

KIC 008022244

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})
008022244-01	OBS	0519.01	11.903526	142.630689	622.3	4.403	39.7	42.0	1.00	6063	2.77	110.76
008022244-02	OBS	0519.02	34.034961	134.430956	719.1	7.088	34.1	35.4	1.00	6063	3.05	27.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008022244-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008022244-02	OBS	PC	1.00	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.

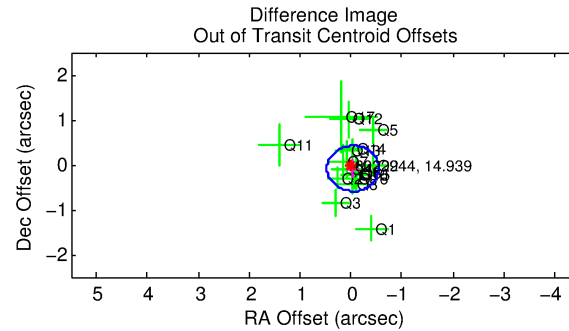
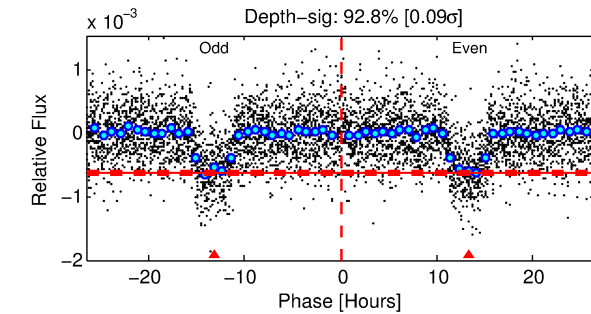
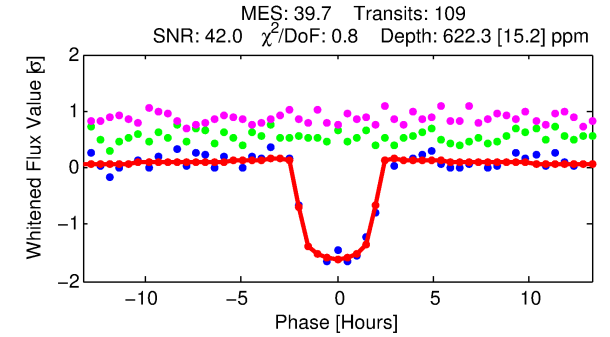
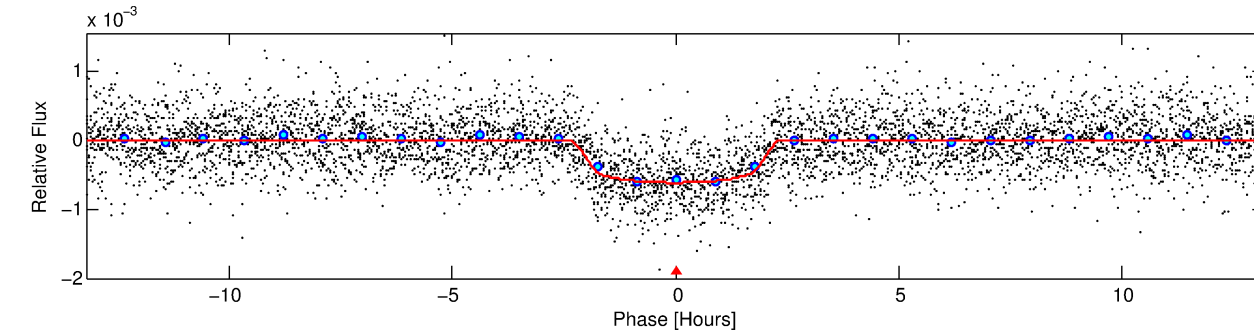
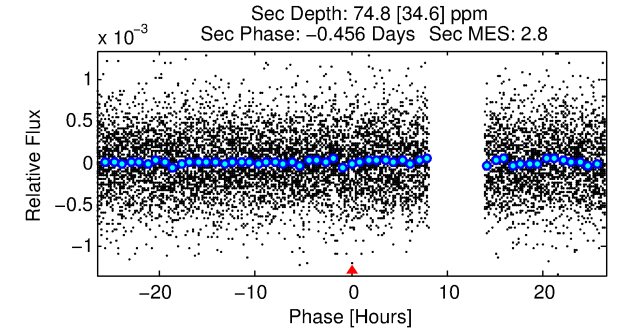
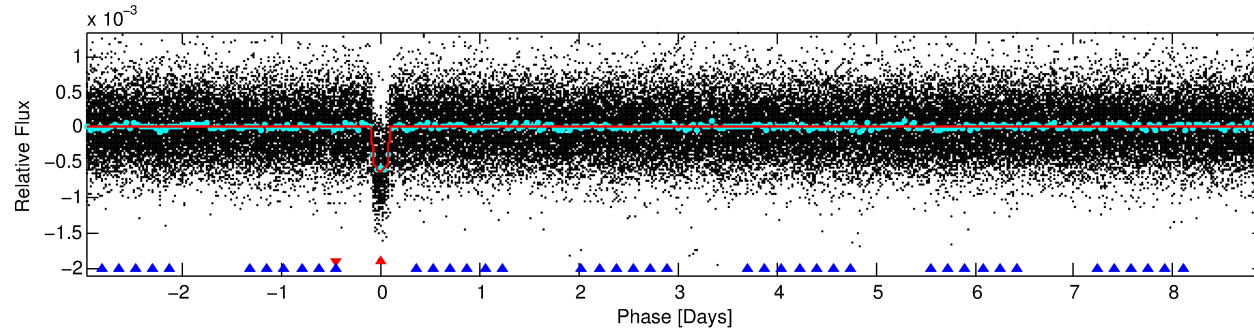
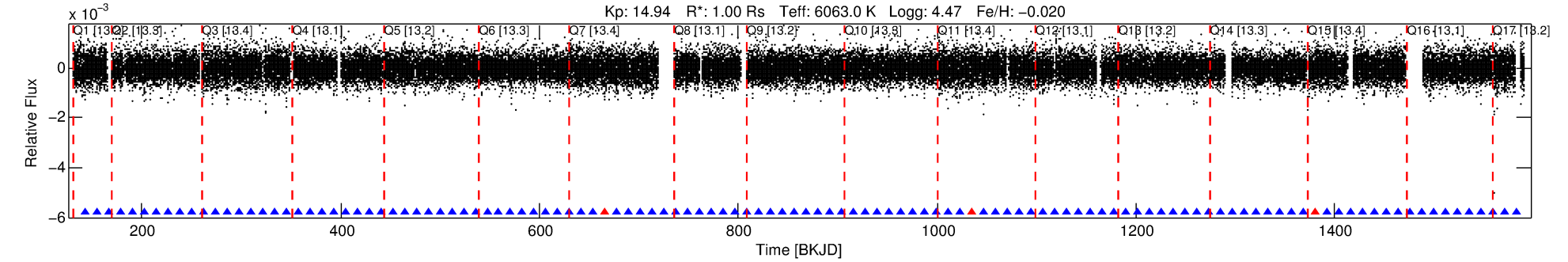
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008022244-01

No Significant Match Found

DV One-Page Summary

KIC: 8022244 Candidate: 1 of 2 Period: 11.904 d
KOI: K00519.01 Name: Kepler-175b Corr: 0.988



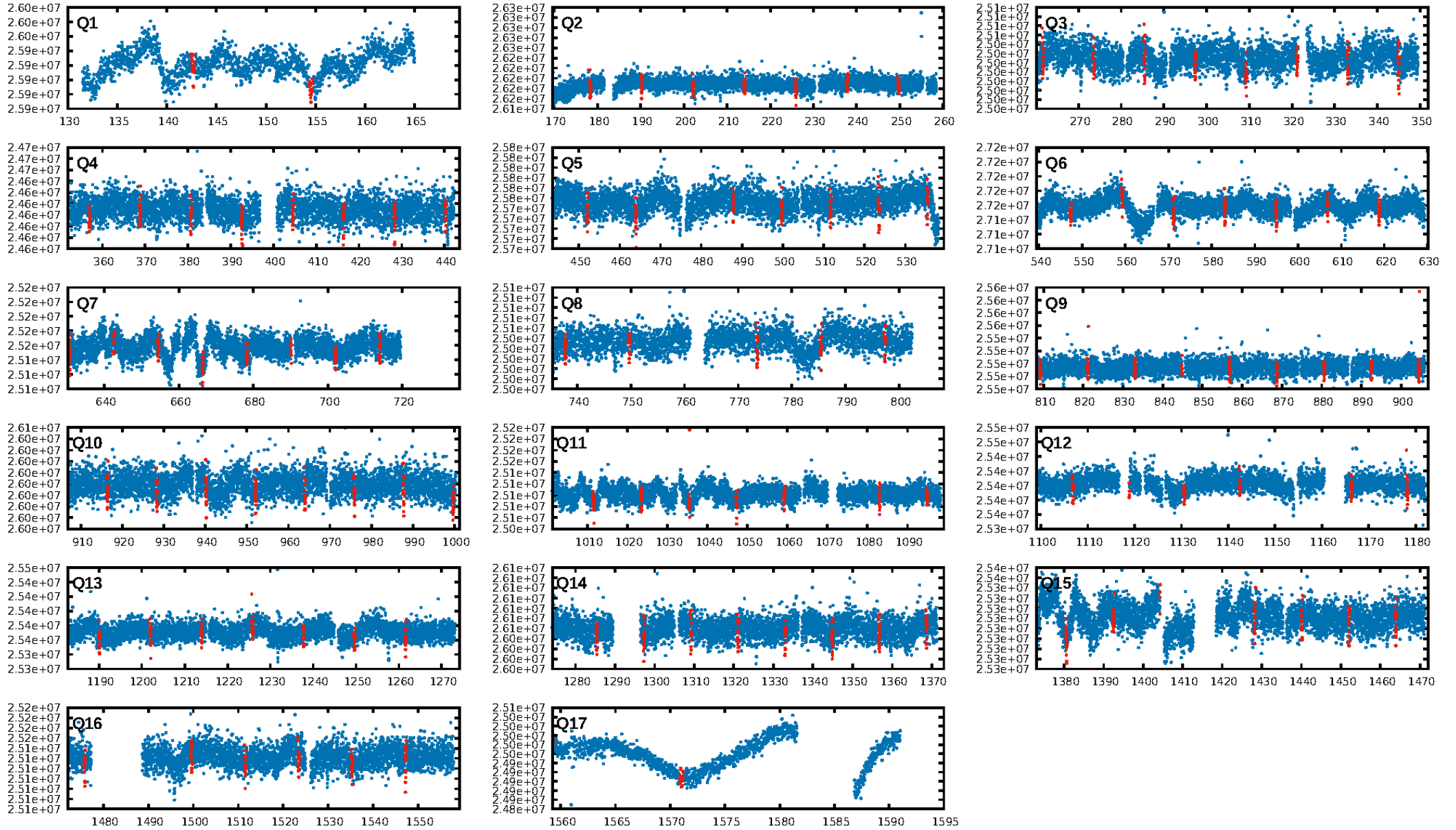
DV Fit Results:

Period = 11.90353 [0.00003] d
Epoch = 142.6307 [0.0021] BKJD
Rp/R* = 0.0253 [0.0031]
a/R* = 13.29 [7.76]
b = 0.80 [0.27]
Seff = 110.76 [46.37]
Teff = 827 [87] K
Rp = 2.77 [0.94] Re
a = 0.1047 [0.0281] AU
Ag = 58.92 [38.57] [1.50σ]
Teffp = 3543 [481] K [5.56σ]

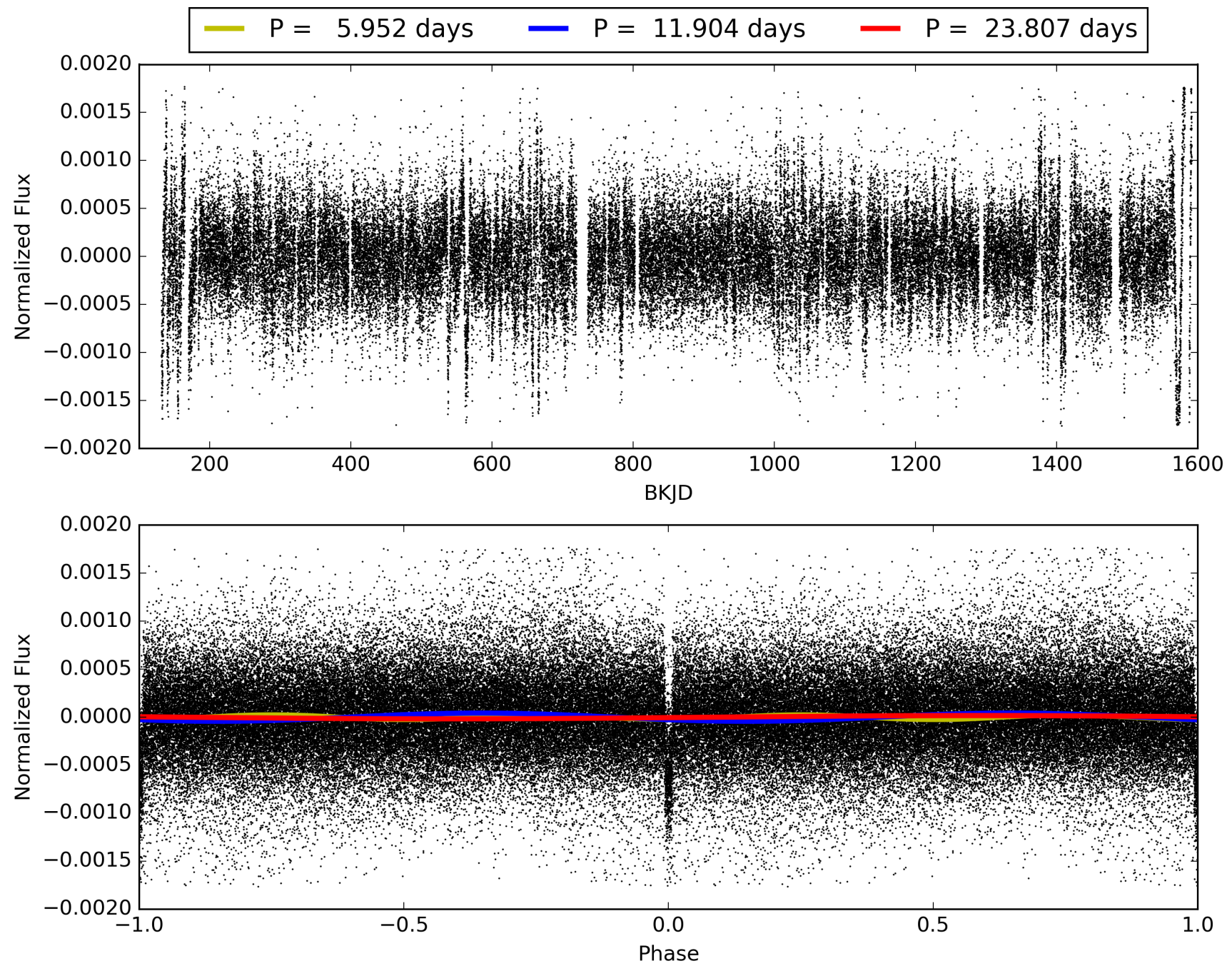
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [63.65σ]
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.97 [102/105]
GhostDiagnostic-chr: 3.944
Centroid-sig: 2.9%
Centroid-so: 0.555 arcsec [1.71σ]
OotOffset-rm: 0.092 arcsec [0.54σ]
KicOffset-rm: 0.373 arcsec [2.39σ]
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]

TCE 008022244-01, PDC Light Curves

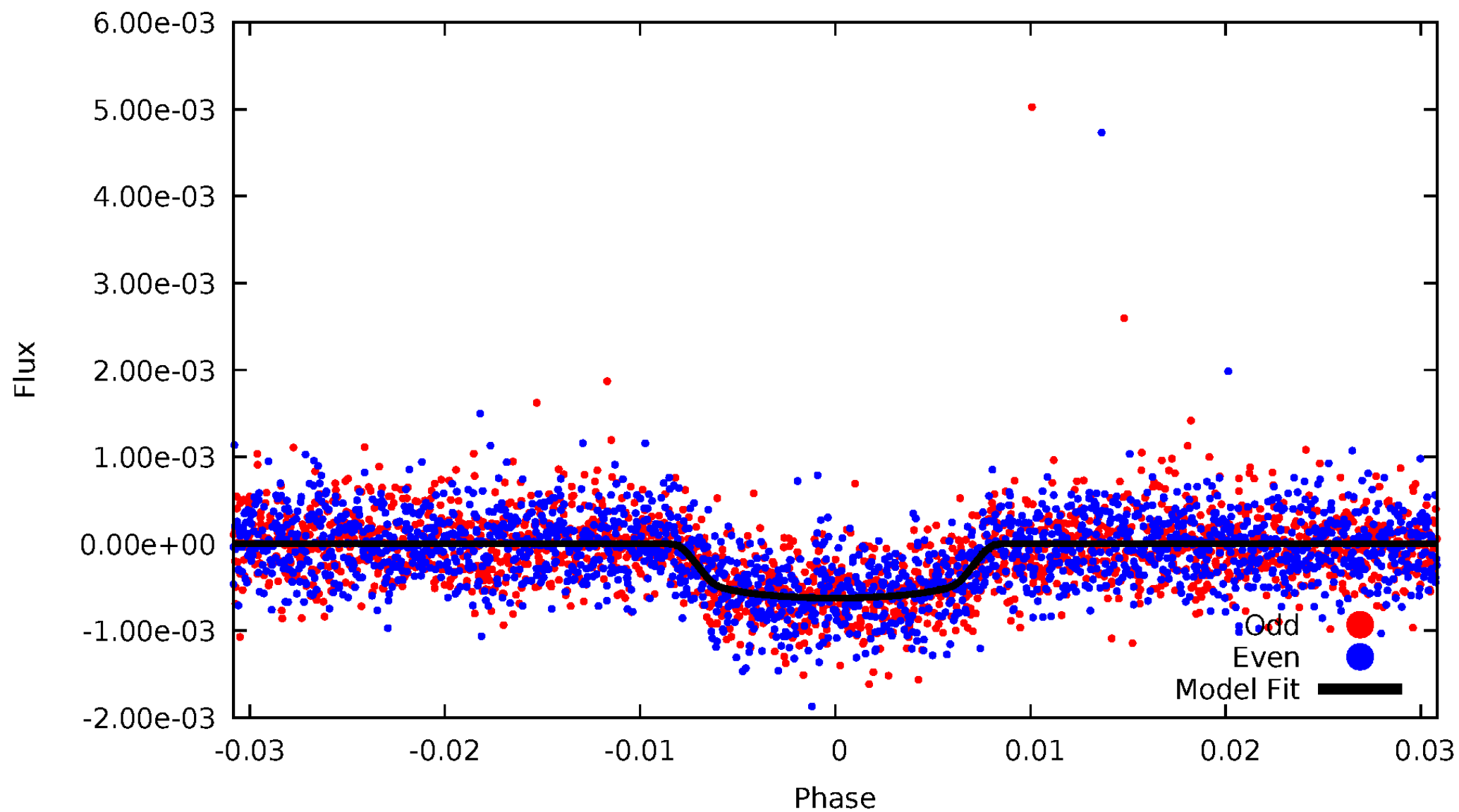


TCE 008022244-01



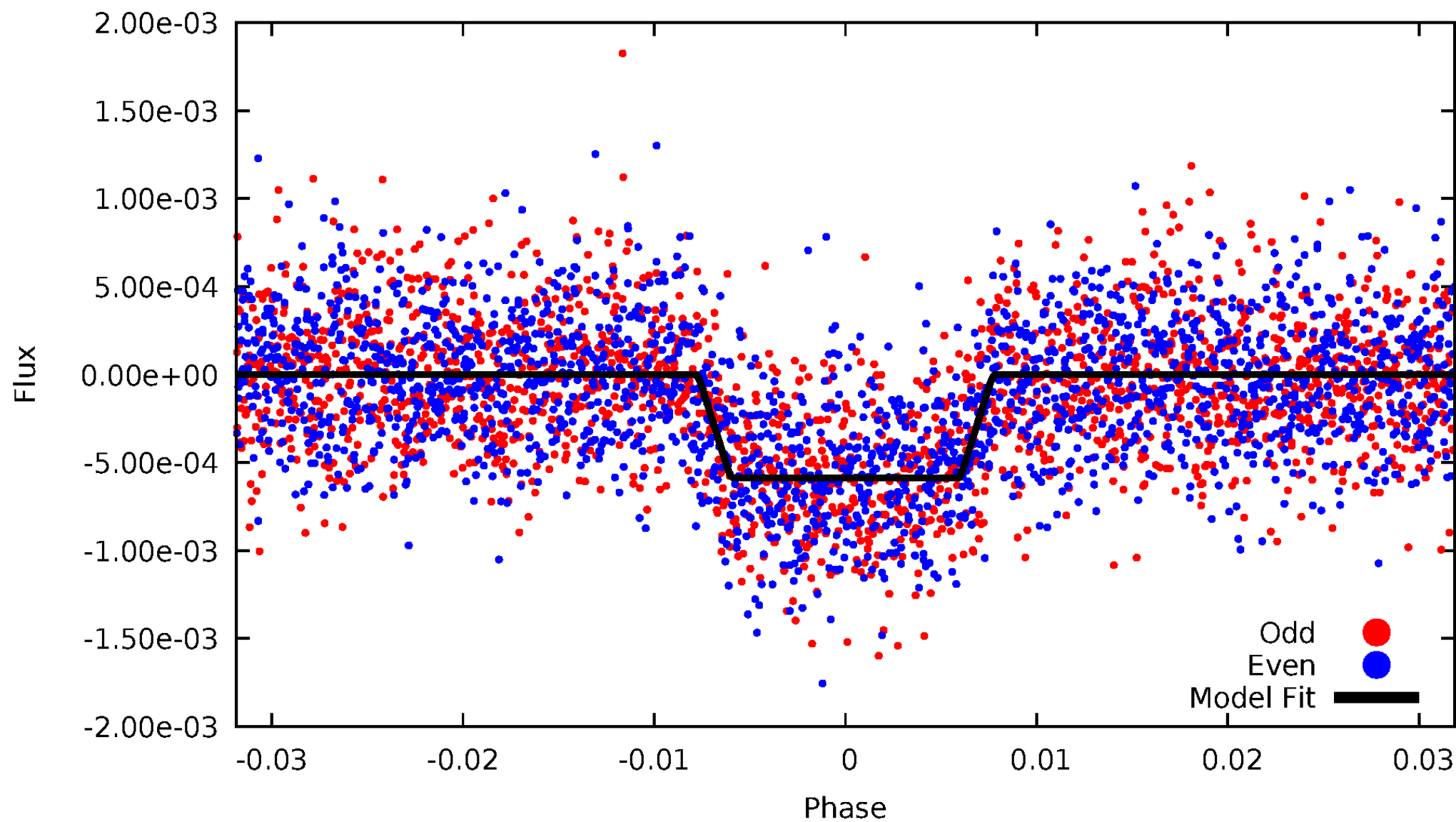
DV Odd/Even

TCE 008022244-01



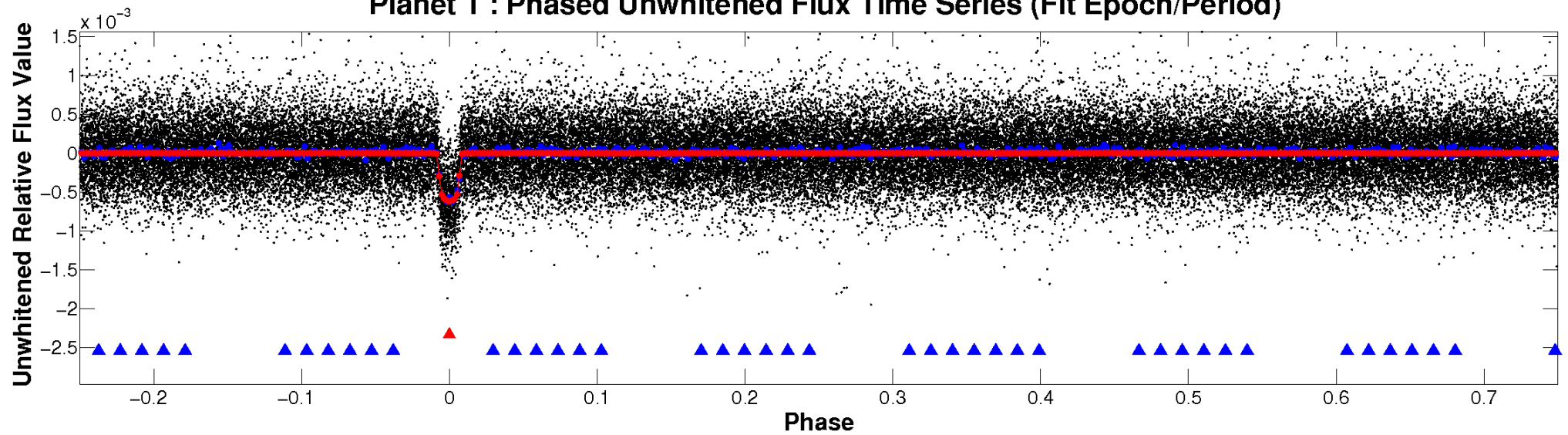
ALT Odd/Even

TCE 008022244-01

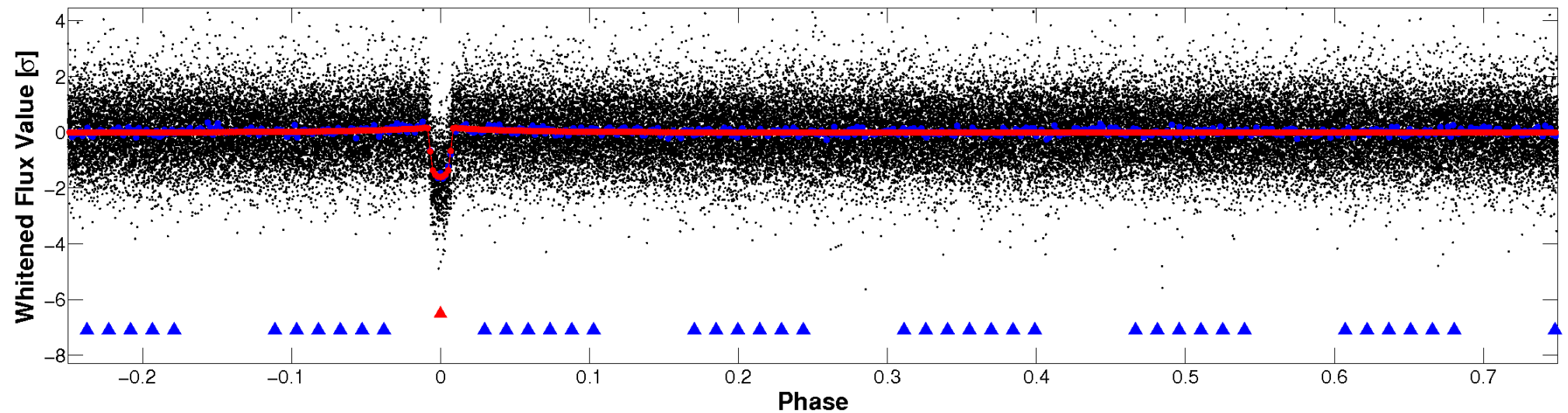


Non-Whitened Vs. Whitened Light Curve

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

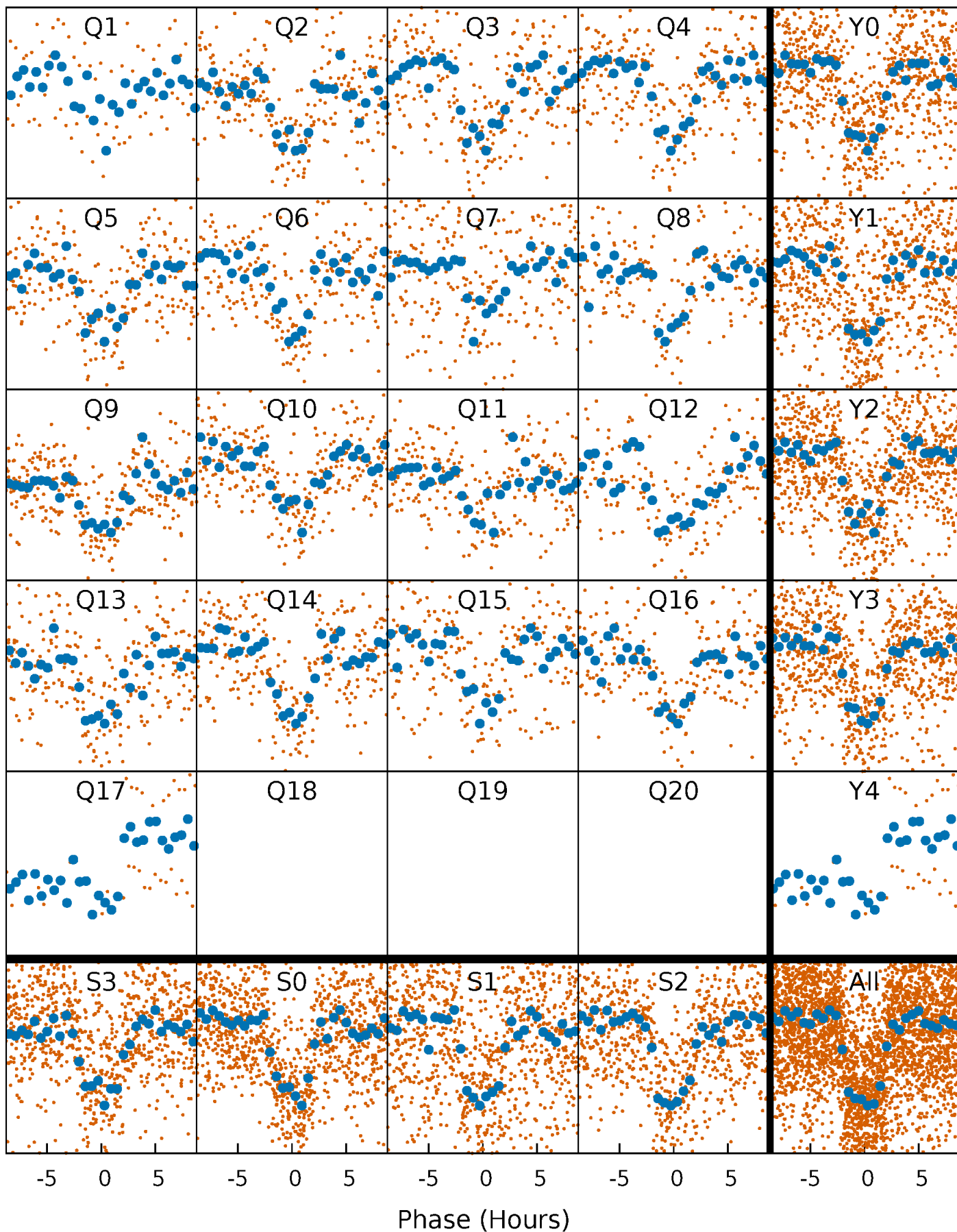


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



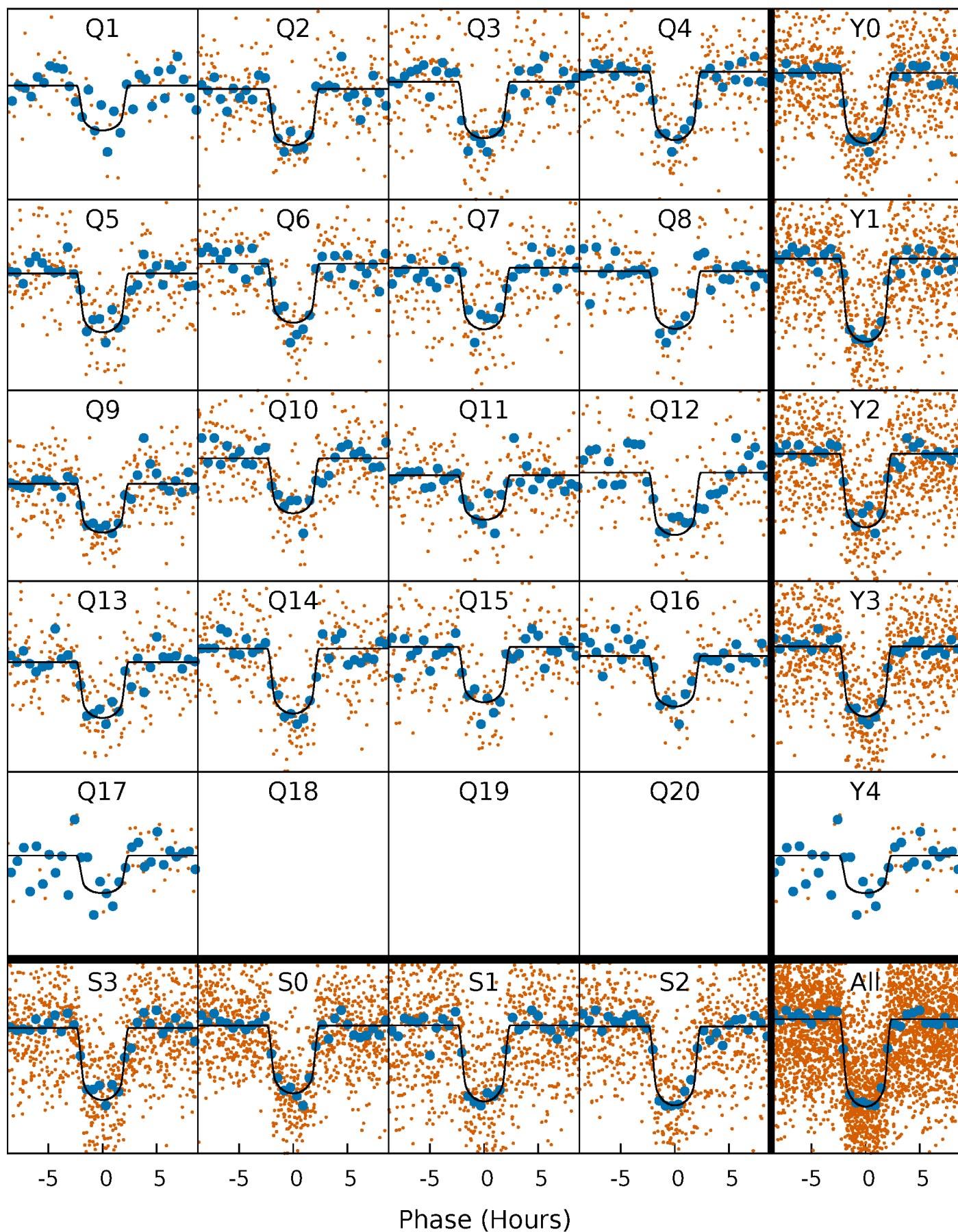
PDC Quarter-Phased Transit Curves

TCE 008022244-01 P= 11.903526 Days $T_0=142.630688$ (BKJD)



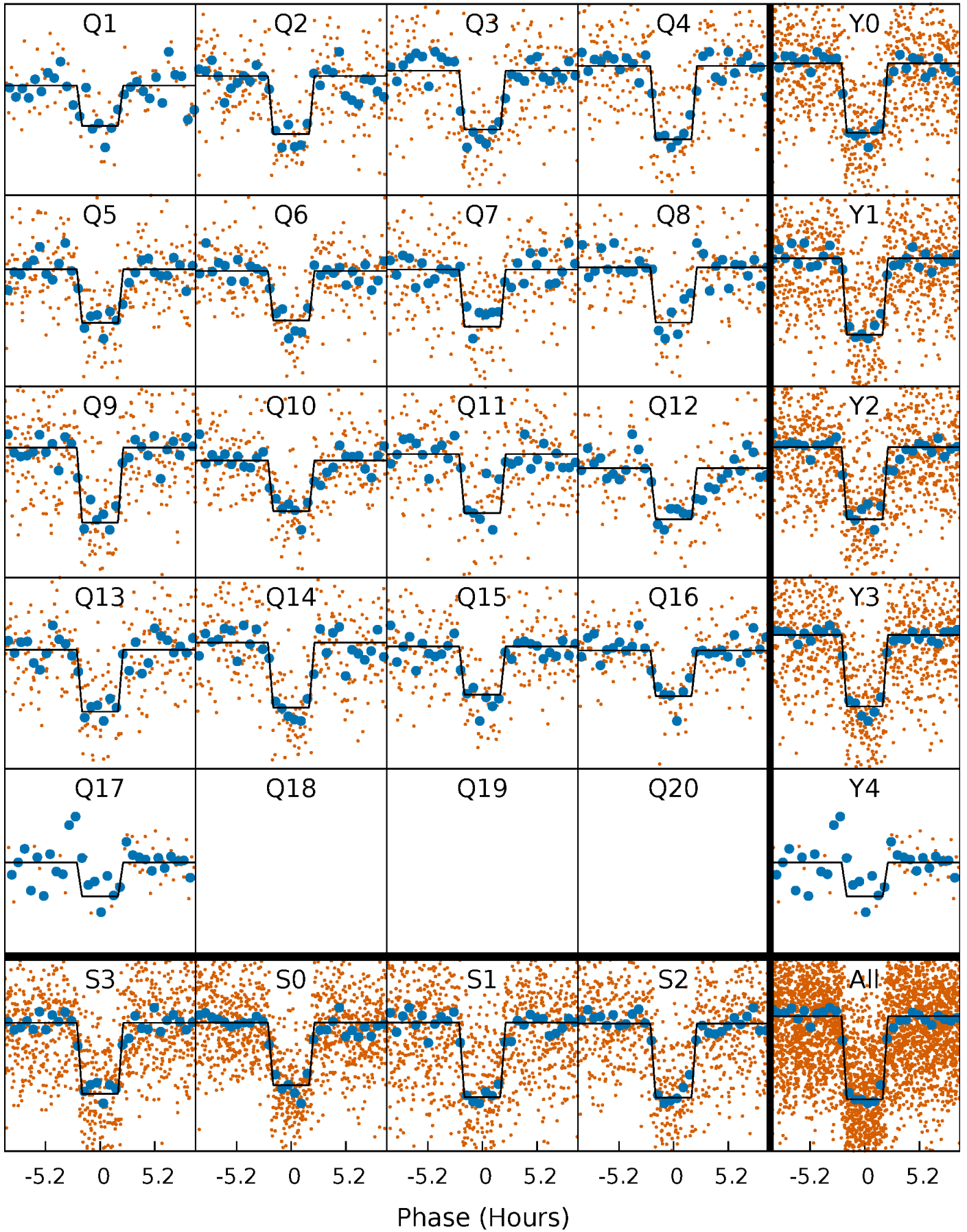
DV Quarter-Phased Transit Curves

TCE 008022244-01 P= 11.903526 Days $T_0=142.630688$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

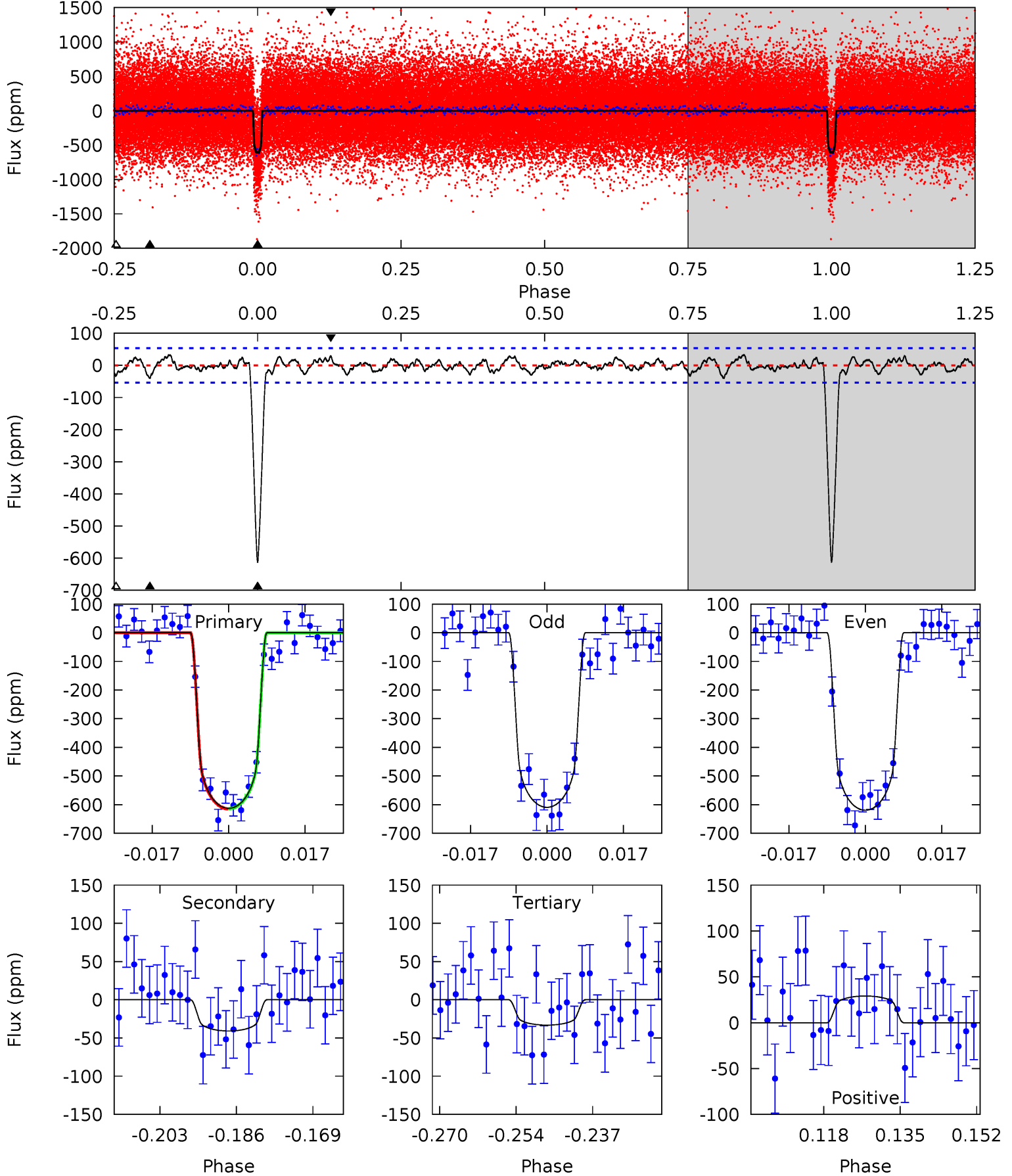
TCE 008022244-01 P= 11.903499 Days $T_0=142.632646$ (BKJD)



DV Model-Shift Uniqueness Test

008022244-01, P = 11.903526 Days, E = 130.727162 Days

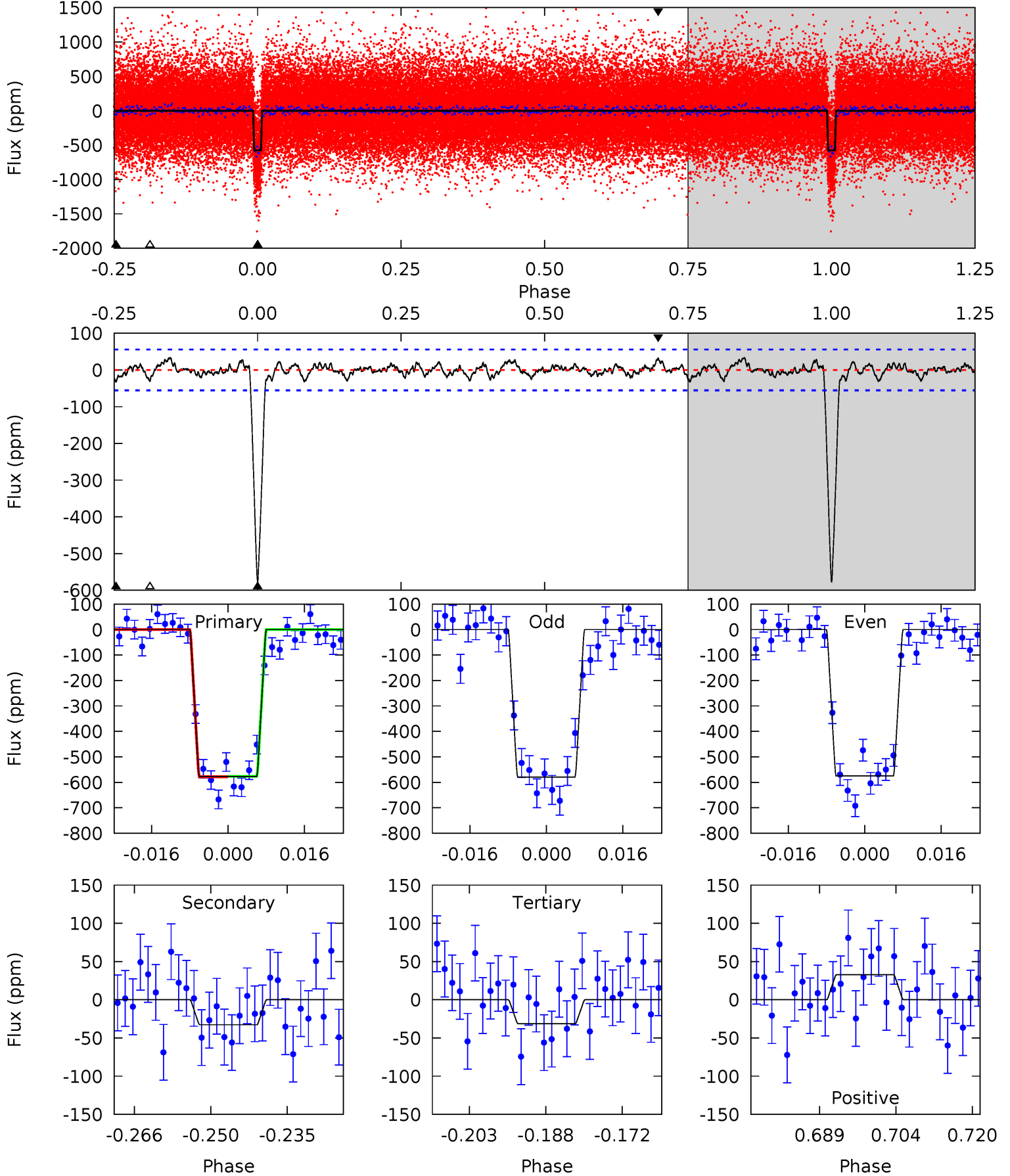
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
56.4	3.76	3.05	2.68	4.92	2.39	1.18	53.3	53.7	0.71	1.08	0.47	1.01	0.05	0.05



Alt Model-Shift Uniqueness Test

008022244-01, P = 11.903499 Days, E = 130.729147 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
51.3	2.90	2.78	2.90	4.94	2.42	1.05	48.5	48.4	0.13	0.00	0.18	1.02	0.05	0.11



Stellar Parameters For KIC 008022244

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6063^{+181}_{-217}	$4.470^{+0.054}_{-0.216}$	$-0.020^{+0.250}_{-0.300}$	$1.001^{+0.318}_{-0.106}$	$1.079^{+0.145}_{-0.145}$	$1.517^{+0.444}_{-0.820}$
	+3%/-4%	+1%/-5%	+1250%/-1500%	+32%/-11%	+13%/-13%	+29%/-54%
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 008022244-01 / KOI 0519.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-41 ± 11	$2.87^{+0.53}_{-0.45}$	1181^{+86}_{-59}	3515^{+218}_{-221}	29^{+14}_{-11}
Alt.	-33 ± 11	$2.74^{+0.53}_{-0.41}$	1179^{+84}_{-62}	3445^{+229}_{-243}	25^{+14}_{-10}

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

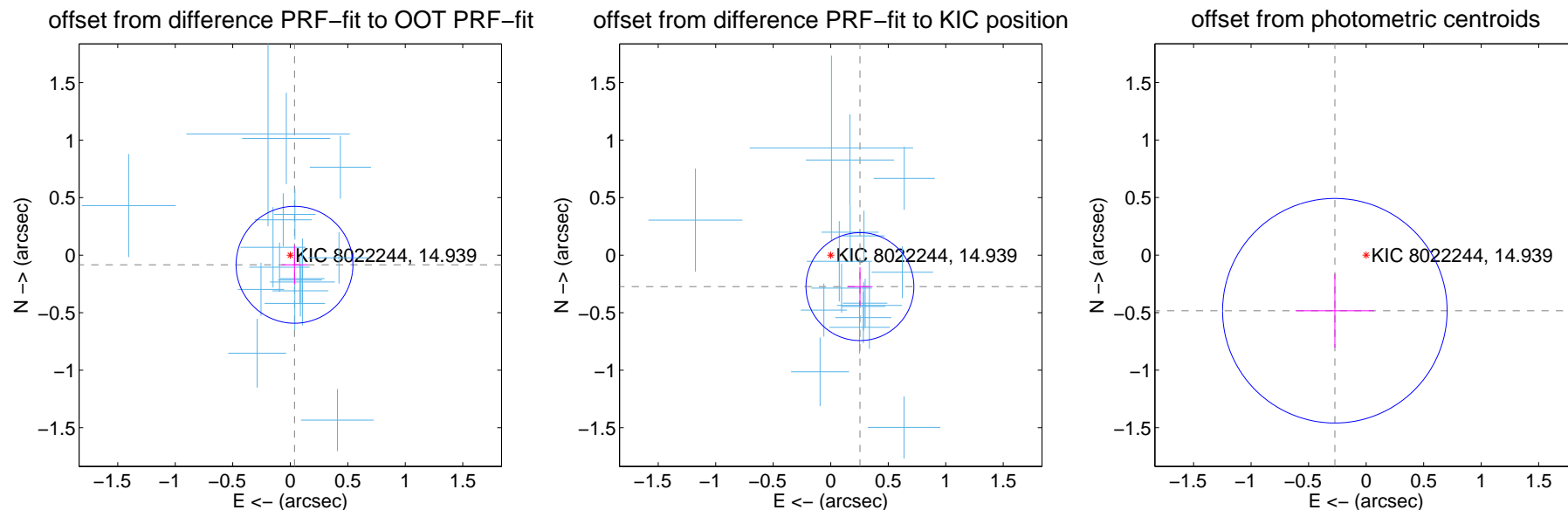
DV Centroid Data

Supplemental centroid analysis for 008022244-01. Kepler magnitude: 14.94. Transit SNR 42.02

There are 17 quarters with good PRF difference image offsets

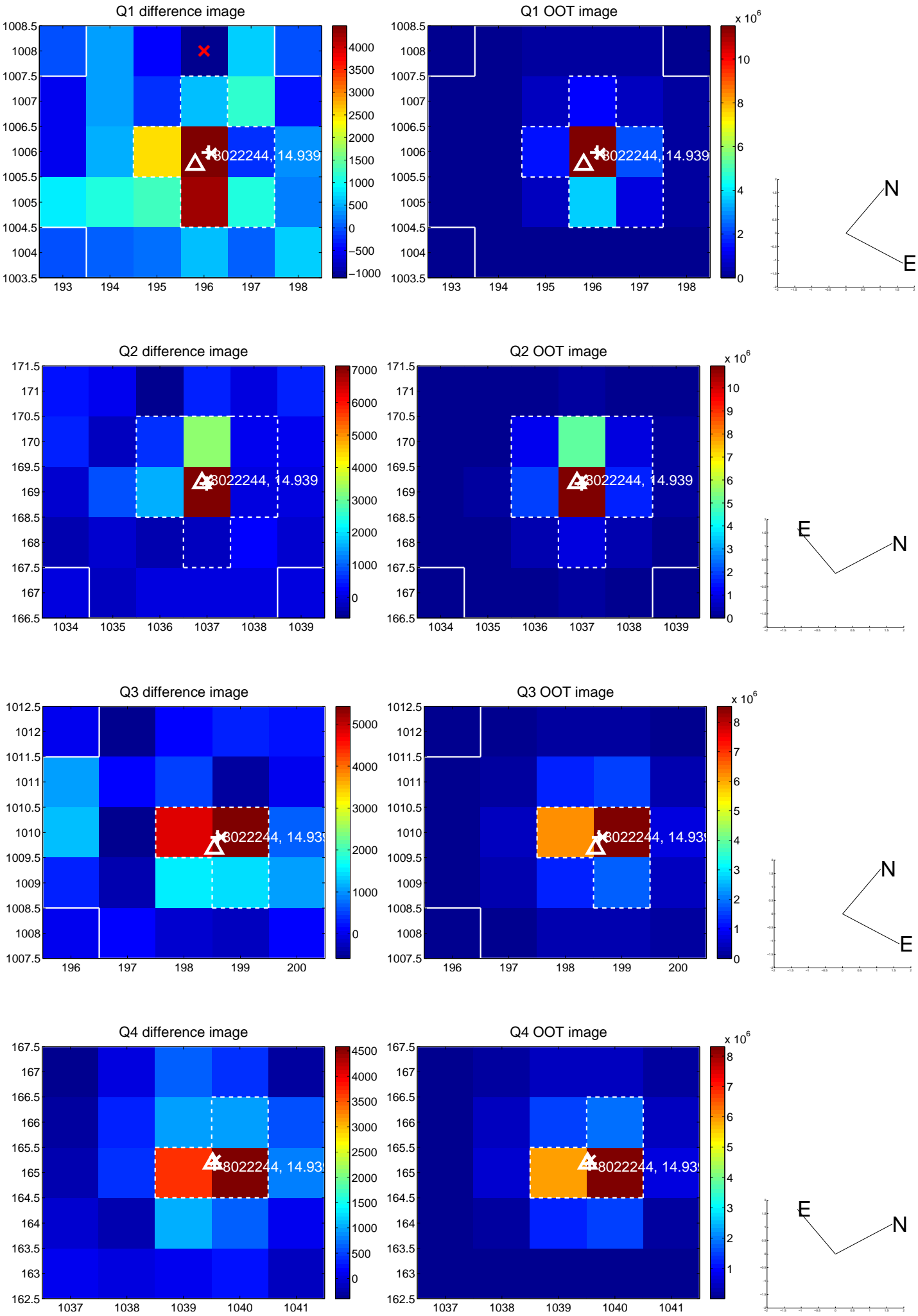
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.092 ± 0.169	0.54	-0.037 ± 0.112	-0.084 ± 0.170
PRF-fit source offset from KIC position	0.373 ± 0.156	2.39	-0.254 ± 0.110	-0.274 ± 0.168
photometric centroid source offset	0.55 ± 0.33	1.71	0.27 ± 0.34	-0.48 ± 0.32

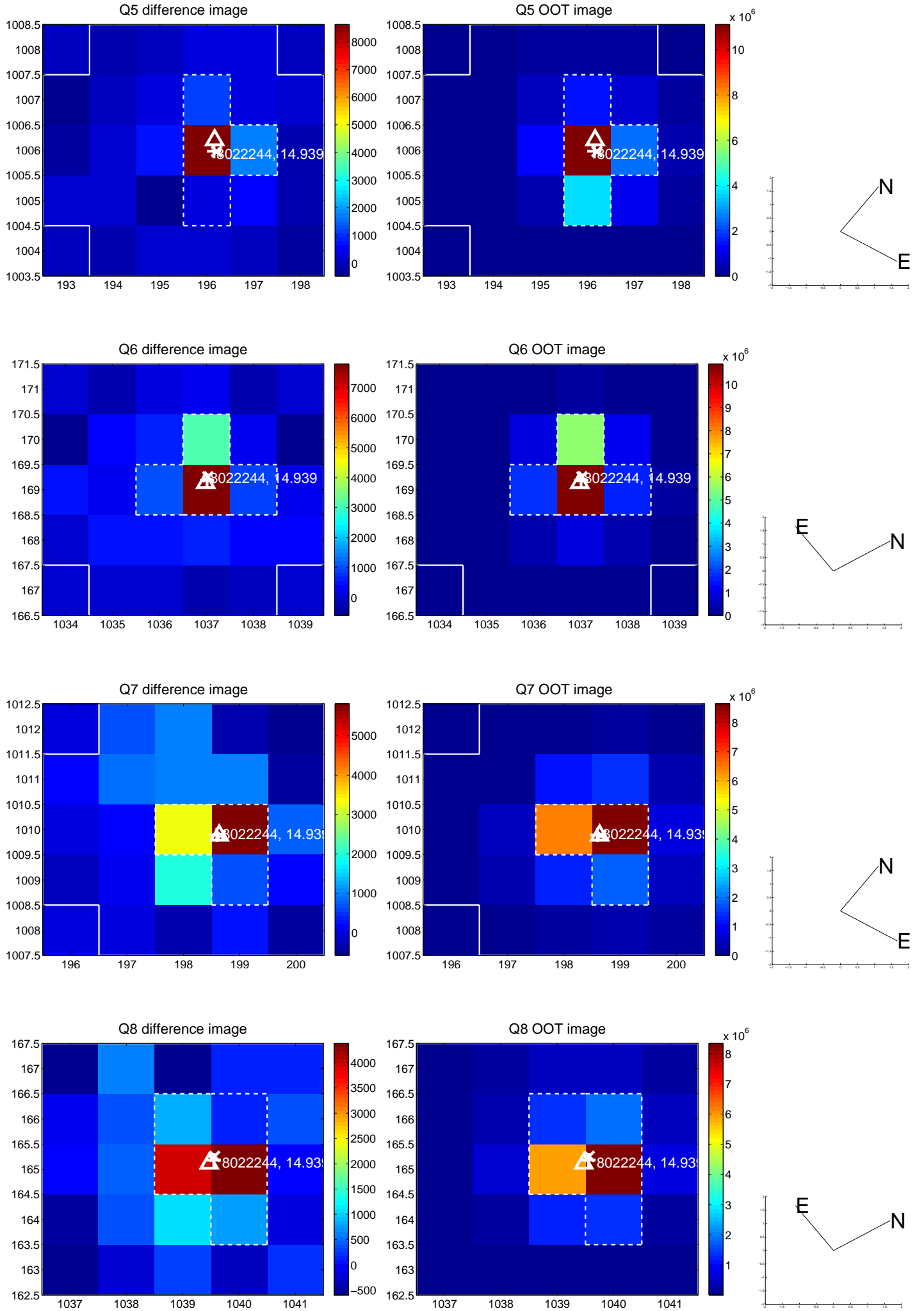


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

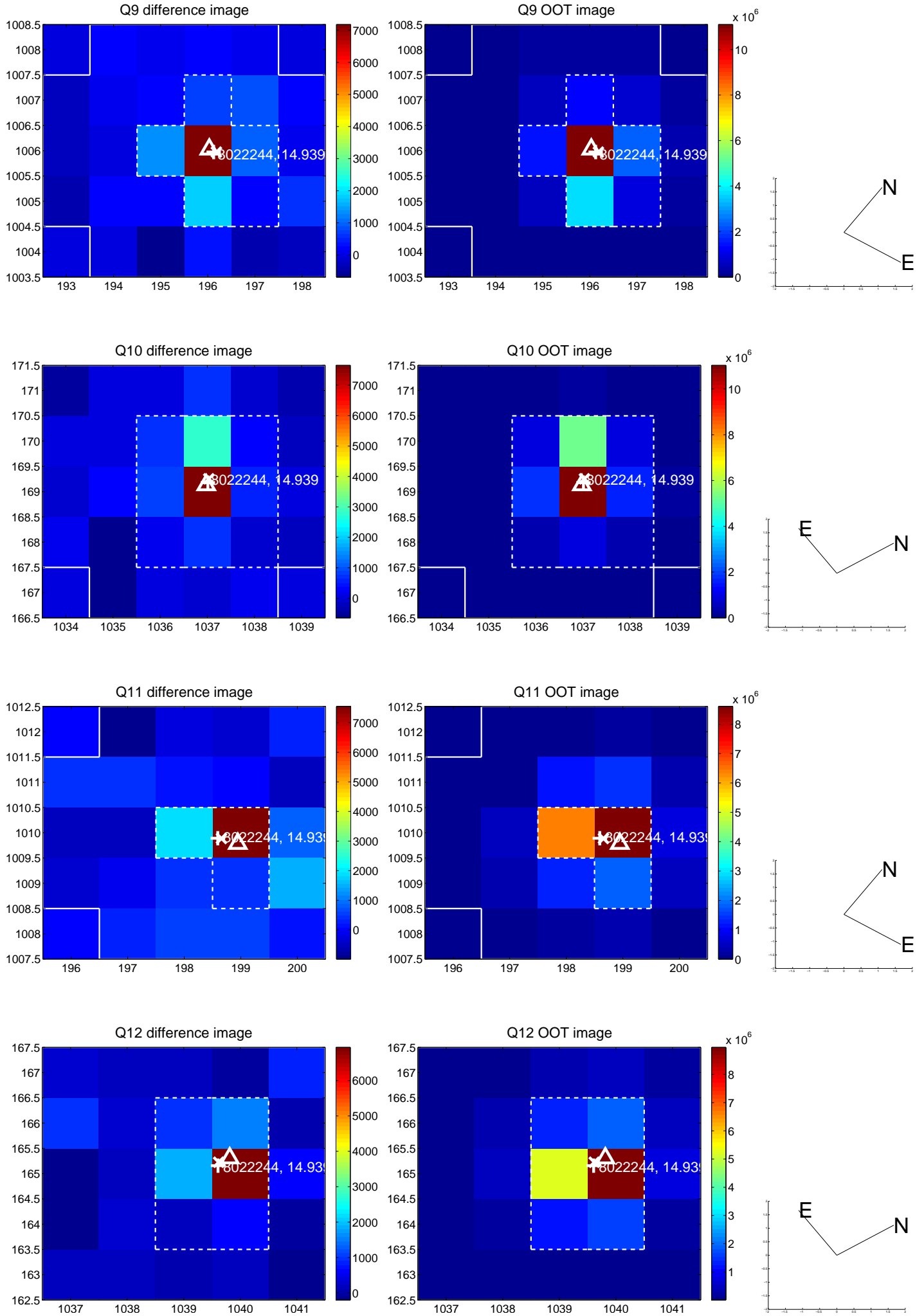
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



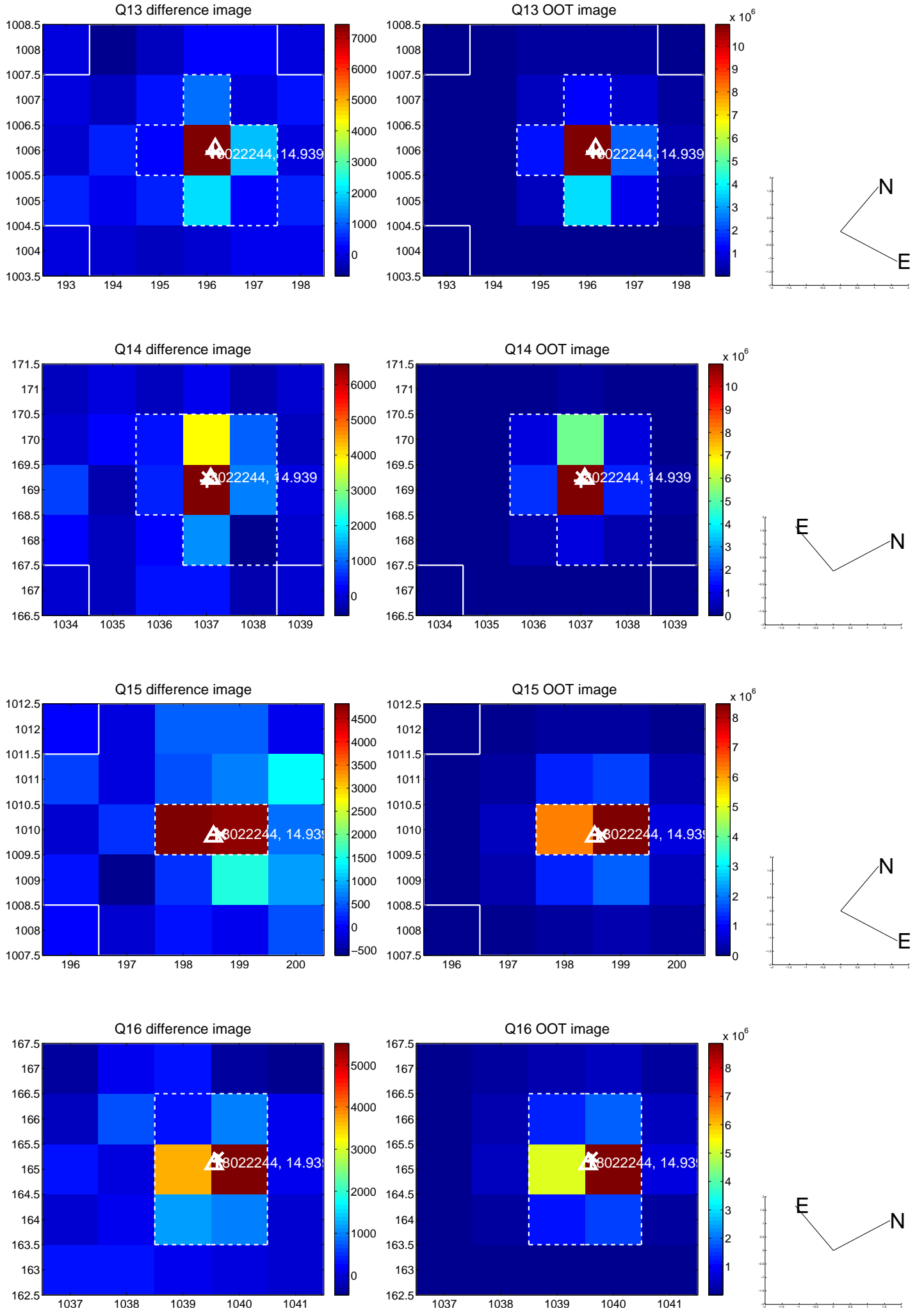
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



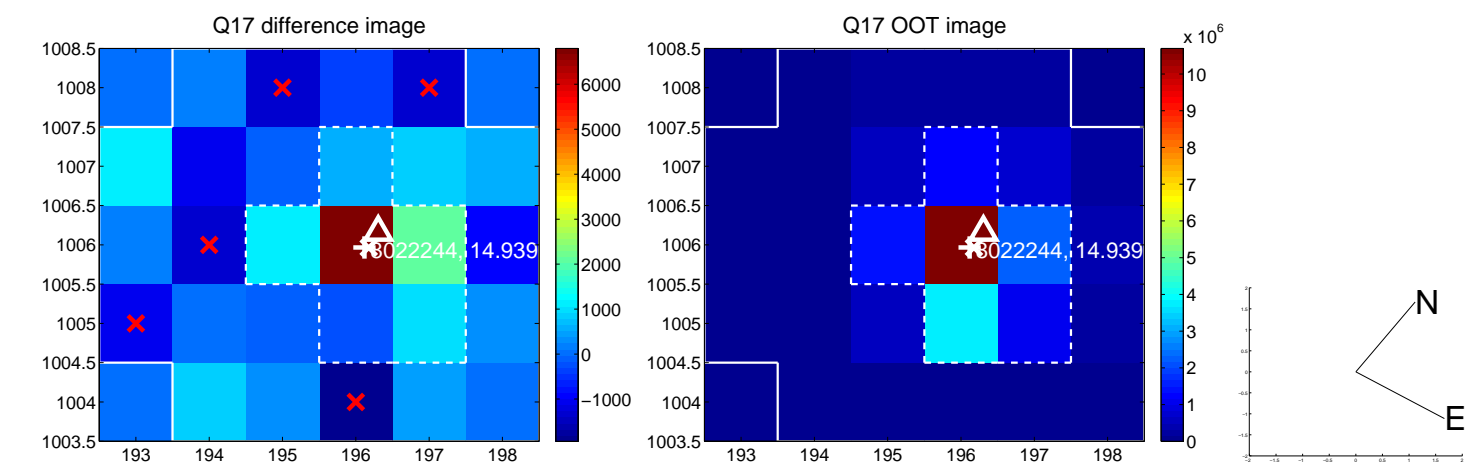
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



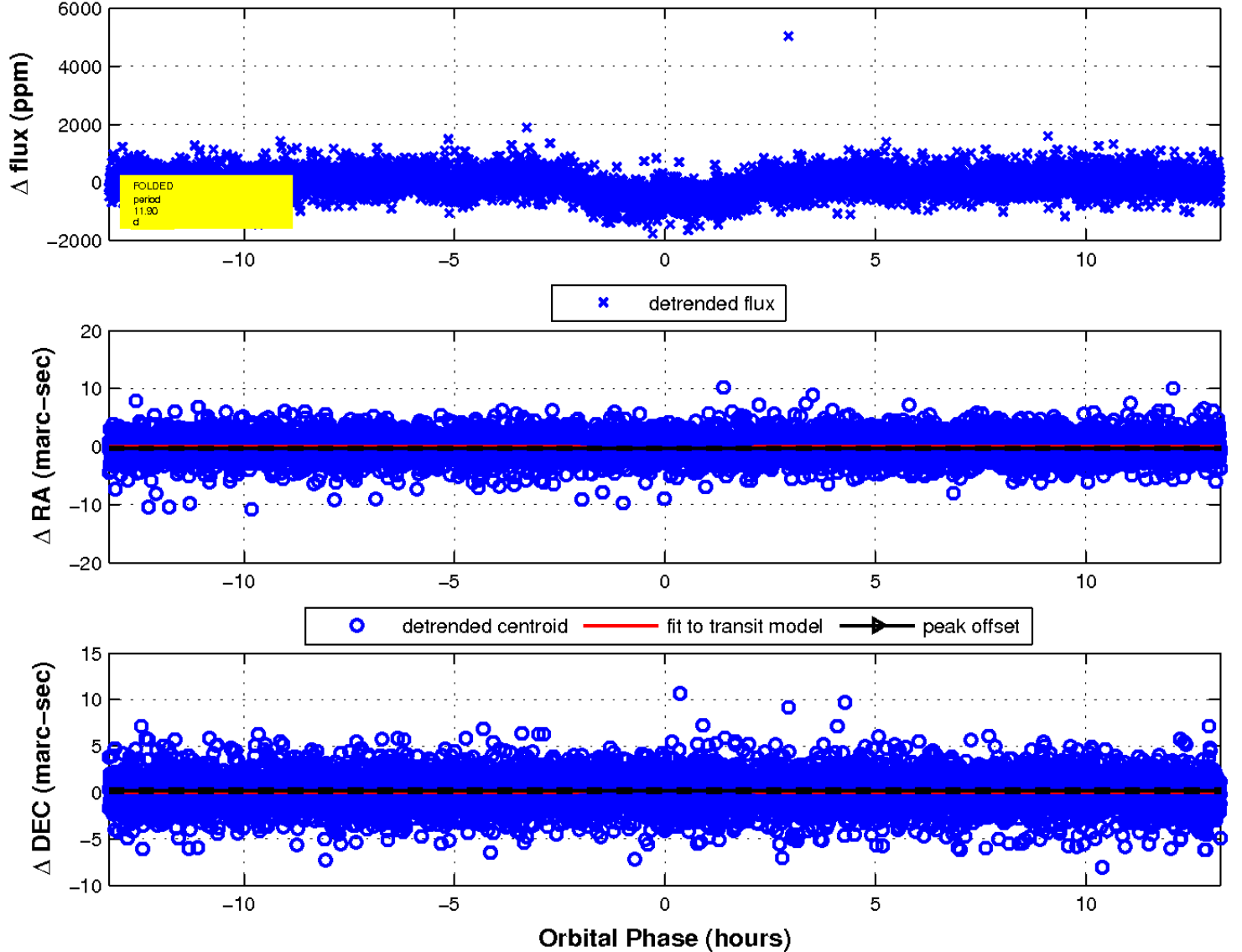
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

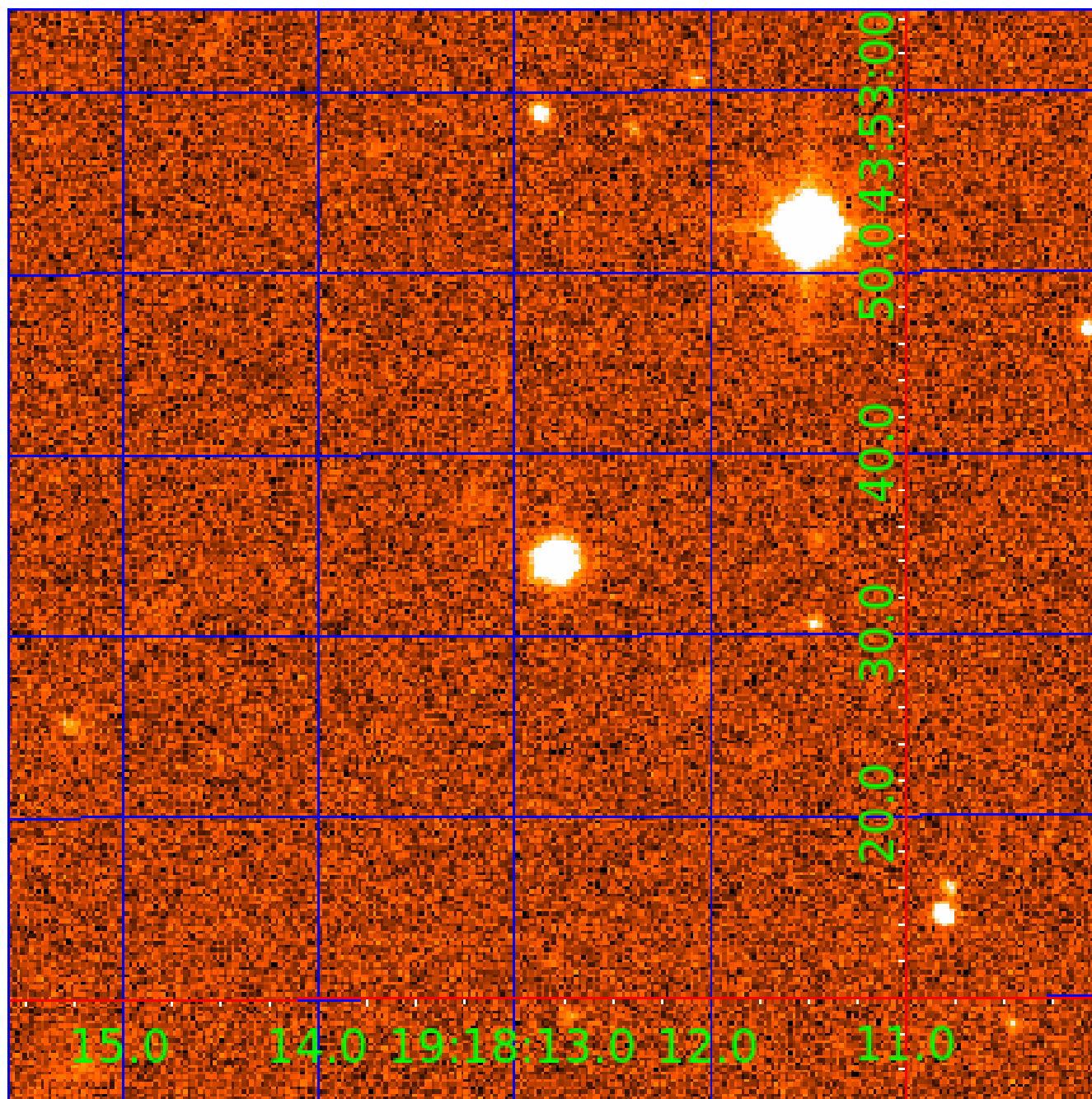


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 008022244

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})
008022244-01	OBS	0519.01	11.903526	142.630689	622.3	4.403	39.7	42.0	1.00	6063	2.77	110.76
008022244-02	OBS	0519.02	34.034961	134.430956	719.1	7.088	34.1	35.4	1.00	6063	3.05	27.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008022244-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008022244-02	OBS	PC	1.00	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.

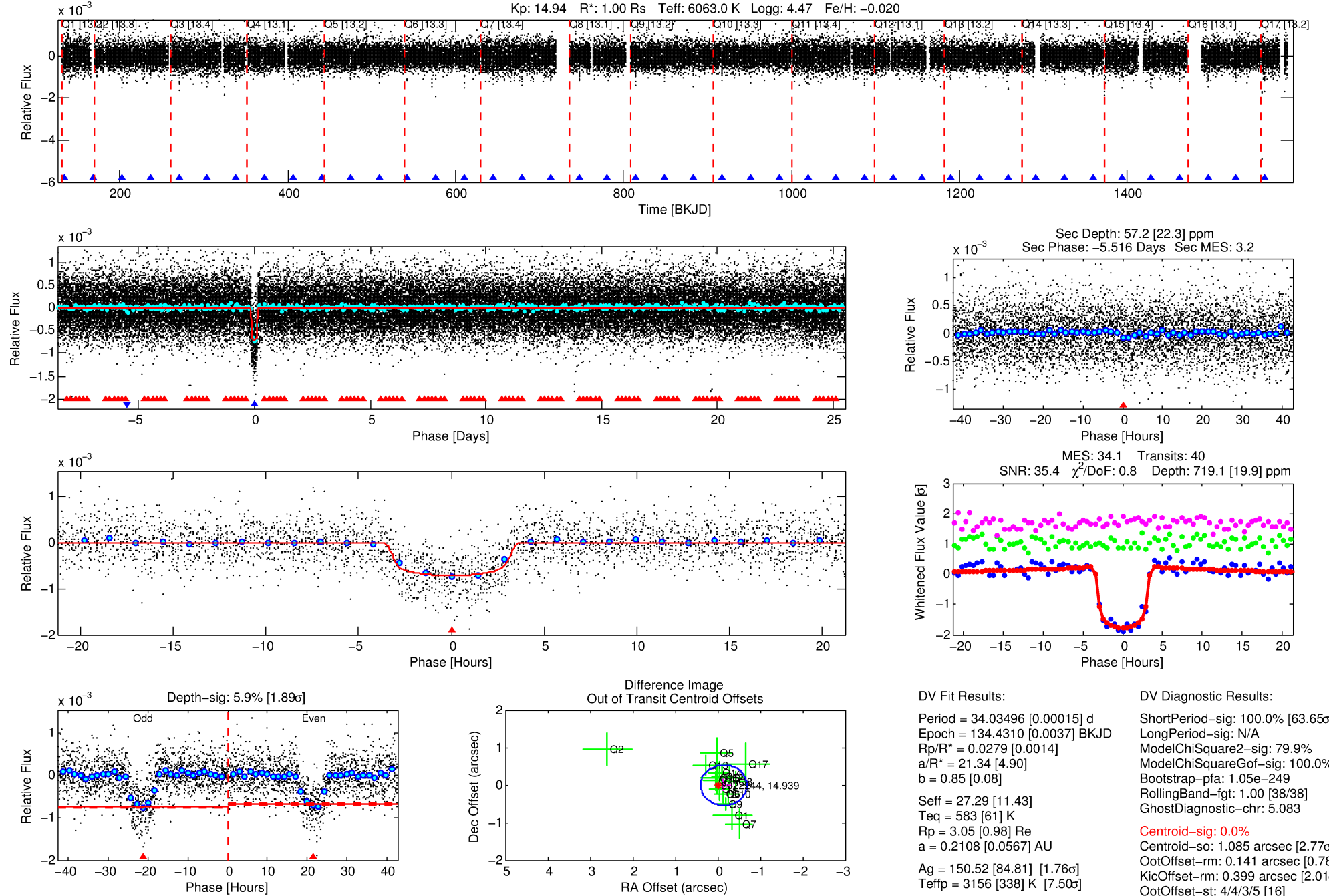
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008022244-02

No Significant Match Found

DV One-Page Summary

KIC: 8022244 Candidate: 2 of 2 Period: 34.035 d
KOI: K00519.02 Name: Kepler-175c Corr: 0.996



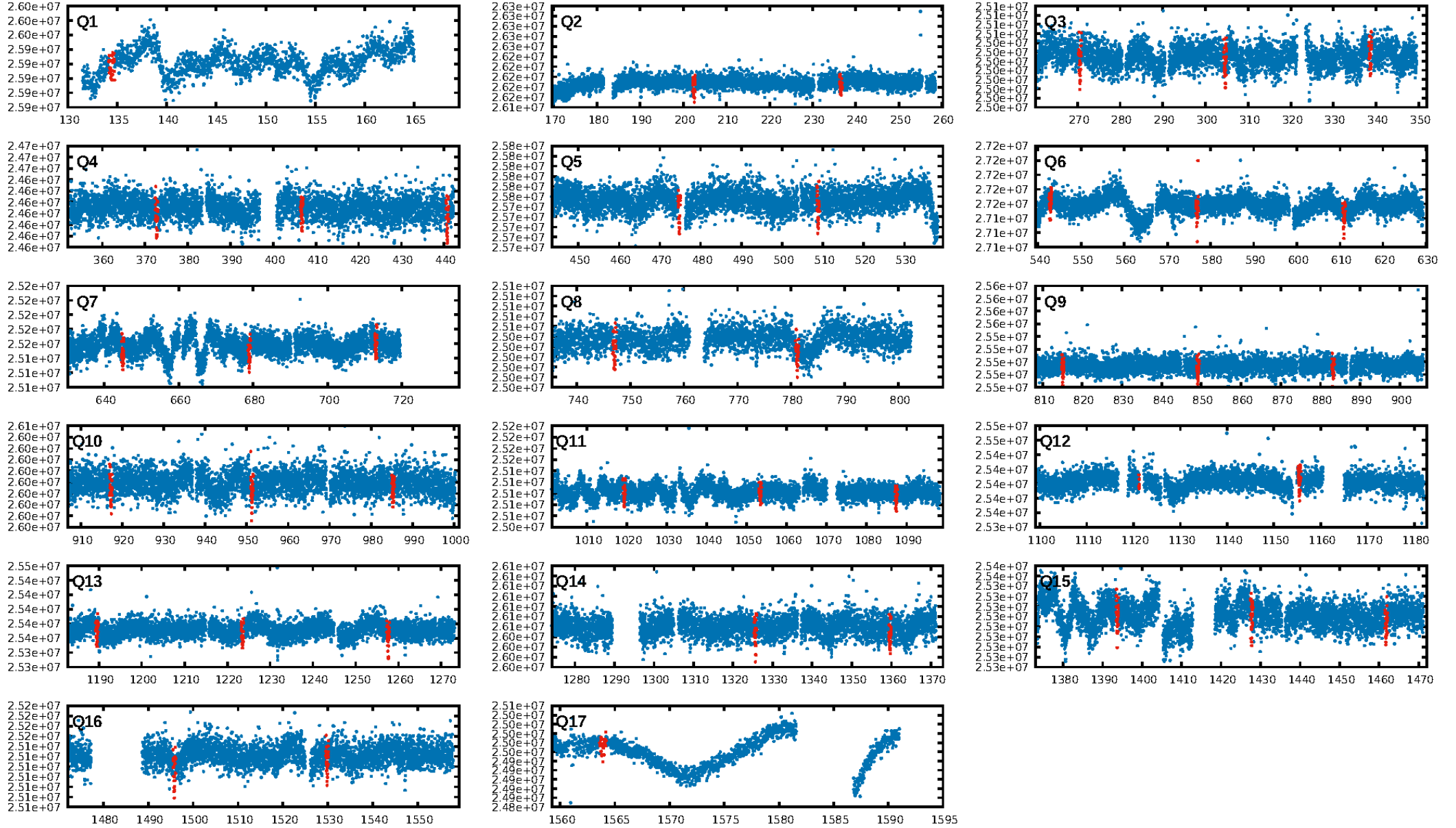
DV Fit Results:

Period = 34.03496 [0.00015] d
Epoch = 134.4310 [0.0037] BKJD
Rp/R* = 0.0279 [0.0014]
a/R* = 21.34 [4.90]
b = 0.85 [0.08]
Seff = 27.29 [11.43]
Teq = 583 [61] K
Rp = 3.05 [0.98] Re
a = 0.2108 [0.0567] AU
Ag = 150.52 [84.81] [1.76 σ]
Teffp = 3156 [338] K [7.50 σ]

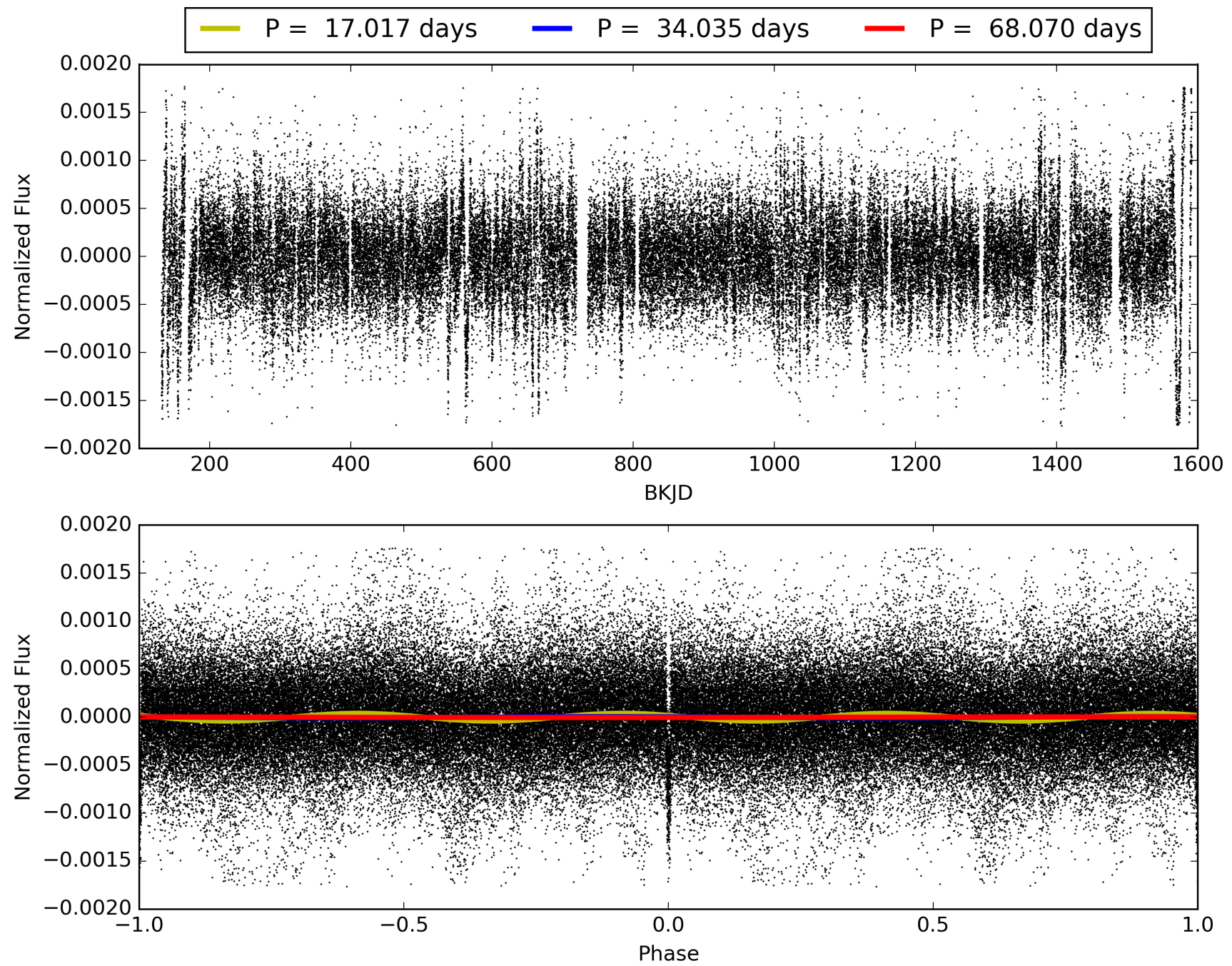
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [63.65 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 79.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.05e-249
RollingBand-fgt: 1.00 [38/38]
GhostDiagnostic-chr: 5.083
Centroid-sig: 0.0%
Centroid-so: 1.085 arcsec [2.77 σ]
OotOffset-rm: 0.141 arcsec [0.78 σ]
KicOffset-rm: 0.399 arcsec [2.01 σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [16/16]

TCE 008022244-02, PDC Light Curves

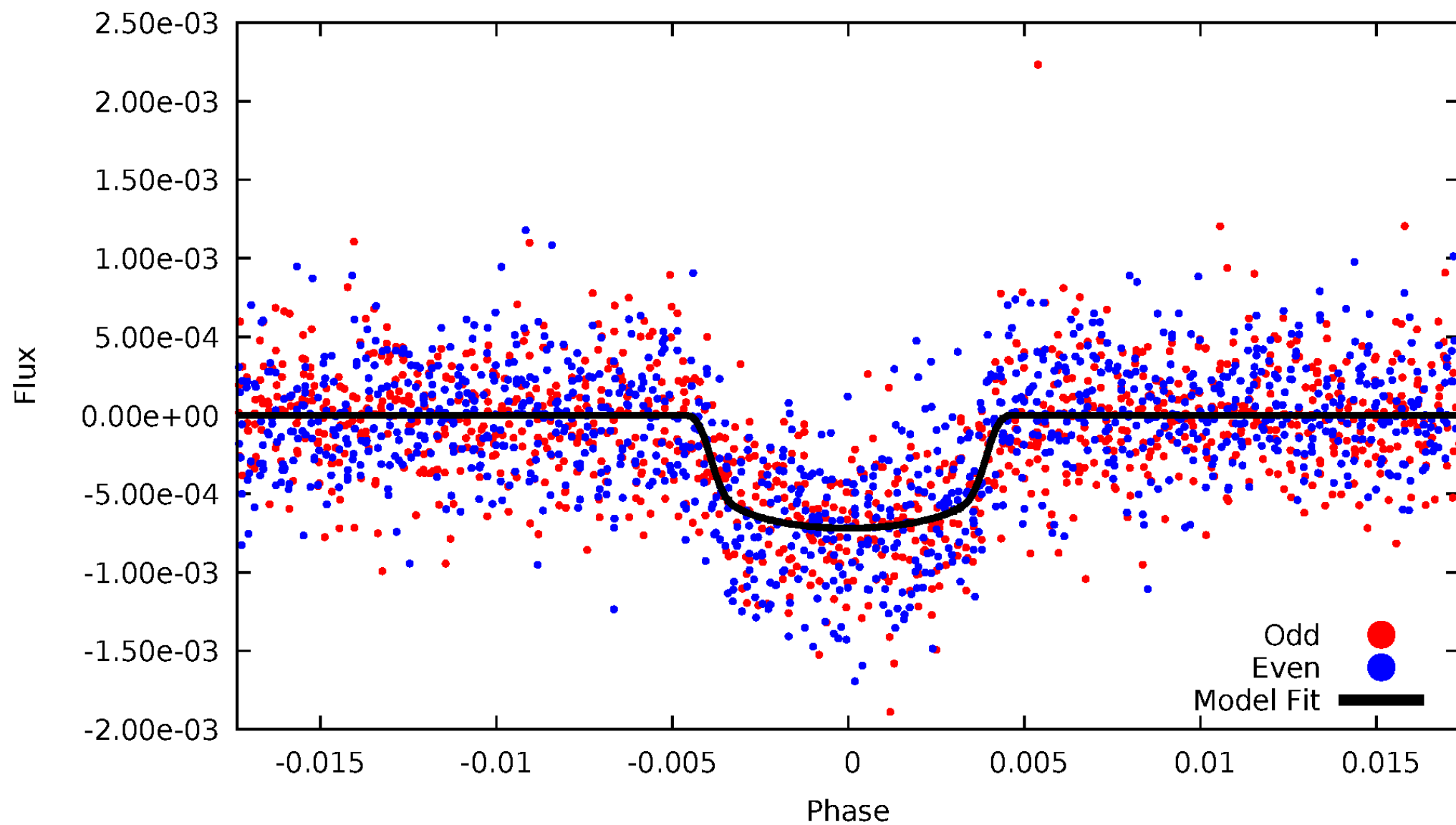


TCE 008022244-02



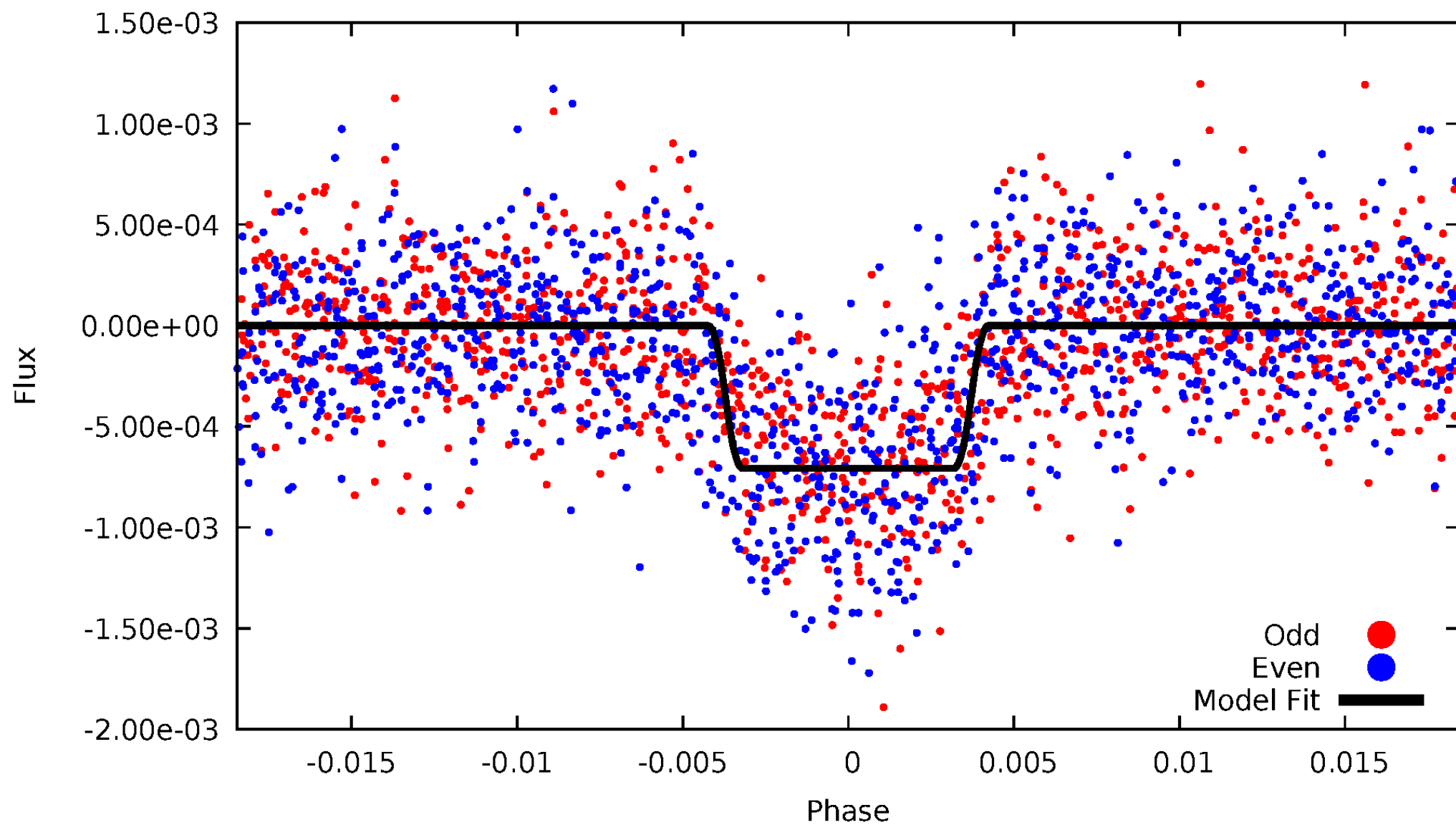
DV Odd/Even

TCE 008022244-02



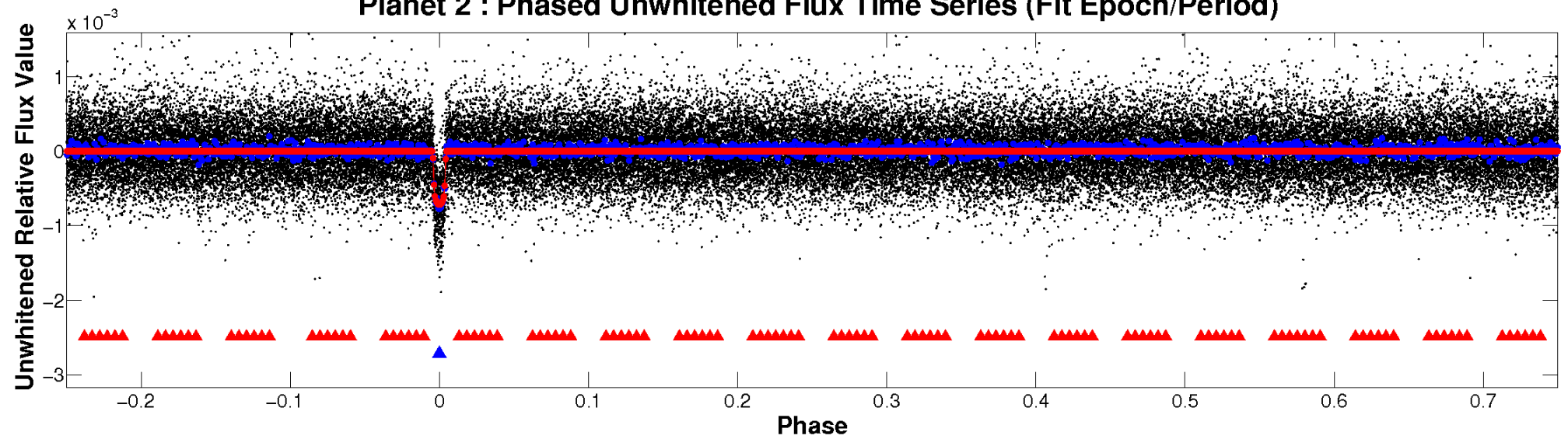
ALT Odd/Even

TCE 008022244-02

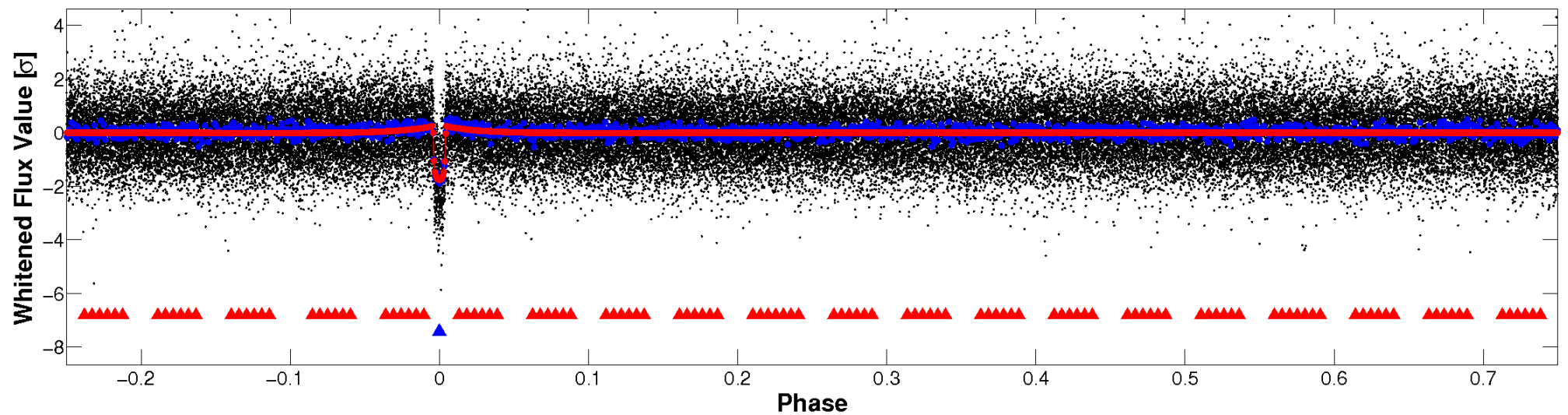


Non-Whitened Vs. Whitened Light Curve

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

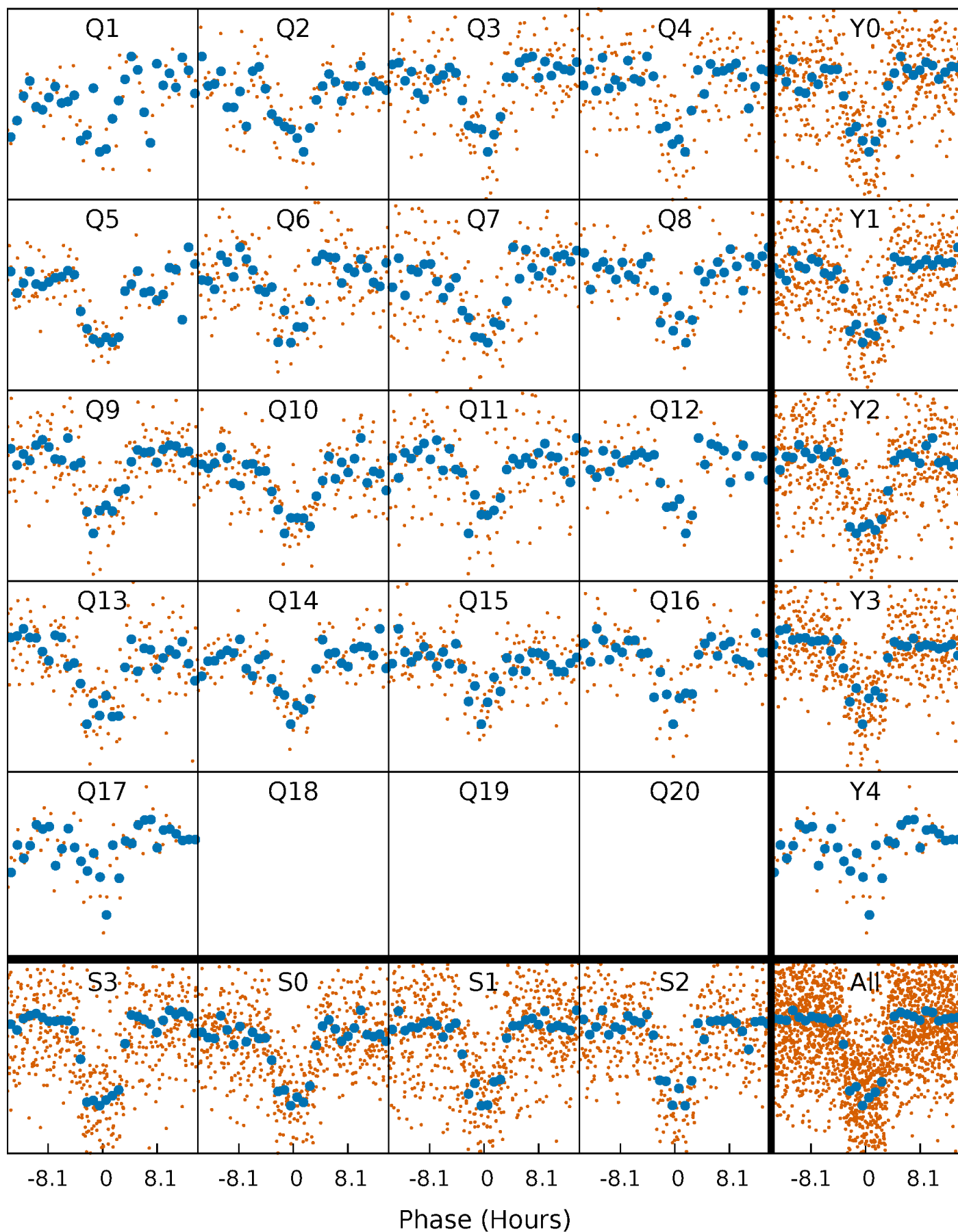


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



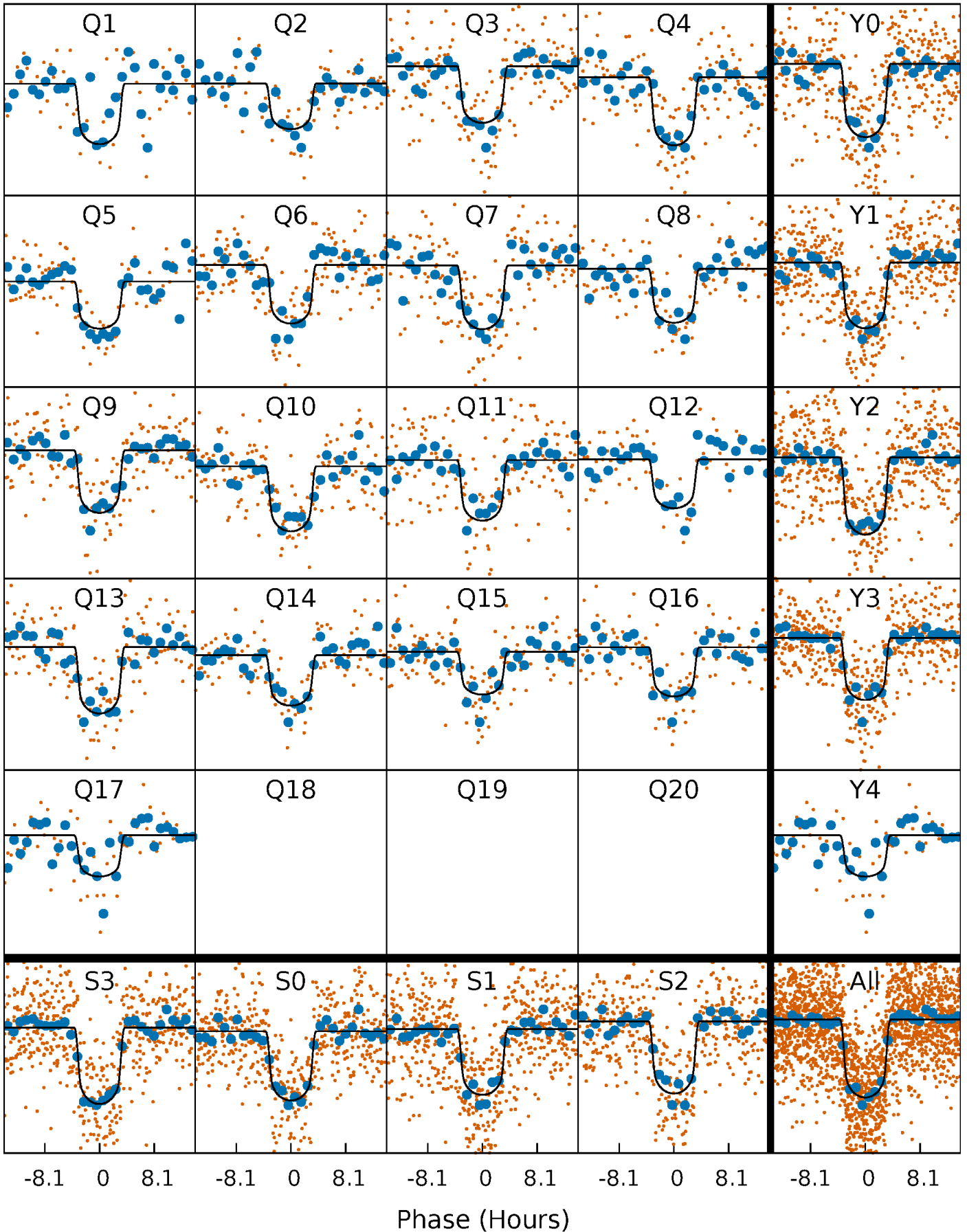
PDC Quarter-Phased Transit Curves

TCE 008022244-02 P= 34.034961 Days $T_0=134.430956$ (BKJD)



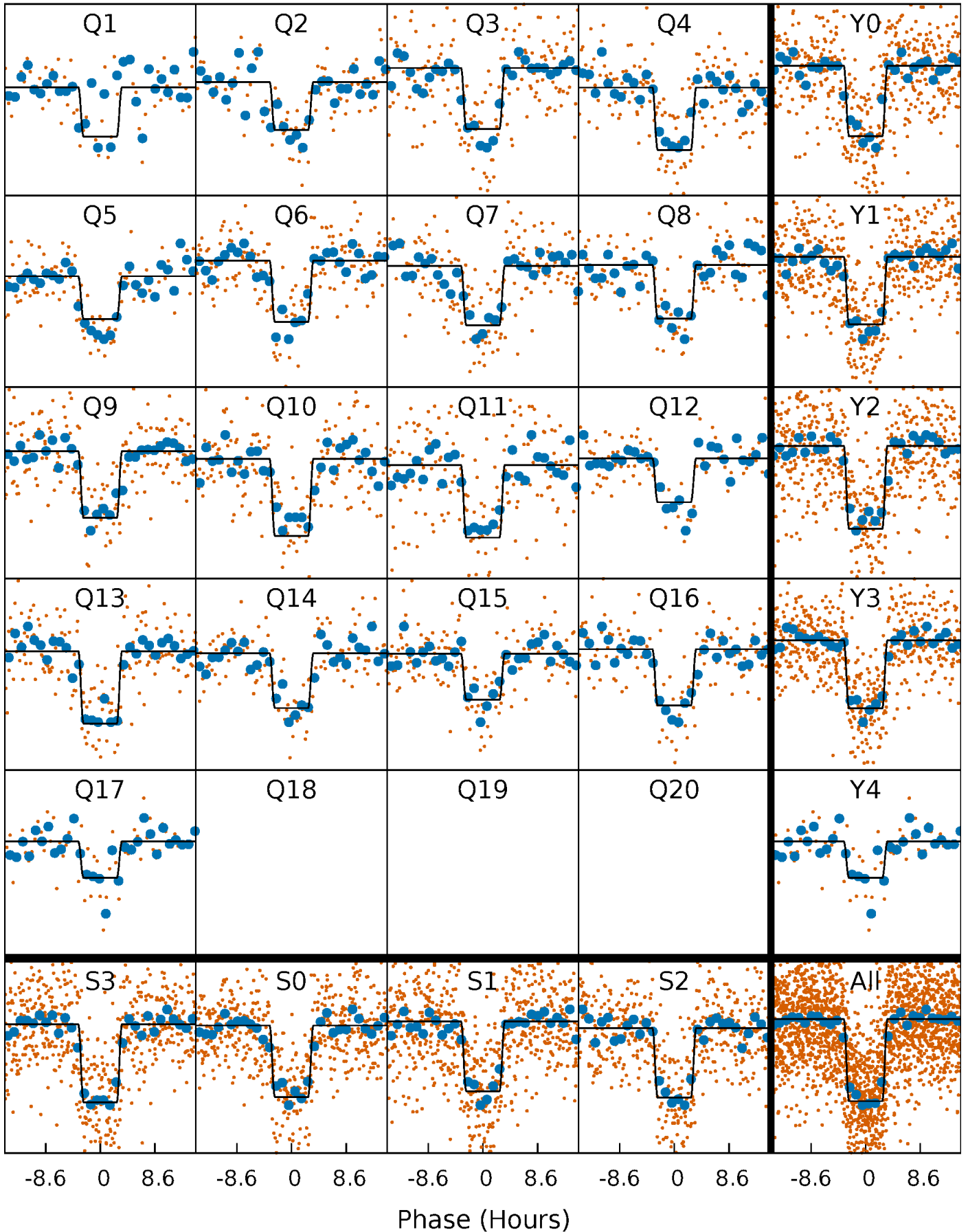
DV Quarter-Phased Transit Curves

TCE 008022244-02 P= 34.034961 Days $T_0=134.430956$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

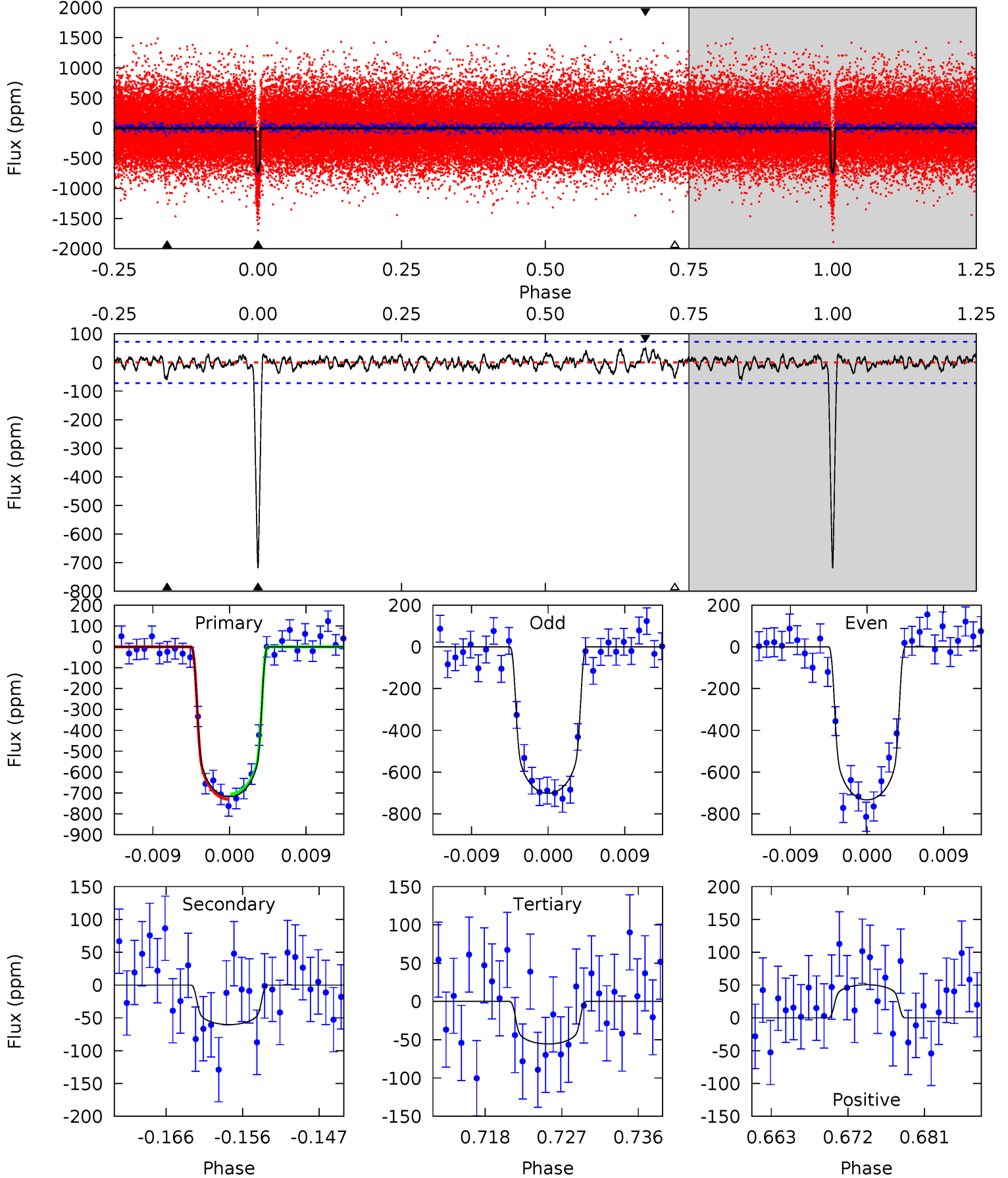
TCE 008022244-02 P= 34.034304 Days $T_0=134.443492$ (BKJD)



DV Model-Shift Uniqueness Test

008022244-02, P = 34.034961 Days, E = 100.395995 Days

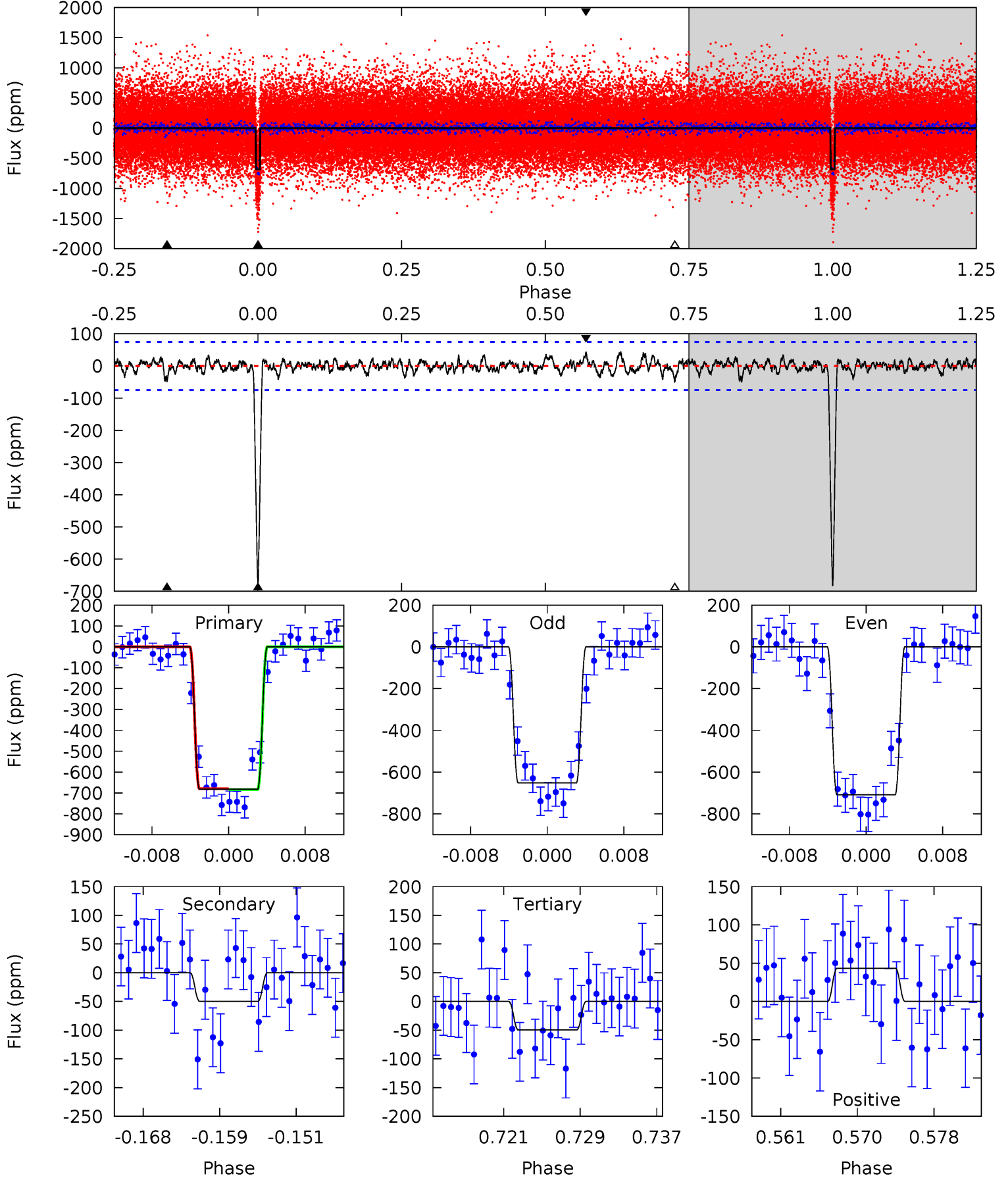
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.2	4.21	3.88	3.53	5.04	2.60	1.11	46.3	46.7	0.33	0.69	1.09	0.97	0.07	0.86



Alt Model-Shift Uniqueness Test

008022244-02, P = 34.034304 Days, E = 100.409188 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
46.1	3.37	3.37	2.93	5.06	2.64	0.94	42.8	43.2	0.00	0.44	1.93	0.99	0.06	0.13



Stellar Parameters For KIC 008022244

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6063^{+181}_{-217}	$4.470^{+0.054}_{-0.216}$	$-0.020^{+0.250}_{-0.300}$	$1.001^{+0.318}_{-0.106}$	$1.079^{+0.145}_{-0.145}$	$1.517^{+0.444}_{-0.820}$
	+3%/-4%	+1%/-5%	+1250%/-1500%	+32%/-11%	+13%/-13%	+29%/-54%
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 008022244-02 / KOI 0519.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-60 ± 14	$3.15^{+0.54}_{-0.32}$	832^{+61}_{-37}	3624^{+168}_{-181}	143^{+46}_{-49}
Alt.	-50 ± 15	$3.00^{+0.53}_{-0.31}$	830^{+61}_{-42}	3568^{+202}_{-222}	127^{+54}_{-47}

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

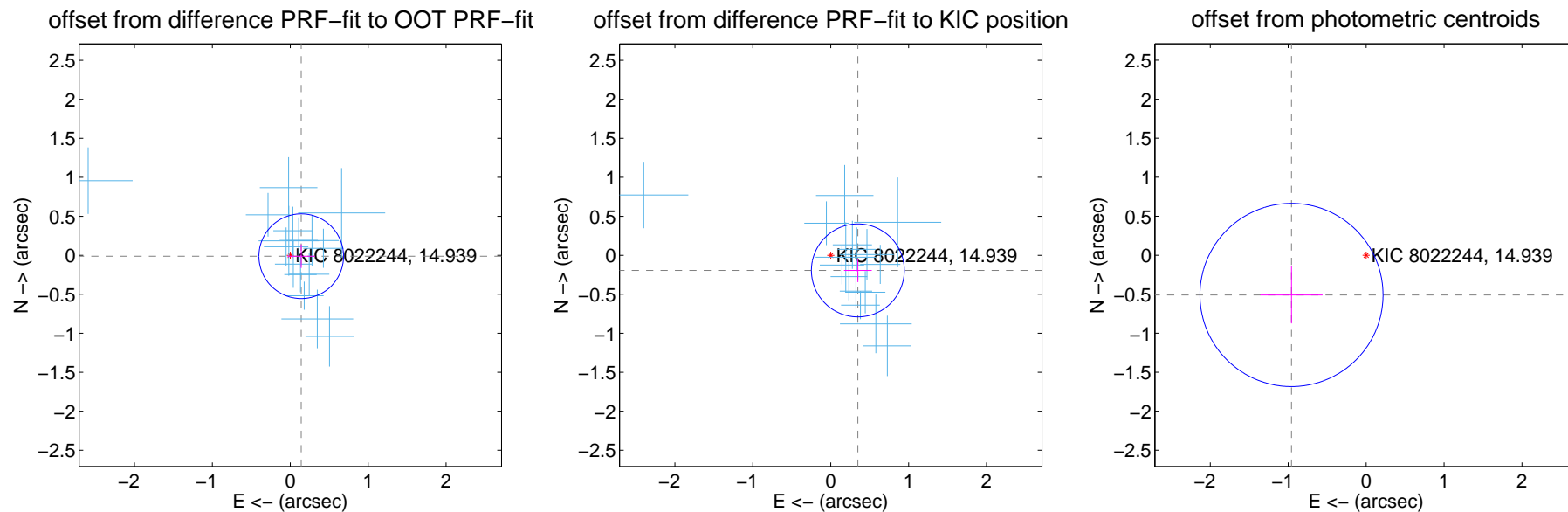
DV Centroid Data

Supplemental centroid analysis for 008022244-02. Kepler magnitude: 14.94. Transit SNR 35.43

There are 16 quarters with good PRF difference image offsets

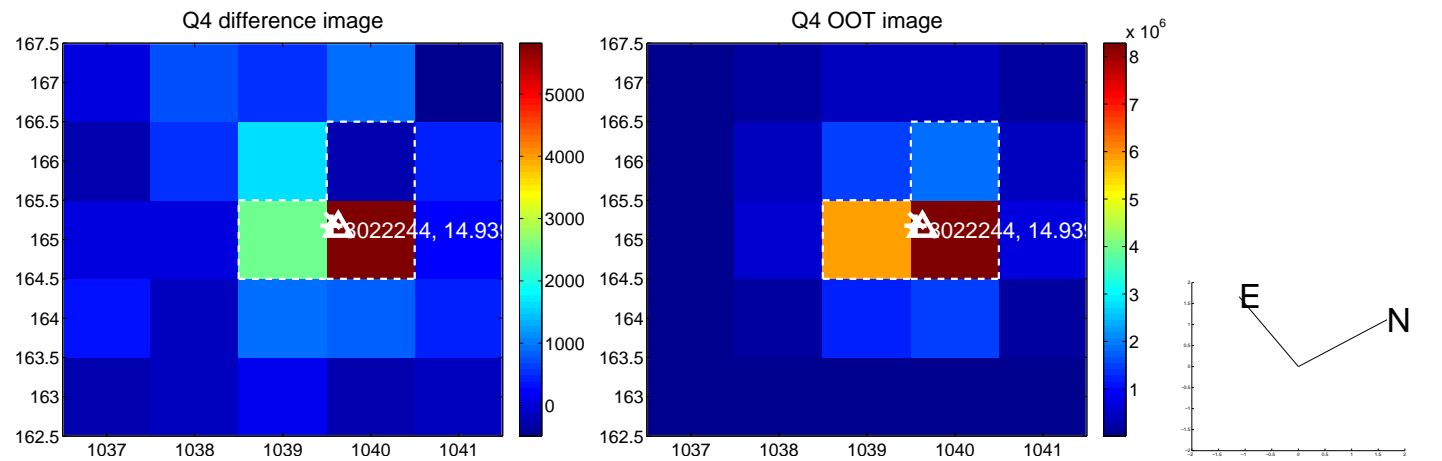
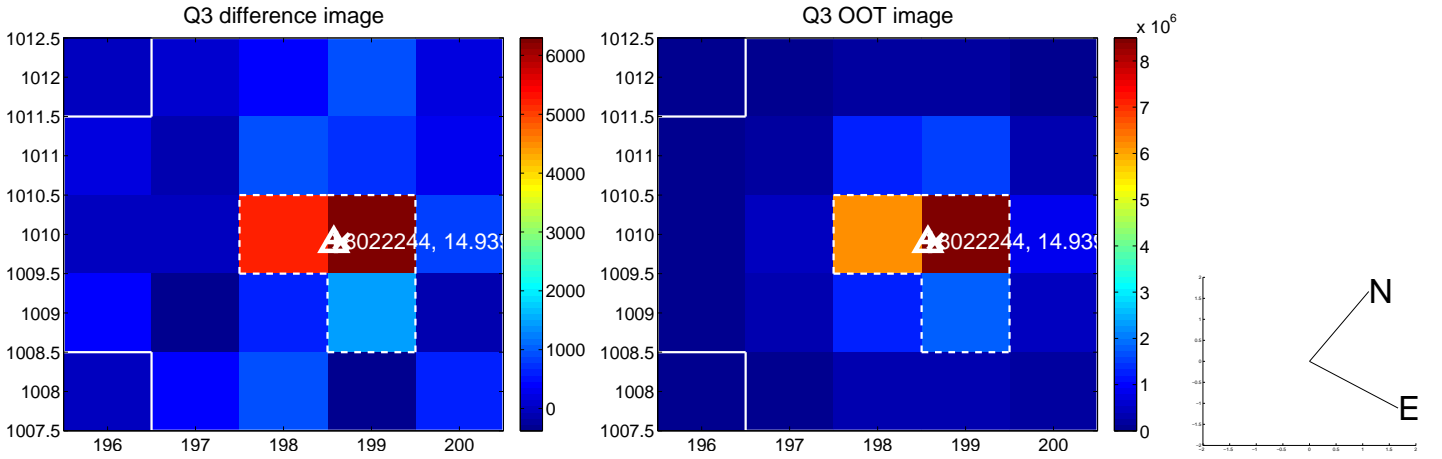
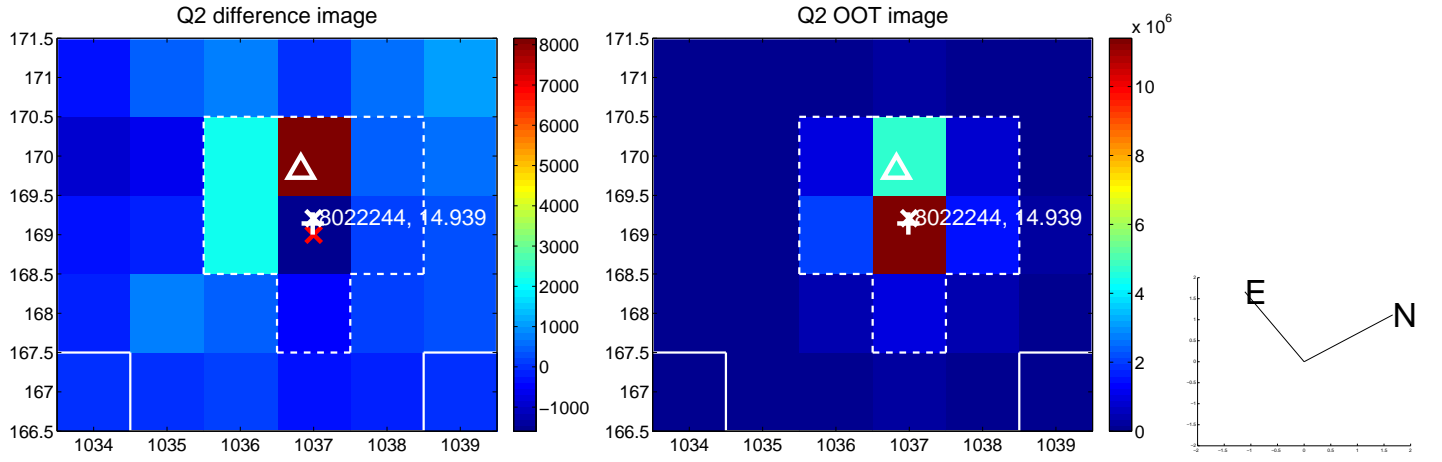
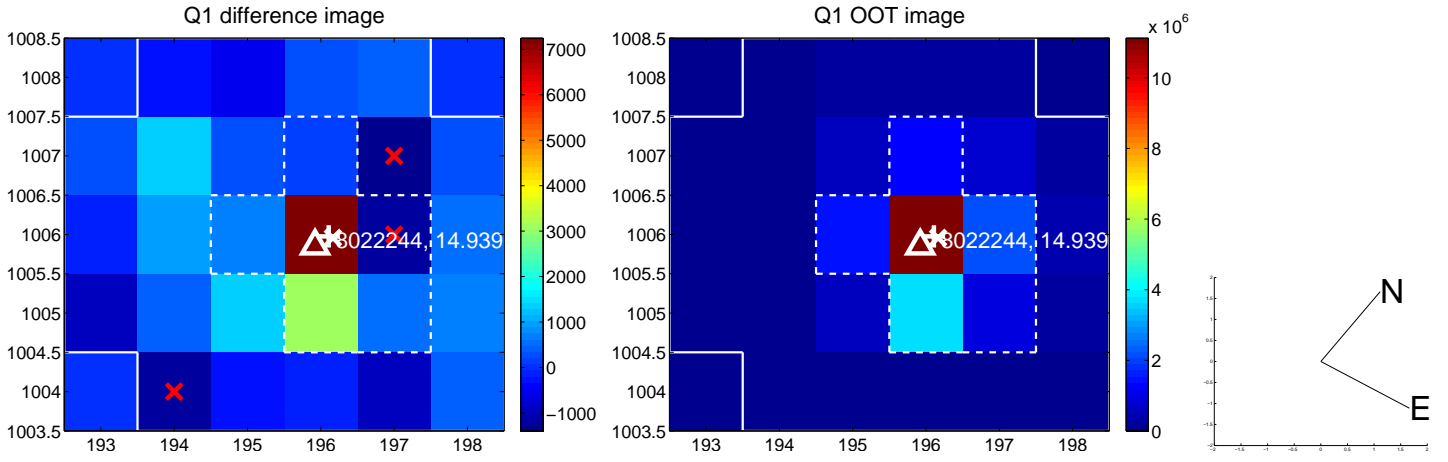
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.141 ± 0.181	0.78	-0.141 ± 0.176	-0.012 ± 0.151
PRF-fit source offset from KIC position	0.399 ± 0.199	2.01	-0.348 ± 0.178	-0.194 ± 0.151
photometric centroid source offset	1.08 ± 0.39	2.77	0.96 ± 0.40	-0.51 ± 0.37

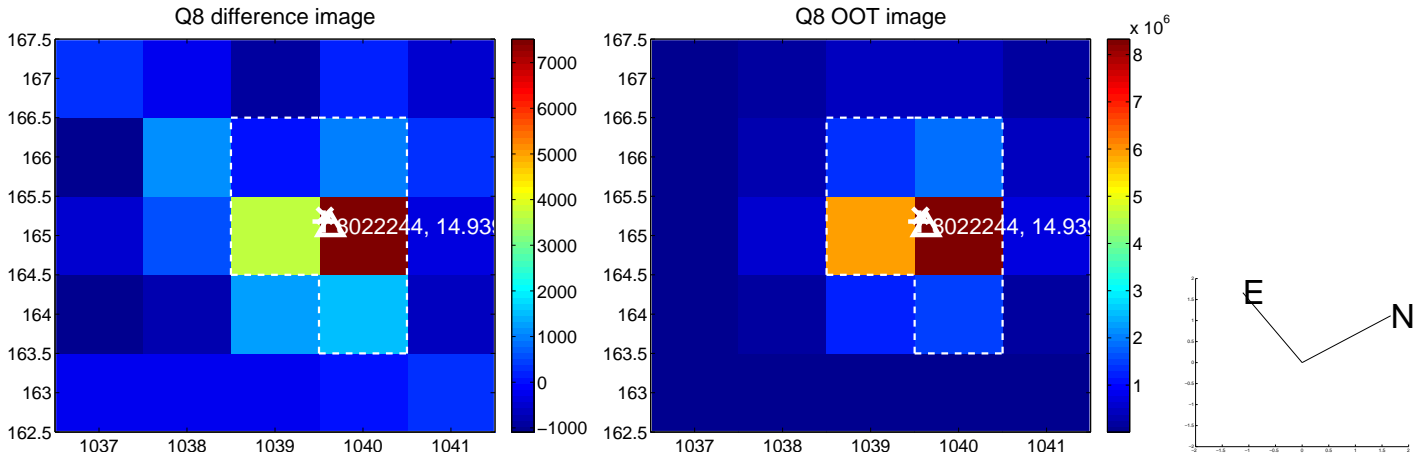
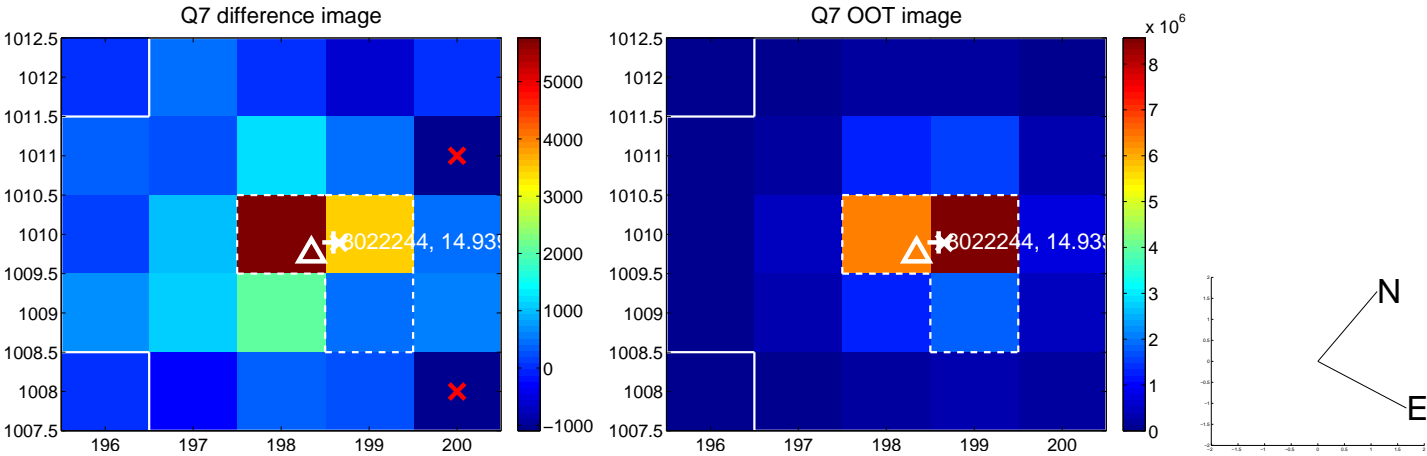
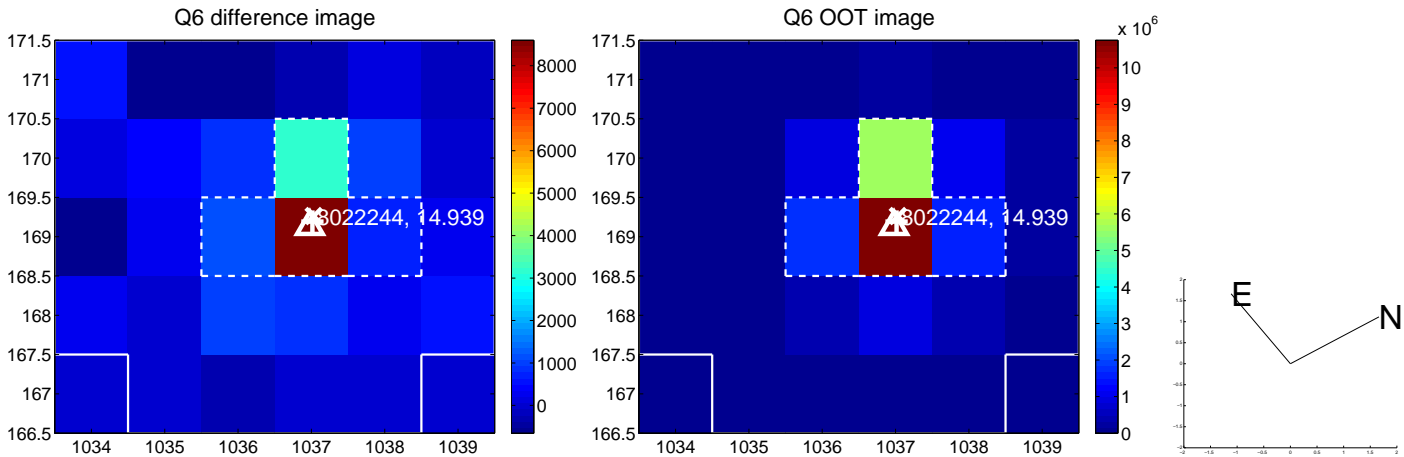
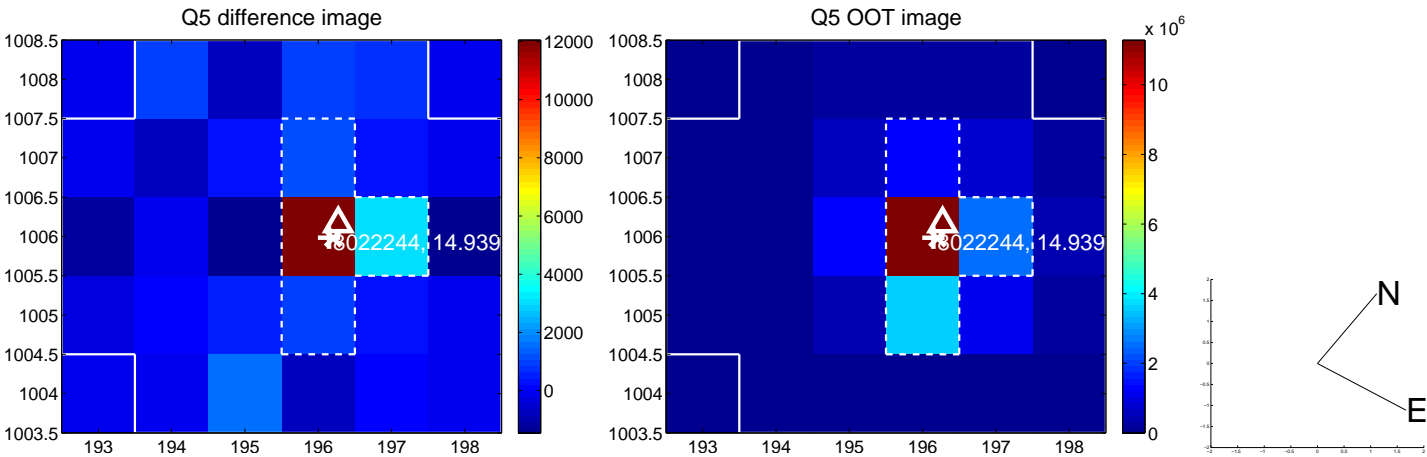


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

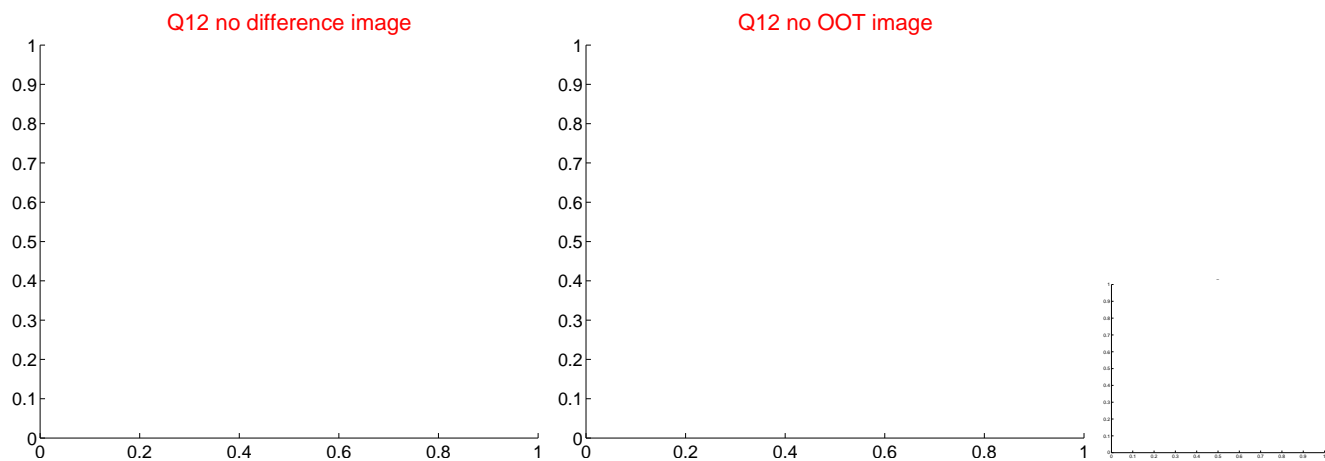
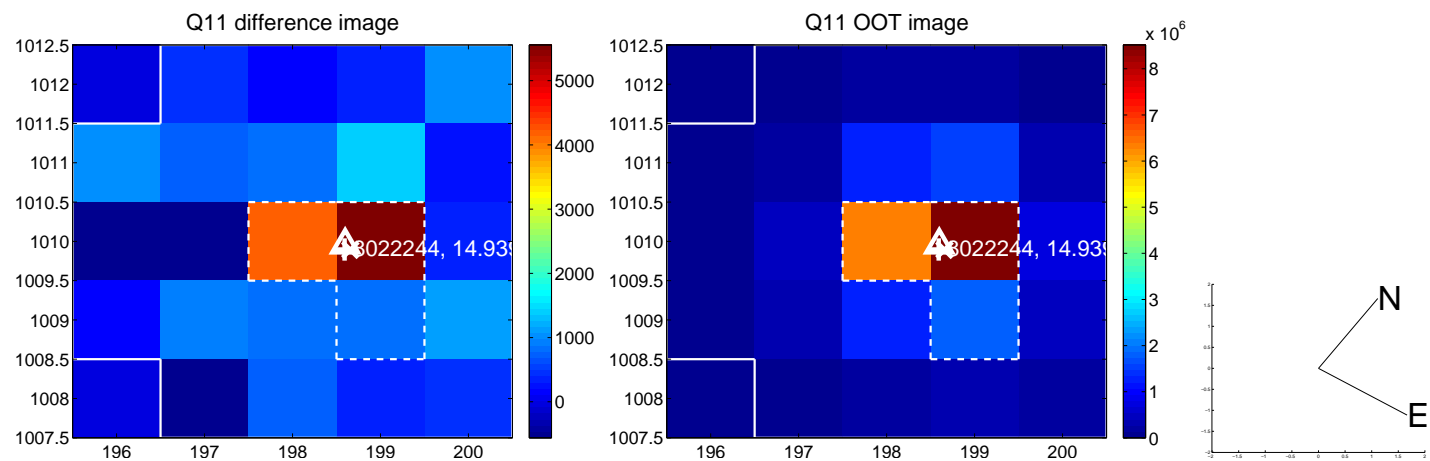
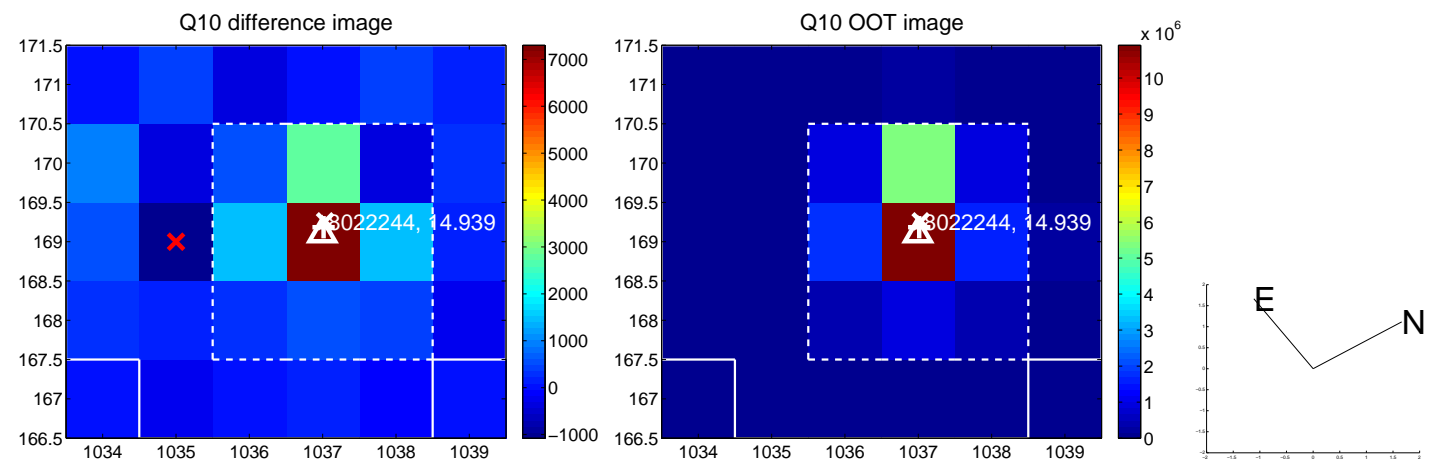
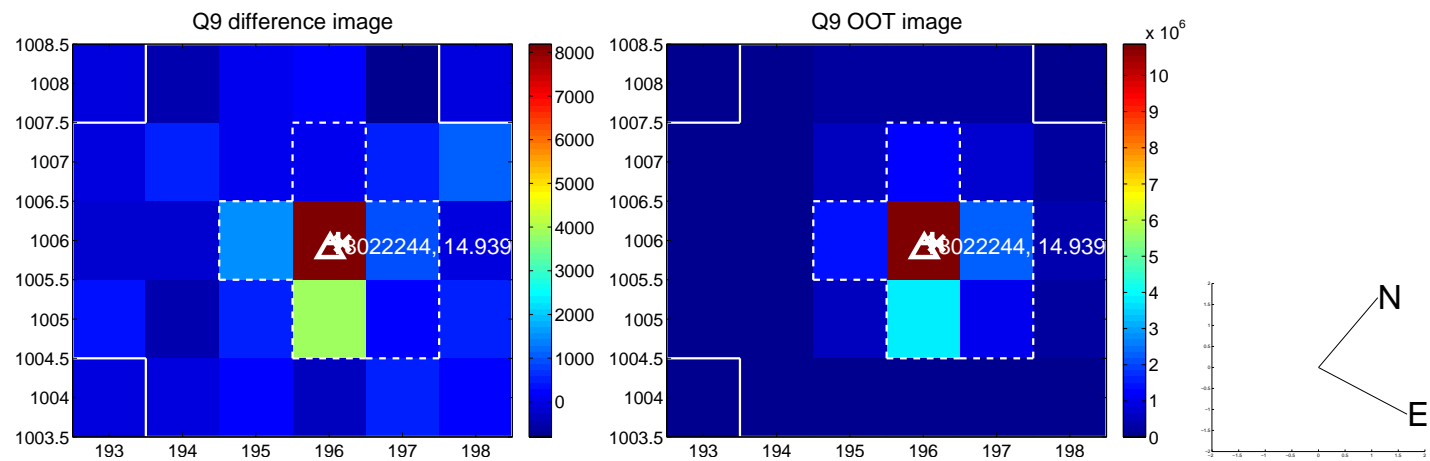
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



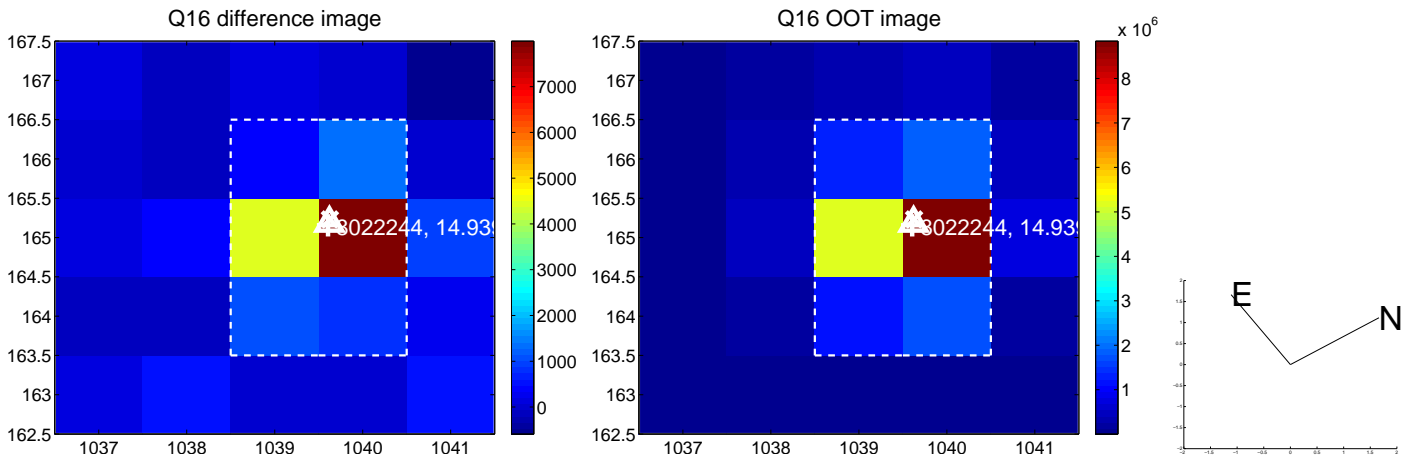
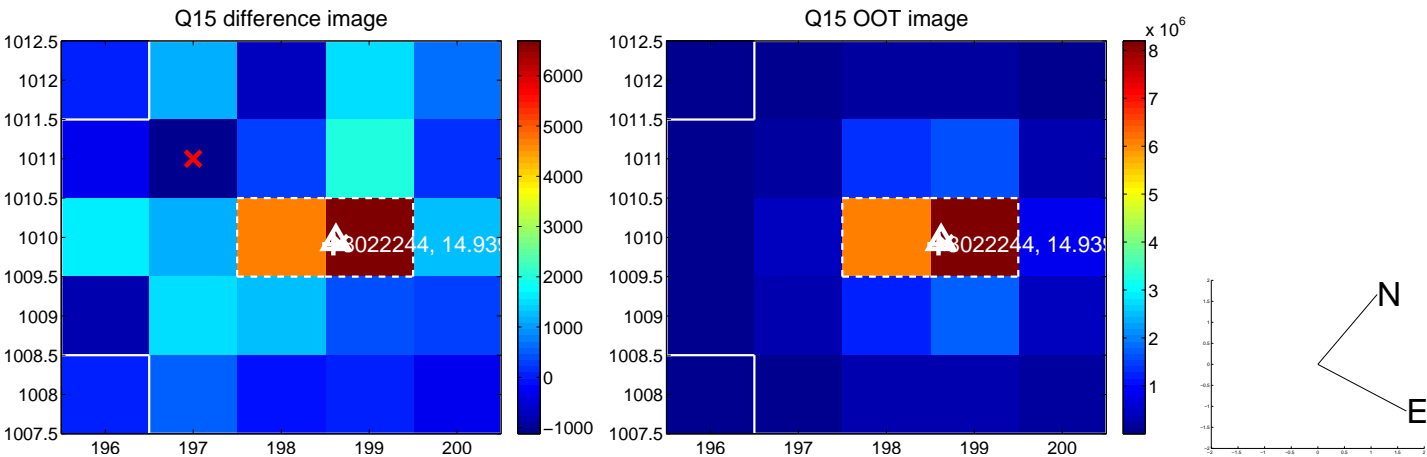
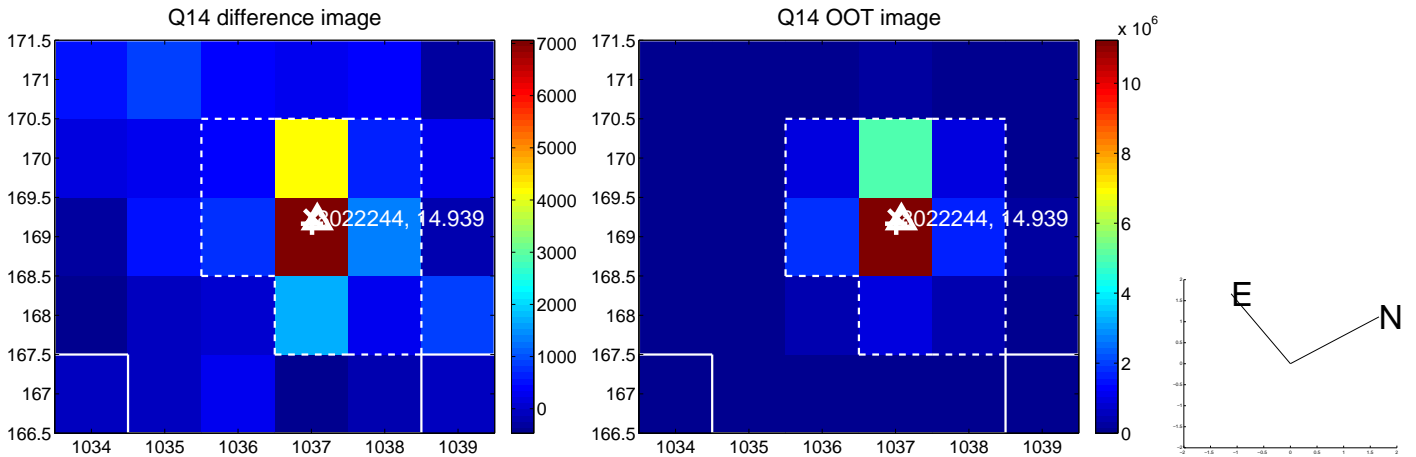
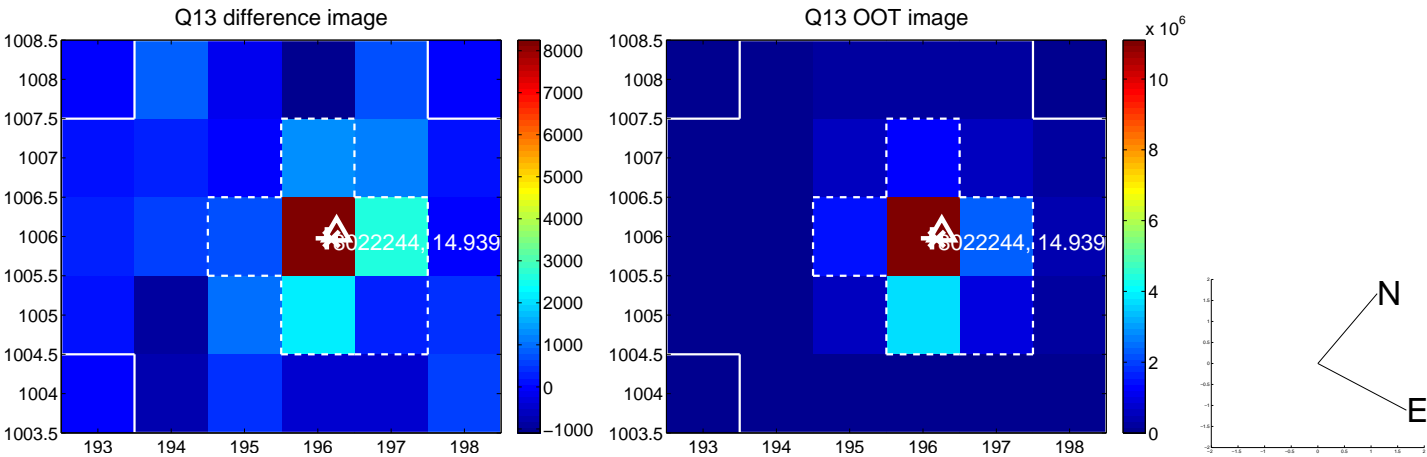
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



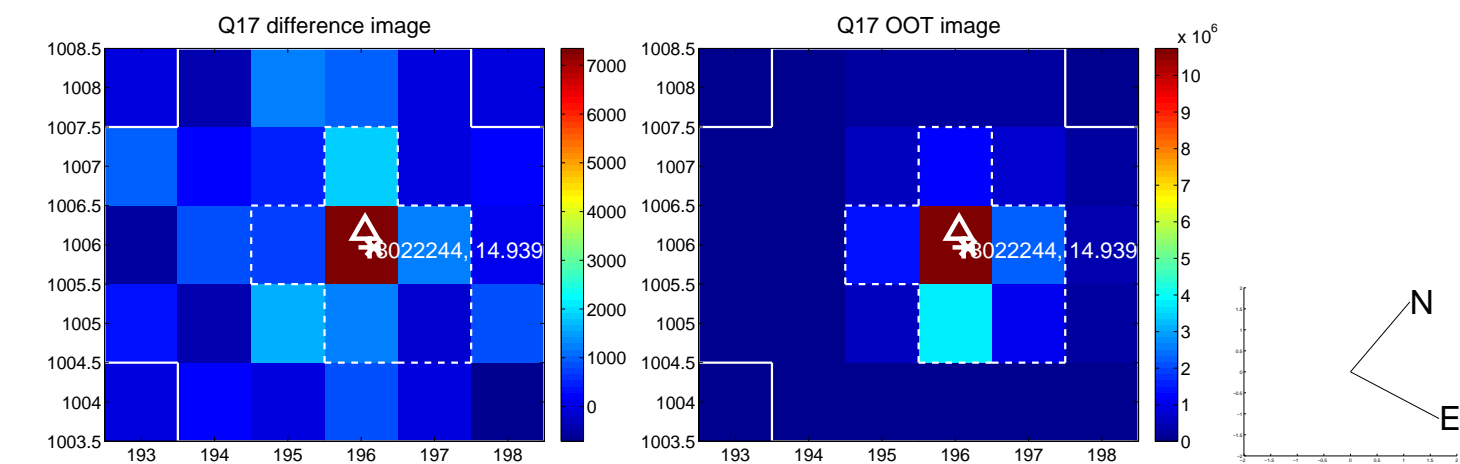
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



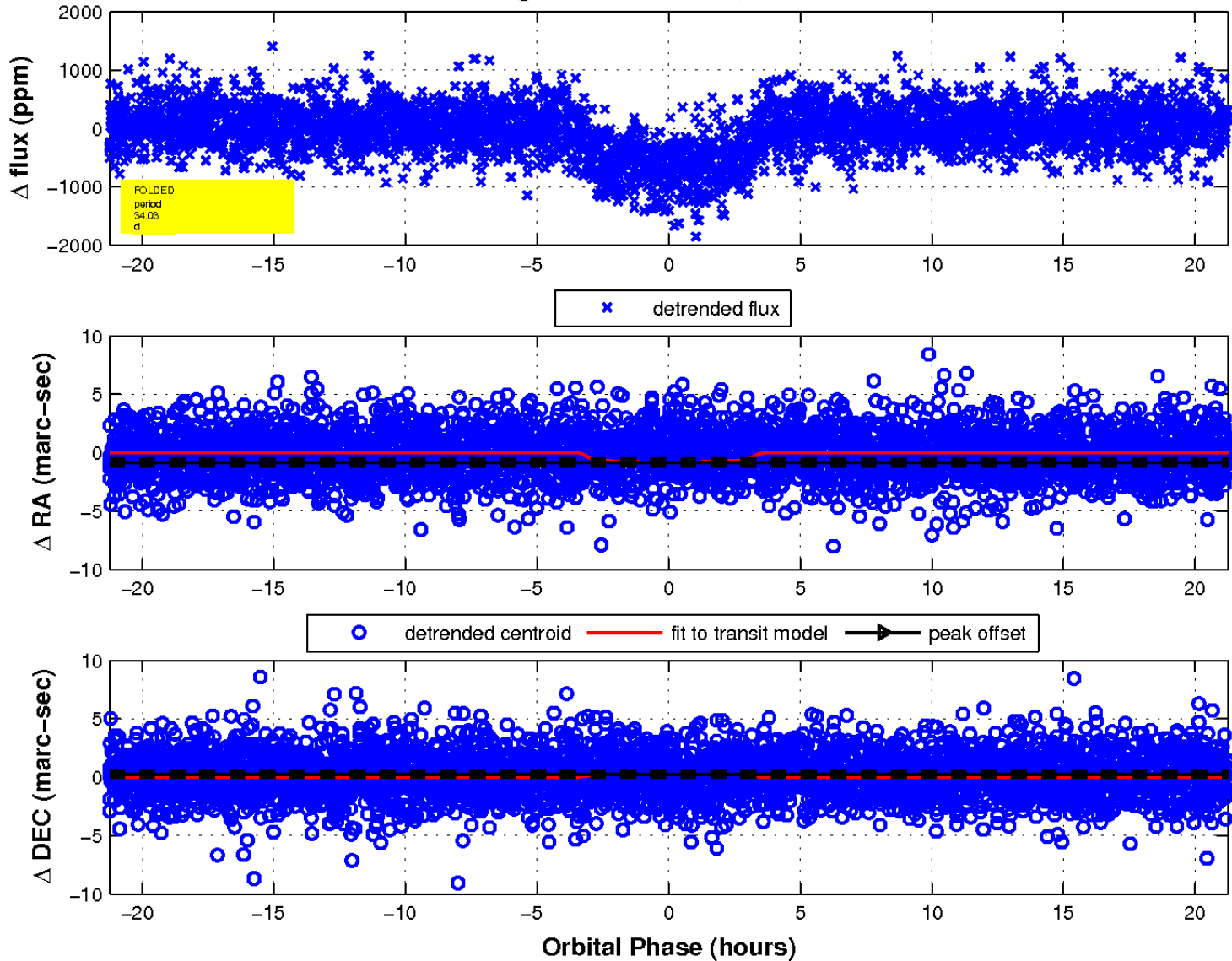
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

