

KIC 008197767

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})
008197767-01	OBS	No	315.807386	374.809321	878.8	15.794	10.4	5.4	0.65	4852	2.02	0.35
008197767-02	OBS	7871.01	1.246101	132.679276	84.6	4.872	10.0	12.6	0.65	4852	0.58	554.92
008197767-03	OBS	No	194.703455	137.141116	840.4	5.647	14.7	7.9	0.65	4852	1.96	0.66
008197767-04	OBS	No	691.615926	134.720734	1712.6	16.883	9.1	8.8	0.65	4852	3.65	0.12

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008197767-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008197767-02	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_UNRESOLVED_OFFSET
008197767-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS
008197767-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

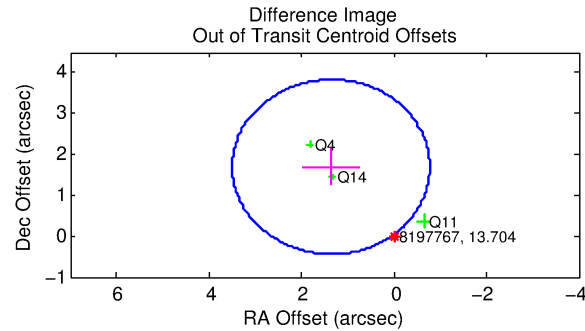
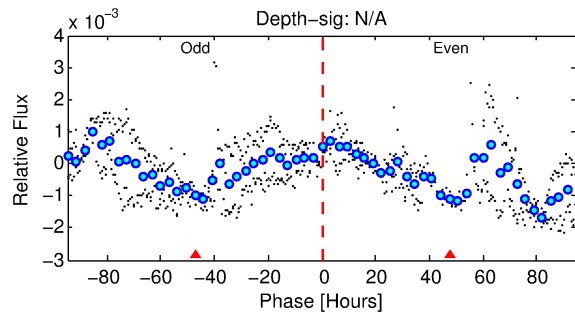
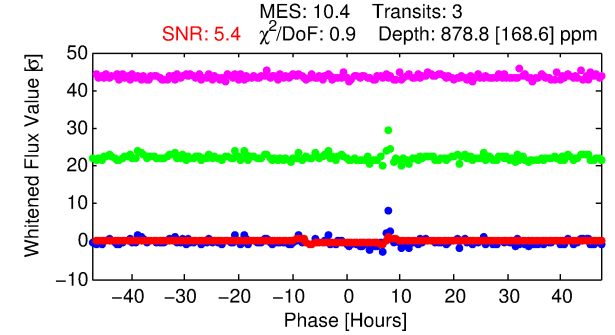
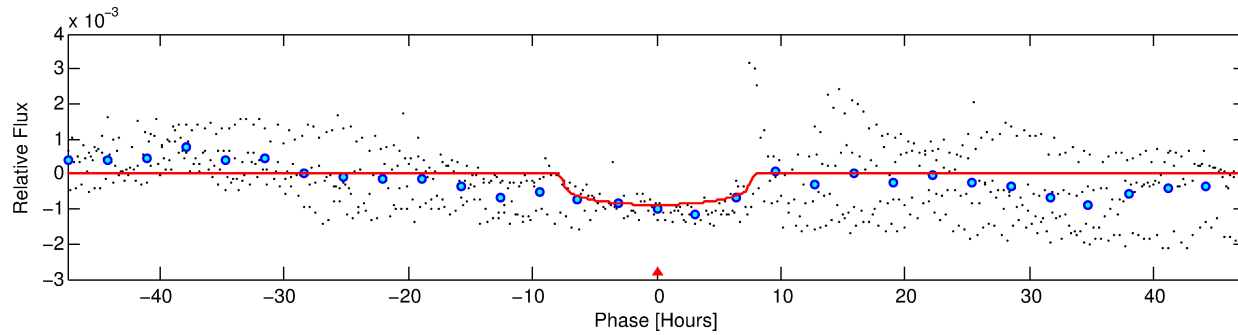
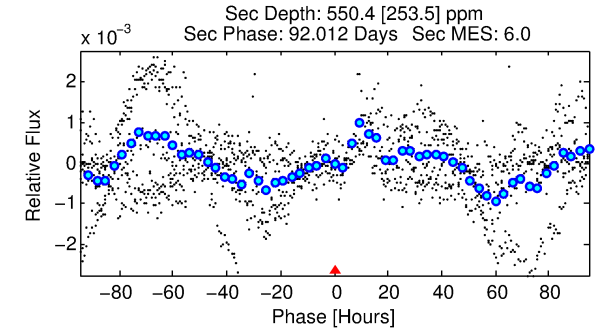
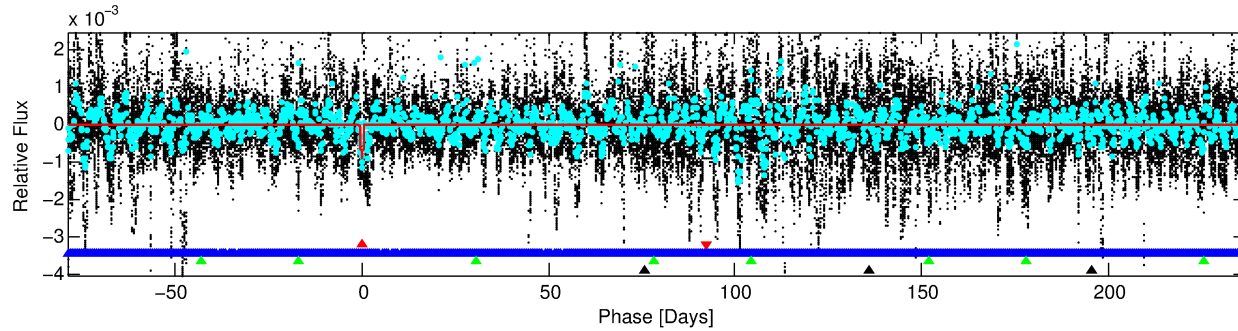
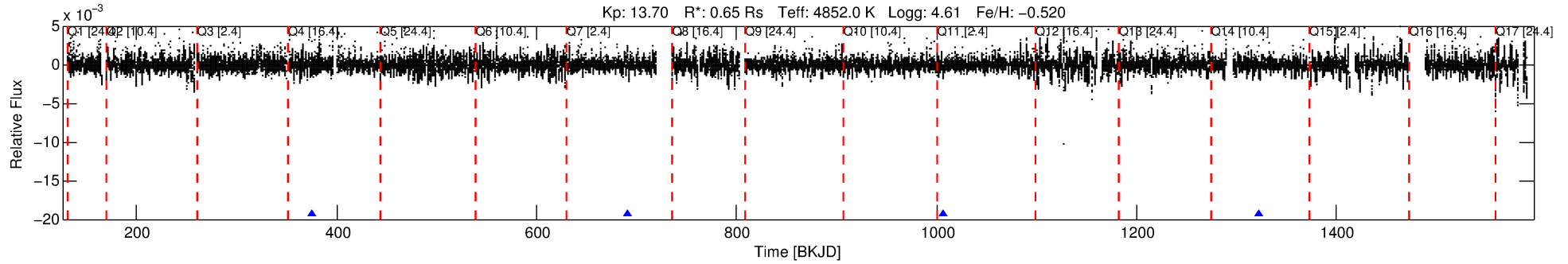
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008197767-01

No Significant Match Found

DV One-Page Summary

KIC: 8197767 Candidate: 1 of 4 Period: 315.807 d



DV Fit Results:

Period = 315.80739 [0.00529] d
Epoch = 374.8093 [0.0113] BKJD
Rp/R* = 0.0284 [0.0057]
a/R* = 122.88 [70.65]
b = 0.64 [0.53]
Seff = 0.35 [0.06]
Teq = 196 [8] K
Rp = 2.01 [0.44] Re
a = 0.7799 [0.0605] AU
Ag = 45371.04 [28202.24] [1.61] σ
Teffp = 4413 [686] K [6.14] σ

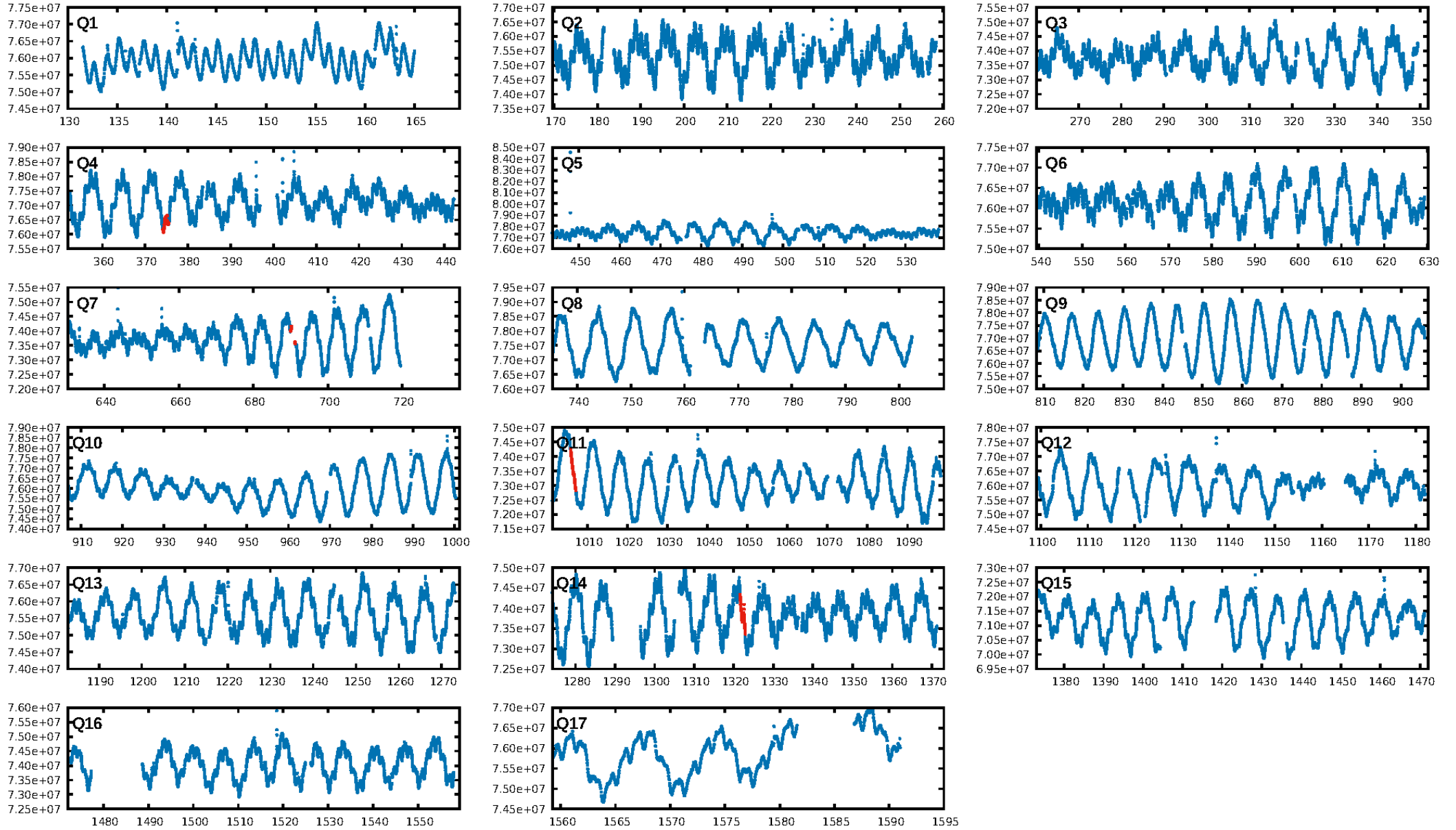
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [173.28 σ]
LongPeriod-sig: 100.0% [390.13 σ]
ModelChiSquare2-sig: 61.8%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 5.55e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.617
Centroid-sig: N/A
Centroid-so: 2.472 arcsec [2.68 σ]
OotOffset-rm: 2.173 arcsec [3.05 σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-rm: 2.087 arcsec [2.39 σ]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.00 [0/3]

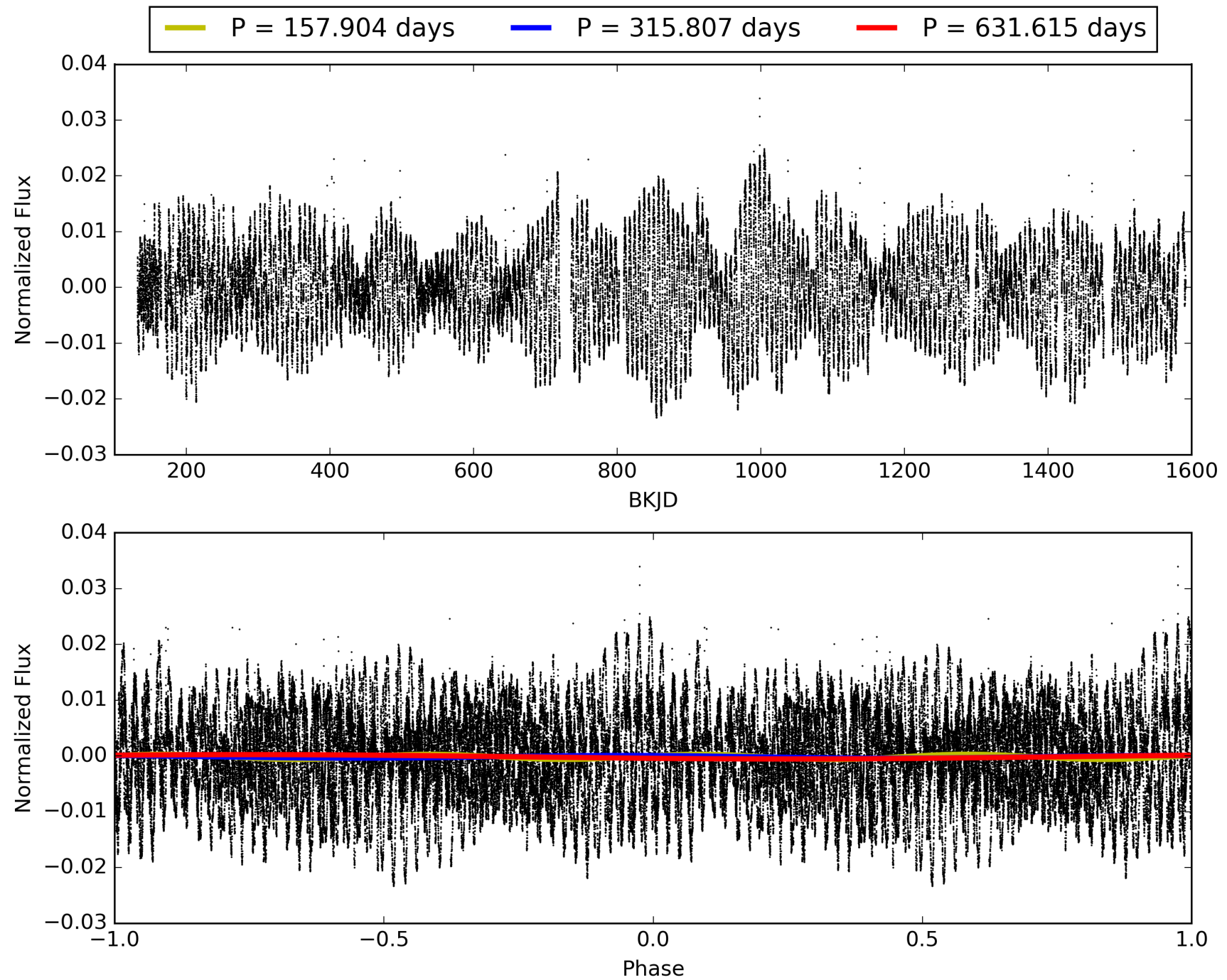
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:11:05 Z

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

TCE 008197767-01, PDC Light Curves

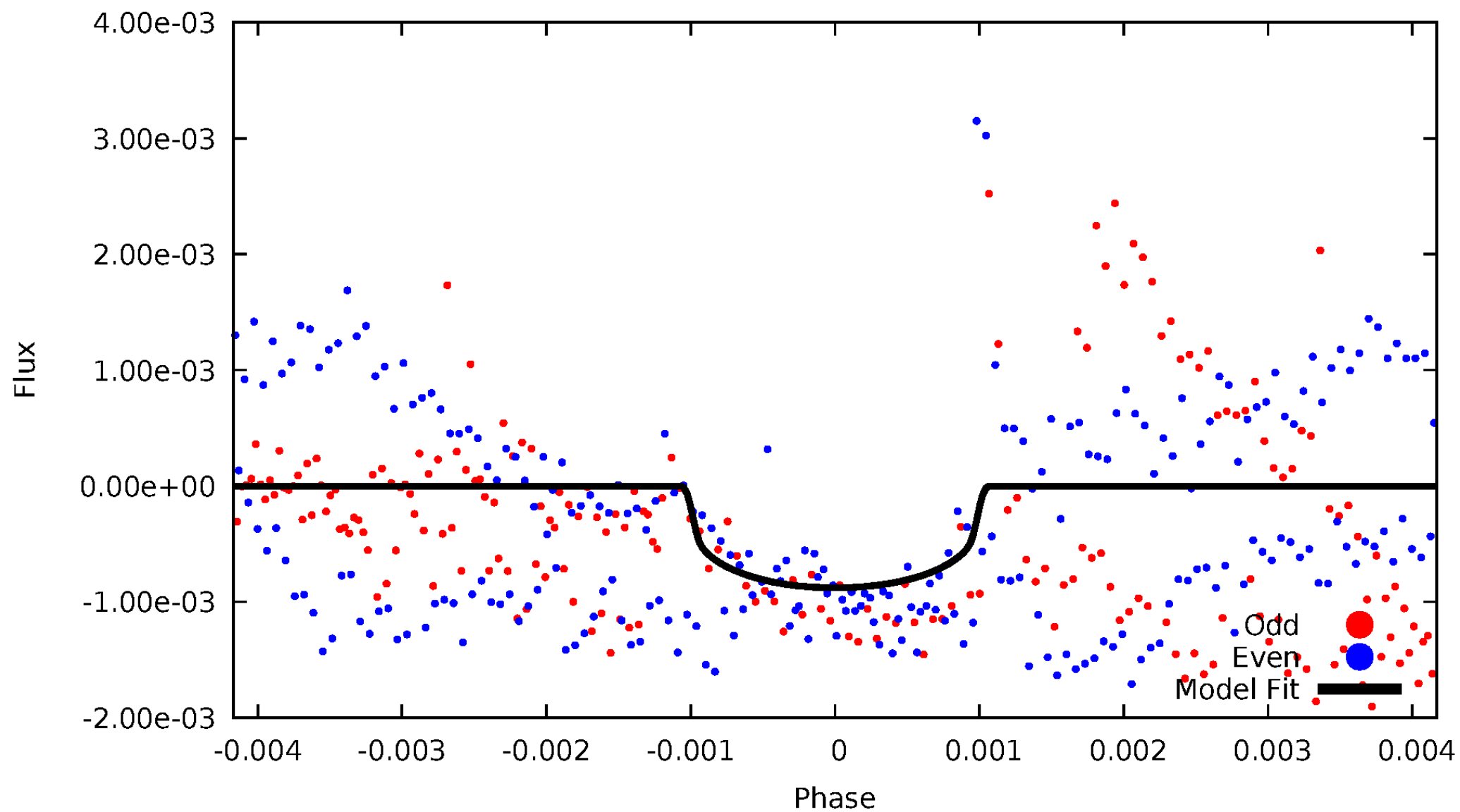


TCE 008197767-01



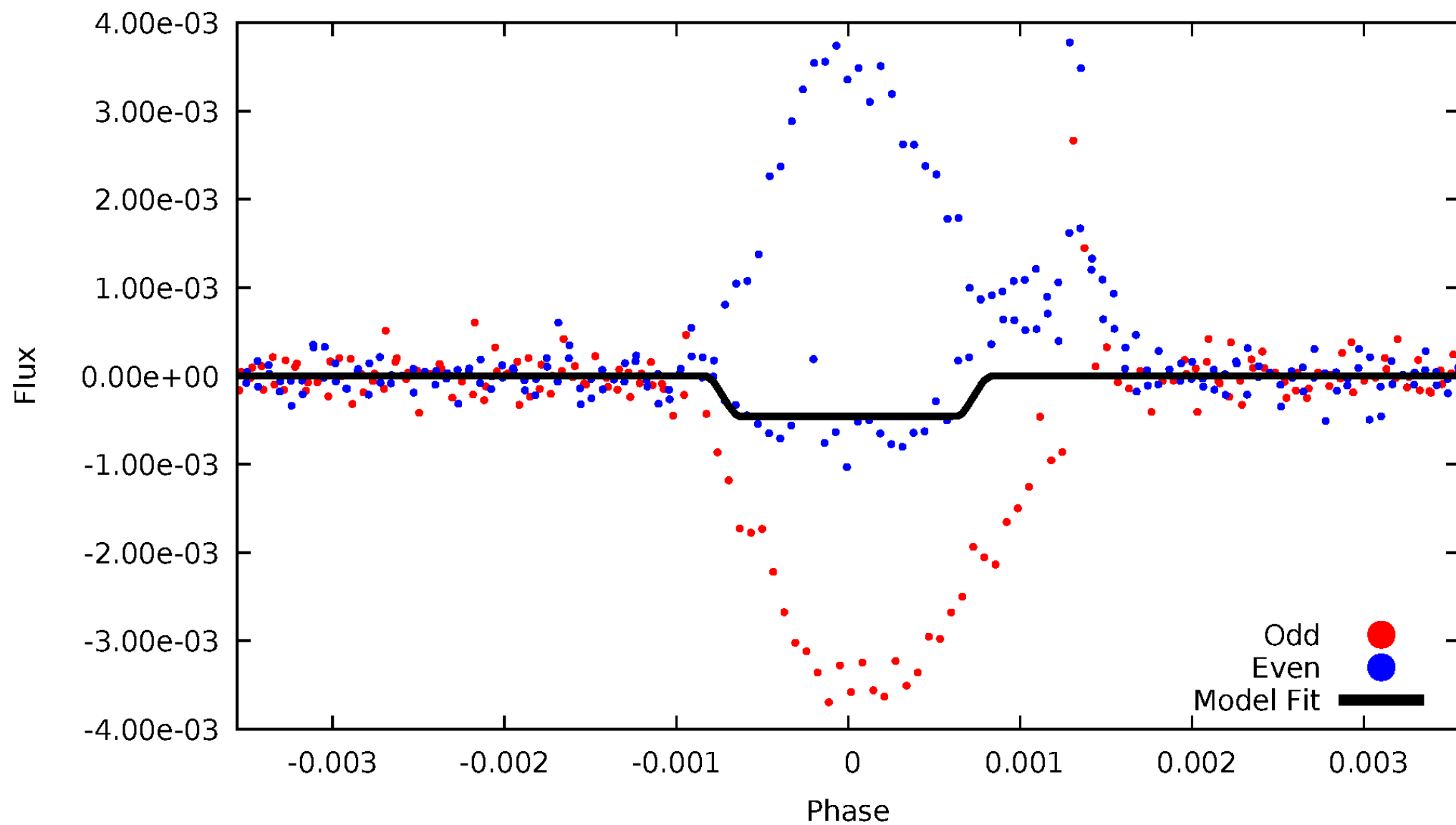
DV Odd/Even

TCE 008197767-01



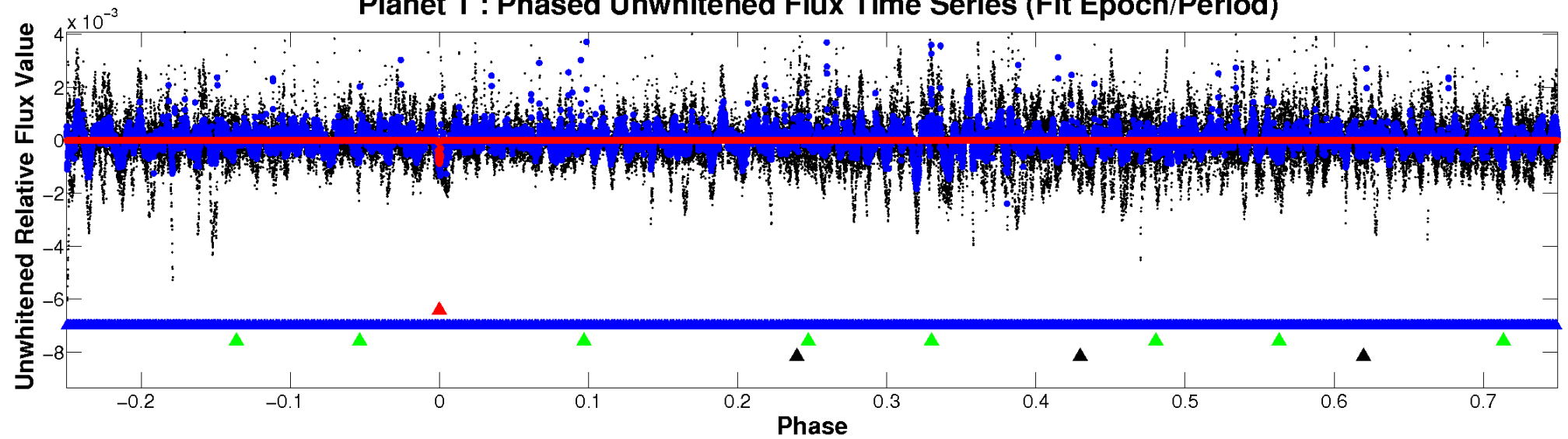
ALT Odd/Even

TCE 008197767-01

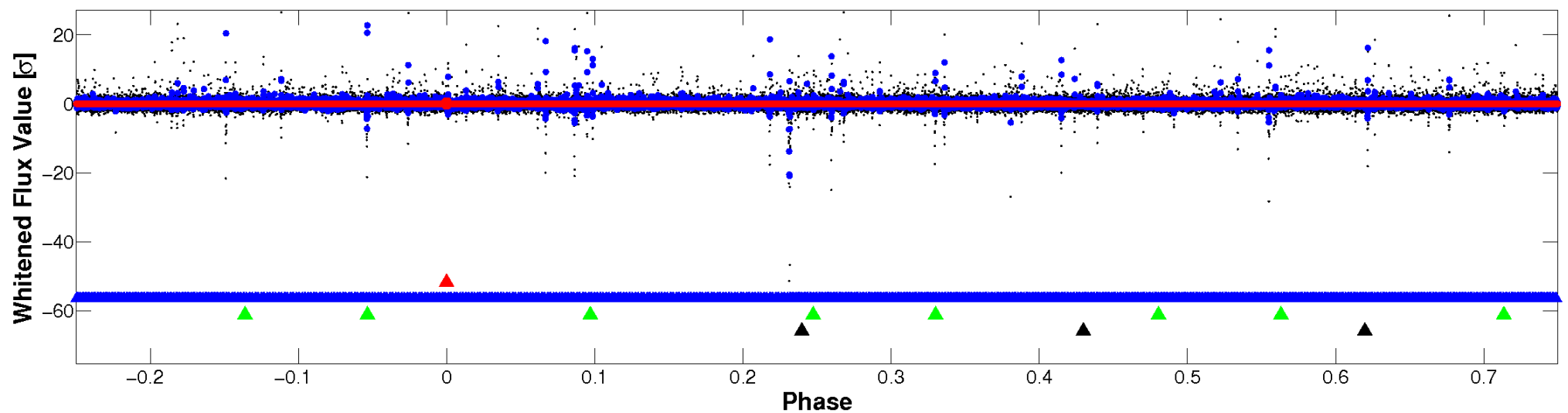


Non-Whitened Vs. Whitened Light Curve

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

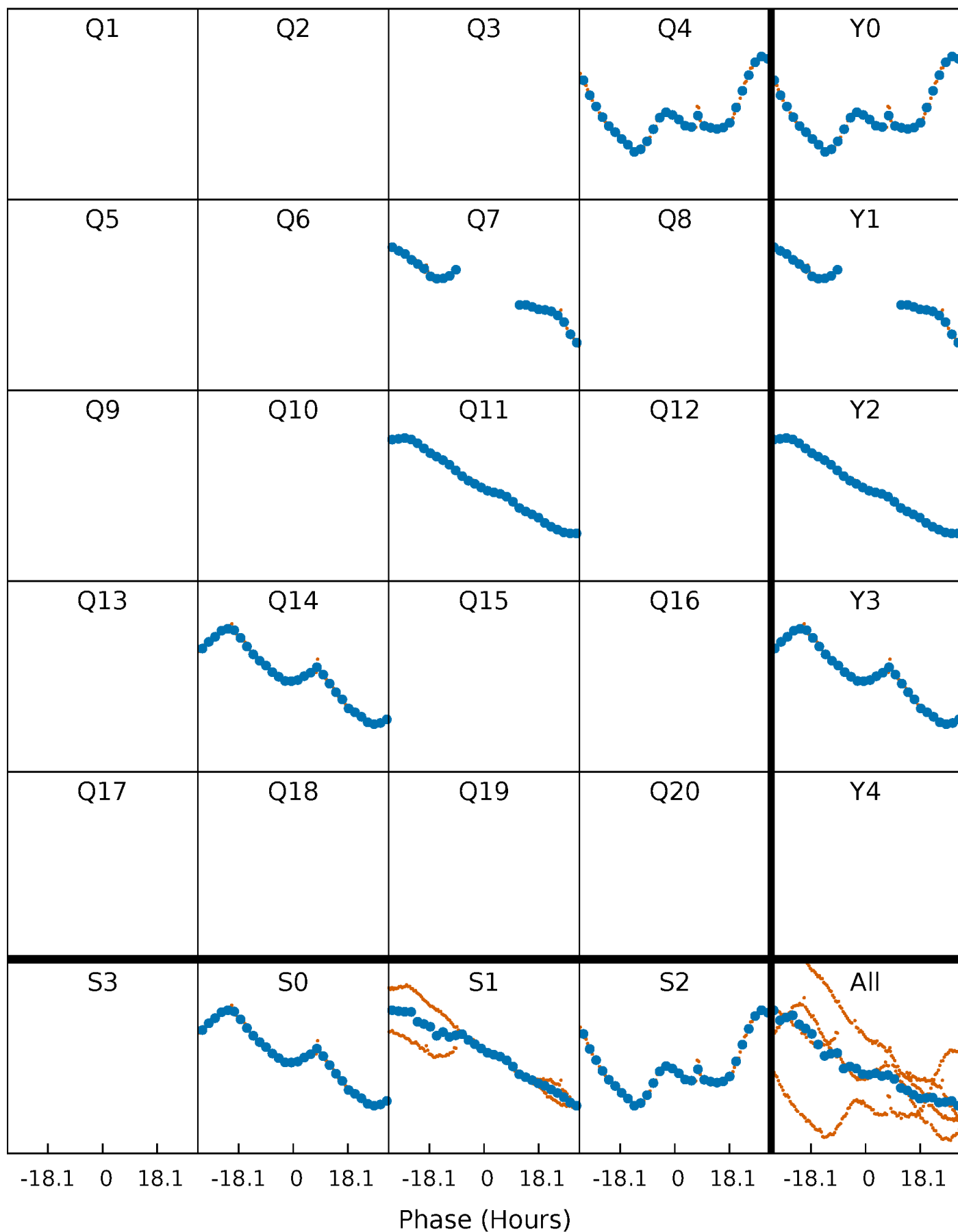


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



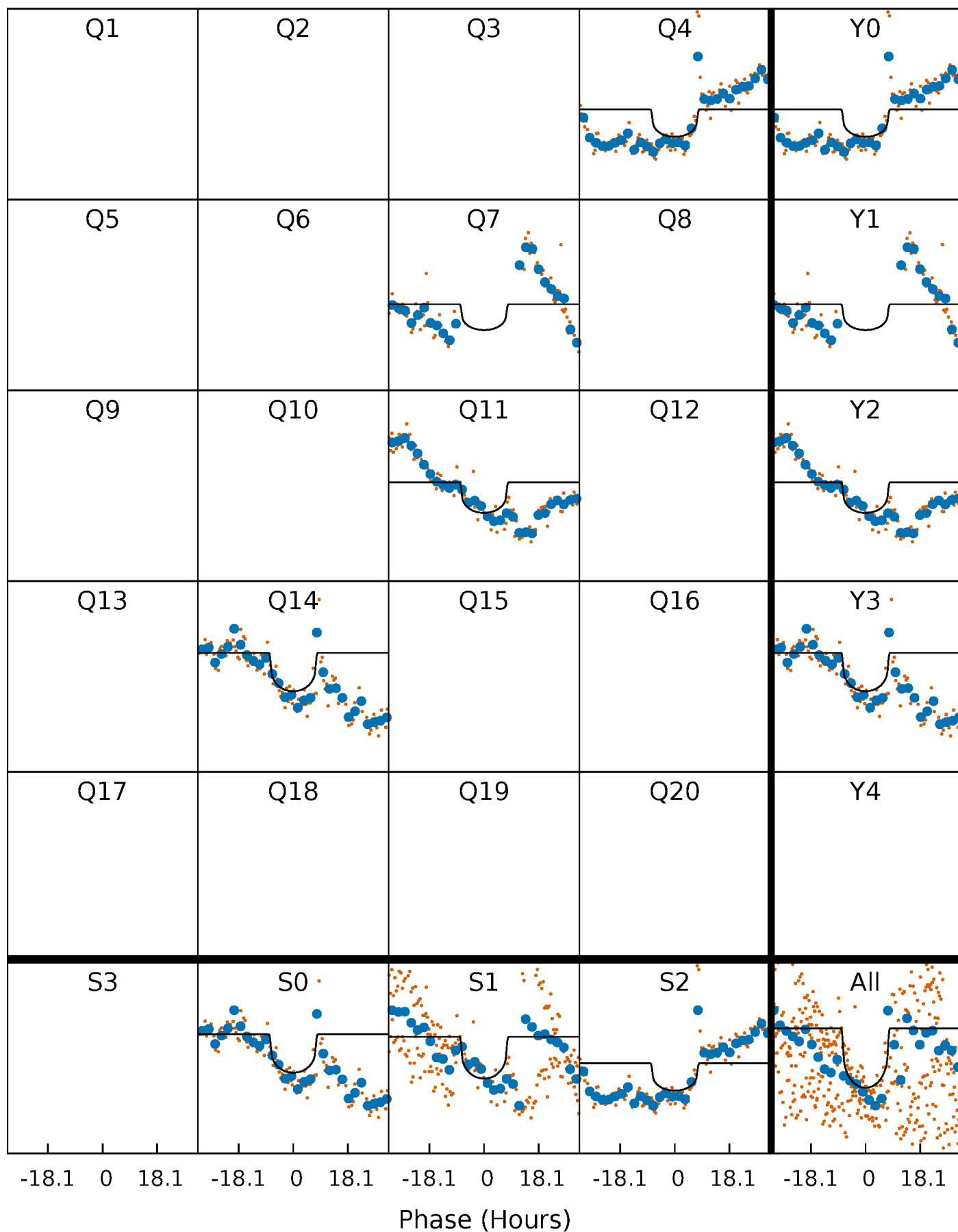
PDC Quarter-Phased Transit Curves

TCE 008197767-01 P=315.807386 Days $T_0=374.809321$ (BKJD)



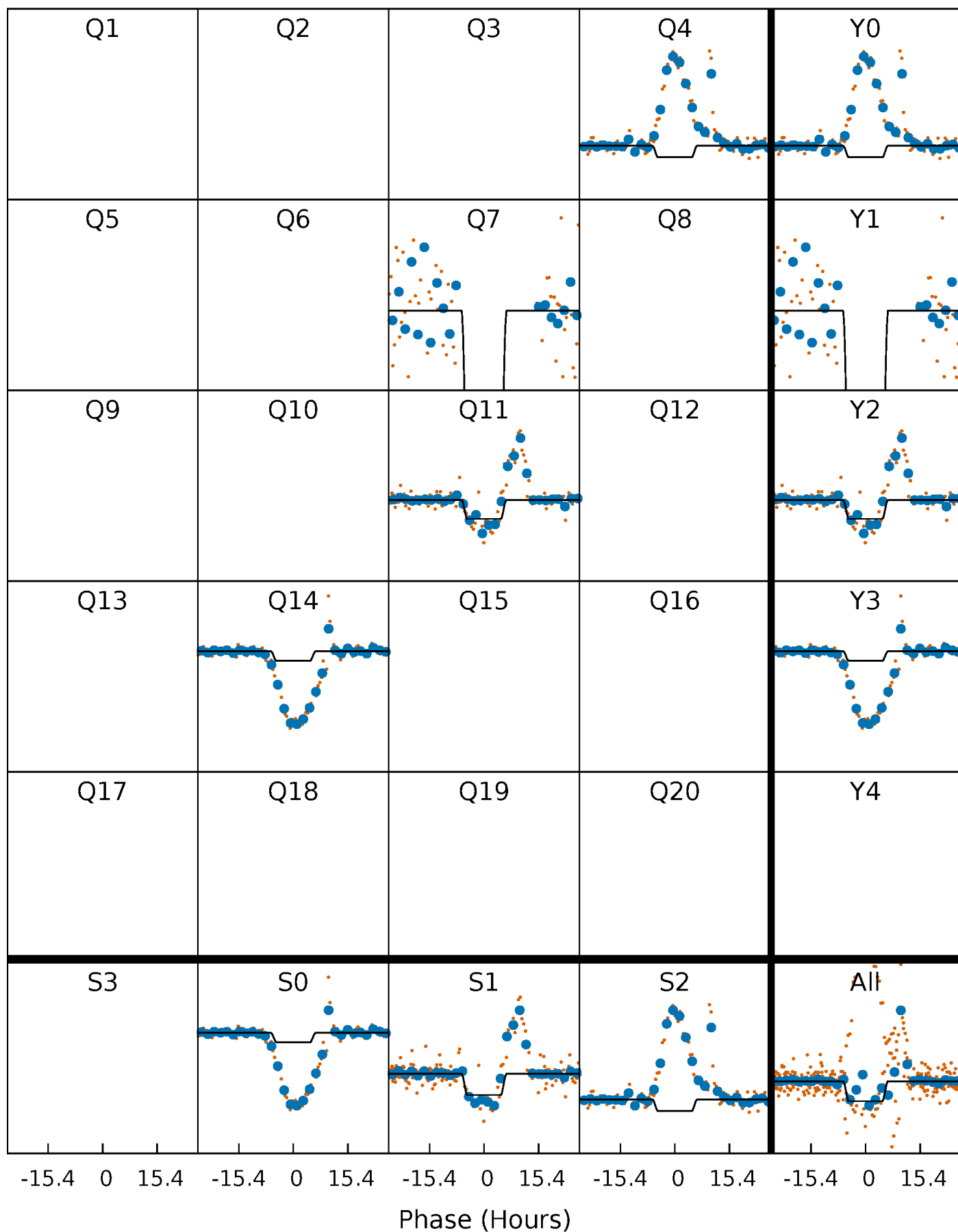
DV Quarter-Phased Transit Curves

TCE 008197767-01 P=315.807386 Days $T_0=374.809321$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

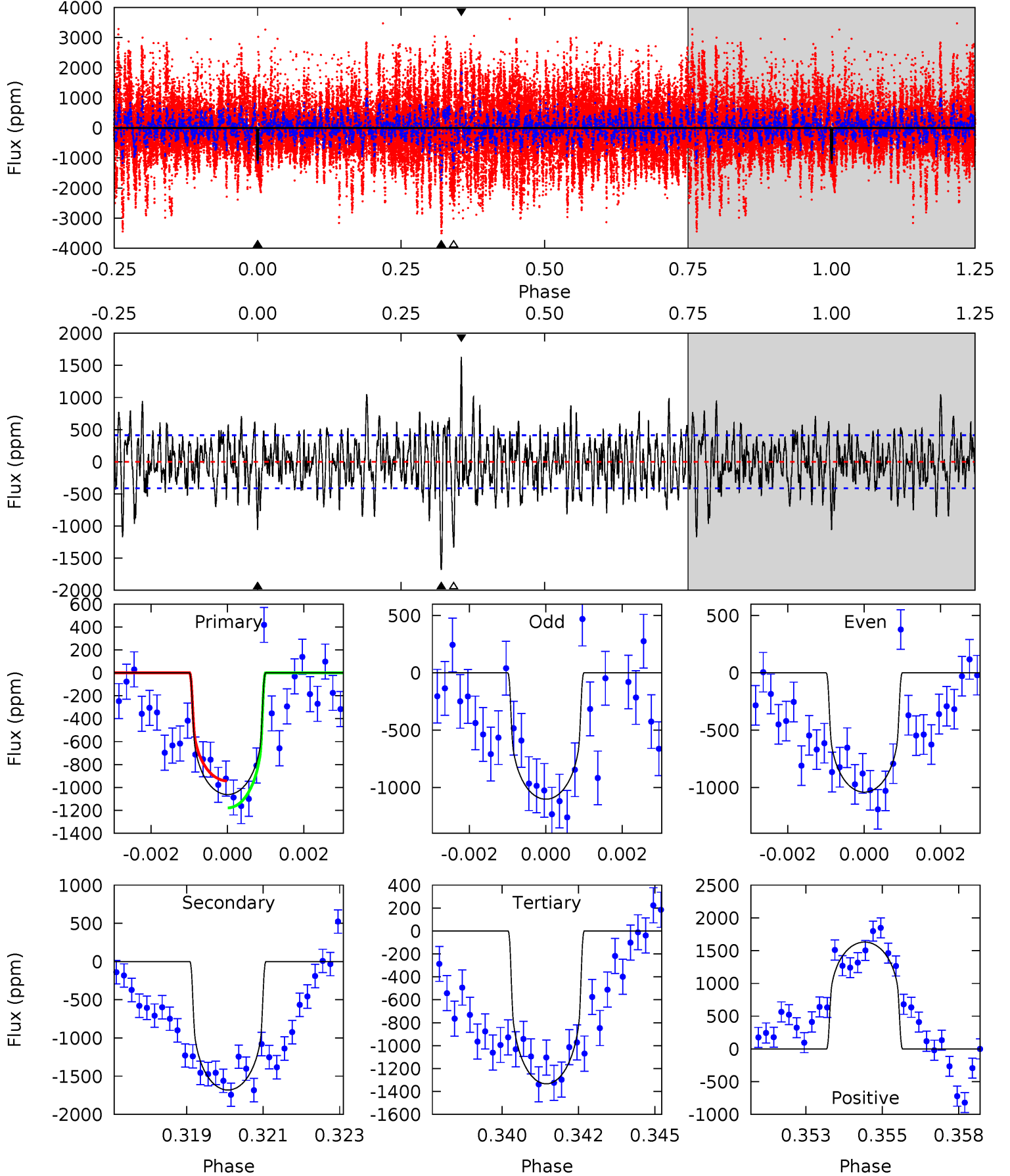
TCE 008197767-01 P=315.814292 Days $T_0=374.711892$ (BKJD)



DV Model-Shift Uniqueness Test

008197767-01, $P = 315.807386$ Days, $E = 59.001935$ Days

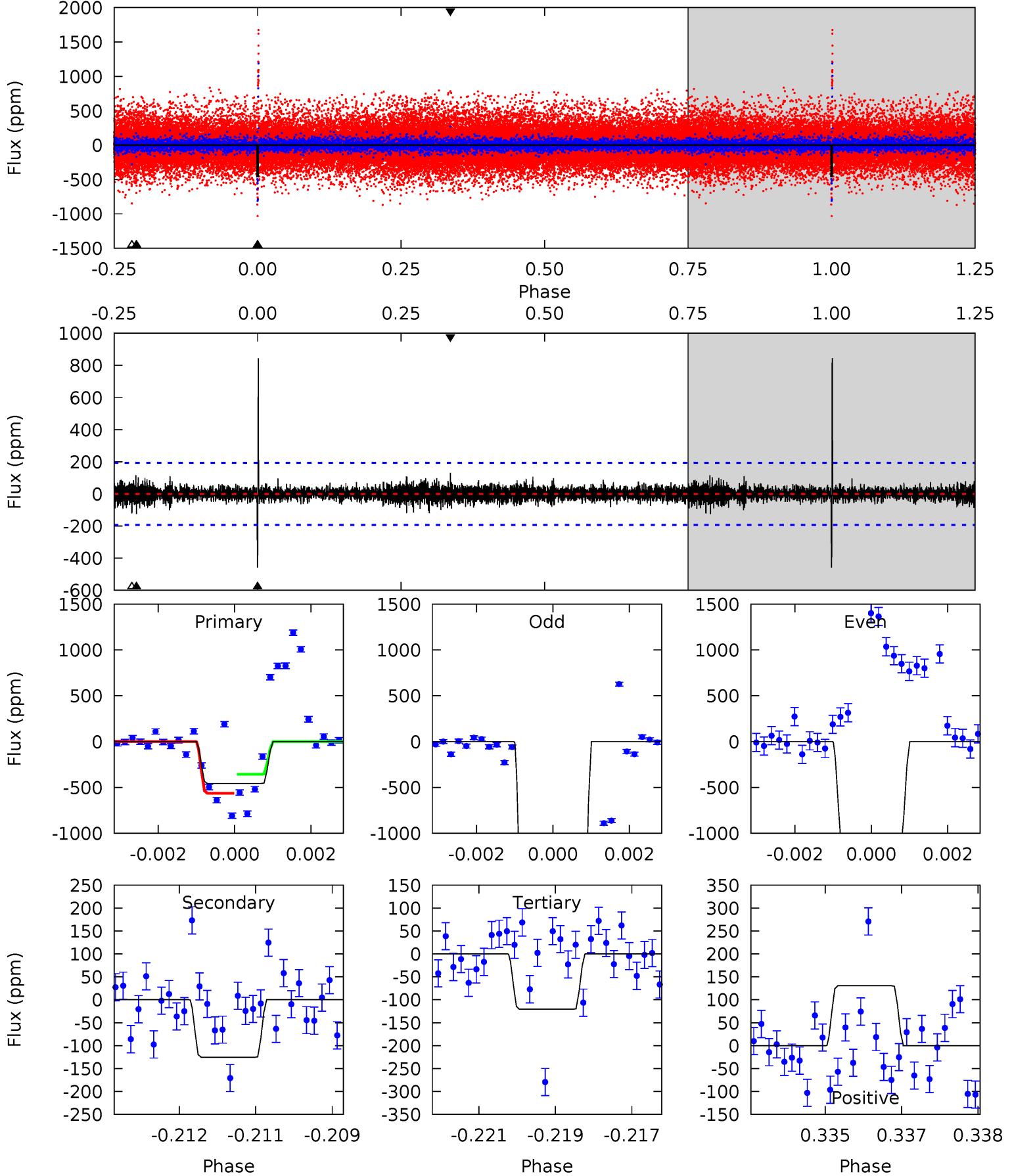
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	21.7	17.2	21.0	5.31	3.07	4.51	-3.49	-7.32	4.48	0.65	0.36	0.95	0.49	1.53



Alt Model-Shift Uniqueness Test

008197767-01, P = 315.814292 Days, E = 58.897600 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.7	3.49	3.35	3.63	5.36	3.15	0.71	9.34	9.07	0.13	-0.14	36.7	0.56	0.65	0



Stellar Parameters For KIC 008197767

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4852^{+145}_{-131}	$4.613^{+0.065}_{-0.035}$	$-0.520^{+0.300}_{-0.300}$	$0.651^{+0.058}_{-0.058}$	$0.634^{+0.084}_{-0.036}$	$3.238^{+0.852}_{-0.467}$
	+3%/-3%	+1%/-1%	+58%/-58%	+9%/-9%	+13%/-6%	+26%/-14%
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 008197767-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1681 ± 78	$2.00^{+0.45}_{-0.42}$	271^{+9}_{-9}	5709^{+738}_{-508}	142651^{+89513}_{-46392}
Alt.	-125 ± 36	$1.52^{+0.41}_{-0.40}$	272^{+10}_{-10}	3794^{+493}_{-352}	18264^{+16825}_{-8137}

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

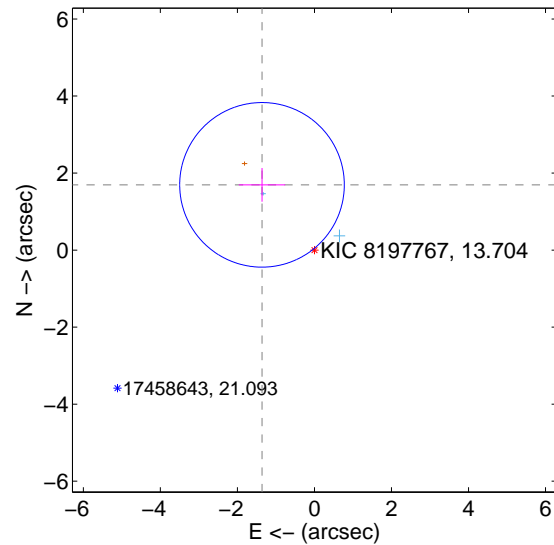
Supplemental centroid analysis for 008197767-01. Kepler magnitude: 13.70. Transit SNR 5.39

There are 2 quarters with good PRF difference image offsets

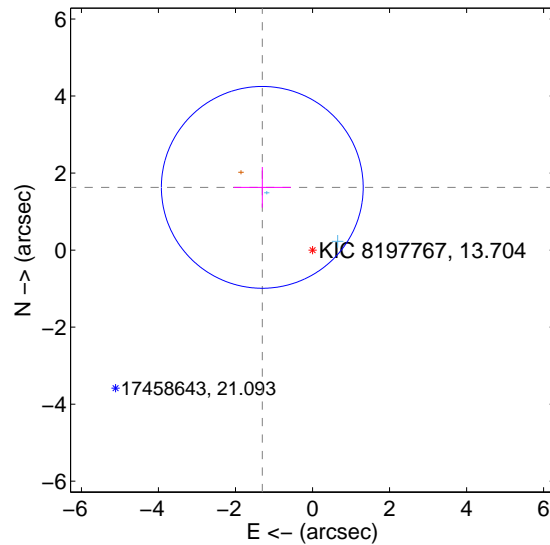
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.173 \pm 0.712	3.05	1.361 \pm 0.603	1.694 \pm 0.437
PRF-fit source offset from KIC position	2.087 \pm 0.873	2.39	1.304 \pm 0.743	1.629 \pm 0.527
photometric centroid source offset	2.47 \pm 0.92	2.68	2.47 \pm 0.92	-0.07 \pm 0.91

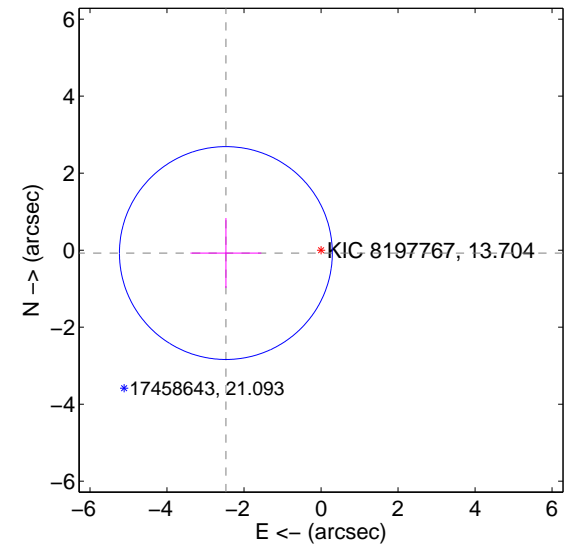
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

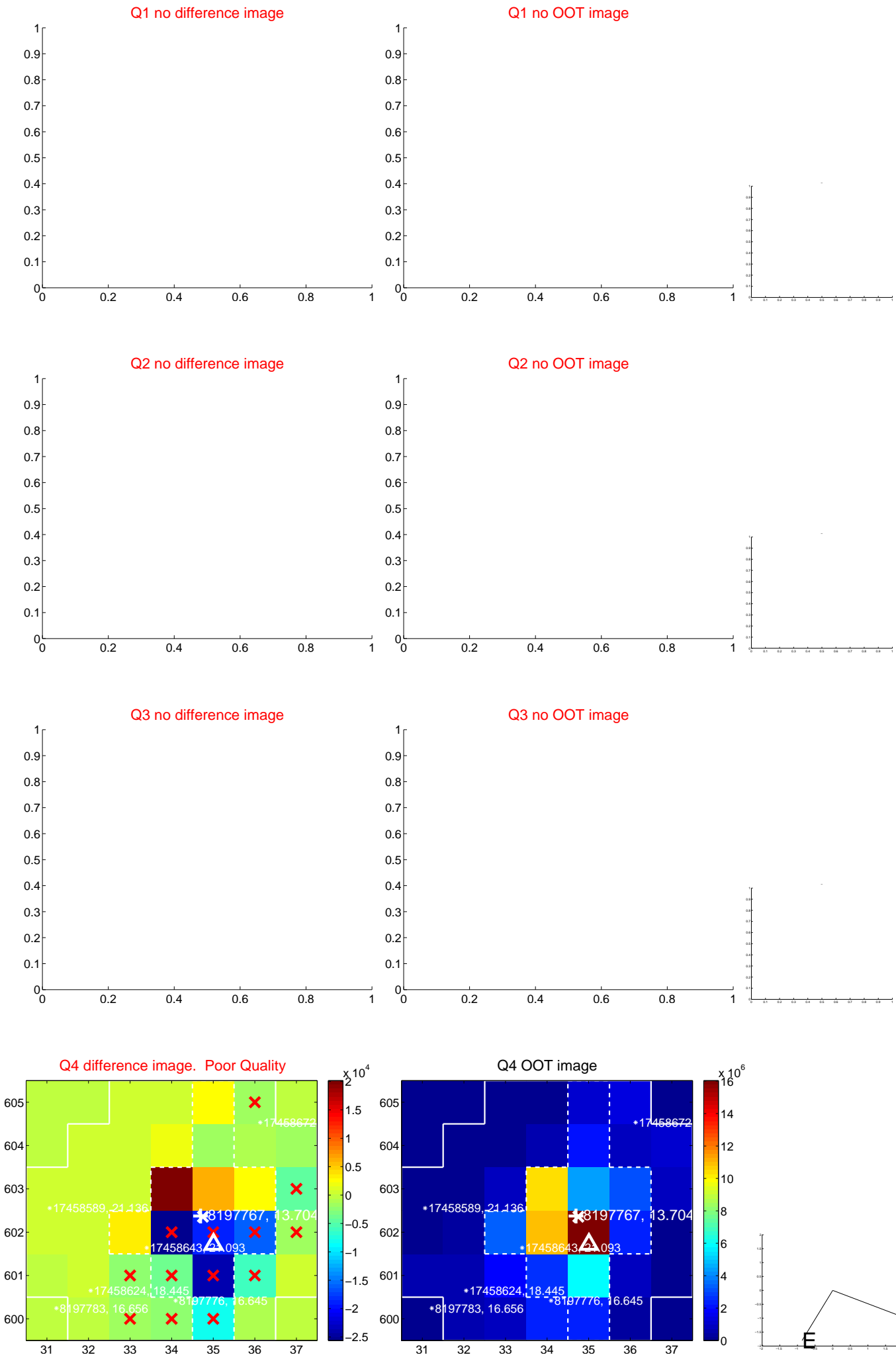


offset from photometric centroids

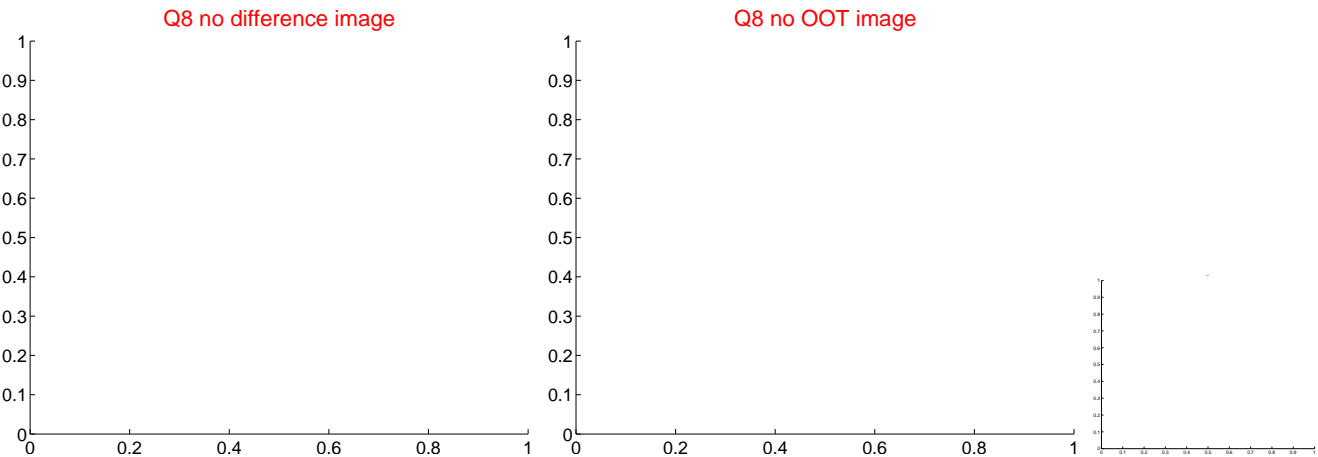
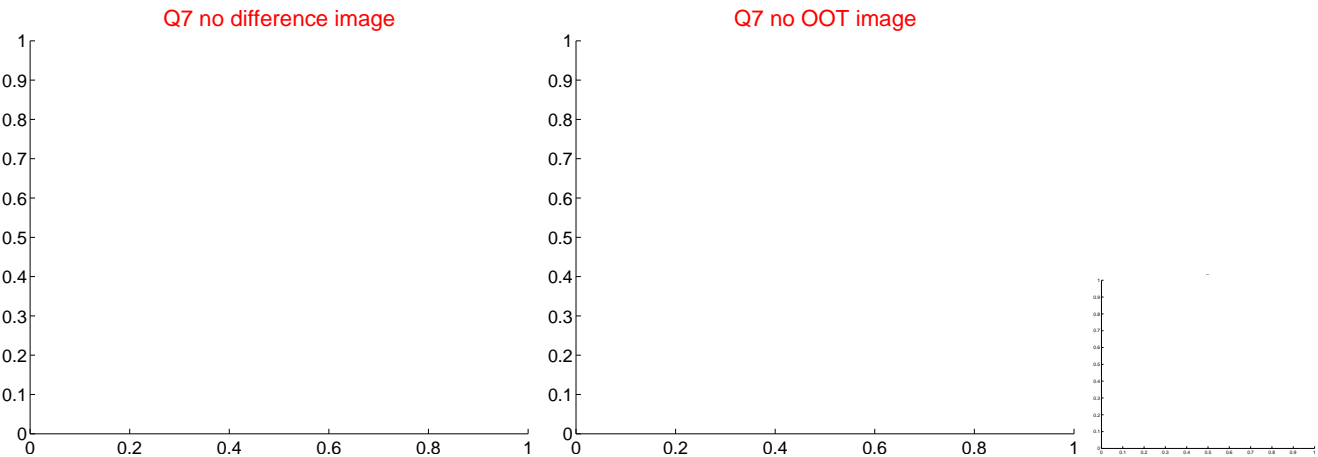
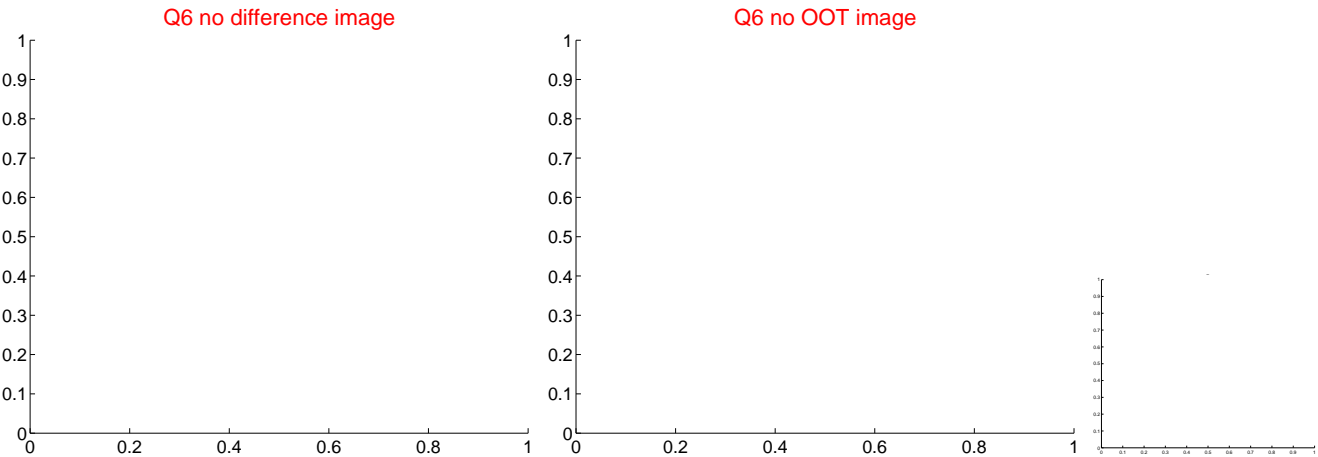
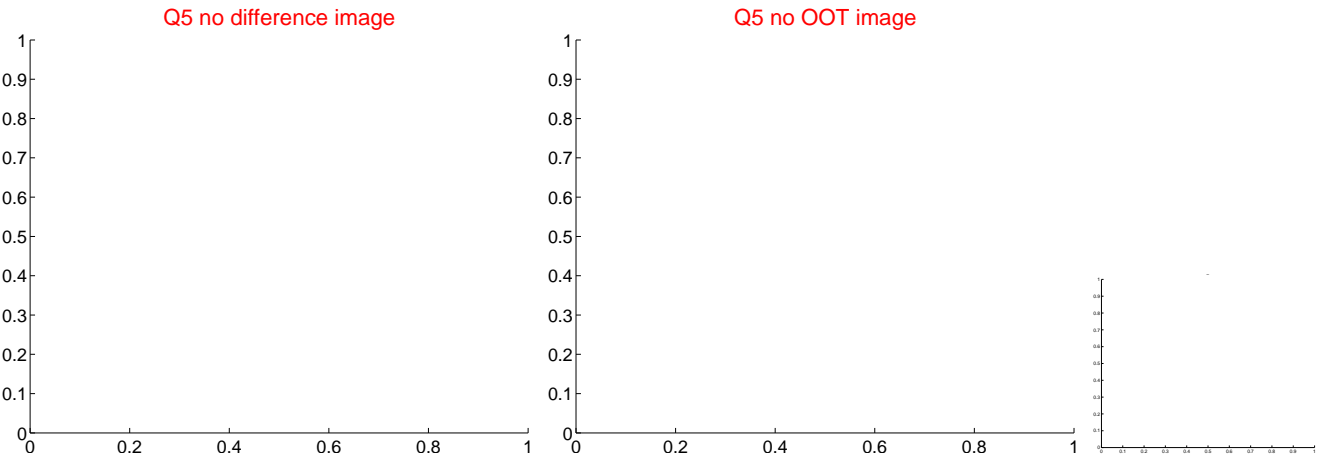


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

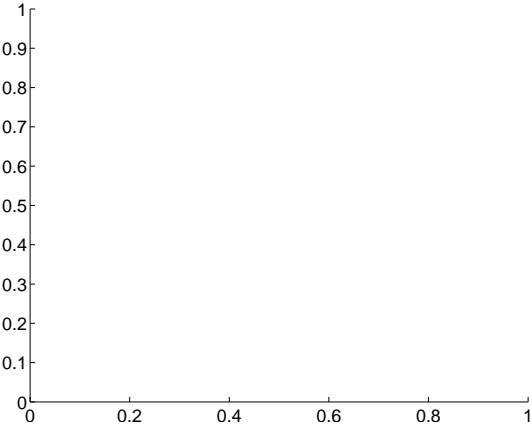


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

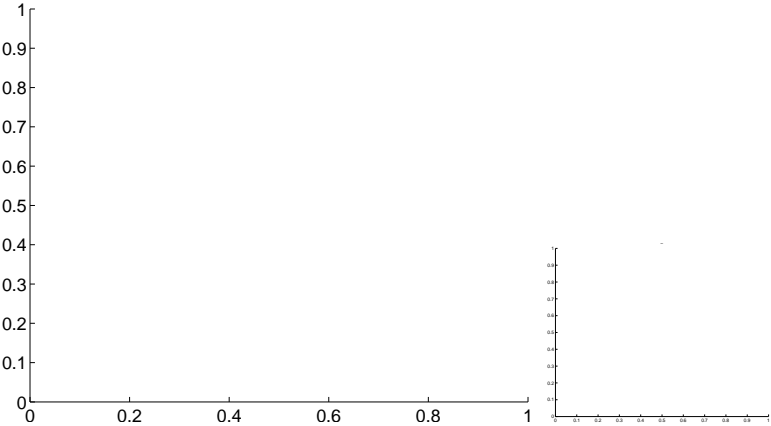


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

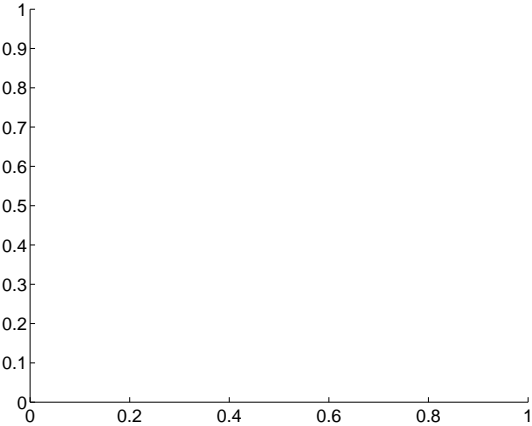
Q9 no difference image



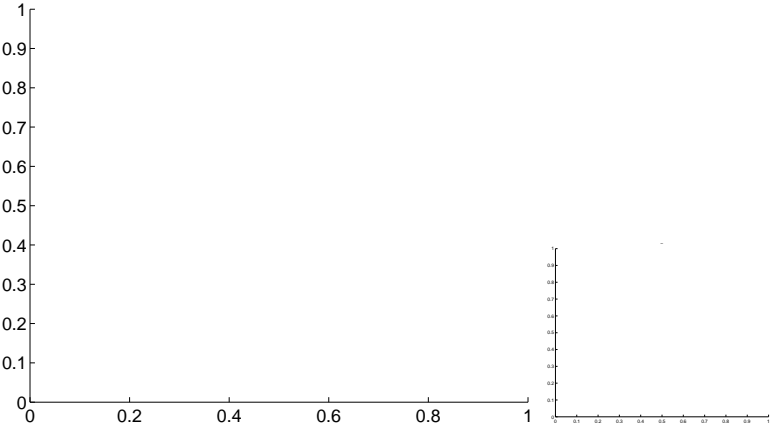
Q9 no OOT image



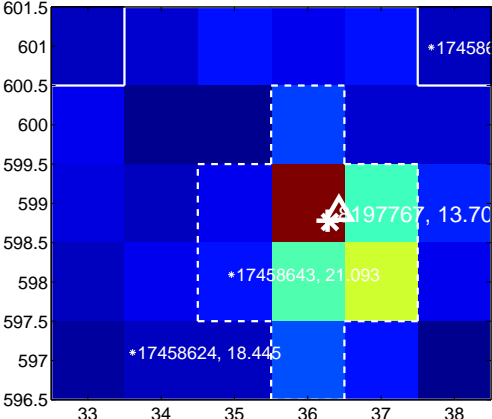
Q10 no difference image



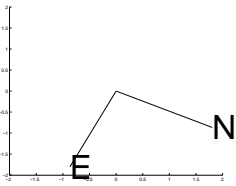
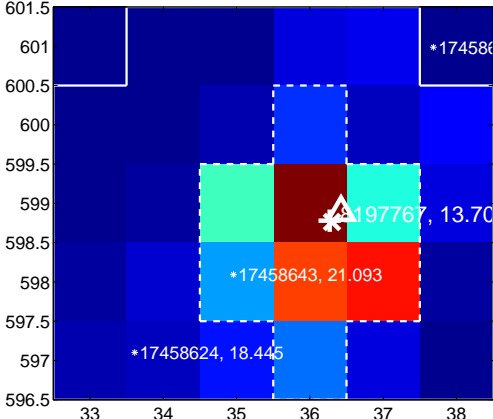
Q10 no OOT image



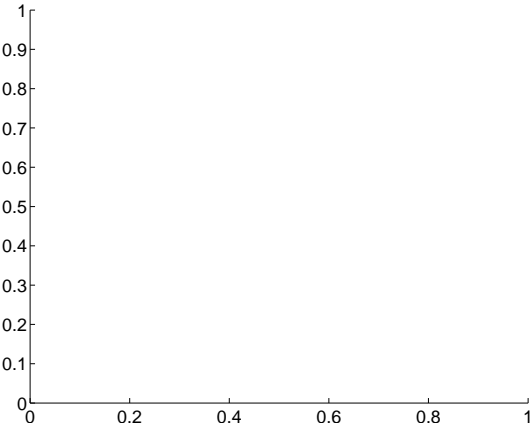
Q11 difference image



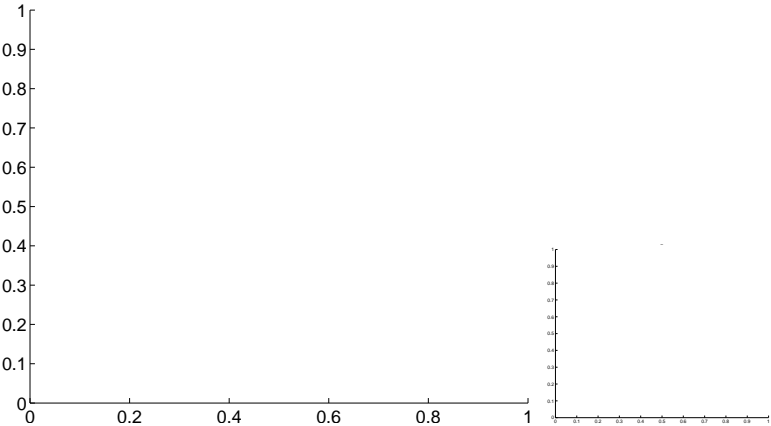
Q11 OOT image



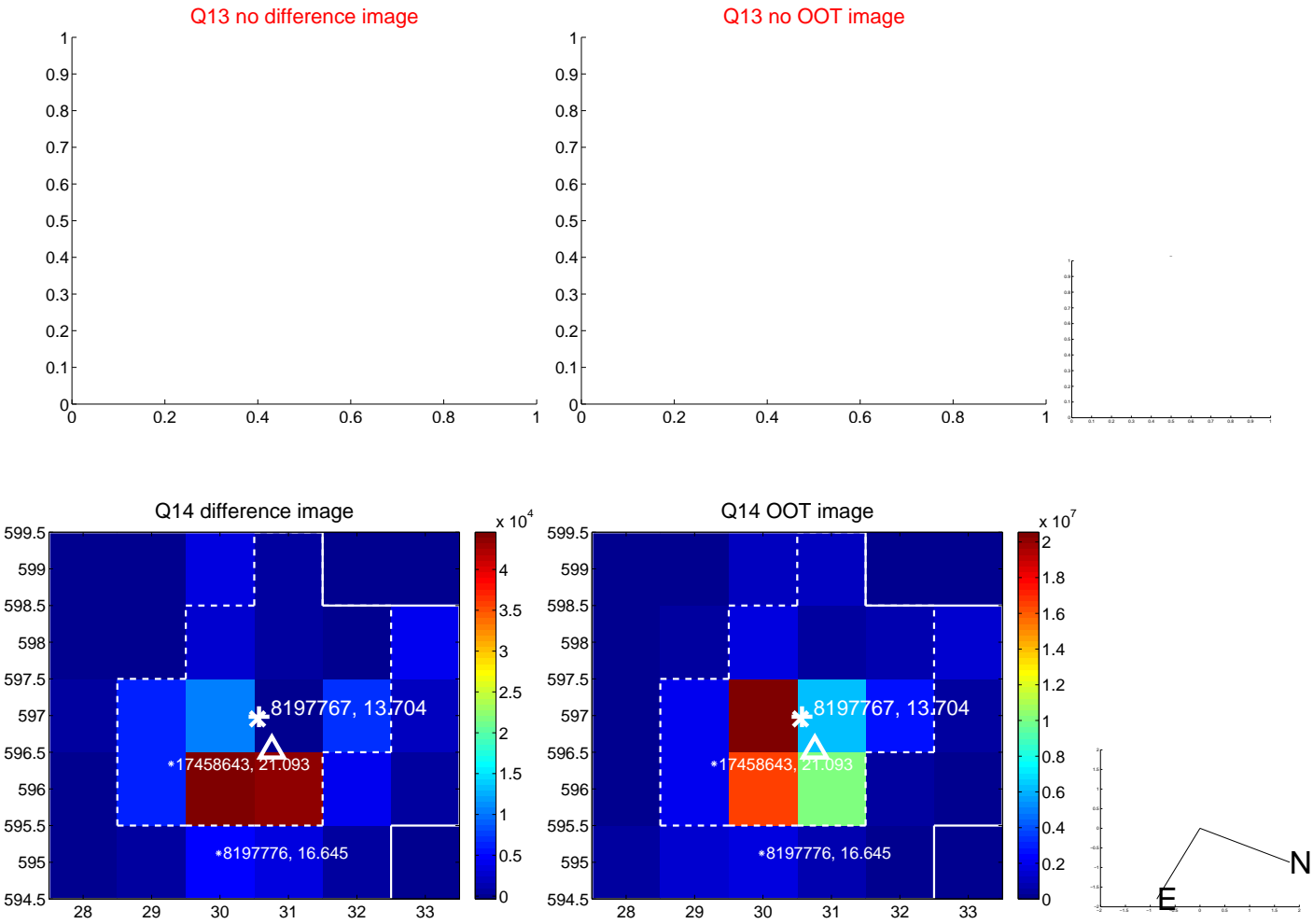
Q12 no difference image



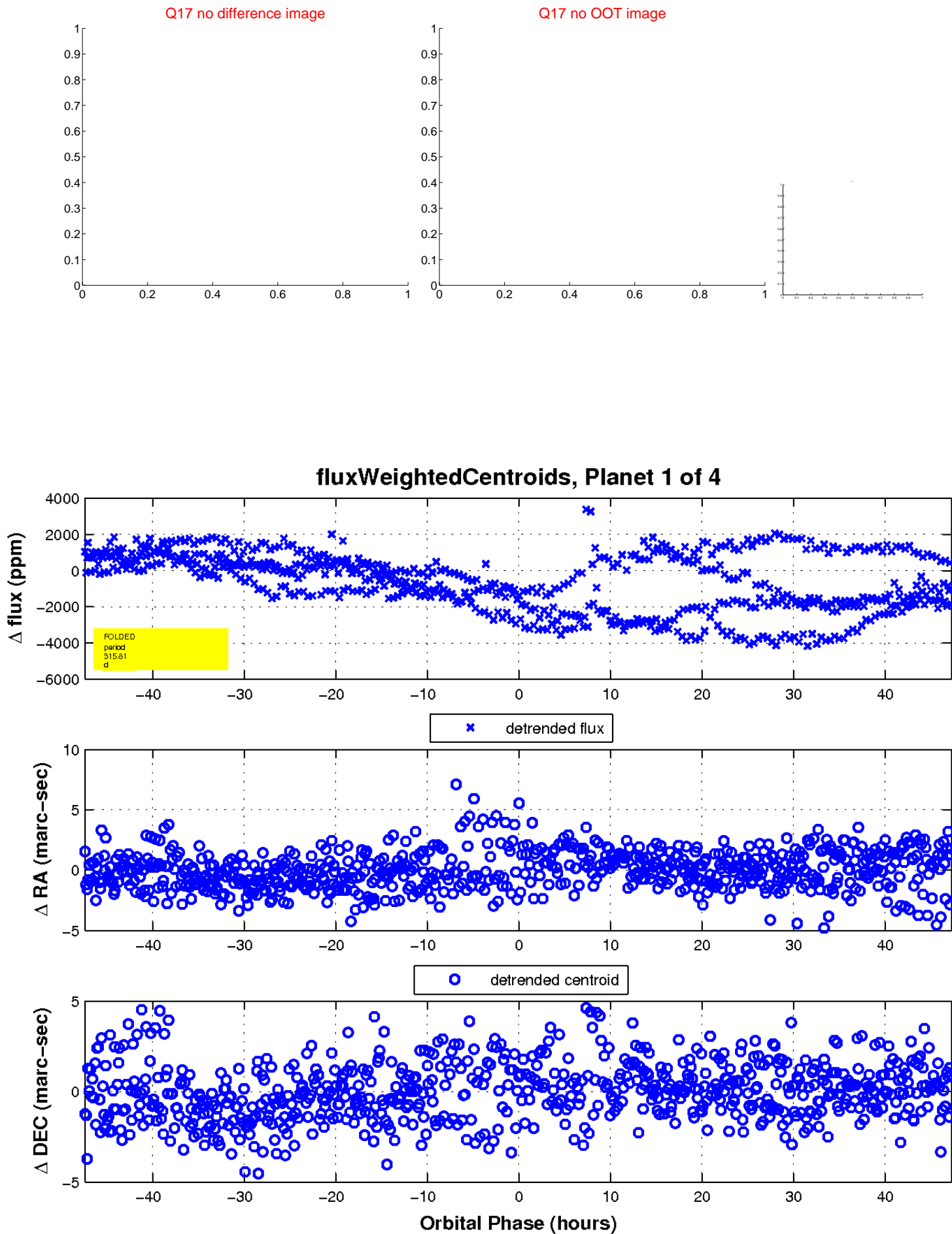
Q12 no OOT image



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

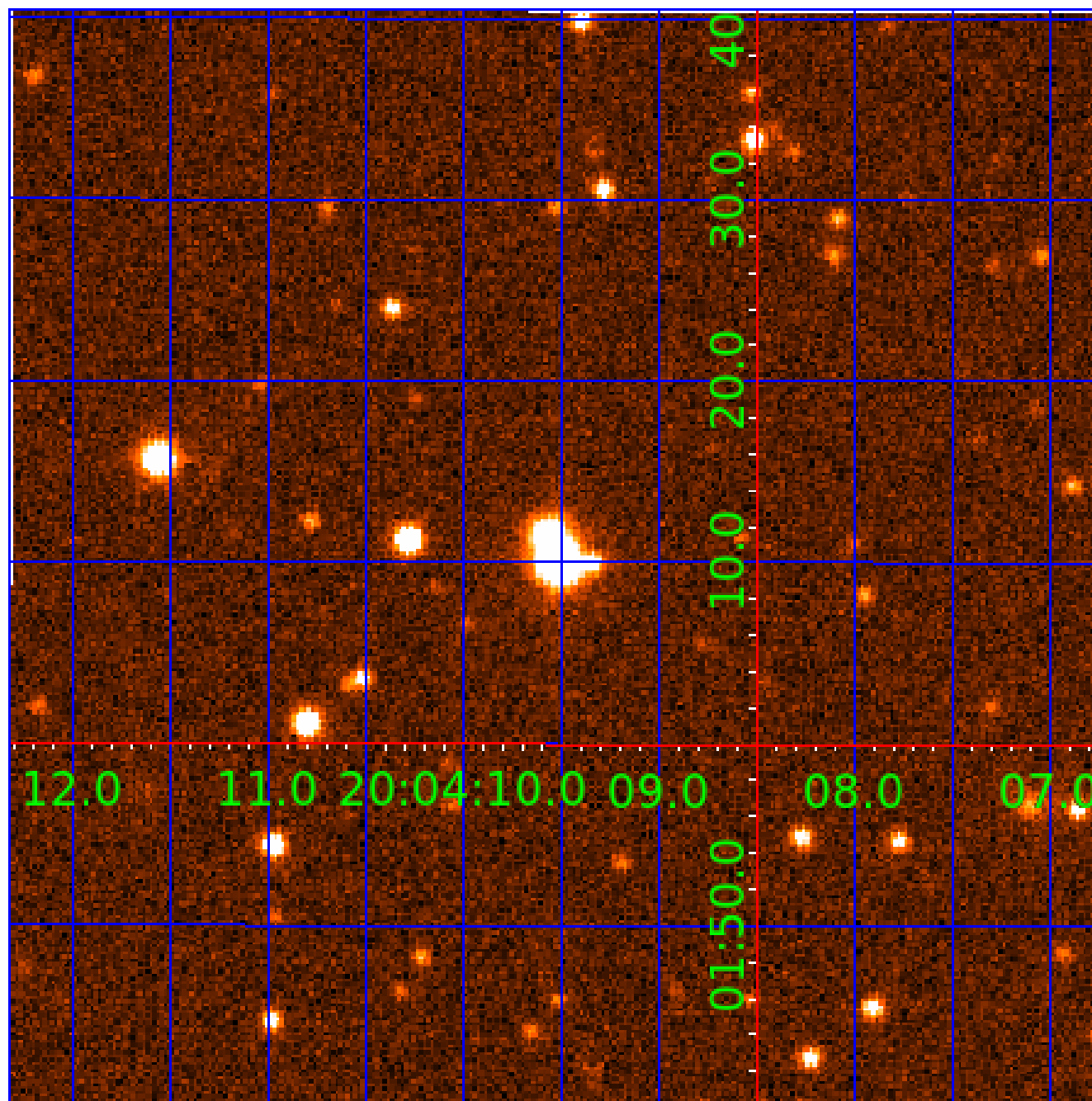


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008197767

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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008197767-03	OBS	No	194.703455	137.141116	840.4	5.647	14.7	7.9	0.65	4852	1.96	0.66
008197767-04	OBS	No	691.615926	134.720734	1712.6	16.883	9.1	8.8	0.65	4852	3.65	0.12

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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008197767-02	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_UNRESOLVED_OFFSET
008197767-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS
008197767-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

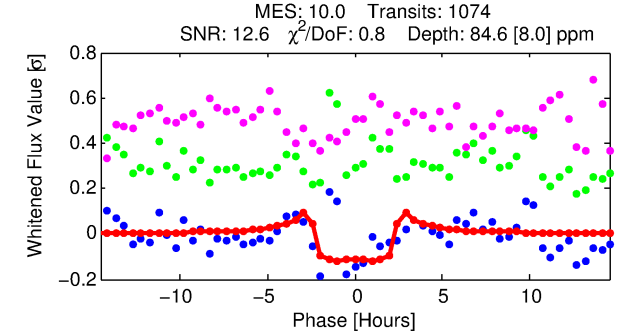
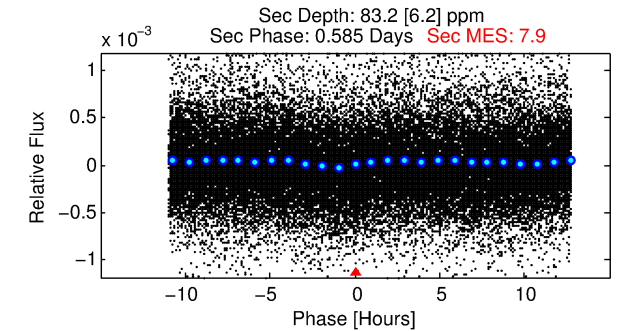
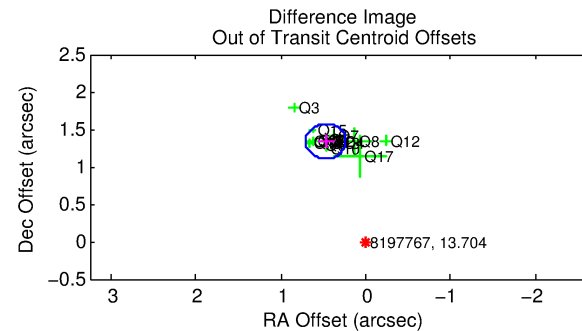
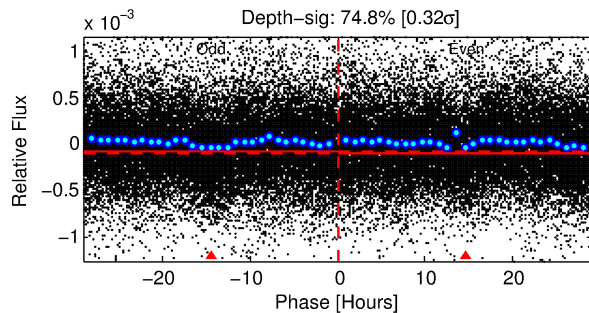
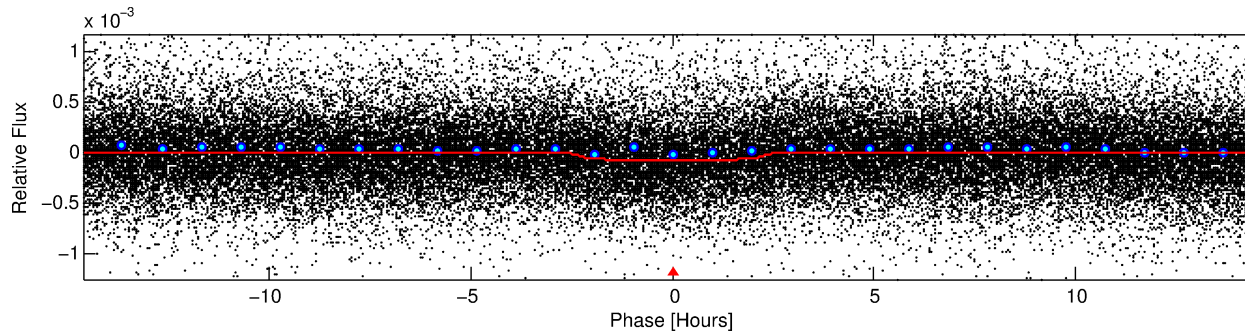
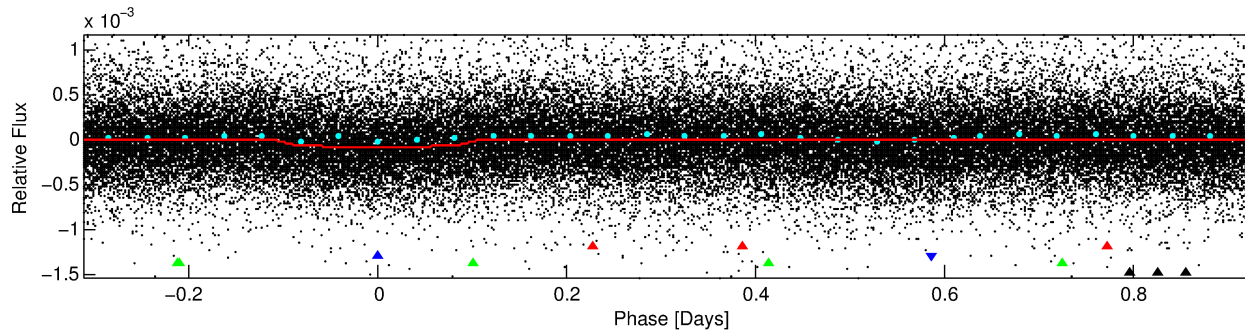
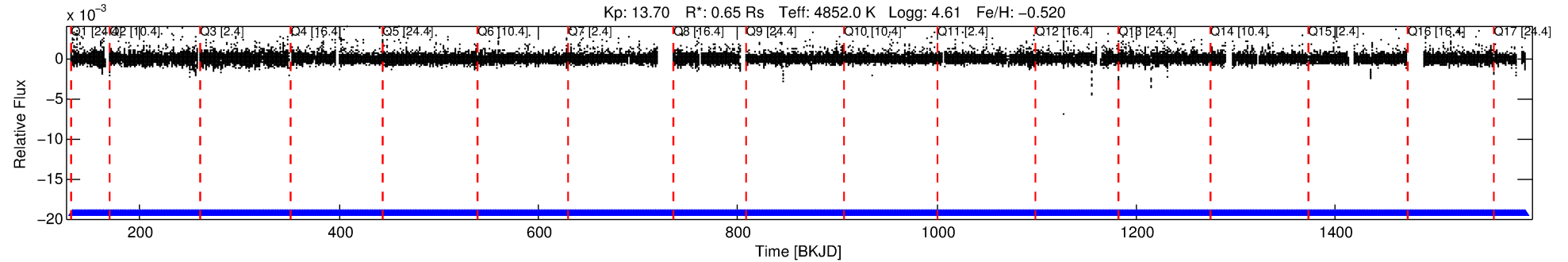
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008197767-02

No Significant Match Found

DV One-Page Summary

KIC: 8197767 Candidate: 2 of 4 Period: 1.246 d



DV Fit Results:

Period = 1.24610 [0.00001] d
Epoch = 132.6793 [0.0024] BKJD
Rp/R* = 0.0082 [0.0053]
a/R* = 2.02 [3.44]
b = 0.21 [10.26]
Seff = 554.92 [92.48]
Teq = 1238 [52] K
Rp = 0.58 [0.38] Re
a = 0.0195 [0.0015] AU
Ag = 50.90 [66.24] [0.75σ]
Teffp = 5111 [1663] K [2.33σ]

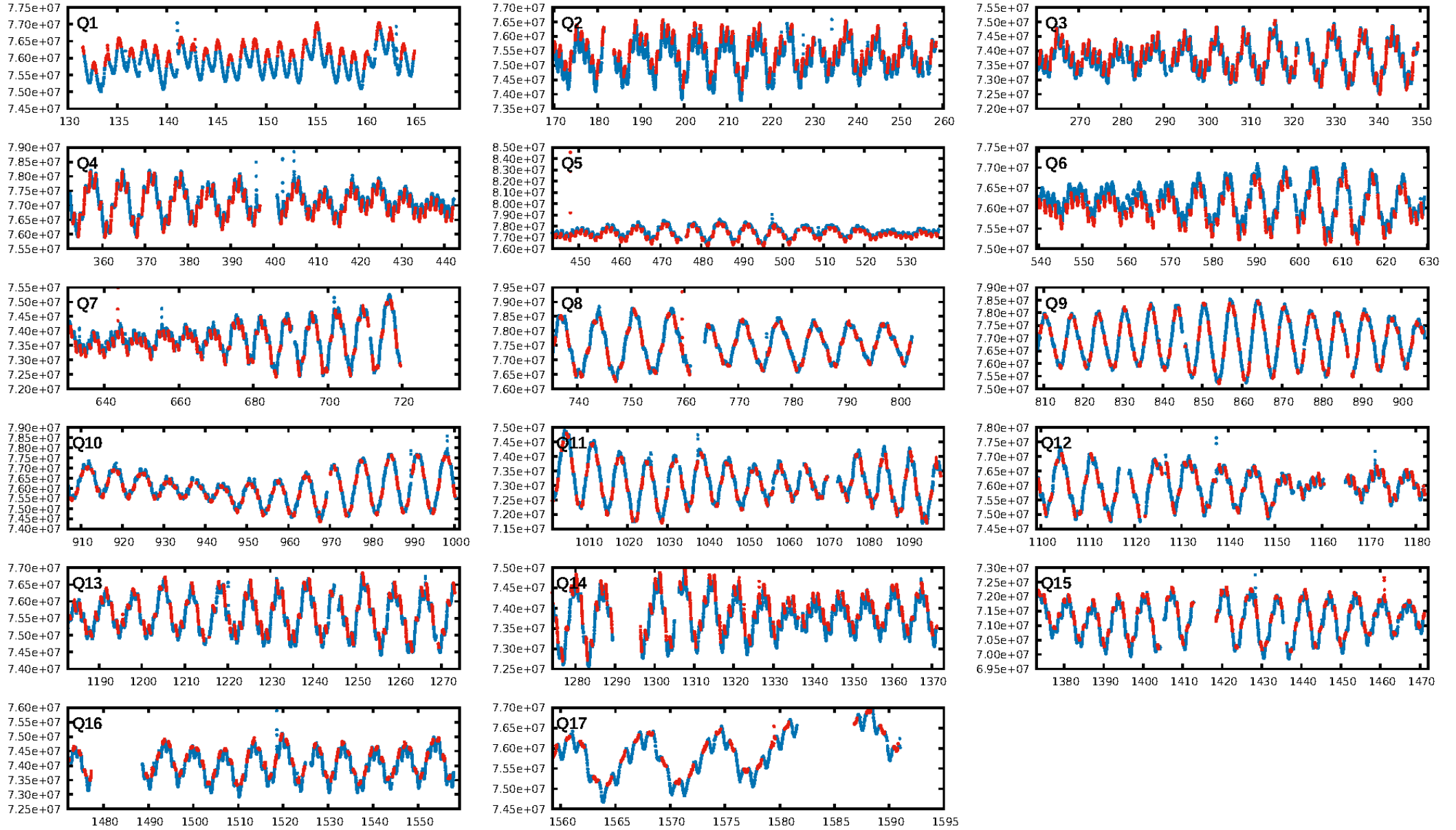
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [622.52σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.52e-15
RollingBand-fgt: 1.00 [1024/1024]
GhostDiagnostic-chr: -1.625
Centroid-sig: N/A
Centroid-so: 1.729 arcsec [3.06σ]
OotOffset-rm: 1.419 arcsec [18.14σ]
KicOffset-rm: 1.315 arcsec [16.97σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.53 [9/17]
DiffImageOverlap-fno: 1.00 [17/17]

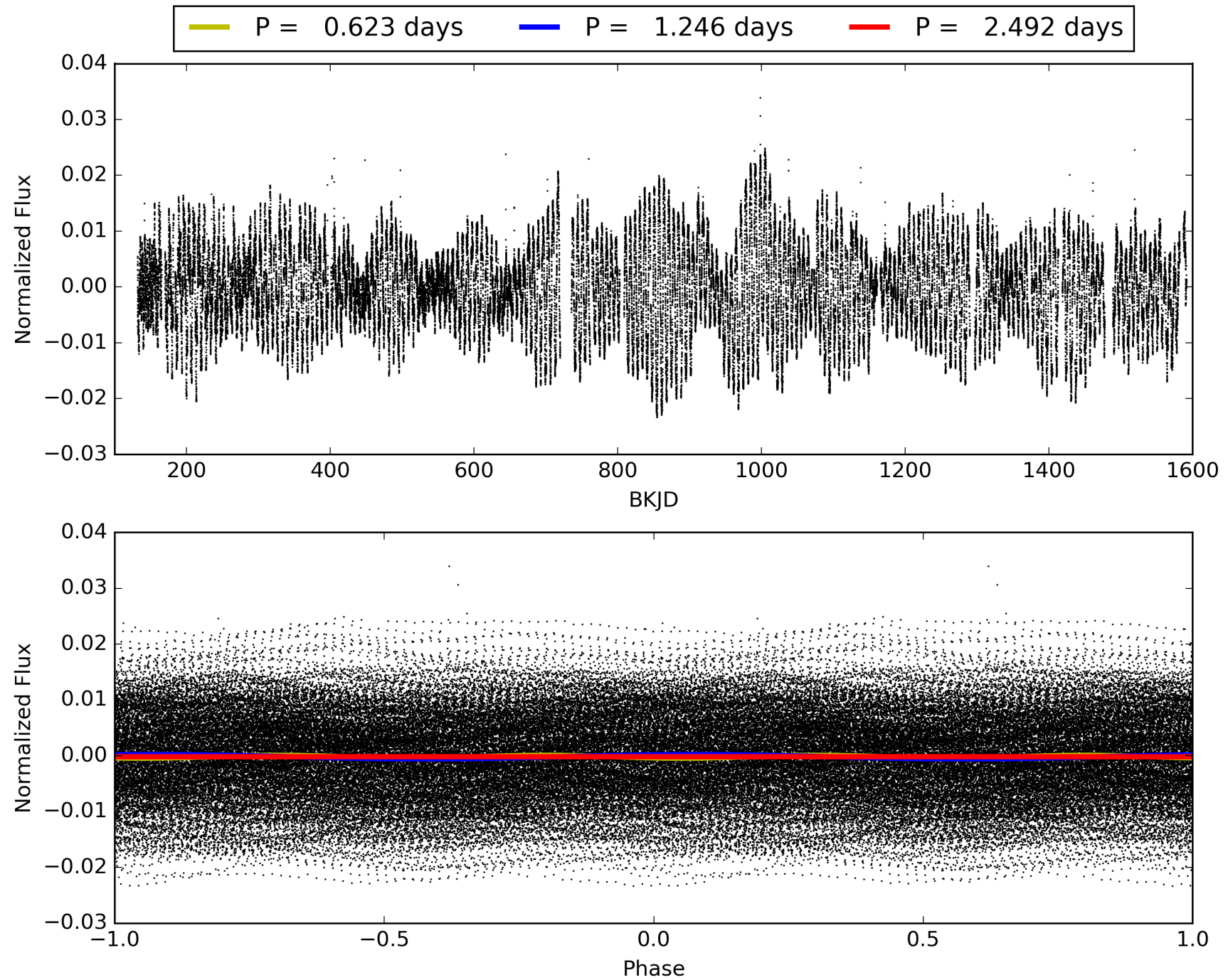
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:11:13 Z

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

TCE 008197767-02, PDC Light Curves

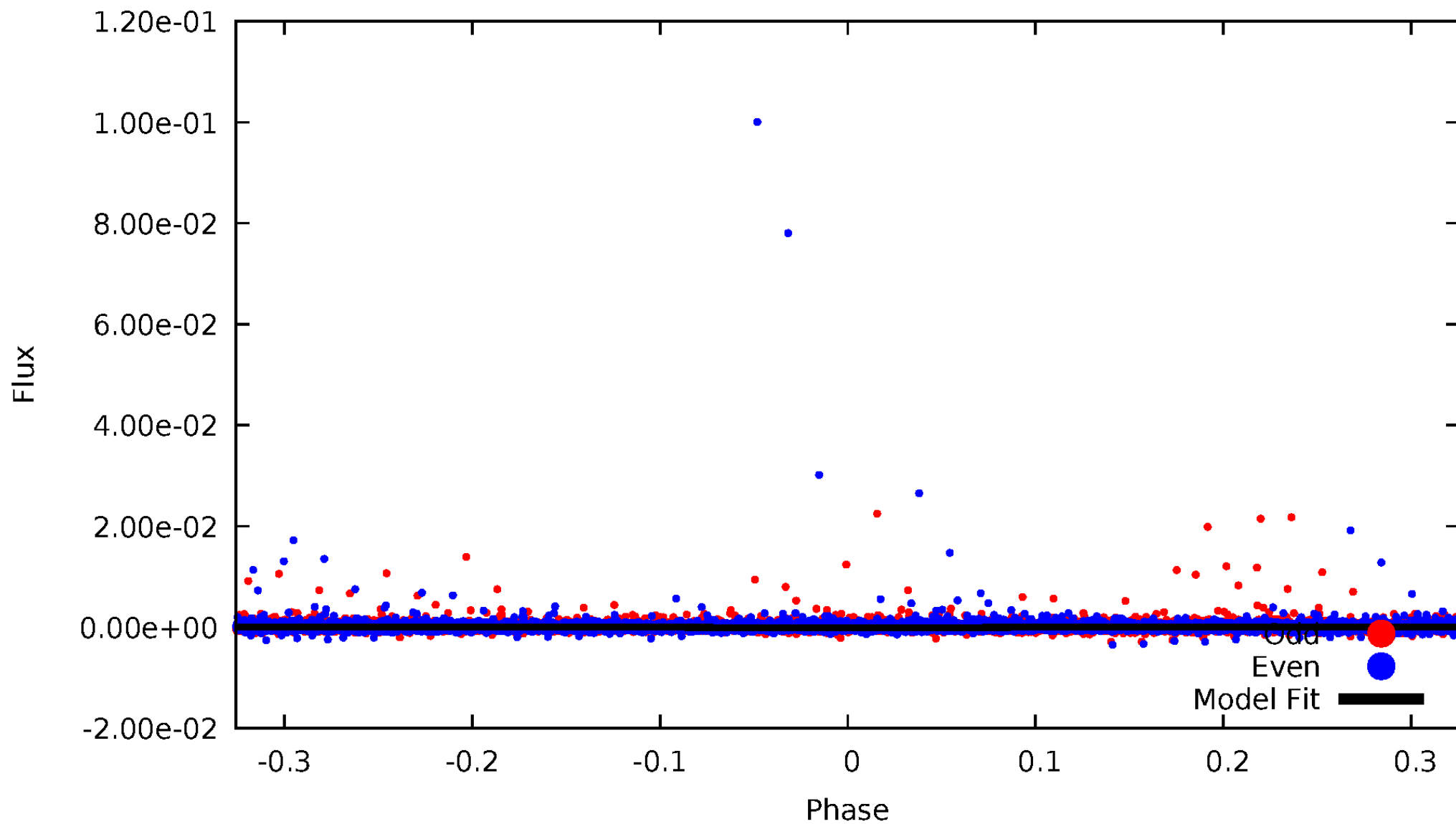


TCE 008197767-02



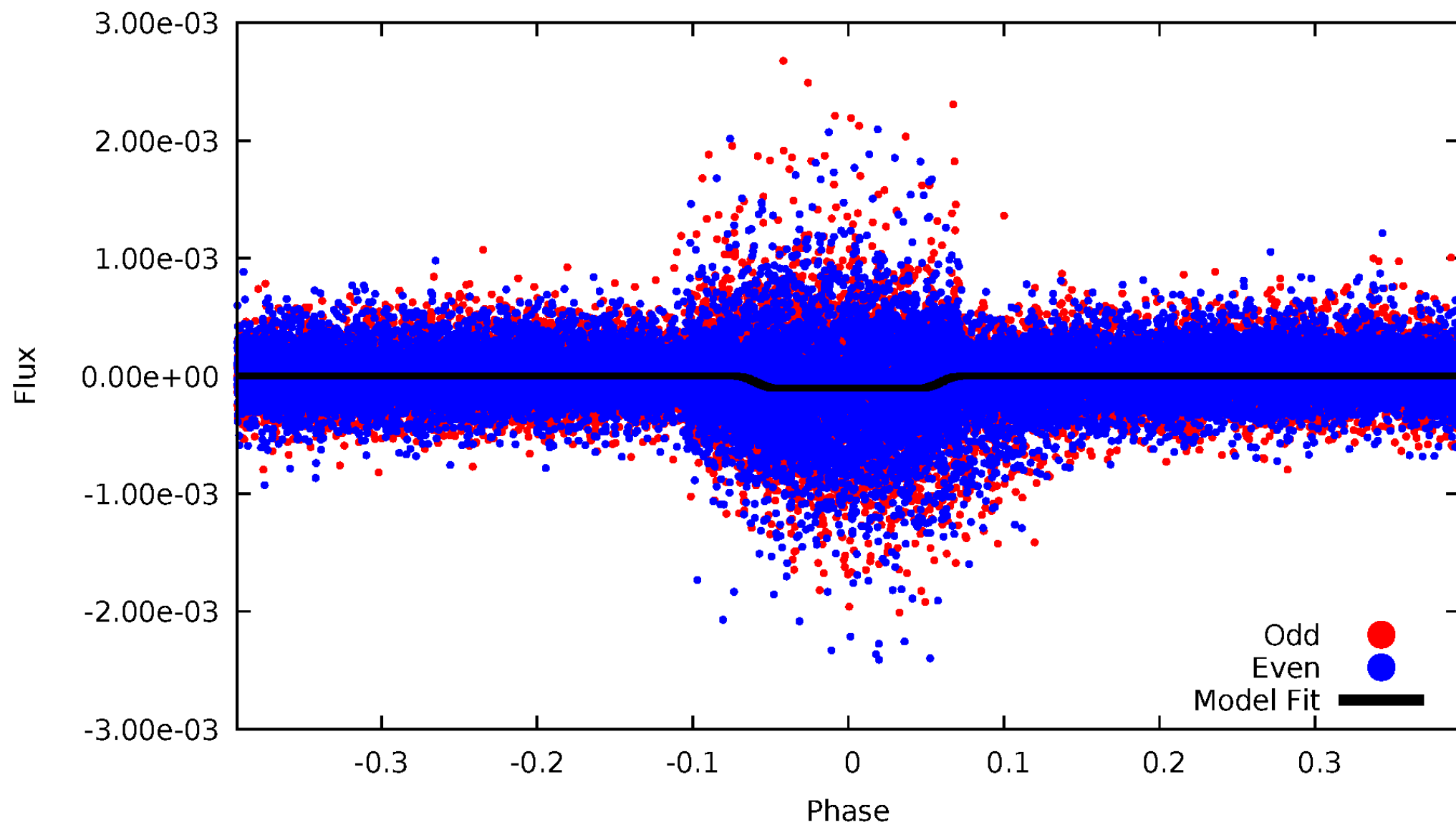
DV Odd/Even

TCE 008197767-02



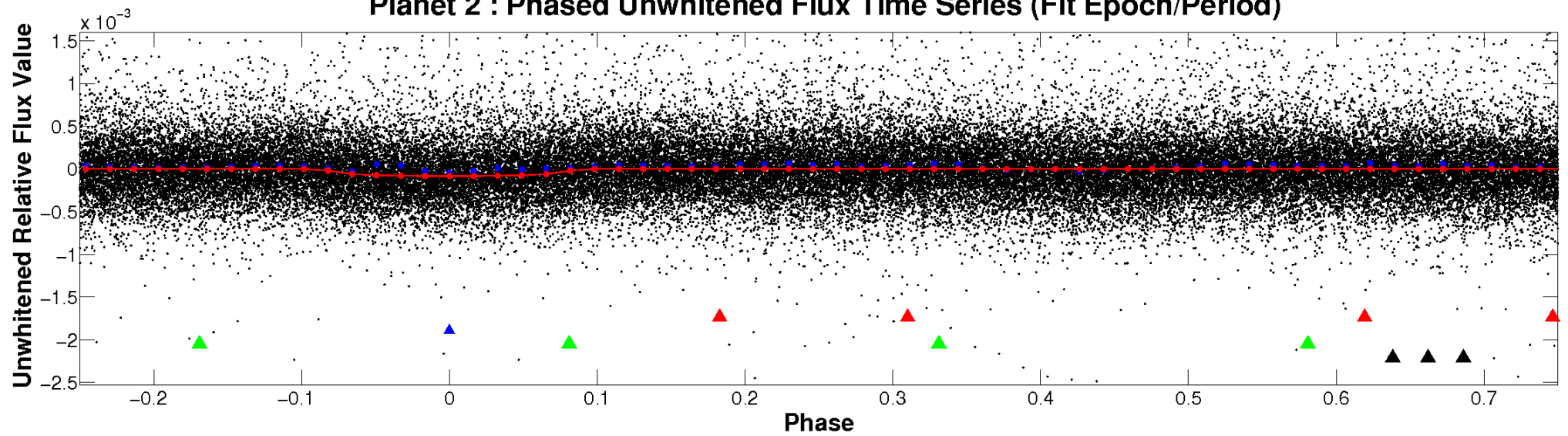
ALT Odd/Even

TCE 008197767-02

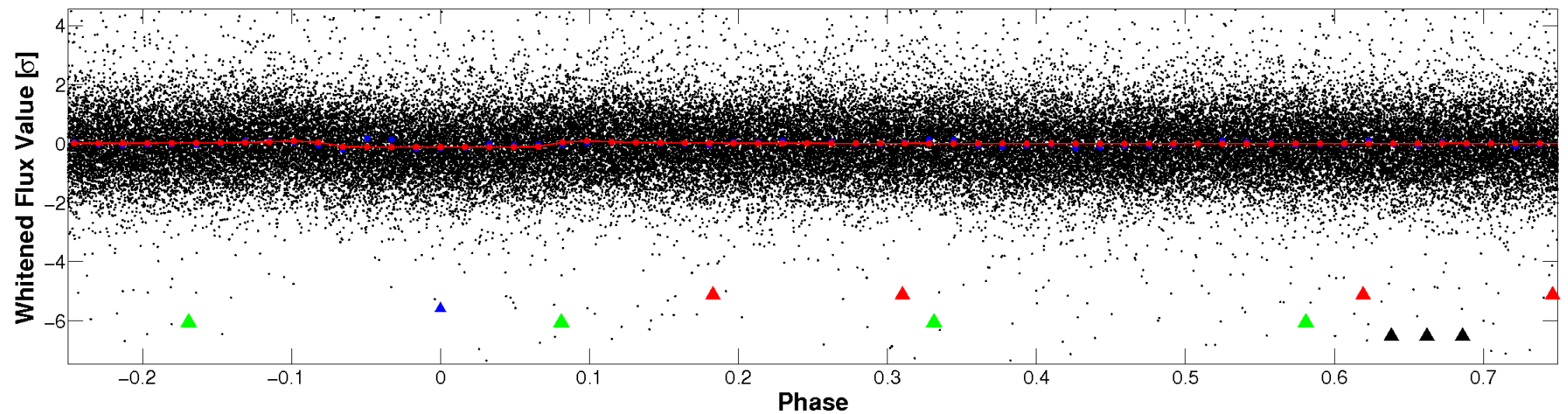


Non-Whitened Vs. Whitened Light Curve

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

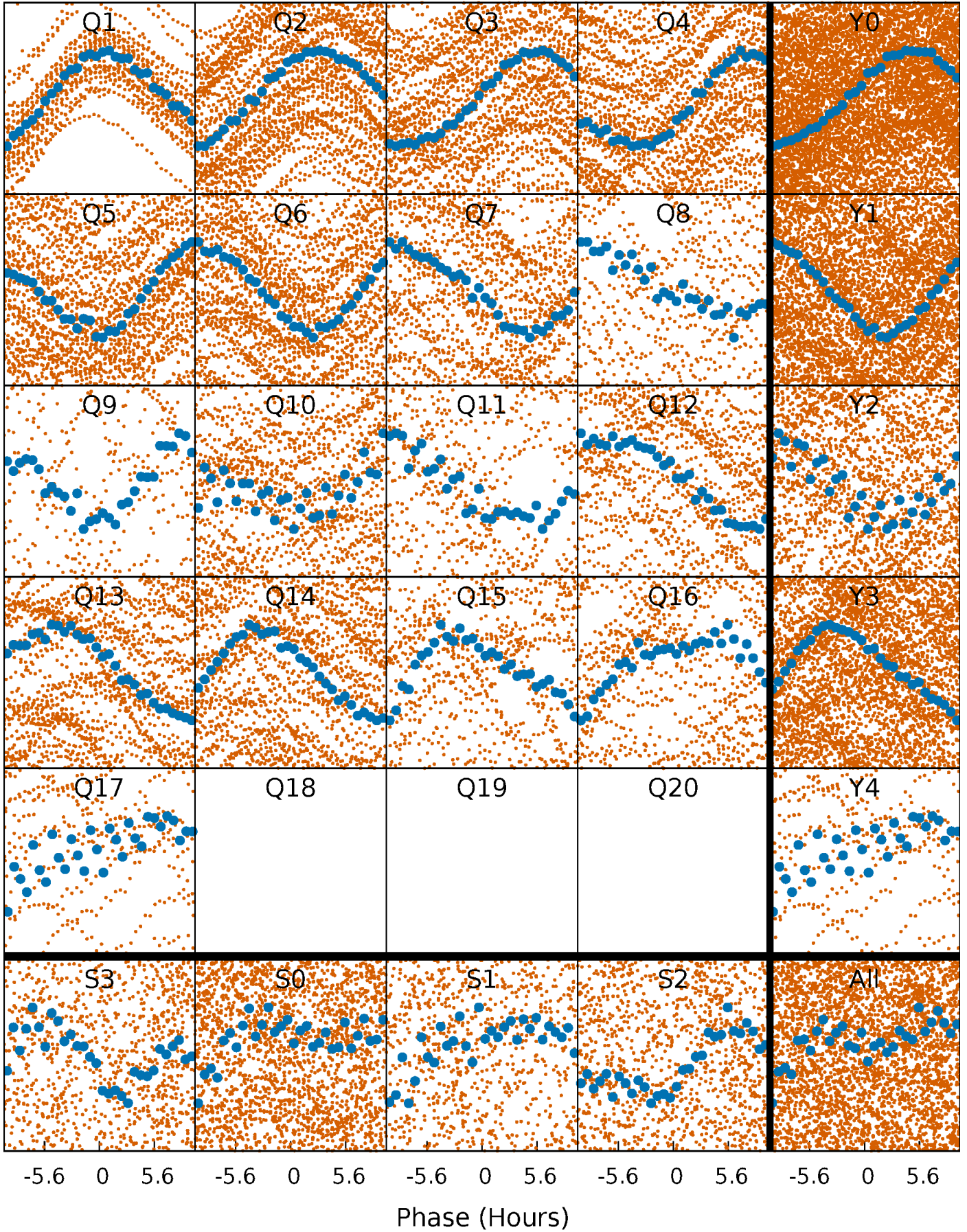


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



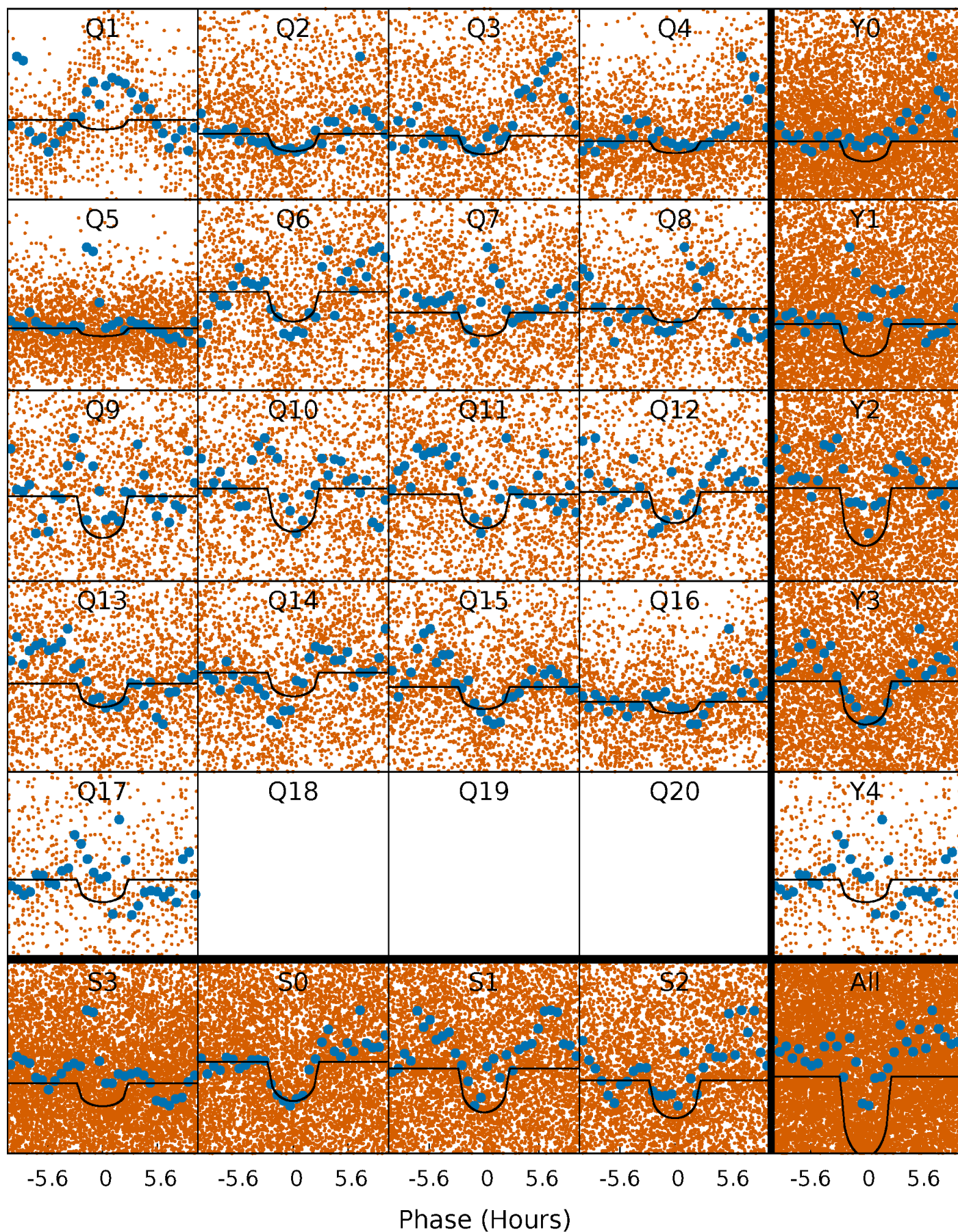
PDC Quarter-Phased Transit Curves

TCE 008197767-02 P= 1.246101 Days $T_0=132.679275$ (BKJD)



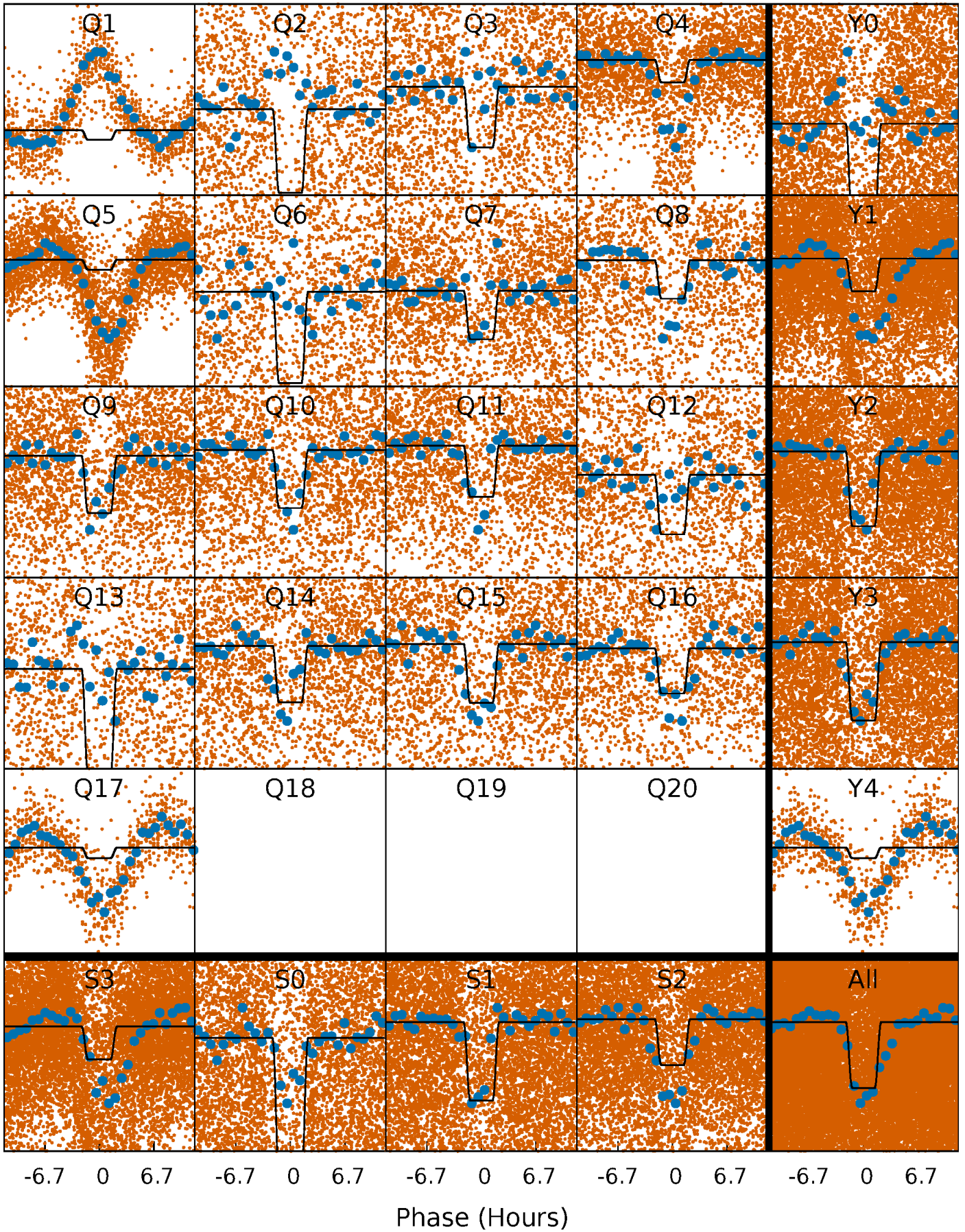
DV Quarter-Phased Transit Curves

TCE 008197767-02 P= 1.246101 Days $T_0=132.679275$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

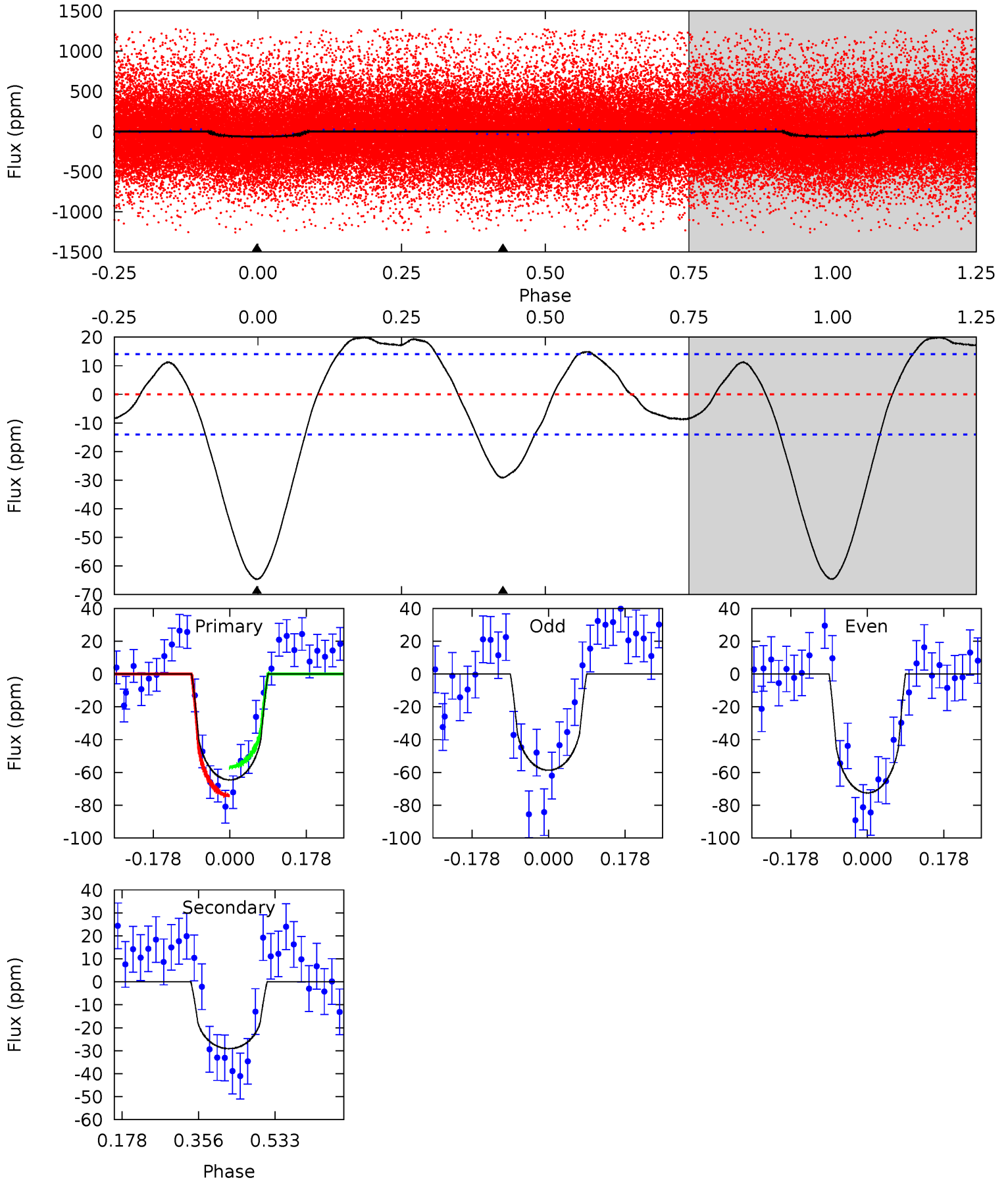
TCE 008197767-02 P= 1.246153 Days $T_0=132.635447$ (BKJD)



DV Model-Shift Uniqueness Test

008197767-02, P = 1.246101 Days, E = 131.433174 Days

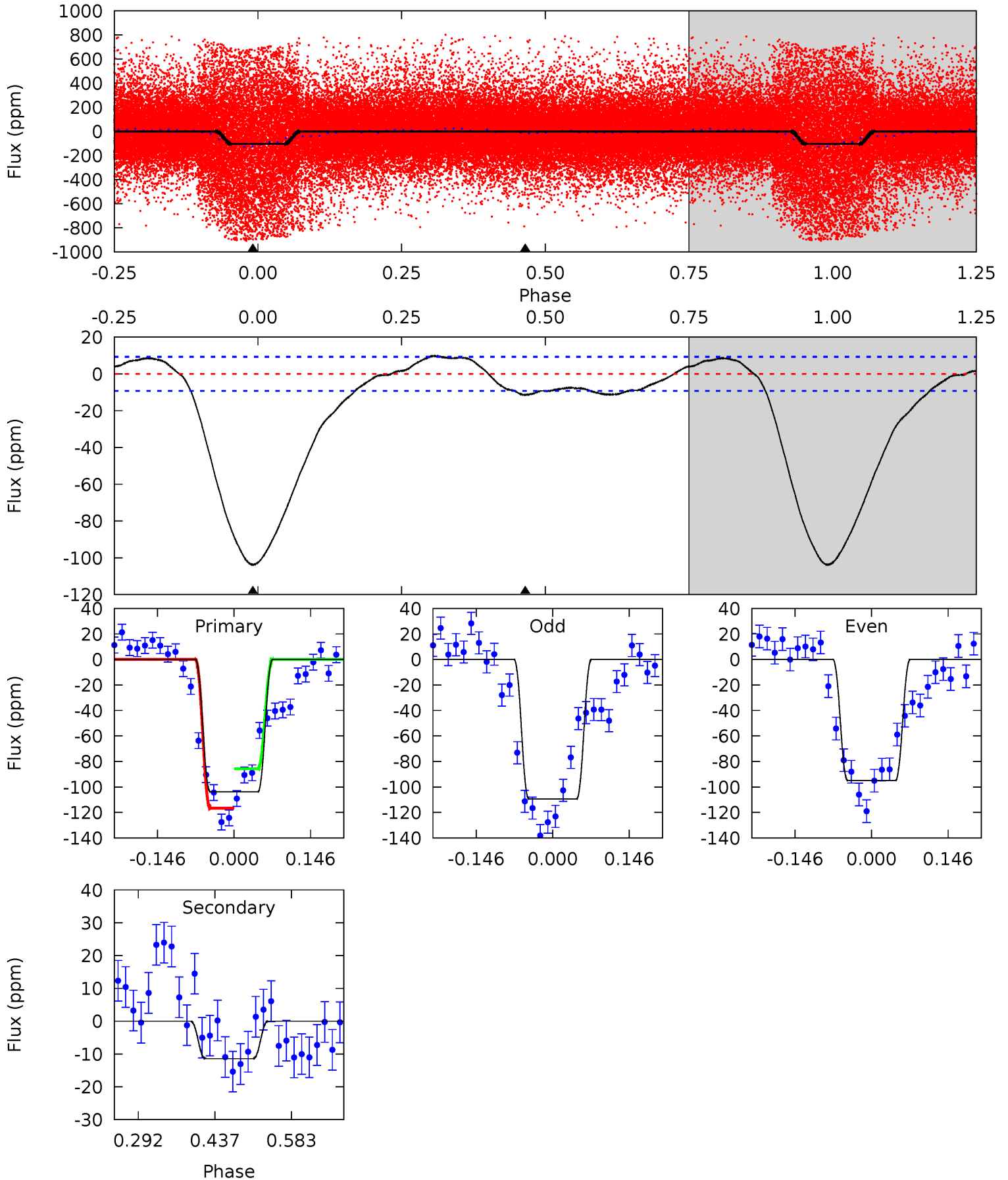
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.4	9.20	0	0	4.44	1.35	3.27	20.4	20.4	9.20	9.20	2.20	-0.04	0.24	2.78



Alt Model-Shift Uniqueness Test

008197767-02, P = 1.246153 Days, E = 131.389294 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.3	5.54	0	0	4.49	1.45	3.60	50.3	50.3	5.54	5.54	3.52	1.30	0.09	7.50



Stellar Parameters For KIC 008197767

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4852^{+145}_{-131}	$4.613^{+0.065}_{-0.035}$	$-0.520^{+0.300}_{-0.300}$	$0.651^{+0.058}_{-0.058}$	$0.634^{+0.084}_{-0.036}$	$3.238^{+0.852}_{-0.467}$
	+3%/-3%	+1%/-1%	+58%/-58%	+9%/-9%	+13%/-6%	+26%/-14%
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 008197767-02 / KOI 7871.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-29 ± 3	$0.61^{+0.35}_{-0.35}$	1721^{+60}_{-57}	4051^{+1662}_{-596}	17^{+77}_{-10}
Alt.	-11 ± 2	$0.72^{+0.36}_{-0.34}$	1722^{+58}_{-61}	3276^{+768}_{-423}	$4.867^{+11.554}_{-2.829}$

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

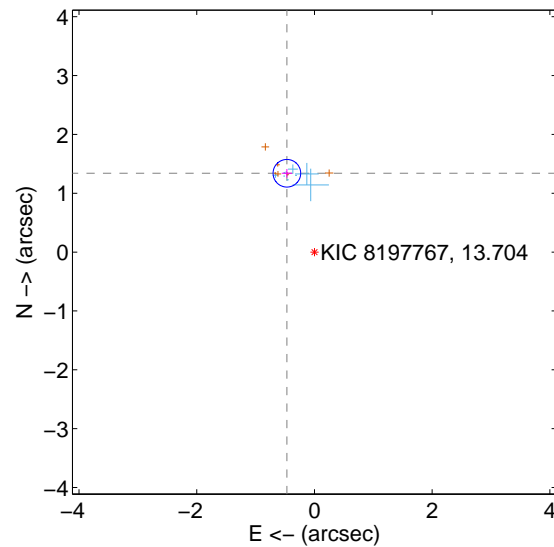
Supplemental centroid analysis for 008197767-02. Kepler magnitude: 13.70. Transit SNR 12.60

There are 9 quarters with good PRF difference image offsets

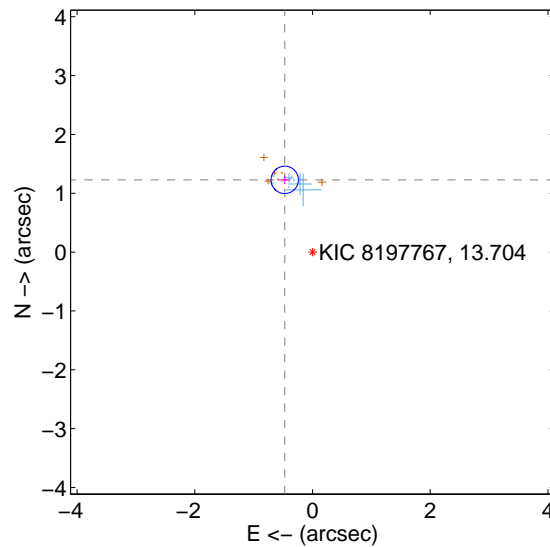
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.419 ± 0.078	18.14	0.468 ± 0.088	1.339 ± 0.073
PRF-fit source offset from KIC position	1.315 ± 0.077	16.97	0.472 ± 0.086	1.227 ± 0.072
photometric centroid source offset	1.73 ± 0.57	3.06	1.38 ± 0.55	1.04 ± 0.59

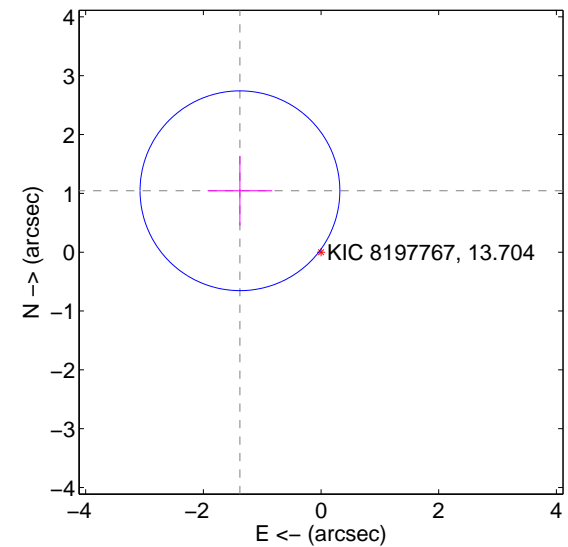
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

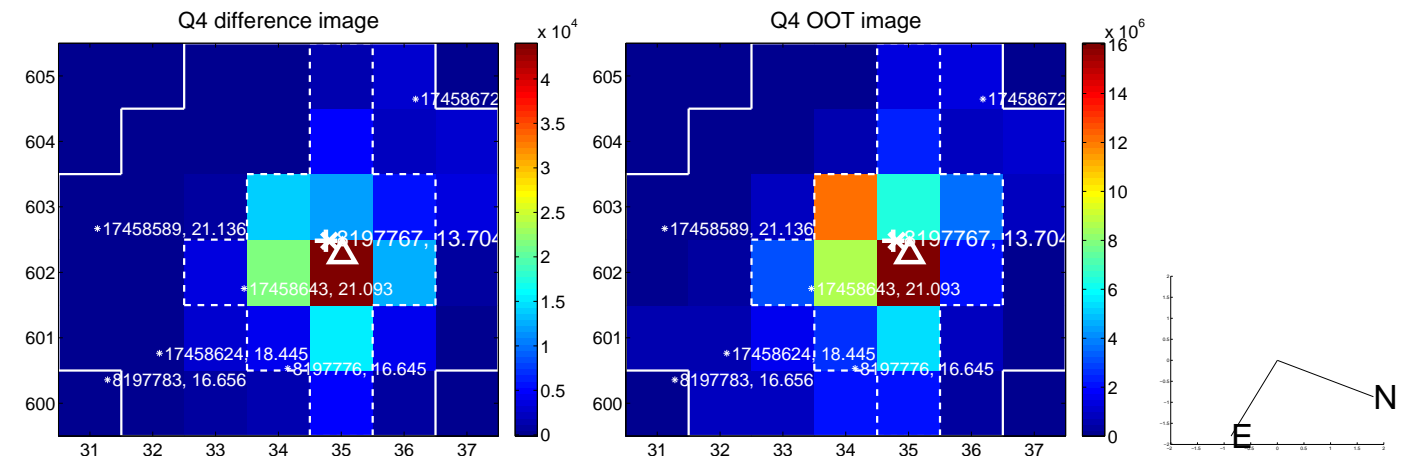
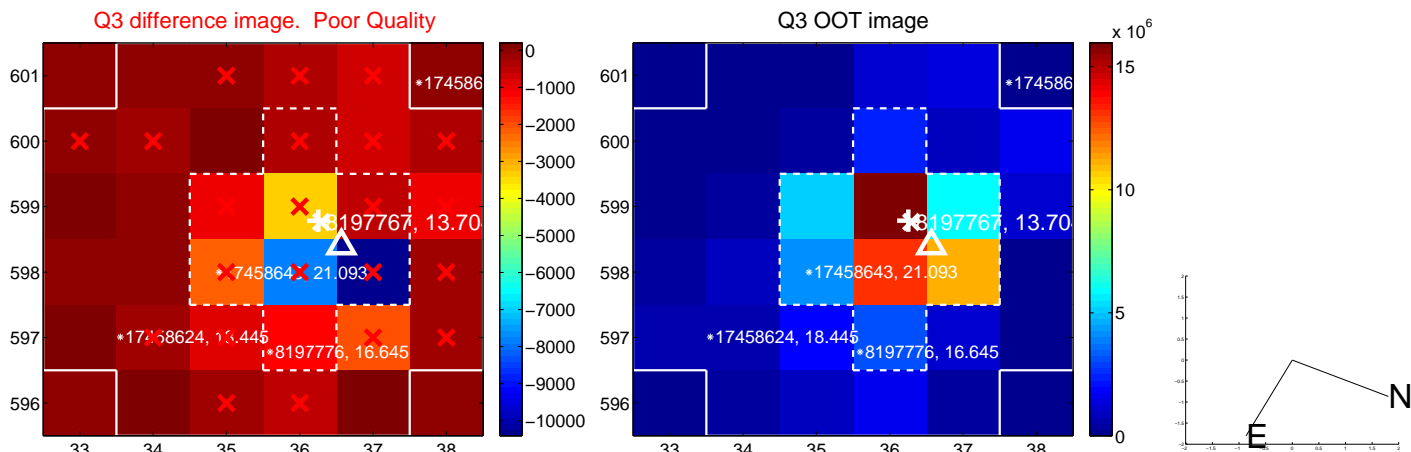
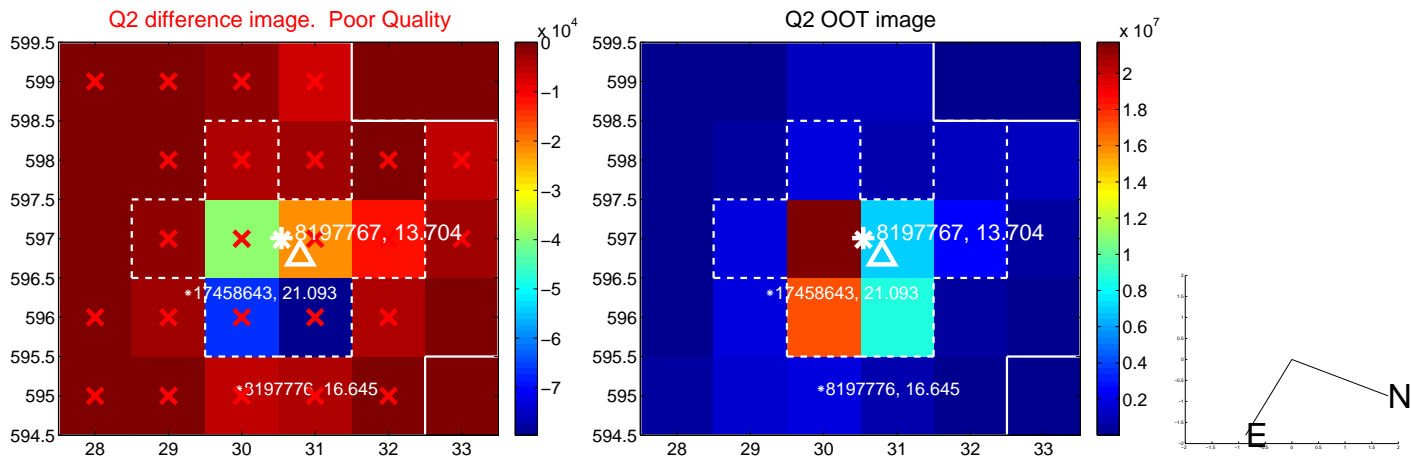
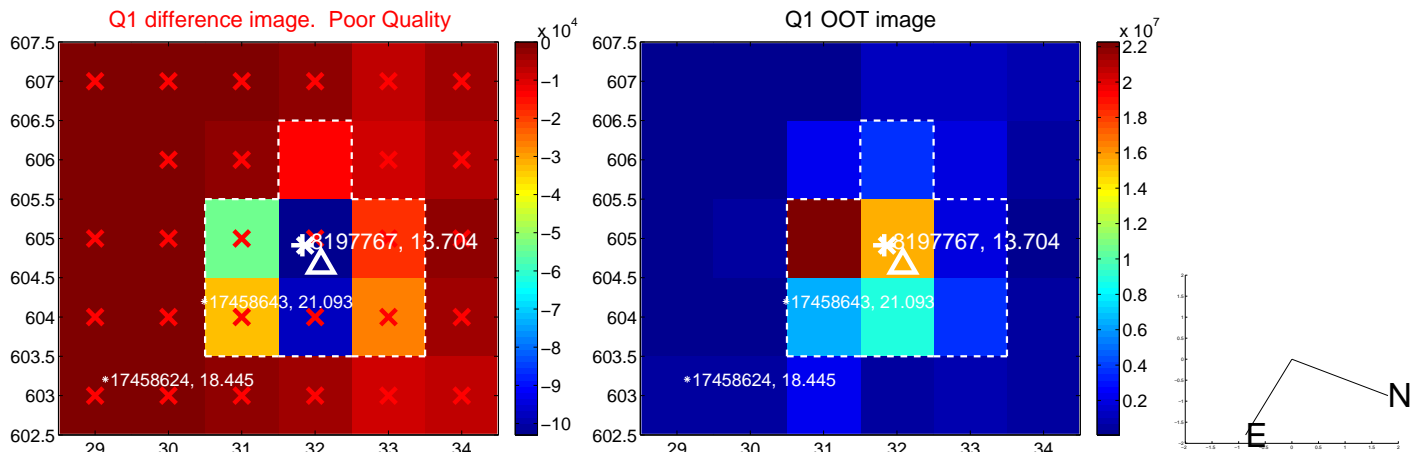


offset from photometric centroids

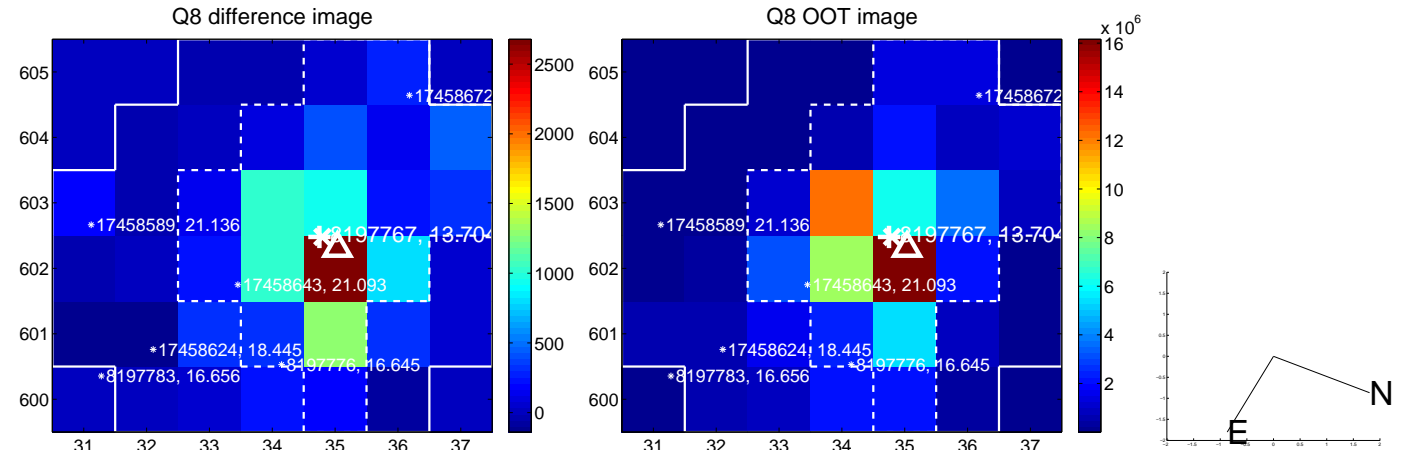
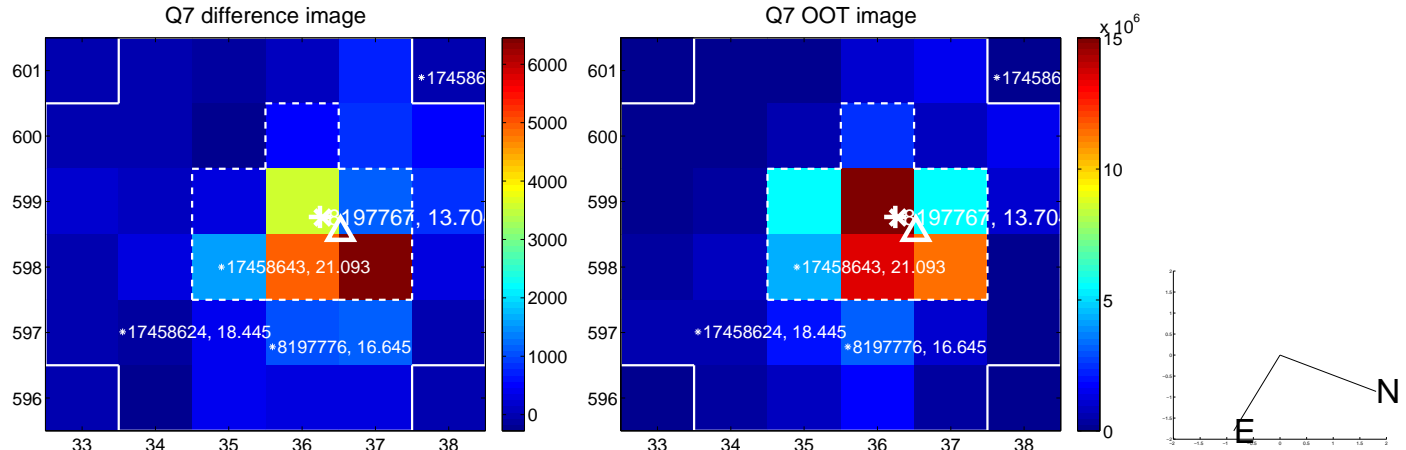
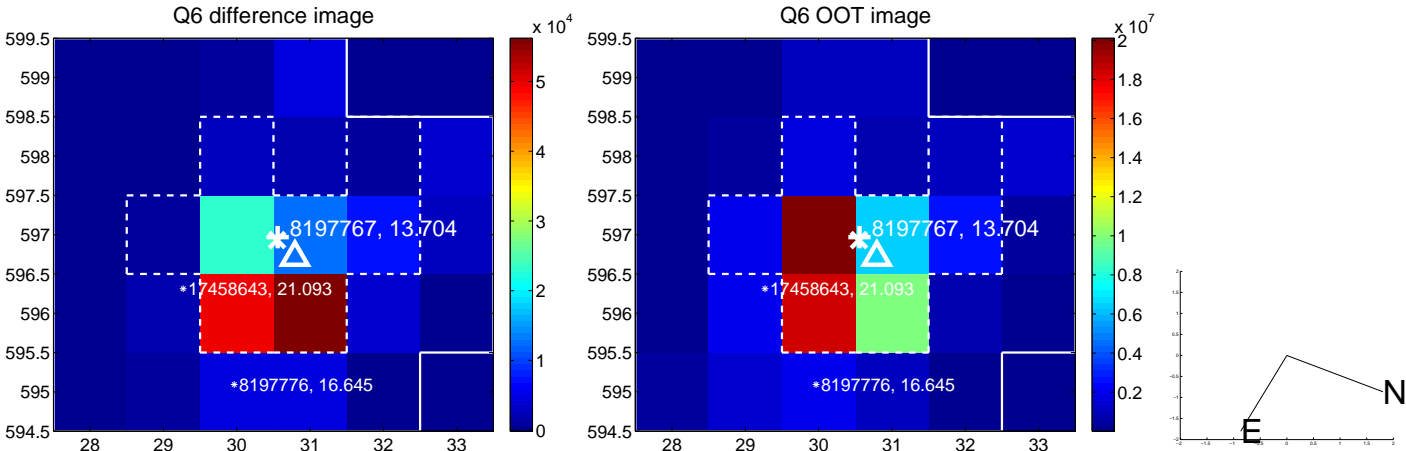
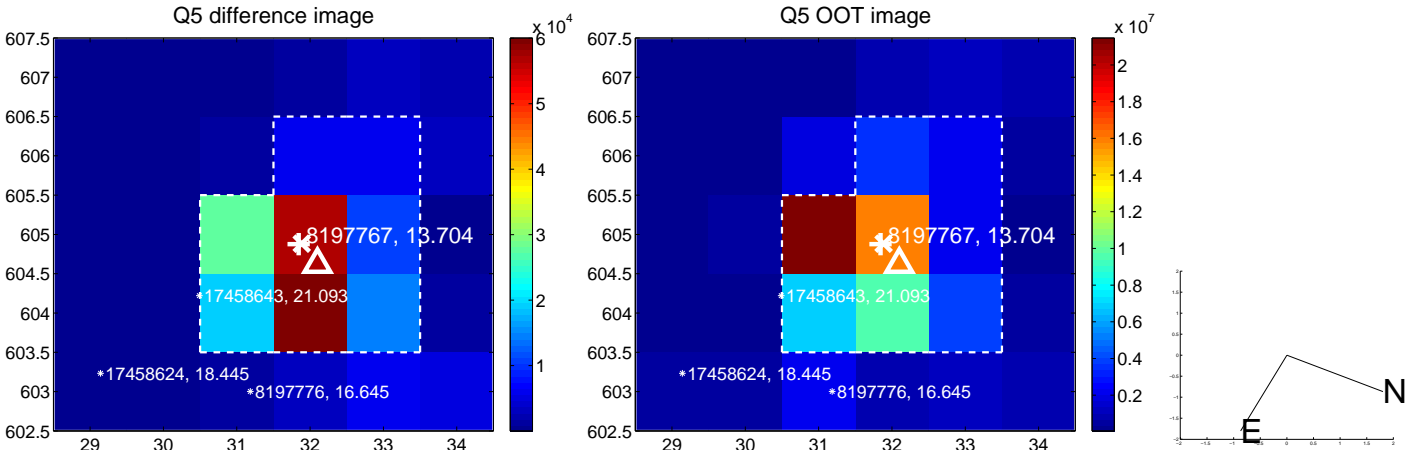


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

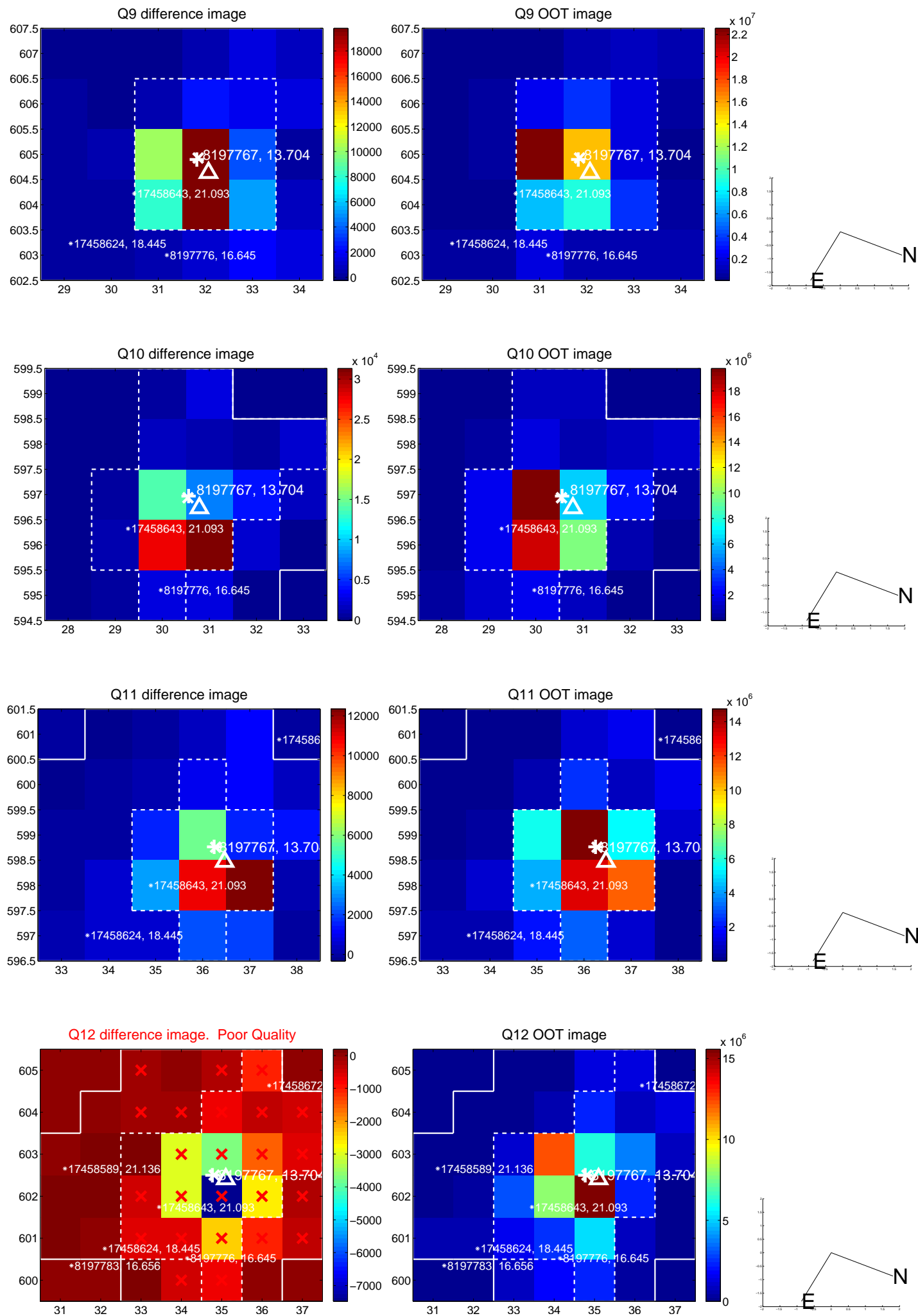
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



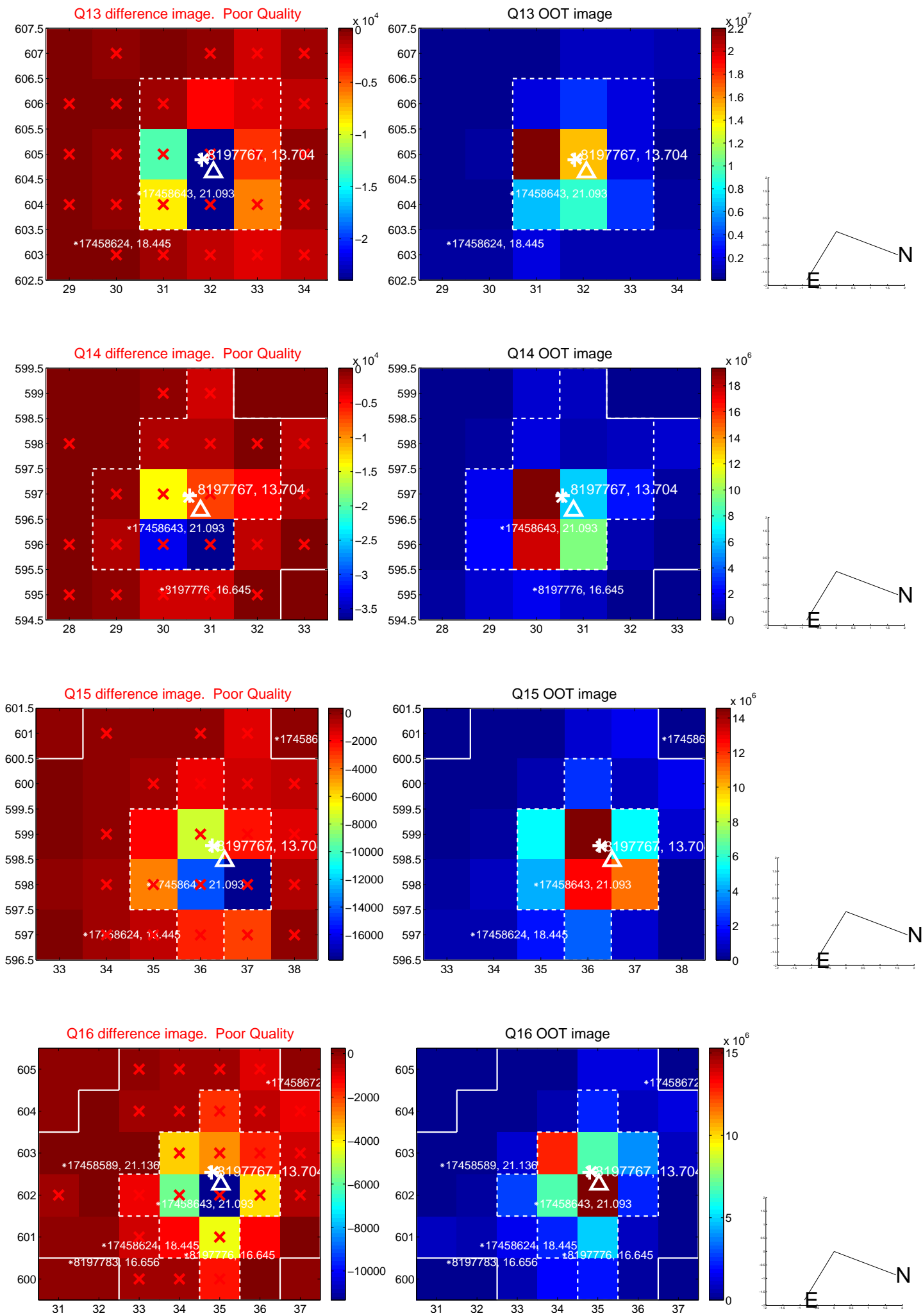
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



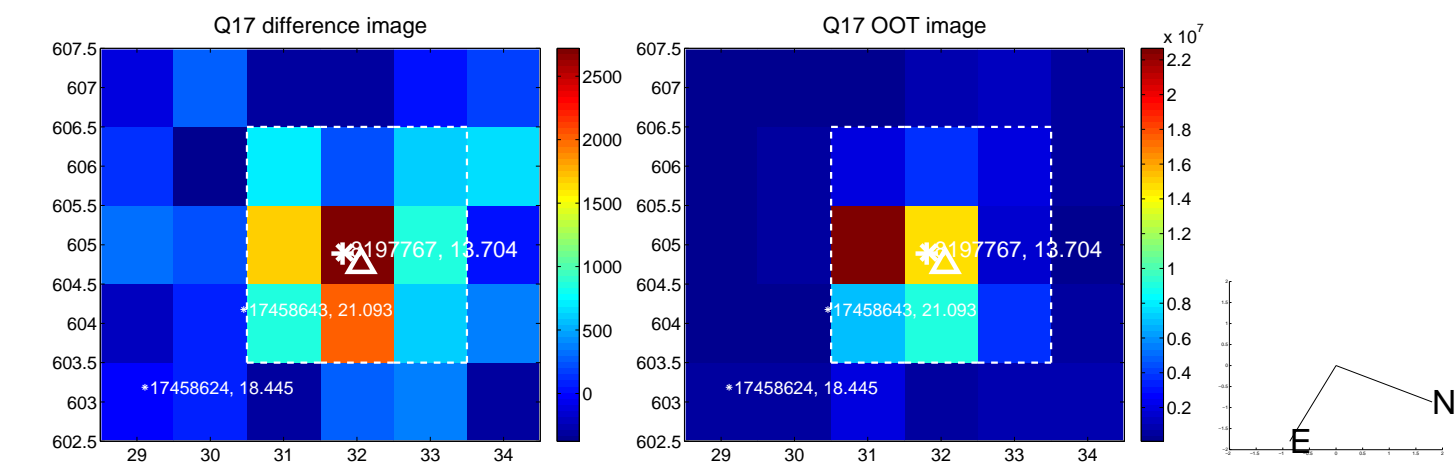
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



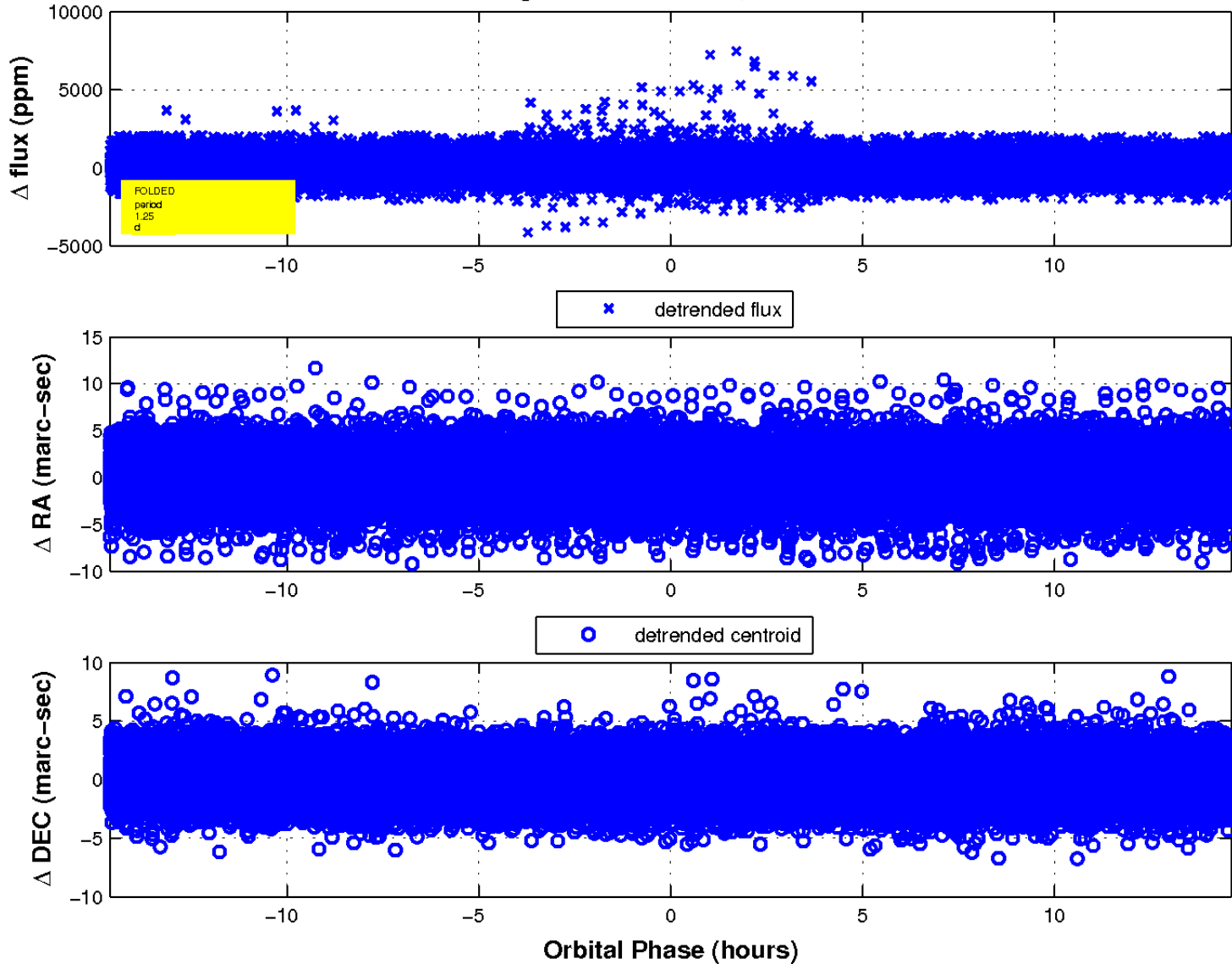
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

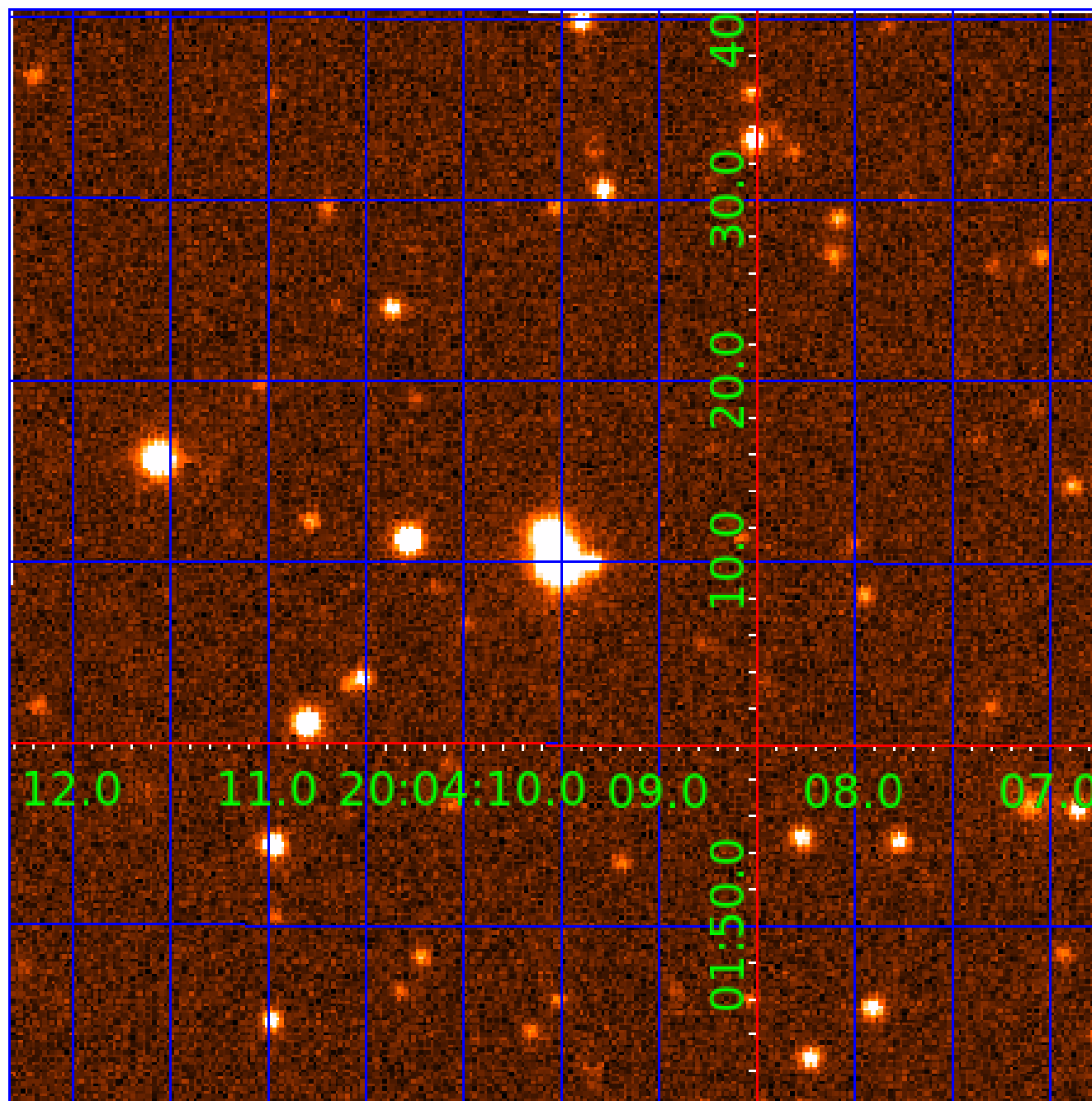


fluxWeightedCentroids, Planet 2 of 4



UKIRT Image

Declination



KIC 008197767

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})
008197767-01	OBS	No	315.807386	374.809321	878.8	15.794	10.4	5.4	0.65	4852	2.02	0.35
008197767-02	OBS	7871.01	1.246101	132.679276	84.6	4.872	10.0	12.6	0.65	4852	0.58	554.92
008197767-03	OBS	No	194.703455	137.141116	840.4	5.647	14.7	7.9	0.65	4852	1.96	0.66
008197767-04	OBS	No	691.615926	134.720734	1712.6	16.883	9.1	8.8	0.65	4852	3.65	0.12

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008197767-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008197767-02	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_UNRESOLVED_OFFSET
008197767-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS
008197767-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

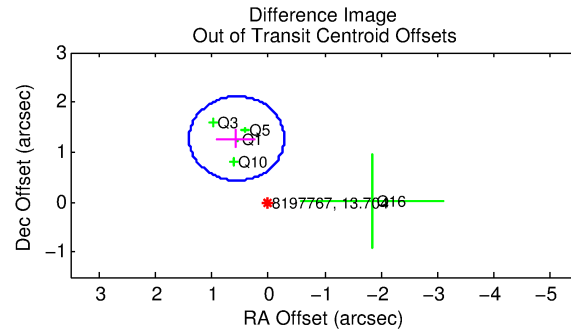
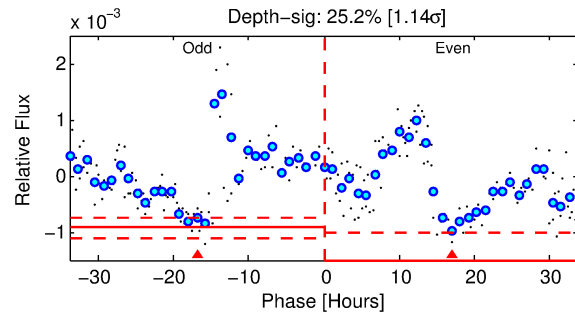
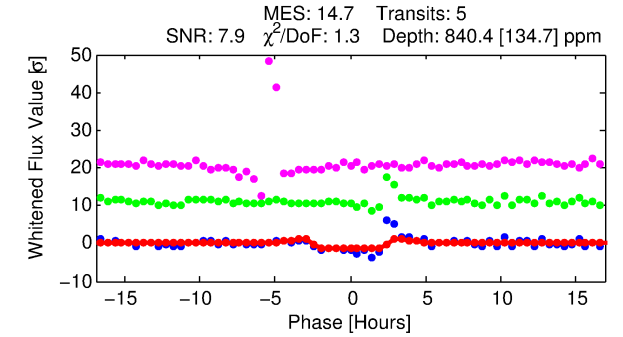
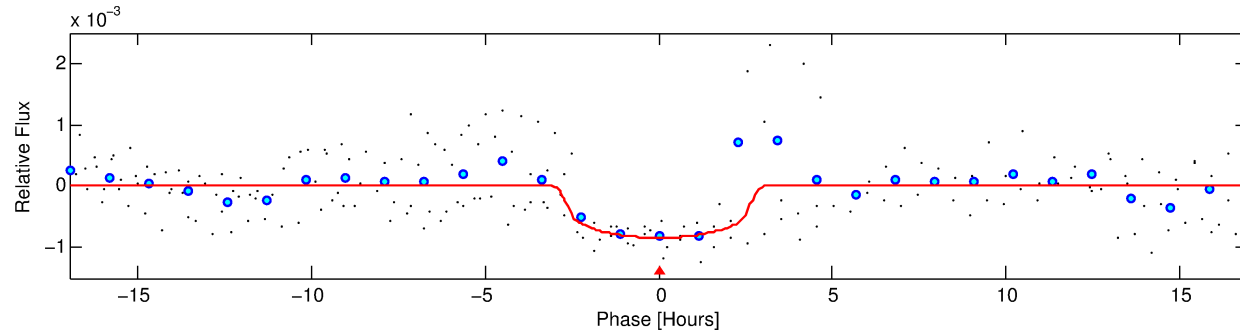
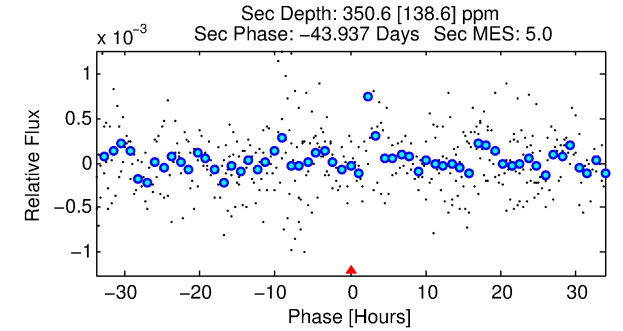
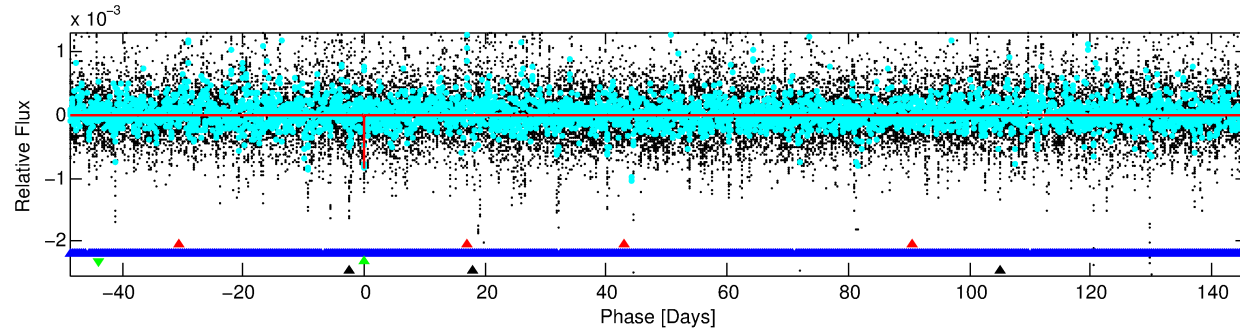
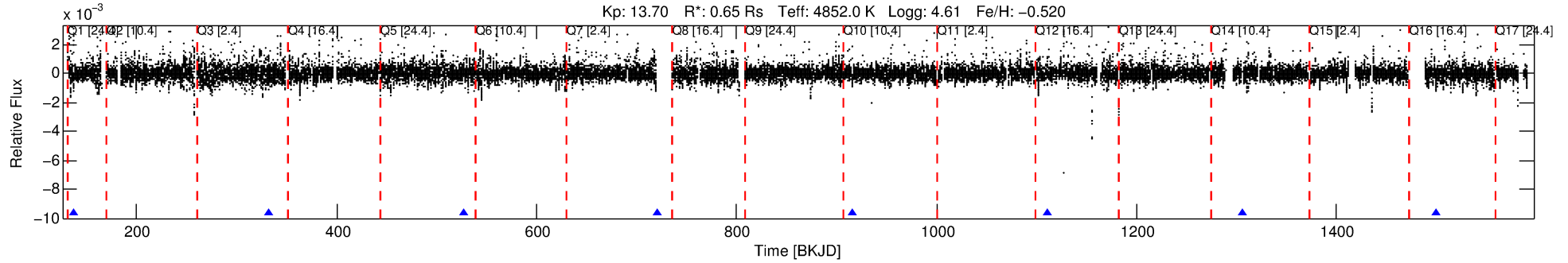
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008197767-03

No Significant Match Found

DV One-Page Summary

KIC: 8197767 Candidate: 3 of 4 Period: 194.703 d



DV Fit Results:

Period = 194.70346 [0.00176] d
Epoch = 137.1411 [0.0068] BKJD
Rp/R* = 0.0276 [0.0297]
a/R* = 214.47 [807.99]
b = 0.63 [3.71]
Seff = 0.66 [0.11]
Teq = 230 [10] K
Rp = 1.96 [2.12] Re
a = 0.5649 [0.0438] AU
Ag = 15980.10 [34999.47] [0.46 σ]
Teffp = 3994 [2187] K [1.72 σ]

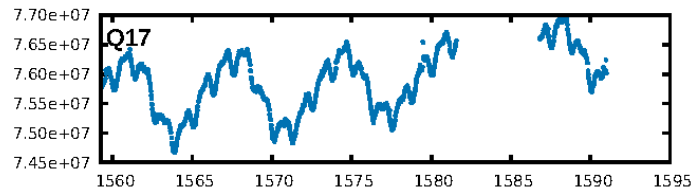
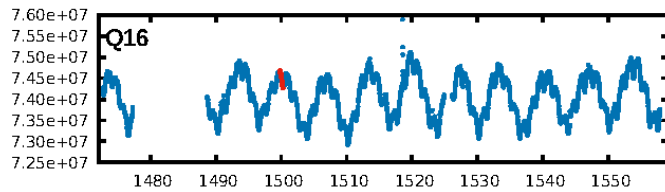
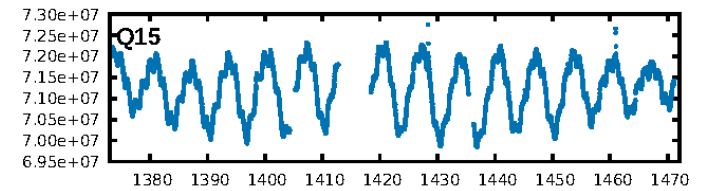
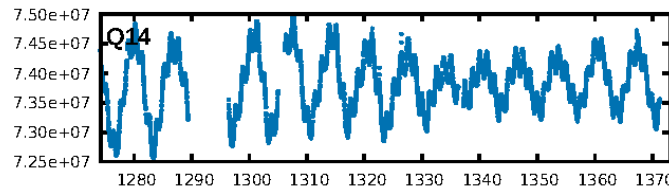
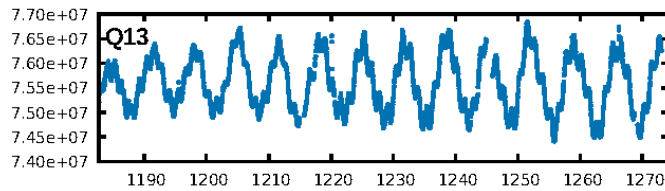
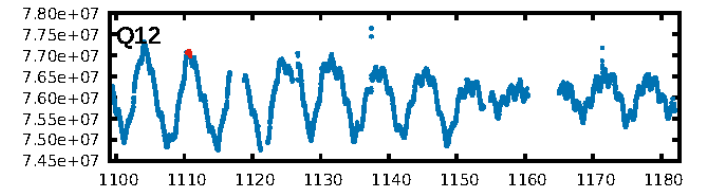
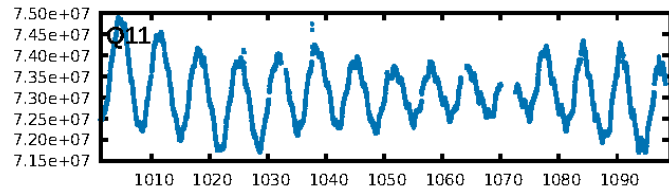
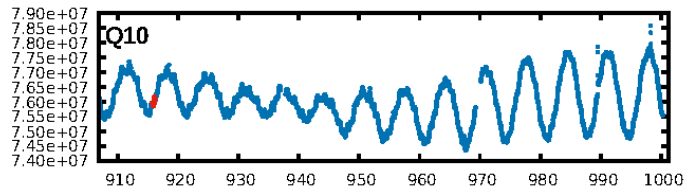
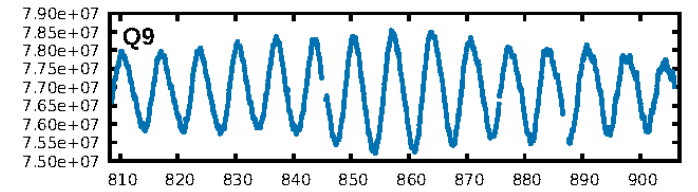
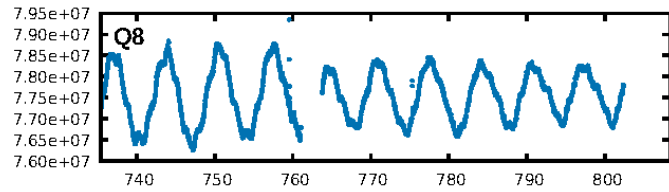
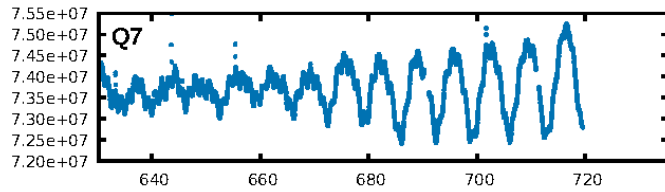
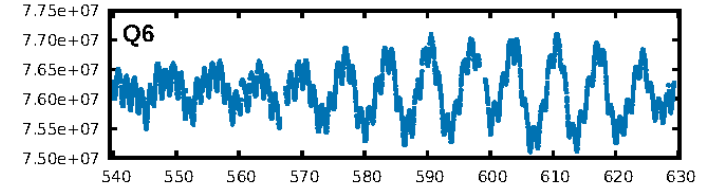
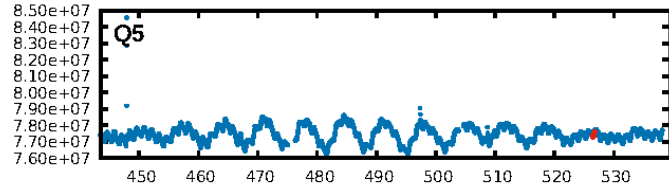
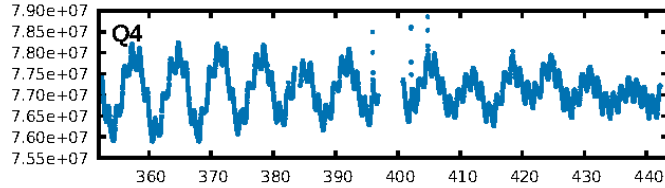
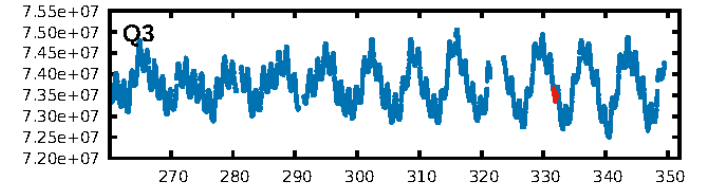
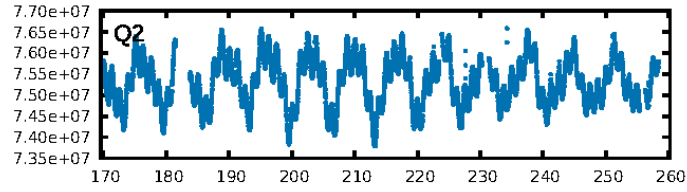
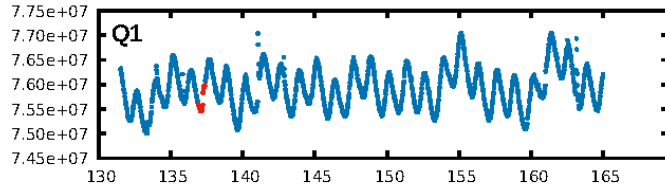
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [622.52 σ]
LongPeriod-sig: 100.0% [173.28 σ]
ModelChiSquare2-sig: 13.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.01e-18
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -1.287
Centroid-sig: N/A
Centroid-so: 1.651 arcsec [2.19 σ]
OotOffset-rm: 1.392 arcsec [4.96 σ]
KicOffset-rm: 1.290 arcsec [3.14 σ]
OotOffset-st: 1/1/1/2 [5]
KicOffset-st: 1/1/1/2 [5]
DiffImageQuality-fgm: 1.00 [5/5]
DiffImageOverlap-fno: 0.00 [0/5]

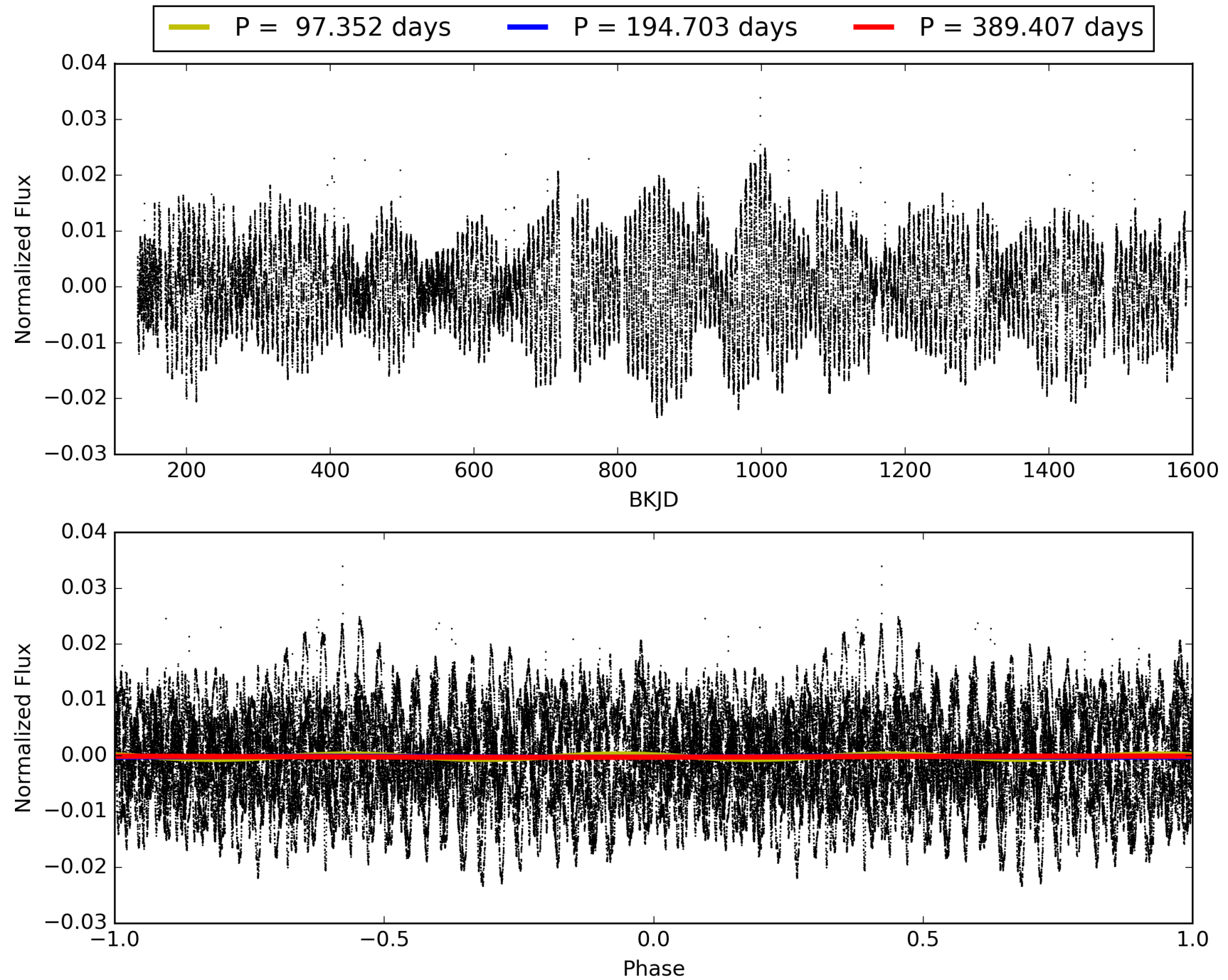
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:11:24 Z

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

TCE 008197767-03, PDC Light Curves

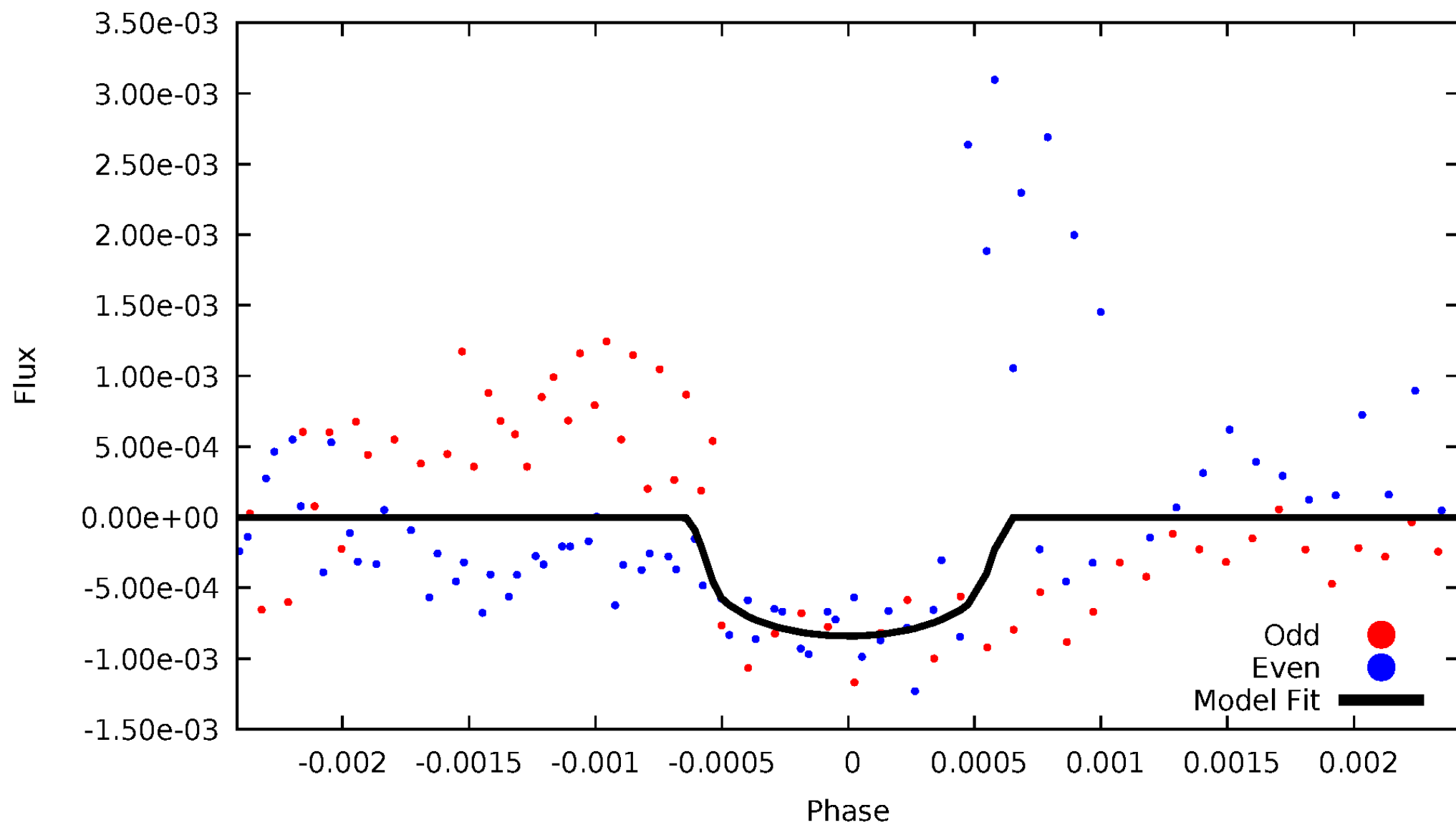


TCE 008197767-03



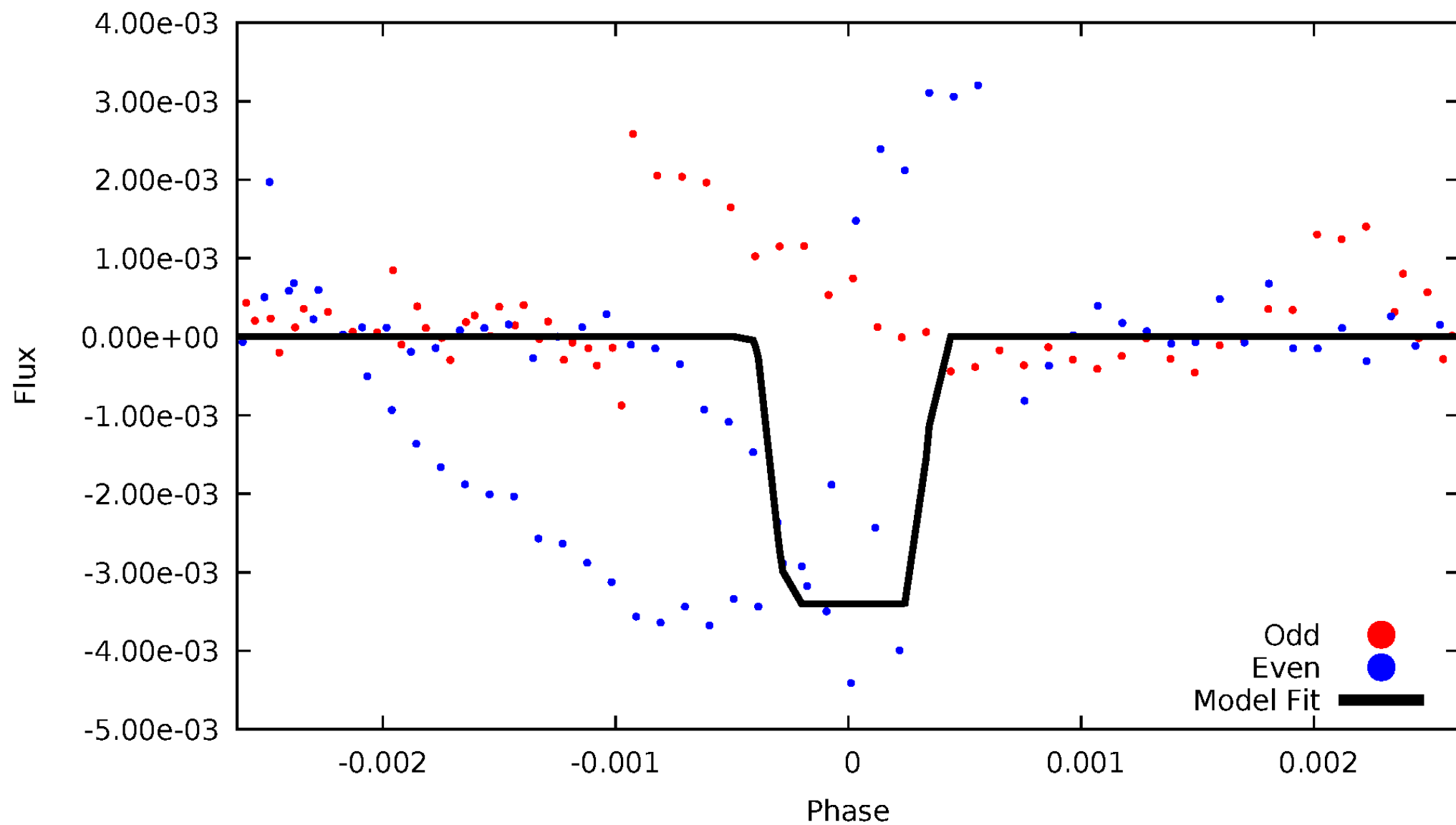
DV Odd/Even

TCE 008197767-03



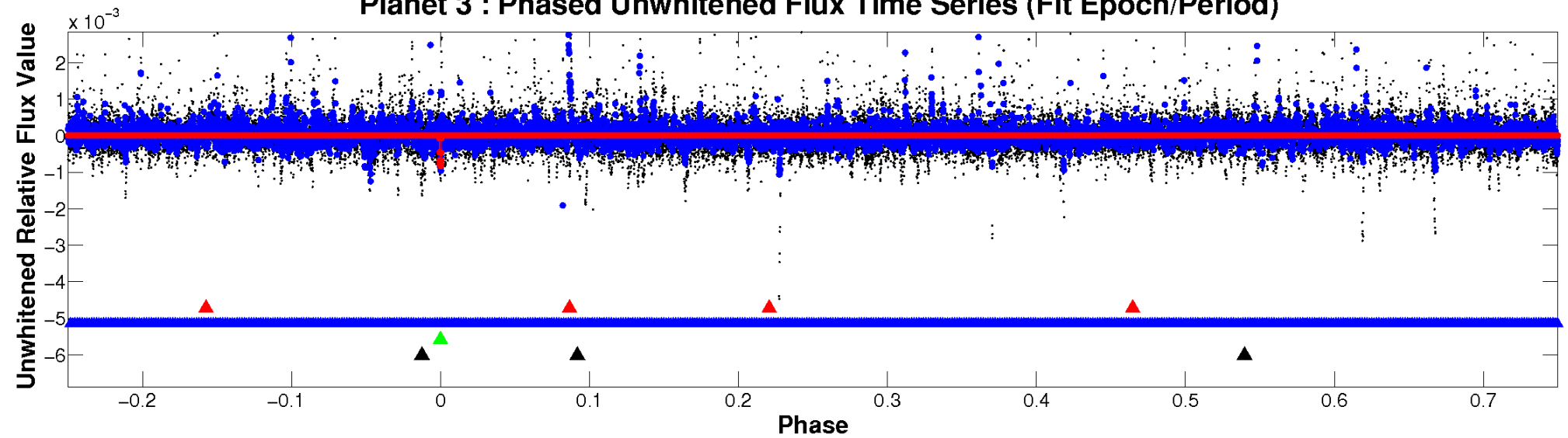
ALT Odd/Even

TCE 008197767-03

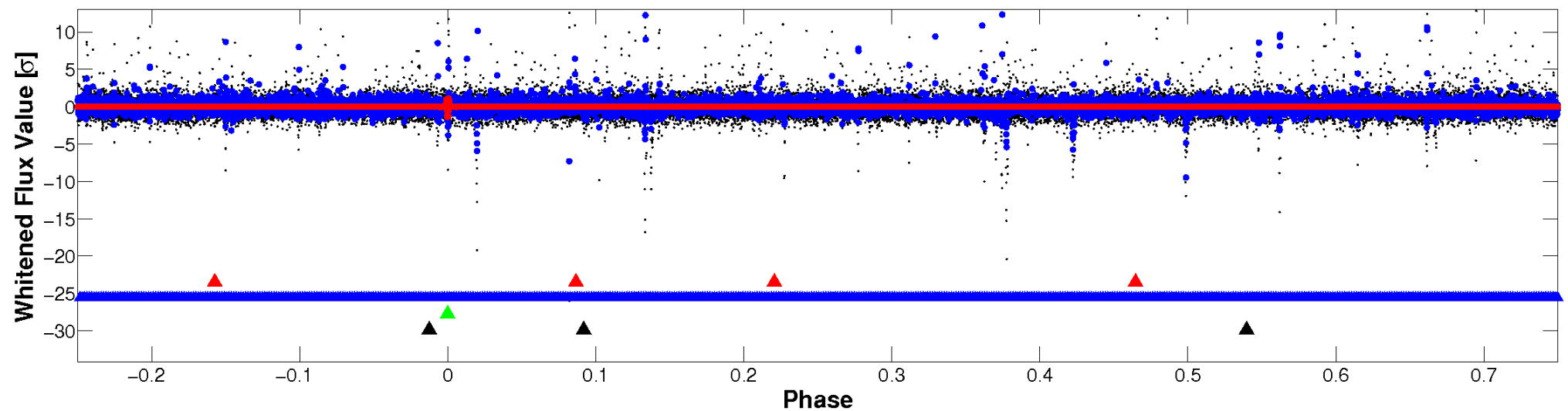


Non-Whitened Vs. Whitened Light Curve

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

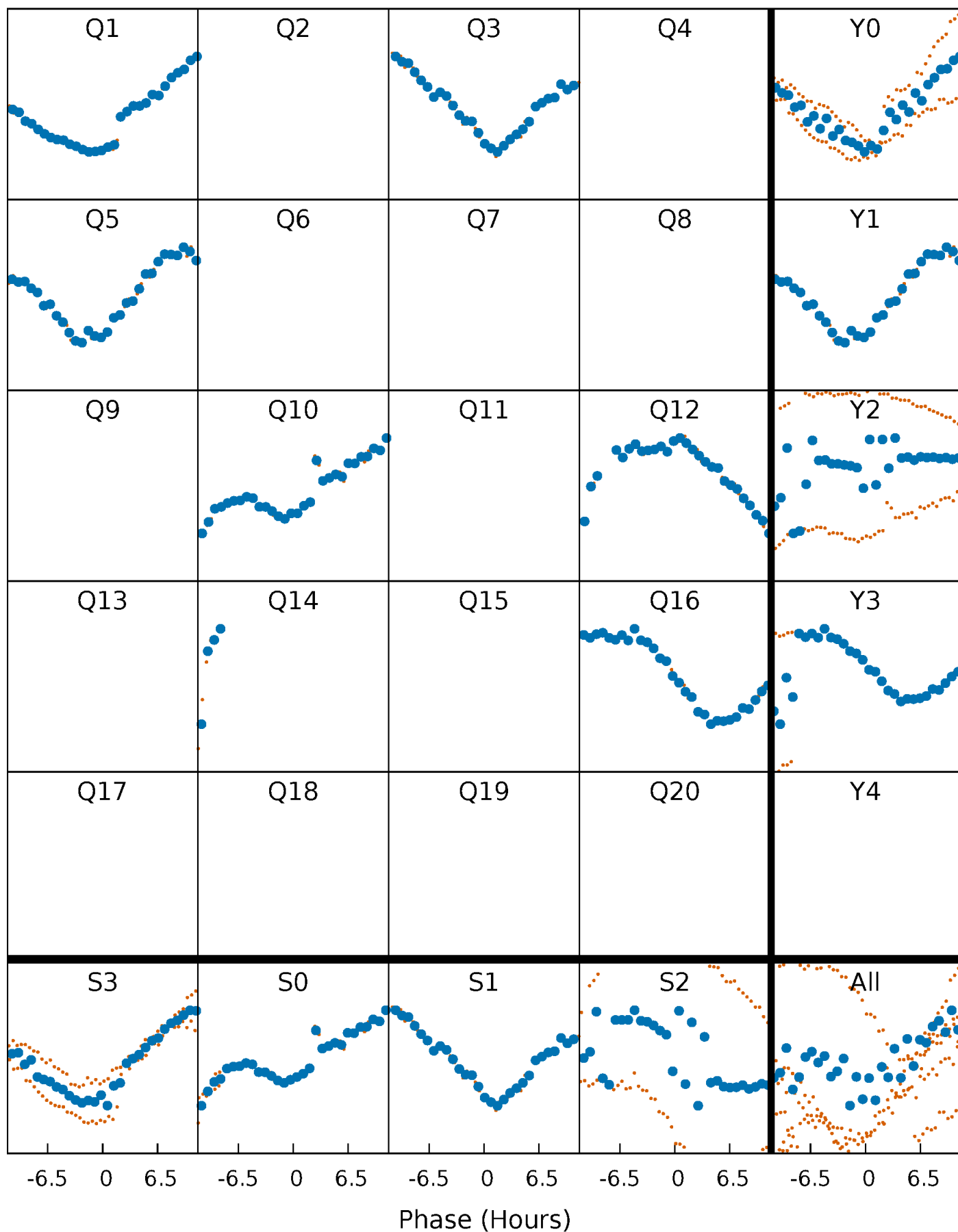


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



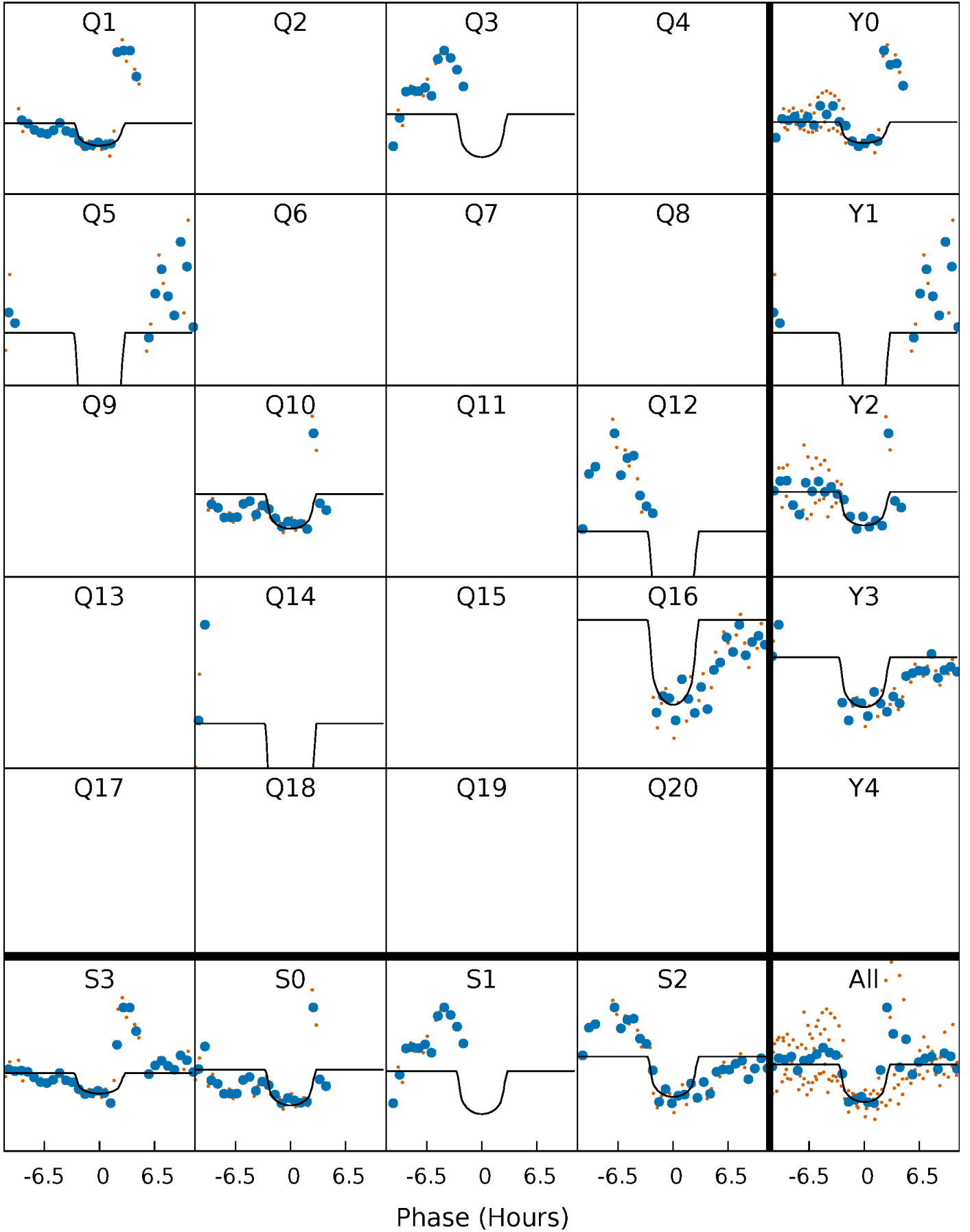
PDC Quarter-Phased Transit Curves

TCE 008197767-03 $P=194.703455$ Days $T_0=137.141116$ (BKJD)



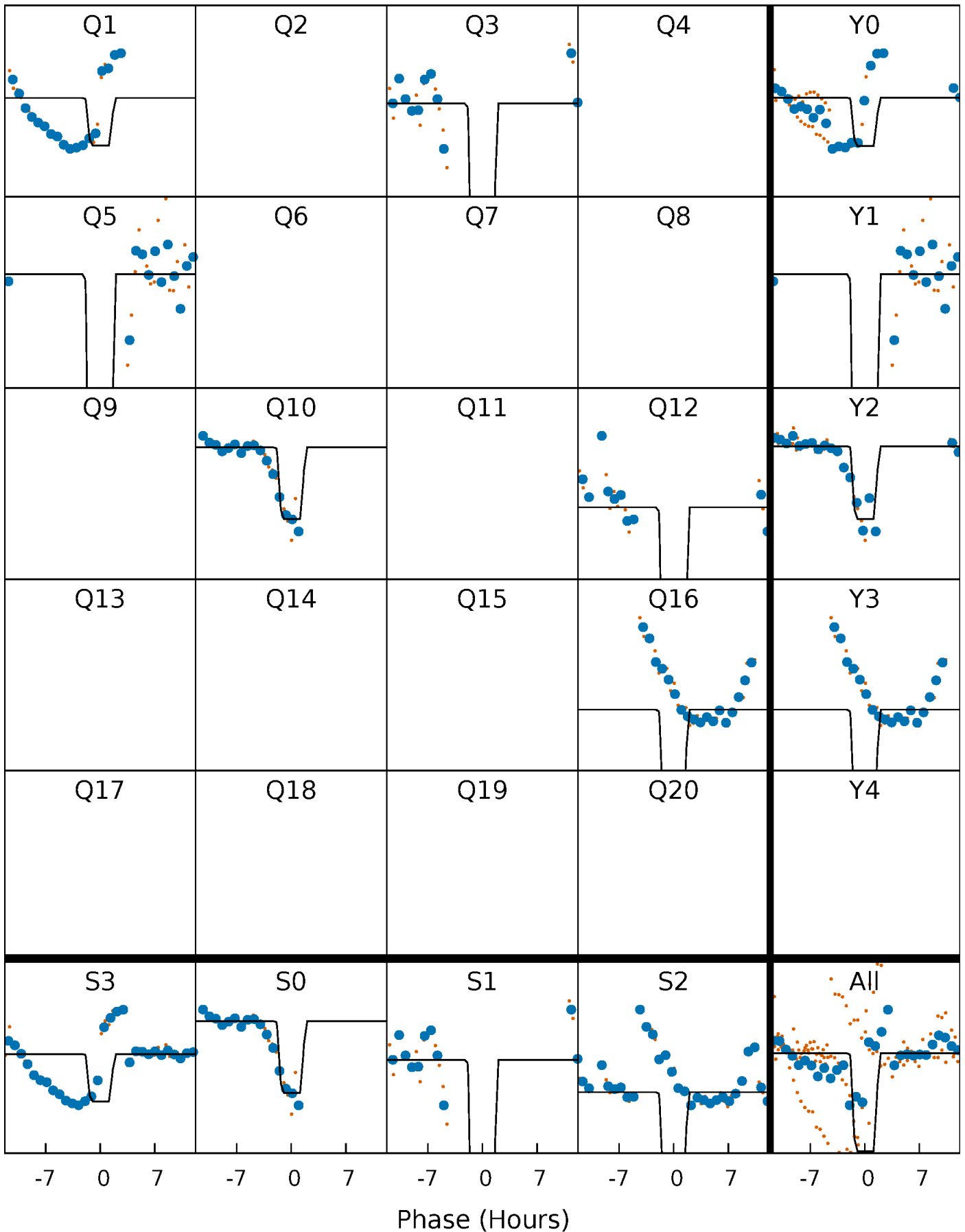
DV Quarter-Phased Transit Curves

TCE 008197767-03 P=194.703455 Days $T_0=137.141116$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

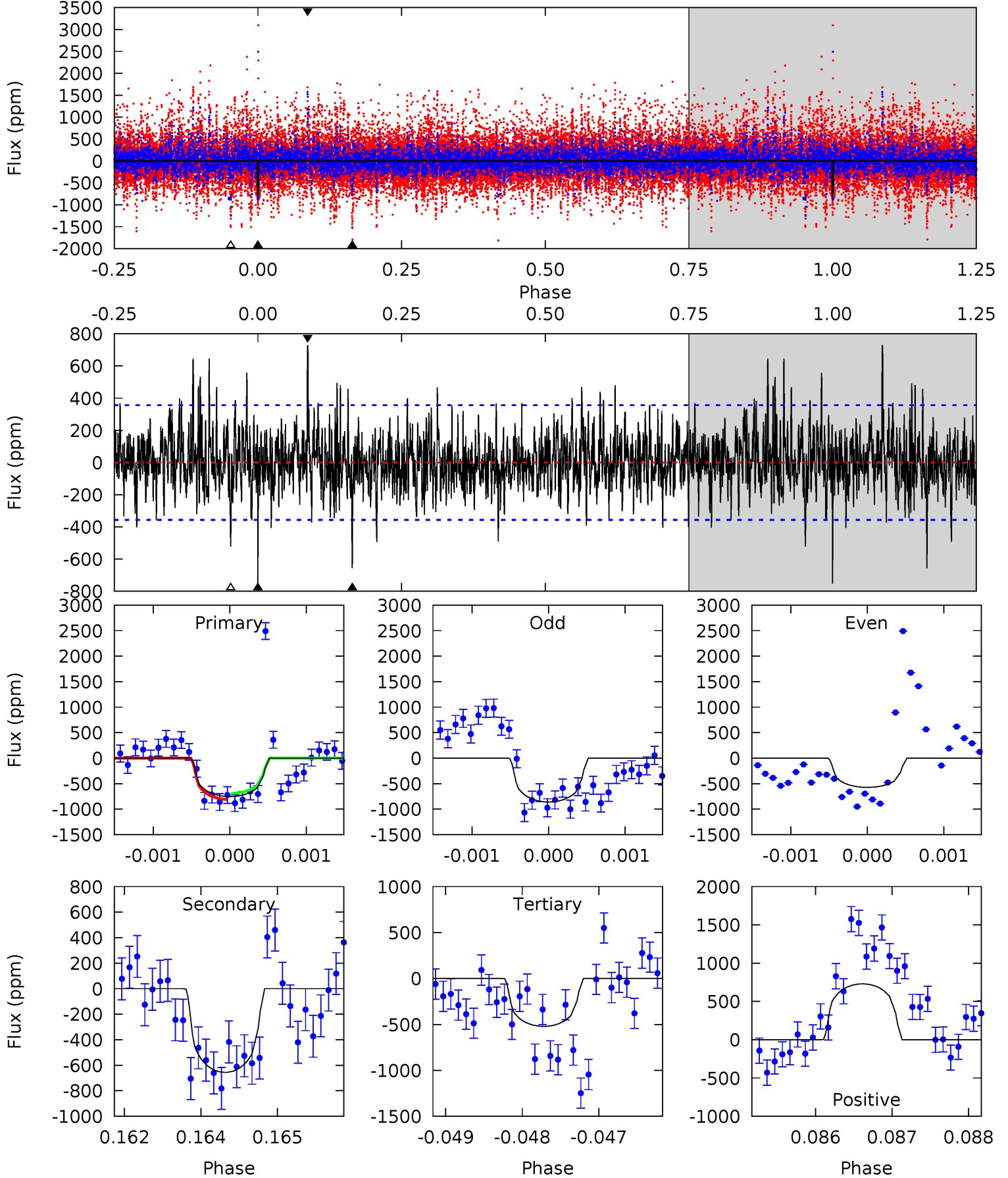
TCE 008197767-03 P=194.702997 Days $T_0=137.226943$ (BKJD)



DV Model-Shift Uniqueness Test

008197767-03, P = 194.703455 Days, E = 137.141116 Days

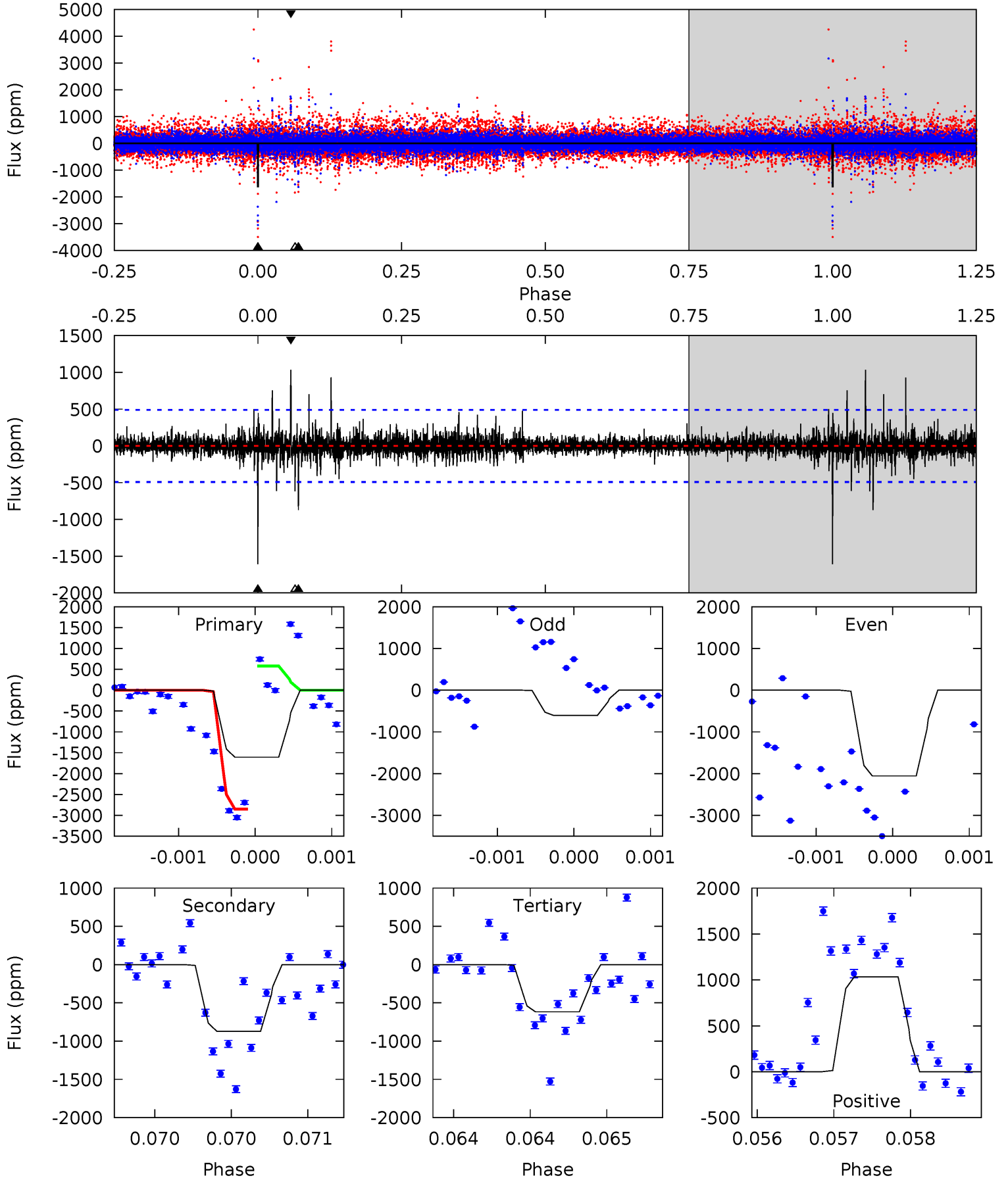
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	9.95	7.91	11.1	5.41	3.23	2.19	3.51	0.35	2.04	-1.13	1.91	0.46	0.49	0.91



Alt Model-Shift Uniqueness Test

008197767-03, P = 194.702997 Days, E = 137.226943 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.0	9.77	6.92	11.6	5.50	3.37	0.97	11.1	6.44	2.85	-1.82	4.89	6.87	0.39	11.9



Stellar Parameters For KIC 008197767

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4852^{+145}_{-131}	$4.613^{+0.065}_{-0.035}$	$-0.520^{+0.300}_{-0.300}$	$0.651^{+0.058}_{-0.058}$	$0.634^{+0.084}_{-0.036}$	$3.238^{+0.852}_{-0.467}$
	+3%/-3%	+1%/-1%	+58%/-58%	+9%/-9%	+13%/-6%	+26%/-14%
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 008197767-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-656 ± 66	$2.42^{+1.83}_{-1.48}$	320^{+12}_{-11}	4351^{+2287}_{-770}	$20010^{+116971}_{-13325}$
Alt.	-870 ± 89	$4.19^{+1.86}_{-1.87}$	320^{+10}_{-12}	3736^{+946}_{-425}	8585^{+21221}_{-4362}

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 $A_{obs} \gg 1.0$

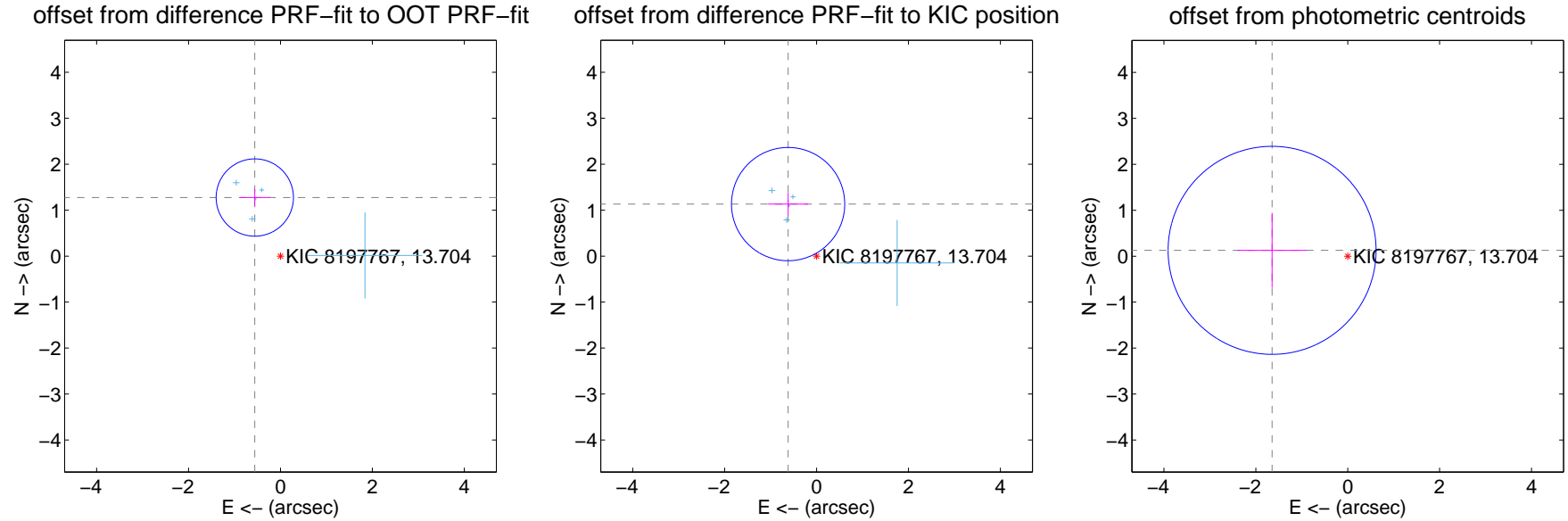
DV Centroid Data

Supplemental centroid analysis for 008197767-03. Kepler magnitude: 13.70. Transit SNR 7.91

There are 5 quarters with good PRF difference image offsets

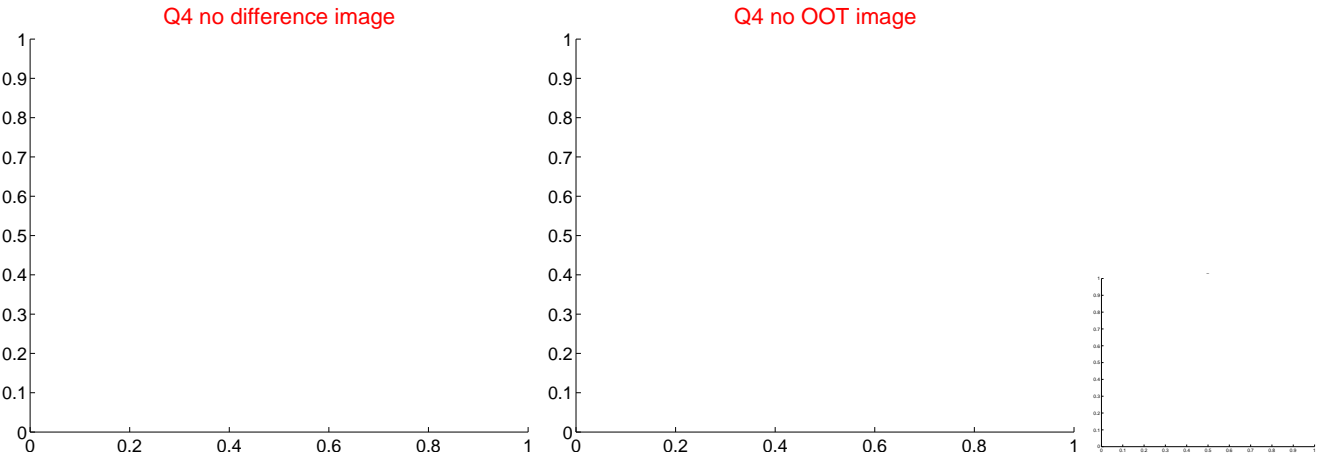
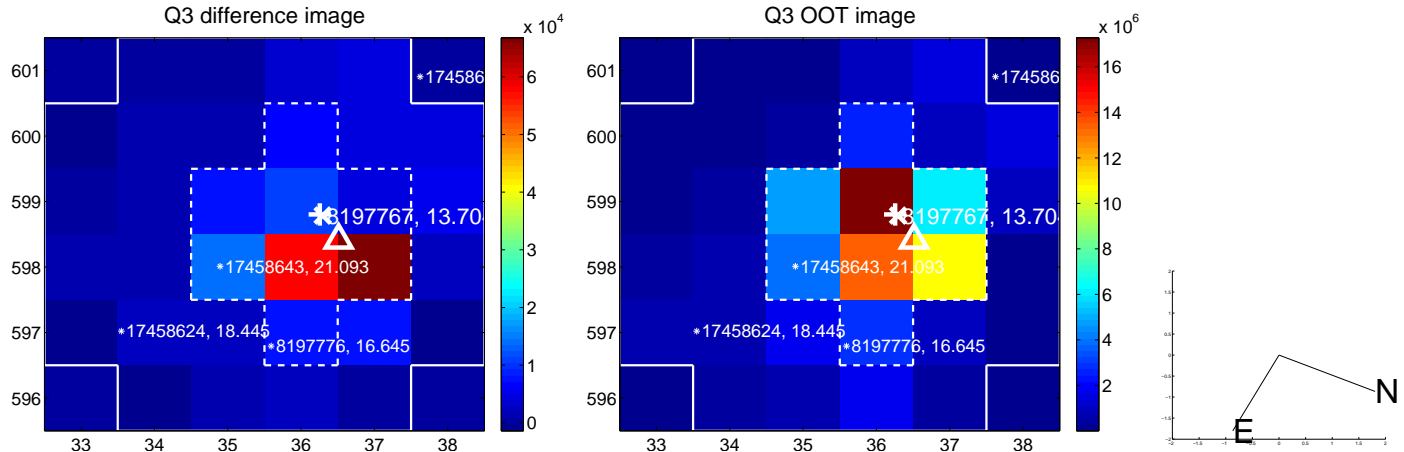
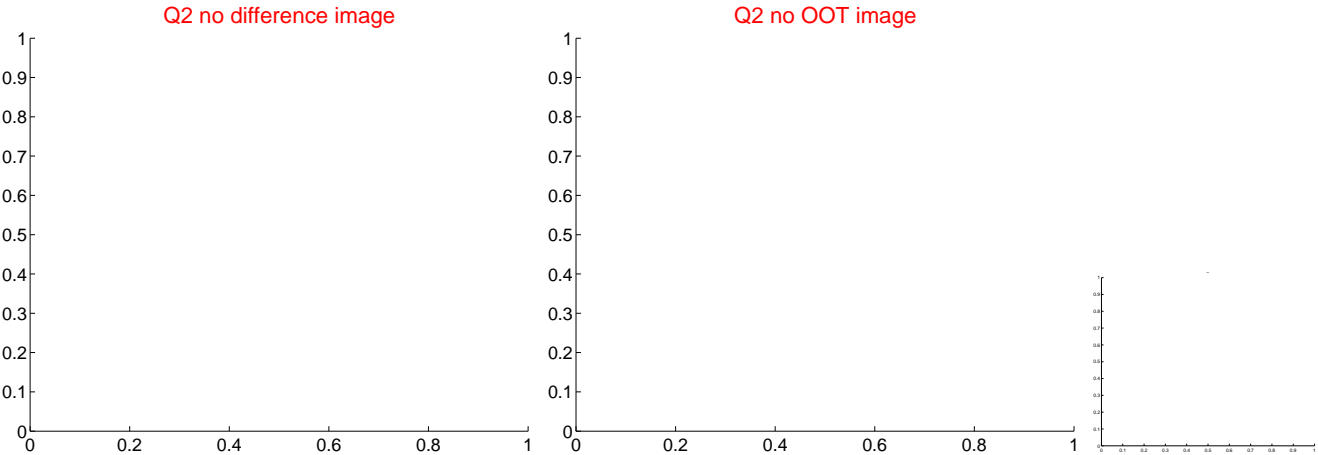
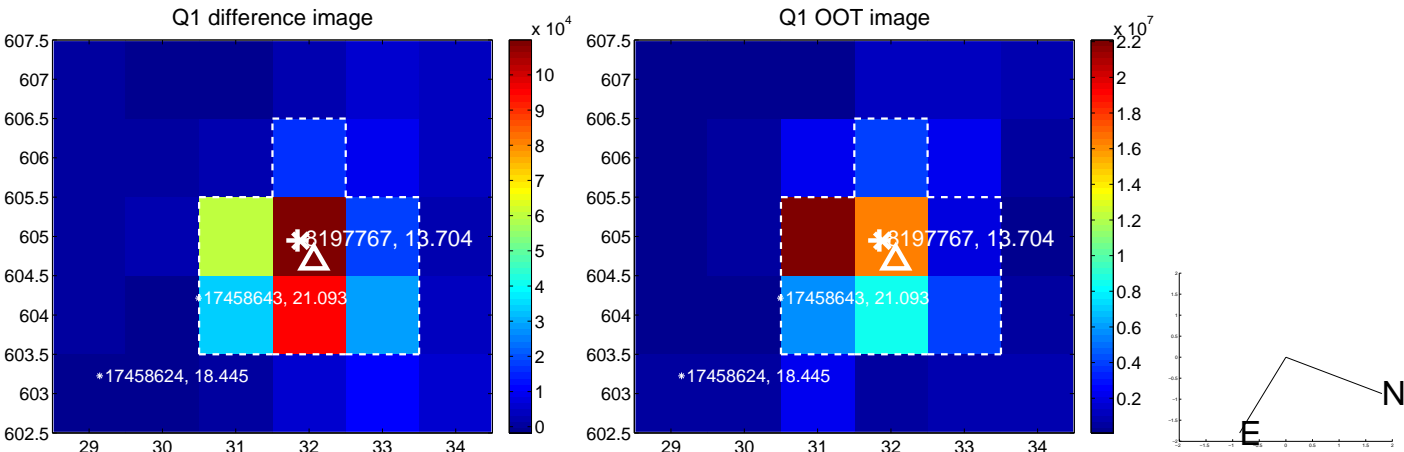
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.392 ± 0.280	4.96	0.558 ± 0.332	1.275 ± 0.187
PRF-fit source offset from KIC position	1.290 ± 0.411	3.14	0.620 ± 0.435	1.132 ± 0.245
photometric centroid source offset	1.65 ± 0.75	2.19	1.65 ± 0.75	0.13 ± 0.82

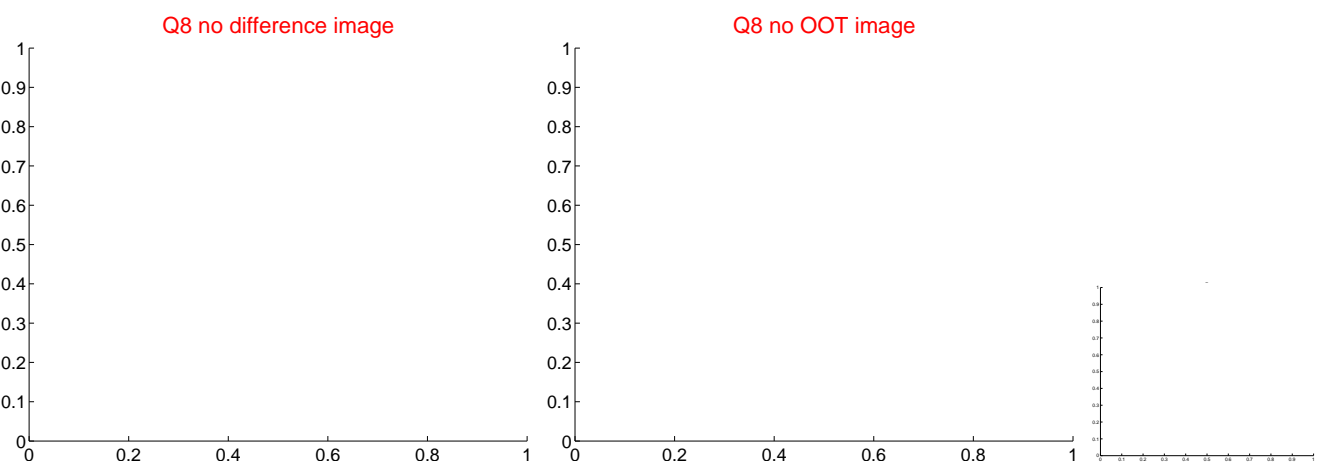
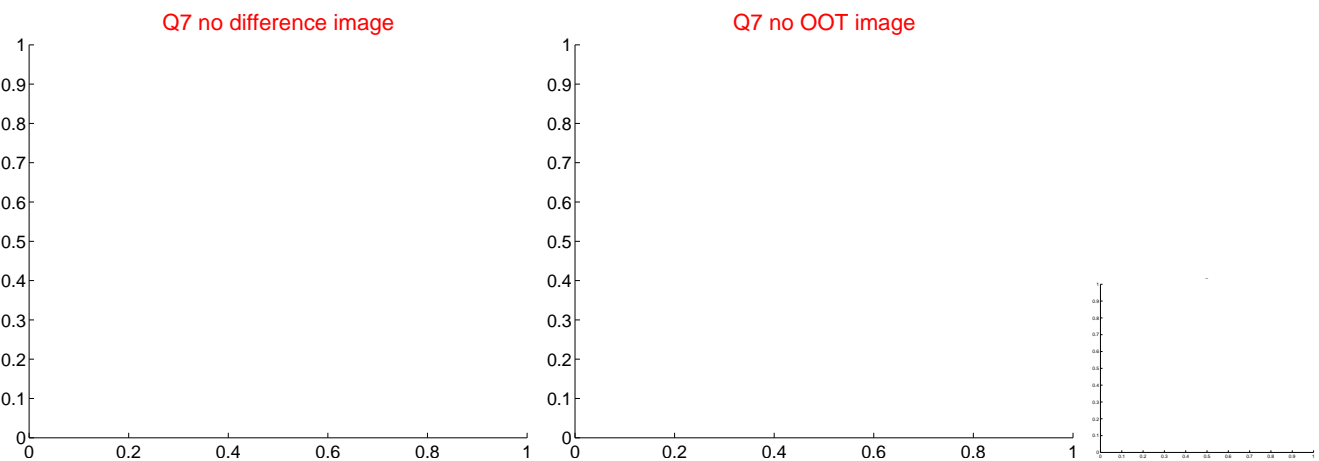
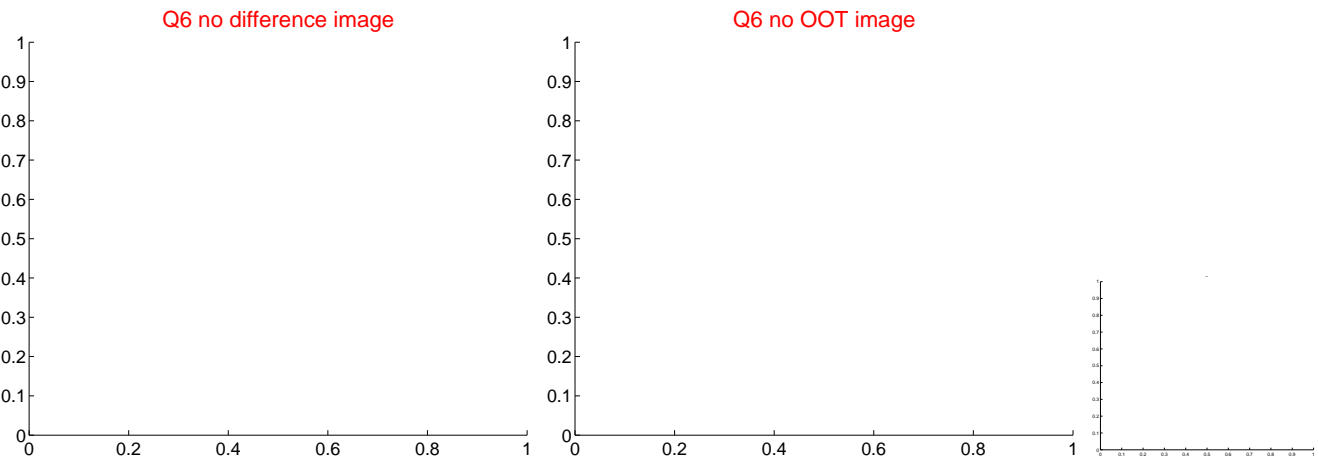
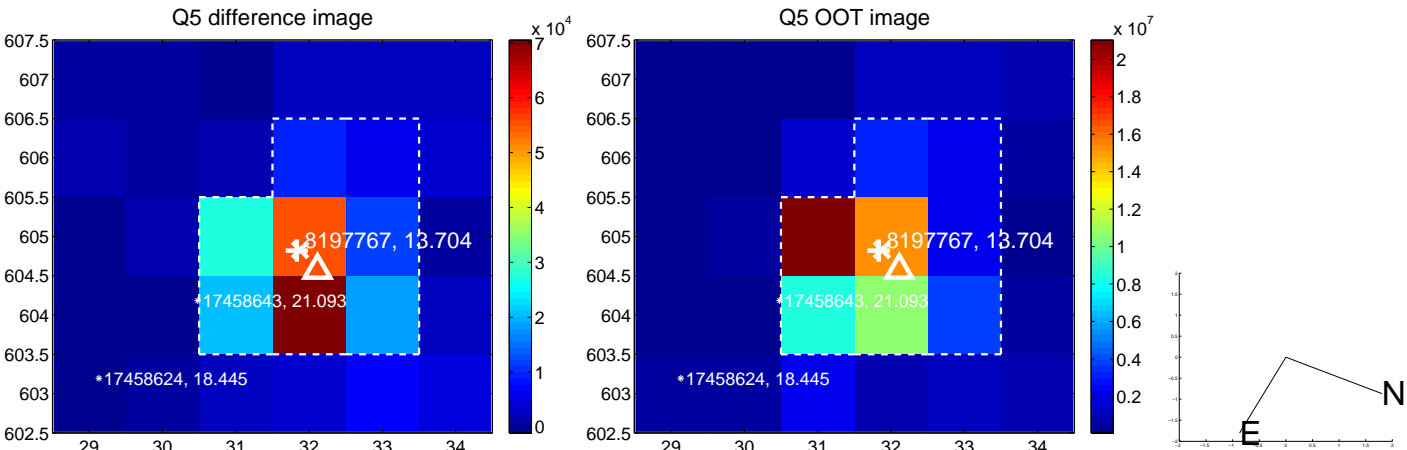


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

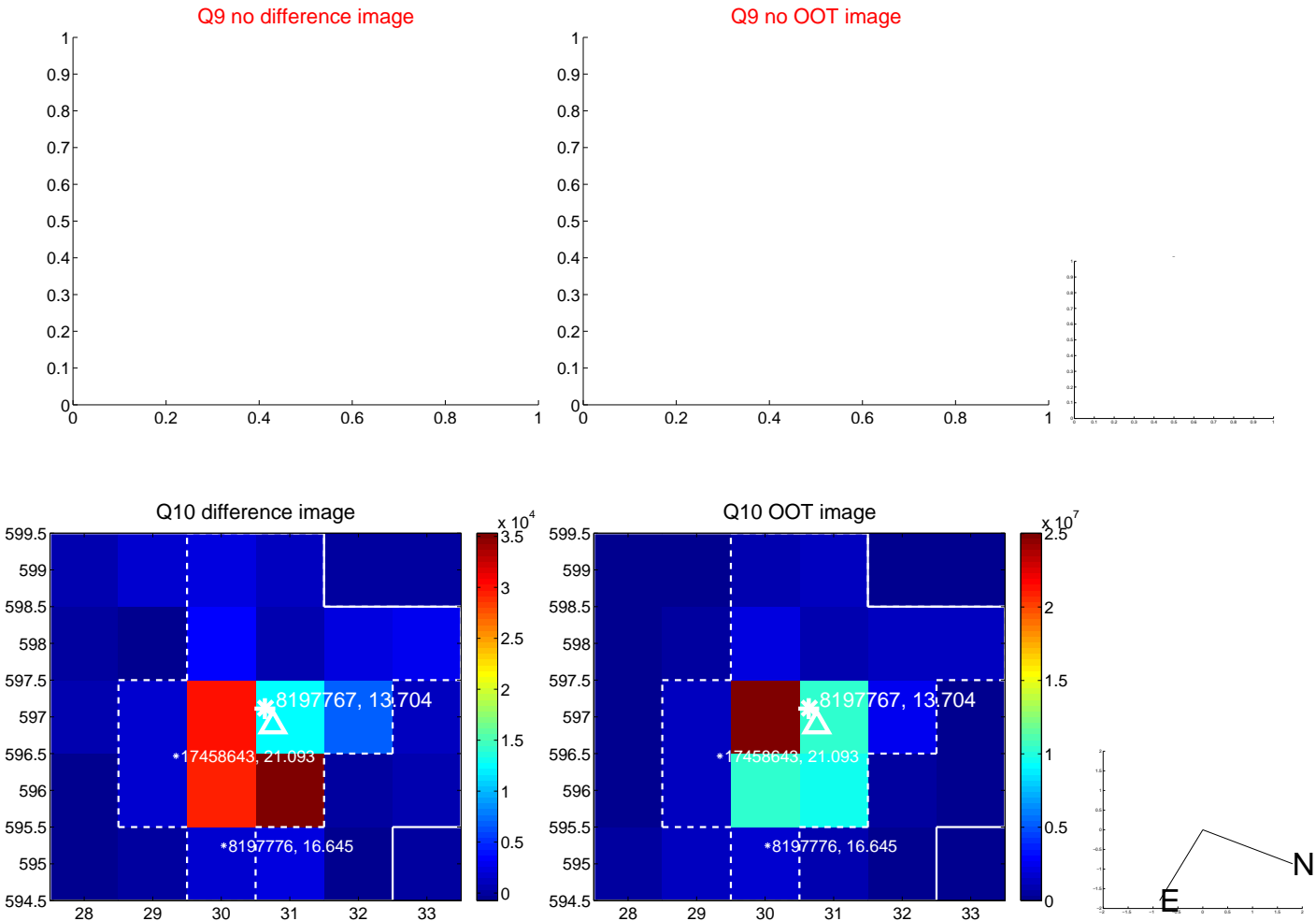
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



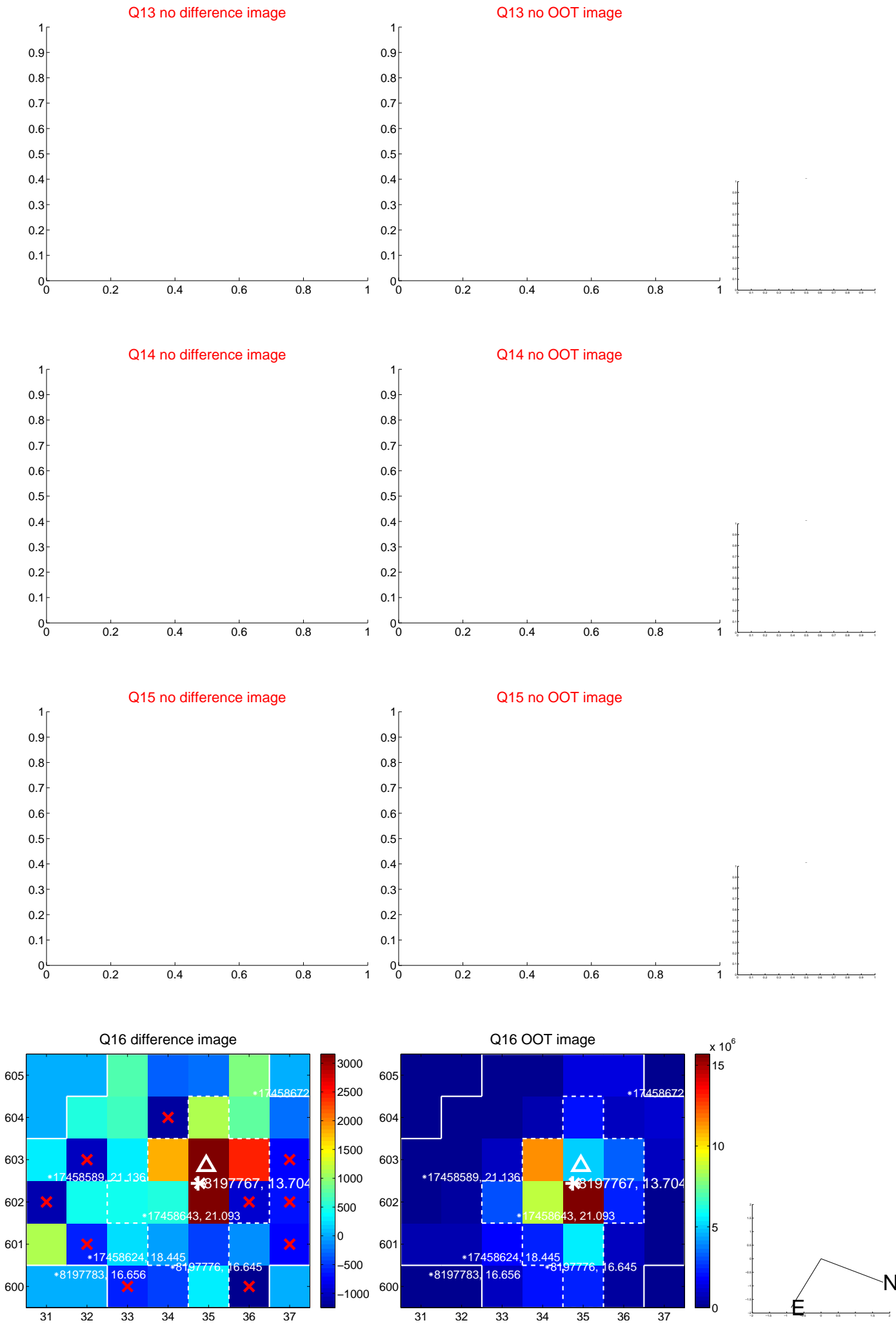
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



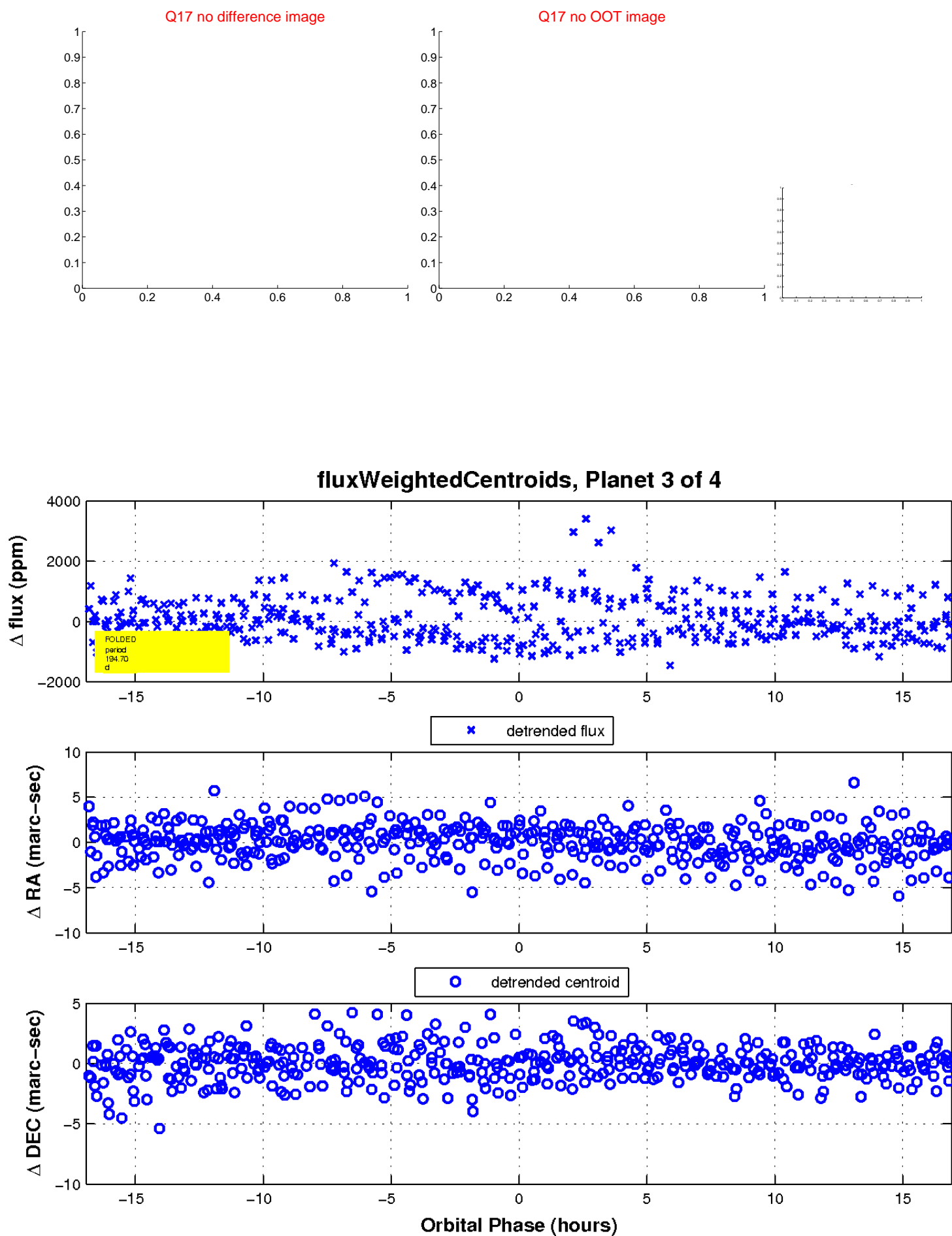
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

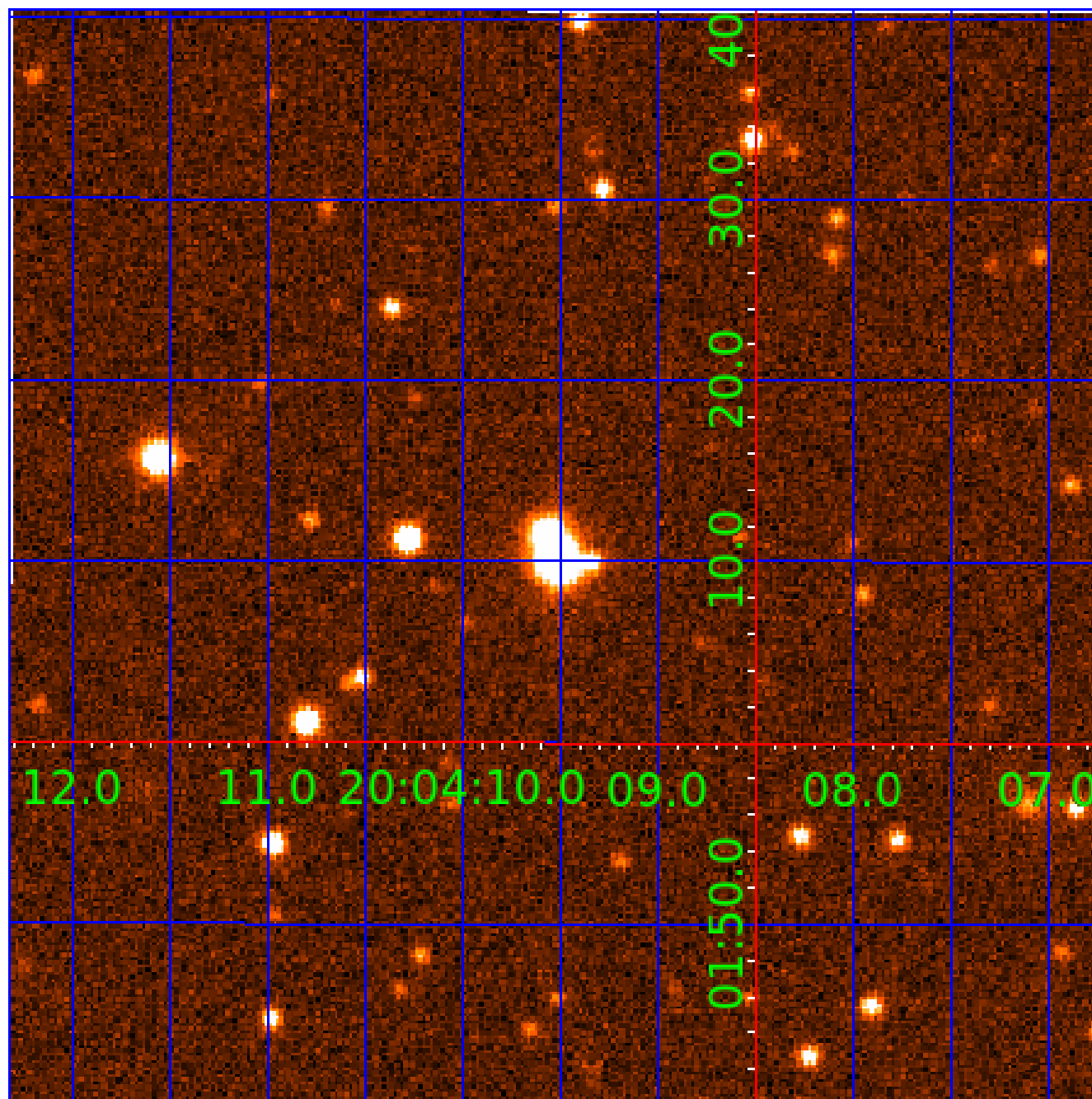


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008197767

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})
008197767-01	OBS	No	315.807386	374.809321	878.8	15.794	10.4	5.4	0.65	4852	2.02	0.35
008197767-02	OBS	7871.01	1.246101	132.679276	84.6	4.872	10.0	12.6	0.65	4852	0.58	554.92
008197767-03	OBS	No	194.703455	137.141116	840.4	5.647	14.7	7.9	0.65	4852	1.96	0.66
008197767-04	OBS	No	691.615926	134.720734	1712.6	16.883	9.1	8.8	0.65	4852	3.65	0.12

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008197767-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008197767-02	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_UNRESOLVED_OFFSET
008197767-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS
008197767-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

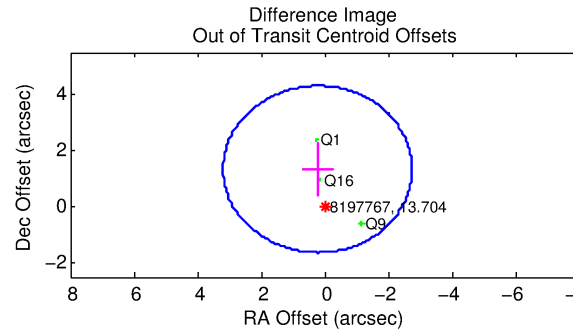
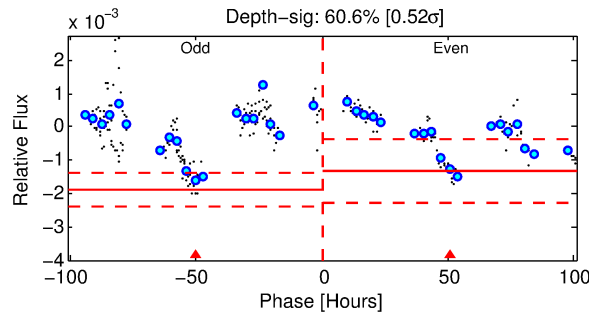
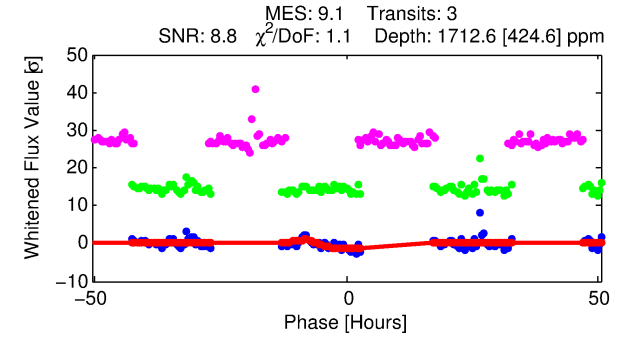
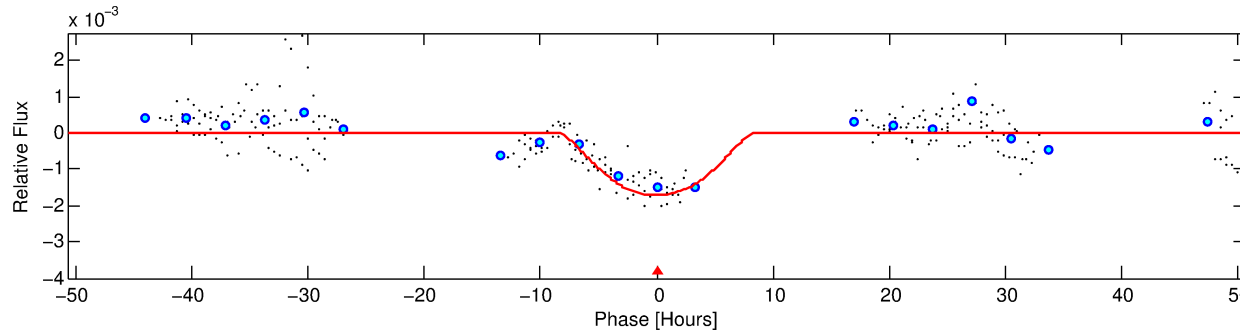
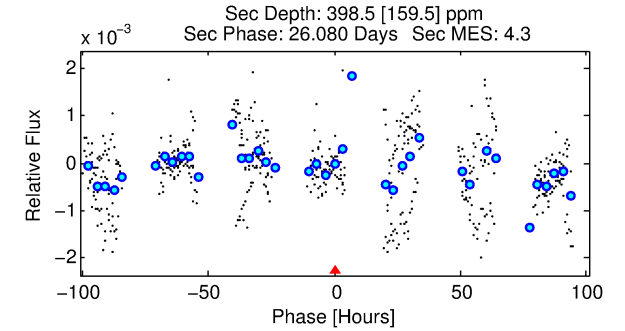
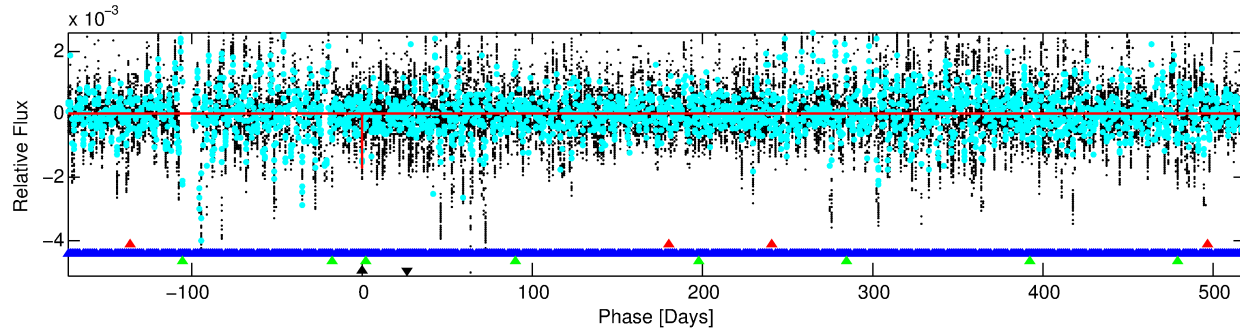
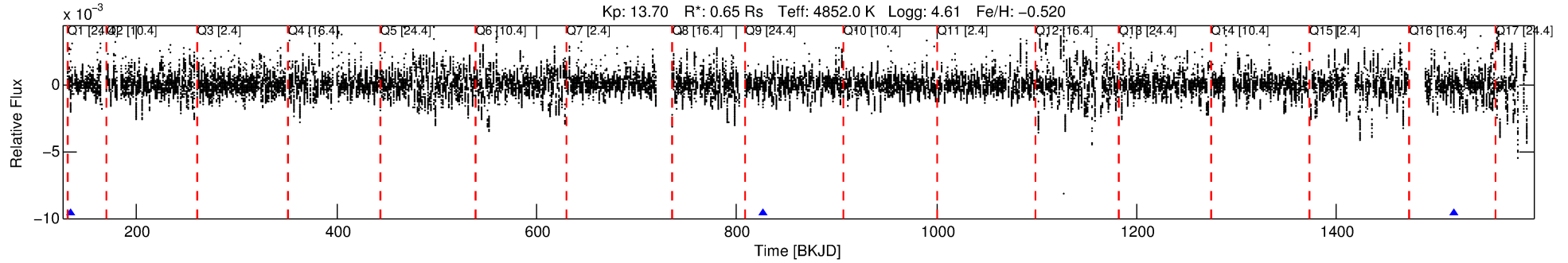
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008197767-04

No Significant Match Found

DV One-Page Summary

KIC: 8197767 Candidate: 4 of 4 Period: 691.616 d



DV Fit Results:

Period = 691.61593 [0.02717] d
Epoch = 134.7207 [0.0613] BKJD
Rp/R* = 0.0514 [0.0105]
a/R* = 138.06 [26.78]
b = 0.95 [0.03]
Seff = 0.12 [0.02]
Teq = 151 [6] K
Rp = 3.65 [0.81] Re
a = 1.3152 [0.1020] AU
Ag = 28470.66 [16607.95] [1.71 σ]
Teffp = 3024 [442] K [6.51 σ]

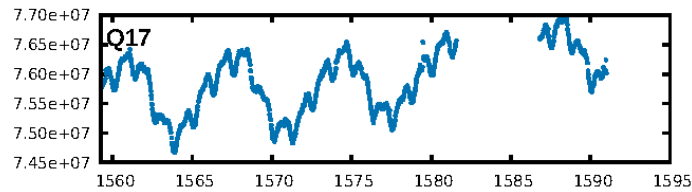
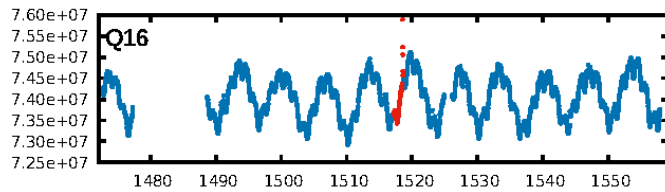
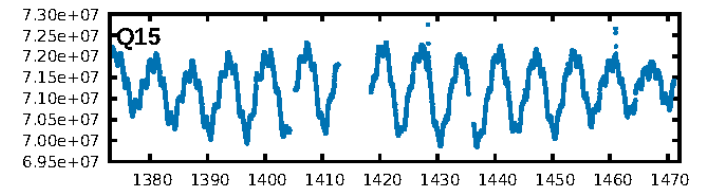
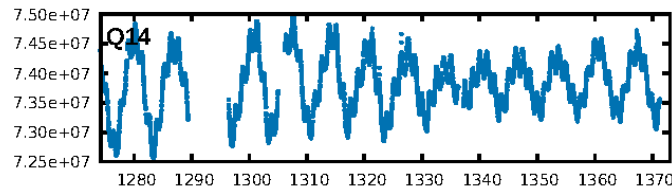
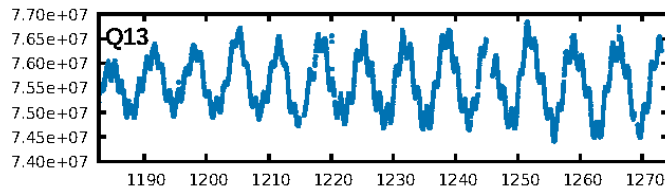
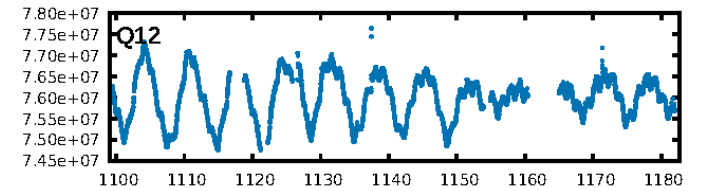
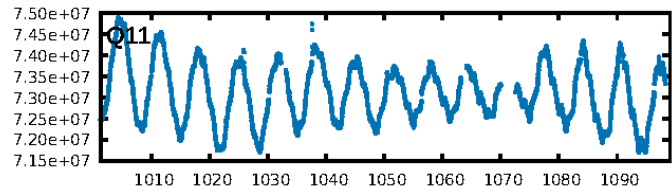
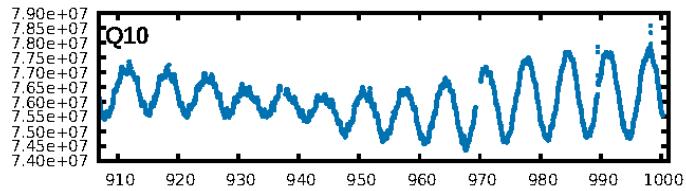
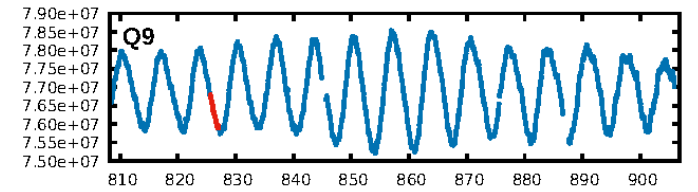
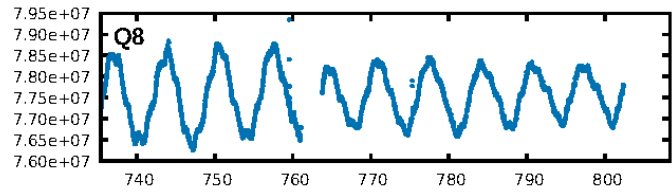
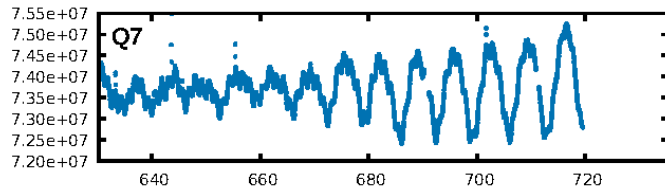
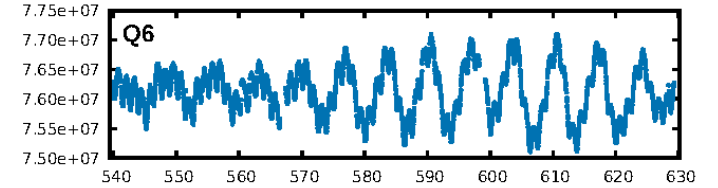
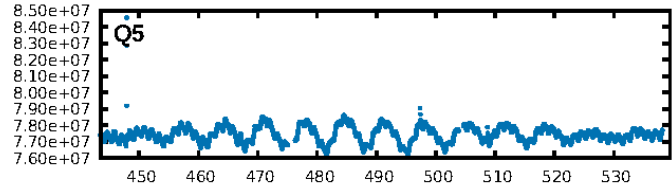
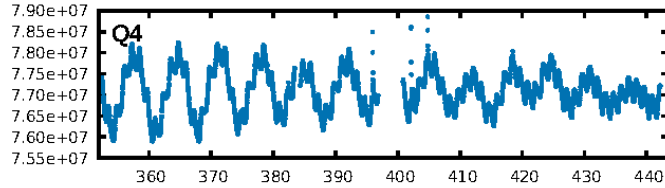
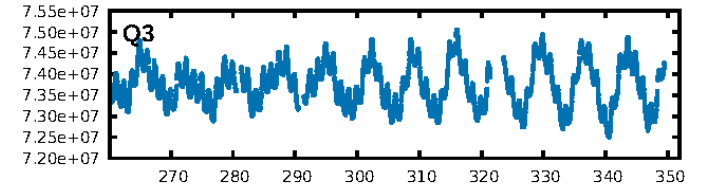
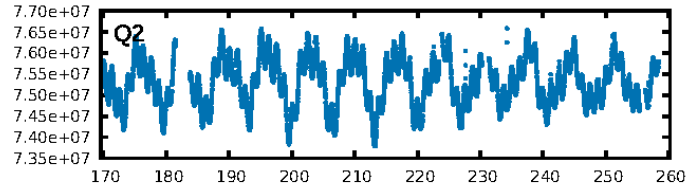
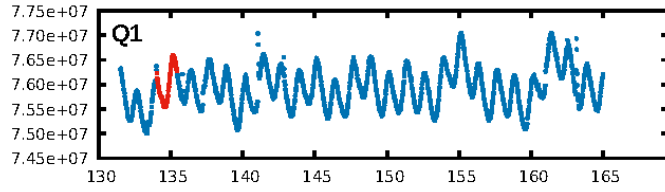
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [390.13 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 33.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.30e-09
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -0.9162
Centroid-sig: N/A
Centroid-so: 1.634 arcsec [2.76 σ]
OotOffset-rm: 1.355 arcsec [1.37 σ]
KicOffset-rm: 1.243 arcsec [1.71 σ]
OotOffset-st: 0/0/1/2 [3]
KicOffset-st: 0/0/1/2 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.00 [0/3]

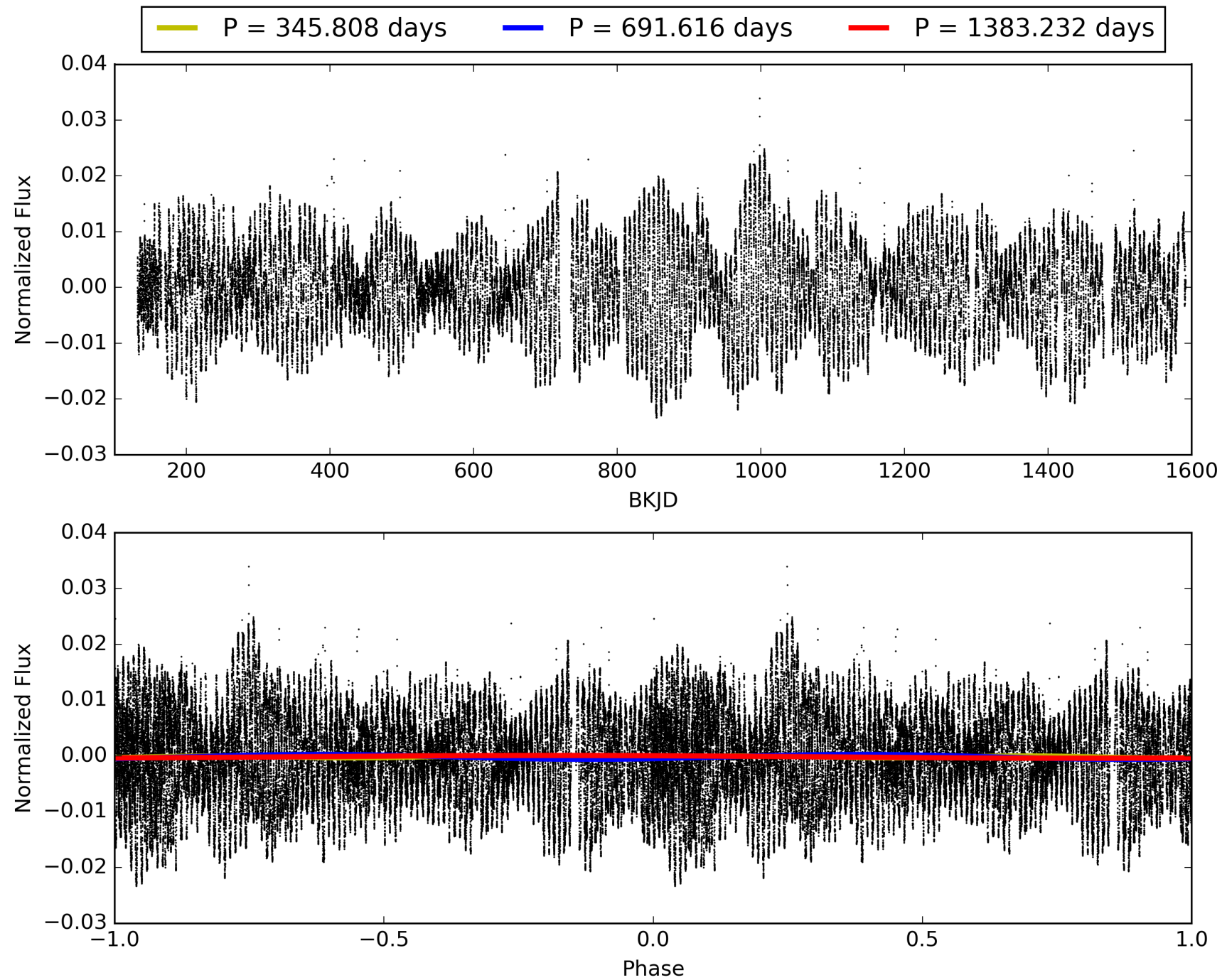
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:11:31 Z

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

TCE 008197767-04, PDC Light Curves

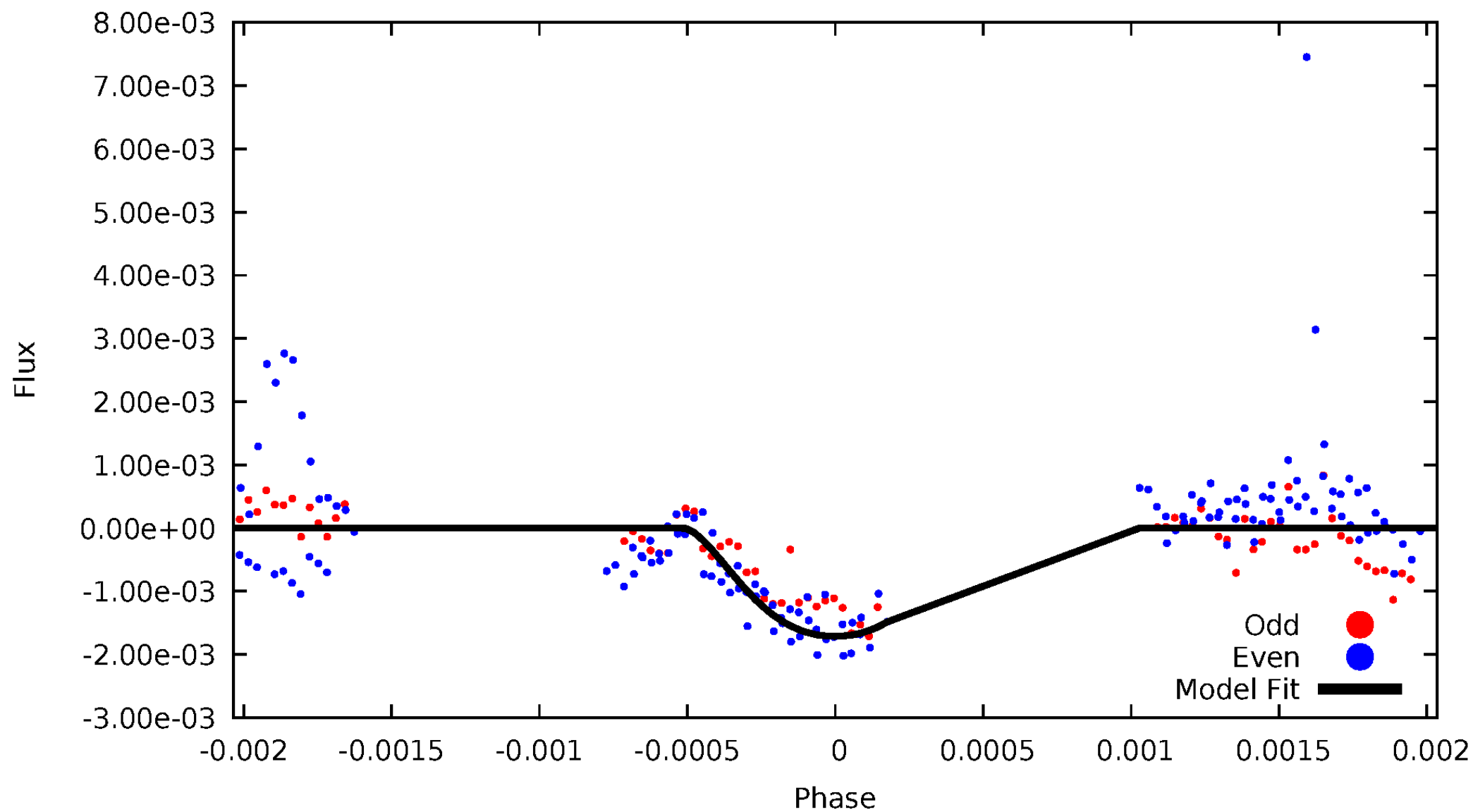


TCE 008197767-04



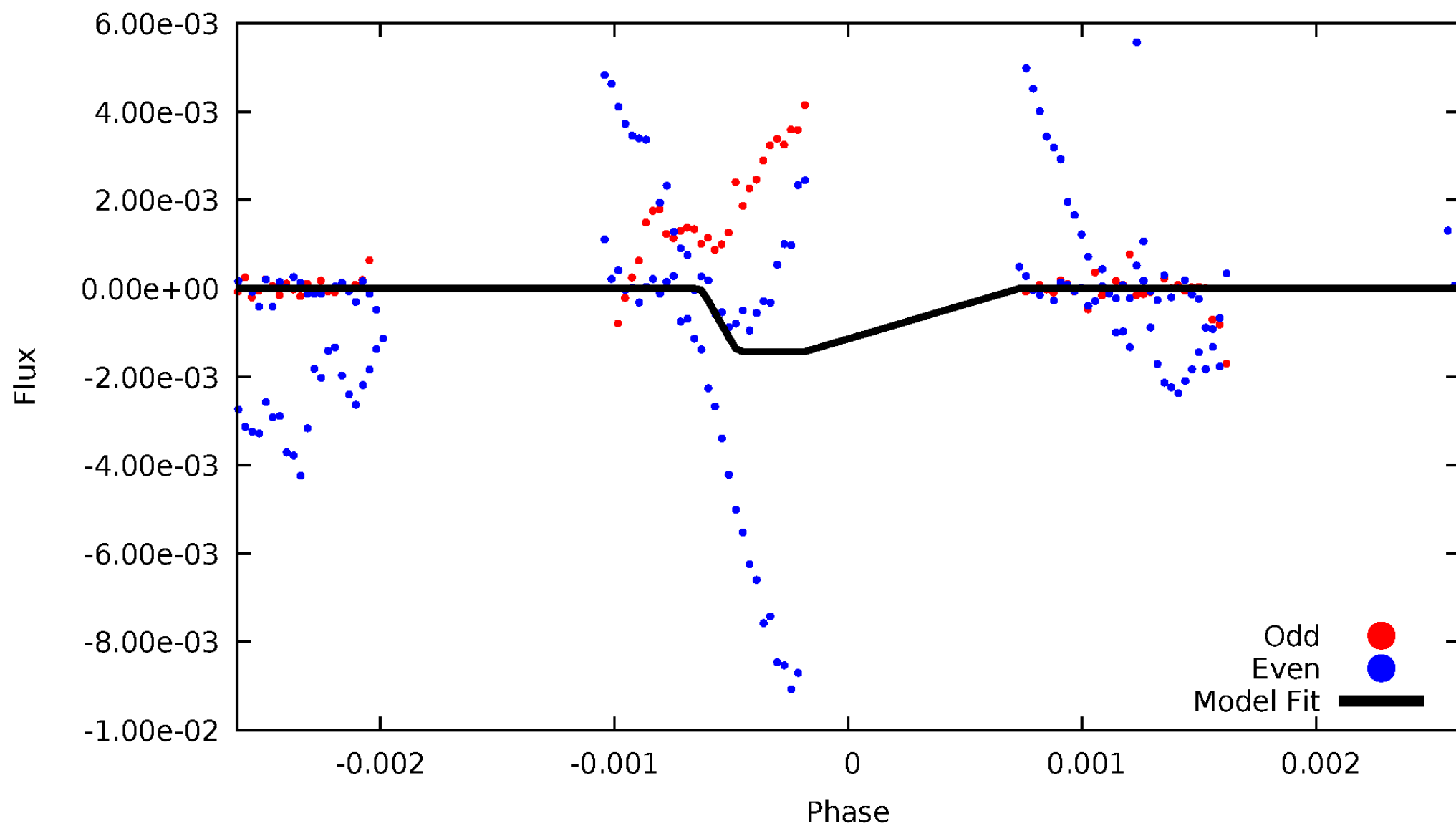
DV Odd/Even

TCE 008197767-04



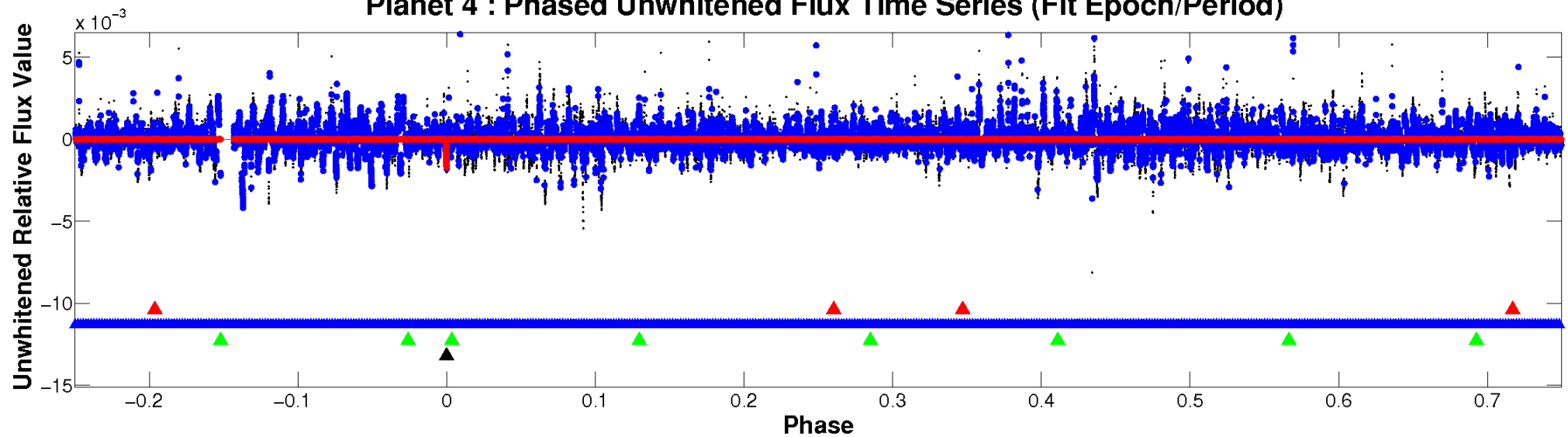
ALT Odd/Even

TCE 008197767-04

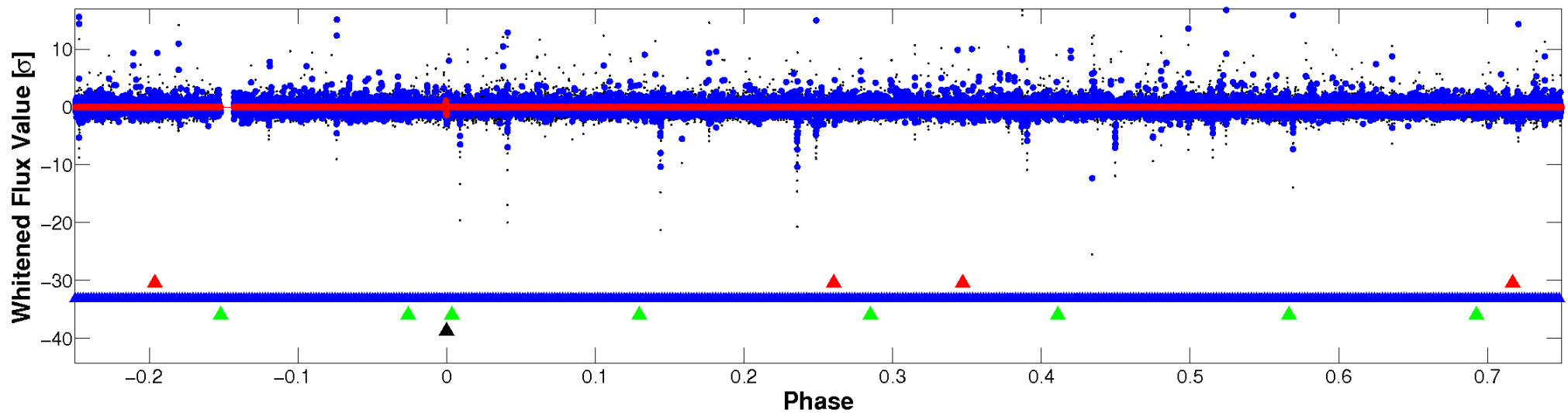


Non-Whitened Vs. Whitened Light Curve

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

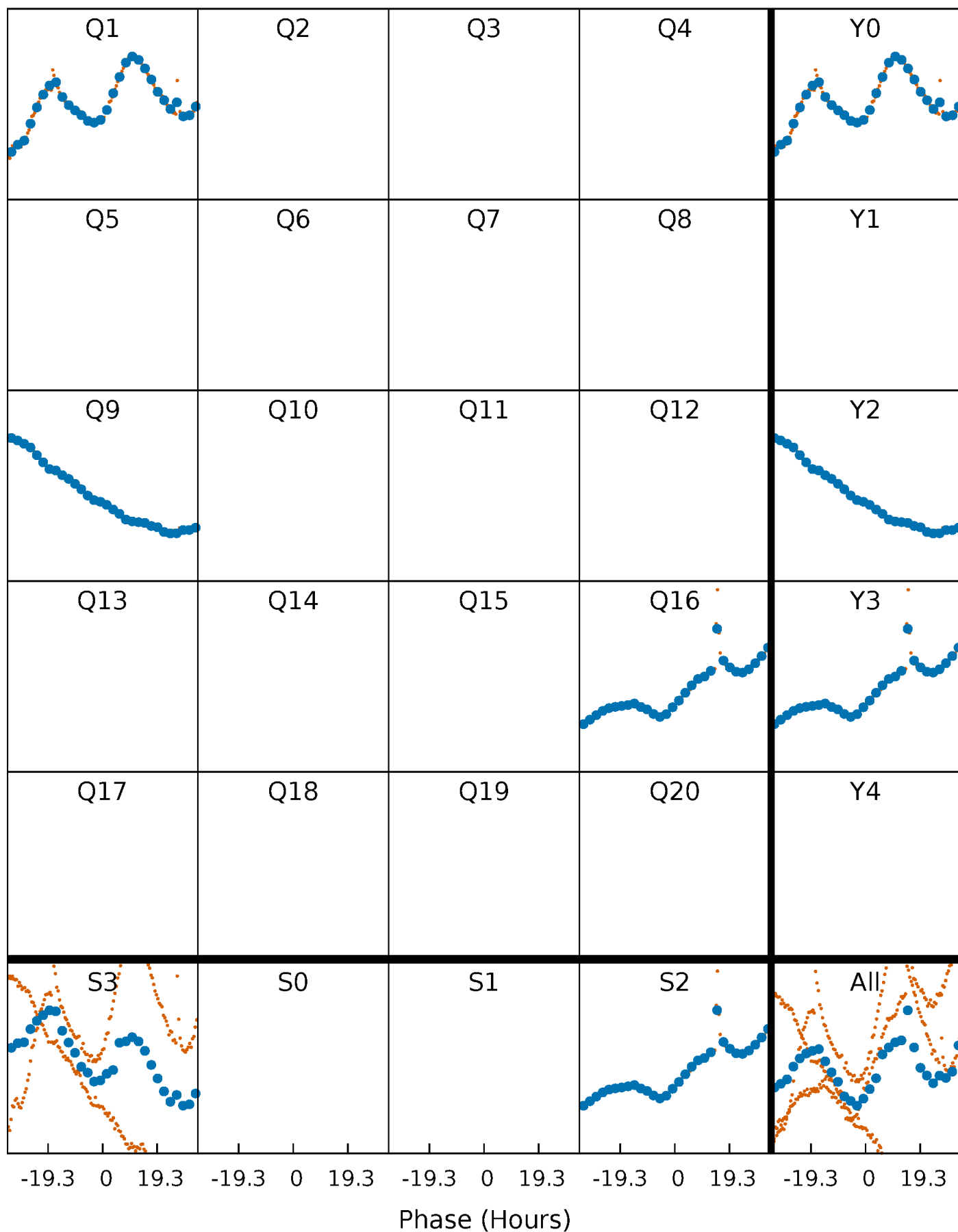


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



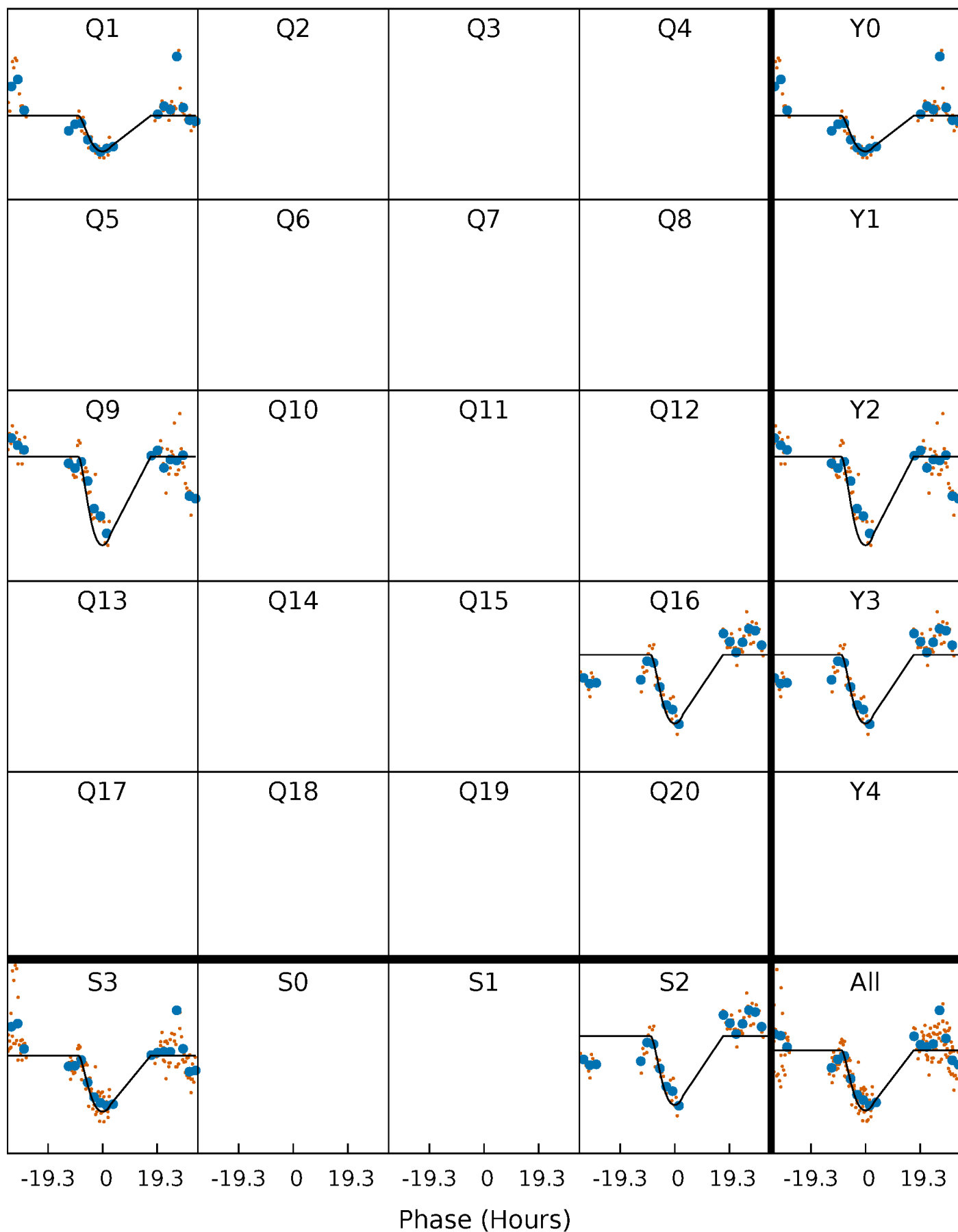
PDC Quarter-Phased Transit Curves

TCE 008197767-04 $P=691.615926$ Days $T_0=134.720734$ (BKJD)



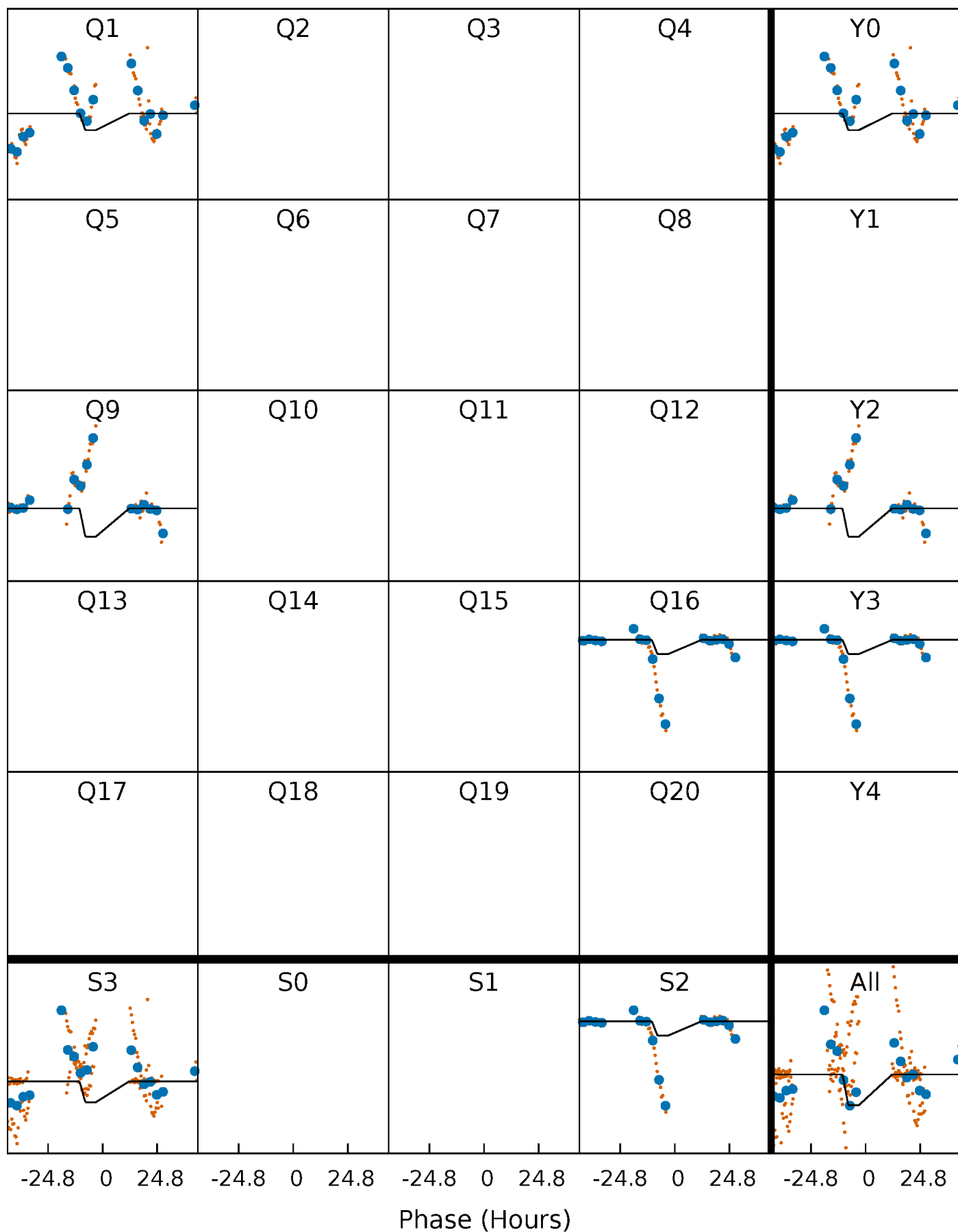
DV Quarter-Phased Transit Curves

TCE 008197767-04 $P=691.615926$ Days $T_0=134.720734$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

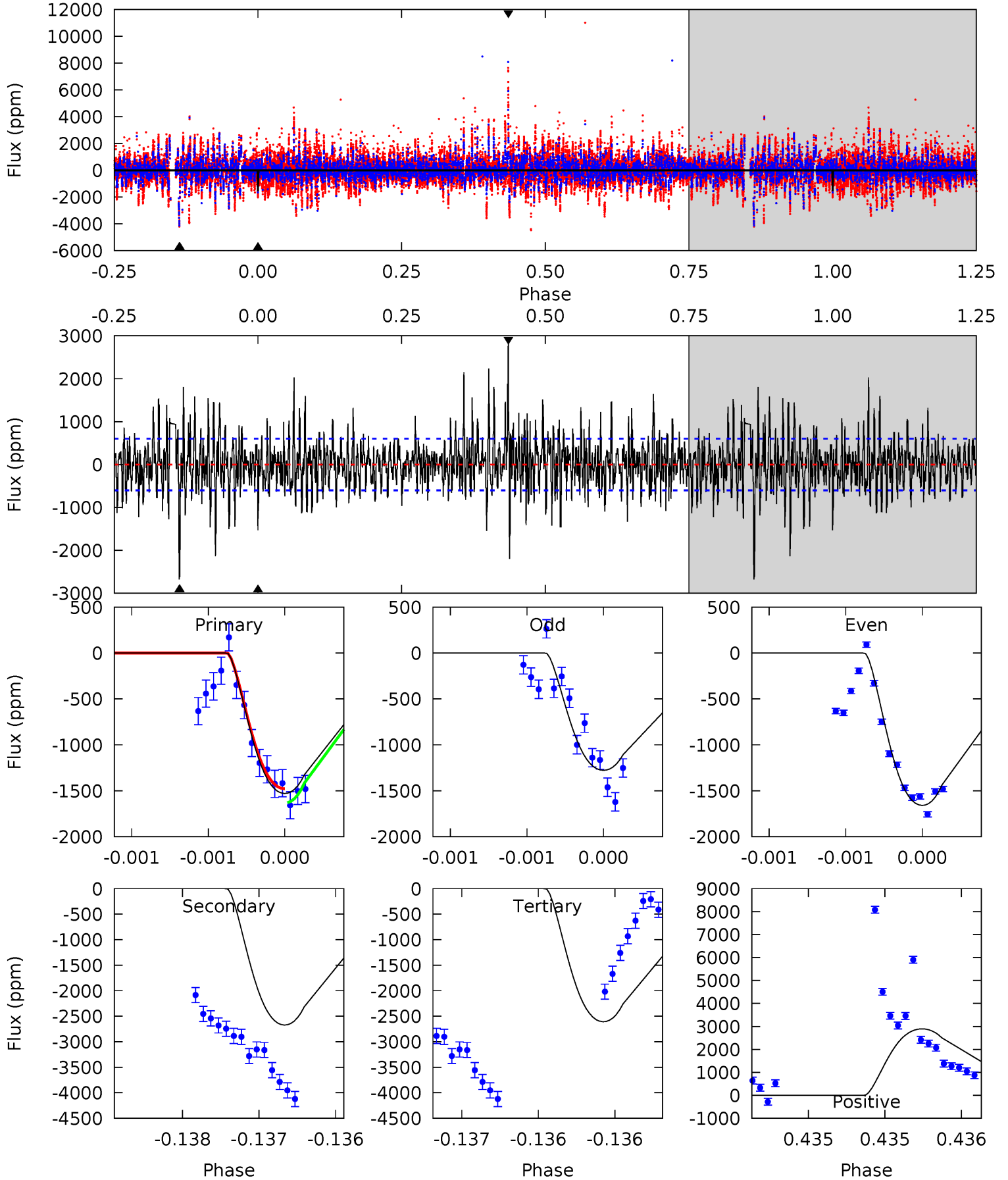
TCE 008197767-04 P=691.594272 Days $T_0=134.970609$ (BKJD)



DV Model-Shift Uniqueness Test

008197767-04, P = 691.615926 Days, E = 134.720734 Days

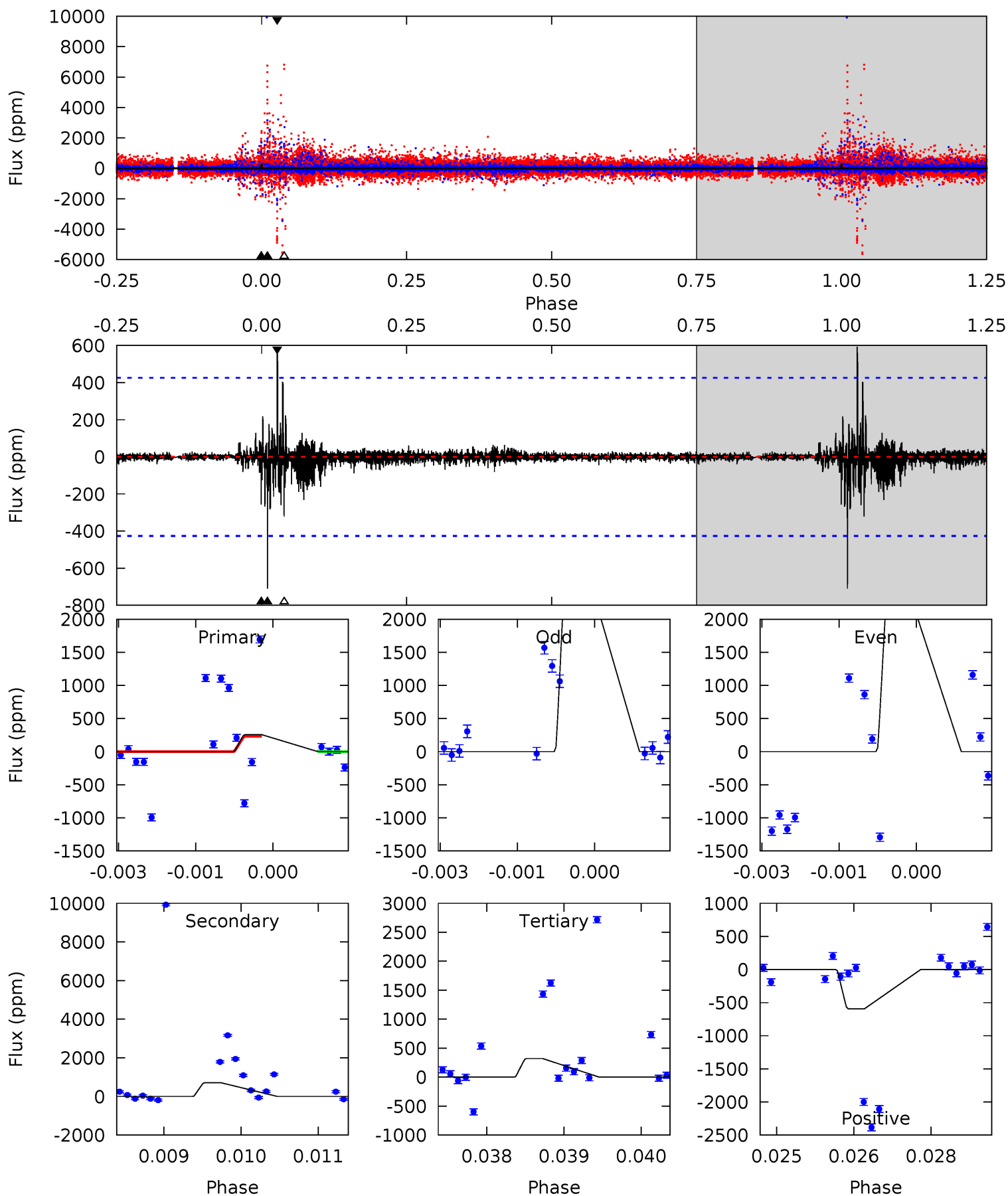
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.0	24.5	23.9	26.5	5.52	3.40	4.91	-9.89	-12.5	0.59	-2.01	1.55	1.00	0.52	0.56



Alt Model-Shift Uniqueness Test

008197767-04, P = 691.594272 Days, E = 134.970609 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.26	9.00	4.07	7.53	5.41	3.23	0.39	-0.81	-4.26	4.93	1.47	2.51	0	0.46	0



Stellar Parameters For KIC 008197767

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4852^{+145}_{-131}	$4.613^{+0.065}_{-0.035}$	$-0.520^{+0.300}_{-0.300}$	$0.651^{+0.058}_{-0.058}$	$0.634^{+0.084}_{-0.036}$	$3.238^{+0.852}_{-0.467}$
	+3%/-3%	+1%/-1%	+58%/-58%	+9%/-9%	+13%/-6%	+26%/-14%
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 008197767-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2673 ± 109	$3.61^{+0.81}_{-0.73}$	209^{+7}_{-7}	4873^{+551}_{-371}	$201225^{+115668}_{-69172}$
Alt.	-709 ± 79	$2.70^{+0.76}_{-0.81}$	209^{+8}_{-7}	4203^{+646}_{-348}	94795^{+96625}_{-36808}

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

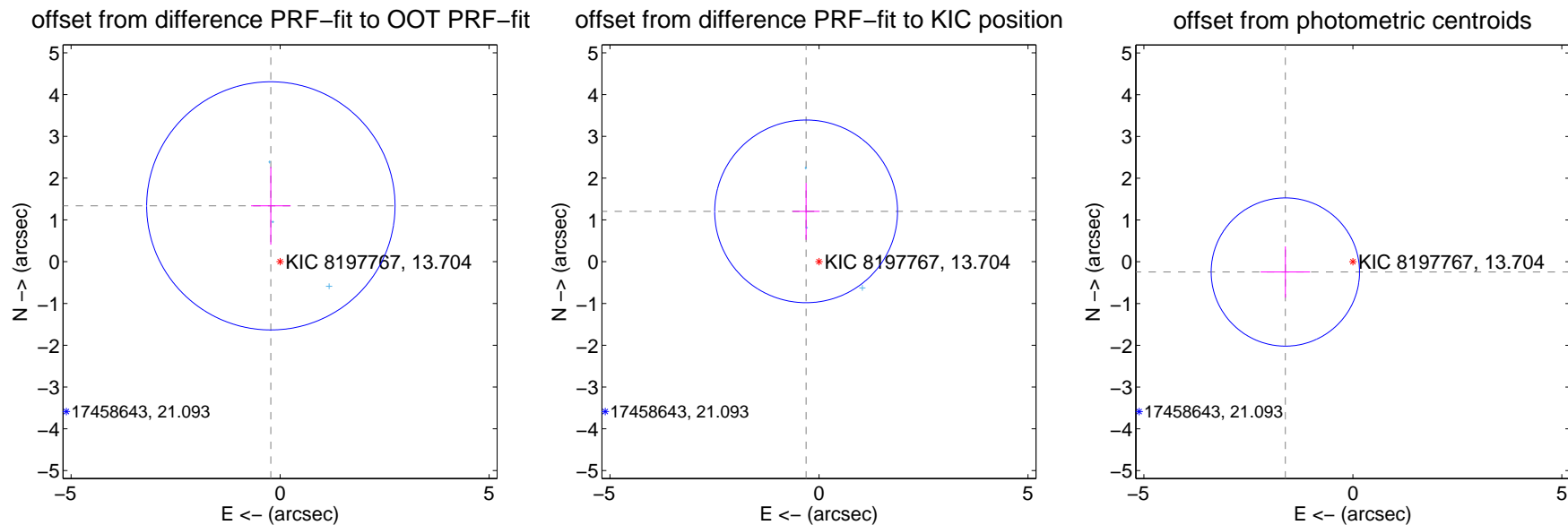
DV Centroid Data

Supplemental centroid analysis for 008197767-04. Kepler magnitude: 13.70. Transit SNR 8.82

There are 3 quarters with good PRF difference image offsets

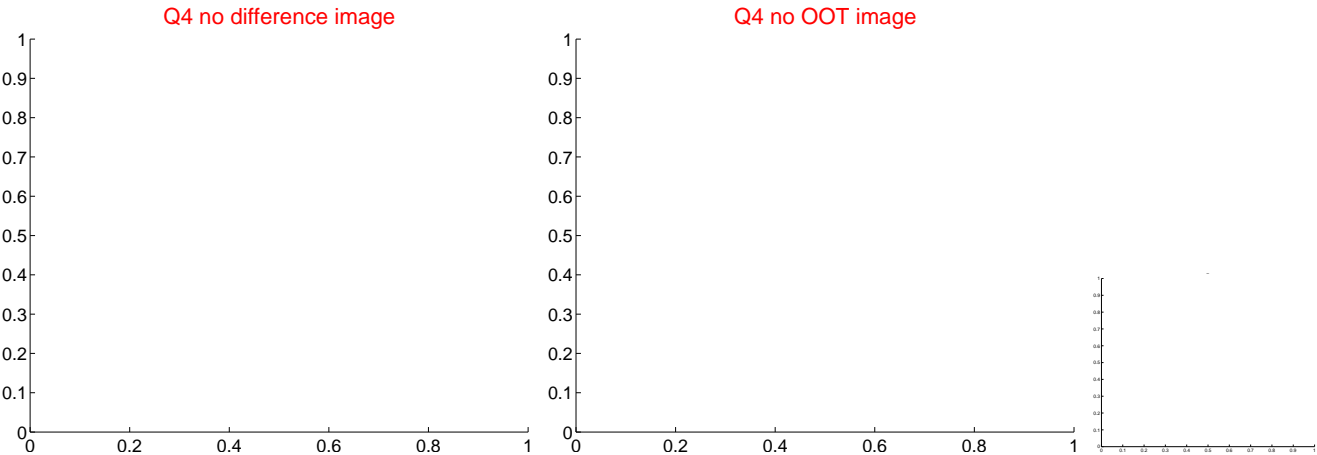
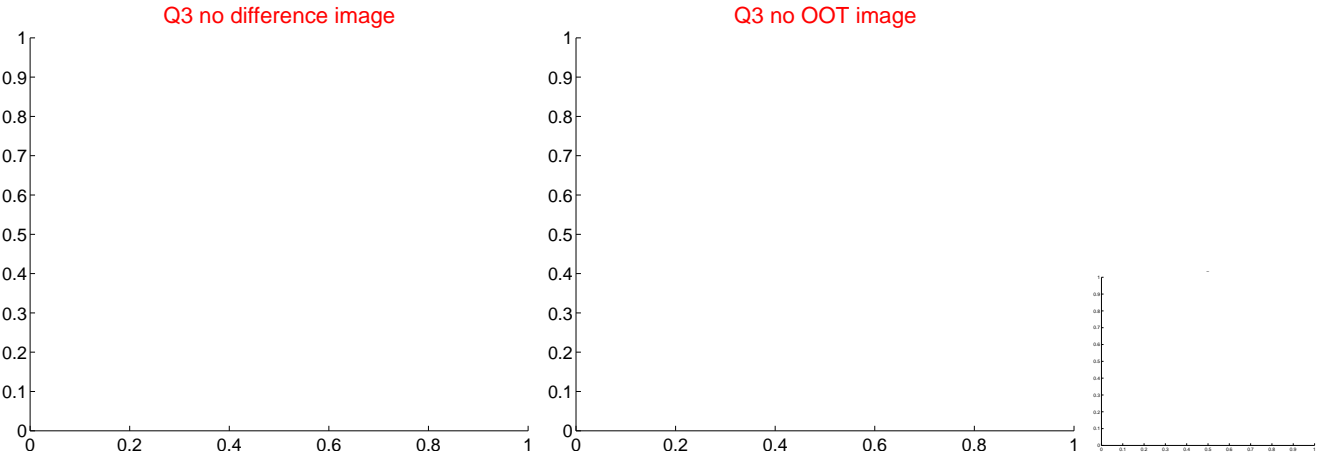
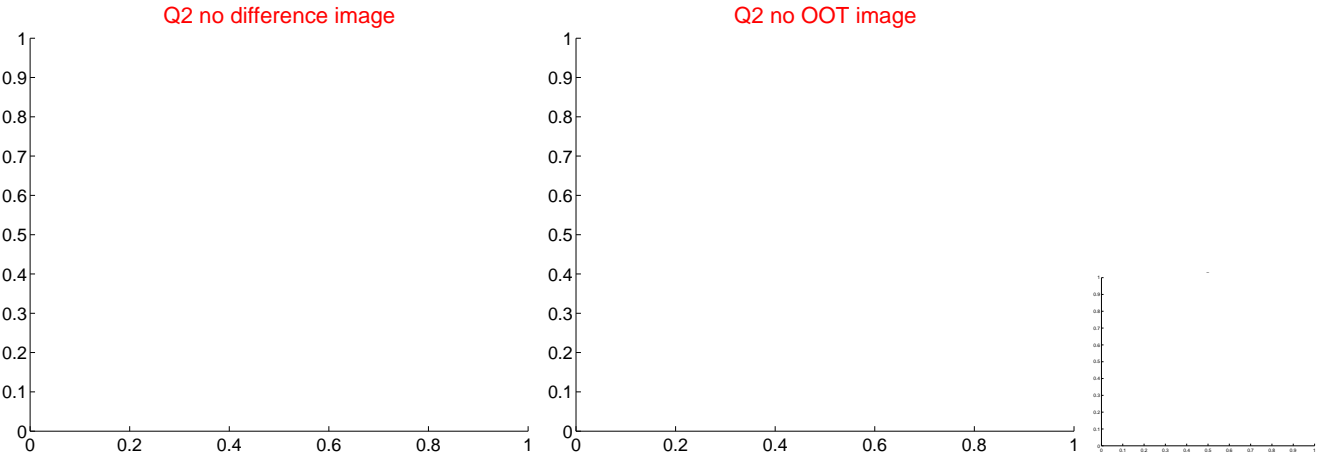
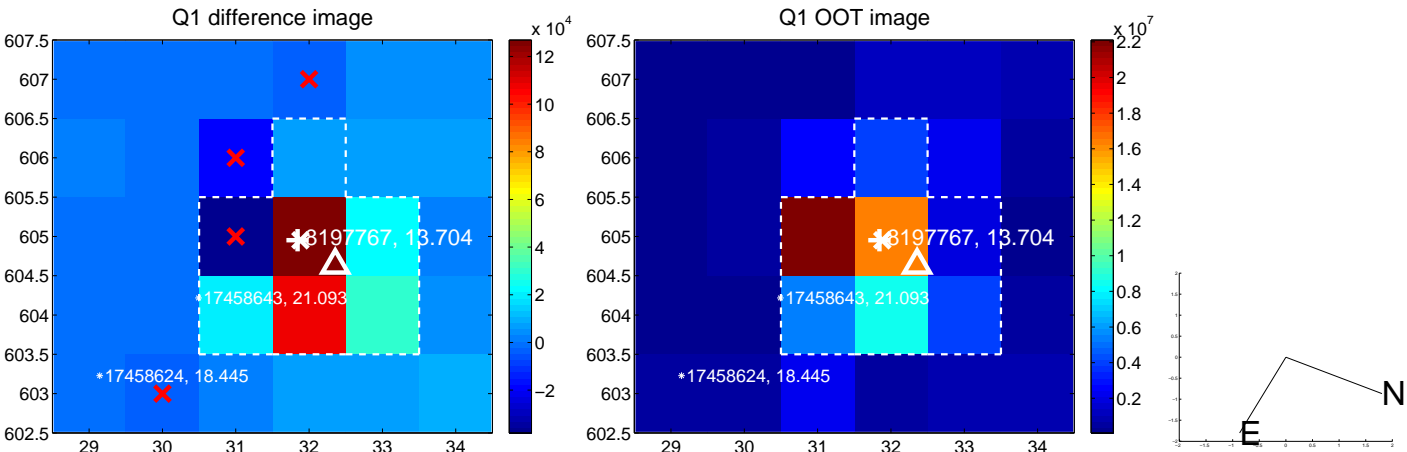
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.355 ± 0.990	1.37	0.221 ± 0.473	1.336 ± 0.929
PRF-fit source offset from KIC position	1.243 ± 0.729	1.71	0.308 ± 0.325	1.205 ± 0.680
photometric centroid source offset	1.63 ± 0.59	2.76	1.62 ± 0.59	-0.25 ± 0.61

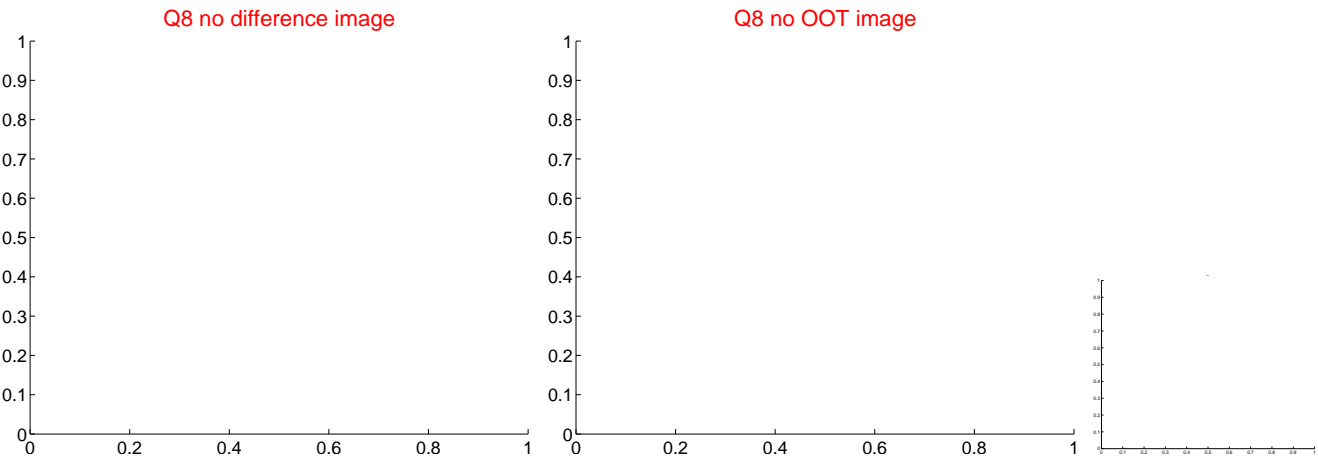
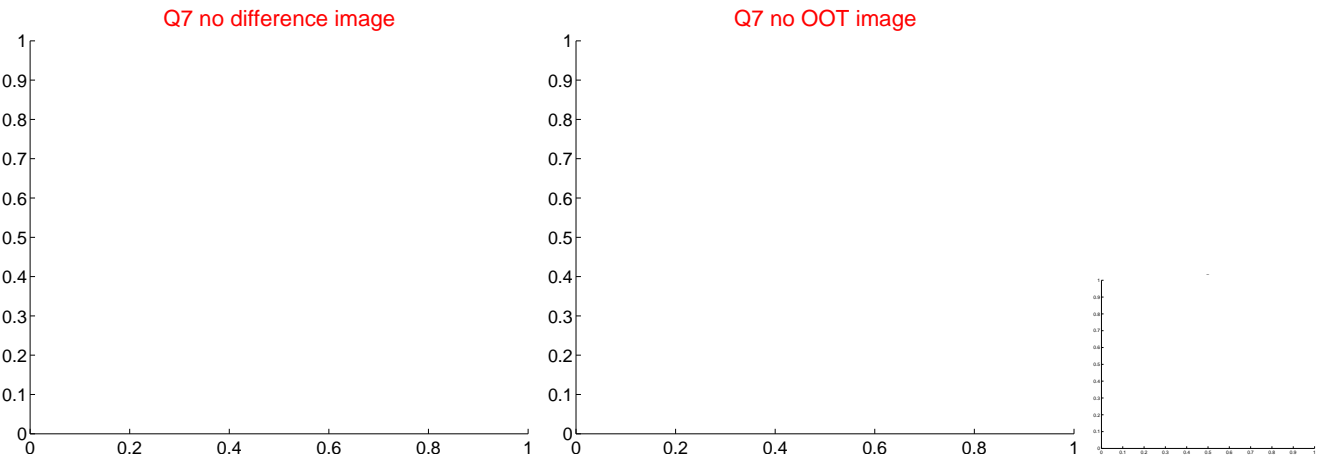
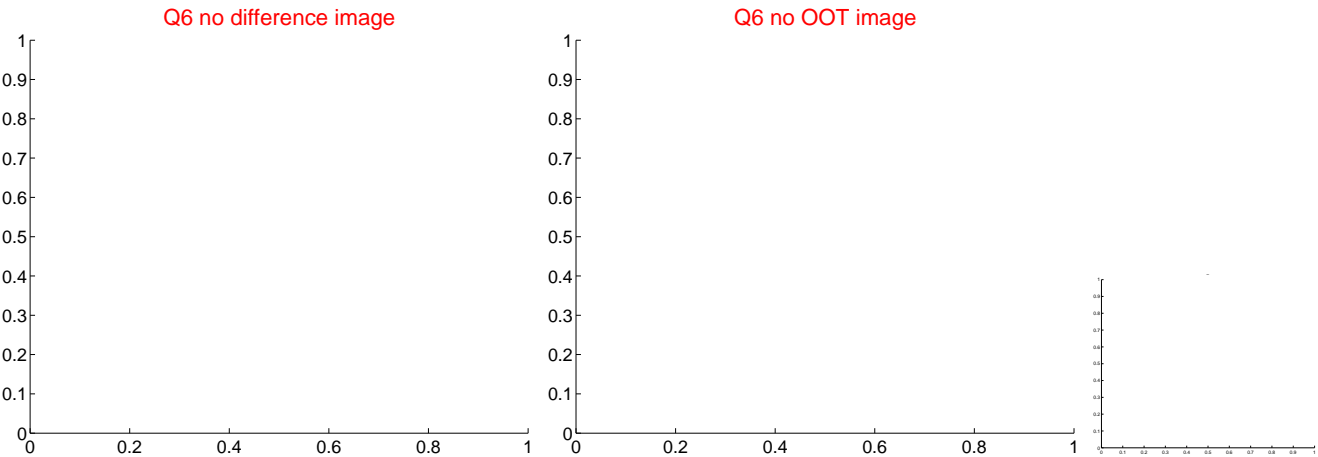
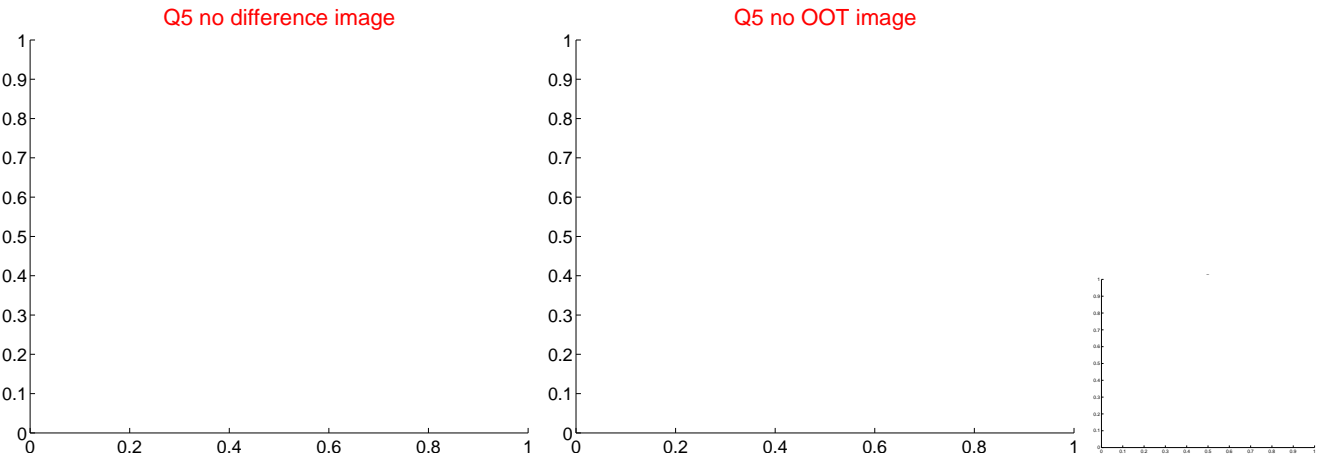


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

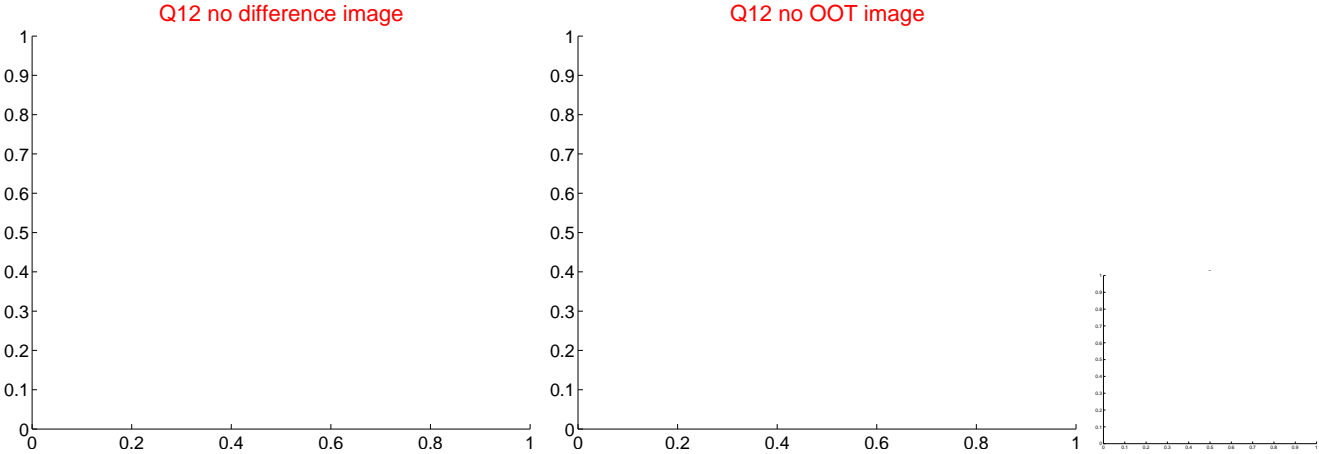
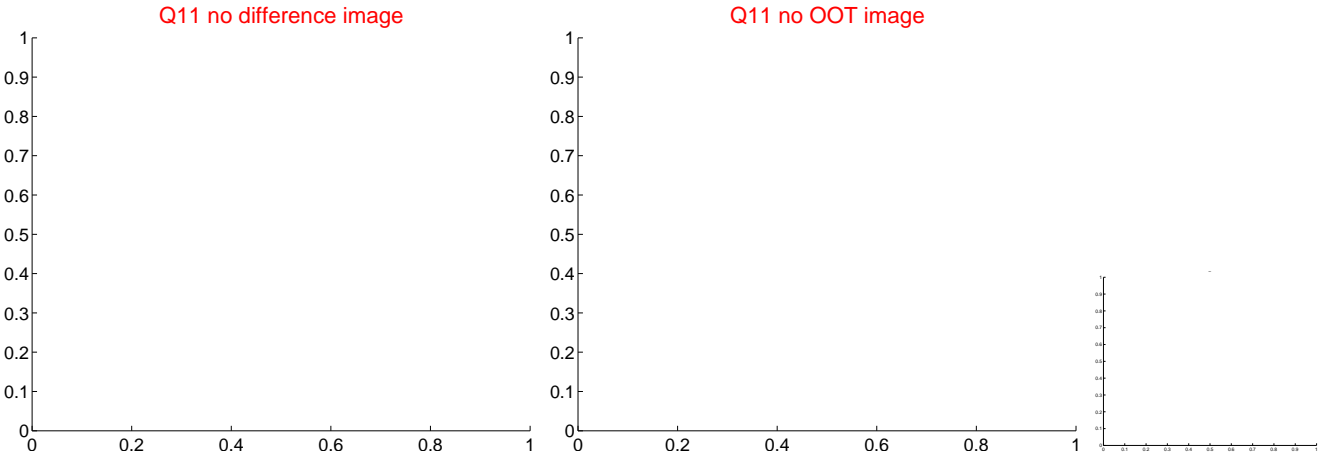
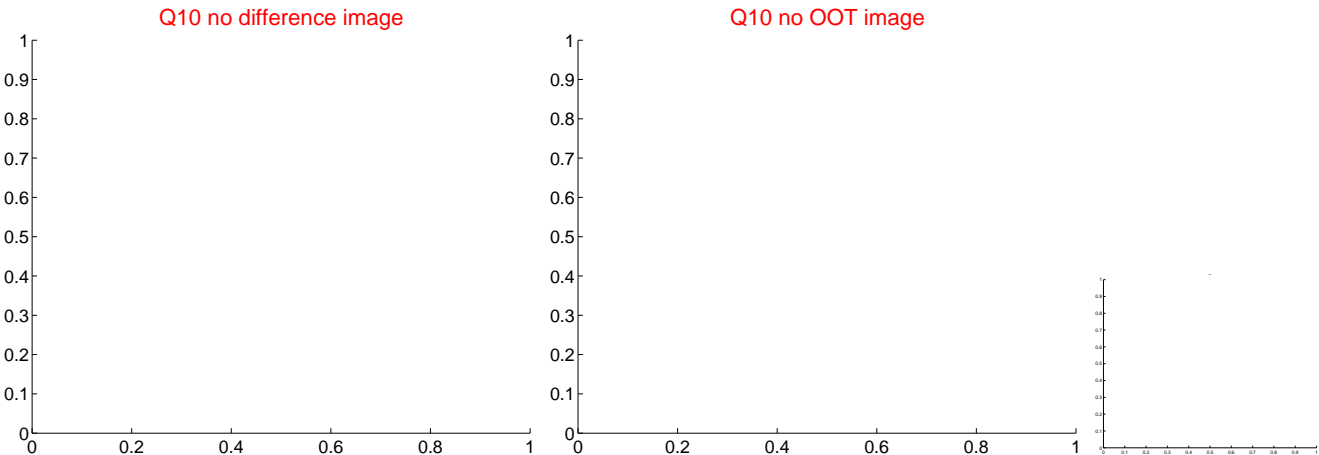
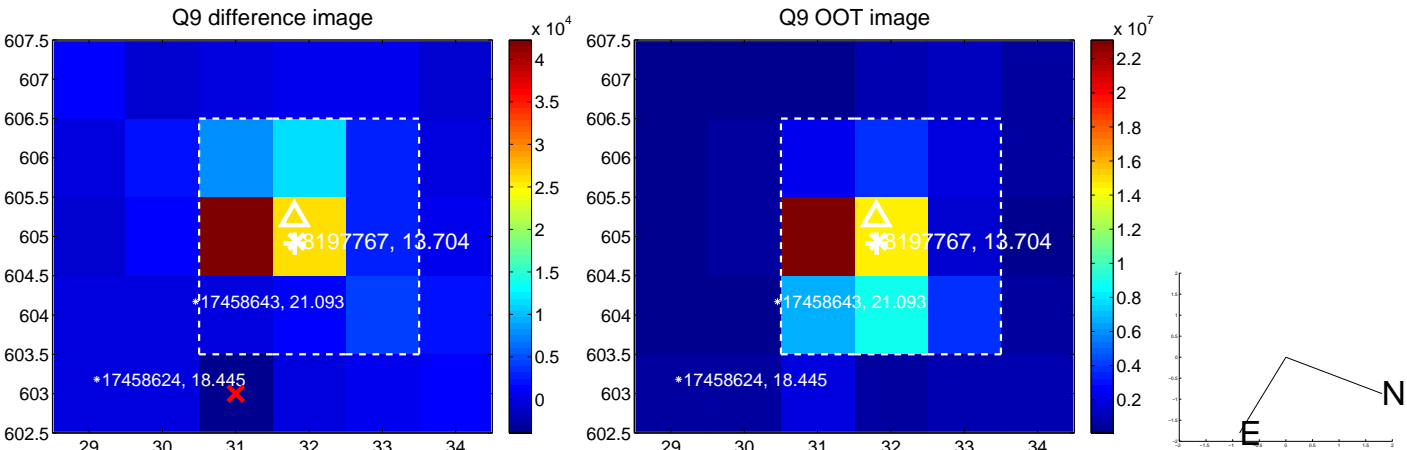
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



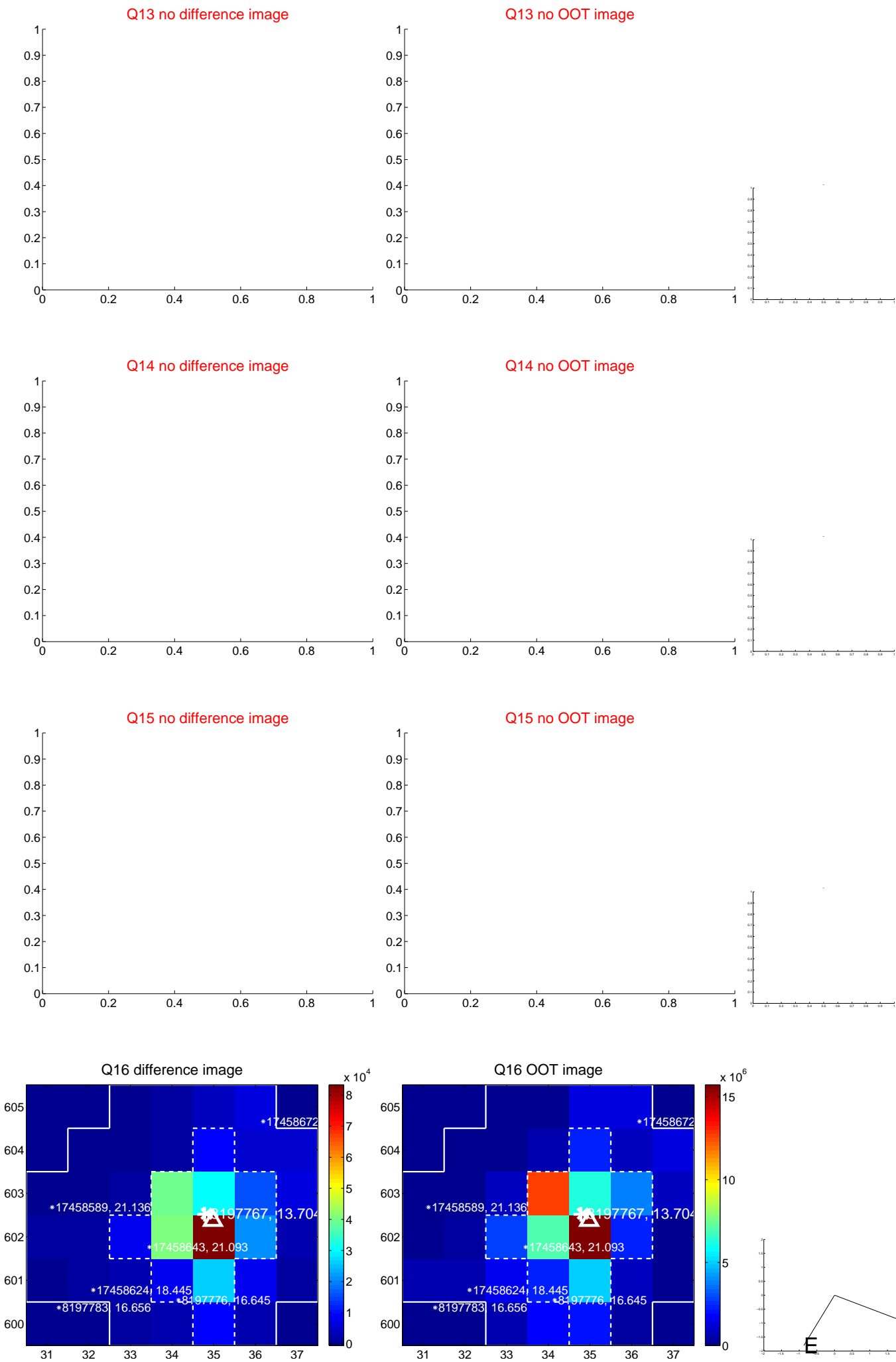
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



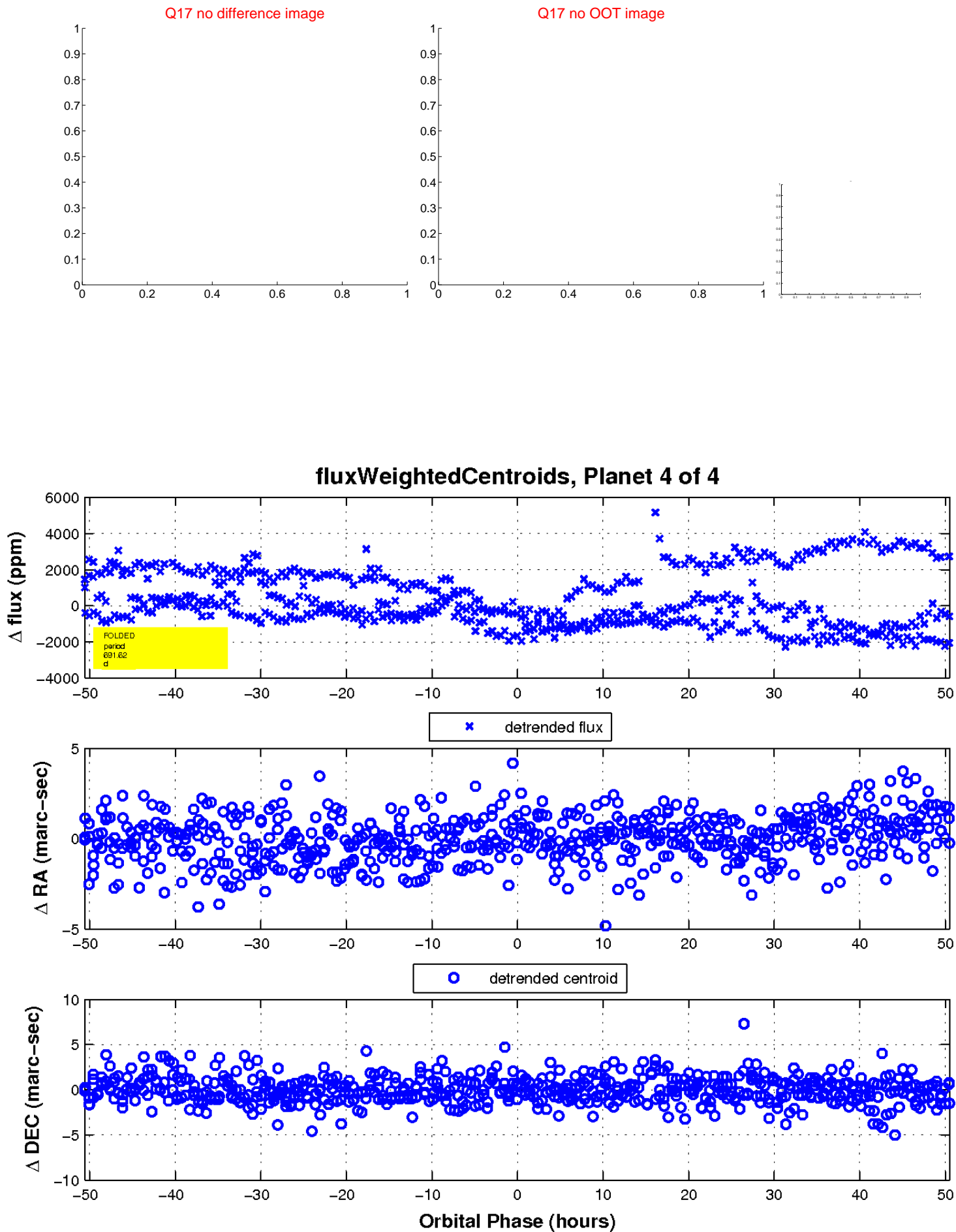
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

