

KIC 010092312

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})
010092312-01	OBS	1823.01	4.468468	134.271867	829.6	1.095	56.5	66.5	0.94	5869	3.25	322.83
010092312-02	OBS	1823.02	1.096598	132.511214	186.4	1.846	33.8	38.7	0.94	5869	1.53	2101.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010092312-01	OBS	FP	0.00	0	1	0	0	MOD_ODDEVEN_DV
010092312-02	OBS	FP	0.00	0	1	1	1	MOD_SEC_ALT—CENT_RESOLVED_OFFSET—EPHEM_MATCH

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

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

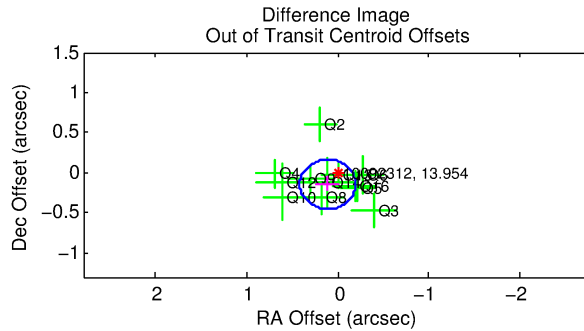
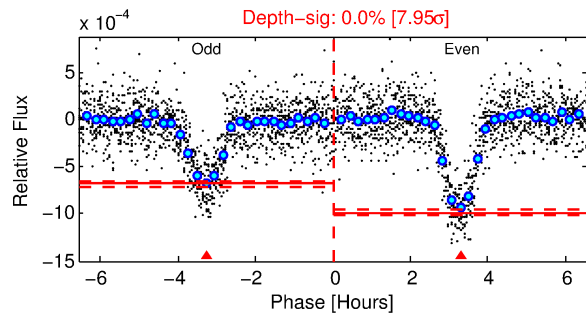
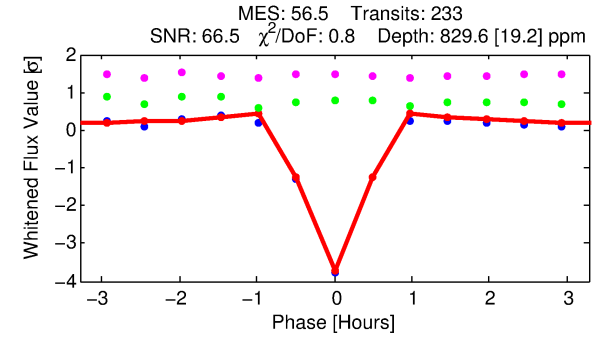
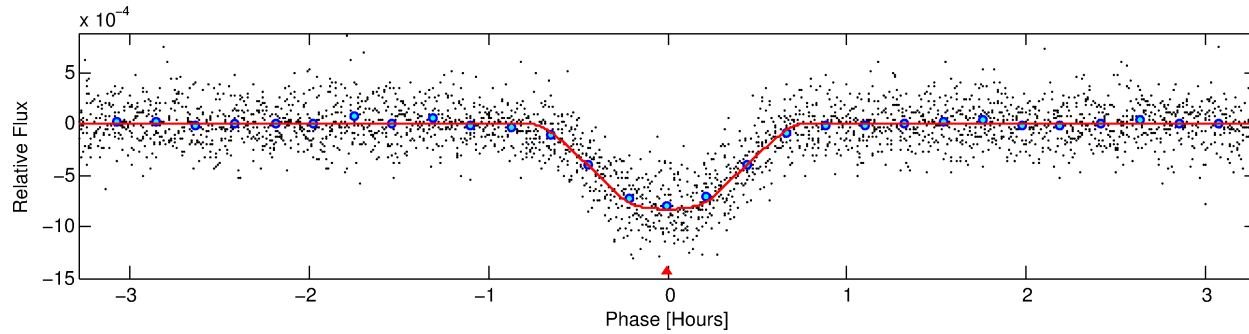
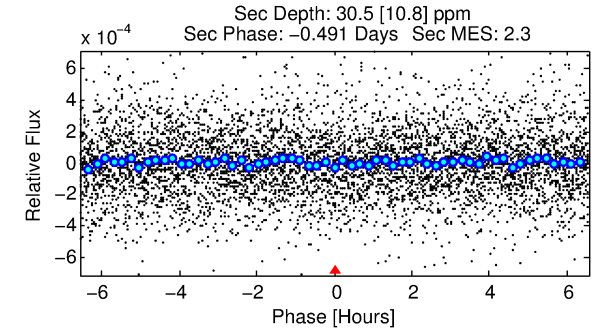
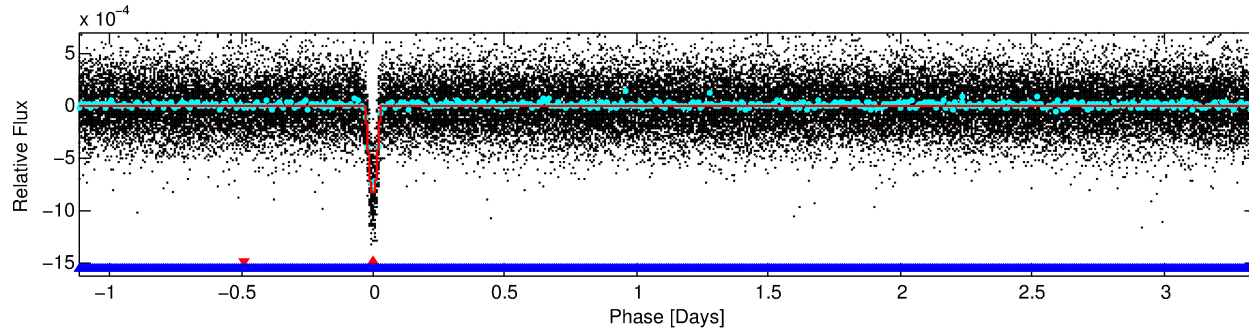
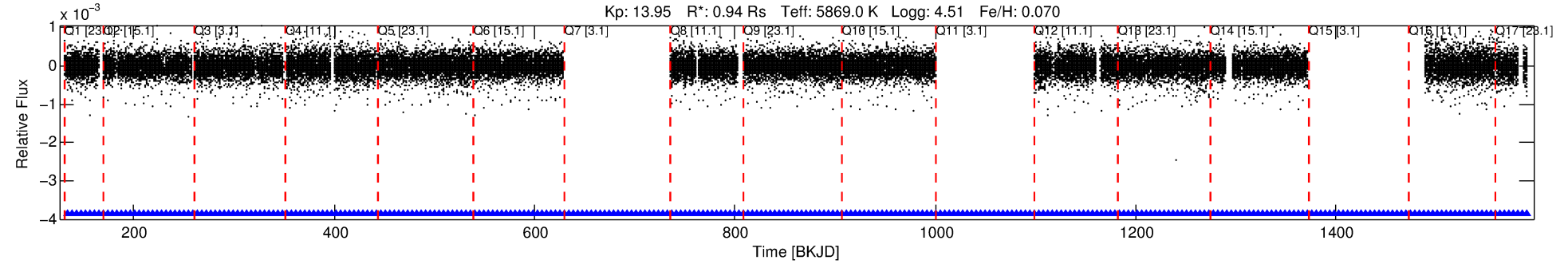
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010092312-01

No Significant Match Found

DV One-Page Summary

KIC: 10092312 Candidate: 1 of 2 Period: 4.468 d
KOI: K01823.01 Corr: 0.887



DV Fit Results:

Period = 4.46847 [0.00000] d
Epoch = 134.2719 [0.0003] BKJD
Rp/R* = 0.0317 [0.0026]
a/R* = 15.74 [5.86]
b = 0.90 [0.08]
Seff = 322.83 [126.91]
Teq = 1081 [106] K
Rp = 3.25 [0.98] Re
a = 0.0541 [0.0134] AU
Ag = 4.62 [2.49] [1.46σ]
Teffp = 2451 [255] K [4.97σ]

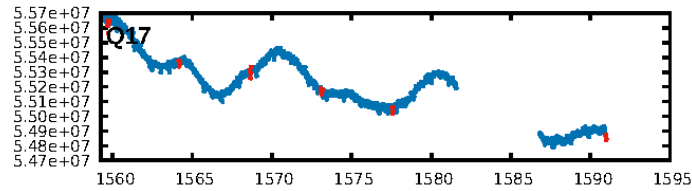
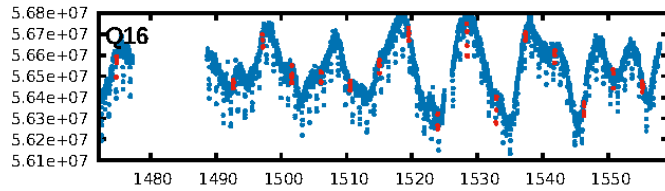
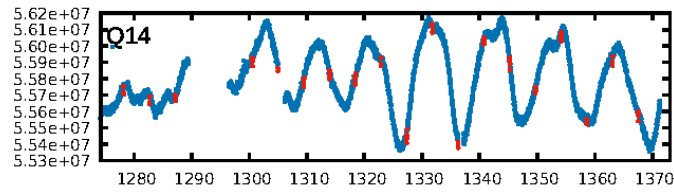
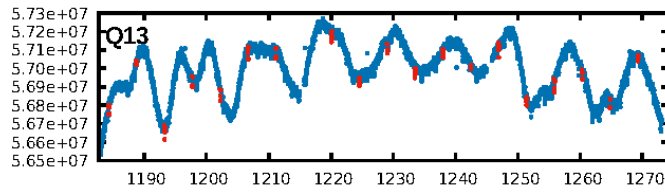
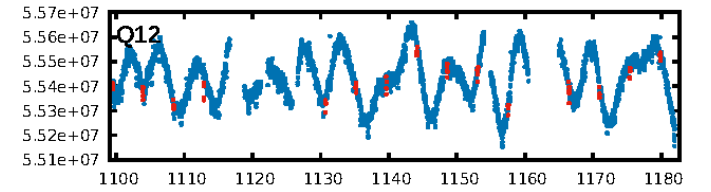
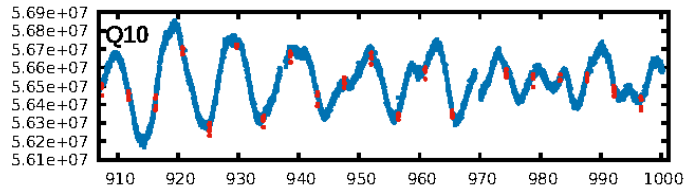
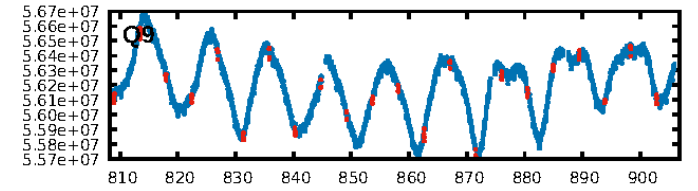
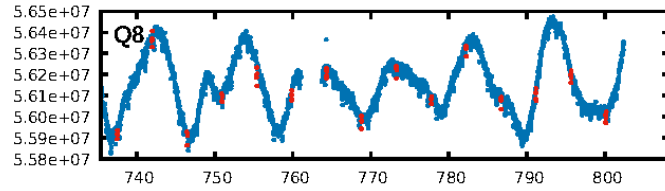
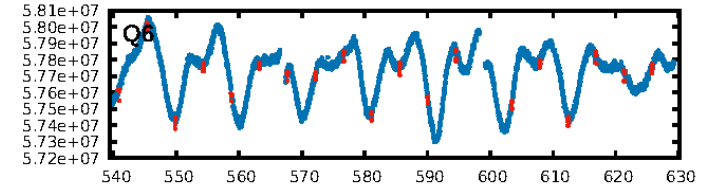
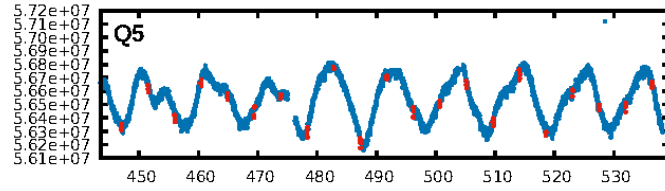
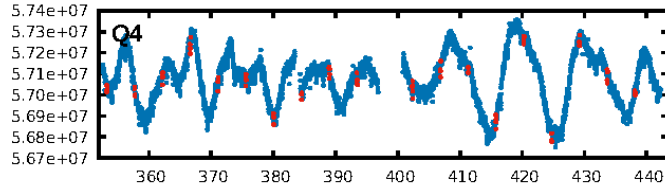
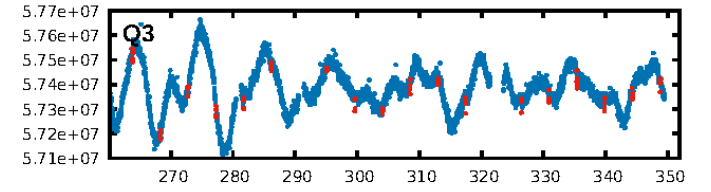
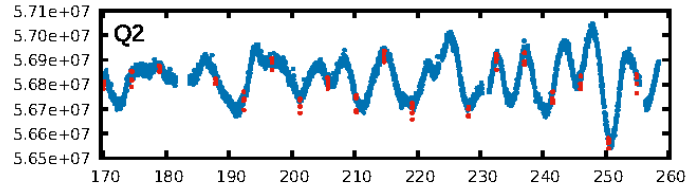
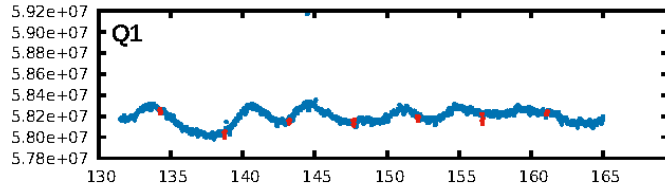
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [37.70σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [220/220]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 0.498 arcsec [2.62σ]
OotOffset-rm: 0.183 arcsec [1.78σ]
KicOffset-rm: 0.411 arcsec [3.04σ]
OotOffset-st: 4/1/4/3 [12]
KicOffset-st: 4/1/4/3 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 1.00 [14/14]

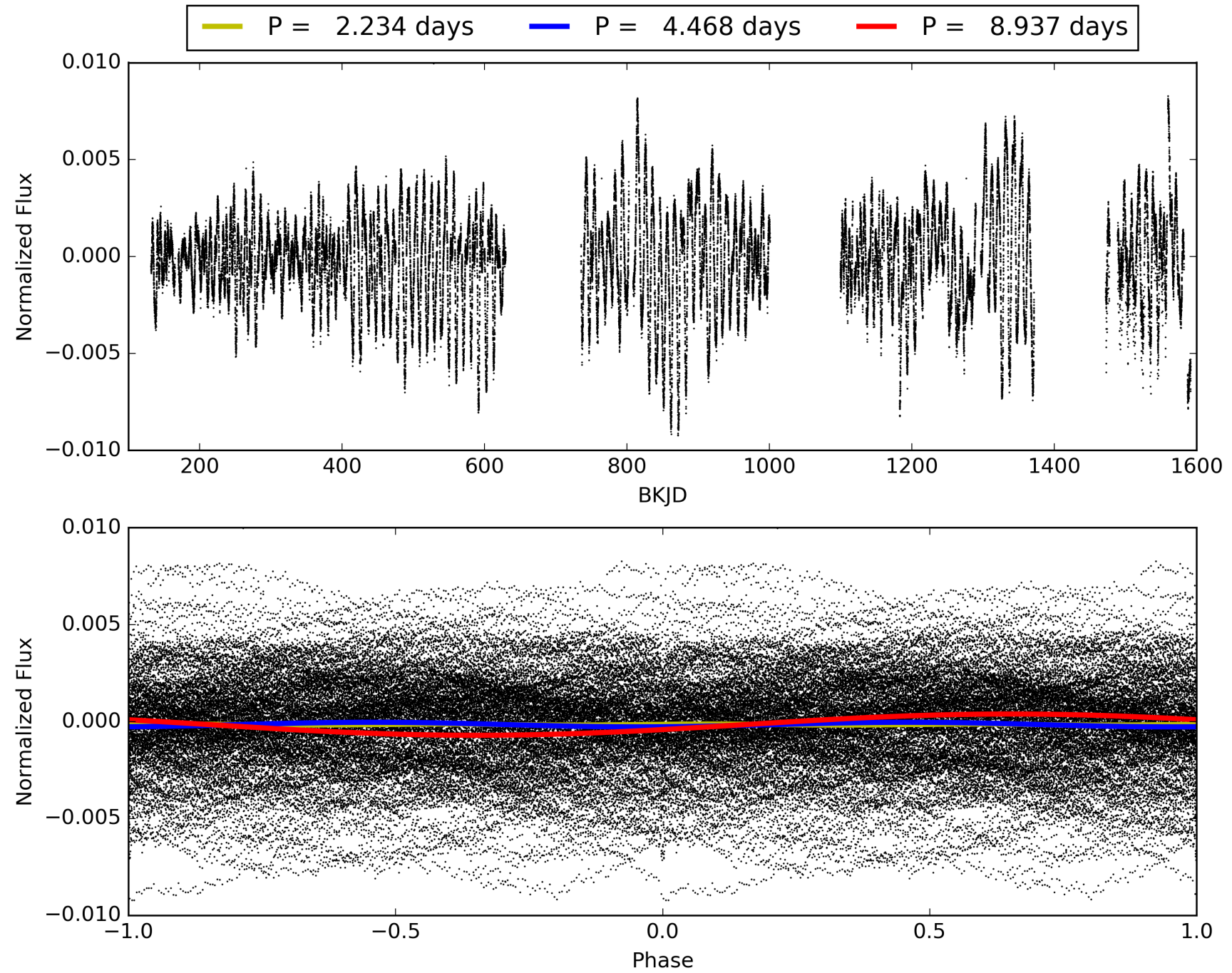
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010092312-01, PDC Light Curves

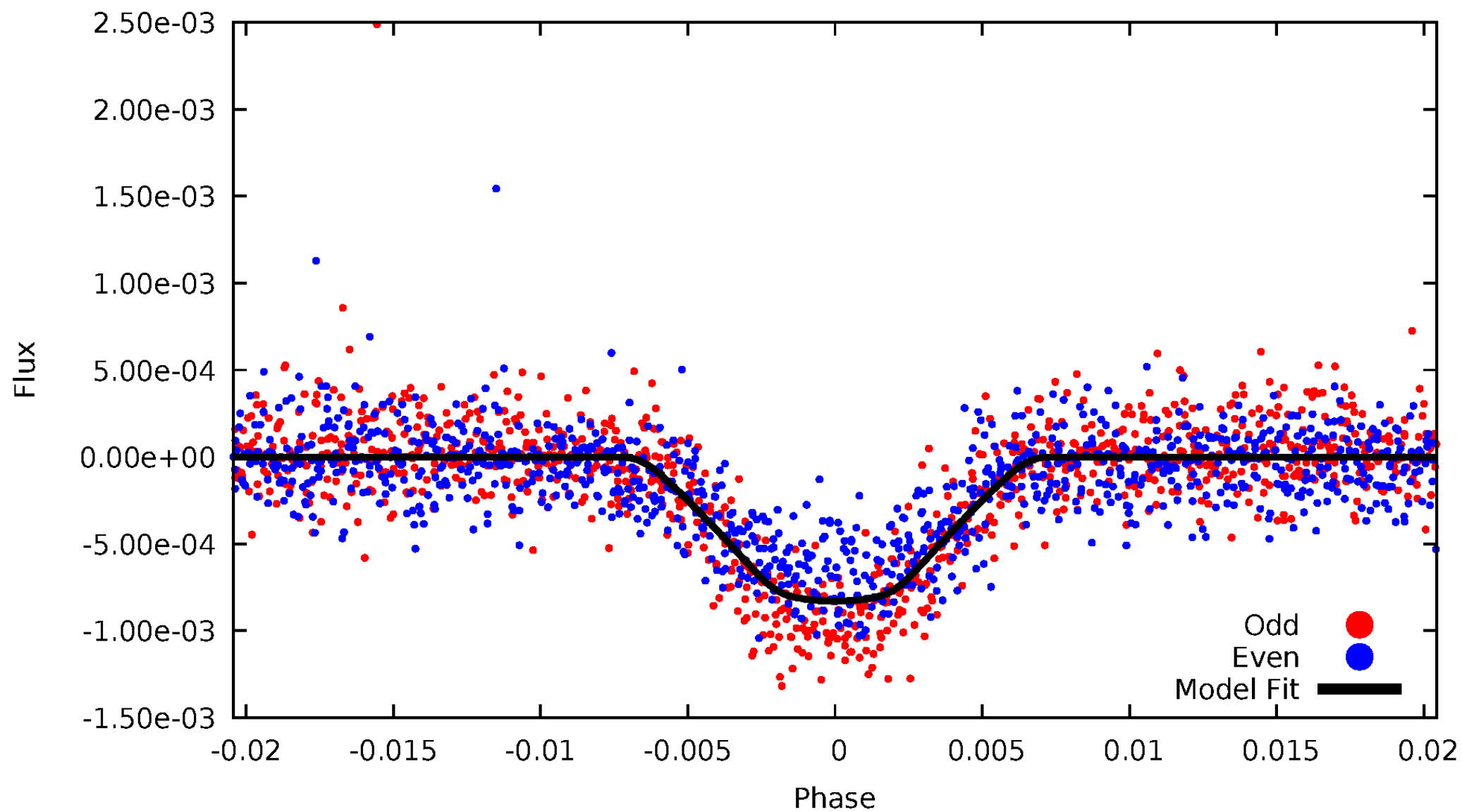


TCE 010092312-01



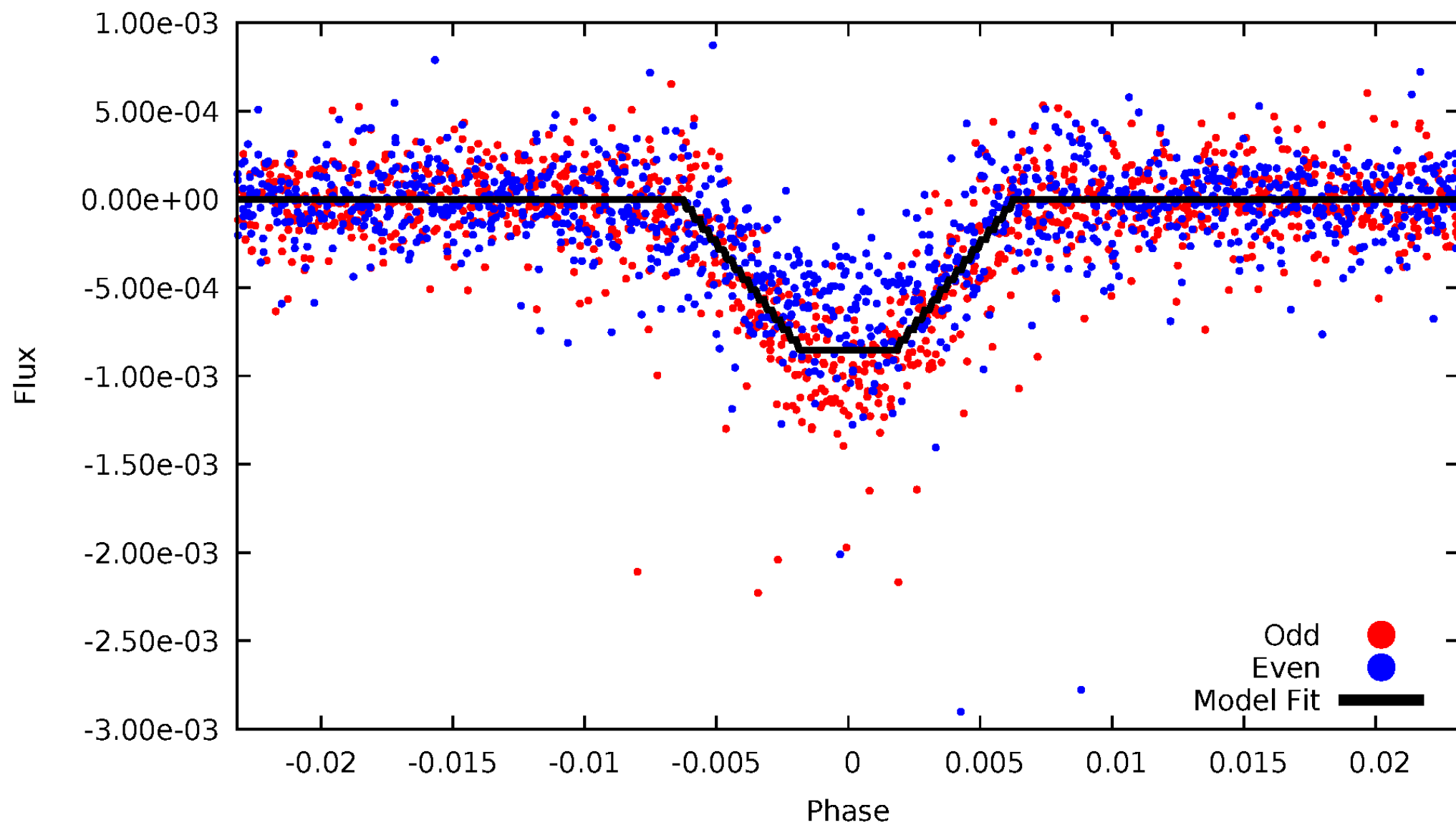
DV Odd/Even

TCE 010092312-01



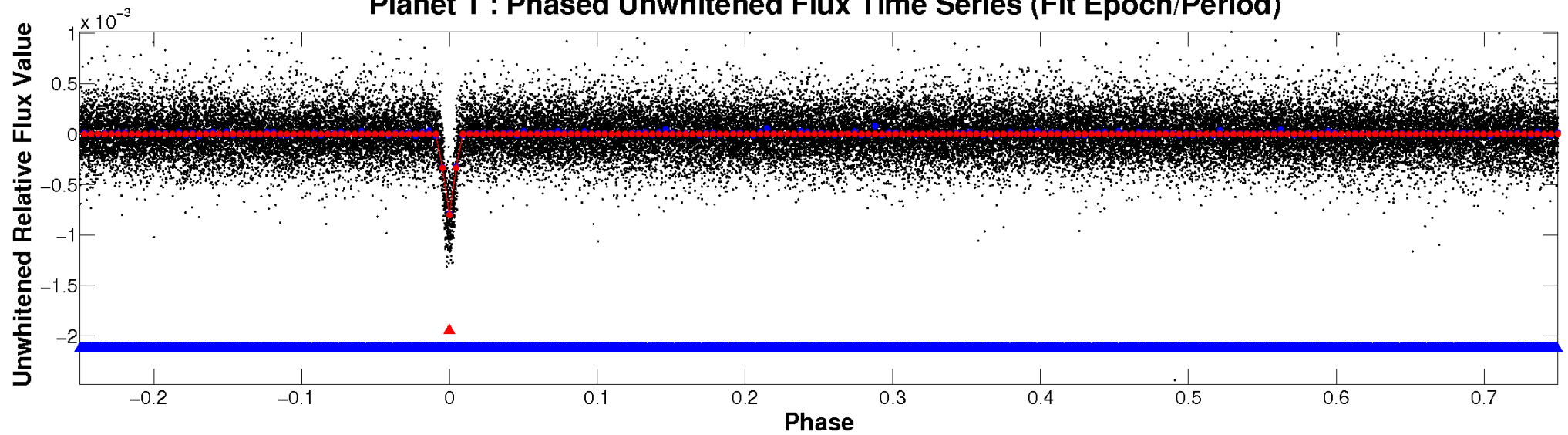
ALT Odd/Even

TCE 010092312-01

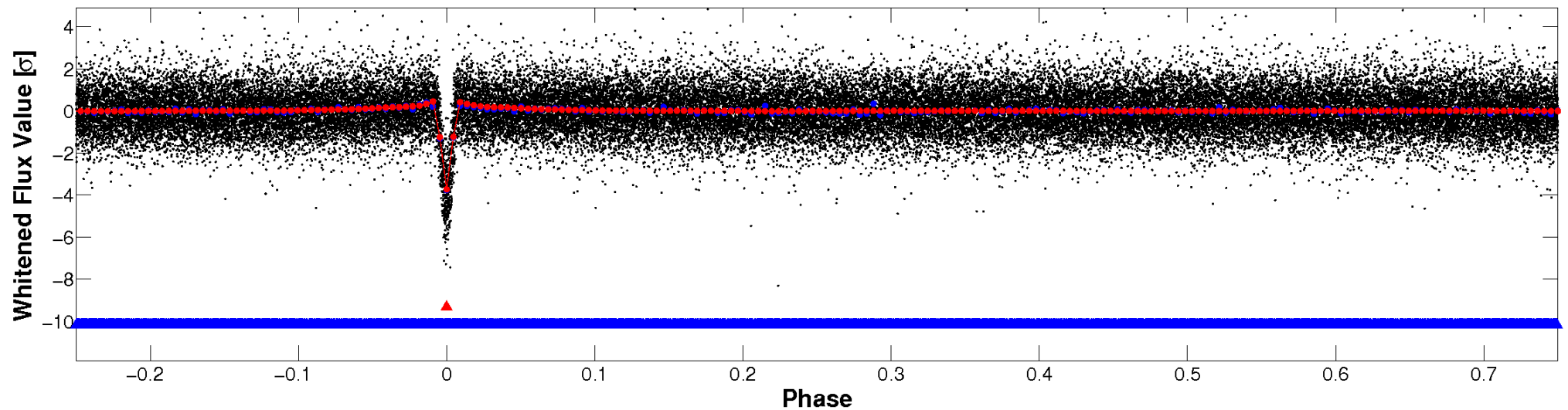


Non-Whitened Vs. Whitened Light Curve

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

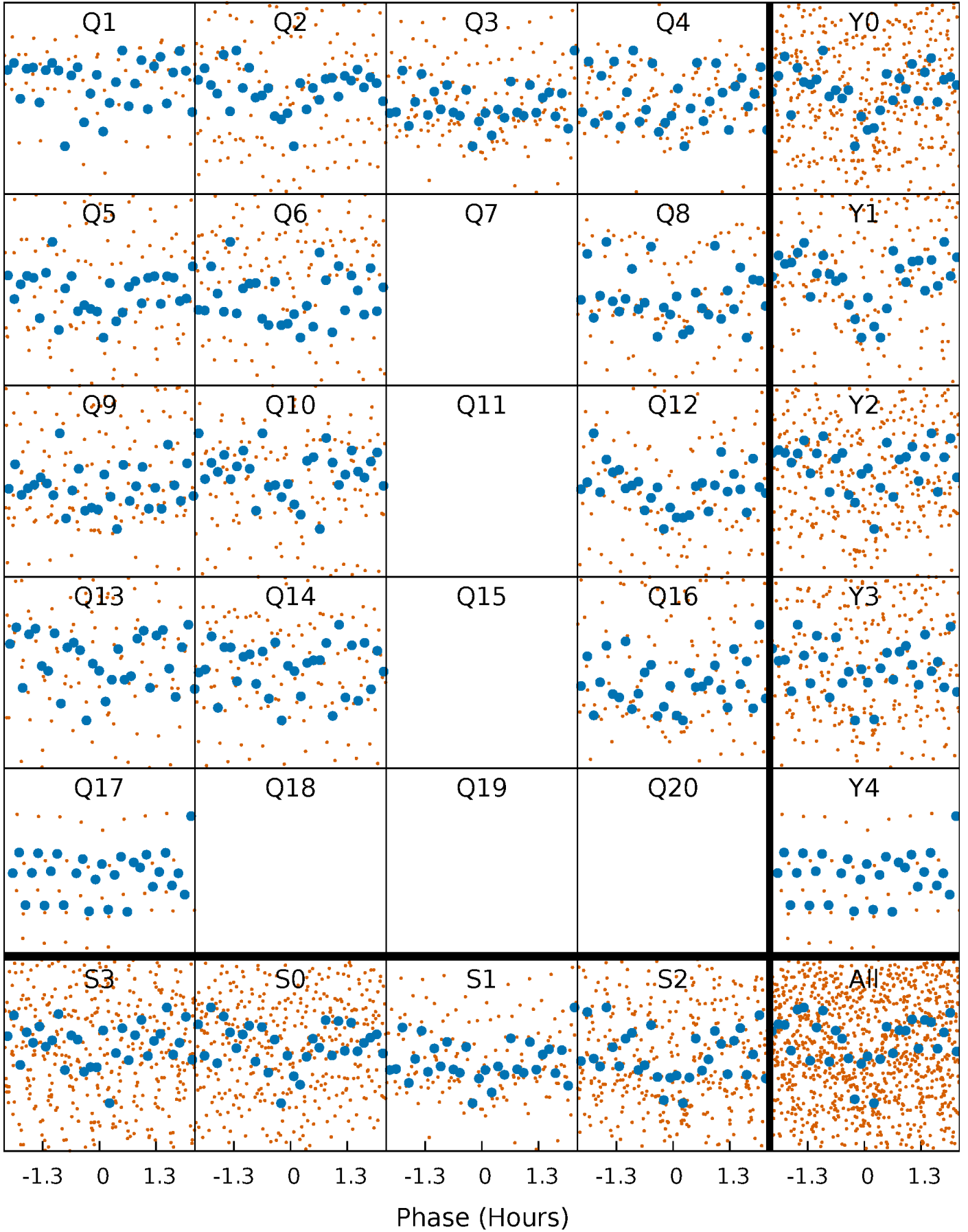


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



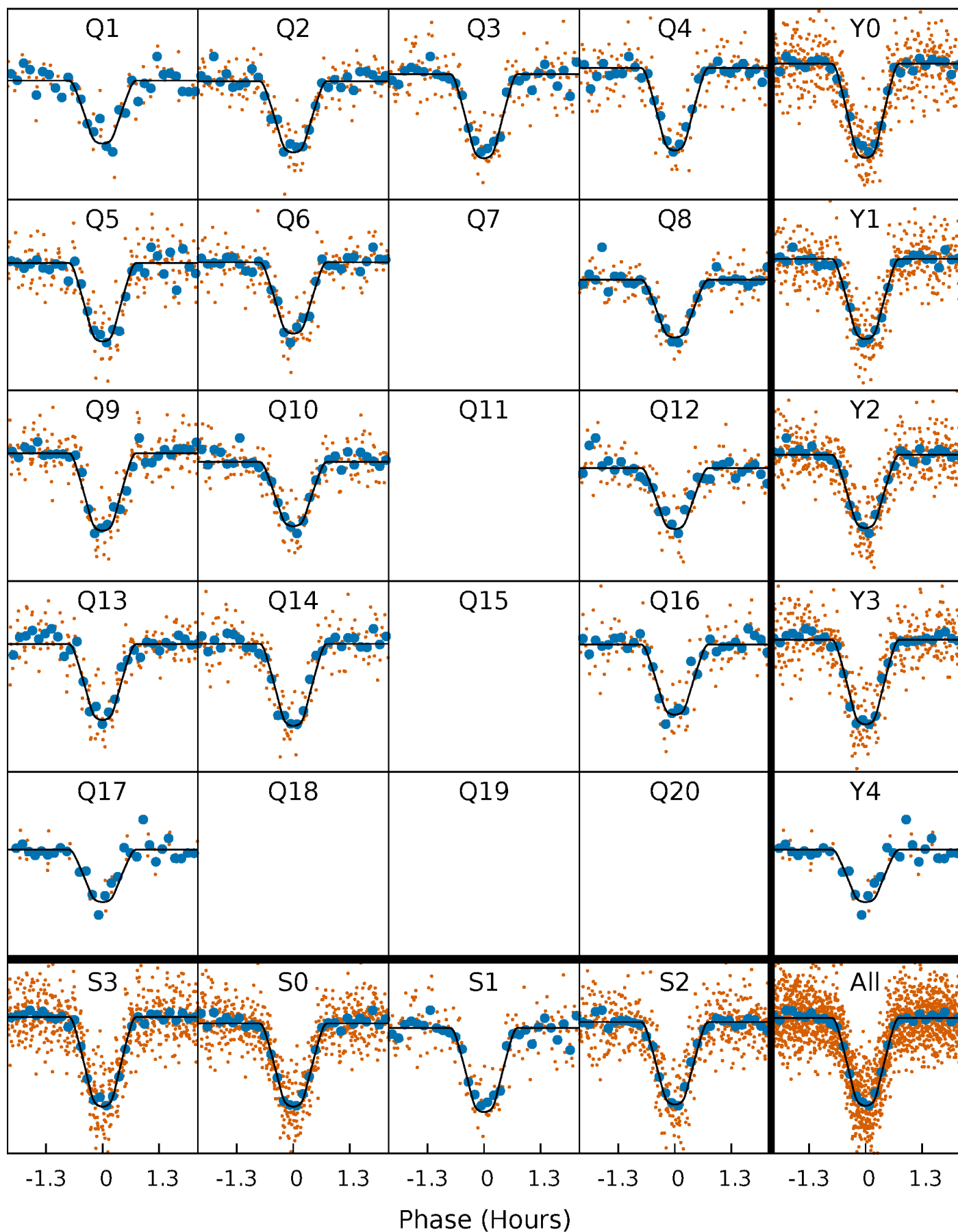
PDC Quarter-Phased Transit Curves

TCE 010092312-01 P= 4.468468 Days $T_0=134.271867$ (BKJD)



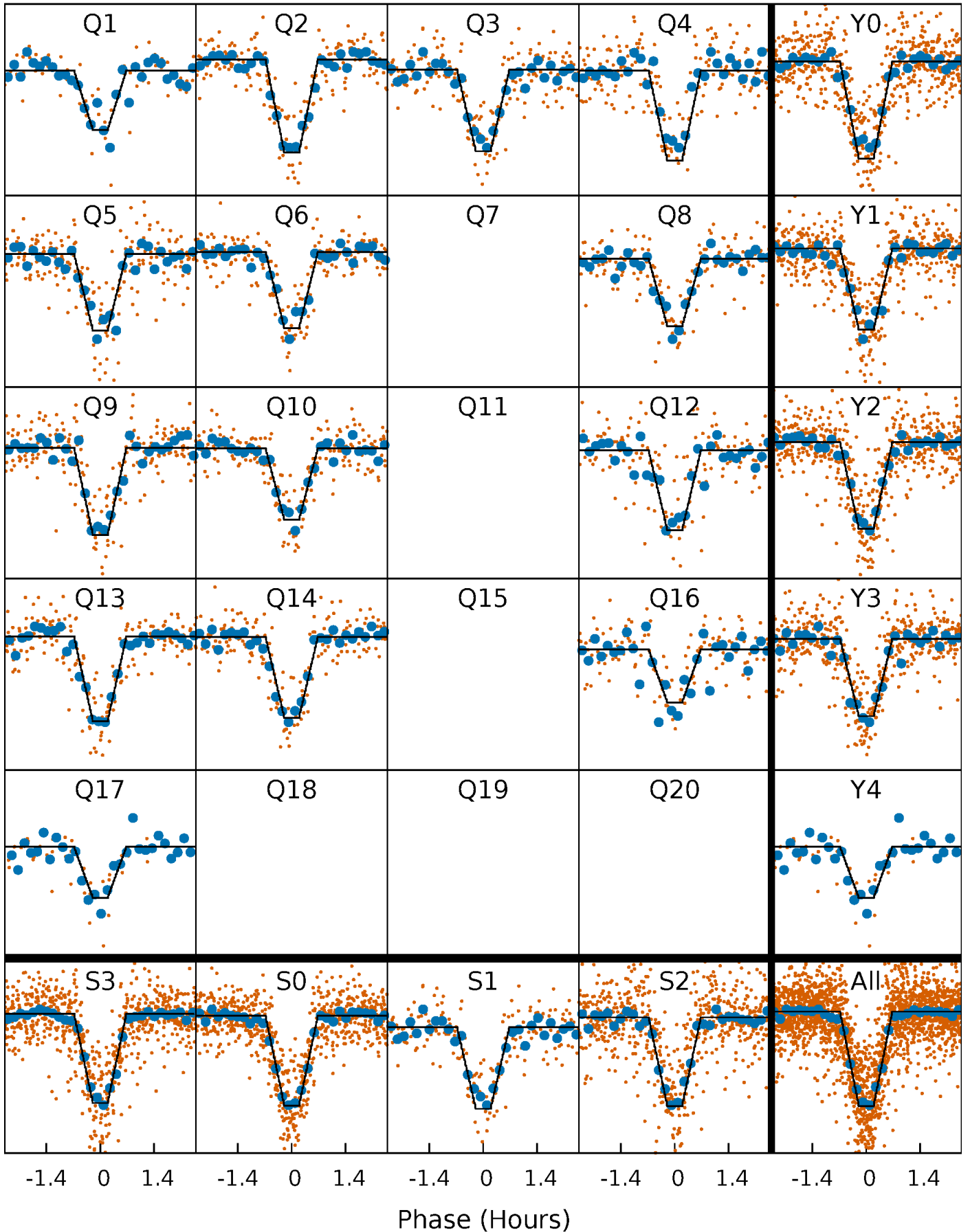
DV Quarter-Phased Transit Curves

TCE 010092312-01 P= 4.468468 Days $T_0=134.271867$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

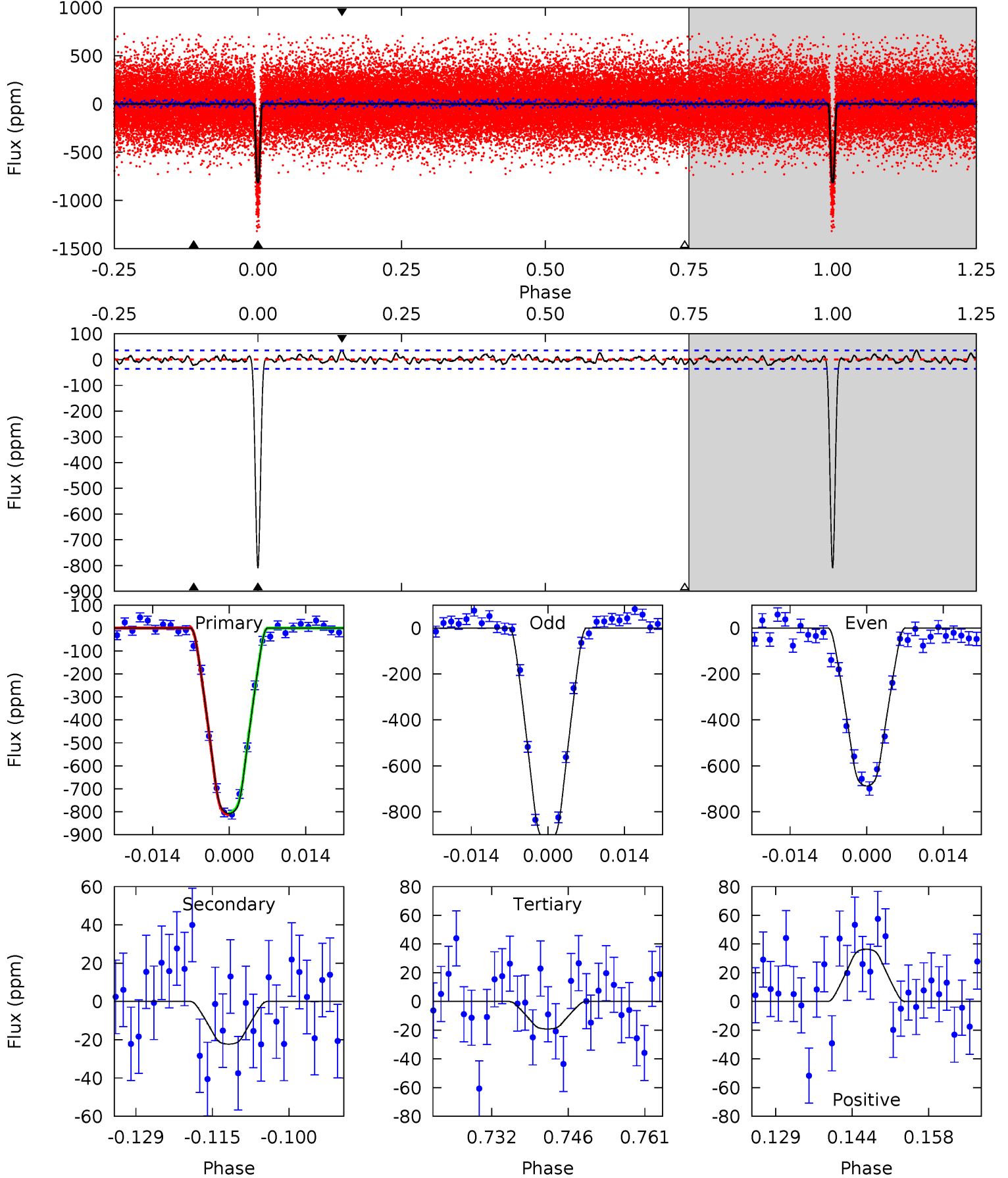
TCE 010092312-01 $P = 4.468467$ Days $T_0 = 134.271670$ (BKJD)



DV Model-Shift Uniqueness Test

010092312-01, P = 4.468468 Days, E = 129.803399 Days

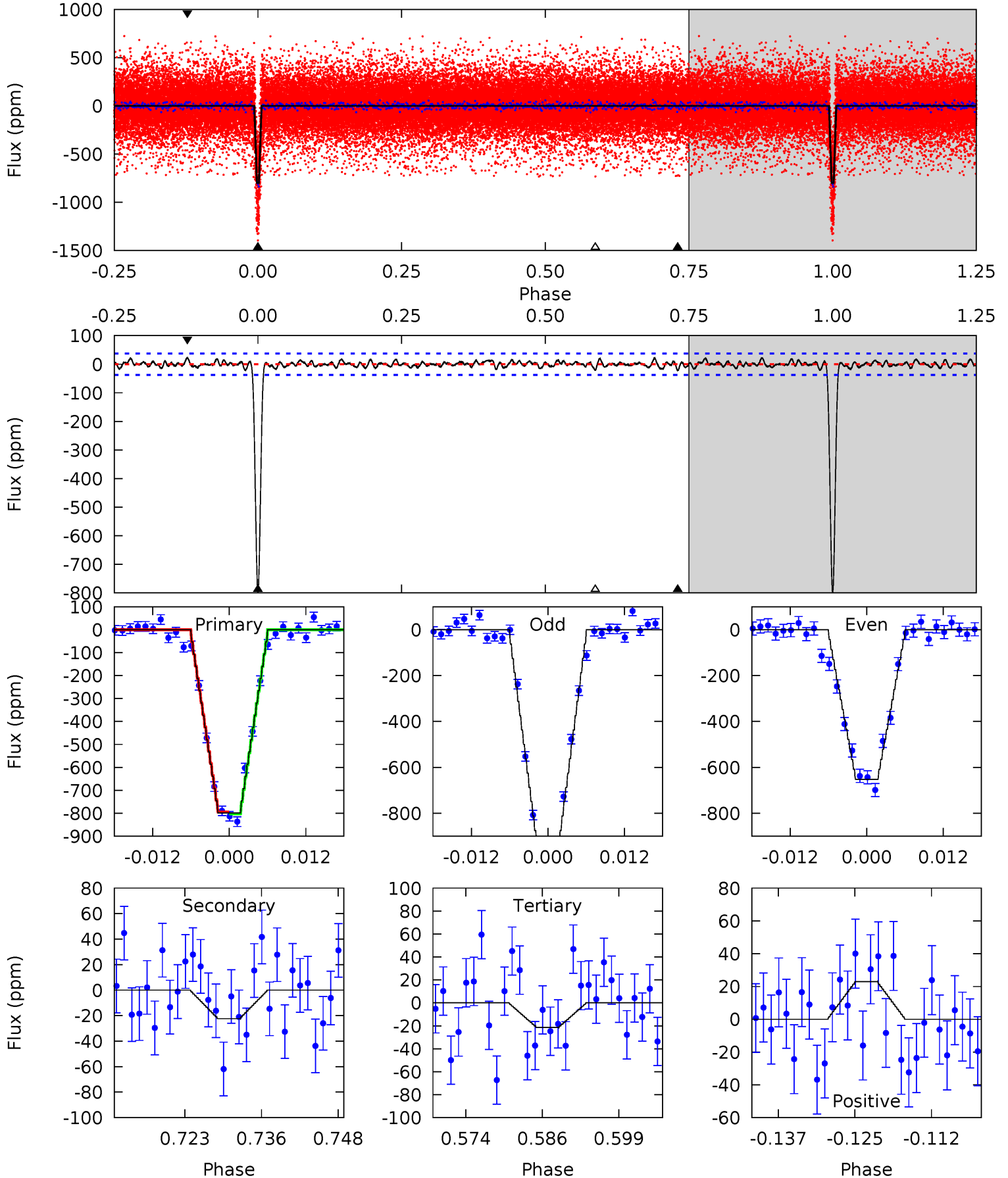
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
111.6	3.08	2.65	5.02	4.96	2.45	1.21	108.9	106.5	0.43	-1.95	16.6	1.00	0.04	0.57



Alt Model-Shift Uniqueness Test

010092312-01, P = 4.468467 Days, E = 129.803203 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
106.3	2.98	2.85	3.05	4.98	2.50	0.99	103.4	103.2	0.13	-0.07	19.1	1.01	0.03	0.57



Stellar Parameters For KIC 010092312

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5869^{+142}_{-203}	$4.513^{+0.036}_{-0.204}$	$0.070^{+0.250}_{-0.300}$	$0.942^{+0.273}_{-0.091}$	$1.054^{+0.112}_{-0.137}$	$1.776^{+0.350}_{-0.912}$
	+2%/-3%	+1%/-5%	+357%/-429%	+29%/-10%	+11%/-13%	+20%/-51%
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 010092312-01 / KOI 1823.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-22 ± 7	$3.42^{+0.56}_{-0.41}$	1549^{+105}_{-78}	2892^{+160}_{-197}	$2.861^{+1.407}_{-1.048}$
Alt.	-22 ± 8	$3.16^{+0.47}_{-0.39}$	1547^{+102}_{-74}	2966^{+178}_{-199}	$3.431^{+1.645}_{-1.332}$

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 $A_{obs} \gg 1.0$

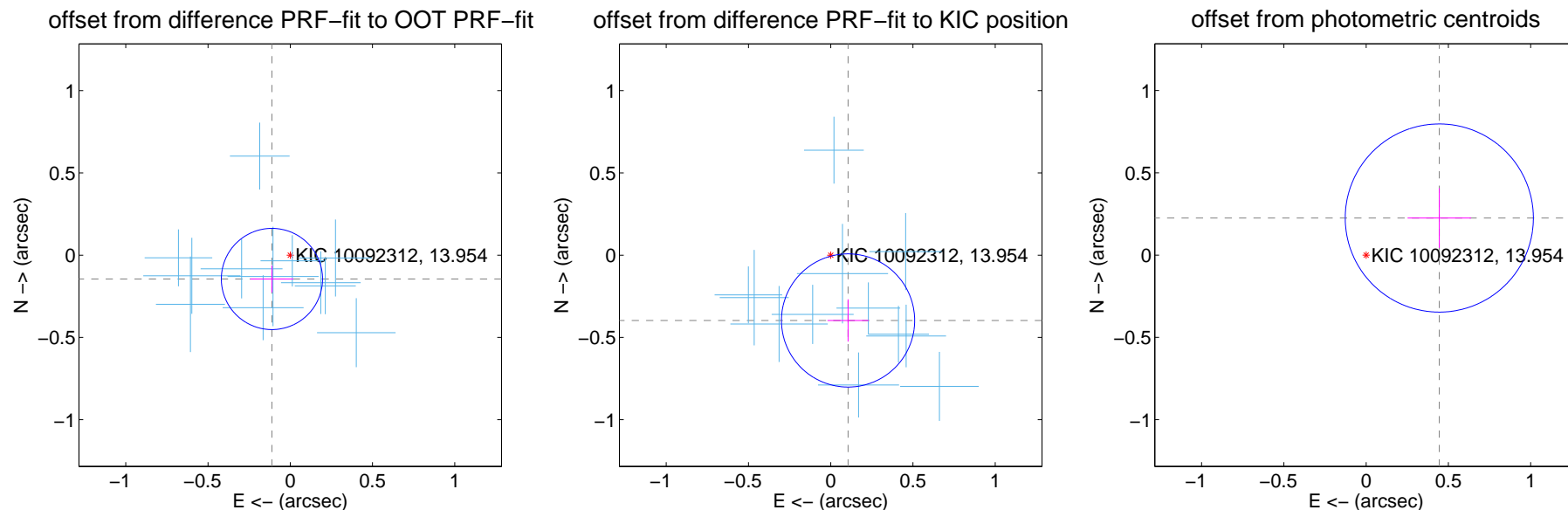
DV Centroid Data

Supplemental centroid analysis for 010092312-01. Kepler magnitude: 13.95. Transit SNR 66.54

There are 12 quarters with good PRF difference image offsets

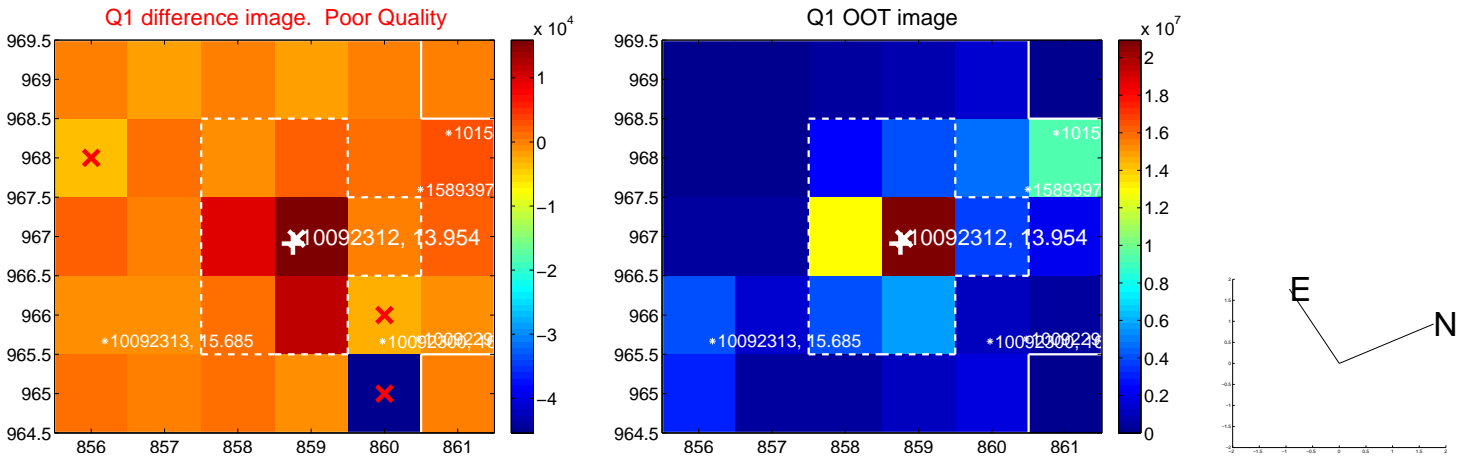
The direct PRF centroid is offset from the target star catalog position by about 0.42 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.183 ± 0.103	1.78	0.111 ± 0.131	-0.145 ± 0.081
PRF-fit source offset from KIC position	0.411 ± 0.135	3.04	-0.105 ± 0.125	-0.397 ± 0.128
photometric centroid source offset	0.50 ± 0.19	2.62	-0.44 ± 0.19	0.23 ± 0.18

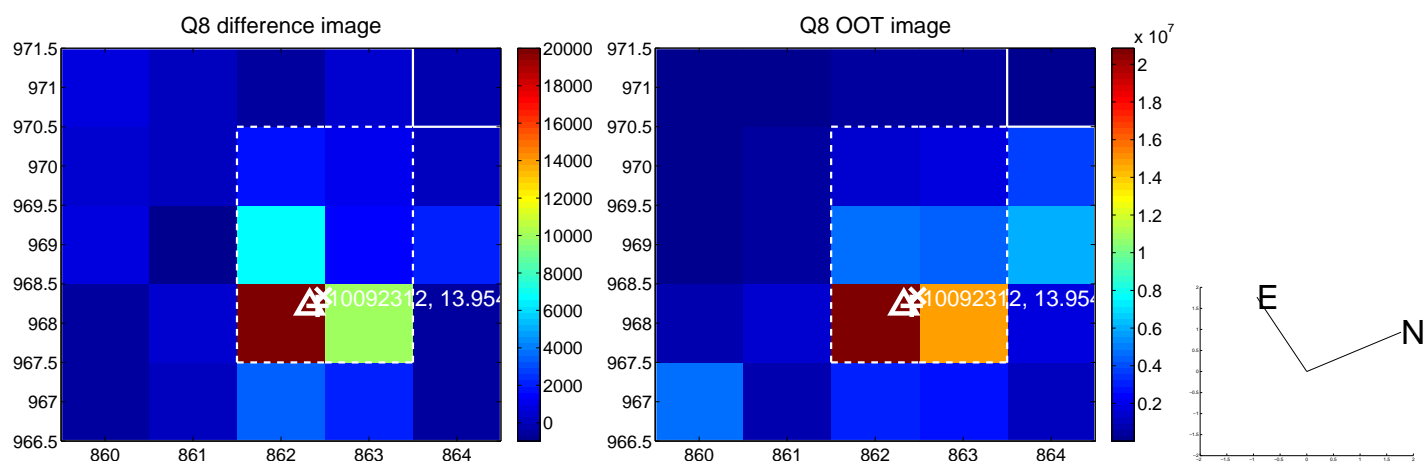
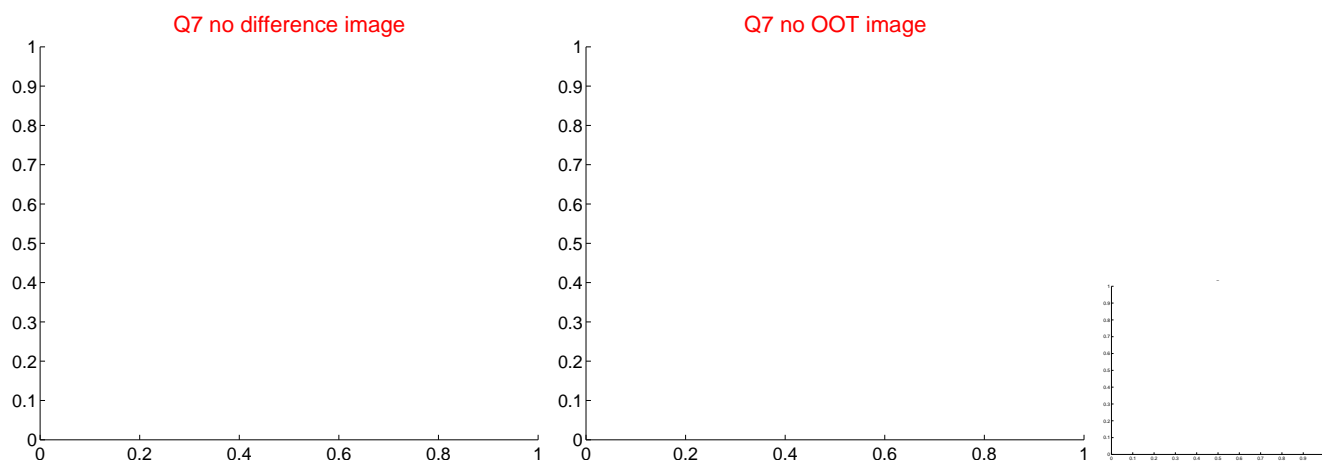
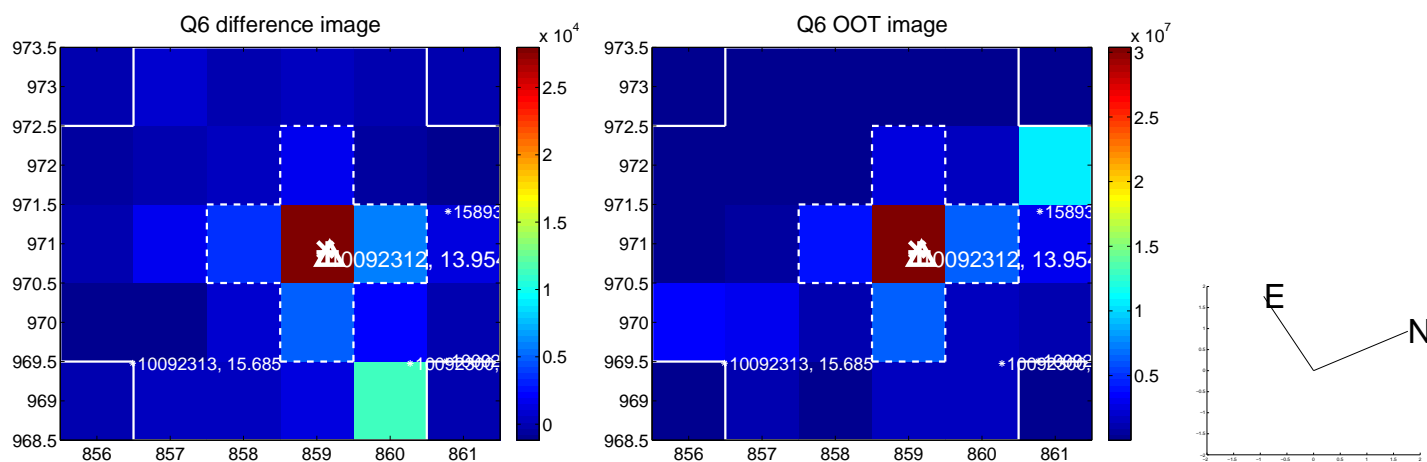
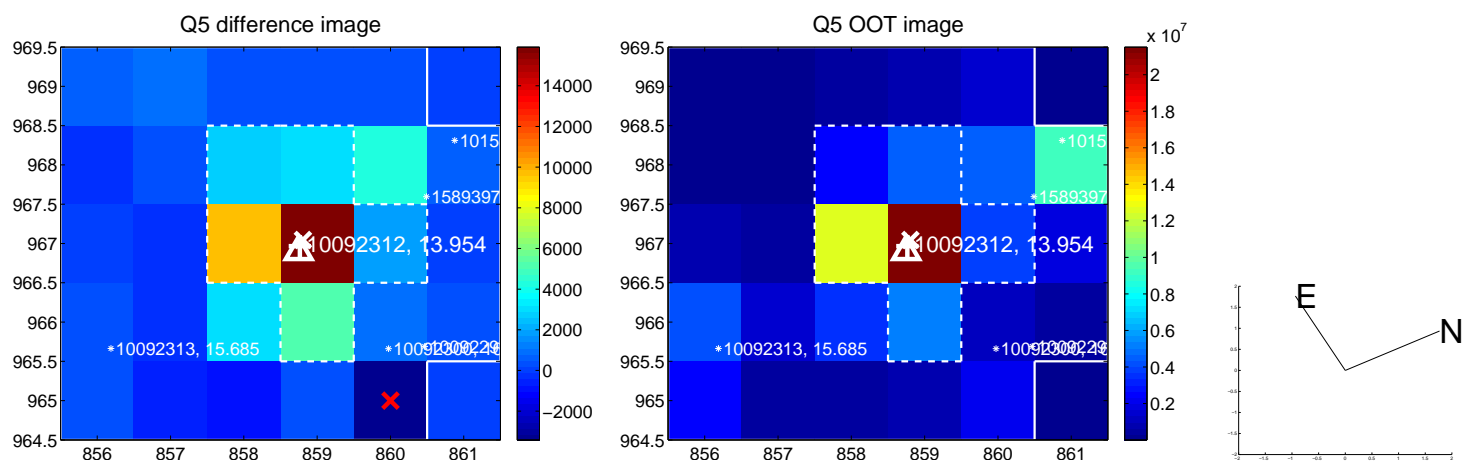


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

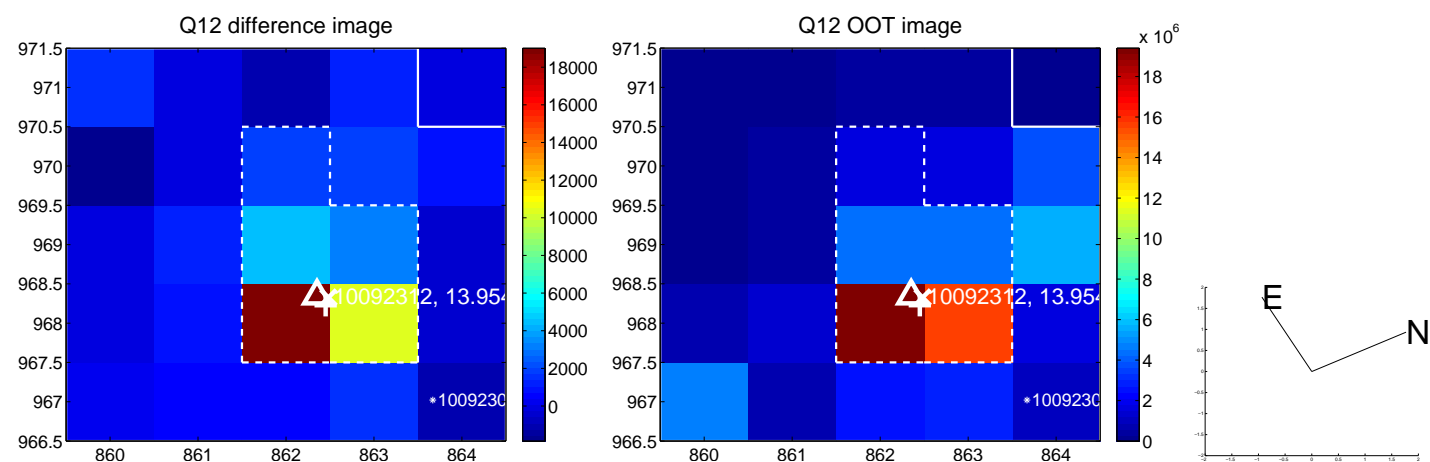
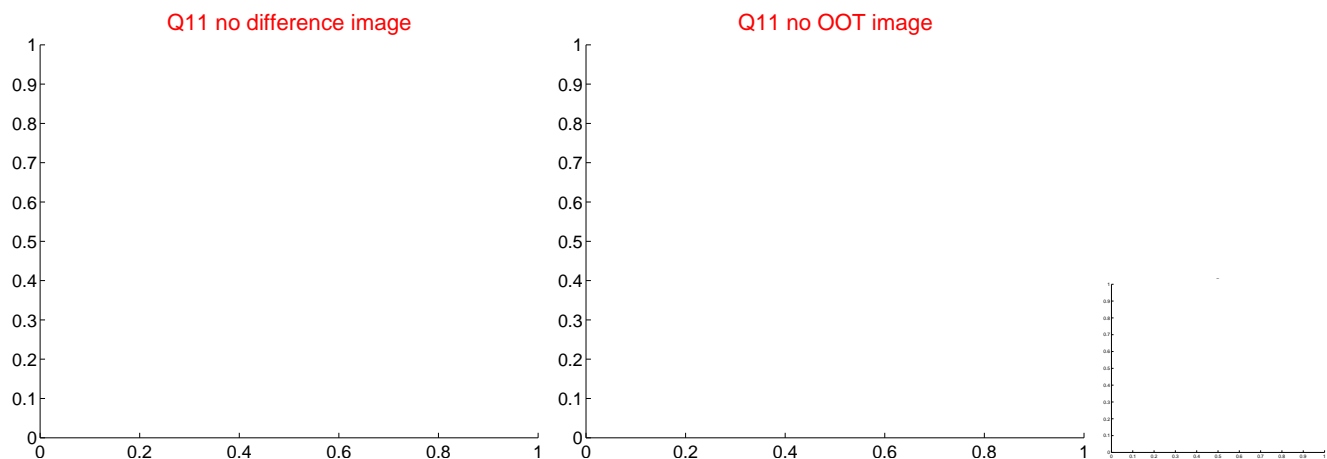
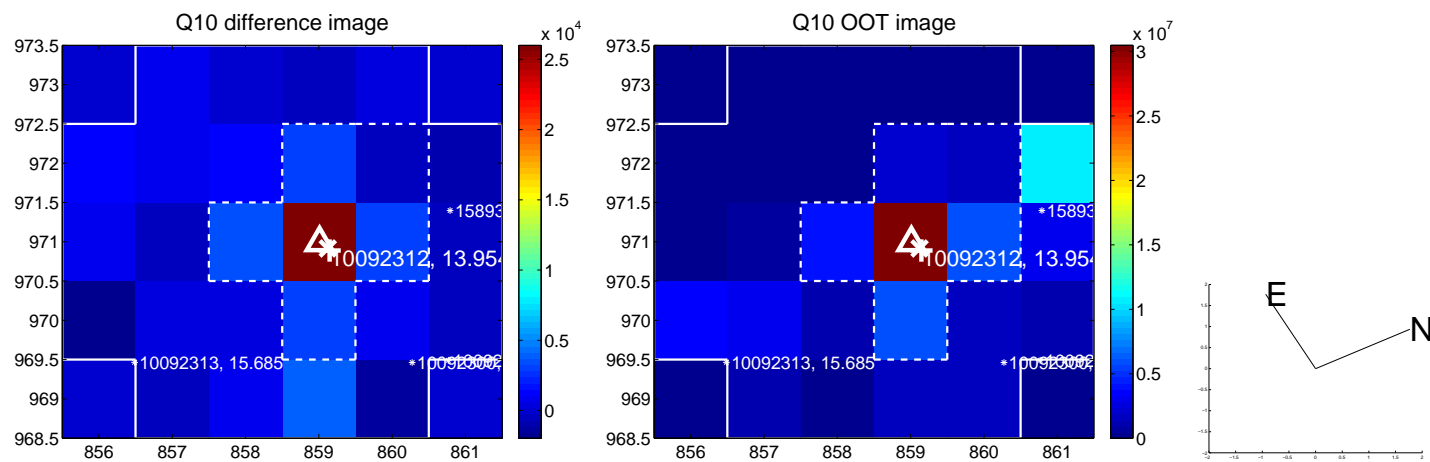
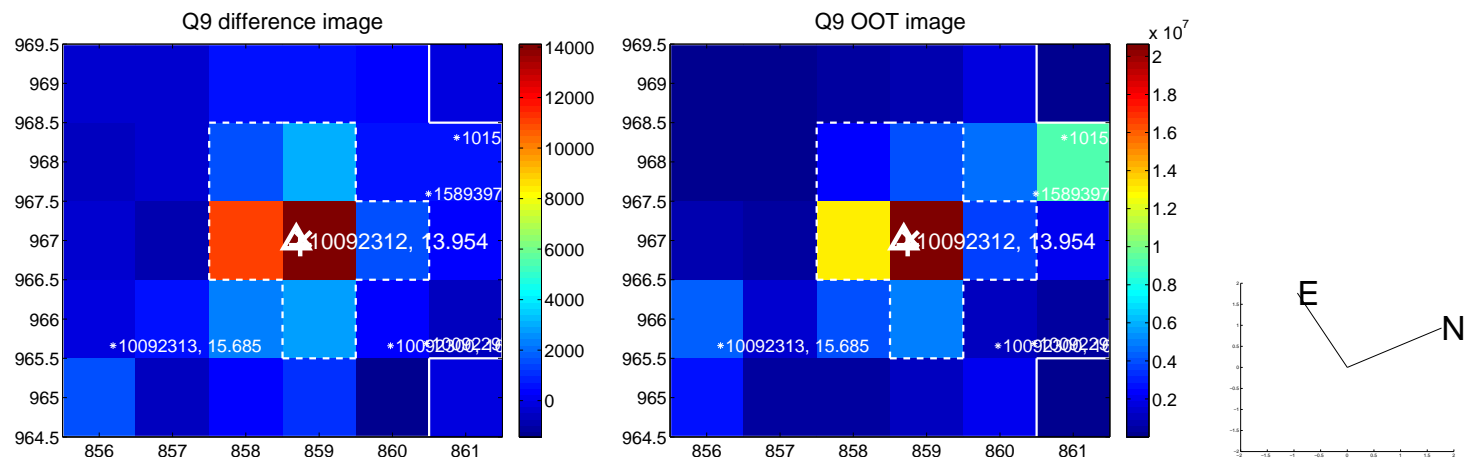
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



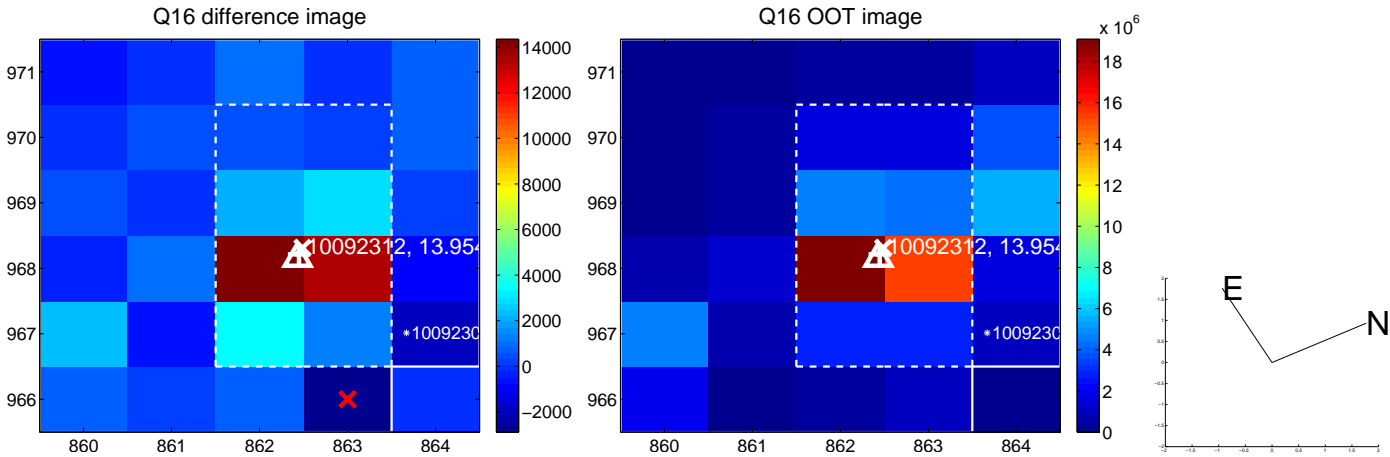
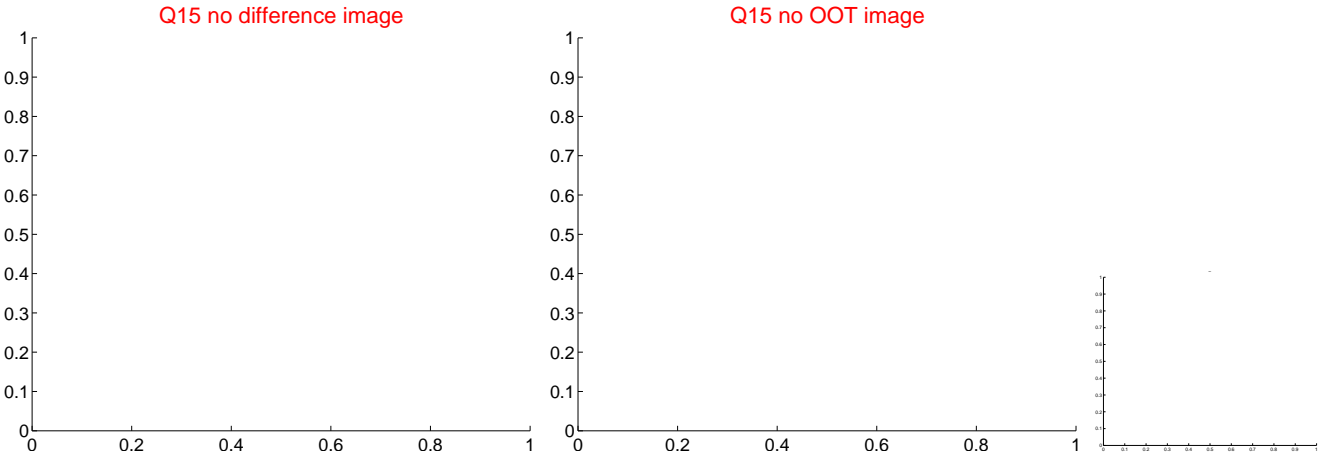
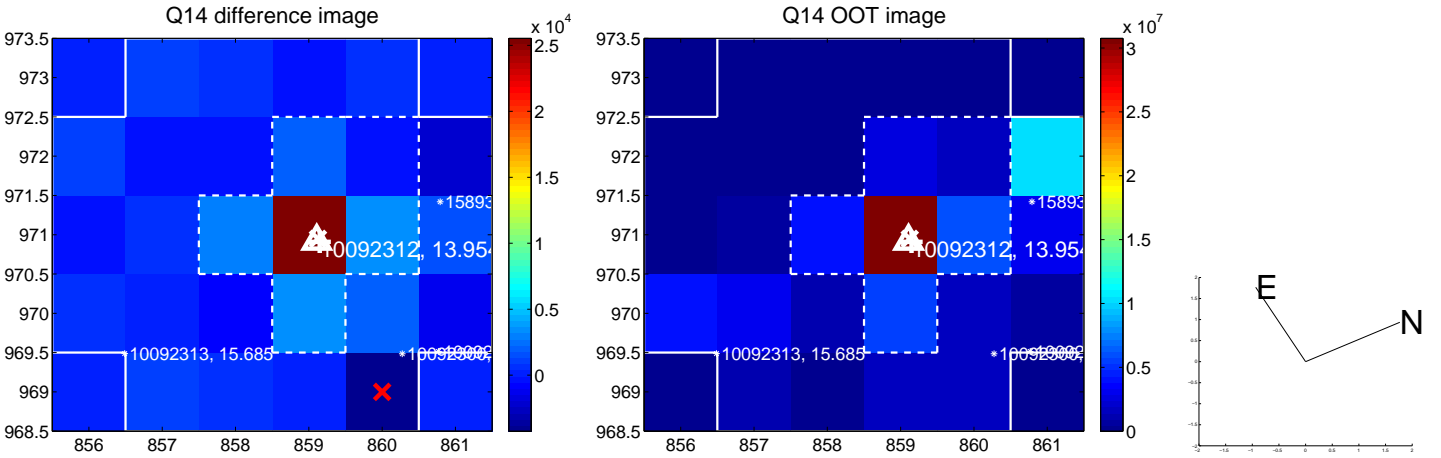
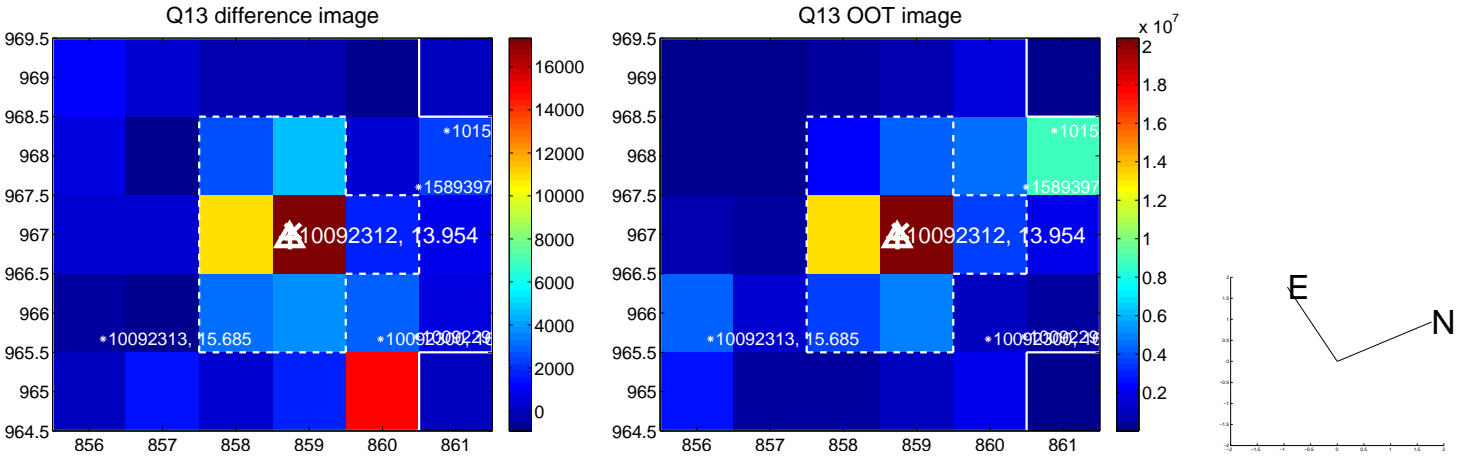
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



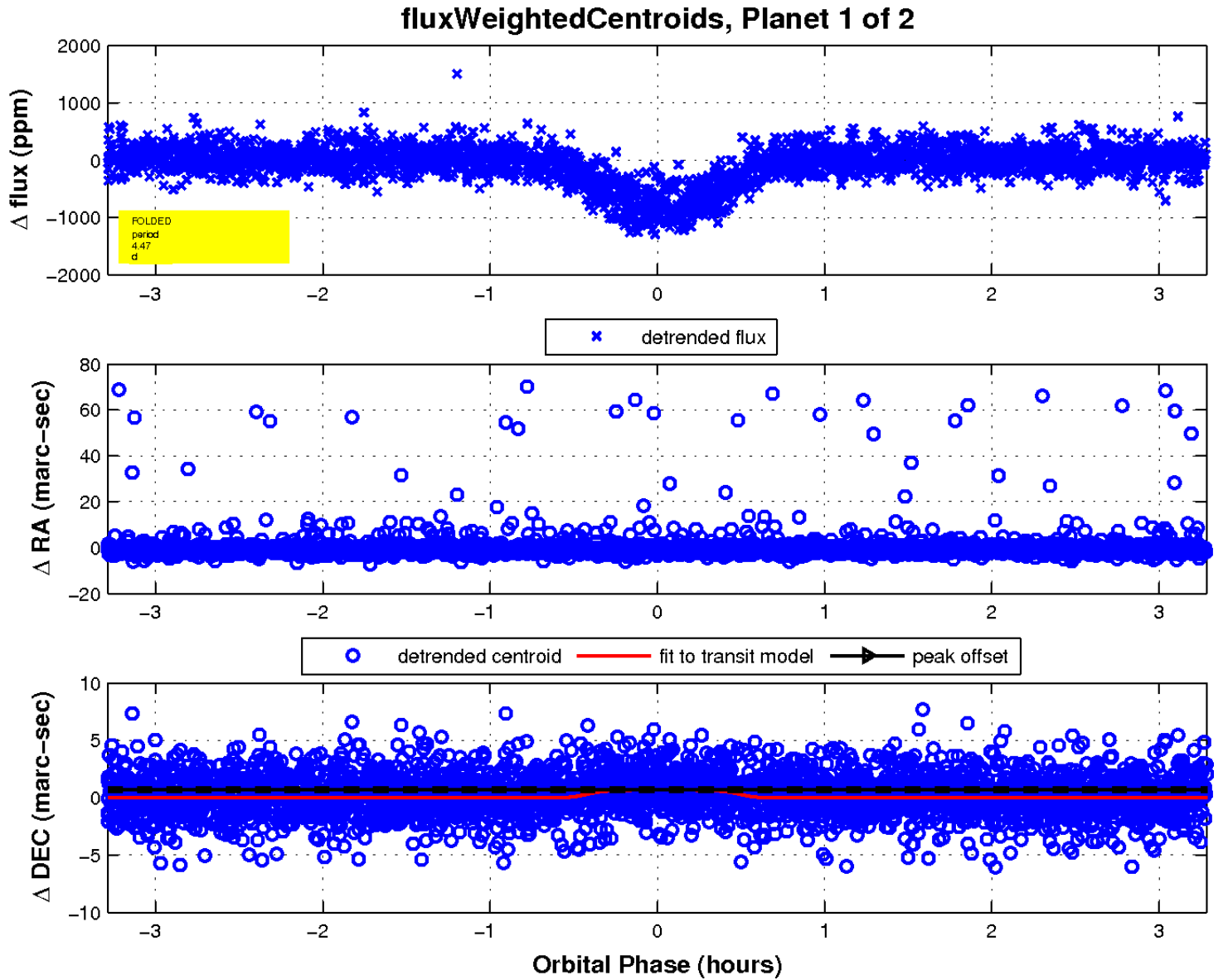
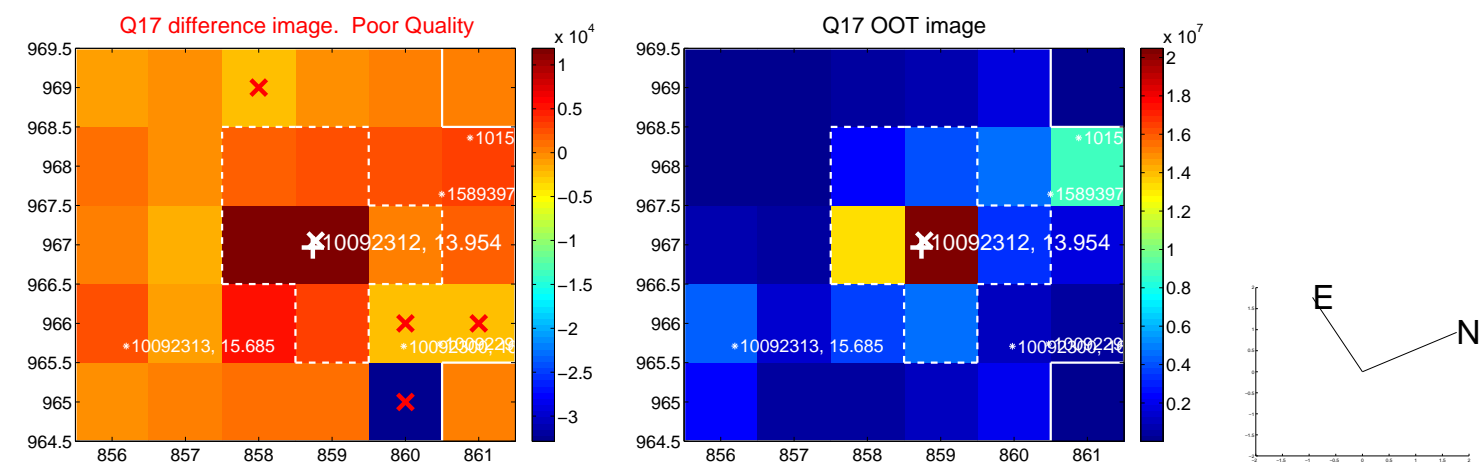
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



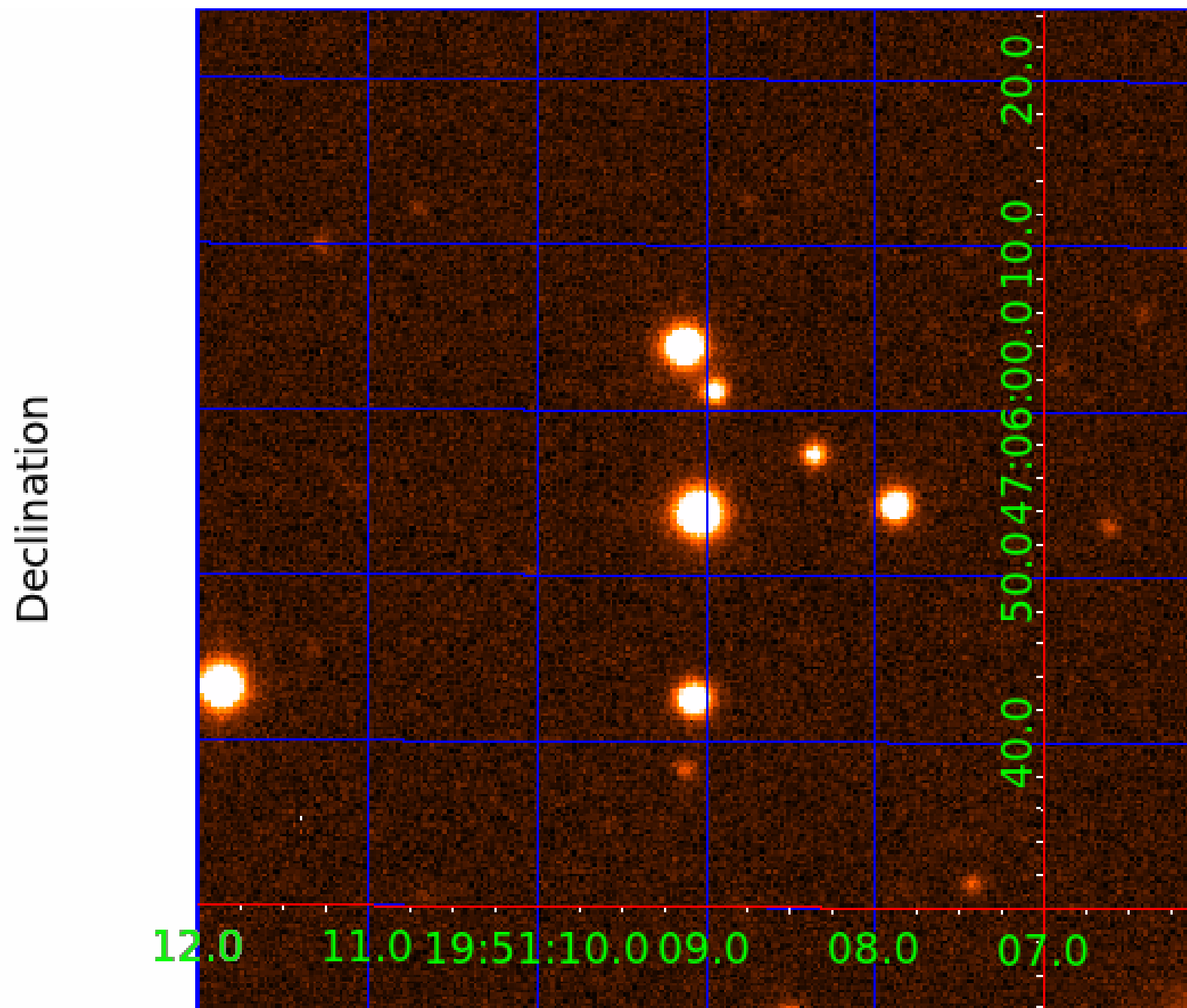
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 010092312

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})
010092312-01	OBS	1823.01	4.468468	134.271867	829.6	1.095	56.5	66.5	0.94	5869	3.25	322.83
010092312-02	OBS	1823.02	1.096598	132.511214	186.4	1.846	33.8	38.7	0.94	5869	1.53	2101.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010092312-01	OBS	FP	0.00	0	1	0	0	MOD_ODDEVEN_DV
010092312-02	OBS	FP	0.00	0	1	1	1	MOD_SEC_ALT—CENT_RESOLVED_OFFSET—EPHEM_MATCH

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 010092312-02

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
010092312-02	10092312	1080.01	10158990	1:1	9.9	-1	-2	14.87	13.96	1.77	Direct-PRF	0	1.16	0.44

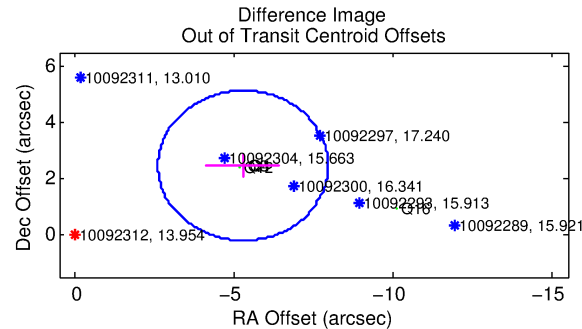
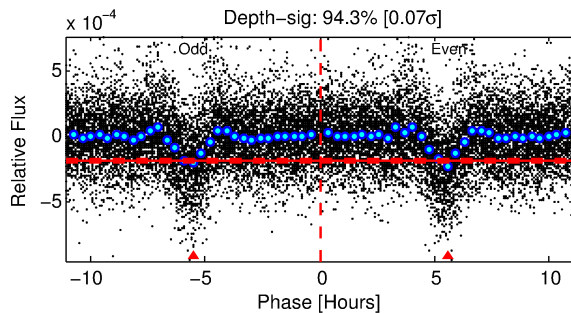
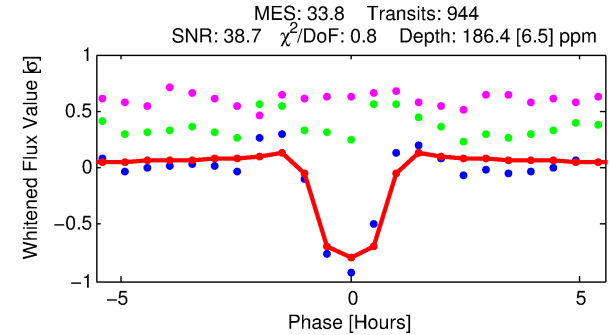
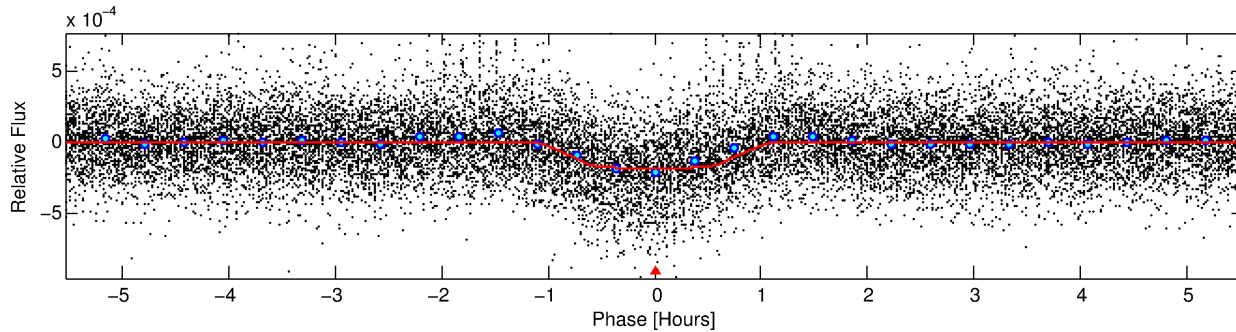
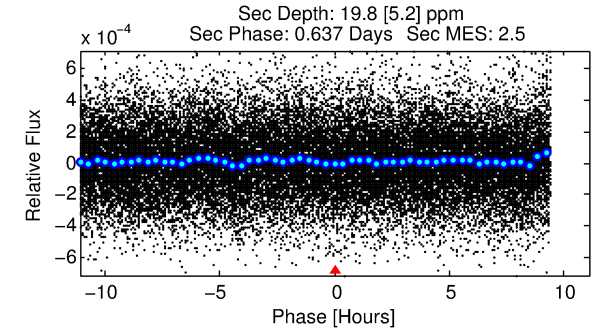
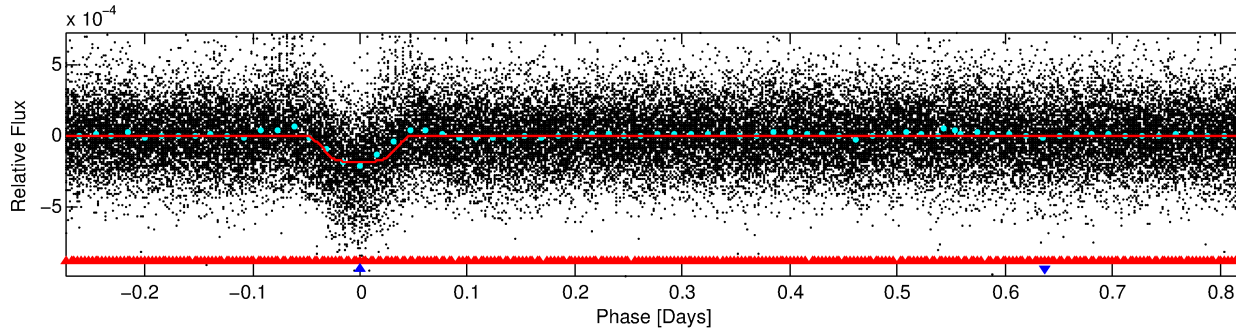
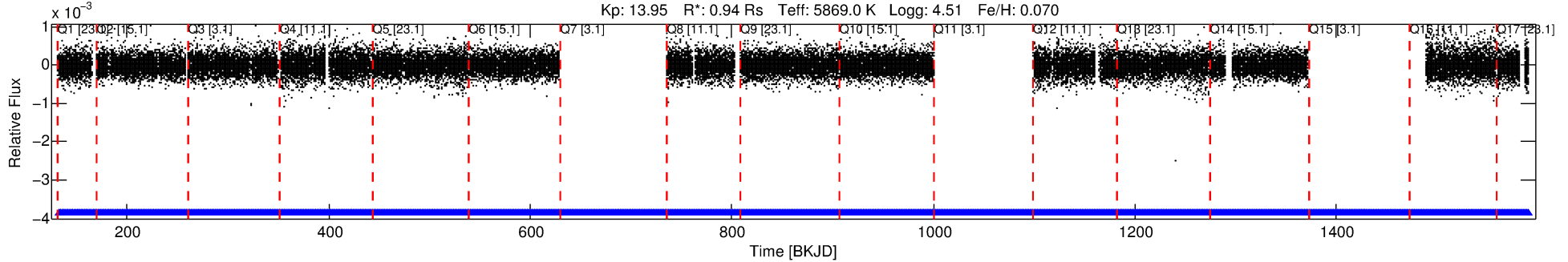
Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 10092312 Candidate: 2 of 2 Period: 1.097 d

KOI: K01823.02 Corr: 0.791

Kp: 13.95 R*: 0.94 Rs Teff: 5869.0 K Logg: 4.51 Fe/H: 0.070



DV Fit Results:

Period = 1.09660 [0.00000] d
Epoch = 132.5112 [0.0006] BKJD
Rp/R* = 0.0149 [0.0026]
a/R* = 2.33 [1.57]
b = 0.90 [0.18]
Seff = 2101.14 [825.98]
Teq = 1726 [170] K
Rp = 1.53 [0.52] Re
a = 0.0212 [0.0053] AU
Ag = 2.08 [1.18] [0.91σ]
Teffp = 3207 [365] K [3.68σ]

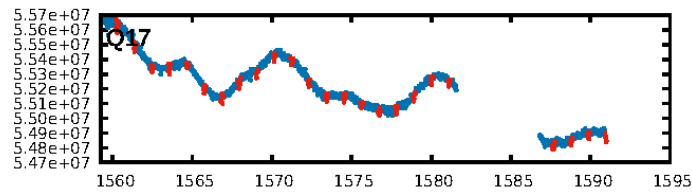
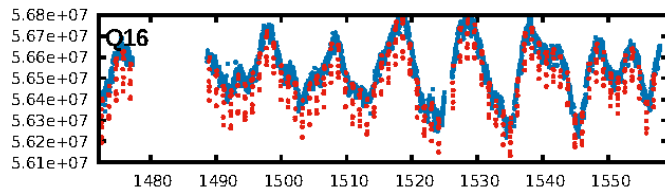
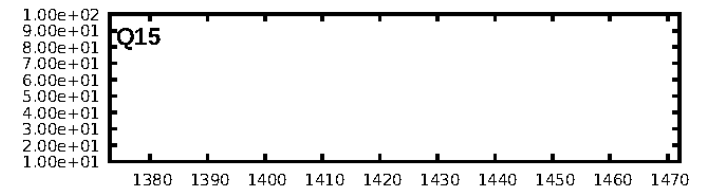
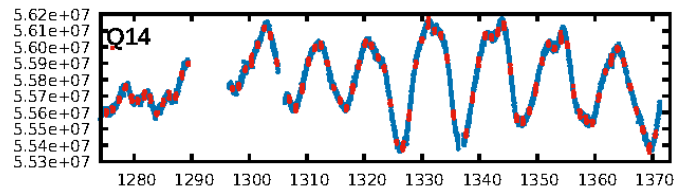
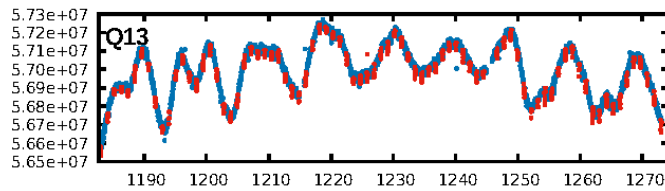
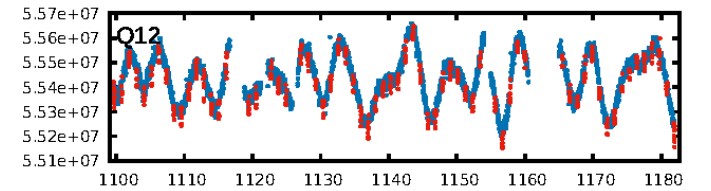
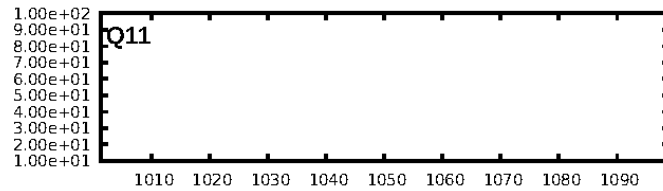
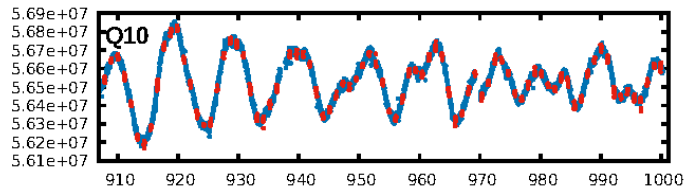
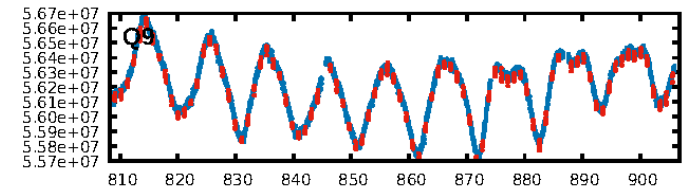
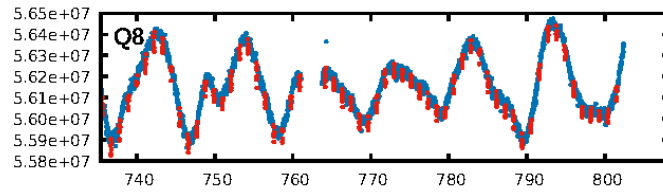
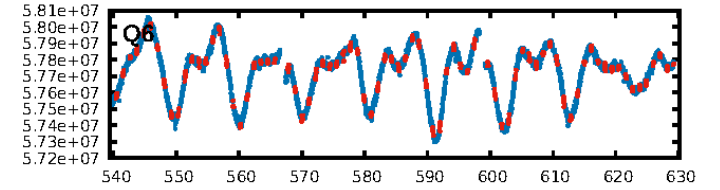
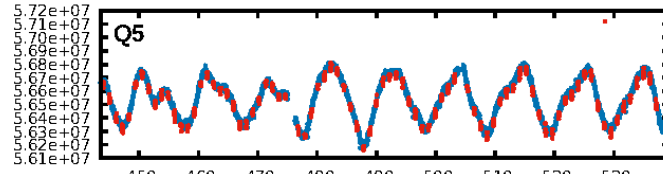
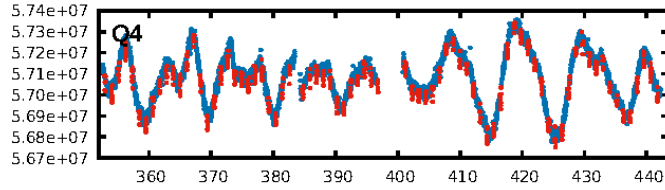
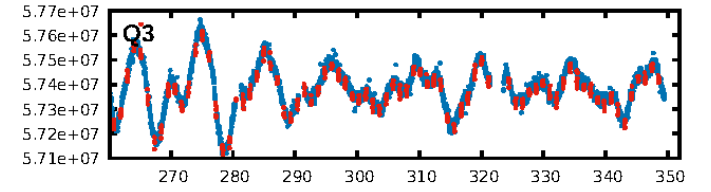
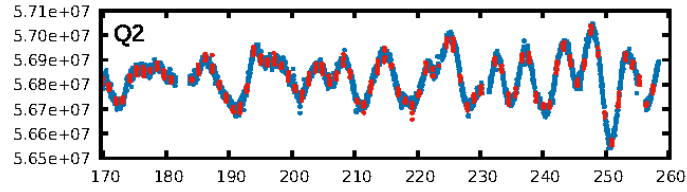
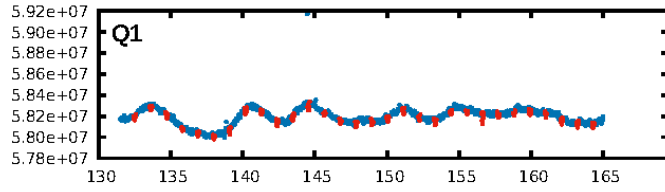
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [37.70σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.12e-226
RollingBand-fgt: 1.00 [892/892]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 336.471 arcsec [974.07σ]
OotOffset-rm: 5.826 arcsec [6.55σ]
KicOffset-rm: 5.961 arcsec [5.07σ]
OotOffset-st: 0/0/4/0 [4]
KicOffset-st: 0/0/4/0 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [14/14]

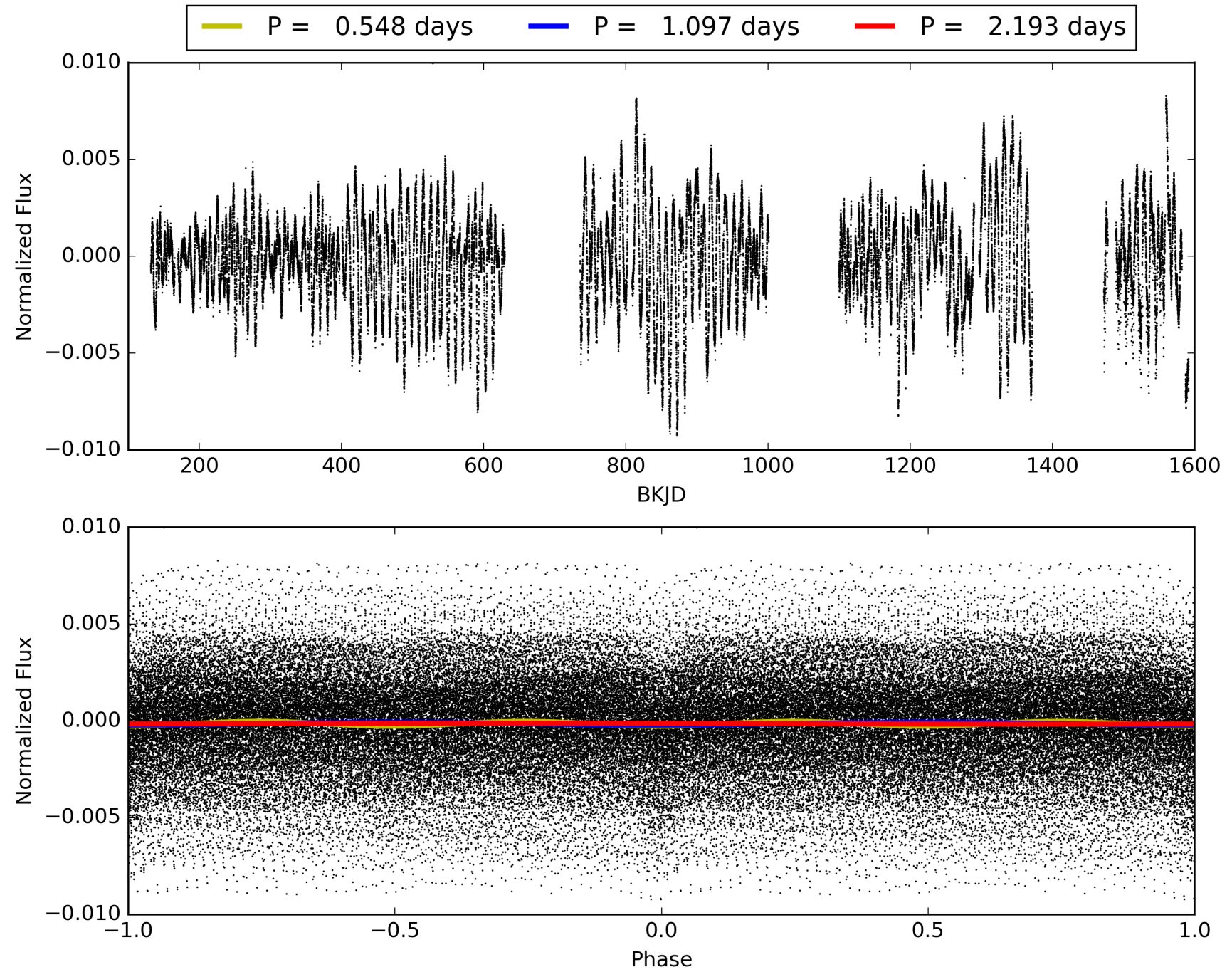
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 01:38:20 Z

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

TCE 010092312-02, PDC Light Curves

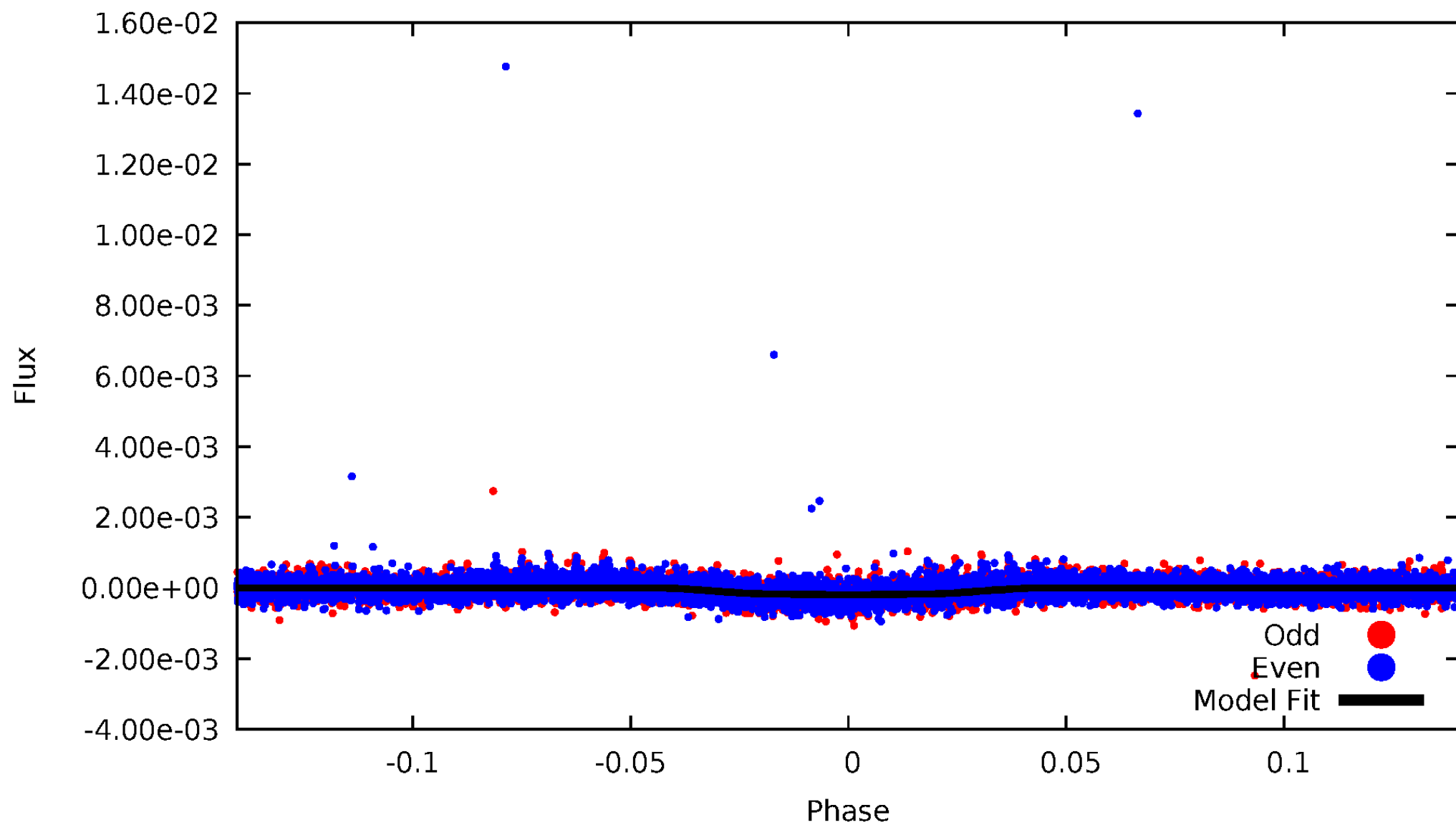


TCE 010092312-02



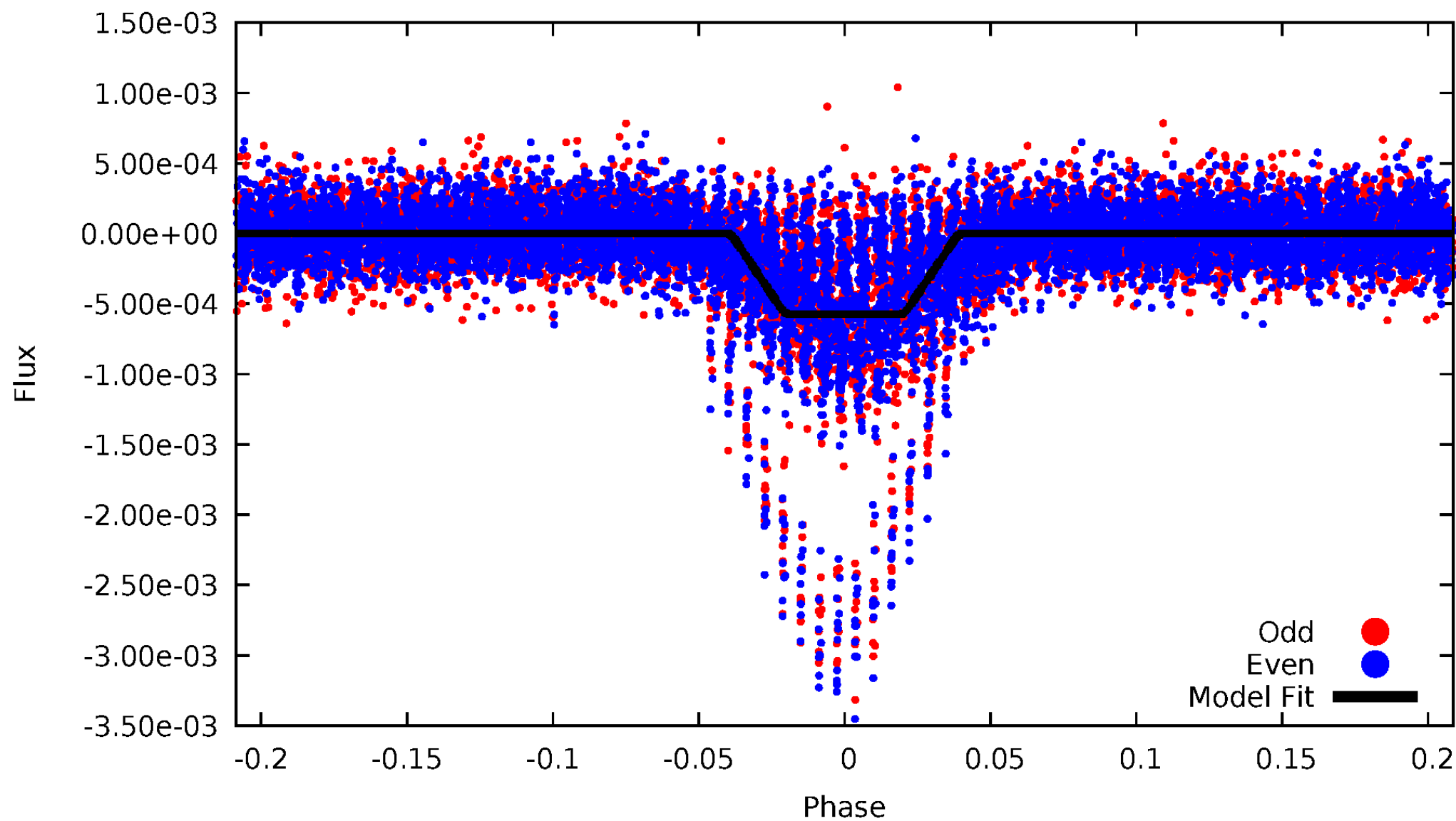
DV Odd/Even

TCE 010092312-02



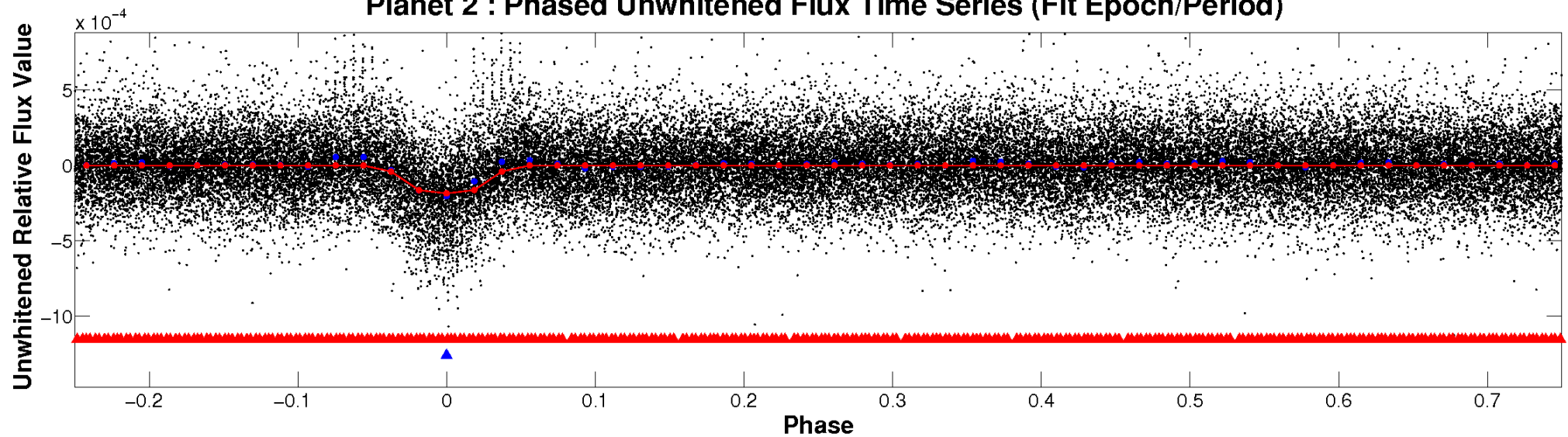
ALT Odd/Even

TCE 010092312-02

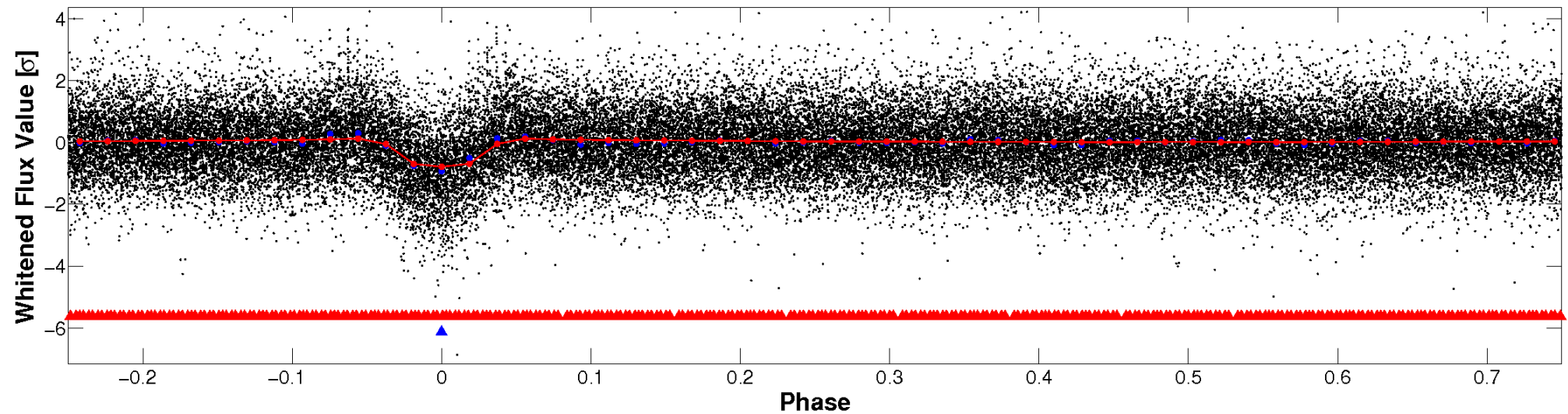


Non-Whitened Vs. Whitened Light Curve

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

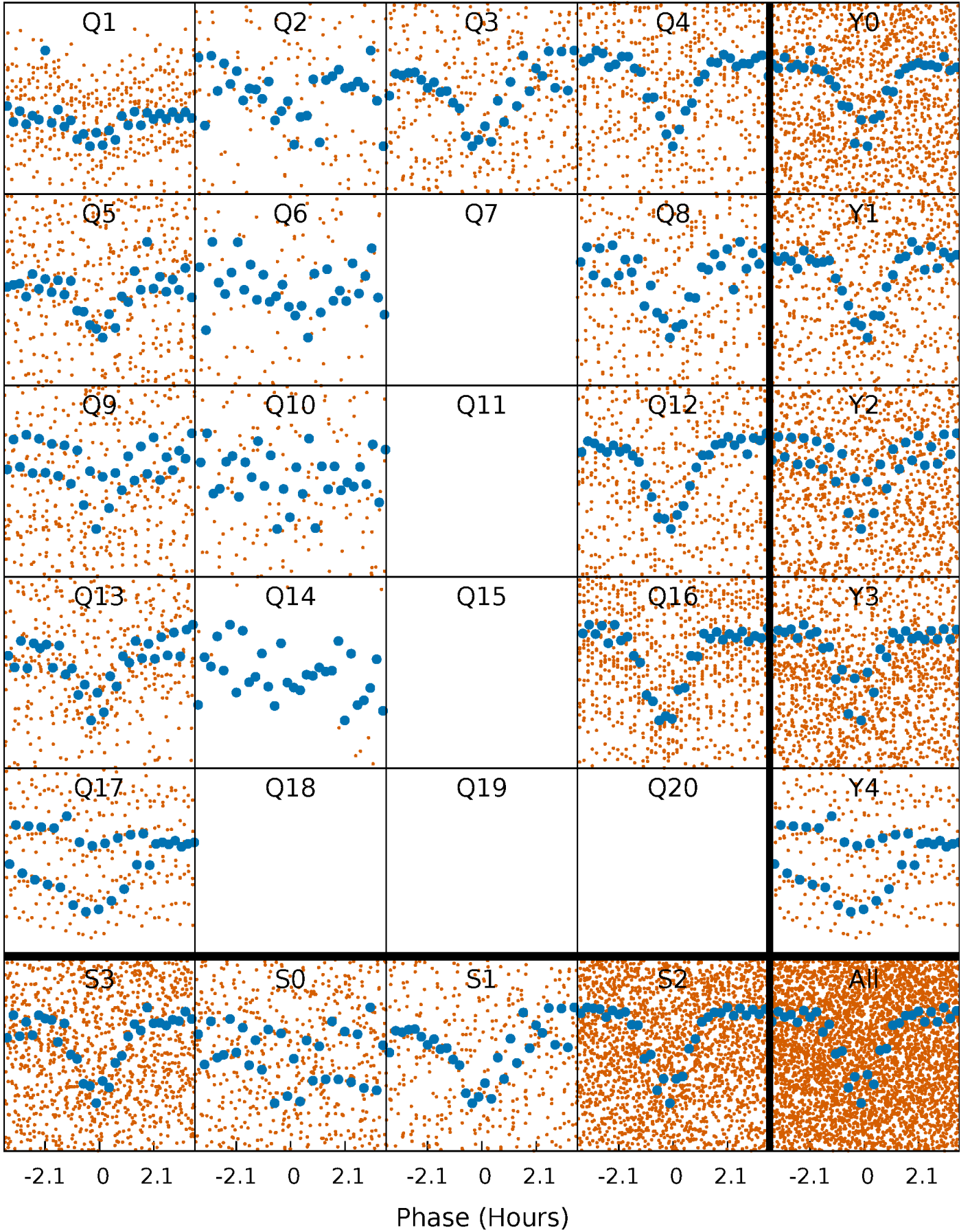


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



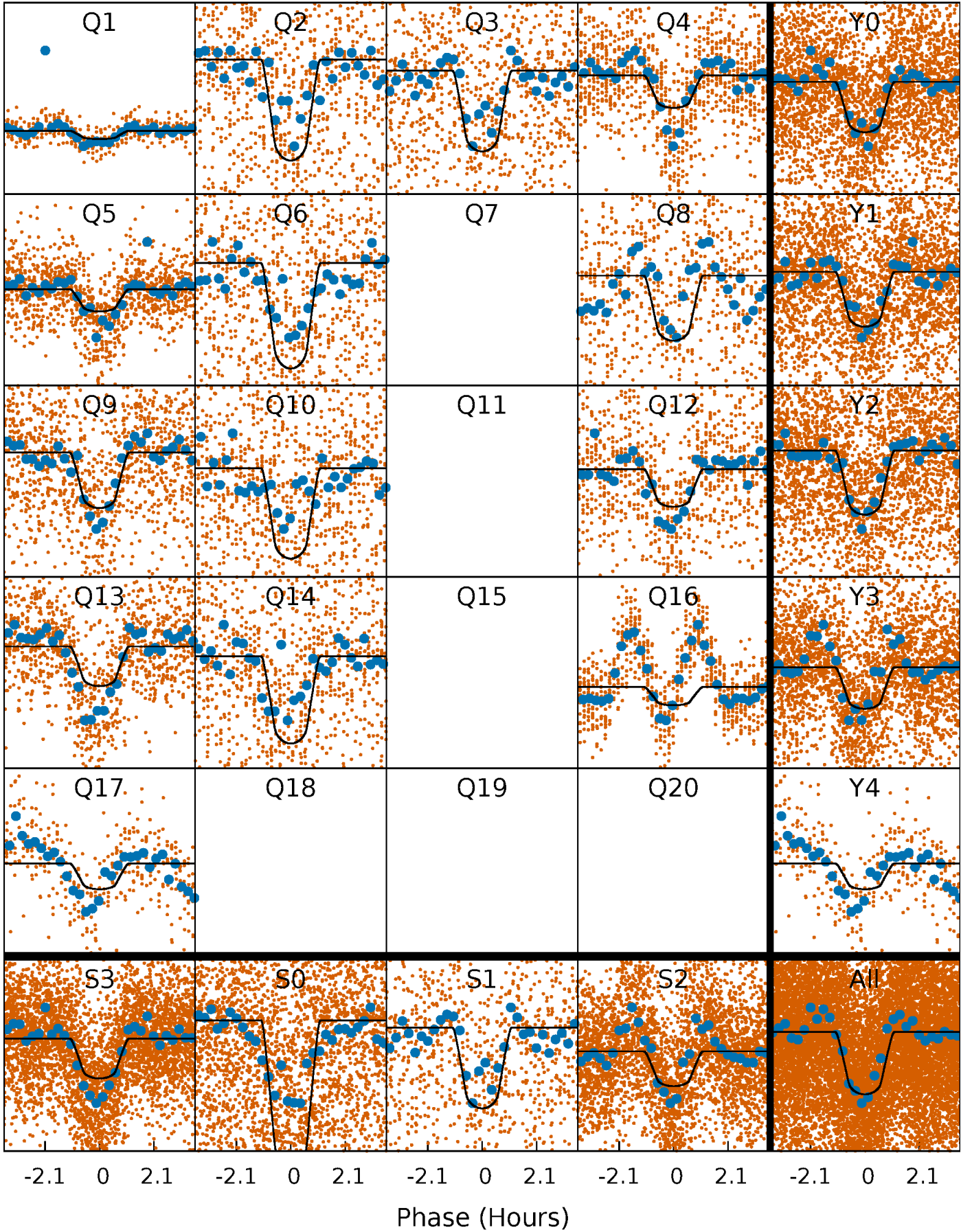
PDC Quarter-Phased Transit Curves

TCE 010092312-02 P= 1.096598 Days $T_0=132.511214$ (BKJD)



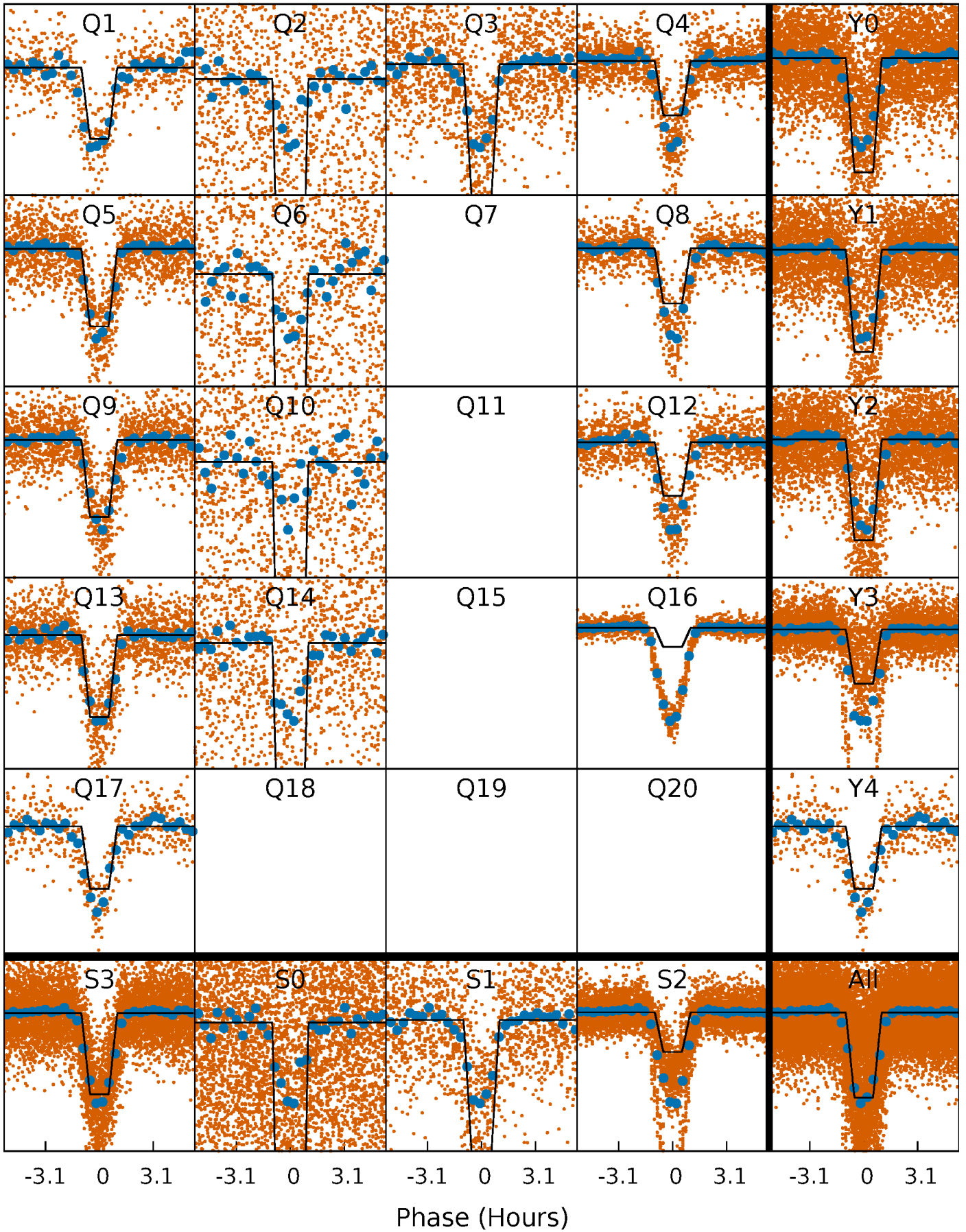
DV Quarter-Phased Transit Curves

TCE 010092312-02 P= 1.096598 Days $T_0=132.511214$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

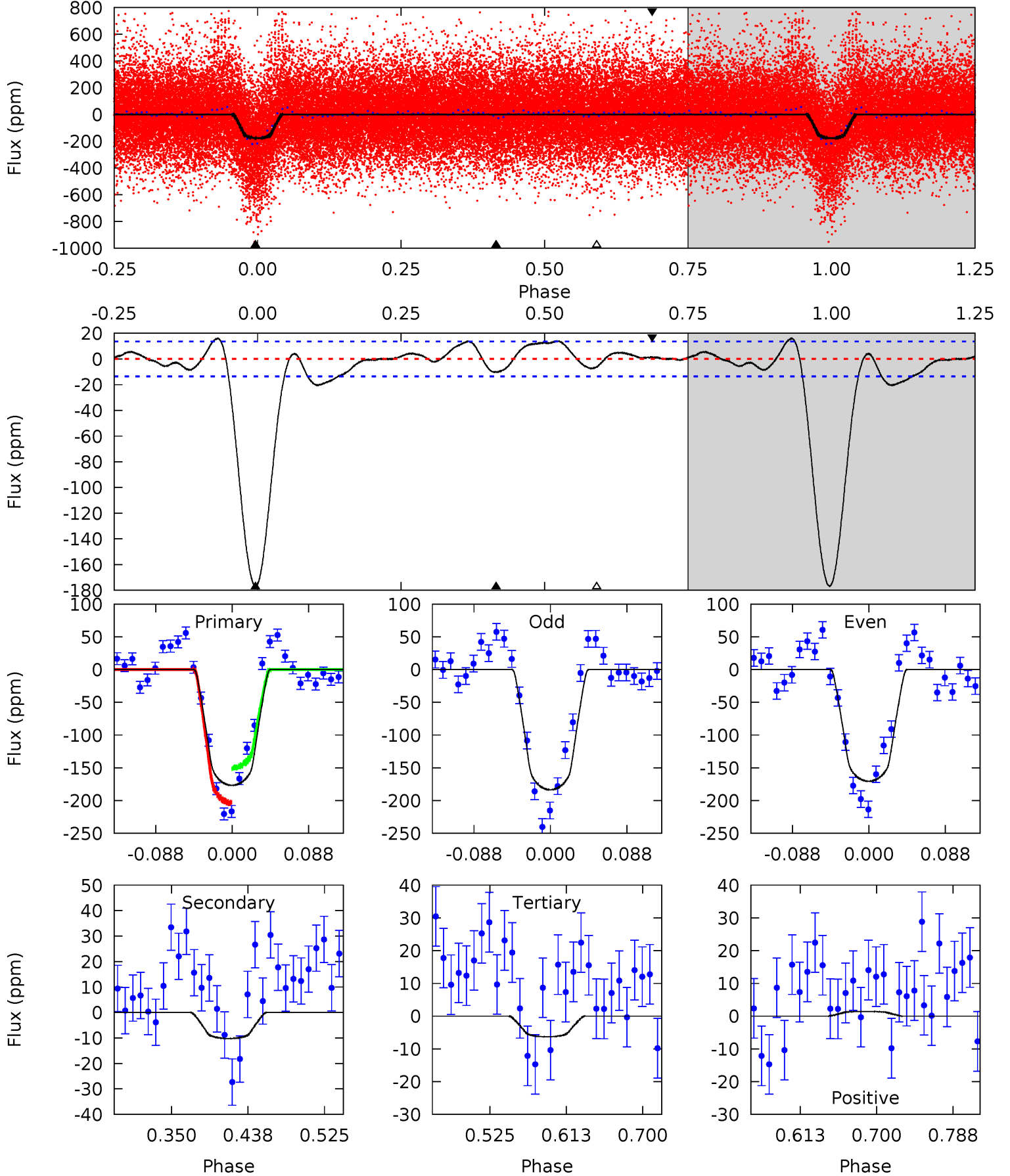
TCE 010092312-02 P= 1.096585 Days $T_0=132.515511$ (BKJD)



DV Model-Shift Uniqueness Test

010092312-02, P = 1.096598 Days, E = 131.414616 Days

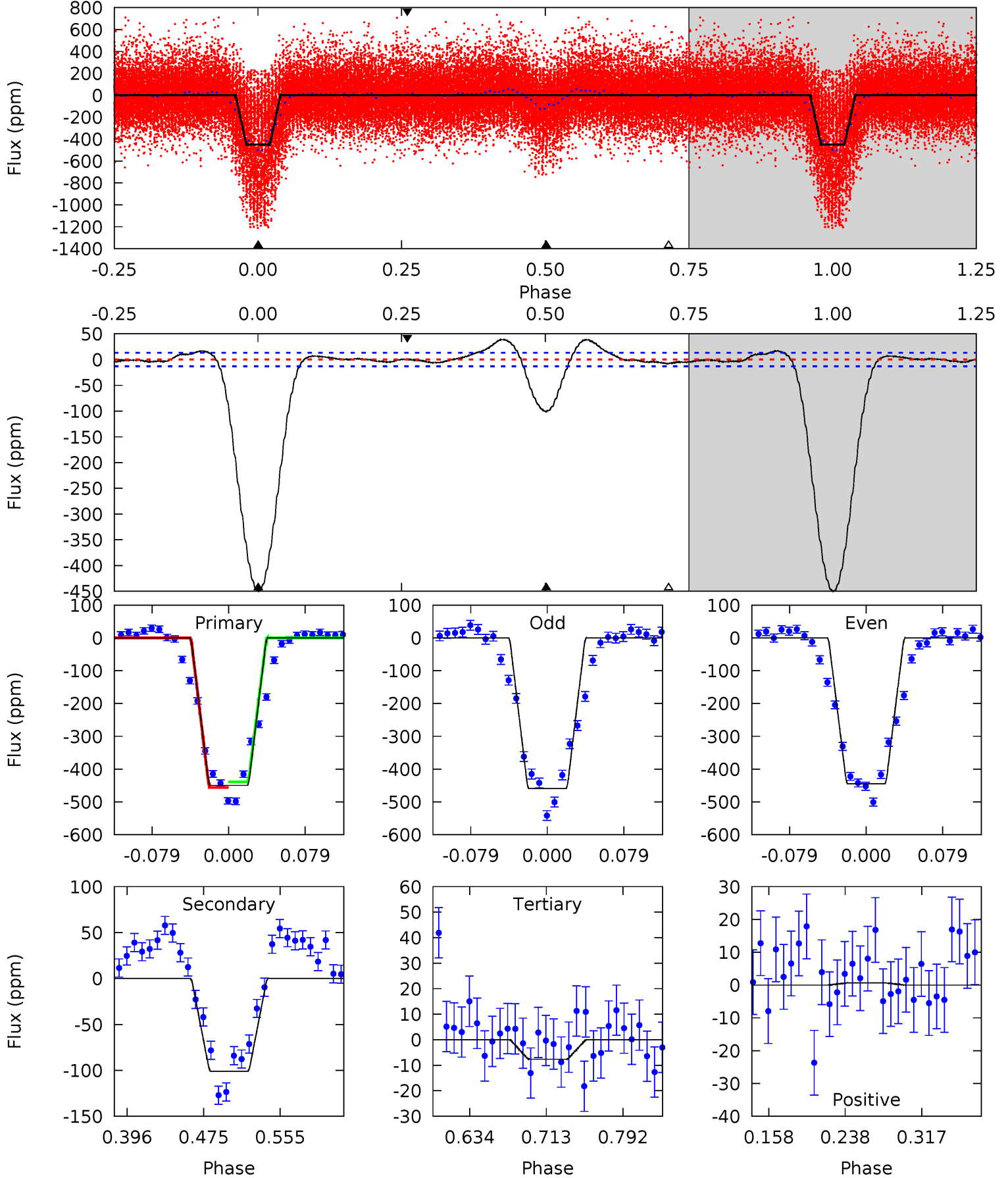
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
59.6	3.45	2.13	0.48	4.59	1.71	2.34	57.5	59.1	1.32	2.97	2.20	1.09	0.08	9.10



Alt Model-Shift Uniqueness Test

010092312-02, P = 1.096585 Days, E = 131.418926 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
159.0	35.7	2.70	0.23	4.61	1.76	3.31	156.3	158.8	33.0	35.4	2.59	1.18	0.08	2.98



Stellar Parameters For KIC 010092312

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5869^{+142}_{-203}	$4.513^{+0.036}_{-0.204}$	$0.070^{+0.250}_{-0.300}$	$0.942^{+0.273}_{-0.091}$	$1.054^{+0.112}_{-0.137}$	$1.776^{+0.350}_{-0.912}$
	+2%/-3%	+1%/-5%	+357%/-429%	+29%/-10%	+11%/-13%	+20%/-51%
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 010092312-02 / KOI 1823.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-10 ± 3	$1.60^{+0.36}_{-0.33}$	2456^{+177}_{-107}	3083^{+318}_{-319}	$0.940^{+0.612}_{-0.352}$
Alt.	-101 ± 3	$2.59^{+0.44}_{-0.36}$	2474^{+153}_{-106}	4022^{+194}_{-180}	$3.606^{+1.171}_{-0.919}$

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 $A_{obs} \gg 1.0$

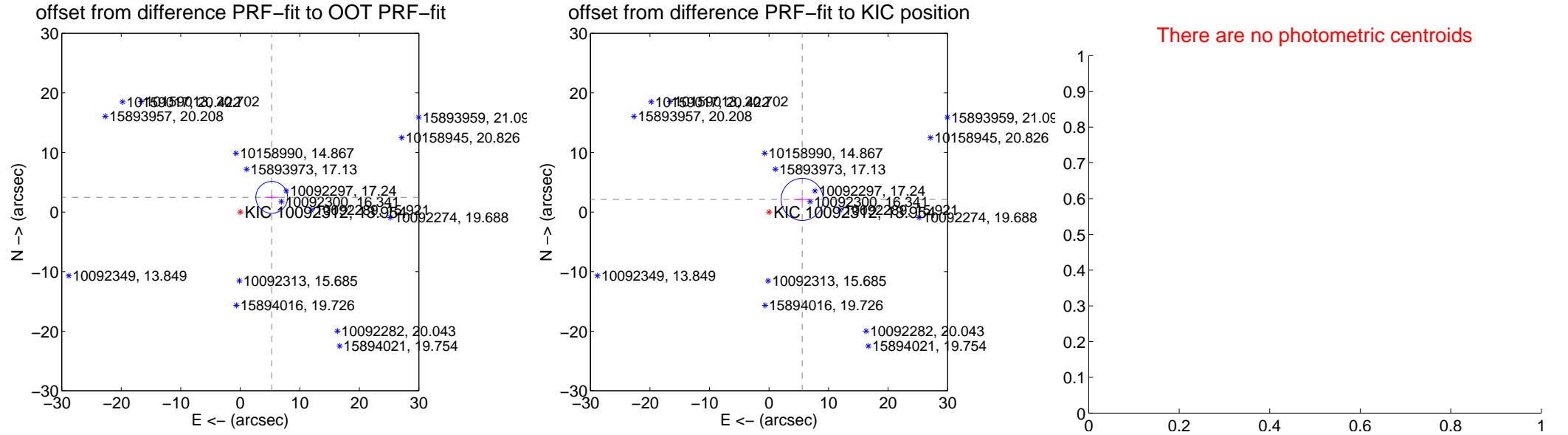
DV Centroid Data

Supplemental centroid analysis for 010092312-02. Kepler magnitude: 13.95. Transit SNR 38.72

There are 4 quarters with good PRF difference image offsets

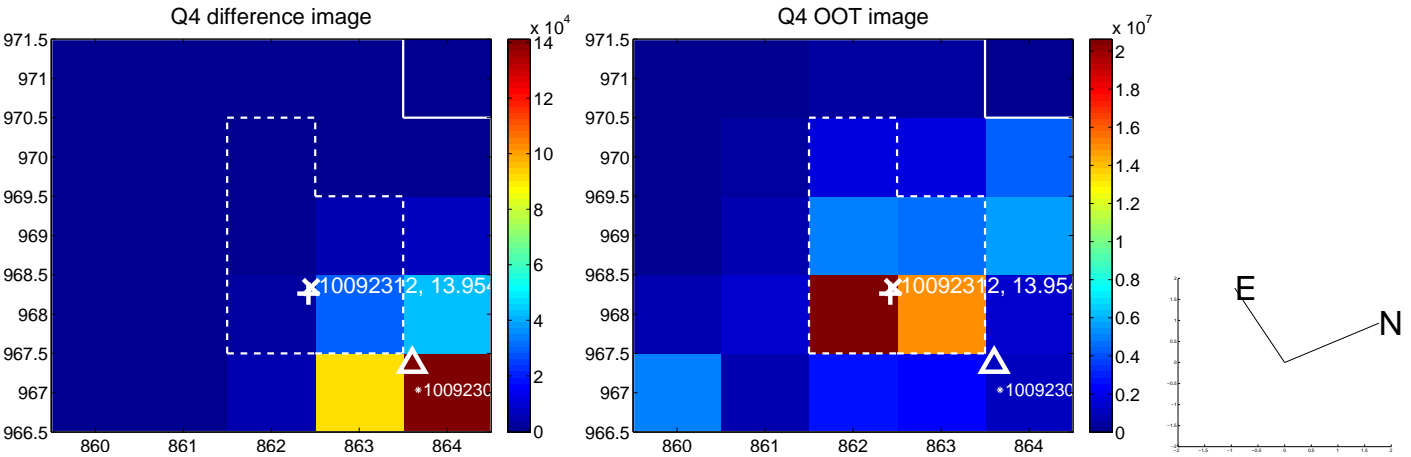
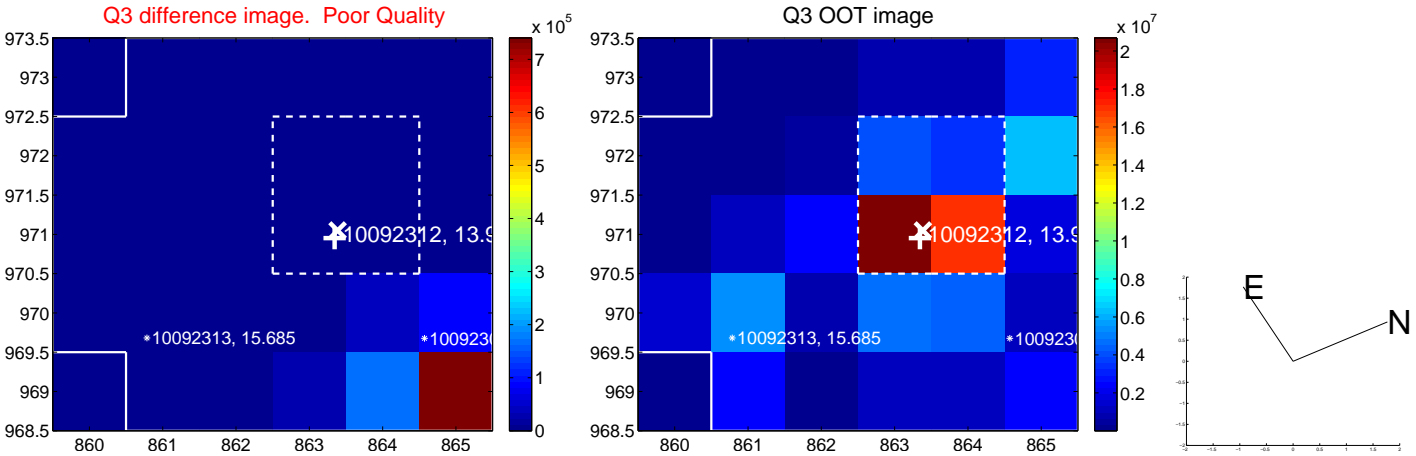
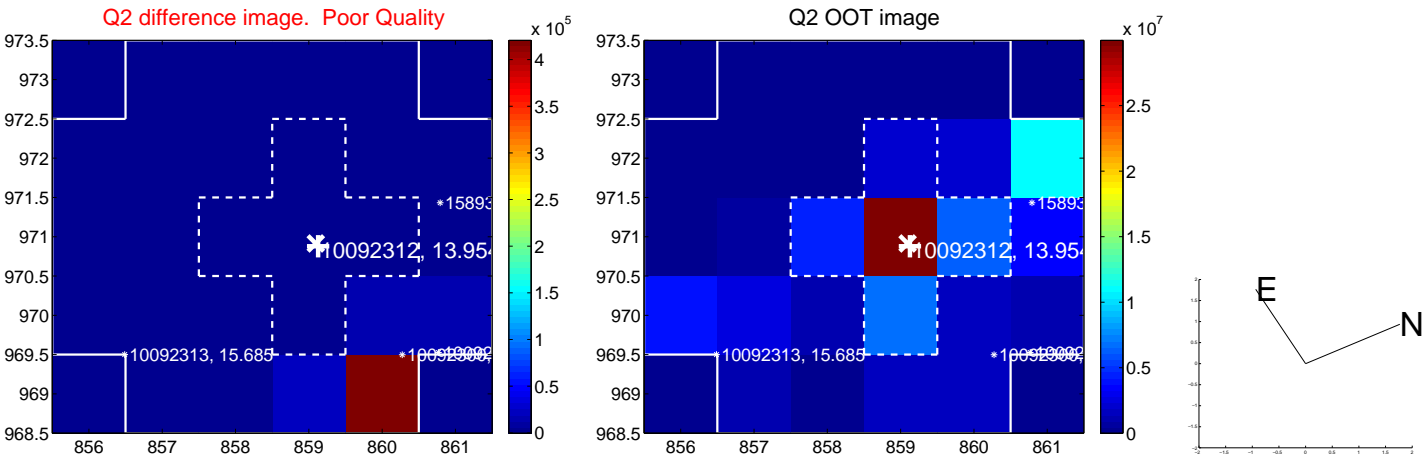
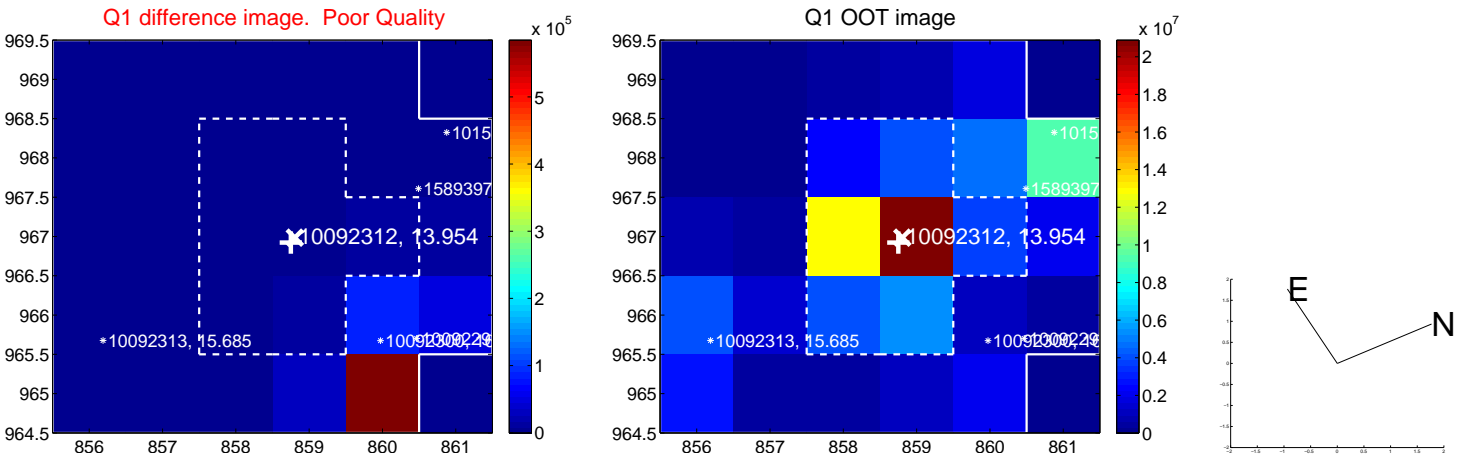
The direct PRF centroid is offset from the target star catalog position by about 0.43 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.826 ± 0.890	6.55	-5.280 ± 1.152	2.464 ± 0.372
PRF-fit source offset from KIC position	5.961 ± 1.176	5.07	-5.570 ± 1.424	2.122 ± 0.441
photometric centroid source offset	—	—	—	—

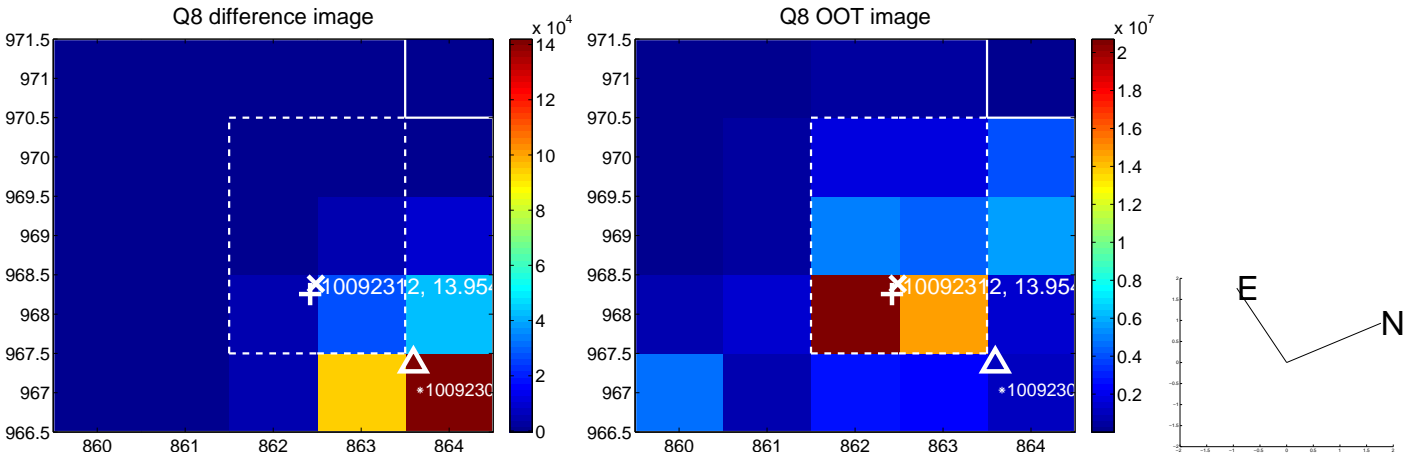
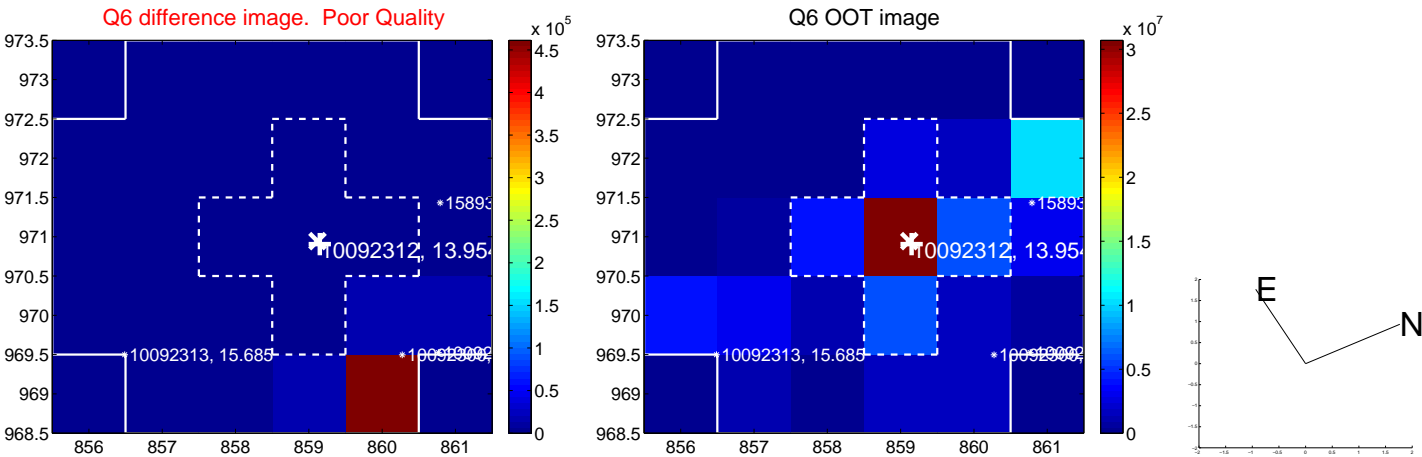
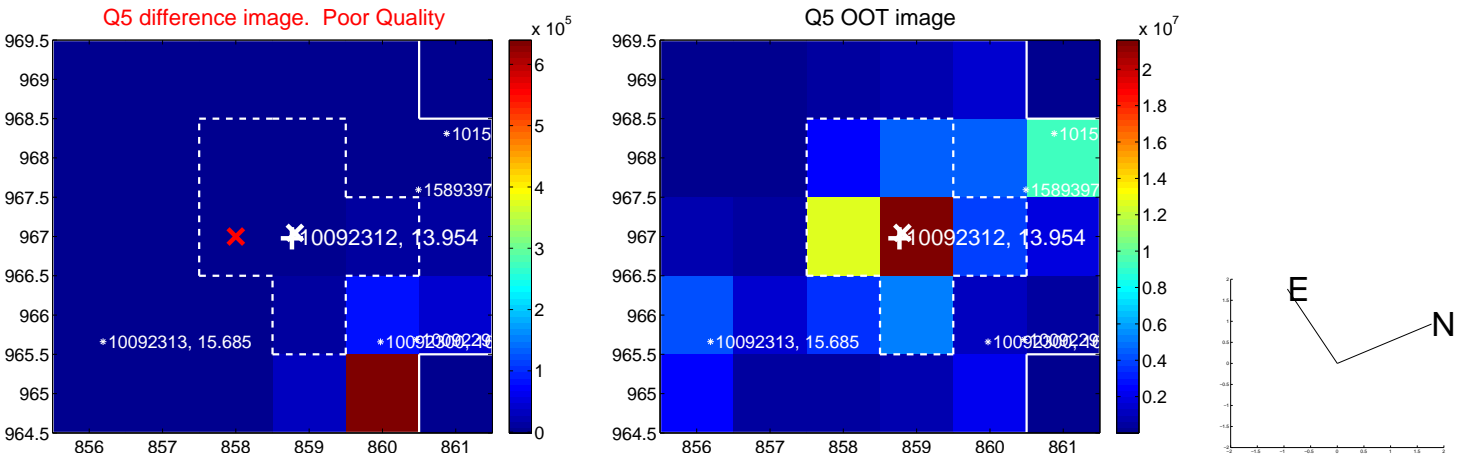


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

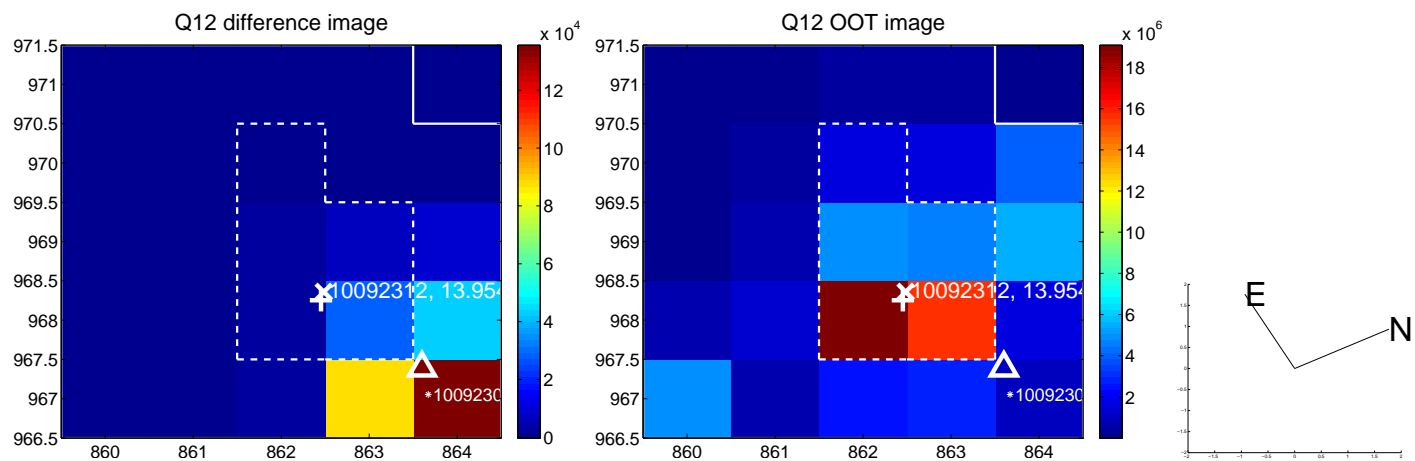
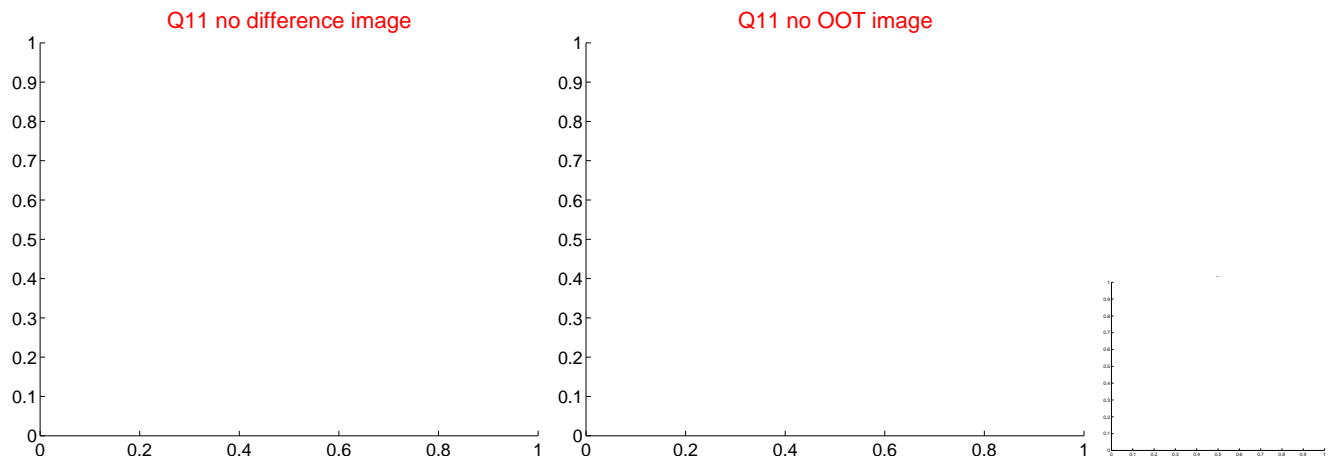
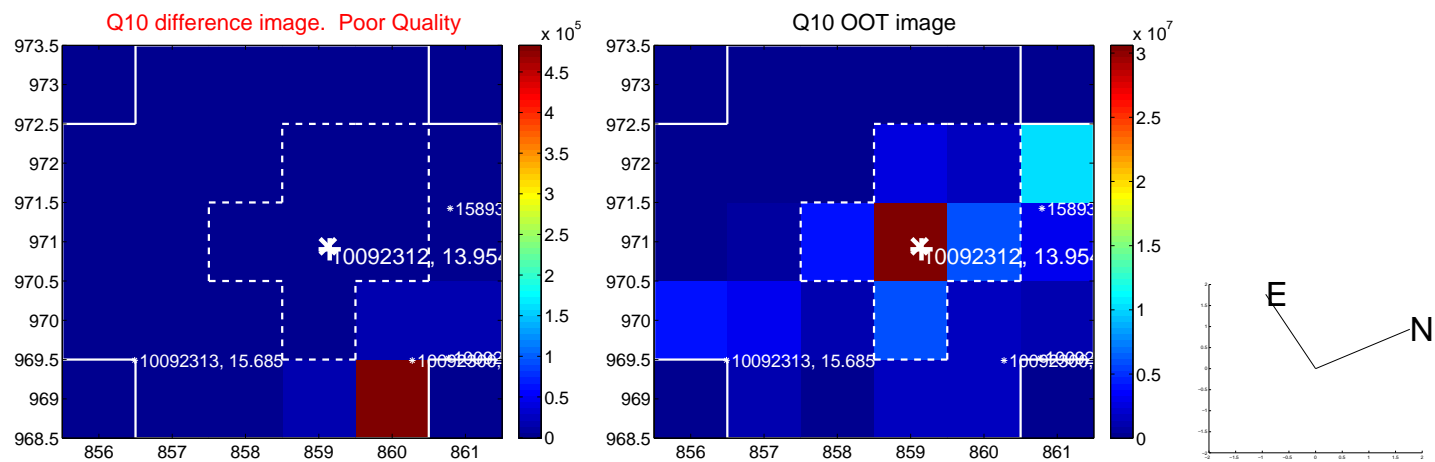
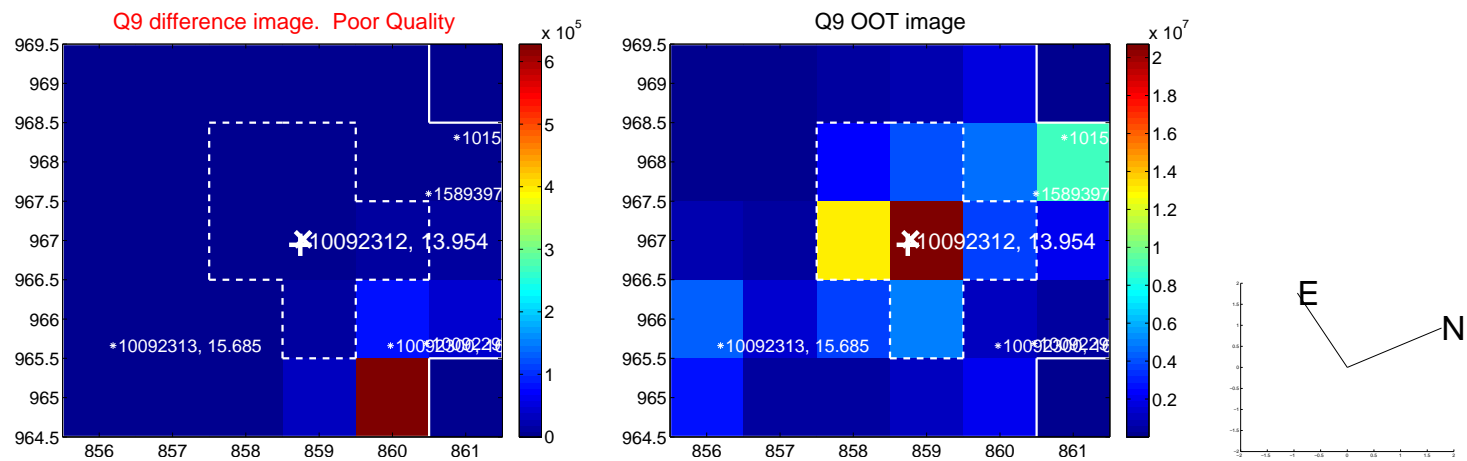
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



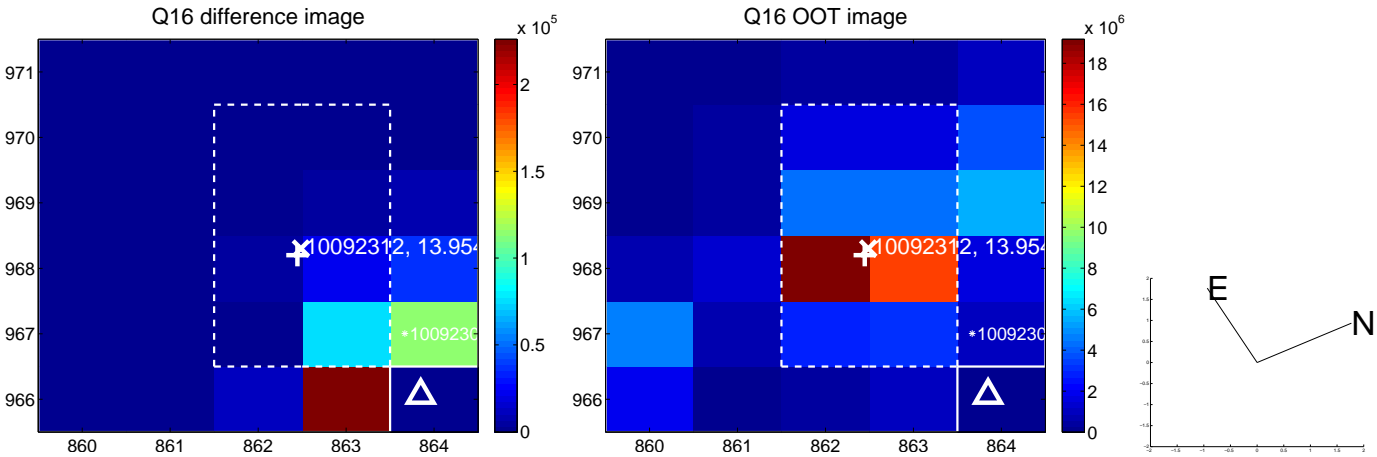
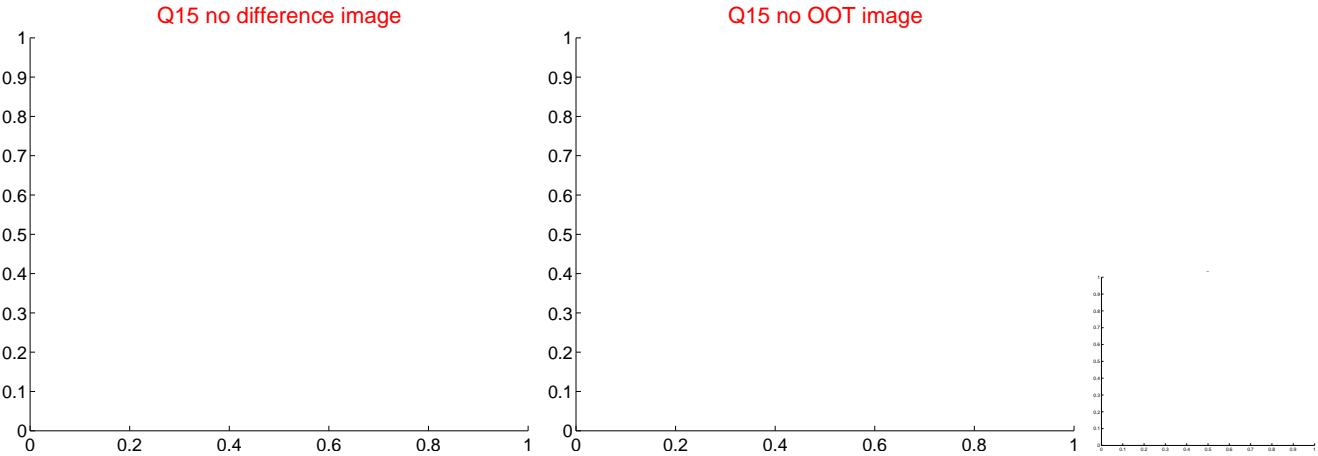
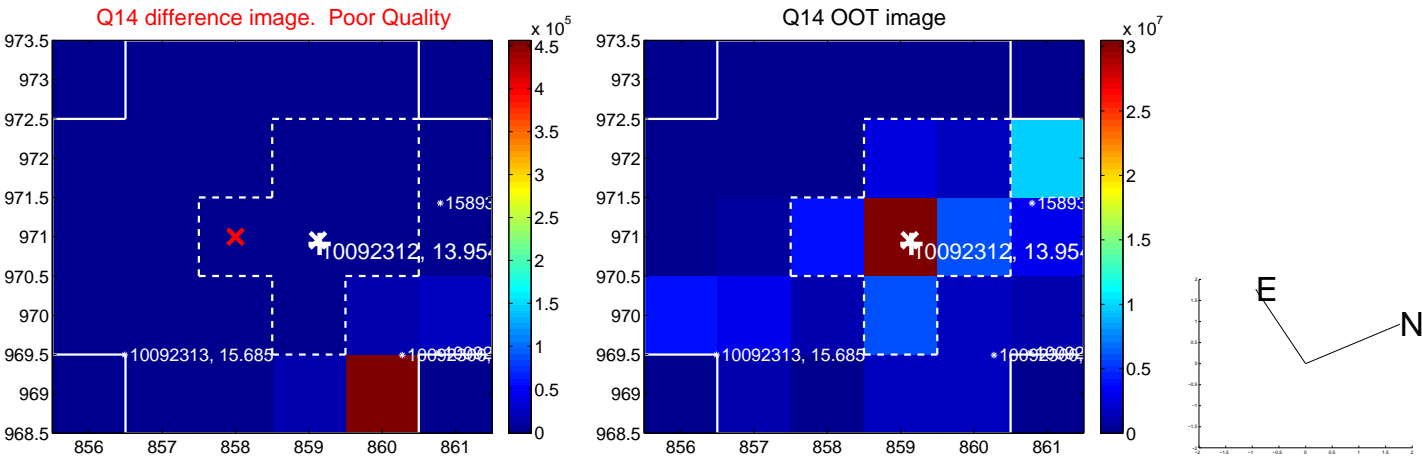
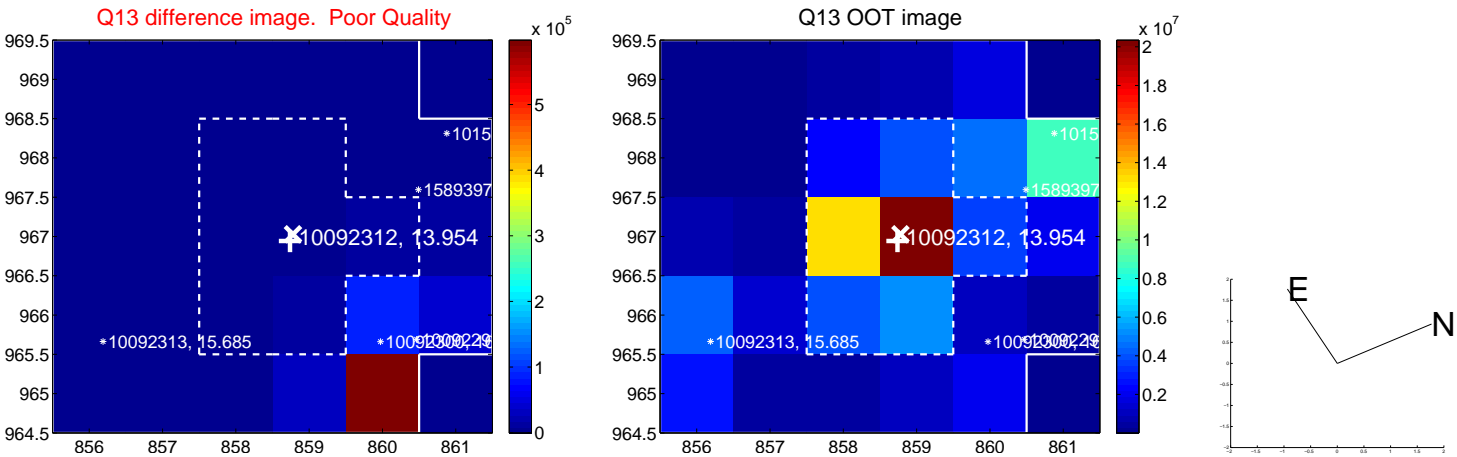
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

