

KIC 004243911

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})
004243911-01	OBS	1337.01	1.922810	132.576423	257.6	1.972	25.0	29.1	0.81	5194	1.58	515.73
004243911-02	OBS	No	422.719751	439.995117	721.4	11.556	8.0	7.5	0.81	5194	2.29	0.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004243911-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
004243911-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

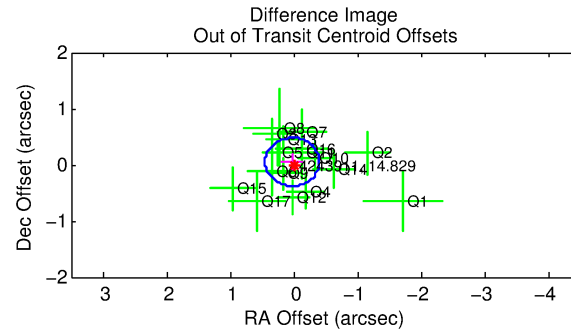
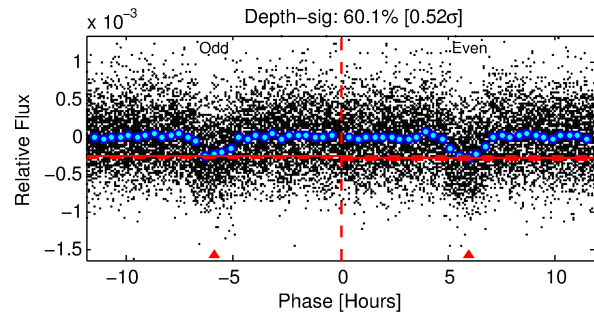
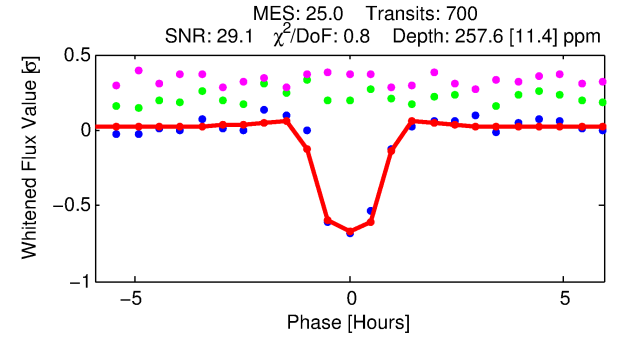
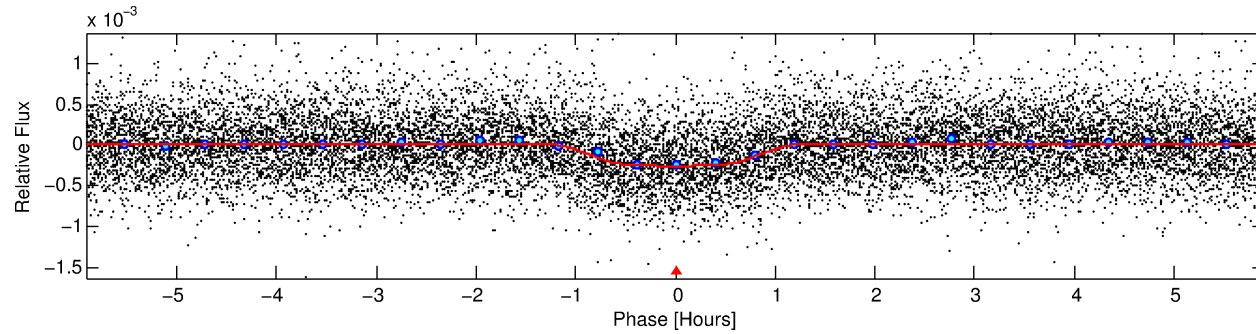
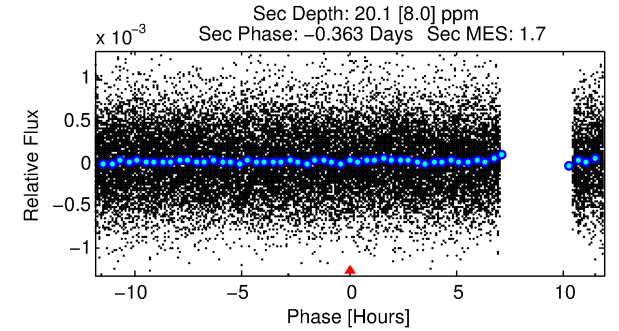
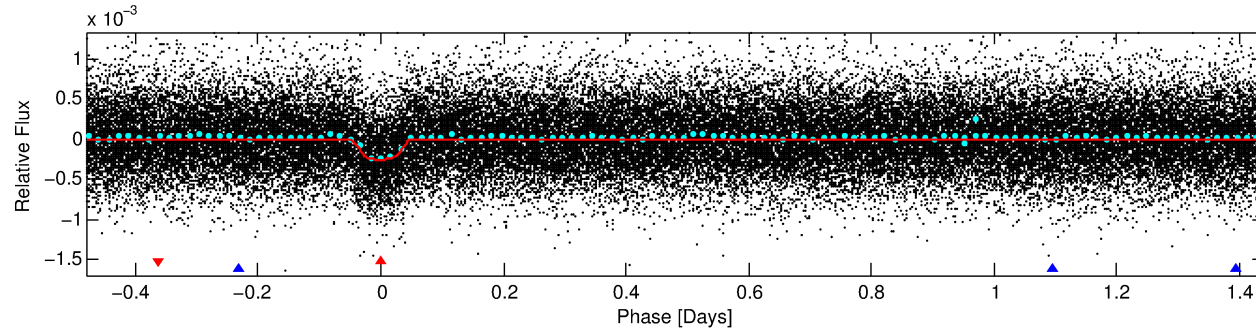
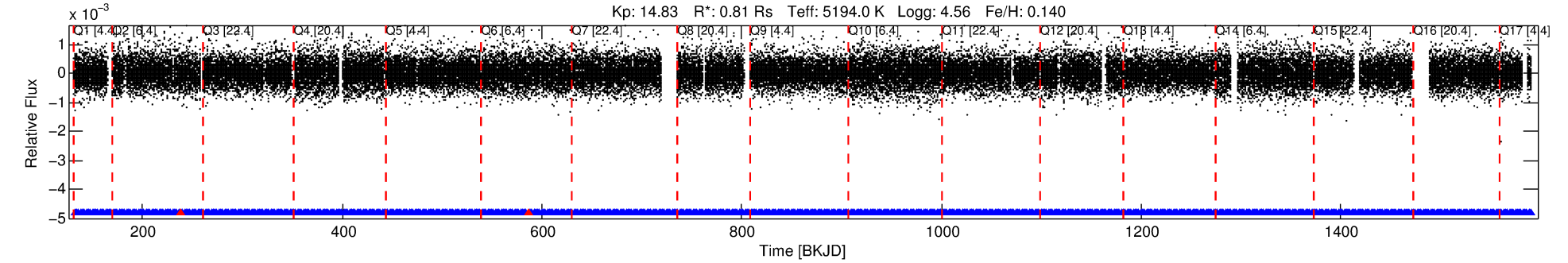
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004243911-01

No Significant Match Found

DV One-Page Summary

KIC: 4243911 Candidate: 1 of 2 Period: 1.923 d
KOI: K01337.01 Corr: 0.968



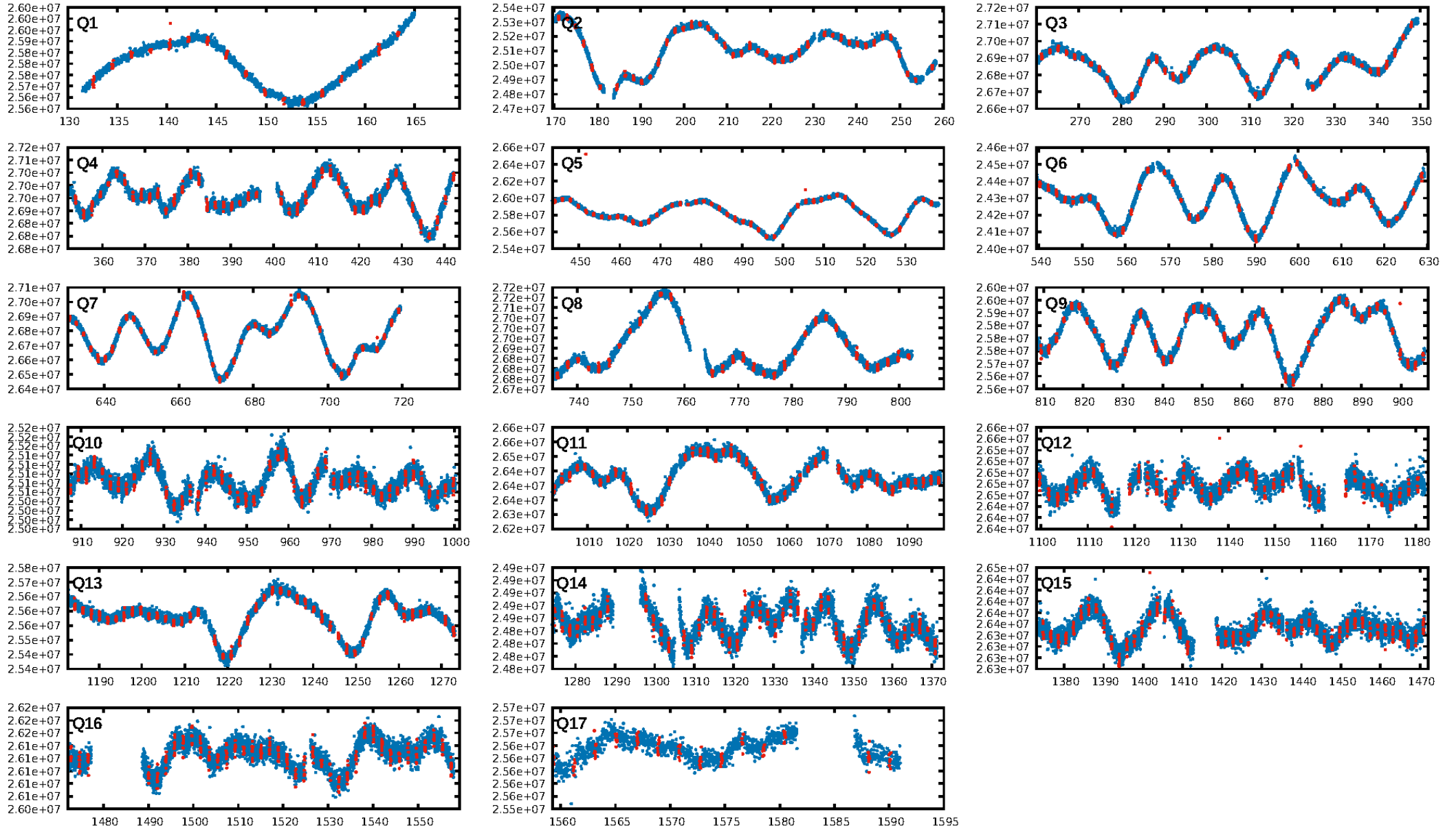
DV Fit Results:

Period = 1.92281 [0.00000] d
Epoch = 132.5764 [0.0010] BKJD
Rp/R* = 0.0178 [0.0054]
a/R* = 3.74 [4.26]
b = 0.89 [0.28]
Seff = 515.73 [71.66]
Teff = 1215 [42] K
Rp = 1.58 [0.50] Re
a = 0.0290 [0.0023] AU
Ag = 3.72 [2.74] [0.99σ]
Teffp = 2609 [475] K [2.92σ]

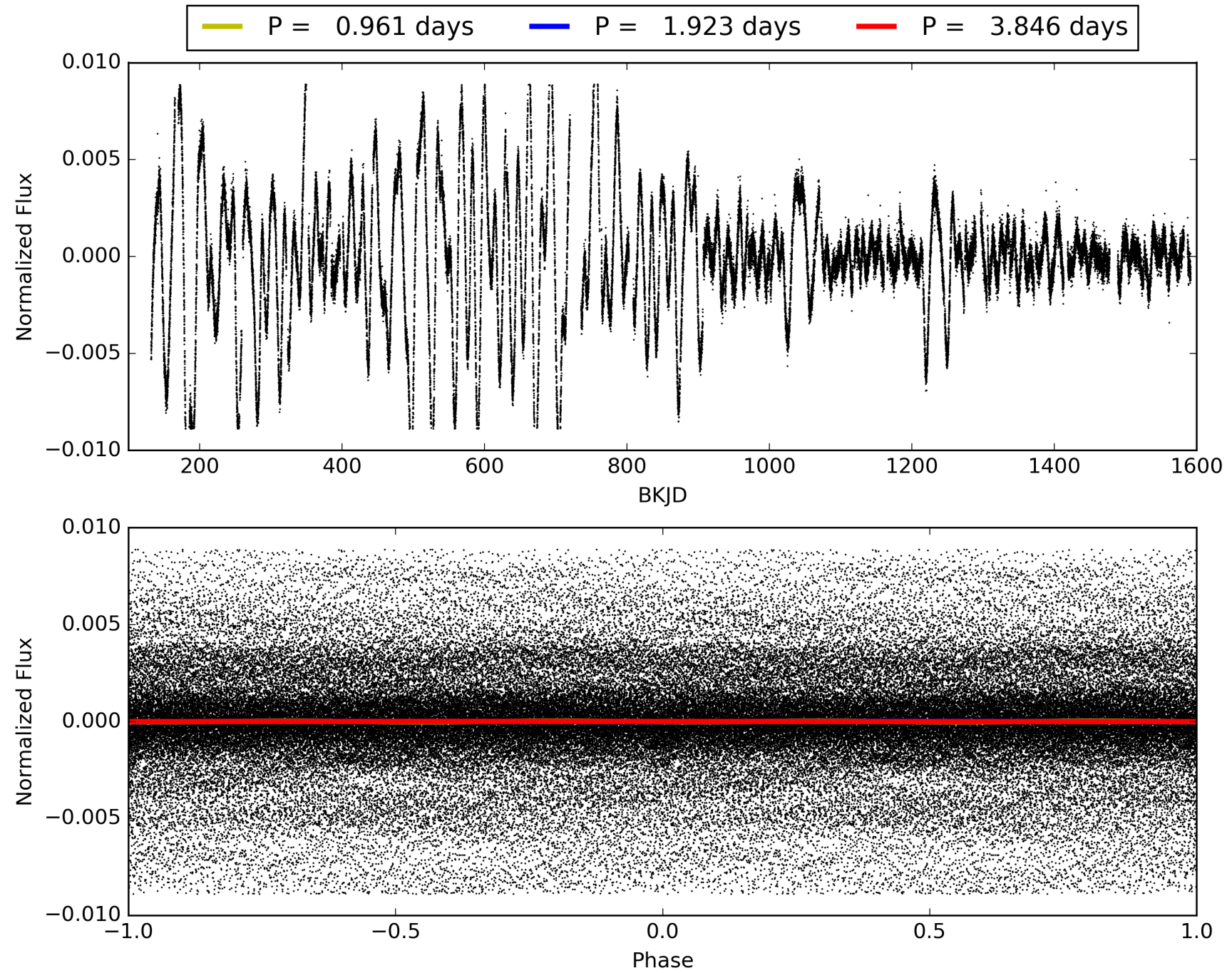
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [861.45σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.41e-133
RollingBand-fgt: 1.00 [667/669]
GhostDiagnostic-chr: 6.196
Centroid-sig: 21.9%
Centroid-so: 0.677 arcsec [1.54σ]
OotOffset-rm: 0.054 arcsec [0.38σ]
KicOffset-rm: 0.123 arcsec [0.79σ]
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 004243911-01, PDC Light Curves

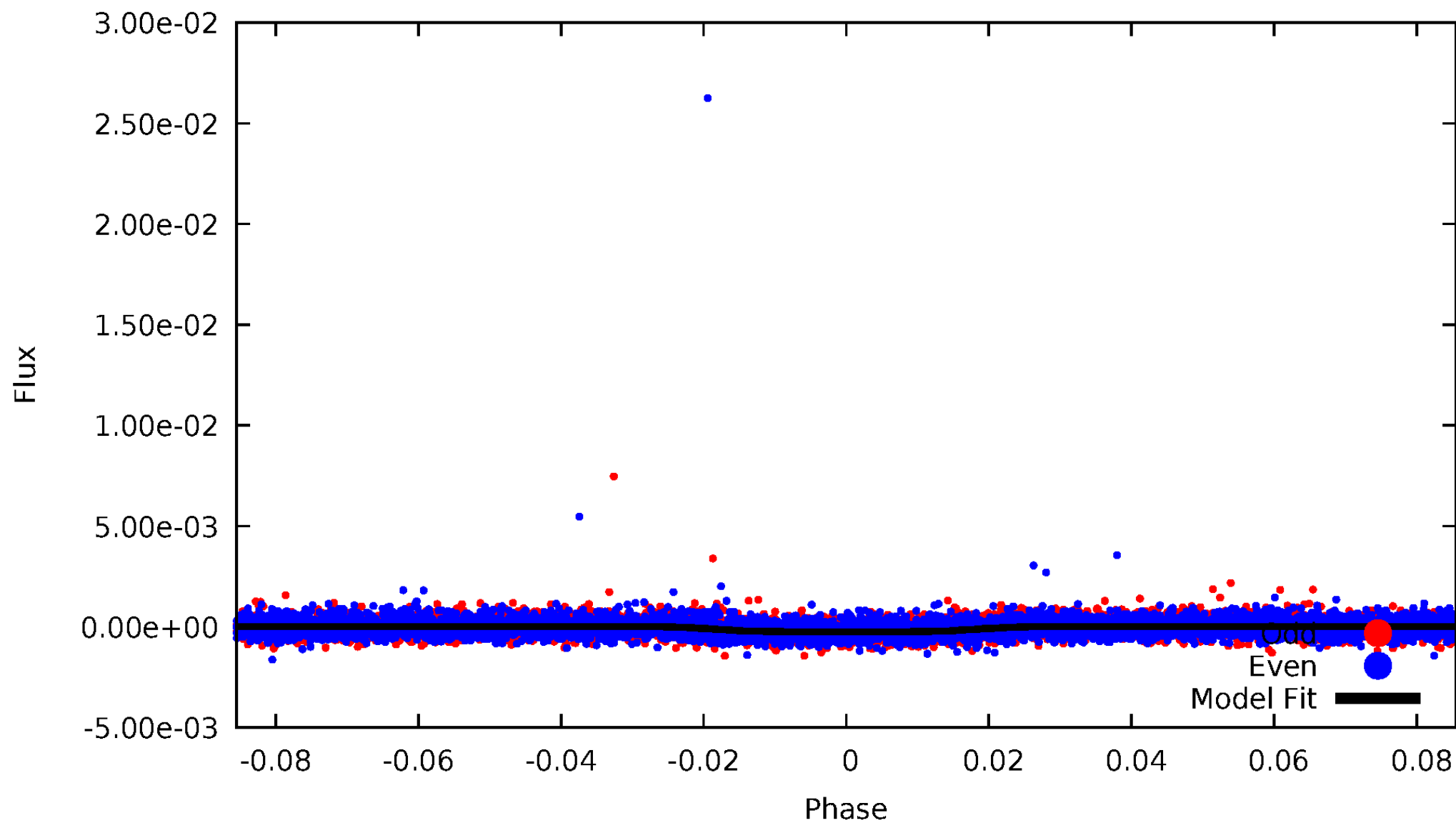


TCE 004243911-01



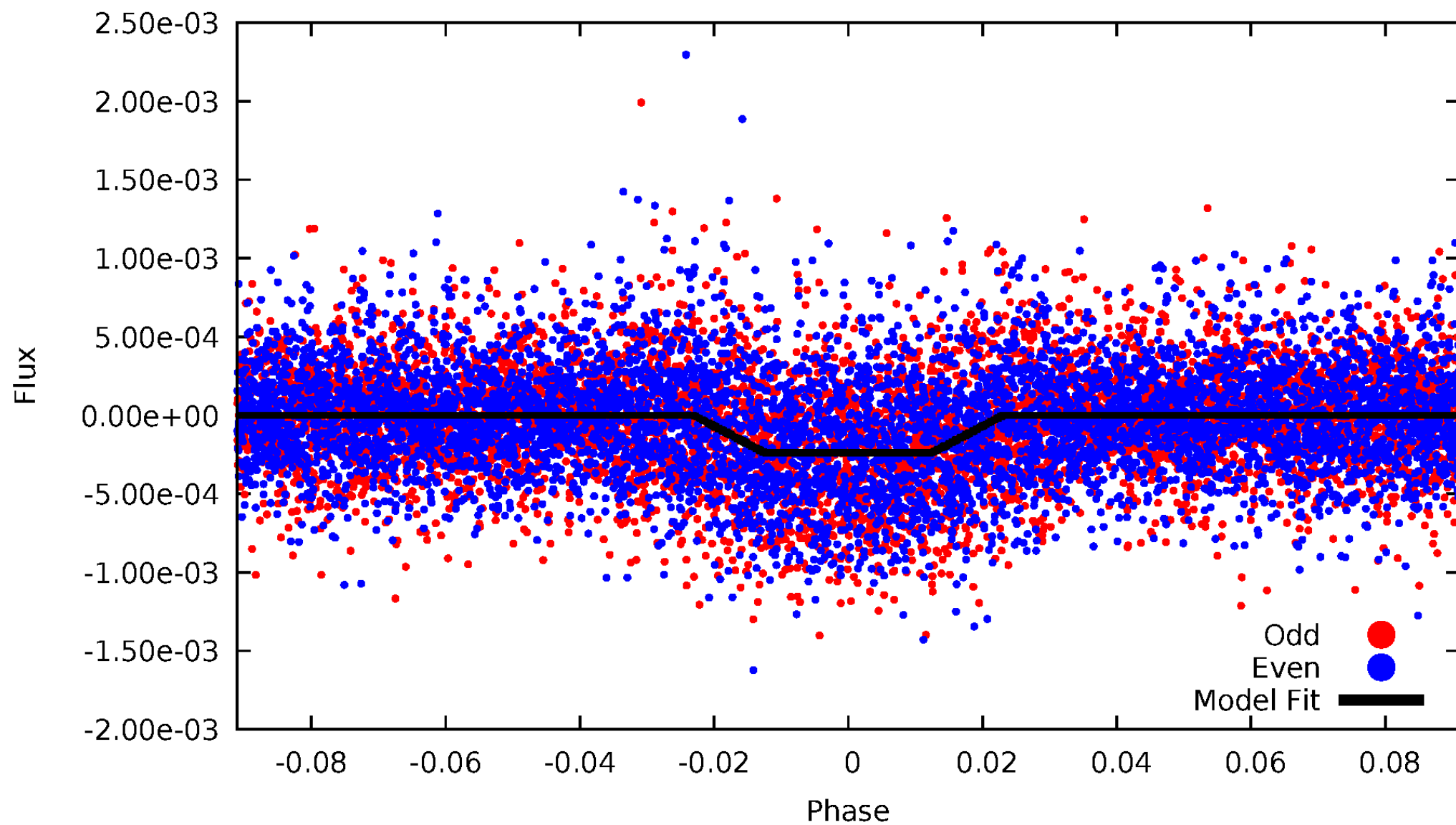
DV Odd/Even

TCE 004243911-01



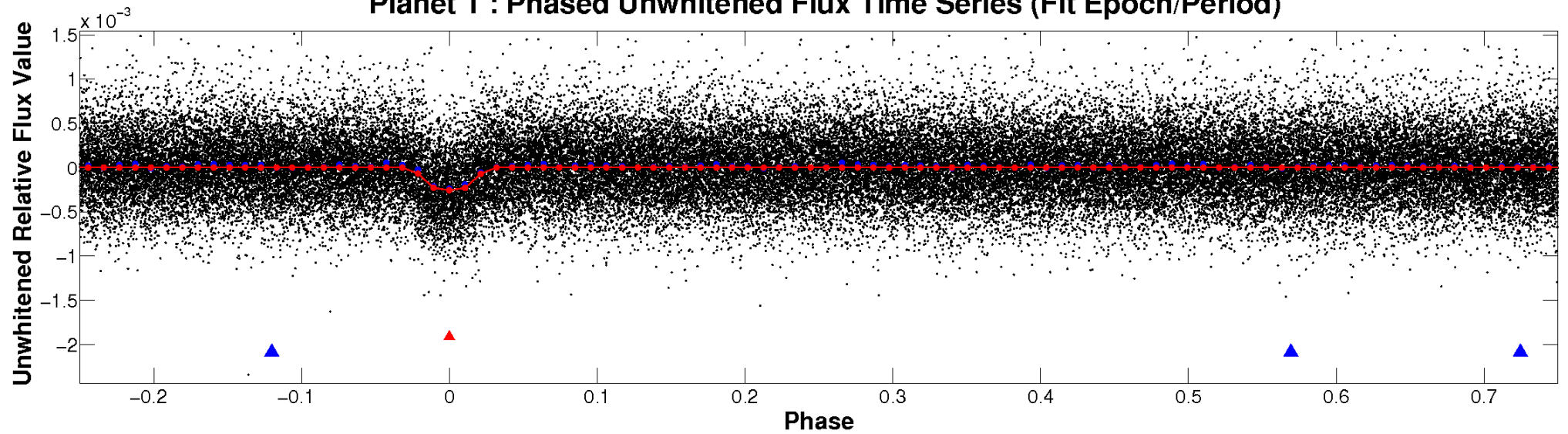
ALT Odd/Even

TCE 004243911-01

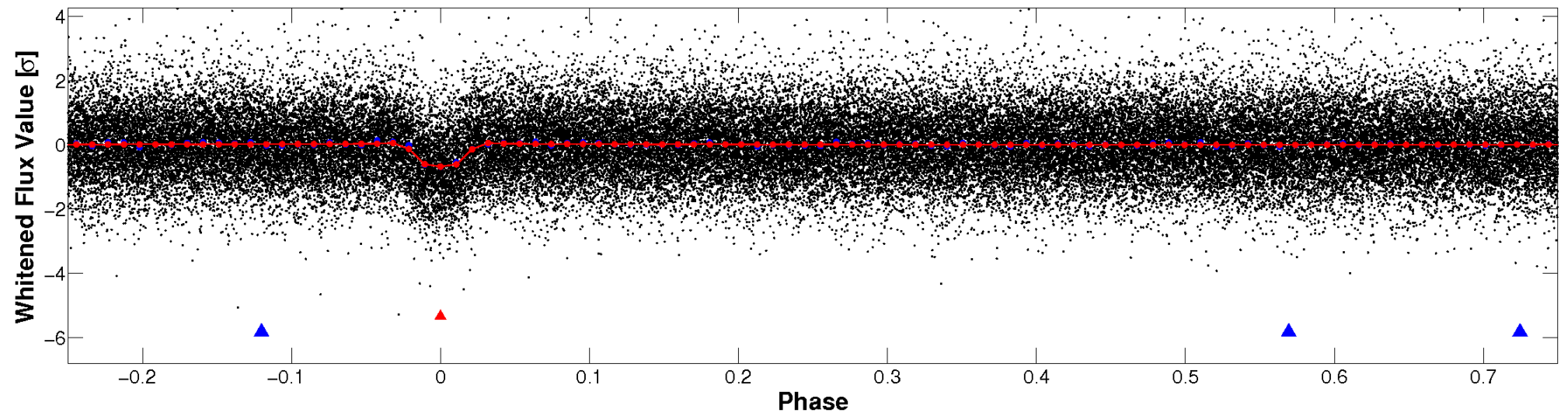


Non-Whitened Vs. Whitened Light Curve

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

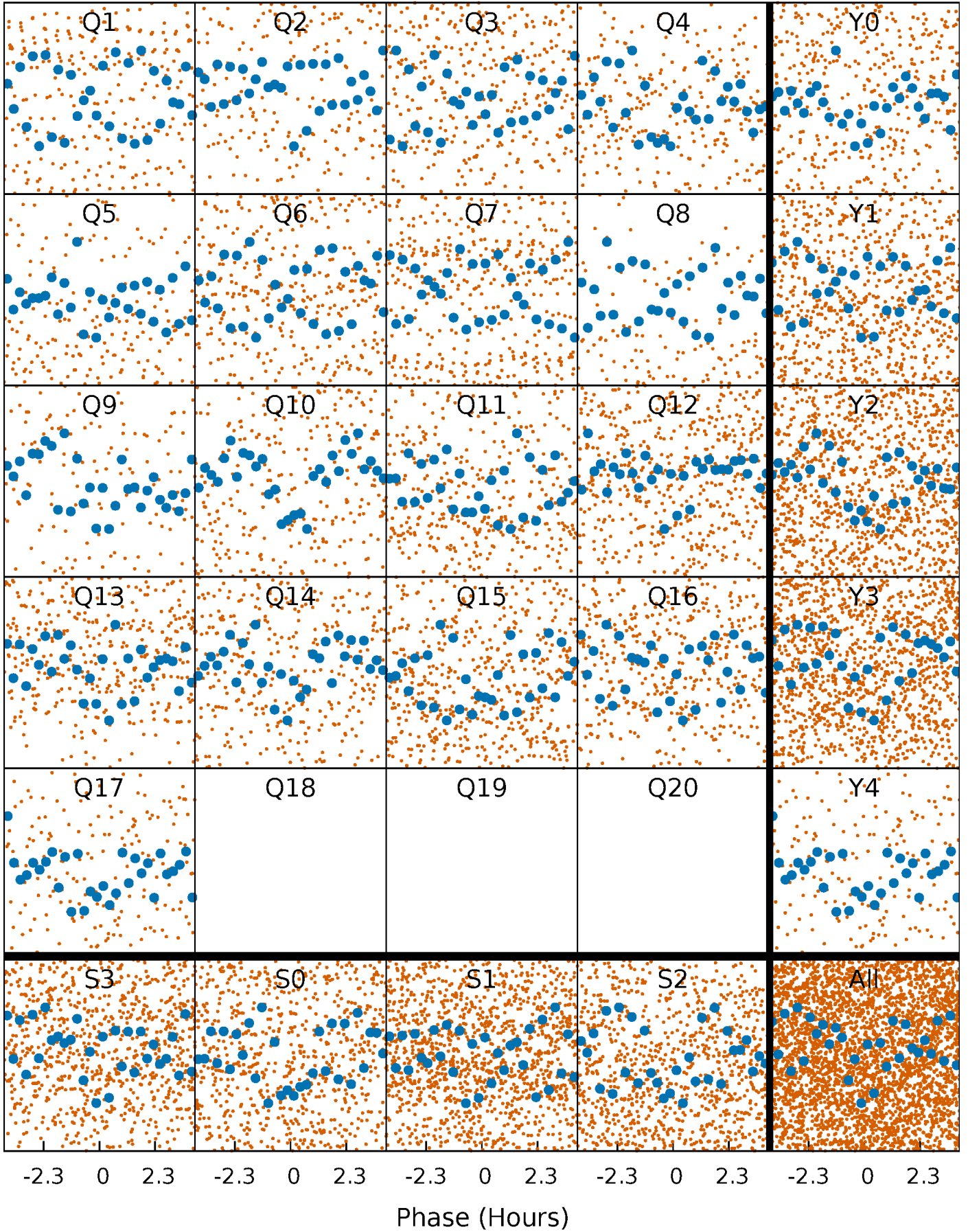


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



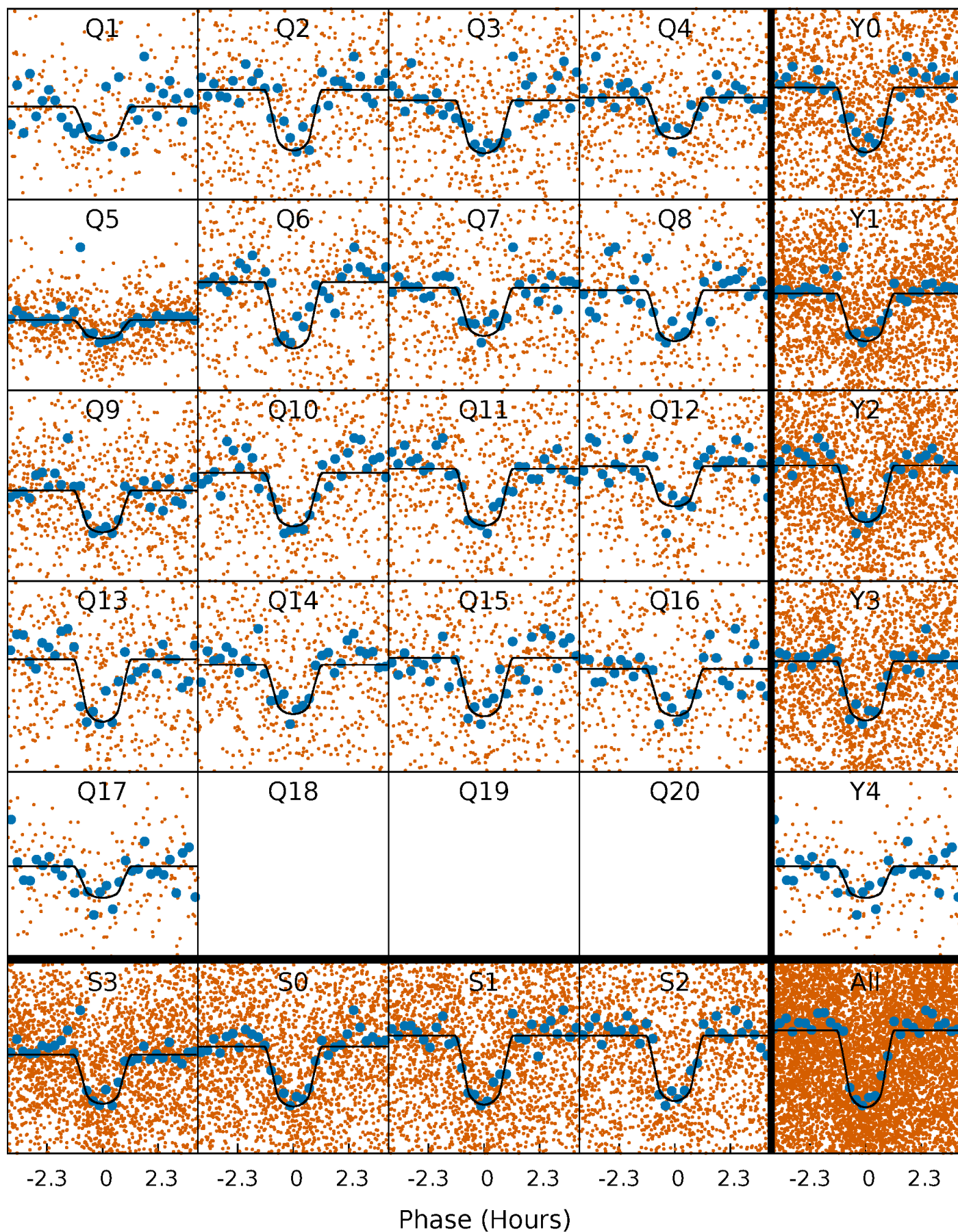
PDC Quarter-Phased Transit Curves

TCE 004243911-01 P= 1.922810 Days $T_0=132.576423$ (BKJD)



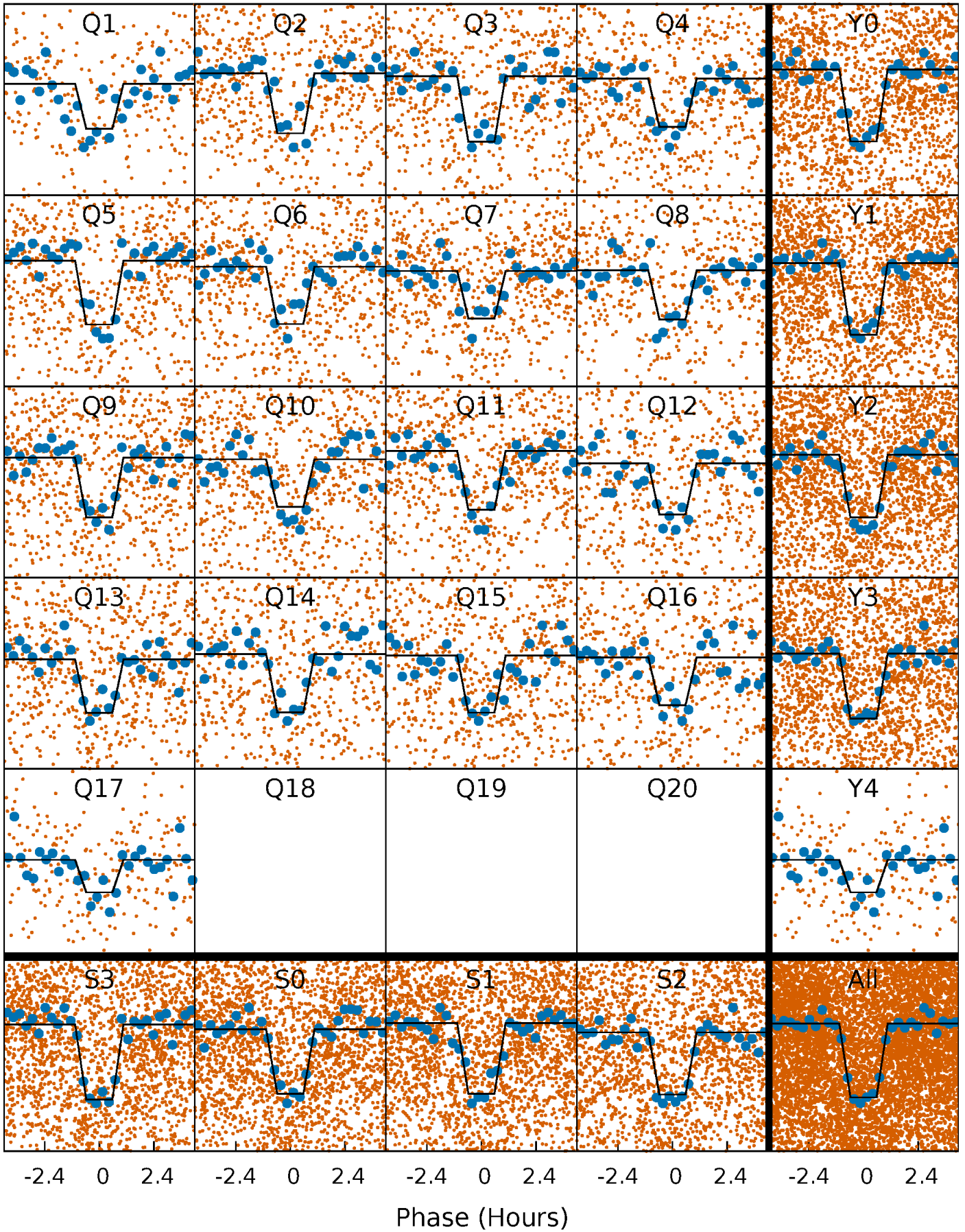
DV Quarter-Phased Transit Curves

TCE 004243911-01 P= 1.922810 Days $T_0=132.576423$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

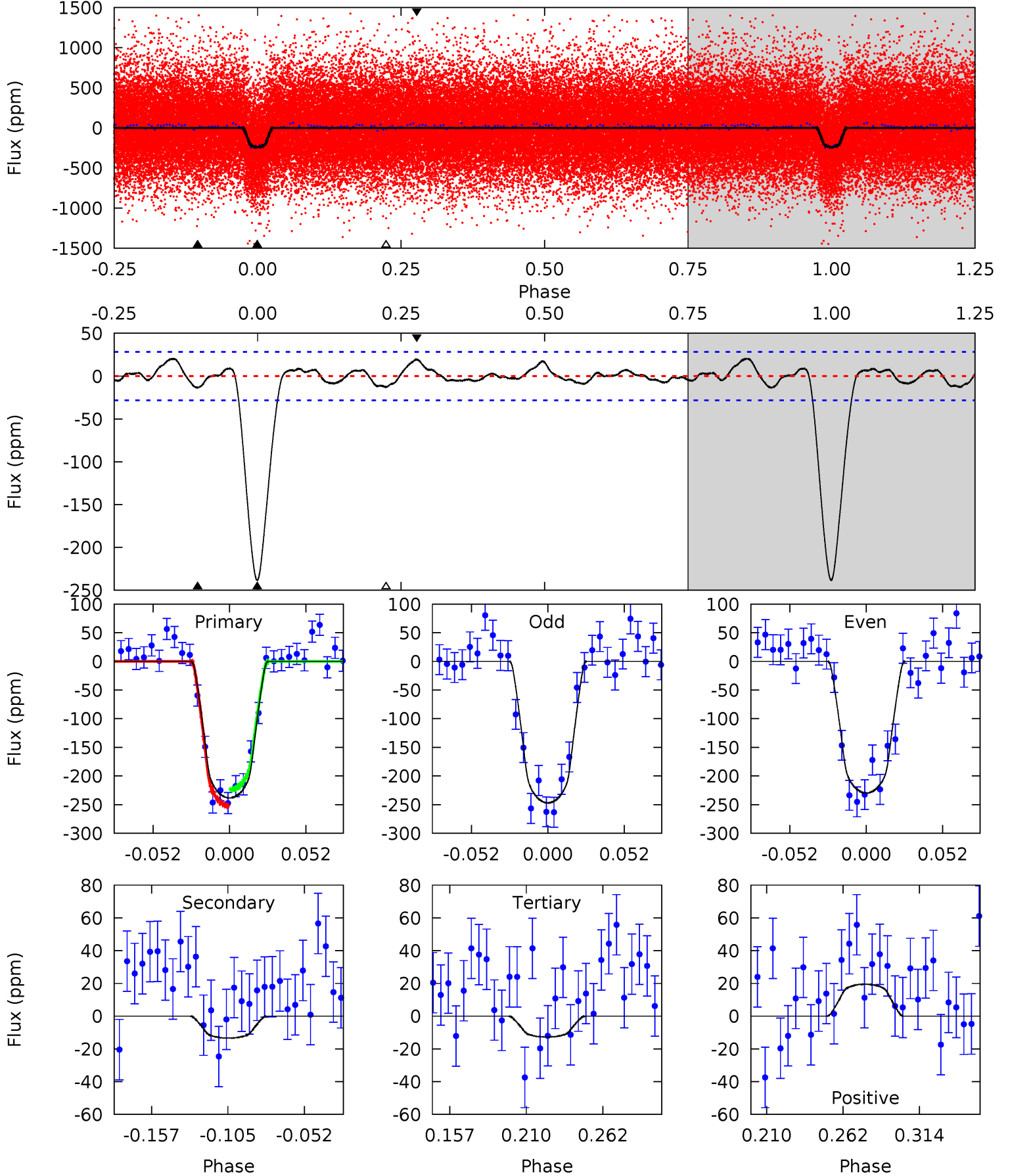
TCE 004243911-01 P= 1.922797 Days $T_0=132.580304$ (BKJD)



DV Model-Shift Uniqueness Test

004243911-01, P = 1.922810 Days, E = 130.653613 Days

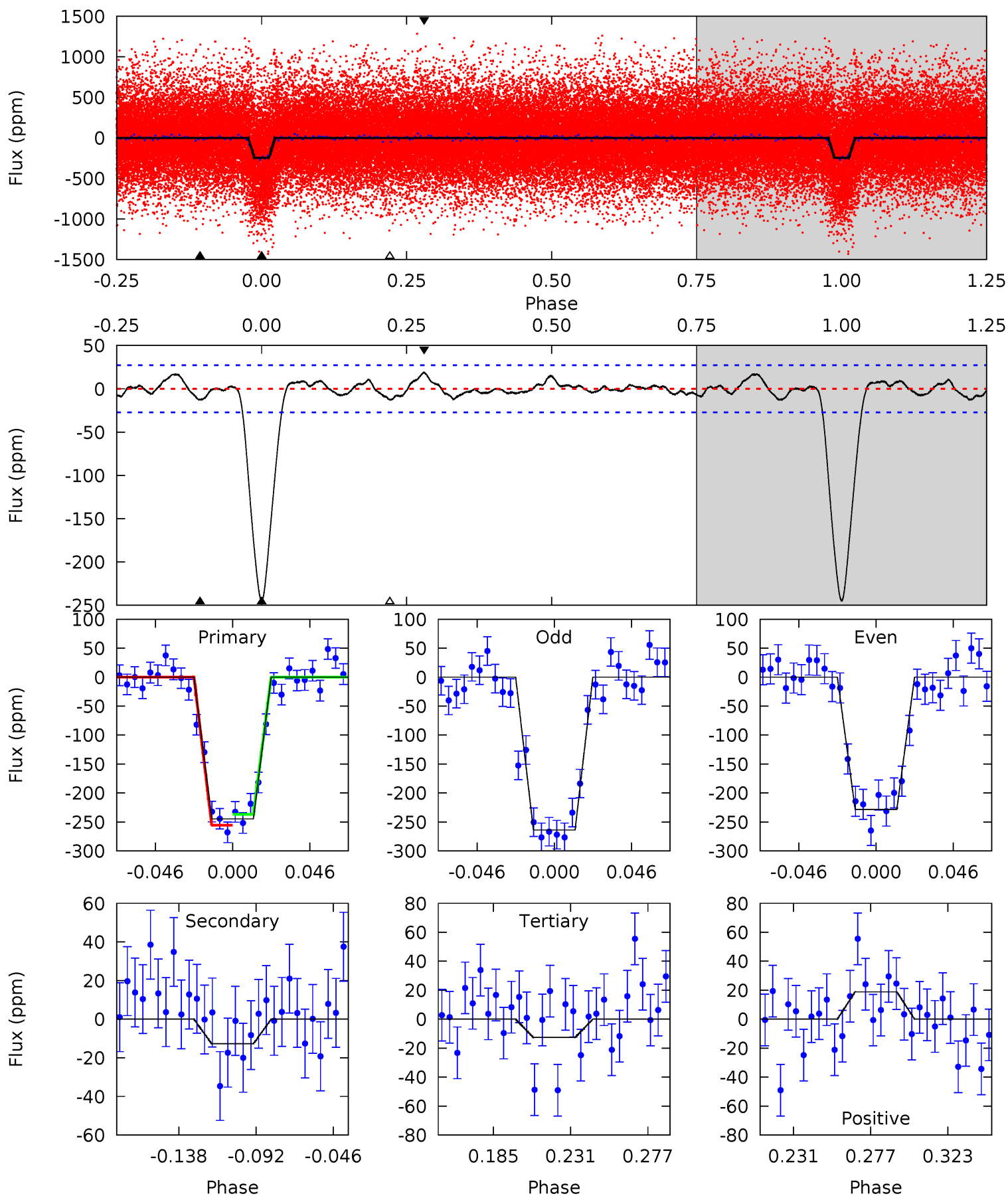
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
39.7	2.24	2.13	3.25	4.70	1.94	1.12	37.6	36.5	0.11	-1.01	1.43	0.97	0.08	2.38



Alt Model-Shift Uniqueness Test

004243911-01, P = 1.922797 Days, E = 130.657507 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
42.4	2.21	2.18	3.27	4.72	1.99	1.06	40.2	39.1	0.03	-1.05	3.09	0.93	0.07	1.62



Stellar Parameters For KIC 004243911

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5194^{+72}_{-83}	$4.559^{+0.022}_{-0.072}$	$0.140^{+0.150}_{-0.150}$	$0.815^{+0.067}_{-0.033}$	$0.879^{+0.035}_{-0.053}$	$2.282^{+0.233}_{-0.492}$
	+1%/-2%	+0%/-2%	+107%/-107%	+8%/-4%	+4%/-6%	+10%/-22%
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 004243911-01 / KOI 1337.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-13 ± 6	$1.61^{+0.47}_{-0.50}$	1711^{+41}_{-39}	2932^{+384}_{-347}	$2.327^{+2.734}_{-1.255}$
Alt.	-13 ± 6	$1.37^{+0.49}_{-0.46}$	1708^{+41}_{-36}	3054^{+454}_{-390}	$3.000^{+4.169}_{-1.744}$

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

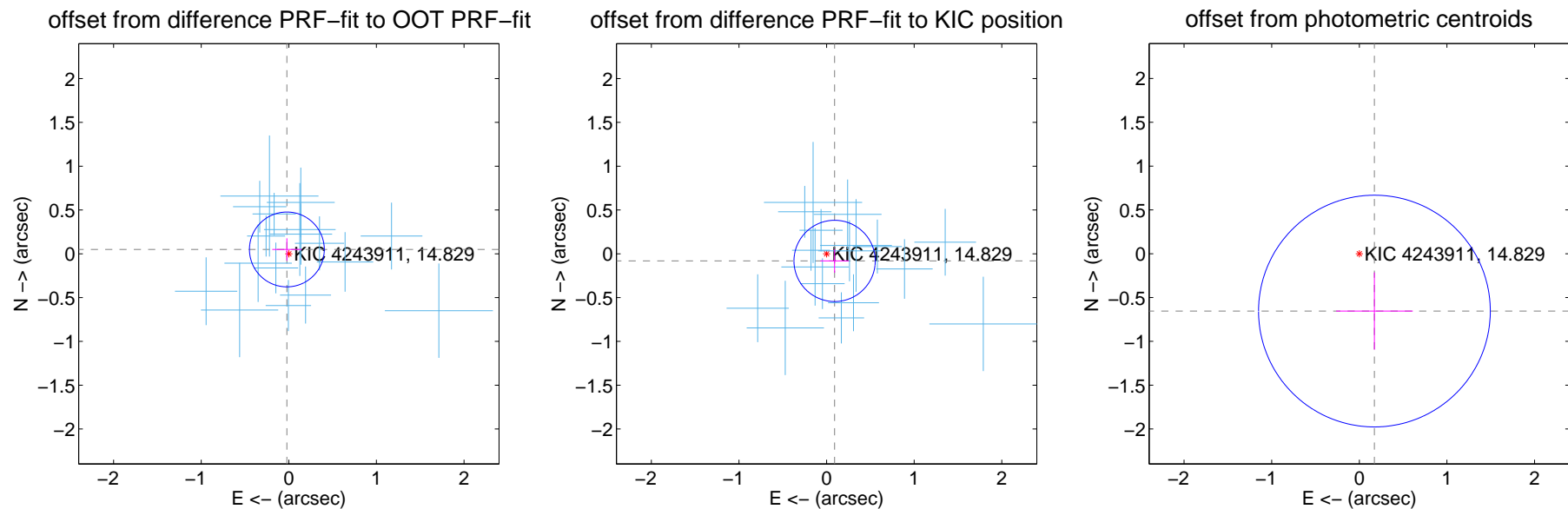
DV Centroid Data

Supplemental centroid analysis for 004243911-01. Kepler magnitude: 14.83. Transit SNR 29.08

There are 17 quarters with good PRF difference image offsets

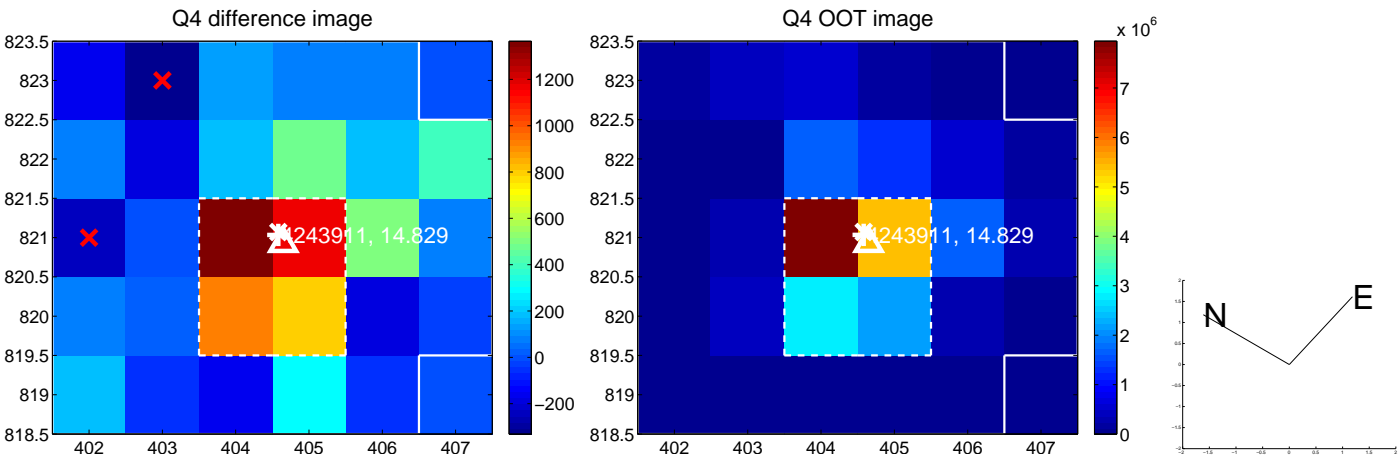
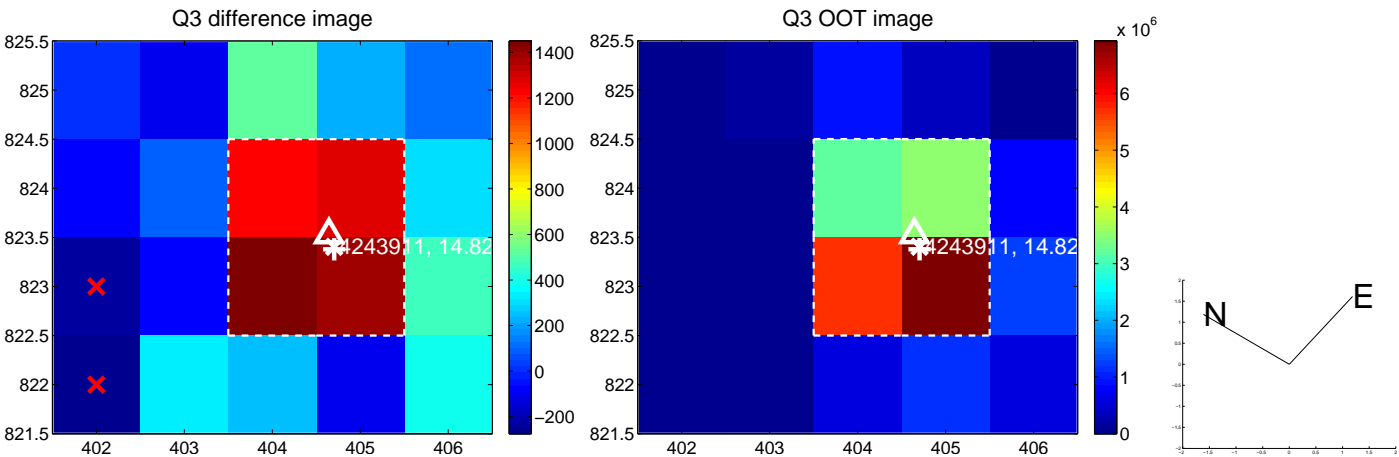
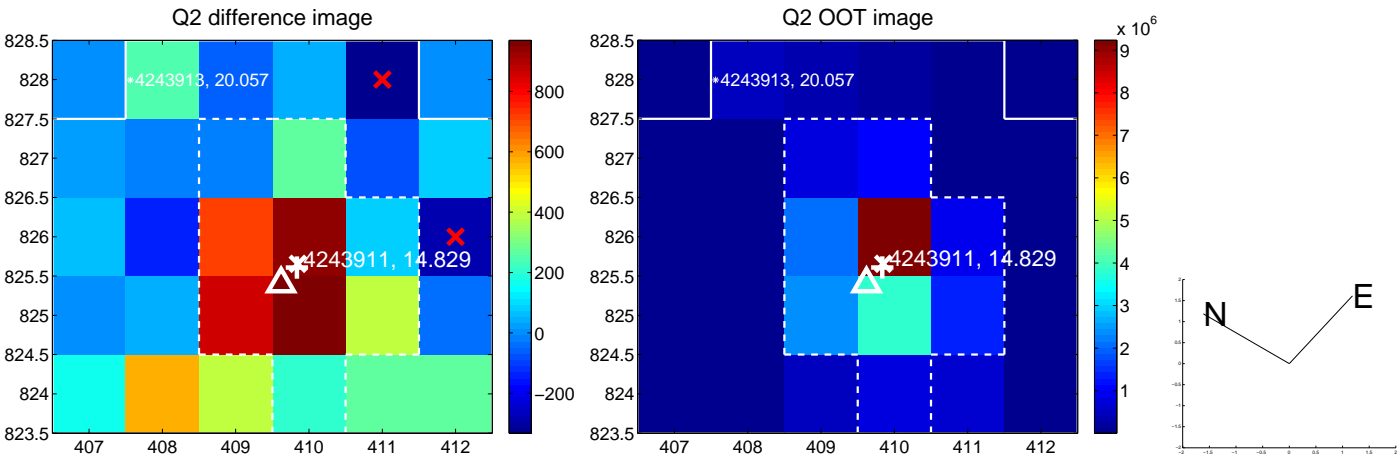
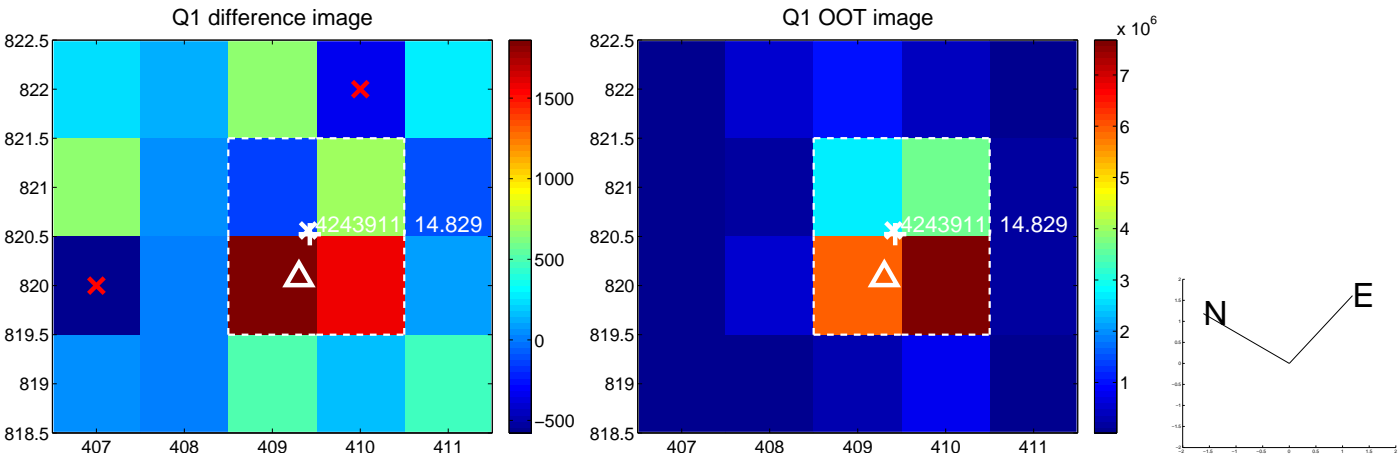
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.054 ± 0.142	0.38	0.022 ± 0.167	0.050 ± 0.127
PRF-fit source offset from KIC position	0.123 ± 0.155	0.79	-0.092 ± 0.163	-0.081 ± 0.135
photometric centroid source offset	0.68 ± 0.44	1.54	-0.17 ± 0.44	-0.65 ± 0.44

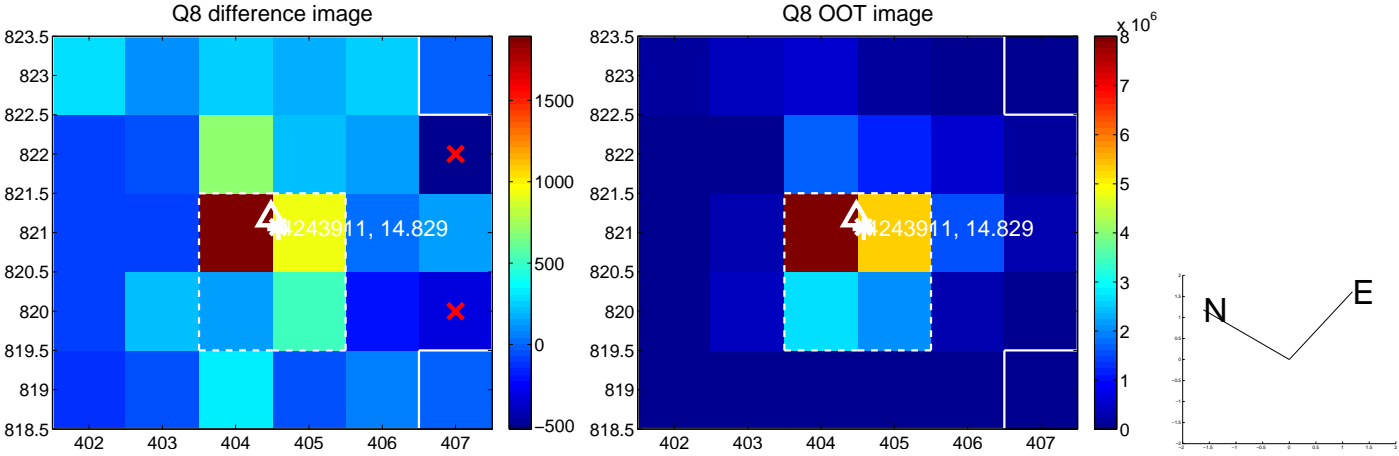
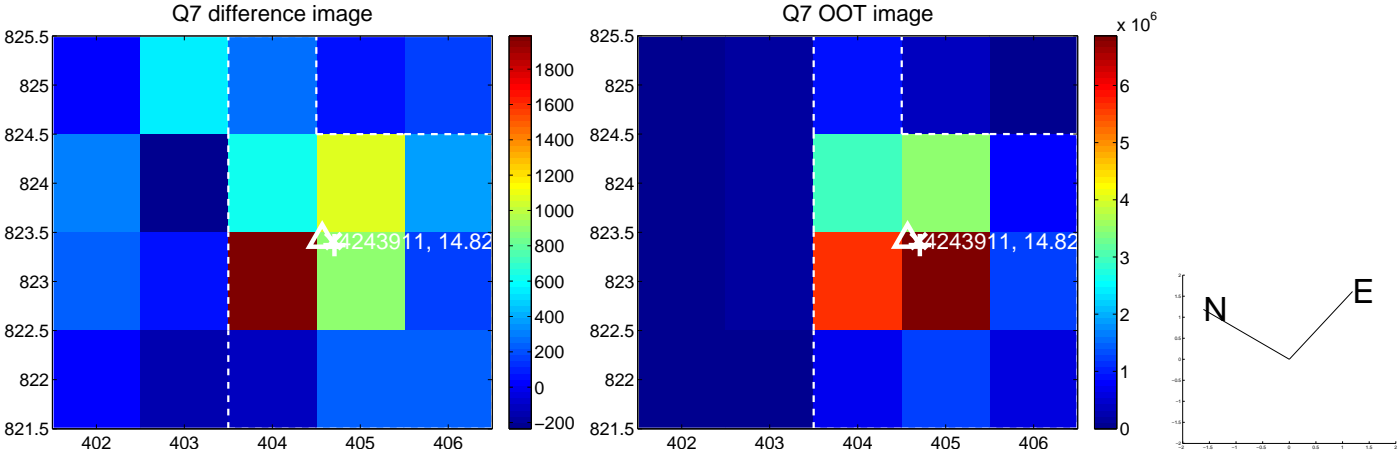
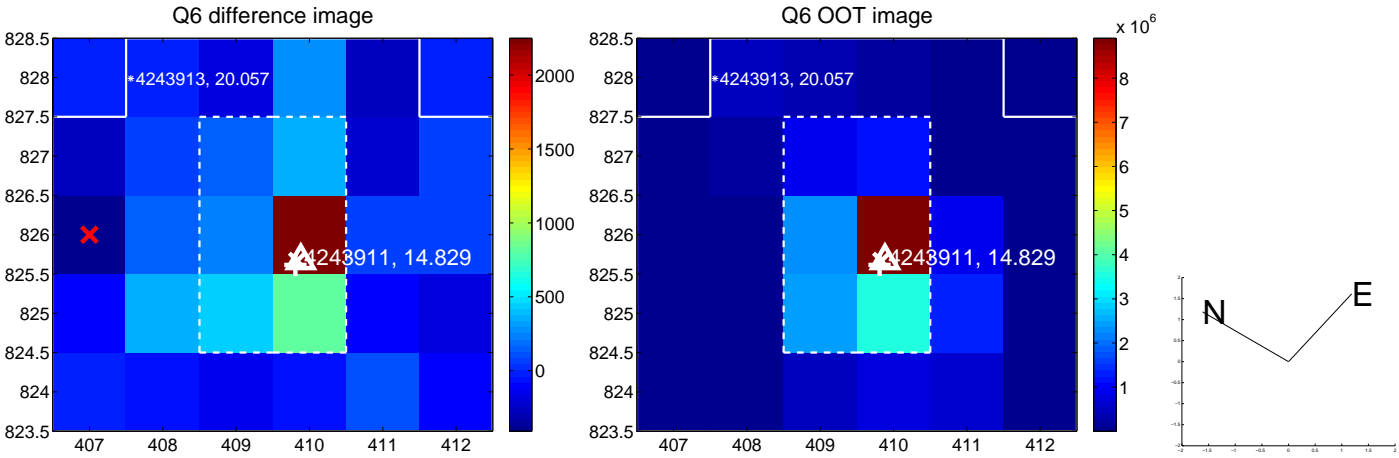
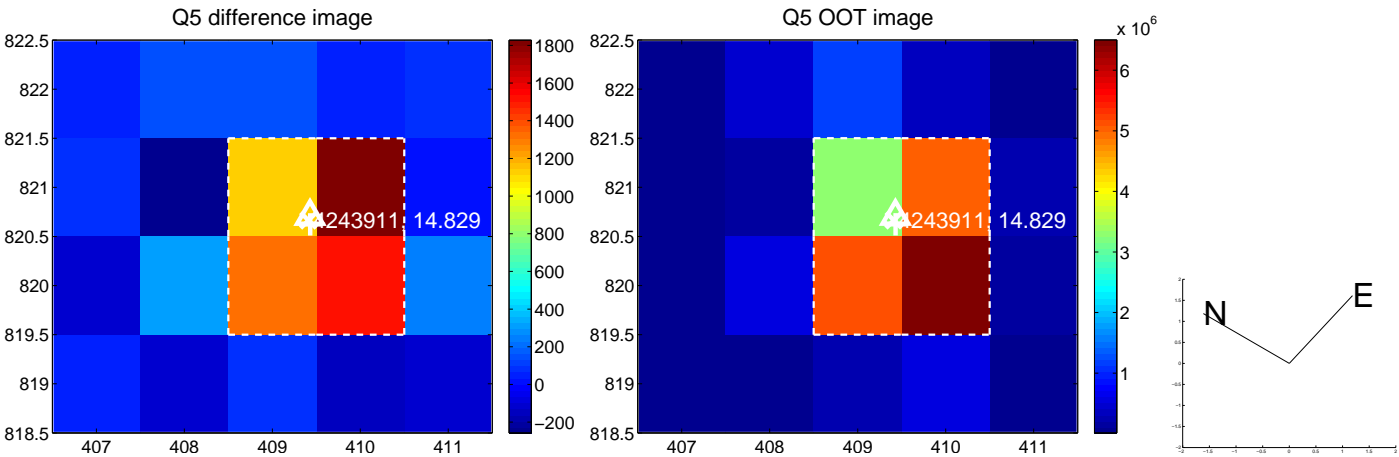


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

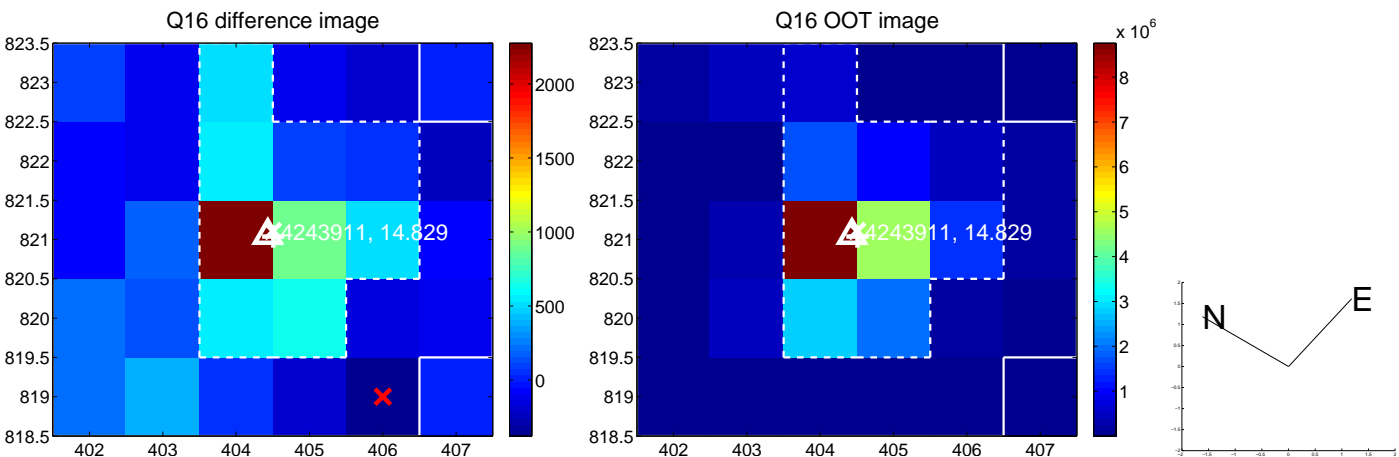
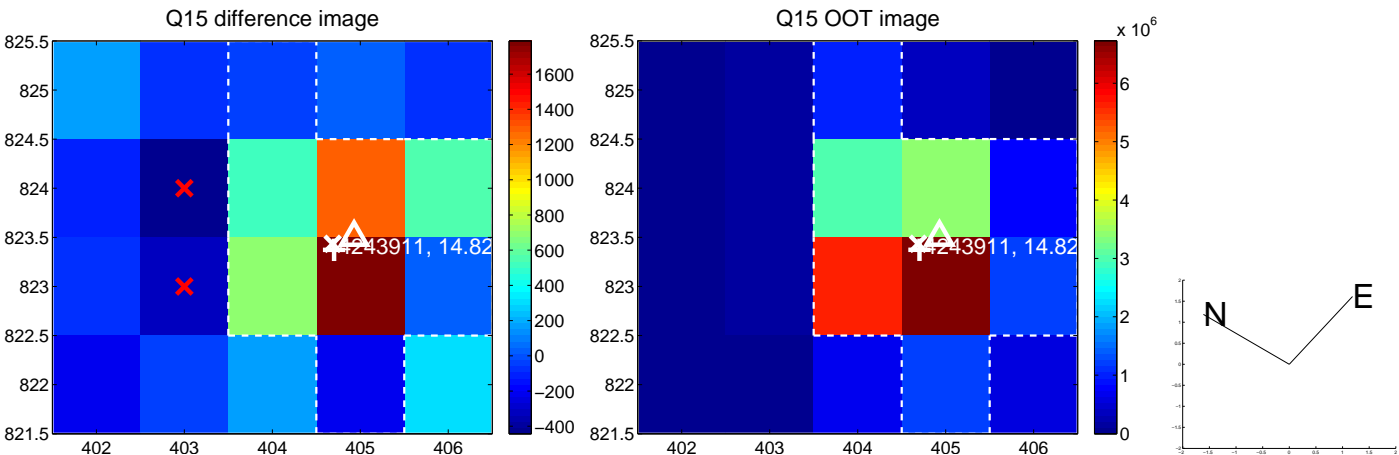
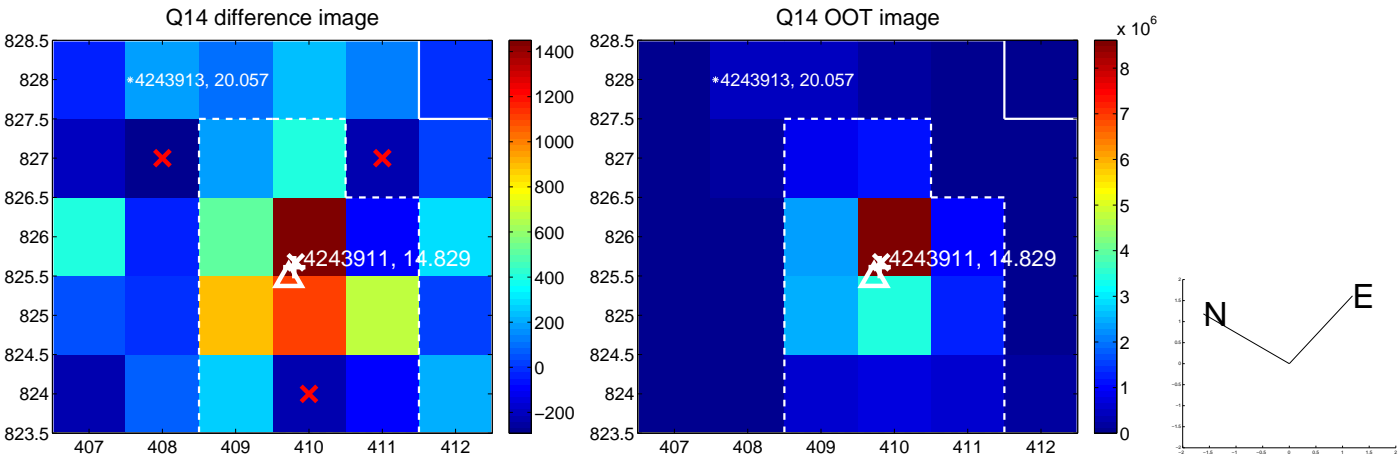
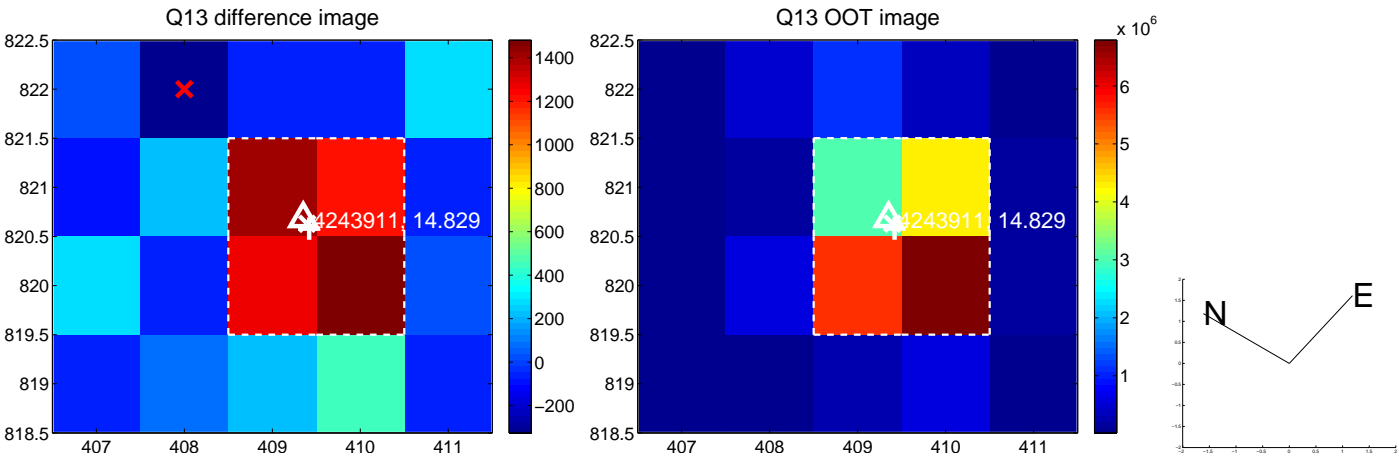
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



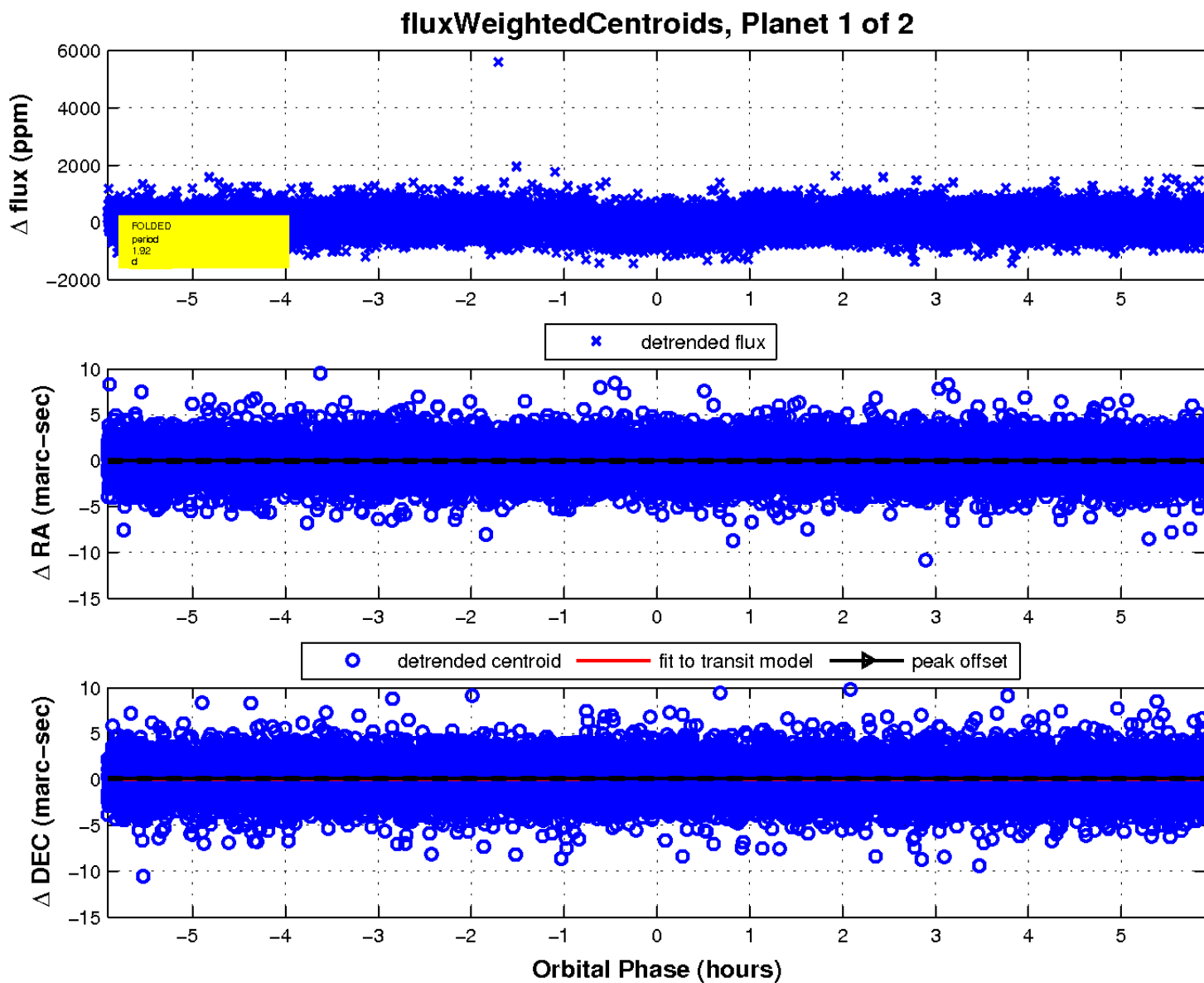
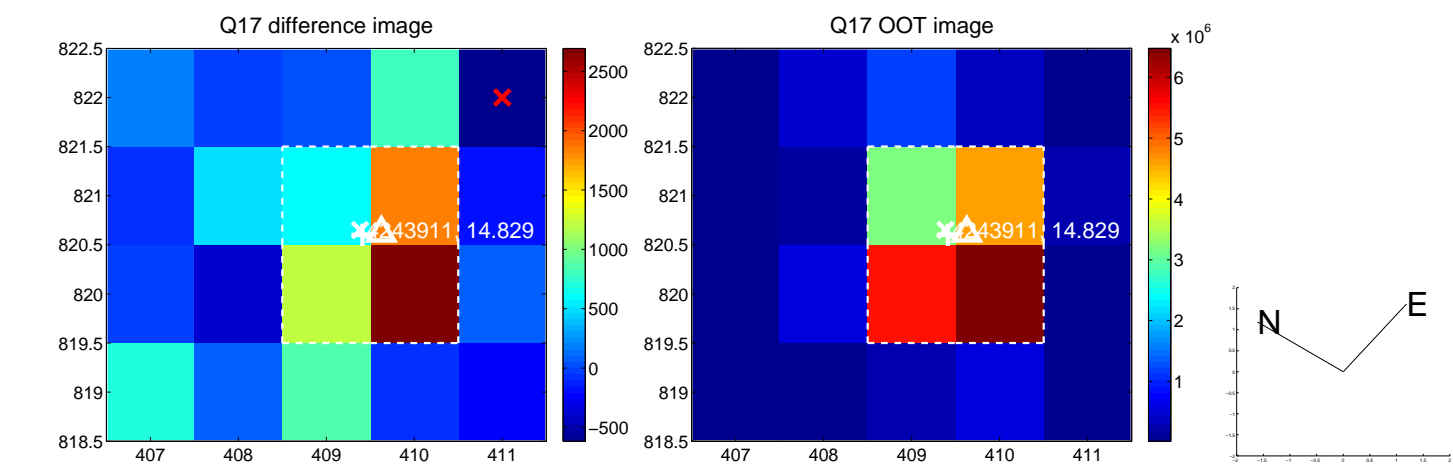
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

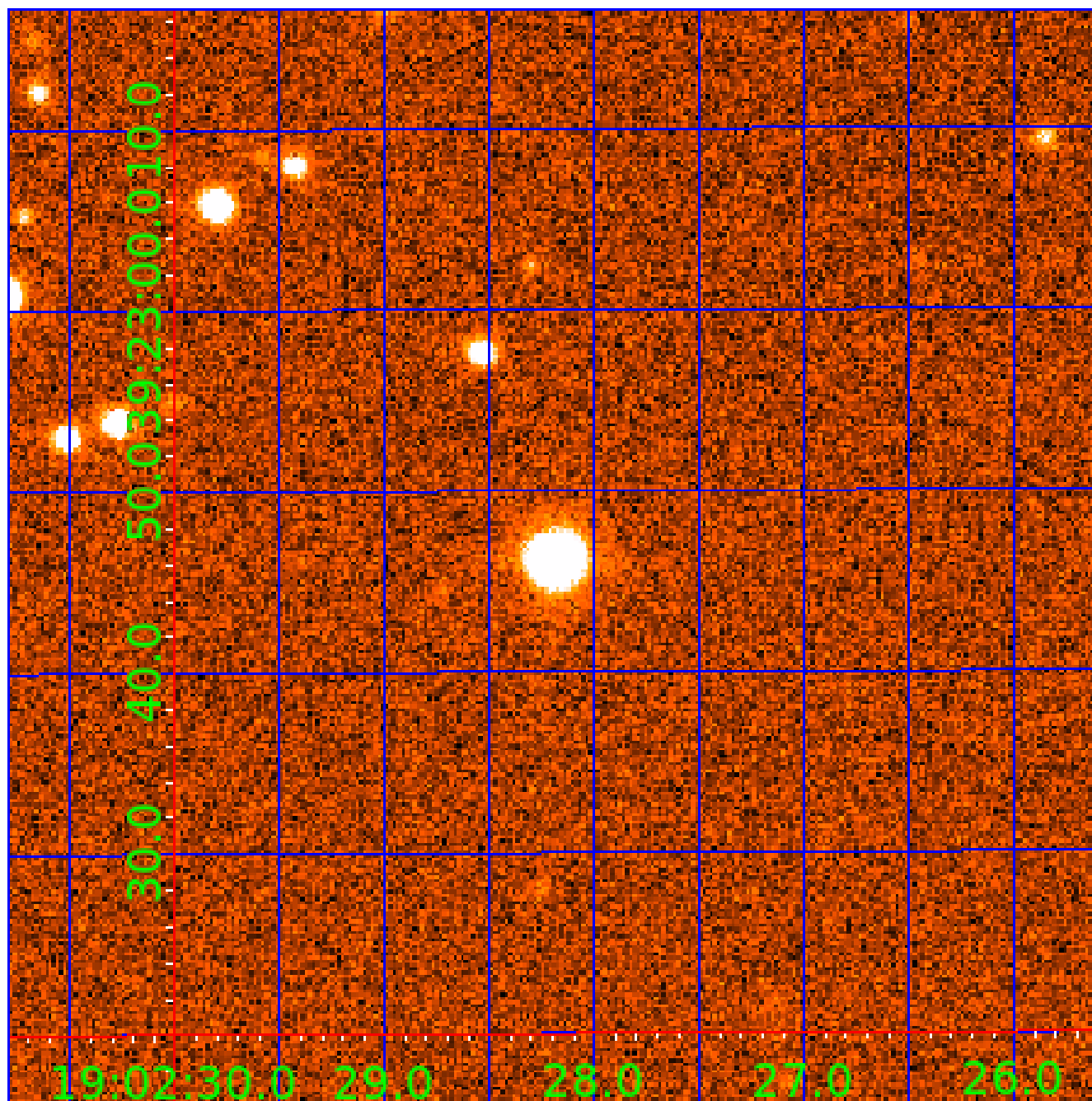


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004243911

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})
004243911-01	OBS	1337.01	1.922810	132.576423	257.6	1.972	25.0	29.1	0.81	5194	1.58	515.73
004243911-02	OBS	No	422.719751	439.995117	721.4	11.556	8.0	7.5	0.81	5194	2.29	0.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004243911-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
004243911-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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.

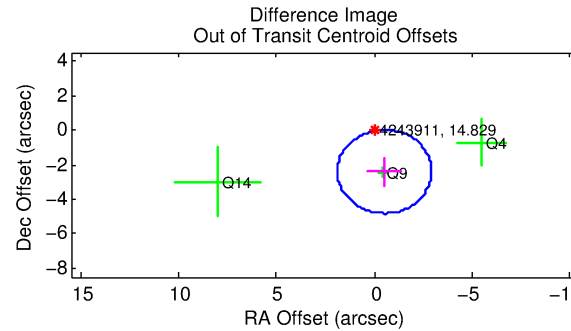
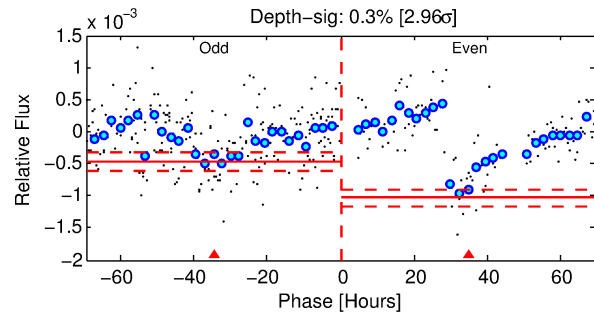
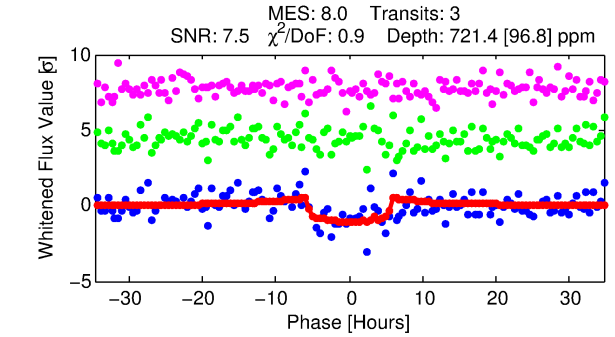
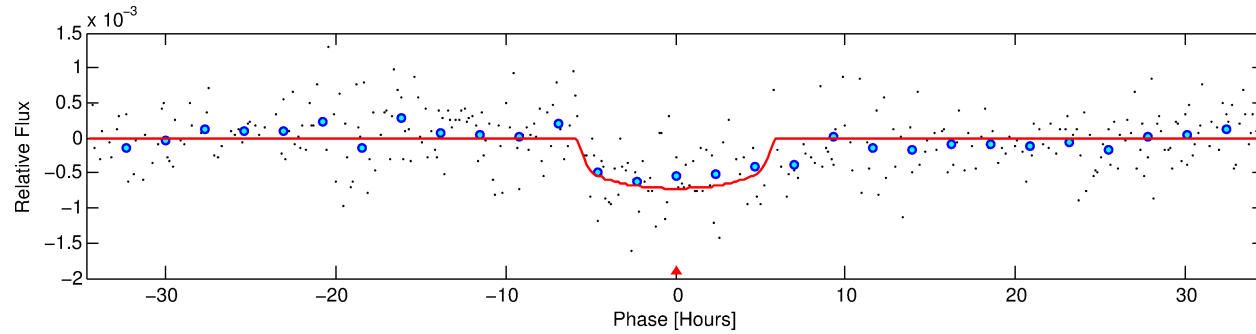
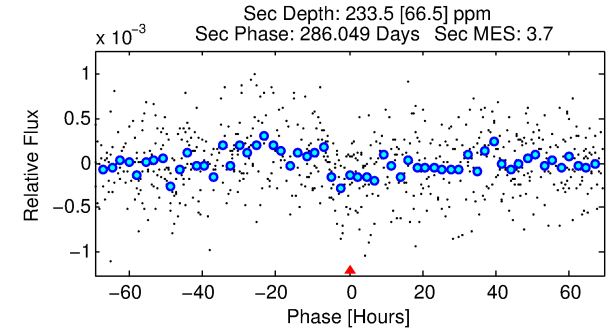
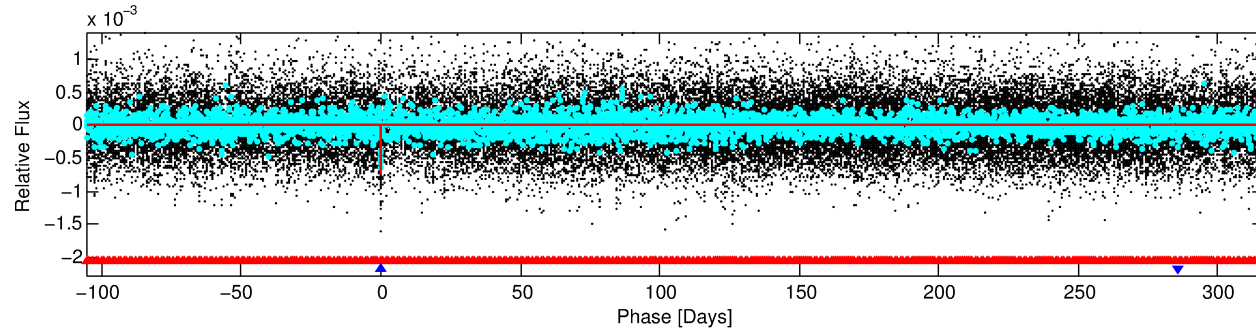
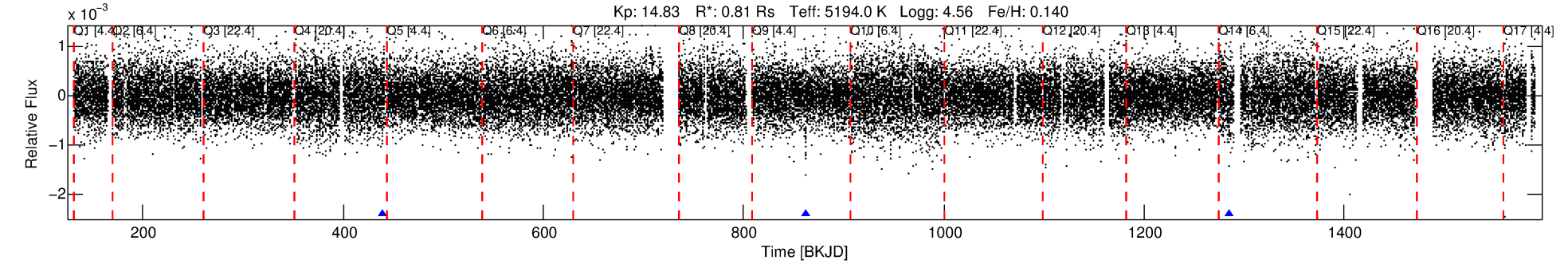
Ephemeris Match Information For 004243911-02

No Significant Match Found

DV One-Page Summary

KIC: 4243911 Candidate: 2 of 2 Period: 422.720 d
KOI: K01337 Corr: No Ephemeris Match

Kp: 14.83 R*: 0.81 Rs Teff: 5194.0 K Logg: 4.56 Fe/H: 0.140



DV Fit Results:

Period = 422.71975 [0.01569] d
Epoch = 439.9951 [0.0206] BKJD
Rp/R* = 0.0257 [0.0136]
a/R* = 224.39 [420.49]
b = 0.64 [1.77]
Seff = 0.39 [0.05]
Teq = 201 [7] K
Rp = 2.29 [1.22] Re
a = 1.0556 [0.0822] AU
Ag = 27389.24 [30152.84] [0.91σ]
Teffp = 4005 [1097] K [3.47σ]

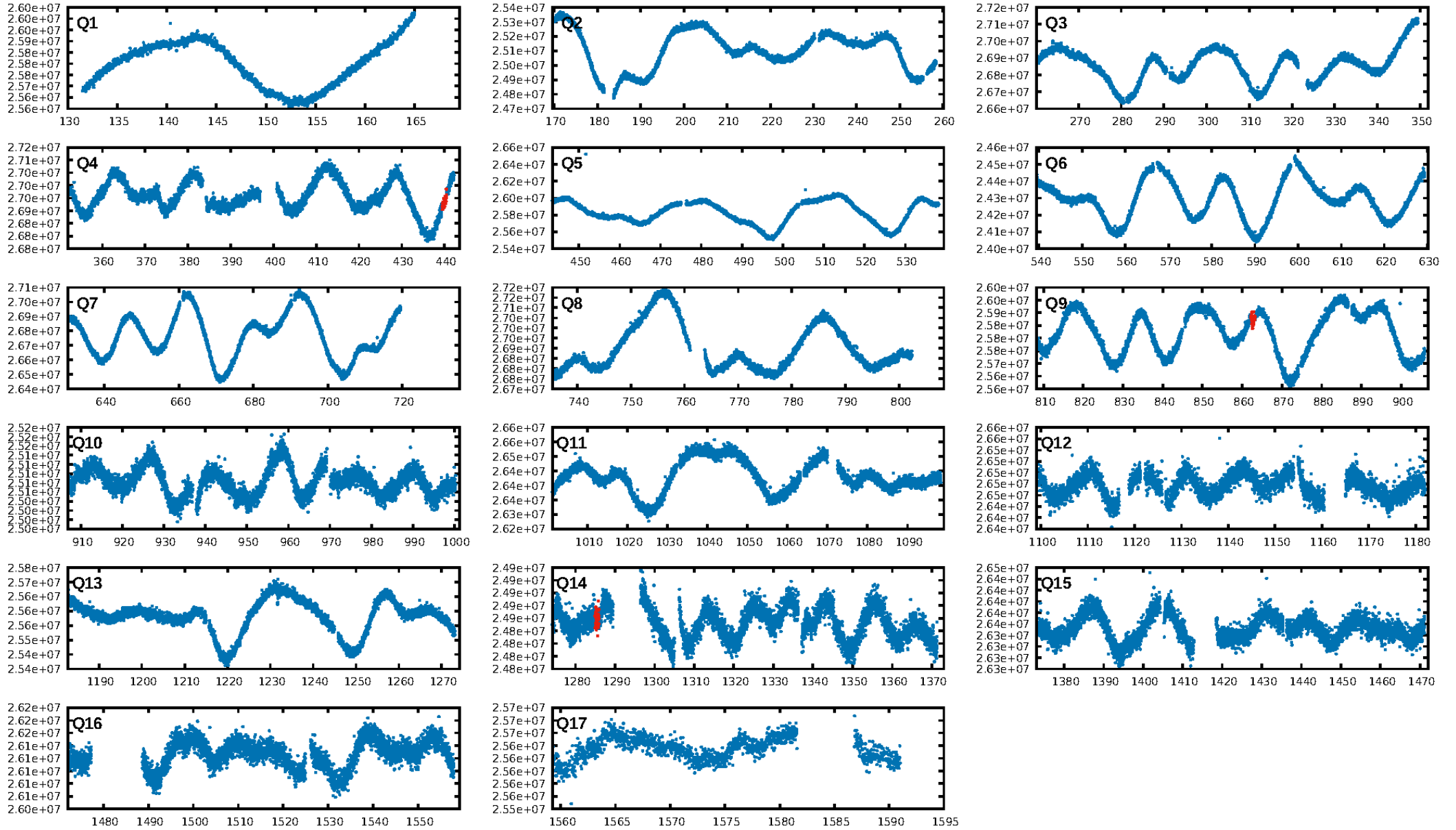
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [861.45σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 17.9%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 1.22e-16
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.4174
Centroid-sig: 0.2%
Centroid-so: 2.463 arcsec [2.38σ]
OotOffset-rm: 2.460 arcsec [3.06σ]
KicOffset-rm: 2.660 arcsec [3.31σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.00 [0/3]

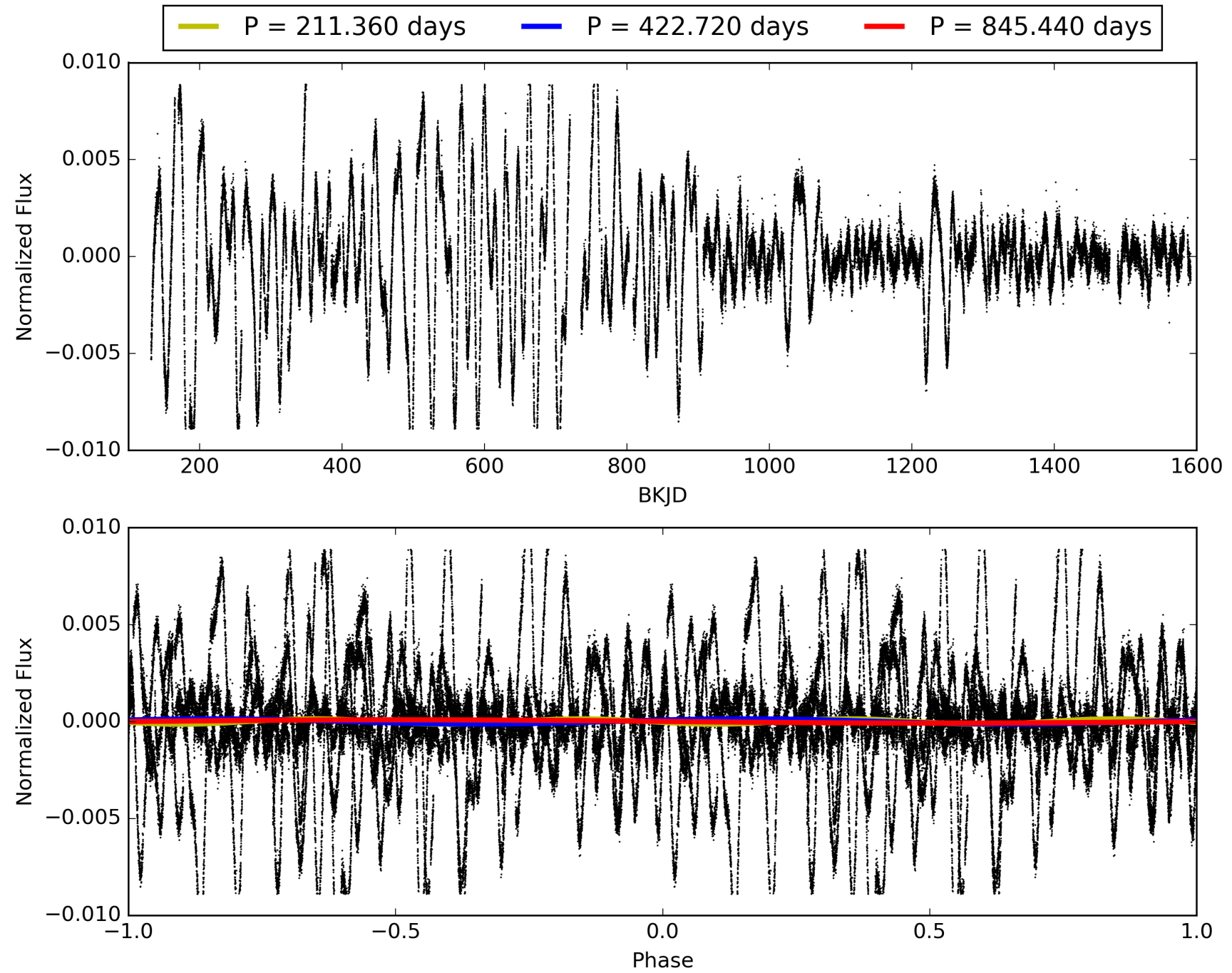
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 08:54:23 Z

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

TCE 004243911-02, PDC Light Curves

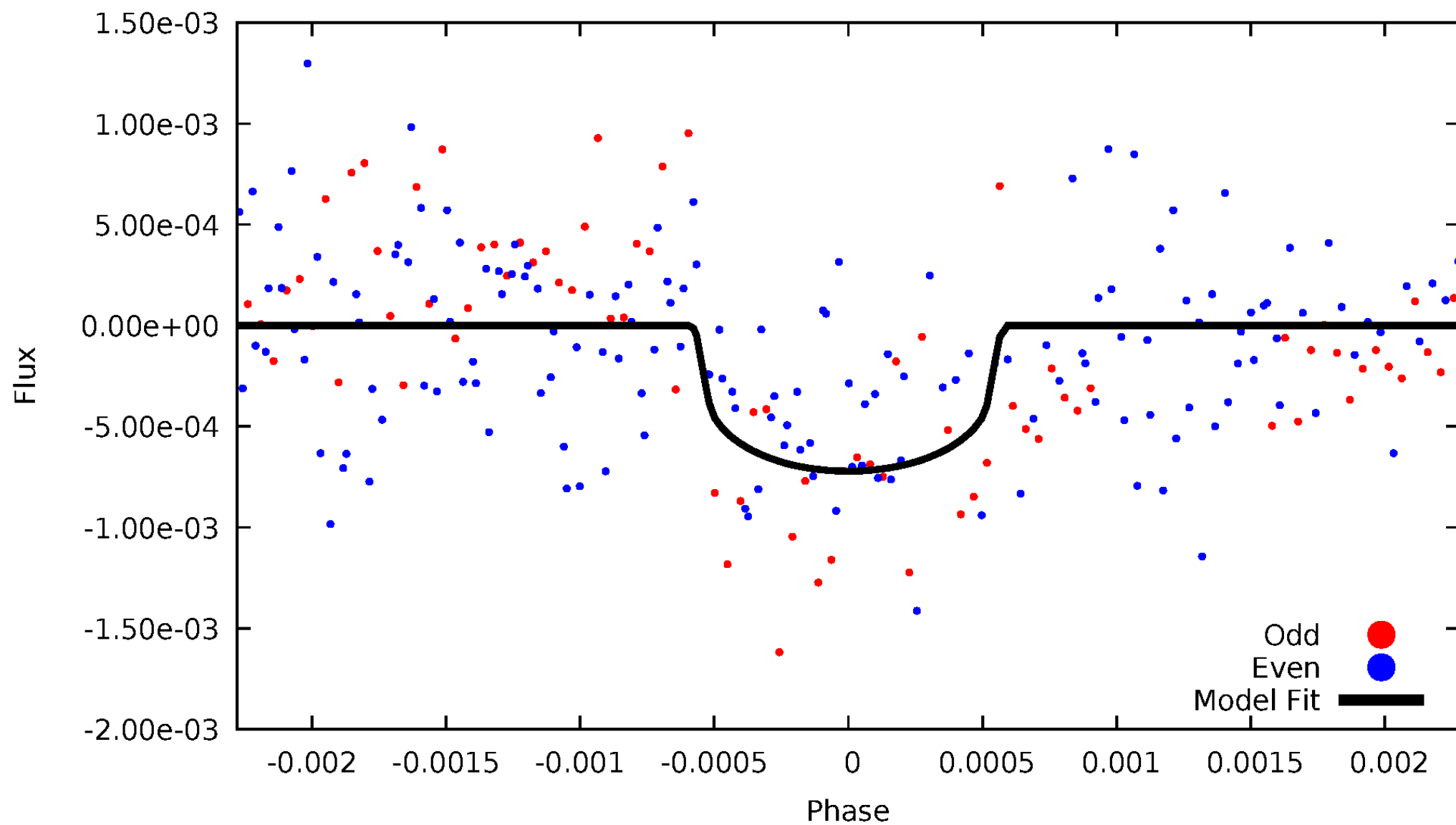


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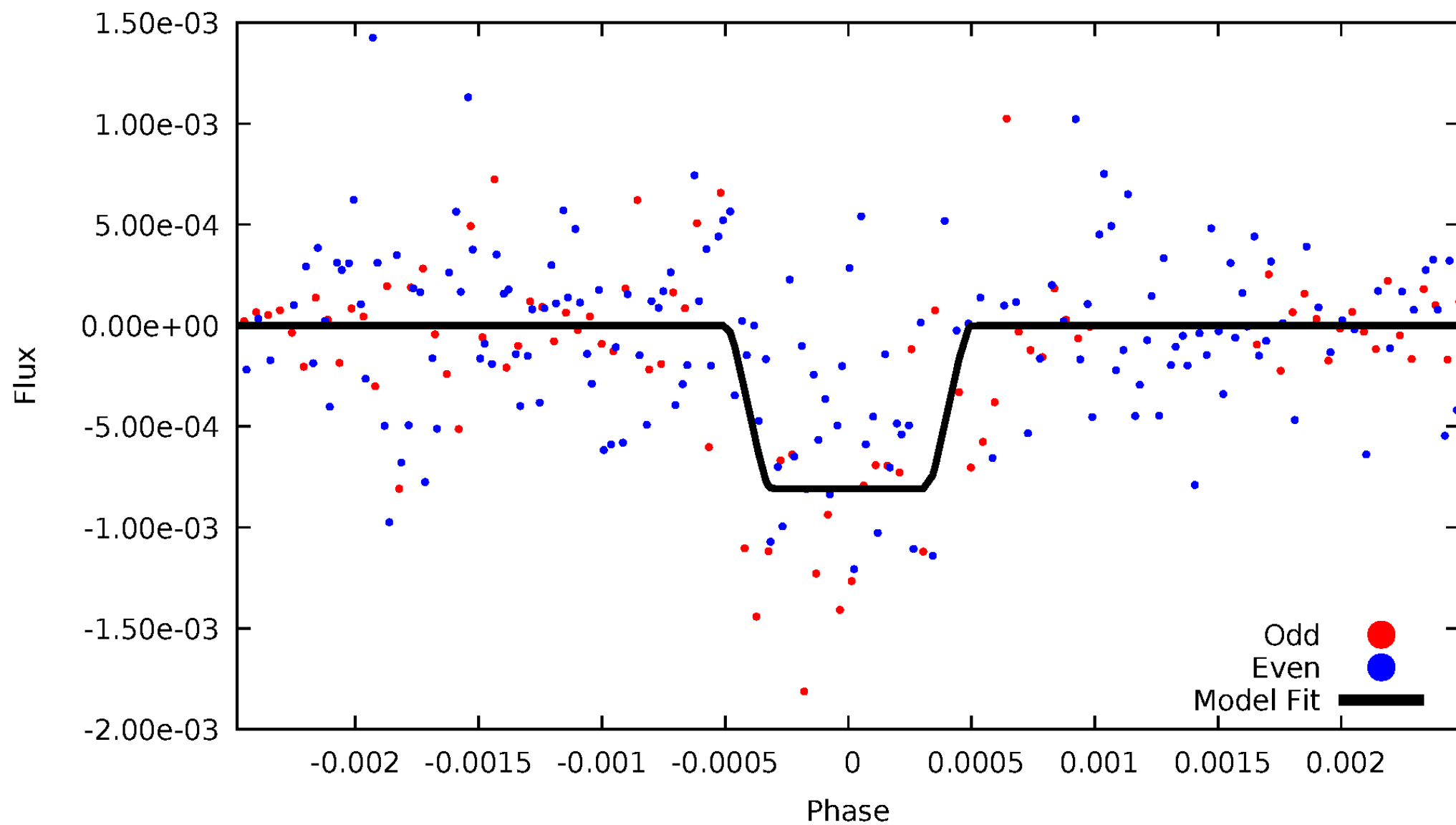
DV Odd/Even

TCE 004243911-02



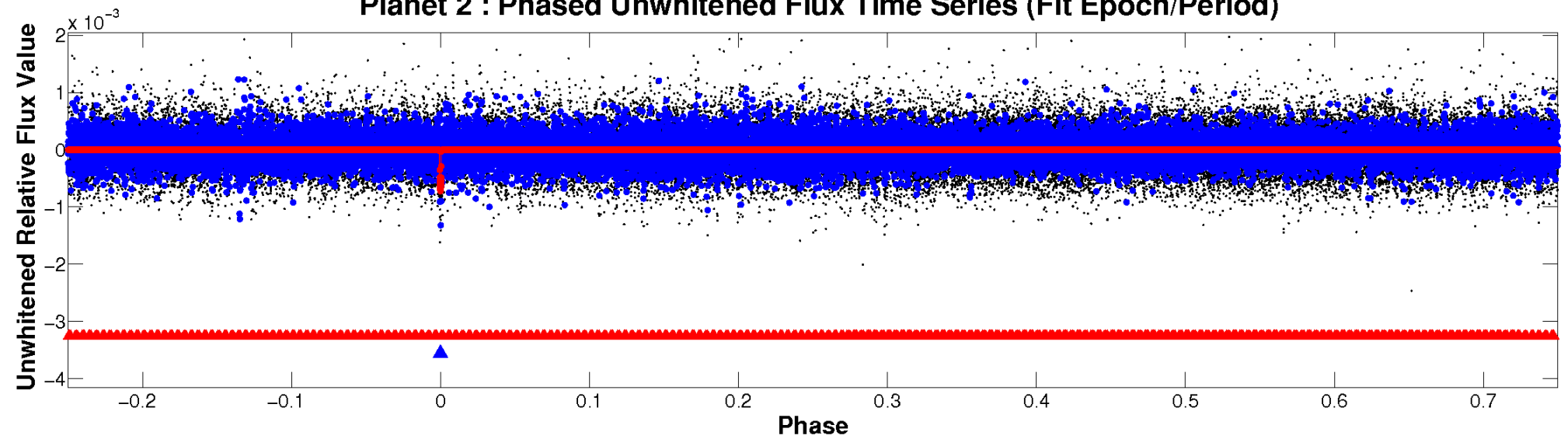
ALT Odd/Even

TCE 004243911-02

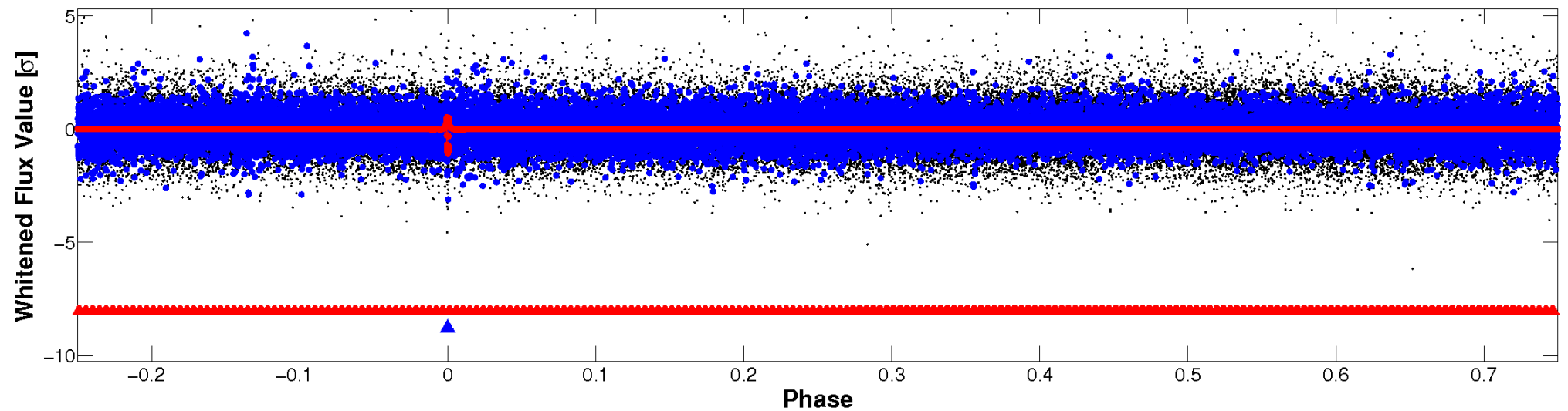


Non-Whitened Vs. Whitened Light Curve

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

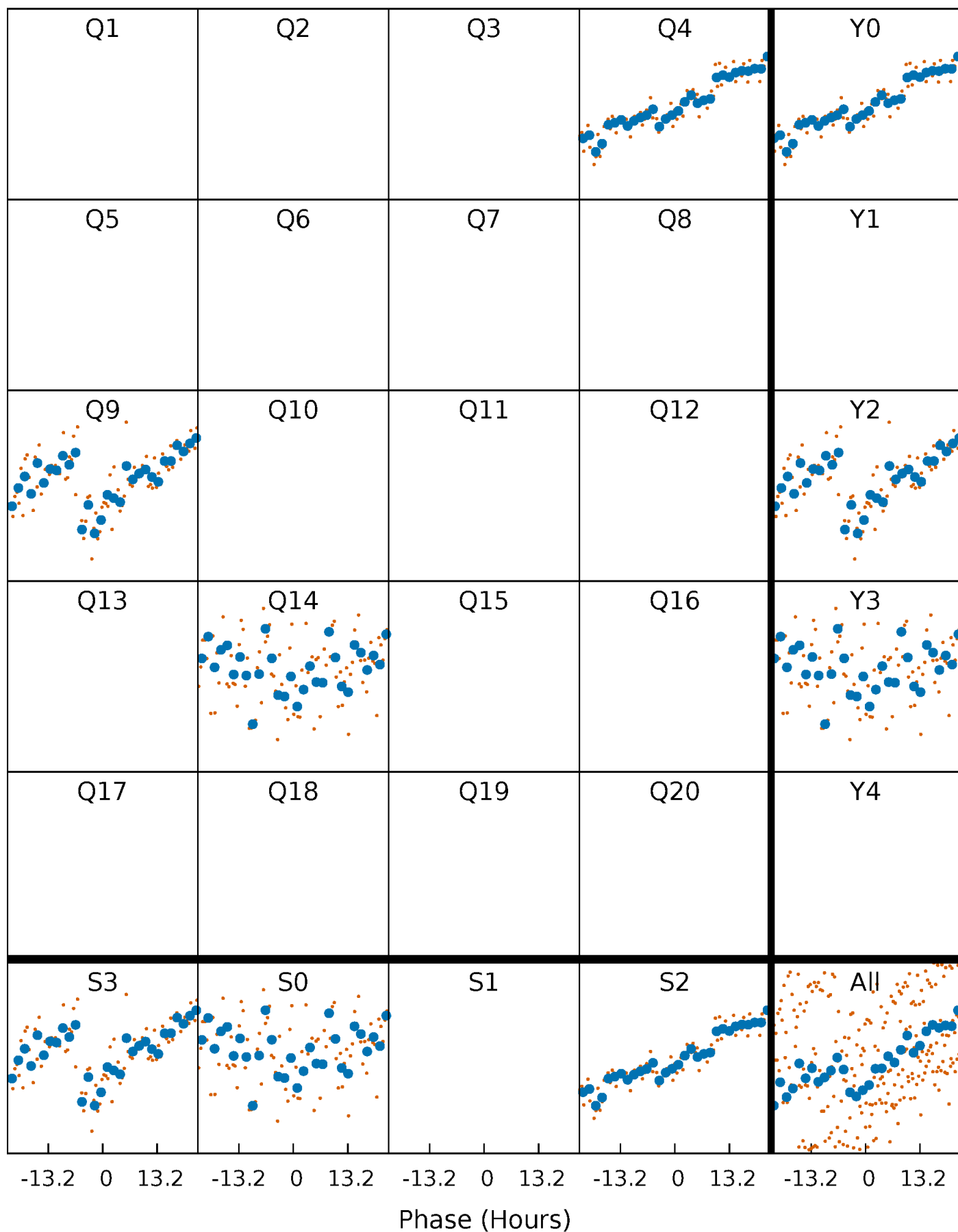


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



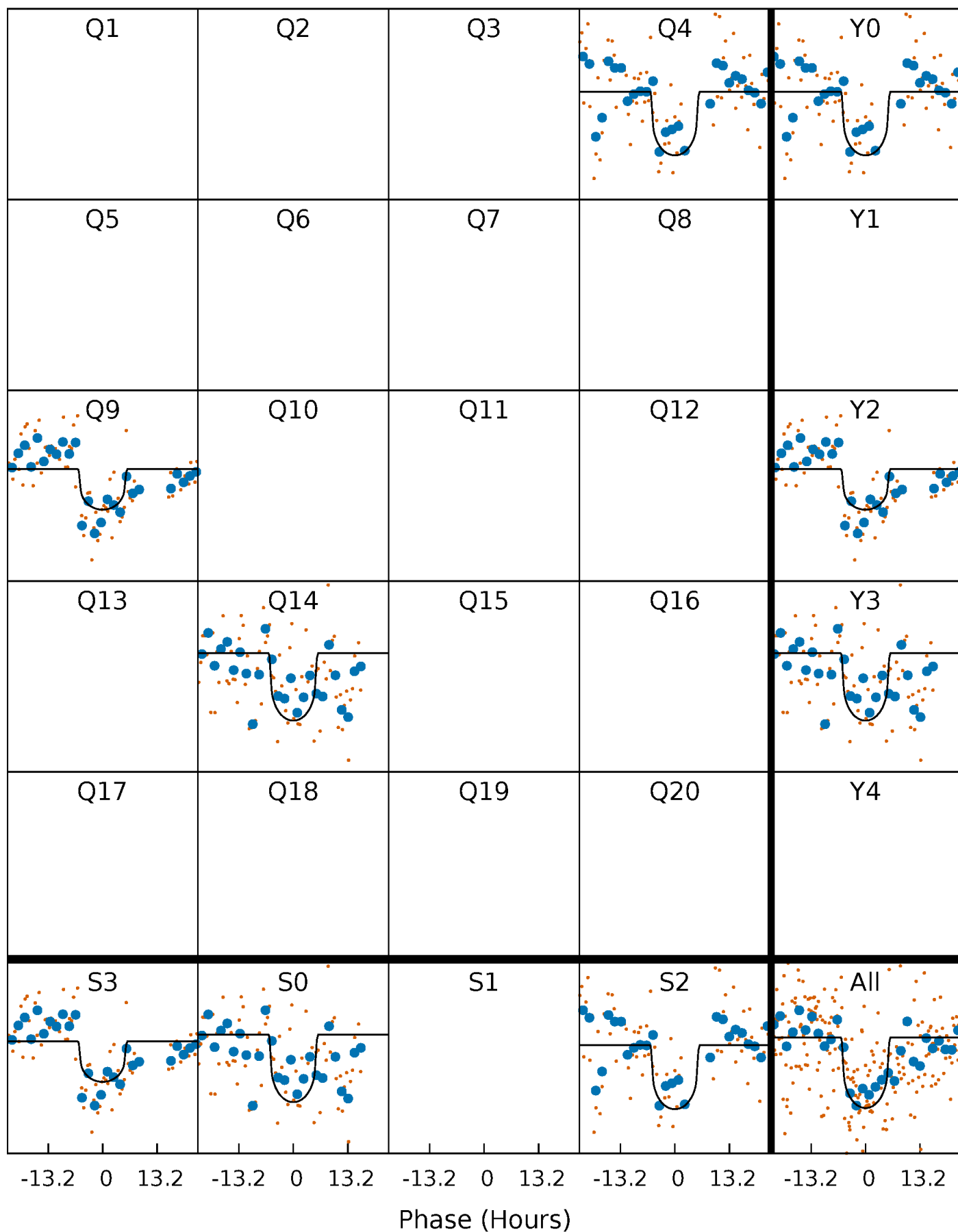
PDC Quarter-Phased Transit Curves

TCE 004243911-02 P=422.719751 Days $T_0=439.995117$ (BKJD)



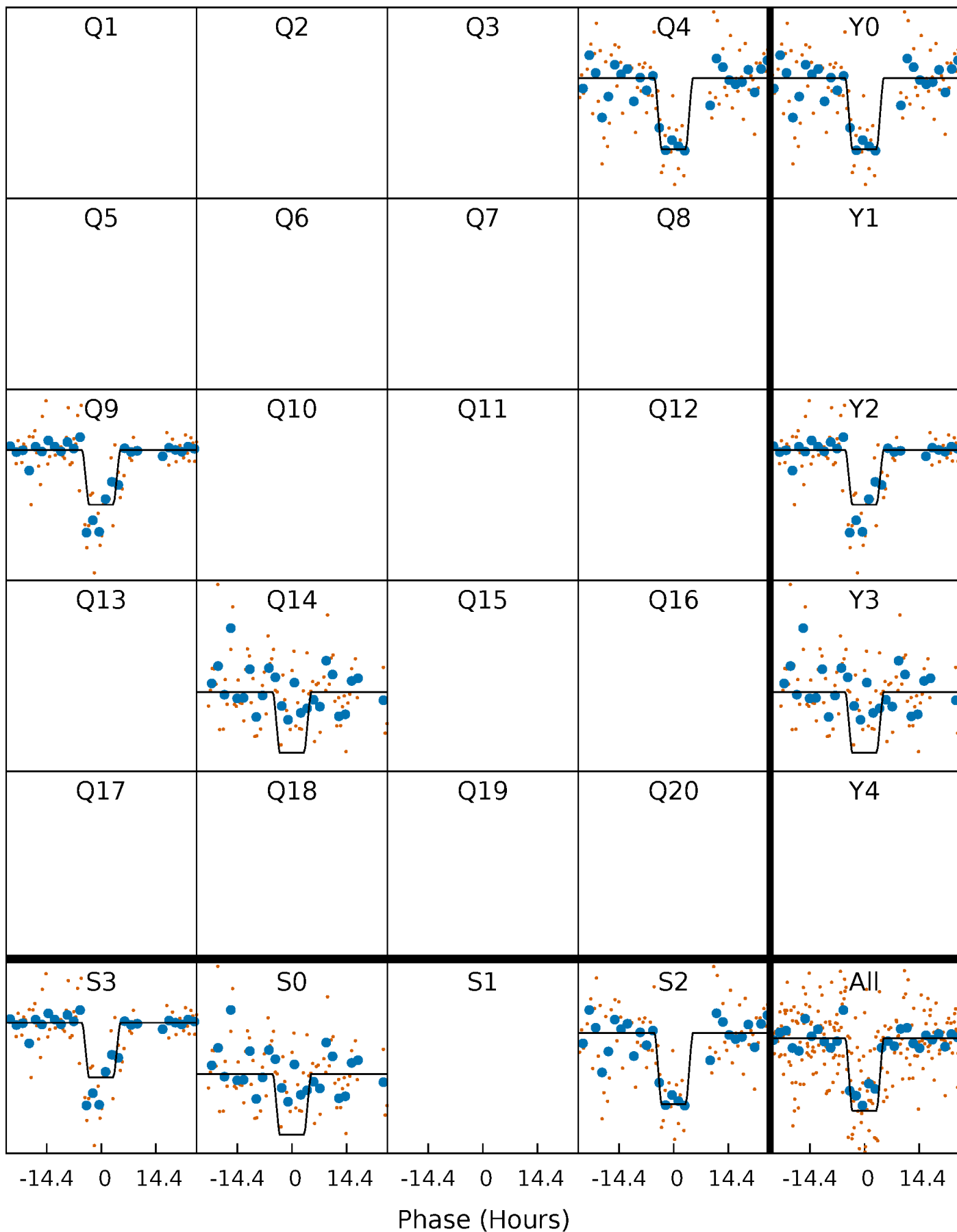
DV Quarter-Phased Transit Curves

TCE 004243911-02 P=422.719751 Days $T_0=439.995117$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

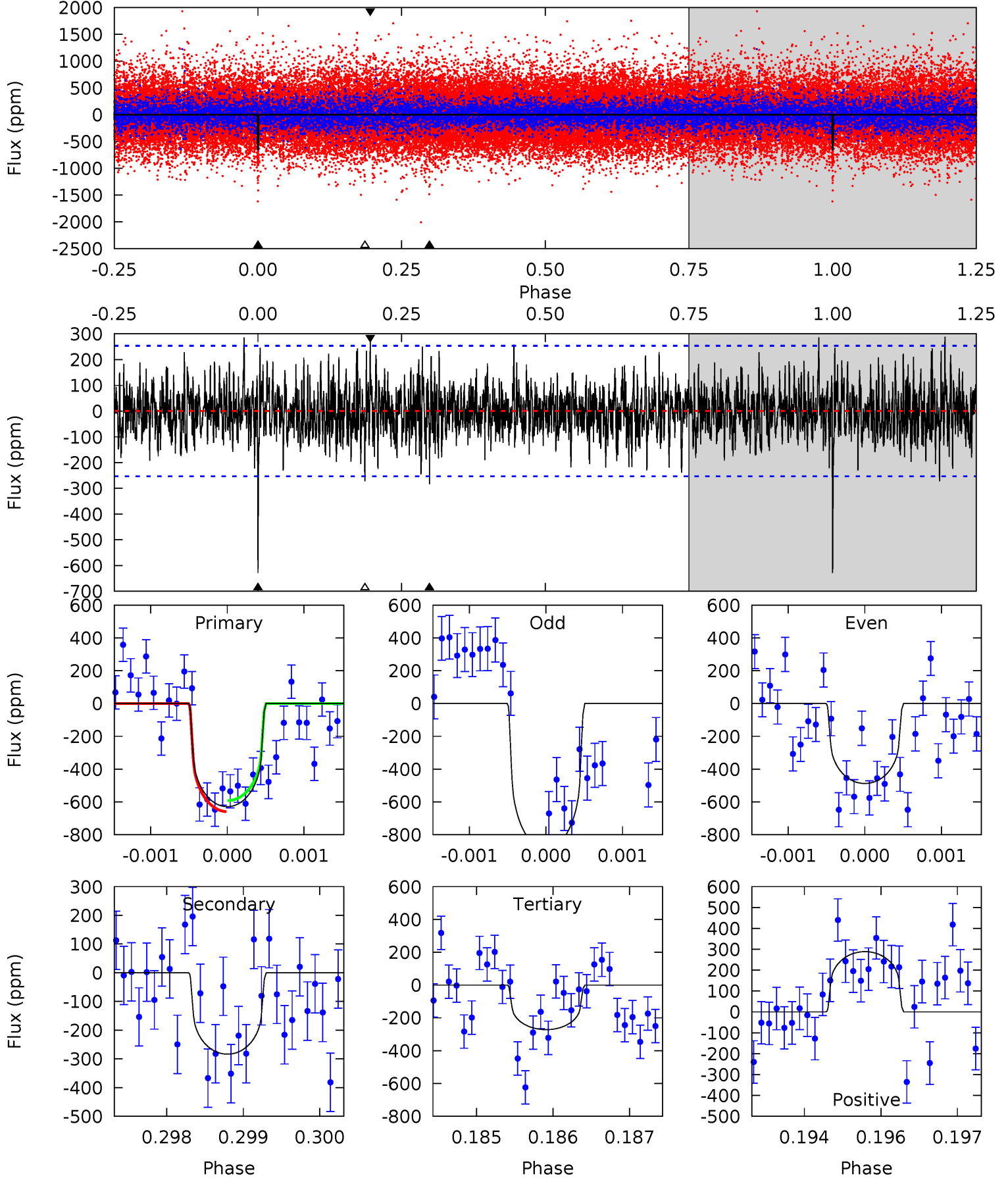
TCE 004243911-02 P=422.715867 Days $T_0=439.966138$ (BKJD)



DV Model-Shift Uniqueness Test

004243911-02, P = 422.719751 Days, E = 17.275366 Days

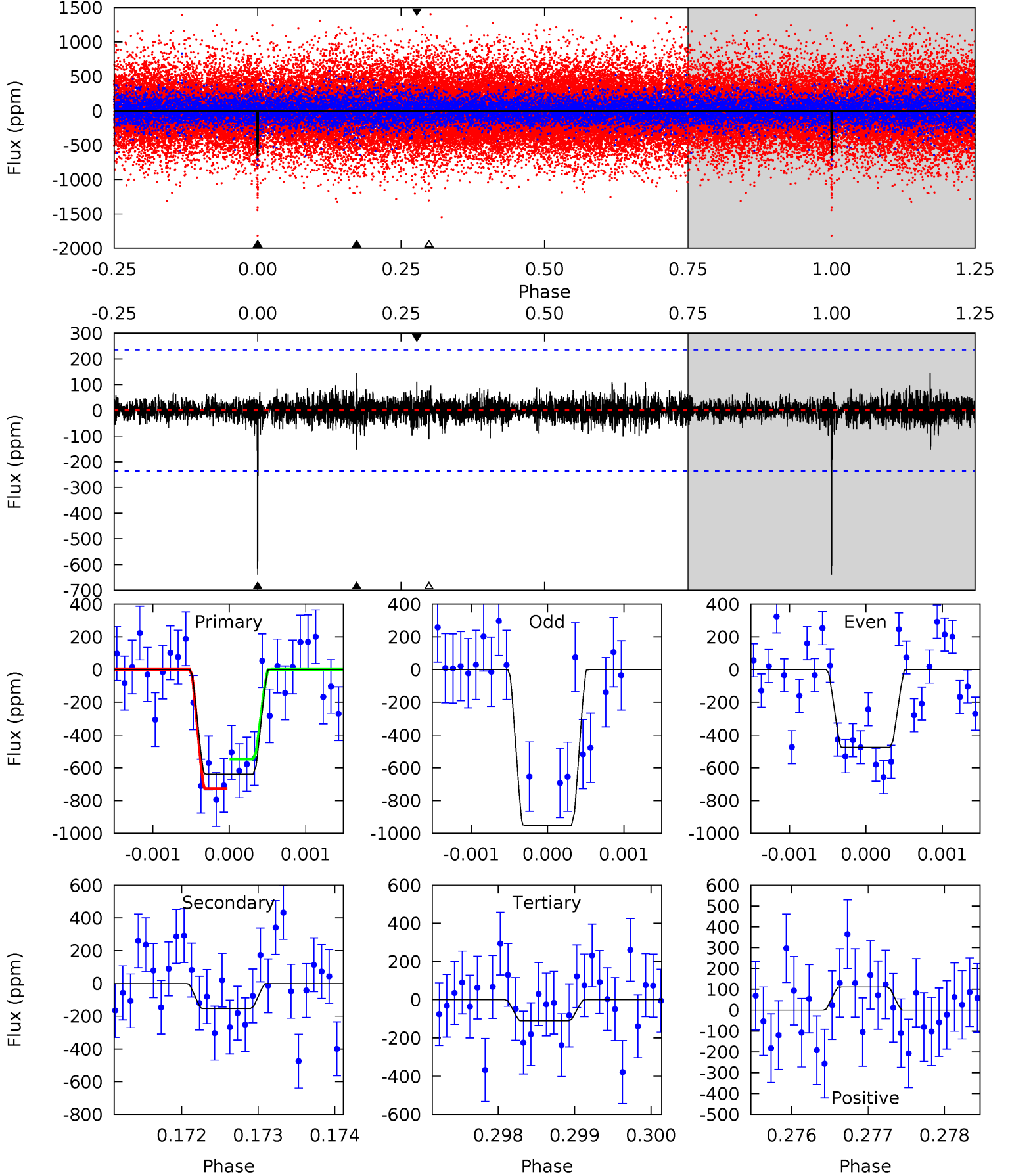
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.4	6.06	5.81	6.17	5.42	3.25	1.60	7.63	7.27	0.25	-0.11	4.10	1.24	0.31	0.71



Alt Model-Shift Uniqueness Test

004243911-02, $P = 422.715867$ Days, $E = 17.250271$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.8	3.56	2.55	2.57	5.46	3.30	0.61	12.3	12.2	1.01	0.99	5.22	0.83	0.18	2.10



Stellar Parameters For KIC 004243911

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5194^{+72}_{-83}	$4.559^{+0.022}_{-0.072}$	$0.140^{+0.150}_{-0.150}$	$0.815^{+0.067}_{-0.033}$	$0.879^{+0.035}_{-0.053}$	$2.282^{+0.233}_{-0.492}$
	+1%/-2%	+0%/-2%	+107%/-107%	+8%/-4%	+4%/-6%	+10%/-22%
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 004243911-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-284 ± 47	$2.40^{+1.09}_{-1.11}$	283^{+7}_{-6}	4318^{+1322}_{-567}	30620^{+76622}_{-16930}
Alt.	-154 ± 43	$2.54^{+1.25}_{-1.09}$	284^{+7}_{-6}	3770^{+930}_{-479}	14186^{+32208}_{-8201}

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

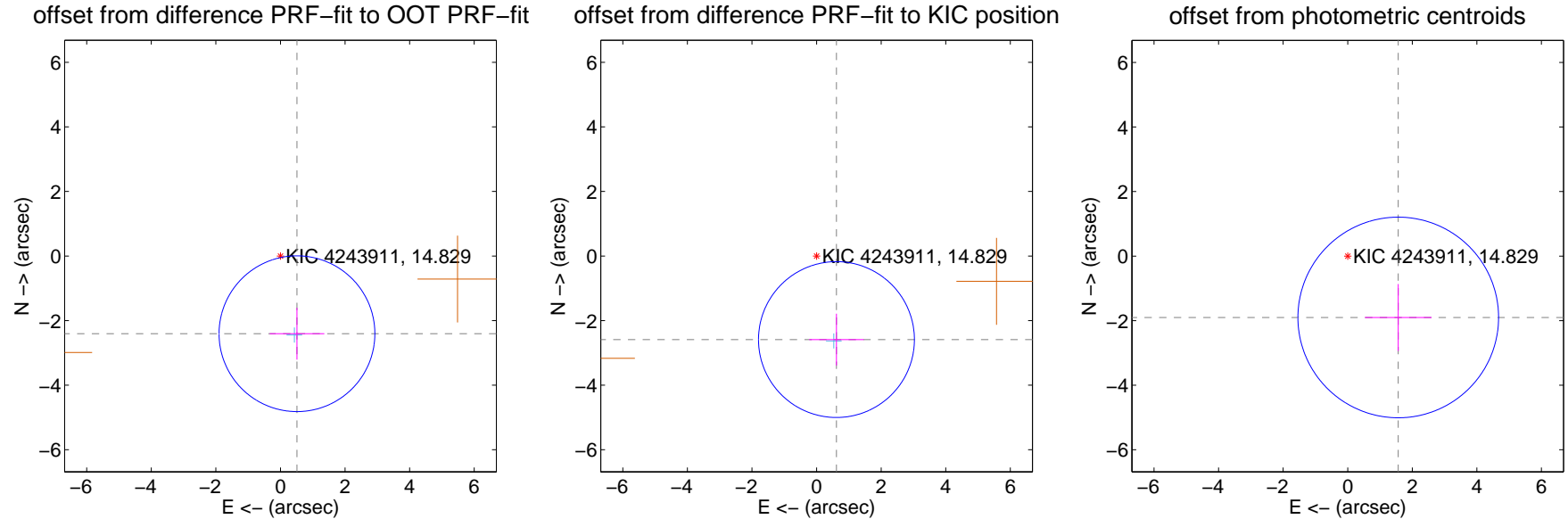
DV Centroid Data

Supplemental centroid analysis for 004243911-02. Kepler magnitude: 14.83. Transit SNR 7.49

There are 1 quarters with good PRF difference image offsets

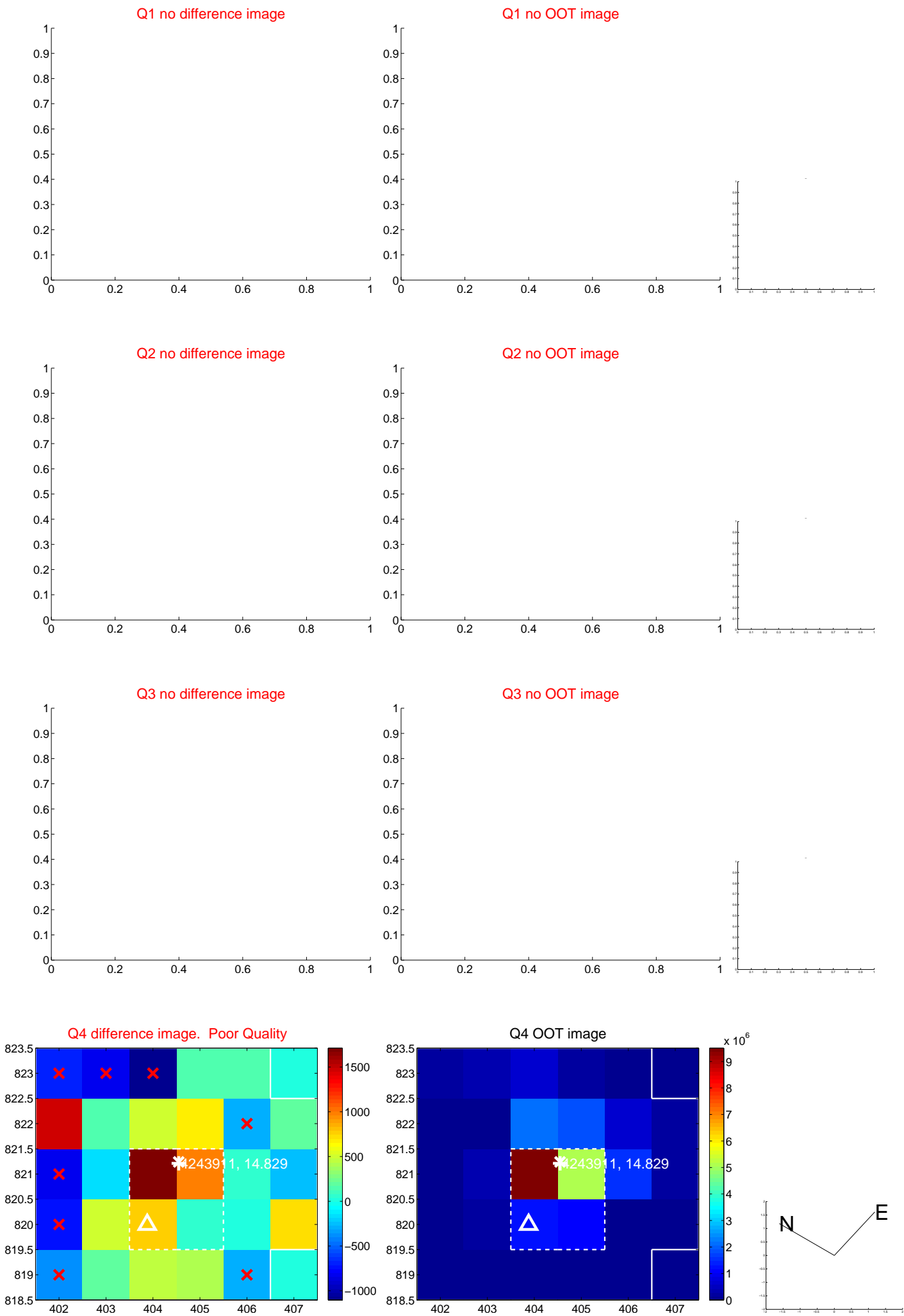
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.460 ± 0.804	3.06	-0.511 ± 0.846	-2.406 ± 0.802
PRF-fit source offset from KIC position	2.660 ± 0.805	3.31	-0.615 ± 0.846	-2.588 ± 0.802
photometric centroid source offset	2.46 ± 1.04	2.38	-1.57 ± 1.03	-1.90 ± 1.04



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.

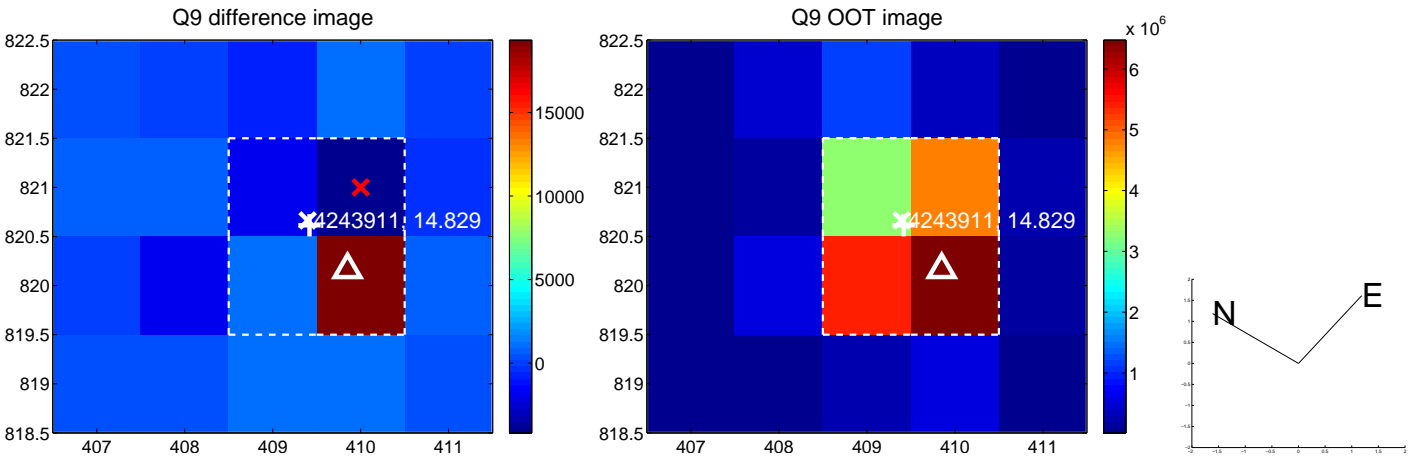
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



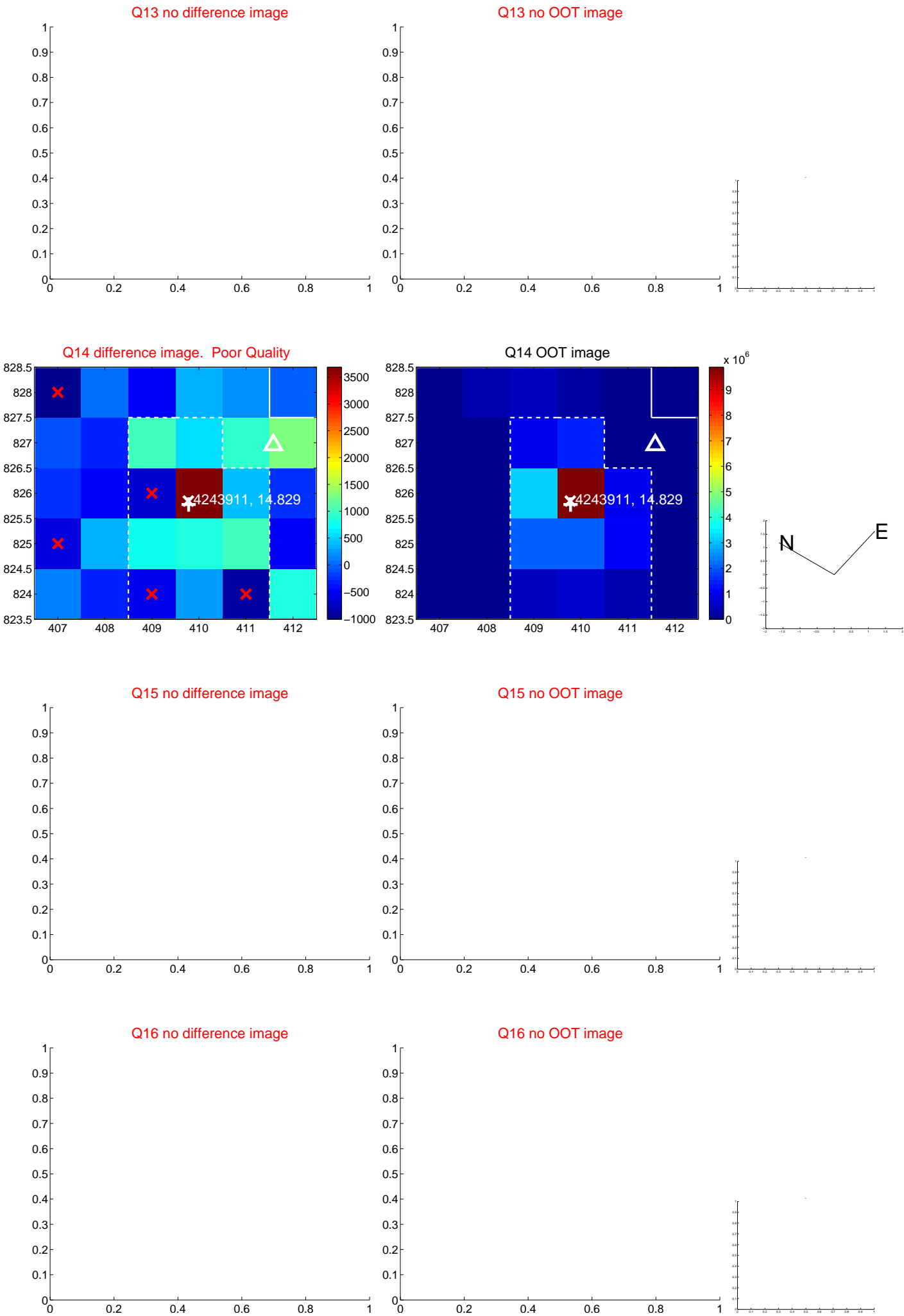
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



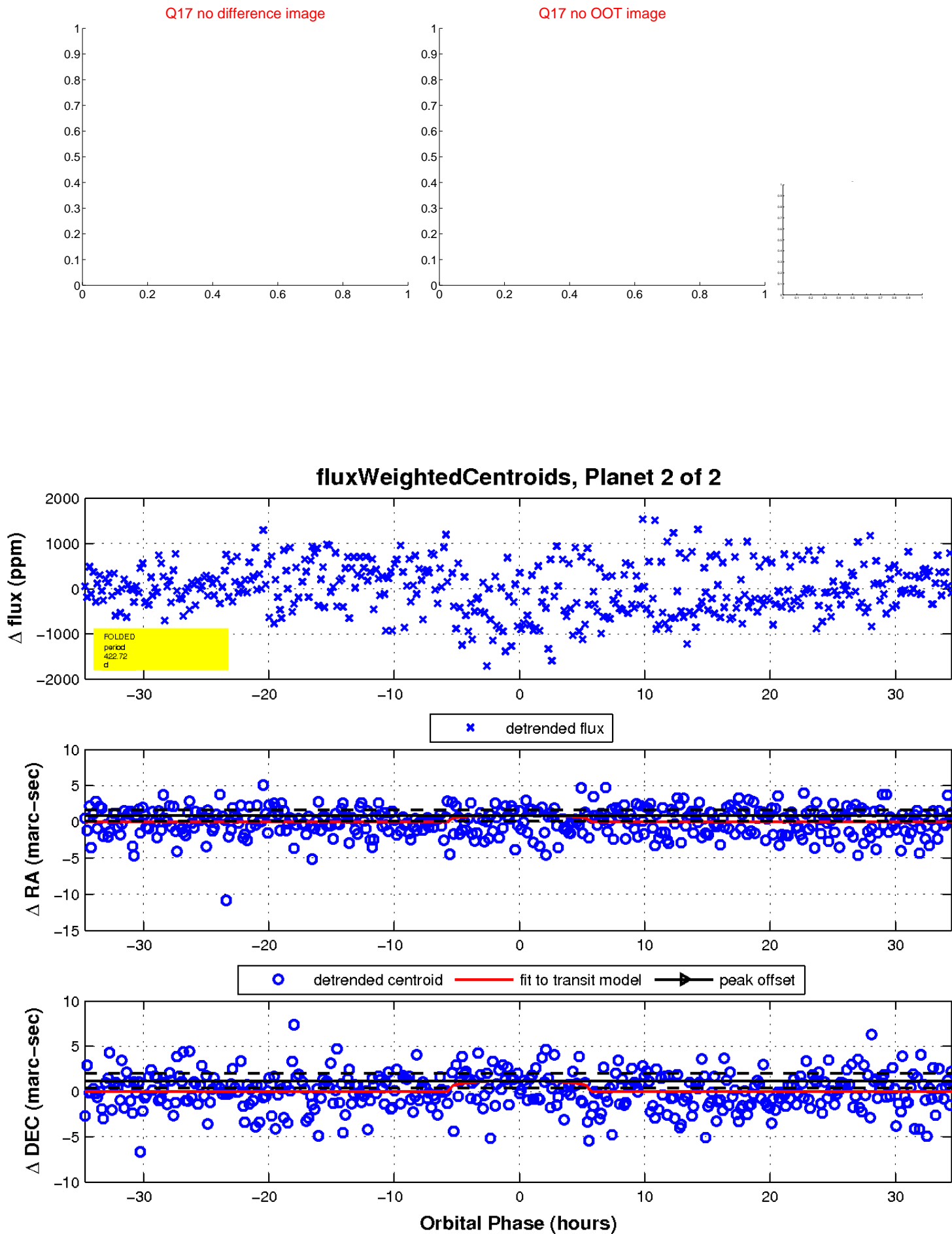
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

