

KIC 010798647

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})
010798647-01	OBS	No	0.678137	132.151213	47.0	1.561	8.3	9.0	5.49	4756	4.62	0.00
010798647-02	OBS	No	404.885950	276.896261	843.1	4.716	7.5	8.5	5.49	4756	21.31	12.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010798647-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010798647-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—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.

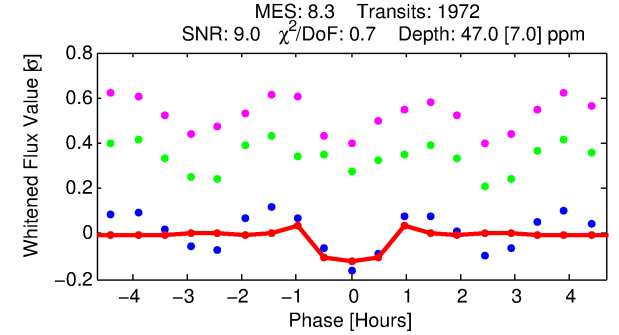
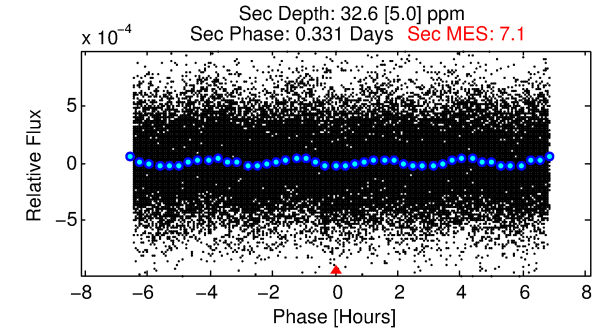
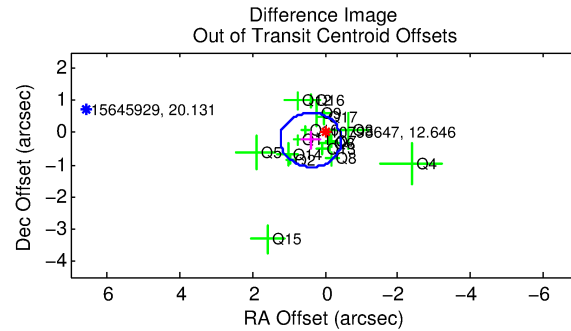
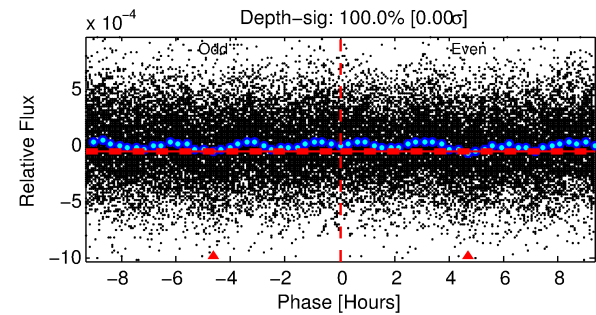
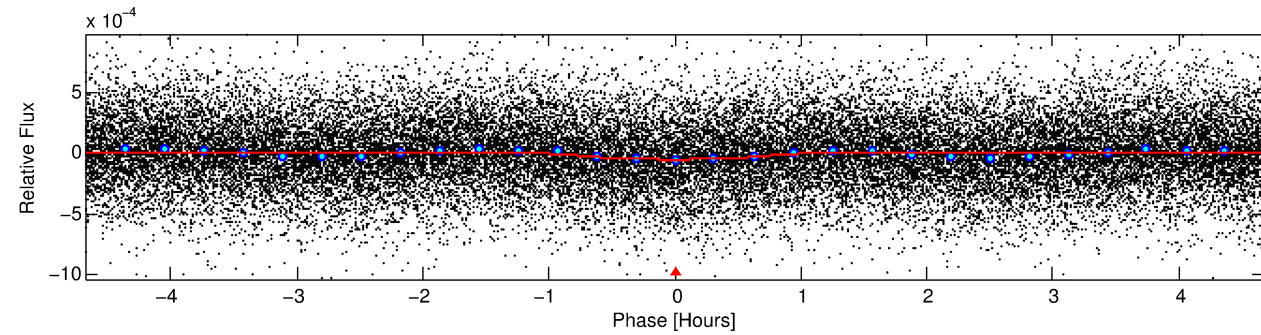
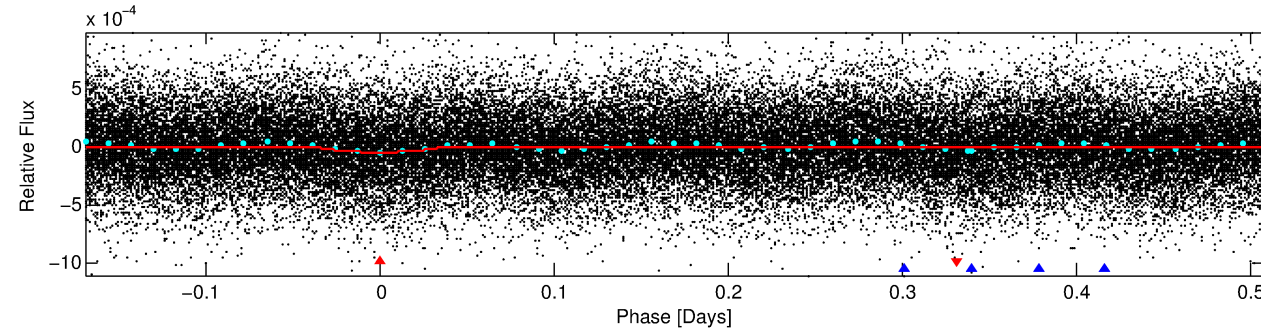
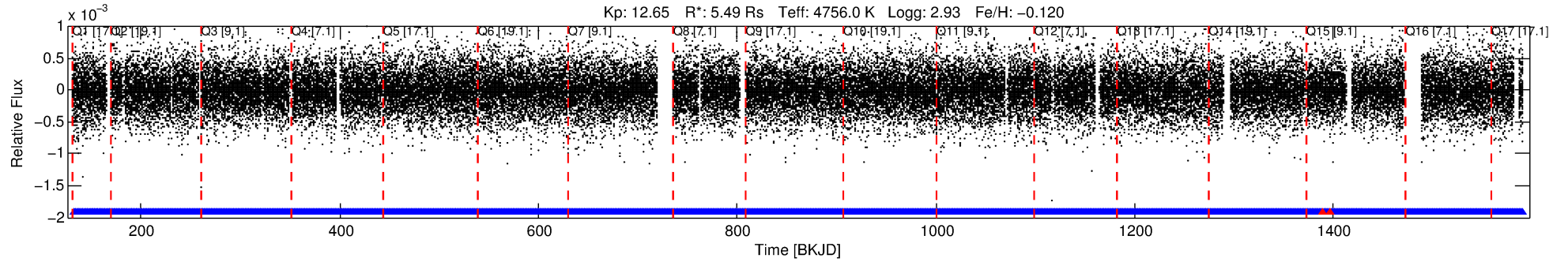
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010798647-01

No Significant Match Found

DV One-Page Summary

KIC: 10798647 Candidate: 1 of 2 Period: 0.678 d



DV Fit Results:

Period = 0.67814 [0.00001] d
Epoch = 132.1512 [0.0015] BKJD
Rp/R* = 0.0077 [0.0034]
a/R* = 1.77 [2.04]
b = 0.90 [0.37]
Seff = N/A
Teq = N/A
Rp = 4.62 [2.15] Re
a = N/A
Ag = N/A
Teffp = N/A

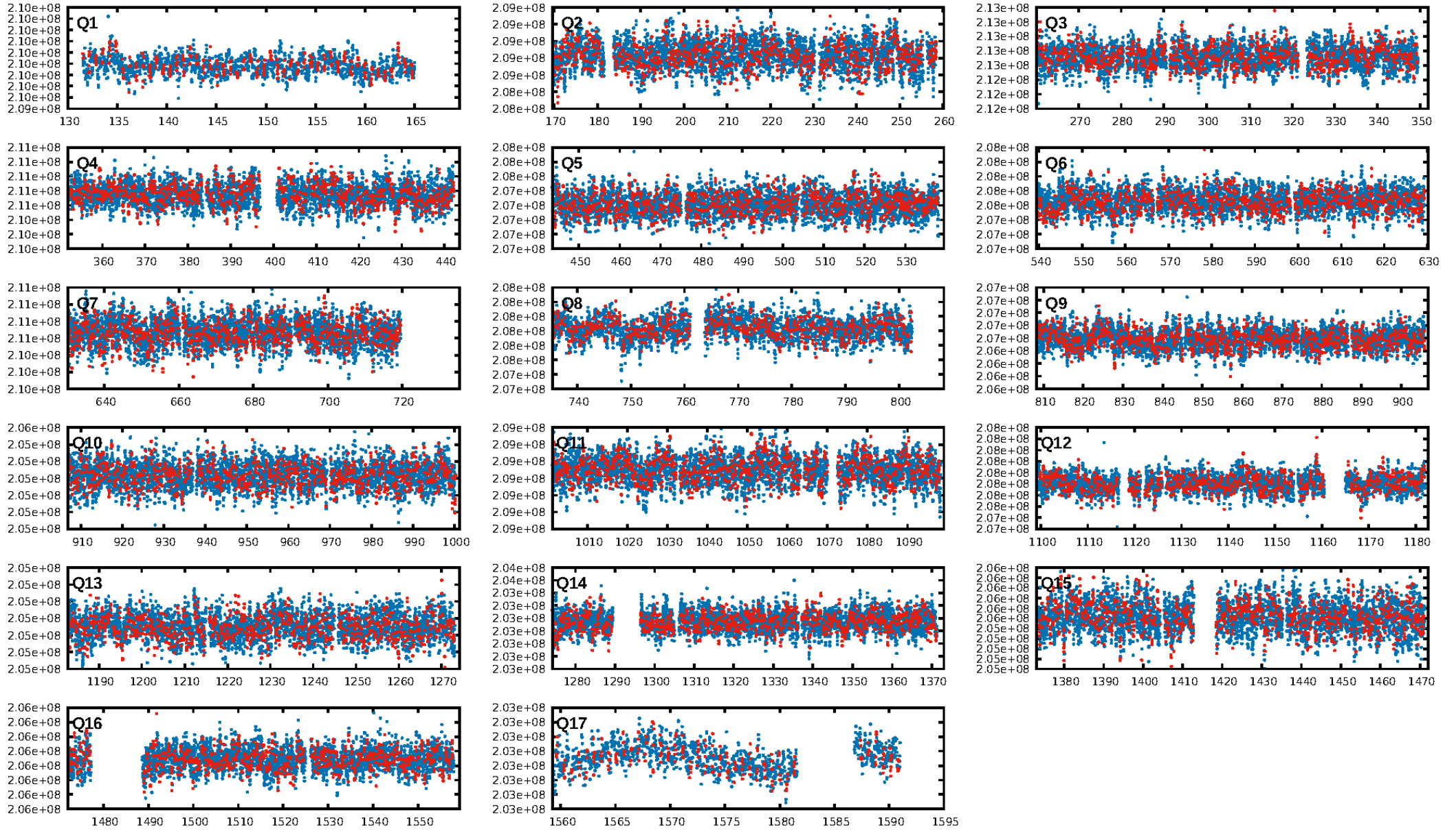
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1952.76 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.02e-17
RollingBand-fgt: 1.00 [1881/1883]
GhostDiagnostic-chr: 3.032
Centroid-sig: 4.2%
Centroid-so: 0.564 arcsec [1.64 σ]
OotOffset-rm: 0.454 arcsec [1.62 σ]
KicOffset-rm: 0.504 arcsec [1.96 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.81 [13/16]
DiffImageOverlap-fno: 1.00 [17/17]

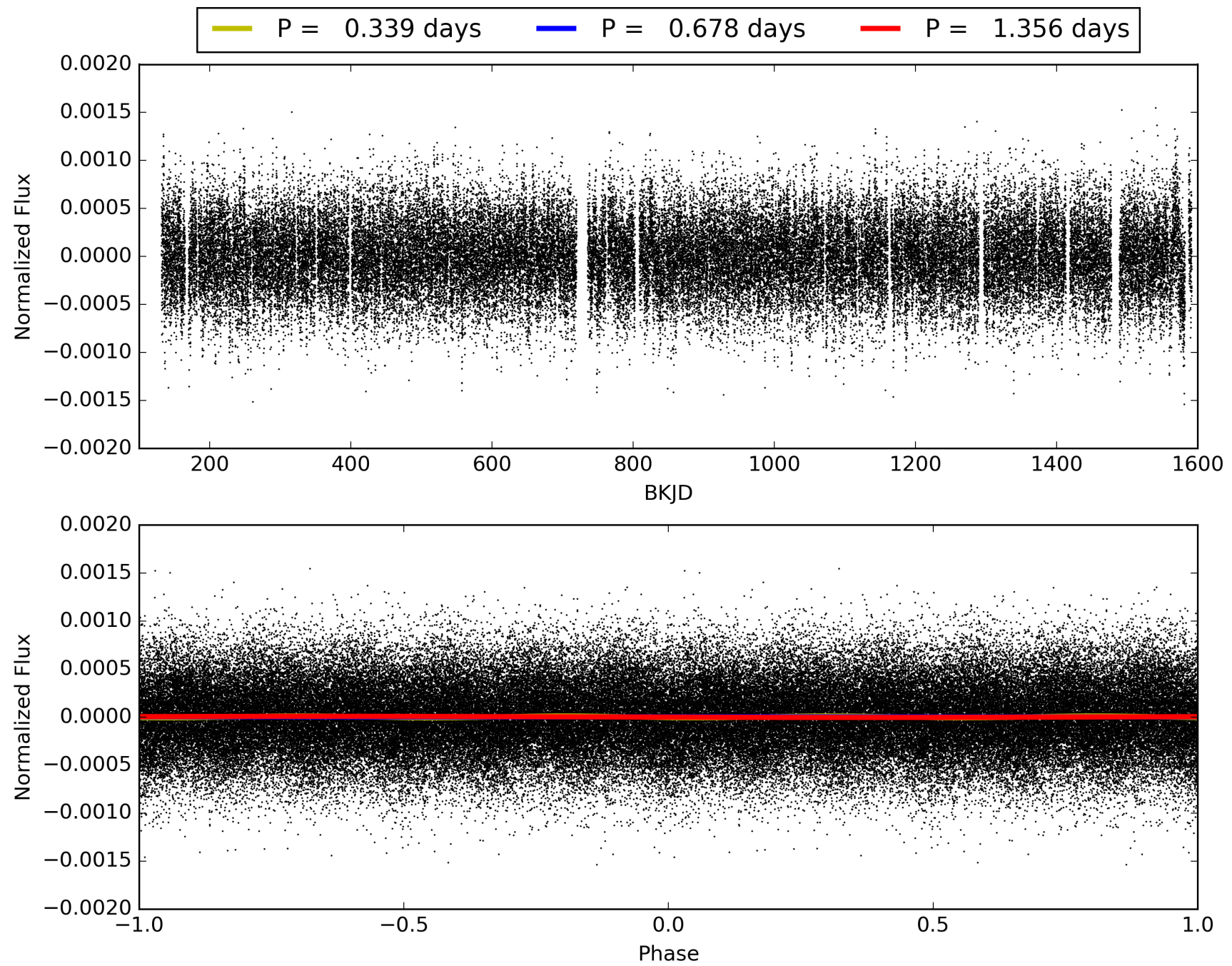
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:35:20 Z

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

TCE 010798647-01, PDC Light Curves

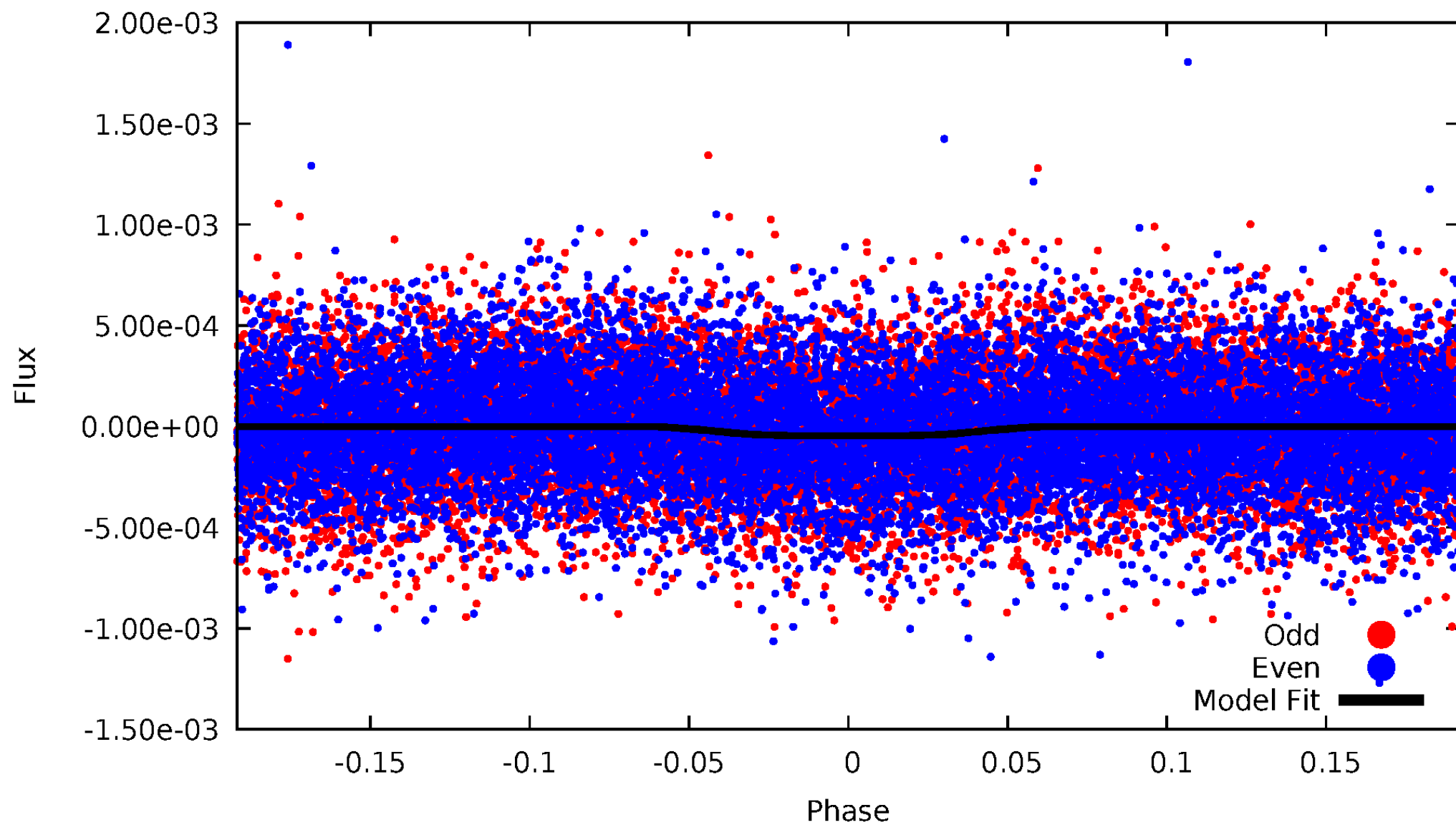


TCE 010798647-01



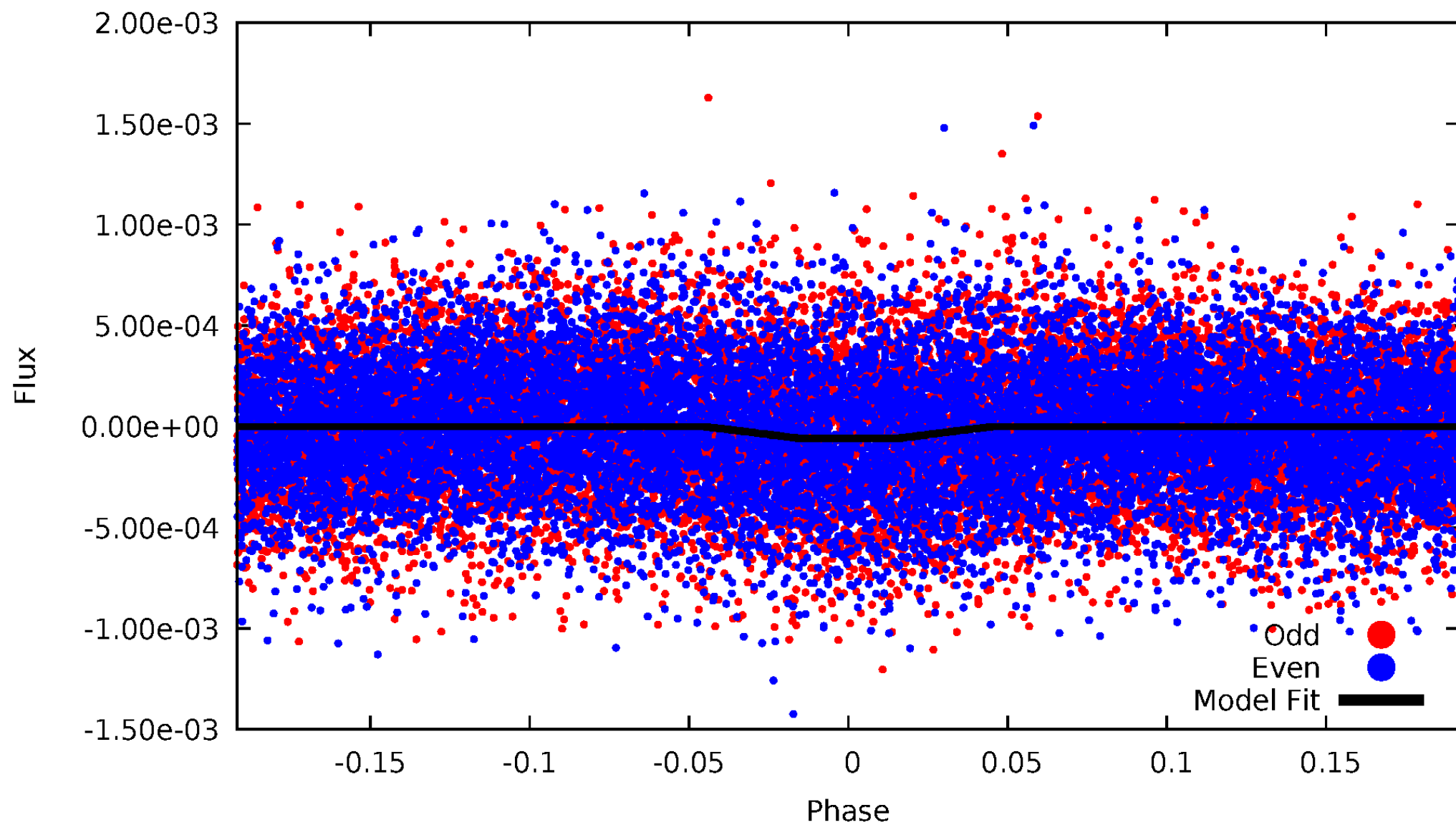
DV Odd/Even

TCE 010798647-01

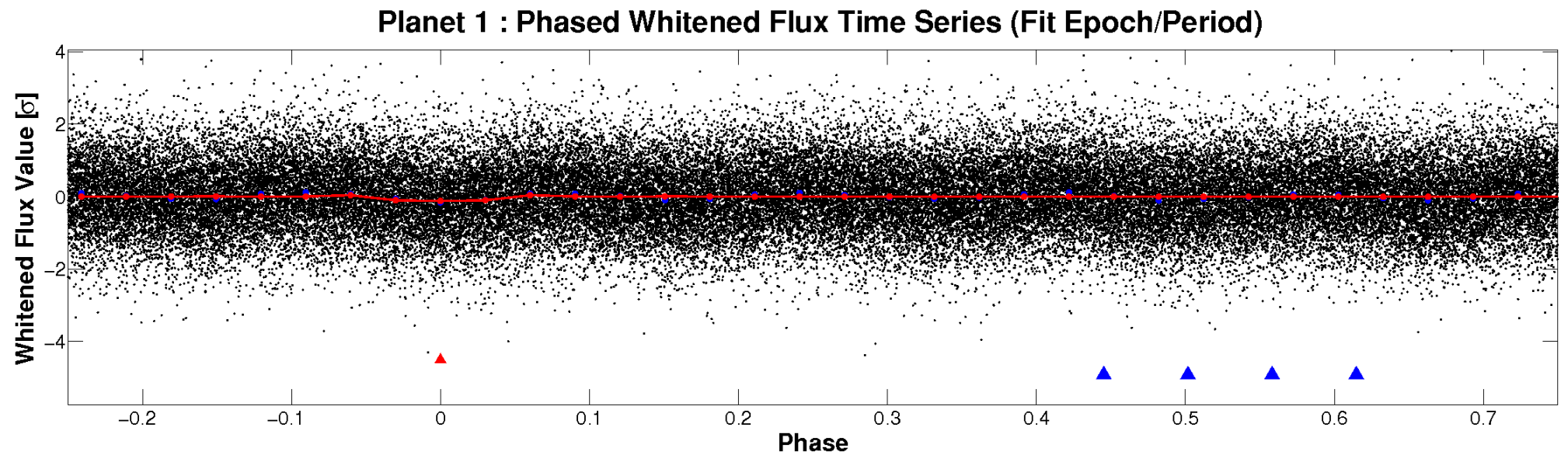
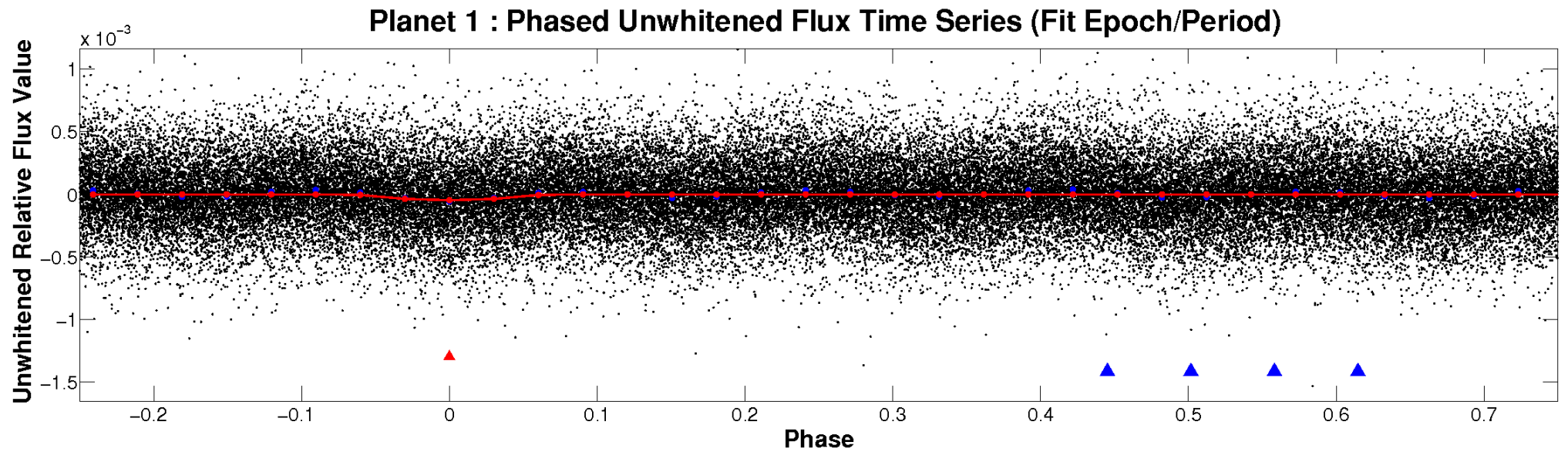


ALT Odd/Even

TCE 010798647-01

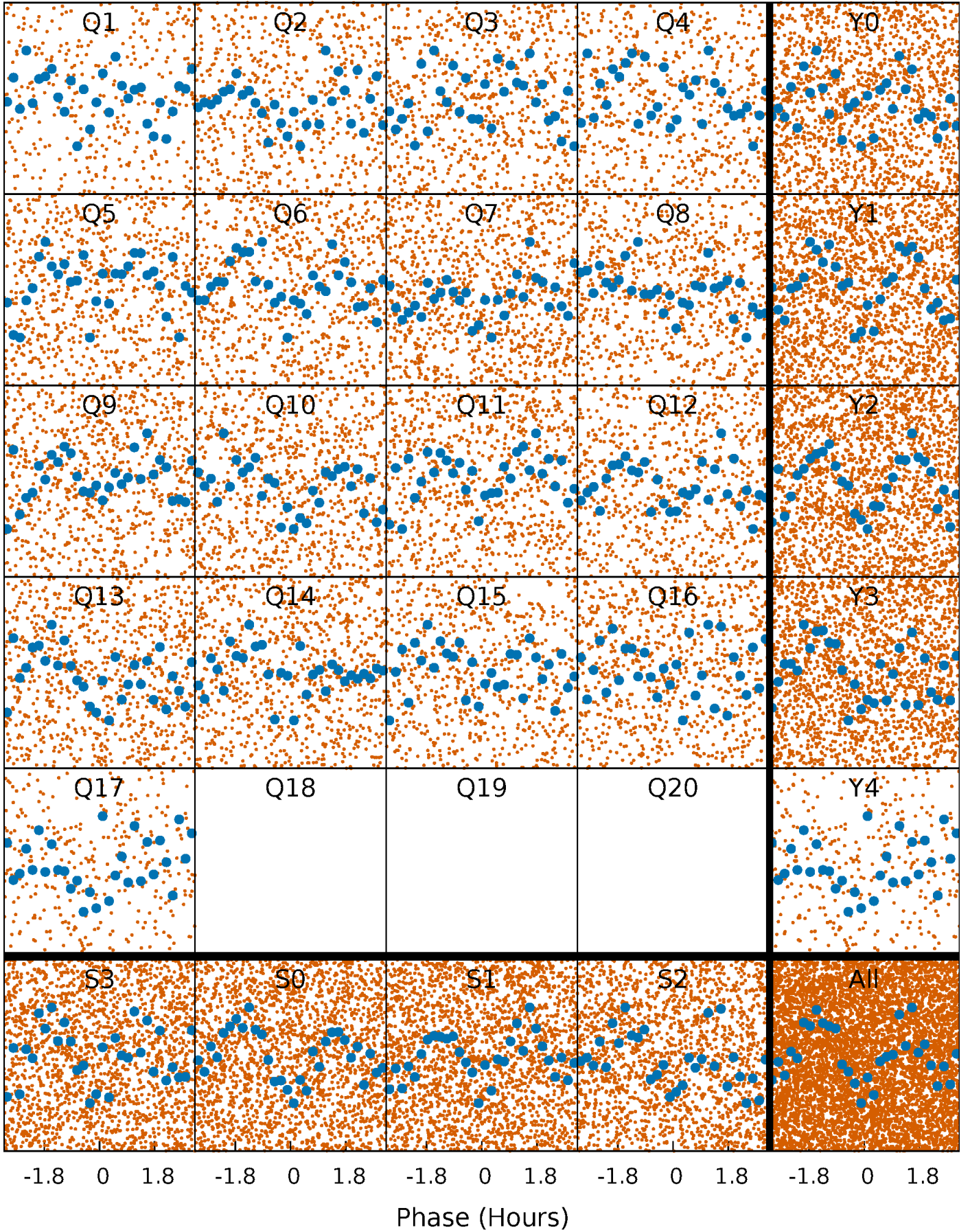


Non-Whitened Vs. Whitened Light Curve



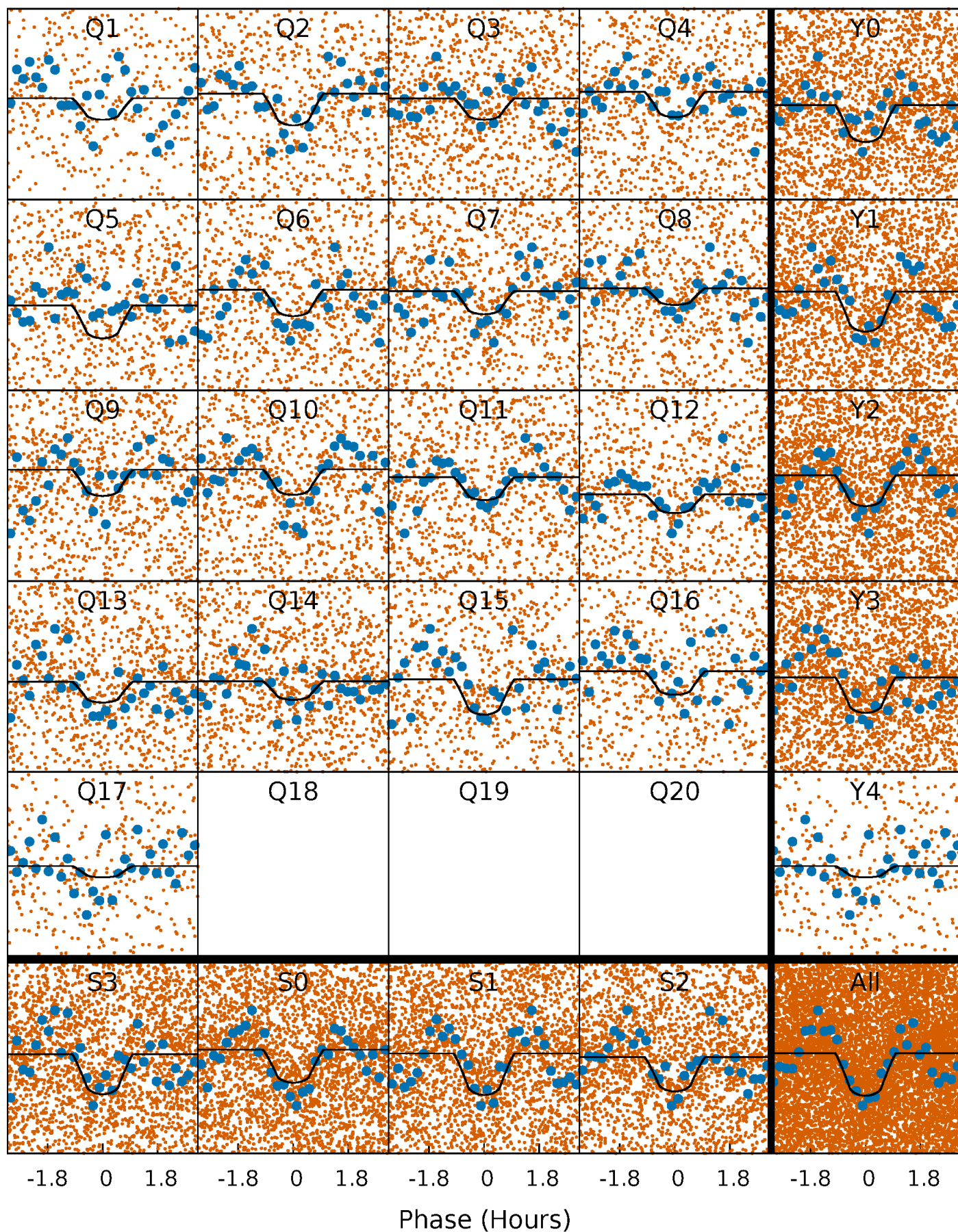
PDC Quarter-Phased Transit Curves

TCE 010798647-01 P= 0.678137 Days $T_0=132.151213$ (BKJD)



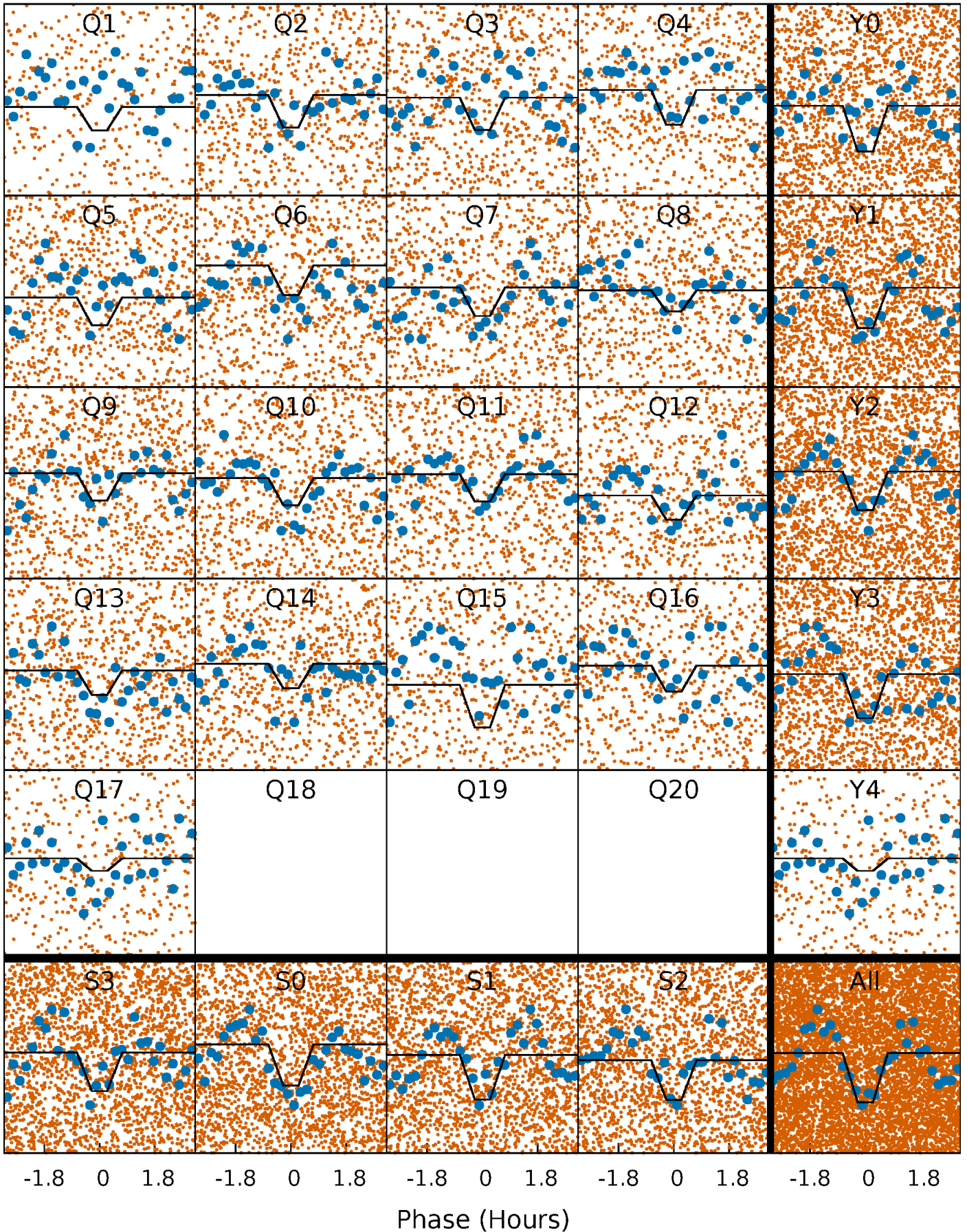
DV Quarter-Phased Transit Curves

TCE 010798647-01 P= 0.678137 Days $T_0=132.151213$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

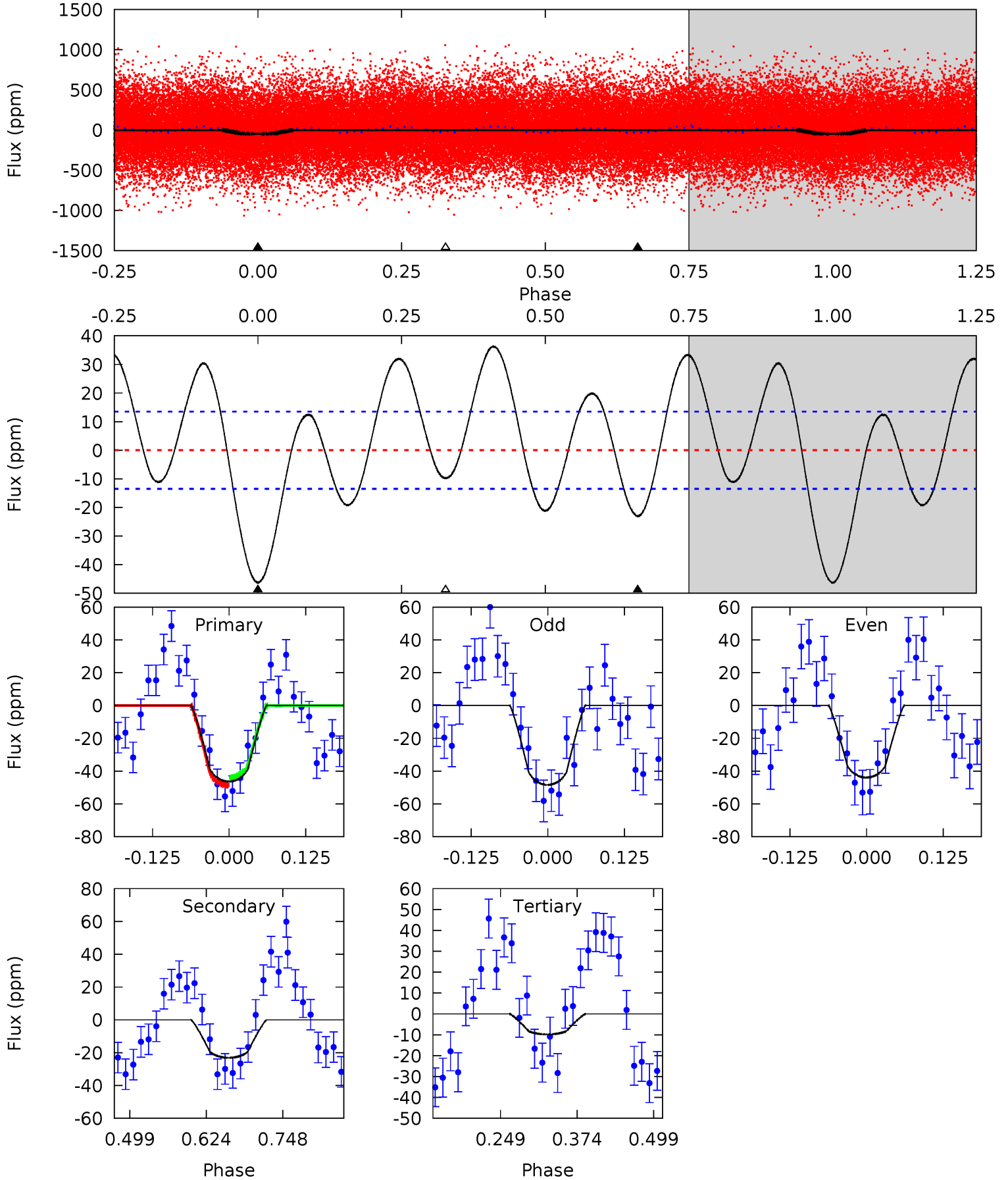
TCE 010798647-01 P= 0.678137 Days $T_0=132.151213$ (BKJD)



DV Model-Shift Uniqueness Test

010798647-01, P = 0.678137 Days, E = 131.473076 Days

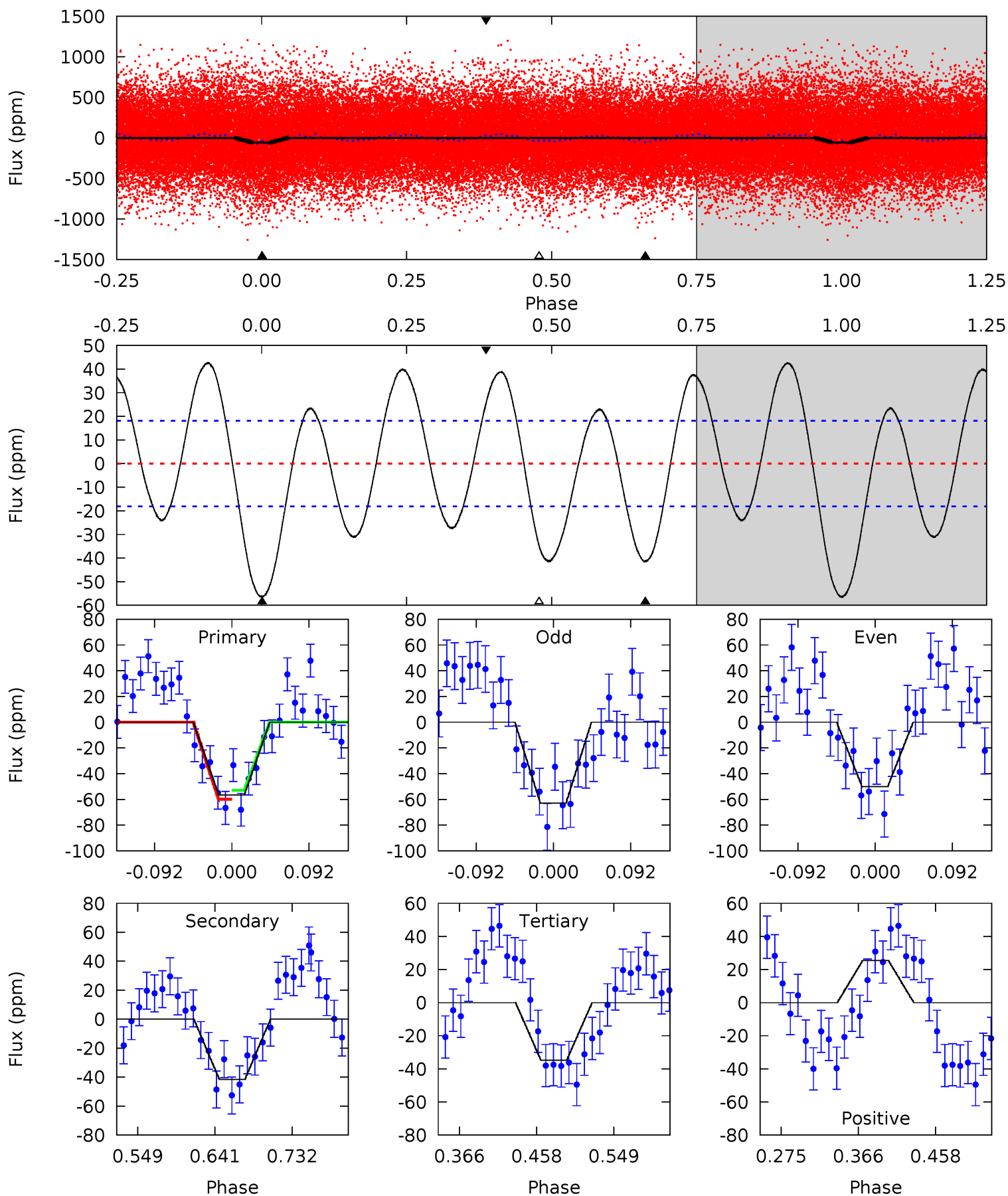
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	7.74	3.28	0	4.52	1.54	5.82	12.2	15.5	4.46	7.74	0.75	1.10	0.44	0.78



Alt Model-Shift Uniqueness Test

010798647-01, P = 0.678137 Days, E = 131.473076 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.3	10.5	8.82	6.44	4.58	1.69	6.18	5.47	7.85	1.69	4.07	1.62	1.11	0.43	0.88



Stellar Parameters For KIC 010798647

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4756^{+71}_{-50}	$2.930^{+0.033}_{-0.030}$	$-0.120^{+0.150}_{-0.100}$	$5.488^{+0.853}_{-0.213}$	$0.935^{+0.297}_{-0.035}$	$0.008^{+0.001}_{-0.001}$
	+1%/-1%	+1%/-1%	+125%/-83%	+16%/-4%	+32%/-4%	+10%/-18%
Source	SPE74	AST9	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 010798647-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-23 ± 3	$4.66^{+2.14}_{-1.97}$	5648^{+113}_{-93}	-4184^{+7935}_{-274}	$0.133^{+0.258}_{-0.073}$
Alt.	-42 ± 4	$4.72^{+2.16}_{-2.04}$	5655^{+115}_{-97}	-3609^{+8612}_{-663}	$0.227^{+0.483}_{-0.117}$

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 $A_{obs} \gg 1.0$

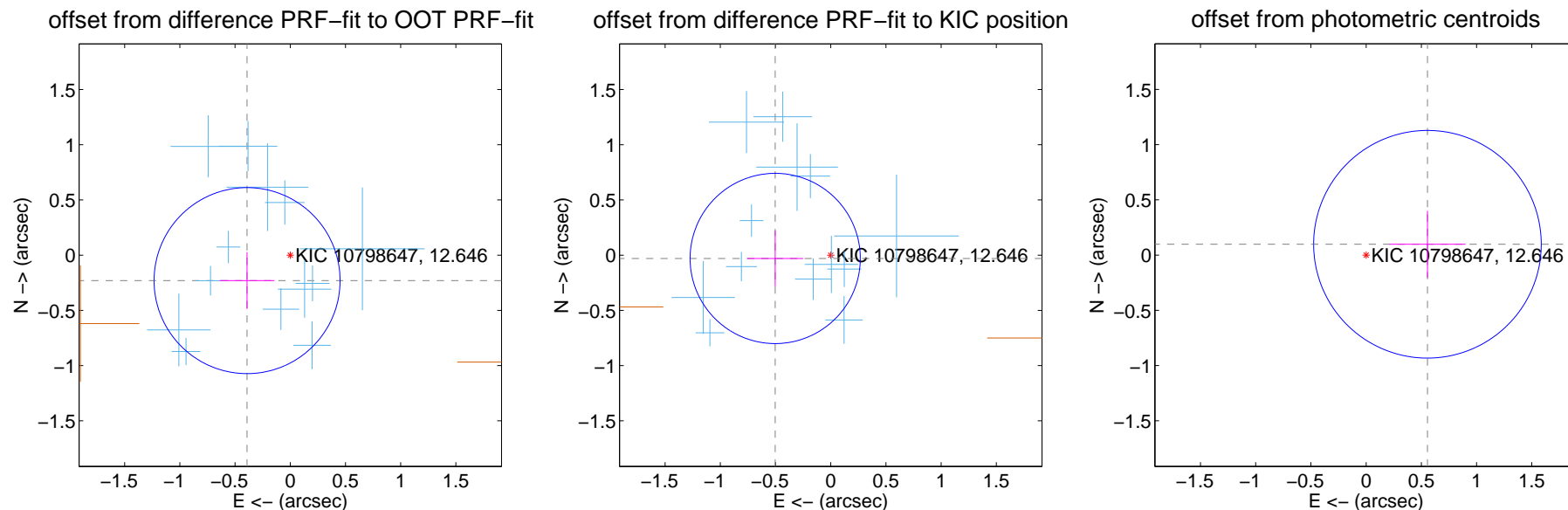
DV Centroid Data

Supplemental centroid analysis for 010798647-01. Kepler magnitude: 12.65. Transit SNR 8.96

There are 13 quarters with good PRF difference image offsets

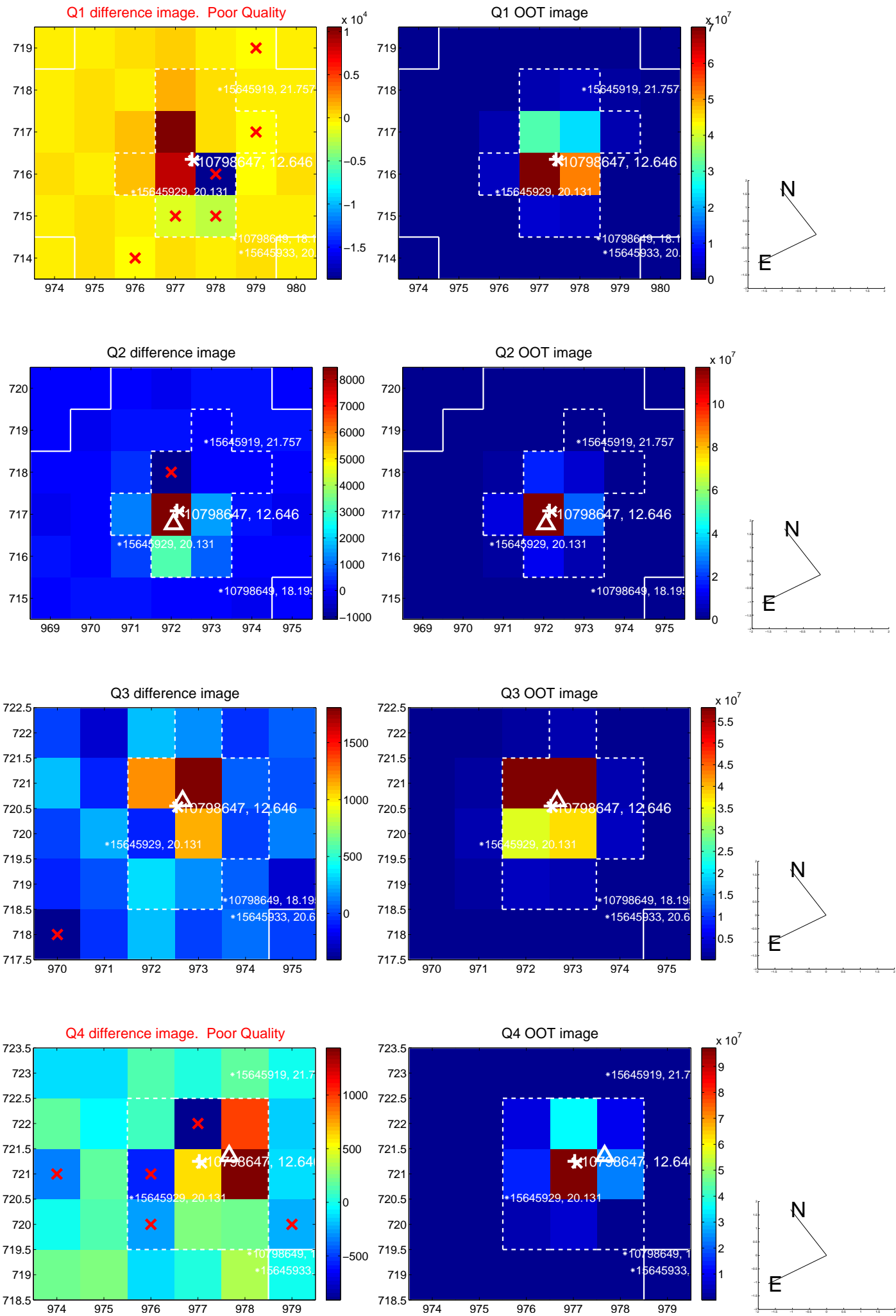
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.454 ± 0.281	1.62	0.391 ± 0.248	-0.231 ± 0.257
PRF-fit source offset from KIC position	0.504 ± 0.257	1.96	0.503 ± 0.253	-0.030 ± 0.252
photometric centroid source offset	0.56 ± 0.34	1.64	-0.56 ± 0.34	0.10 ± 0.30

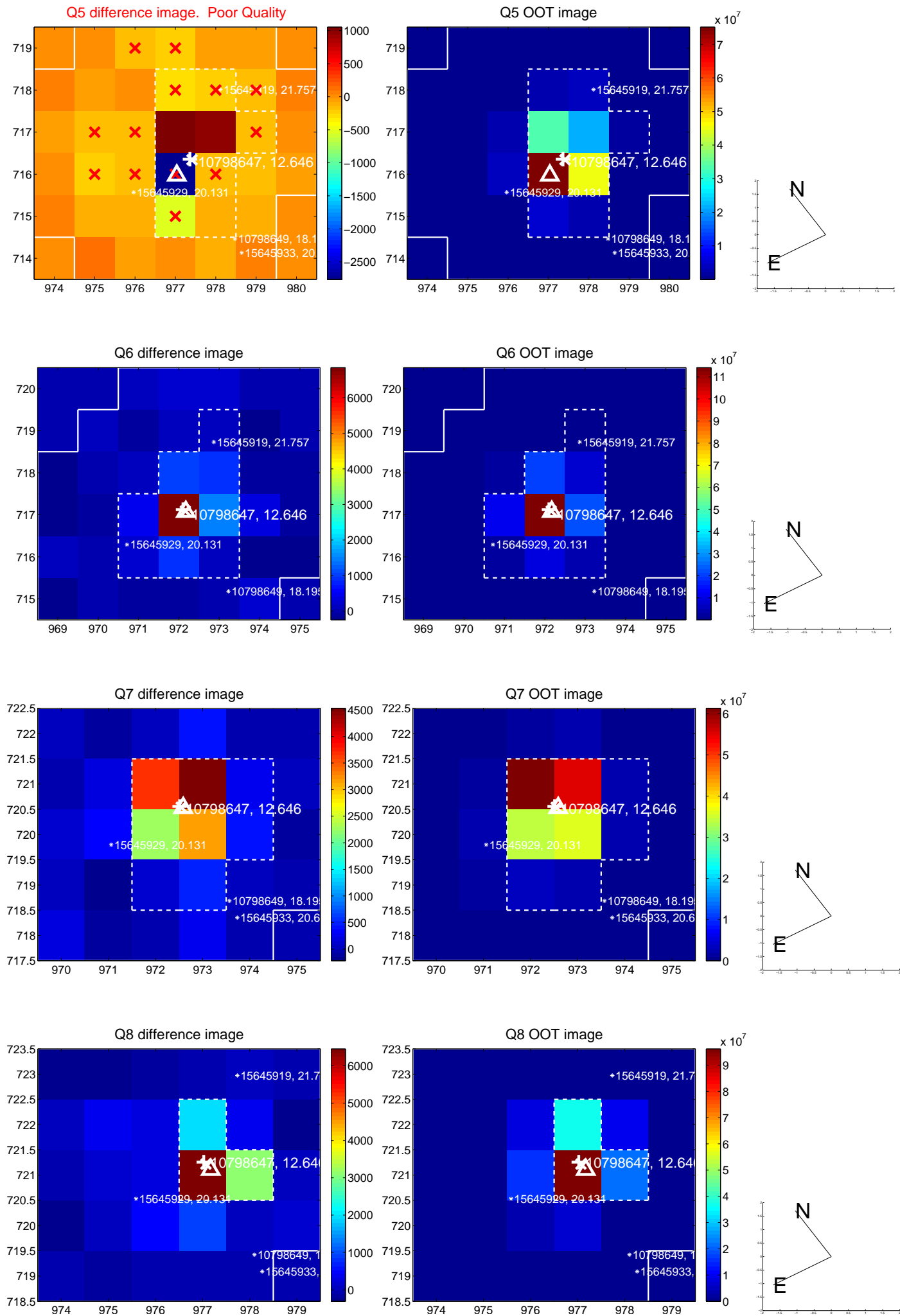


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

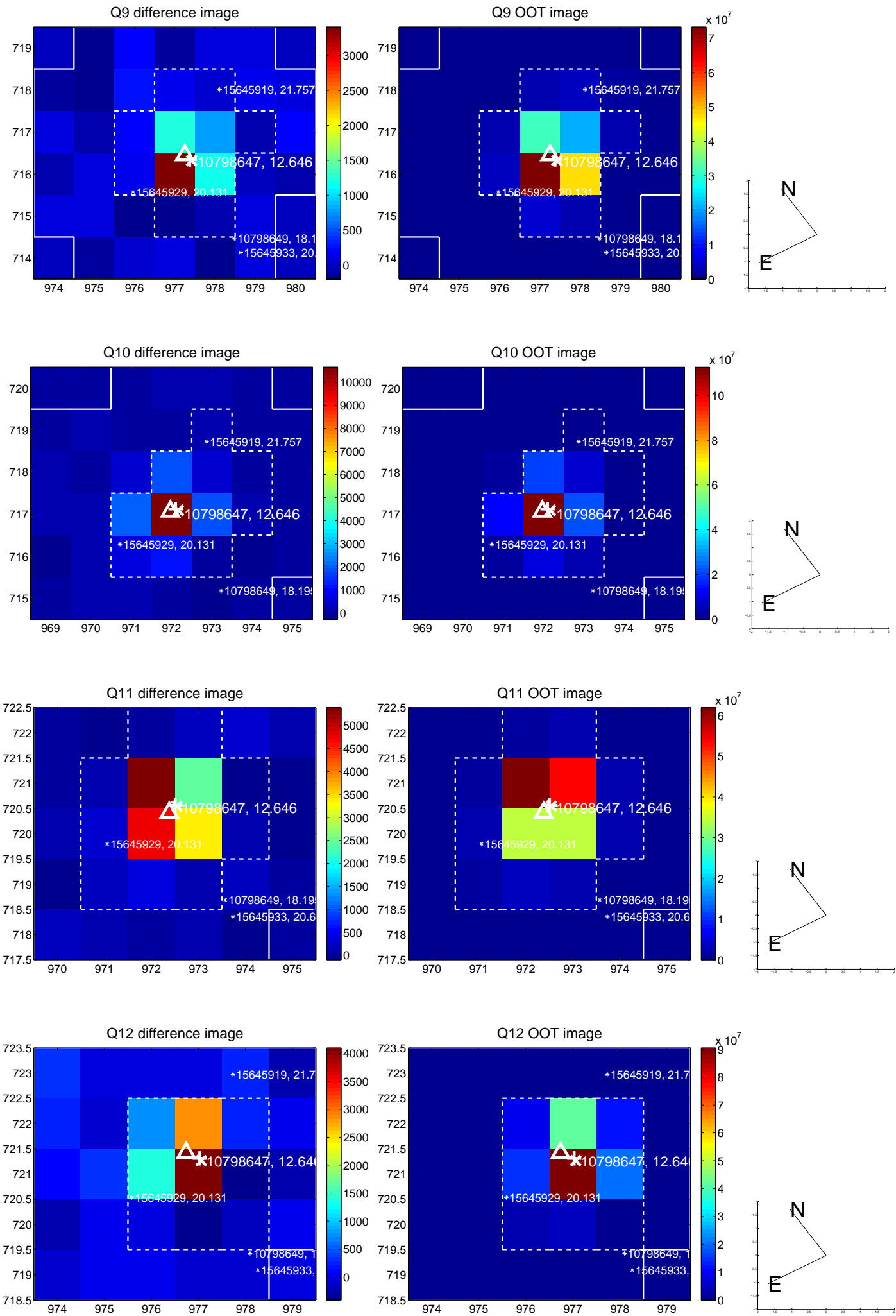
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



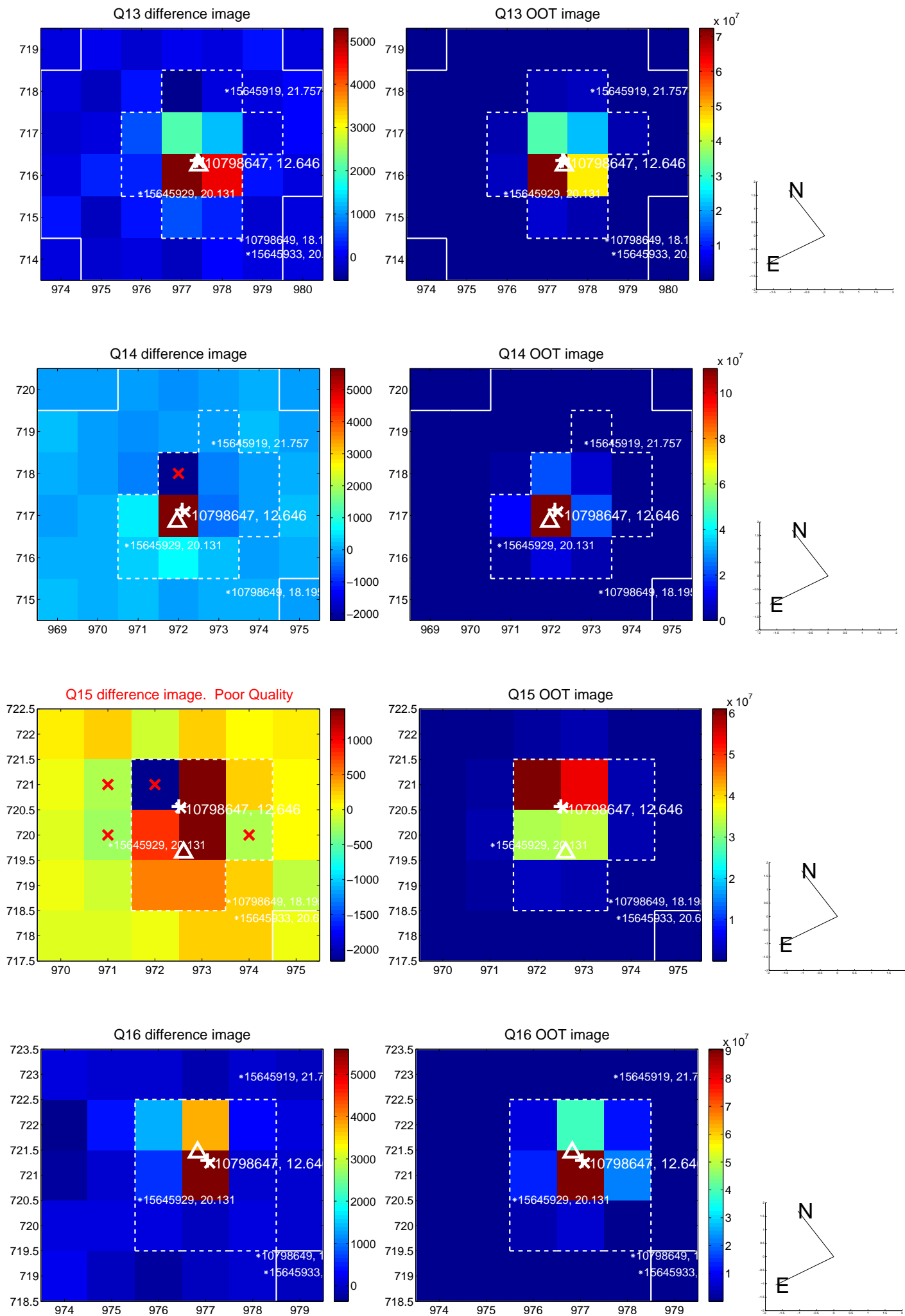
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



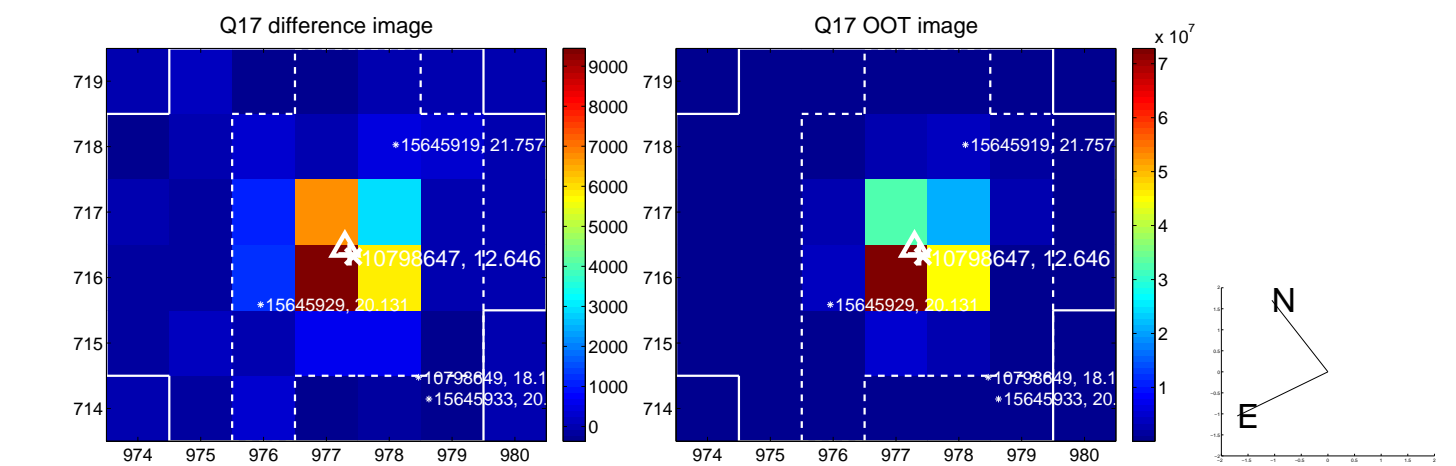
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



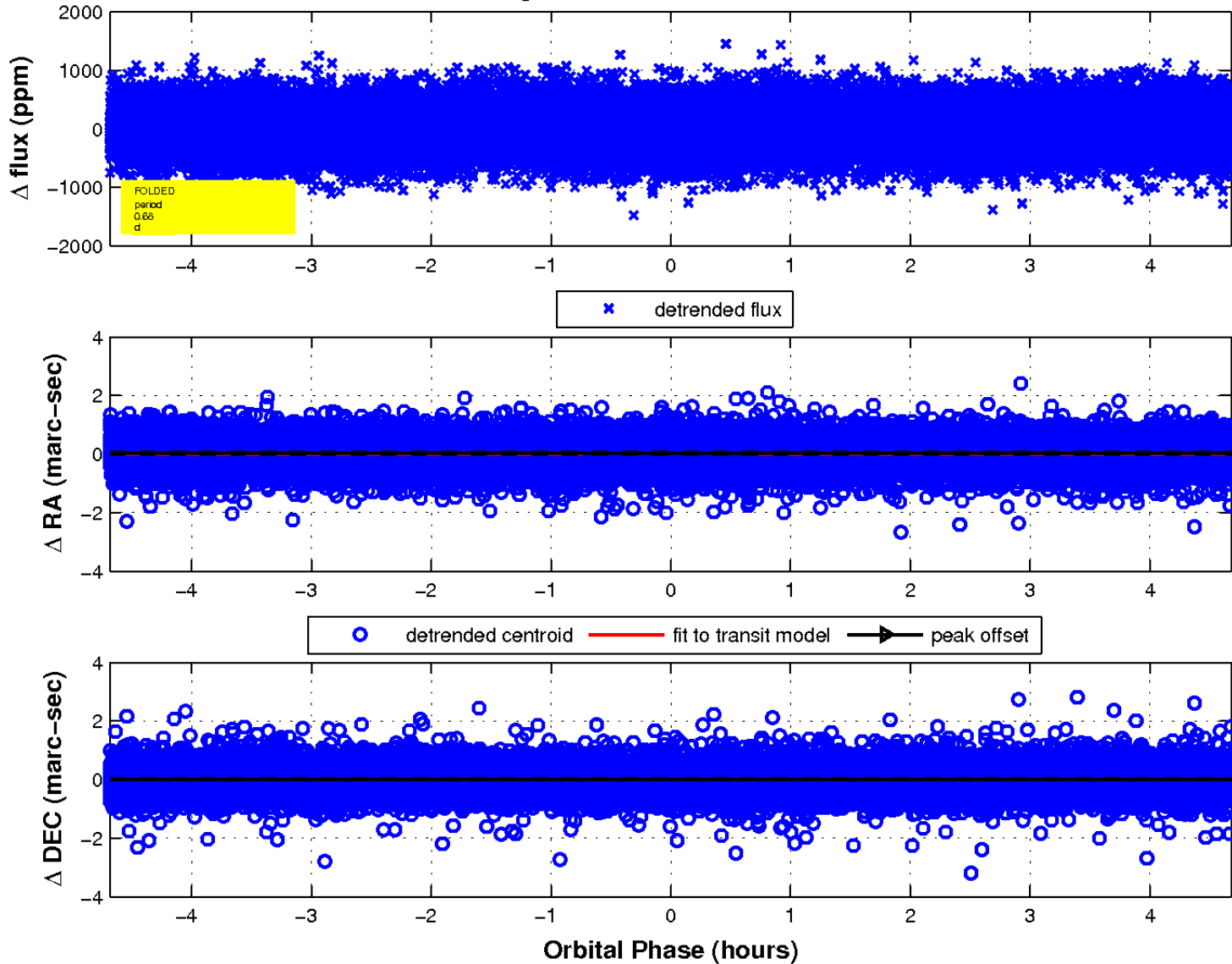
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

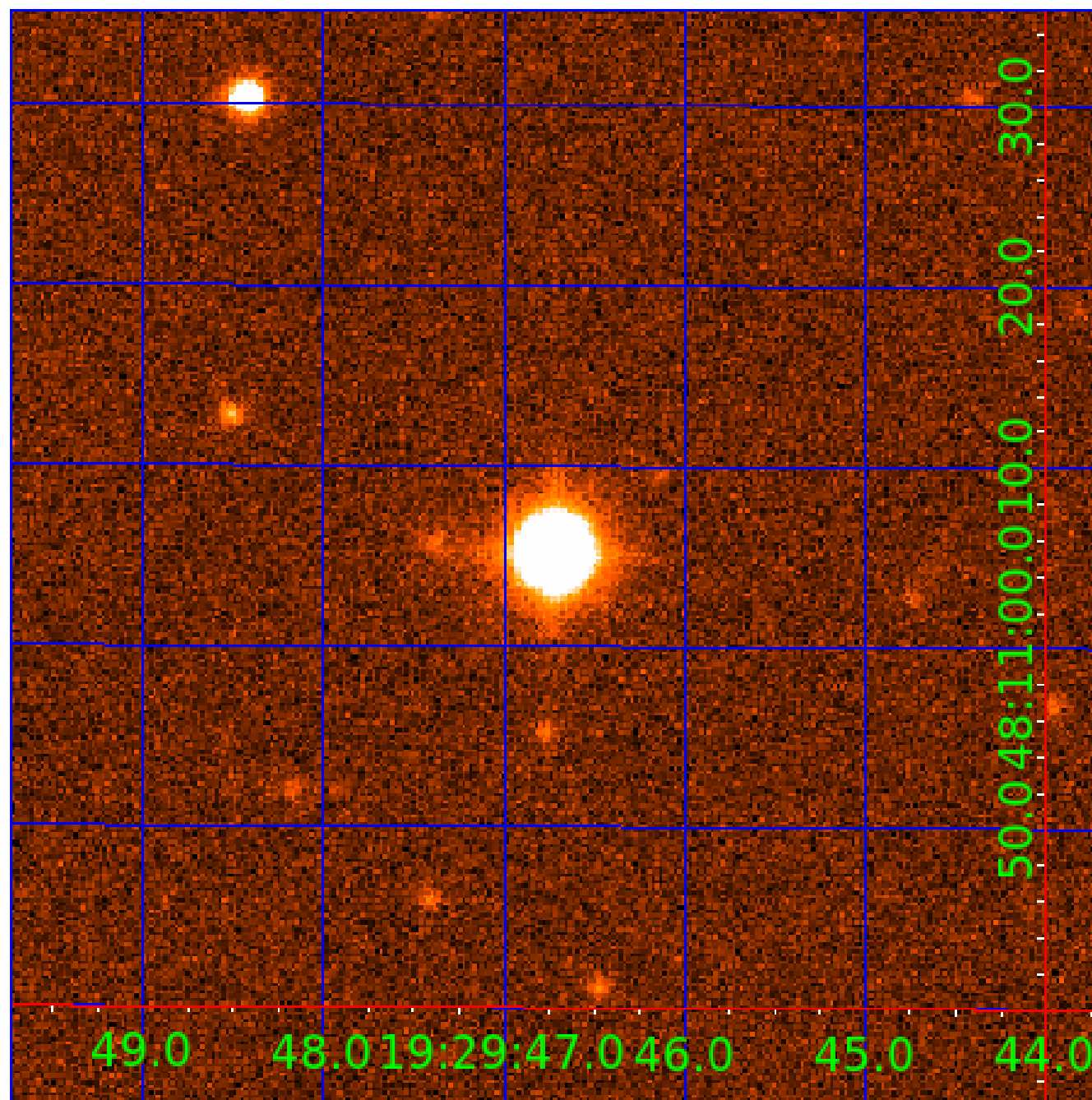


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 010798647

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})
010798647-01	OBS	No	0.678137	132.151213	47.0	1.561	8.3	9.0	5.49	4756	4.62	0.00
010798647-02	OBS	No	404.885950	276.896261	843.1	4.716	7.5	8.5	5.49	4756	21.31	12.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010798647-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010798647-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—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.

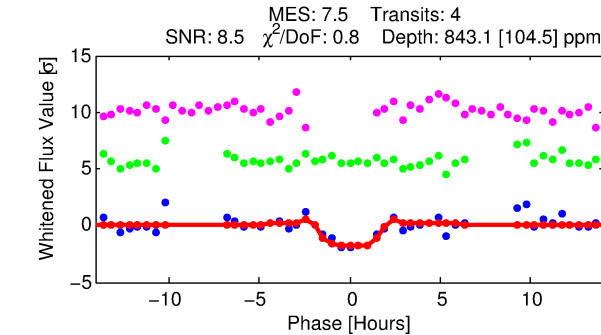
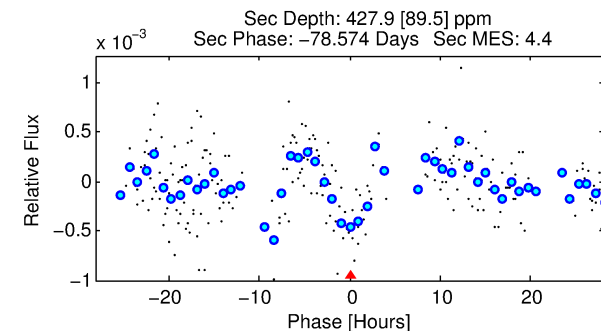
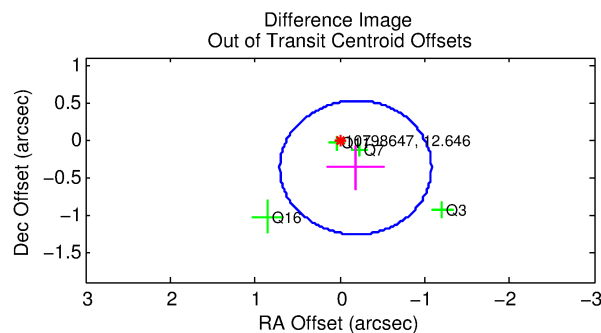
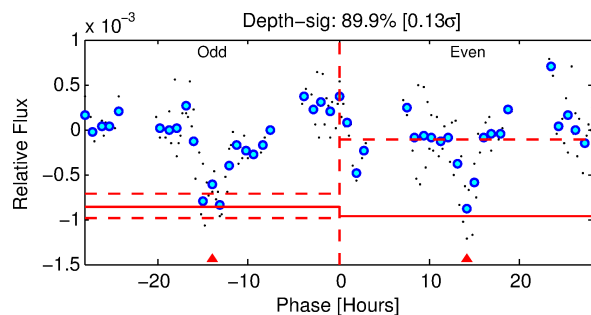
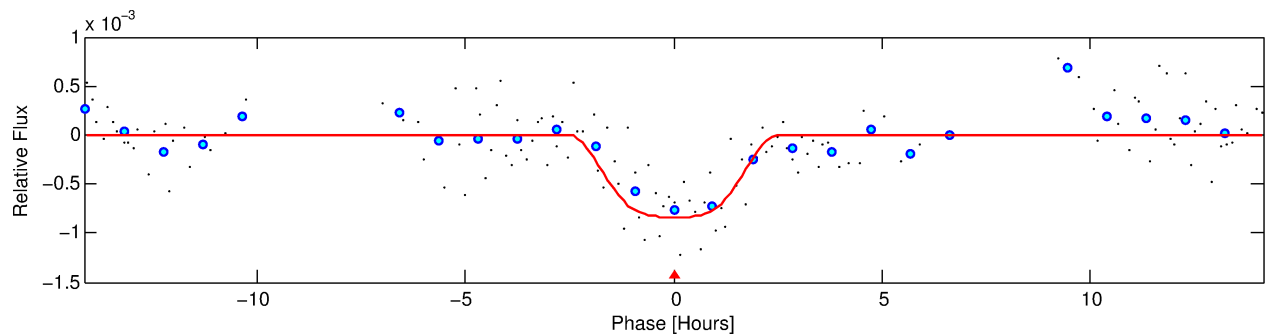
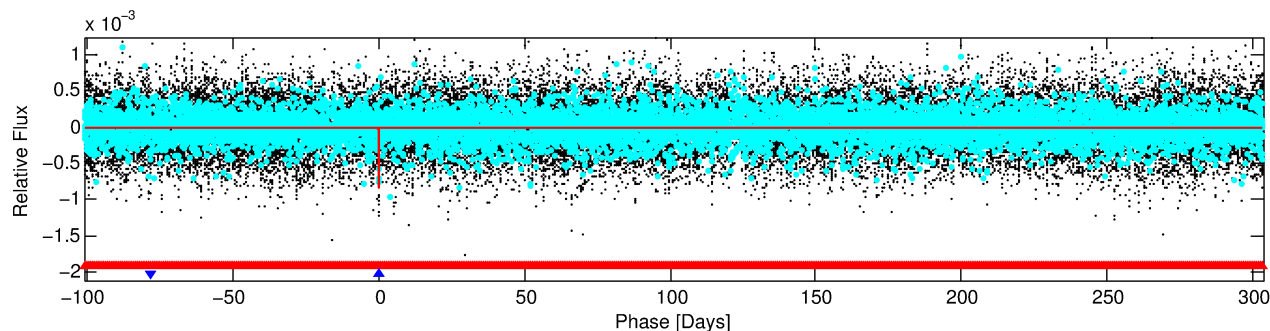
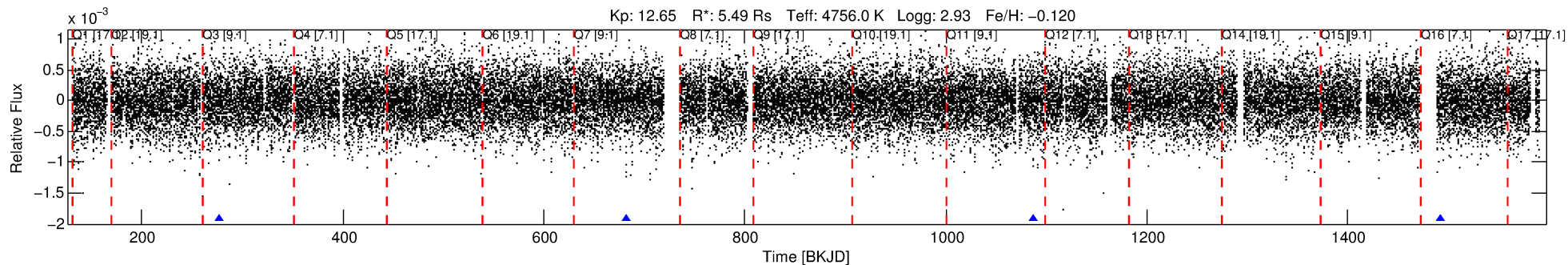
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010798647-02

No Significant Match Found

DV One-Page Summary

KIC: 10798647 Candidate: 2 of 2 Period: 404.886 d



DV Fit Results:

Period = 404.88595 [0.00414] d
Epoch = 276.8963 [0.0069] BKJD
Rp/R* = 0.0356 [0.0029]
a/R* = 267.99 [36.35]
b = 0.95 [0.02]
Seff = 12.58 [1.63]
Teq = 480 [16] K
Rp = 21.31 [3.74] Re
a = 1.0476 [0.1117] AU
Ag = 568.93 [164.59] [3.45σ]
Teffp = 3626 [247] K [12.74σ]

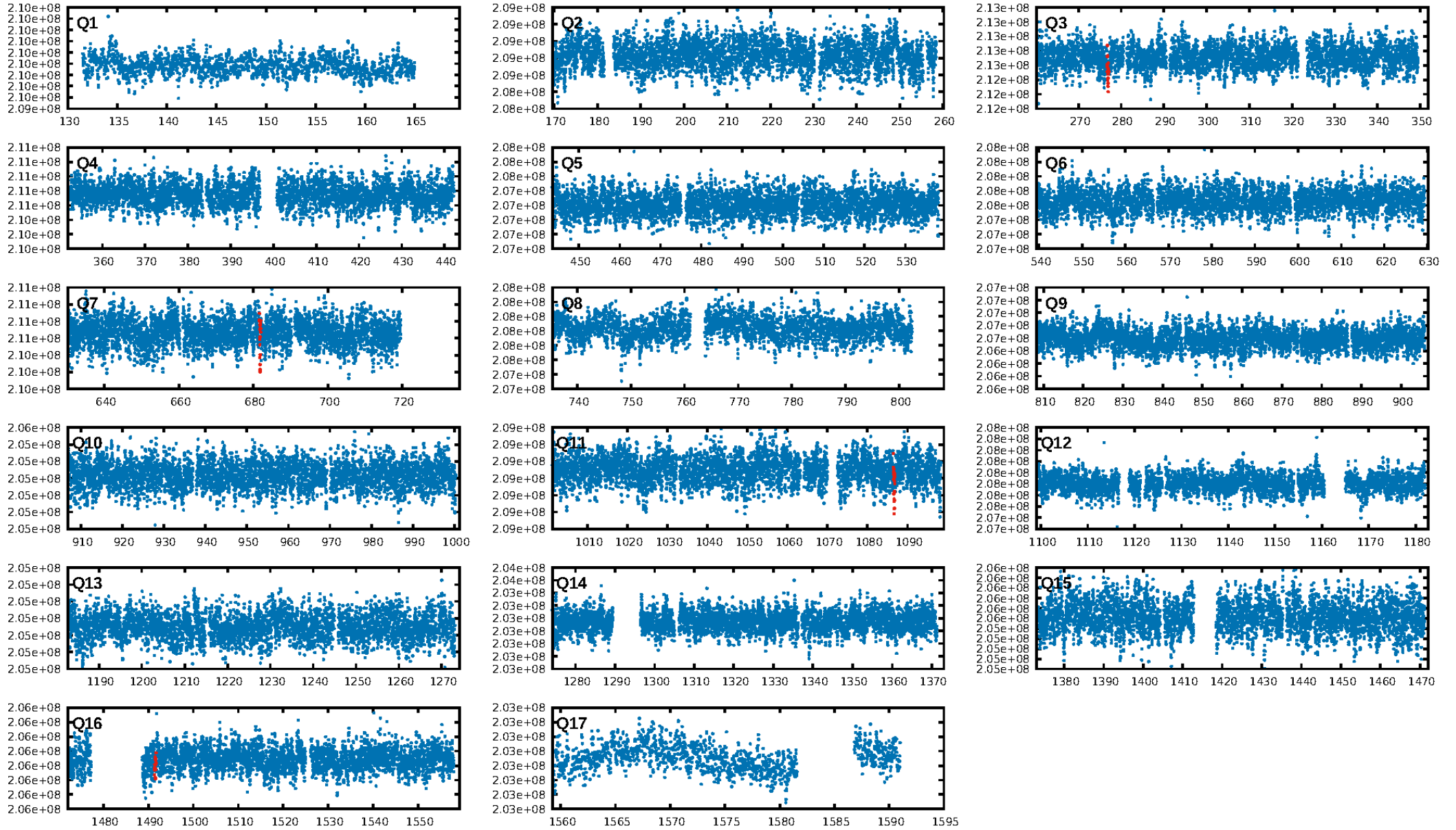
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1952.76σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 13.5%
ModelChiSquareGof-sig: 99.6%
Bootstrap-pfa: 3.86e-10
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.998
Centroid-sig: 65.1%
Centroid-so: 0.100 arcsec [0.38σ]
OotOffset-rm: 0.417 arcsec [1.40σ]
KicOffset-rm: 0.259 arcsec [0.88σ]
OotOffset-st: 0/3/1/0 [4]
KicOffset-st: 0/3/1/0 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 0.00 [0/4]

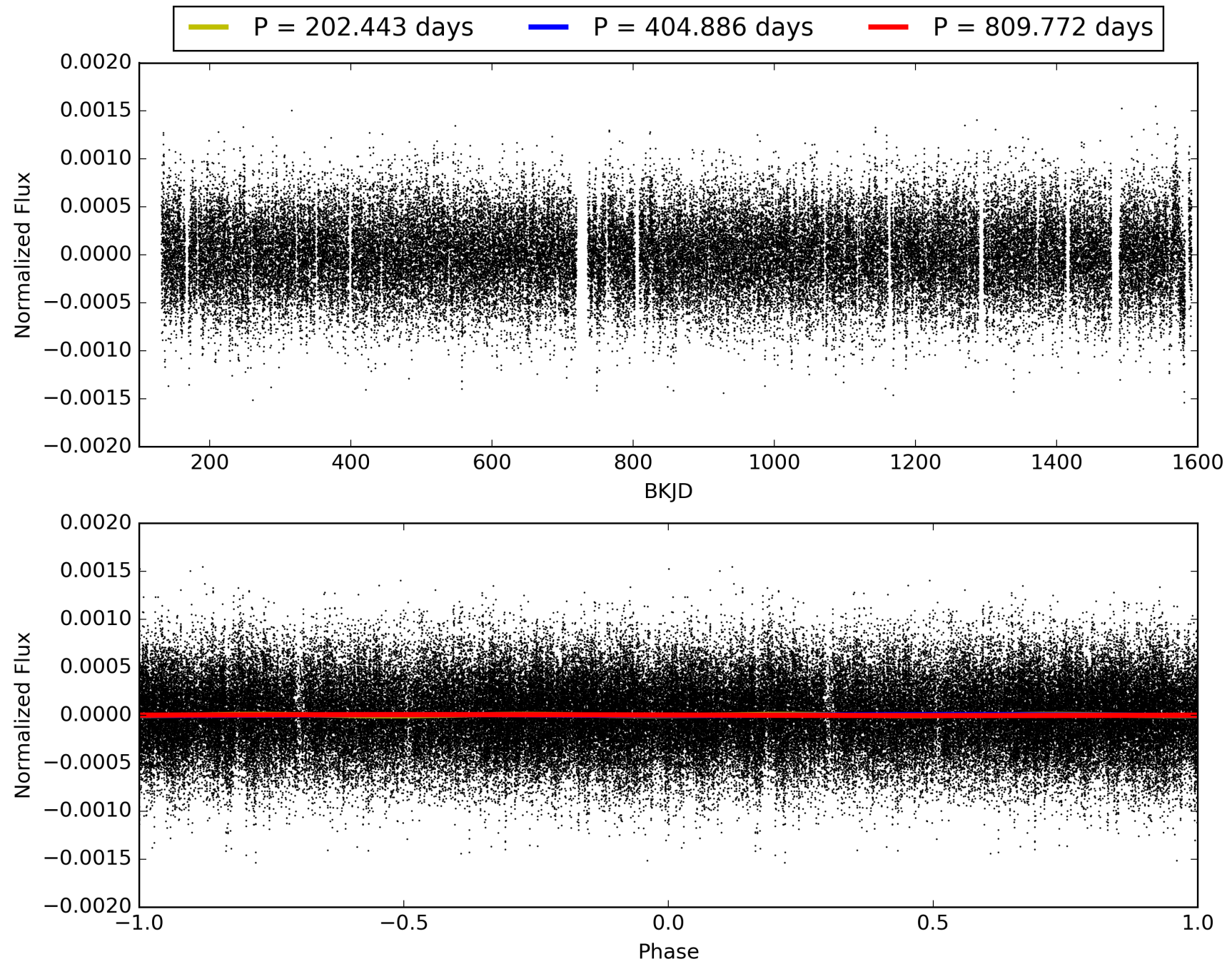
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:35:34 Z

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

TCE 010798647-02, PDC Light Curves

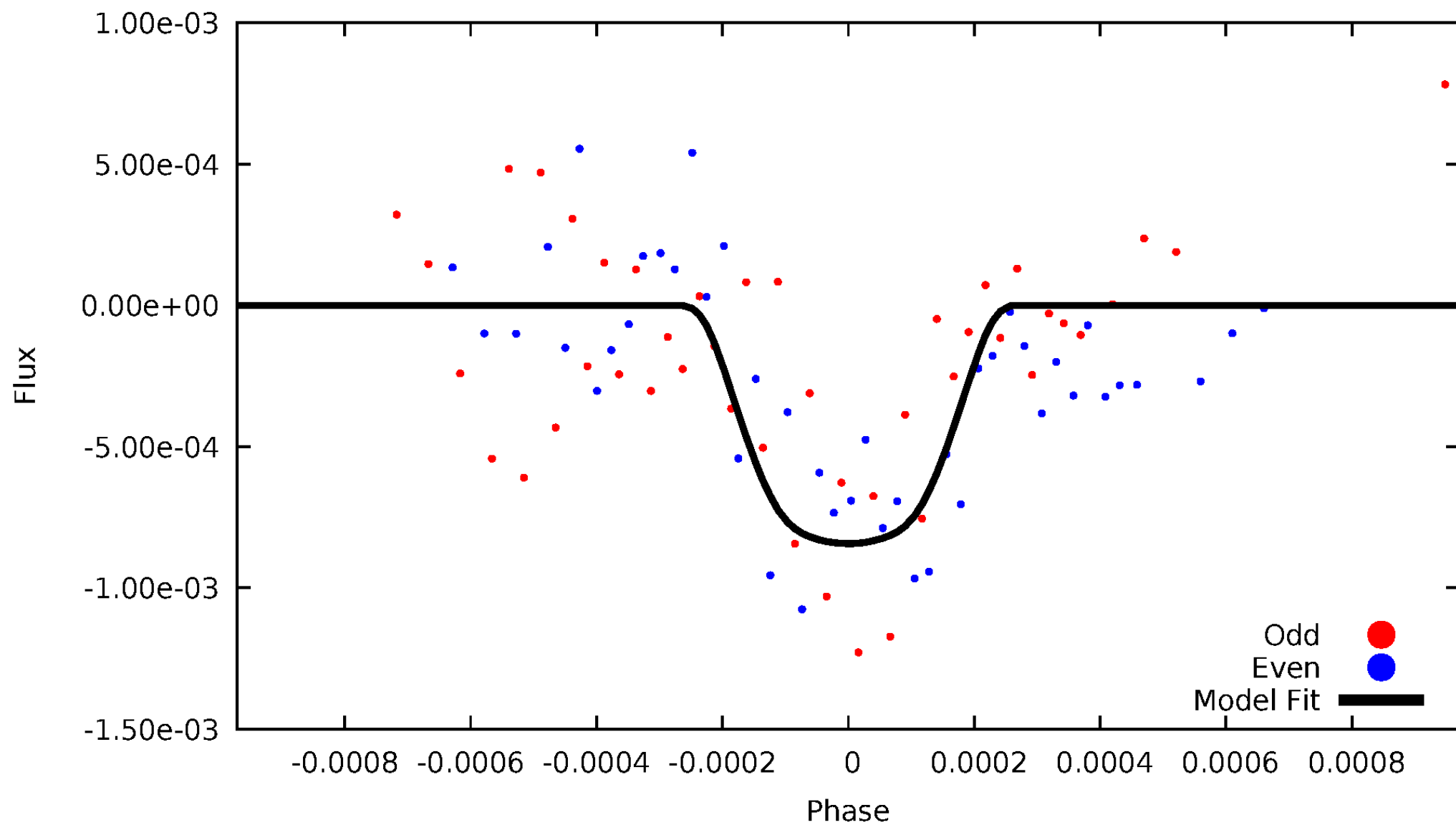


TCE 010798647-02



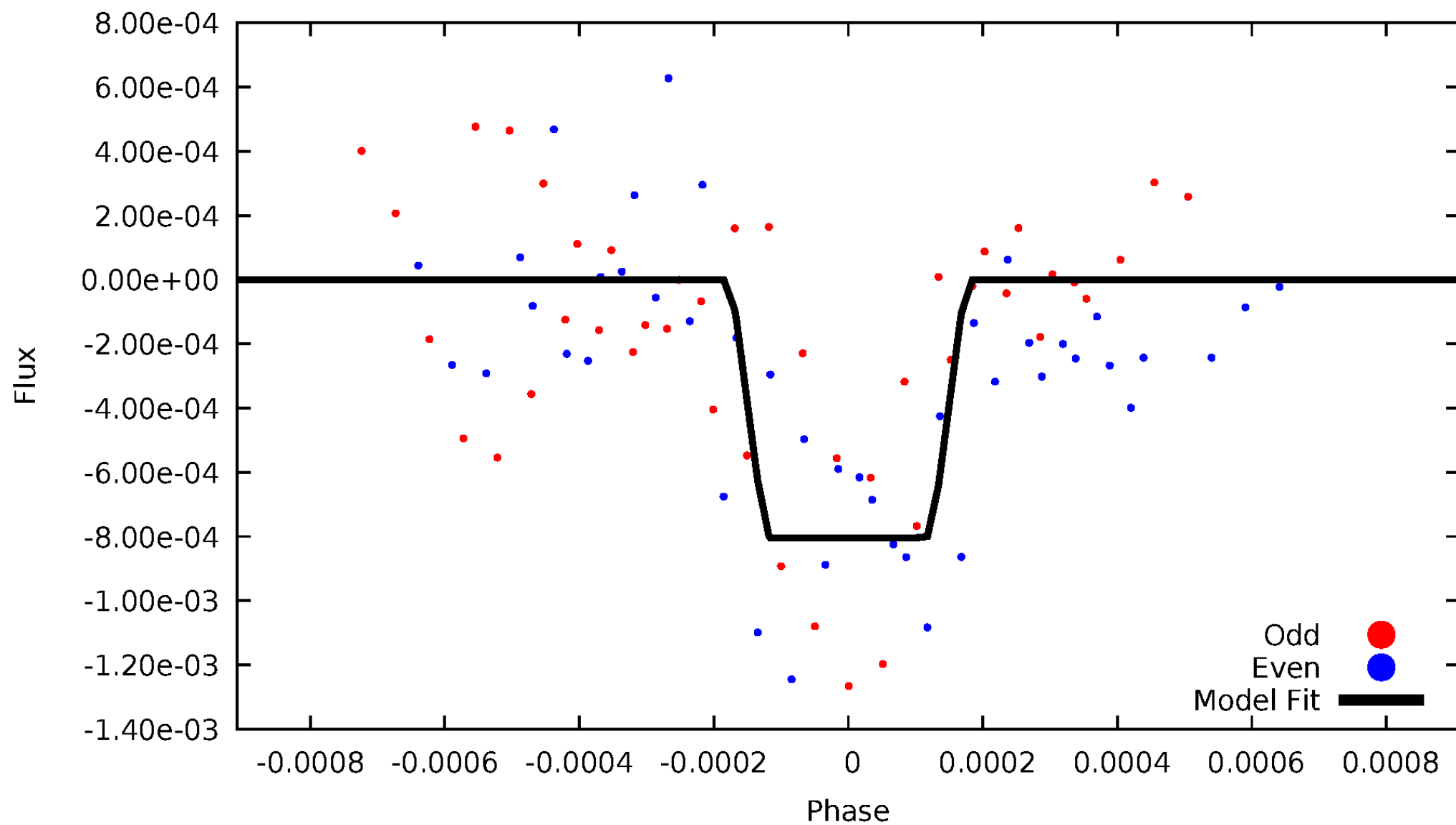
DV Odd/Even

TCE 010798647-02



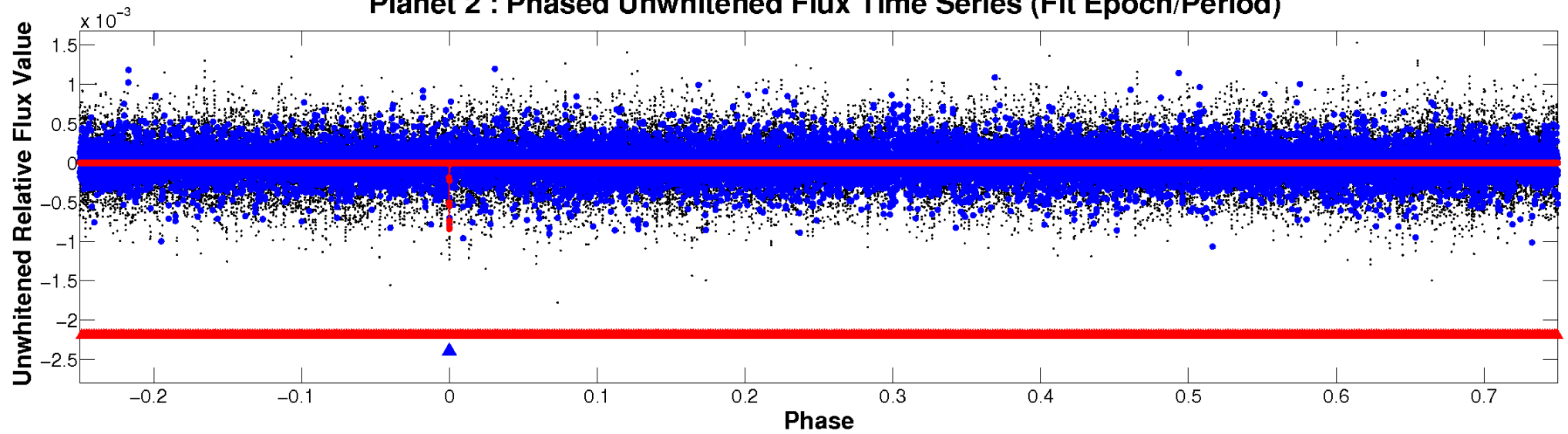
ALT Odd/Even

TCE 010798647-02

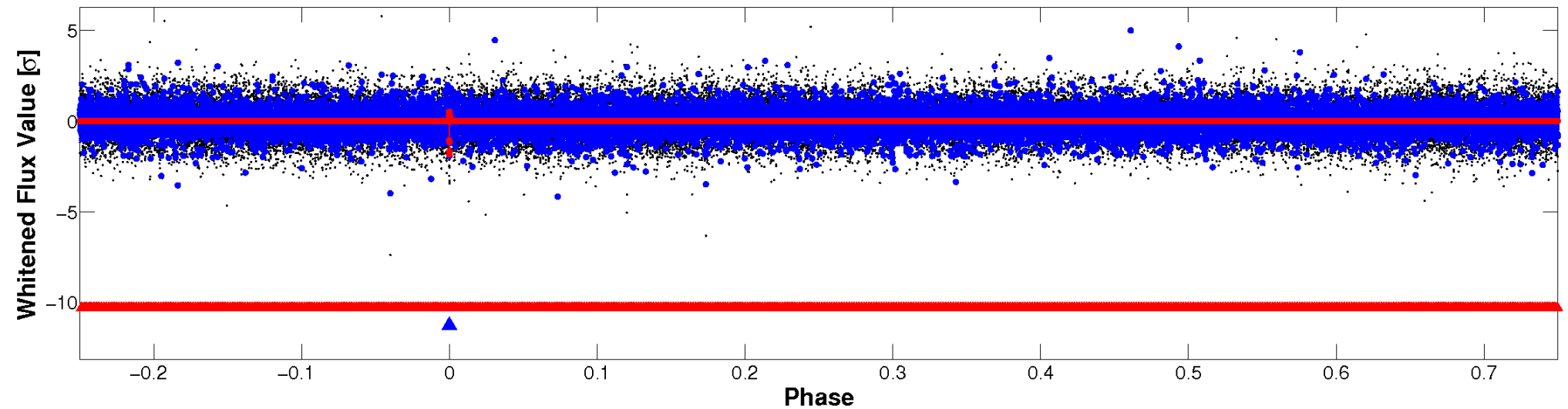


Non-Whitened Vs. Whitened Light Curve

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

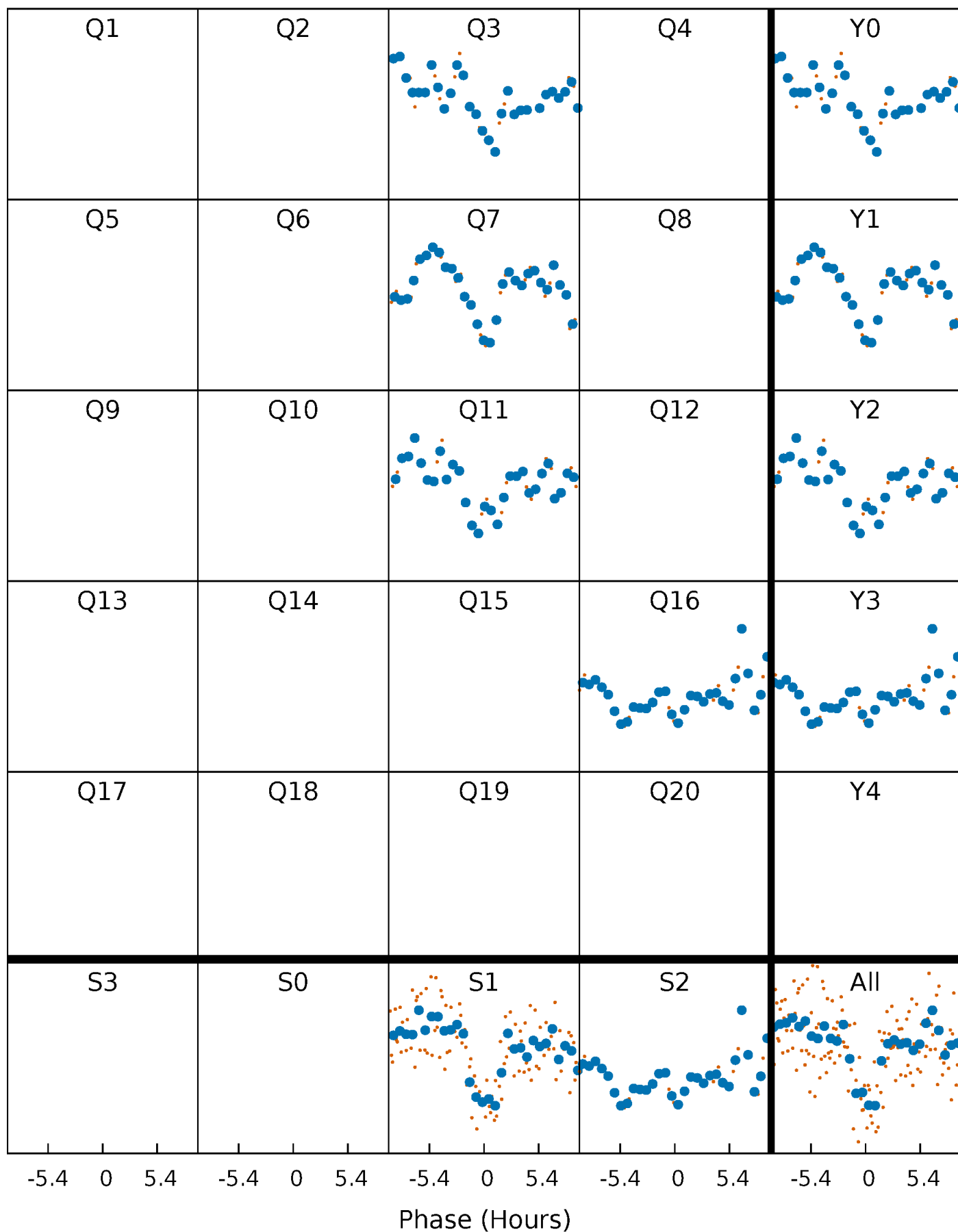


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



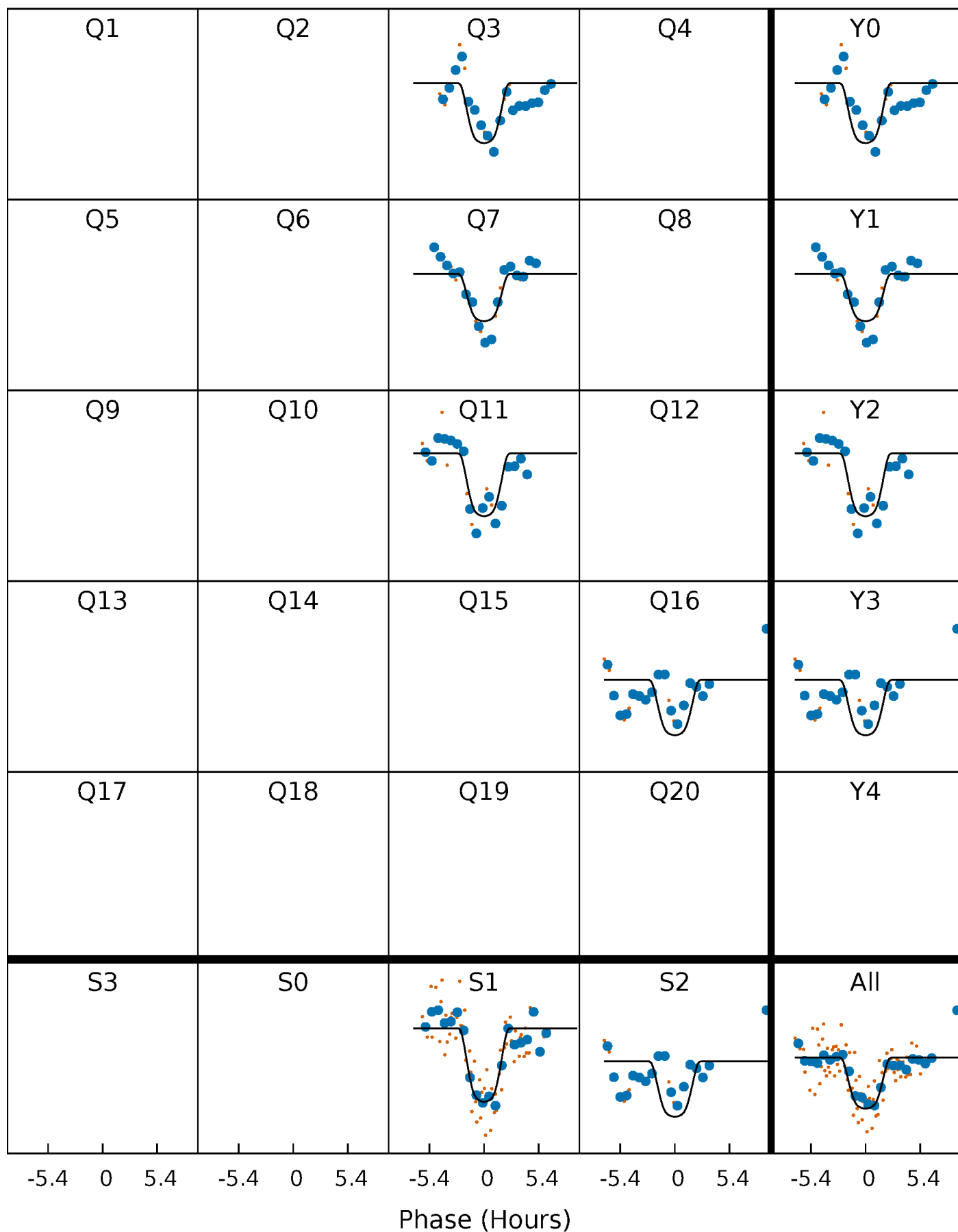
PDC Quarter-Phased Transit Curves

TCE 010798647-02 $P=404.885950$ Days $T_0=276.896261$ (BKJD)



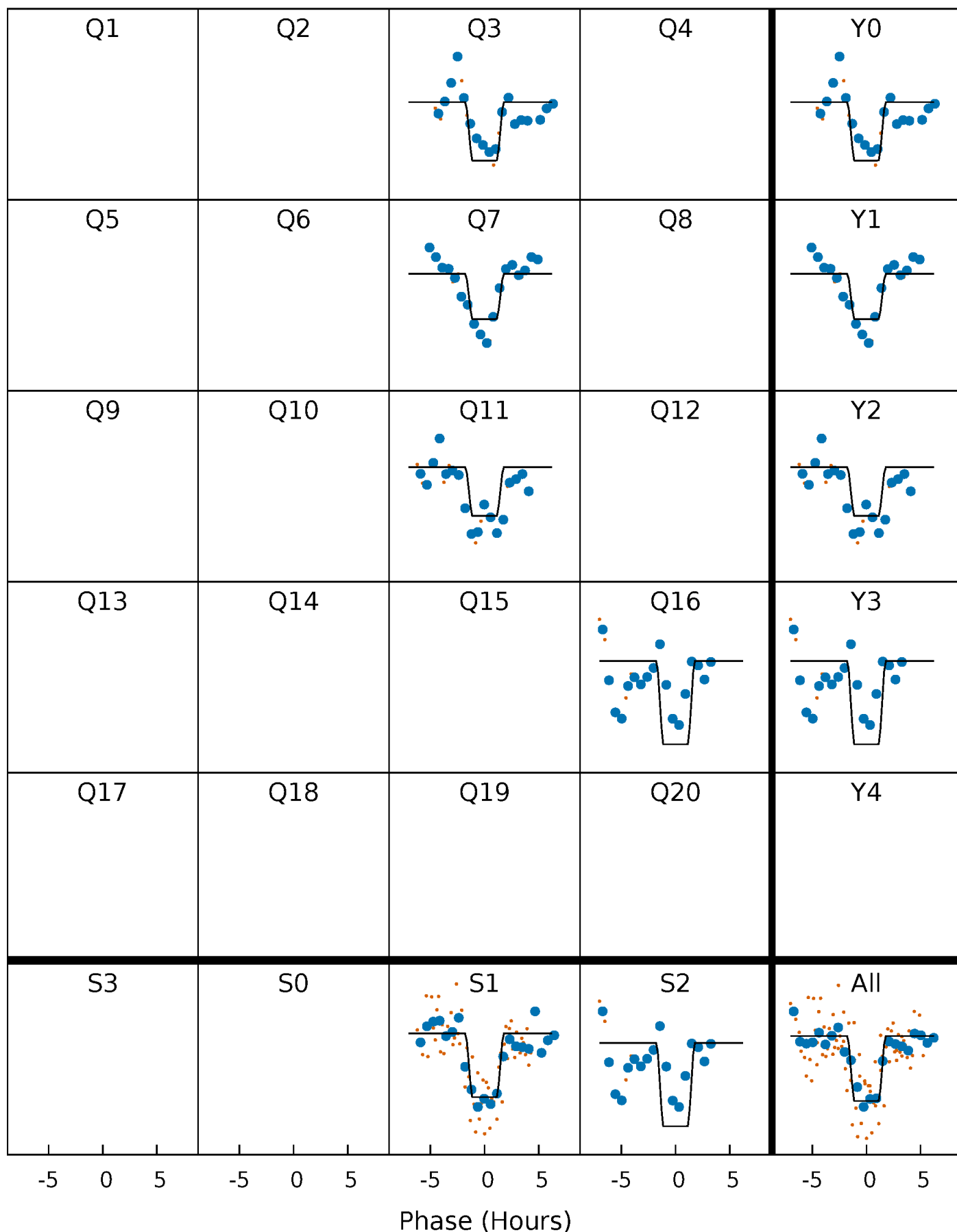
DV Quarter-Phased Transit Curves

TCE 010798647-02 $P=404.885950$ Days $T_0=276.896261$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

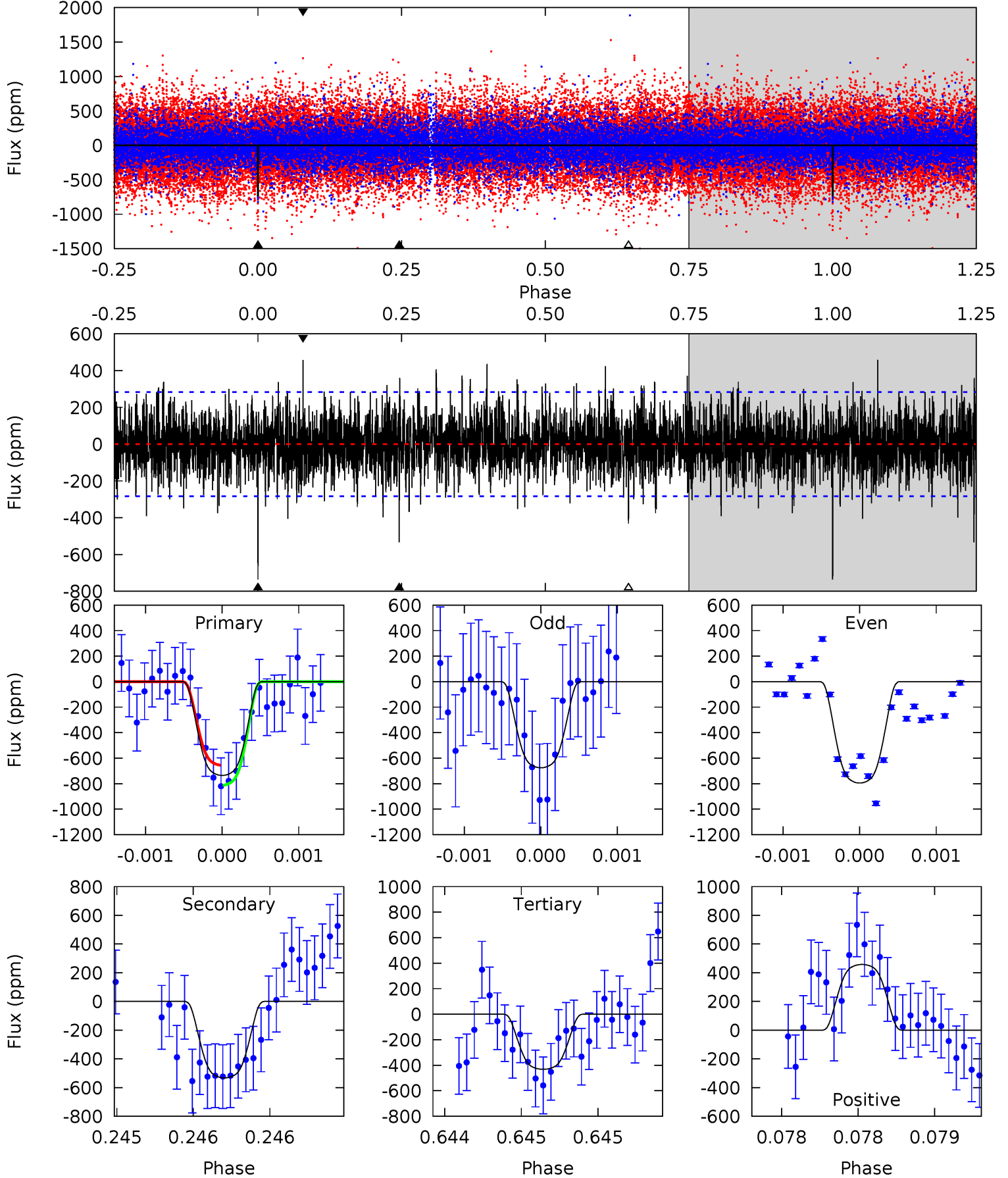
TCE 010798647-02 P=404.884180 Days $T_0=276.904179$ (BKJD)



DV Model-Shift Uniqueness Test

010798647-02, P = 404.885950 Days, E = 276.896261 Days

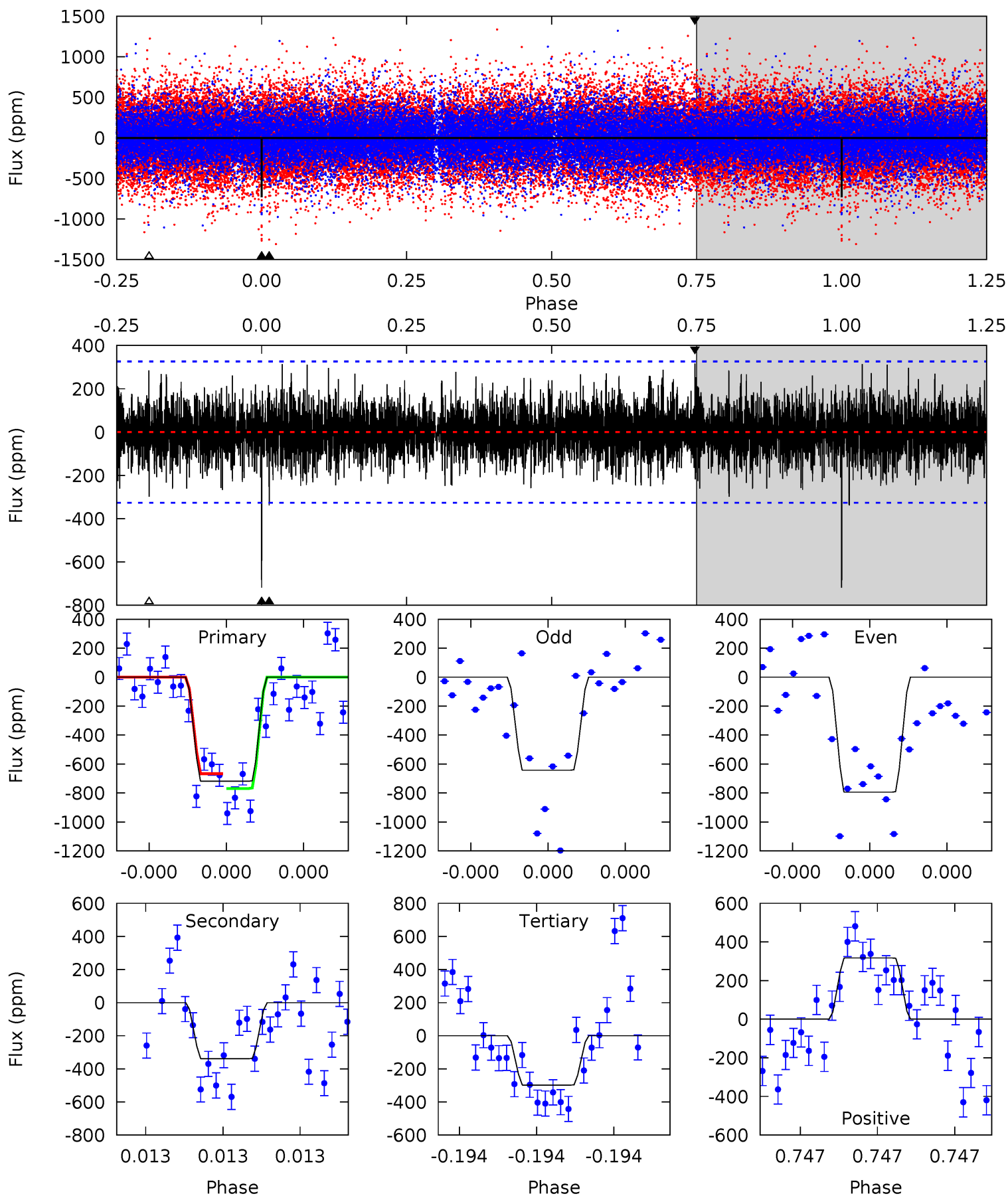
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	10.5	8.48	8.99	5.57	3.47	2.29	5.97	5.46	1.98	1.47	1.18	0.92	0.38	1.54



Alt Model-Shift Uniqueness Test

010798647-02, P = 404.884180 Days, E = 276.904179 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.4	5.84	5.14	5.47	5.63	3.57	1.49	7.27	6.94	0.70	0.37	1.33	0.91	0.31	0.88



Stellar Parameters For KIC 010798647

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4756^{+71}_{-50}	$2.930^{+0.033}_{-0.030}$	$-0.120^{+0.150}_{-0.100}$	$5.488^{+0.853}_{-0.213}$	$0.935^{+0.297}_{-0.035}$	$0.008^{+0.001}_{-0.001}$
	+1%/-1%	+1%/-1%	+125%/-83%	+16%/-4%	+32%/-4%	+10%/-18%
Source	SPE74	AST9	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 010798647-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-532 ± 51	$21.32^{+2.32}_{-1.96}$	671^{+13}_{-12}	4041^{+152}_{-136}	708^{+156}_{-123}
Alt.	-338 ± 58	$16.96^{+2.08}_{-1.75}$	670^{+14}_{-11}	4040^{+197}_{-175}	714^{+204}_{-170}

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

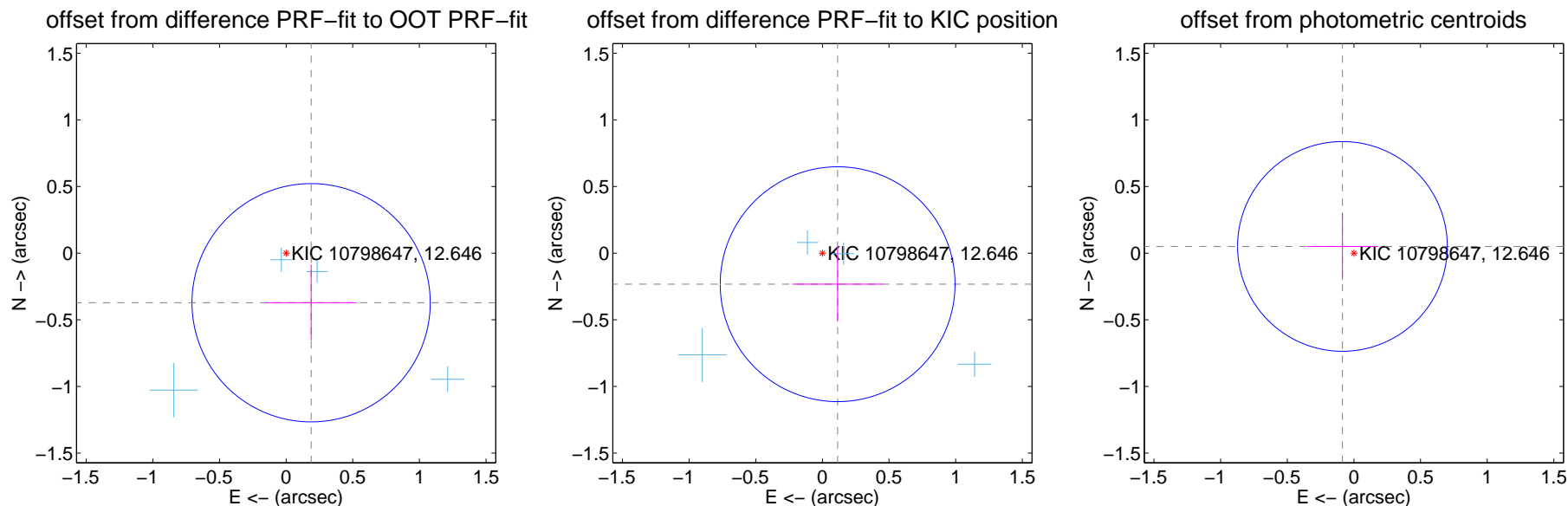
DV Centroid Data

Supplemental centroid analysis for 010798647-02. Kepler magnitude: 12.65. Transit SNR 8.46

There are 4 quarters with good PRF difference image offsets

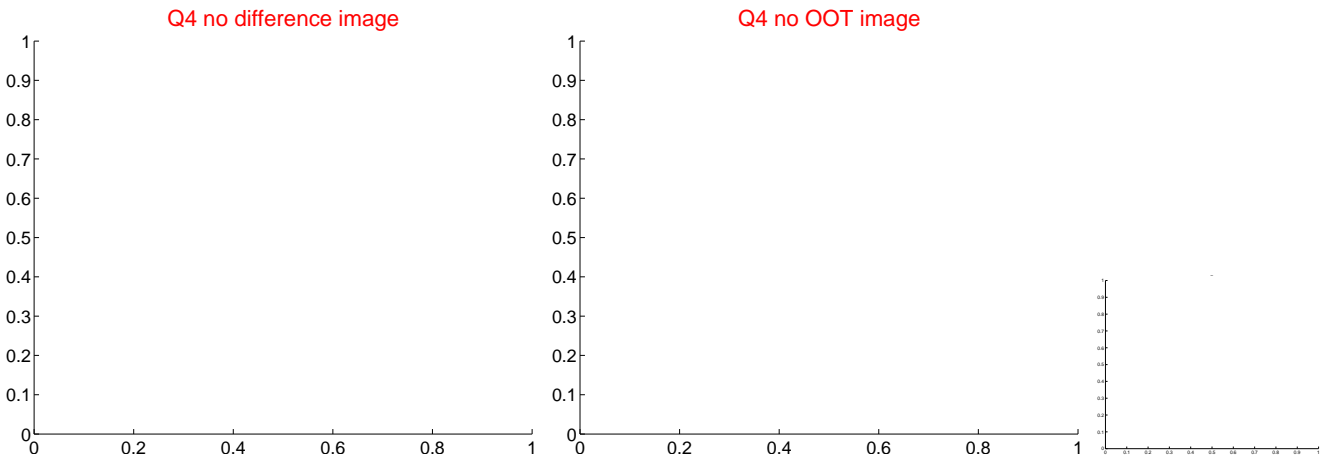
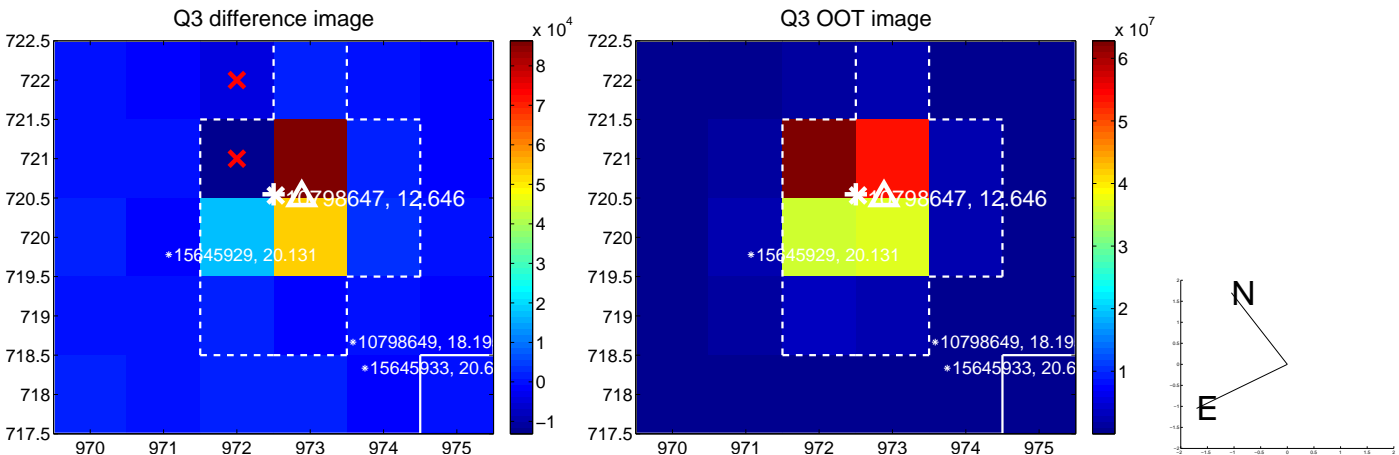
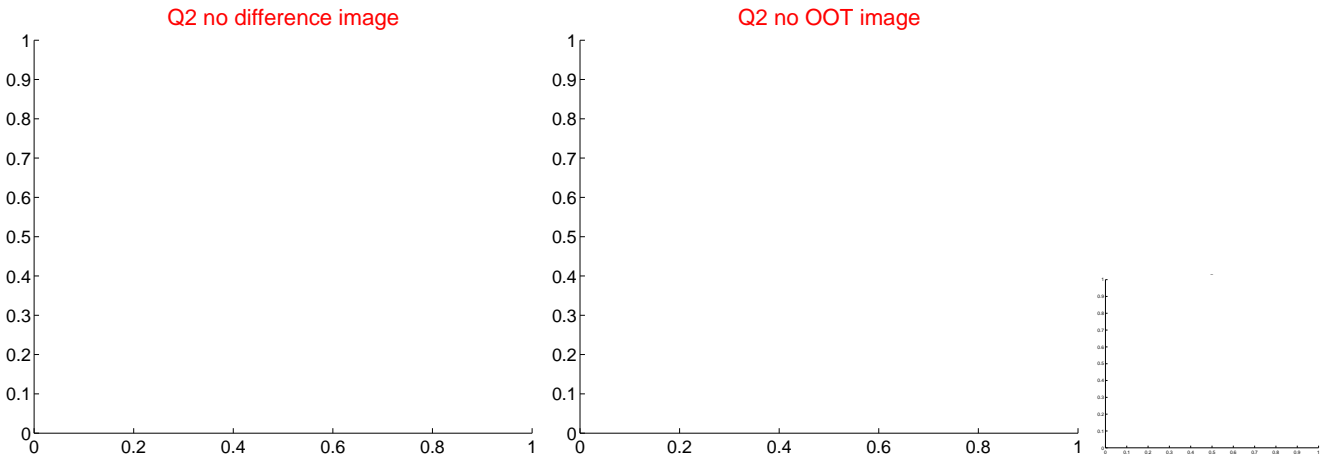
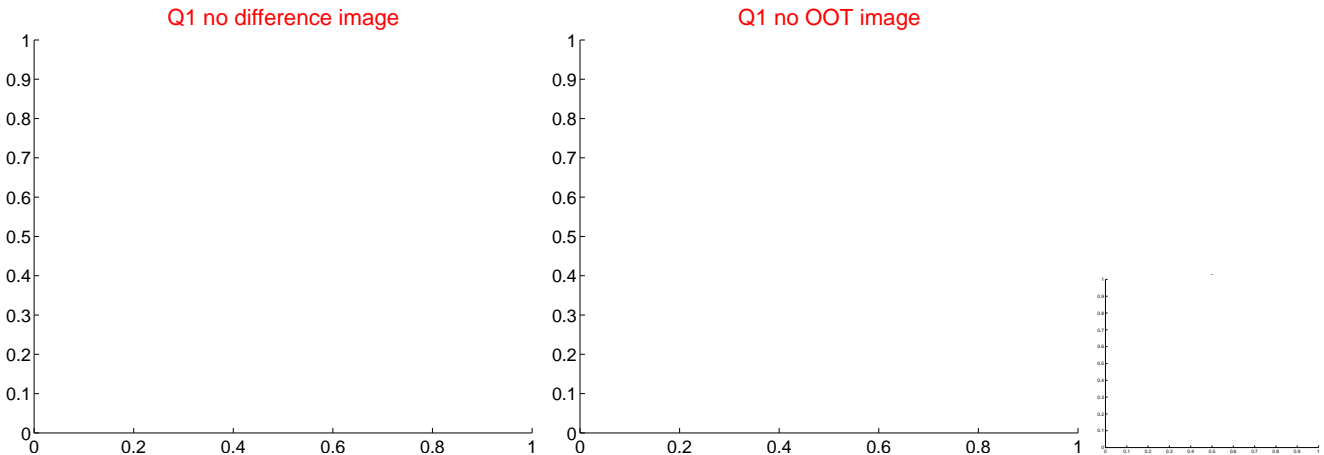
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.417 ± 0.298	1.40	-0.188 ± 0.341	-0.372 ± 0.286
PRF-fit source offset from KIC position	0.259 ± 0.294	0.88	-0.114 ± 0.341	-0.233 ± 0.281
photometric centroid source offset	0.10 ± 0.26	0.38	0.09 ± 0.27	0.05 ± 0.25



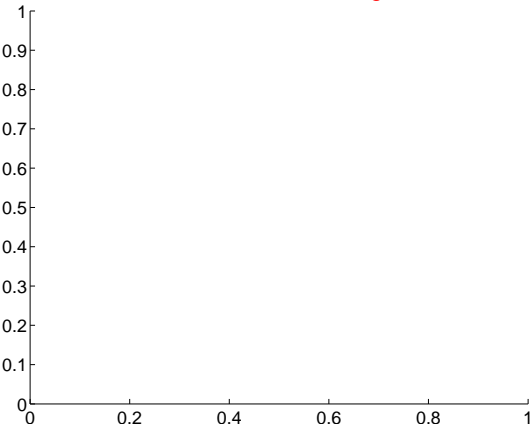
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

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

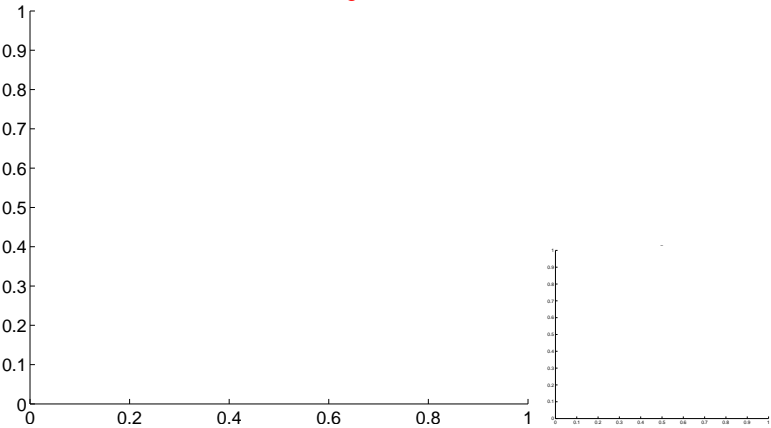


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

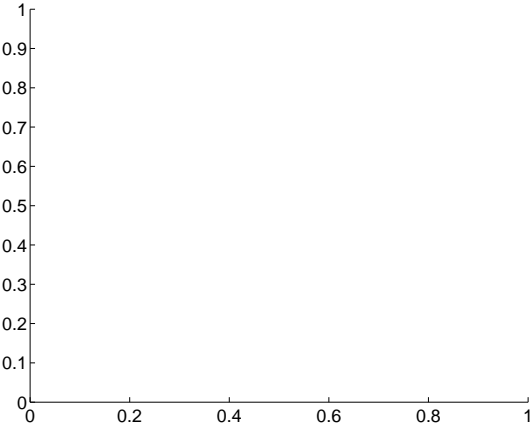
Q5 no difference image



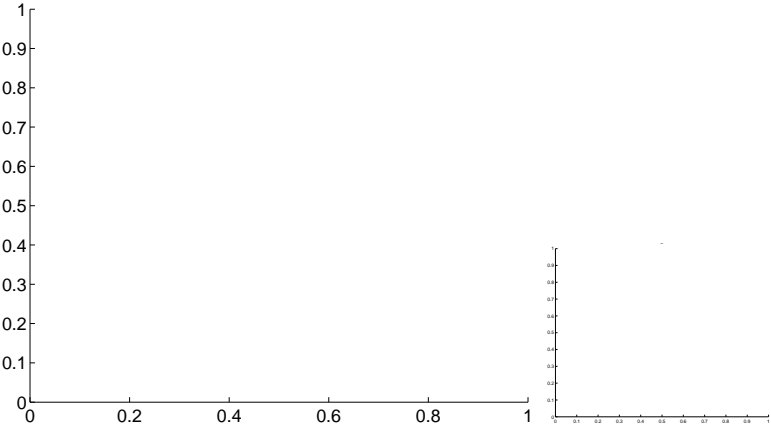
Q5 no OOT image



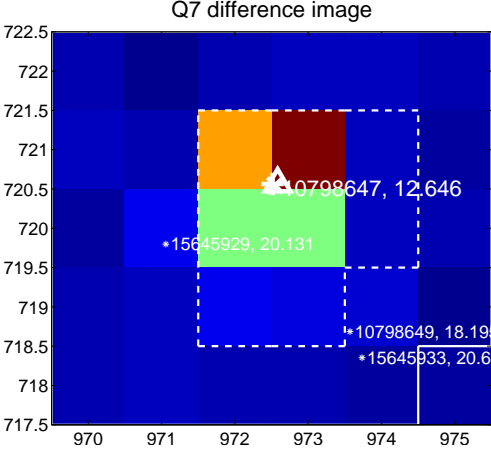
Q6 no difference image



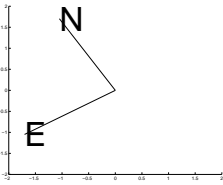
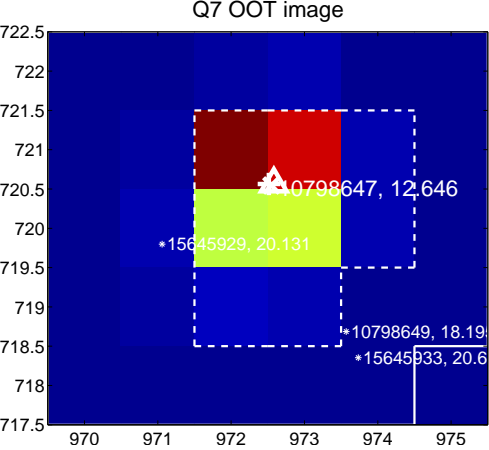
Q6 no OOT image



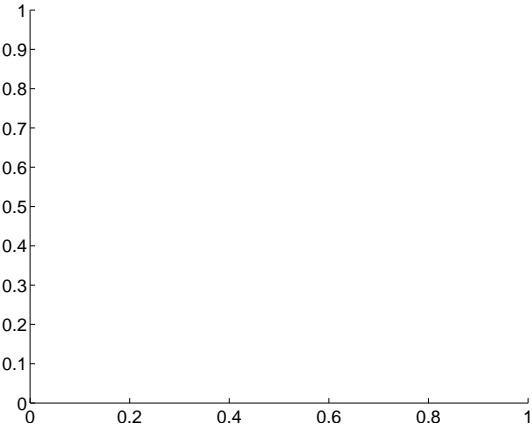
Q7 difference image



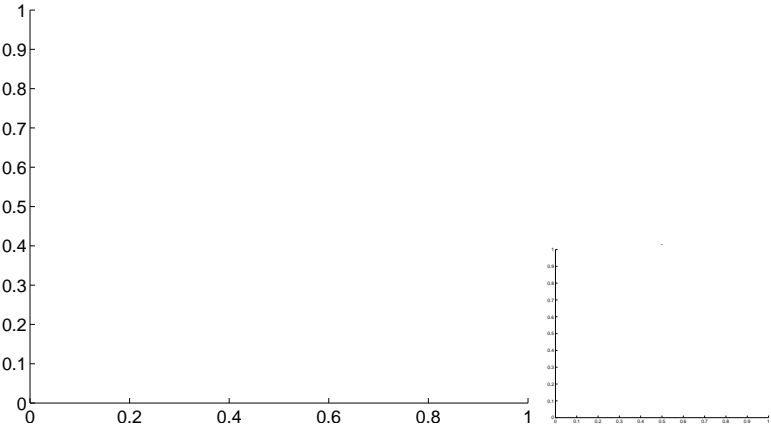
Q7 OOT image



Q8 no difference image



Q8 no OOT image



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

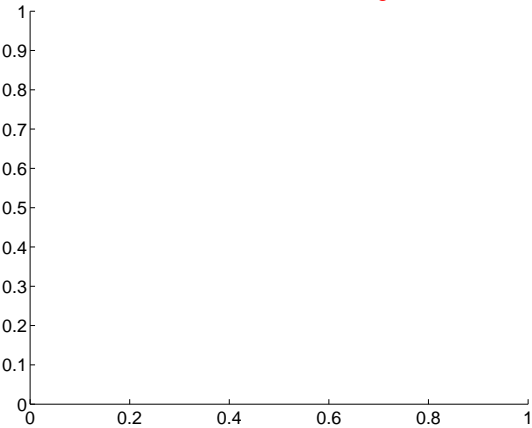
Q9 no difference image



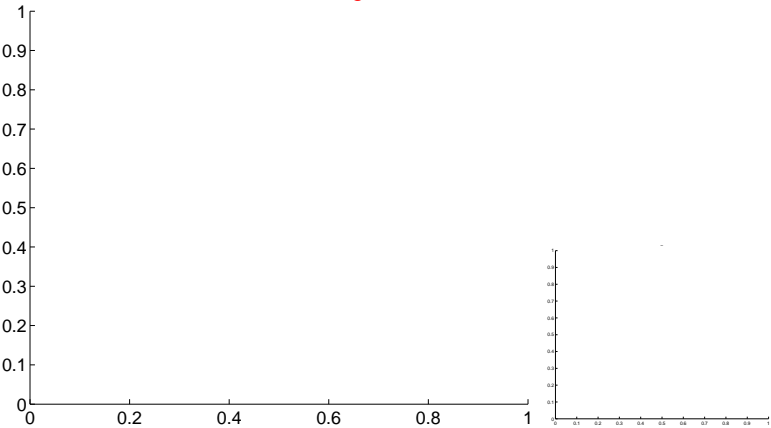
Q9 no OOT image



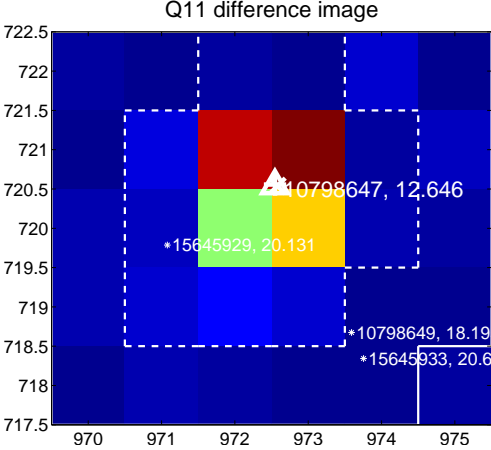
Q10 no difference image



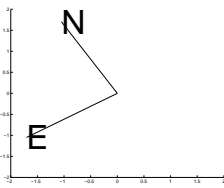
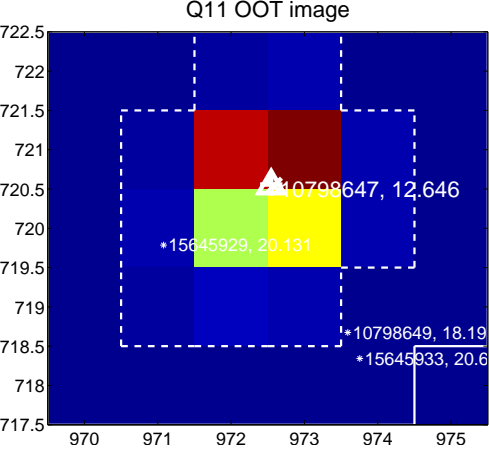
Q10 no OOT image



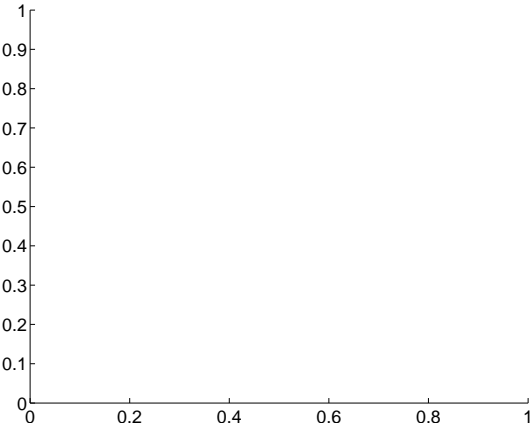
Q11 difference image



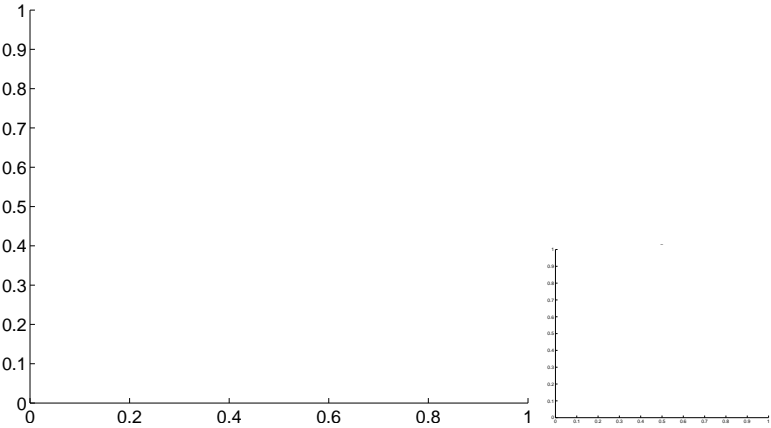
Q11 OOT image



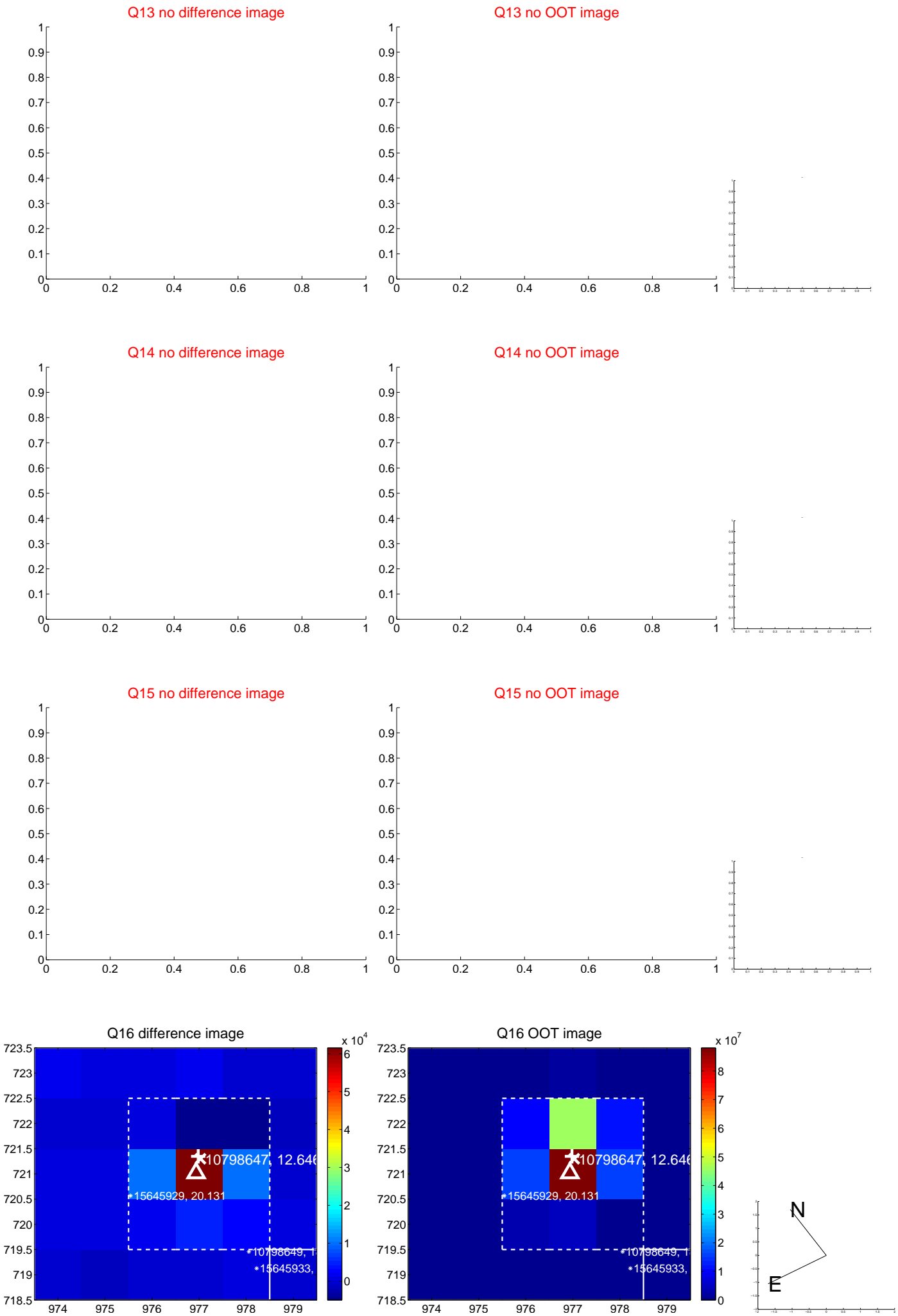
Q12 no difference image



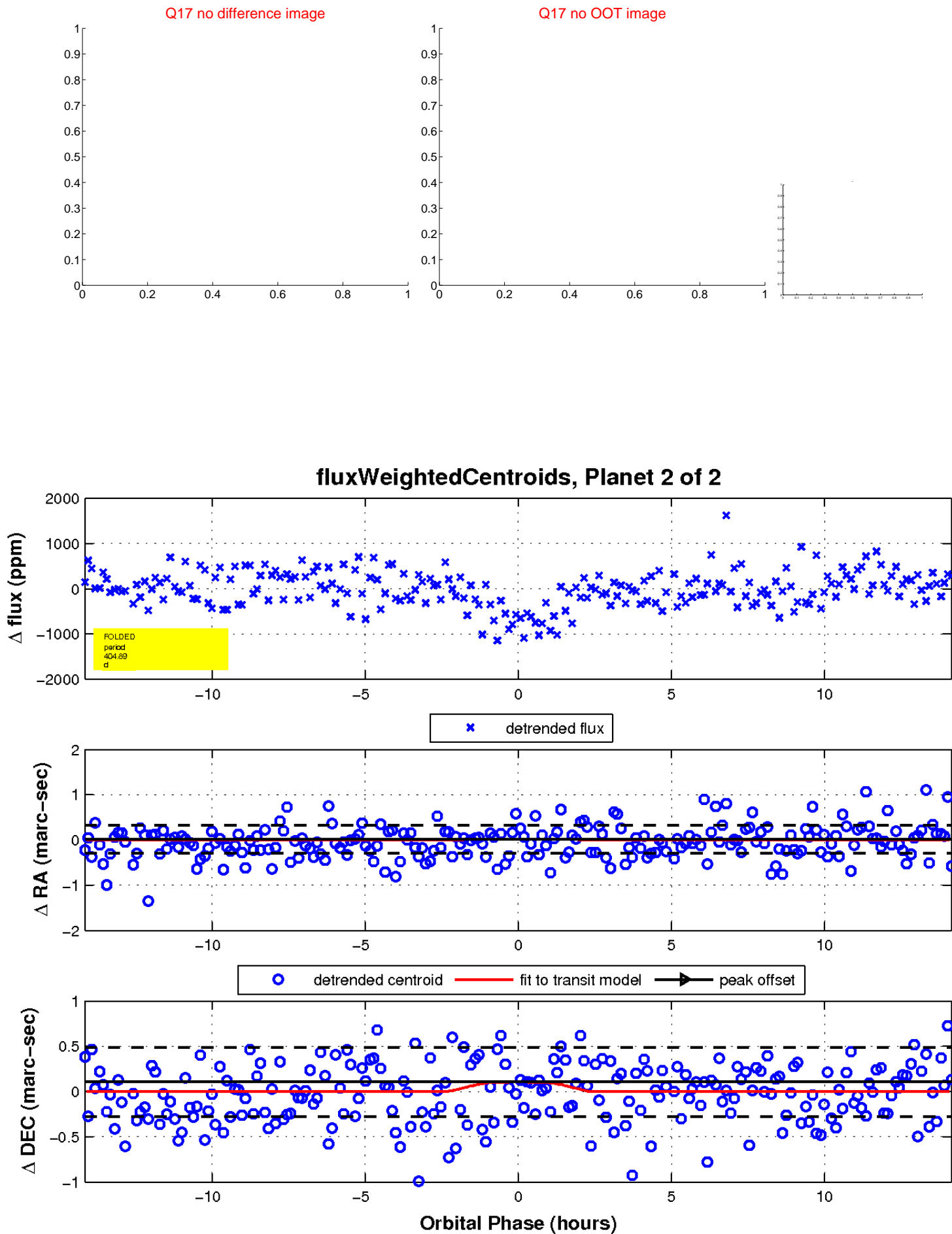
Q12 no OOT image



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

