

KIC 003747817

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})
003747817-01	OBS	4103.01	184.771030	217.363320	1048.6	9.857	16.9	17.0	0.80	5273	2.66	1.22
003747817-02	OBS	4103.02	14.237064	140.484922	204.3	2.851	8.0	8.6	0.80	5273	1.39	37.12

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003747817-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
003747817-02	OBS	PC	0.87	0	0	0	0	NO_COMMENT

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.

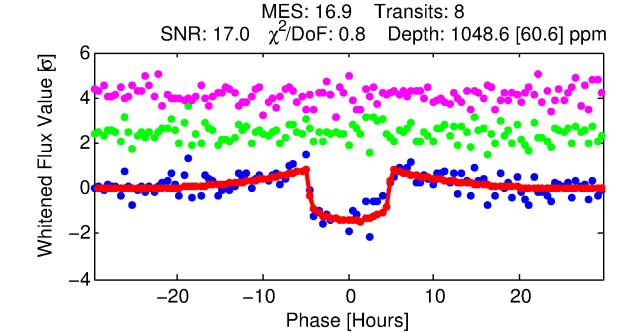
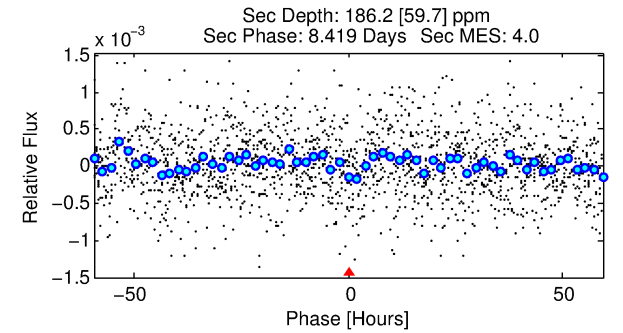
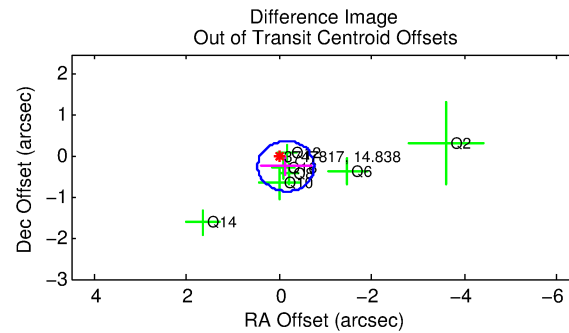
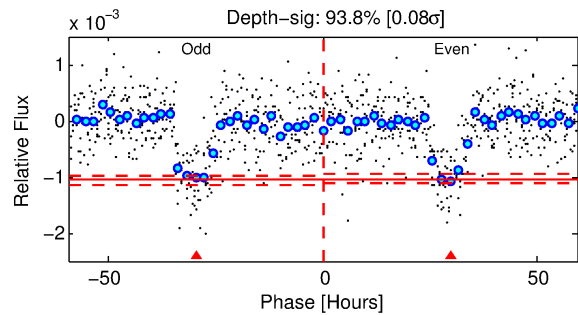
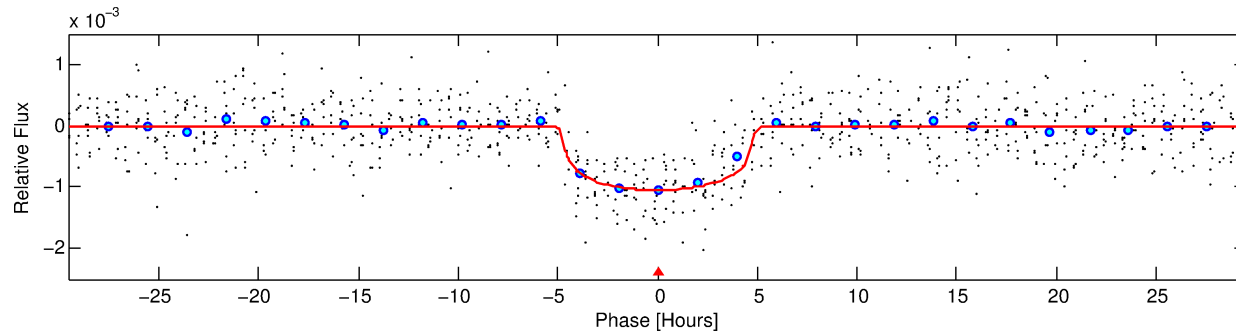
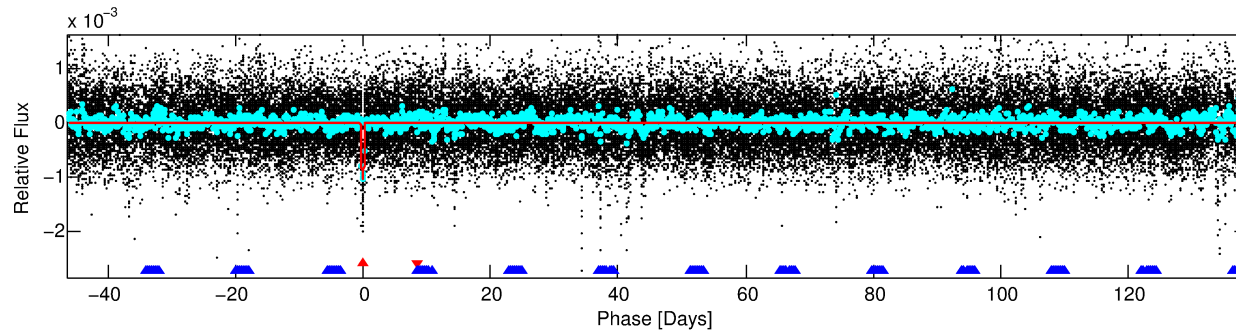
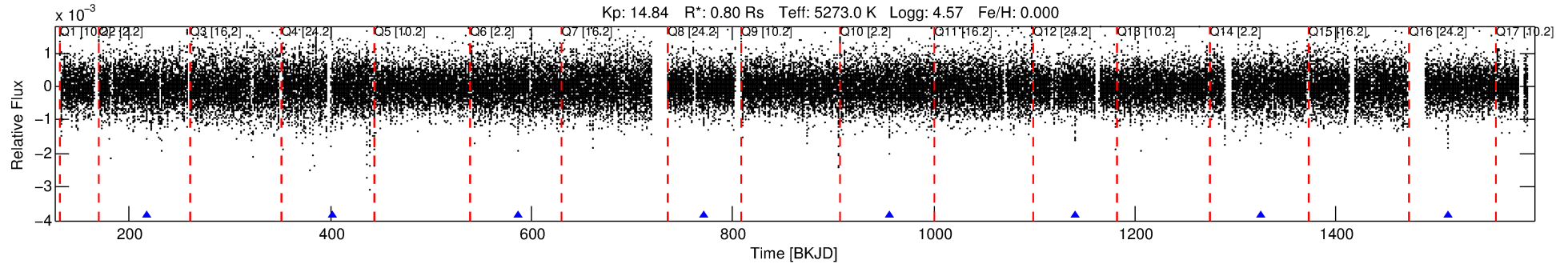
Ephemeris Match Information For 003747817-01

No Significant Match Found

DV One-Page Summary

KIC: 3747817 Candidate: 1 of 2 Period: 184.771 d

KOI: K04103.01 Corr: 0.992



DV Fit Results:

Period = 184.77103 [0.00151] d
Epoch = 217.3633 [0.0067] BKJD
Rp/R* = 0.0304 [0.0095]
a/R* = 123.84 [143.05]
b = 0.56 [1.43]
Seff = 1.22 [0.18]
Teq = 268 [10] K
Rp = 2.66 [0.87] Re
a = 0.6042 [0.0486] AU
Ag = 5290.11 [3784.40] [1.40 σ]
Teffp = 3532 [626] K [5.21 σ]

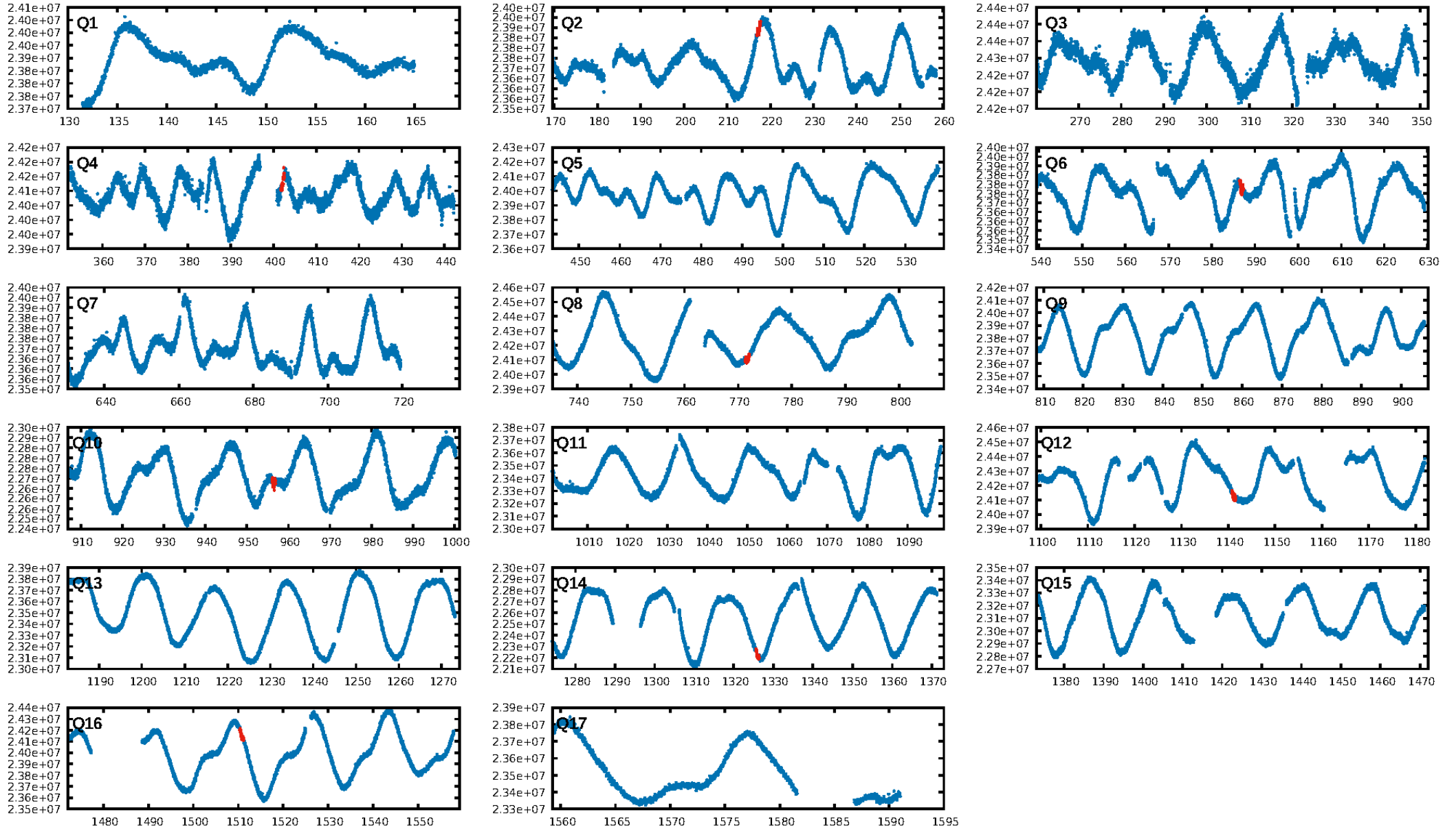
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [398.85 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 21.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.90e-31
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: -3.254
Centroid-sig: 0.0%
Centroid-so: 1.760 arcsec [2.94 σ]
OotOffset-rm: 0.282 arcsec [1.38 σ]
KicOffset-rm: 0.096 arcsec [0.50 σ]
OotOffset-st: 4/0/3/0 [7]
KicOffset-st: 4/0/3/0 [7]
DiffImageQuality-fgm: 0.86 [6/7]
DiffImageOverlap-fno: 1.00 [7/7]

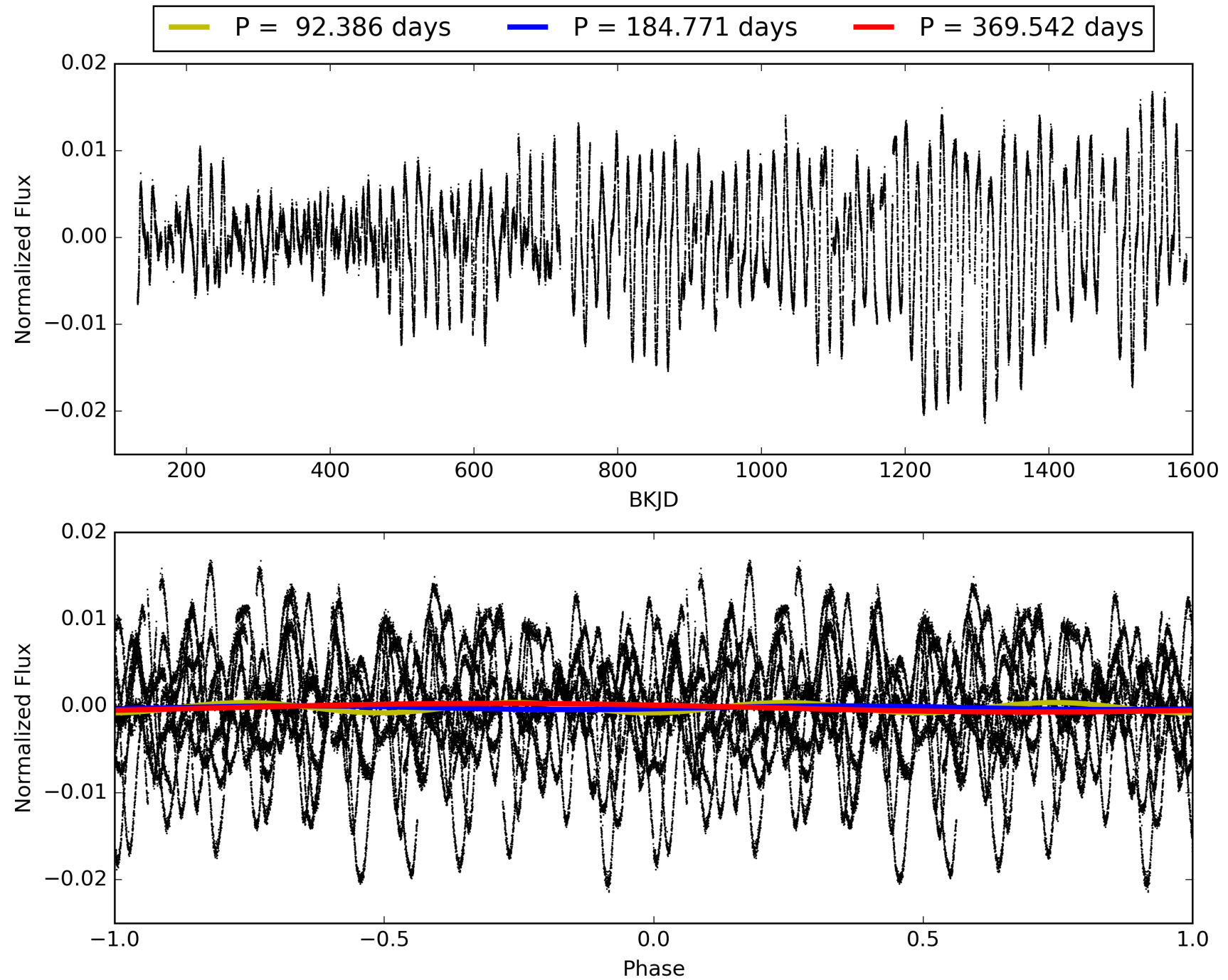
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:07:06 Z

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

TCE 003747817-01, PDC Light Curves

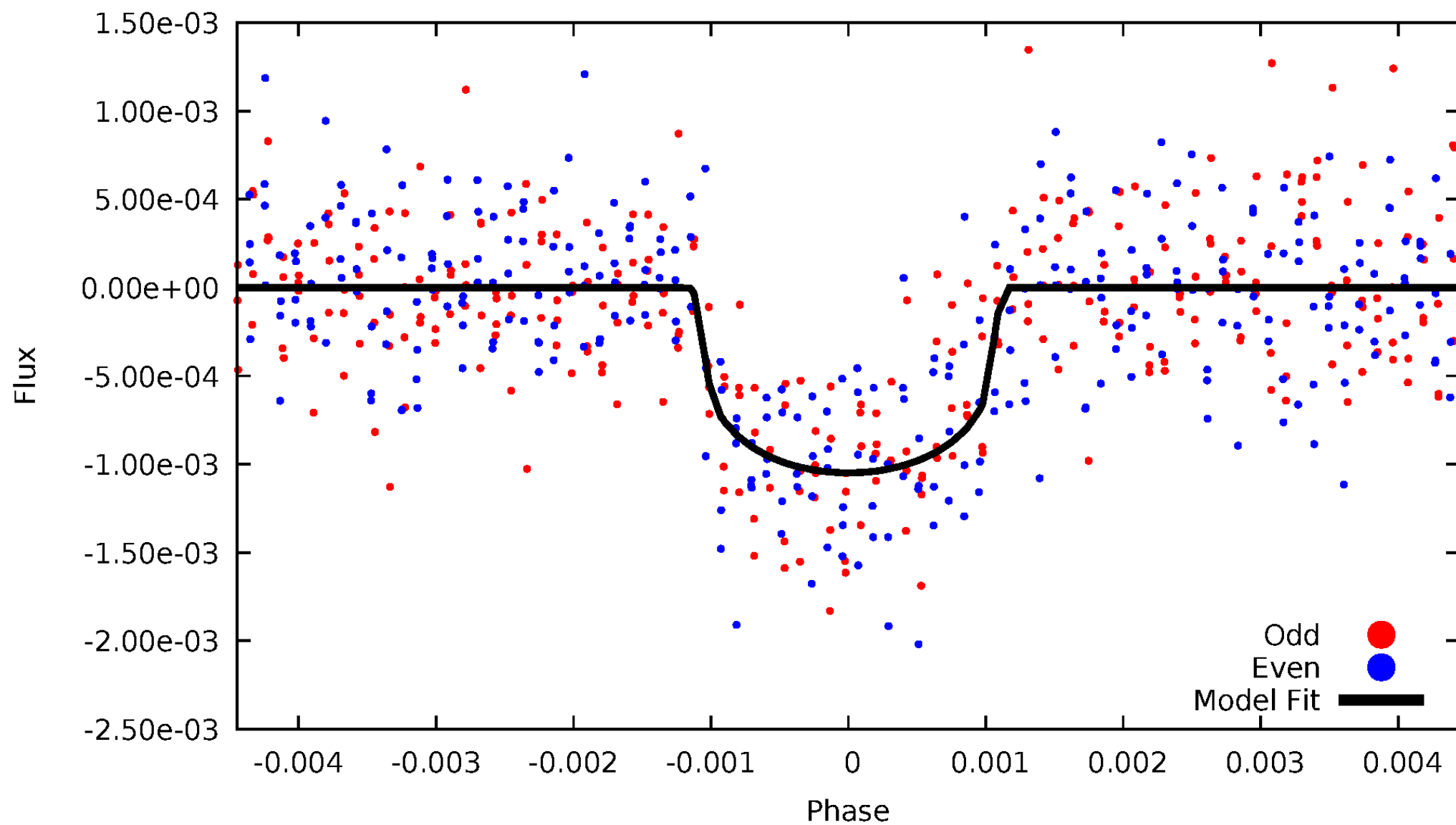


TCE 003747817-01



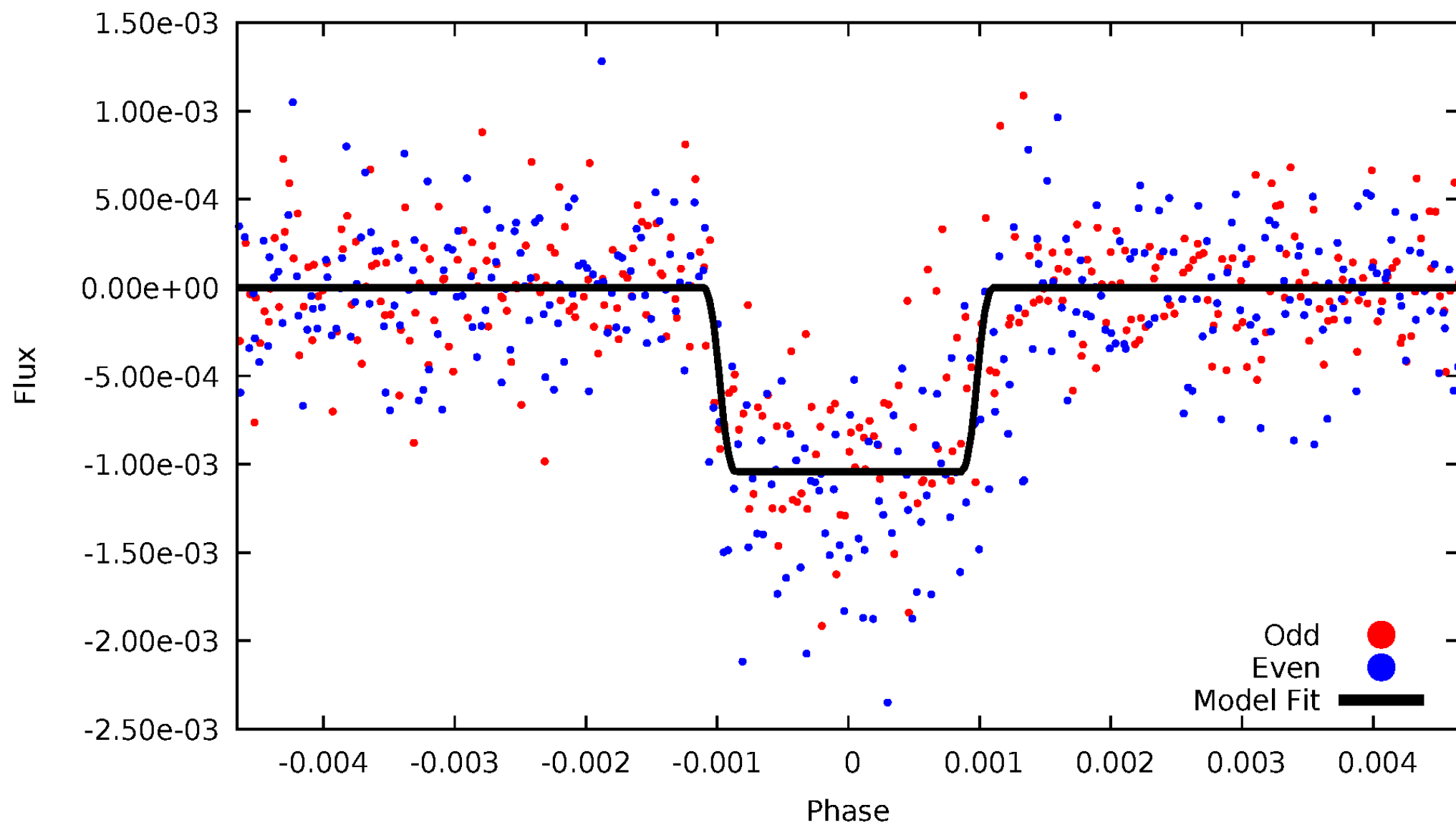
DV Odd/Even

TCE 003747817-01



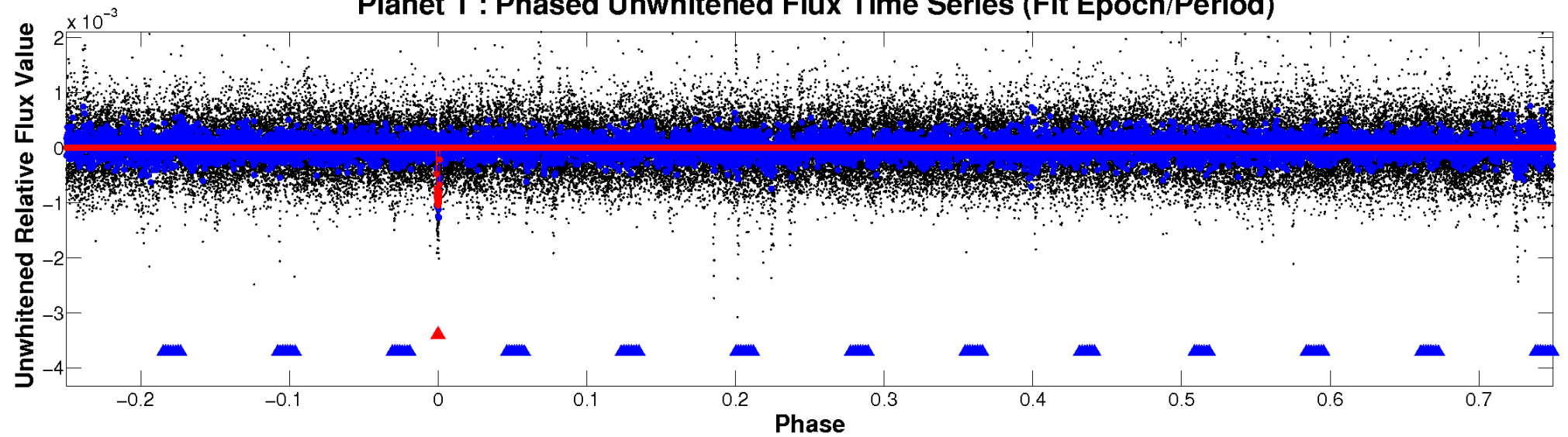
ALT Odd/Even

TCE 003747817-01

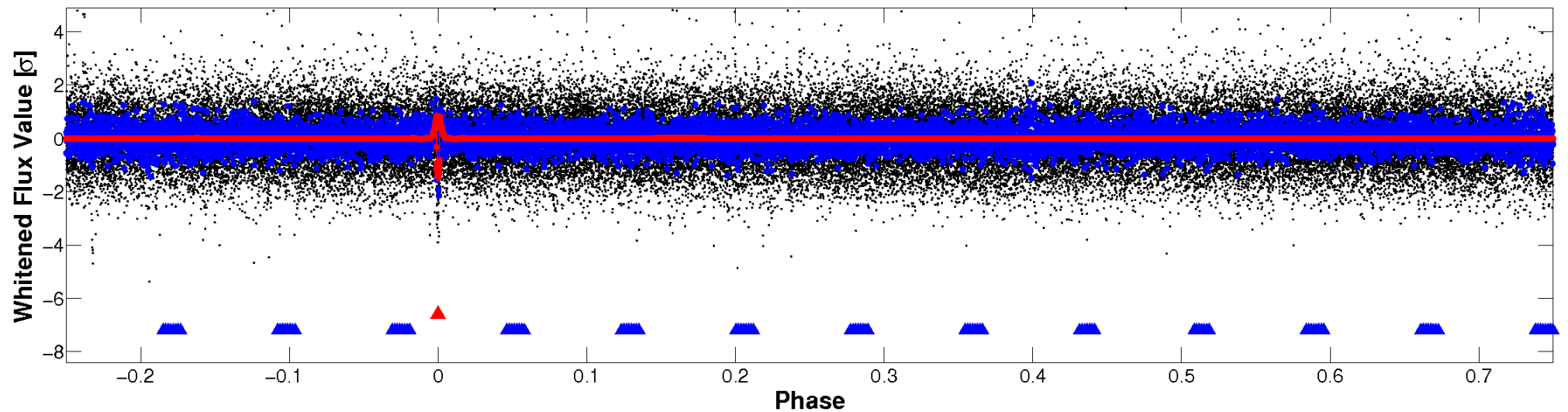


Non-Whitened Vs. Whitened Light Curve

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

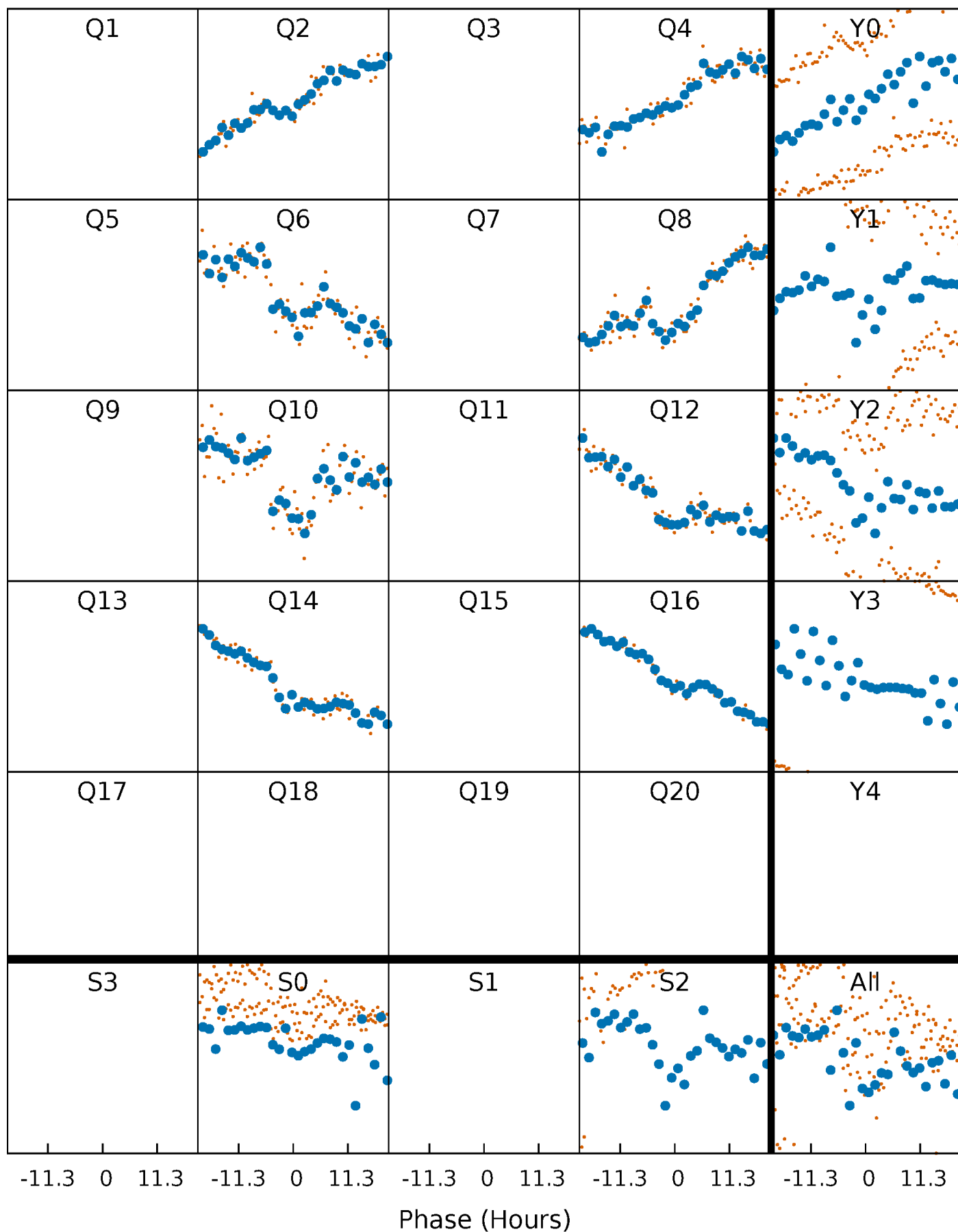


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



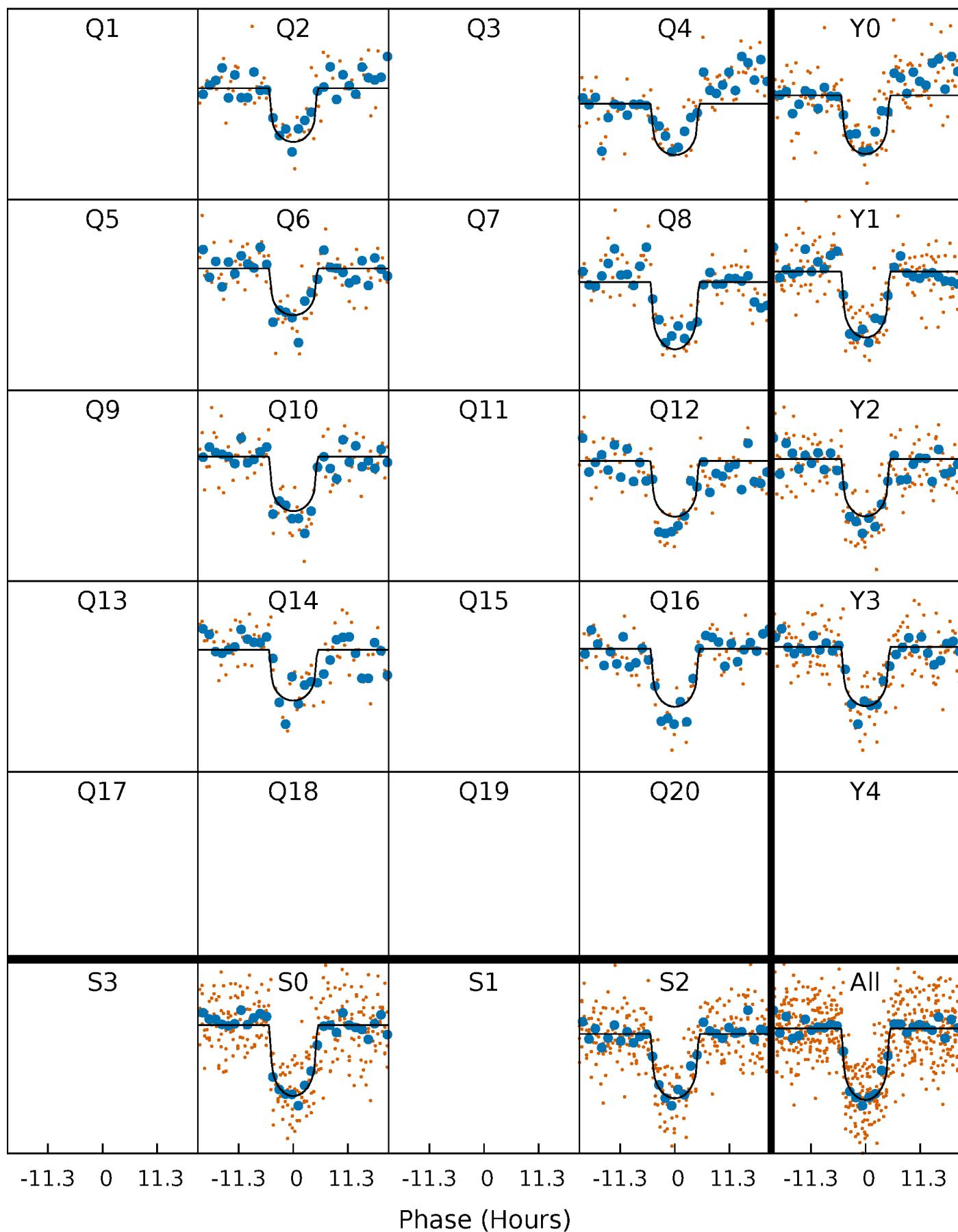
PDC Quarter-Phased Transit Curves

TCE 003747817-01 P=184.771030 Days $T_0=217.363320$ (BKJD)



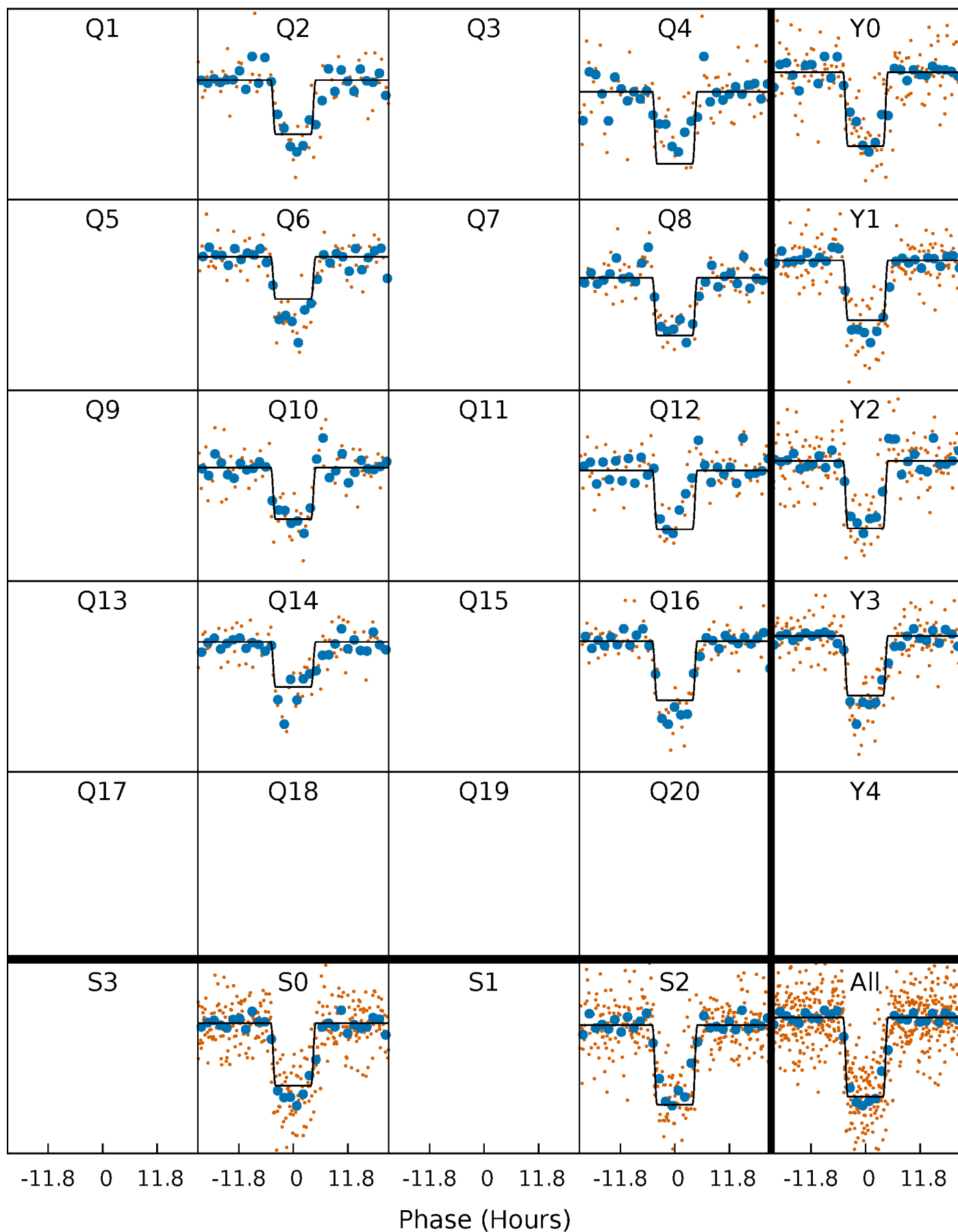
DV Quarter-Phased Transit Curves

TCE 003747817-01 P=184.771030 Days $T_0=217.363320$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

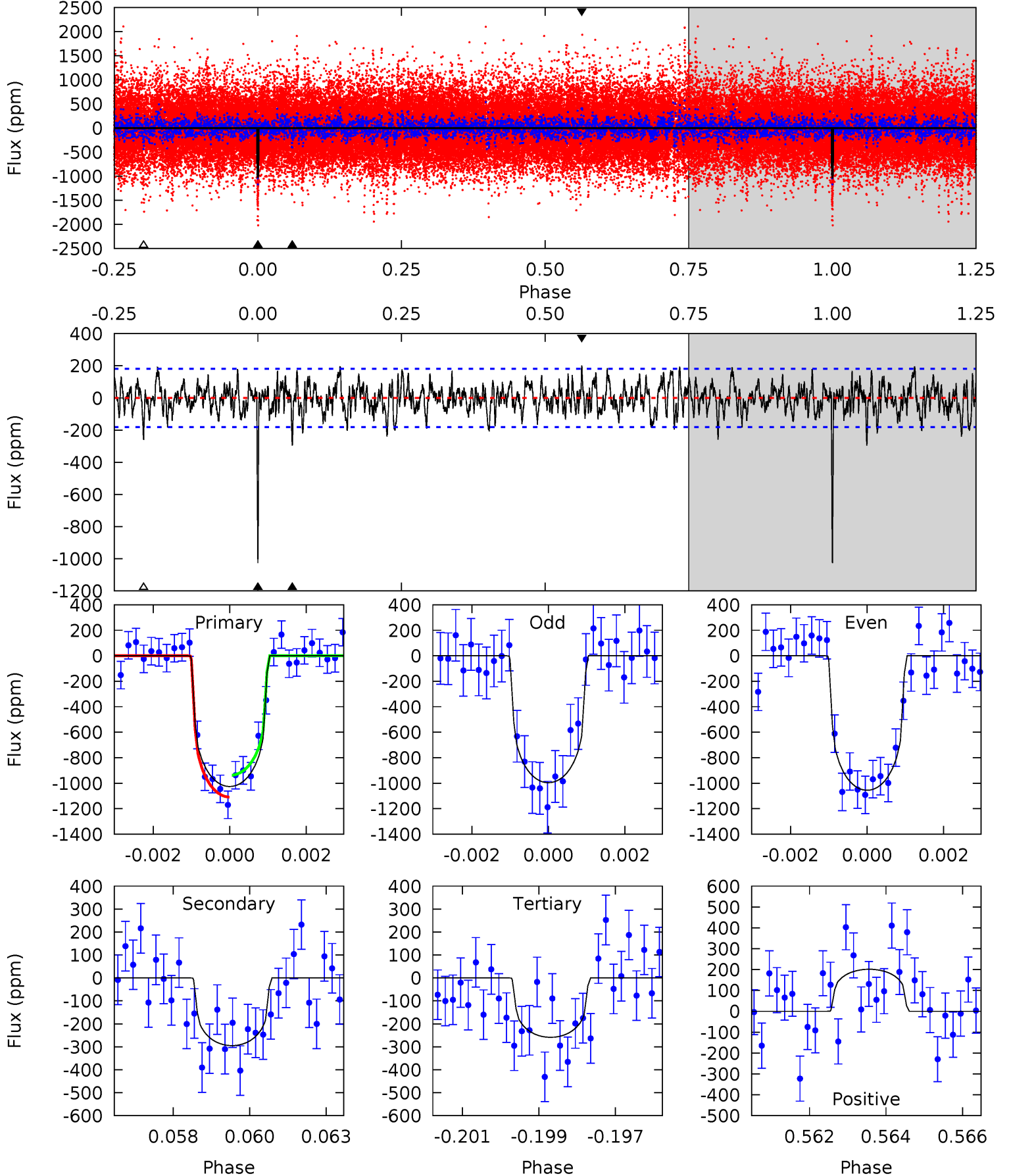
TCE 003747817-01 P=184.773872 Days $T_0=217.356141$ (BKJD)



DV Model-Shift Uniqueness Test

003747817-01, $P = 184.771030$ Days, $E = 32.592290$ Days

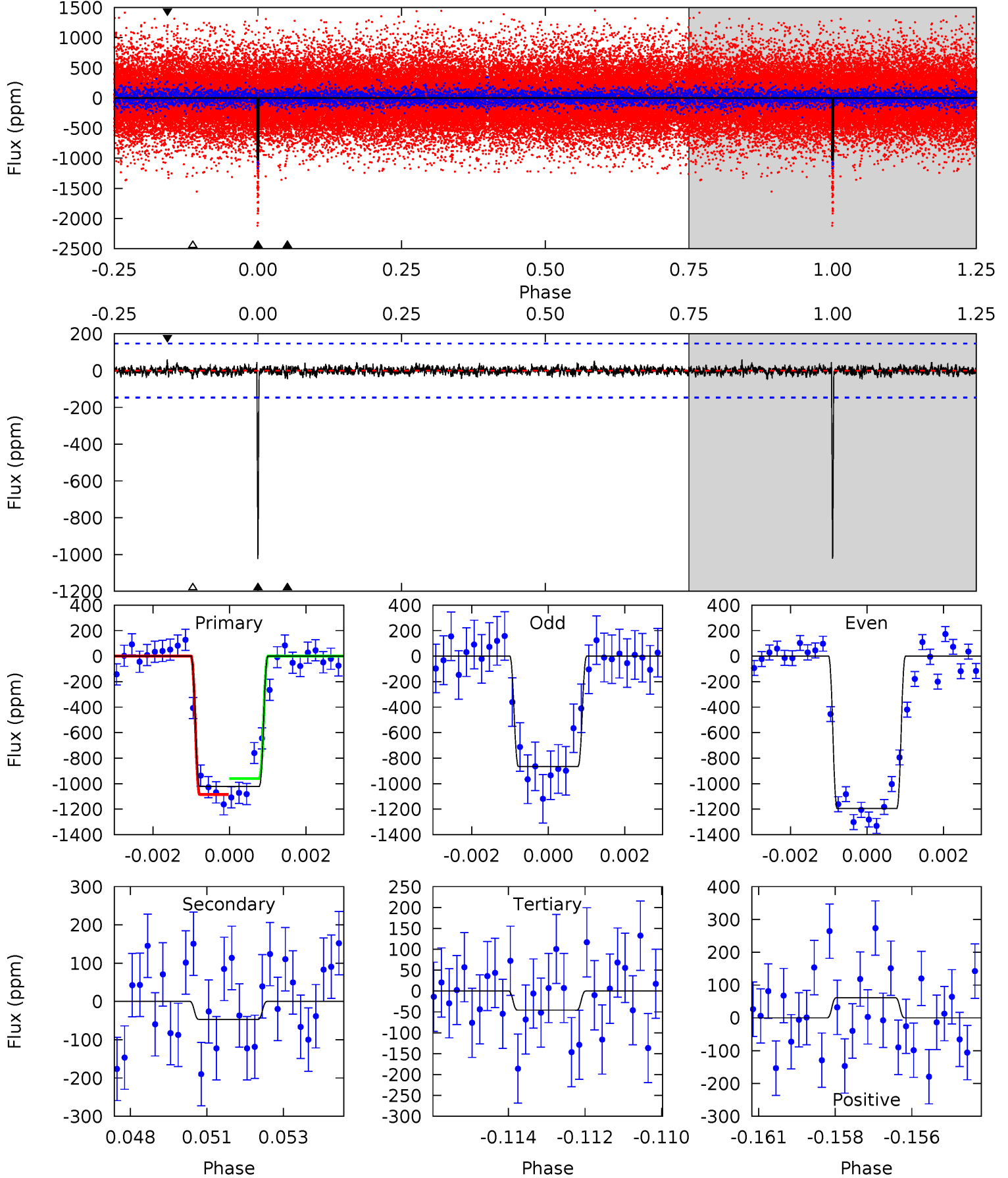
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.1	8.65	7.59	5.91	5.31	3.06	2.14	22.5	24.2	1.06	2.74	0.87	0.99	0.16	2.51



Alt Model-Shift Uniqueness Test

003747817-01, P = 184.773872 Days, E = 32.582269 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.0	1.69	1.65	2.21	5.31	3.06	0.46	35.3	34.7	0.04	-0.52	6.02	0.98	0.06	2.25



Stellar Parameters For KIC 003747817

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5273^{+105}_{-105}	$4.566^{+0.025}_{-0.070}$	$0.000^{+0.150}_{-0.150}$	$0.801^{+0.072}_{-0.033}$	$0.861^{+0.042}_{-0.053}$	$2.364^{+0.258}_{-0.508}$
	+2%/-2%	+1%/-2%	+inf%/-inf%	+9%/-4%	+5%/-6%	+11%/-21%
Source	SPE57	SPE57	SPE57	DSEP		

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

Secondary Eclipse Parameters for KIC 003747817-01 / KOI 4103.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-295 ± 34	$2.67^{+0.93}_{-0.79}$	377^{+10}_{-10}	4203^{+618}_{-426}	8144^{+9067}_{-3653}
Alt.	-47 ± 28	$2.83^{+0.81}_{-0.85}$	377^{+10}_{-9}	3043^{+426}_{-399}	1130^{+1556}_{-731}

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

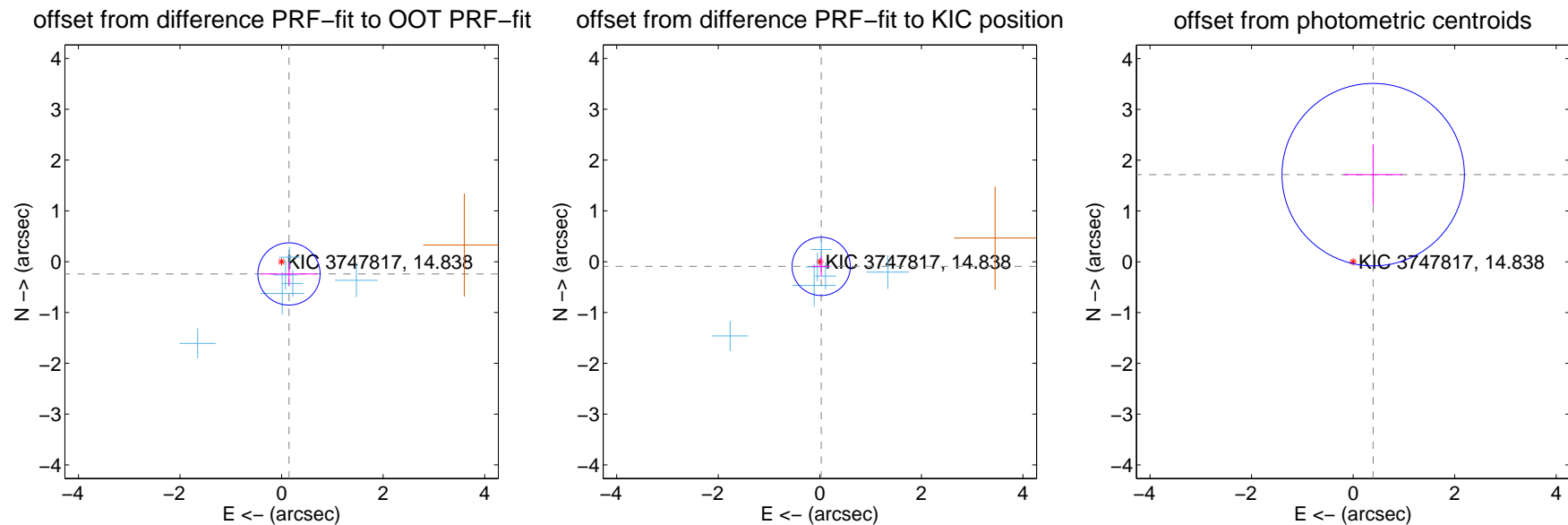
DV Centroid Data

Supplemental centroid analysis for 003747817-01. Kepler magnitude: 14.84. Transit SNR 17.00

There are 6 quarters with good PRF difference image offsets

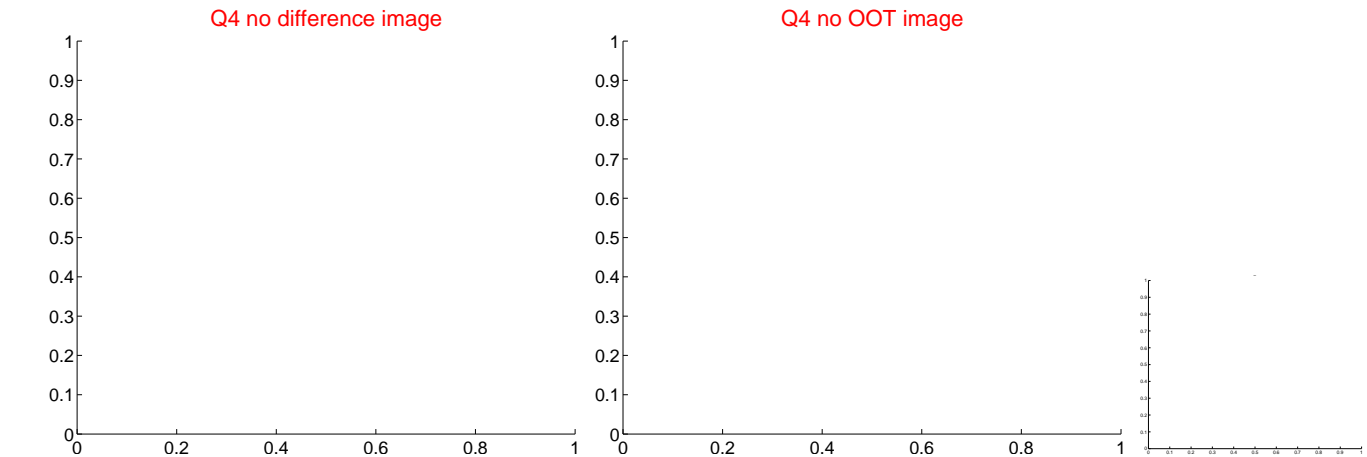
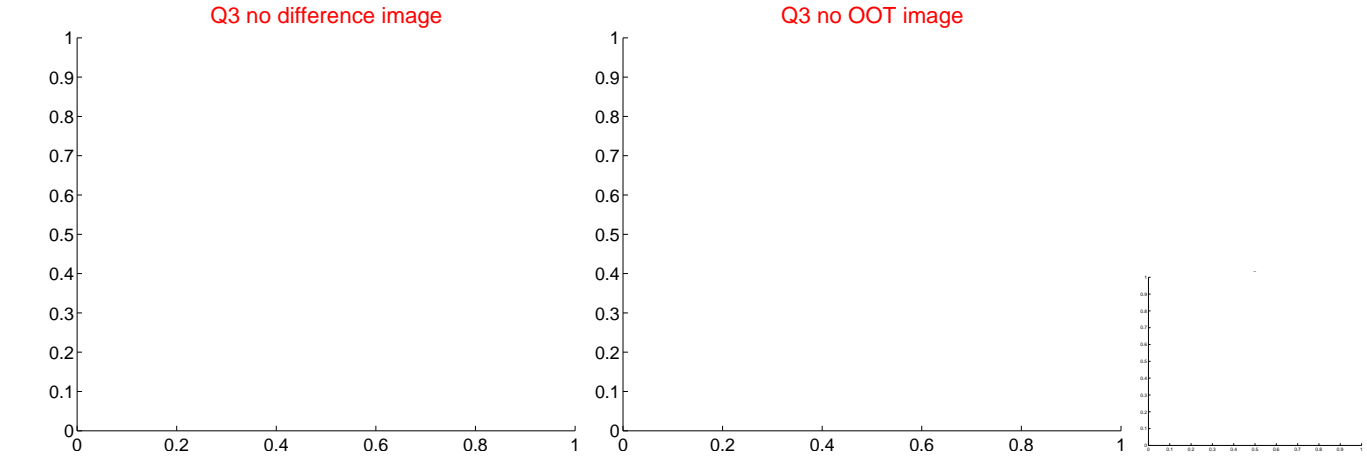
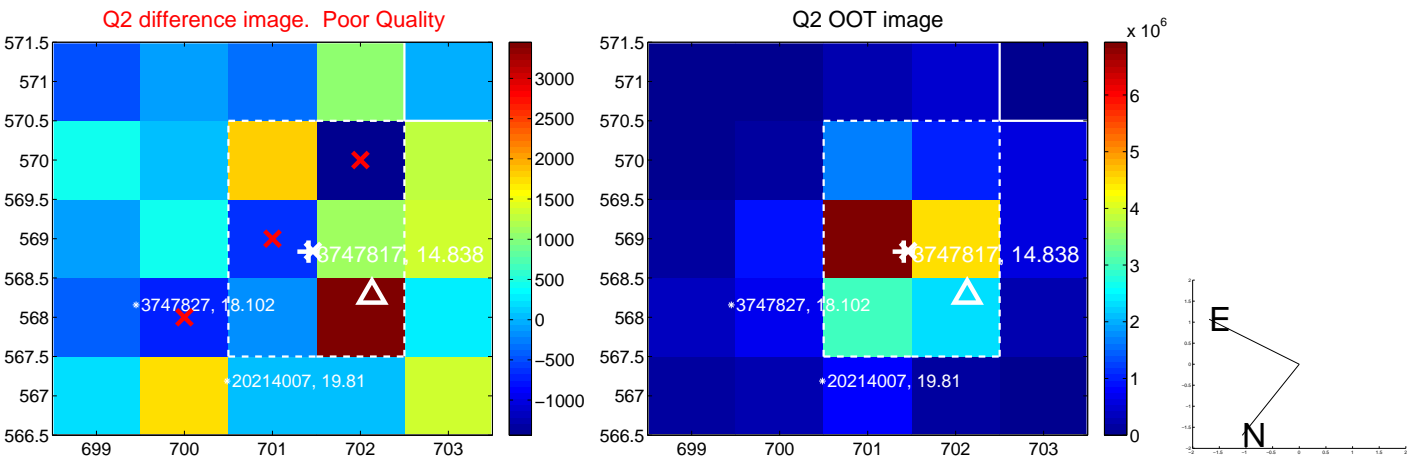
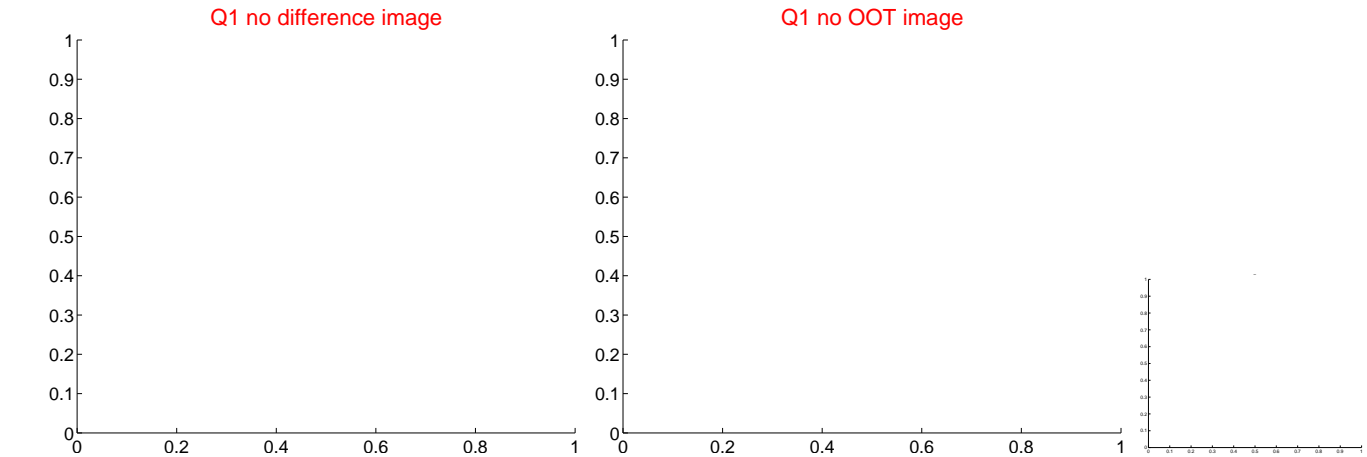
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.282 ± 0.204	1.38	-0.146 ± 0.553	-0.241 ± 0.227
PRF-fit source offset from KIC position	0.096 ± 0.191	0.50	-0.027 ± 0.175	-0.092 ± 0.193
photometric centroid source offset	1.76 ± 0.60	2.94	-0.40 ± 0.58	1.72 ± 0.60

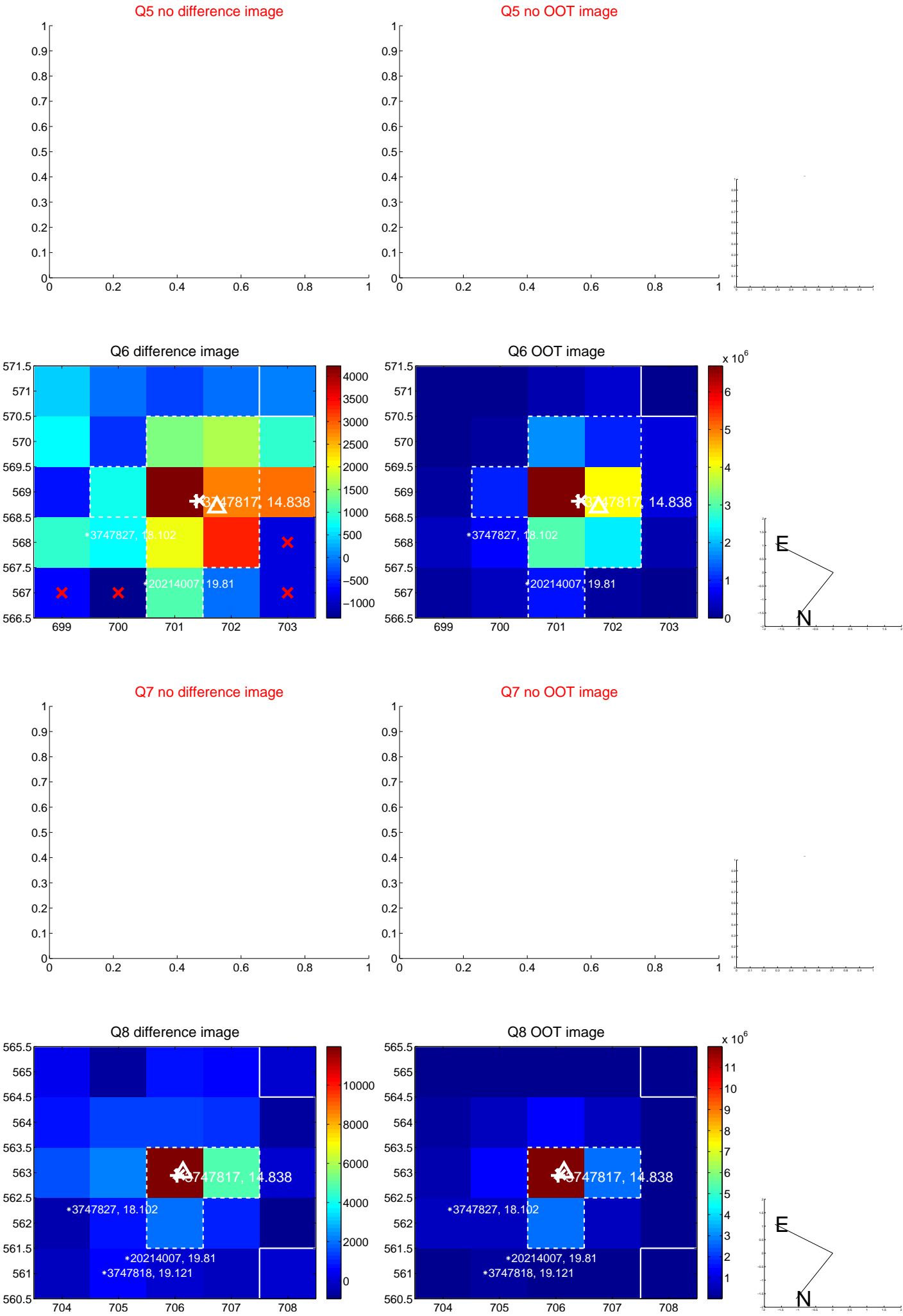


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

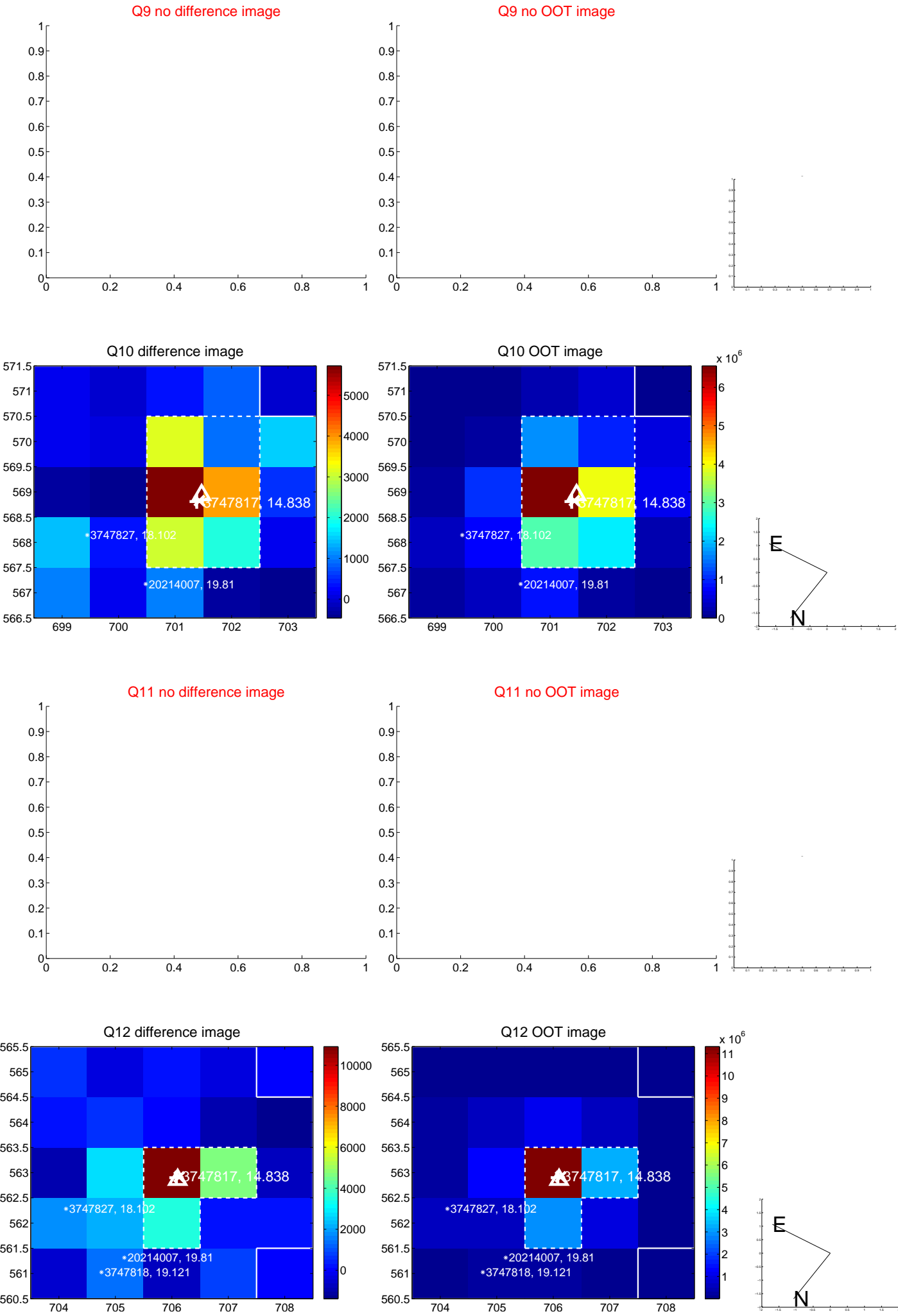
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



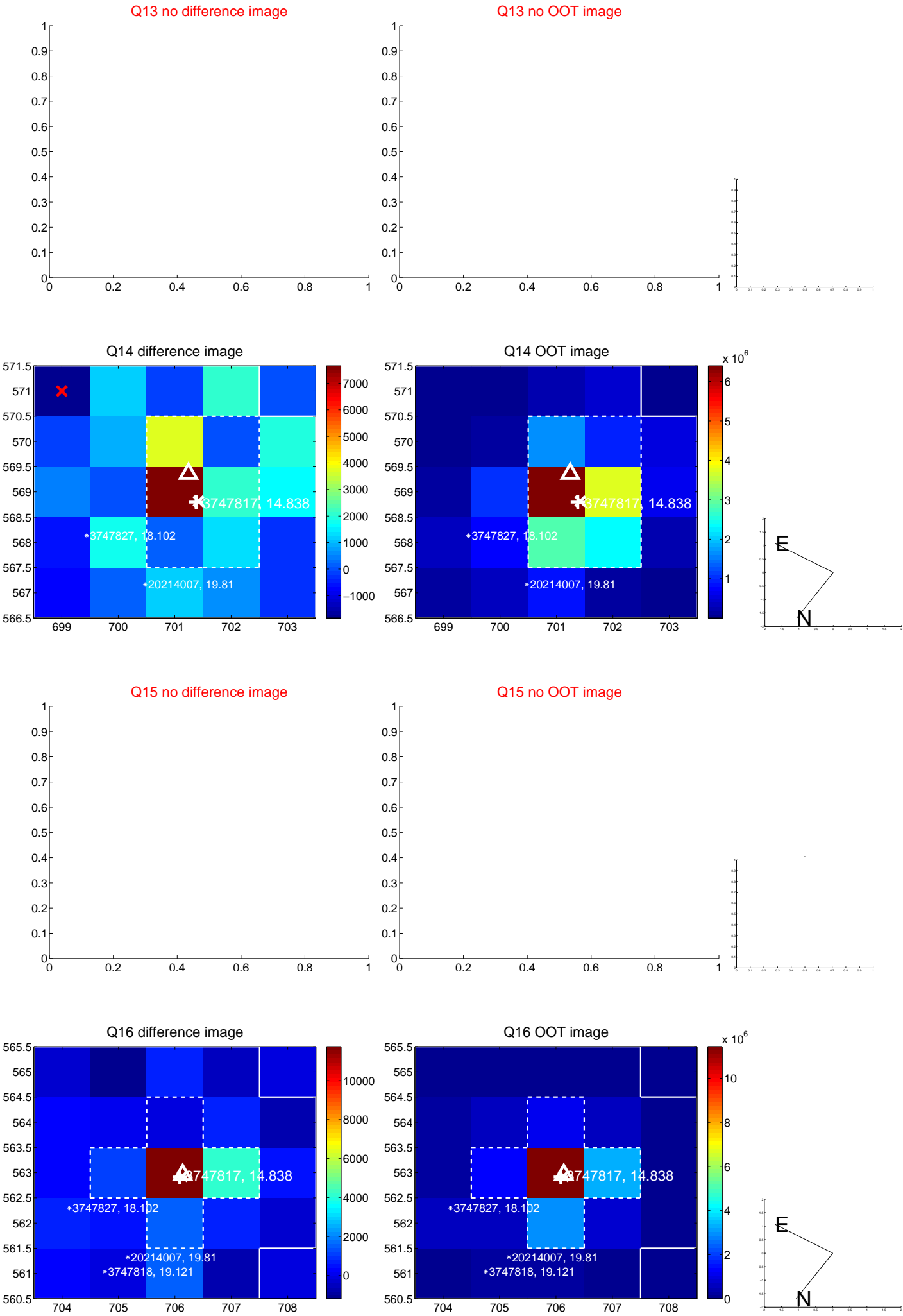
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



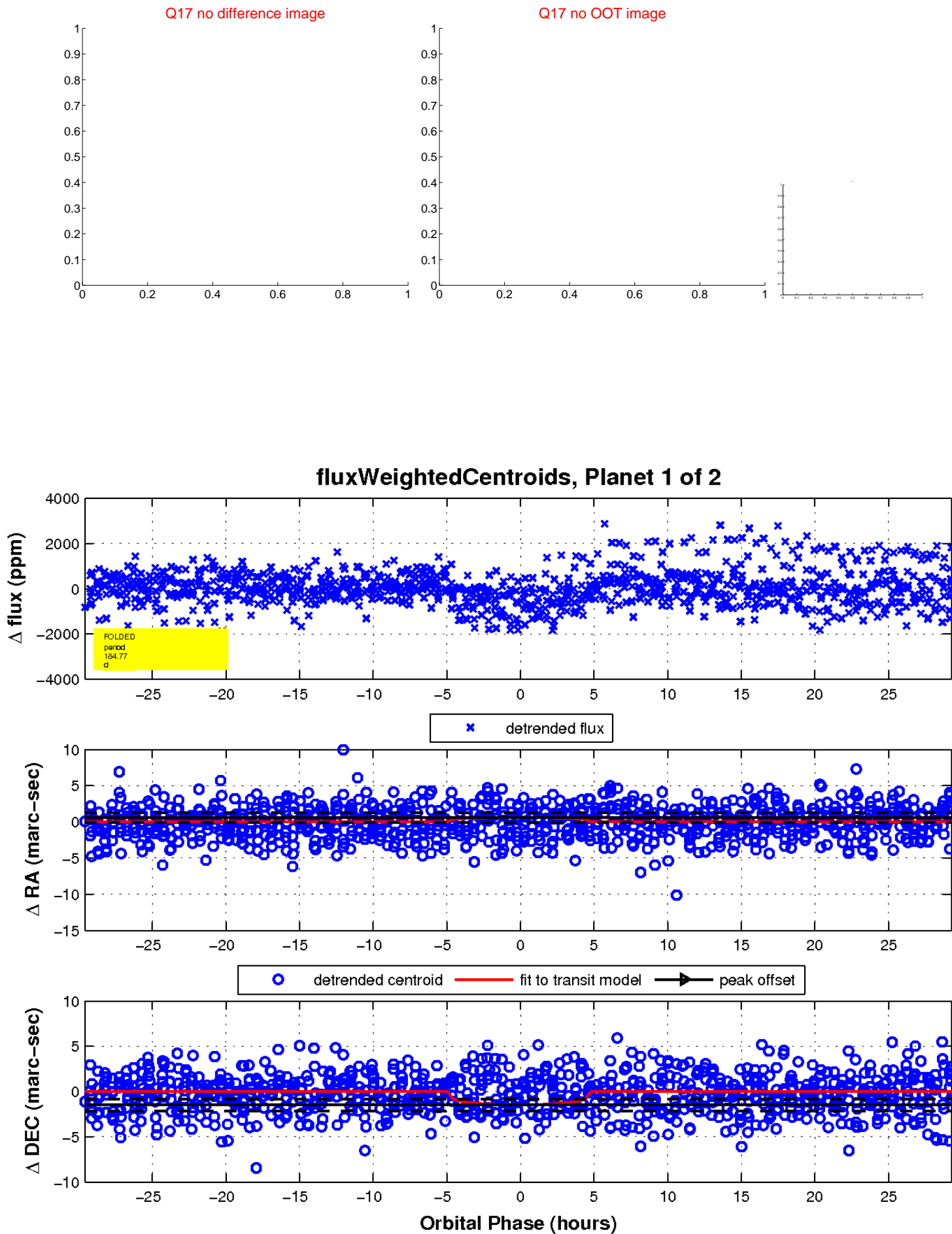
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



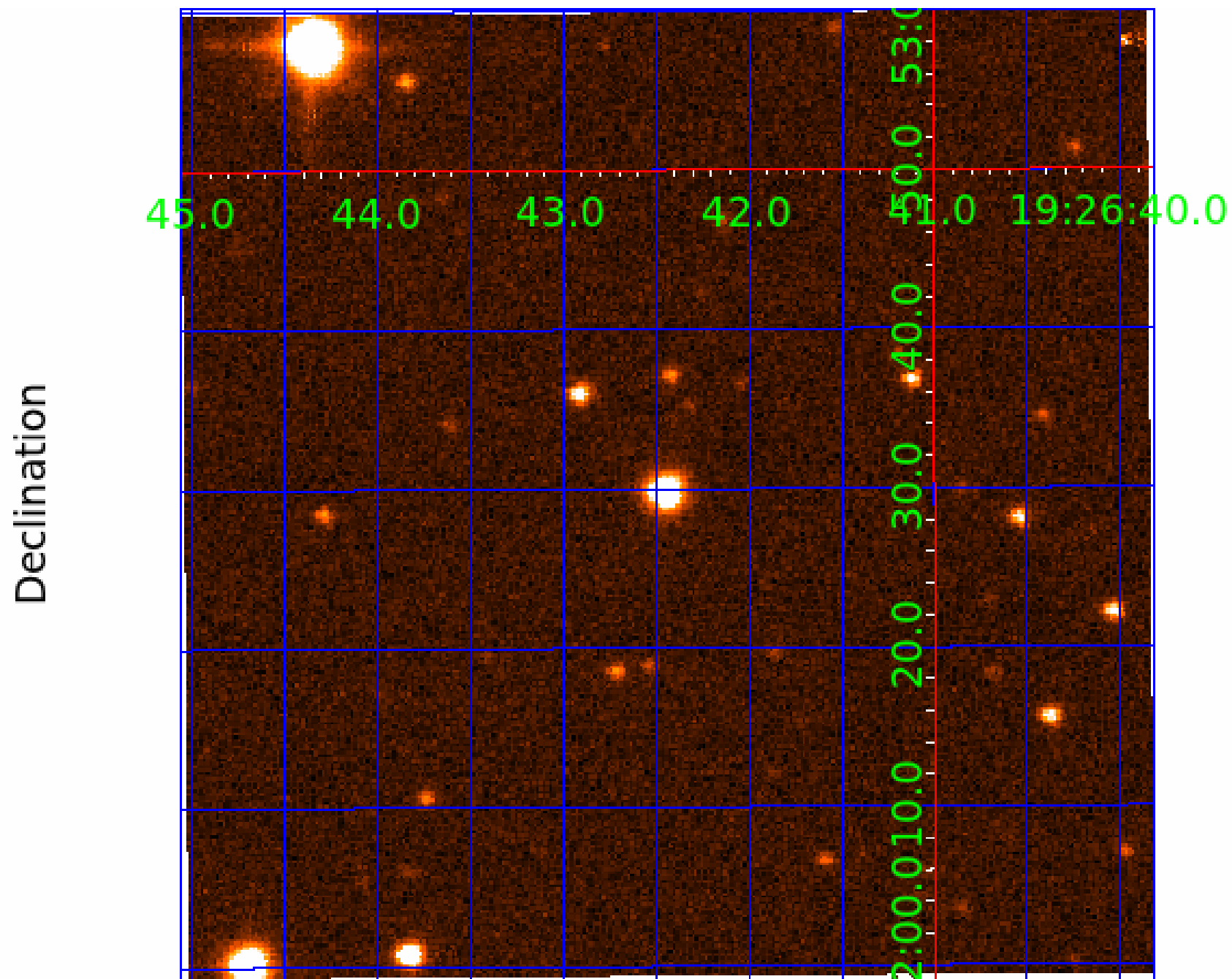
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 003747817

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})
003747817-01	OBS	4103.01	184.771030	217.363320	1048.6	9.857	16.9	17.0	0.80	5273	2.66	1.22
003747817-02	OBS	4103.02	14.237064	140.484922	204.3	2.851	8.0	8.6	0.80	5273	1.39	37.12

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003747817-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
003747817-02	OBS	PC	0.87	0	0	0	0	NO_COMMENT

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

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

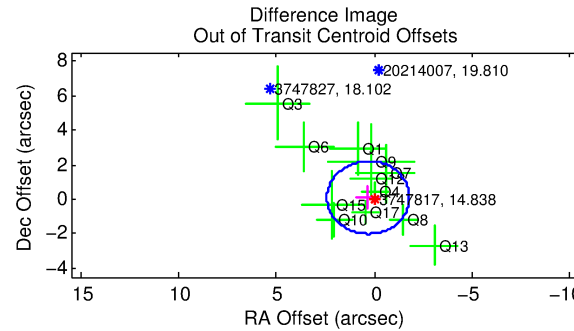
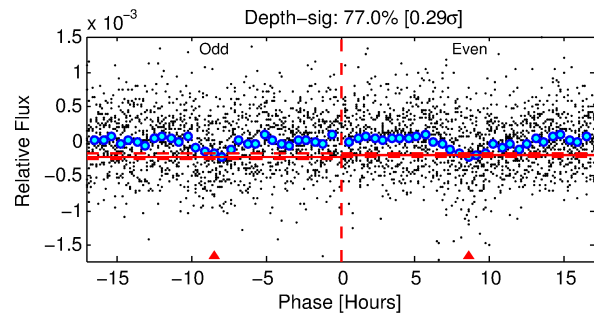
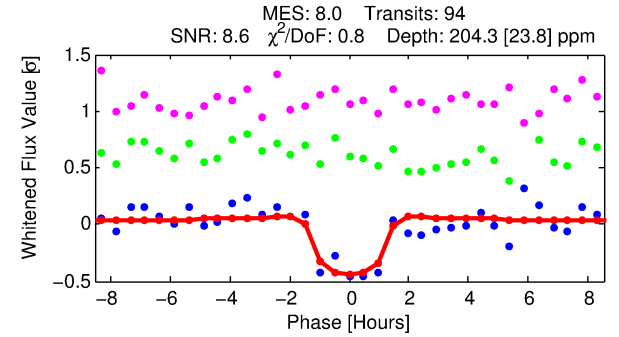
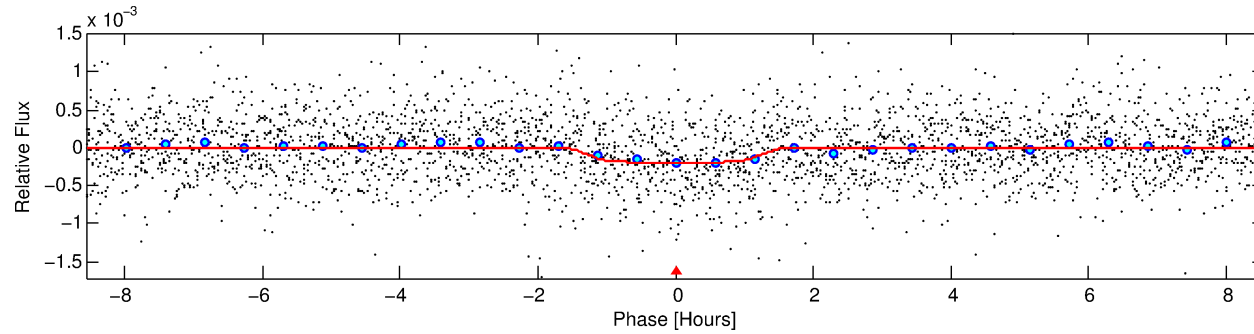
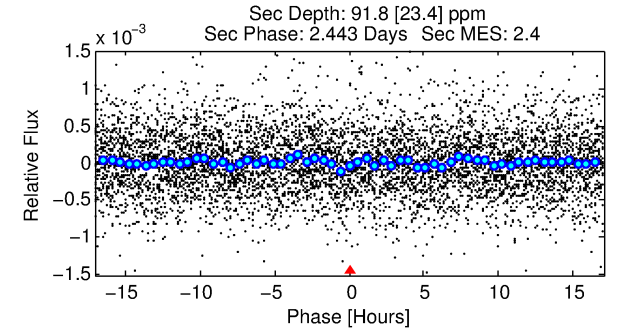
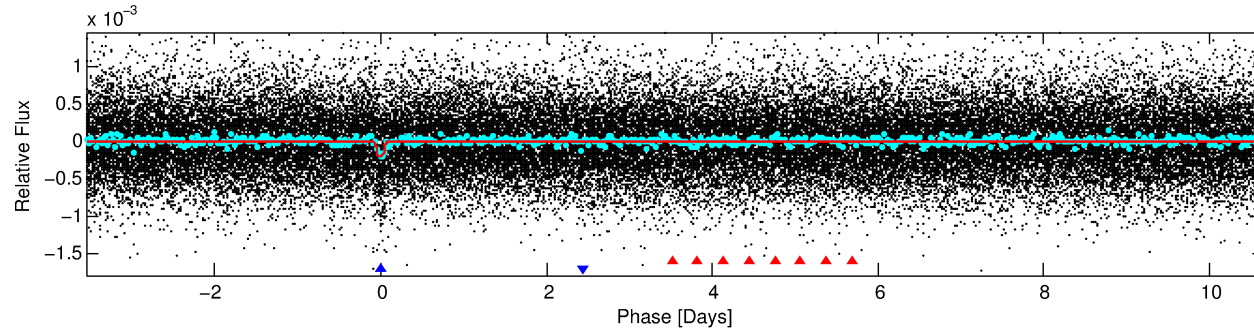
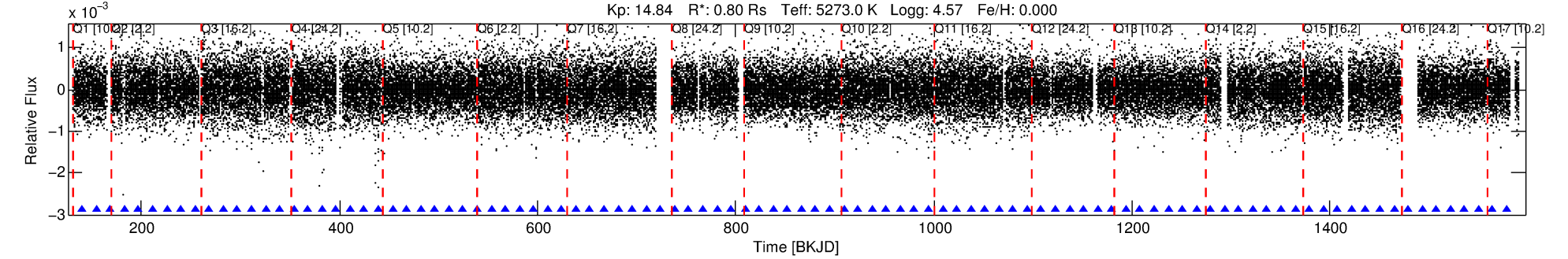
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003747817-02

No Significant Match Found

DV One-Page Summary

KIC: 3747817 Candidate: 2 of 2 Period: 14.237 d
KOI: K04103.02 Corr: 0.950



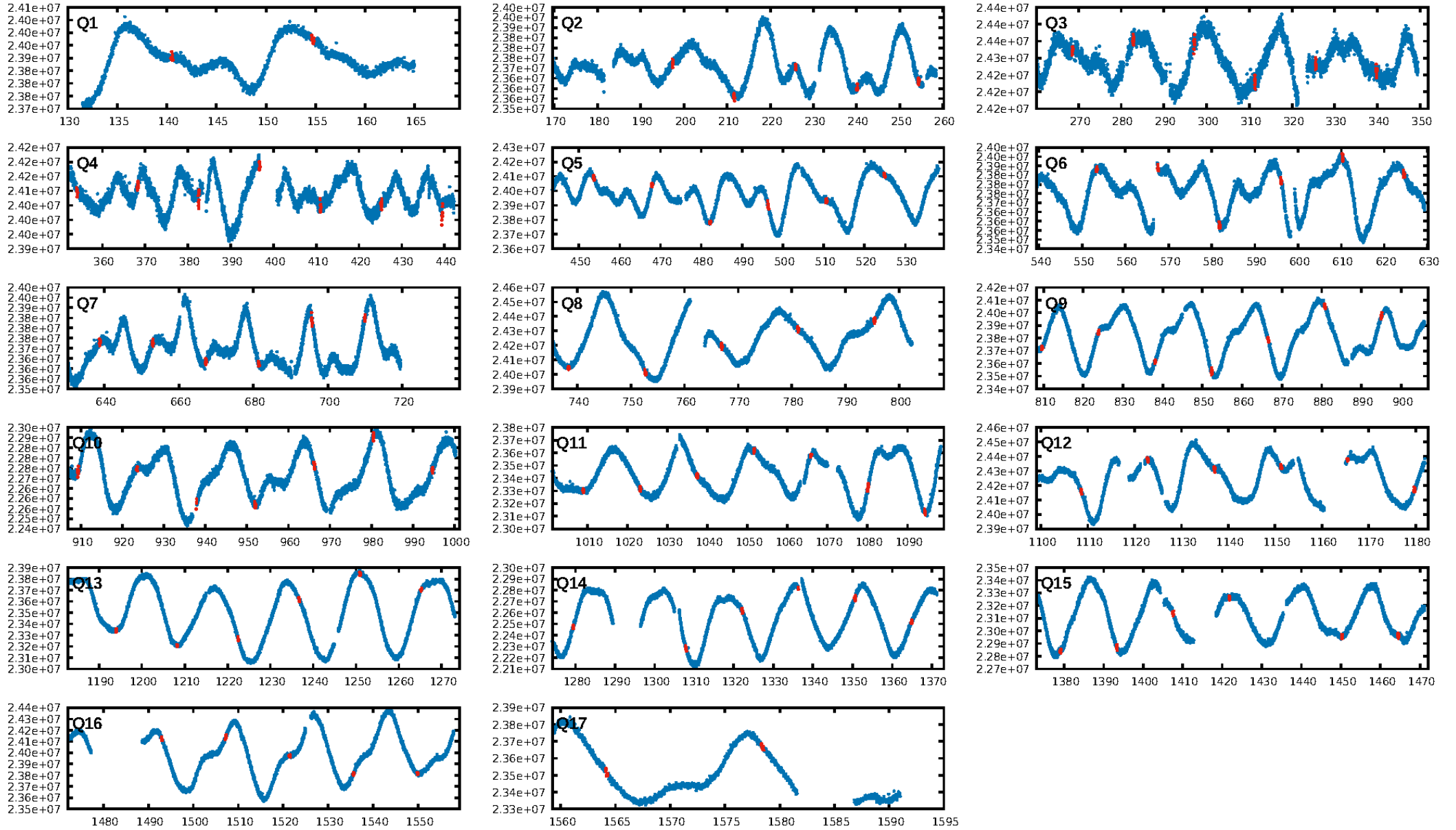
DV Fit Results:

Period = 14.23706 [0.00013] d
Epoch = 140.4849 [0.0074] BKJD
Rp/R* = 0.0159 [0.0110]
a/R* = 17.82 [51.97]
b = 0.90 [0.62]
Seff = 37.12 [5.44]
Teq = 629 [23] K
Rp = 1.39 [0.97] Re
a = 0.1094 [0.0088] AU
Ag = 314.38 [444.06] [0.71σ]
Teffp = 4098 [1444] K [2.40σ]

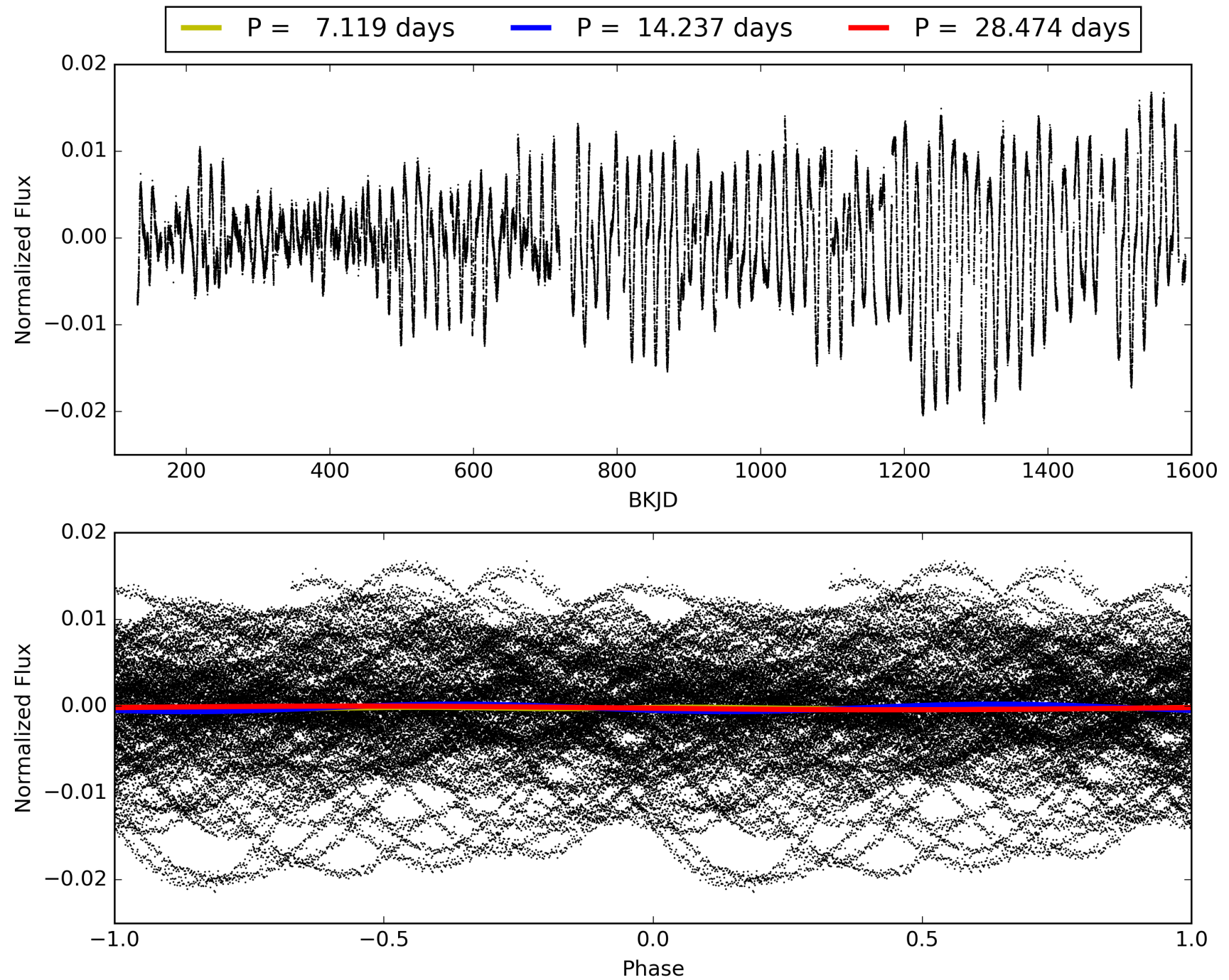
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [398.85σ]
ModelChiSquare2-sig: 99.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.50e-15
RollingBand-fgt: 1.00 [90/90]
GhostDiagnostic-chr: 0.866
Centroid-sig: 4.9%
Centroid-so: 2.466 arcsec [1.54σ]
OotOffset-rm: 0.336 arcsec [0.48σ]
KicOffset-rm: 0.478 arcsec [0.67σ]
OotOffset-st: 2/3/3/4 [12]
KicOffset-st: 2/3/3/4 [12]
DiffImageQuality-fgm: 0.33 [4/12]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 003747817-02, PDC Light Curves

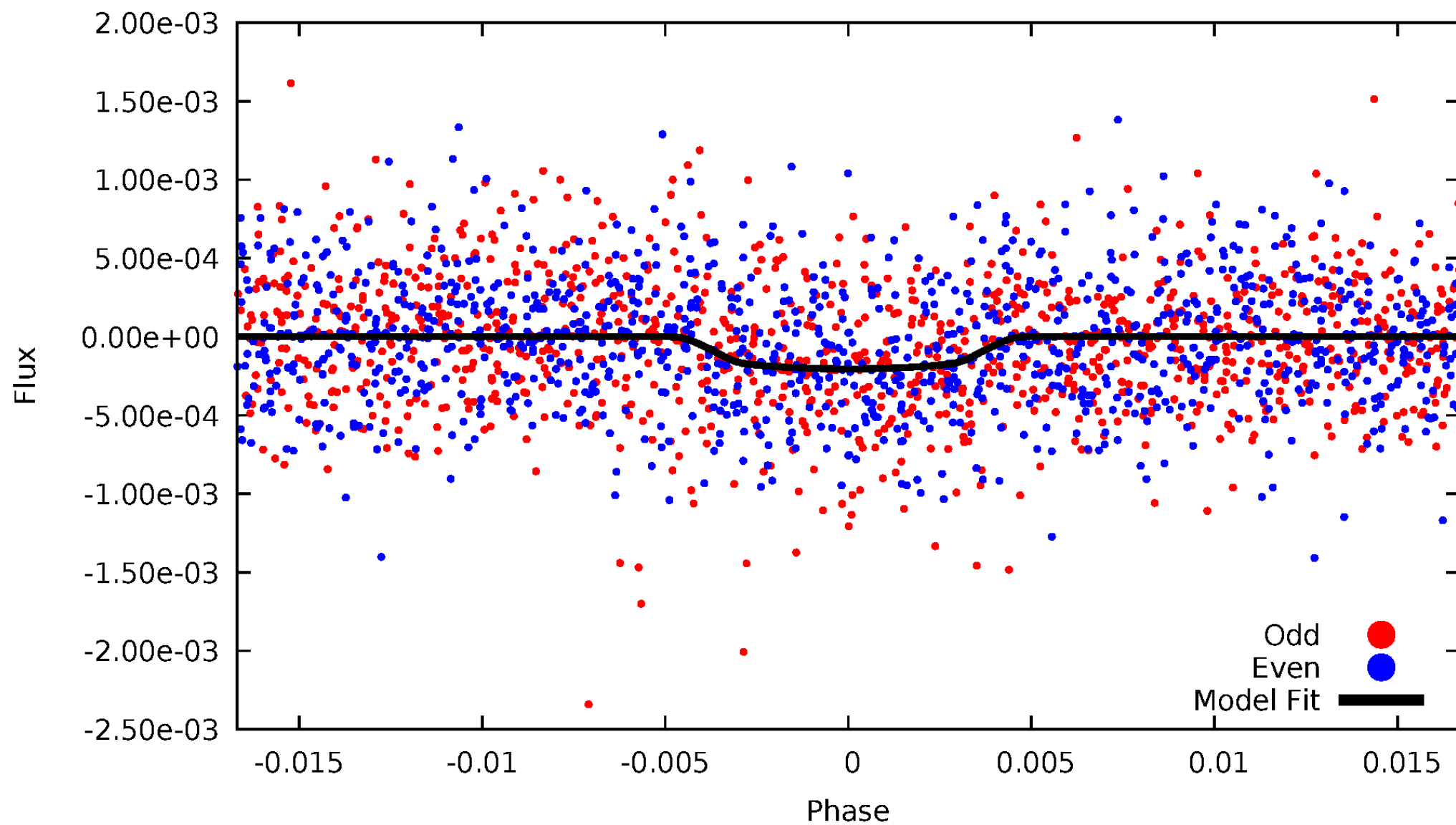


TCE 003747817-02



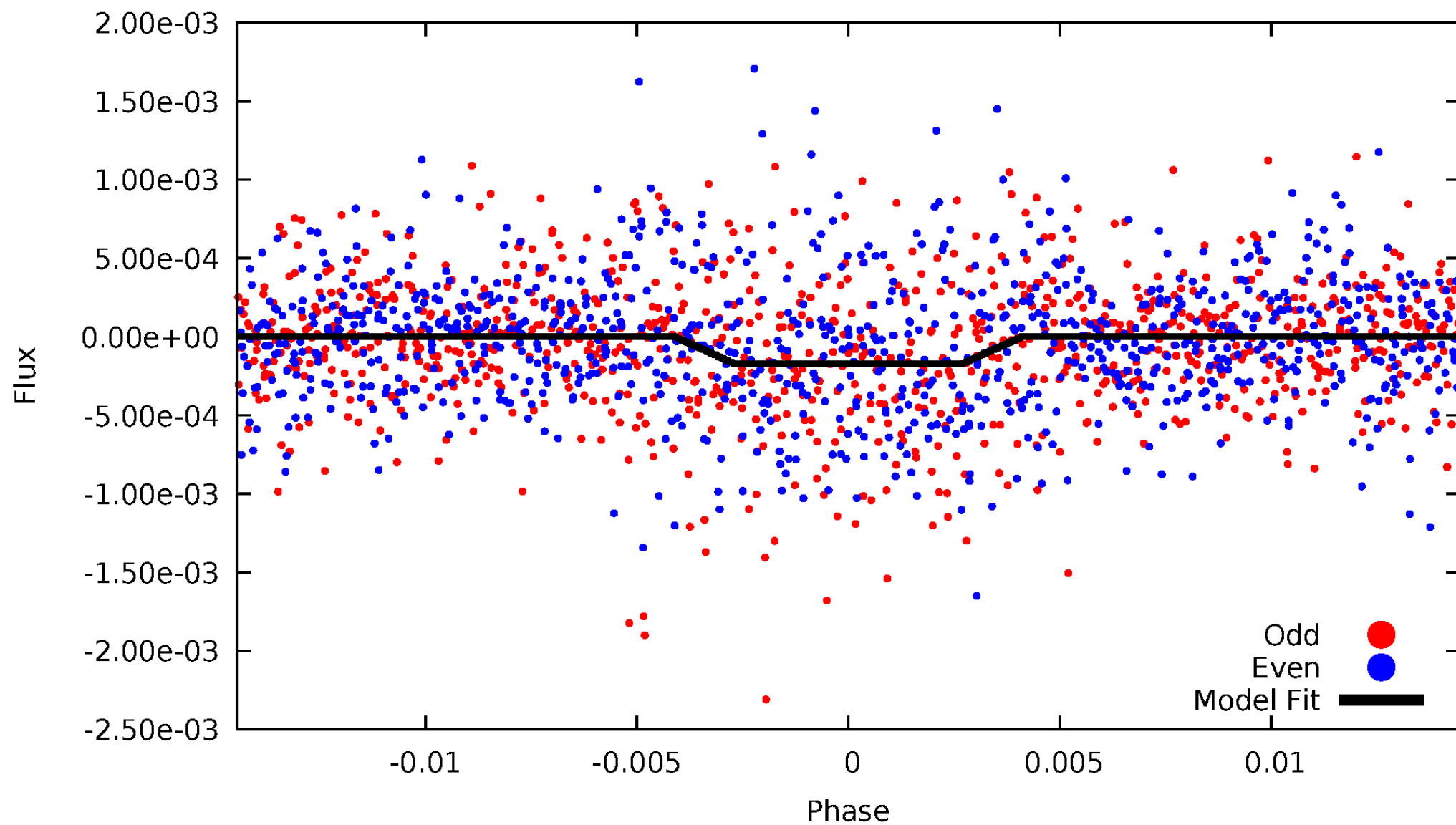
DV Odd/Even

TCE 003747817-02



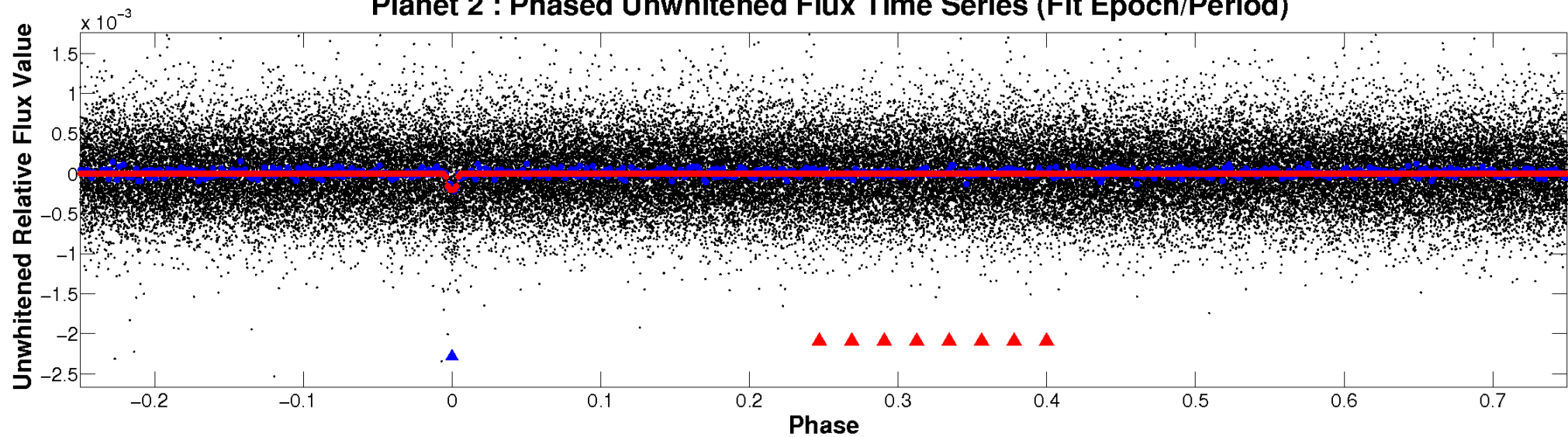
ALT Odd/Even

TCE 003747817-02

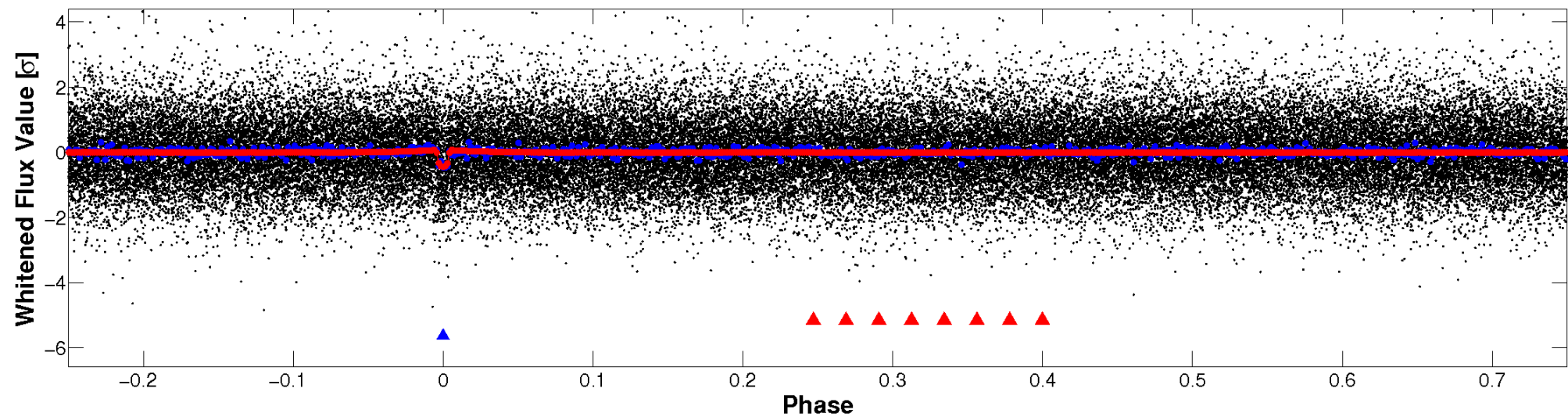


Non-Whitened Vs. Whitened Light Curve

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

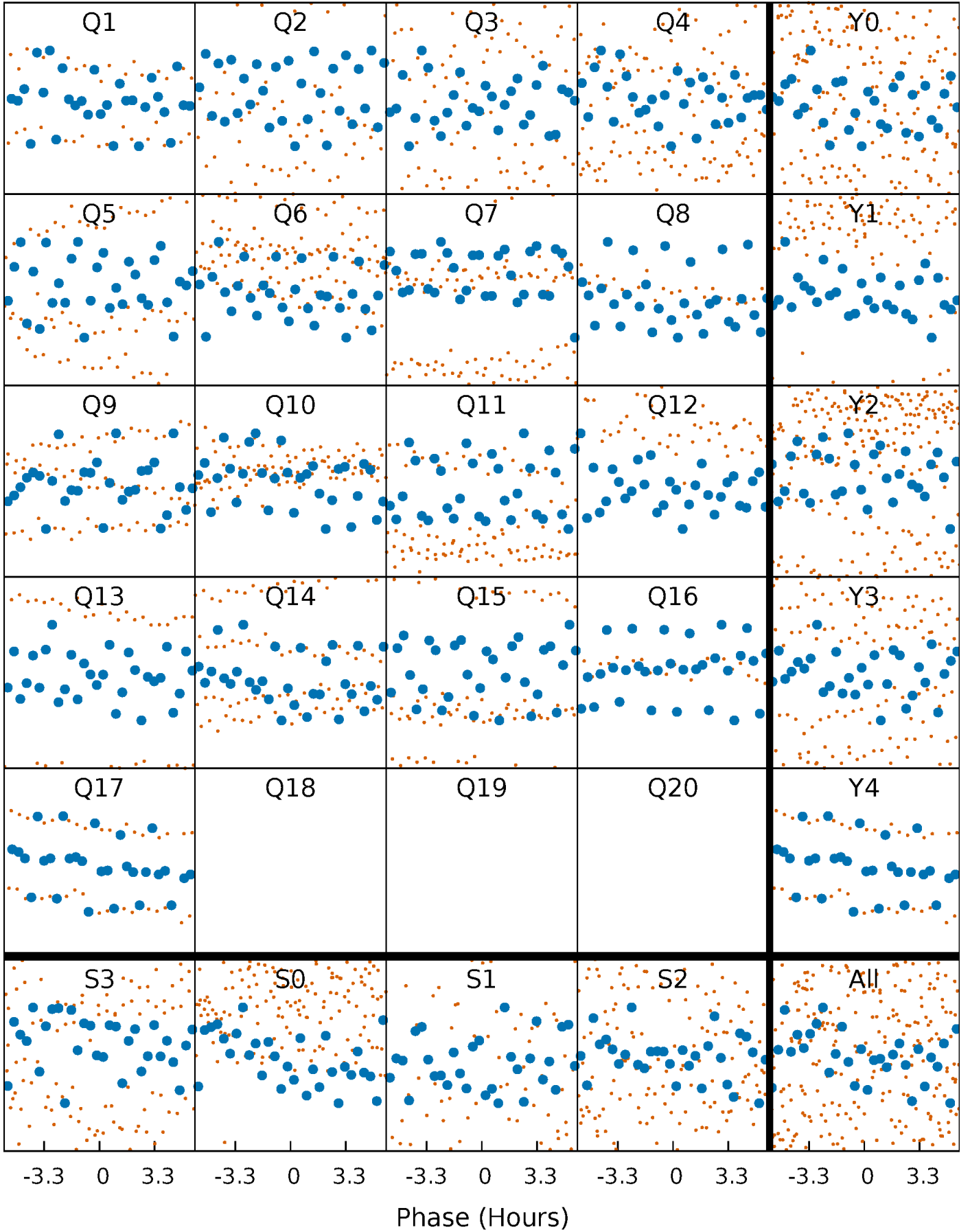


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



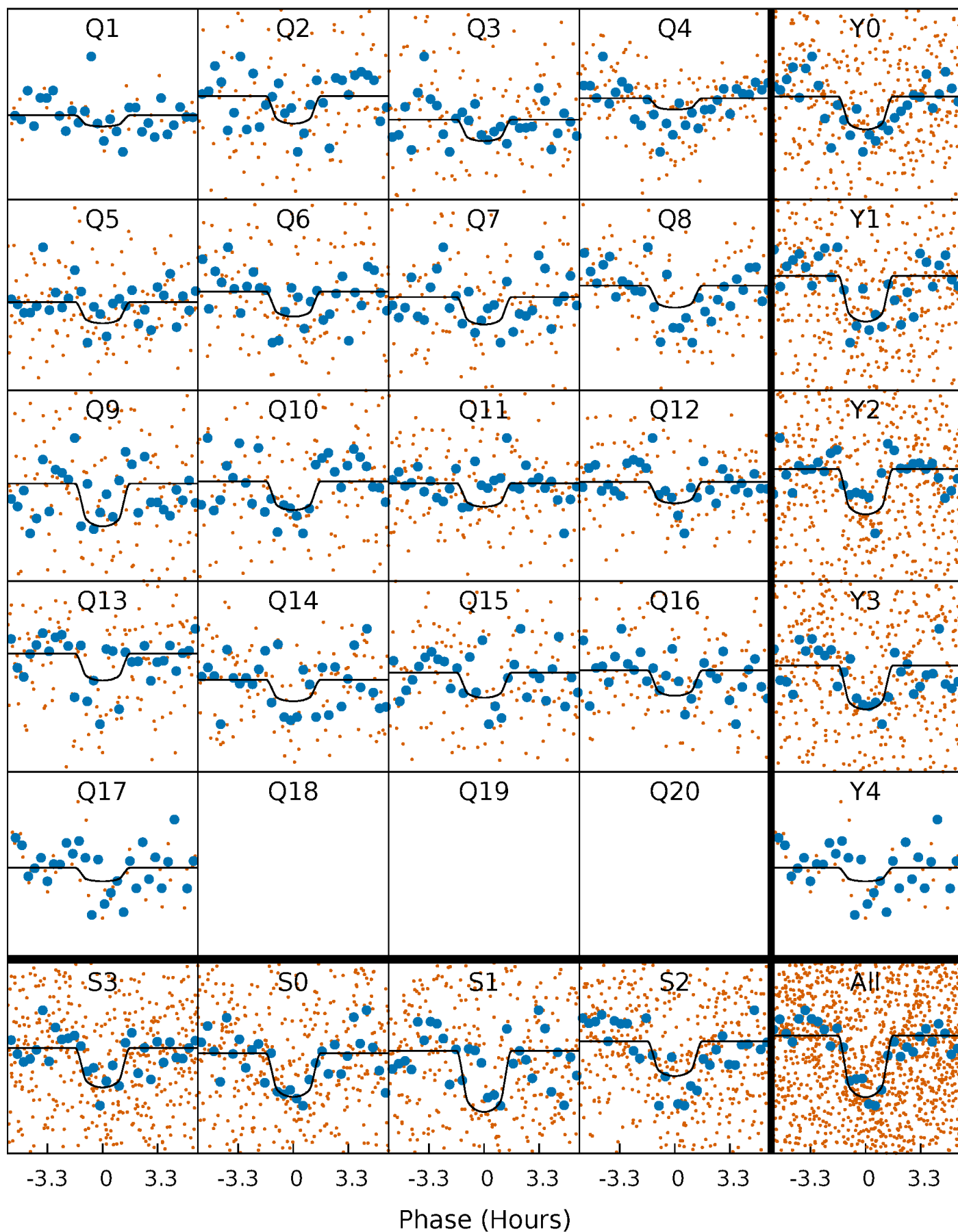
PDC Quarter-Phased Transit Curves

TCE 003747817-02 P= 14.237064 Days $T_0=140.484922$ (BKJD)



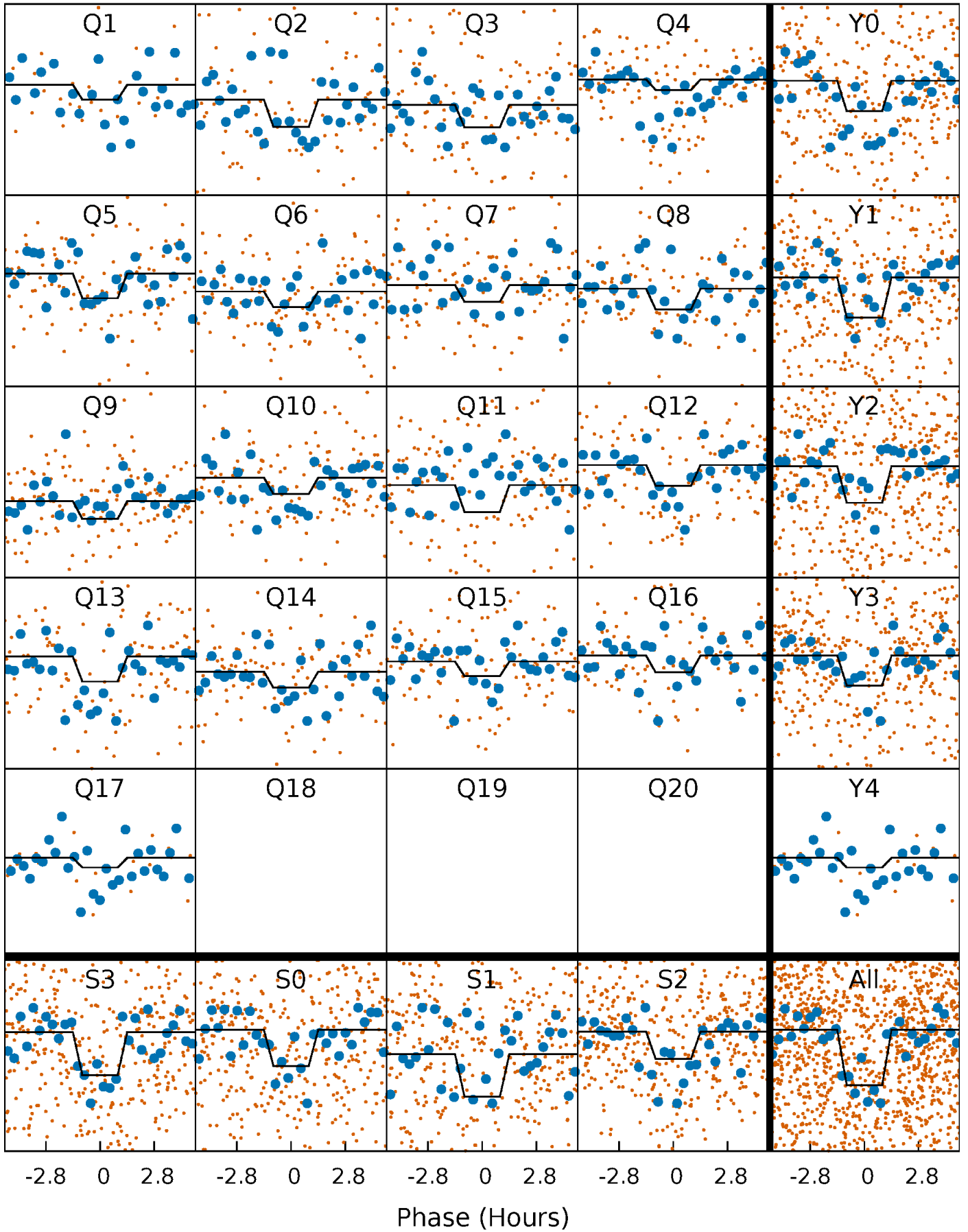
DV Quarter-Phased Transit Curves

TCE 003747817-02 P= 14.237064 Days $T_0=140.484922$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

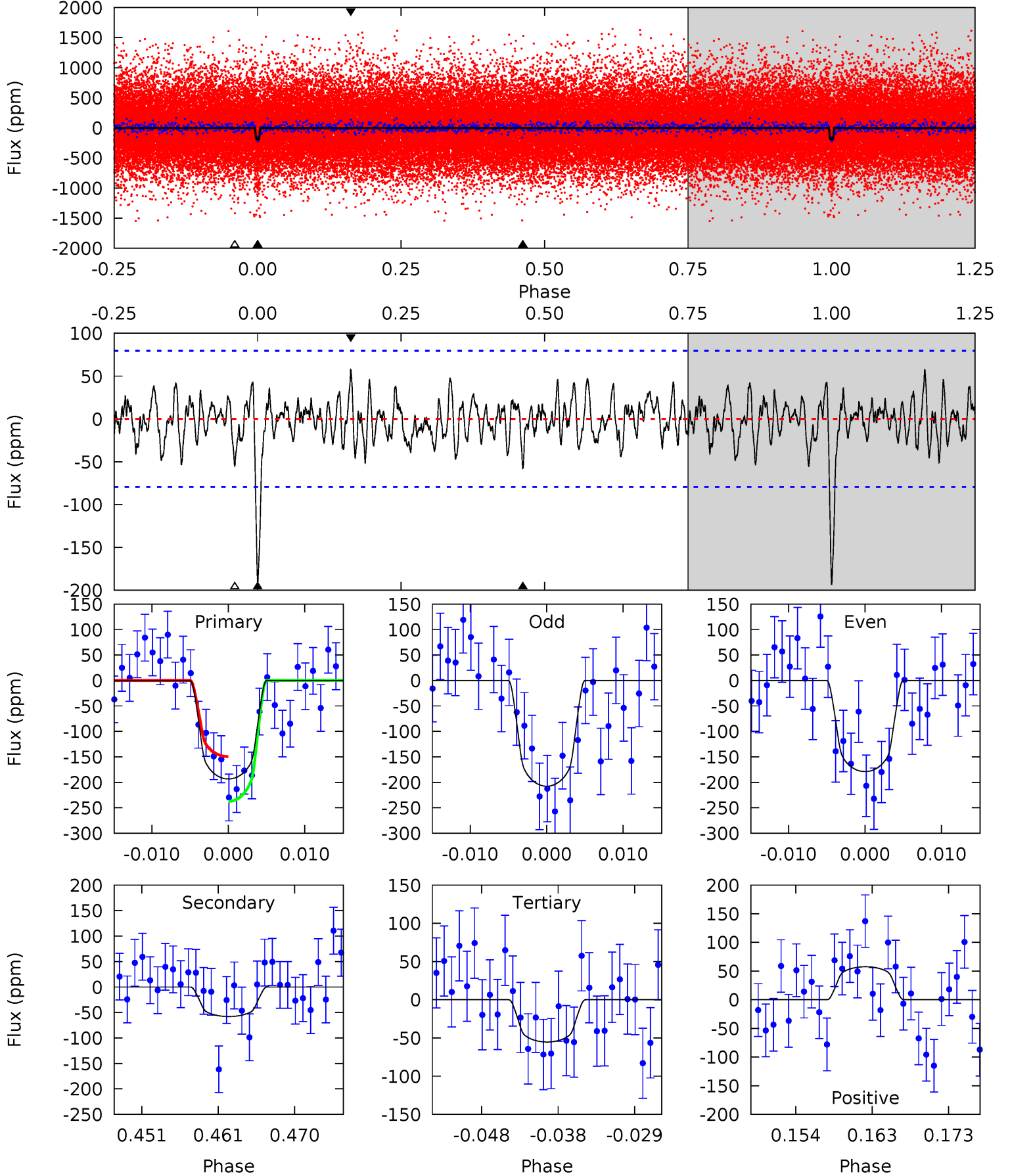
TCE 003747817-02 P= 14.237403 Days $T_0=140.466181$ (BKJD)



DV Model-Shift Uniqueness Test

003747817-02, P = 14.237064 Days, E = 126.247858 Days

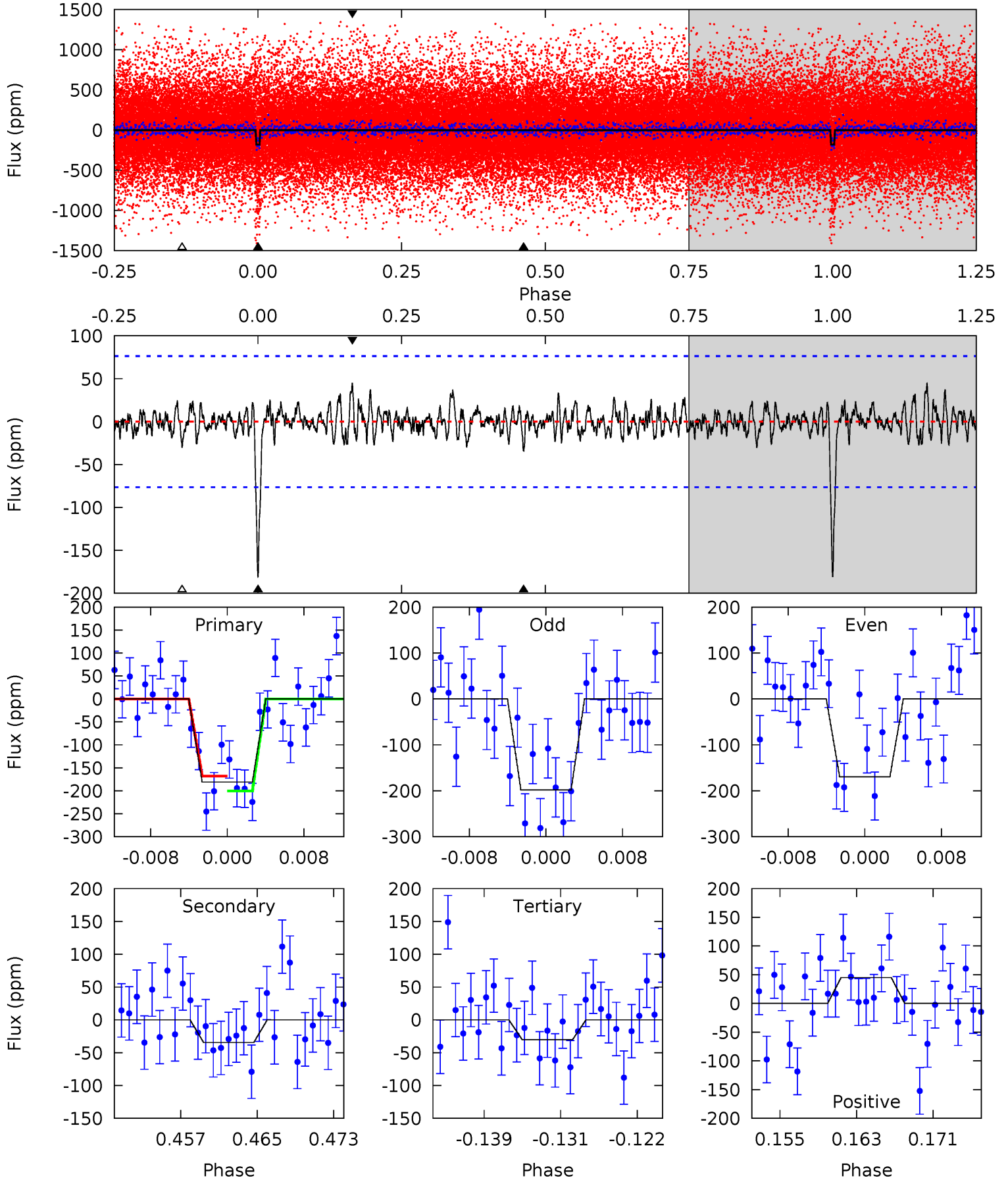
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.3	3.67	3.50	3.65	5.03	2.59	1.24	8.75	8.61	0.17	0.02	0.91	1.13	0.23	2.79



Alt Model-Shift Uniqueness Test

003747817-02, $P = 14.237403$ Days, $E = 126.228778$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	2.29	2.01	2.99	5.07	2.65	0.78	9.99	9.02	0.27	-0.70	0.94	1.28	0.20	1.07



Stellar Parameters For KIC 003747817

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5273^{+105}_{-105}	$4.566^{+0.025}_{-0.070}$	$0.000^{+0.150}_{-0.150}$	$0.801^{+0.072}_{-0.033}$	$0.861^{+0.042}_{-0.053}$	$2.364^{+0.258}_{-0.508}$
	+2%/-2%	+1%/-2%	+inf%/-inf%	+9%/-4%	+5%/-6%	+11%/-21%
Source	SPE57	SPE57	SPE57	DSEP		

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

Secondary Eclipse Parameters for KIC 003747817-02 / KOI 4103.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-58 ± 16	$1.51^{+0.95}_{-0.83}$	886^{+21}_{-22}	3817^{+1456}_{-549}	160^{+689}_{-100}
Alt.	-34 ± 15	$1.40^{+0.87}_{-0.80}$	884^{+28}_{-22}	3585^{+1272}_{-542}	106^{+461}_{-70}

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

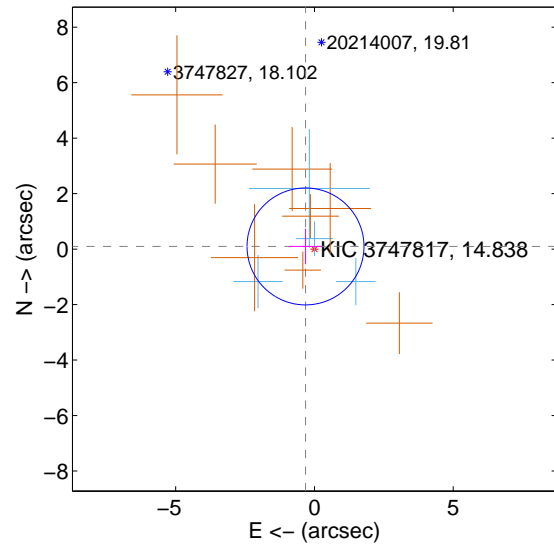
Supplemental centroid analysis for 003747817-02. Kepler magnitude: 14.84. Transit SNR 8.64

There are 4 quarters with good PRF difference image offsets

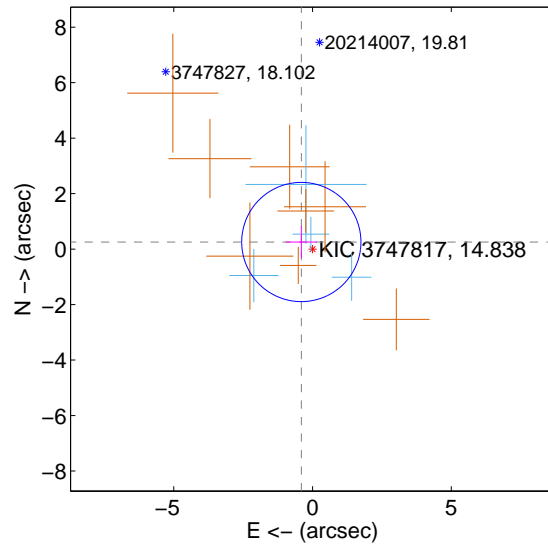
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.336 ± 0.702	0.48	0.322 ± 0.579	0.096 ± 0.642
PRF-fit source offset from KIC position	0.478 ± 0.716	0.67	0.404 ± 0.562	0.256 ± 0.575
photometric centroid source offset	2.47 ± 1.60	1.54	-2.05 ± 1.59	1.37 ± 1.62

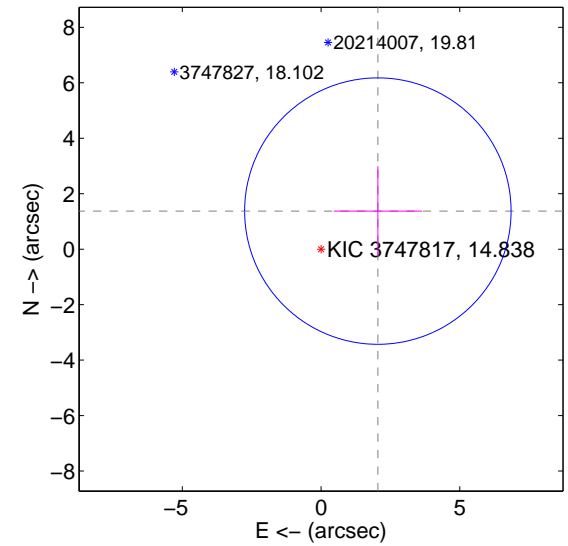
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

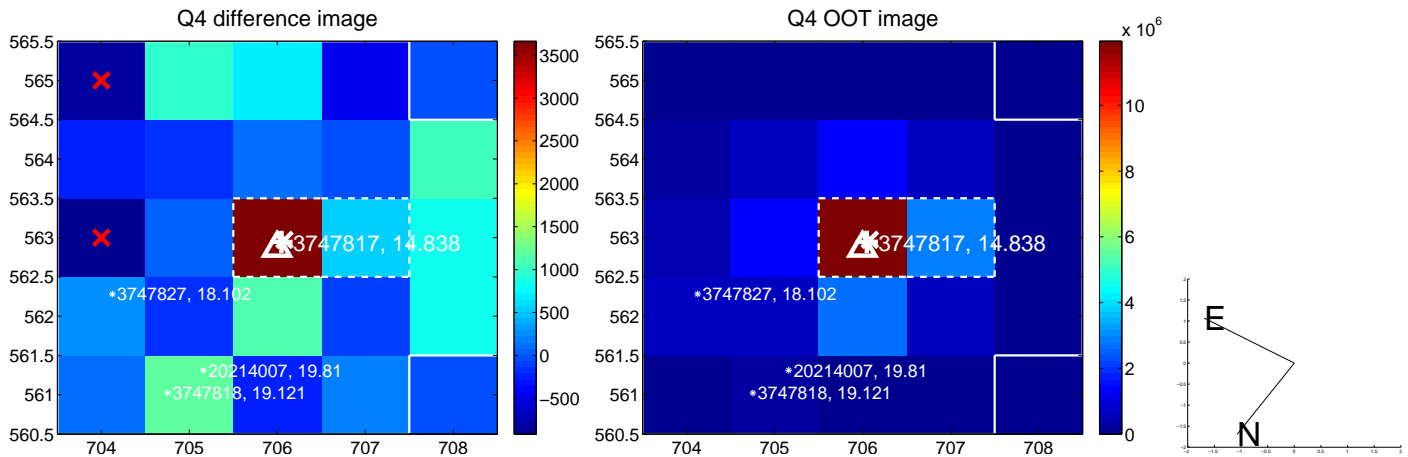
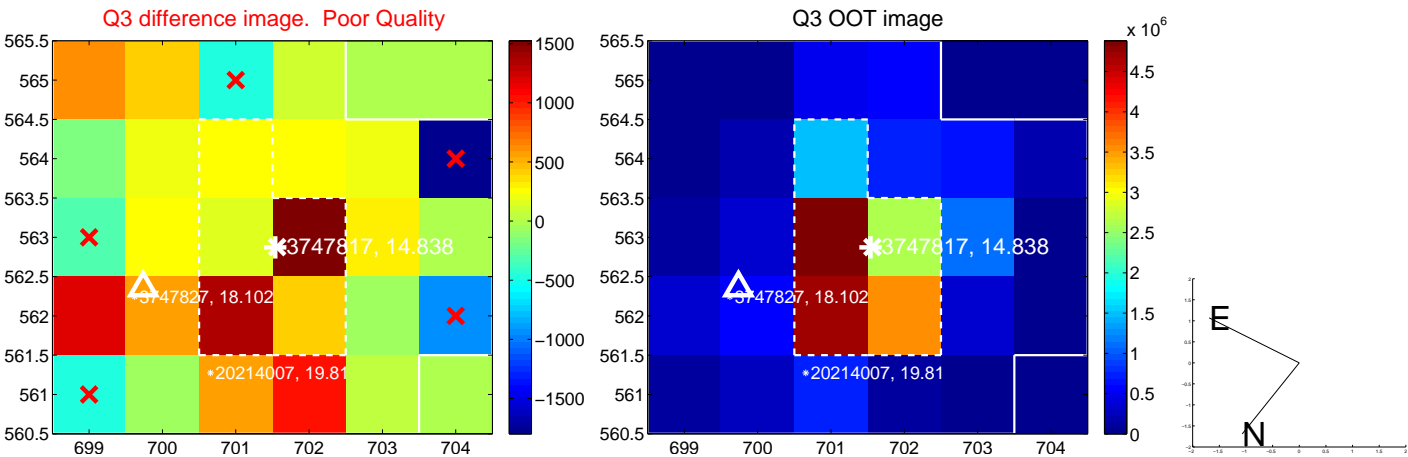
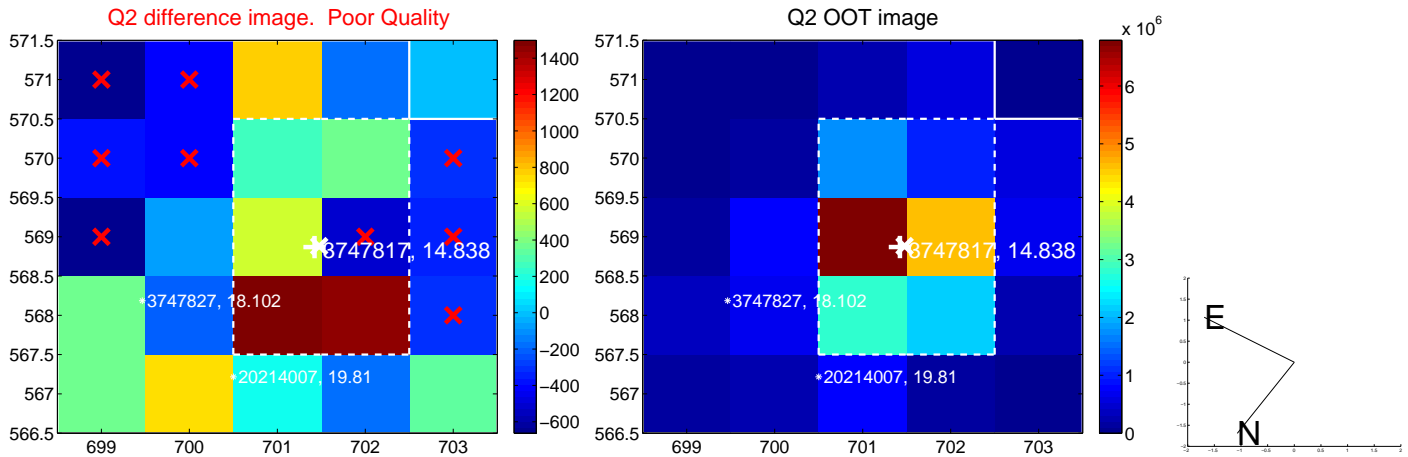
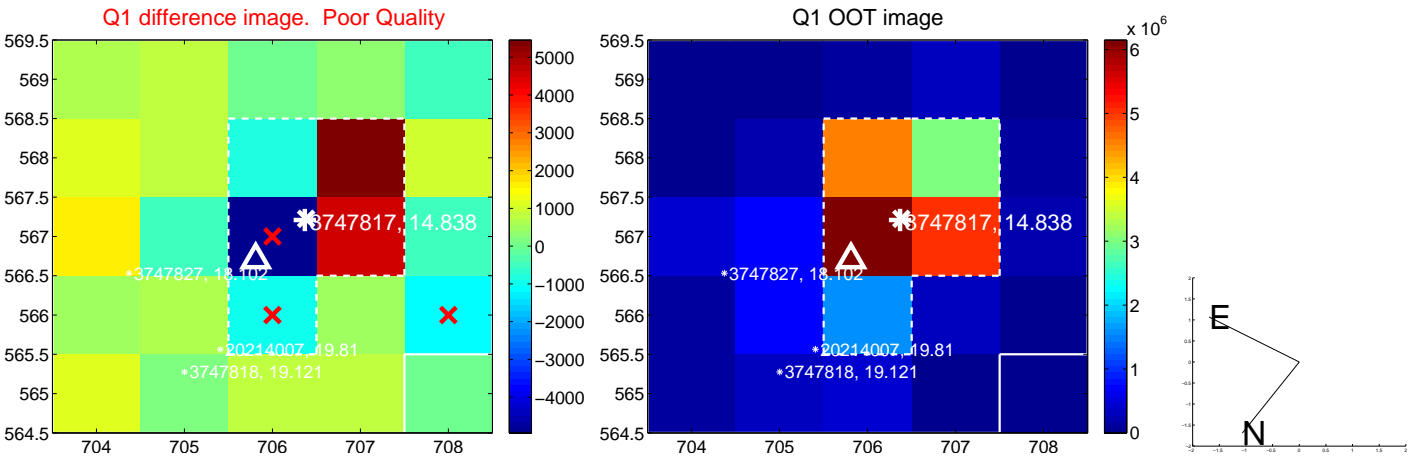


offset from photometric centroids

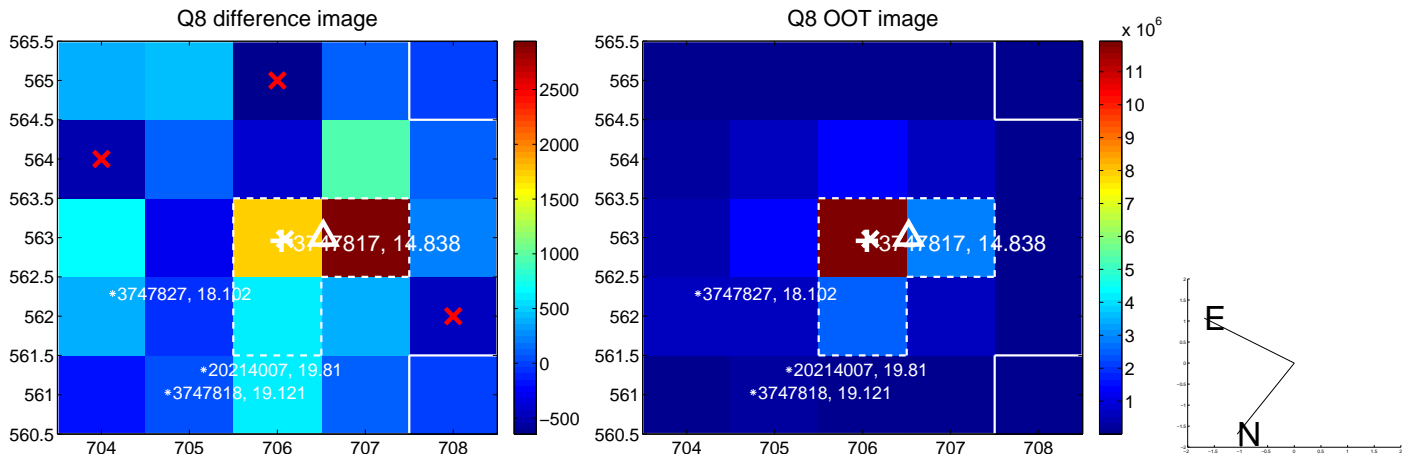
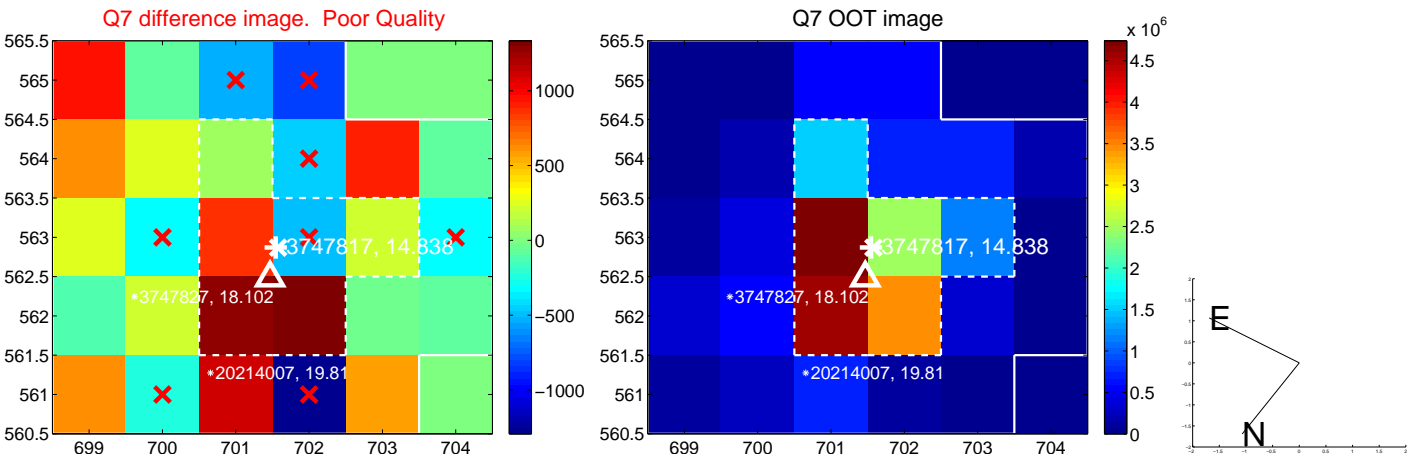
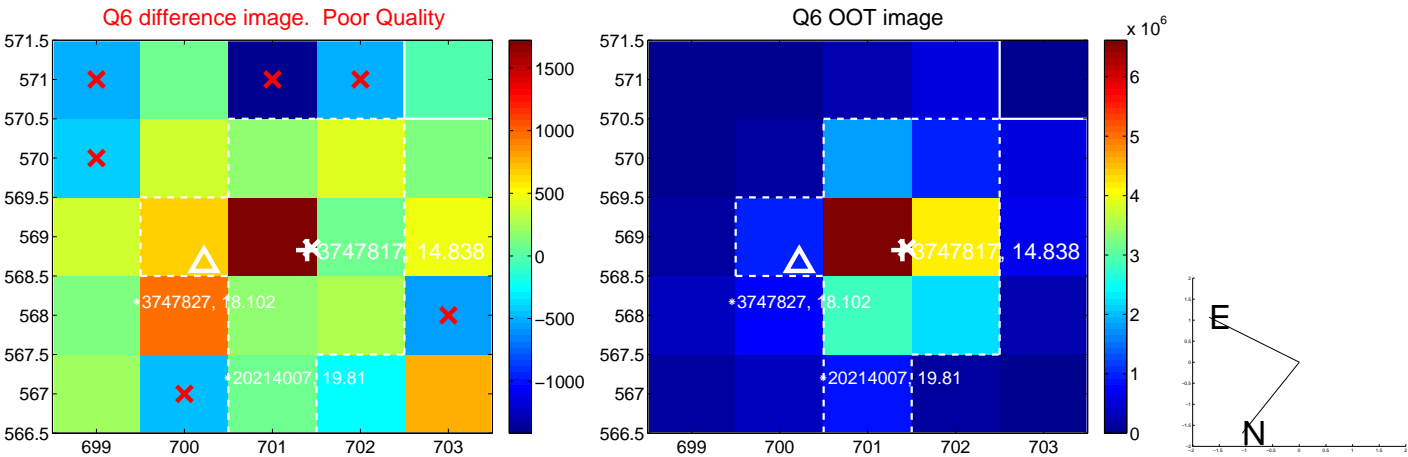
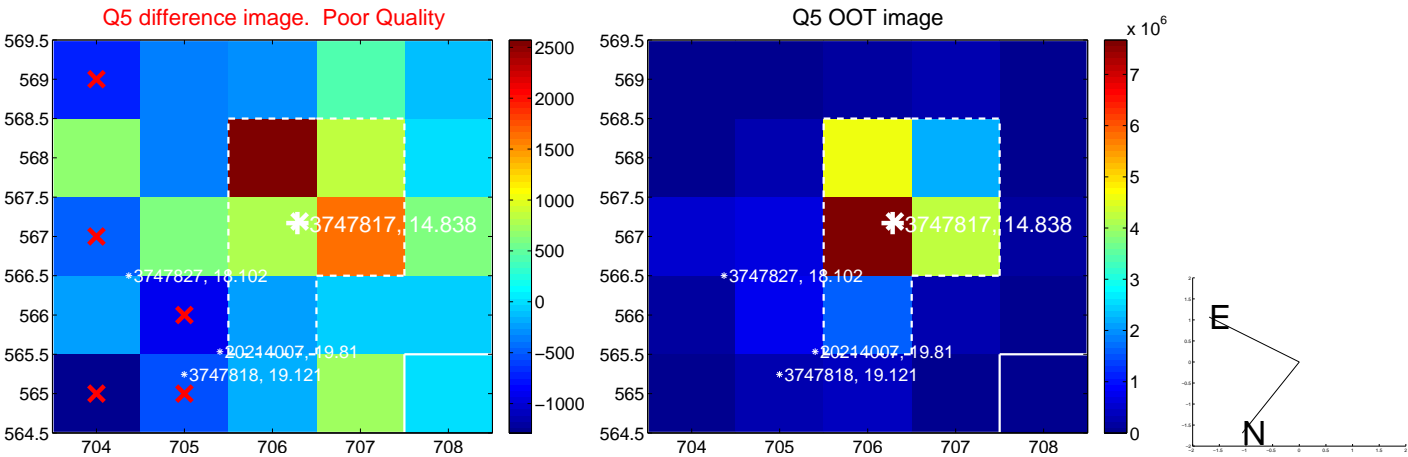


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

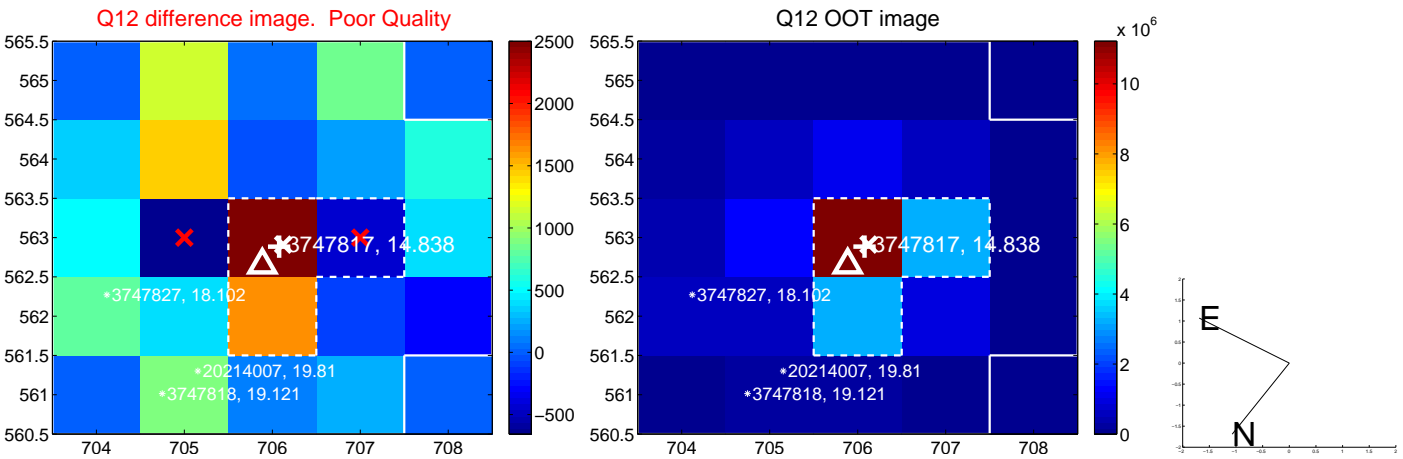
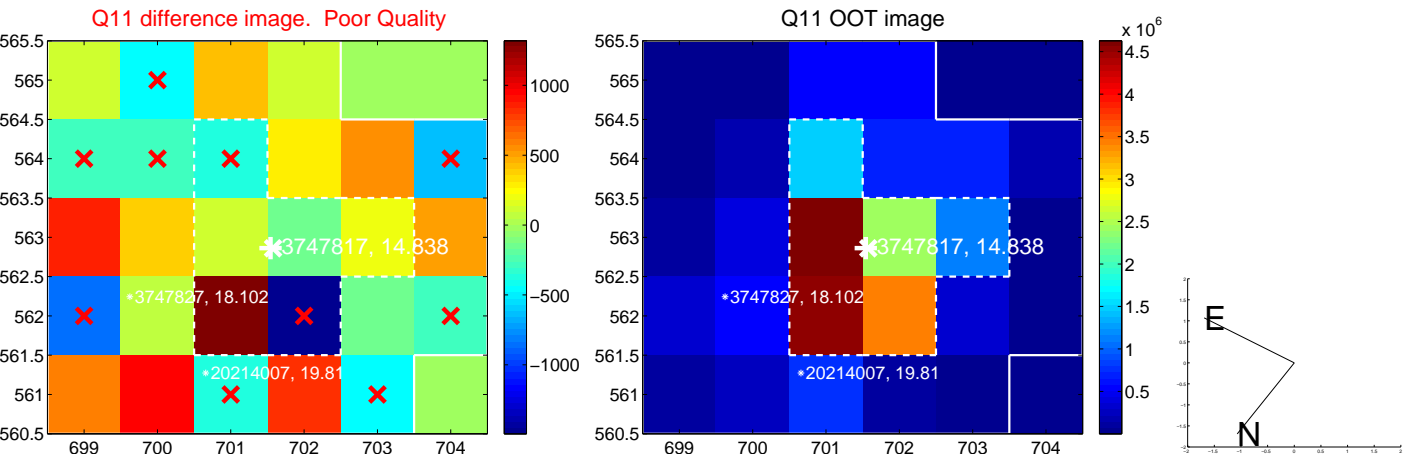
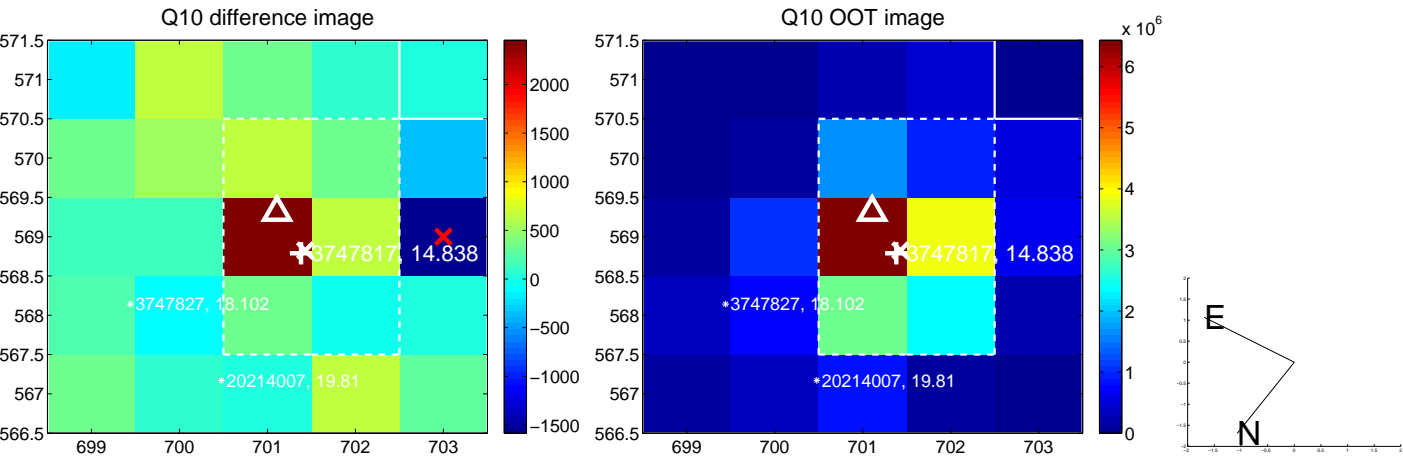
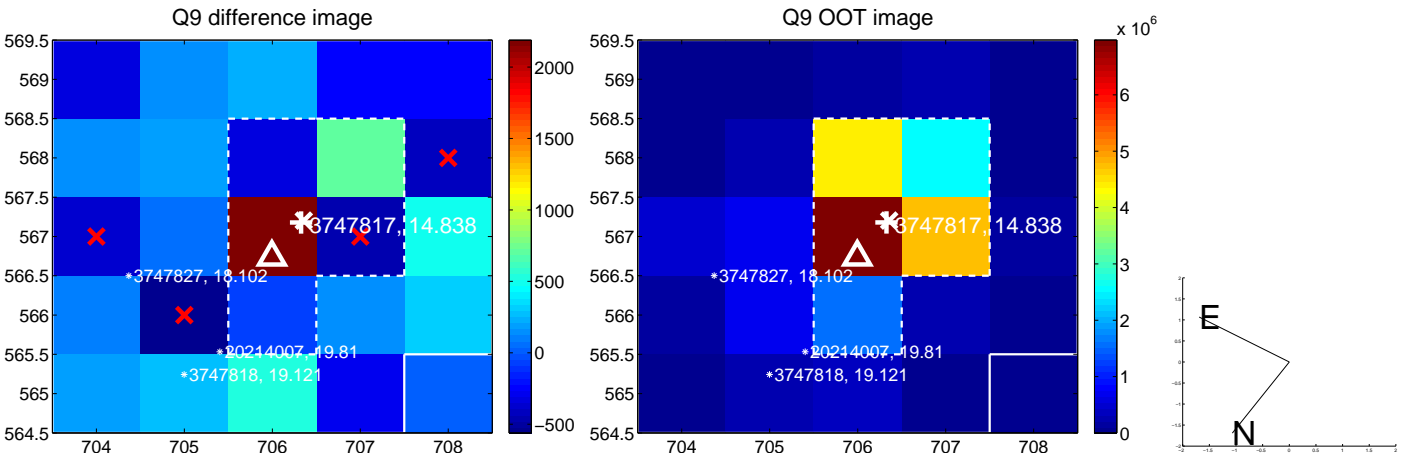
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



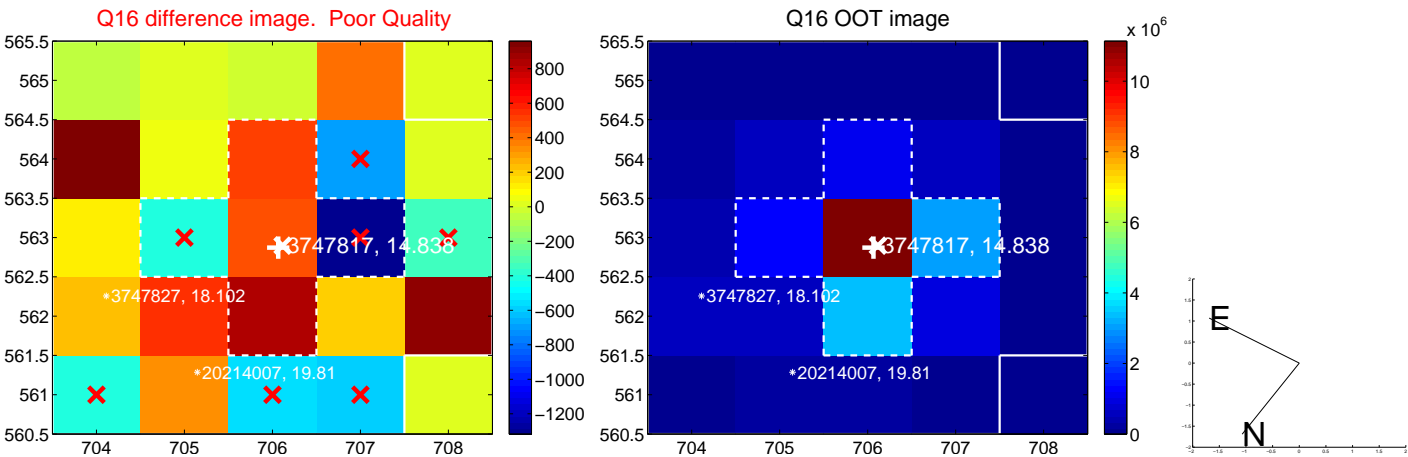
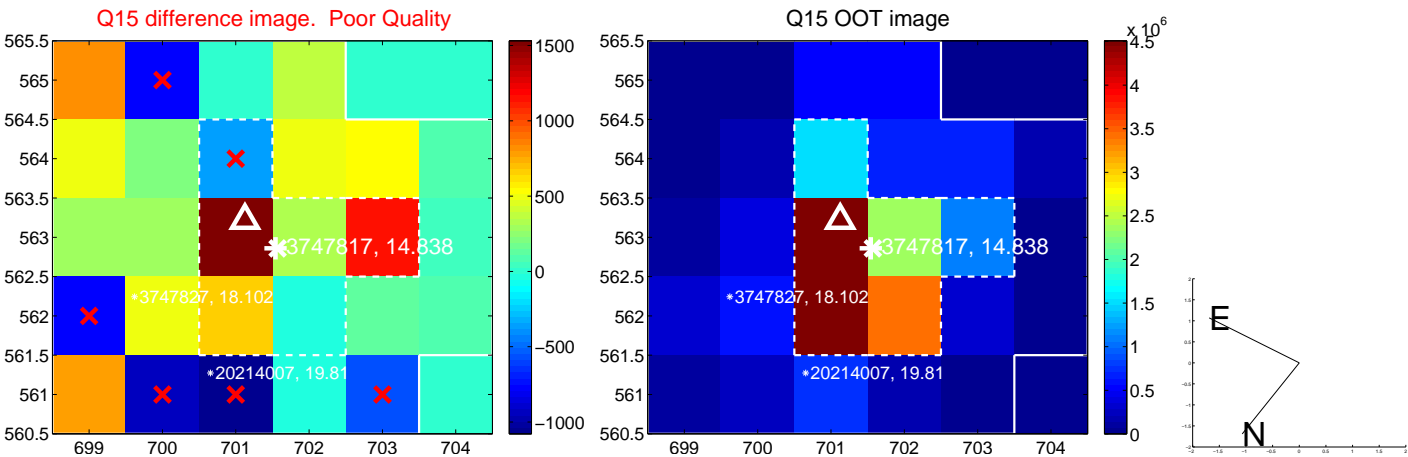
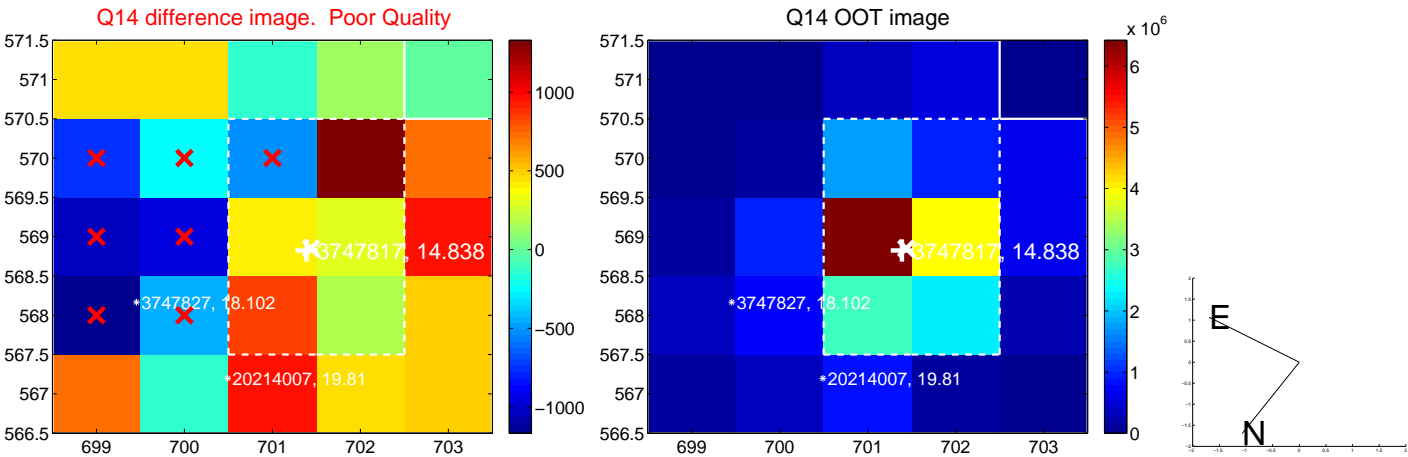
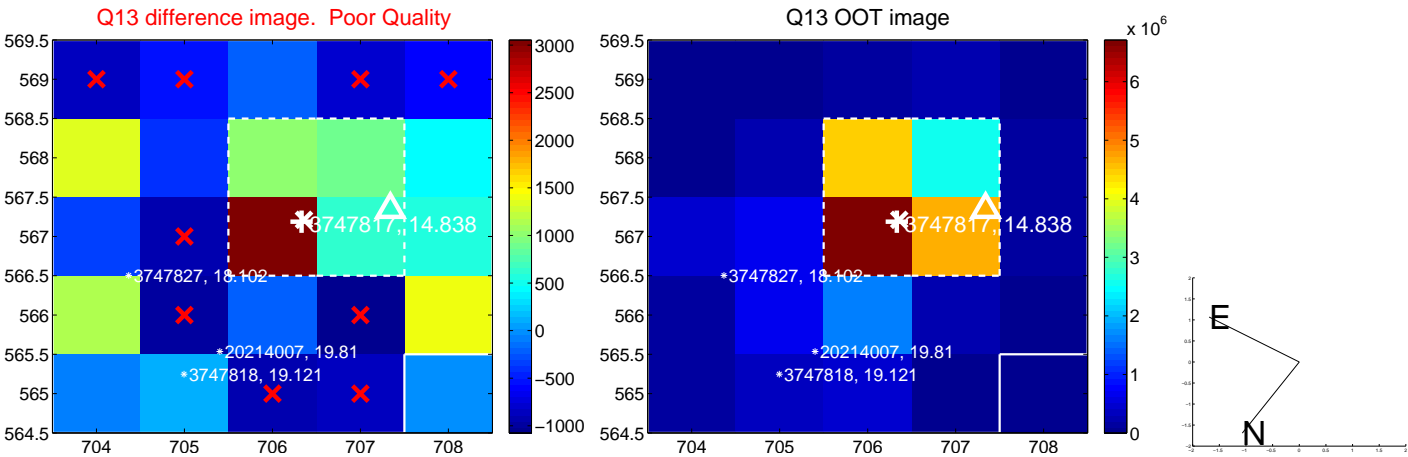
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



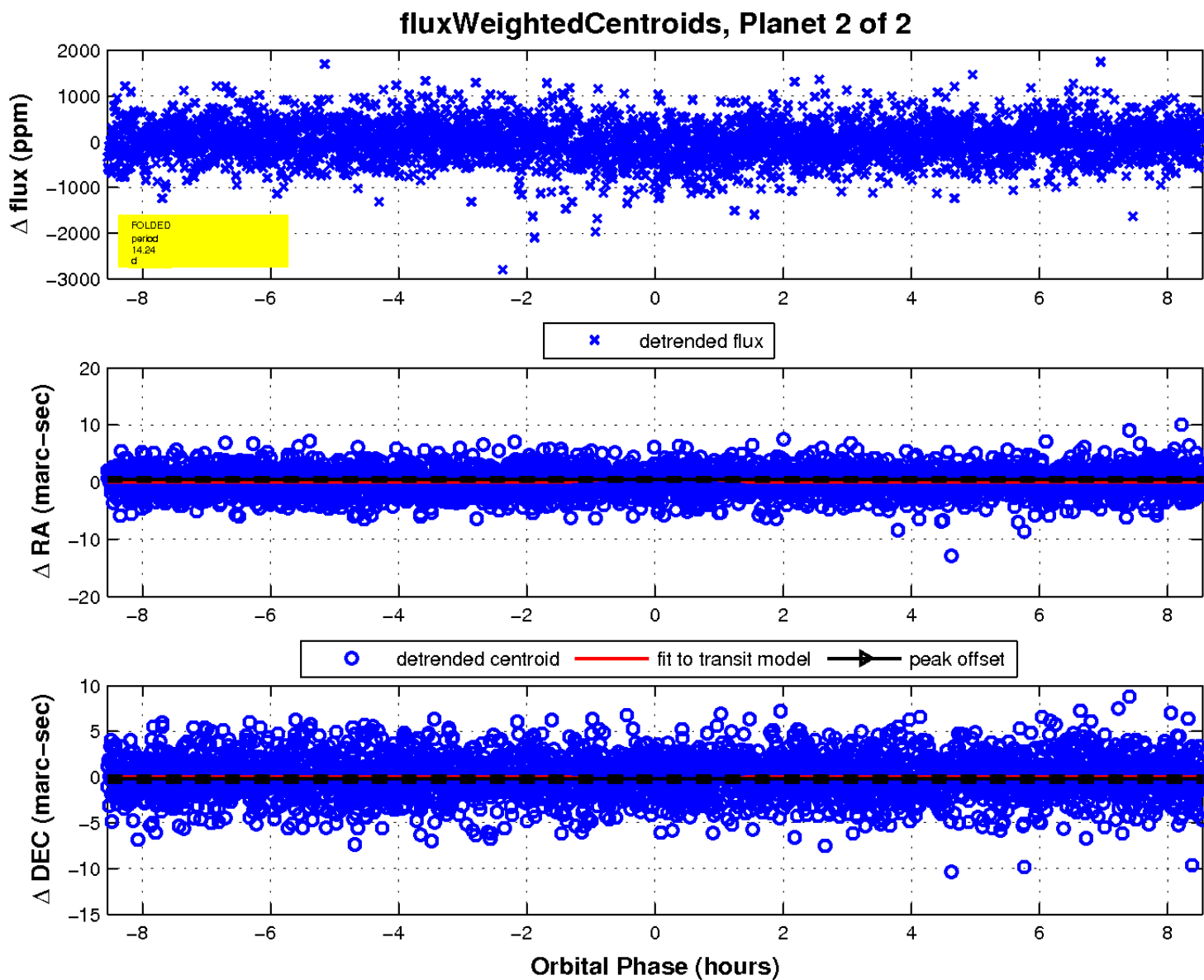
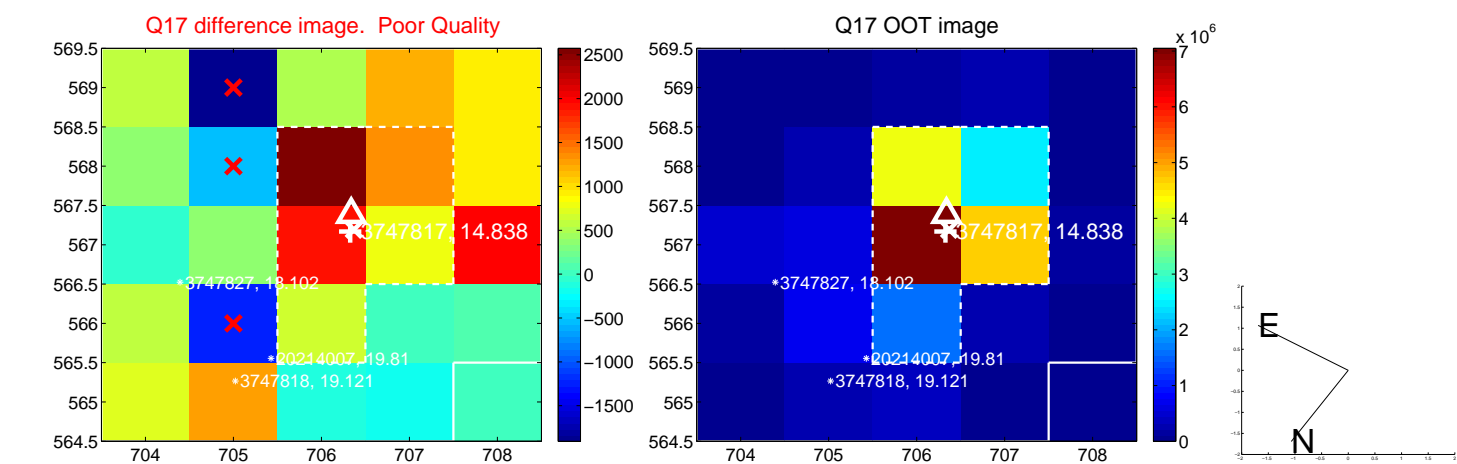
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

