

KIC 008324293

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})
008324293-01	OBS	No	365.658178	225.952275	8865.1	23.252	61.0	44.4	1.12	6478	18.65	1.93
008324293-02	OBS	No	365.532895	229.861503	6357.6	19.405	49.4	38.3	1.12	6478	15.94	1.93
008324293-03	OBS	No	361.665746	231.948284	16219.6	22.870	47.3	68.5	1.12	6478	24.83	1.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008324293-01	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED
008324293-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_SATURATED
008324293-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—ALL_TRANS_CHASES—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.

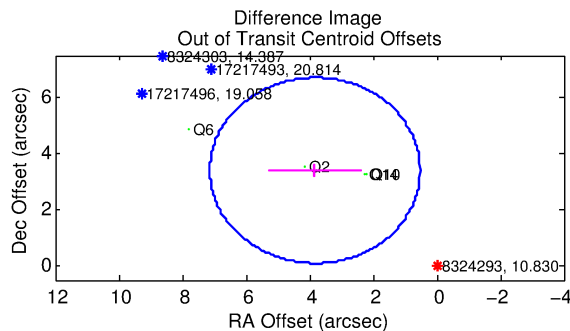
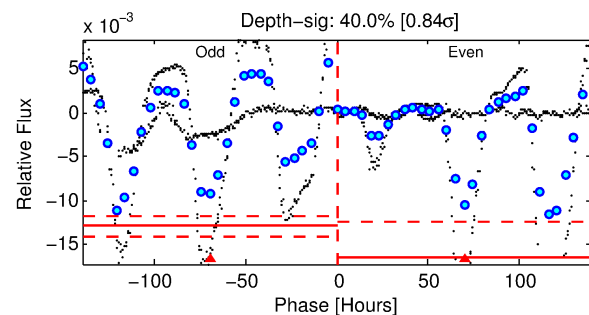
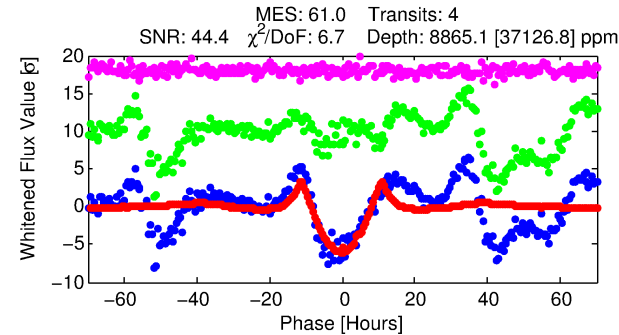
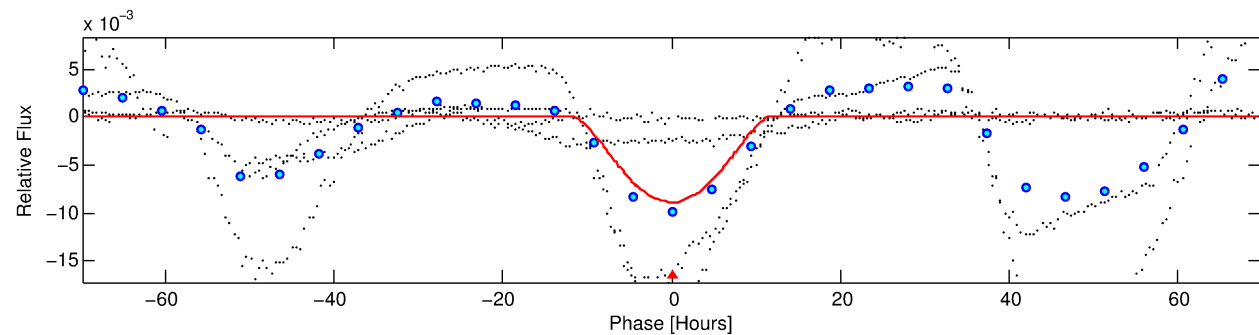
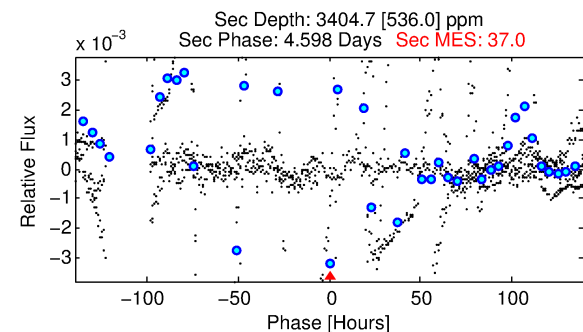
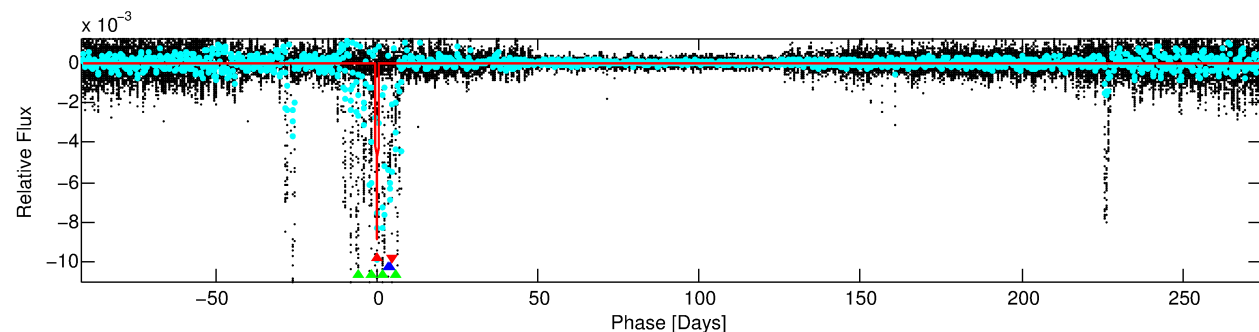
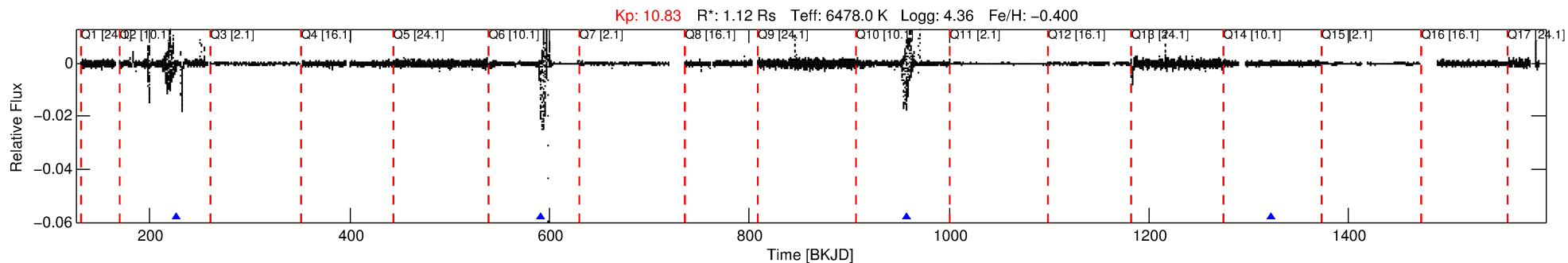
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008324293-01

No Significant Match Found

DV One-Page Summary

KIC: 8324293 Candidate: 1 of 3 Period: 365.658 d



DV Fit Results:

Period = 365.65818 [0.00948] d
Epoch = 225.9523 [0.0171] BKJD
Rp/R* = 0.1526 [0.1128]
a/R* = 68.86 [7.95]
b = 1.00 [0.27]
Seff = 1.93 [0.74]
Teq = 300 [29] K
Rp = 18.65 [14.89] Re
a = 1.0137 [0.2515] AU
Ag = 5533.29 [8450.84] [0.65 σ]
Teffp = 4006 [1496] K [2.48 σ]

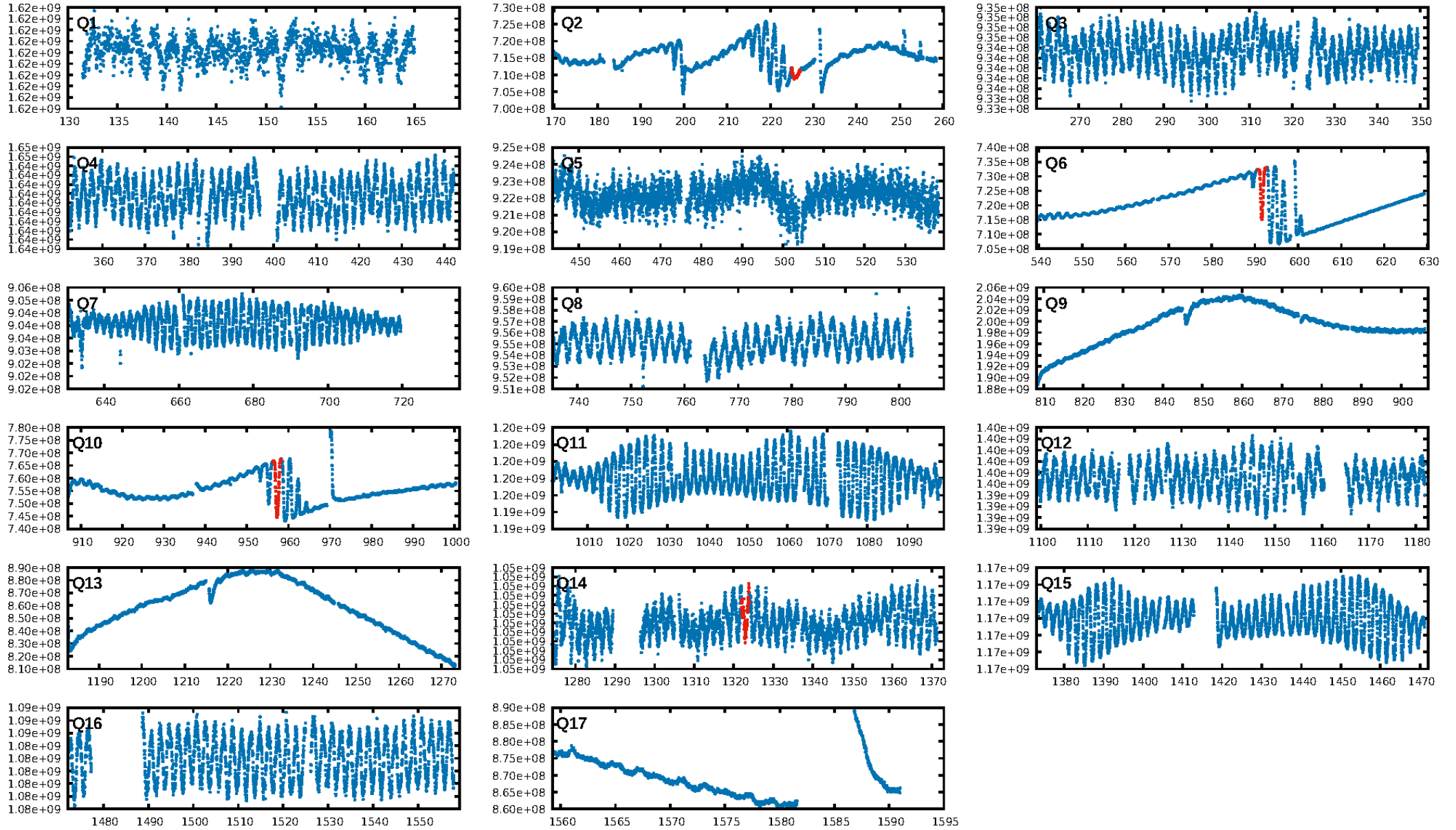
DV Diagnostic Results:

ShortPeriod-sig: 7.9% [0.10 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 3.21e-80
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 1.305 arcsec [2.09 σ]
OotOffset-rm: 5.120 arcsec [4.65 σ]
KicOffset-rm: 2.934 arcsec [2.04 σ]
OotOffset-st: 4/0/0/0 [4]
KicOffset-st: 4/0/0/0 [4]
DiffImageQuality-fgm: 0.25 [1/4]
DiffImageOverlap-fno: 0.50 [2/4]

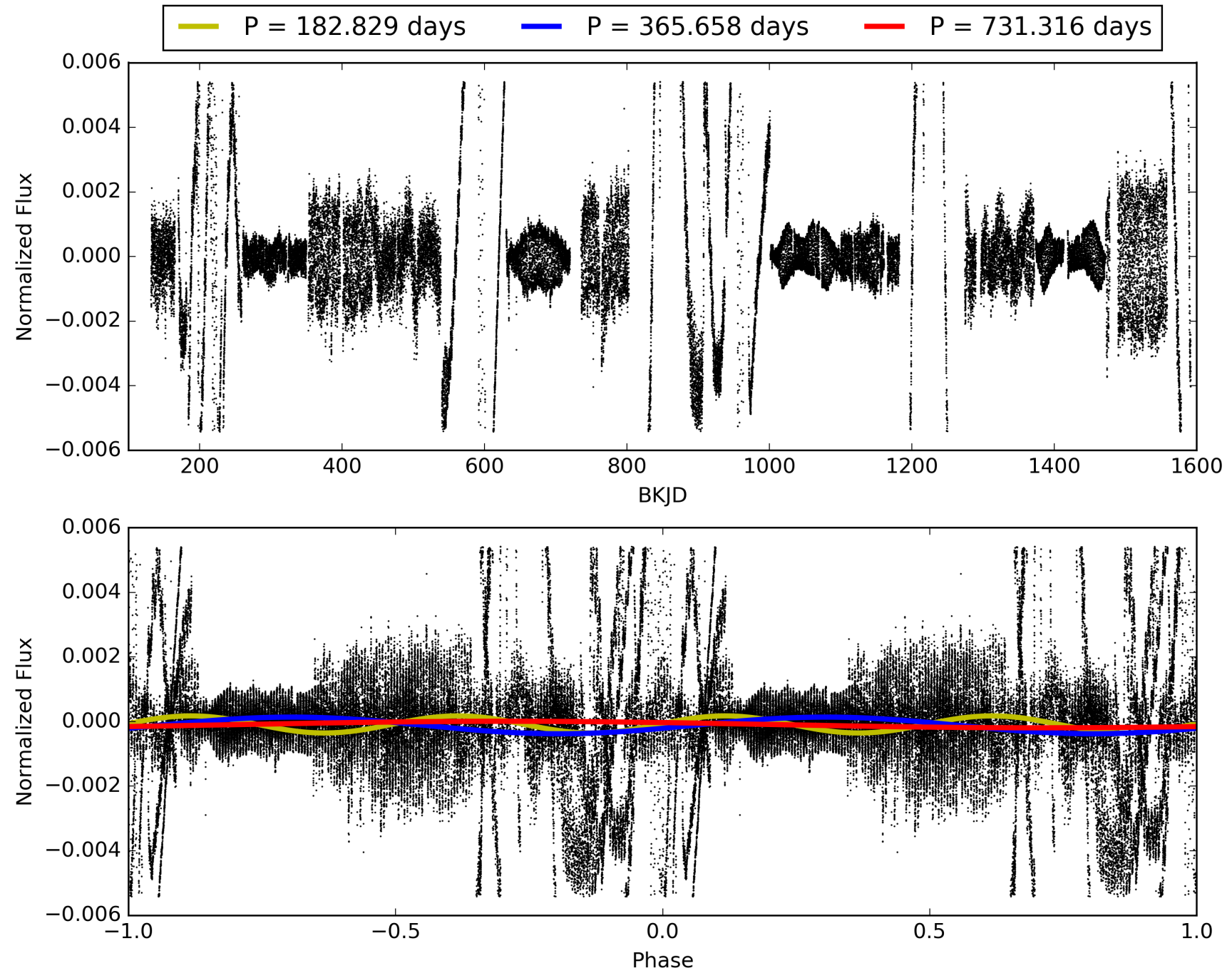
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:57:03 Z

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

TCE 008324293-01, PDC Light Curves

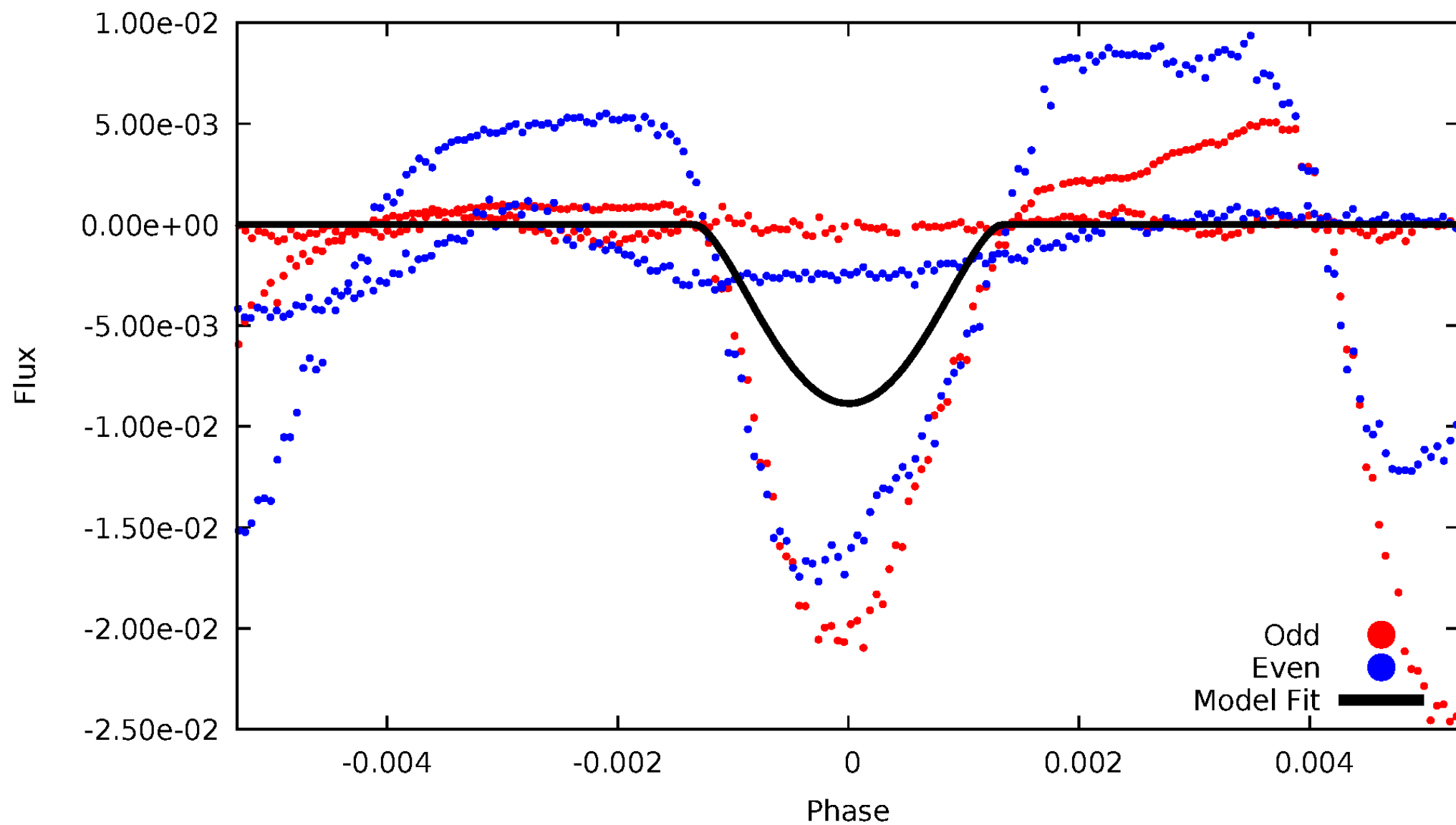


TCE 008324293-01



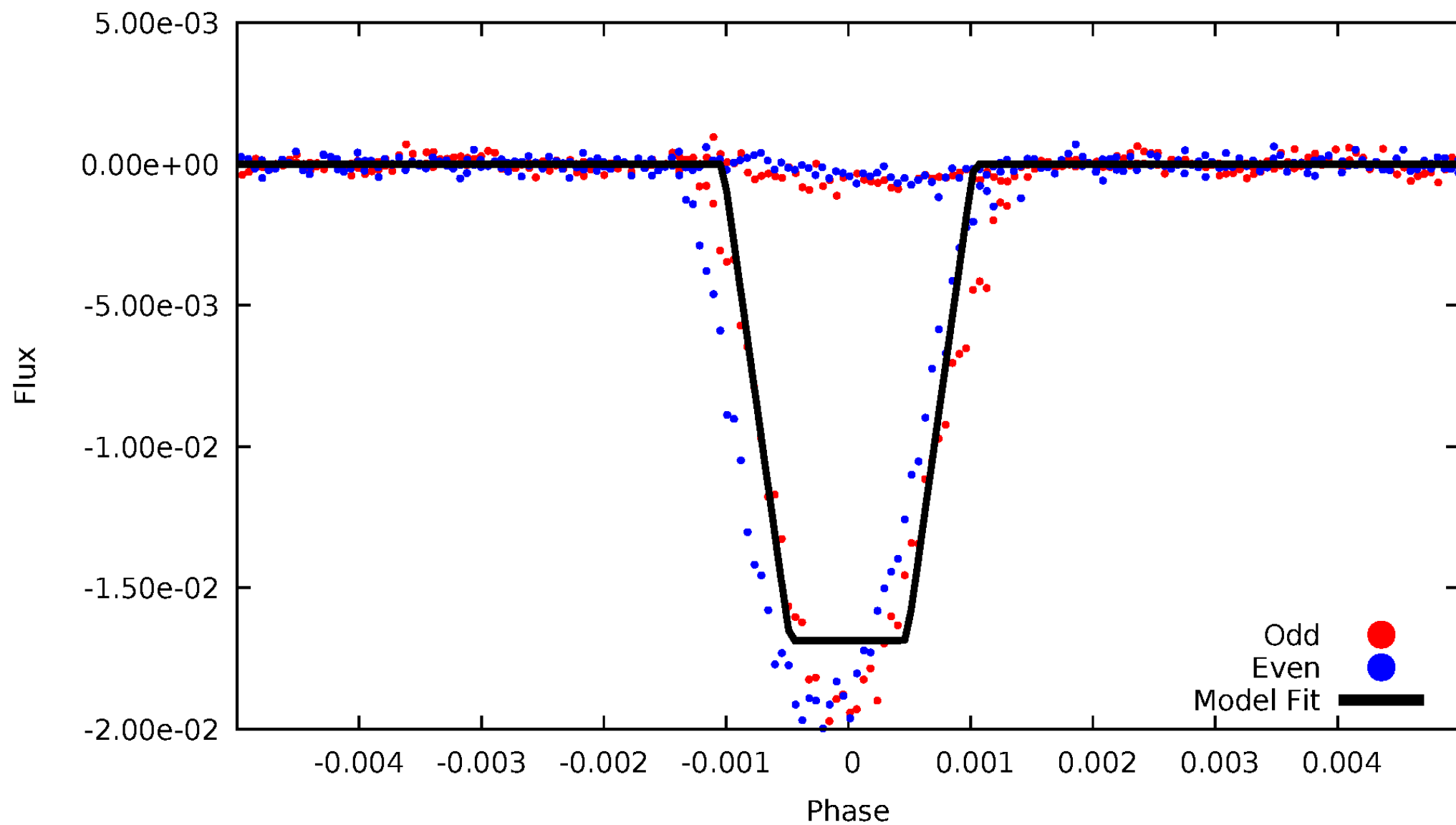
DV Odd/Even

TCE 008324293-01



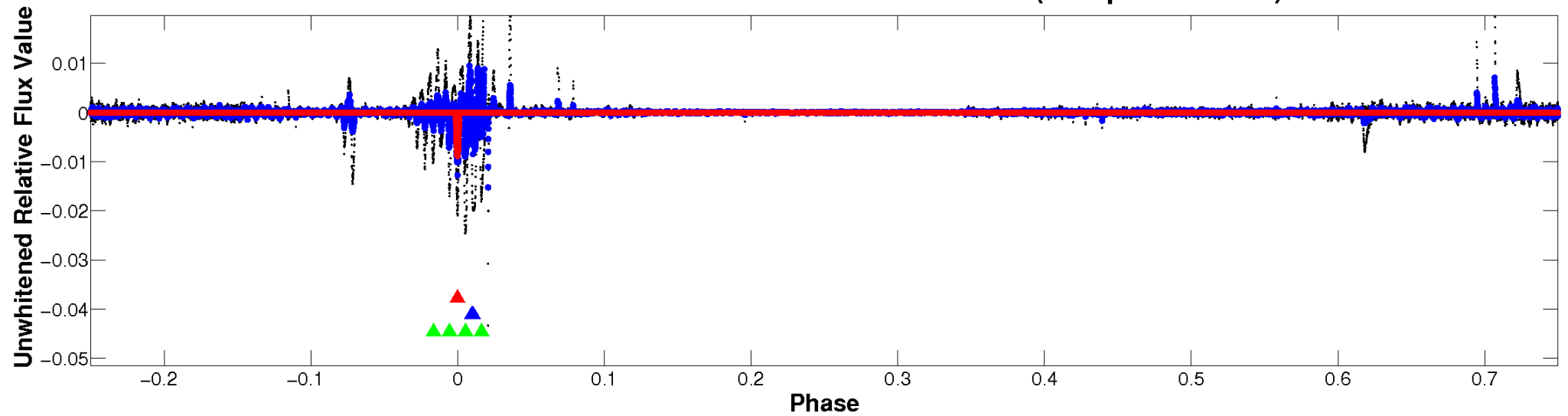
ALT Odd/Even

TCE 008324293-01

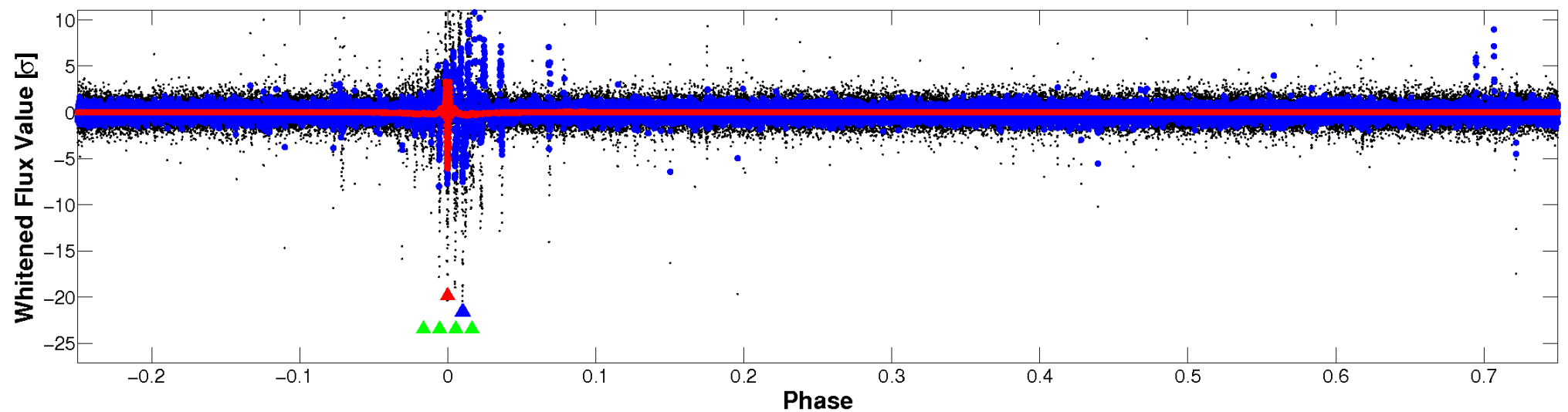


Non-Whitened Vs. Whitened Light Curve

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

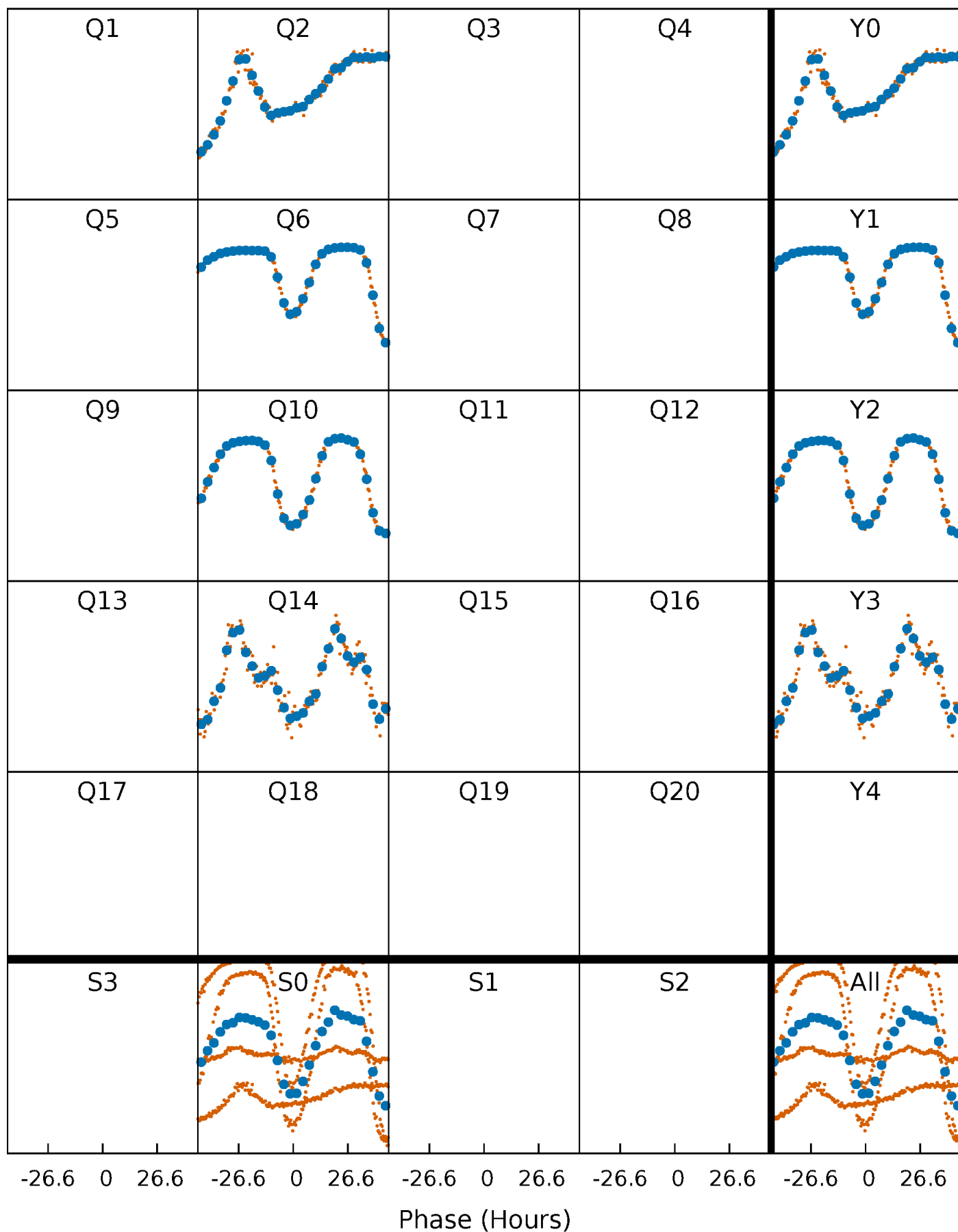


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



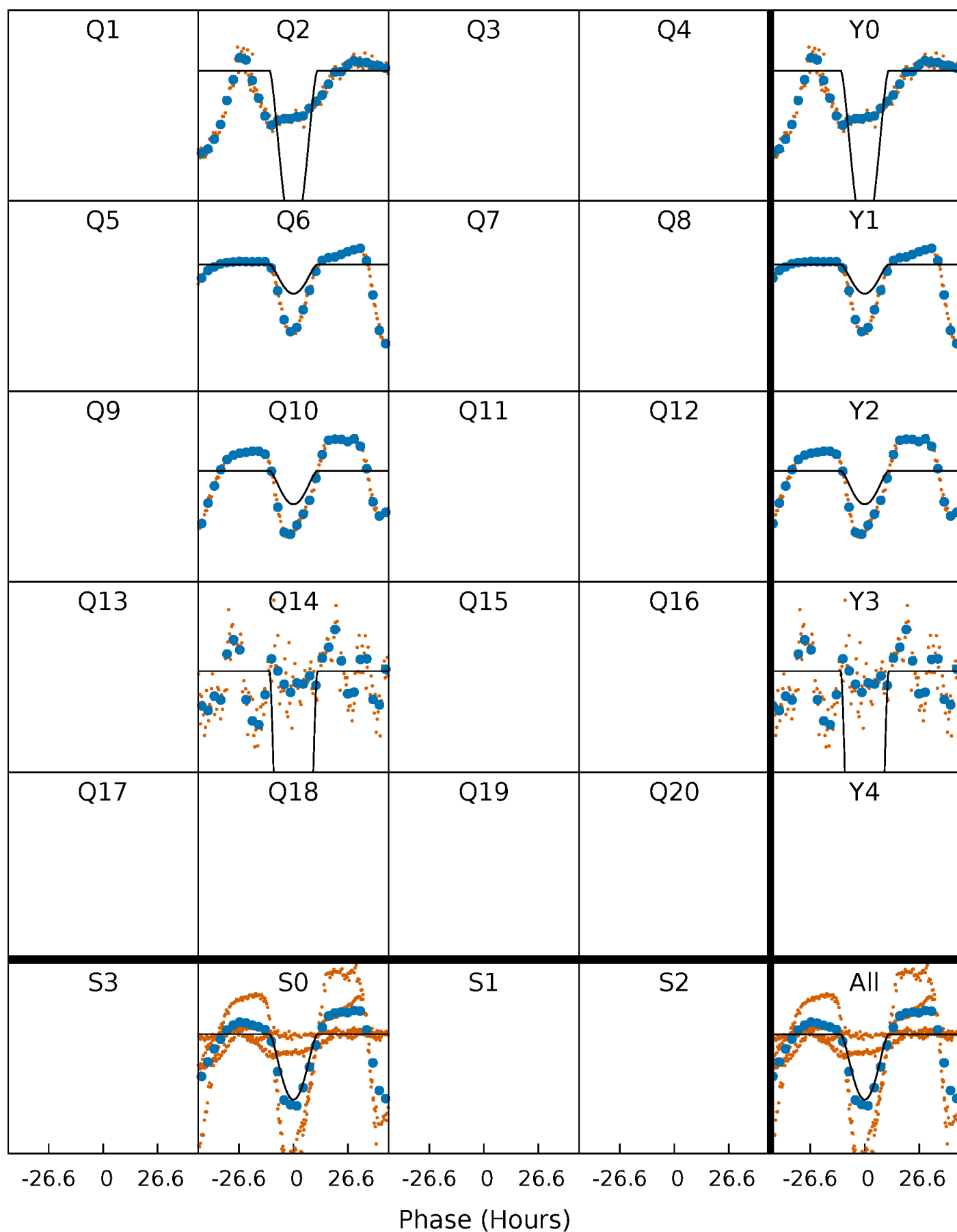
PDC Quarter-Phased Transit Curves

TCE 008324293-01 P=365.658178 Days $T_0=225.952275$ (BKJD)



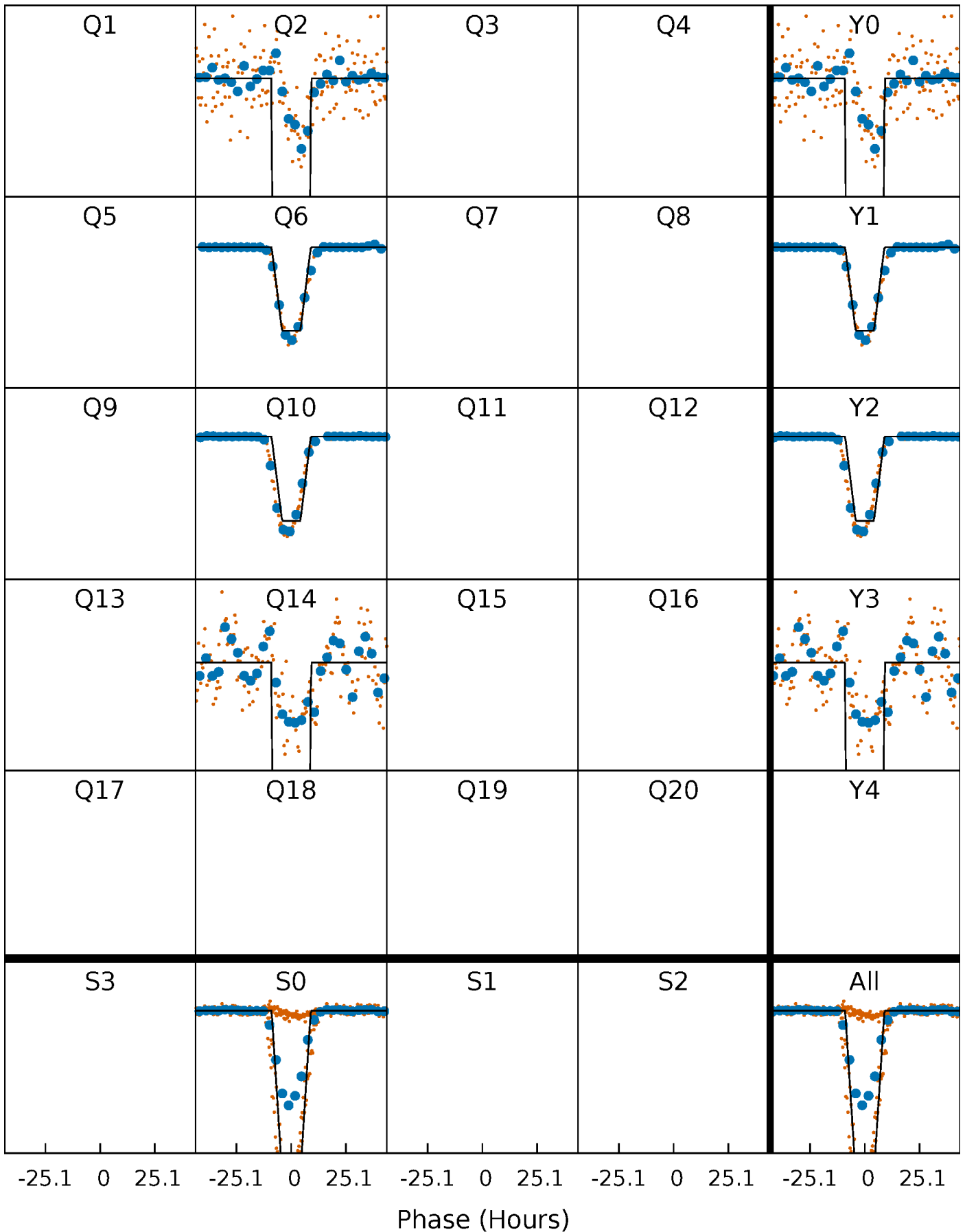
DV Quarter-Phased Transit Curves

TCE 008324293-01 P=365.658178 Days $T_0=225.952275$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

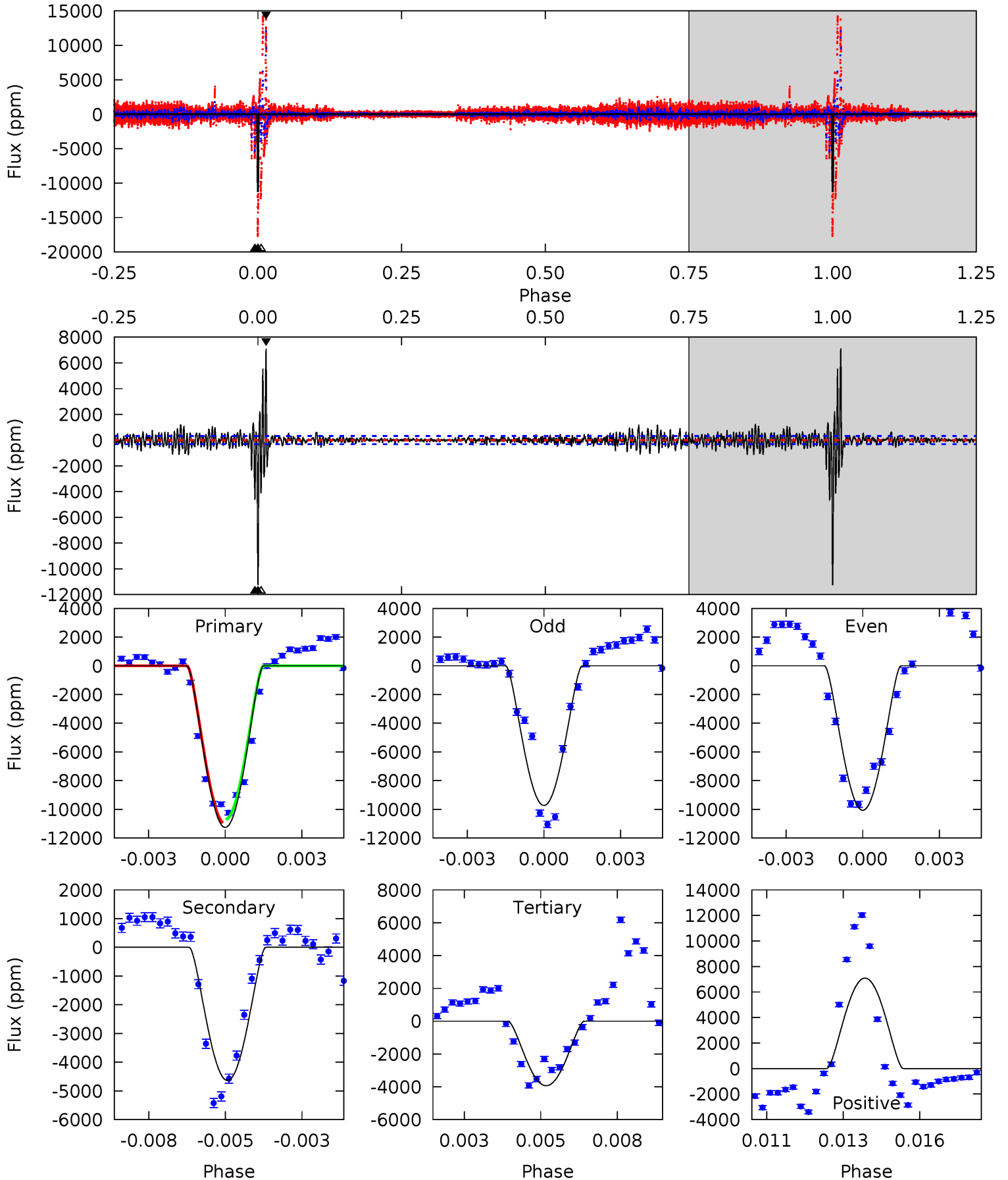
TCE 008324293-01 P=365.678990 Days $T_0=225.893148$ (BKJD)



DV Model-Shift Uniqueness Test

008324293-01, P = 365.658178 Days, E = 225.952275 Days

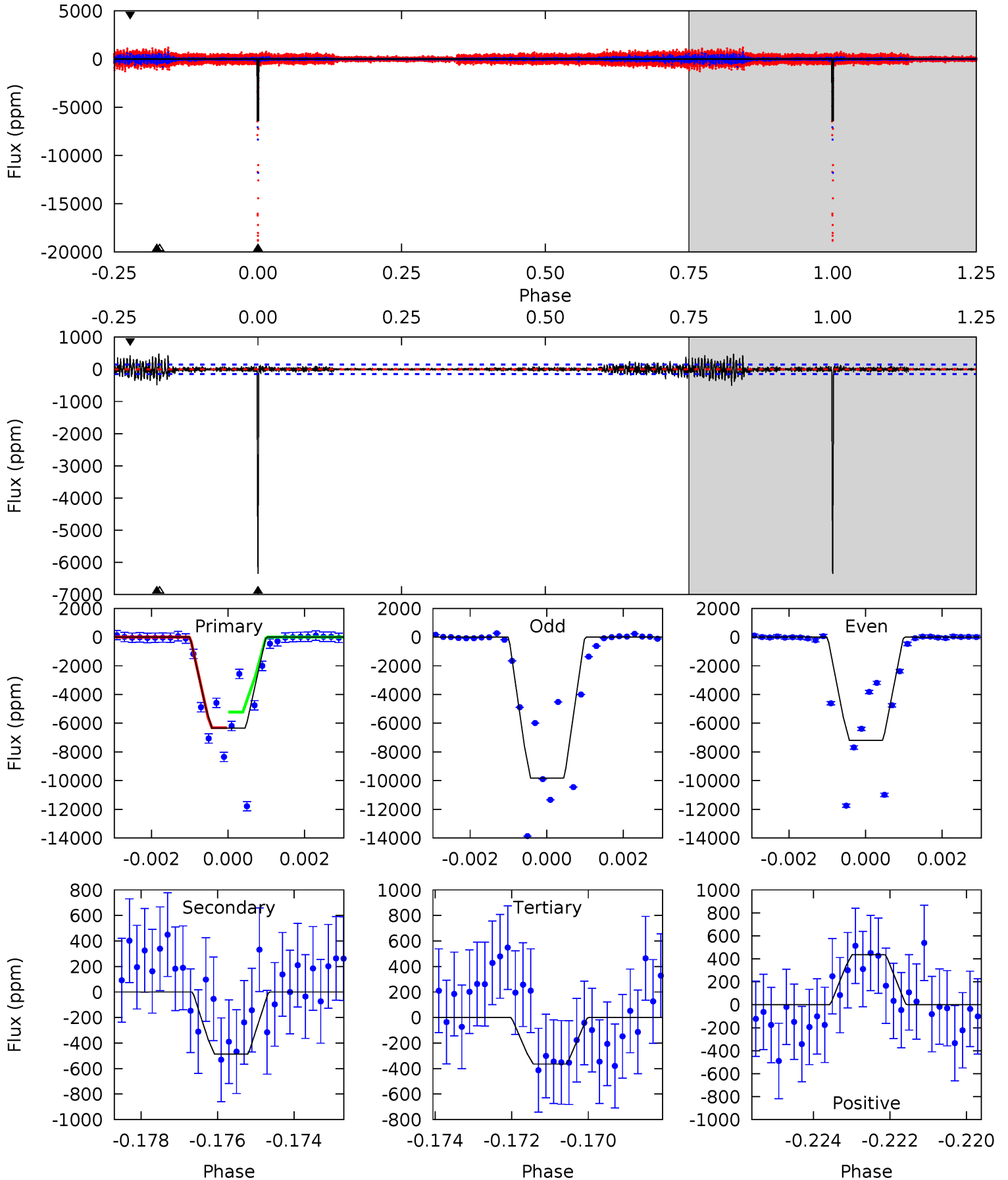
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
186.0	76.5	65.0	117.1	5.27	3.00	6.95	121.0	69.0	11.6	-40.5	2.11	1.00	0.39	0



Alt Model-Shift Uniqueness Test

008324293-01, P = 365.678990 Days, E = 225.893148 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
226.8	17.4	13.0	15.6	5.32	3.08	2.19	213.8	211.3	4.38	1.82	56.1	1.00	0.07	17.8



Stellar Parameters For KIC 008324293

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6478^{+181}_{-250}	$4.356^{+0.101}_{-0.188}$	$-0.400^{+0.250}_{-0.300}$	$1.120^{+0.339}_{-0.169}$	$1.036^{+0.161}_{-0.132}$	$1.039^{+0.549}_{-0.512}$
	+3%/-4%	+2%/-4%	+62%/-75%	+30%/-15%	+16%/-13%	+53%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008324293-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-4635 ± 61	$21.61^{+12.63}_{-13.00}$	422^{+35}_{-22}	4292^{+2059}_{-654}	5606^{+28194}_{-3340}
Alt.	-487 ± 28	$18.63^{+14.10}_{-11.04}$	423^{+32}_{-25}	3107^{+1107}_{-421}	798^{+3822}_{-543}

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

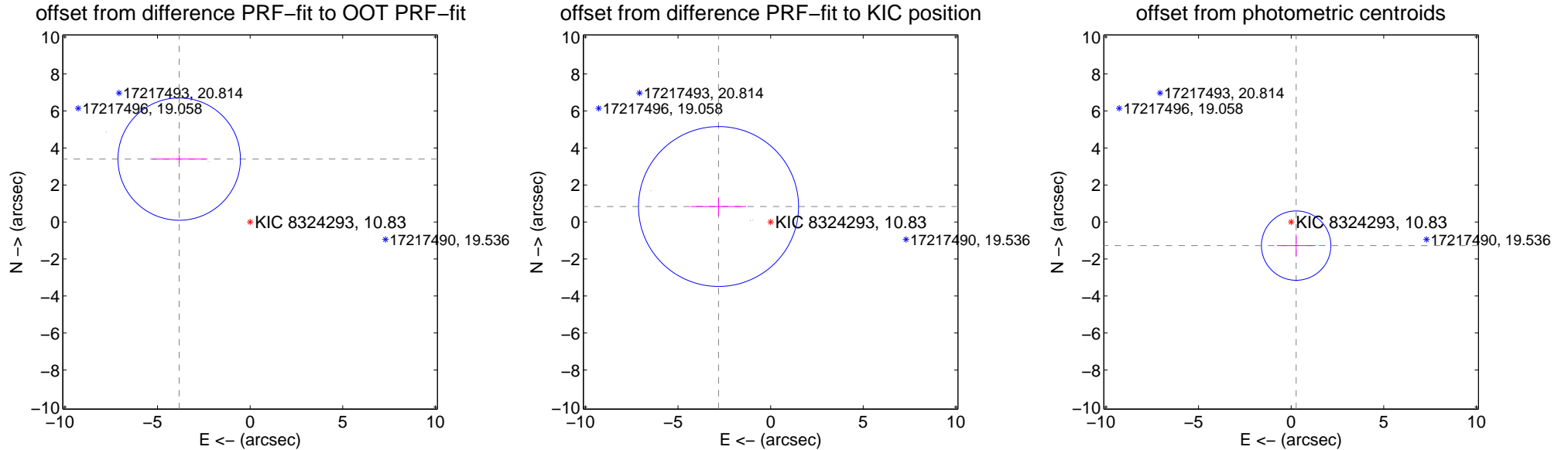
DV Centroid Data

Supplemental centroid analysis for 008324293-01. **Kepler magnitude: 10.83.** Transit SNR 44.42

There are 1 quarters with good PRF difference image offsets

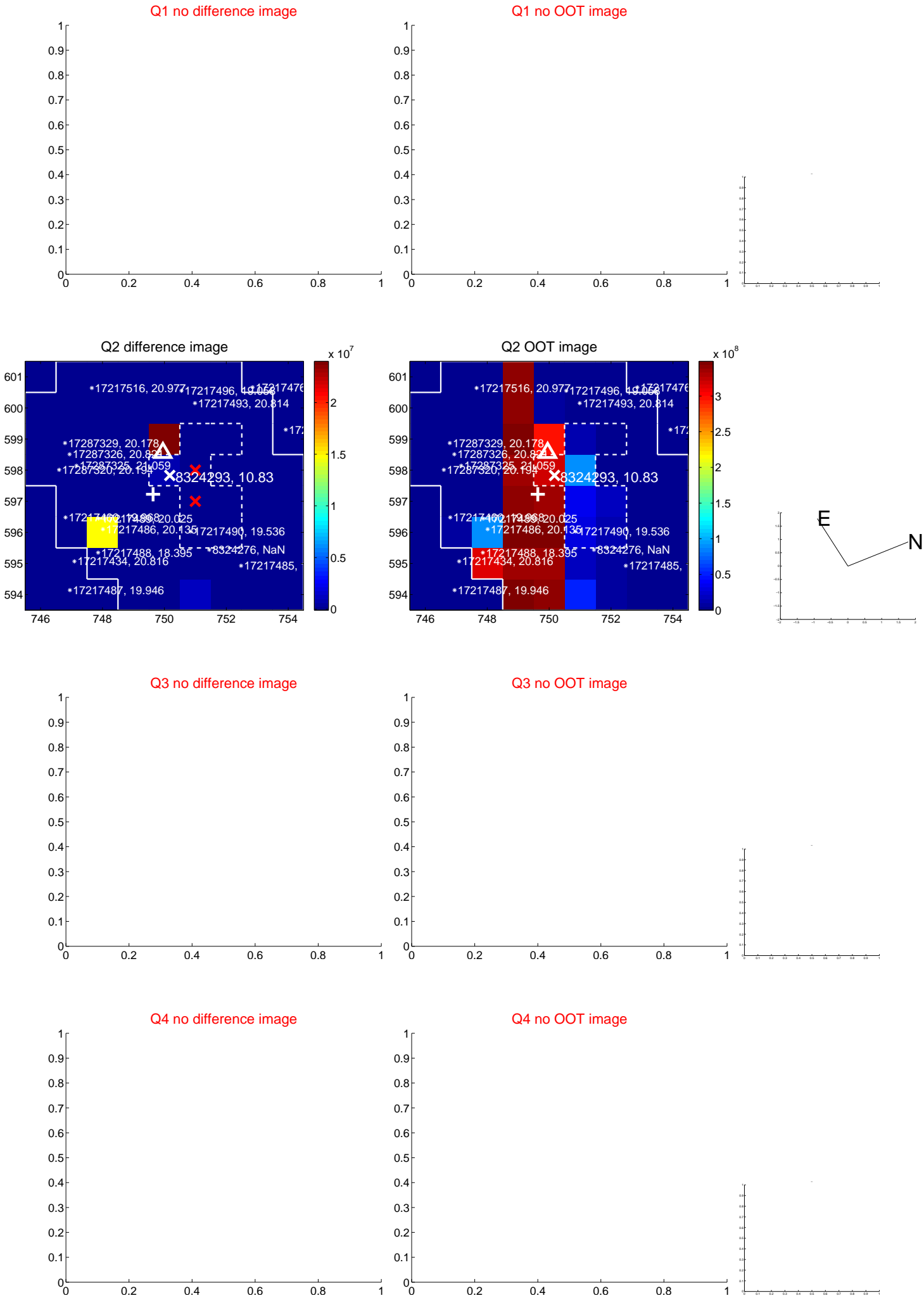
The OOT PRF centroid is offset from the target star catalog position by about 3.40 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.120 ± 1.102	4.65	3.828 ± 1.461	3.400 ± 0.217
PRF-fit source offset from KIC position	2.934 ± 1.440	2.04	2.813 ± 1.495	0.837 ± 0.498
photometric centroid source offset	1.30 ± 0.62	2.09	-0.27 ± 1.04	-1.28 ± 0.60

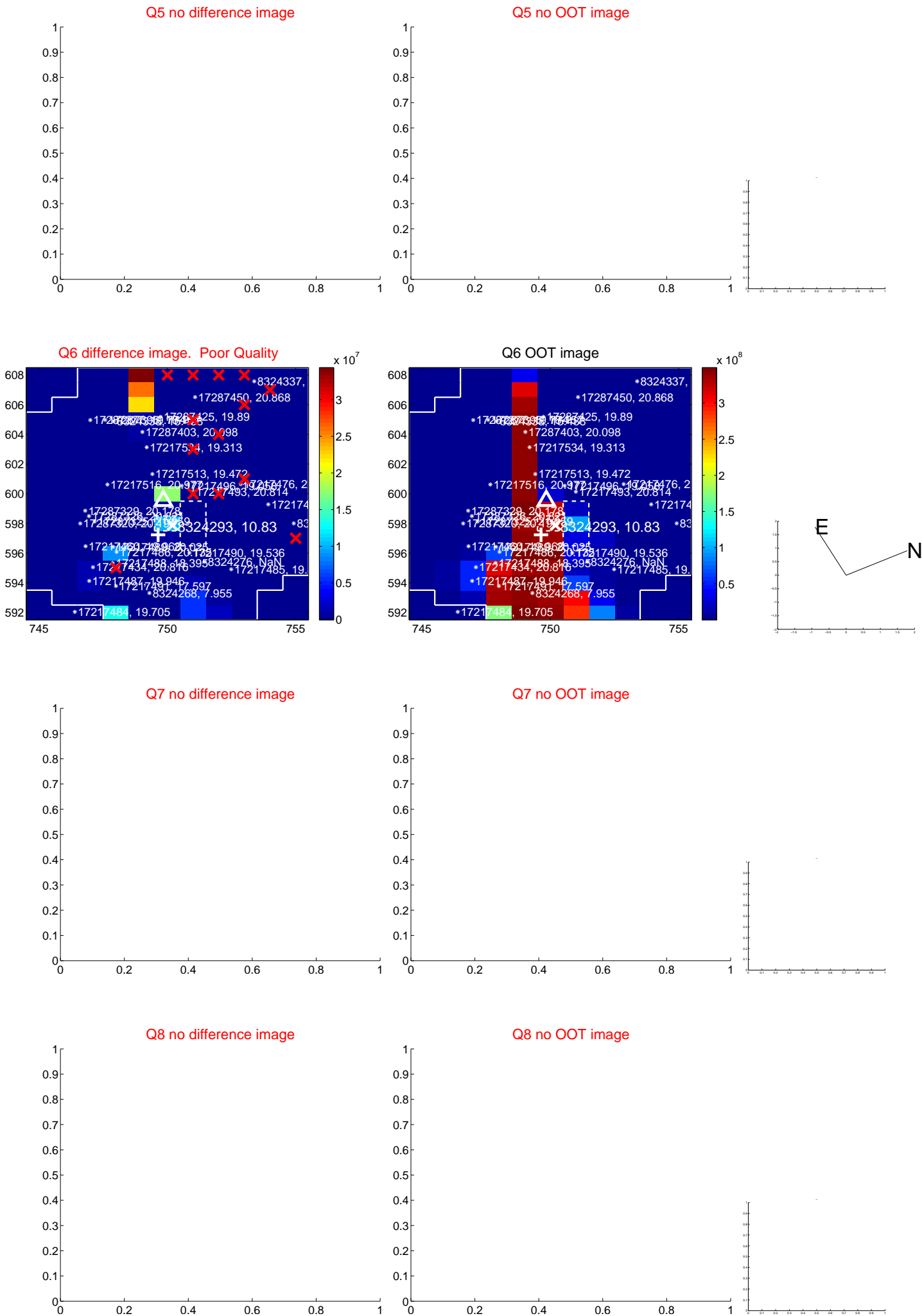


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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



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

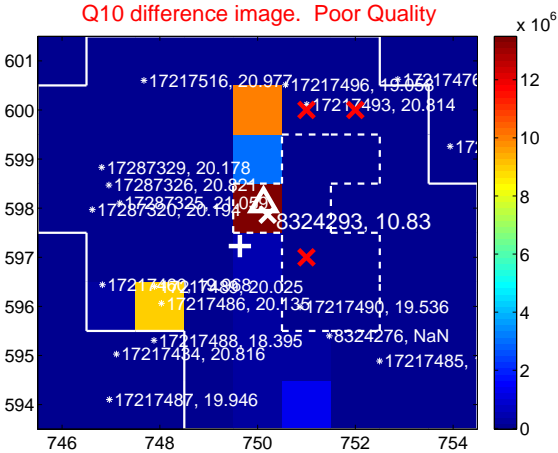
Q9 no difference image



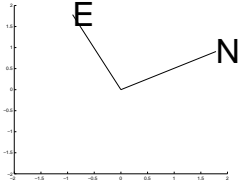
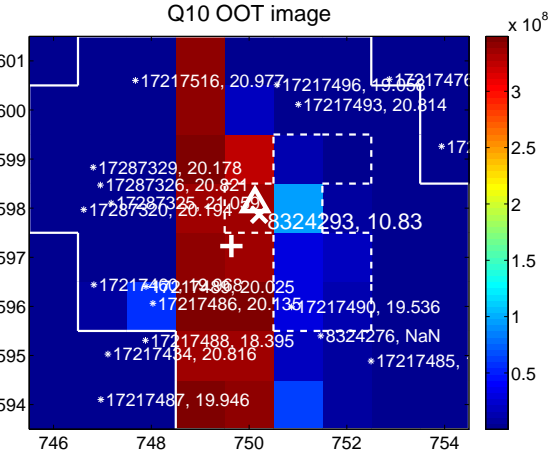
Q9 no OOT image



Q10 difference image. Poor Quality



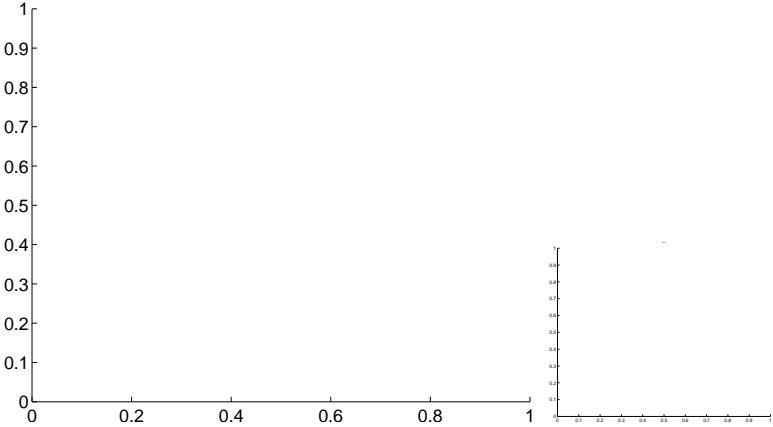
Q10 OOT image



Q11 no difference image



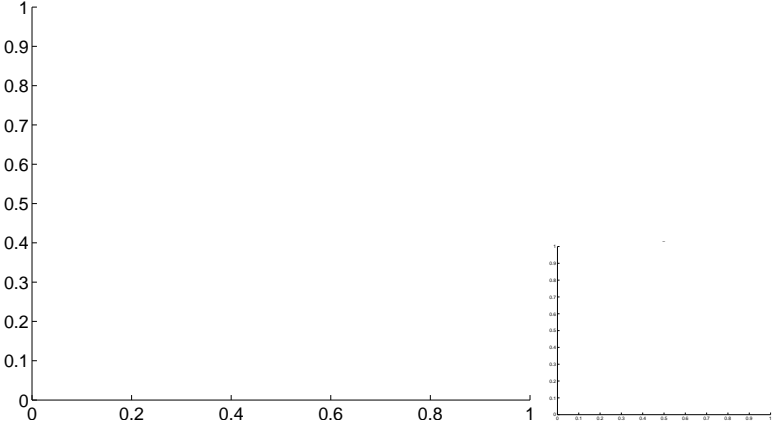
Q11 no OOT image



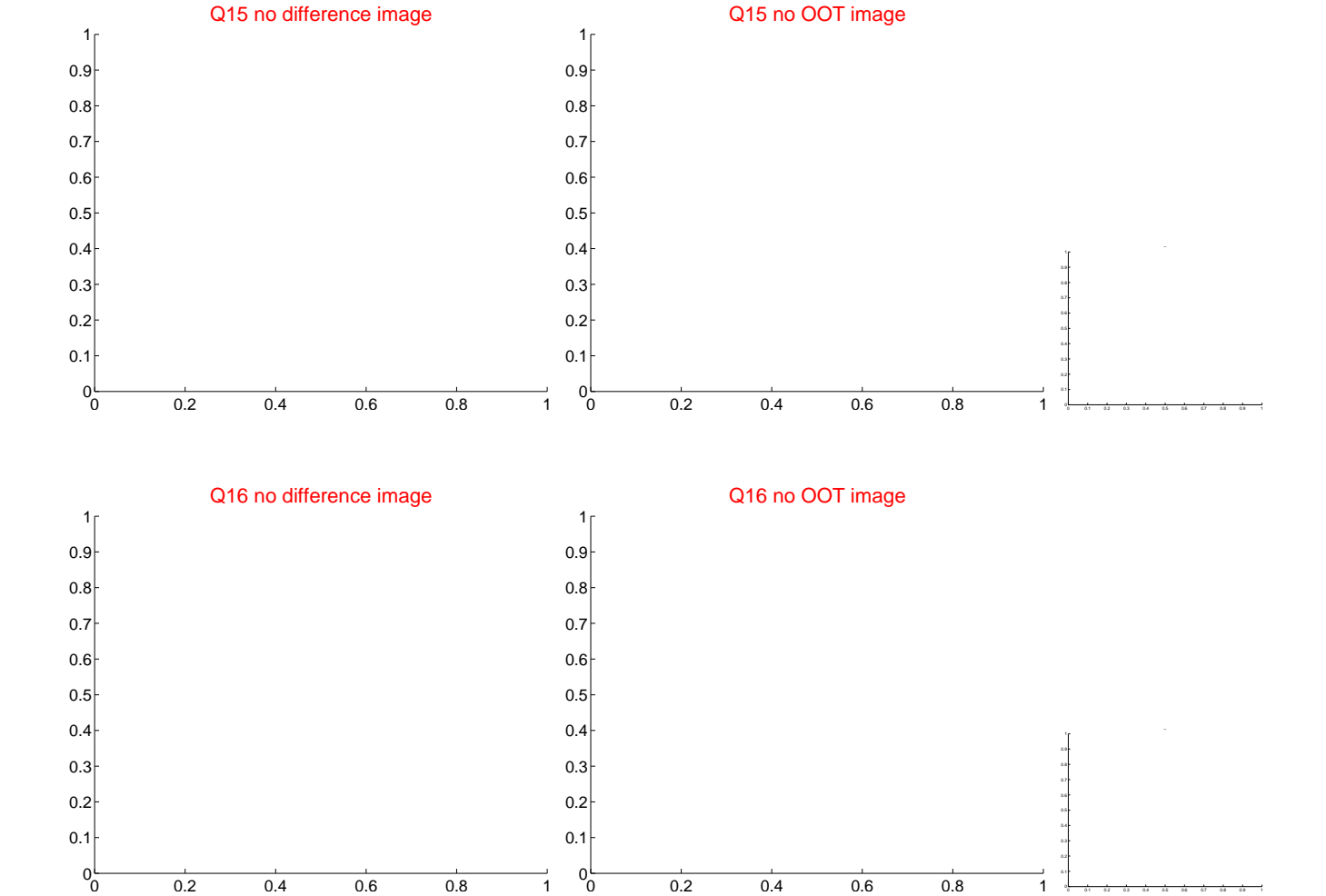
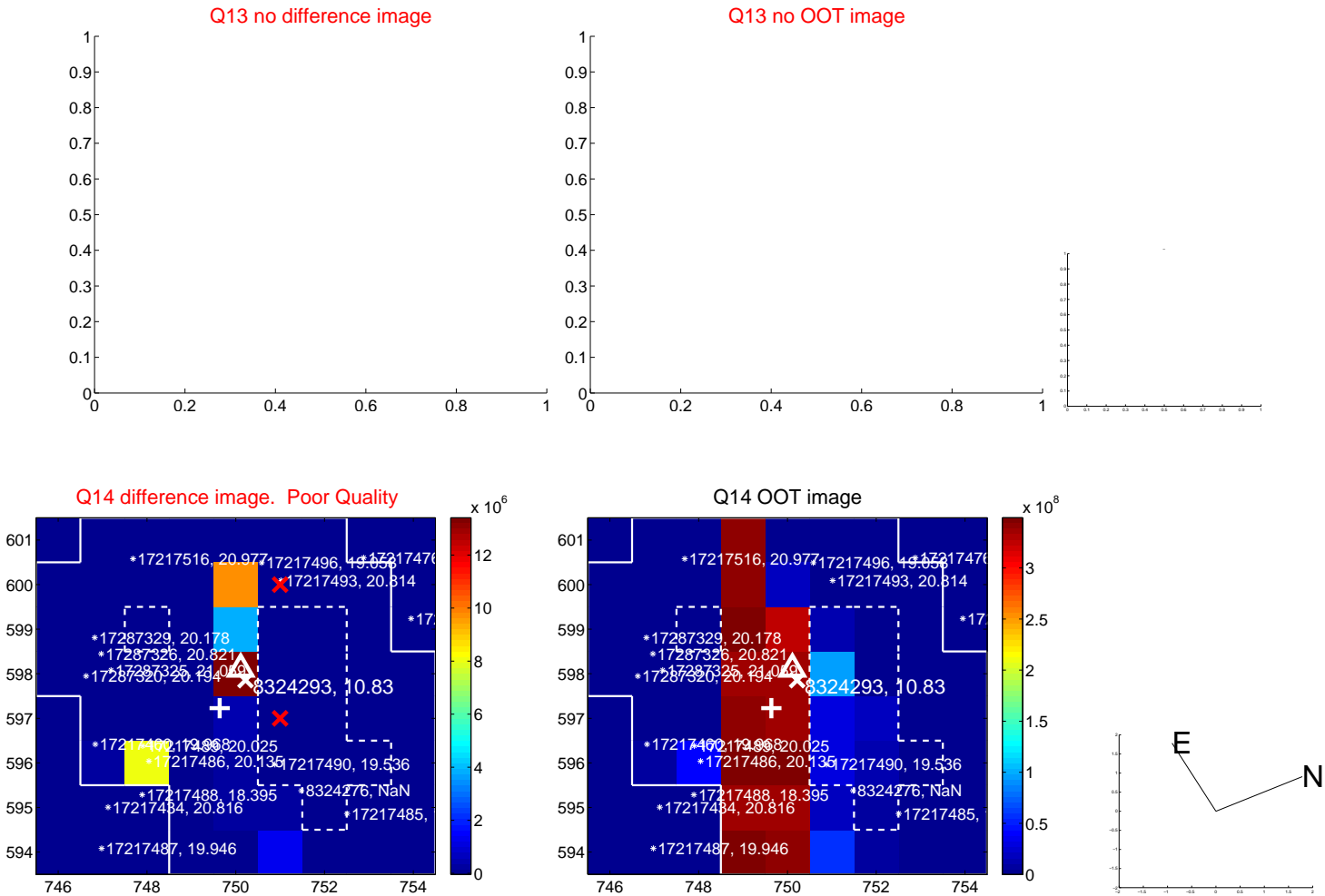
Q12 no difference image



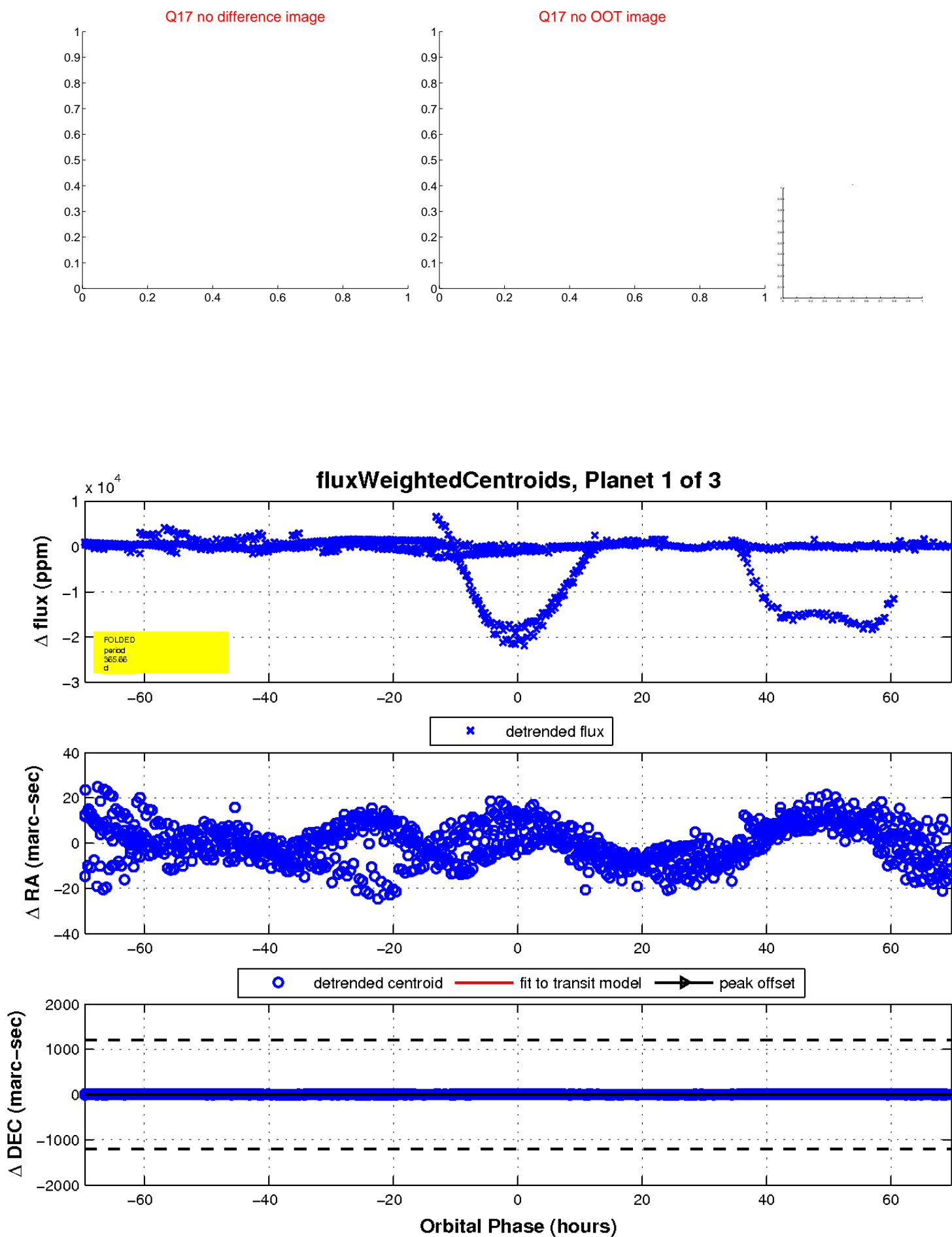
Q12 no OOT image



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

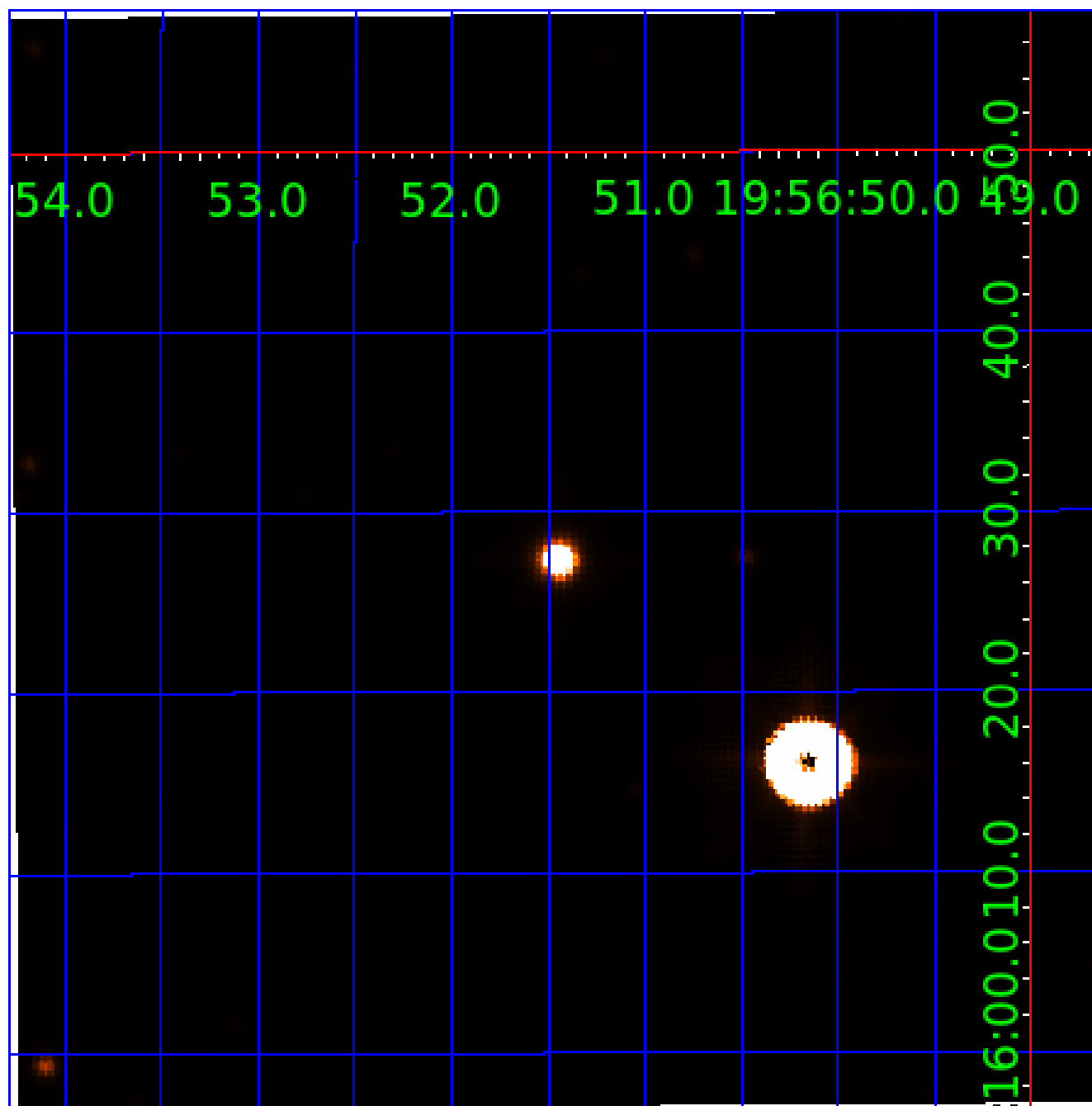


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008324293

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})
008324293-01	OBS	No	365.658178	225.952275	8865.1	23.252	61.0	44.4	1.12	6478	18.65	1.93
008324293-02	OBS	No	365.532895	229.861503	6357.6	19.405	49.4	38.3	1.12	6478	15.94	1.93
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008324293-01	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED
008324293-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_SATURATED
008324293-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—ALL_TRANS_CHASES—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.

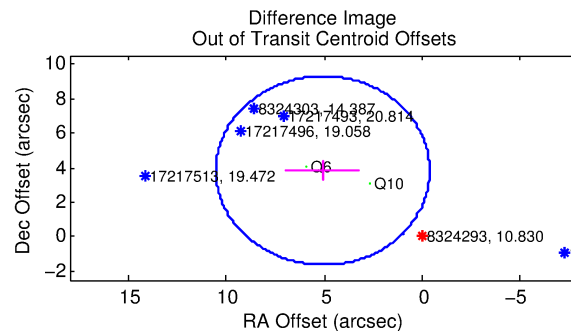
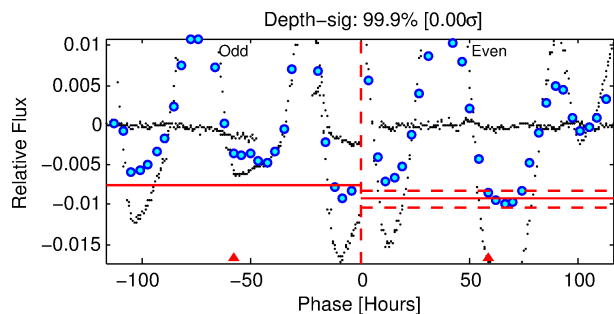
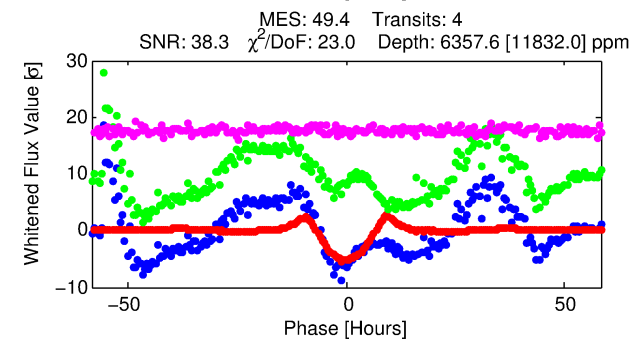
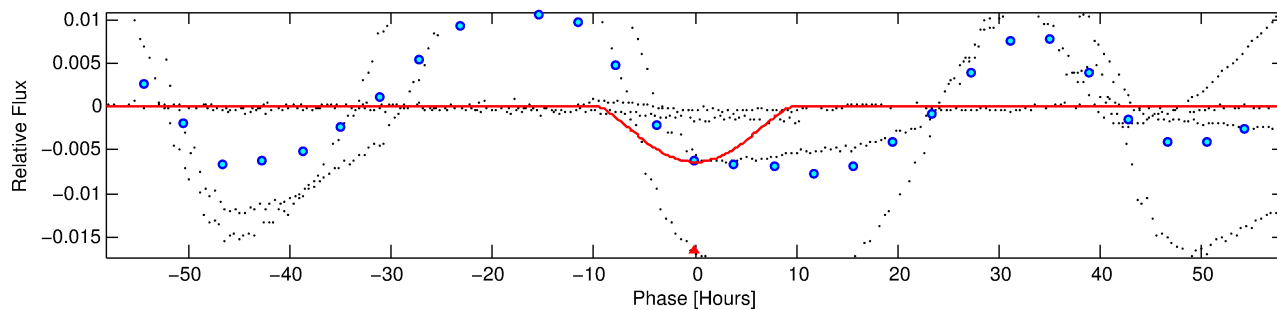
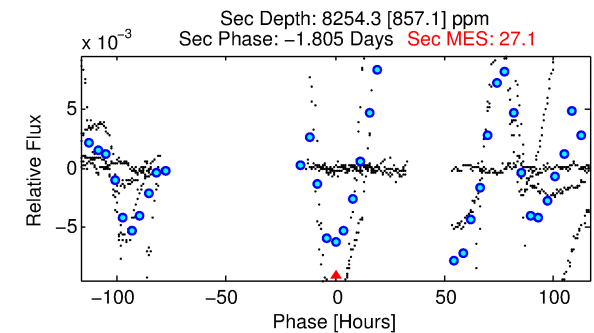
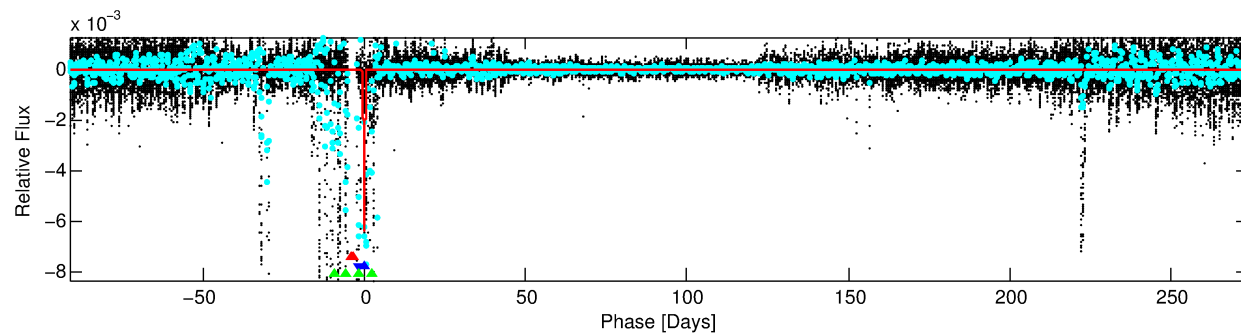
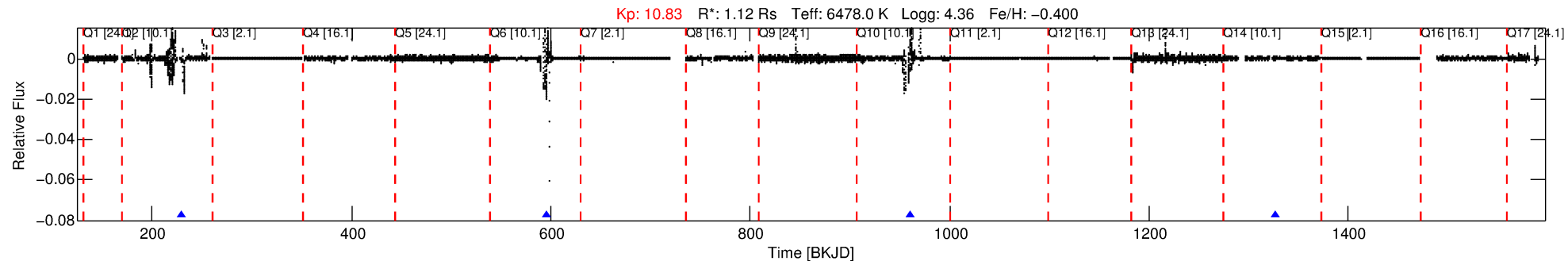
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008324293-02

No Significant Match Found

DV One-Page Summary

KIC: 8324293 Candidate: 2 of 3 Period: 365.533 d



DV Fit Results:

Period = 365.53289 [0.02002] d
Epoch = 229.8615 [0.0386] BKJD
Rp/R* = 0.1304 [0.3066]
a/R* = 75.86 [31.46]
b = 1.00 [0.60]
Seff = 1.93 [0.74]
Teq = 300 [29] K
Rp = 15.94 [37.78] Re
a = 1.0134 [0.2514] AU
Ag = 18361.60 [86593.10] [0.21σ]
Teff = 5407 [6361] K [0.80σ]

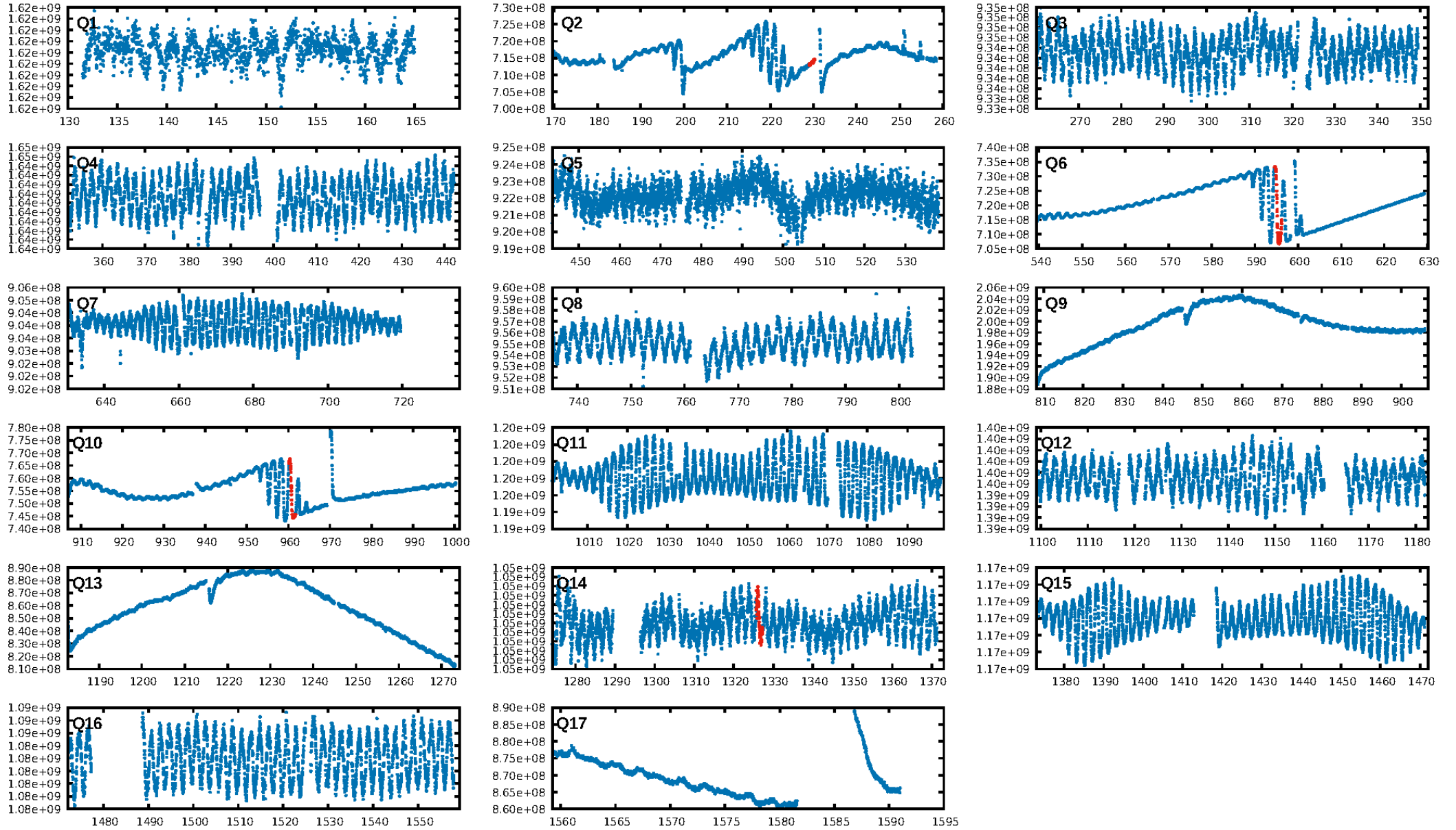
DV Diagnostic Results:

ShortPeriod-sig: 99.8% [3.09σ]
LongPeriod-sig: 7.9% [0.10σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 4.59e-27
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 1.679 arcsec [1.63σ]
OotOffset-rm: 6.350 arcsec [3.49σ]
KicOffset-rm: 3.817 arcsec [2.44σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-st: 2/0/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.67 [2/3]

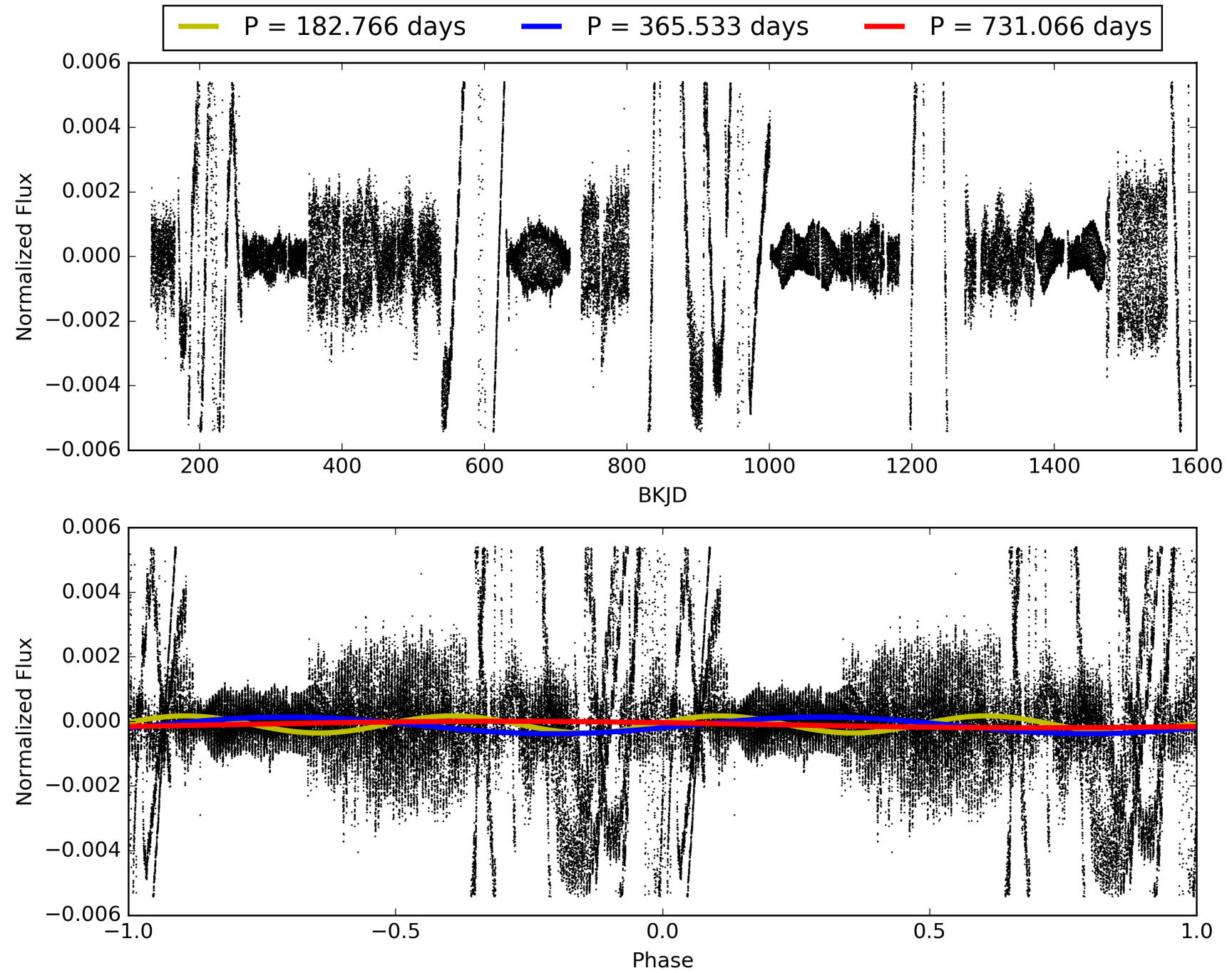
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:57:10 Z

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

TCE 008324293-02, PDC Light Curves

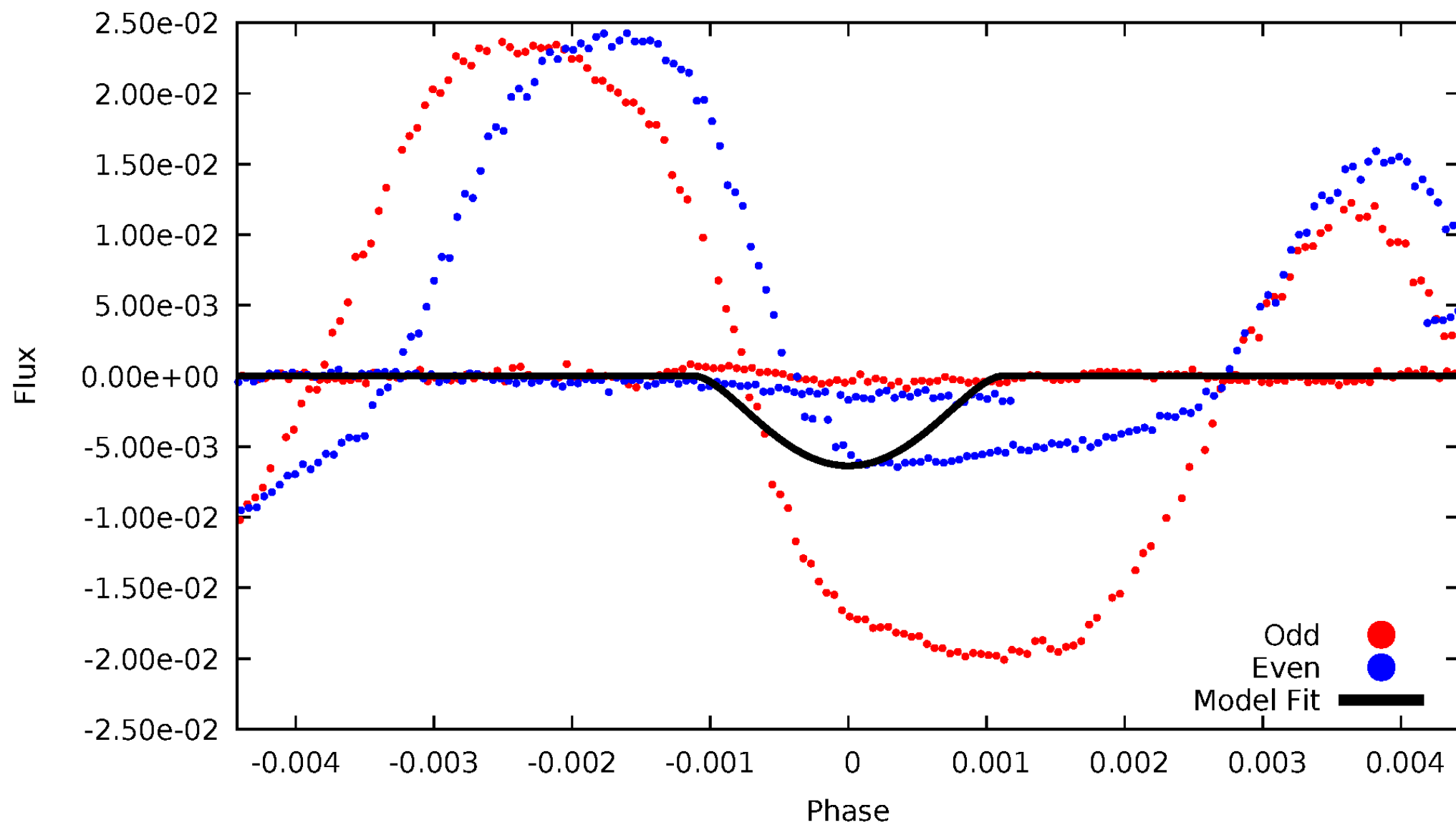


TCE 008324293-02



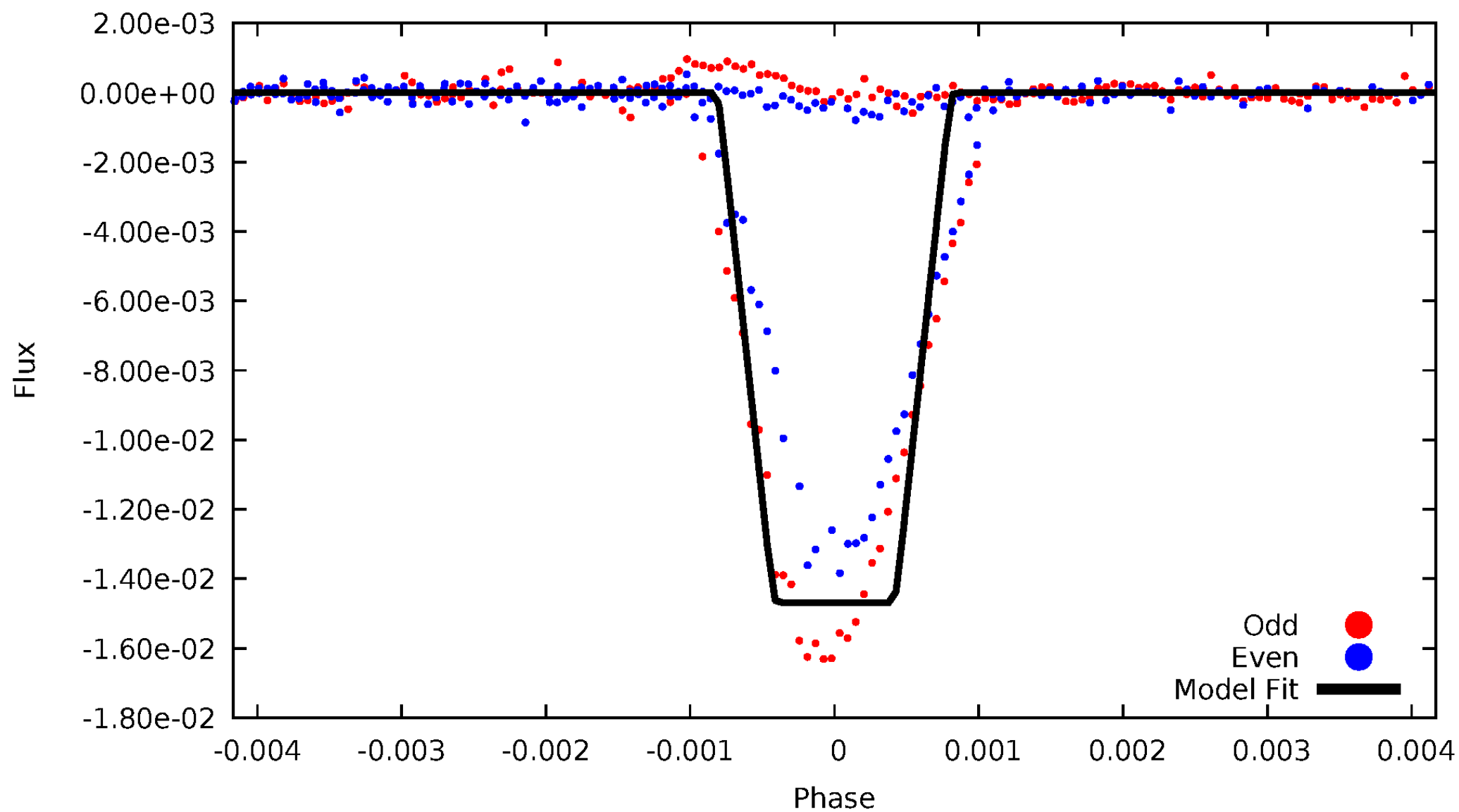
DV Odd/Even

TCE 008324293-02



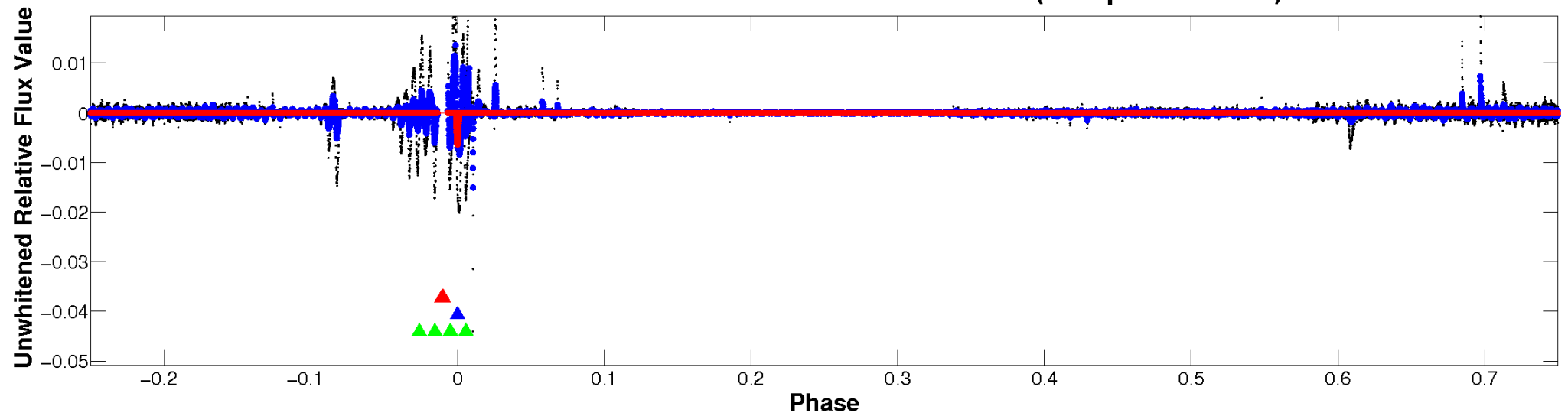
ALT Odd/Even

TCE 008324293-02

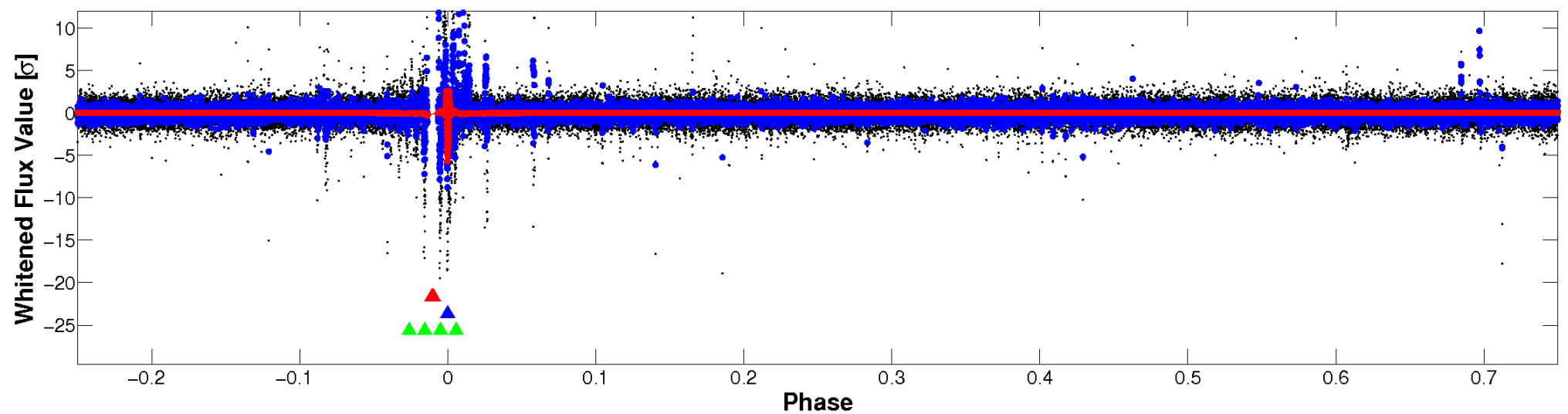


Non-Whitened Vs. Whitened Light Curve

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

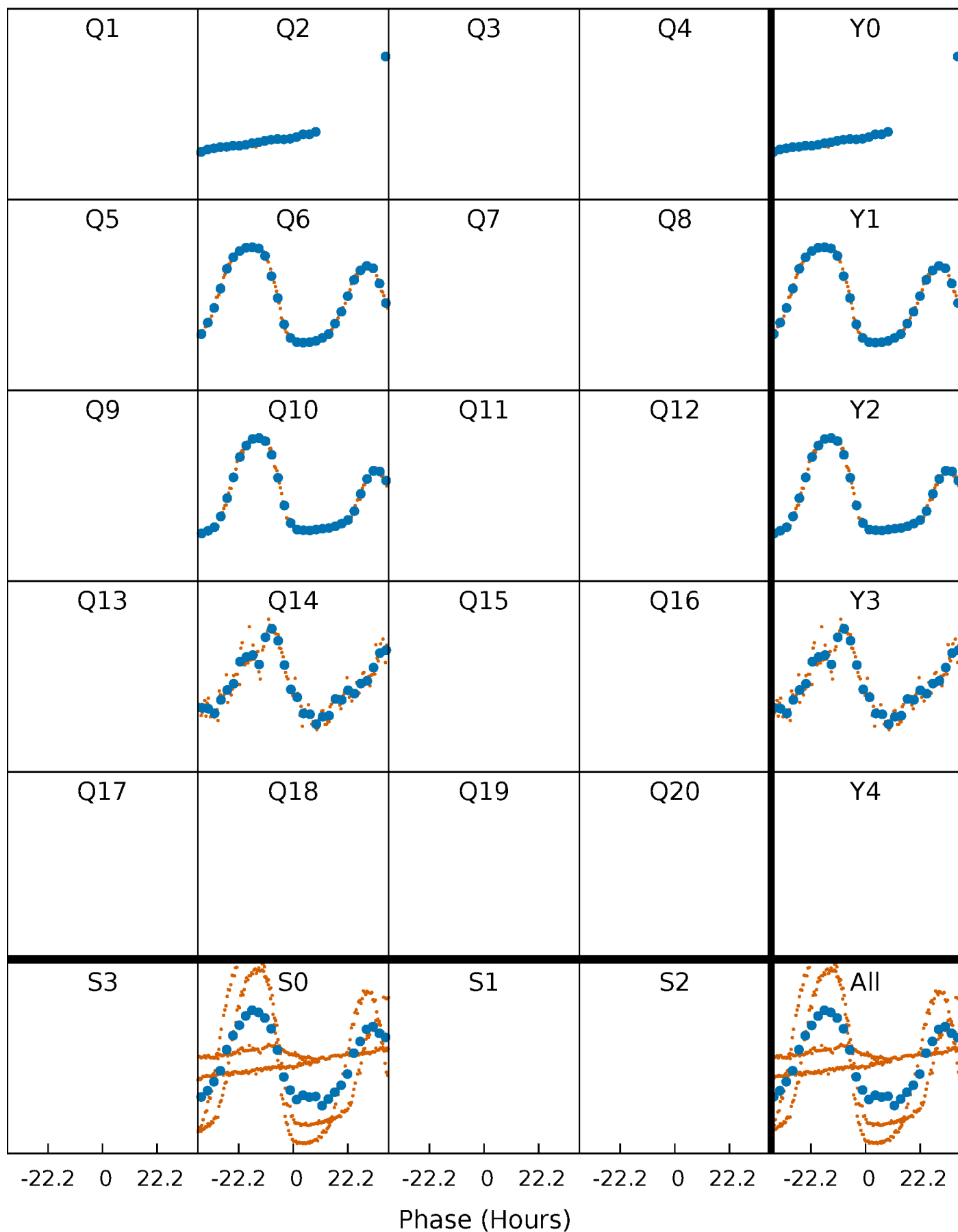


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



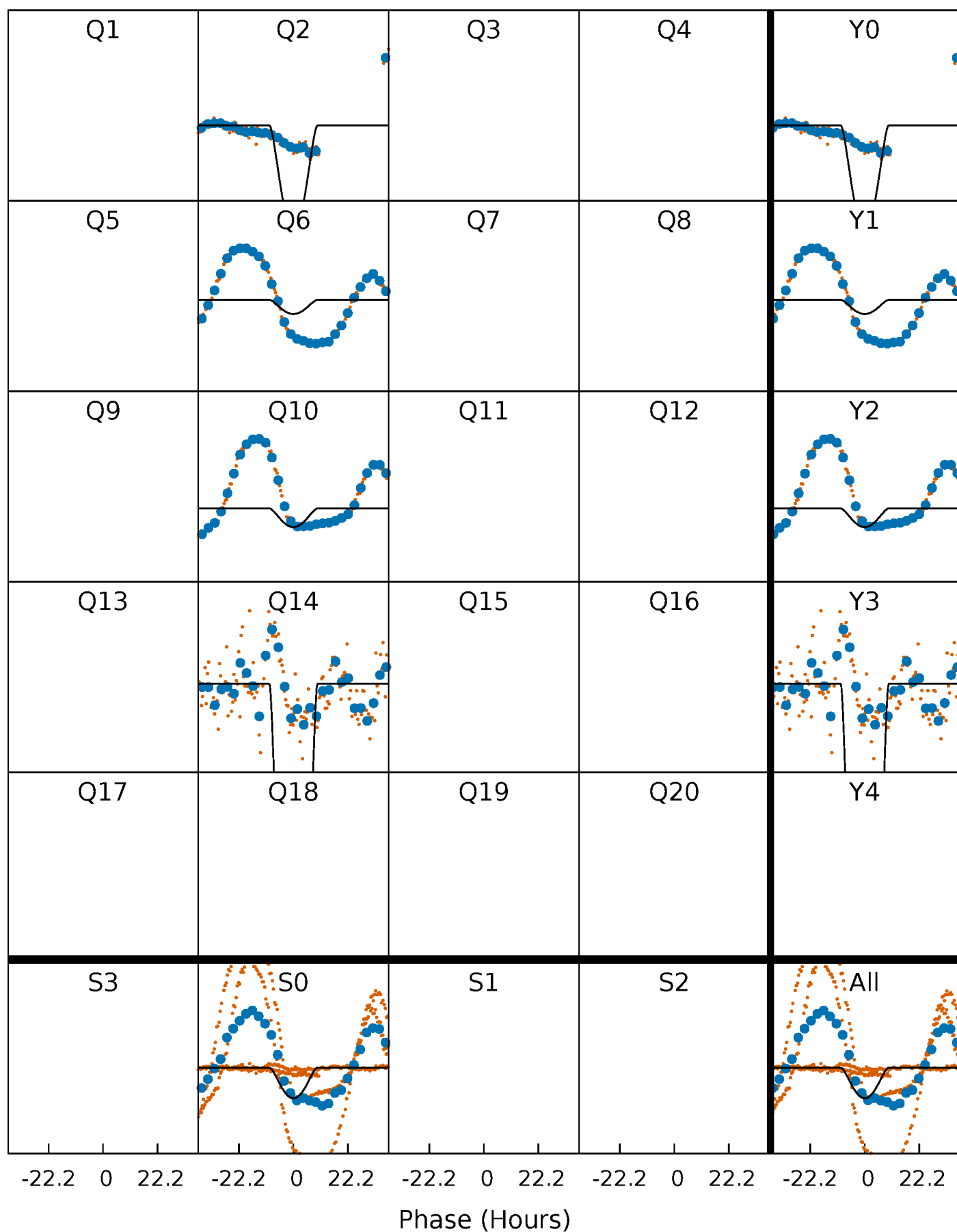
PDC Quarter-Phased Transit Curves

TCE 008324293-02 P=365.532895 Days $T_0=229.861503$ (BKJD)



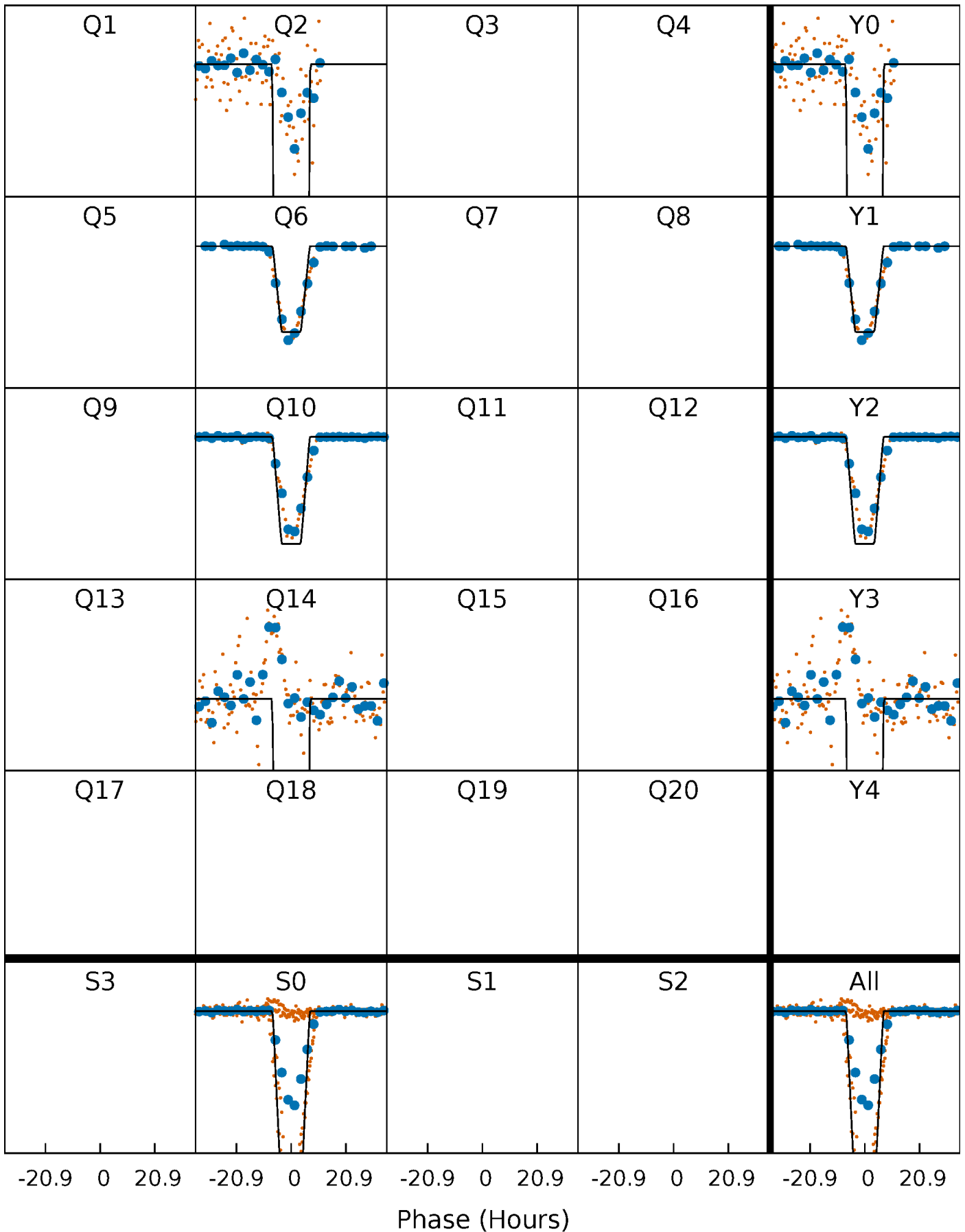
DV Quarter-Phased Transit Curves

TCE 008324293-02 P=365.532895 Days $T_0=229.861503$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

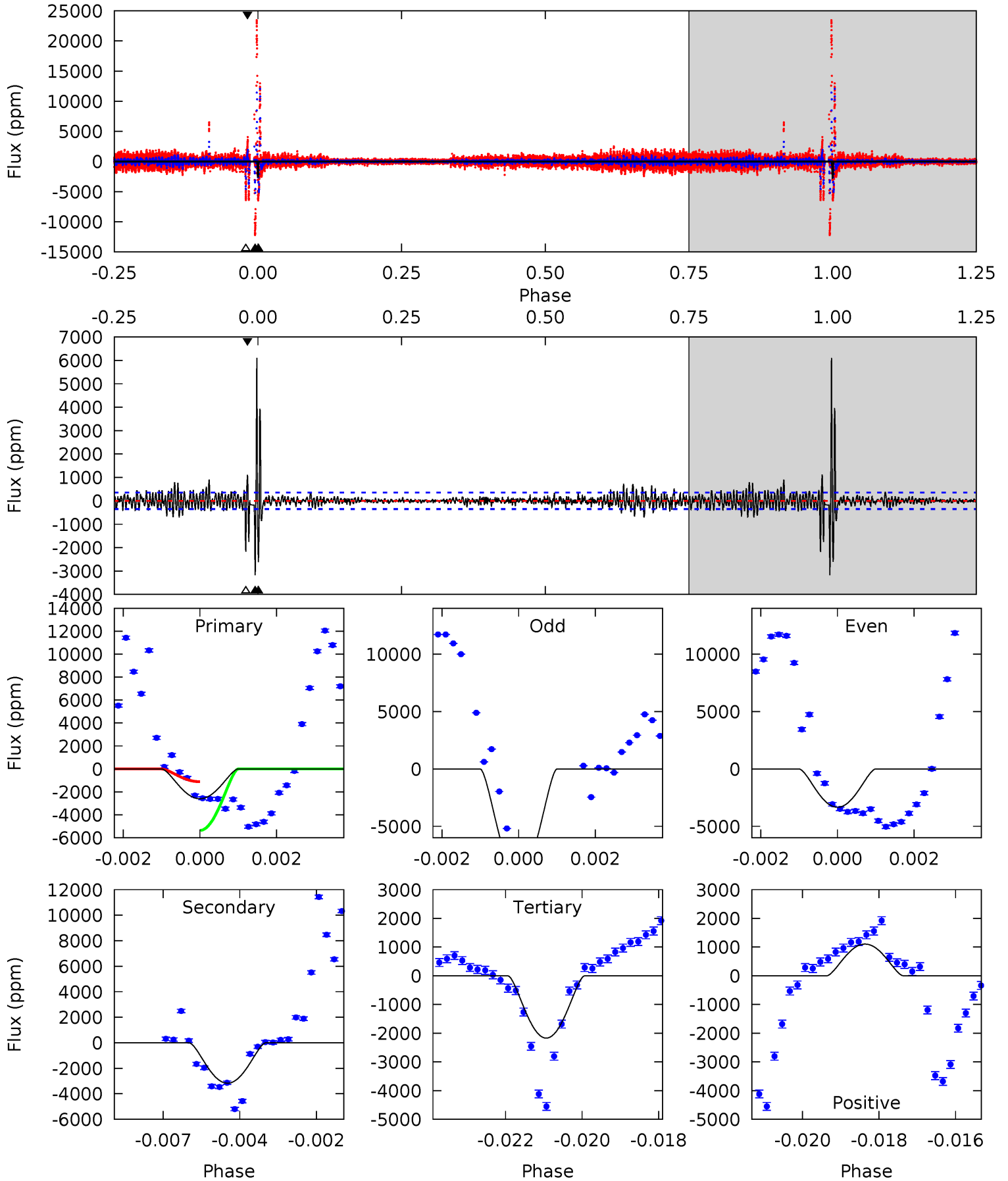
TCE 008324293-02 P=365.535955 Days $T_0=229.808060$ (BKJD)



DV Model-Shift Uniqueness Test

008324293-02, P = 365.532895 Days, E = 229.861503 Days

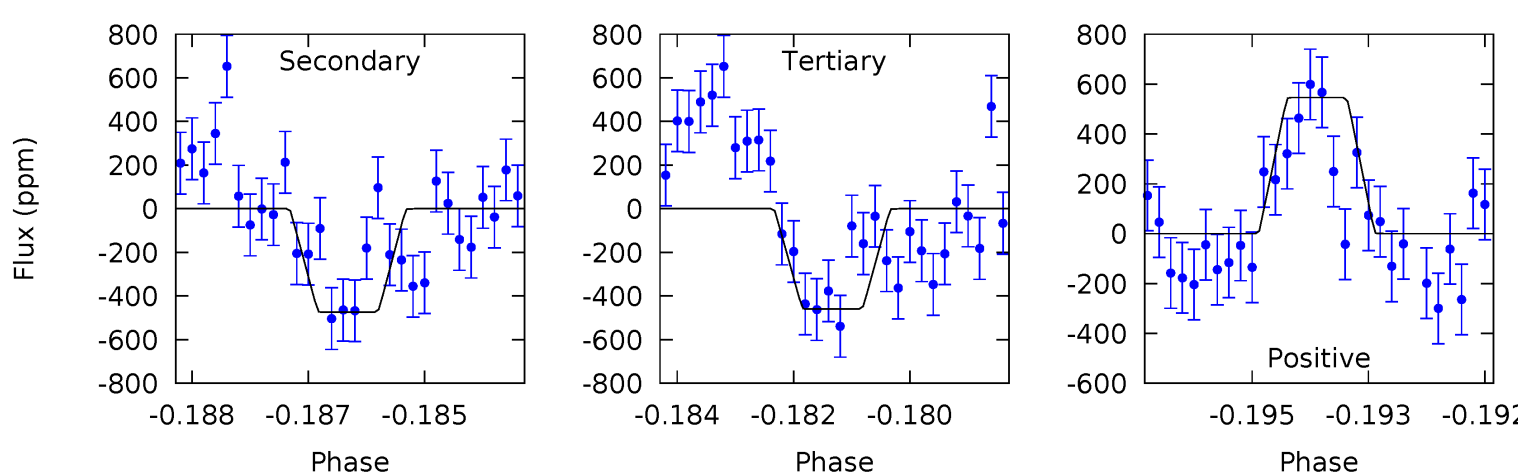
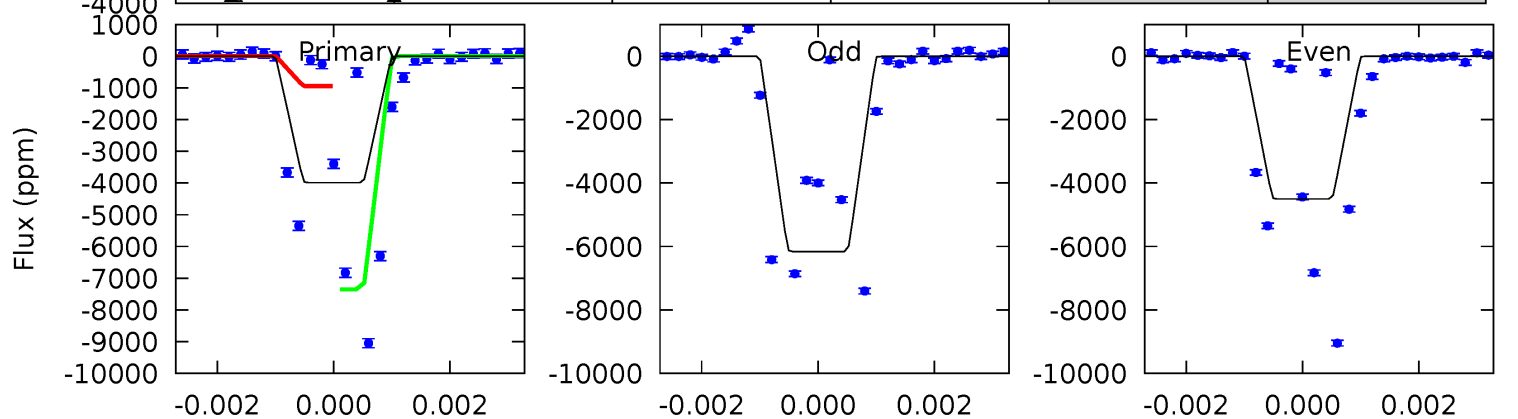
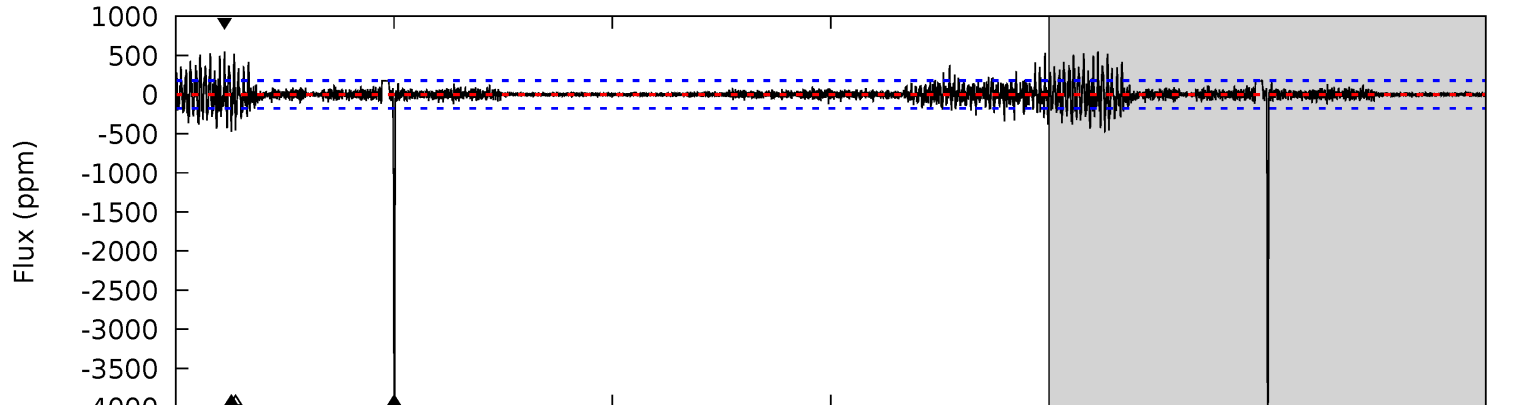
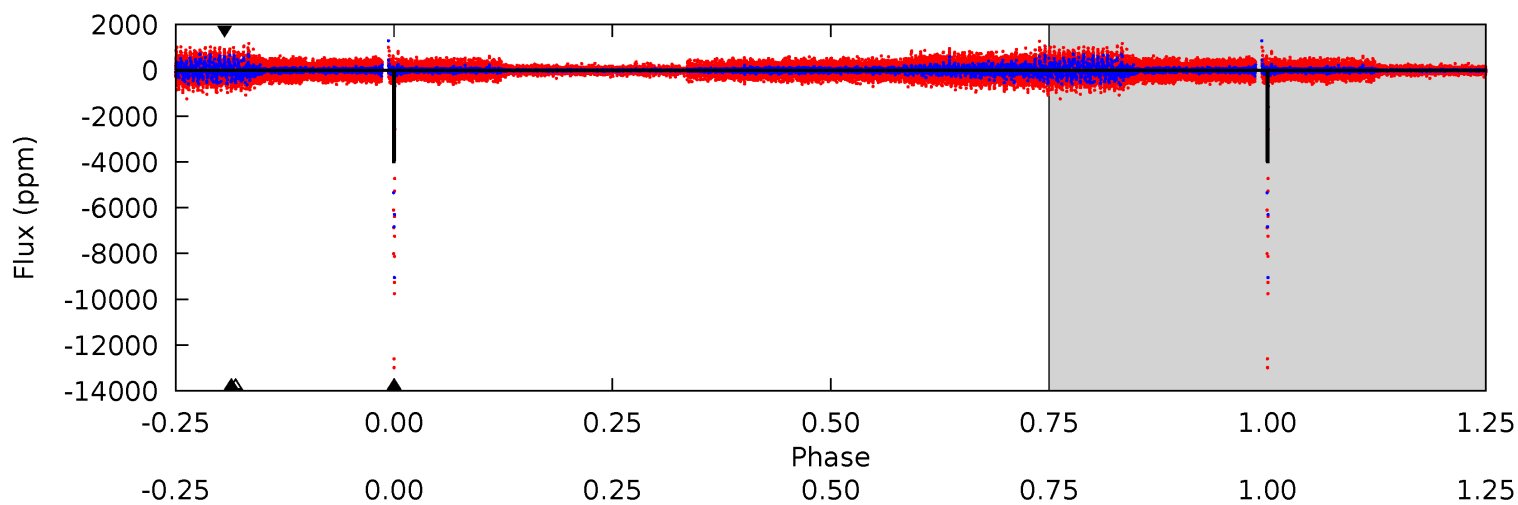
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.8	47.4	32.5	16.5	5.31	3.06	4.03	6.37	22.3	14.9	30.9	31.9	2.29	0.66	31.6



Alt Model-Shift Uniqueness Test

008324293-02, P = 365.535955 Days, E = 229.808060 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
119.7	14.2	13.8	16.4	5.36	3.15	2.03	105.9	103.3	0.43	-2.15	33.5	1.11	0.12	100.3



Stellar Parameters For KIC 008324293

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6478^{+181}_{-250}	$4.356^{+0.101}_{-0.188}$	$-0.400^{+0.250}_{-0.300}$	$1.120^{+0.339}_{-0.169}$	$1.036^{+0.161}_{-0.132}$	$1.039^{+0.549}_{-0.512}$
	+3%/-4%	+2%/-4%	+62%/-75%	+30%/-15%	+16%/-13%	+53%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008324293-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3170 ± 67	$33.71^{+33.79}_{-23.02}$	425^{+27}_{-26}	3467^{+1814}_{-633}	1524^{+13611}_{-1125}
Alt.	-474 ± 33	$33.43^{+33.80}_{-22.01}$	424^{+28}_{-25}	2658^{+941}_{-405}	242^{+1693}_{-183}

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

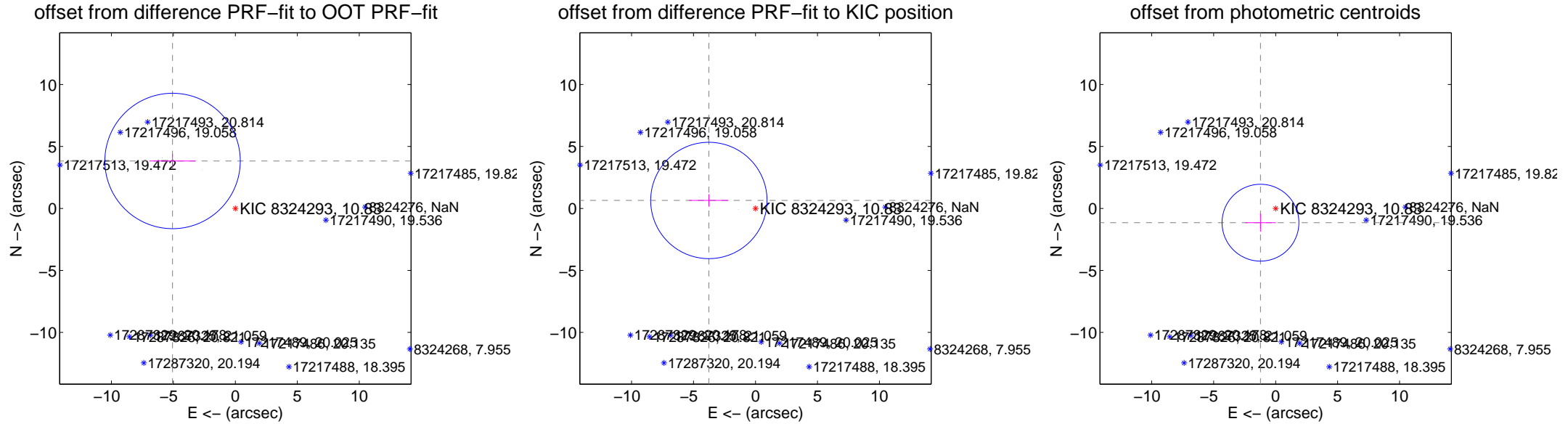
DV Centroid Data

Supplemental centroid analysis for 008324293-02. **Kepler magnitude: 10.83.** Transit SNR 38.30

There are 1 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 3.44 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.350 ± 1.821	3.49	5.065 ± 1.861	3.830 ± 0.561
PRF-fit source offset from KIC position	3.817 ± 1.565	2.44	3.762 ± 1.585	0.644 ± 0.497
photometric centroid source offset	1.68 ± 1.03	1.63	1.22 ± 1.24	-1.15 ± 0.73

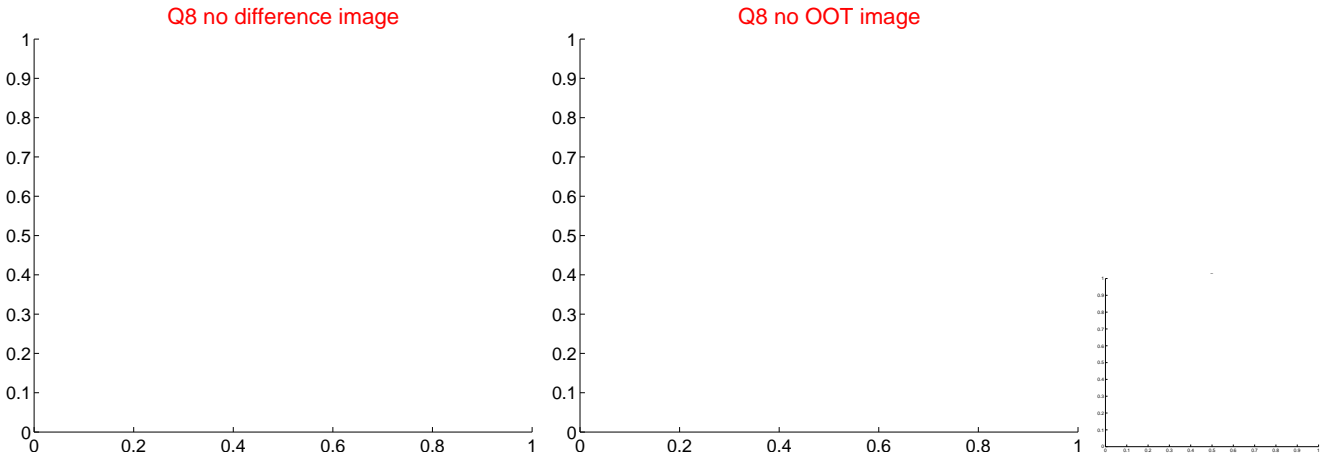
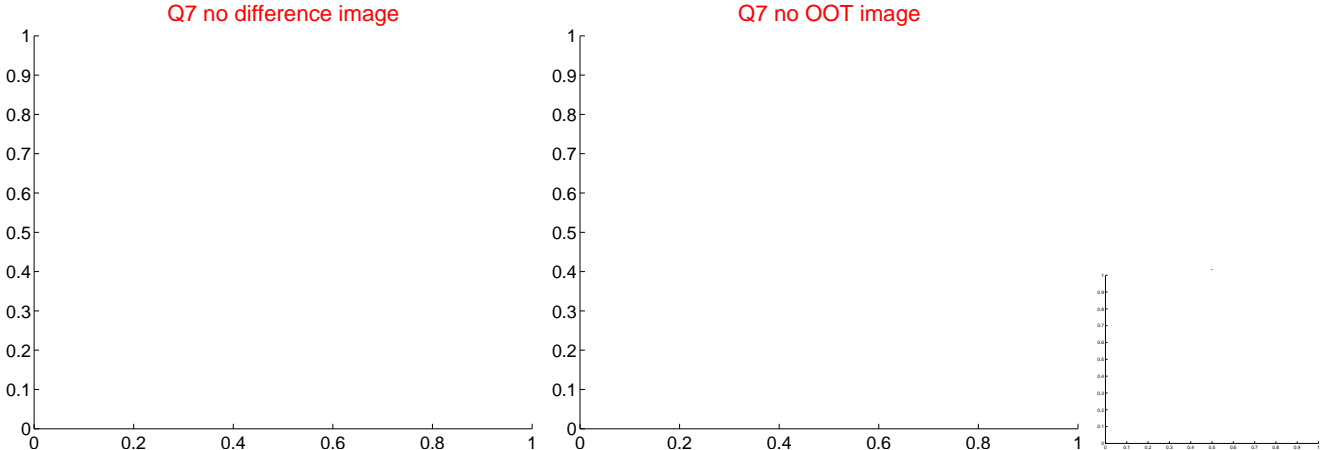
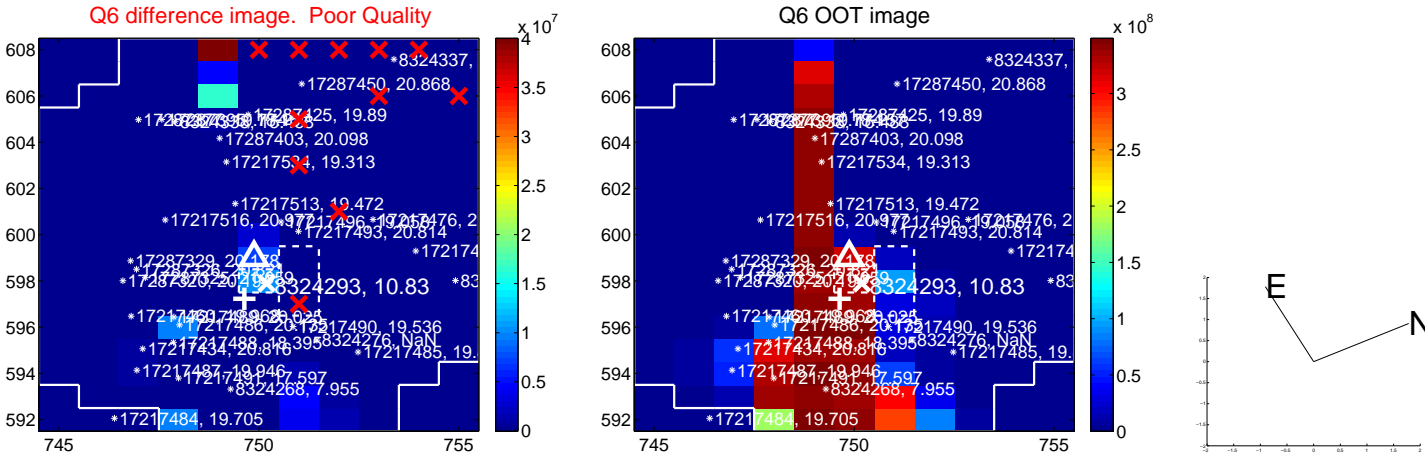
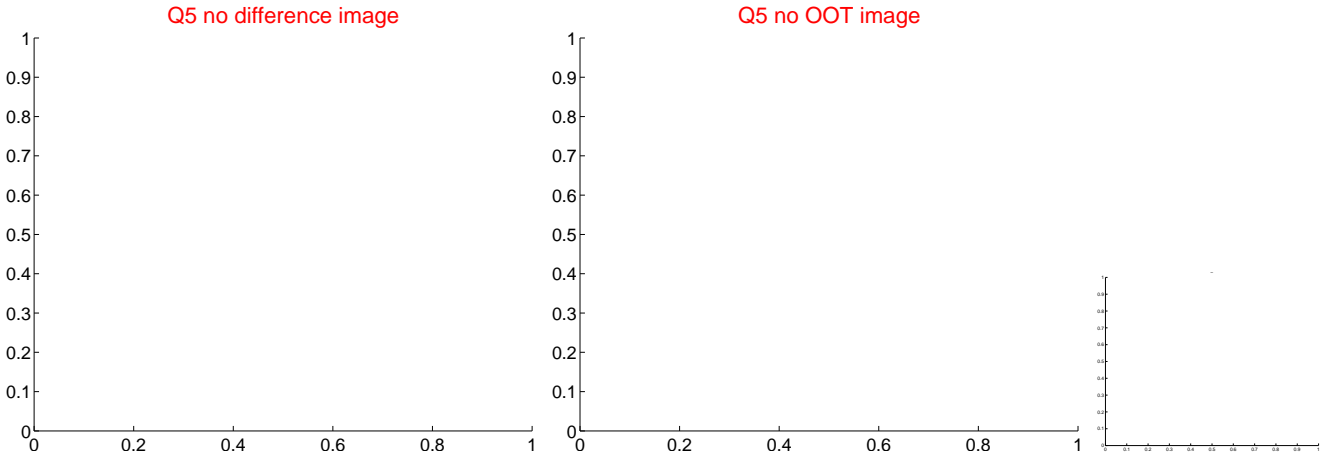


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

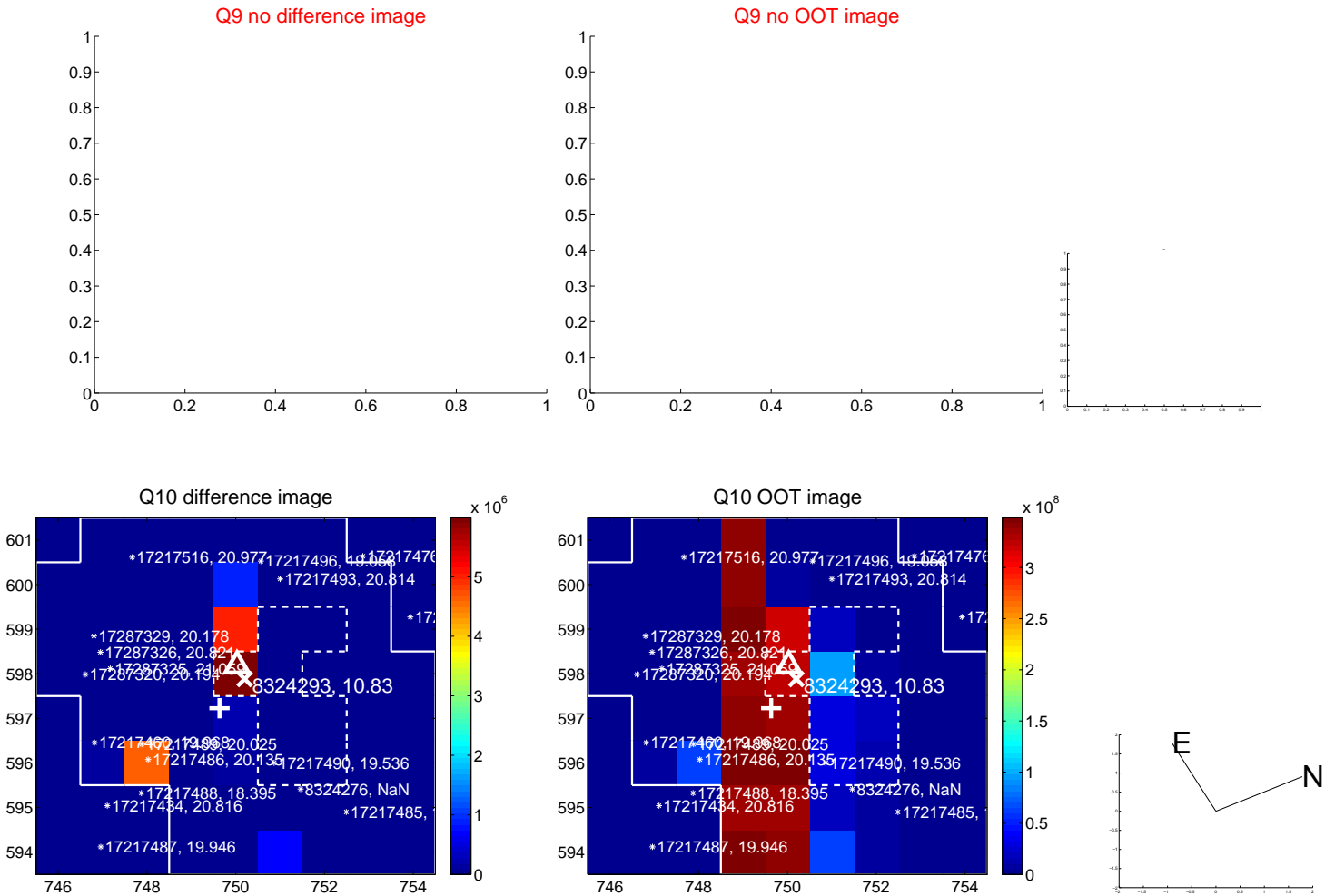
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



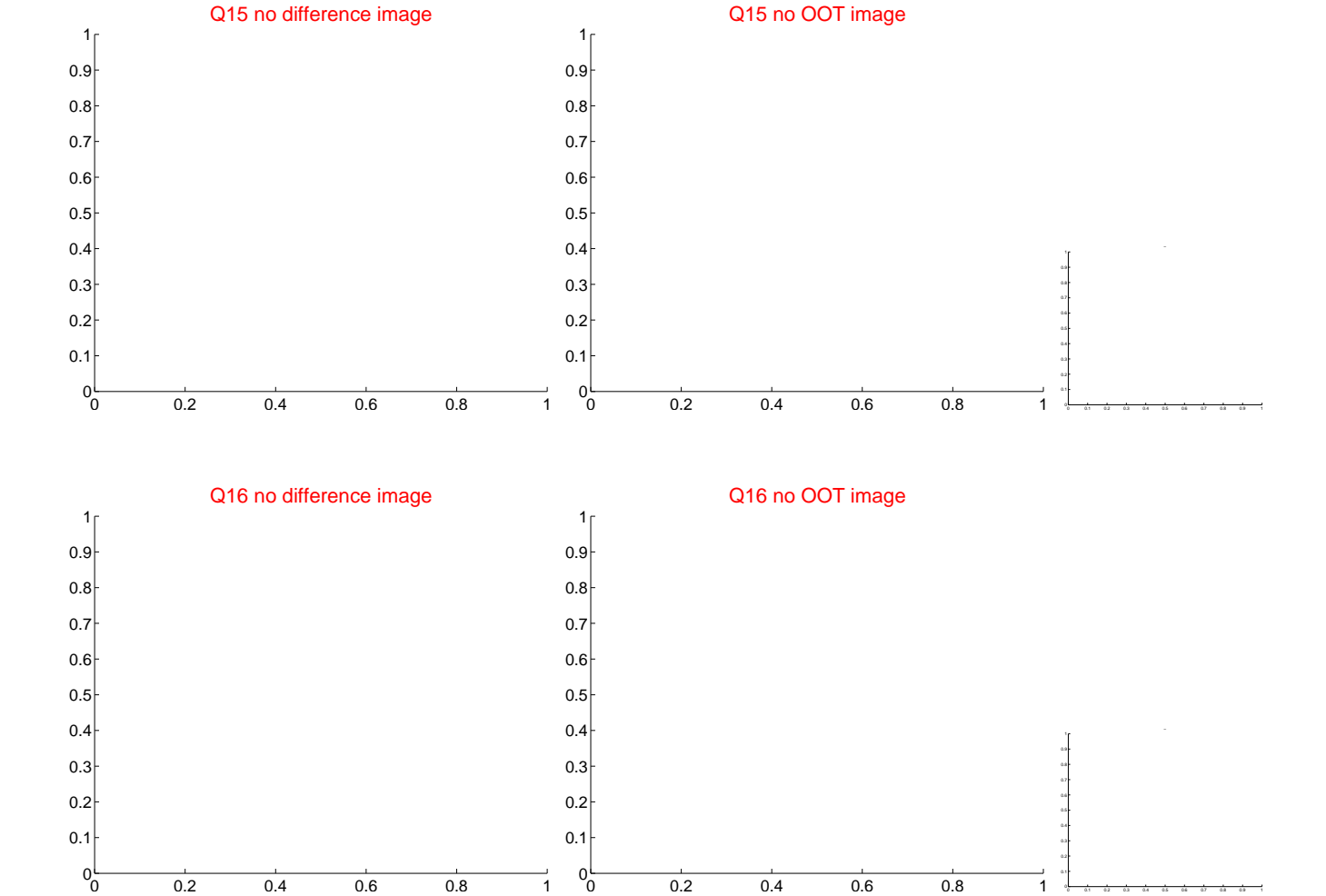
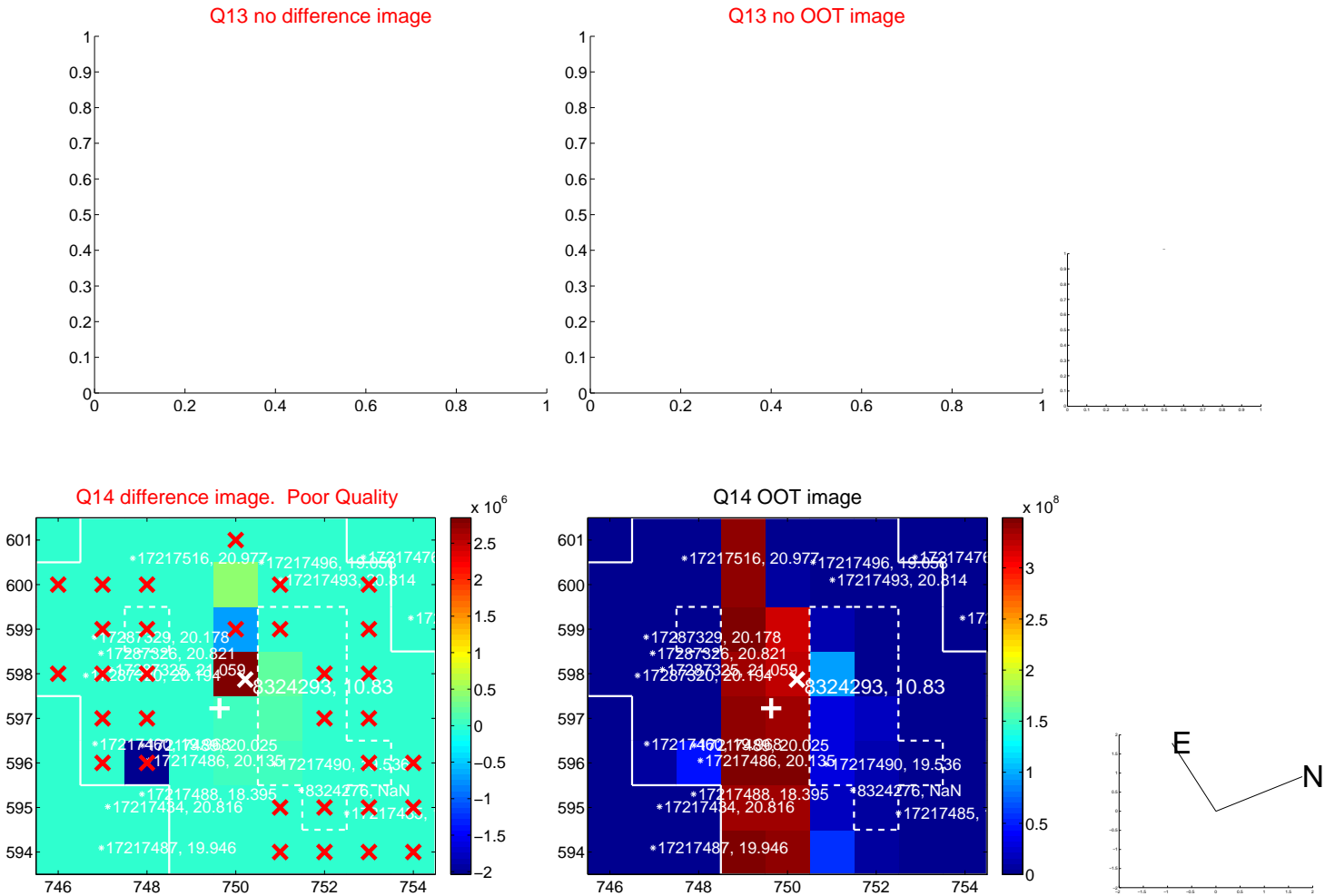
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



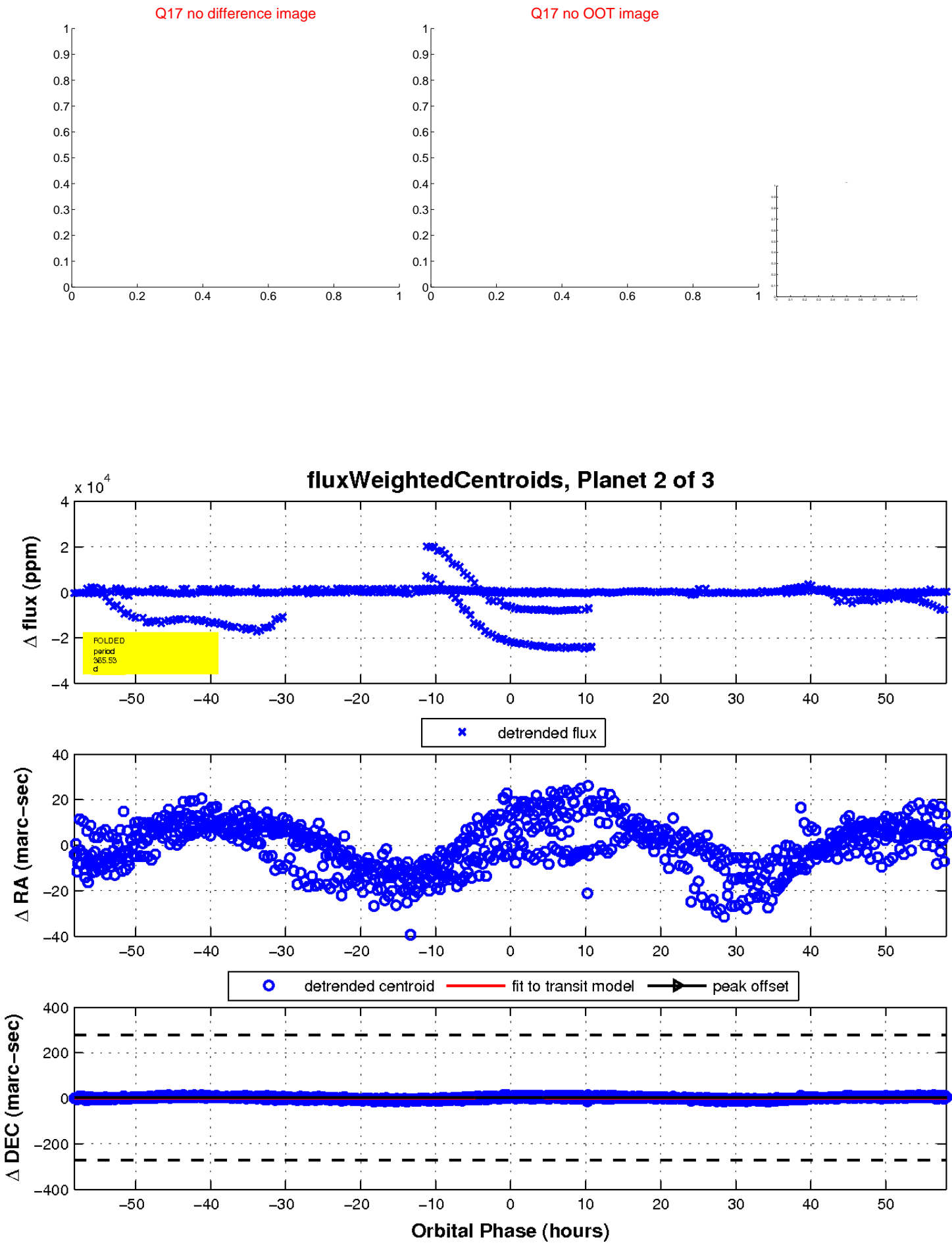
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

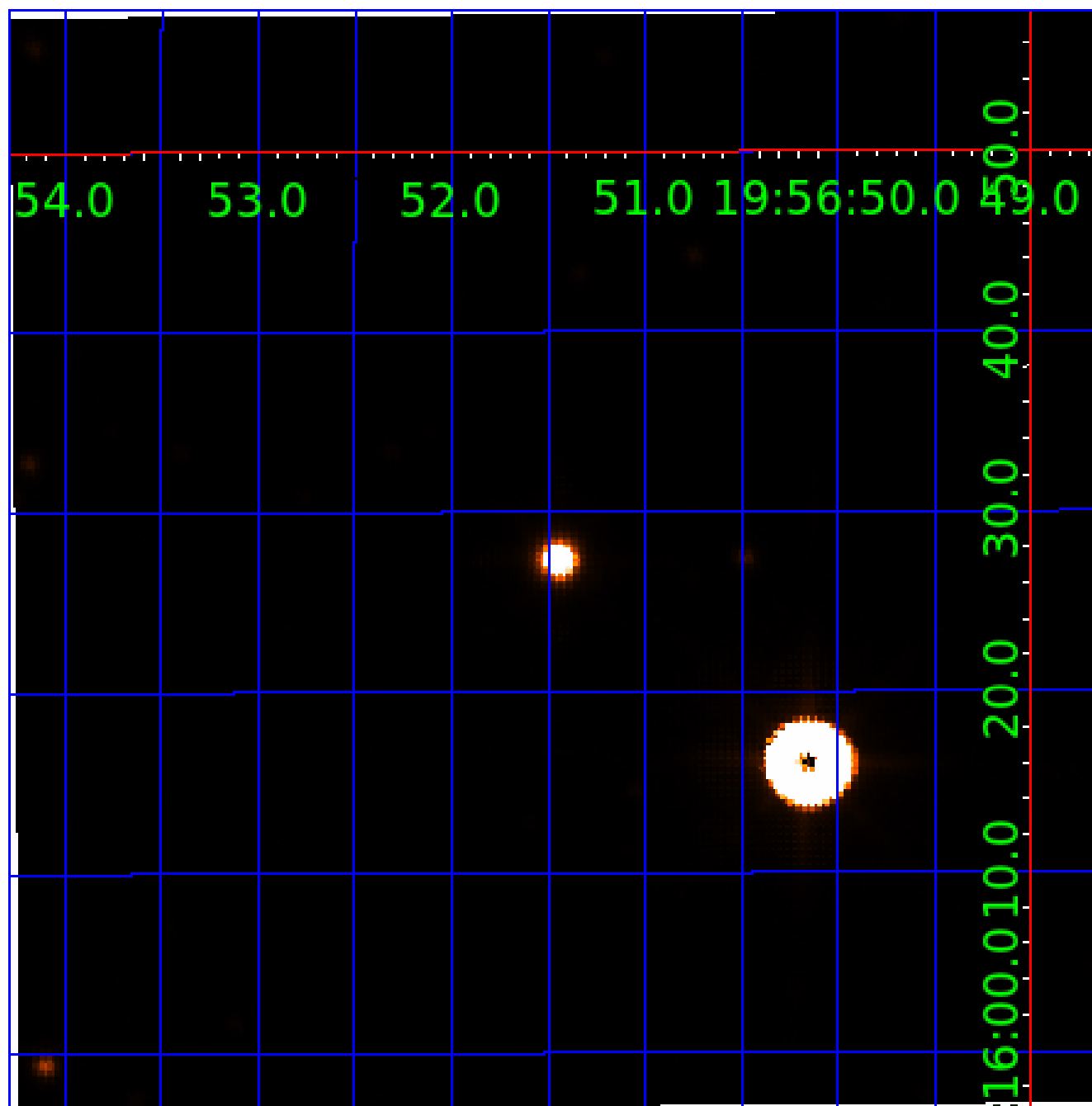


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008324293

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})
008324293-01	OBS	No	365.658178	225.952275	8865.1	23.252	61.0	44.4	1.12	6478	18.65	1.93
008324293-02	OBS	No	365.532895	229.861503	6357.6	19.405	49.4	38.3	1.12	6478	15.94	1.93
008324293-03	OBS	No	361.665746	231.948284	16219.6	22.870	47.3	68.5	1.12	6478	24.83	1.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008324293-01	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED
008324293-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_SATURATED
008324293-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—ALL_TRANS_CHASES—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.

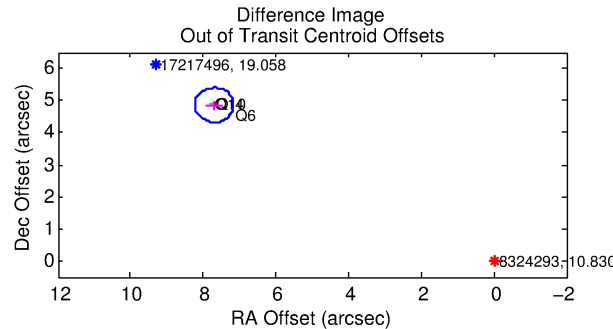
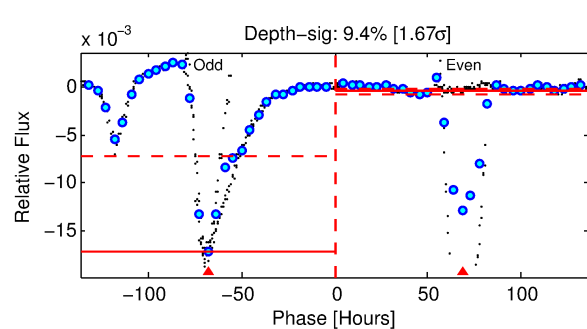
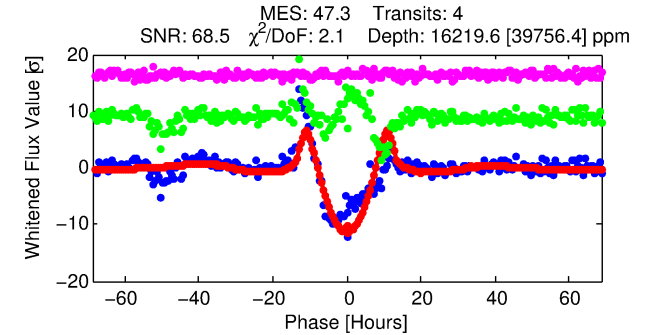
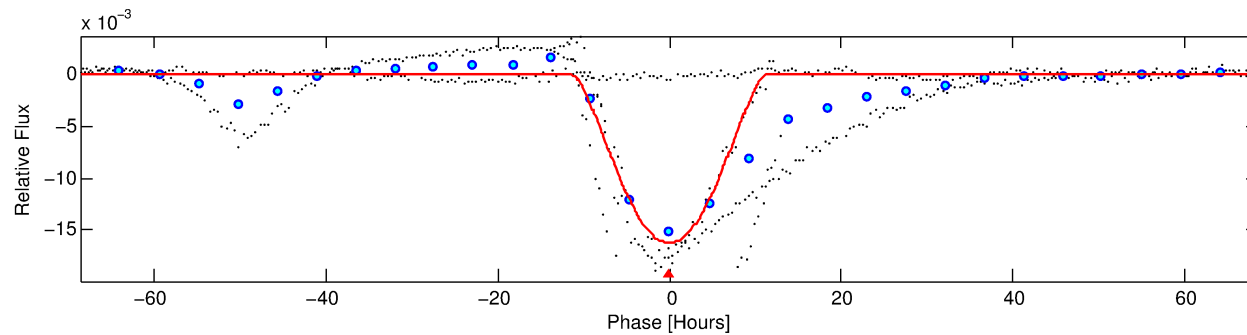
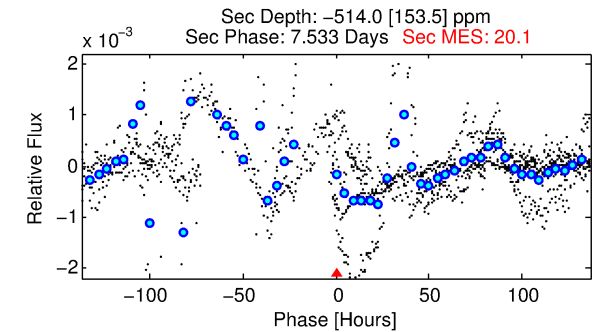
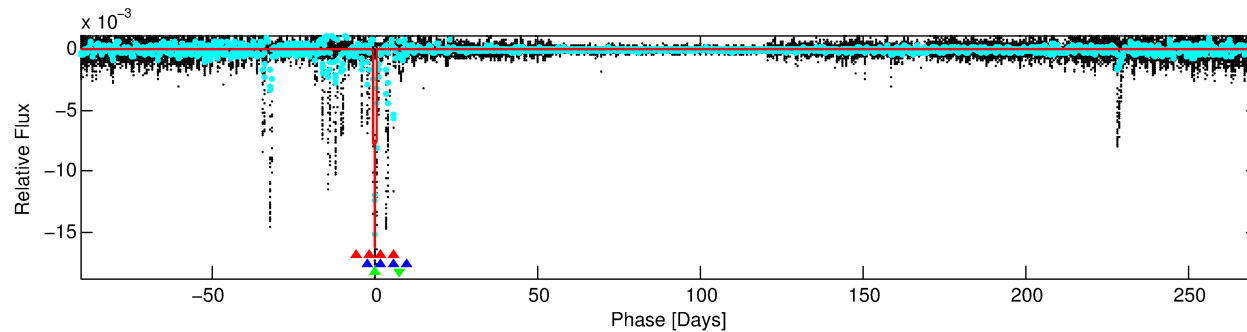
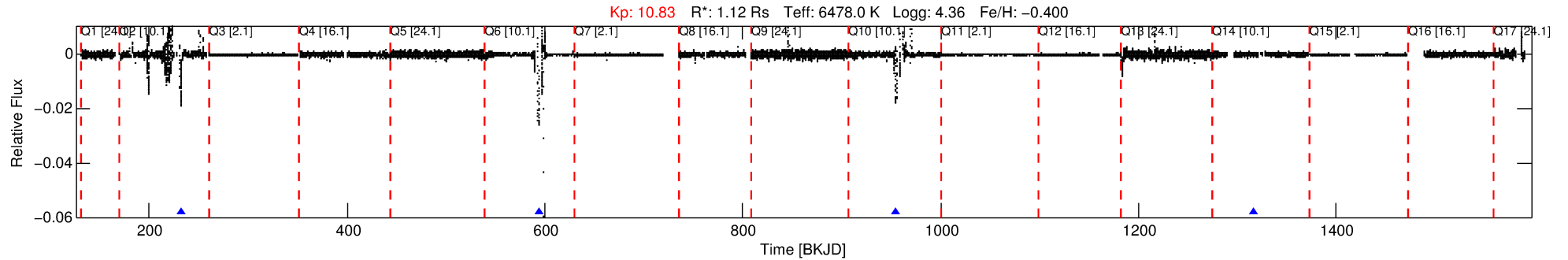
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008324293-03

No Significant Match Found

DV One-Page Summary

KIC: 8324293 Candidate: 3 of 3 Period: 361.666 d



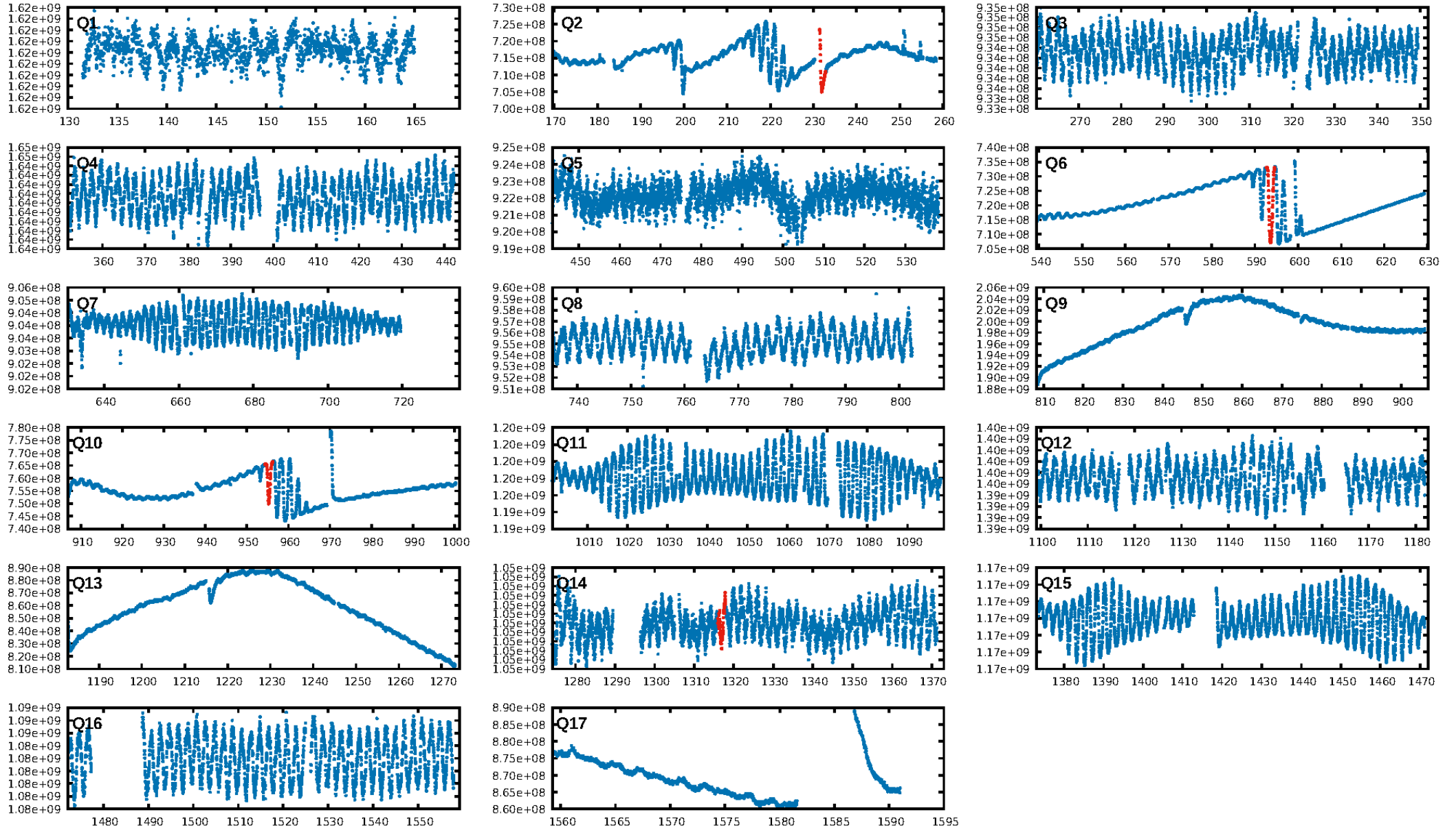
DV Fit Results:

Period = 361.66575 [0.00299] d
Epoch = 231.9483 [0.0055] BKJD
Rp/R* = 0.2032 [0.0571]
a/R* = 80.83 [2.69]
b = 1.00 [0.25]
Seff = 1.95 [0.75]
Teq = 302 [29] K
Rp = 24.83 [10.25] Re
a = 1.0063 [0.2496] AU
Ag = N/A
Teffp = N/A

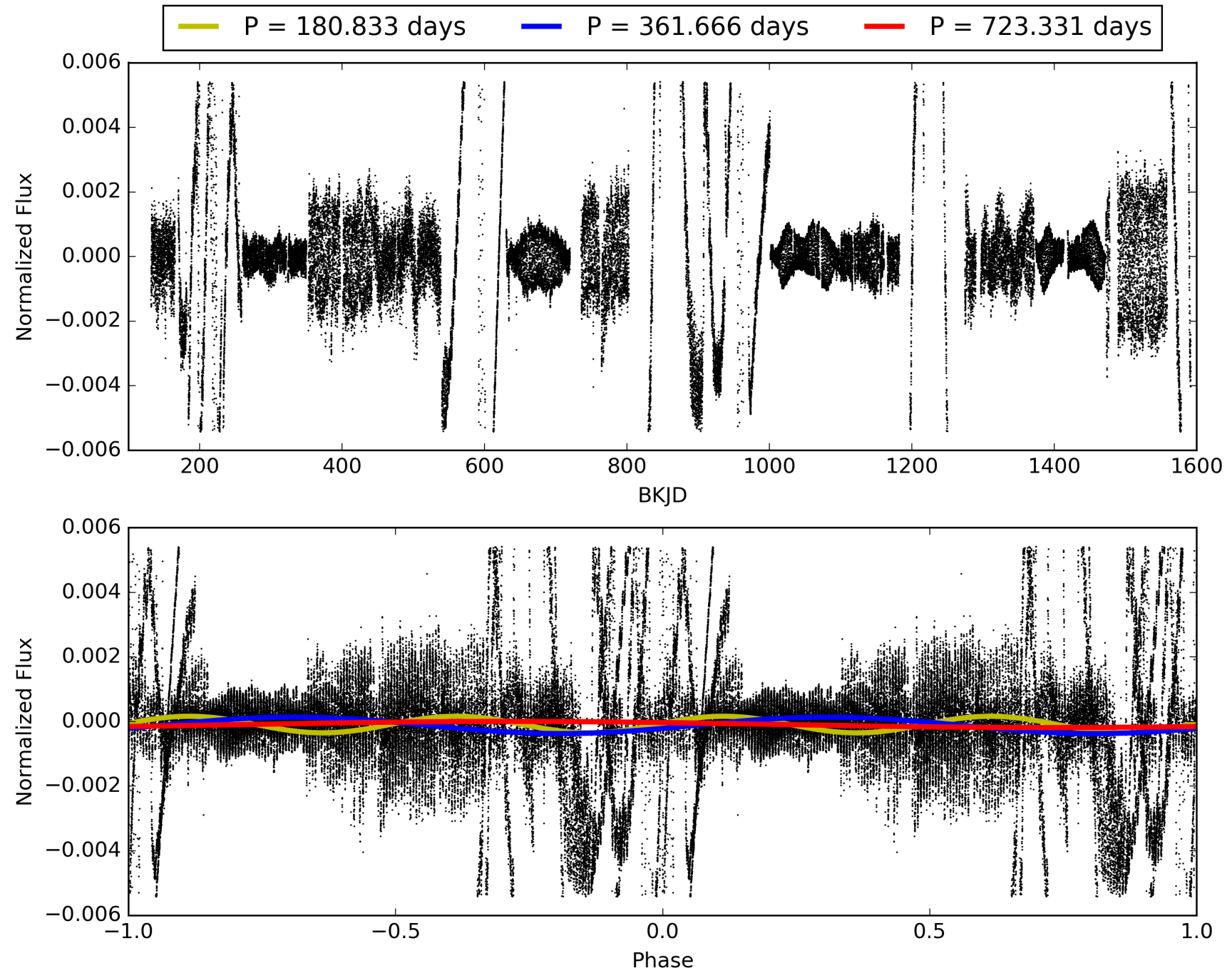
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 99.8% [3.09 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 3.84e-52
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 1.225 arcsec [2.30 σ]
OotOffset-rm: 9.105 arcsec [51.07 σ]
KicOffset-rm: 6.776 arcsec [28.58 σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.33 [1/3]

TCE 008324293-03, PDC Light Curves

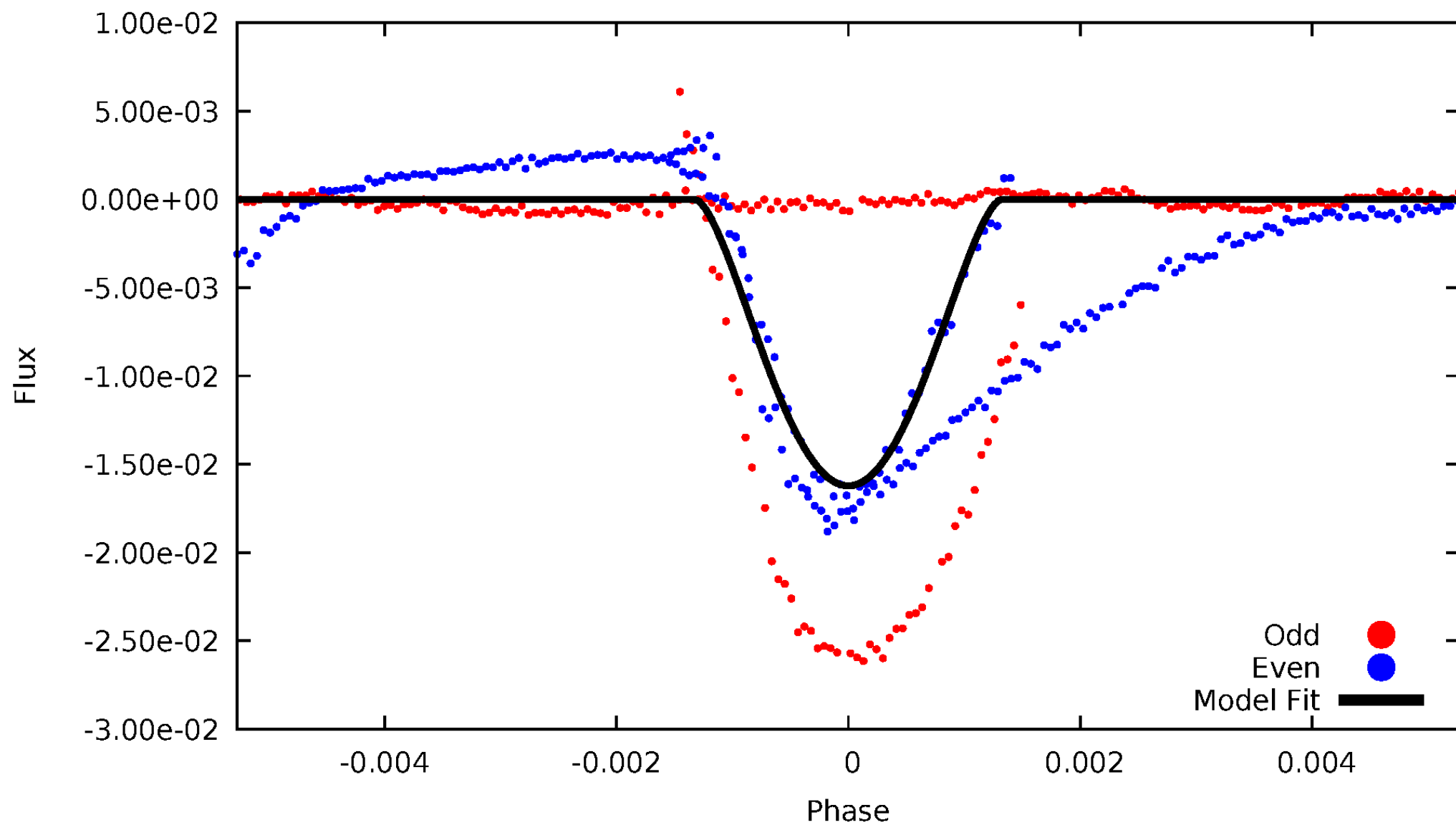


TCE 008324293-03



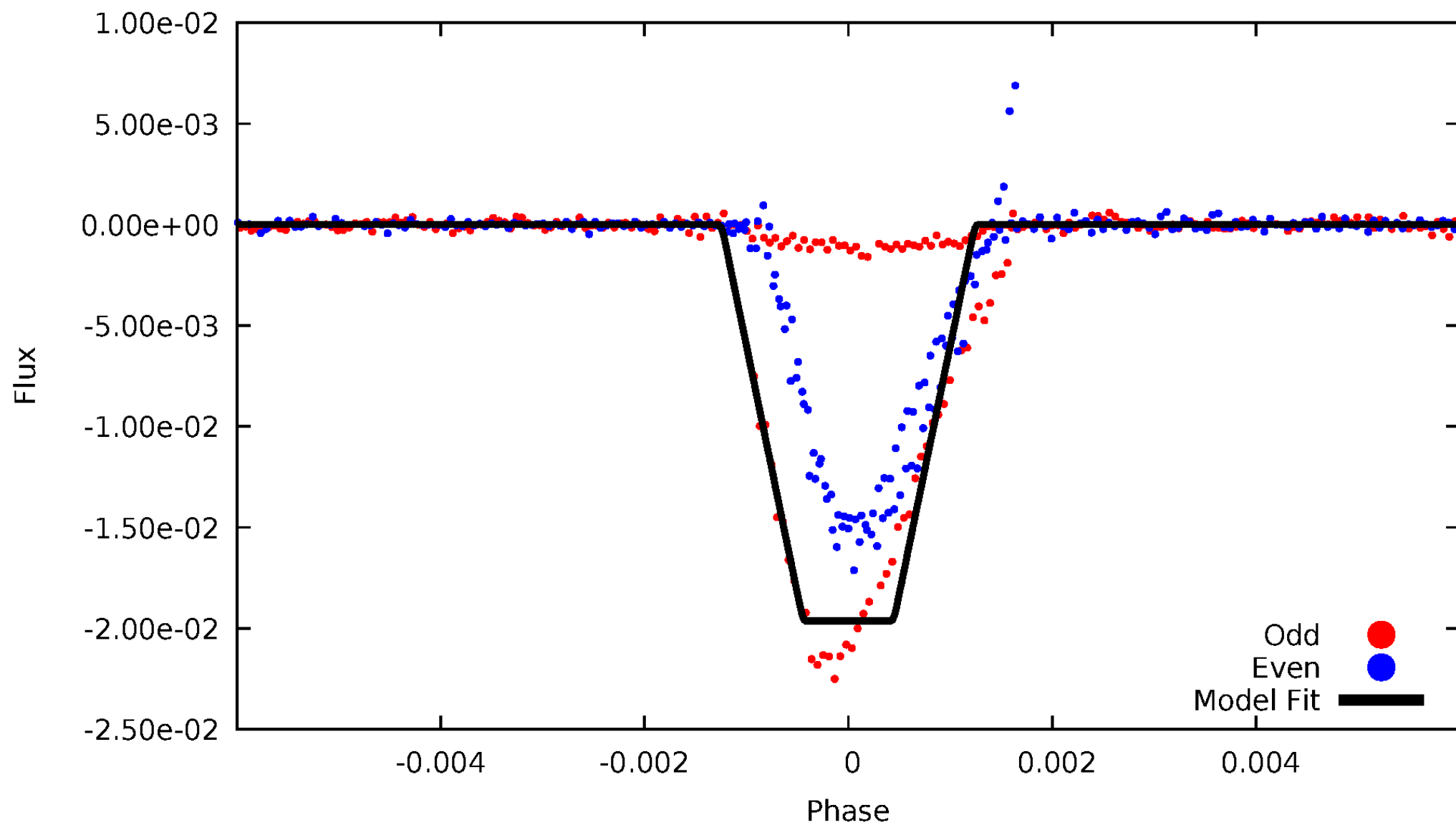
DV Odd/Even

TCE 008324293-03



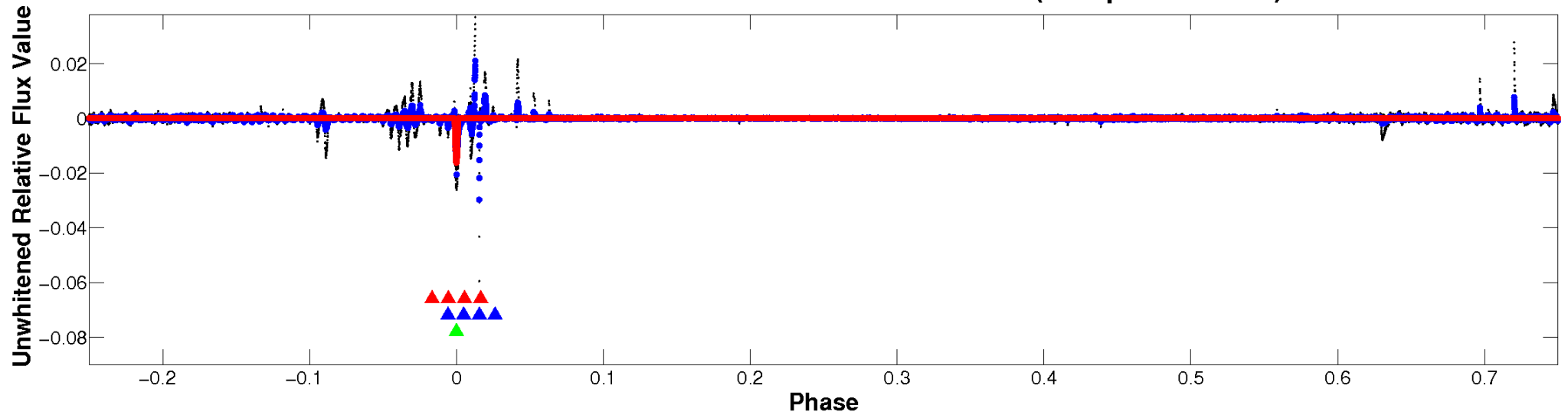
ALT Odd/Even

TCE 008324293-03

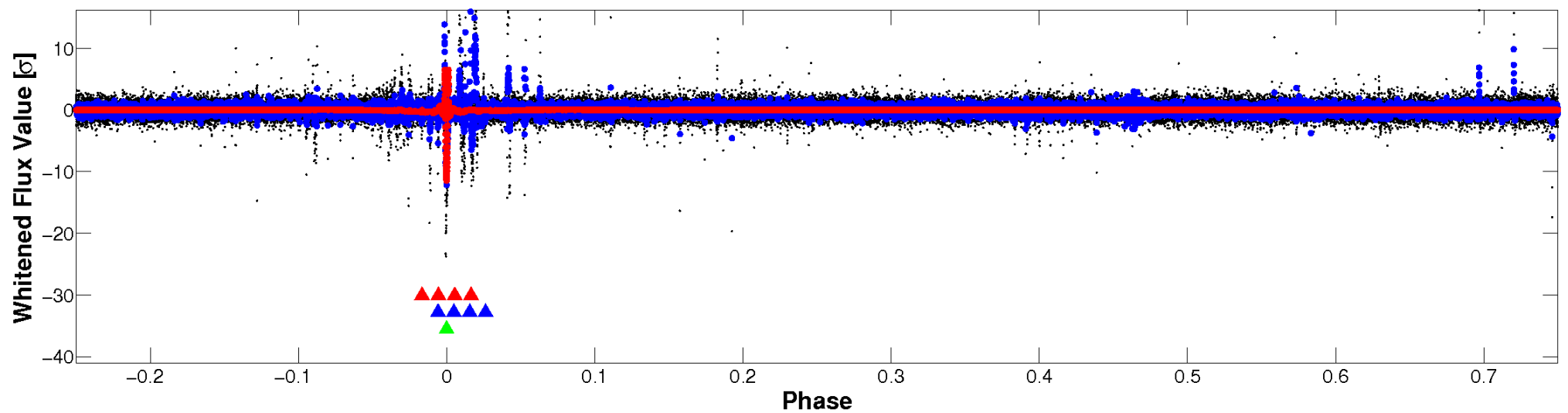


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

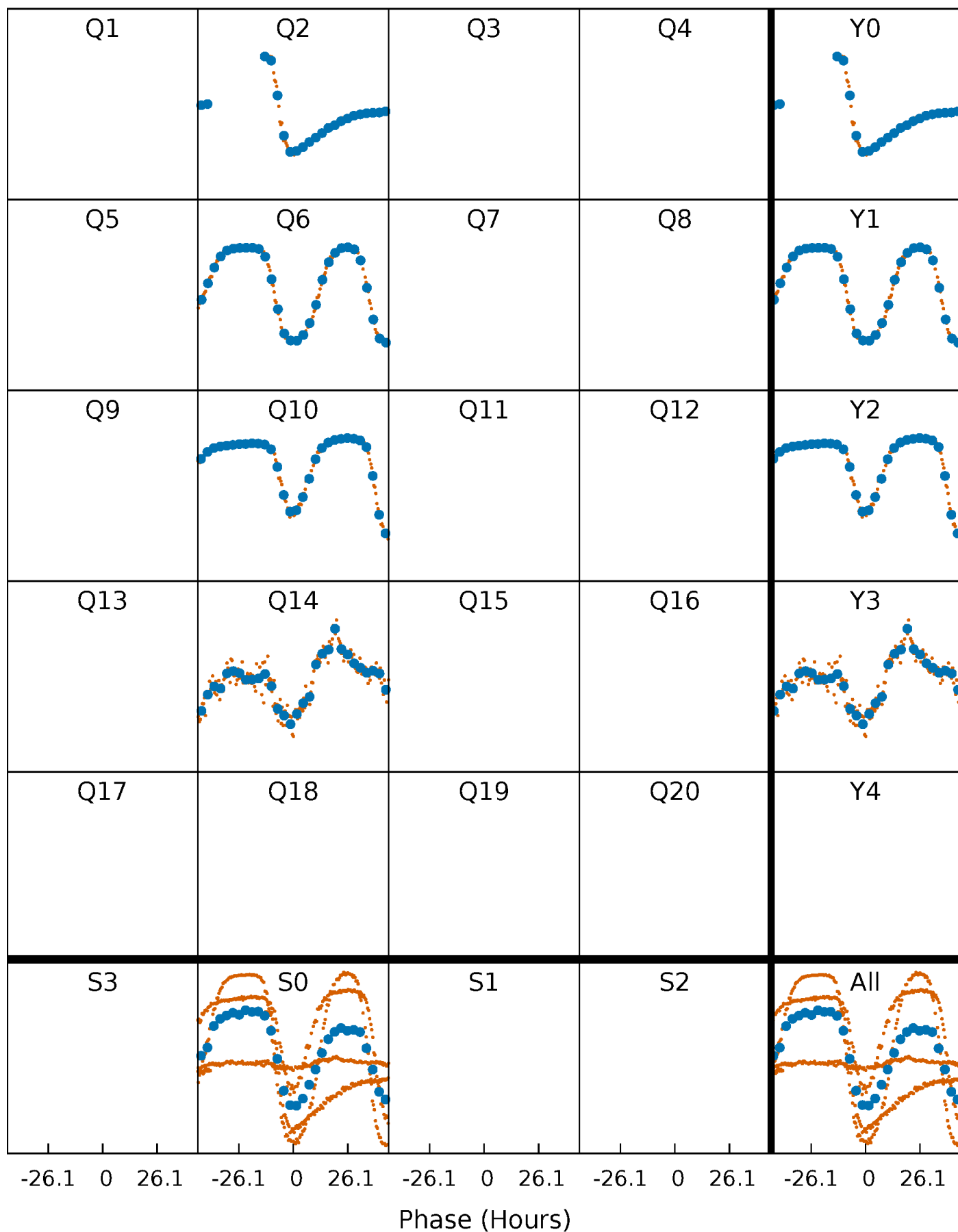


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



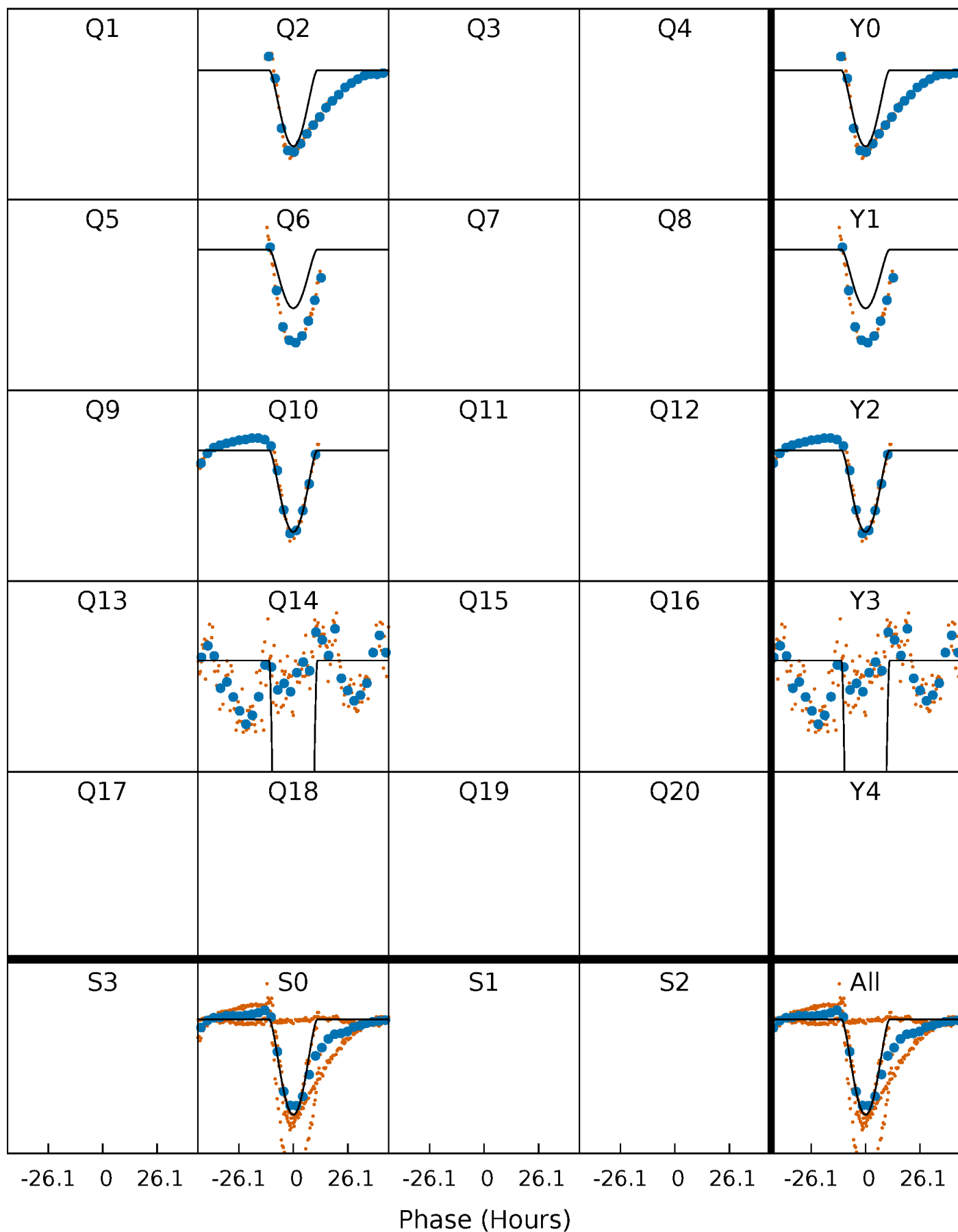
PDC Quarter-Phased Transit Curves

TCE 008324293-03 $P=361.665746$ Days $T_0=231.948284$ (BKJD)



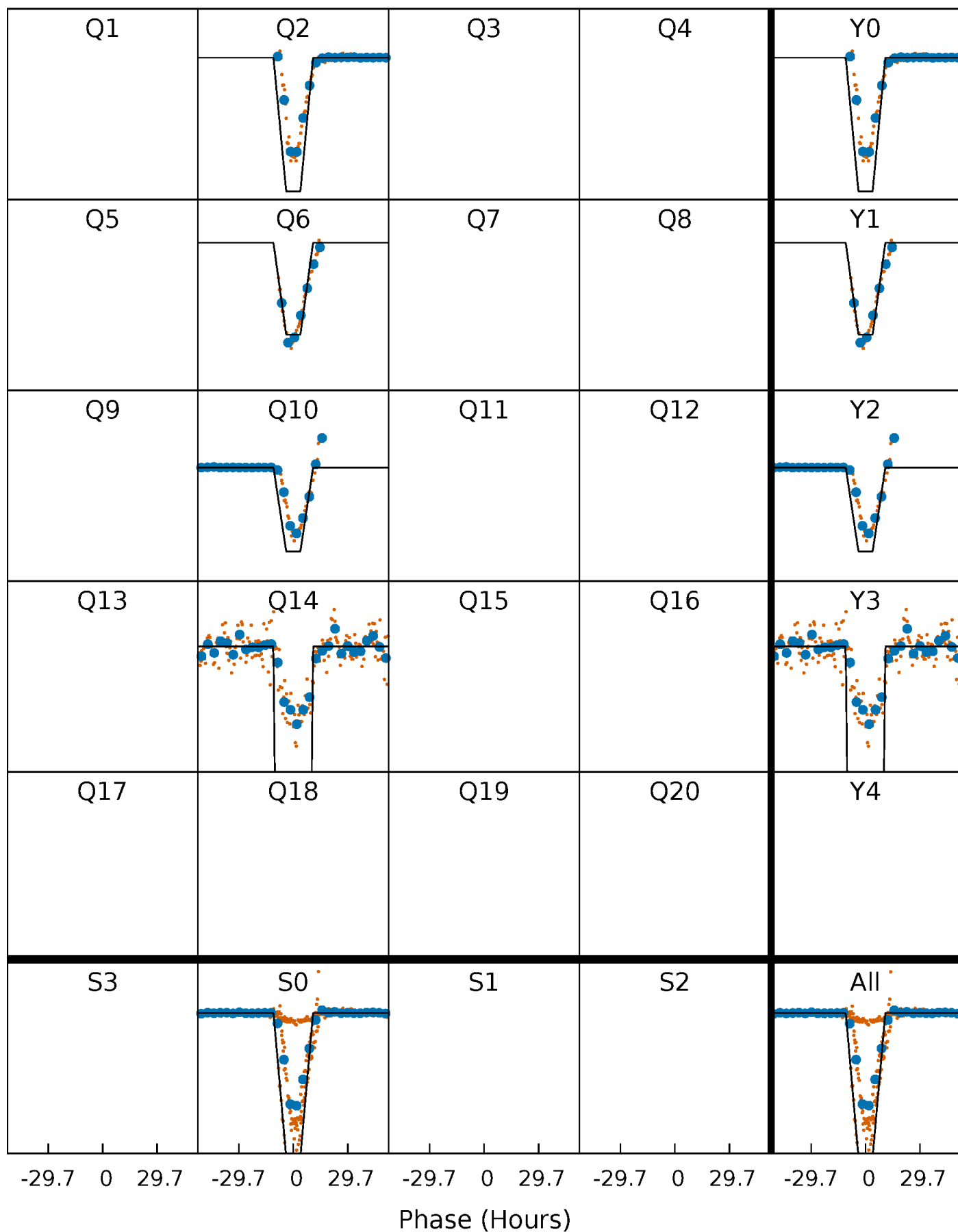
DV Quarter-Phased Transit Curves

TCE 008324293-03 P=361.665746 Days $T_0=231.948284$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

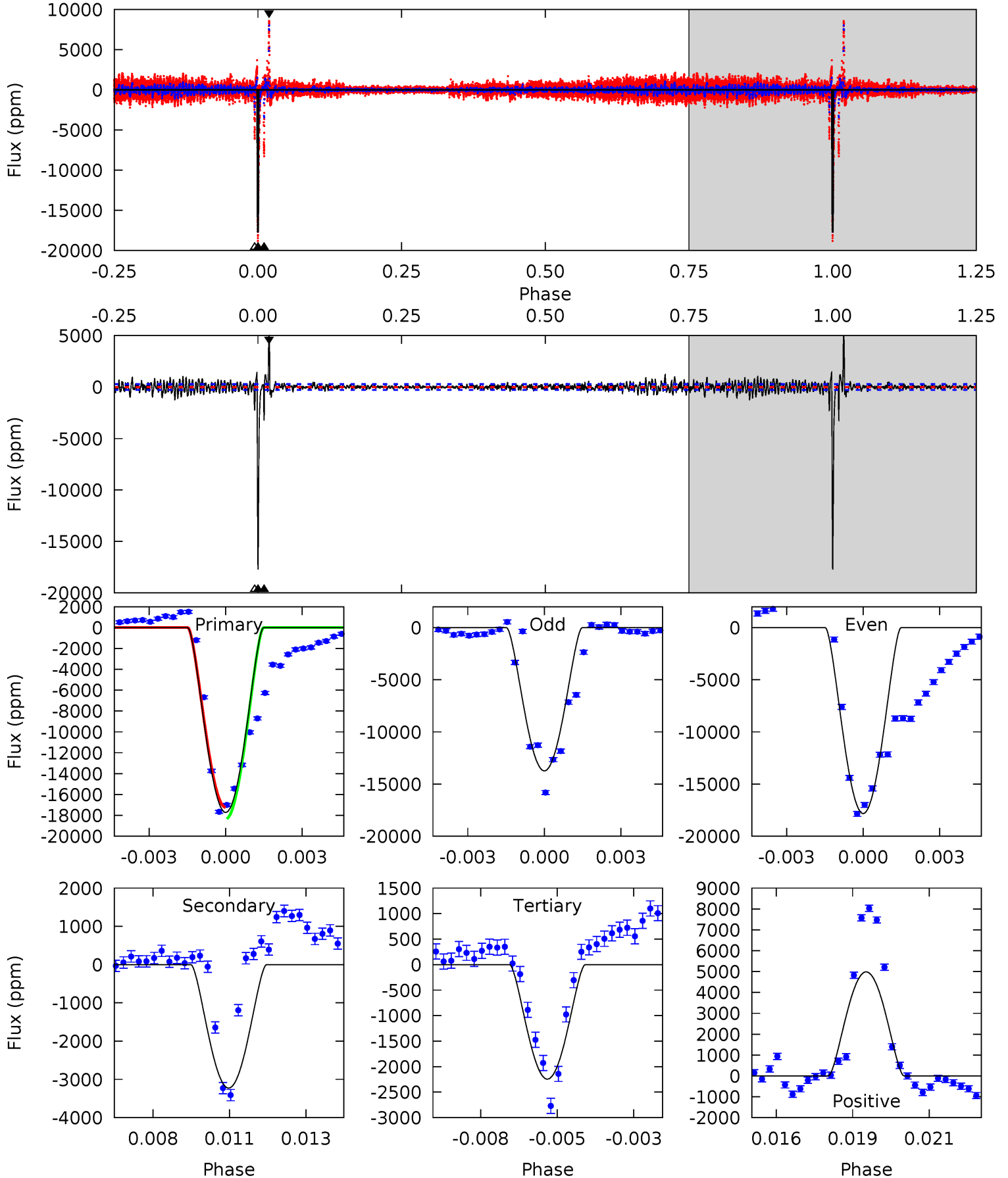
TCE 008324293-03 P=361.687634 Days $T_0=231.817704$ (BKJD)



DV Model-Shift Uniqueness Test

008324293-03, P = 361.665746 Days, E = 231.948284 Days

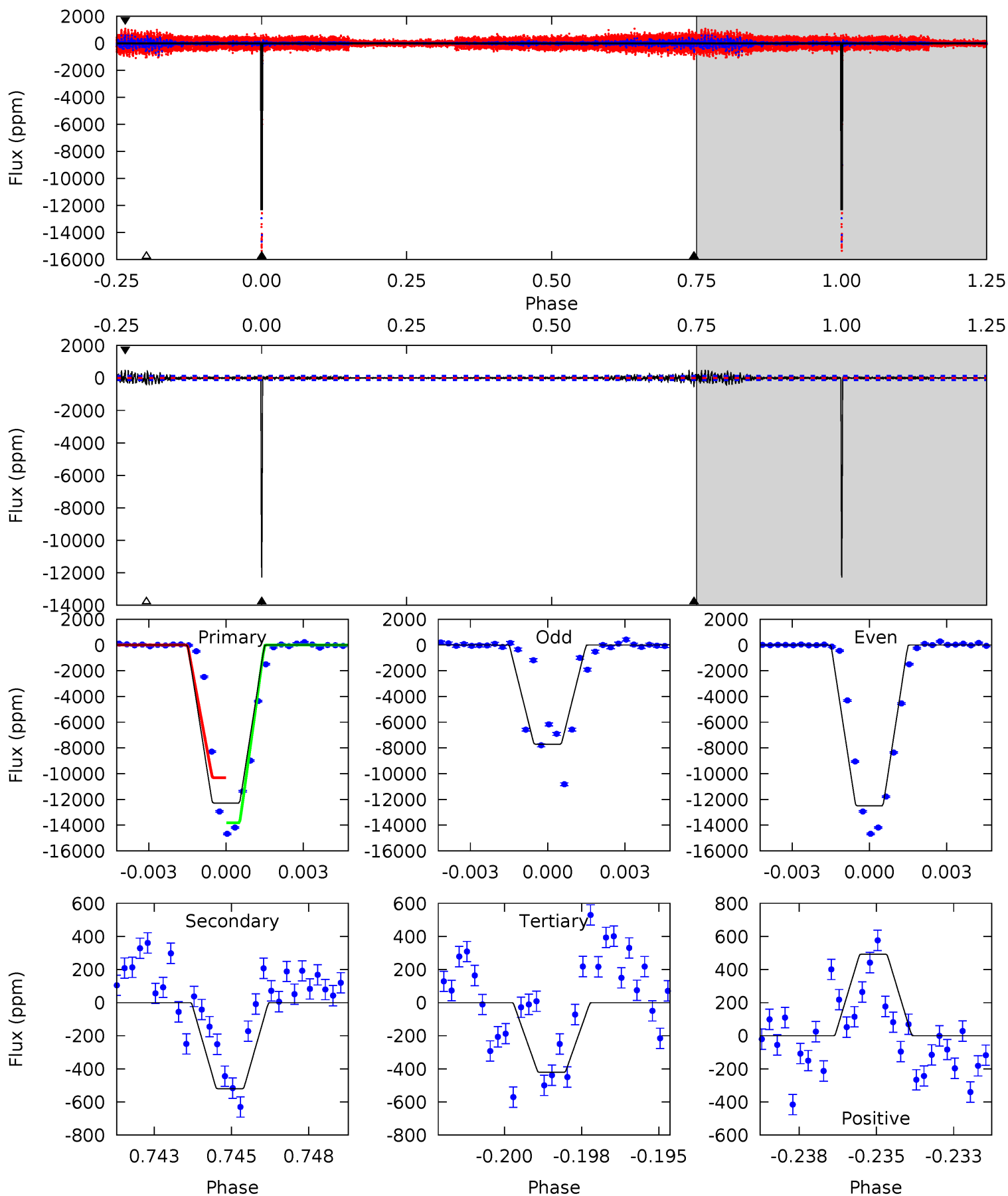
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
337.0	61.3	42.7	94.8	5.27	3.00	5.84	294.3	242.2	18.7	-33.5	30.9	0.92	0.22	10.2



Alt Model-Shift Uniqueness Test

008324293-03, P = 361.687634 Days, E = 231.817704 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
497.5	21.1	17.1	19.9	5.29	3.02	2.59	480.4	477.5	4.00	1.12	118.4	0.92	0.04	63.1



Stellar Parameters For KIC 008324293

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6478^{+181}_{-250}	$4.356^{+0.101}_{-0.188}$	$-0.400^{+0.250}_{-0.300}$	$1.120^{+0.339}_{-0.169}$	$1.036^{+0.161}_{-0.132}$	$1.039^{+0.549}_{-0.512}$
	+3%/-4%	+2%/-4%	+62%/-75%	+30%/-15%	+16%/-13%	+53%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008324293-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3227 ± 53	$25.48^{+8.41}_{-7.56}$	426^{+31}_{-25}	3788^{+471}_{-292}	2734^{+2666}_{-1144}
Alt.	-520 ± 25	$17.37^{+8.31}_{-7.11}$	424^{+28}_{-24}	3202^{+596}_{-302}	962^{+1767}_{-530}

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

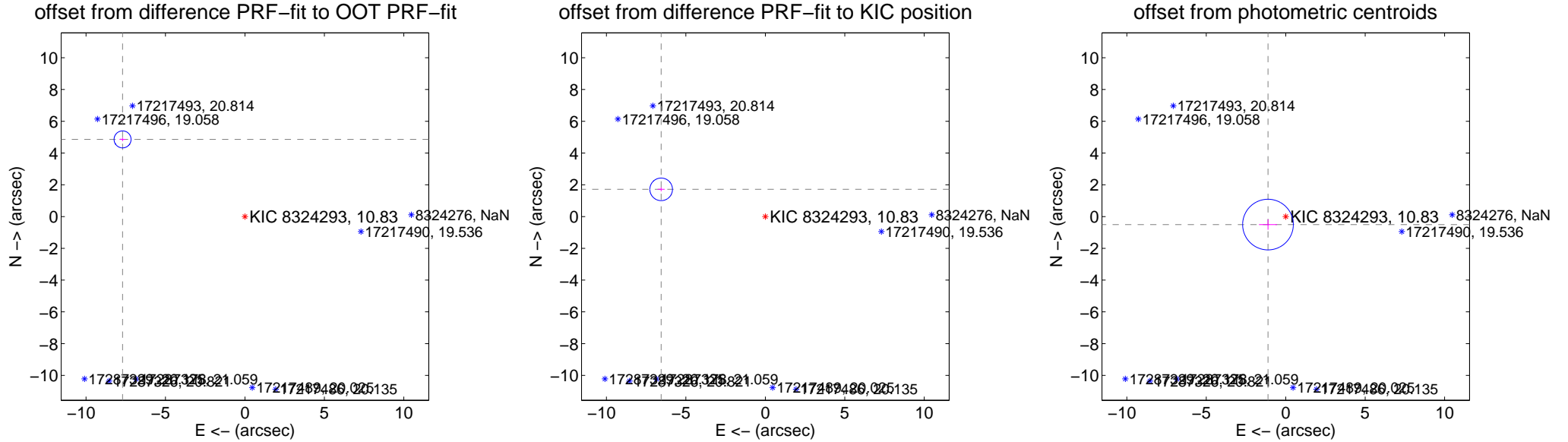
DV Centroid Data

Supplemental centroid analysis for 008324293-03. **Kepler magnitude: 10.83.** Transit SNR 68.52

There are 2 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 3.37 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	9.105 ± 0.178	51.07	7.700 ± 0.198	4.859 ± 0.116
PRF-fit source offset from KIC position	6.776 ± 0.237	28.58	6.555 ± 0.219	1.714 ± 0.123
photometric centroid source offset	1.22 ± 0.53	2.30	1.12 ± 0.56	-0.50 ± 0.32

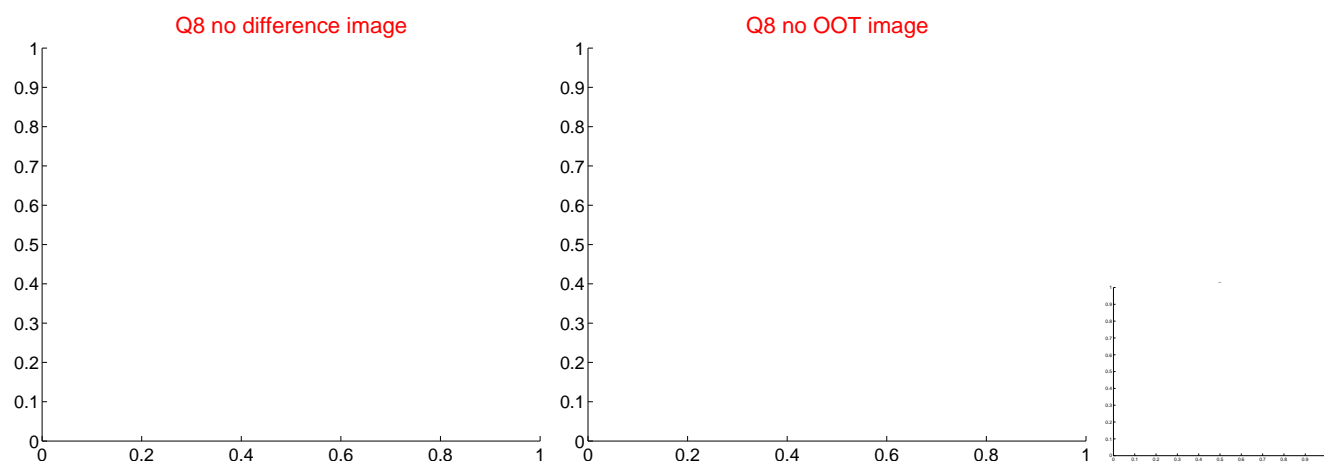
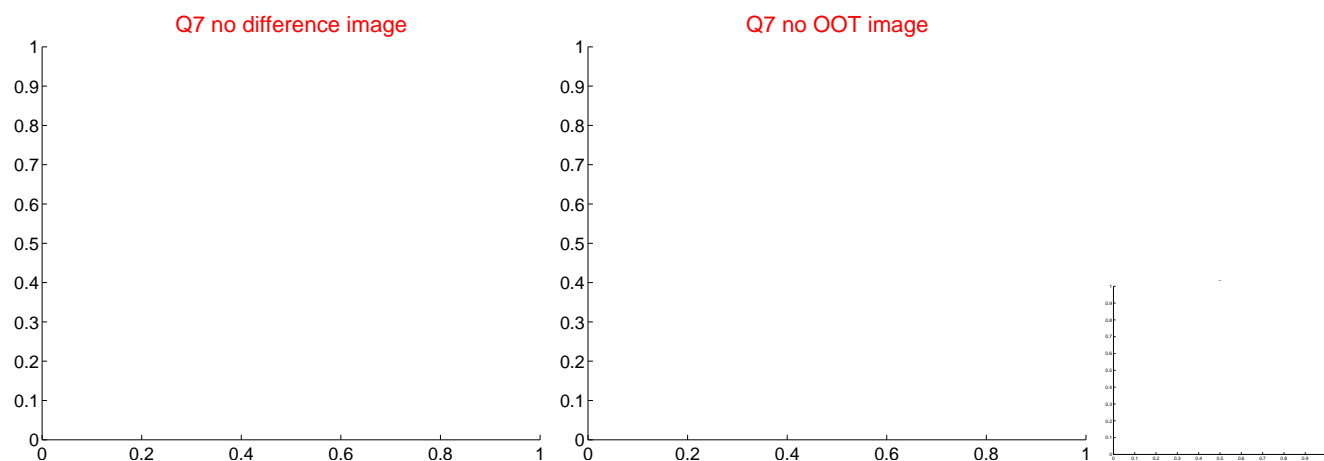
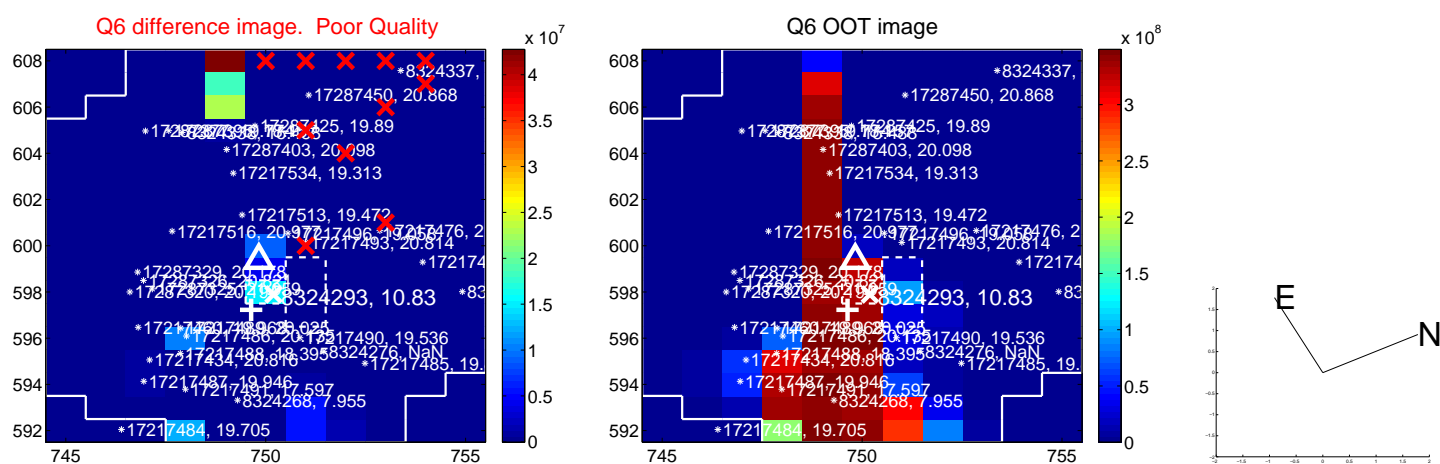
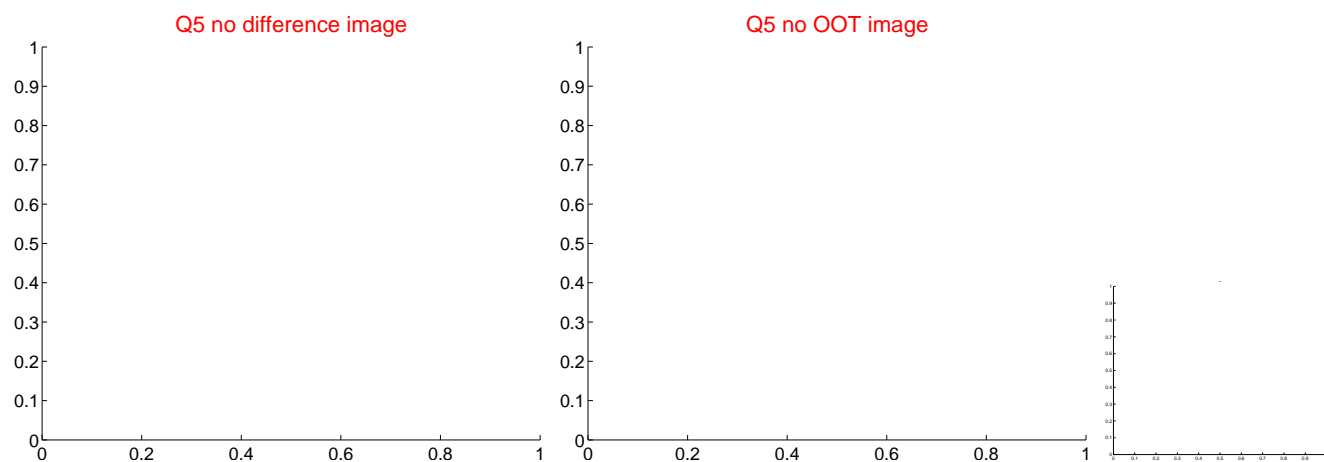


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

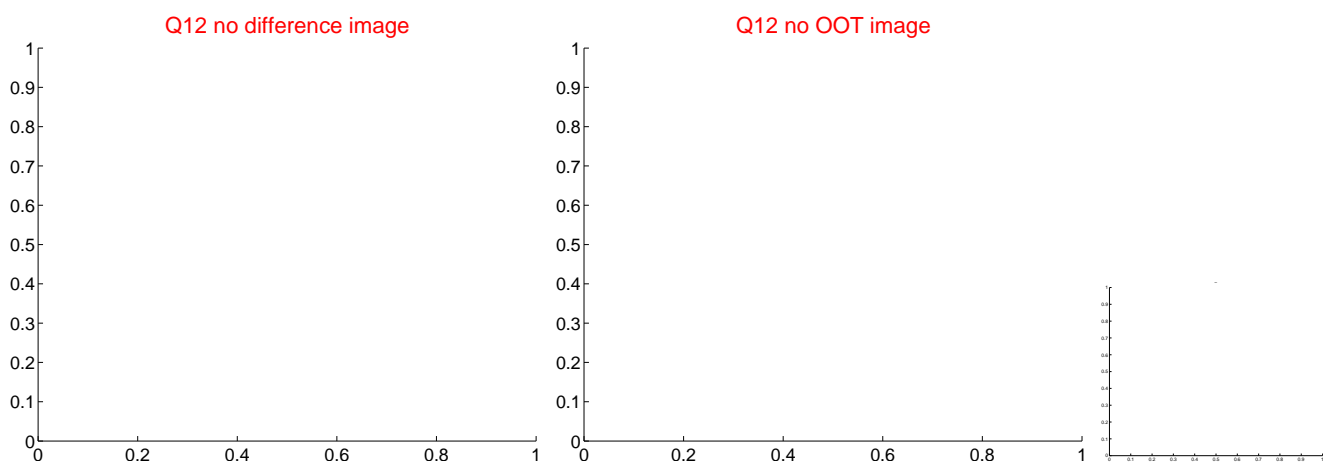
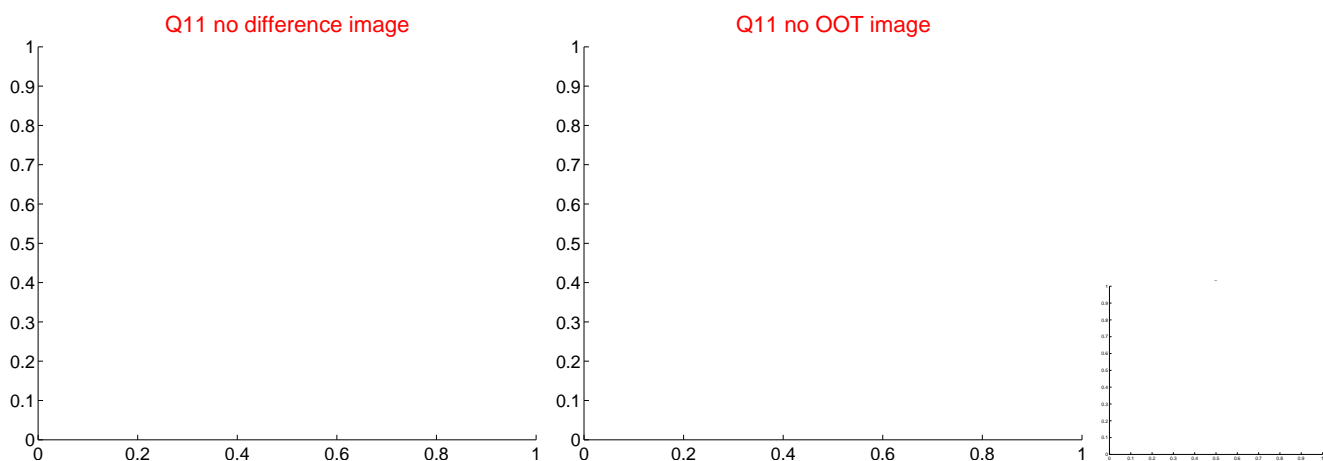
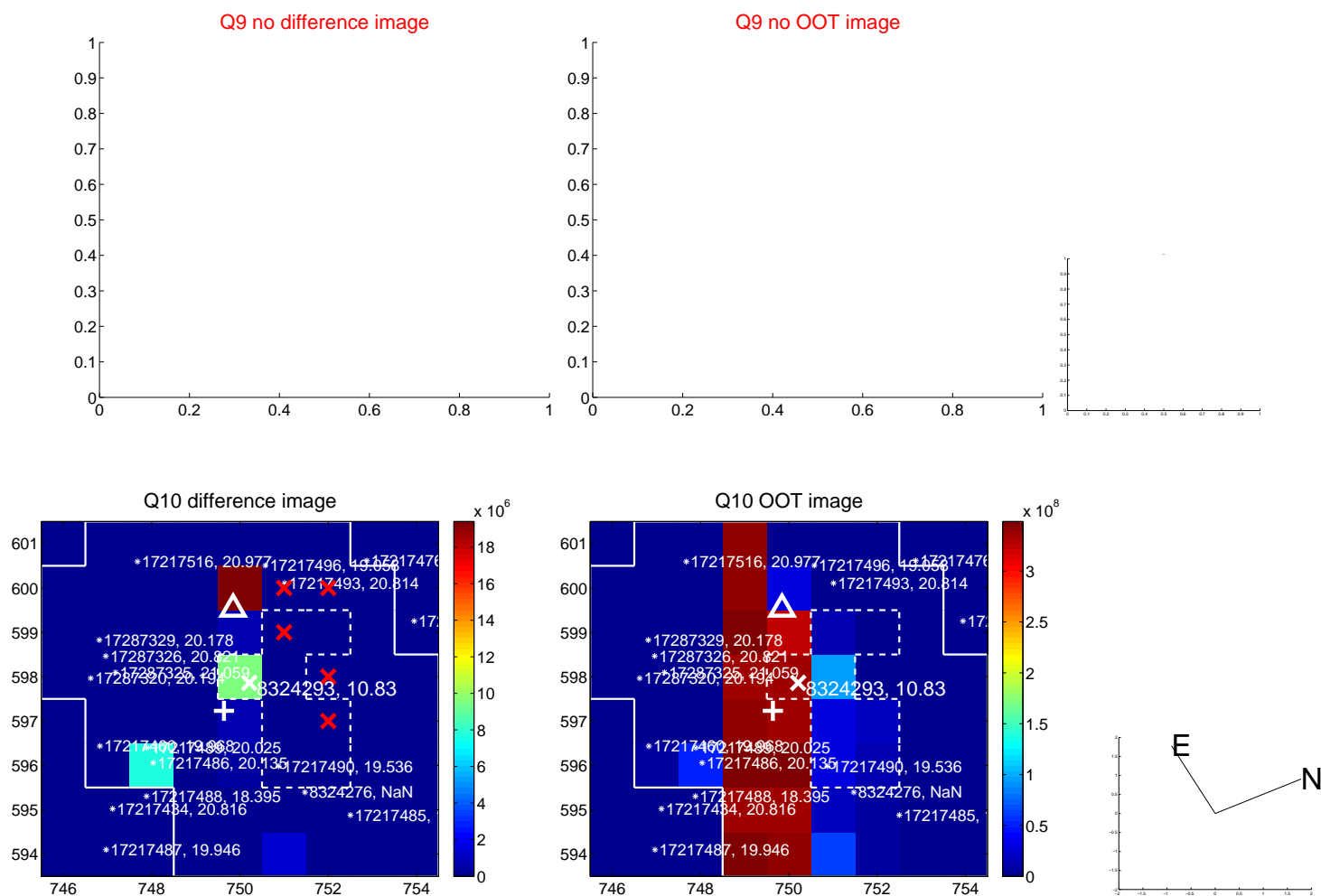
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

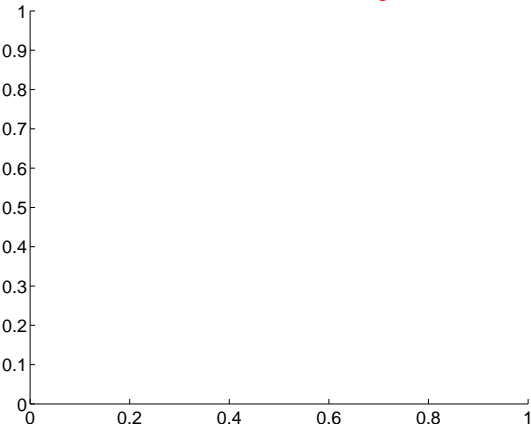


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value

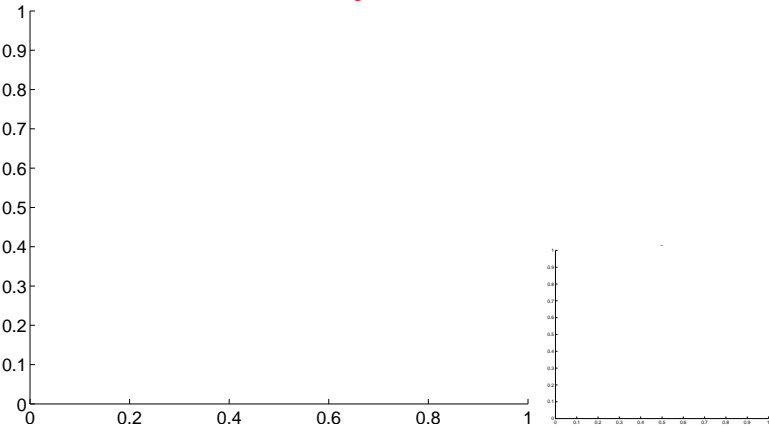


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

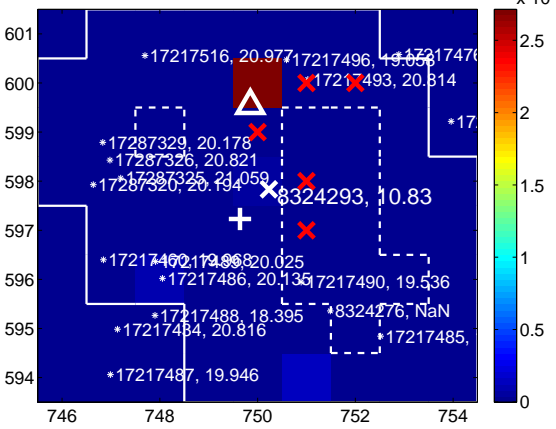
Q13 no difference image



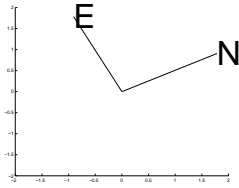
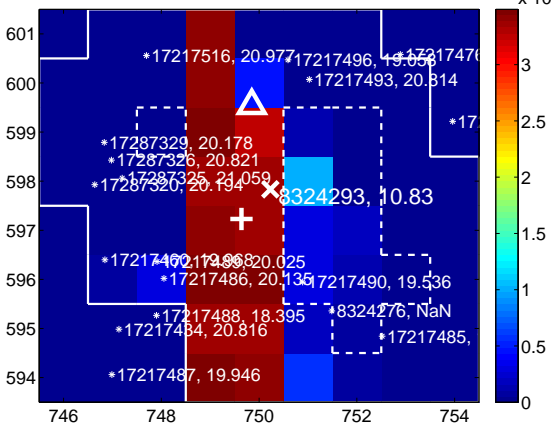
Q13 no OOT image



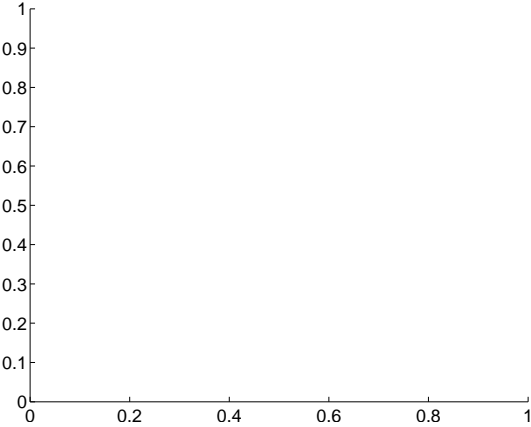
Q14 difference image



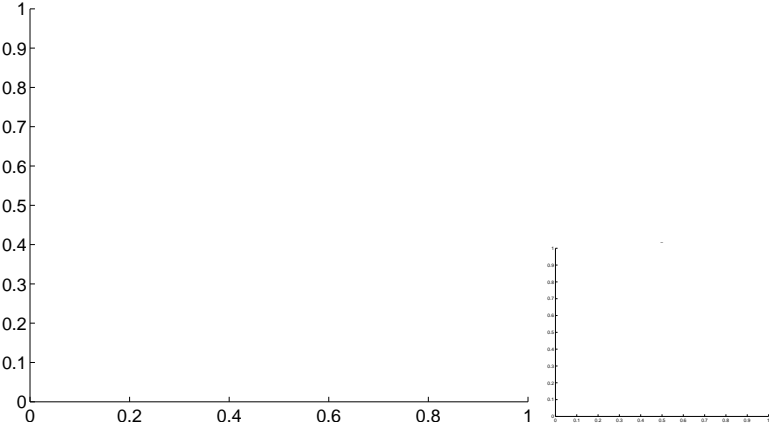
Q14 OOT image



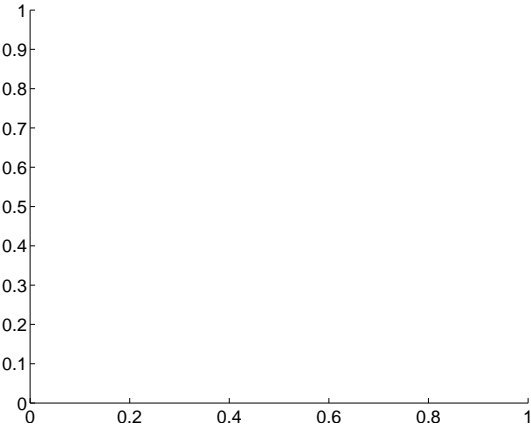
Q15 no difference image



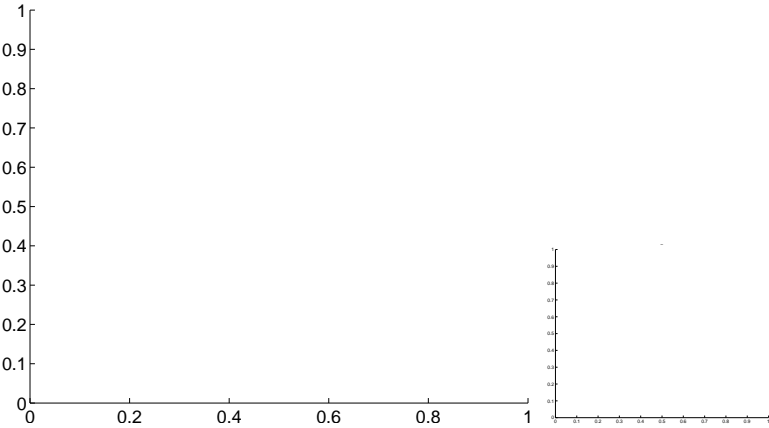
Q15 no OOT image



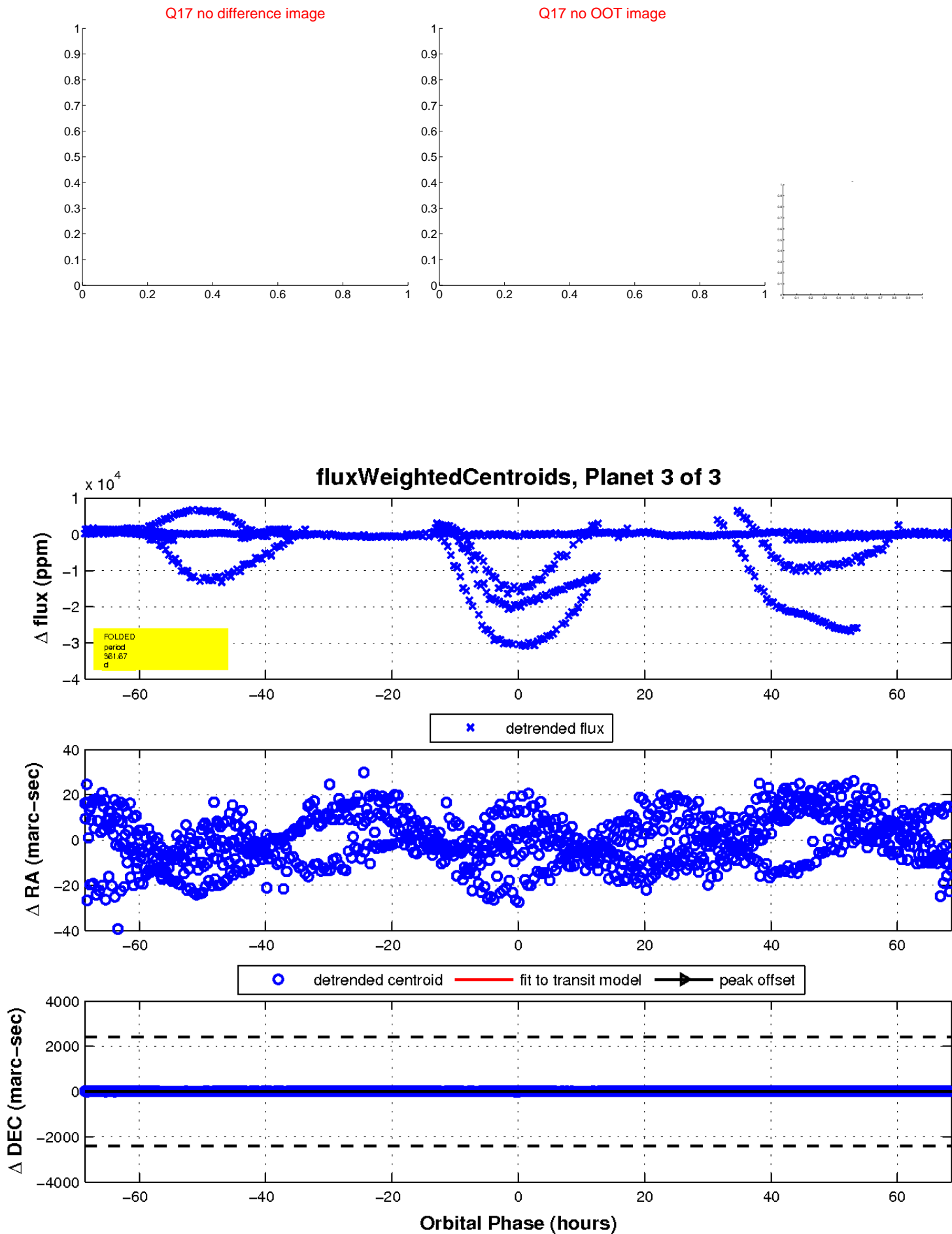
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

