

KIC 010745663

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})
010745663-01	OBS	No	220.435832	193.699321	937.0	3.344	16.4	6.4	0.96	6014	3.05	2.05
010745663-02	OBS	No	501.209558	355.507097	1168.8	4.421	15.5	5.7	0.96	6014	3.30	0.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010745663-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_FEW_DIFFS
010745663-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—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.

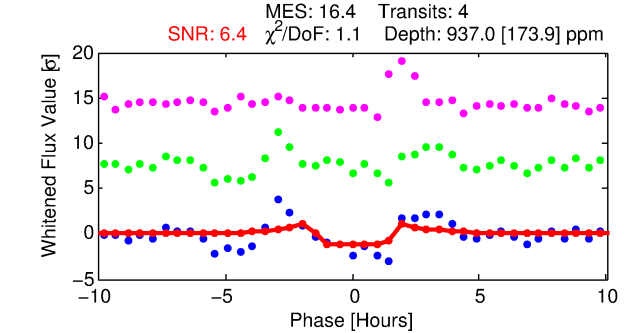
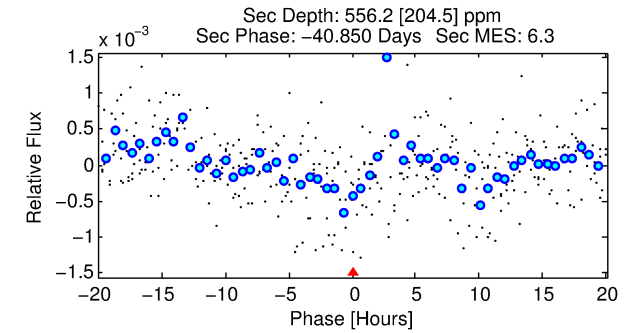
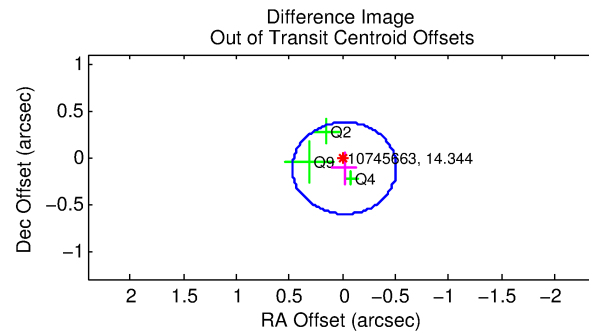
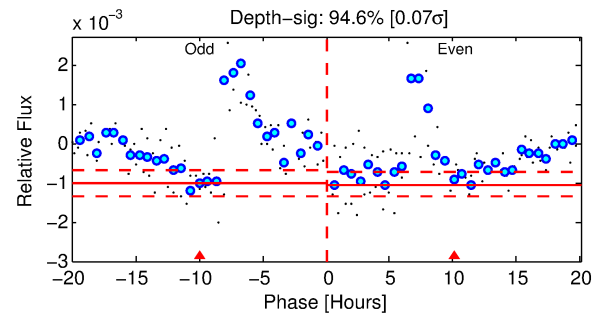
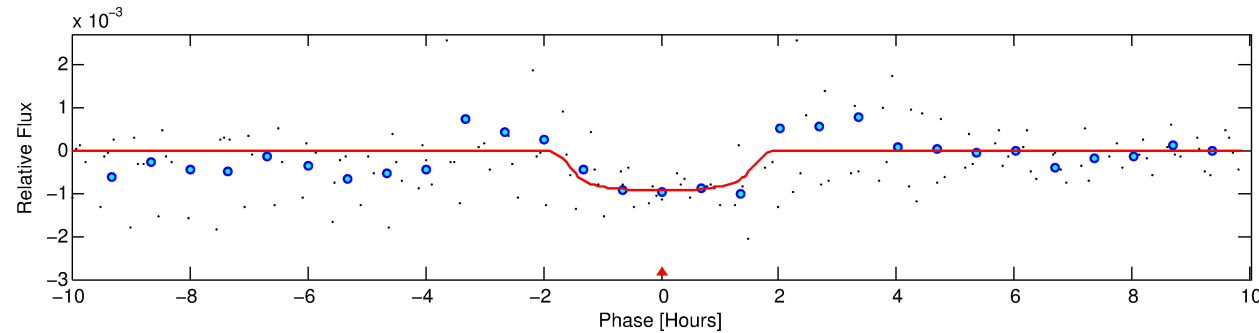
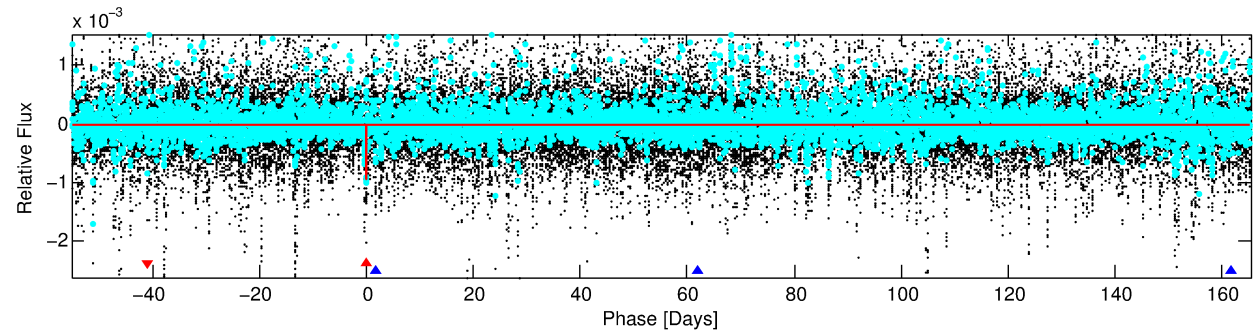
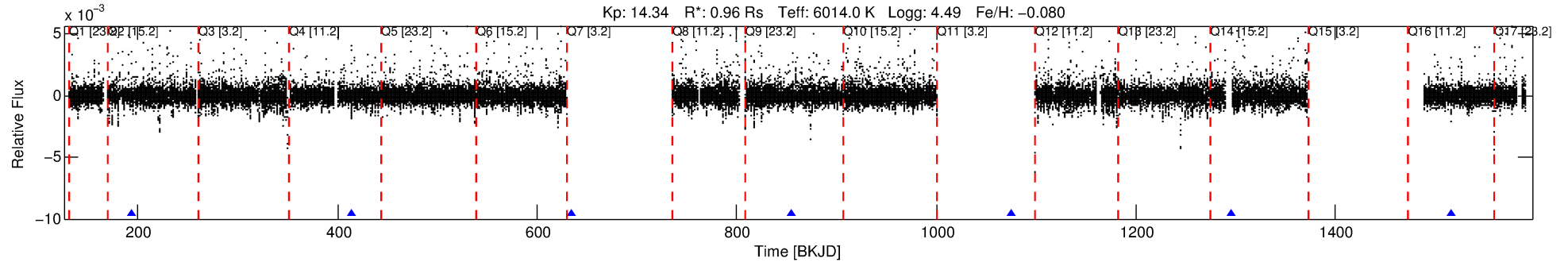
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010745663-01

No Significant Match Found

DV One-Page Summary

KIC: 10745663 Candidate: 1 of 2 Period: 220.436 d



DV Fit Results:

Period = 220.43583 [0.00174] d
Epoch = 193.6993 [0.0073] BKJD
Rp/R* = 0.0292 [0.0528]
a/R* = 426.21 [3644.18]
b = 0.59 [9.66]
Seff = 2.05 [0.83]
Teq = 305 [31] K
Rp = 3.05 [5.60] Re
a = 0.7247 [0.1904] AU
Ag = 17232.71 [62964.44] [0.27σ]
Teffp = 5404 [4912] K [1.04σ]

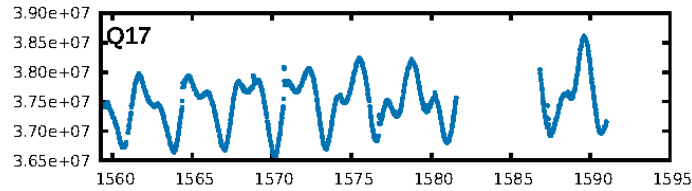
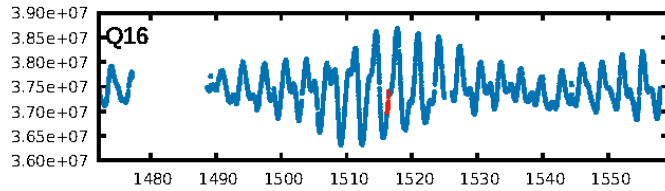
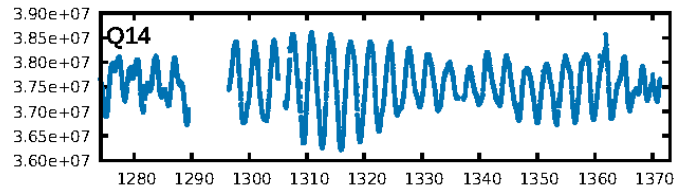
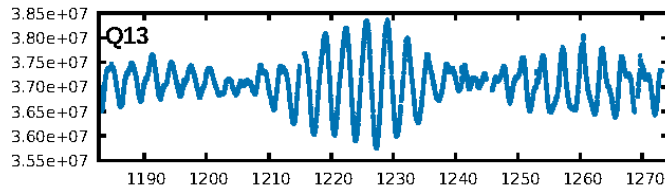
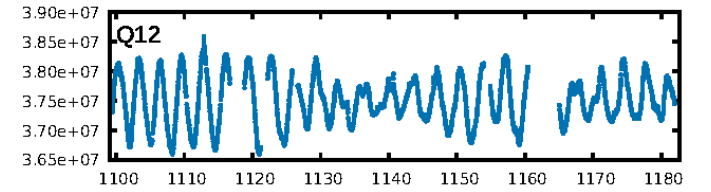
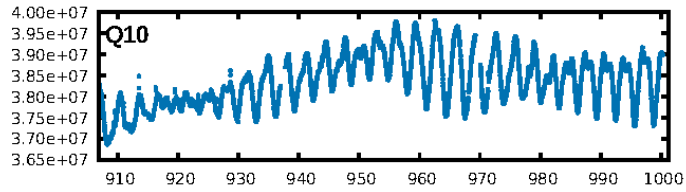
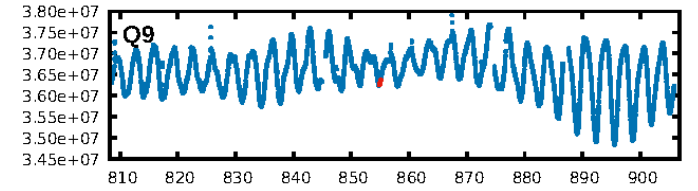
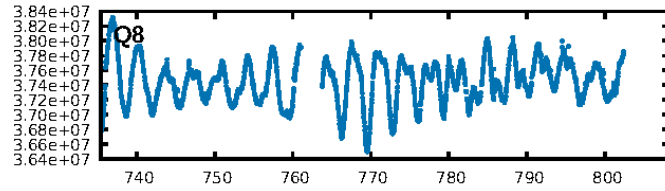
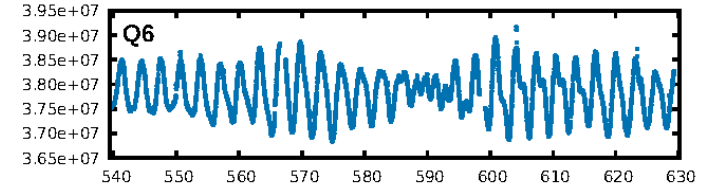
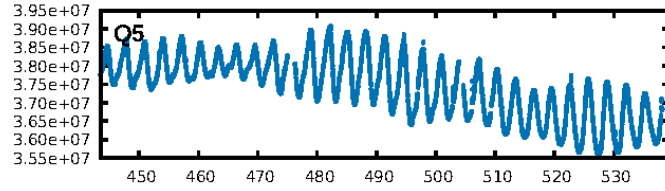
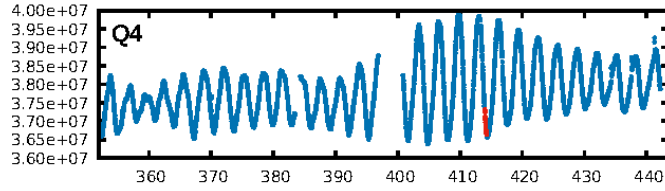
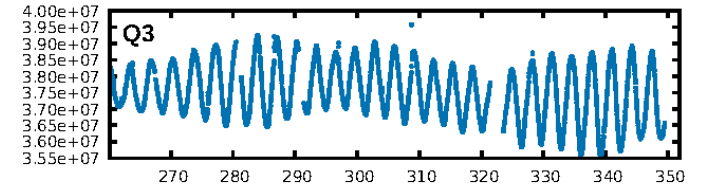
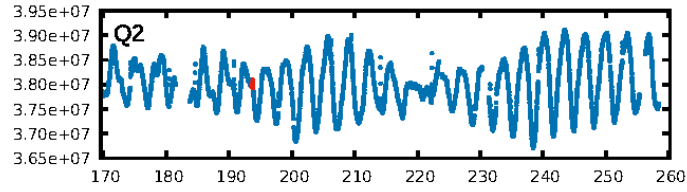
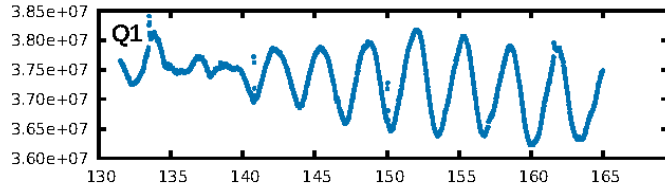
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1215.66σ]
ModelChiSquare2-sig: 19.4%
ModelChiSquareGof-sig: 92.8%
Bootstrap-pfa: 2.31e-16
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.8192
Centroid-sig: 81.6%
Centroid-so: 0.386 arcsec [0.33σ]
OotOffset-rm: 0.118 arcsec [0.72σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-rm: 0.095 arcsec [0.72σ]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

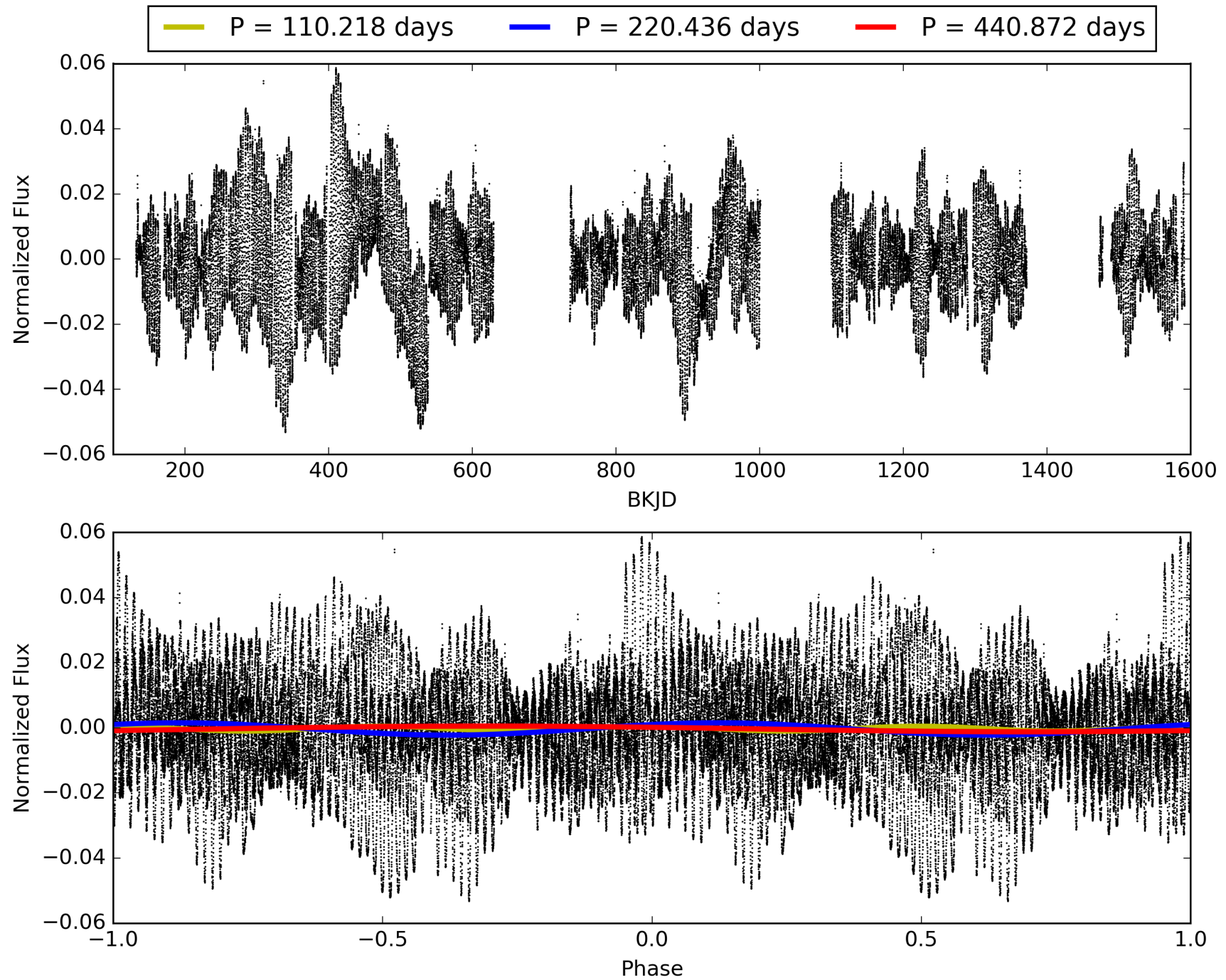
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:48:33 Z

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

TCE 010745663-01, PDC Light Curves

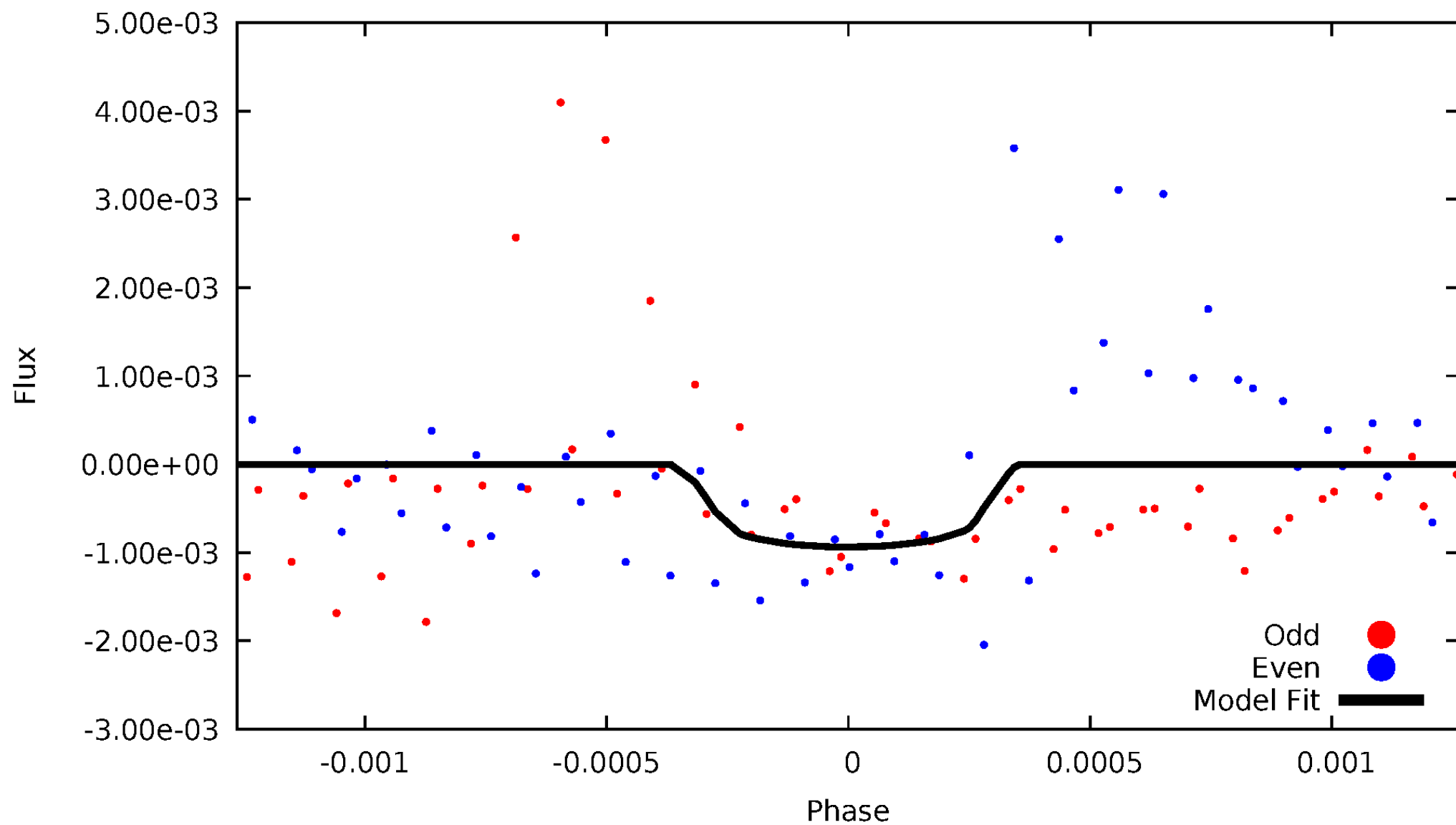


TCE 010745663-01



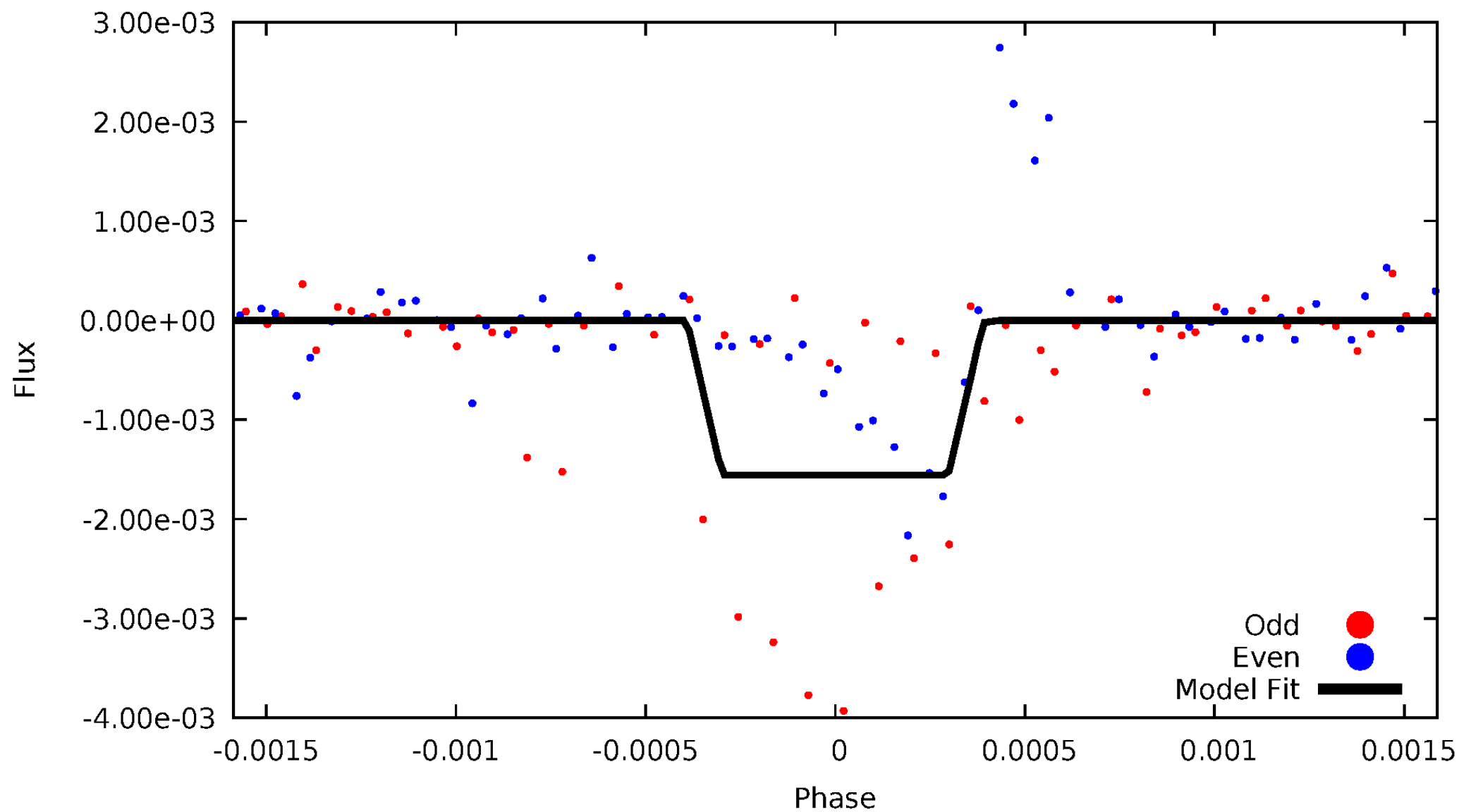
DV Odd/Even

TCE 010745663-01



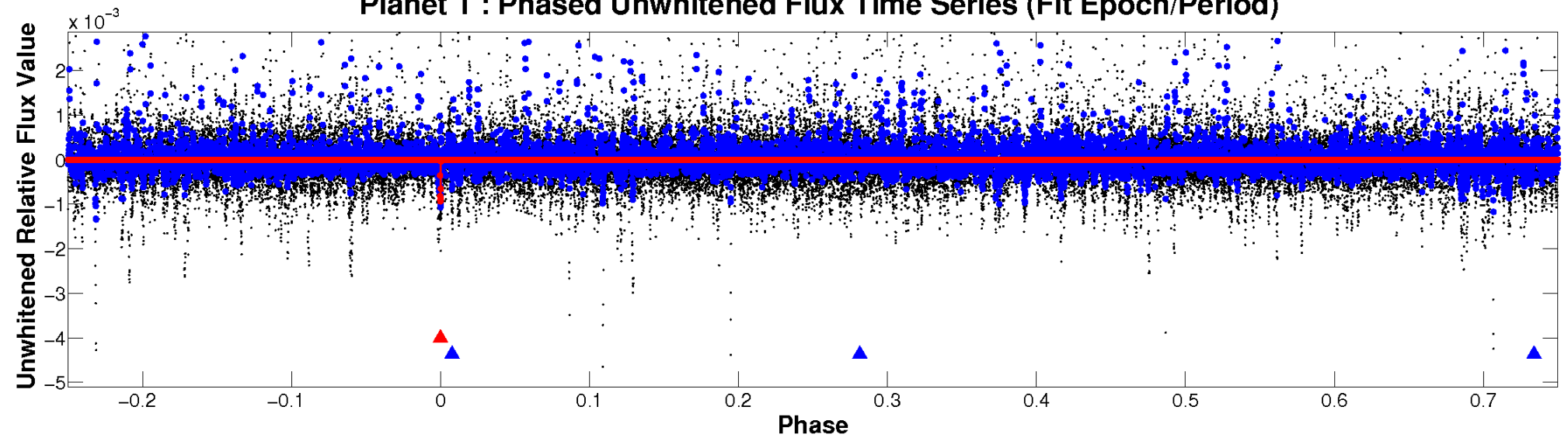
ALT Odd/Even

TCE 010745663-01

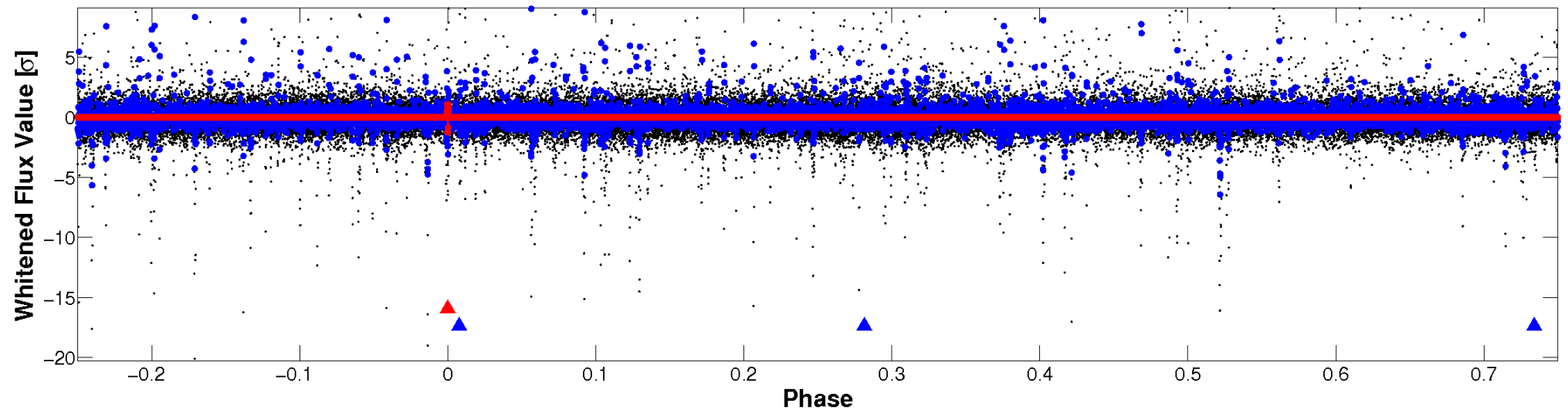


Non-Whitened Vs. Whitened Light Curve

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

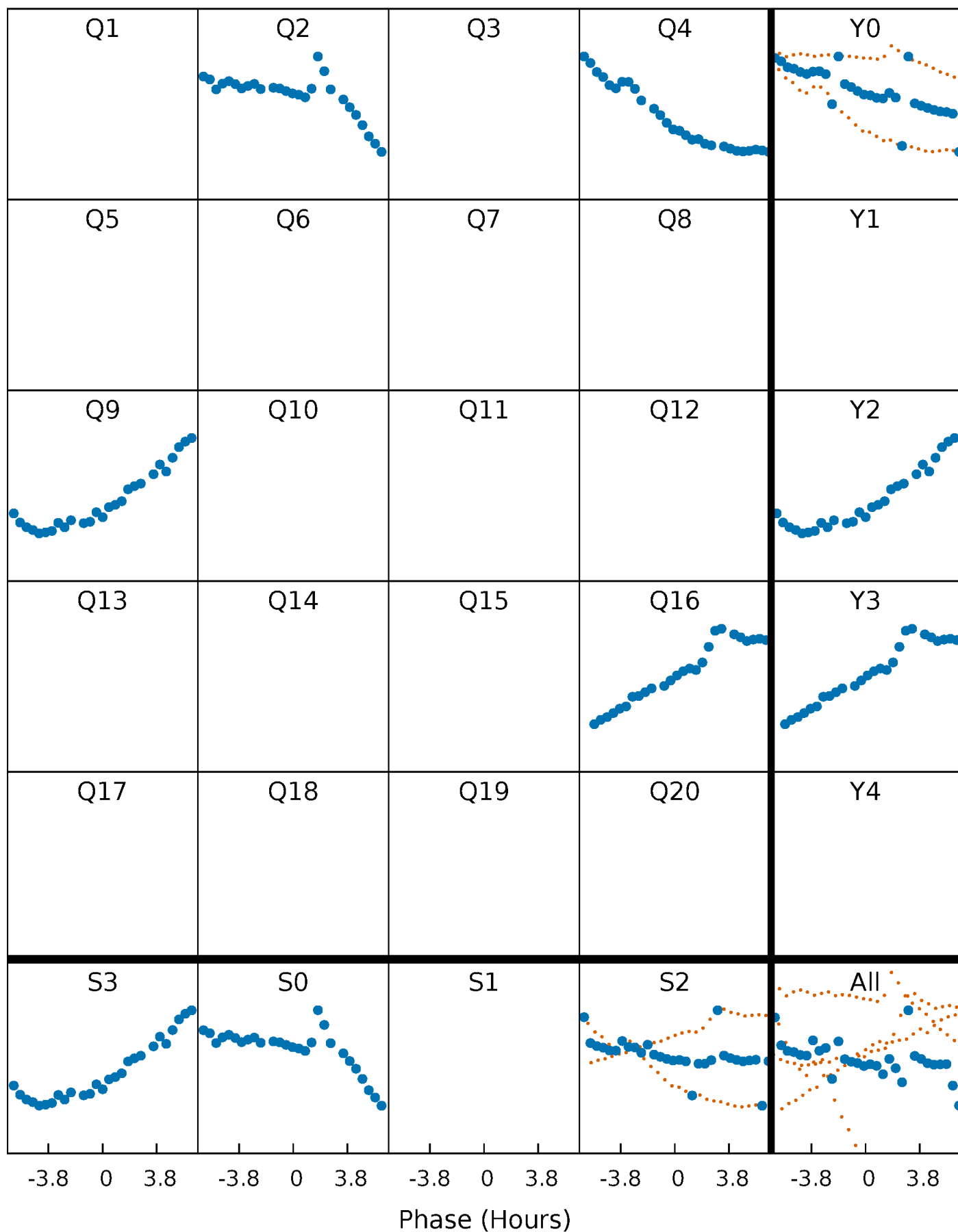


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



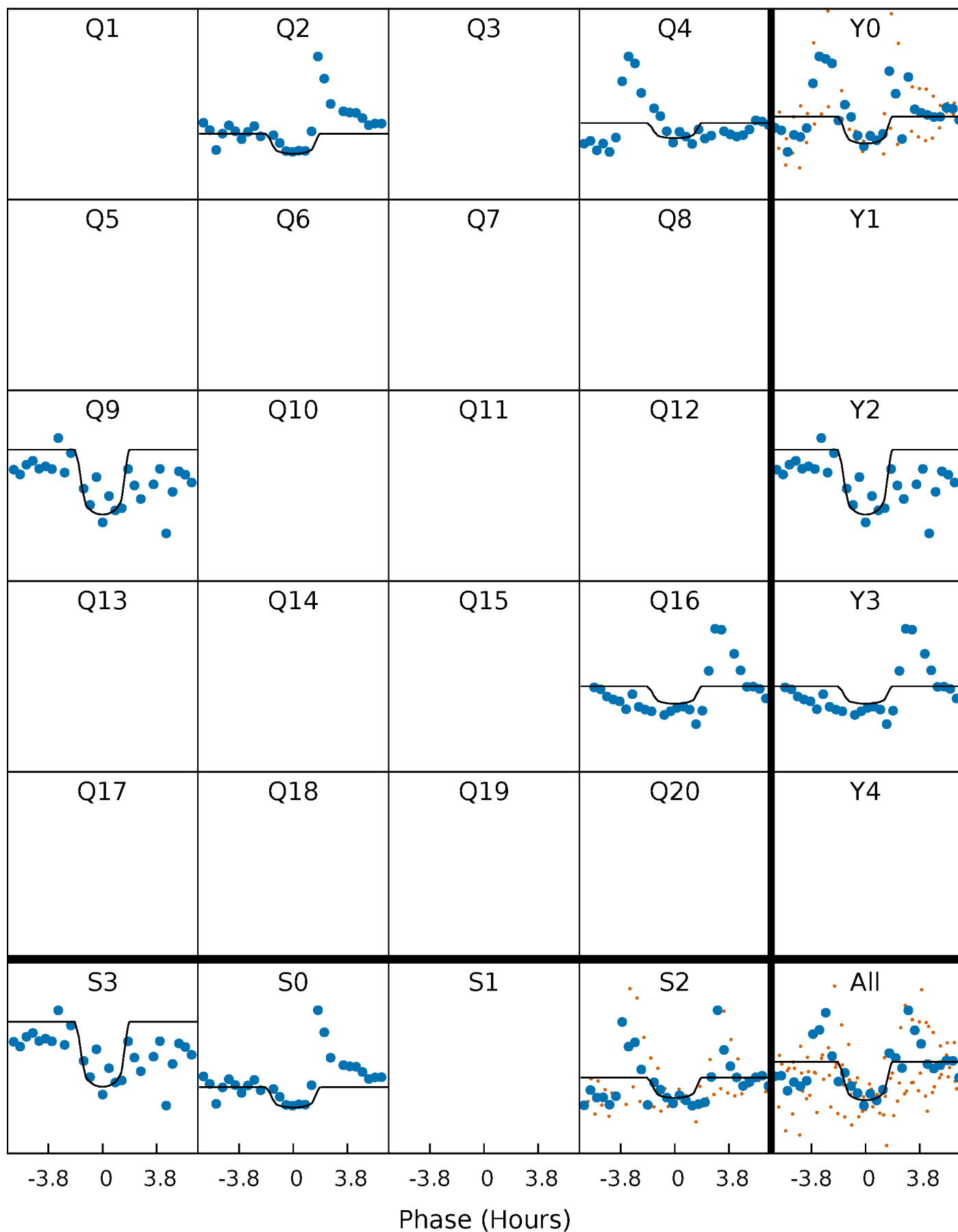
PDC Quarter-Phased Transit Curves

TCE 010745663-01 P=220.435832 Days $T_0=193.699321$ (BKJD)



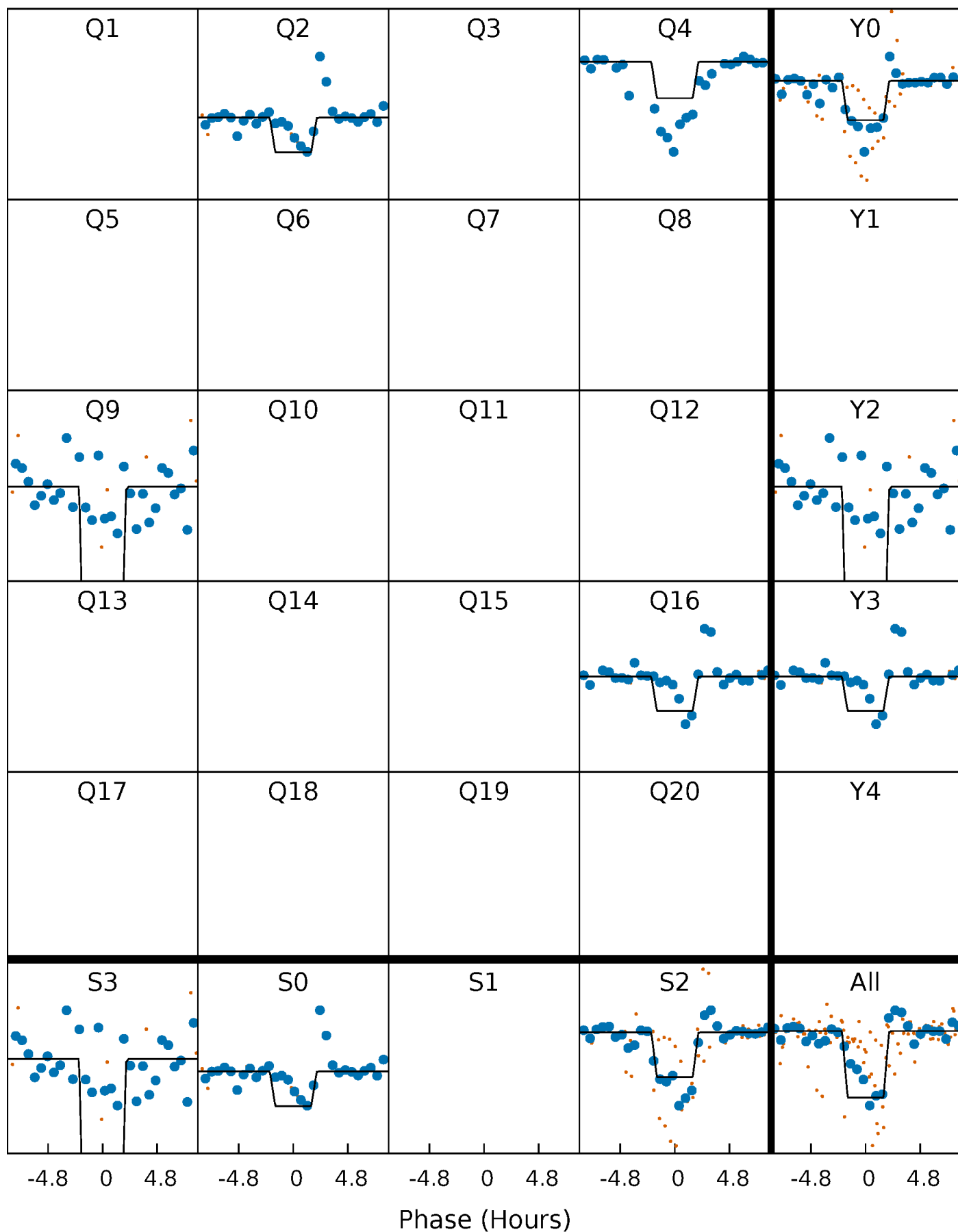
DV Quarter-Phased Transit Curves

TCE 010745663-01 P=220.435832 Days $T_0=193.699321$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

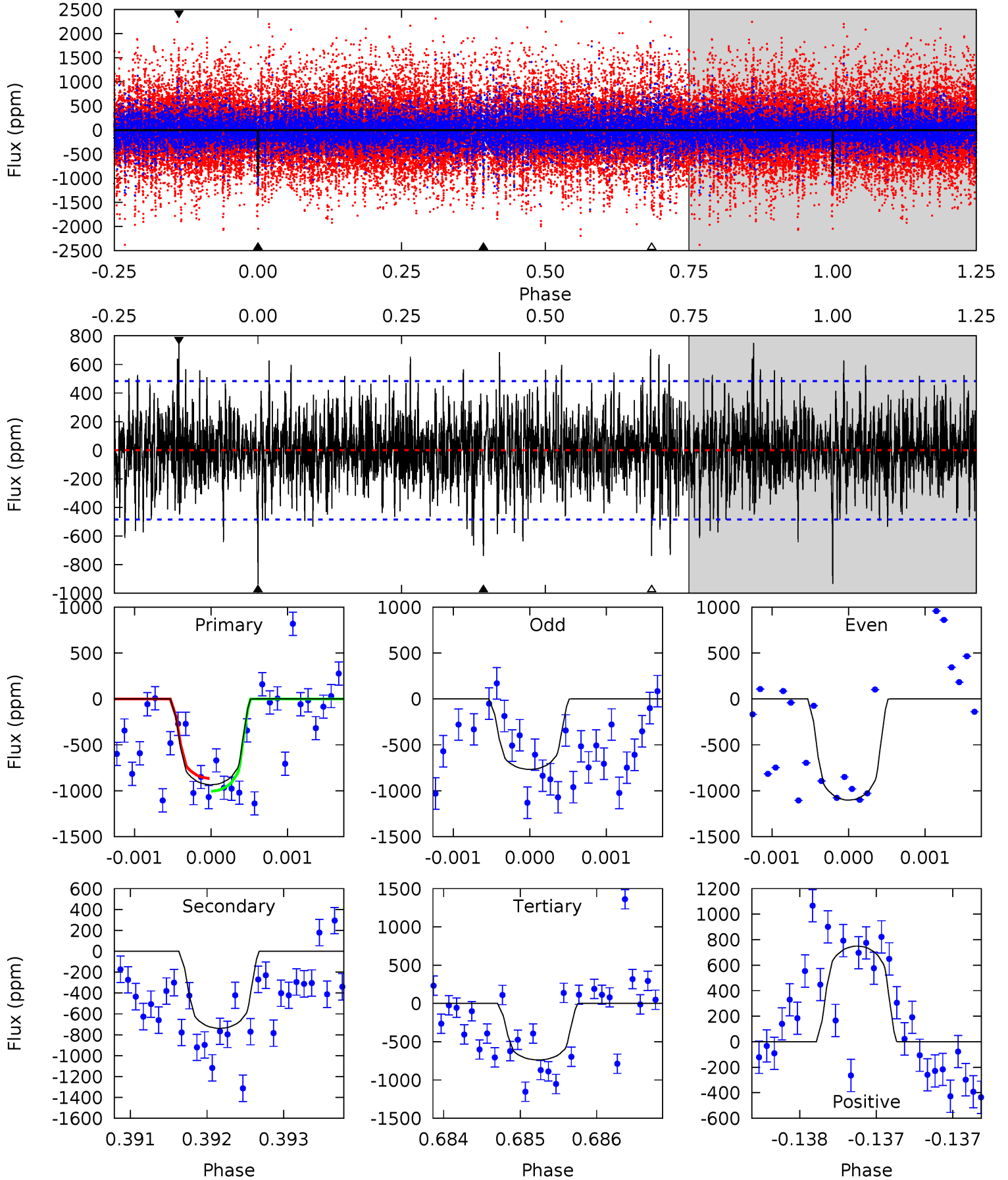
TCE 010745663-01 P=220.442438 Days $T_0=193.679291$ (BKJD)



DV Model-Shift Uniqueness Test

010745663-01, P = 220.435832 Days, E = 193.699321 Days

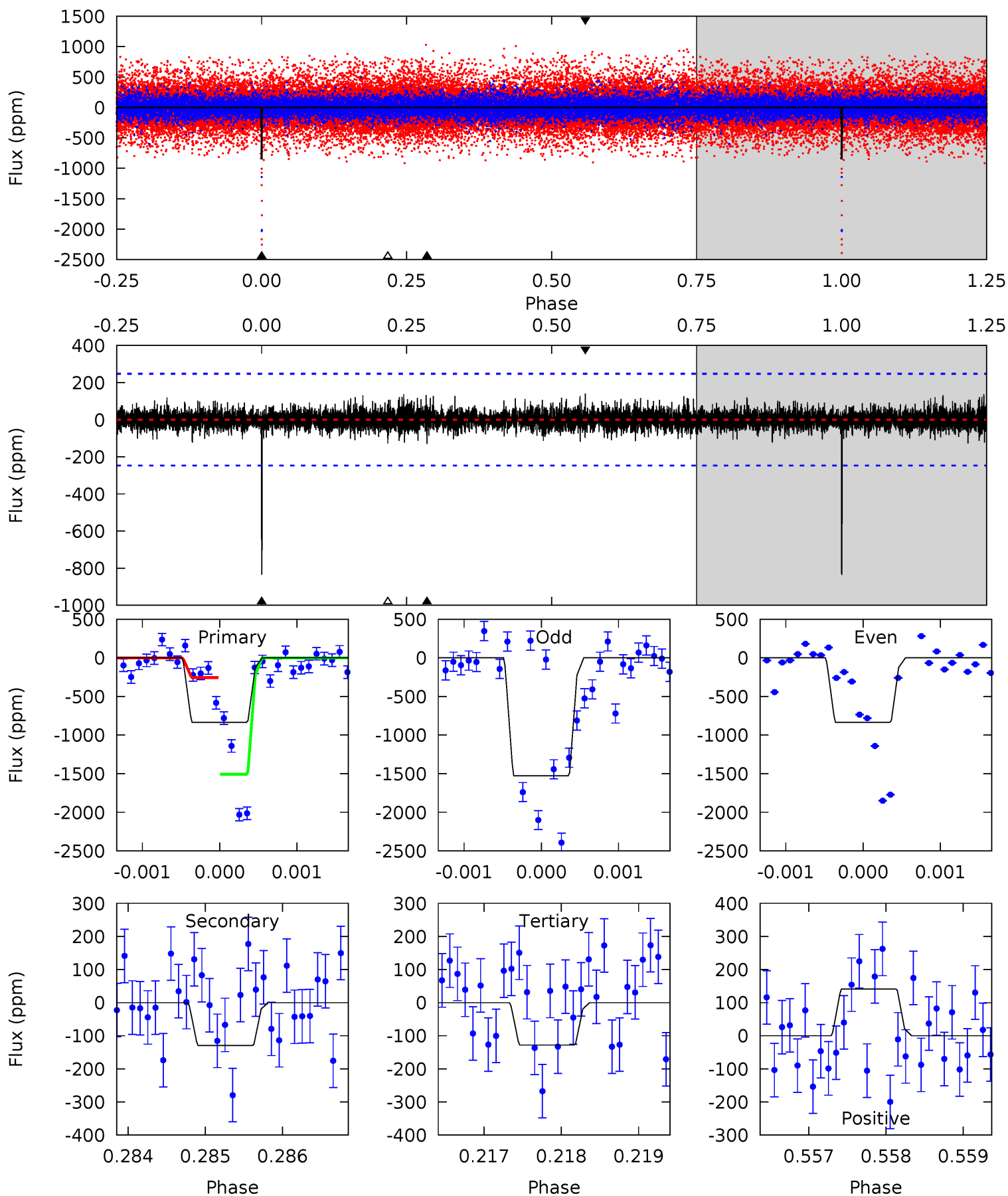
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	8.42	8.41	8.55	5.52	3.39	2.07	2.24	2.11	0.01	-0.12	1.81	1.21	0.45	0.80



Alt Model-Shift Uniqueness Test

010745663-01, P = 220.442438 Days, E = 193.679291 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.6	2.88	2.85	3.14	5.49	3.35	0.70	15.7	15.4	0.03	-0.26	8.53	1.47	0.14	14.0



Stellar Parameters For KIC 010745663

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6014^{+162}_{-198}	$4.494^{+0.052}_{-0.208}$	$-0.080^{+0.250}_{-0.350}$	$0.958^{+0.300}_{-0.100}$	$1.043^{+0.126}_{-0.139}$	$1.673^{+0.355}_{-0.906}$
	+3%/-3%	+1%/-5%	+312%/-438%	+31%/-10%	+12%/-13%	+21%/-54%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010745663-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-739 ± 88	$5.00^{+5.35}_{-3.56}$	434^{+29}_{-21}	4737^{+4285}_{-1085}	7783^{+95886}_{-5867}
Alt.	-130 ± 45	$5.96^{+5.08}_{-3.92}$	434^{+32}_{-20}	3305^{+1371}_{-556}	991^{+6909}_{-708}

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 $A_{obs} \gg 1.0$

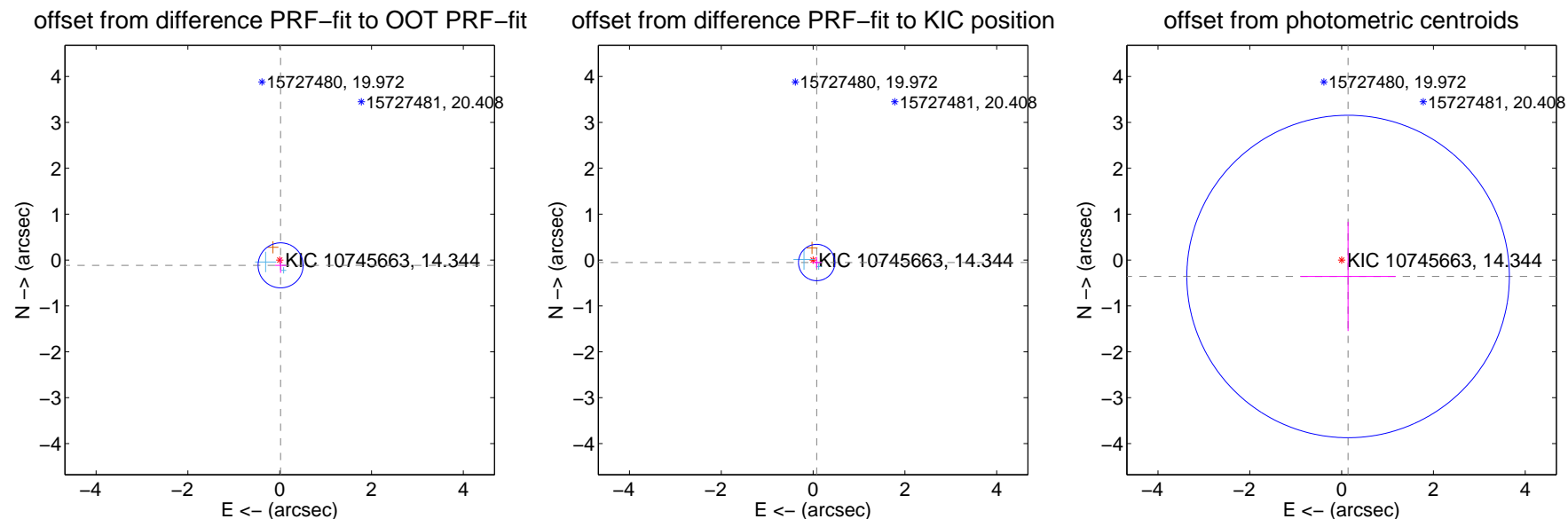
DV Centroid Data

Supplemental centroid analysis for 010745663-01. Kepler magnitude: 14.34. Transit SNR 6.36

There are 2 quarters with good PRF difference image offsets

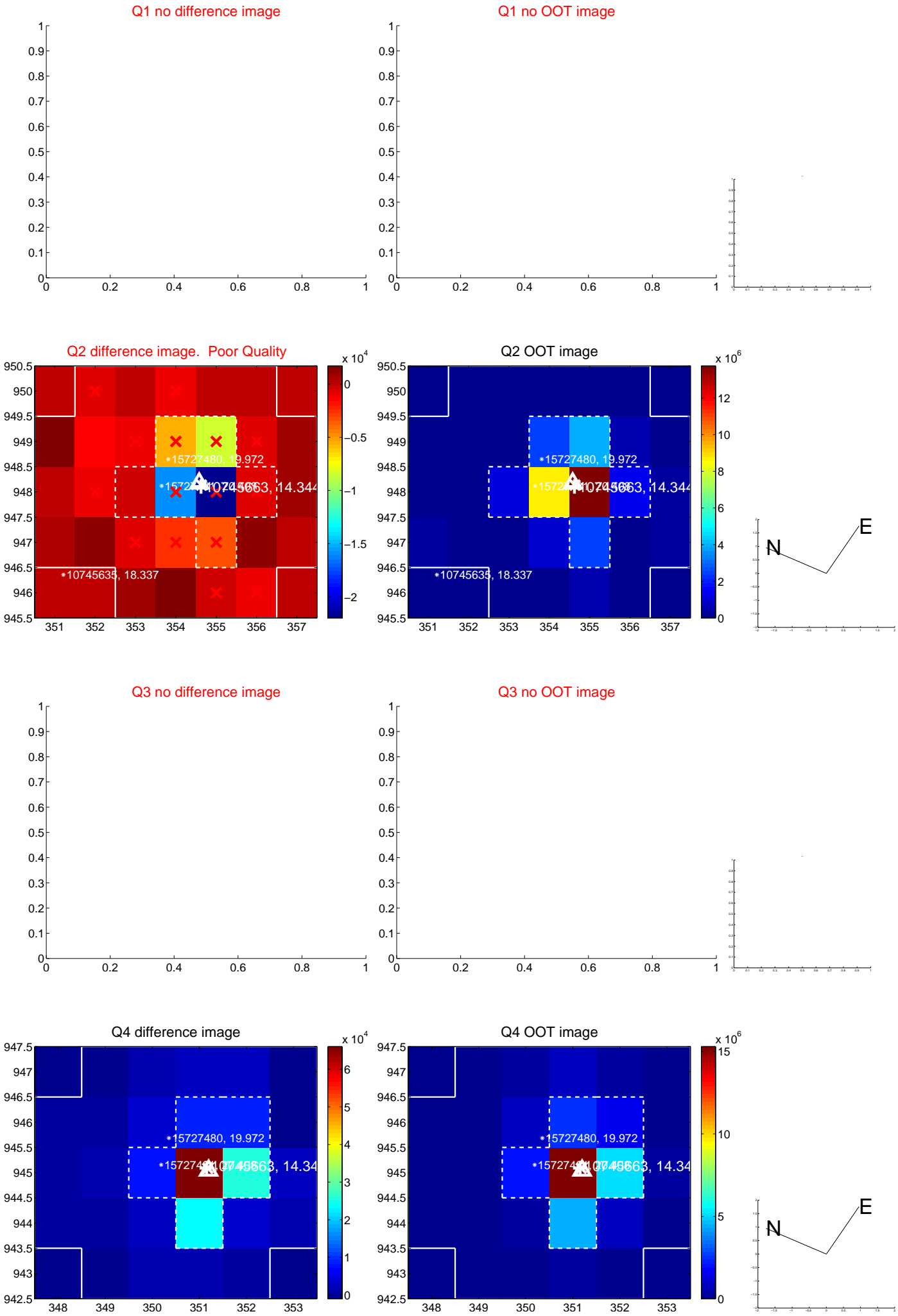
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.118 ± 0.164	0.72	-0.020 ± 0.120	-0.116 ± 0.165
PRF-fit source offset from KIC position	0.095 ± 0.132	0.72	-0.078 ± 0.104	-0.054 ± 0.122
photometric centroid source offset	0.39 ± 1.17	0.33	-0.14 ± 1.04	-0.36 ± 1.19



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.

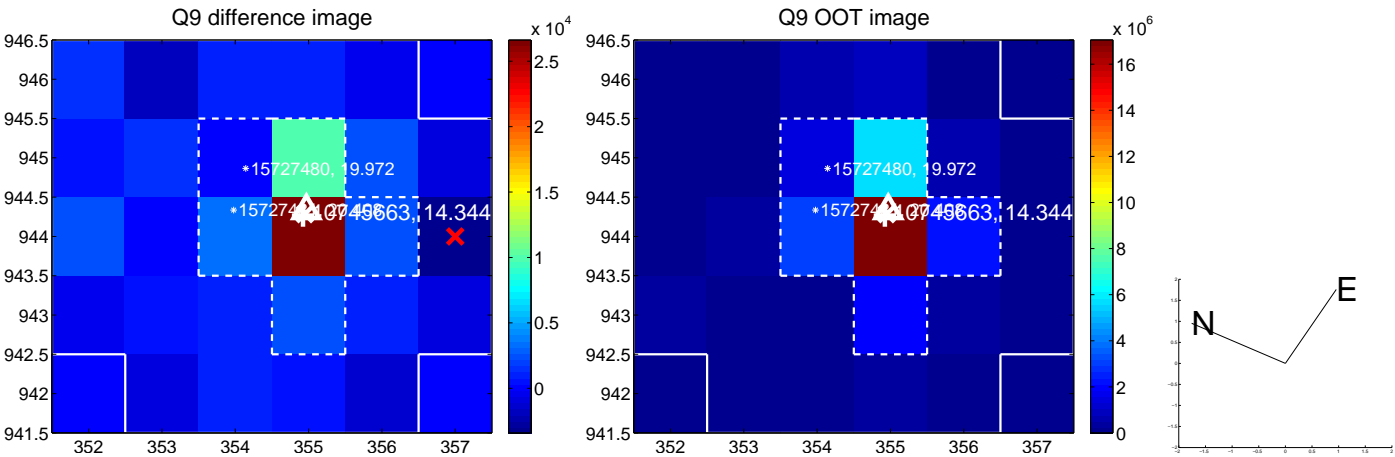
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



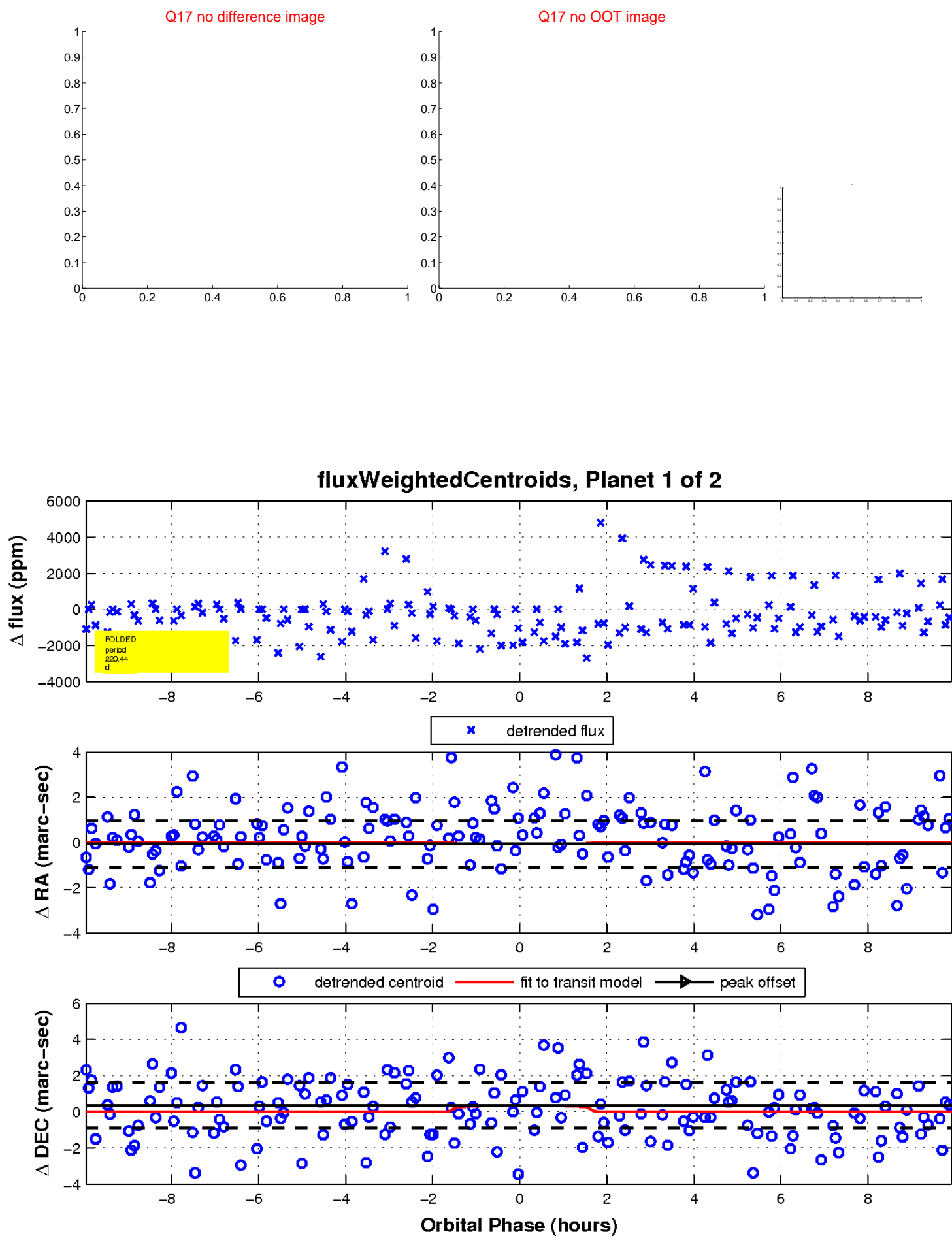
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

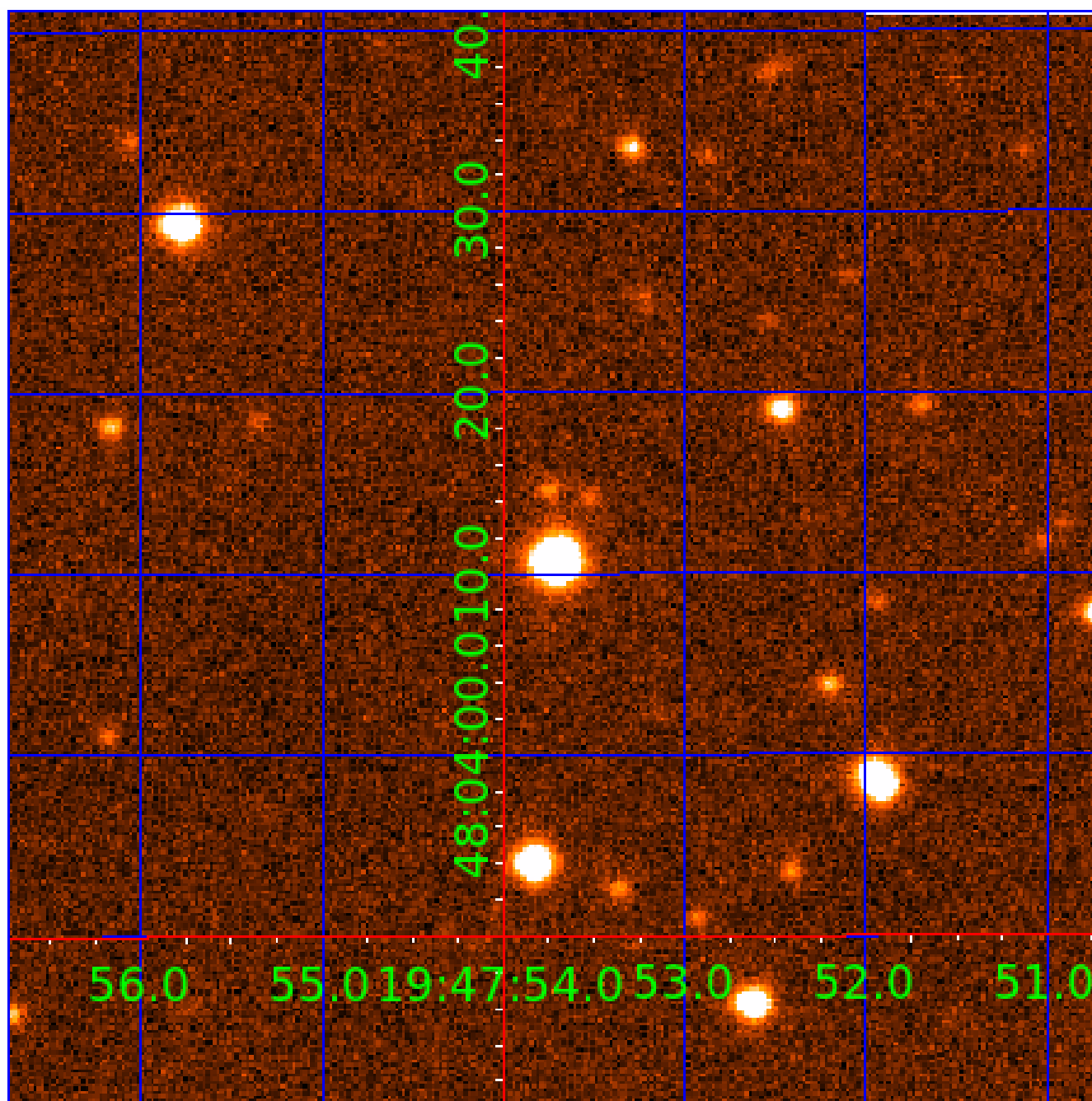


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010745663

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})
010745663-01	OBS	No	220.435832	193.699321	937.0	3.344	16.4	6.4	0.96	6014	3.05	2.05
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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010745663-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—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.

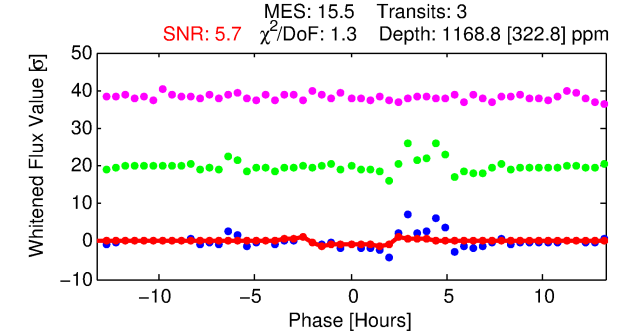
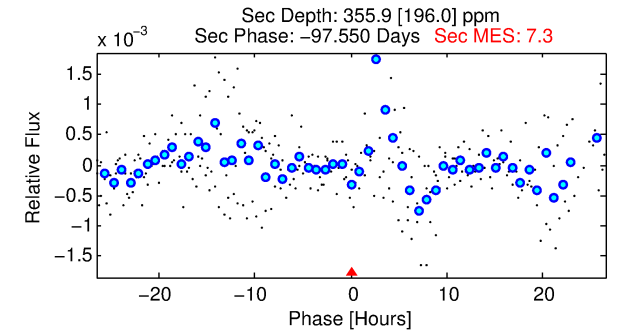
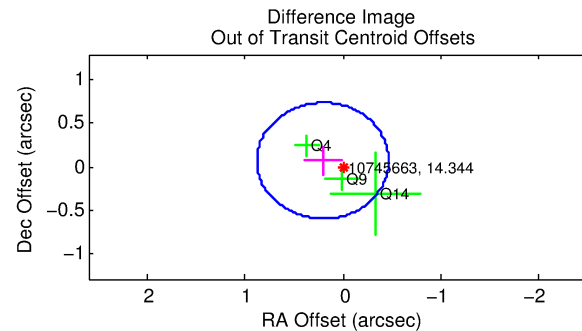
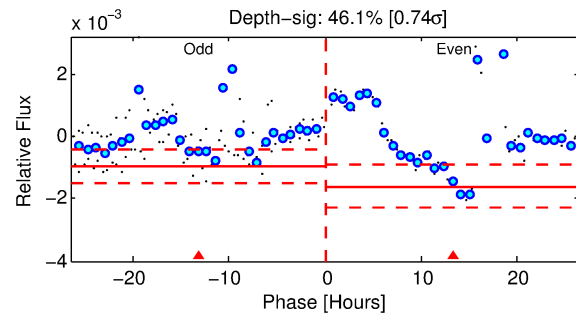
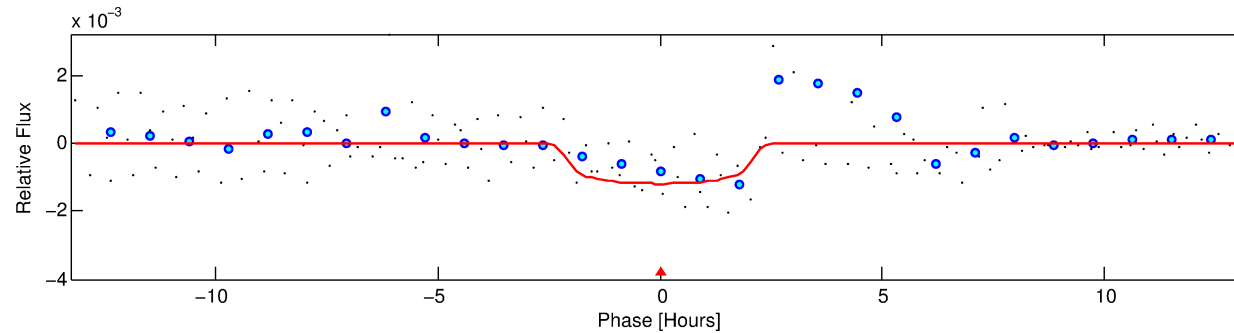
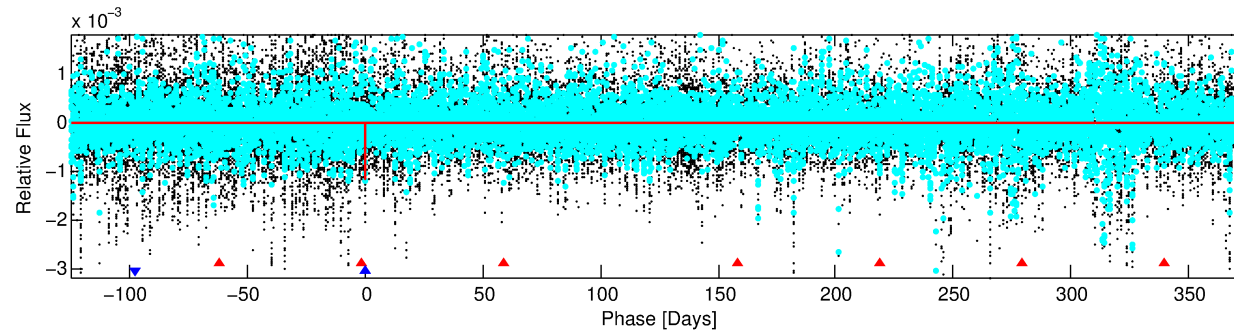
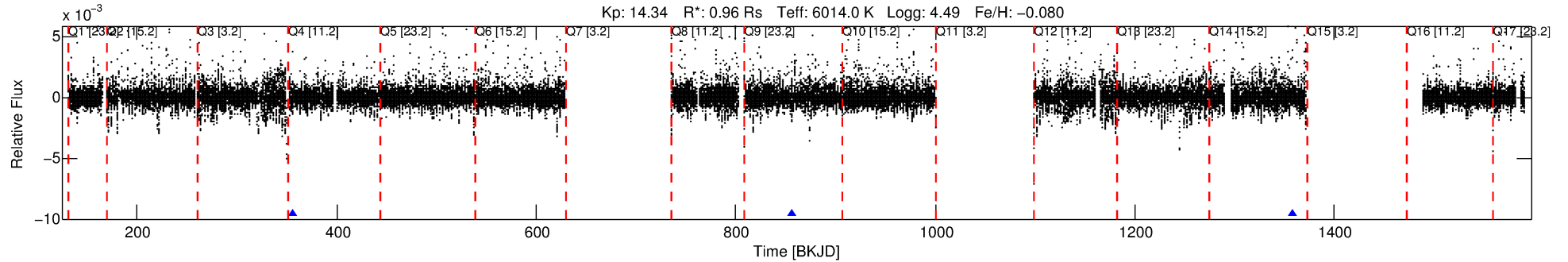
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010745663-02

No Significant Match Found

DV One-Page Summary

KIC: 10745663 Candidate: 2 of 2 Period: 501.210 d



DV Fit Results:

Period = 501.20956 [0.00736] d
Epoch = 355.5071 [0.0095] BKJD
Rp/R* = 0.0316 [0.0385]
a/R* = 846.38 [4725.77]
b = 0.33 [15.15]
Seff = 0.69 [0.28]
Teq = 232 [23] K
Rp = 3.30 [4.16] Re
a = 1.2530 [0.3293] AU
Ag = 28190.71 [71276.68] [0.40 σ]
Teffp = 4648 [2908] K [1.52 σ]

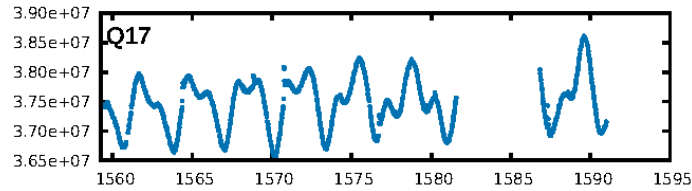
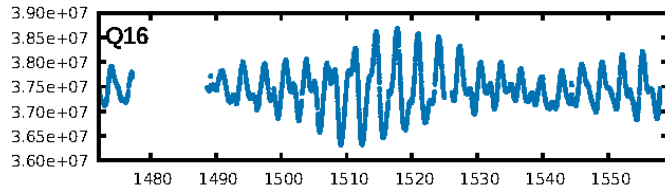
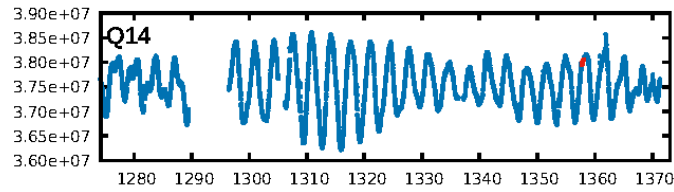
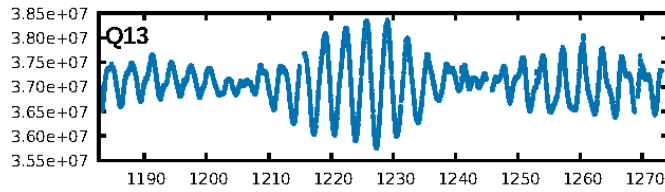
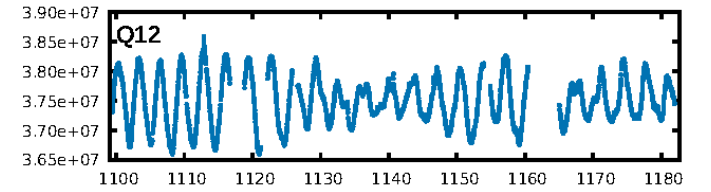
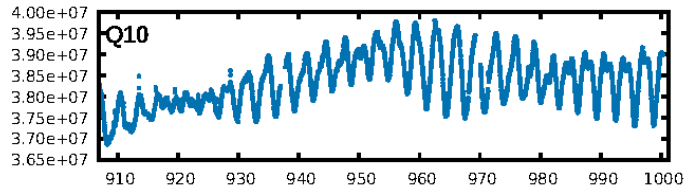
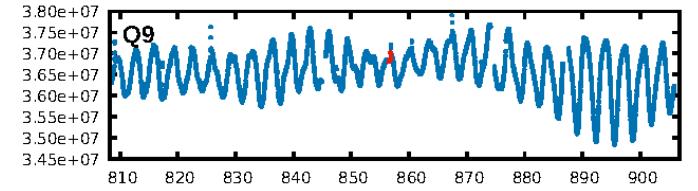
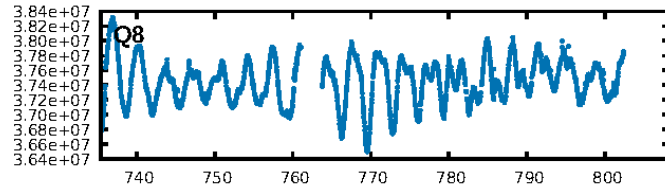
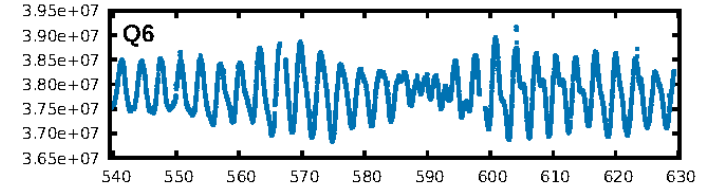
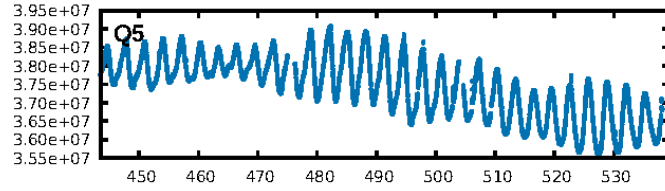
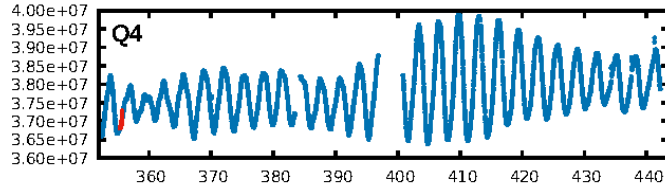
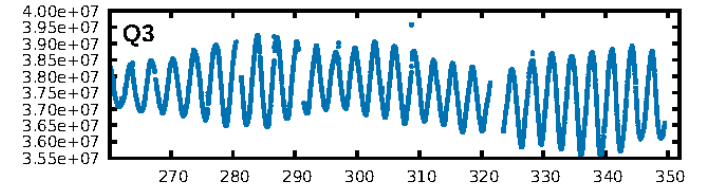
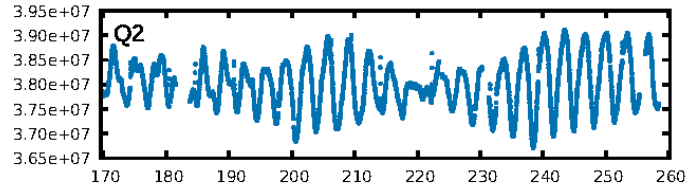
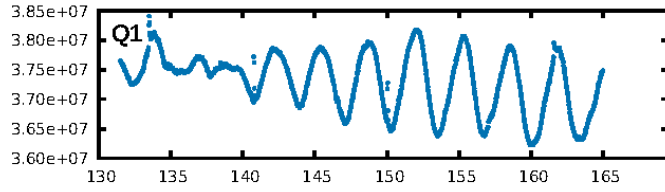
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1215.66 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 5.1%
ModelChiSquareGof-sig: 52.7%
Bootstrap-pfa: 4.98e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.301
Centroid-sig: 46.4%
Centroid-so: 0.468 arcsec [0.56 σ]
OotOffset-rm: 0.217 arcsec [0.97 σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-rm: 0.168 arcsec [0.68 σ]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

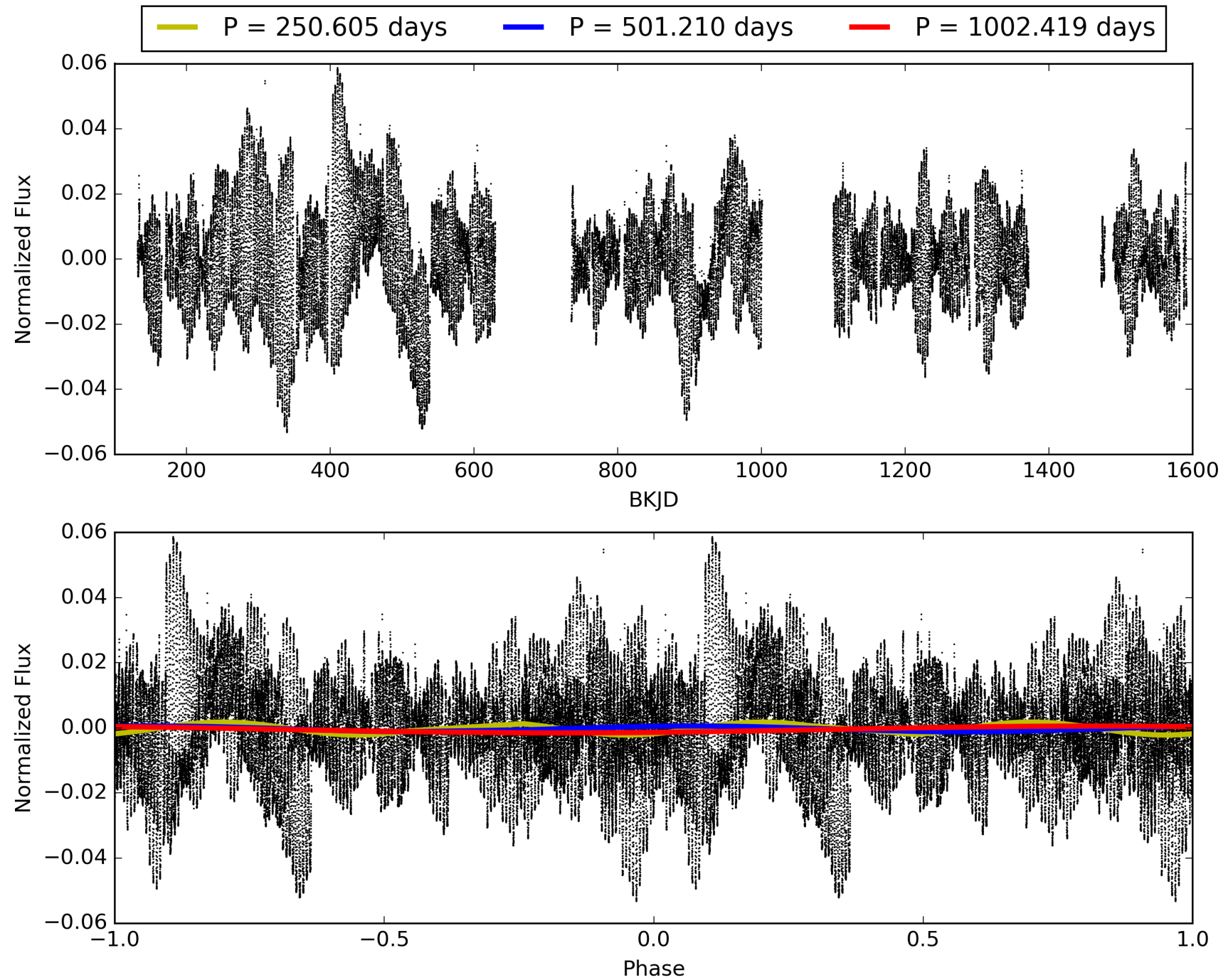
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:48:47 Z

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

TCE 010745663-02, PDC Light Curves

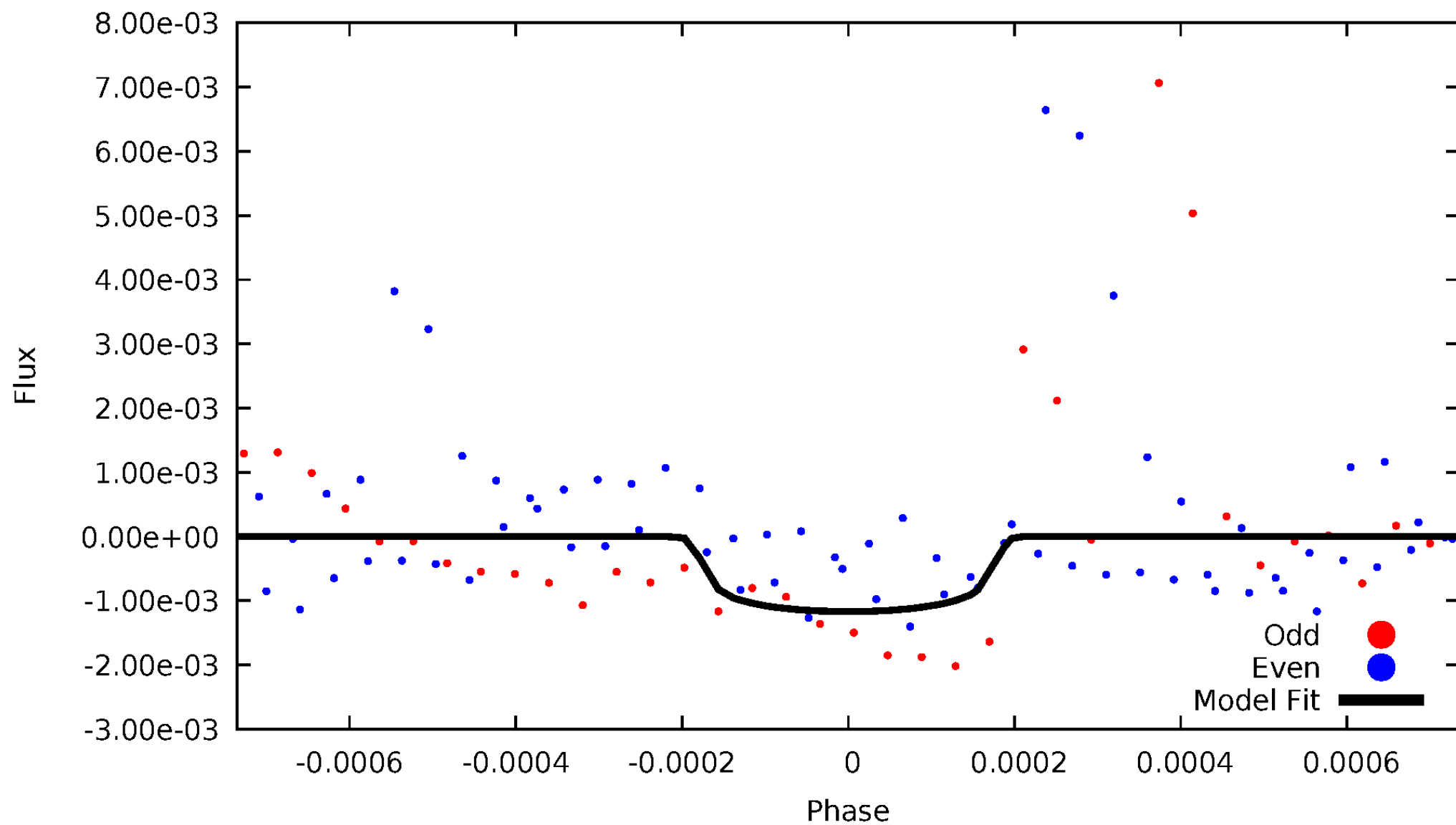


TCE 010745663-02



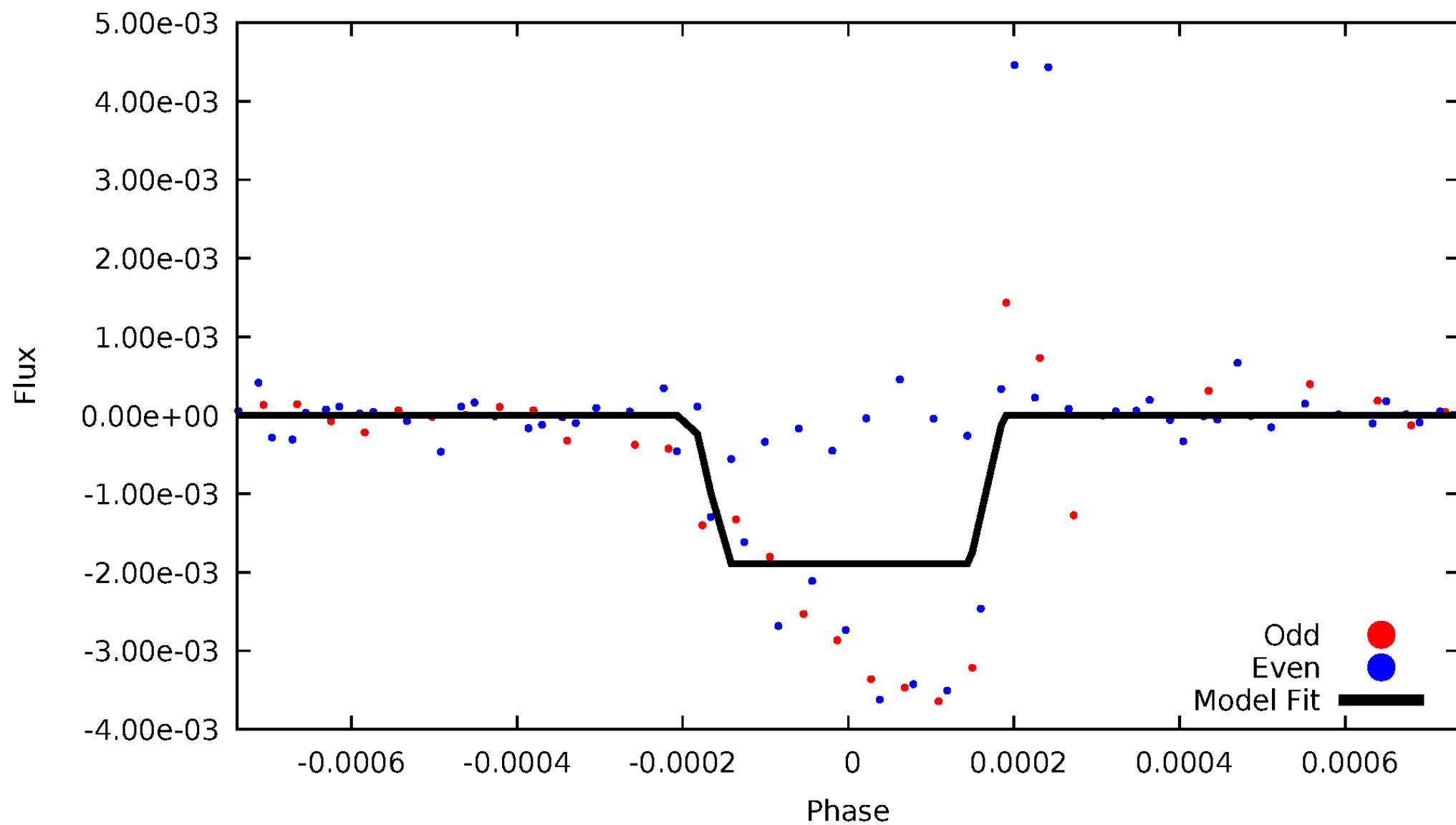
DV Odd/Even

TCE 010745663-02



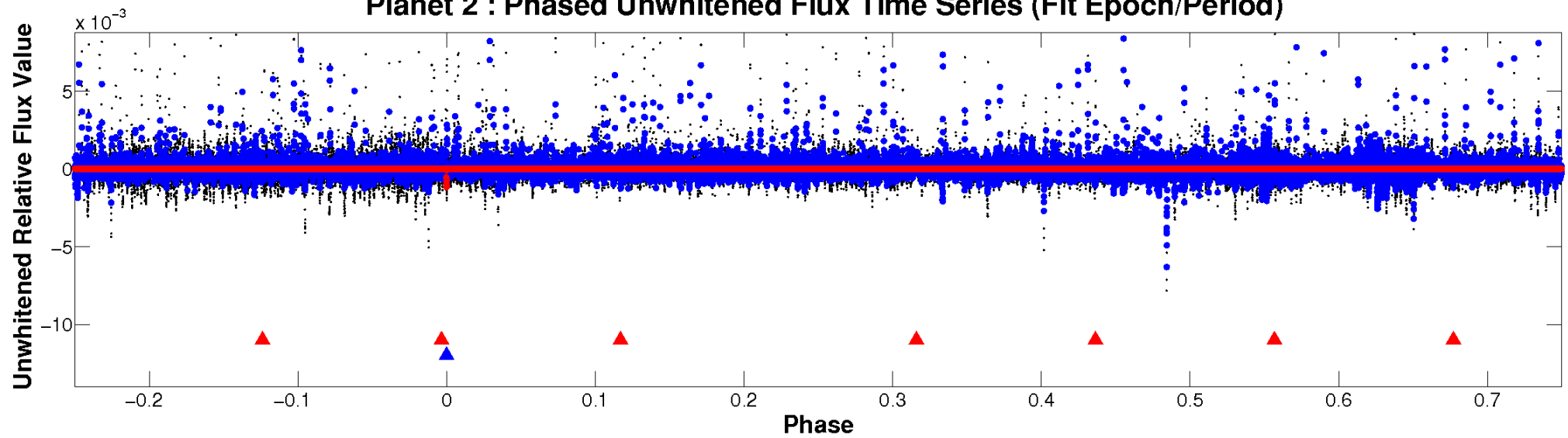
ALT Odd/Even

TCE 010745663-02

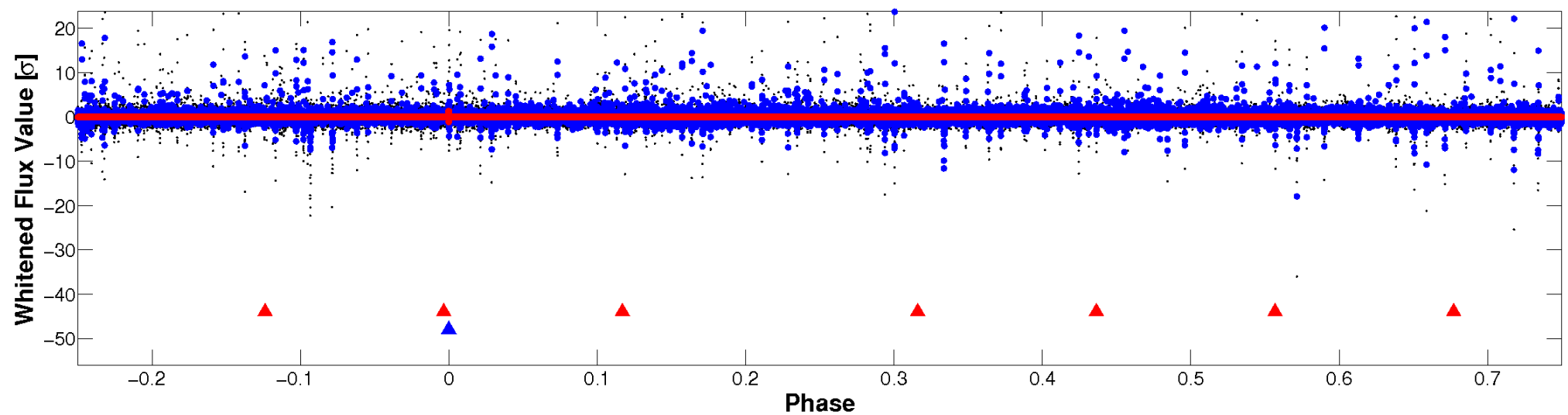


Non-Whitened Vs. Whitened Light Curve

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

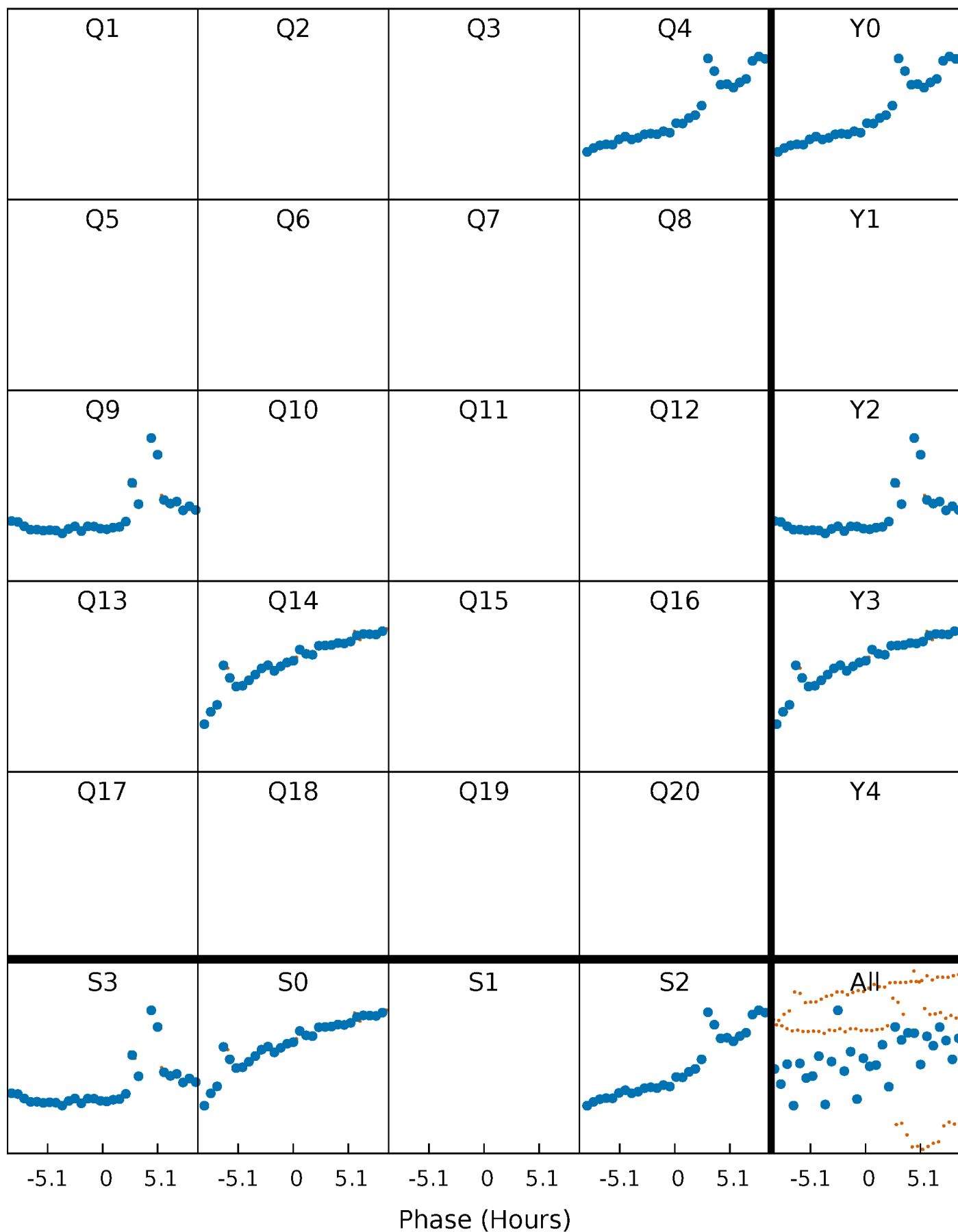


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



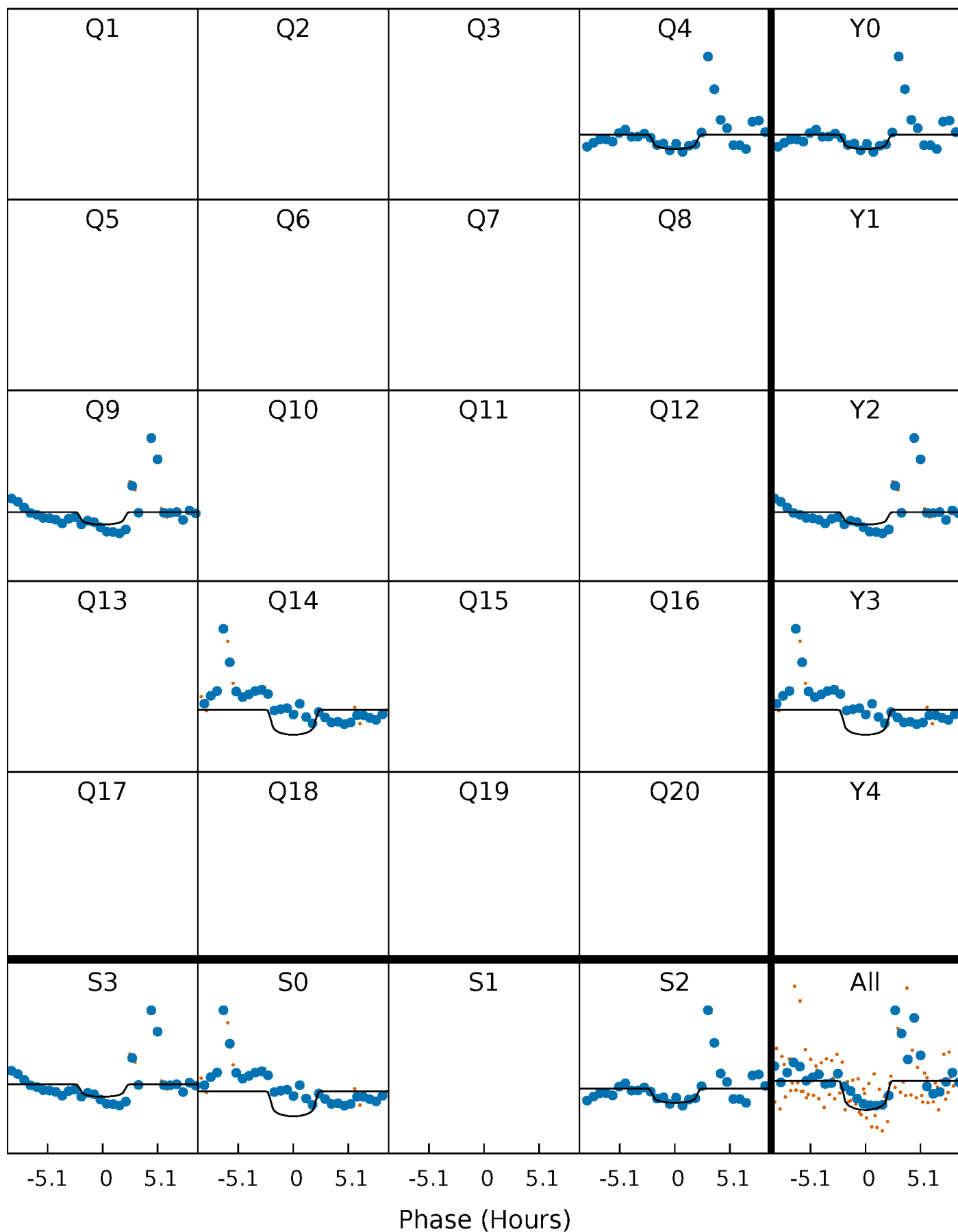
PDC Quarter-Phased Transit Curves

TCE 010745663-02 P=501.209558 Days $T_0=355.507097$ (BKJD)



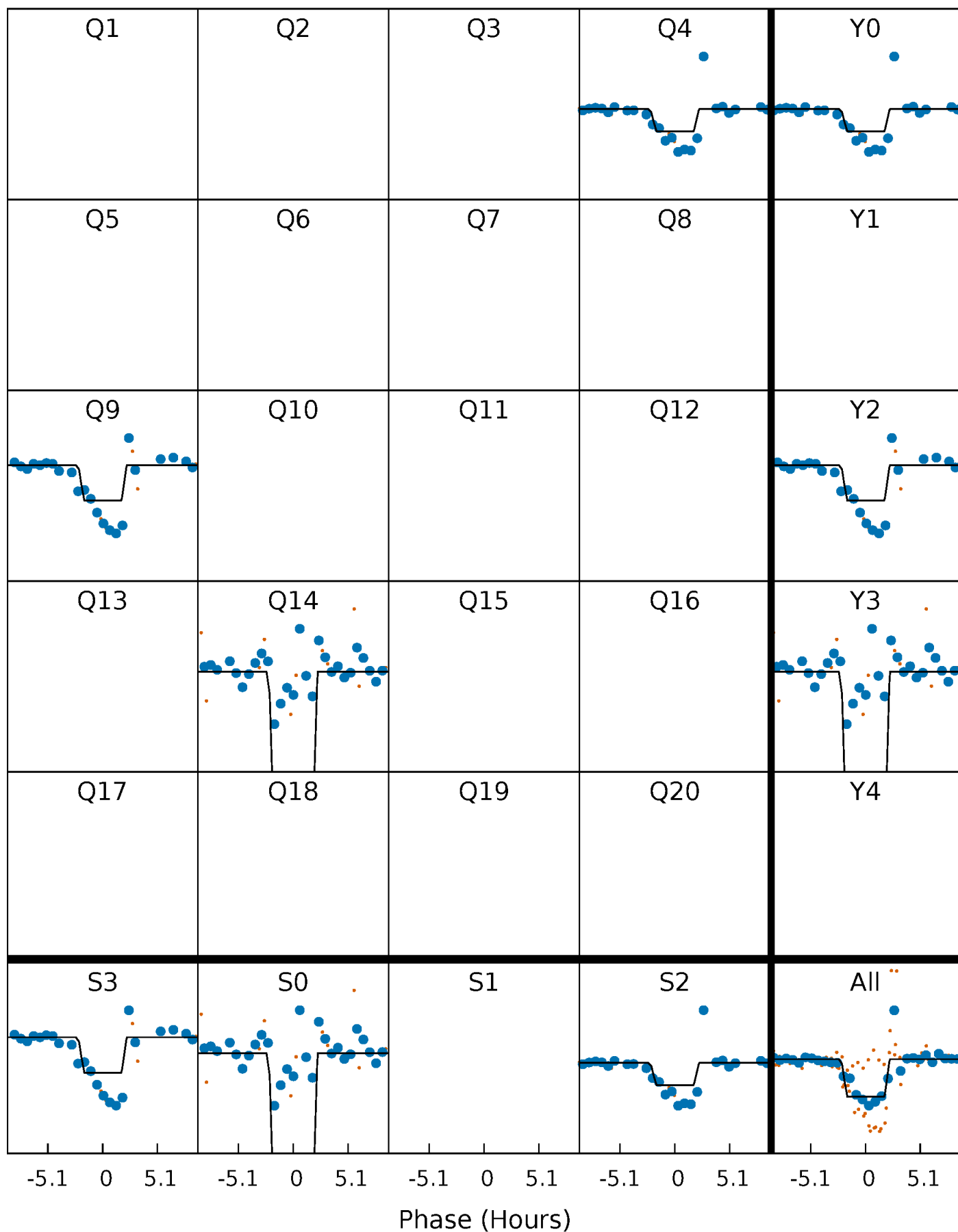
DV Quarter-Phased Transit Curves

TCE 010745663-02 $P=501.209558$ Days $T_0=355.507097$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

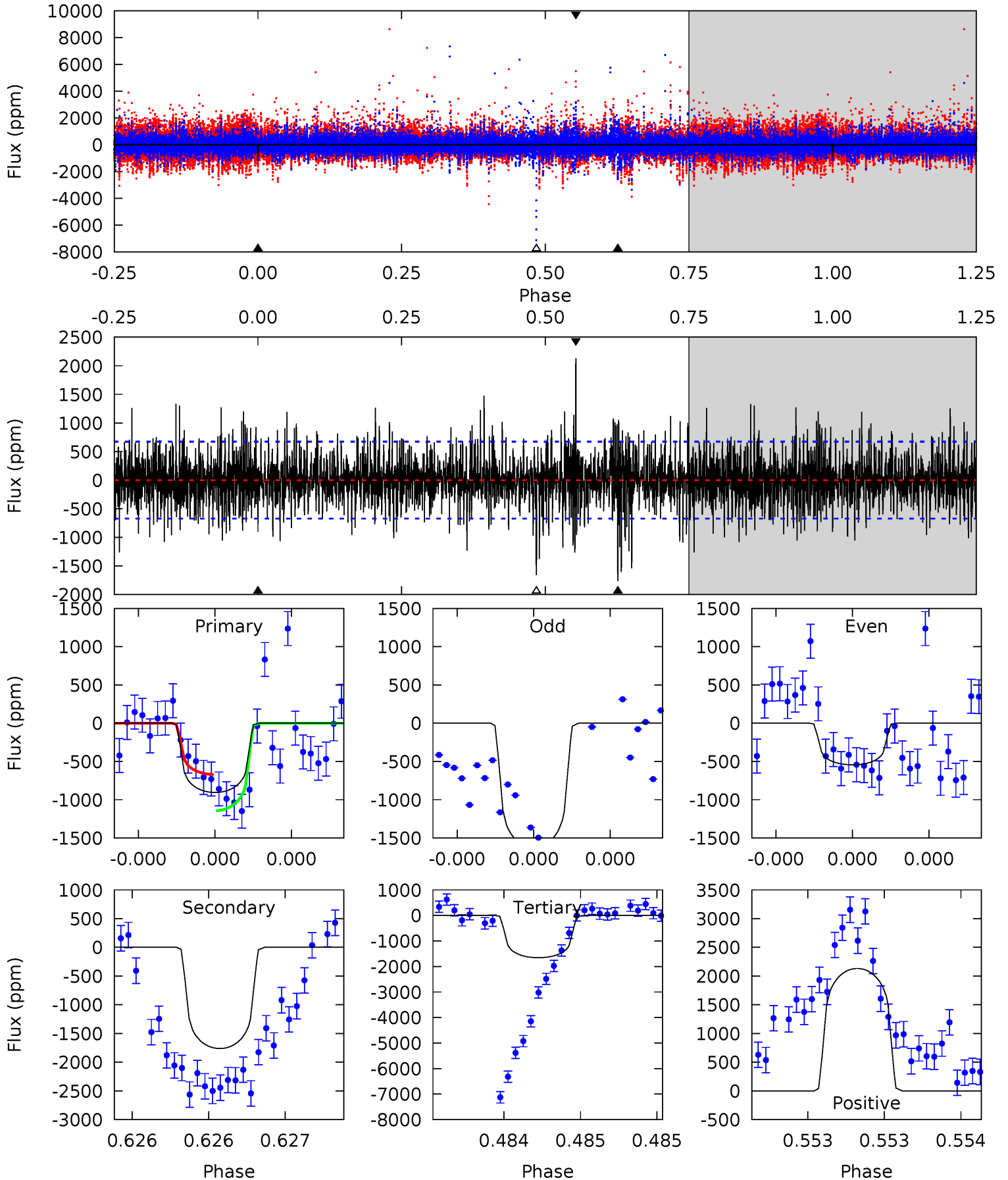
TCE 010745663-02 P=501.201171 Days $T_0=355.525459$ (BKJD)



DV Model-Shift Uniqueness Test

010745663-02, P = 501.209558 Days, E = 355.507097 Days

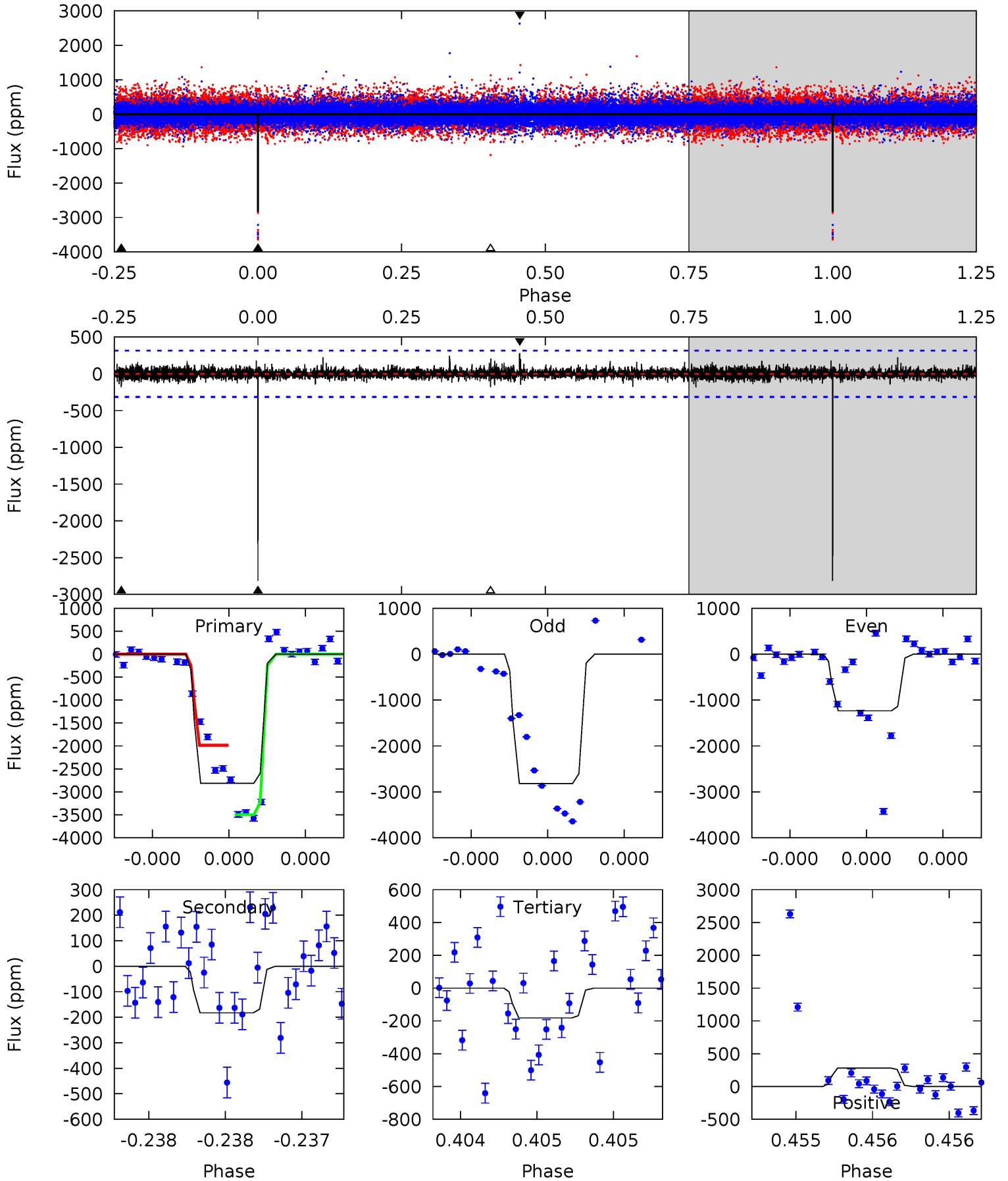
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.56	14.7	13.8	17.8	5.62	3.55	2.81	-6.29	-10.2	0.87	-3.09	3.44	0.91	0.55	1.98



Alt Model-Shift Uniqueness Test

010745663-02, P = 501.201171 Days, E = 355.525459 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.2	3.26	3.25	5.02	5.63	3.56	0.62	47.0	45.2	0.01	-1.76	15.4	0.69	0.09	13.9



Stellar Parameters For KIC 010745663

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6014^{+162}_{-198}	$4.494^{+0.052}_{-0.208}$	$-0.080^{+0.250}_{-0.350}$	$0.958^{+0.300}_{-0.100}$	$1.043^{+0.126}_{-0.139}$	$1.673^{+0.355}_{-0.906}$
	+3%/-3%	+1%/-5%	+312%/-438%	+31%/-10%	+12%/-13%	+21%/-54%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010745663-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1762 ± 120	$4.62^{+3.77}_{-2.86}$	330^{+26}_{-15}	6021^{+4867}_{-1417}	$71526^{+416291}_{-50991}$
Alt.	-183 ± 56	$5.30^{+4.16}_{-3.18}$	330^{+23}_{-16}	3594^{+1537}_{-598}	5220^{+30708}_{-3646}

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 $A_{obs} \gg 1.0$

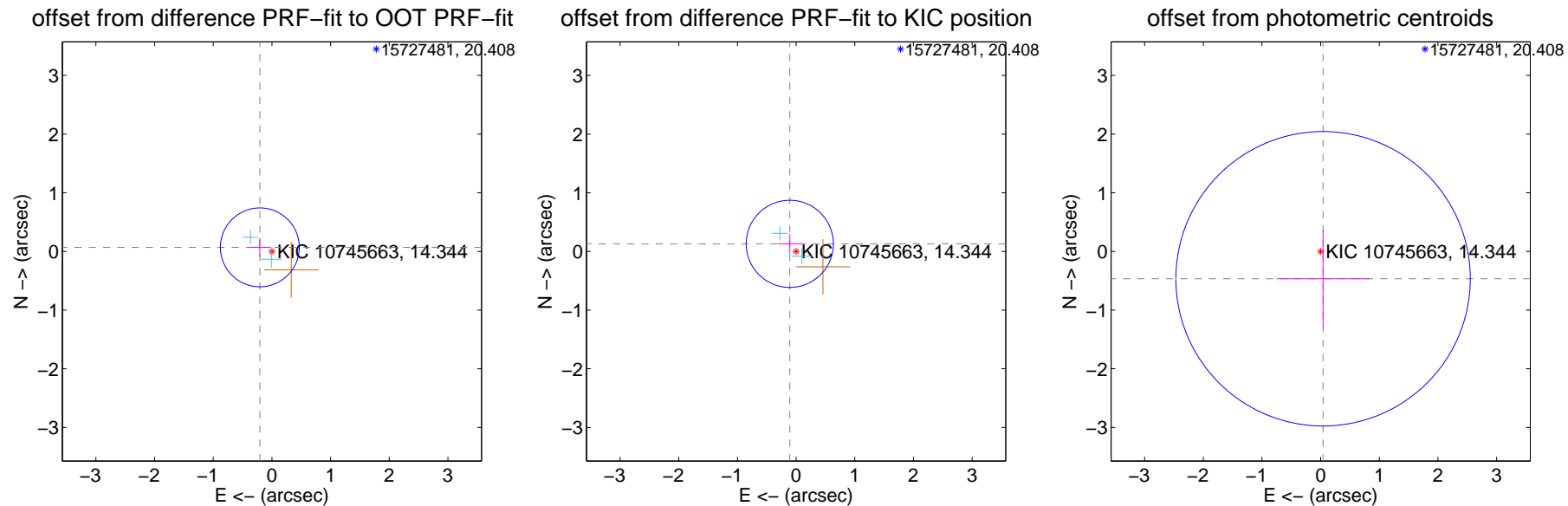
DV Centroid Data

Supplemental centroid analysis for 010745663-02. Kepler magnitude: 14.34. Transit SNR 5.66

There are 2 quarters with good PRF difference image offsets

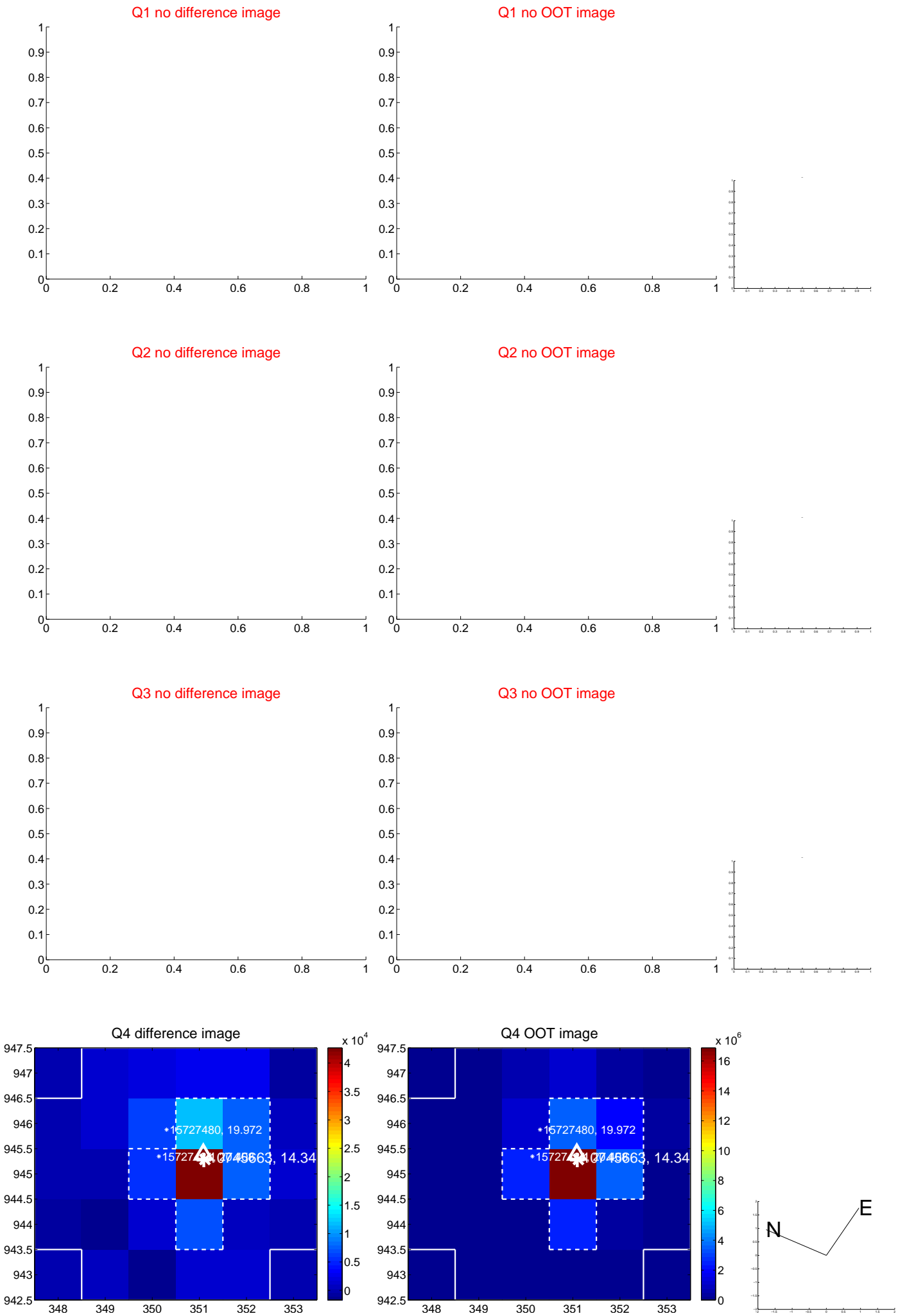
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.217 ± 0.224	0.97	0.205 ± 0.190	0.069 ± 0.158
PRF-fit source offset from KIC position	0.168 ± 0.248	0.68	0.108 ± 0.203	0.129 ± 0.167
photometric centroid source offset	0.47 ± 0.84	0.56	-0.04 ± 0.79	-0.47 ± 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.

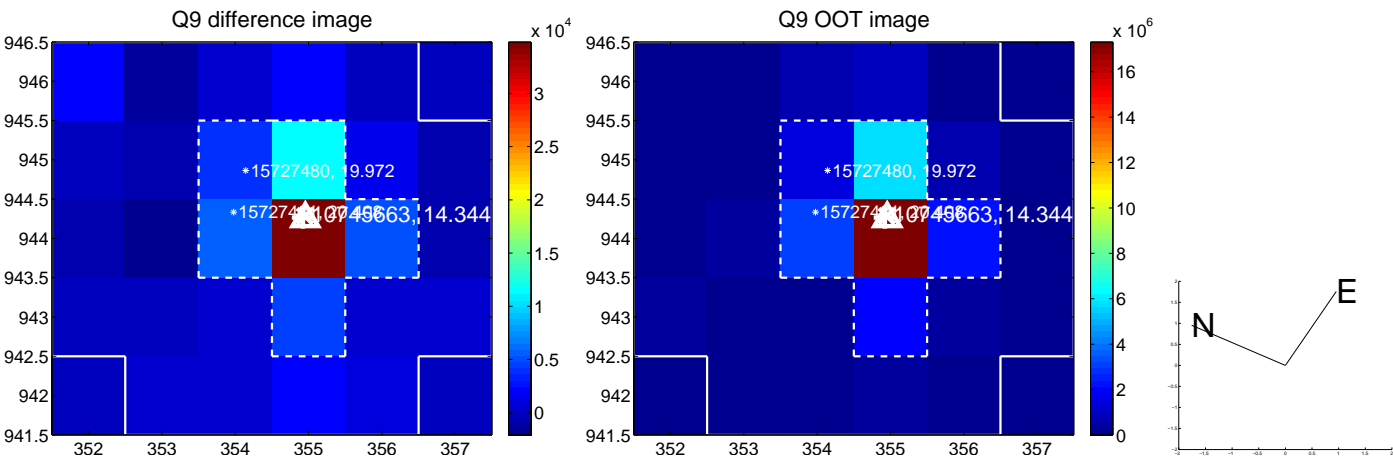
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



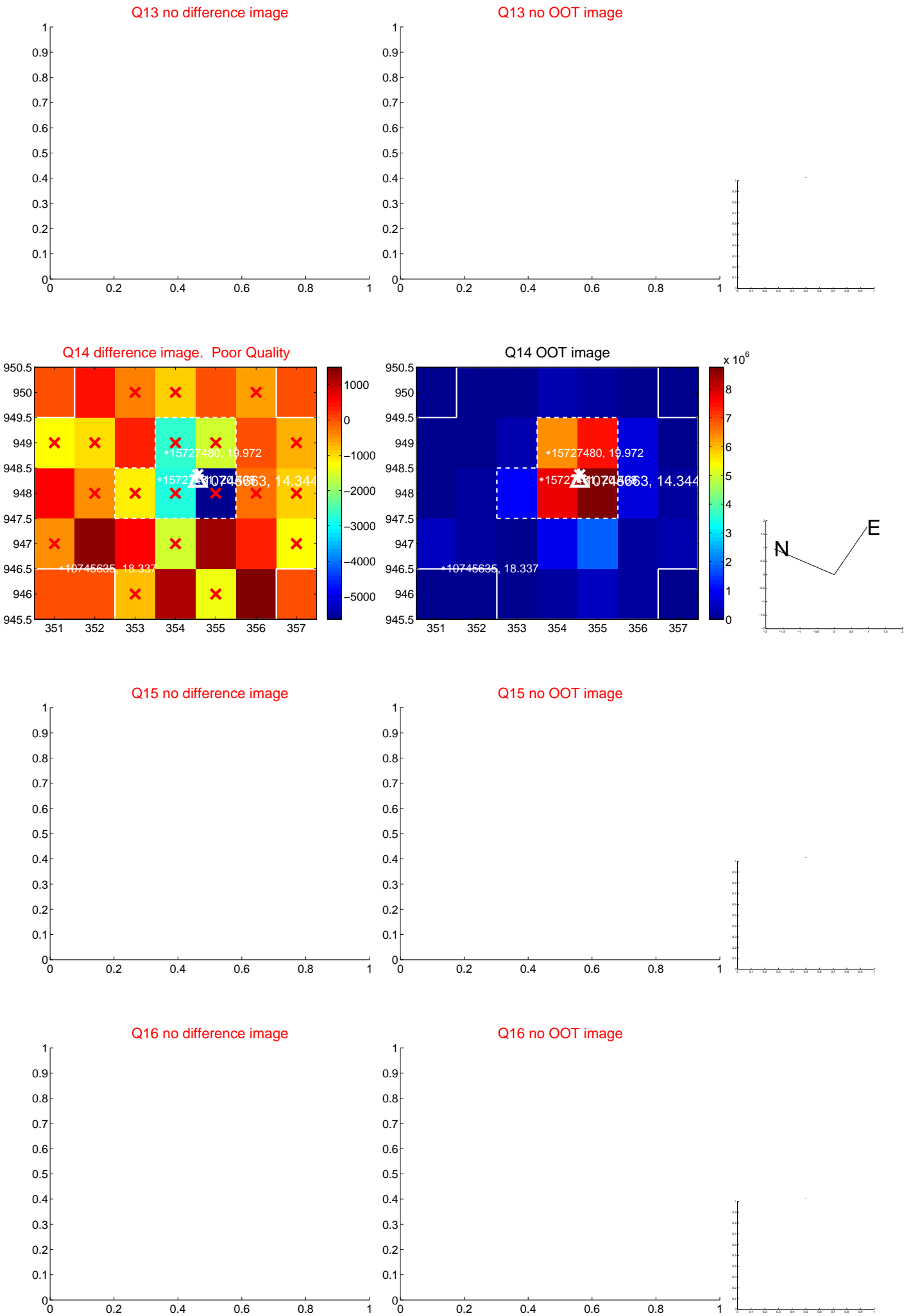
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



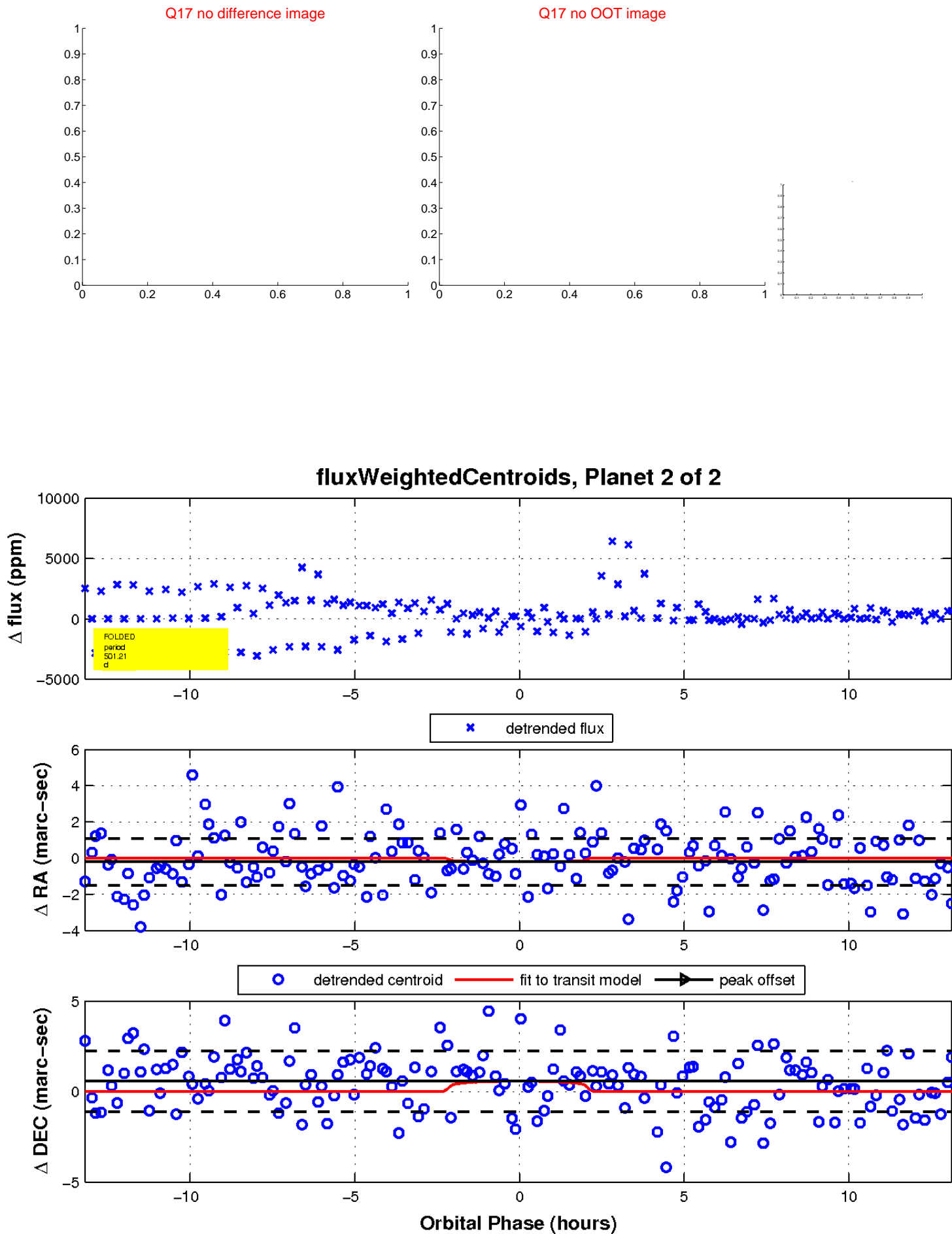
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

