

KIC 006063291

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})
006063291-01	OBS	No	384.513628	372.928481	29.6	4.356	19.6	3.2	0.91	5695	0.51	0.87
006063291-02	OBS	No	485.421313	199.410390	78.6	28.191	31.7	10.3	0.91	5695	1.00	0.64

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006063291-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
006063291-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

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

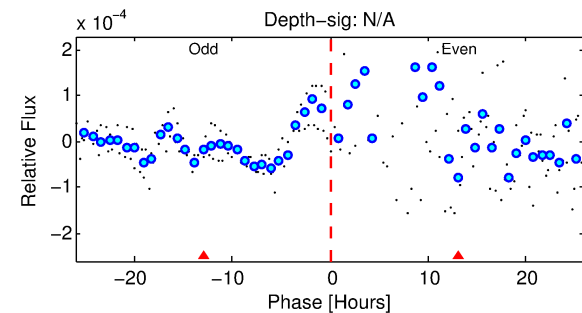
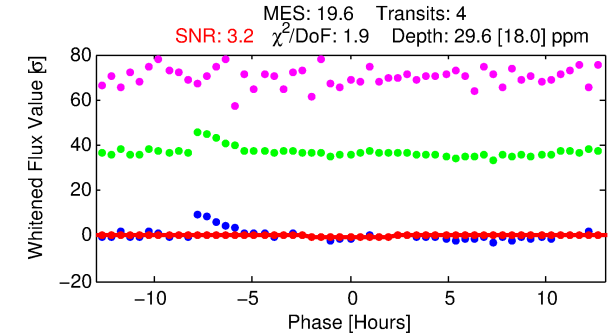
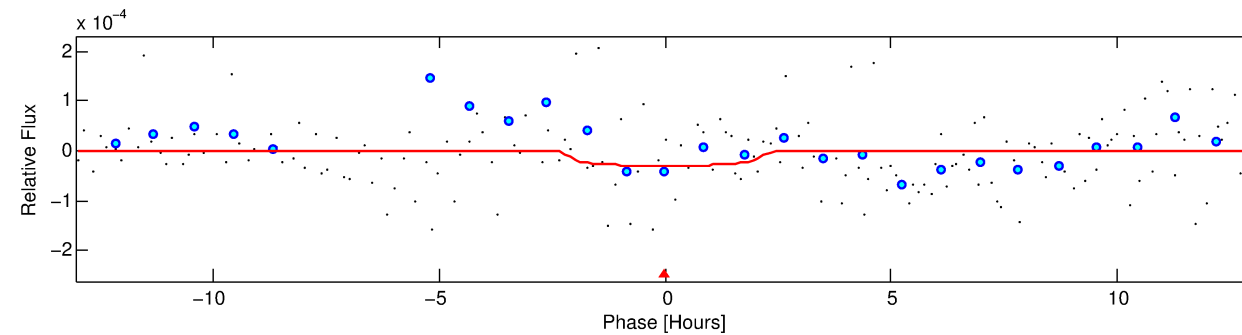
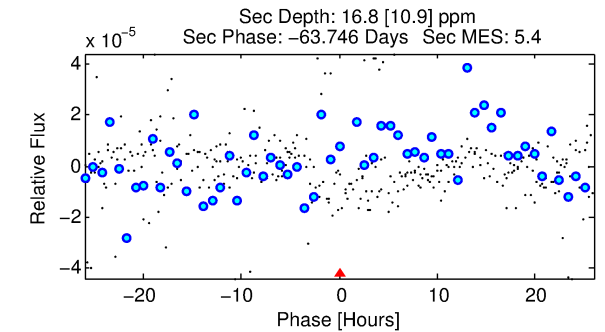
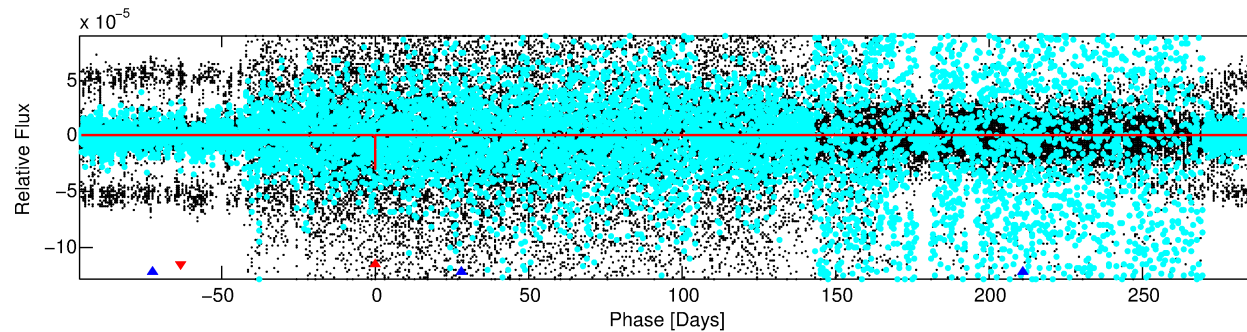
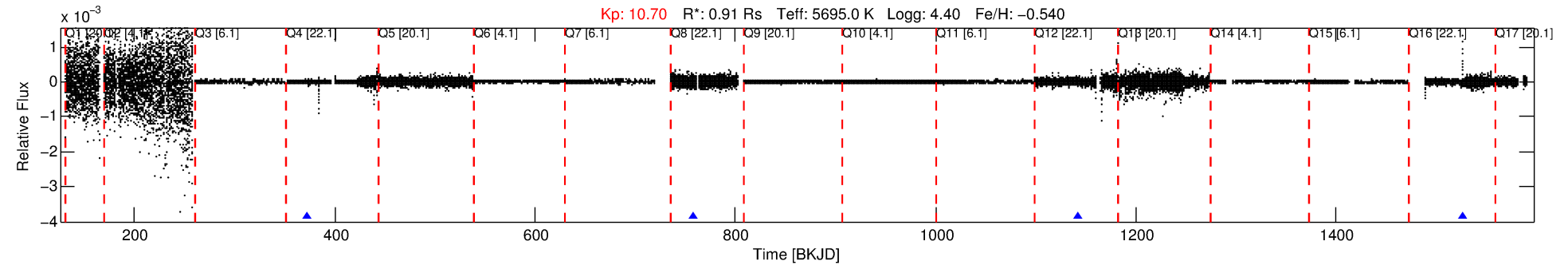
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006063291-01

No Significant Match Found

DV One-Page Summary

KIC: 6063291 Candidate: 1 of 2 Period: 384.514 d



DV Fit Results:

Period = 384.51363 [0.02029] d
Epoch = 372.9285 [0.0236] BKJD
Rp/R* = 0.0052 [0.0047]
a/R* = 555.52 [2474.54]
b = 0.58 [5.06]
Seff = 0.87 [0.32]
Teq = 246 [23] K
Rp = 0.51 [0.49] Re
a = 0.9427 [0.2170] AU
Ag = 31374.45 [61672.15] [0.51σ]
Teffp = 5068 [2455] K [1.96σ]

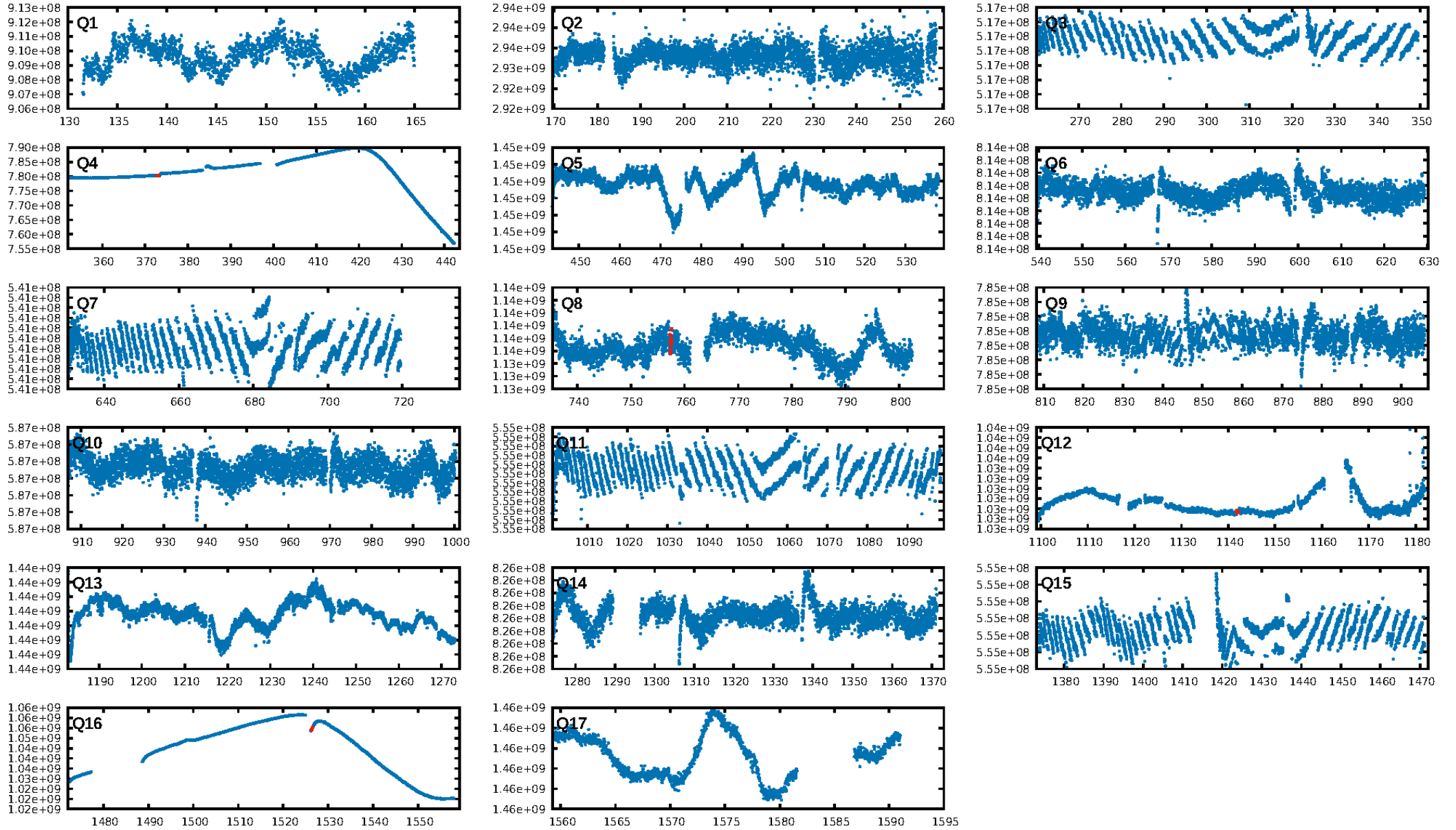
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [84.90σ]
ModelChiSquare2-sig: 5.9%
ModelChiSquareGof-sig: 72.6%
Bootstrap-pfa: 2.27e-07
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -3.529
Centroid-sig: 68.9%
Centroid-so: 1.433 arcsec [0.34σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [2/2]

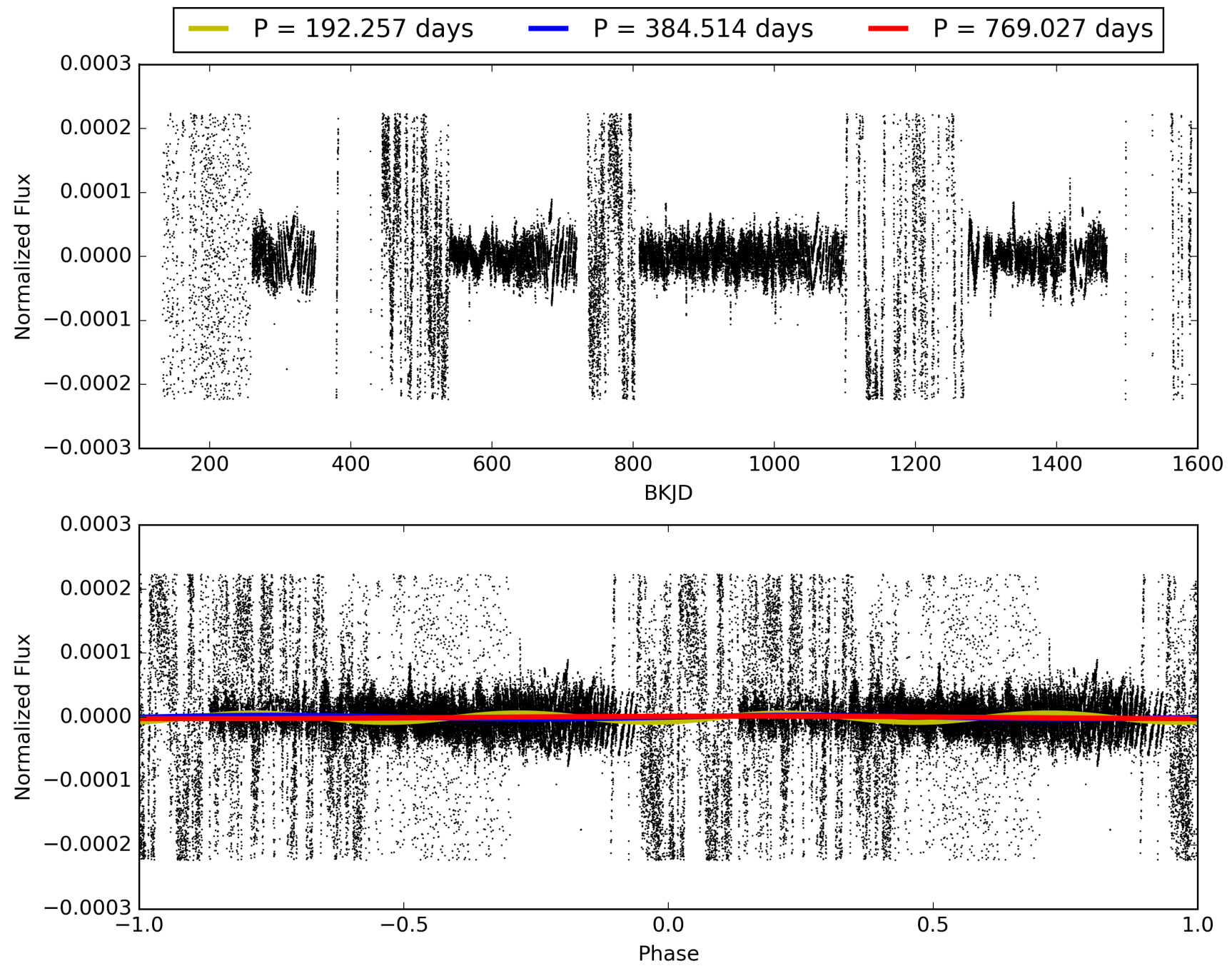
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 06:02:23 Z

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

TCE 006063291-01, PDC Light Curves

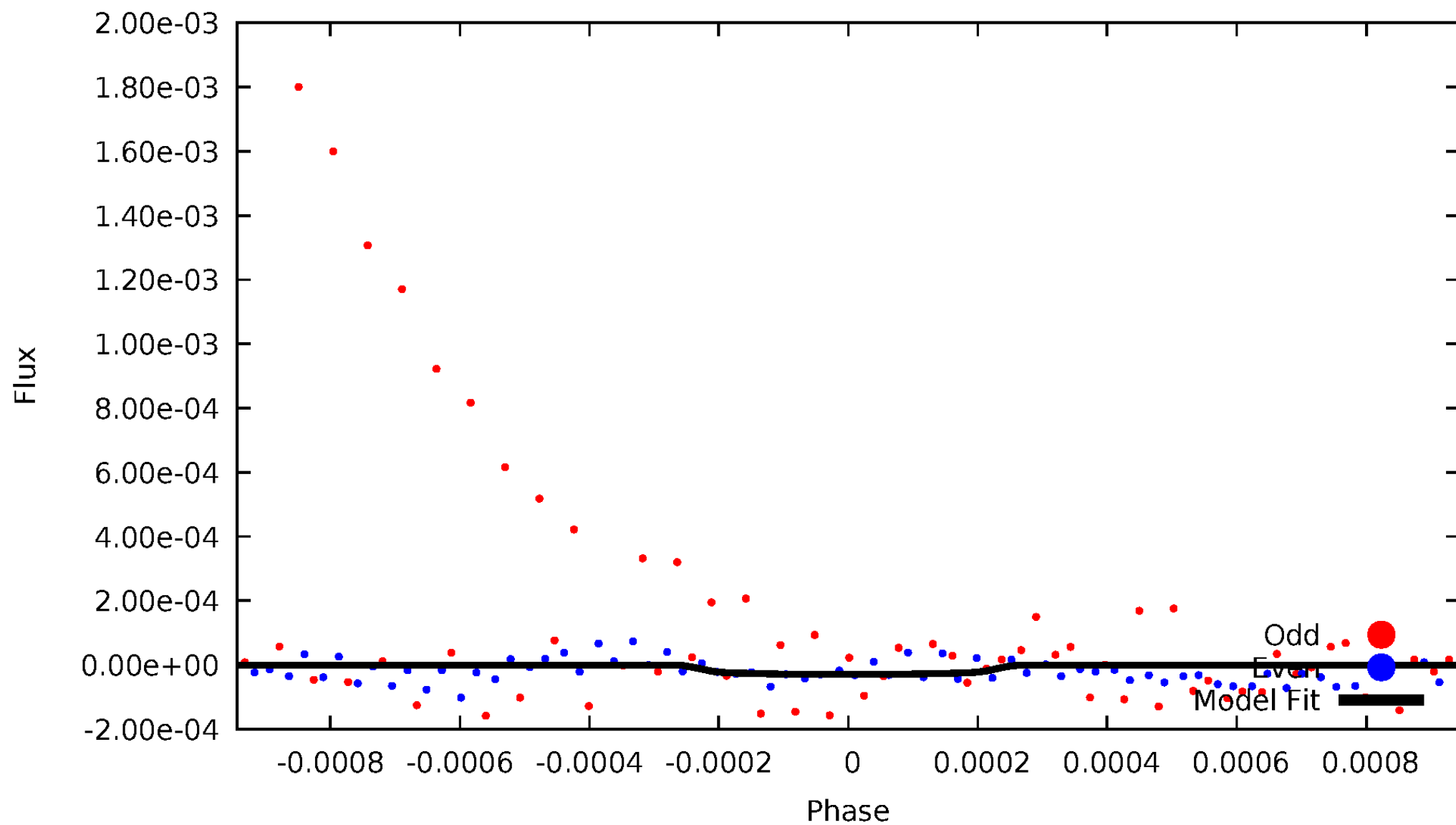


TCE 006063291-01



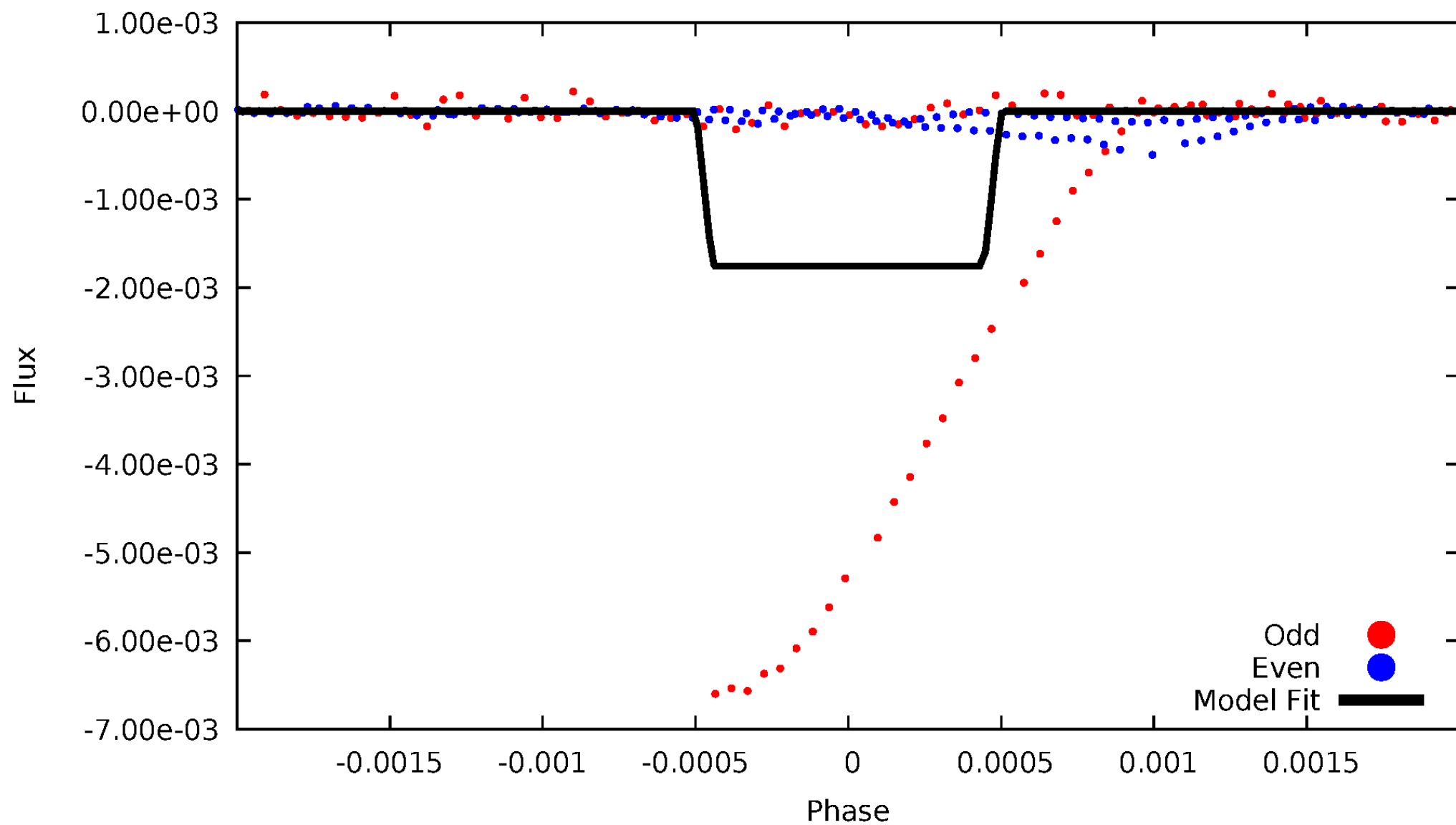
DV Odd/Even

TCE 006063291-01



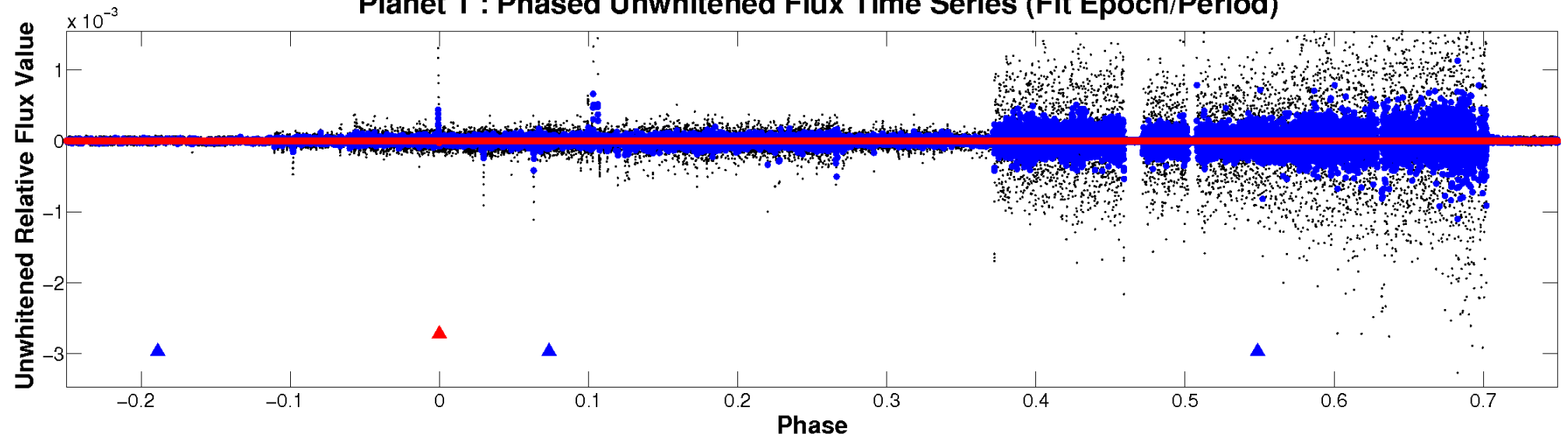
ALT Odd/Even

TCE 006063291-01

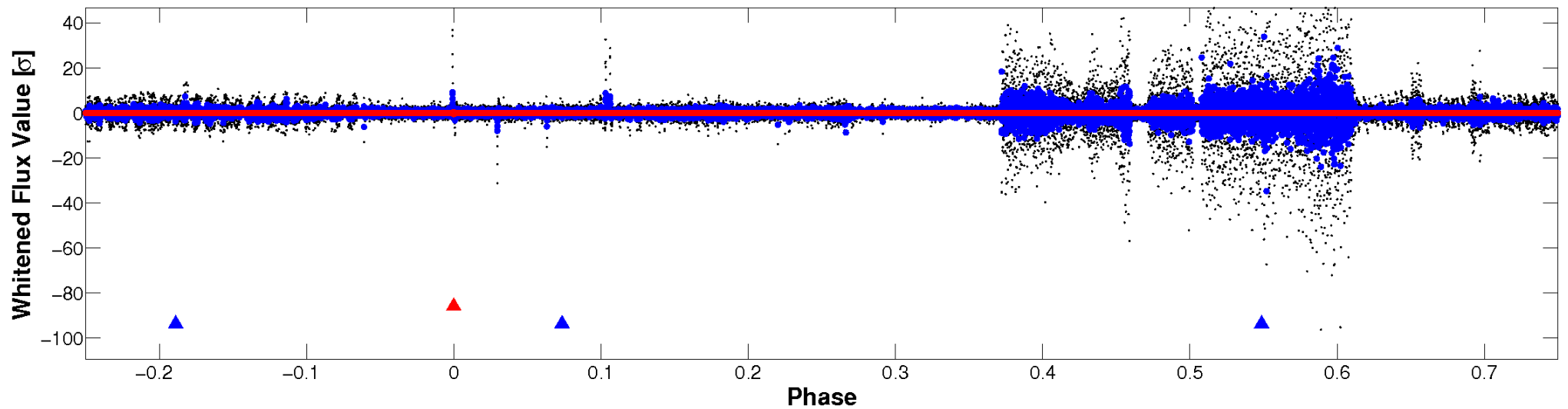


Non-Whitened Vs. Whitened Light Curve

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

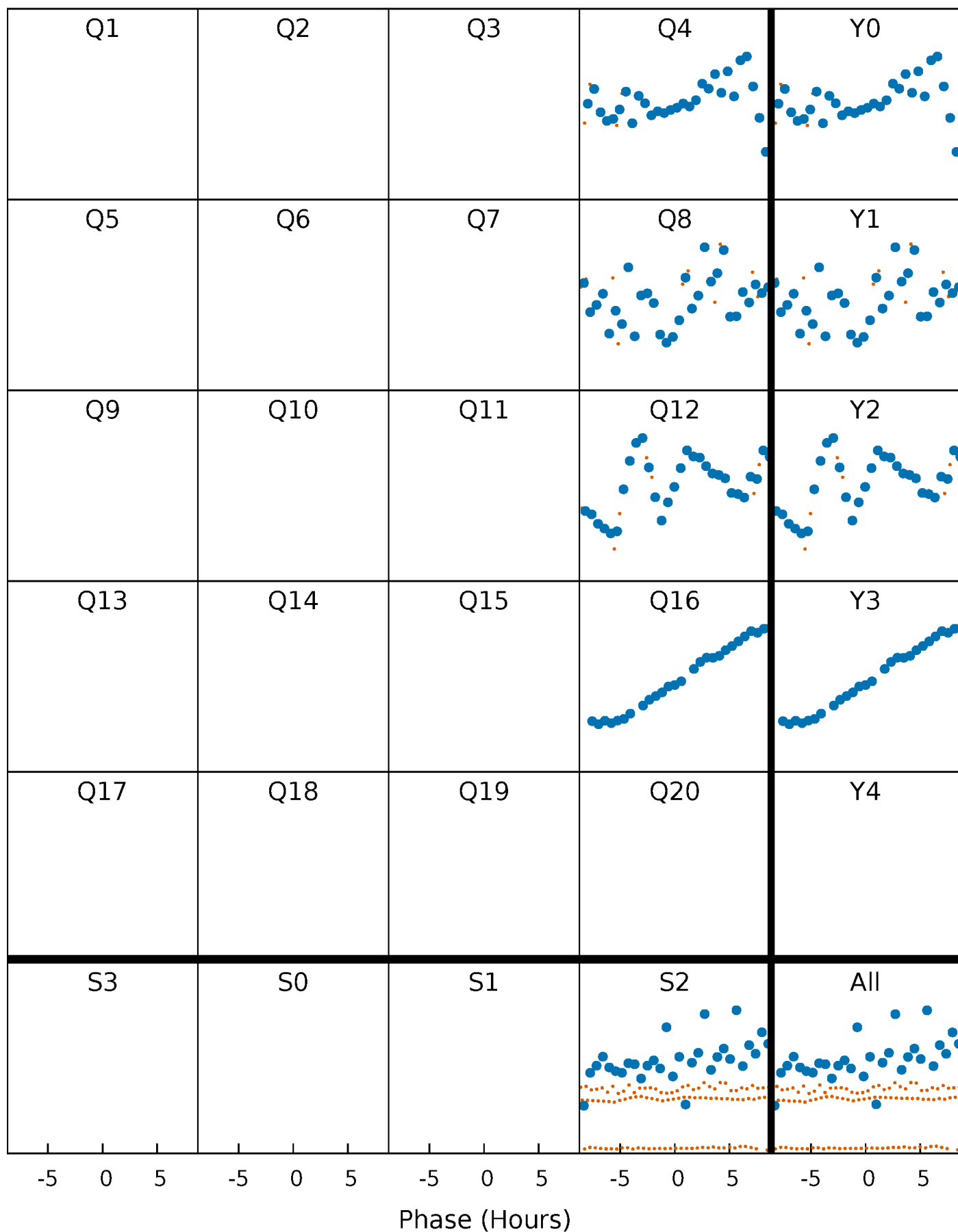


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



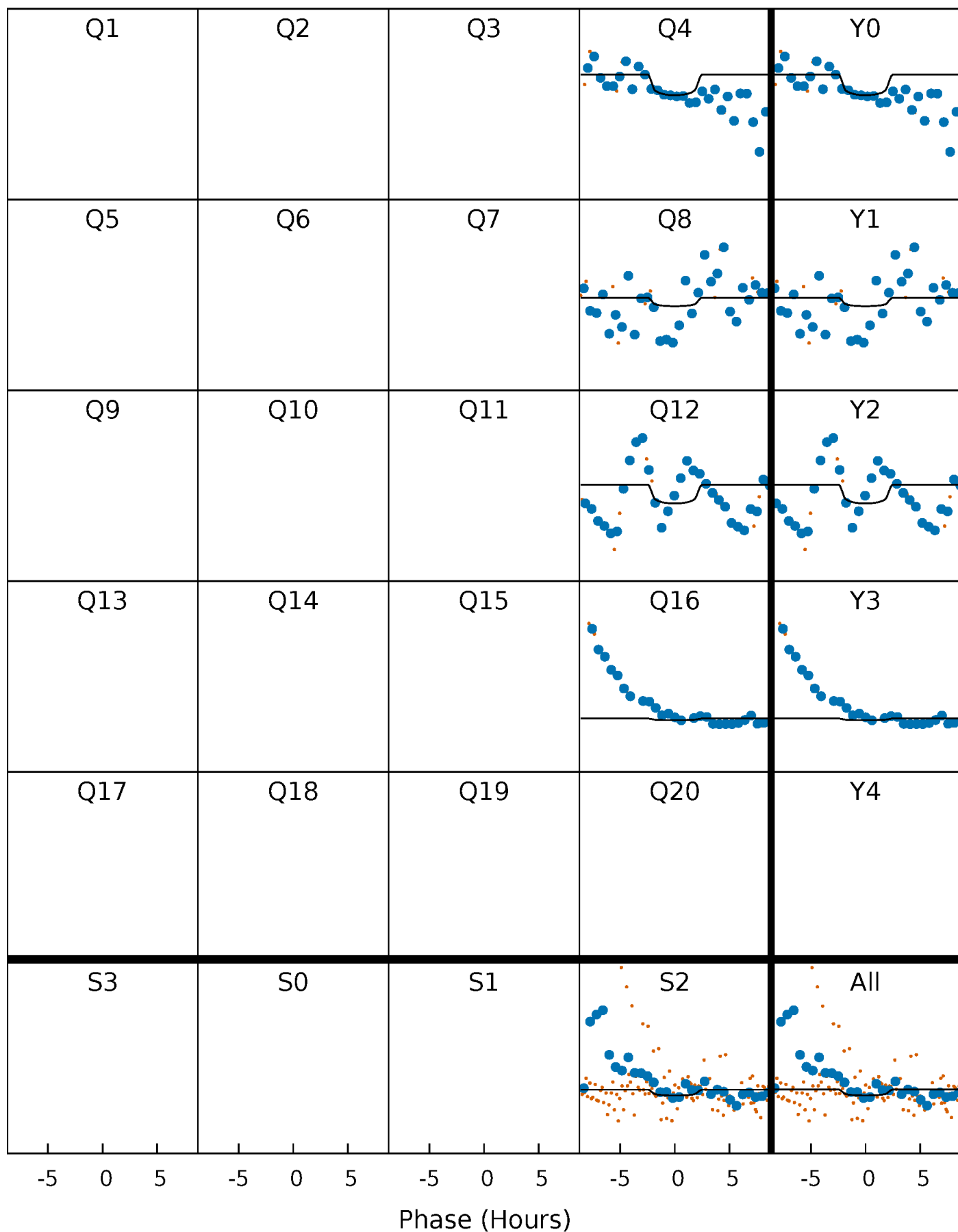
PDC Quarter-Phased Transit Curves

TCE 006063291-01 P=384.513628 Days $T_0=372.928481$ (BKJD)



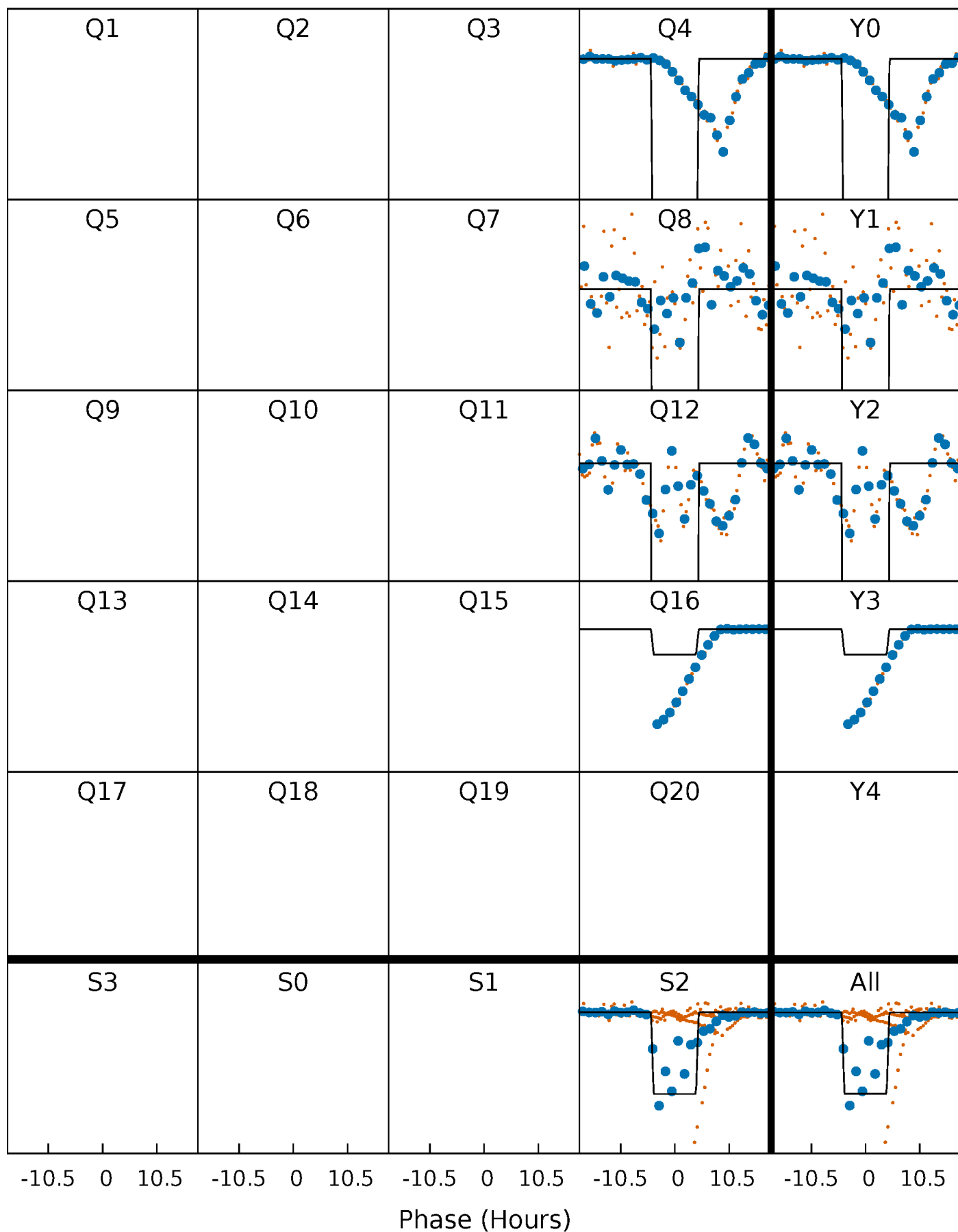
DV Quarter-Phased Transit Curves

TCE 006063291-01 P=384.513628 Days $T_0=372.928481$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

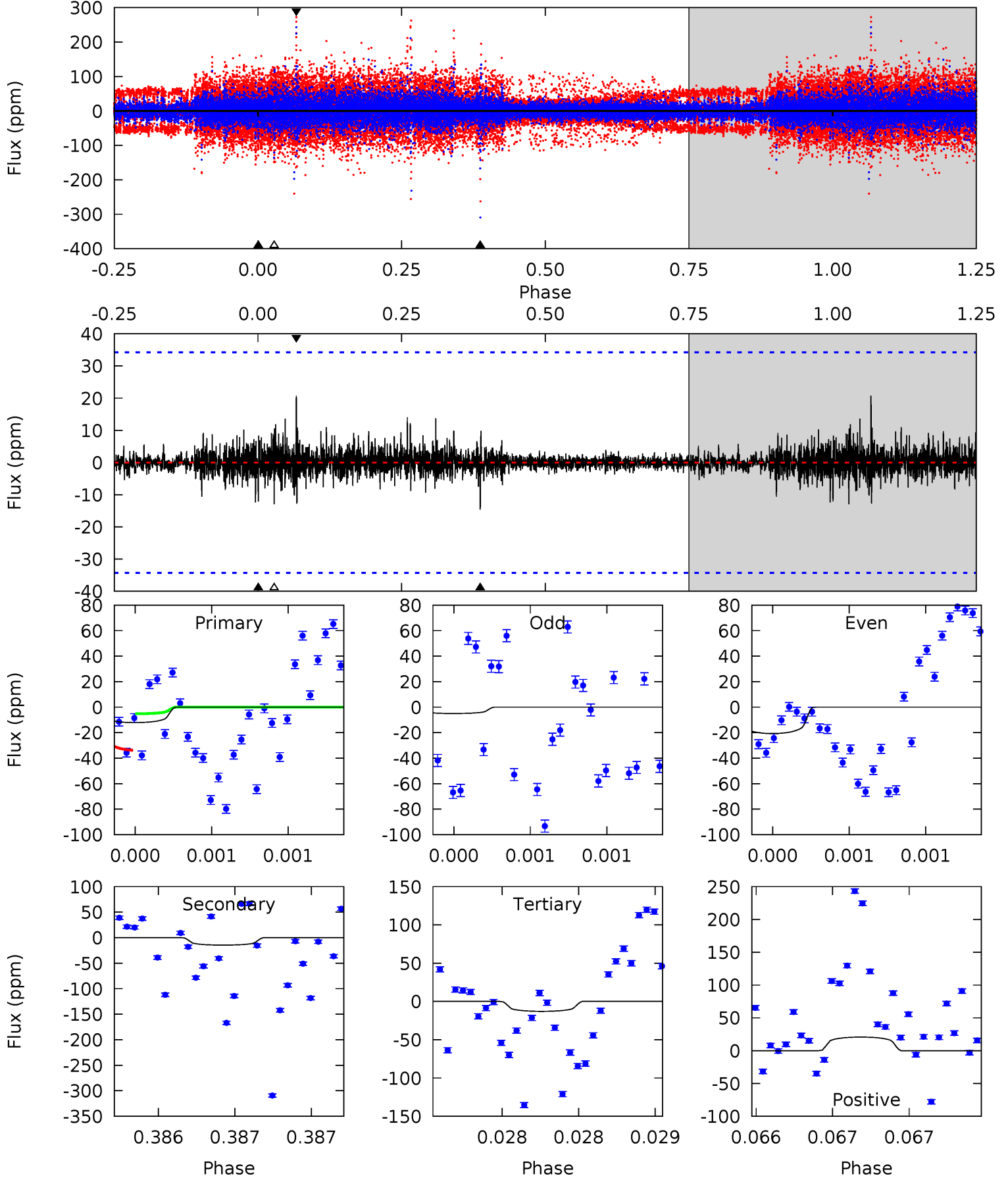
TCE 006063291-01 P=384.471054 Days $T_0=372.897133$ (BKJD)



DV Model-Shift Uniqueness Test

006063291-01, P = 384.513628 Days, E = 372.928481 Days

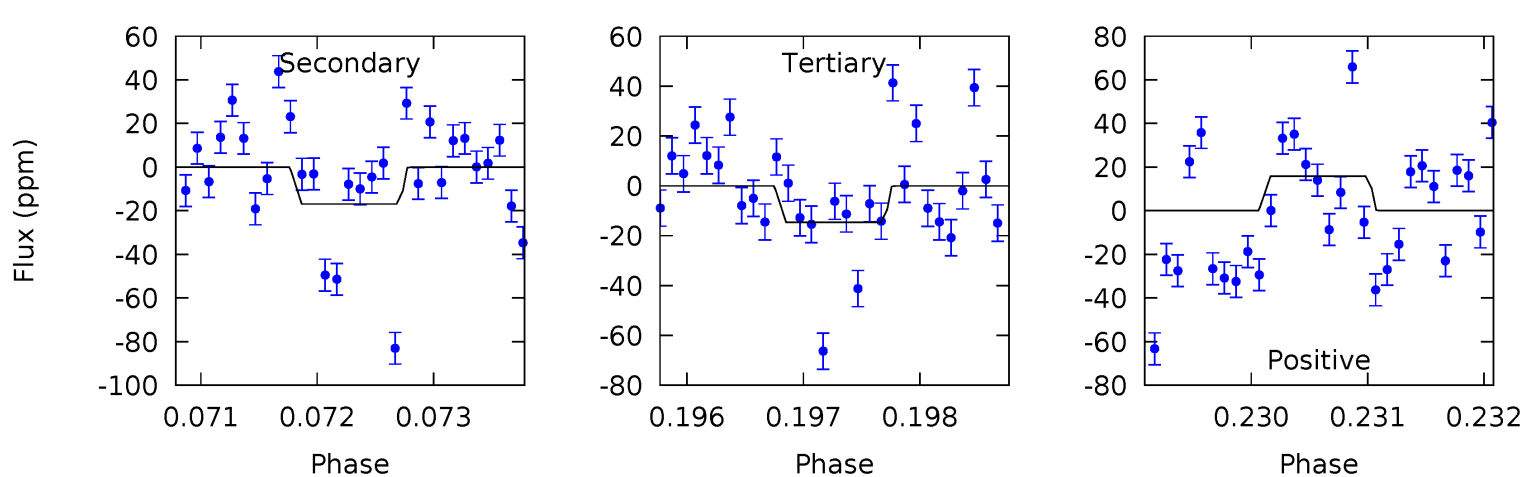
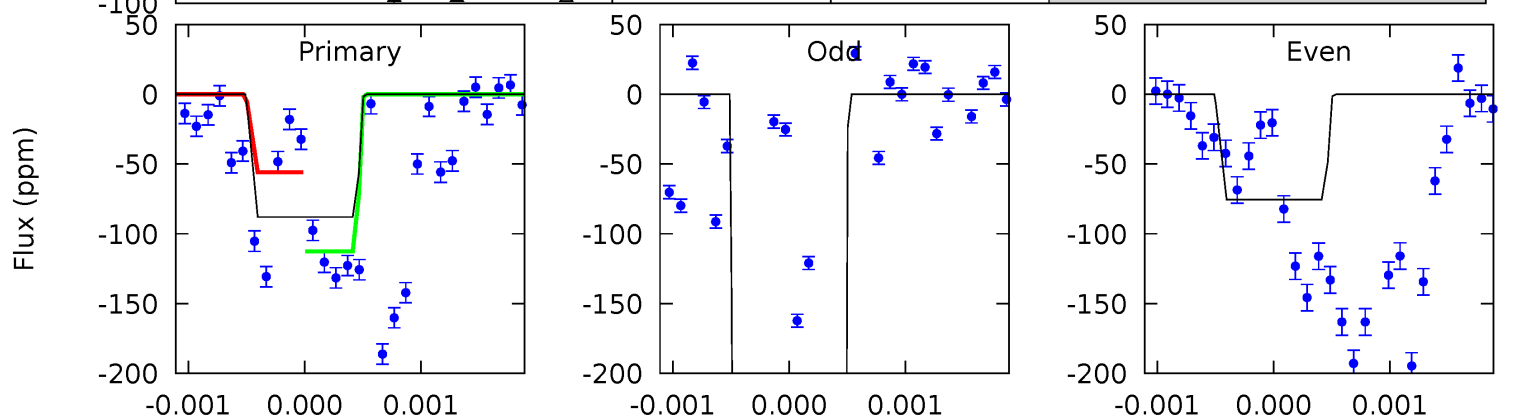
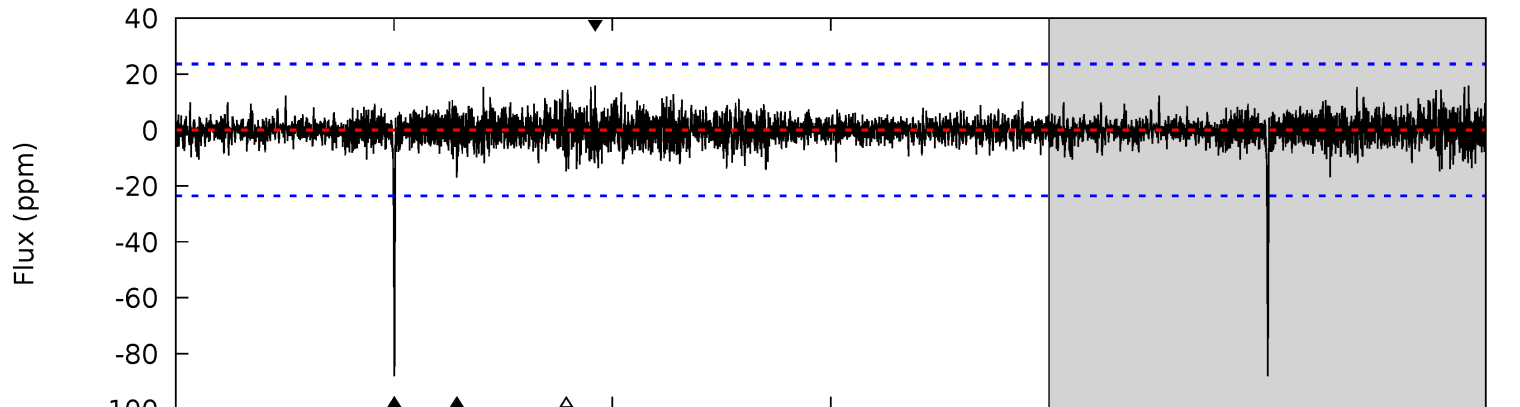
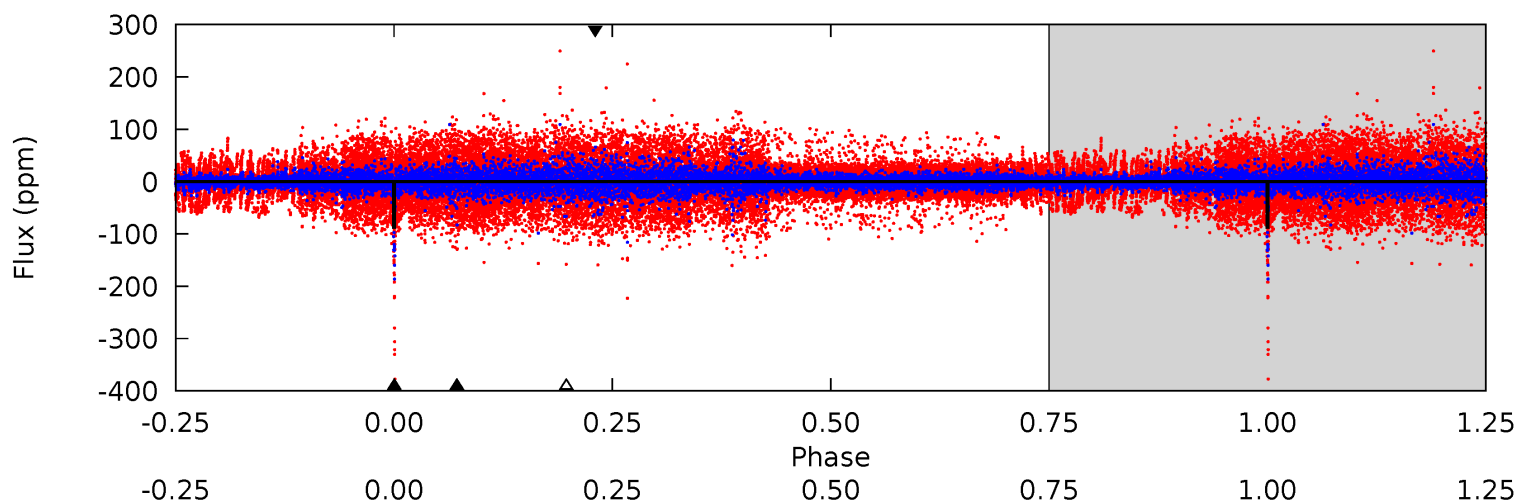
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.97	2.37	2.10	3.37	5.57	3.48	0.38	-0.13	-1.40	0.28	-1.00	0.89	0.42	0.59	2.13



Alt Model-Shift Uniqueness Test

006063291-01, P = 384.471054 Days, E = 372.897133 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.3	3.91	3.39	3.68	5.45	3.29	0.77	17.0	16.7	0.52	0.23	88.0	17.5	0.15	0



Stellar Parameters For KIC 006063291

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5695^{+153}_{-136}	$4.402^{+0.162}_{-0.198}$	$-0.540^{+0.350}_{-0.300}$	$0.906^{+0.235}_{-0.176}$	$0.756^{+0.113}_{-0.040}$	$1.429^{+1.126}_{-0.728}$
	+3%/-2%	+4%/-4%	+65%/-56%	+26%/-19%	+15%/-5%	+79%/-51%
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 006063291-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-15 ± 6	$0.60^{+0.46}_{-0.37}$	347^{+25}_{-22}	4711^{+2784}_{-981}	$20075^{+123243}_{-14456}$
Alt.	-17 ± 4	$4.24^{+0.73}_{-0.67}$	346^{+25}_{-21}	2608^{+116}_{-128}	472^{+224}_{-172}

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 006063291-01. **Kepler magnitude: 10.70.** Transit SNR 3.20

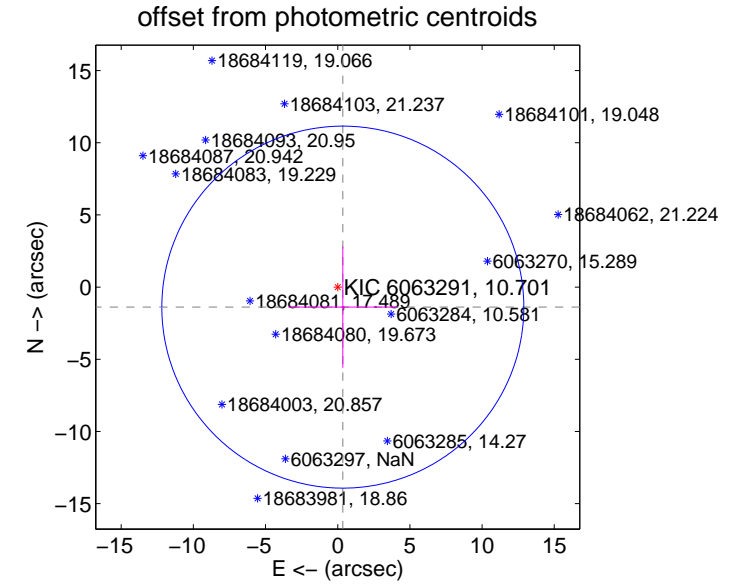
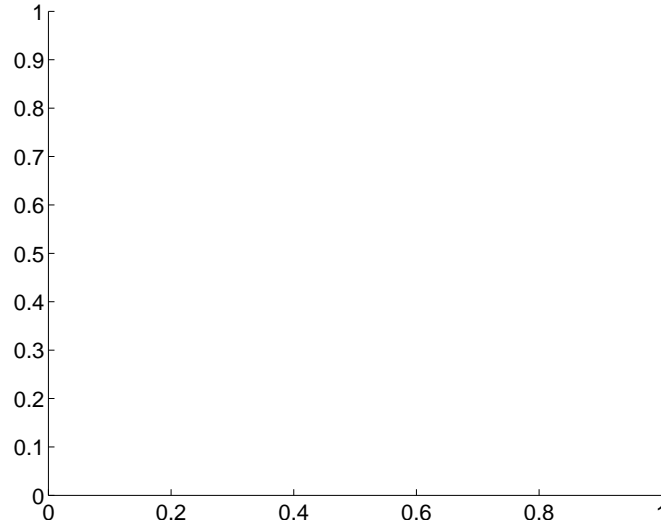
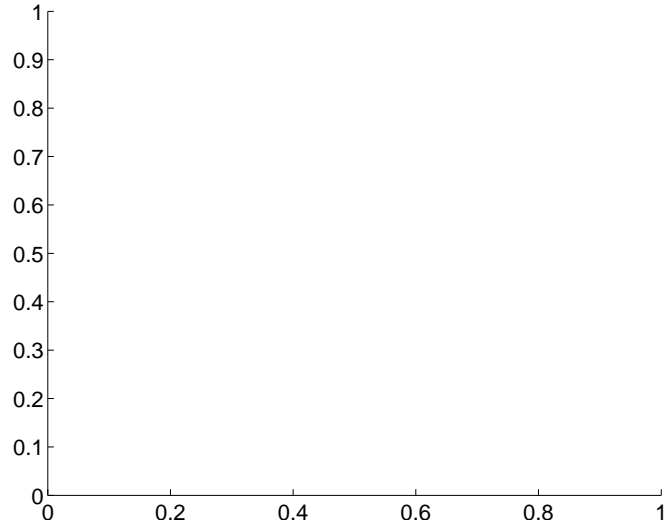
There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	1.43 ± 4.18	0.34	-0.35 ± 3.78	-1.39 ± 4.20

There is no PRF-fit offset from OOT-fit

There is no PRF-fit offset from KIC

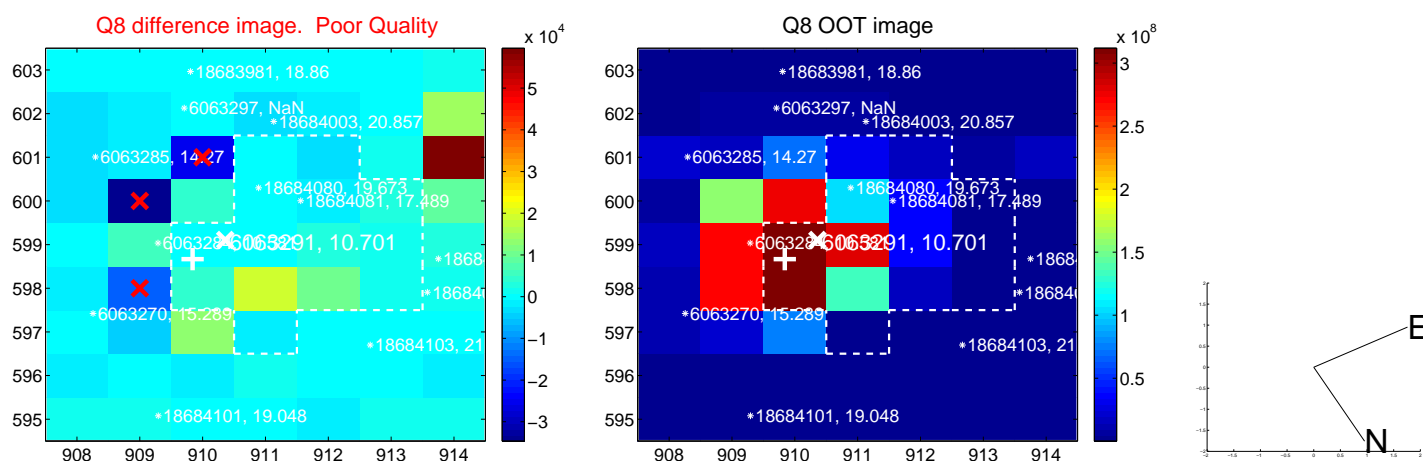
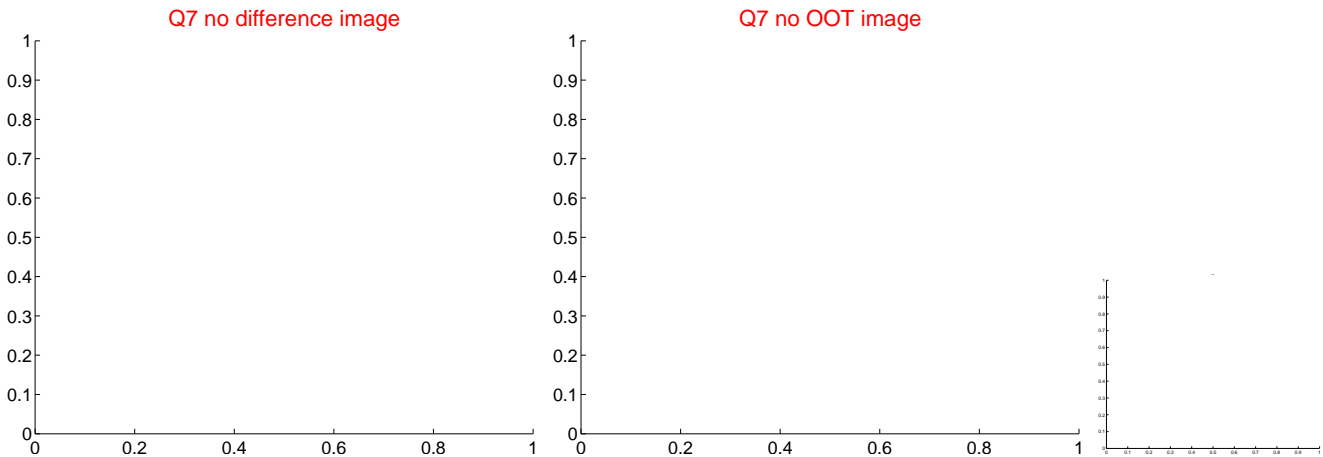
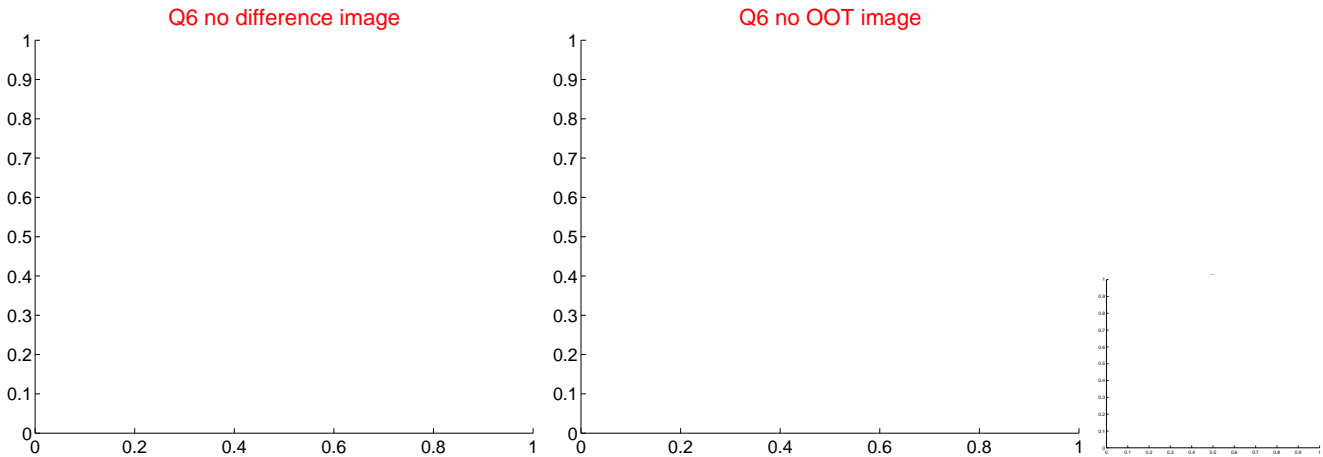
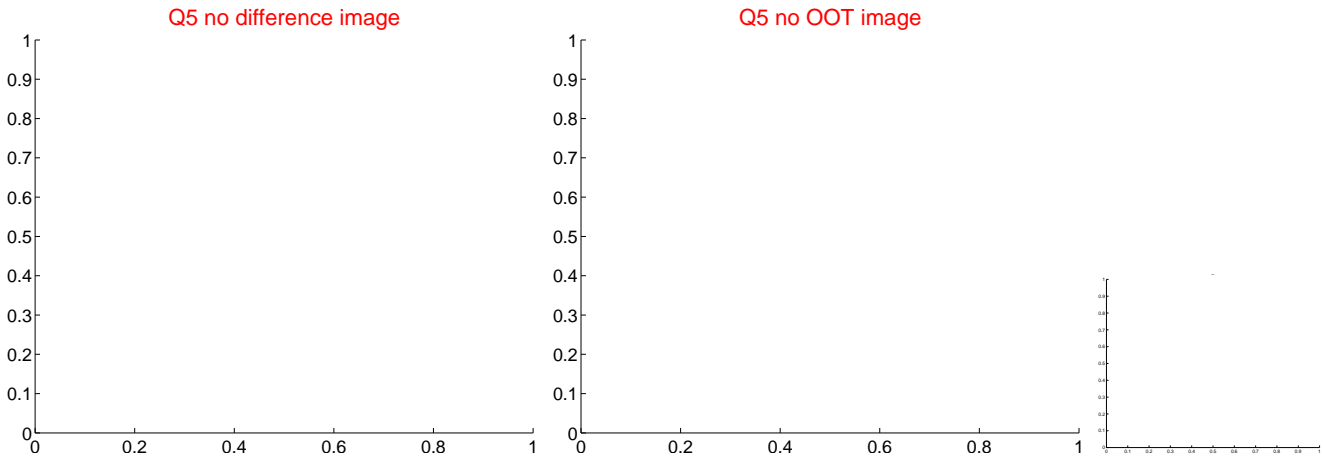


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

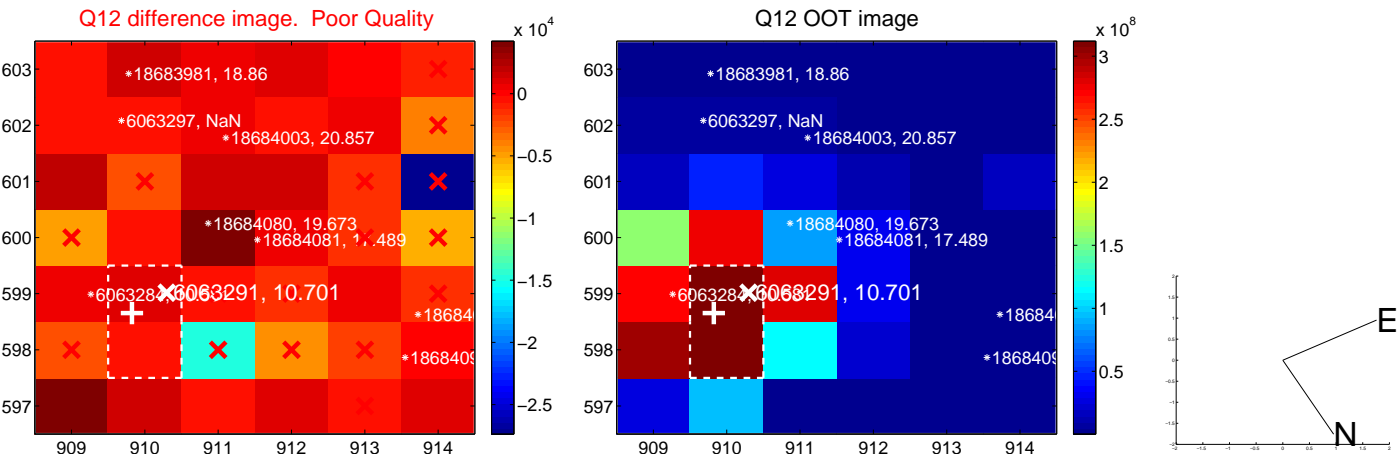
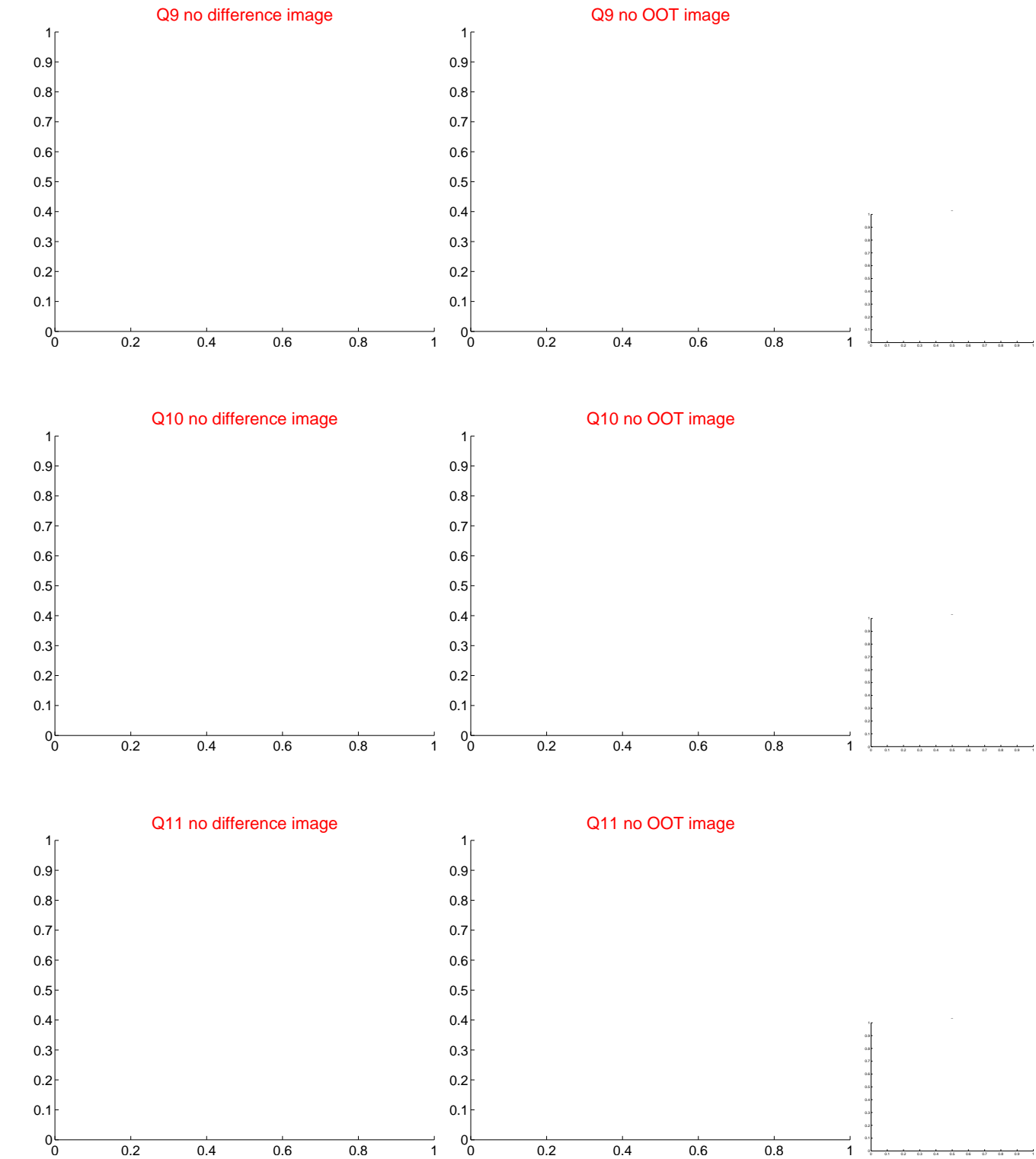
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



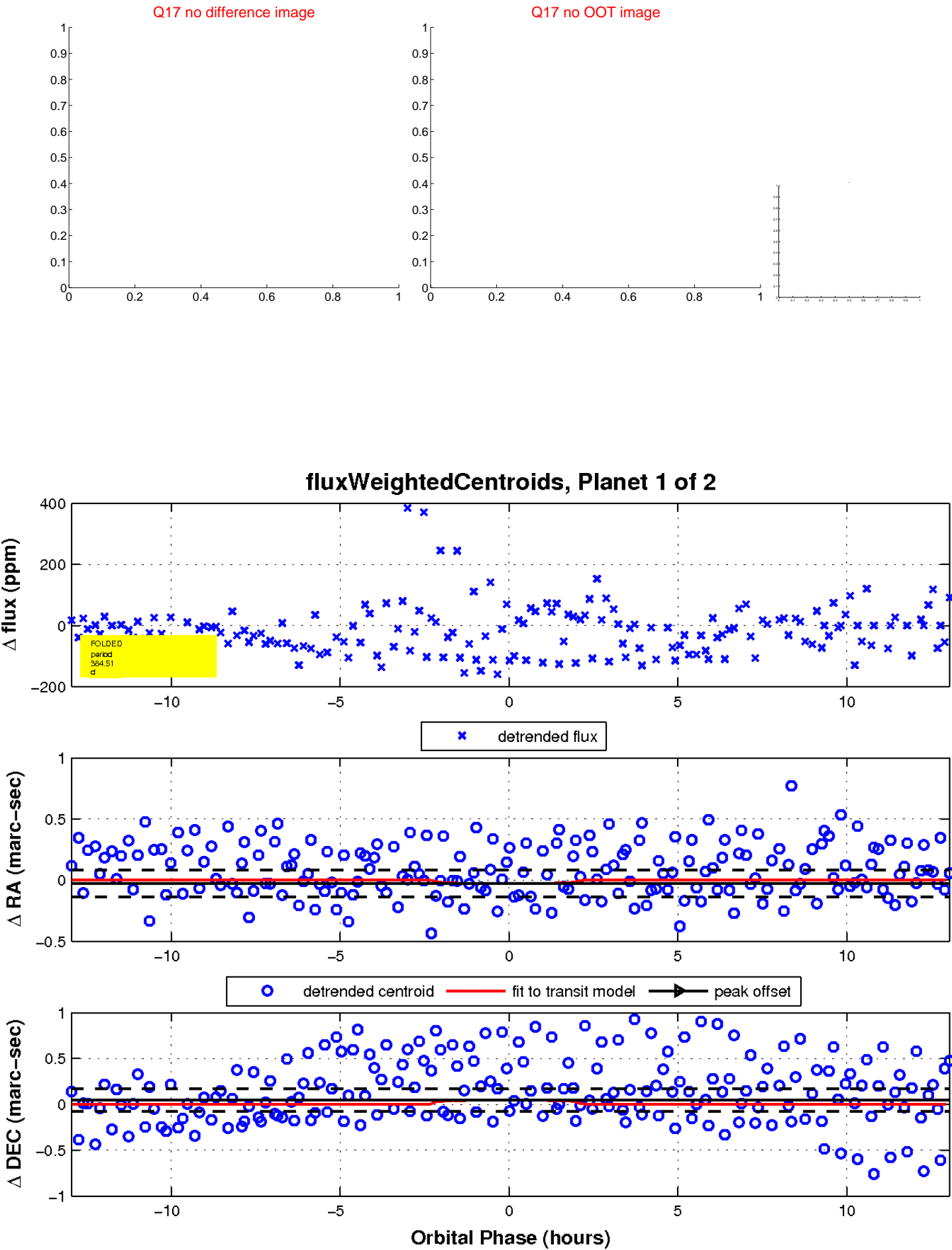
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



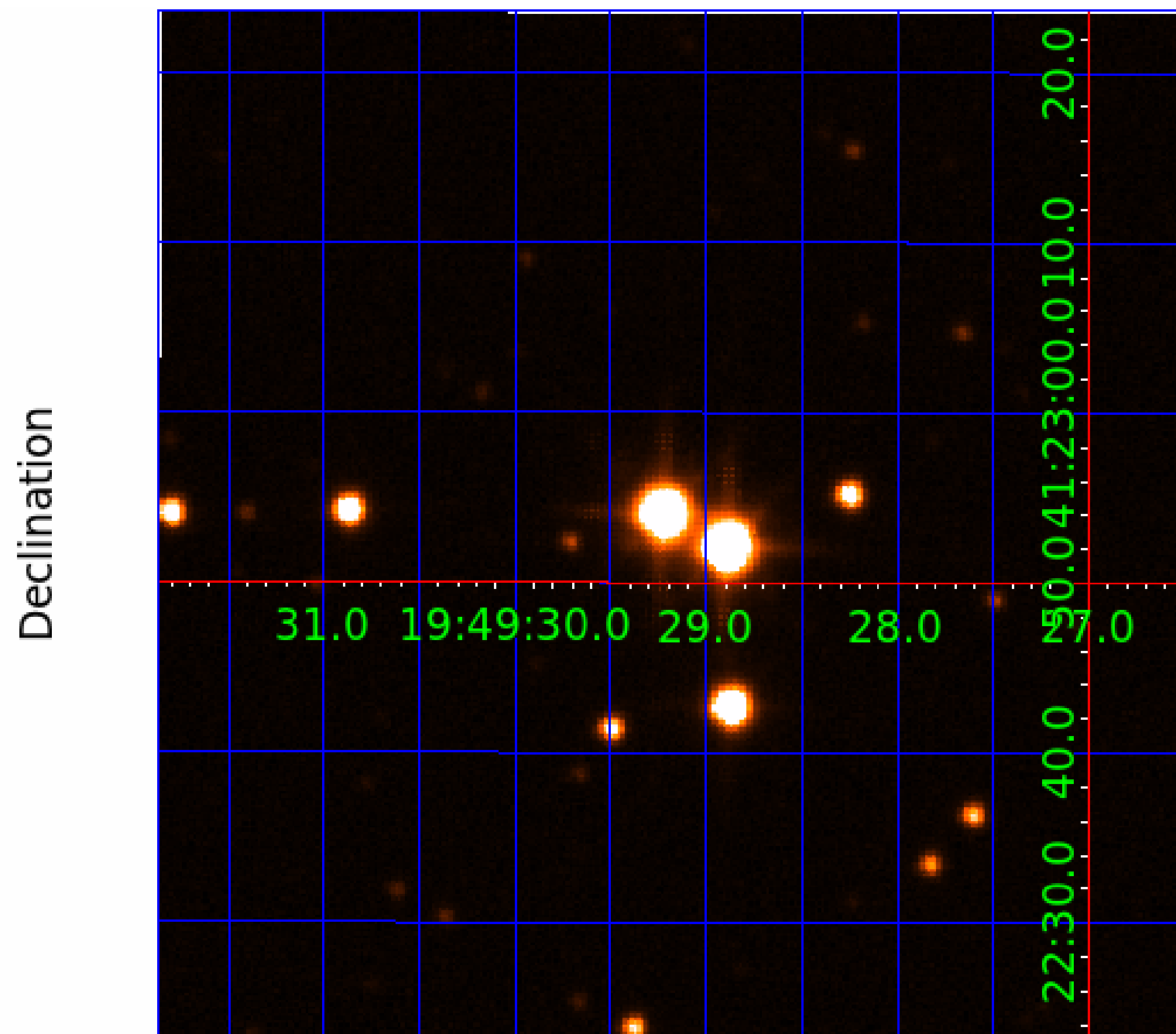
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 006063291

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})
006063291-01	OBS	No	384.513628	372.928481	29.6	4.356	19.6	3.2	0.91	5695	0.51	0.87
006063291-02	OBS	No	485.421313	199.410390	78.6	28.191	31.7	10.3	0.91	5695	1.00	0.64

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006063291-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
006063291-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

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

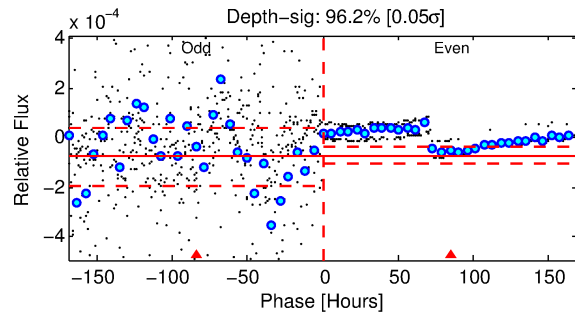
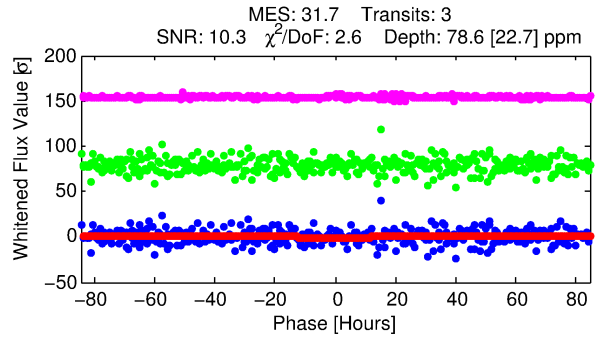
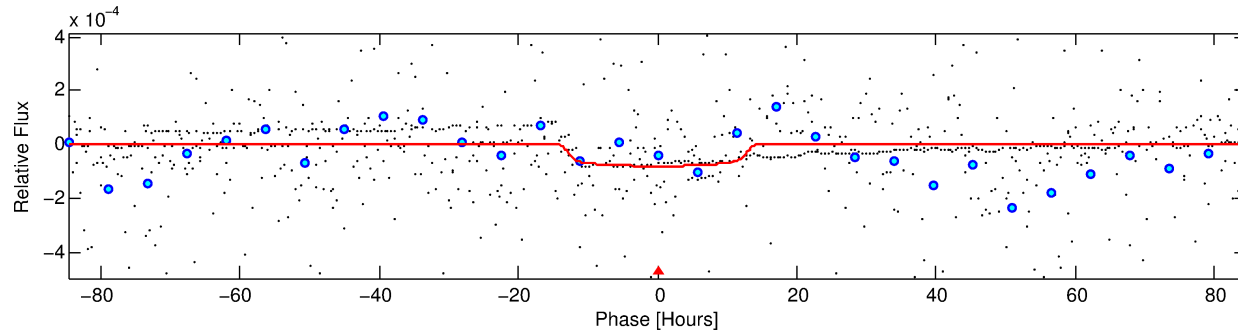
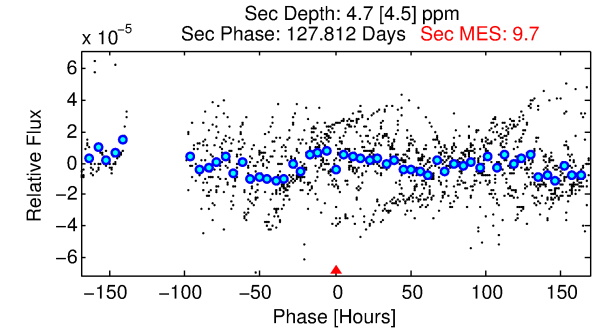
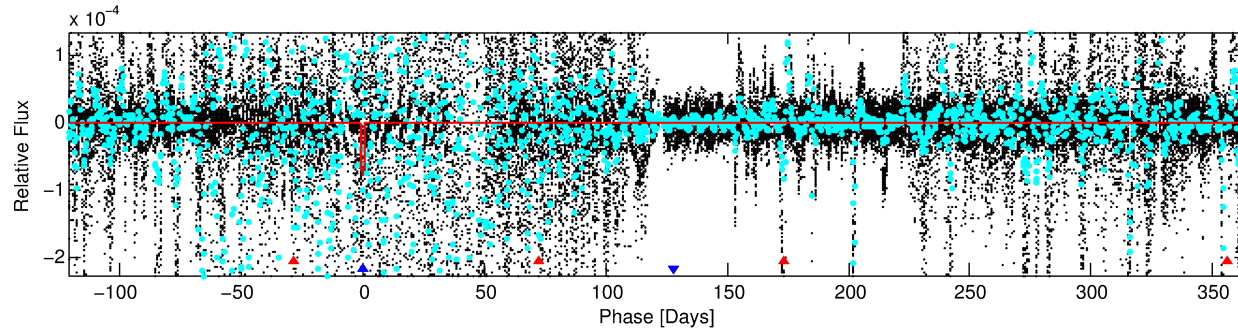
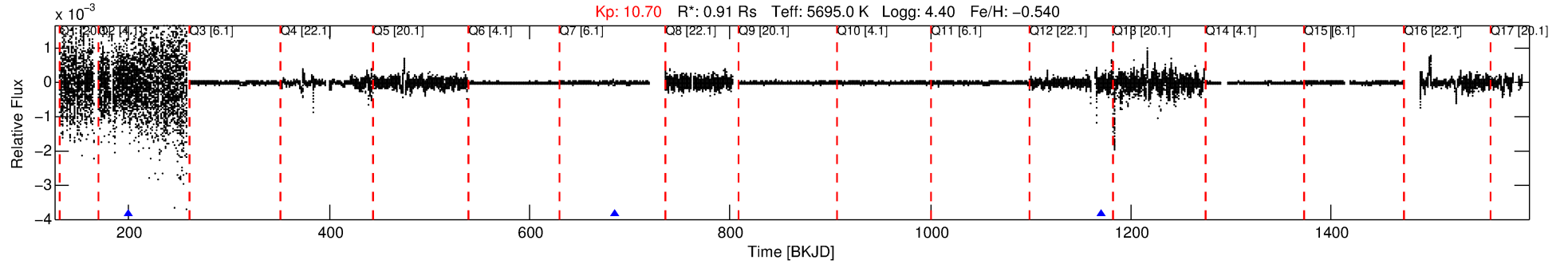
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006063291-02

No Significant Match Found

DV One-Page Summary

KIC: 6063291 Candidate: 2 of 2 Period: 485.421 d



DV Fit Results:

Period = 485.42131 [0.05968] d
Epoch = 199.4104 [0.0573] BKJD
Rp/R* = 0.0102 [0.0016]
a/R* = 46.29 [15.64]
b = 0.95 [0.04]
Seff = 0.64 [0.23]
Teq = 228 [21] K
Rp = 1.00 [0.31] Re
a = 1.1012 [0.2535] AU
Ag = 3124.20 [3300.43] [0.95σ]
Teffp = 2634 [660] K [3.64σ]

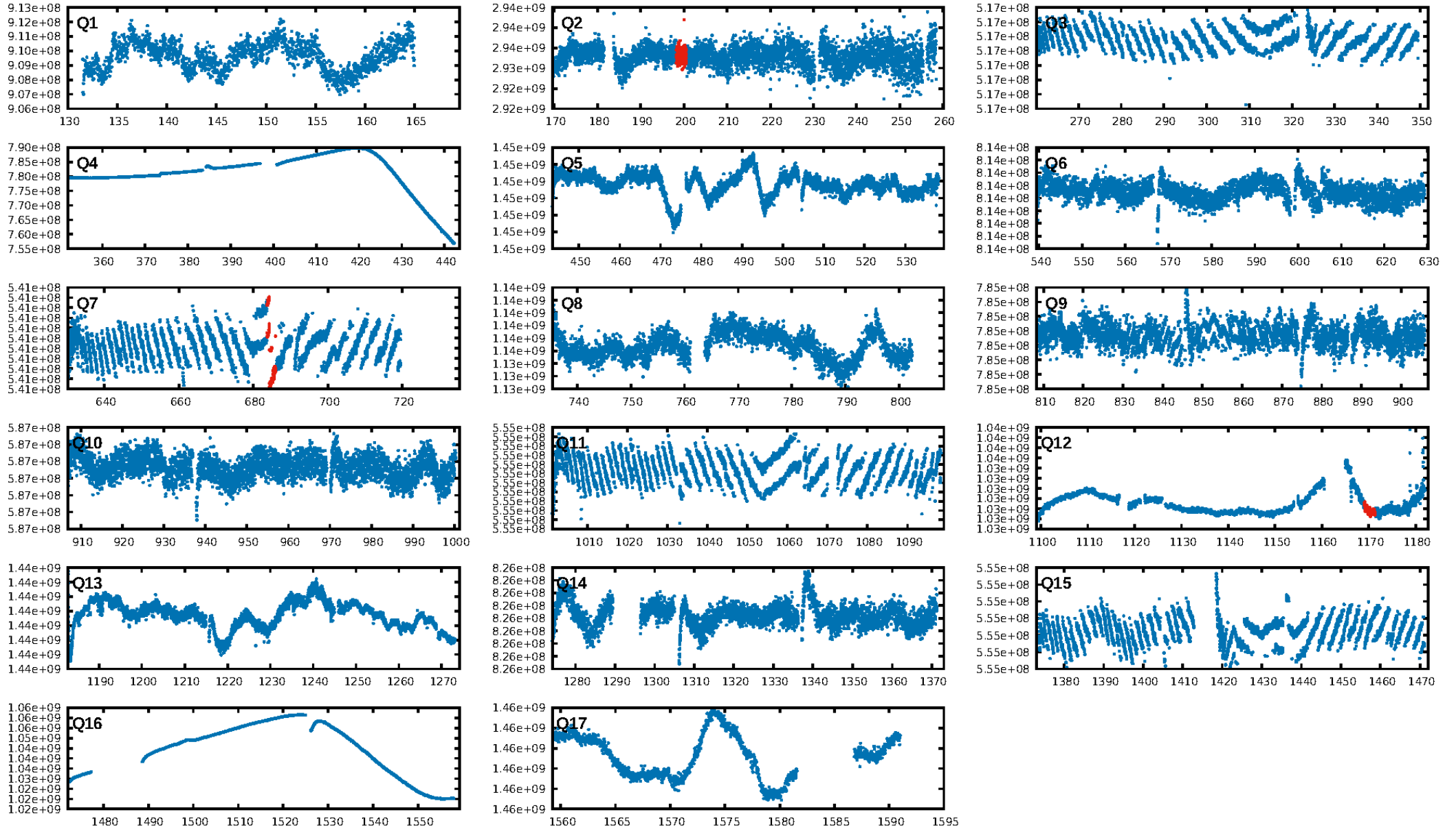
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [84.90σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 68.9%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 3.11e-05
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.4148
Centroid-sig: 8.9%
Centroid-so: 3.077 arcsec [1.12σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [1/1]

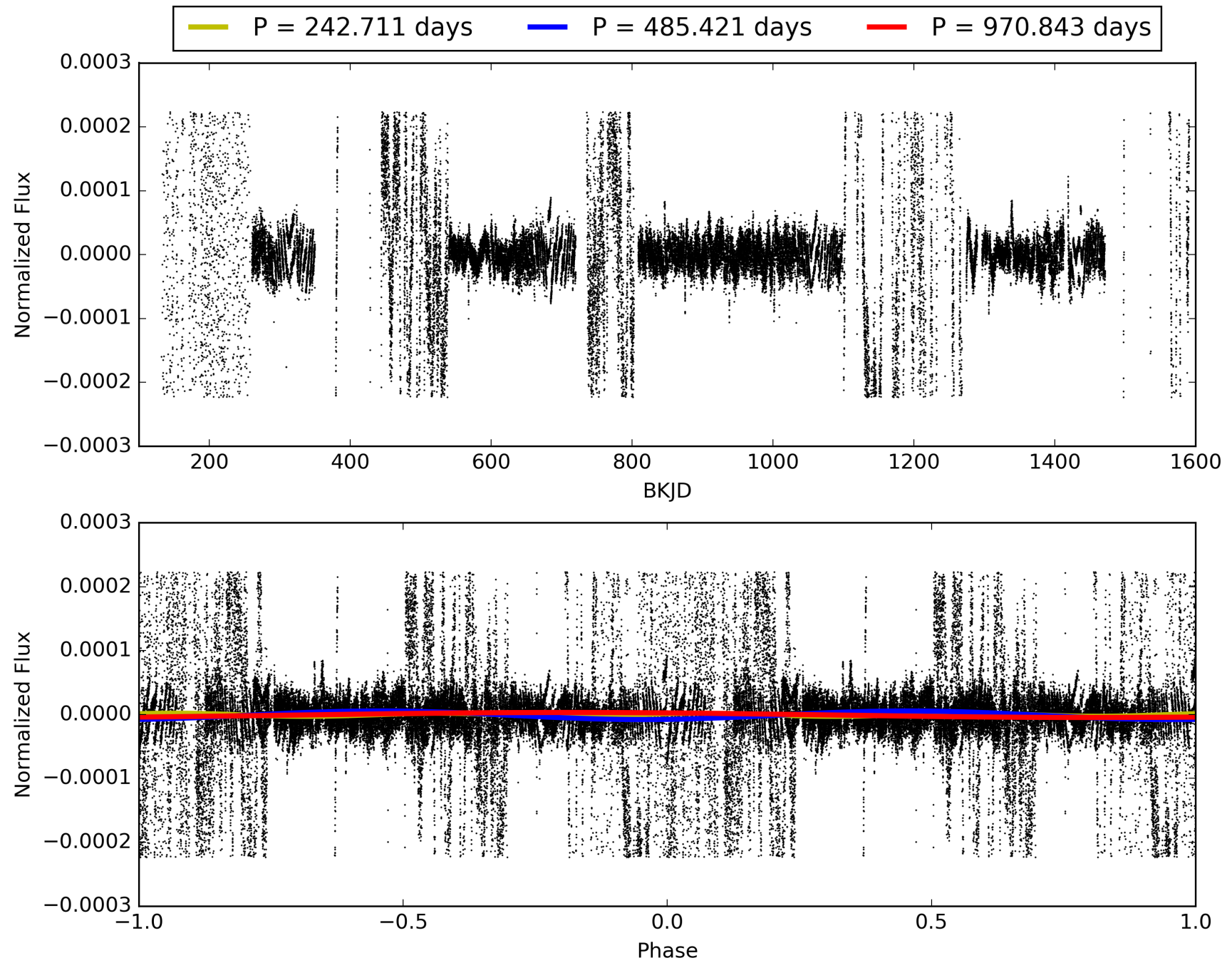
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 06:02:31 Z

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

TCE 006063291-02, PDC Light Curves

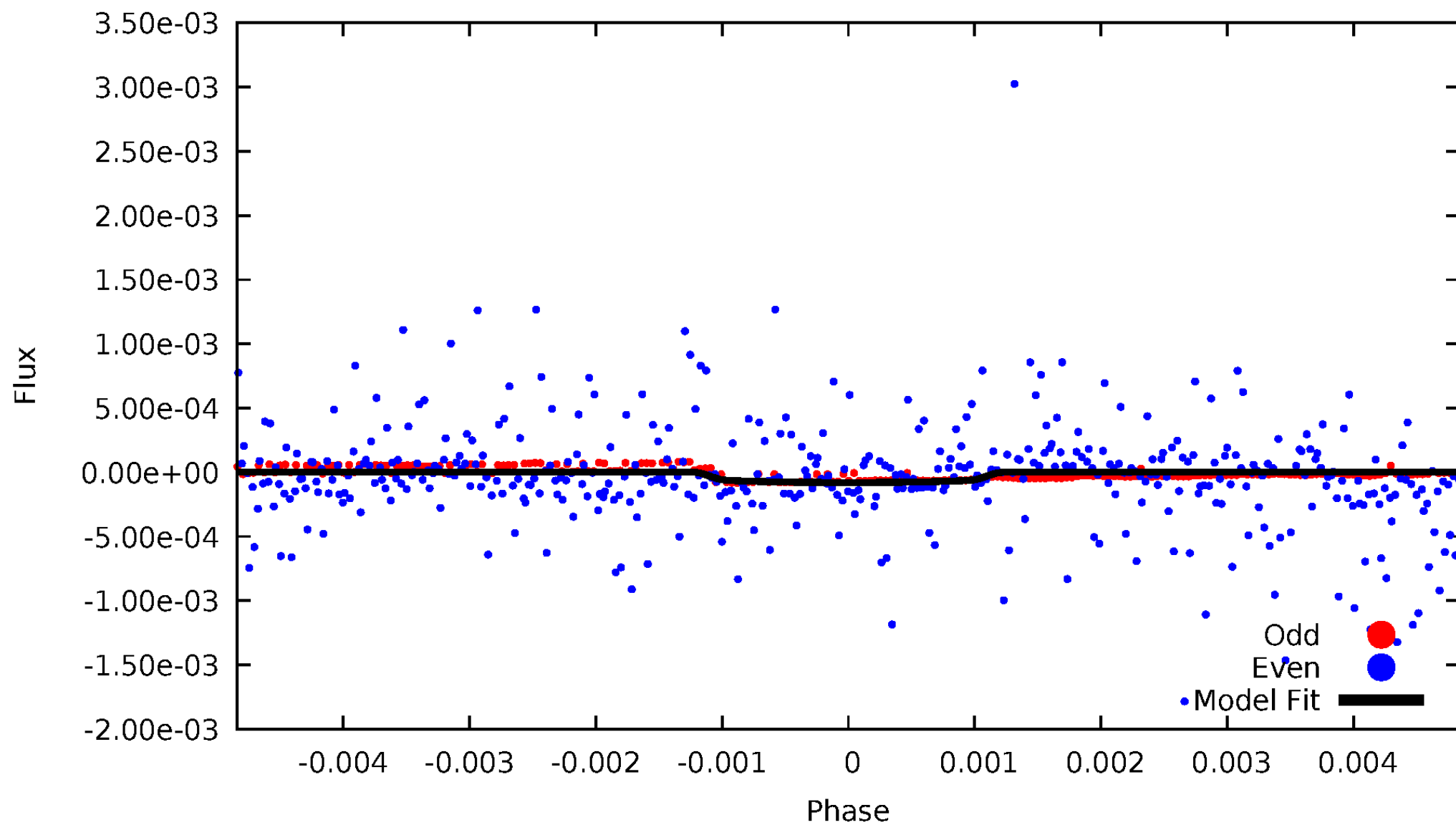


TCE 006063291-02



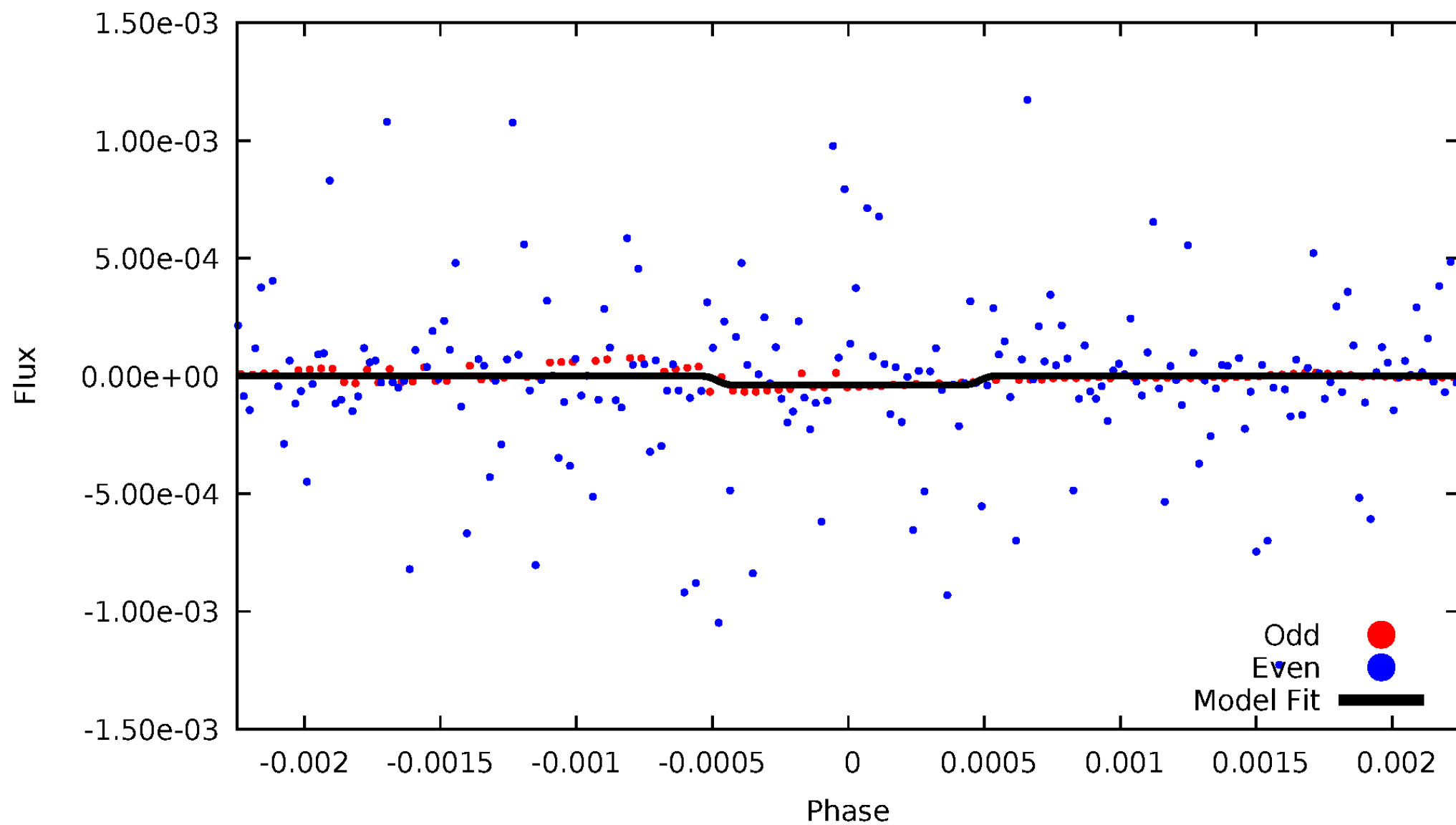
DV Odd/Even

TCE 006063291-02



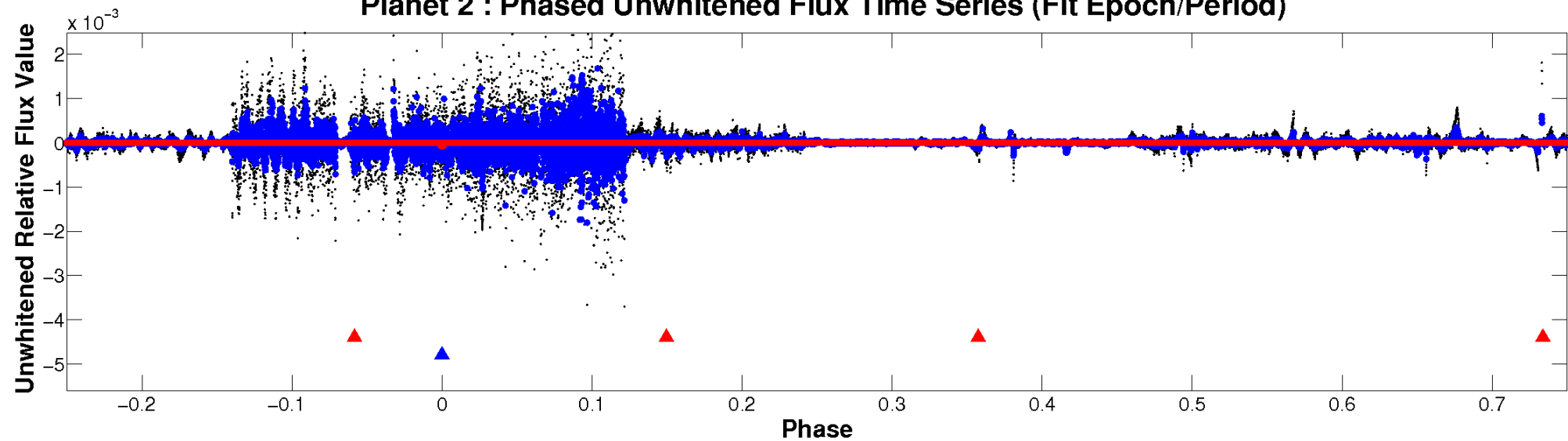
ALT Odd/Even

TCE 006063291-02

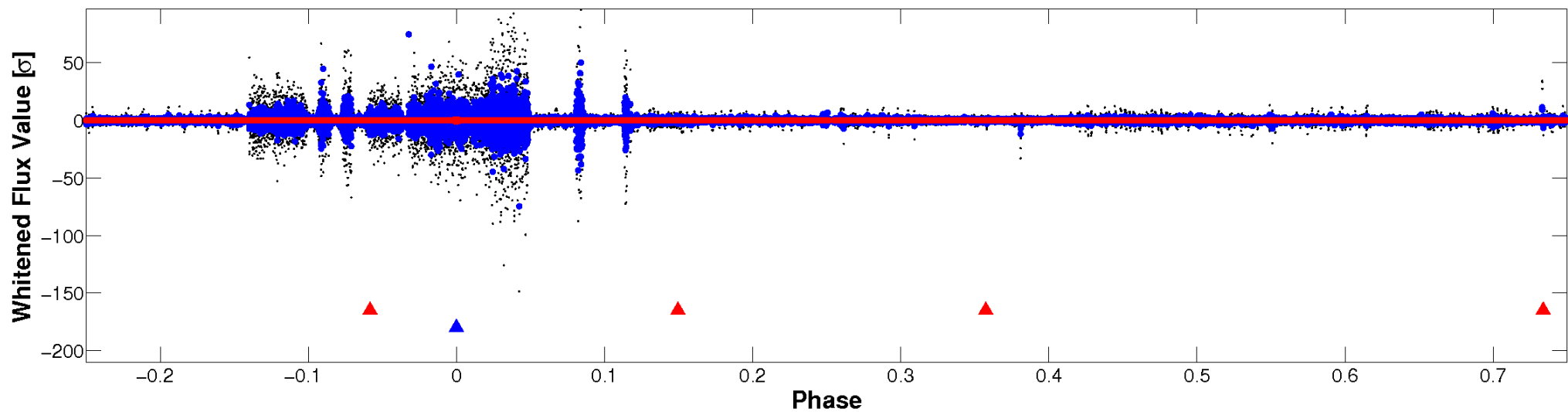


Non-Whitened Vs. Whitened Light Curve

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

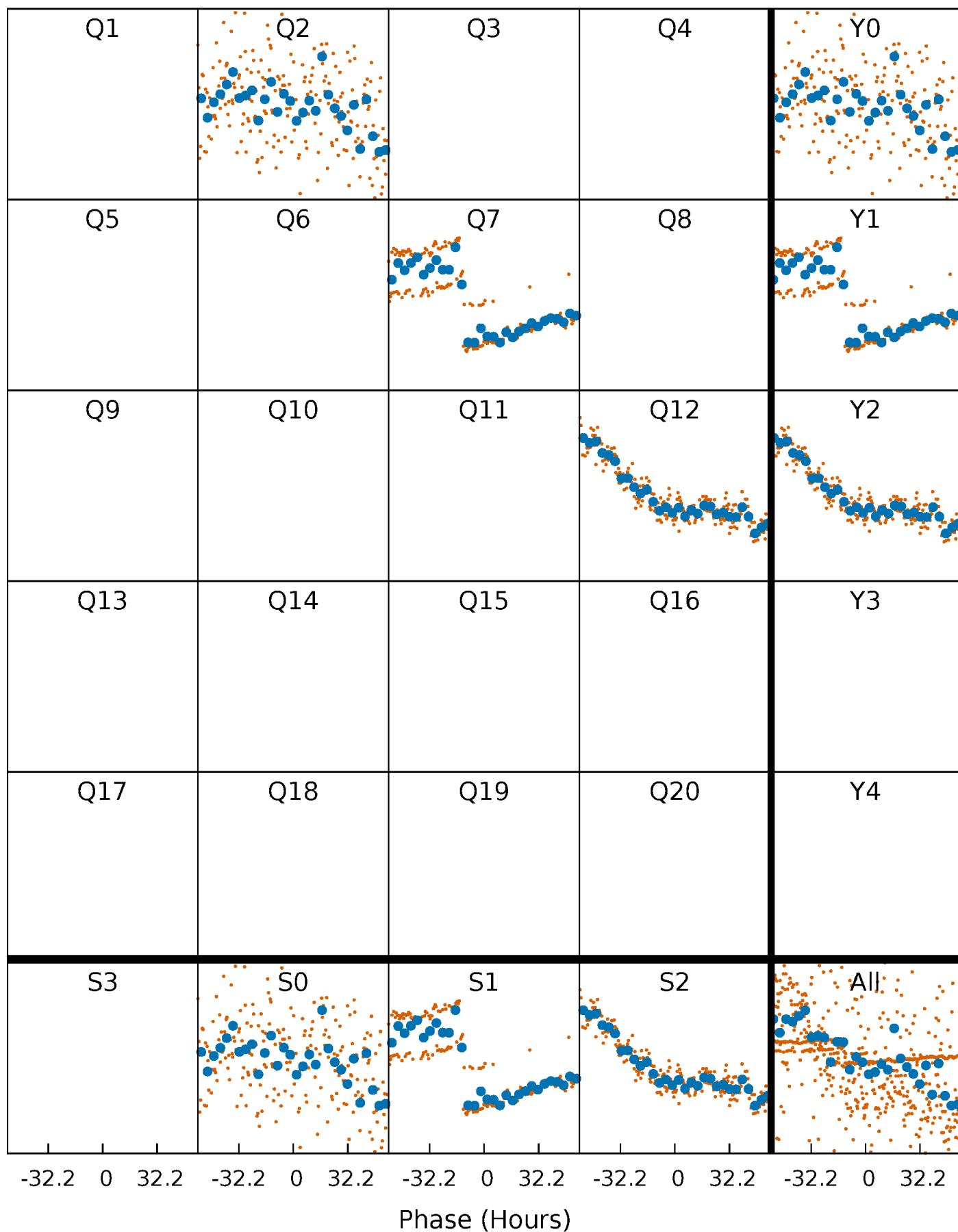


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



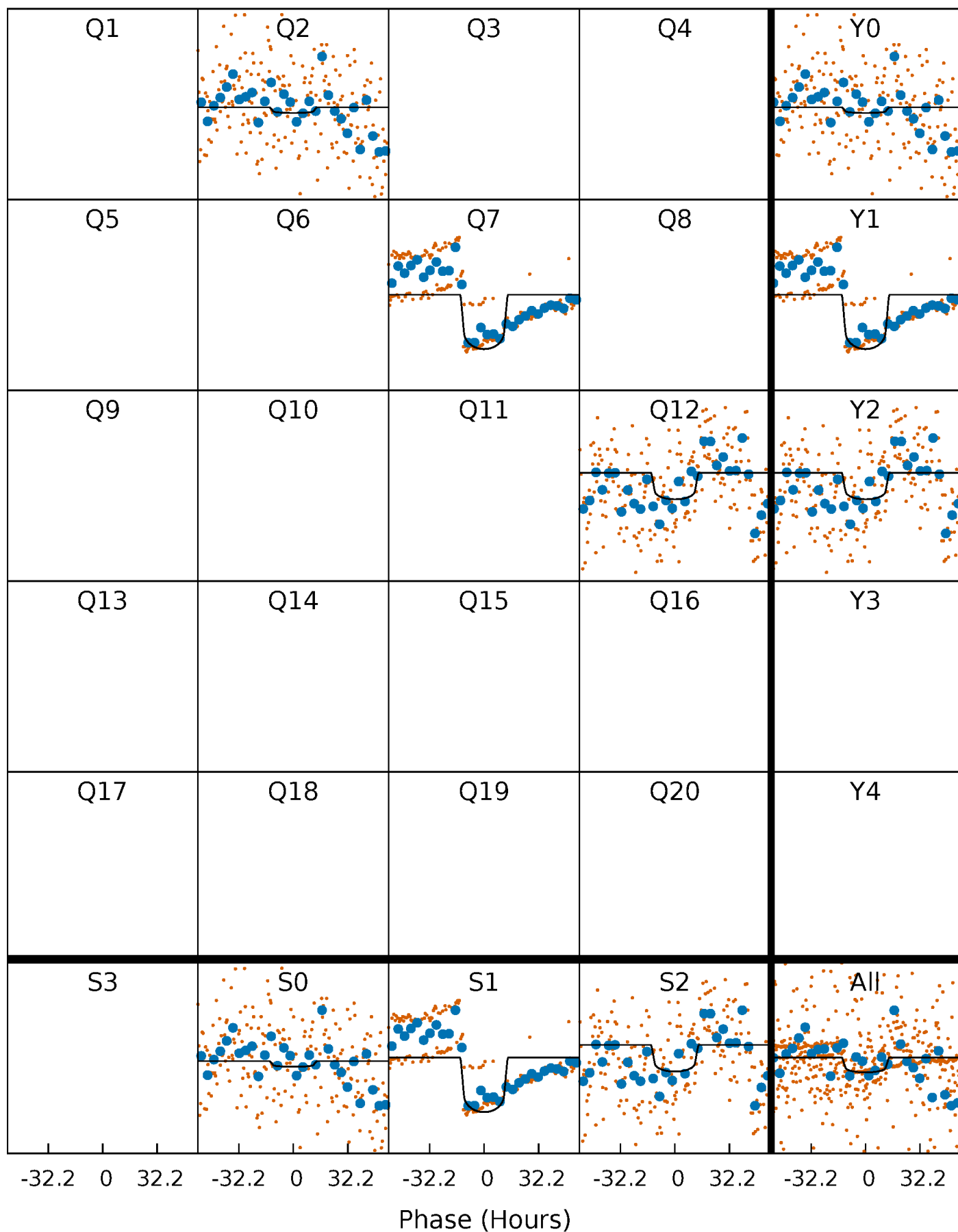
PDC Quarter-Phased Transit Curves

TCE 006063291-02 P=485.421313 Days $T_0=199.410391$ (BKJD)



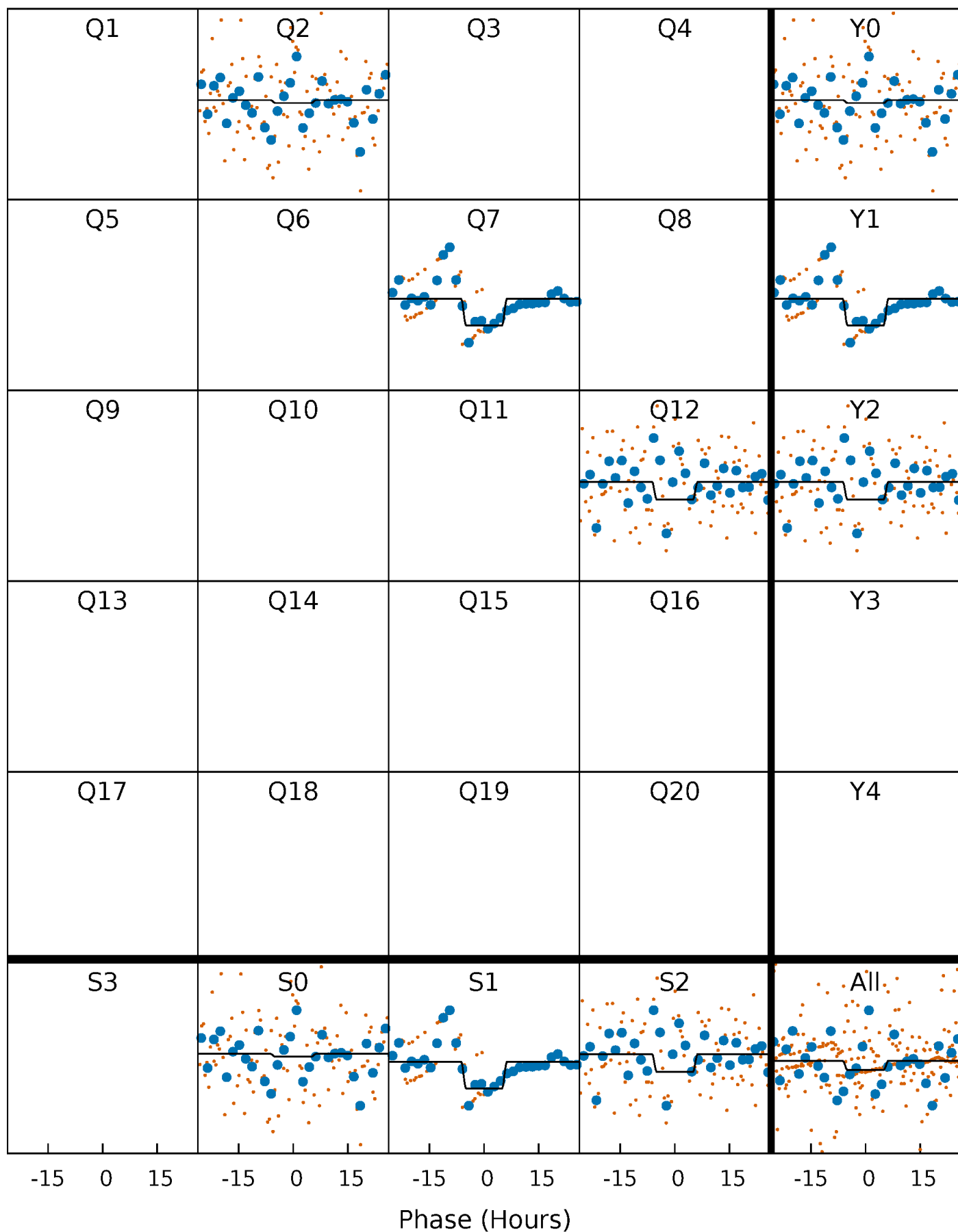
DV Quarter-Phased Transit Curves

TCE 006063291-02 $P=485.421313$ Days $T_0=199.410391$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

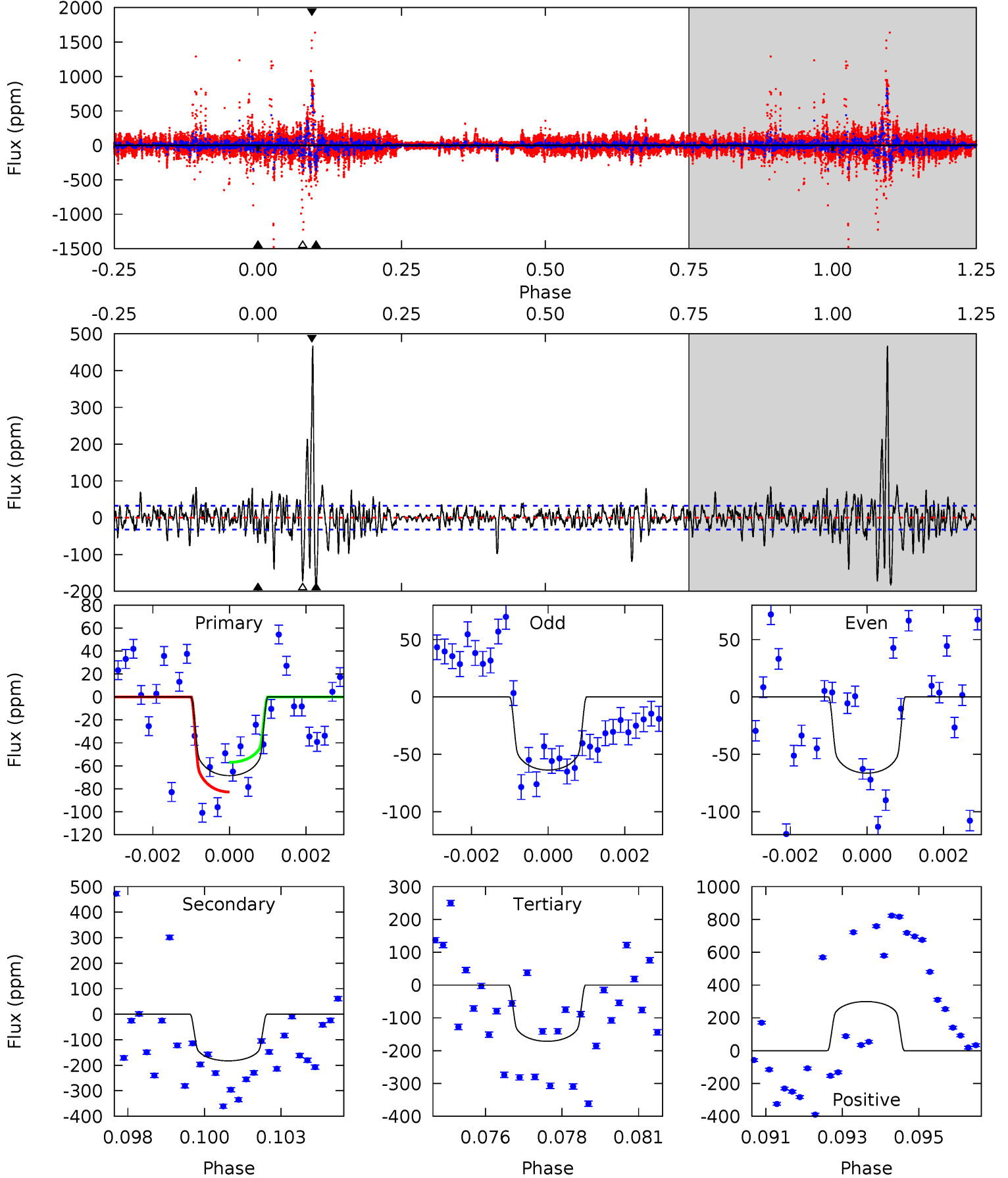
TCE 006063291-02 P=485.760211 Days $T_0=198.809215$ (BKJD)



DV Model-Shift Uniqueness Test

006063291-02, P = 485.421313 Days, E = 199.410391 Days

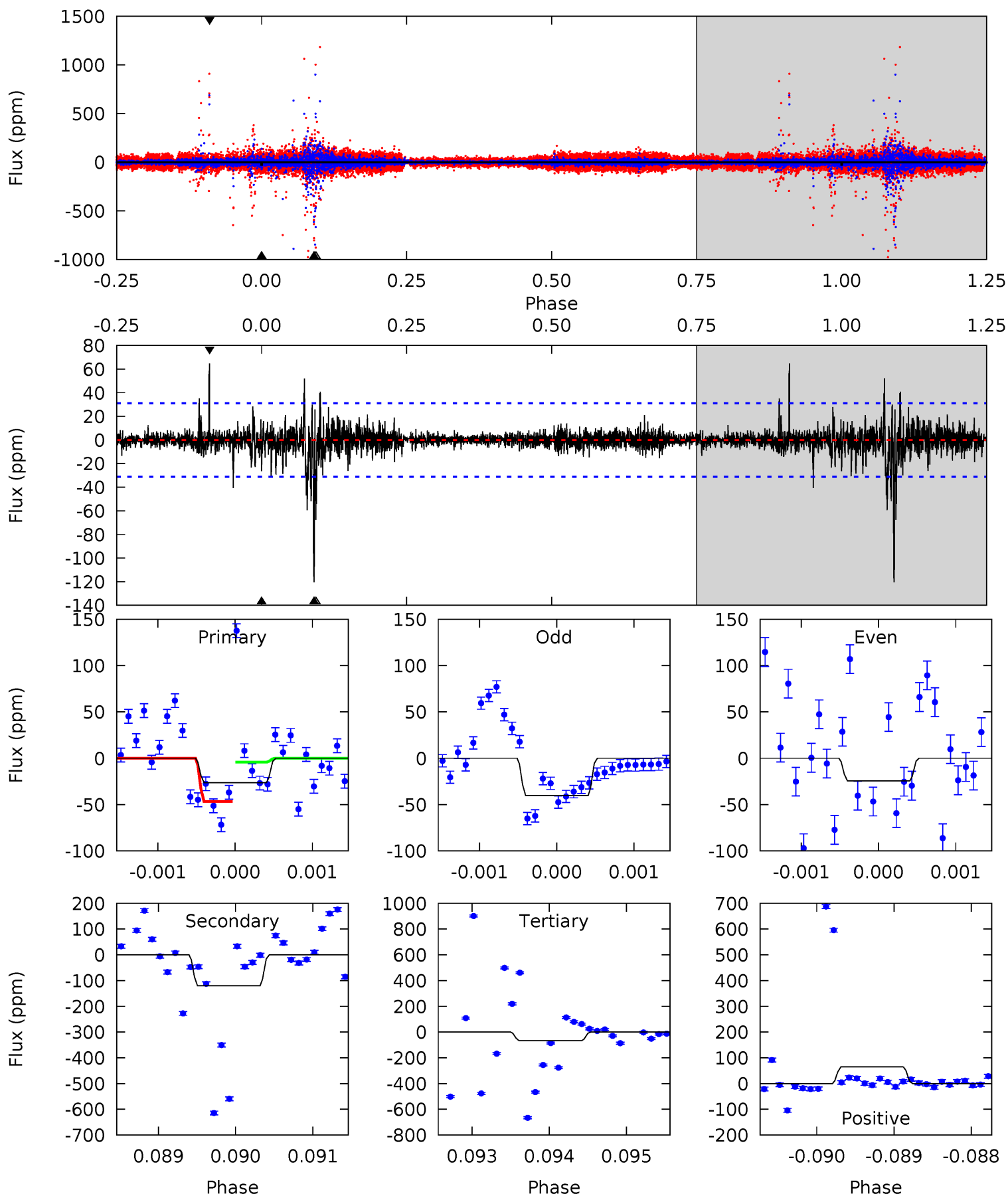
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	29.9	28.0	48.9	5.29	3.03	4.85	-16.8	-37.7	1.86	-19.1	0.16	0.72	0.72	2.13



Alt Model-Shift Uniqueness Test

006063291-02, P = 485.760211 Days, E = 198.809215 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.61	21.1	11.8	11.3	5.44	3.28	0.96	-7.21	-6.70	9.25	9.77	1.01	0.67	0.35	0



Stellar Parameters For KIC 006063291

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5695^{+153}_{-136}	$4.402^{+0.162}_{-0.198}$	$-0.540^{+0.350}_{-0.300}$	$0.906^{+0.235}_{-0.176}$	$0.756^{+0.113}_{-0.040}$	$1.429^{+1.126}_{-0.728}$
	+3%/-2%	+4%/-4%	+65%/-56%	+26%/-19%	+15%/-5%	+79%/-51%
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 006063291-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-183 ± 6	$1.02^{+0.23}_{-0.19}$	321^{+26}_{-20}	6593^{+693}_{-531}	118689^{+63756}_{-40124}
Alt.	-120 ± 6	$0.63^{+0.19}_{-0.18}$	320^{+22}_{-21}	7639^{+1860}_{-995}	$205423^{+212728}_{-83324}$

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

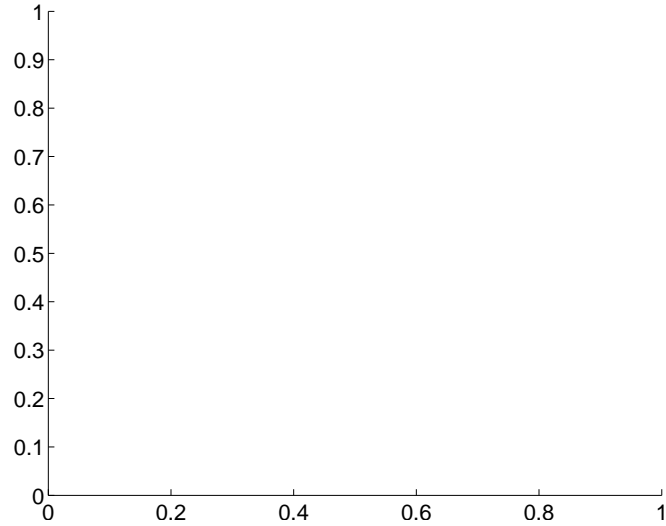
Supplemental centroid analysis for 006063291-02. **Kepler magnitude: 10.70.** Transit SNR 10.30

There are 0 quarters with good PRF difference image offsets

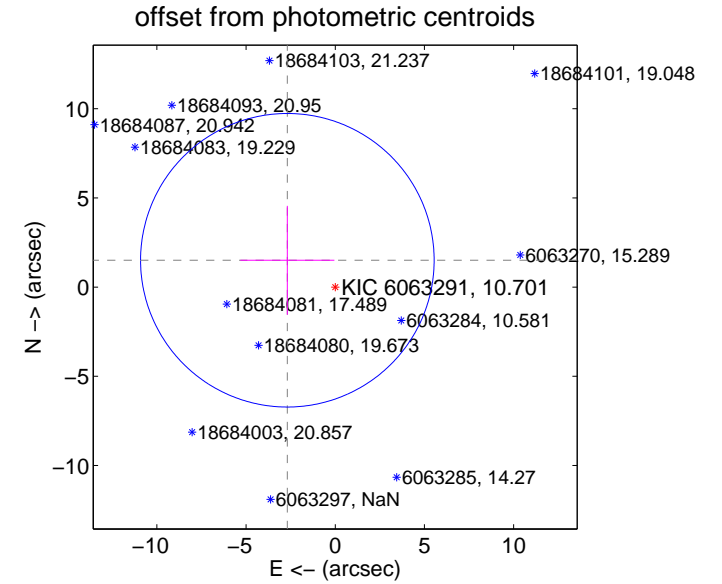
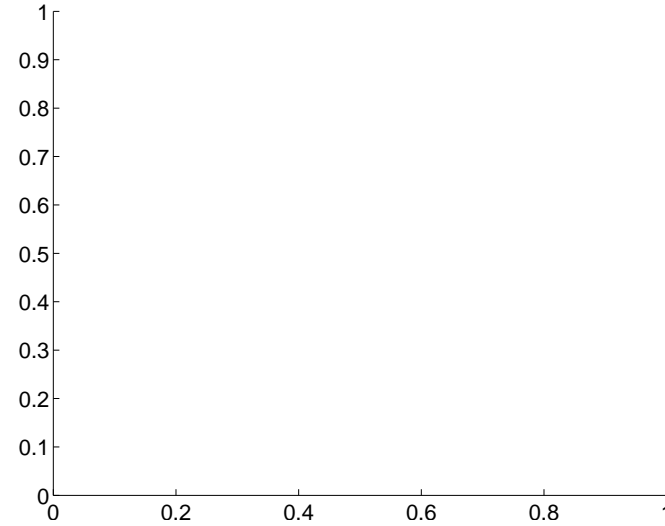
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	3.08 ± 2.74	1.12	2.68 ± 2.64	1.50 ± 3.05

There is no PRF-fit offset from OOT-fit



There is no PRF-fit offset from KIC



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.

Q5 no difference image



Q5 no OOT image



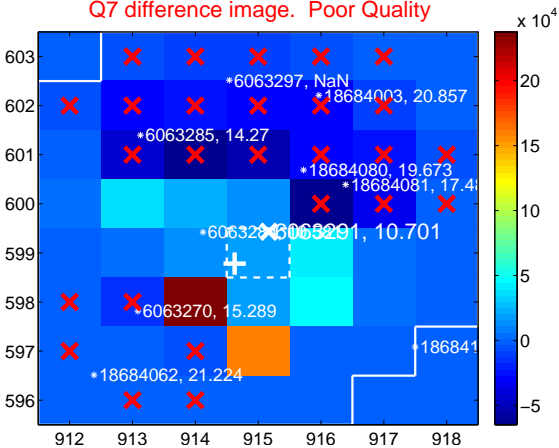
Q6 no difference image



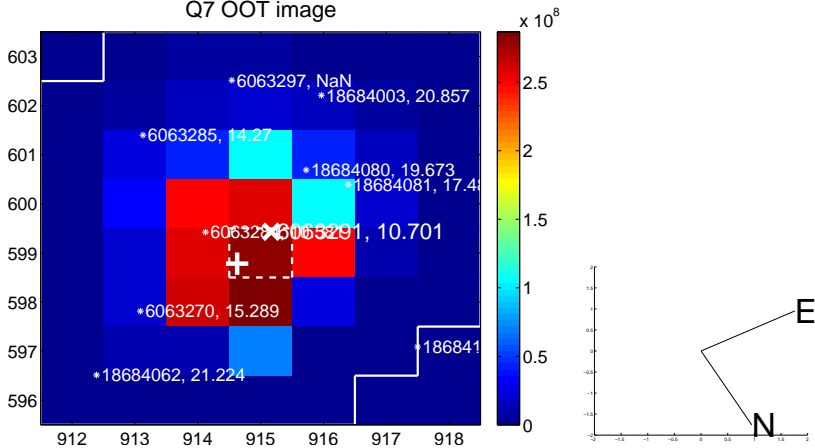
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



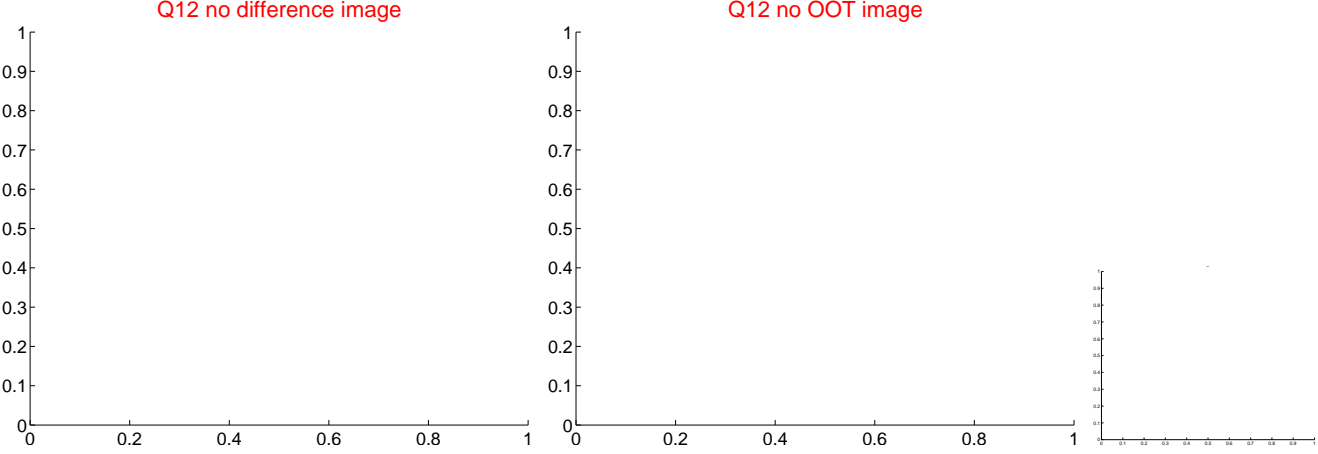
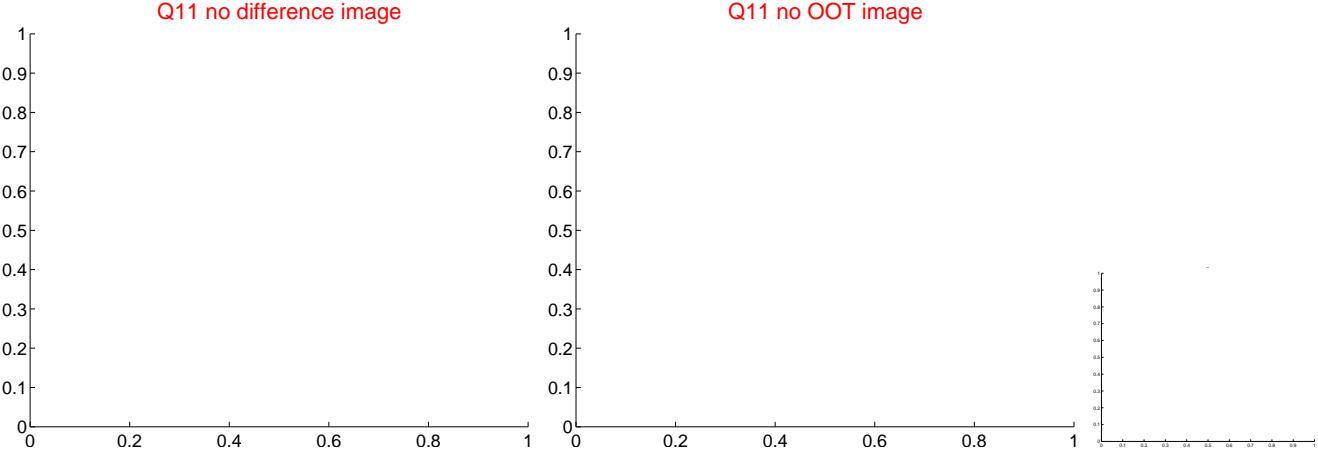
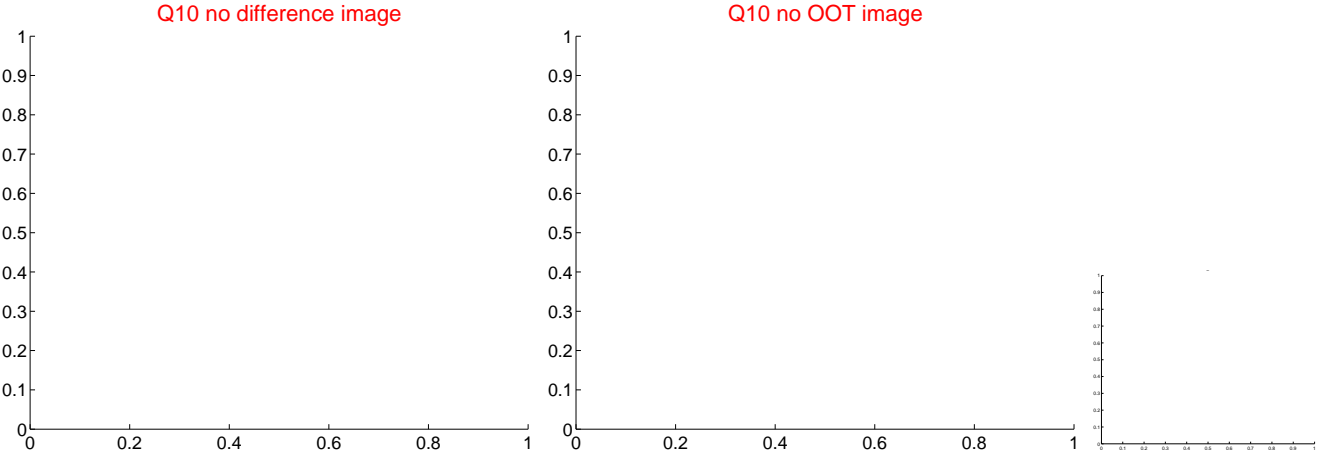
Q8 no difference image



Q8 no OOT image



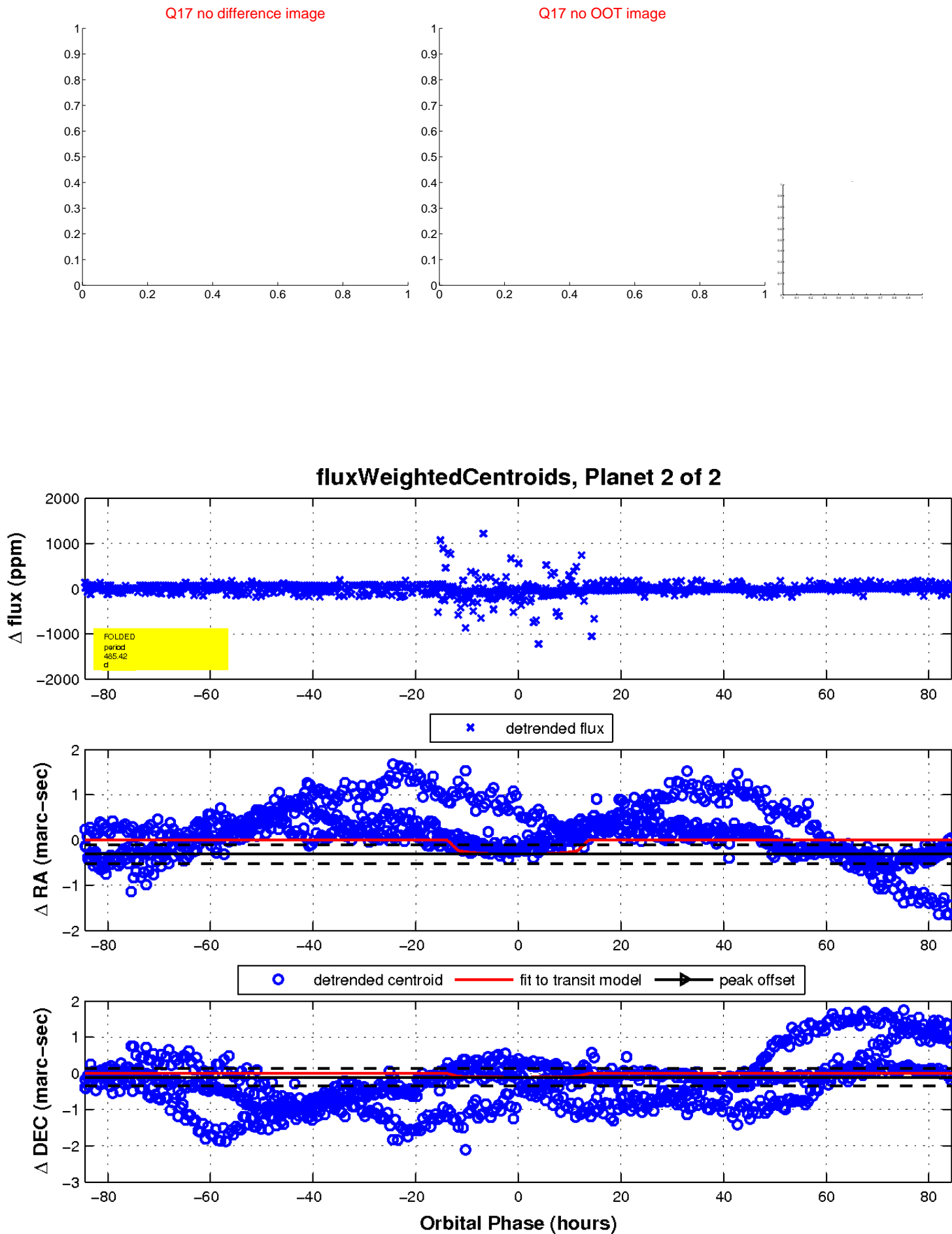
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

