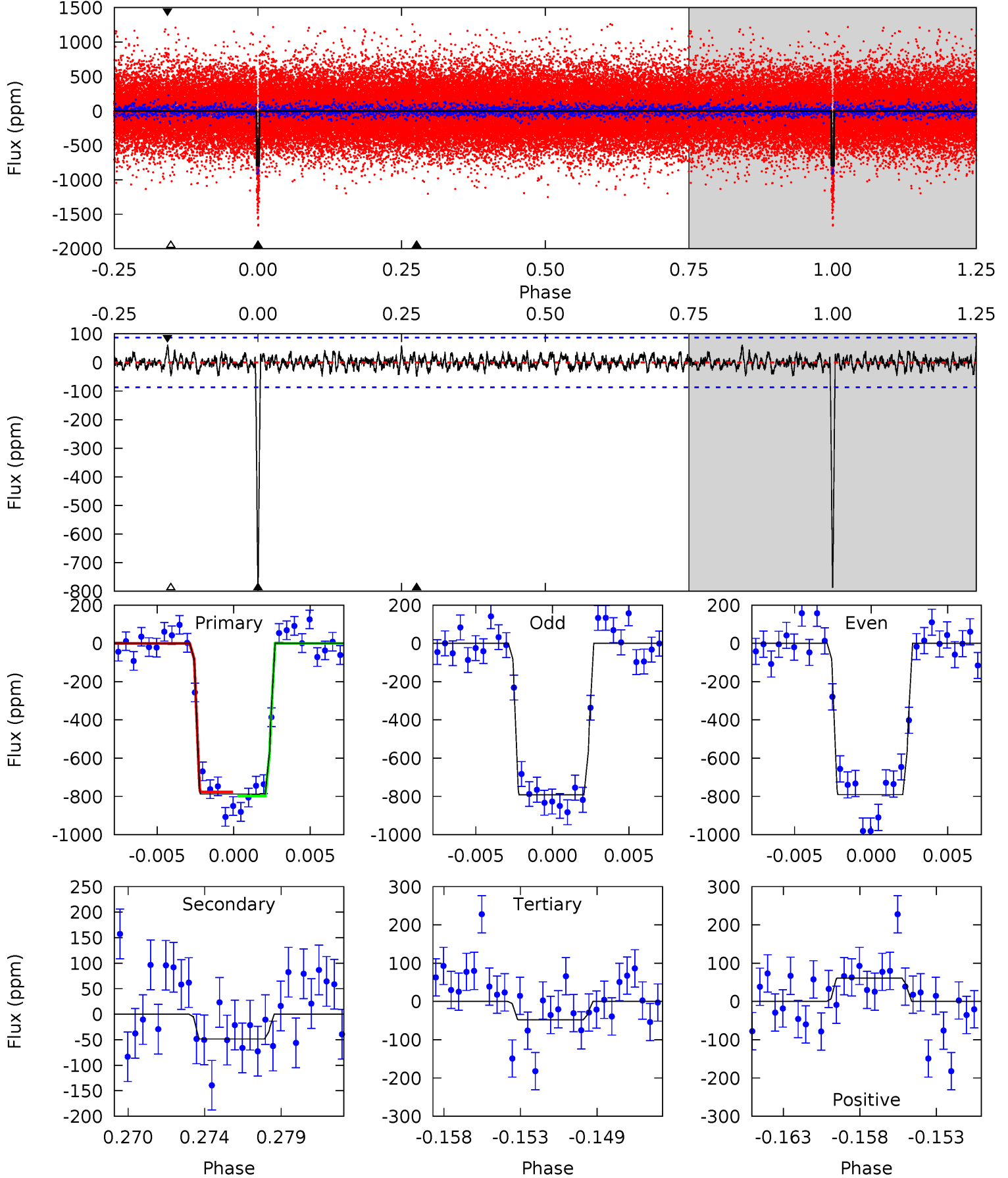
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
51.2	3.77	3.74	3.66	5.14	2.78	1.28	47.5	47.6	0.04	0.11	0.14	1.01	0.08	0.96



Alt Model-Shift Uniqueness Test

011709124-02, P = 62.302028 Days, E = 116.804533 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
46.7	2.88	2.85	3.61	5.17	2.83	0.97	43.9	43.1	0.03	-0.73	0.02	0.99	0.07	0.63



Stellar Parameters For KIC 011709124

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5688^{+113}_{-101}	$4.415^{+0.100}_{-0.100}$	$-0.120^{+0.150}_{-0.150}$	$0.971^{+0.130}_{-0.095}$	$0.895^{+0.071}_{-0.052}$	$1.377^{+0.567}_{-0.434}$
	+2%/-2%	+2%/-2%	+125%/-125%	+13%/-10%	+8%/-6%	+41%/-32%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 011709124-02 / KOI 0435.05

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-61 ± 16	$3.07^{+0.40}_{-0.33}$	635^{+25}_{-24}	3450^{+181}_{-176}	310^{+121}_{-91}
Alt.	-49 ± 17	$2.98^{+0.35}_{-0.33}$	631^{+27}_{-21}	3355^{+206}_{-223}	265^{+122}_{-98}

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 $A_{obs} \gg 1.0$

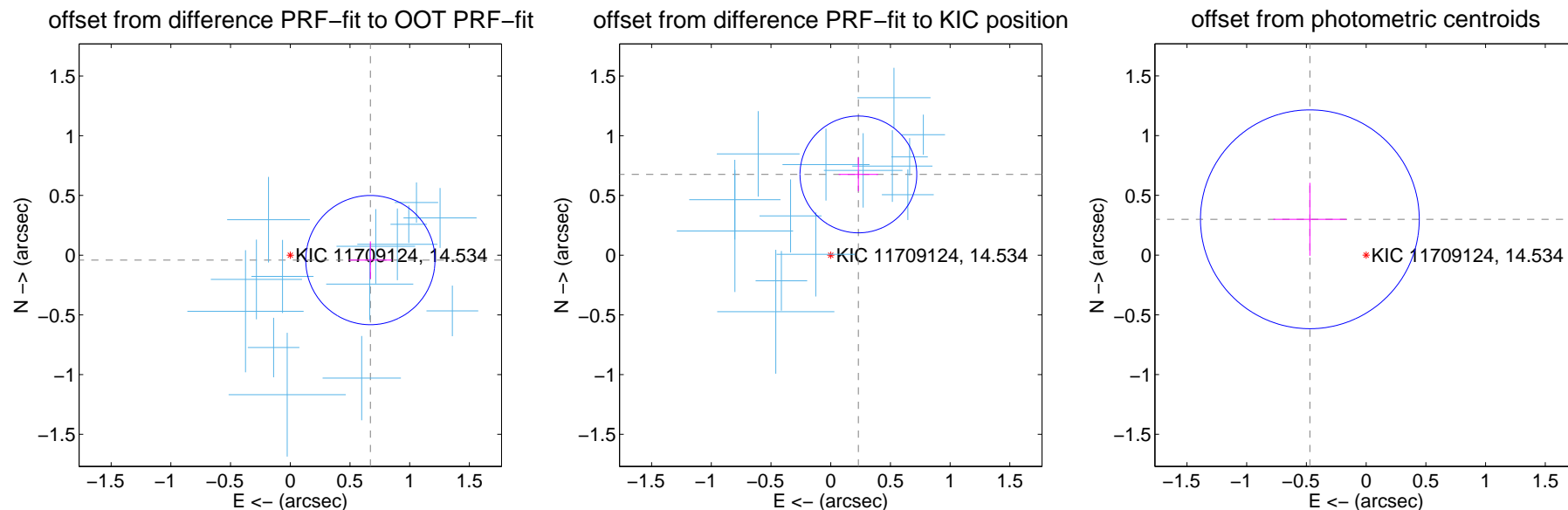
DV Centroid Data

Supplemental centroid analysis for 011709124-02. Kepler magnitude: 14.53. Transit SNR 33.08

There are 14 quarters with good PRF difference image offsets

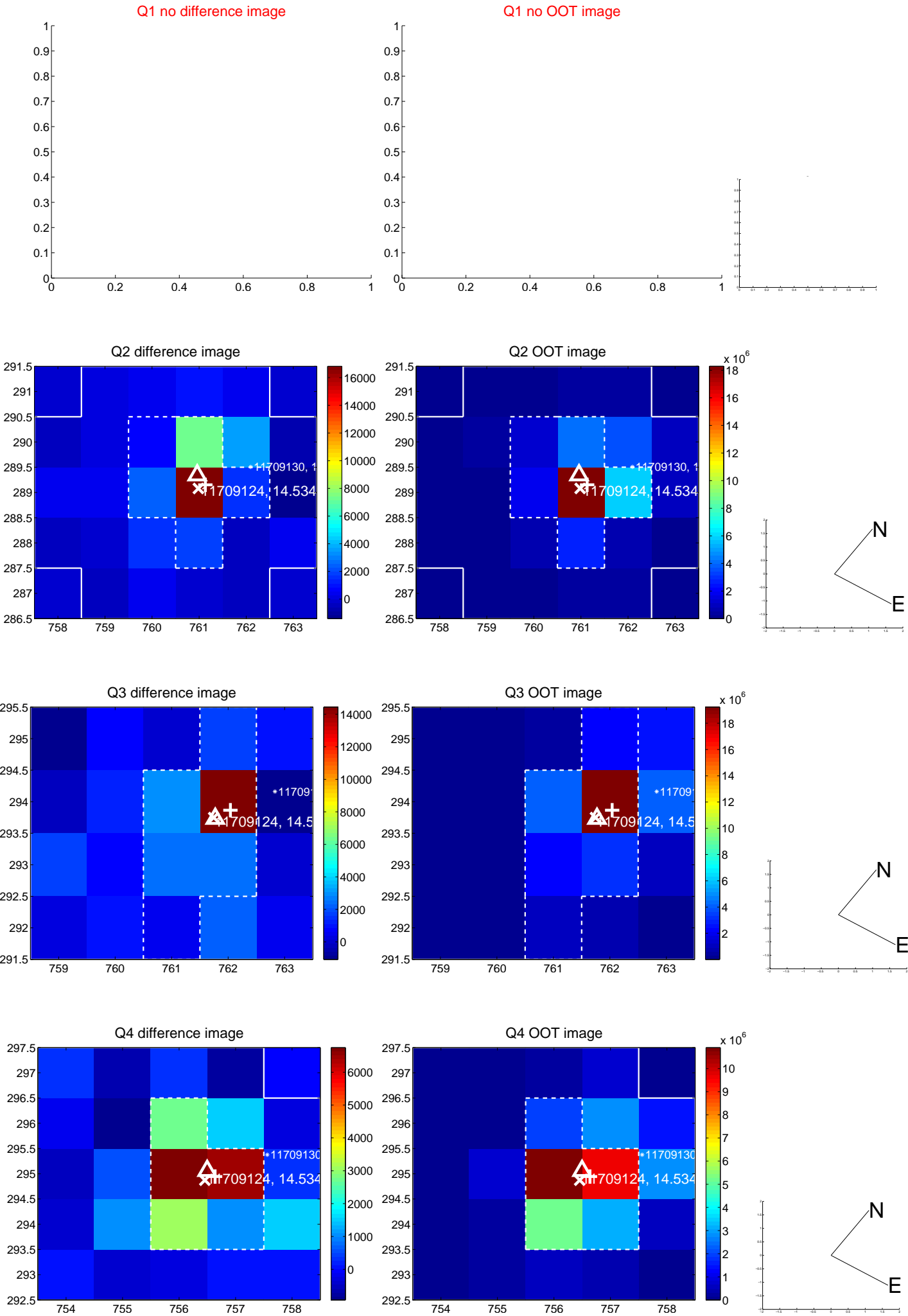
The direct PRF centroid is offset from the target star catalog position by about 1.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.672 ± 0.180	3.73	-0.671 ± 0.180	-0.041 ± 0.156
PRF-fit source offset from KIC position	0.715 ± 0.163	4.38	-0.232 ± 0.165	0.676 ± 0.141
photometric centroid source offset	0.56 ± 0.31	1.83	0.47 ± 0.31	0.30 ± 0.31

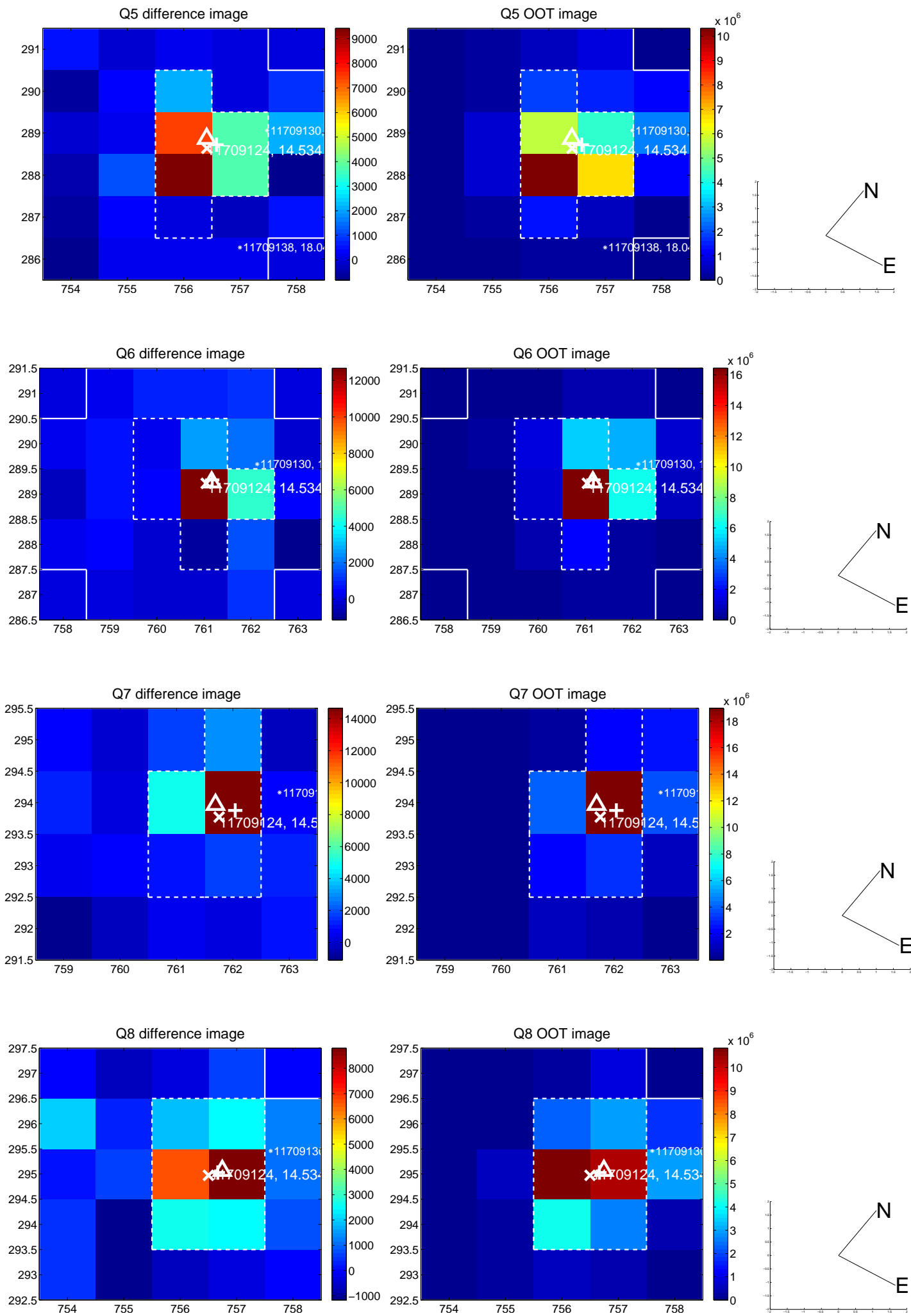


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

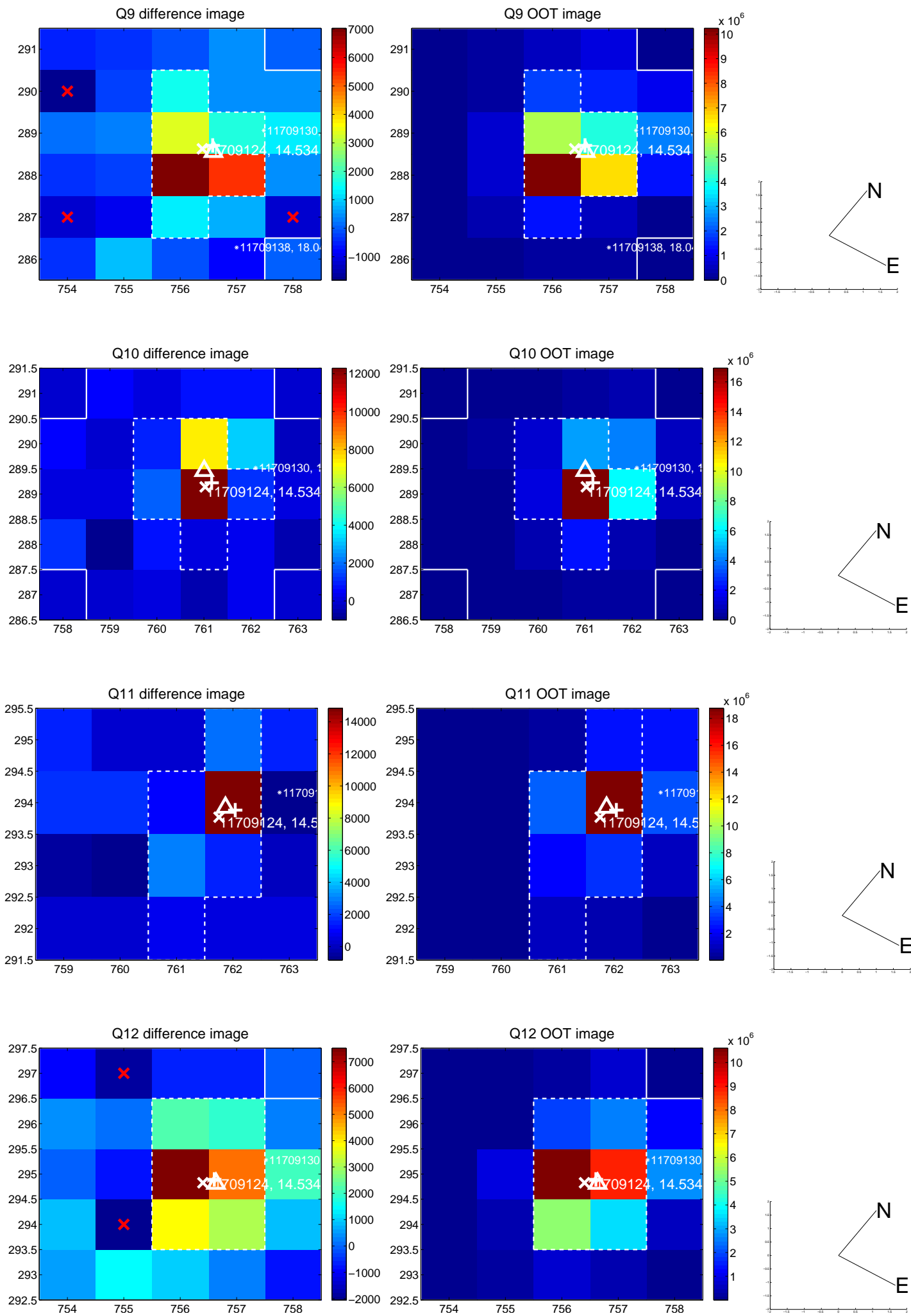
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



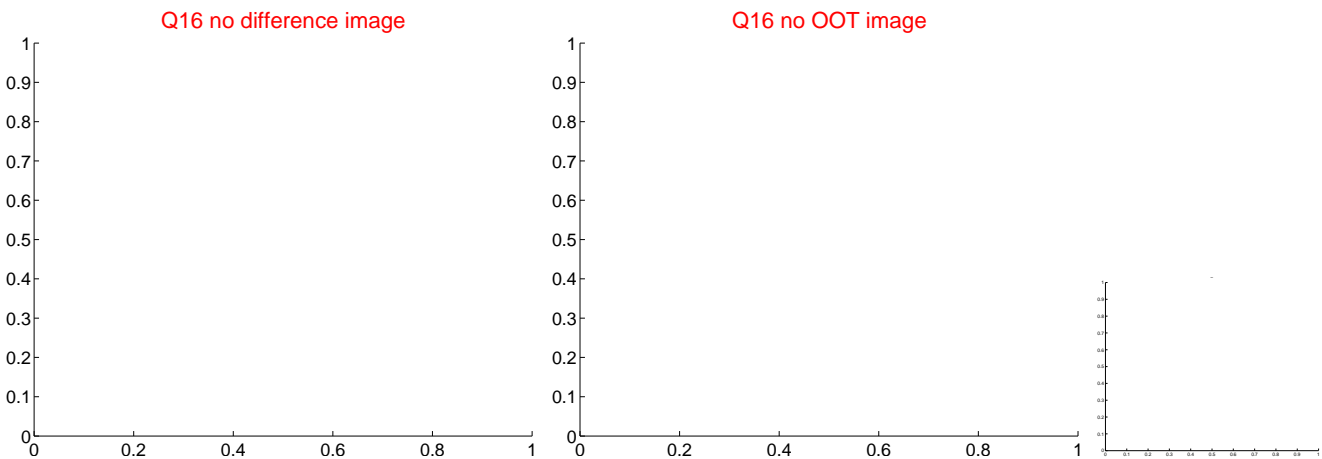
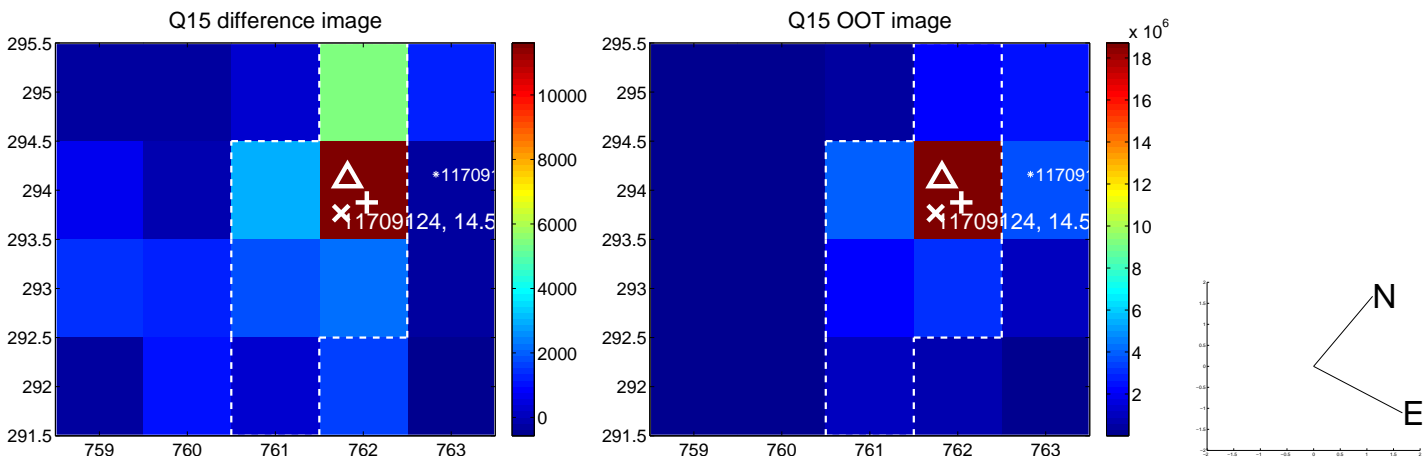
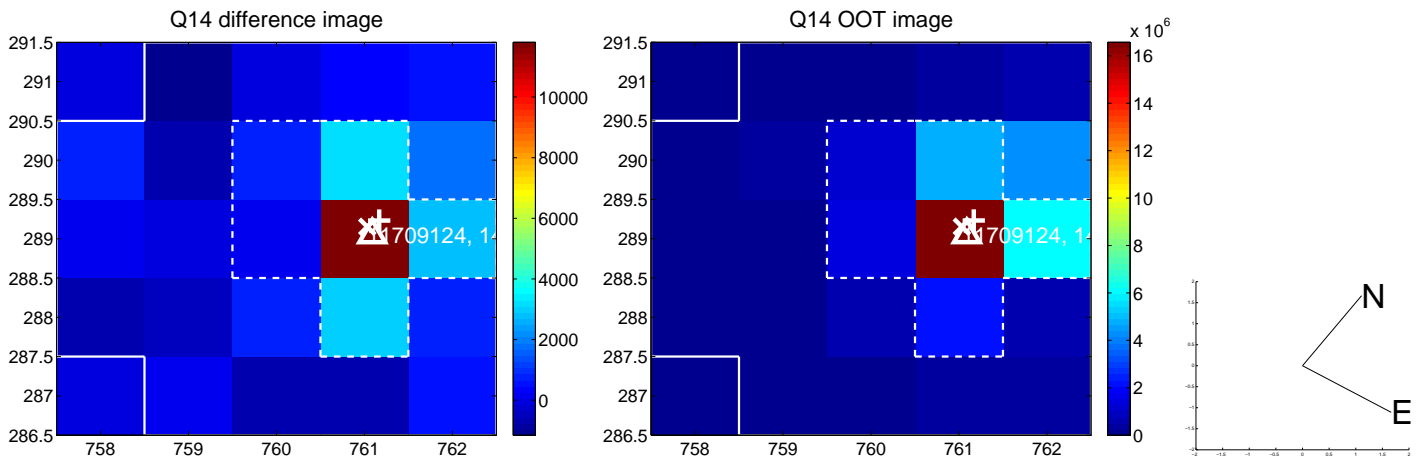
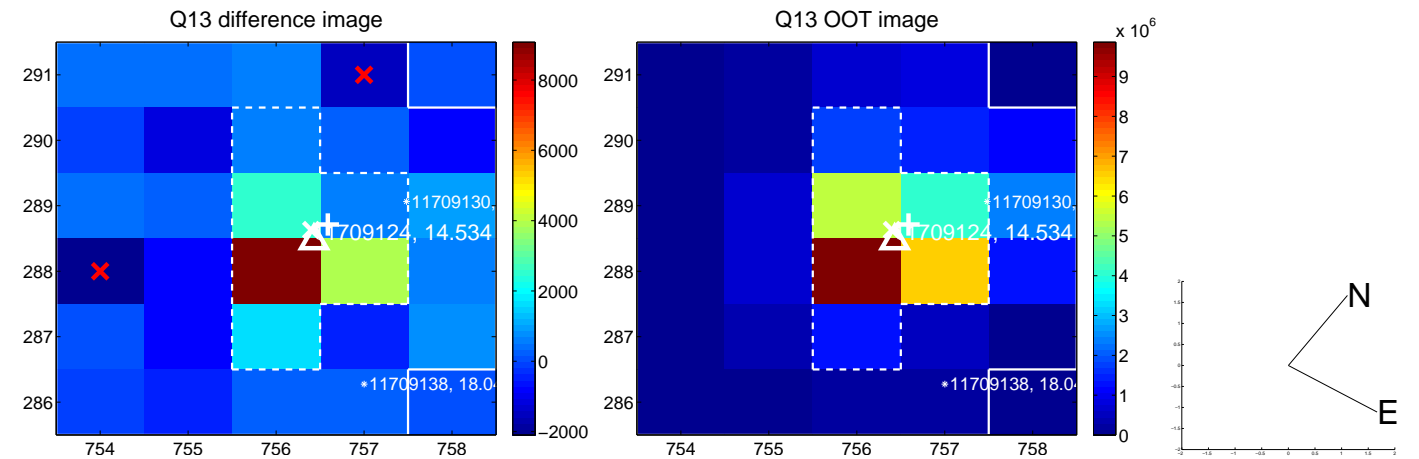
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



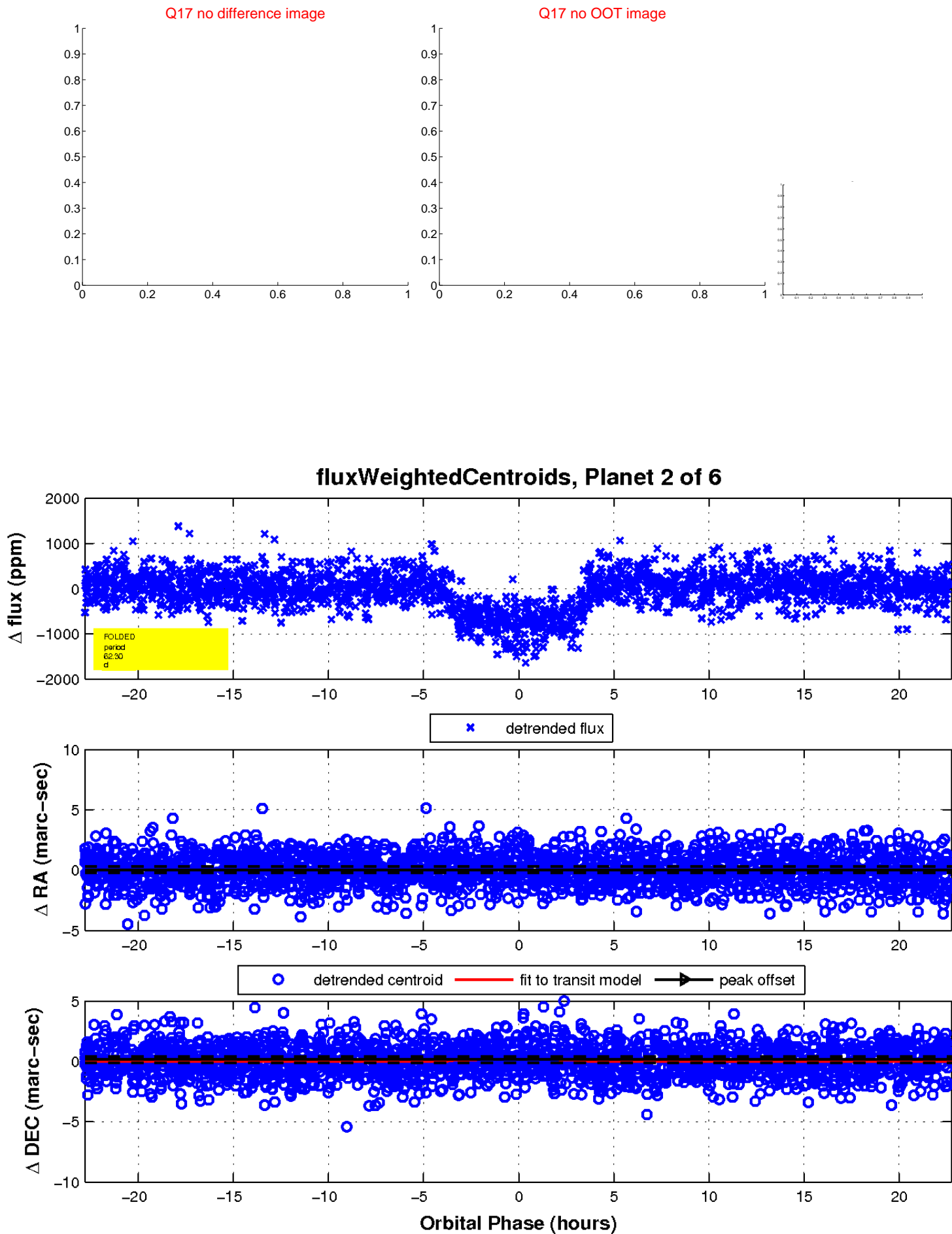
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

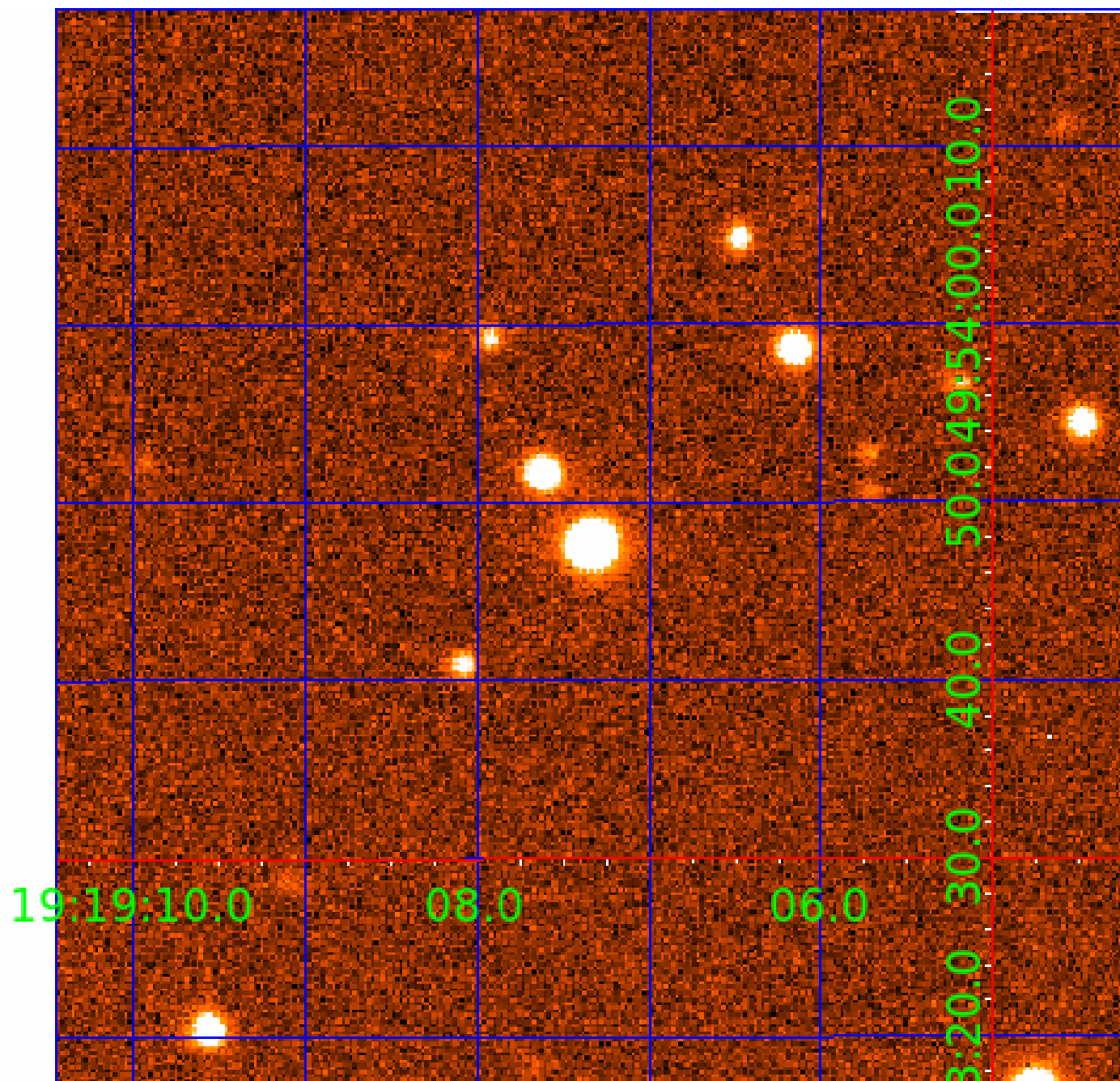


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011709124

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})
011709124-01	OBS	0435.01	20.549791	137.848211	1563.5	5.574	93.7	96.0	0.97	5688	4.09	44.17
011709124-02	OBS	0435.05	62.302555	179.099592	841.3	7.600	33.3	33.1	0.97	5688	3.09	10.07
011709124-03	OBS	No	207.656092	241.824270	130.5	16.317	50.7	2.3	0.97	5688	1.38	2.02
011709124-04	OBS	0435.04	3.932747	134.652254	232.0	3.019	24.8	26.5	0.97	5688	1.75	400.51
011709124-05	OBS	0435.03	33.040544	161.223174	569.1	3.506	21.2	21.4	0.97	5688	2.65	23.45
011709124-06	OBS	0435.06	9.919405	136.870975	185.5	4.603	14.6	15.3	0.97	5688	1.57	116.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011709124-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
011709124-02	OBS	PC	0.92	0	0	0	0	CENT_KIC_POS
011709124-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
011709124-04	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
011709124-05	OBS	PC	0.88	0	0	0	0	CENT_KIC_POS
011709124-06	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

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

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

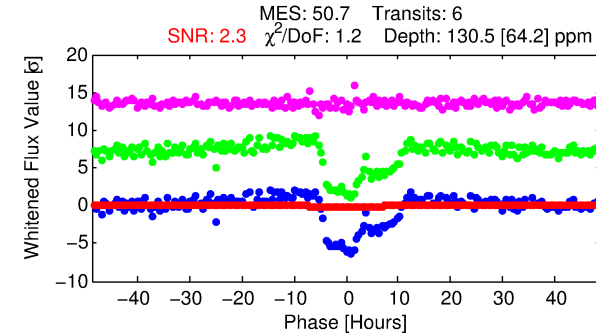
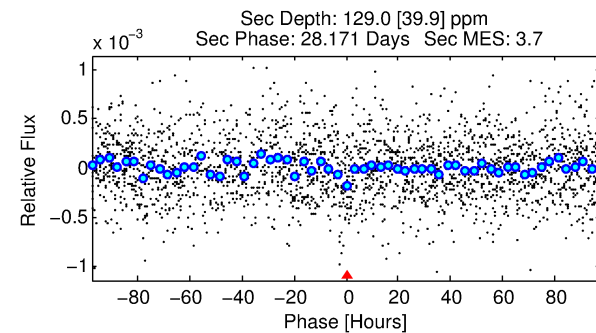
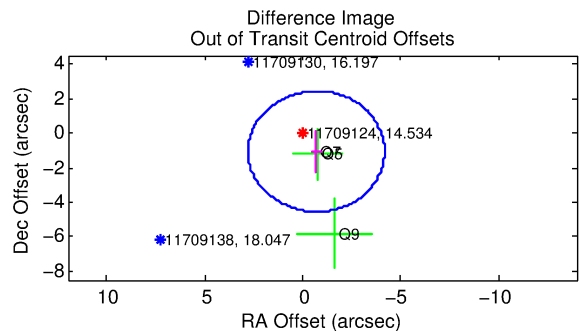
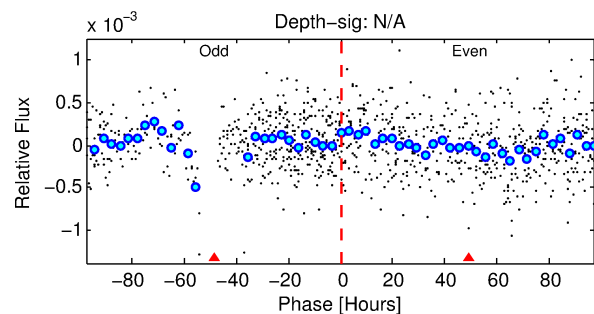
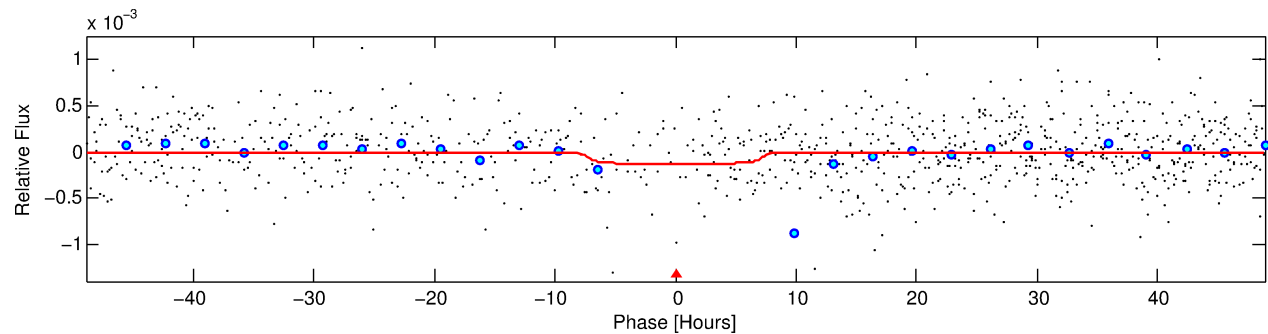
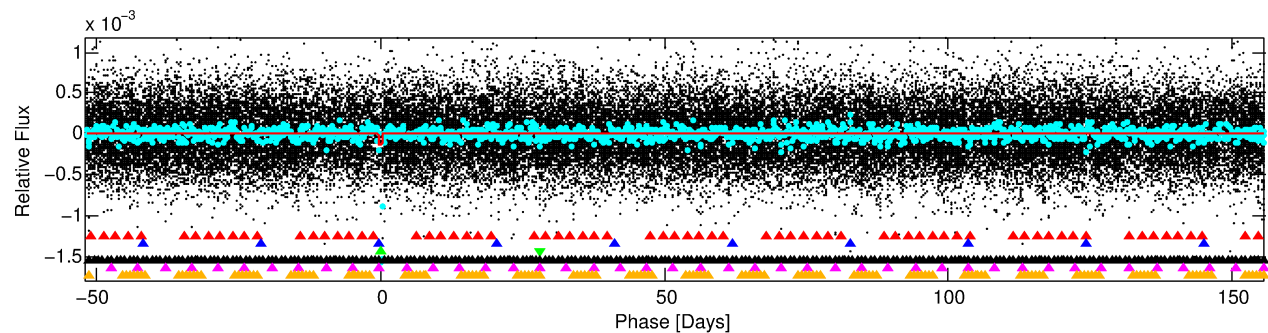
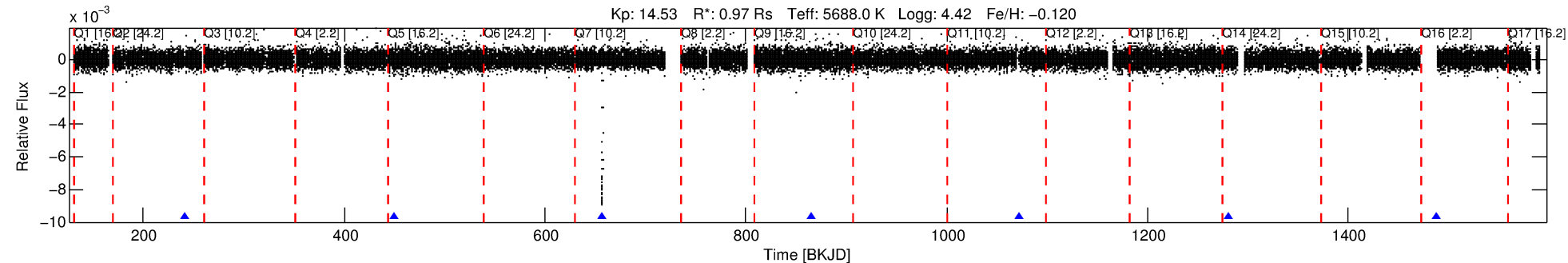
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011709124-03

No Significant Match Found

DV One-Page Summary

KIC: 11709124 Candidate: 3 of 6 Period: 207.656 d
KOI: K00435 Name: Kepler-154 Corr: No Ephemeris Match



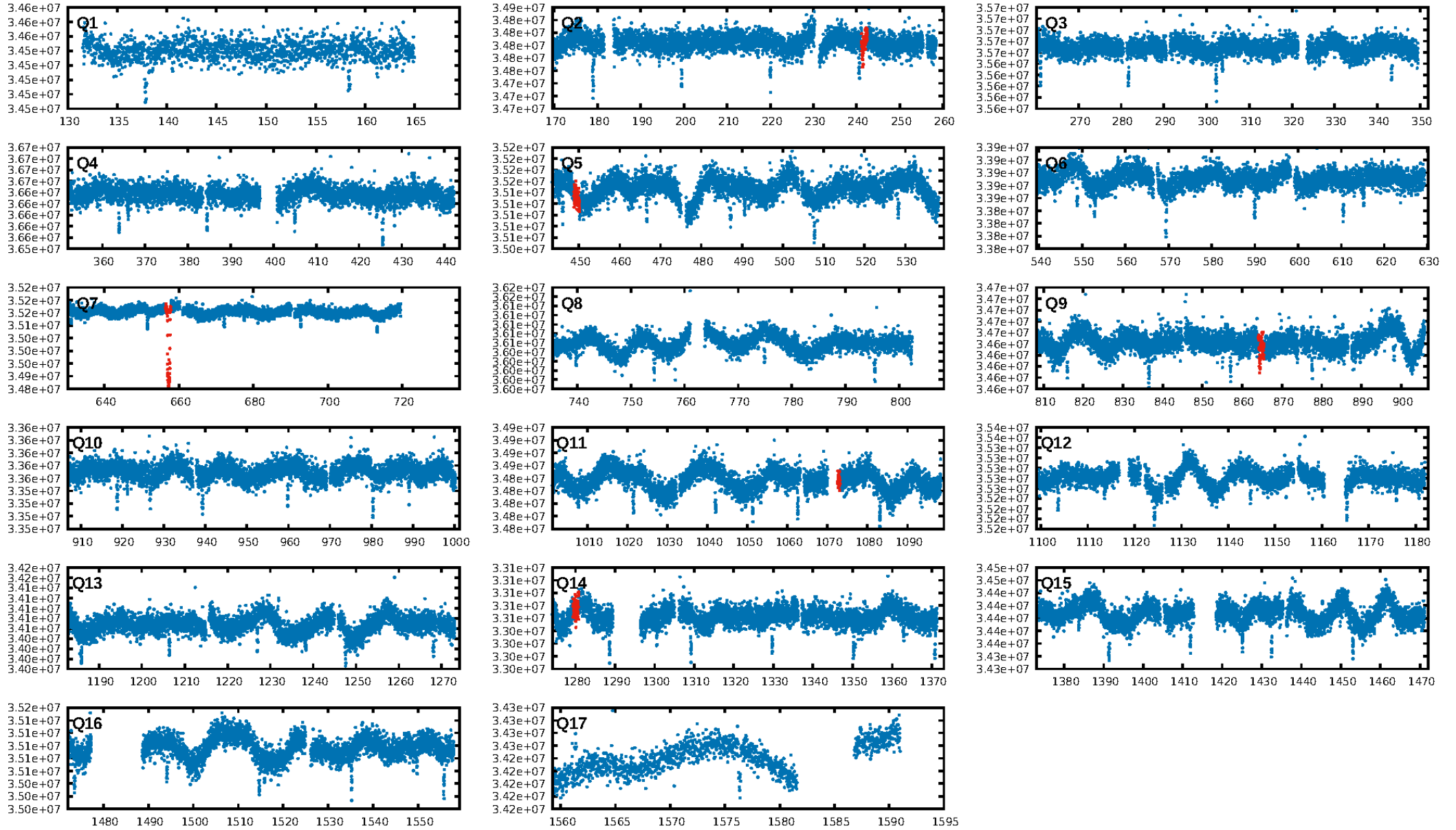
DV Fit Results:

Period = 207.65609 [0.03034] d
Epoch = 241.8243 [0.0952] BKJD
Rp/R* = 0.0130 [0.0056]
a/R* = 37.41 [62.91]
b = 0.94 [0.22]
Seff = 2.02 [0.39]
Teq = 304 [15] K
Rp = 1.38 [0.62] Re
a = 0.6613 [0.0778] AU
Ag = 16314.23 [15243.43] [1.07σ]
Teffp = 5313 [1223] K [4.10σ]

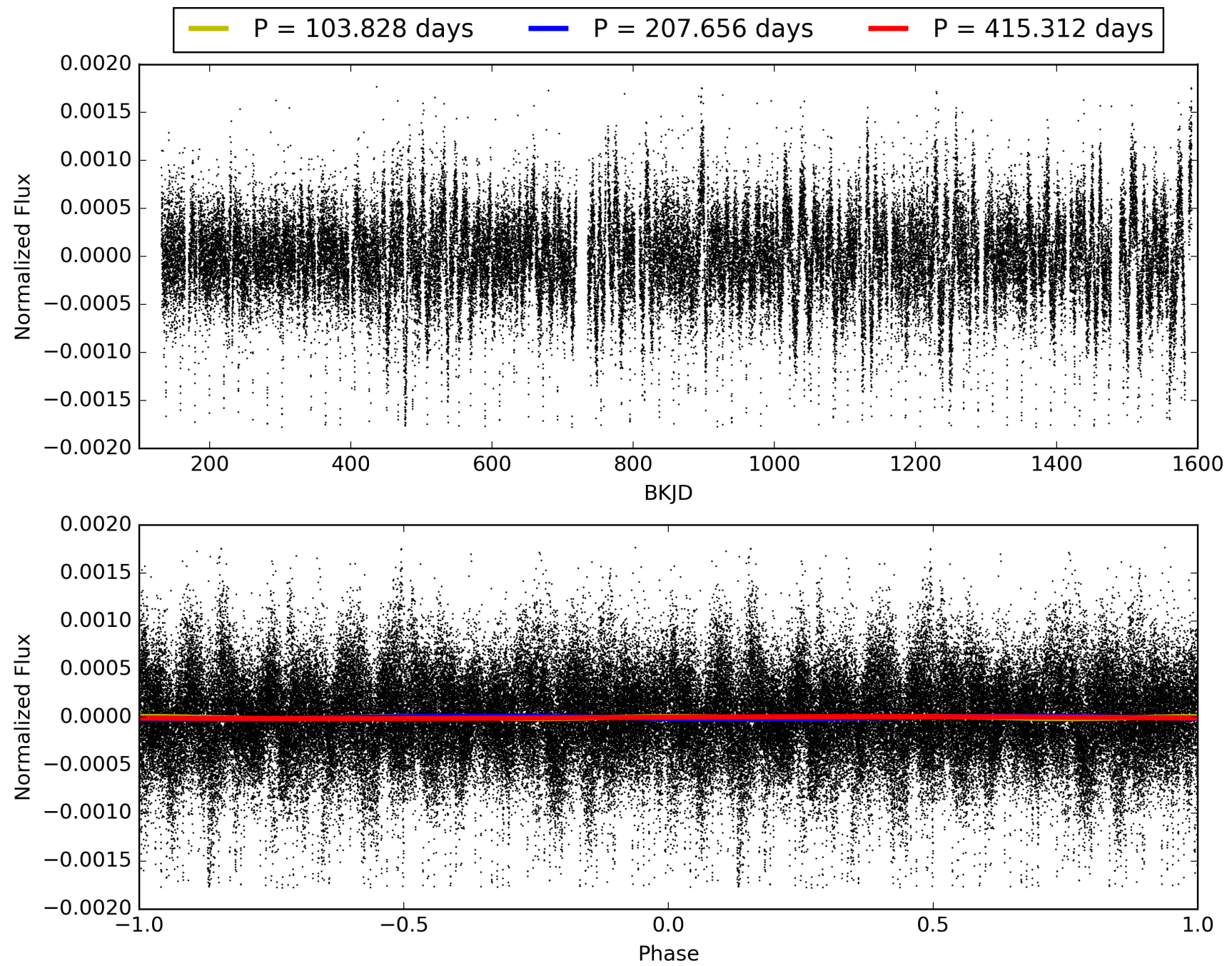
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [193.81σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 93.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.27e-273
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -0.06616
Centroid-sig: 7.3%
Centroid-so: 5.236 arcsec [1.82σ]
OotOffset-rm: 1.265 arcsec [1.09σ]
OotOffset-st: 0/1/0/2 [3]
KicOffset-rm: 0.061 arcsec [0.05σ]
KicOffset-st: 0/1/0/2 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.00 [0/4]

TCE 011709124-03, PDC Light Curves

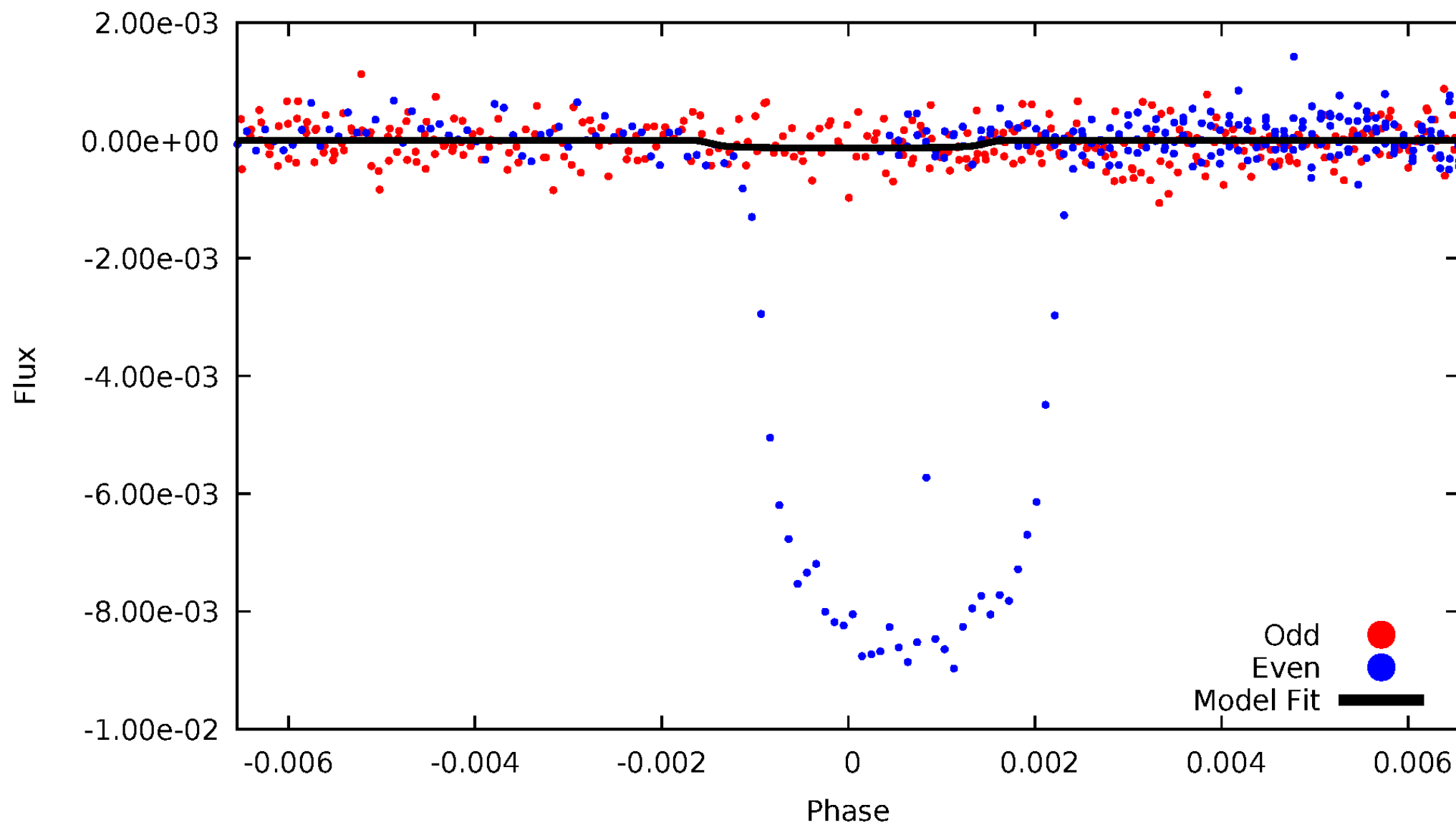


TCE 011709124-03



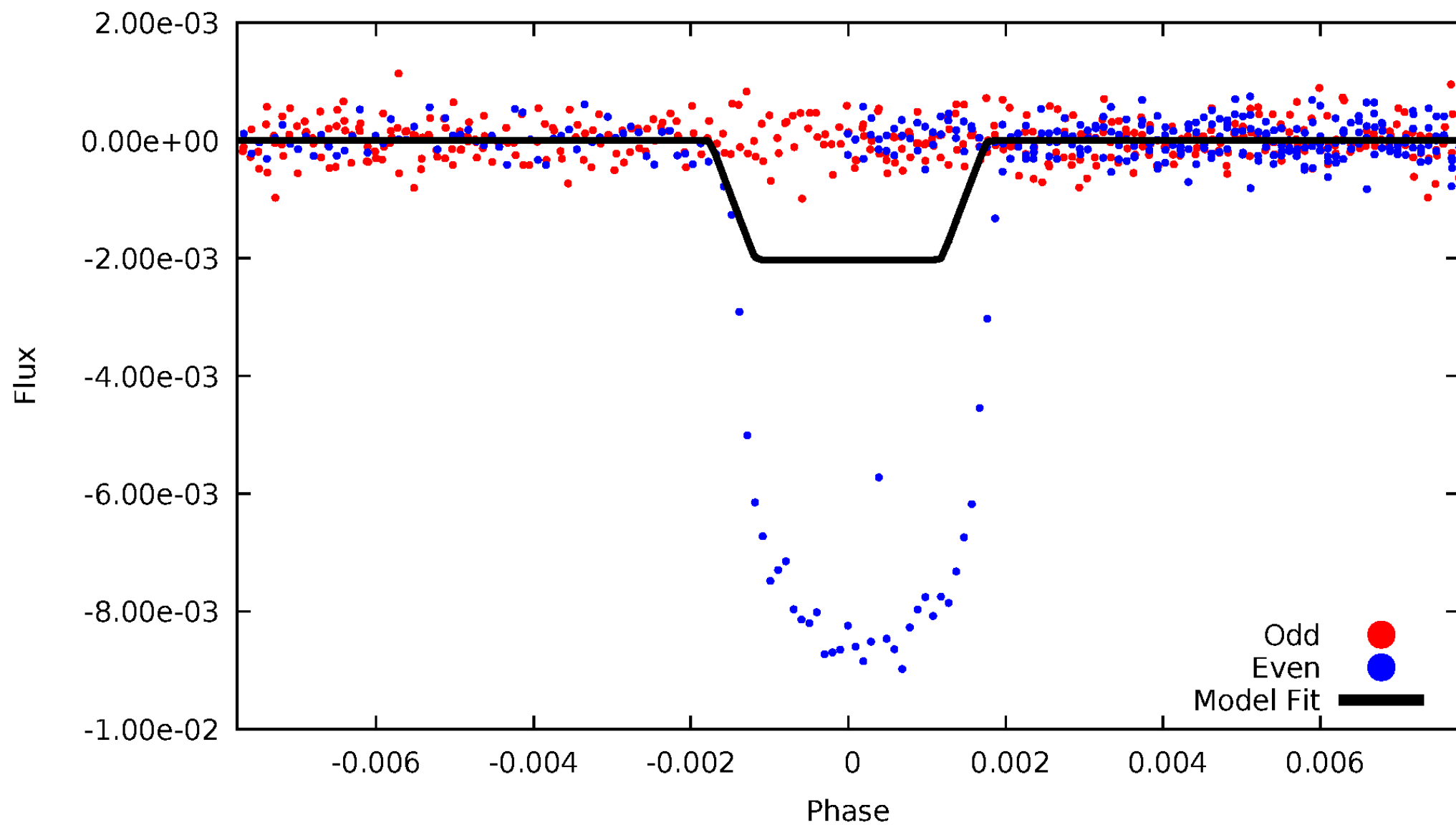
DV Odd/Even

TCE 011709124-03

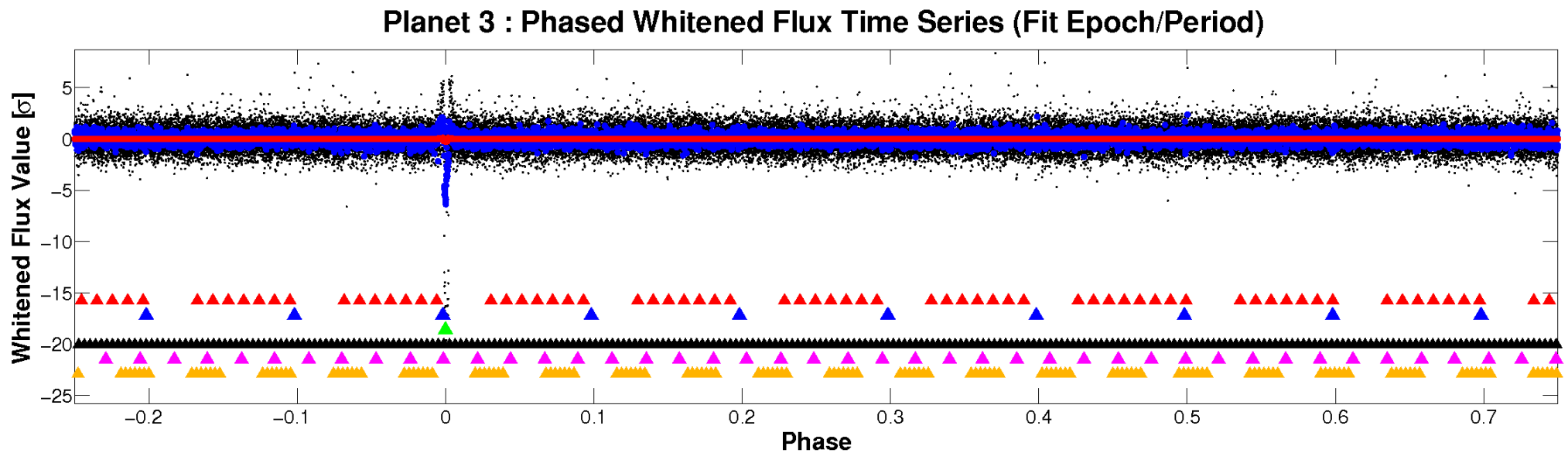
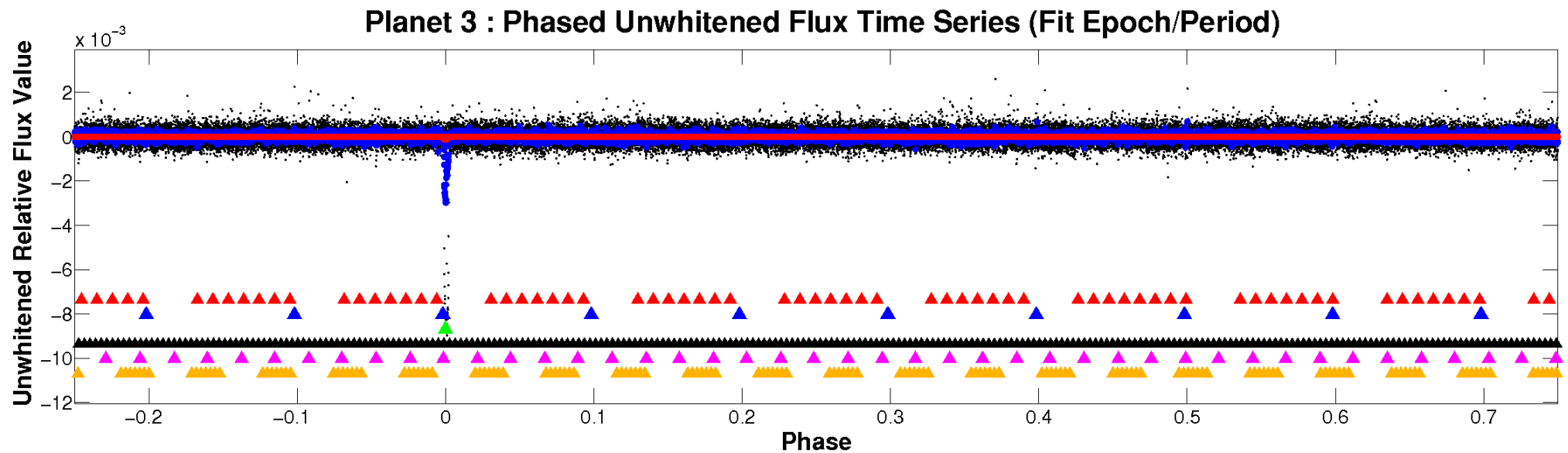


ALT Odd/Even

TCE 011709124-03

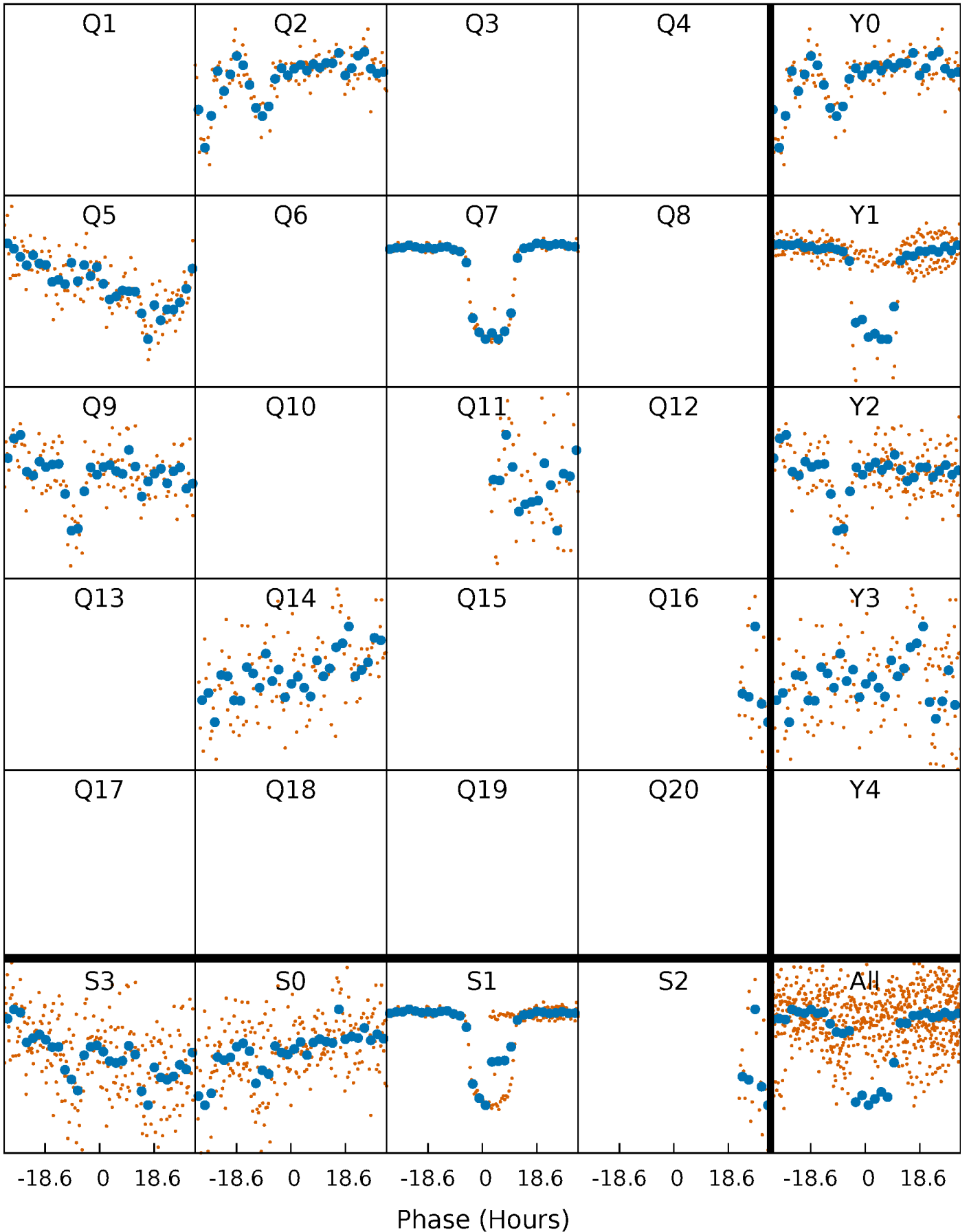


Non-Whitened Vs. Whitened Light Curve



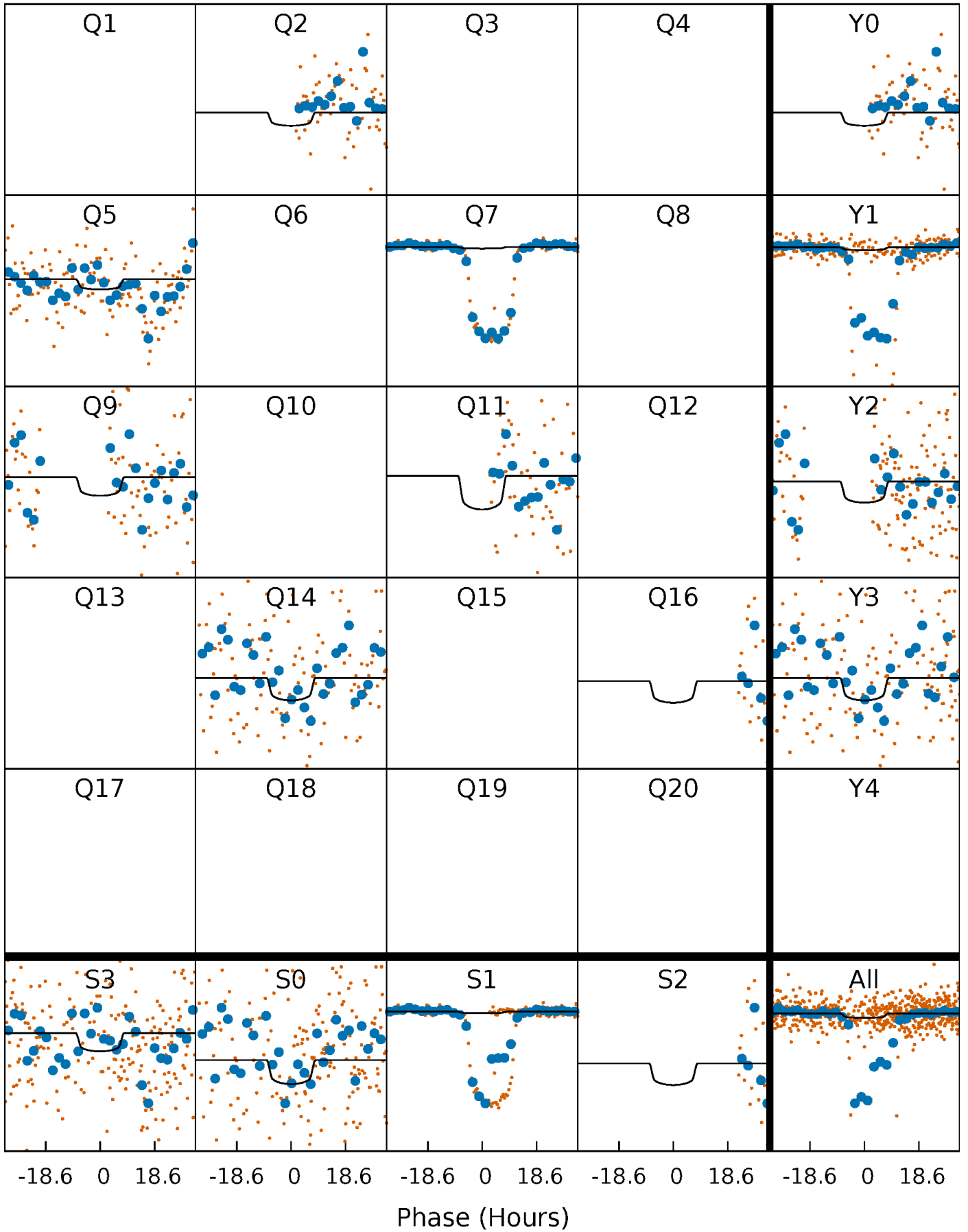
PDC Quarter-Phased Transit Curves

TCE 011709124-03 P=207.656092 Days $T_0=241.824270$ (BKJD)



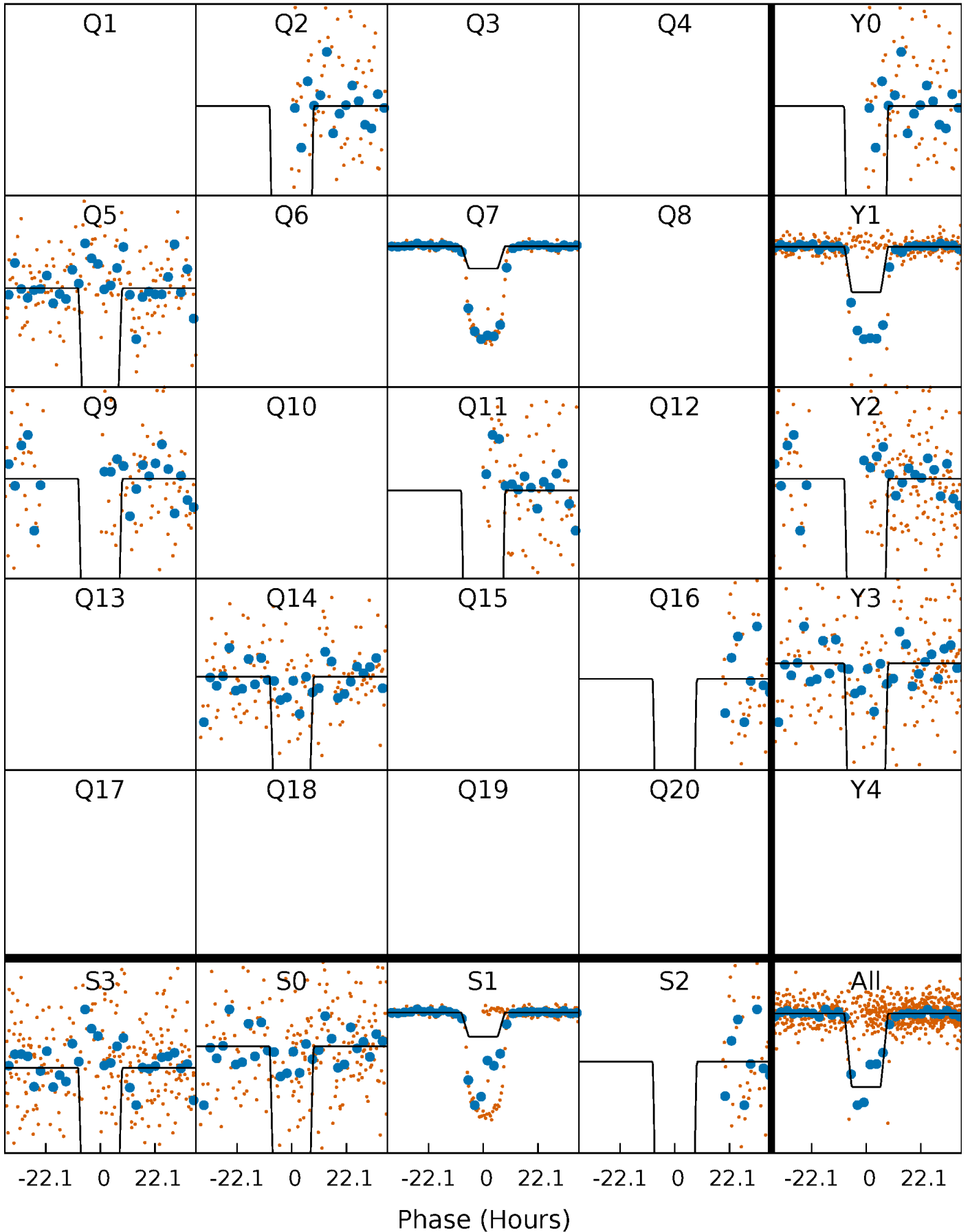
DV Quarter-Phased Transit Curves

TCE 011709124-03 P=207.656092 Days $T_0=241.824270$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

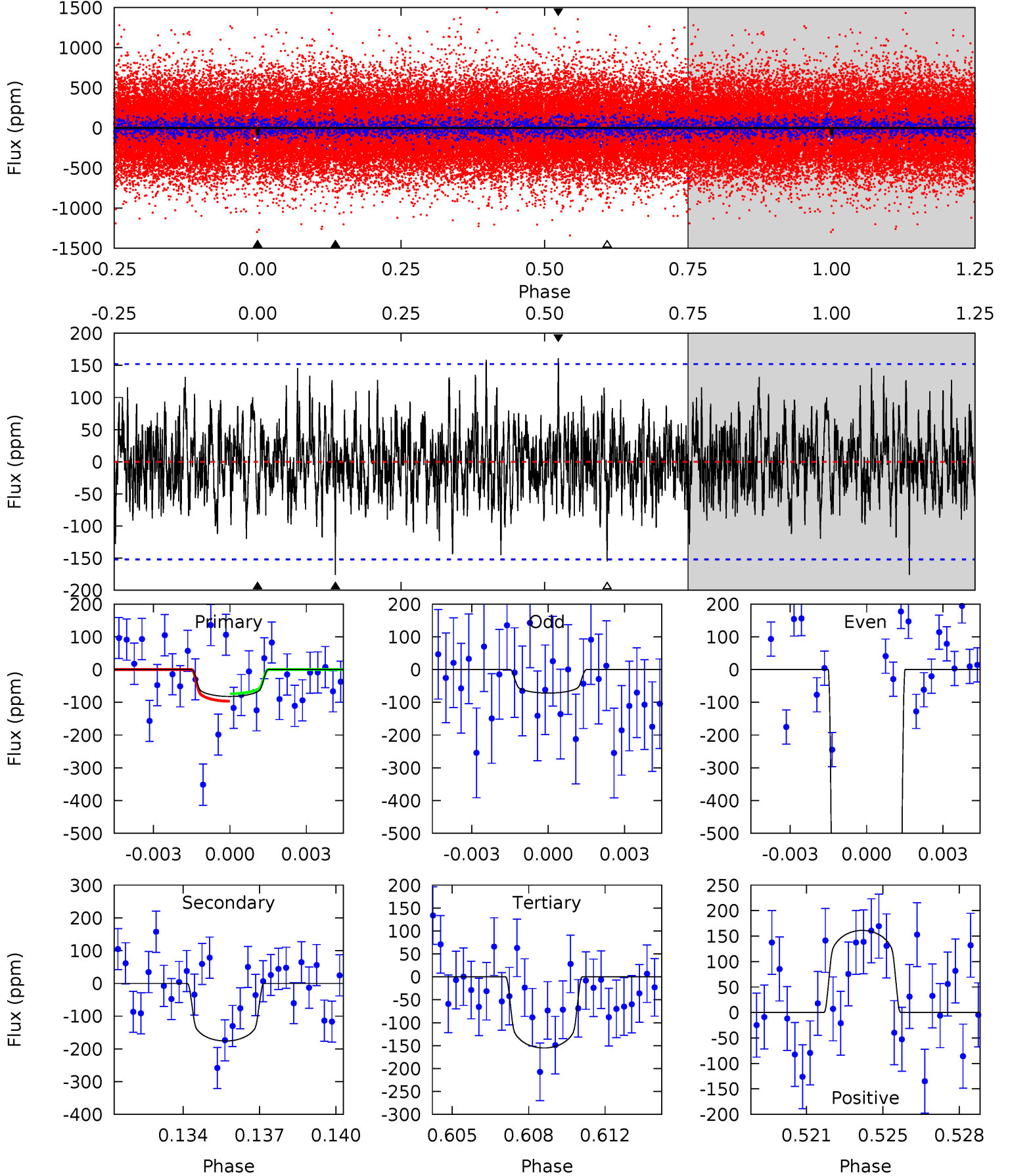
TCE 011709124-03 P=207.666270 Days $T_0=241.896879$ (BKJD)



DV Model-Shift Uniqueness Test

011709124-03, P = 207.656092 Days, E = 34.168178 Days

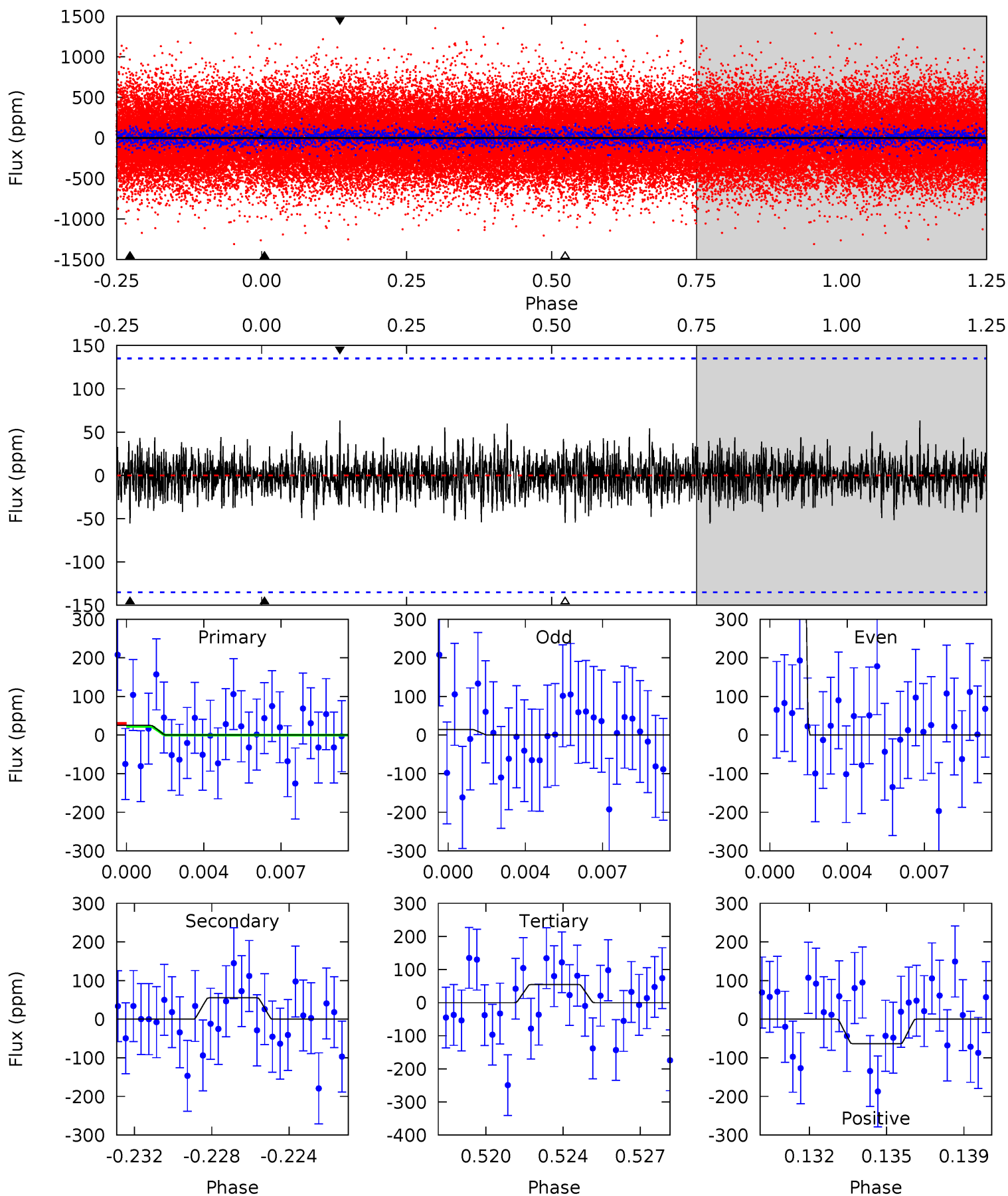
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.83	6.05	5.34	5.54	5.23	2.93	1.52	-2.51	-2.71	0.71	0.51	54.9	43.6	0.48	0.37



Alt Model-Shift Uniqueness Test

011709124-03, P = 207.666270 Days, E = 34.230609 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.96	2.14	2.11	2.45	5.22	2.91	0.63	-1.15	-1.49	0.03	-0.32	46.5	-147.6	0.53	0.15



Stellar Parameters For KIC 011709124

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5688^{+113}_{-101}	$4.415^{+0.100}_{-0.100}$	$-0.120^{+0.150}_{-0.150}$	$0.971^{+0.130}_{-0.095}$	$0.895^{+0.071}_{-0.052}$	$1.377^{+0.567}_{-0.434}$
	+2%/-2%	+2%/-2%	+125%/-125%	+13%/-10%	+8%/-6%	+41%/-32%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 011709124-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-176 ± 29	$1.35^{+0.59}_{-0.58}$	425^{+17}_{-17}	5794^{+2003}_{-887}	23190^{+46644}_{-12219}
Alt.	-55 ± 26	$4.73^{+0.66}_{-0.61}$	425^{+16}_{-15}	3000^{+214}_{-274}	599^{+378}_{-312}

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

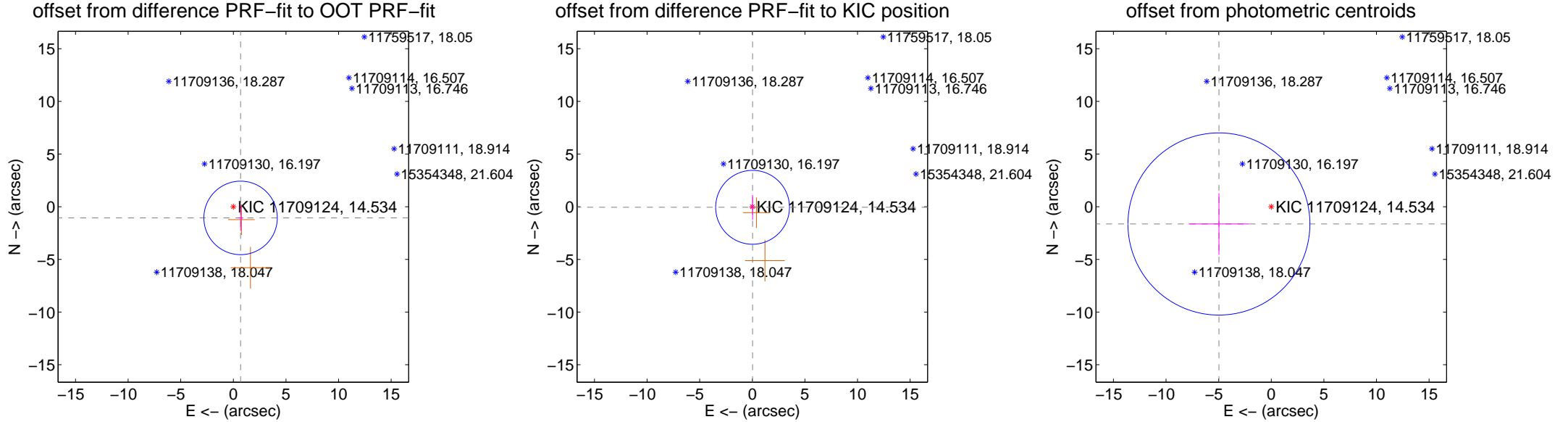
DV Centroid Data

Supplemental centroid analysis for 011709124-03. Kepler magnitude: 14.53. Transit SNR 2.29

There are 1 quarters with good PRF difference image offsets

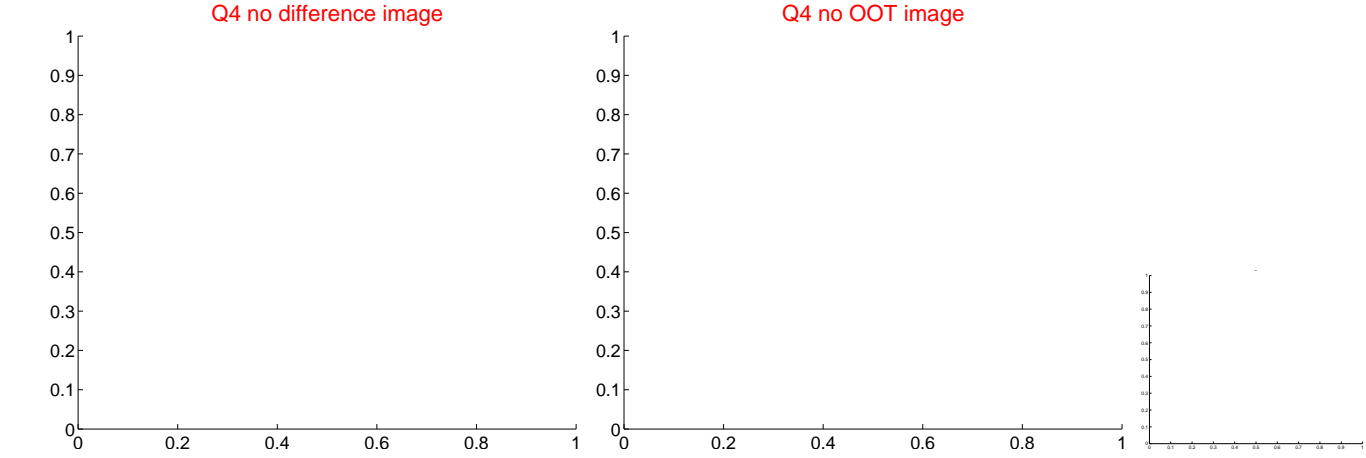
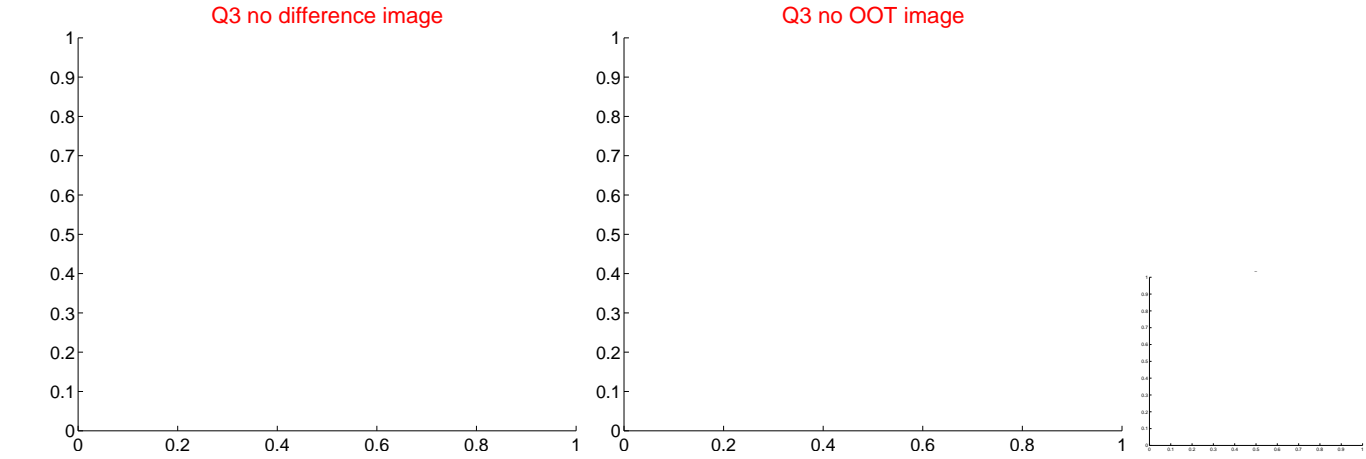
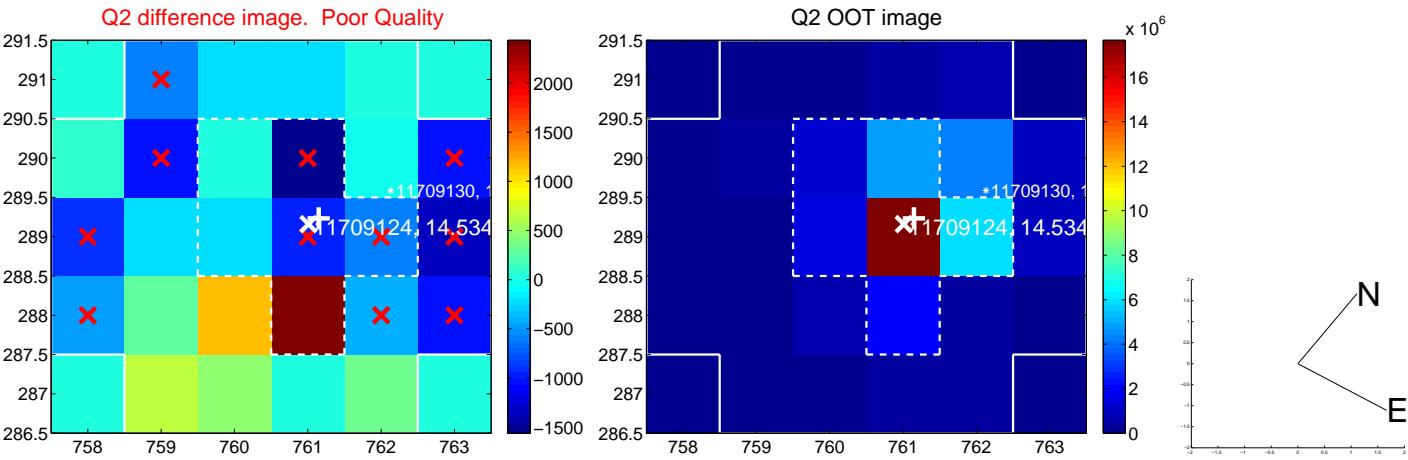
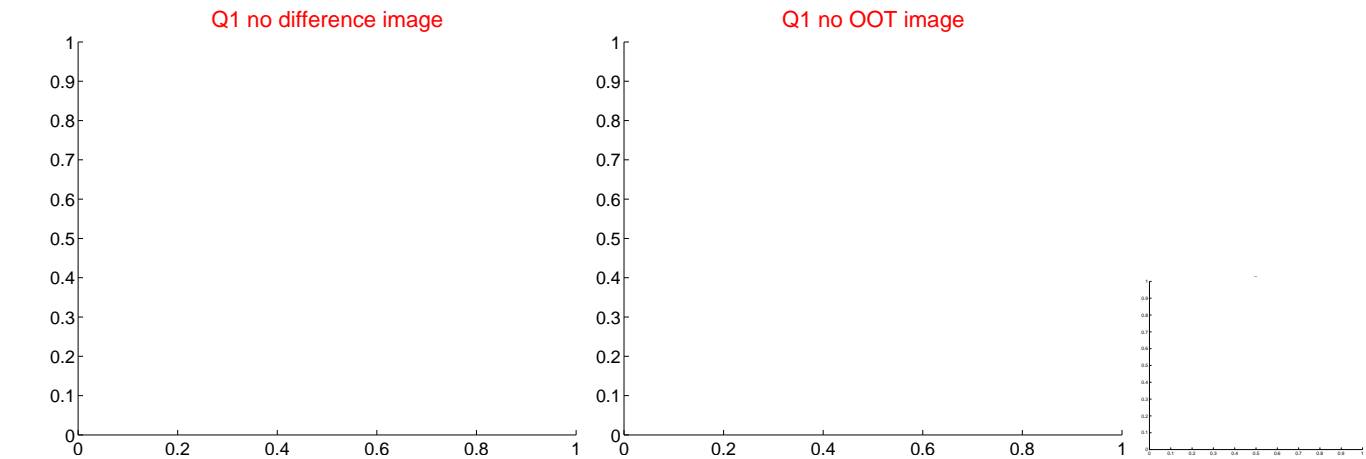
The direct PRF centroid is offset from the target star catalog position by about 0.80 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.265 ± 1.163	1.09	-0.688 ± 0.252	-1.062 ± 1.228
PRF-fit source offset from KIC position	0.061 ± 1.169	0.05	-0.026 ± 0.271	-0.055 ± 1.169
photometric centroid source offset	5.24 ± 2.88	1.82	4.97 ± 2.88	-1.64 ± 2.93

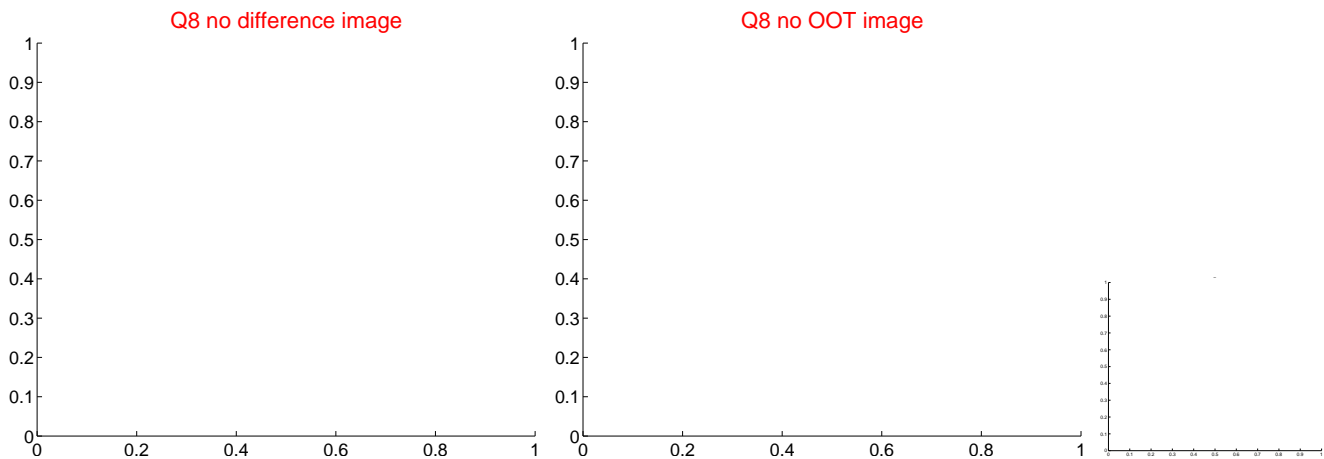
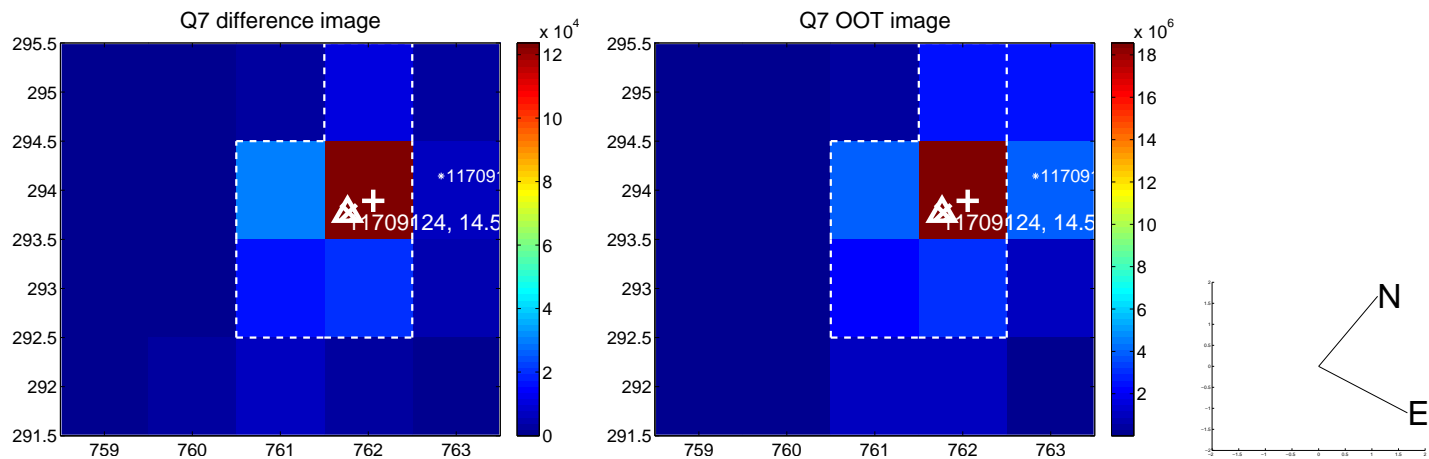
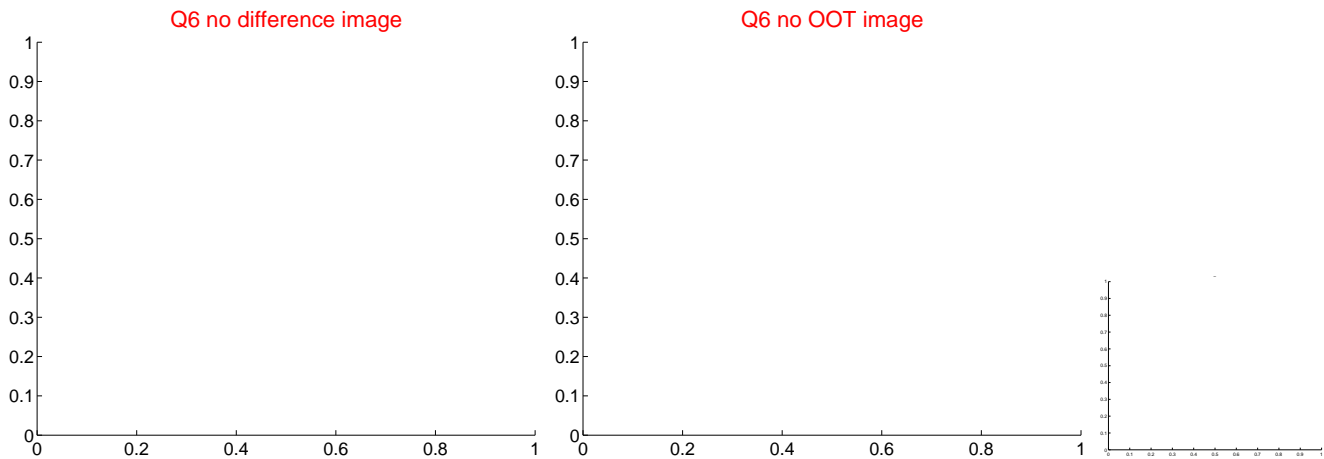
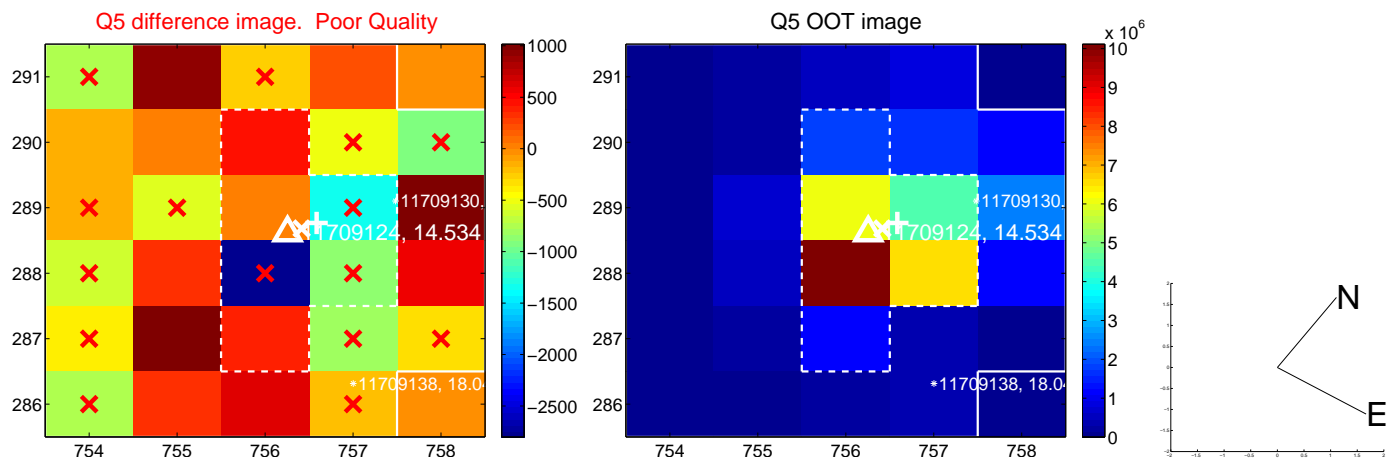


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

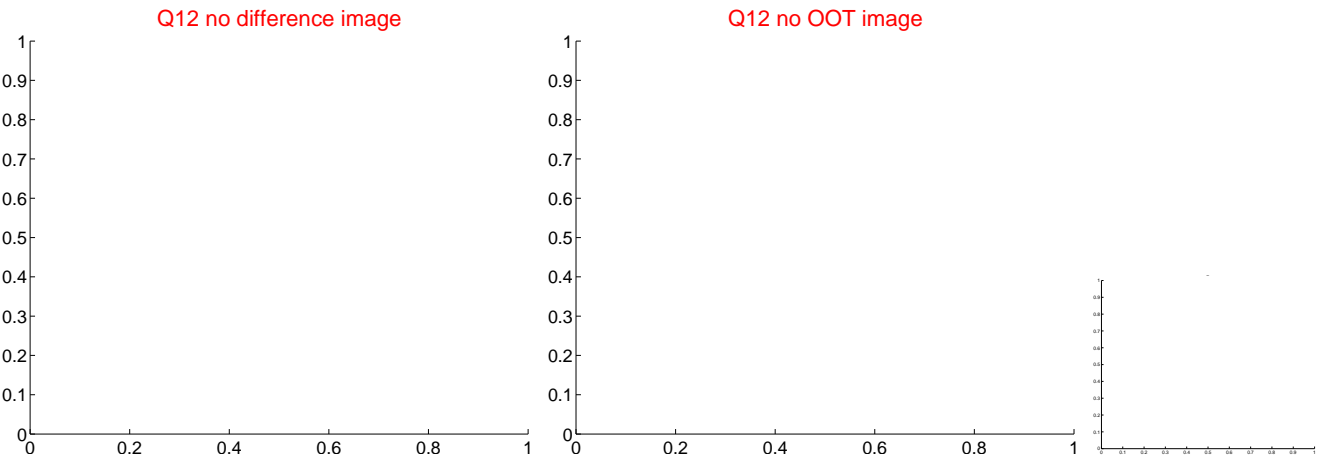
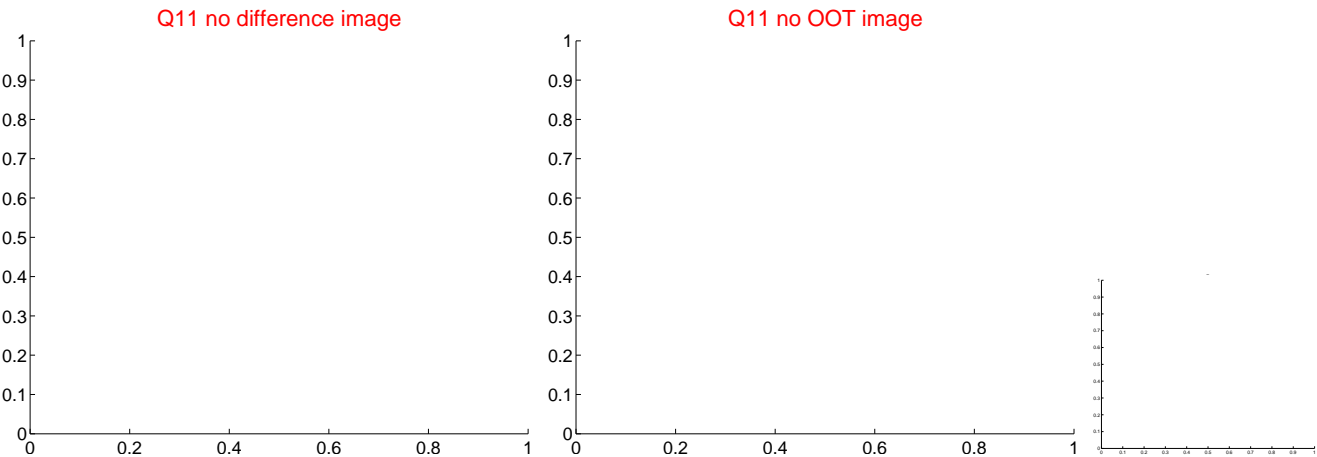
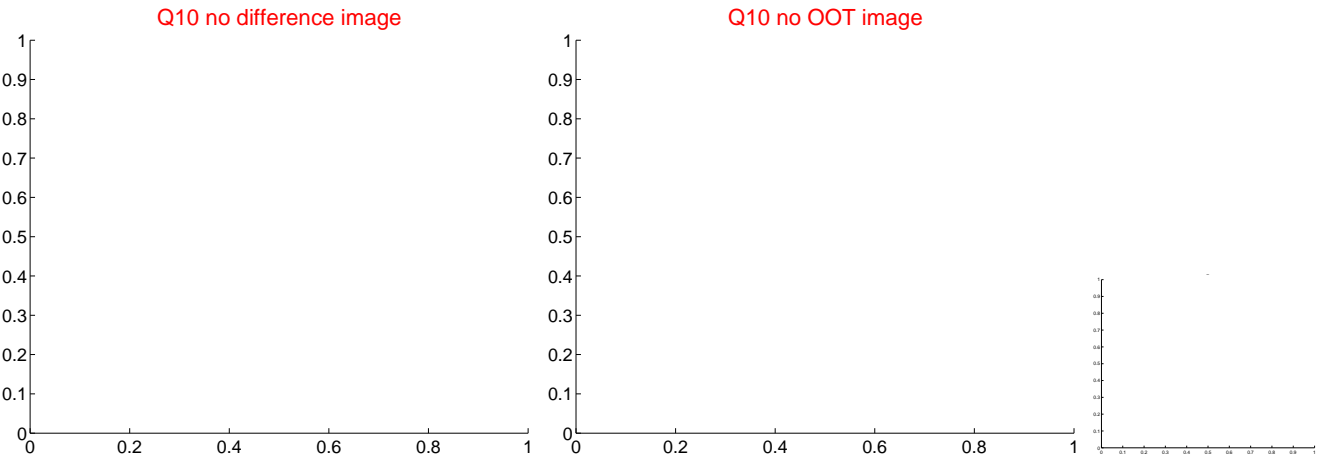
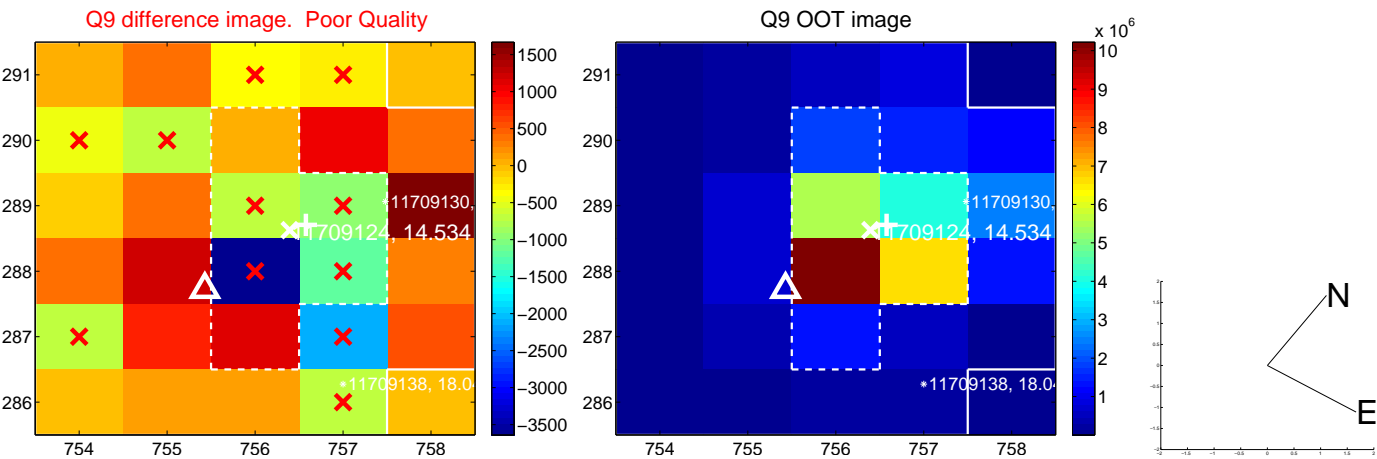
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



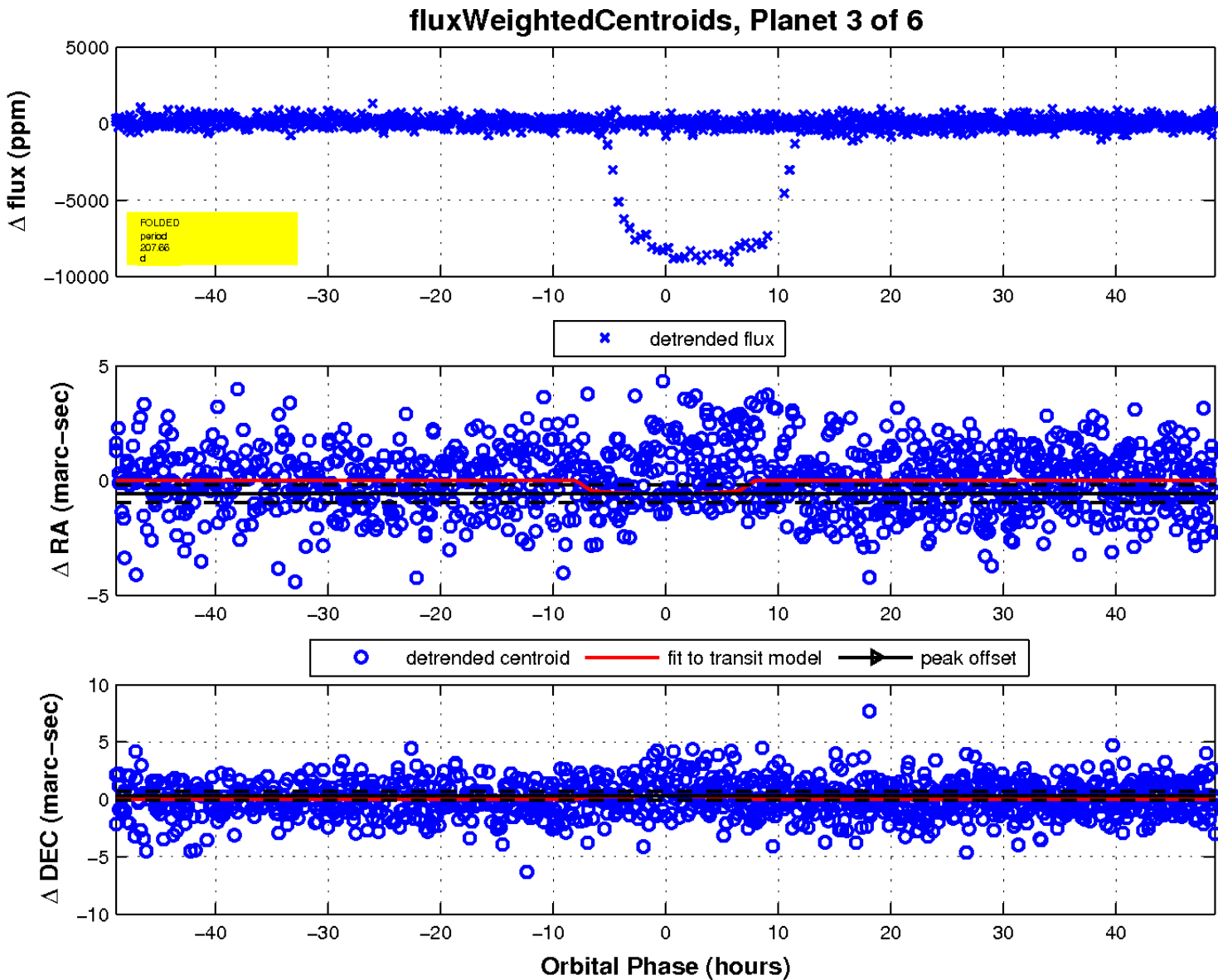
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

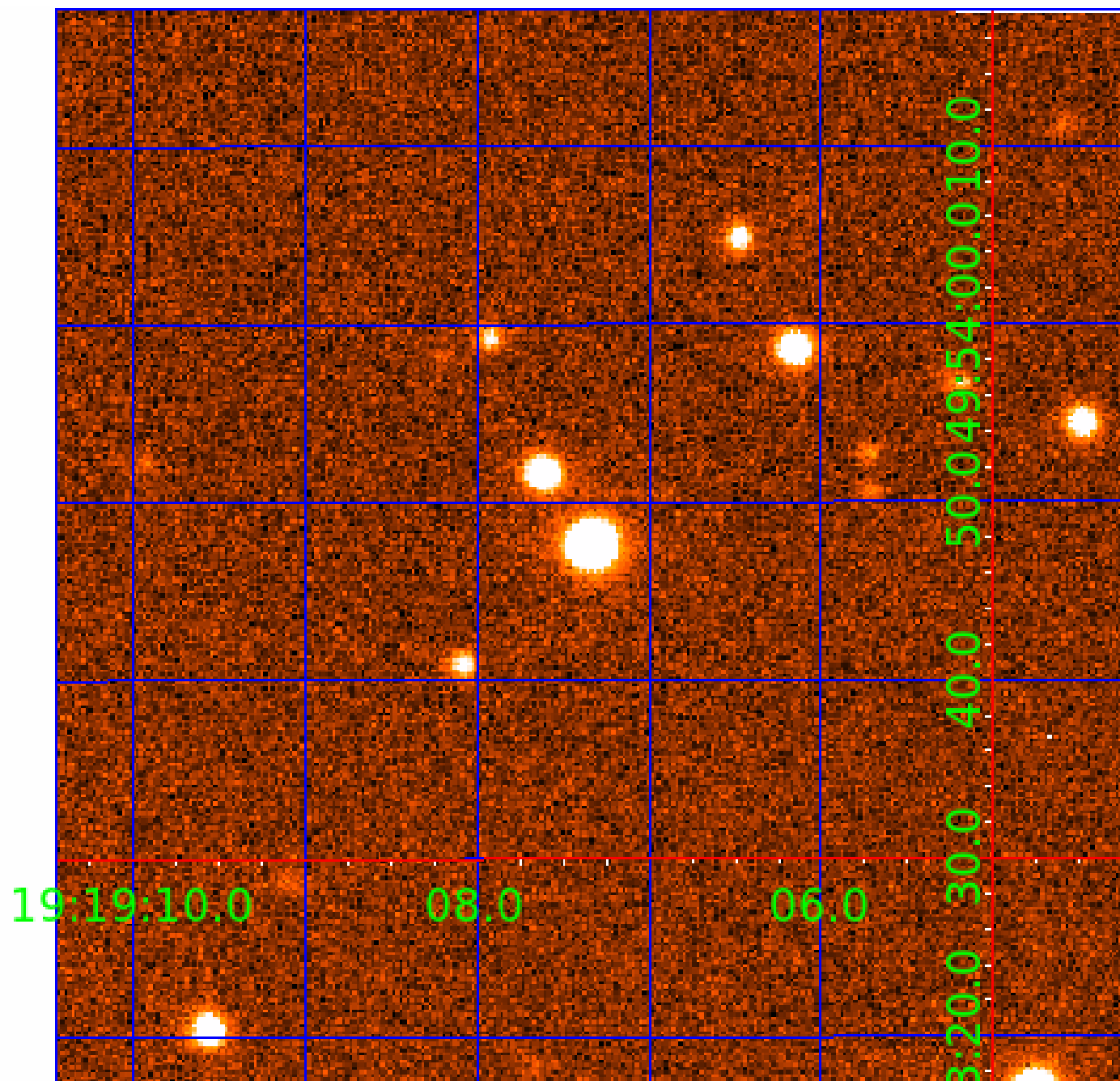
Q17 no difference image

Q17 no OOT image



UKIRT Image

Declination



KIC 011709124

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})
011709124-01	OBS	0435.01	20.549791	137.848211	1563.5	5.574	93.7	96.0	0.97	5688	4.09	44.17
011709124-02	OBS	0435.05	62.302555	179.099592	841.3	7.600	33.3	33.1	0.97	5688	3.09	10.07
011709124-03	OBS	No	207.656092	241.824270	130.5	16.317	50.7	2.3	0.97	5688	1.38	2.02
011709124-04	OBS	0435.04	3.932747	134.652254	232.0	3.019	24.8	26.5	0.97	5688	1.75	400.51
011709124-05	OBS	0435.03	33.040544	161.223174	569.1	3.506	21.2	21.4	0.97	5688	2.65	23.45
011709124-06	OBS	0435.06	9.919405	136.870975	185.5	4.603	14.6	15.3	0.97	5688	1.57	116.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011709124-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
011709124-02	OBS	PC	0.92	0	0	0	0	CENT_KIC_POS
011709124-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
011709124-04	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
011709124-05	OBS	PC	0.88	0	0	0	0	CENT_KIC_POS
011709124-06	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

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.

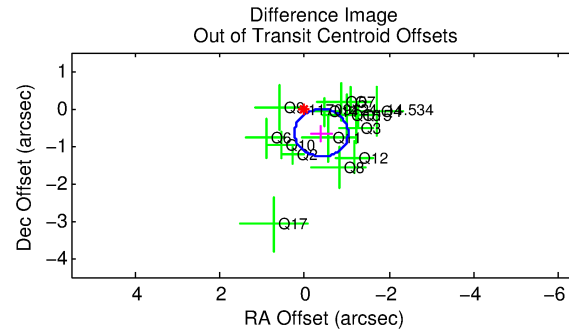
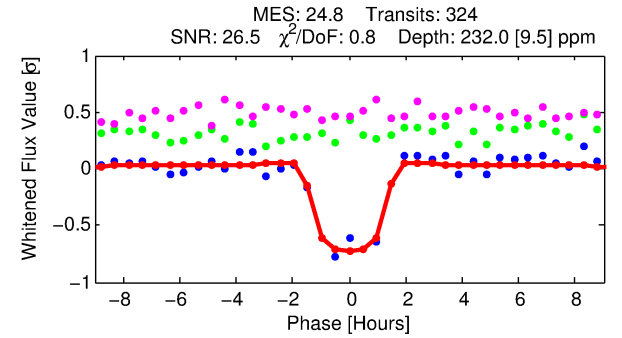
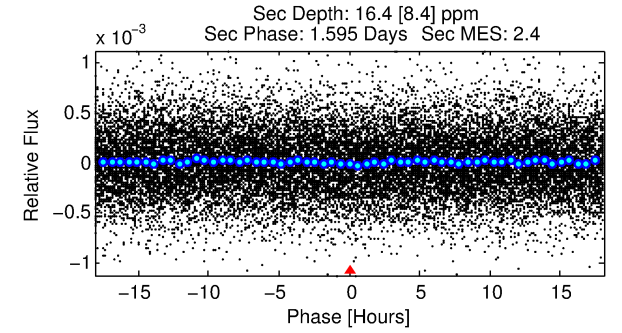
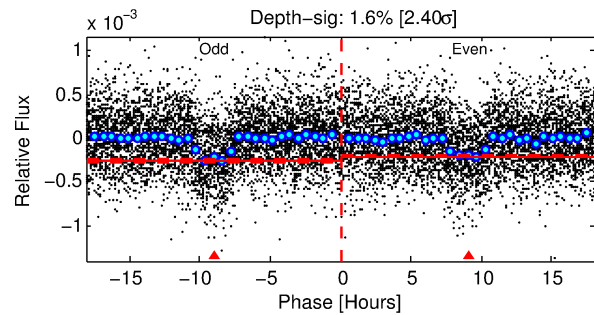
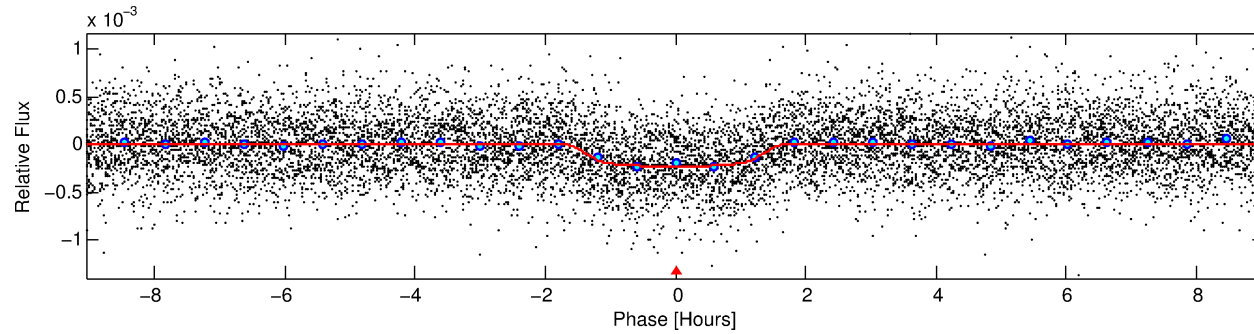
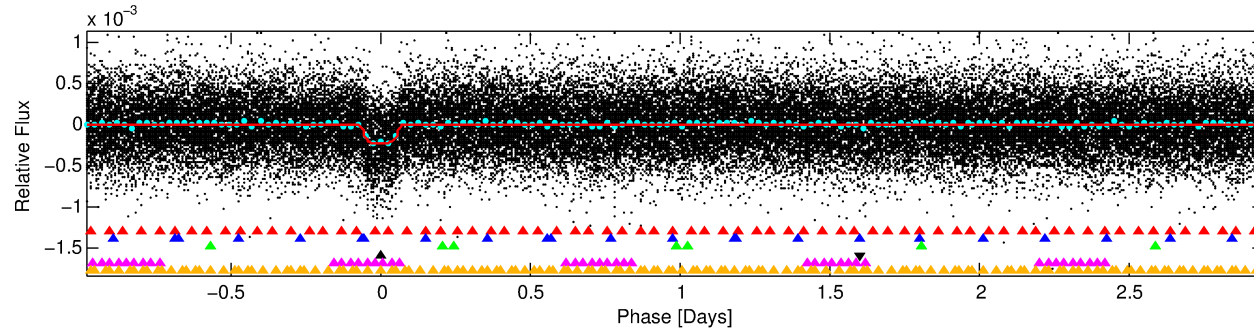
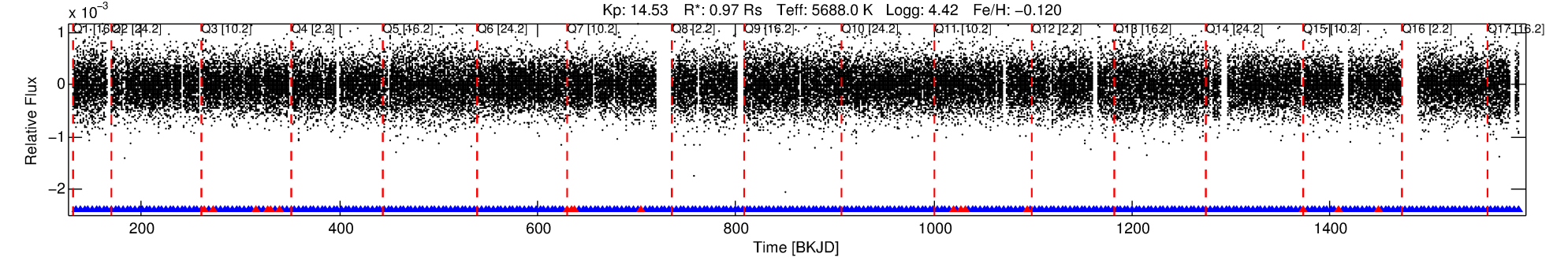
Ephemeris Match Information For 011709124-04

No Significant Match Found

DV One-Page Summary

KIC: 11709124 Candidate: 4 of 6 Period: 3.933 d

KOI: K00435.04 Corr: 0.976



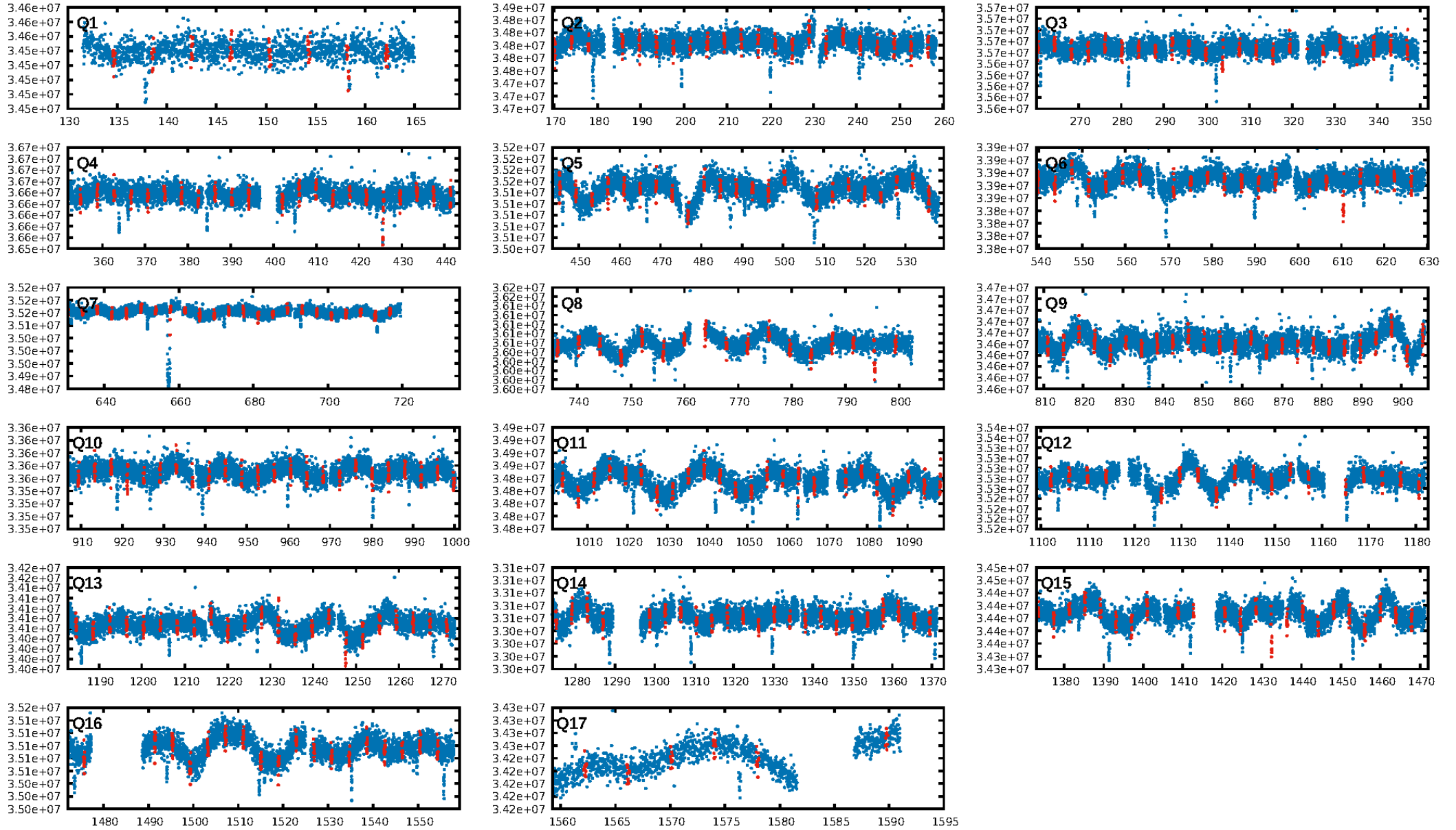
DV Fit Results:

Period = 3.93275 [0.00001] d
Epoch = 134.6523 [0.0018] BKJD
Rp/R* = 0.0165 [0.0034]
a/R* = 4.88 [4.54]
b = 0.90 [0.22]
Seff = 400.51 [77.92]
Teff = 1141 [55] K
Rp = 1.75 [0.43] Re
a = 0.0470 [0.0055] AU
Ag = 6.50 [4.44] [1.24 σ]
Teffp = 2816 [468] K [3.56 σ]

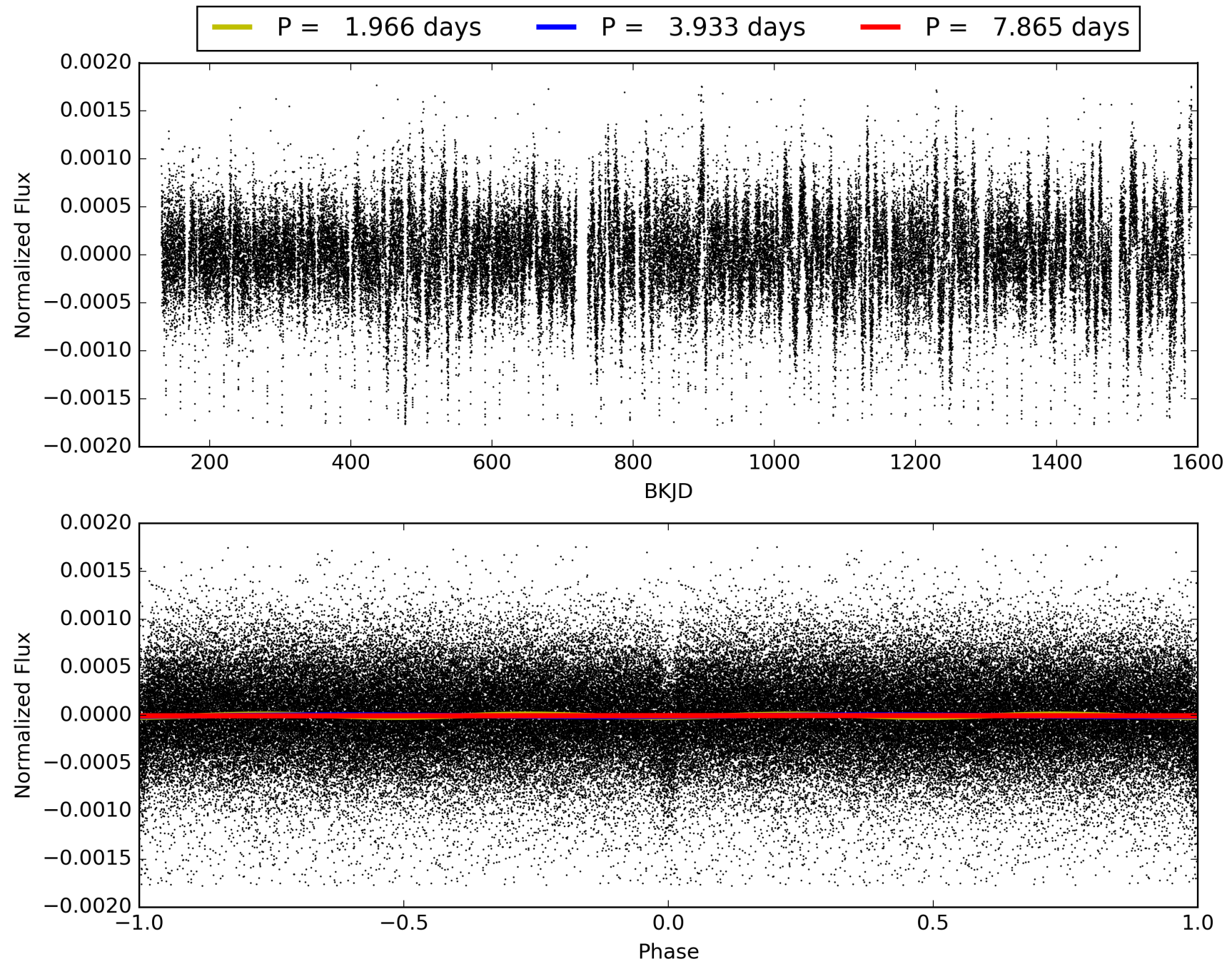
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [26.10 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.62e-129
RollingBand-fgt: 0.95 [294/311]
GhostDiagnostic-chr: 2.82
Centroid-sig: 16.2%
Centroid-so: 0.285 arcsec [0.63 σ]
OotOffset-rm: 0.766 arcsec [3.62 σ]
KicOffset-rm: 0.113 arcsec [0.49 σ]
OotOffset-st: 4/4/4/3 [15]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 0.93 [14/15]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 011709124-04, PDC Light Curves

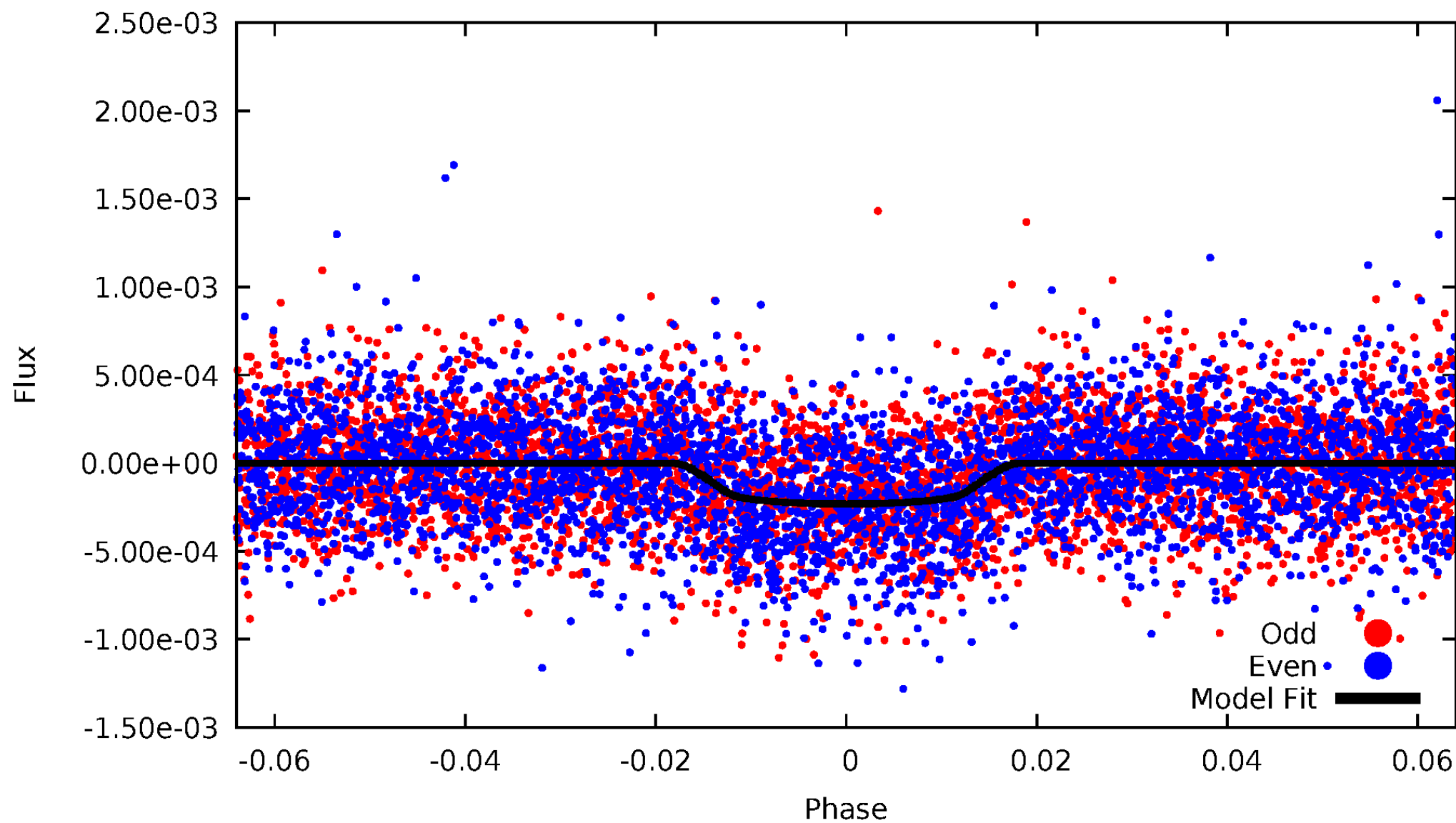


TCE 011709124-04



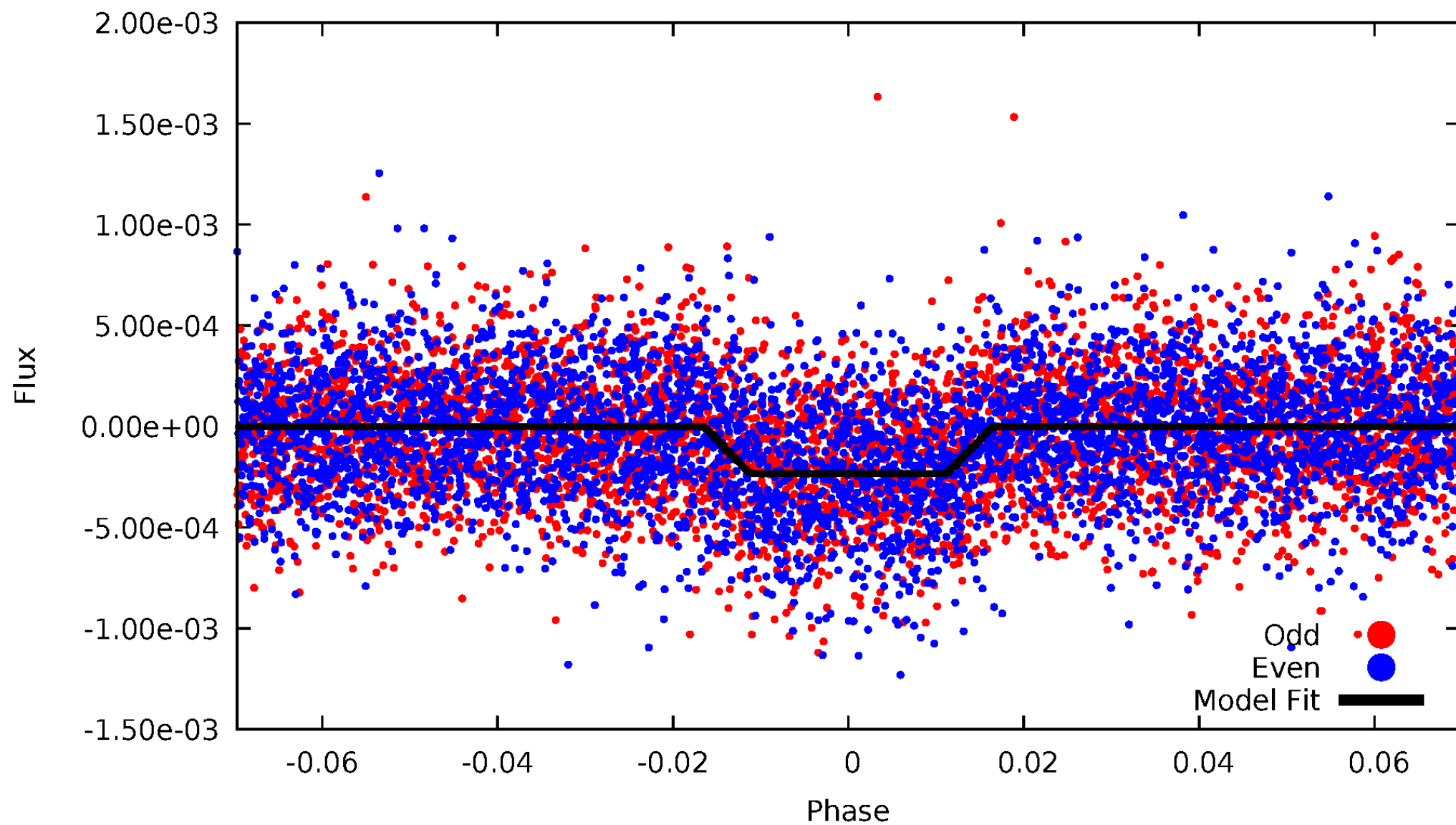
DV Odd/Even

TCE 011709124-04



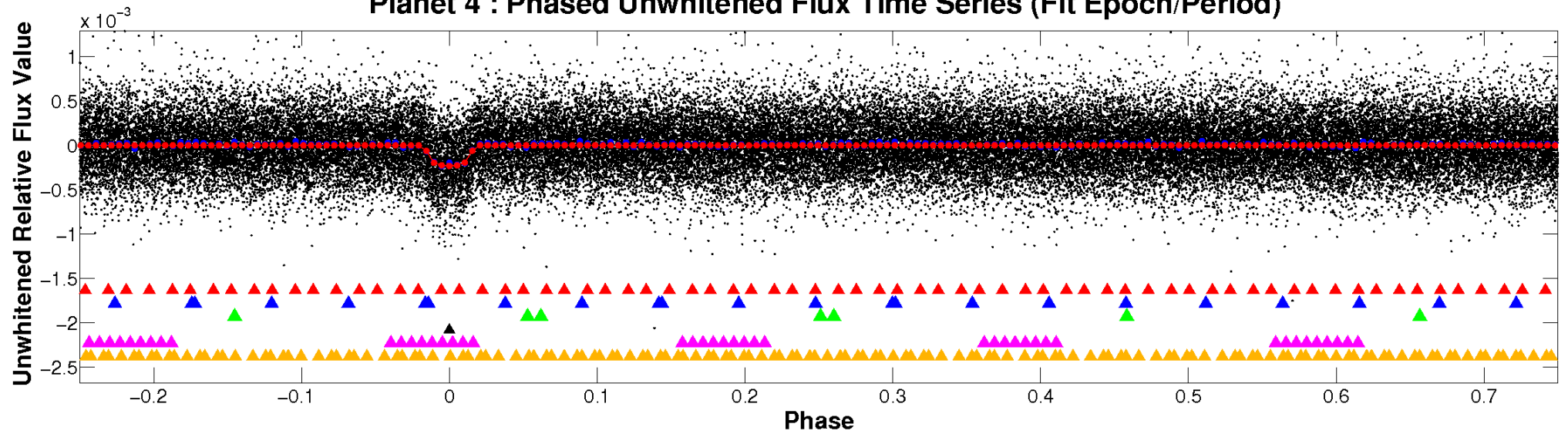
ALT Odd/Even

TCE 011709124-04

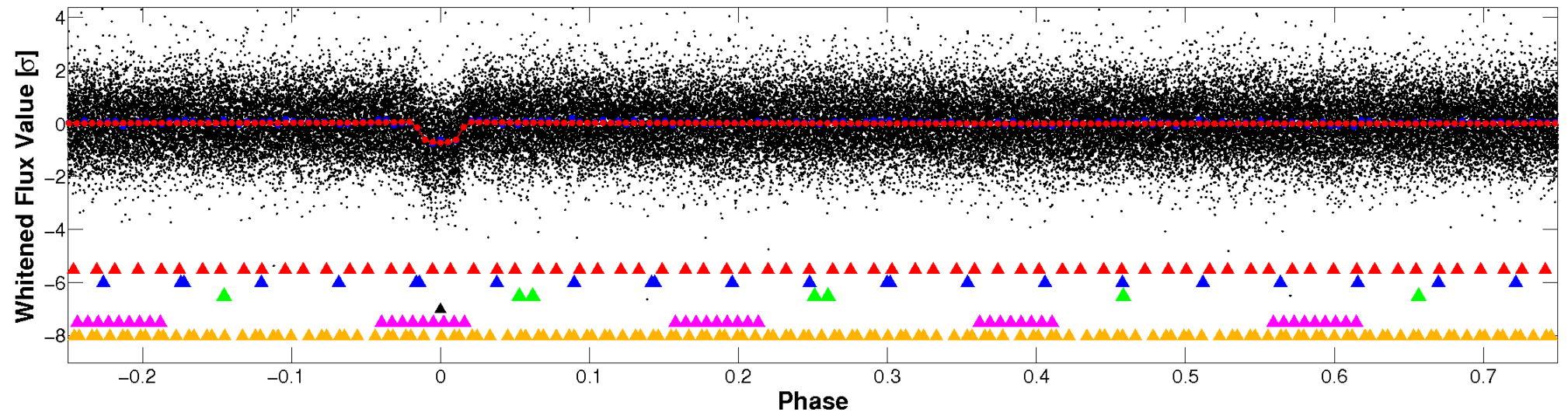


Non-Whitened Vs. Whitened Light Curve

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

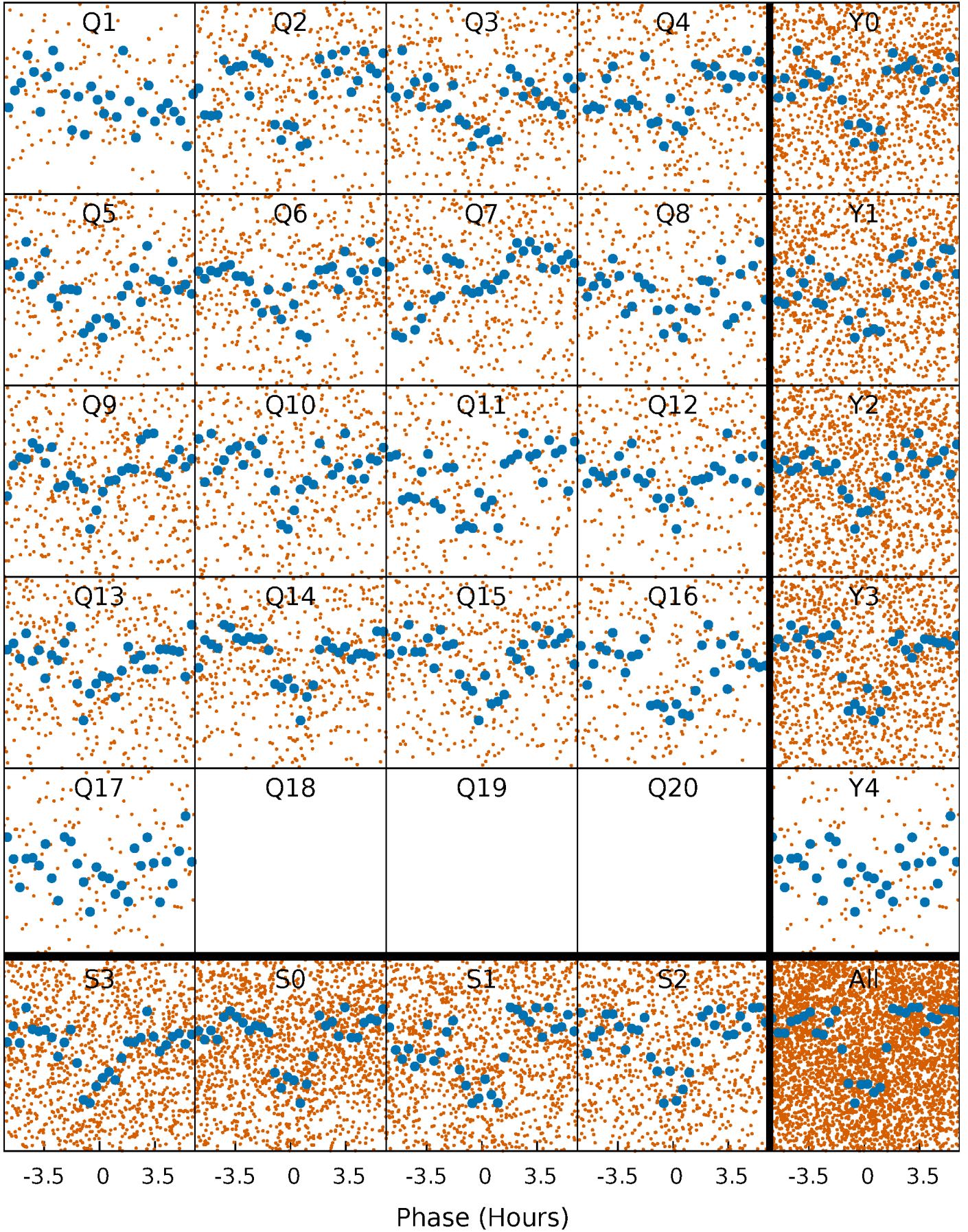


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



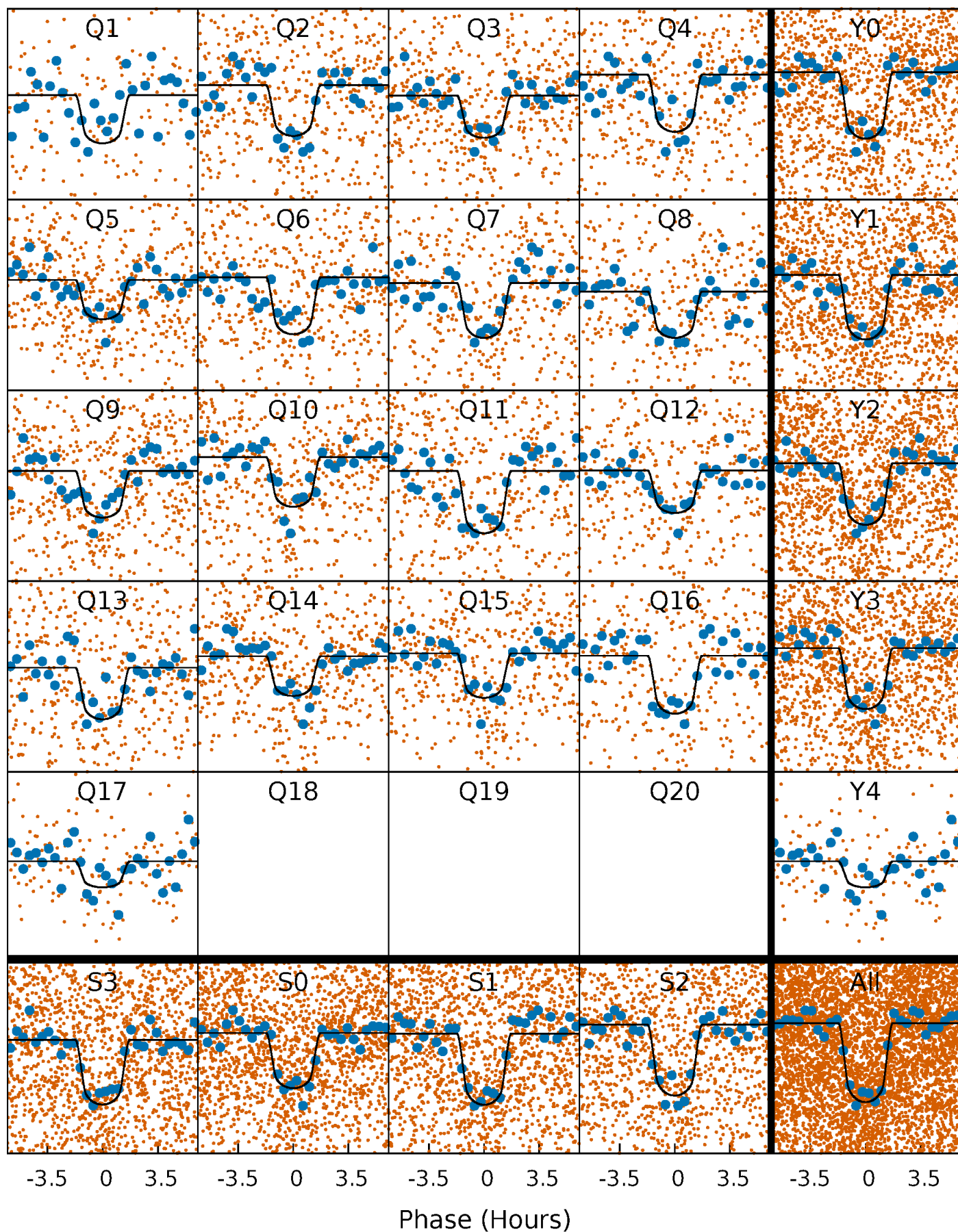
PDC Quarter-Phased Transit Curves

TCE 011709124-04 P= 3.932747 Days $T_0=134.652254$ (BKJD)



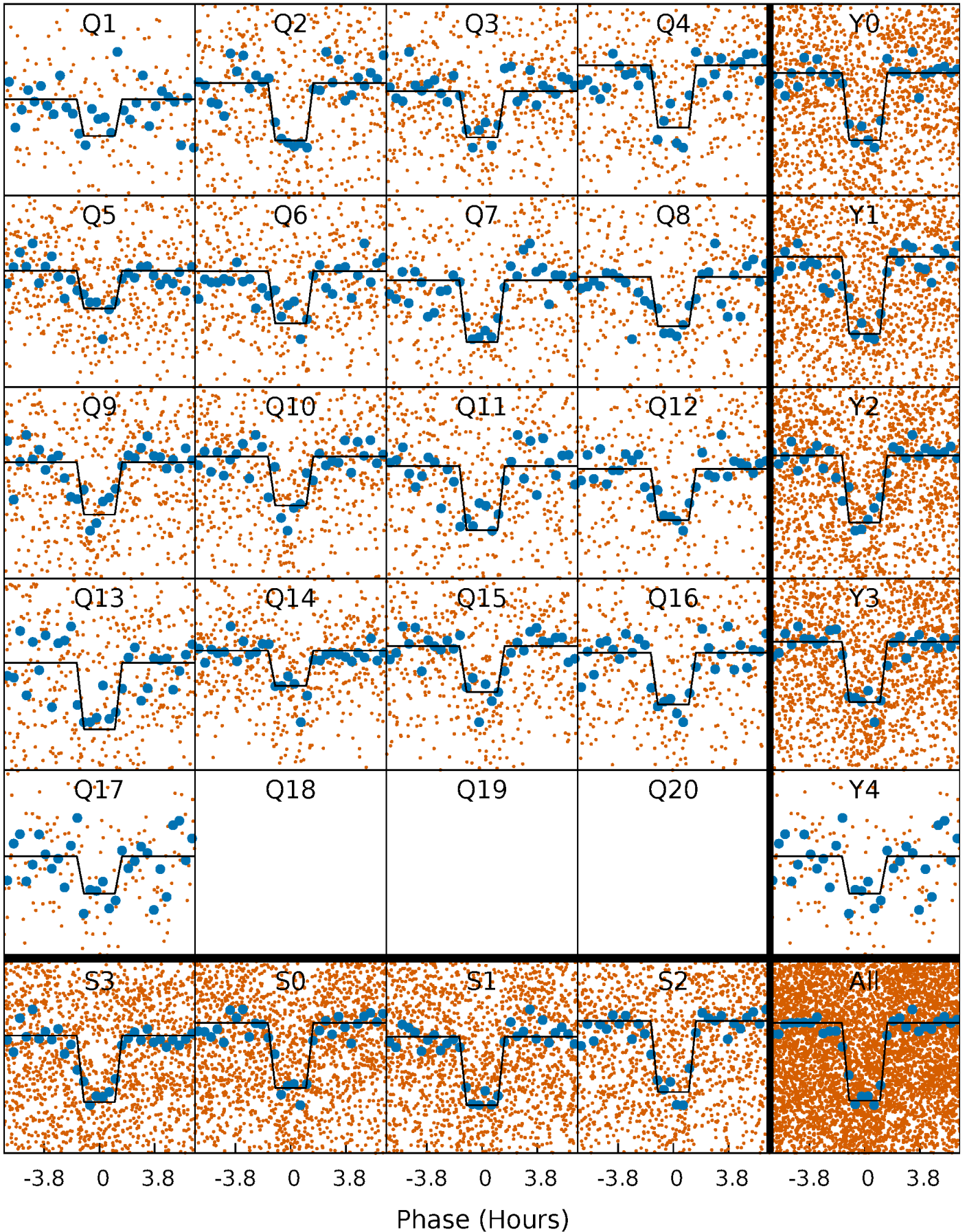
DV Quarter-Phased Transit Curves

TCE 011709124-04 P= 3.932747 Days $T_0=134.652254$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

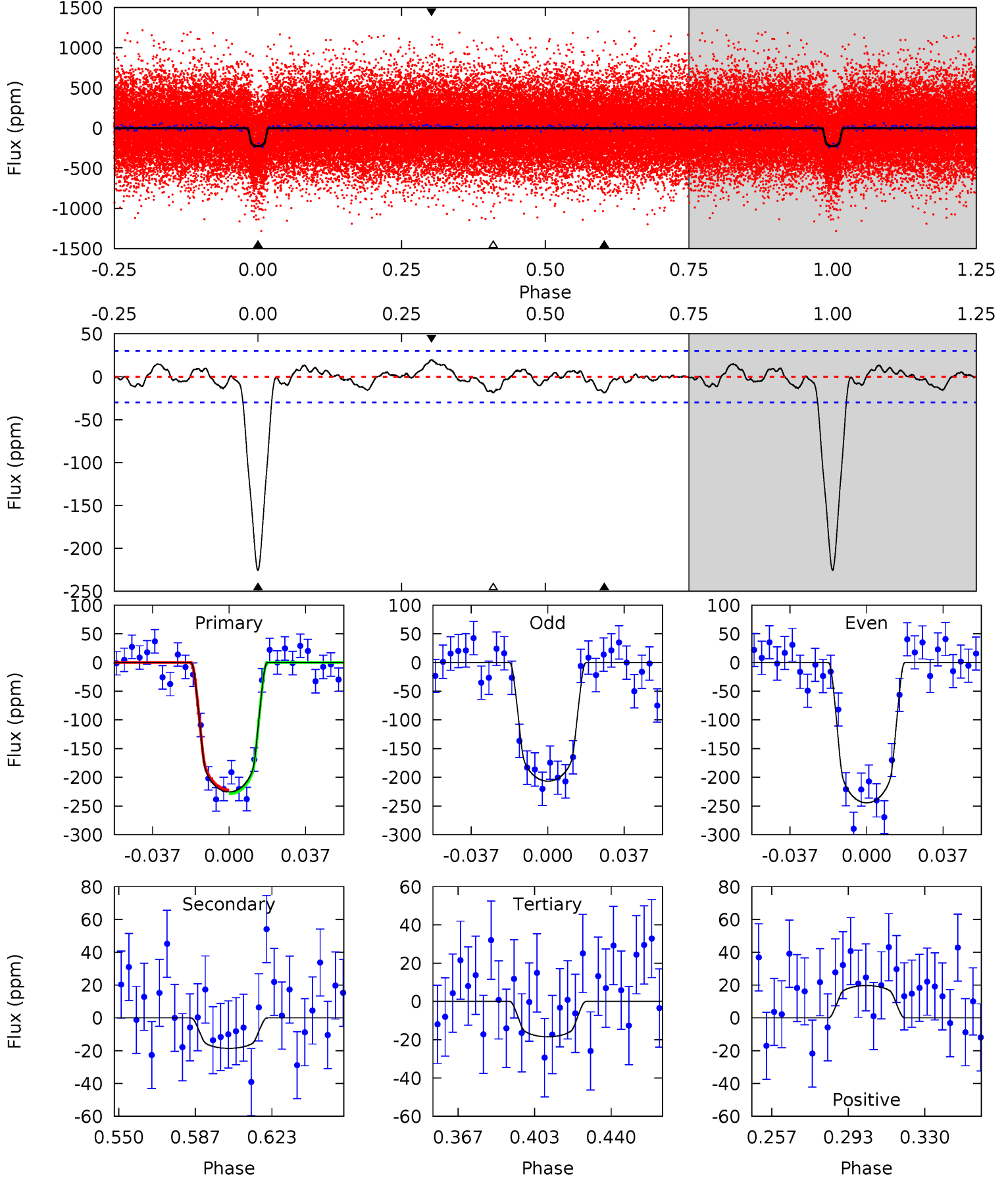
TCE 011709124-04 $P = 3.932747$ Days $T_0 = 134.652273$ (BKJD)



DV Model-Shift Uniqueness Test

011709124-04, P = 3.932747 Days, E = 130.719507 Days

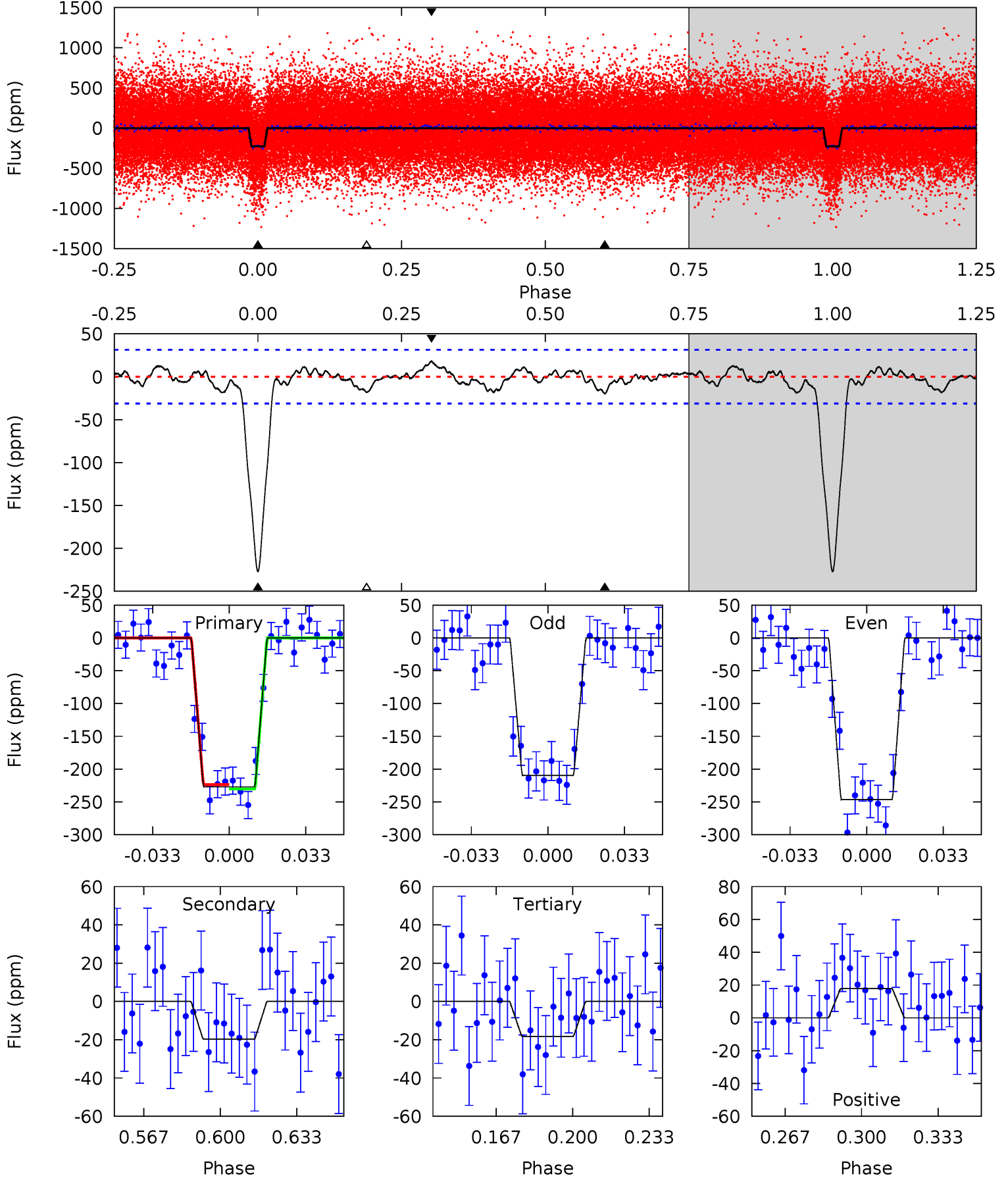
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.9	2.96	2.94	3.14	4.77	2.09	1.19	33.0	32.8	0.02	-0.18	3.01	0.98	0.08	0.50



Alt Model-Shift Uniqueness Test

011709124-04, P = 3.932747 Days, E = 130.719526 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.8	3.02	2.80	2.74	4.79	2.13	1.14	32.0	32.0	0.22	0.28	2.82	1.00	0.07	0.51



Stellar Parameters For KIC 011709124

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5688^{+113}_{-101}	$4.415^{+0.100}_{-0.100}$	$-0.120^{+0.150}_{-0.150}$	$0.971^{+0.130}_{-0.095}$	$0.895^{+0.071}_{-0.052}$	$1.377^{+0.567}_{-0.434}$
	+2%/-2%	+2%/-2%	+125%/-125%	+13%/-10%	+8%/-6%	+41%/-32%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 011709124-04 / KOI 0435.04

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-19 ± 6	$1.77^{+0.37}_{-0.38}$	1593^{+67}_{-60}	3385^{+310}_{-287}	$7.169^{+5.158}_{-3.176}$
Alt.	-20 ± 7	$1.60^{+0.39}_{-0.37}$	1591^{+65}_{-53}	3533^{+356}_{-324}	$9.385^{+7.598}_{-4.209}$

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

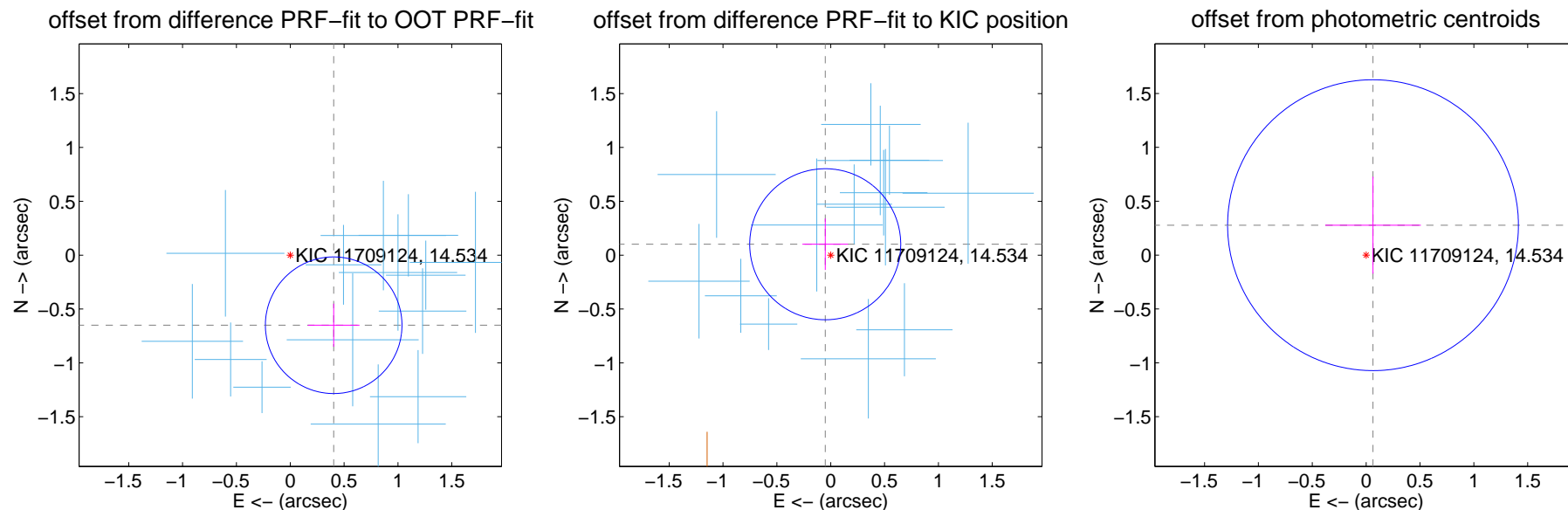
DV Centroid Data

Supplemental centroid analysis for 011709124-04. Kepler magnitude: 14.53. Transit SNR 26.50

There are 14 quarters with good PRF difference image offsets

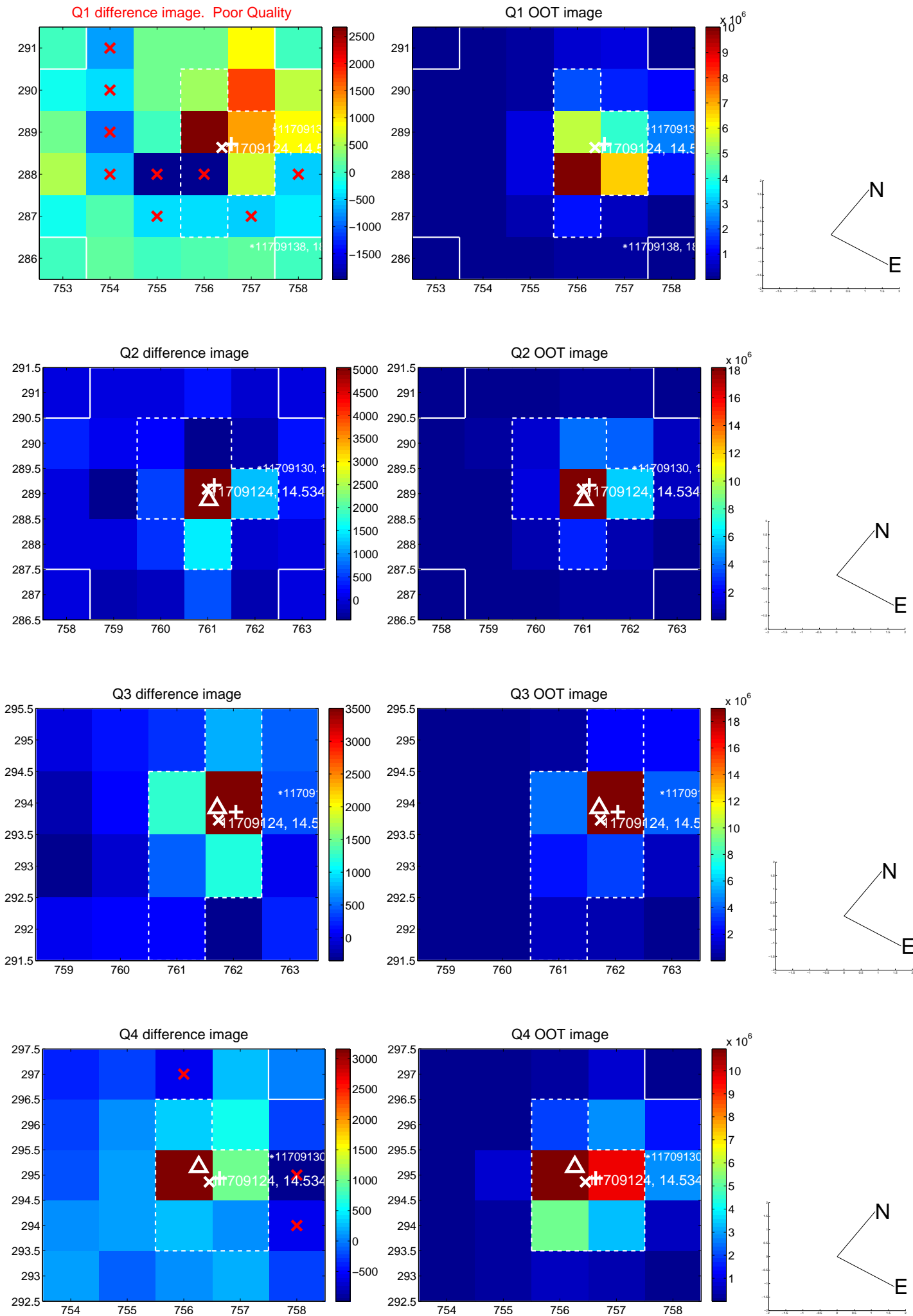
The direct PRF centroid is offset from the target star catalog position by about 0.84 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.766 \pm 0.211	3.62	-0.403 \pm 0.239	-0.651 \pm 0.200
PRF-fit source offset from KIC position	0.113 \pm 0.234	0.49	0.051 \pm 0.212	0.101 \pm 0.239
photometric centroid source offset	0.28 \pm 0.45	0.63	-0.06 \pm 0.44	0.28 \pm 0.45

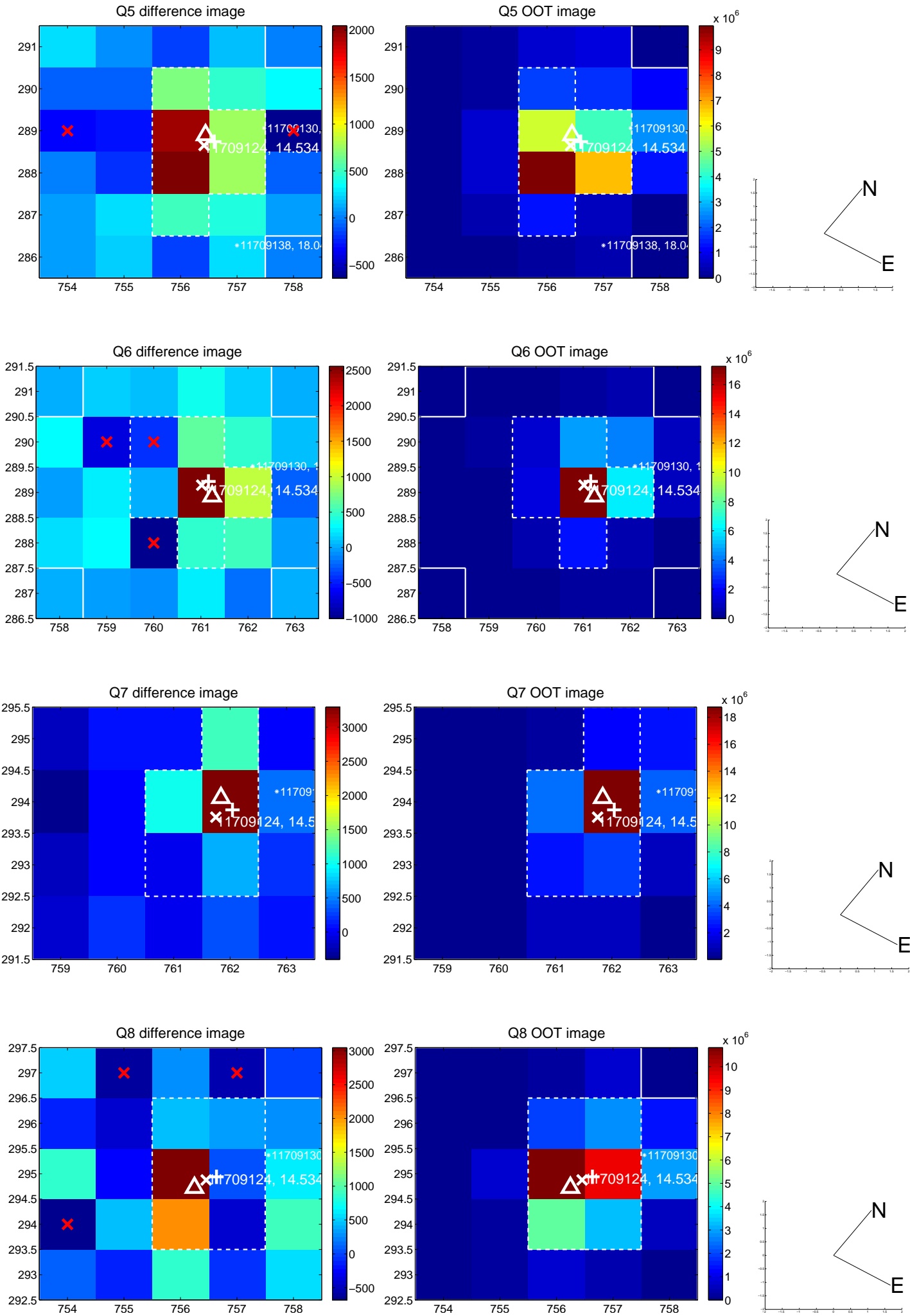


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

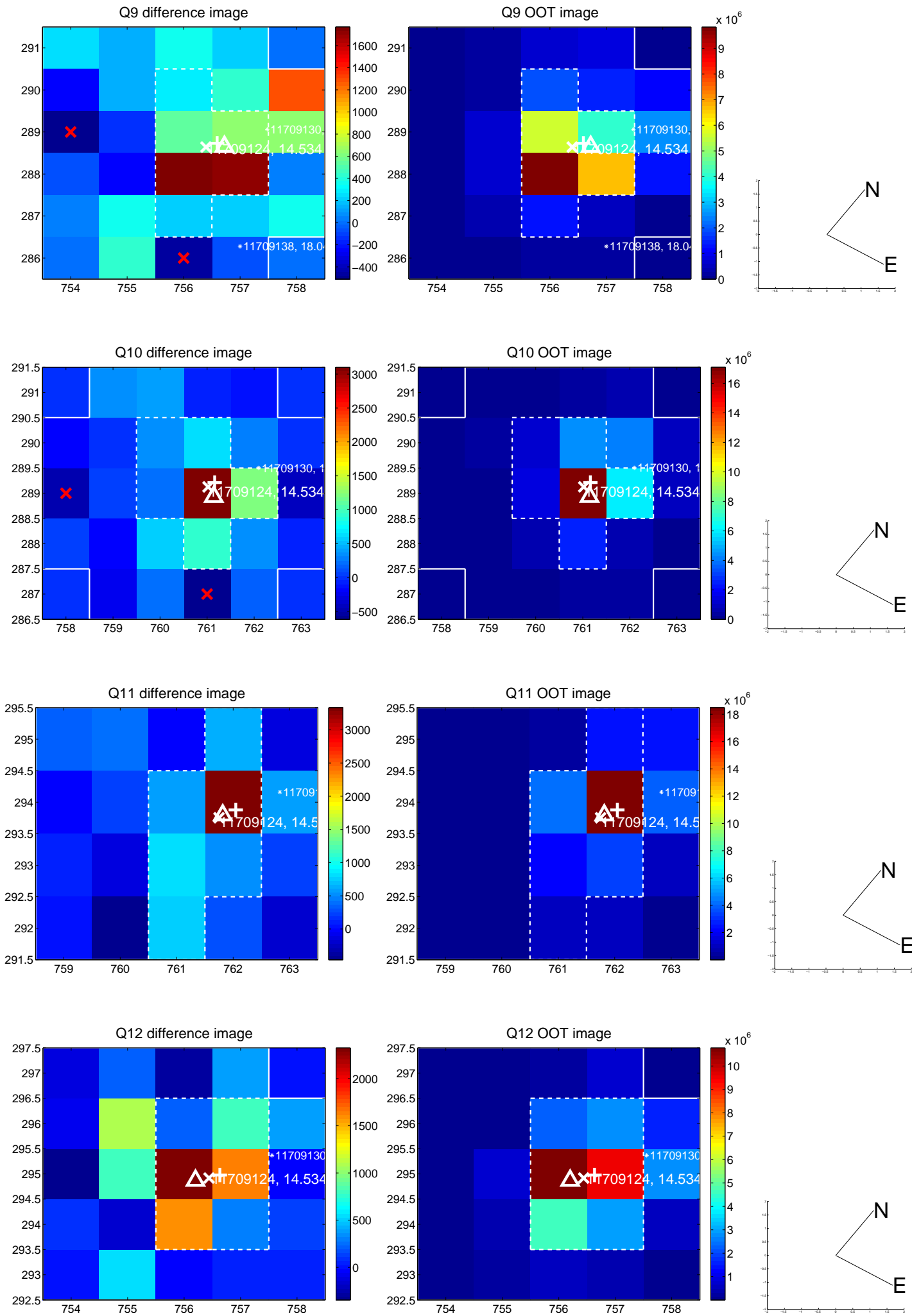
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



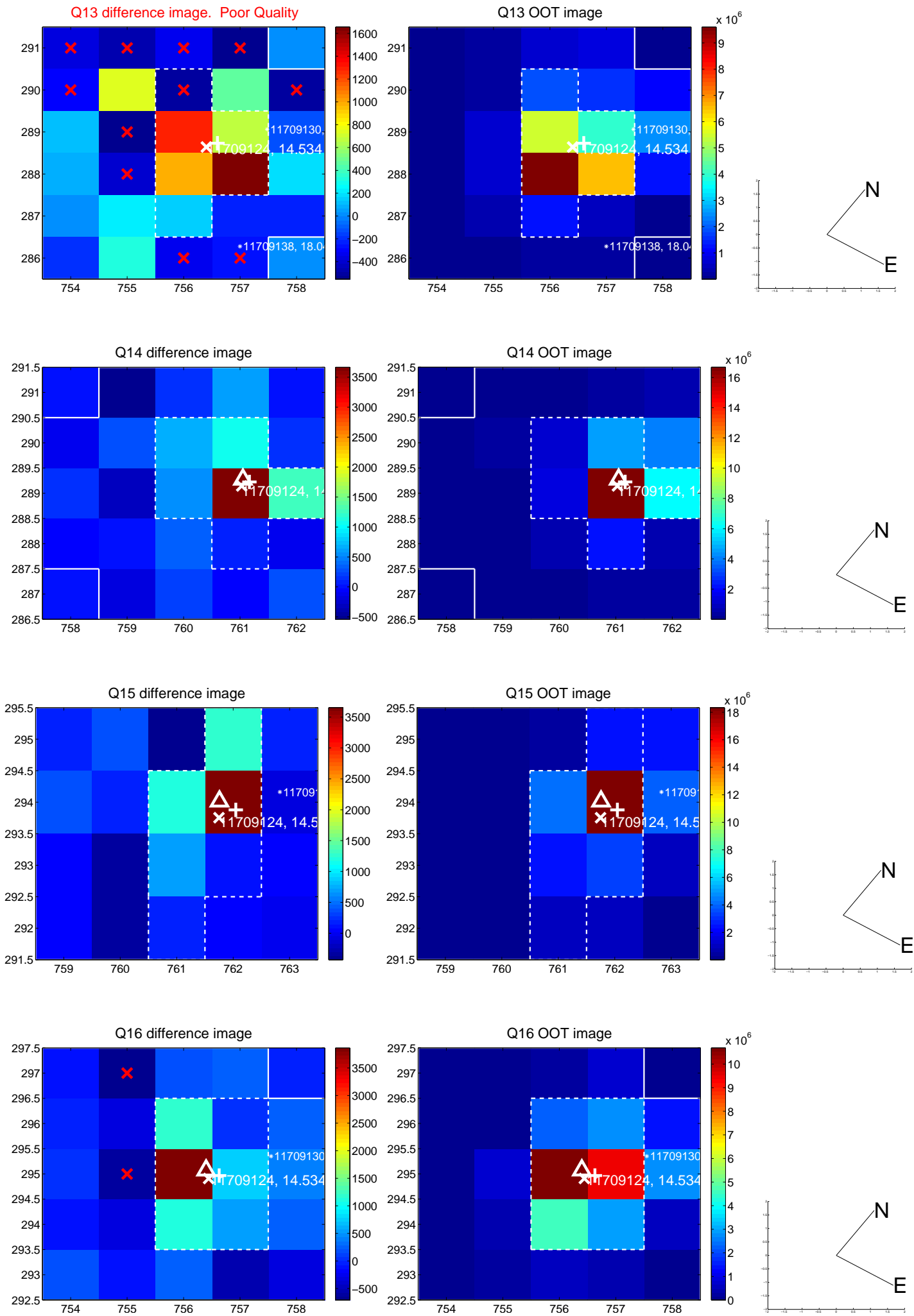
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



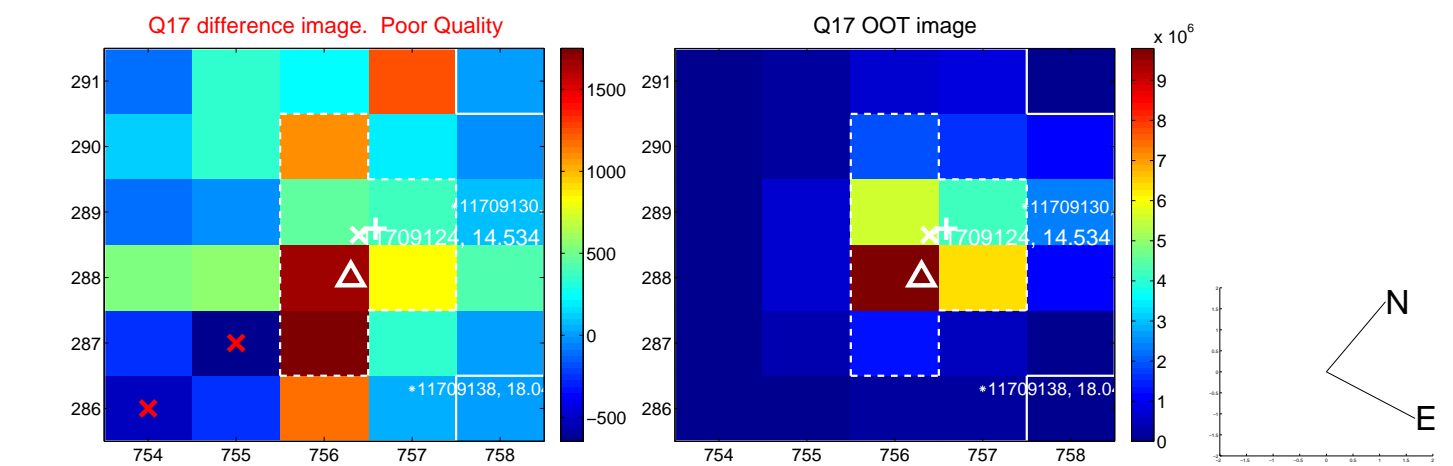
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



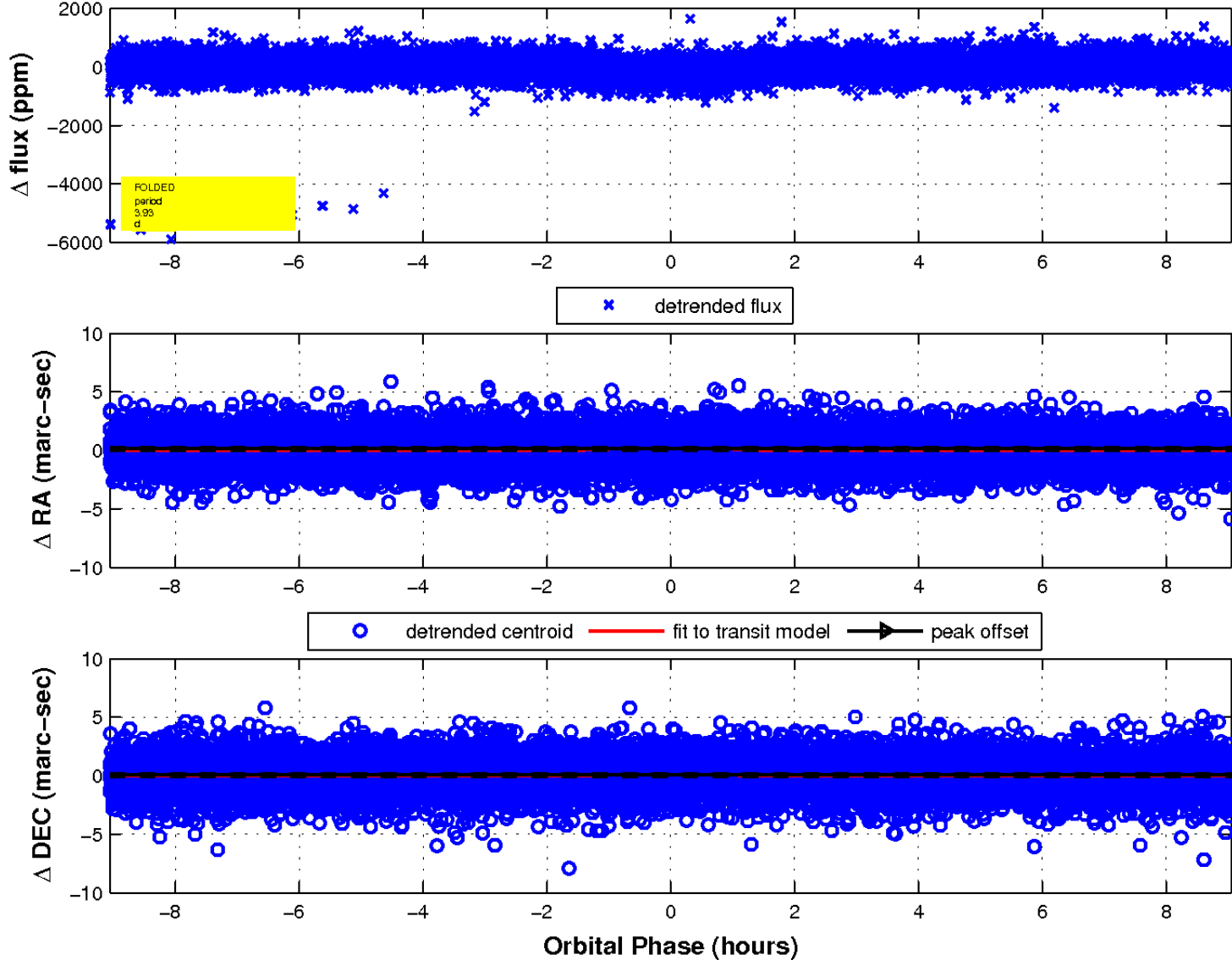
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

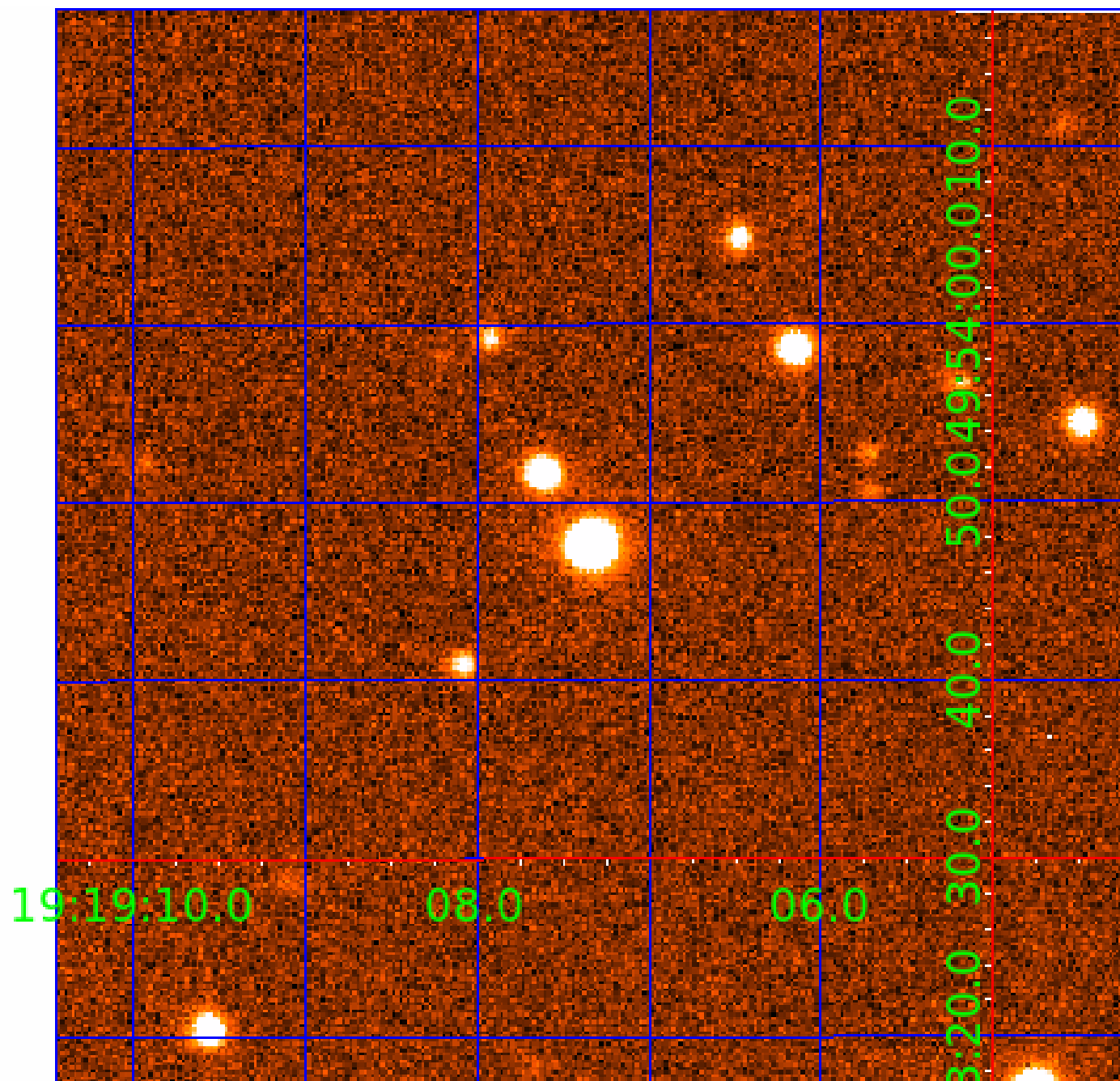


fluxWeightedCentroids, Planet 4 of 6



UKIRT Image

Declination



KIC 011709124

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})
011709124-01	OBS	0435.01	20.549791	137.848211	1563.5	5.574	93.7	96.0	0.97	5688	4.09	44.17
011709124-02	OBS	0435.05	62.302555	179.099592	841.3	7.600	33.3	33.1	0.97	5688	3.09	10.07
011709124-03	OBS	No	207.656092	241.824270	130.5	16.317	50.7	2.3	0.97	5688	1.38	2.02
011709124-04	OBS	0435.04	3.932747	134.652254	232.0	3.019	24.8	26.5	0.97	5688	1.75	400.51
011709124-05	OBS	0435.03	33.040544	161.223174	569.1	3.506	21.2	21.4	0.97	5688	2.65	23.45
011709124-06	OBS	0435.06	9.919405	136.870975	185.5	4.603	14.6	15.3	0.97	5688	1.57	116.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011709124-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
011709124-02	OBS	PC	0.92	0	0	0	0	CENT_KIC_POS
011709124-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
011709124-04	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
011709124-05	OBS	PC	0.88	0	0	0	0	CENT_KIC_POS
011709124-06	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

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

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

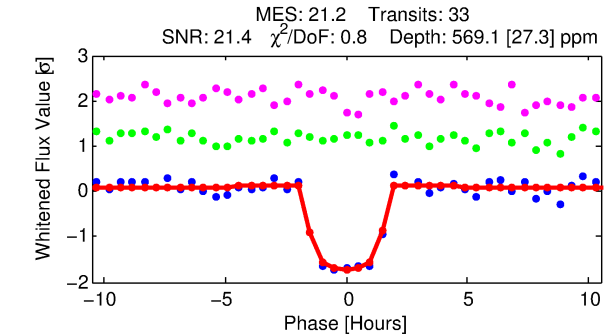
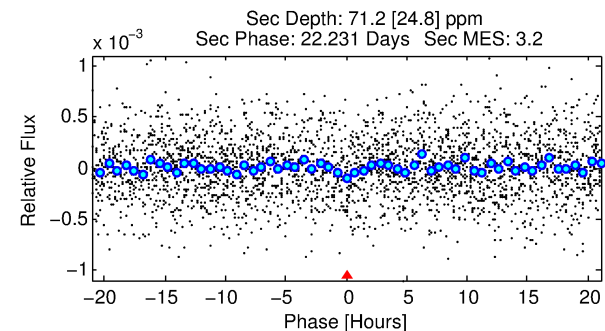
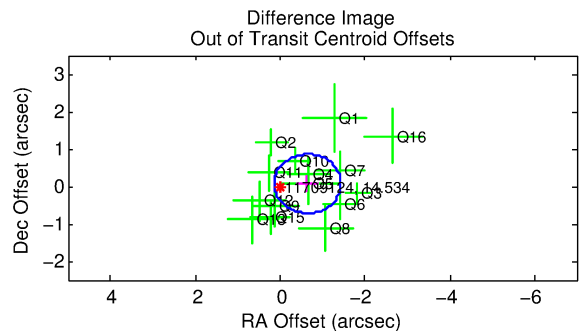
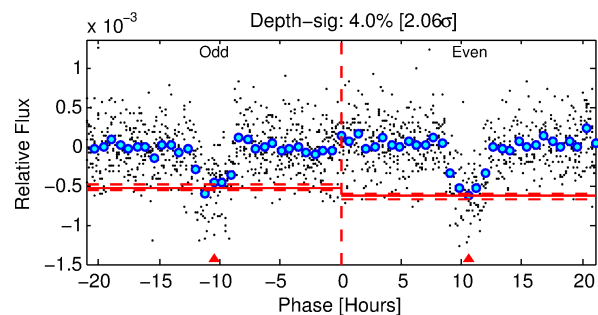
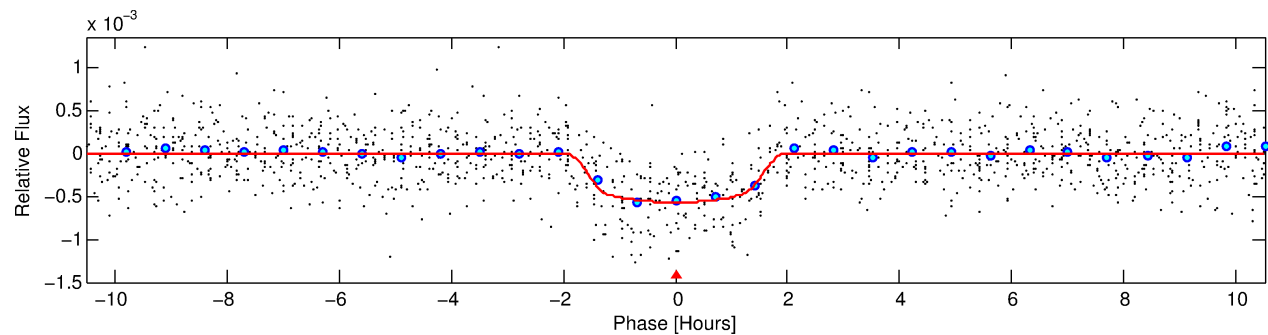
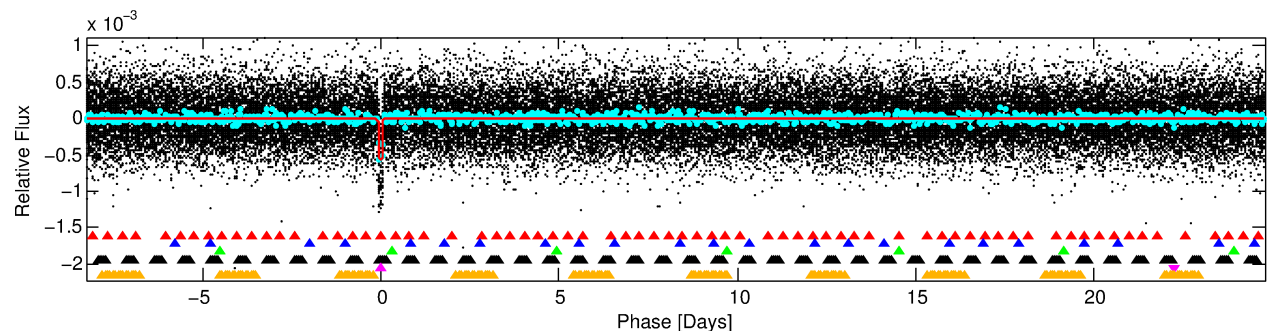
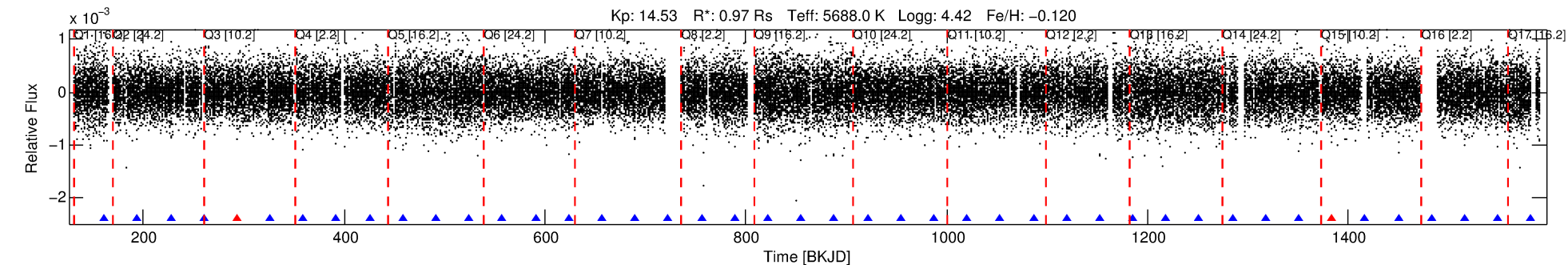
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011709124-05

No Significant Match Found

DV One-Page Summary

KIC: 11709124 Candidate: 5 of 6 Period: 33.041 d
KOI: K00435.03 Name: Kepler-154b Corr: 0.973



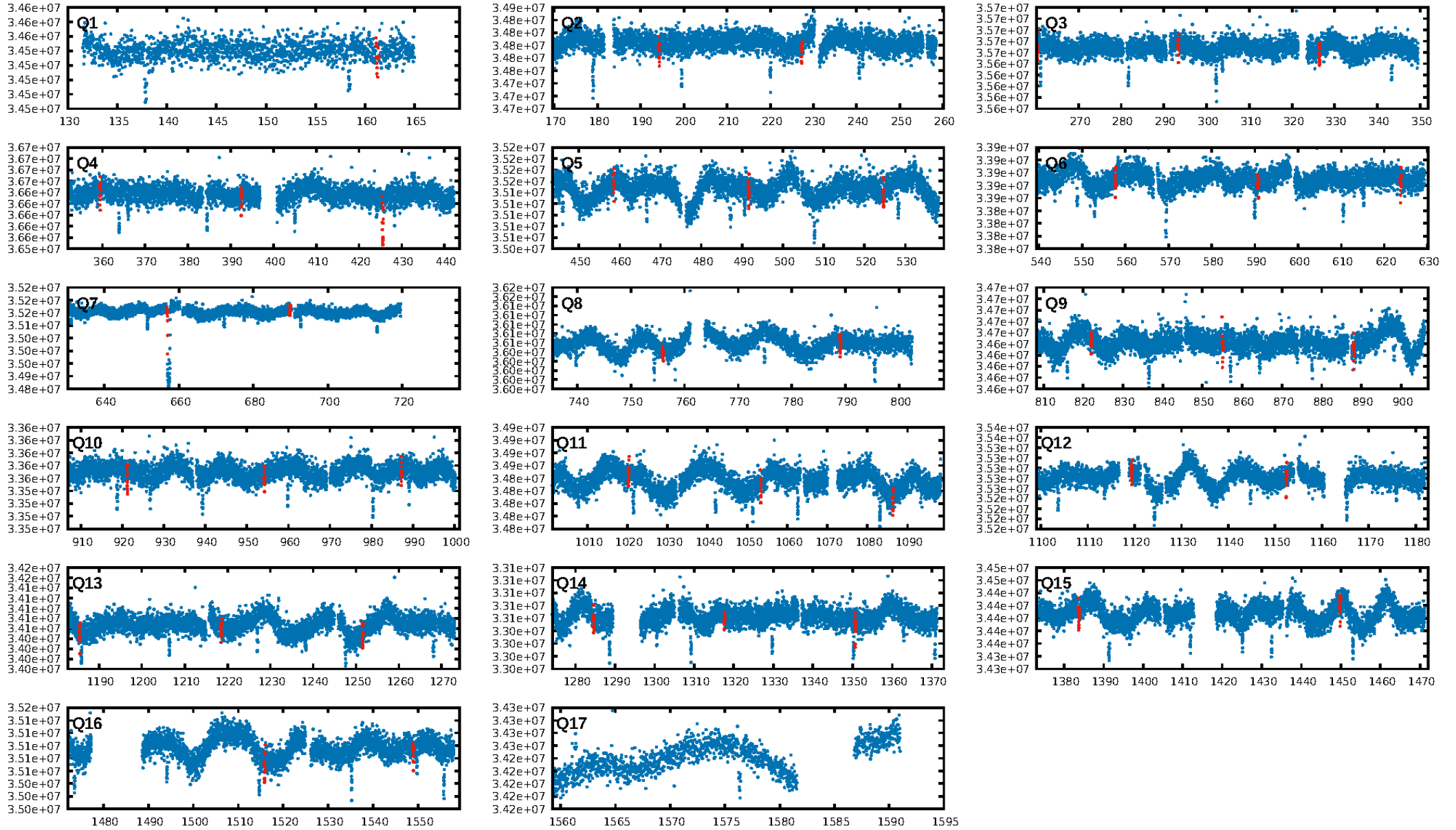
DV Fit Results:

Period = 33.04054 [0.00014] d
Epoch = 161.2232 [0.0034] BKJD
Rp/R* = 0.0251 [0.0058]
a/R* = 40.86 [42.23]
b = 0.85 [0.33]
Seff = 23.45 [4.56]
Teff = 561 [27] K
Rp = 2.66 [0.71] Re
a = 0.1942 [0.0229] AU
Ag = 209.40 [126.56] [1.65σ]
Teffp = 3300 [481] K [5.68σ]

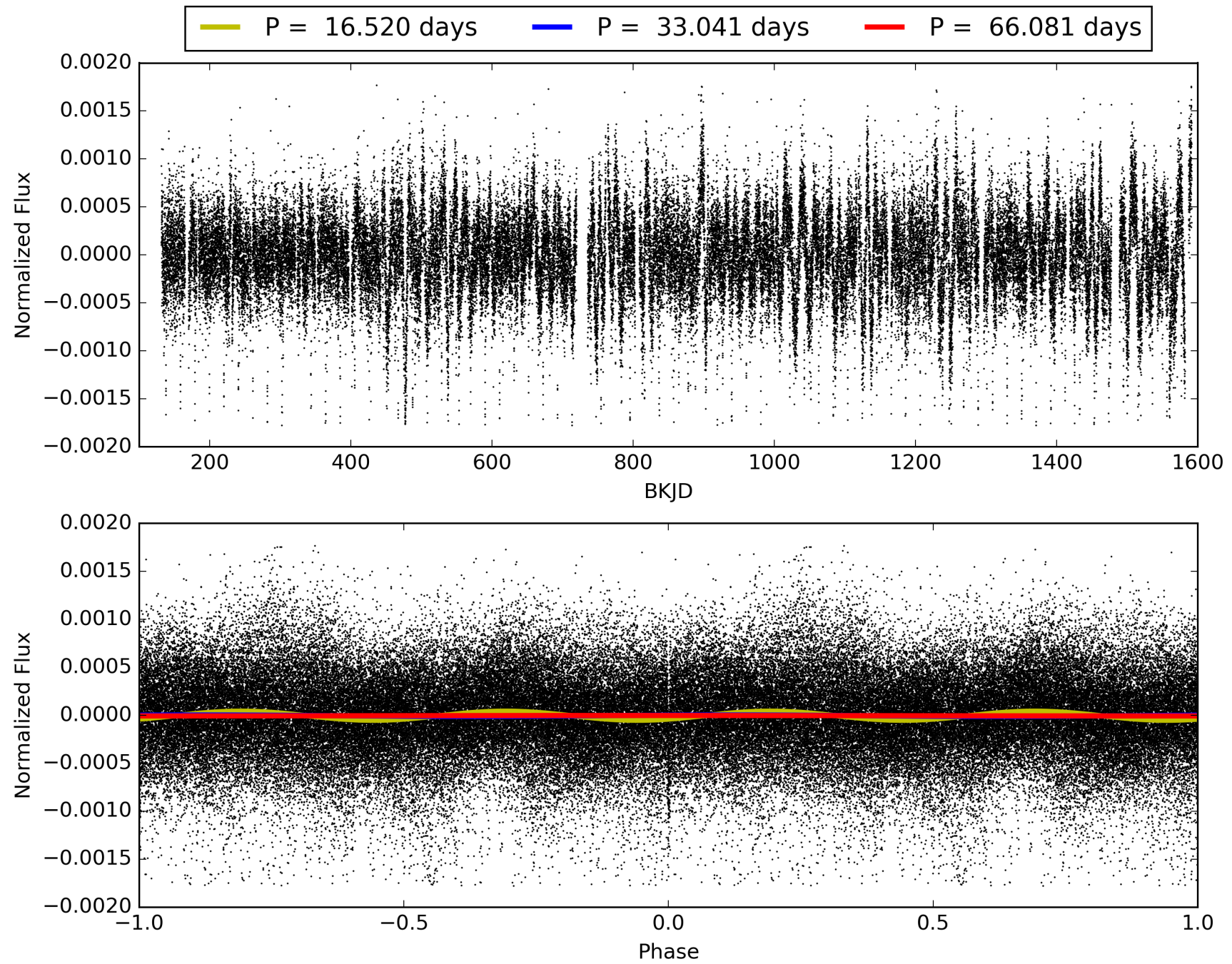
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [45.53σ]
LongPeriod-sig: 100.0% [83.91σ]
ModelChiSquare2-sig: 99.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.78e-93
RollingBand-fgt: 0.94 [30/32]
GhostDiagnostic-chr: 6.549
Centroid-sig: 3.0%
Centroid-so: 0.704 arcsec [1.42σ]
OotOffset-rm: 0.650 arcsec [2.47σ]
OotOffset-st: 3/4/4/4 [15]
KicOffset-rm: 0.880 arcsec [3.68σ]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.93 [14/15]
DiffImageOverlap-fno: 0.94 [15/16]

TCE 011709124-05, PDC Light Curves

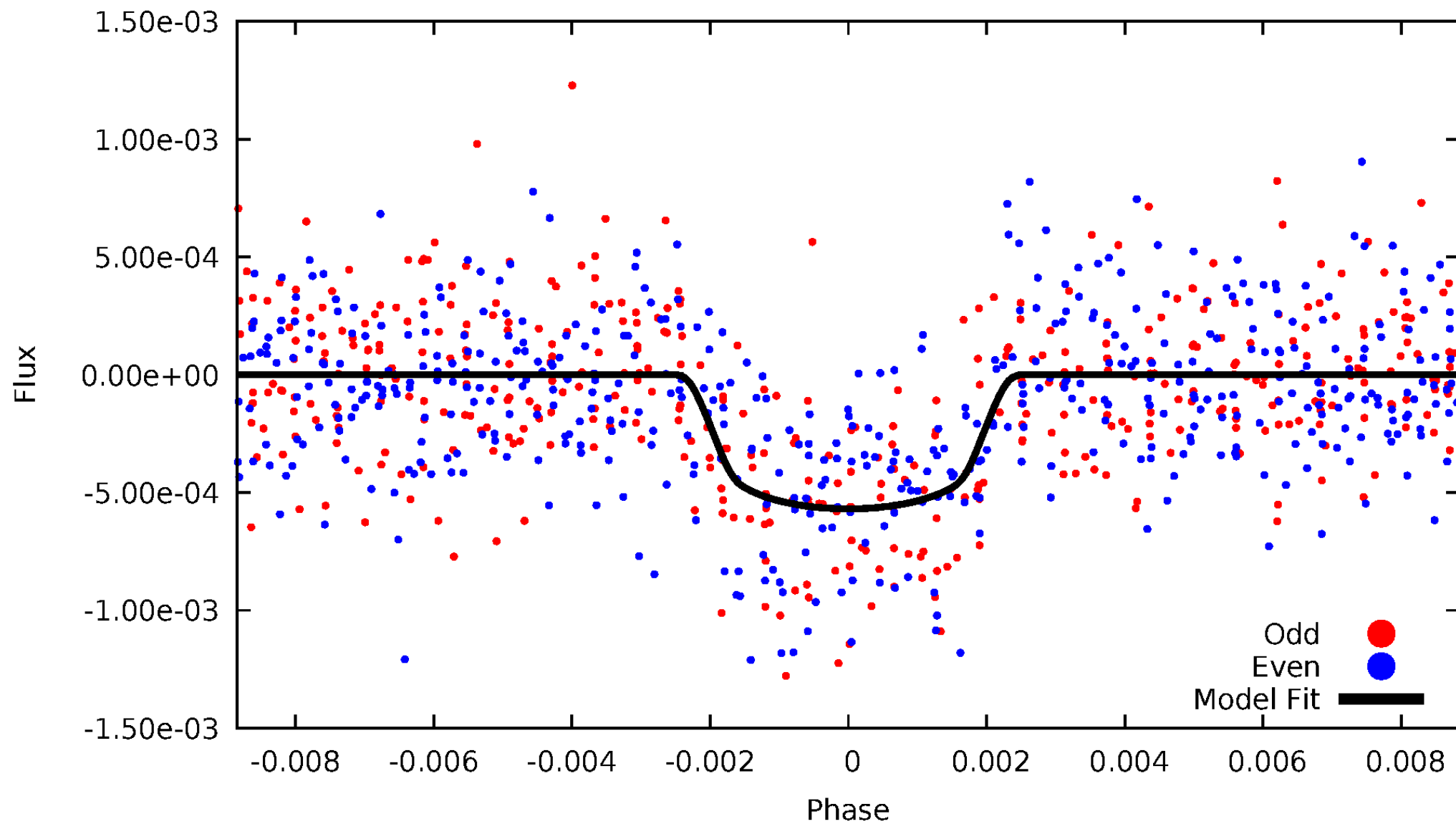


TCE 011709124-05



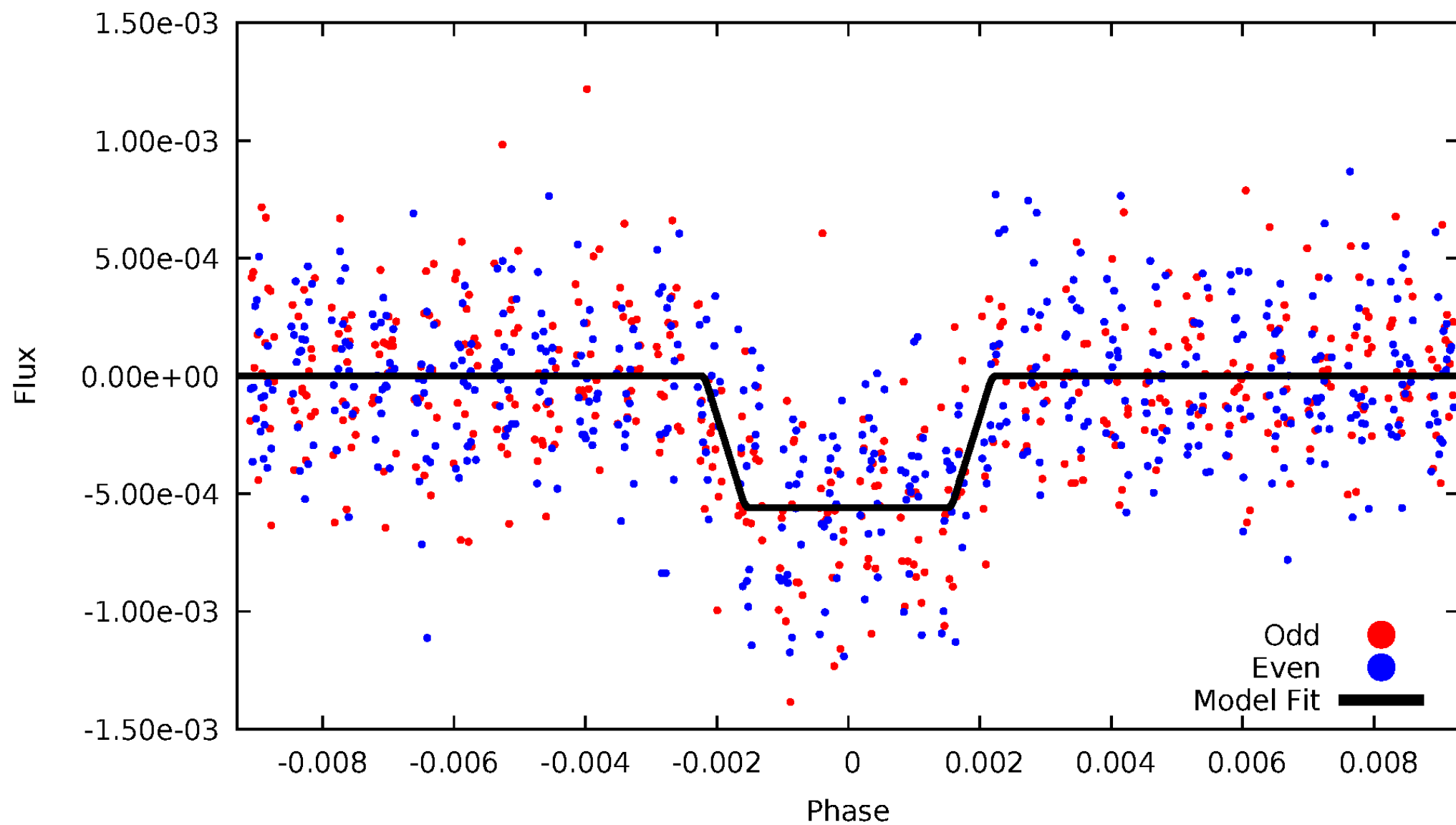
DV Odd/Even

TCE 011709124-05



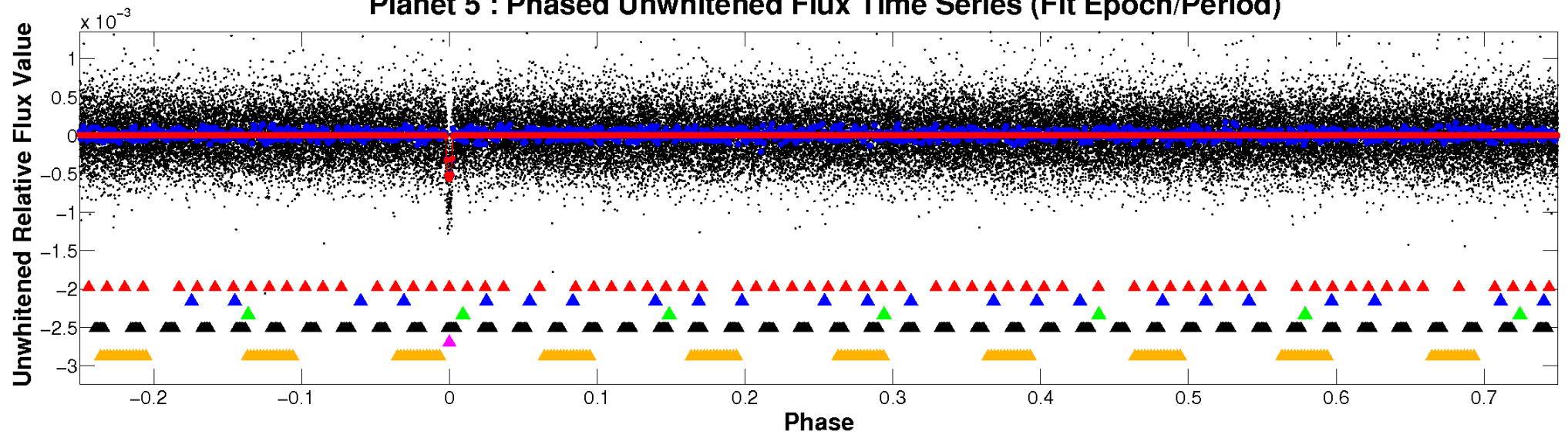
ALT Odd/Even

TCE 011709124-05

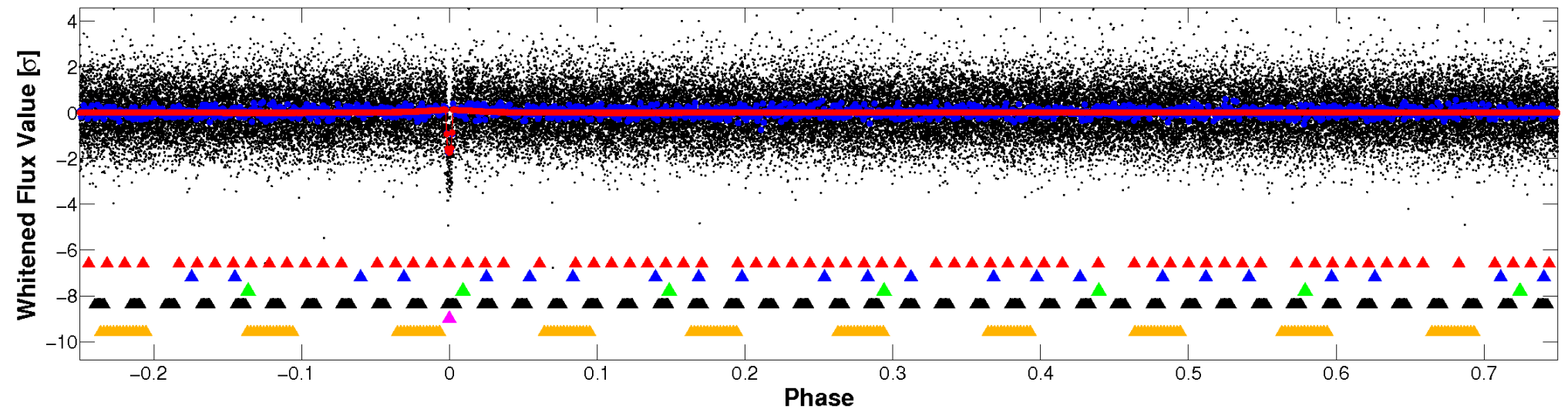


Non-Whitened Vs. Whitened Light Curve

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

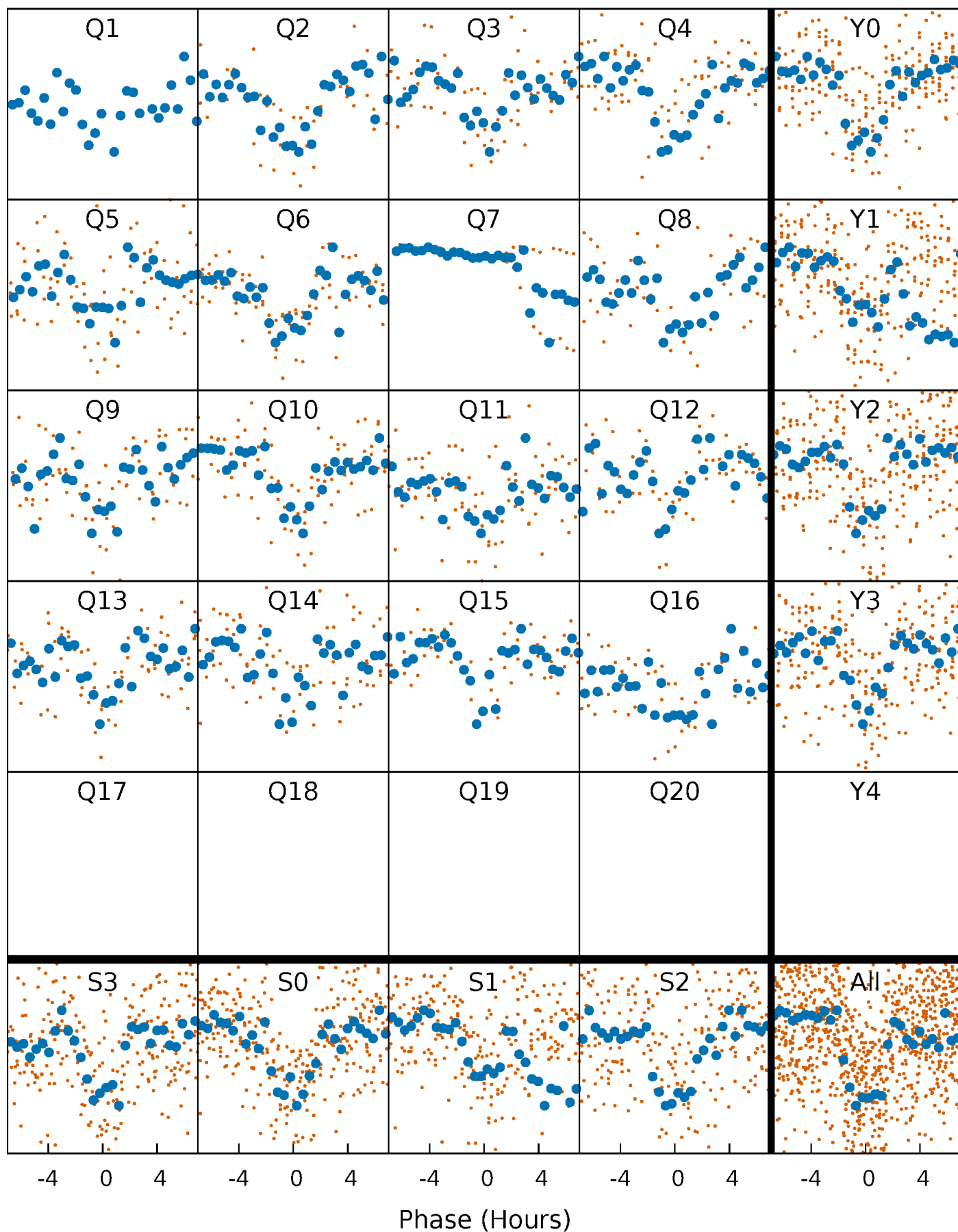


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



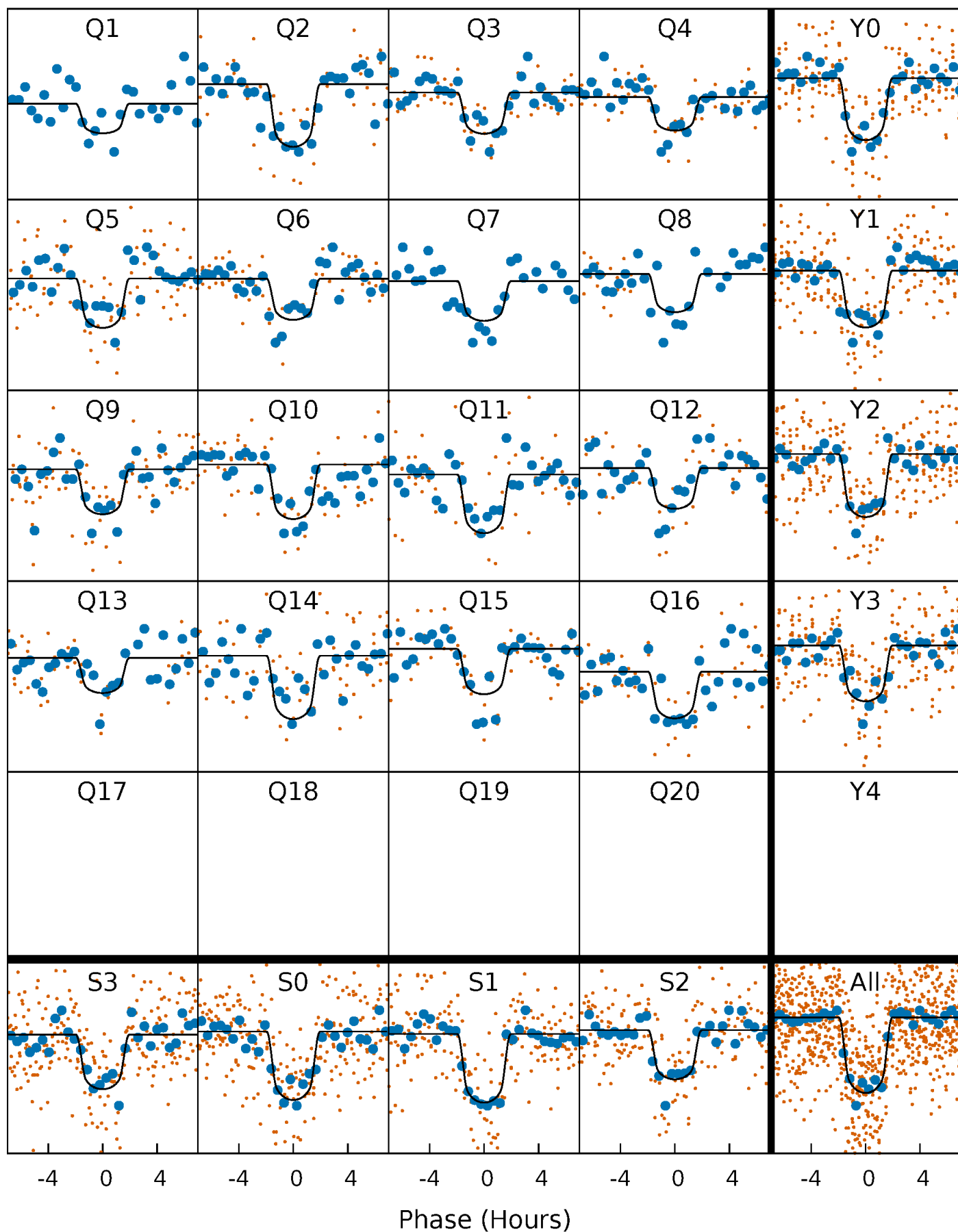
PDC Quarter-Phased Transit Curves

TCE 011709124-05 P= 33.040544 Days $T_0=161.223174$ (BKJD)



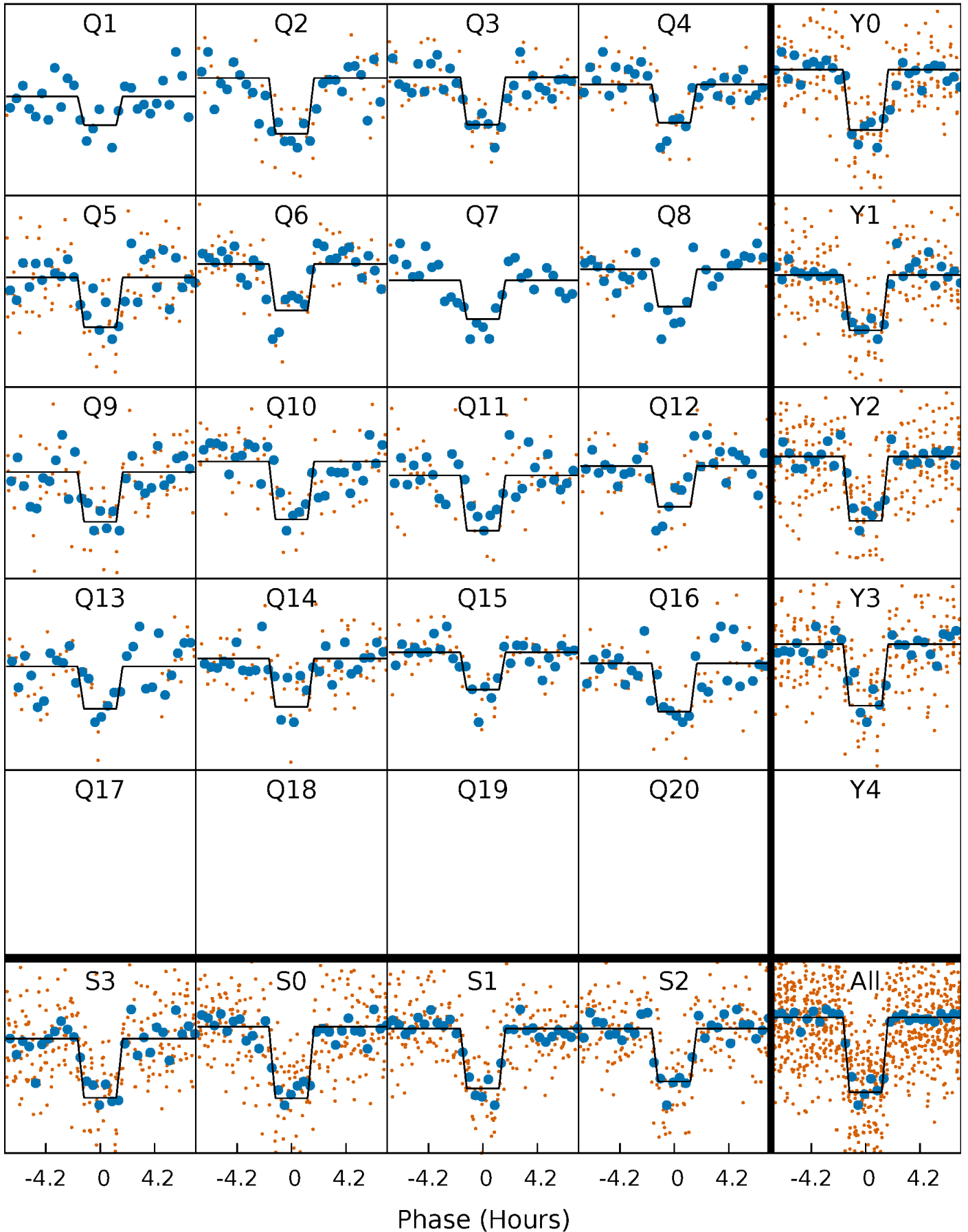
DV Quarter-Phased Transit Curves

TCE 011709124-05 $P = 33.040544$ Days $T_0 = 161.223174$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

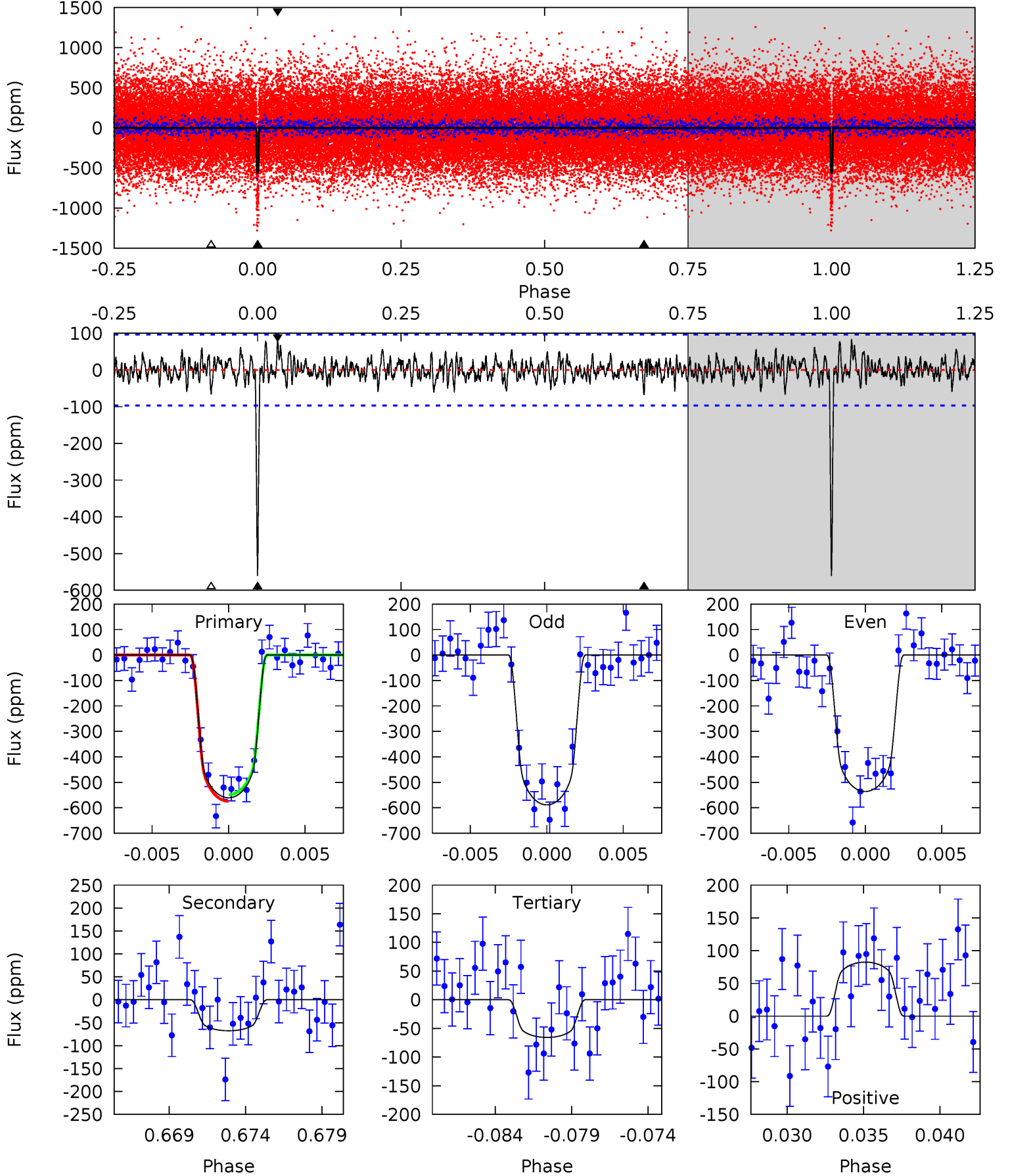
TCE 011709124-05 P= 33.040836 Days $T_0=161.216446$ (BKJD)



DV Model-Shift Uniqueness Test

011709124-05, $P = 33.040544$ Days, $E = 128.182630$ Days

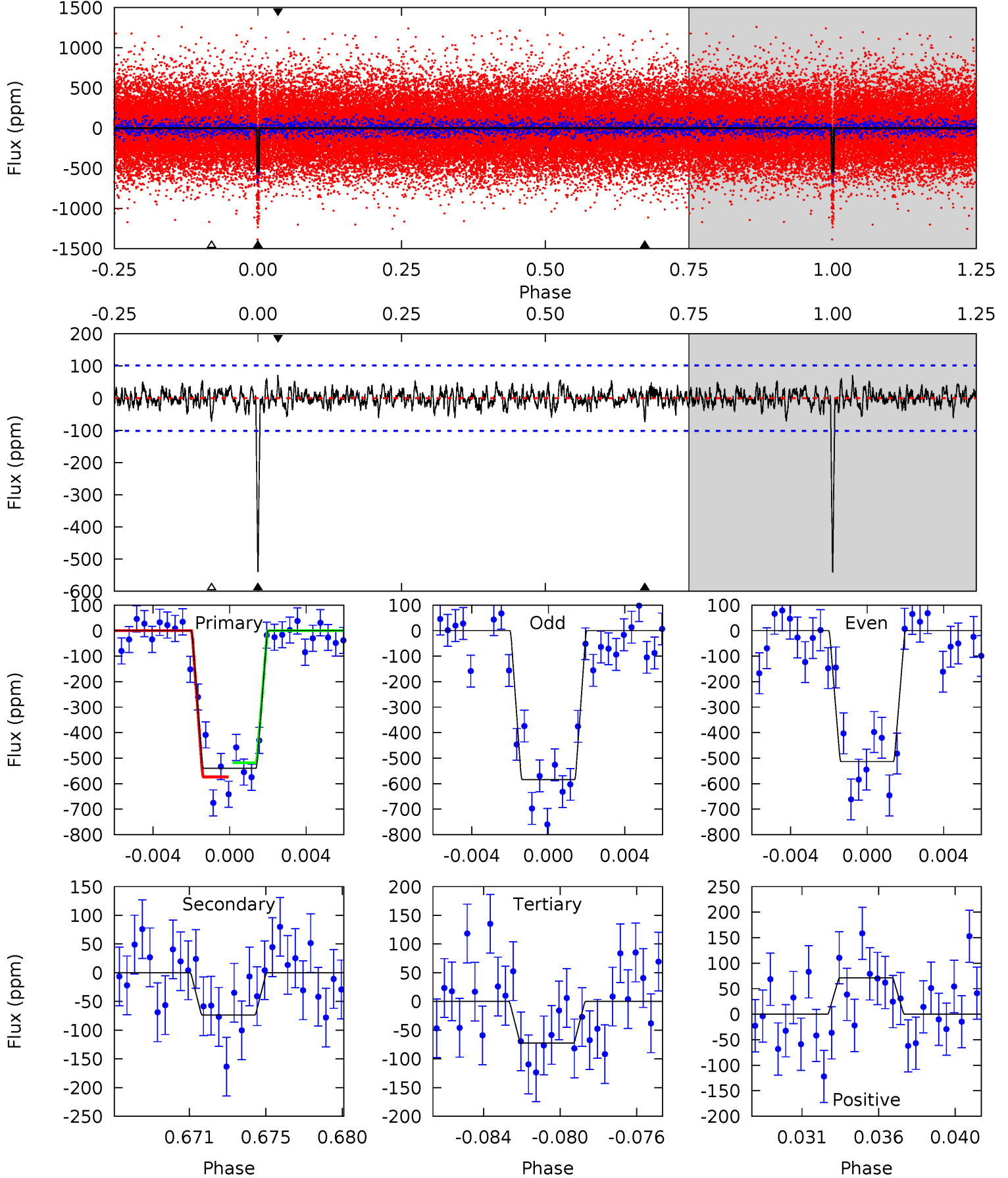
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.9	3.61	3.51	4.40	5.16	2.81	1.16	26.4	25.5	0.10	-0.79	1.40	0.97	0.13	0.69



Alt Model-Shift Uniqueness Test

011709124-05, P = 33.040836 Days, E = 128.175610 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.5	3.75	3.69	3.64	5.18	2.84	1.03	23.8	23.9	0.06	0.11	1.79	0.95	0.12	1.42



Stellar Parameters For KIC 011709124

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5688^{+113}_{-101}	$4.415^{+0.100}_{-0.100}$	$-0.120^{+0.150}_{-0.150}$	$0.971^{+0.130}_{-0.095}$	$0.895^{+0.071}_{-0.052}$	$1.377^{+0.567}_{-0.434}$
	+2%/-2%	+2%/-2%	+125%/-125%	+13%/-10%	+8%/-6%	+41%/-32%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 011709124-05 / KOI 0435.03

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-68 ± 19	$2.61^{+0.66}_{-0.60}$	785^{+30}_{-29}	3687^{+378}_{-321}	200^{+150}_{-87}
Alt.	-74 ± 20	$2.51^{+0.60}_{-0.58}$	784^{+30}_{-25}	3807^{+403}_{-322}	244^{+182}_{-103}

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 $A_{obs} \gg 1.0$

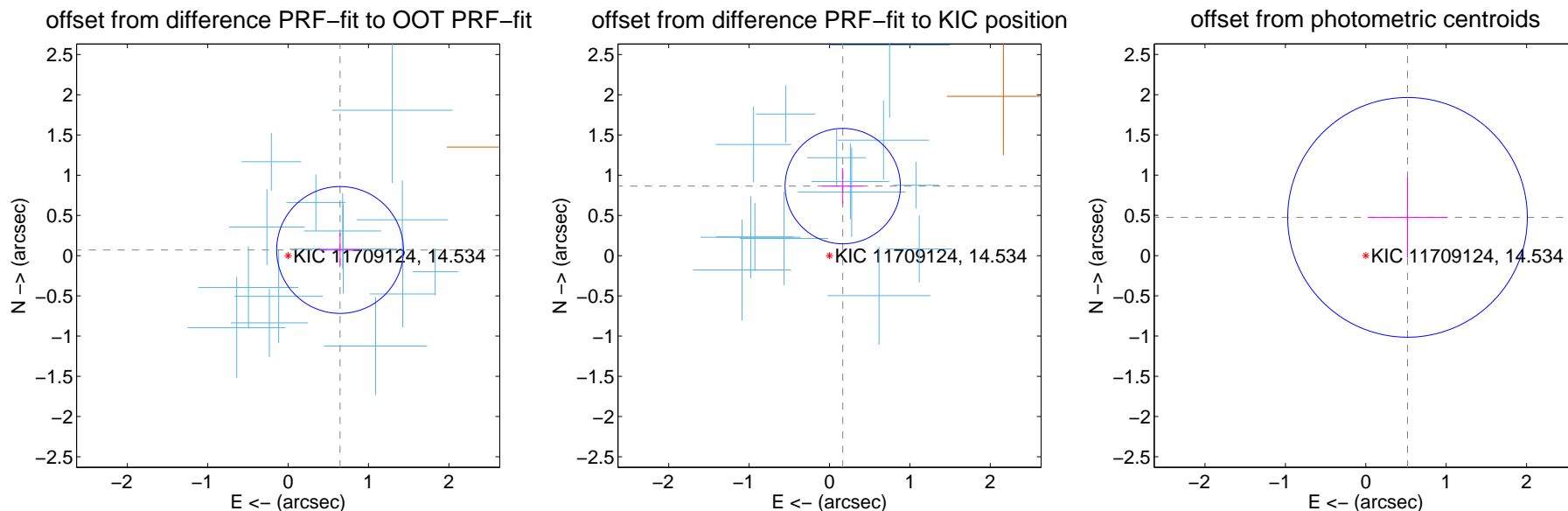
DV Centroid Data

Supplemental centroid analysis for 011709124-05. Kepler magnitude: 14.53. Transit SNR 21.37

There are 14 quarters with good PRF difference image offsets

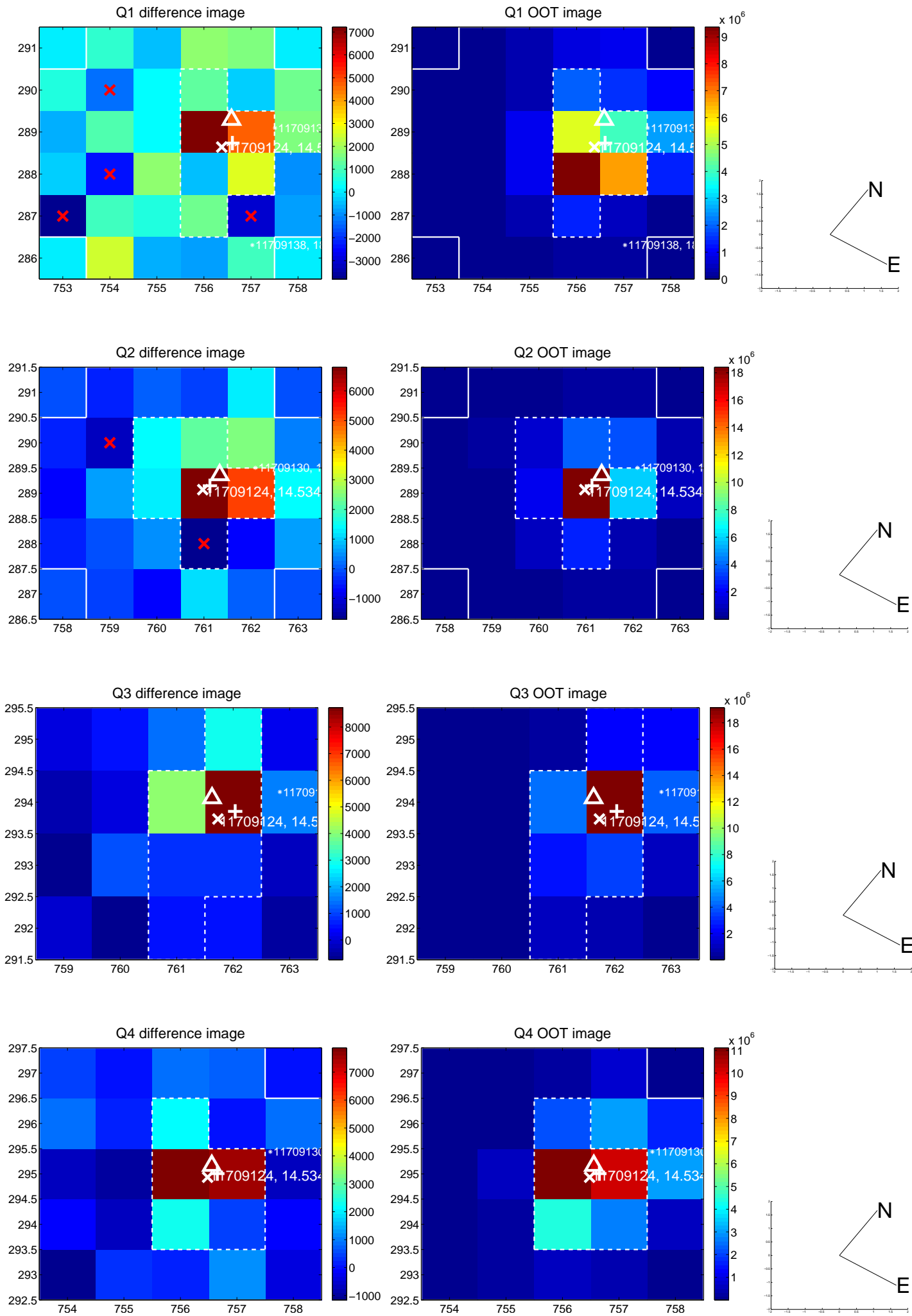
The direct PRF centroid is offset from the target star catalog position by about 0.81 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.650 ± 0.263	2.47	-0.646 ± 0.263	0.071 ± 0.215
PRF-fit source offset from KIC position	0.880 ± 0.239	3.68	-0.165 ± 0.256	0.865 ± 0.224
photometric centroid source offset	0.70 ± 0.50	1.42	-0.52 ± 0.49	0.48 ± 0.50

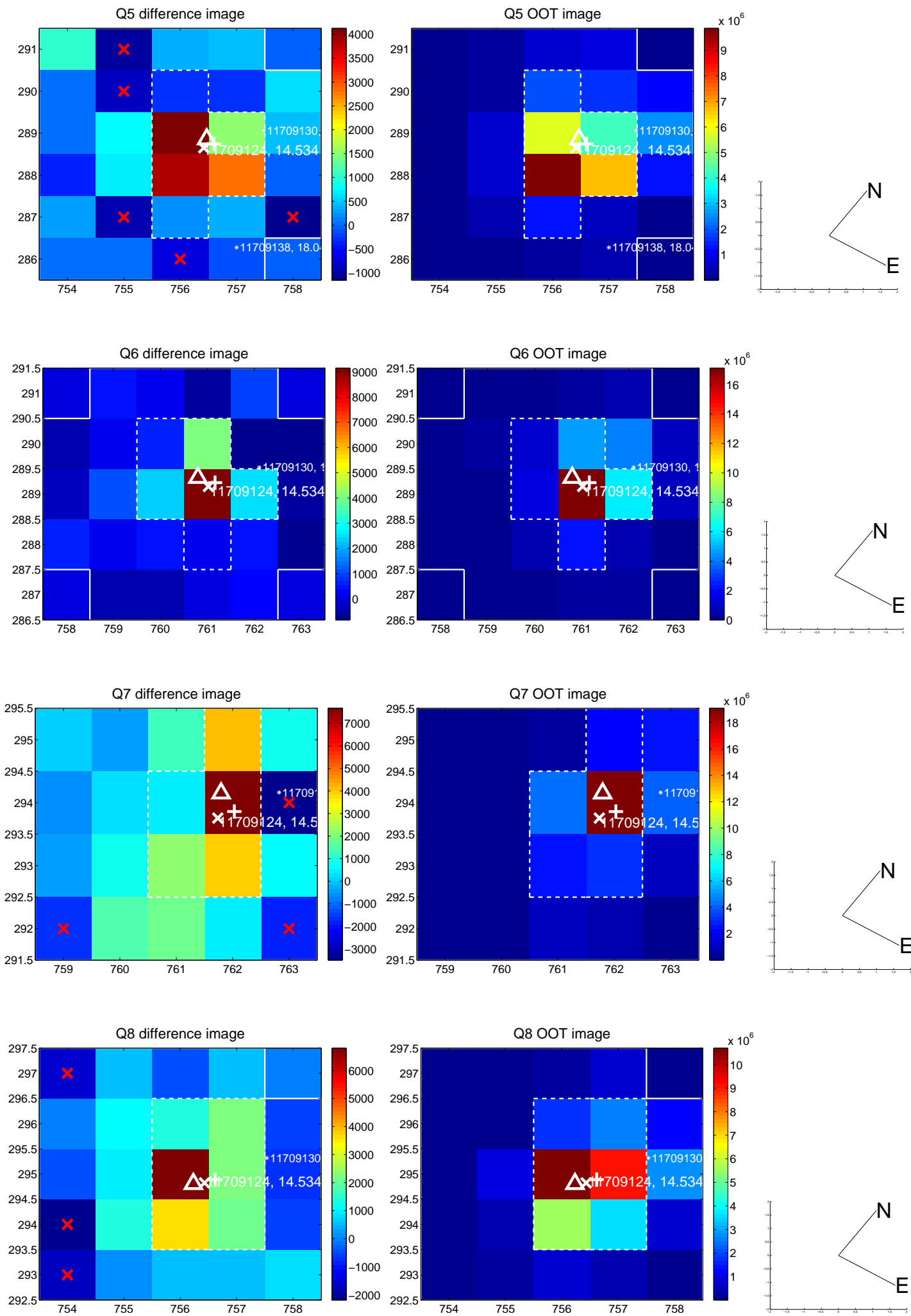


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

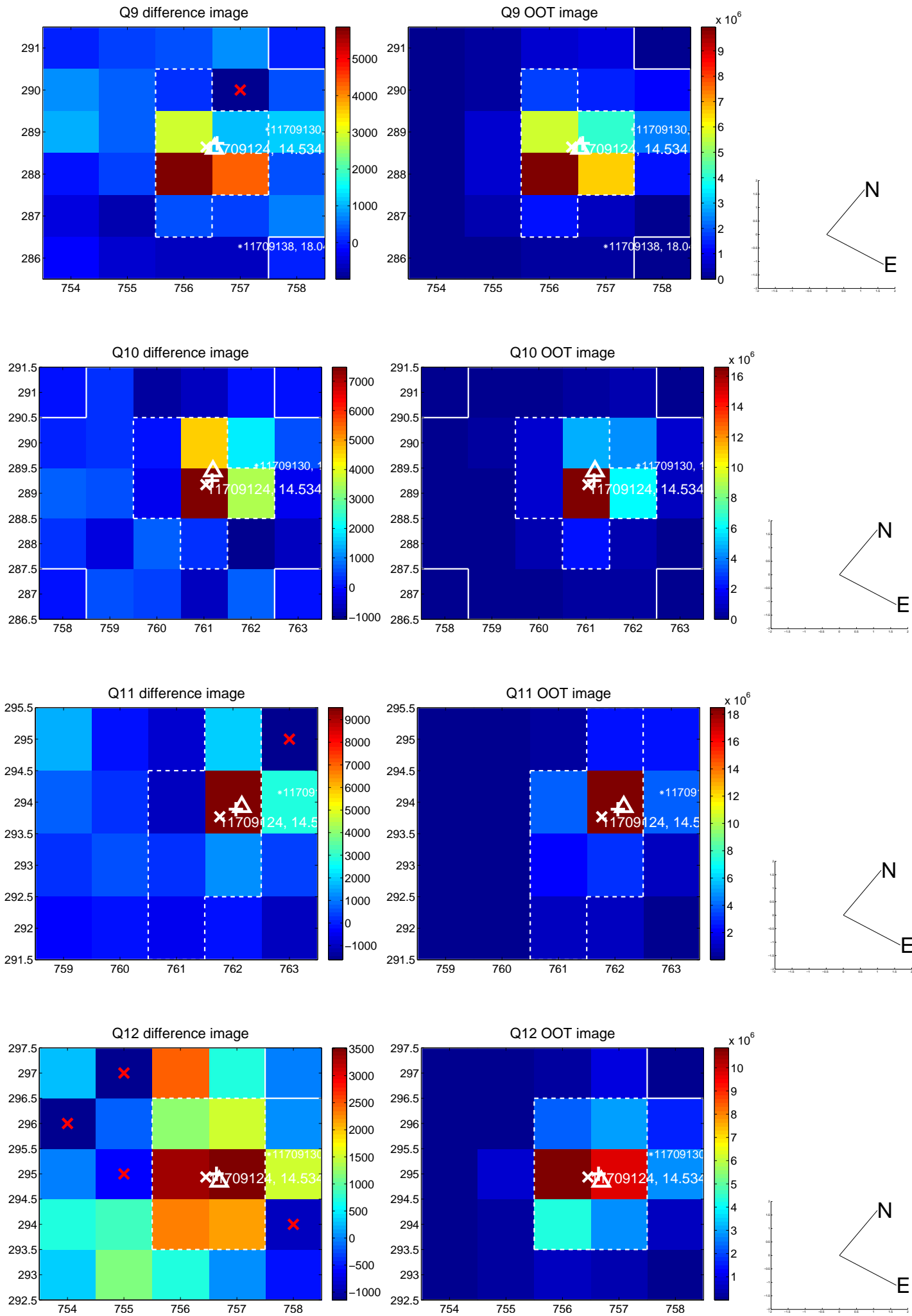
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



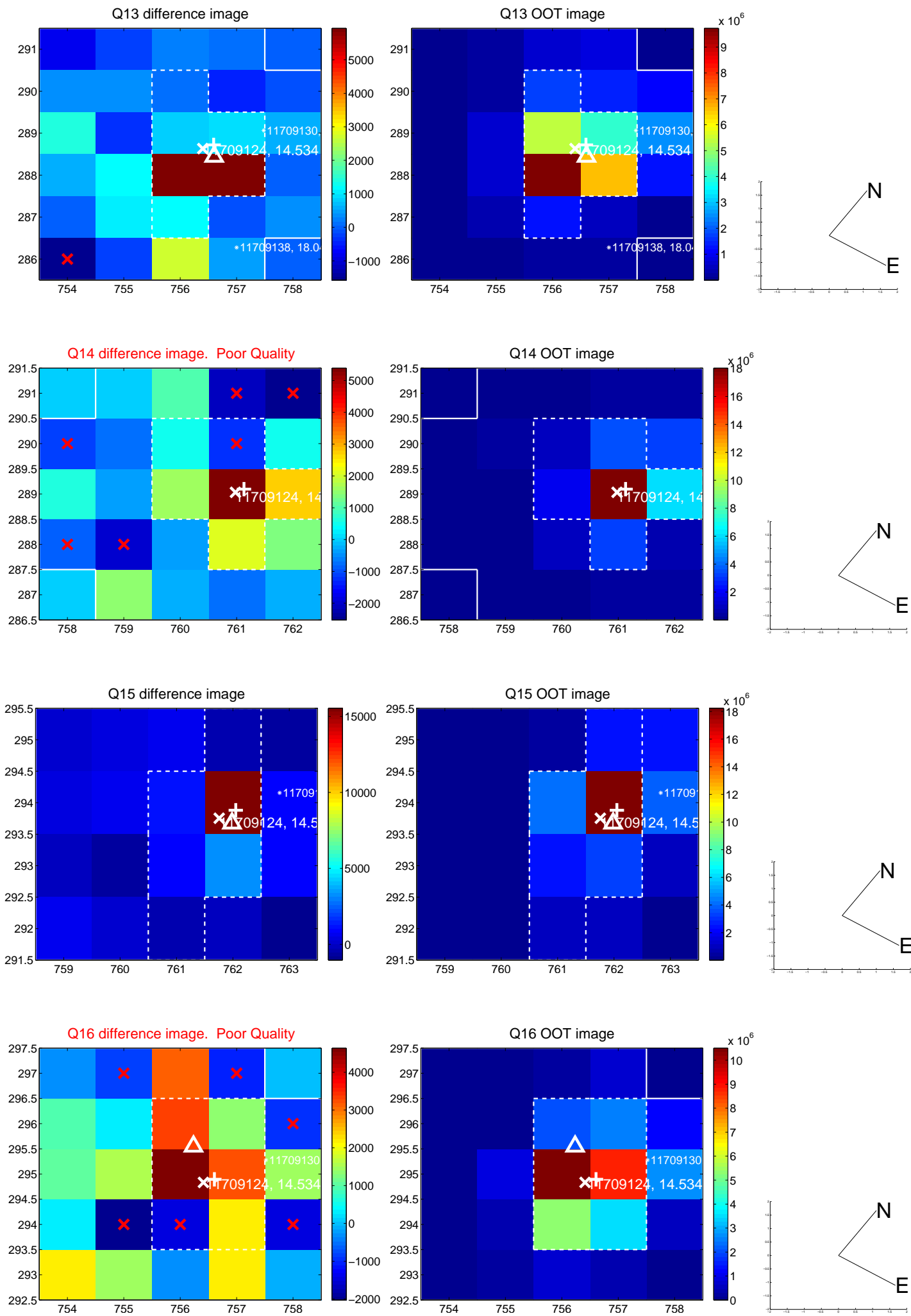
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



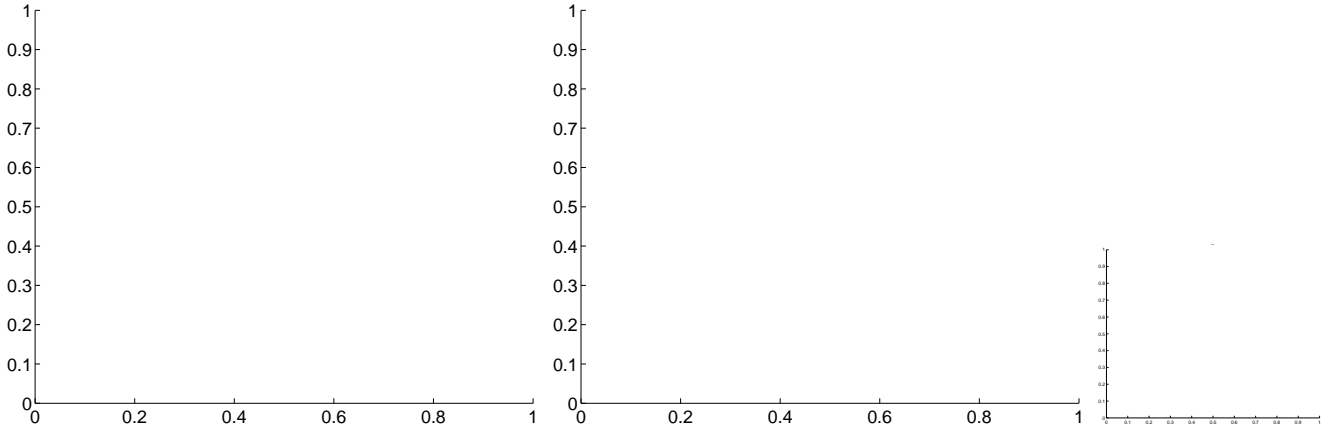
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



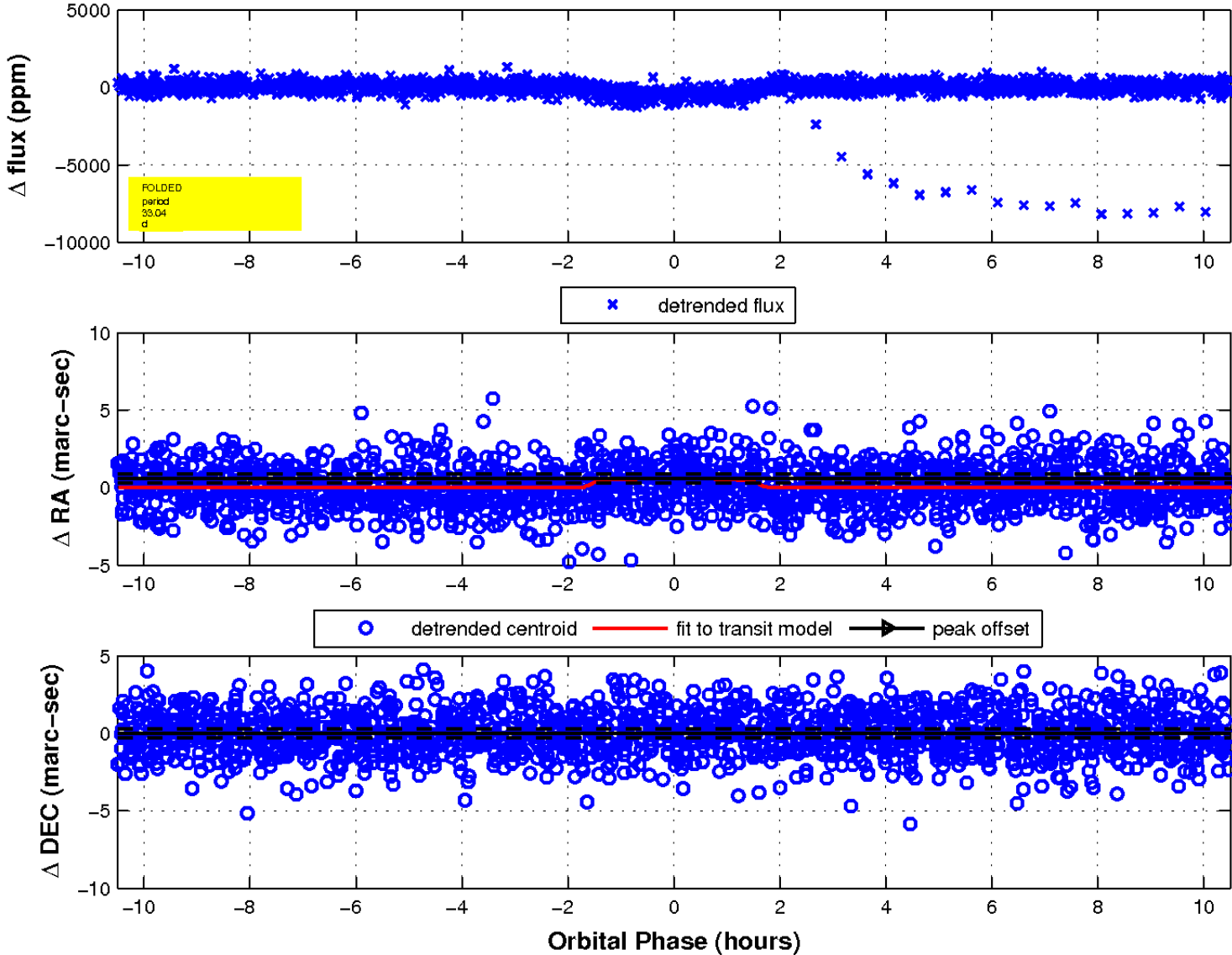
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q17 no difference image

Q17 no OOT image

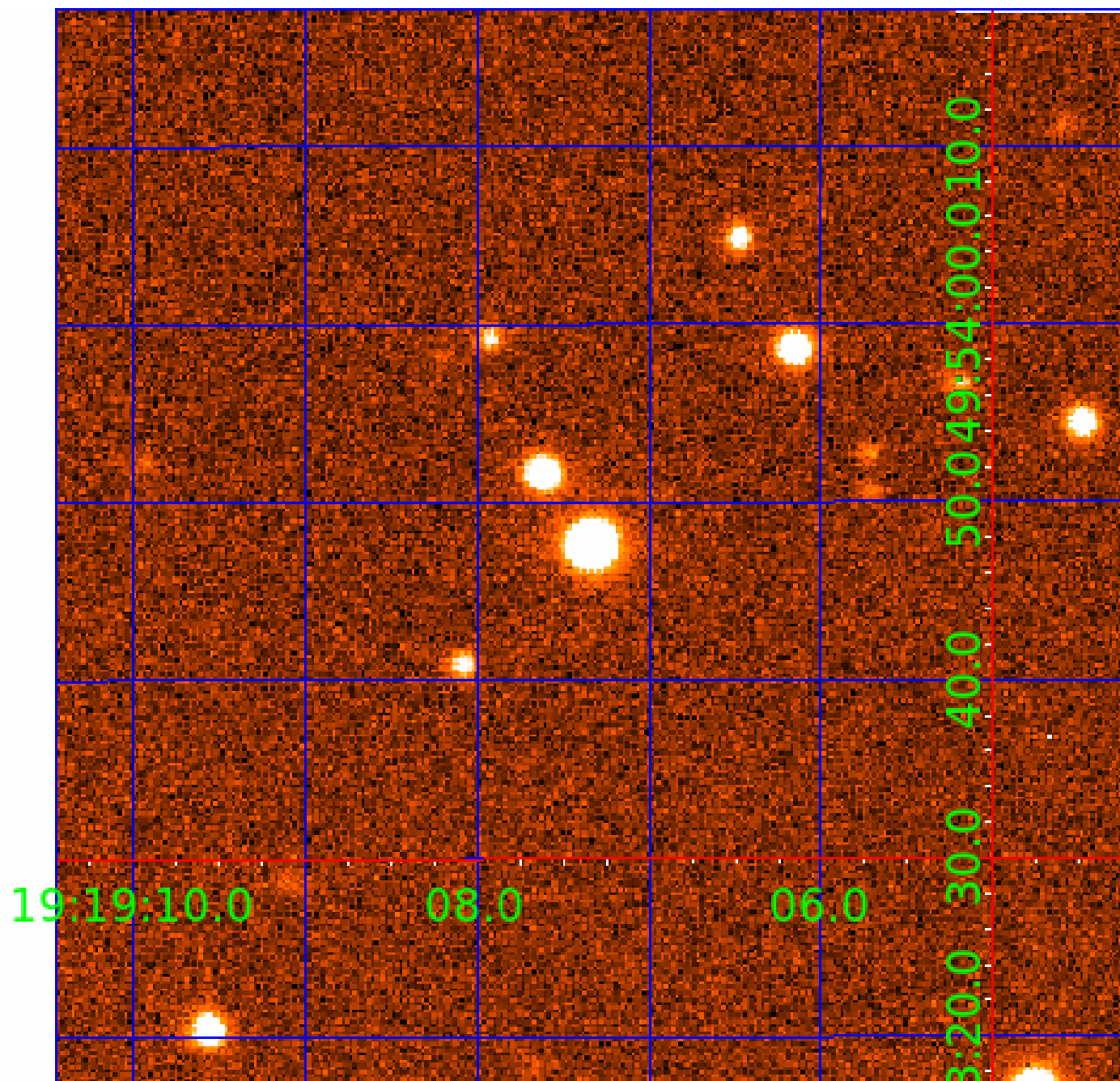


fluxWeightedCentroids, Planet 5 of 6



UKIRT Image

Declination



KIC 011709124

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})
011709124-01	OBS	0435.01	20.549791	137.848211	1563.5	5.574	93.7	96.0	0.97	5688	4.09	44.17
011709124-02	OBS	0435.05	62.302555	179.099592	841.3	7.600	33.3	33.1	0.97	5688	3.09	10.07
011709124-03	OBS	No	207.656092	241.824270	130.5	16.317	50.7	2.3	0.97	5688	1.38	2.02
011709124-04	OBS	0435.04	3.932747	134.652254	232.0	3.019	24.8	26.5	0.97	5688	1.75	400.51
011709124-05	OBS	0435.03	33.040544	161.223174	569.1	3.506	21.2	21.4	0.97	5688	2.65	23.45
011709124-06	OBS	0435.06	9.919405	136.870975	185.5	4.603	14.6	15.3	0.97	5688	1.57	116.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011709124-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
011709124-02	OBS	PC	0.92	0	0	0	0	CENT_KIC_POS
011709124-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
011709124-04	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
011709124-05	OBS	PC	0.88	0	0	0	0	CENT_KIC_POS
011709124-06	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

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

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

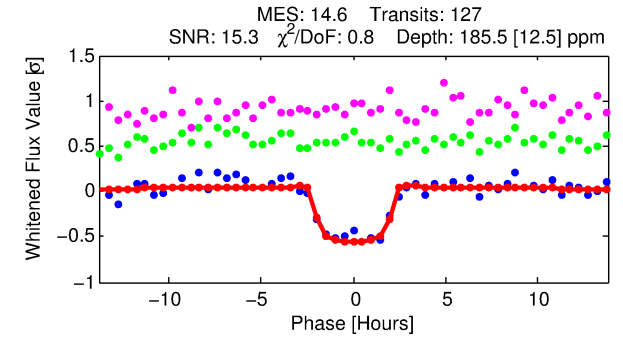
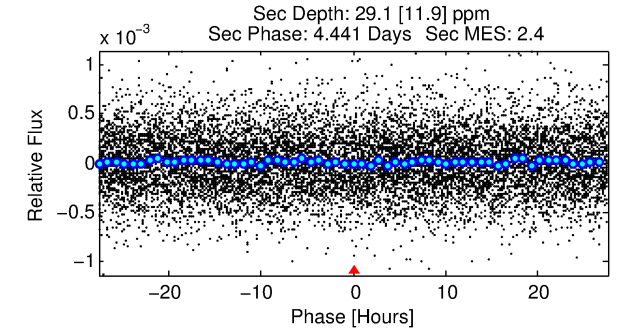
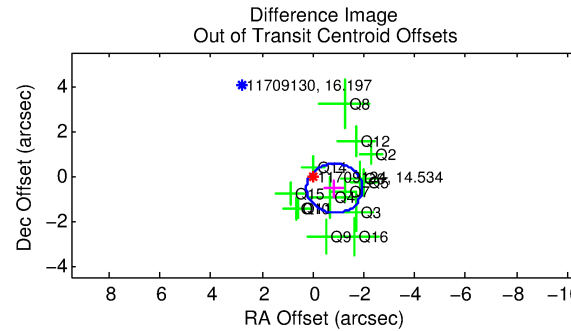
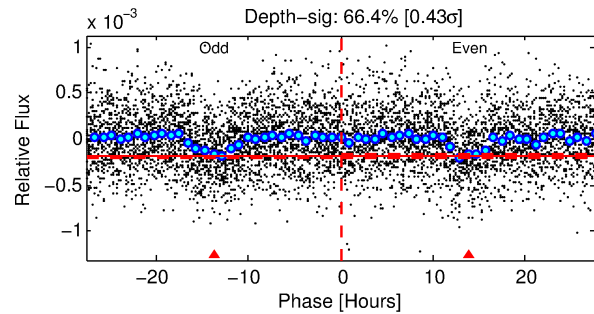
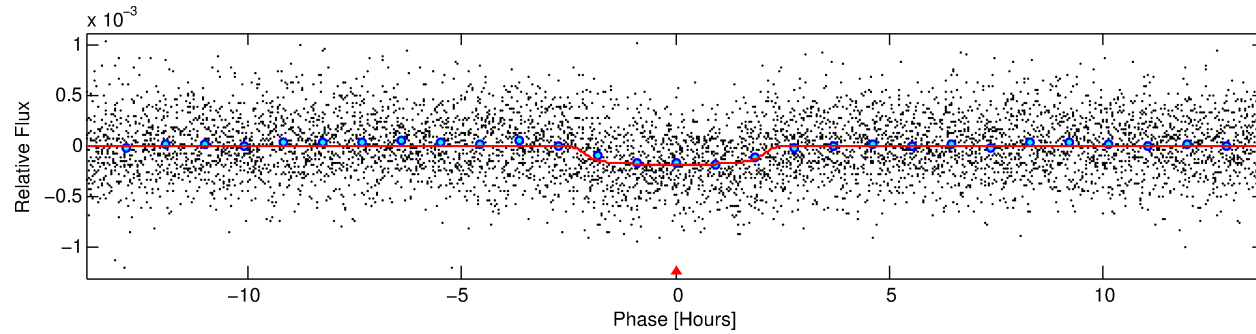
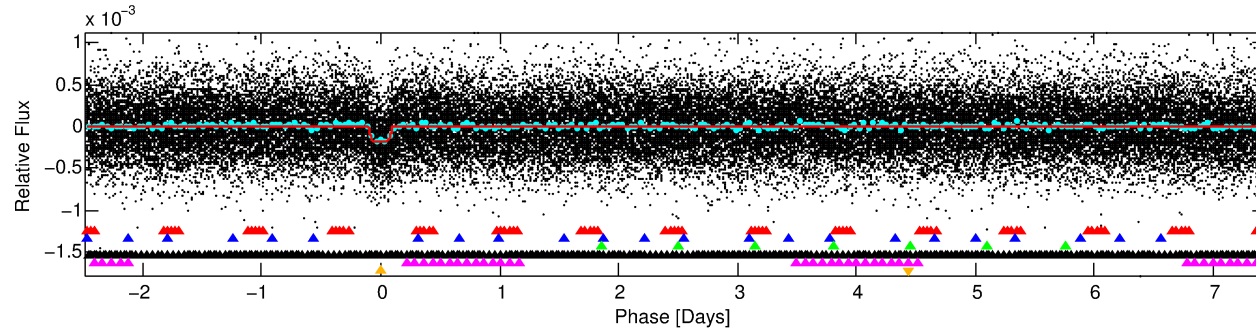
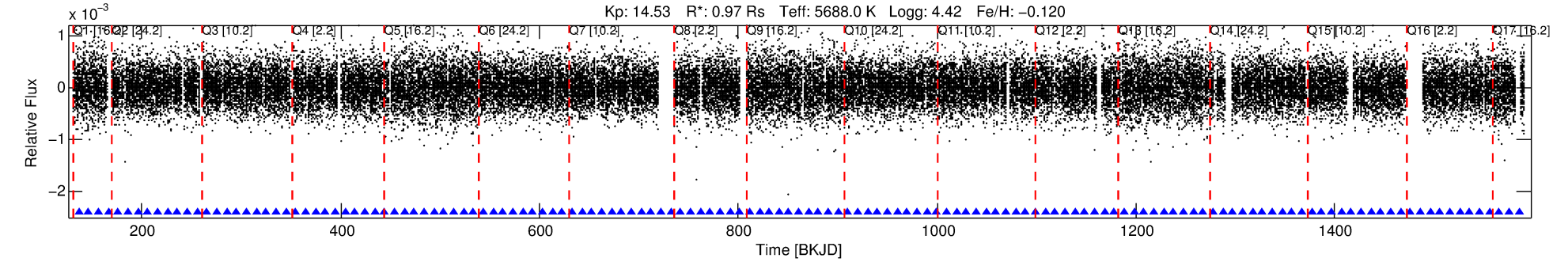
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011709124-06

No Significant Match Found

DV One-Page Summary

KIC: 11709124 Candidate: 6 of 6 Period: 9.919 d
KOI: K00435.06 Corr: 0.960



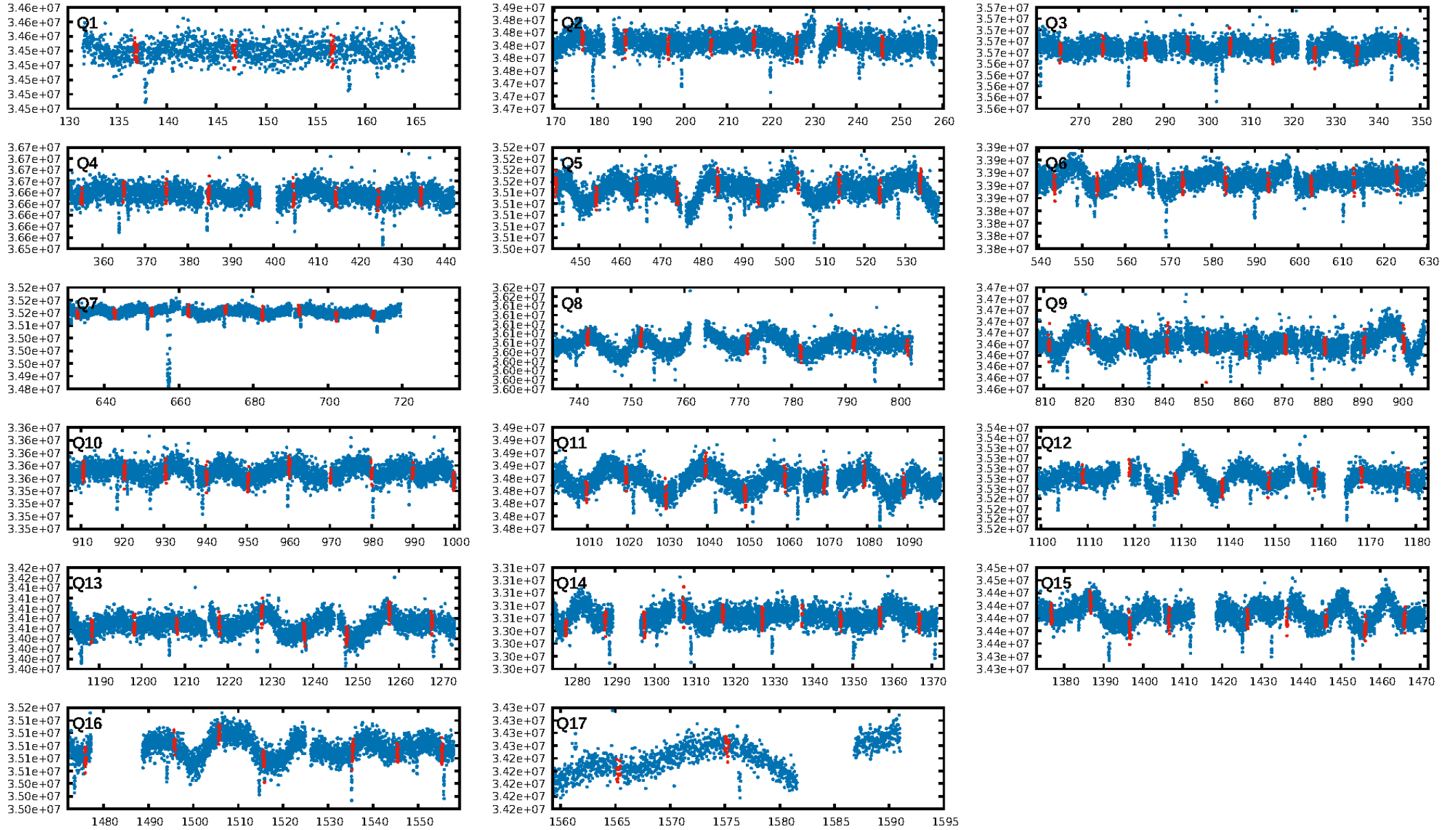
DV Fit Results:

Period = 9.91941 [0.00007] d
Epoch = 136.8710 [0.0056] BKJD
Rp/R* = 0.0148 [0.0037]
a/R* = 7.86 [9.03]
b = 0.90 [0.26]
Seff = 116.65 [22.69]
Teq = 838 [41] K
Rp = 1.57 [0.44] Re
a = 0.0871 [0.0102] AU
Ag = 49.39 [32.99] [1.47 σ]
Teffp = 3435 [557] K [4.65 σ]

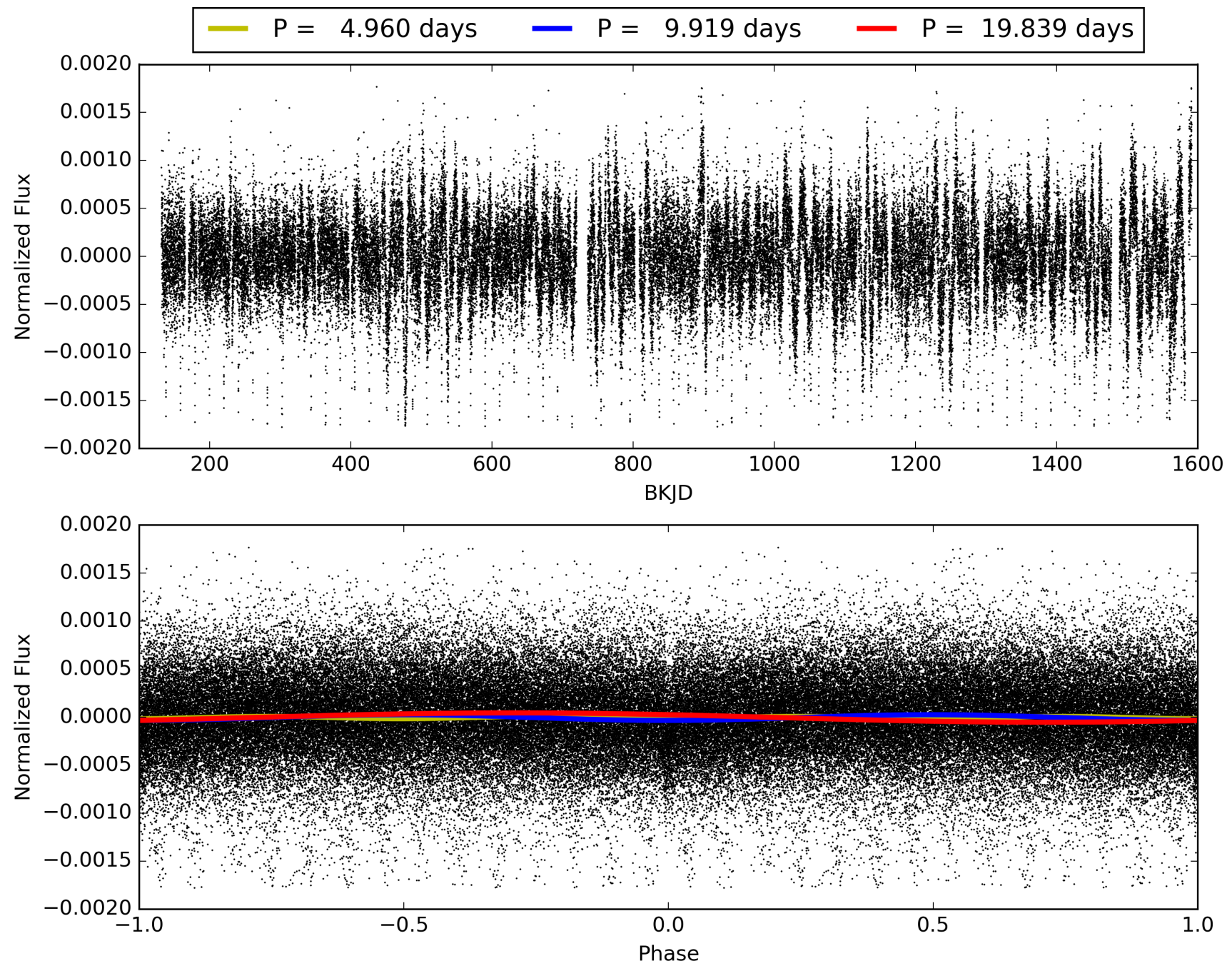
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [26.10 σ]
LongPeriod-sig: 100.0% [35.29 σ]
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.68e-45
RollingBand-fgt: 1.00 [122/122]
GhostDiagnostic-chr: 1.788
Centroid-sig: 0.0%
Centroid-so: 1.185 arcsec [1.65 σ]
OotOffset-rm: 1.016 arcsec [2.78 σ]
KicOffset-rm: 0.428 arcsec [1.17 σ]
OotOffset-st: 4/4/4/2 [14]
KicOffset-st: 4/4/4/2 [14]
DiffImageQuality-fgm: 0.79 [11/14]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 011709124-06, PDC Light Curves

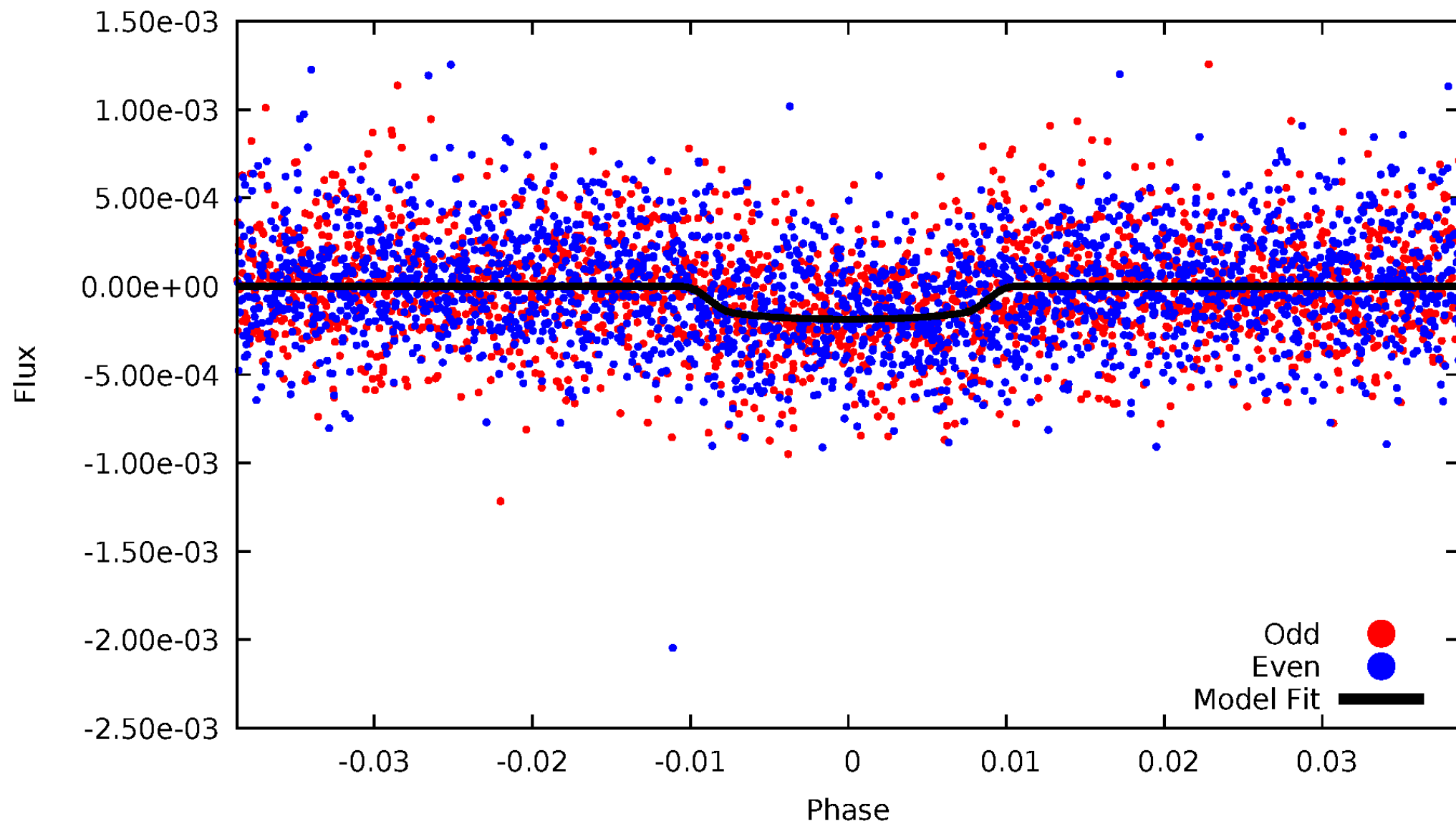


TCE 011709124-06



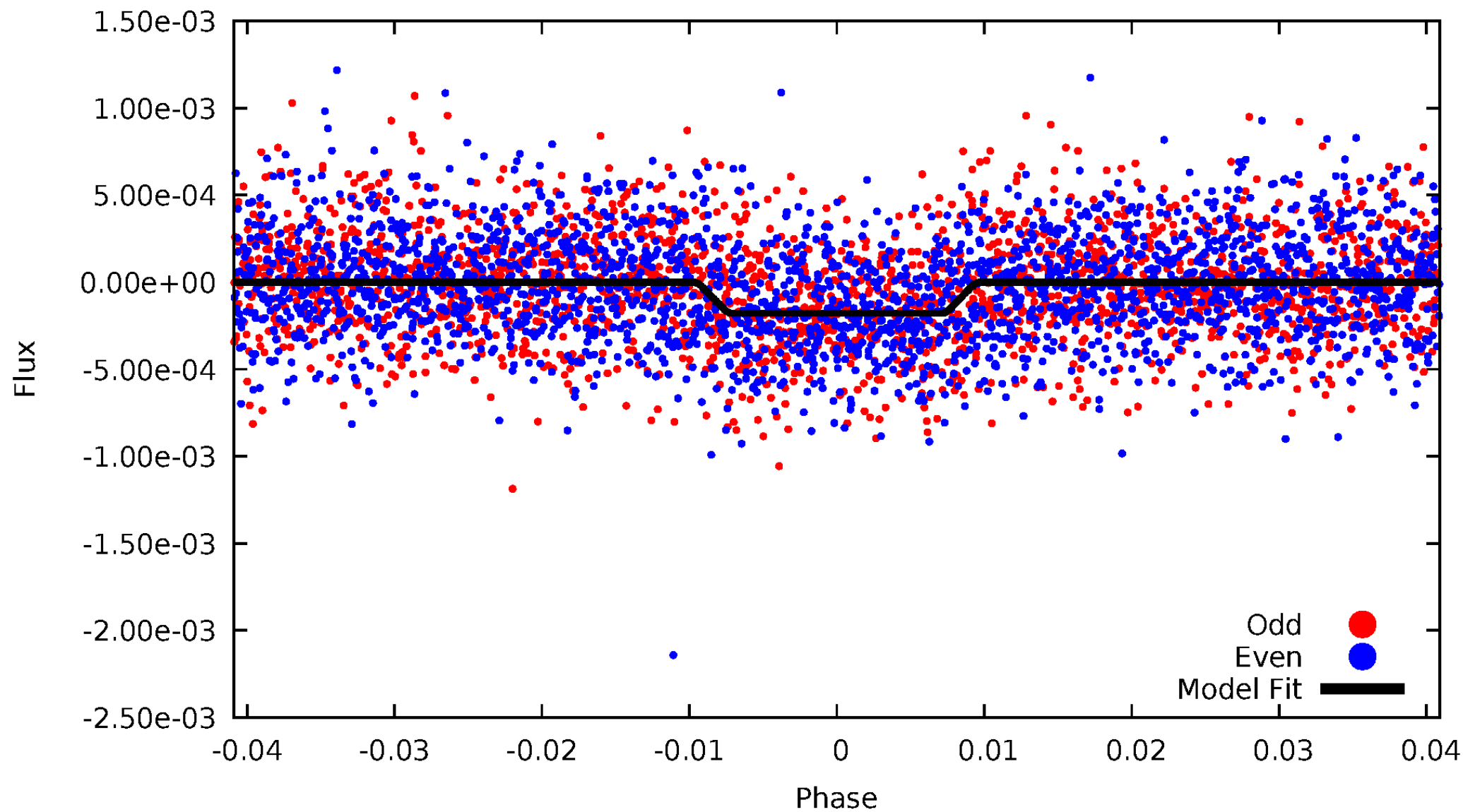
DV Odd/Even

TCE 011709124-06



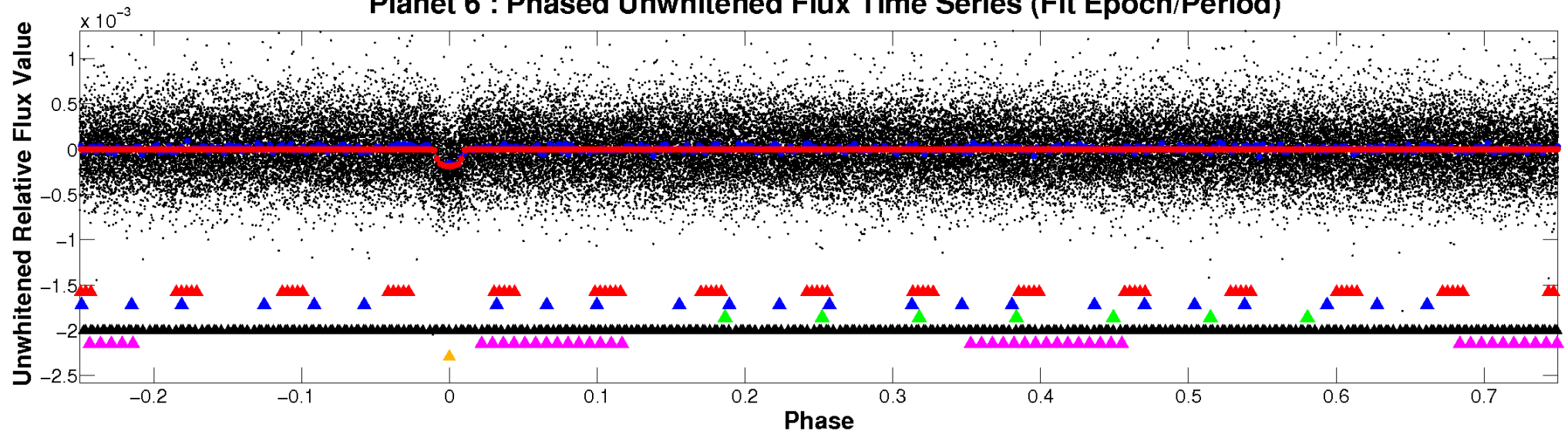
ALT Odd/Even

TCE 011709124-06

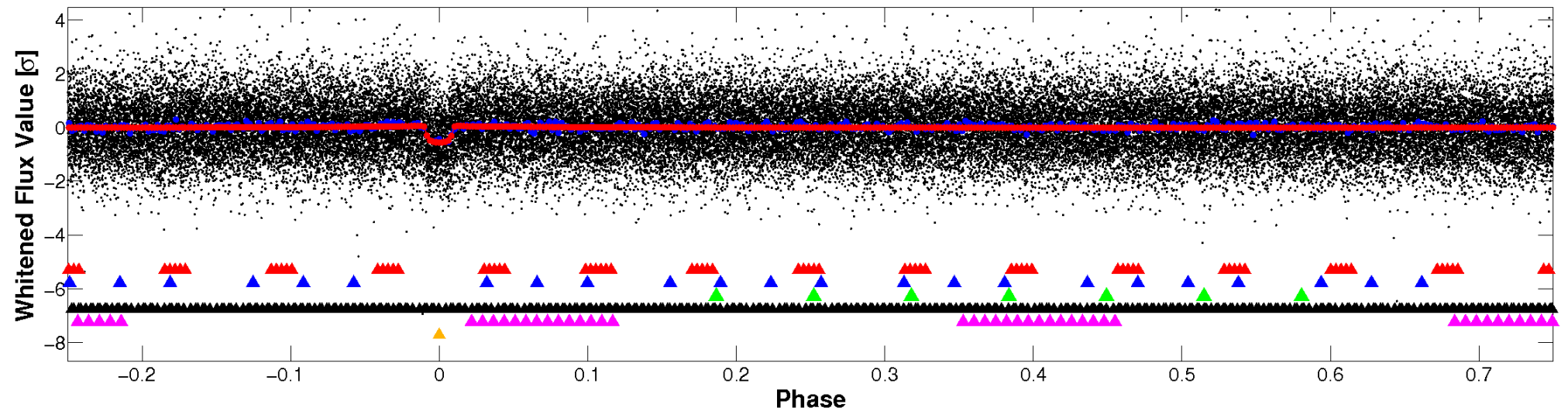


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

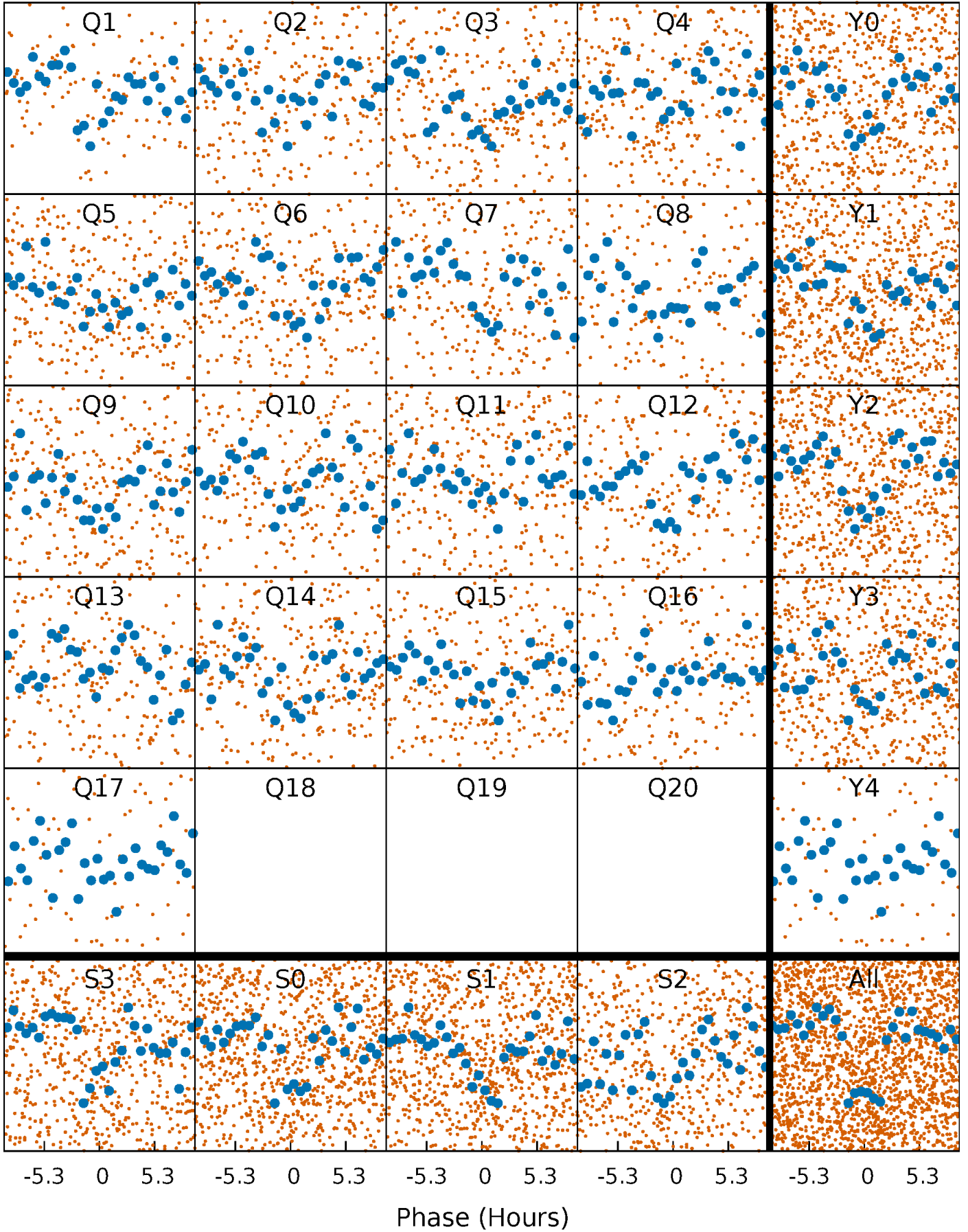


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



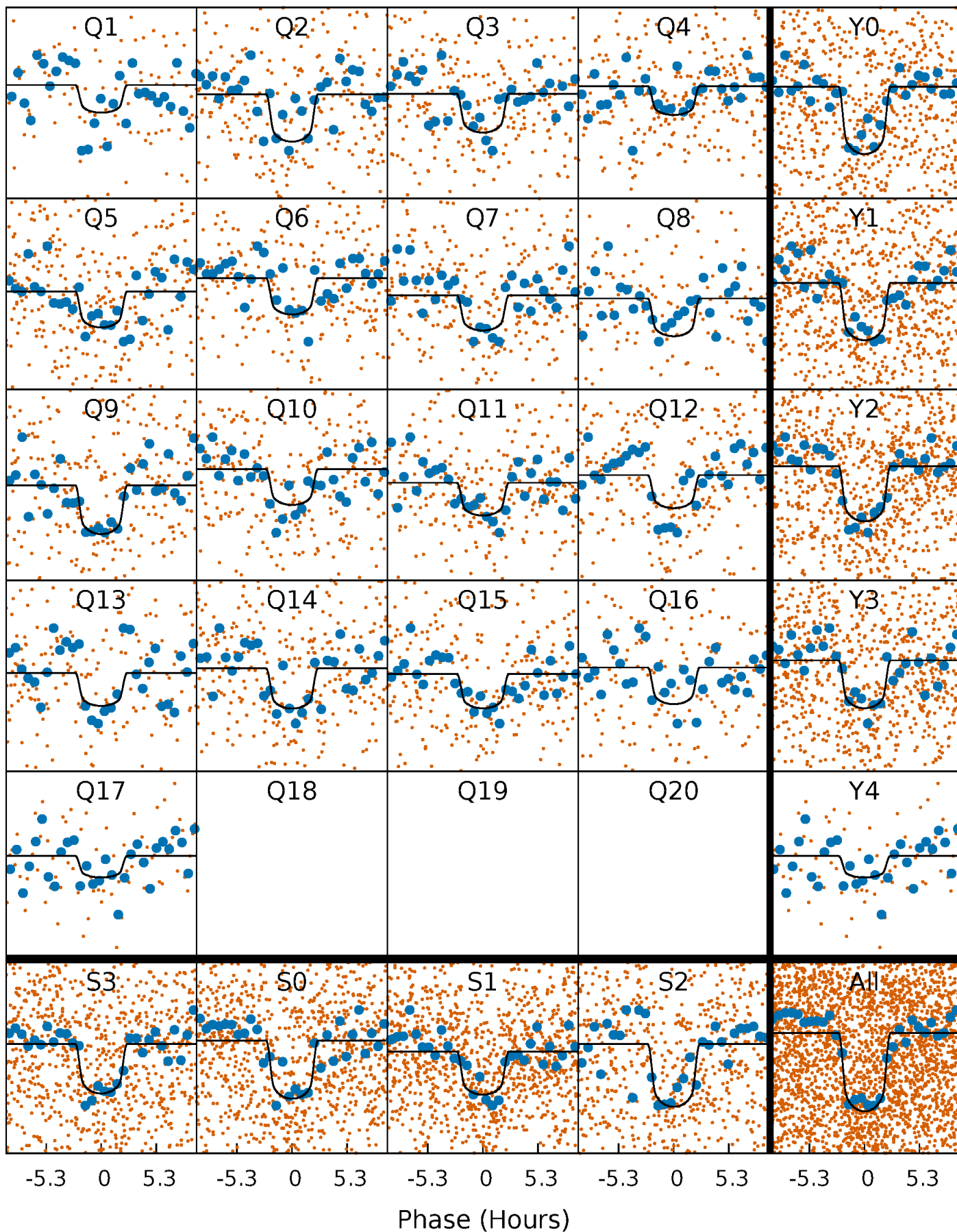
PDC Quarter-Phased Transit Curves

TCE 011709124-06 P= 9.919405 Days $T_0=136.870975$ (BKJD)



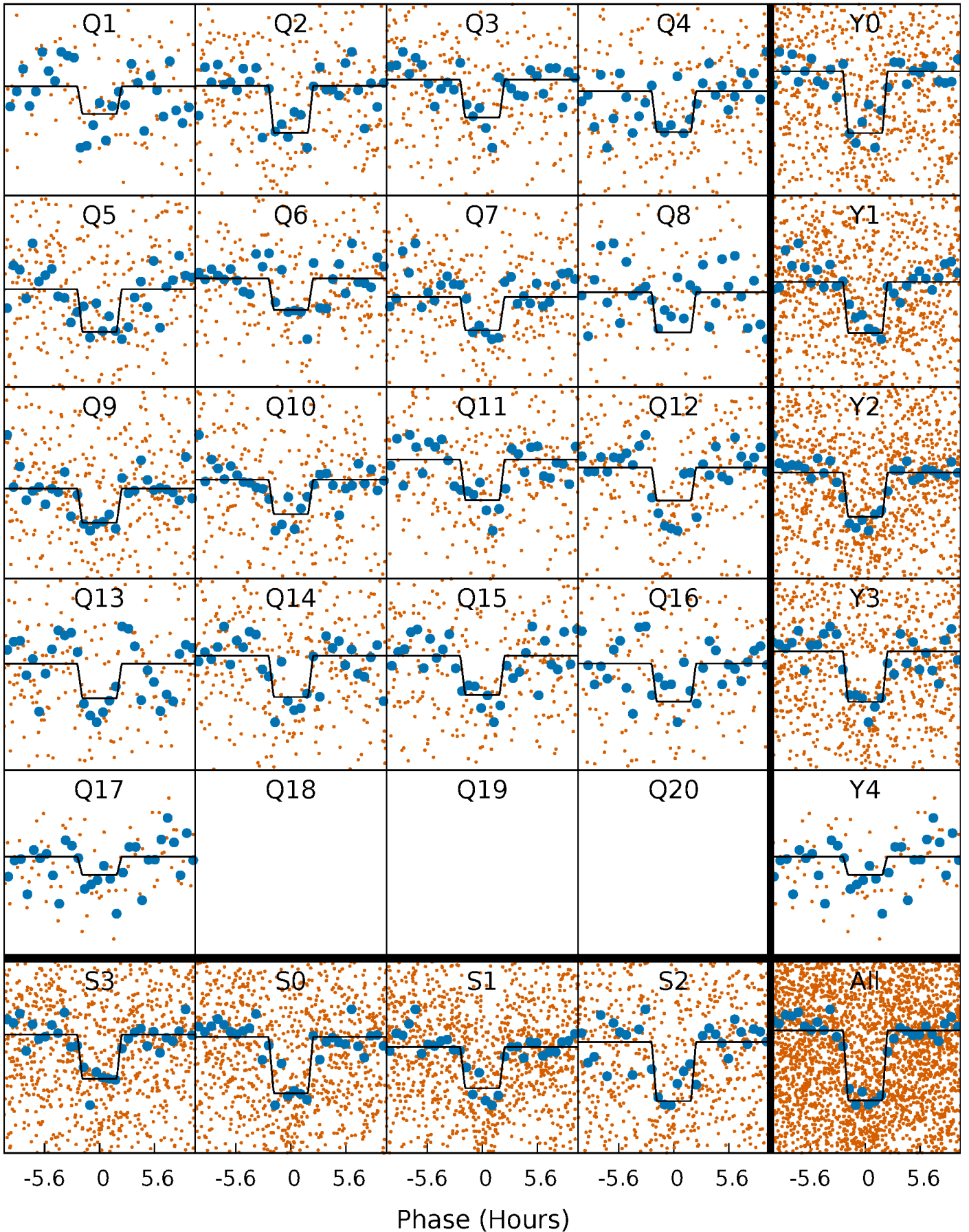
DV Quarter-Phased Transit Curves

TCE 011709124-06 P= 9.919405 Days $T_0=136.870975$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

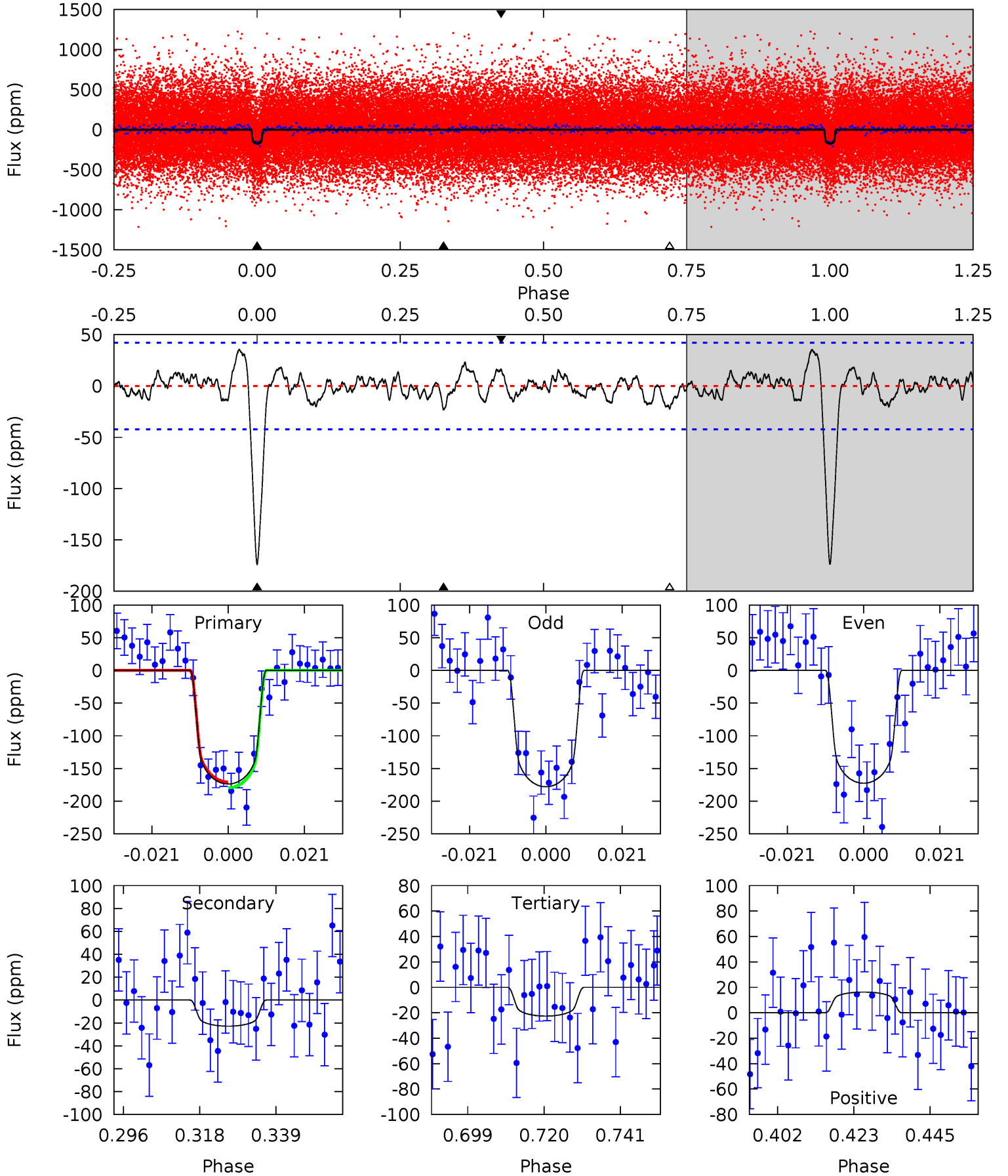
TCE 011709124-06 P= 9.919427 Days $T_0=136.869210$ (BKJD)



DV Model-Shift Uniqueness Test

011709124-06, P = 9.919405 Days, E = 126.951570 Days

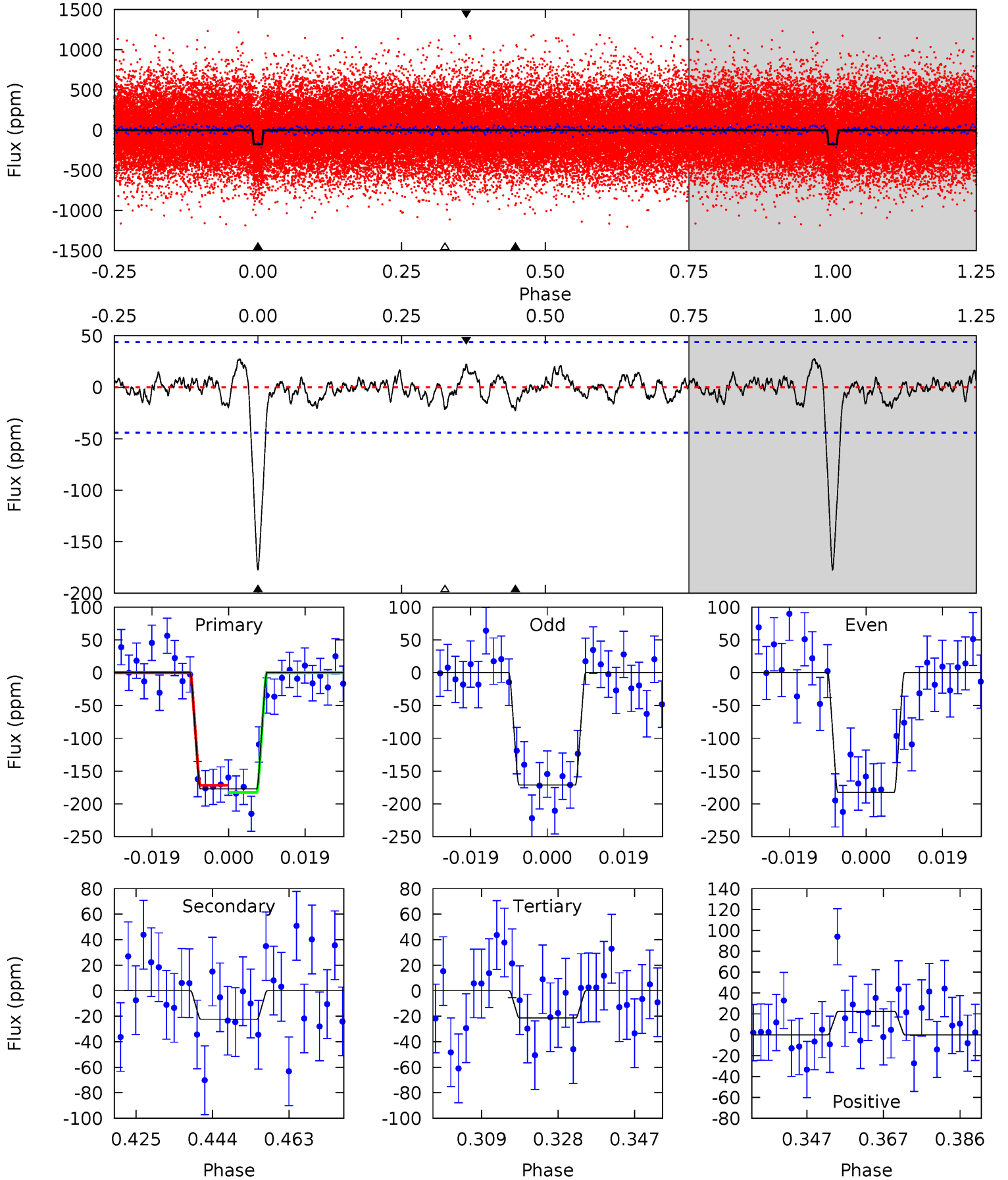
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.1	2.65	2.62	1.89	4.88	2.30	1.13	17.5	18.2	0.02	0.76	0.31	0.91	0.17	0.51



Alt Model-Shift Uniqueness Test

011709124-06, P = 9.919427 Days, E = 126.949783 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	2.50	2.39	2.50	4.90	2.34	0.97	17.4	17.2	0.11	0.00	0.62	0.93	0.13	0.60



Stellar Parameters For KIC 011709124

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5688^{+113}_{-101}	$4.415^{+0.100}_{-0.100}$	$-0.120^{+0.150}_{-0.150}$	$0.971^{+0.130}_{-0.095}$	$0.895^{+0.071}_{-0.052}$	$1.377^{+0.567}_{-0.434}$
	+2%/-2%	+2%/-2%	+125%/-125%	+13%/-10%	+8%/-6%	+41%/-32%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 011709124-06 / KOI 0435.06

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-23 ± 9	$1.55^{+0.40}_{-0.38}$	1169^{+49}_{-46}	3644^{+411}_{-358}	39^{+33}_{-19}
Alt.	-22 ± 9	$1.43^{+0.43}_{-0.40}$	1172^{+49}_{-44}	3734^{+539}_{-421}	44^{+50}_{-24}

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

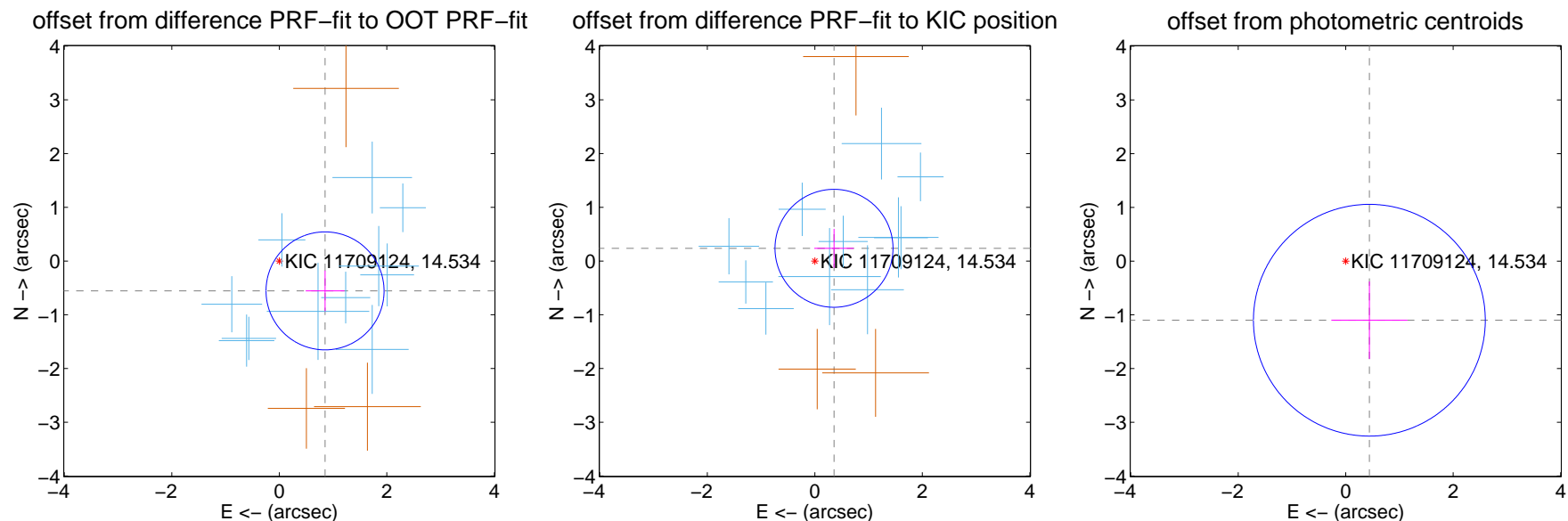
DV Centroid Data

Supplemental centroid analysis for 011709124-06. Kepler magnitude: 14.53. Transit SNR 15.26

There are 11 quarters with good PRF difference image offsets

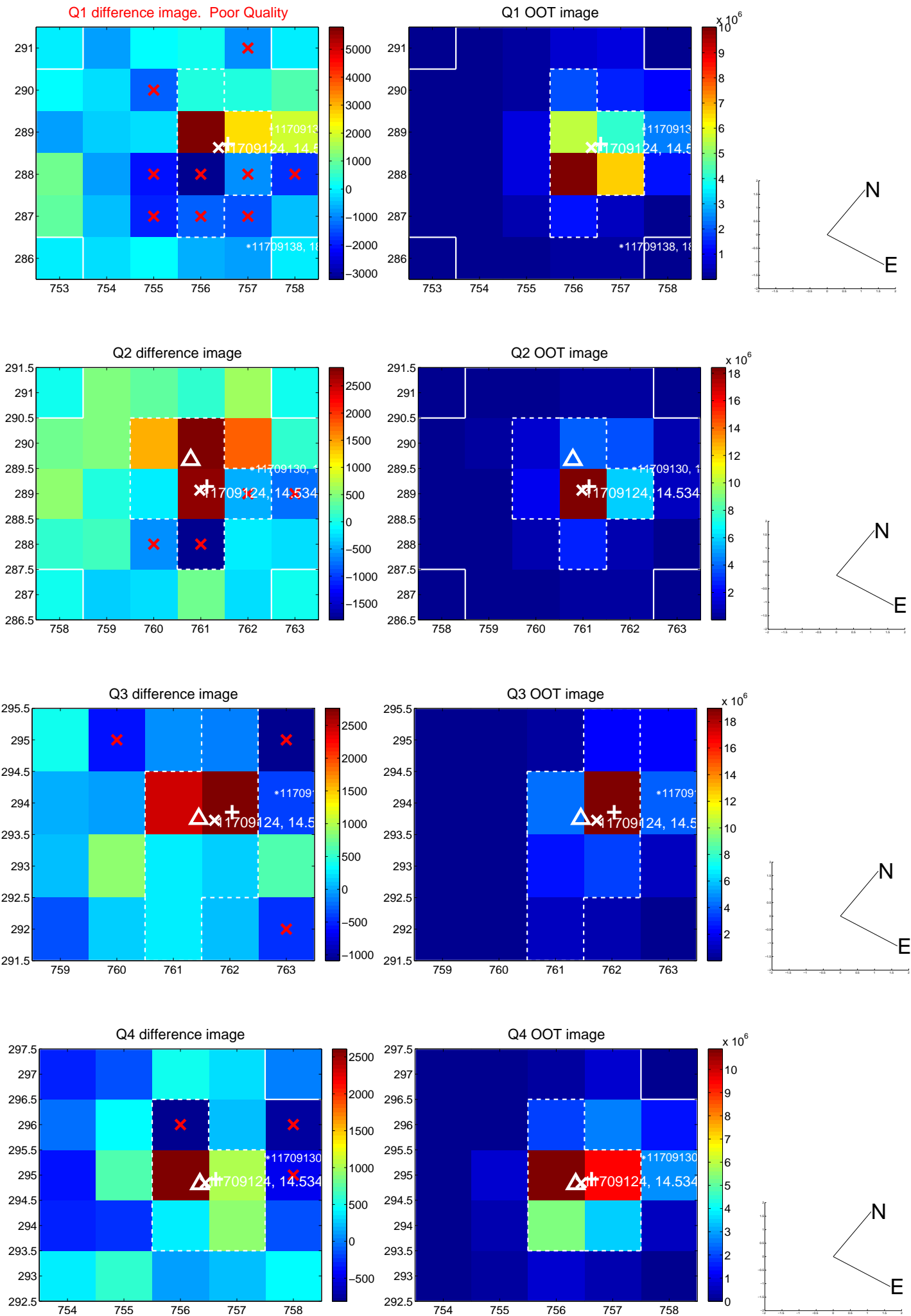
The direct PRF centroid is offset from the target star catalog position by about 0.81 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.016 ± 0.366	2.78	-0.851 ± 0.361	-0.555 ± 0.378
PRF-fit source offset from KIC position	0.428 ± 0.366	1.17	-0.357 ± 0.367	0.237 ± 0.363
photometric centroid source offset	1.19 ± 0.72	1.65	-0.44 ± 0.71	-1.10 ± 0.72

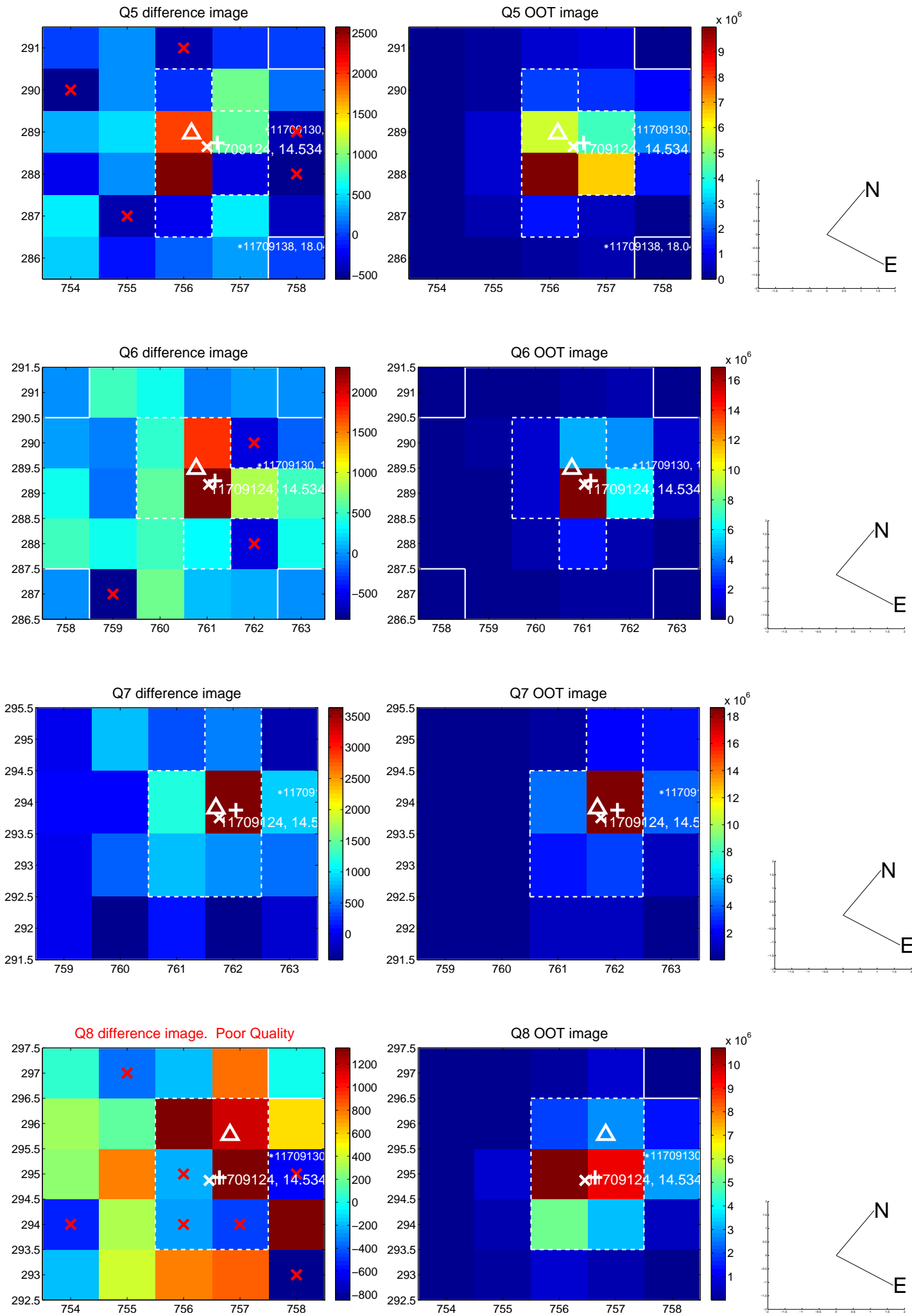


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

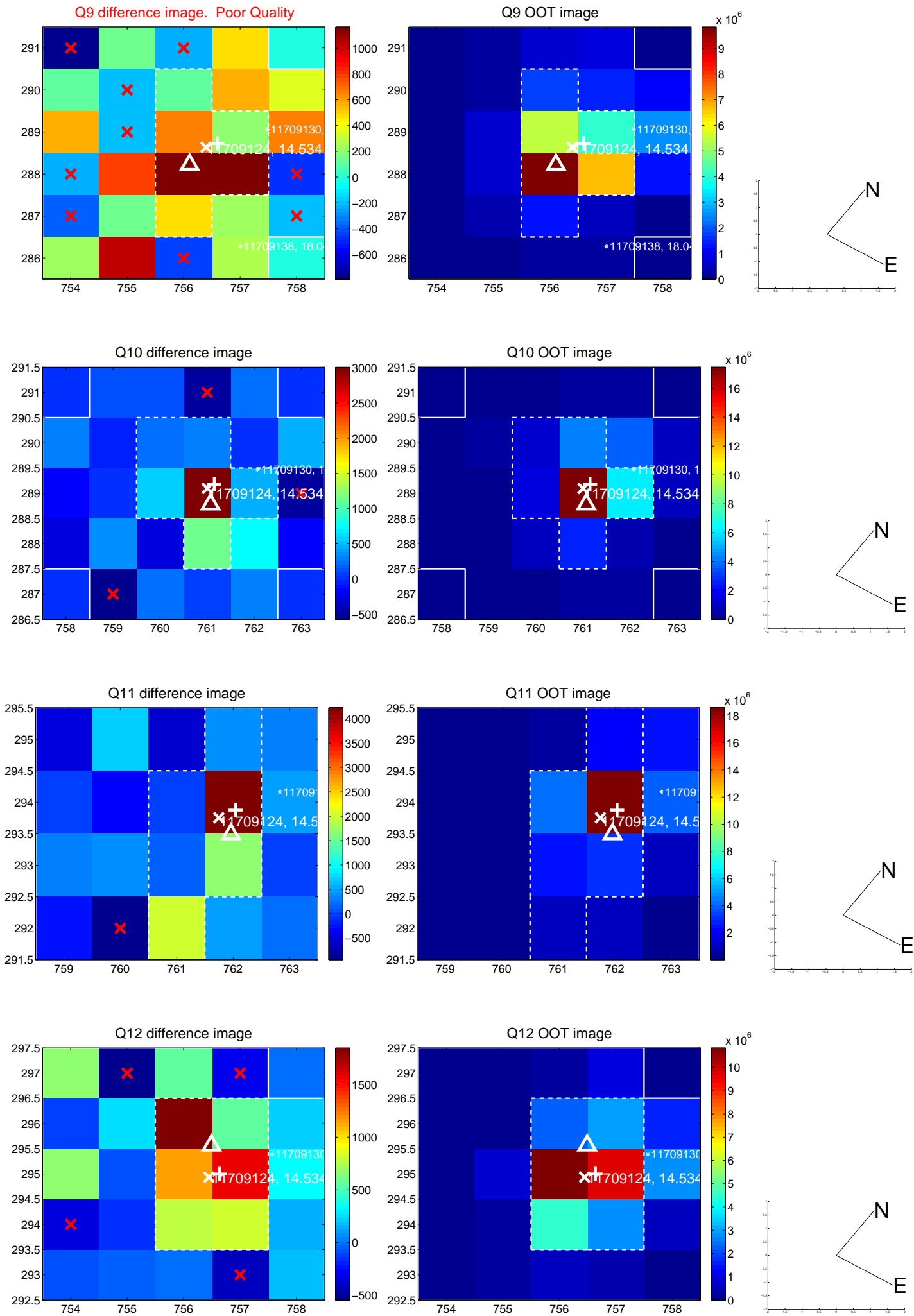
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



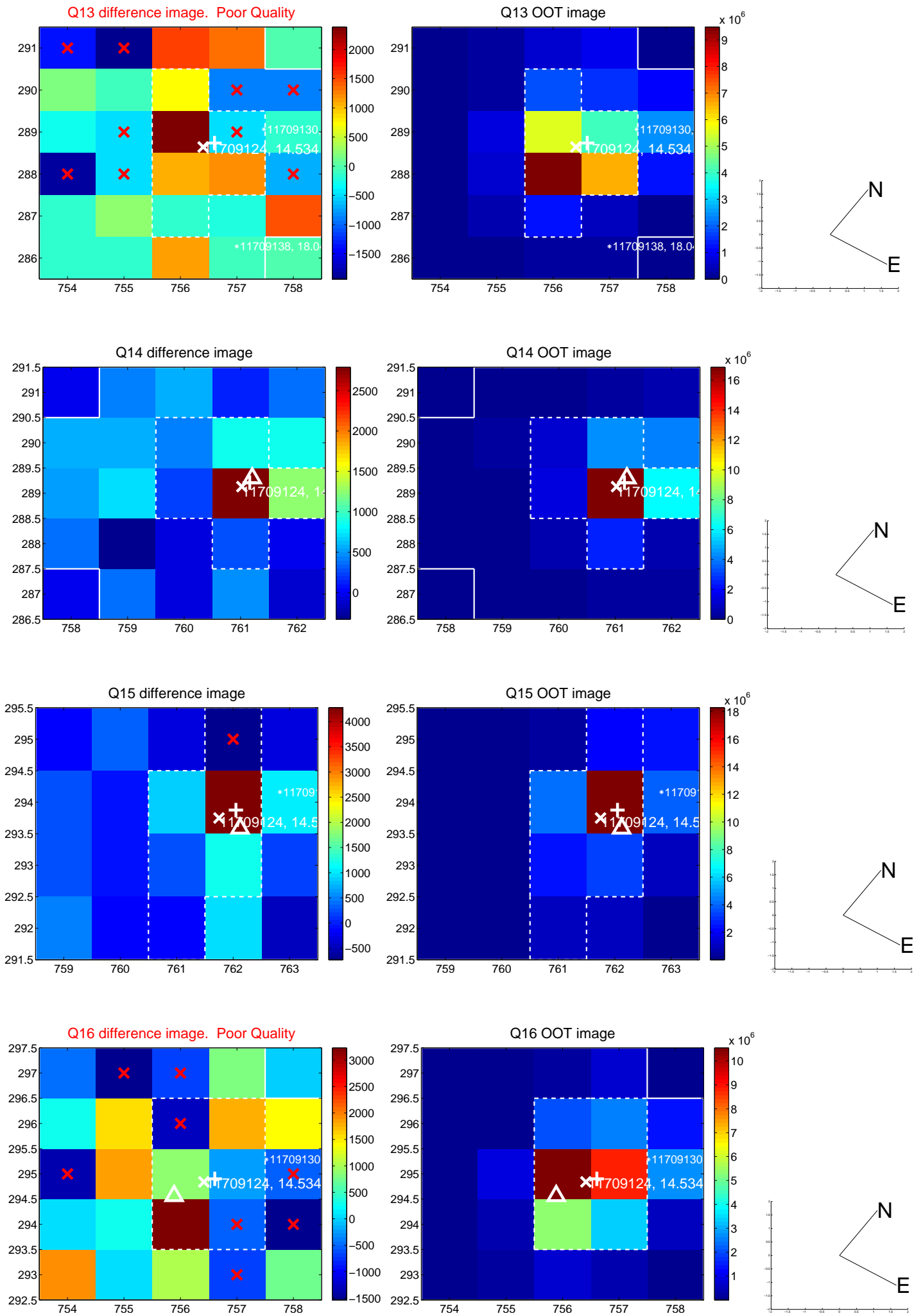
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



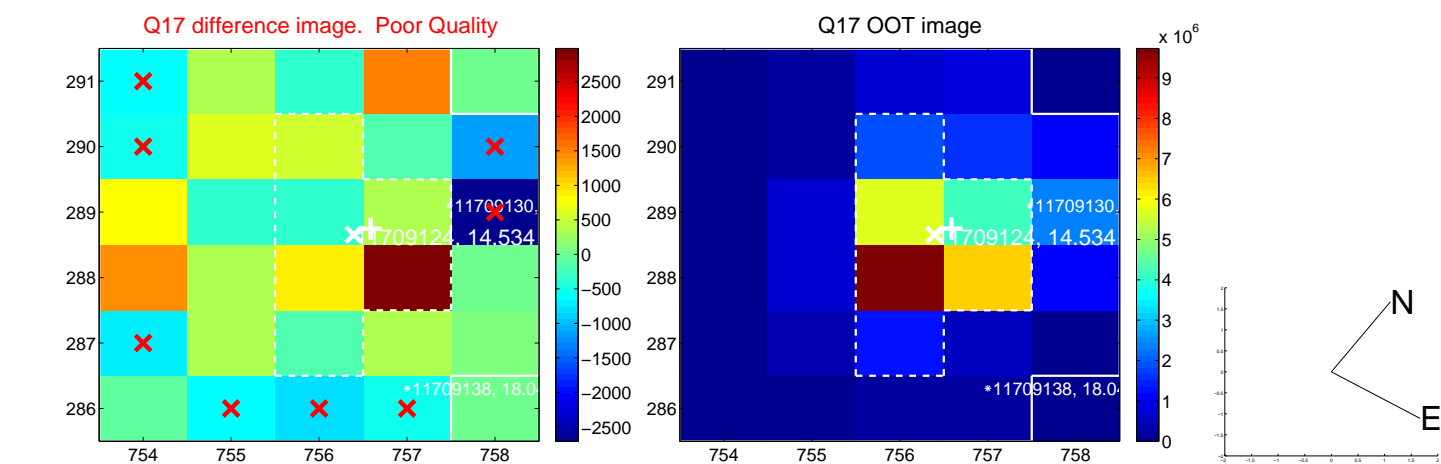
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



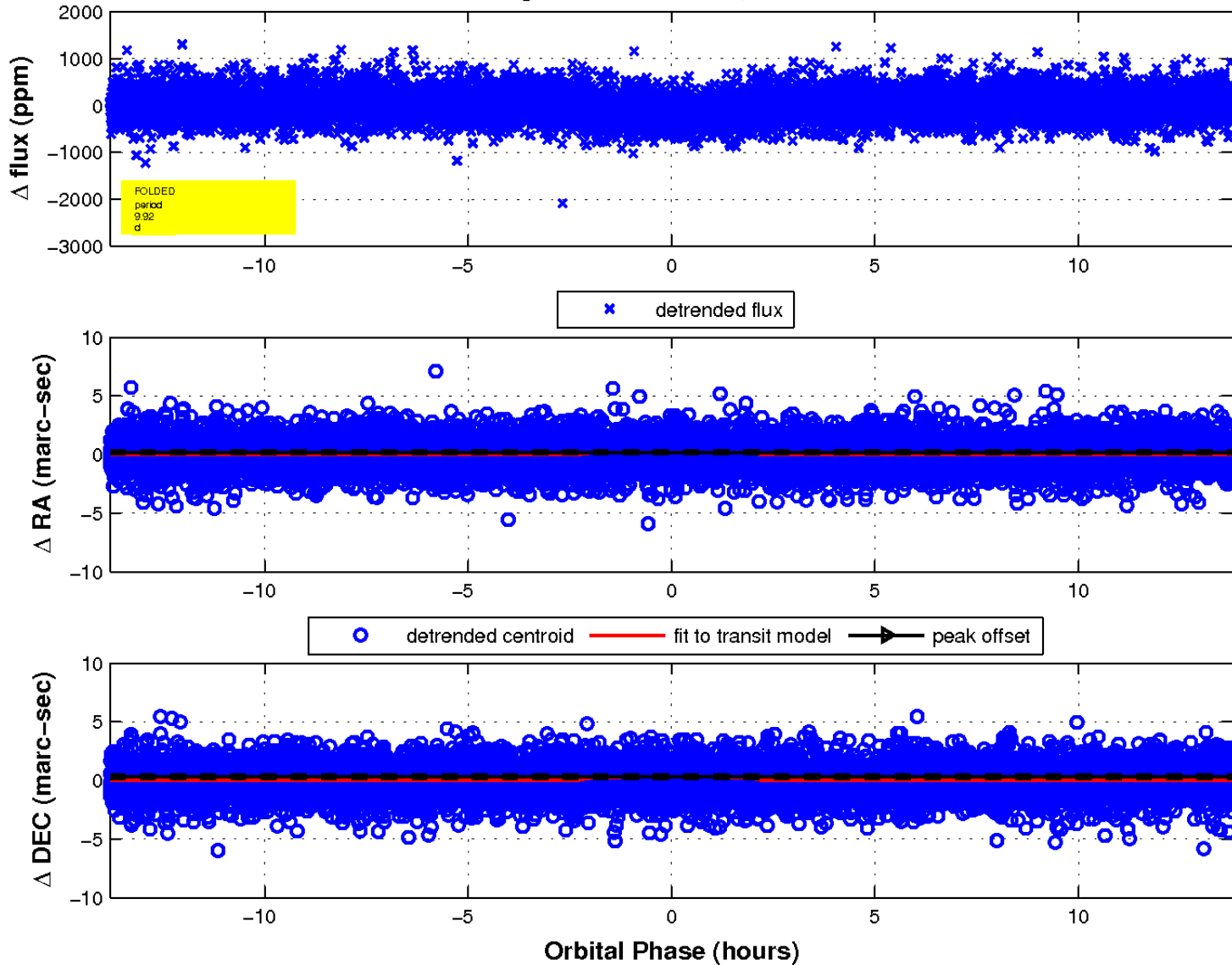
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 6 of 6



UKIRT Image

Declination

