

KIC 010419211

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})
010419211-01	OBS	0742.01	11.521447	136.275330	17961.1	3.627	628.4	609.9	0.85	5795	17.39	75.98
010419211-02	OBS	No	11.521466	142.757427	852.3	3.594	25.8	29.2	0.85	5795	4.32	75.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010419211-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
010419211-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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

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

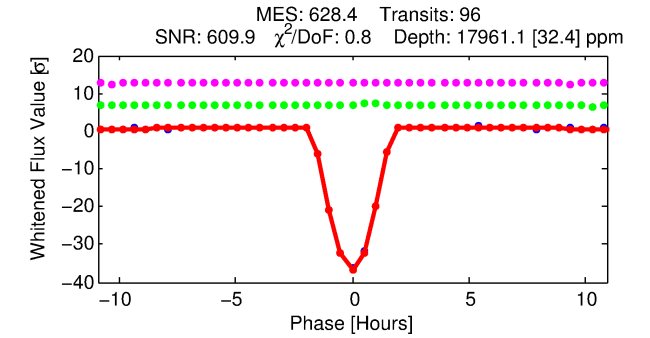
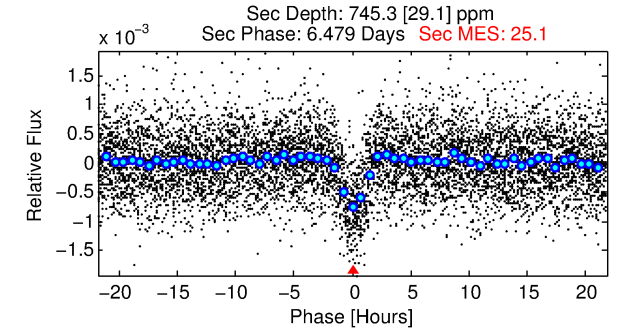
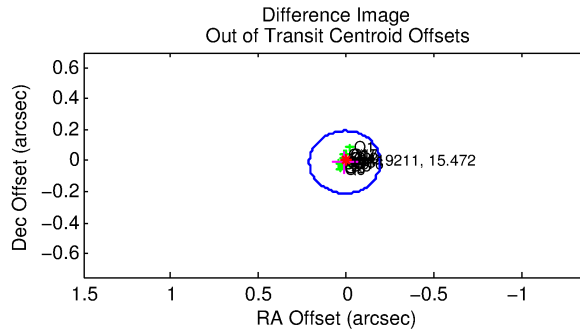
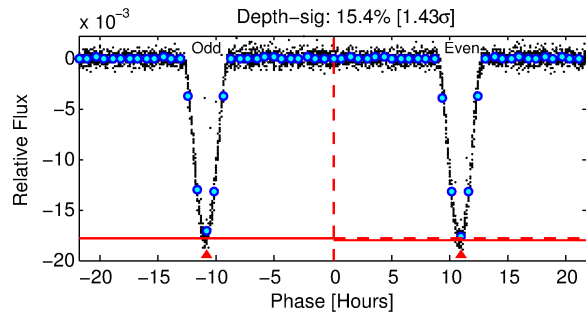
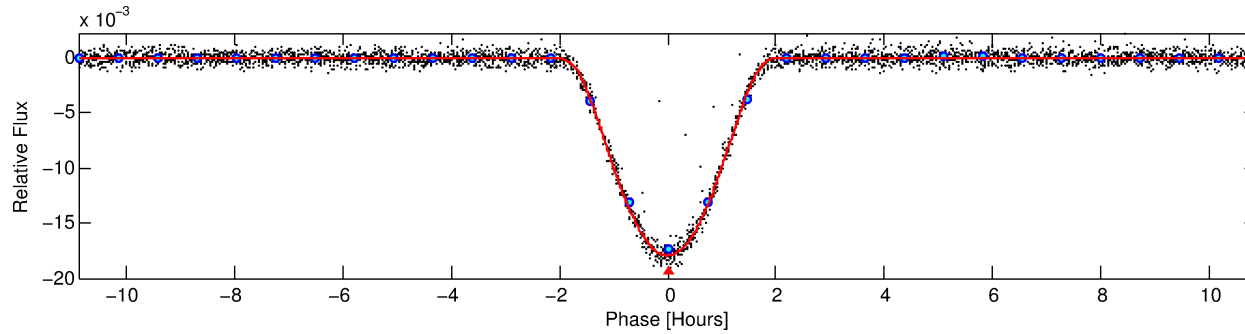
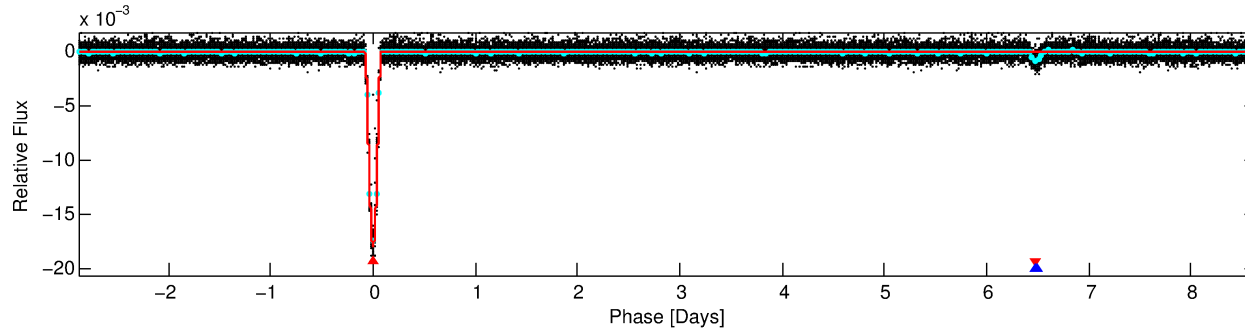
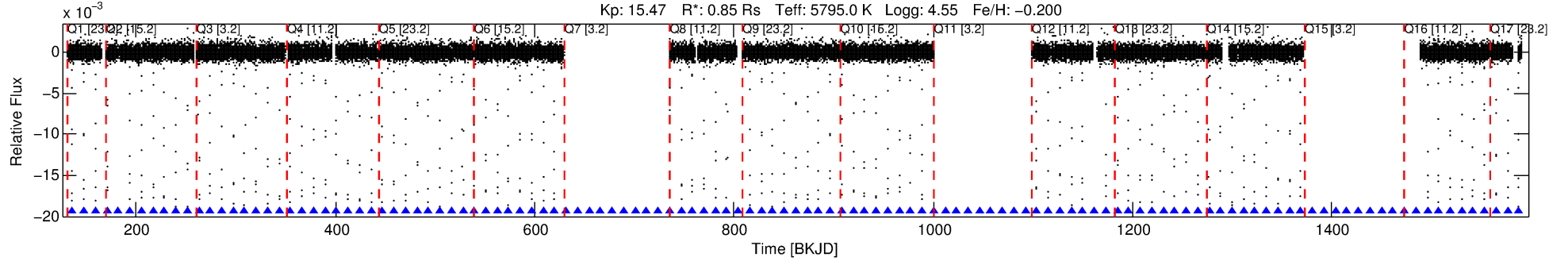
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010419211-01

No Significant Match Found

DV One-Page Summary

KIC: 10419211 Candidate: 1 of 2 Period: 11.521 d
KOI: K00742.01 Corr: 1.000



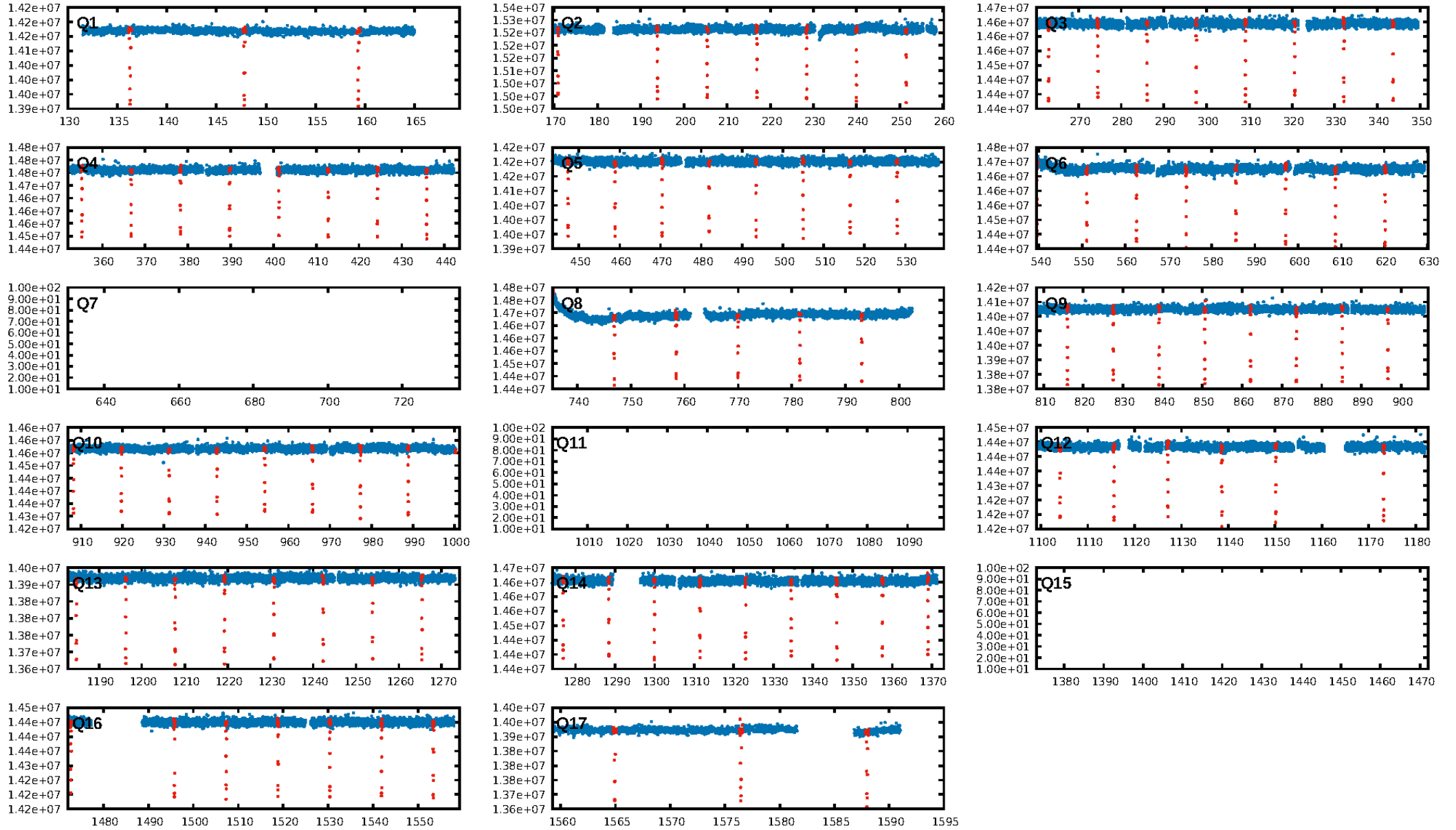
DV Fit Results:

Period = 11.52145 [0.00000] d
Epoch = 136.2753 [0.0001] BKJD
Rp/R* = 0.1879 [0.0109]
a/R* = 17.16 [0.17]
b = 0.96 [0.02]
Seff = 75.98 [26.11]
Teq = 753 [65] K
Rp = 17.39 [4.70] Re
a = 0.0978 [0.0217] AU
Ag = 12.97 [4.47] [2.68 σ]
Teffp = 2209 [94] K [12.75 σ]

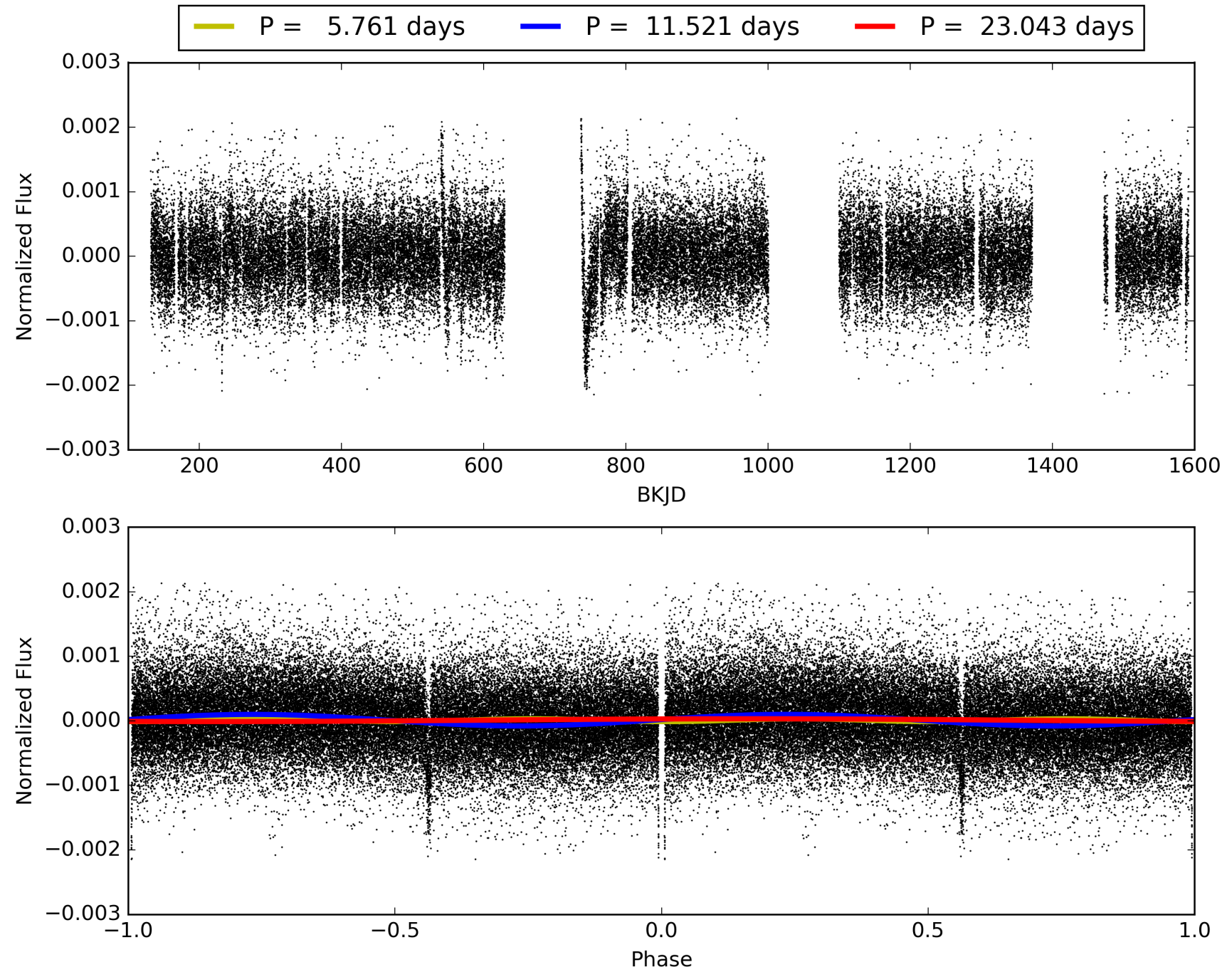
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: 28.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [90/90]
GhostDiagnostic-chr: 4.836
Centroid-sig: 89.5%
Centroid-so: 0.078 arcsec [3.31 σ]
OotOffset-rm: 0.013 arcsec [0.19 σ]
KicOffset-rm: 0.151 arcsec [2.24 σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 010419211-01, PDC Light Curves

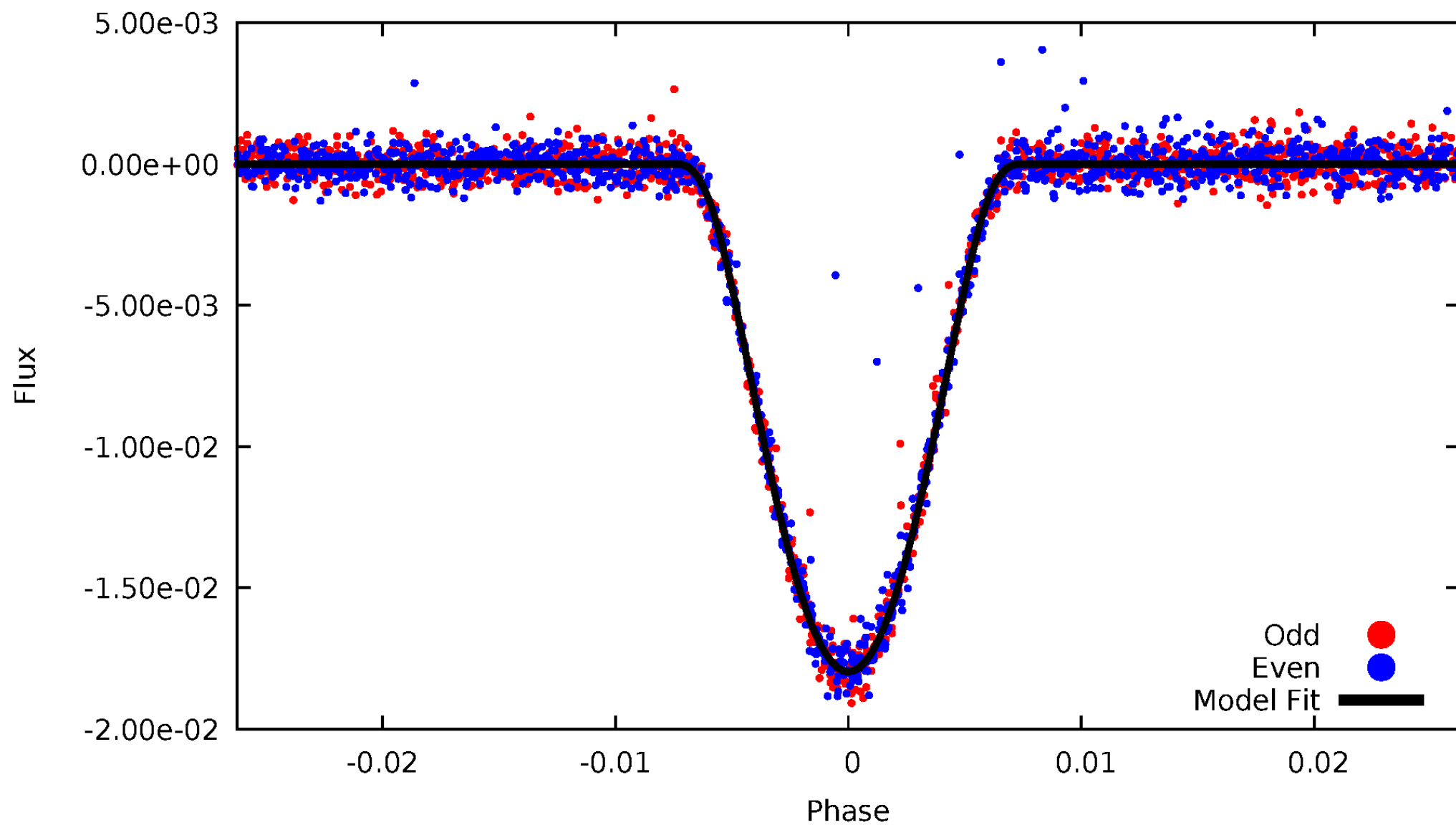


TCE 010419211-01



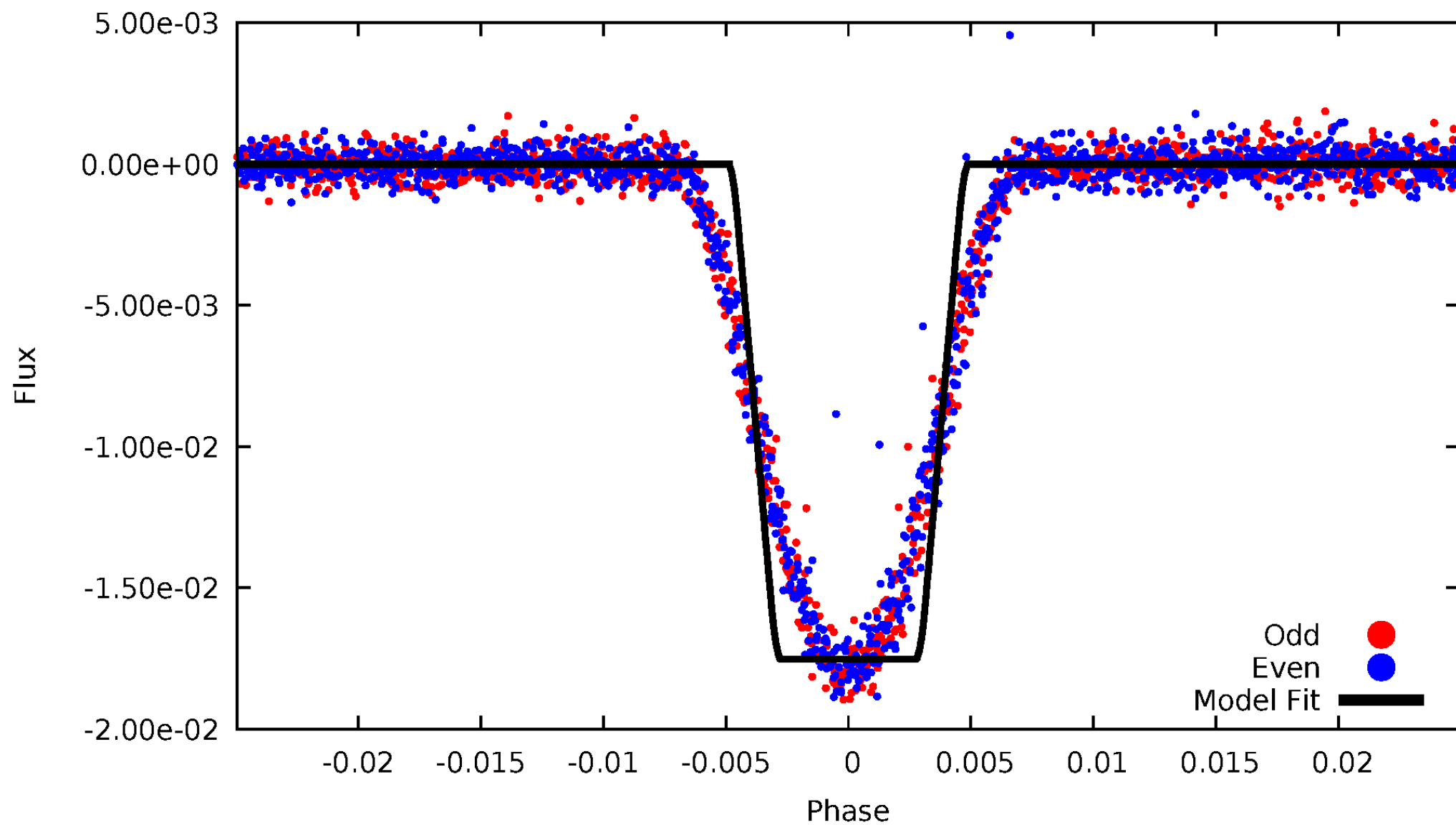
DV Odd/Even

TCE 010419211-01



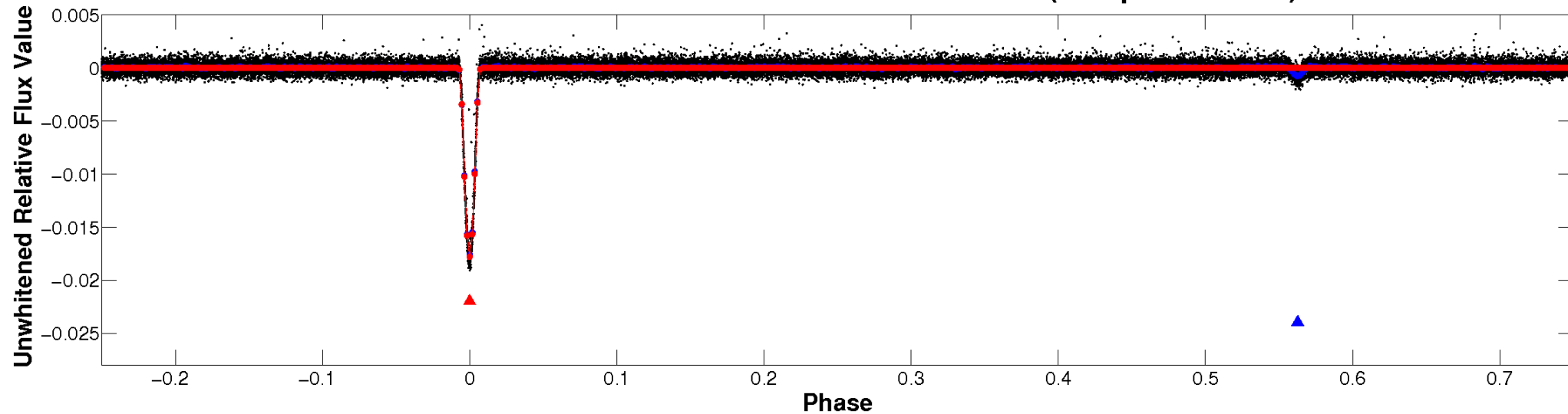
ALT Odd/Even

TCE 010419211-01

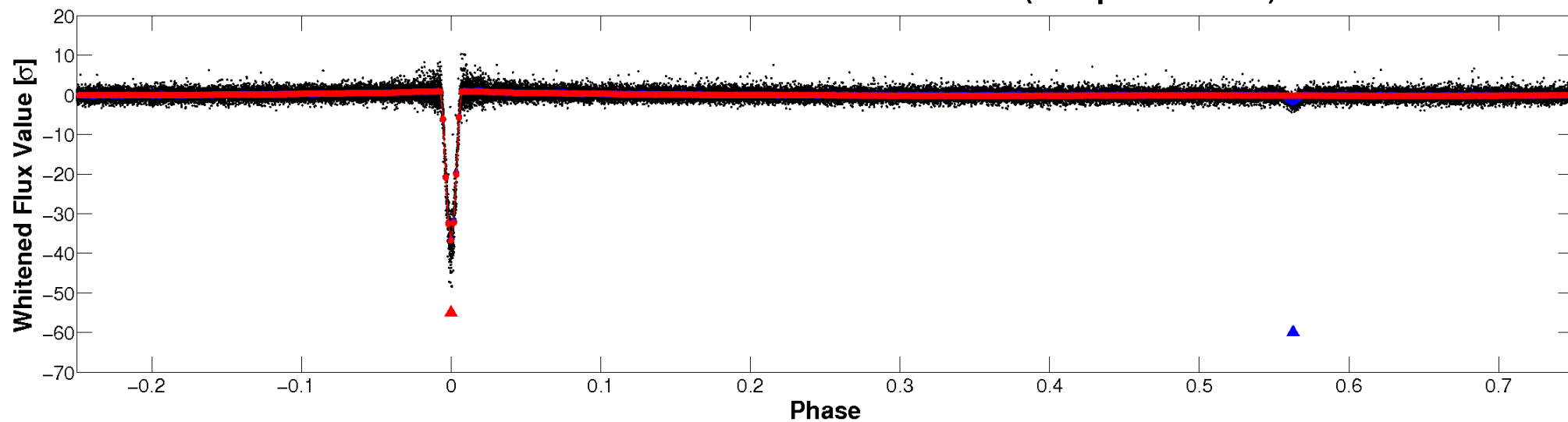


Non-Whitened Vs. Whitened Light Curve

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

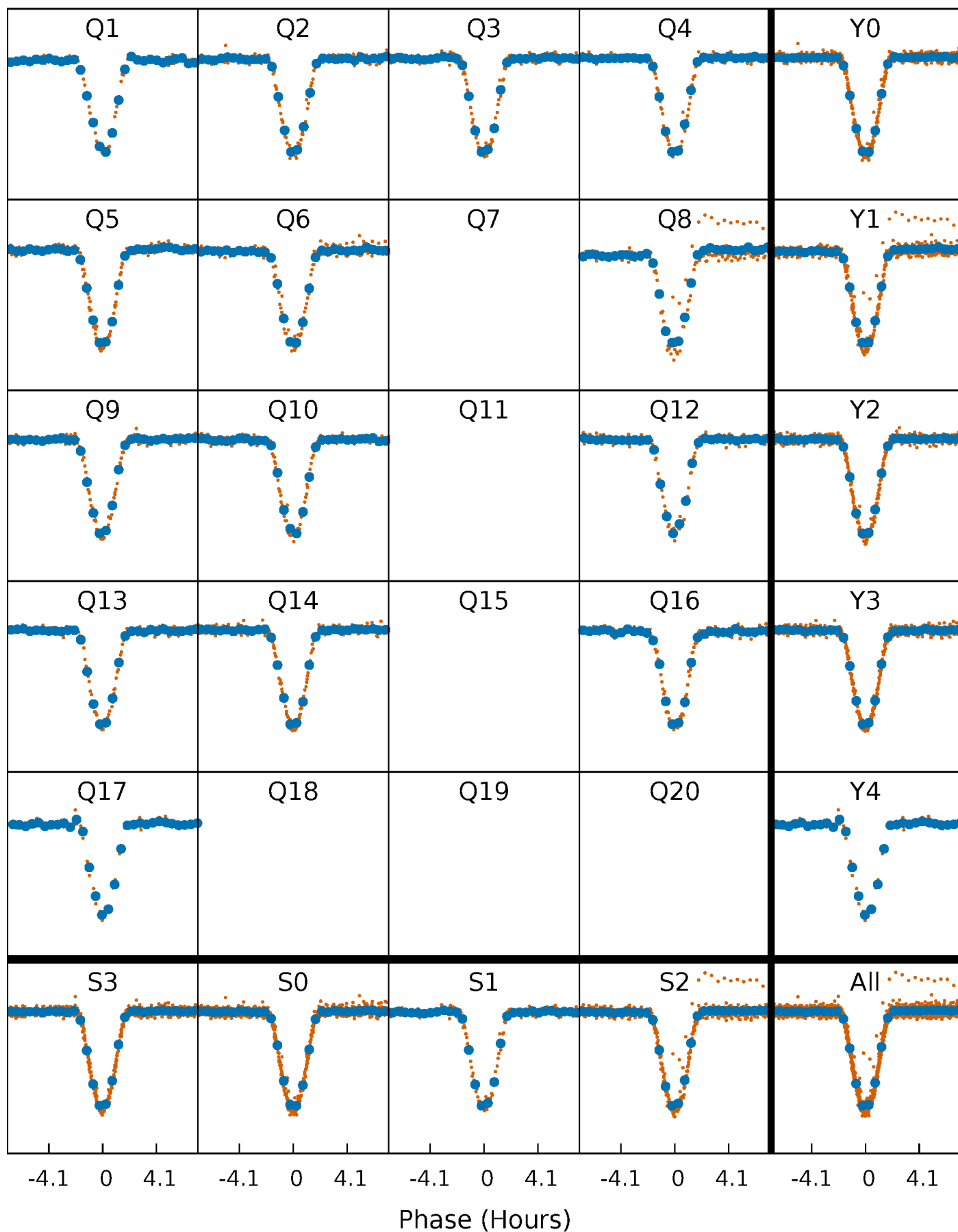


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



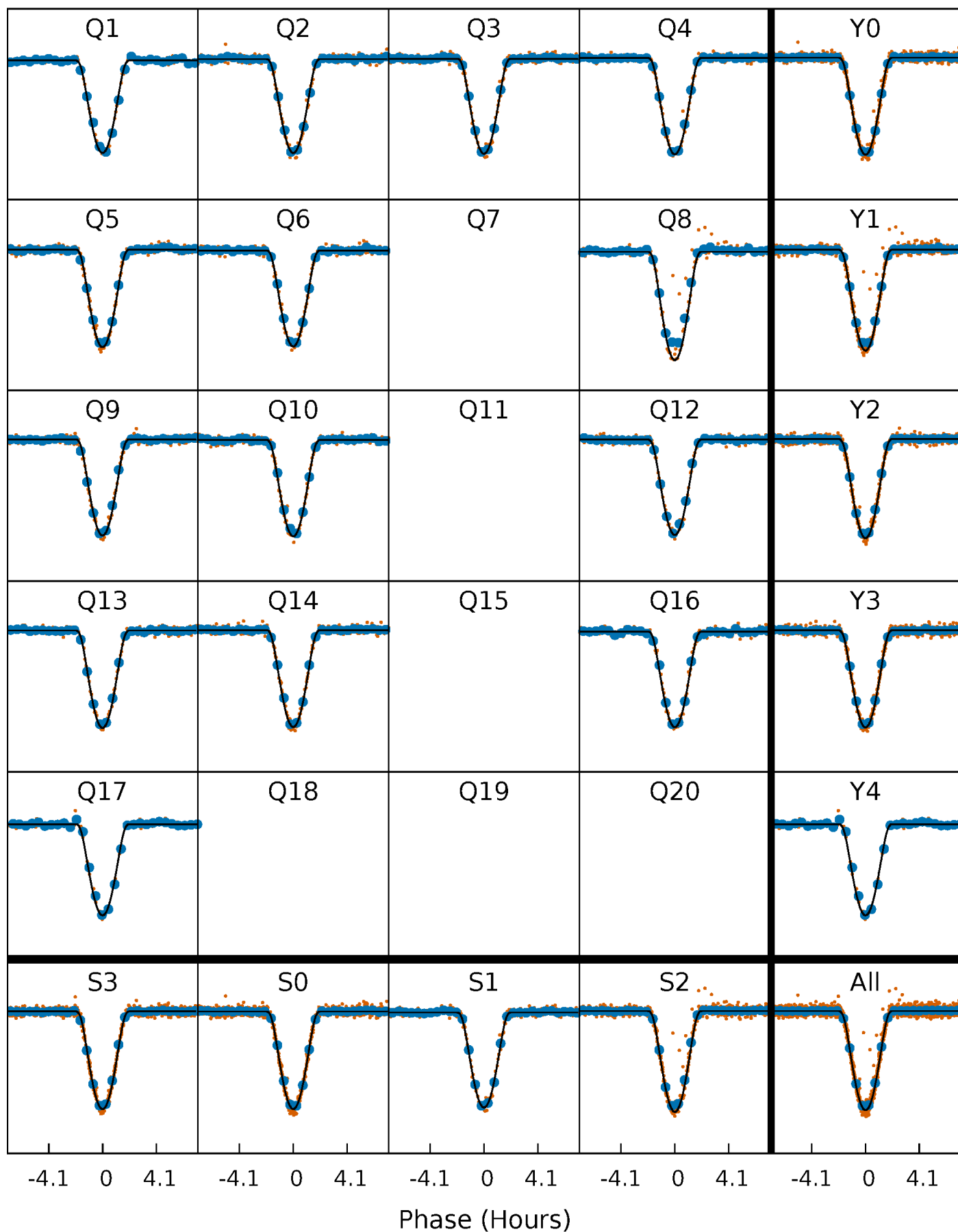
PDC Quarter-Phased Transit Curves

TCE 010419211-01 P= 11.521447 Days $T_0=136.275330$ (BKJD)



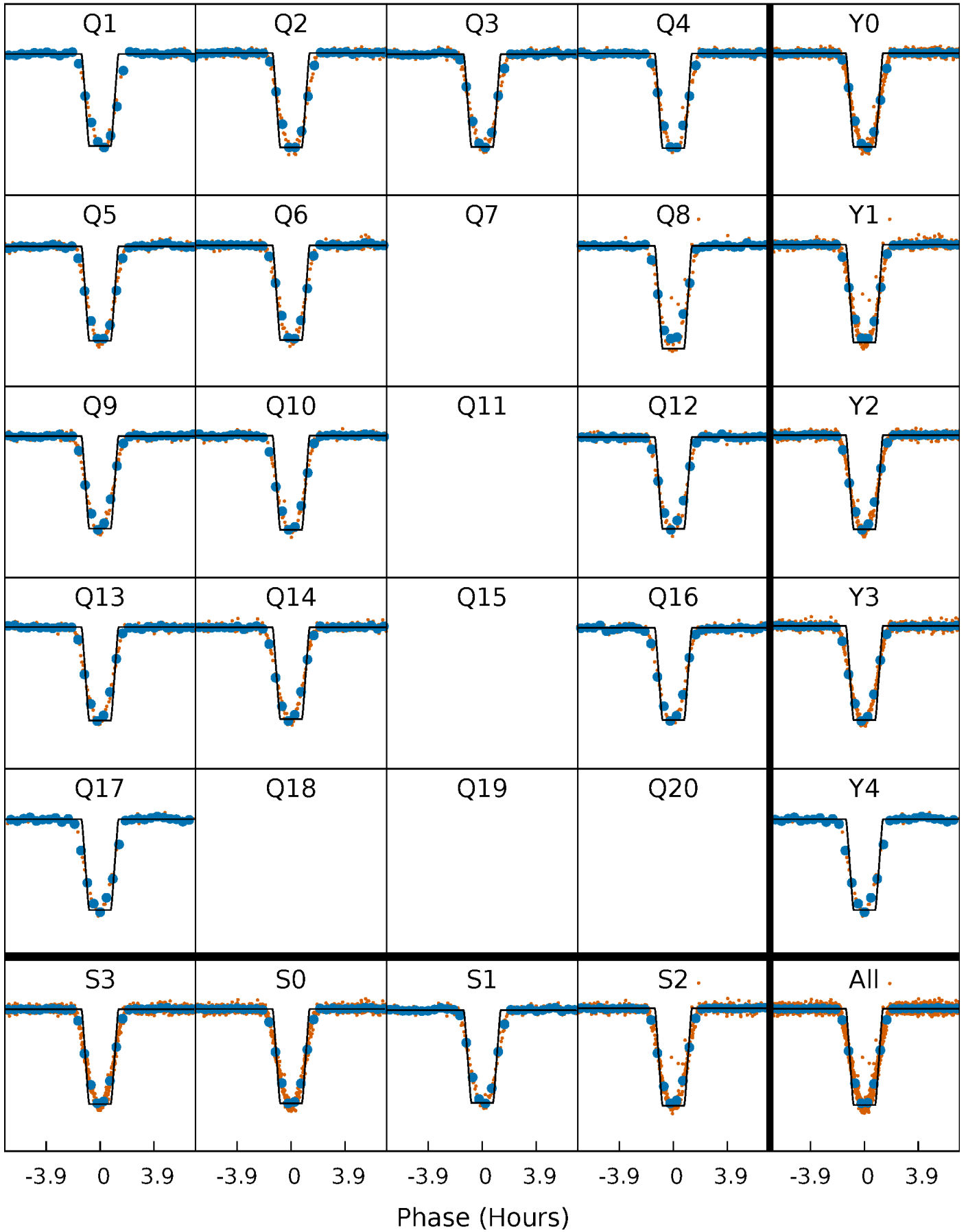
DV Quarter-Phased Transit Curves

TCE 010419211-01 P= 11.521447 Days $T_0=136.275330$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

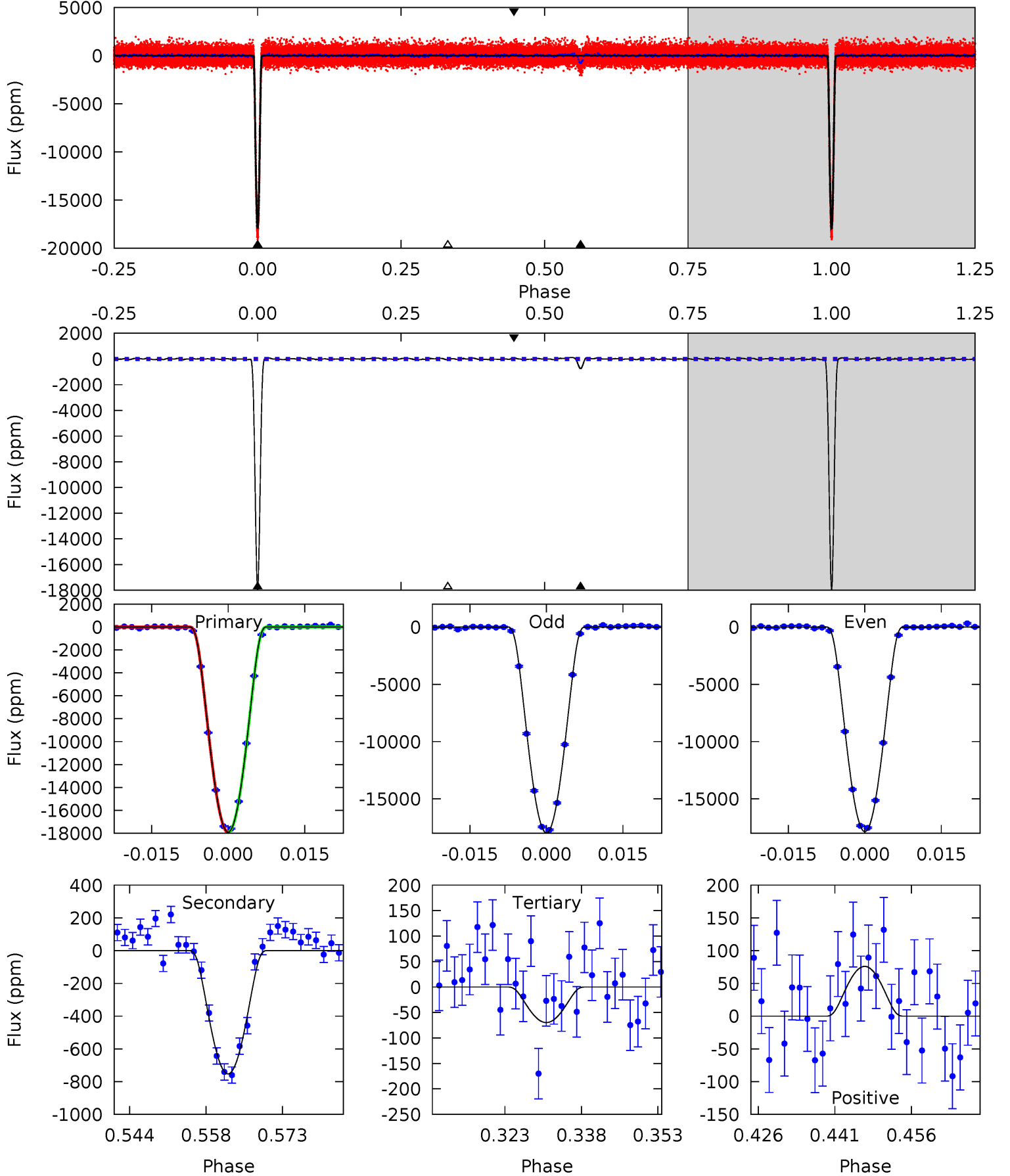
TCE 010419211-01 P= 11.521514 Days $T_0=136.271276$ (BKJD)



DV Model-Shift Uniqueness Test

010419211-01, P = 11.521447 Days, E = 124.753883 Days

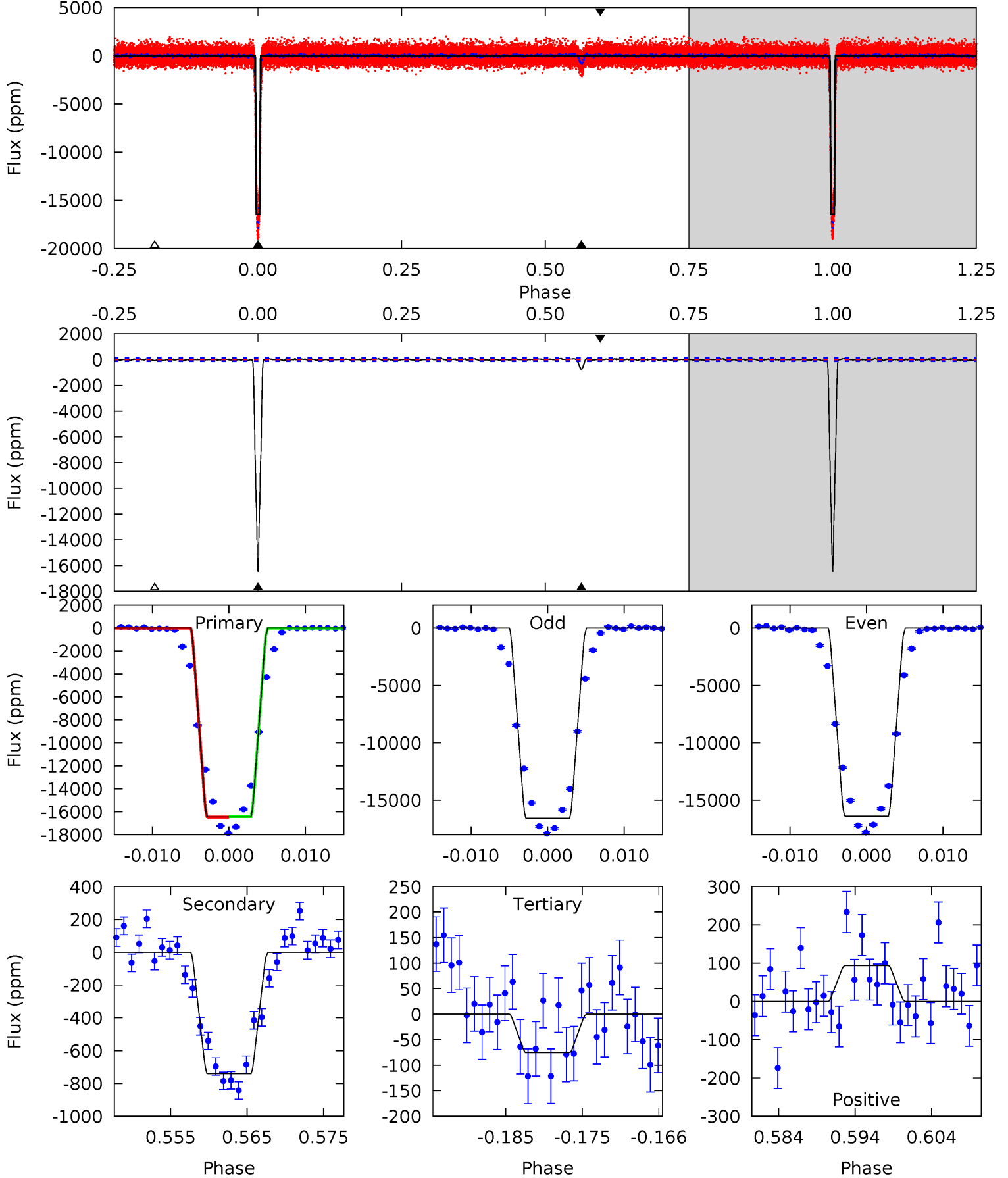
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1057	44.5	4.12	4.49	4.95	2.44	1.87	1053	1053	40.3	40.0	3.06	0.99	0.01	0.23



Alt Model-Shift Uniqueness Test

010419211-01, P = 11.521514 Days, E = 124.749762 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
699.8	31.5	3.21	3.99	5.03	2.58	1.24	696.6	695.8	28.3	27.5	3.97	0.99	0.01	0.81



Stellar Parameters For KIC 010419211

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5795^{+155}_{-172}	$4.554^{+0.033}_{-0.176}$	$-0.200^{+0.250}_{-0.300}$	$0.848^{+0.224}_{-0.075}$	$0.938^{+0.098}_{-0.109}$	$2.167^{+0.391}_{-1.004}$
	+3%/-3%	+1%/-4%	+125%/-150%	+26%/-9%	+10%/-12%	+18%/-46%
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 010419211-01 / KOI 0742.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-753 ± 17	$18.03^{+2.52}_{-1.81}$	1074^{+70}_{-45}	2906^{+63}_{-74}	12^{+2}_{-3}
Alt.	-741 ± 24	$12.79^{+1.86}_{-1.43}$	1076^{+64}_{-44}	3210^{+95}_{-97}	23^{+6}_{-5}

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

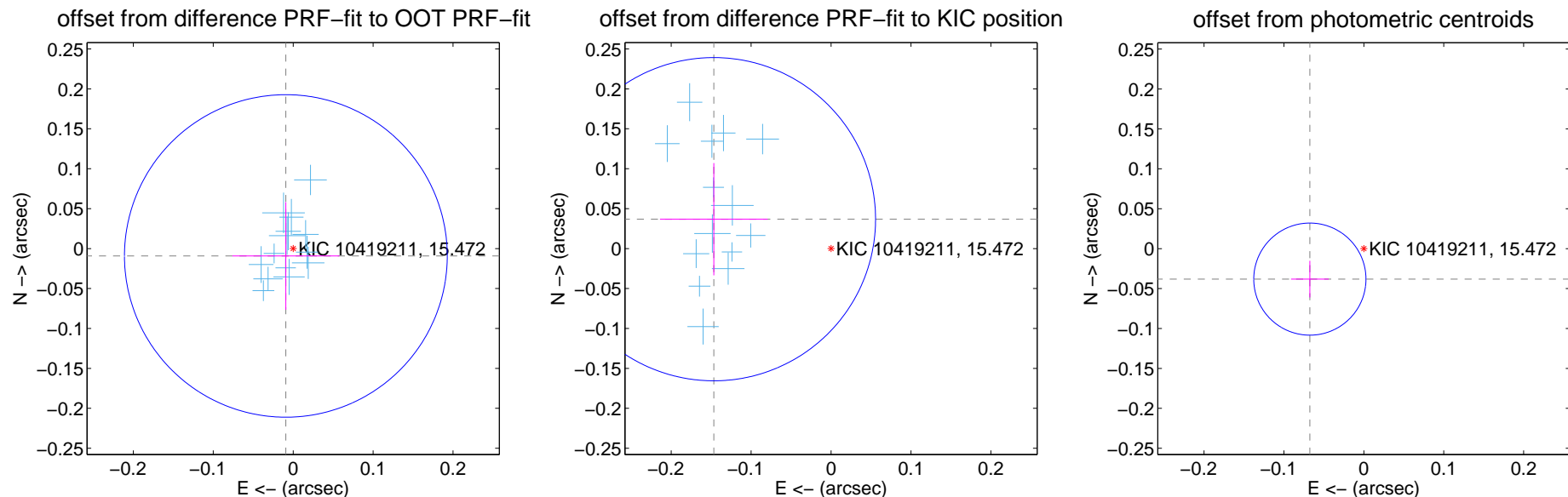
DV Centroid Data

Supplemental centroid analysis for 010419211-01. Kepler magnitude: 15.47. Transit SNR 609.94

There are 14 quarters with good PRF difference image offsets

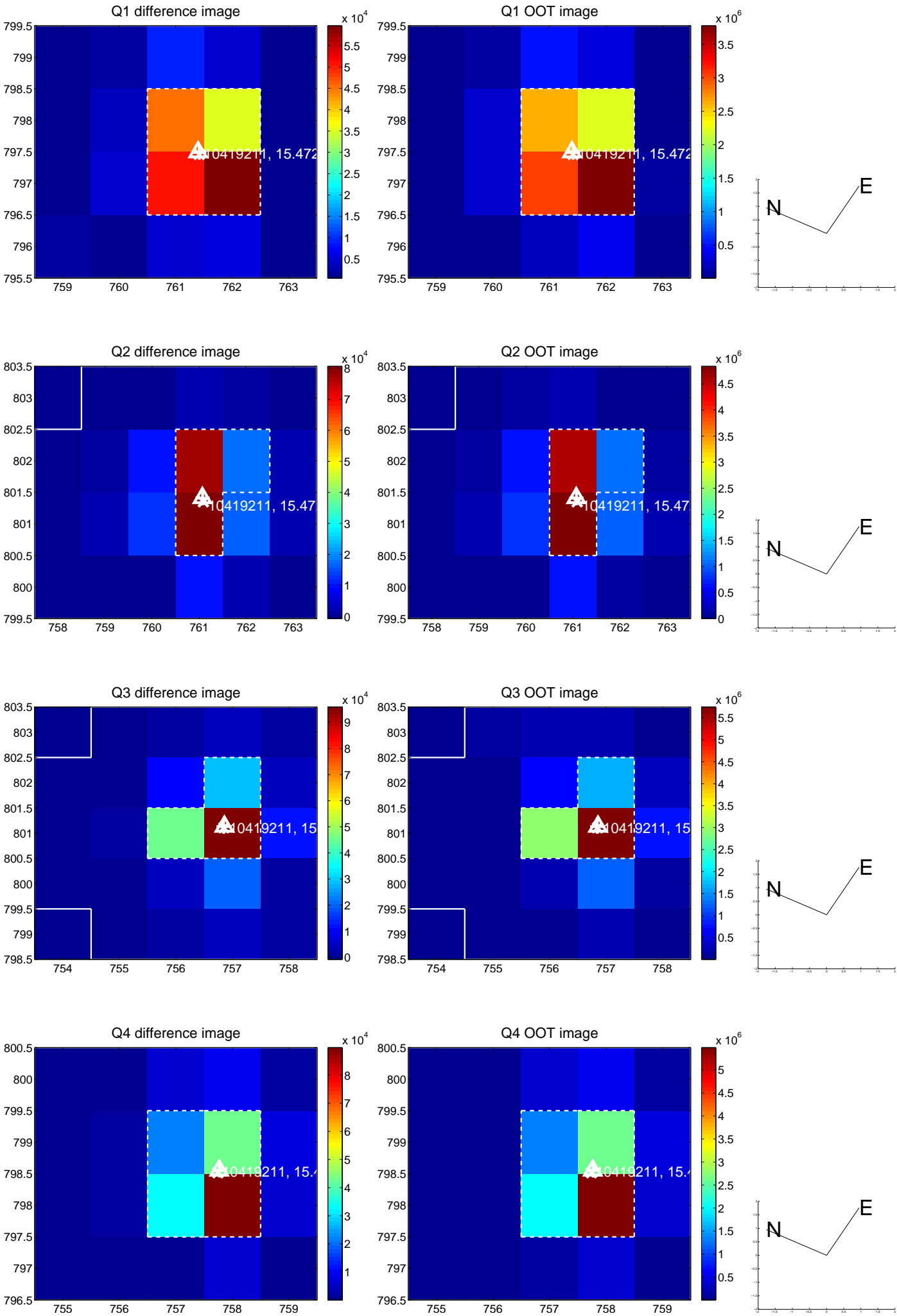
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.013 ± 0.067	0.19	0.009 ± 0.067	-0.009 ± 0.067
PRF-fit source offset from KIC position	0.151 ± 0.067	2.24	0.147 ± 0.067	0.037 ± 0.070
photometric centroid source offset	0.08 ± 0.02	3.31	0.07 ± 0.02	-0.04 ± 0.02

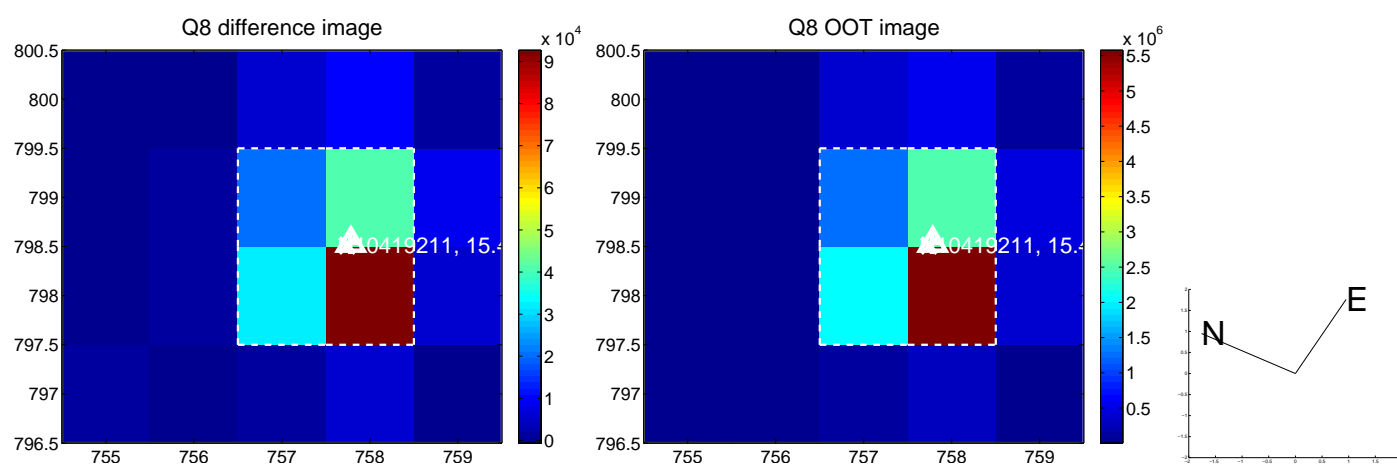
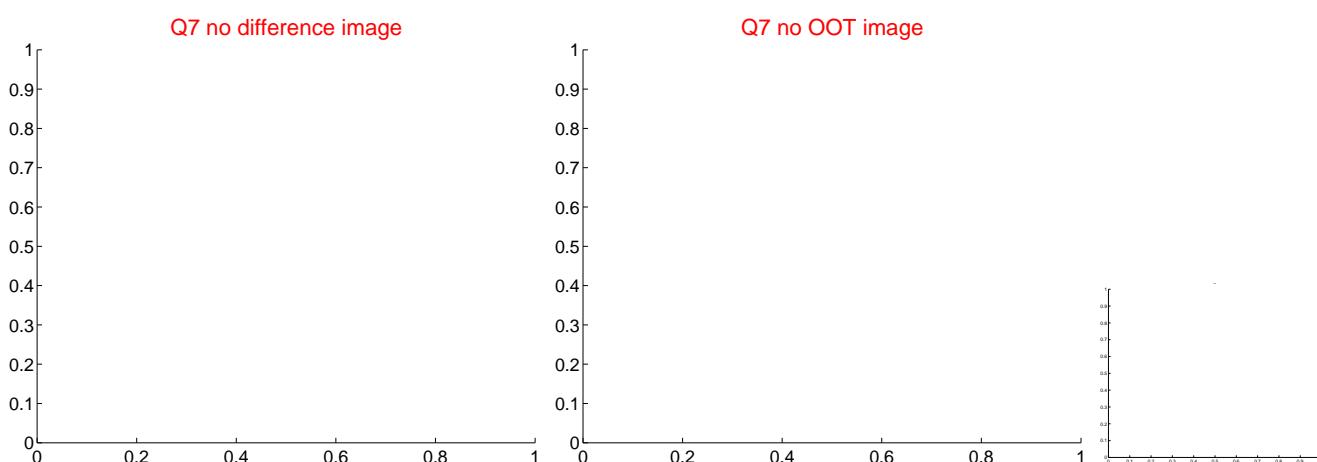
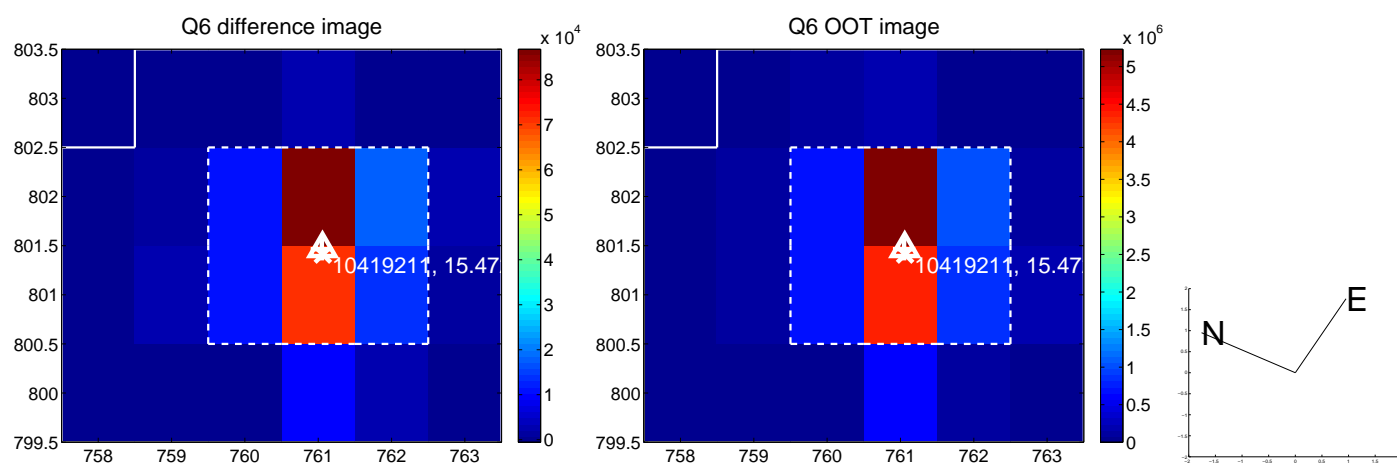
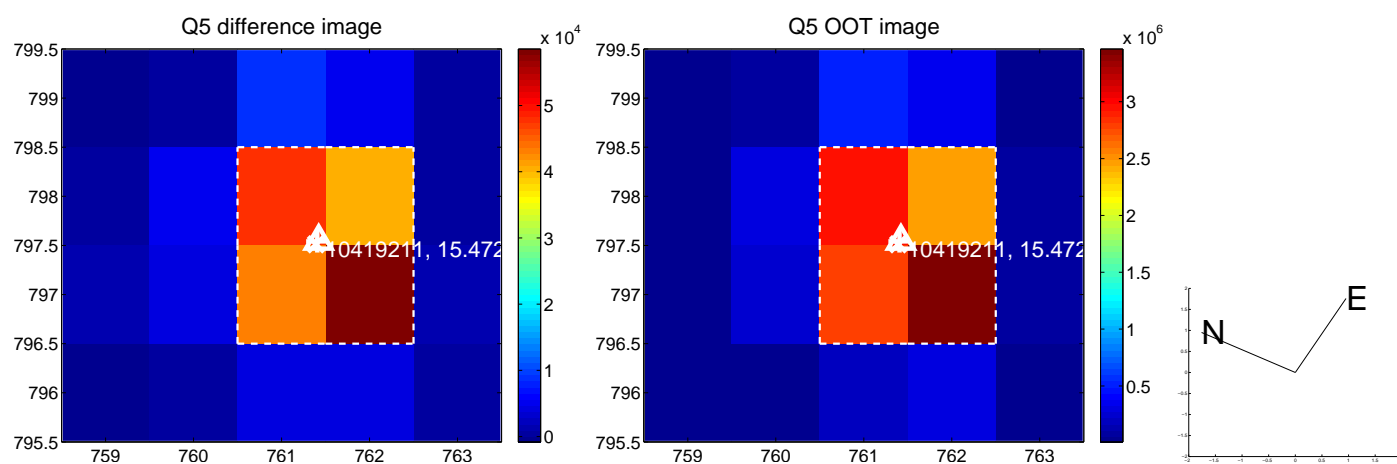


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

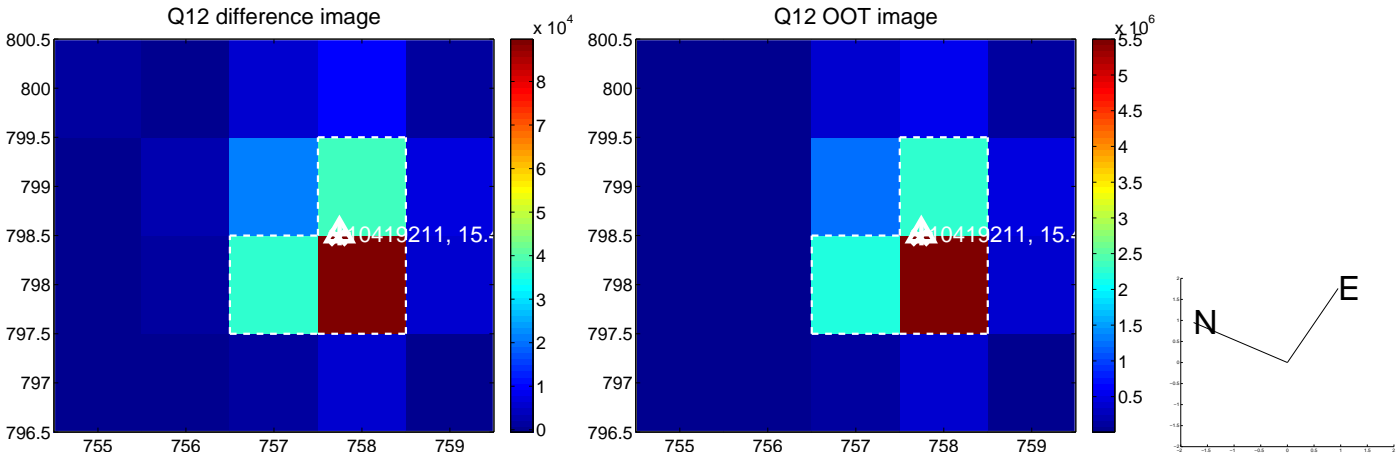
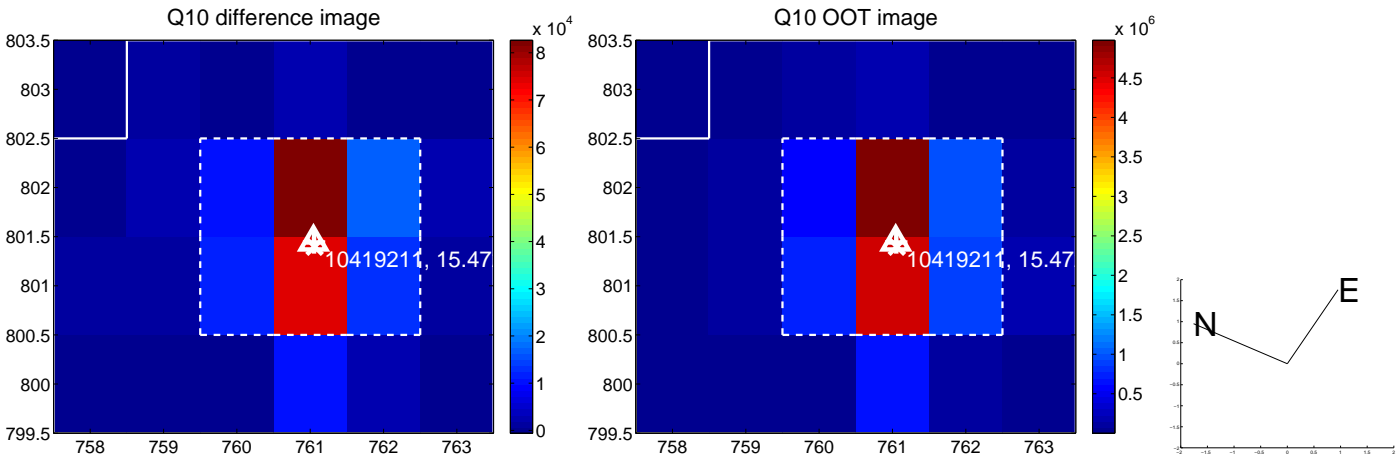
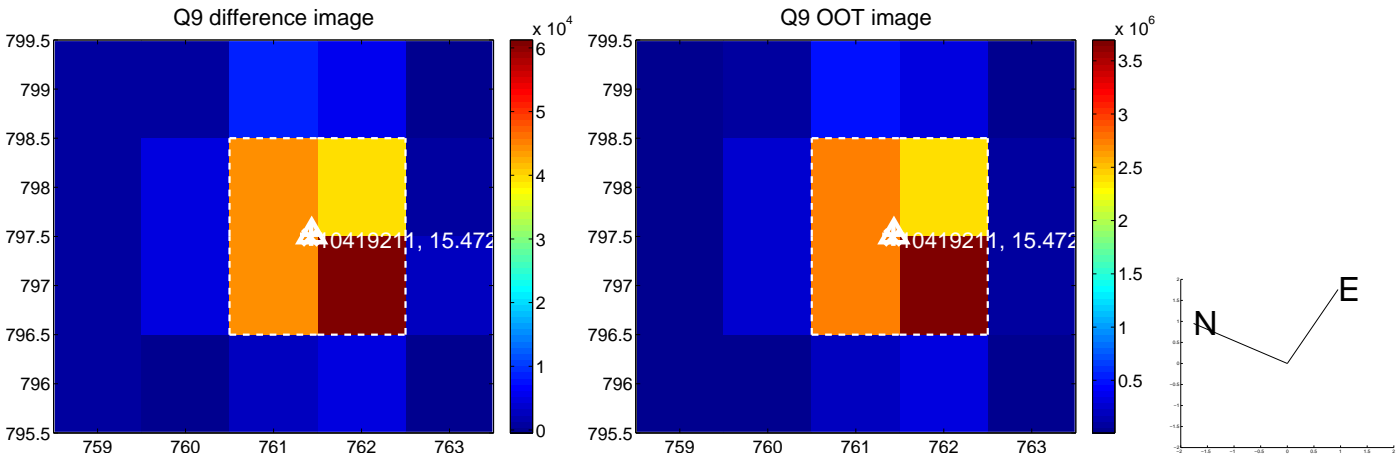
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



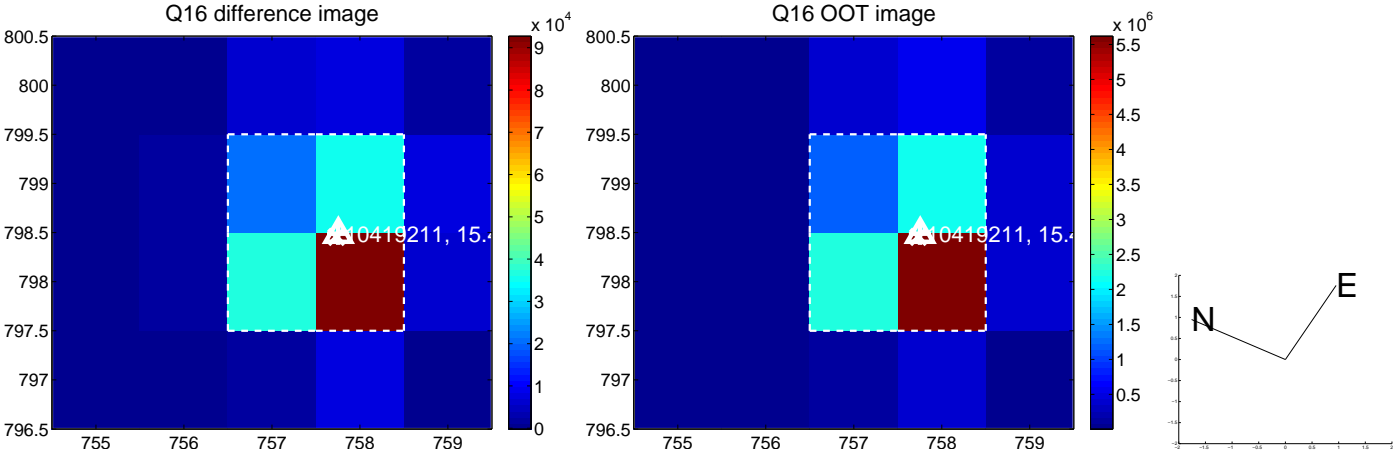
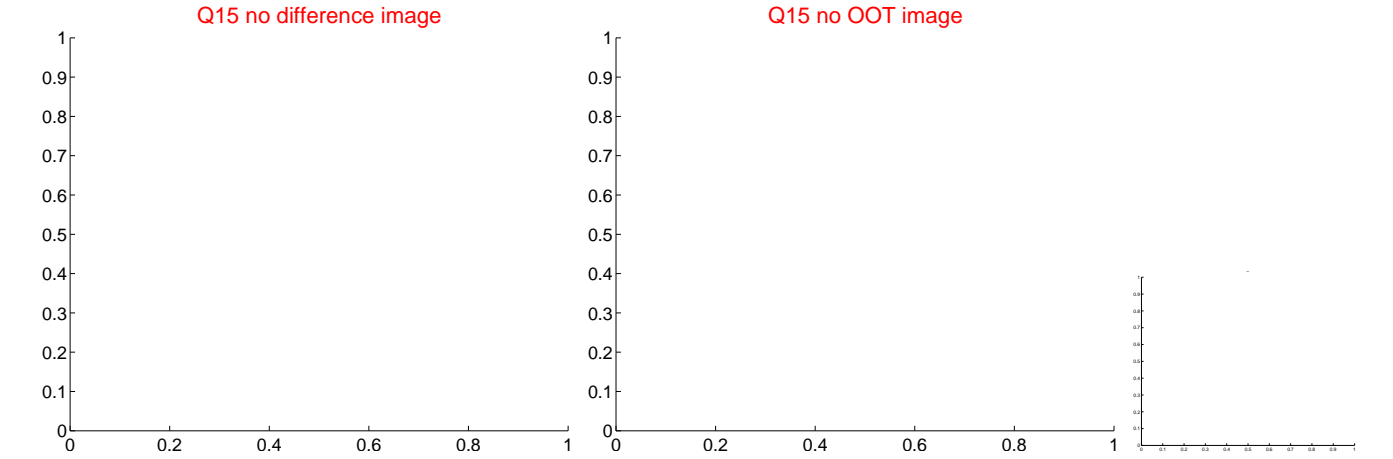
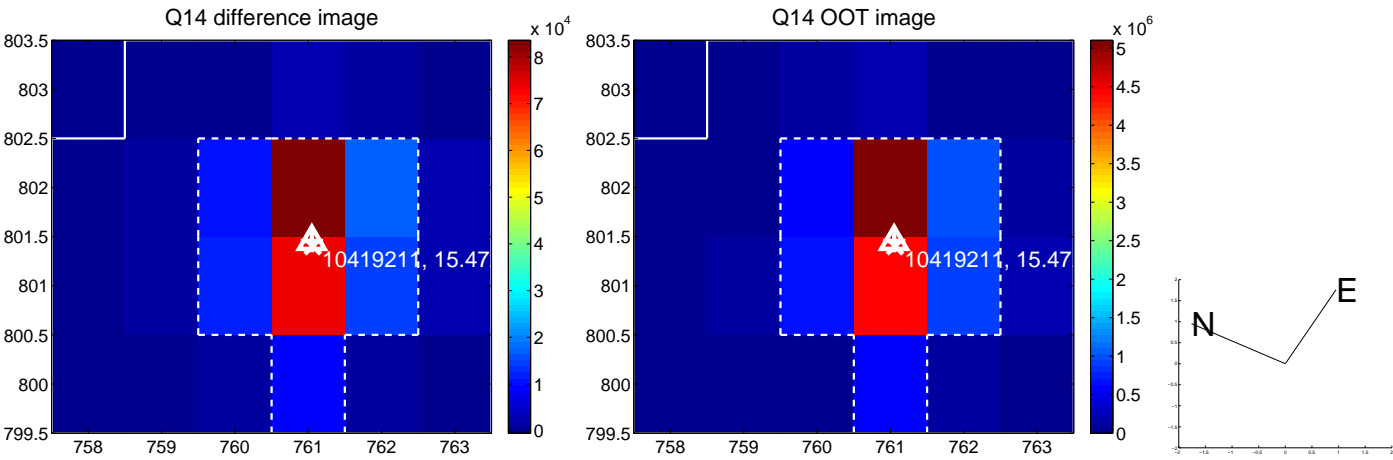
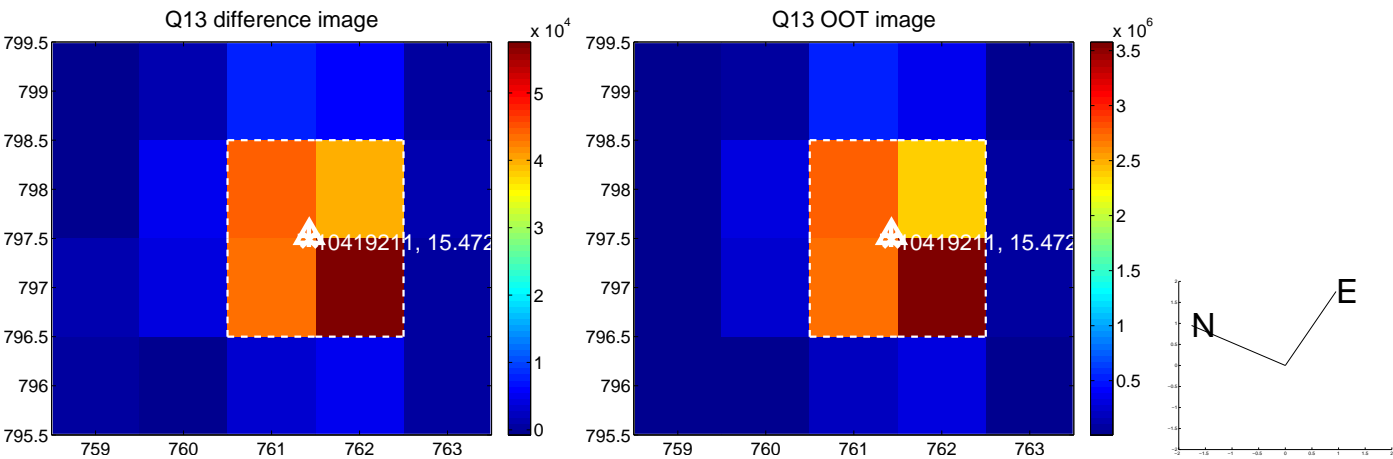
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



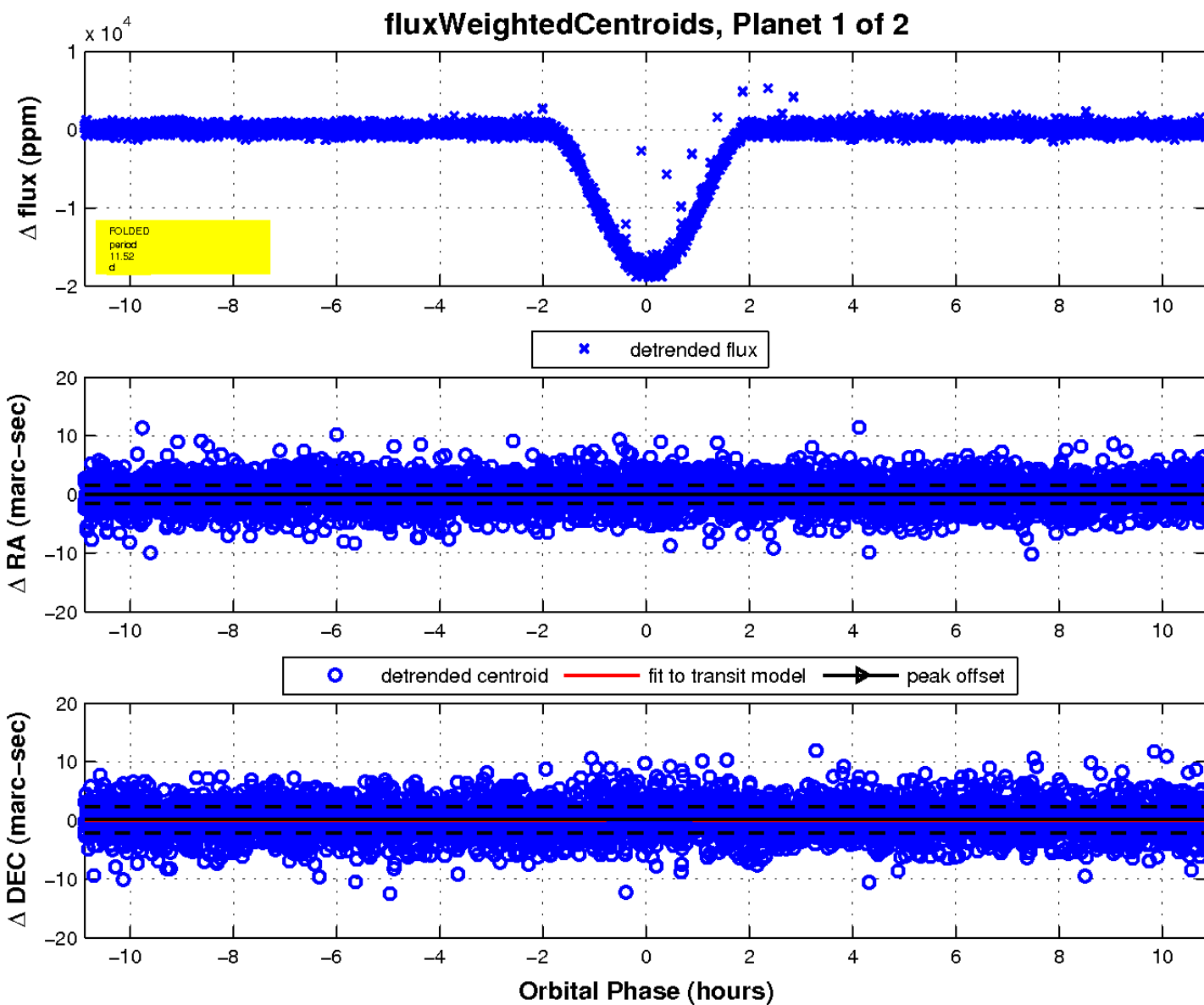
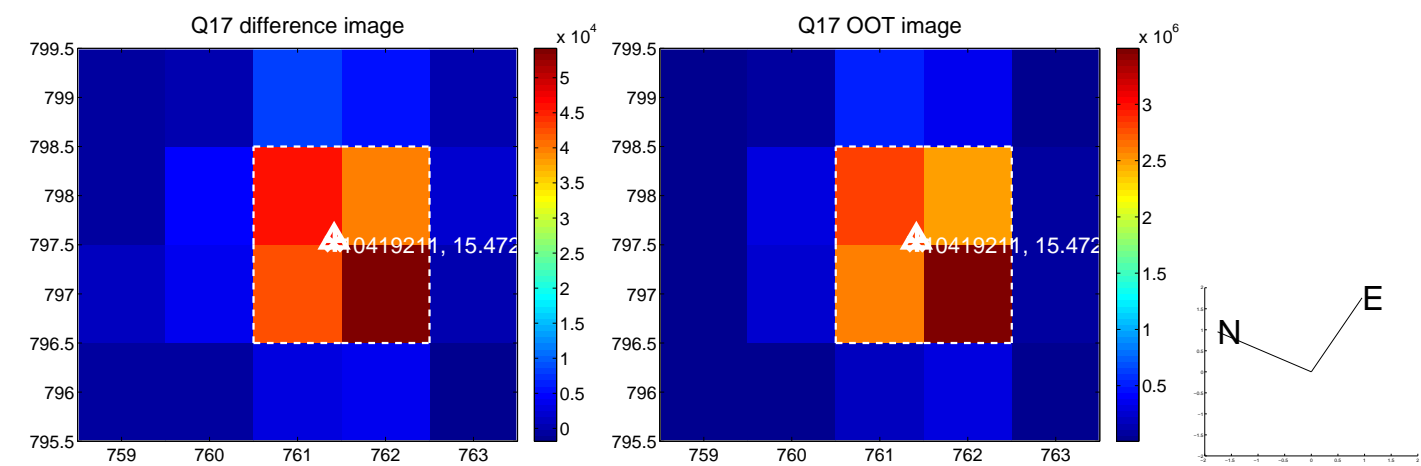
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



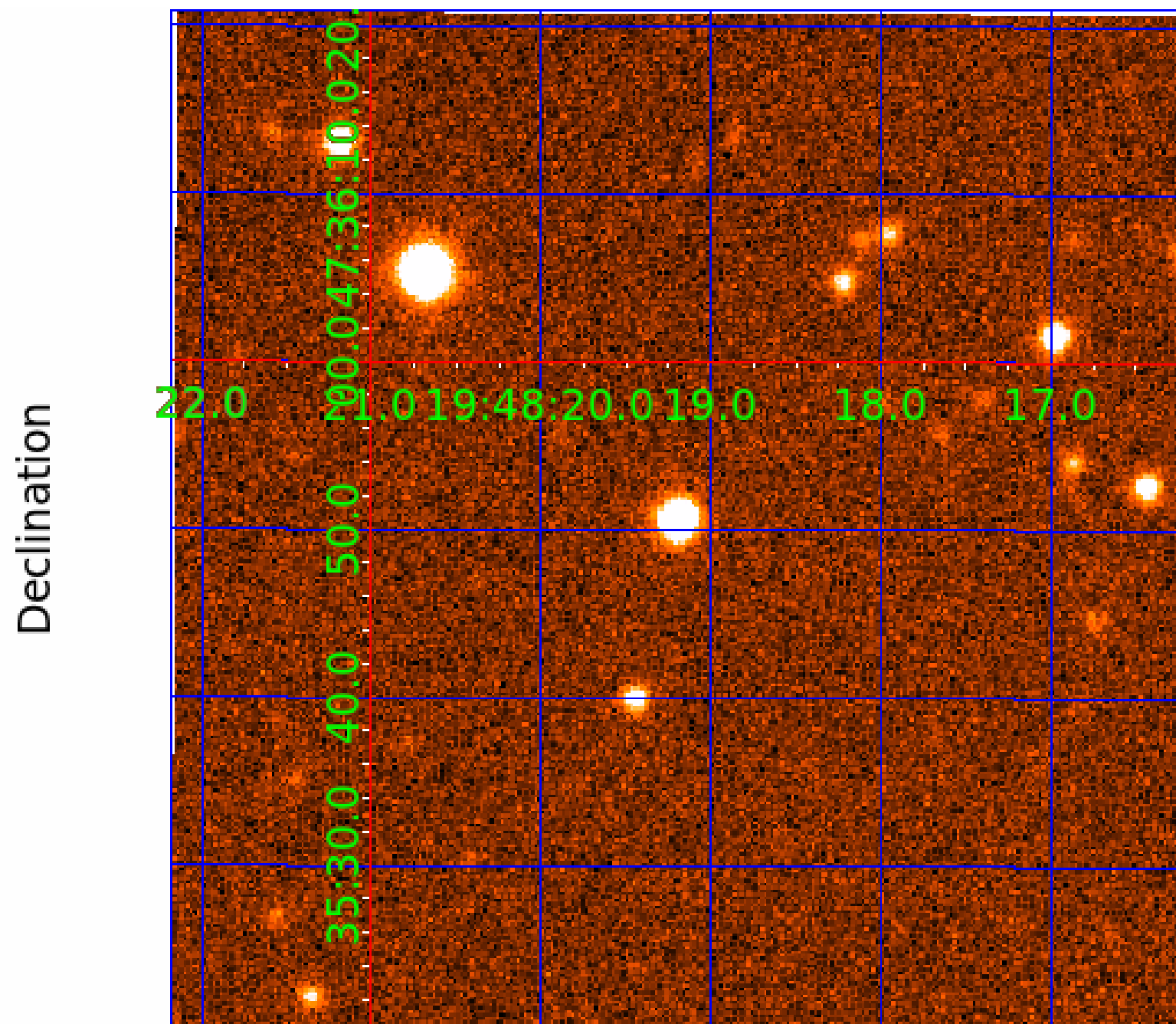
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 010419211

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})
010419211-01	OBS	0742.01	11.521447	136.275330	17961.1	3.627	628.4	609.9	0.85	5795	17.39	75.98
010419211-02	OBS	No	11.521466	142.757427	852.3	3.594	25.8	29.2	0.85	5795	4.32	75.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010419211-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
010419211-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

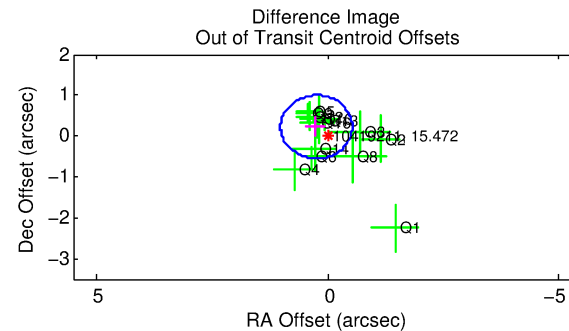
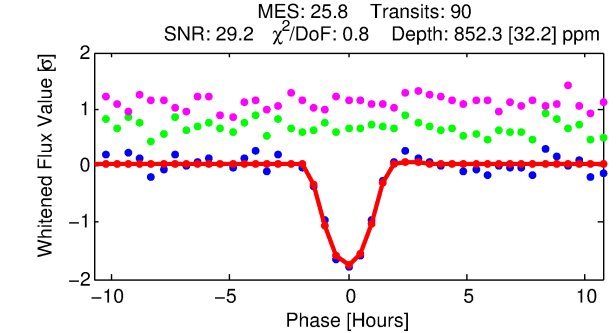
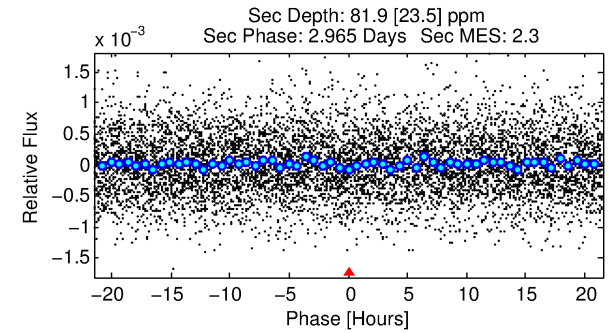
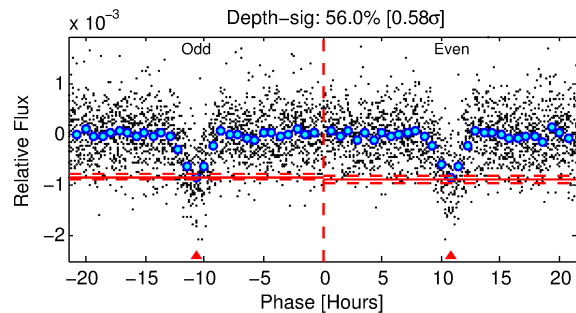
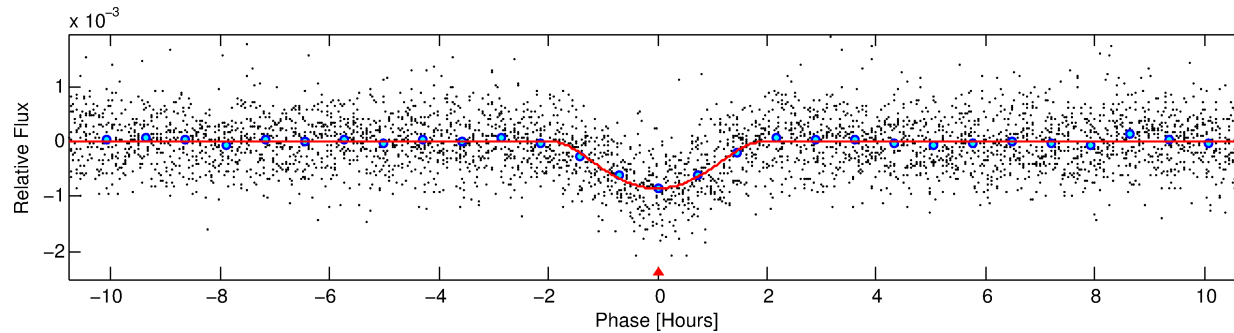
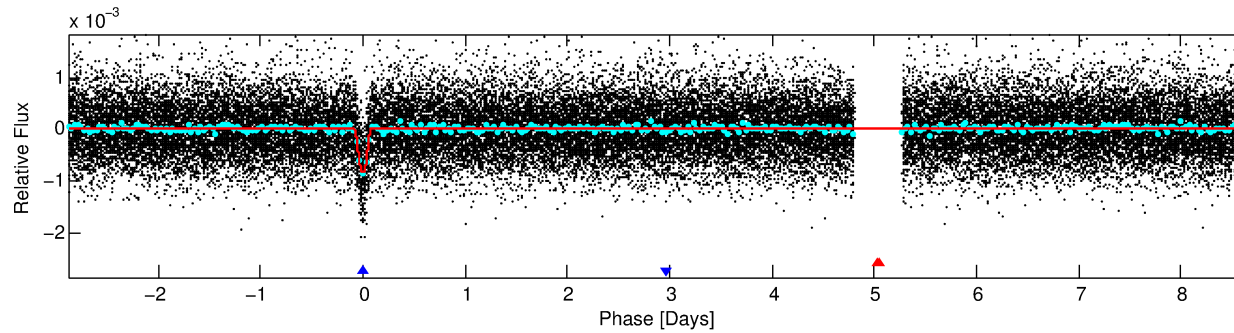
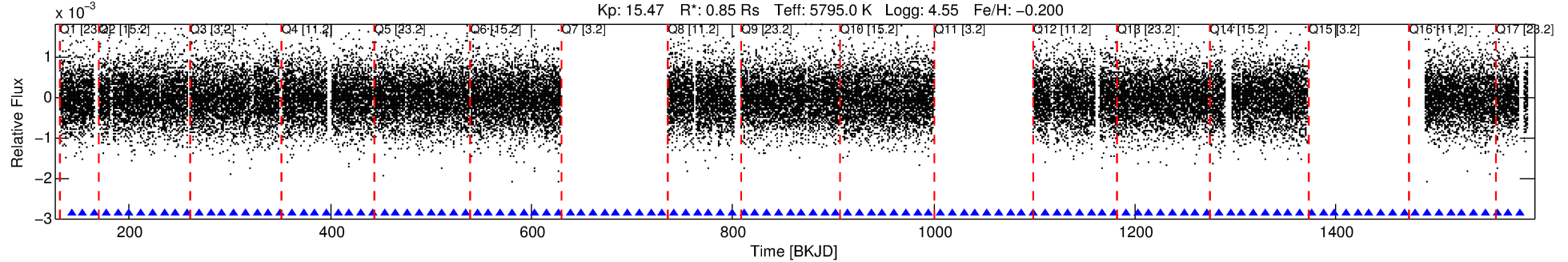
Ephemeris Match Information For 010419211-02

No Significant Match Found

DV One-Page Summary

KIC: 10419211 Candidate: 2 of 2 Period: 11.521 d
KOI: K00742 Corr: No Ephemeris Match

Kp: 15.47 R*: 0.85 Rs Teff: 5795.0 K Logg: 4.55 Fe/H: -0.200



DV Fit Results:

Period = 11.52147 [0.00004] d
Epoch = 142.7574 [0.0028] BKJD
Rp/R* = 0.0467 [0.0470]
a/R* = 8.30 [2.39]
b = 0.99 [0.08]
Seff = 75.98 [26.11]
Teq = 753 [65] K
Rp = 4.32 [4.49] Re
a = 0.0978 [0.0217] AU
Ag = 23.07 [47.44] [0.47σ]
Teffp = 2551 [1297] K [1.38σ]

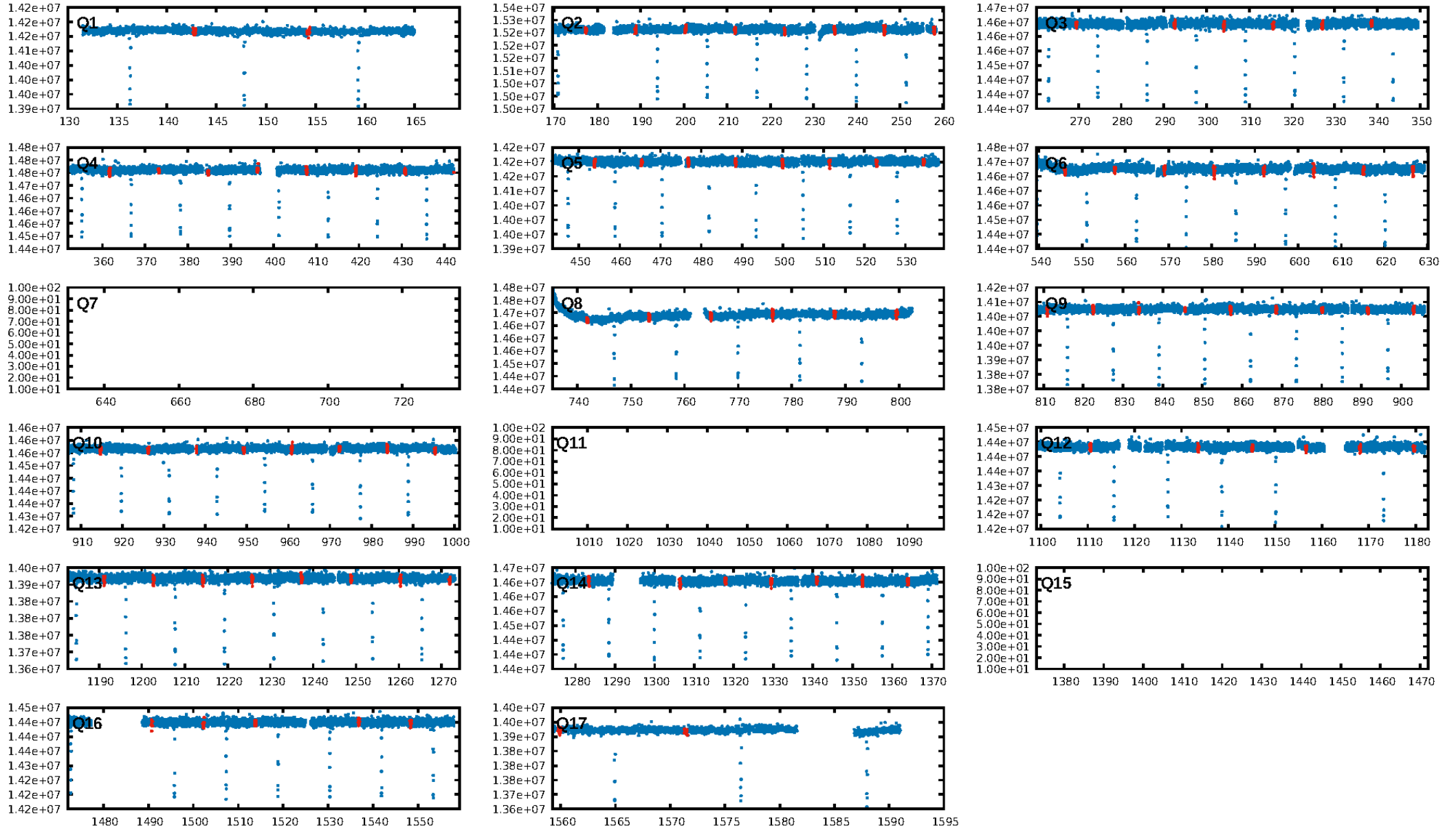
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 89.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 9.99e-147
RollingBand-fgt: 1.00 [86/86]
GhostDiagnostic-chr: 7.383
Centroid-sig: 70.3%
Centroid-so: 0.212 arcsec [0.43σ]
OotOffset-rm: 0.330 arcsec [1.28σ]
KicOffset-rm: 0.528 arcsec [2.02σ]
OotOffset-st: 4/1/4/4 [13]
KicOffset-st: 4/1/4/4 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [14/14]

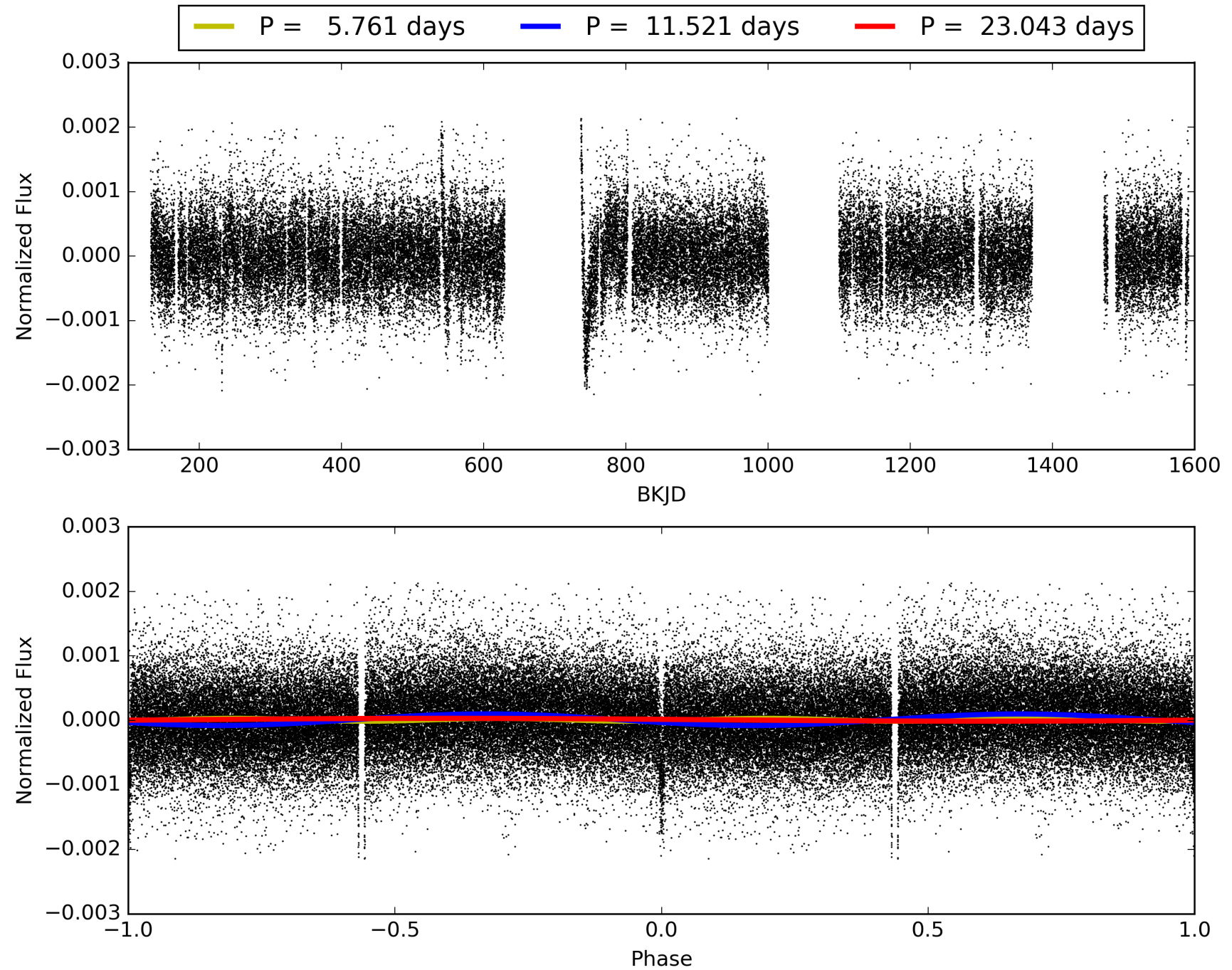
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:40:05 Z

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

TCE 010419211-02, PDC Light Curves

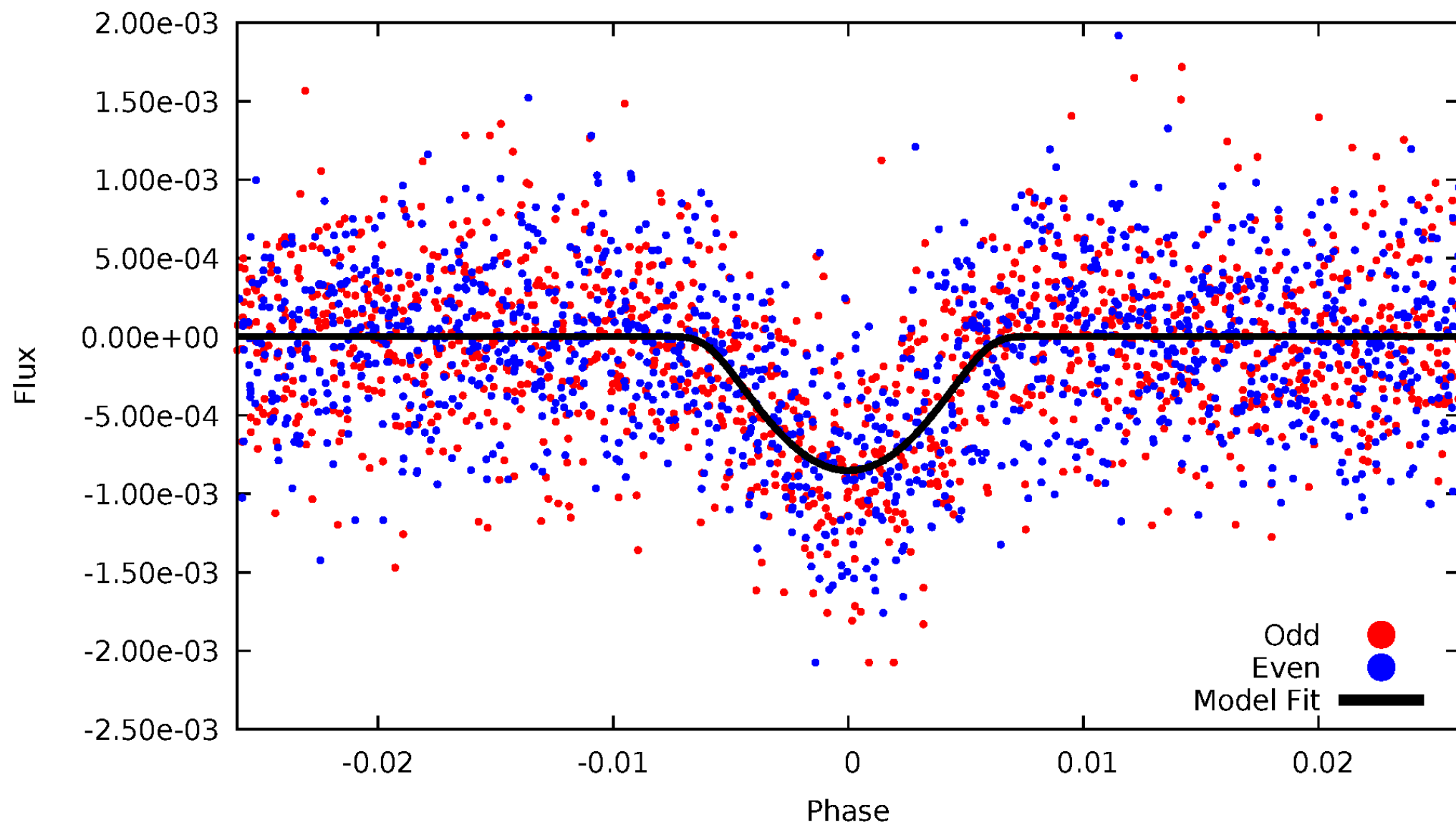


TCE 010419211-02



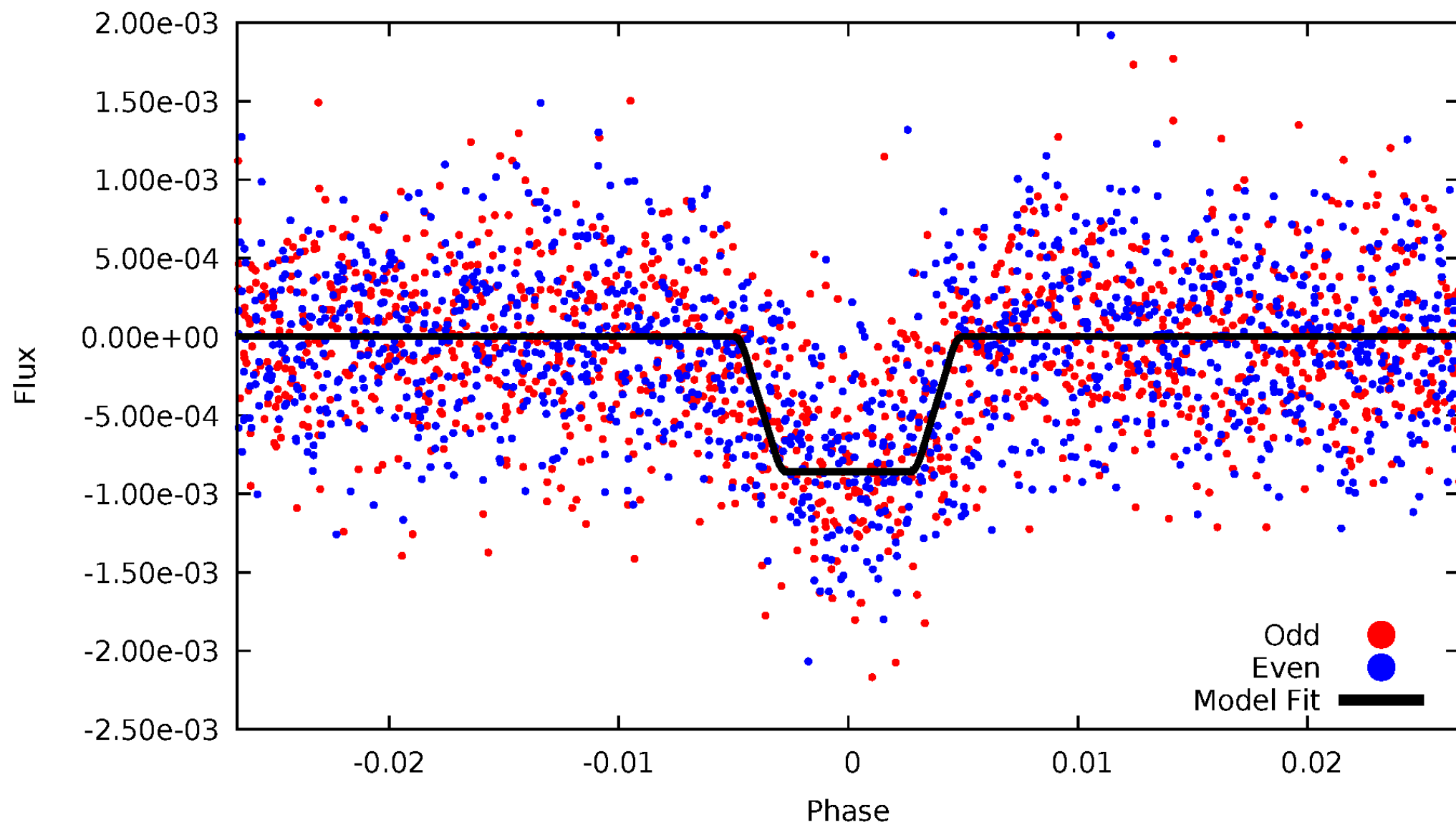
DV Odd/Even

TCE 010419211-02



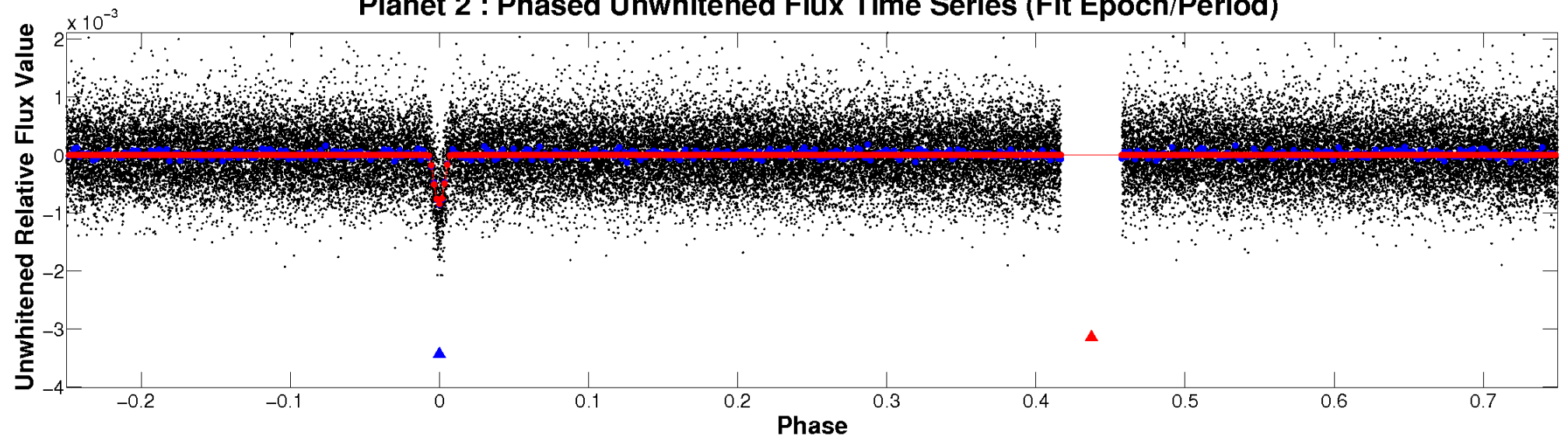
ALT Odd/Even

TCE 010419211-02

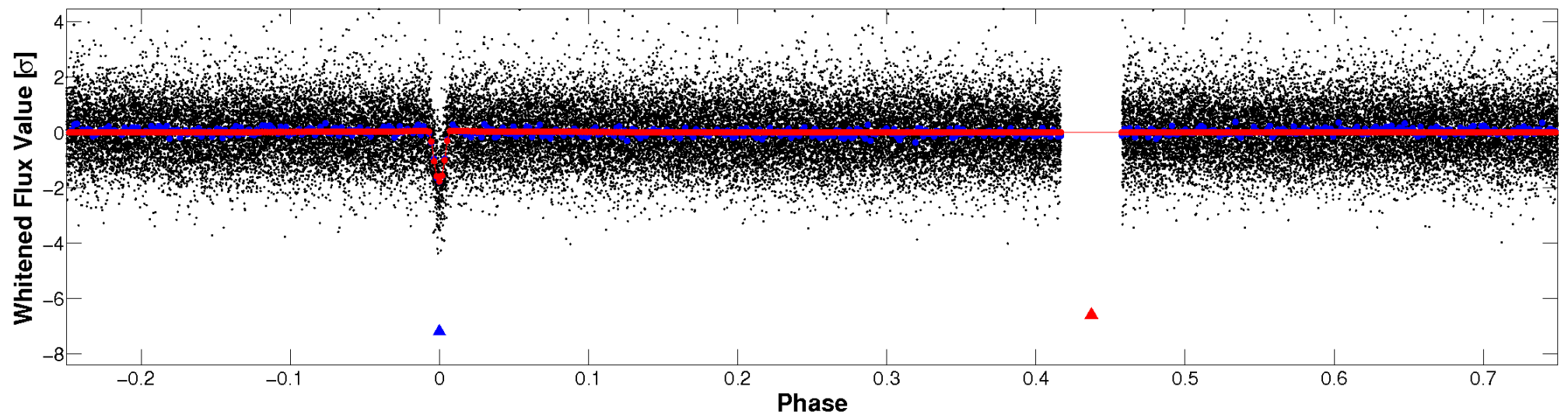


Non-Whitened Vs. Whitened Light Curve

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

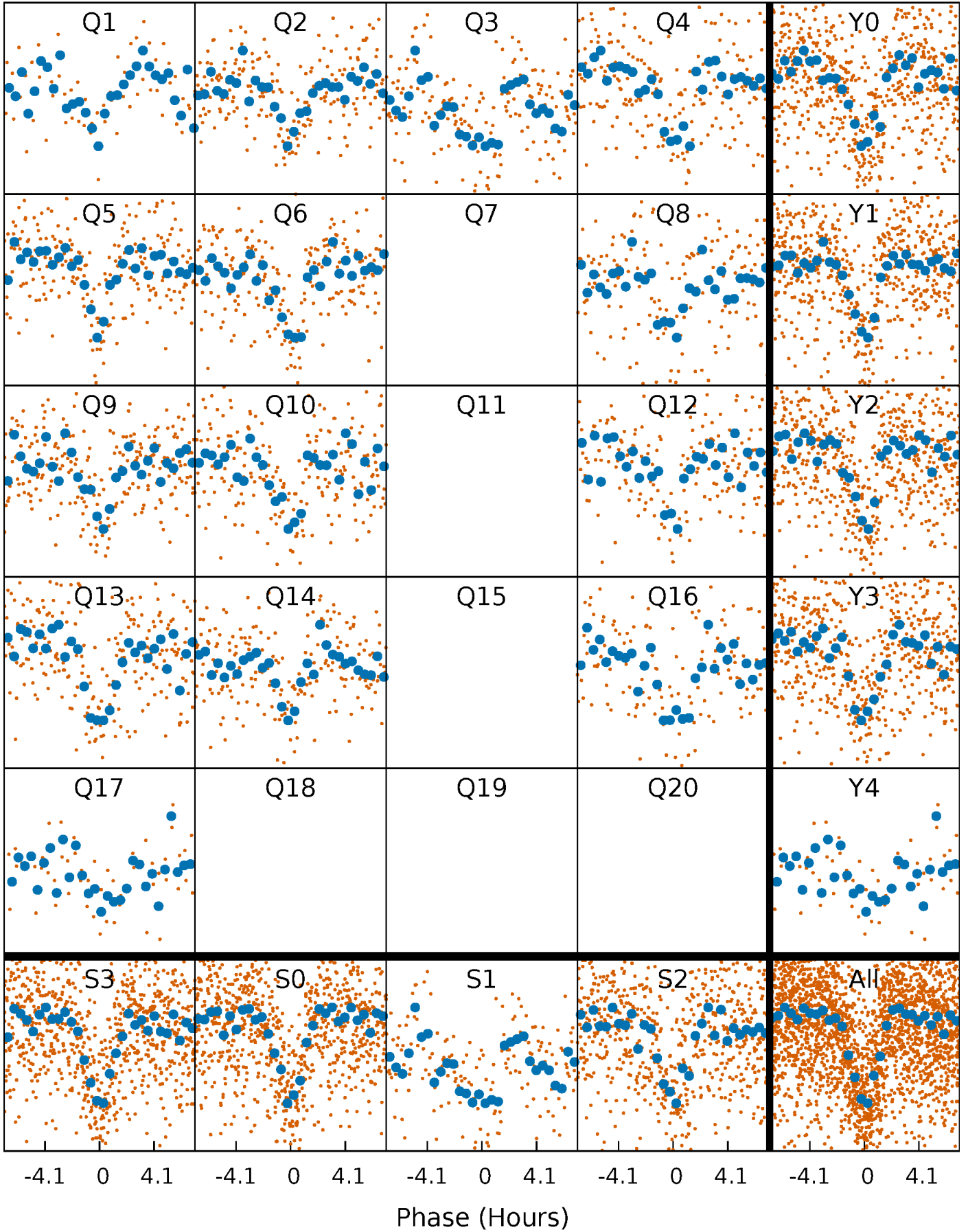


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



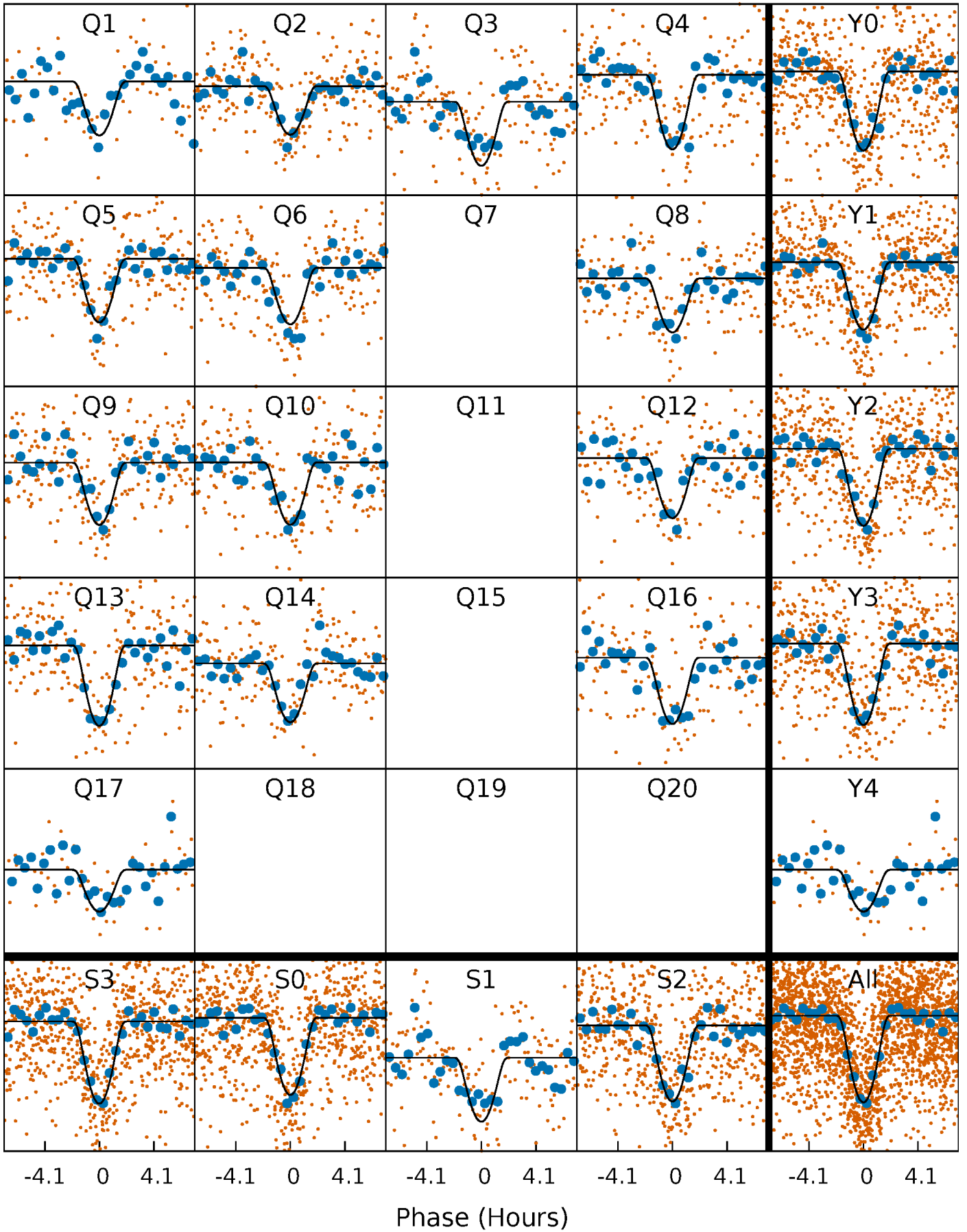
PDC Quarter-Phased Transit Curves

TCE 010419211-02 P= 11.521466 Days $T_0=142.757427$ (BKJD)



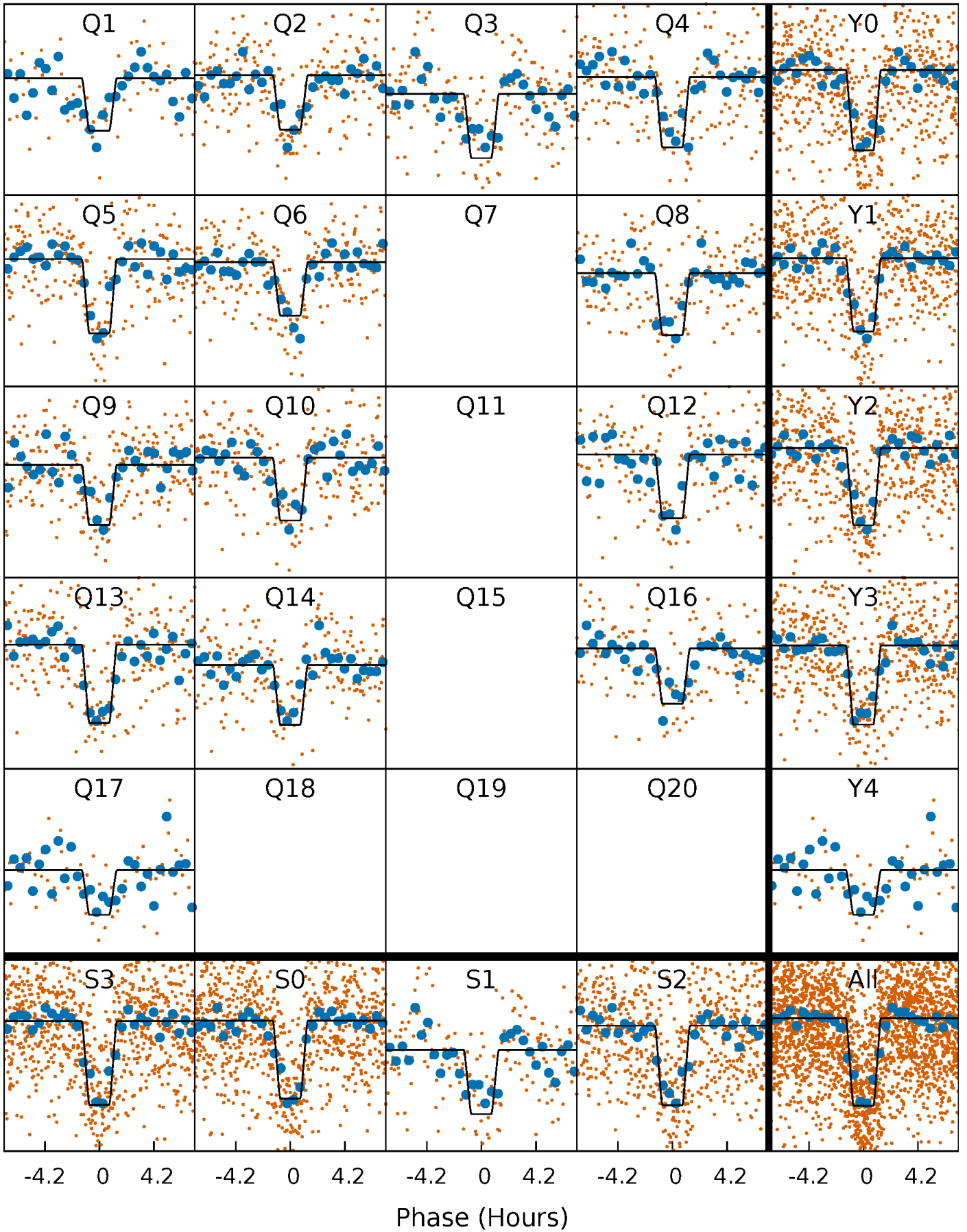
DV Quarter-Phased Transit Curves

TCE 010419211-02 P= 11.521466 Days $T_0=142.757427$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

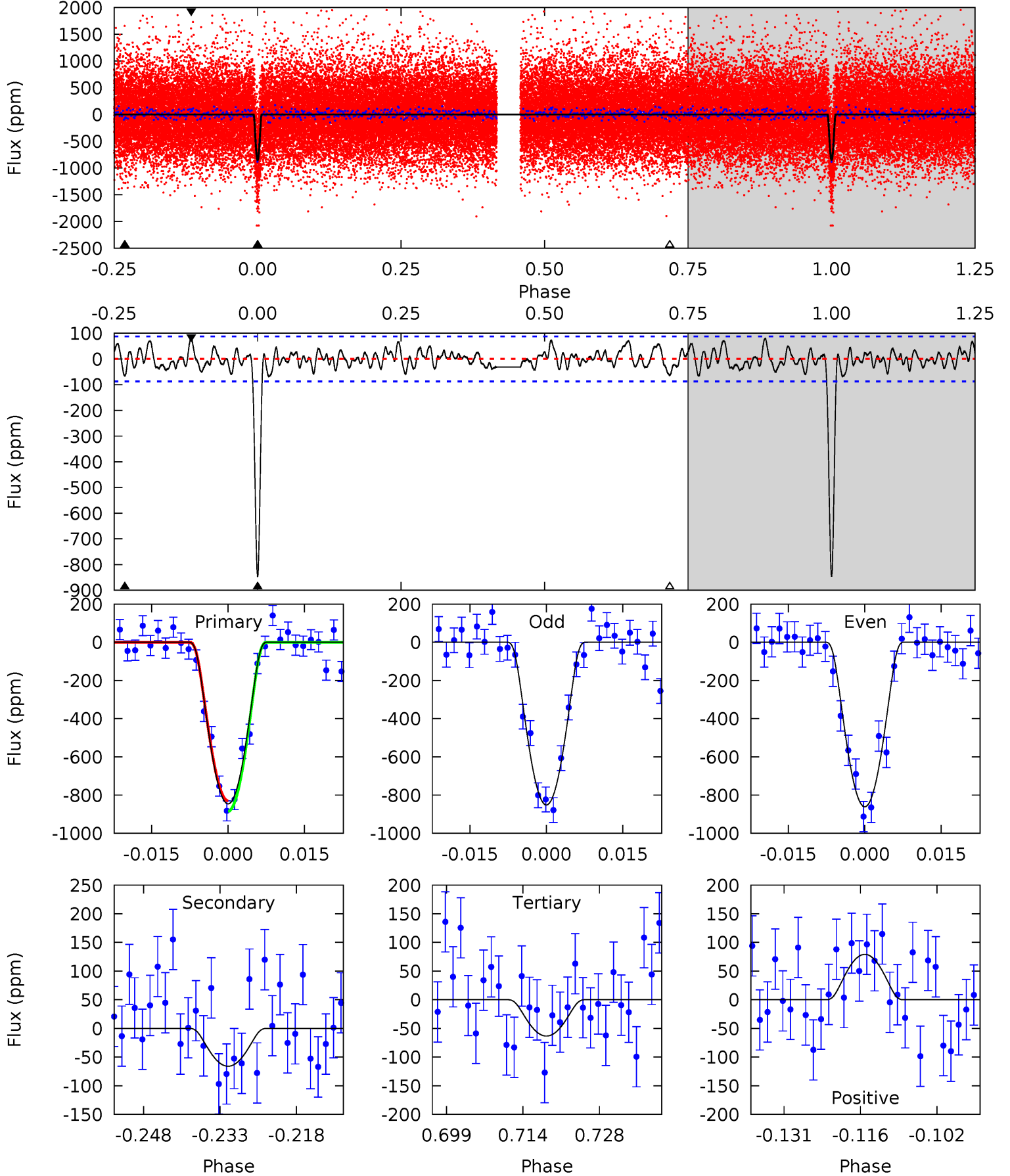
TCE 010419211-02 P= 11.521539 Days $T_0=142.752777$ (BKJD)



DV Model-Shift Uniqueness Test

010419211-02, $P = 11.521466$ Days, $E = 131.235961$ Days

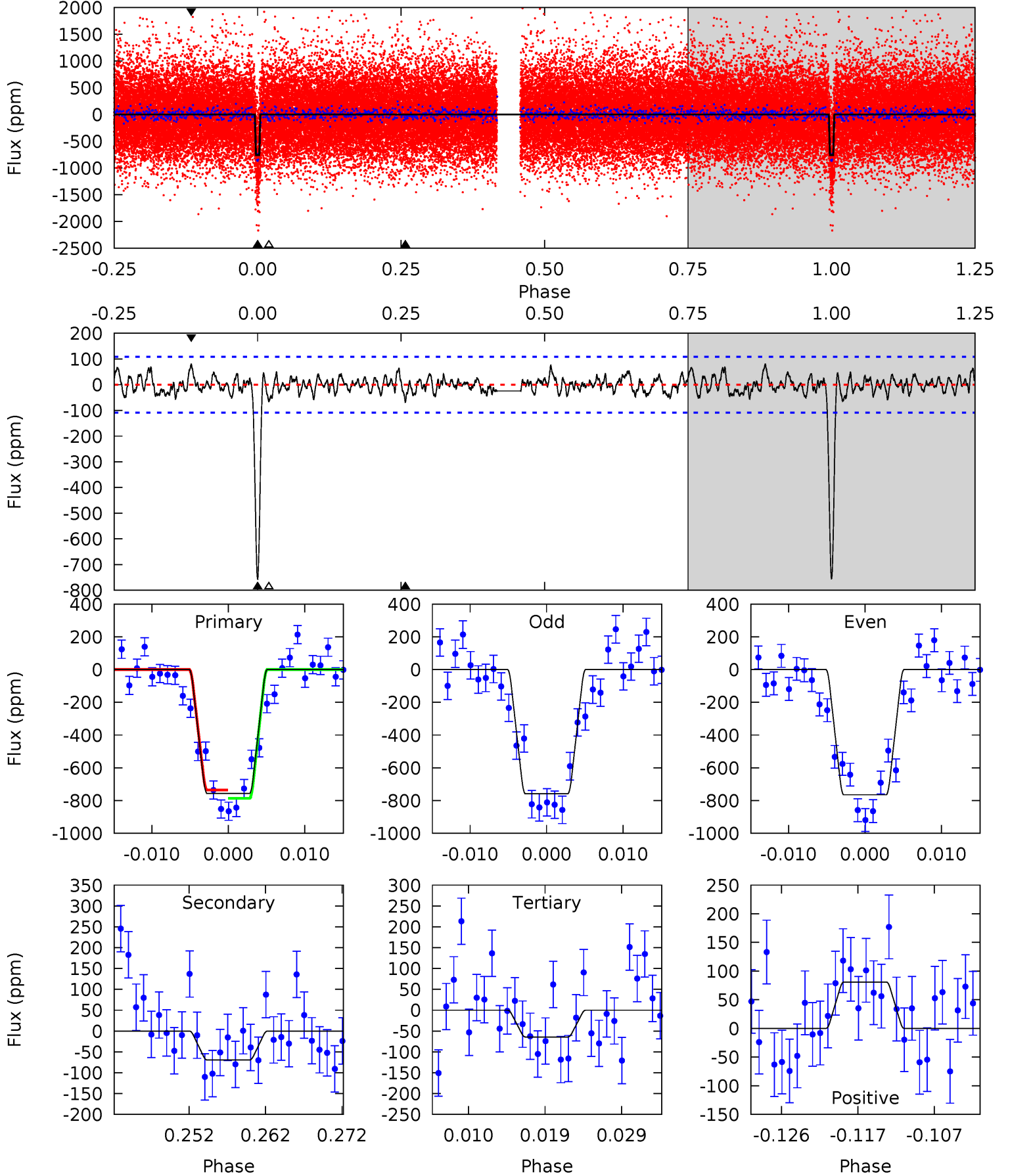
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.9	3.74	3.59	4.48	4.95	2.44	1.59	44.3	43.4	0.15	-0.75	0.27	0.97	0.09	1.54



Alt Model-Shift Uniqueness Test

010419211-02, $P = 11.521539$ Days, $E = 131.231238$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.0	3.21	2.98	3.75	5.03	2.59	1.16	32.0	31.3	0.24	-0.54	0.15	1.00	0.10	1.16



Stellar Parameters For KIC 010419211

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5795^{+155}_{-172}	$4.554^{+0.033}_{-0.176}$	$-0.200^{+0.250}_{-0.300}$	$0.848^{+0.224}_{-0.075}$	$0.938^{+0.098}_{-0.109}$	$2.167^{+0.391}_{-1.004}$
	+3%/-3%	+1%/-4%	+125%/-150%	+26%/-9%	+10%/-12%	+18%/-46%
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 010419211-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-66 ± 18	$5.38^{+3.93}_{-3.54}$	1078^{+62}_{-44}	2913^{+1124}_{-430}	12^{+81}_{-8}
Alt.	-69 ± 22	$4.40^{+3.85}_{-3.00}$	1076^{+61}_{-42}	3084^{+1482}_{-516}	18^{+165}_{-13}

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

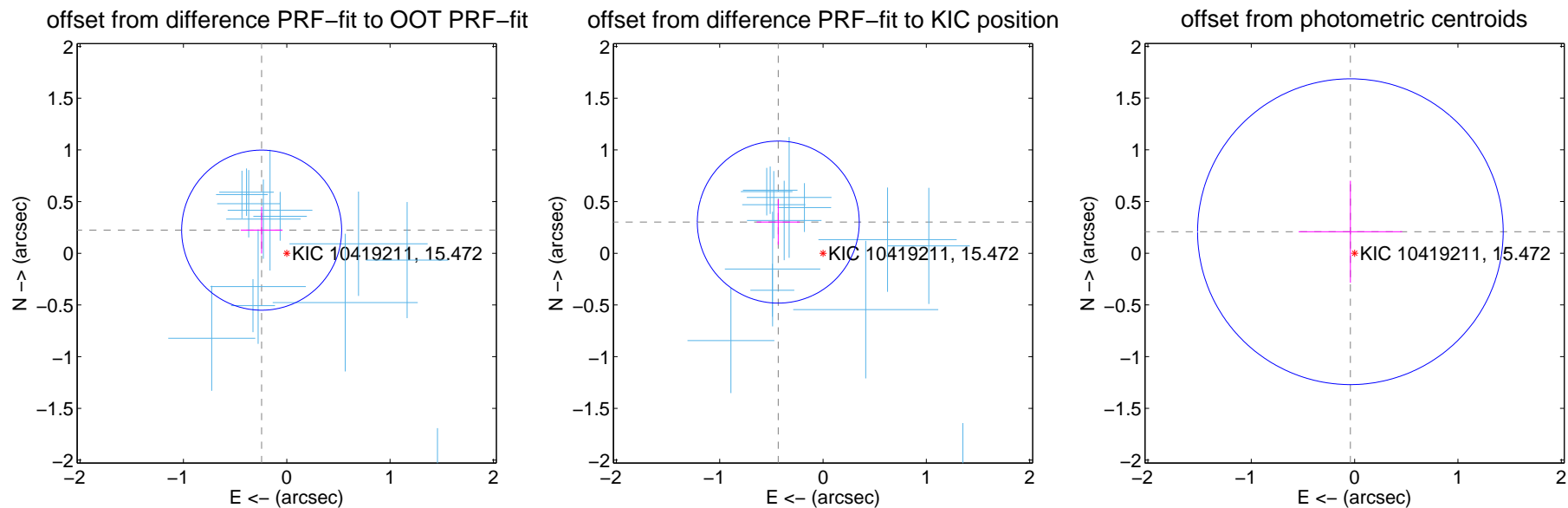
DV Centroid Data

Supplemental centroid analysis for 010419211-02. Kepler magnitude: 15.47. Transit SNR 29.22

There are 13 quarters with good PRF difference image offsets

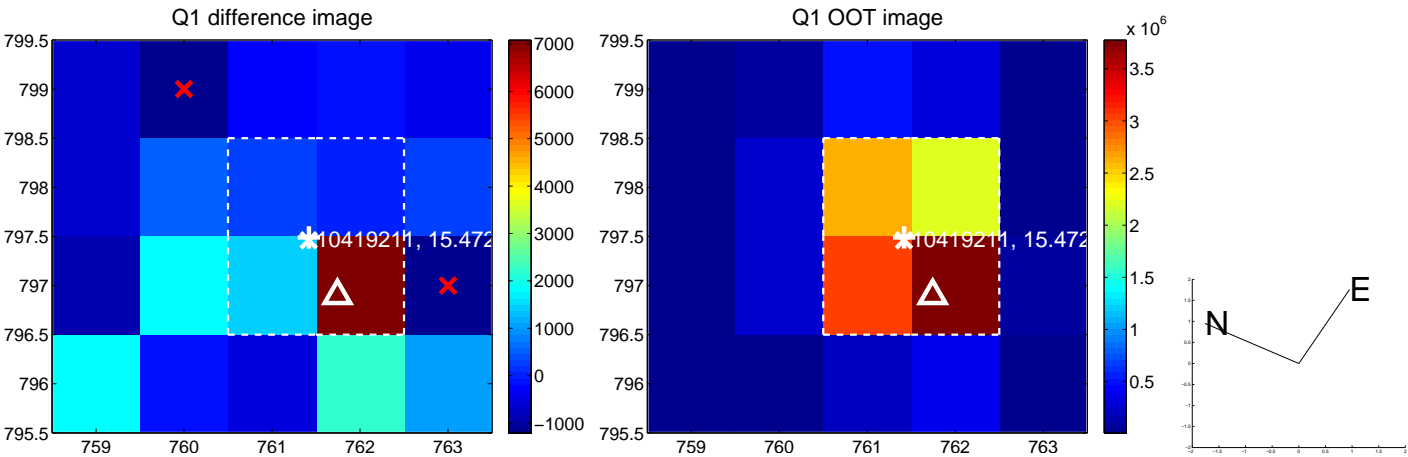
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.330 ± 0.258	1.28	0.243 ± 0.202	0.224 ± 0.226
PRF-fit source offset from KIC position	0.528 ± 0.261	2.02	0.433 ± 0.208	0.302 ± 0.218
photometric centroid source offset	0.21 ± 0.49	0.43	0.04 ± 0.50	0.21 ± 0.49

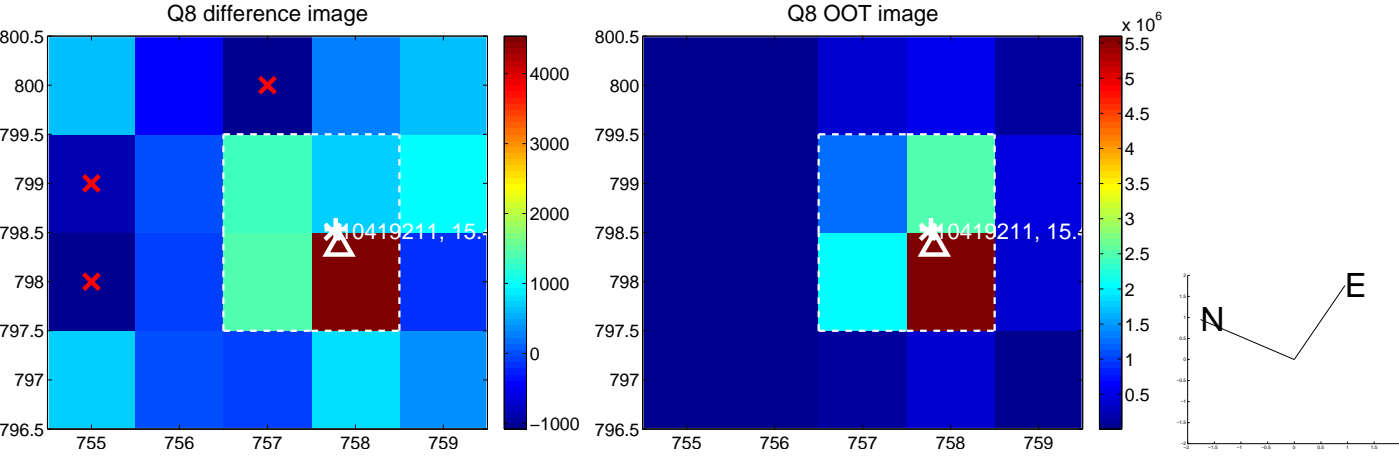
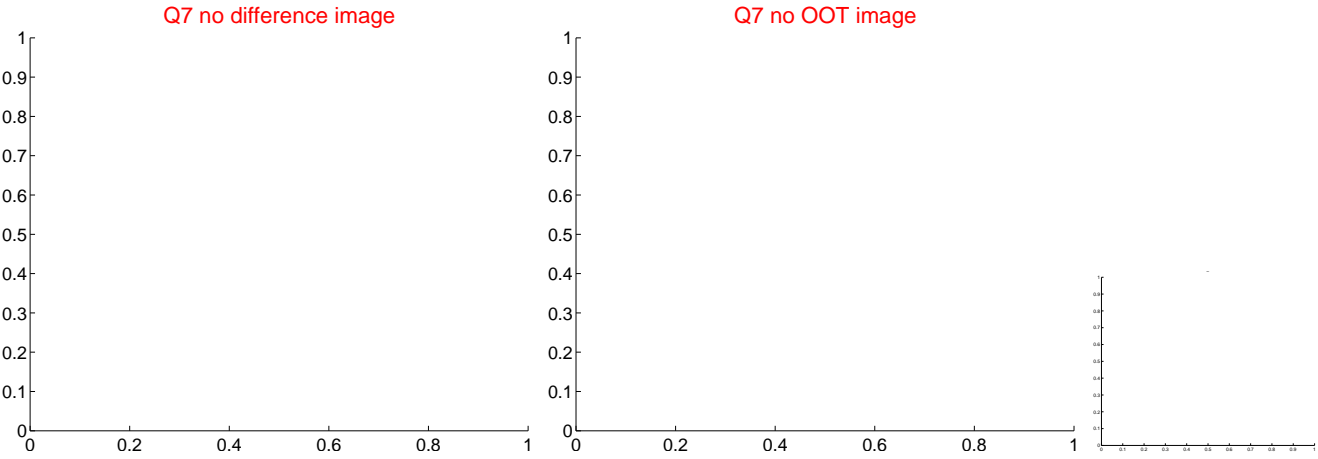
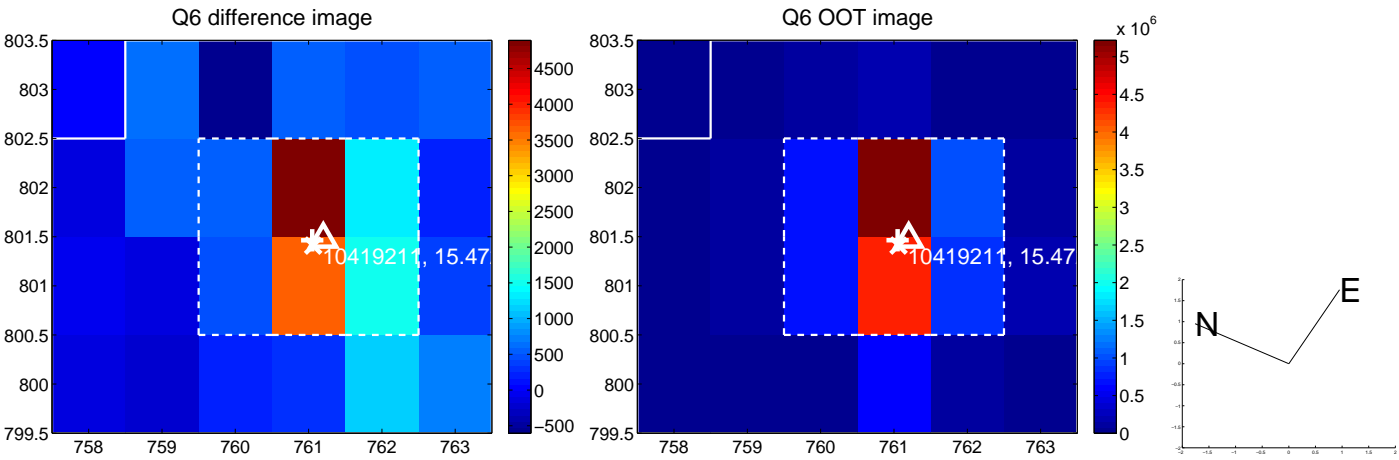
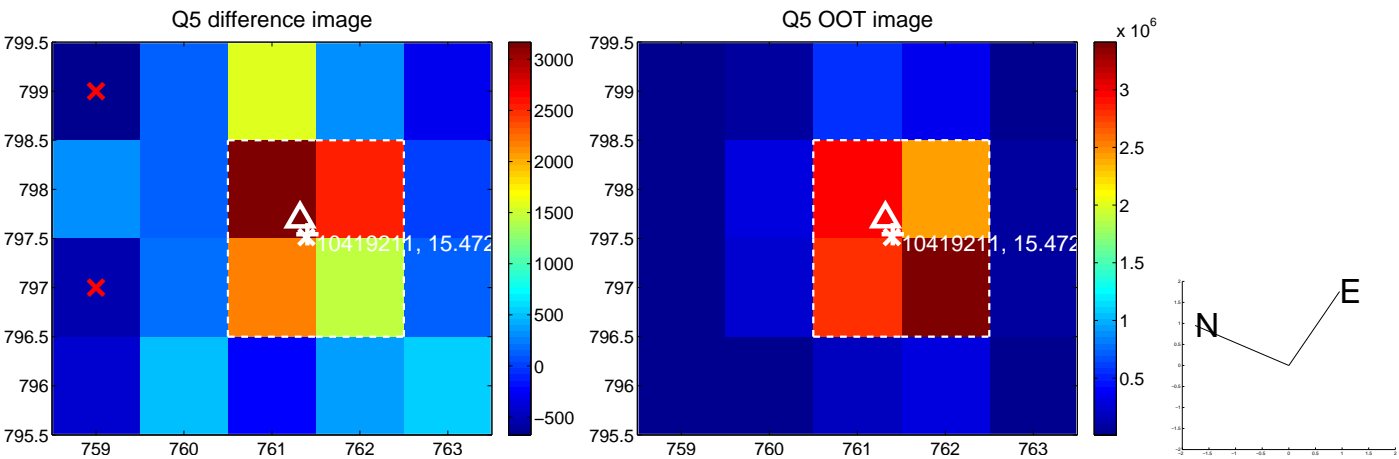


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

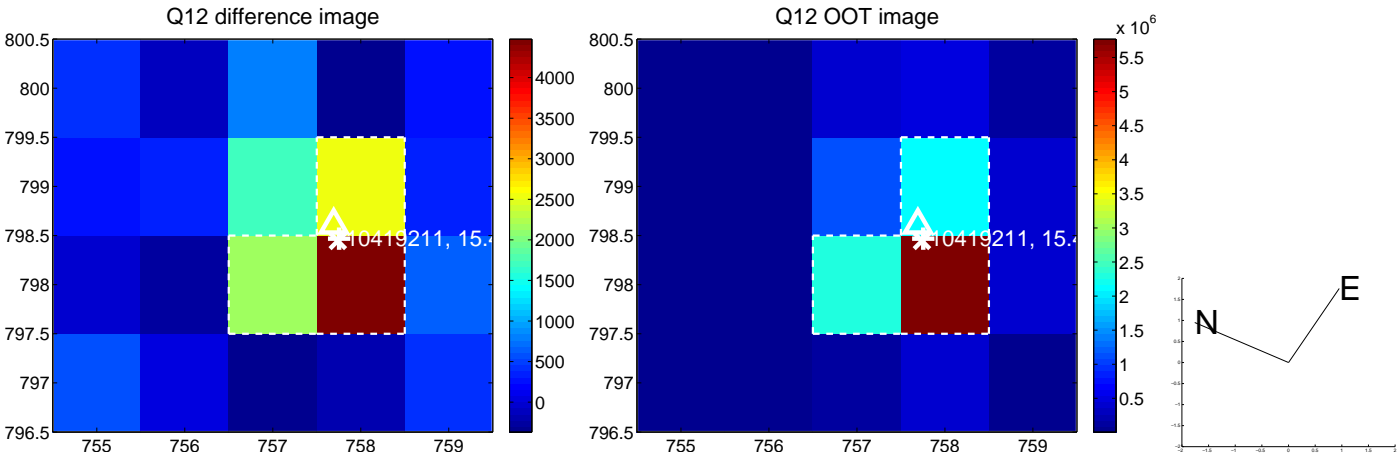
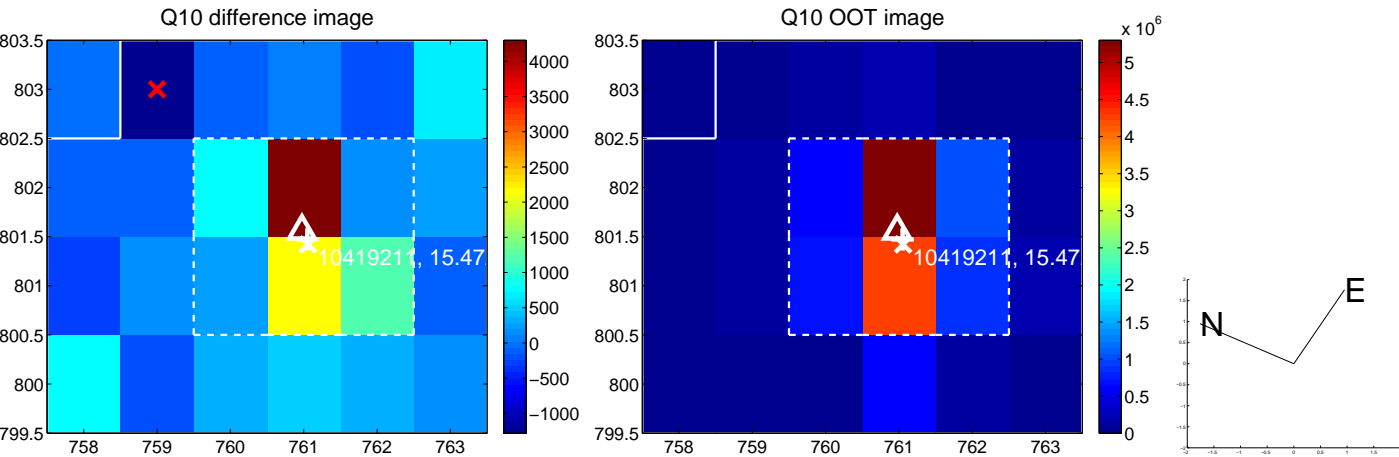
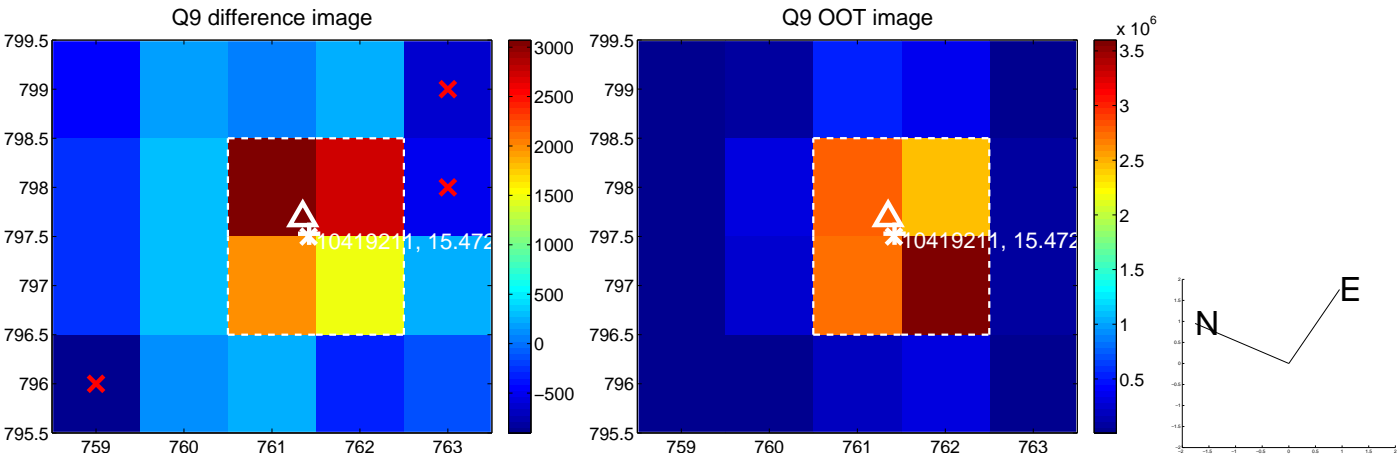
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



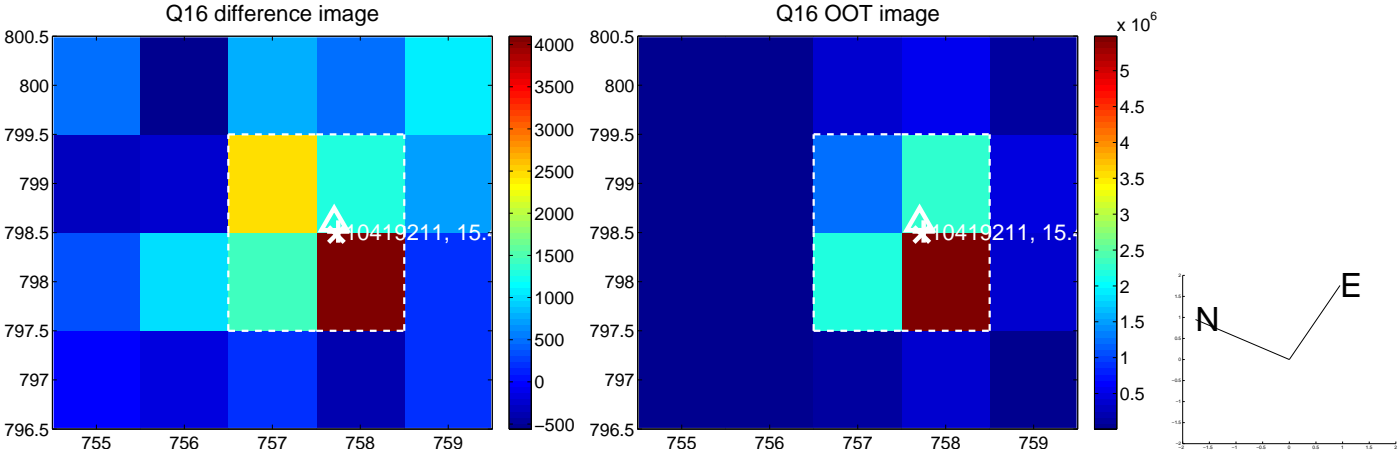
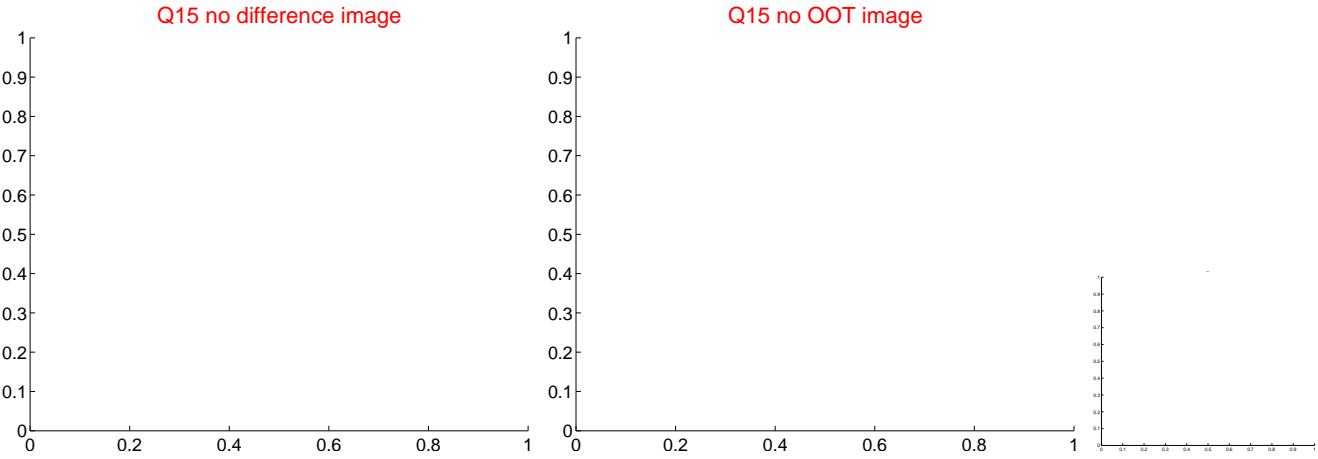
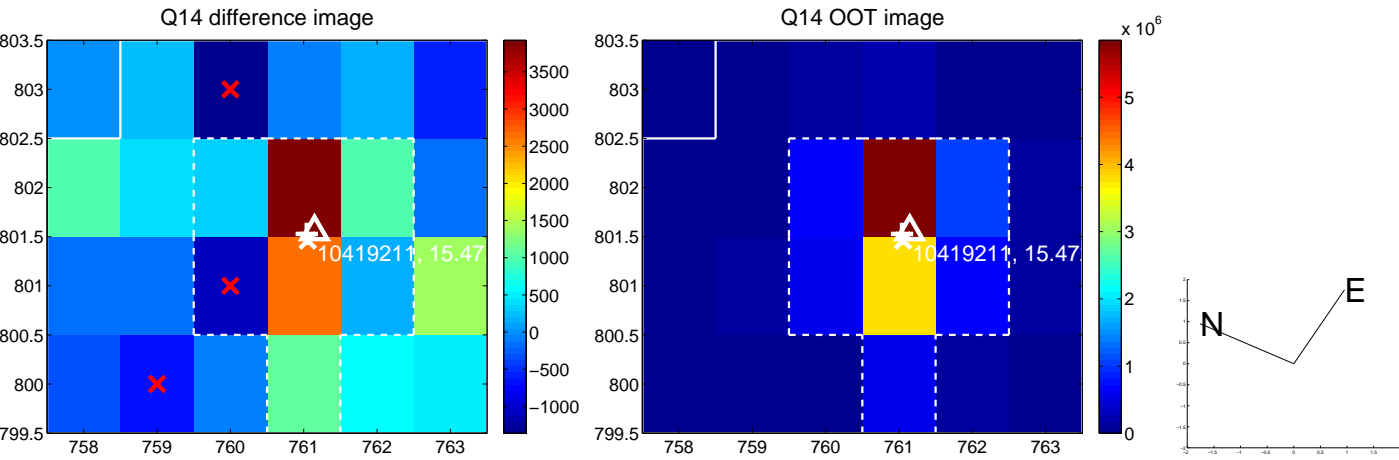
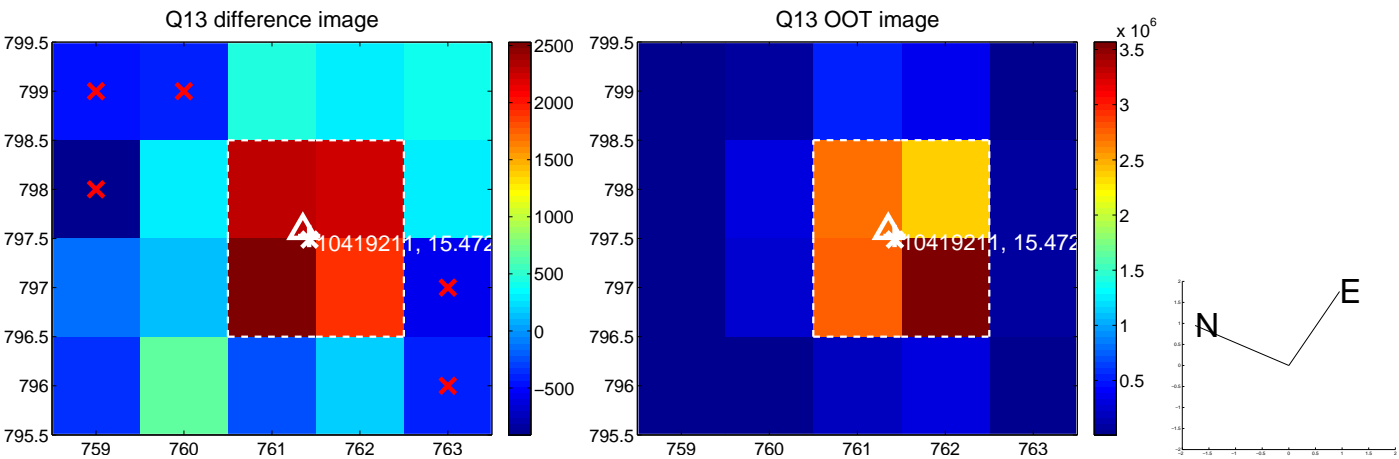
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



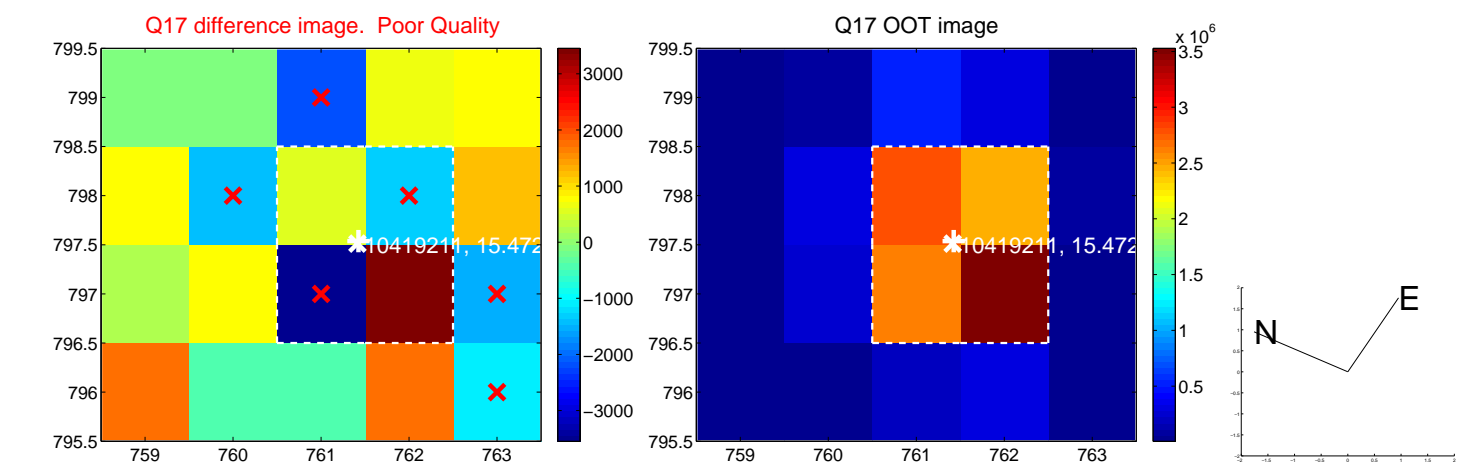
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



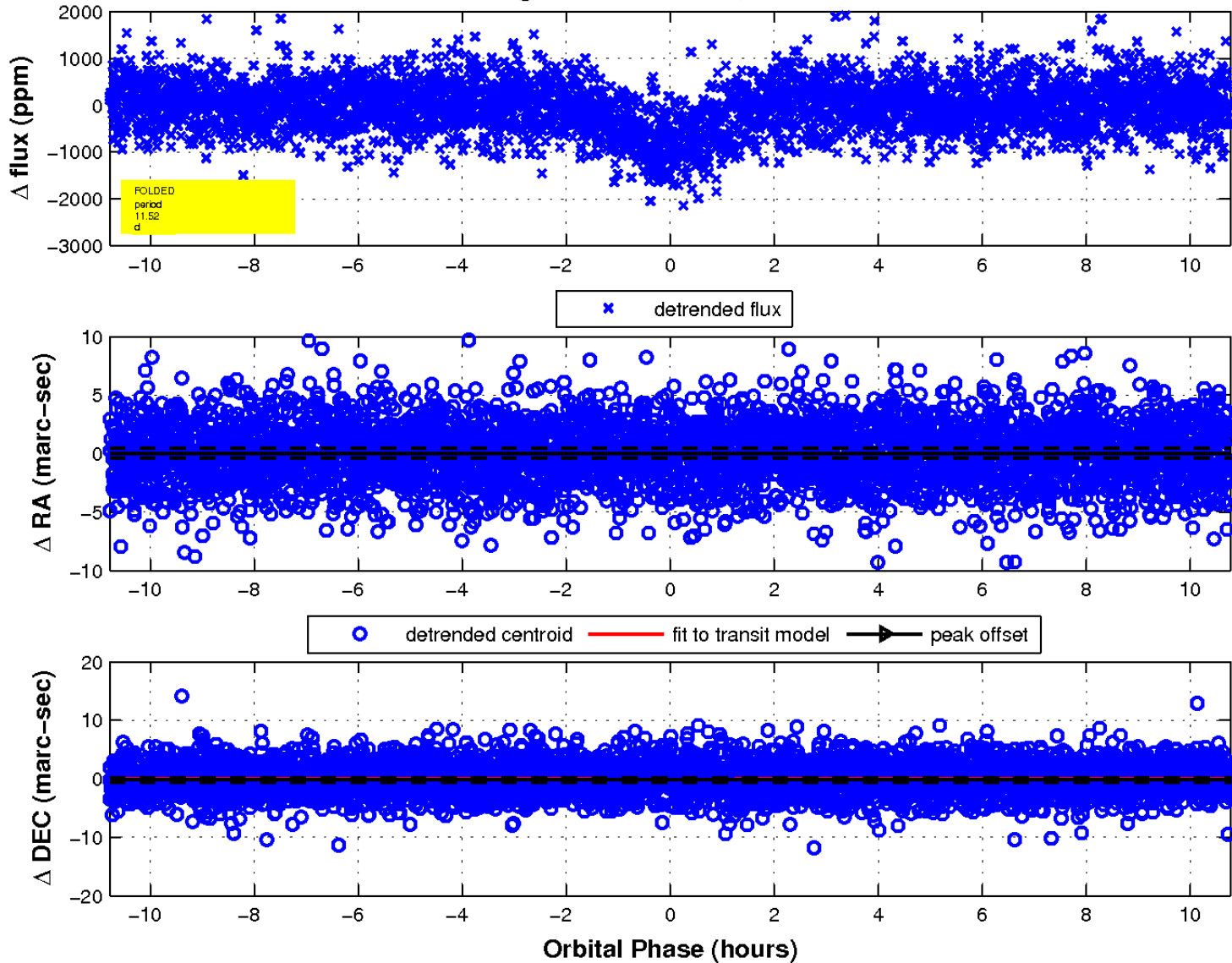
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

