

KIC 007869917

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})
007869917-01	OBS	1525.01	7.714664	133.557888	220.6	4.506	31.7	34.4	2.60	6900	4.49	1638.35
007869917-02	OBS	1525.02	11.806128	138.266599	109.1	4.656	12.1	13.1	2.60	6900	3.16	929.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007869917-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007869917-02	OBS	PC	0.98	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.

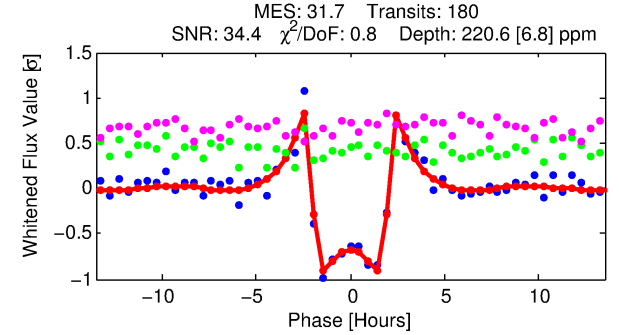
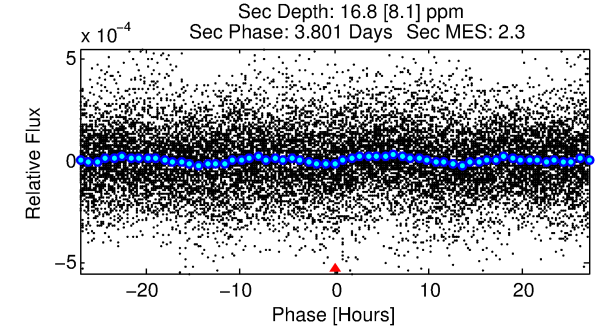
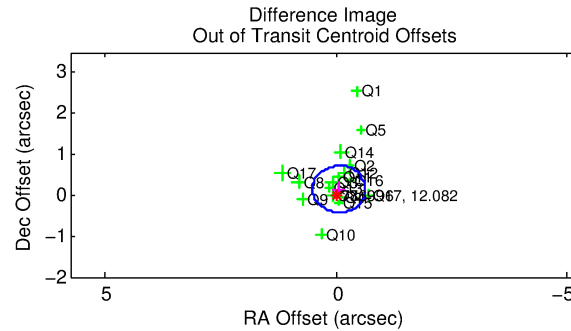
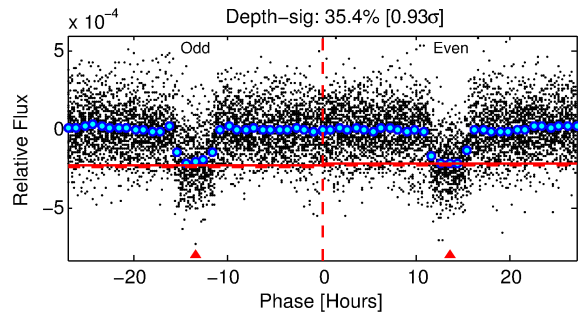
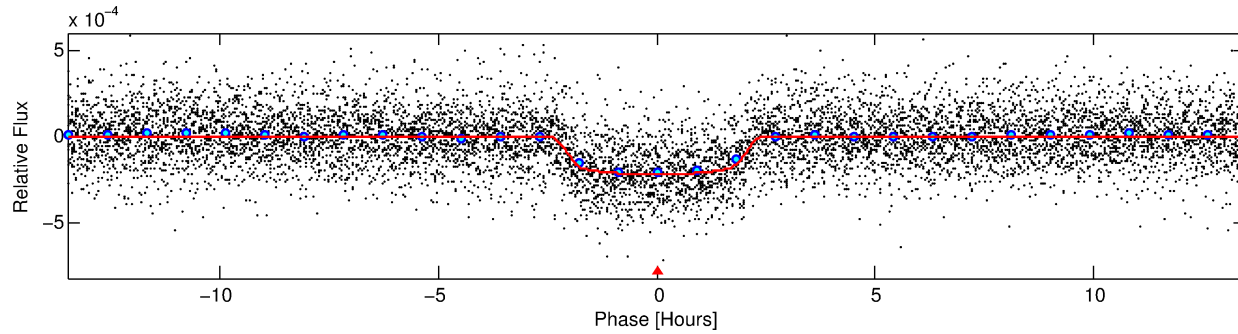
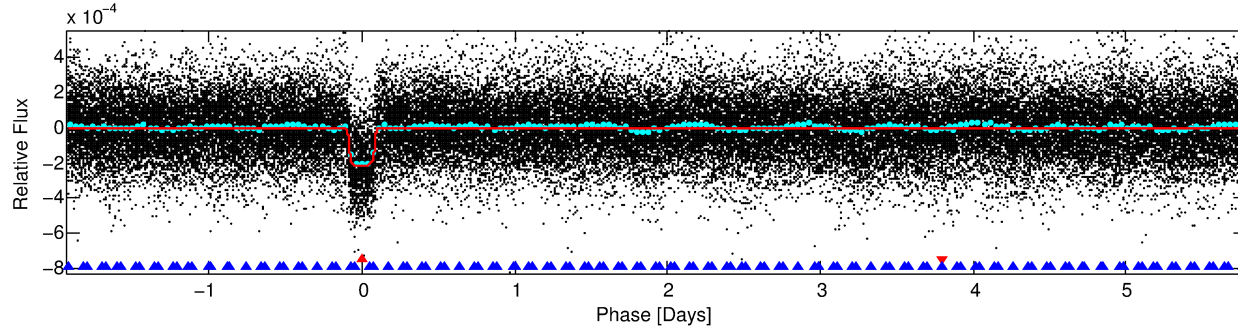
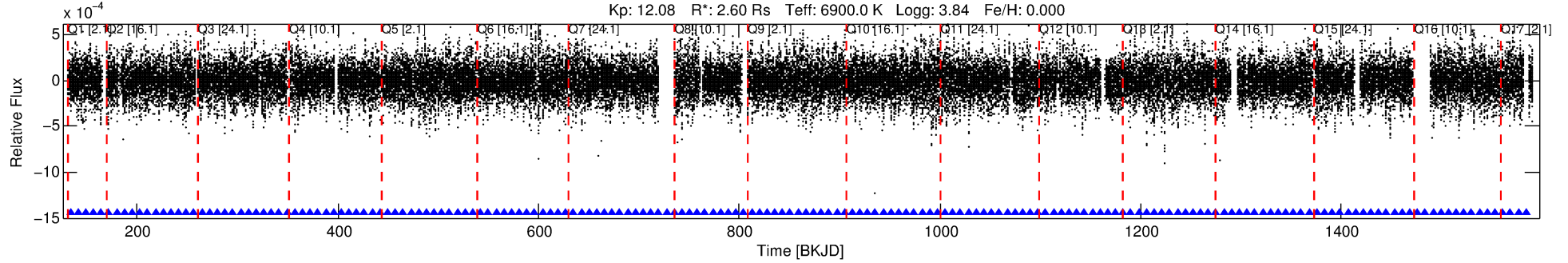
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007869917-01

No Significant Match Found

DV One-Page Summary

KIC: 7869917 Candidate: 1 of 2 Period: 7.715 d
KOI: K01525.01 Corr: 0.976



DV Fit Results:

Period = 7.71466 [0.00001] d
Epoch = 133.5579 [0.0010] BKJD
Rp/R* = 0.0158 [0.0006]
a/R* = 6.24 [1.14]
b = 0.90 [0.04]
Seff = 1638.35 [767.74]
Teq = 1622 [190] K
Rp = 4.49 [1.48] Re
a = 0.0915 [0.0270] AU
Ag = 3.85 [2.57] [1.11 σ]
Teffp = 3513 [442] K [3.93 σ]

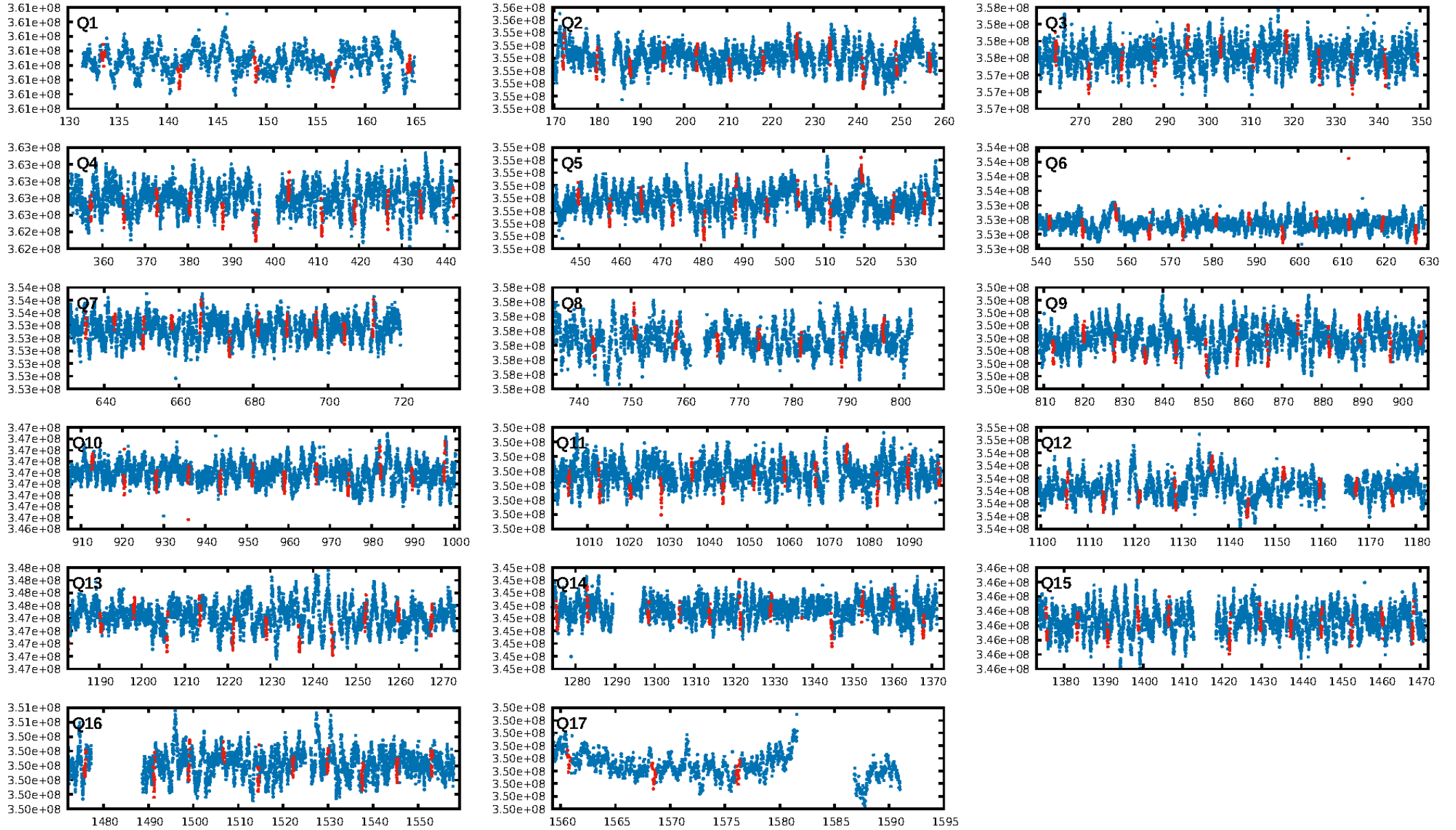
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [15.16 σ]
ModelChiSquare2-sig: 80.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.44e-190
RollingBand-fgt: 1.00 [172/172]
GhostDiagnostic-chr: 3.047
Centroid-sig: 79.7%
Centroid-so: 0.204 arcsec [1.51 σ]
OotOffset-rm: 0.161 arcsec [0.85 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.400 arcsec [2.06 σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

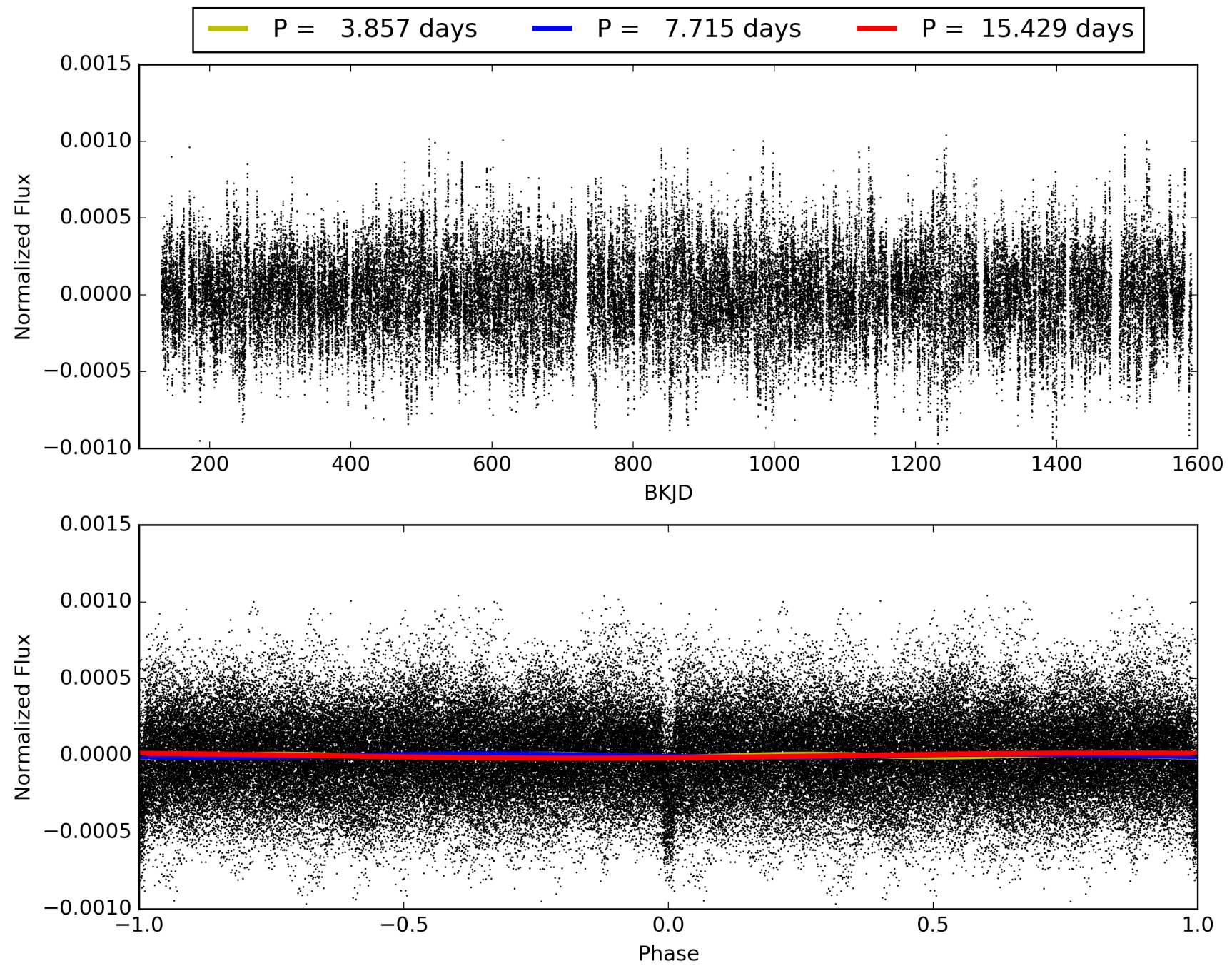
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:28:47 Z

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

TCE 007869917-01, PDC Light Curves

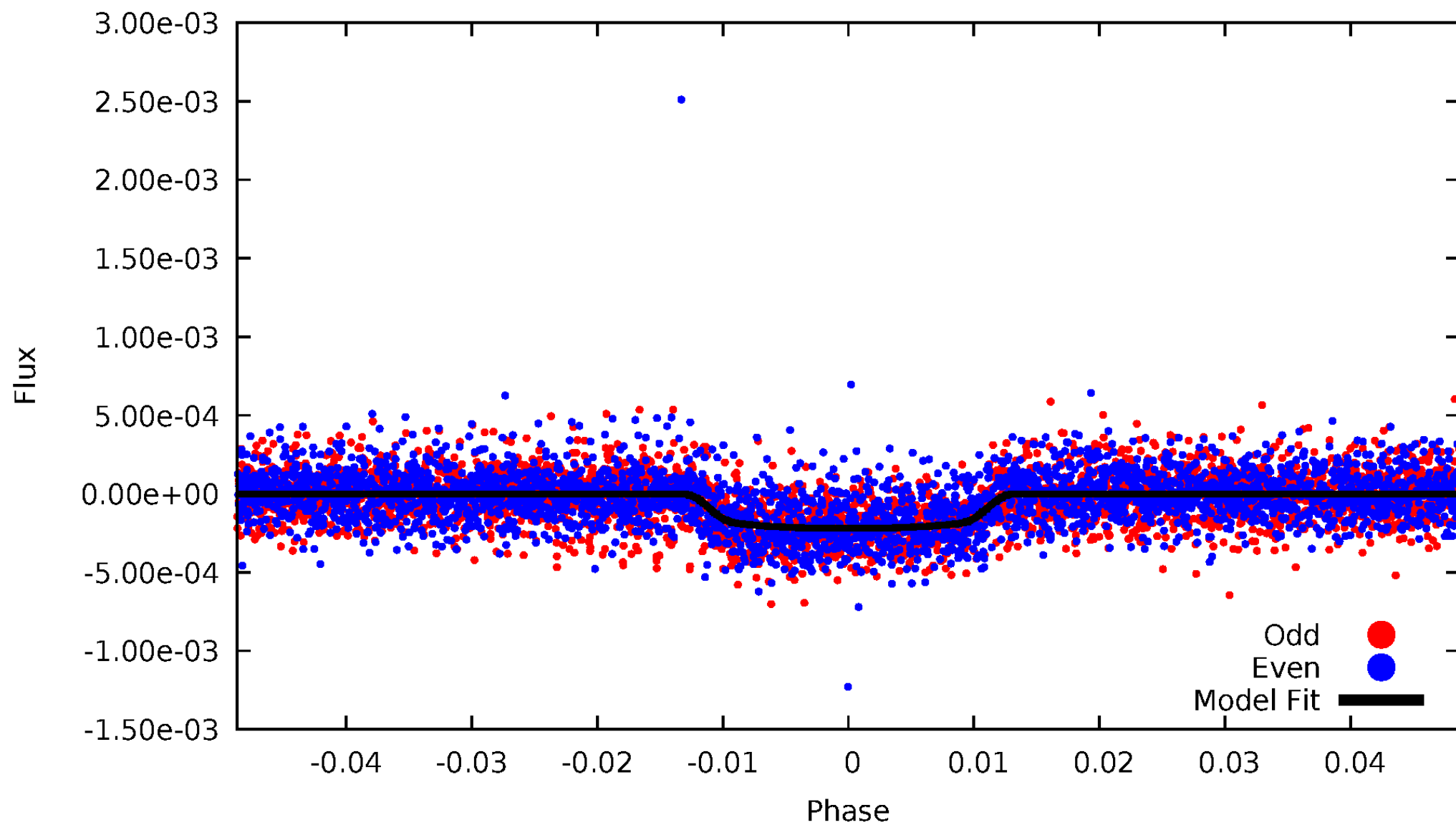


TCE 007869917-01



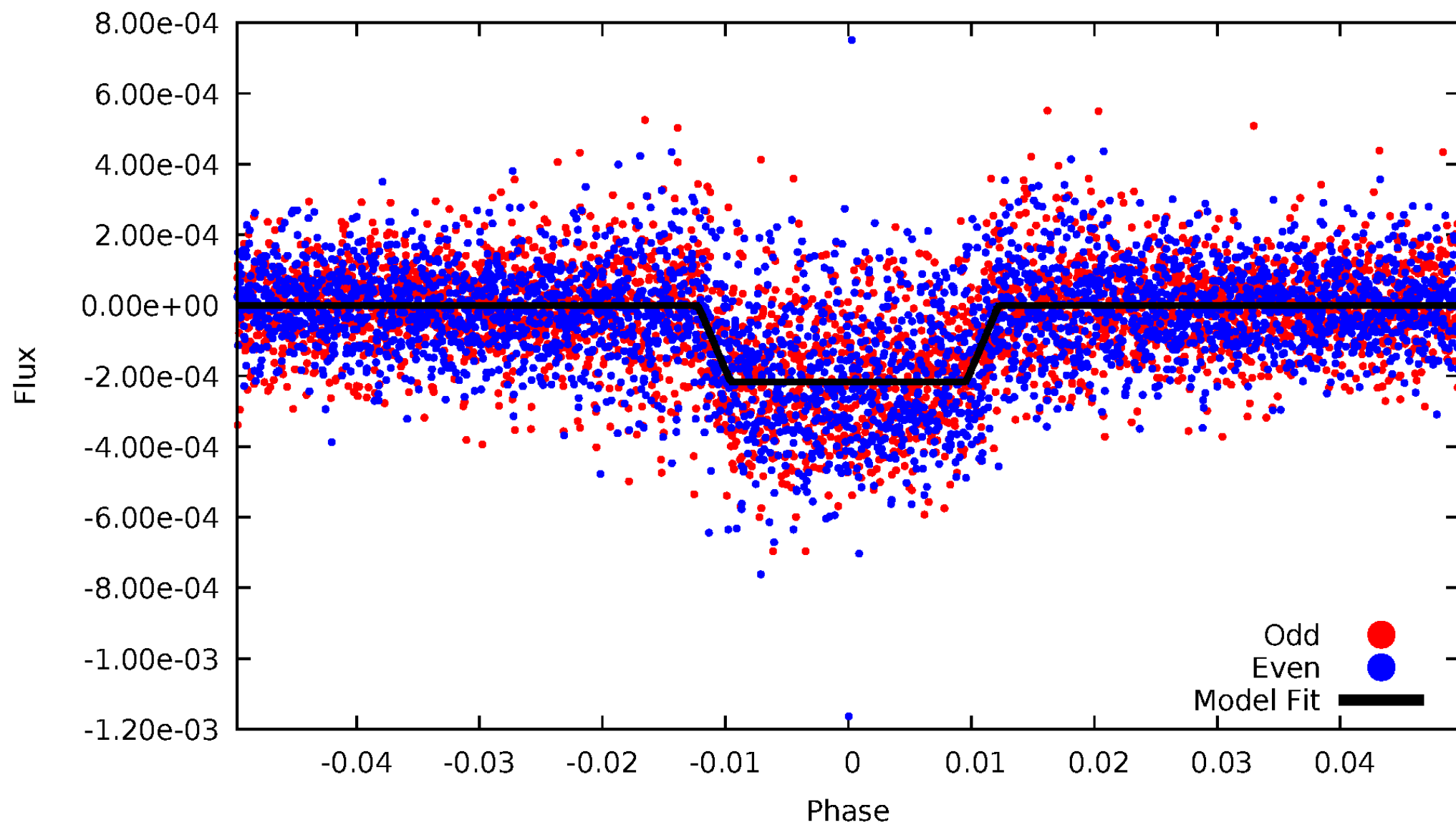
DV Odd/Even

TCE 007869917-01



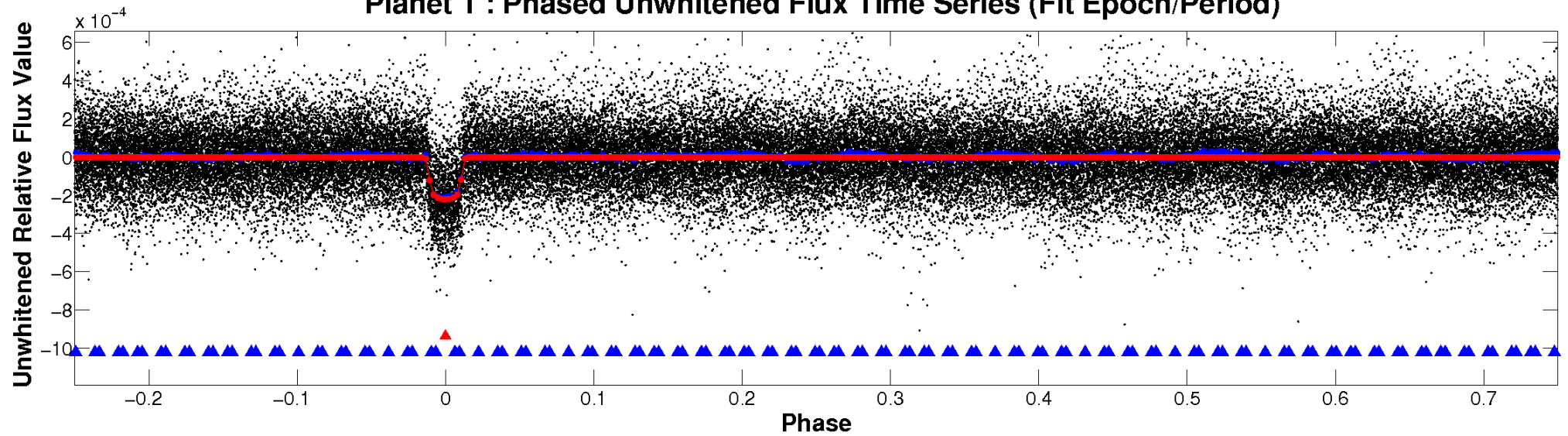
ALT Odd/Even

TCE 007869917-01

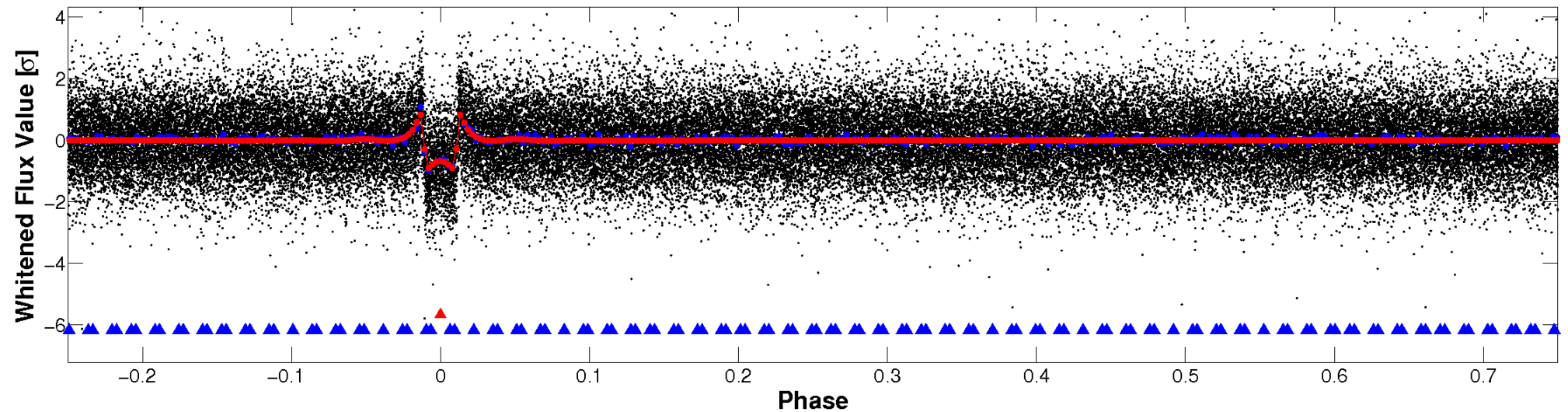


Non-Whitened Vs. Whitened Light Curve

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

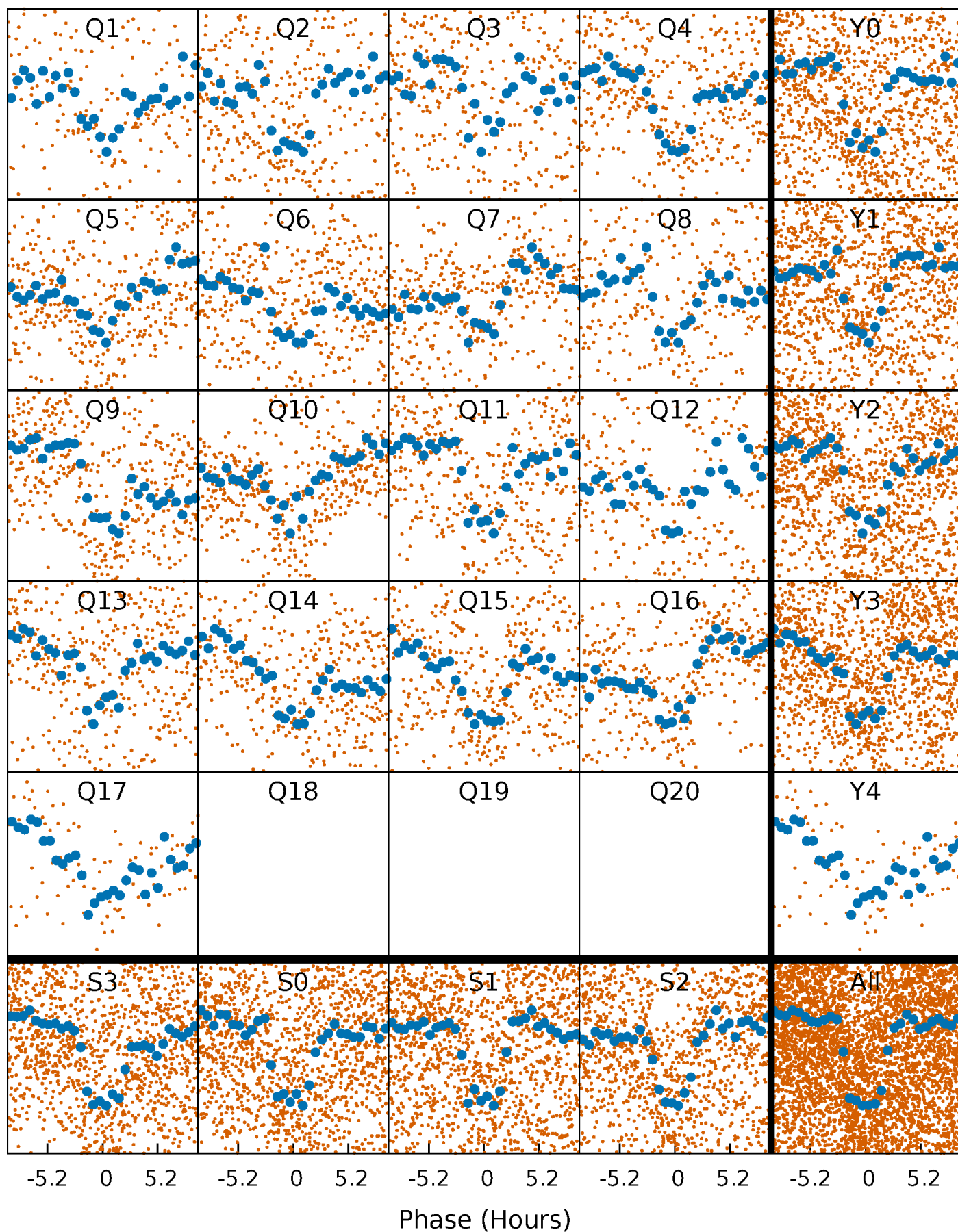


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



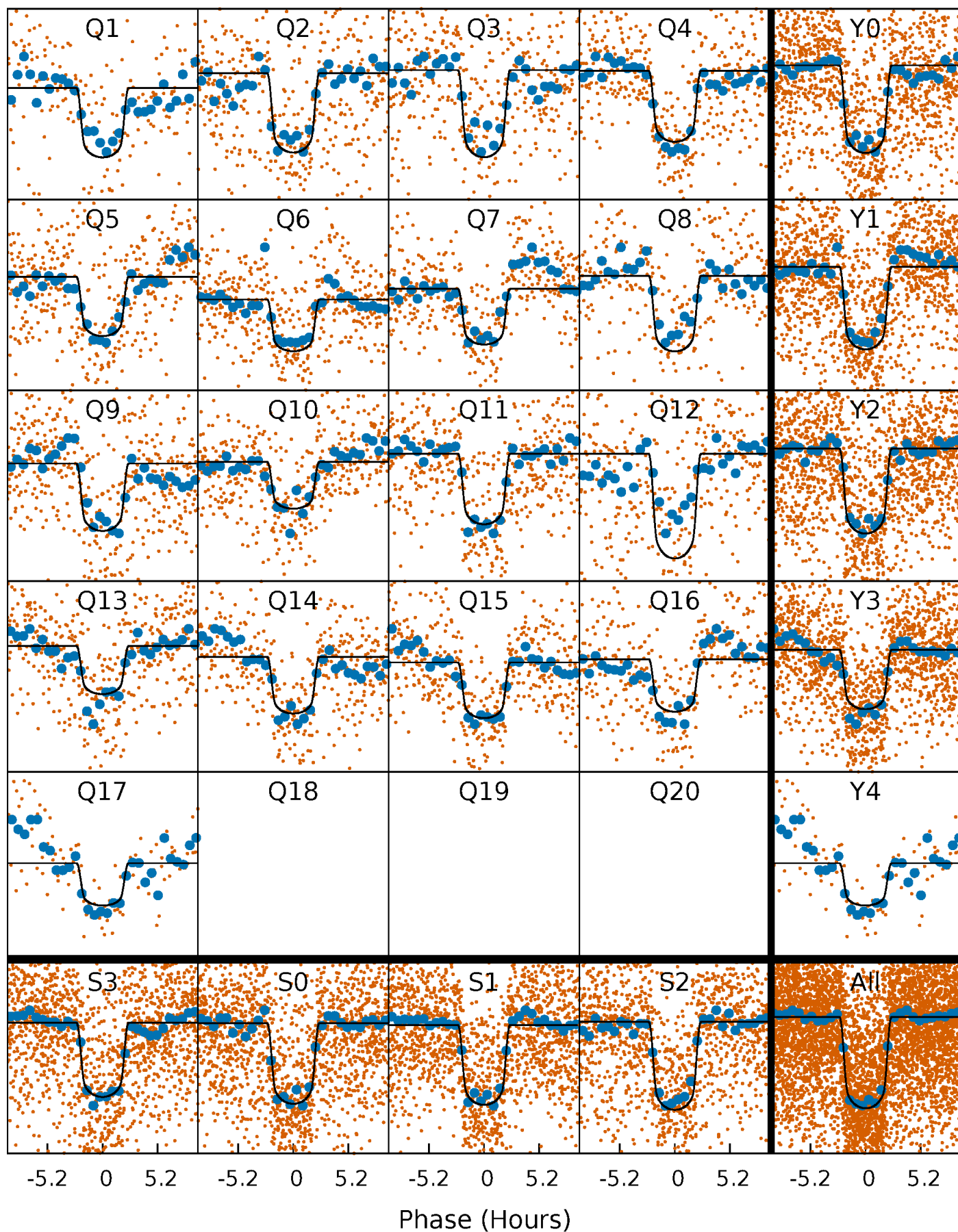
PDC Quarter-Phased Transit Curves

TCE 007869917-01 P= 7.714664 Days $T_0=133.557888$ (BKJD)



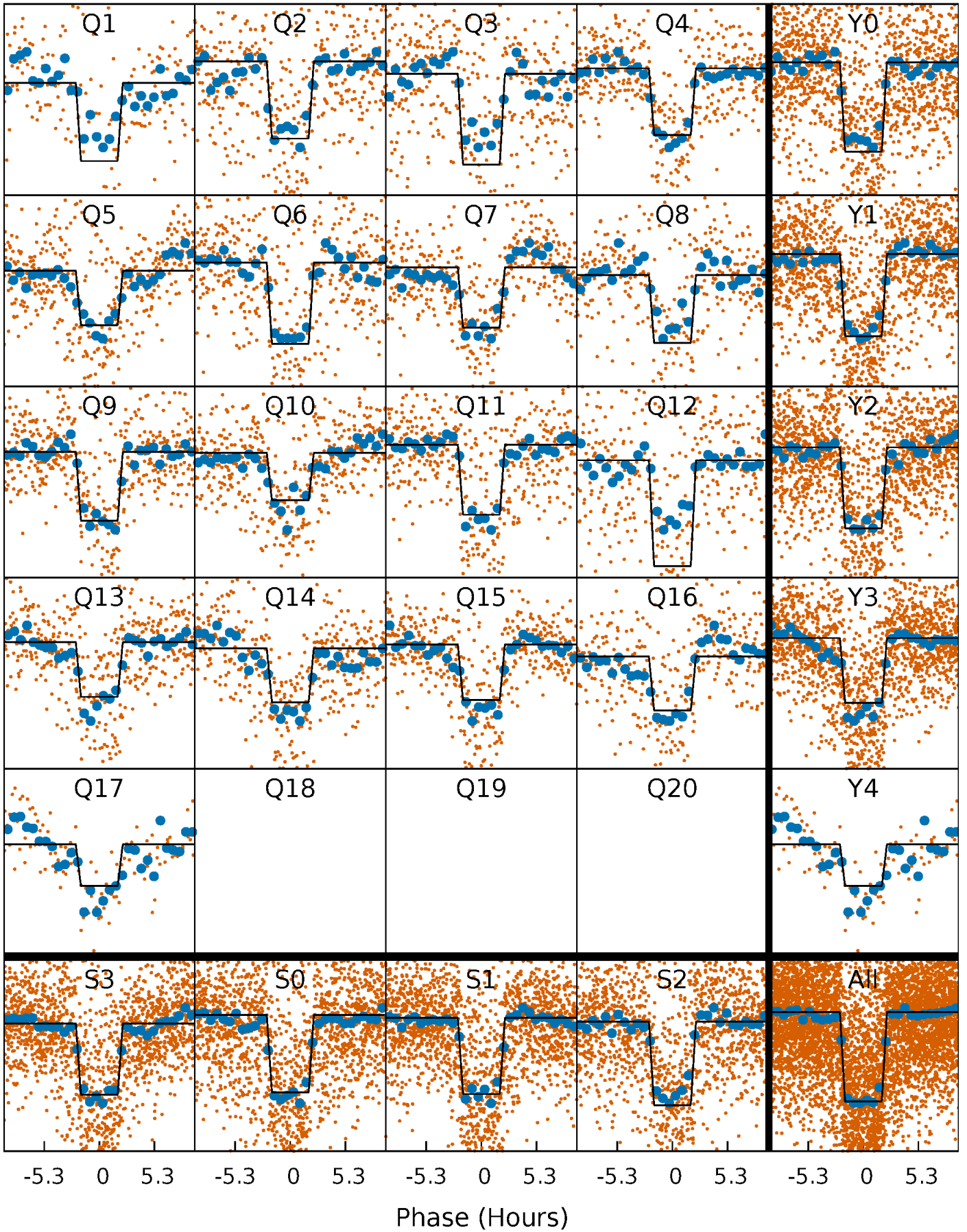
DV Quarter-Phased Transit Curves

TCE 007869917-01 P= 7.714664 Days $T_0=133.557888$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

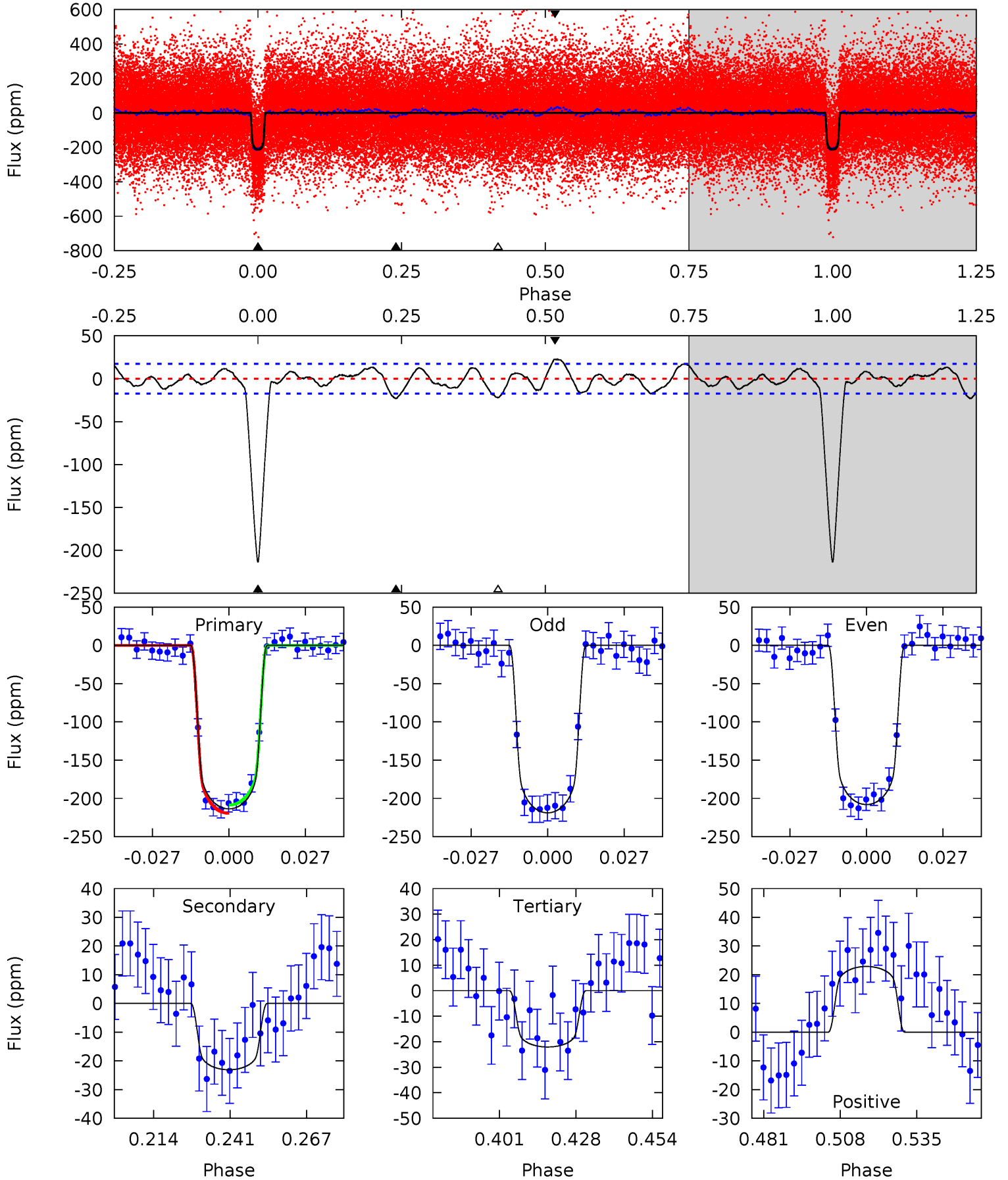
TCE 007869917-01 P= 7.714667 Days $T_0=133.557134$ (BKJD)



DV Model-Shift Uniqueness Test

007869917-01, P = 7.714664 Days, E = 125.843224 Days

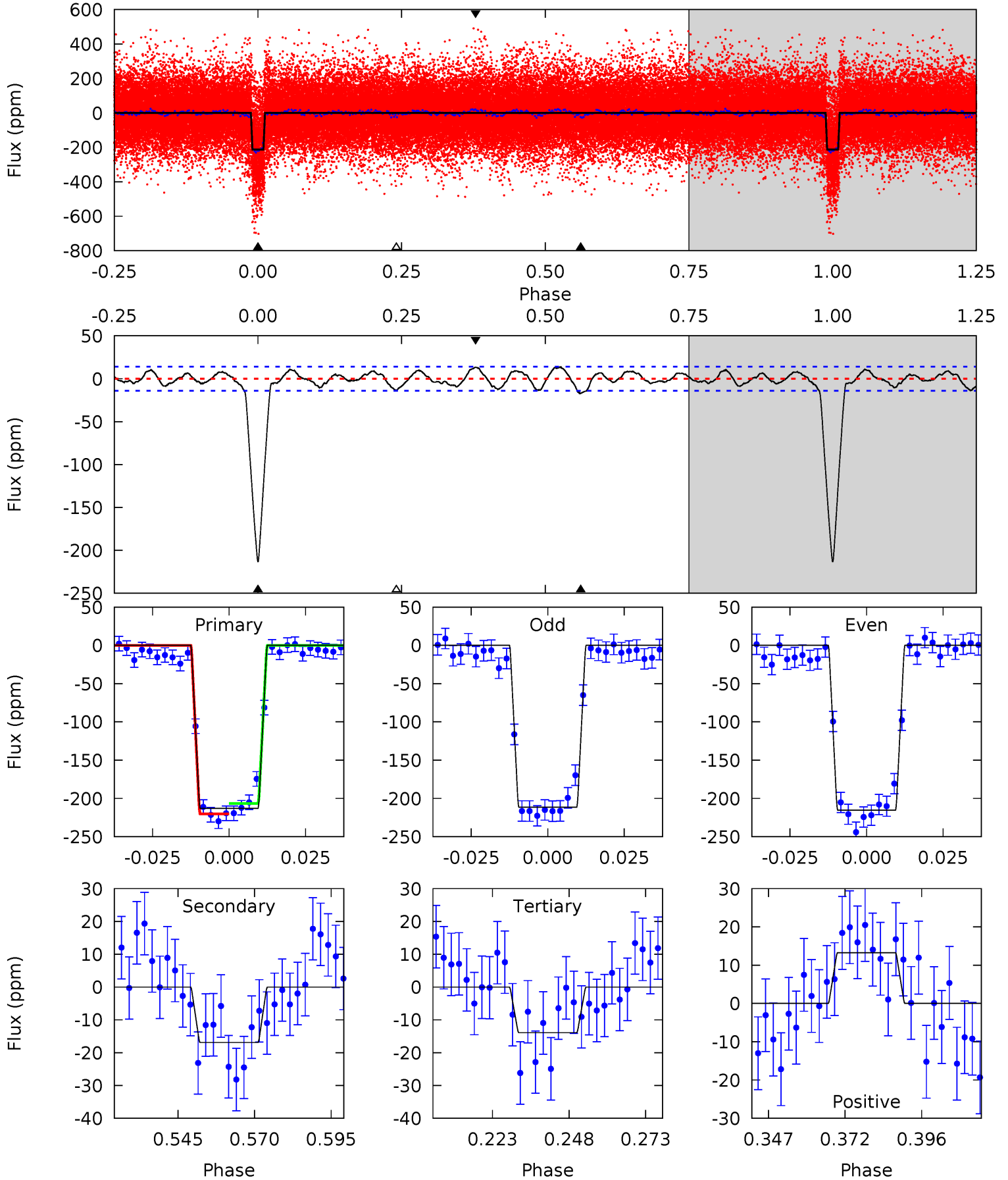
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
59.3	6.41	6.13	6.35	4.83	2.22	2.48	53.2	53.0	0.29	0.06	1.50	0.95	0.10	1.50



Alt Model-Shift Uniqueness Test

007869917-01, P = 7.714667 Days, E = 125.842467 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
73.6	5.84	4.80	4.58	4.85	2.24	2.15	68.8	69.0	1.03	1.26	0.67	0.94	0.06	2.31



Stellar Parameters For KIC 007869917

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6900^{+184}_{-204}	$3.843^{+0.259}_{-0.111}$	$0.000^{+0.250}_{-0.300}$	$2.599^{+0.523}_{-0.850}$	$1.714^{+0.170}_{-0.316}$	$0.138^{+0.223}_{-0.046}$
	+3%/-3%	+7%/-3%	+inf%/-inf%	+20%/-33%	+10%/-18%	+162%/-33%
Source	PHO1	FLK73	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 007869917-01 / KOI 1525.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-23 ± 4	$4.42^{+0.55}_{-0.75}$	2242^{+141}_{-194}	4038^{+146}_{-154}	$5.537^{+2.291}_{-1.372}$
Alt.	-17 ± 3	$4.08^{+0.53}_{-0.66}$	2237^{+150}_{-176}	3909^{+151}_{-170}	$4.607^{+2.075}_{-1.159}$

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

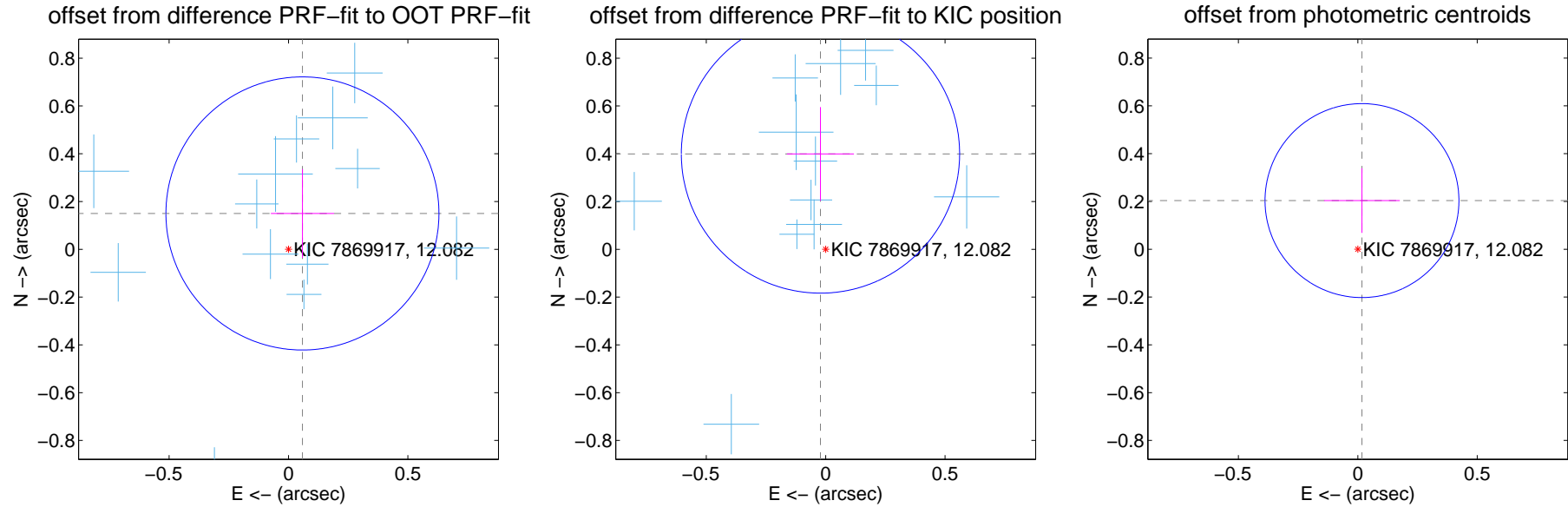
DV Centroid Data

Supplemental centroid analysis for 007869917-01. Kepler magnitude: 12.08. Transit SNR 34.44

There are 17 quarters with good PRF difference image offsets

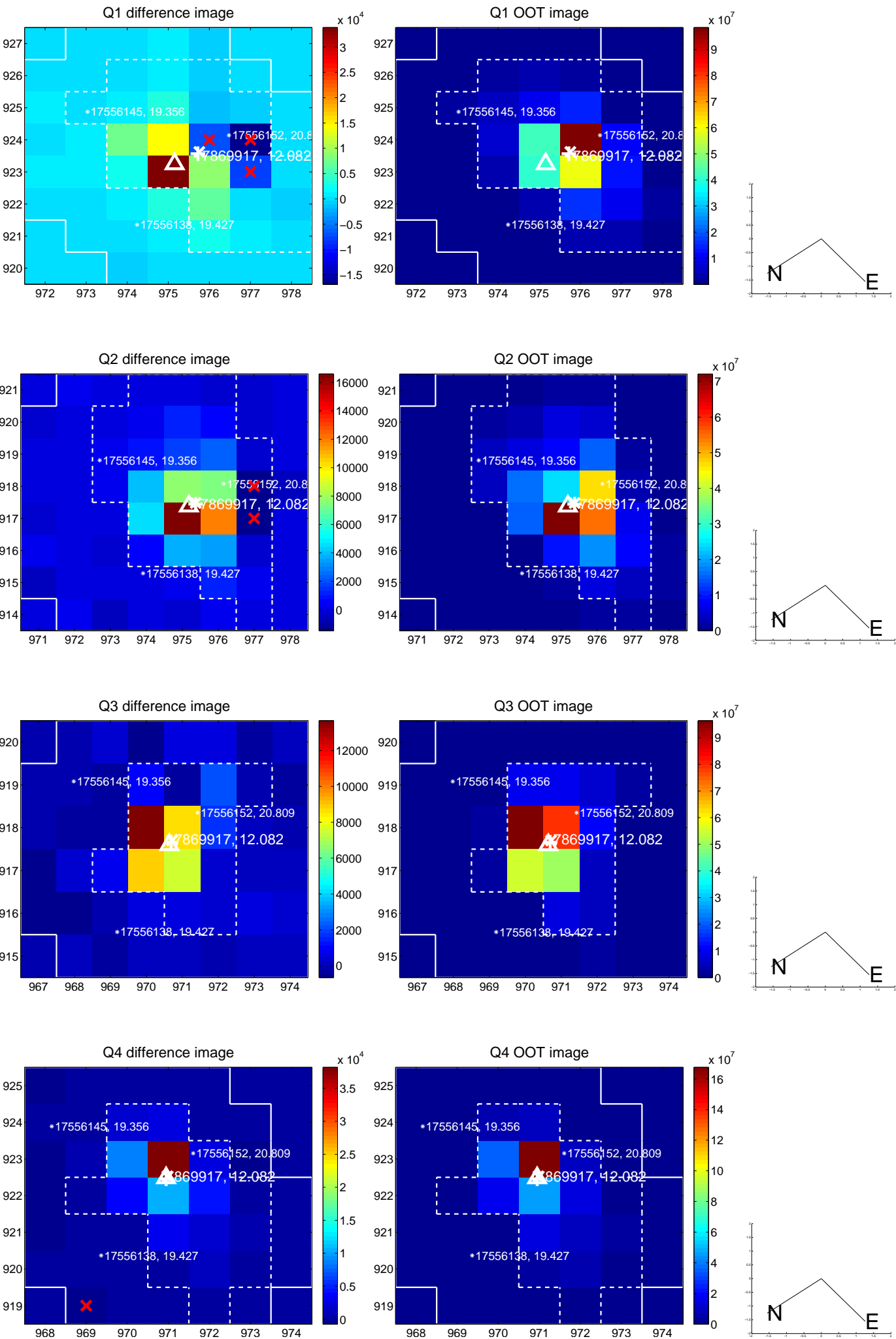
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.161 ± 0.191	0.85	-0.058 ± 0.132	0.150 ± 0.186
PRF-fit source offset from KIC position	0.400 ± 0.194	2.06	0.022 ± 0.140	0.399 ± 0.196
photometric centroid source offset	0.20 ± 0.14	1.51	-0.02 ± 0.16	0.20 ± 0.14

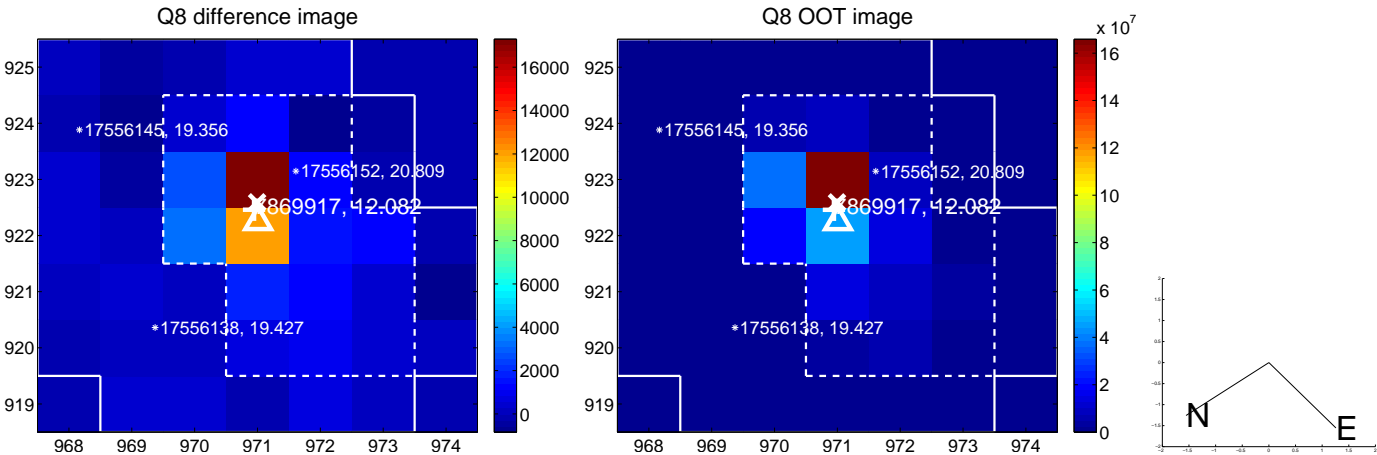
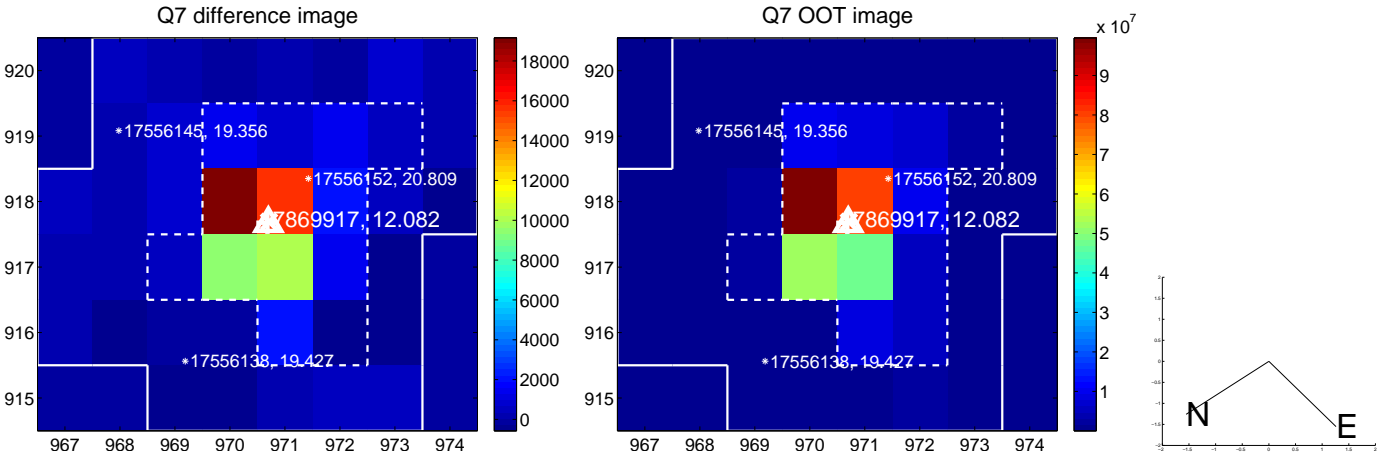
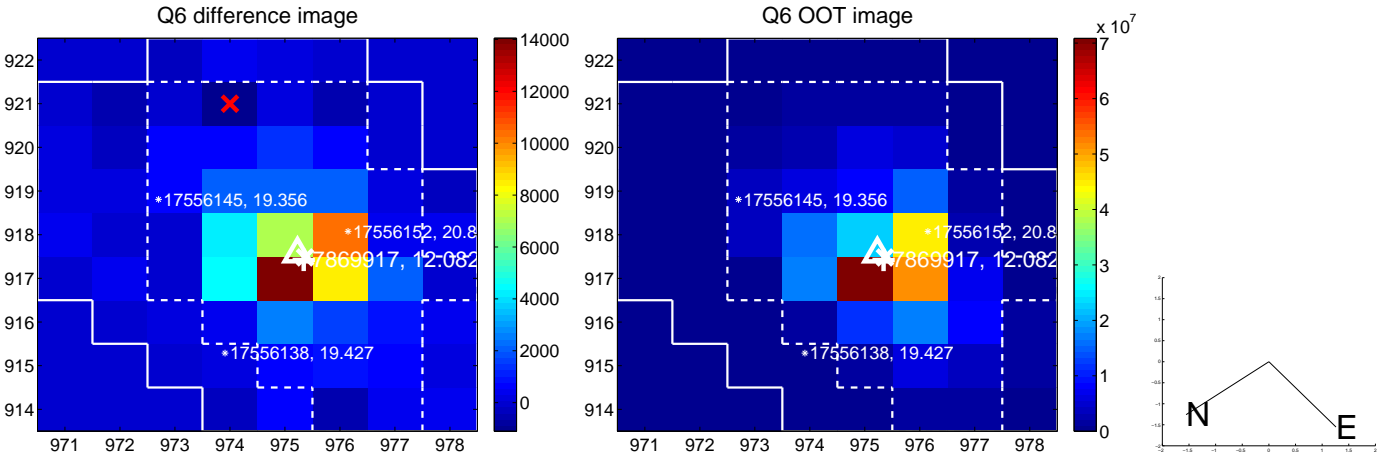
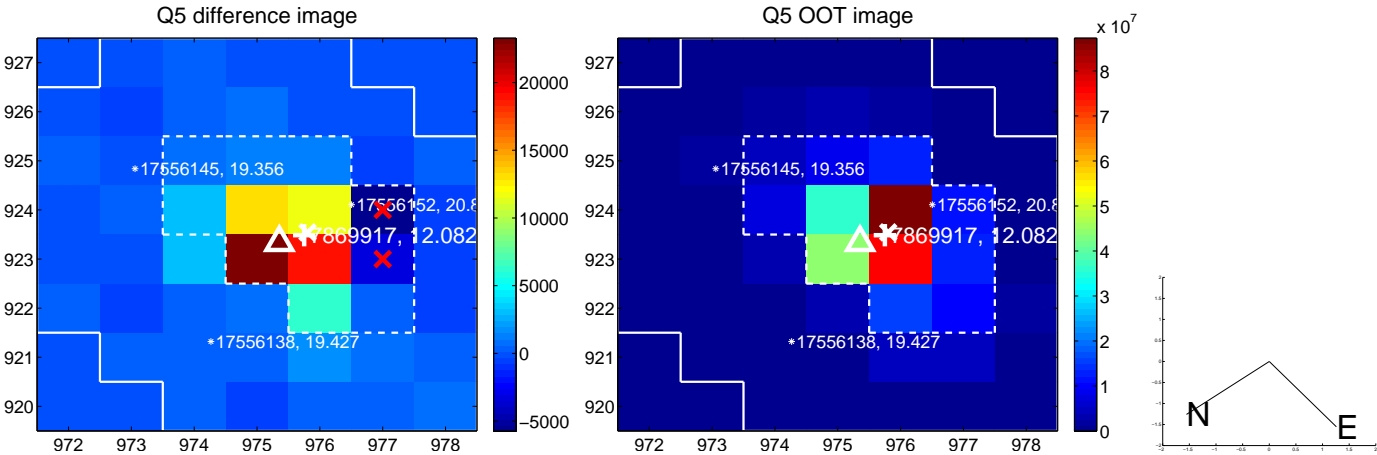


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

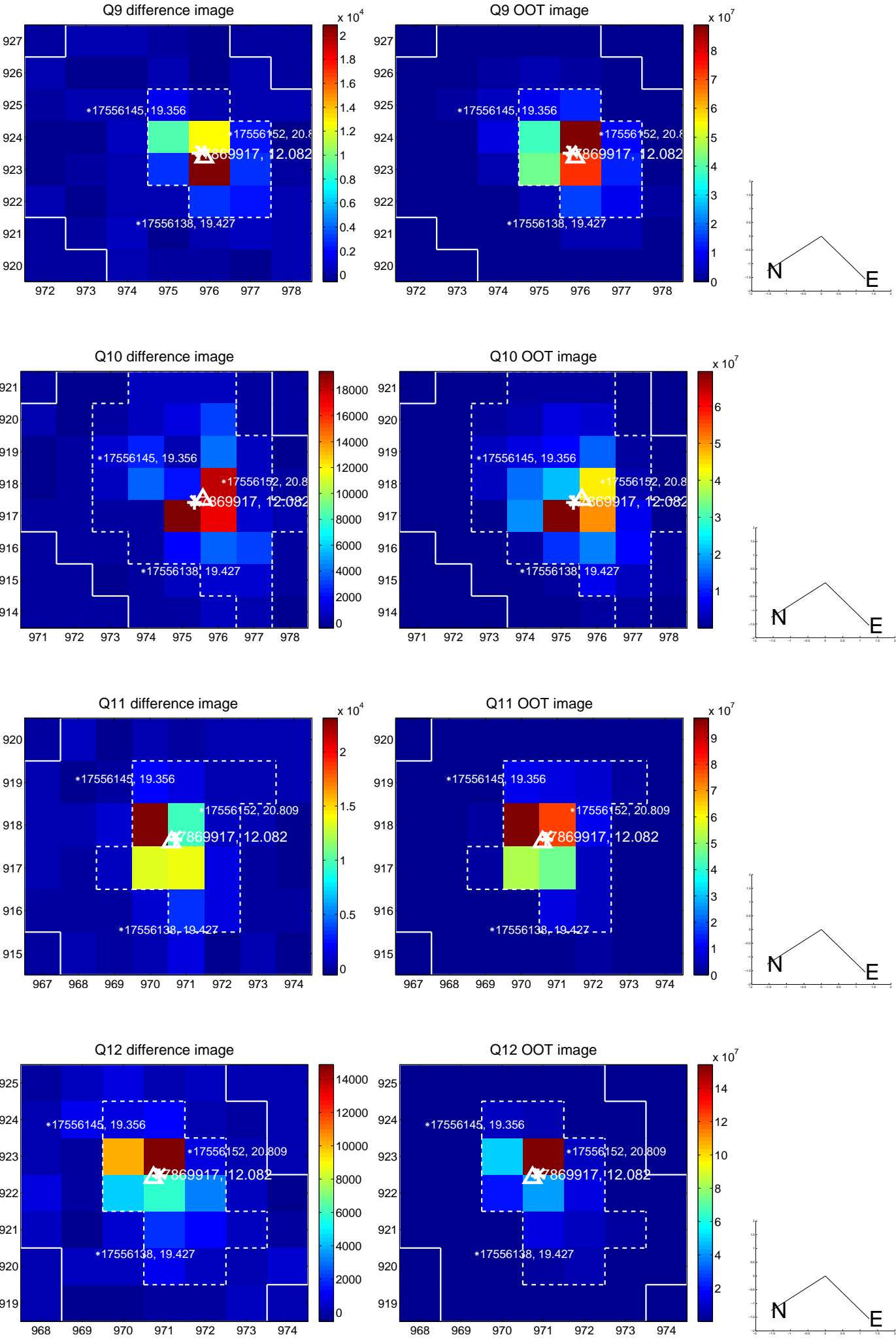
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



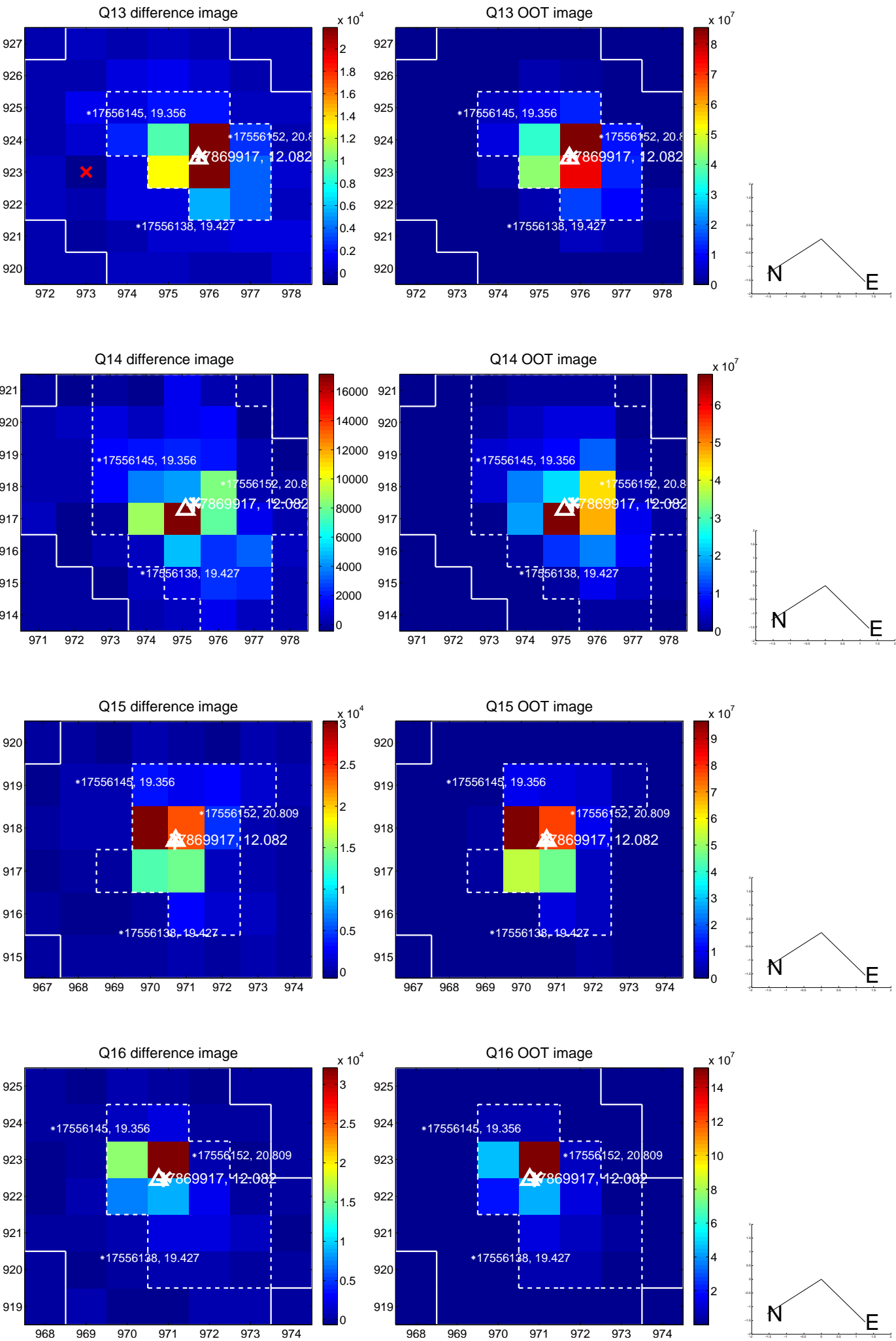
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



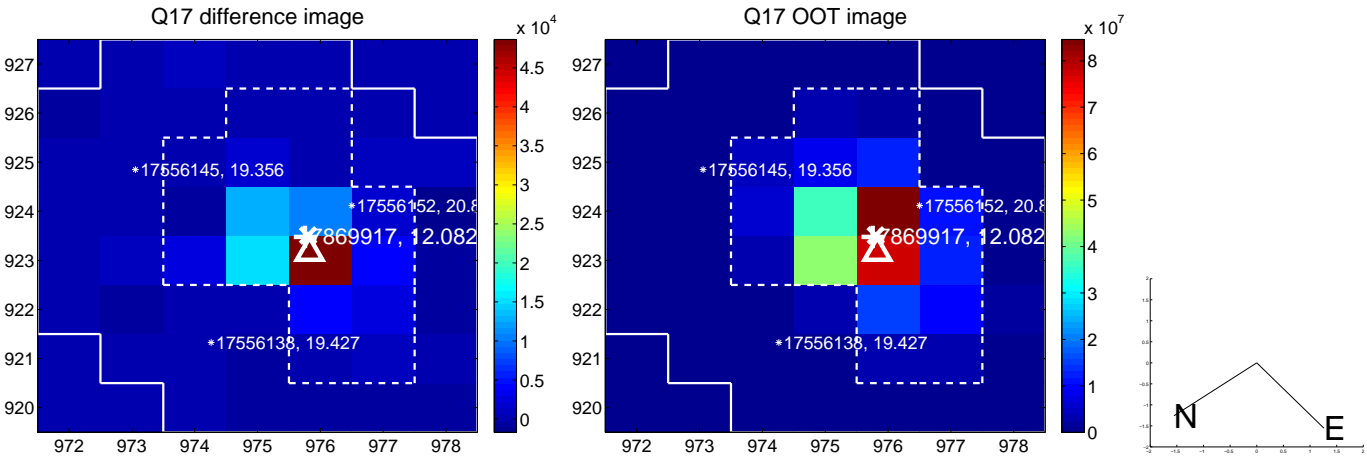
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



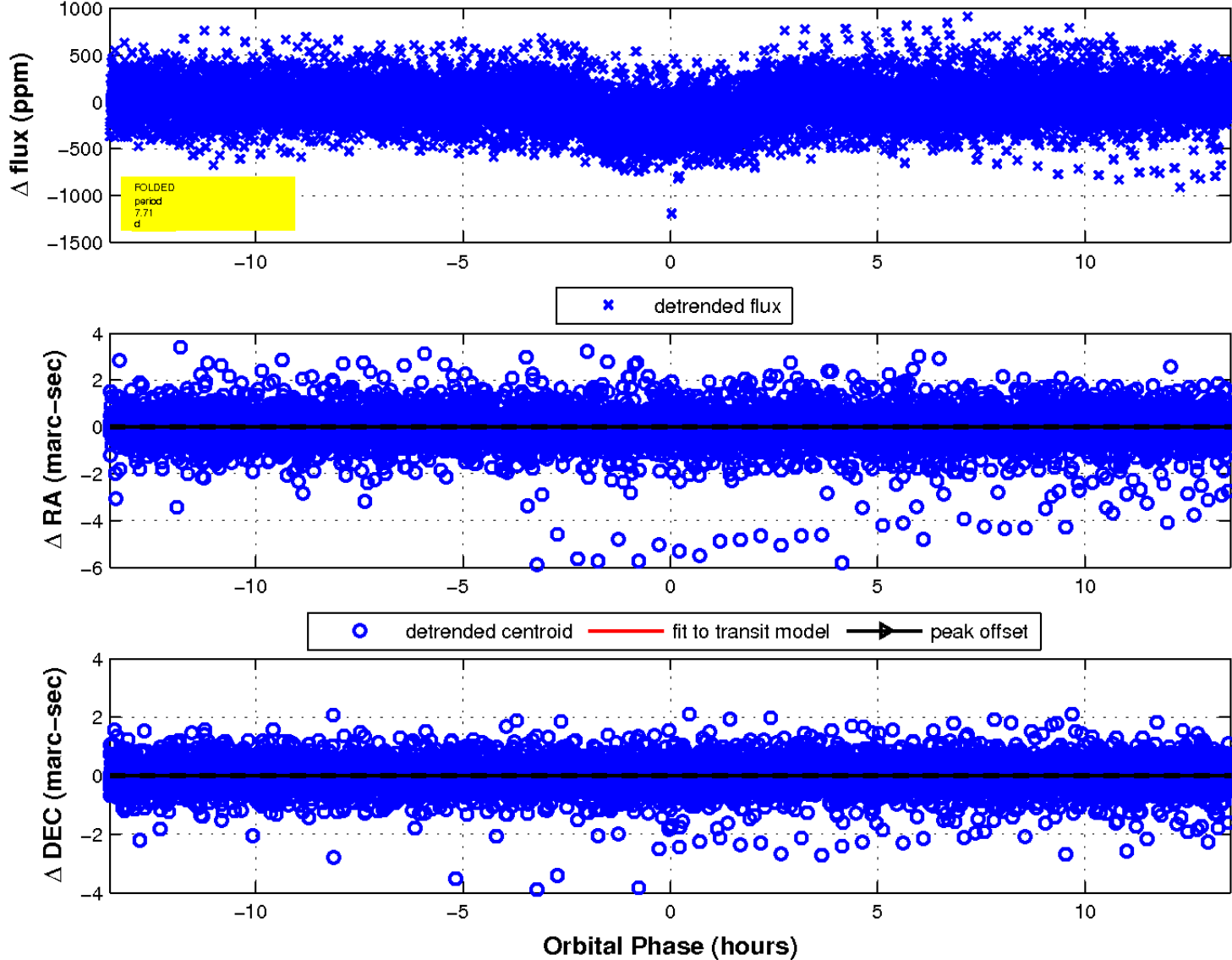
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

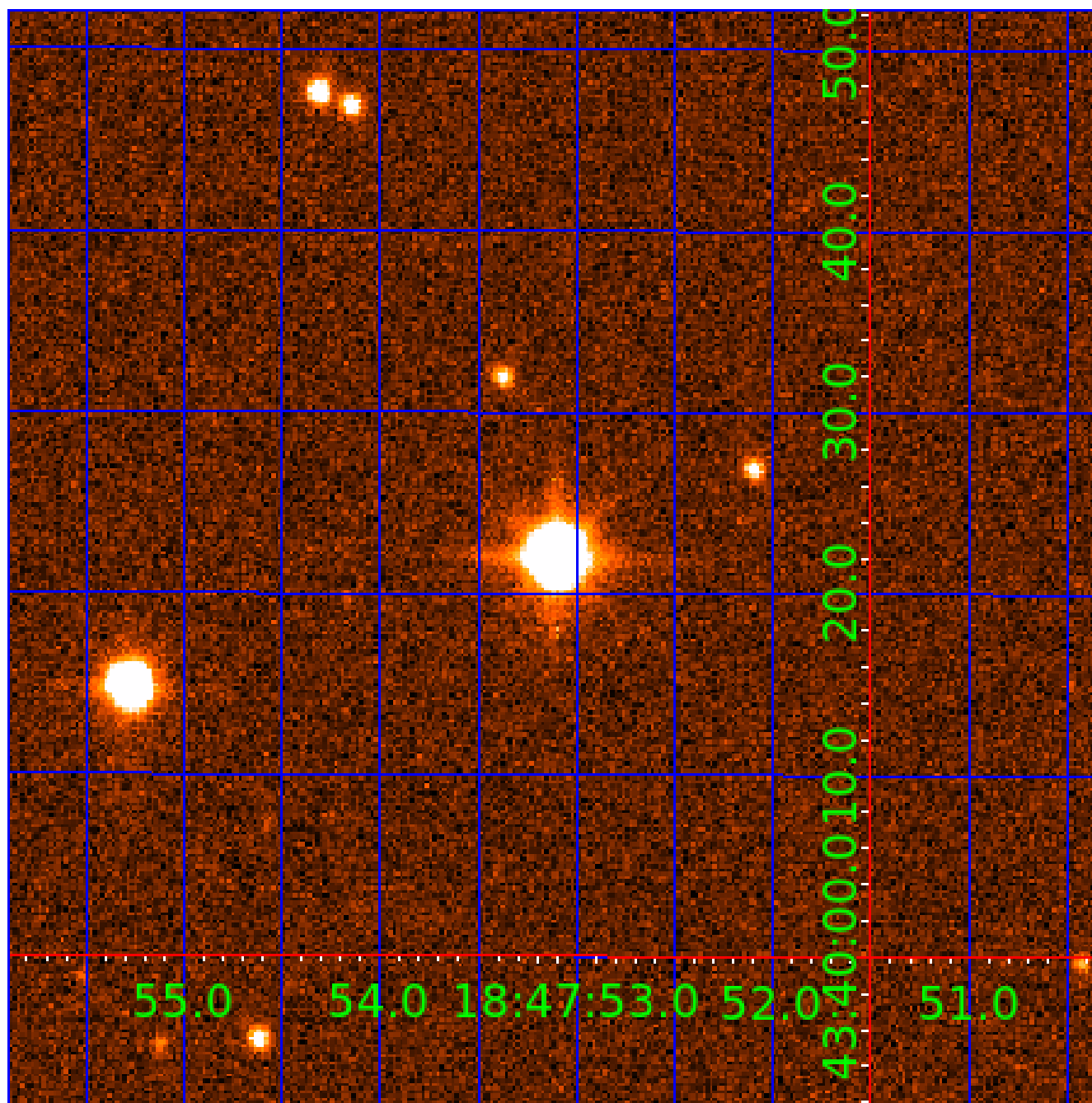


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 007869917

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})
007869917-01	OBS	1525.01	7.714664	133.557888	220.6	4.506	31.7	34.4	2.60	6900	4.49	1638.35
007869917-02	OBS	1525.02	11.806128	138.266599	109.1	4.656	12.1	13.1	2.60	6900	3.16	929.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007869917-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007869917-02	OBS	PC	0.98	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.

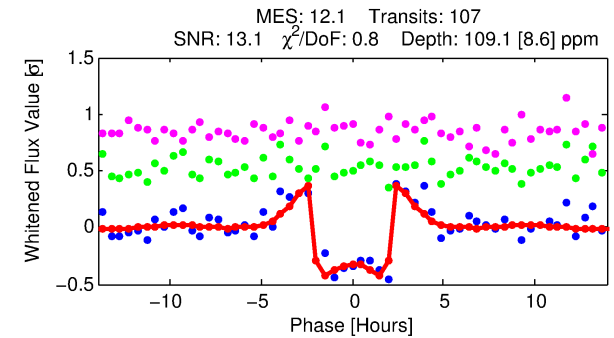
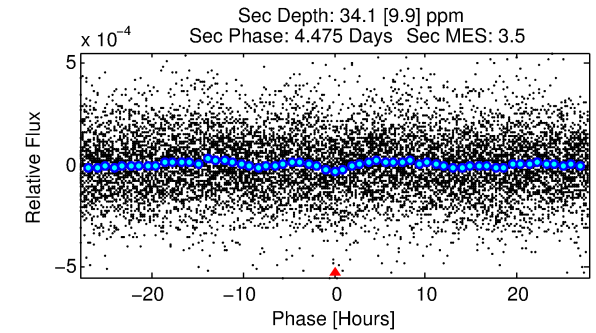
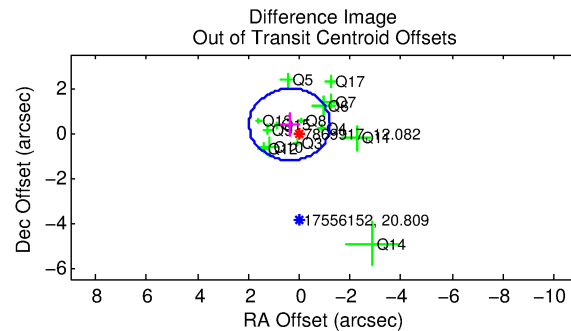
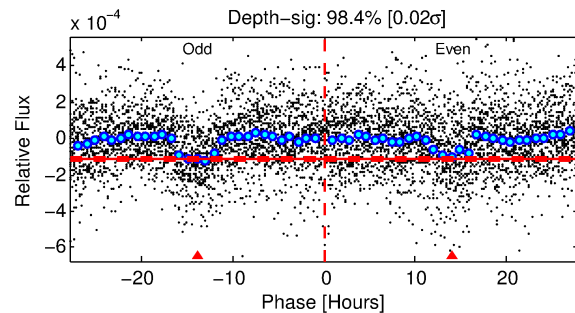
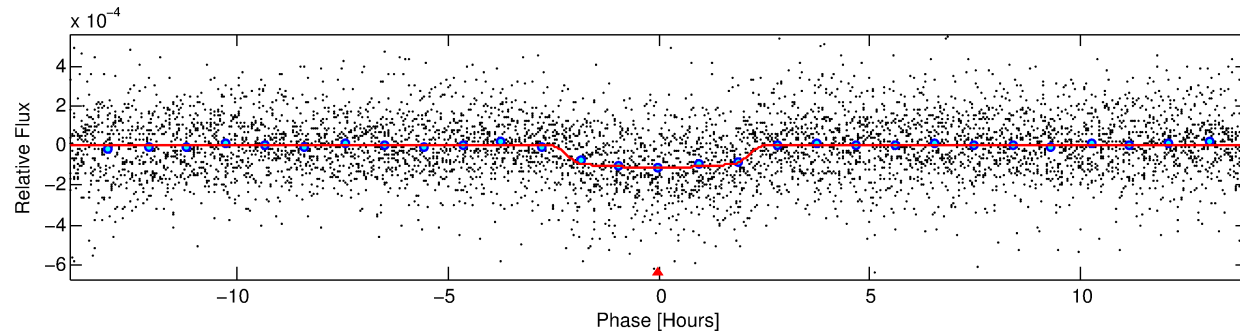
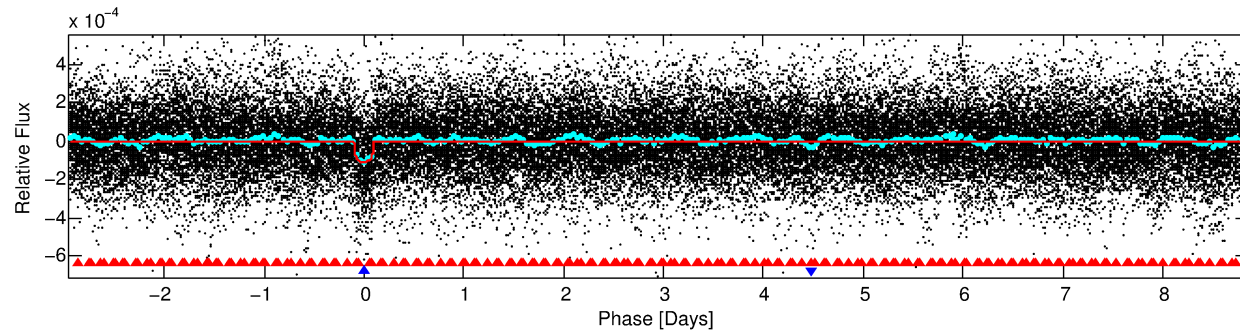
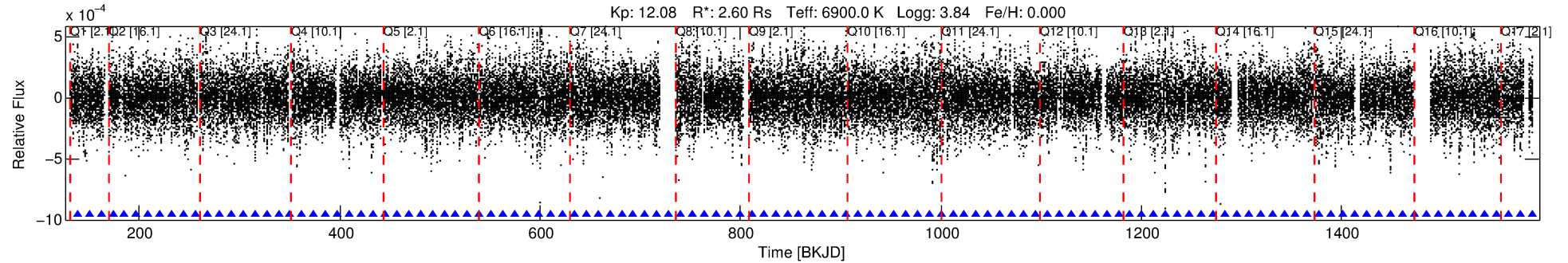
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007869917-02

No Significant Match Found

DV One-Page Summary

KIC: 7869917 Candidate: 2 of 2 Period: 11.806 d
KOI: K01525.02 Corr: 0.983



DV Fit Results:

Period = 11.80613 [0.00004] d
Epoch = 138.2666 [0.0029] BKJD
Rp/R* = 0.0111 [0.0012]
a/R* = 8.96 [5.13]
b = 0.90 [0.12]
Seff = 929.01 [435.34]
Teq = 1408 [165] K
Rp = 3.16 [1.09] Re
a = 0.1215 [0.0359] AU
Ag = 27.82 [16.20] [1.66 σ]
Teffp = 4999 [480] K [7.07 σ]

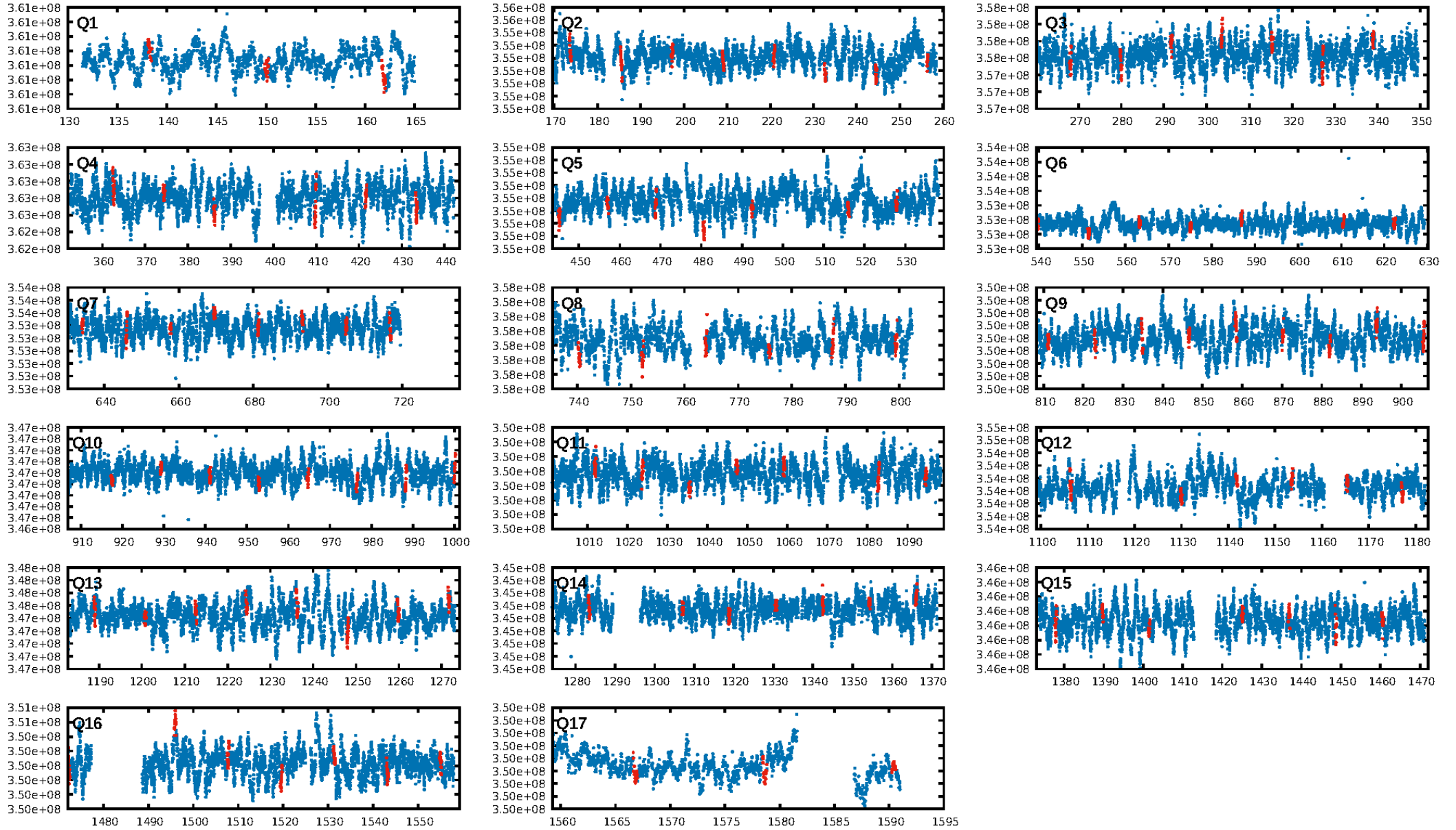
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [15.16 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 81.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.01e-29
RollingBand-fgt: 1.00 [101/101]
GhostDiagnostic-chr: 3.464
Centroid-sig: 8.7%
Centroid-so: 0.630 arcsec [1.63 σ]
OotOffset-rm: 0.531 arcsec [1.00 σ]
KicOffset-rm: 0.835 arcsec [1.81 σ]
OotOffset-st: 3/4/3/4 [14]
KicOffset-st: 3/4/3/4 [14]
DiffImageQuality-fgm: 0.79 [11/14]
DiffImageOverlap-fno: 1.00 [17/17]

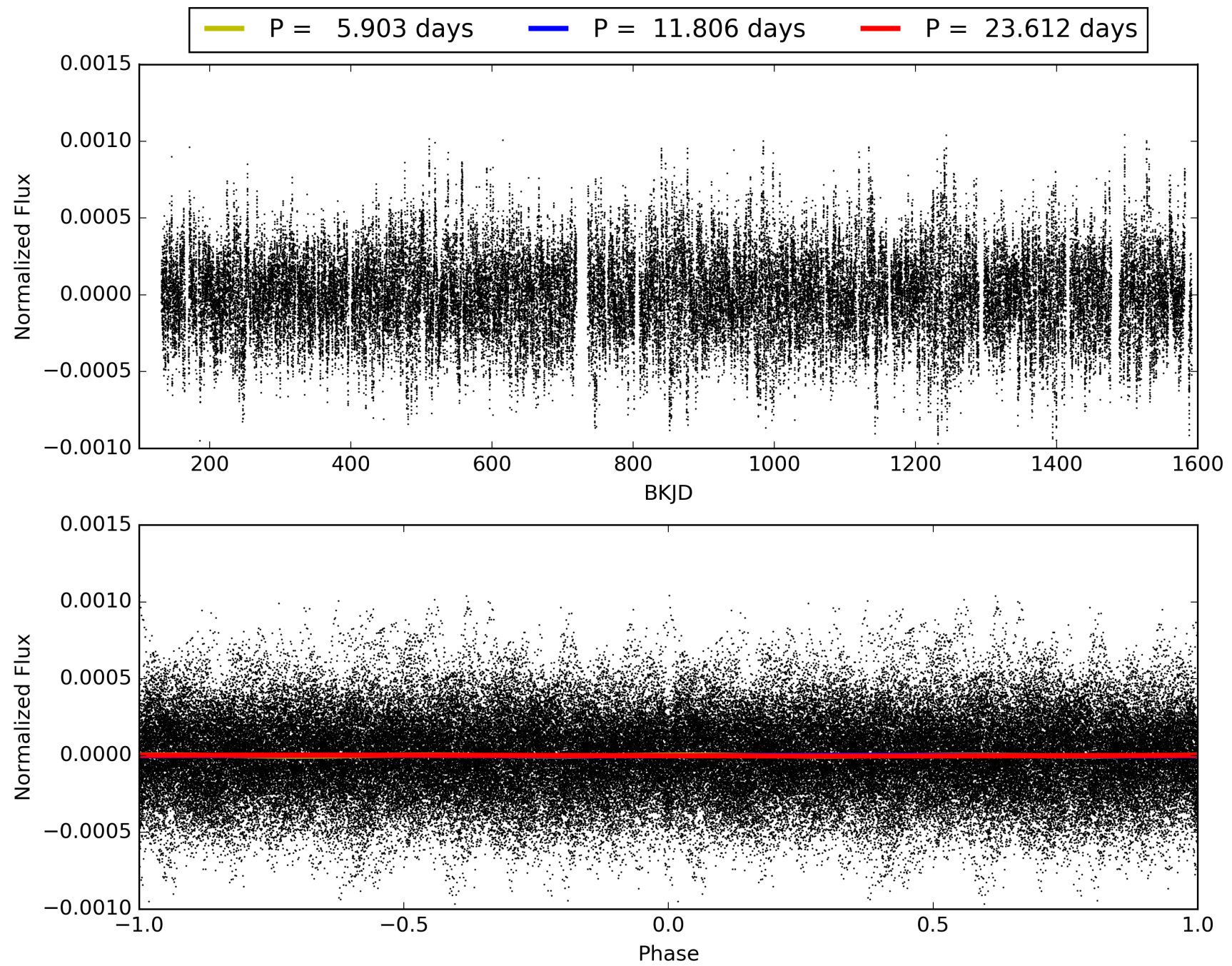
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:28:54 Z

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

TCE 007869917-02, PDC Light Curves

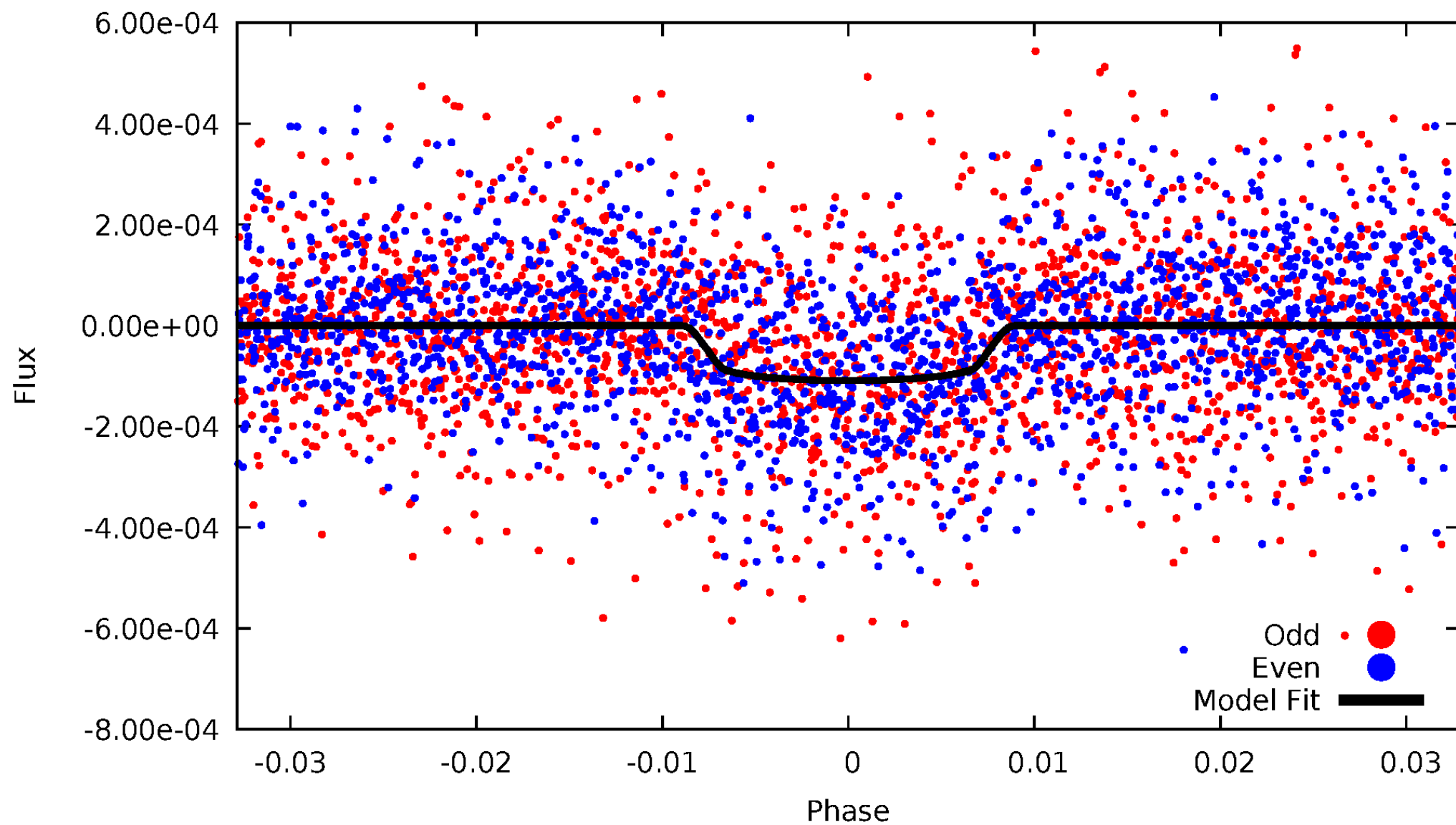


TCE 007869917-02



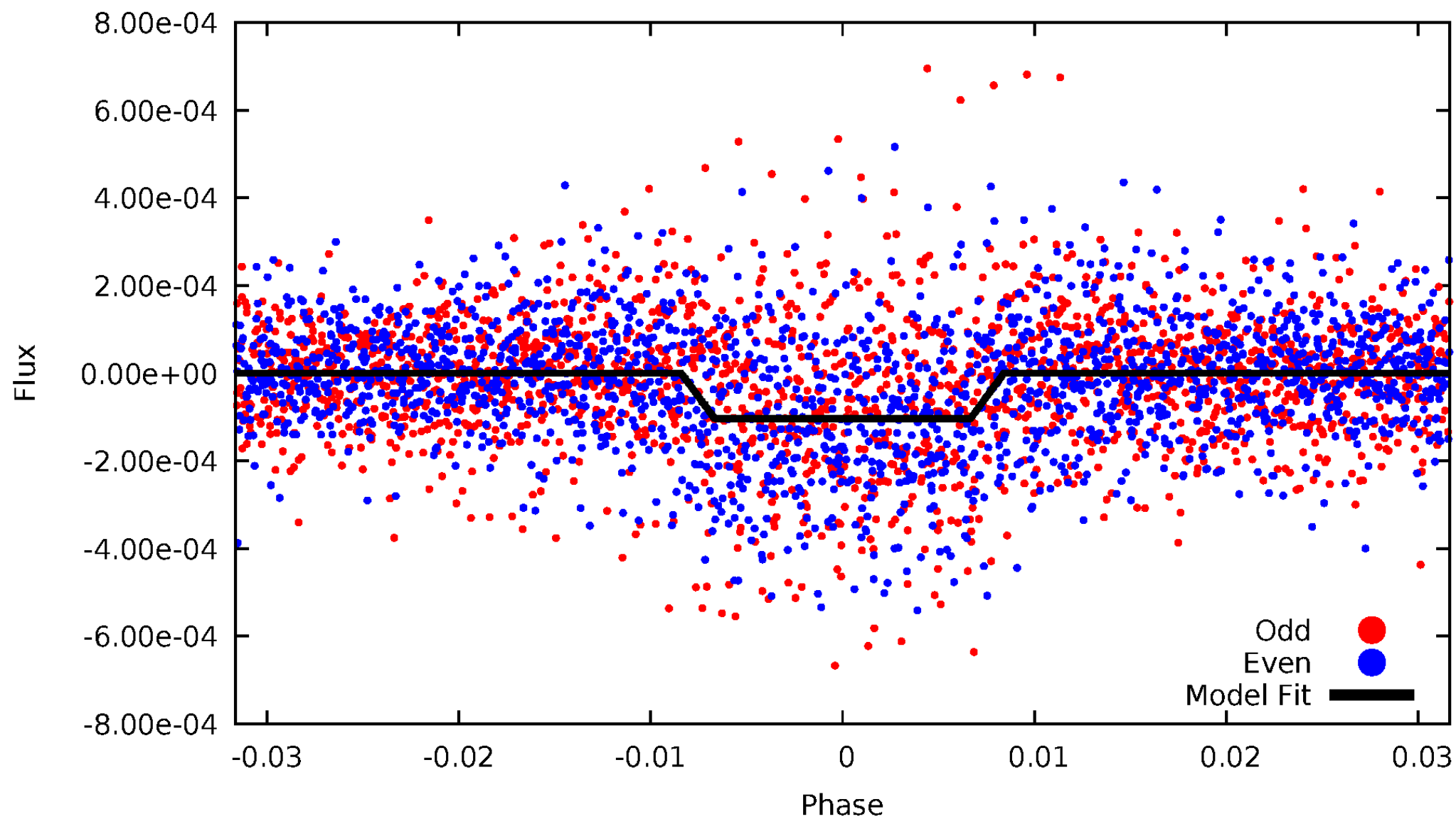
DV Odd/Even

TCE 007869917-02



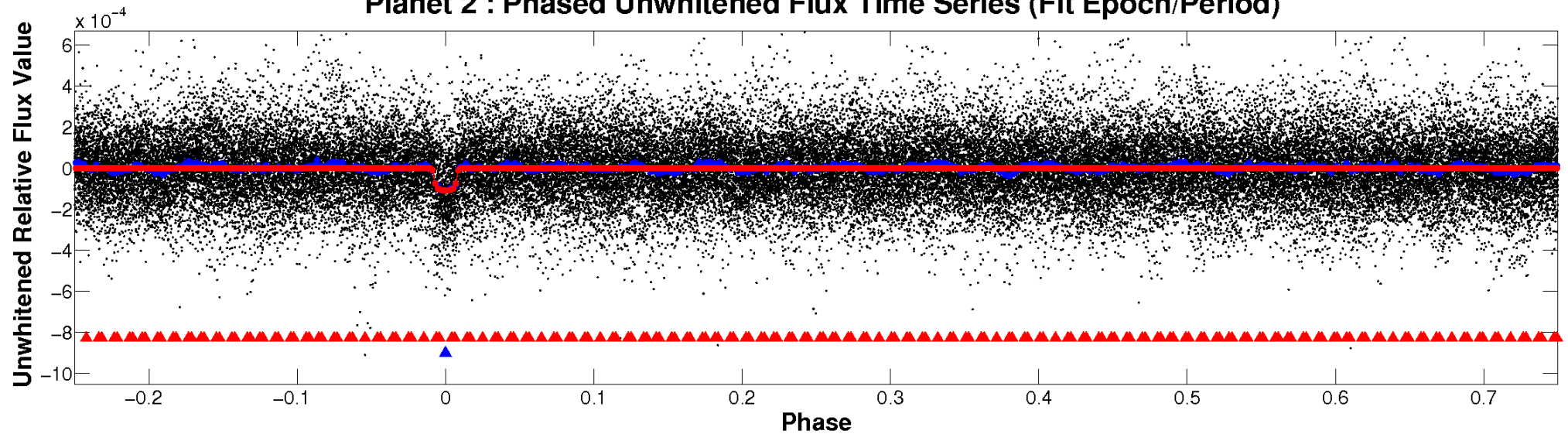
ALT Odd/Even

TCE 007869917-02

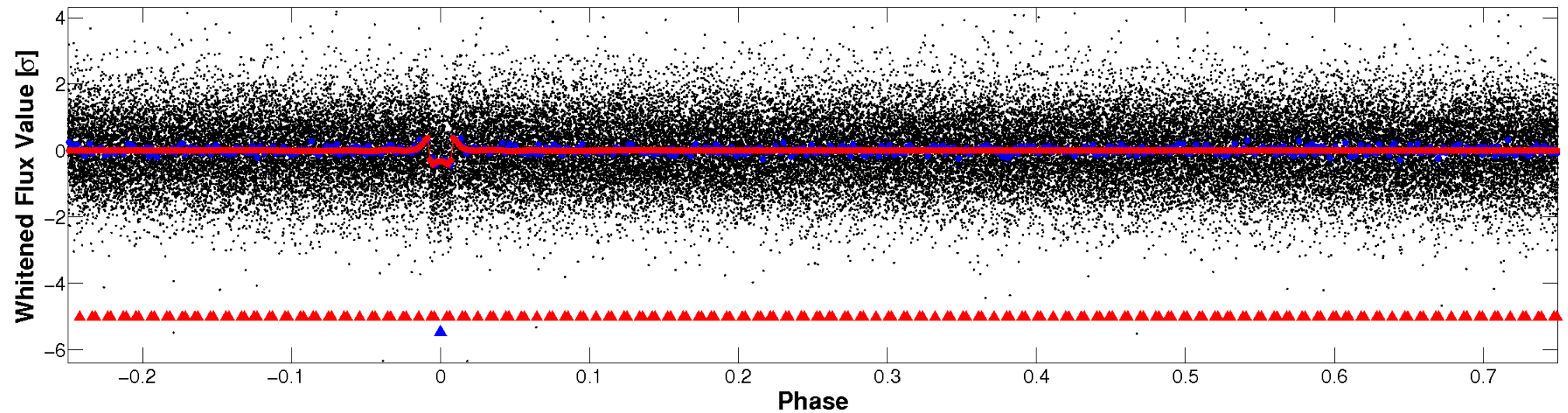


Non-Whitened Vs. Whitened Light Curve

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

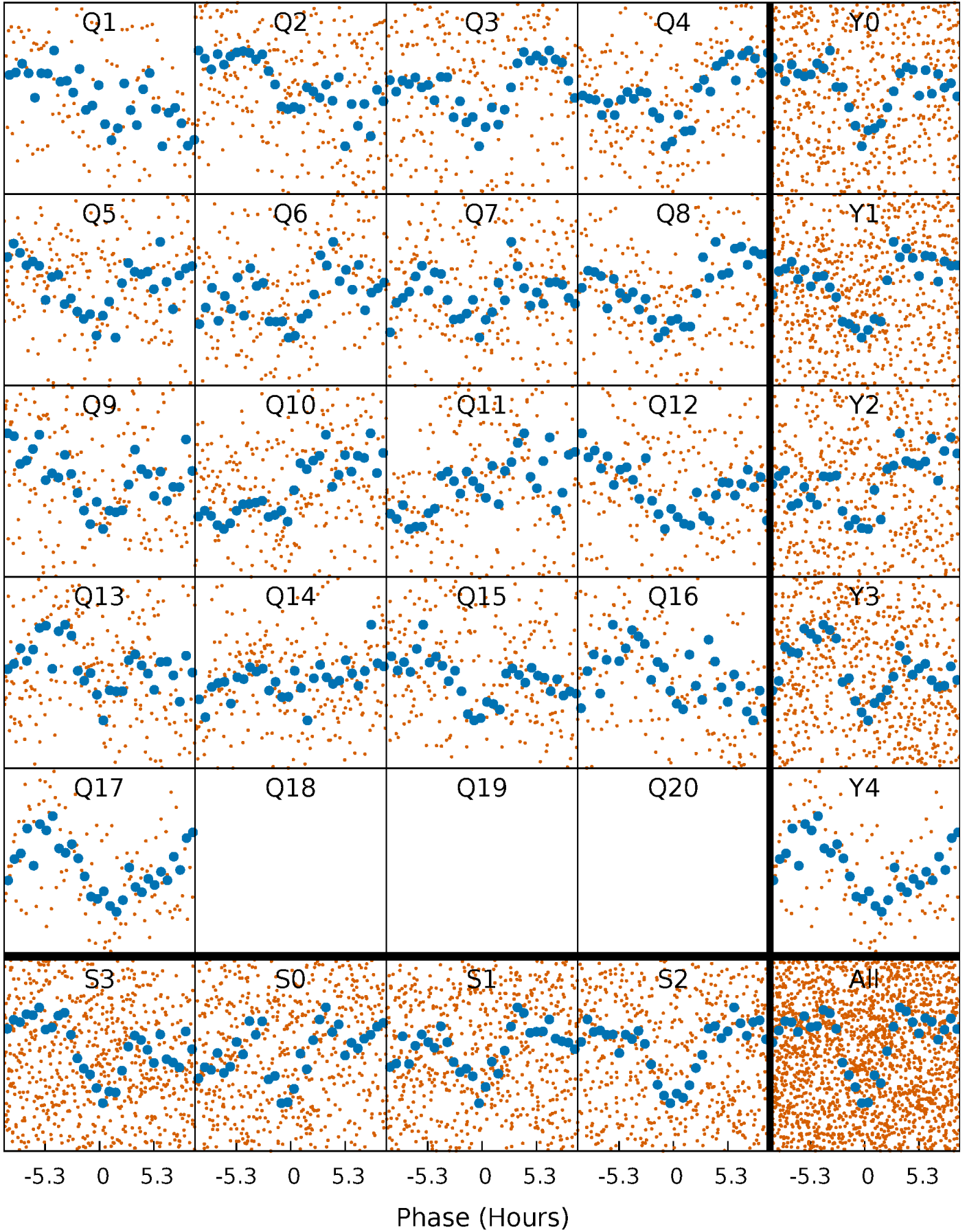


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



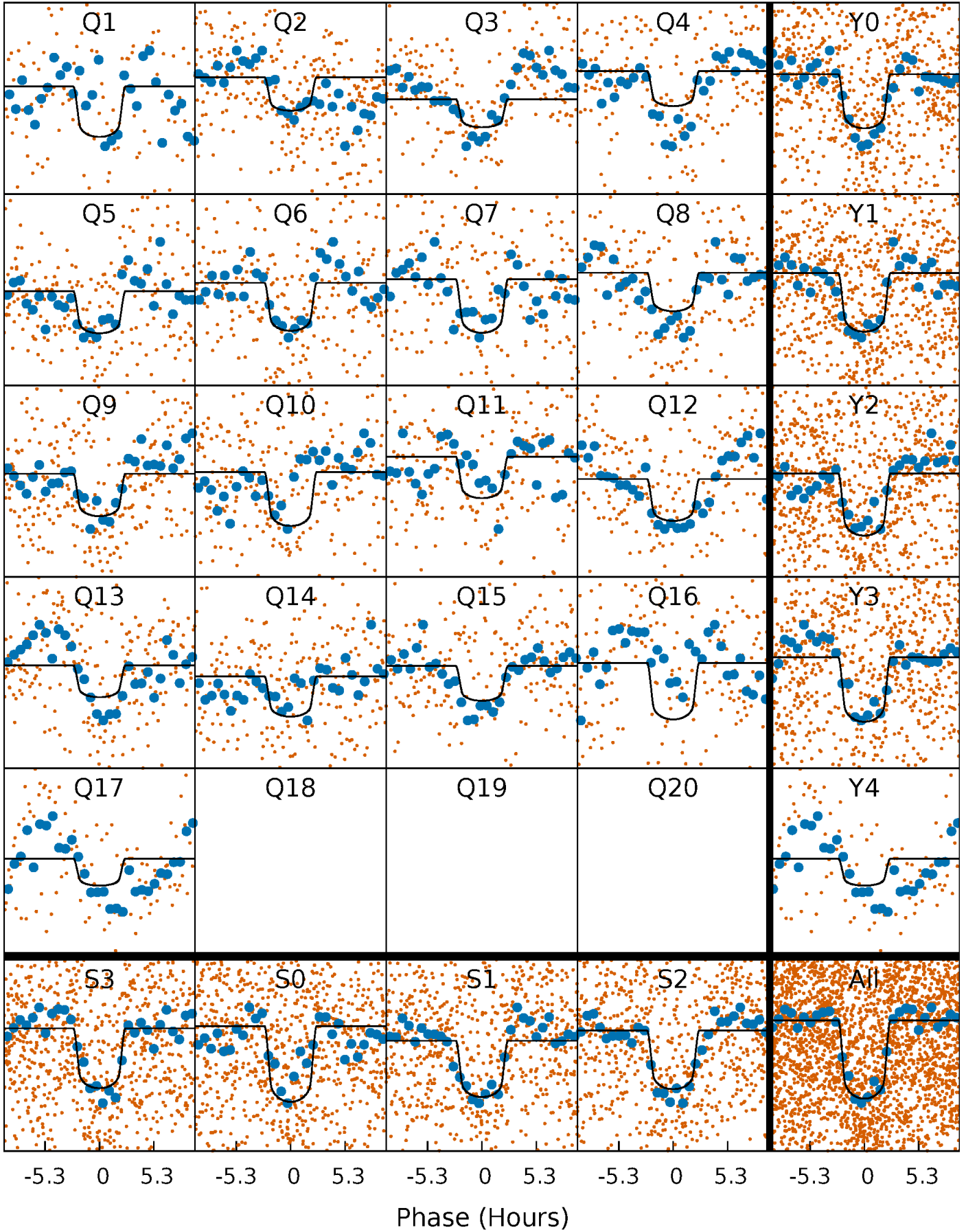
PDC Quarter-Phased Transit Curves

TCE 007869917-02 P= 11.806128 Days $T_0=138.266599$ (BKJD)



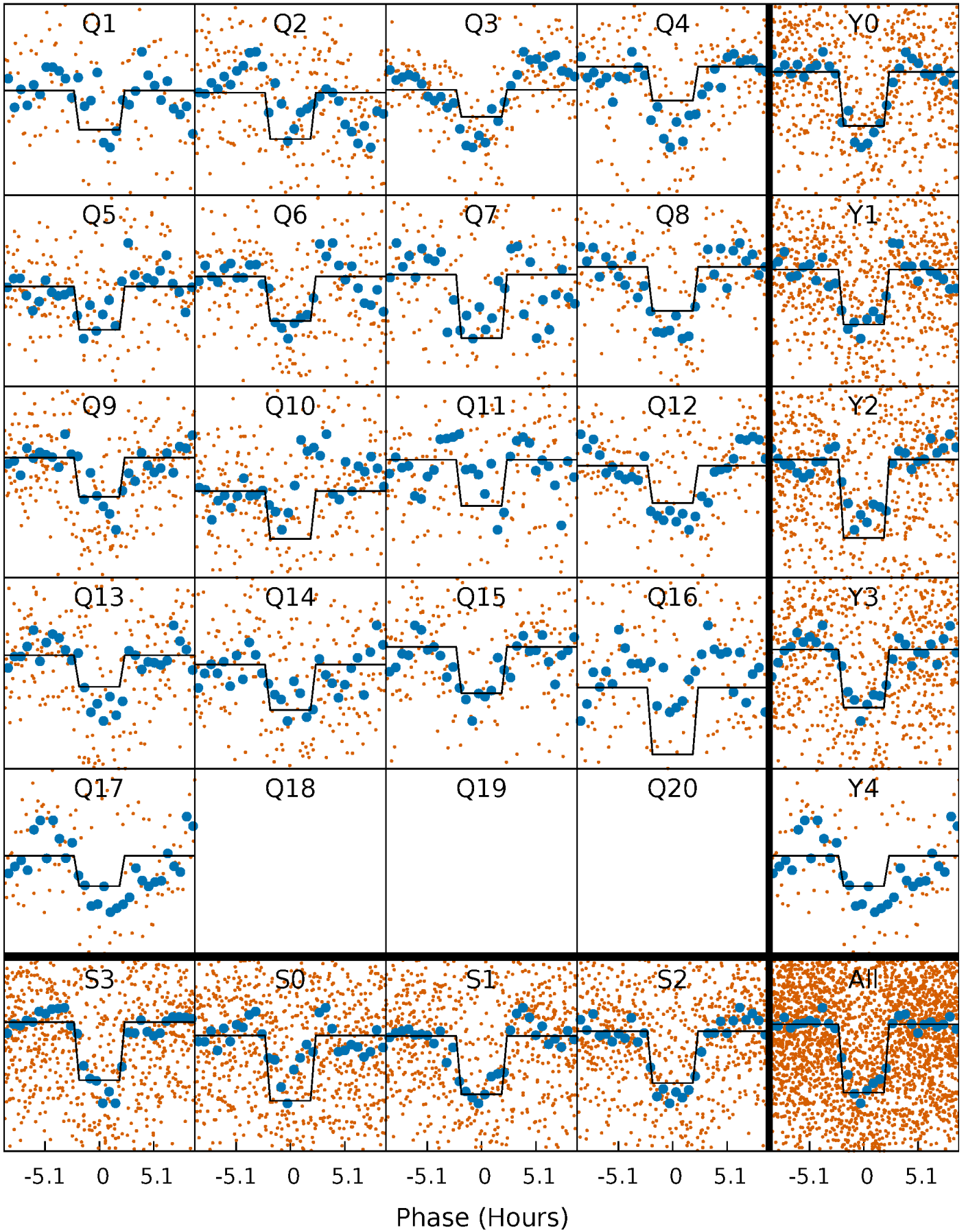
DV Quarter-Phased Transit Curves

TCE 007869917-02 P= 11.806128 Days $T_0=138.266599$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

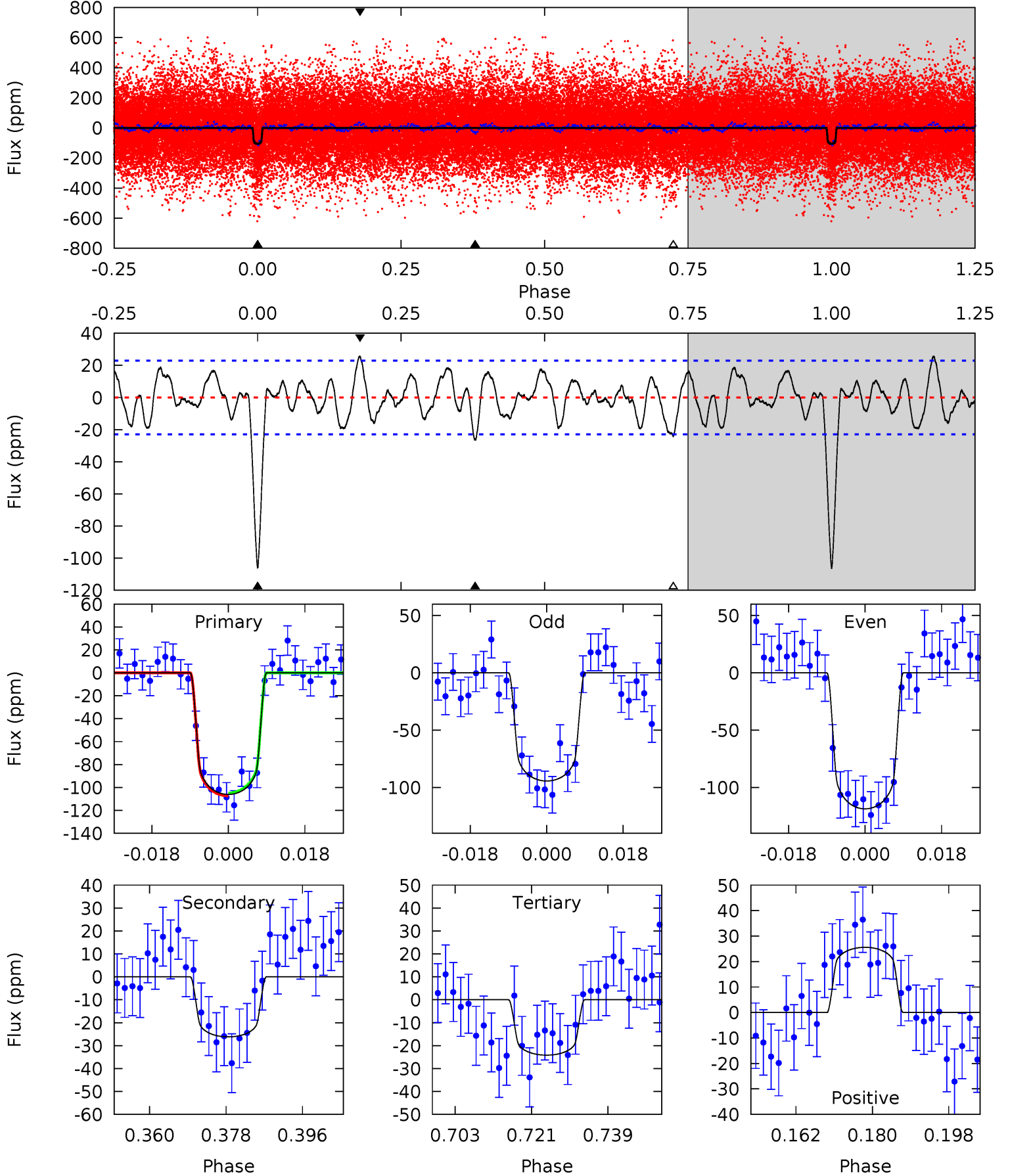
TCE 007869917-02 P= 11.806120 Days $T_0=138.266985$ (BKJD)



DV Model-Shift Uniqueness Test

007869917-02, P = 11.806128 Days, E = 126.460471 Days

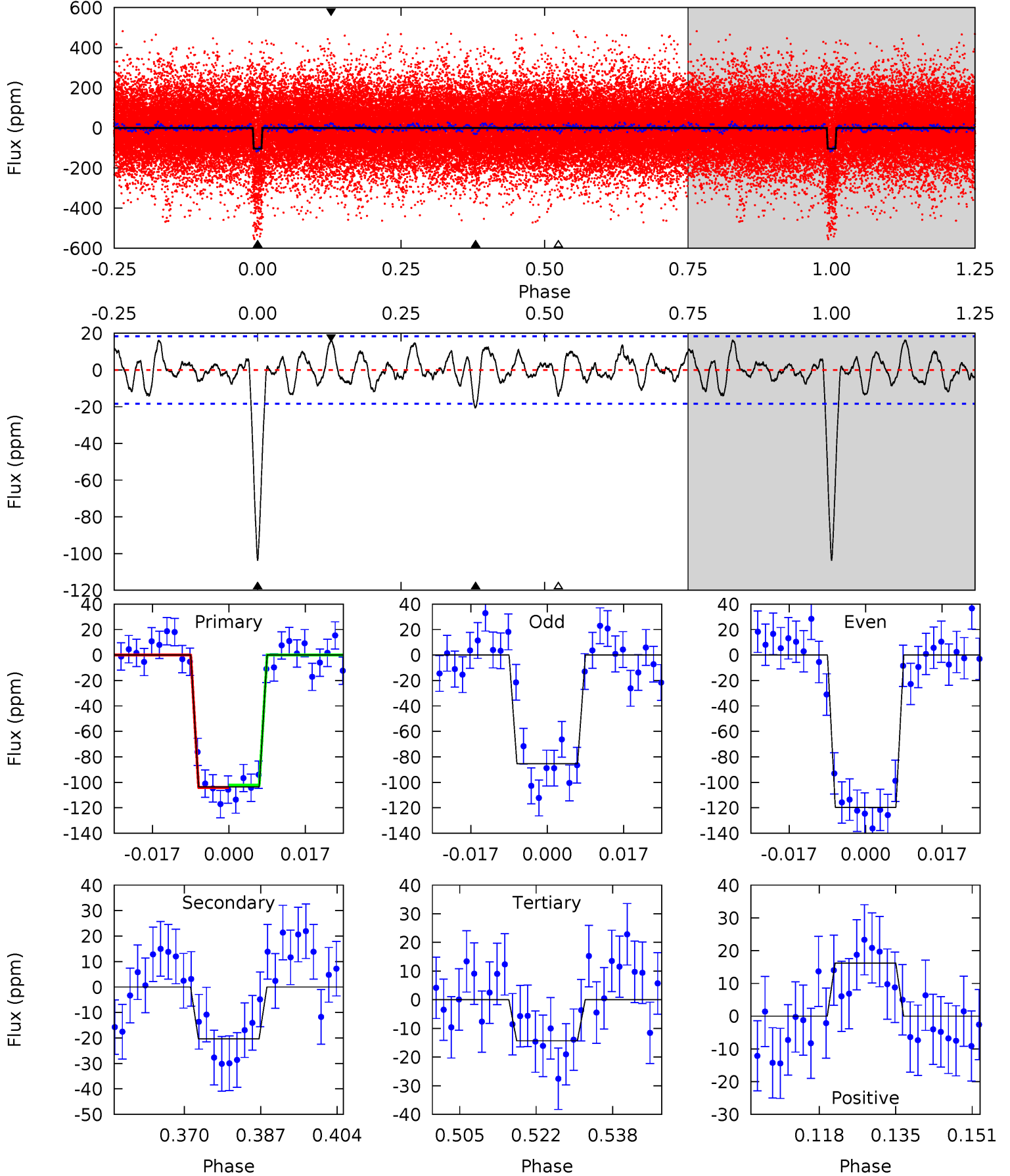
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.7	5.60	5.17	5.47	4.91	2.37	2.11	17.5	17.2	0.44	0.13	2.61	0.92	0.19	0.26



Alt Model-Shift Uniqueness Test

007869917-02, $P = 11.806120$ Days, $E = 126.460865$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.8	5.46	3.84	4.34	4.93	2.39	1.62	23.9	23.4	1.62	1.12	4.57	0.98	0.14	0.26



Stellar Parameters For KIC 007869917

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6900^{+184}_{-204}	$3.843^{+0.259}_{-0.111}$	$0.000^{+0.250}_{-0.300}$	$2.599^{+0.523}_{-0.850}$	$1.714^{+0.170}_{-0.316}$	$0.138^{+0.223}_{-0.046}$
	+3%/-3%	+7%/-3%	+inf%/-inf%	+20%/-33%	+10%/-18%	+162%/-33%
Source	PHO1	FLK73	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 007869917-02 / KOI 1525.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-26 ± 5	$3.03^{+0.59}_{-0.55}$	1949^{+120}_{-160}	4775^{+283}_{-283}	23^{+12}_{-7}
Alt.	-20 ± 4	$2.75^{+0.50}_{-0.53}$	1938^{+122}_{-156}	4710^{+311}_{-297}	22^{+11}_{-7}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

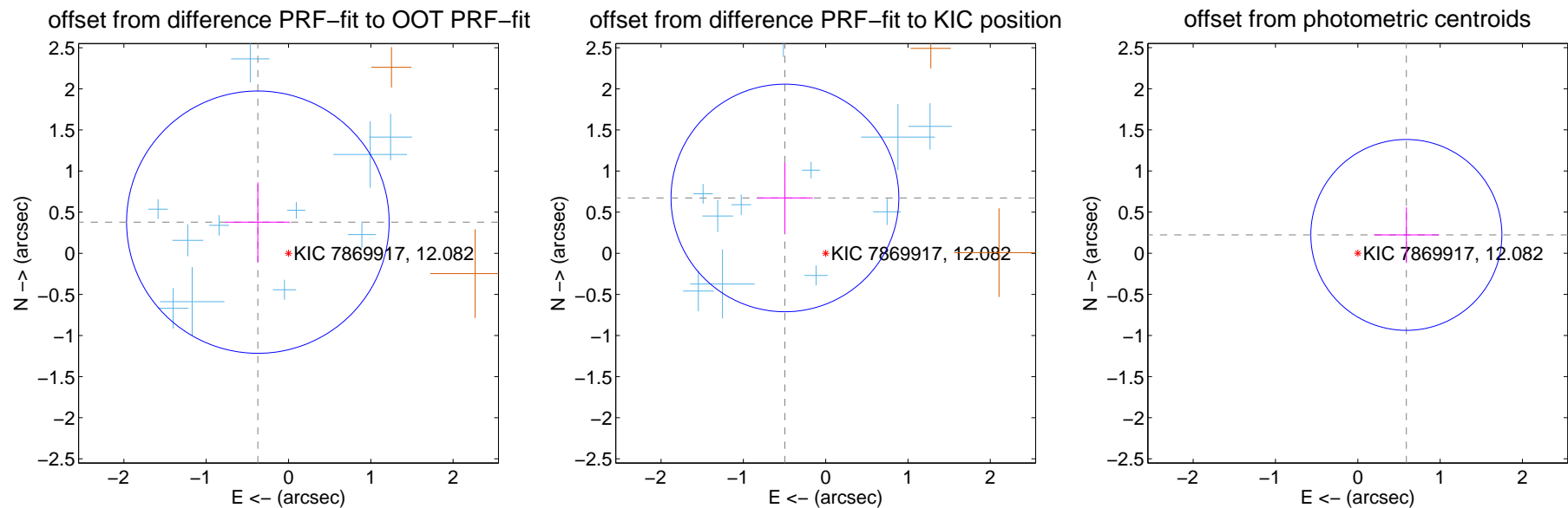
DV Centroid Data

Supplemental centroid analysis for 007869917-02. Kepler magnitude: 12.08. Transit SNR 13.08

There are 11 quarters with good PRF difference image offsets

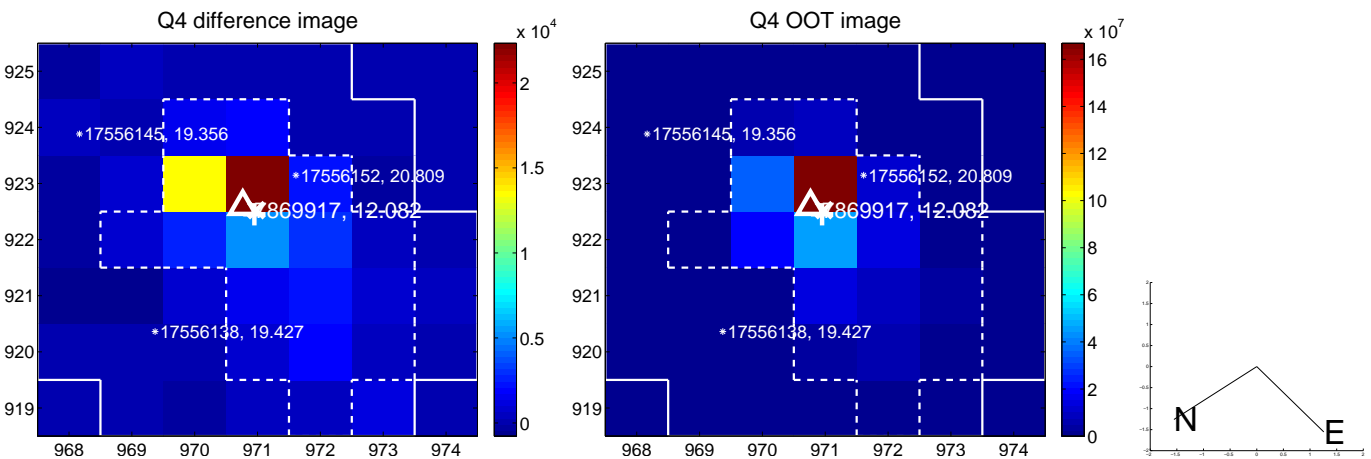
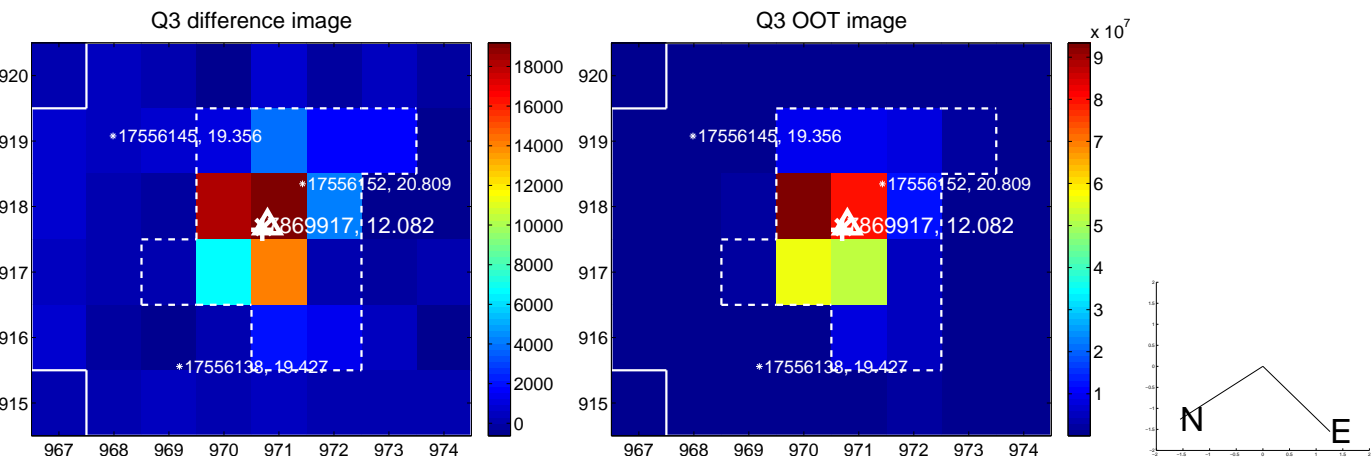
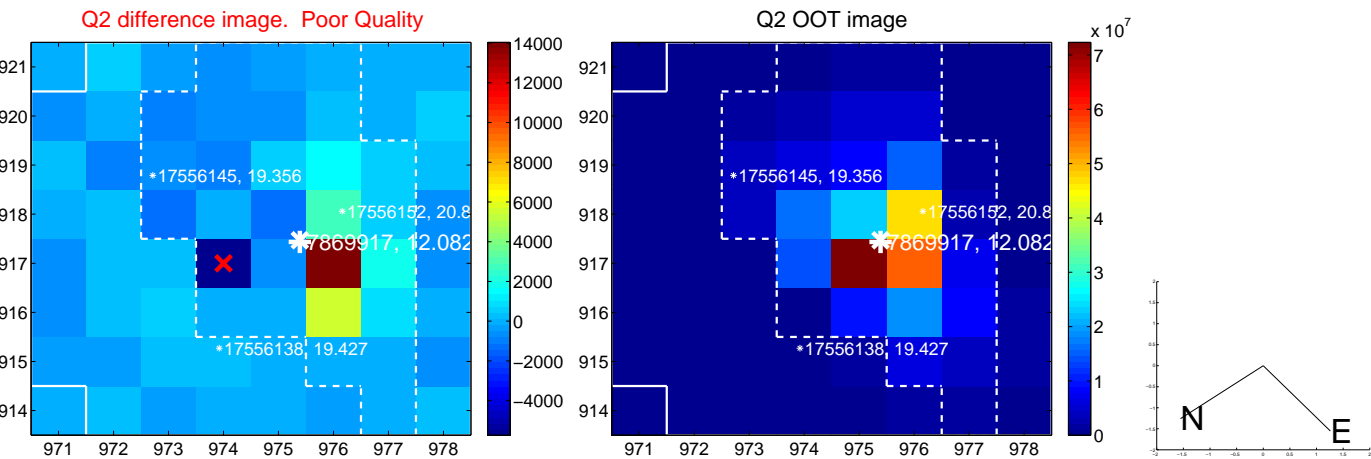
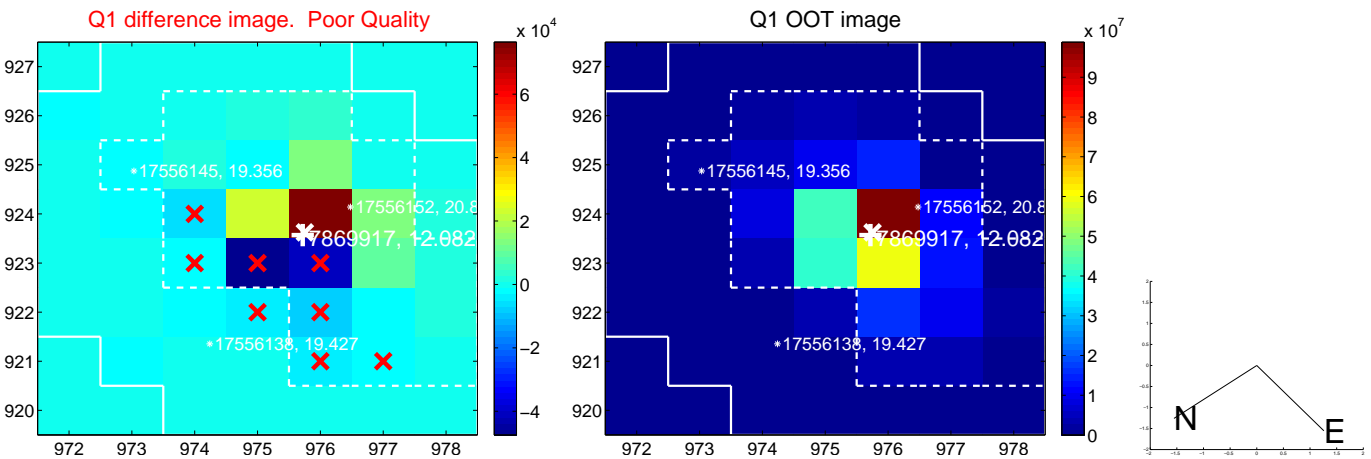
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.531 ± 0.532	1.00	0.372 ± 0.389	0.378 ± 0.484
PRF-fit source offset from KIC position	0.835 ± 0.461	1.81	0.495 ± 0.338	0.673 ± 0.430
photometric centroid source offset	0.63 ± 0.39	1.63	-0.59 ± 0.39	0.22 ± 0.34

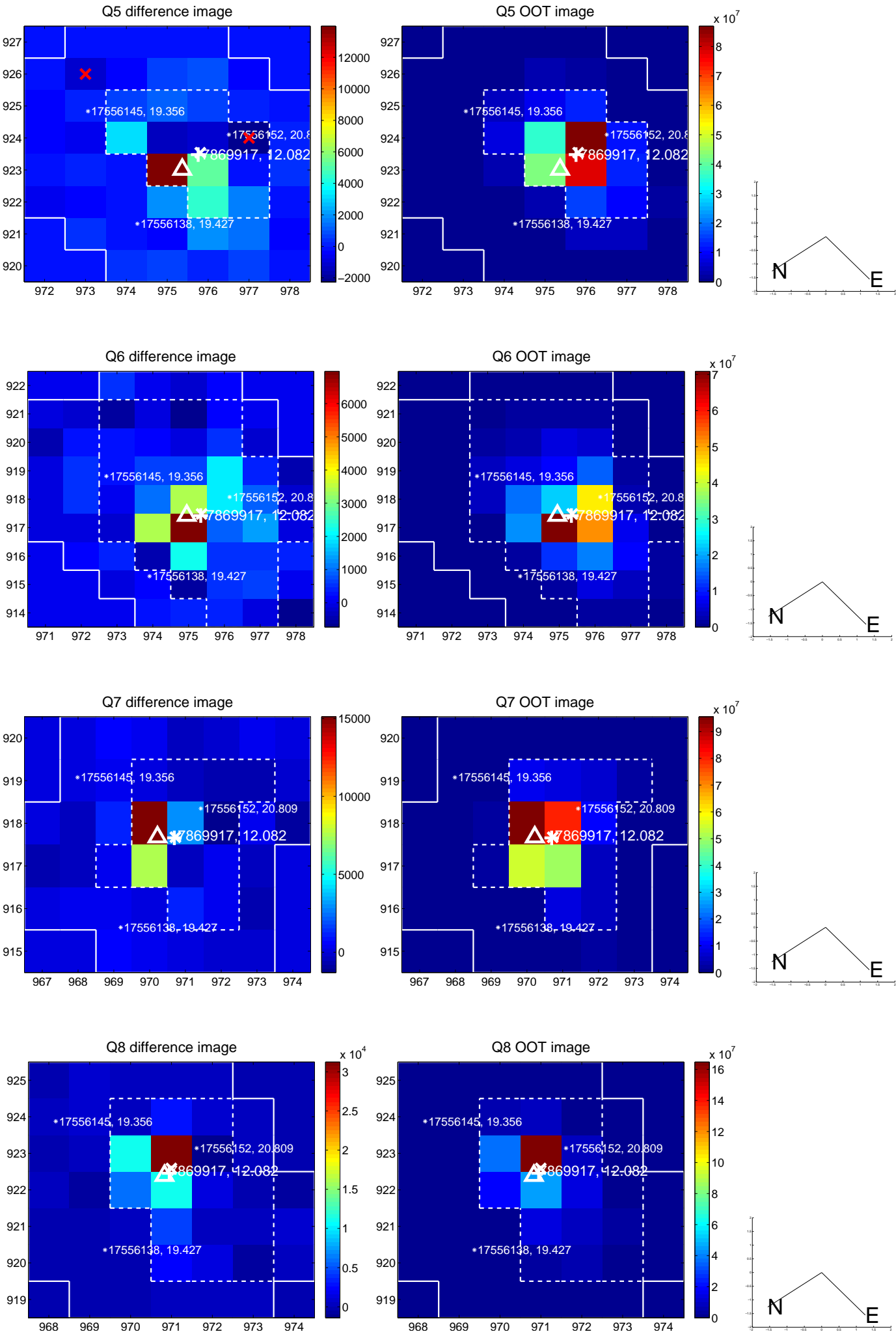


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

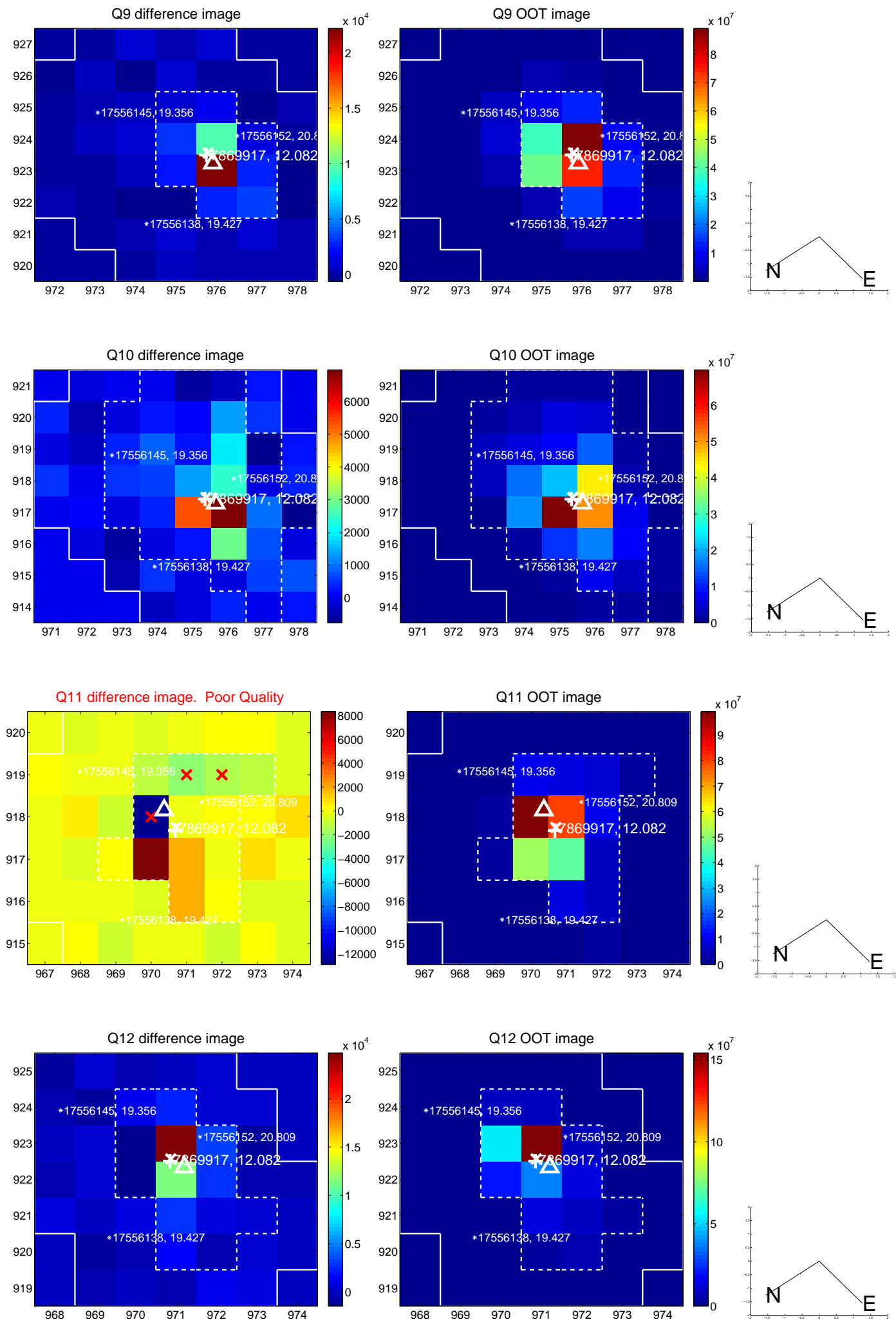
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



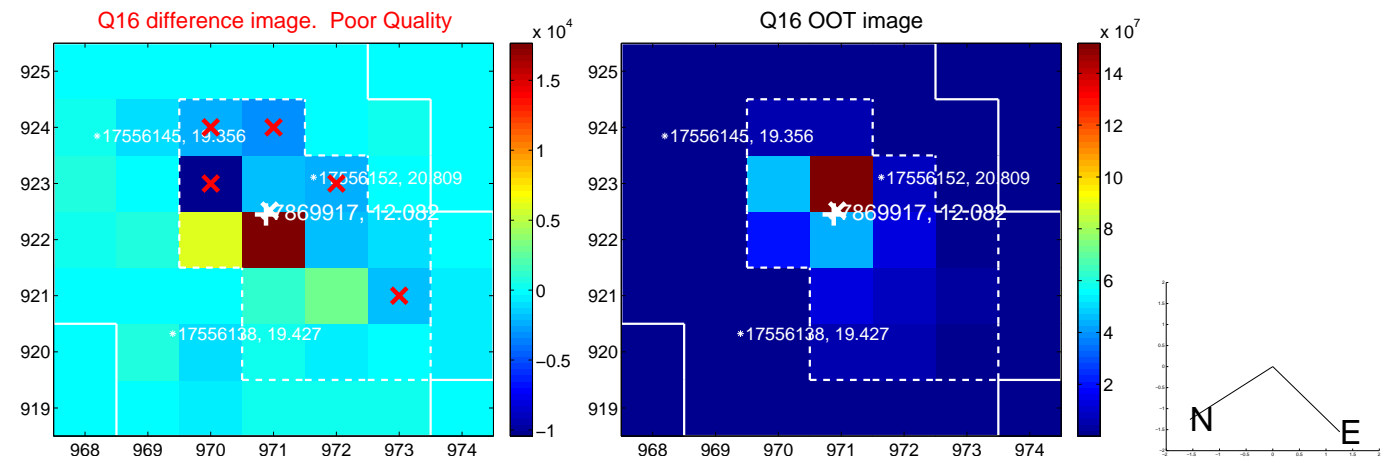
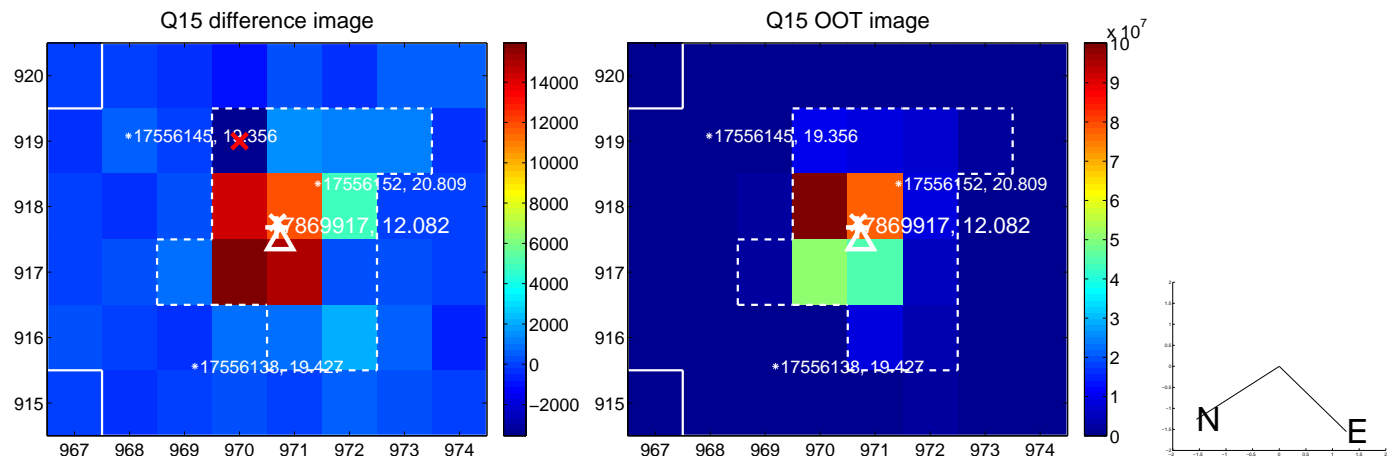
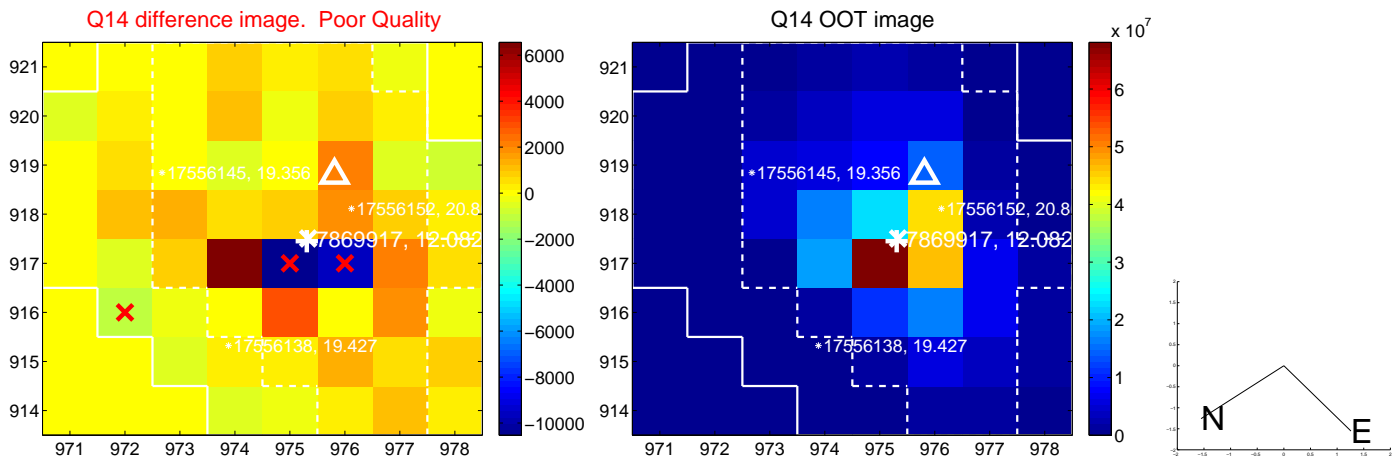
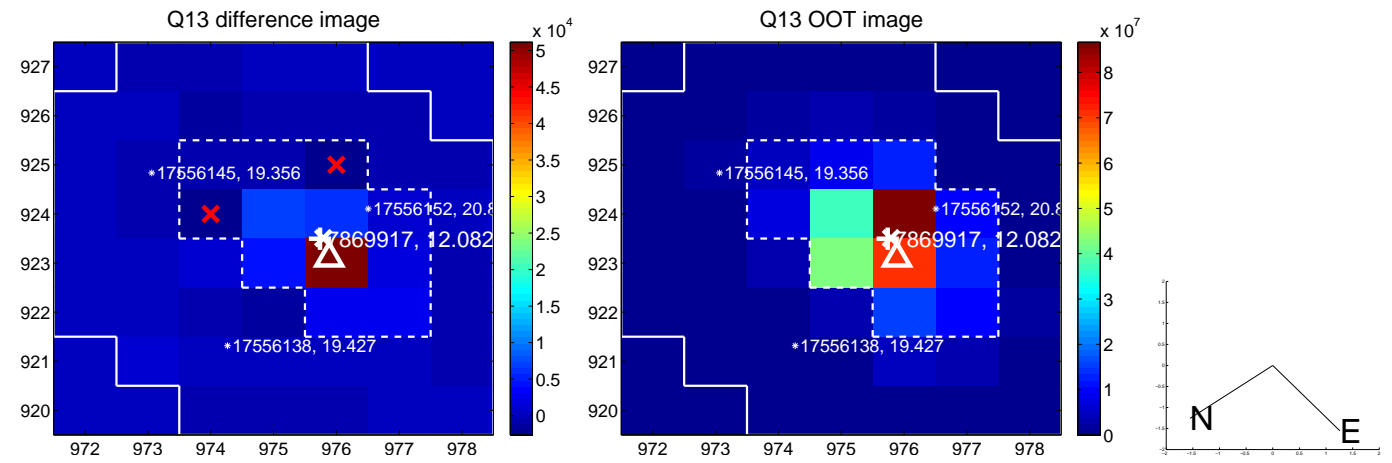
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



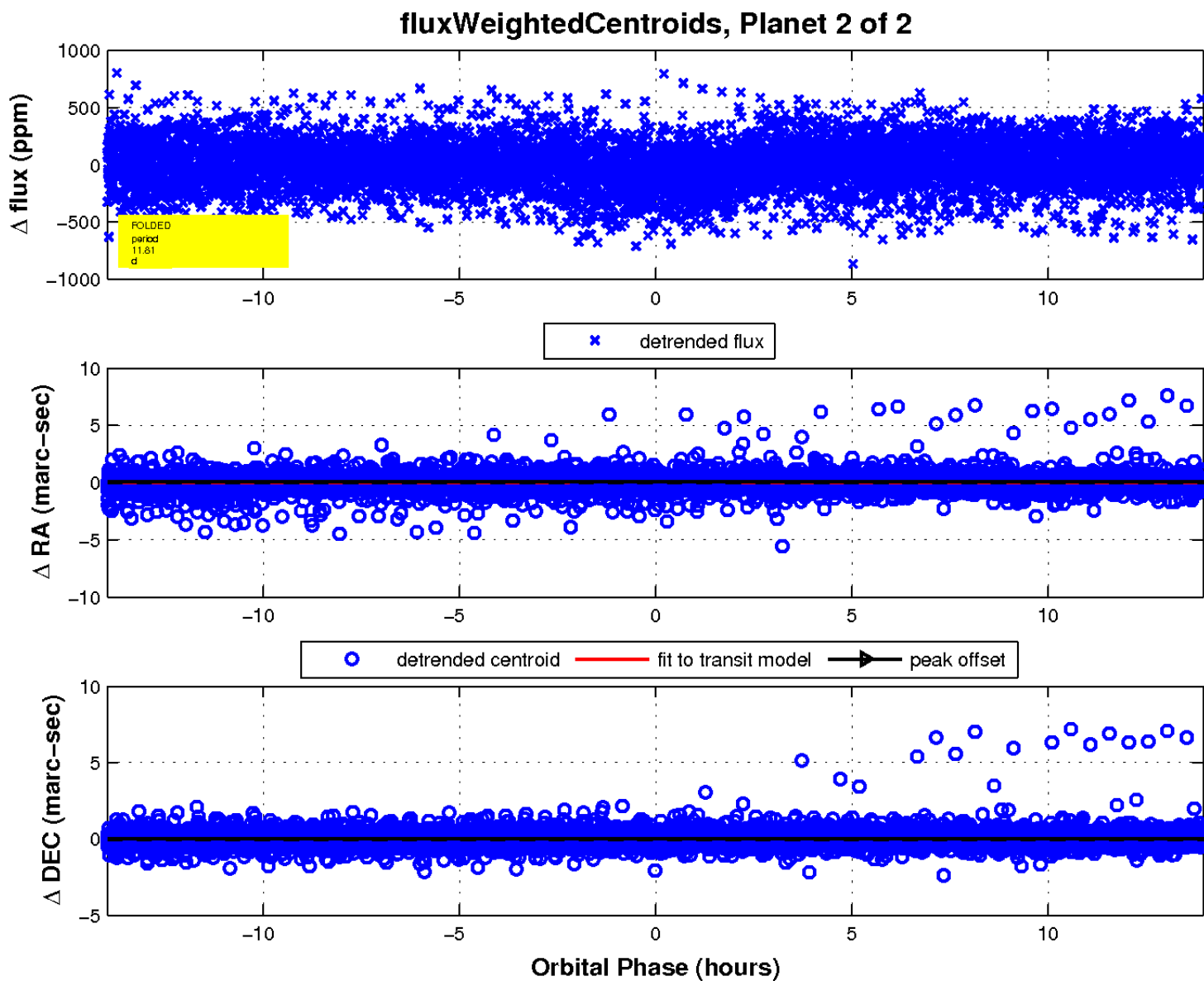
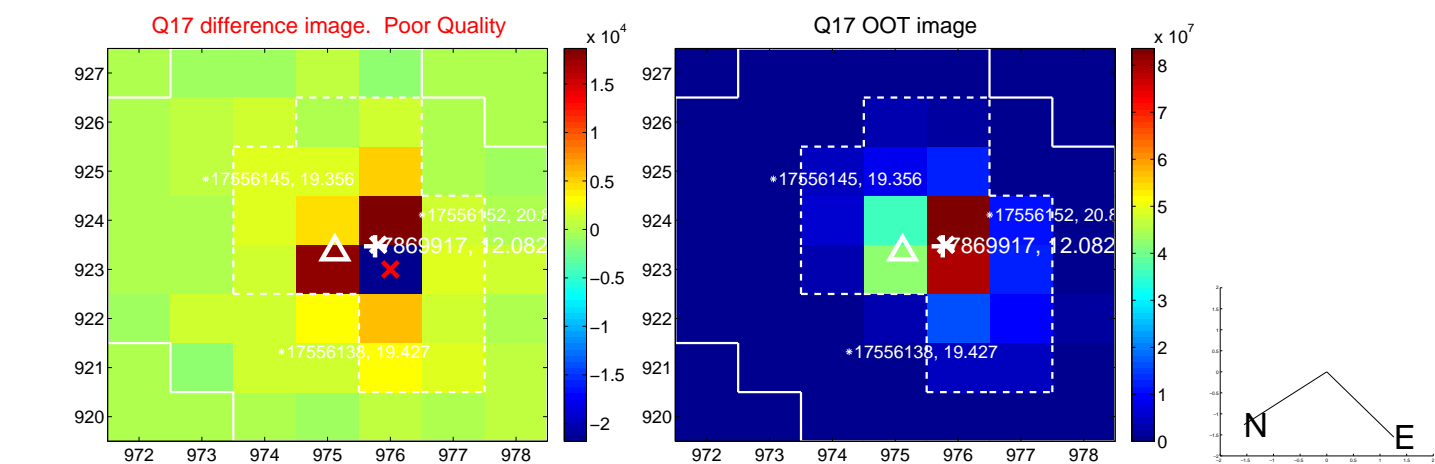
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

