

KIC 008836388

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})
008836388-01	OBS	No	443.498925	377.853575	3649.3	8.427	13.7	10.4	0.33	3497	2.32	0.02
008836388-02	OBS	No	523.213209	333.343657	2491.4	4.325	12.3	8.3	0.33	3497	1.65	0.02
008836388-03	OBS	No	551.839444	335.812495	2782.9	8.496	11.7	8.3	0.33	3497	1.75	0.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008836388-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008836388-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008836388-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—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.

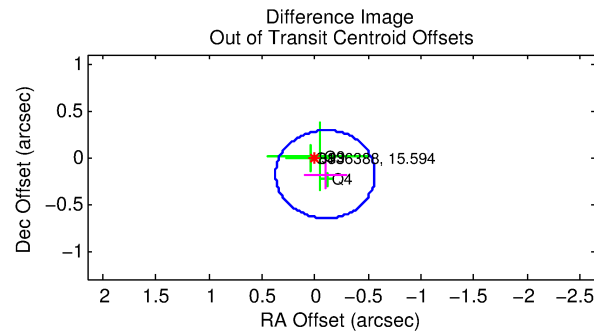
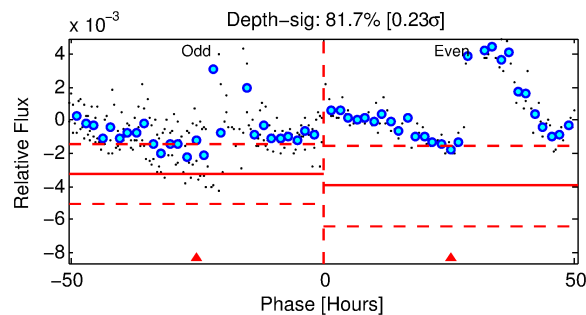
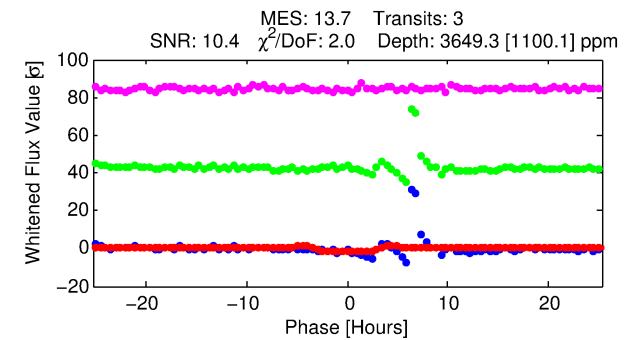
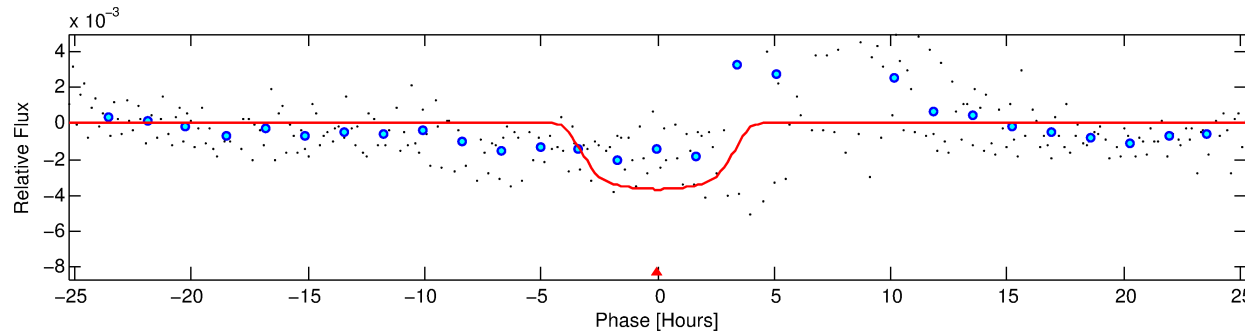
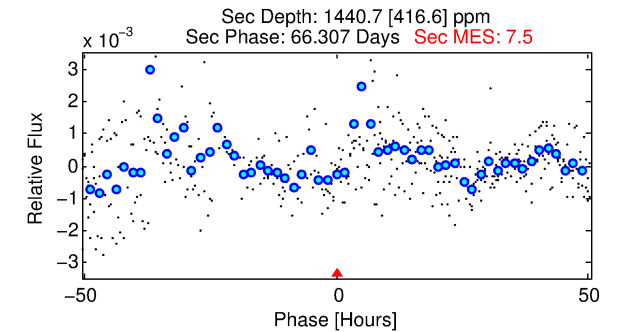
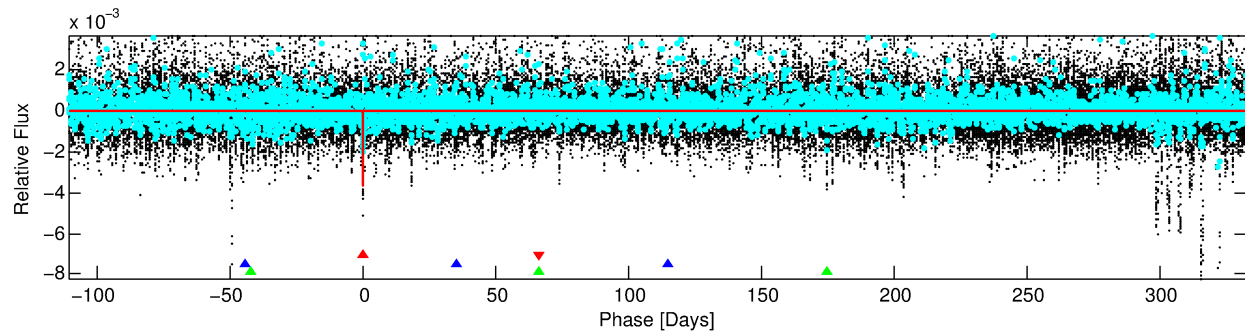
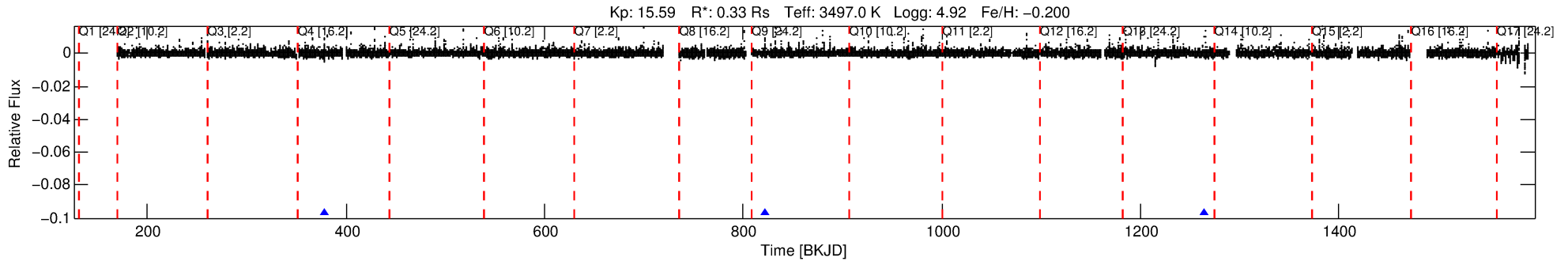
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008836388-01

No Significant Match Found

DV One-Page Summary

KIC: 8836388 Candidate: 1 of 3 Period: 443.499 d



DV Fit Results:

Period = 443.49892 [0.02012] d
Epoch = 377.8536 [0.0264] BKJD
Rp/R* = 0.0637 [0.0126]
a/R* = 250.46 [106.21]
b = 0.86 [0.13]
Seff = 0.02 [0.00]
Teq = 100 [4] K
Rp = 2.32 [0.58] Re
a = 0.7933 [0.0901] AU
Ag = 92512.52 [47041.73] [1.97σ]
Teffp = 2699 [334] K [7.77σ]

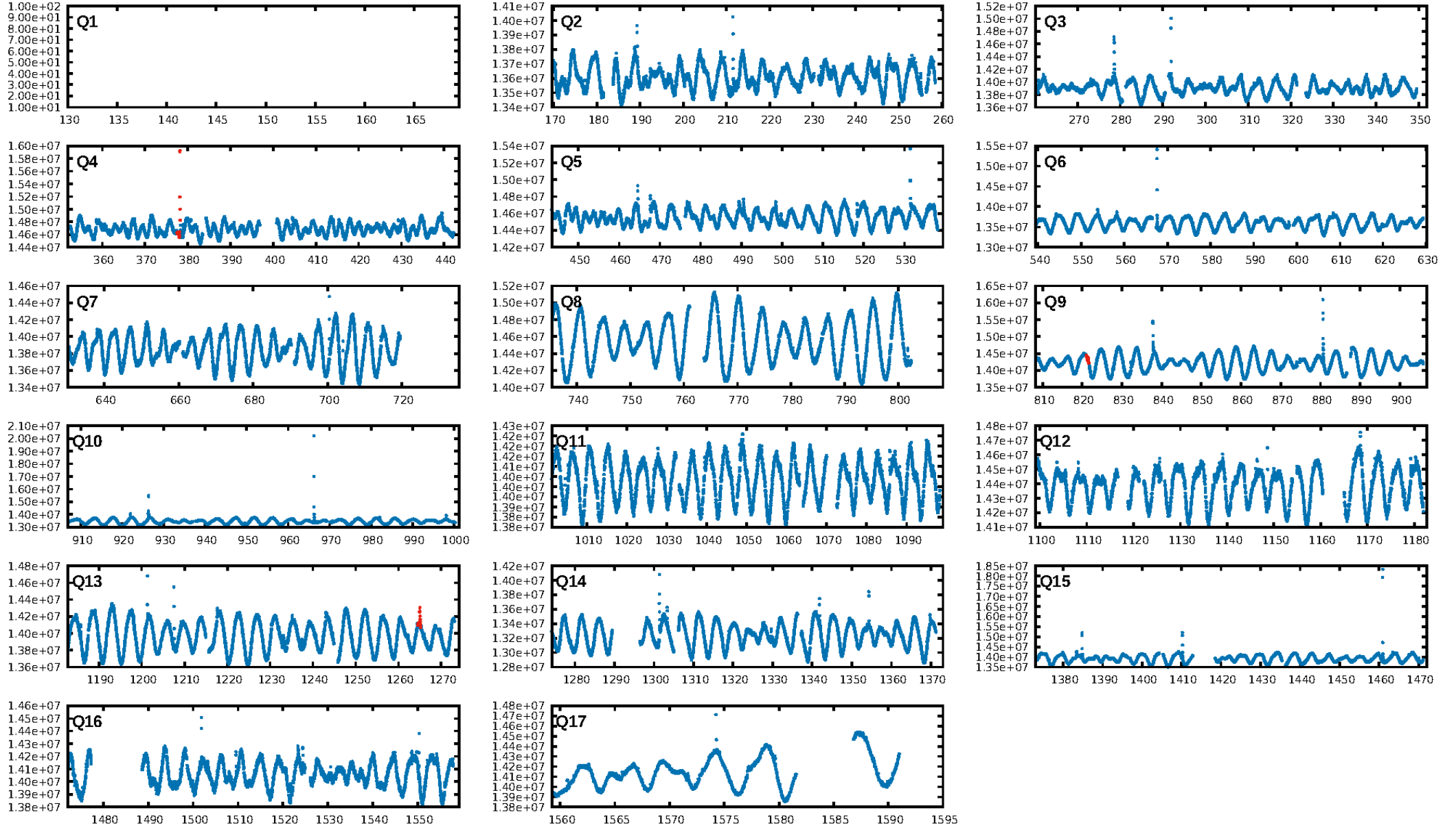
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [201.97σ]
ModelChiSquare2-sig: 1.8%
ModelChiSquareGof-sig: 38.7%
Bootstrap-pfa: 2.41e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -3.015
Centroid-sig: 44.6%
Centroid-so: 0.367 arcsec [0.78σ]
OotOffset-rm: 0.206 arcsec [1.31σ]
OotOffset-st: 0/0/1/2 [3]
KicOffset-rm: 0.044 arcsec [0.30σ]
KicOffset-st: 0/0/1/2 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

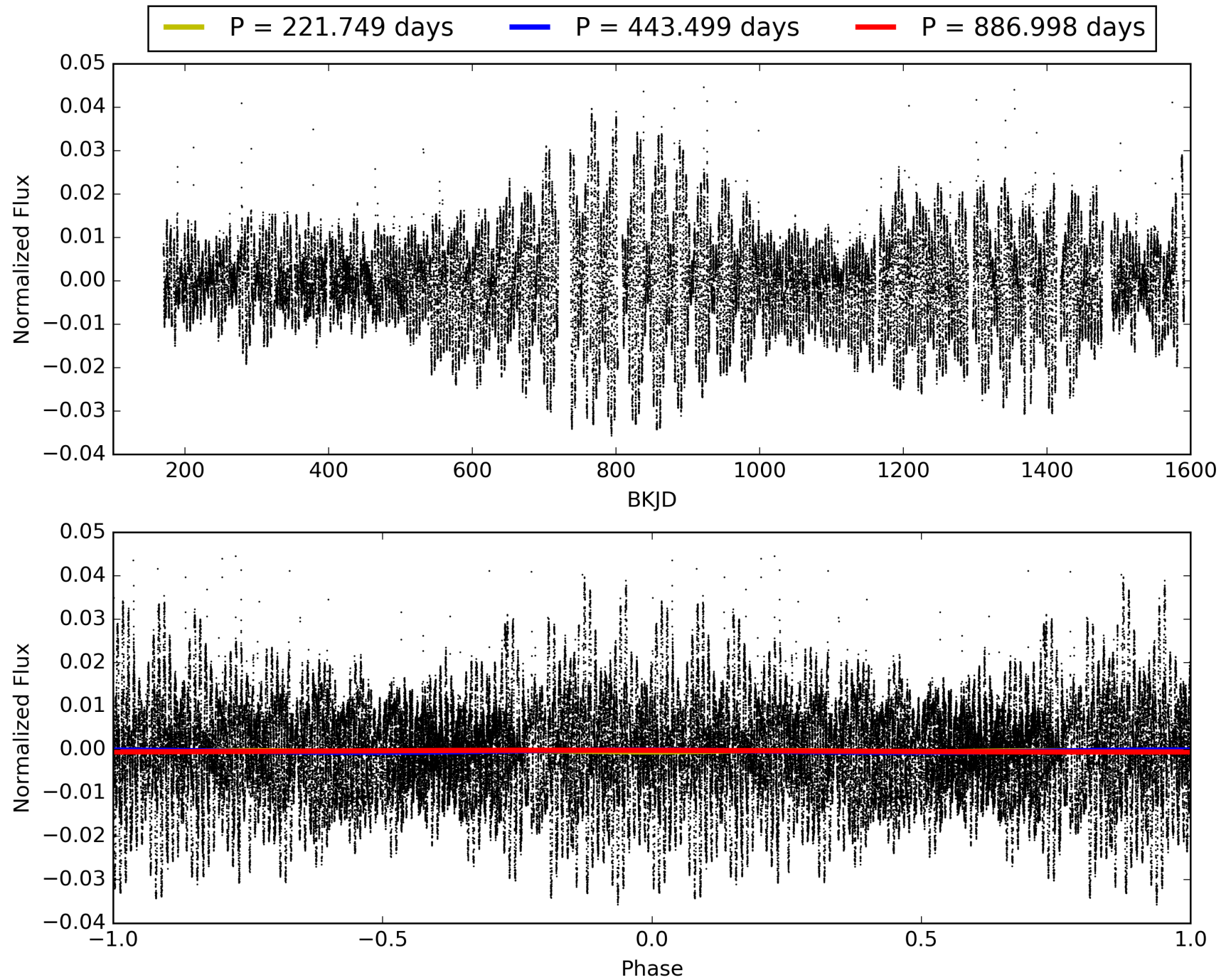
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:11:47 Z

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

TCE 008836388-01, PDC Light Curves

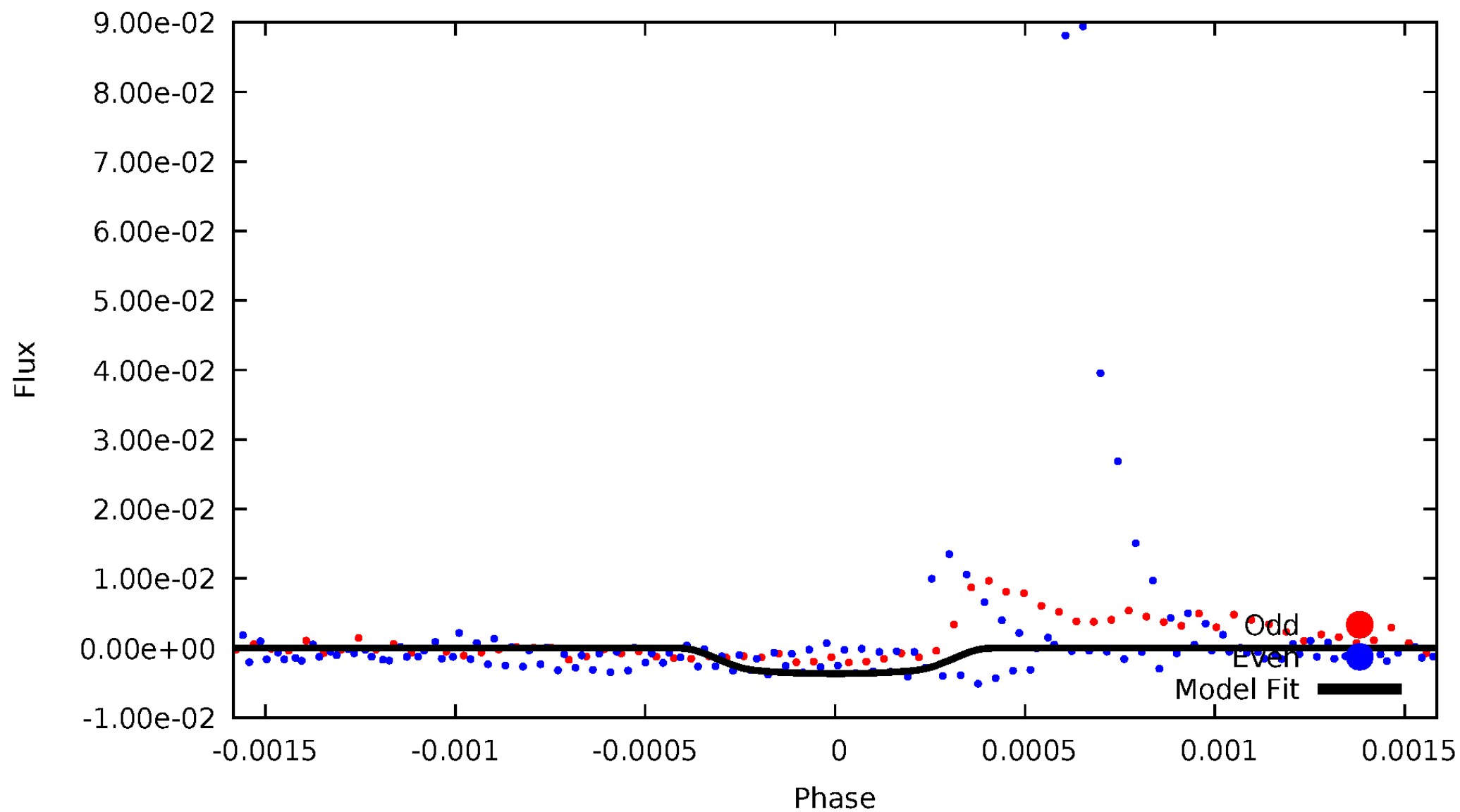


TCE 008836388-01



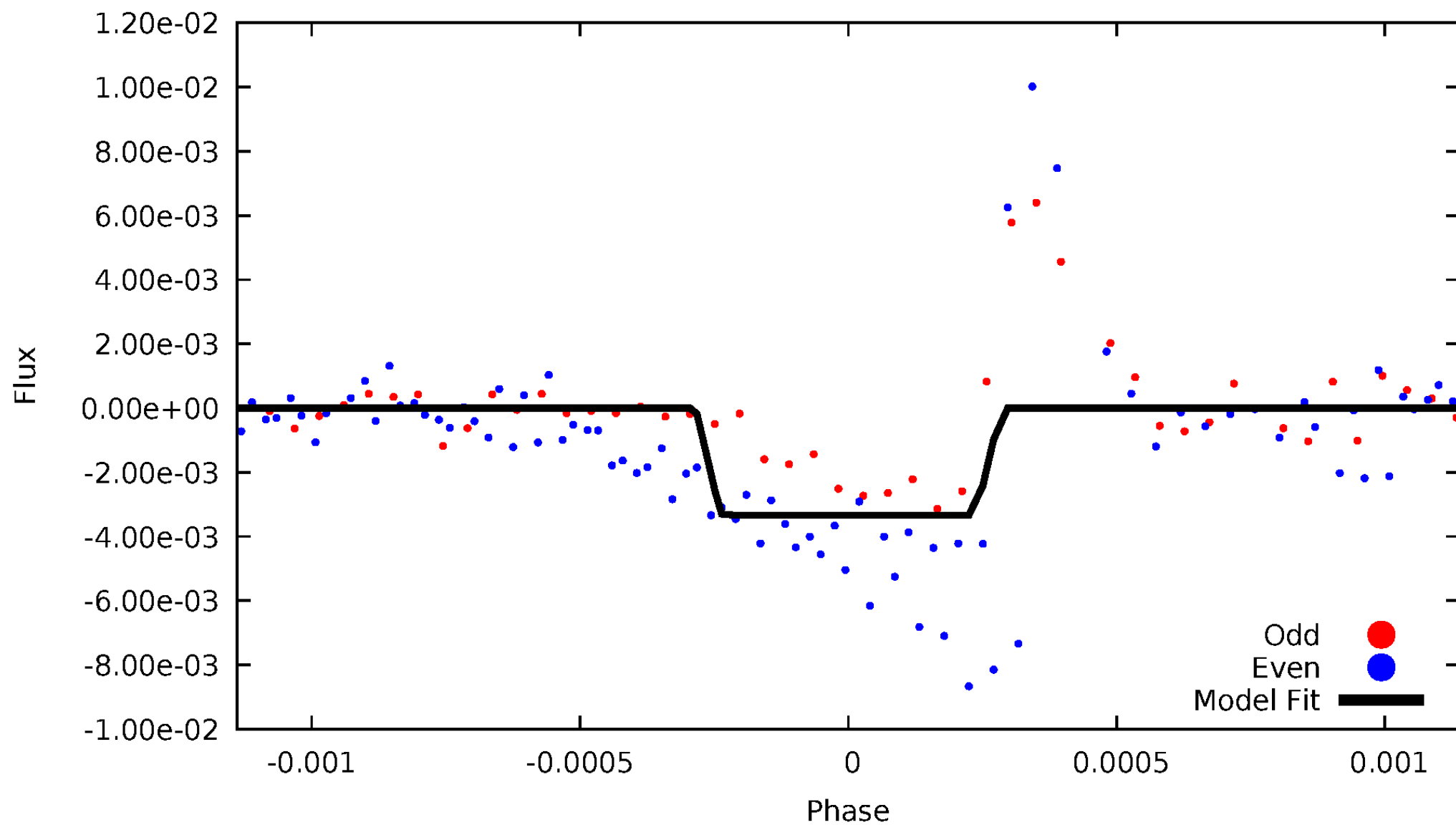
DV Odd/Even

TCE 008836388-01



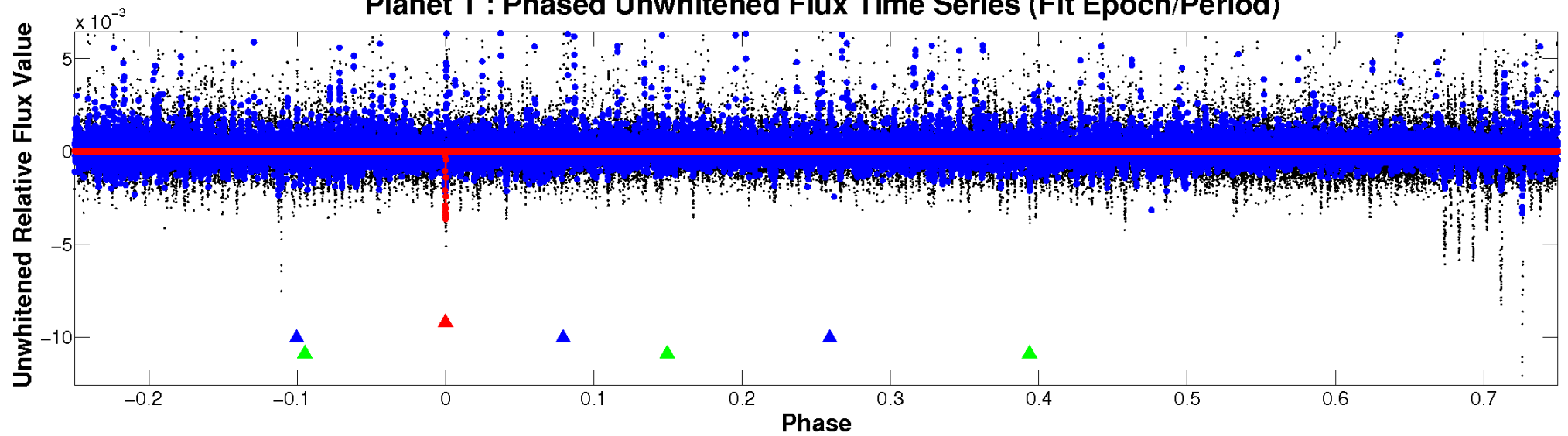
ALT Odd/Even

TCE 008836388-01

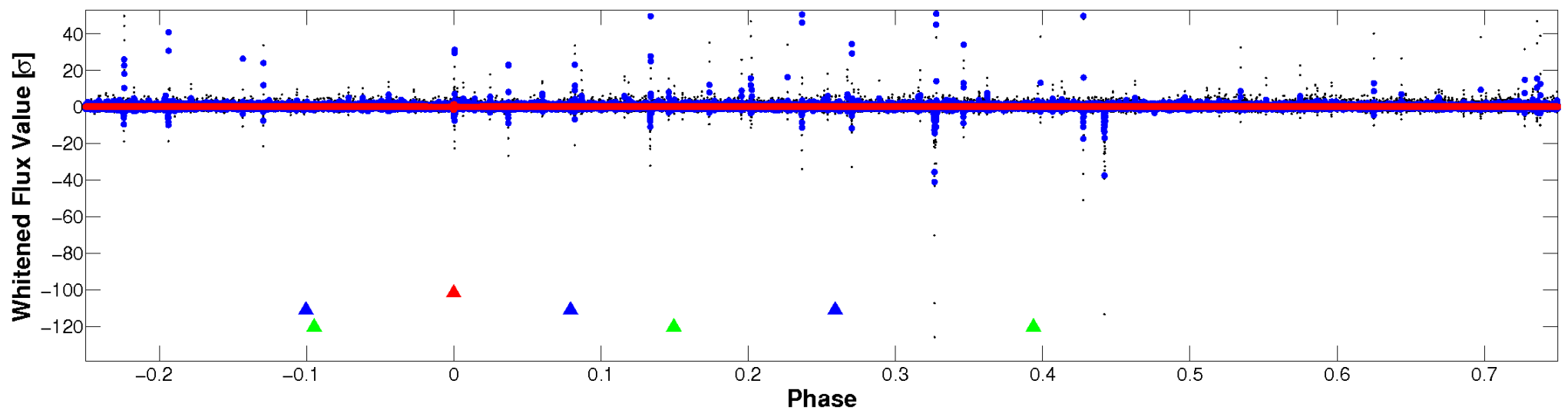


Non-Whitened Vs. Whitened Light Curve

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

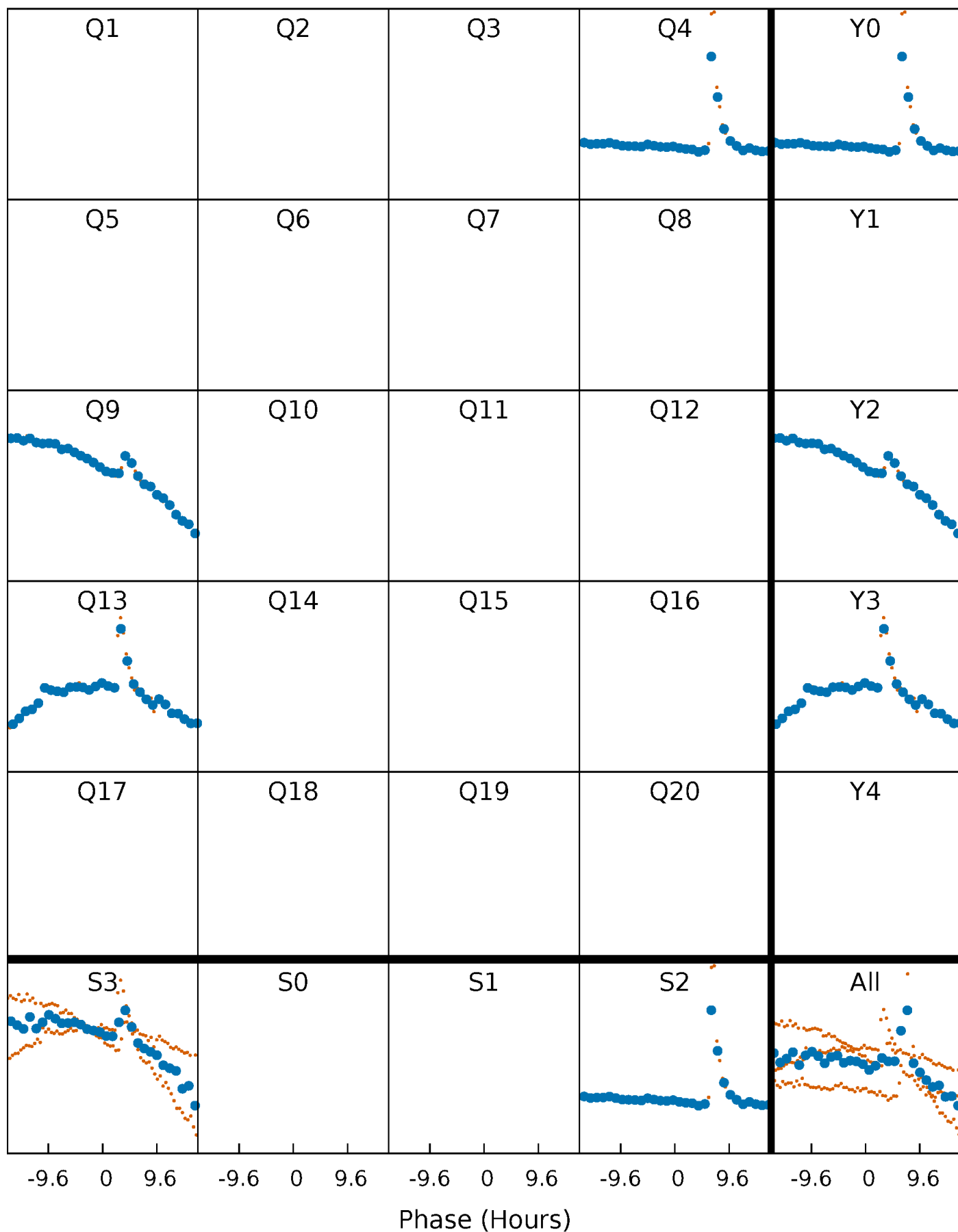


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



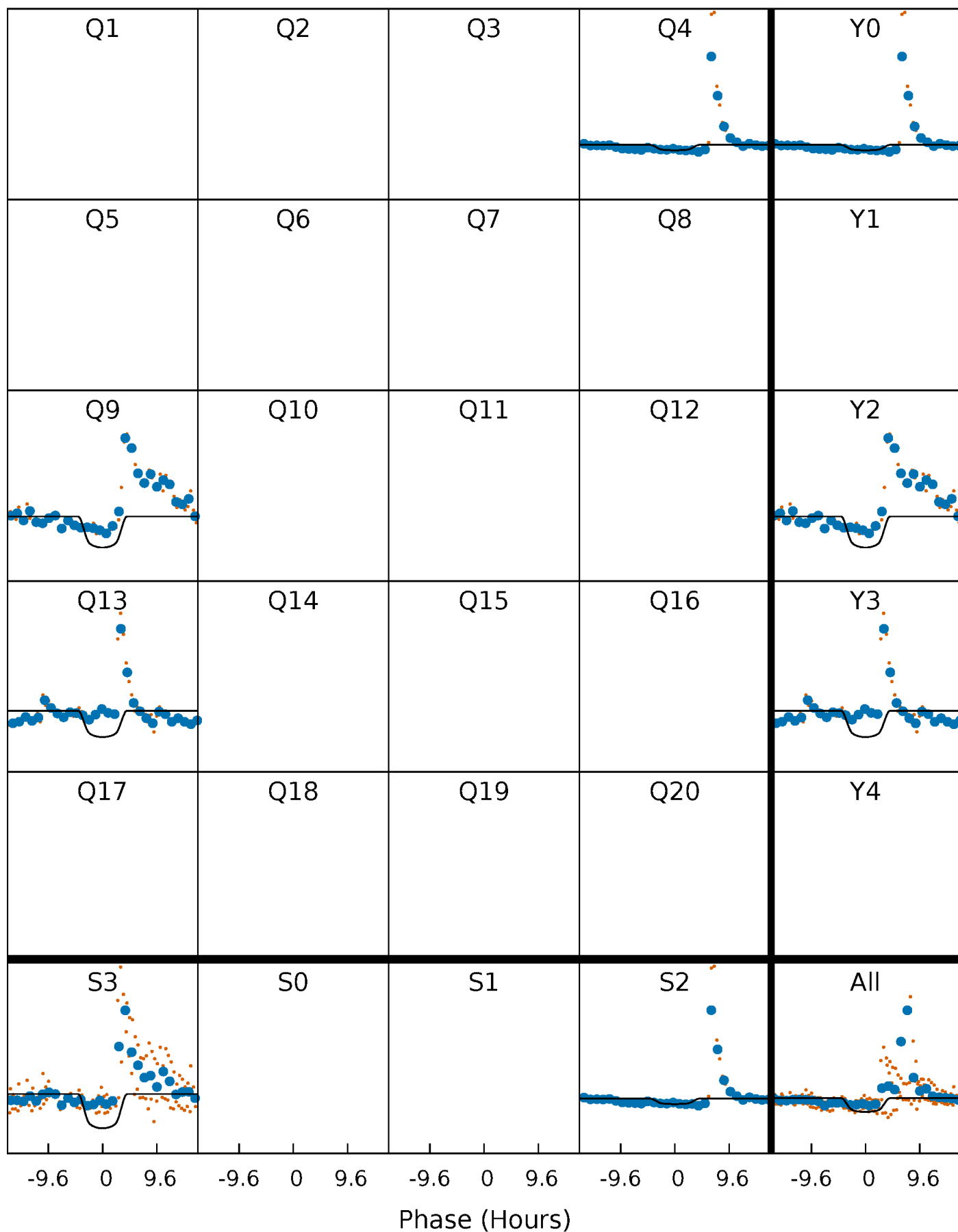
PDC Quarter-Phased Transit Curves

TCE 008836388-01 P=443.498925 Days $T_0=377.853575$ (BKJD)



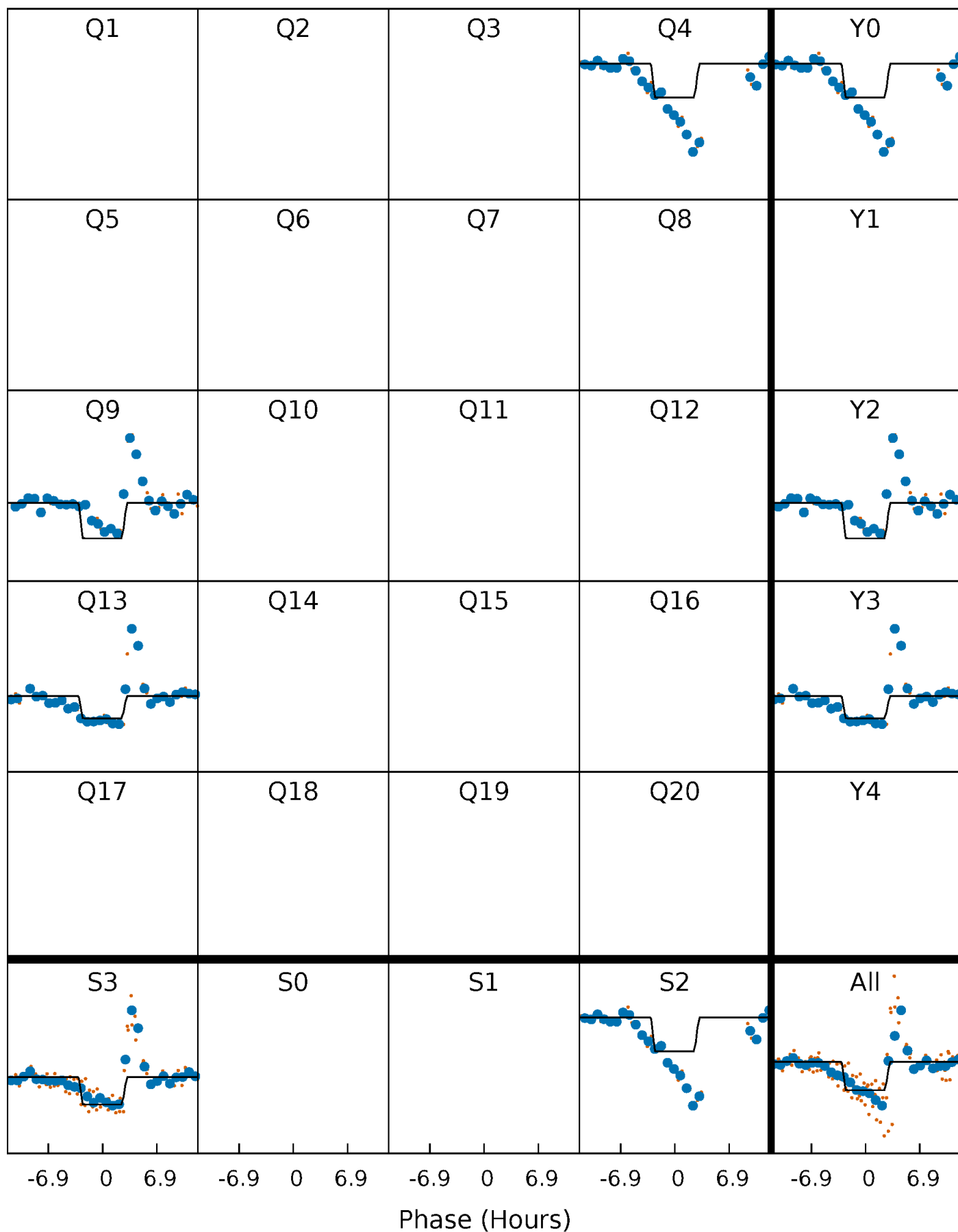
DV Quarter-Phased Transit Curves

TCE 008836388-01 $P=443.498925$ Days $T_0=377.853575$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

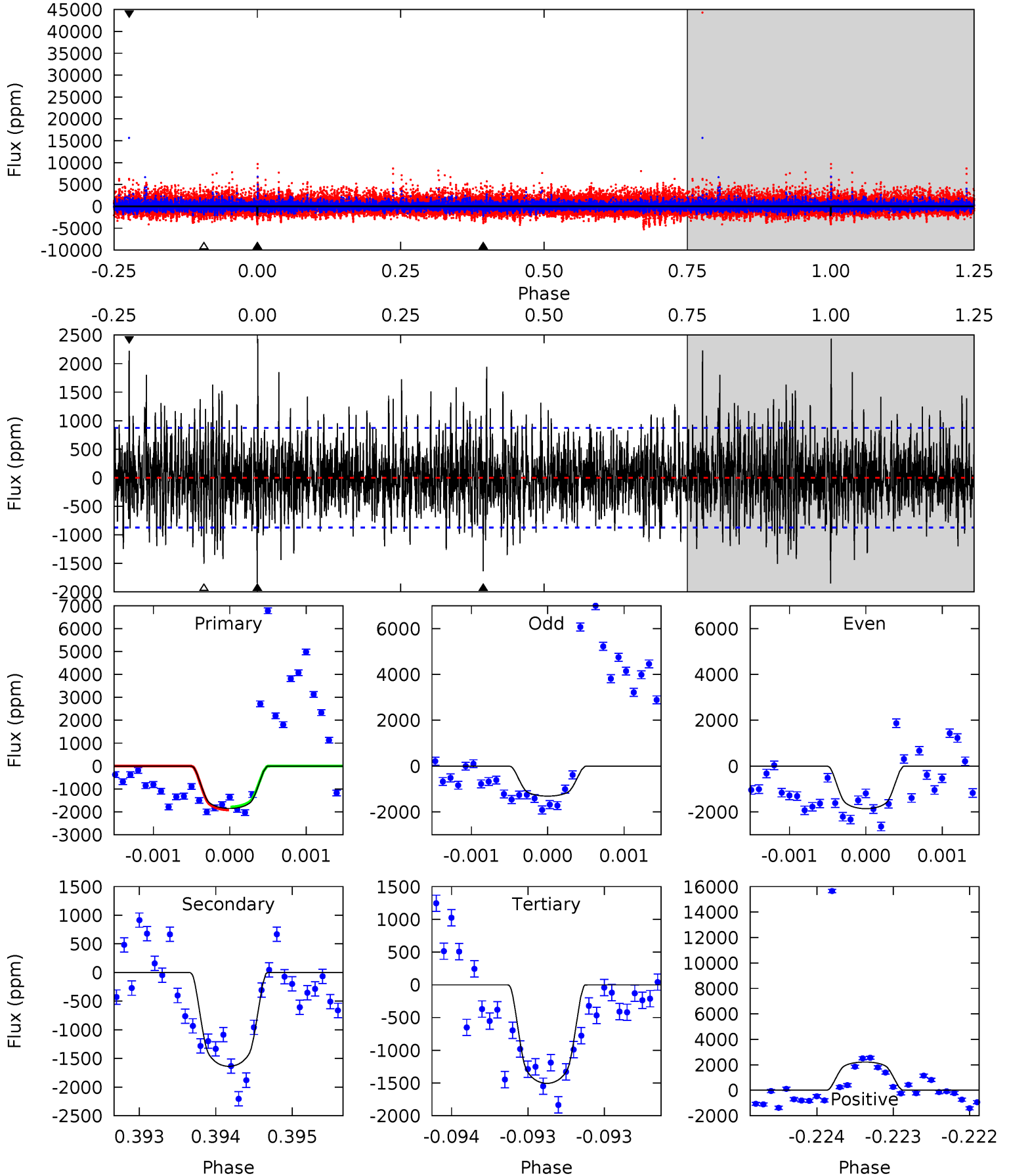
TCE 008836388-01 P=443.455930 Days $T_0=377.920812$ (BKJD)



DV Model-Shift Uniqueness Test

008836388-01, P = 443.498925 Days, E = 377.853575 Days

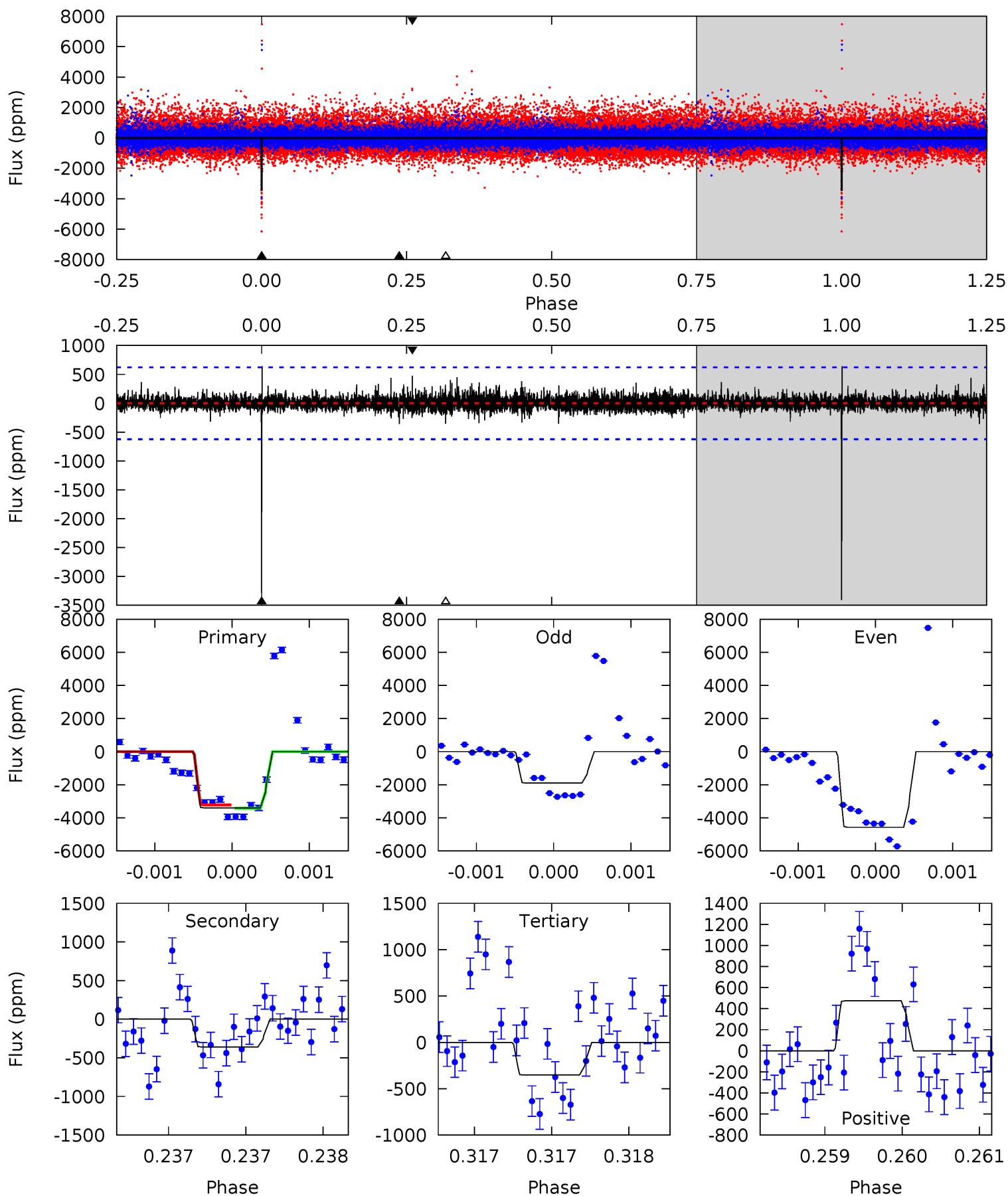
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.6	10.3	9.47	14.0	5.49	3.35	2.83	2.18	-2.32	0.83	-3.67	0.78	1.03	0.57	0.42



Alt Model-Shift Uniqueness Test

008836388-01, P = 443.455930 Days, E = 377.920812 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.3	3.20	3.14	4.23	5.55	3.44	0.70	27.2	26.1	0.06	-1.02	11.6	0.94	0.16	0.87



Stellar Parameters For KIC 008836388

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3497^{+62}_{-69}	$4.920^{+0.060}_{-0.045}$	$-0.200^{+0.100}_{-0.100}$	$0.334^{+0.042}_{-0.052}$	$0.339^{+0.049}_{-0.060}$	$12.780^{+4.488}_{-2.318}$
	+2%/-2%	+1%/-1%	+50%/-50%	+13%/-16%	+14%/-18%	+35%/-18%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 008836388-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1637 ± 159	$2.32^{+0.48}_{-0.51}$	139^{+4}_{-4}	3049^{+219}_{-163}	103658^{+63089}_{-30012}
Alt.	-359 ± 112	$2.12^{+0.51}_{-0.44}$	140^{+4}_{-5}	2553^{+188}_{-172}	27666^{+21292}_{-12123}

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

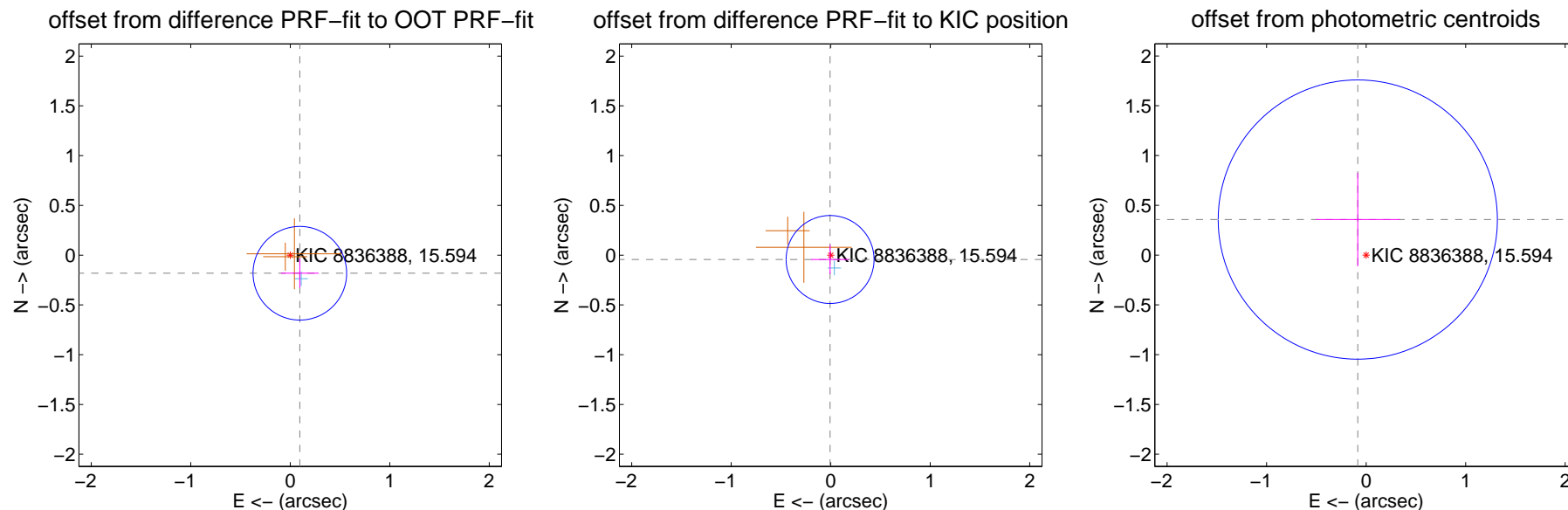
DV Centroid Data

Supplemental centroid analysis for 008836388-01. Kepler magnitude: 15.59. Transit SNR 10.41

There are 1 quarters with good PRF difference image offsets

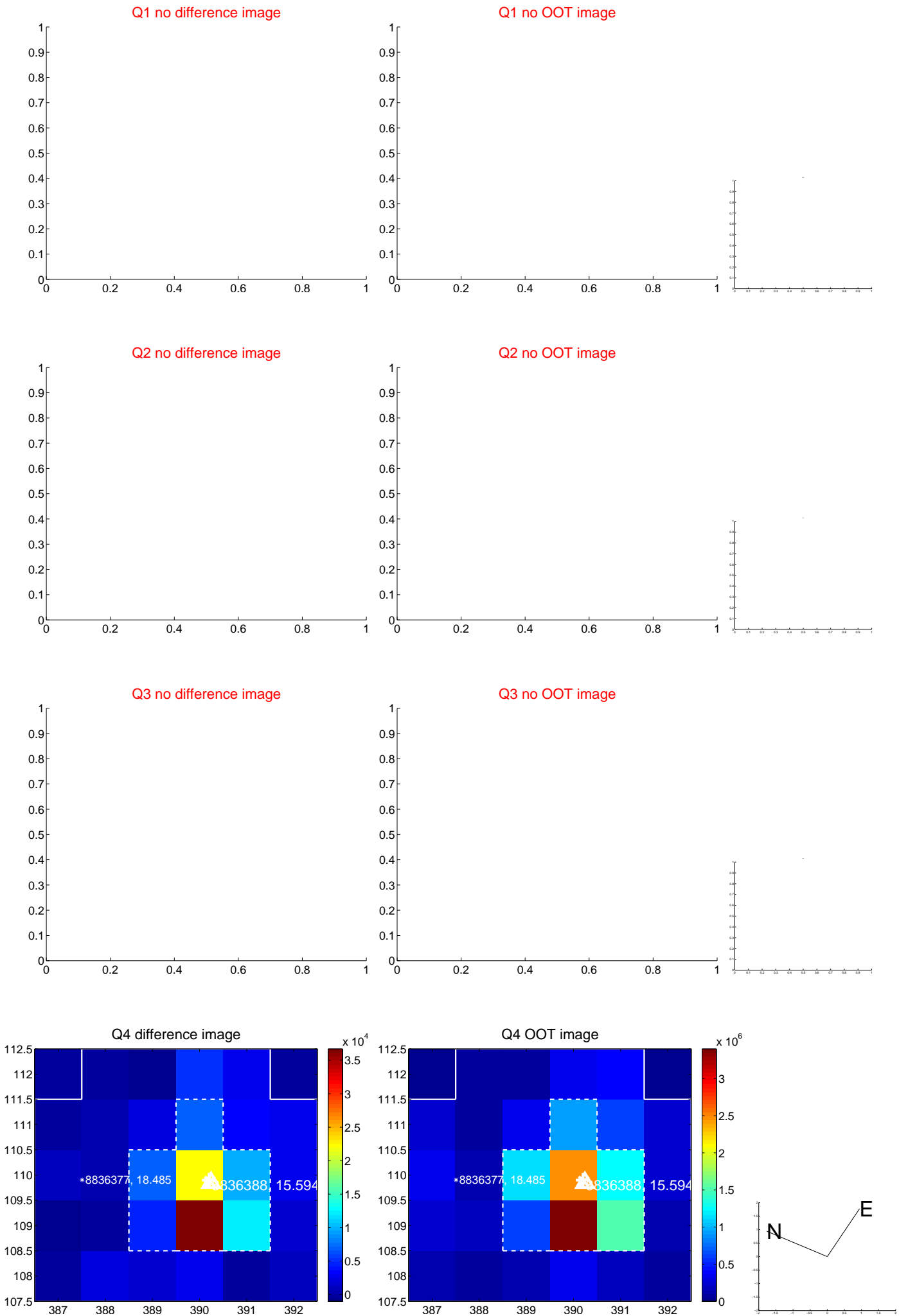
The direct PRF centroid is offset from the target star catalog position by about 0.46 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.206 ± 0.157	1.31	-0.096 ± 0.190	-0.182 ± 0.146
PRF-fit source offset from KIC position	0.044 ± 0.147	0.30	0.006 ± 0.190	-0.044 ± 0.146
photometric centroid source offset	0.37 ± 0.47	0.78	0.08 ± 0.42	0.36 ± 0.47



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.

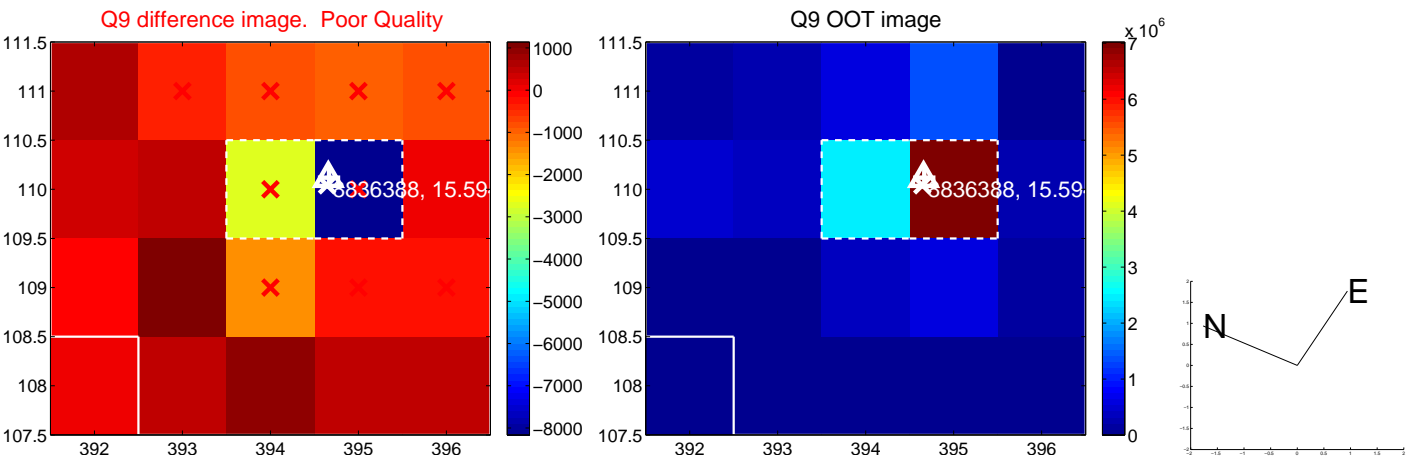
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



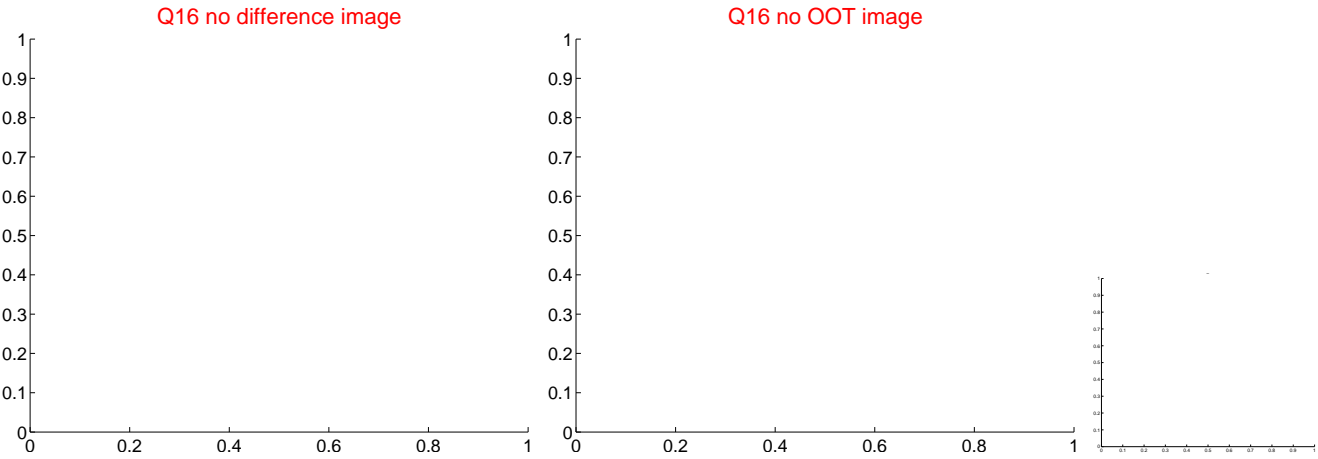
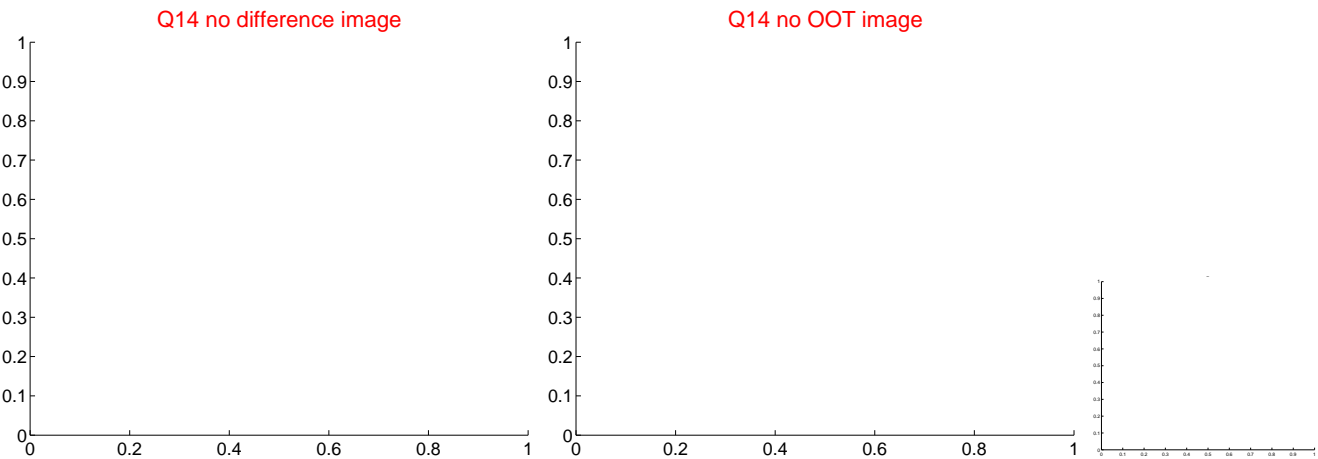
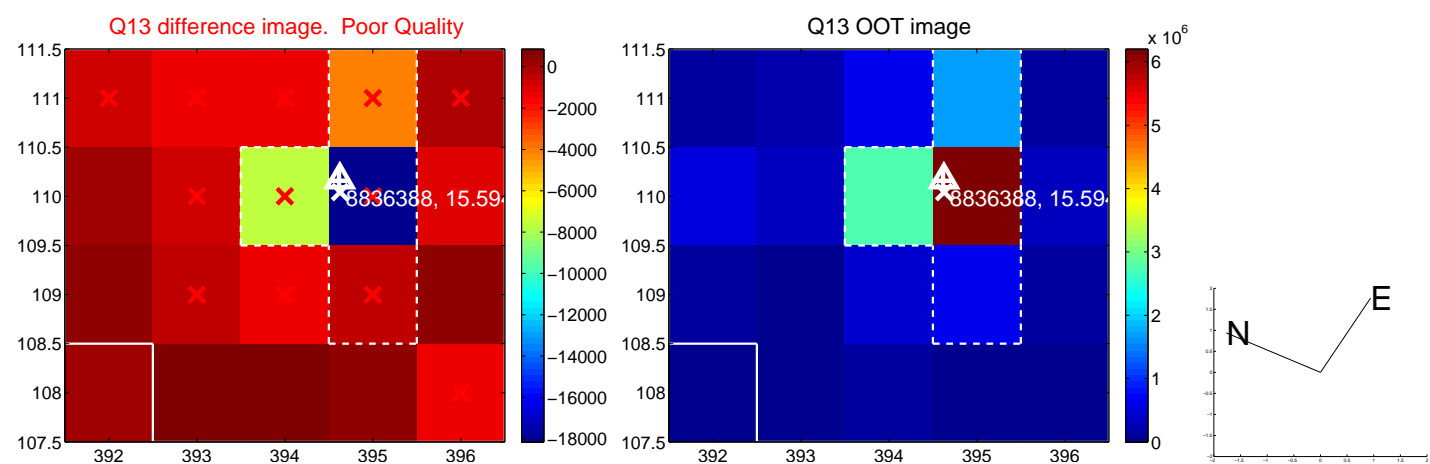
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



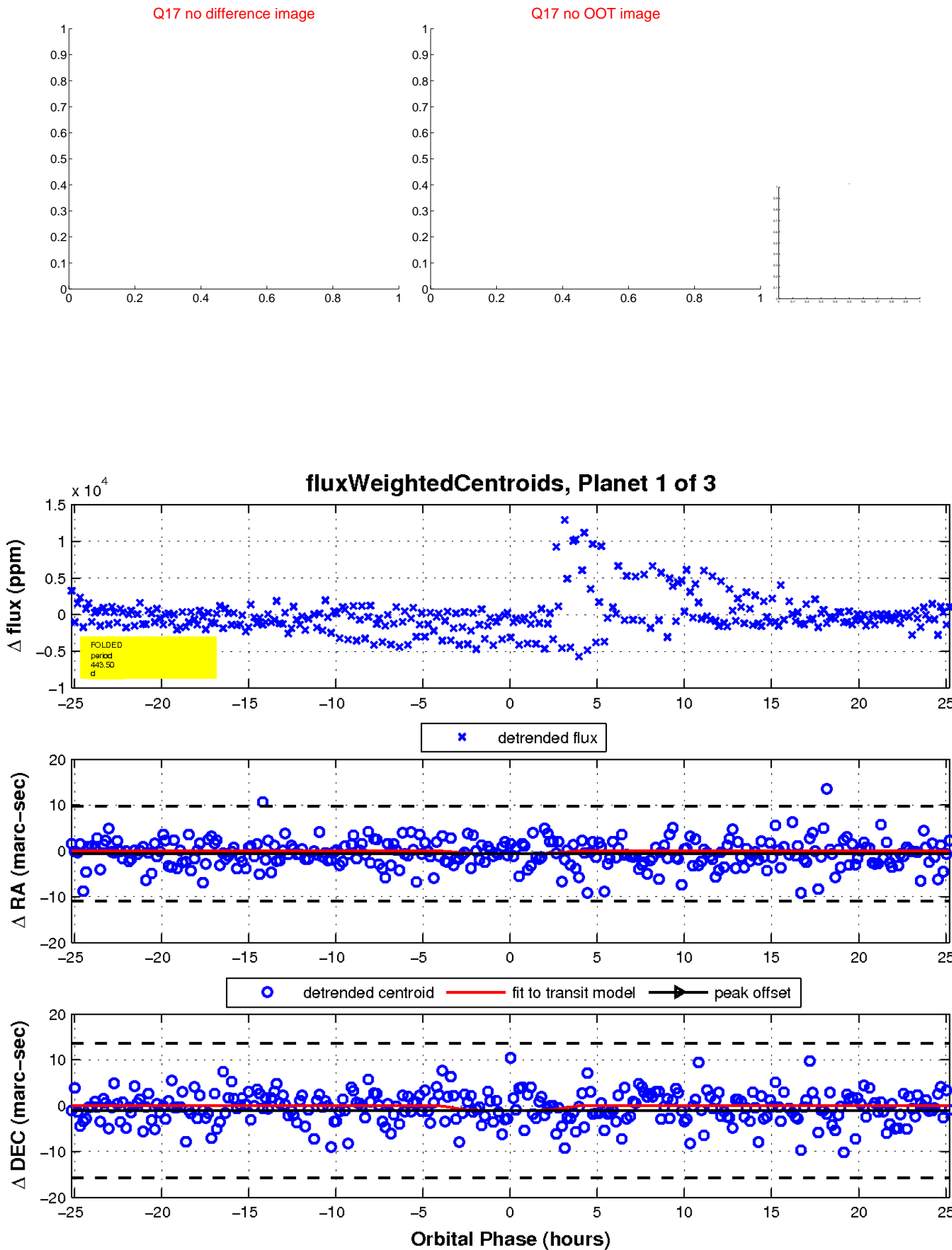
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

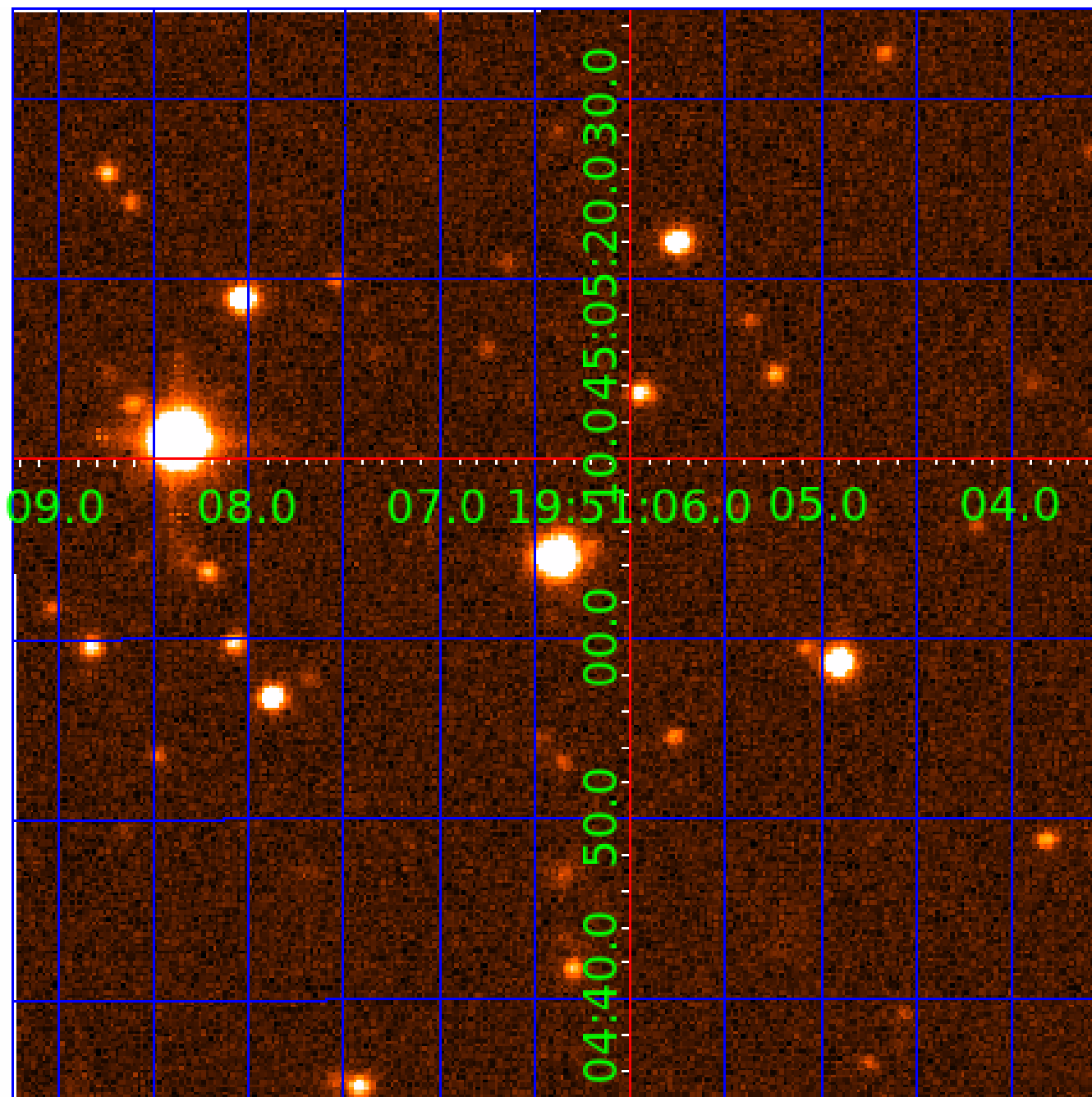


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008836388

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})
008836388-01	OBS	No	443.498925	377.853575	3649.3	8.427	13.7	10.4	0.33	3497	2.32	0.02
008836388-02	OBS	No	523.213209	333.343657	2491.4	4.325	12.3	8.3	0.33	3497	1.65	0.02
008836388-03	OBS	No	551.839444	335.812495	2782.9	8.496	11.7	8.3	0.33	3497	1.75	0.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008836388-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008836388-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008836388-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—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.

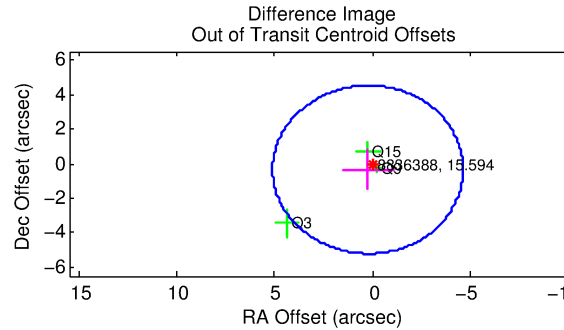
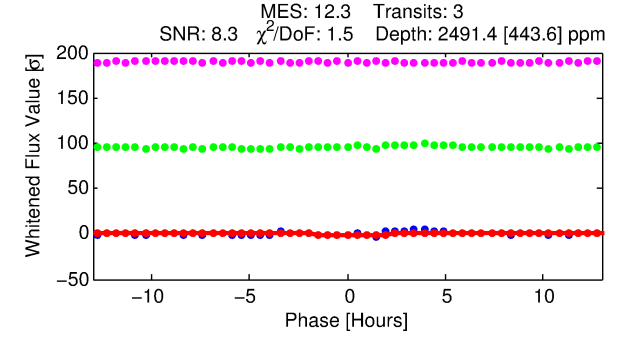
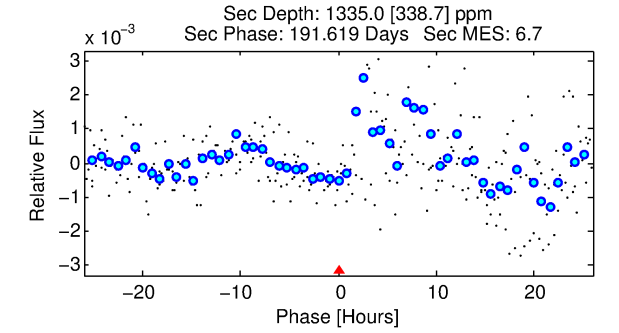
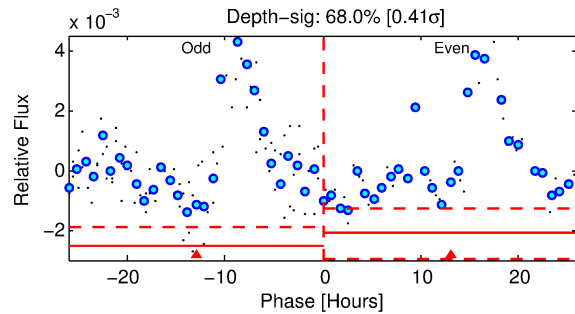
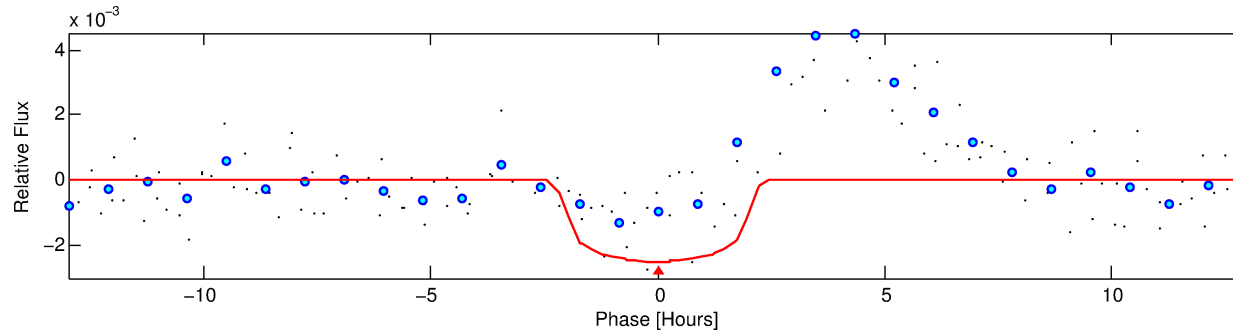
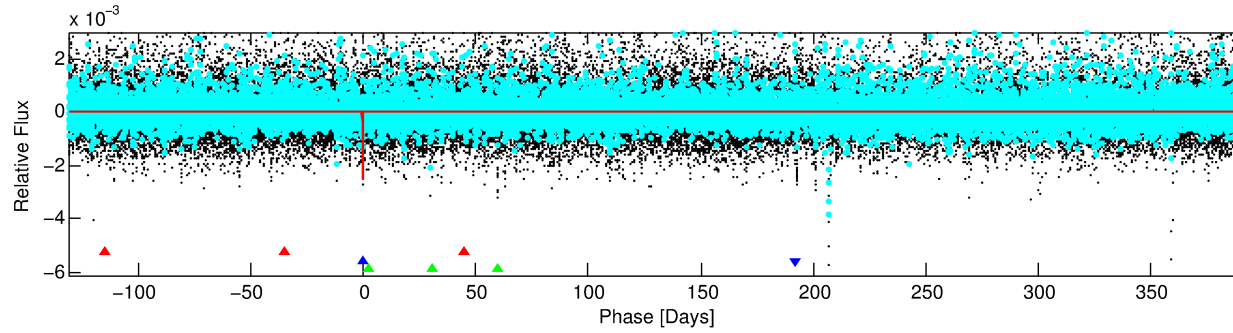
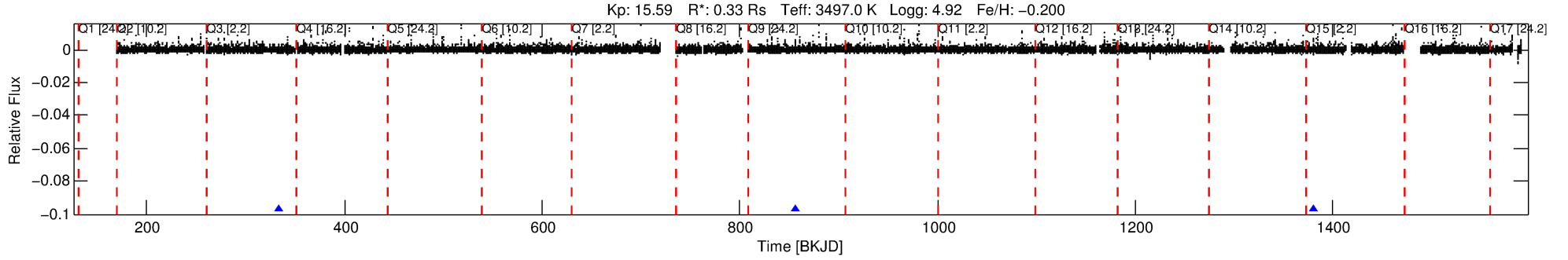
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008836388-02

No Significant Match Found

DV One-Page Summary

KIC: 8836388 Candidate: 2 of 3 Period: 523.213 d



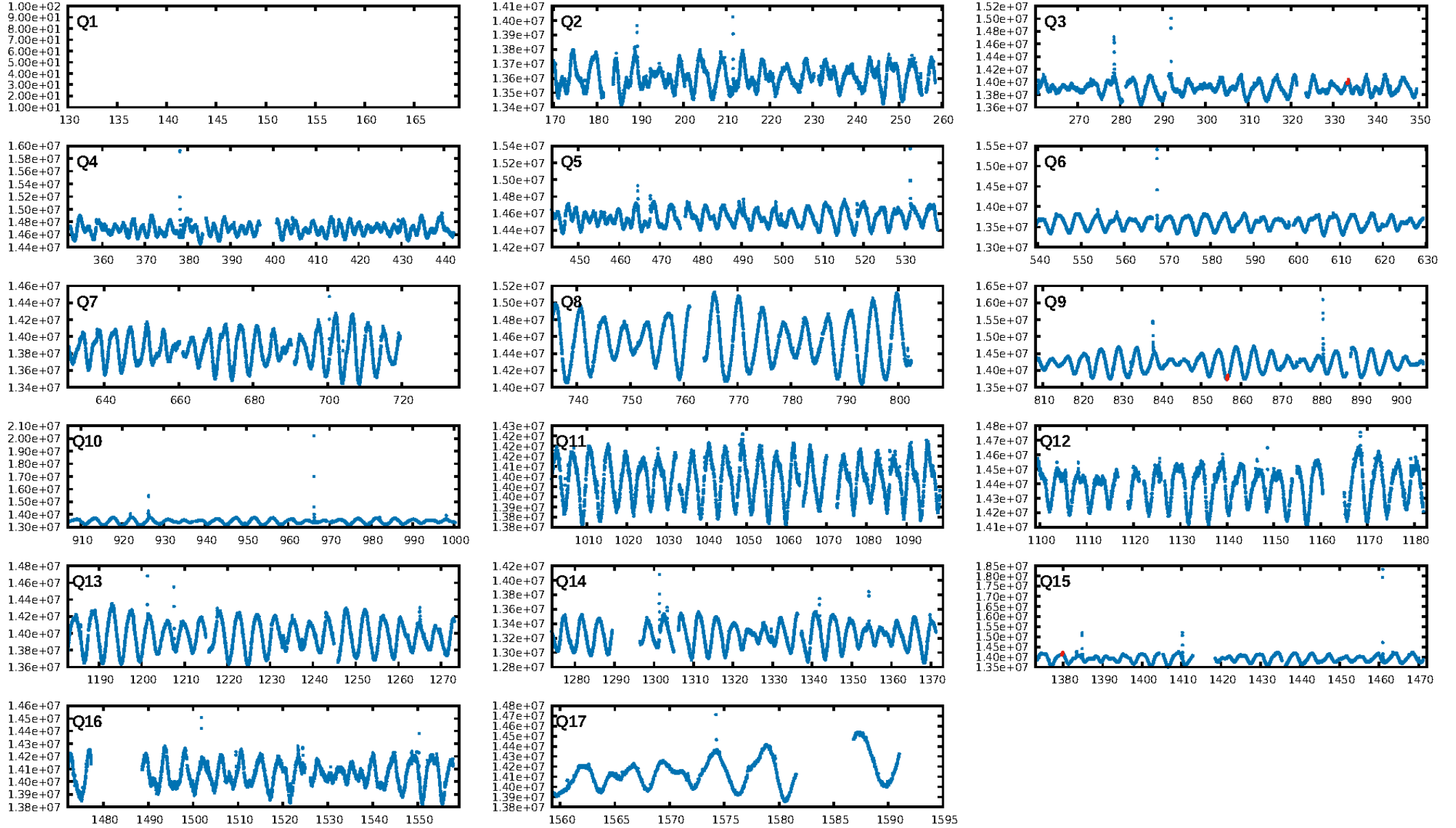
DV Fit Results:

Period = 523.21321 [0.00711] d
Epoch = 333.3437 [0.0090] BKJD
Rp/R* = 0.0453 [0.0885]
a/R* = 966.02 [8573.36]
b = 0.01 [930.34]
Seff = 0.02 [0.00]
Teq = 95 [4] K
Rp = 1.65 [3.23] Re
a = 0.8858 [0.1006] AU
Ag = 211170.70 [826575.45] [0.26 σ]
Teffp = 3140 [3071] K [0.99 σ]

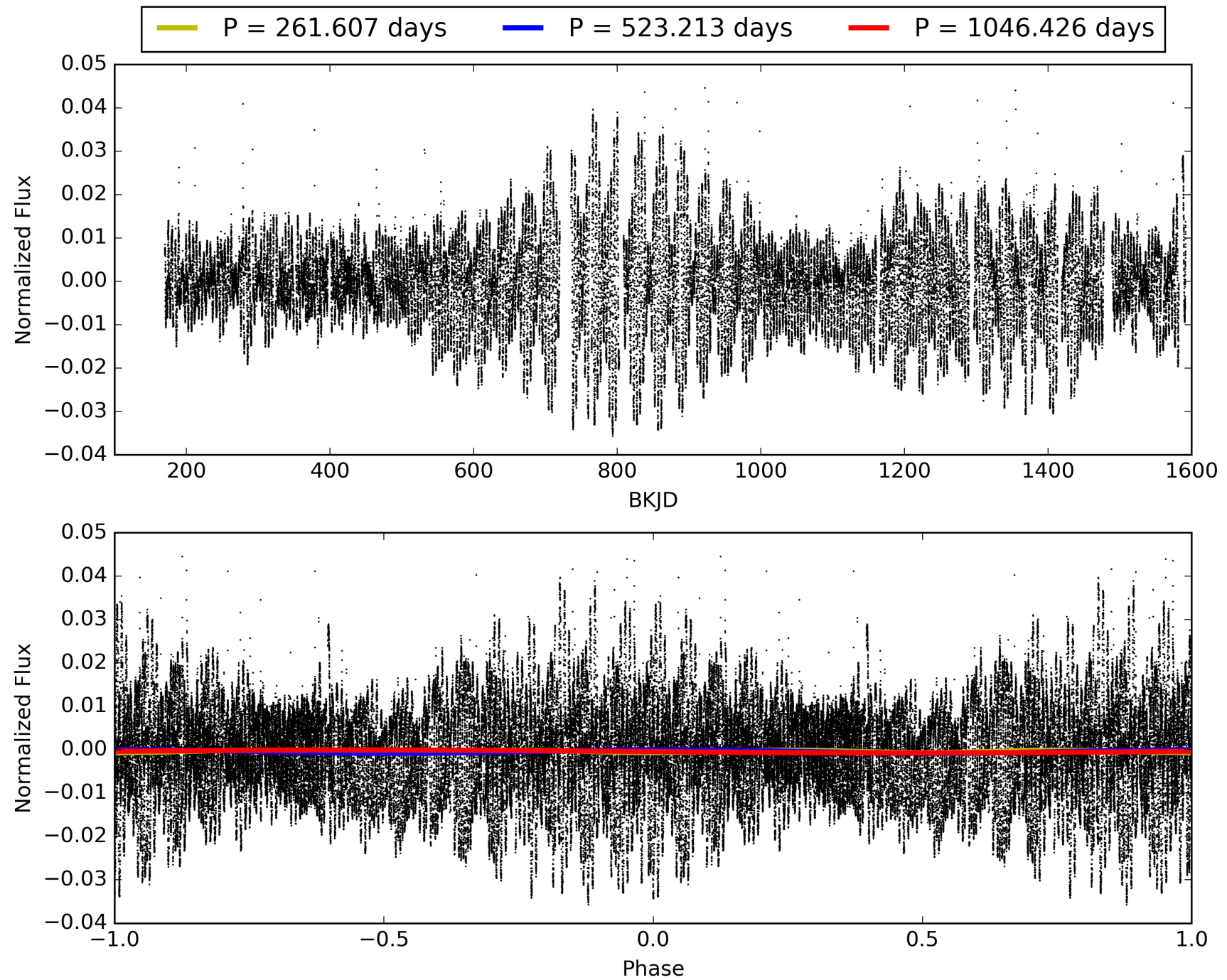
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [201.97 σ]
LongPeriod-sig: 100.0% [72.07 σ]
ModelChiSquare2-sig: 3.3%
ModelChiSquareGof-sig: 78.8%
Bootstrap-pfa: 9.74e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.721
Centroid-sig: 45.8%
Centroid-so: 0.710 arcsec [0.91 σ]
OotOffset-rm: 0.415 arcsec [0.26 σ]
KicOffset-rm: 0.559 arcsec [0.39 σ]
OotOffset-st: 0/2/0/1 [3]
KicOffset-st: 0/2/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 008836388-02, PDC Light Curves

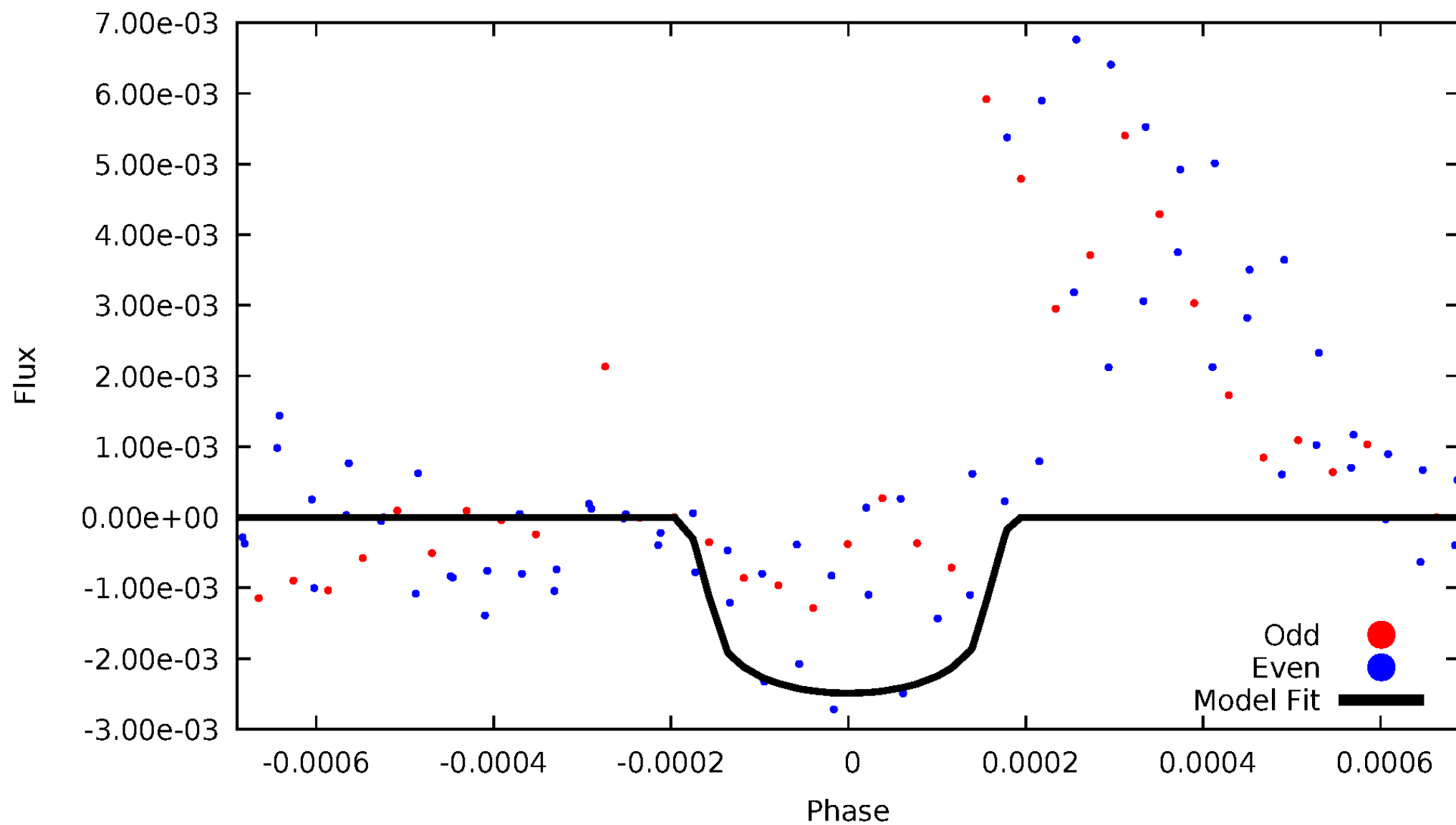


TCE 008836388-02



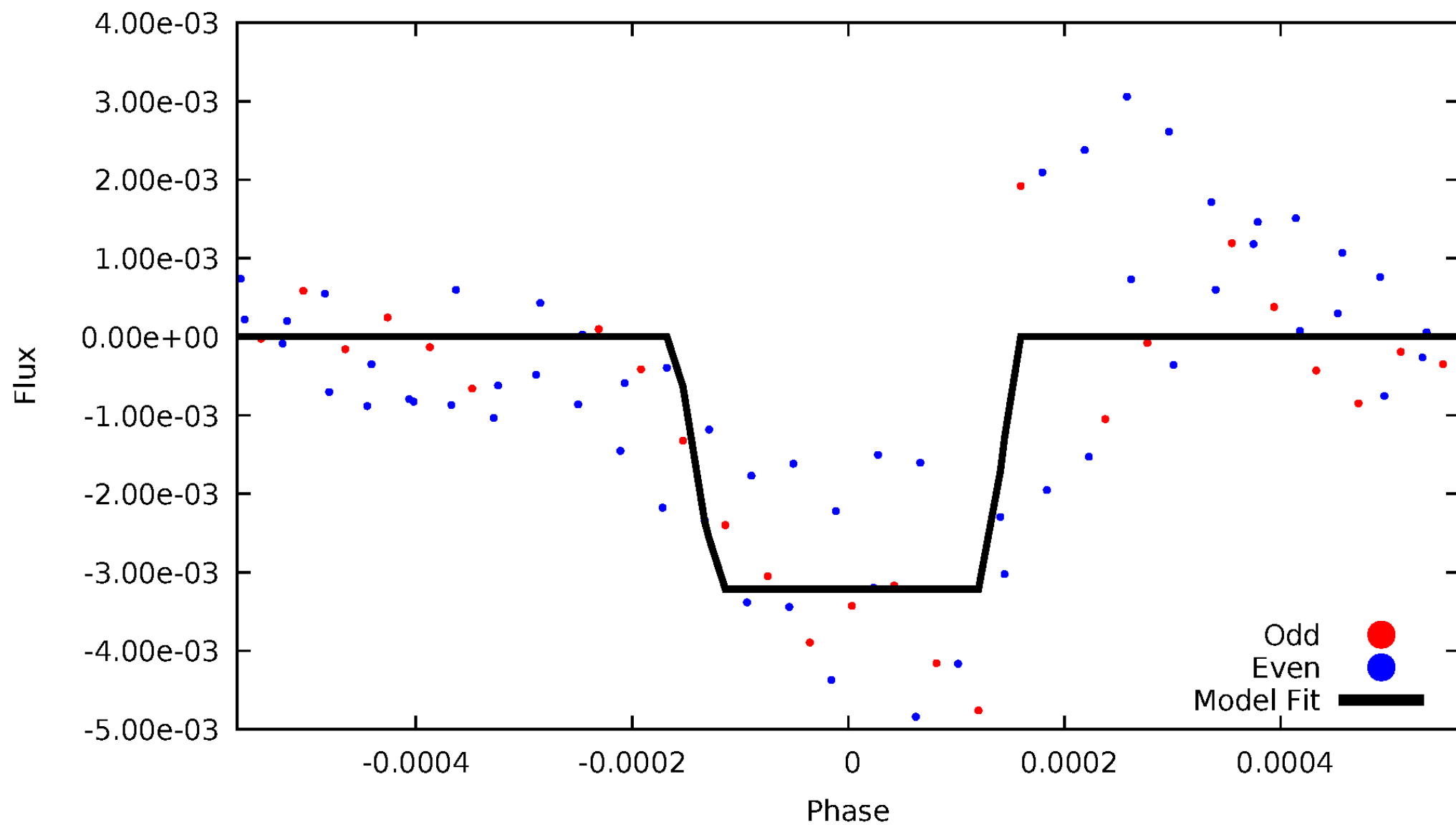
DV Odd/Even

TCE 008836388-02



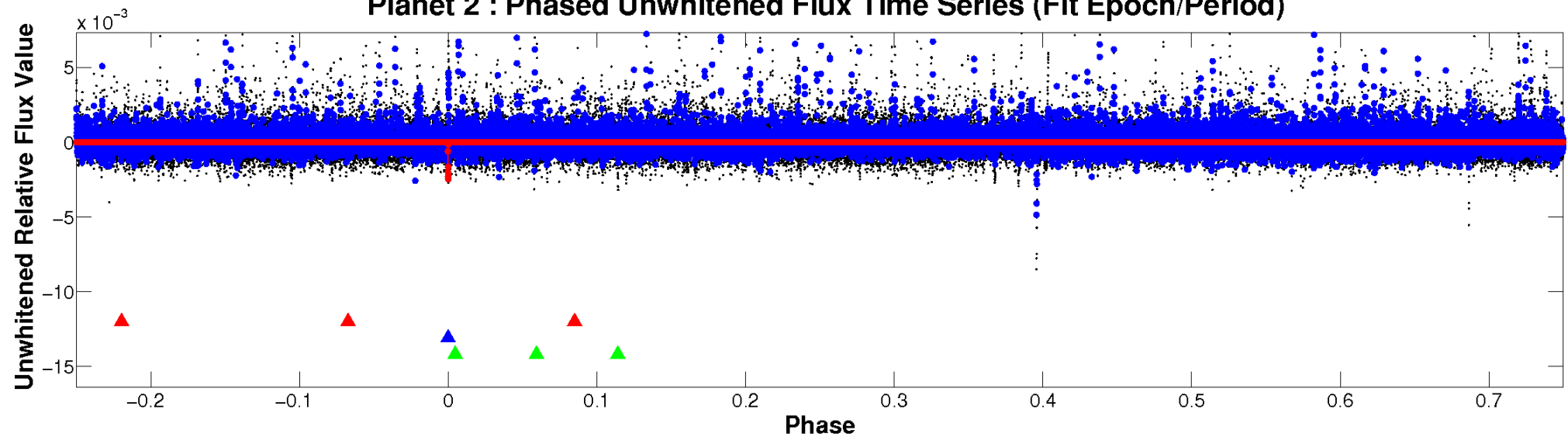
ALT Odd/Even

TCE 008836388-02

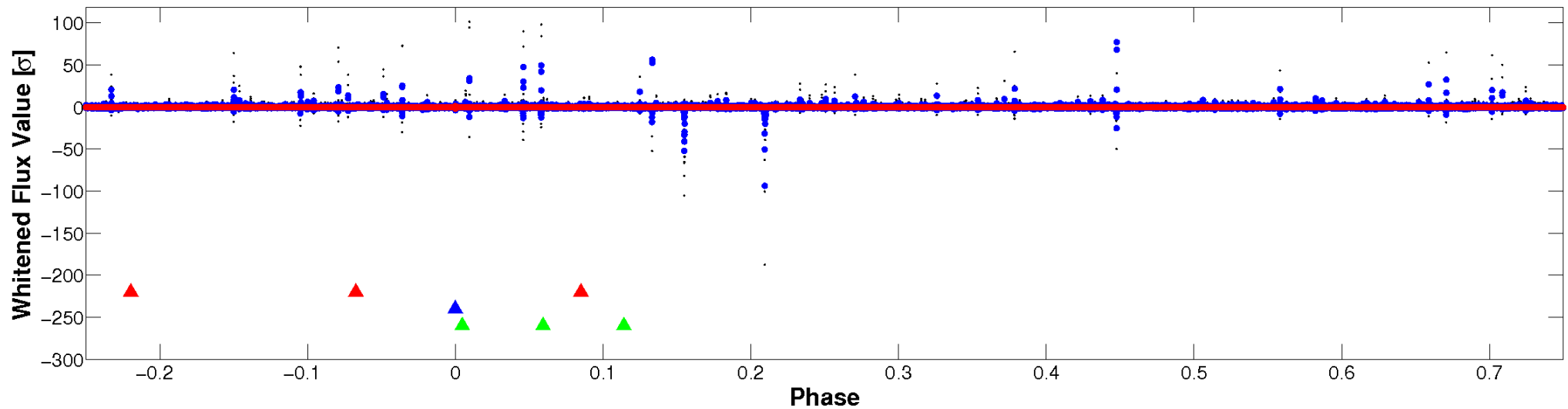


Non-Whitened Vs. Whitened Light Curve

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

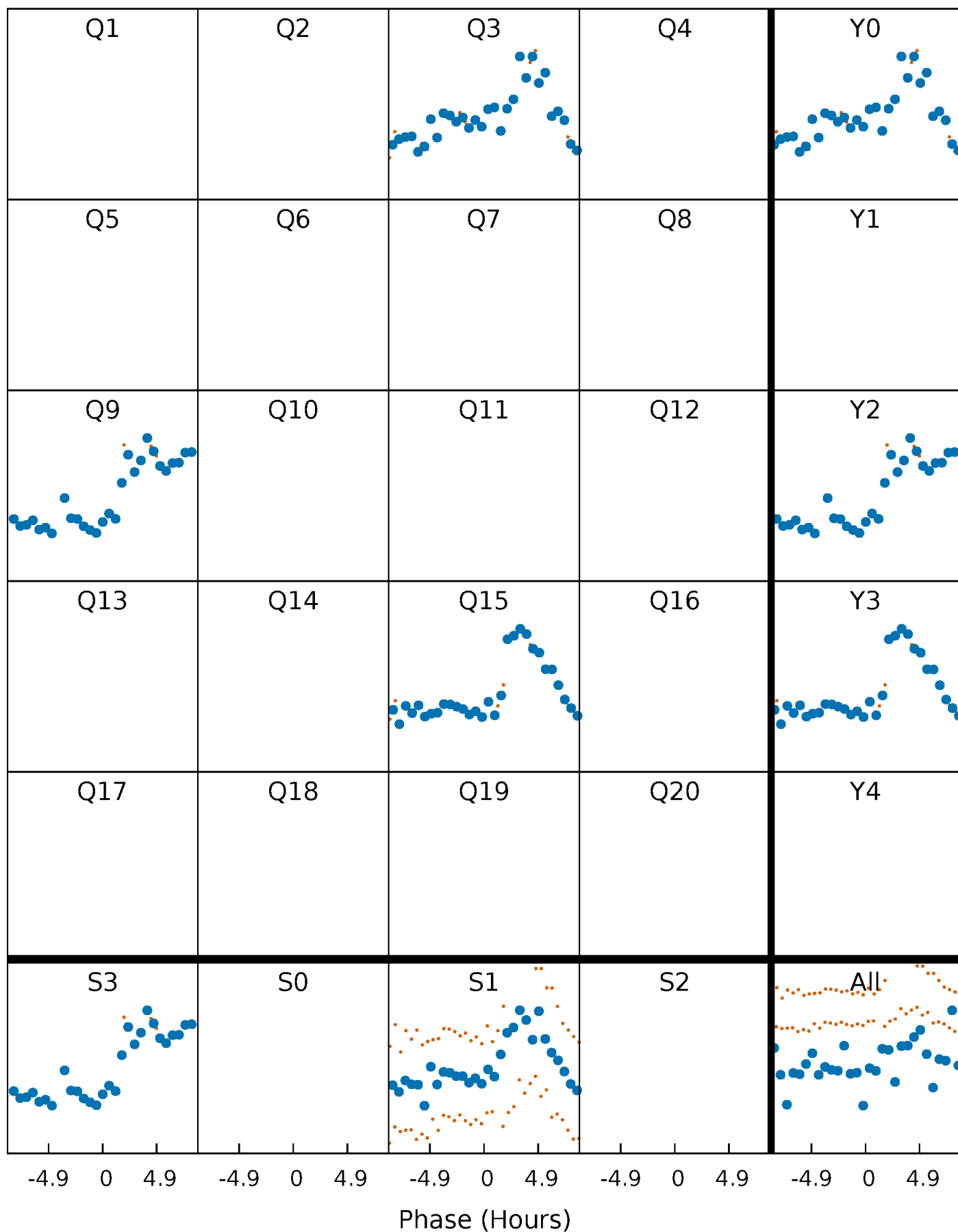


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



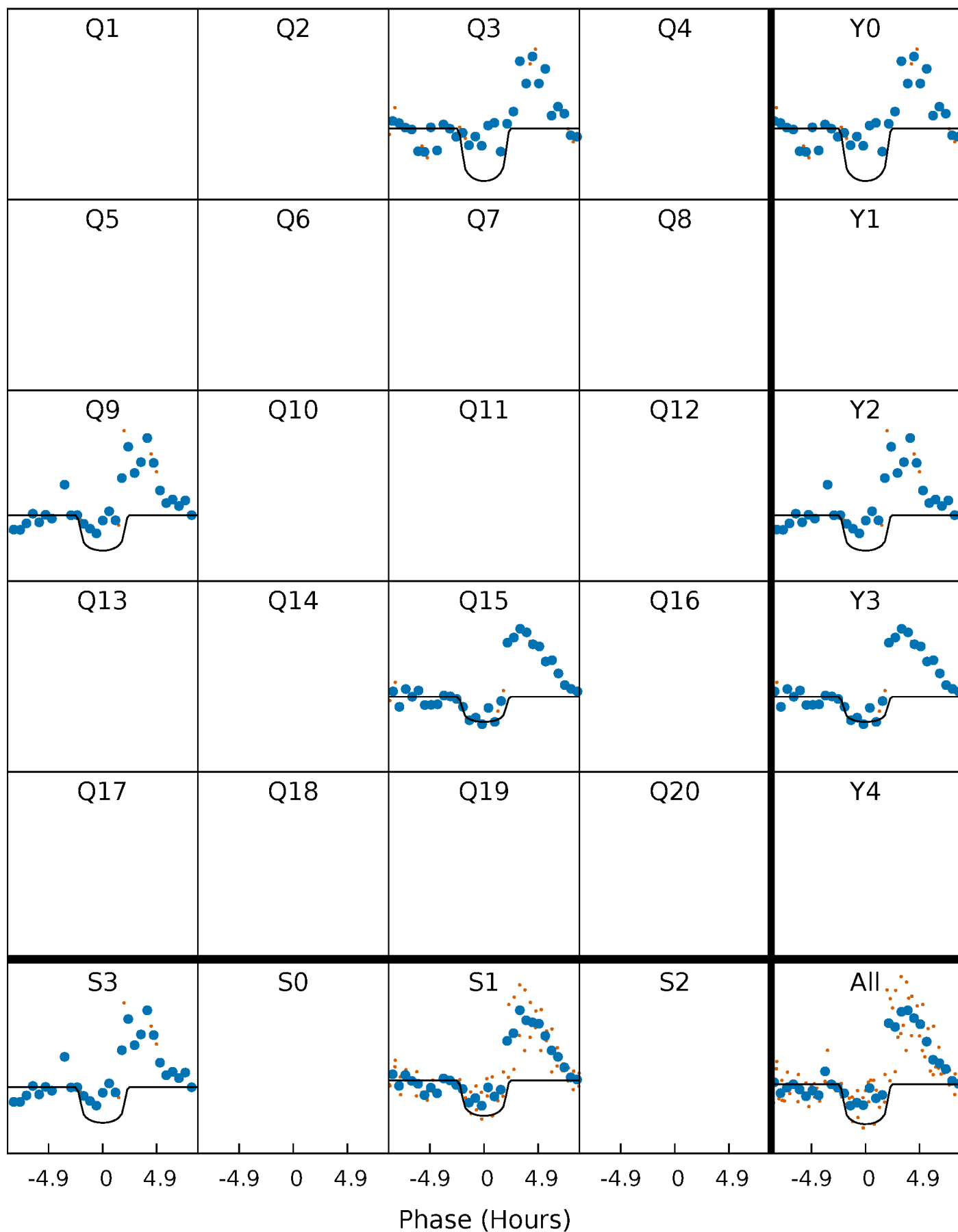
PDC Quarter-Phased Transit Curves

TCE 008836388-02 $P=523.213209$ Days $T_0=333.343657$ (BKJD)



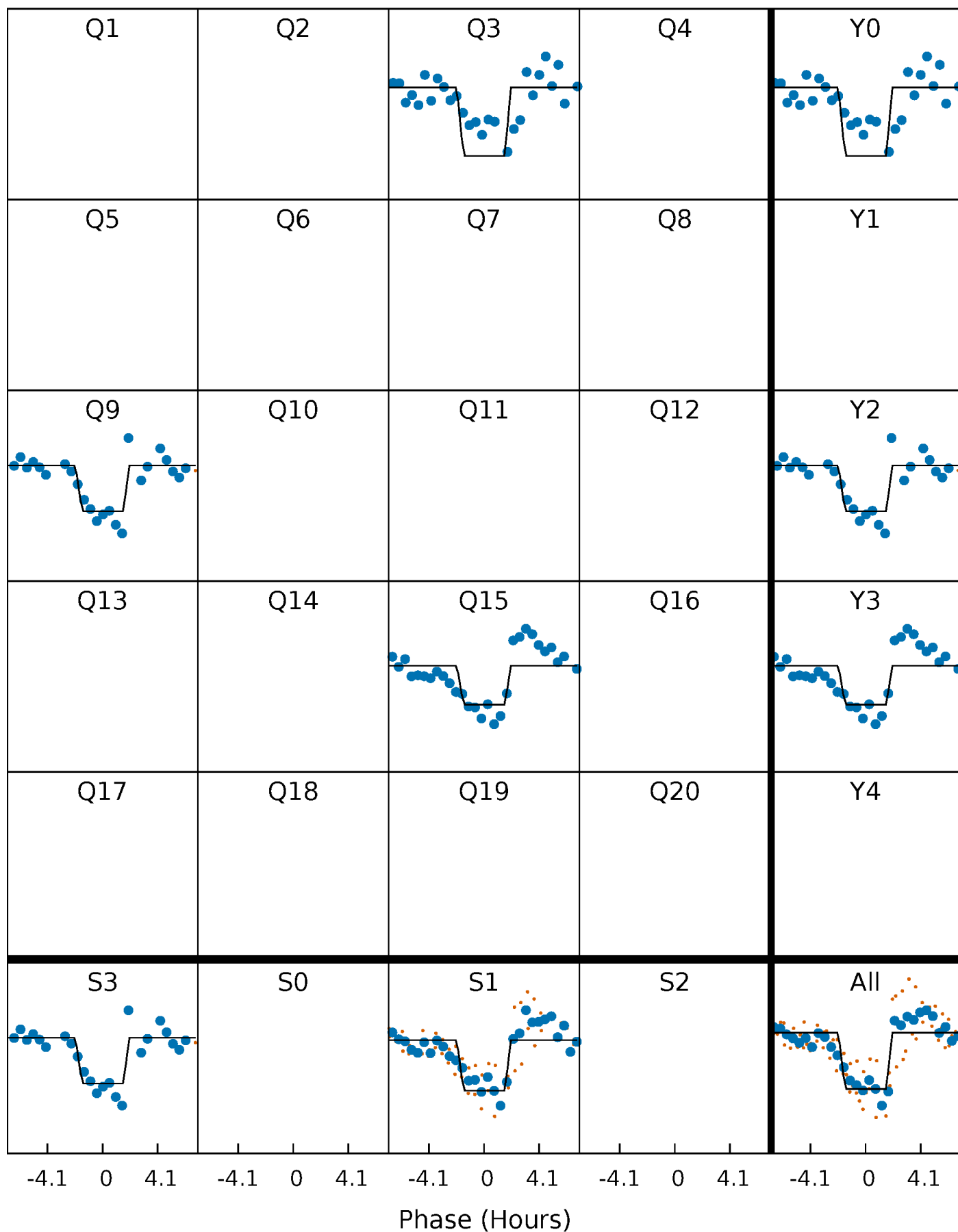
DV Quarter-Phased Transit Curves

TCE 008836388-02 $P=523.213209$ Days $T_0=333.343657$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

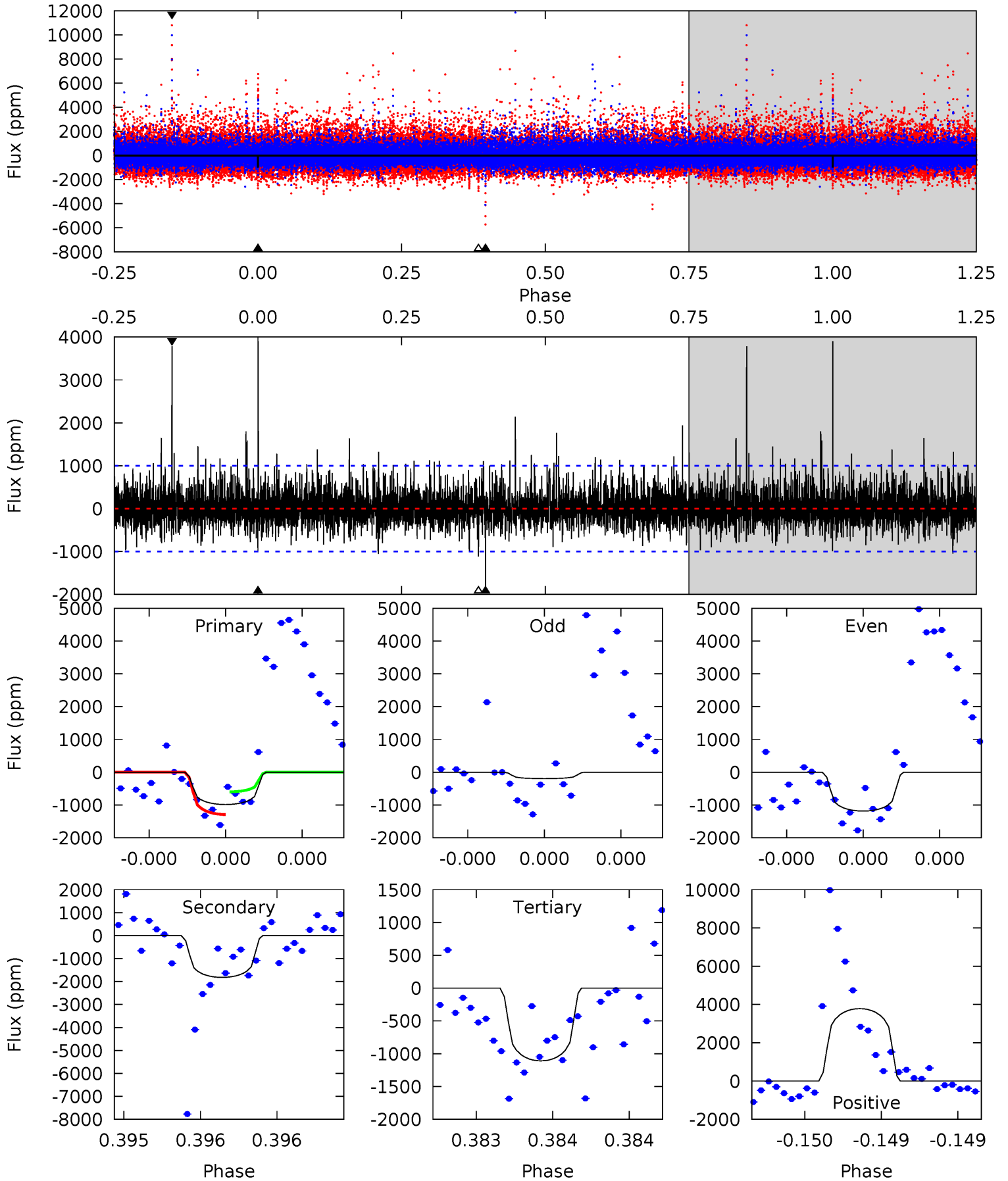
TCE 008836388-02 $P=523.214926$ Days $T_0=333.339822$ (BKJD)



DV Model-Shift Uniqueness Test

008836388-02, P = 523.213209 Days, E = 333.343657 Days

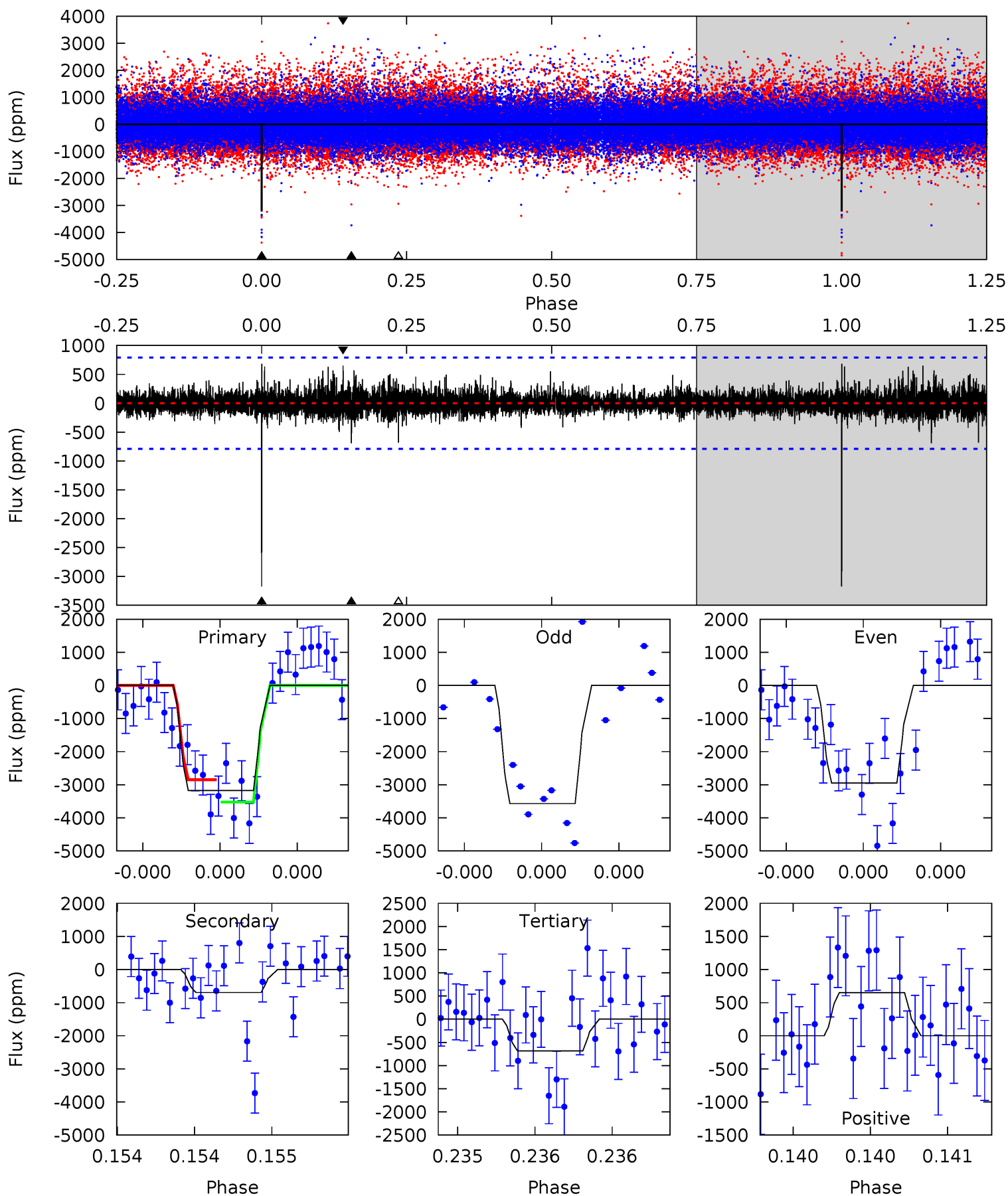
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.57	10.3	6.26	21.4	5.63	3.56	1.84	-0.69	-15.8	4.01	-11.1	1.06	1.77	0.68	1.95



Alt Model-Shift Uniqueness Test

008836388-02, P = 523.214926 Days, E = 333.339822 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.8	4.98	4.91	4.66	5.68	3.64	0.78	17.9	18.1	0.06	0.31	2.00	0.87	0.18	2.43



Stellar Parameters For KIC 008836388

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3497^{+62}_{-69}	$4.920^{+0.060}_{-0.045}$	$-0.200^{+0.100}_{-0.100}$	$0.334^{+0.042}_{-0.052}$	$0.339^{+0.049}_{-0.060}$	$12.780^{+4.488}_{-2.318}$
	+2%/-2%	+1%/-1%	+50%/-50%	+13%/-16%	+14%/-18%	+35%/-18%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 008836388-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1820 ± 177	$2.90^{+2.67}_{-1.98}$	132^{+4}_{-4}	2912^{+1265}_{-453}	$95003^{+803207}_{-70455}$
Alt.	-693 ± 139	$3.12^{+2.84}_{-1.97}$	132^{+4}_{-4}	2524^{+801}_{-363}	$31093^{+205260}_{-22901}$

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

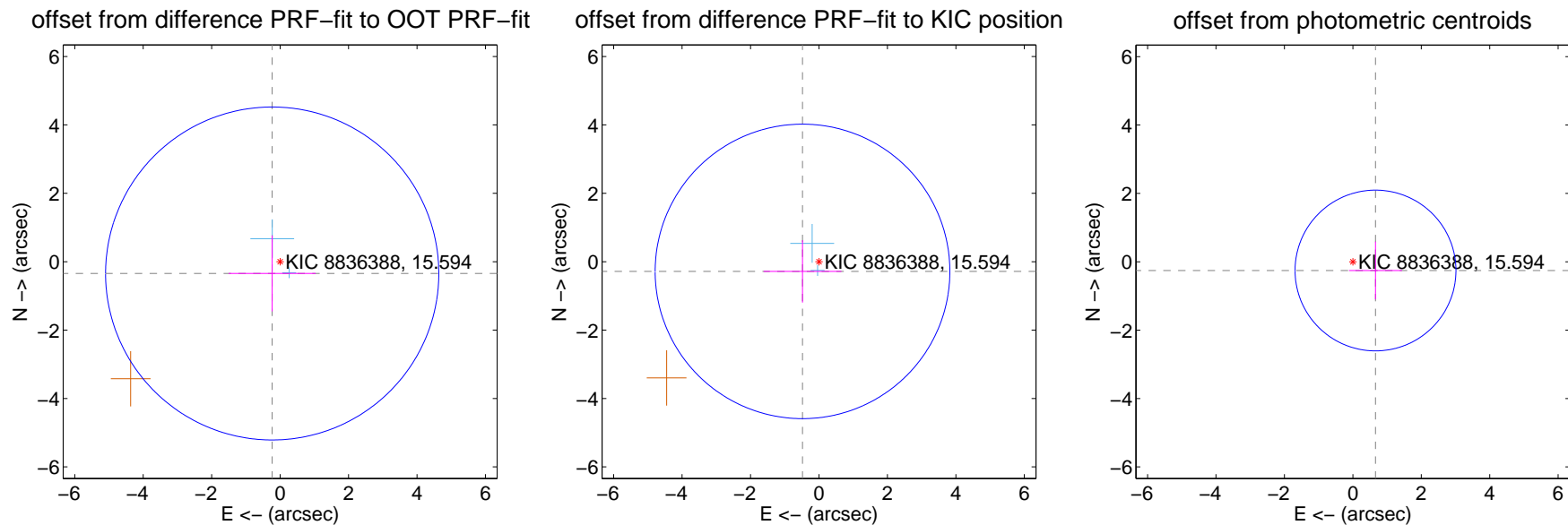
DV Centroid Data

Supplemental centroid analysis for 008836388-02. Kepler magnitude: 15.59. Transit SNR 8.31

There are 2 quarters with good PRF difference image offsets

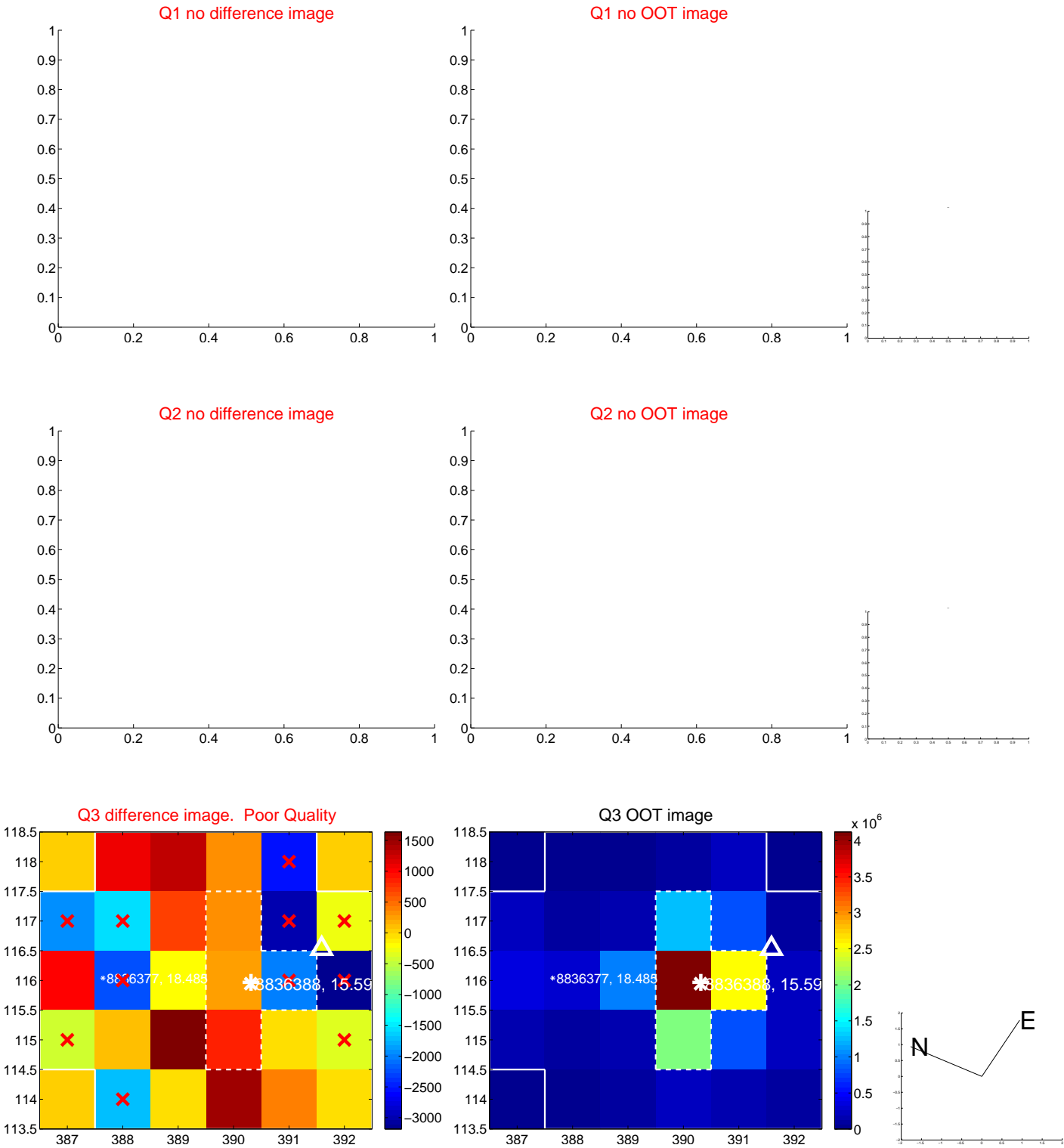
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.415 ± 1.623	0.26	0.231 ± 1.272	-0.345 ± 1.110
PRF-fit source offset from KIC position	0.559 ± 1.435	0.39	0.481 ± 1.136	-0.284 ± 0.911
photometric centroid source offset	0.71 ± 0.78	0.91	-0.66 ± 0.77	-0.26 ± 0.84



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.

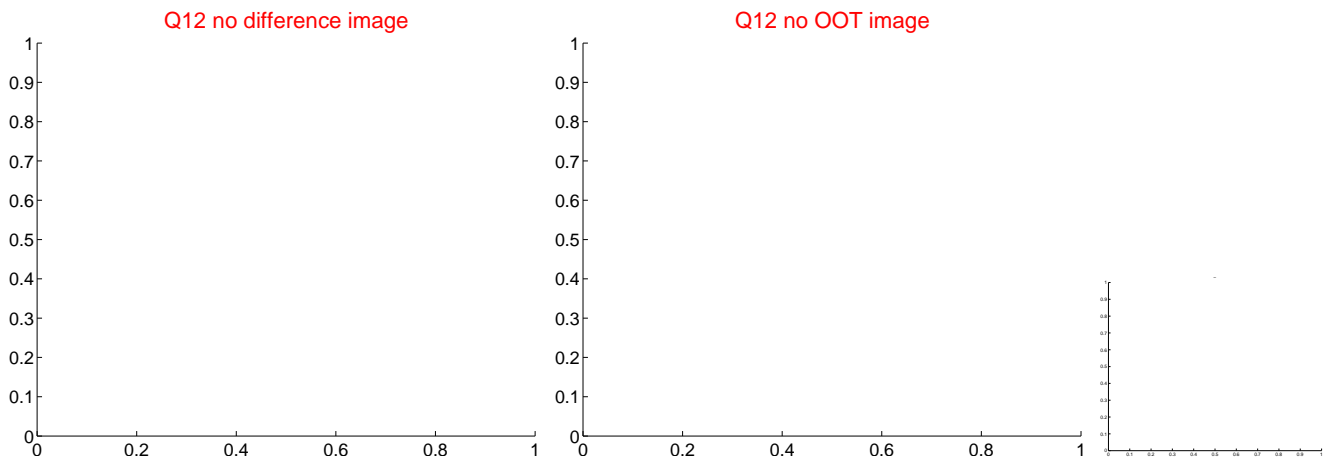
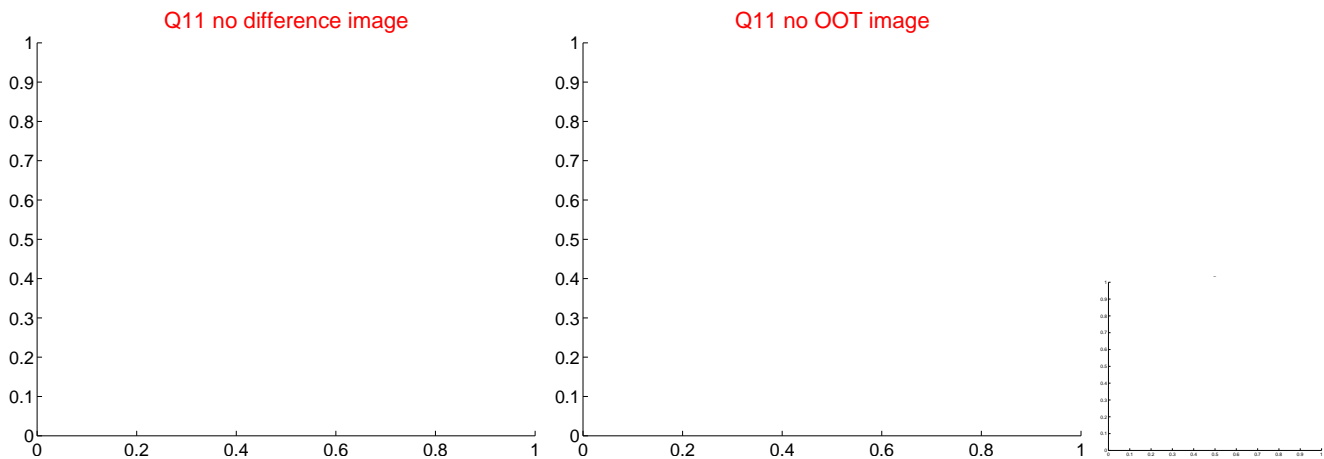
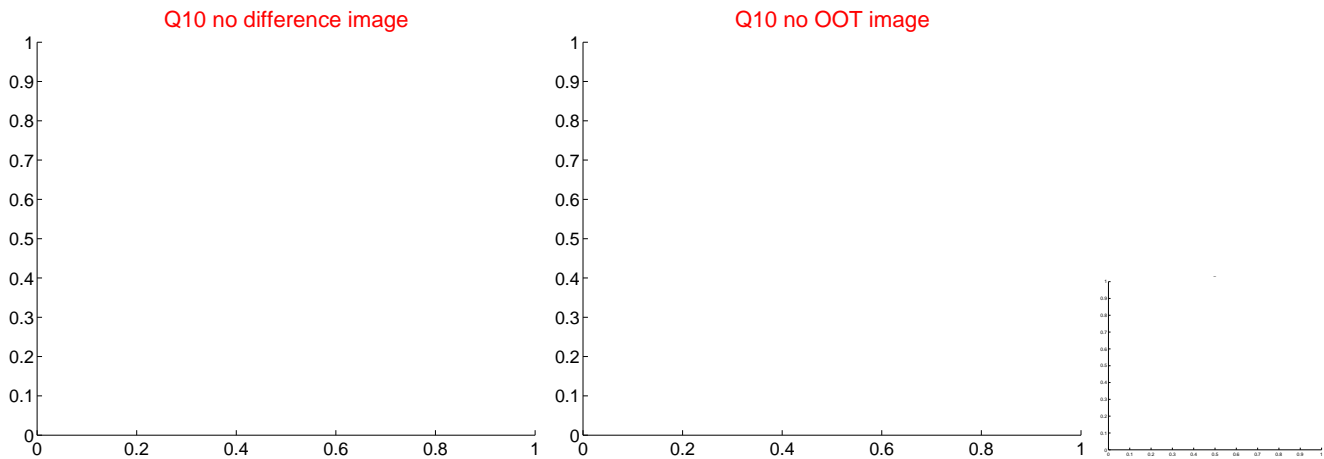
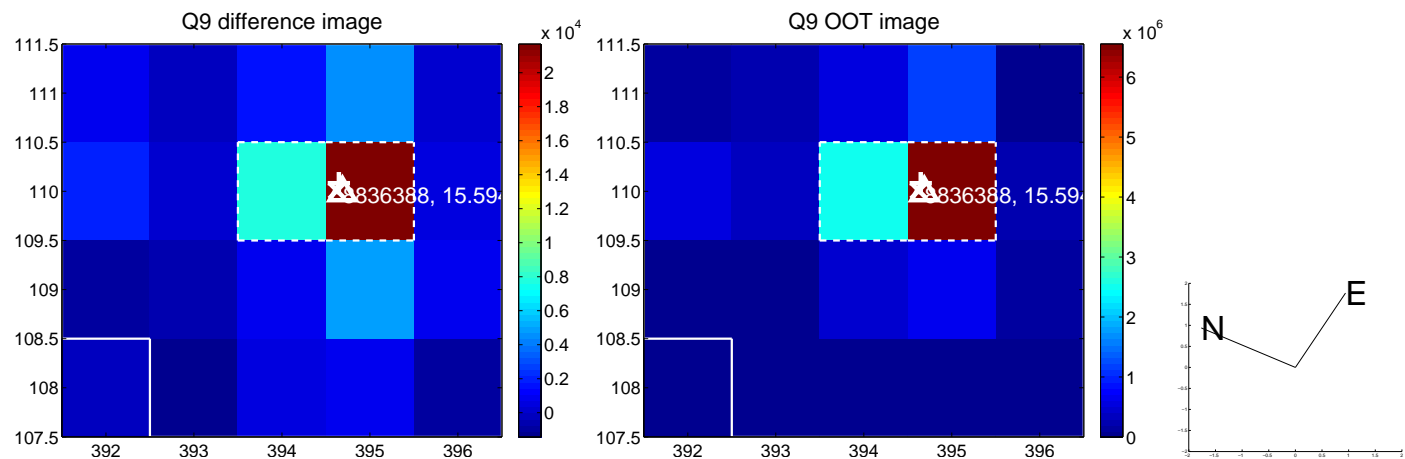
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



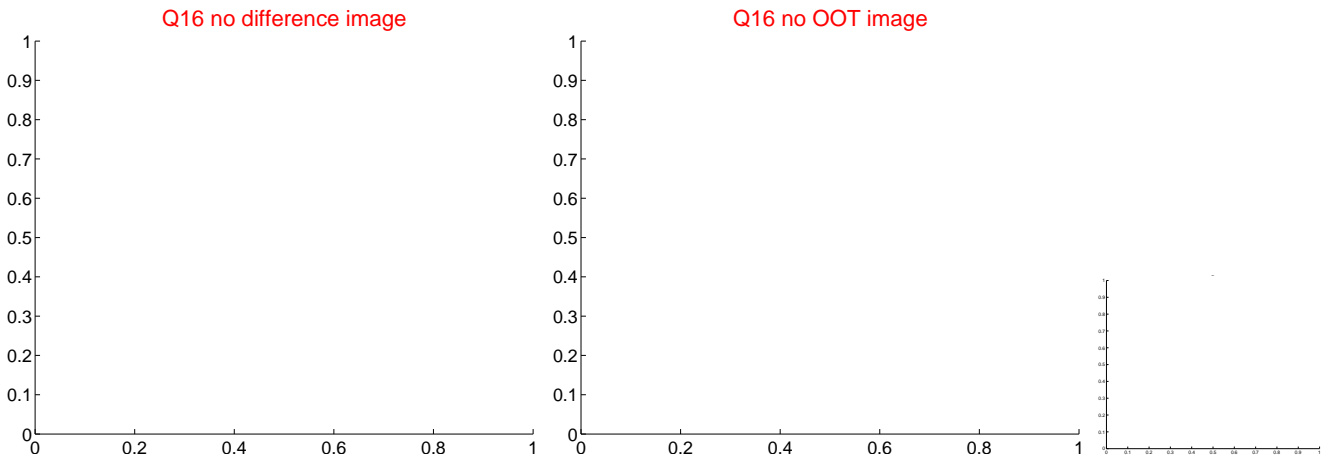
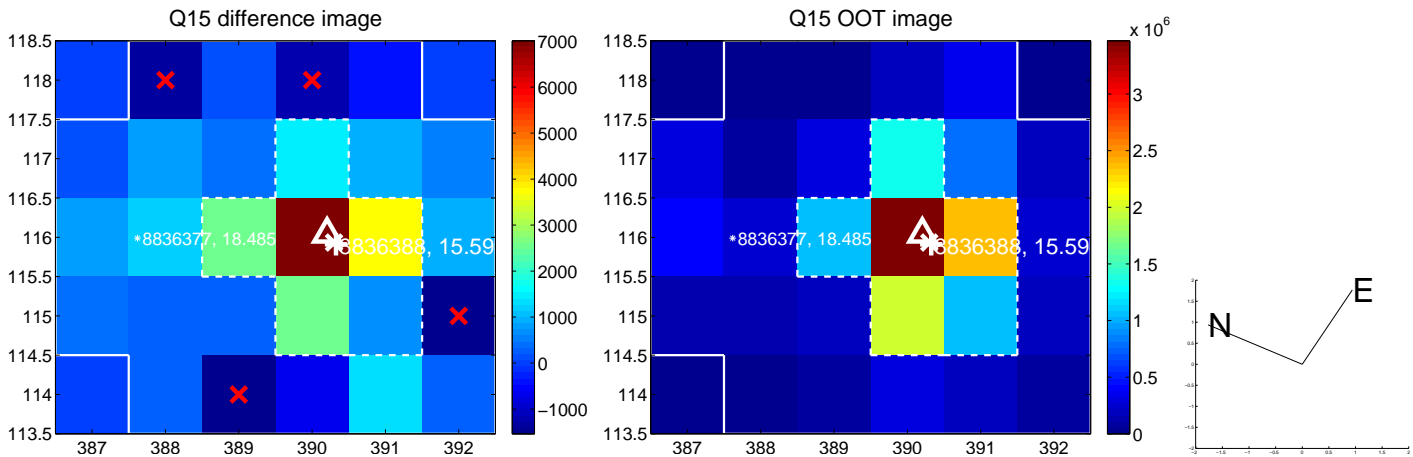
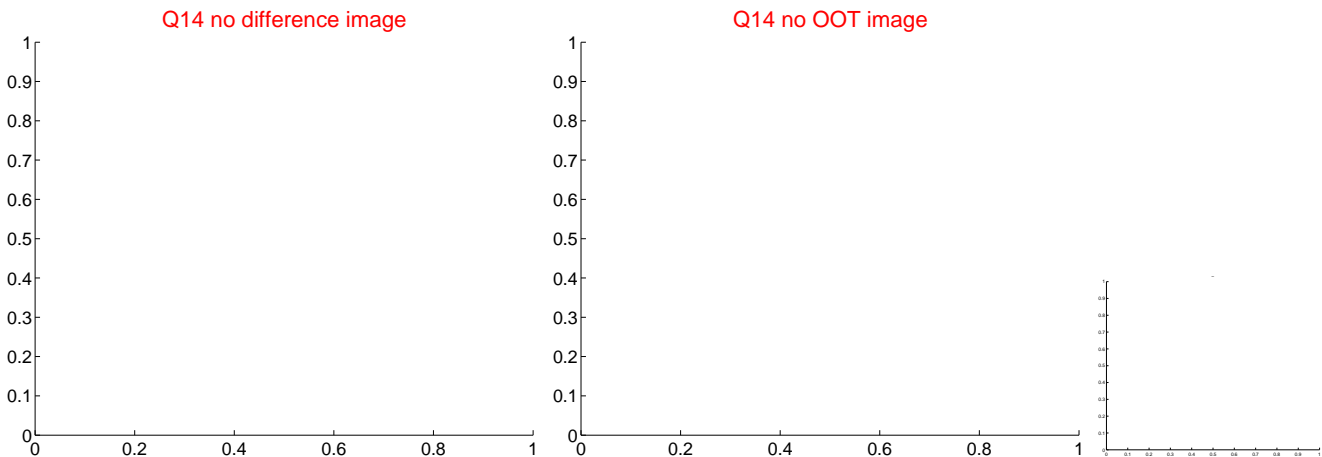
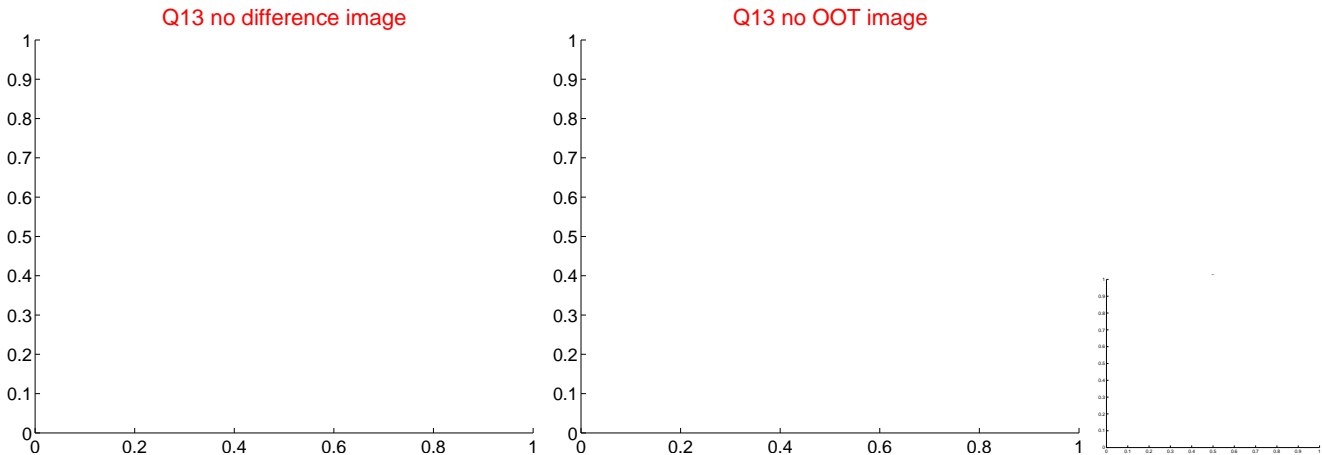
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



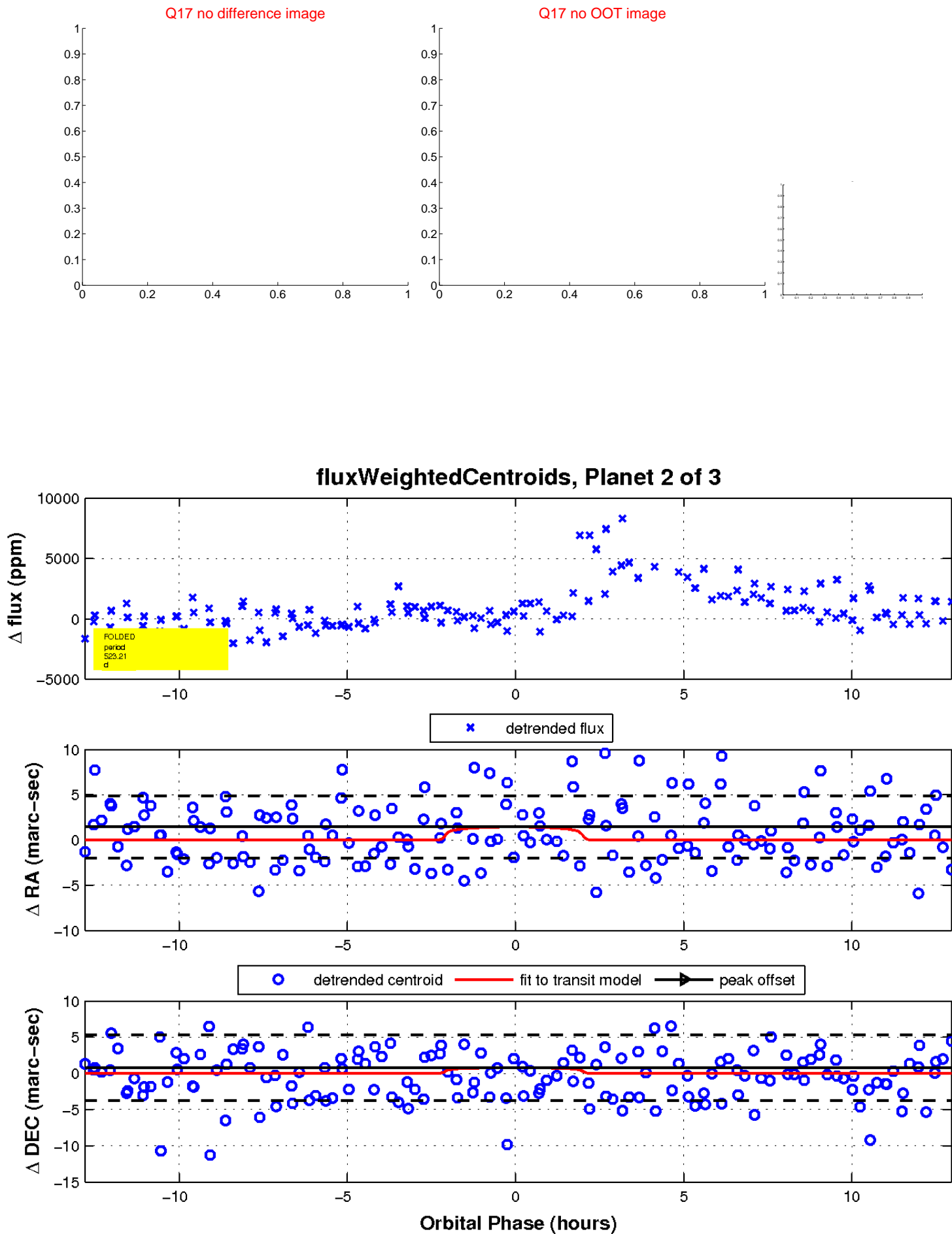
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

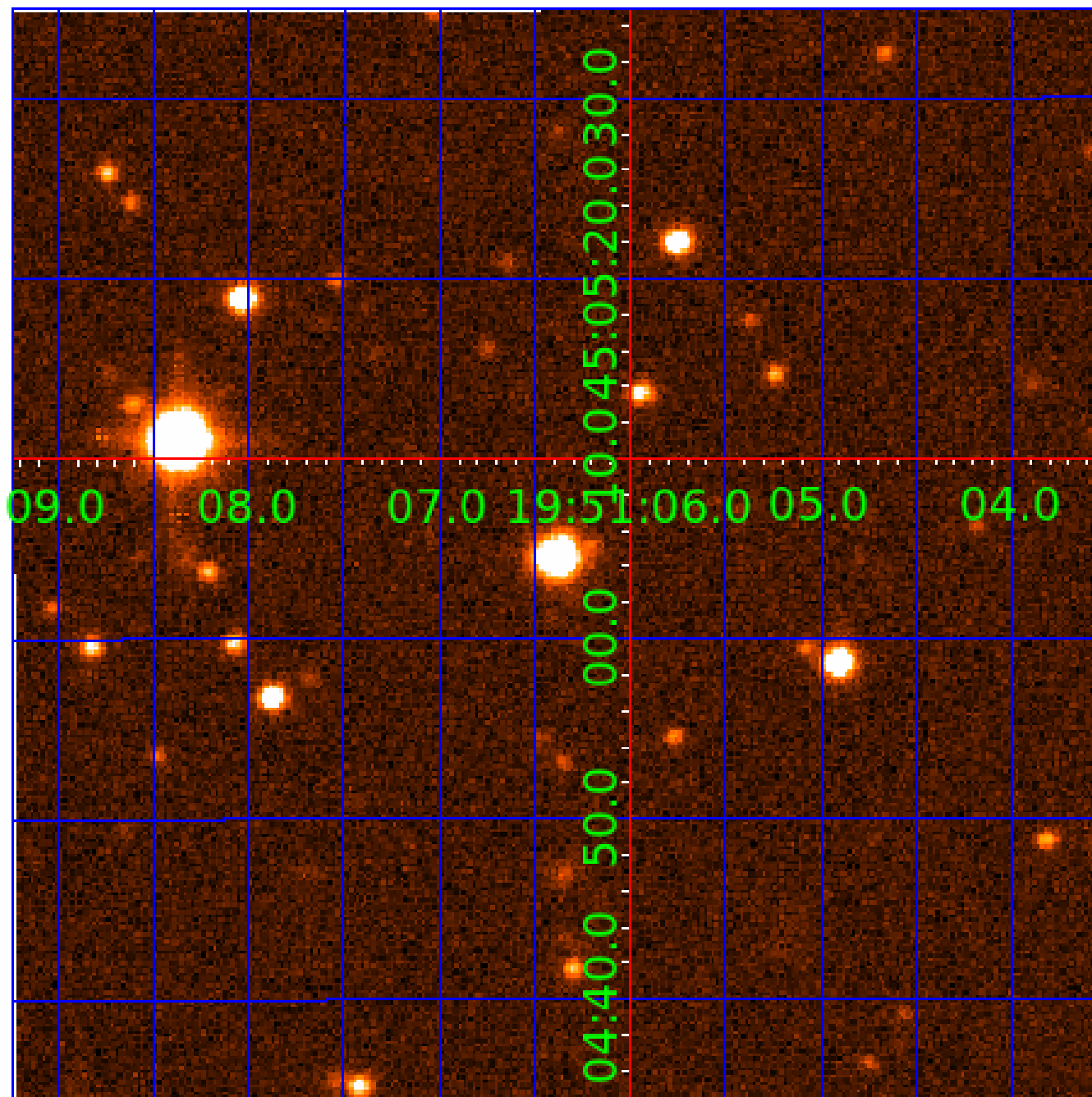


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008836388

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})
008836388-01	OBS	No	443.498925	377.853575	3649.3	8.427	13.7	10.4	0.33	3497	2.32	0.02
008836388-02	OBS	No	523.213209	333.343657	2491.4	4.325	12.3	8.3	0.33	3497	1.65	0.02
008836388-03	OBS	No	551.839444	335.812495	2782.9	8.496	11.7	8.3	0.33	3497	1.75	0.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008836388-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008836388-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008836388-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—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.

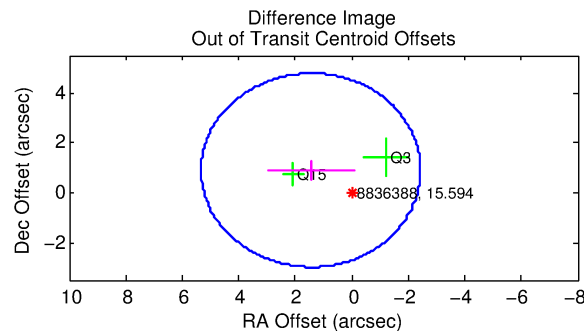
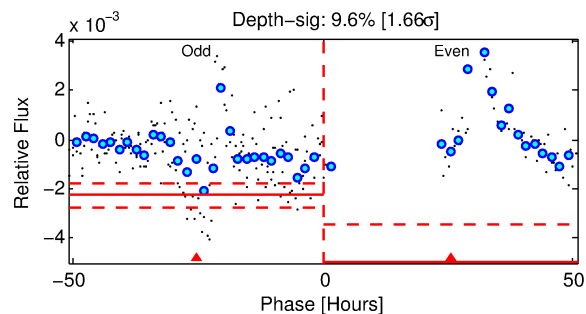
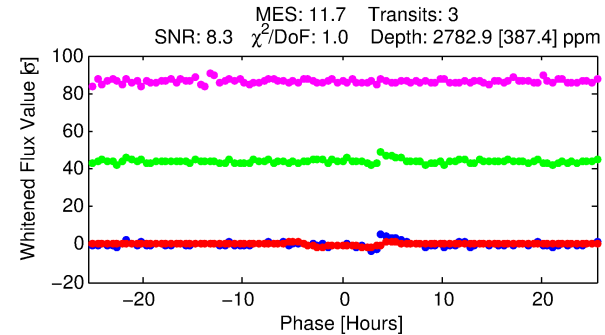
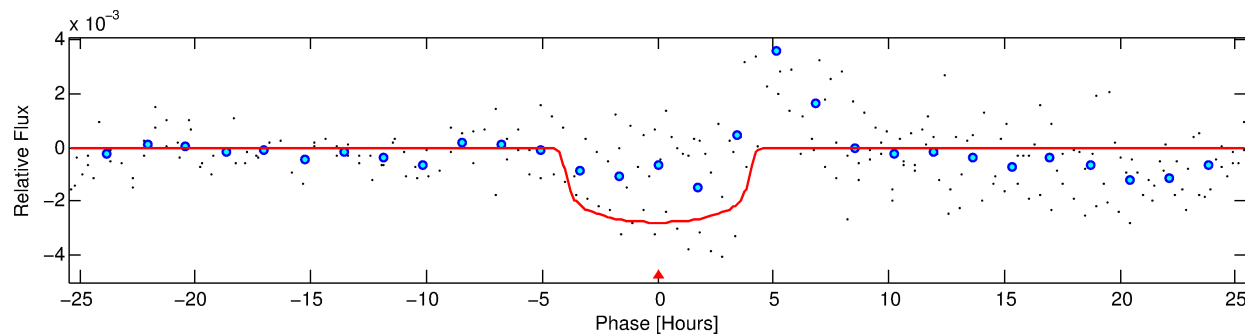
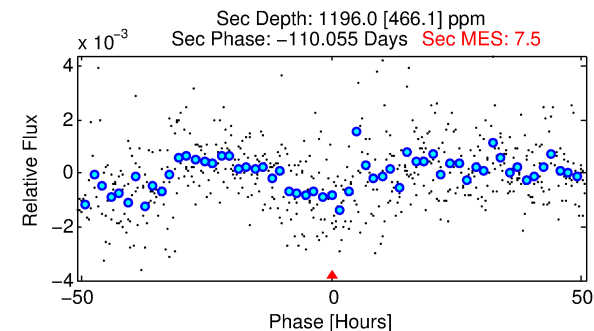
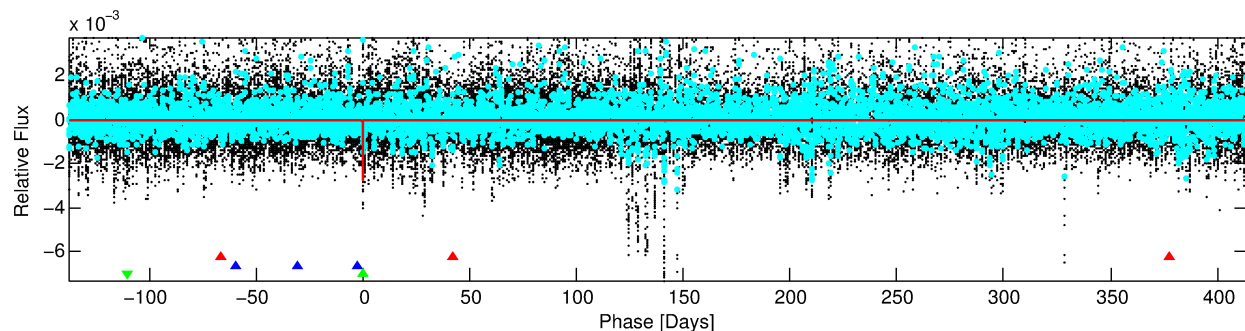
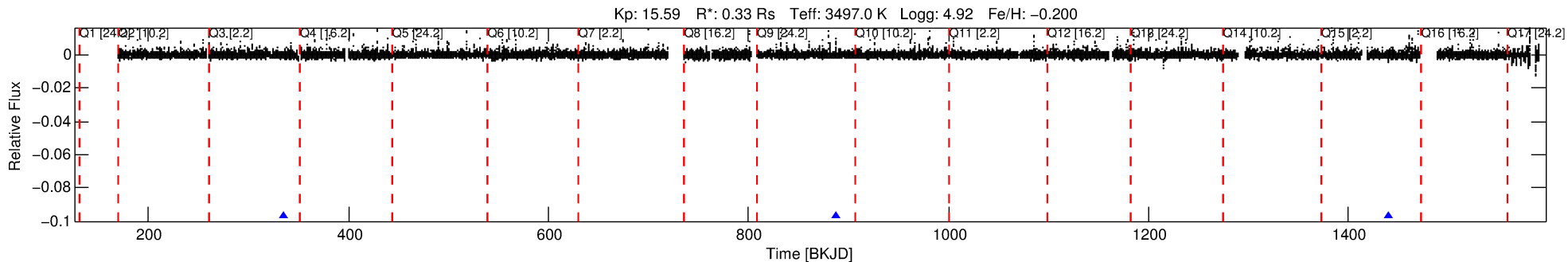
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008836388-03

No Significant Match Found

DV One-Page Summary

KIC: 8836388 Candidate: 3 of 3 Period: 551.839 d



DV Fit Results:

Period = 551.83944 [0.00603] d
Epoch = 335.8125 [0.0087] BKJD
Rp/R* = 0.0481 [0.0165]
a/R* = 509.42 [754.43]
b = 0.21 [6.70]
Seff = 0.02 [0.00]
Teq = 93 [4] K
Rp = 1.75 [0.66] Re
a = 0.9178 [0.1042] AU
Ag = 180145.32 [144449.07] [1.25σ]
Teffp = 2964 [588] K [4.88σ]

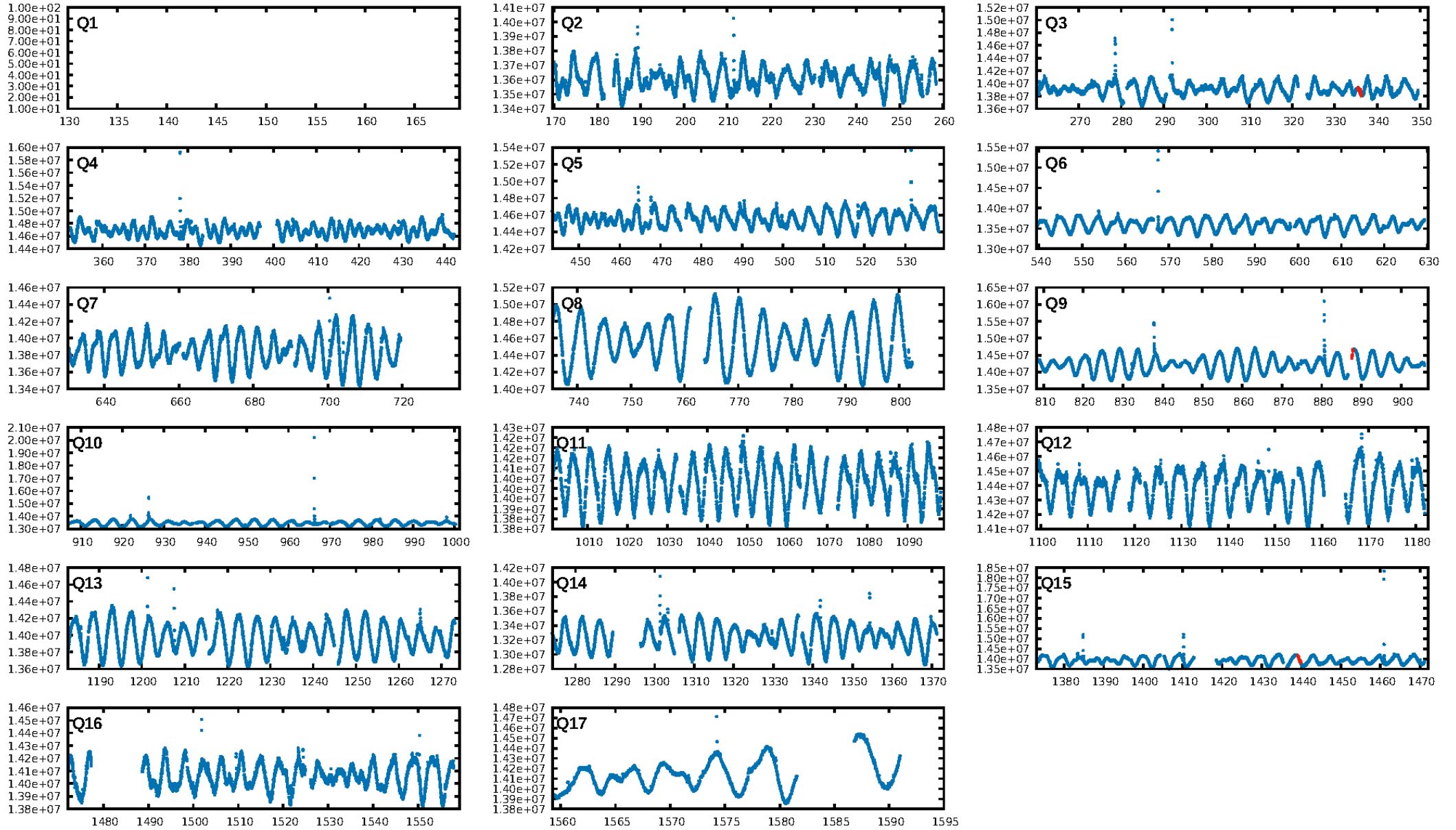
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [72.07σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 28.8%
ModelChiSquareGof-sig: 96.9%
Bootstrap-pfa: 1.44e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 17.85
Centroid-sig: 13.7%
Centroid-so: 0.818 arcsec [1.31σ]
OotOffset-rm: 1.701 arcsec [1.32σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-rm: 1.735 arcsec [1.33σ]
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

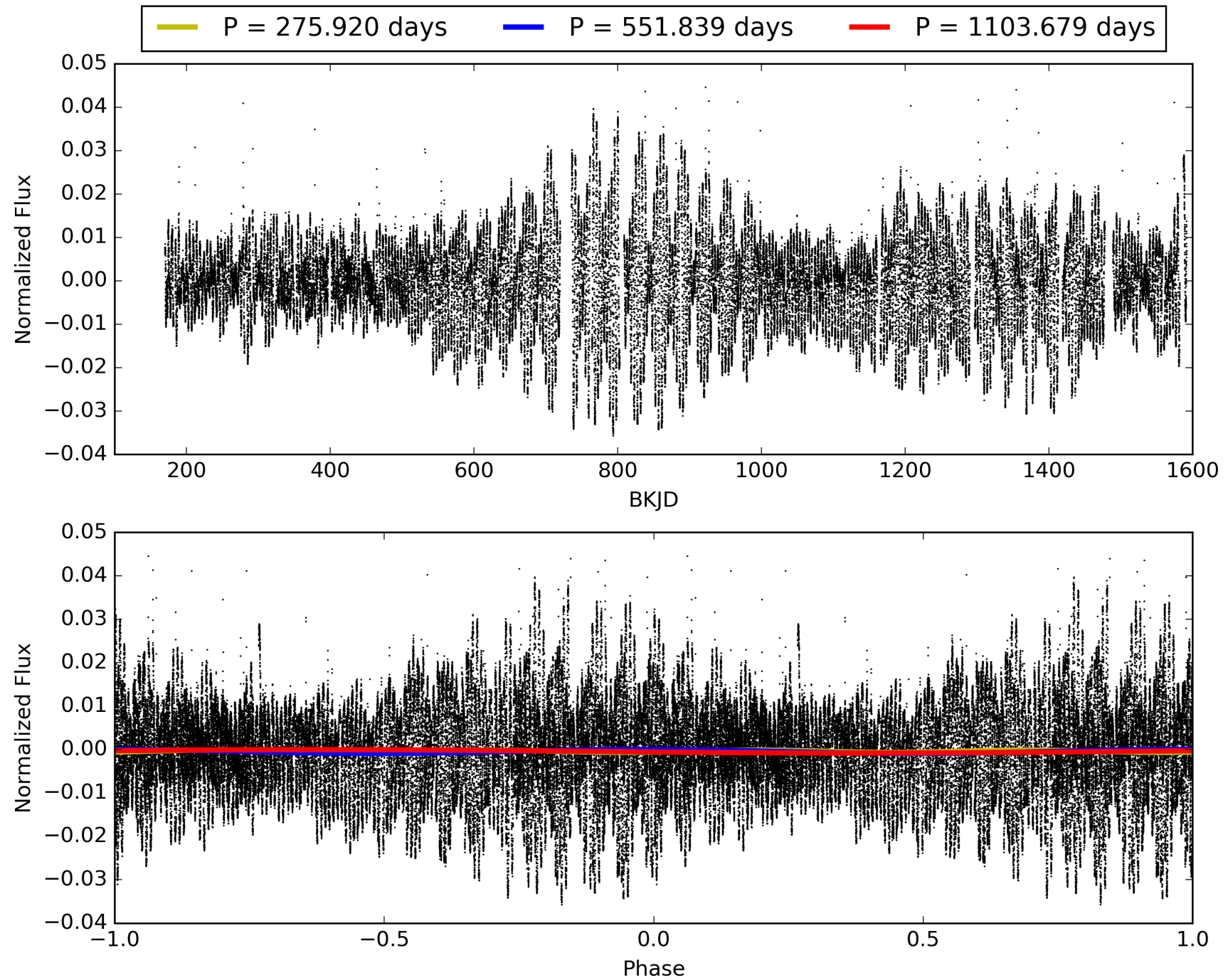
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:12:16 Z

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

TCE 008836388-03, PDC Light Curves

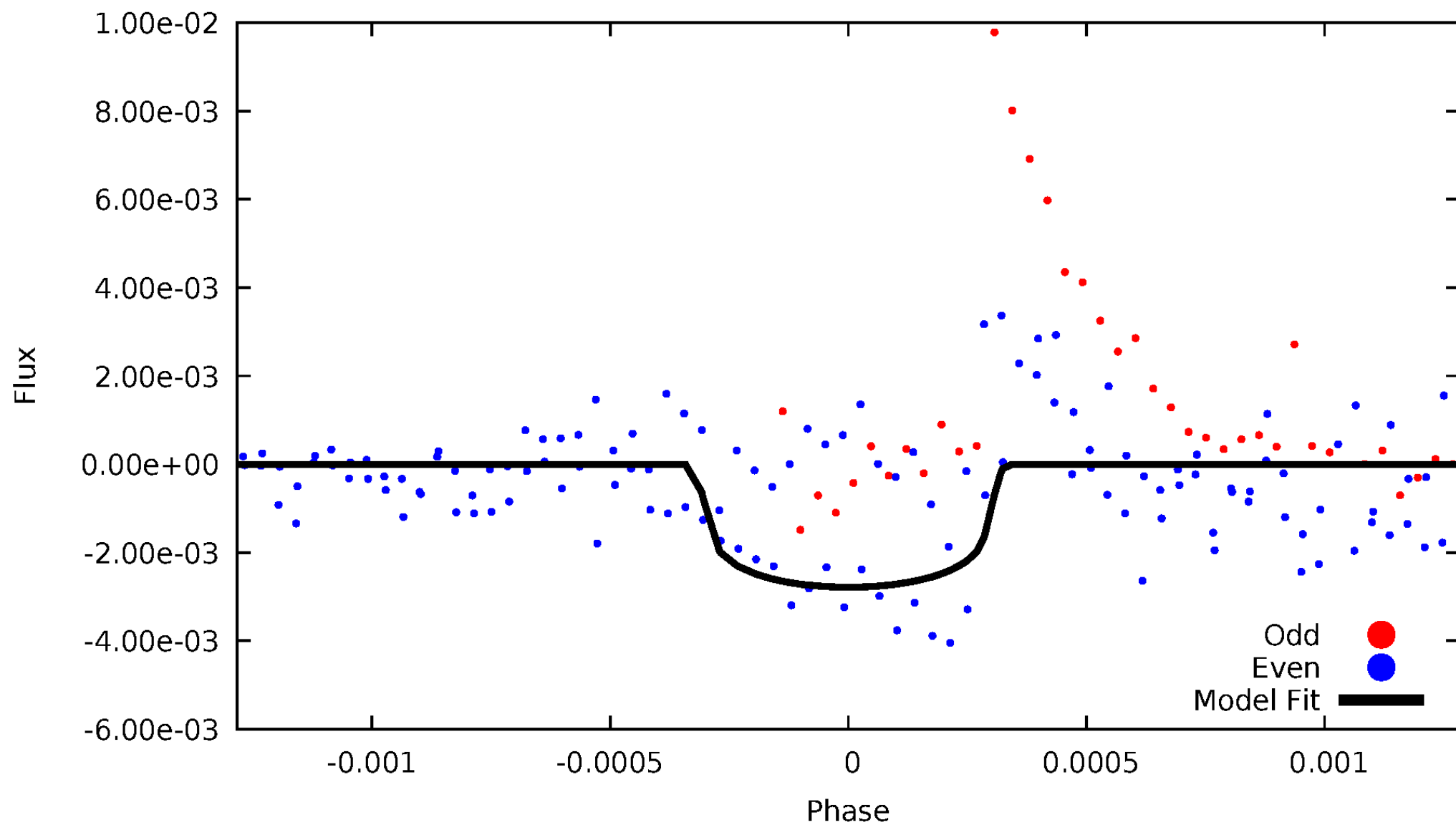


TCE 008836388-03



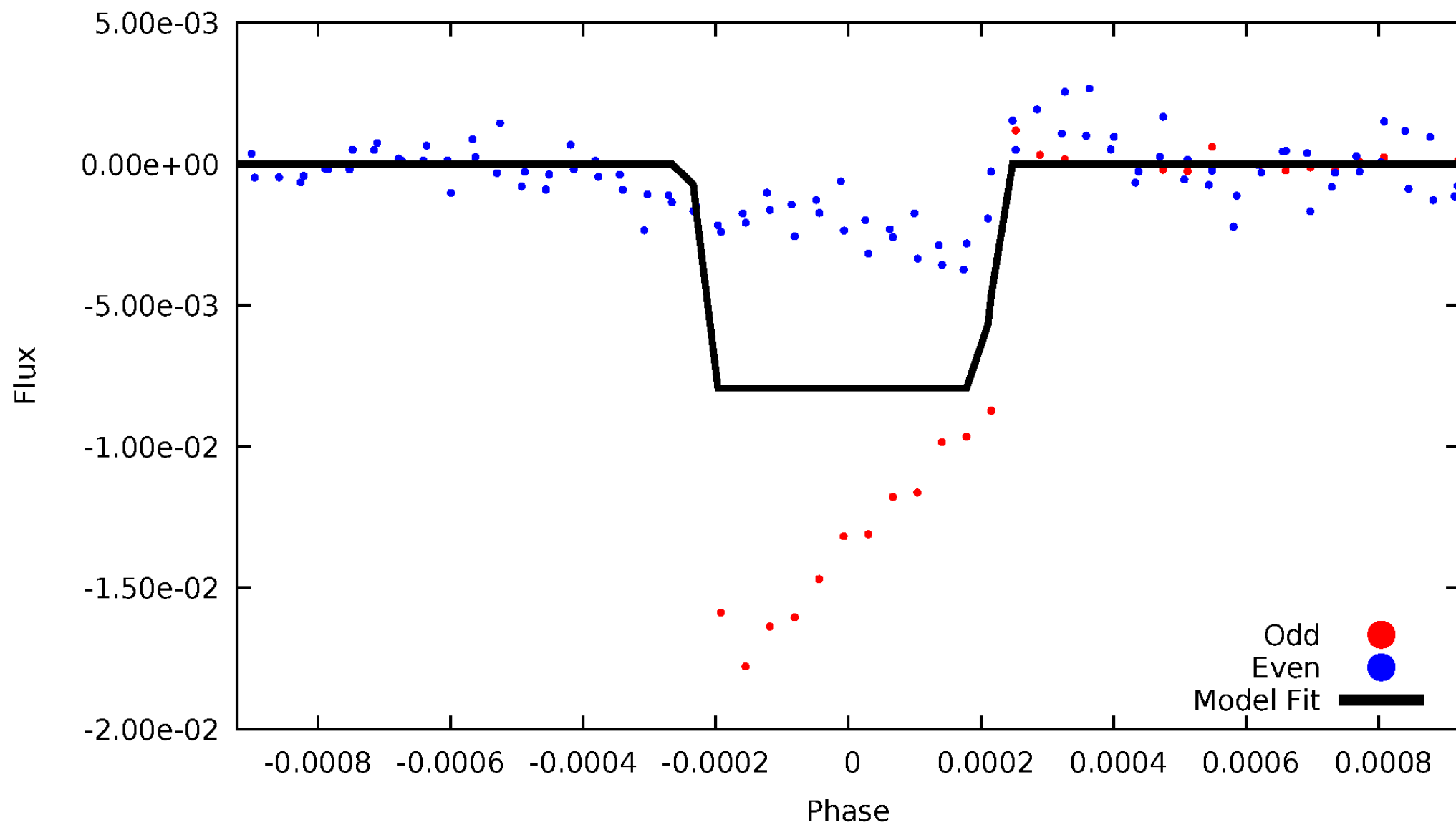
DV Odd/Even

TCE 008836388-03



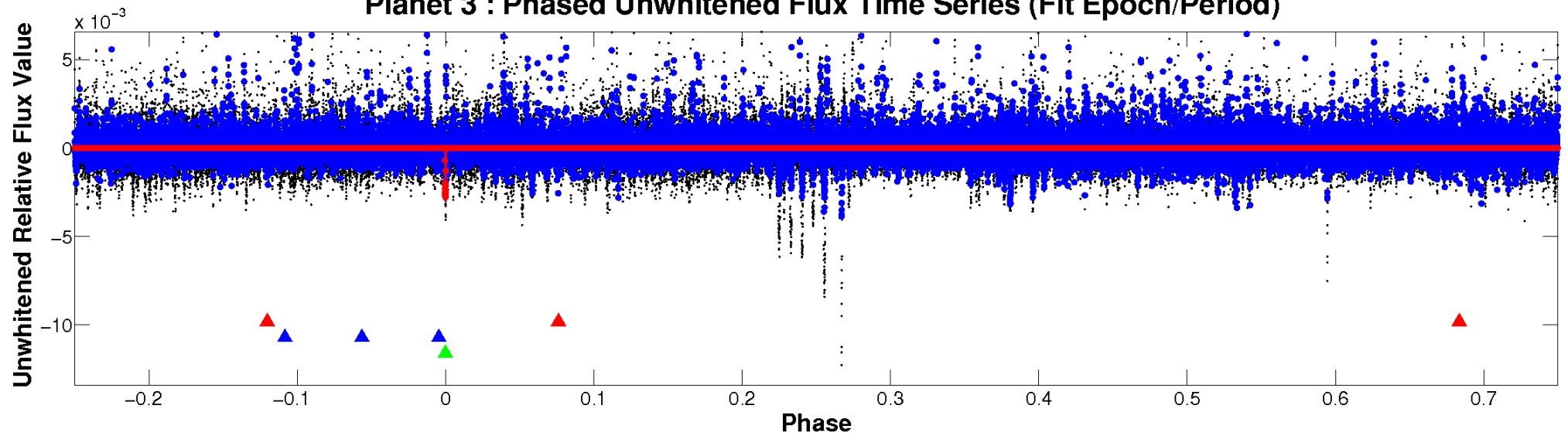
ALT Odd/Even

TCE 008836388-03

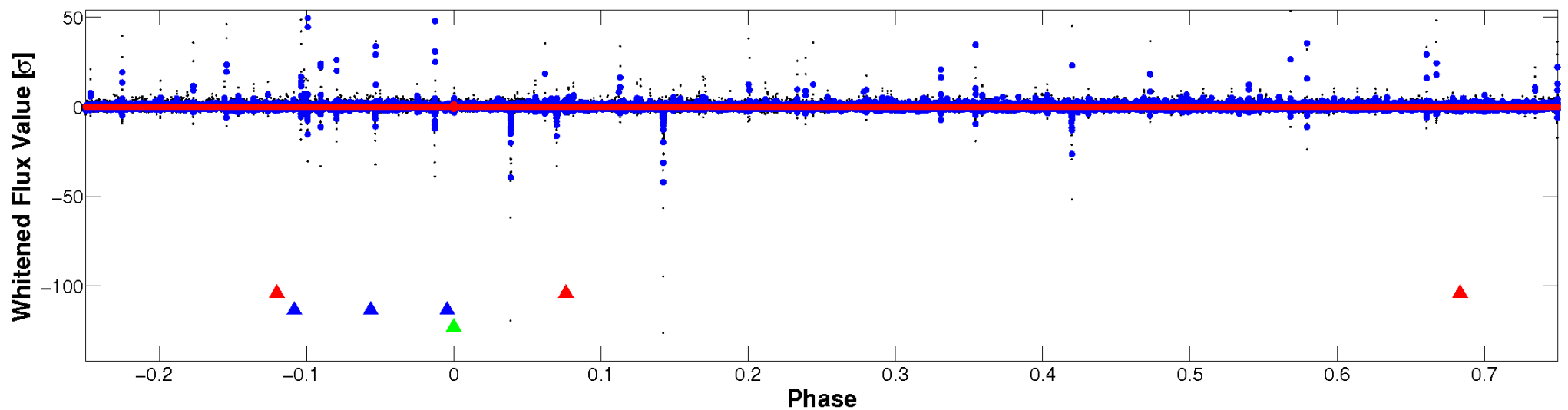


Non-Whitened Vs. Whitened Light Curve

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

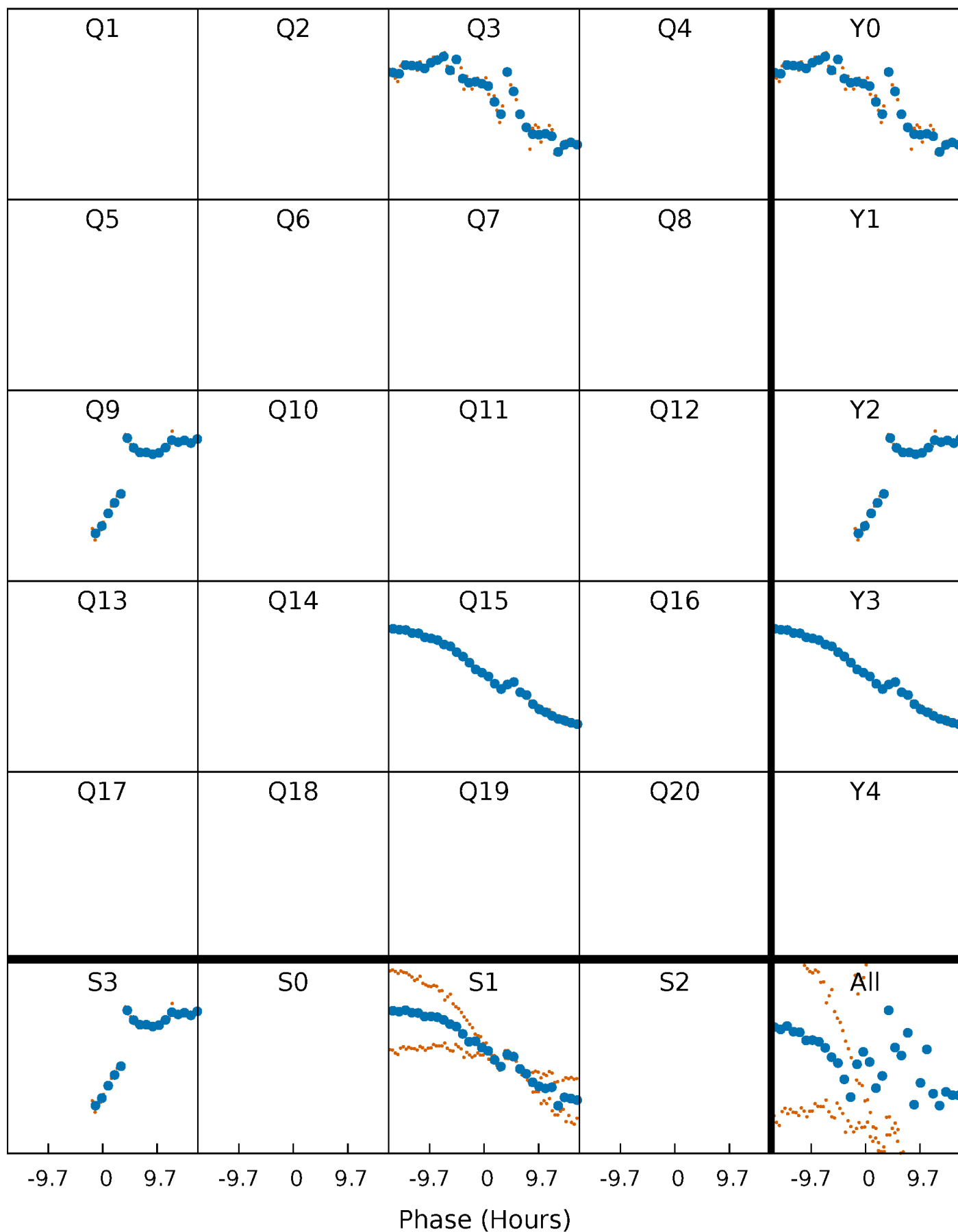


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



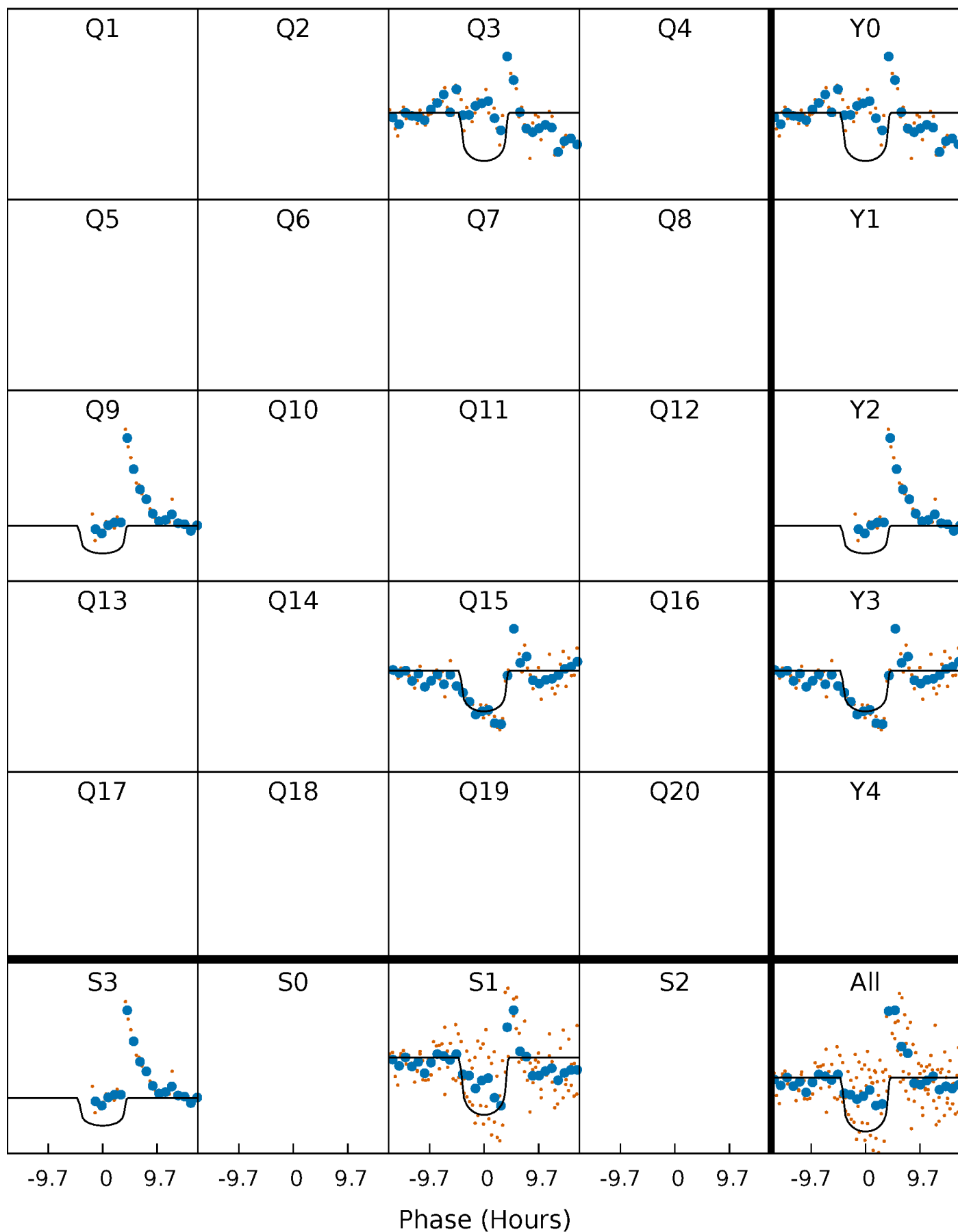
PDC Quarter-Phased Transit Curves

TCE 008836388-03 P=551.839444 Days $T_0=335.812495$ (BKJD)



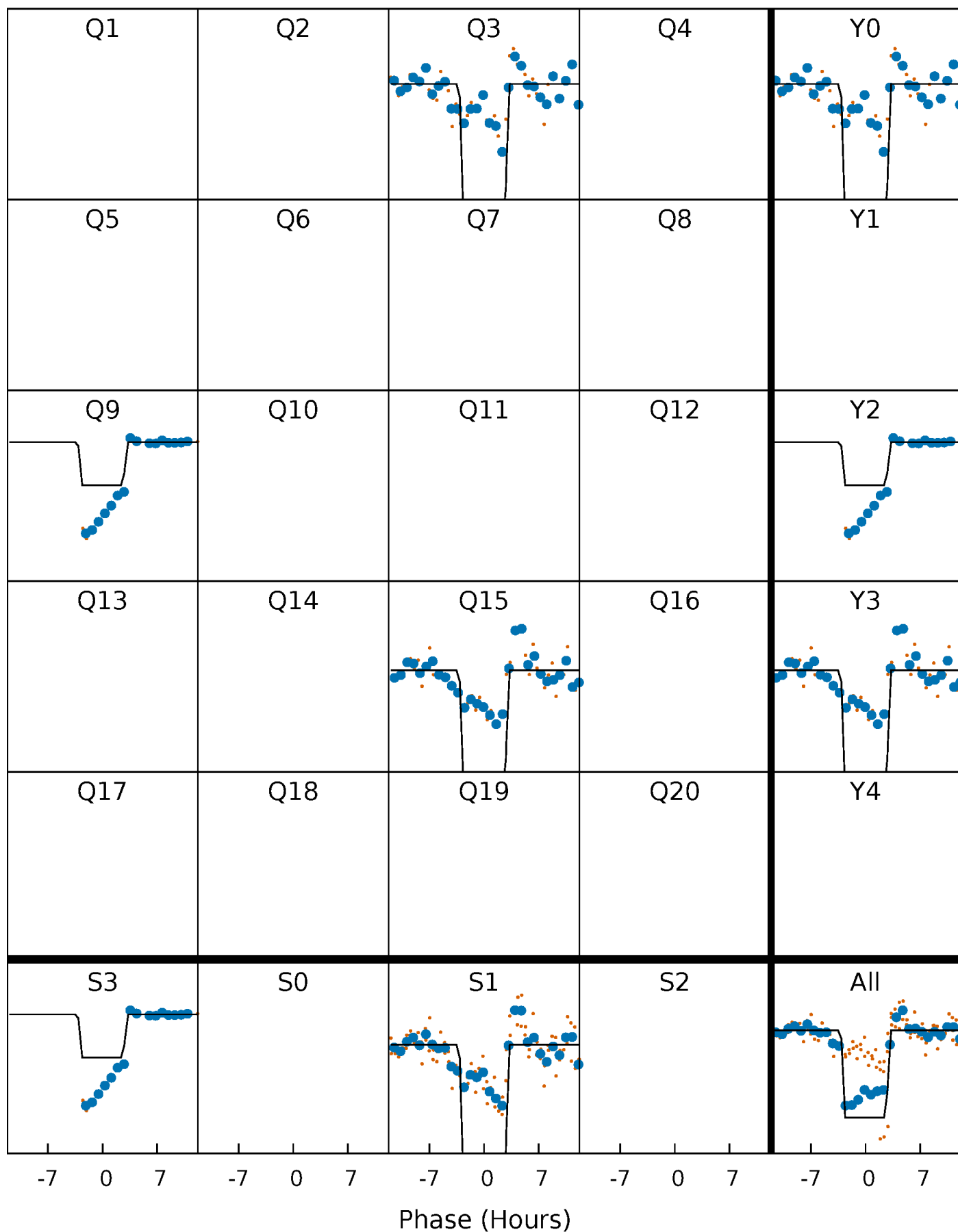
DV Quarter-Phased Transit Curves

TCE 008836388-03 $P=551.839444$ Days $T_0=335.812495$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

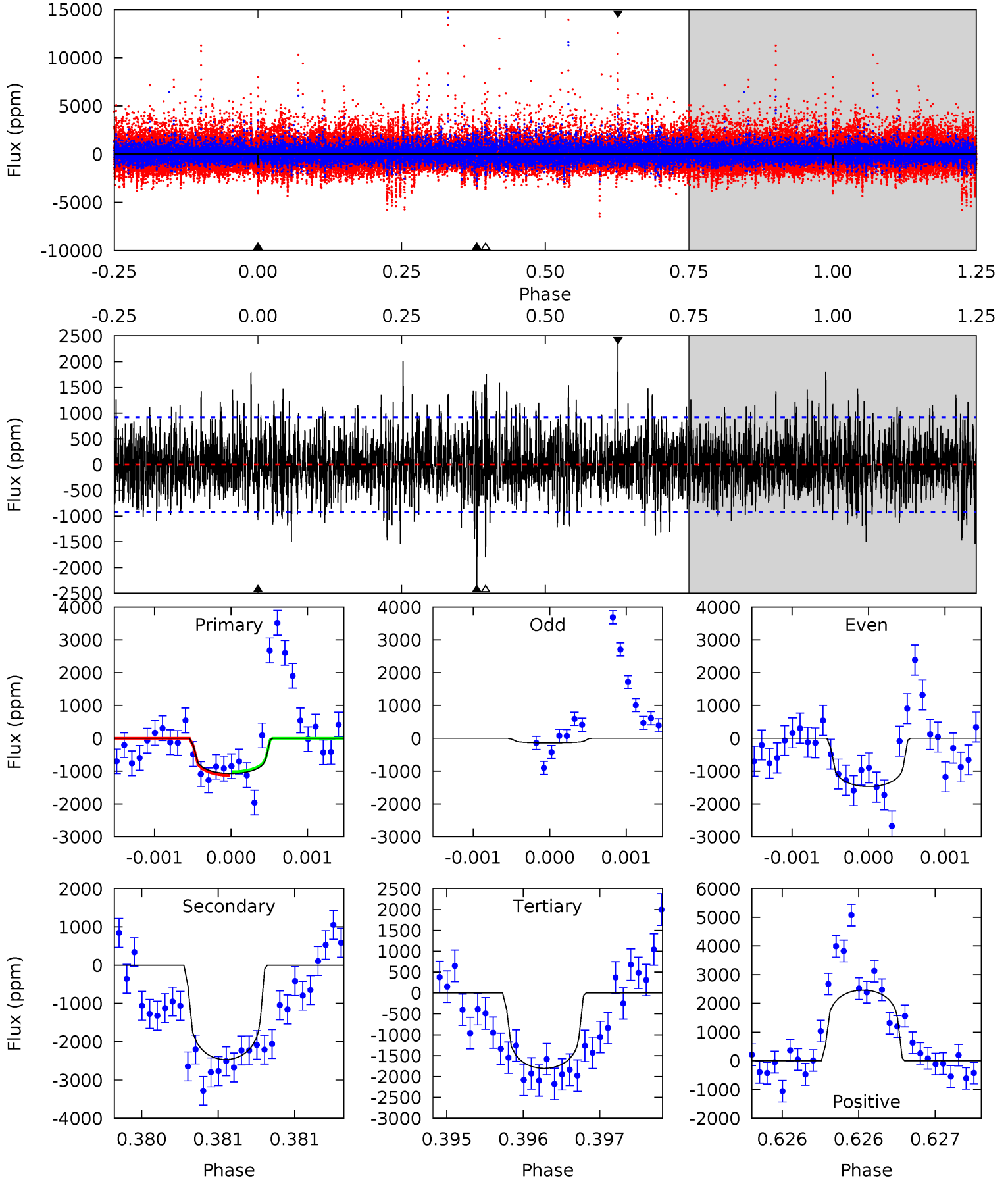
TCE 008836388-03 P=551.849155 Days $T_0=335.832868$ (BKJD)



DV Model-Shift Uniqueness Test

008836388-03, P = 551.839444 Days, E = 335.812495 Days

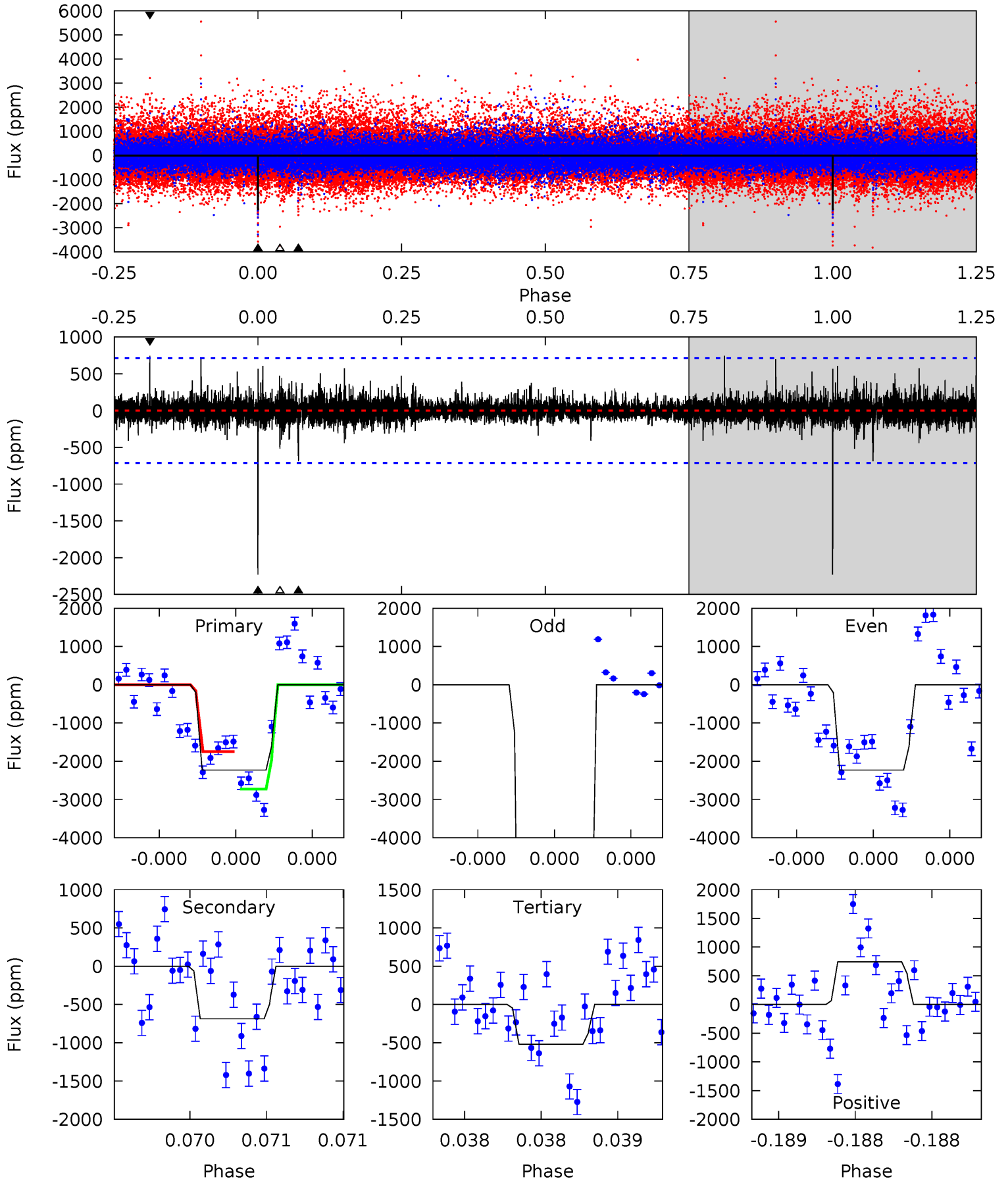
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.45	14.8	10.8	14.8	5.53	3.42	2.69	-4.38	-8.35	3.97	0.00	2.18	-6.68	0.50	0.33



Alt Model-Shift Uniqueness Test

008836388-03, P = 551.849155 Days, E = 335.832868 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.5	5.39	4.07	5.84	5.59	3.51	0.71	13.4	11.7	1.32	-0.45	50.6	2.40	0.25	3.78



Stellar Parameters For KIC 008836388

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3497^{+62}_{-69}	$4.920^{+0.060}_{-0.045}$	$-0.200^{+0.100}_{-0.100}$	$0.334^{+0.042}_{-0.052}$	$0.339^{+0.049}_{-0.060}$	$12.780^{+4.488}_{-2.318}$
	+2%/-2%	+1%/-1%	+50%/-50%	+13%/-16%	+14%/-18%	+35%/-18%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 008836388-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2465 ± 166	$1.77^{+0.60}_{-0.63}$	130^{+4}_{-4}	3533^{+553}_{-323}	$377173^{+525064}_{-172529}$
Alt.	-687 ± 127	$3.21^{+0.61}_{-0.69}$	130^{+4}_{-4}	2501^{+133}_{-127}	31600^{+19098}_{-11186}

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

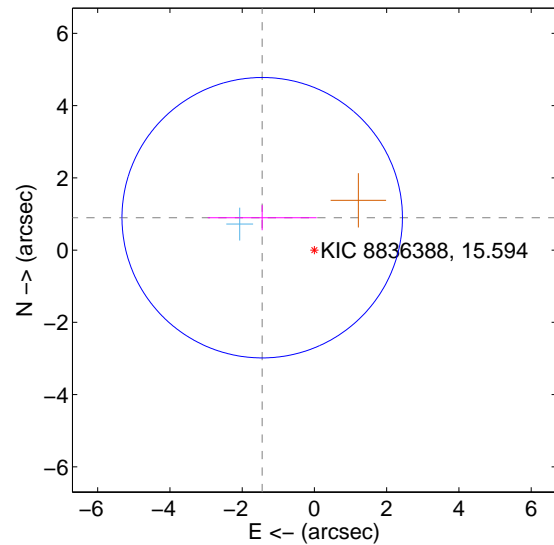
Supplemental centroid analysis for 008836388-03. Kepler magnitude: 15.59. Transit SNR 8.26

There are 1 quarters with good PRF difference image offsets

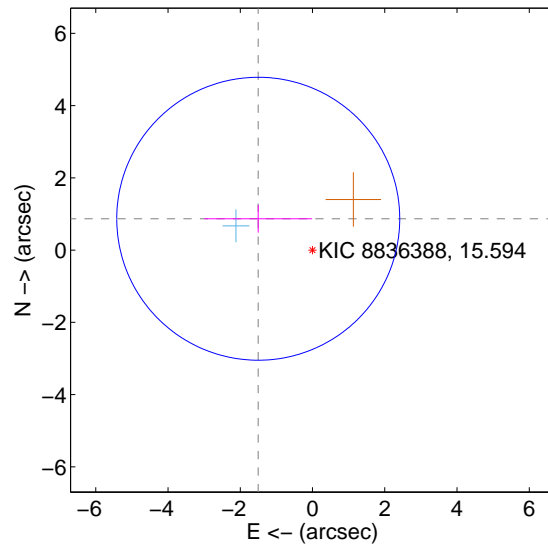
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.701 ± 1.294	1.32	1.446 ± 1.507	0.897 ± 0.347
PRF-fit source offset from KIC position	1.735 ± 1.305	1.33	1.503 ± 1.491	0.868 ± 0.383
photometric centroid source offset	0.82 ± 0.62	1.31	0.56 ± 0.61	0.59 ± 0.64

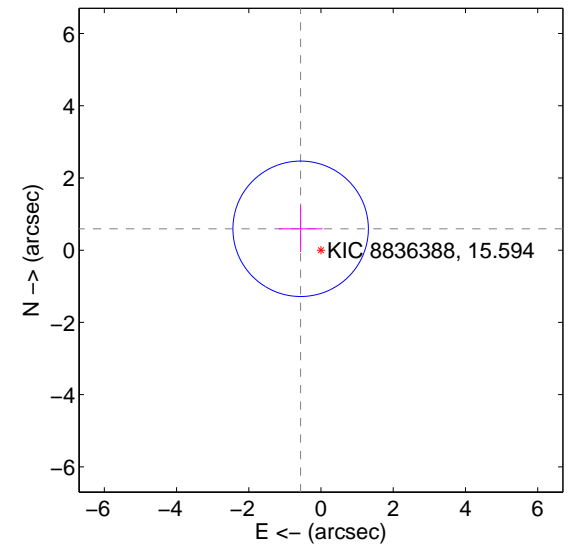
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

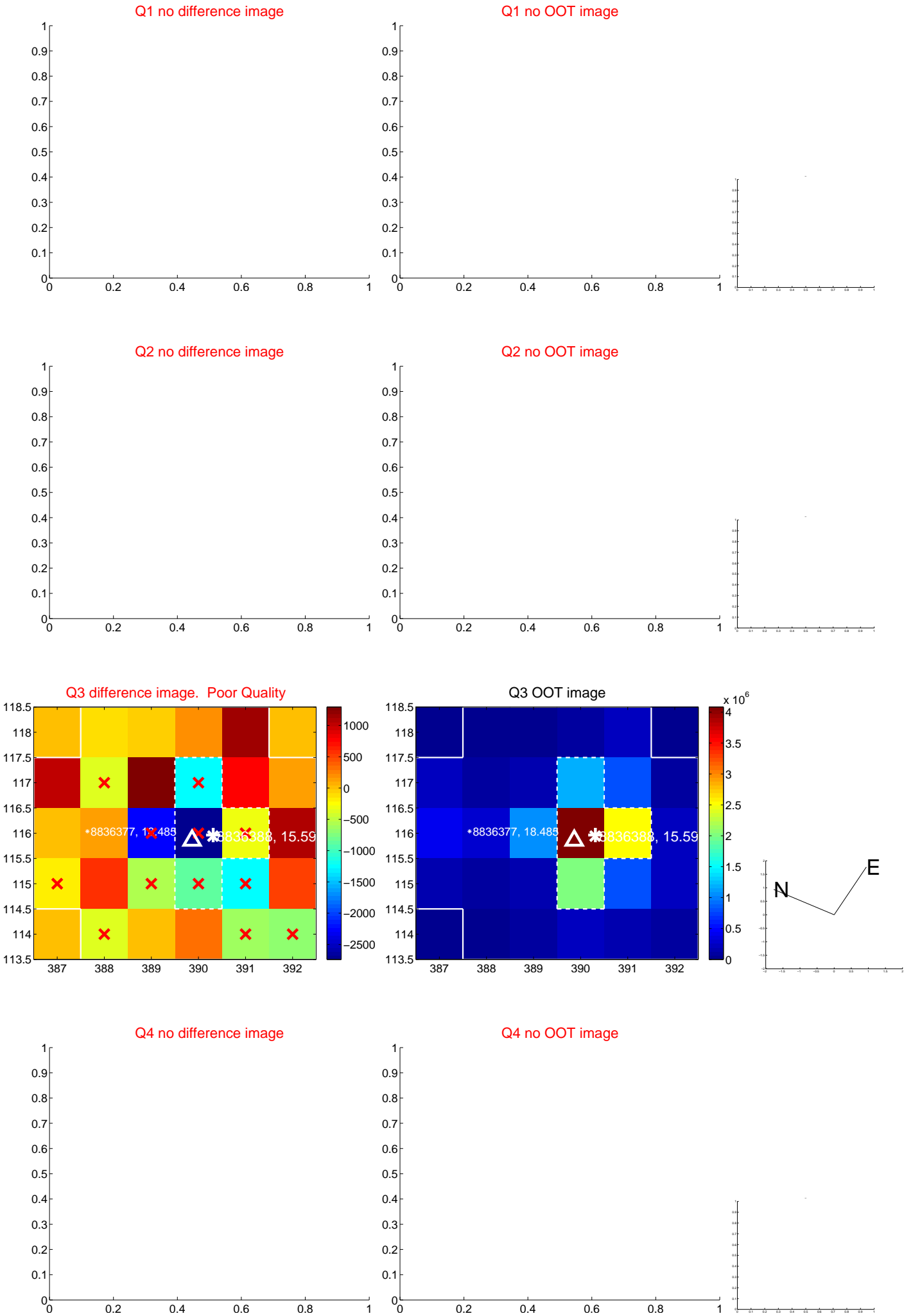


offset from photometric centroids



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.



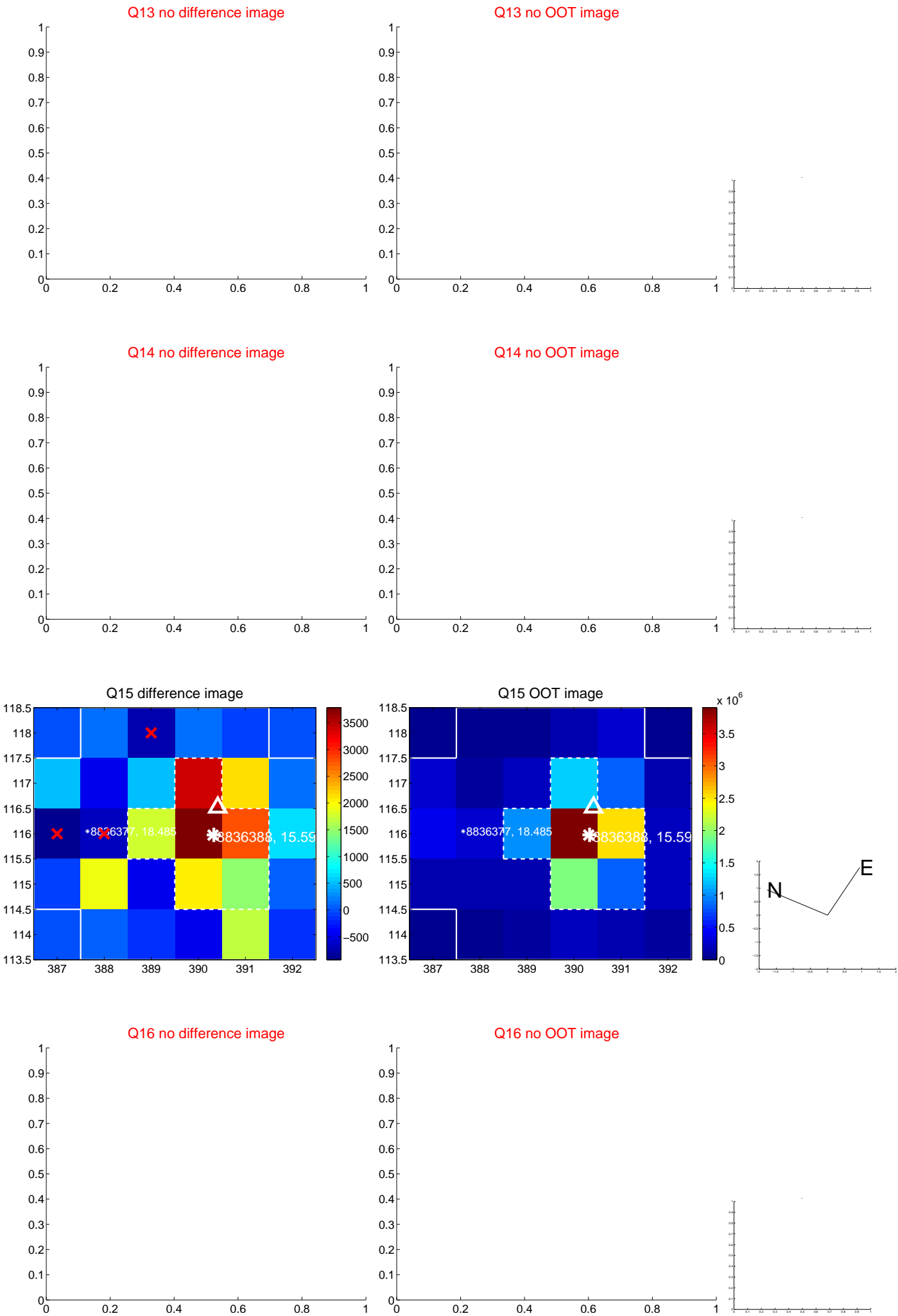
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



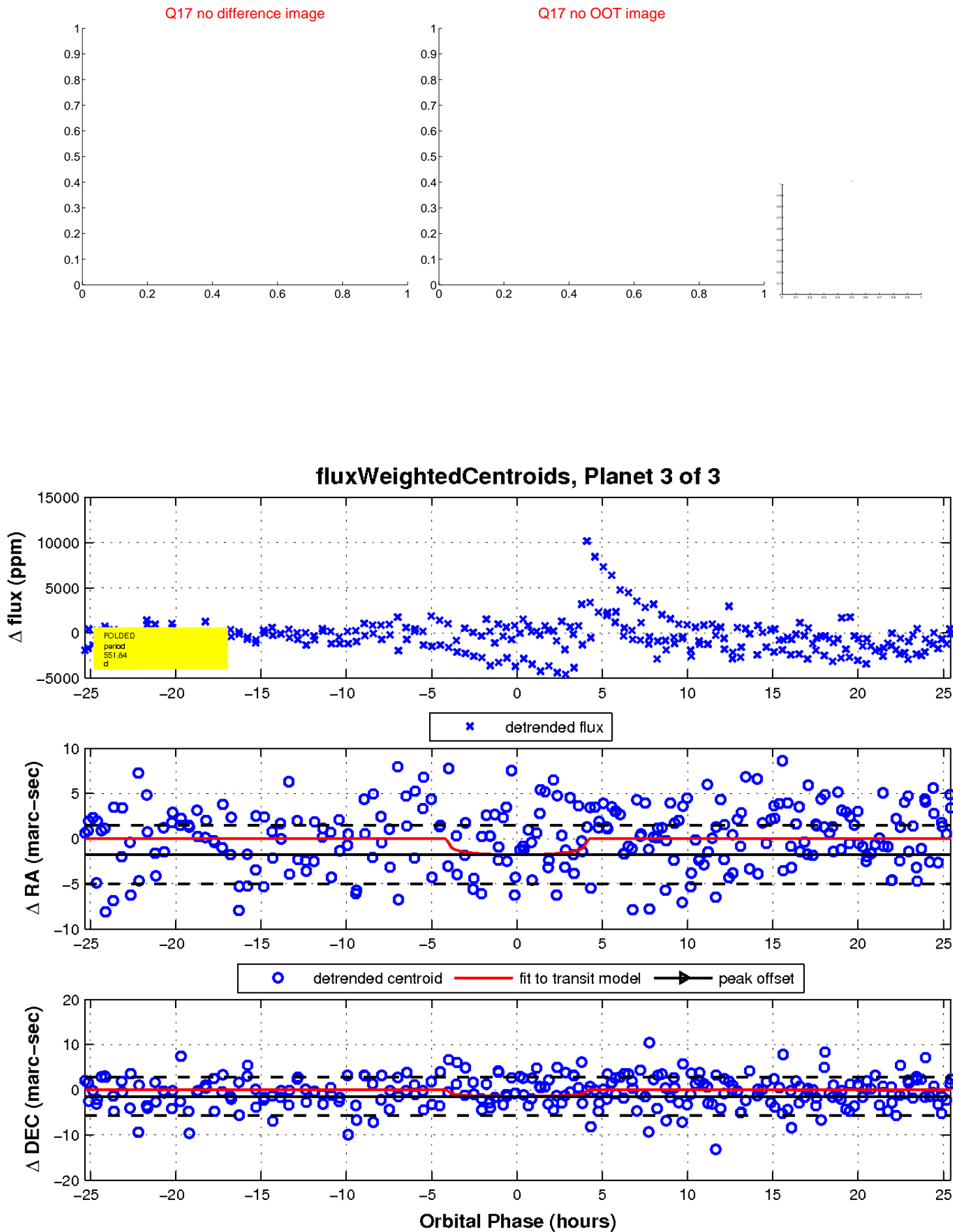
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

