

KIC 007708418

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})
007708418-01	OBS	No	0.751426	131.840283	5.1	4.269	8.9	3.5	1.89	7311	0.43	26008.07
007708418-02	OBS	No	60.039056	167.835095	125.4	4.326	8.7	8.1	1.89	7311	2.46	75.58
007708418-03	OBS	No	39.311786	134.109745	124.6	3.794	8.3	8.8	1.89	7311	2.37	132.92
007708418-04	OBS	No	320.817673	175.830844	190.7	3.069	8.1	8.1	1.89	7311	3.02	8.09
007708418-05	OBS	No	148.141121	223.849097	217.9	3.309	8.2	8.8	1.89	7311	3.03	22.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007708418-01	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST
007708418-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
007708418-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007708418-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007708418-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

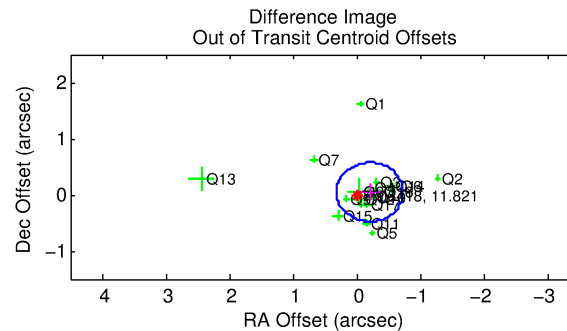
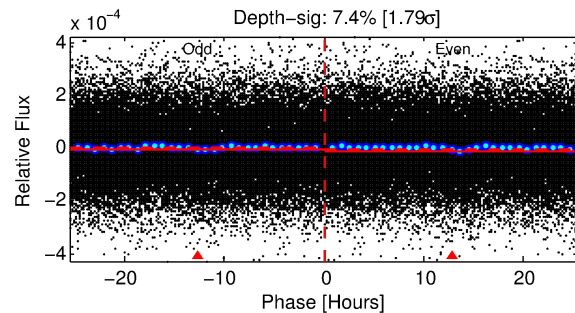
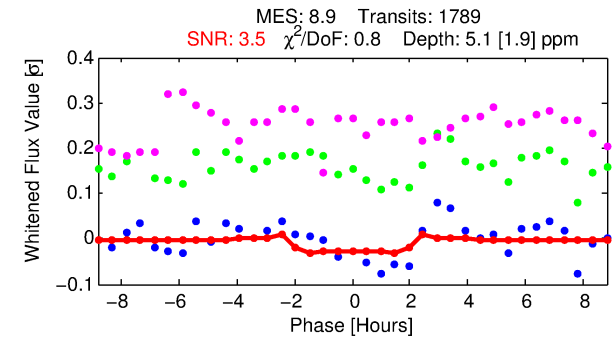
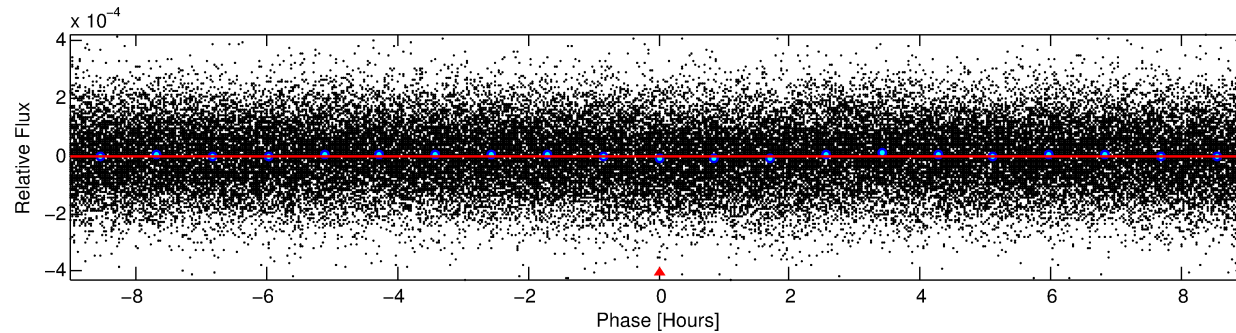
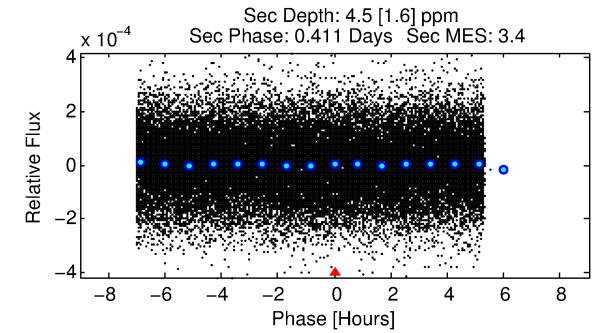
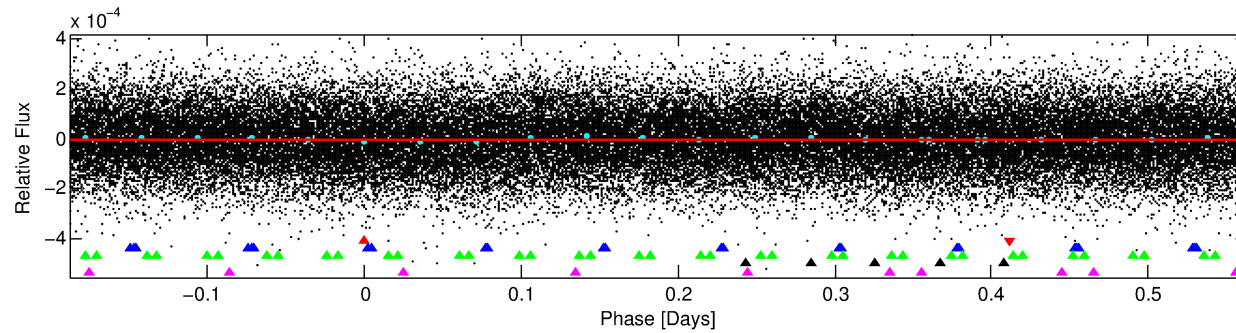
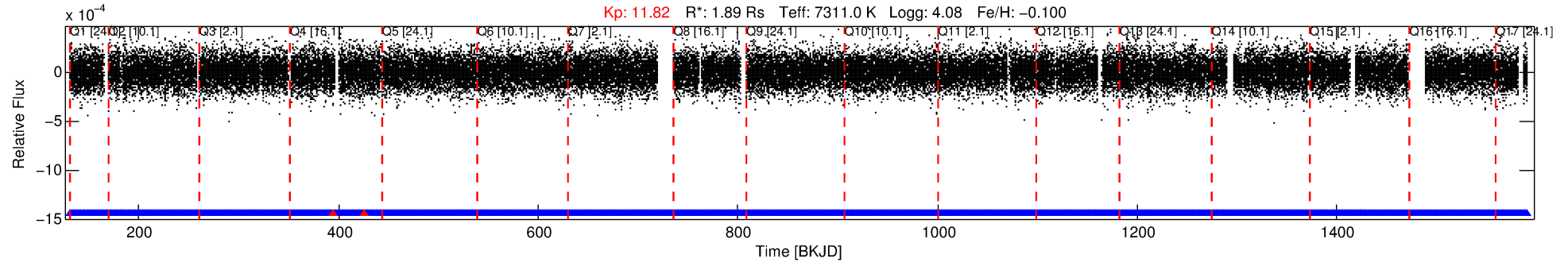
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007708418-01

No Significant Match Found

DV One-Page Summary

KIC: 7708418 Candidate: 1 of 5 Period: 0.751 d



DV Fit Results:

Period = 0.75143 [0.00003] d
Epoch = 131.8403 [0.0087] BKJD
Rp/R* = 0.0021 [0.0042]
a/R* = 1.48 [9.69]
b = 0.01 [1170.71]
Seff = 26008.07 [9823.63]
Teq = 3238 [306] K
Rp = 0.43 [0.88] Re
a = 0.0187 [0.0045] AU
Ag = 4.57 [18.48] [0.19σ]
Teffp = 7321 [7377] K [0.55σ]

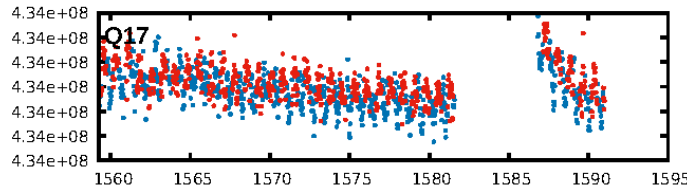
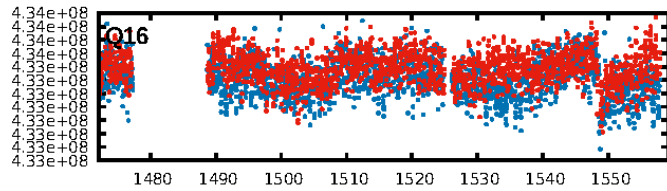
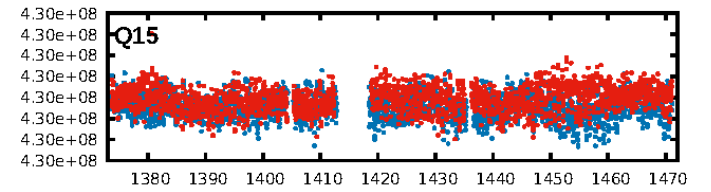
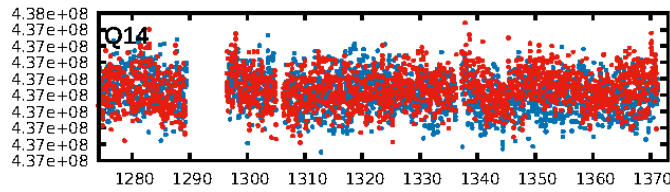
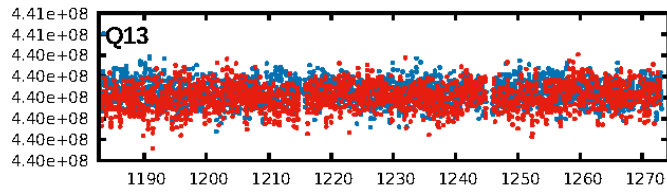
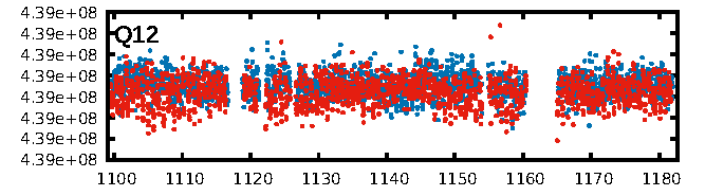
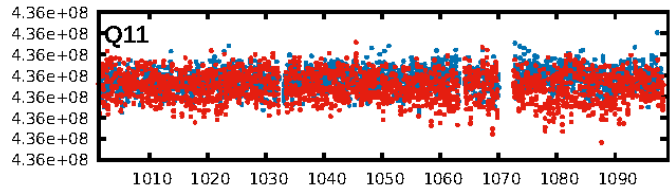
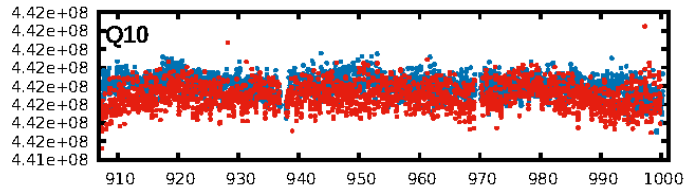
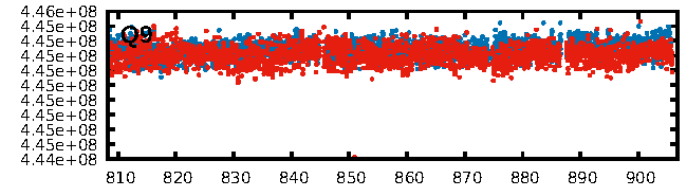
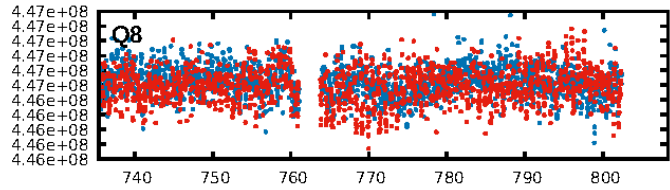
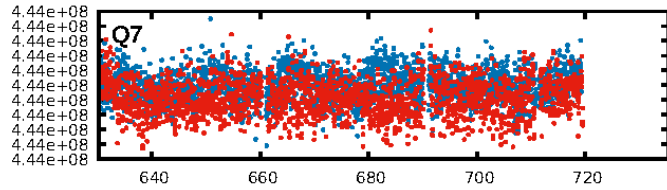
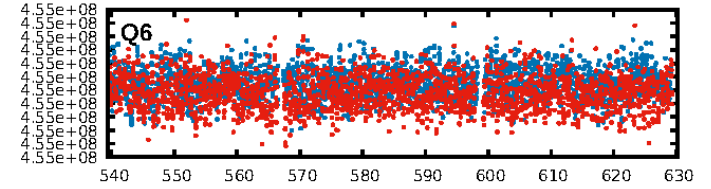
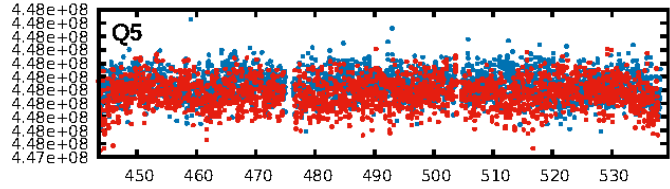
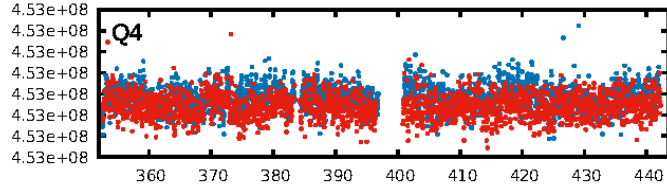
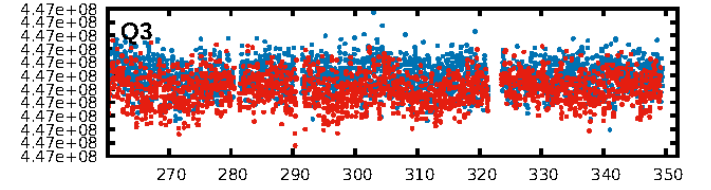
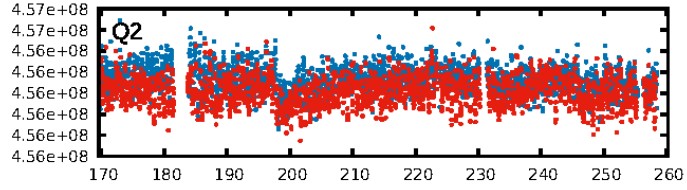
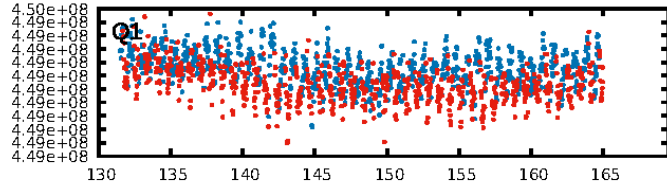
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [162.05σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.15e-12
RollingBand-fgt: 1.00 [1707/1709]
GhostDiagnostic-chr: 0.1553
Centroid-sig: 0.0%
Centroid-so: 6.451 arcsec [2.93σ]
OotOffset-rm: 0.213 arcsec [1.22σ]
KicOffset-rm: 0.251 arcsec [1.43σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.71 [12/17]
DiffImageOverlap-fno: 1.00 [17/17]

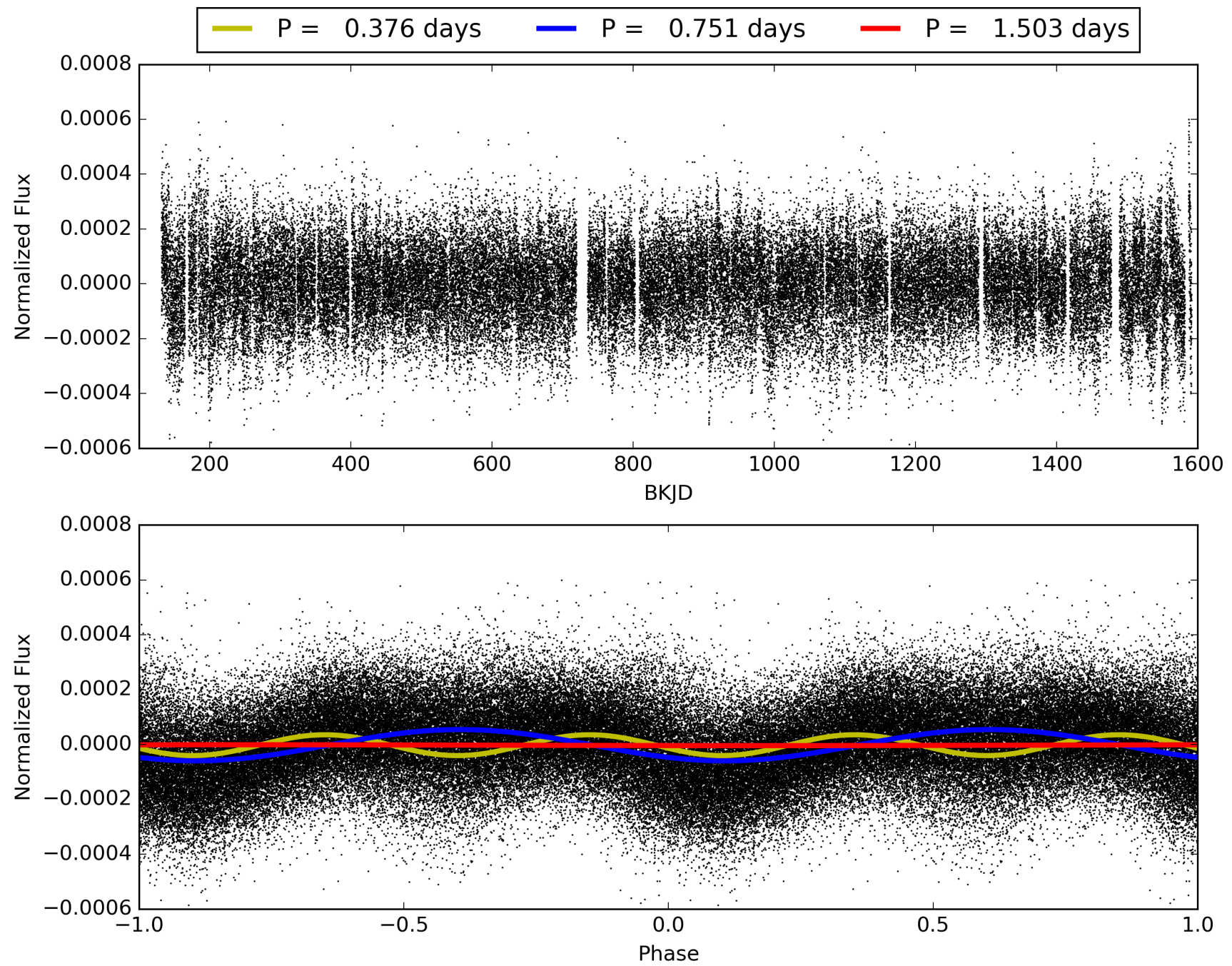
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007708418-01, PDC Light Curves

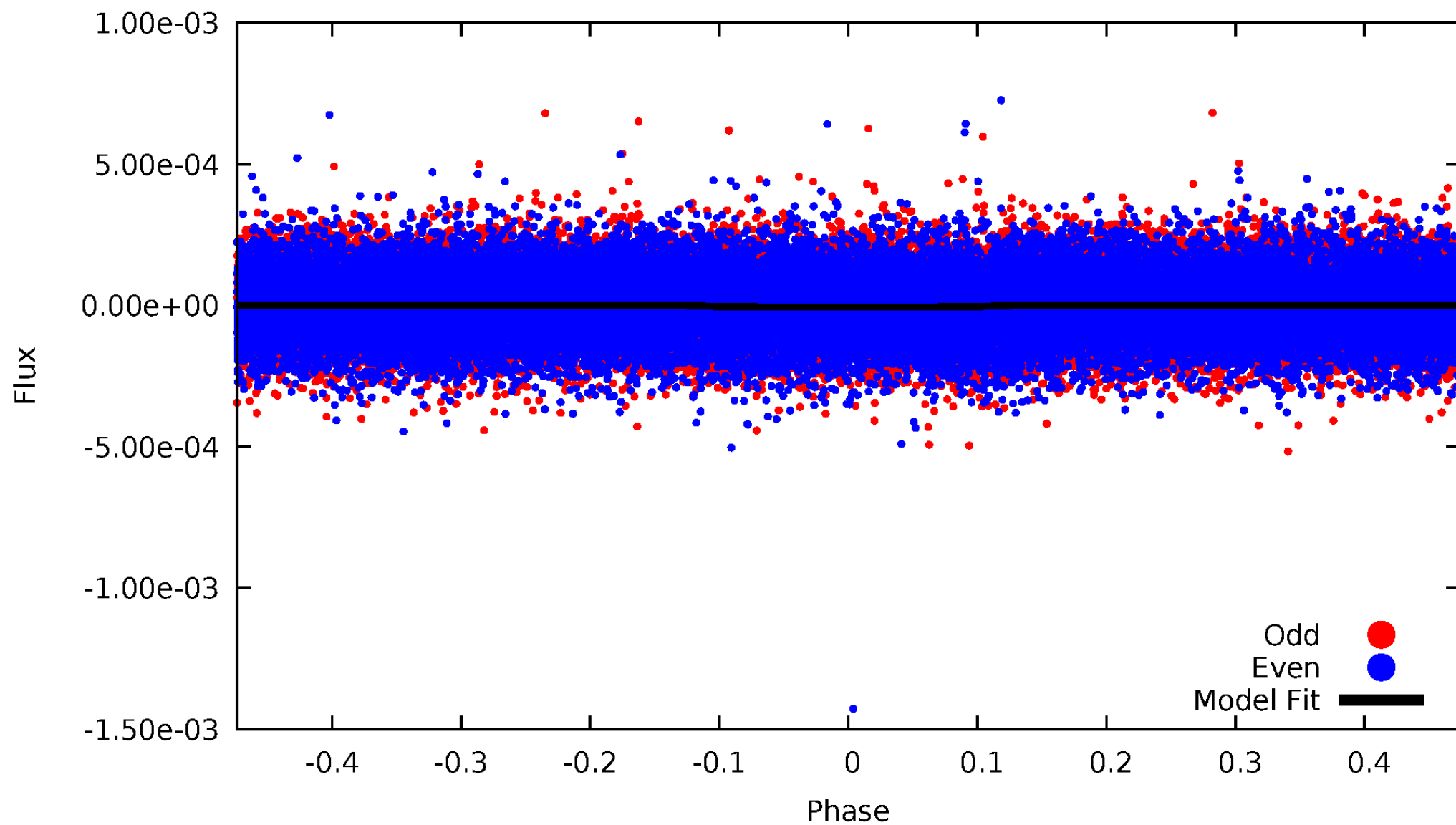


TCE 007708418-01



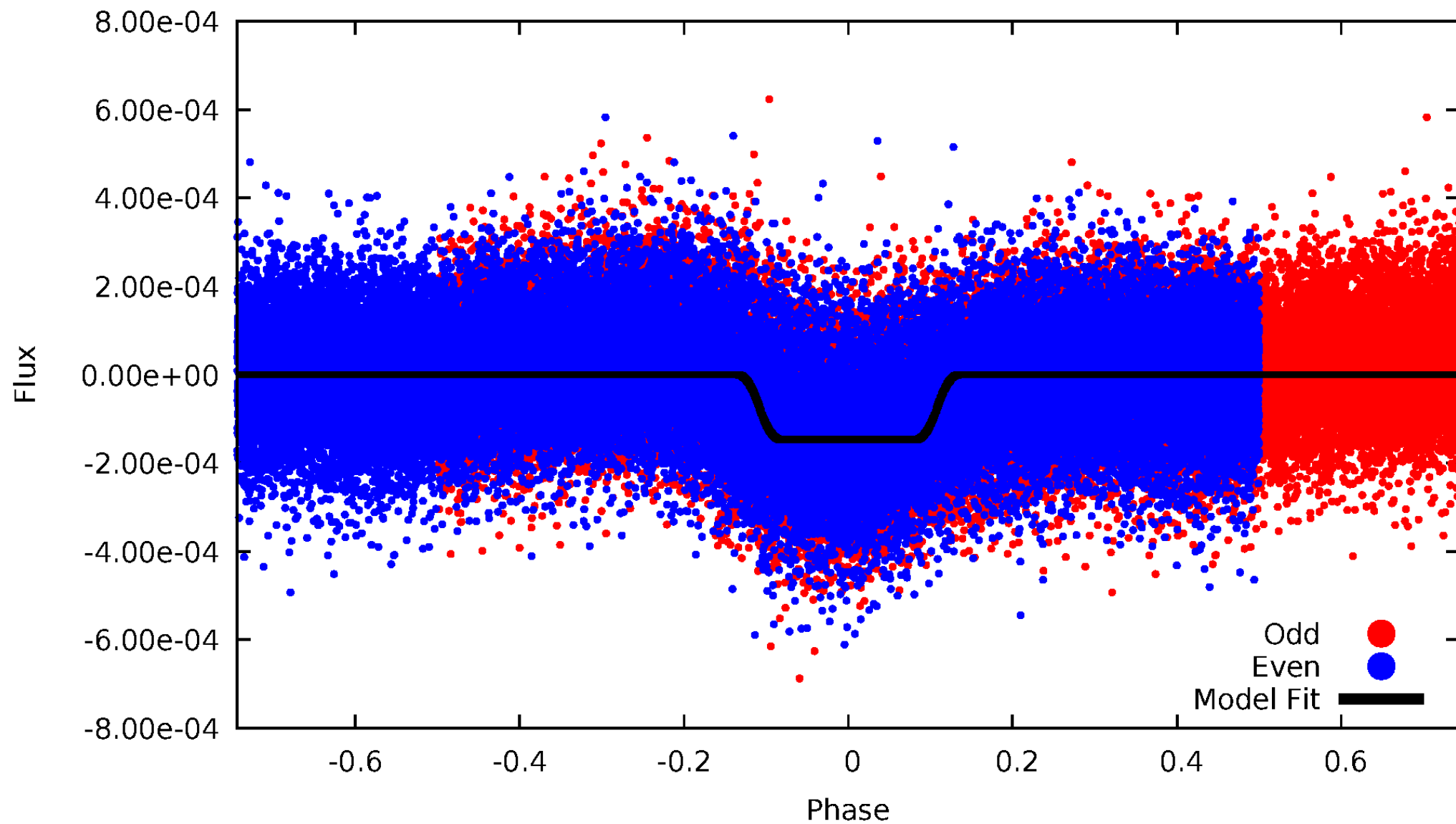
DV Odd/Even

TCE 007708418-01



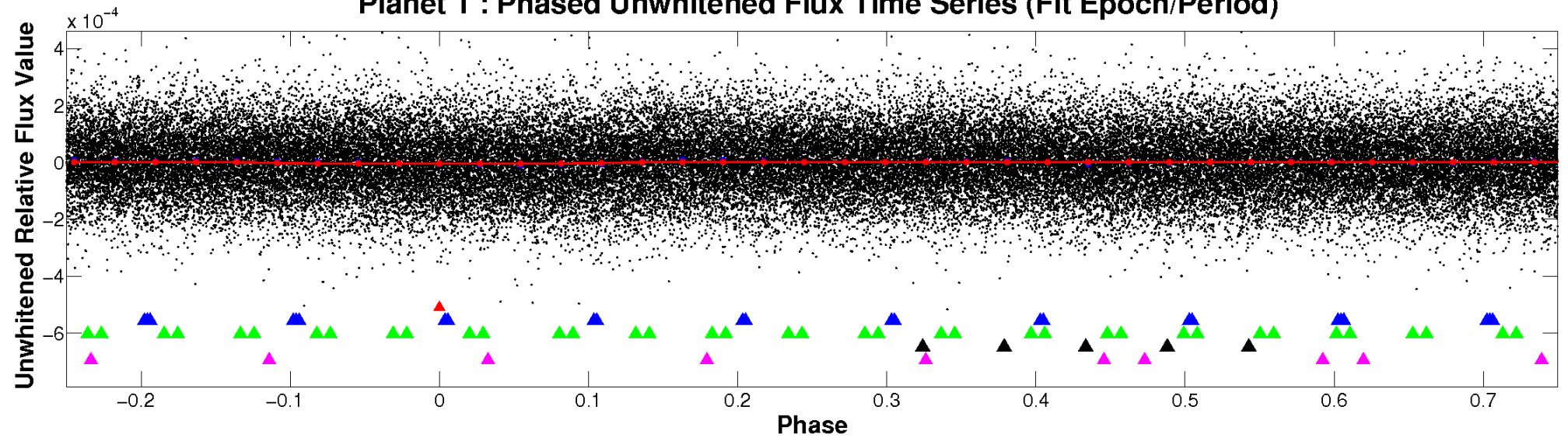
ALT Odd/Even

TCE 007708418-01

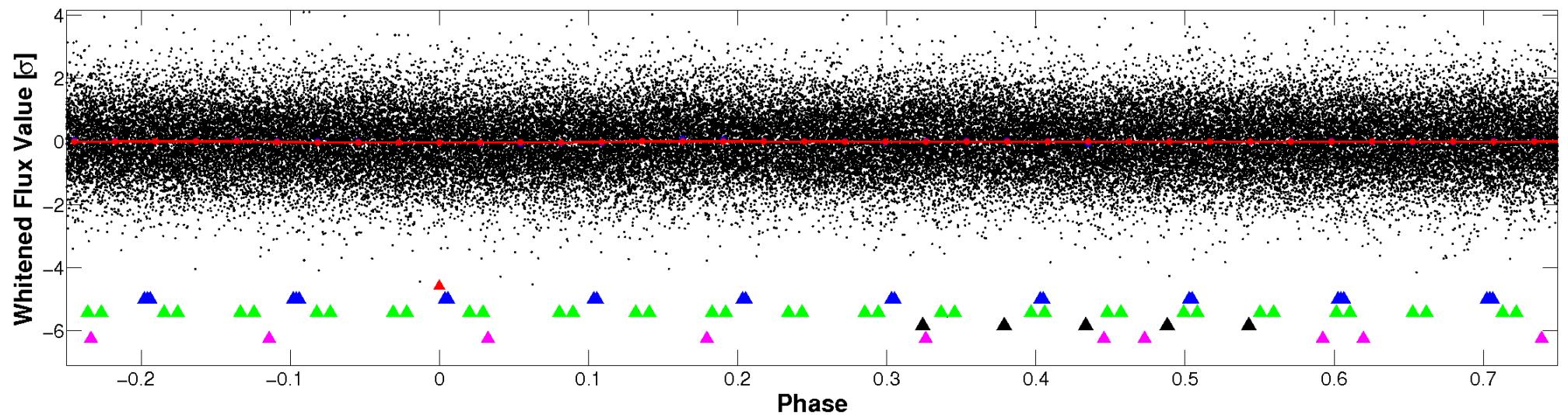


Non-Whitened Vs. Whitened Light Curve

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

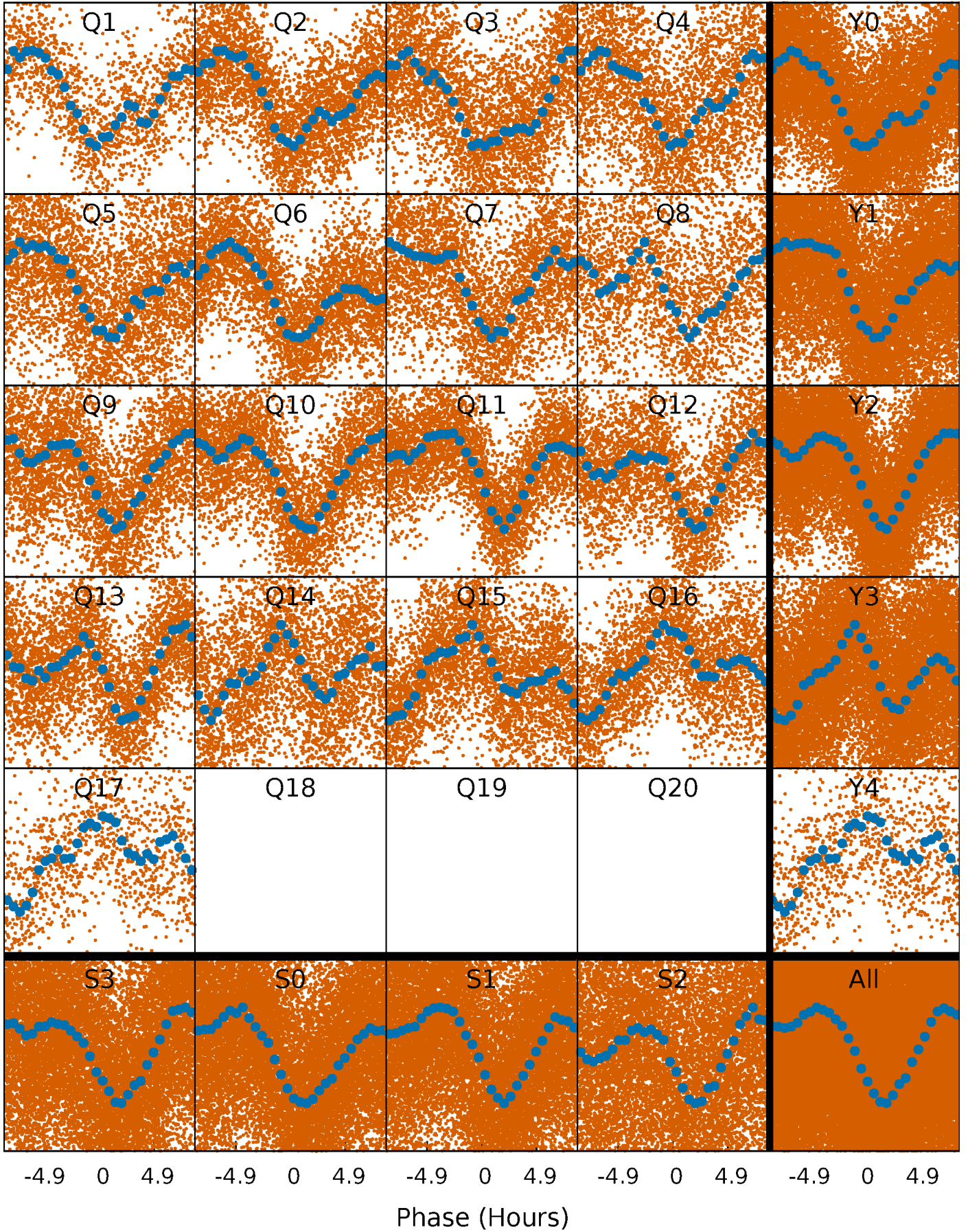


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



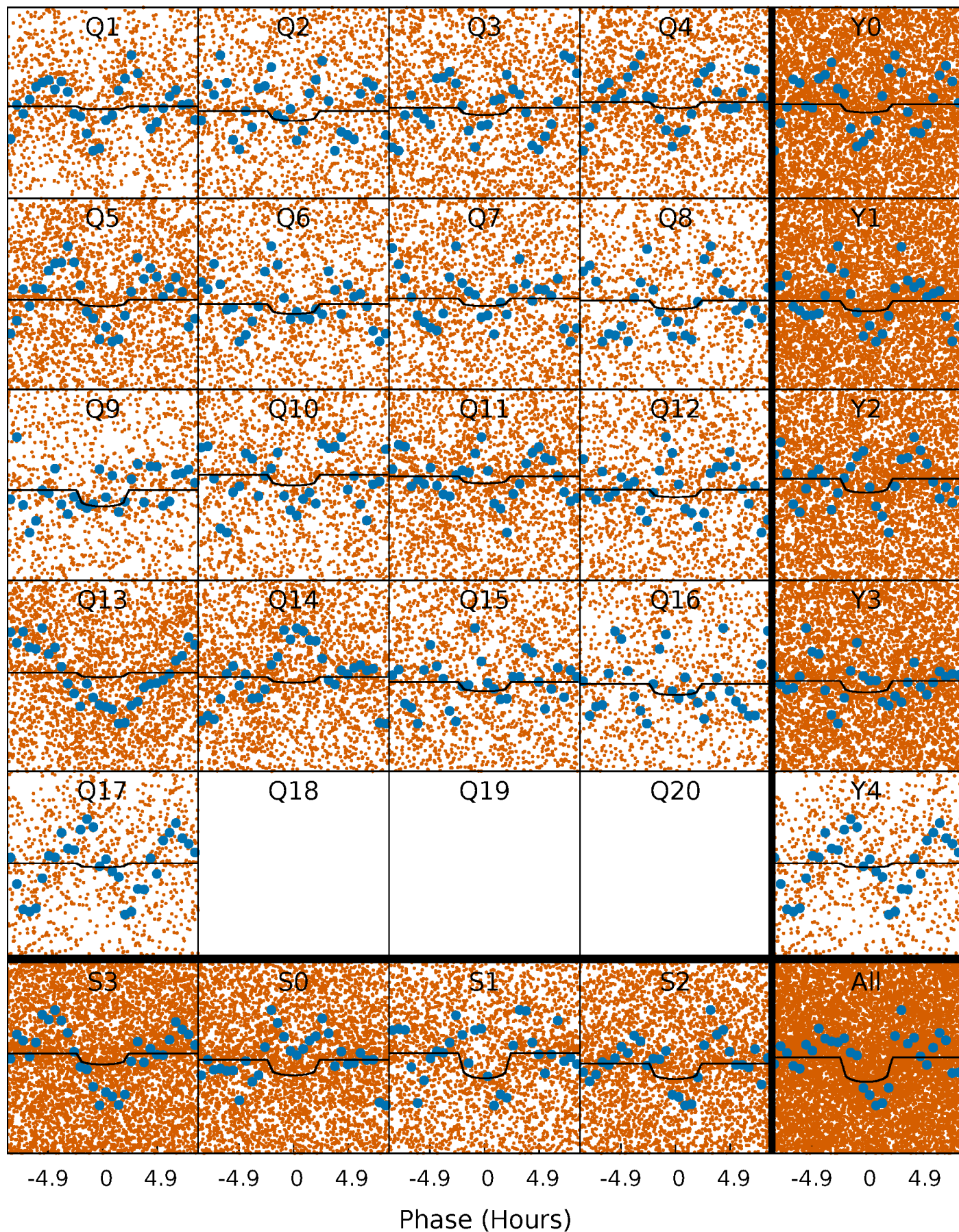
PDC Quarter-Phased Transit Curves

TCE 007708418-01 P= 0.751426 Days $T_0=131.840283$ (BKJD)



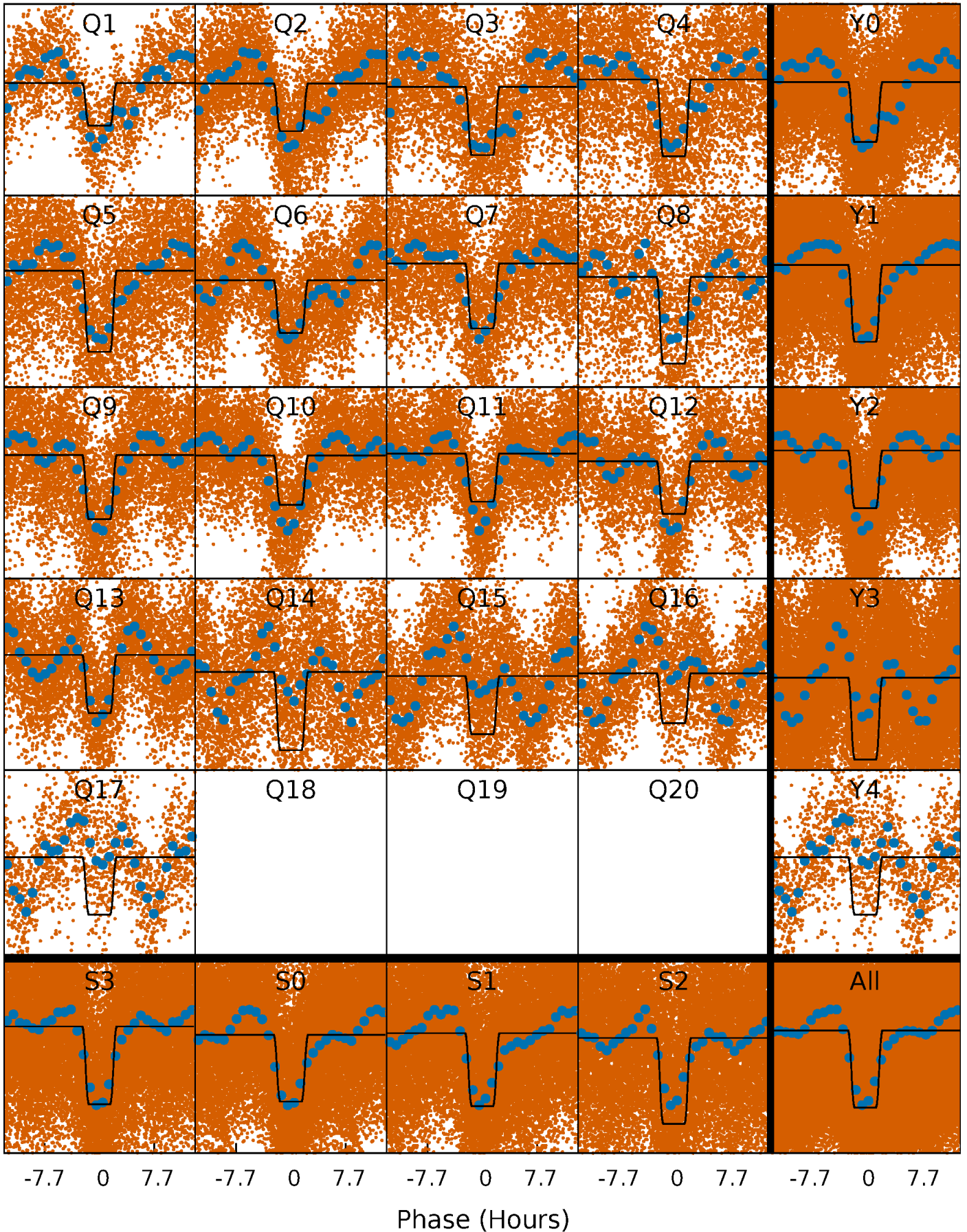
DV Quarter-Phased Transit Curves

TCE 007708418-01 P= 0.751426 Days $T_0=131.840283$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

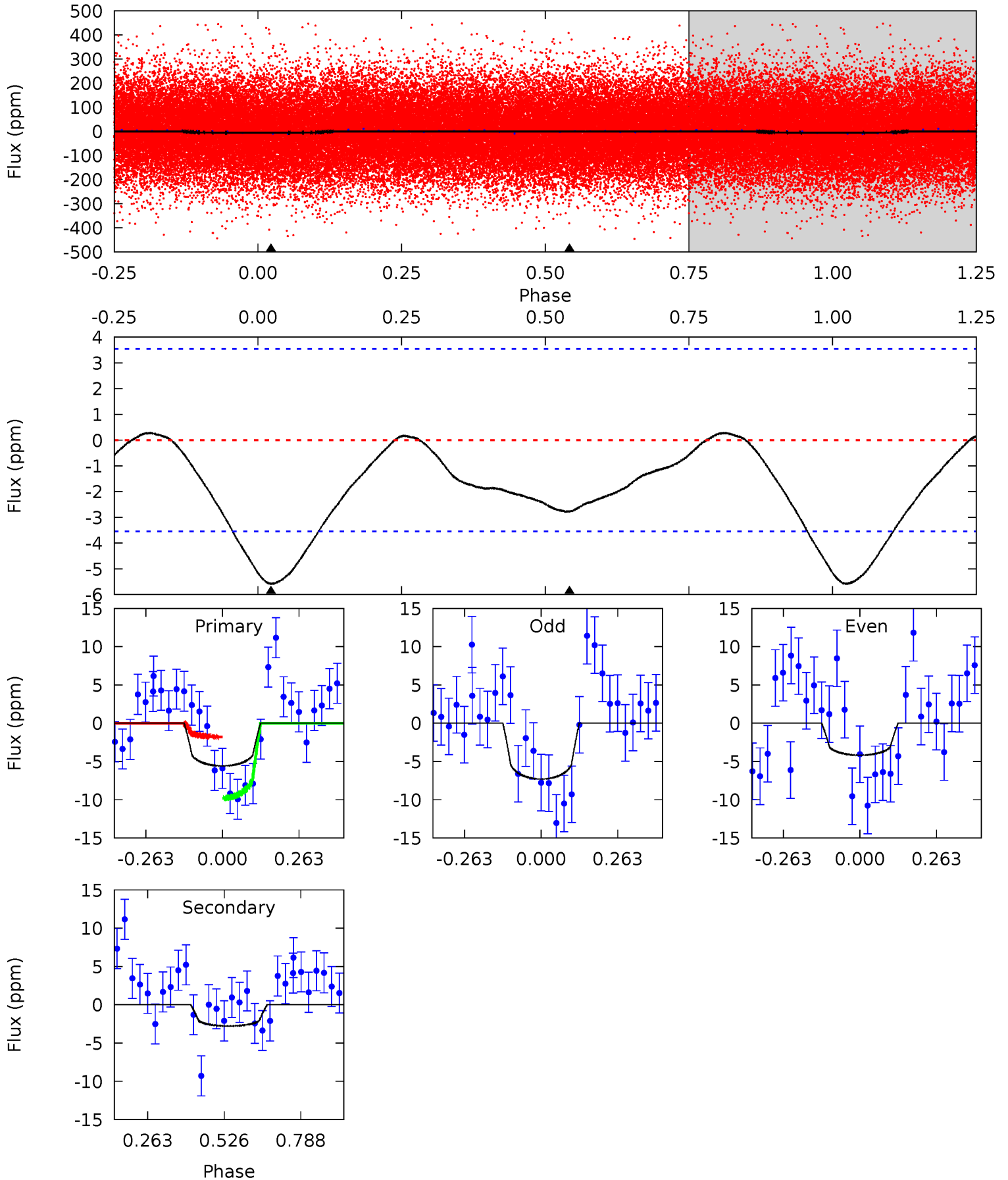
TCE 007708418-01 P= 0.751496 Days $T_0=131.842849$ (BKJD)



DV Model-Shift Uniqueness Test

007708418-01, P = 0.751426 Days, E = 131.088857 Days

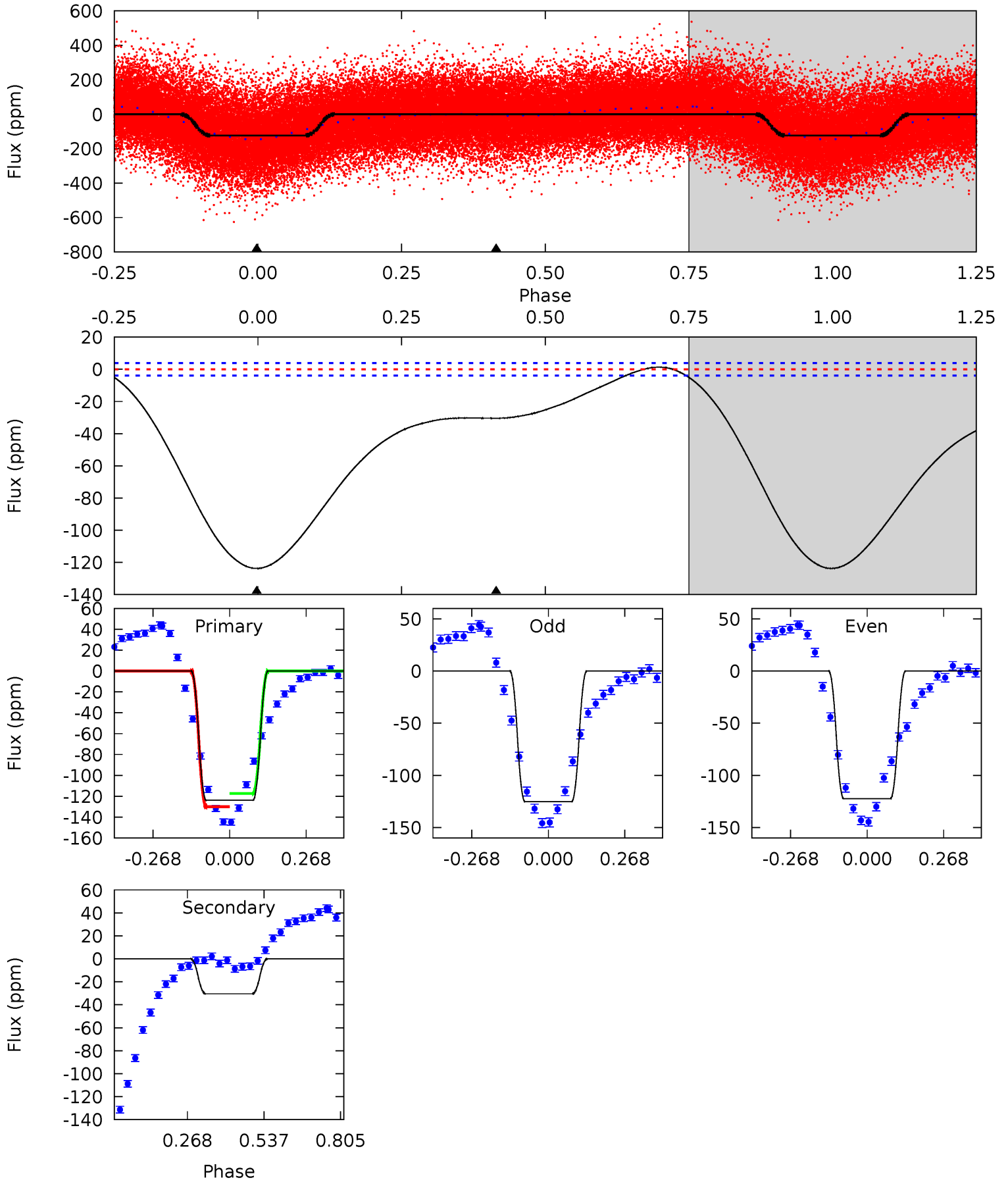
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.87	3.42	0	0	4.36	1.12	0.32	6.87	6.87	3.42	3.42	1.90	0.92	0.05	4.84



Alt Model-Shift Uniqueness Test

007708418-01, P = 0.751496 Days, E = 131.091353 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
138.5	34.0	0	0	4.35	1.11	2.32	138.5	138.5	34.0	34.0	1.59	0.94	0.01	6.60



Stellar Parameters For KIC 007708418

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7311^{+203}_{-319}	$4.077^{+0.158}_{-0.175}$	$-0.100^{+0.200}_{-0.350}$	$1.889^{+0.567}_{-0.464}$	$1.551^{+0.211}_{-0.257}$	$0.324^{+0.312}_{-0.160}$
	+3%/-4%	+4%/-4%	+200%/-350%	+30%/-25%	+14%/-17%	+96%/-49%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007708418-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-3 ± 1	$0.76^{+0.73}_{-0.52}$	4522^{+349}_{-336}	4492^{+4401}_{-7642}	$0.914^{+8.105}_{-0.681}$
Alt.	-30 ± 1	$2.50^{+1.02}_{-0.91}$	4524^{+380}_{-312}	4572^{+1241}_{-893}	$0.919^{+1.345}_{-0.442}$

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 $A_{obs} \gg 1.0$

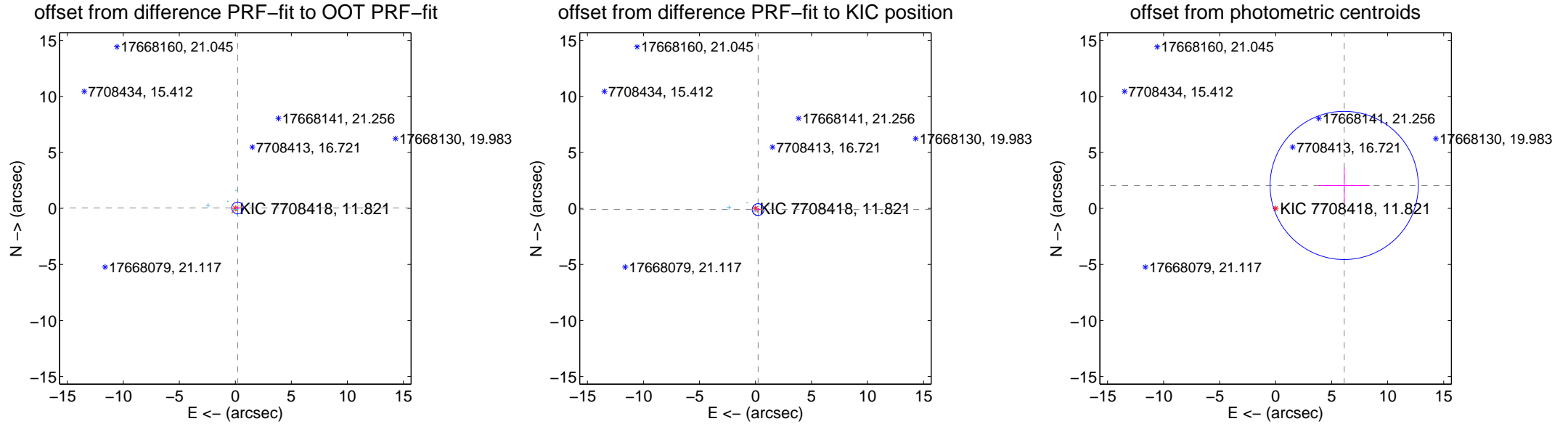
DV Centroid Data

Supplemental centroid analysis for 007708418-01. **Kepler magnitude: 11.82.** Transit SNR 3.53

There are 12 quarters with good PRF difference image offsets

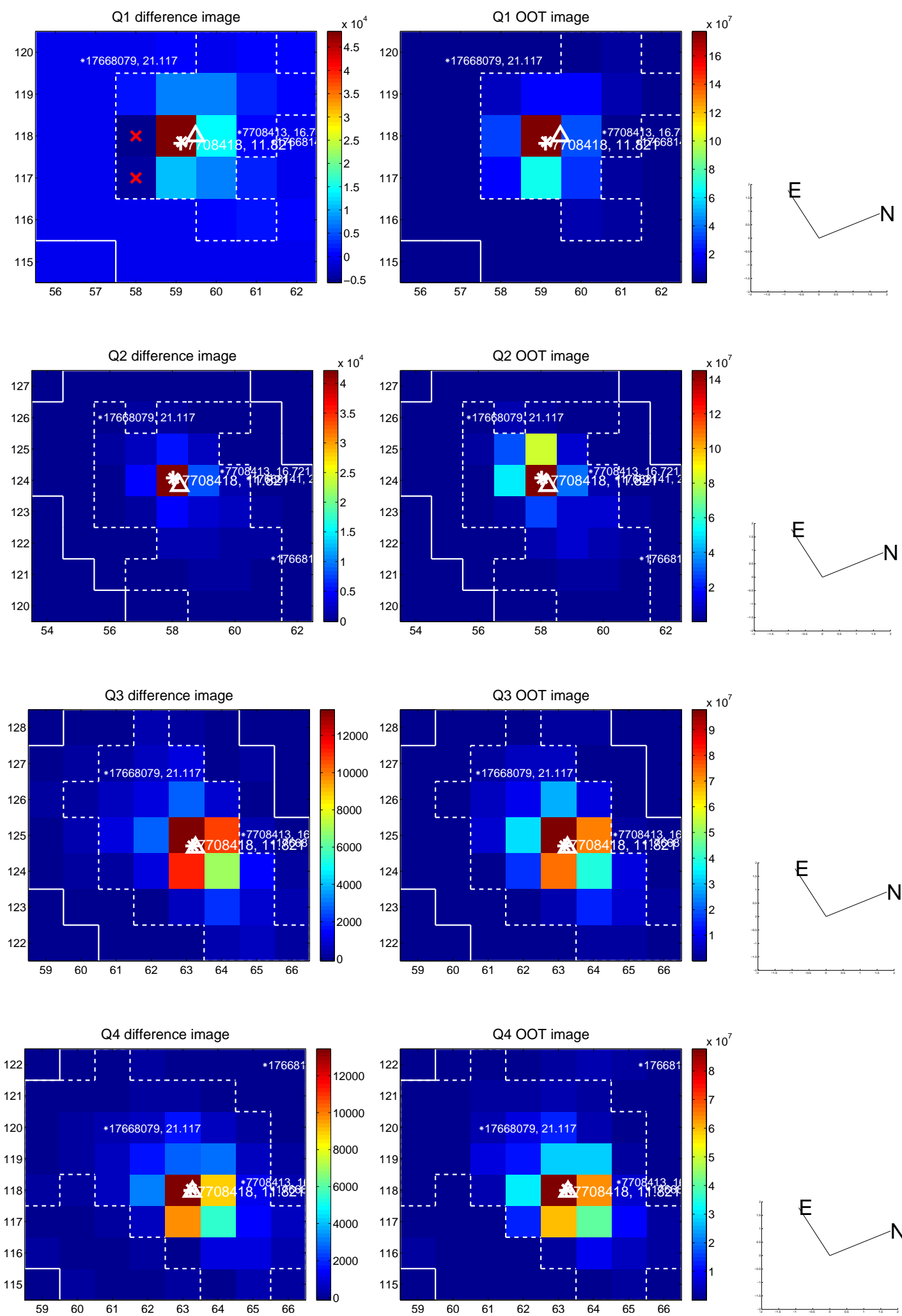
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.213 ± 0.175	1.22	-0.208 ± 0.180	0.047 ± 0.122
PRF-fit source offset from KIC position	0.251 ± 0.175	1.43	-0.230 ± 0.175	-0.100 ± 0.143
photometric centroid source offset	6.45 ± 2.20	2.93	-6.12 ± 2.26	2.05 ± 1.62

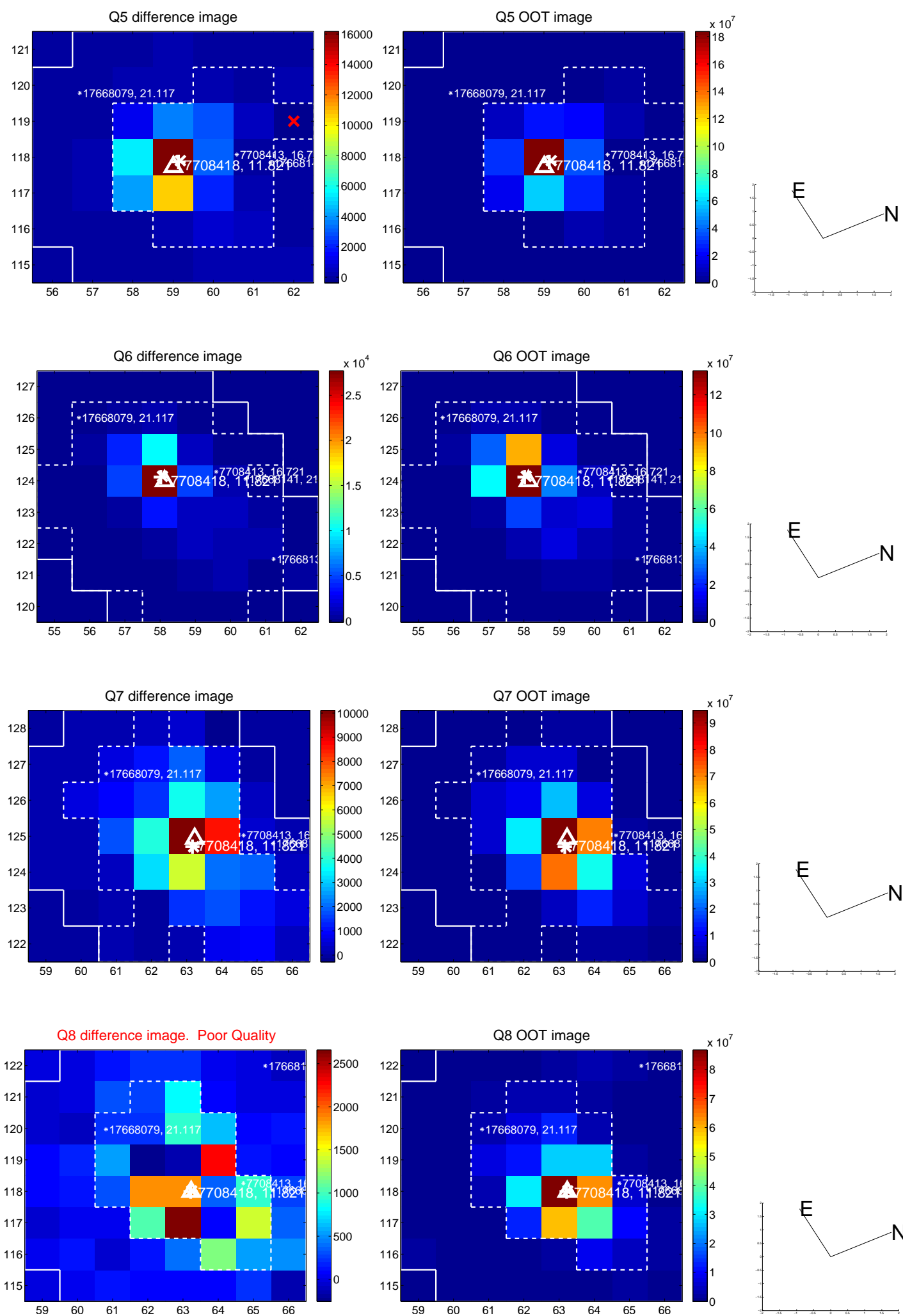


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

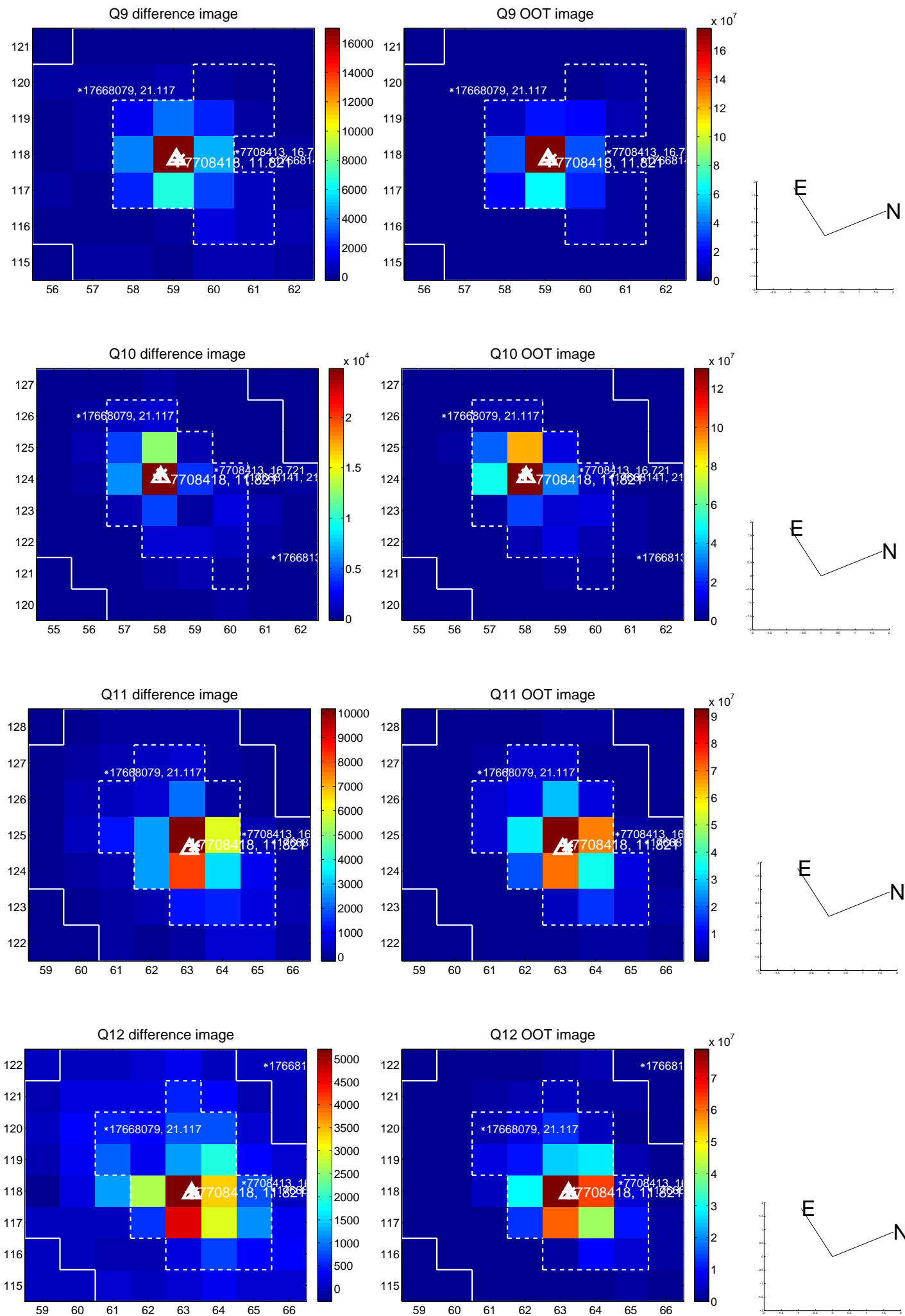
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



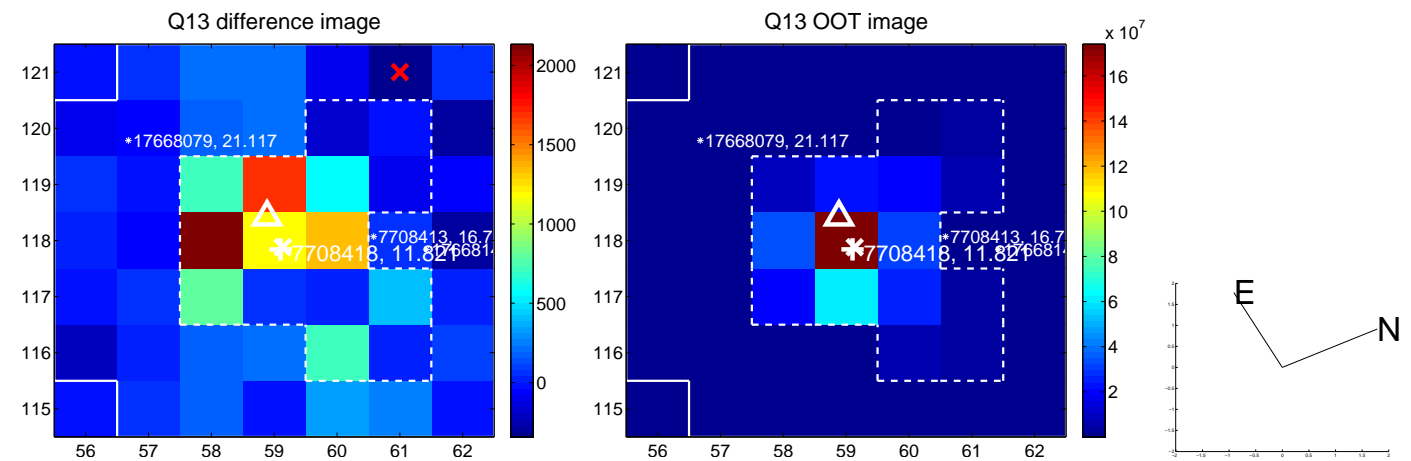
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



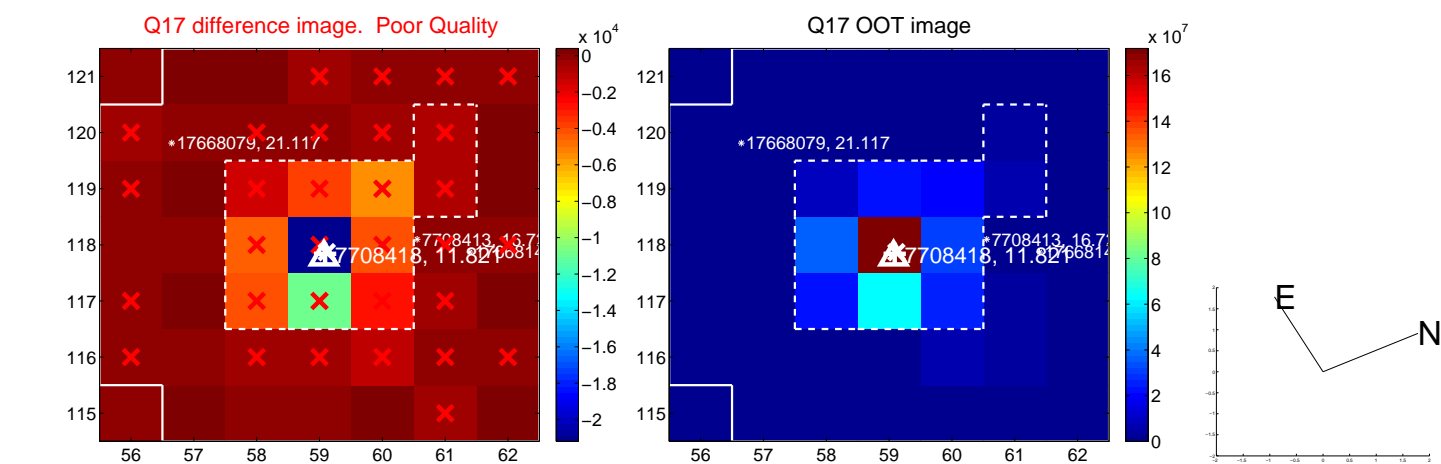
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



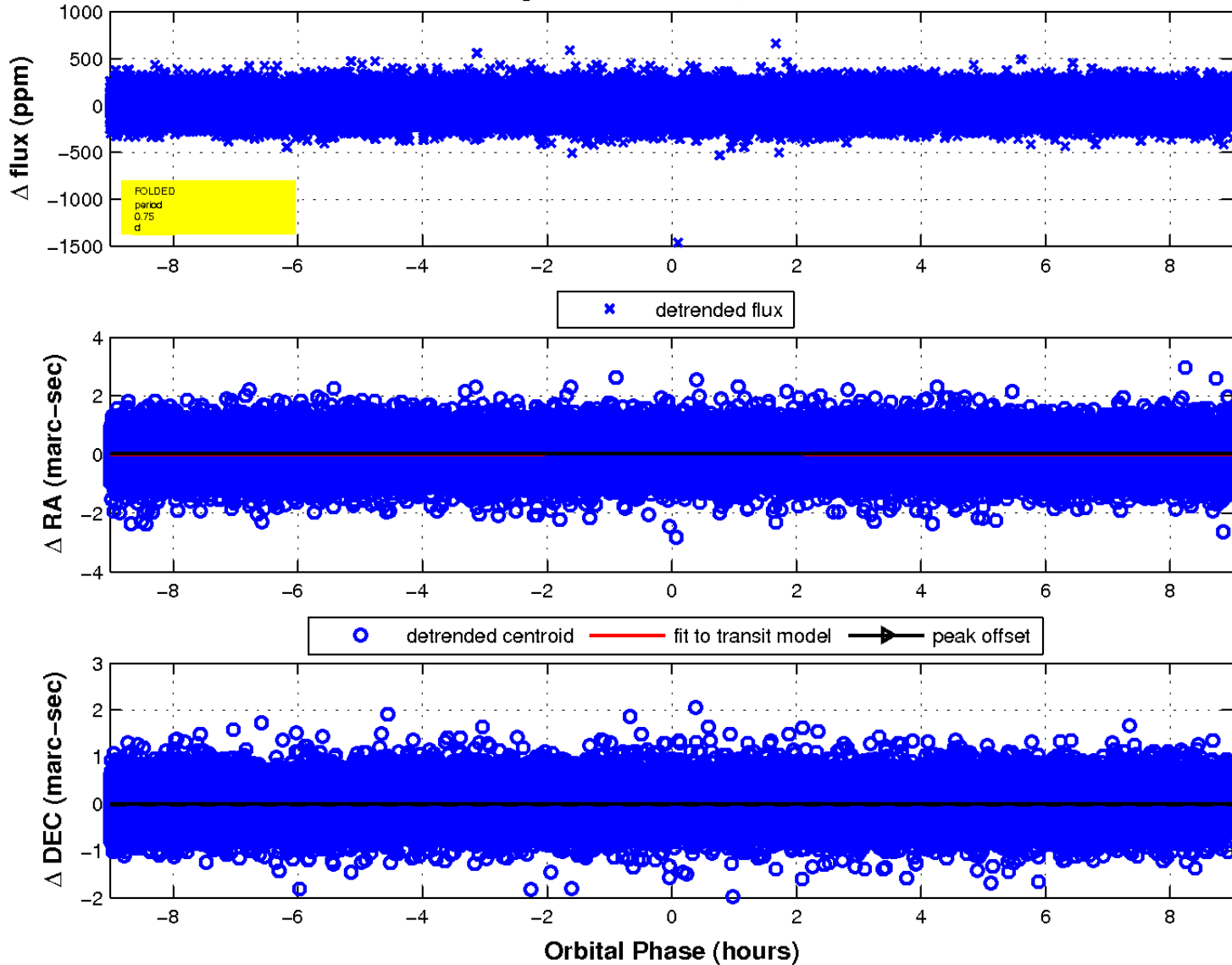
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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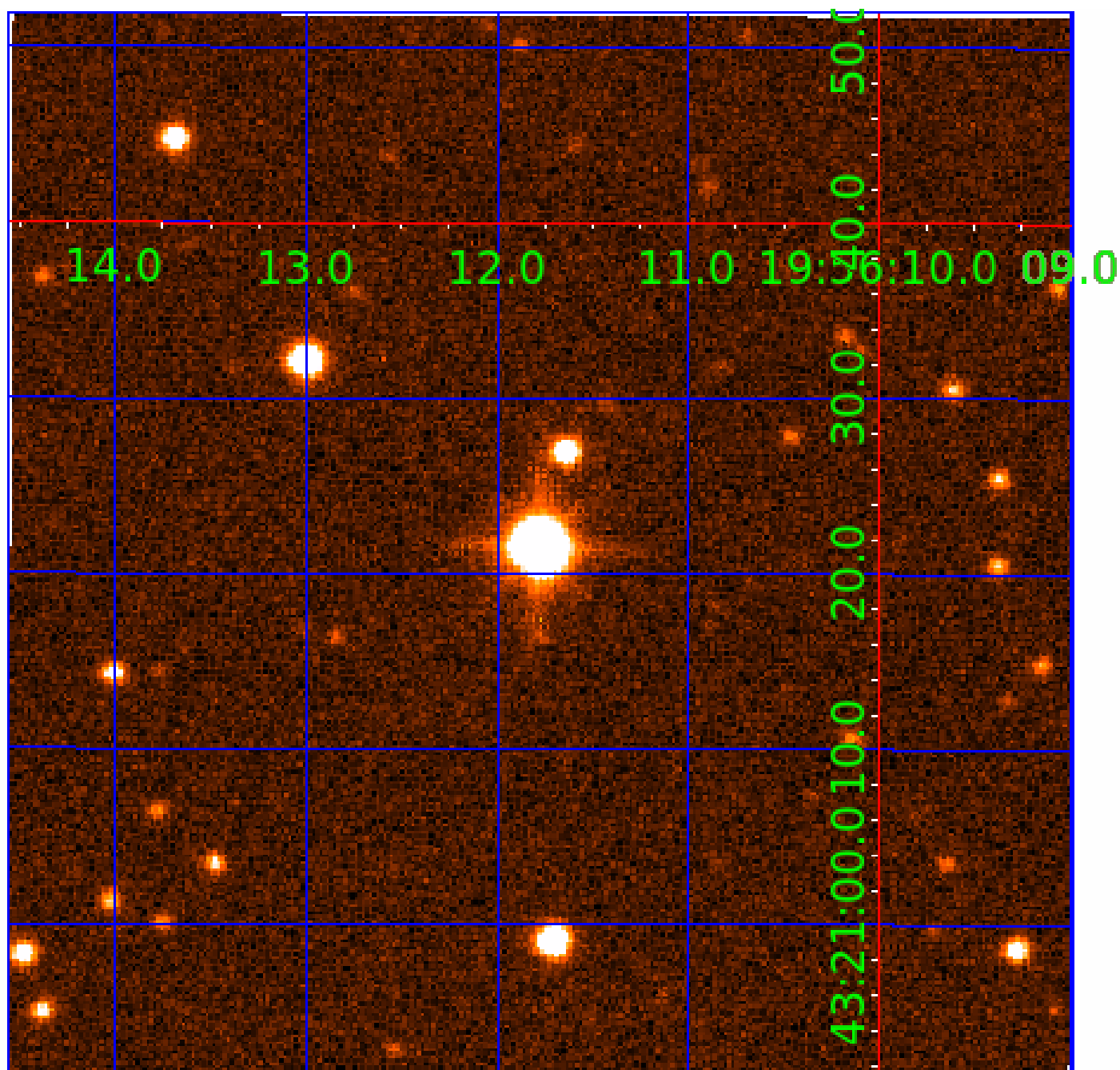


fluxWeightedCentroids, Planet 1 of 5



UKIRT Image

Declination



KIC 007708418

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})
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Robovetter Results

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007708418-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
007708418-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007708418-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007708418-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

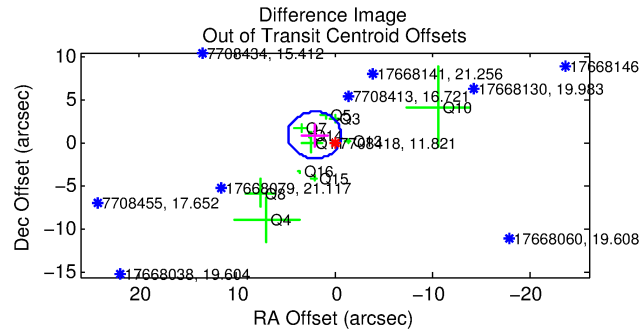
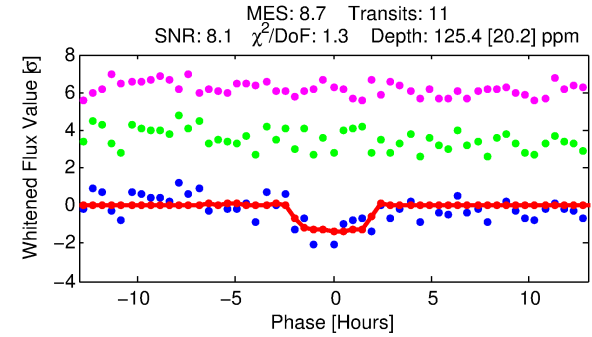
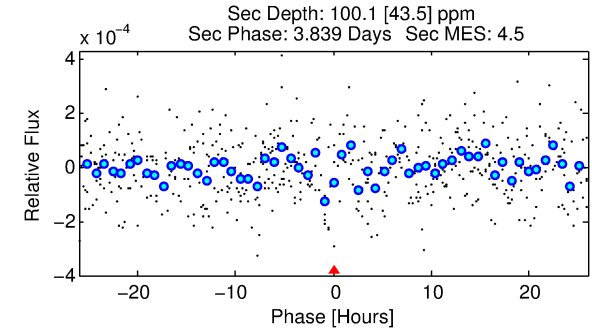
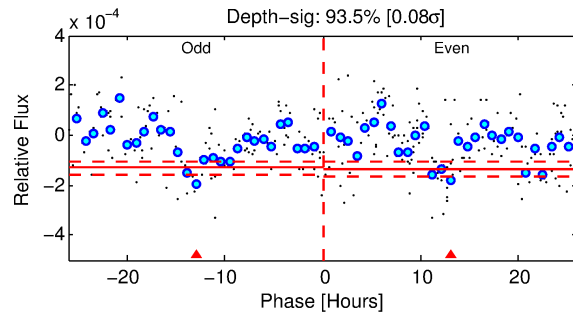
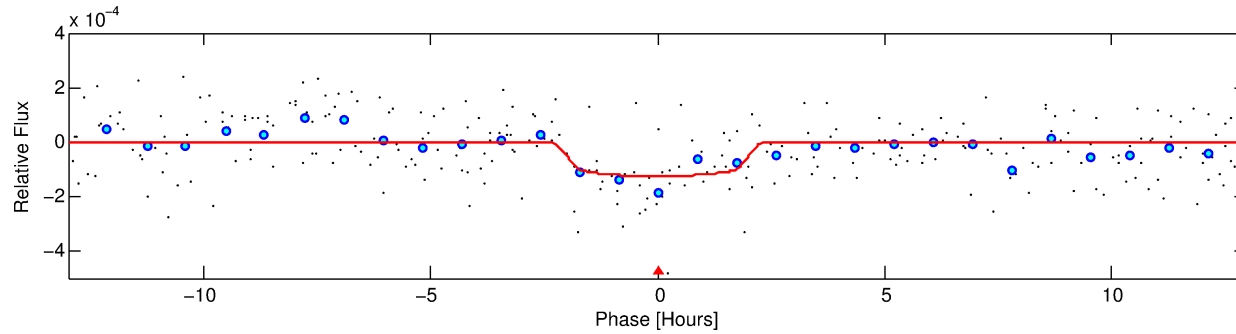
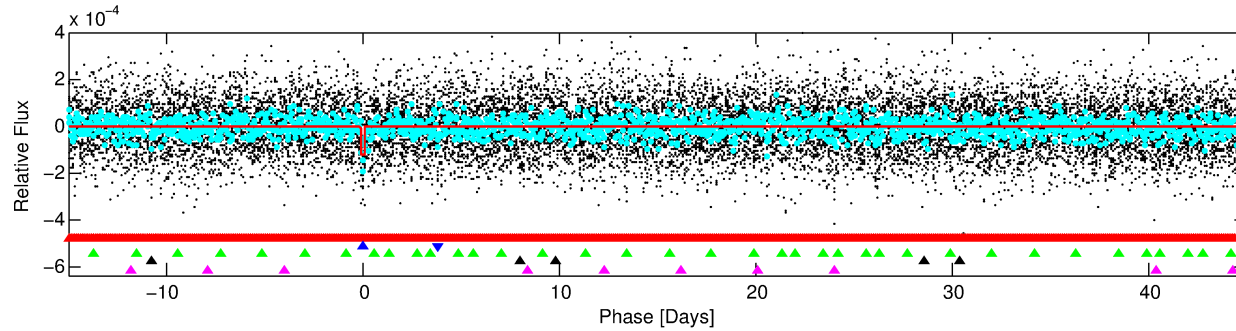
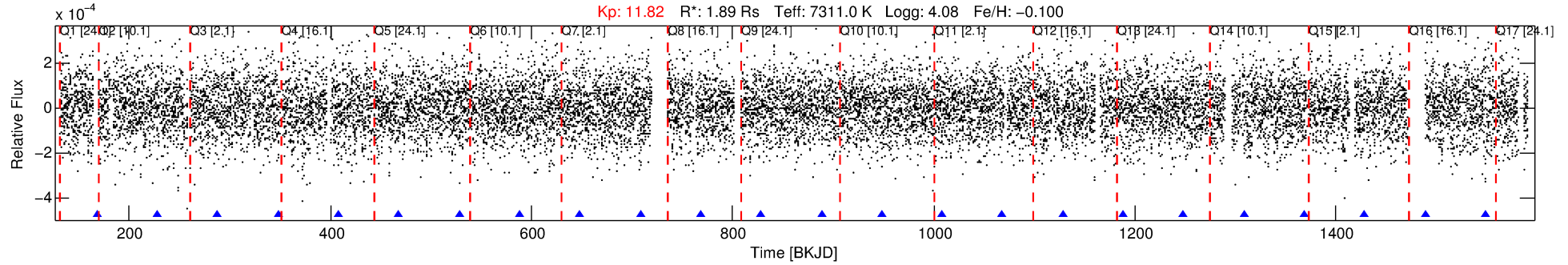
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007708418-02

No Significant Match Found

DV One-Page Summary

KIC: 7708418 Candidate: 2 of 5 Period: 60.039 d



DV Fit Results:

Period = 60.03906 [0.00118] d
Epoch = 167.8351 [0.0120] BKJD
 $R_p/R^* = 0.0119$ [0.0049]
 $a/R^* = 48.25$ [124.70]
 $b = 0.90$ [0.53]
 $\text{Seff} = 75.57$ [28.55]
 $T_{\text{eq}} = 752$ [71] K
 $R_p = 2.46$ [1.26] R_e
 $a = 0.3476$ [0.0838] AU
 $\text{Ag} = 1101.56$ [1094.59] [1.01 σ]
 $T_{\text{eff}} = 6697$ [1593] K [3.73 σ]

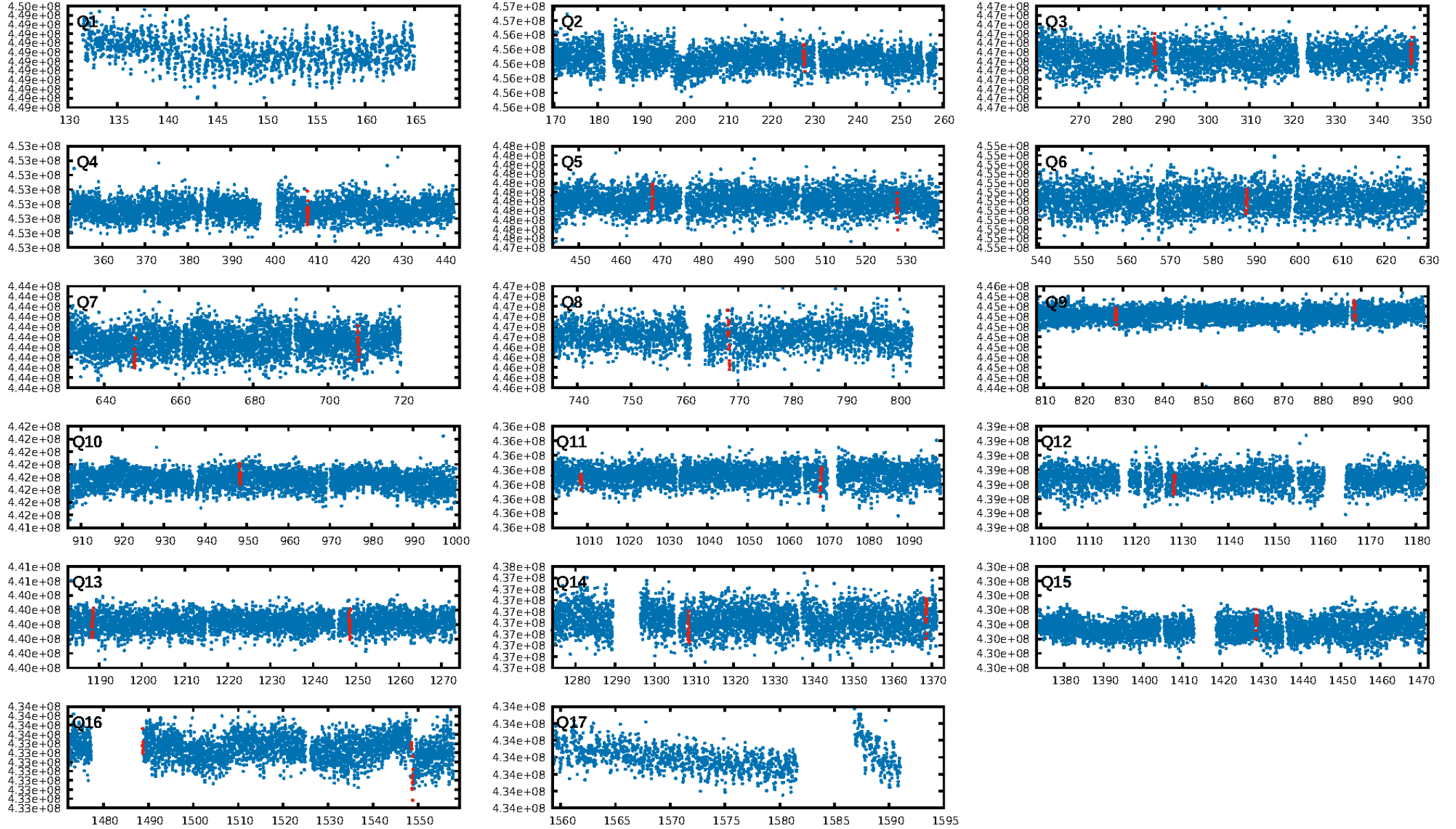
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [86.45 σ]
LongPeriod-sig: 100.0% [388.21 σ]
ModelChiSquare2-sig: 0.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.46e-10
RollingBand-fgt: 1.00 [11/11]
GhostDiagnostic-chr: 0.1019
Centroid-sig: 14.8%
Centroid-so: 0.830 arcsec [1.01 σ]
OotOffset-rm: 2.252 arcsec [2.49 σ]
KicOffset-rm: 2.129 arcsec [2.24 σ]
OotOffset-st: 2/4/3/2 [11]
KicOffset-st: 2/4/3/2 [11]
DiffImageQuality-fgm: 0.18 [2/11]
DiffImageOverlap-fno: 0.00 [0/15]

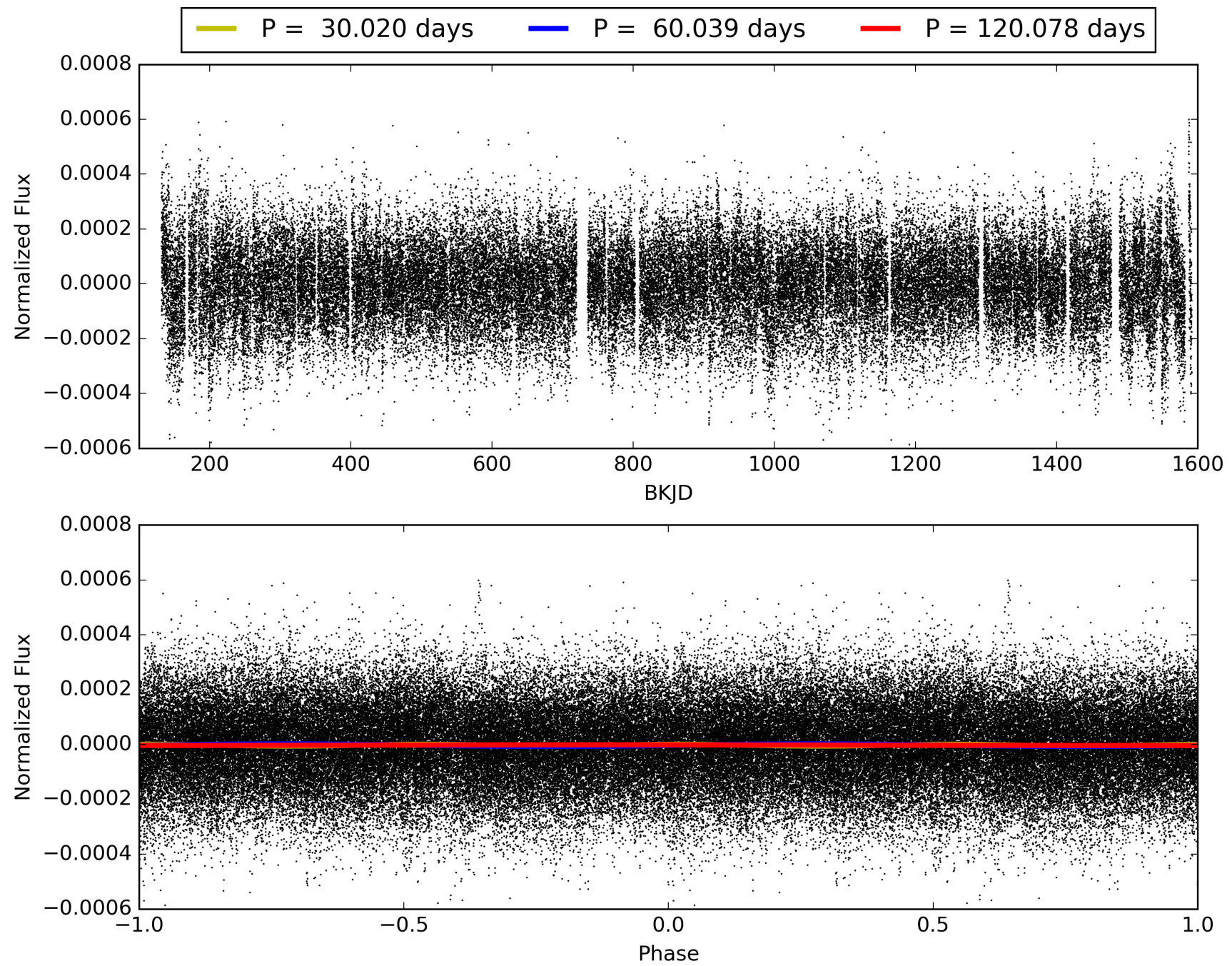
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:56:10 Z

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

TCE 007708418-02, PDC Light Curves

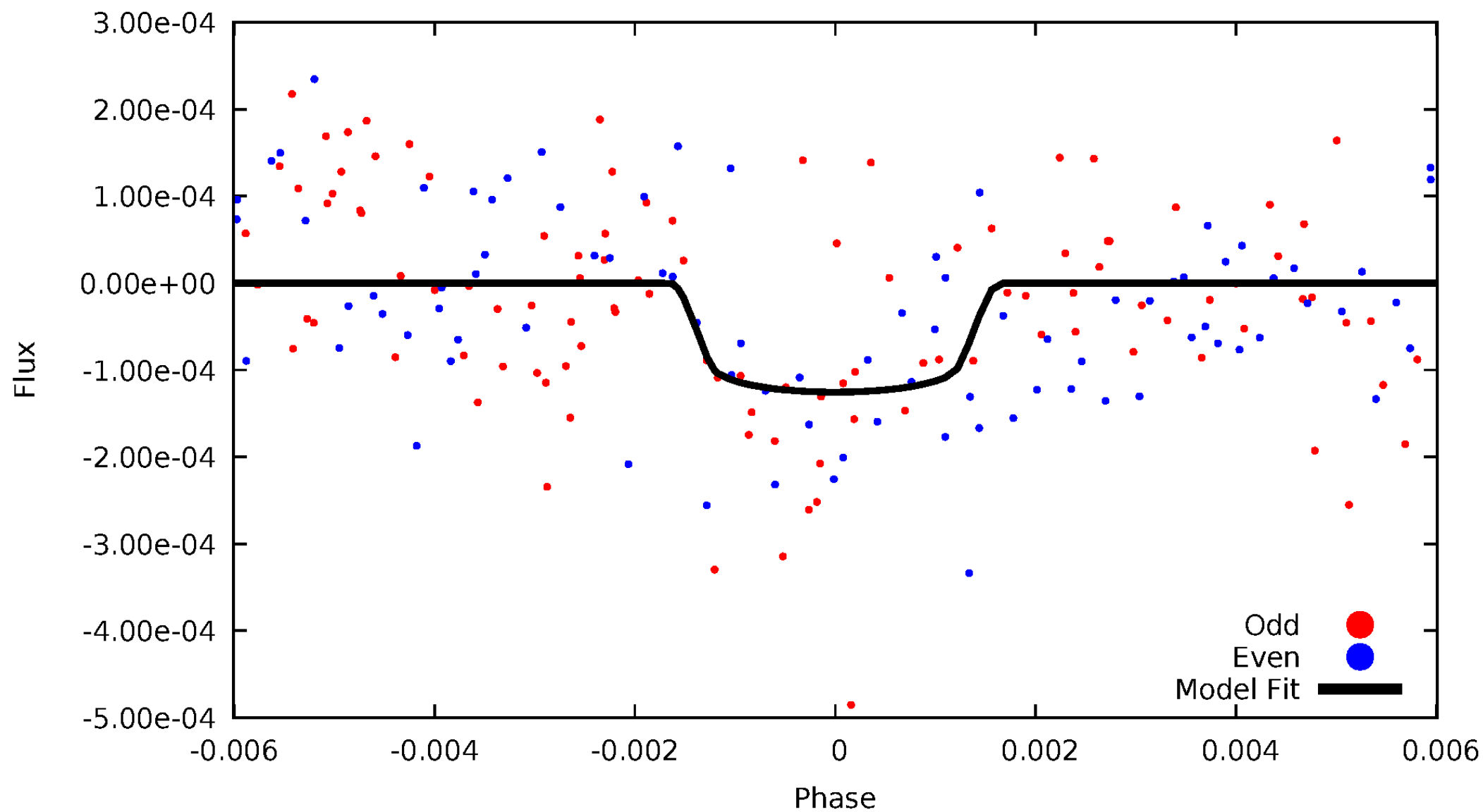


TCE 007708418-02



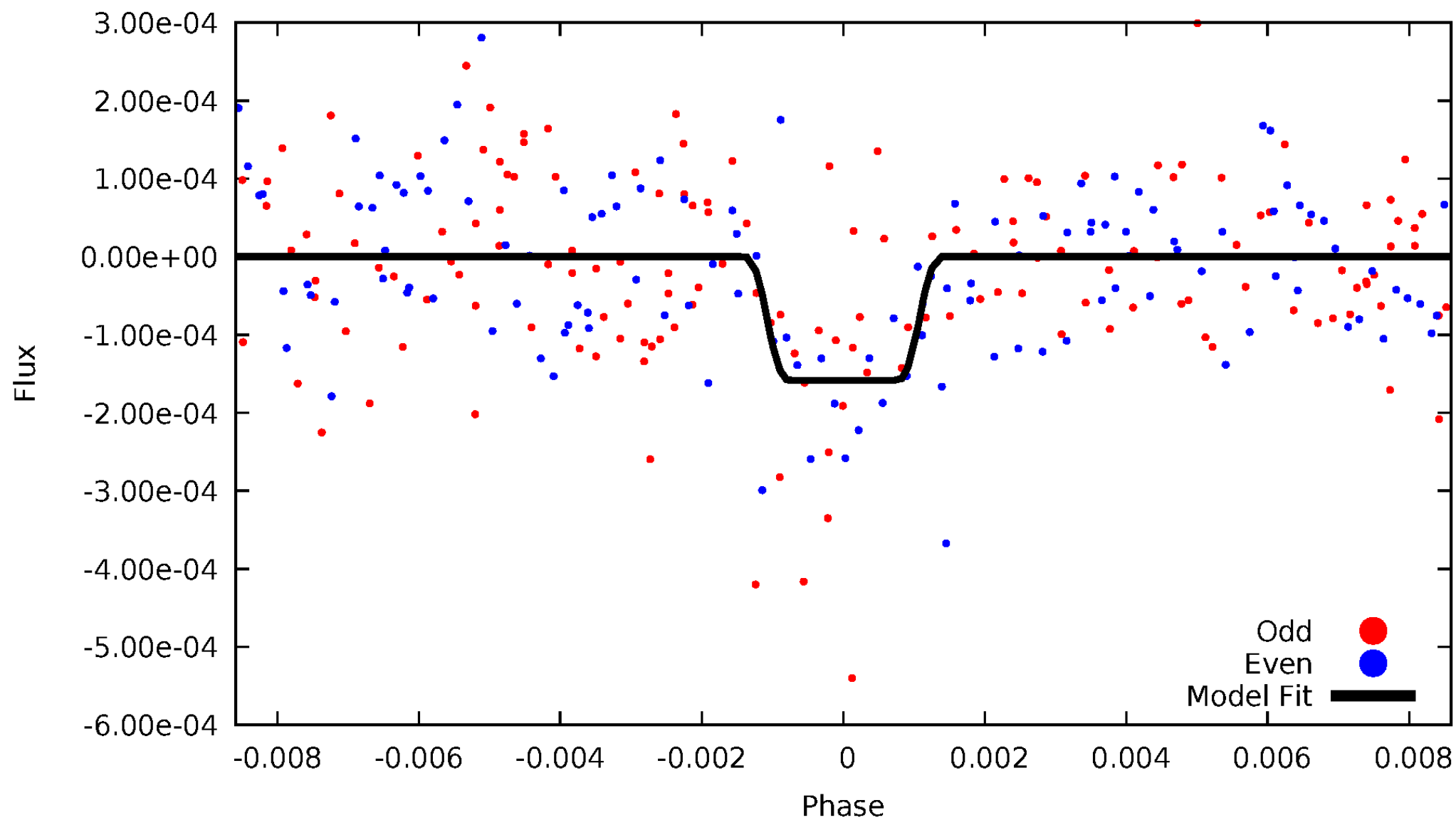
DV Odd/Even

TCE 007708418-02



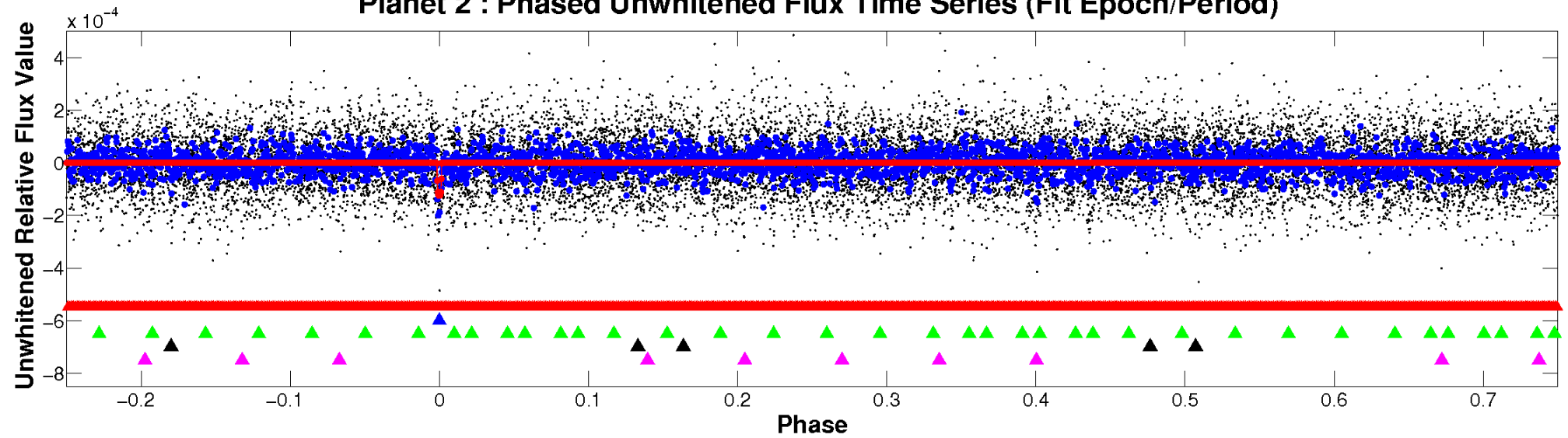
ALT Odd/Even

TCE 007708418-02

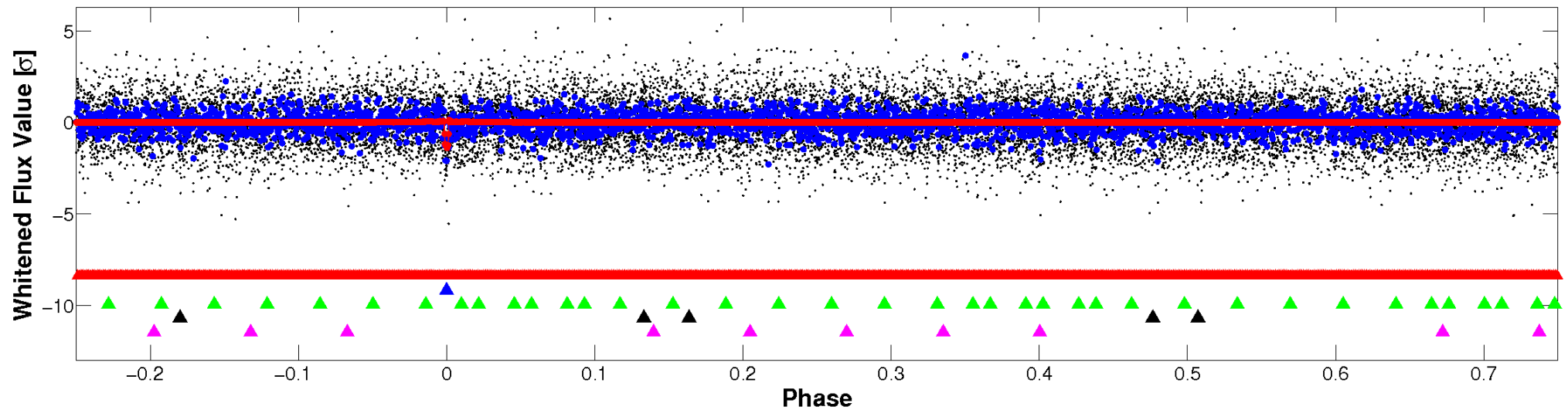


Non-Whitened Vs. Whitened Light Curve

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

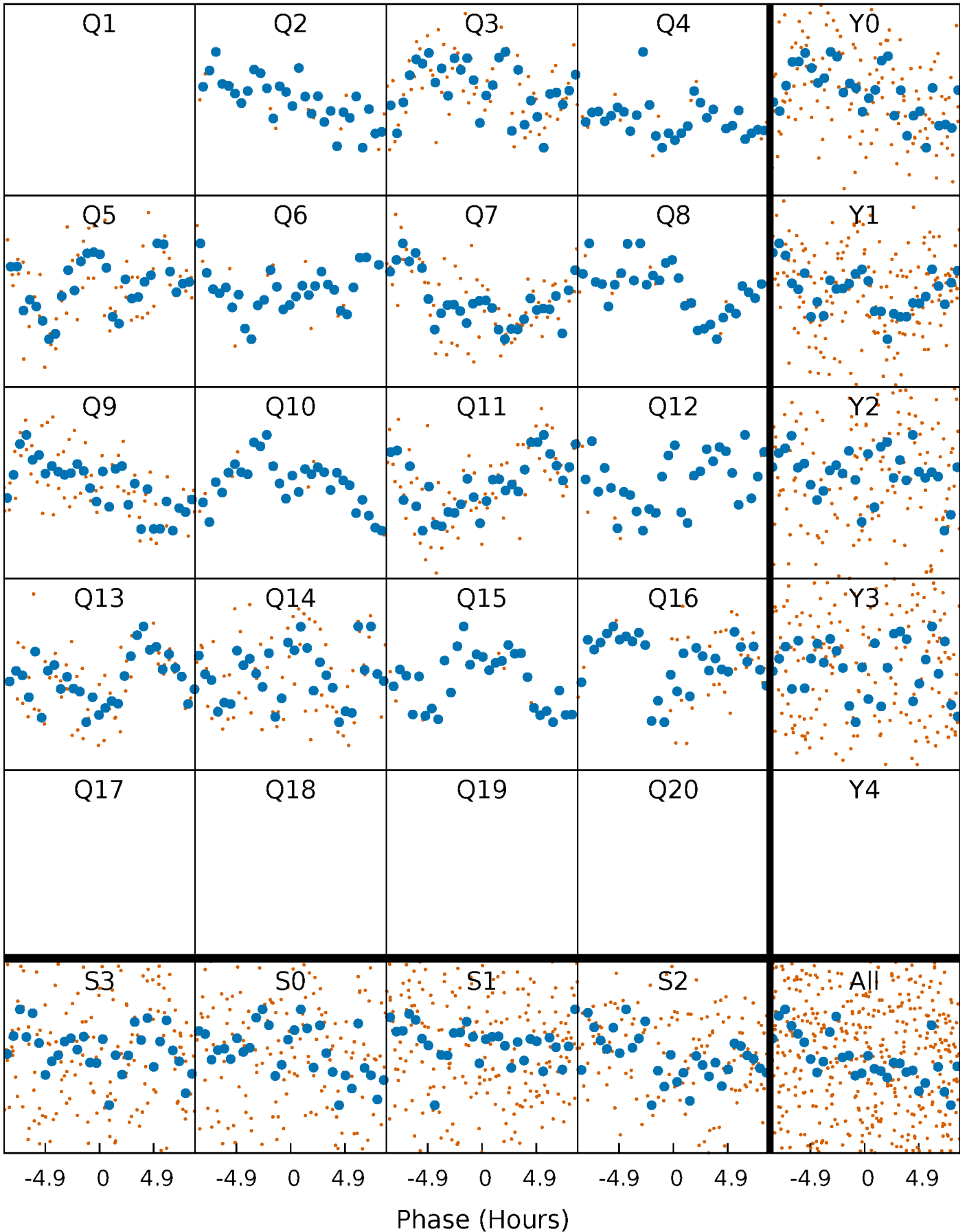


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



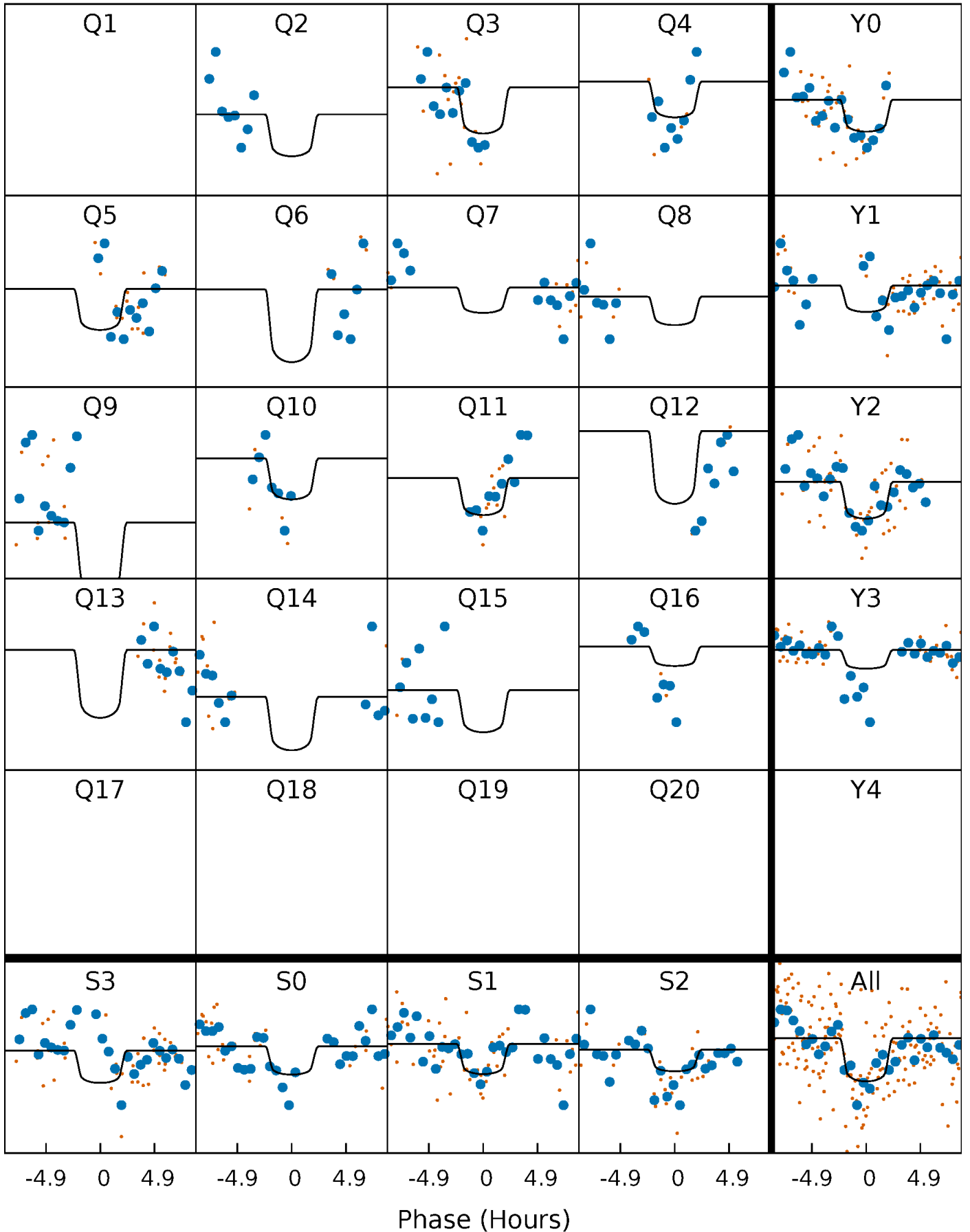
PDC Quarter-Phased Transit Curves

TCE 007708418-02 P= 60.039056 Days $T_0=167.835095$ (BKJD)



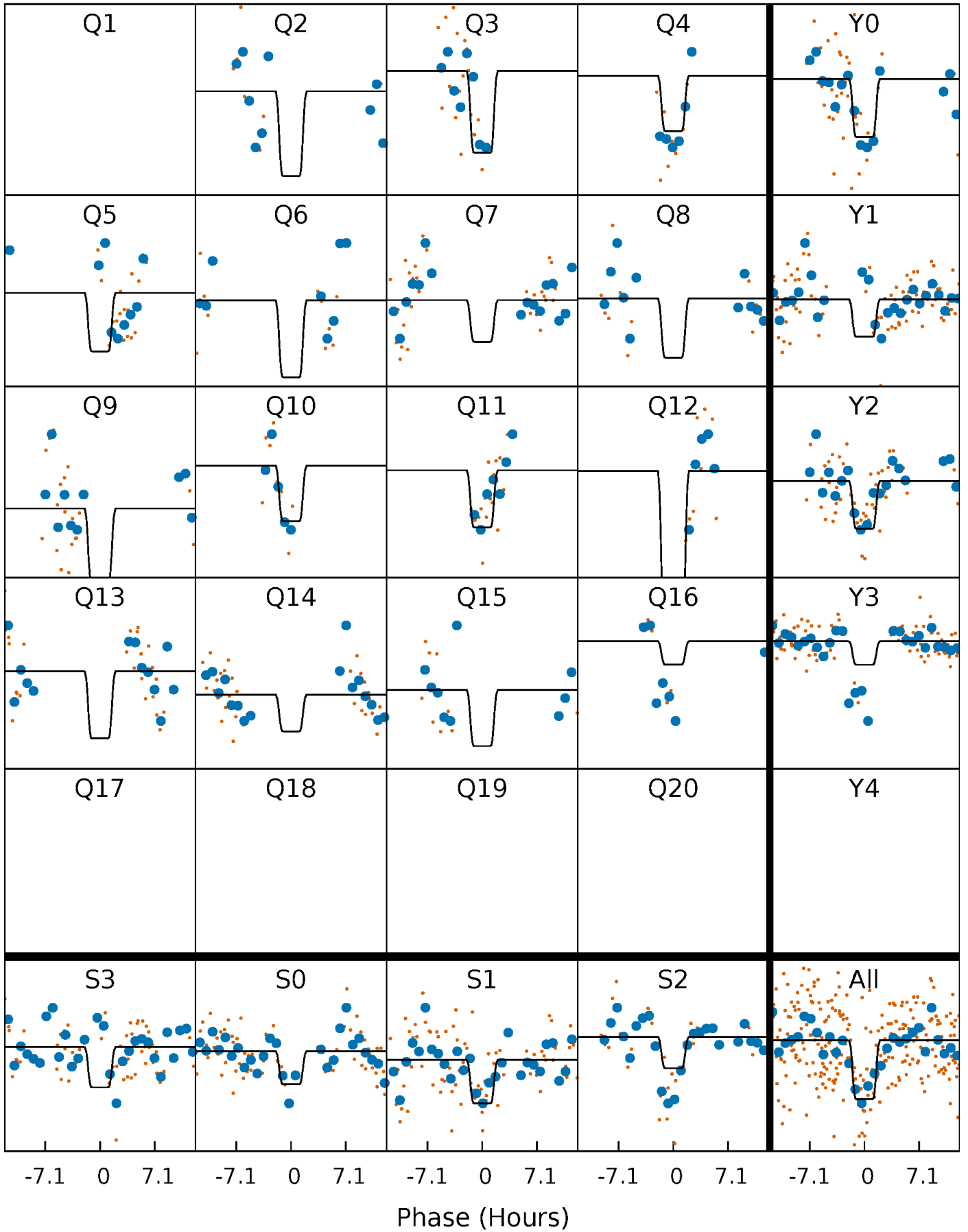
DV Quarter-Phased Transit Curves

TCE 007708418-02 P= 60.039056 Days $T_0=167.835095$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

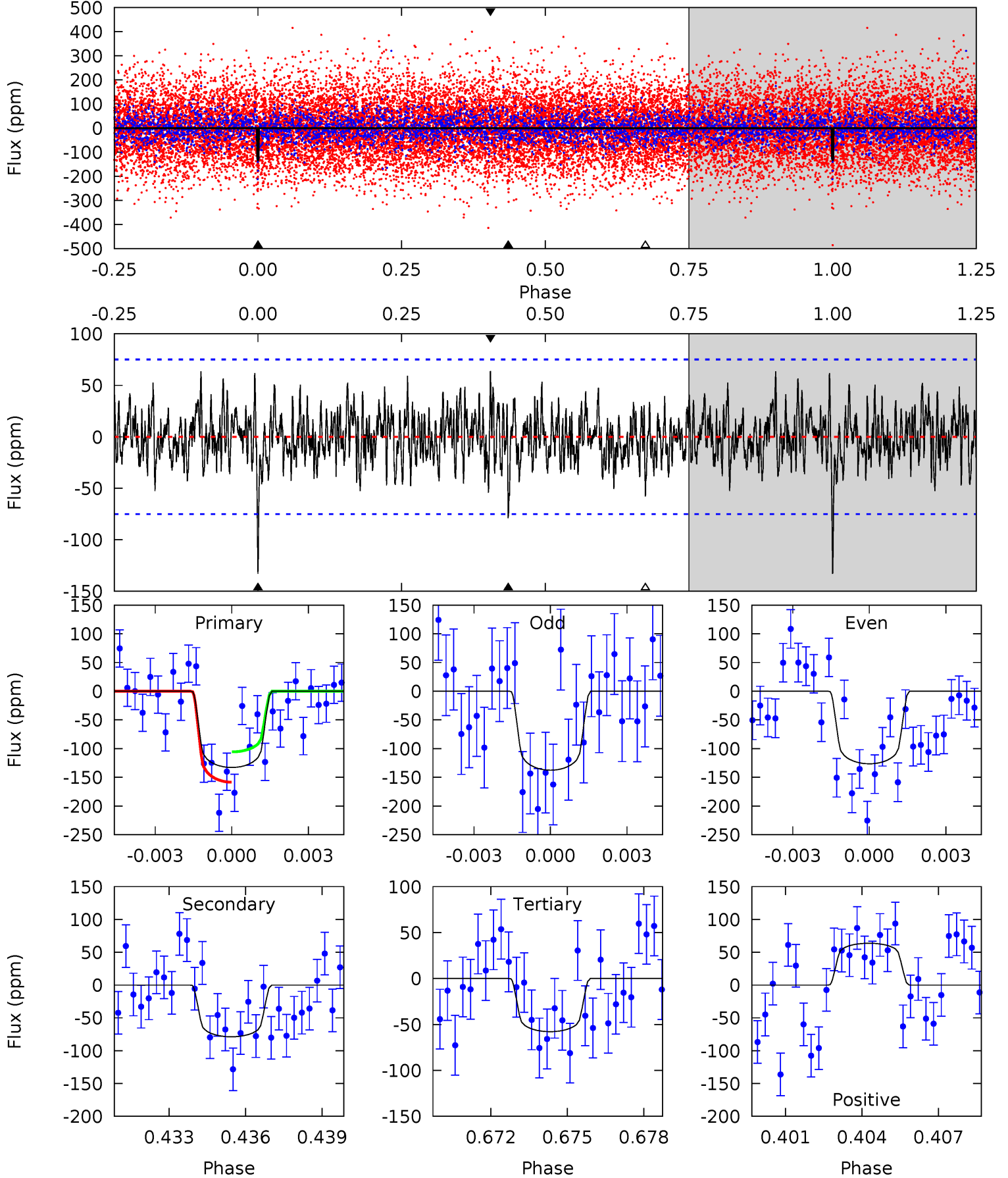
TCE 007708418-02 P= 60.039605 Days $T_0=167.824665$ (BKJD)



DV Model-Shift Uniqueness Test

007708418-02, P = 60.039056 Days, E = 107.796039 Days

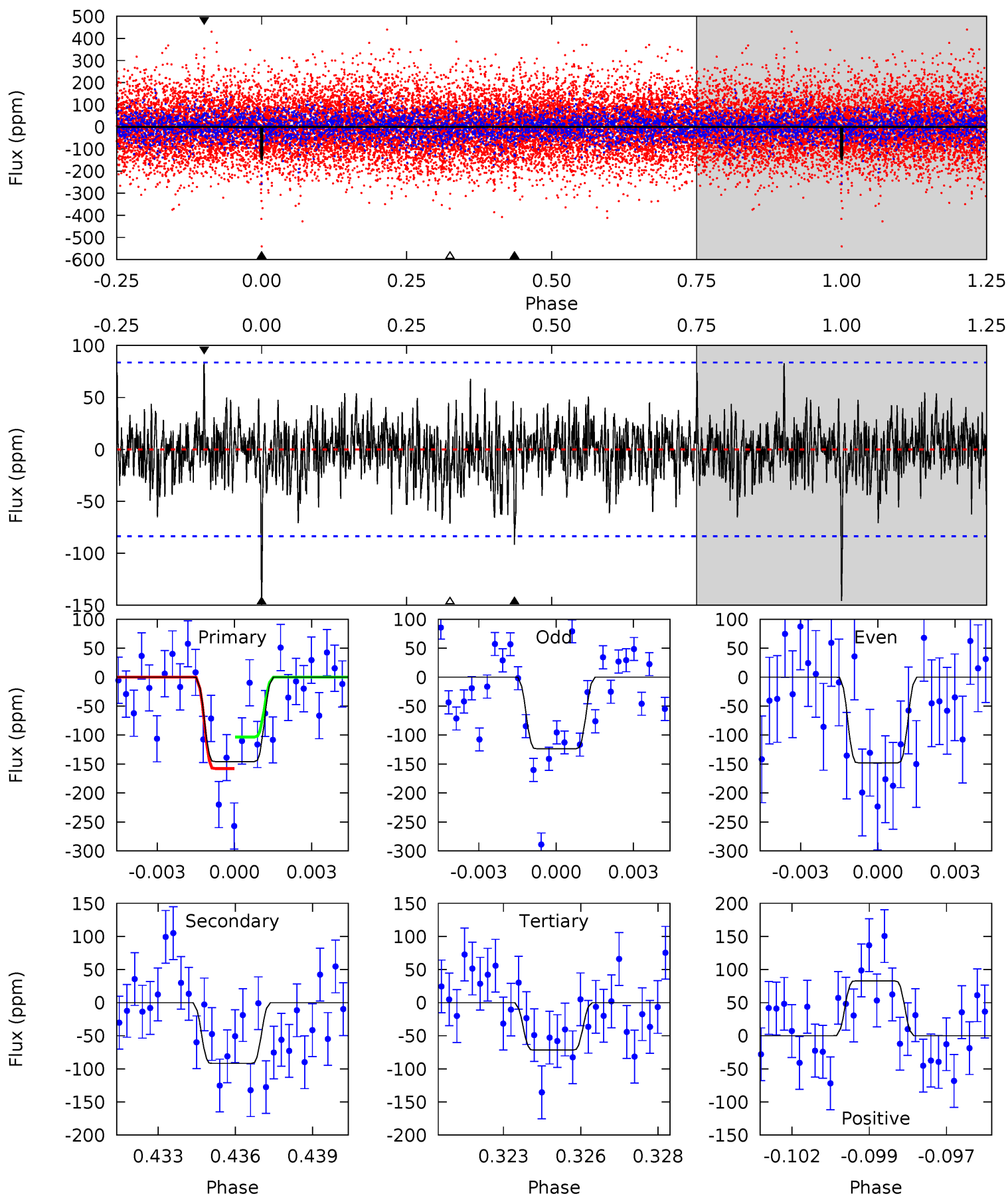
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.28	5.51	4.04	4.45	5.24	2.95	1.41	5.24	4.83	1.46	1.06	0.39	0.85	0.32	1.84



Alt Model-Shift Uniqueness Test

007708418-02, P = 60.039605 Days, E = 107.785060 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.19	5.78	4.51	5.21	5.27	2.99	1.33	4.68	3.97	1.27	0.57	0.76	0.81	0.36	1.70



Stellar Parameters For KIC 007708418

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7311^{+203}_{-319}	$4.077^{+0.158}_{-0.175}$	$-0.100^{+0.200}_{-0.350}$	$1.889^{+0.567}_{-0.464}$	$1.551^{+0.211}_{-0.257}$	$0.324^{+0.312}_{-0.160}$
	+3%/-4%	+4%/-4%	+200%/-350%	+30%/-25%	+14%/-17%	+96%/-49%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007708418-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-79 ± 14	$2.45^{+1.13}_{-1.09}$	1047^{+77}_{-75}	6160^{+2472}_{-958}	858^{+1932}_{-468}
Alt.	-92 ± 16	$2.54^{+1.24}_{-0.99}$	1050^{+79}_{-77}	6257^{+2100}_{-990}	910^{+1564}_{-497}

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

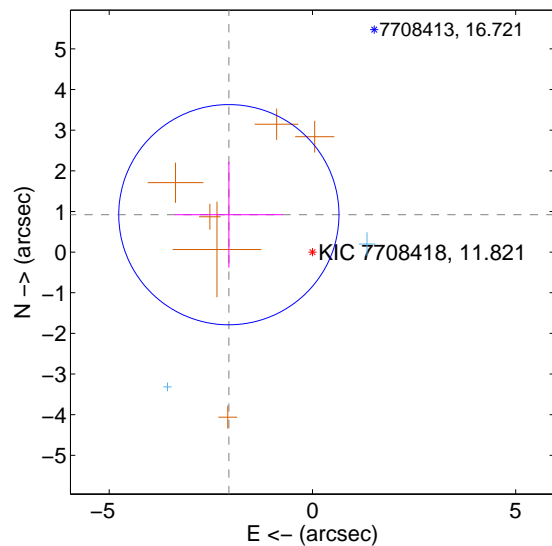
Supplemental centroid analysis for 007708418-02. **Kepler magnitude: 11.82.** Transit SNR 8.07

There are 2 quarters with good PRF difference image offsets

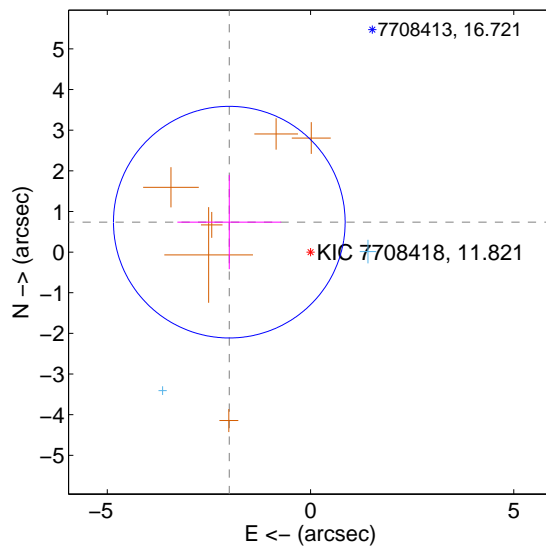
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.252 ± 0.903	2.49	2.056 ± 1.331	0.920 ± 1.301
PRF-fit source offset from KIC position	2.129 ± 0.950	2.24	1.998 ± 1.276	0.737 ± 1.159
photometric centroid source offset	0.83 ± 0.82	1.01	-0.71 ± 0.88	-0.42 ± 0.63

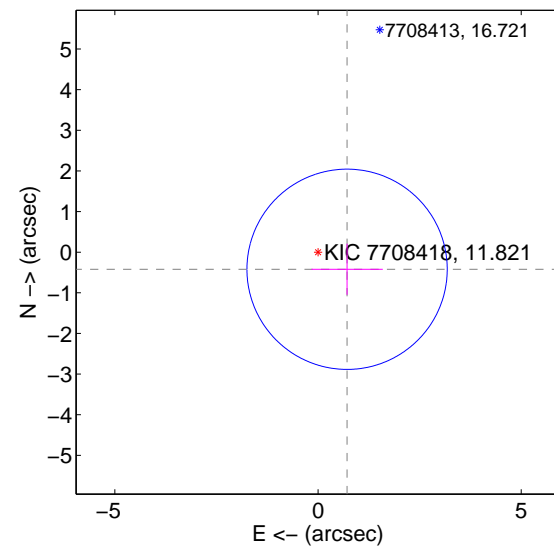
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

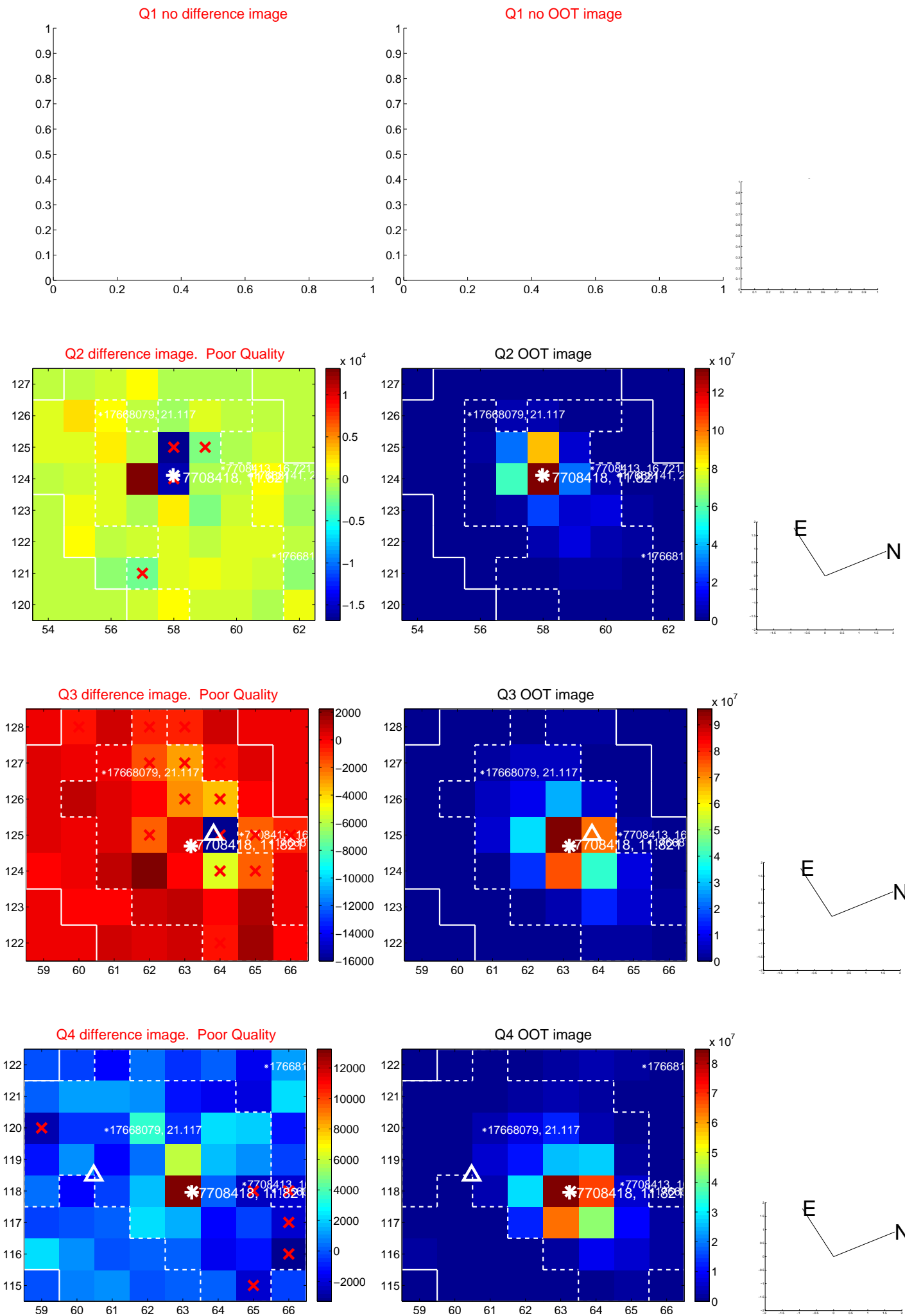


offset from photometric centroids

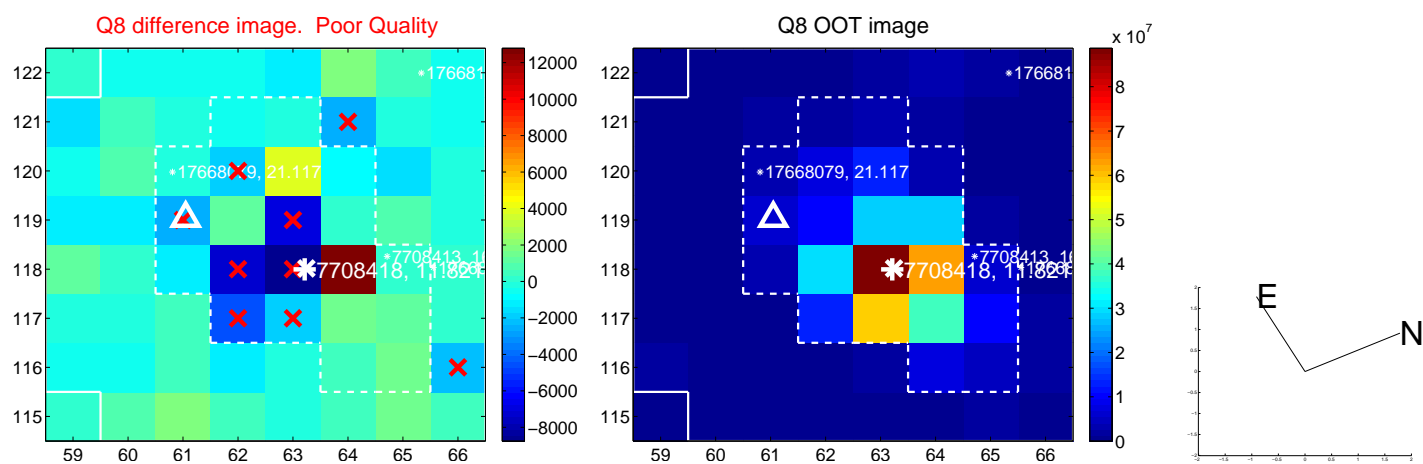
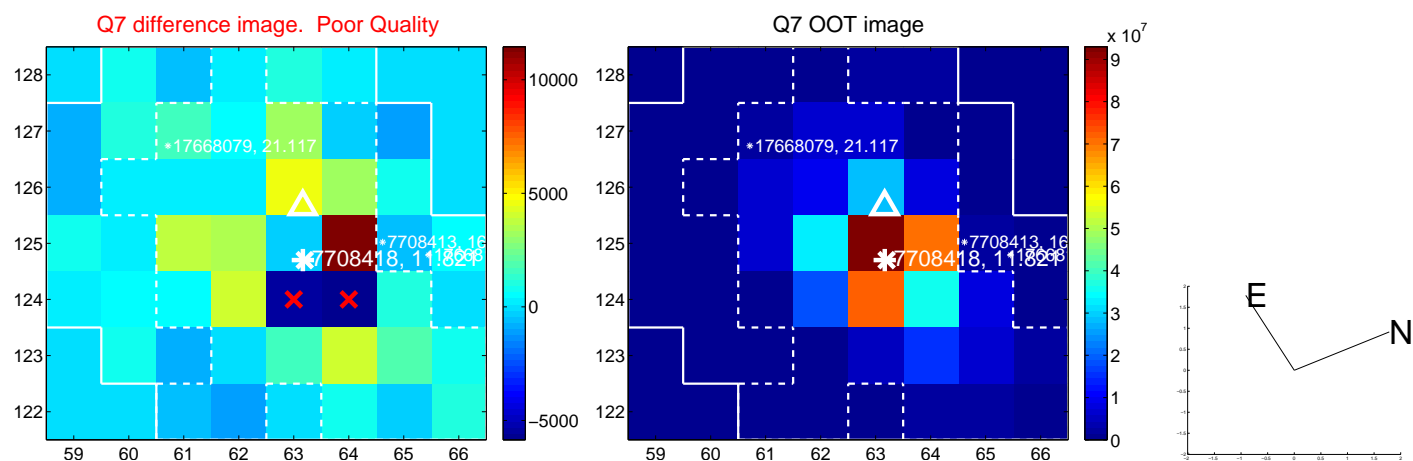
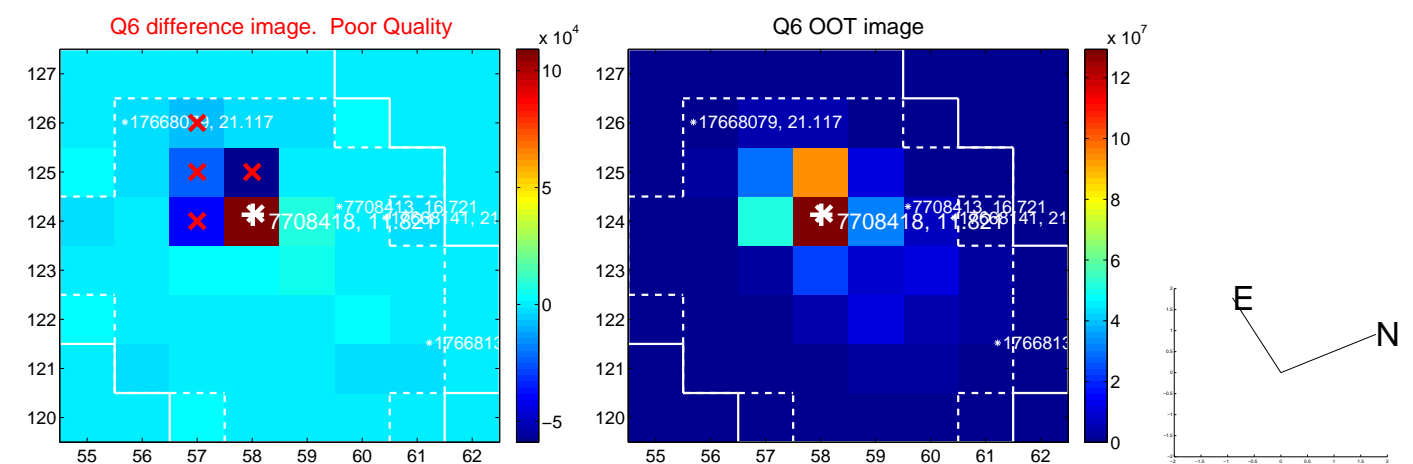
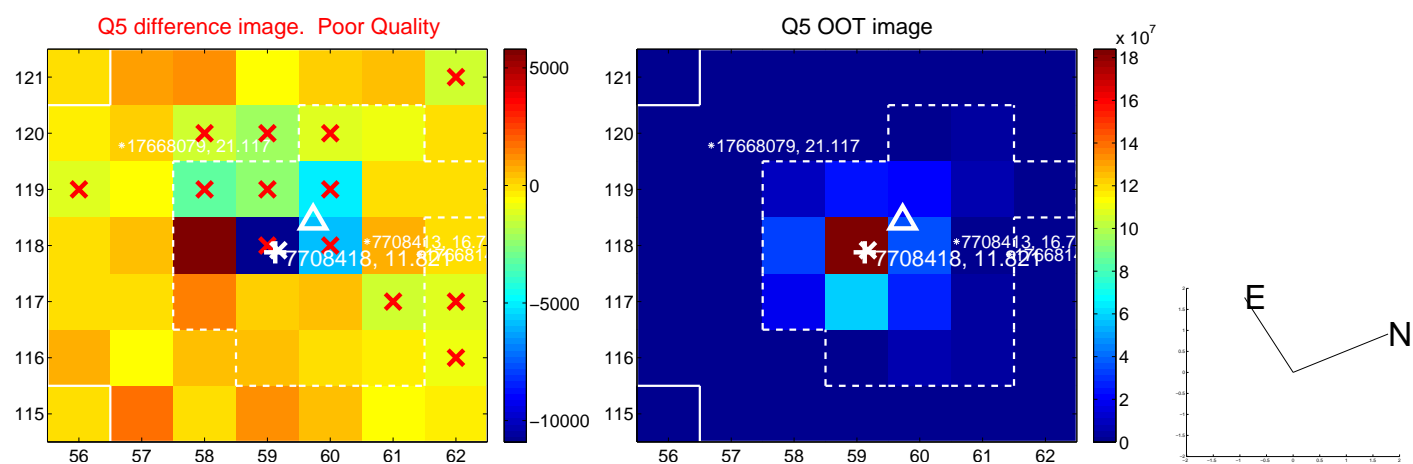


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

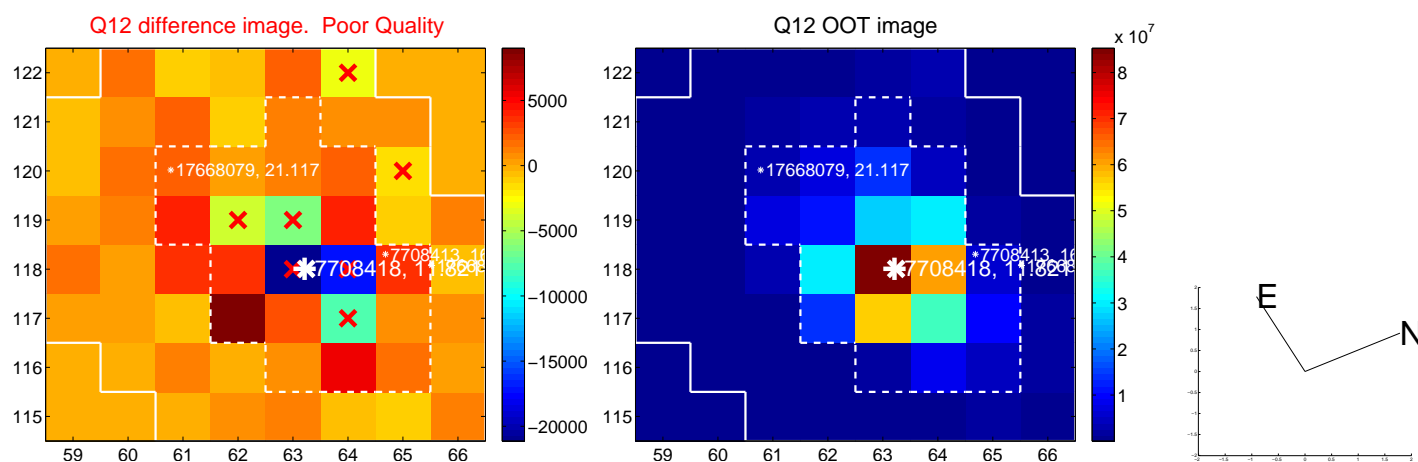
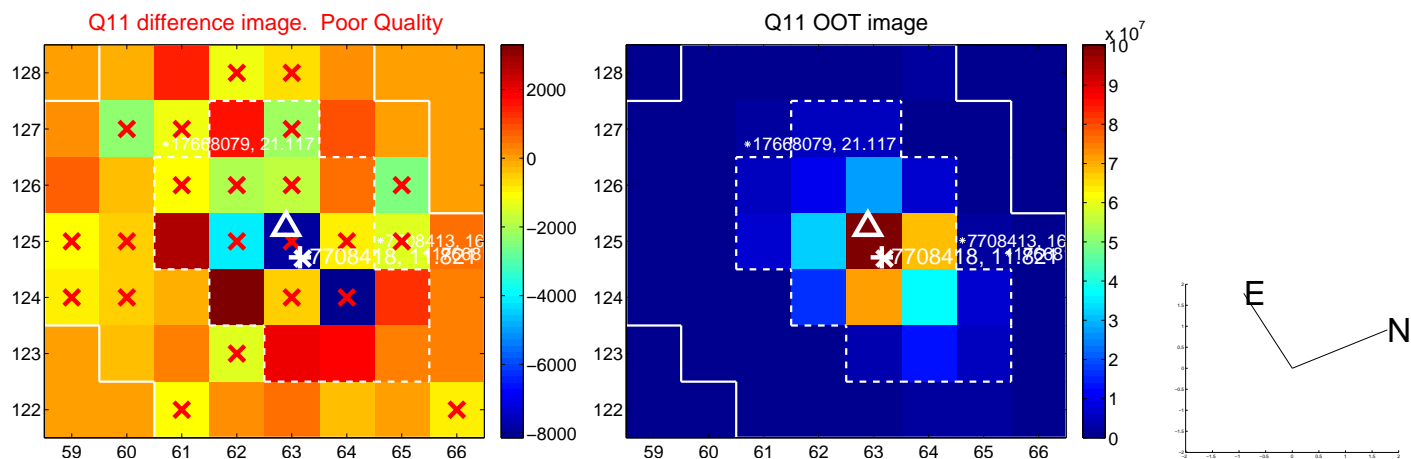
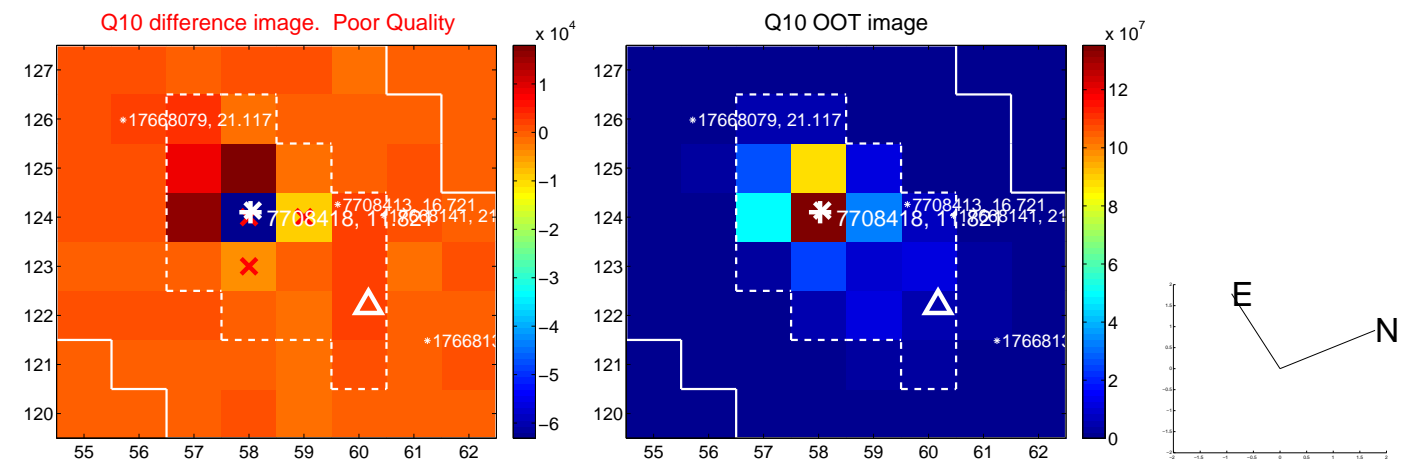
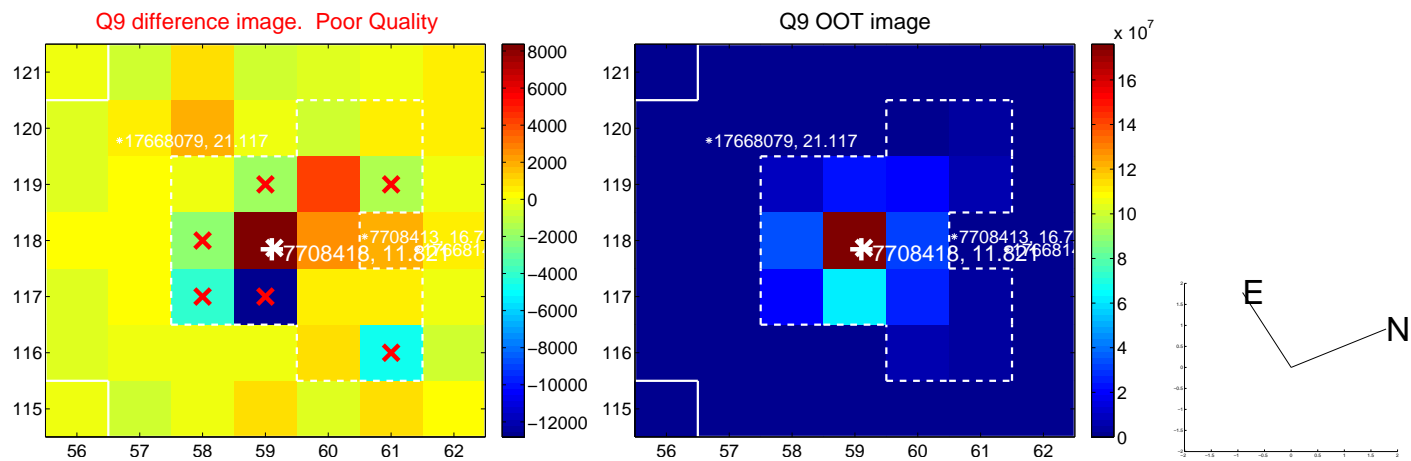
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



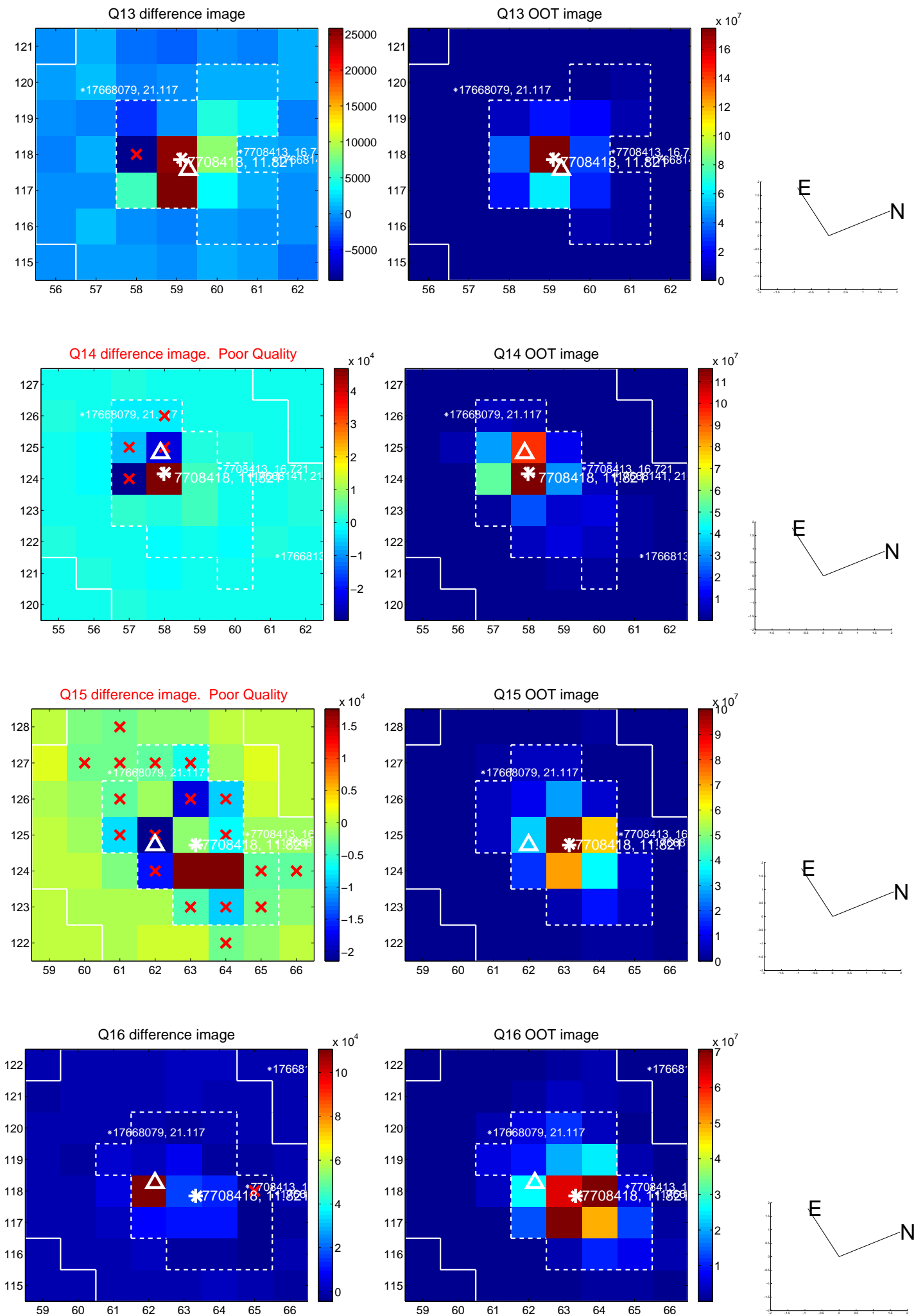
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



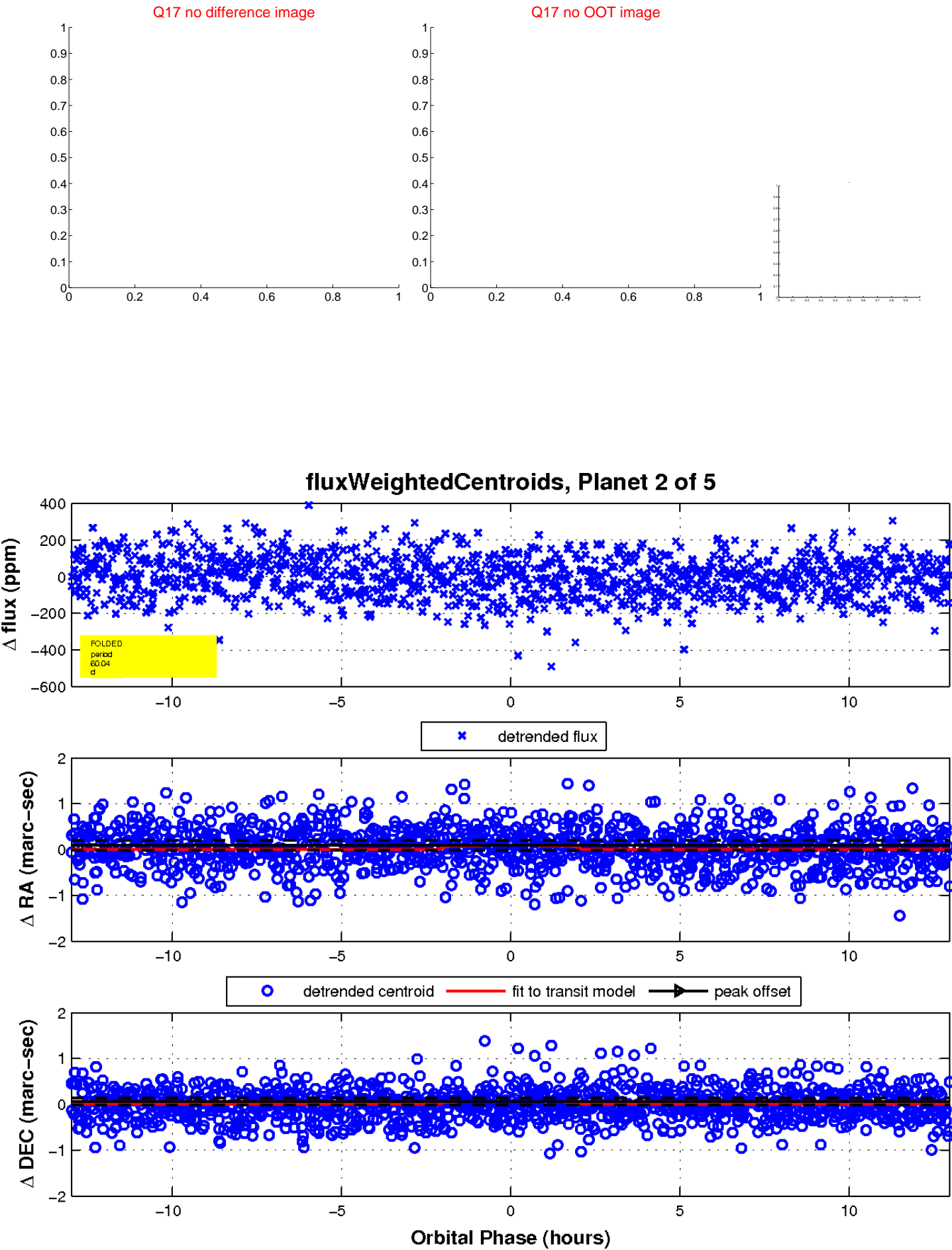
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

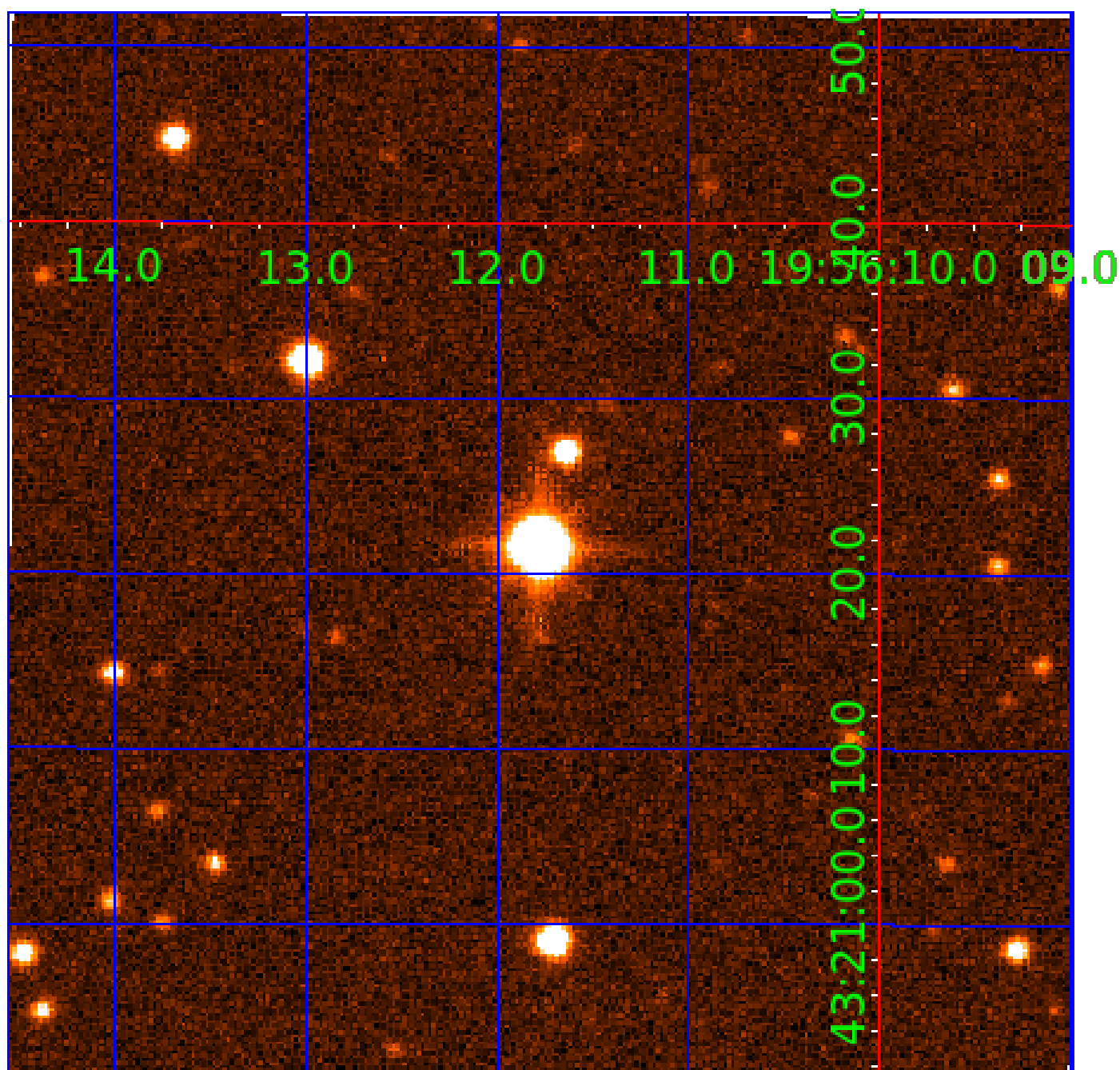


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007708418

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})
007708418-01	OBS	No	0.751426	131.840283	5.1	4.269	8.9	3.5	1.89	7311	0.43	26008.07
007708418-02	OBS	No	60.039056	167.835095	125.4	4.326	8.7	8.1	1.89	7311	2.46	75.58
007708418-03	OBS	No	39.311786	134.109745	124.6	3.794	8.3	8.8	1.89	7311	2.37	132.92
007708418-04	OBS	No	320.817673	175.830844	190.7	3.069	8.1	8.1	1.89	7311	3.02	8.09
007708418-05	OBS	No	148.141121	223.849097	217.9	3.309	8.2	8.8	1.89	7311	3.03	22.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007708418-01	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST
007708418-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
007708418-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007708418-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007708418-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

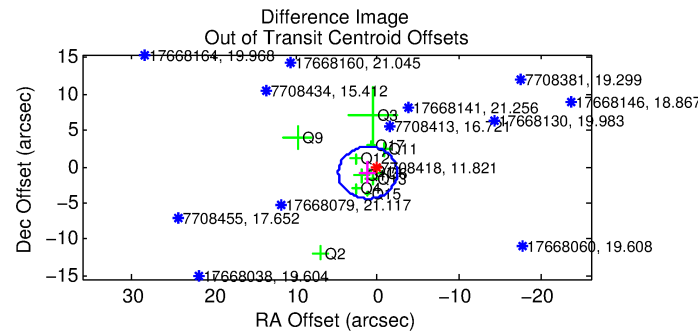
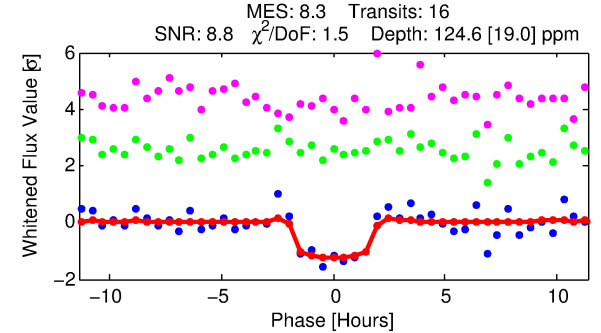
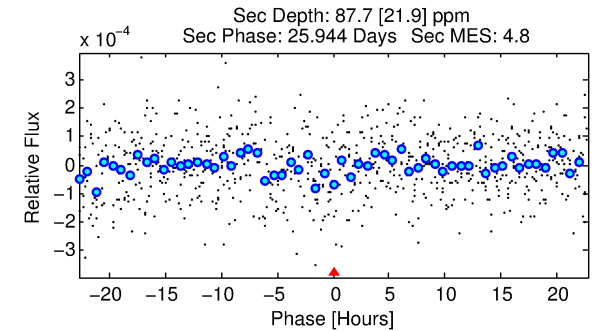
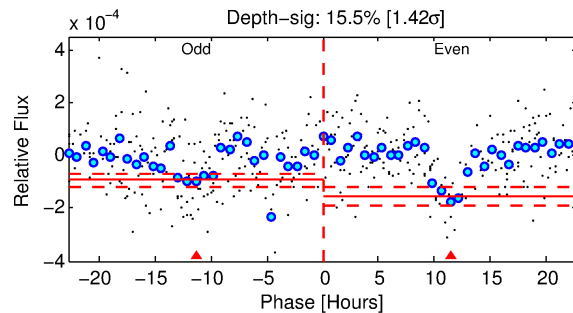
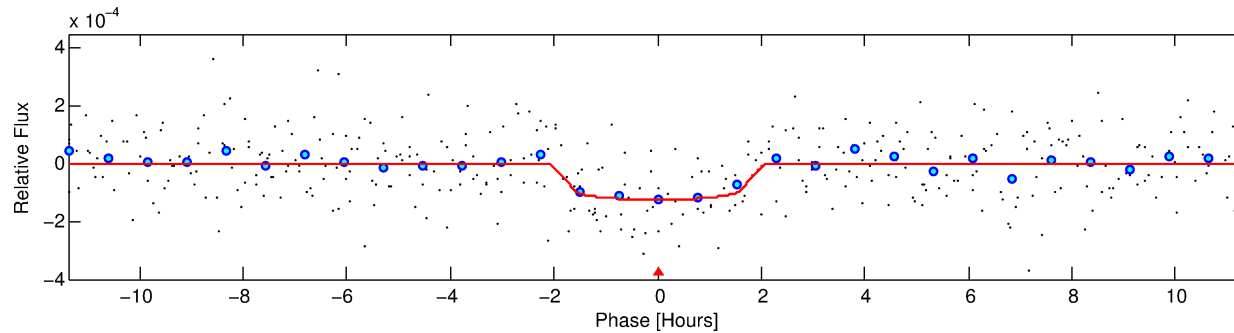
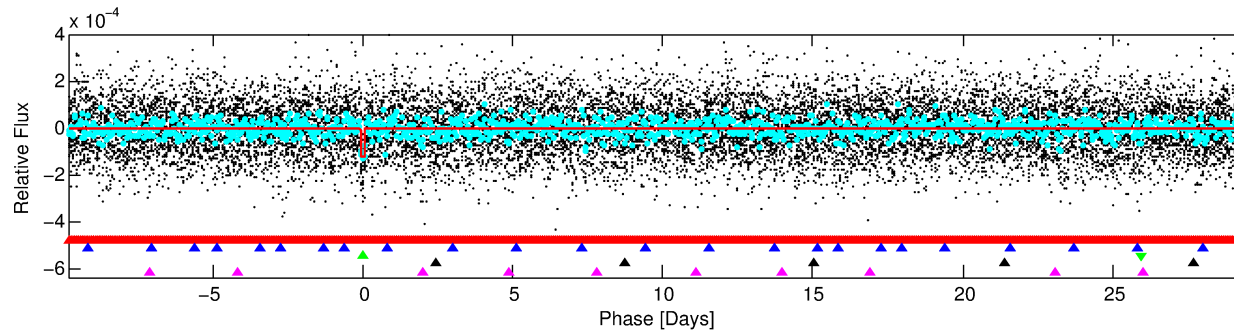
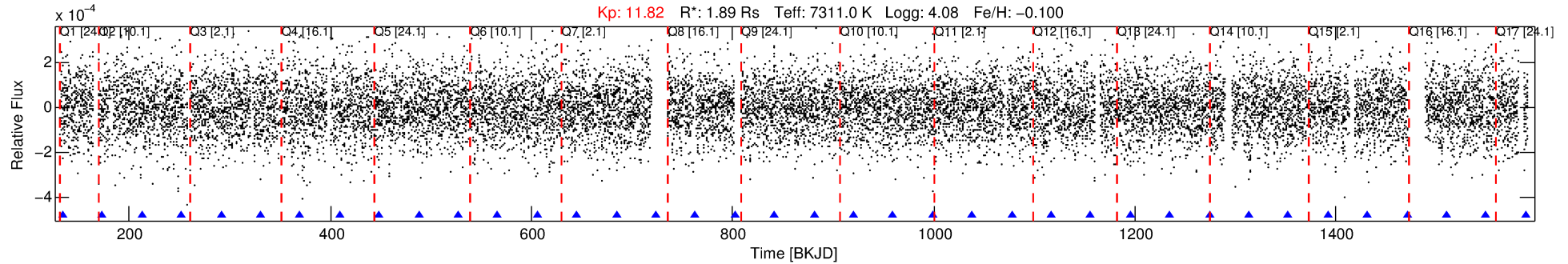
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007708418-03

No Significant Match Found

DV One-Page Summary

KIC: 7708418 Candidate: 3 of 5 Period: 39.312 d



DV Fit Results:

Period = 39.31179 [0.00040] d
Epoch = 134.1097 [0.0091] BKJD
Rp/R* = 0.0115 [0.0094]
a/R* = 43.92 [225.95]
b = 0.85 [1.75]
Seff = 132.92 [50.21]
Teq = 866 [82] K
Rp = 2.37 [2.06] Re
a = 0.2621 [0.0632] AU
Ag = 591.67 [998.17] [0.59 σ]
Teffp = 6602 [2744] K [2.09 σ]

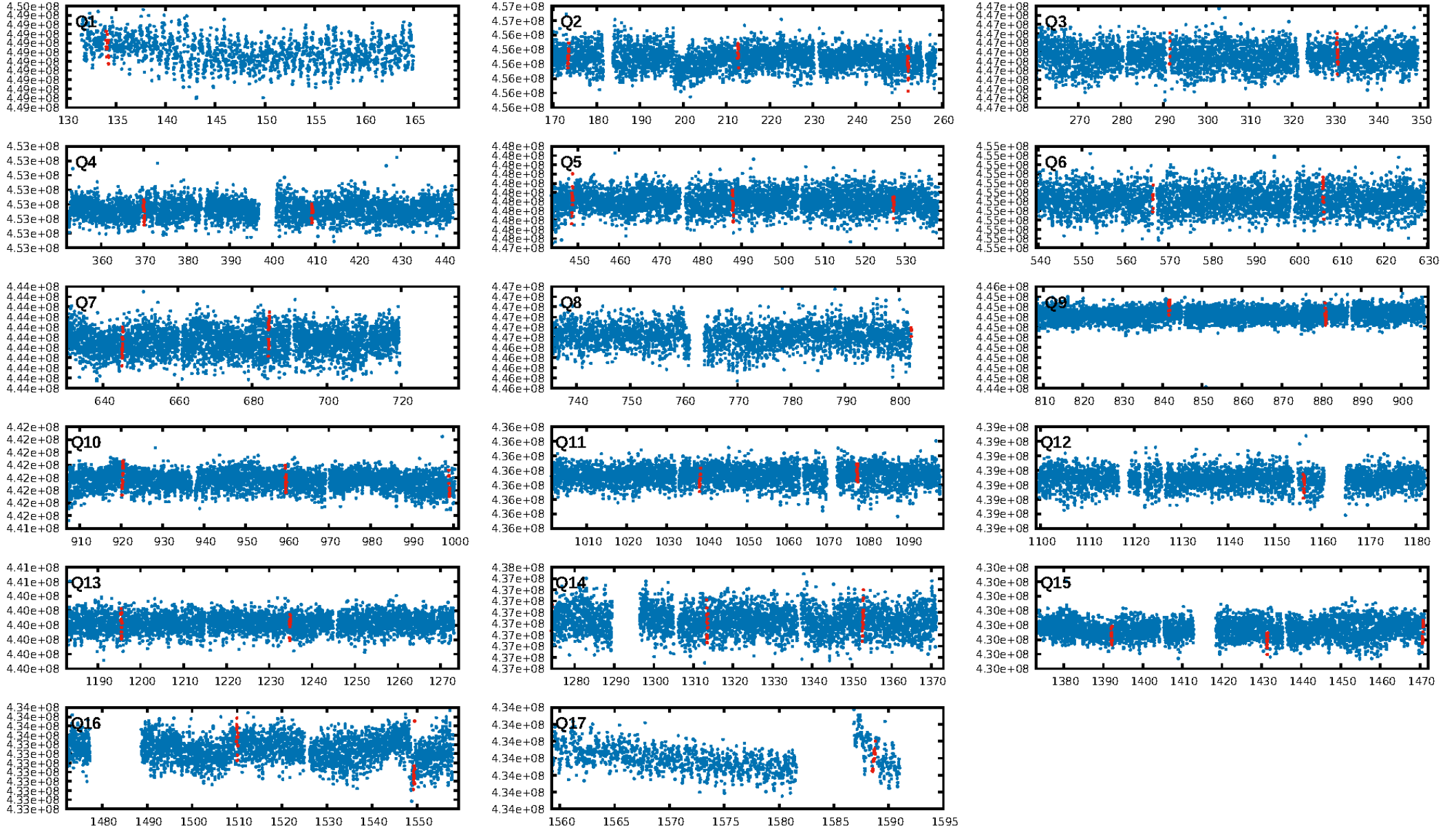
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [162.05 σ]
LongPeriod-sig: 100.0% [86.45 σ]
ModelChiSquare2-sig: 10.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.12e-09
RollingBand-fgt: 1.00 [15/15]
GhostDiagnostic-chr: -1.077
Centroid-sig: 6.4%
Centroid-so: 0.813 arcsec [1.18 σ]
OotOffset-rm: 1.462 arcsec [1.22 σ]
KicOffset-rm: 1.529 arcsec [1.25 σ]
OotOffset-st: 3/3/2/4 [12]
KicOffset-st: 3/3/2/4 [12]
DiffImageQuality-fgm: 0.17 [2/12]
DiffImageOverlap-fno: 0.00 [0/15]

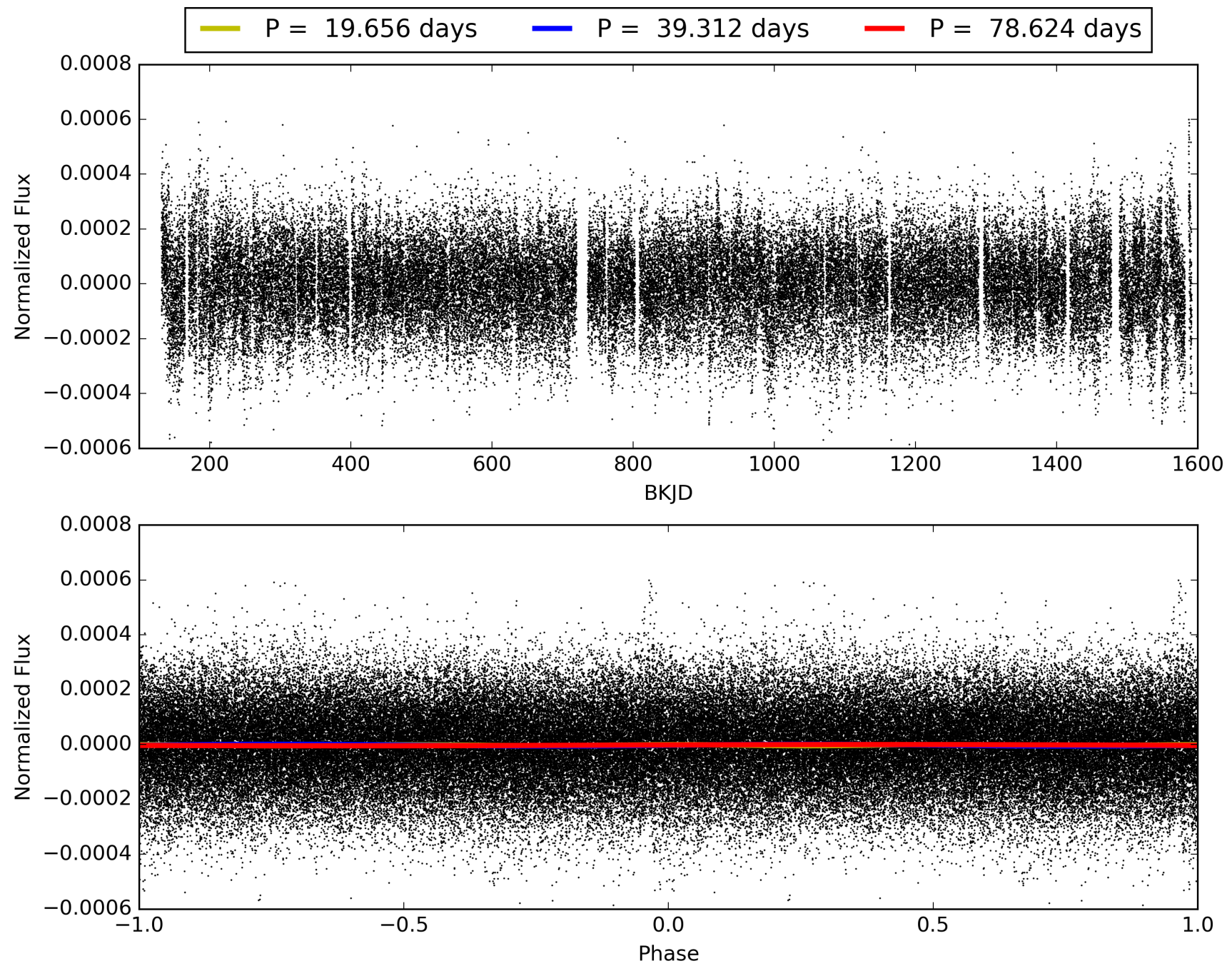
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:56:14 Z

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

TCE 007708418-03, PDC Light Curves

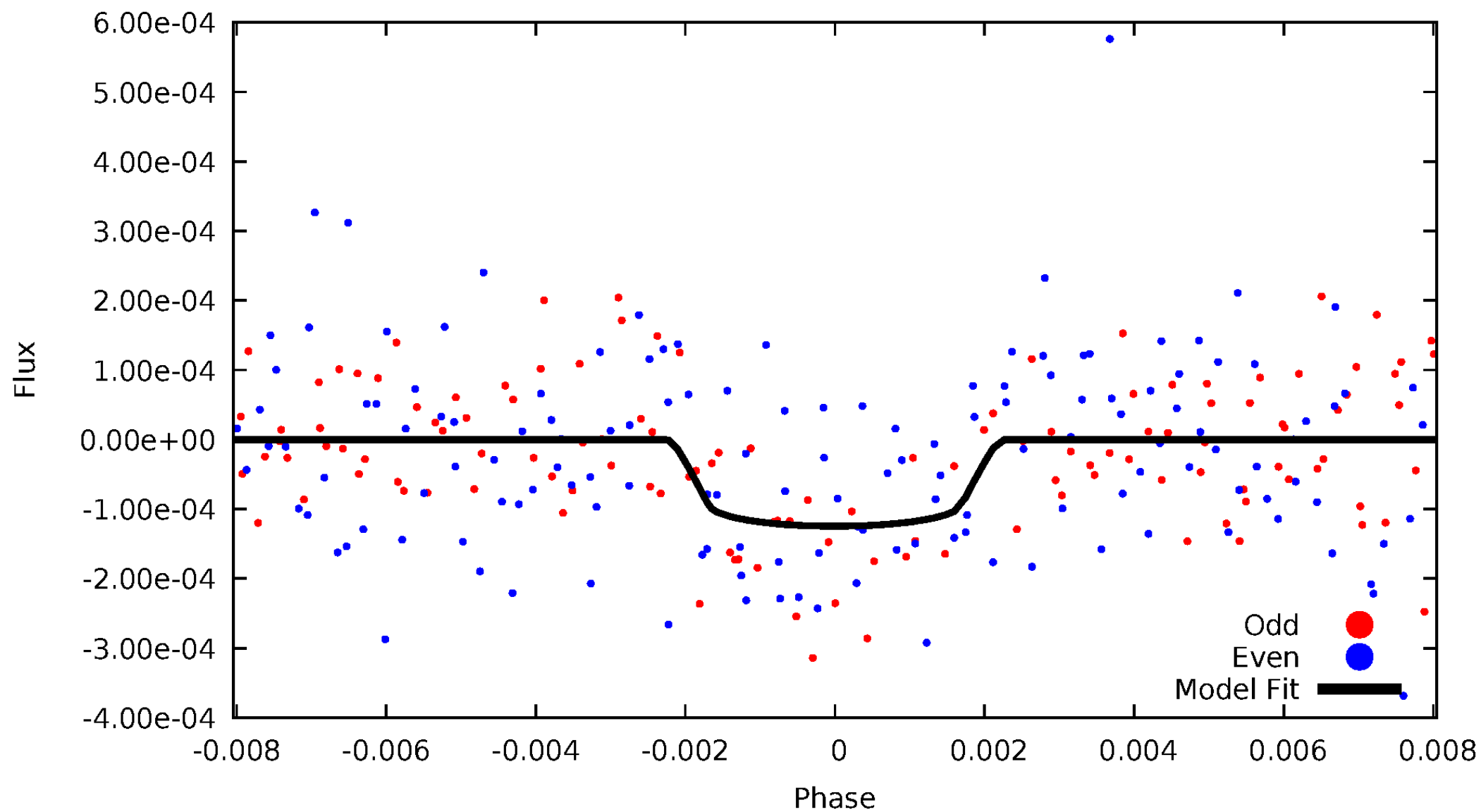


TCE 007708418-03



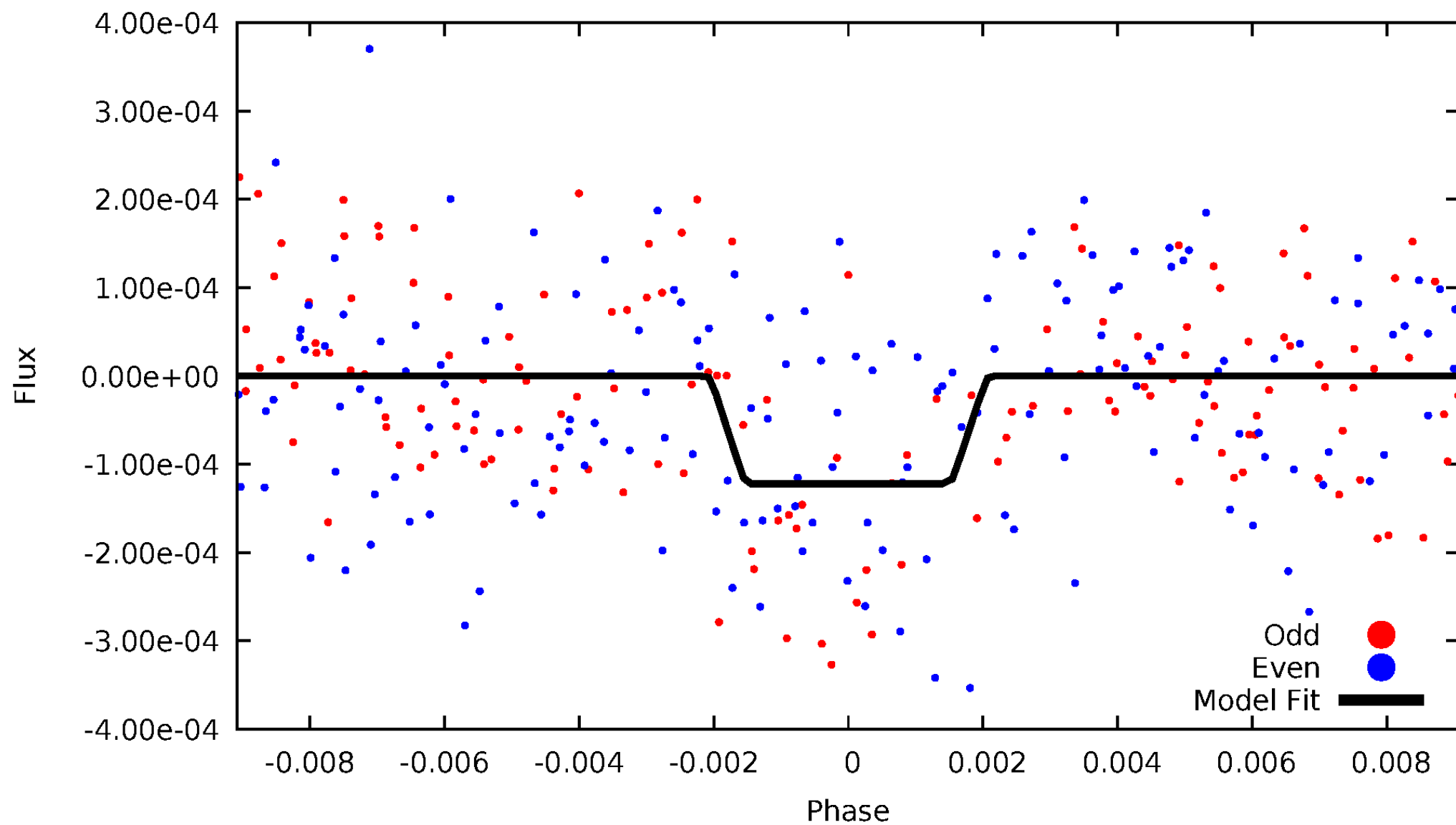
DV Odd/Even

TCE 007708418-03



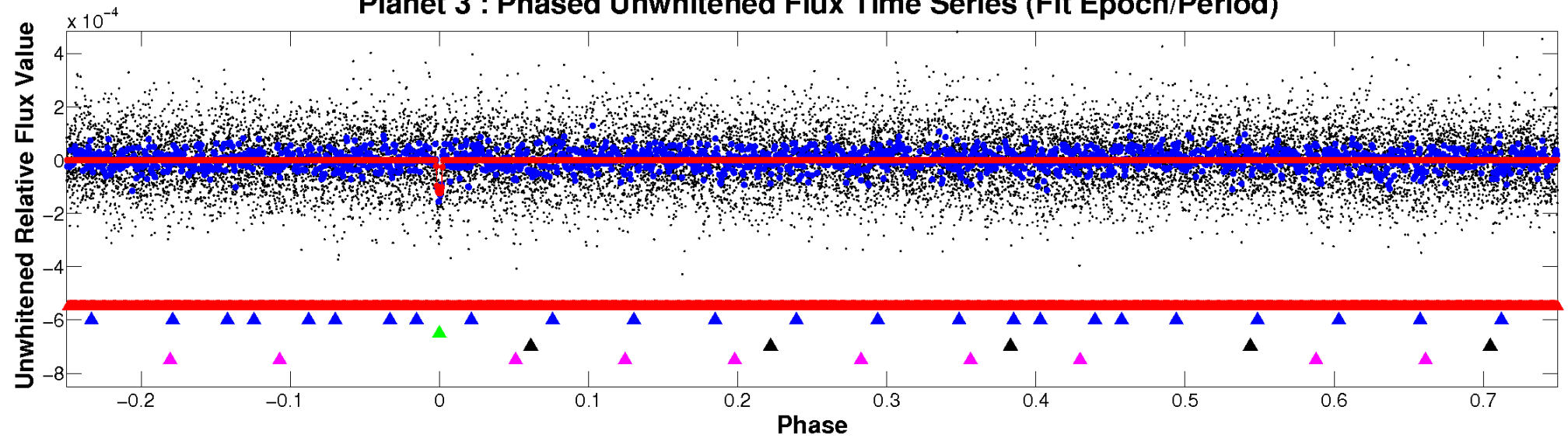
ALT Odd/Even

TCE 007708418-03

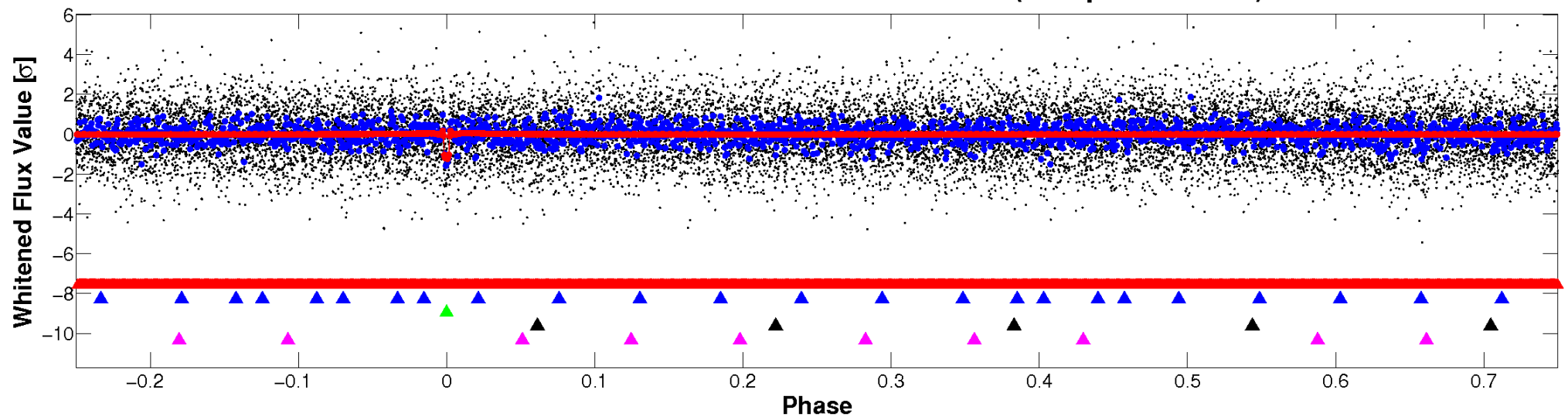


Non-Whitened Vs. Whitened Light Curve

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

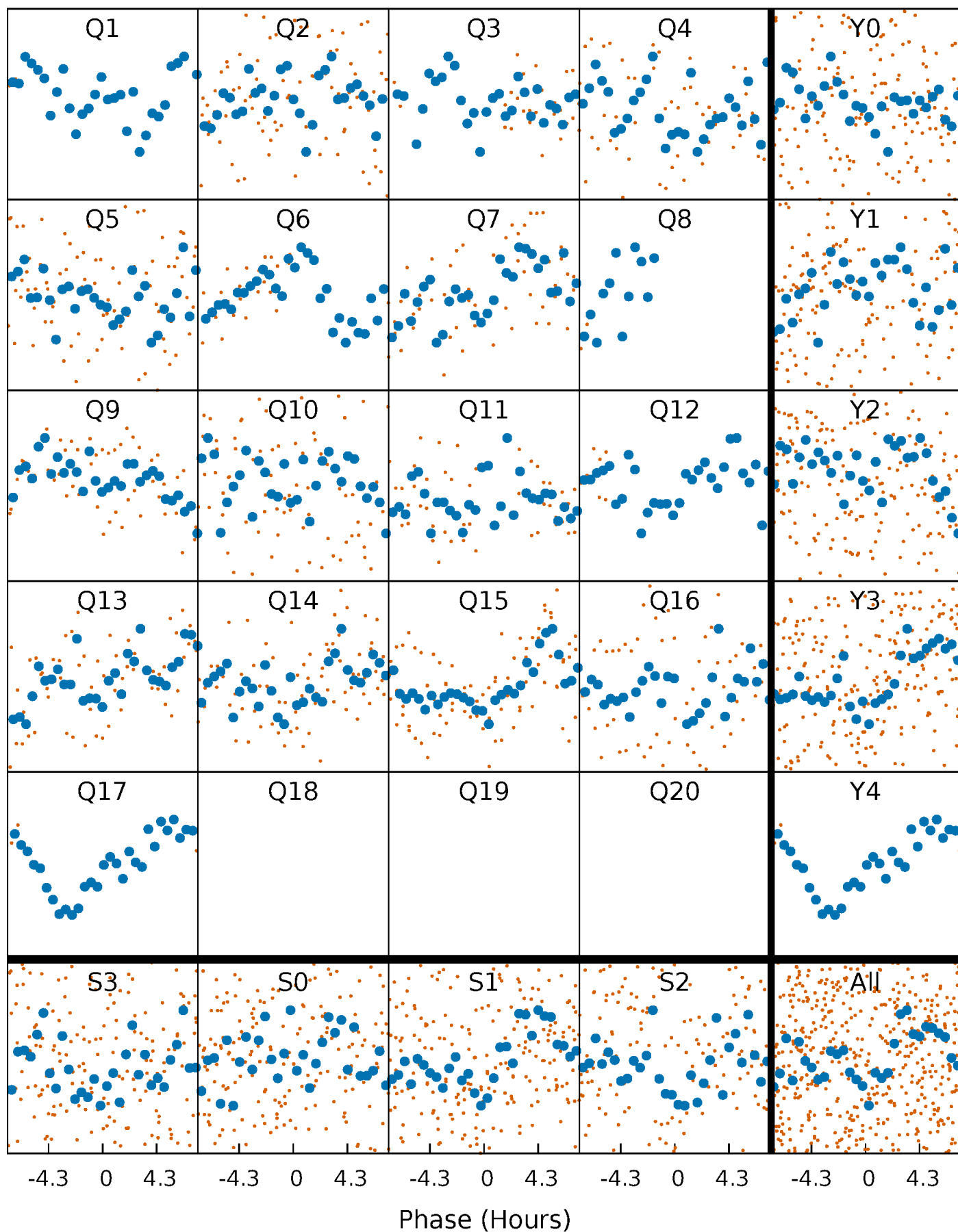


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



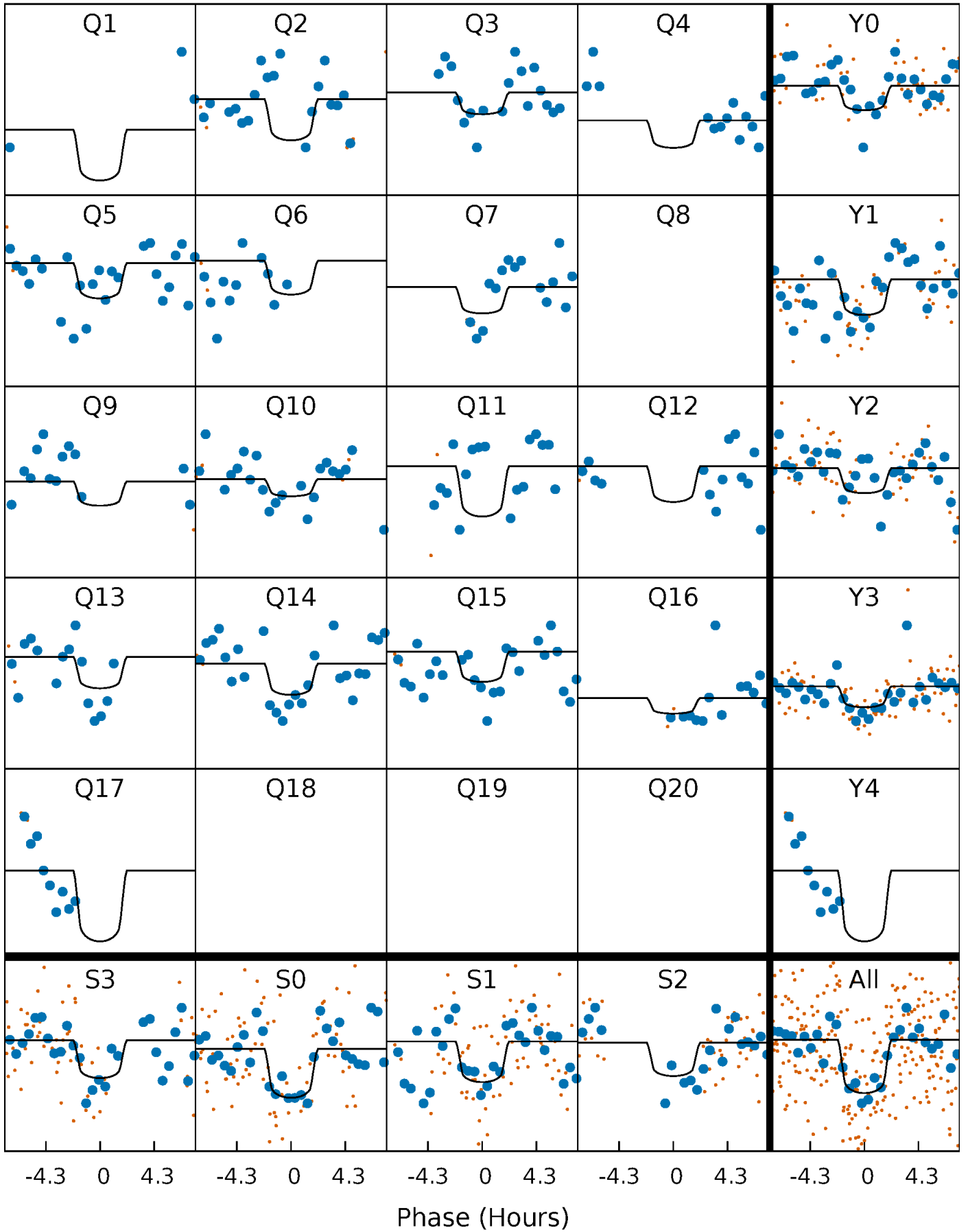
PDC Quarter-Phased Transit Curves

TCE 007708418-03 P= 39.311786 Days $T_0=134.109745$ (BKJD)



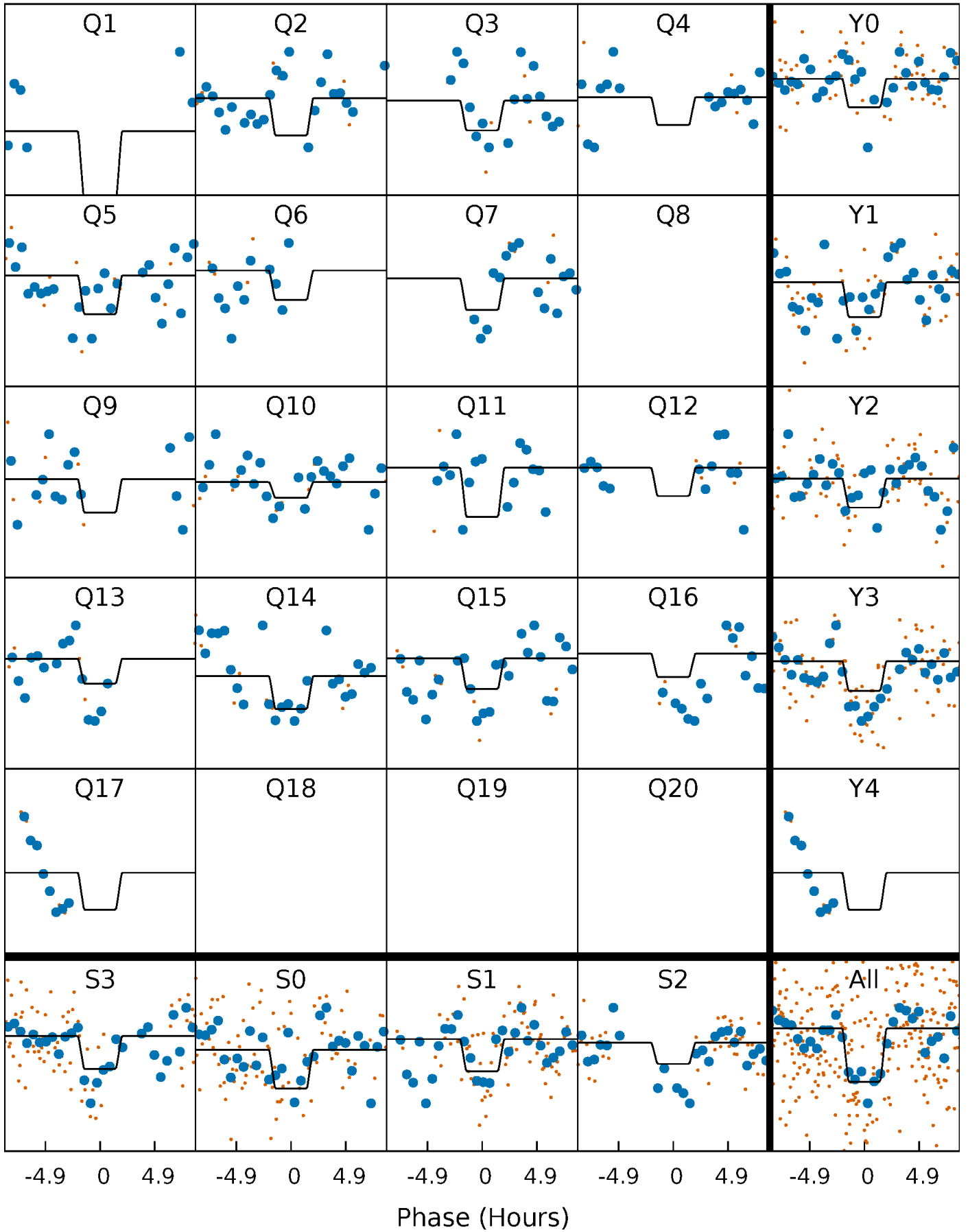
DV Quarter-Phased Transit Curves

TCE 007708418-03 P= 39.311786 Days $T_0=134.109745$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

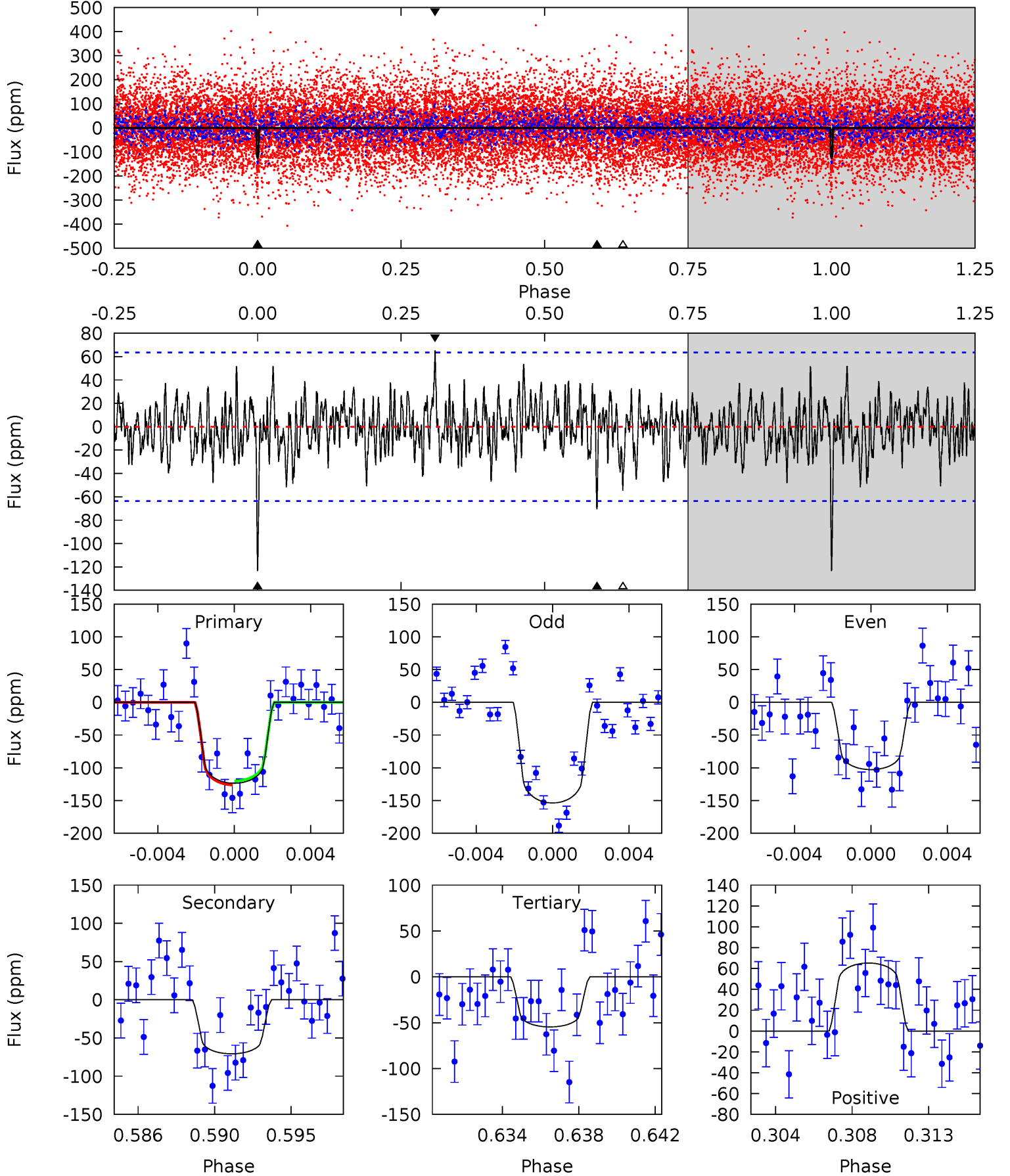
TCE 007708418-03 P= 39.313654 Days $T_0=134.074932$ (BKJD)



DV Model-Shift Uniqueness Test

007708418-03, P = 39.311786 Days, E = 94.797959 Days

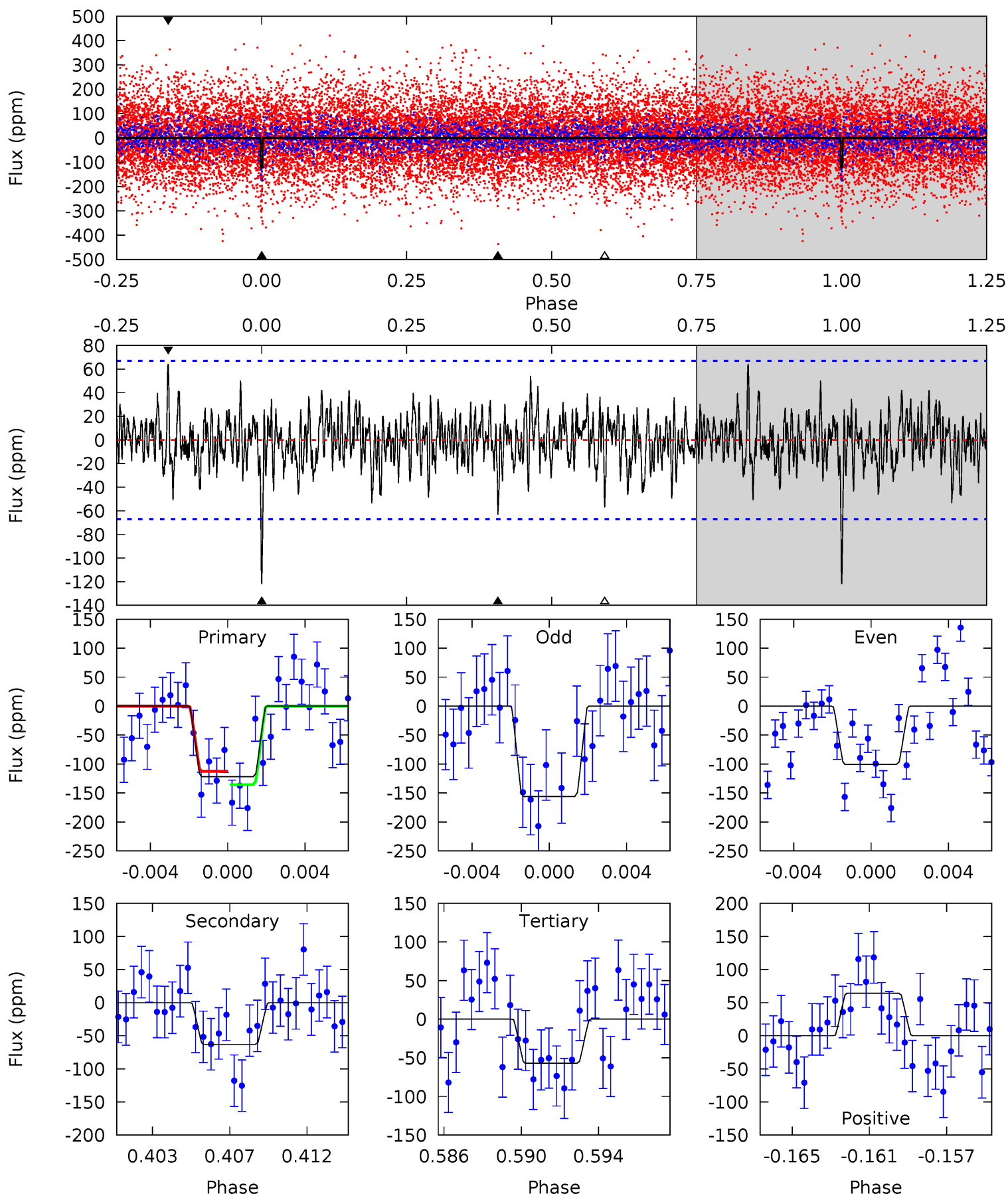
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	5.77	4.45	5.32	5.18	2.85	1.46	5.62	4.76	1.31	0.45	2.06	0.83	0.35	0.24



Alt Model-Shift Uniqueness Test

007708418-03, P = 39.313654 Days, E = 94.761278 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.44	4.89	4.42	4.98	5.19	2.86	1.35	5.02	4.46	0.47	-0.09	2.10	0.98	0.35	0.87



Stellar Parameters For KIC 007708418

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7311^{+203}_{-319}	$4.077^{+0.158}_{-0.175}$	$-0.100^{+0.200}_{-0.350}$	$1.889^{+0.567}_{-0.464}$	$1.551^{+0.211}_{-0.257}$	$0.324^{+0.312}_{-0.160}$
	+3%/-4%	+4%/-4%	+200%/-350%	+30%/-25%	+14%/-17%	+96%/-49%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007708418-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-71 ± 12	$2.64^{+1.81}_{-1.59}$	1207^{+92}_{-84}	5782^{+4277}_{-1167}	368^{+2036}_{-242}
Alt.	-63 ± 13	$2.62^{+1.90}_{-1.64}$	1207^{+92}_{-83}	5681^{+4644}_{-1148}	340^{+2257}_{-228}

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 $A_{obs} \gg 1.0$

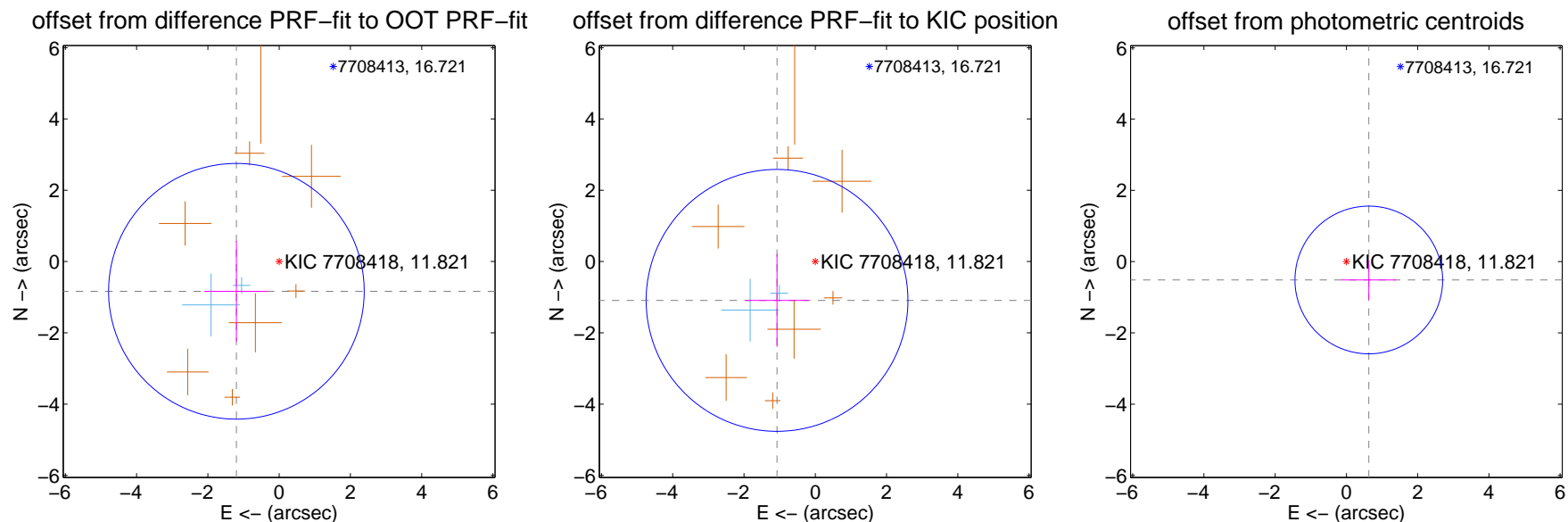
DV Centroid Data

Supplemental centroid analysis for 007708418-03. **Kepler magnitude: 11.82.** Transit SNR 8.84

There are 2 quarters with good PRF difference image offsets

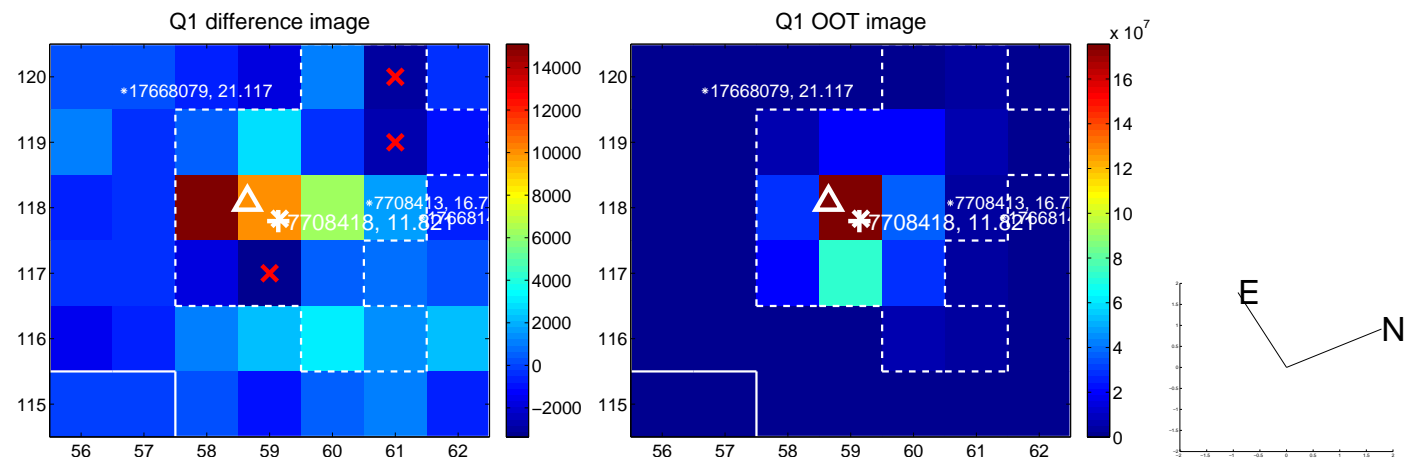
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.462 ± 1.196	1.22	1.200 ± 0.898	-0.835 ± 1.411
PRF-fit source offset from KIC position	1.529 ± 1.224	1.25	1.073 ± 0.892	-1.090 ± 1.304
photometric centroid source offset	0.81 ± 0.69	1.18	-0.63 ± 0.77	-0.52 ± 0.55

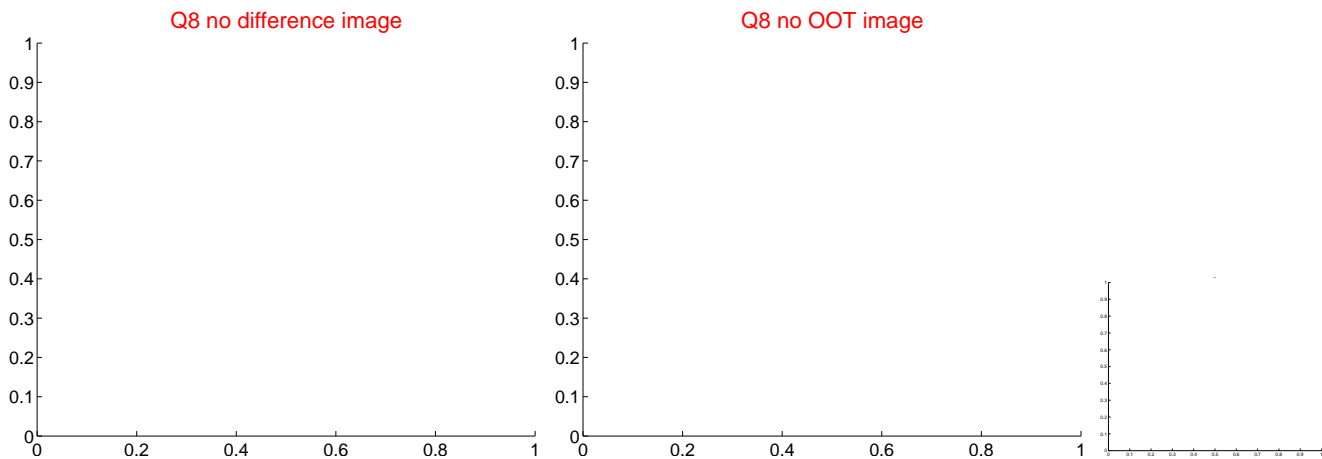
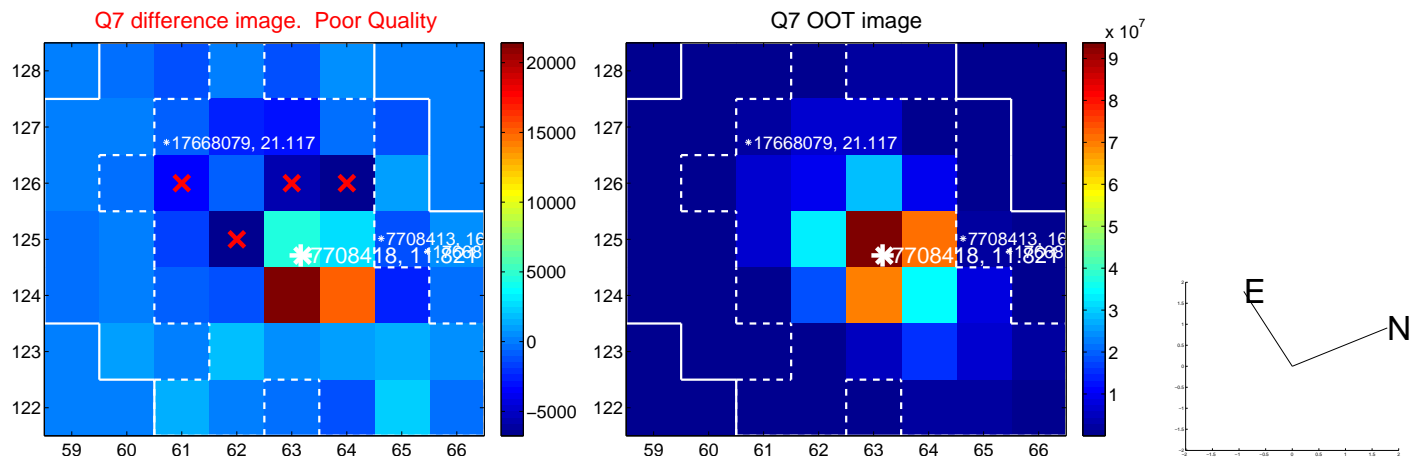
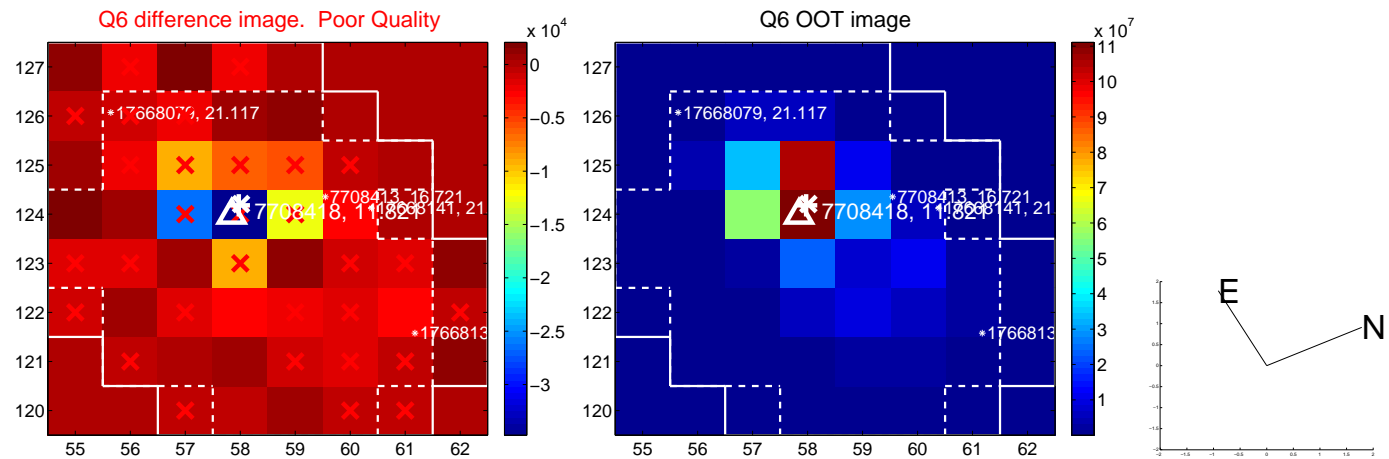
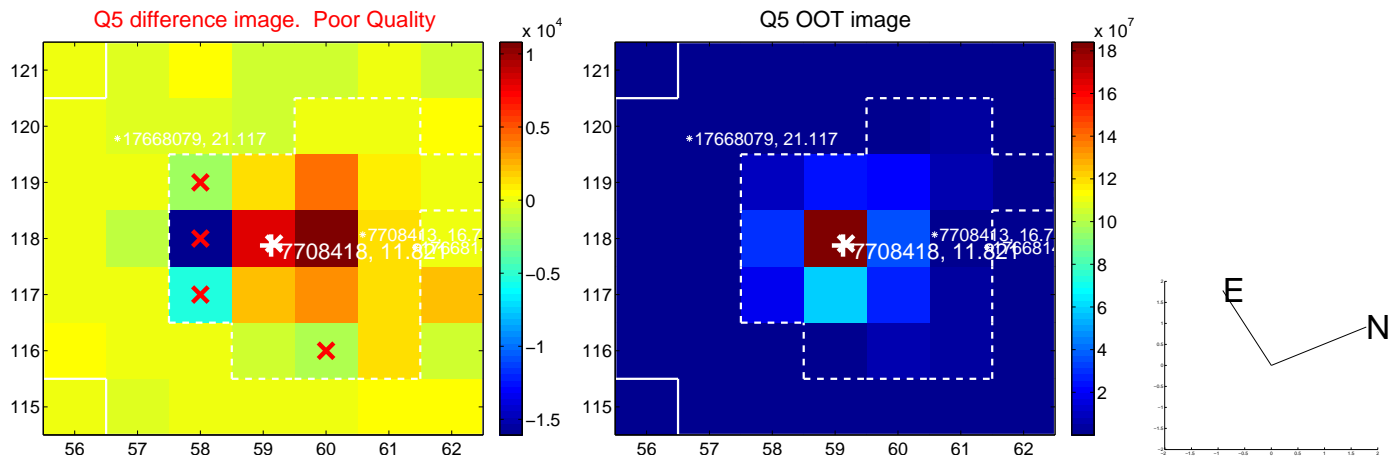


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

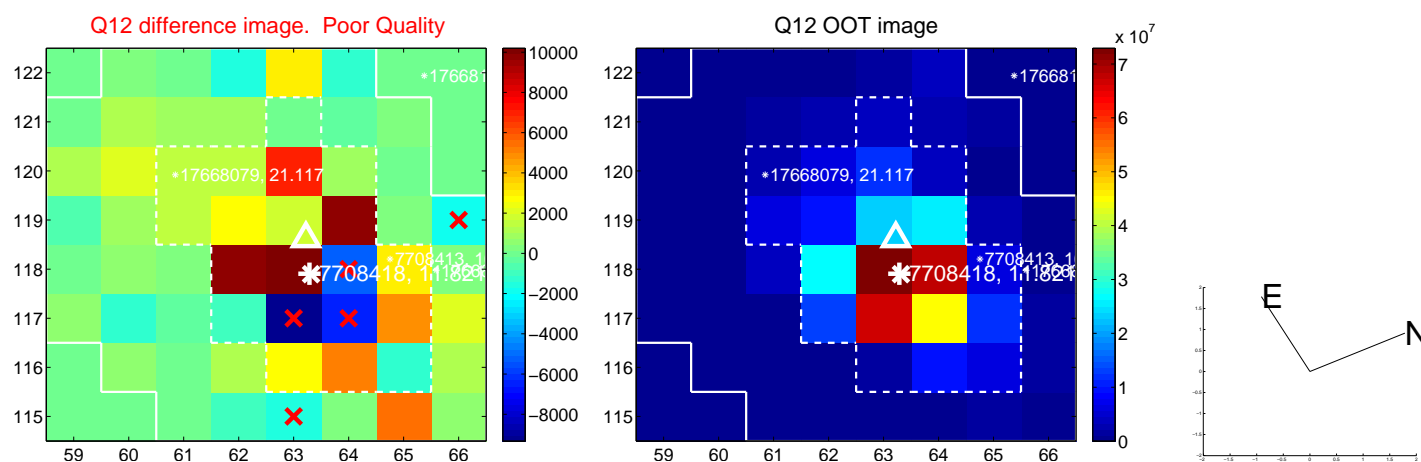
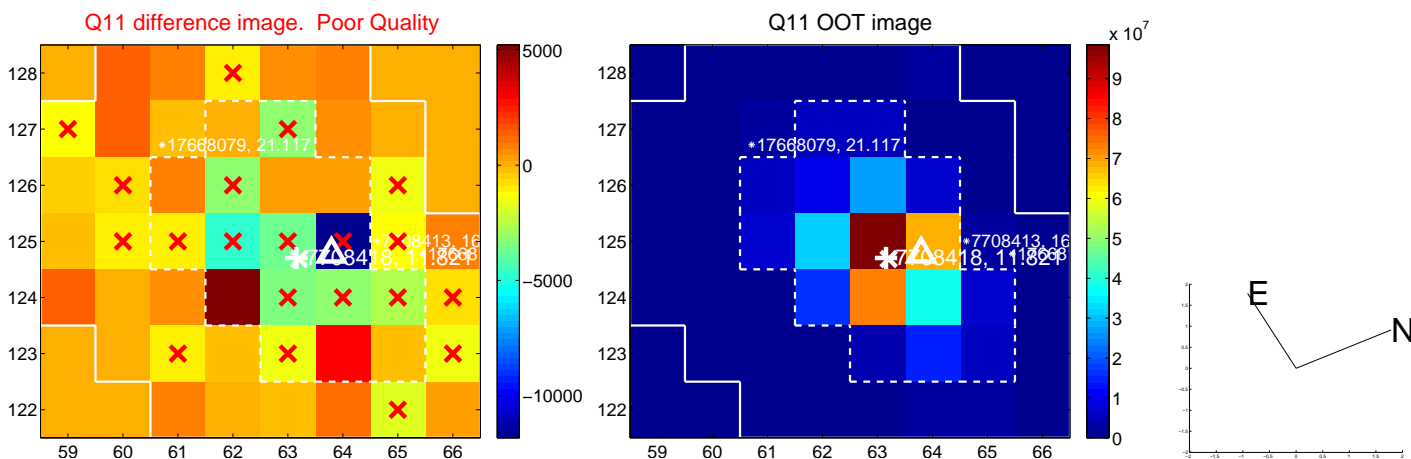
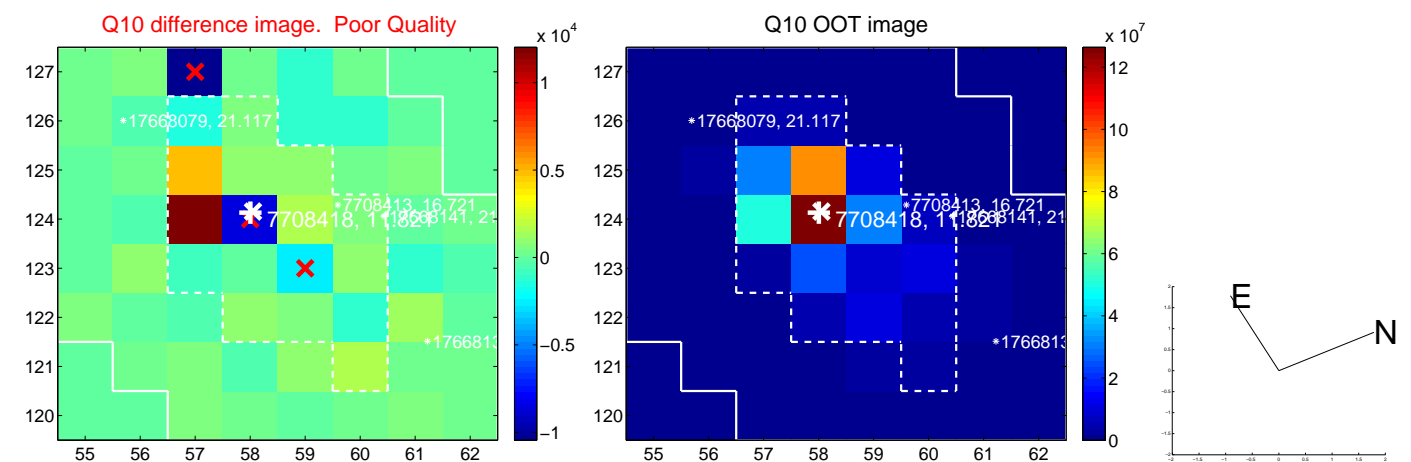
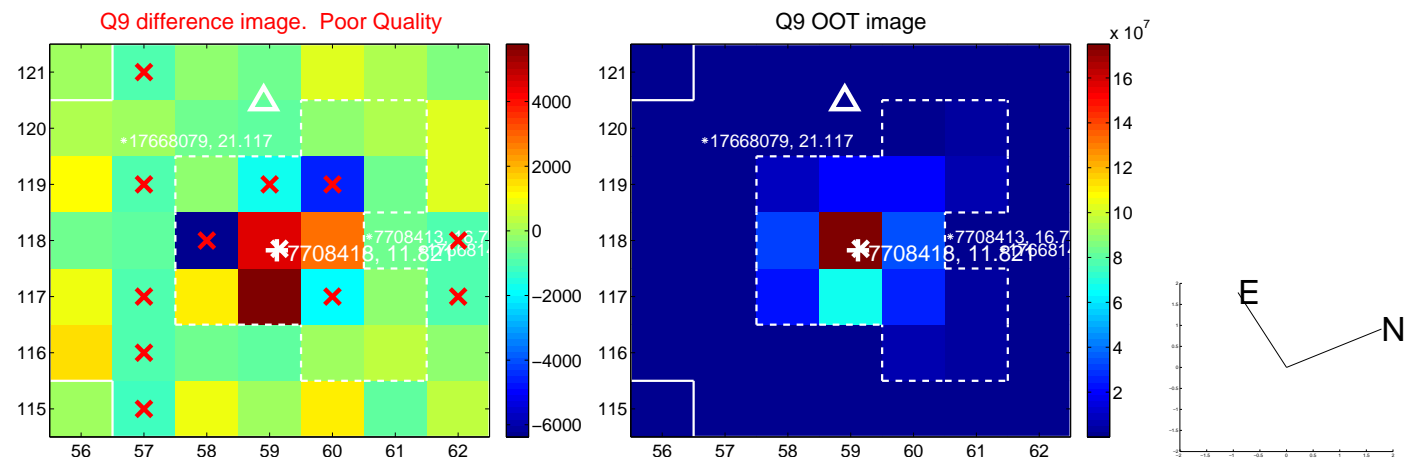
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



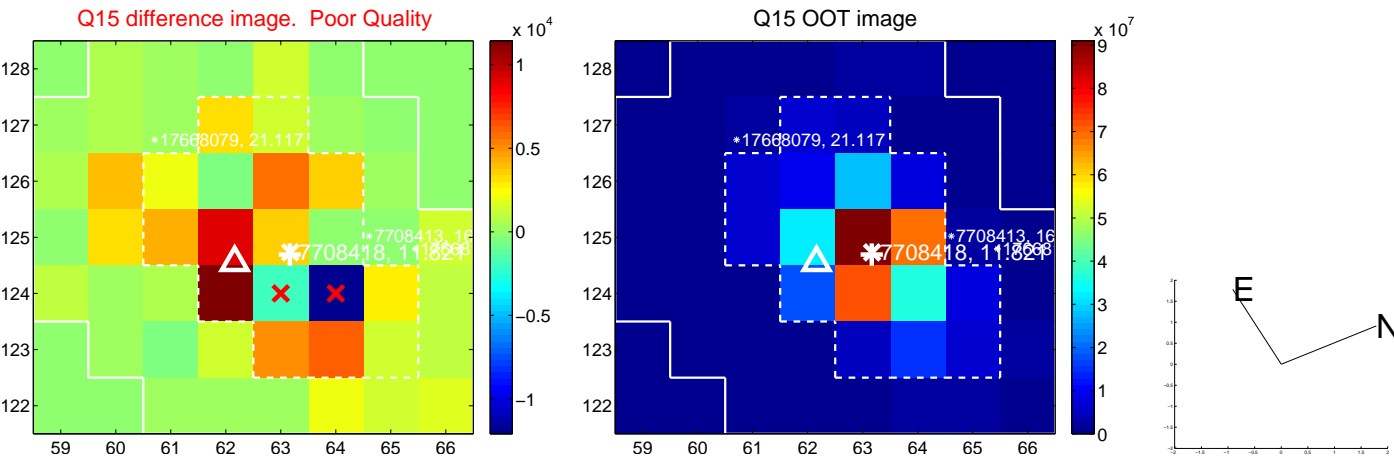
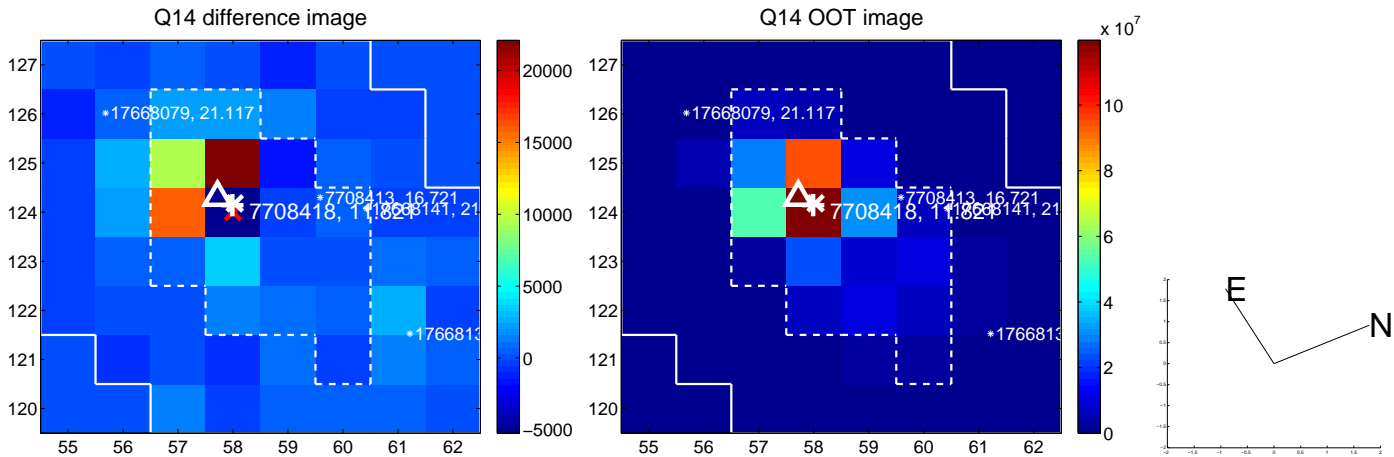
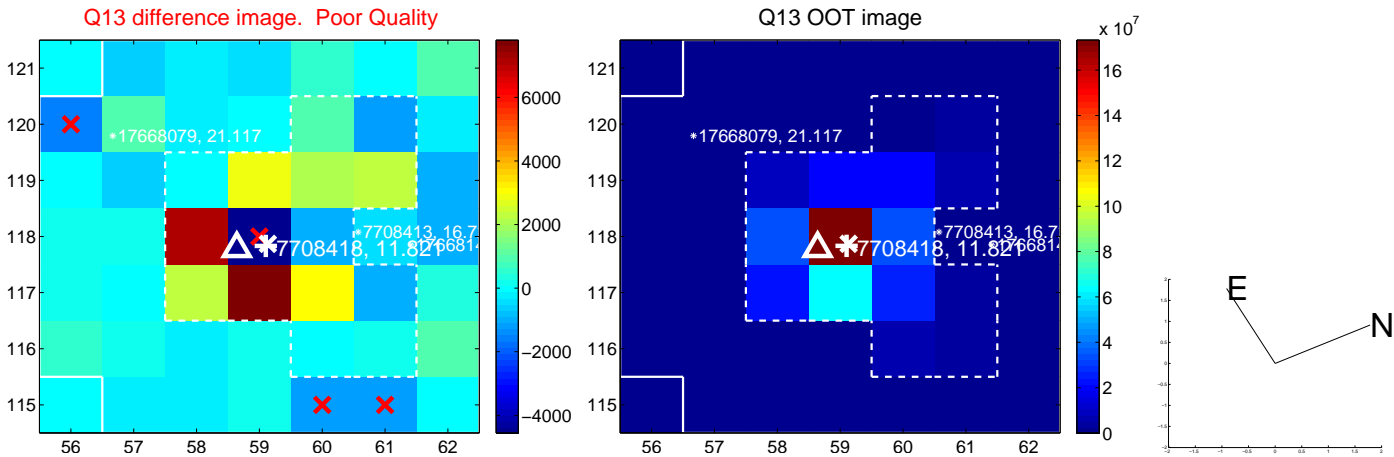
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



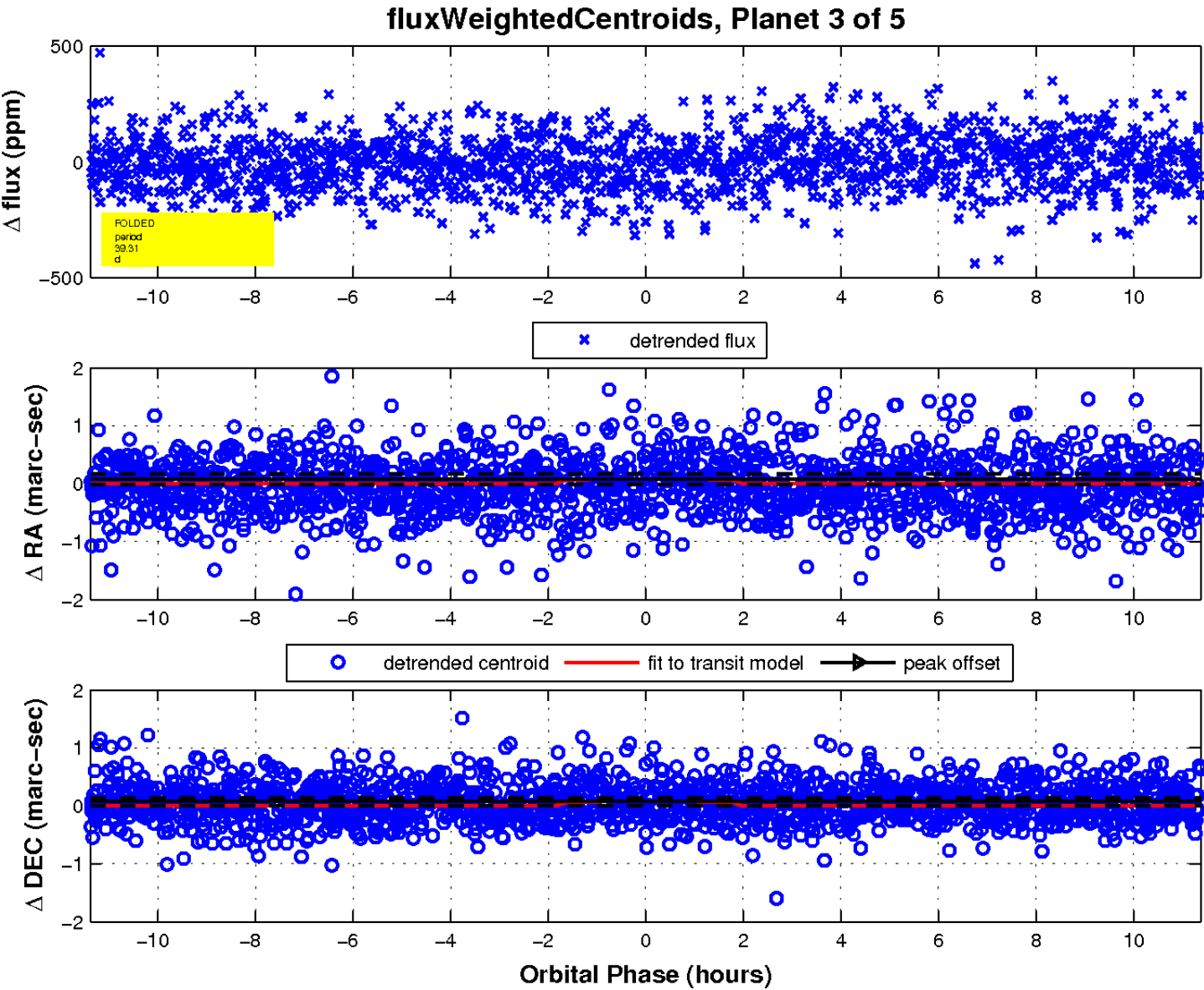
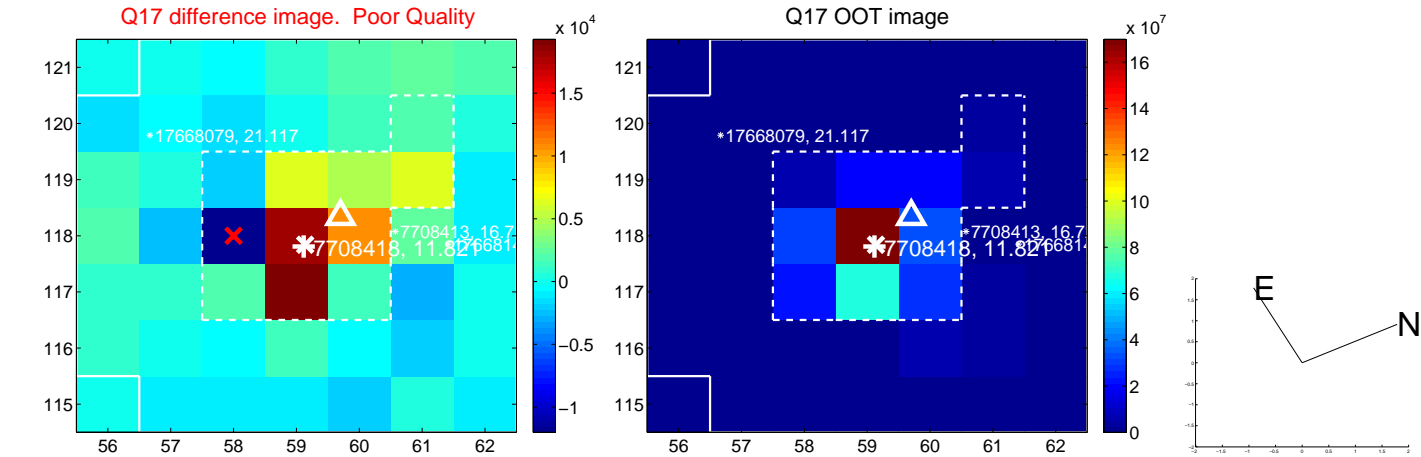
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

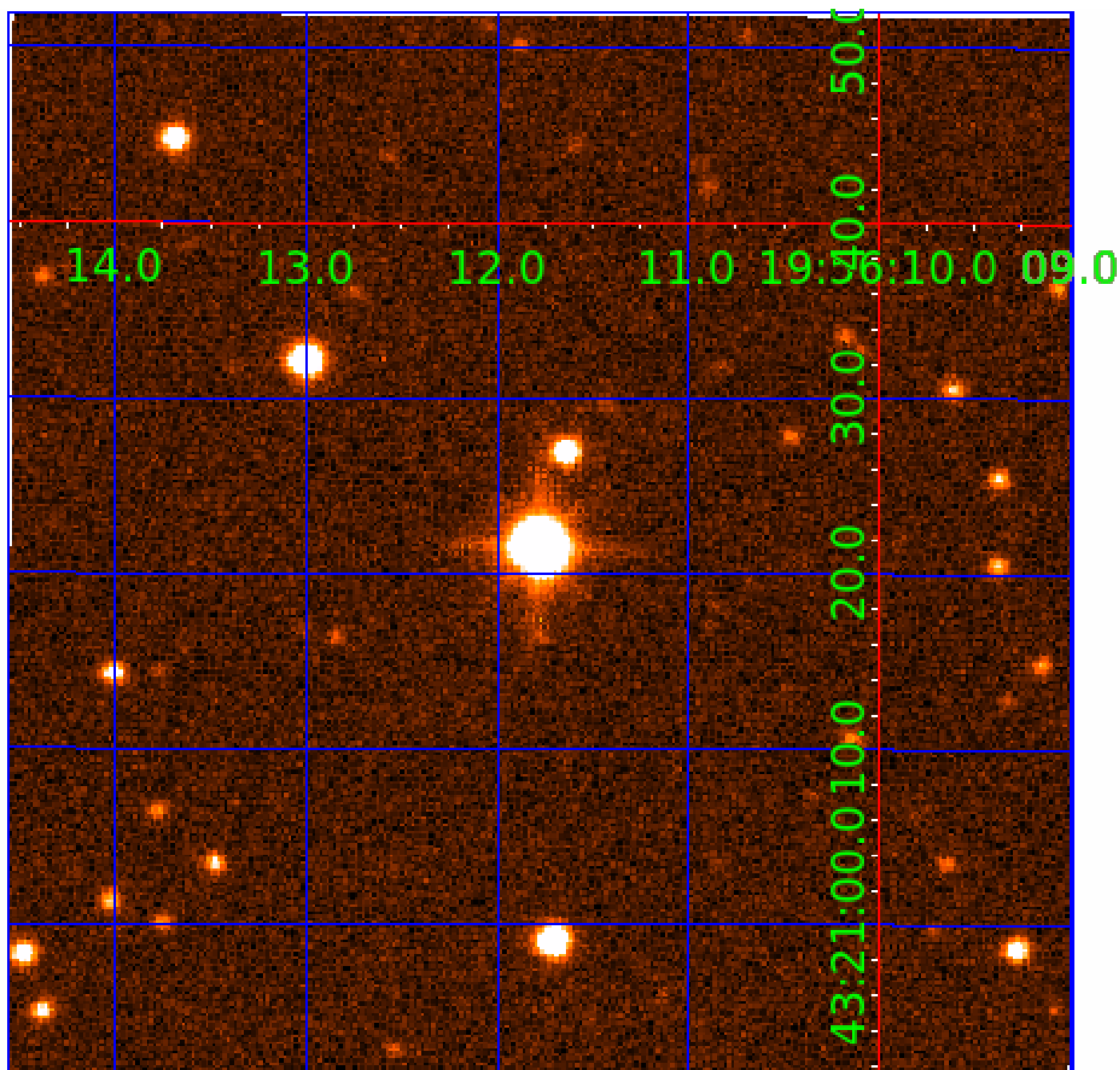


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007708418

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})
007708418-01	OBS	No	0.751426	131.840283	5.1	4.269	8.9	3.5	1.89	7311	0.43	26008.07
007708418-02	OBS	No	60.039056	167.835095	125.4	4.326	8.7	8.1	1.89	7311	2.46	75.58
007708418-03	OBS	No	39.311786	134.109745	124.6	3.794	8.3	8.8	1.89	7311	2.37	132.92
007708418-04	OBS	No	320.817673	175.830844	190.7	3.069	8.1	8.1	1.89	7311	3.02	8.09
007708418-05	OBS	No	148.141121	223.849097	217.9	3.309	8.2	8.8	1.89	7311	3.03	22.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007708418-01	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST
007708418-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
007708418-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007708418-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007708418-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

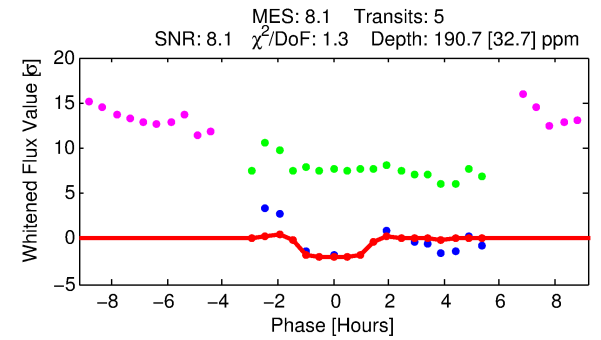
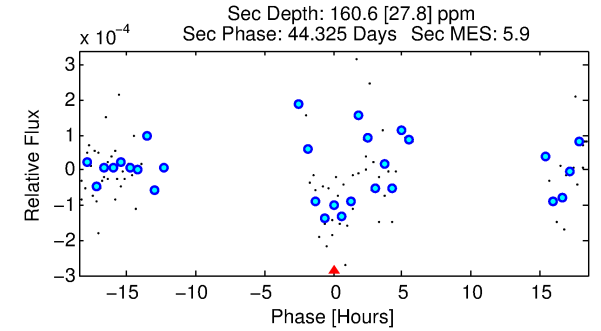
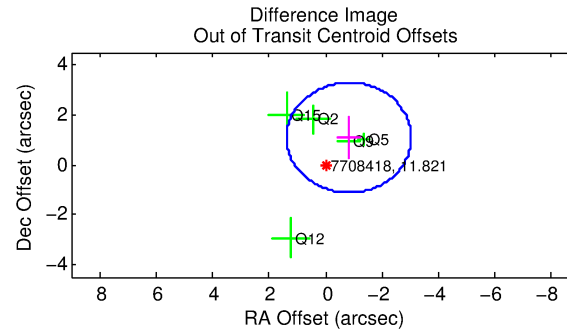
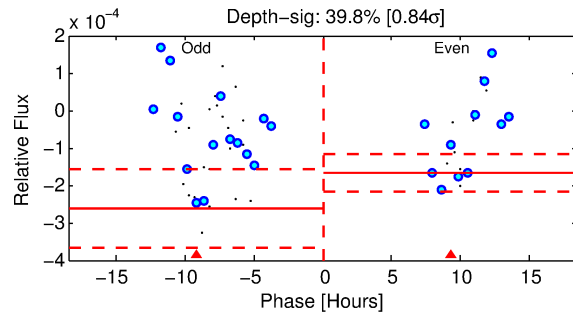
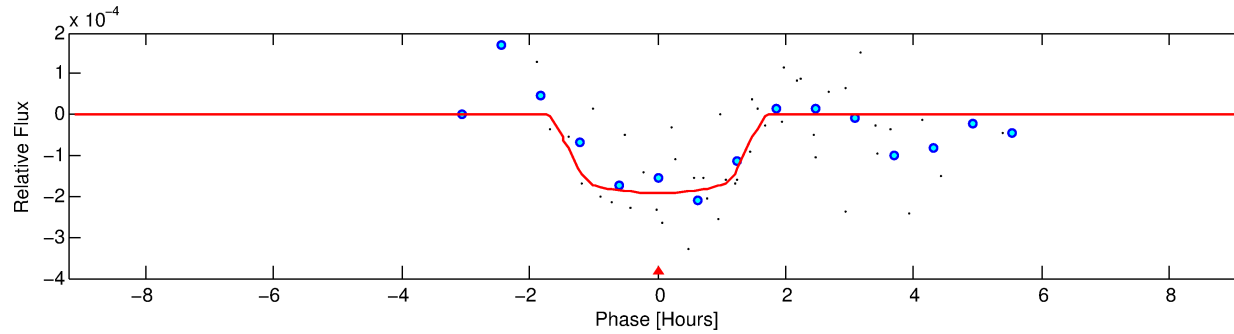
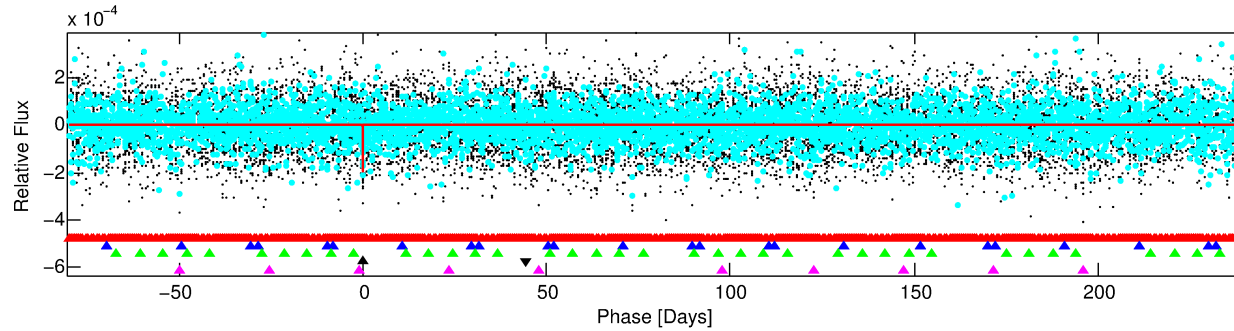
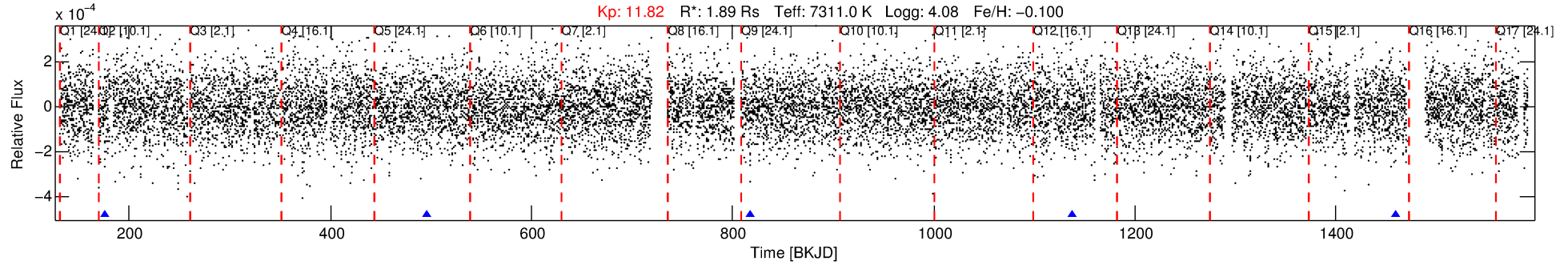
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007708418-04

No Significant Match Found

DV One-Page Summary

KIC: 7708418 Candidate: 4 of 5 Period: 320.818 d



DV Fit Results:

Period = 320.81767 [0.00395] d
Epoch = 175.8308 [0.0071] BKJD
Rp/R* = 0.0147 [0.0074]
a/R* = 375.65 [1185.91]
b = 0.90 [0.68]
Seff = 8.09 [3.06]
Teq = 430 [41] K
Rp = 3.02 [1.78] Re
a = 1.0626 [0.2561] AU
Ag = 10926.79 [11832.96] [0.92 σ]
Teffp = 6798 [1775] K [3.59 σ]

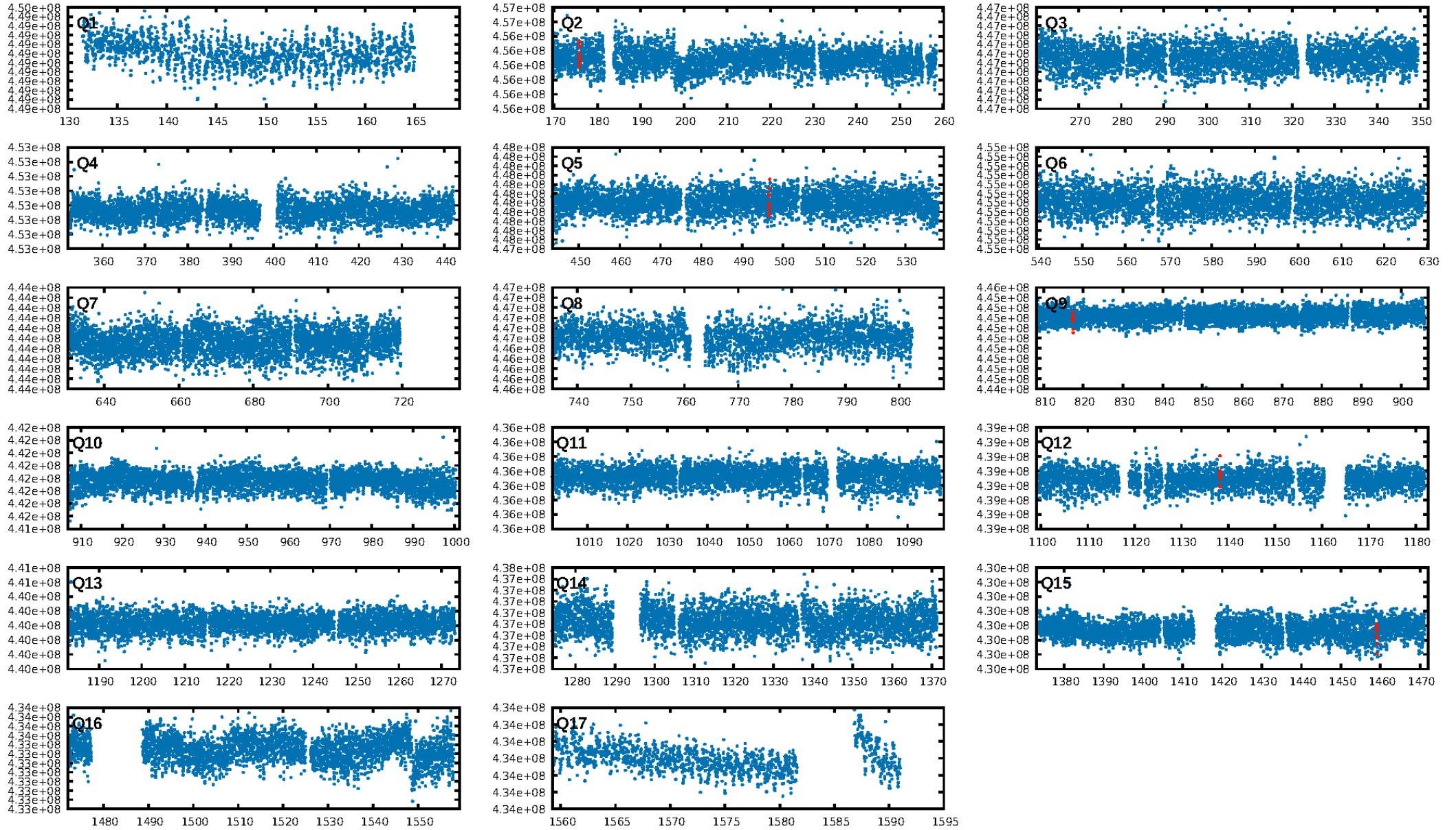
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [918.28 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 32.1%
ModelChiSquareGof-sig: 99.6%
Bootstrap-pfa: 8.40e-09
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -1.481
Centroid-sig: 18.2%
Centroid-so: 1.545 arcsec [1.20 σ]
OotOffset-rm: 1.360 arcsec [1.85 σ]
KicOffset-rm: 1.193 arcsec [1.53 σ]
OotOffset-st: 1/1/1/2 [5]
KicOffset-st: 1/1/1/2 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 0.00 [0/5]

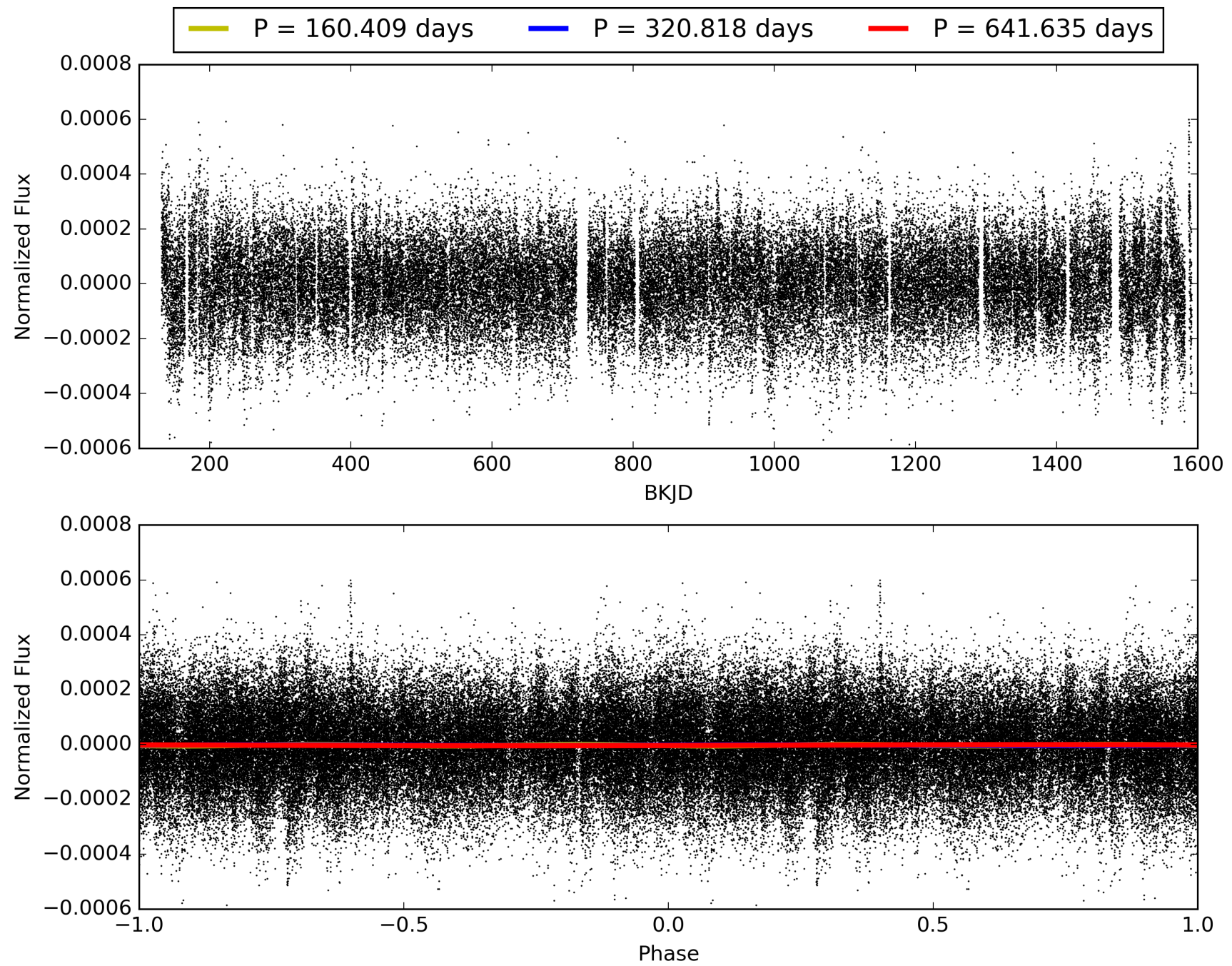
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:56:21 Z

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

TCE 007708418-04, PDC Light Curves

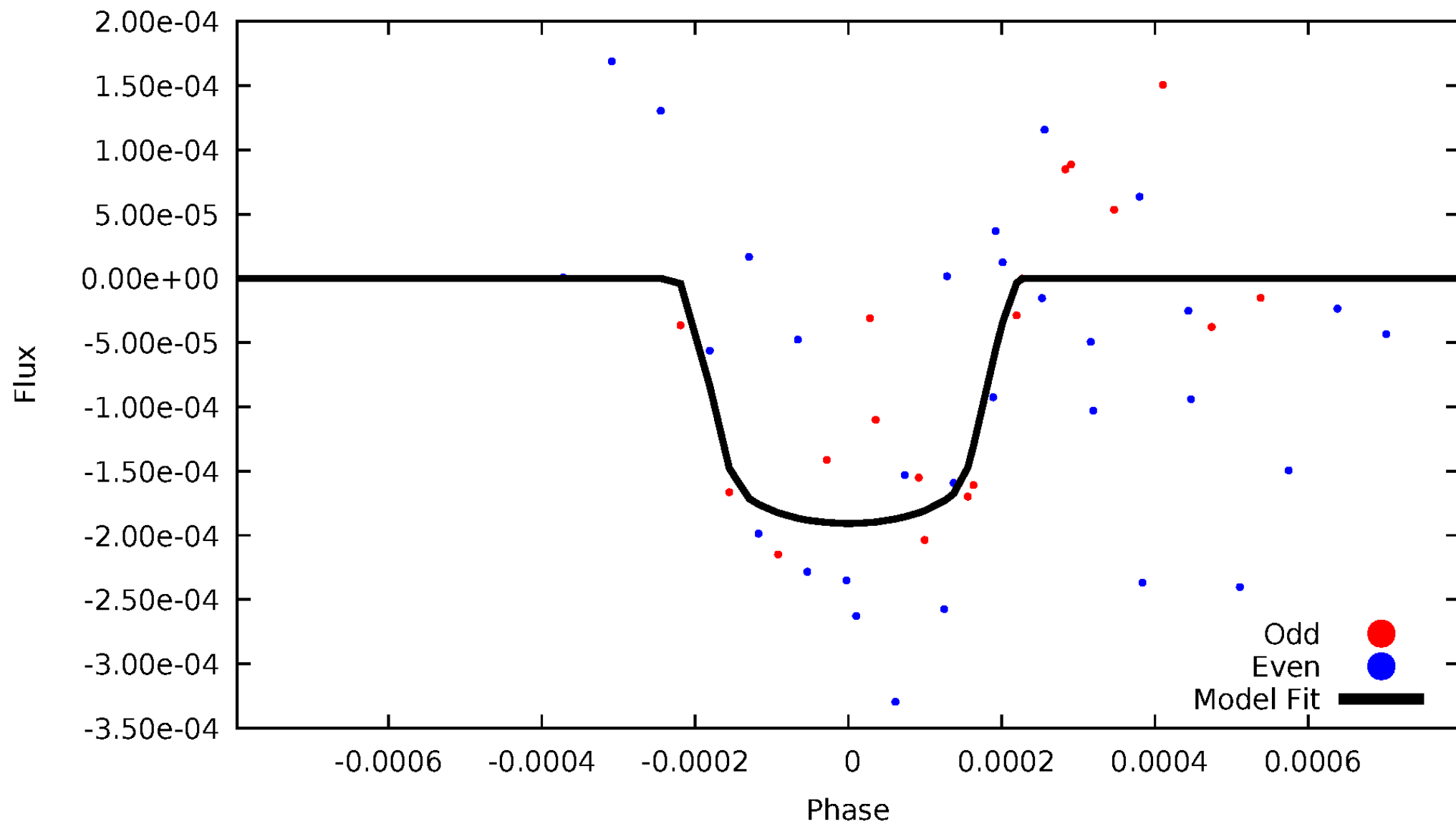


TCE 007708418-04



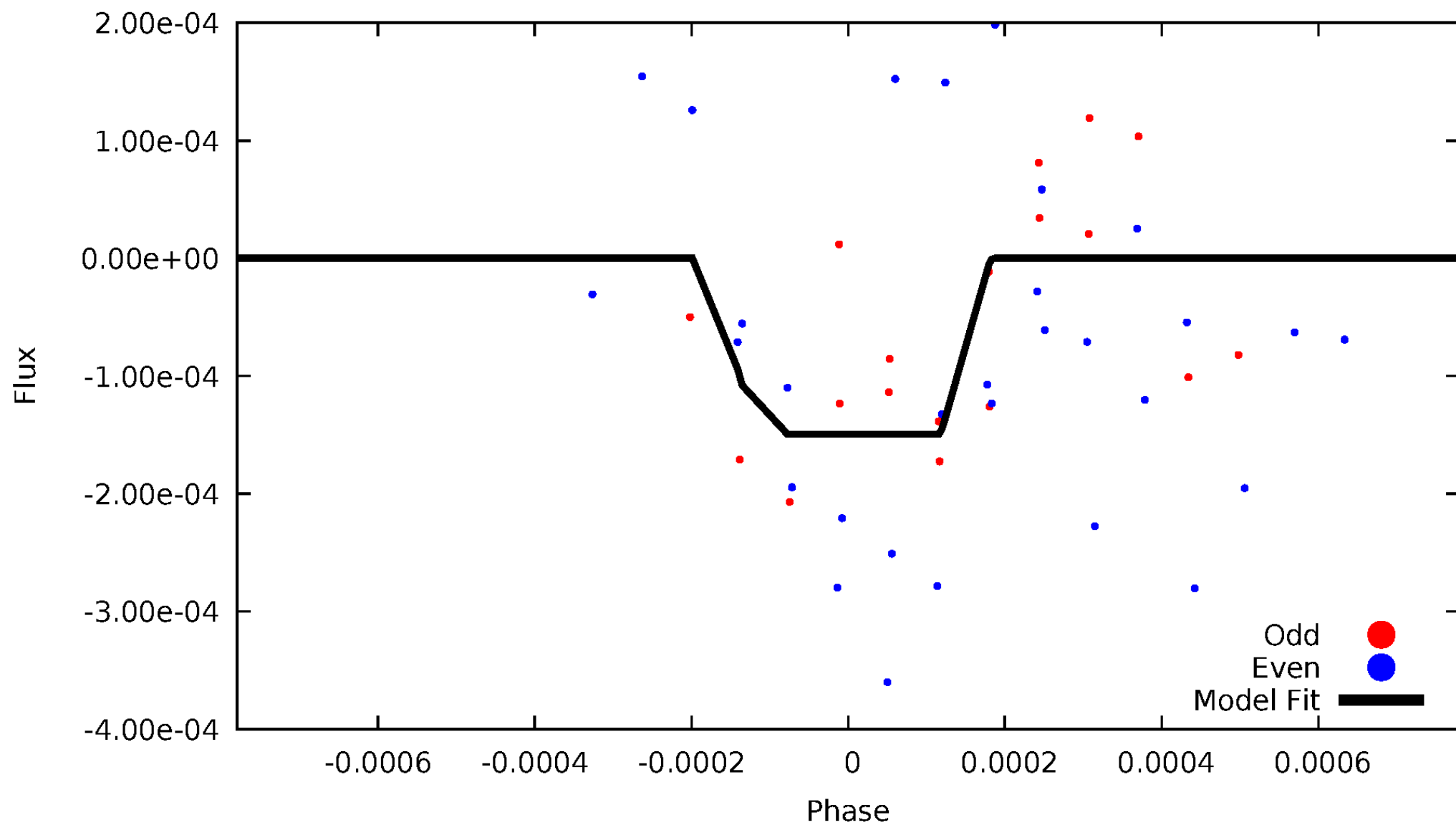
DV Odd/Even

TCE 007708418-04



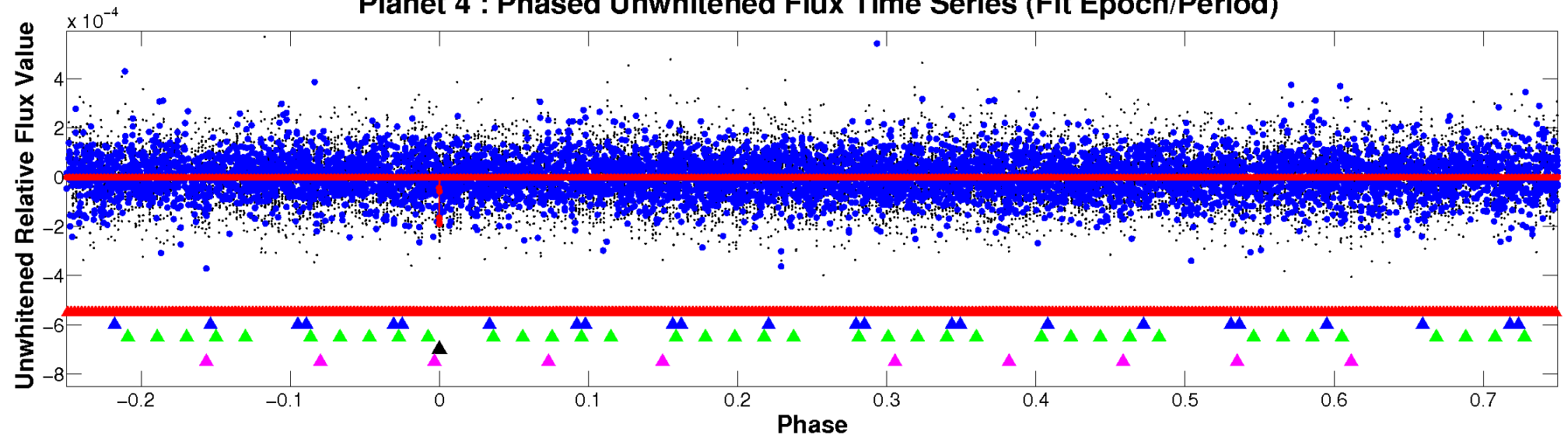
ALT Odd/Even

TCE 007708418-04

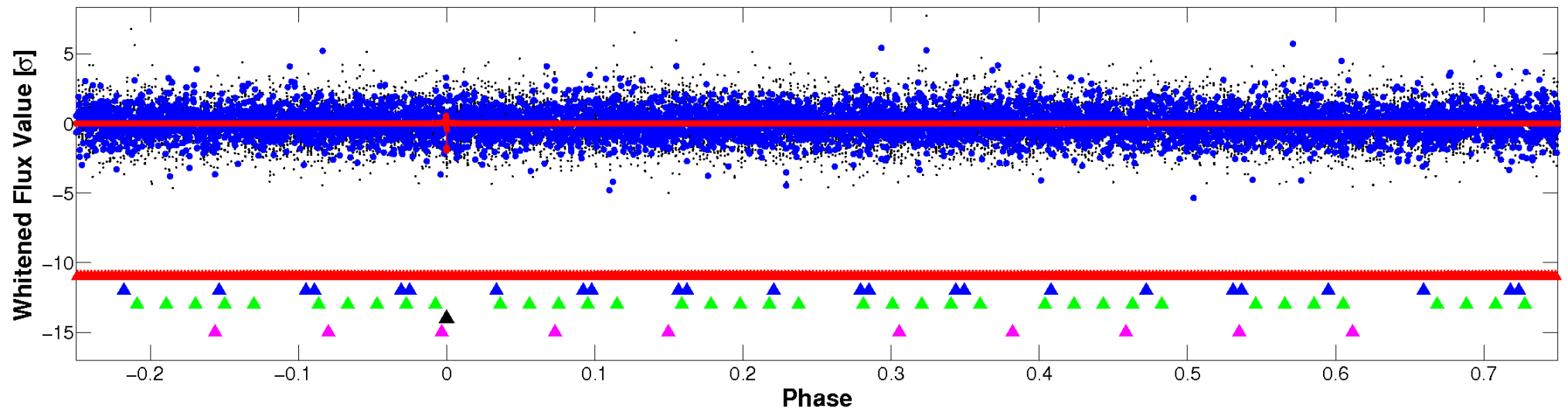


Non-Whitened Vs. Whitened Light Curve

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

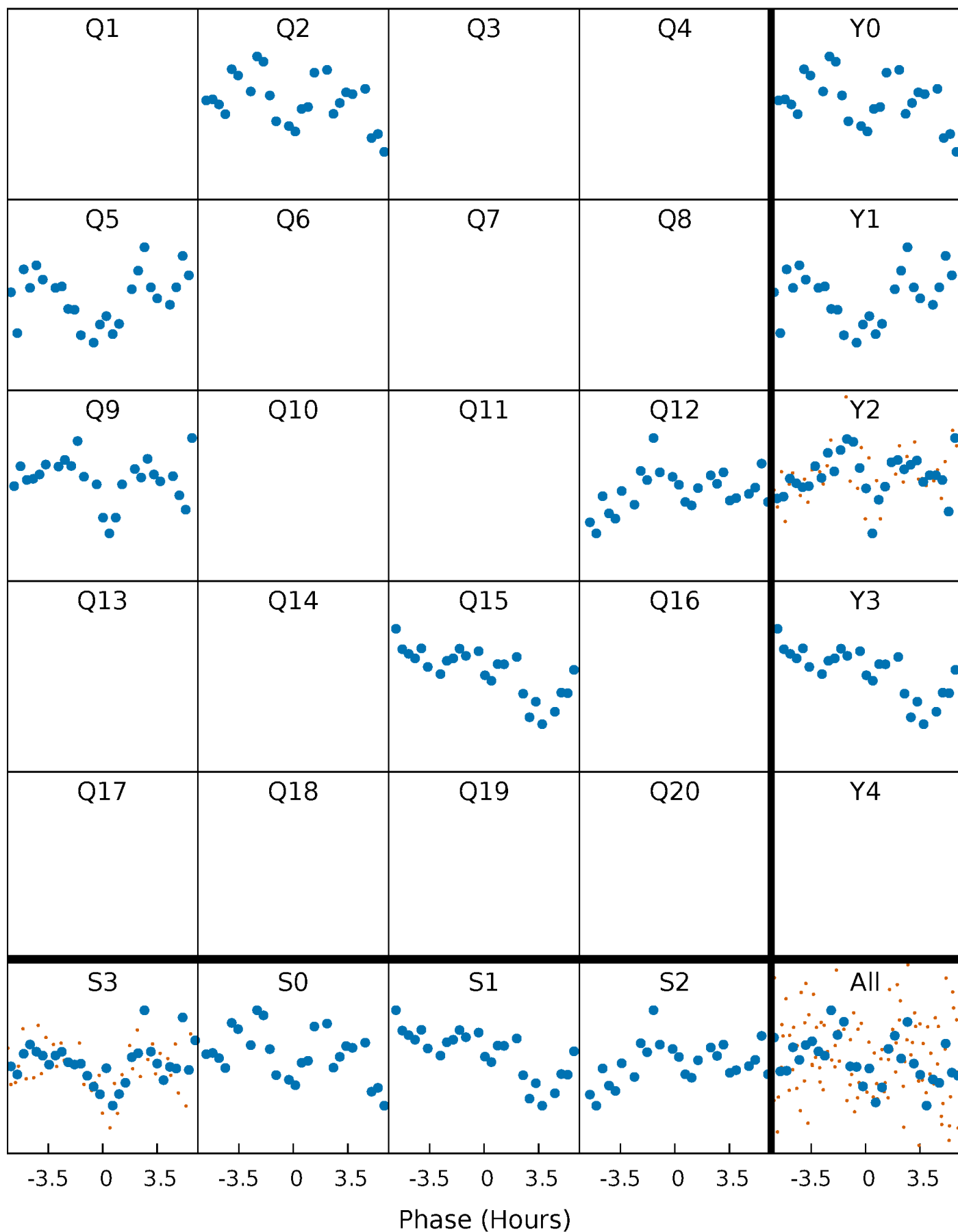


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



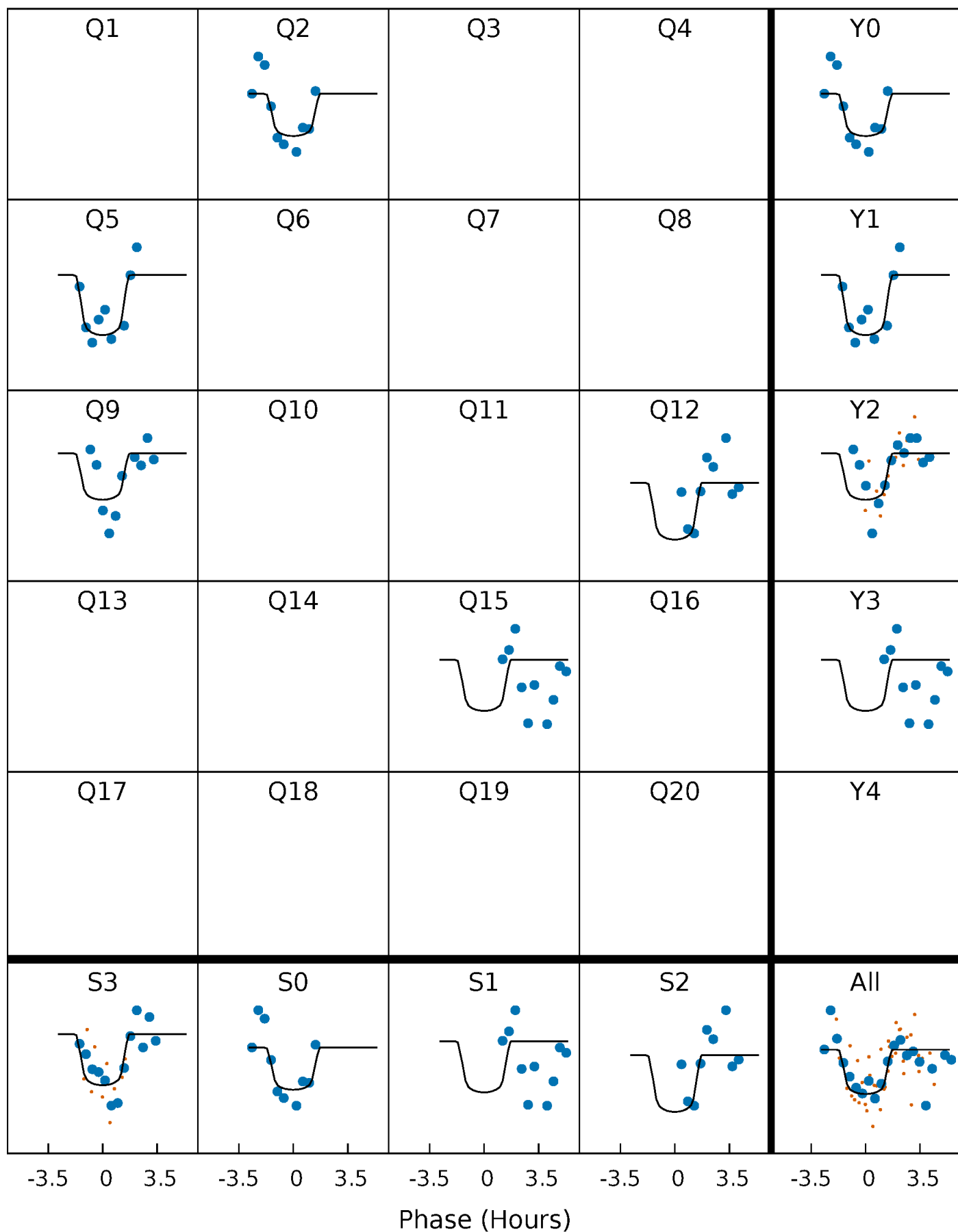
PDC Quarter-Phased Transit Curves

TCE 007708418-04 $P=320.817673$ Days $T_0=175.830844$ (BKJD)



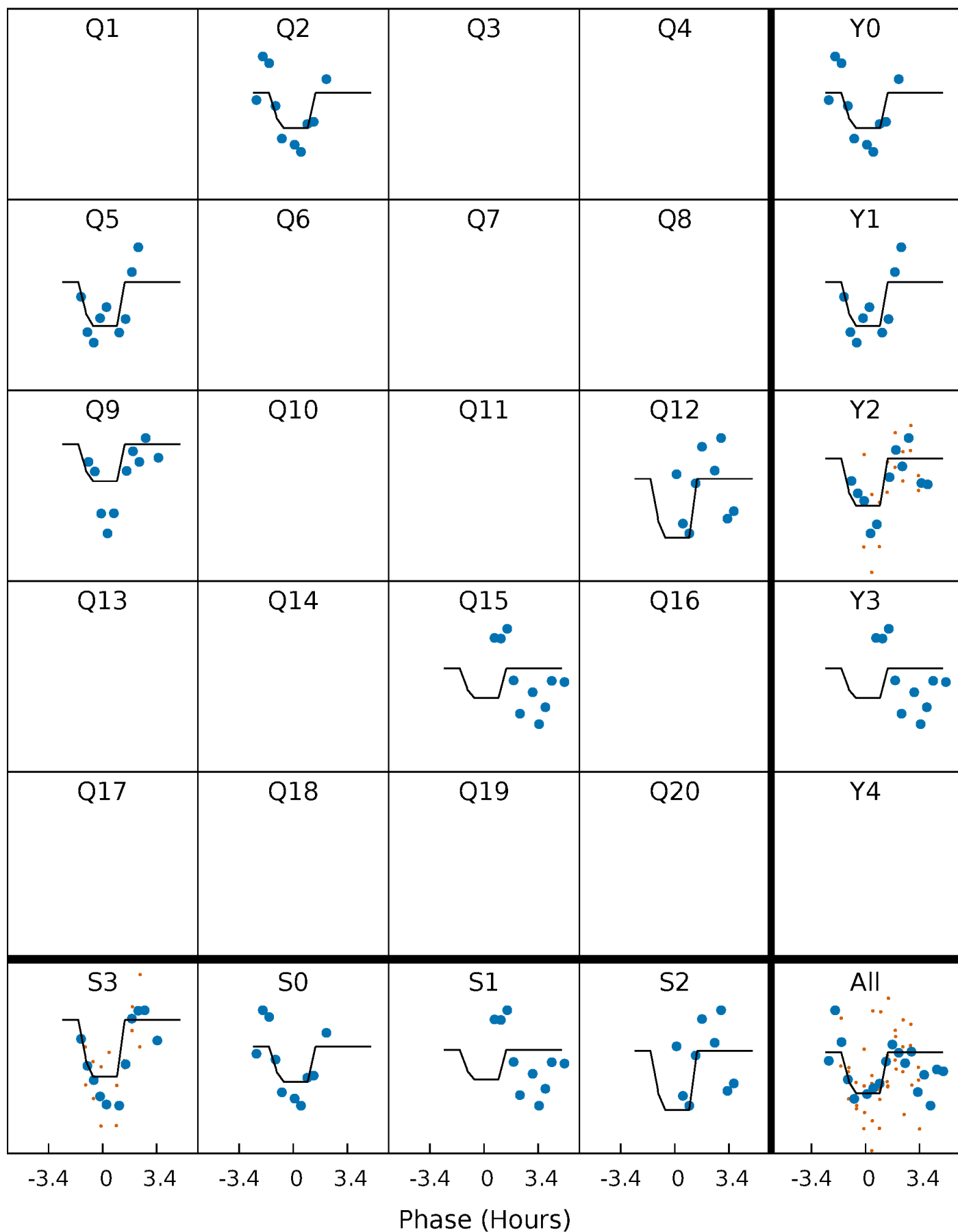
DV Quarter-Phased Transit Curves

TCE 007708418-04 P=320.817673 Days $T_0=175.830844$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

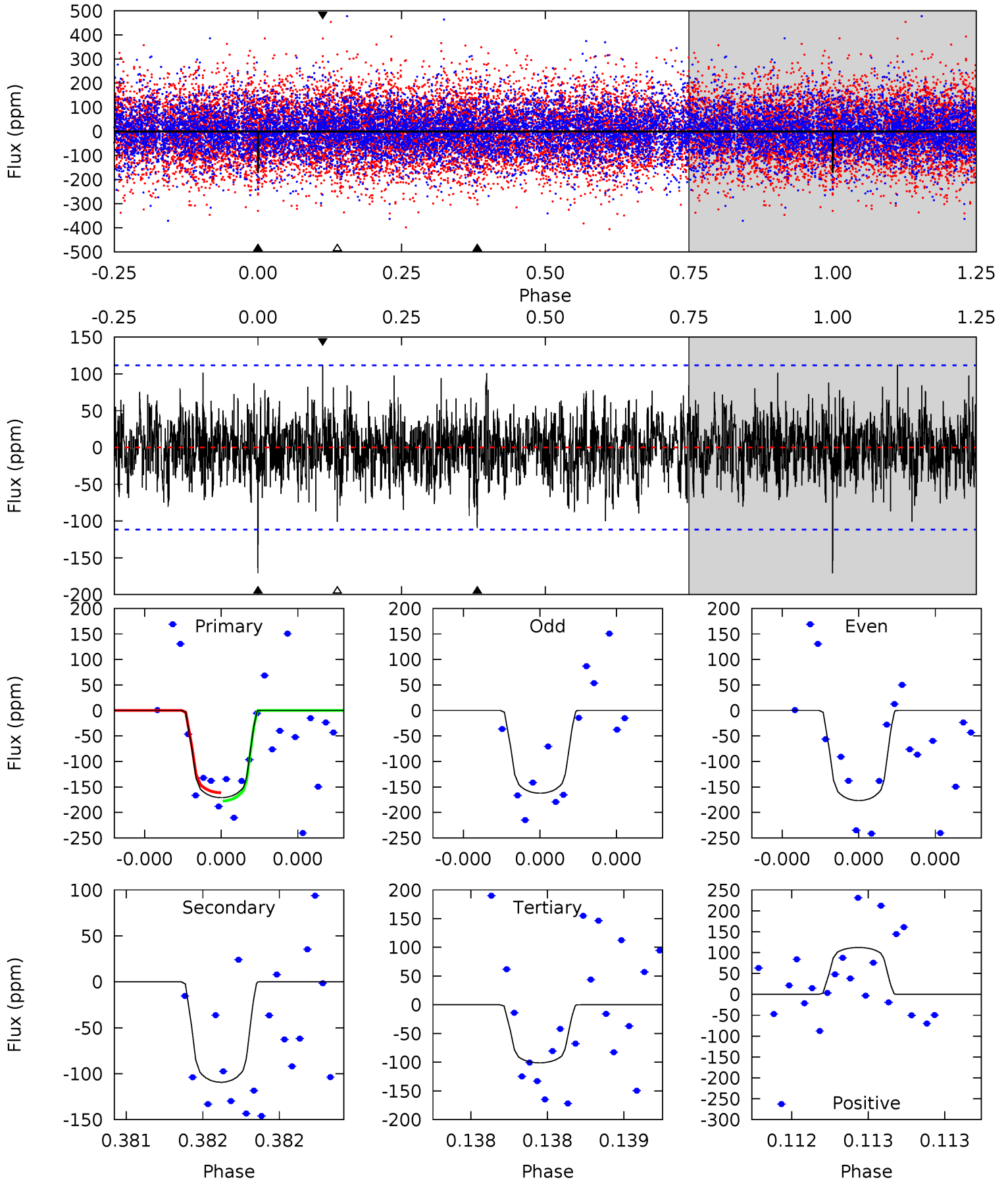
TCE 007708418-04 P=320.826832 Days $T_0=175.816267$ (BKJD)



DV Model-Shift Uniqueness Test

007708418-04, P = 320.817673 Days, E = 175.830844 Days

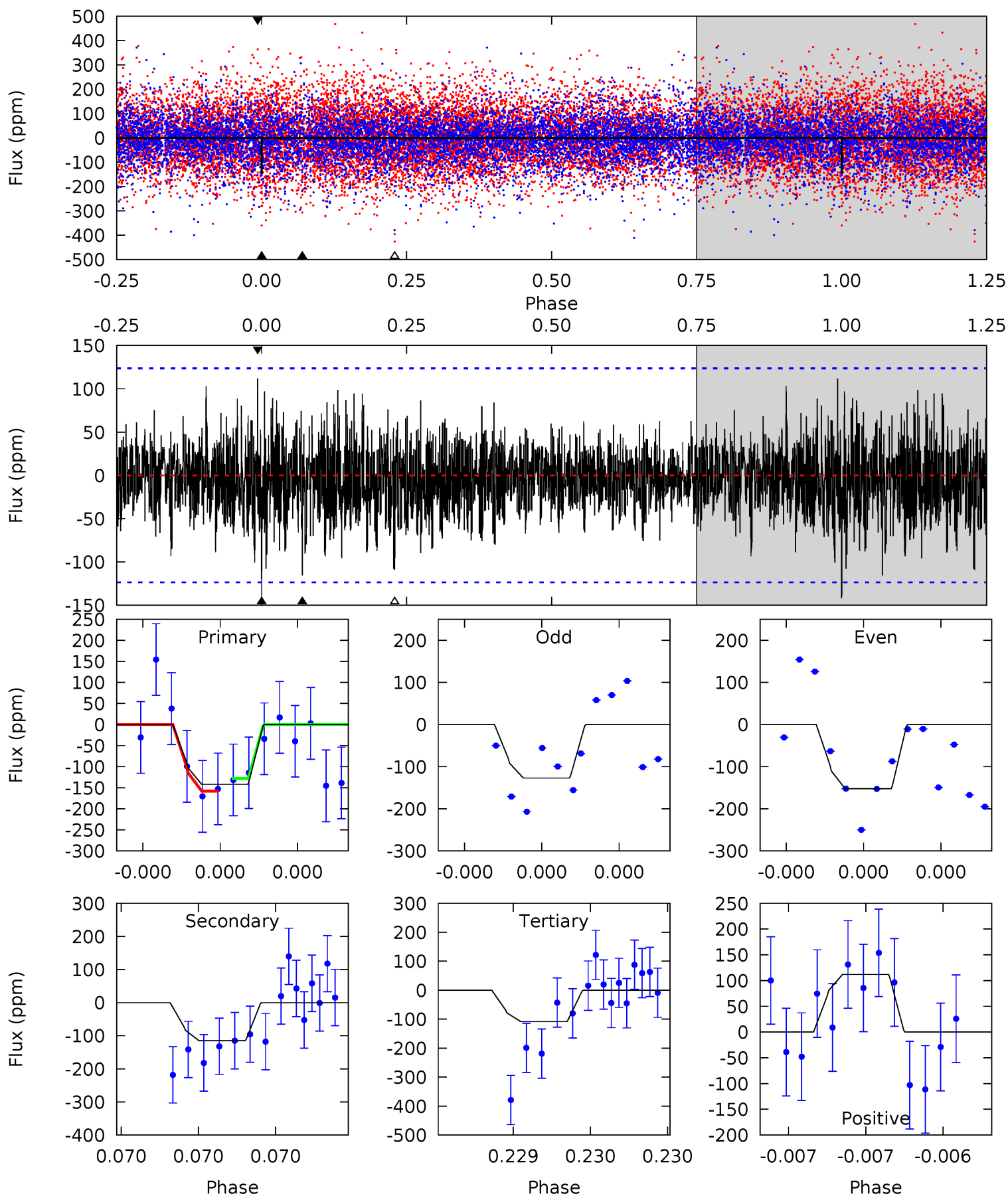
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.55	5.47	5.06	5.61	5.58	3.50	1.50	3.49	2.94	0.41	-0.14	0.36	0.75	0.40	0.39



Alt Model-Shift Uniqueness Test

007708418-04, P = 320.826832 Days, E = 175.816267 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.49	5.27	4.96	5.11	5.65	3.60	1.35	1.54	1.38	0.32	0.16	0.57	0.65	0.44	0.68



Stellar Parameters For KIC 007708418

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7311^{+203}_{-319}	$4.077^{+0.158}_{-0.175}$	$-0.100^{+0.200}_{-0.350}$	$1.889^{+0.567}_{-0.464}$	$1.551^{+0.211}_{-0.257}$	$0.324^{+0.312}_{-0.160}$
	+3%/-4%	+4%/-4%	+200%/-350%	+30%/-25%	+14%/-17%	+96%/-49%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007708418-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-109 ± 20	$3.02^{+1.56}_{-1.46}$	601^{+47}_{-41}	6095^{+2775}_{-1101}	7102^{+19540}_{-4062}
Alt.	-115 ± 22	$2.64^{+1.52}_{-1.45}$	601^{+46}_{-39}	6662^{+4189}_{-1353}	10215^{+37198}_{-6175}

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

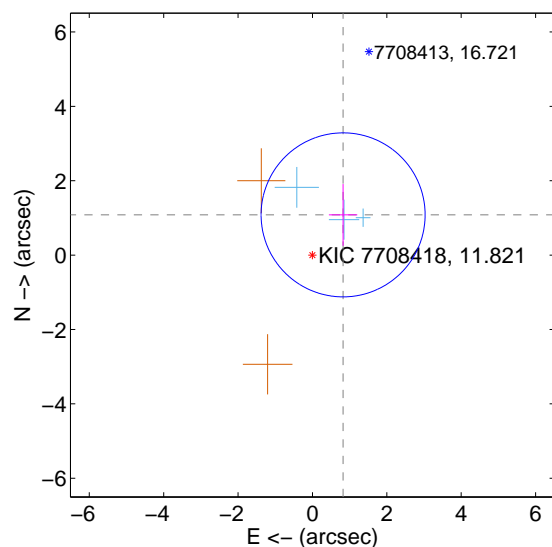
Supplemental centroid analysis for 007708418-04. **Kepler magnitude: 11.82.** Transit SNR 8.10

There are 3 quarters with good PRF difference image offsets

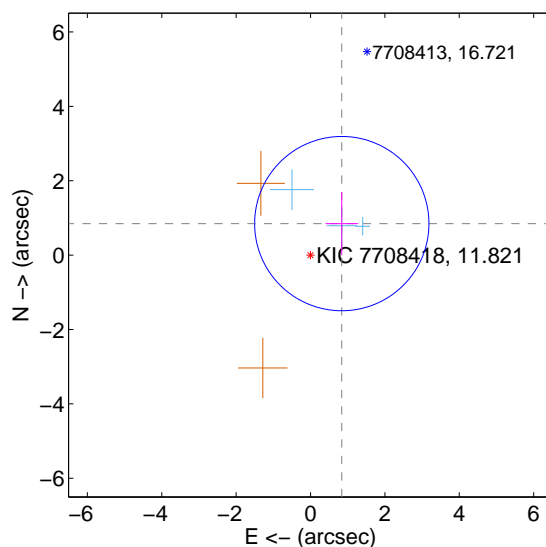
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.360 ± 0.735	1.85	-0.825 ± 0.382	1.082 ± 0.830
PRF-fit source offset from KIC position	1.193 ± 0.781	1.53	-0.841 ± 0.443	0.847 ± 0.845
photometric centroid source offset	1.54 ± 1.29	1.20	1.54 ± 1.29	0.03 ± 1.08

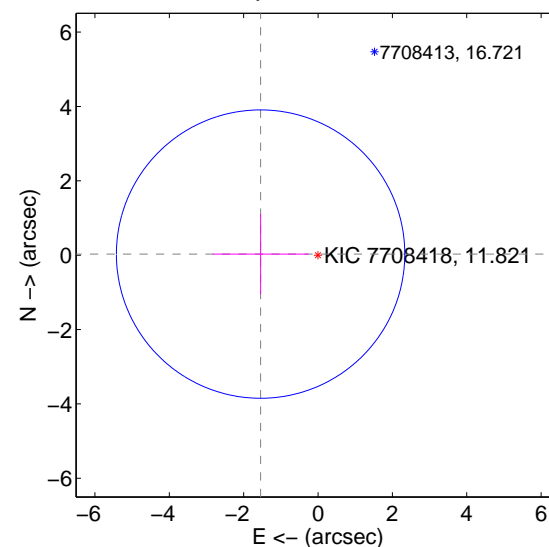
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

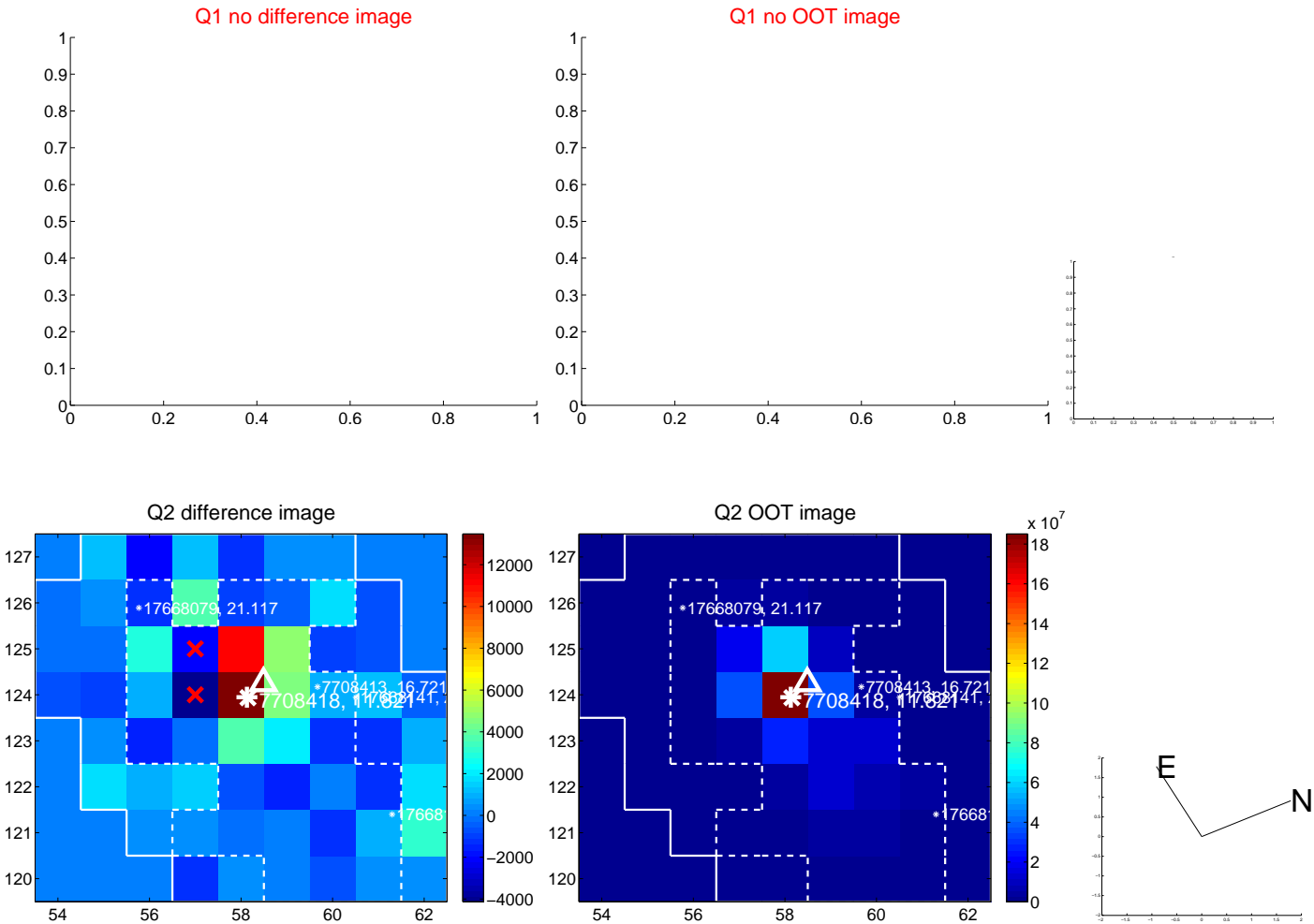


offset from photometric centroids

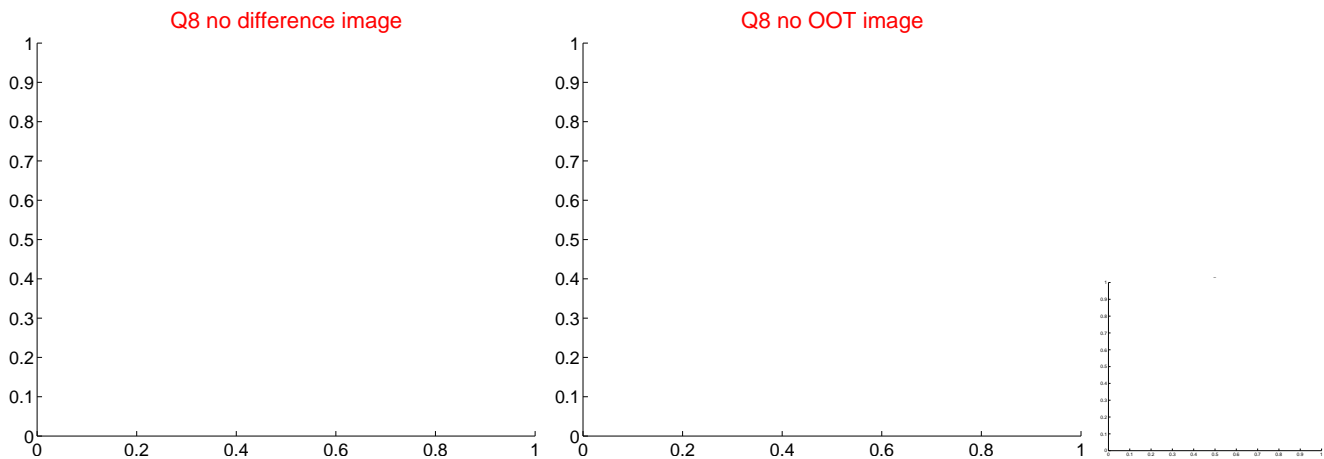
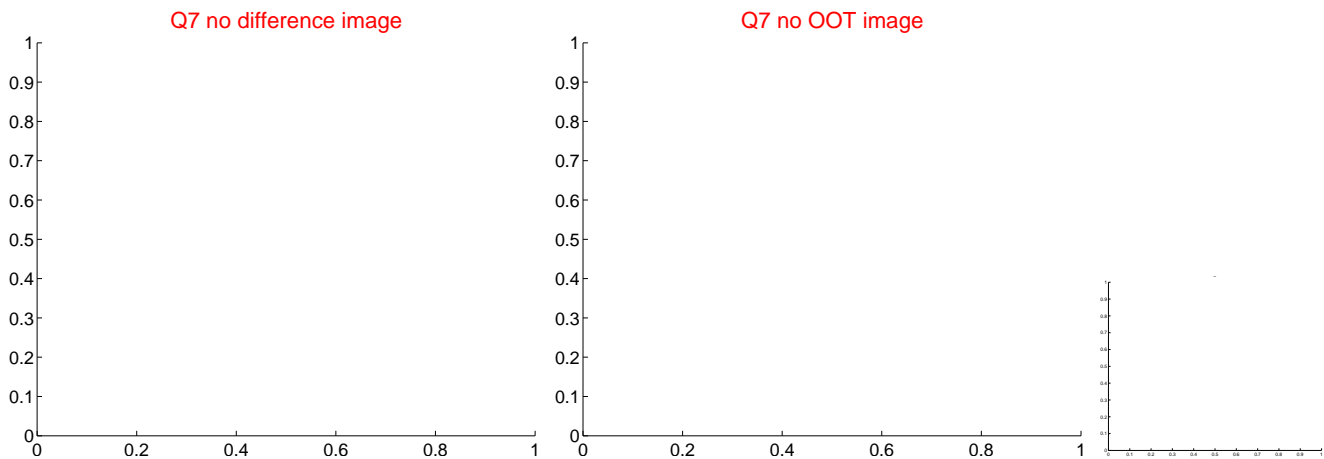
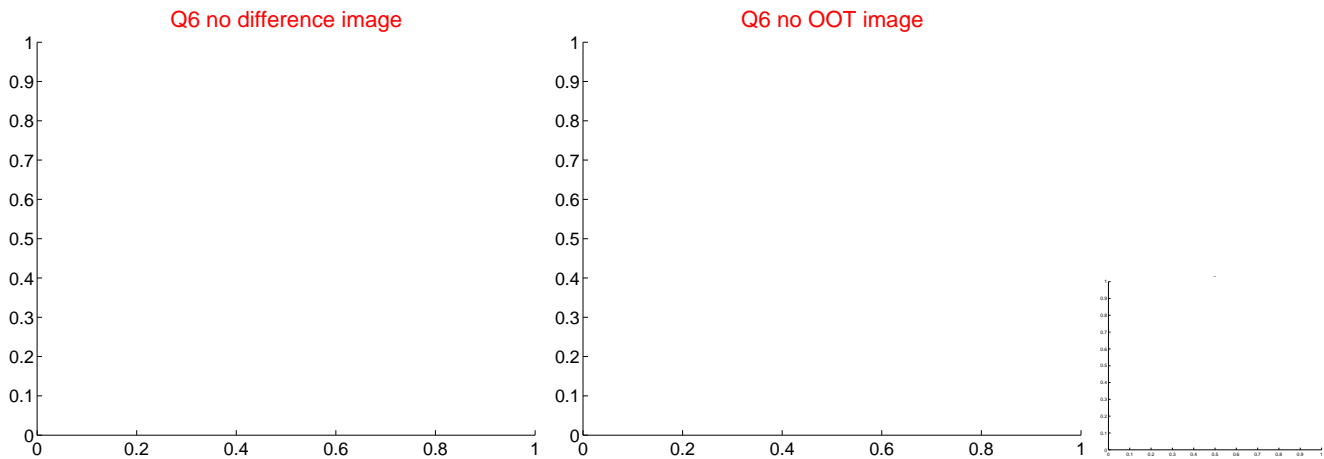
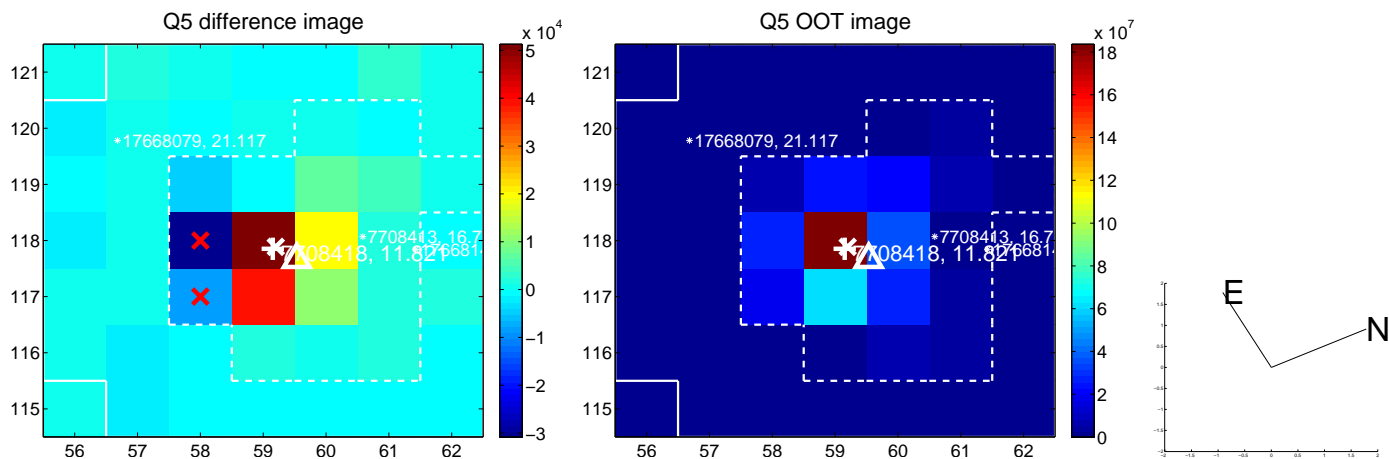


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

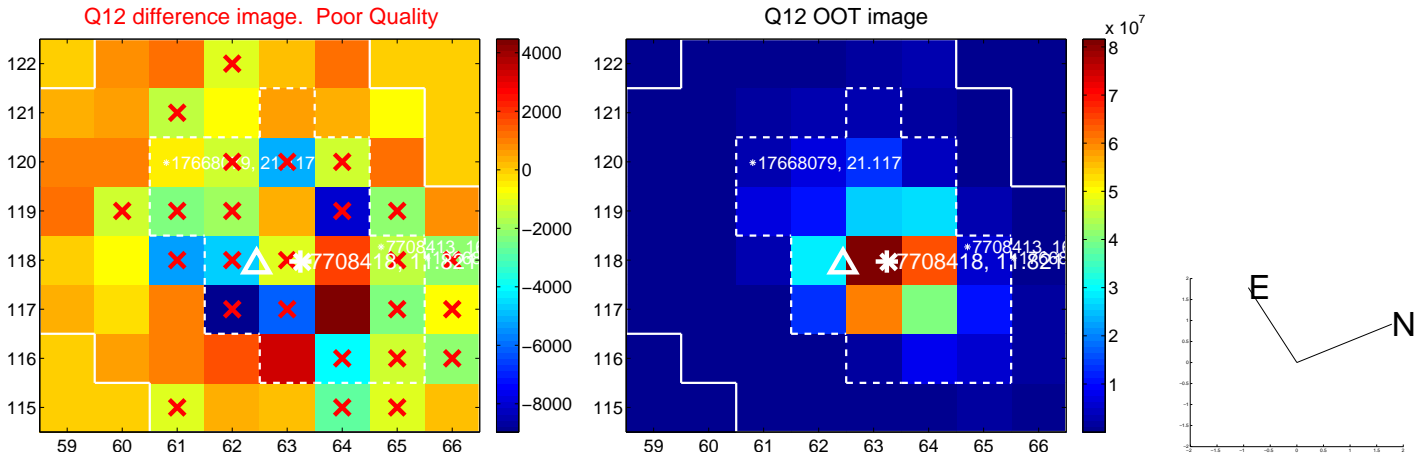
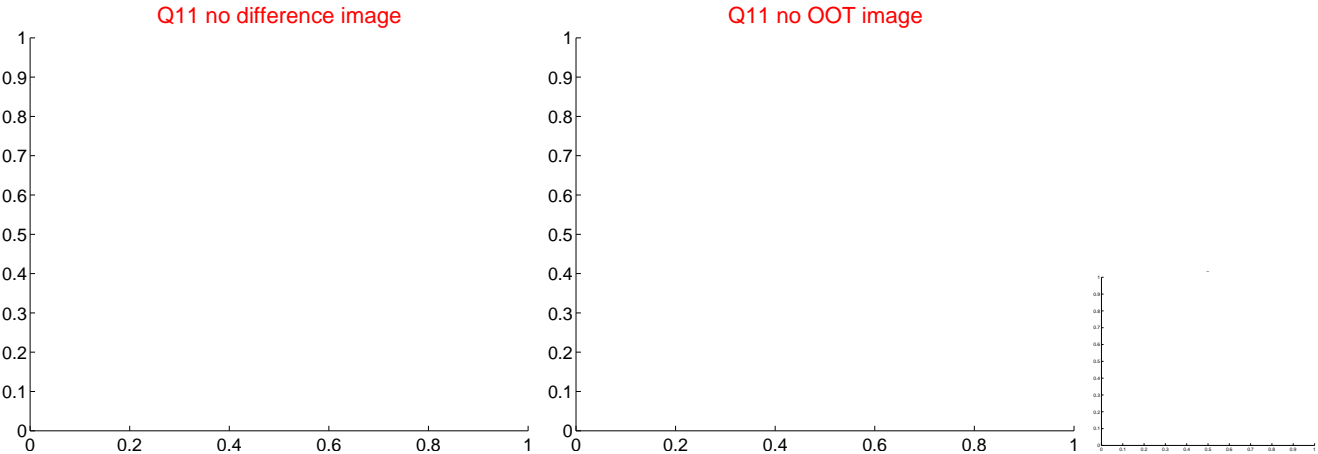
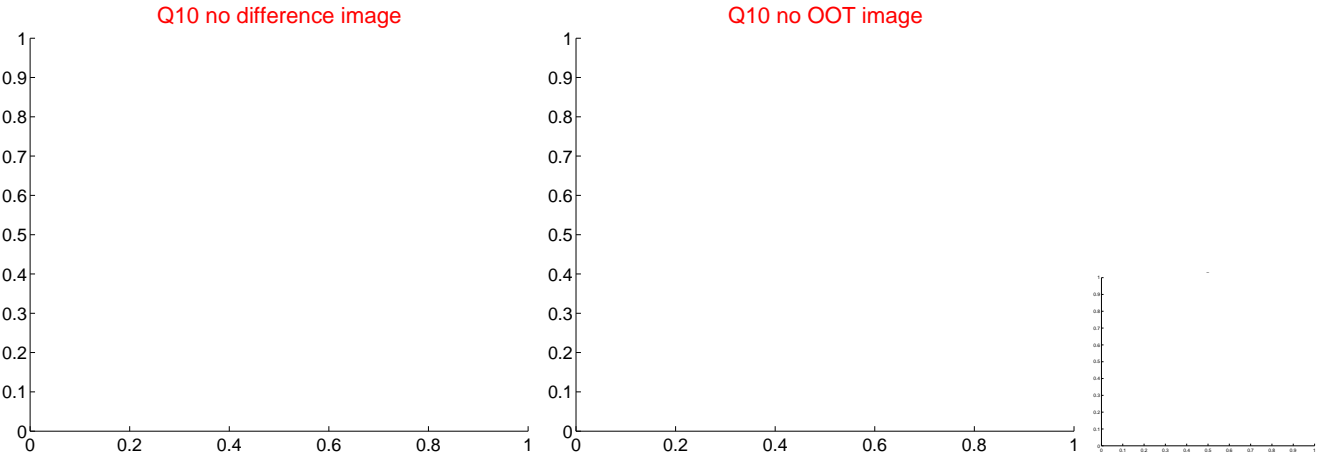
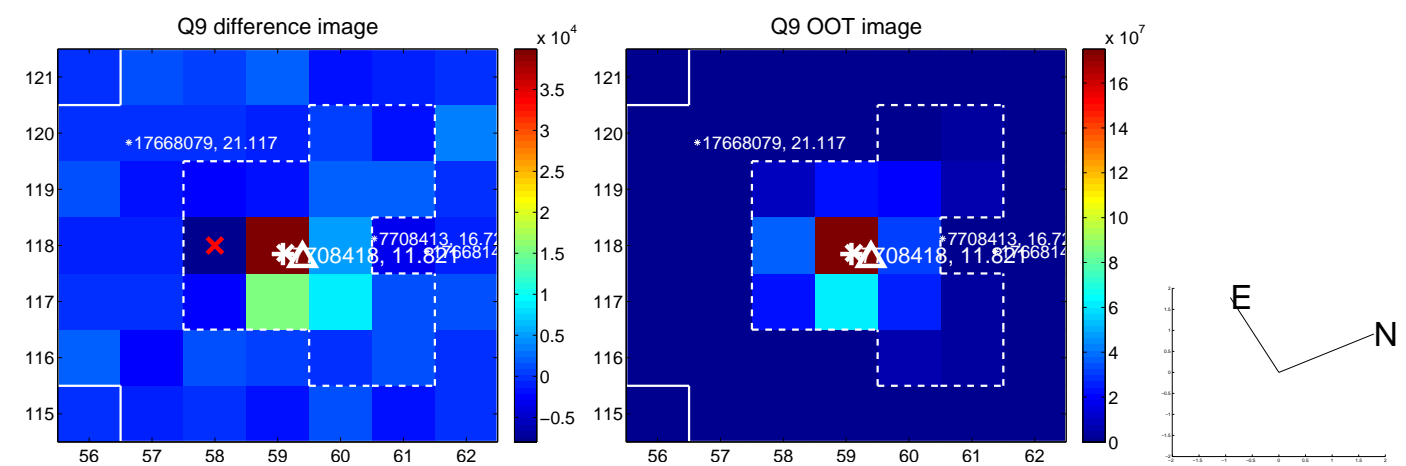
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



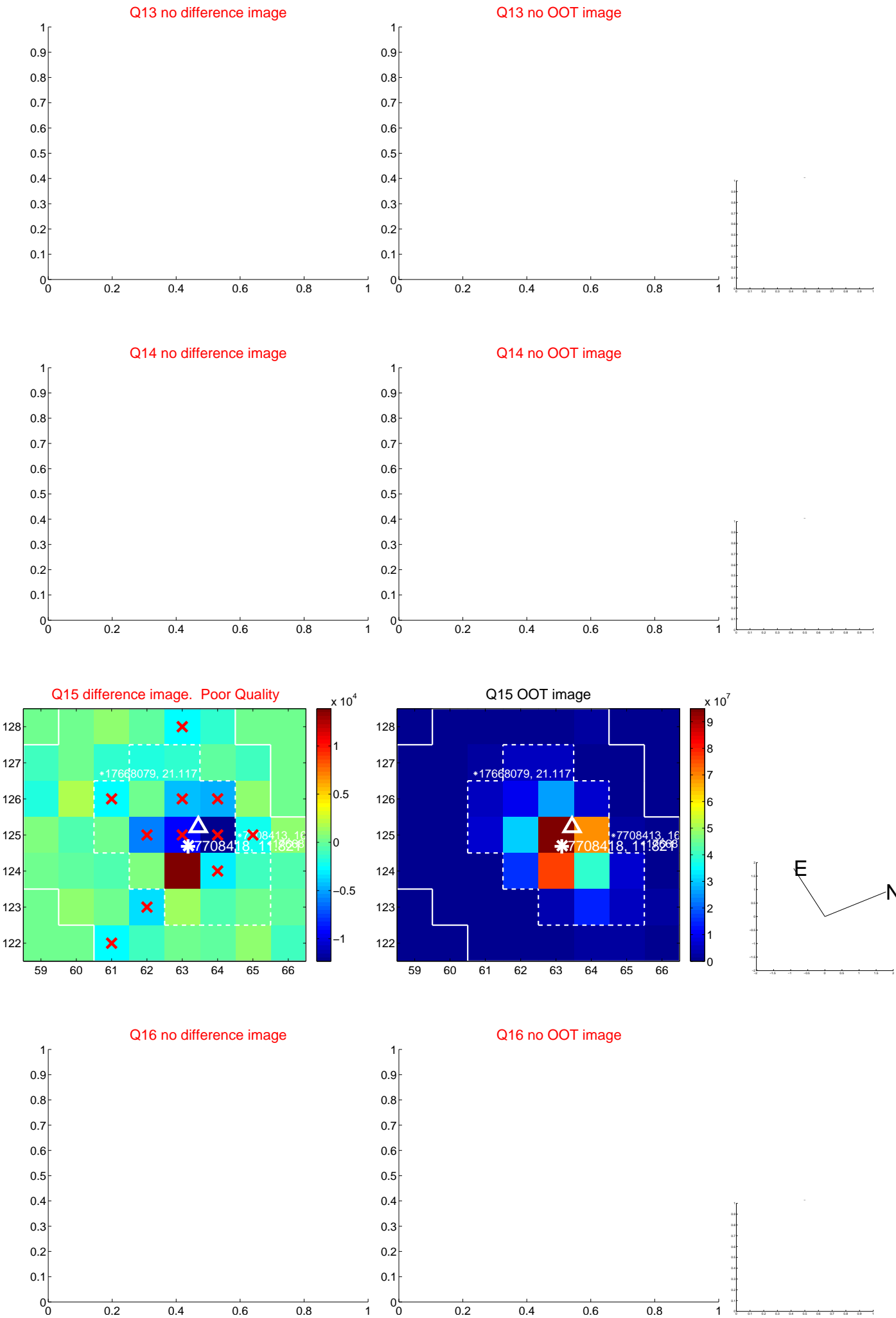
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



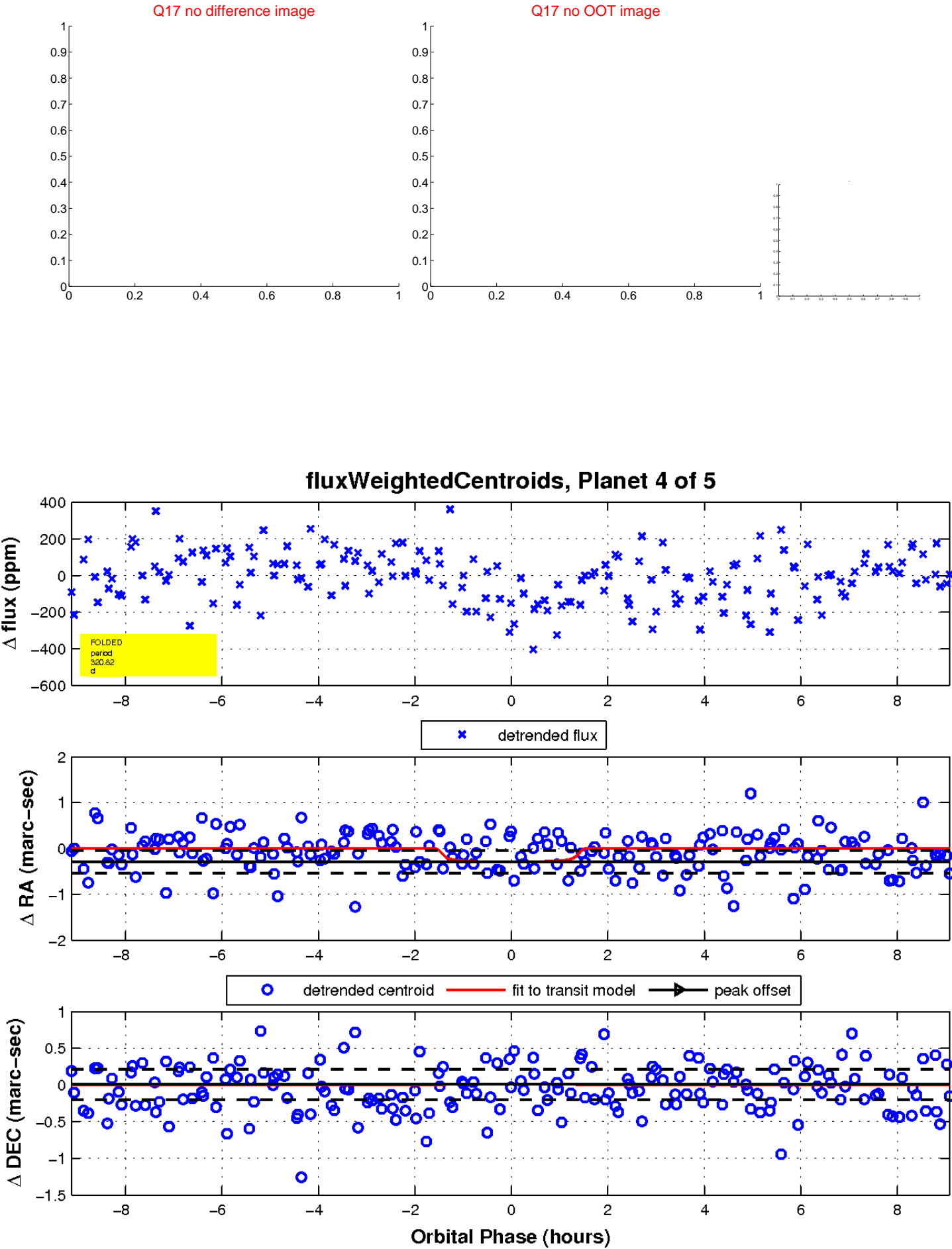
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

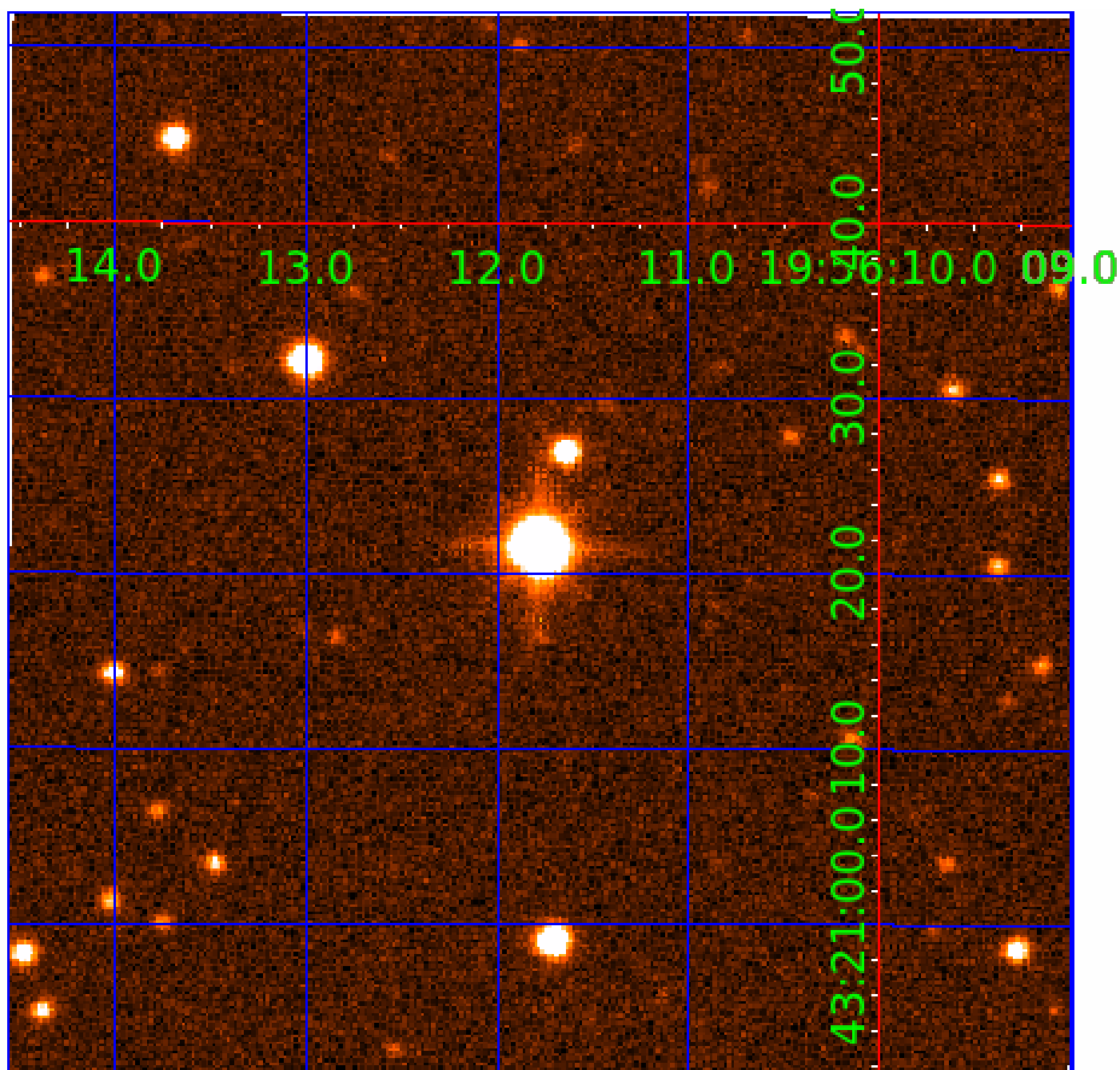


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007708418

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})
007708418-01	OBS	No	0.751426	131.840283	5.1	4.269	8.9	3.5	1.89	7311	0.43	26008.07
007708418-02	OBS	No	60.039056	167.835095	125.4	4.326	8.7	8.1	1.89	7311	2.46	75.58
007708418-03	OBS	No	39.311786	134.109745	124.6	3.794	8.3	8.8	1.89	7311	2.37	132.92
007708418-04	OBS	No	320.817673	175.830844	190.7	3.069	8.1	8.1	1.89	7311	3.02	8.09
007708418-05	OBS	No	148.141121	223.849097	217.9	3.309	8.2	8.8	1.89	7311	3.03	22.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007708418-01	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST
007708418-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
007708418-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007708418-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007708418-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

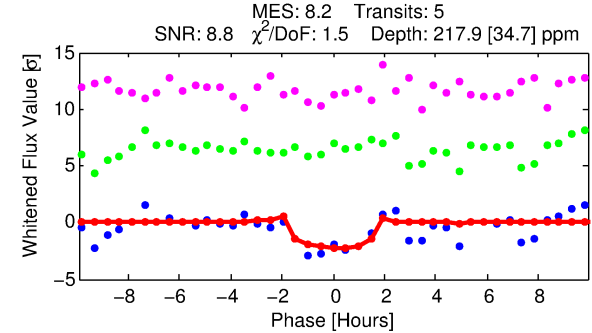
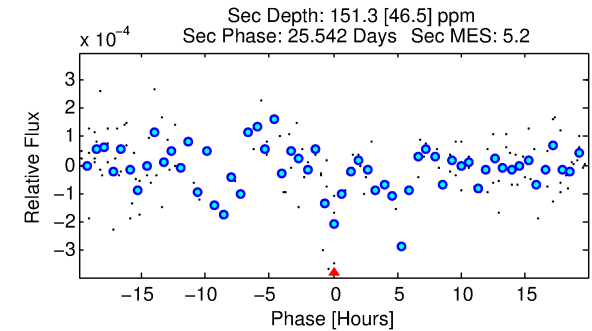
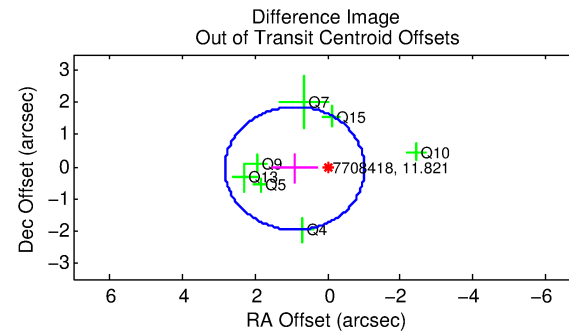
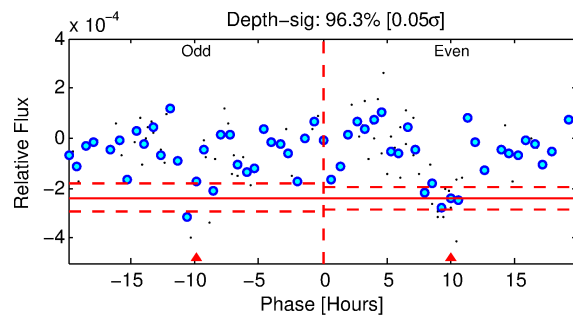
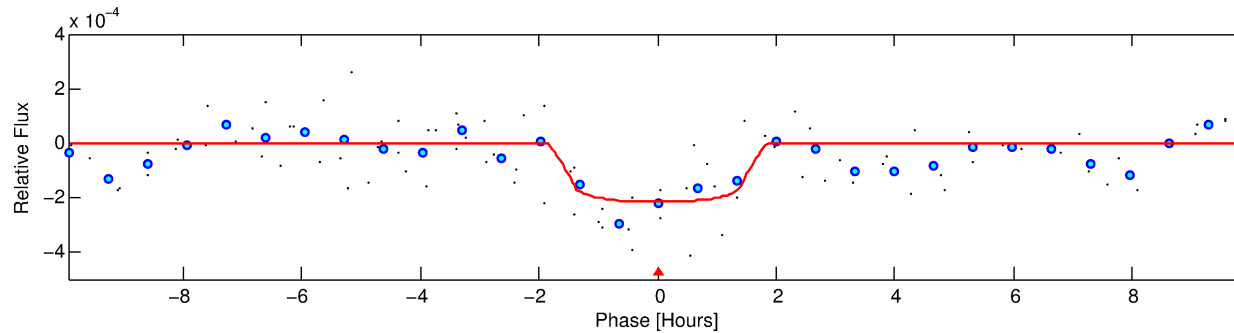
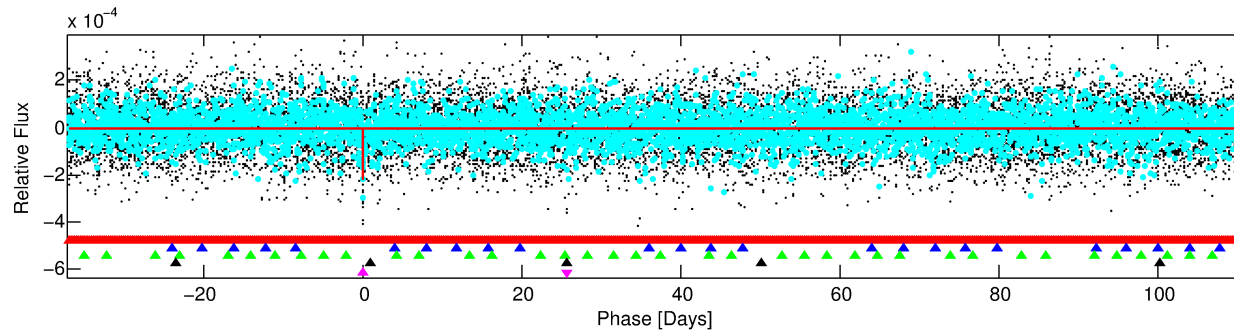
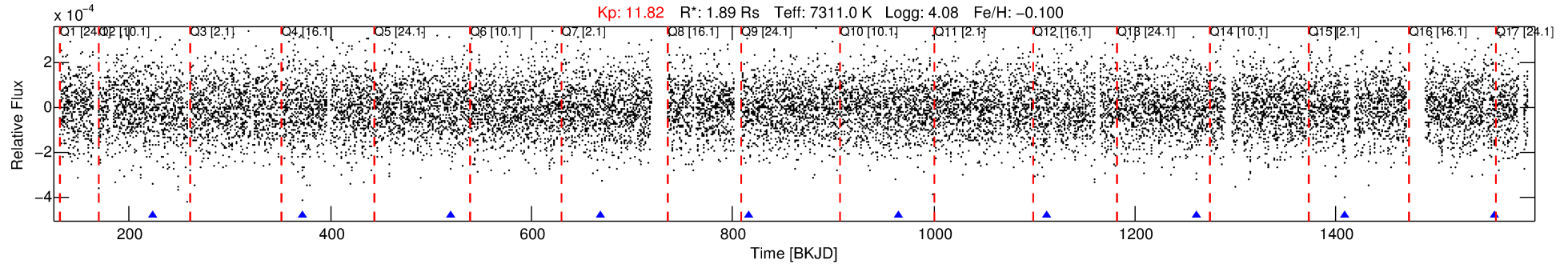
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007708418-05

No Significant Match Found

DV One-Page Summary

KIC: 7708418 Candidate: 5 of 5 Period: 148.141 d



DV Fit Results:

Period = 148.14112 [0.00156] d
Epoch = 223.8491 [0.0090] BKJD
Rp/R* = 0.0147 [0.0105]
a/R* = 233.32 [1015.87]
b = 0.75 [2.55]
Seff = 22.67 [8.56]
Teq = 556 [53] K
Rp = 3.03 [2.35] Re
a = 0.6348 [0.1530] AU
Ag = 3659.54 [5503.59] [0.66σ]
Teffp = 6691 [2470] K [2.48σ]

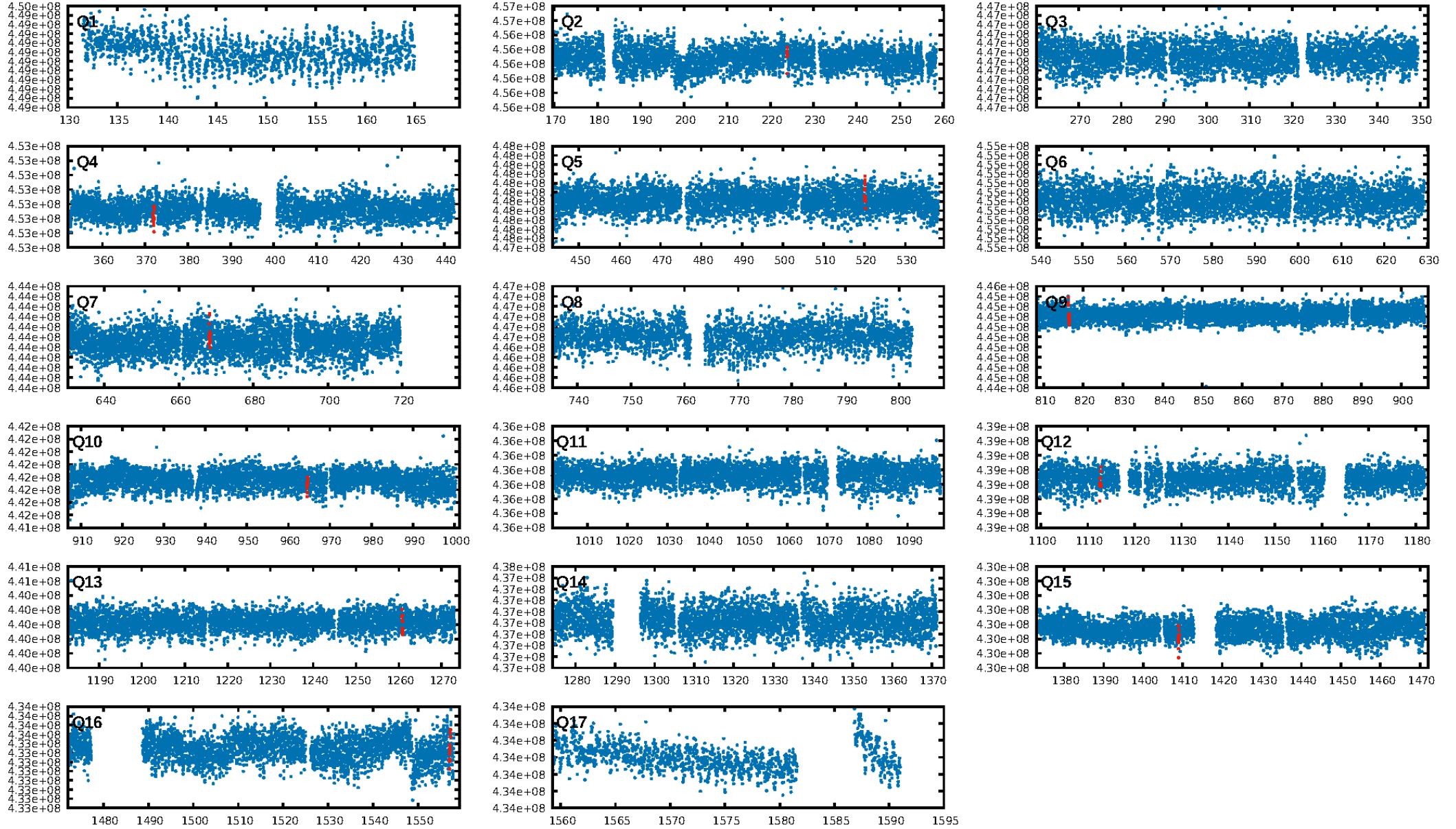
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [388.21σ]
LongPeriod-sig: 100.0% [918.28σ]
ModelChiSquare2-sig: 48.2%
ModelChiSquareGof-sig: 97.9%
Bootstrap-pfa: 6.68e-09
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -6.492
Centroid-sig: 38.0%
Centroid-so: 0.363 arcsec [0.54σ]
OotOffset-rm: 0.904 arcsec [1.41σ]
KicOffset-rm: 0.895 arcsec [1.40σ]
OotOffset-st: 1/2/1/3 [7]
KicOffset-st: 1/2/1/3 [7]
DiffImageQuality-fgm: 0.71 [5/7]
DiffImageOverlap-fno: 0.00 [0/9]

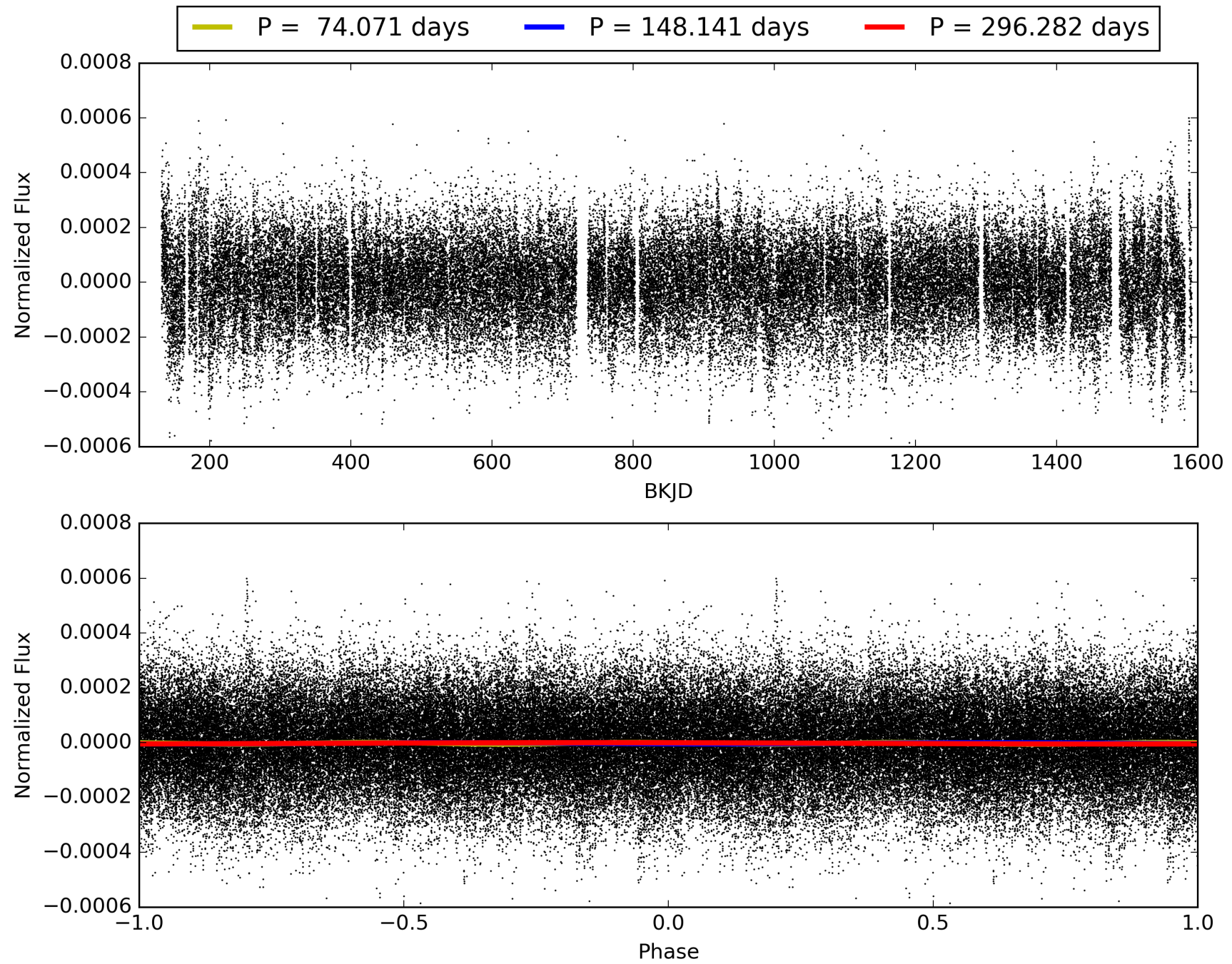
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:56:26 Z

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

TCE 007708418-05, PDC Light Curves

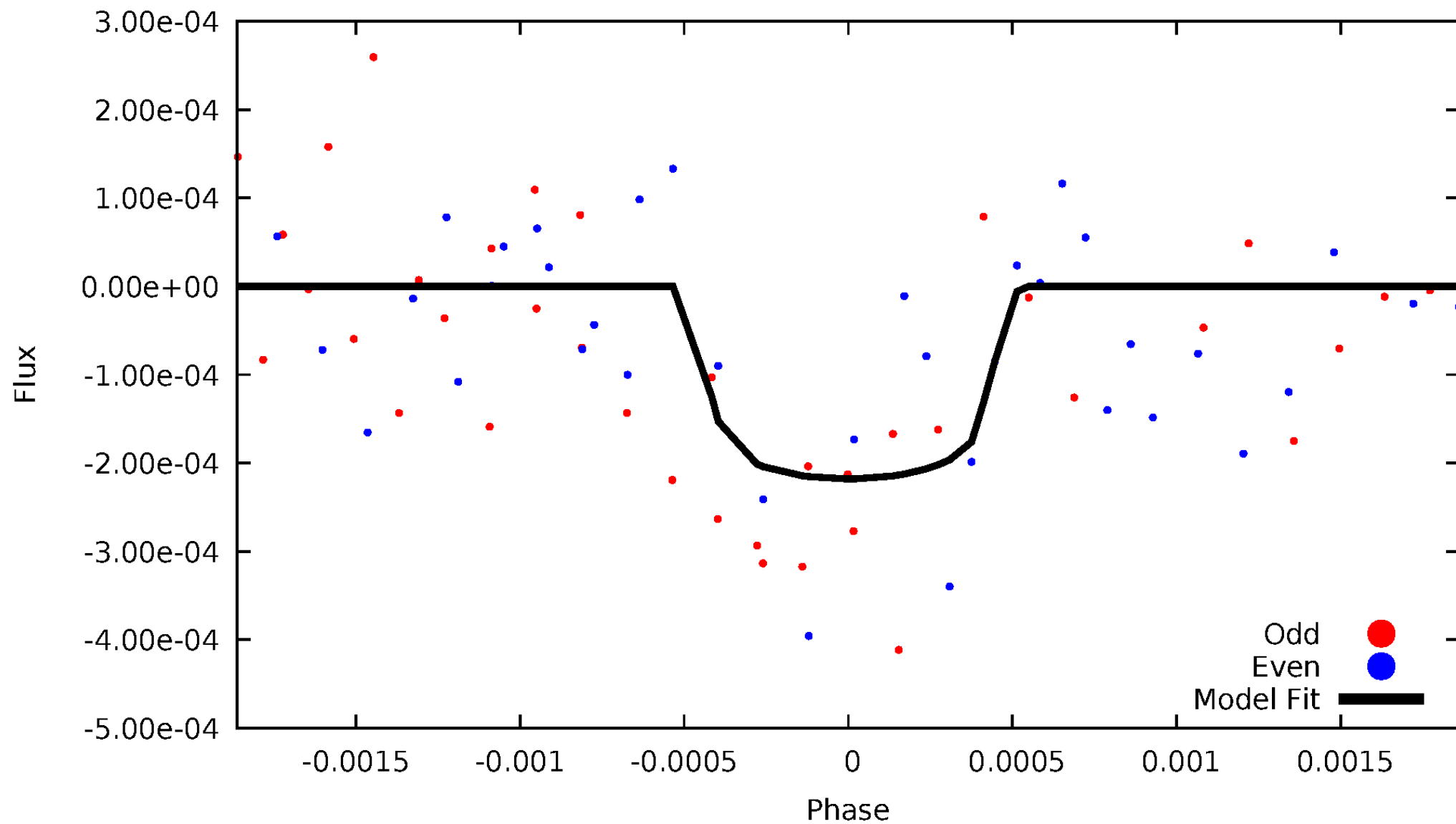


TCE 007708418-05



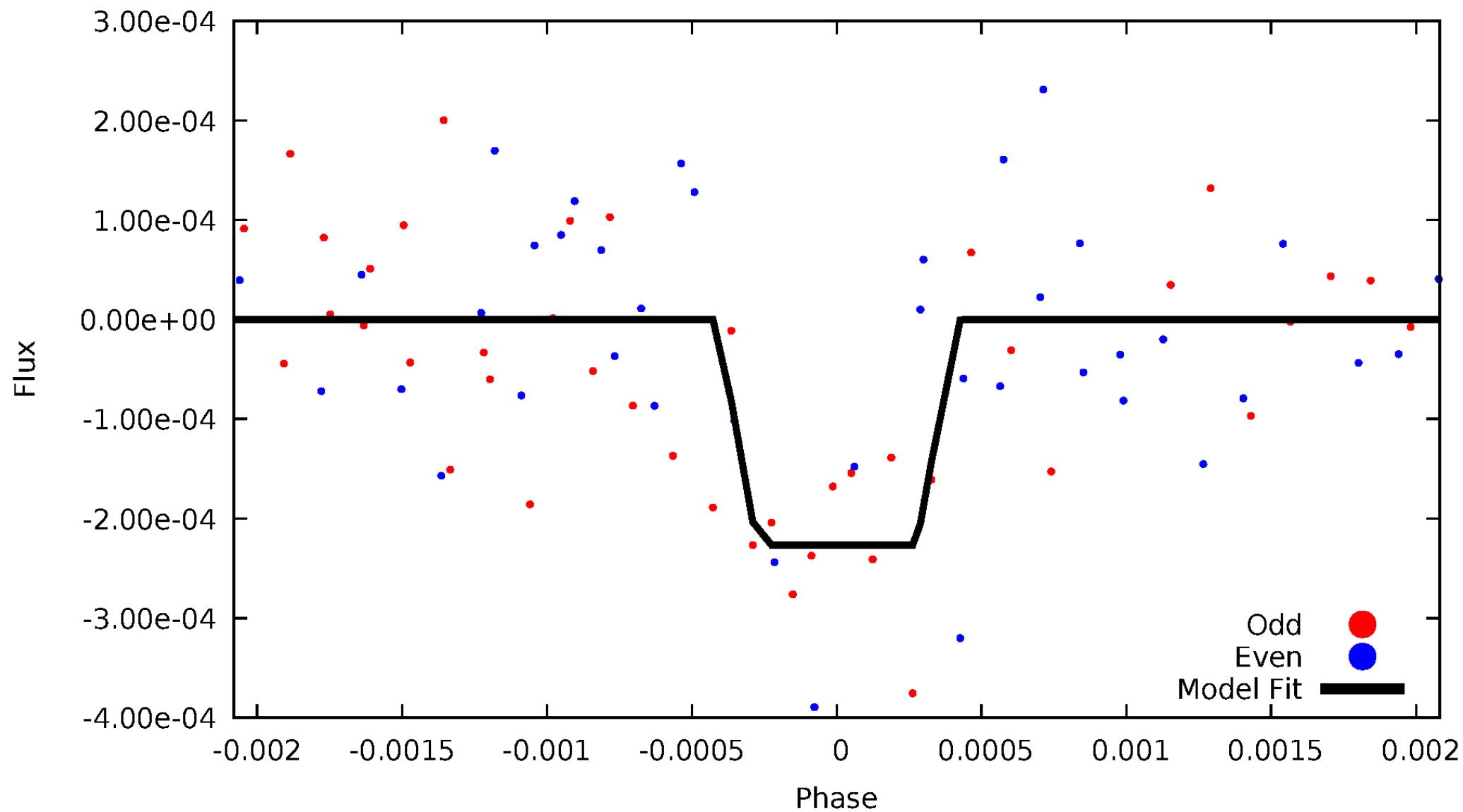
DV Odd/Even

TCE 007708418-05



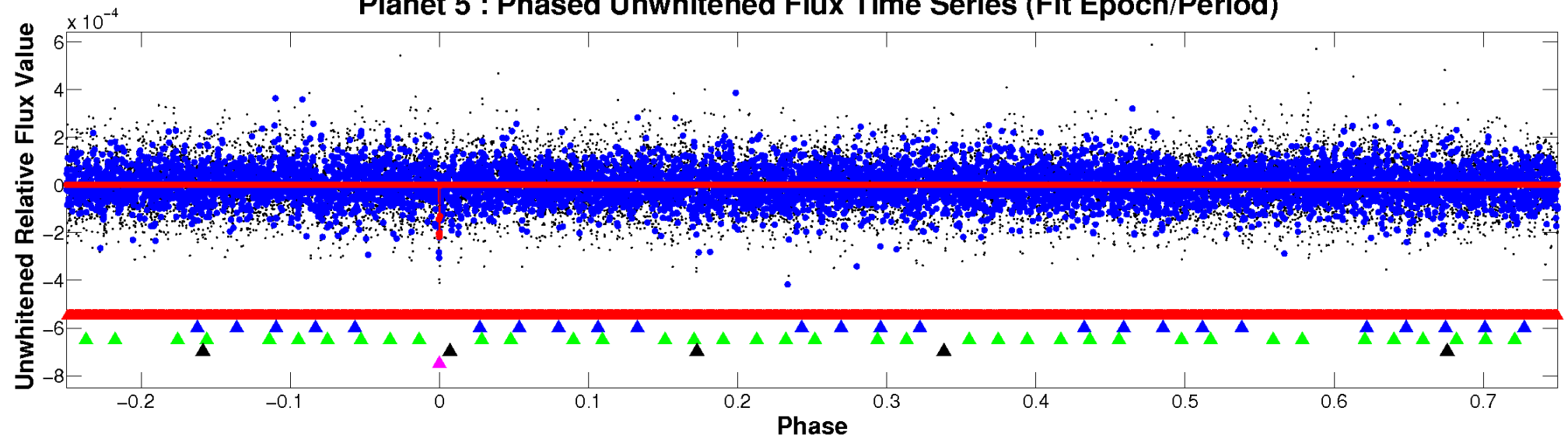
ALT Odd/Even

TCE 007708418-05

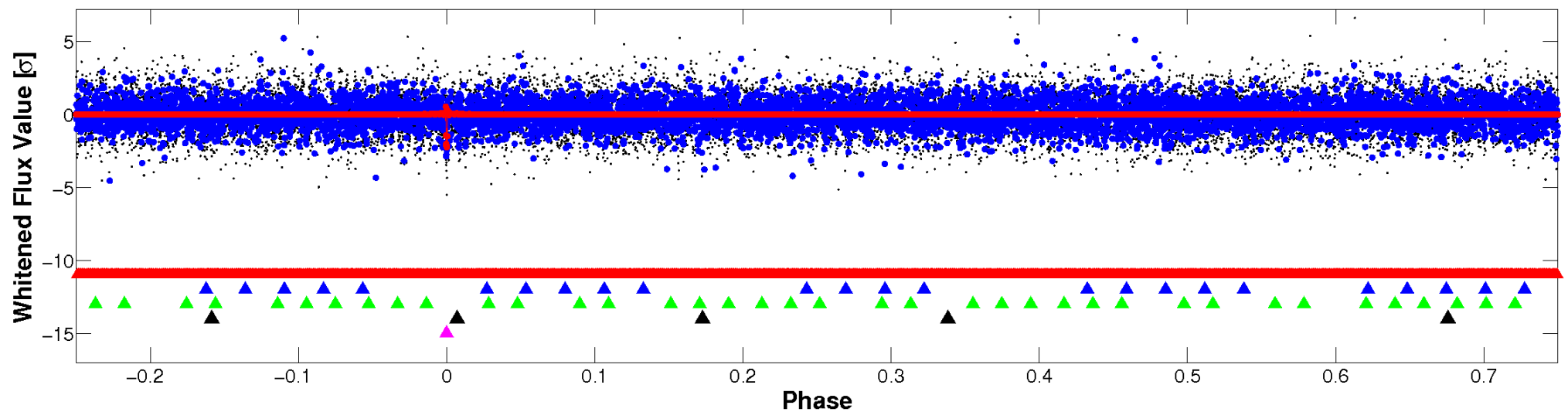


Non-Whitened Vs. Whitened Light Curve

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

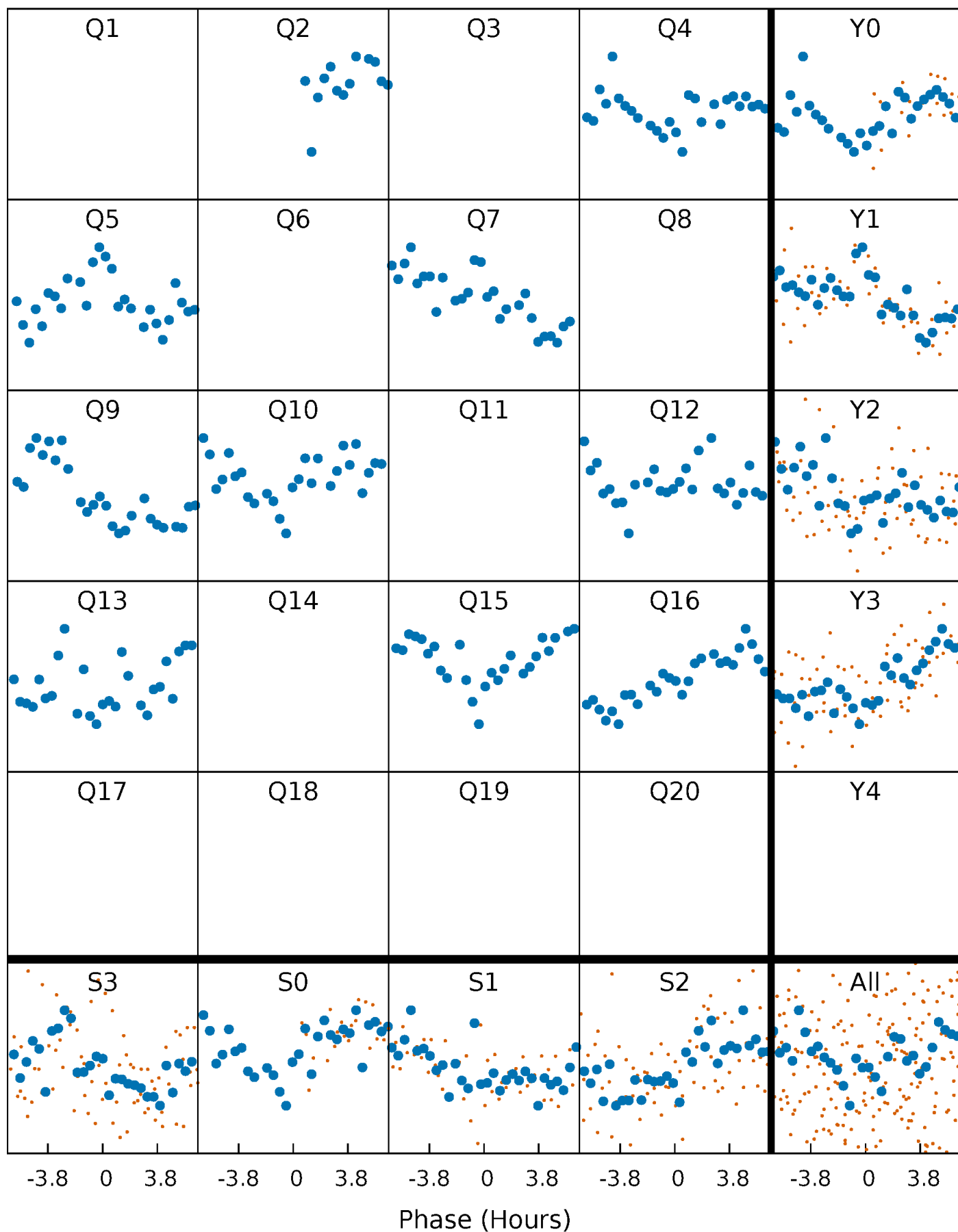


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



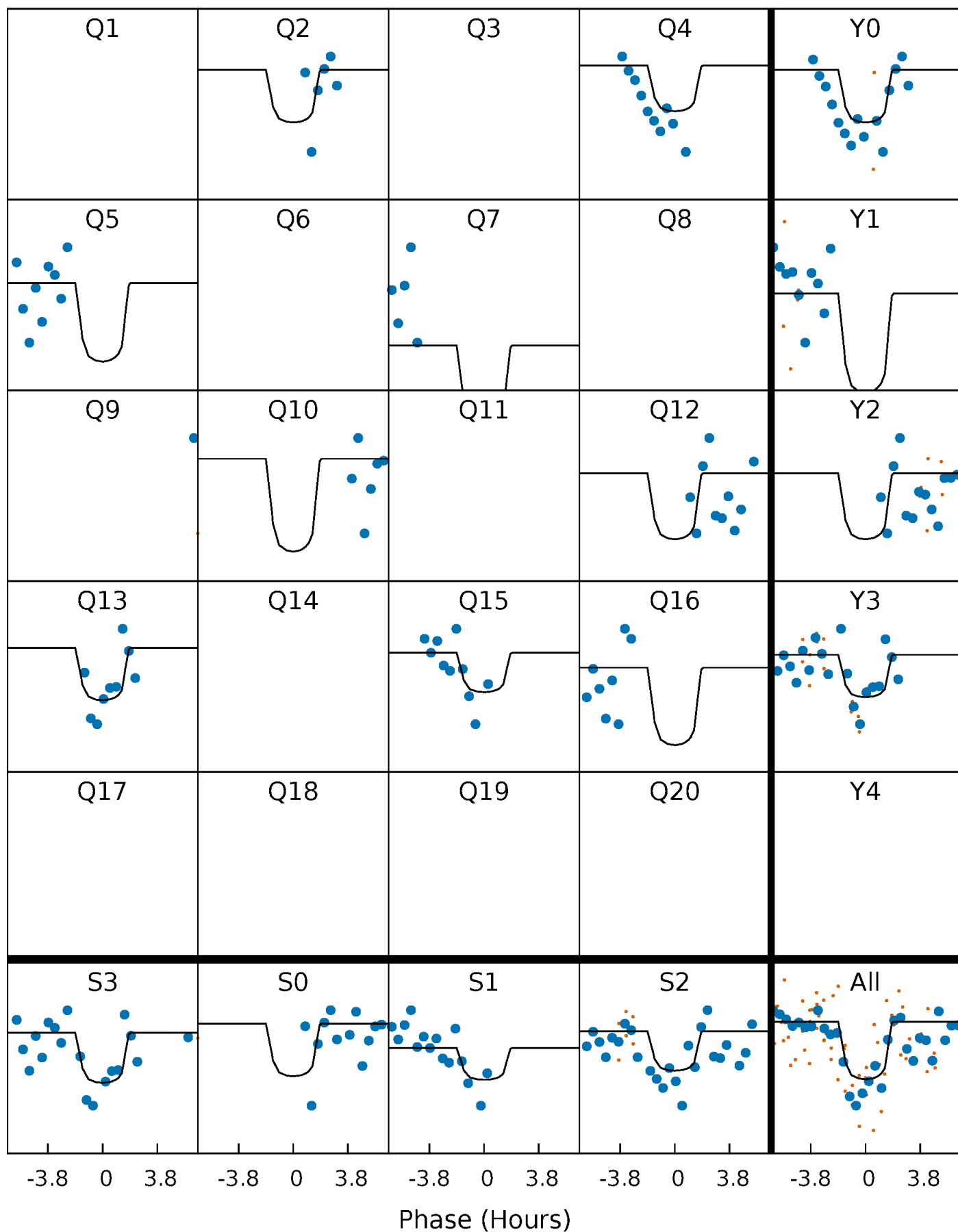
PDC Quarter-Phased Transit Curves

TCE 007708418-05 P=148.141121 Days $T_0=223.849097$ (BKJD)



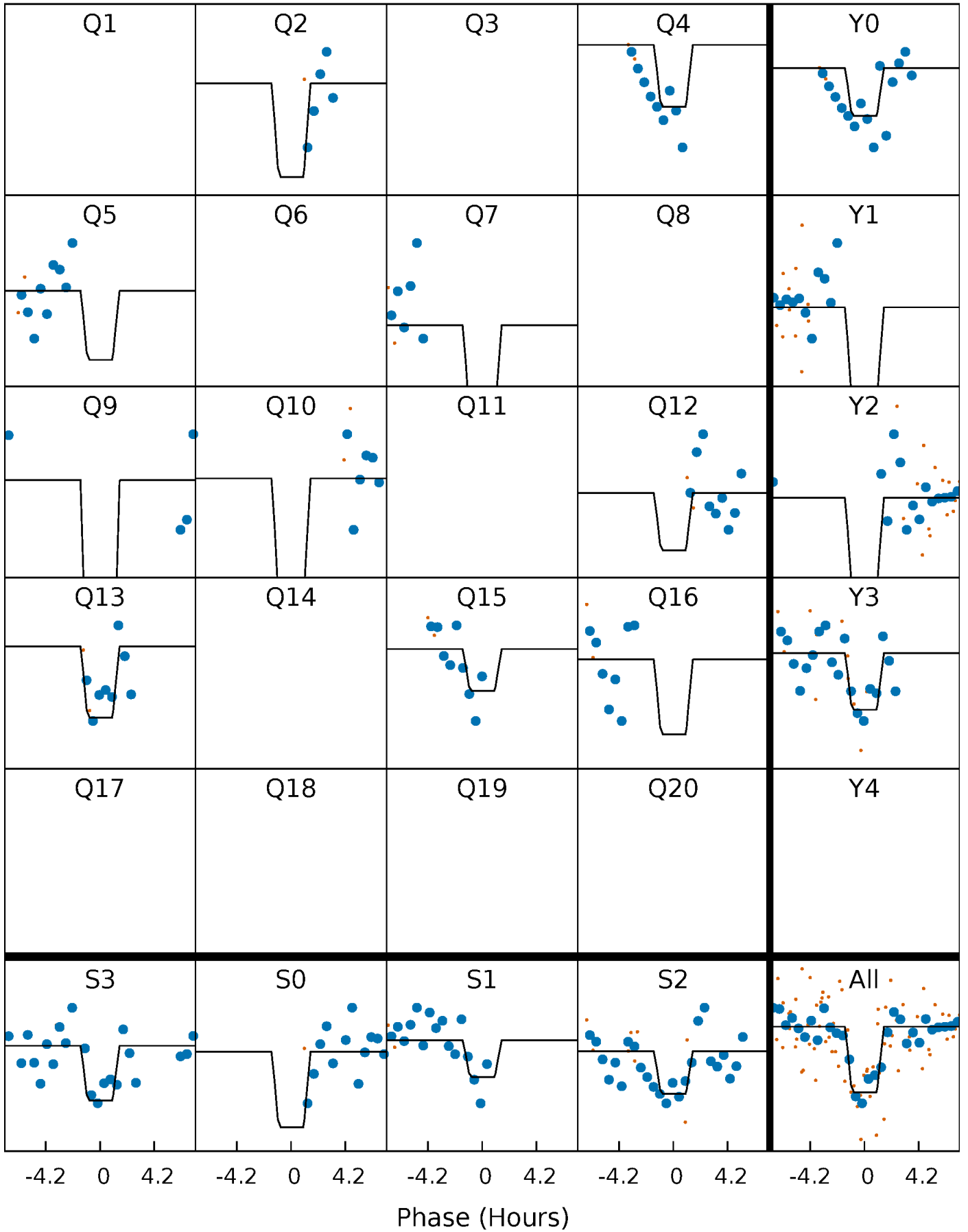
DV Quarter-Phased Transit Curves

TCE 007708418-05 P=148.141121 Days $T_0=223.849097$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

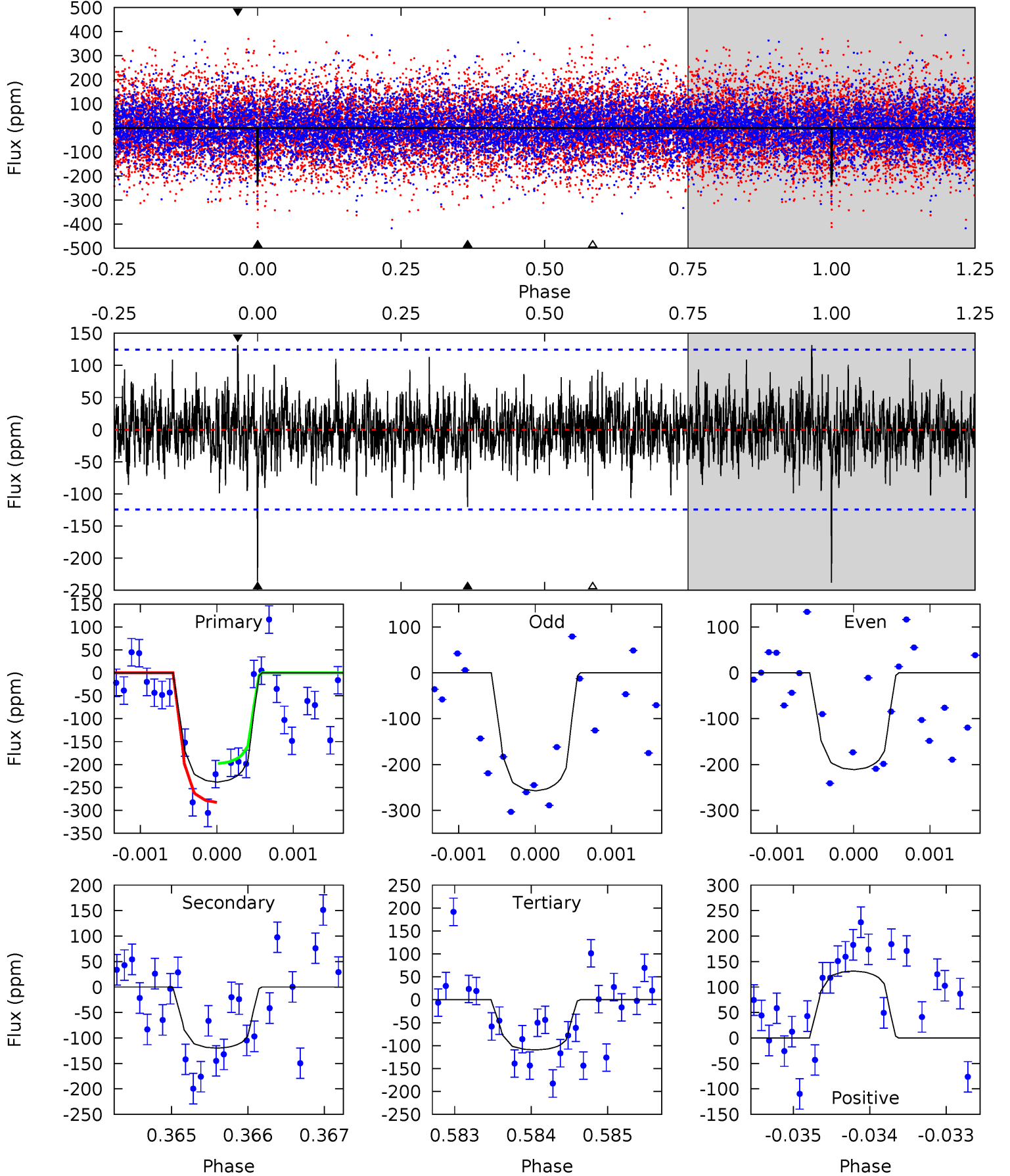
TCE 007708418-05 P=148.142500 Days $T_0=223.831680$ (BKJD)



DV Model-Shift Uniqueness Test

007708418-05, $P = 148.141121$ Days, $E = 75.707976$ Days

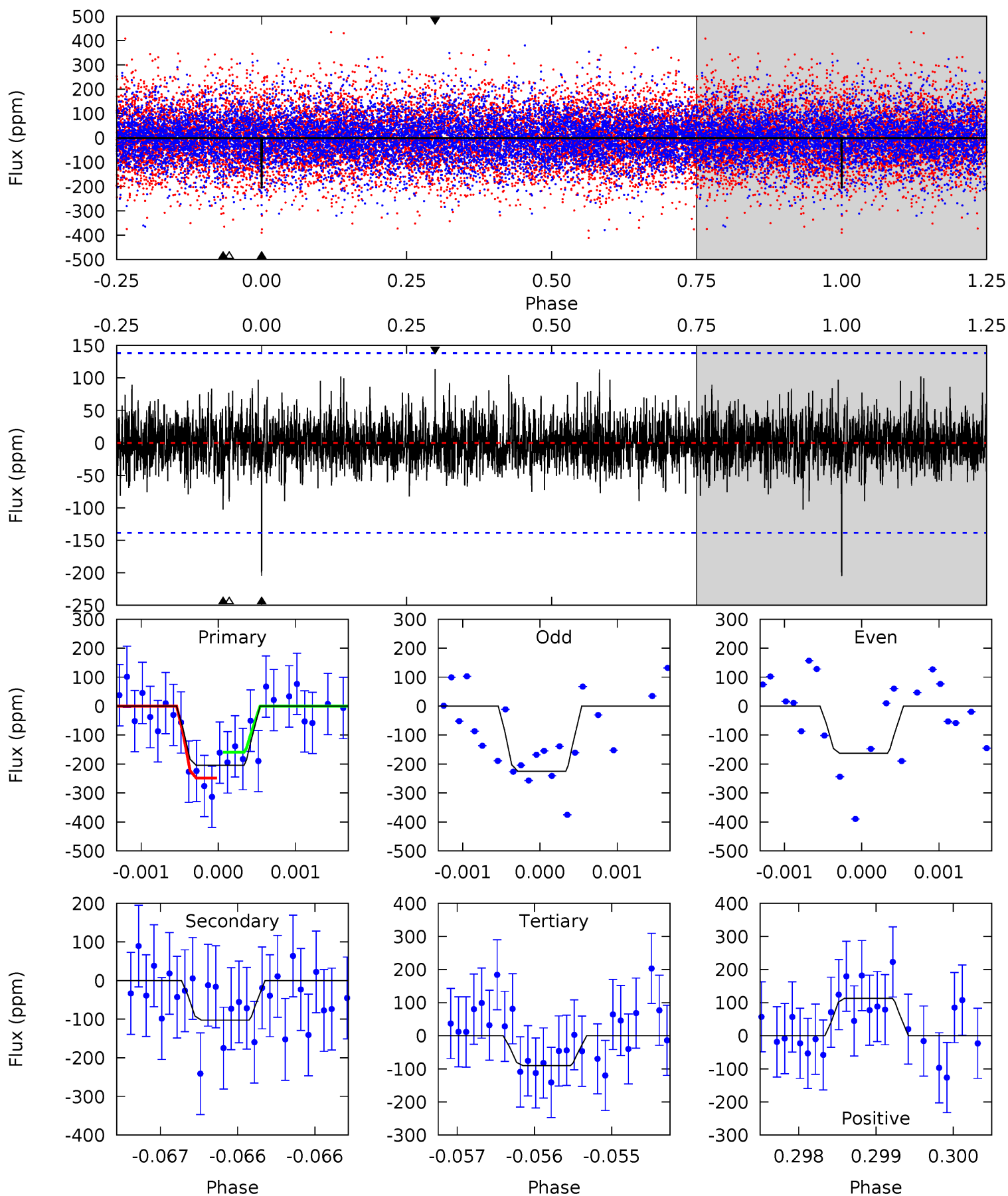
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	5.27	4.81	5.77	5.46	3.31	1.37	5.66	4.69	0.46	-0.50	1.01	1.06	0.36	1.85



Alt Model-Shift Uniqueness Test

007708418-05, P = 148.142500 Days, E = 75.689180 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.12	4.07	3.57	4.50	5.49	3.36	1.09	4.55	3.62	0.49	-0.43	1.20	0.78	0.36	1.77



Stellar Parameters For KIC 007708418

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7311^{+203}_{-319}	$4.077^{+0.158}_{-0.175}$	$-0.100^{+0.200}_{-0.350}$	$1.889^{+0.567}_{-0.464}$	$1.551^{+0.211}_{-0.257}$	$0.324^{+0.312}_{-0.160}$
	+3%/-4%	+4%/-4%	+200%/-350%	+30%/-25%	+14%/-17%	+96%/-49%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007708418-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-120 ± 23	$3.34^{+2.08}_{-1.80}$	779^{+63}_{-54}	5866^{+3401}_{-1055}	2247^{+8196}_{-1342}
Alt.	-102 ± 25	$3.26^{+2.38}_{-1.84}$	775^{+61}_{-58}	5725^{+3289}_{-1253}	2051^{+7897}_{-1396}

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

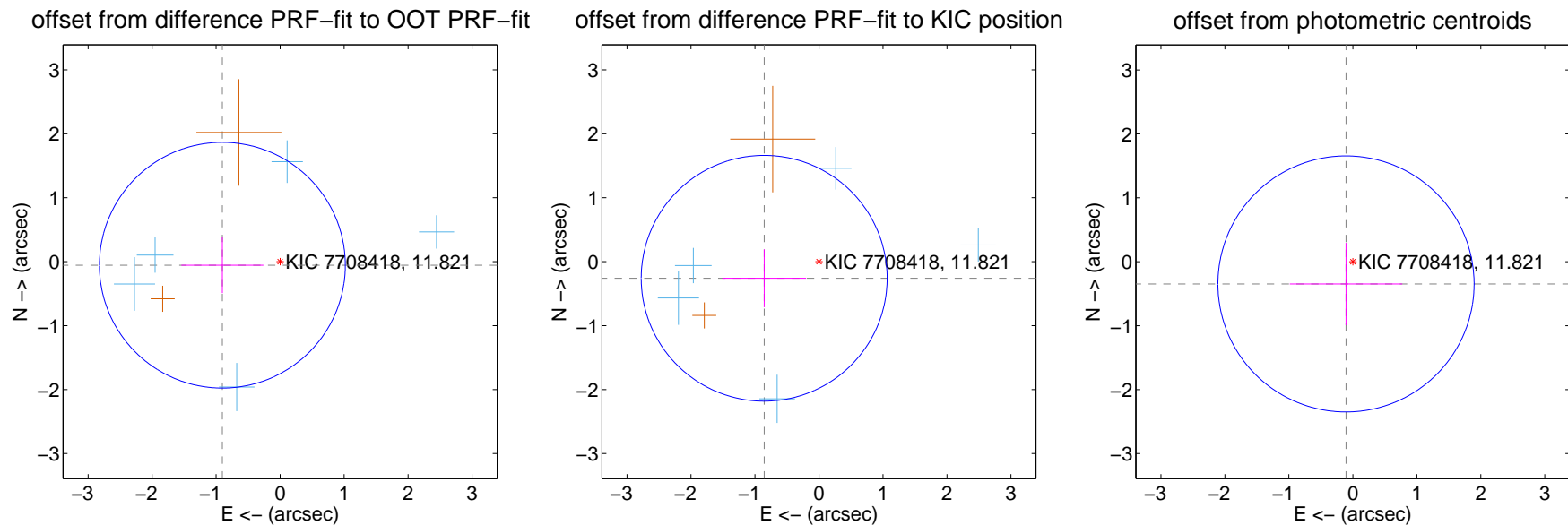
DV Centroid Data

Supplemental centroid analysis for 007708418-05. **Kepler magnitude: 11.82.** Transit SNR 8.81

There are 5 quarters with good PRF difference image offsets

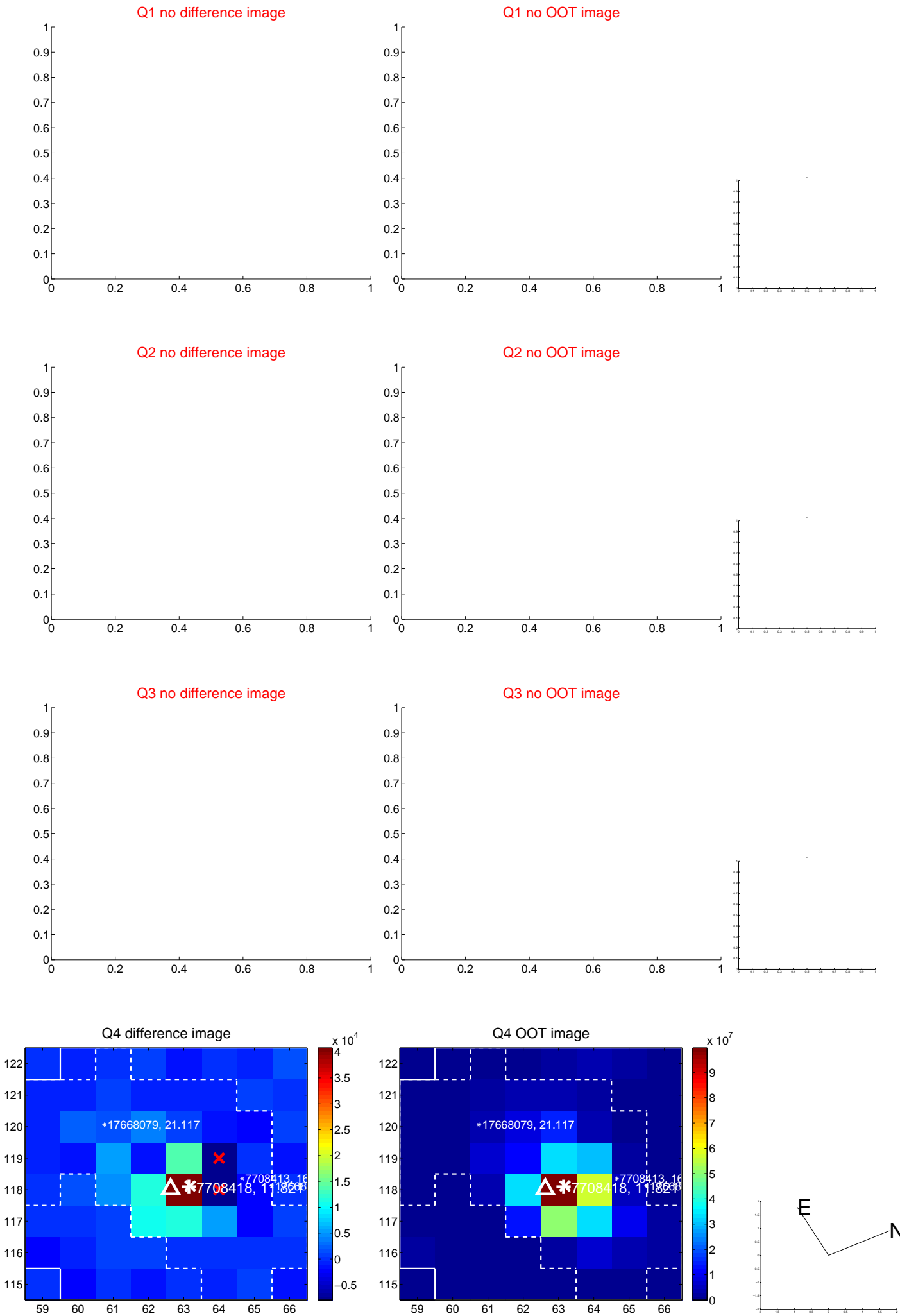
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.904 ± 0.640	1.41	0.903 ± 0.641	-0.055 ± 0.437
PRF-fit source offset from KIC position	0.895 ± 0.640	1.40	0.856 ± 0.655	-0.259 ± 0.453
photometric centroid source offset	0.36 ± 0.67	0.54	0.11 ± 0.88	-0.35 ± 0.64

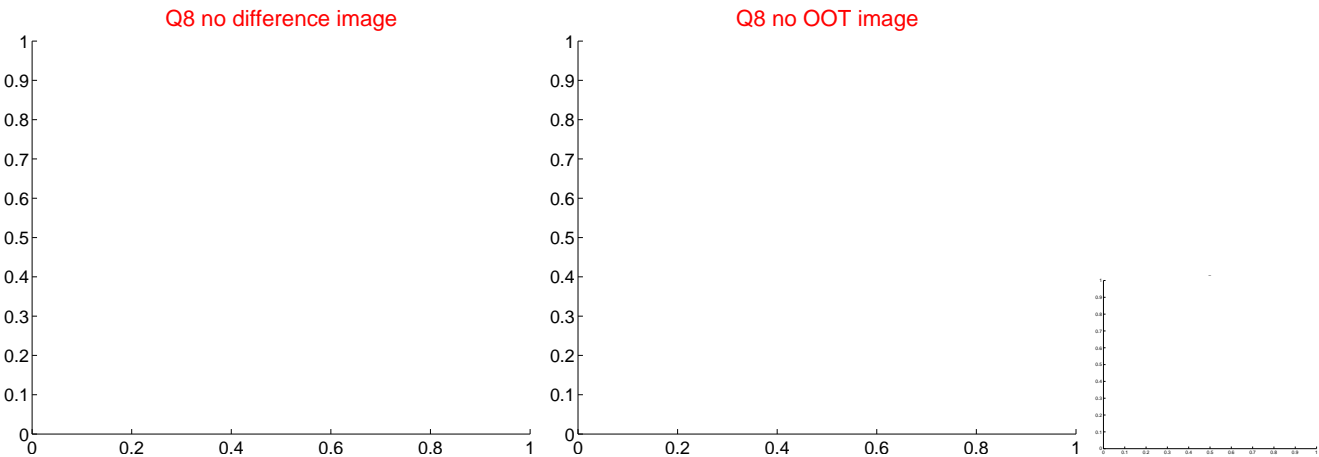
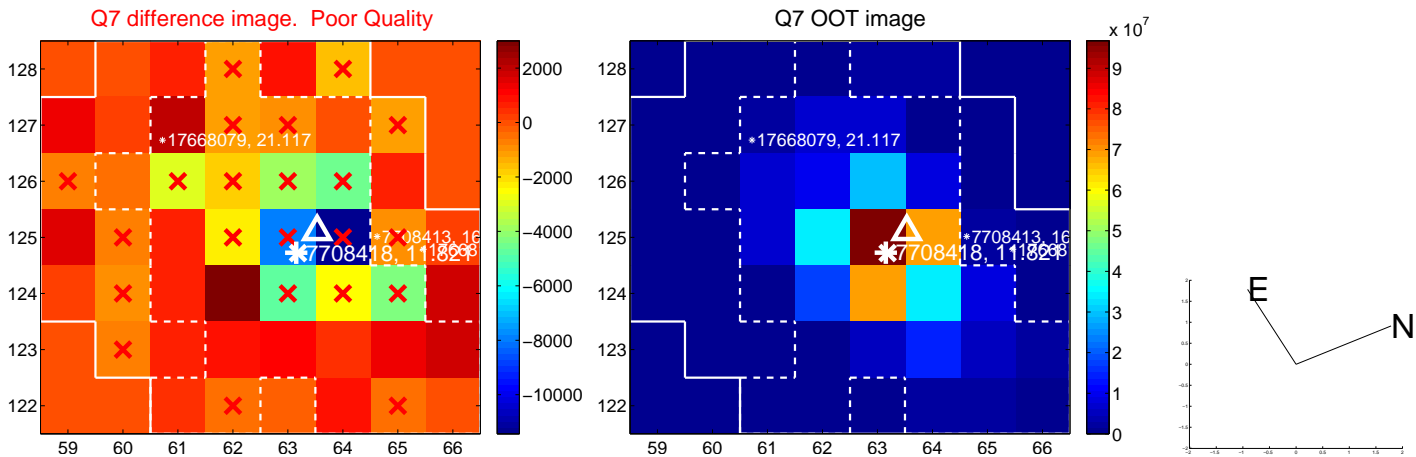
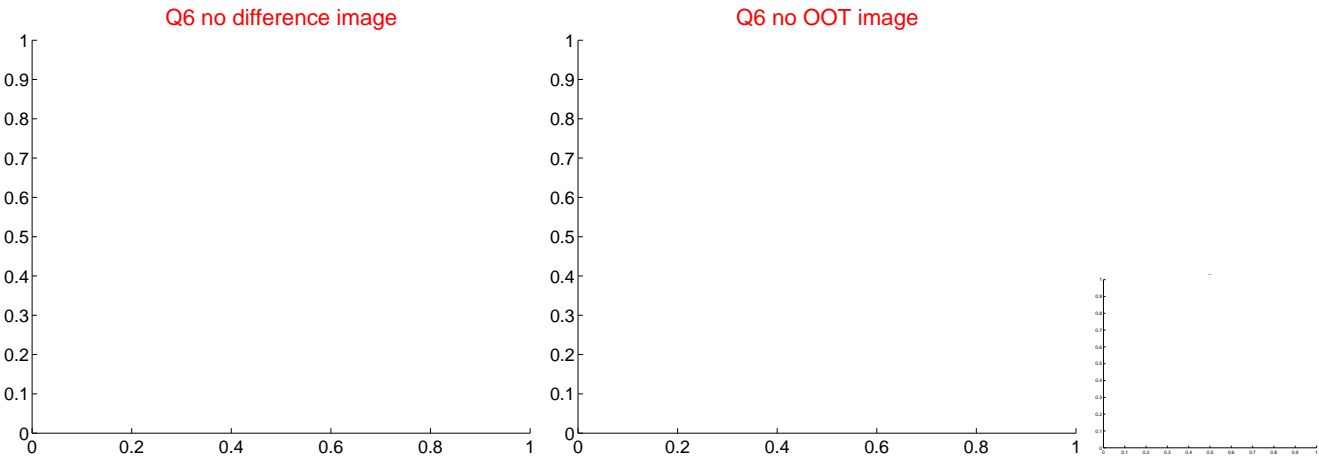
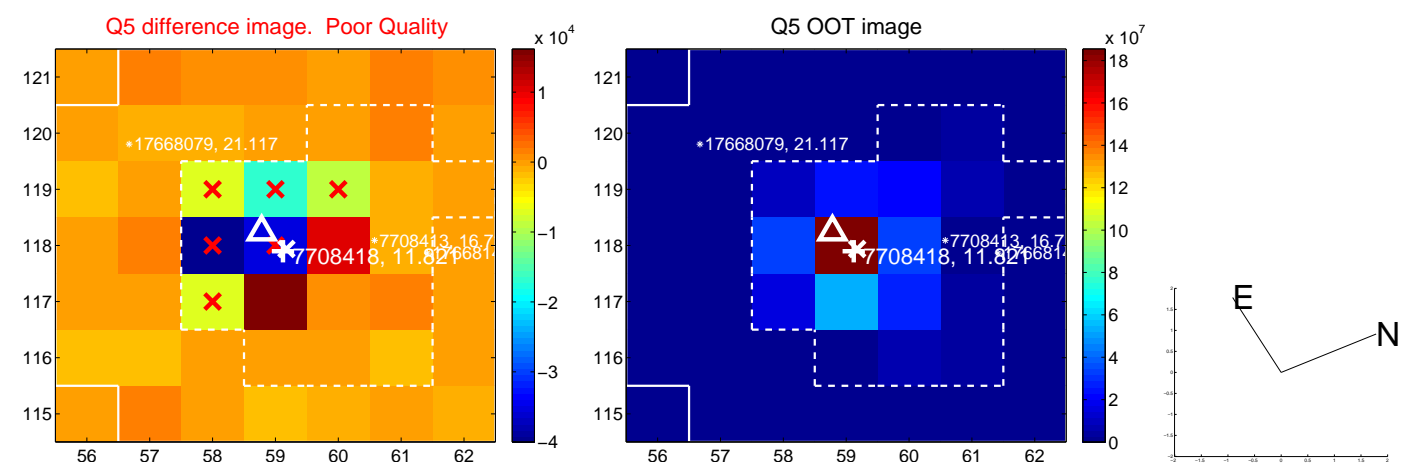


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

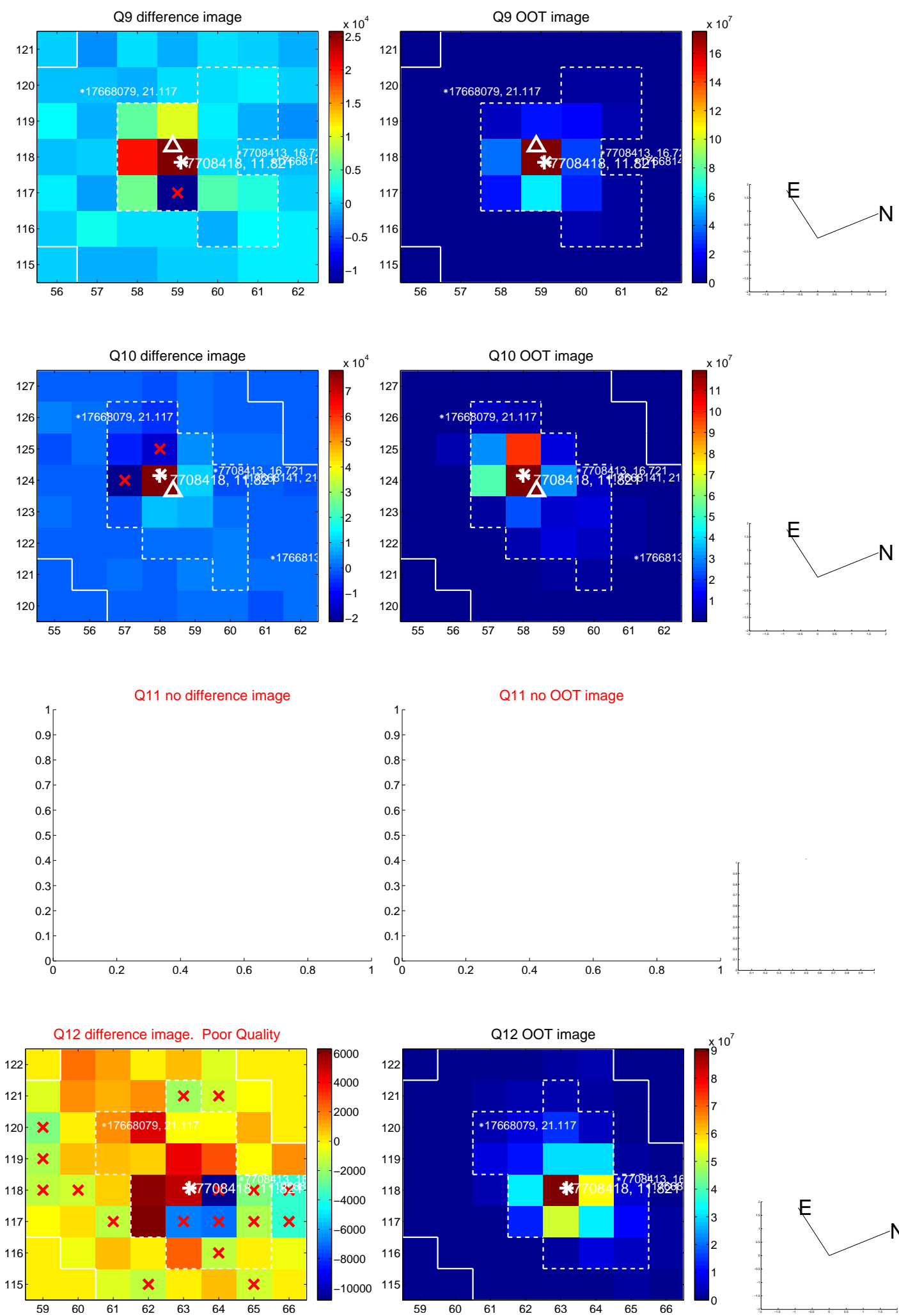
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



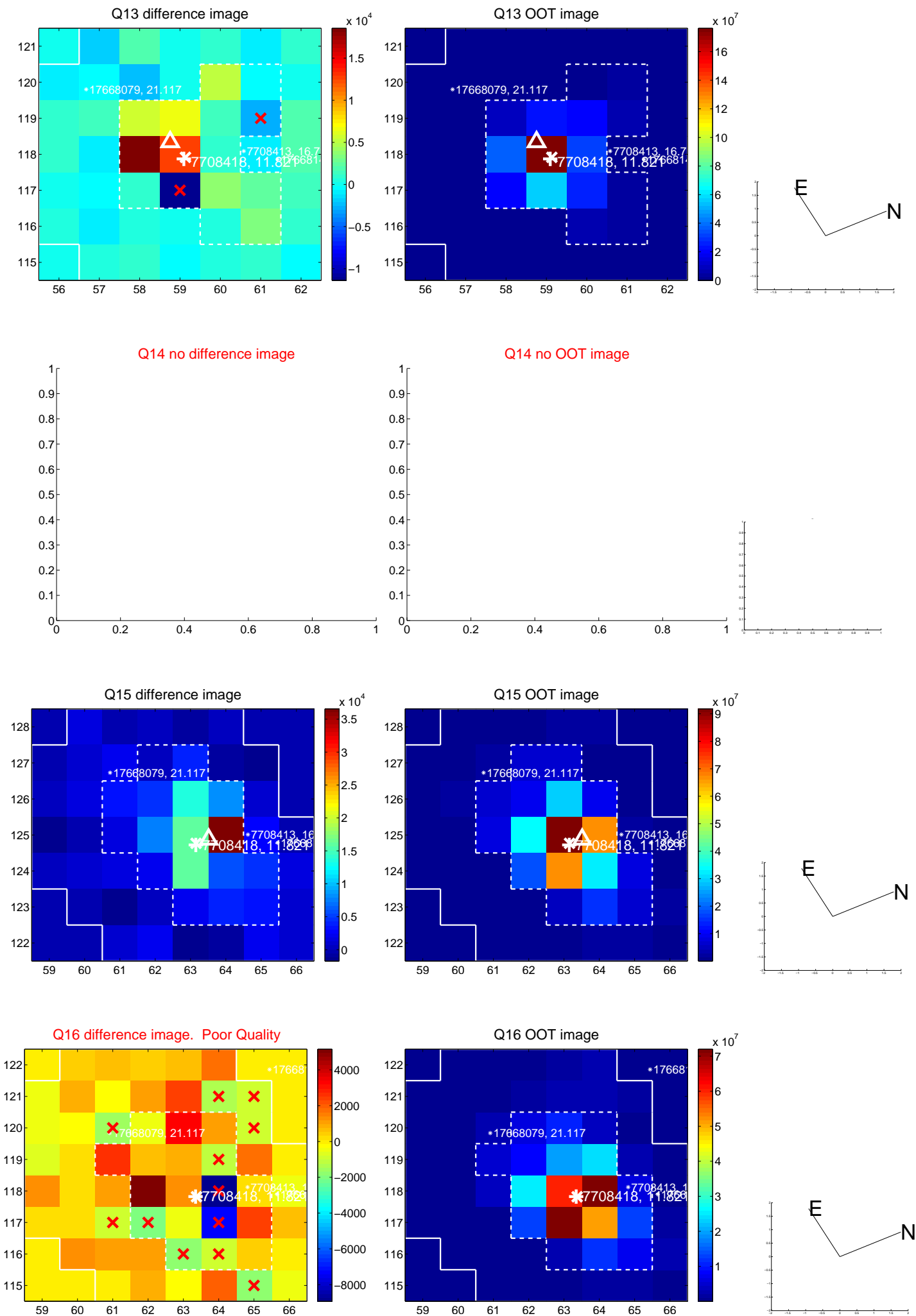
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



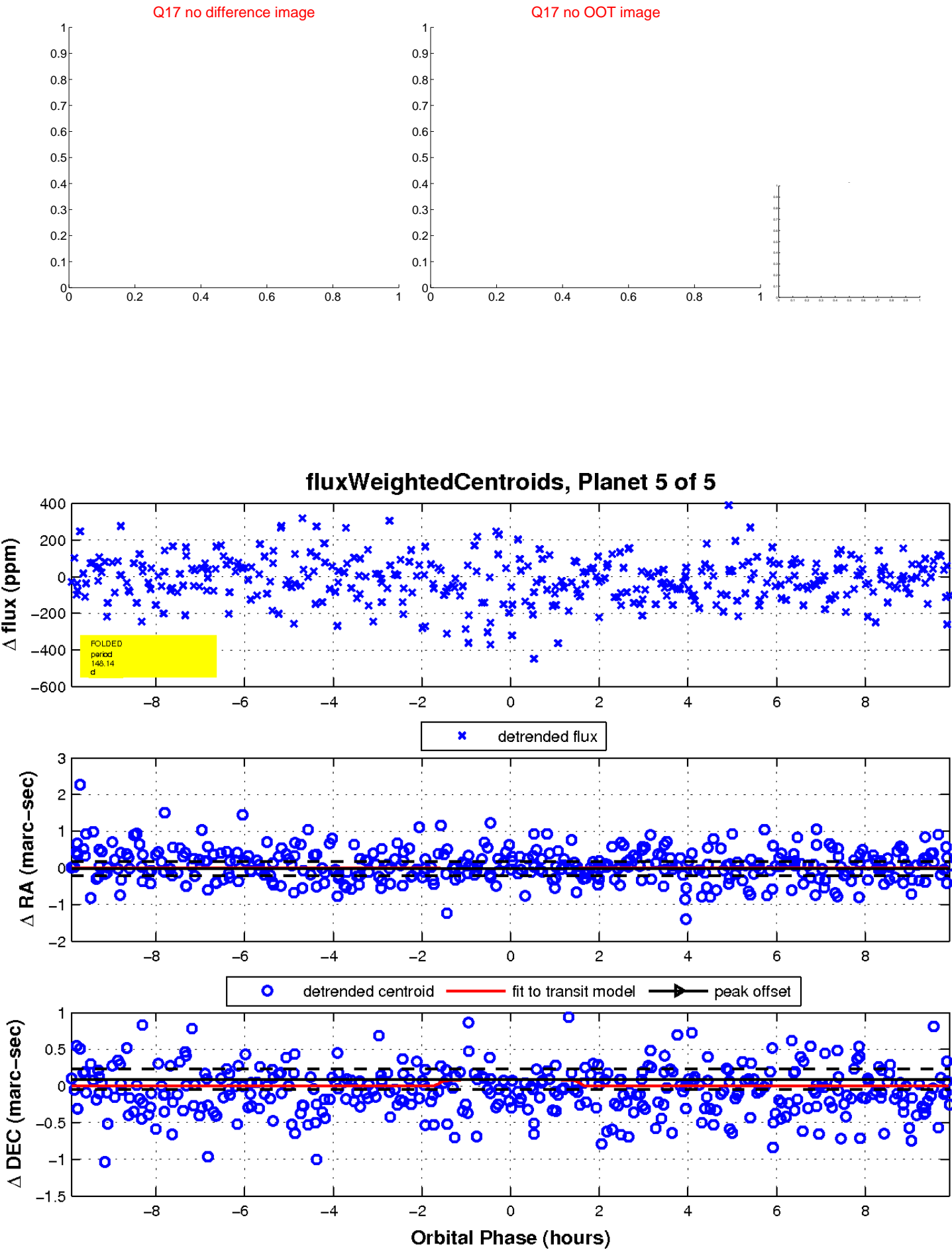
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

