

KIC 011410904

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})
011410904-01	OBS	2171.01	3.532317	134.745901	227.8	2.972	18.4	19.6	0.96	5761	1.71	427.67
011410904-02	OBS	No	389.476251	458.262041	849.7	4.591	7.9	6.9	0.96	5761	2.91	0.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011410904-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011410904-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS

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

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

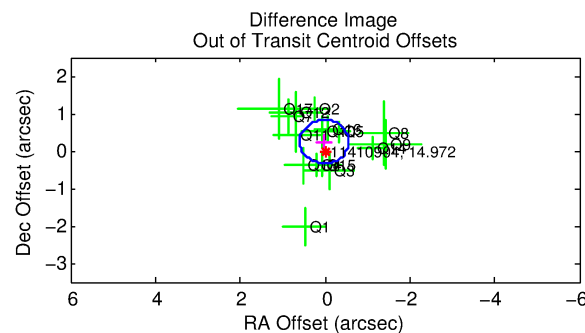
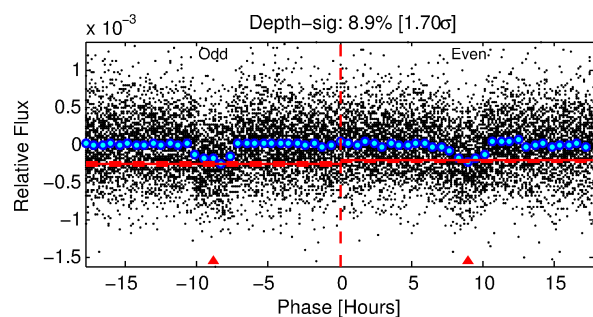
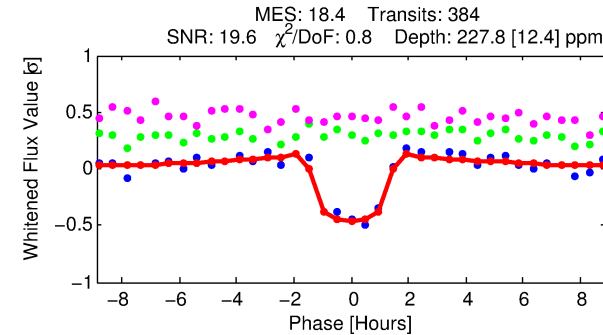
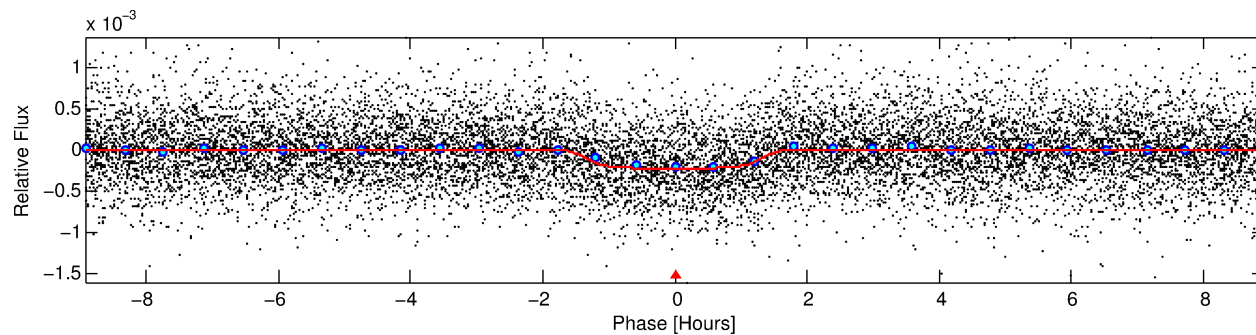
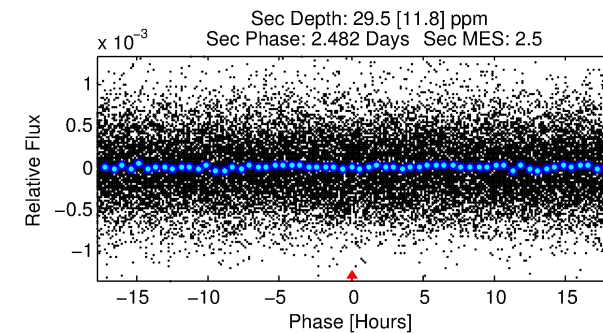
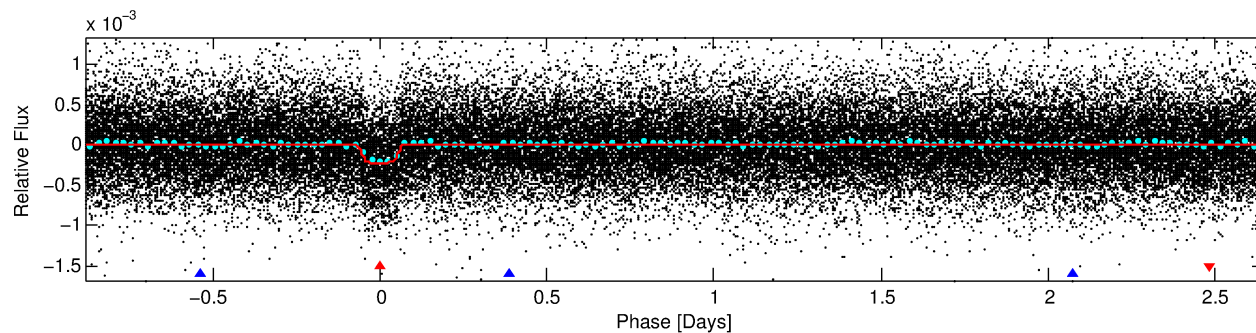
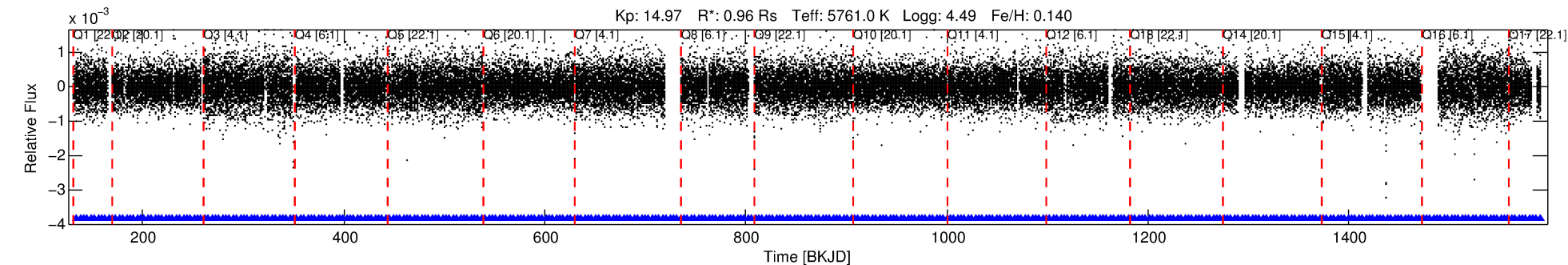
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011410904-01

No Significant Match Found

DV One-Page Summary

KIC: 11410904 Candidate: 1 of 2 Period: 3.532 d
KOI: K02171.01 Corr: 0.972



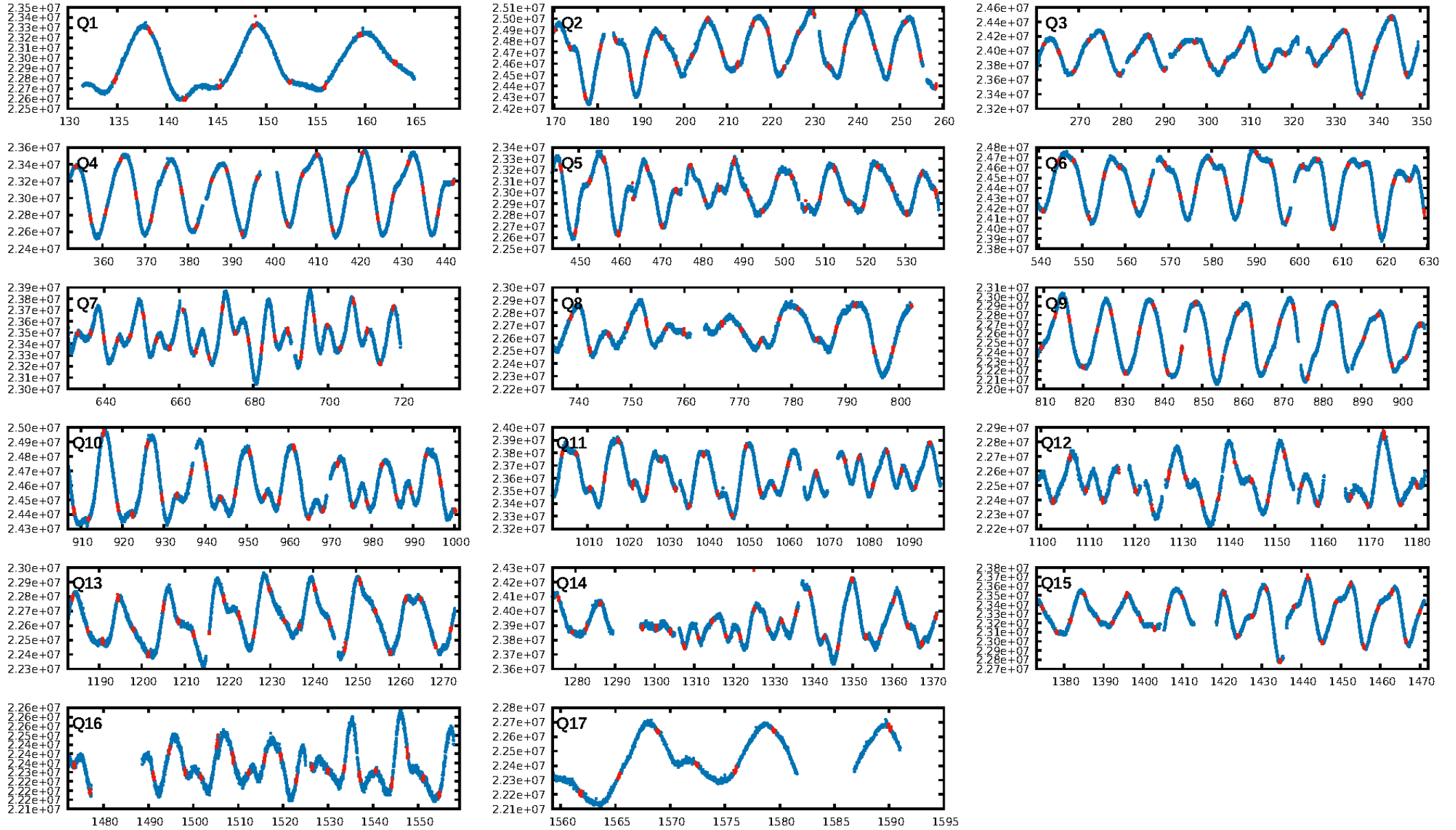
DV Fit Results:

Period = 3.53232 [0.00001] d
Epoch = 134.7459 [0.0020] BKJD
Rp/R* = 0.0164 [0.0040]
a/R* = 4.50 [4.81]
b = 0.89 [0.26]
Seff = 427.67 [92.53]
Teq = 1160 [63] K
Rp = 1.71 [0.49] Re
a = 0.0459 [0.0062] AU
Ag = 11.72 [7.78] [1.38σ]
Teffp = 3317 [524] K [4.09σ]

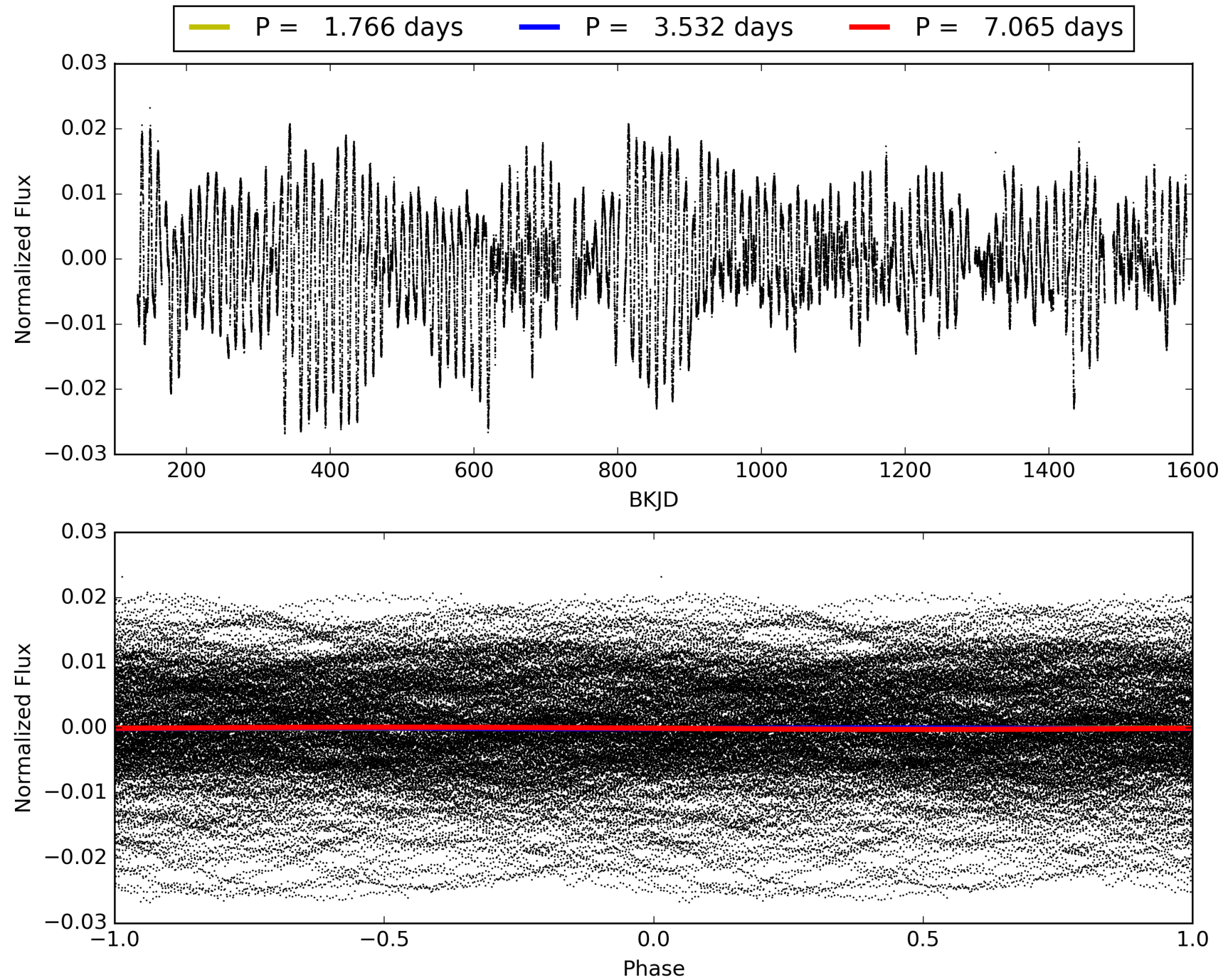
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1693.55σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.16e-70
RollingBand-fgt: 1.00 [368/368]
GhostDiagnostic-chr: 2.052
Centroid-sig: 19.8%
Centroid-so: 0.885 arcsec [1.60σ]
OotOffset-rm: 0.248 arcsec [1.28σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-rm: 0.431 arcsec [2.04σ]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.94 [15/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 011410904-01, PDC Light Curves

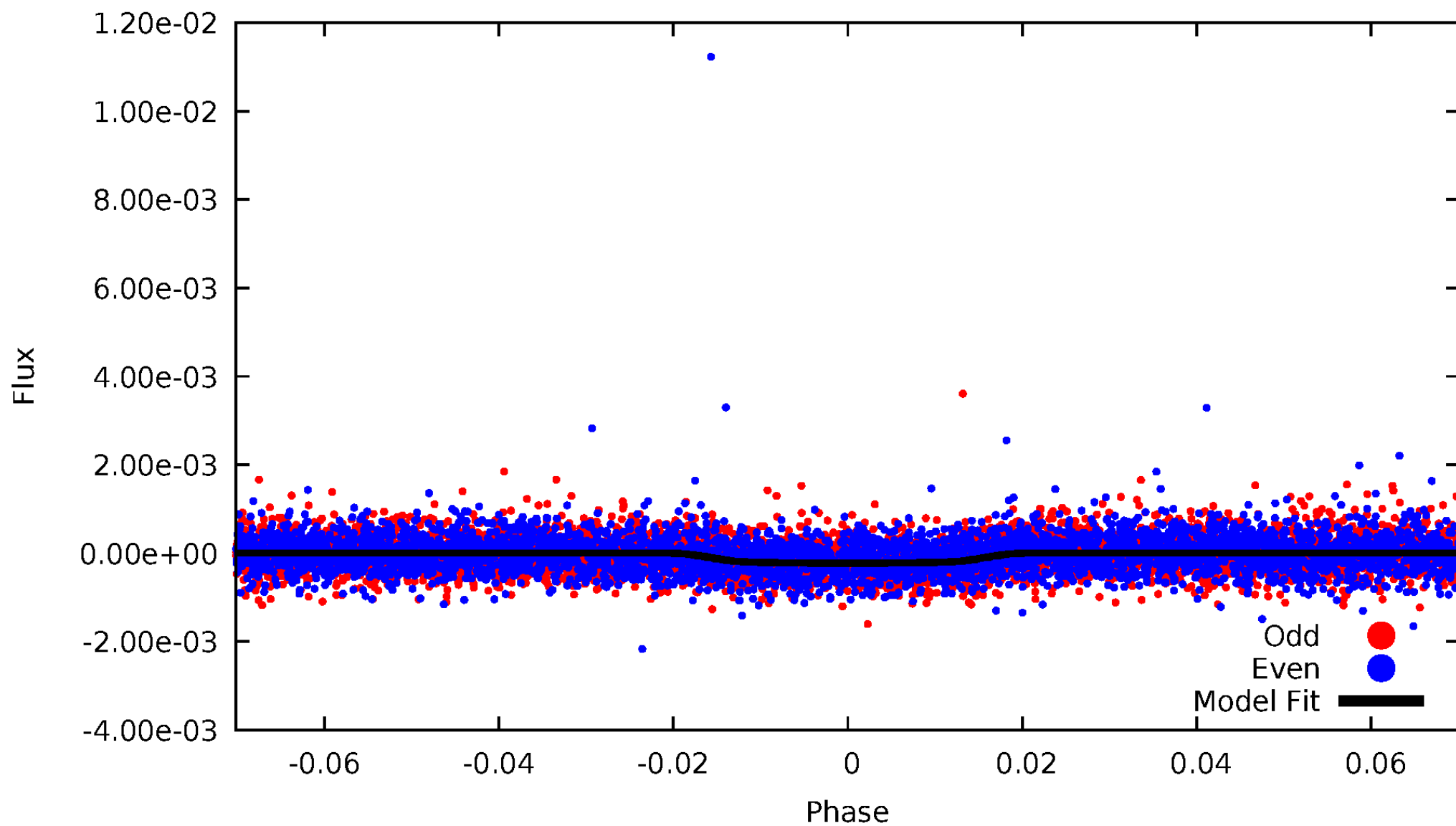


TCE 011410904-01



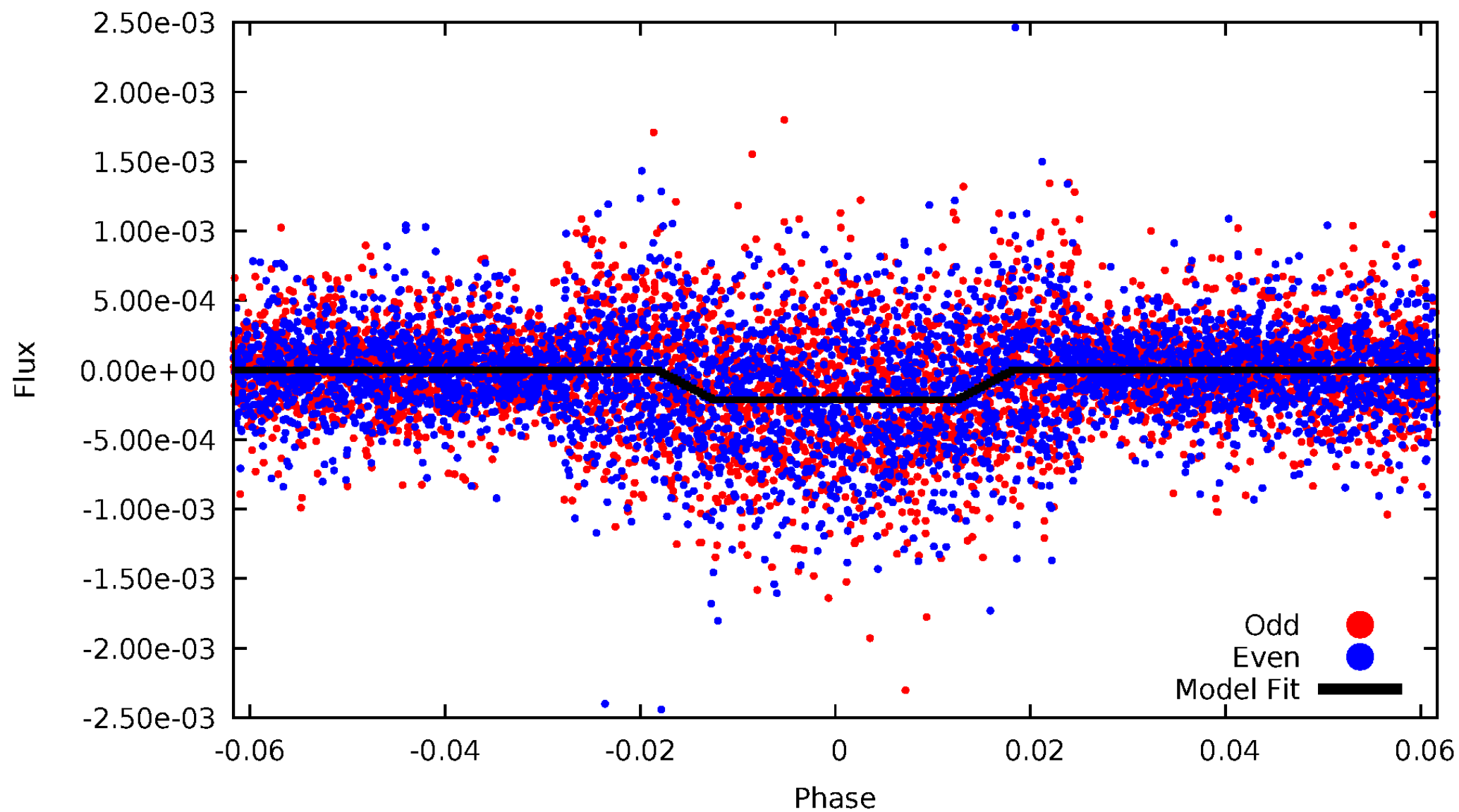
DV Odd/Even

TCE 011410904-01



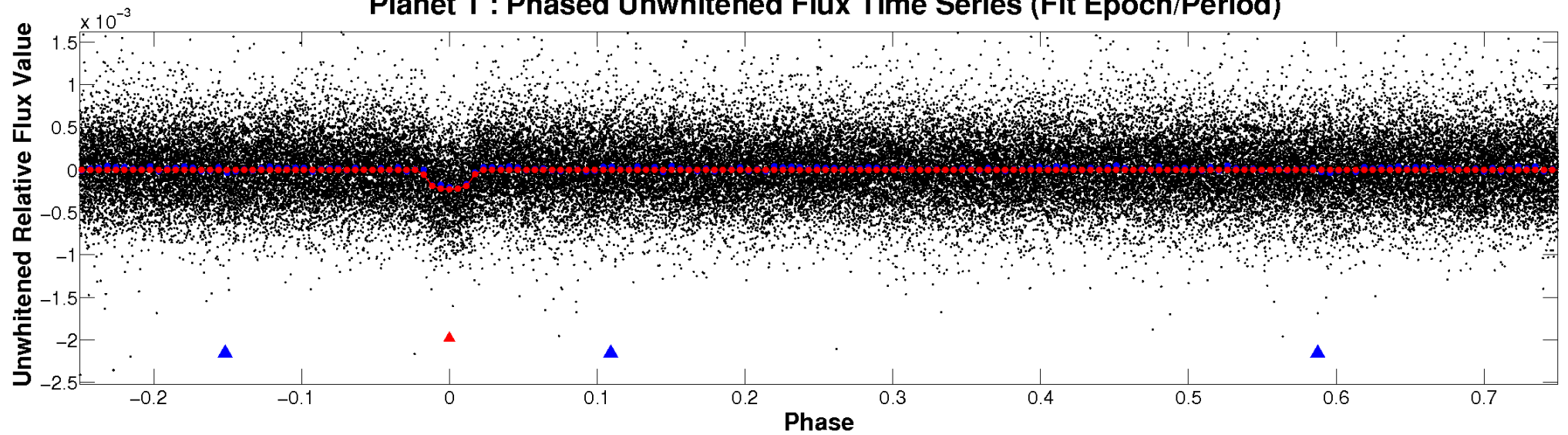
ALT Odd/Even

TCE 011410904-01

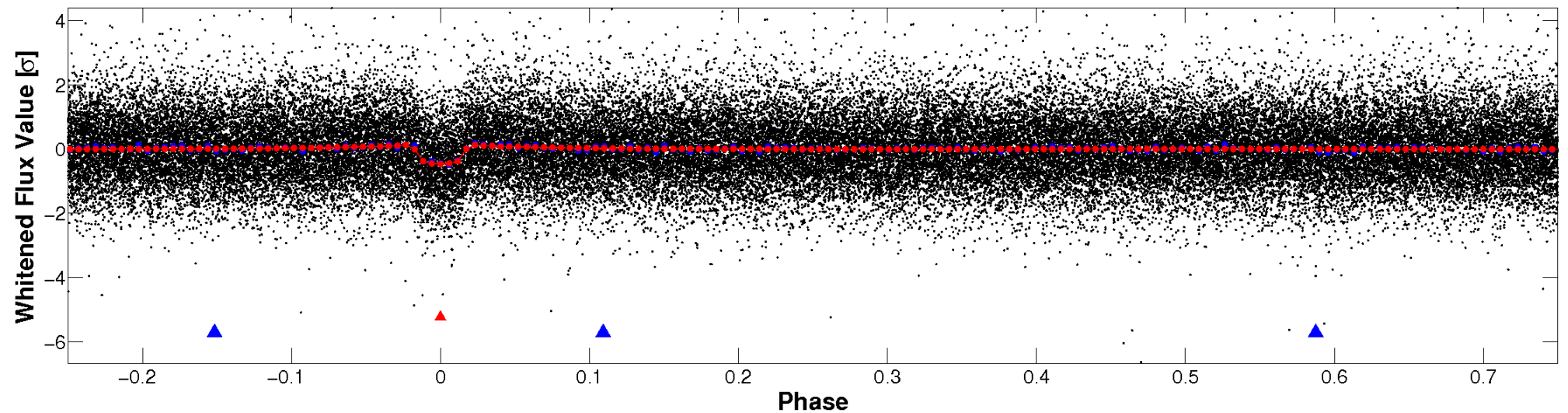


Non-Whitened Vs. Whitened Light Curve

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

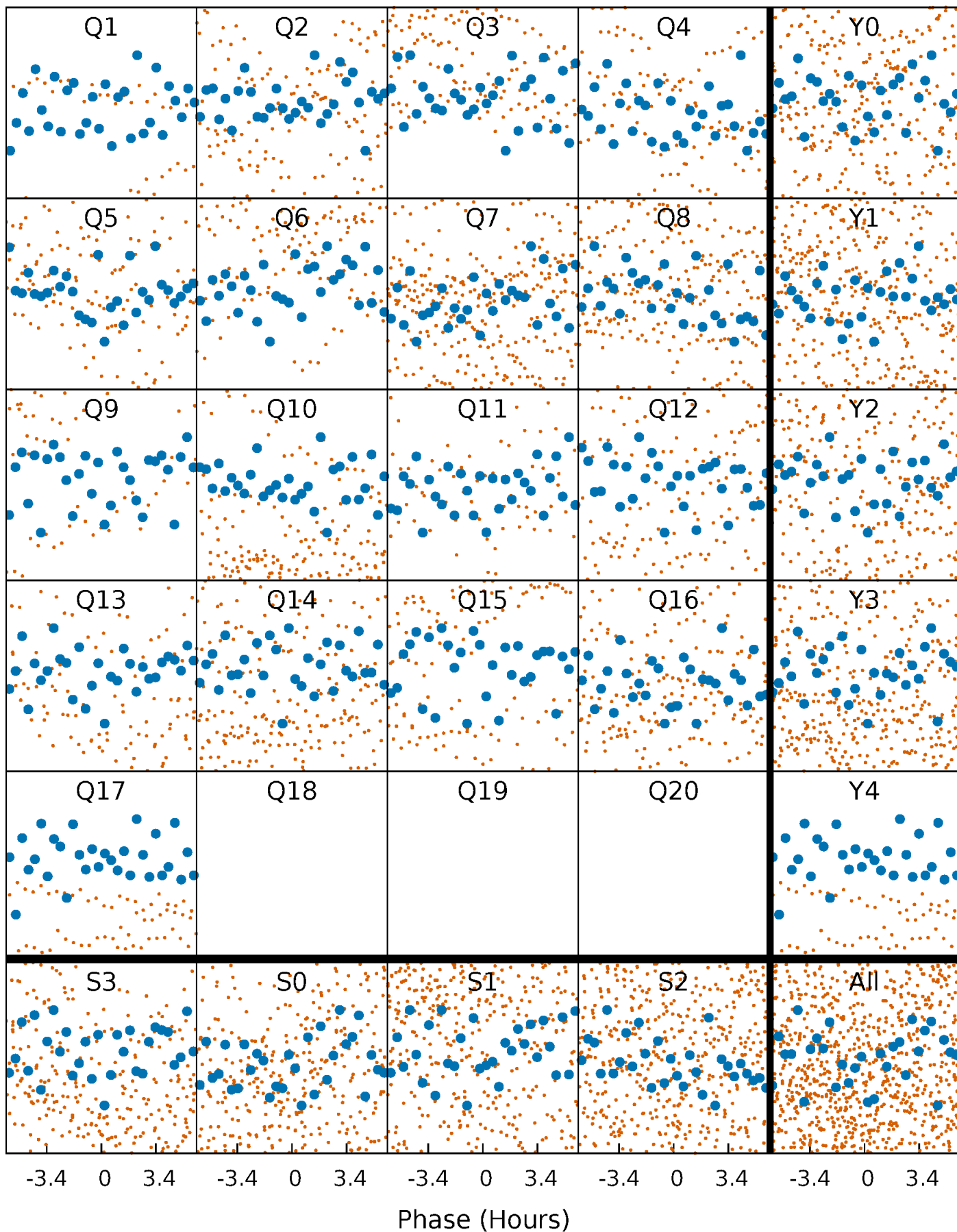


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



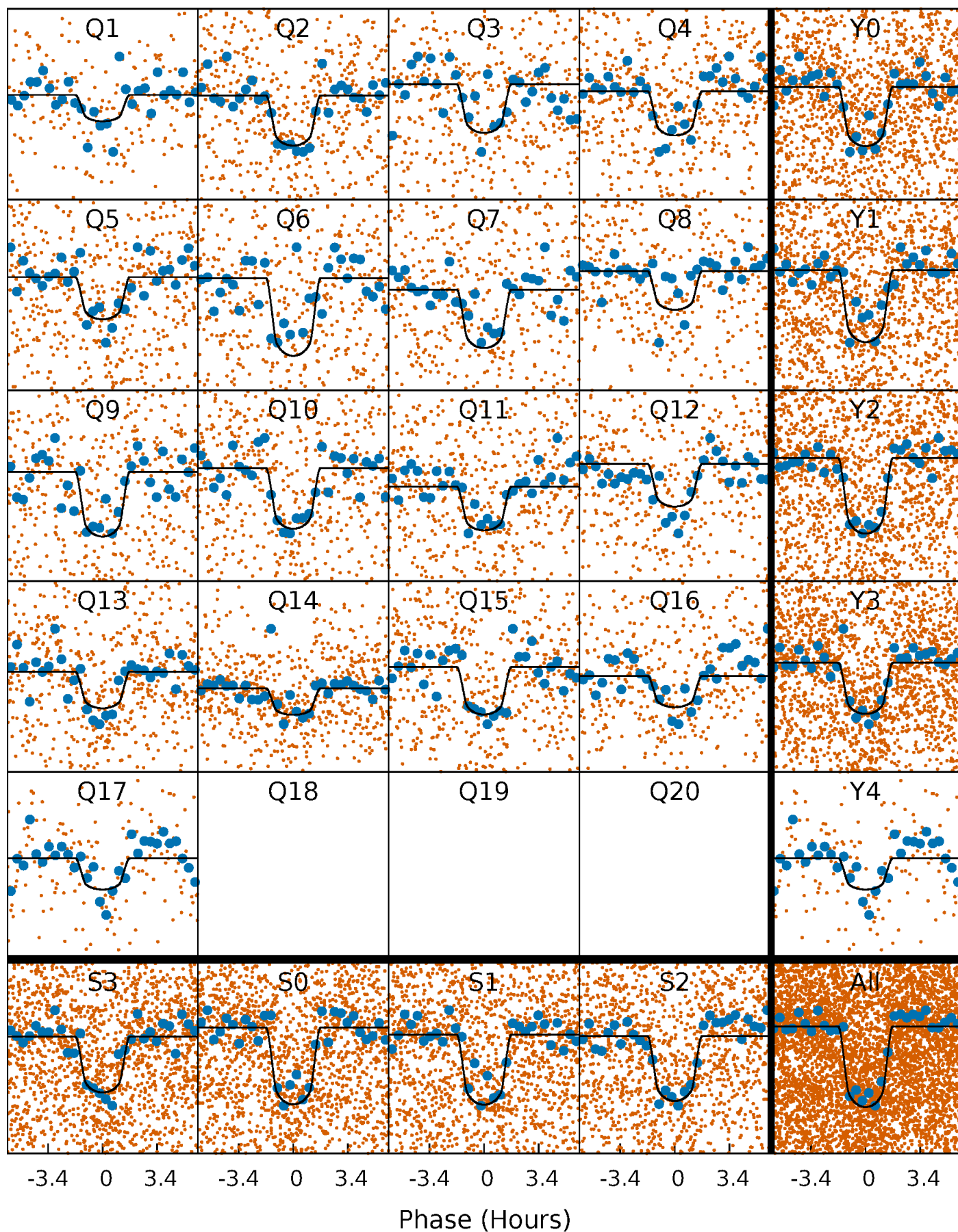
PDC Quarter-Phased Transit Curves

TCE 011410904-01 P= 3.532317 Days $T_0=134.745901$ (BKJD)



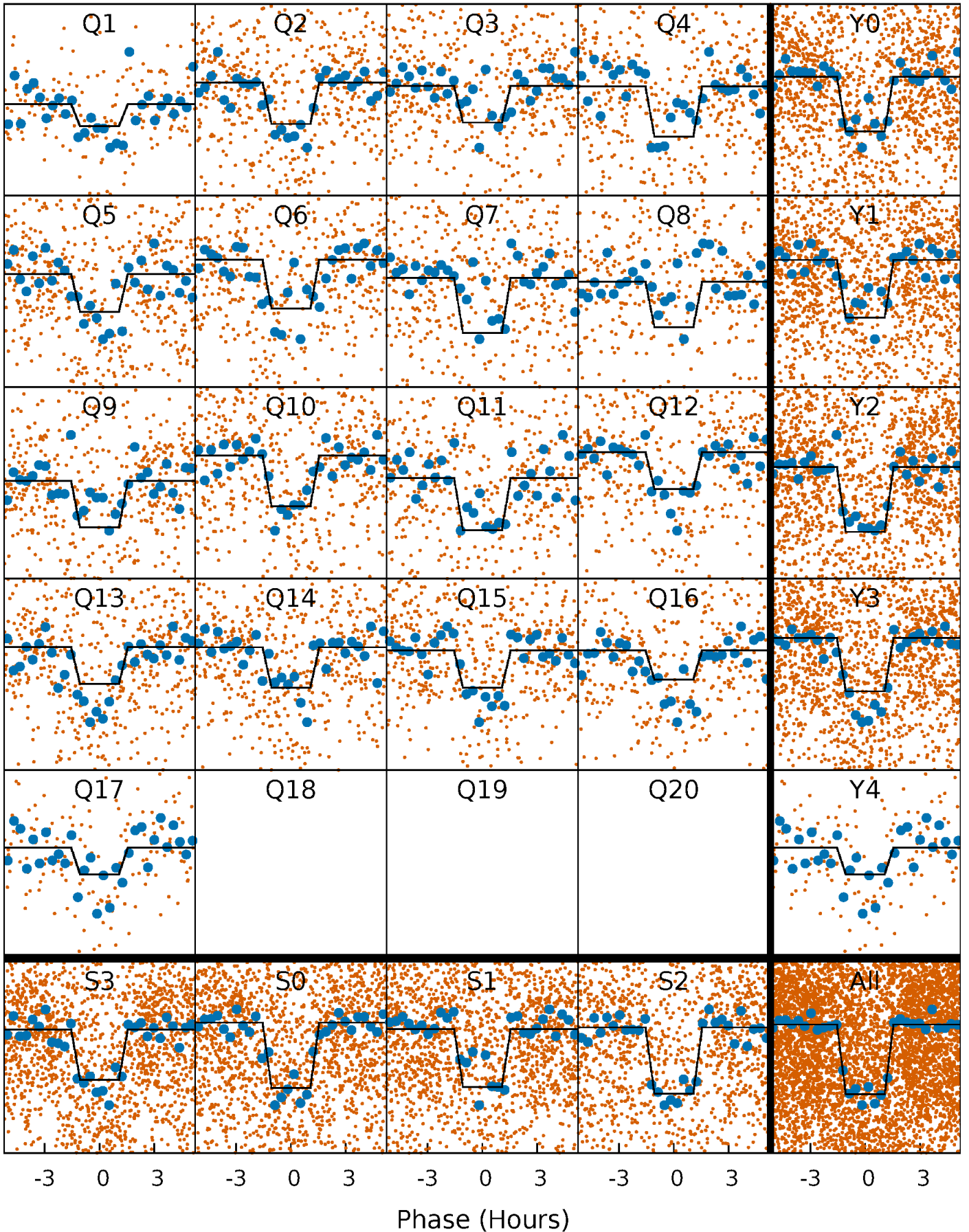
DV Quarter-Phased Transit Curves

TCE 011410904-01 P= 3.532317 Days $T_0=134.745901$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

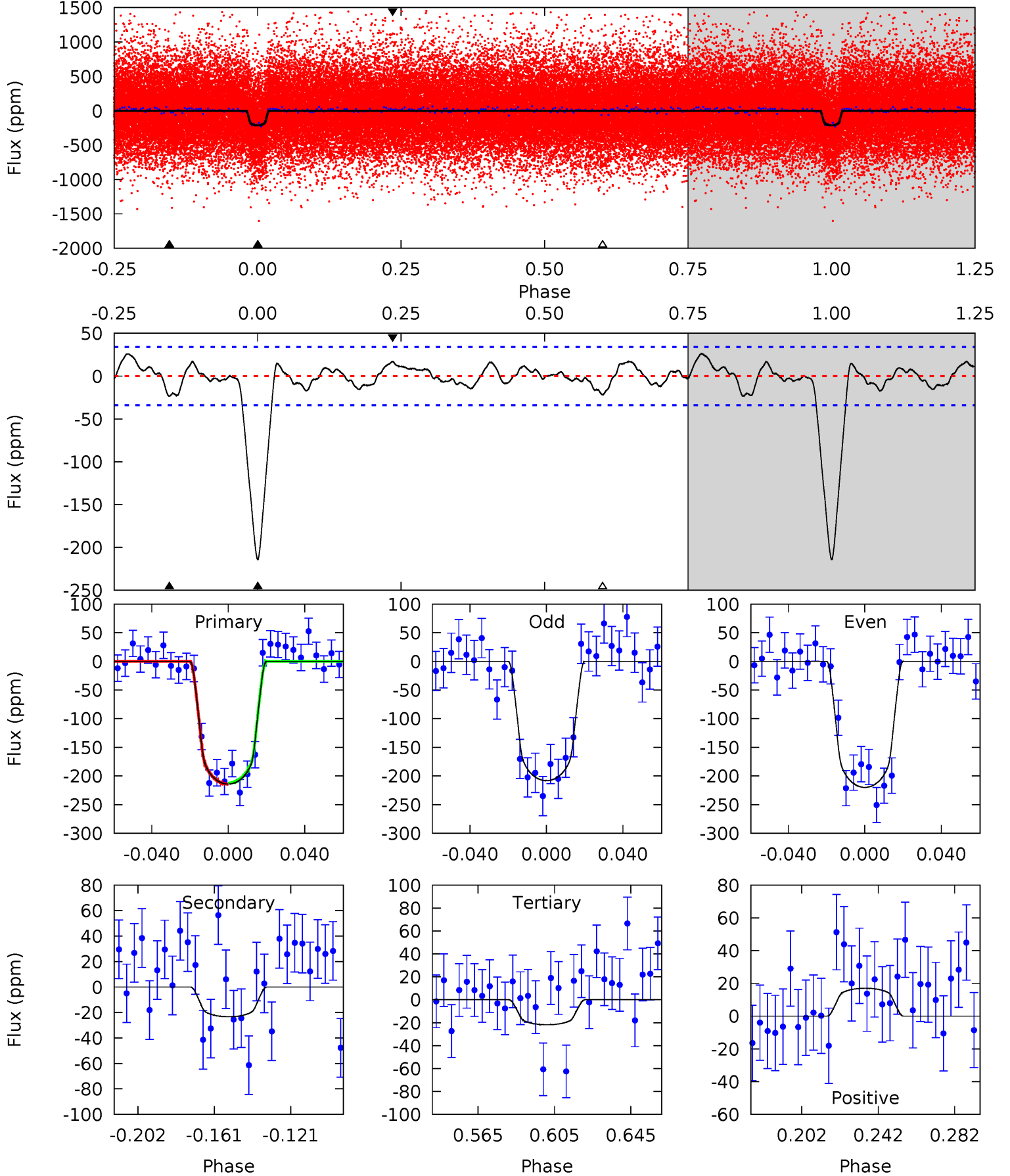
TCE 011410904-01 P= 3.532329 Days $T_0=134.744966$ (BKJD)



DV Model-Shift Uniqueness Test

011410904-01, P = 3.532317 Days, E = 131.213584 Days

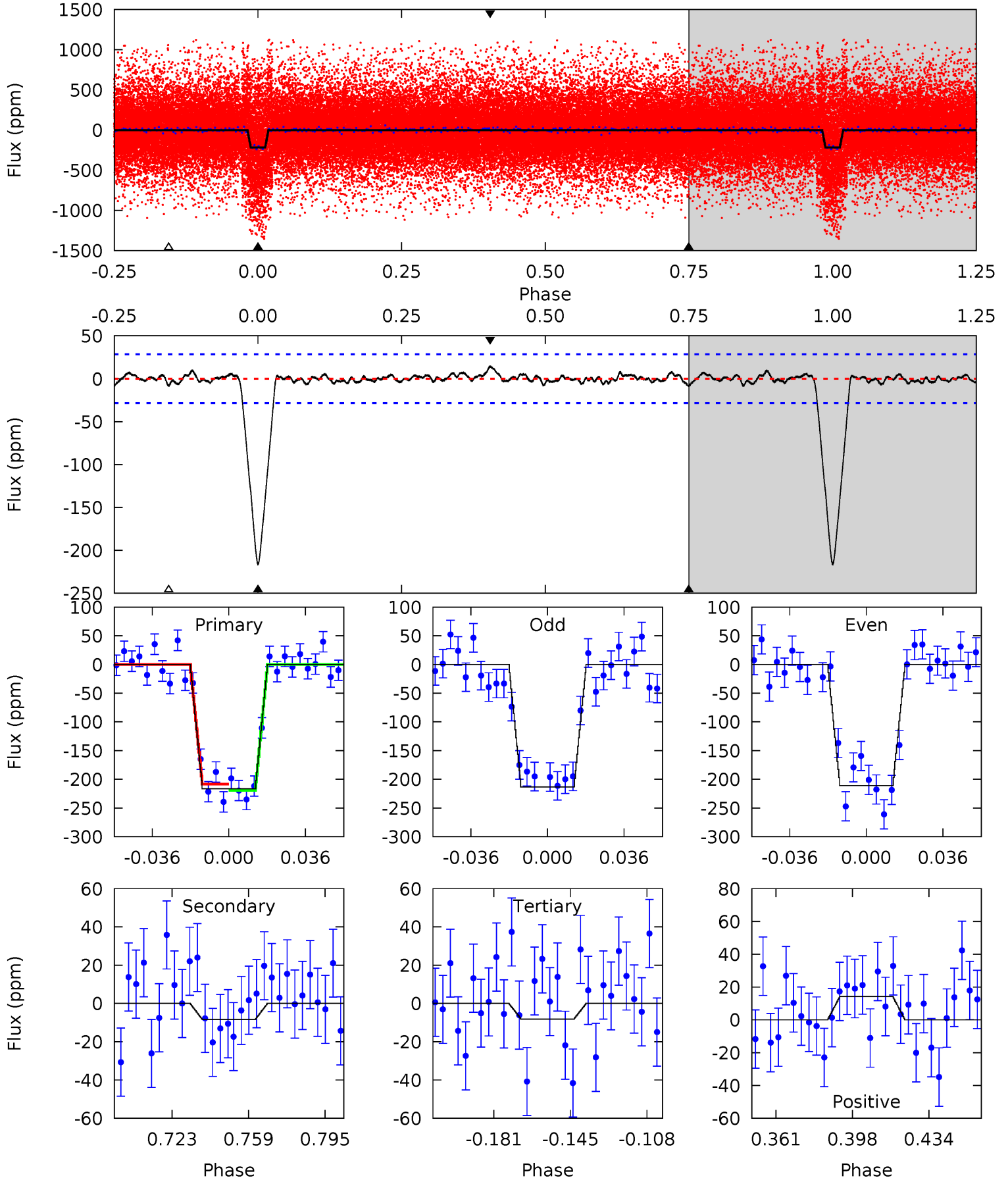
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.0	3.28	3.06	2.39	4.75	2.05	1.32	27.0	27.6	0.22	0.89	0.82	0.92	0.11	0.13



Alt Model-Shift Uniqueness Test

011410904-01, P = 3.532329 Days, E = 131.212637 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.2	1.40	1.36	2.39	4.77	2.10	0.58	34.8	33.8	0.04	-0.99	0.19	1.02	0.06	0.90



Stellar Parameters For KIC 011410904

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5761^{+78}_{-78}	$4.492^{+0.022}_{-0.120}$	$0.140^{+0.150}_{-0.150}$	$0.956^{+0.143}_{-0.048}$	$1.035^{+0.050}_{-0.068}$	$1.667^{+0.187}_{-0.578}$
	+1%/-1%	+0%/-3%	+107%/-107%	+15%/-5%	+5%/-7%	+11%/-35%
Source	SPE90	SPE90	SPE90	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 011410904-01 / KOI 2171.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-23 ± 7	$1.74^{+0.47}_{-0.43}$	1642^{+64}_{-41}	3550^{+451}_{-301}	$8.689^{+7.628}_{-3.862}$
Alt.	-8 ± 6	$1.58^{+0.44}_{-0.45}$	1639^{+58}_{-35}	3090^{+486}_{-584}	$3.579^{+5.282}_{-2.591}$

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

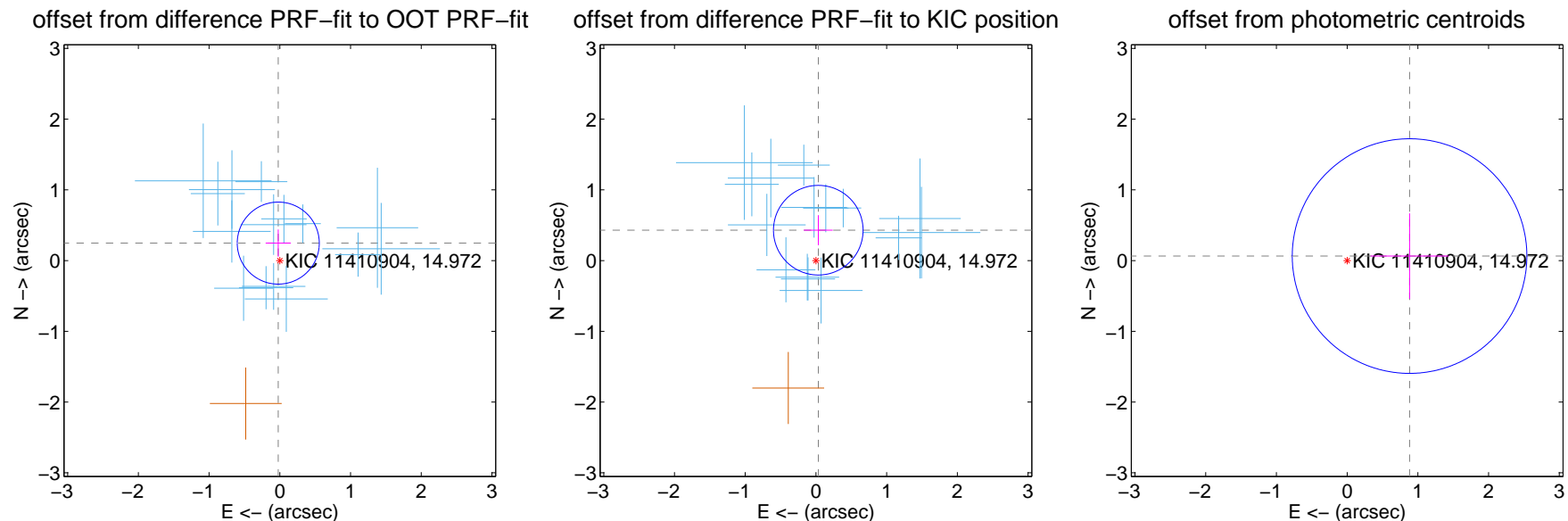
DV Centroid Data

Supplemental centroid analysis for 011410904-01. Kepler magnitude: 14.97. Transit SNR 19.63

There are 15 quarters with good PRF difference image offsets

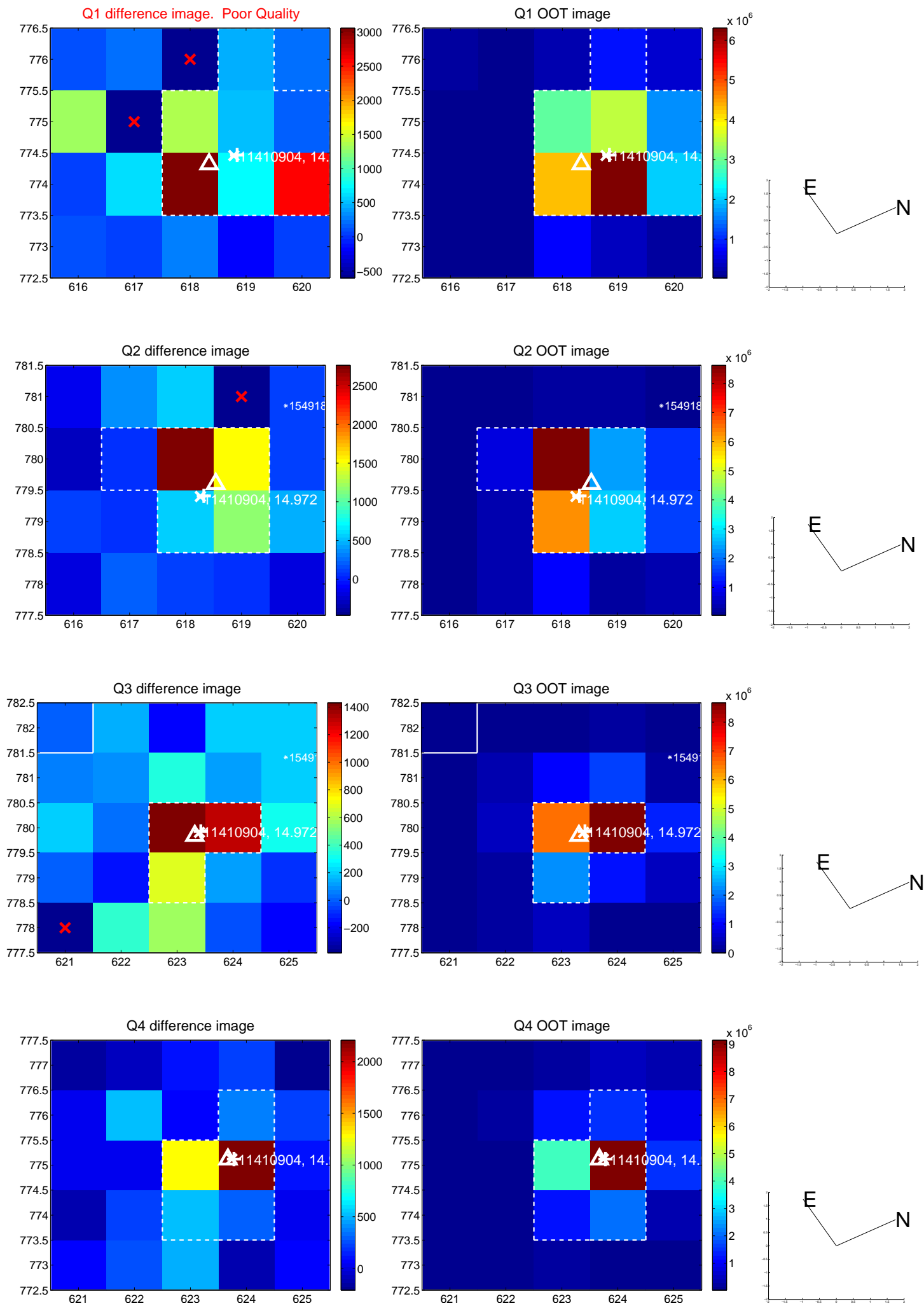
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.248 ± 0.193	1.28	0.022 ± 0.178	0.247 ± 0.193
PRF-fit source offset from KIC position	0.431 ± 0.211	2.04	-0.033 ± 0.204	0.430 ± 0.212
photometric centroid source offset	0.89 ± 0.55	1.60	-0.88 ± 0.55	0.06 ± 0.60

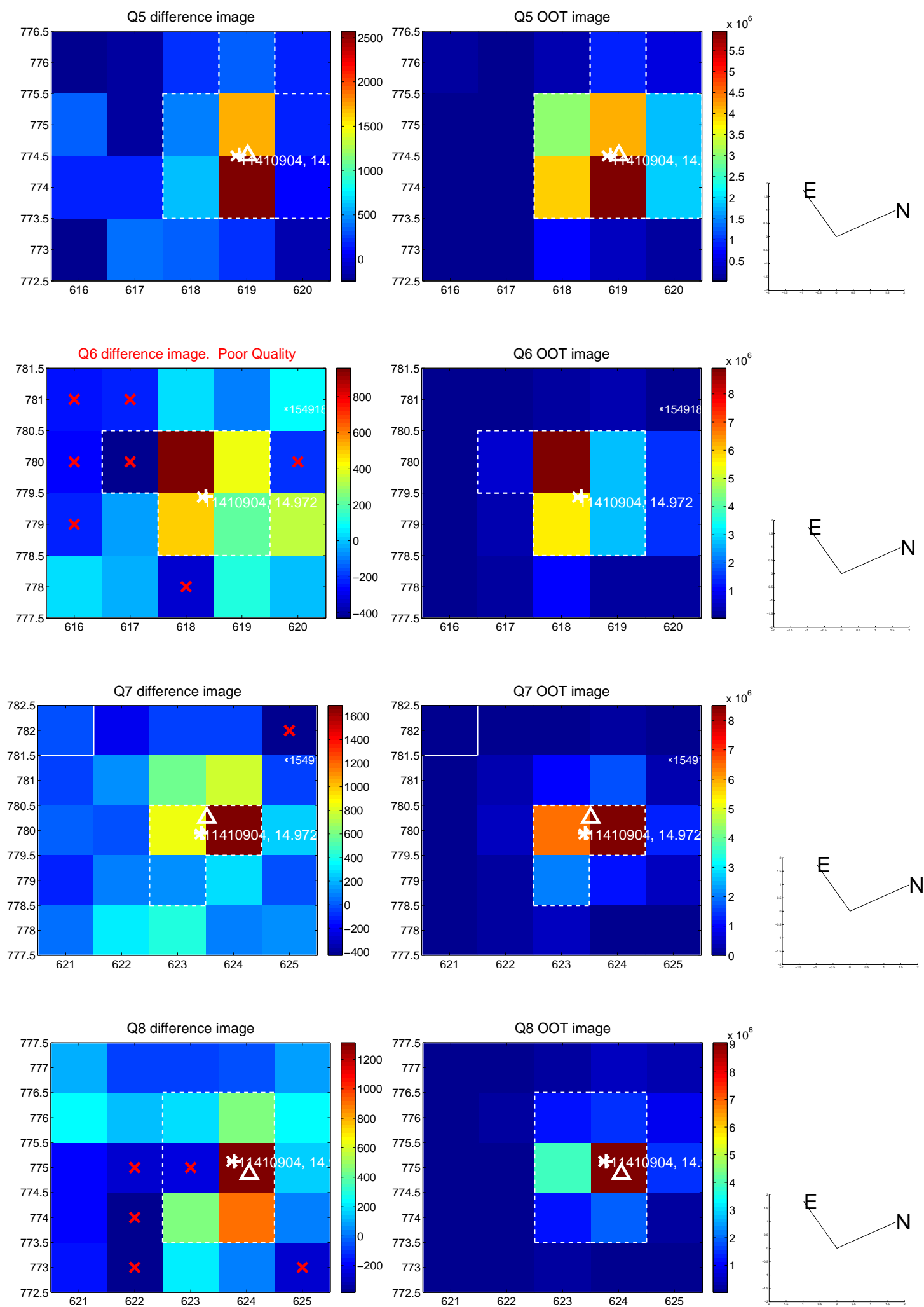


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

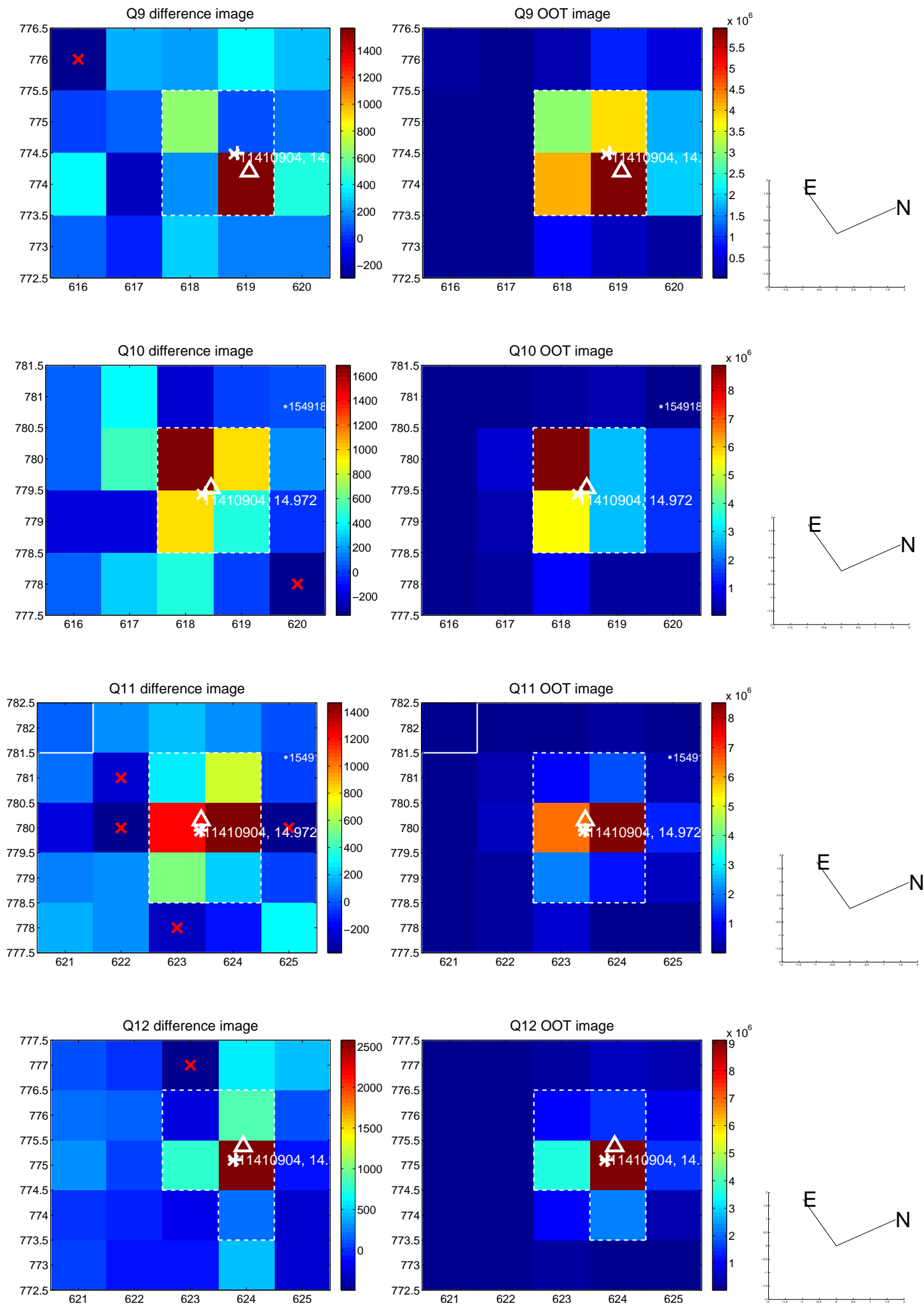
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



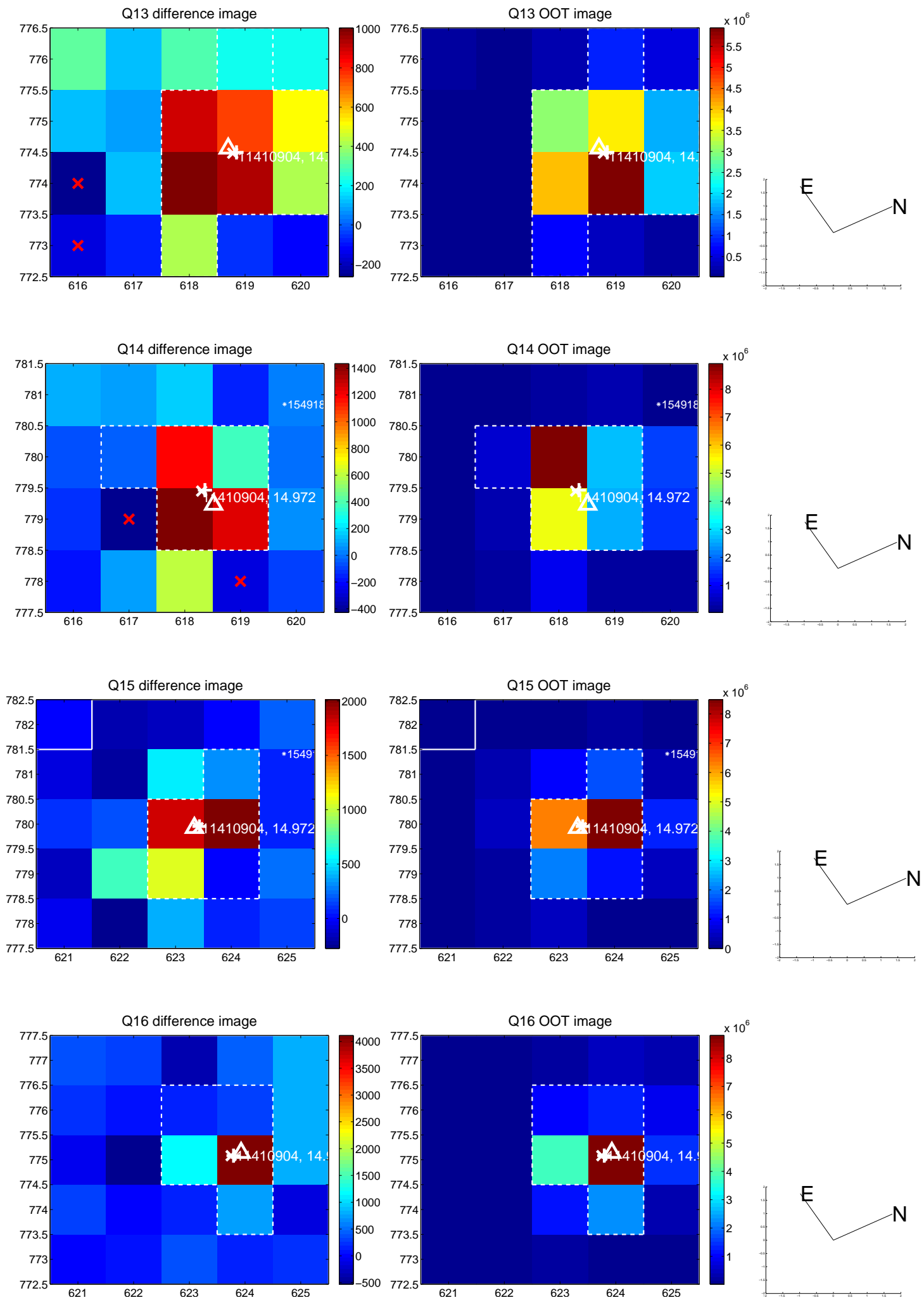
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



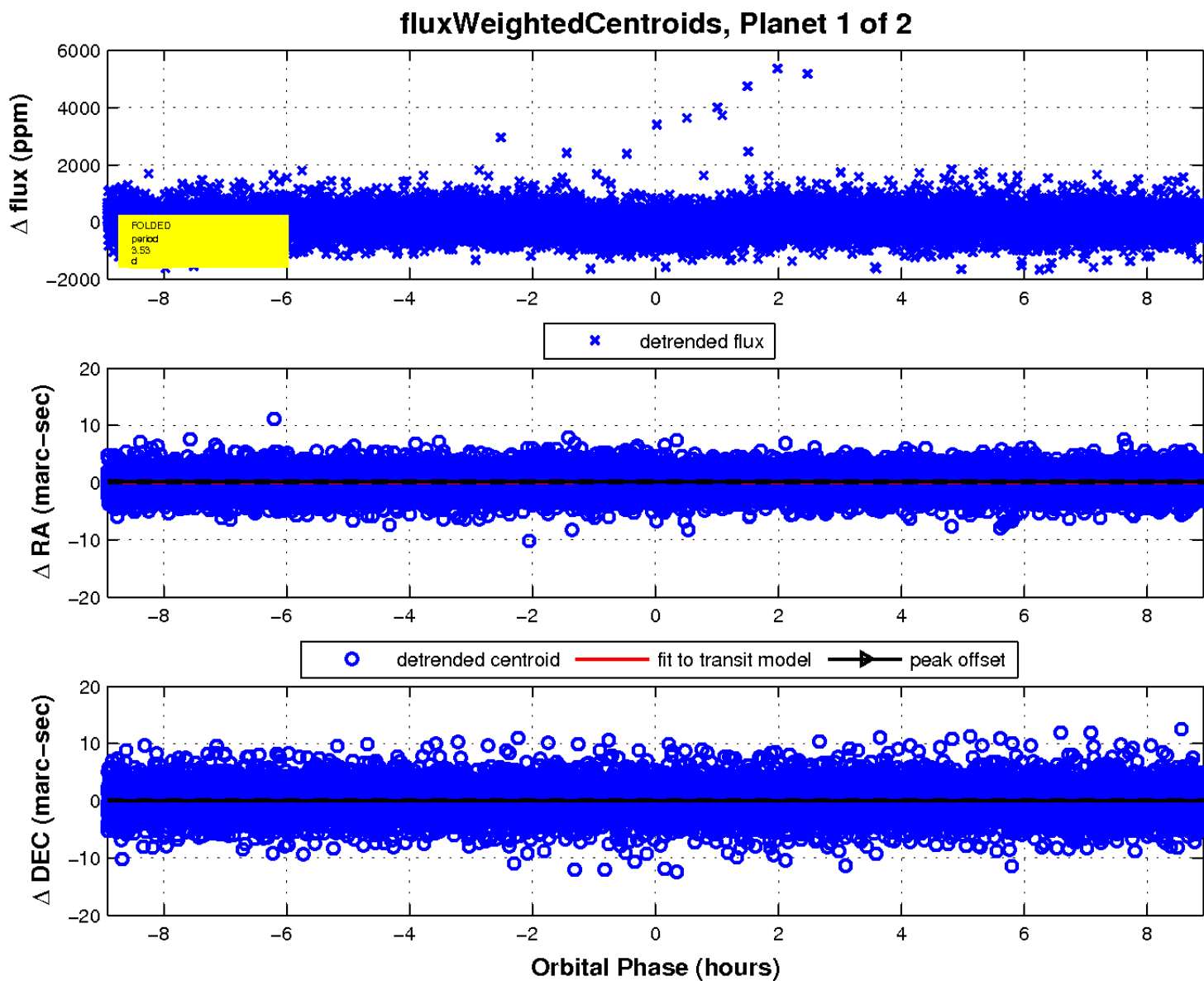
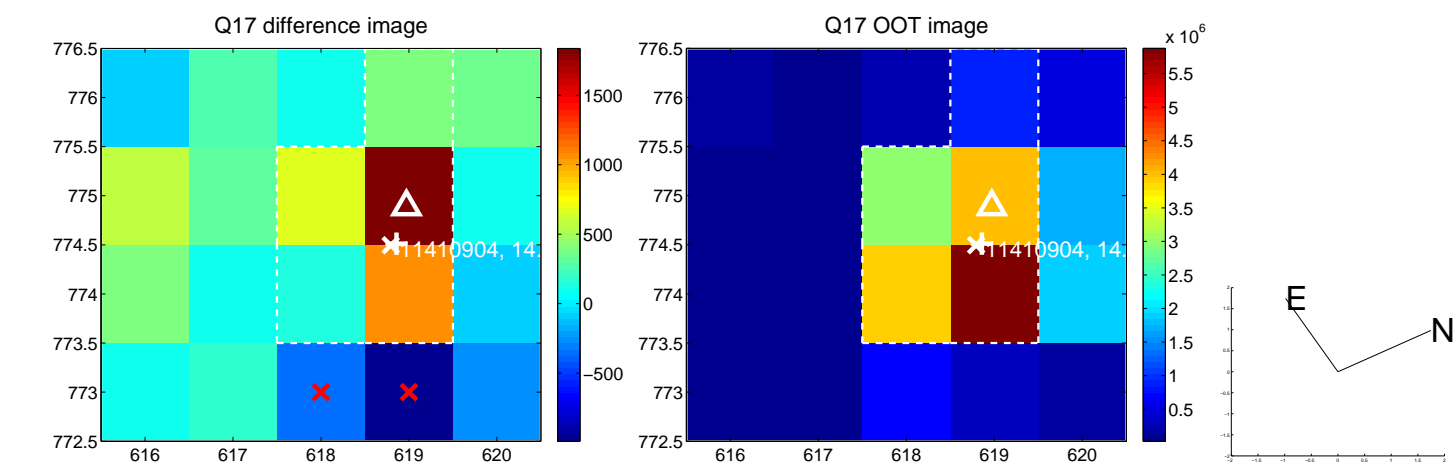
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white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

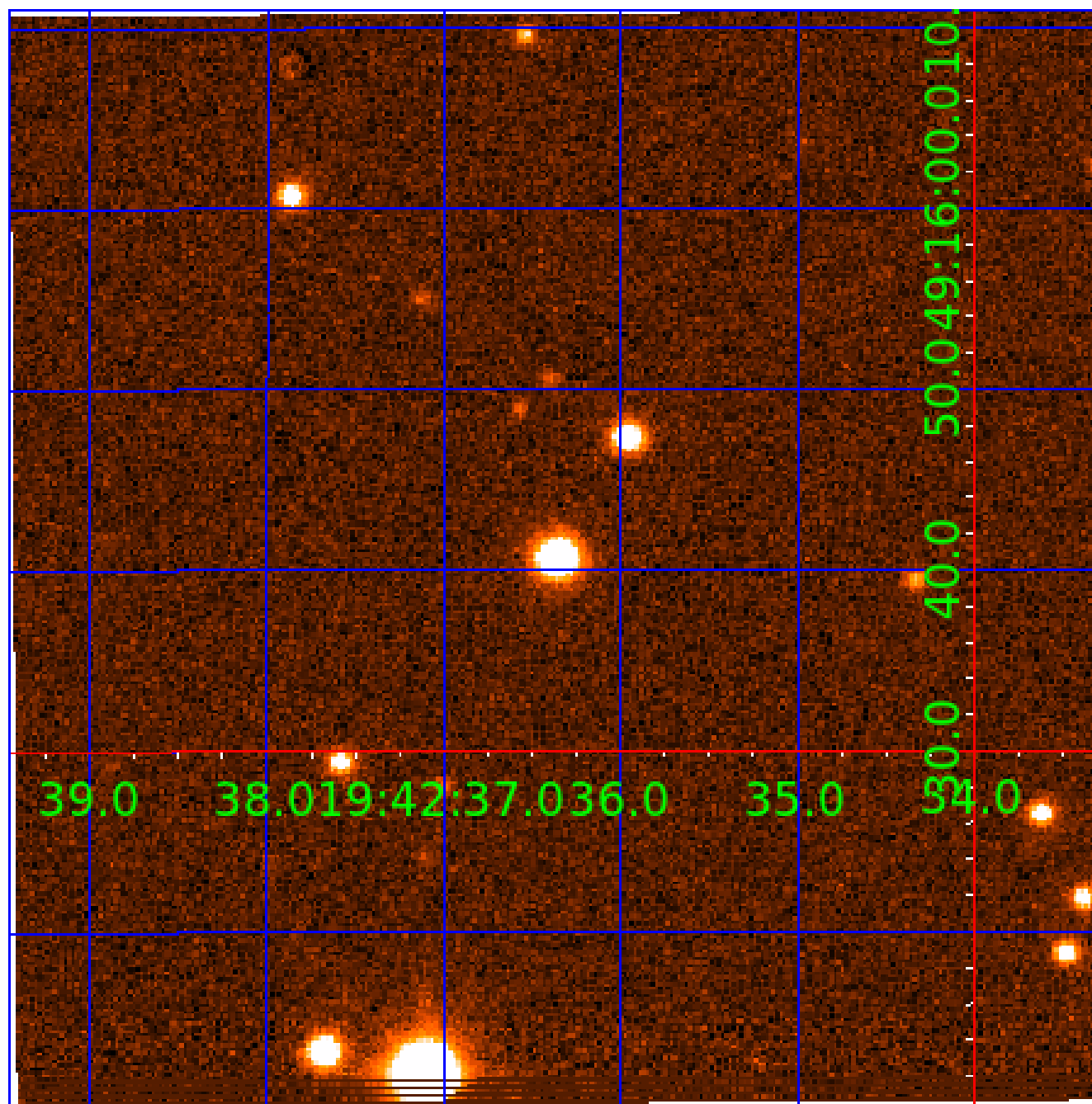


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011410904

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})
011410904-01	OBS	2171.01	3.532317	134.745901	227.8	2.972	18.4	19.6	0.96	5761	1.71	427.67
011410904-02	OBS	No	389.476251	458.262041	849.7	4.591	7.9	6.9	0.96	5761	2.91	0.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011410904-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011410904-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS

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

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

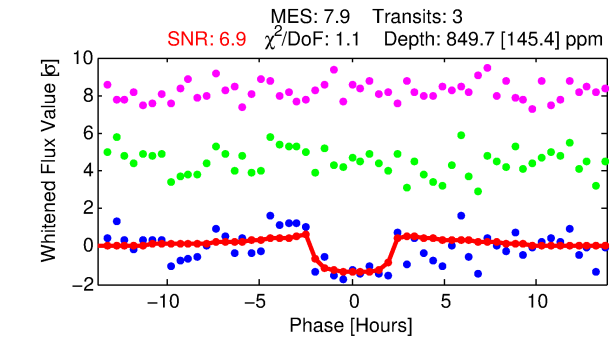
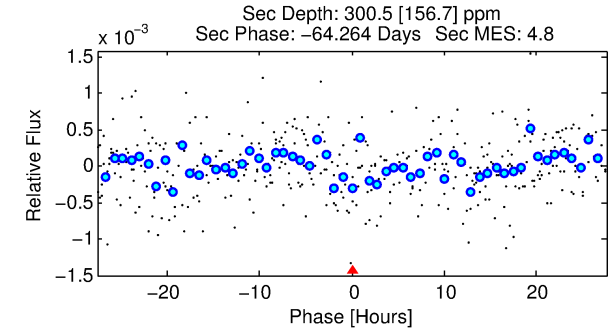
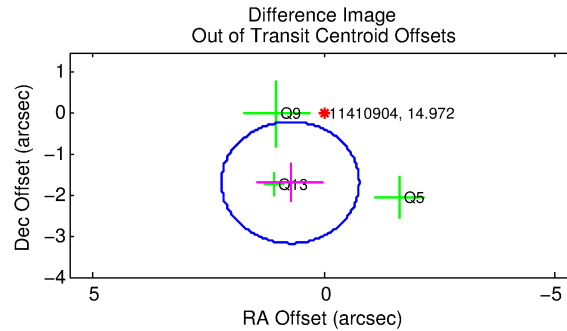
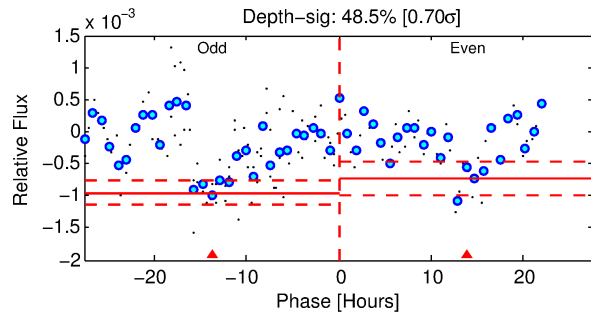
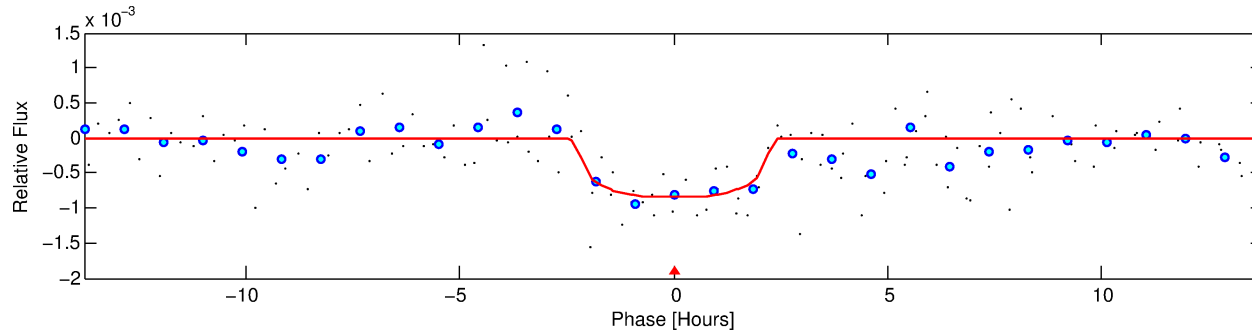
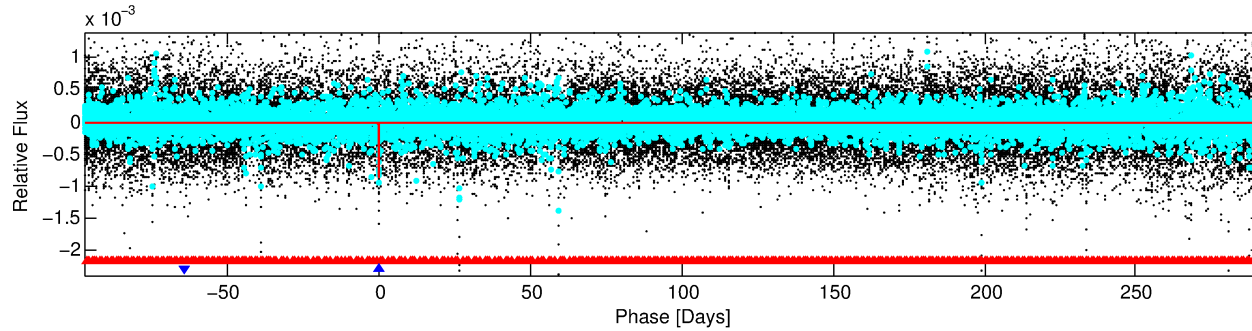
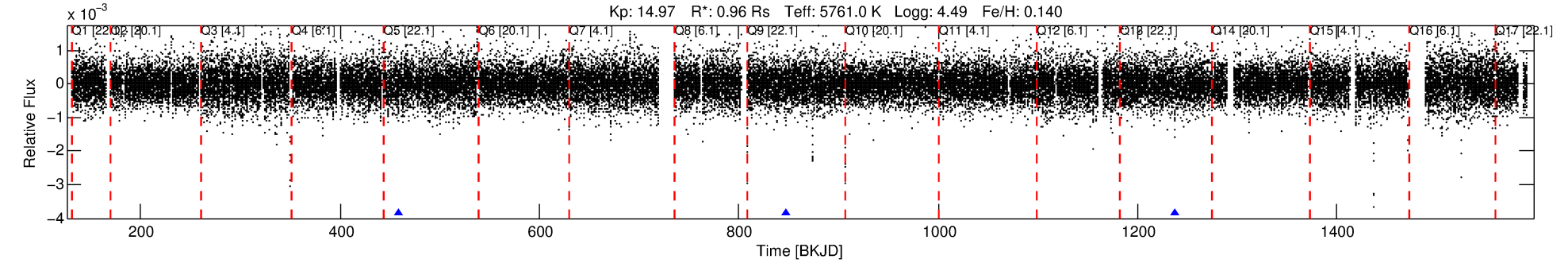
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011410904-02

No Significant Match Found

DV One-Page Summary

KIC: 11410904 Candidate: 2 of 2 Period: 389.476 d
KOI: K02171 Corr: No Ephemeris Match



DV Fit Results:

Period = 389.47625 [0.00837] d
Epoch = 458.2620 [0.0106] BKJD
Rp/R* = 0.0279 [0.0288]
a/R* = 532.33 [2301.39]
b = 0.62 [4.36]
Seff = 0.81 [0.18]
Teq = 242 [13] K
Rp = 2.91 [3.03] Re
a = 1.0560 [0.1433] AU
Ag = 21779.65 [46595.26] [0.47 σ]
Teffp = 4542 [2418] K [1.78 σ]

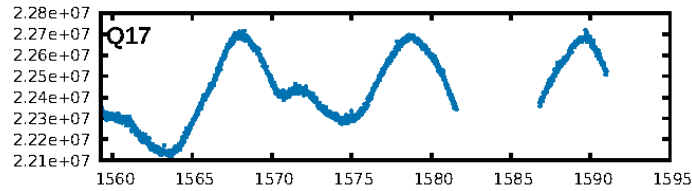
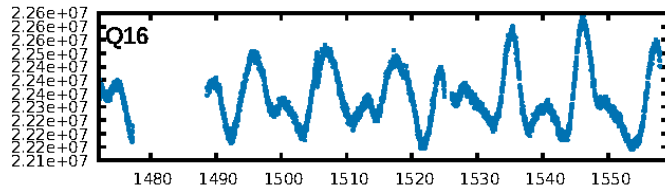
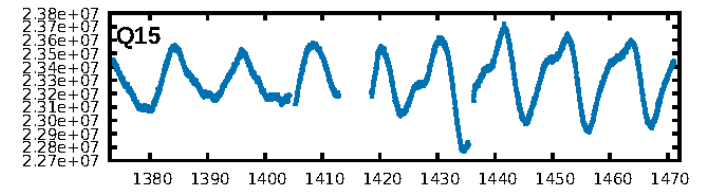
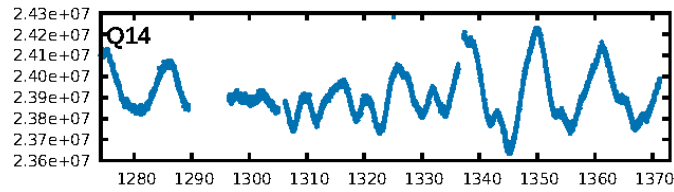
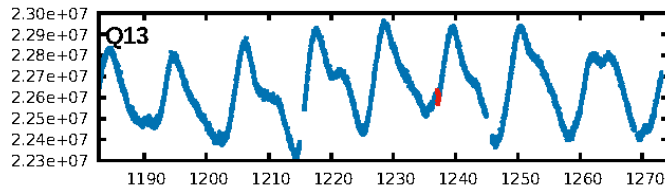
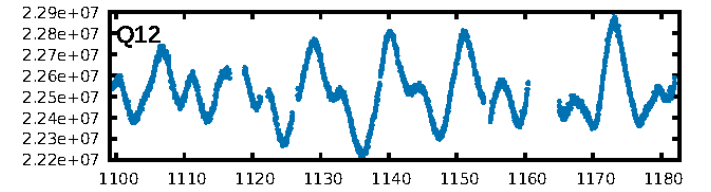
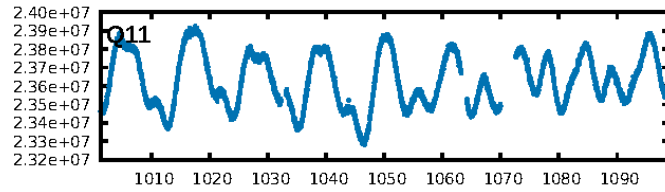
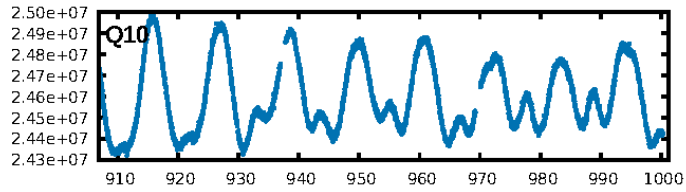
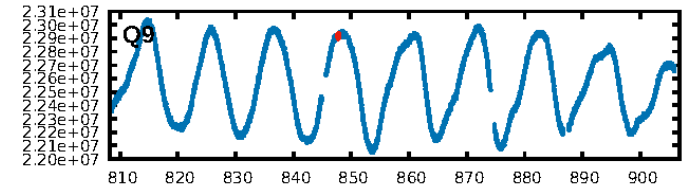
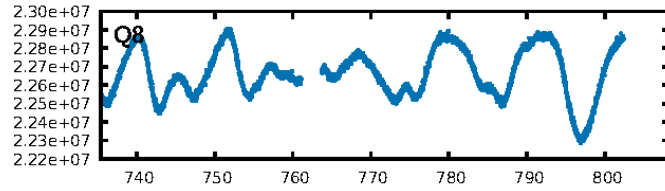
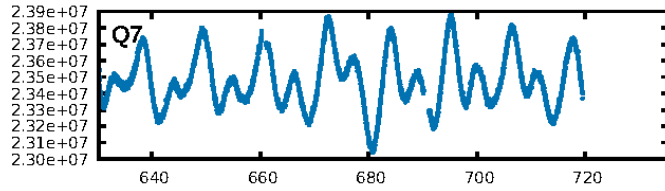
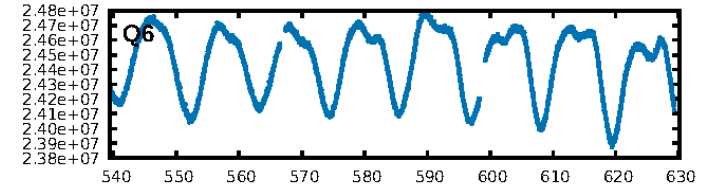
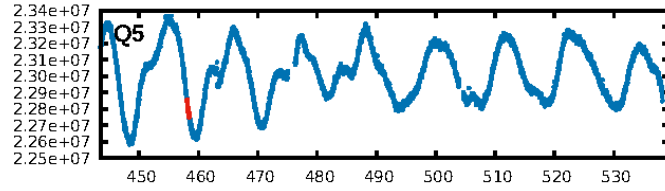
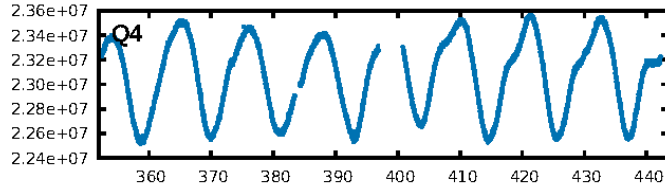
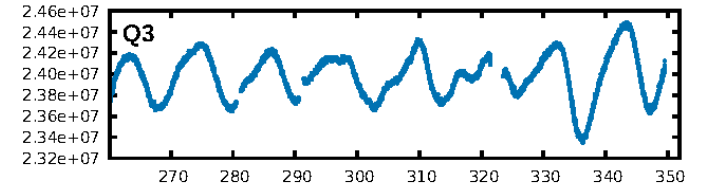
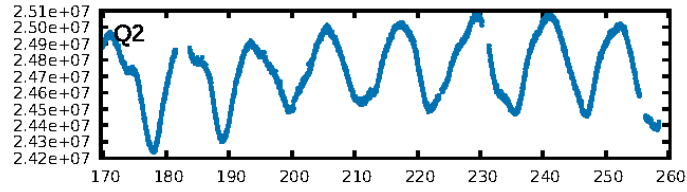
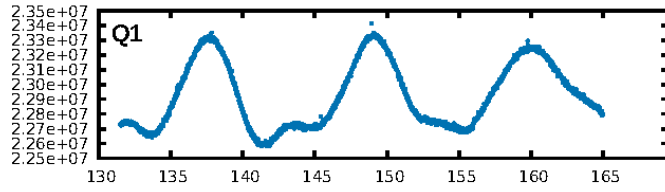
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1693.55 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 18.1%
ModelChiSquareGof-sig: 99.0%
Bootstrap-pfa: 1.27e-07
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.118
Centroid-sig: 3.1%
Centroid-so: 1.707 arcsec [1.08 σ]
OotOffset-rm: 1.835 arcsec [3.70 σ]
KicOffset-rm: 1.561 arcsec [3.22 σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.67 [2/3]

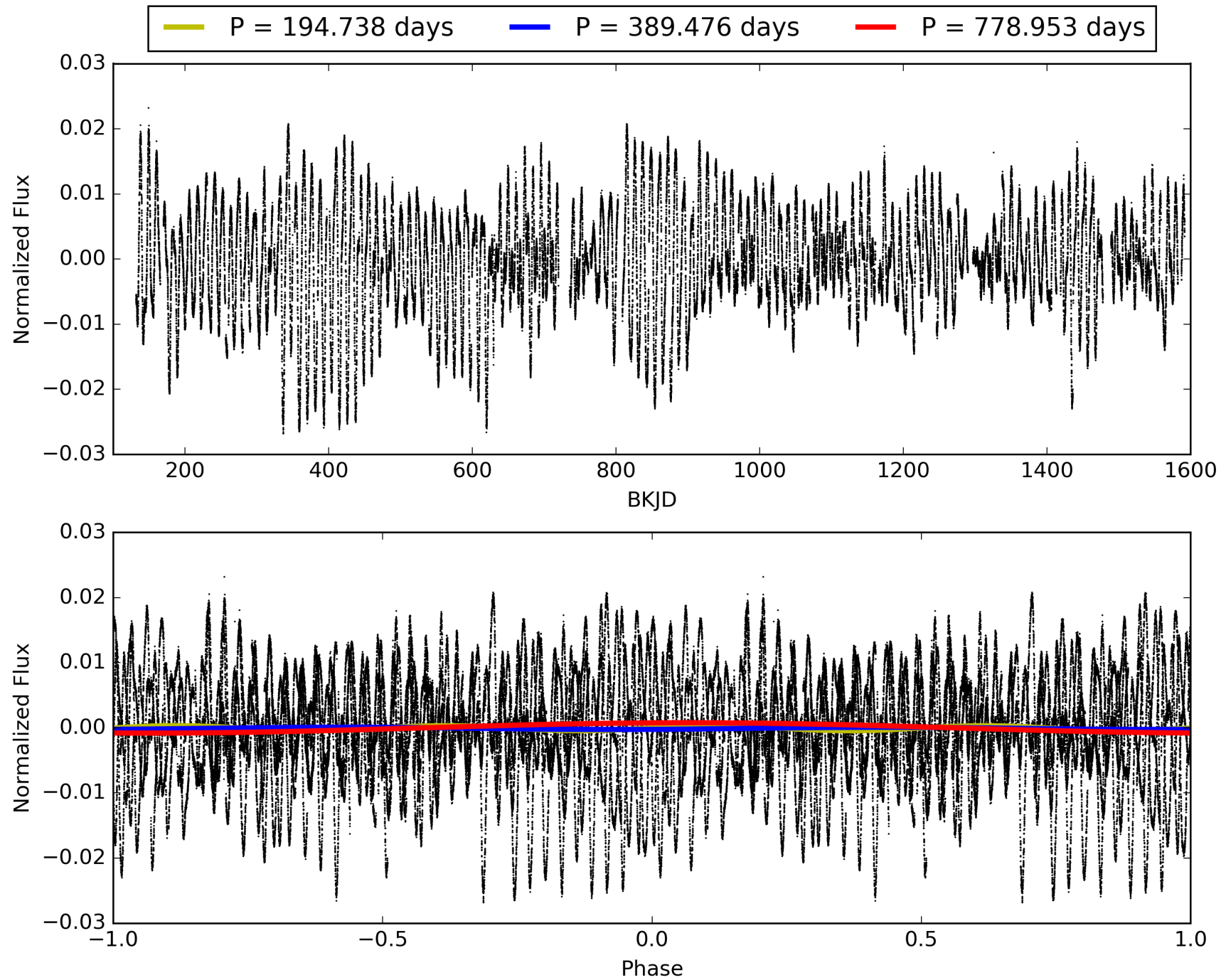
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 03:15:32 Z

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

TCE 011410904-02, PDC Light Curves

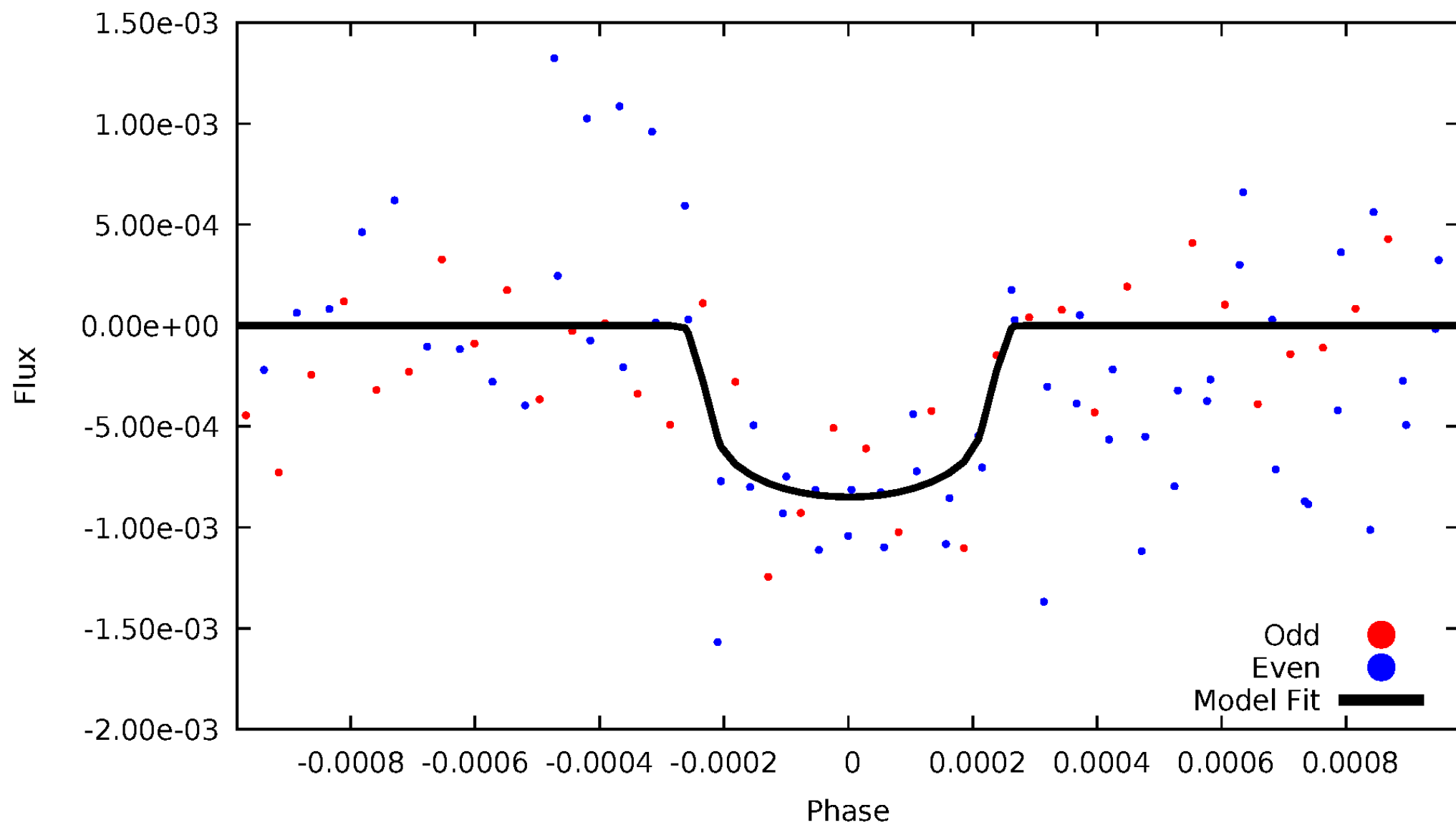


TCE 011410904-02



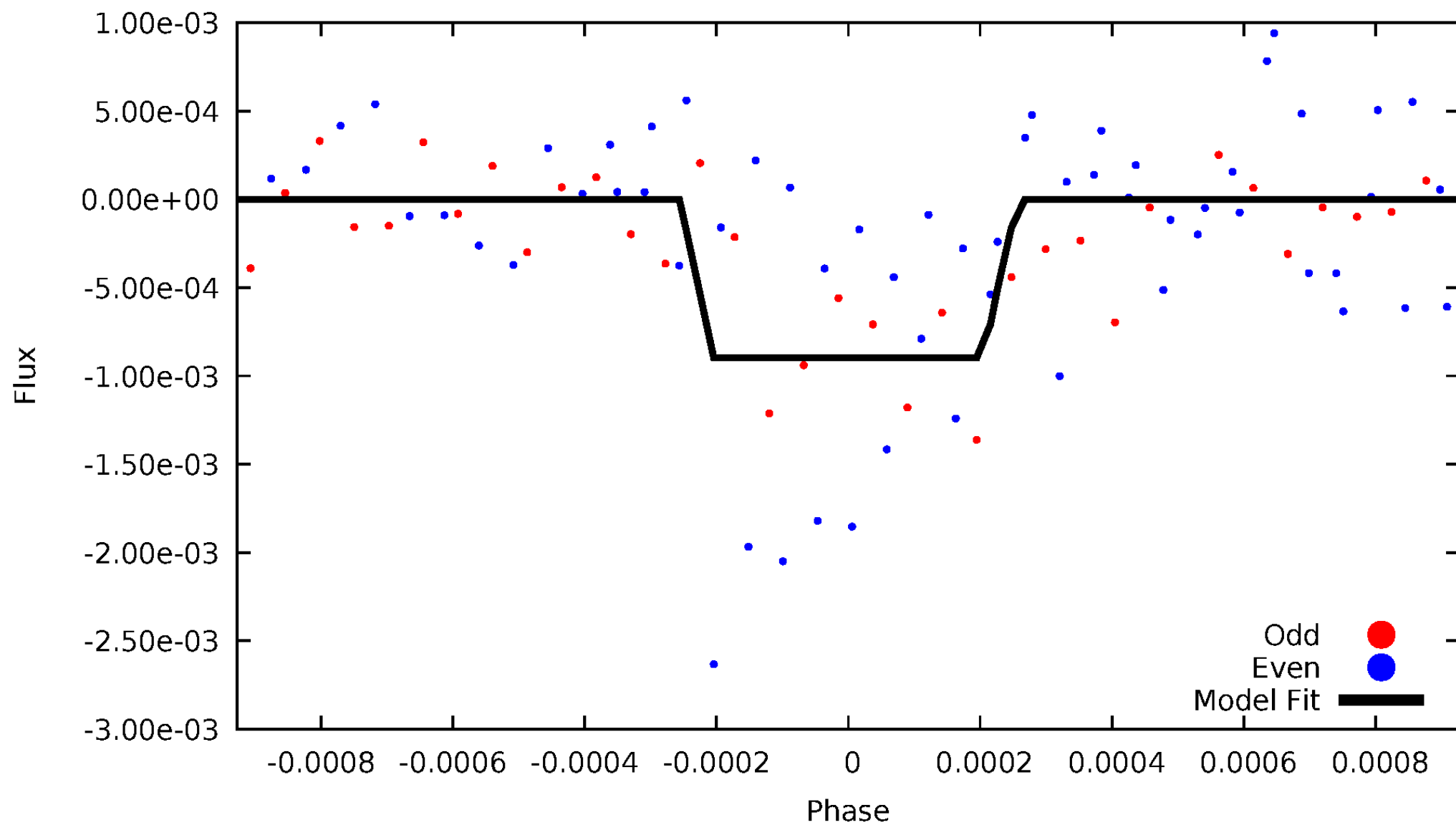
DV Odd/Even

TCE 011410904-02



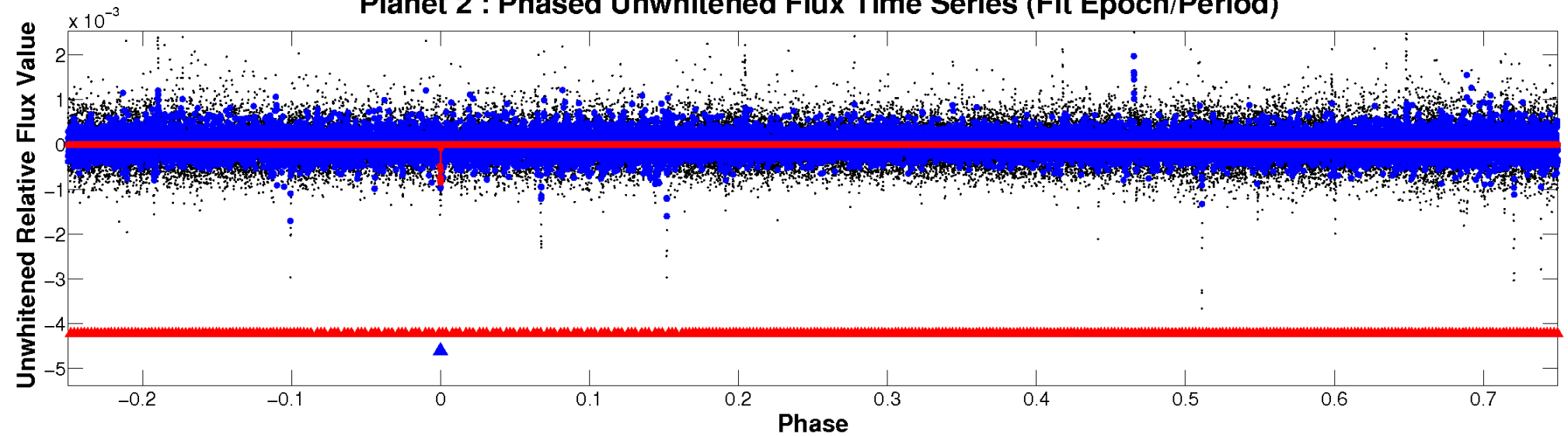
ALT Odd/Even

TCE 011410904-02

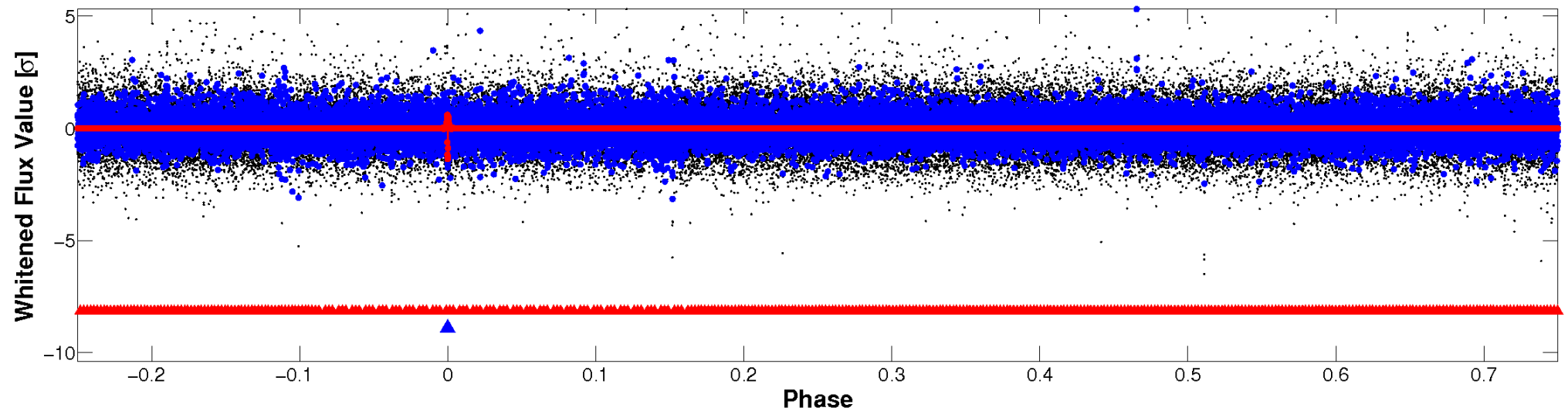


Non-Whitened Vs. Whitened Light Curve

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

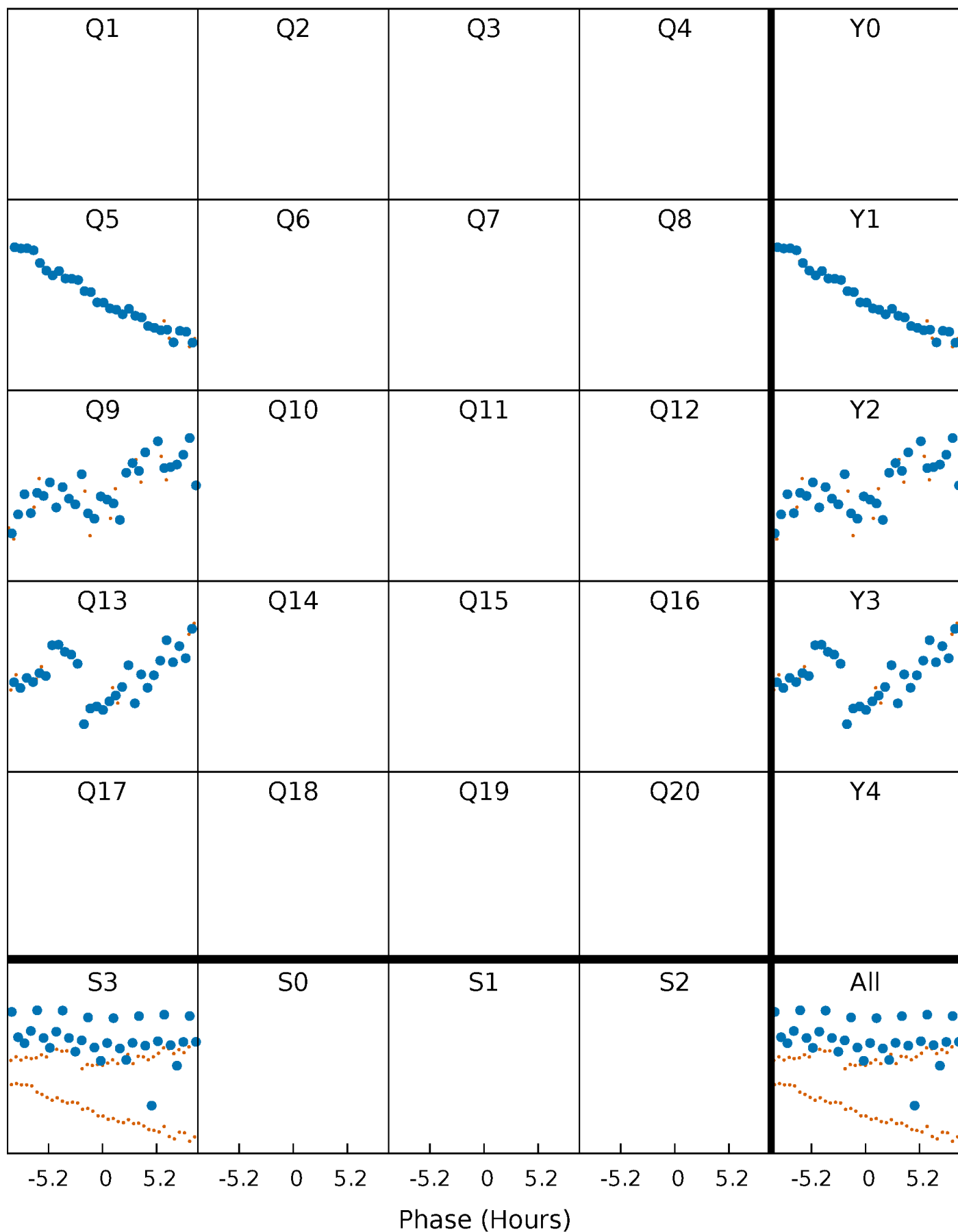


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



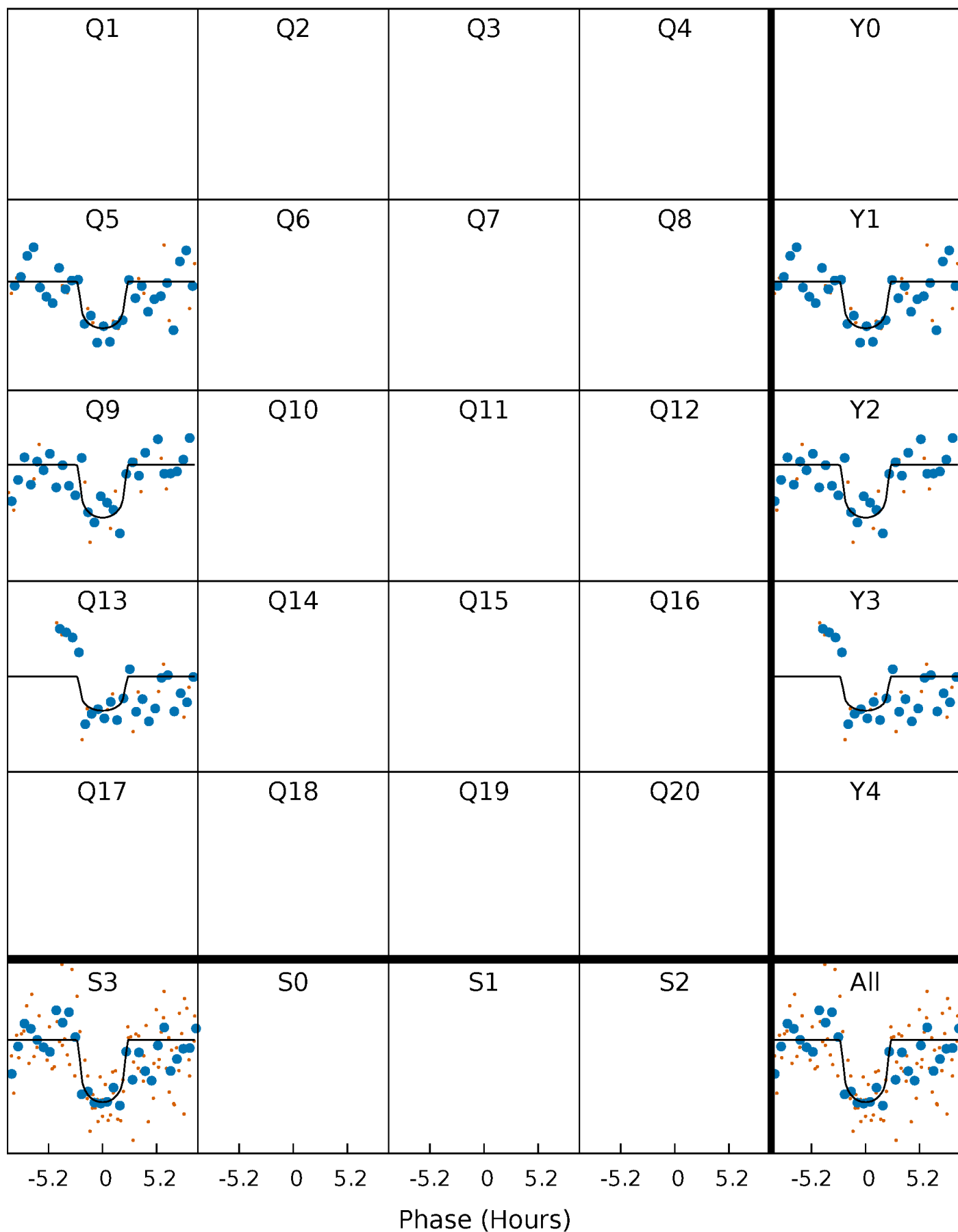
PDC Quarter-Phased Transit Curves

TCE 011410904-02 $P=389.476251$ Days $T_0=458.262041$ (BKJD)



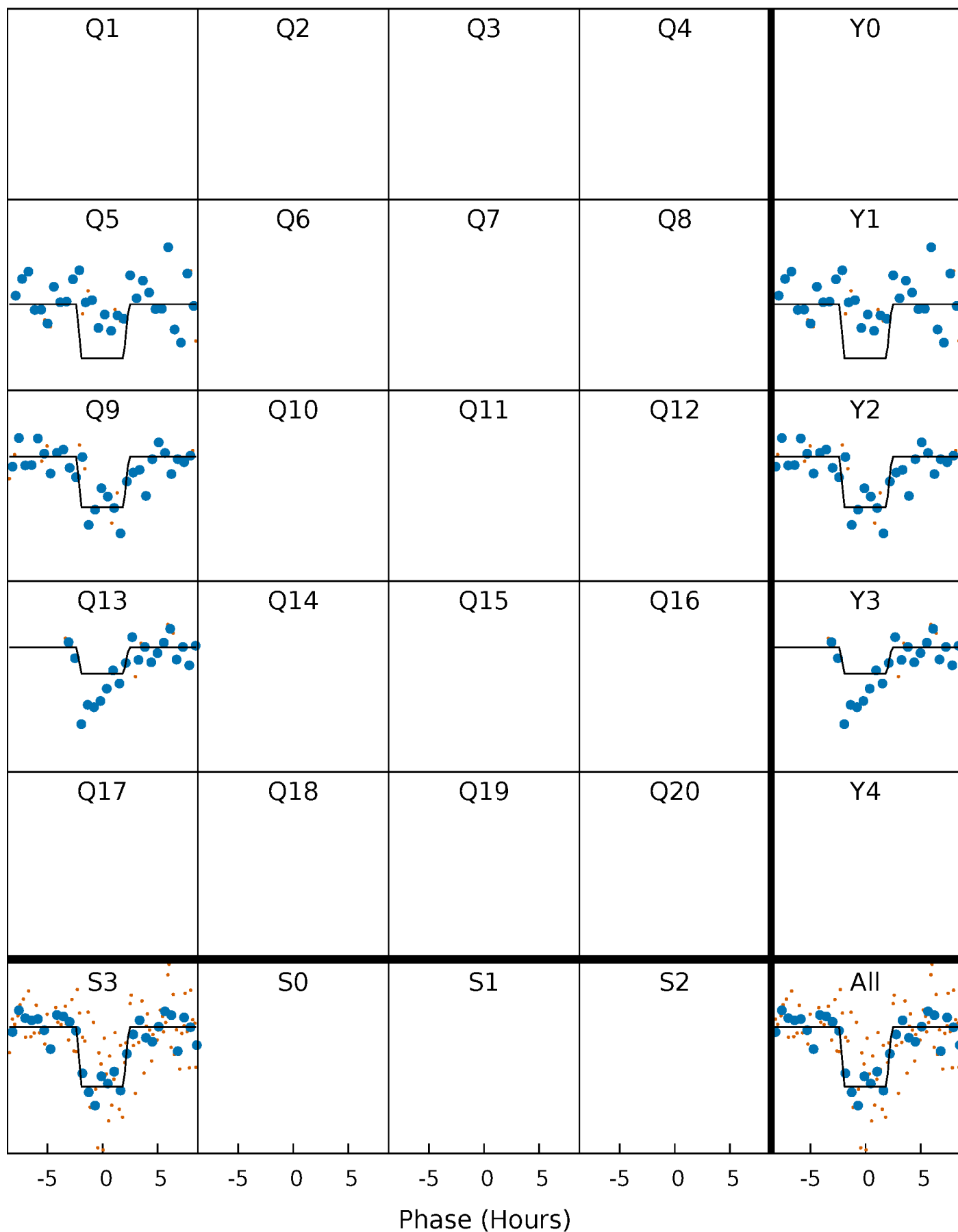
DV Quarter-Phased Transit Curves

TCE 011410904-02 P=389.476251 Days $T_0=458.262041$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

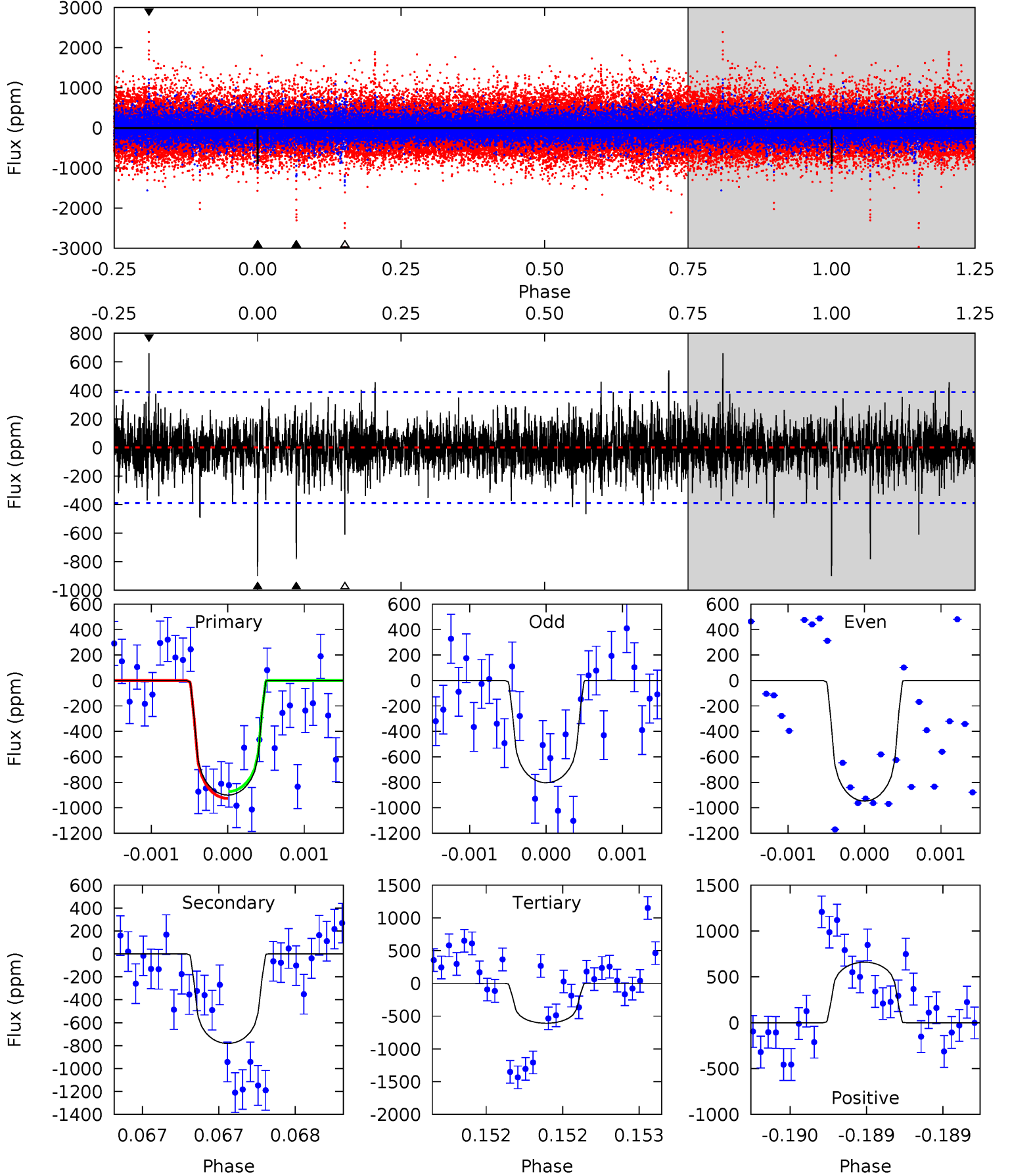
TCE 011410904-02 P=389.477276 Days $T_0=458.257565$ (BKJD)



DV Model-Shift Uniqueness Test

011410904-02, P = 389.476251 Days, E = 68.785790 Days

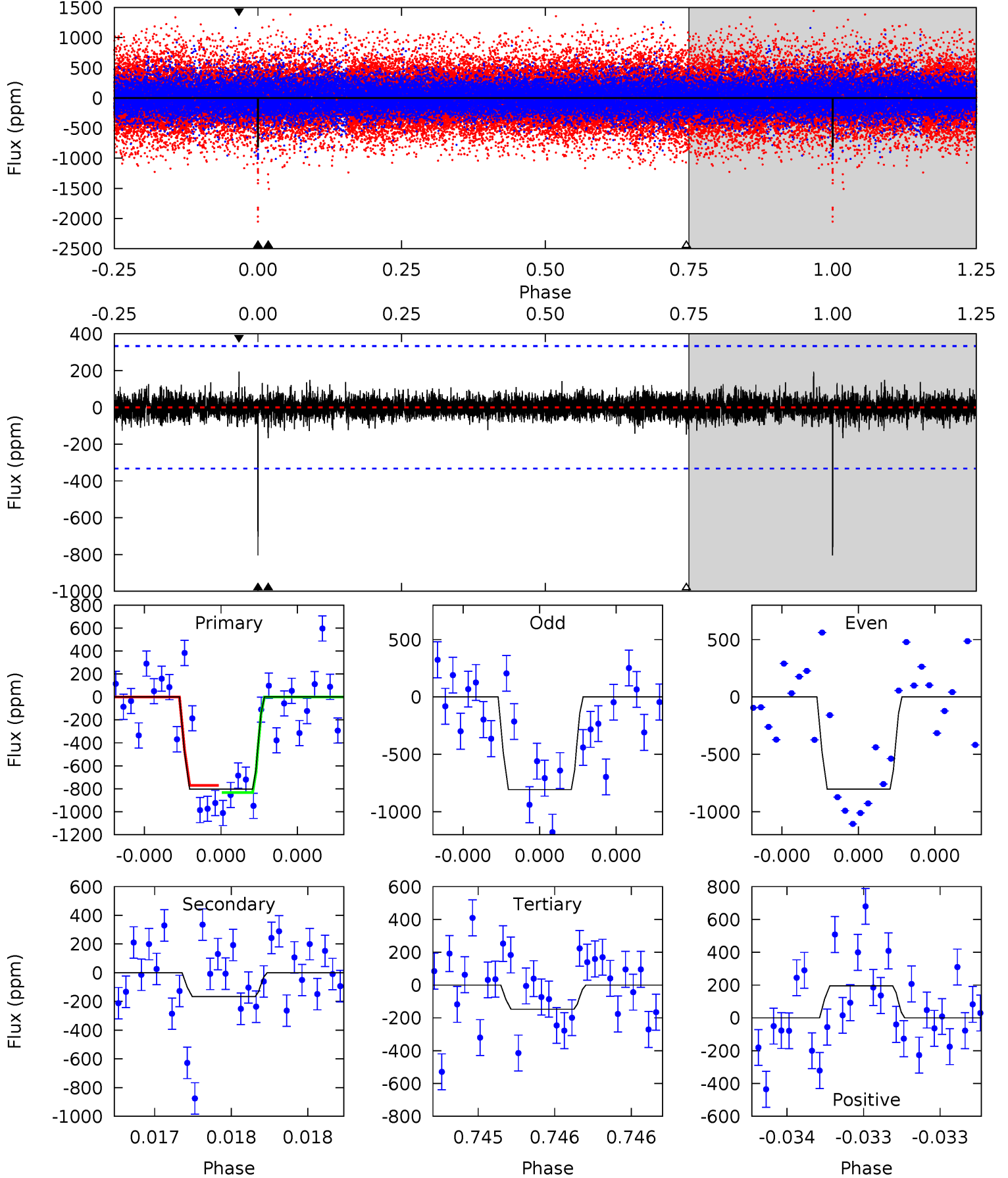
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.9	11.2	8.71	9.45	5.56	3.47	1.56	4.18	3.44	2.48	1.74	0.96	0.98	0.42	0.38



Alt Model-Shift Uniqueness Test

011410904-02, P = 389.477276 Days, E = 68.780289 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.5	2.80	2.47	3.27	5.58	3.50	0.54	11.0	10.2	0.32	-0.47	0.03	1.08	0.20	0.51



Stellar Parameters For KIC 011410904

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5761^{+78}_{-78}	$4.492^{+0.022}_{-0.120}$	$0.140^{+0.150}_{-0.150}$	$0.956^{+0.143}_{-0.048}$	$1.035^{+0.050}_{-0.068}$	$1.667^{+0.187}_{-0.578}$
	+1%/-1%	+0%/-3%	+107%/-107%	+15%/-5%	+5%/-7%	+11%/-35%
Source	SPE90	SPE90	SPE90	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 011410904-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-782 ± 70	$3.78^{+2.86}_{-2.28}$	343^{+12}_{-9}	5203^{+3446}_{-1069}	$32552^{+177872}_{-21832}$
Alt.	-167 ± 60	$3.74^{+2.74}_{-2.25}$	342^{+14}_{-8}	3831^{+1787}_{-642}	6843^{+39121}_{-4740}

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 $A_{obs} \gg 1.0$

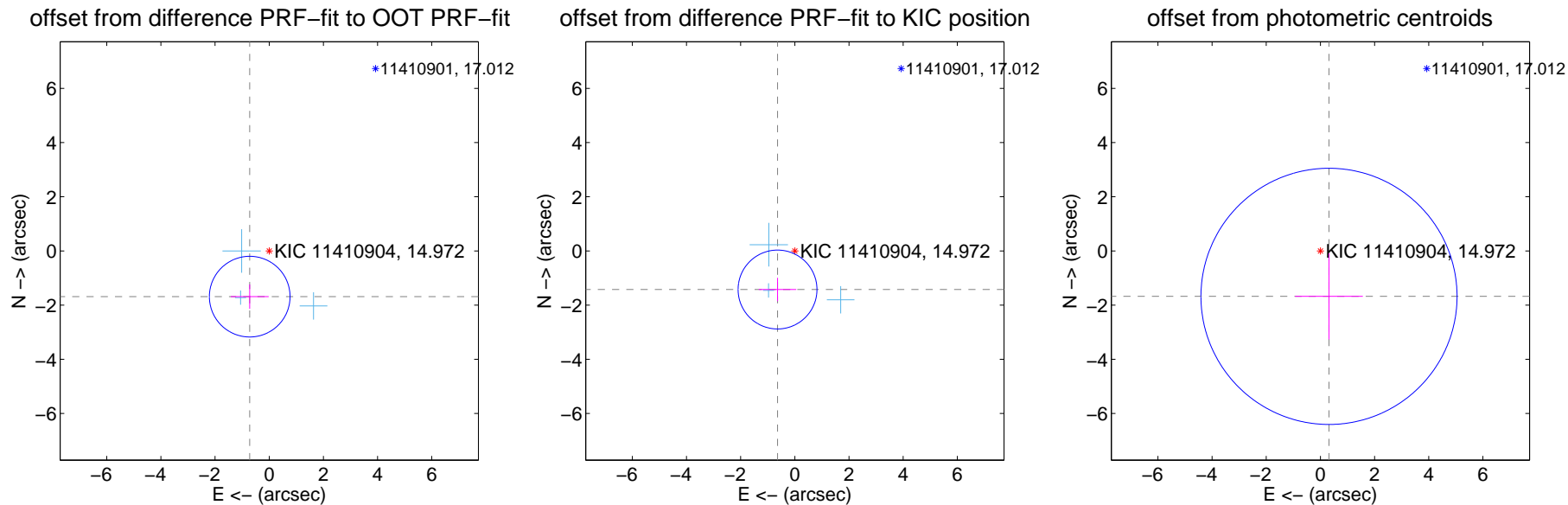
DV Centroid Data

Supplemental centroid analysis for 011410904-02. Kepler magnitude: 14.97. Transit SNR 6.87

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.835 ± 0.497	3.70	0.721 ± 0.700	-1.688 ± 0.450
PRF-fit source offset from KIC position	1.561 ± 0.485	3.22	0.639 ± 0.692	-1.425 ± 0.432
photometric centroid source offset	1.71 ± 1.58	1.08	-0.32 ± 1.25	-1.68 ± 1.59

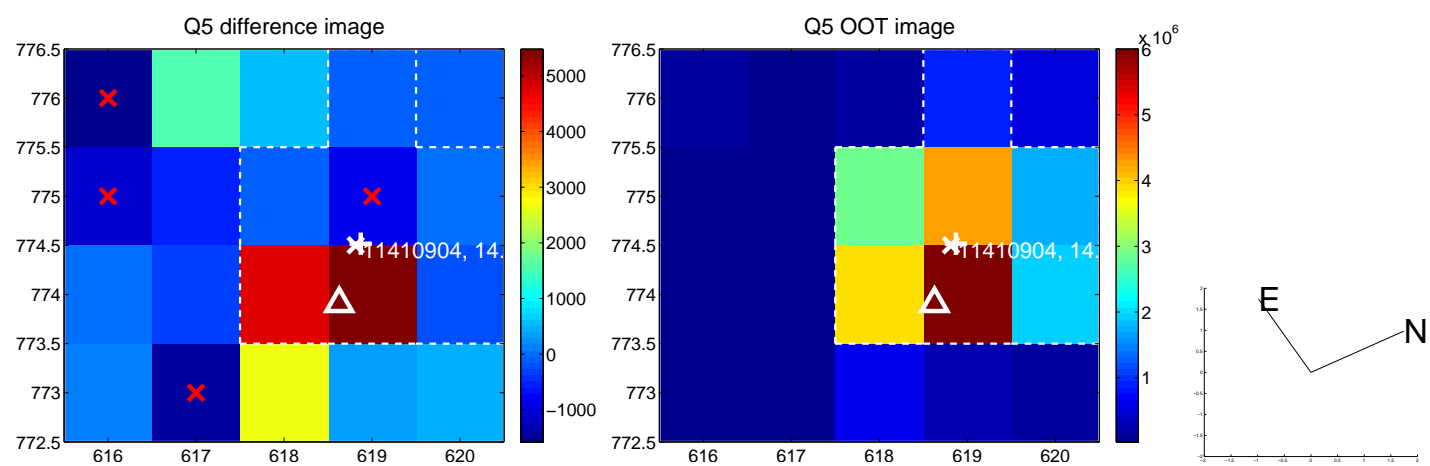


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

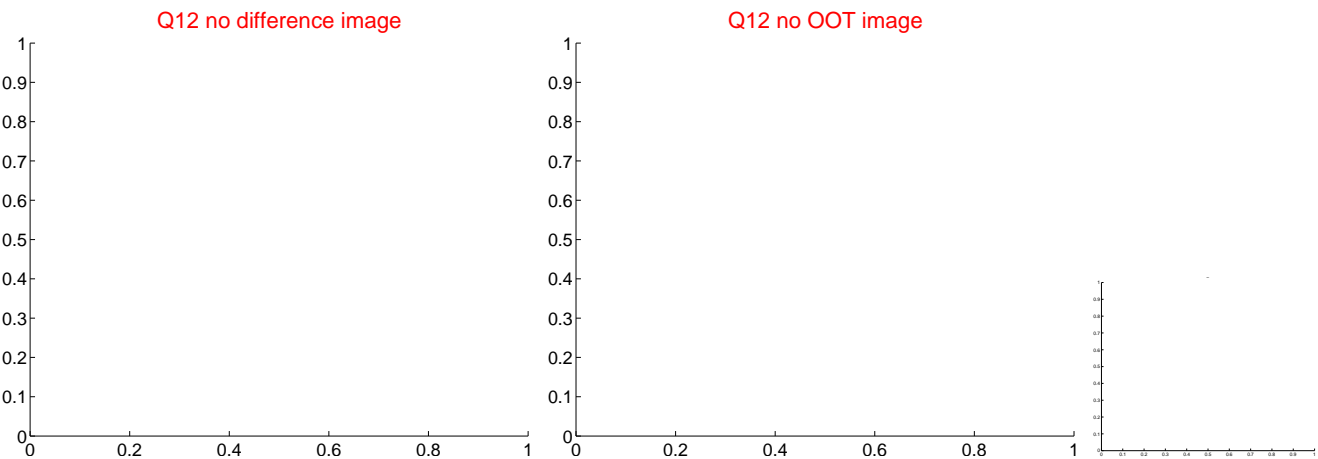
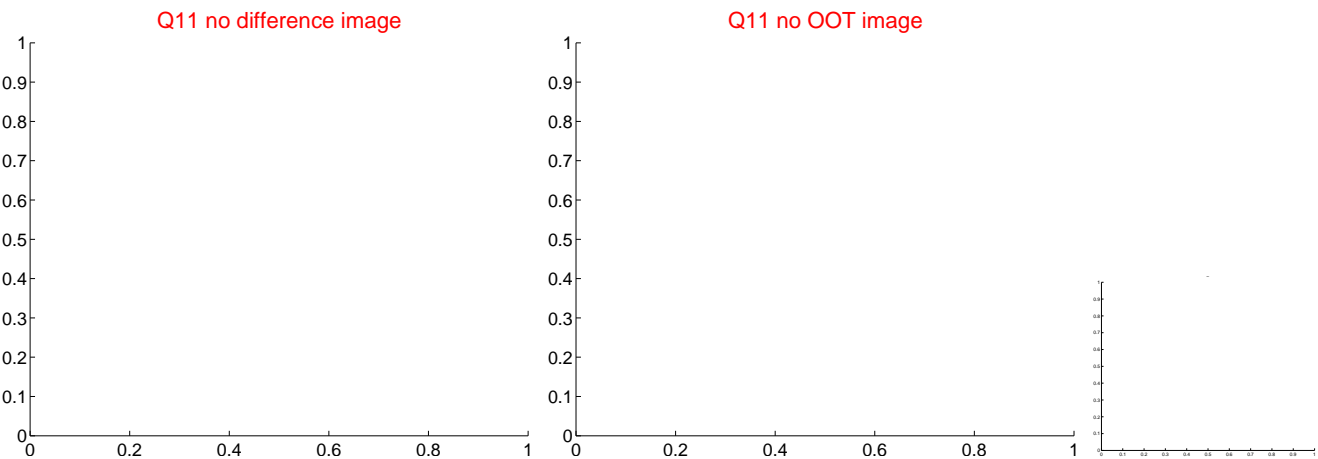
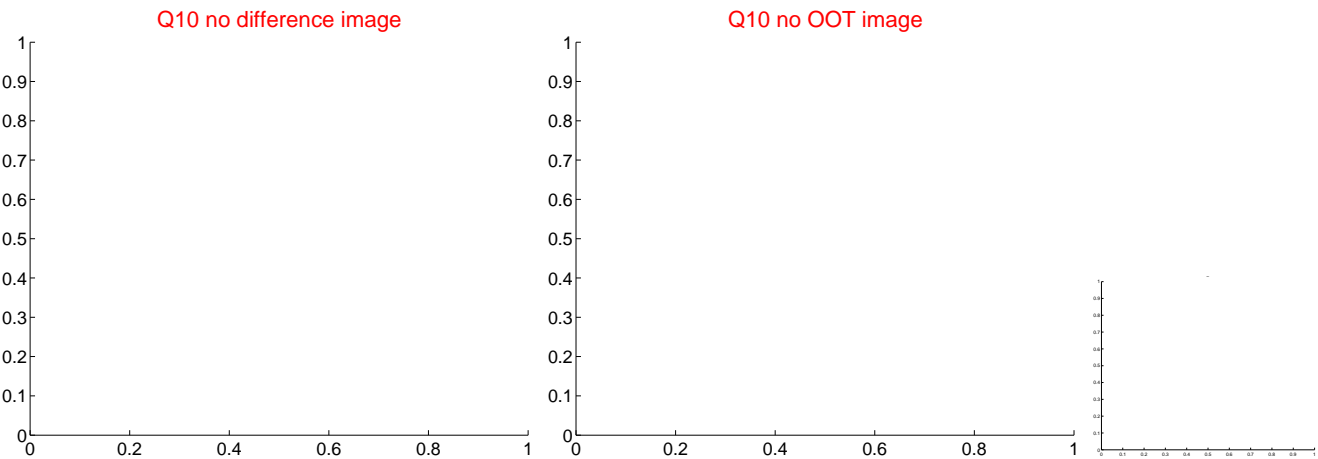
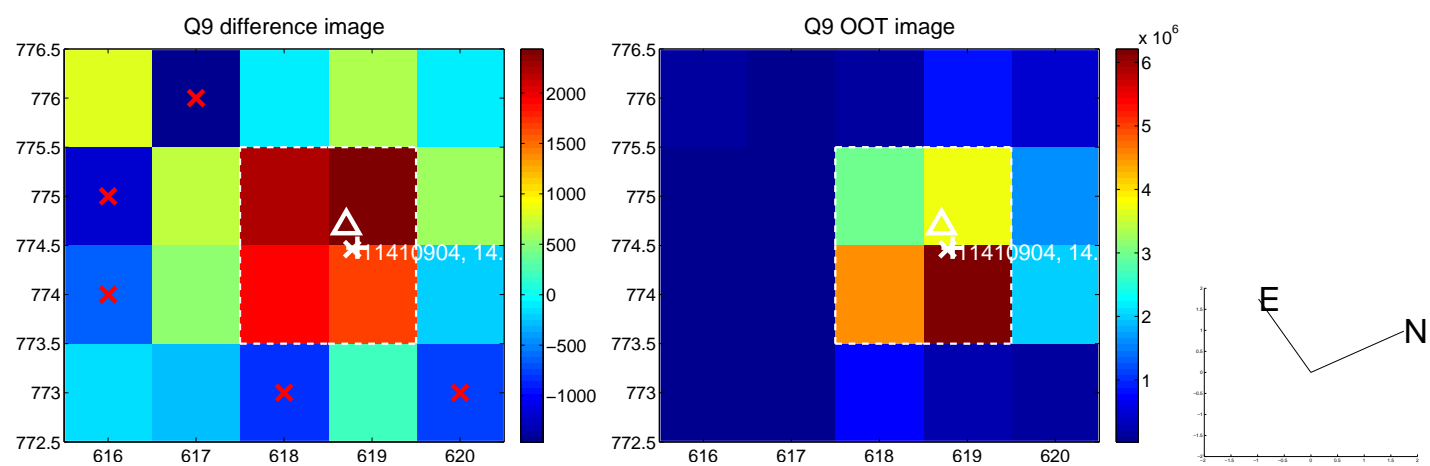
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



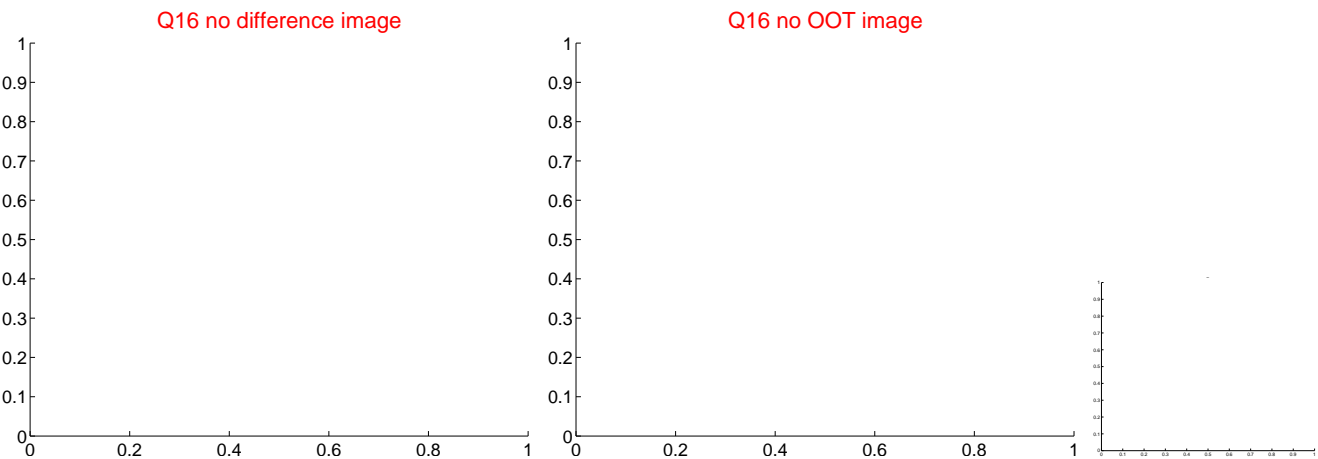
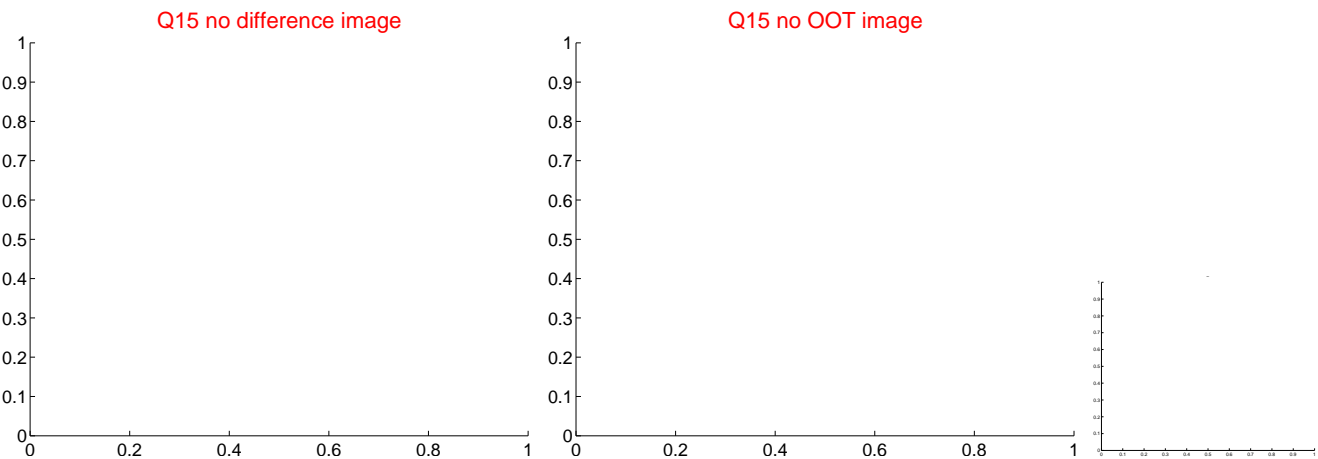
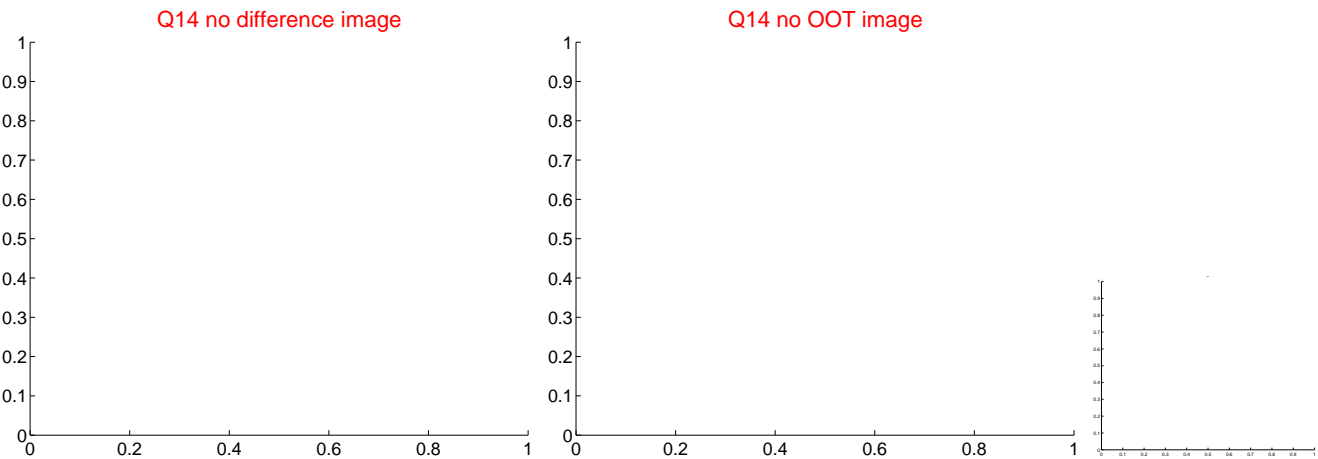
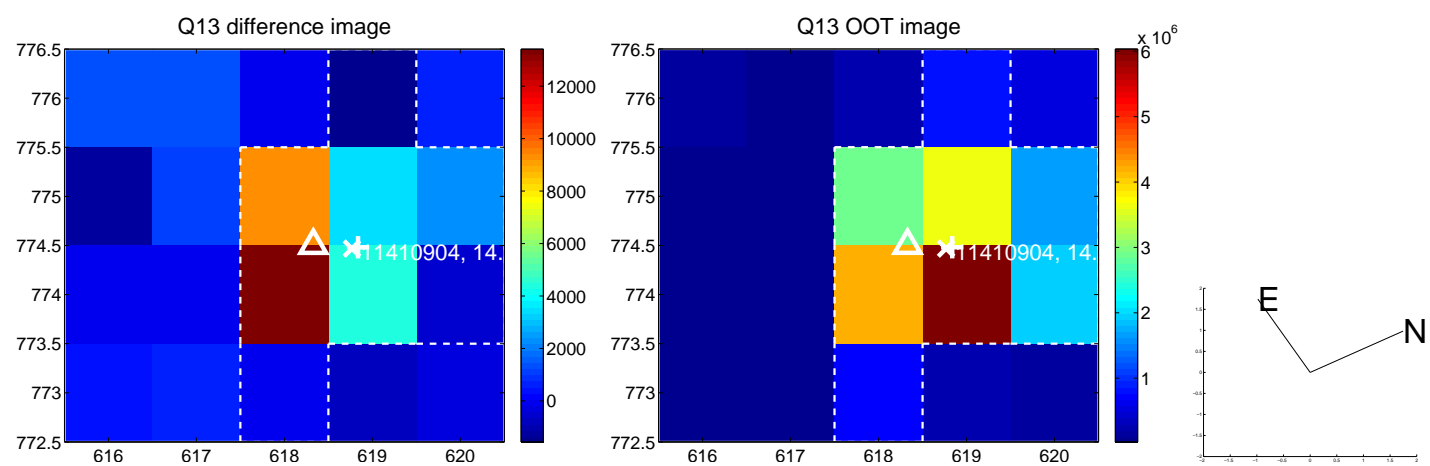
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



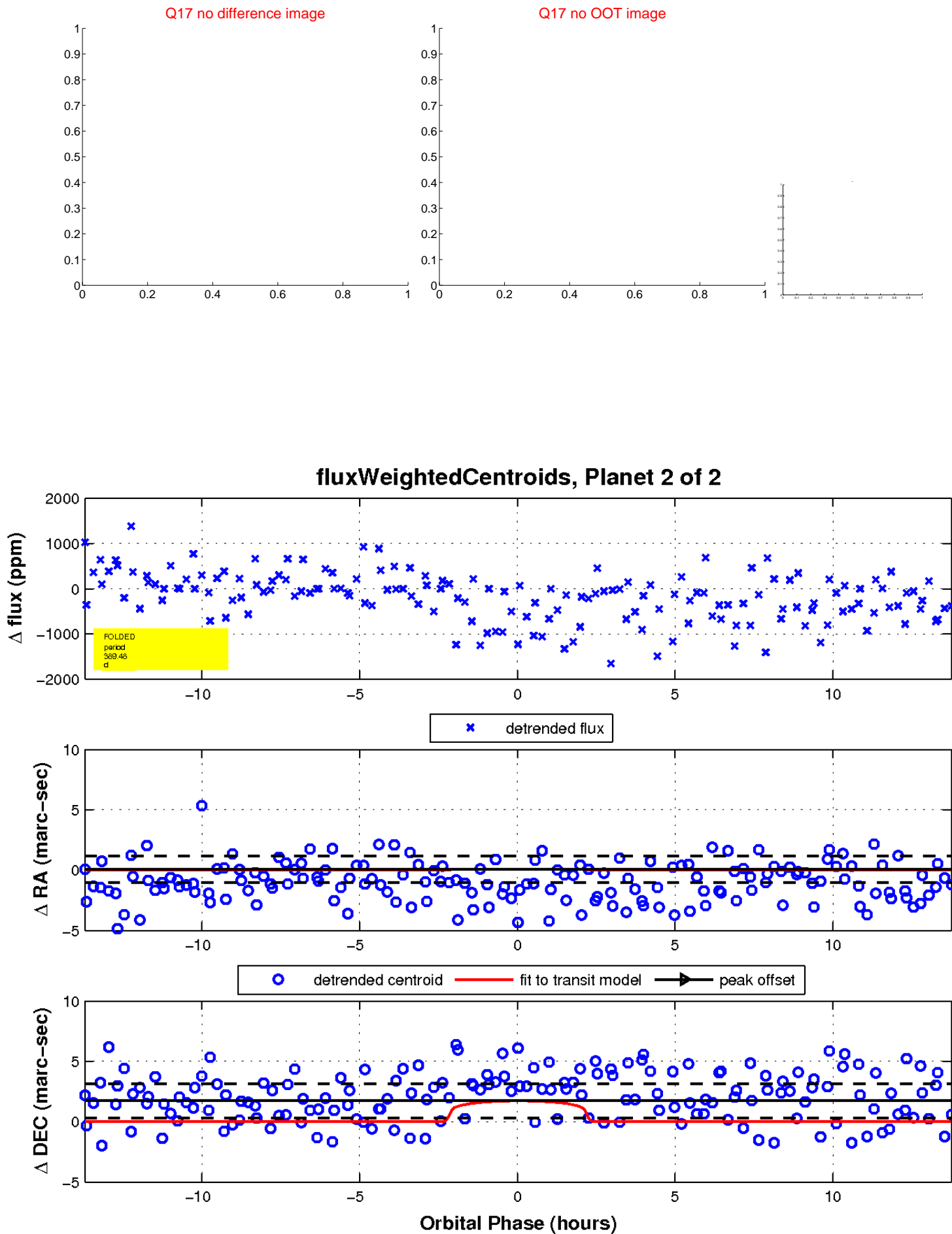
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

