

KIC 006780893

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})
006780893-01	OBS	No	411.893155	458.663464	1973.7	8.524	15.4	7.0	0.93	5462	5.21	0.68
006780893-02	OBS	No	449.988800	526.477825	1804.8	3.433	14.7	9.5	0.93	5462	4.19	0.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006780893-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006780893-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—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.

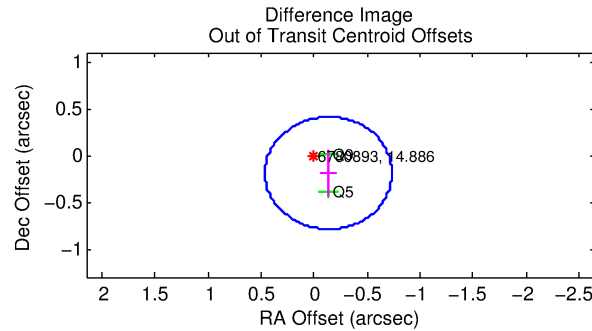
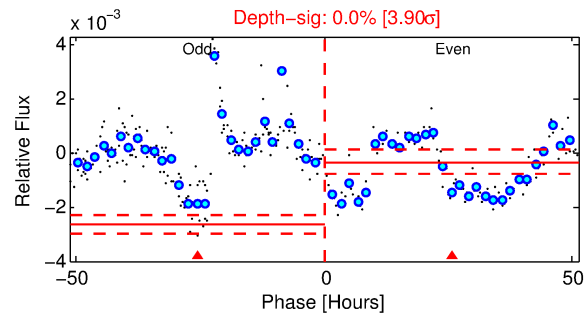
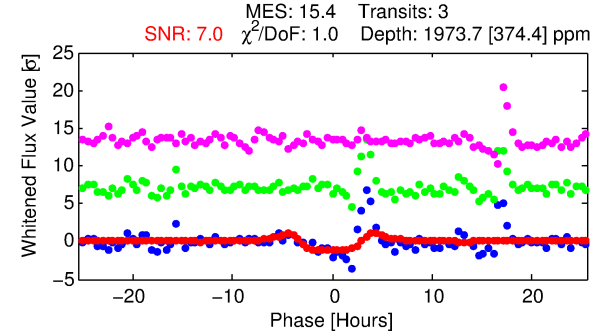
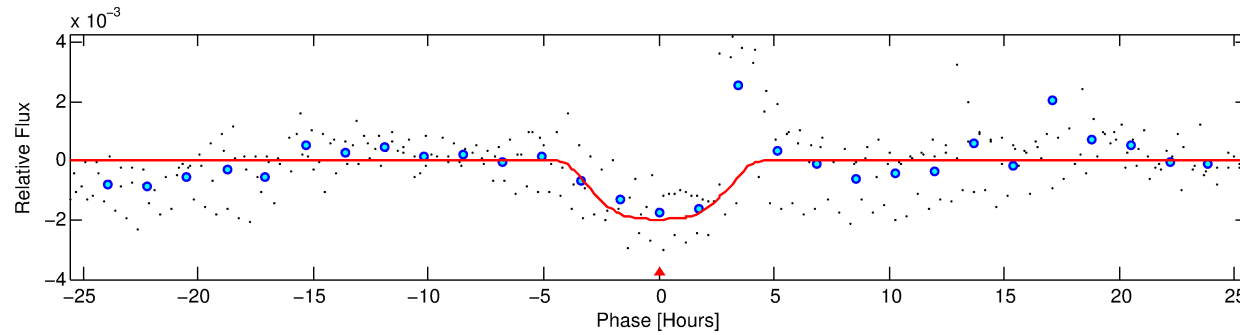
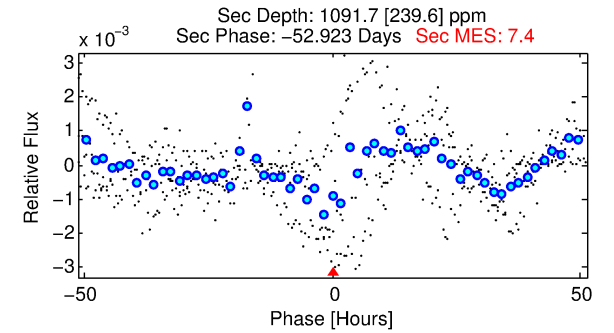
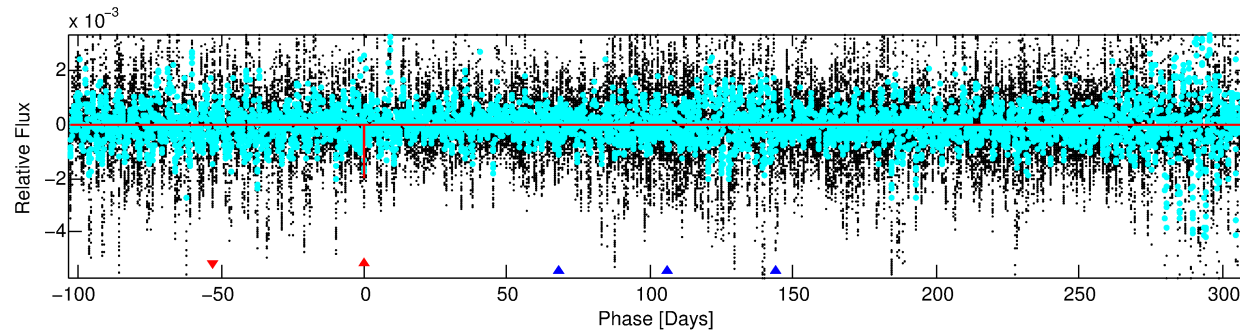
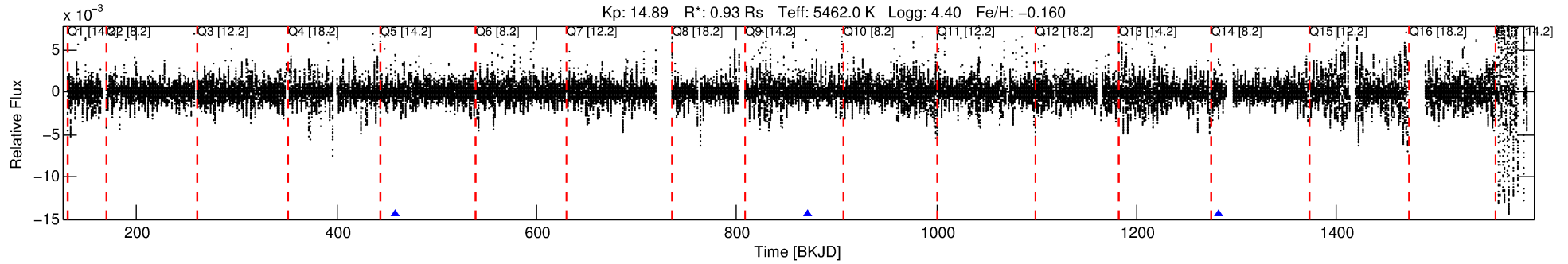
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006780893-01

No Significant Match Found

DV One-Page Summary

KIC: 6780893 Candidate: 1 of 2 Period: 411.893 d



DV Fit Results:

Period = 411.89316 [0.01143] d
Epoch = 458.6635 [0.0140] BKJD
Rp/R* = 0.0511 [0.0057]
a/R* = 177.96 [27.27]
b = 0.93 [0.02]
Seff = 0.68 [0.28]
Teq = 232 [24] K
Rp = 5.21 [1.62] Re
a = 1.0088 [0.2600] AU
Ag = 22507.51 [11267.52] [2.00σ]
Teffp = 4391 [367] K [11.32σ]

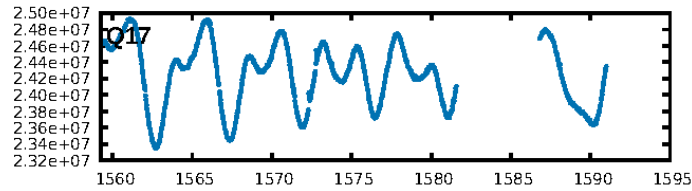
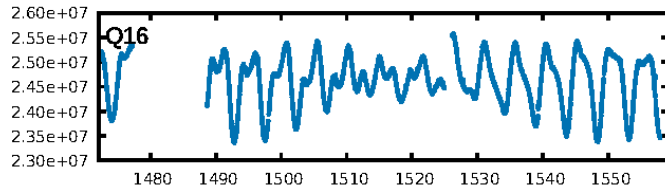
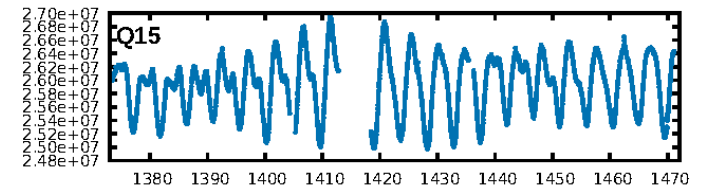
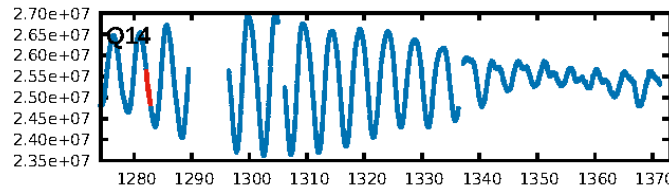
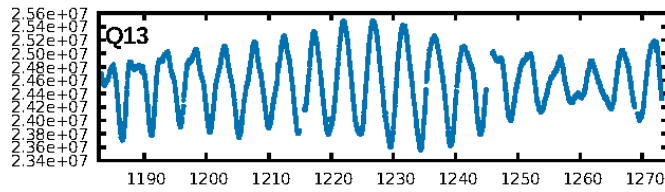
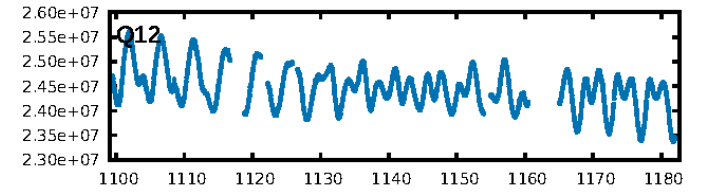
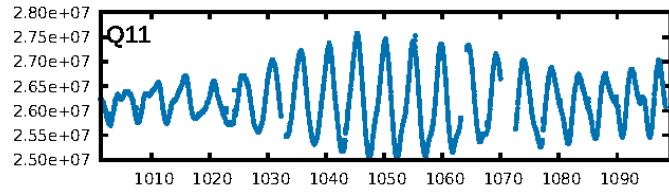
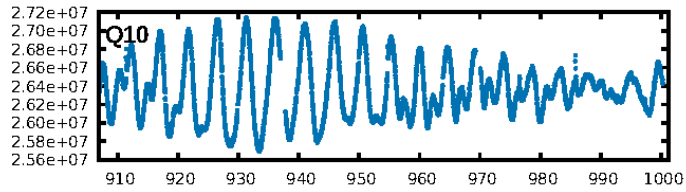
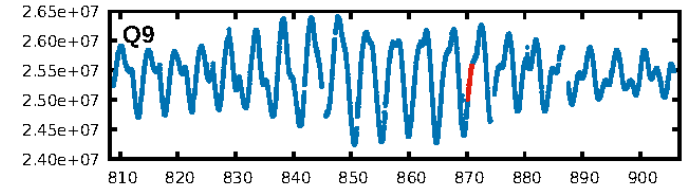
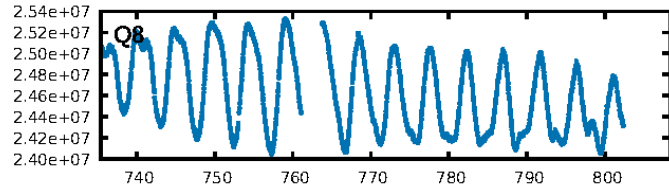
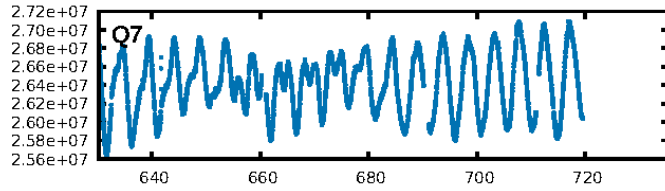
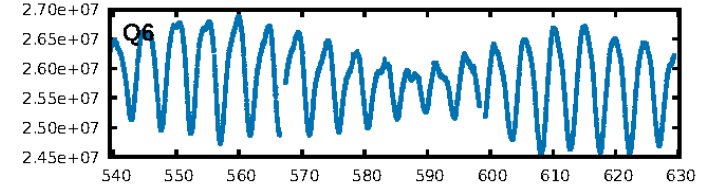
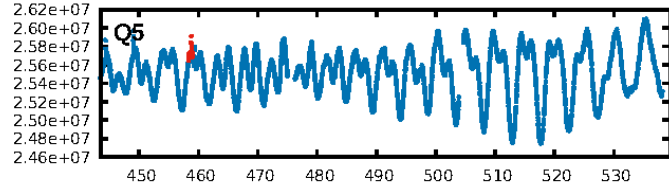
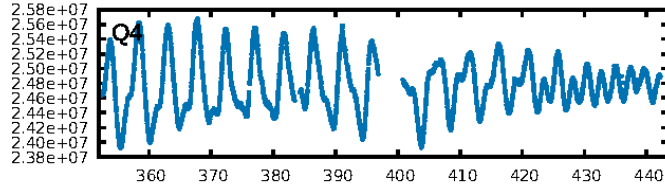
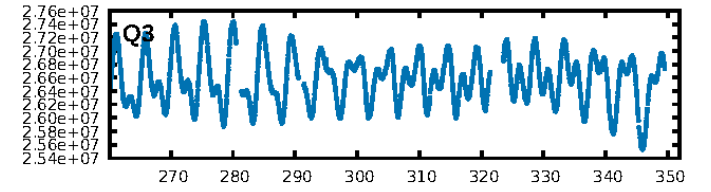
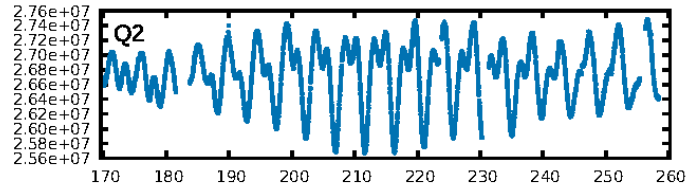
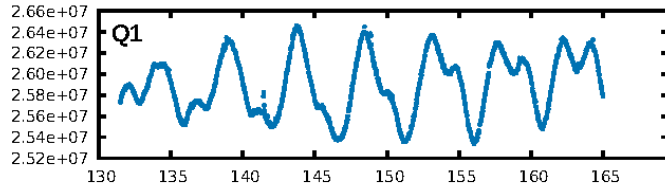
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [99.49σ]
ModelChiSquare2-sig: 5.3%
ModelChiSquareGof-sig: 93.8%
Bootstrap-pfa: 1.76e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.53
Centroid-sig: 31.4%
Centroid-so: 0.282 arcsec [0.57σ]
OotOffset-rm: 0.233 arcsec [1.17σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-rm: 0.260 arcsec [1.73σ]
KicOffset-st: 0/0/0/2 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [2/2]

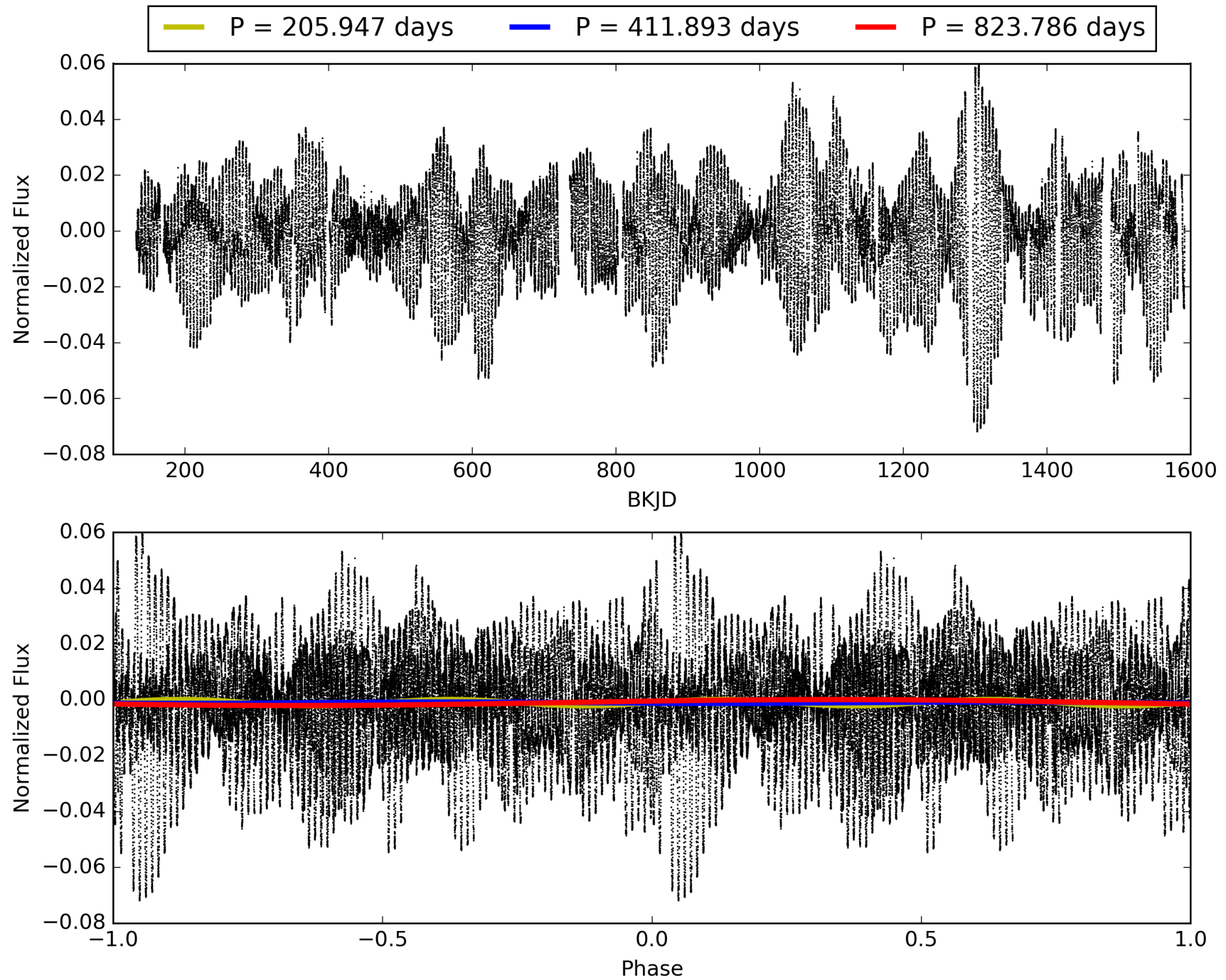
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 01:20:50 Z

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

TCE 006780893-01, PDC Light Curves

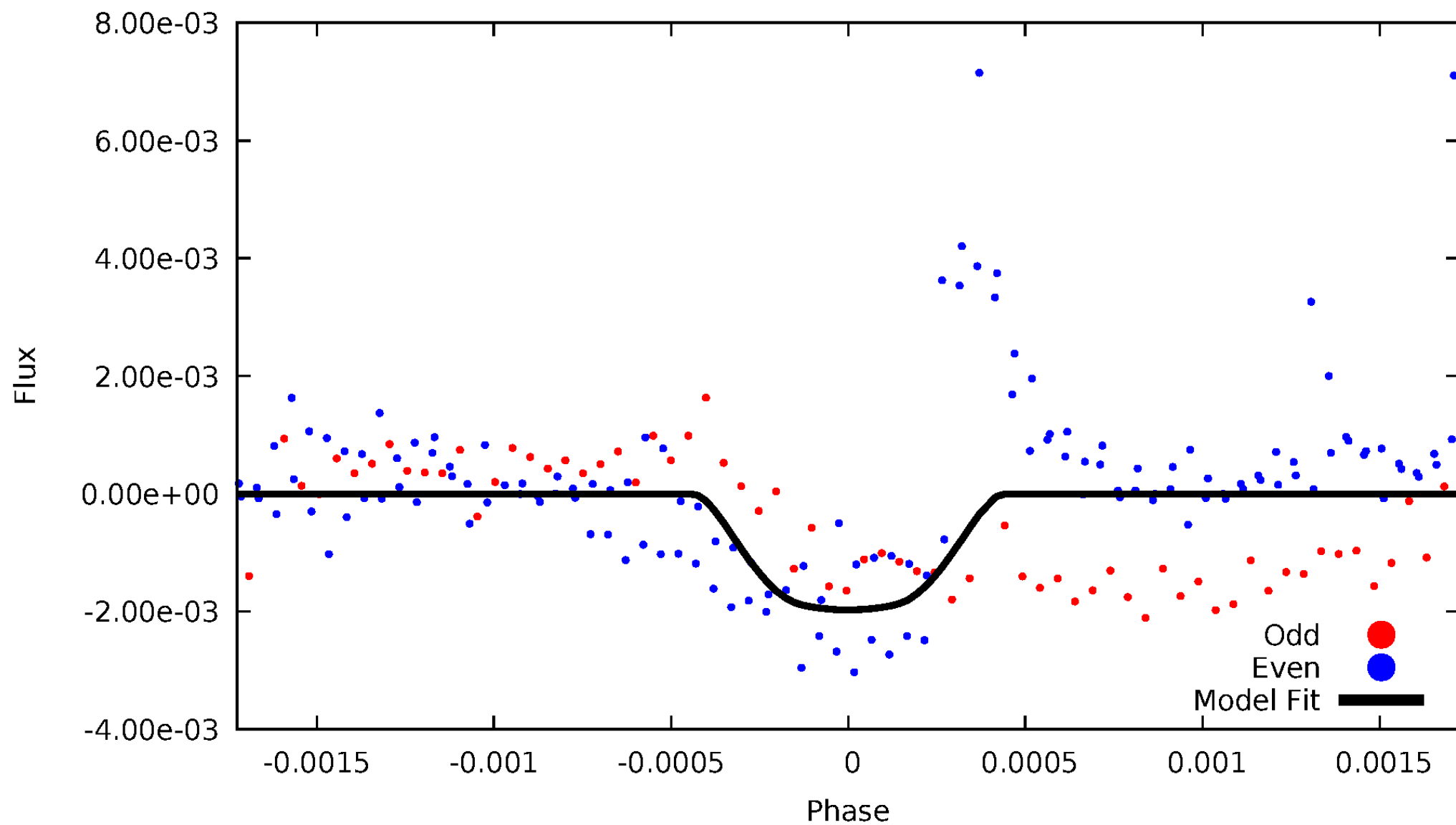


TCE 006780893-01



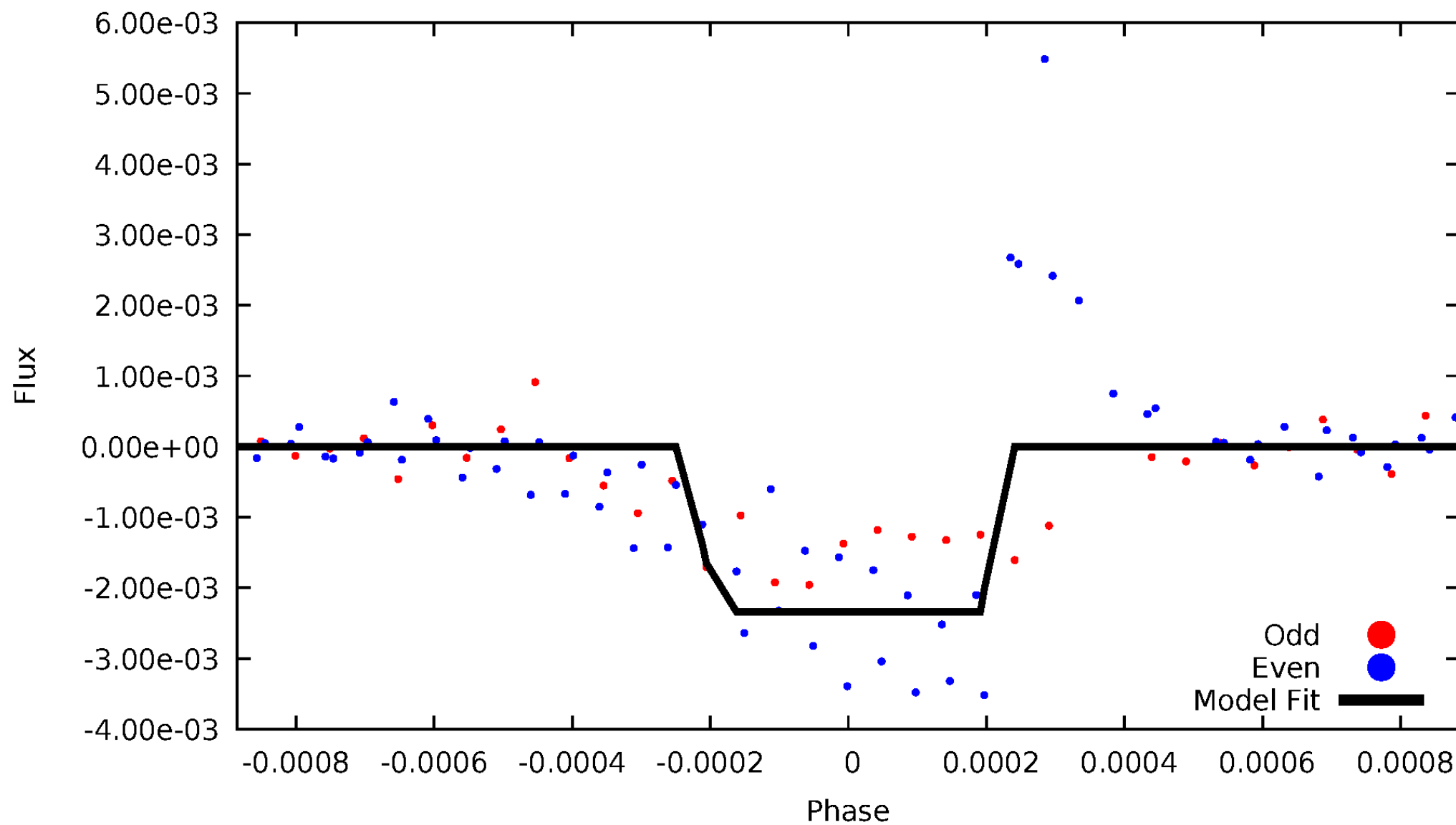
DV Odd/Even

TCE 006780893-01



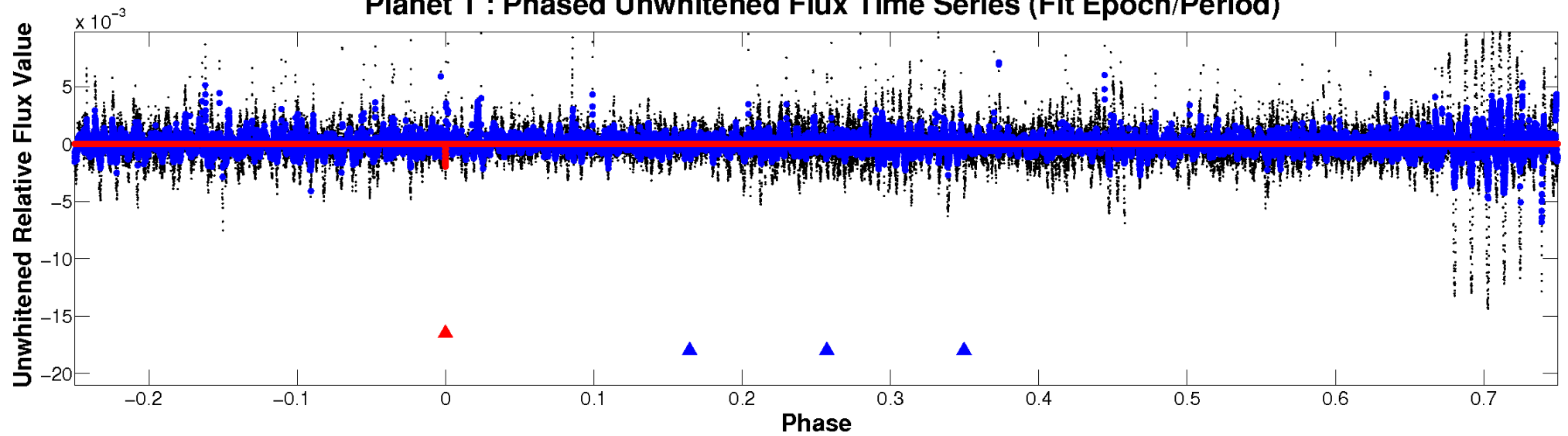
ALT Odd/Even

TCE 006780893-01

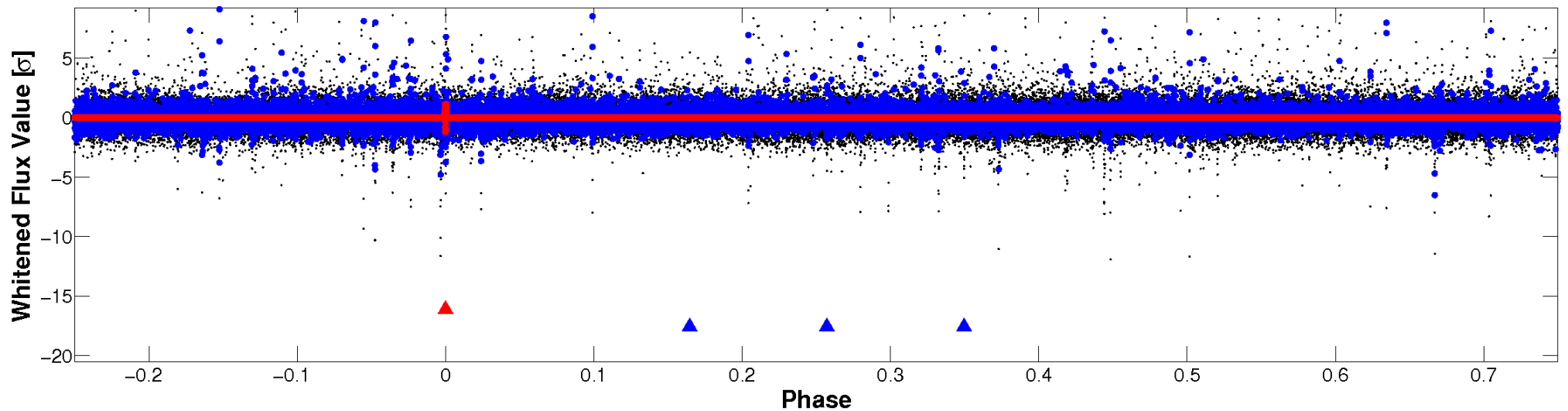


Non-Whitened Vs. Whitened Light Curve

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

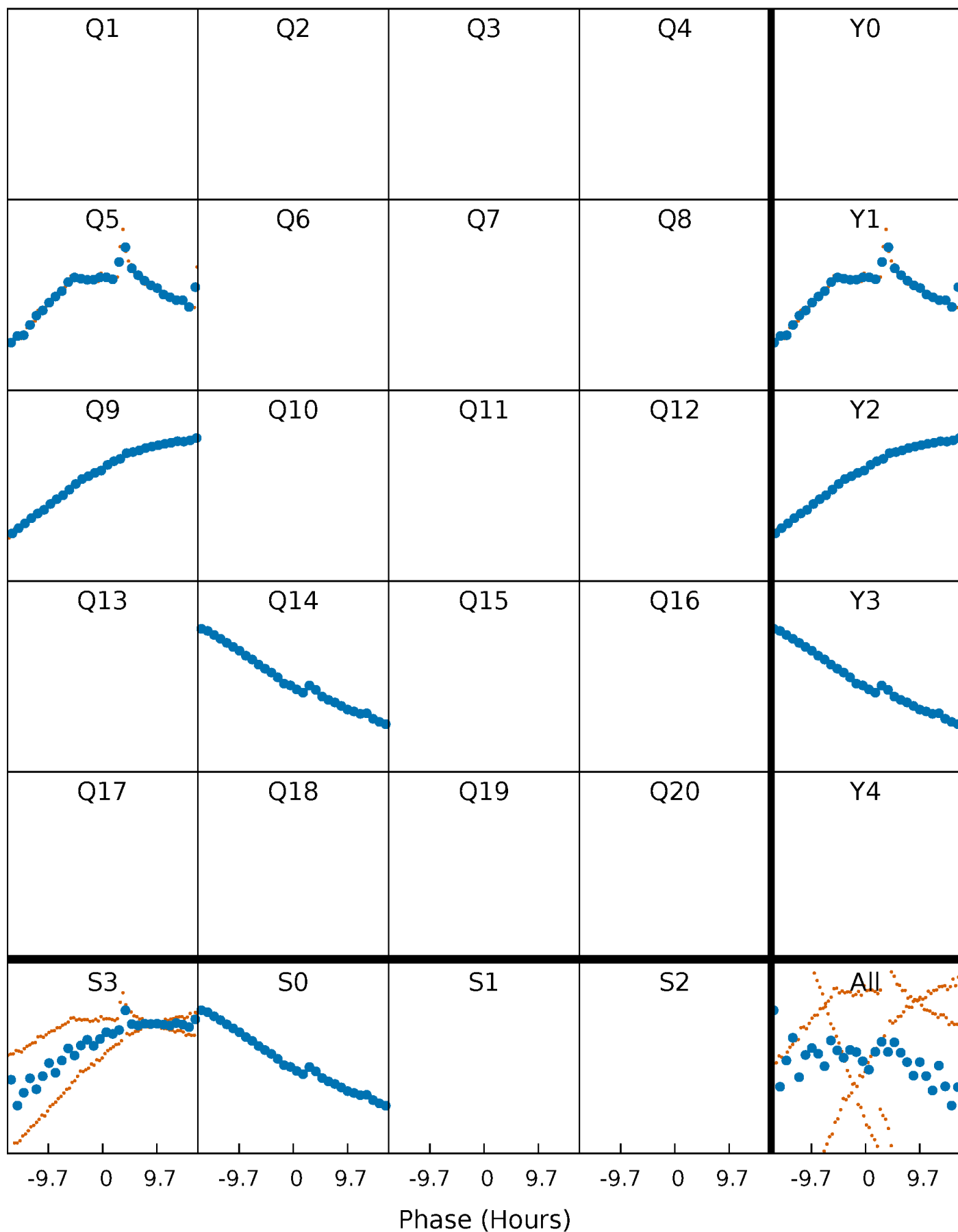


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



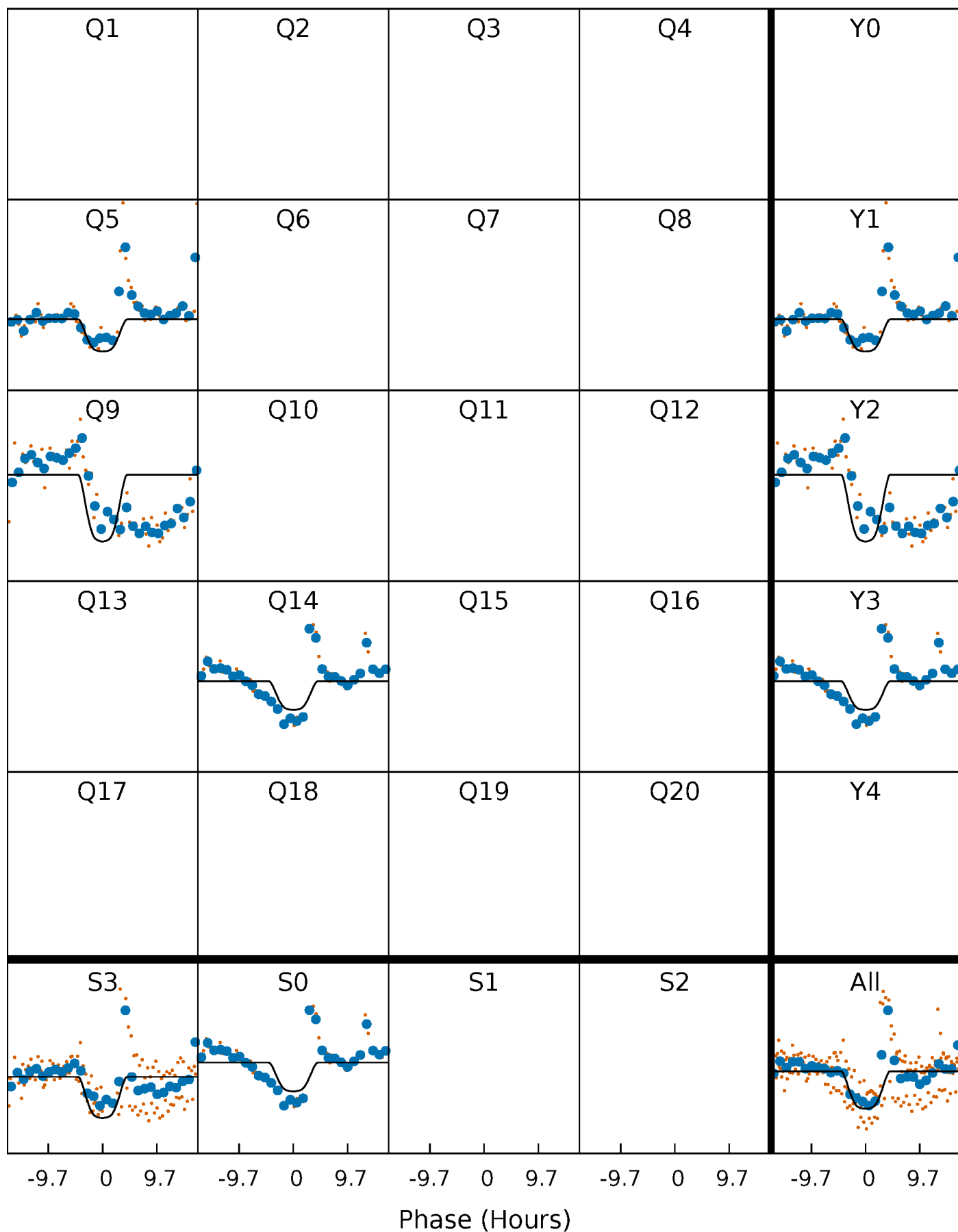
PDC Quarter-Phased Transit Curves

TCE 006780893-01 P=411.893155 Days $T_0=458.663464$ (BKJD)



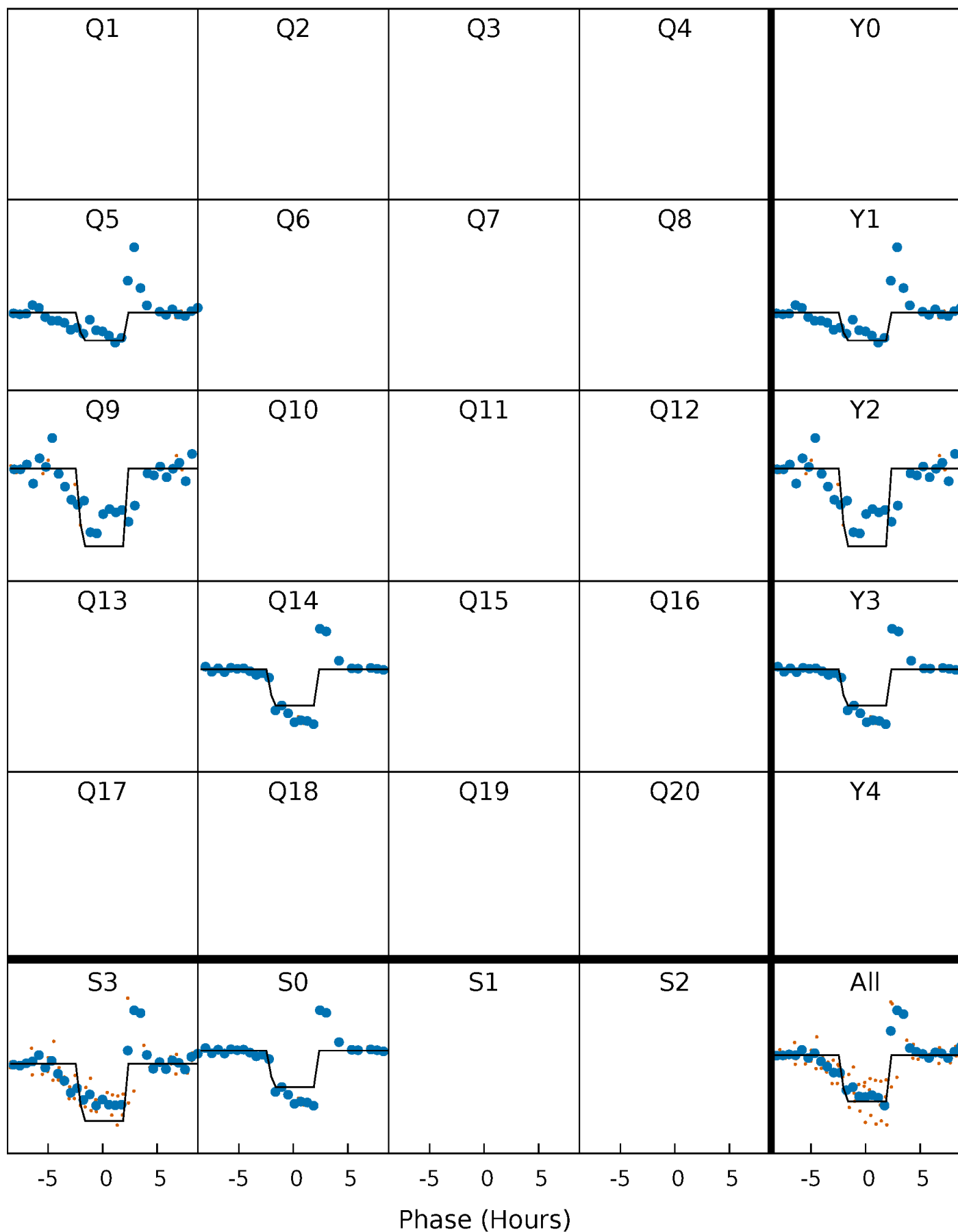
DV Quarter-Phased Transit Curves

TCE 006780893-01 P=411.893155 Days $T_0=458.663464$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

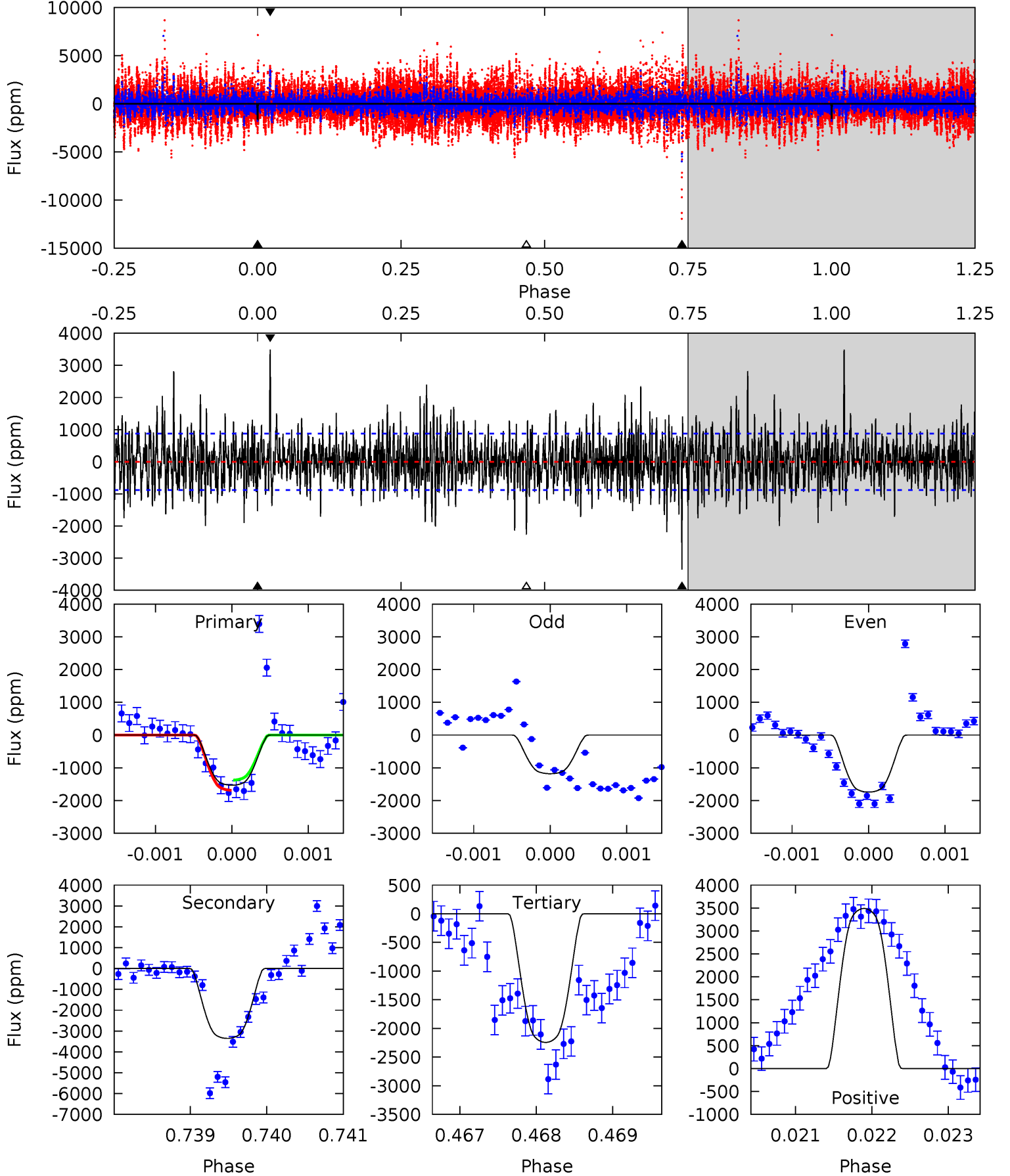
TCE 006780893-01 P=411.879269 Days $T_0=458.698697$ (BKJD)



DV Model-Shift Uniqueness Test

006780893-01, P = 411.893155 Days, E = 46.770309 Days

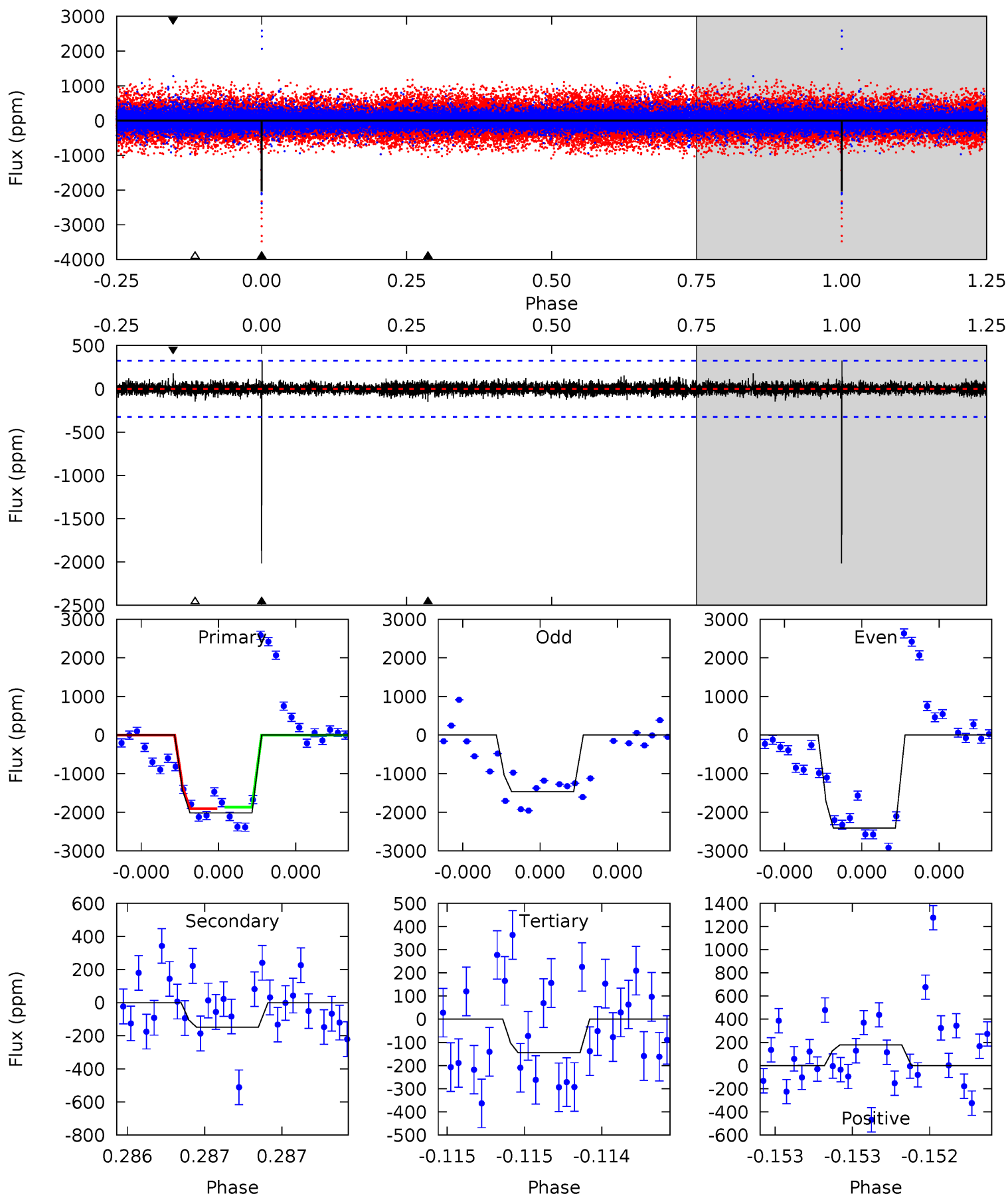
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.54	20.9	14.0	21.7	5.47	3.32	3.91	-4.43	-12.2	6.92	-0.85	1.24	1.23	0.51	0.97



Alt Model-Shift Uniqueness Test

006780893-01, $P = 411.879269$ Days, $E = 46.819428$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.7	2.55	2.49	3.06	5.60	3.51	0.55	32.3	31.7	0.06	-0.51	7.88	1.23	0.14	0



Stellar Parameters For KIC 006780893

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5462^{+164}_{-147}	$4.404^{+0.148}_{-0.222}$	$-0.160^{+0.300}_{-0.250}$	$0.934^{+0.271}_{-0.146}$	$0.807^{+0.128}_{-0.064}$	$1.396^{+0.917}_{-0.749}$
	+3%/-3%	+3%/-5%	+188%/-156%	+29%/-16%	+16%/-8%	+66%/-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 006780893-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-3354 ± 161	$5.38^{+1.04}_{-0.90}$	326^{+25}_{-20}	5787^{+405}_{-330}	66744^{+26590}_{-20622}
Alt.	-148 ± 58	$5.03^{+1.08}_{-0.79}$	327^{+28}_{-19}	3278^{+238}_{-279}	3131^{+2153}_{-1497}

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 $A_{obs} \gg 1.0$

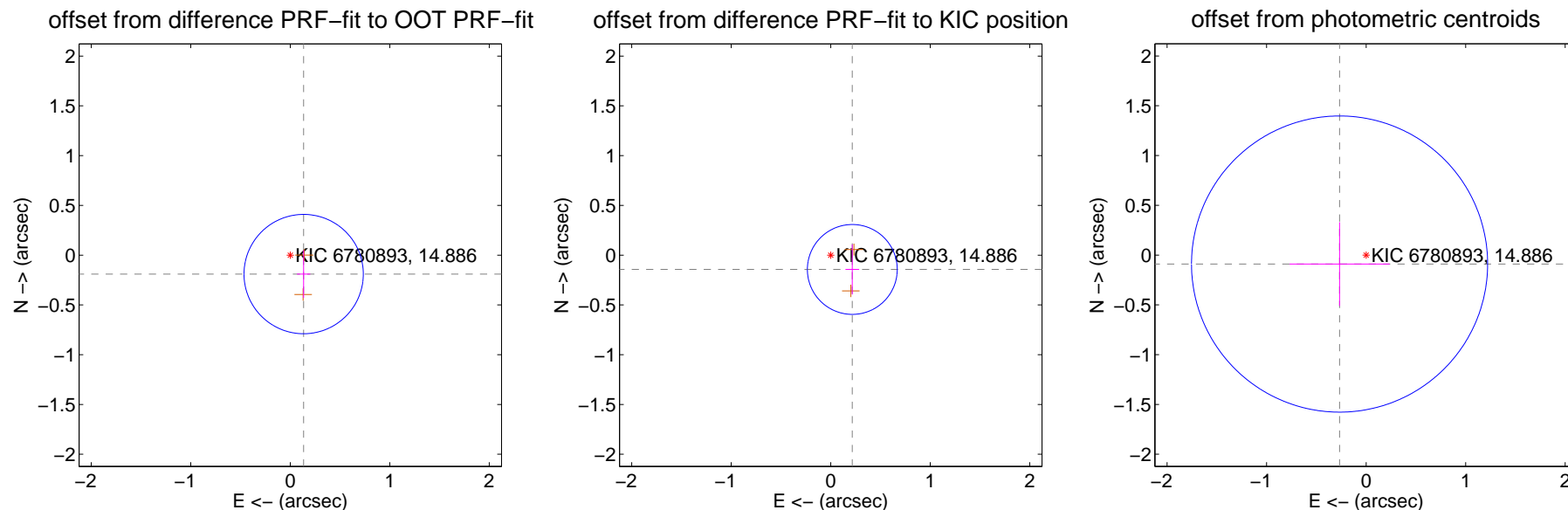
DV Centroid Data

Supplemental centroid analysis for 006780893-01. Kepler magnitude: 14.89. Transit SNR 7.04

There are 0 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	0.233 ± 0.200	1.17	-0.135 ± 0.067	-0.190 ± 0.240
PRF-fit source offset from KIC position	0.260 ± 0.150	1.73	-0.217 ± 0.069	-0.144 ± 0.252
photometric centroid source offset	0.28 ± 0.50	0.57	0.27 ± 0.50	-0.09 ± 0.42

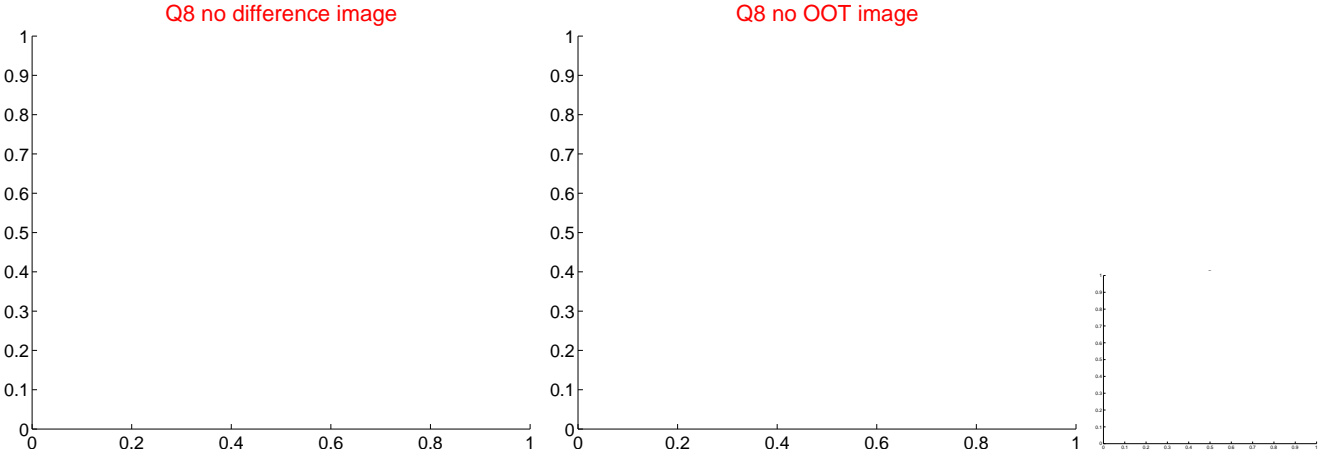
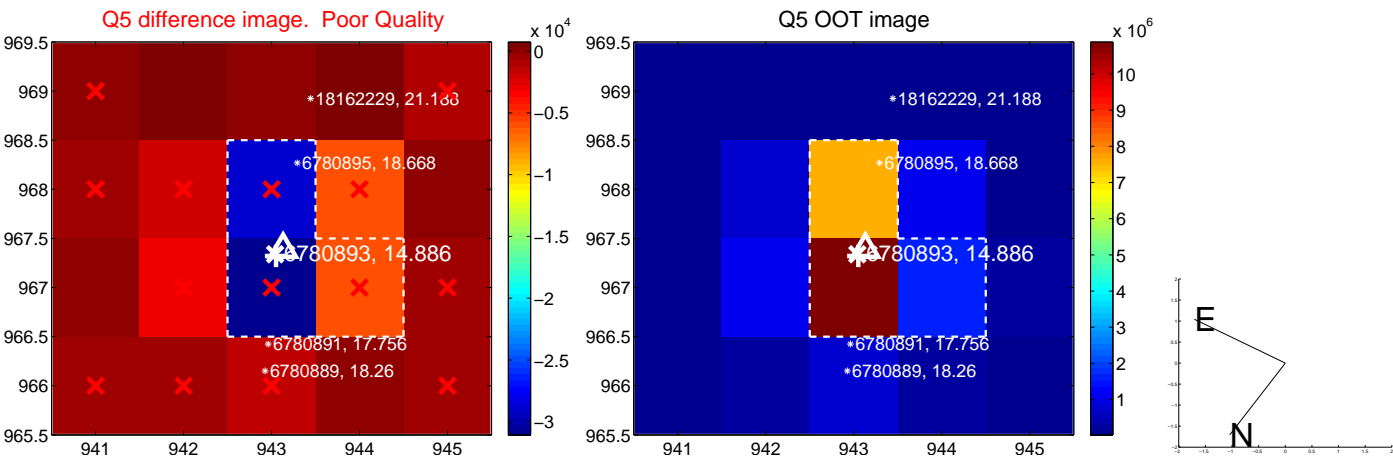


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

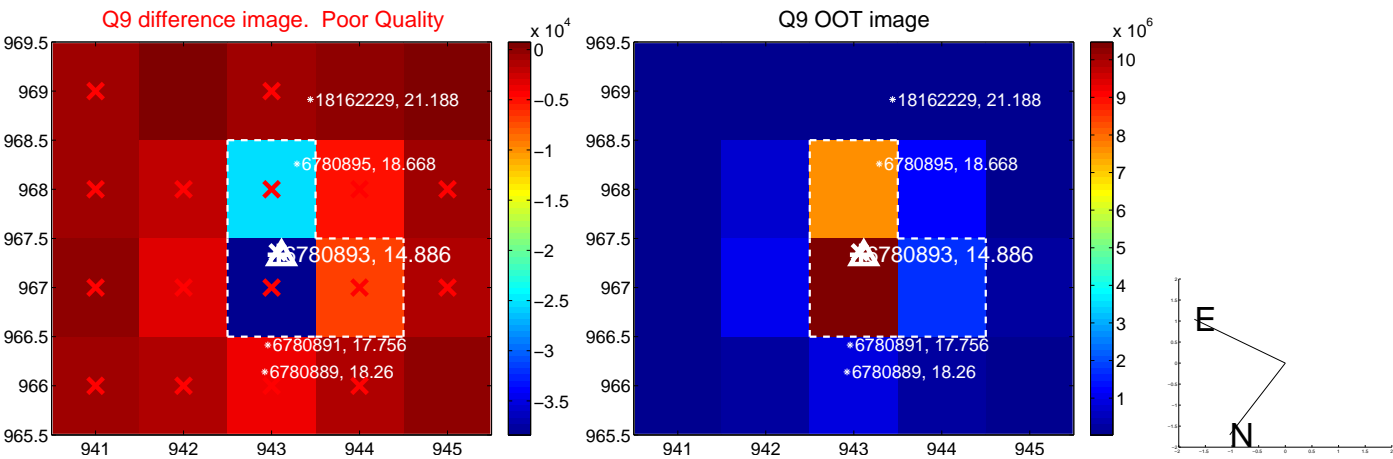
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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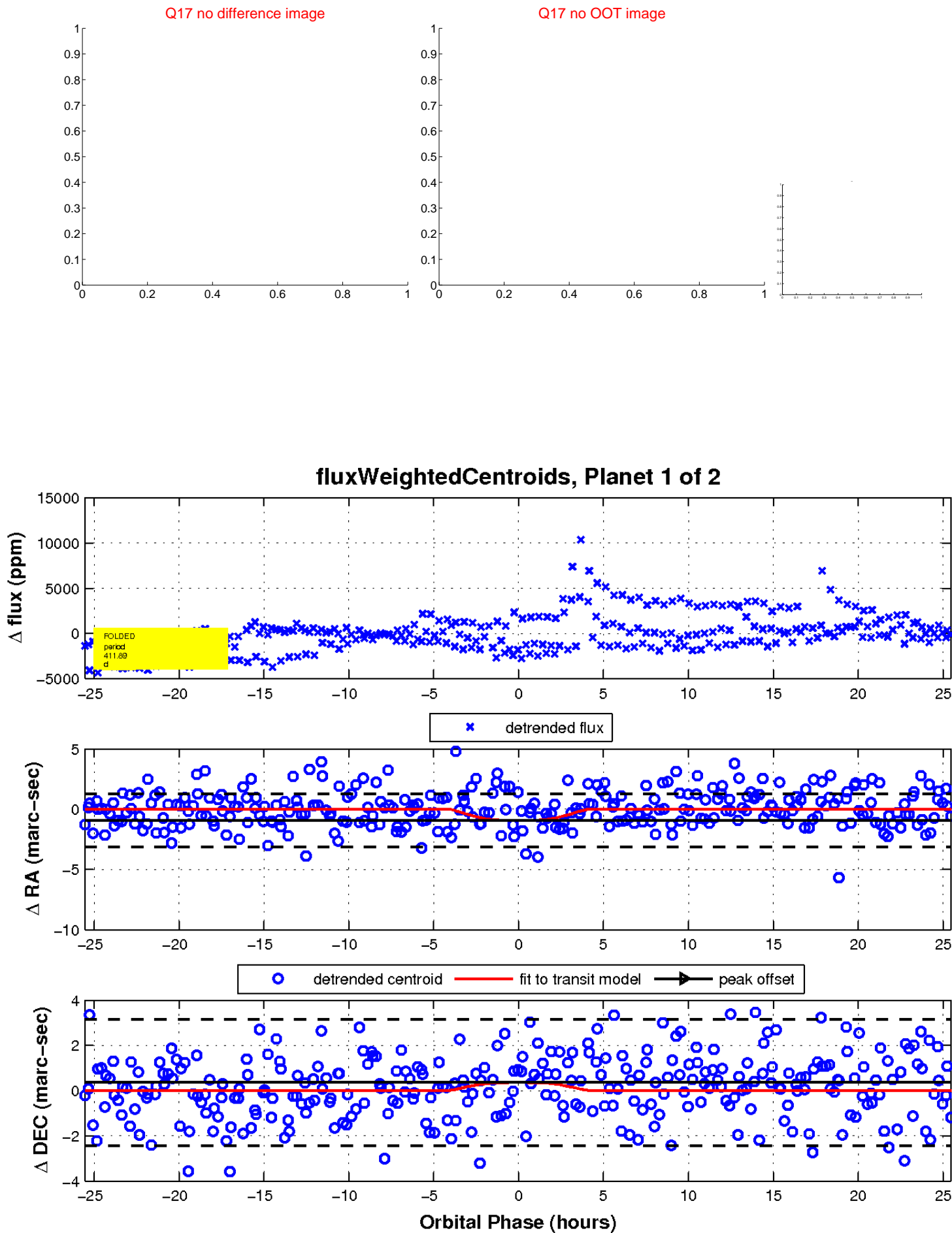
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

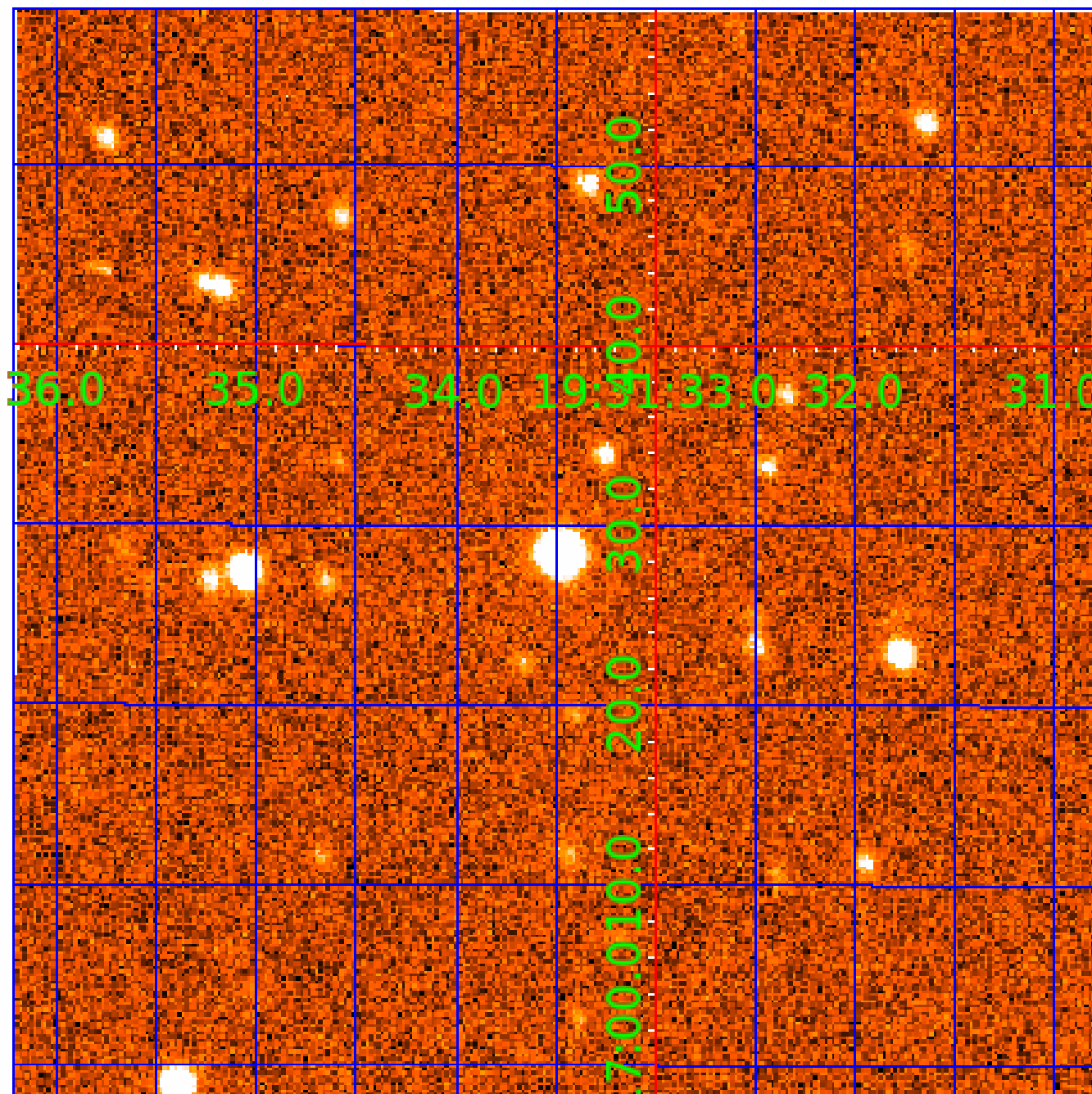


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006780893

Q1-17 DR25 TCE Parameters

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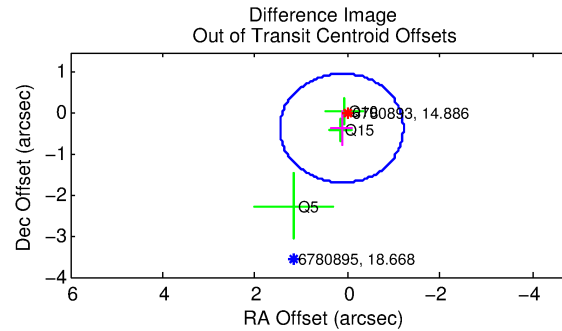
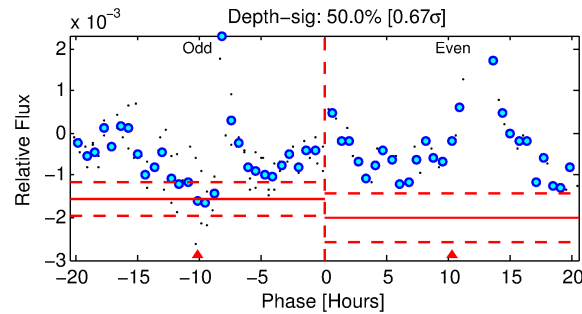
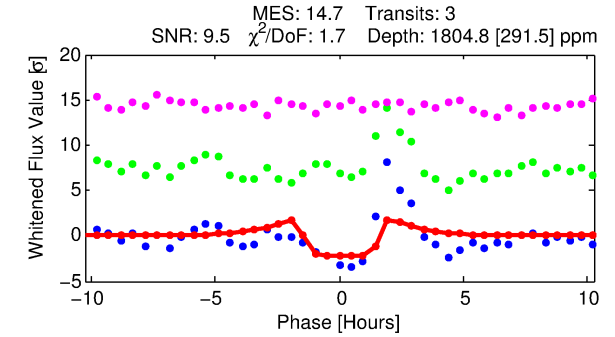
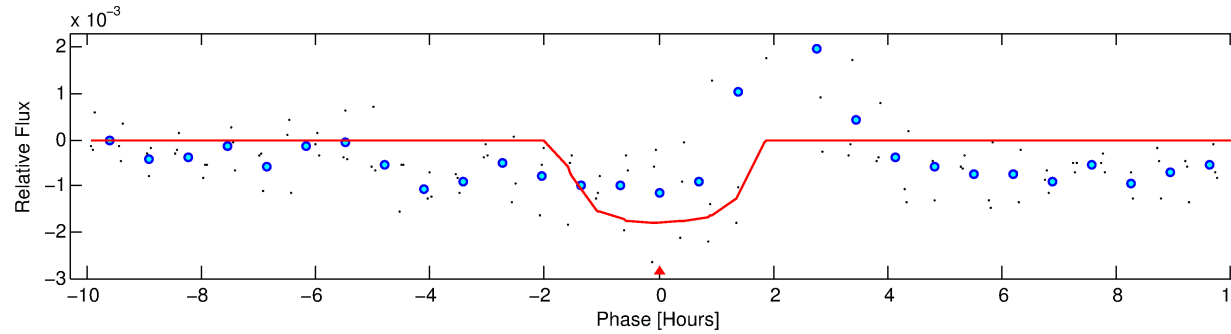
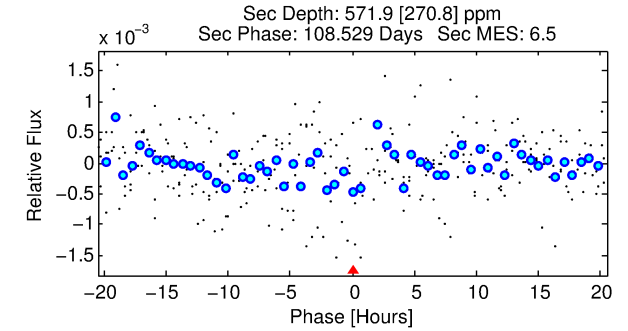
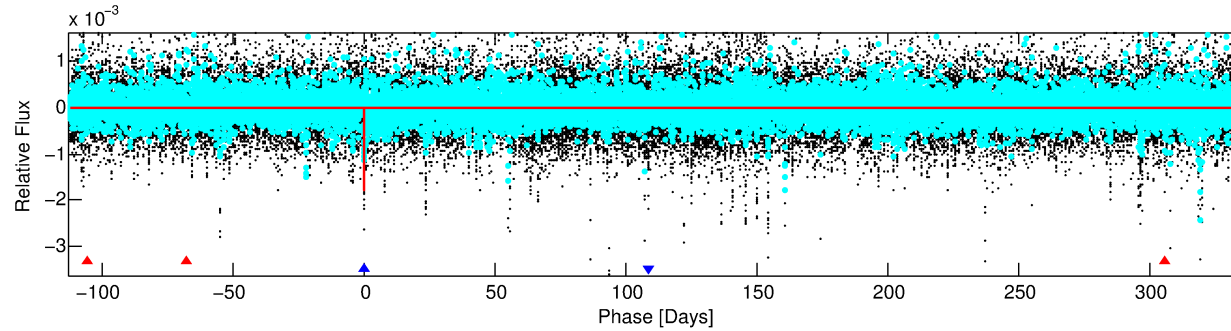
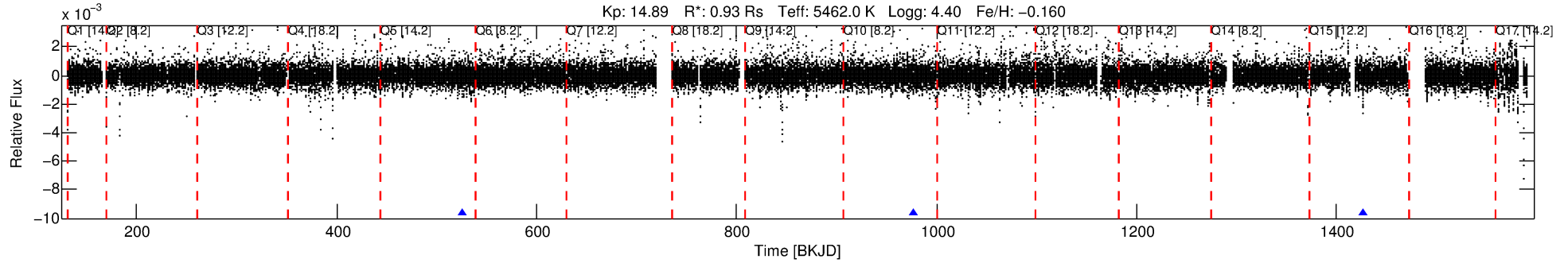
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006780893-02

No Significant Match Found

DV One-Page Summary

KIC: 6780893 Candidate: 2 of 2 Period: 449.989 d



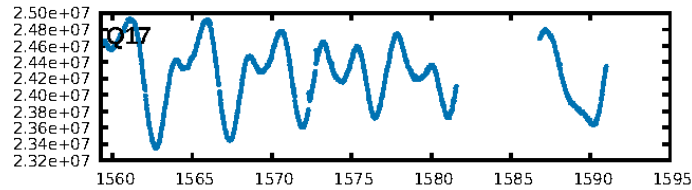
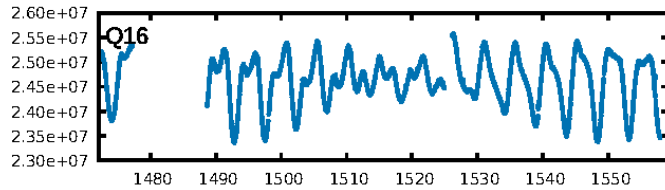
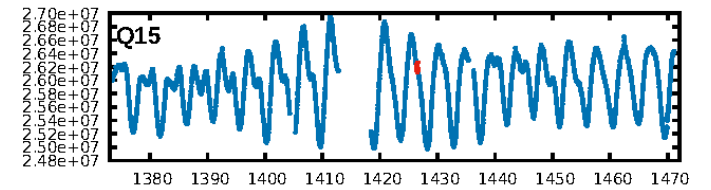
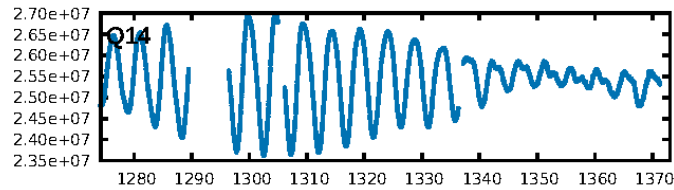
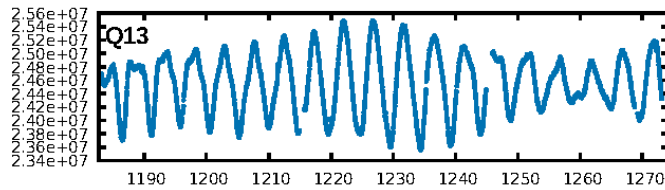
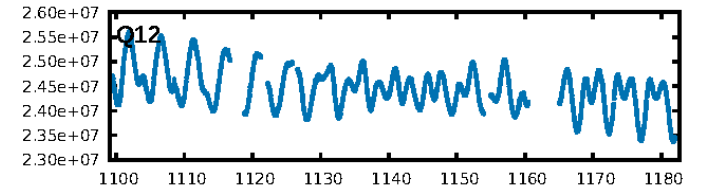
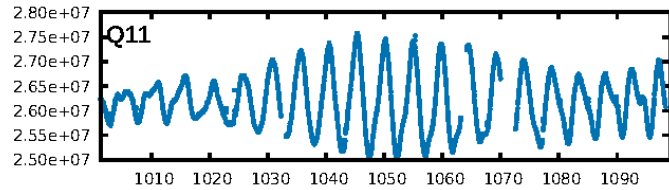
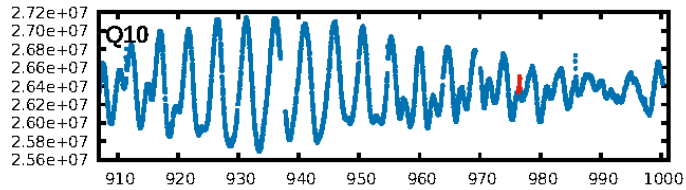
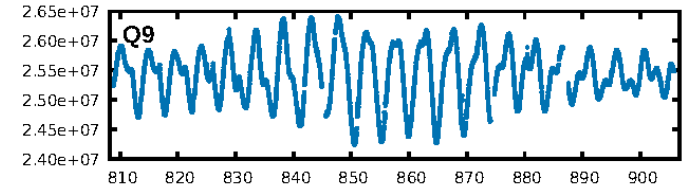
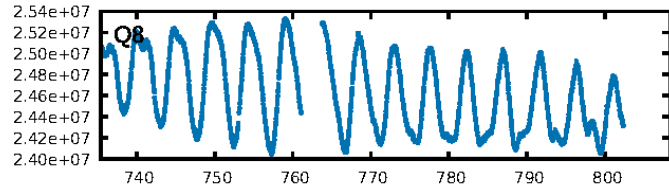
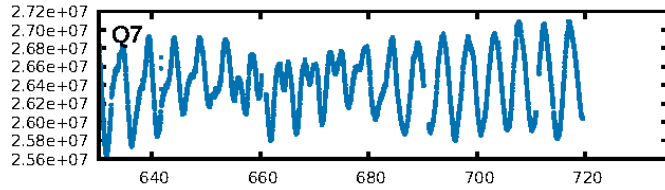
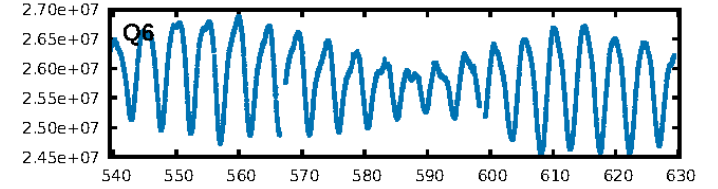
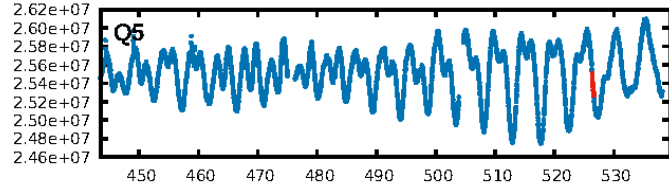
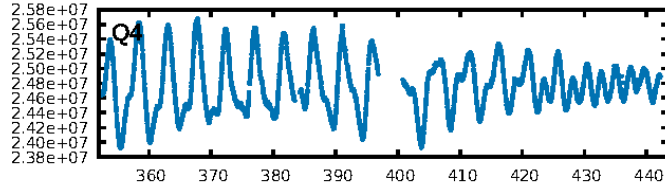
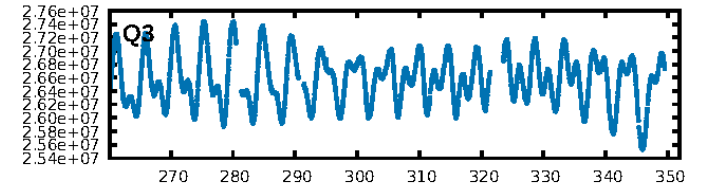
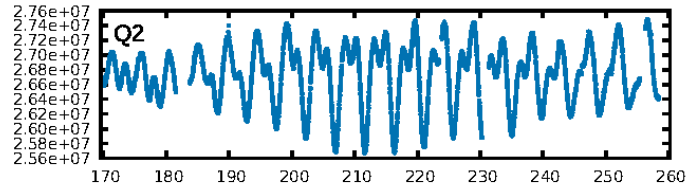
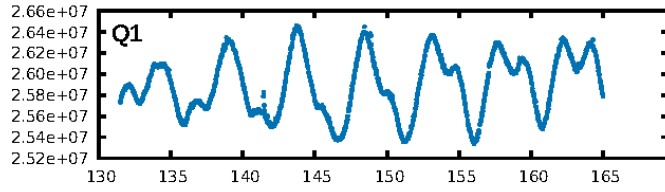
DV Fit Results:

Period = 449.98880 [0.00565] d
Epoch = 526.4778 [0.0075] BKJD
Rp/R* = 0.0411 [0.0374]
a/R* = 803.19 [2875.61]
b = 0.66 [3.06]
Seff = 0.61 [0.25]
Teff = 225 [23] K
Rp = 4.19 [4.01] Re
a = 1.0700 [0.2758] AU
Ag = 20519.59 [39448.84] [0.52σ]
Teffp = 4166 [1964] K [2.01σ]

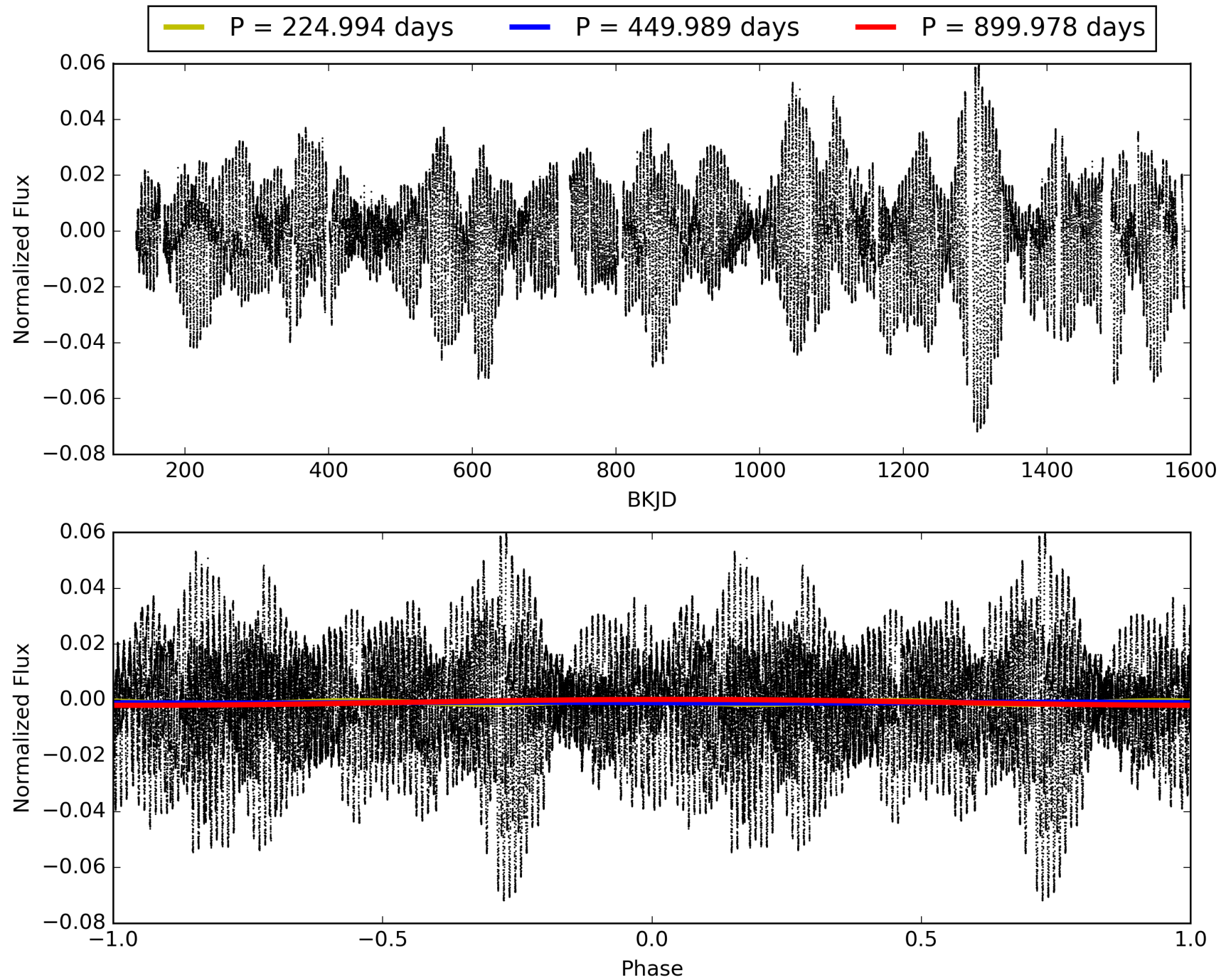
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [99.49σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 4.2%
ModelChiSquareGof-sig: 31.5%
Bootstrap-pfa: 7.47e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.8605
Centroid-sig: 35.9%
Centroid-so: 0.371 arcsec [0.55σ]
OotOffset-rm: 0.380 arcsec [0.85σ]
KicOffset-rm: 0.336 arcsec [0.69σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 006780893-02, PDC Light Curves

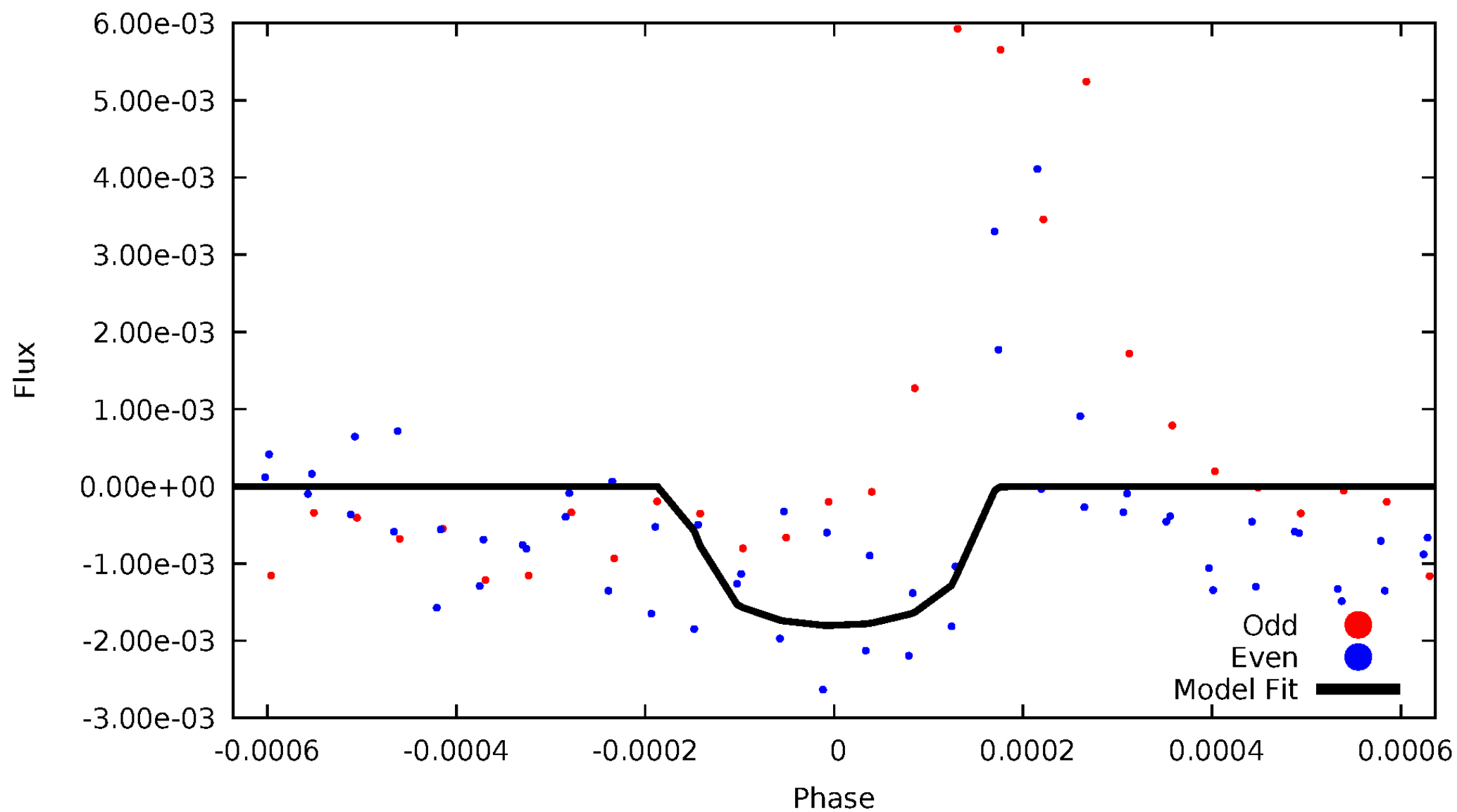


TCE 006780893-02



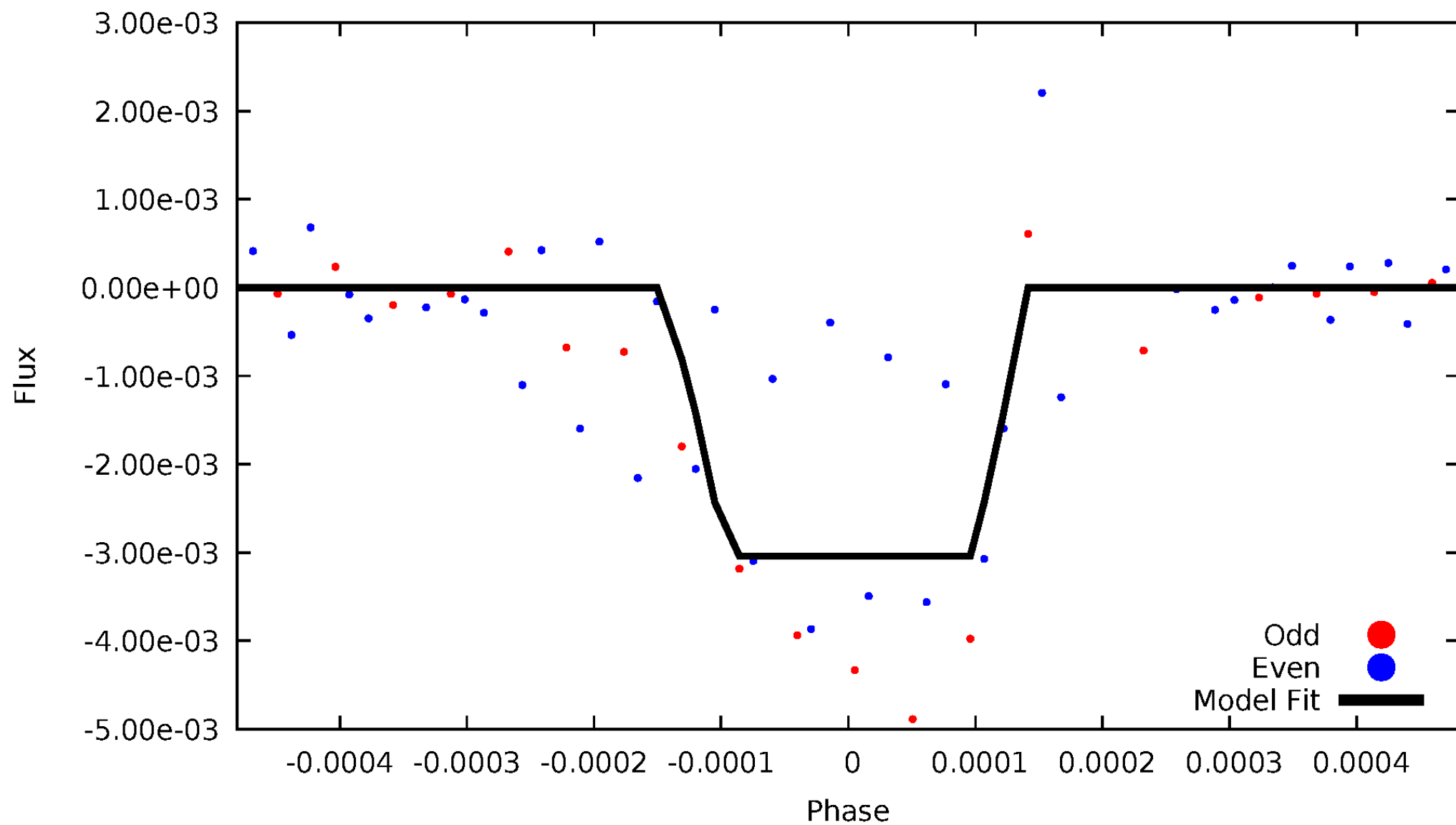
DV Odd/Even

TCE 006780893-02



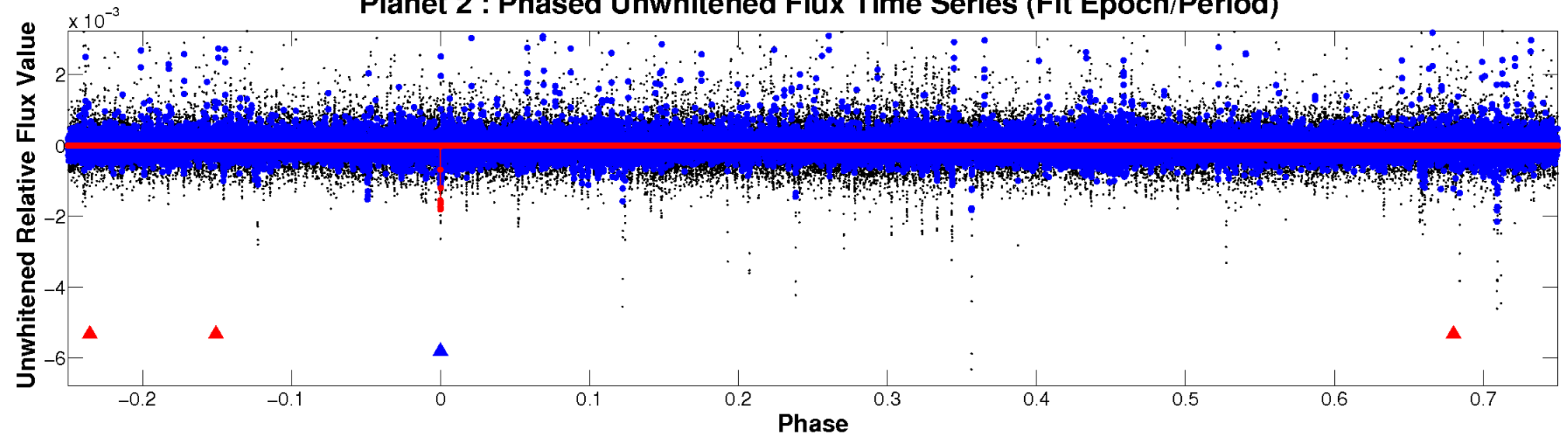
ALT Odd/Even

TCE 006780893-02

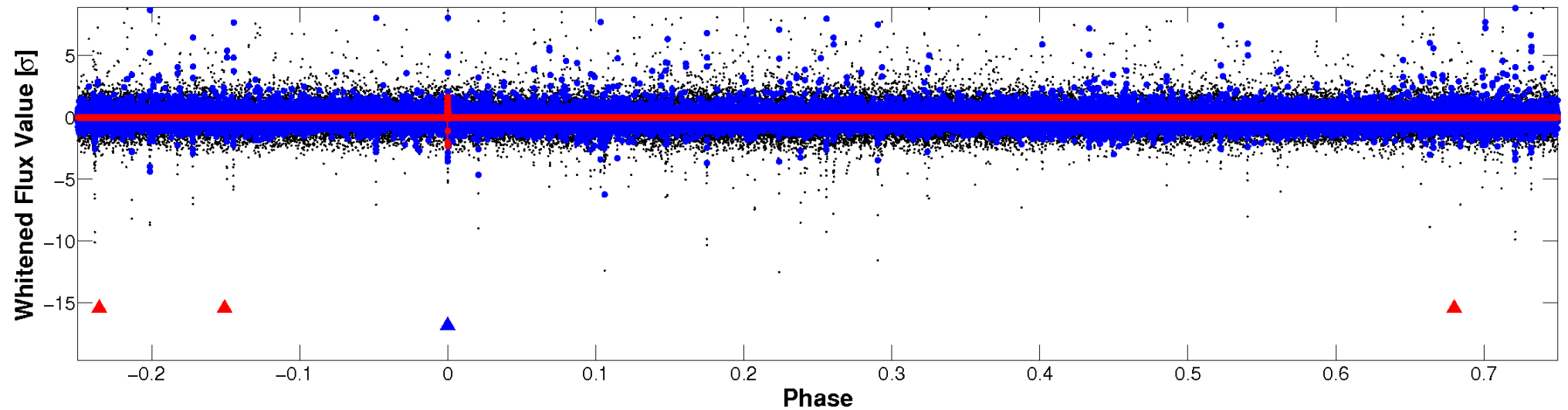


Non-Whitened Vs. Whitened Light Curve

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

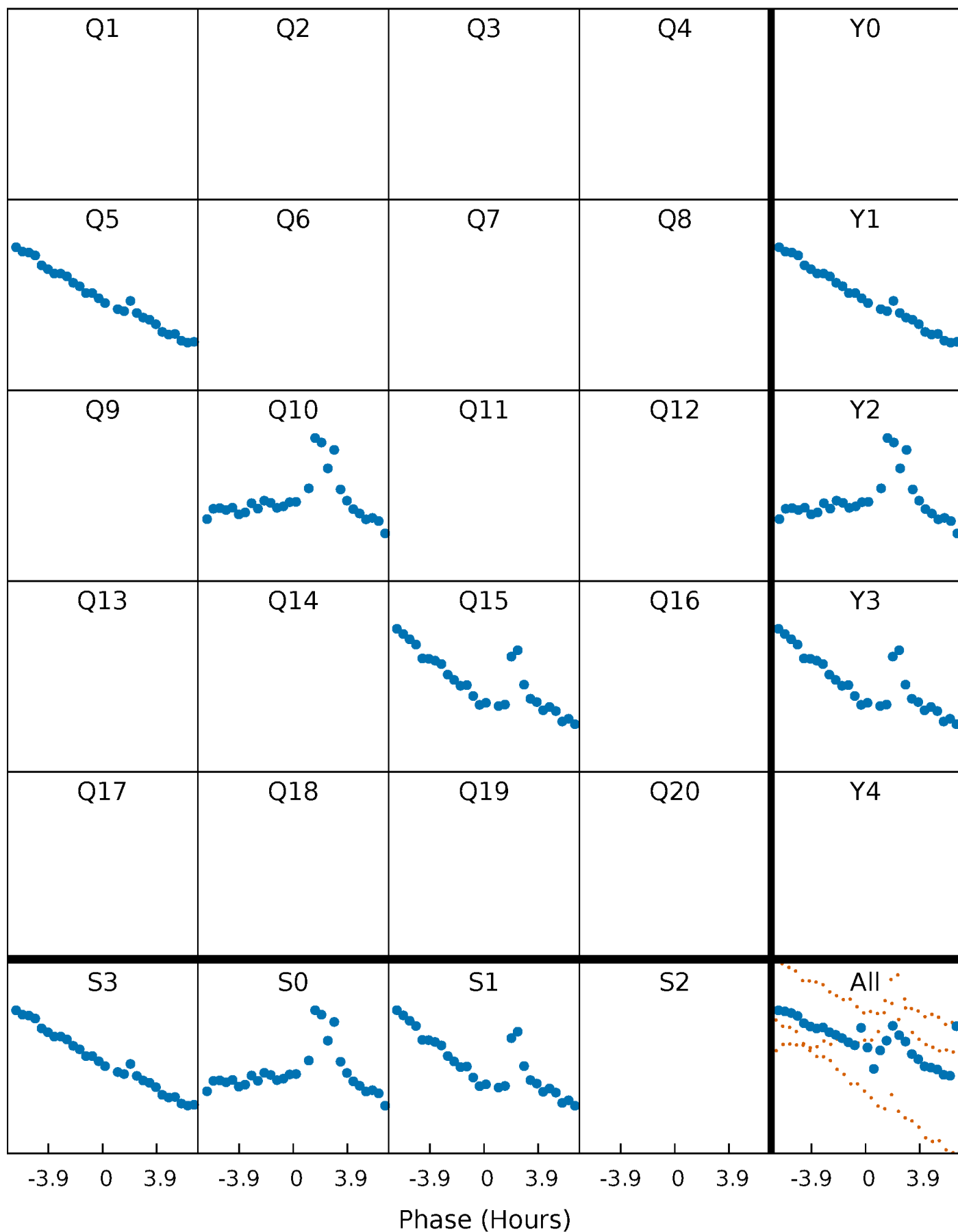


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



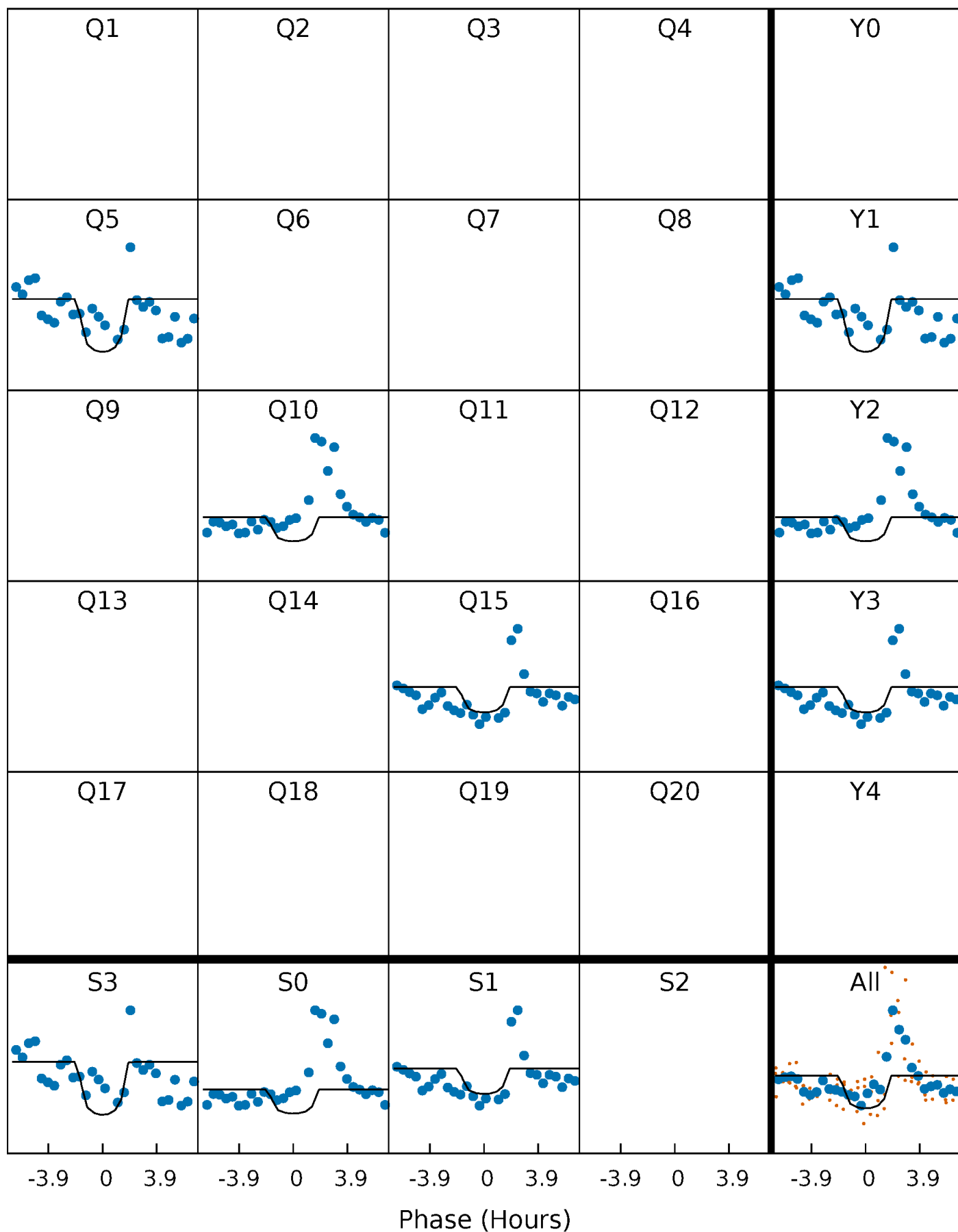
PDC Quarter-Phased Transit Curves

TCE 006780893-02 P=449.988800 Days $T_0=526.477825$ (BKJD)



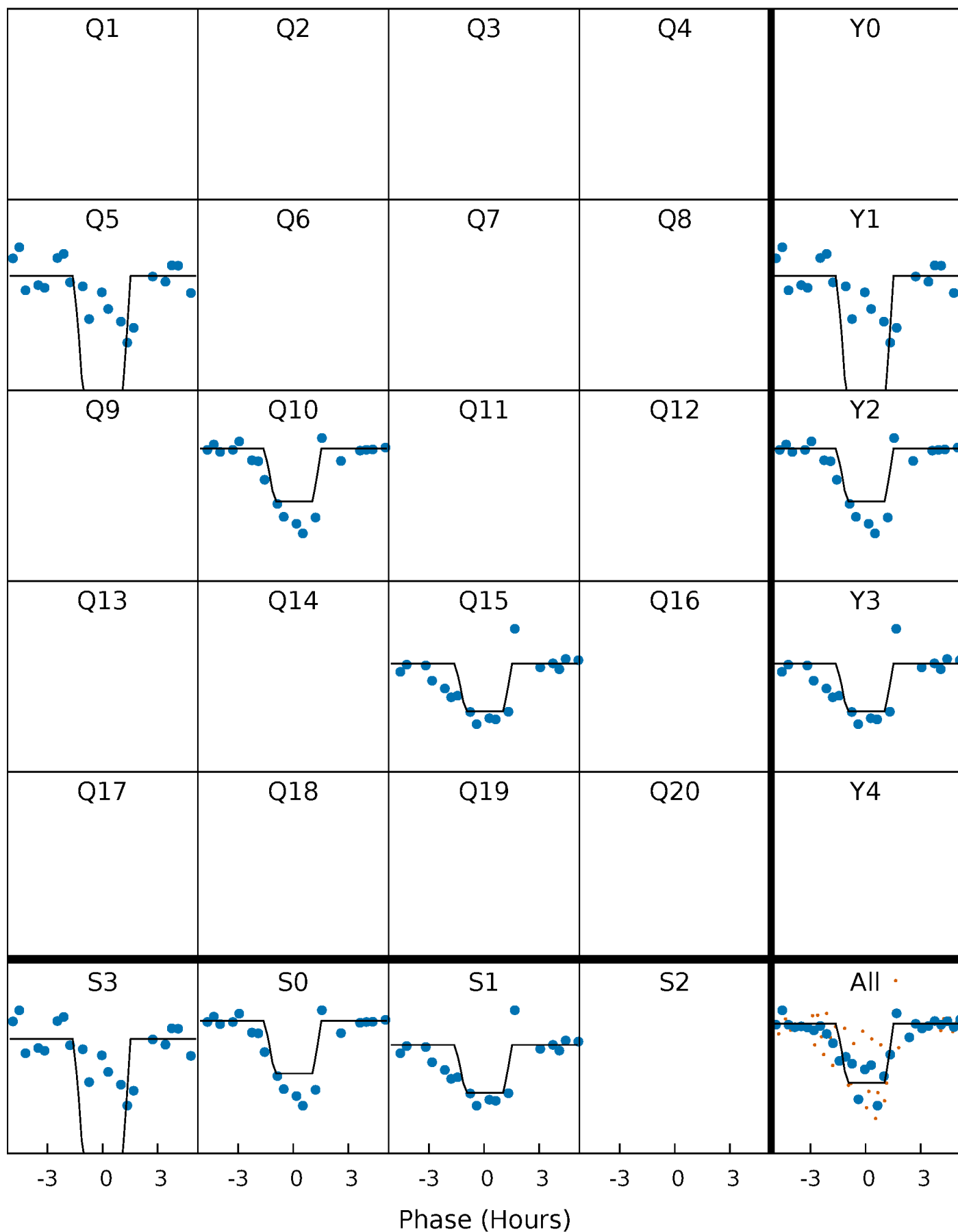
DV Quarter-Phased Transit Curves

TCE 006780893-02 P=449.988800 Days $T_0=526.477825$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

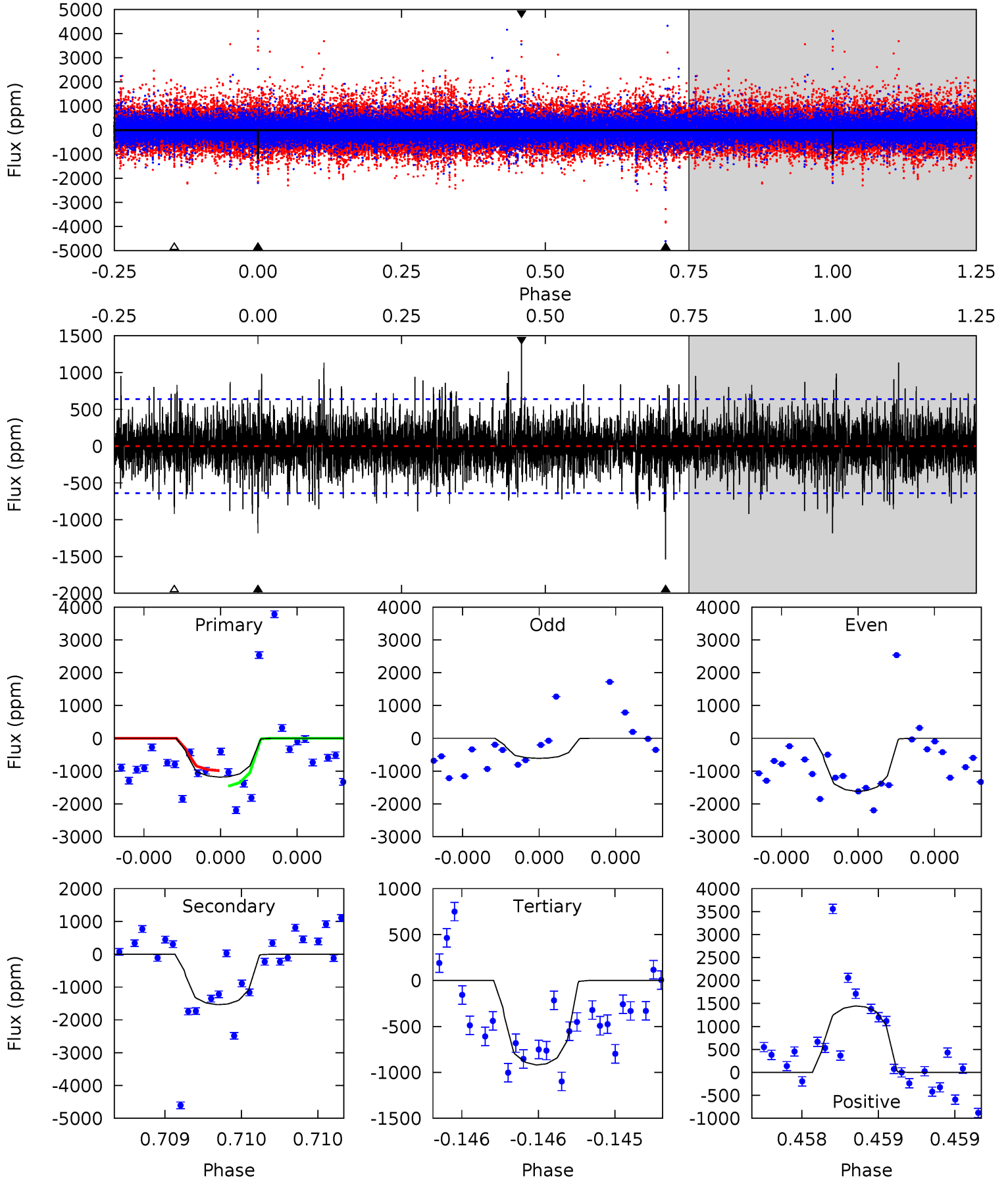
TCE 006780893-02 P=450.001481 Days $T_0=526.460317$ (BKJD)



DV Model-Shift Uniqueness Test

006780893-02, P = 449.988800 Days, E = 76.489025 Days

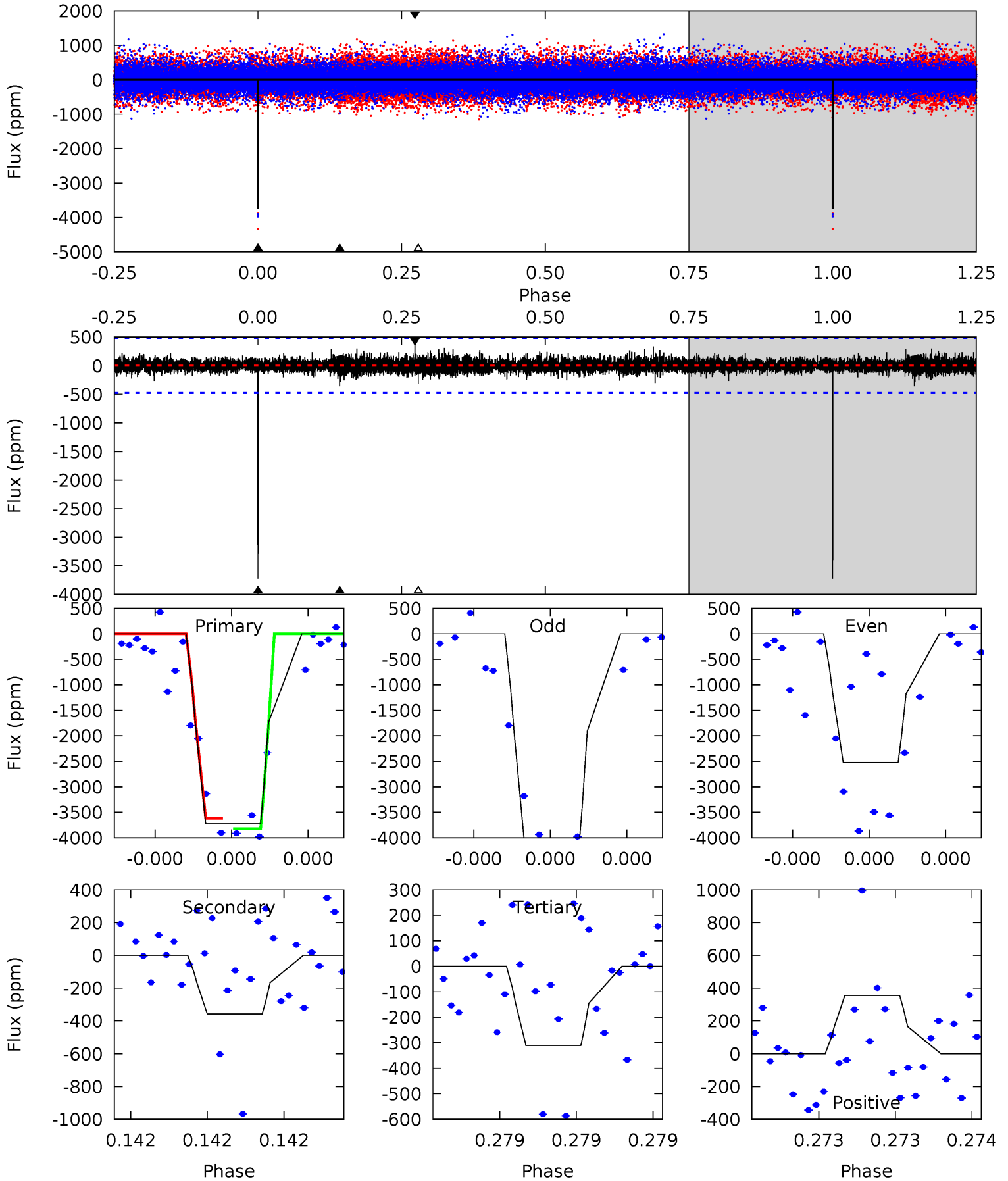
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	13.6	8.13	12.8	5.65	3.60	1.95	2.34	-2.31	5.47	0.82	3.84	0.90	0.48	2.06



Alt Model-Shift Uniqueness Test

006780893-02, P = 450.001481 Days, E = 76.458836 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.3	4.25	3.70	4.22	5.69	3.66	0.75	40.6	40.1	0.56	0.04	10.5	0.80	0.09	0



Stellar Parameters For KIC 006780893

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5462^{+164}_{-147}	$4.404^{+0.148}_{-0.222}$	$-0.160^{+0.300}_{-0.250}$	$0.934^{+0.271}_{-0.146}$	$0.807^{+0.128}_{-0.064}$	$1.396^{+0.917}_{-0.749}$
	+3%/-3%	+3%/-5%	+188%/-156%	+29%/-16%	+16%/-8%	+66%/-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 006780893-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1538 ± 113	$4.91^{+3.57}_{-2.83}$	318^{+26}_{-19}	5051^{+2819}_{-945}	$39574^{+193411}_{-25720}$
Alt.	-358 ± 84	$6.21^{+3.94}_{-3.30}$	318^{+24}_{-18}	3506^{+1165}_{-454}	5747^{+20604}_{-3636}

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 $A_{obs} \gg 1.0$

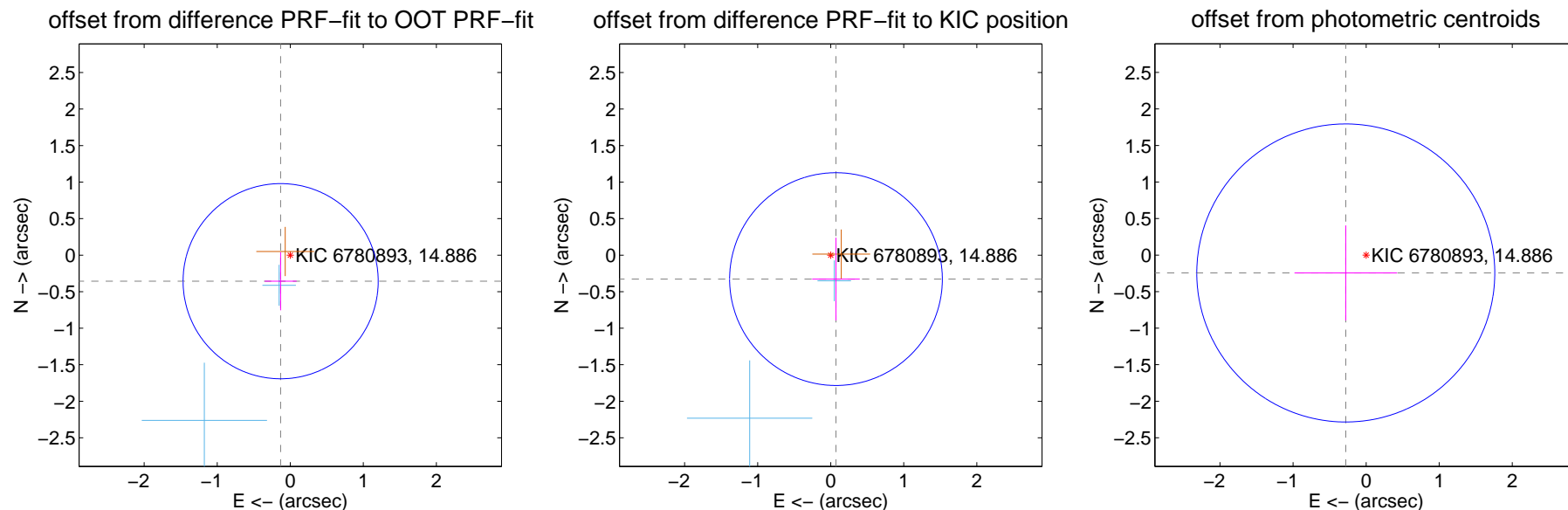
DV Centroid Data

Supplemental centroid analysis for 006780893-02. Kepler magnitude: 14.89. Transit SNR 9.51

There are 2 quarters with good PRF difference image offsets

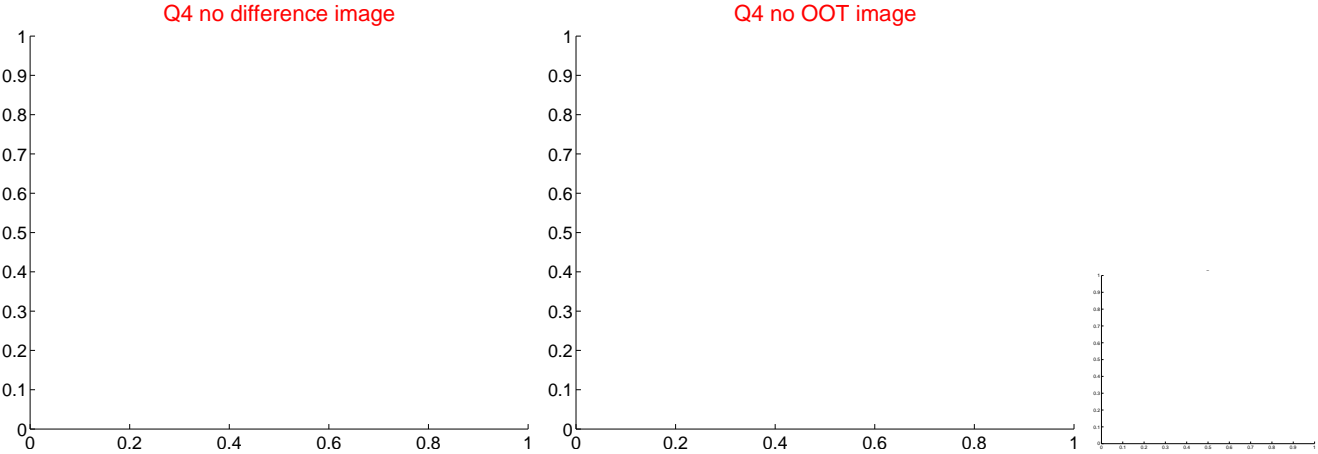
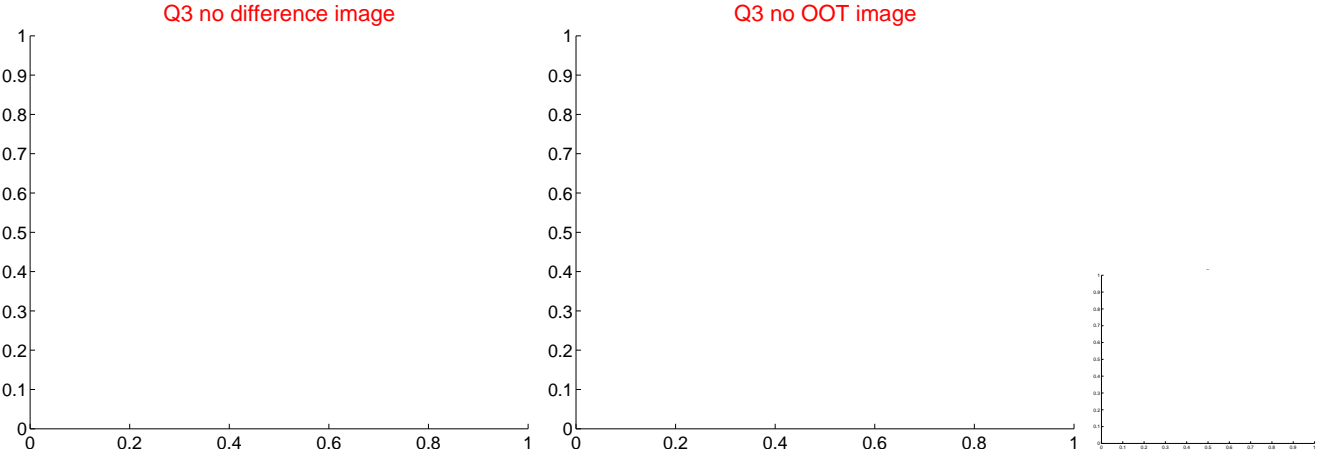
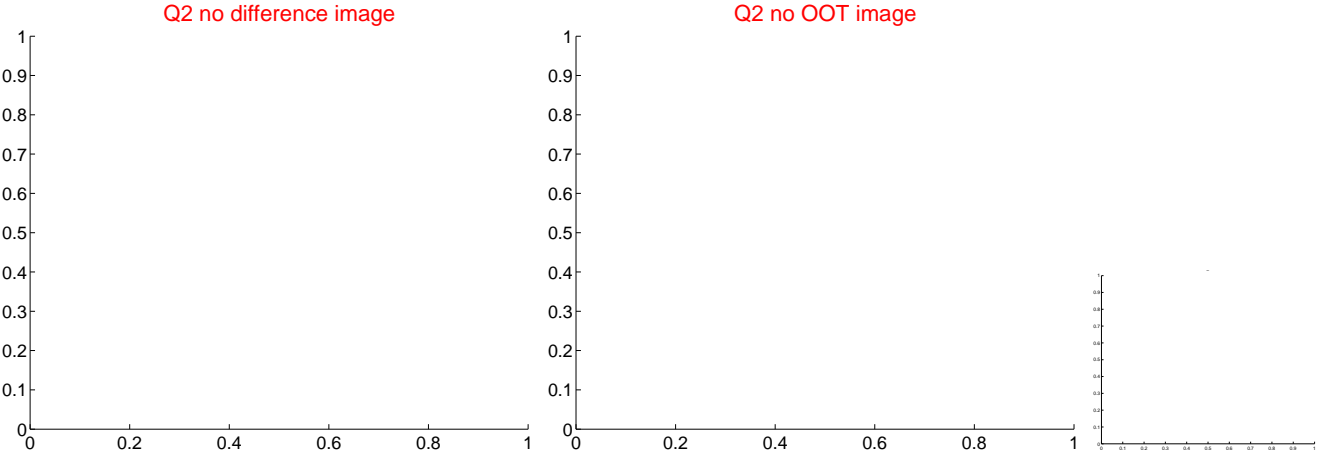
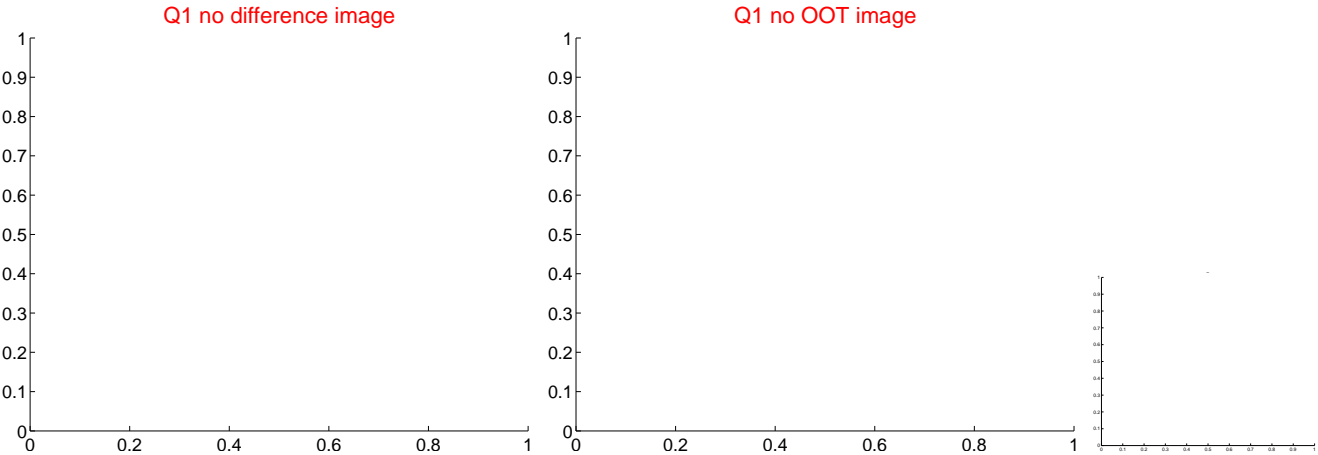
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.380 ± 0.445	0.85	0.132 ± 0.219	-0.356 ± 0.399
PRF-fit source offset from KIC position	0.336 ± 0.485	0.69	-0.072 ± 0.326	-0.328 ± 0.566
photometric centroid source offset	0.37 ± 0.68	0.55	0.28 ± 0.70	-0.24 ± 0.65

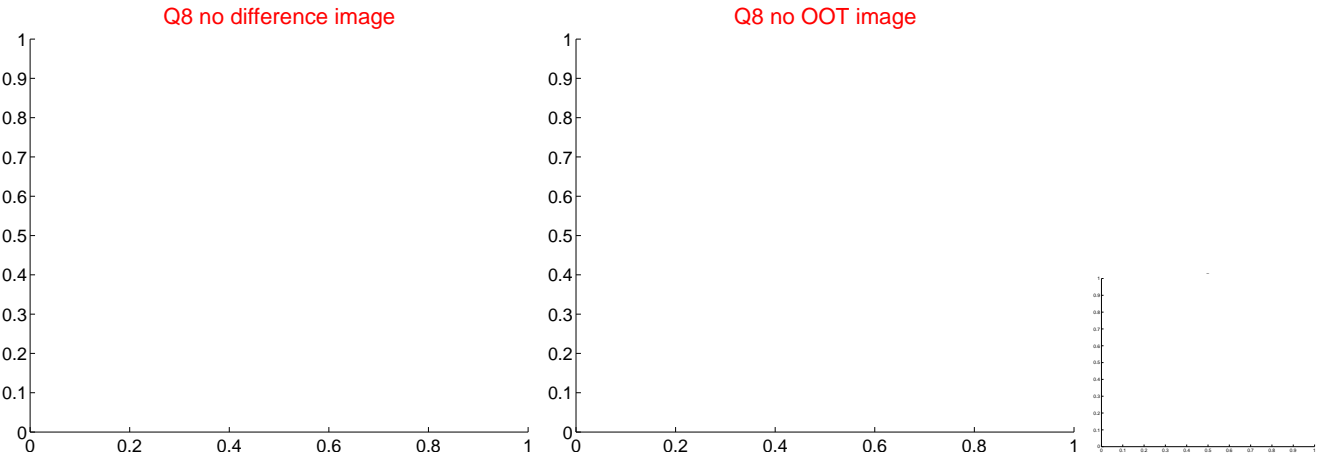
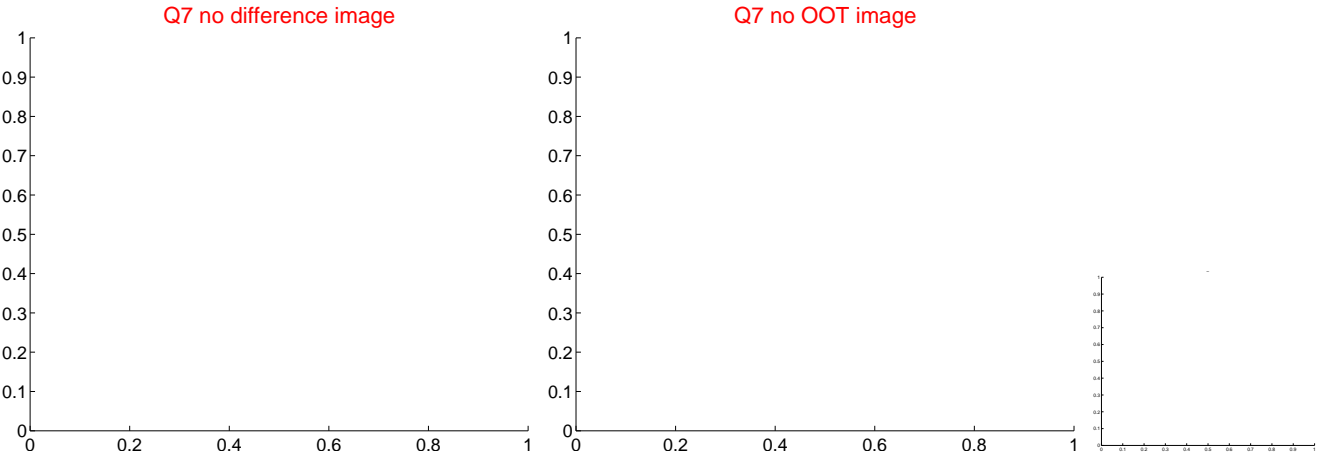
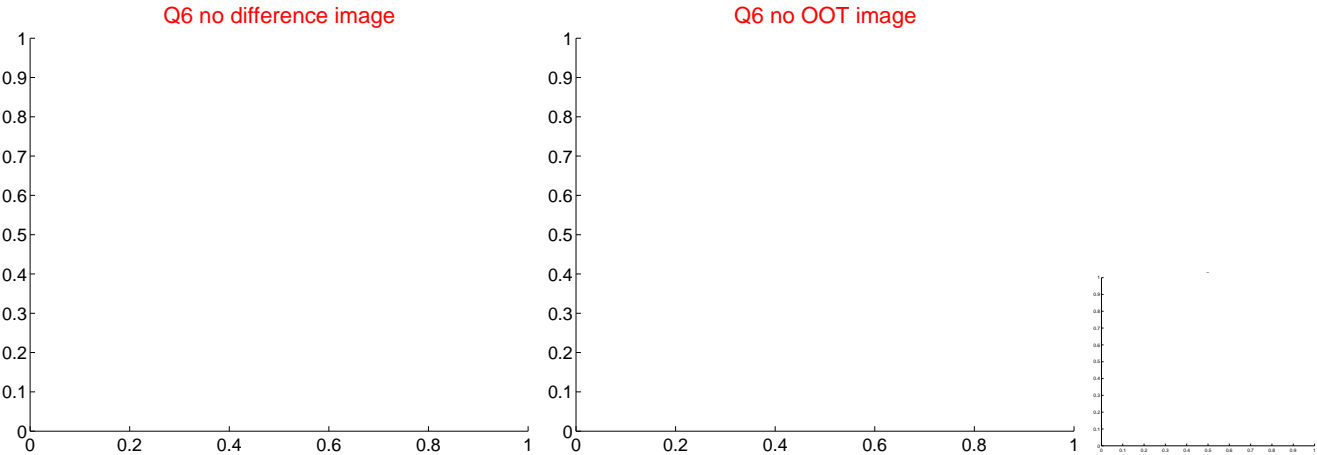
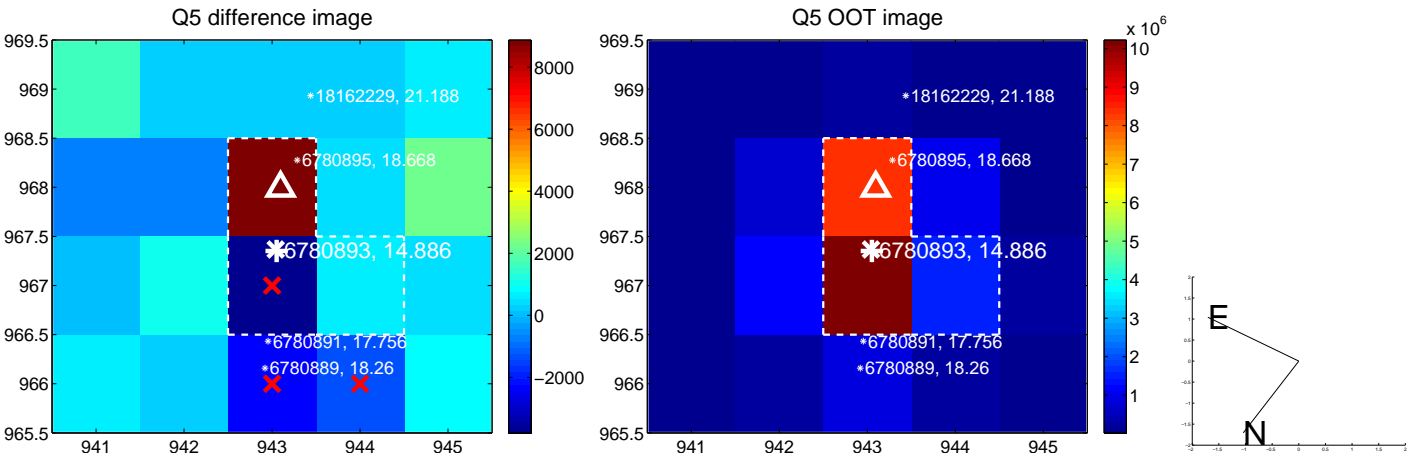


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

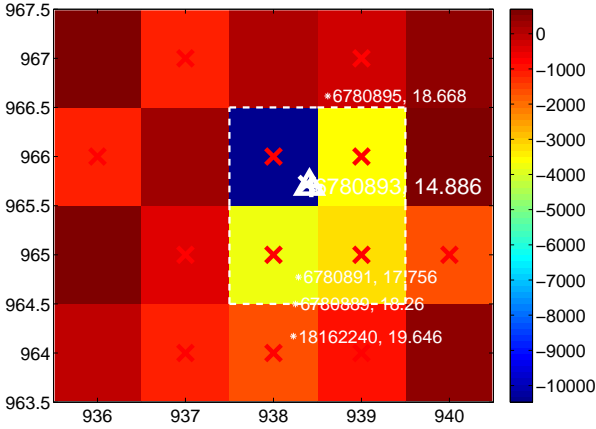
Q9 no difference image



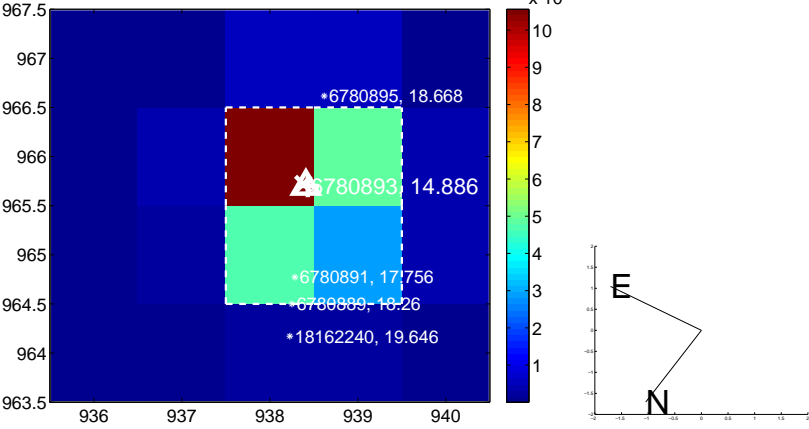
Q9 no OOT image



Q10 difference image. Poor Quality



Q10 OOT image



Q11 no difference image



Q11 no OOT image



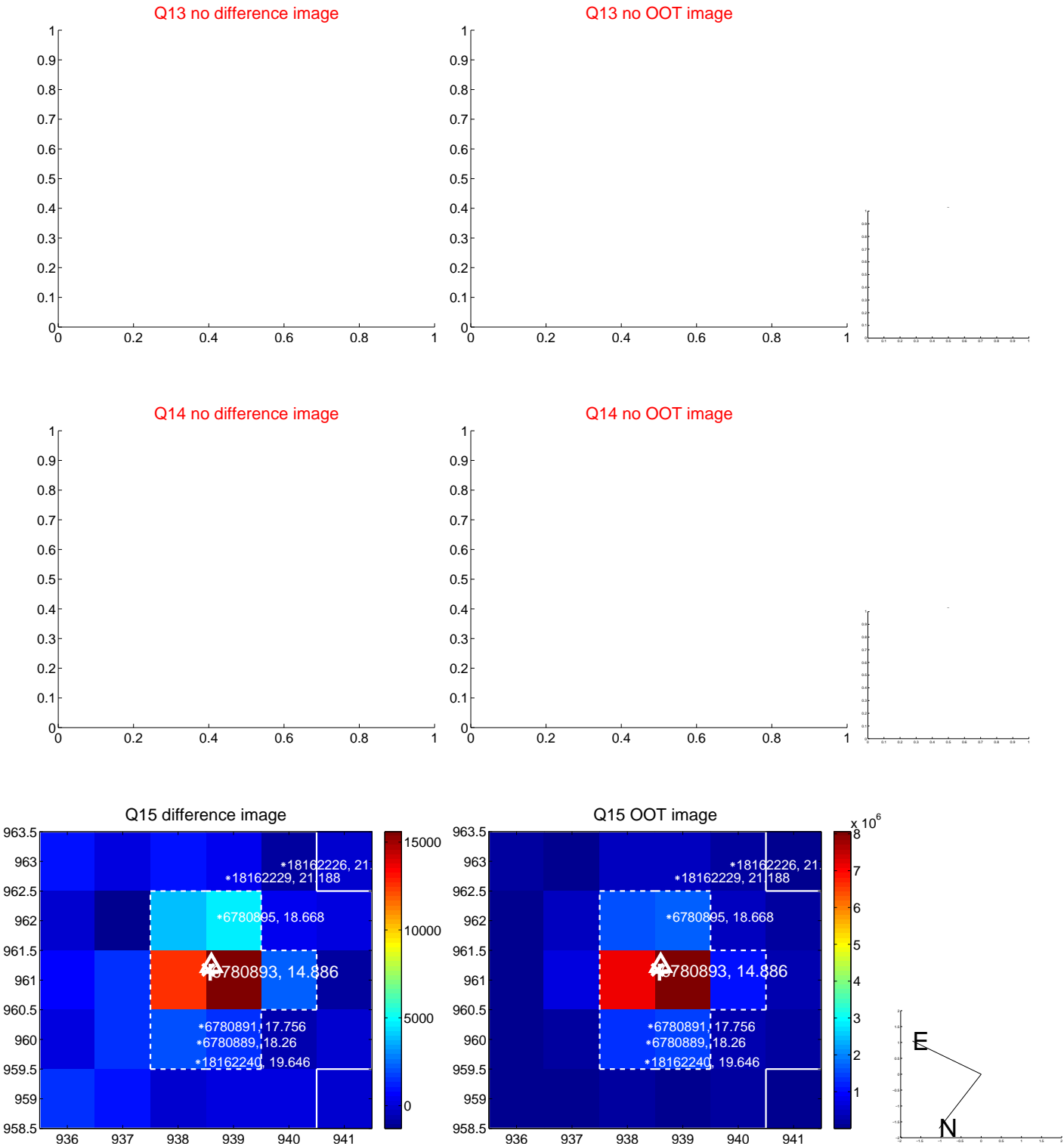
Q12 no difference image



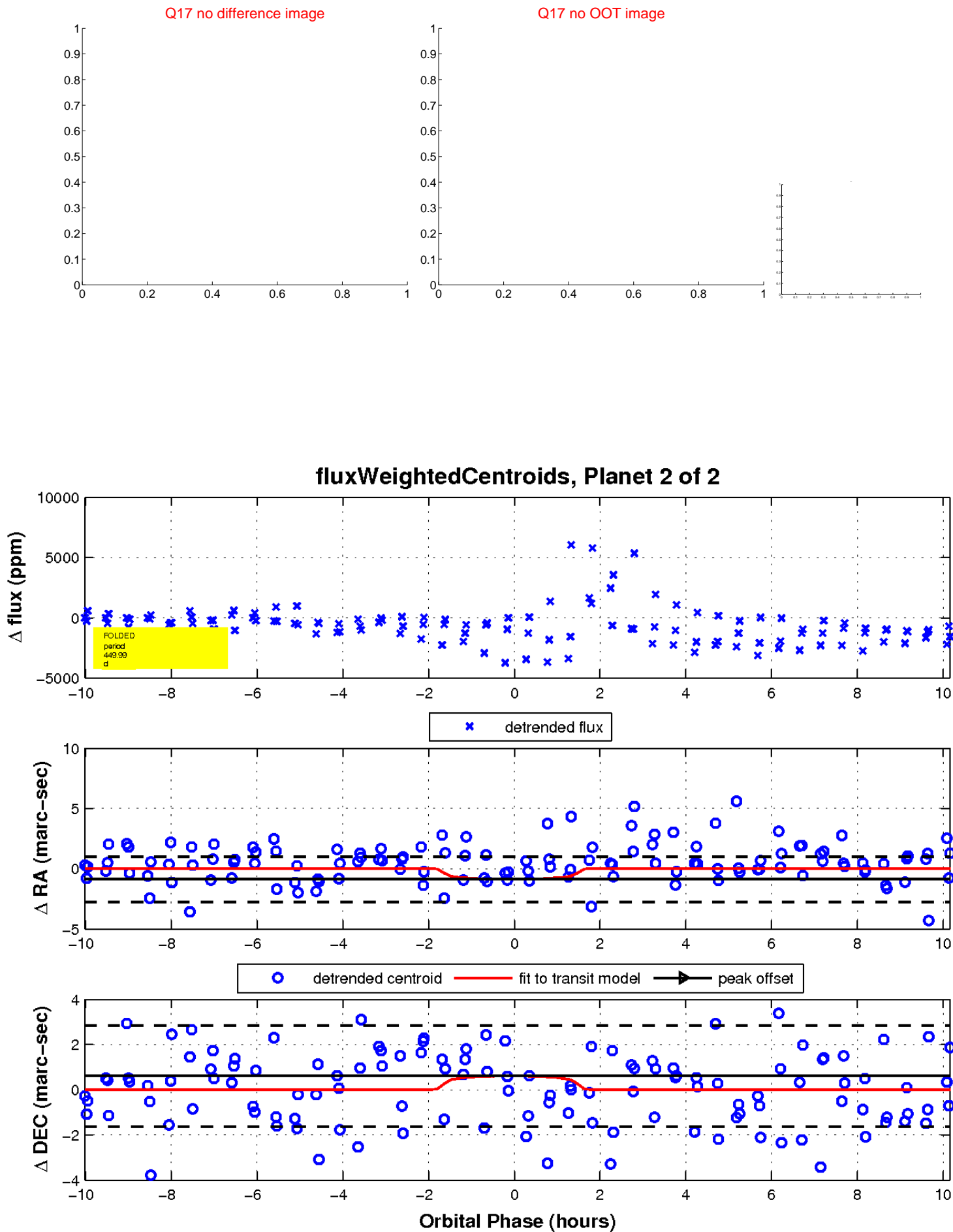
Q12 no OOT image



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.



UKIRT Image

Declination

