

KIC 008908102

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})
008908102-01	OBS	0699.01	5.414581	136.705904	3812.4	3.747	425.5	431.9	2.94	6033	33.57	2155.10
008908102-02	OBS	No	5.414934	131.868581	140.9	12.000	11.0	-1.0	2.94	6033	3.48	2154.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008908102-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED—HAS_SEC_TCE
008908102-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

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.

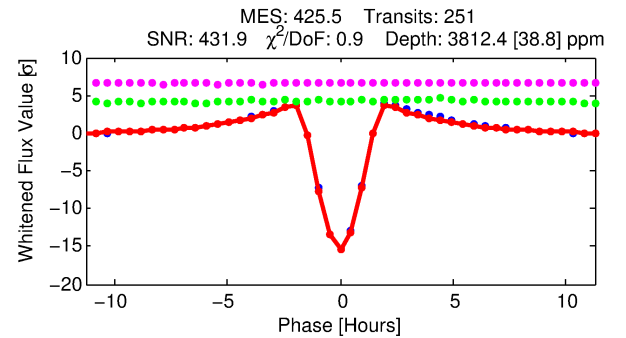
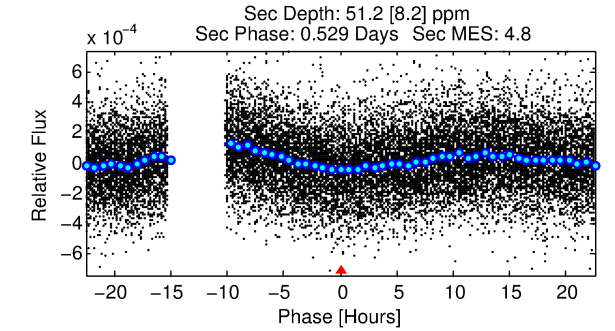
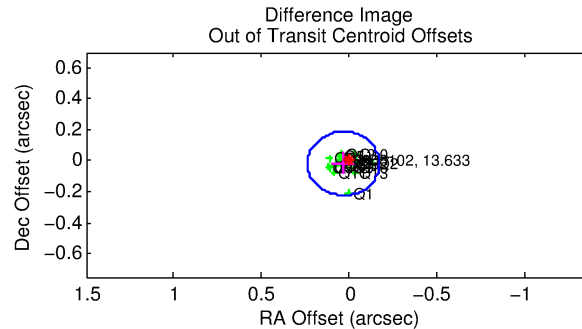
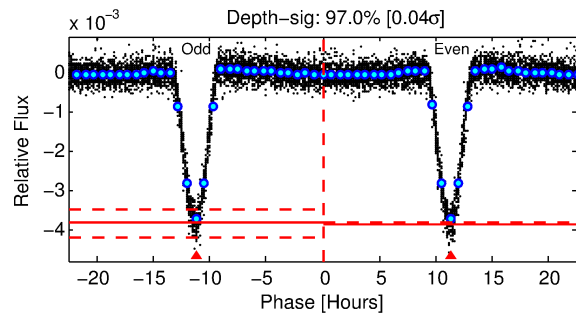
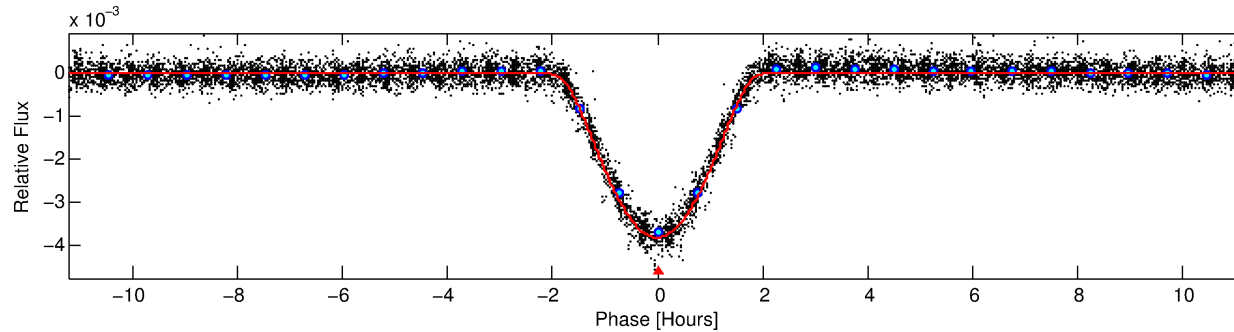
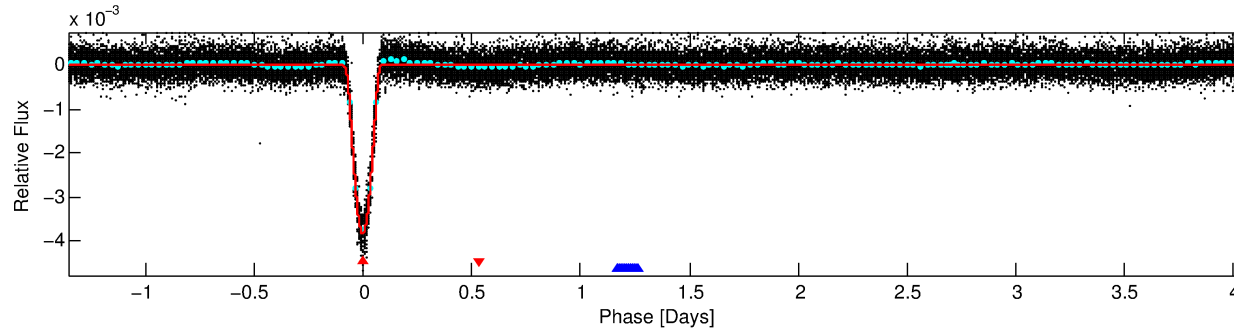
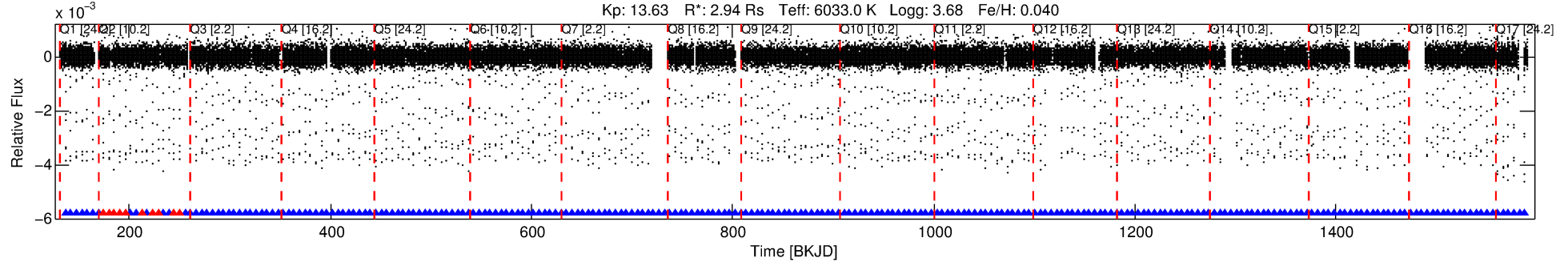
Ephemeris Match Information For 008908102-01

No Significant Match Found

DV One-Page Summary

KIC: 8908102 Candidate: 1 of 2 Period: 5.415 d
KOI: K00699.01 Corr: 0.939

Kp: 13.63 R*: 2.94 Rs Teff: 6033.0 K Logg: 3.68 Fe/H: 0.040



DV Fit Results:

Period = 5.41458 [0.00000] d
Epoch = 136.7059 [0.0002] BKJD
Rp/R* = 0.1045 [0.0094]
a/R* = 5.29 [0.09]
b = 1.00 [0.01]
Seff = 2155.10 [2117.06]
Teff = 1737 [427] K
Rp = 33.57 [19.18] Re
a = 0.0691 [0.0404] AU
Ag = 0.12 [0.12] [-7.37σ]
Teffp = 1579 [110] K [-0.36σ]

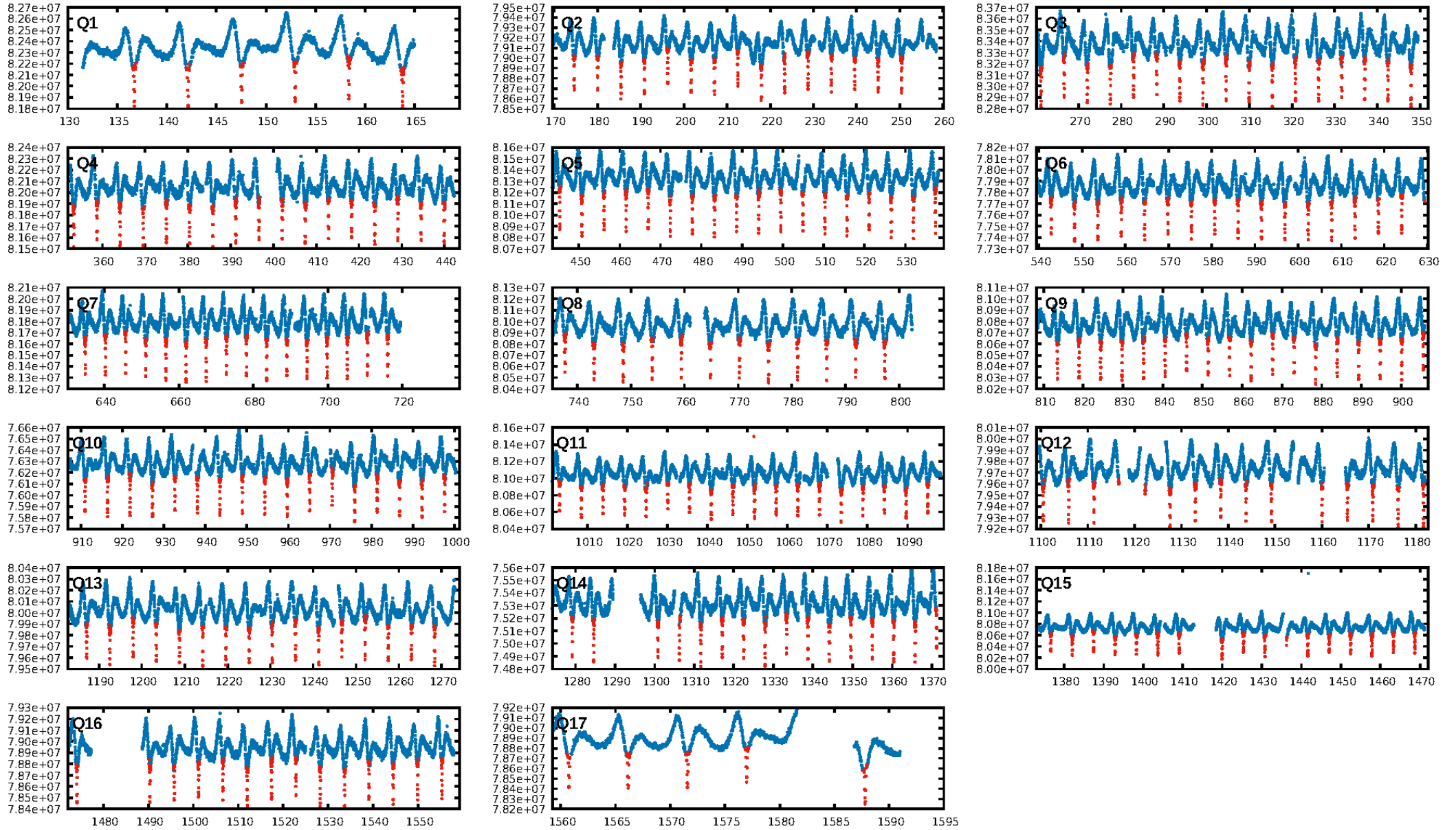
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.96 [230/240]
GhostDiagnostic-chr: 4.36
Centroid-sig: 0.0%
Centroid-so: 0.036 arcsec [1.56σ]
OotOffset-rm: 0.038 arcsec [0.56σ]
KicOffset-rm: 0.031 arcsec [0.45σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

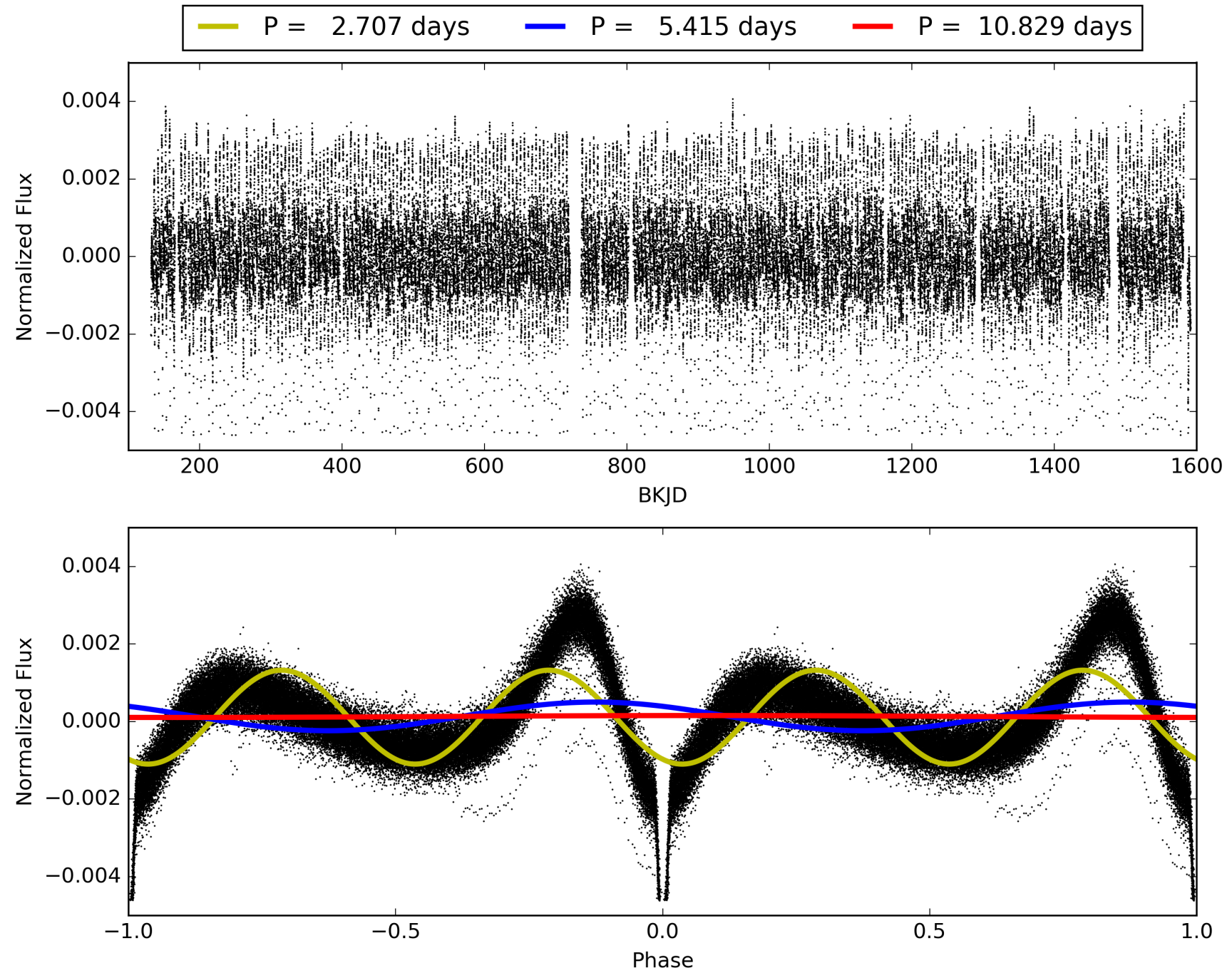
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:31:38 Z

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

TCE 008908102-01, PDC Light Curves

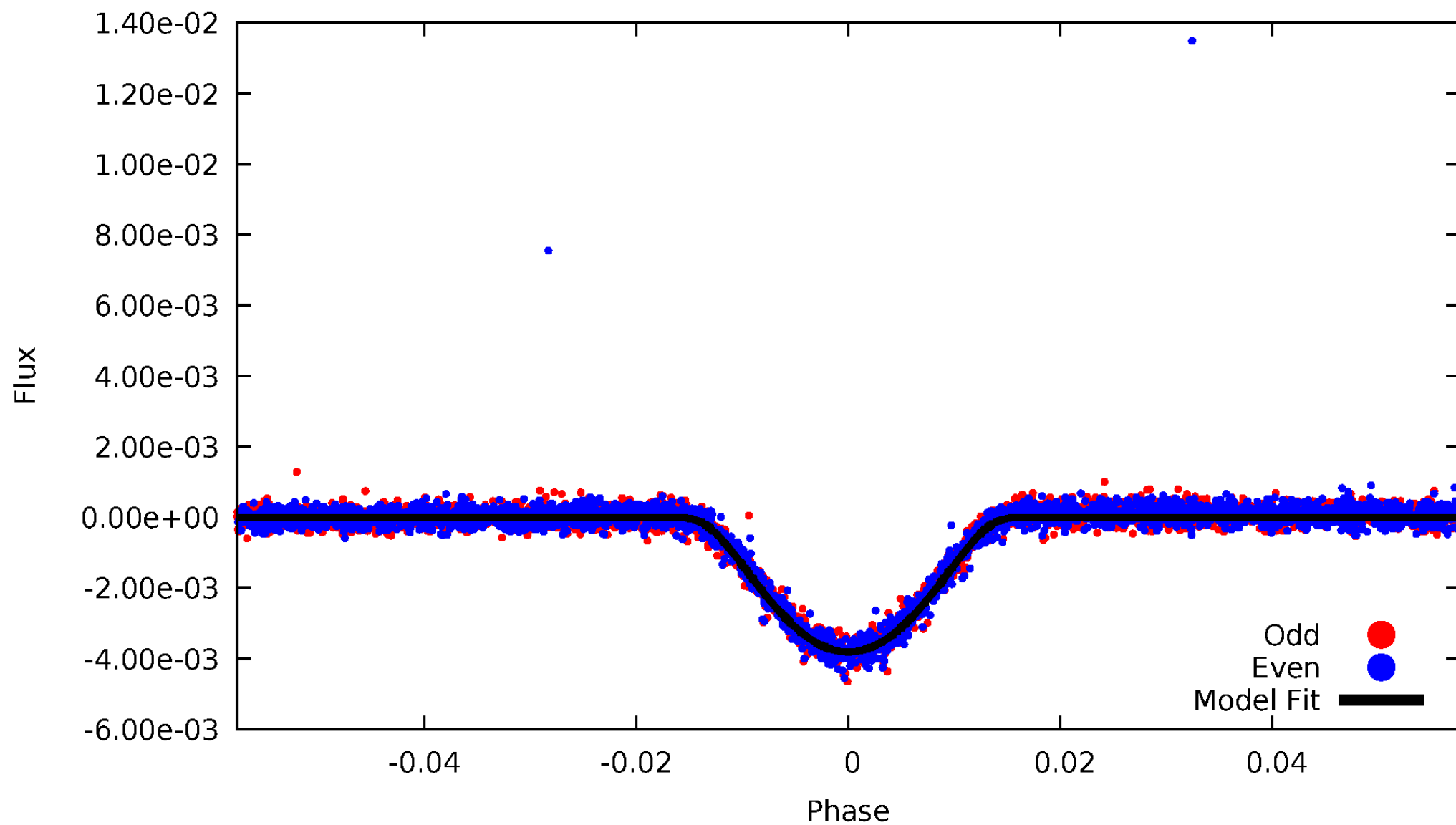


TCE 008908102-01



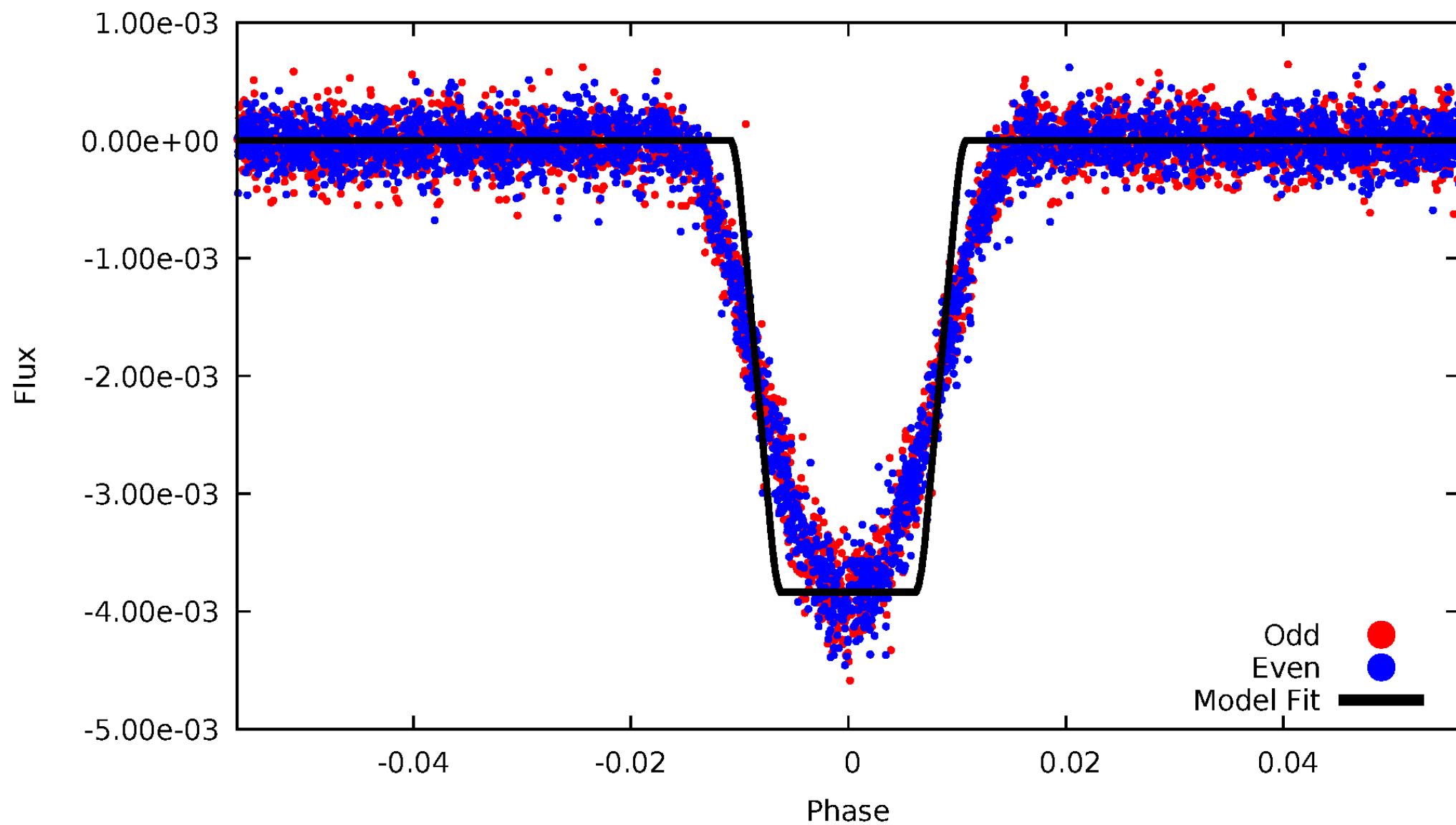
DV Odd/Even

TCE 008908102-01



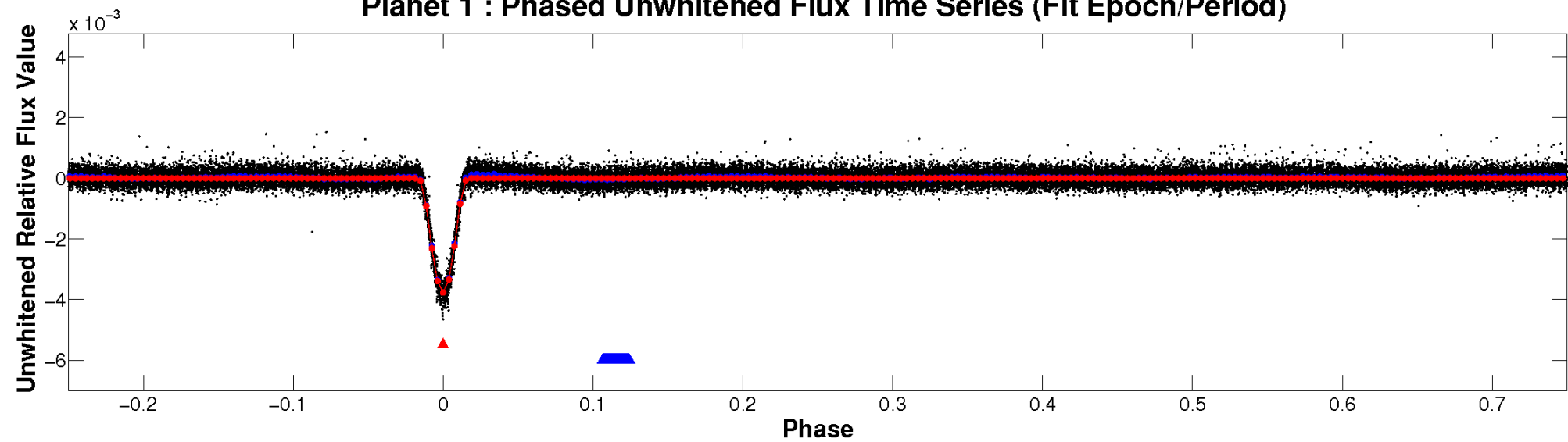
ALT Odd/Even

TCE 008908102-01

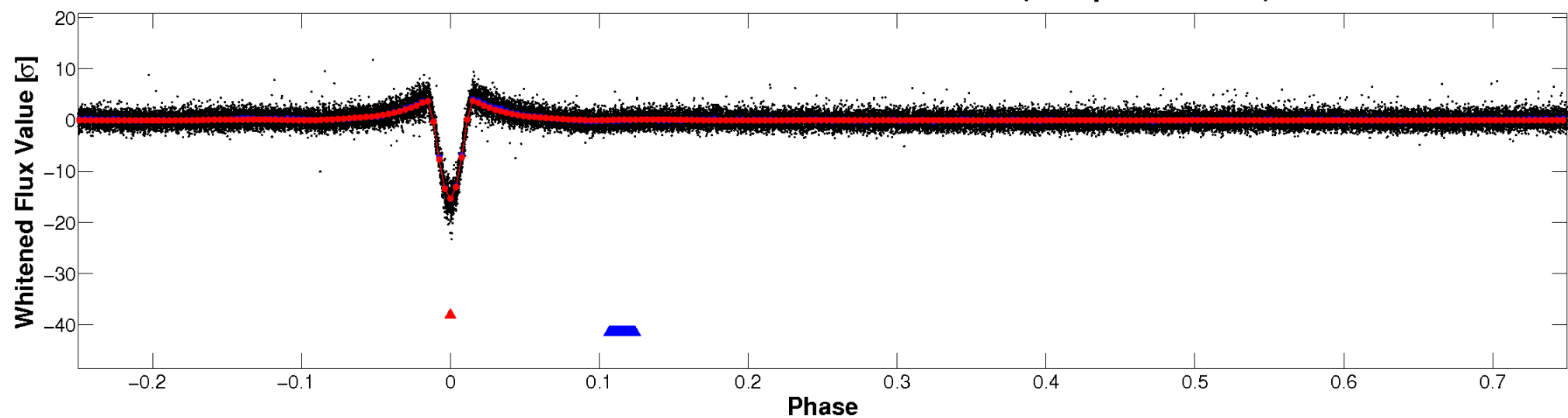


Non-Whitened Vs. Whitened Light Curve

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

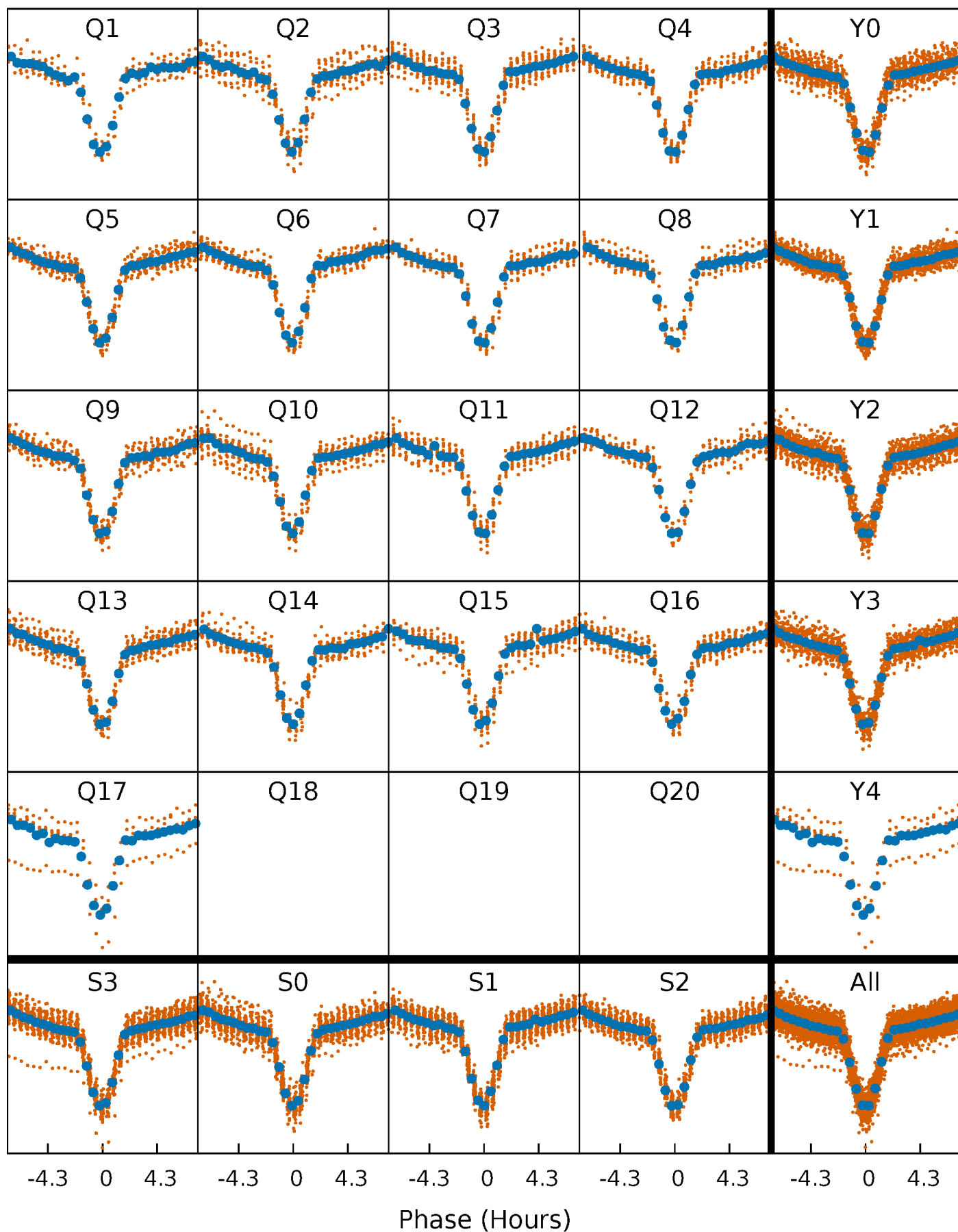


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



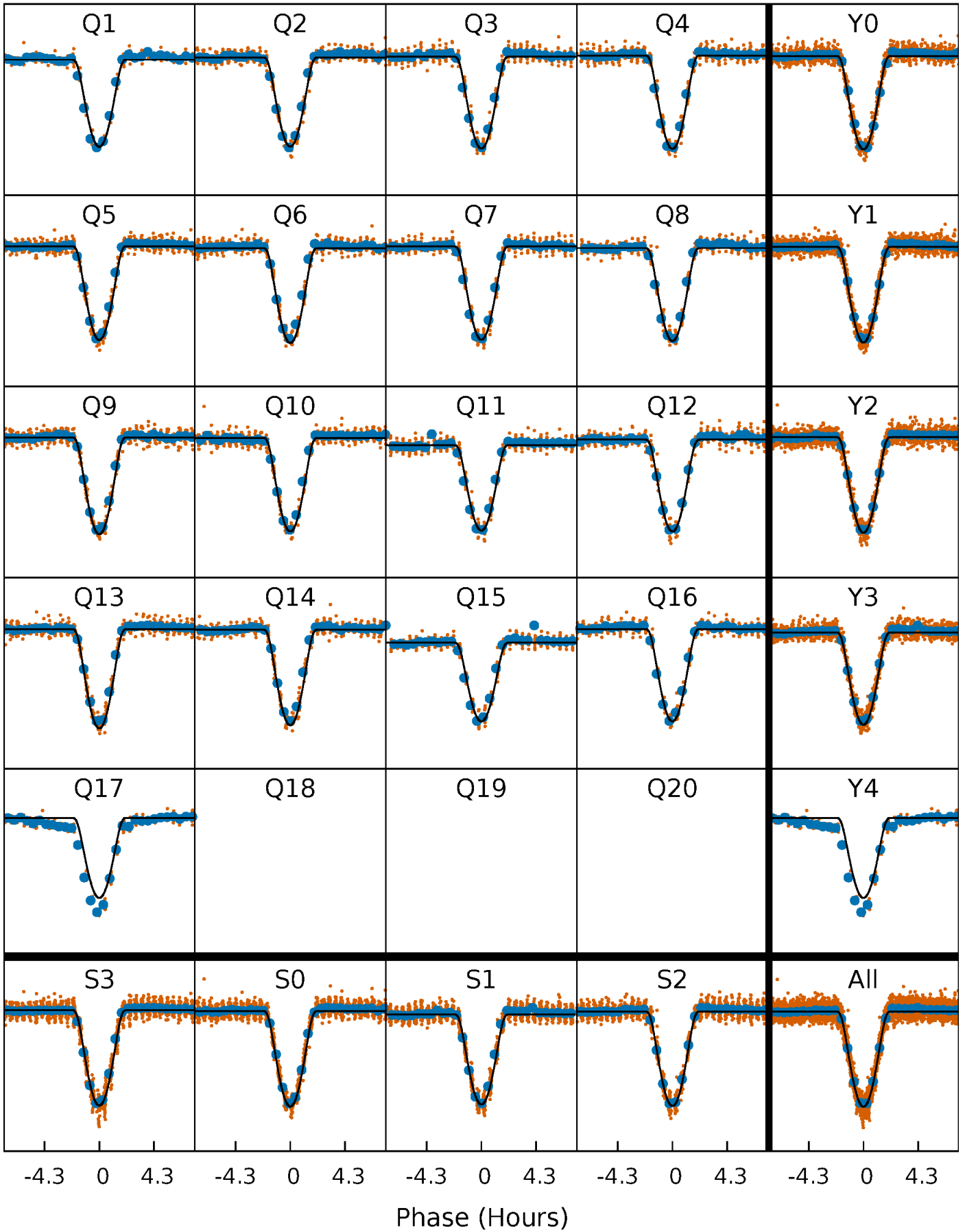
PDC Quarter-Phased Transit Curves

TCE 008908102-01 P= 5.414581 Days $T_0=136.705904$ (BKJD)



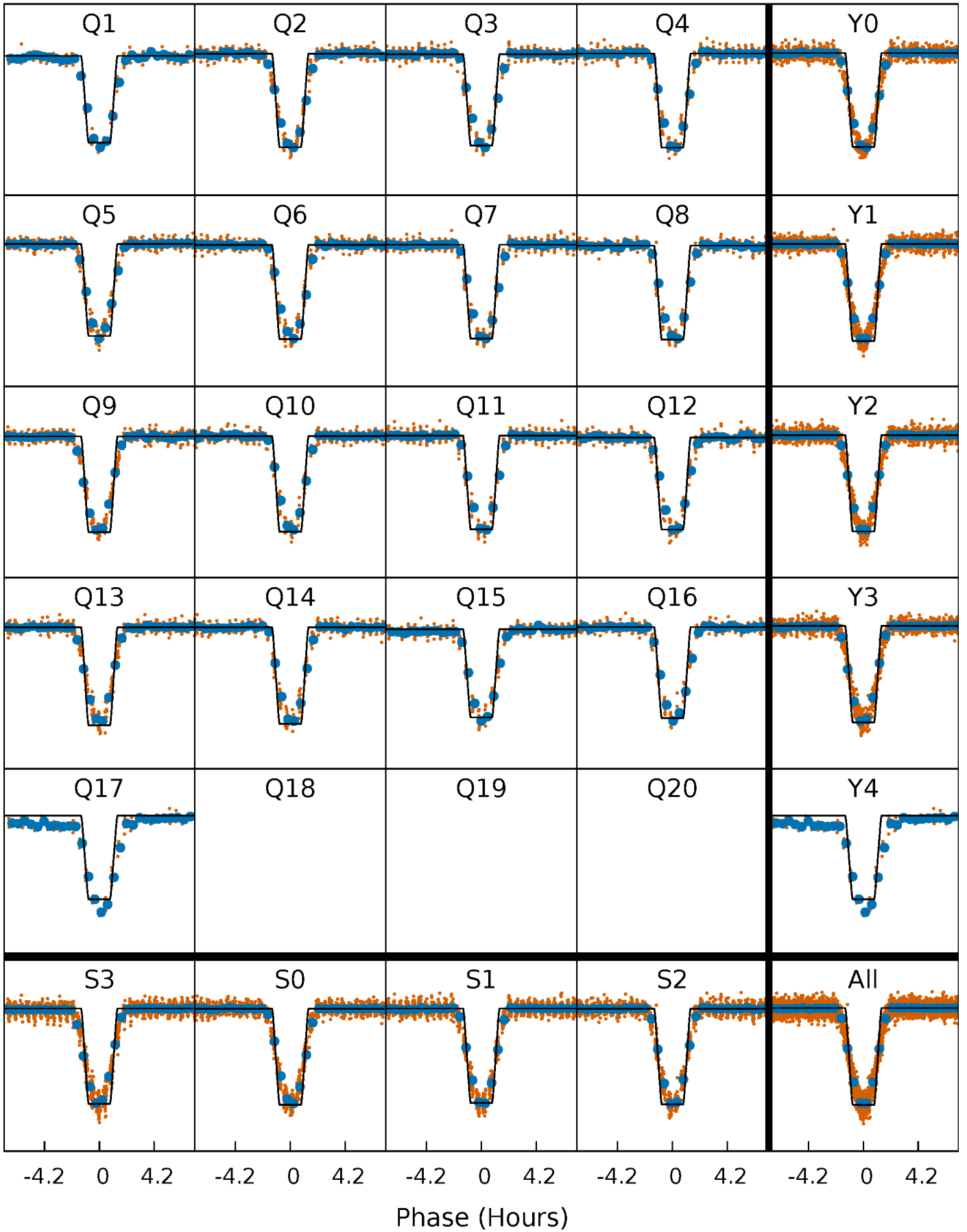
DV Quarter-Phased Transit Curves

TCE 008908102-01 P= 5.414581 Days $T_0=136.705904$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

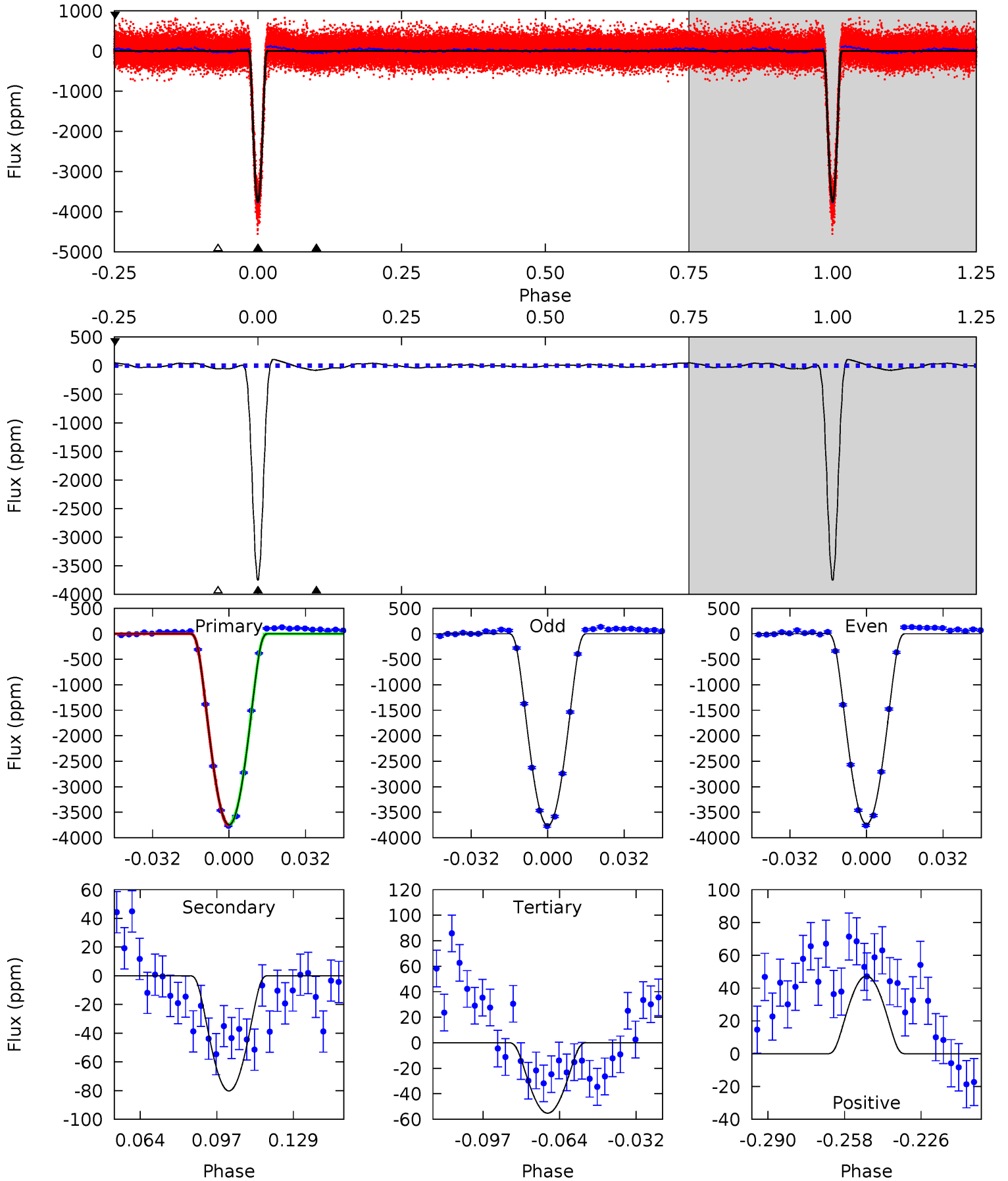
TCE 008908102-01 P= 5.414571 Days $T_0=136.707254$ (BKJD)



DV Model-Shift Uniqueness Test

008908102-01, P = 5.414581 Days, E = 131.291323 Days

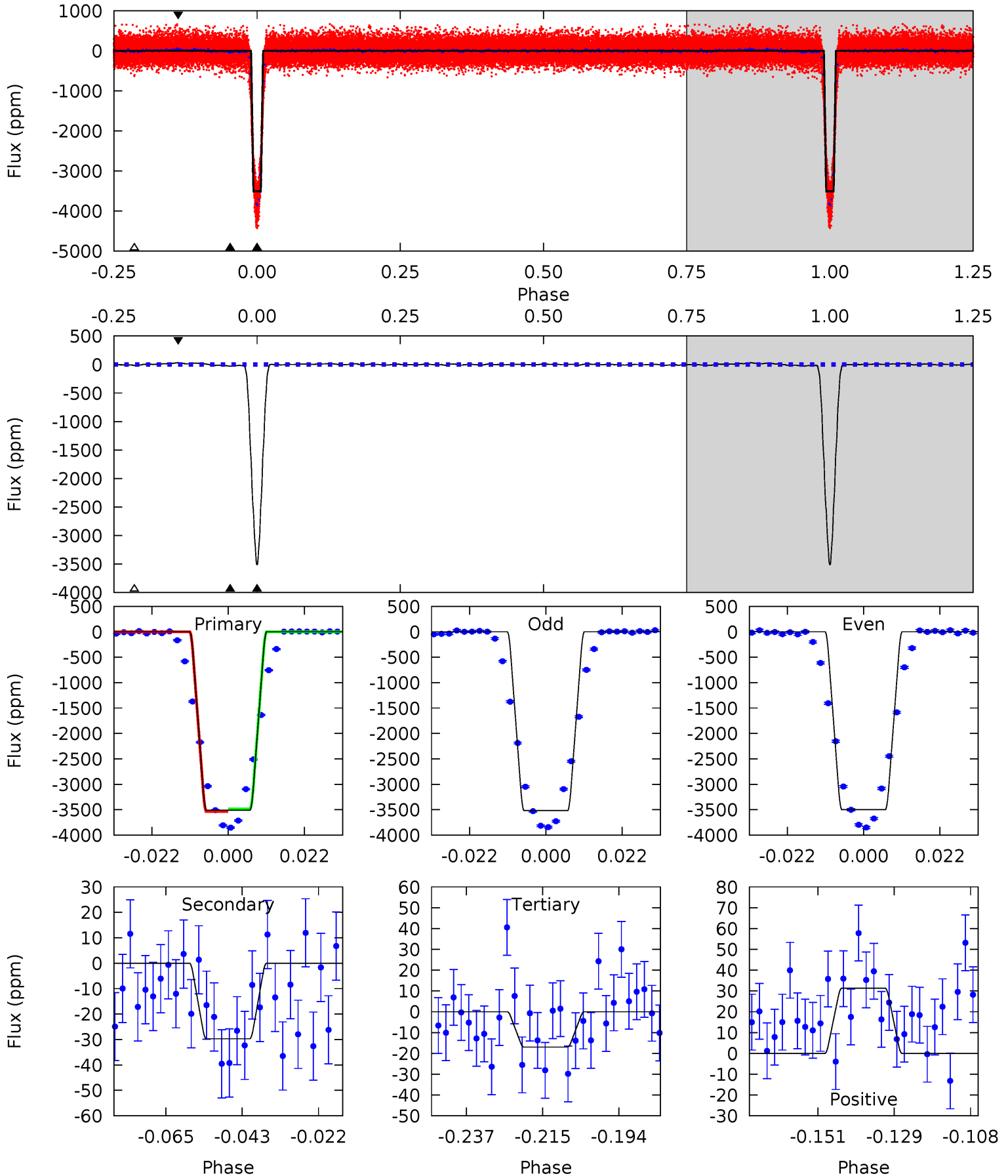
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
892.1	19.1	13.1	11.3	4.80	2.14	6.42	879.0	880.8	5.96	7.83	3.63	1.00	0.03	1.92



Alt Model-Shift Uniqueness Test

008908102-01, P = 5.414571 Days, E = 131.292683 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
773.4	6.55	3.74	6.90	4.88	2.30	1.76	769.7	766.5	2.81	-0.35	2.32	1.00	0.01	5.73



Stellar Parameters For KIC 008908102

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6033^{+213}_{-213}	$3.676^{+0.584}_{-0.110}$	$0.040^{+0.250}_{-0.300}$	$2.943^{+0.553}_{-1.660}$	$1.500^{+0.165}_{-0.462}$	$0.083^{+0.737}_{-0.028}$
	+4%/-4%	+16%/-3%	+625%/-750%	+19%/-56%	+11%/-31%	+890%/-33%
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 008908102-01 / KOI 0699.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-80 ± 4	$31.49^{+6.13}_{-8.96}$	2371^{+172}_{-334}	-2332^{+4488}_{-225}	$0.214^{+0.166}_{-0.063}$
Alt.	-30 ± 5	$18.26^{+4.68}_{-5.71}$	2355^{+186}_{-337}	-2272^{+4638}_{-286}	$0.228^{+0.248}_{-0.084}$

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 $A_{obs} \gg 1.0$

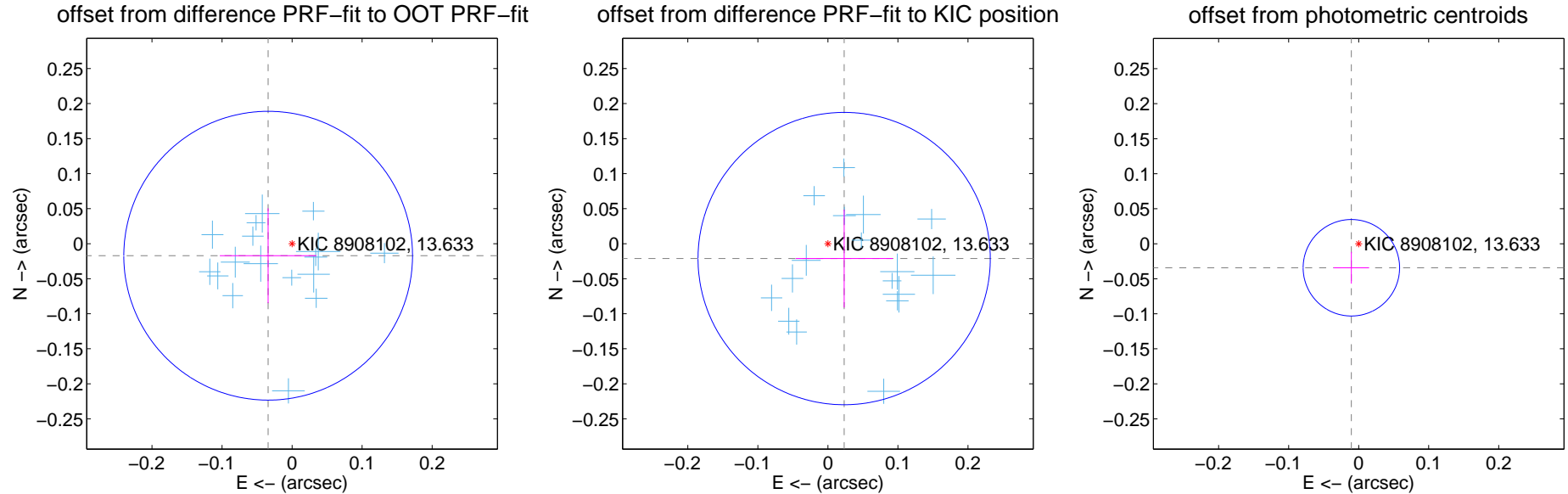
DV Centroid Data

Supplemental centroid analysis for 008908102-01. Kepler magnitude: 13.63. Transit SNR 431.87

There are 17 quarters with good PRF difference image offsets

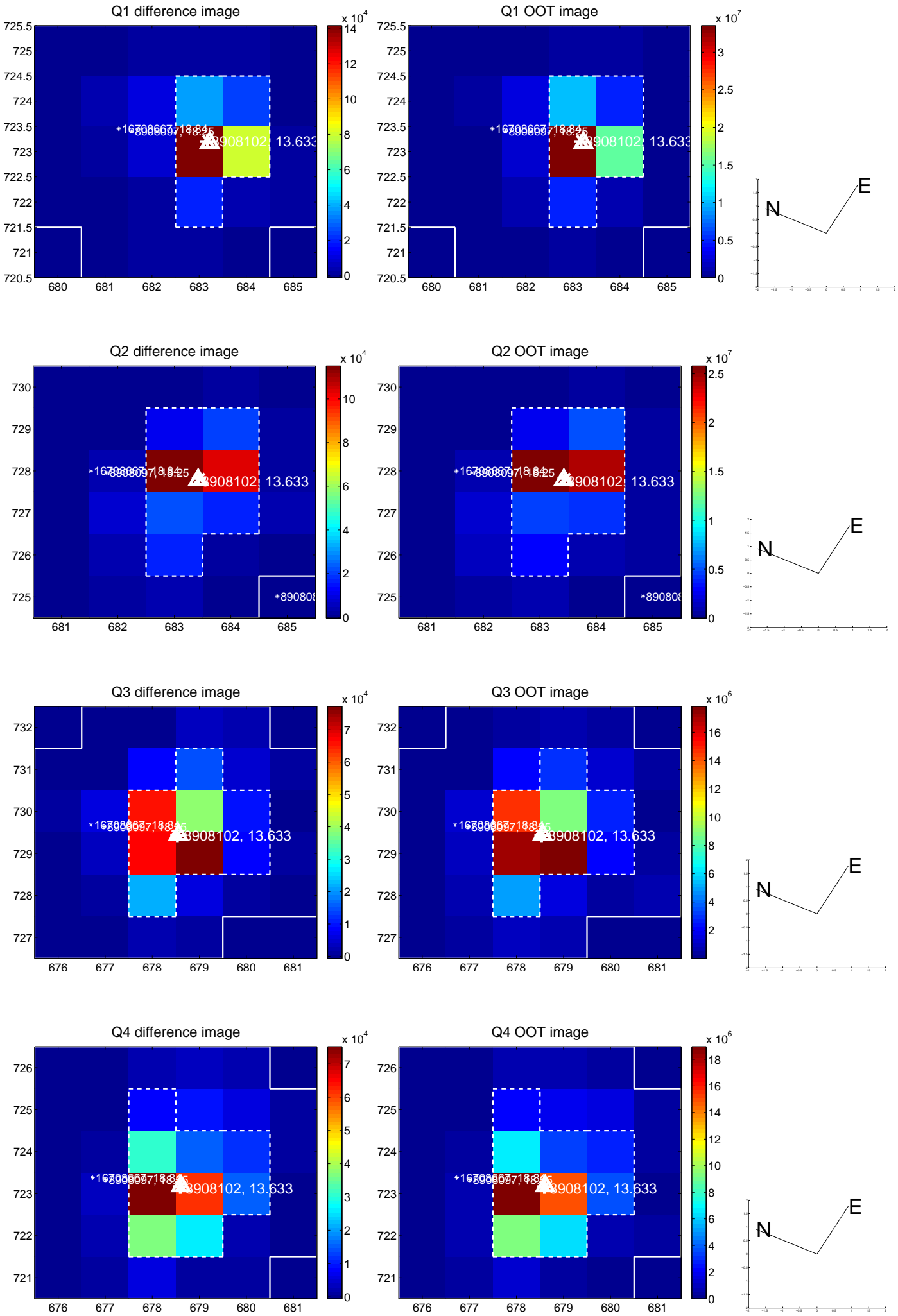
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.038 ± 0.069	0.56	0.034 ± 0.069	-0.017 ± 0.068
PRF-fit source offset from KIC position	0.031 ± 0.070	0.45	-0.023 ± 0.069	-0.021 ± 0.070
photometric centroid source offset	0.04 ± 0.02	1.56	0.01 ± 0.03	-0.03 ± 0.02

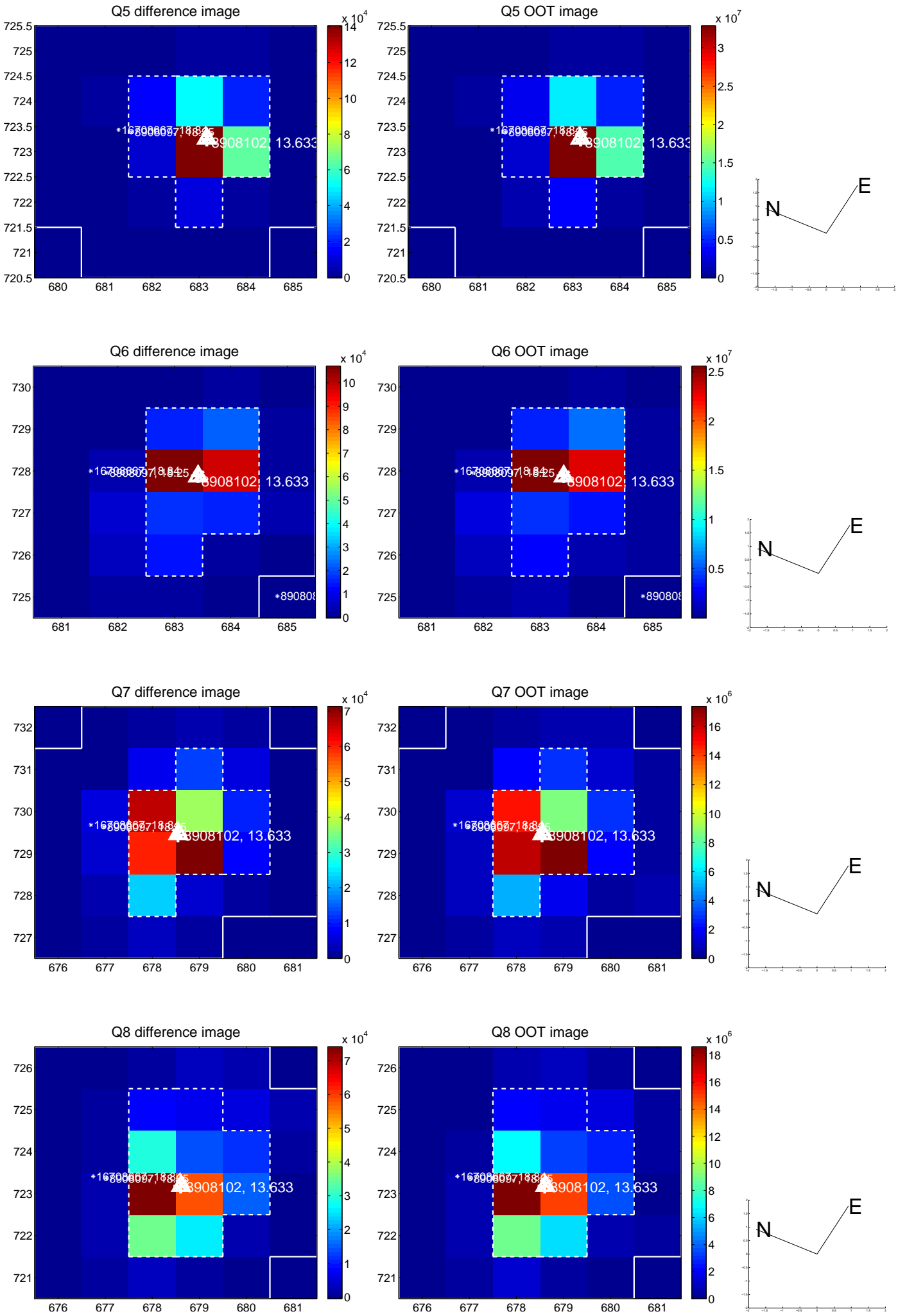


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

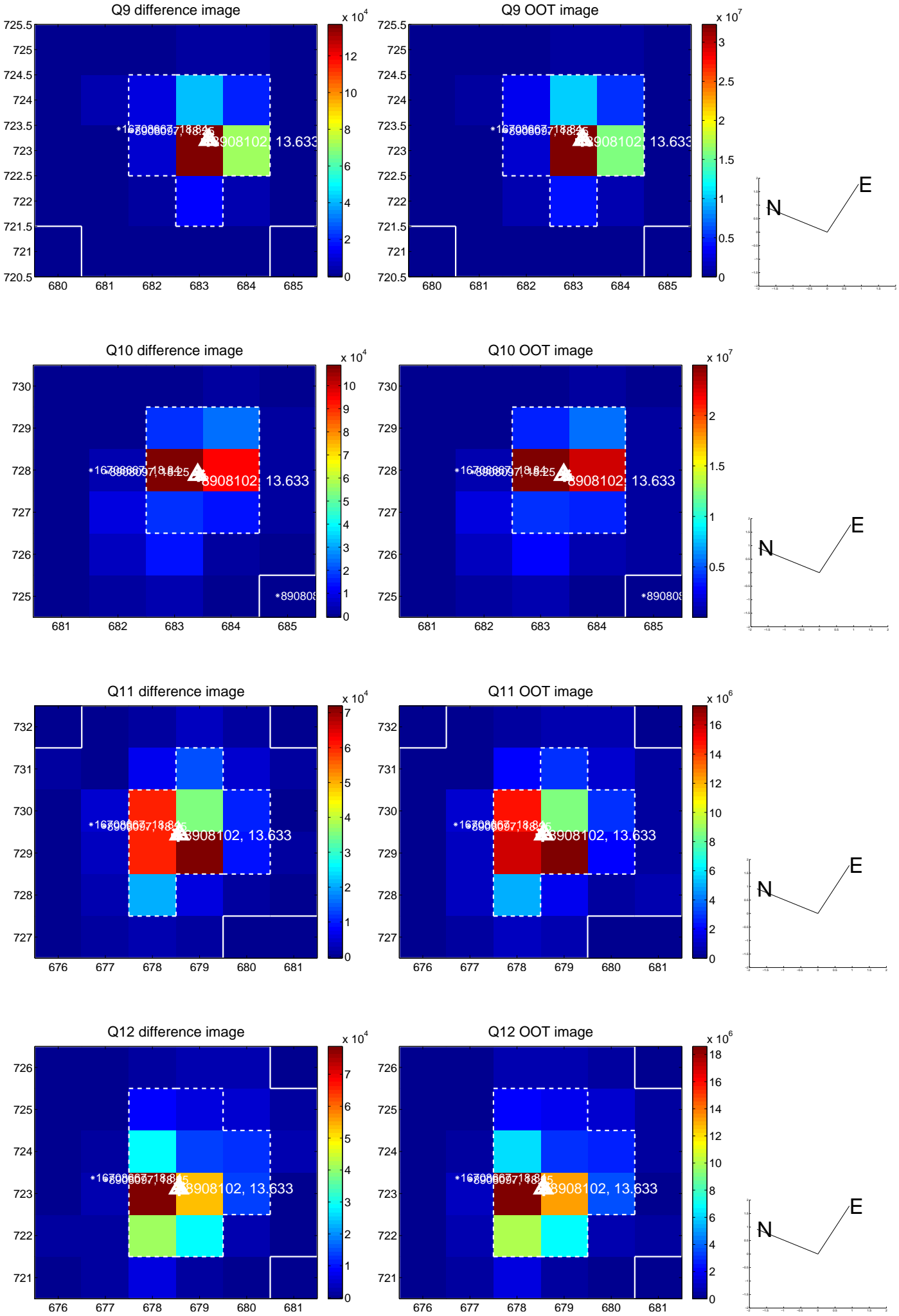
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



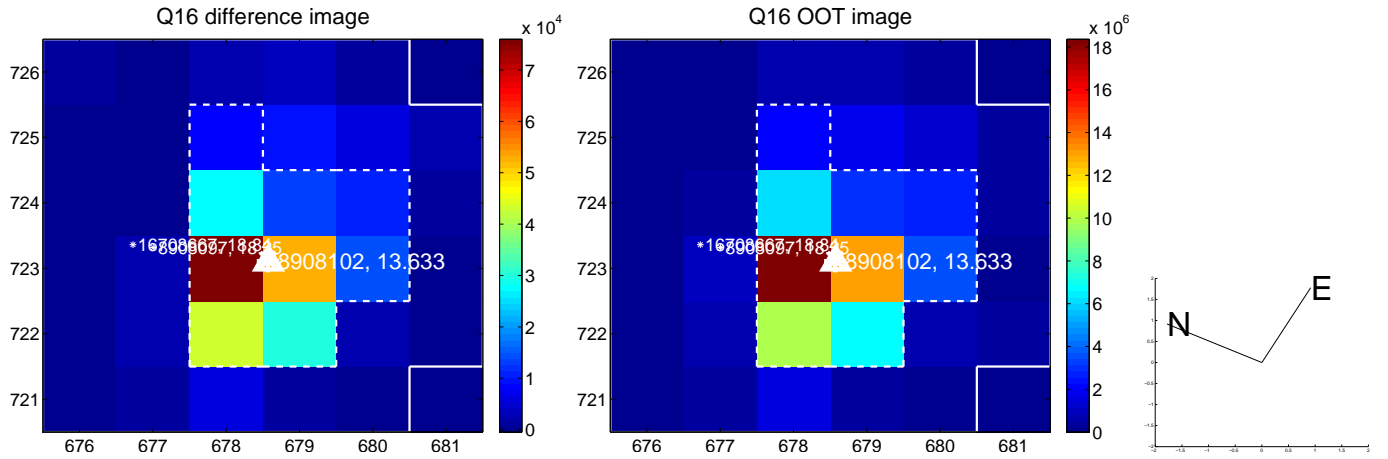
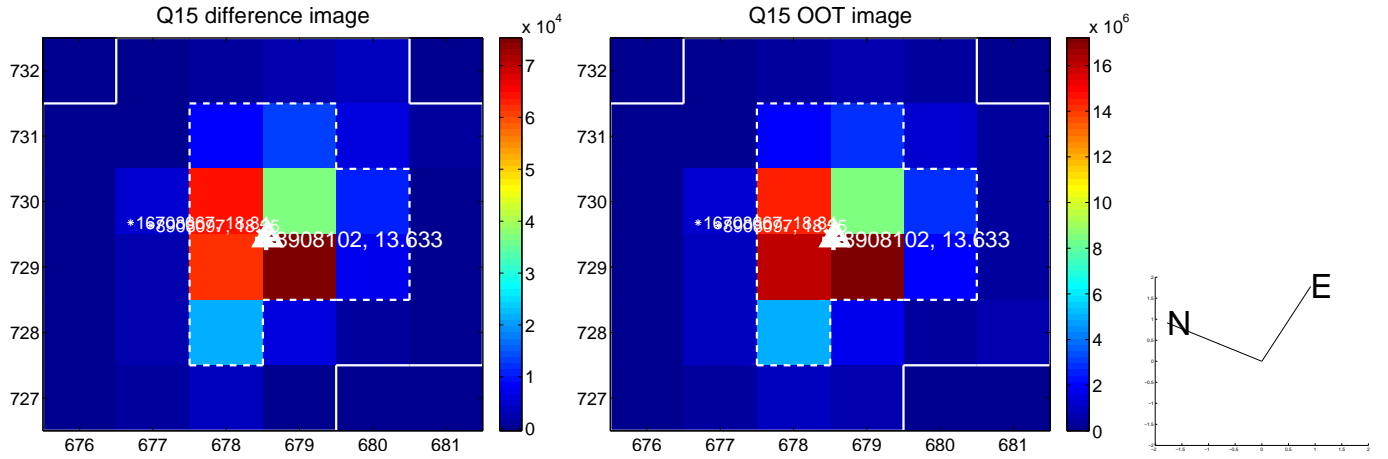
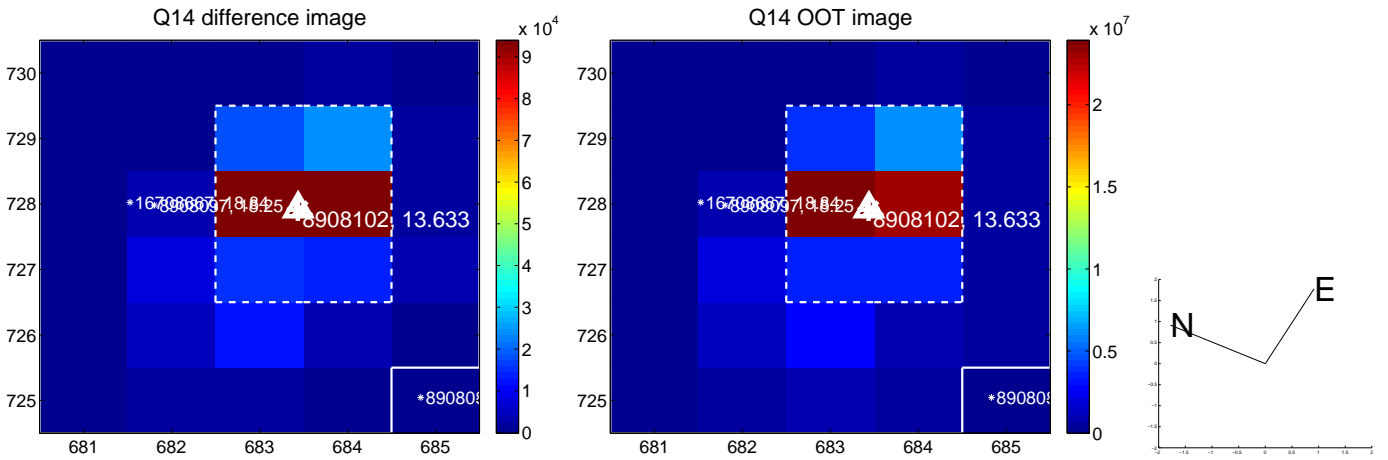
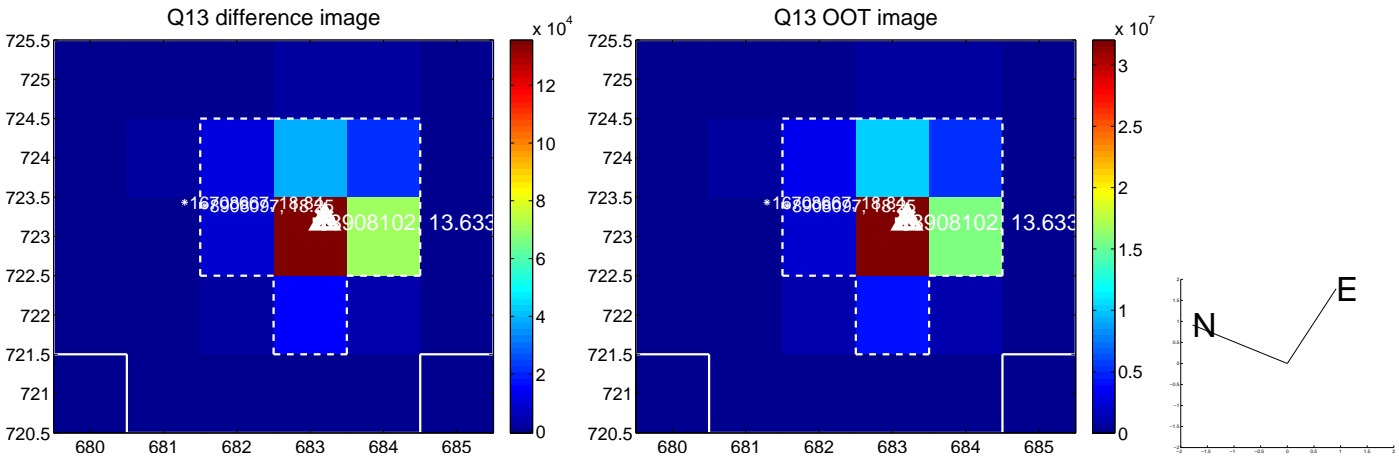
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



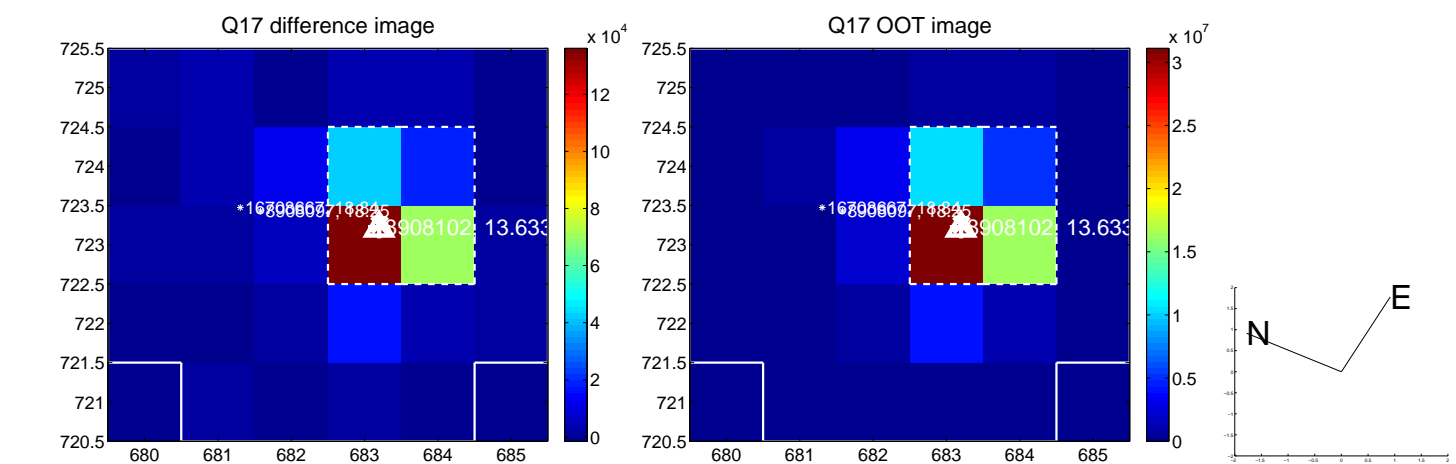
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



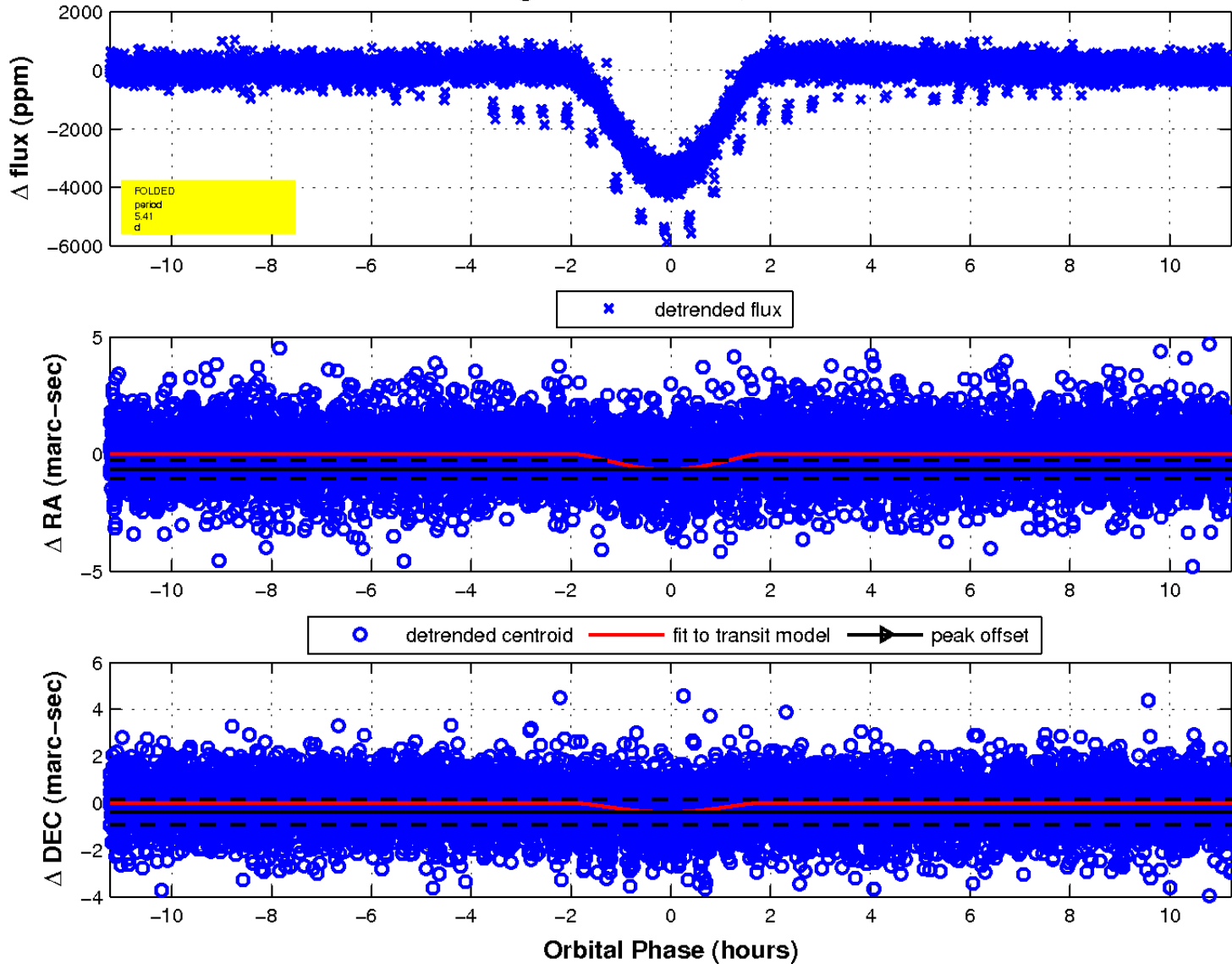
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

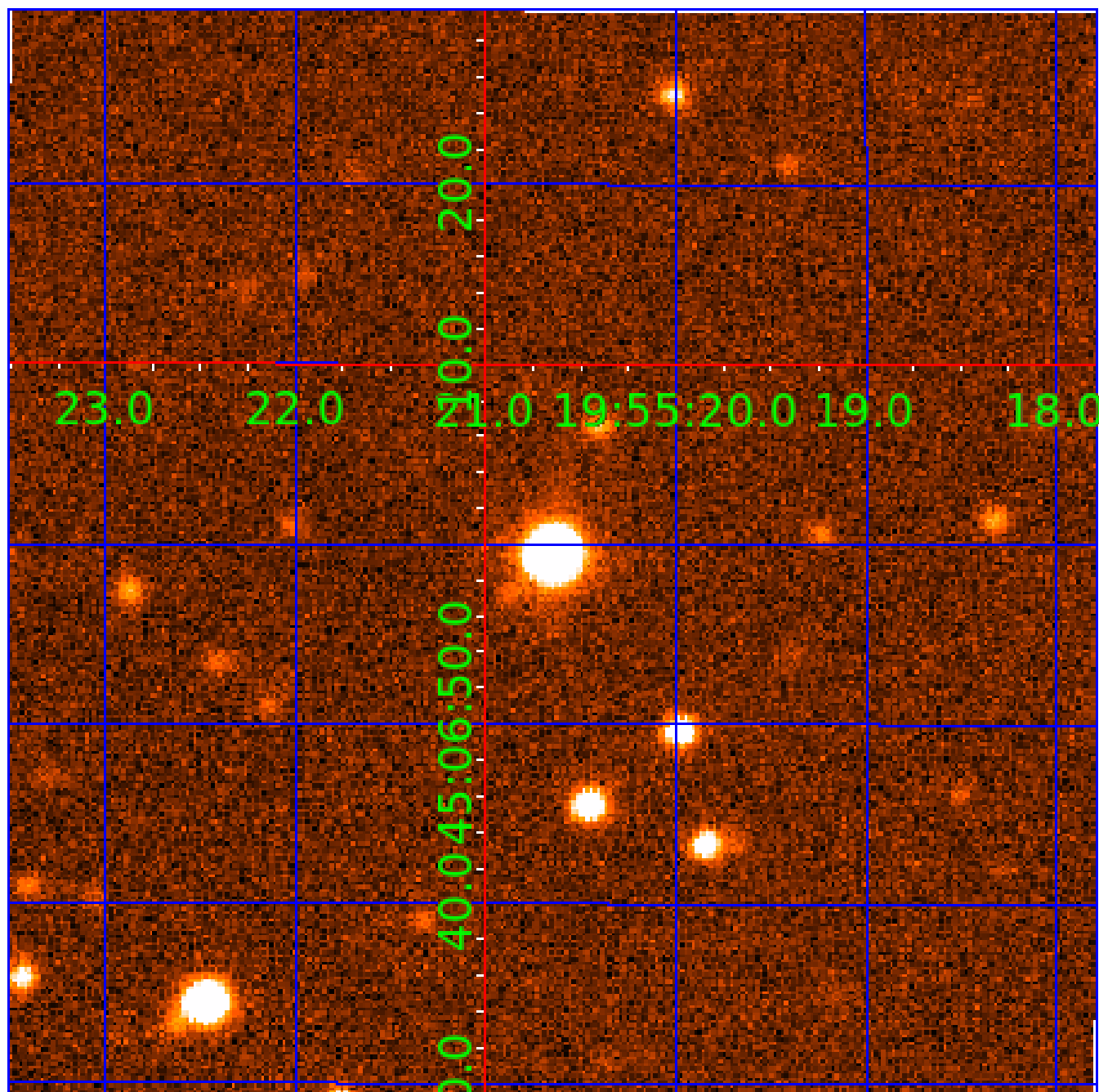


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 008908102

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})
008908102-01	OBS	0699.01	5.414581	136.705904	3812.4	3.747	425.5	431.9	2.94	6033	33.57	2155.10
008908102-02	OBS	No	5.414934	131.868581	140.9	12.000	11.0	-1.0	2.94	6033	3.48	2154.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008908102-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED—HAS_SEC_TCE
008908102-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

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.

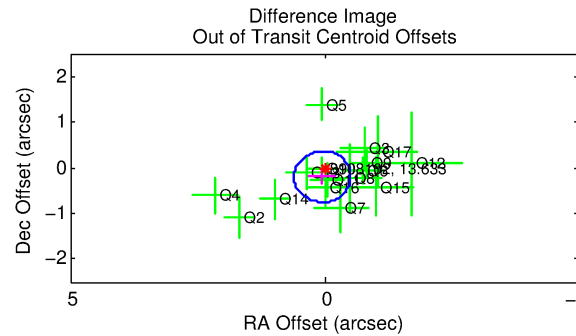
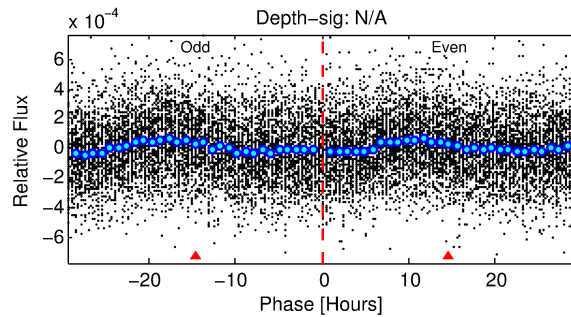
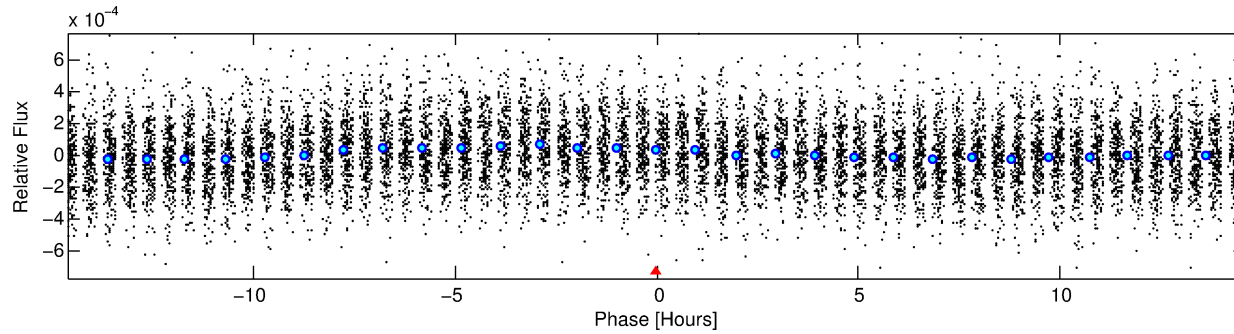
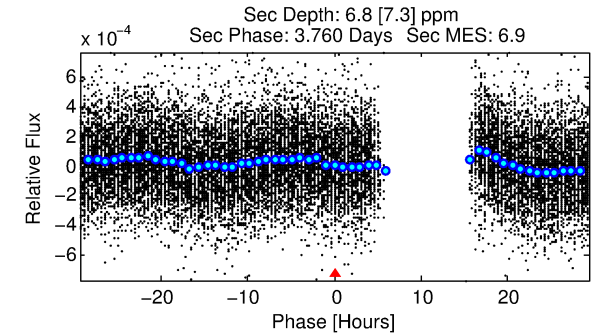
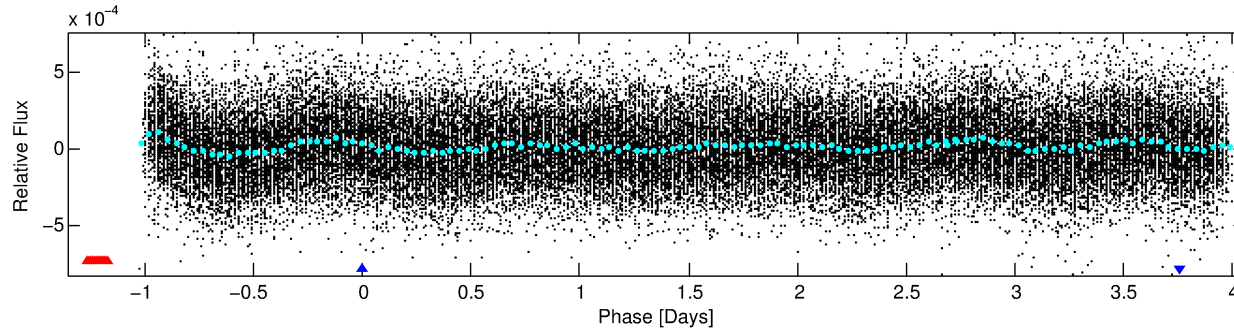
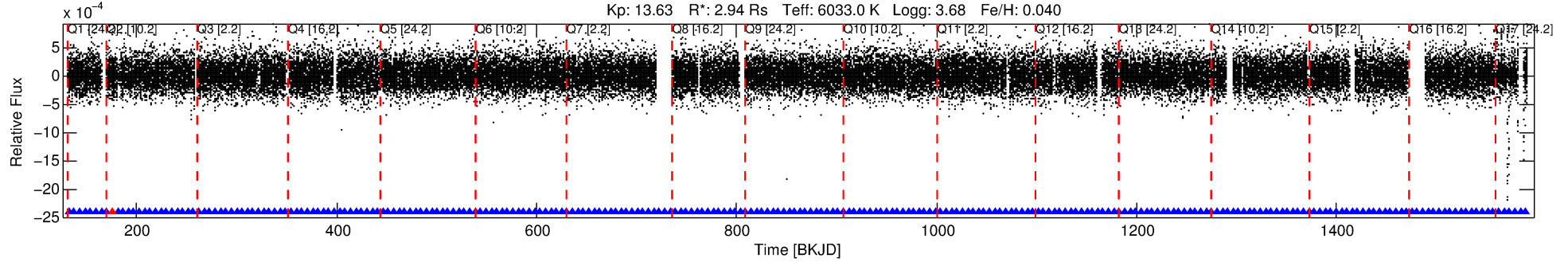
Ephemeris Match Information For 008908102-02

No Significant Match Found

DV One-Page Summary

KIC: 8908102 Candidate: 2 of 2 Period: 5.415 d
KOI: K00699 Corr: No Ephemeris Match

Kp: 13.63 R*: 2.94 Rs Teff: 6033.0 K Logg: 3.68 Fe/H: 0.040



TPS TCE Results:

Period = 5.41493 d
Epoch = 131.8686 BKJD

DV fit results are unavailable

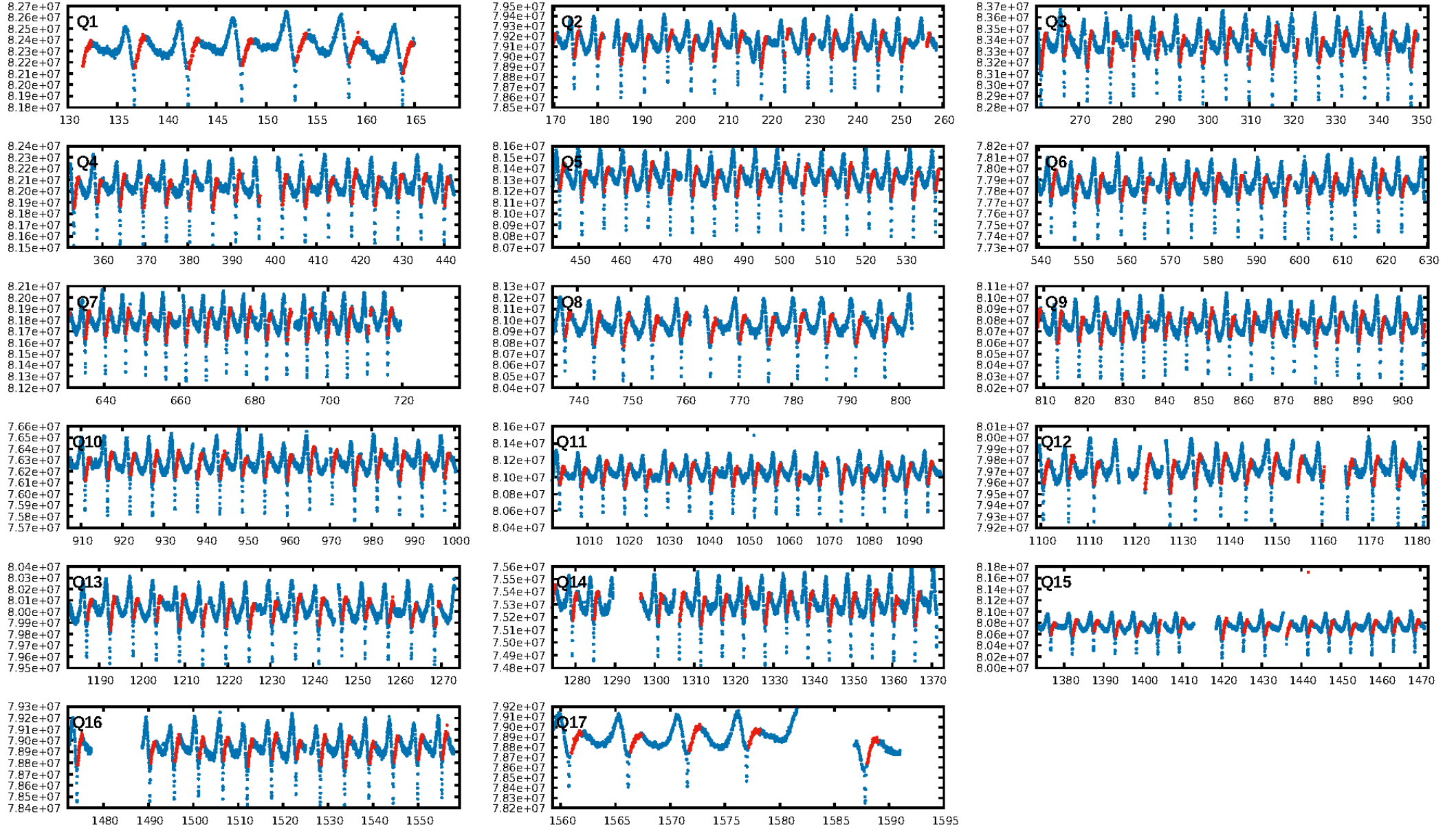
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.12e-21
RollingBand-fgt: 1.00 [237/238]
GhostDiagnostic-chr: 1.986
Centroid-sig: 0.0%
Centroid-so: 16.578 arcsec [2.37σ]
OotOffset-rm: 0.201 arcsec [1.08σ]
KicOffset-rm: 0.175 arcsec [1.06σ]
OotOffset-st: 4/4/4 [16]
KicOffset-st: 4/4/4 [16]
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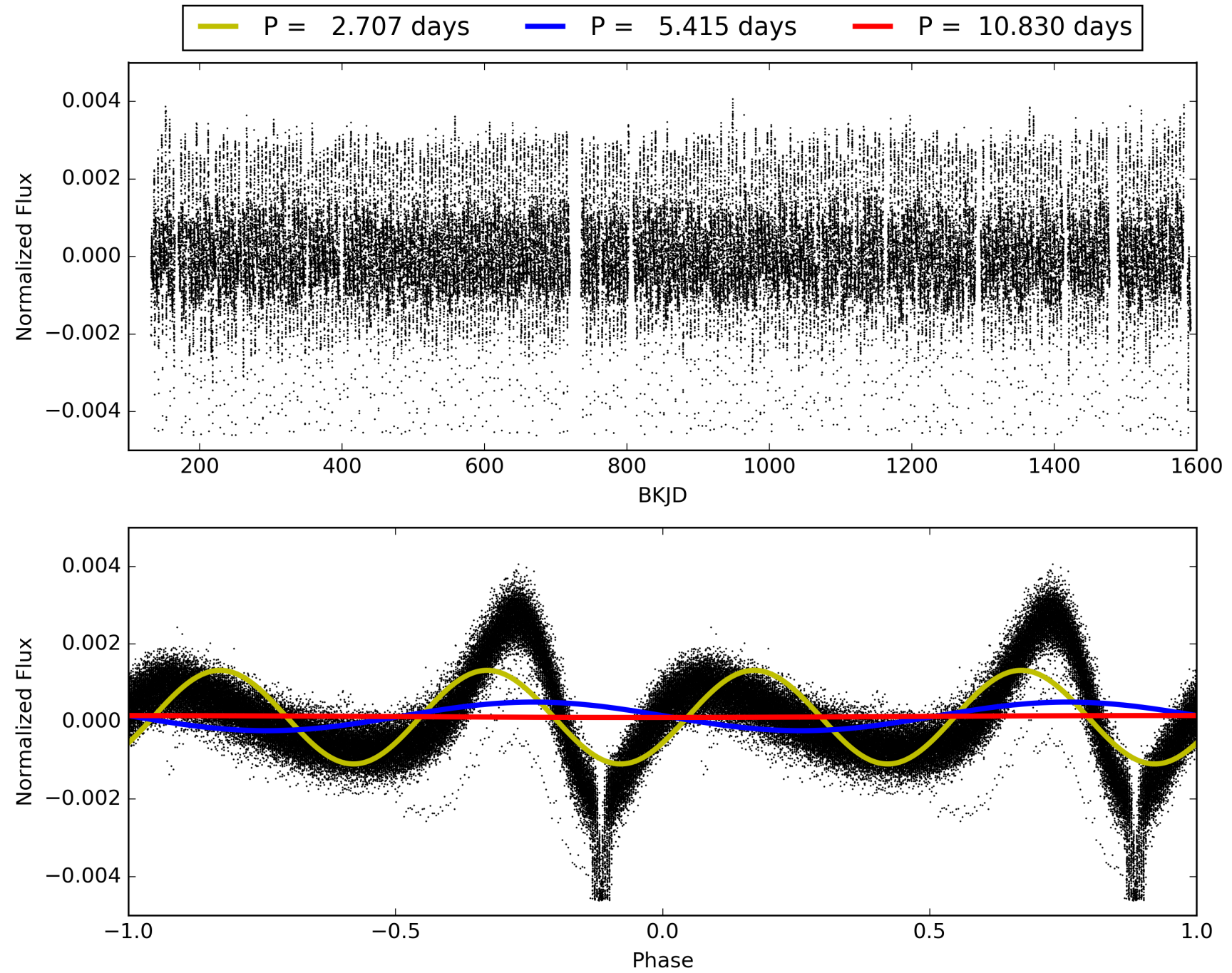
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:31:45 Z

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

TCE 008908102-02, PDC Light Curves

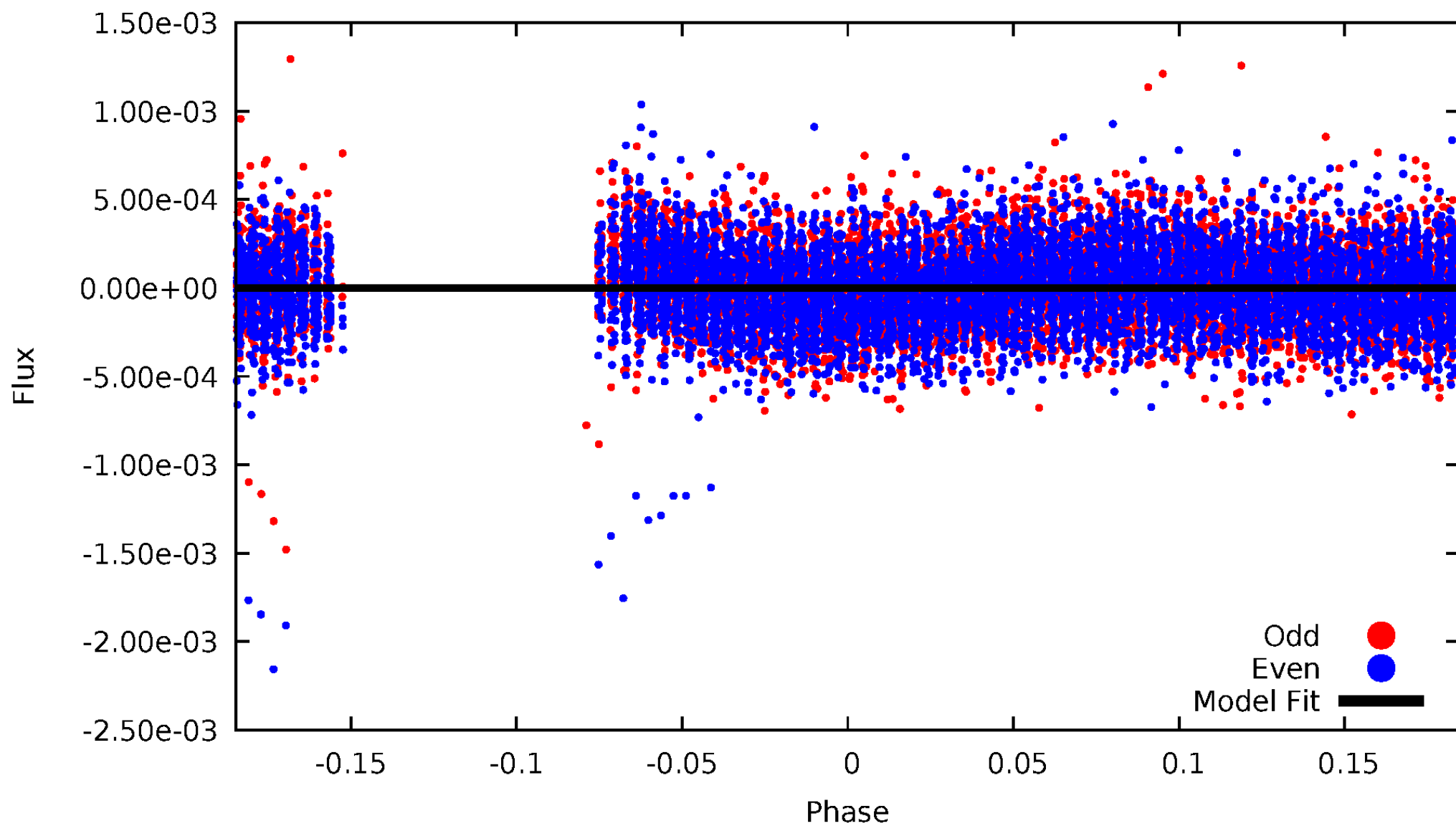


TCE 008908102-02



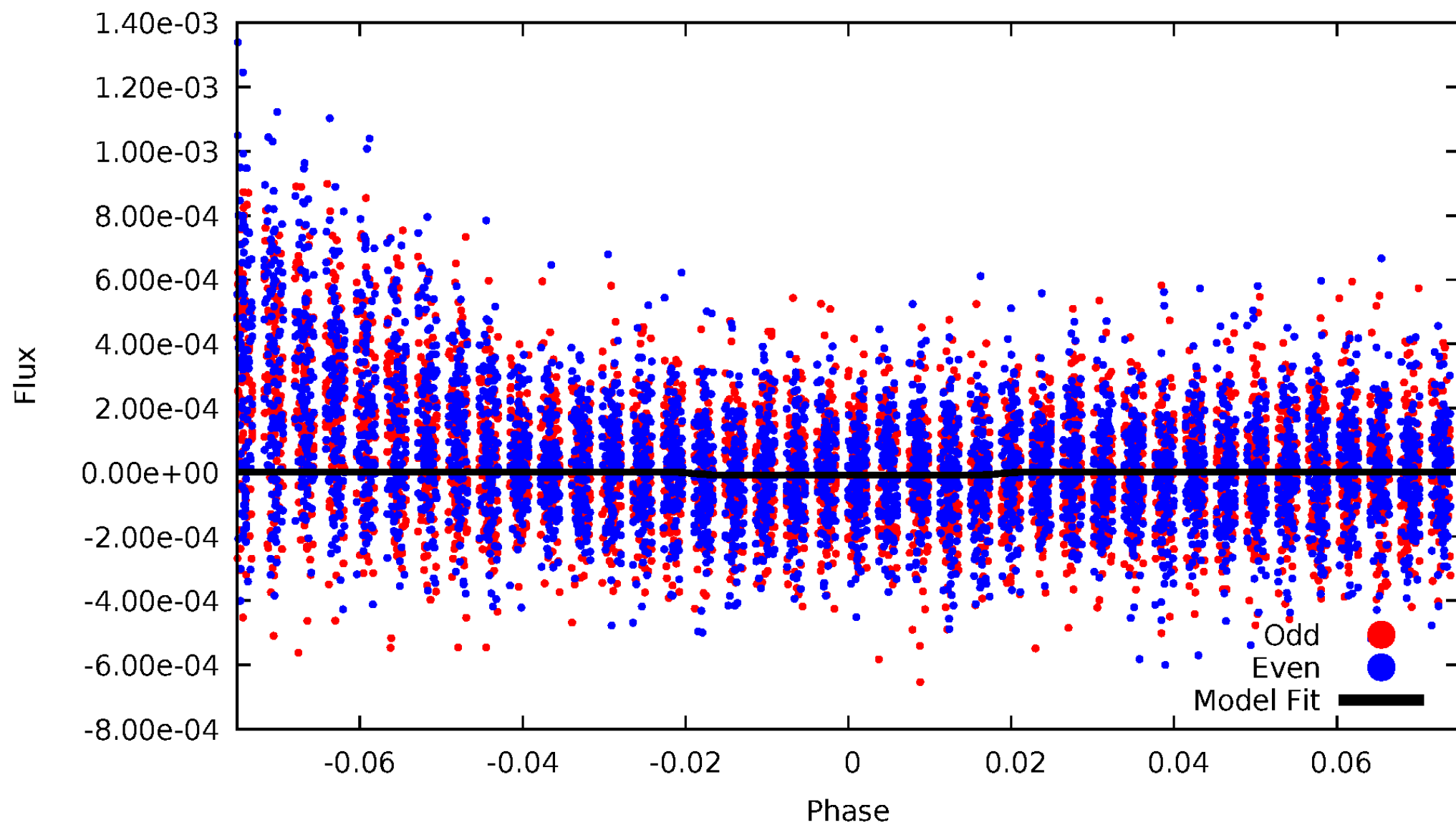
DV Odd/Even

TCE 008908102-02



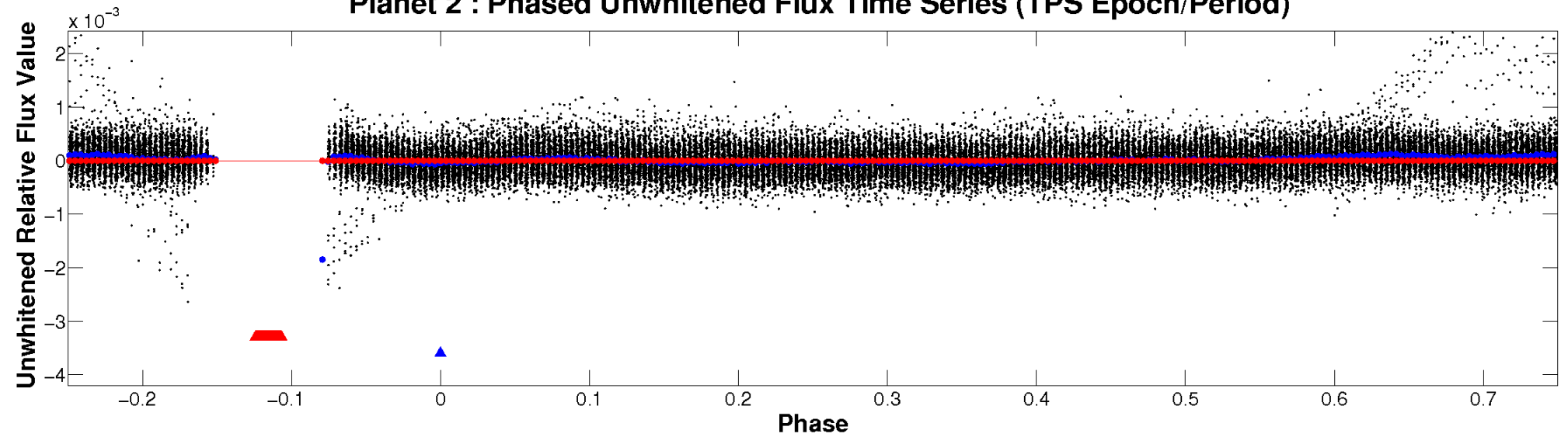
ALT Odd/Even

TCE 008908102-02

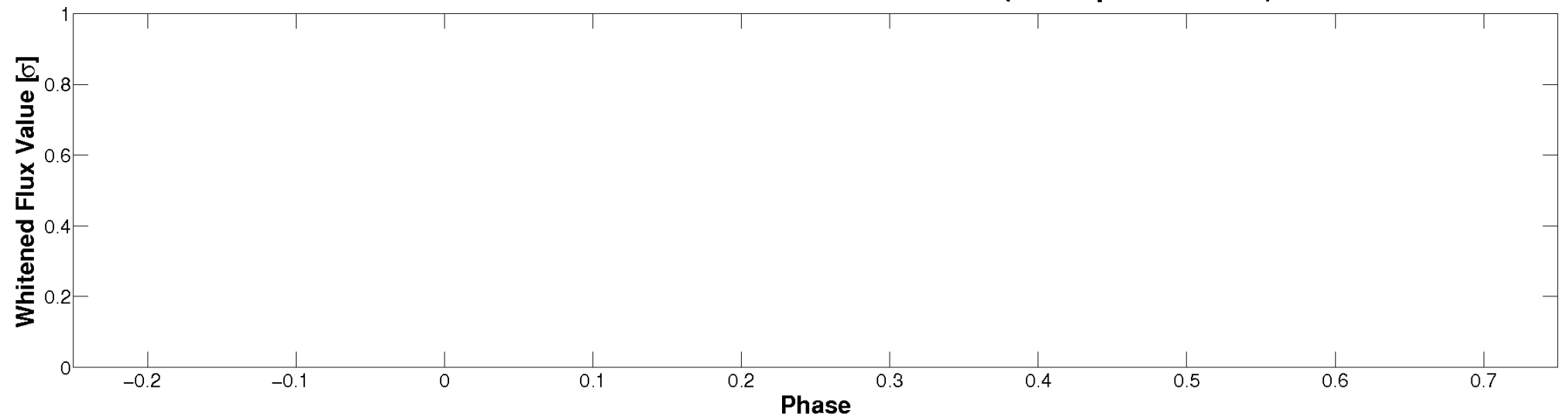


Non-Whitened Vs. Whitened Light Curve

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

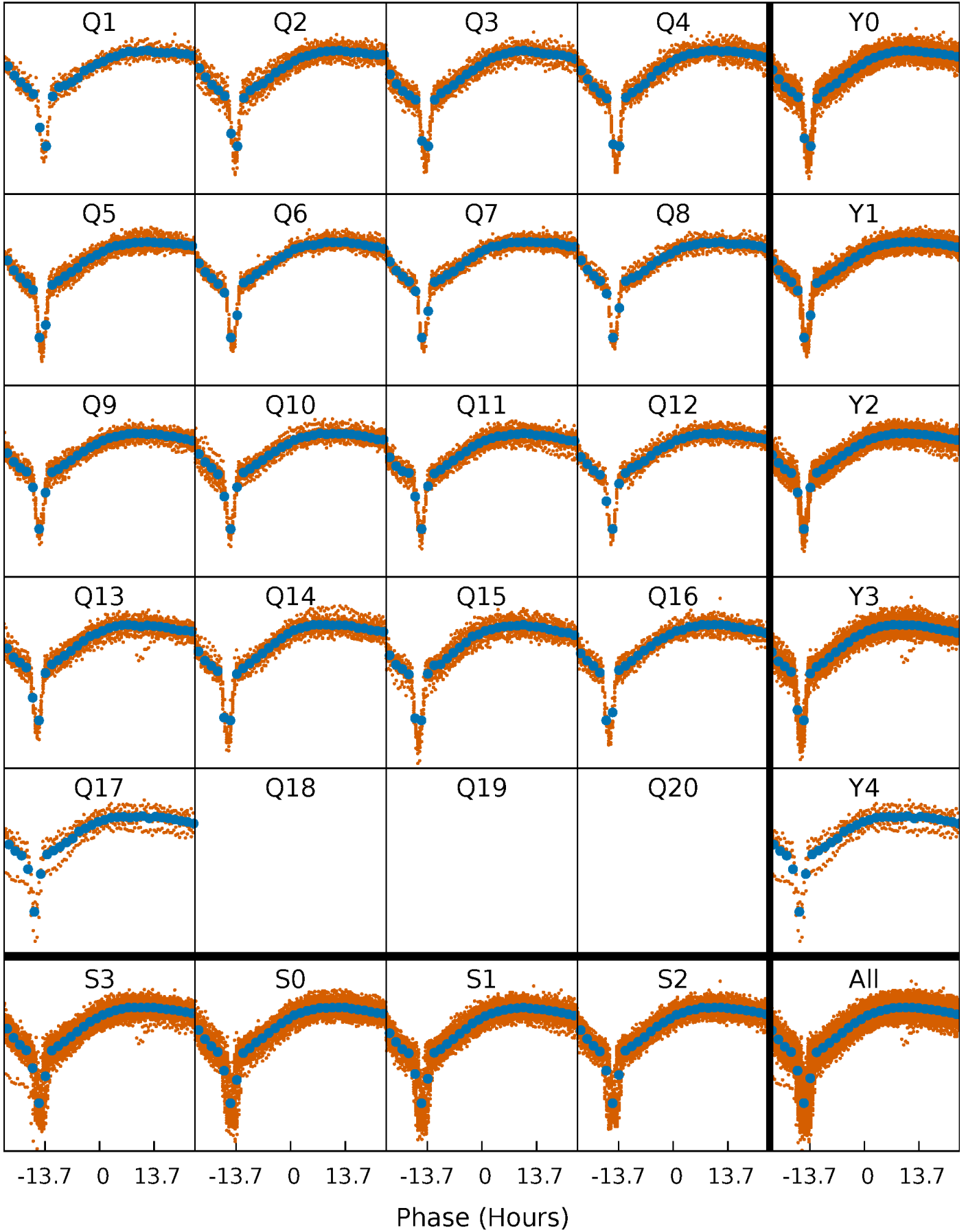


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



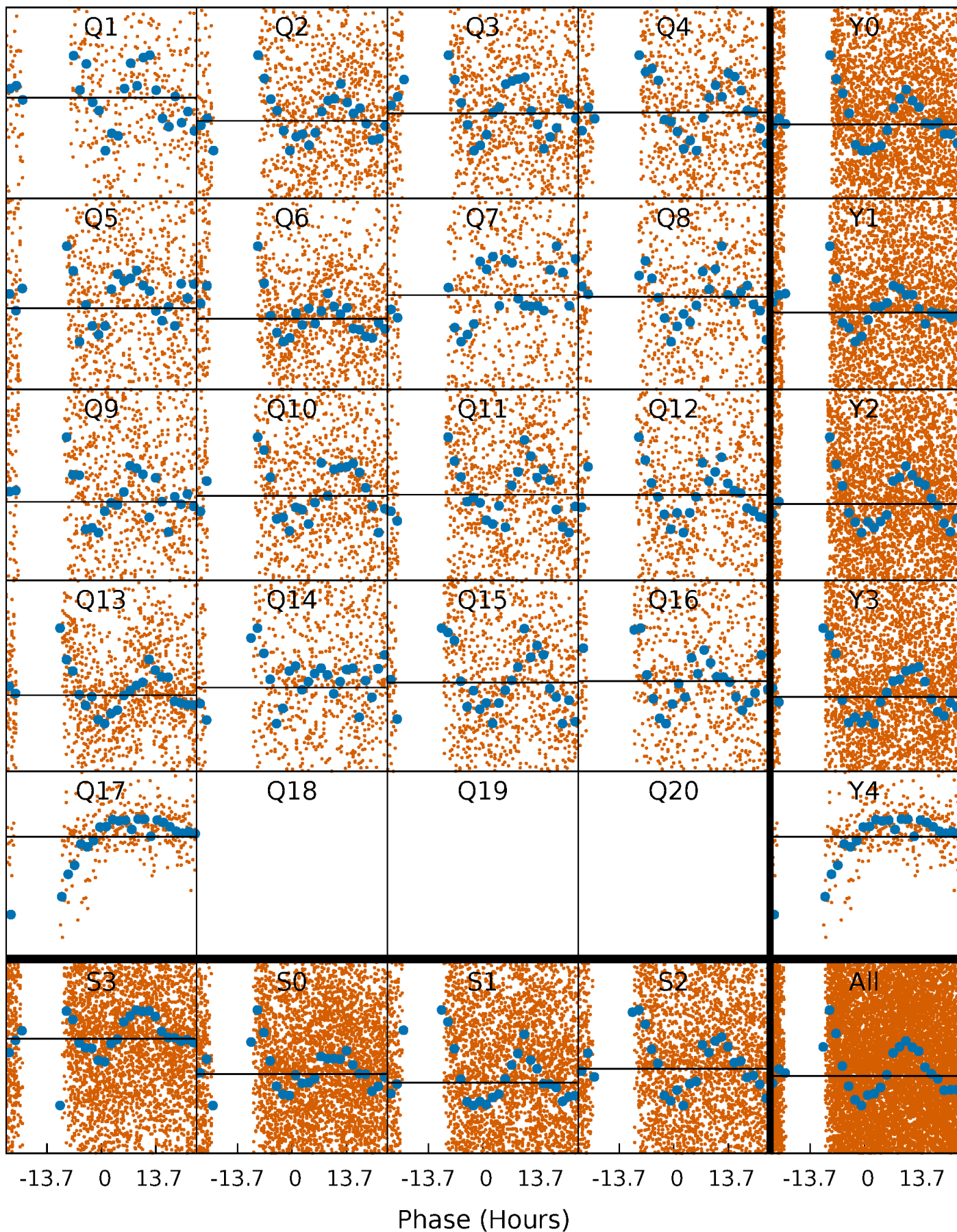
PDC Quarter-Phased Transit Curves

TCE 008908102-02 P= 5.414934 Days $T_0=131.868581$ (BKJD)



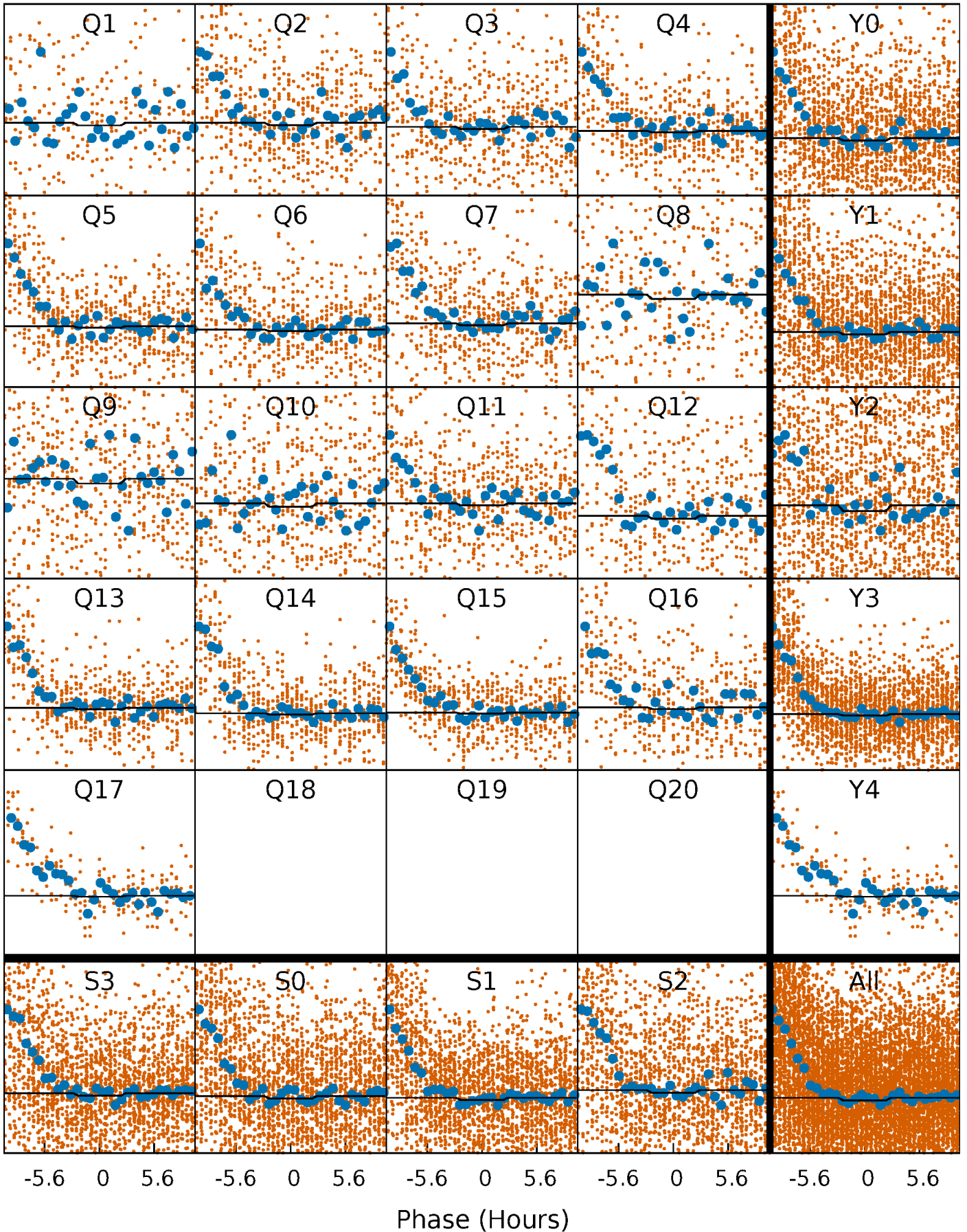
DV Quarter-Phased Transit Curves

TCE 008908102-02 P= 5.414934 Days $T_0=131.868581$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

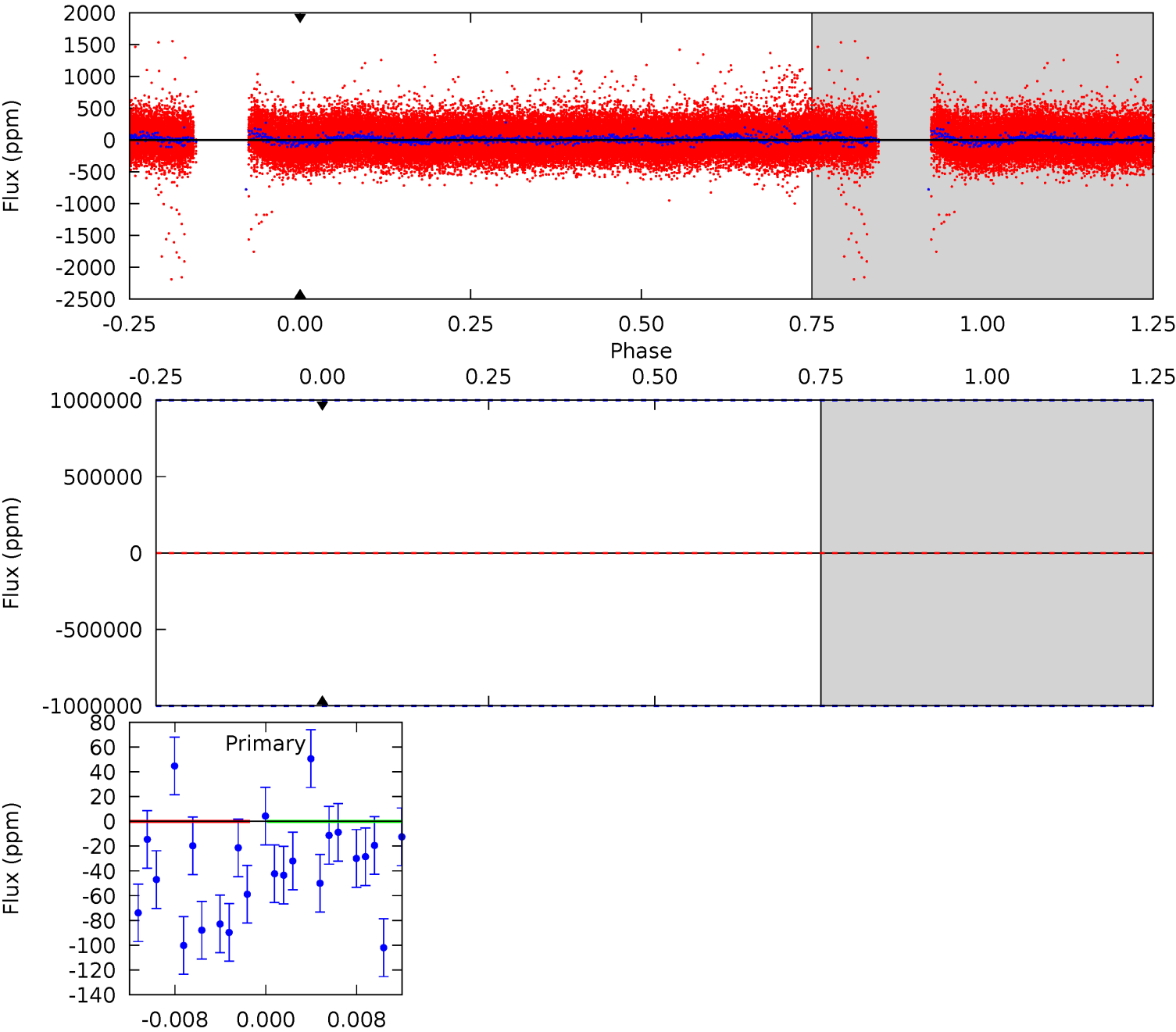
TCE 008908102-02 P= 5.414934 Days $T_0=132.461988$ (BKJD)



DV Model-Shift Uniqueness Test

008908102-02, P = 5.414934 Days, E = 126.453647 Days

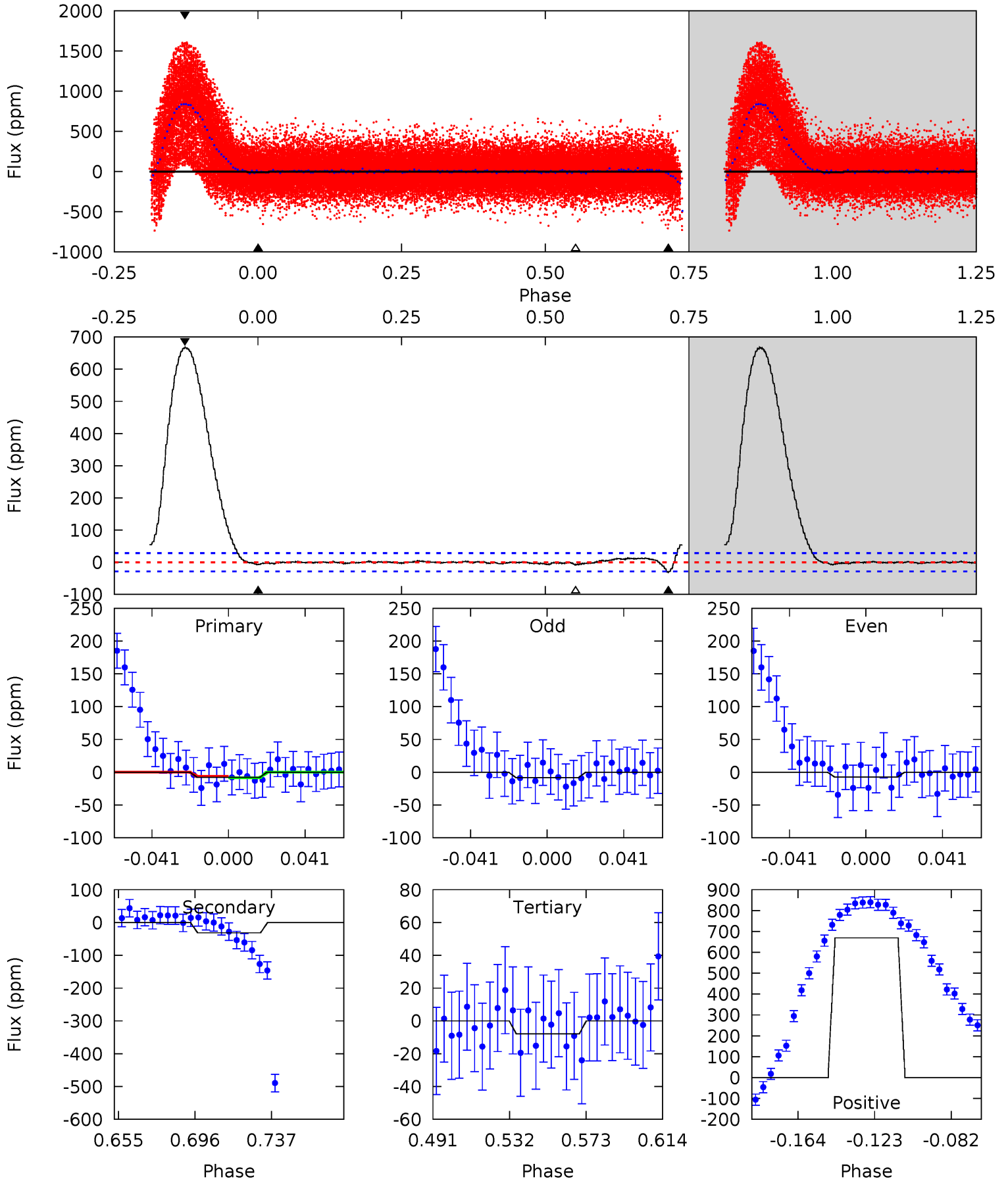
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008908102-02, P = 5.414934 Days, E = 127.047054 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.30	5.31	1.34	112.4	4.75	2.04	28.3	-0.03	-111.1	3.98	-107.1	0.08	0.80	0.95	0.16



Stellar Parameters For KIC 008908102

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6033^{+213}_{-213}	$3.676^{+0.584}_{-0.110}$	$0.040^{+0.250}_{-0.300}$	$2.943^{+0.553}_{-1.660}$	$1.500^{+0.165}_{-0.462}$	$0.083^{+0.737}_{-0.028}$
	+4%/-4%	+16%/-3%	+625%/-750%	+19%/-56%	+11%/-31%	+890%/-33%
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 008908102-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$19.09^{+25.15}_{-13.19}$	2345^{+197}_{-330}	4568^{+24330}_{-26087}	10^{+1656}_{-996}
Alt.	-32 ± 6	$18.56^{+23.59}_{-13.19}$	2351^{+192}_{-342}	-2152^{+5735}_{-538}	$0.237^{+2.615}_{-0.191}$

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

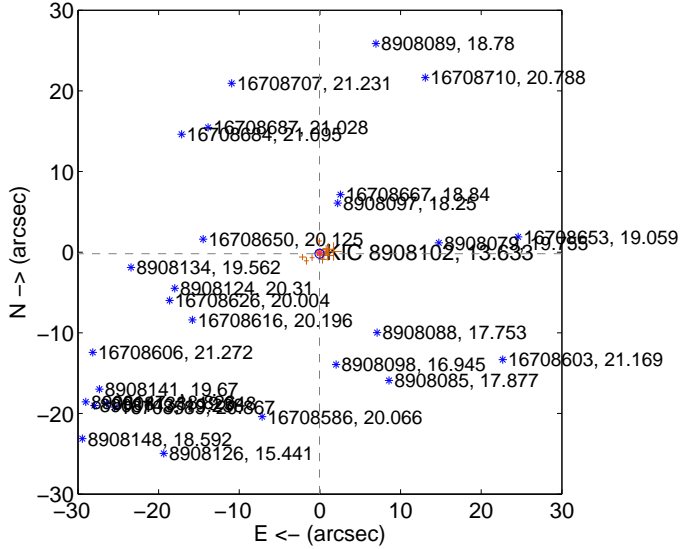
Supplemental centroid analysis for 008908102-02. Kepler magnitude: 13.63. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

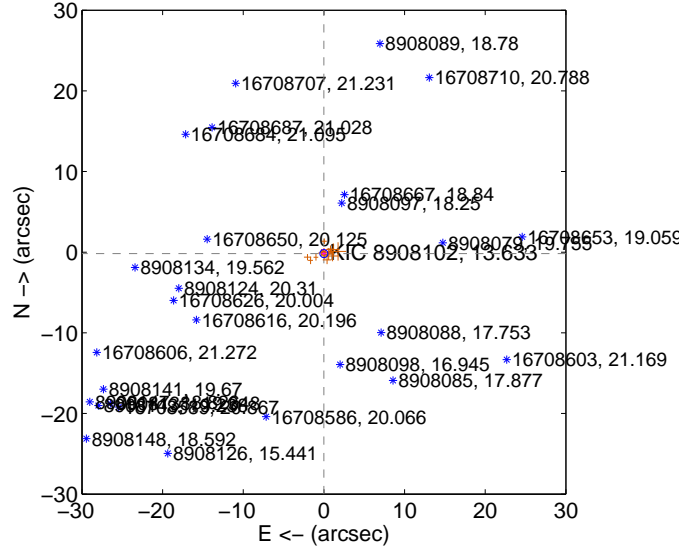
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.201 ± 0.186	1.08	0.045 ± 0.252	-0.196 ± 0.161
PRF-fit source offset from KIC position	0.175 ± 0.166	1.06	0.007 ± 0.269	-0.175 ± 0.161
photometric centroid source offset	16.58 ± 7.01	2.37	9.55 ± 7.51	-13.55 ± 6.74

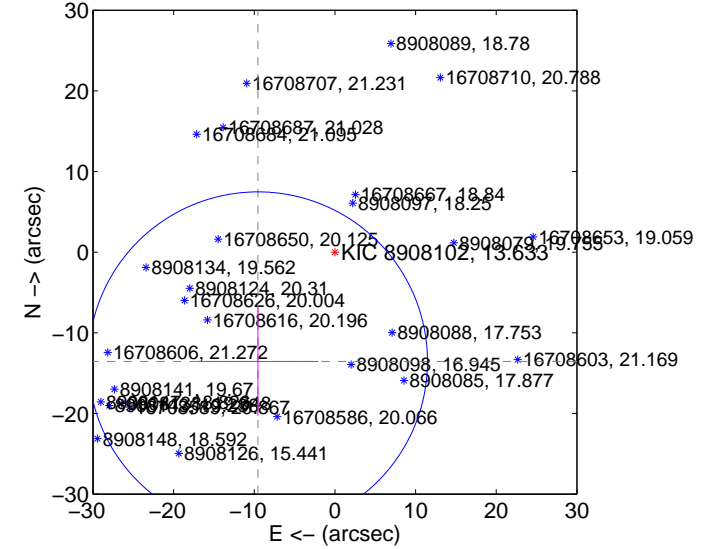
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

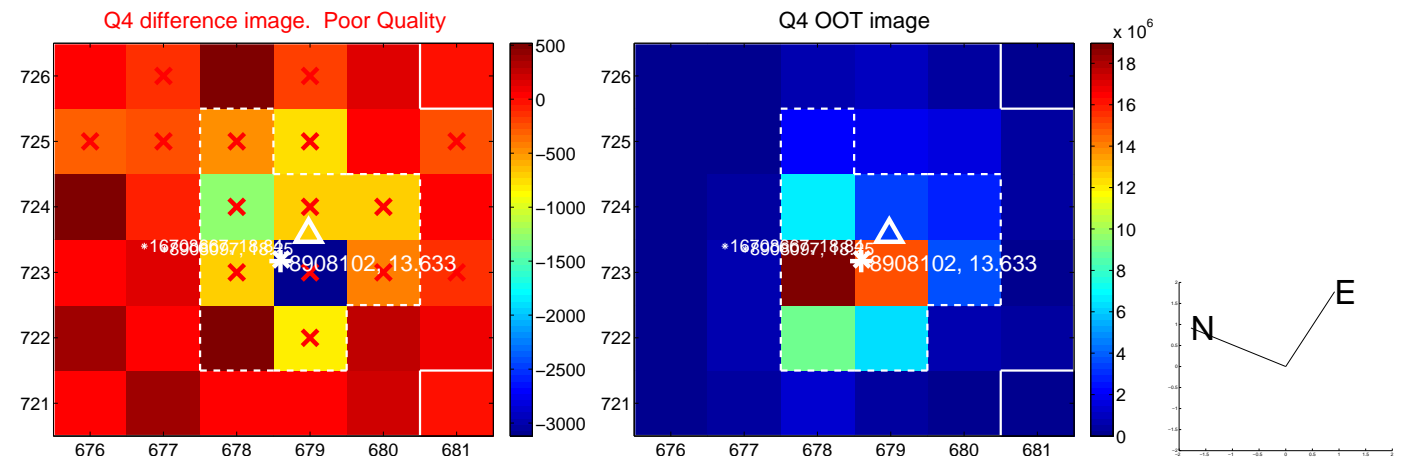
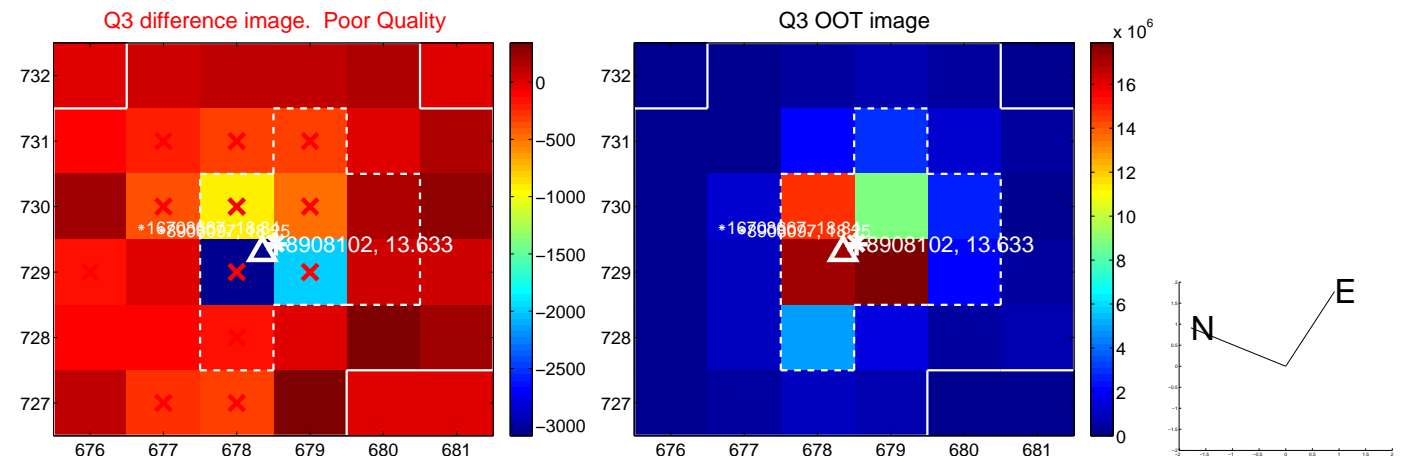
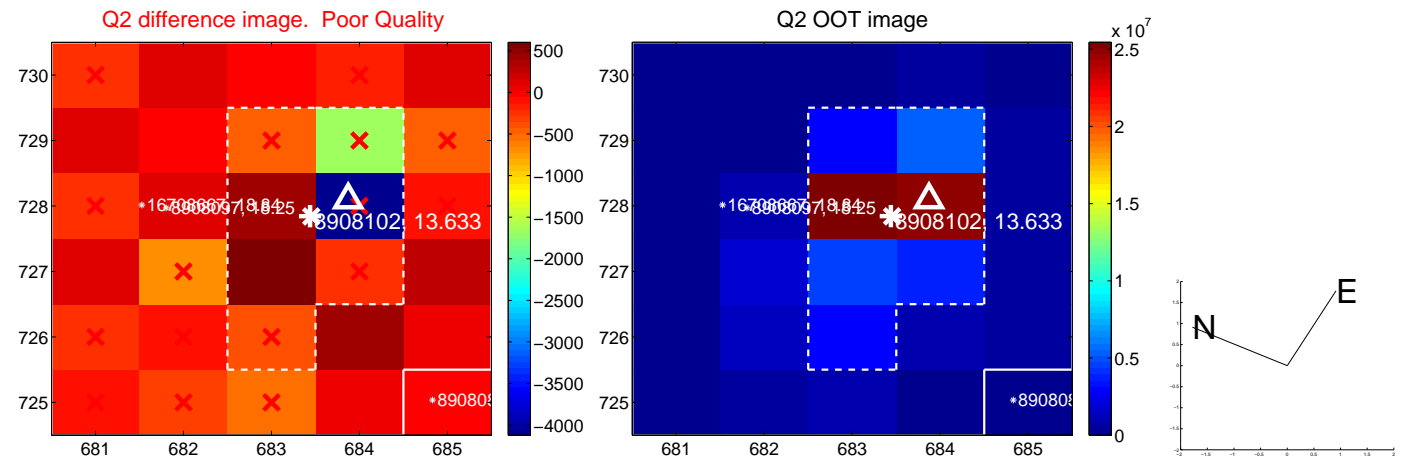
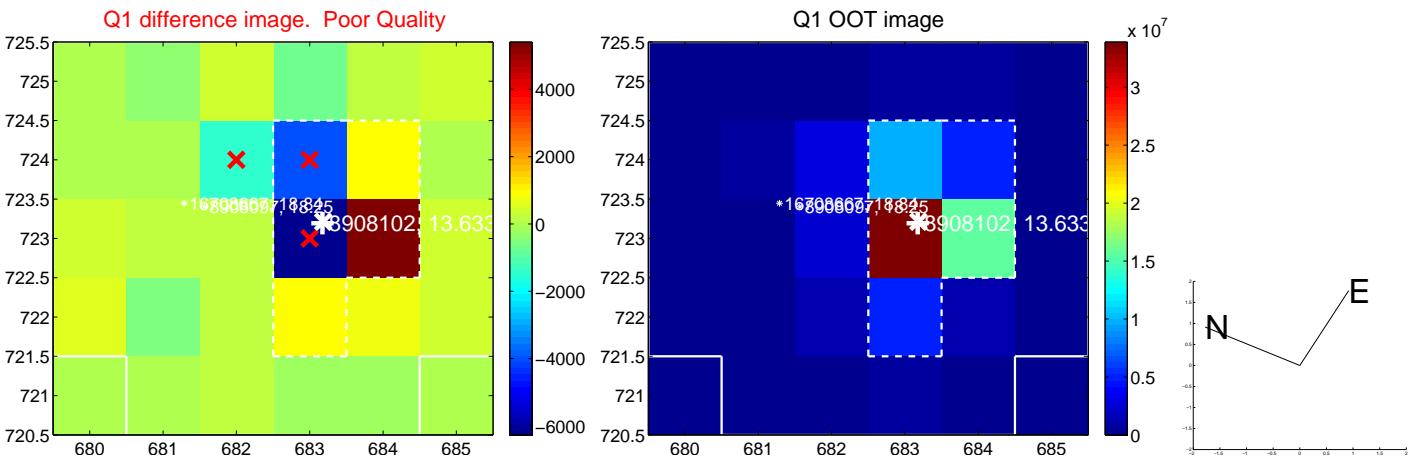


offset from photometric centroids

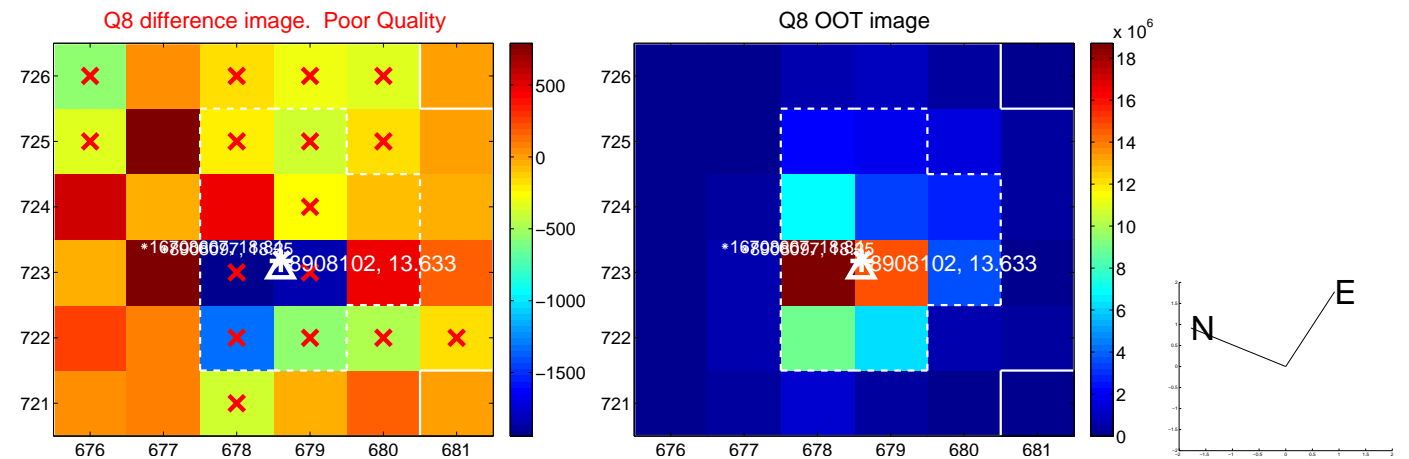
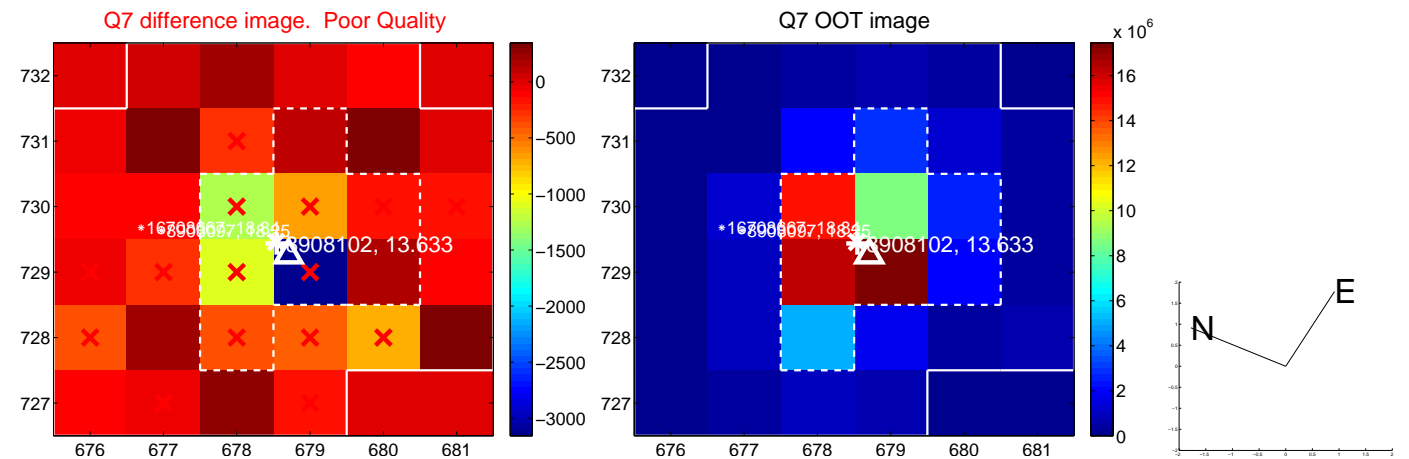
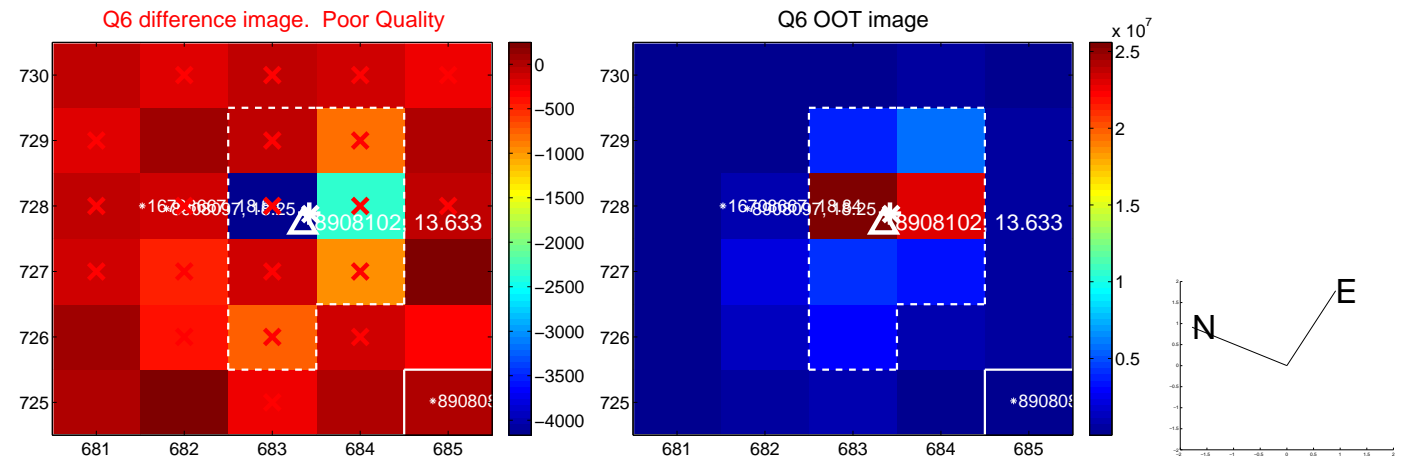
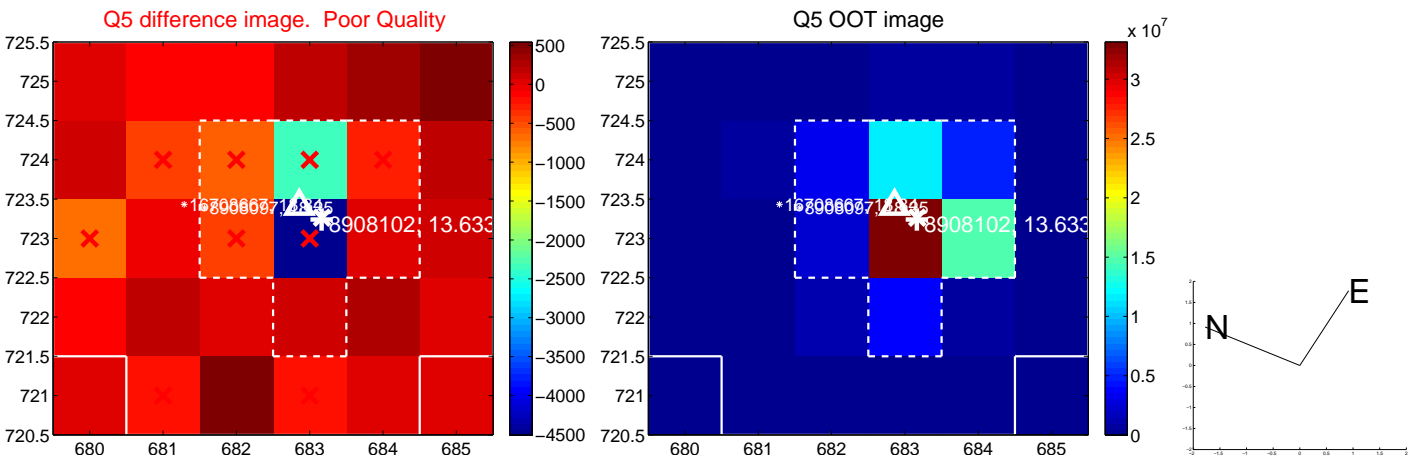


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

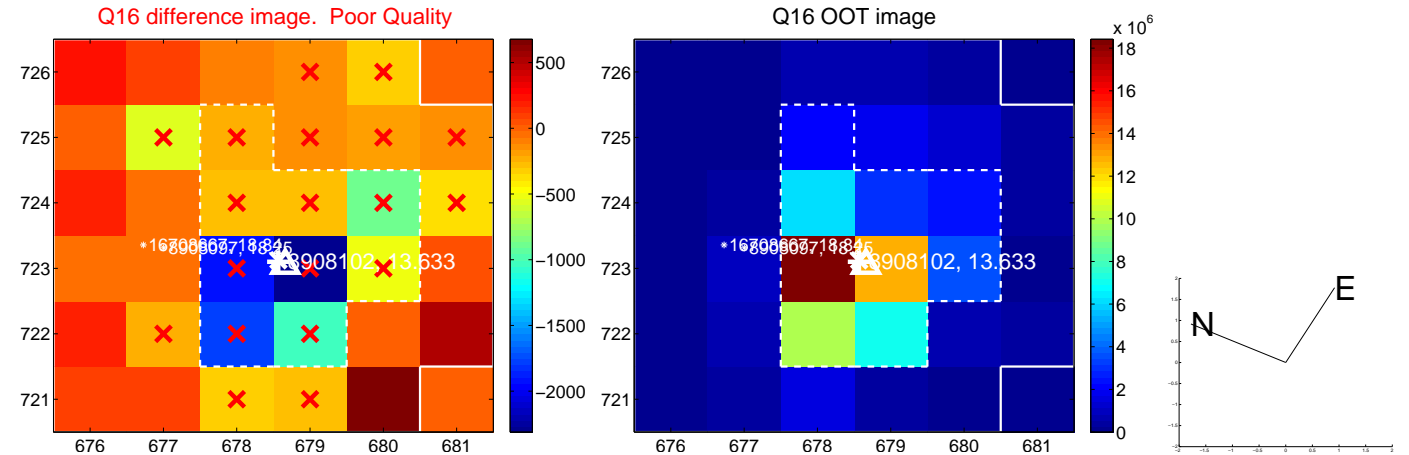
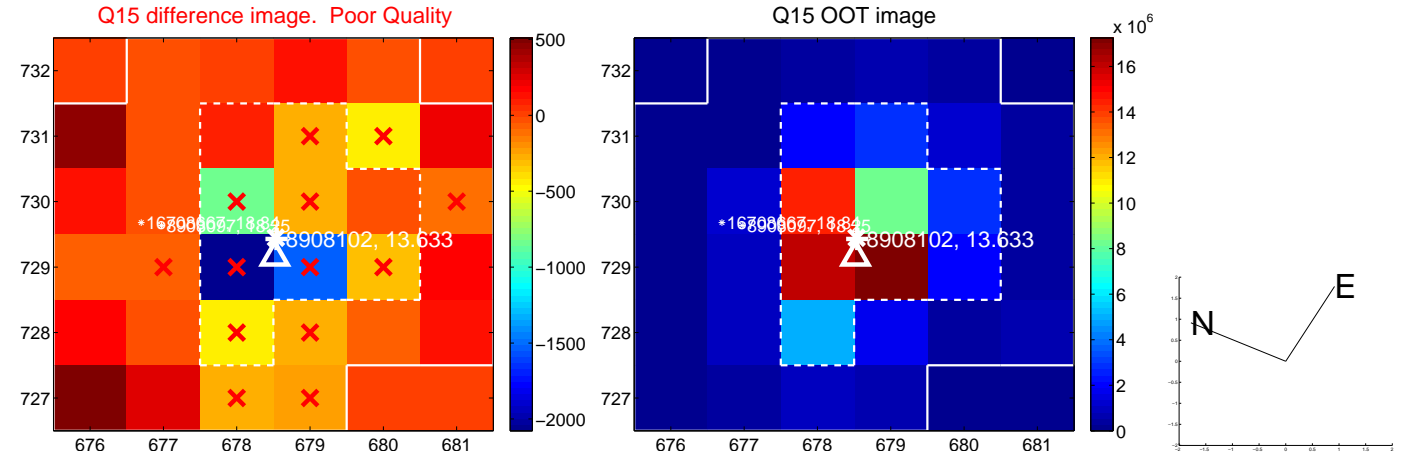
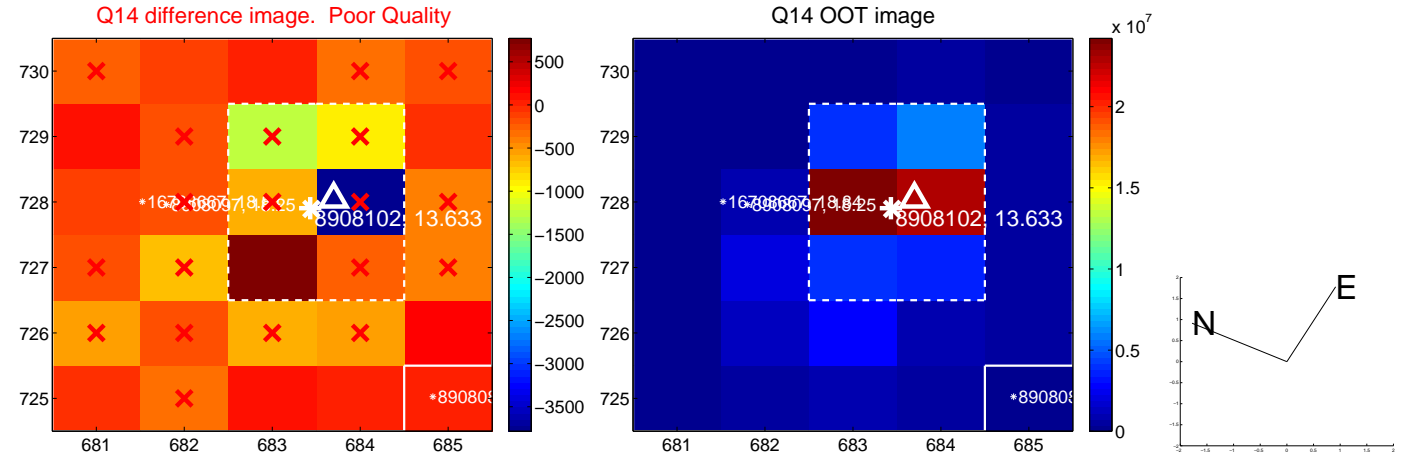
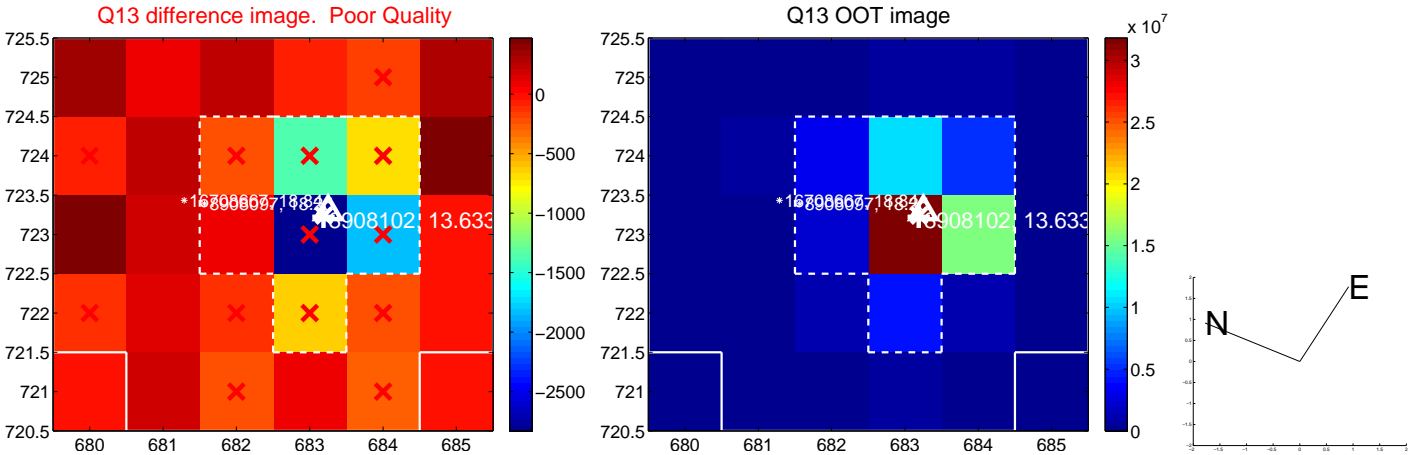
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



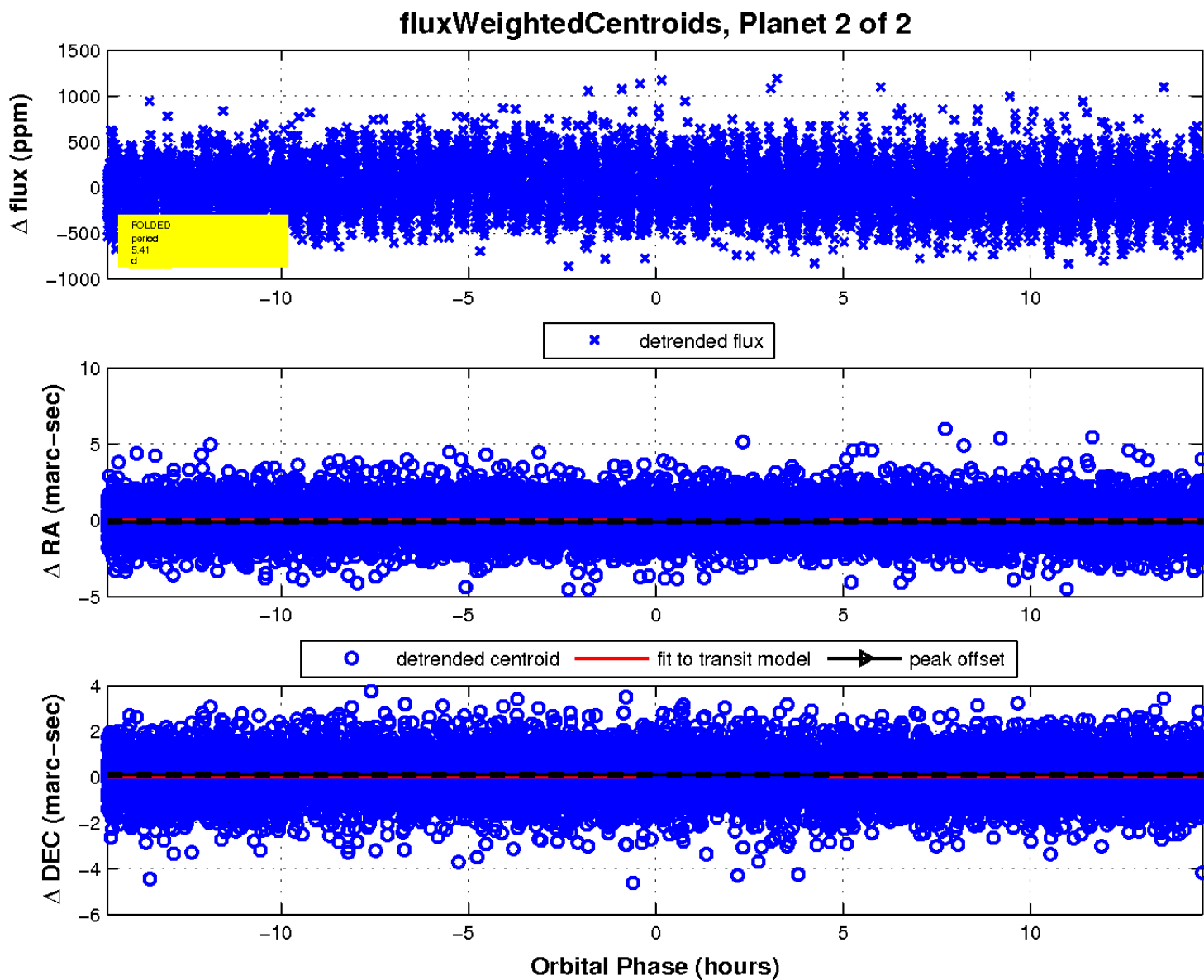
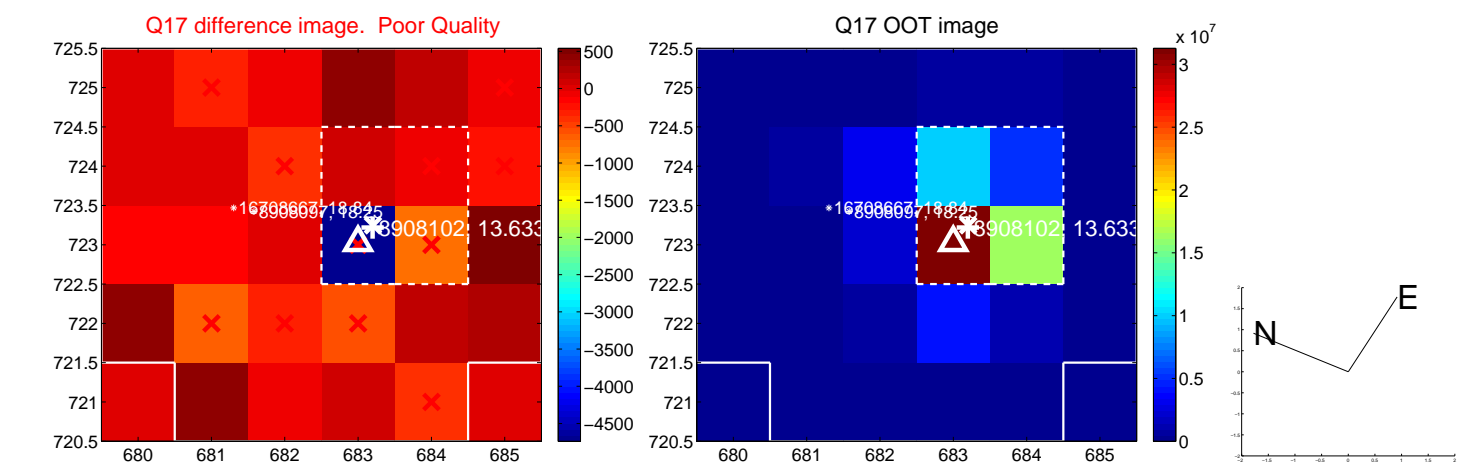
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

