

KIC 003634755

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})
003634755-01	OBS	No	711.220882	140.856146	1389.4	7.789	30.4	7.7	0.56	4875	2.41	0.10
003634755-02	OBS	No	308.961264	364.978663	1690.7	2.944	386.4	10.8	0.56	4875	2.33	0.29
003634755-03	OBS	No	443.040224	570.913998	904.6	4.144	79.2	6.7	0.56	4875	1.83	0.18
003634755-04	OBS	No	545.888201	365.594548	620.6	13.175	69.9	3.3	0.56	4875	1.42	0.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003634755-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003634755-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003634755-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003634755-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—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.

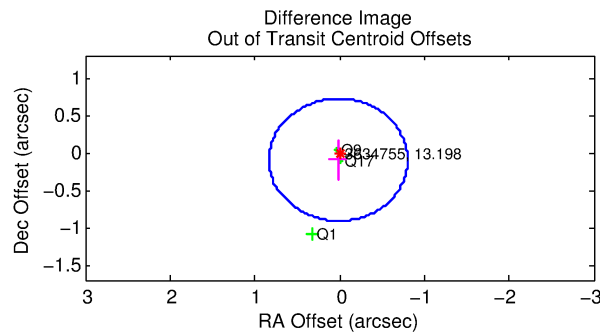
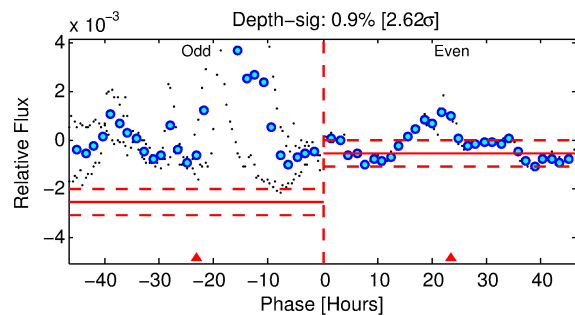
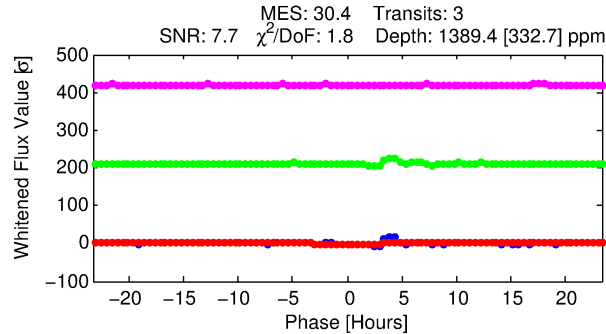
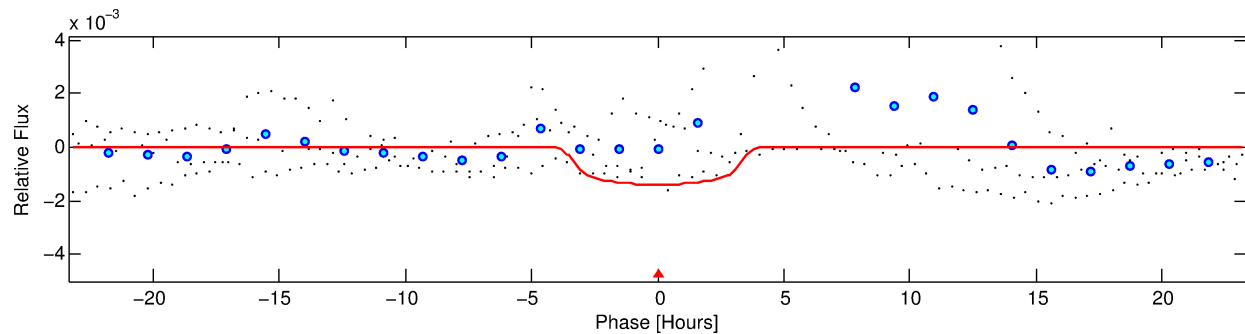
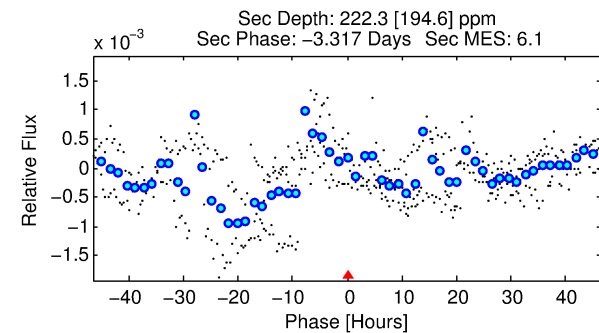
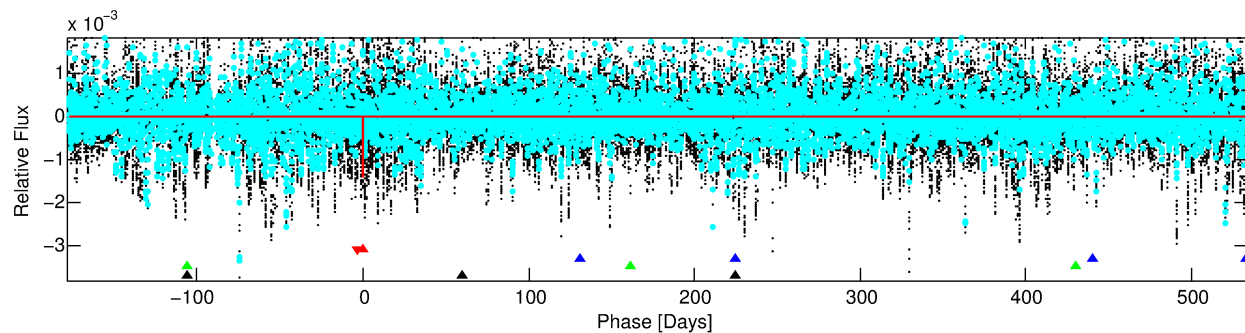
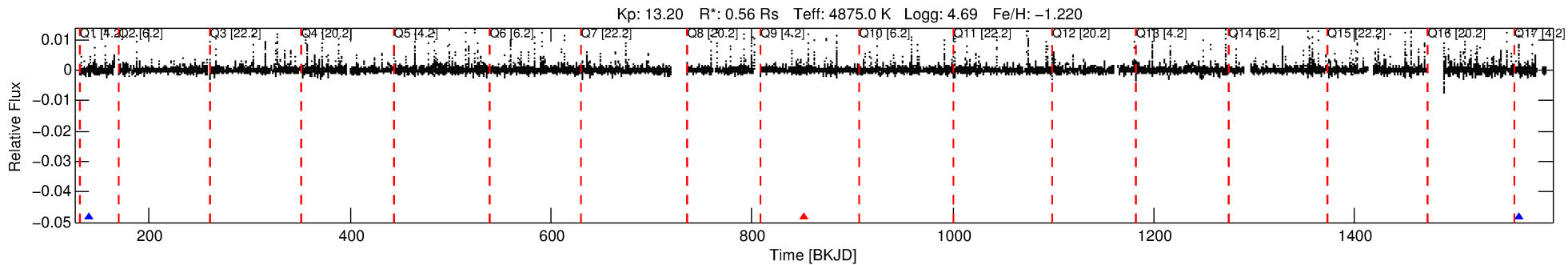
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003634755-01

No Significant Match Found

DV One-Page Summary

KIC: 3634755 Candidate: 1 of 4 Period: 711.221 d



DV Fit Results:

Period = 711.22088 [0.00801] d
Epoch = 140.8561 [0.0100] BKJD
Rp/R* = 0.0396 [0.0059]
a/R* = 404.56 [113.80]
b = 0.86 [0.08]
Seff = 0.10 [0.02]
Teq = 142 [6] K
Rp = 2.41 [0.39] Re
a = 1.2872 [0.0755] AU
Ag = 34784.02 [32346.48] [1.08 σ]
Teffp = 2993 [699] K [4.08 σ]

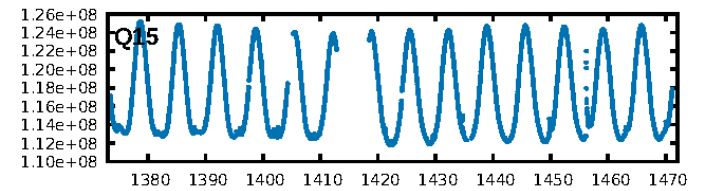
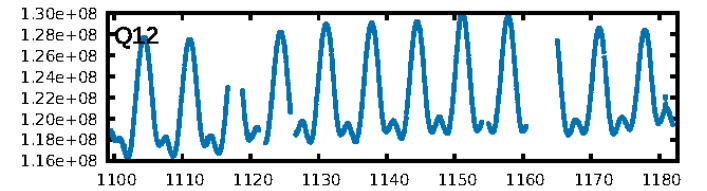
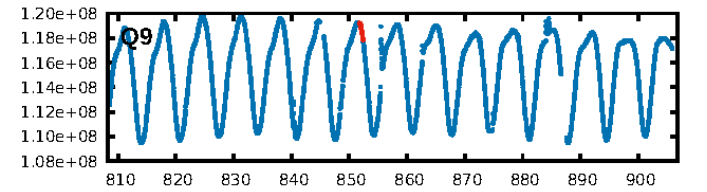
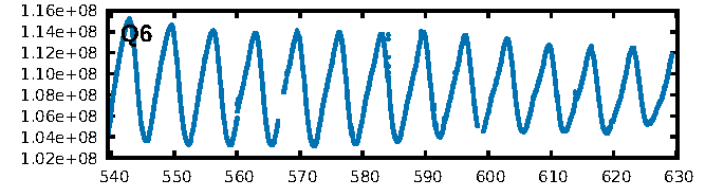
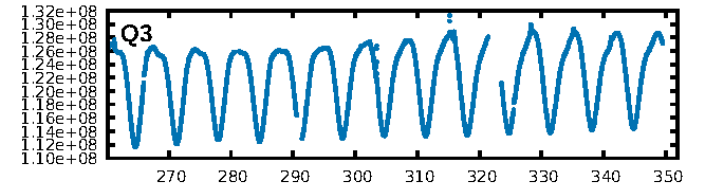
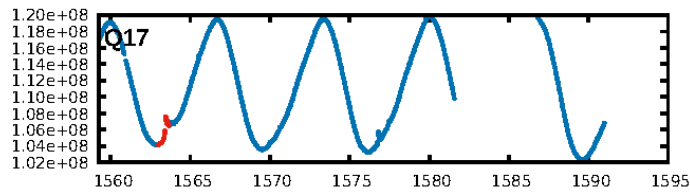
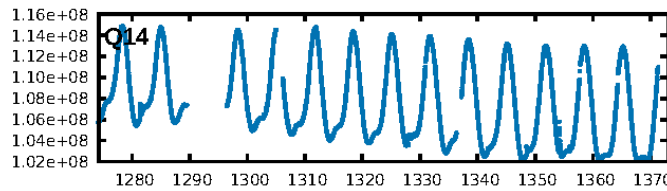
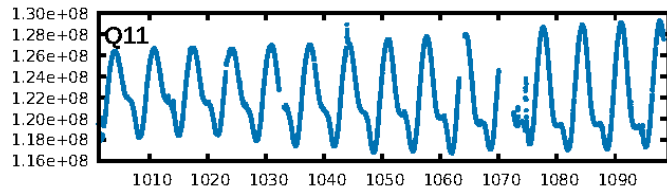
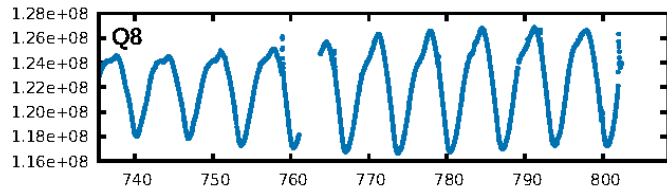
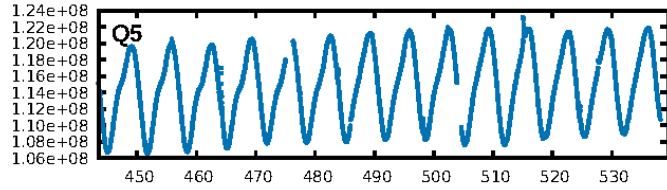
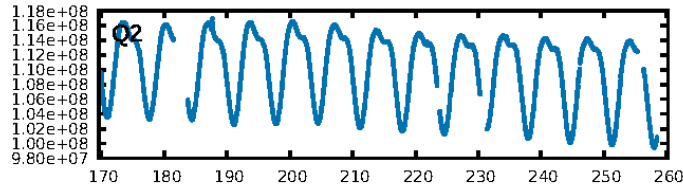
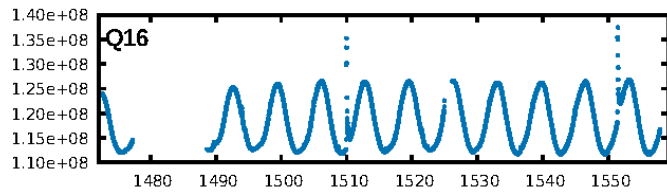
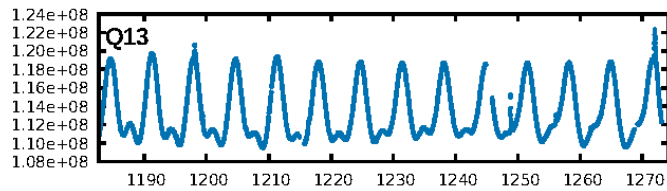
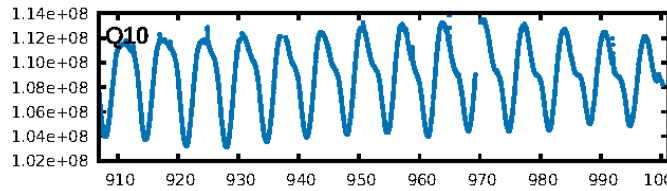
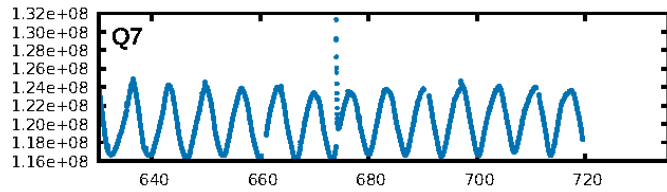
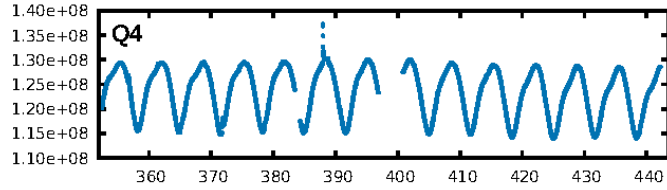
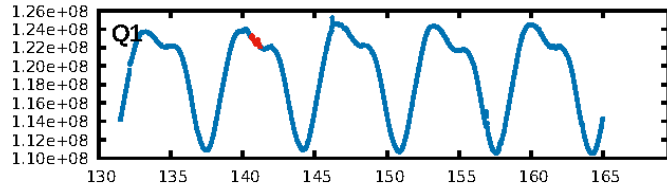
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [259.26 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 10.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.00 [0/1]
GhostDiagnostic-chr: 3.549
Centroid-sig: 49.1%
Centroid-so: 0.543 arcsec [1.37 σ]
OotOffset-rm: 0.097 arcsec [0.35 σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-rm: 0.225 arcsec [0.98 σ]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

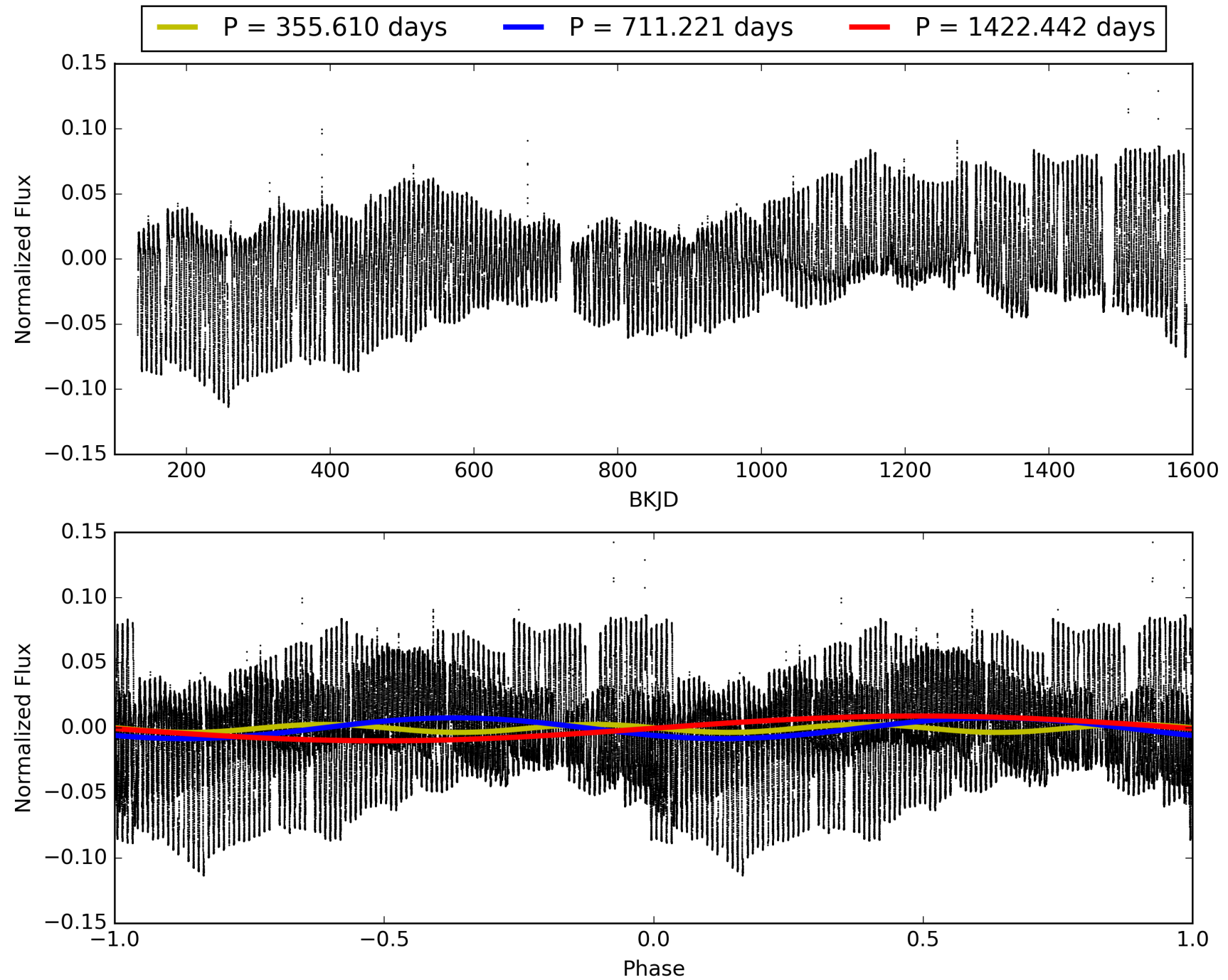
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:37:11 Z

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

TCE 003634755-01, PDC Light Curves

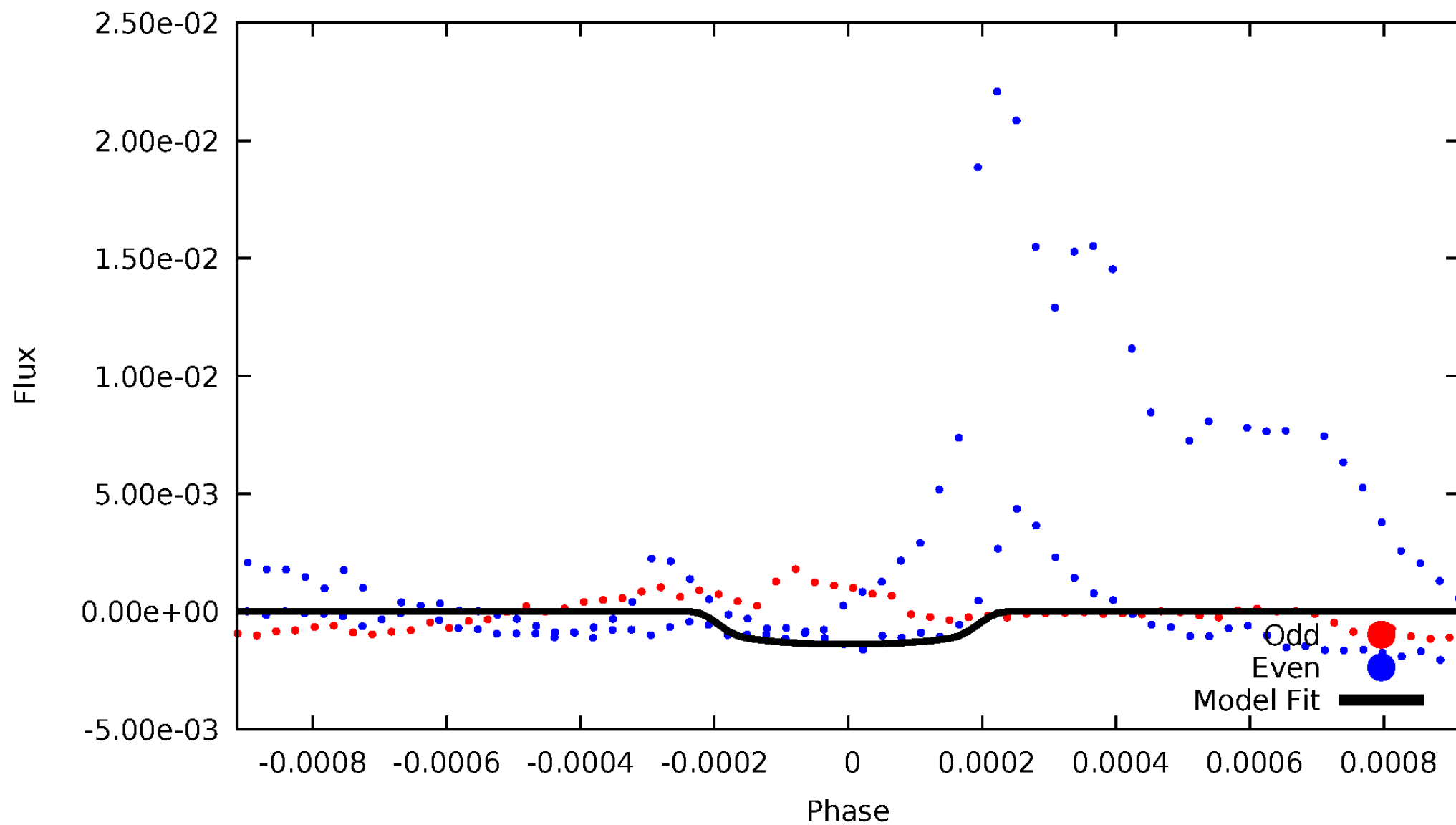


TCE 003634755-01



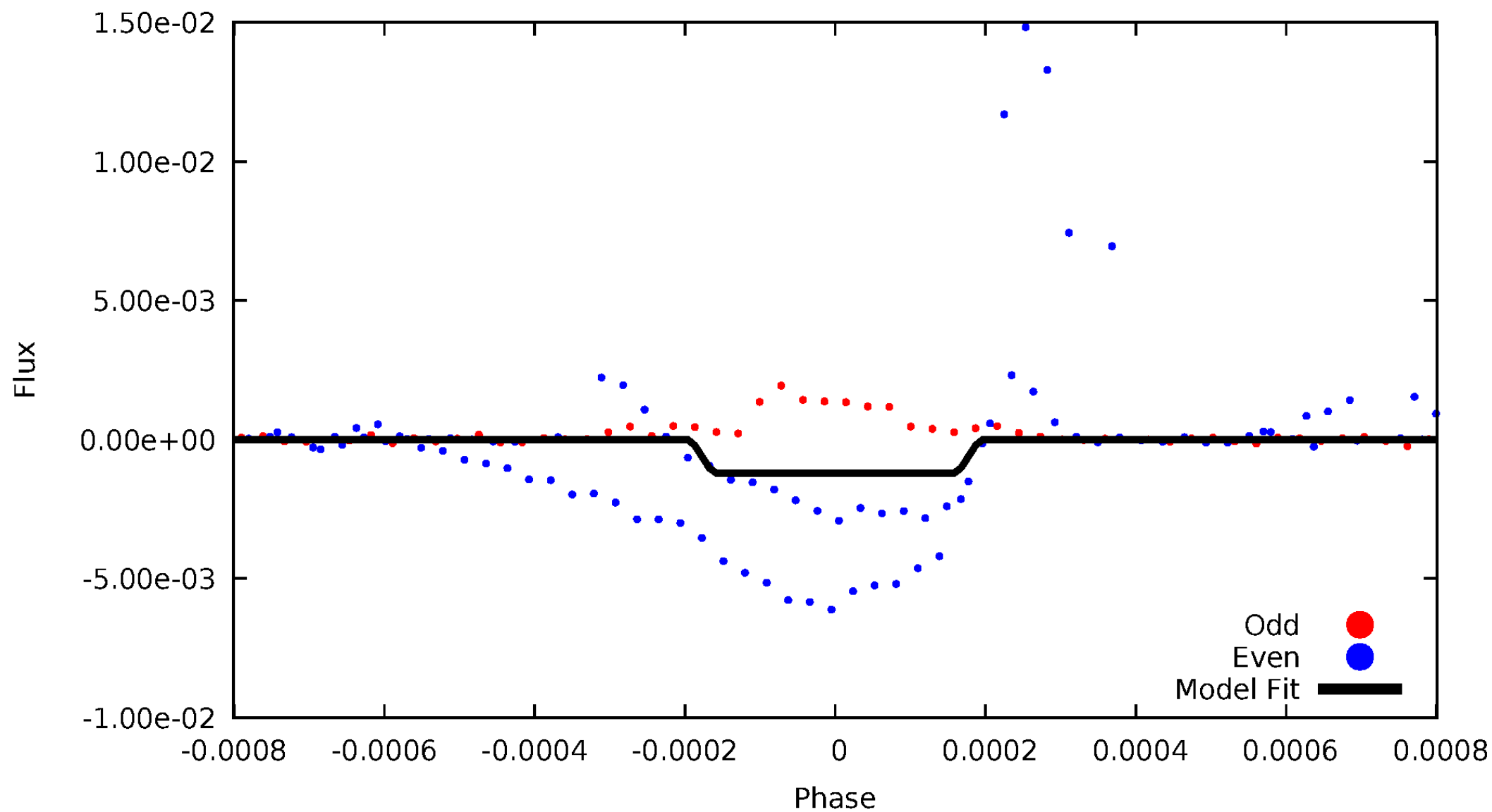
DV Odd/Even

TCE 003634755-01



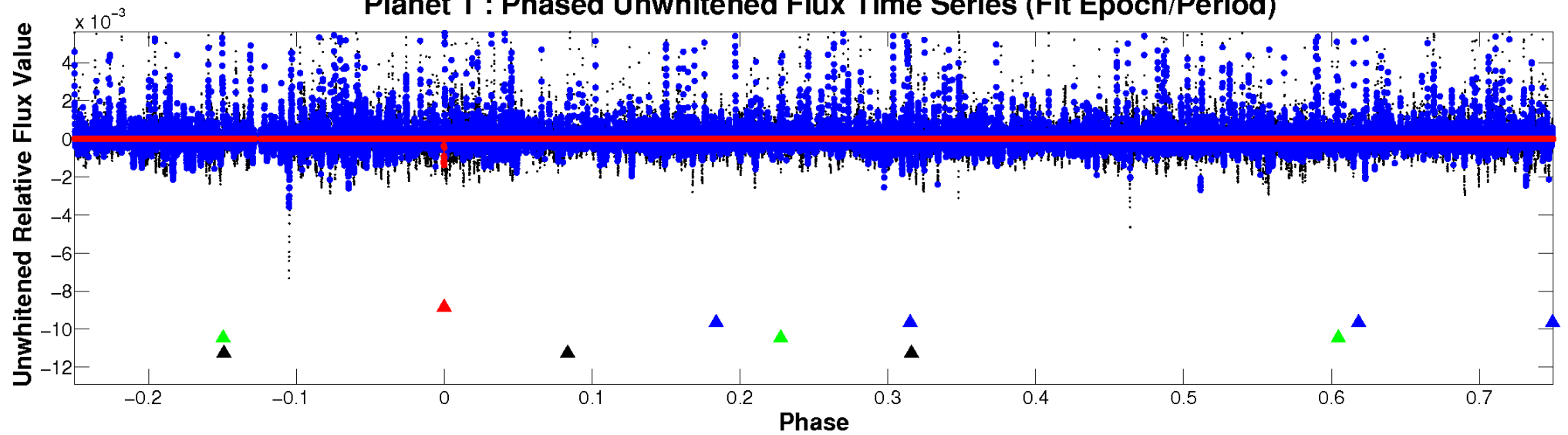
ALT Odd/Even

TCE 003634755-01

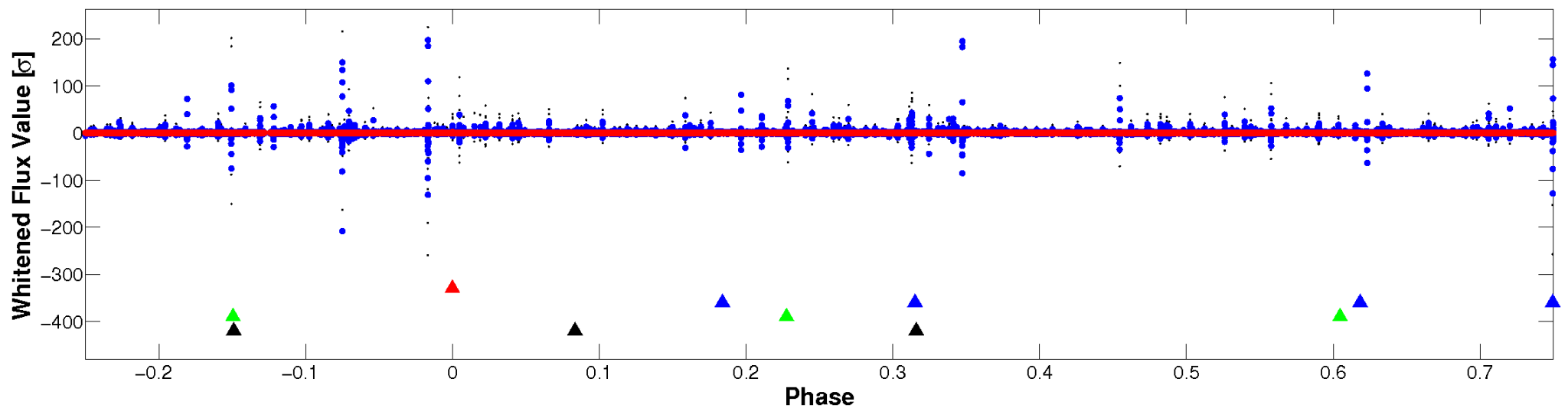


Non-Whitened Vs. Whitened Light Curve

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

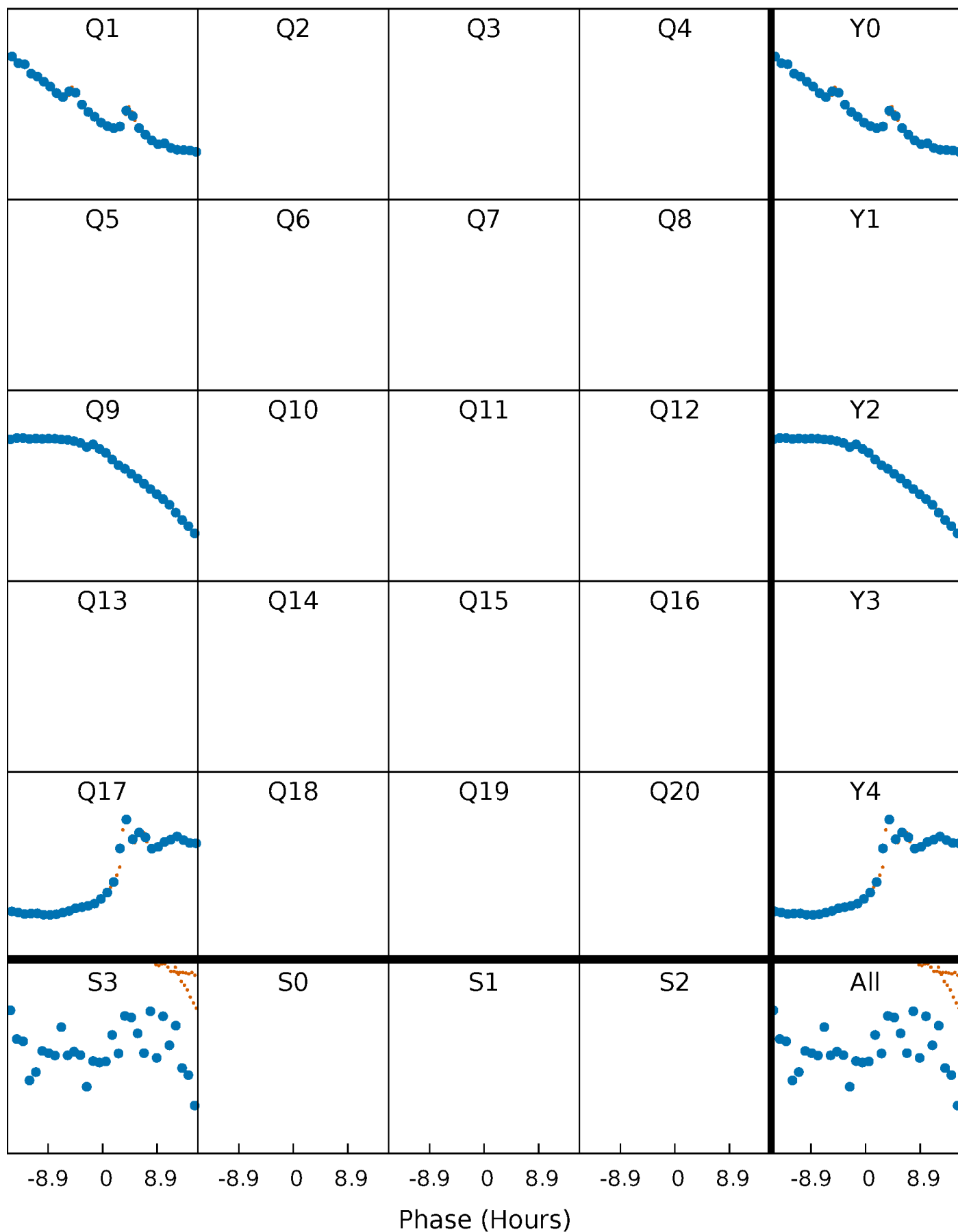


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



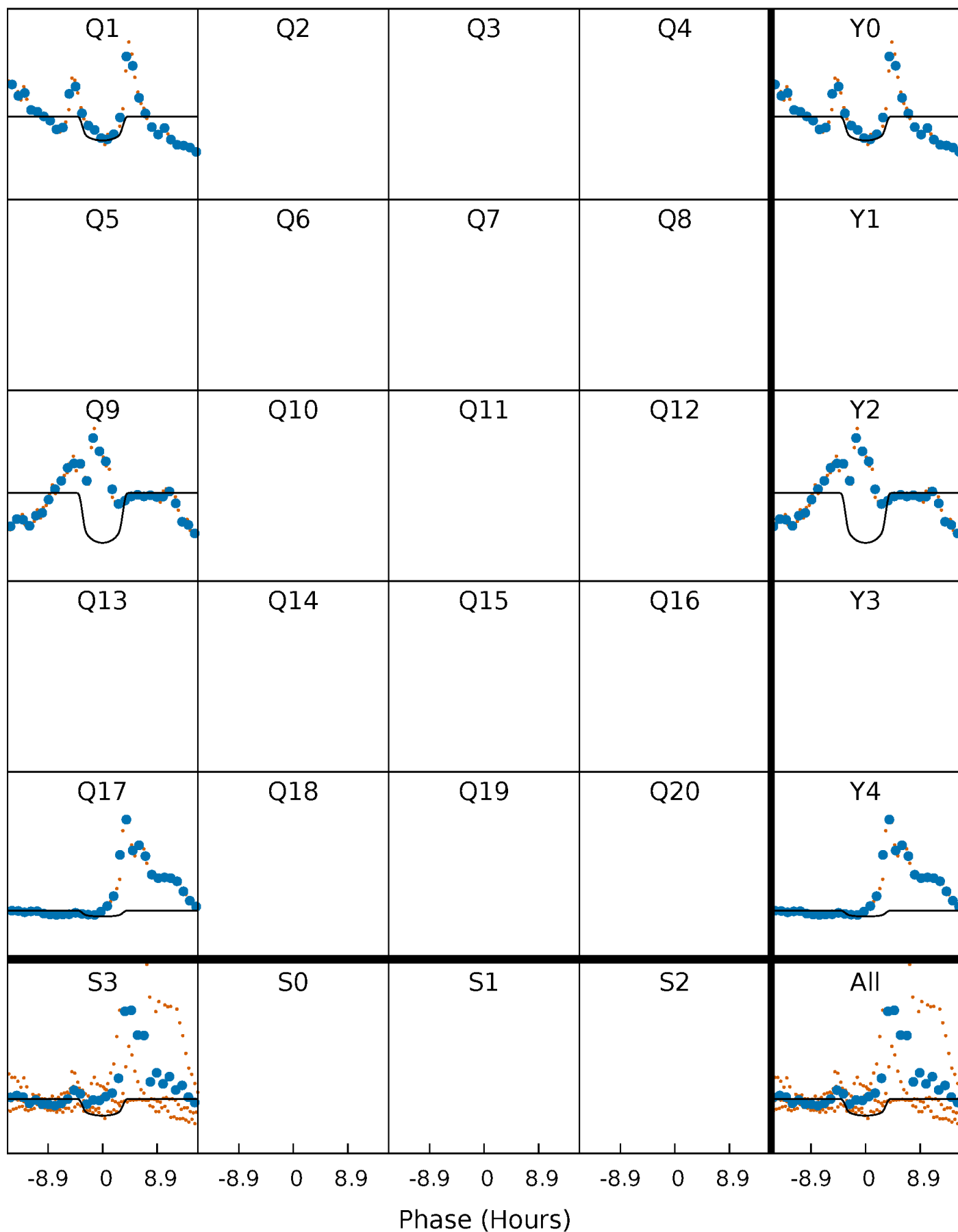
PDC Quarter-Phased Transit Curves

TCE 003634755-01 P=711.220882 Days $T_0=140.856146$ (BKJD)



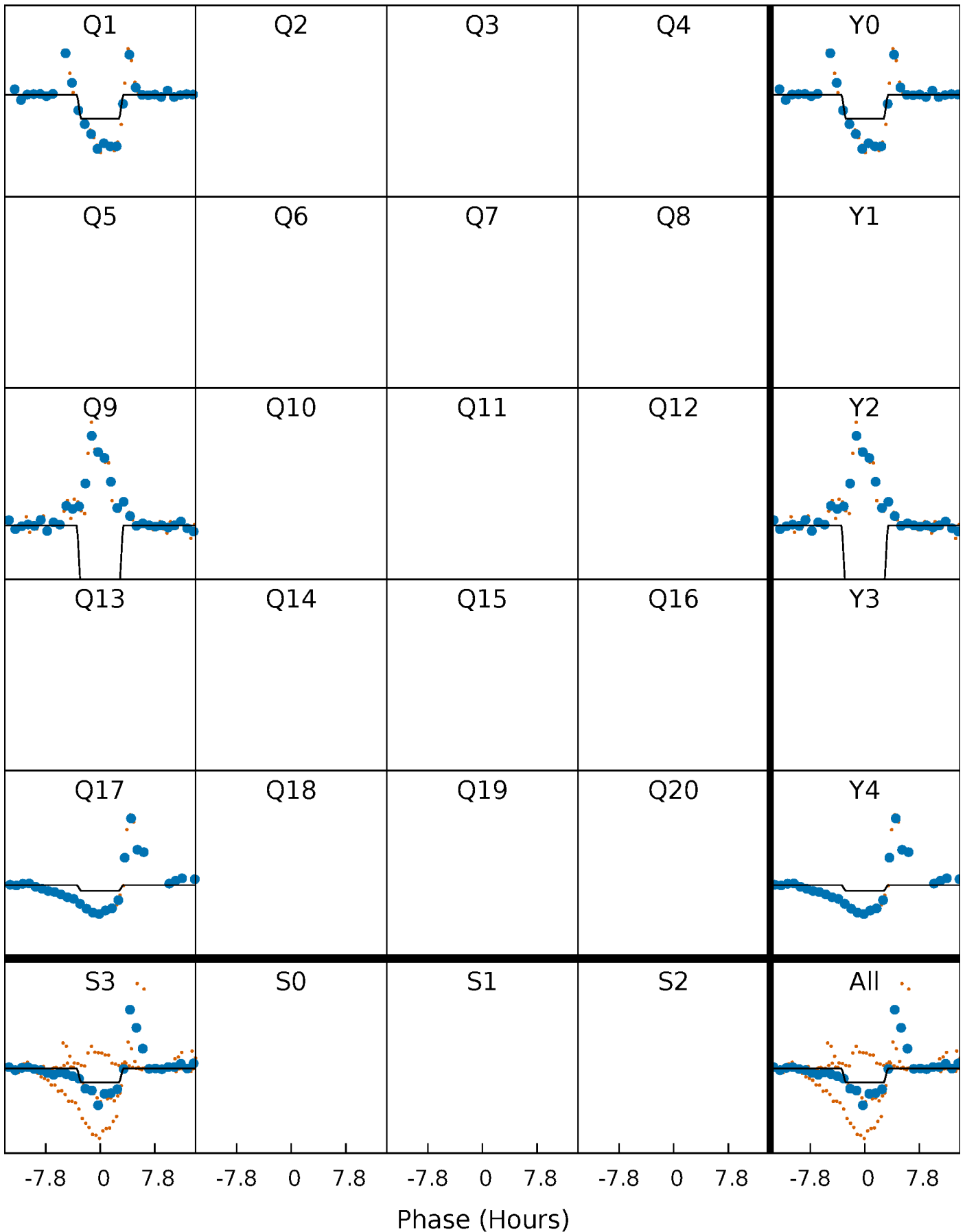
DV Quarter-Phased Transit Curves

TCE 003634755-01 P=711.220882 Days $T_0=140.856146$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

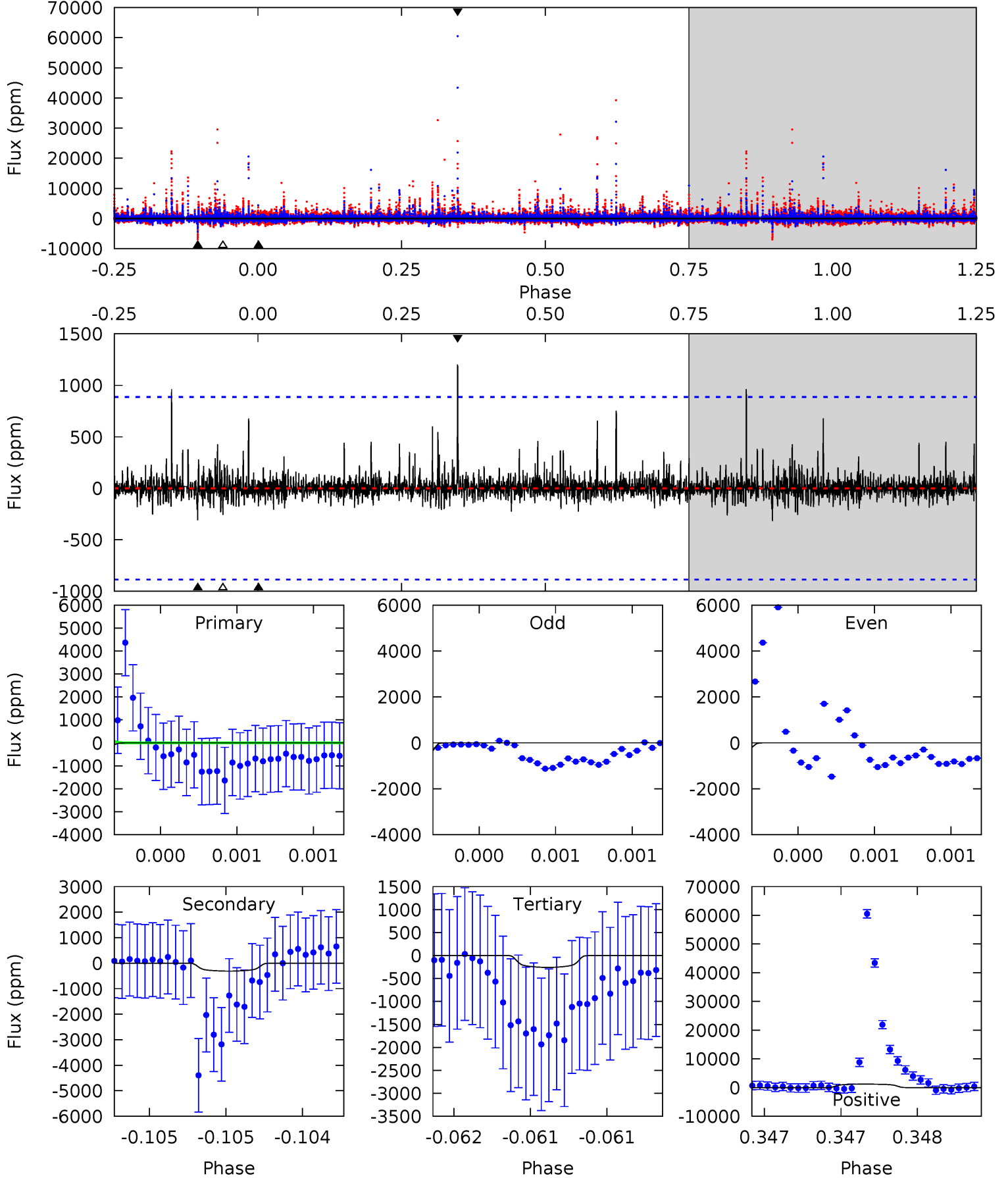
TCE 003634755-01 P=711.203678 Days $T_0=140.868307$ (BKJD)



DV Model-Shift Uniqueness Test

003634755-01, P = 711.220882 Days, E = 140.856146 Days

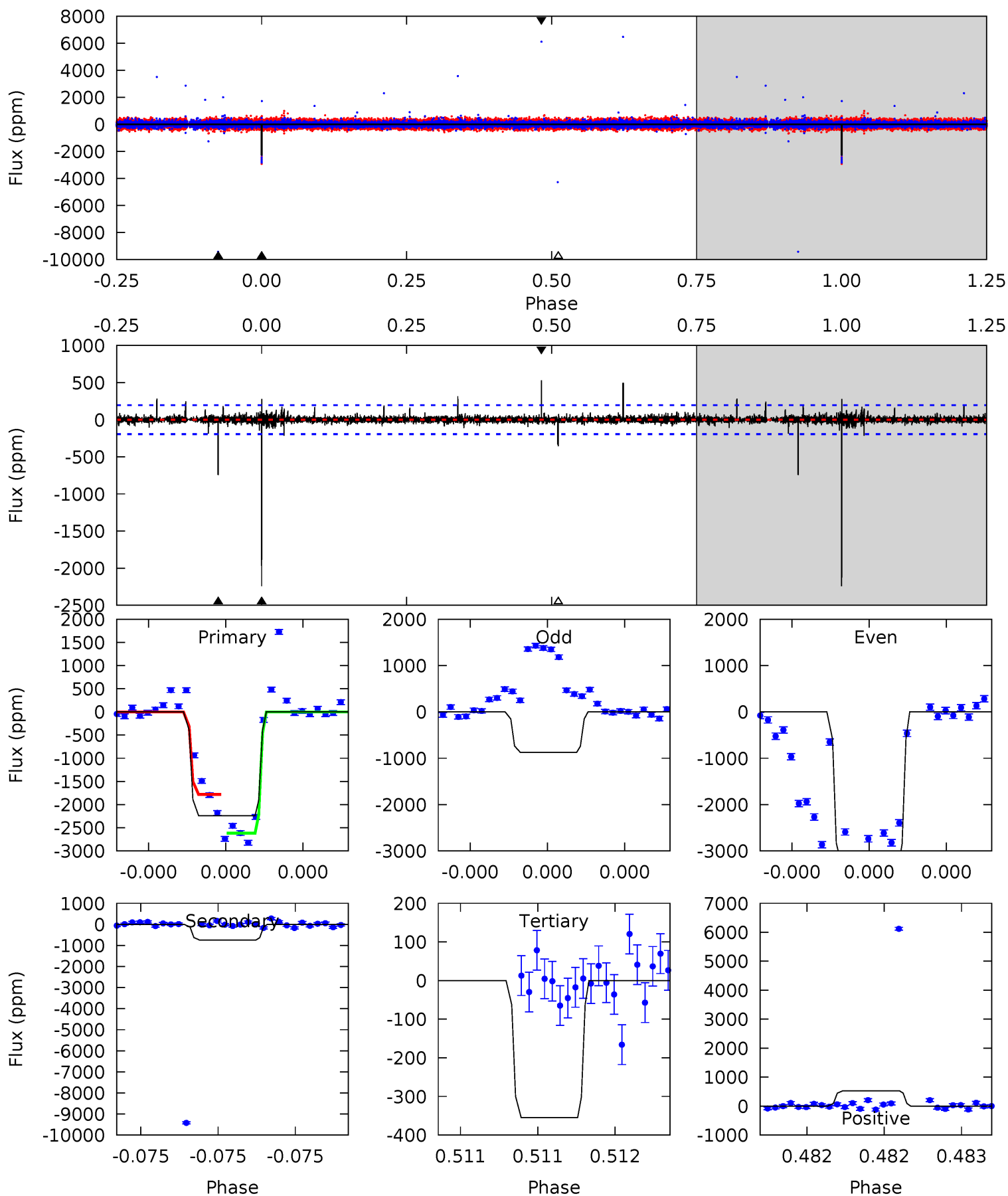
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.10	1.95	1.62	7.55	5.58	3.50	0.54	-0.52	-6.45	0.33	-5.60	0.46	0.78	0.79	1.40



Alt Model-Shift Uniqueness Test

003634755-01, P = 711.203678 Days, E = 140.868307 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
64.6	21.4	10.2	15.2	5.62	3.54	0.75	54.3	49.3	11.2	6.20	40.6	0.94	0.19	0



Stellar Parameters For KIC 003634755

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4875^{+145}_{-160}	$4.693^{+0.052}_{-0.028}$	$-1.220^{+0.300}_{-0.300}$	$0.559^{+0.033}_{-0.036}$	$0.563^{+0.040}_{-0.023}$	$4.532^{+0.892}_{-0.512}$
	+3%/-3%	+1%/-1%	+25%/-25%	+6%/-6%	+7%/-4%	+20%/-11%
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 003634755-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-310 ± 159	$2.41^{+0.40}_{-0.37}$	197^{+6}_{-7}	3584^{+343}_{-400}	48175^{+32850}_{-25685}
Alt.	-744 ± 35	$2.12^{+0.36}_{-0.38}$	197^{+7}_{-8}	4416^{+367}_{-287}	151613^{+73152}_{-41420}

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

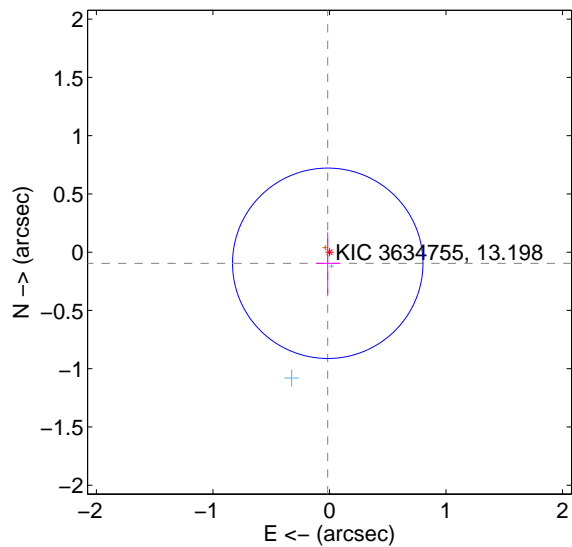
Supplemental centroid analysis for 003634755-01. Kepler magnitude: 13.20. Transit SNR 7.69

There are 2 quarters with good PRF difference image offsets

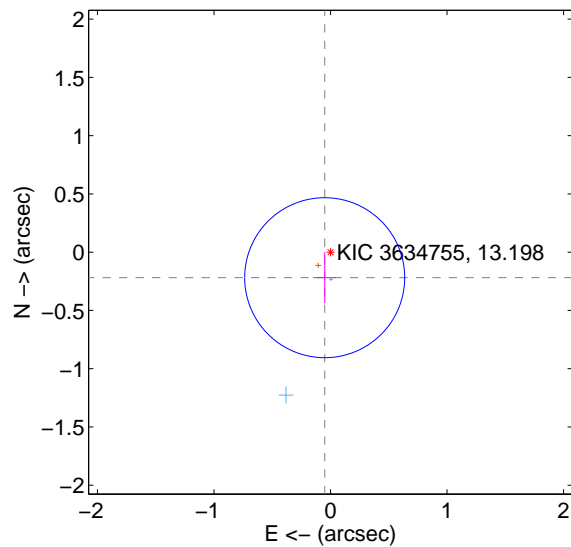
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.097 ± 0.272	0.35	0.015 ± 0.098	-0.095 ± 0.265
PRF-fit source offset from KIC position	0.225 ± 0.229	0.98	0.050 ± 0.098	-0.219 ± 0.220
photometric centroid source offset	0.54 ± 0.40	1.37	-0.29 ± 0.45	-0.46 ± 0.37

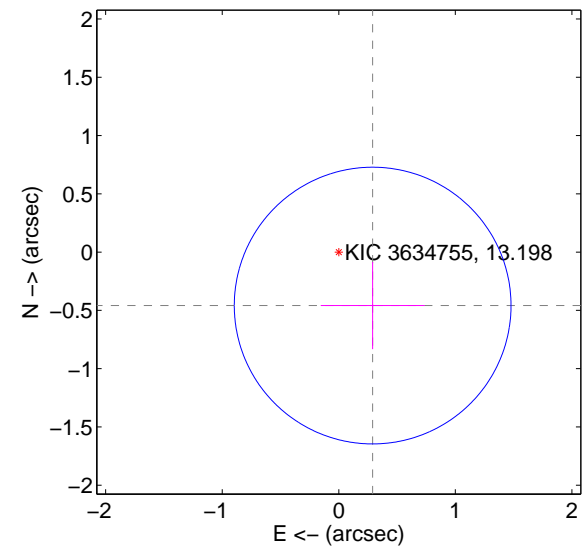
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

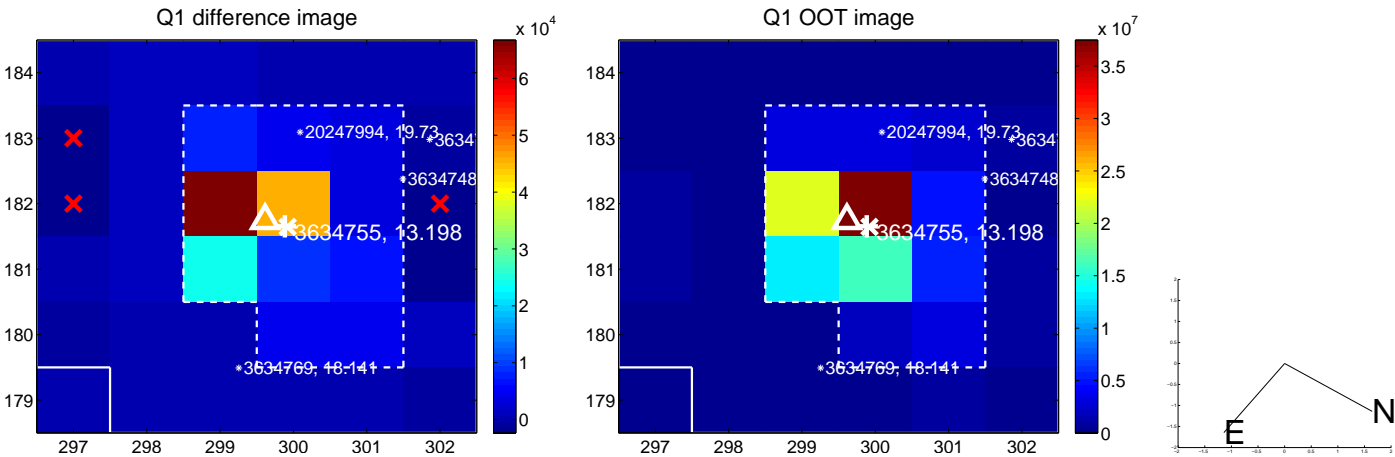


offset from photometric centroids



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.

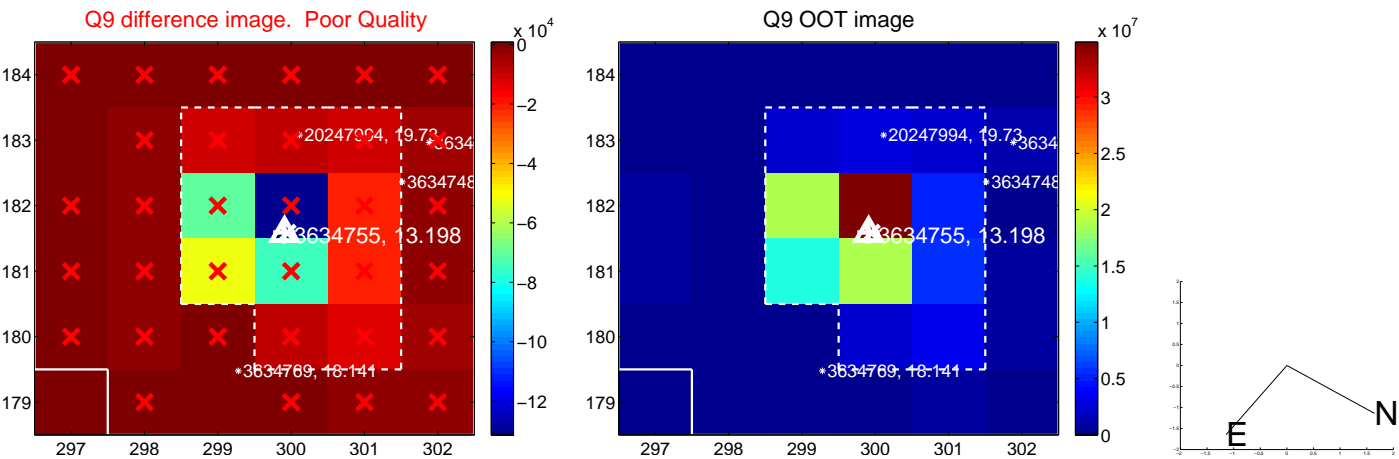
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



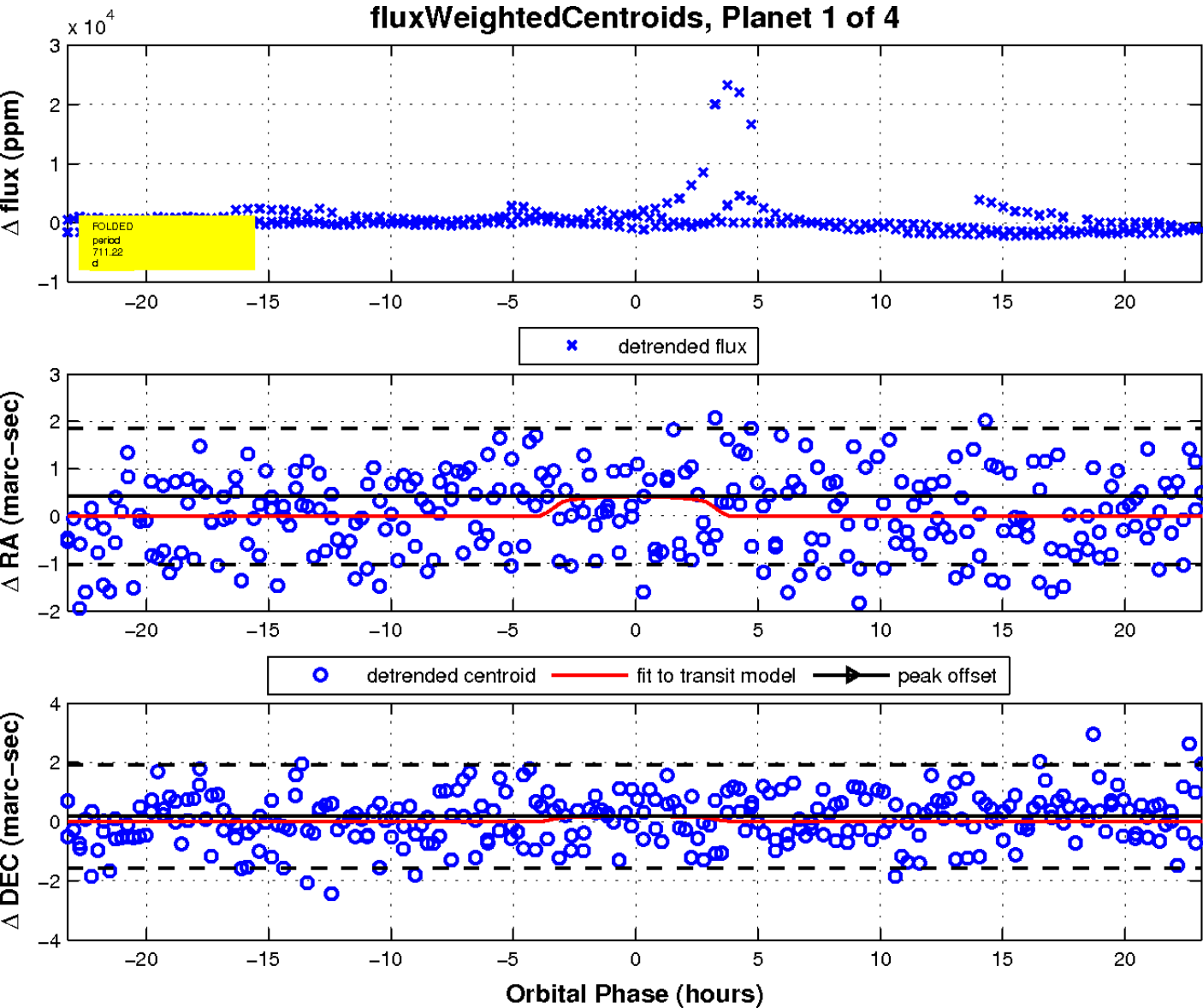
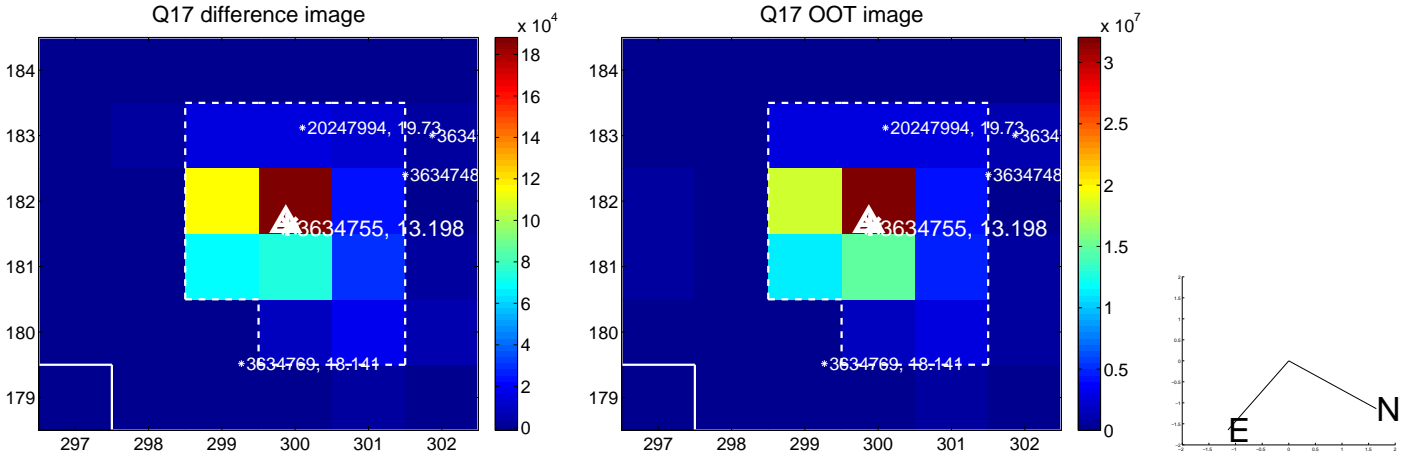
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



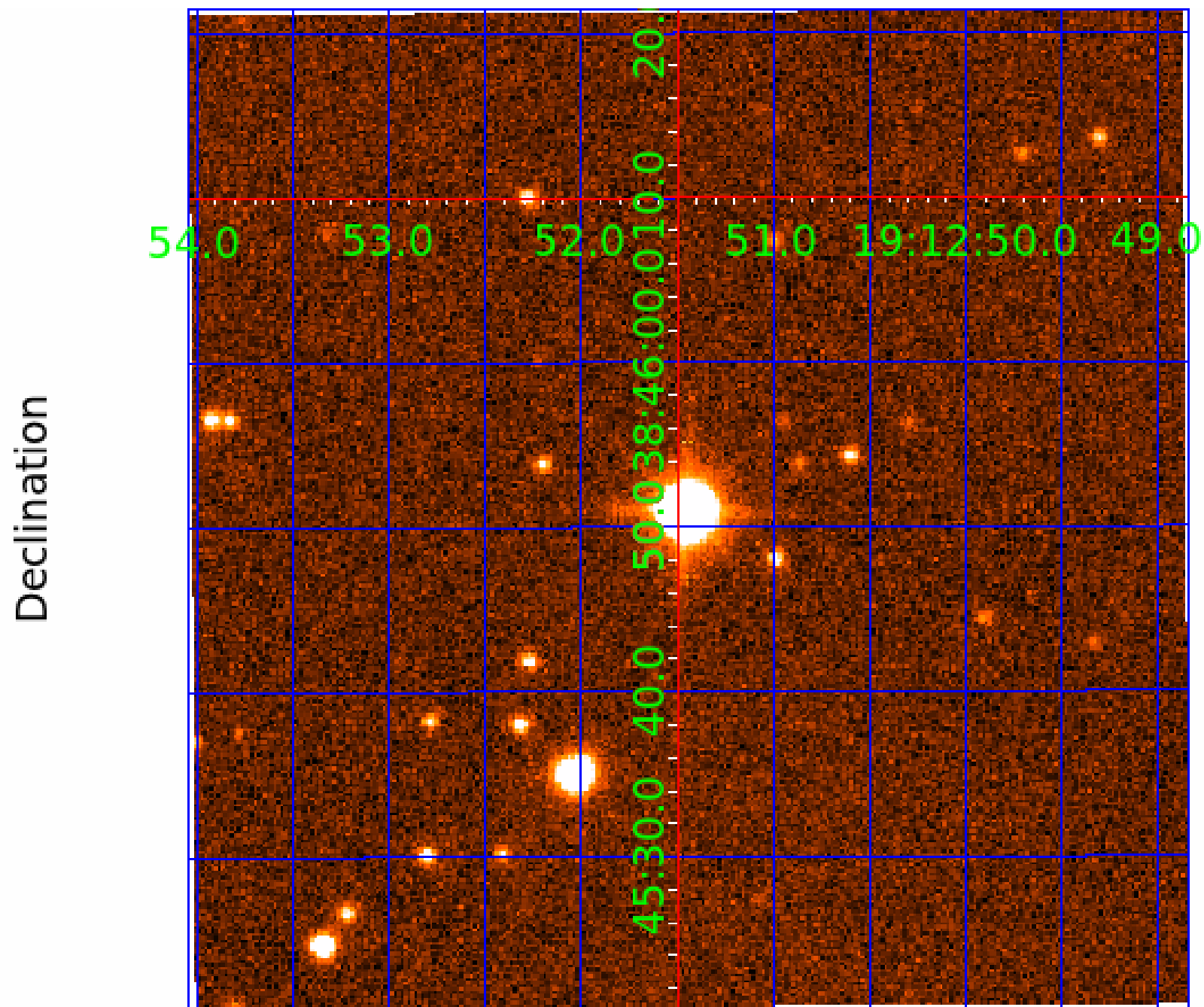
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 003634755

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})
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Robovetter Results

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003634755-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003634755-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003634755-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—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.

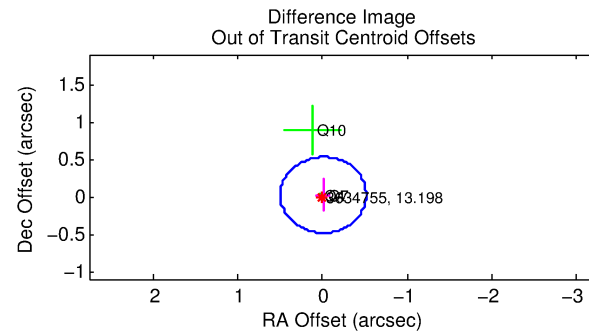
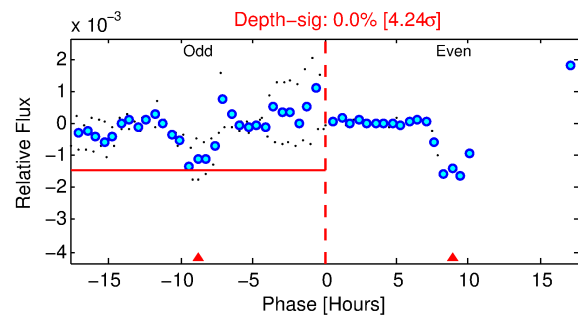
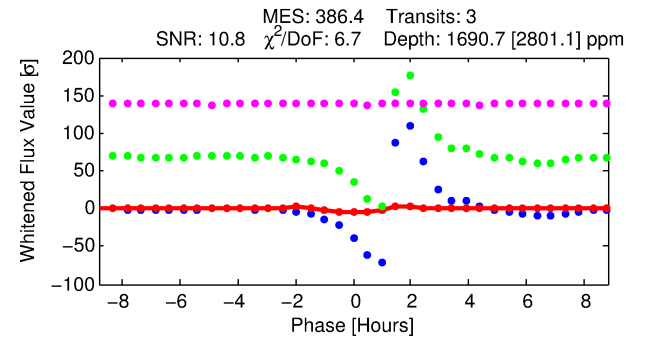
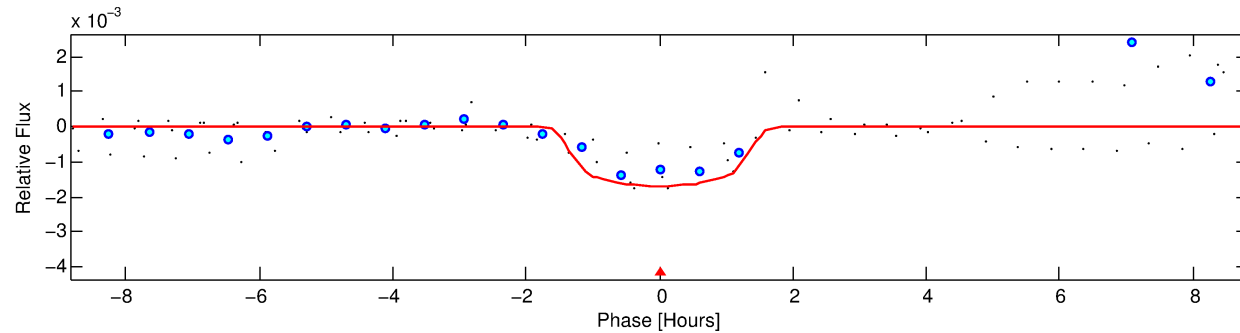
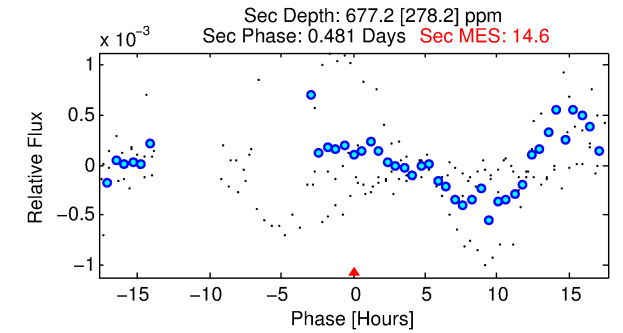
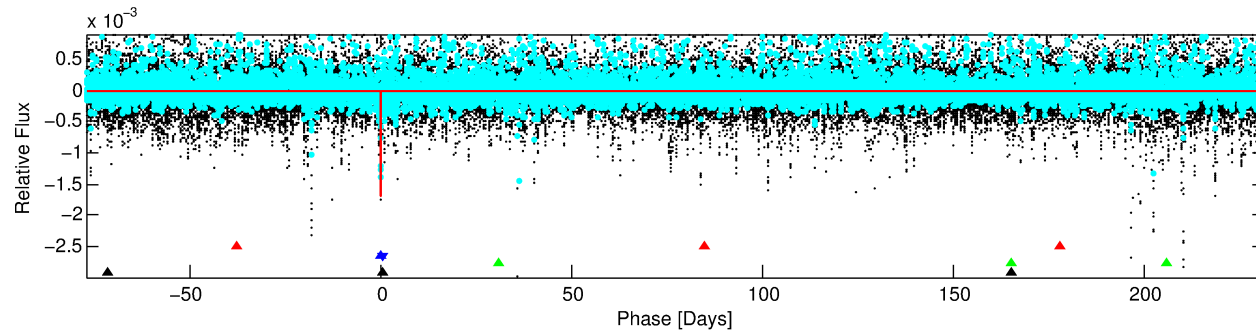
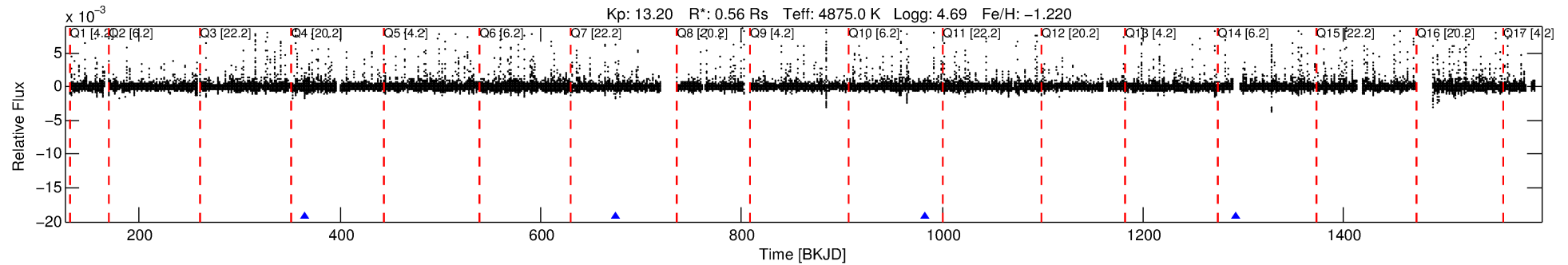
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003634755-02

No Significant Match Found

DV One-Page Summary

KIC: 3634755 Candidate: 2 of 4 Period: 308.961 d



DV Fit Results:

Period = 308.96126 [0.05010] d
Epoch = 364.9787 [0.0647] BKJD
Rp/R* = 0.0383 [1.3305]
a/R* = 737.64 [104150.14]
b = 0.48 [228.17]
Seff = 0.29 [0.05]
Teq = 187 [7] K
Rp = 2.33 [81.16] Re
a = 0.7383 [0.0433] AU
Ag = 37292.28 [2594127.63] [0.01σ]
Teffp = 4021 [69922] K [0.05σ]

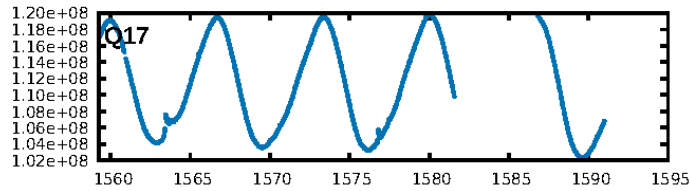
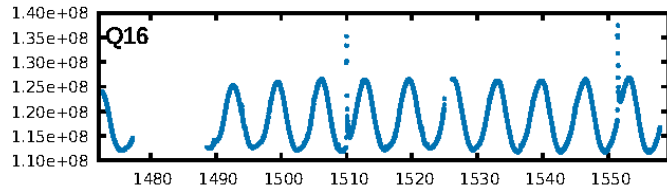
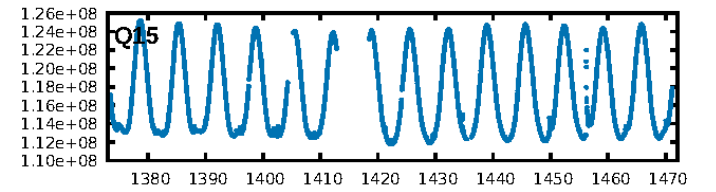
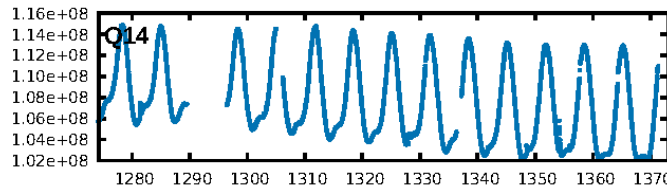
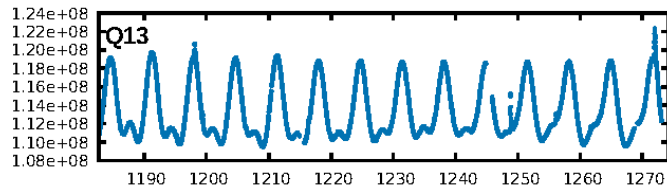
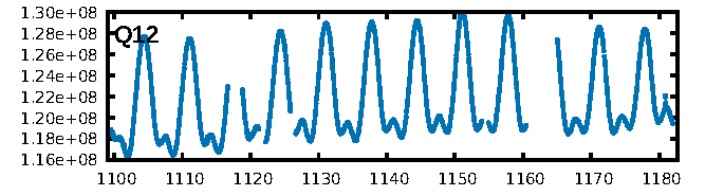
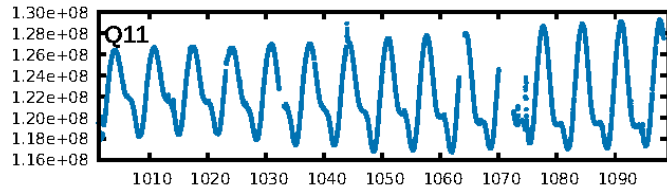
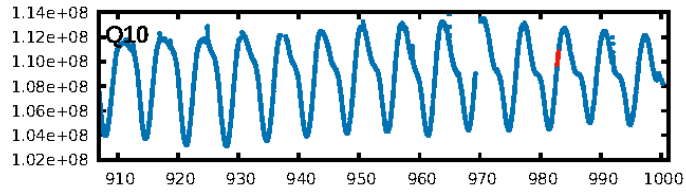
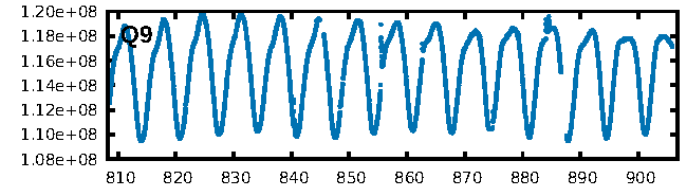
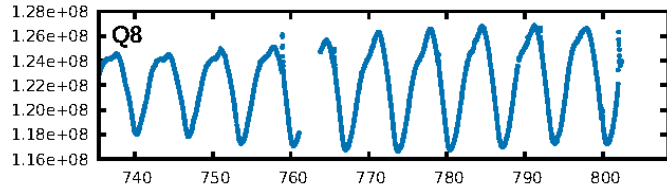
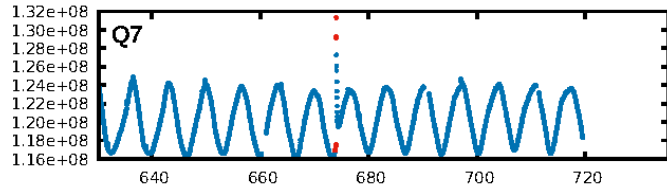
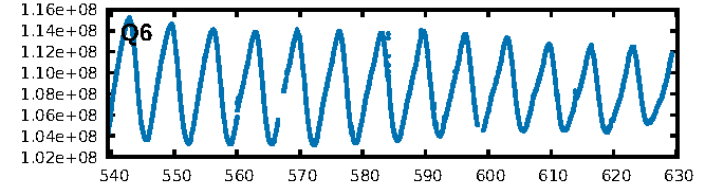
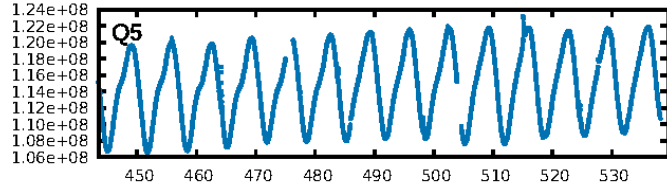
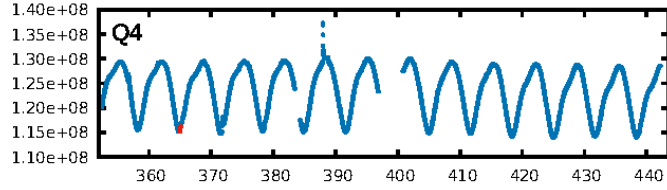
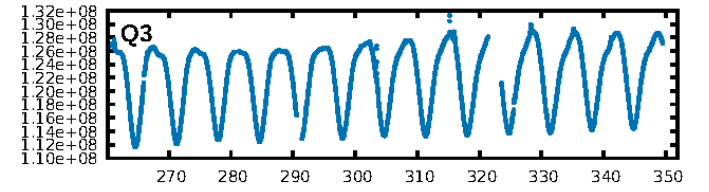
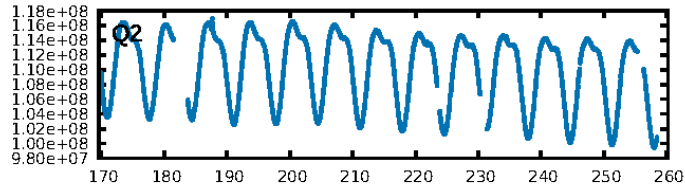
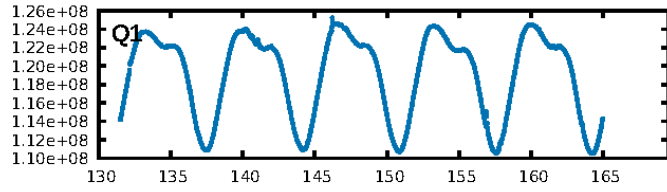
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [632.98σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.26
Centroid-sig: 76.5%
Centroid-so: 0.182 arcsec [0.42σ]
OotOffset-rm: 0.025 arcsec [0.15σ]
KicOffset-rm: 0.060 arcsec [0.30σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

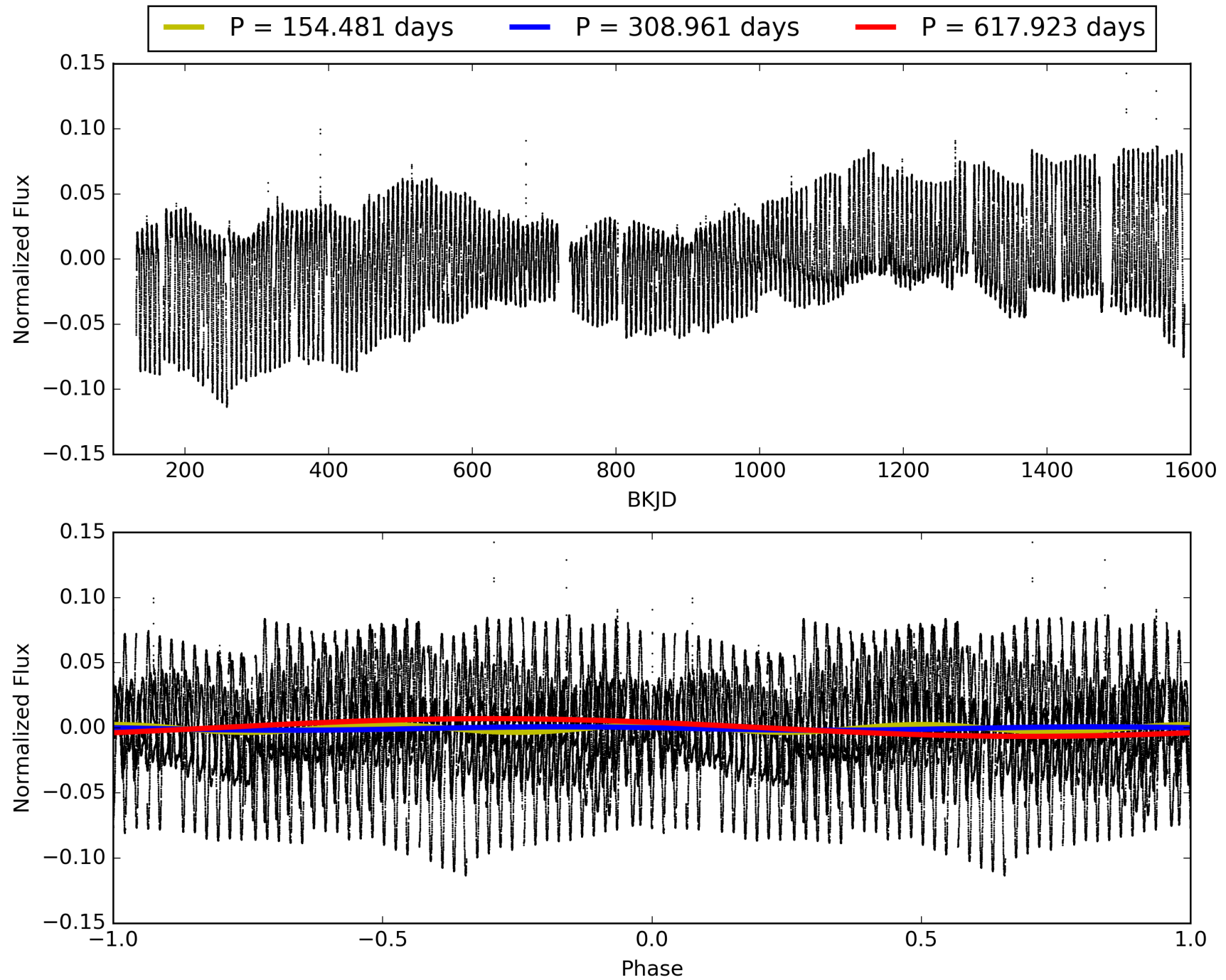
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:37:27 Z

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

TCE 003634755-02, PDC Light Curves

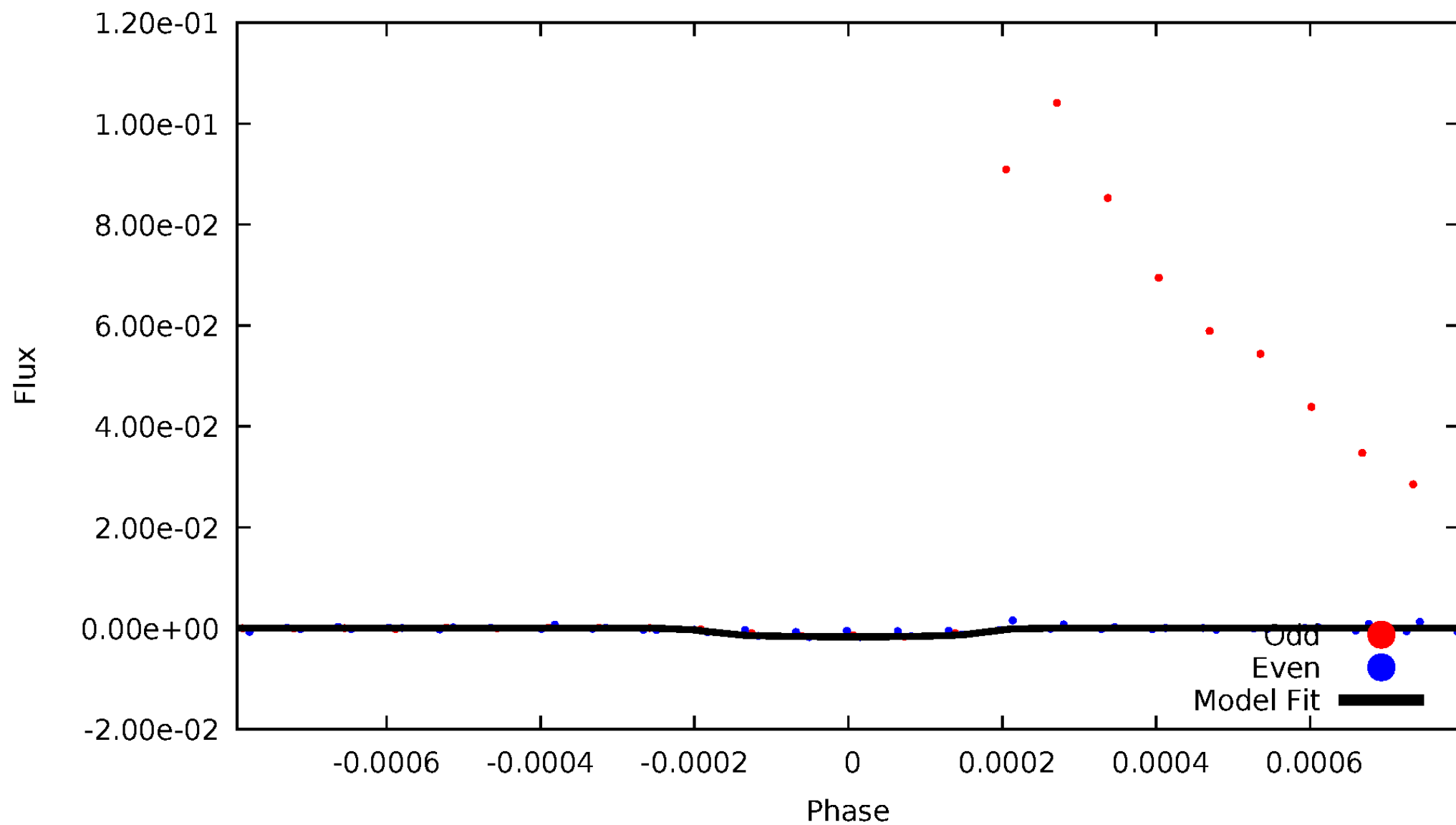


TCE 003634755-02



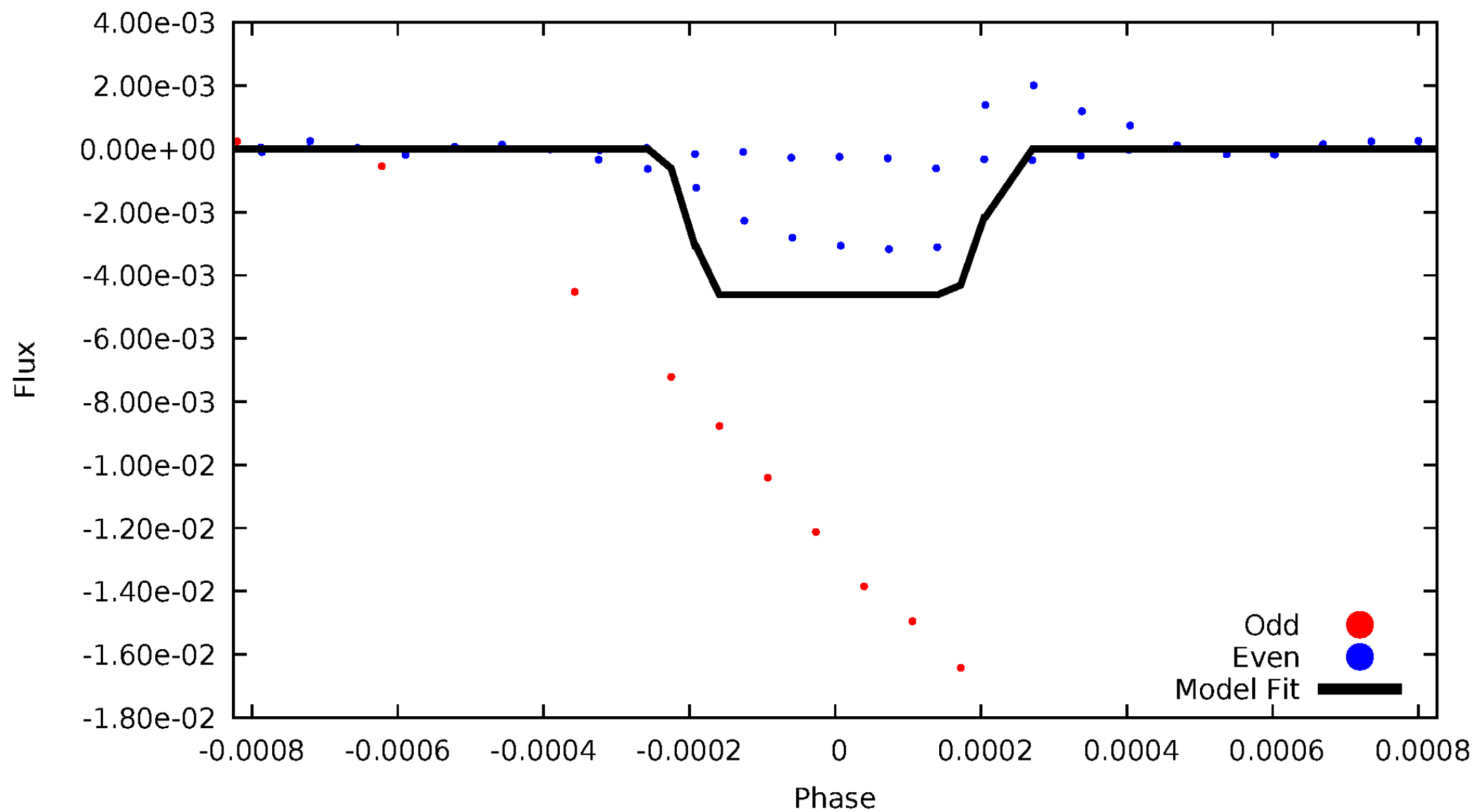
DV Odd/Even

TCE 003634755-02



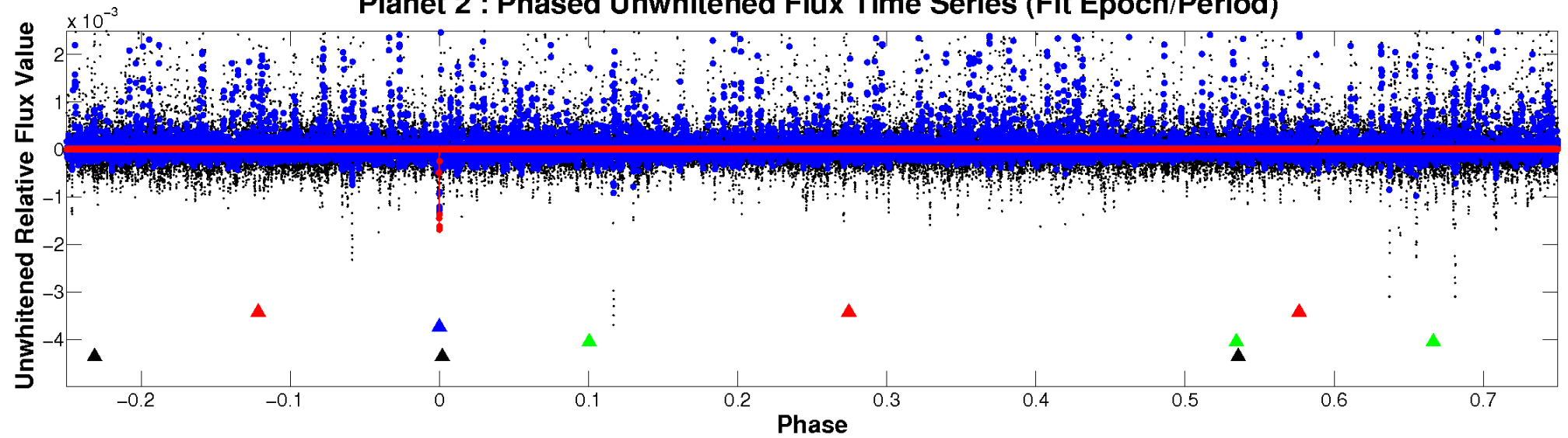
ALT Odd/Even

TCE 003634755-02

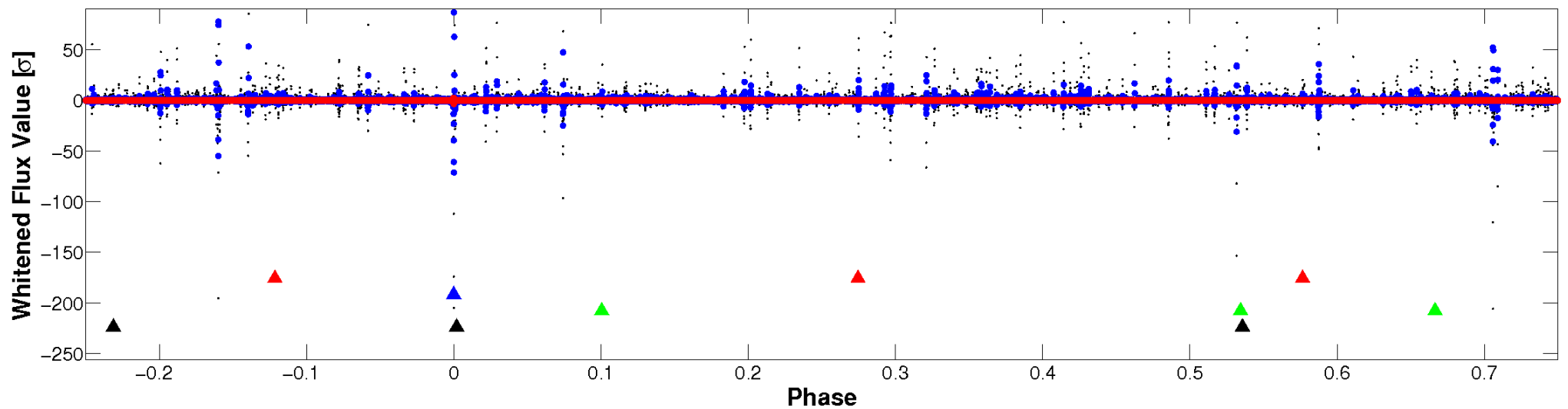


Non-Whitened Vs. Whitened Light Curve

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

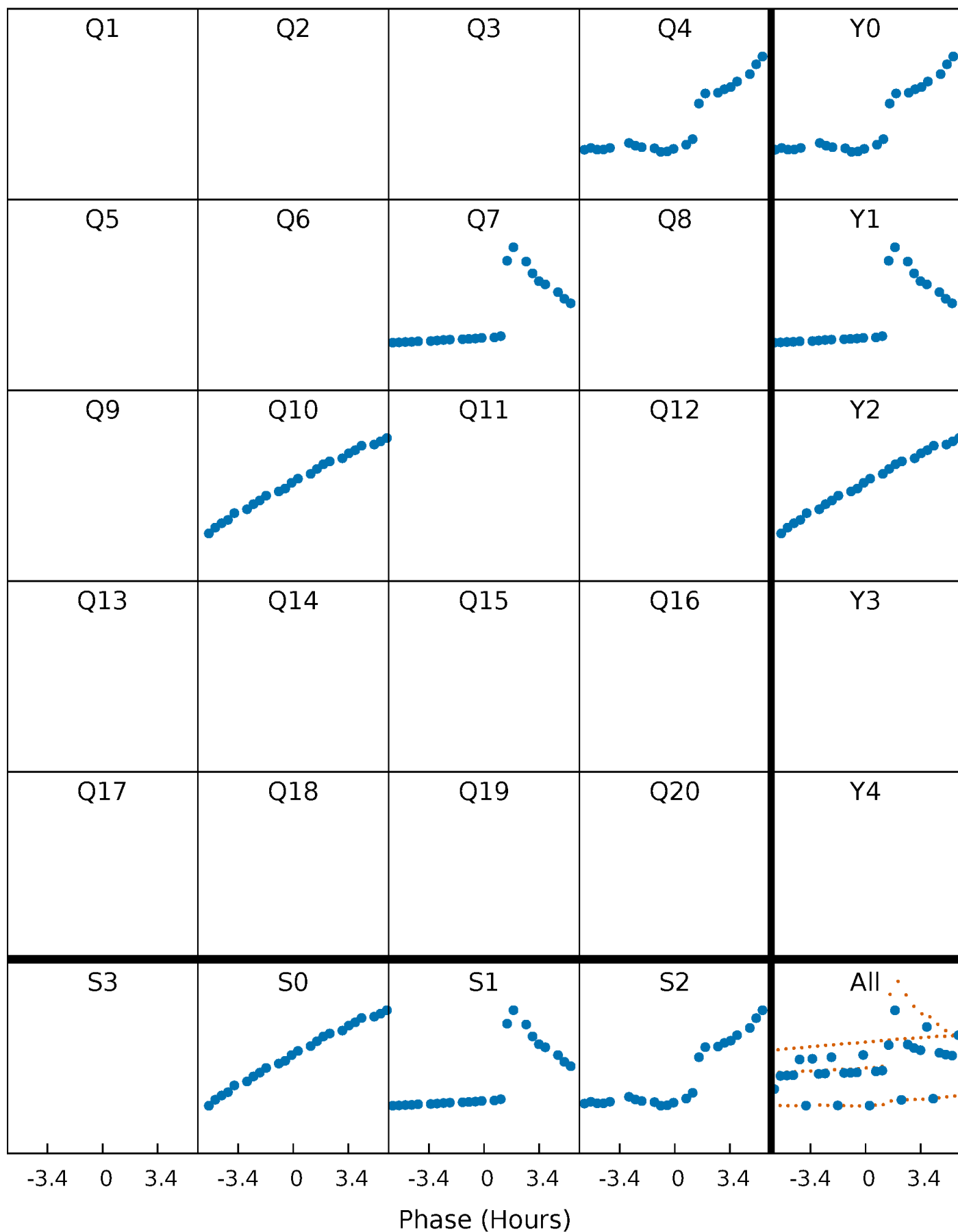


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



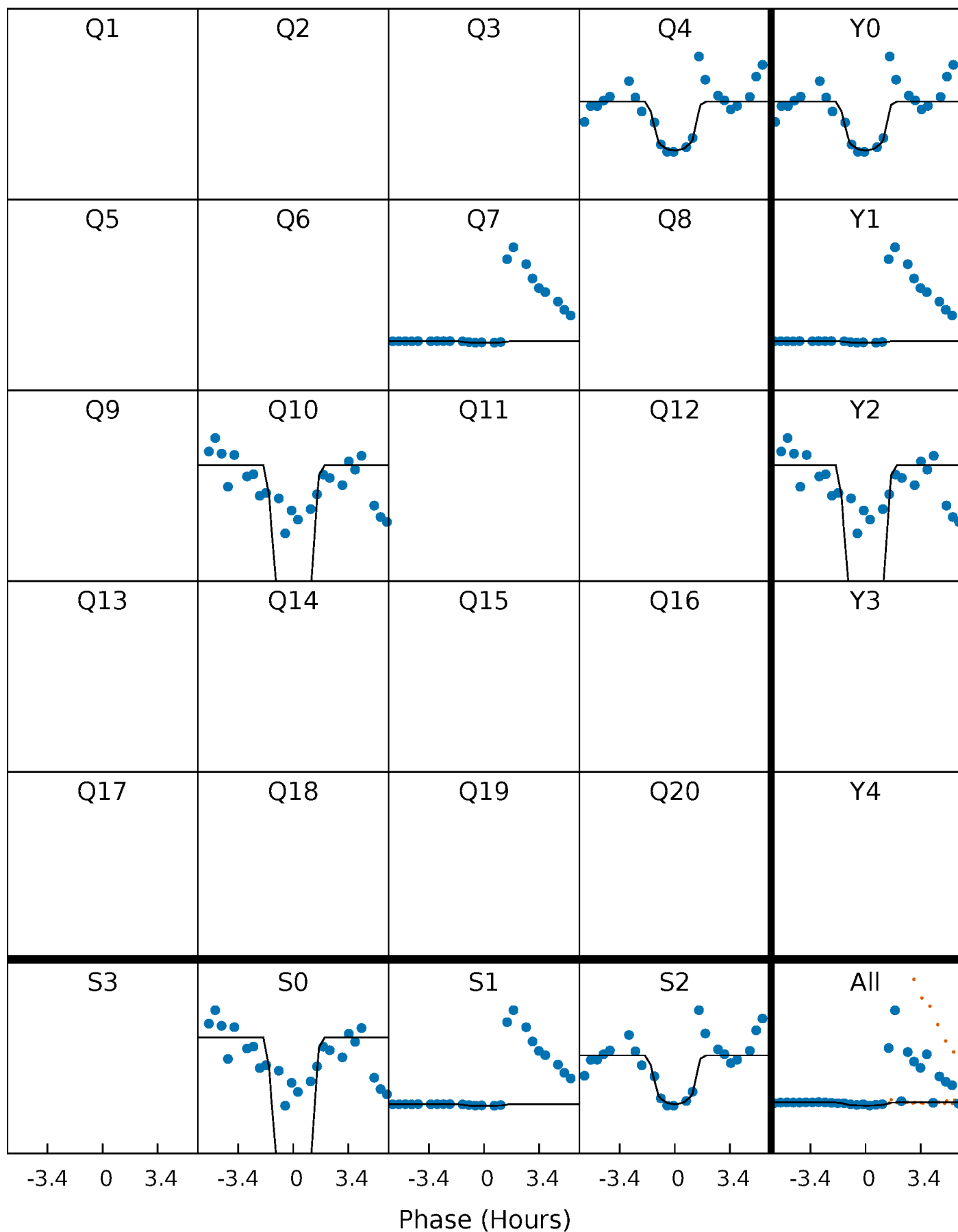
PDC Quarter-Phased Transit Curves

TCE 003634755-02 P=308.961264 Days $T_0=364.978663$ (BKJD)



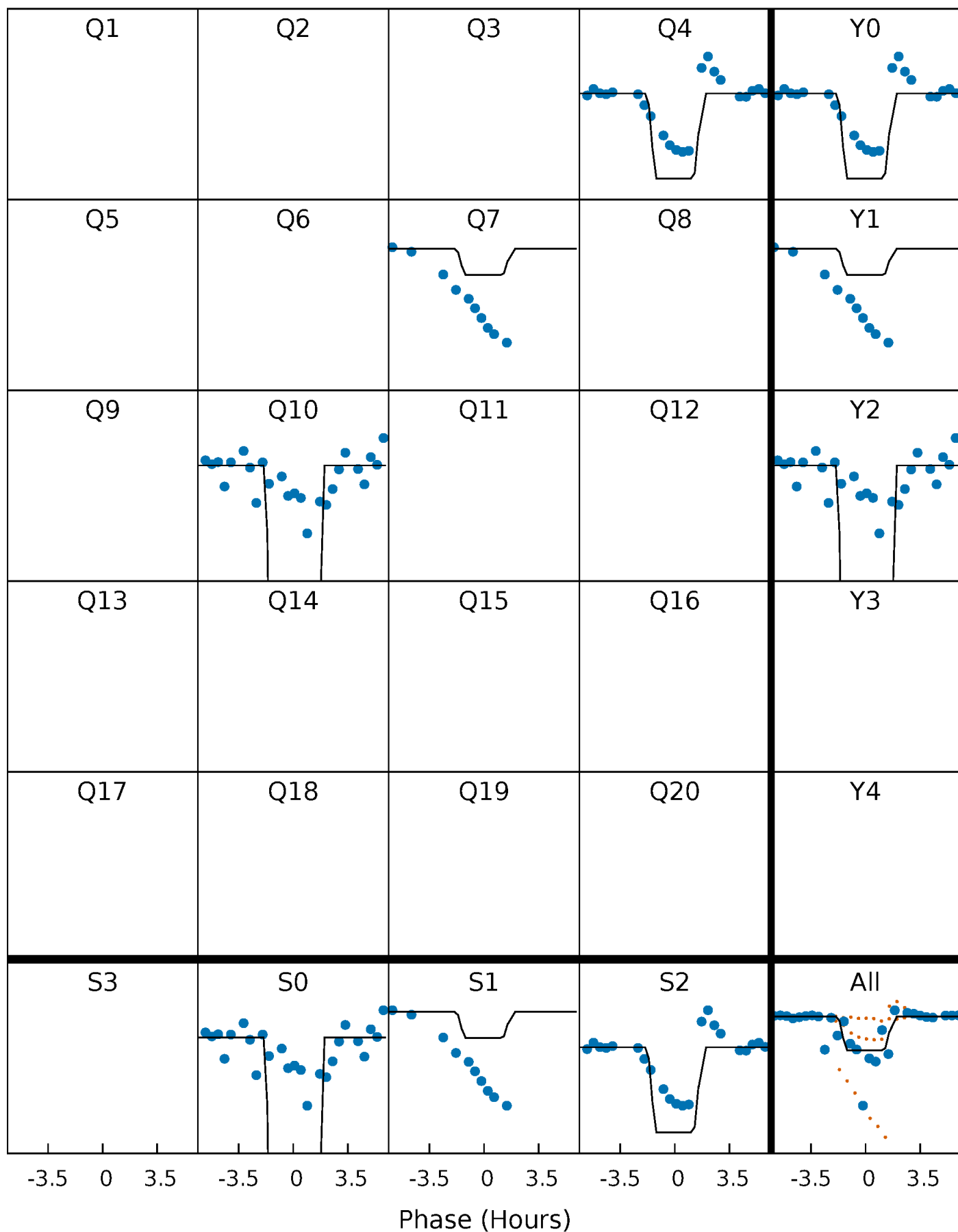
DV Quarter-Phased Transit Curves

TCE 003634755-02 $P=308.961264$ Days $T_0=364.978663$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

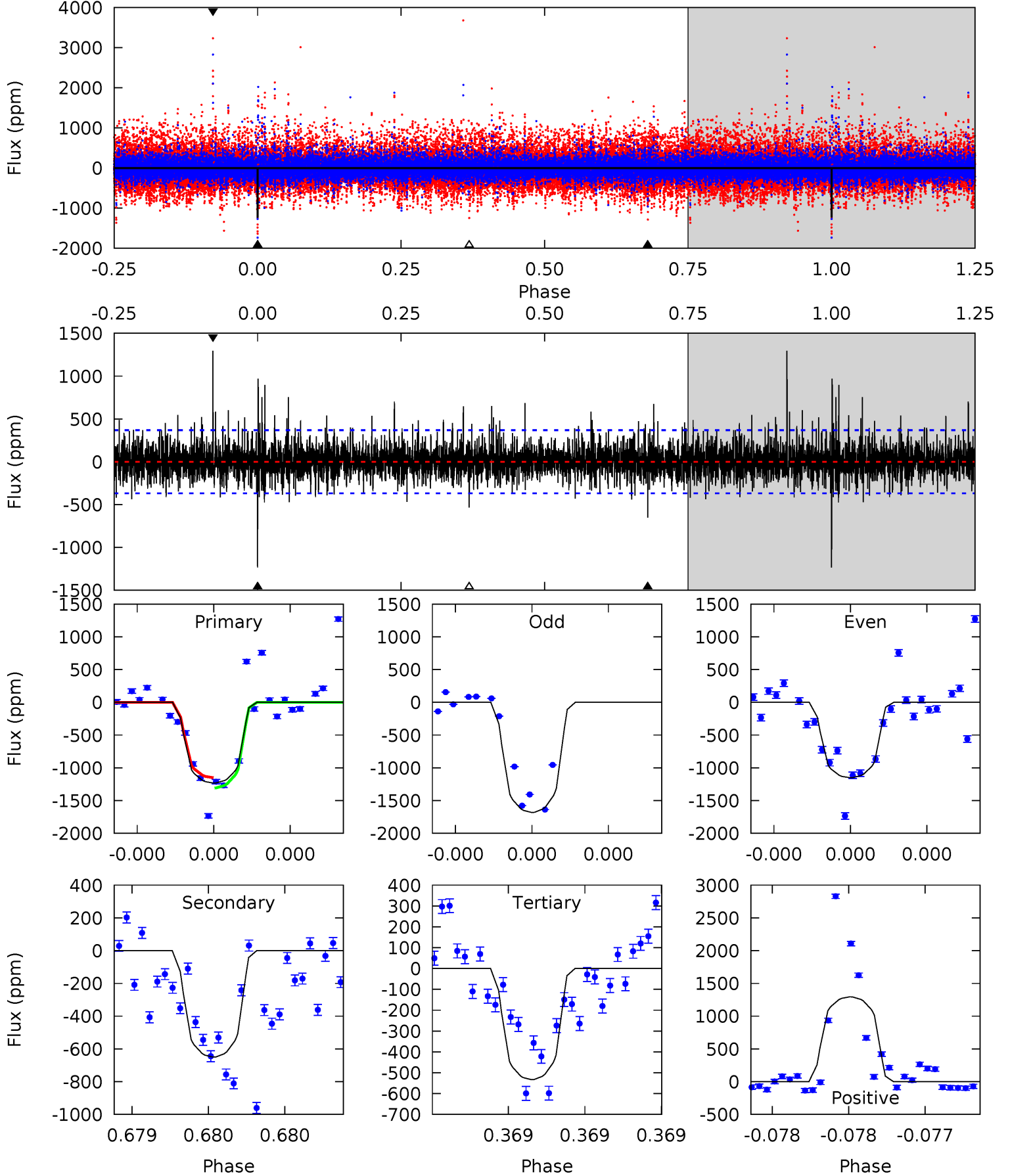
TCE 003634755-02 P=308.928174 Days $T_0=364.981069$ (BKJD)



DV Model-Shift Uniqueness Test

003634755-02, P = 308.961264 Days, E = 56.017399 Days

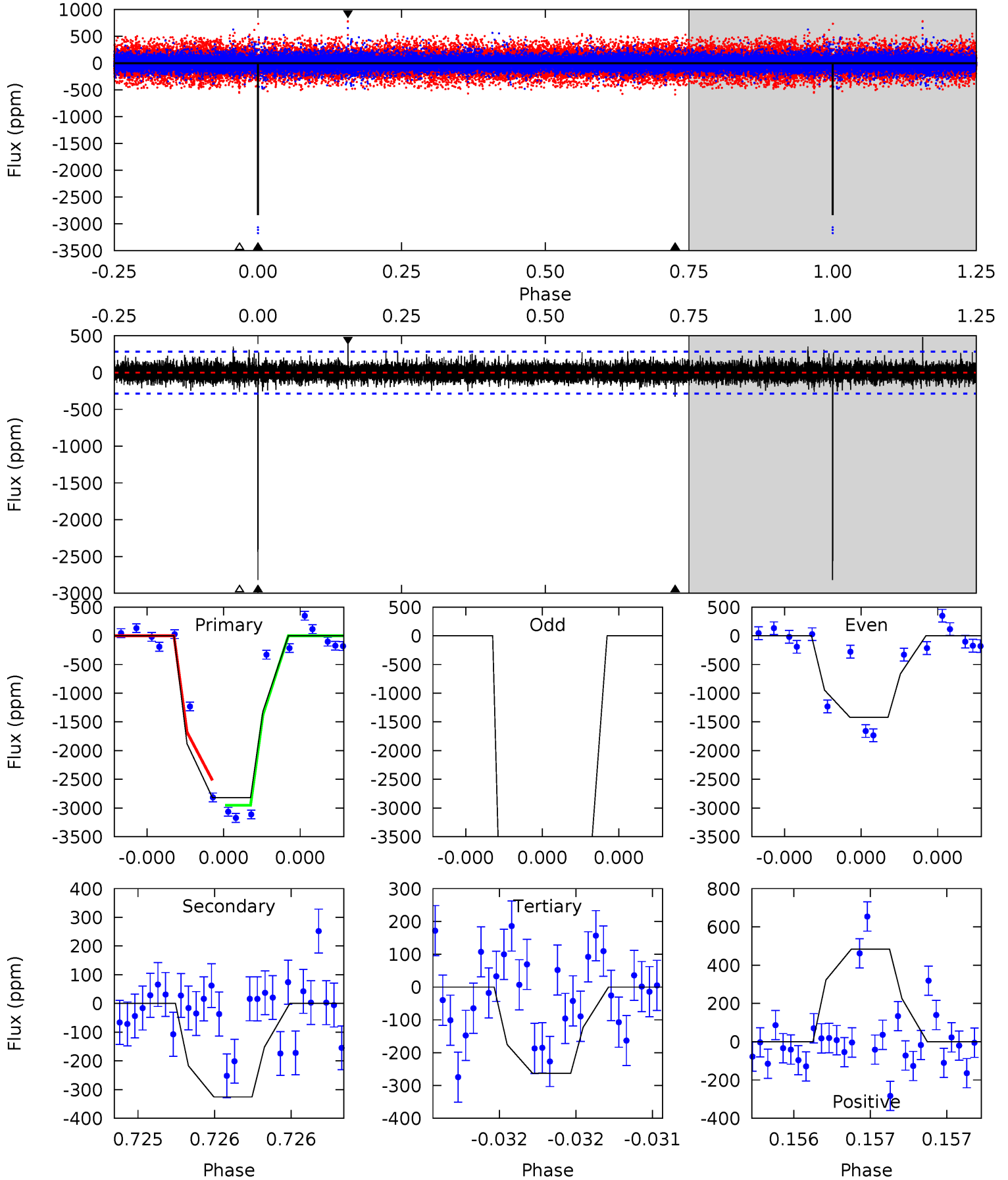
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.7	9.87	8.10	19.7	5.59	3.50	2.07	10.6	-0.93	1.77	-9.79	2.67	0.33	0.51	1.20



Alt Model-Shift Uniqueness Test

003634755-02, P = 308.928174 Days, E = 56.052895 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
55.6	6.43	5.19	9.55	5.61	3.54	1.12	50.4	46.1	1.24	-3.13	141.6	2.05	0.15	0



Stellar Parameters For KIC 003634755

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4875^{+145}_{-160}	$4.693^{+0.052}_{-0.028}$	$-1.220^{+0.300}_{-0.300}$	$0.559^{+0.033}_{-0.036}$	$0.563^{+0.040}_{-0.023}$	$4.532^{+0.892}_{-0.512}$
	+3%/-3%	+1%/-1%	+25%/-25%	+6%/-6%	+7%/-4%	+20%/-11%
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 003634755-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-650 ± 66	$55.81^{+64.20}_{-39.59}$	261^{+8}_{-9}	1831^{+541}_{-245}	63^{+687}_{-49}
Alt.	-326 ± 51	$56.72^{+61.76}_{-39.64}$	260^{+9}_{-9}	1704^{+466}_{-204}	30^{+309}_{-23}

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 $A_{obs} \gg 1.0$

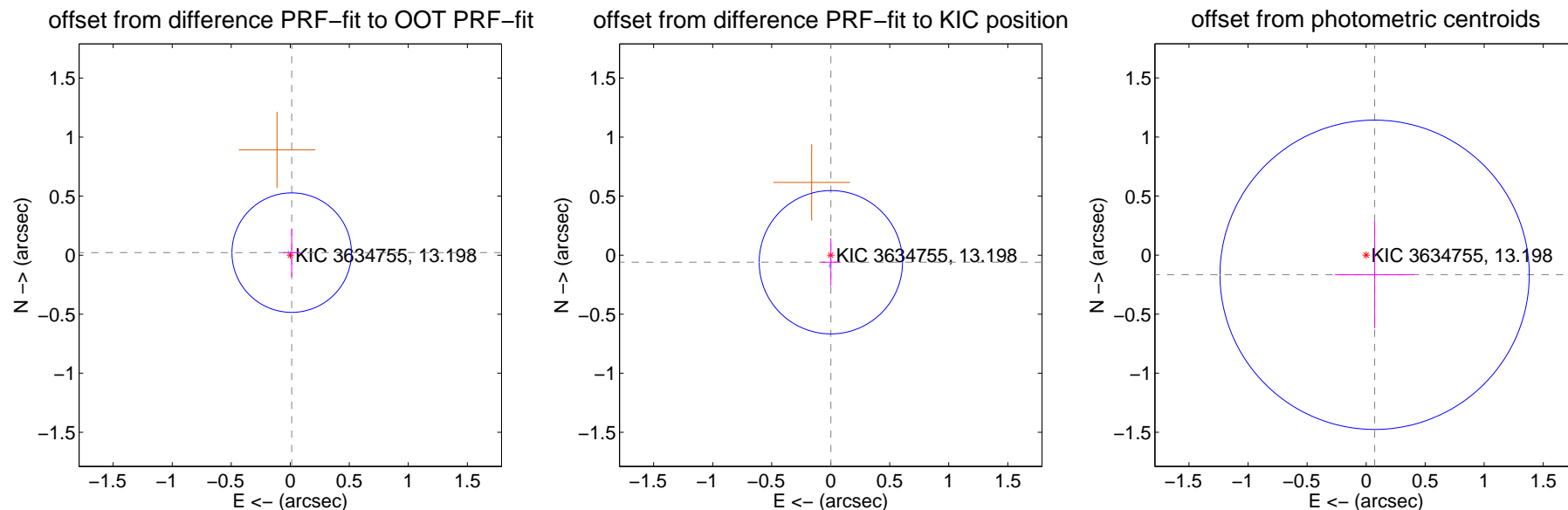
DV Centroid Data

Supplemental centroid analysis for 003634755-02. Kepler magnitude: 13.20. Transit SNR 10.84

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

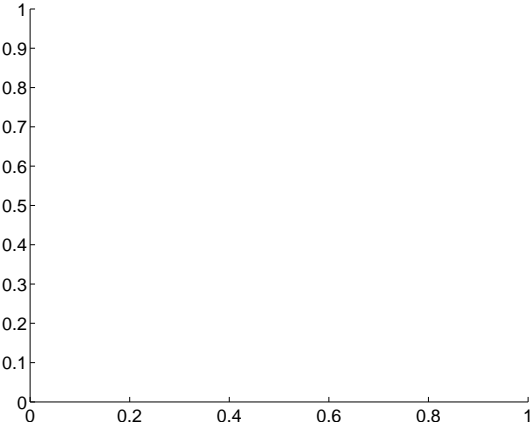
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.025 ± 0.169	0.15	-0.012 ± 0.072	0.021 ± 0.205
PRF-fit source offset from KIC position	0.060 ± 0.202	0.30	-0.001 ± 0.080	-0.060 ± 0.202
photometric centroid source offset	0.18 ± 0.44	0.42	-0.07 ± 0.34	-0.17 ± 0.45



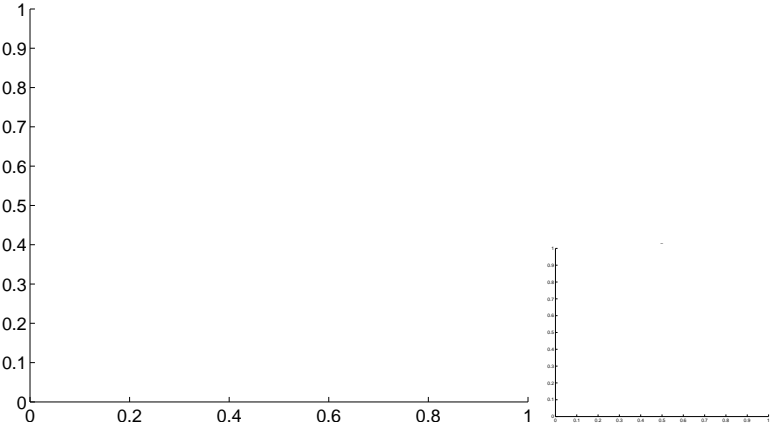
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

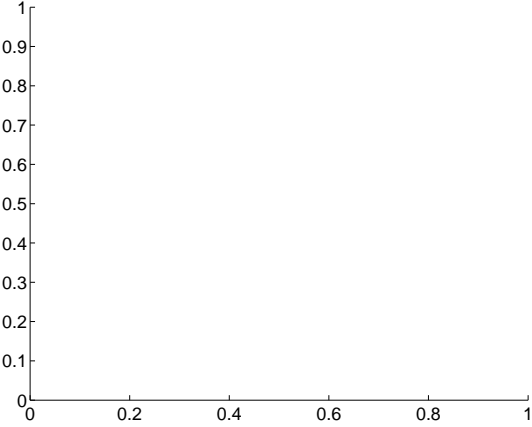
Q1 no difference image



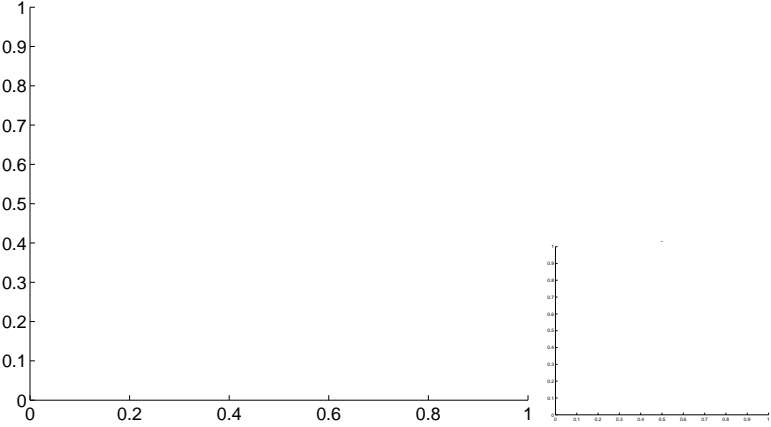
Q1 no OOT image



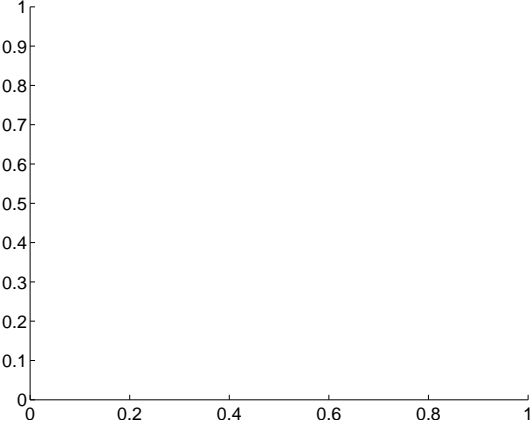
Q2 no difference image



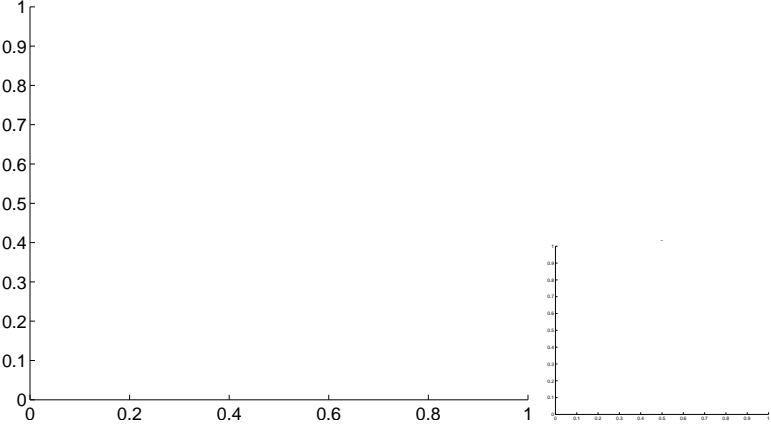
Q2 no OOT image



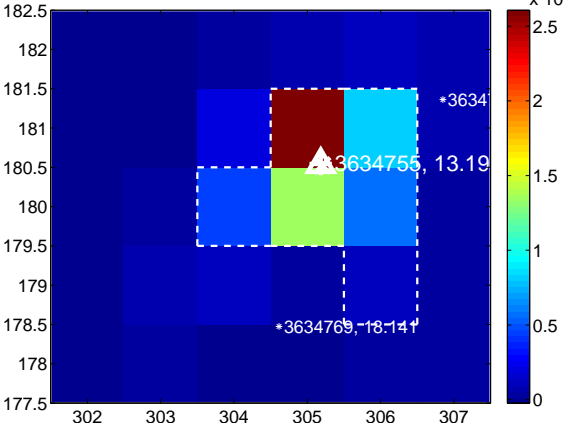
Q3 no difference image



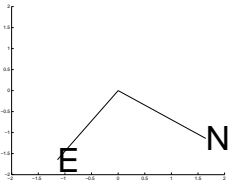
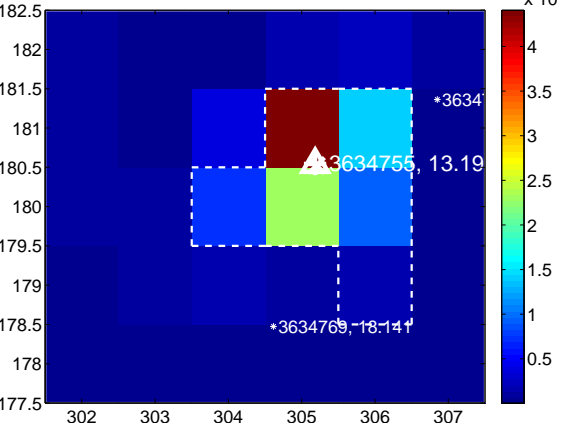
Q3 no OOT image



Q4 difference image



Q4 OOT image



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

Q5 no difference image



Q5 no OOT image



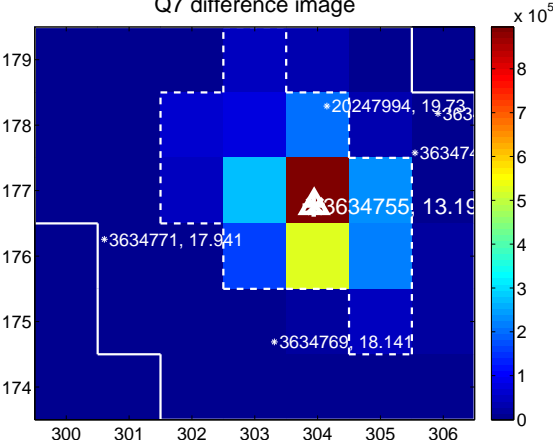
Q6 no difference image



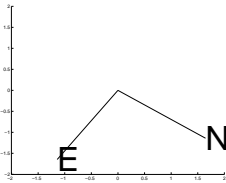
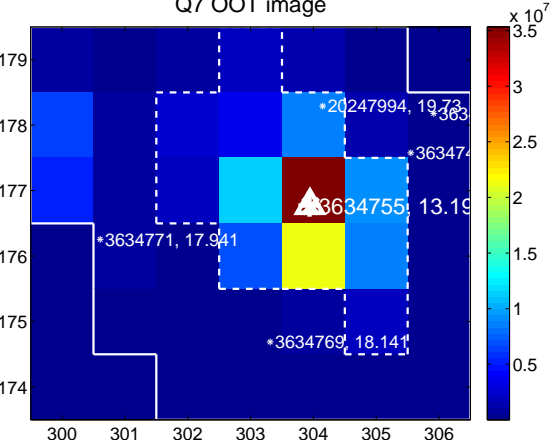
Q6 no OOT image



Q7 difference image



Q7 OOT image



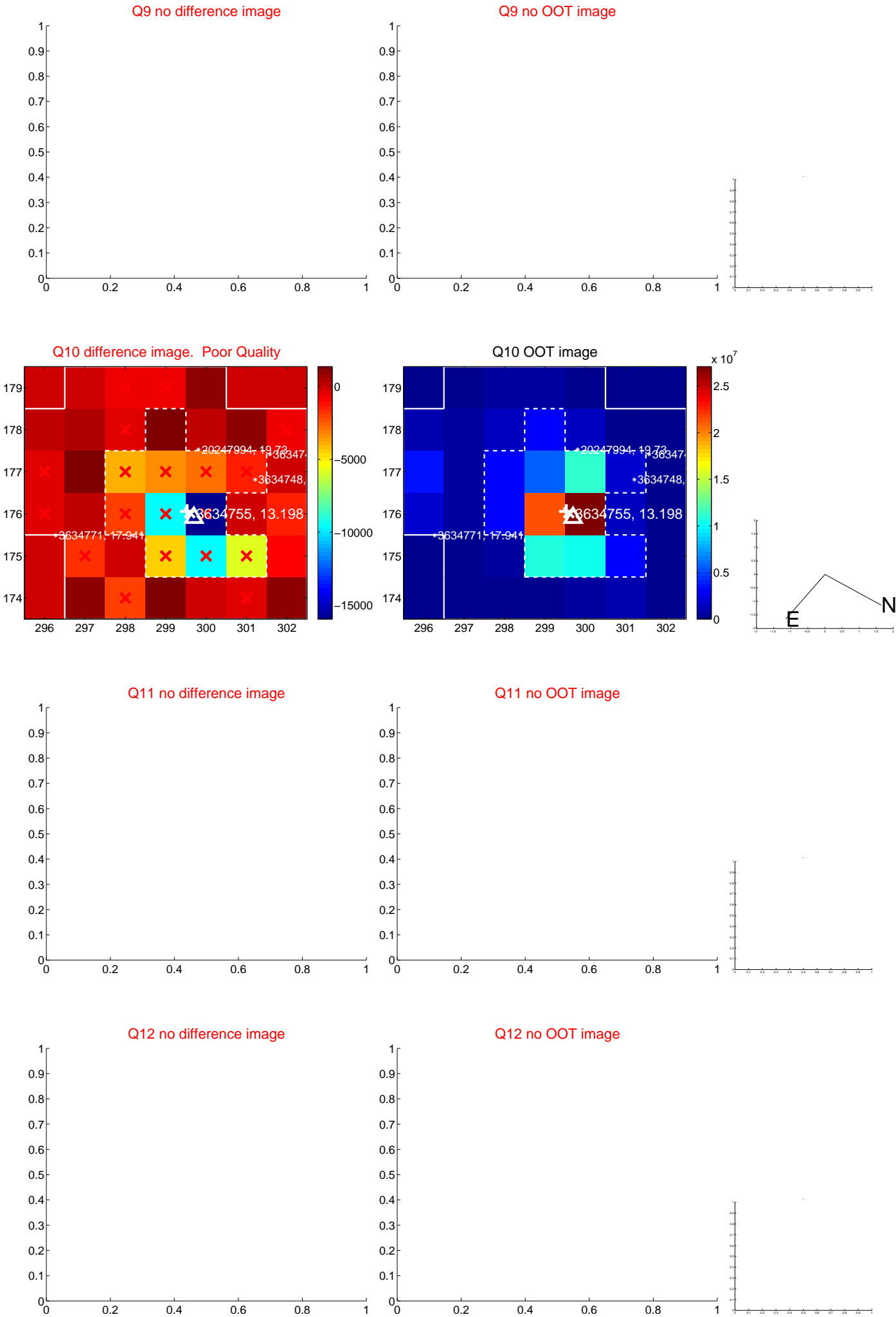
Q8 no difference image



Q8 no OOT image



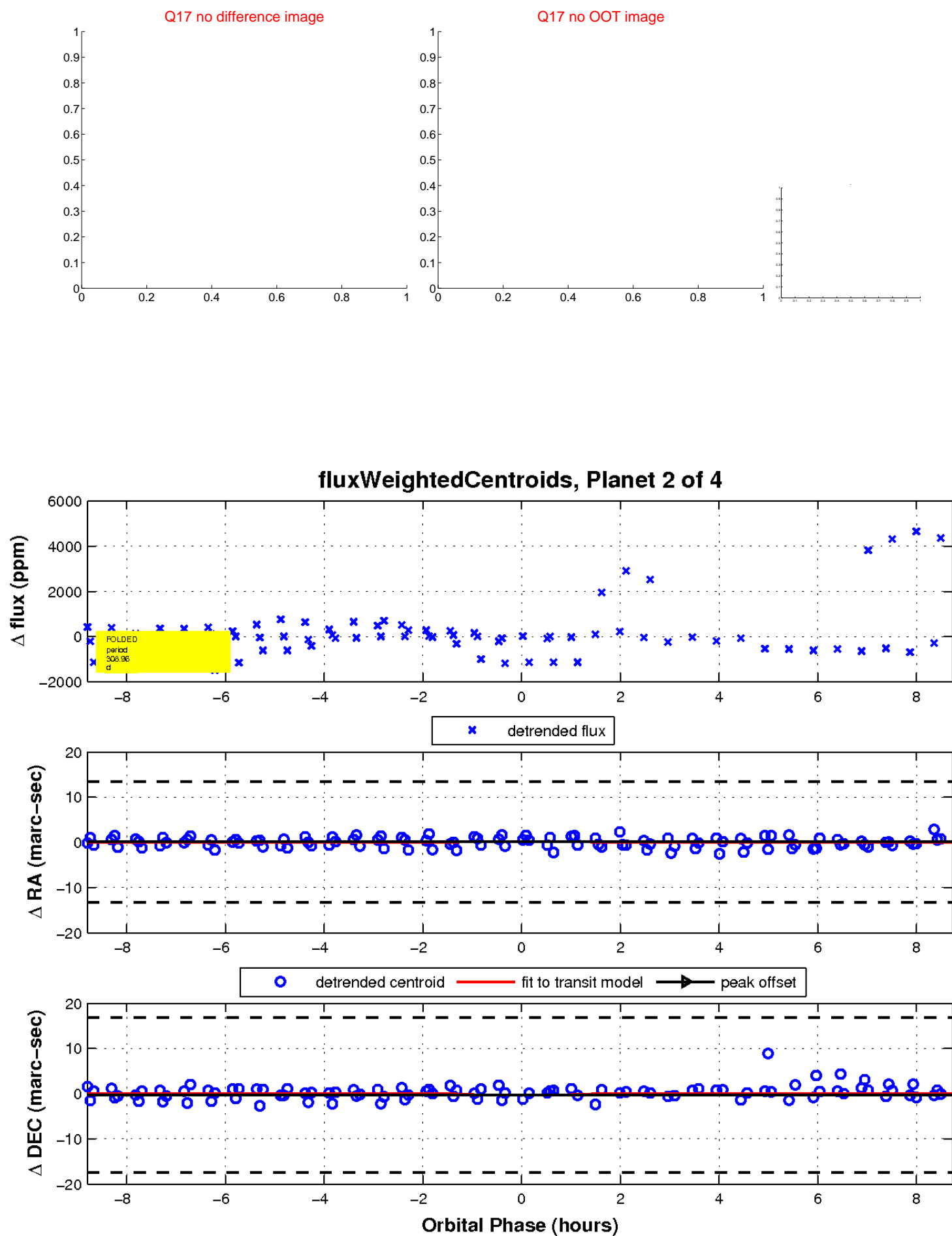
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



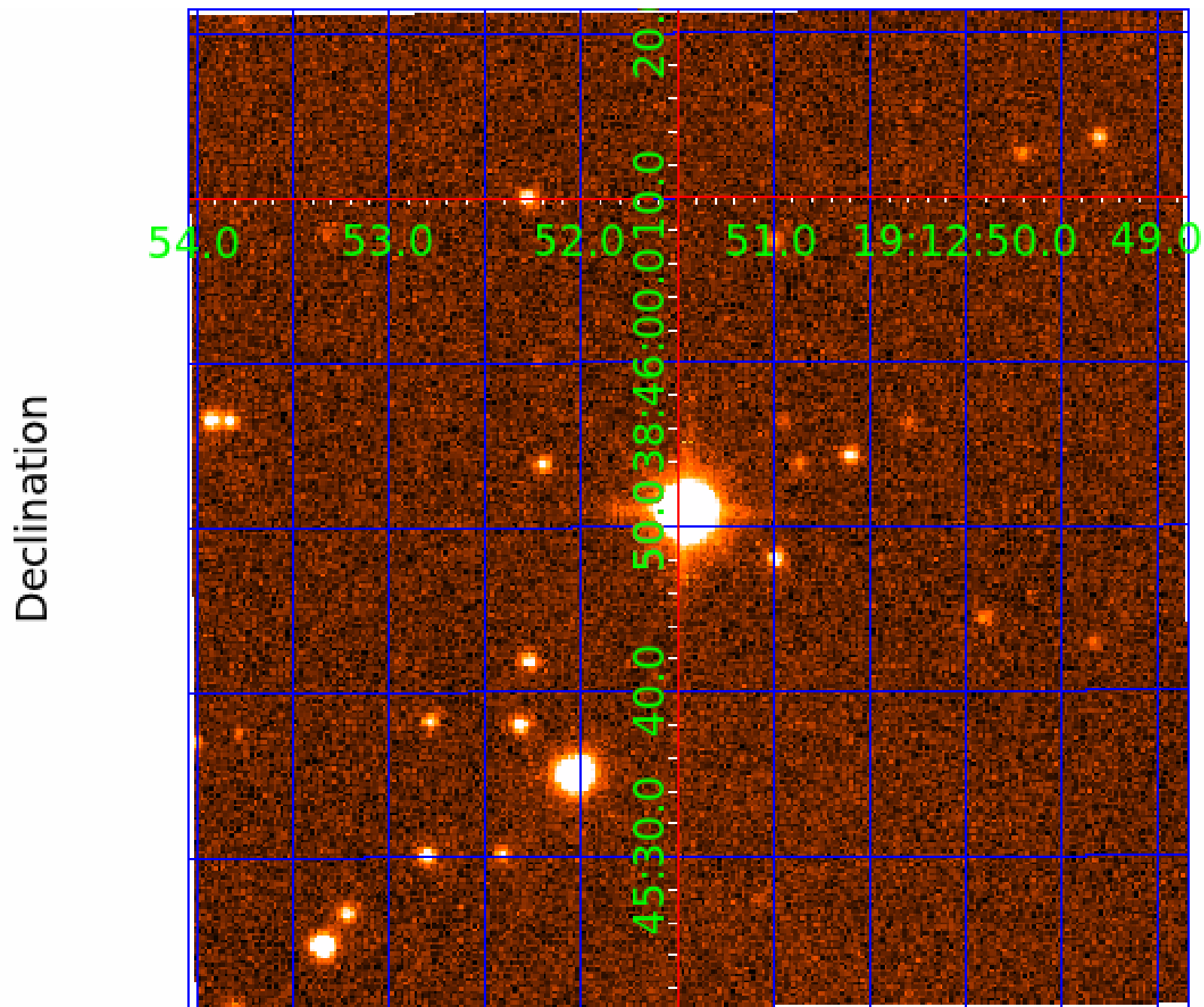
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 003634755

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})
003634755-01	OBS	No	711.220882	140.856146	1389.4	7.789	30.4	7.7	0.56	4875	2.41	0.10
003634755-02	OBS	No	308.961264	364.978663	1690.7	2.944	386.4	10.8	0.56	4875	2.33	0.29
003634755-03	OBS	No	443.040224	570.913998	904.6	4.144	79.2	6.7	0.56	4875	1.83	0.18
003634755-04	OBS	No	545.888201	365.594548	620.6	13.175	69.9	3.3	0.56	4875	1.42	0.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003634755-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003634755-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003634755-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003634755-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—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.

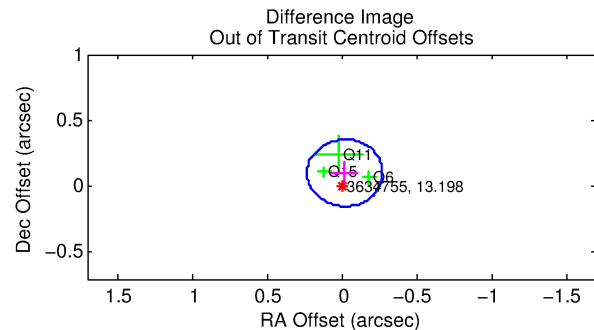
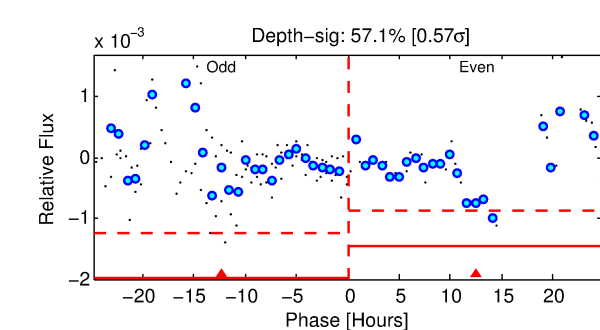
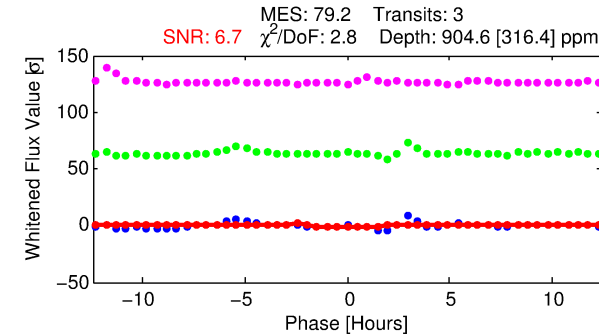
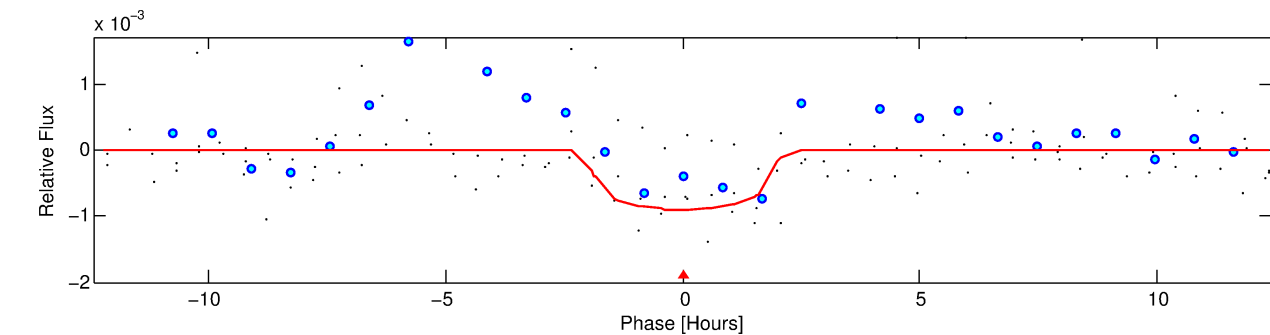
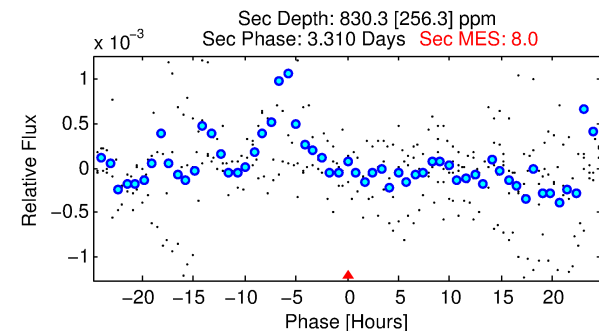
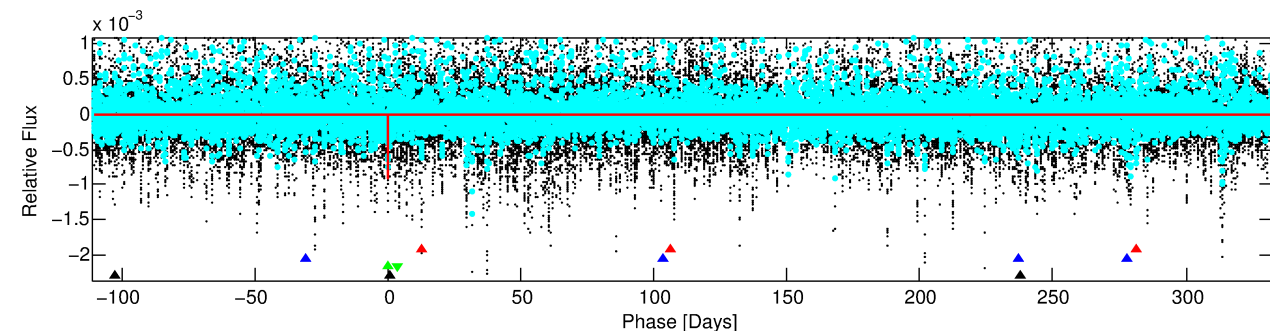
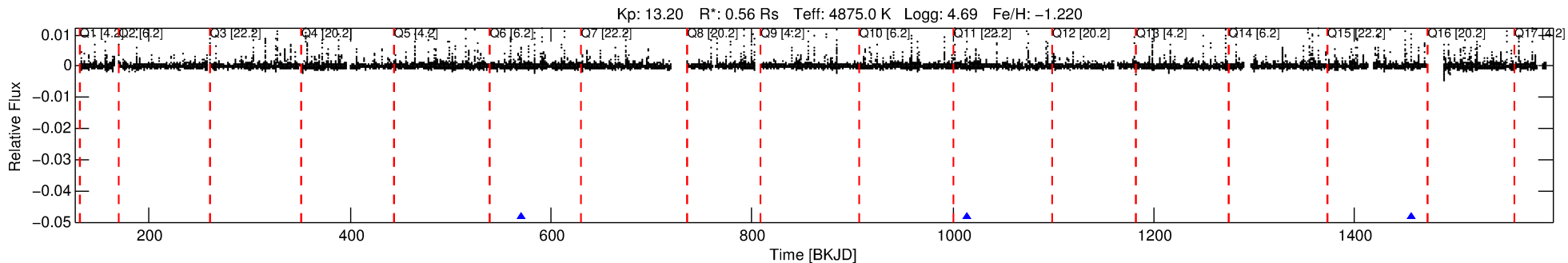
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003634755-03

No Significant Match Found

DV One-Page Summary

KIC: 3634755 Candidate: 3 of 4 Period: 443.040 d



DV Fit Results:

Period = 443.04022 [0.00862] d
Epoch = 570.9140 [0.0124] BKJD
Rp/R* = 0.0301 [0.0727]
a/R* = 567.97 [5552.07]
b = 0.76 [5.55]
Seff = 0.18 [0.03]
Teq = 166 [7] K
Rp = 1.83 [4.44] Re
a = 0.9389 [0.0550] AU
Ag = 119656.99 [579820.85] [0.21σ]
Teffp = 4772 [5782] K [0.80σ]

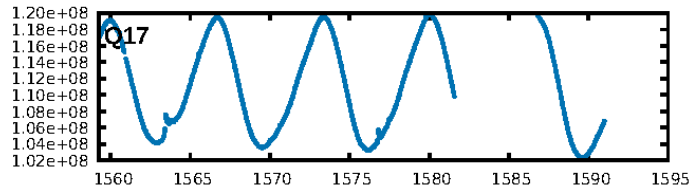
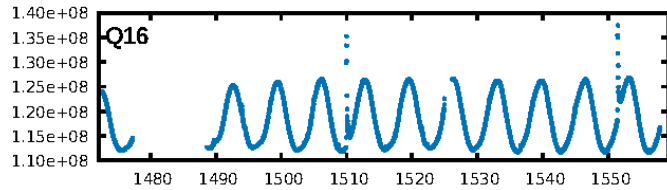
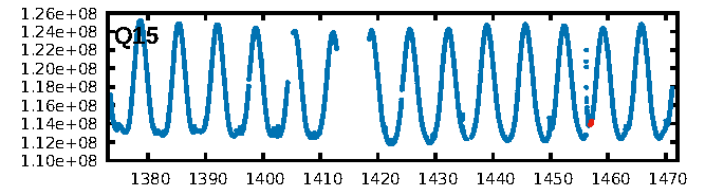
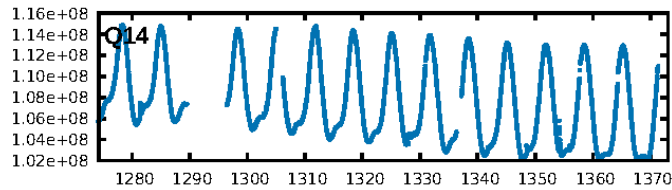
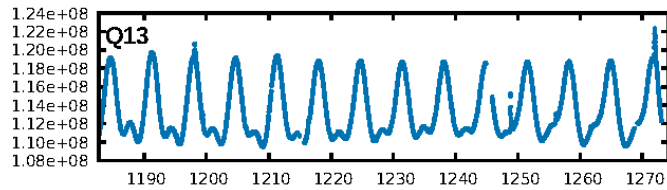
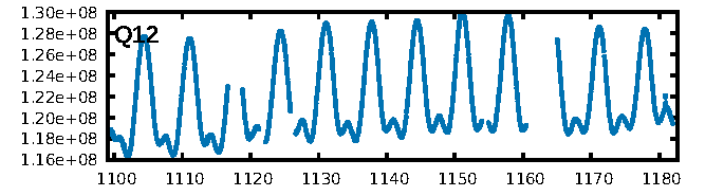
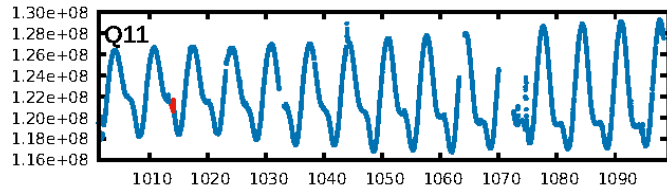
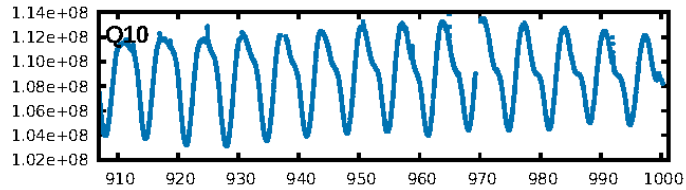
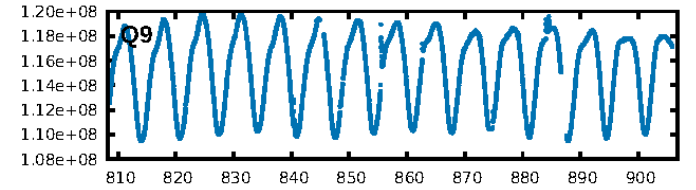
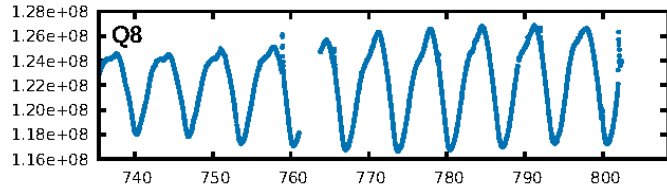
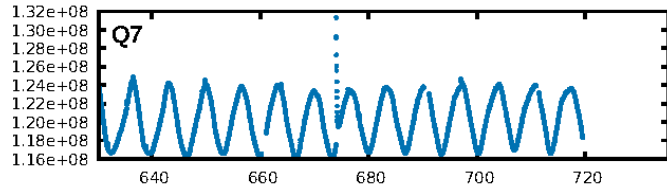
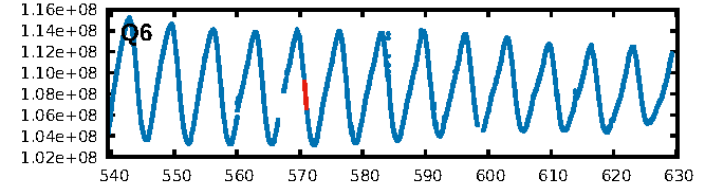
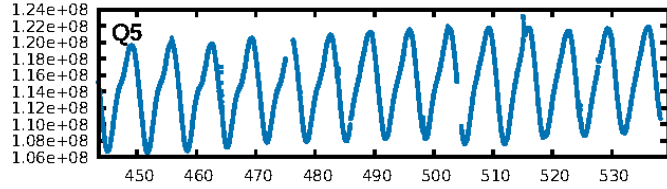
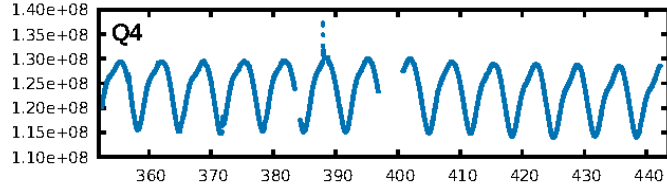
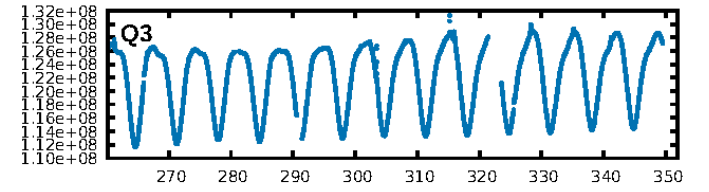
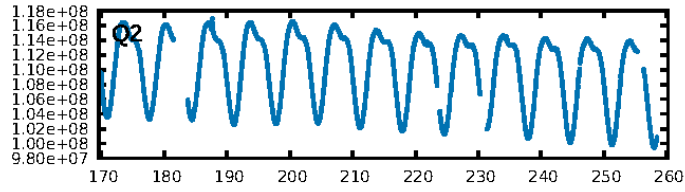
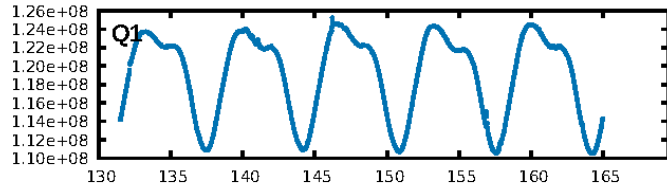
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [632.98σ]
LongPeriod-sig: 100.0% [178.72σ]
ModelChiSquare2-sig: 6.9%
ModelChiSquareGof-sig: 24.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.982
Centroid-sig: 20.7%
Centroid-so: 0.914 arcsec [1.22σ]
OotOffset-rm: 0.104 arcsec [1.24σ]
KicOffset-rm: 0.100 arcsec [0.68σ]
OotOffset-st: 1/2/0/0 [3]
KicOffset-st: 1/2/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.67 [2/3]

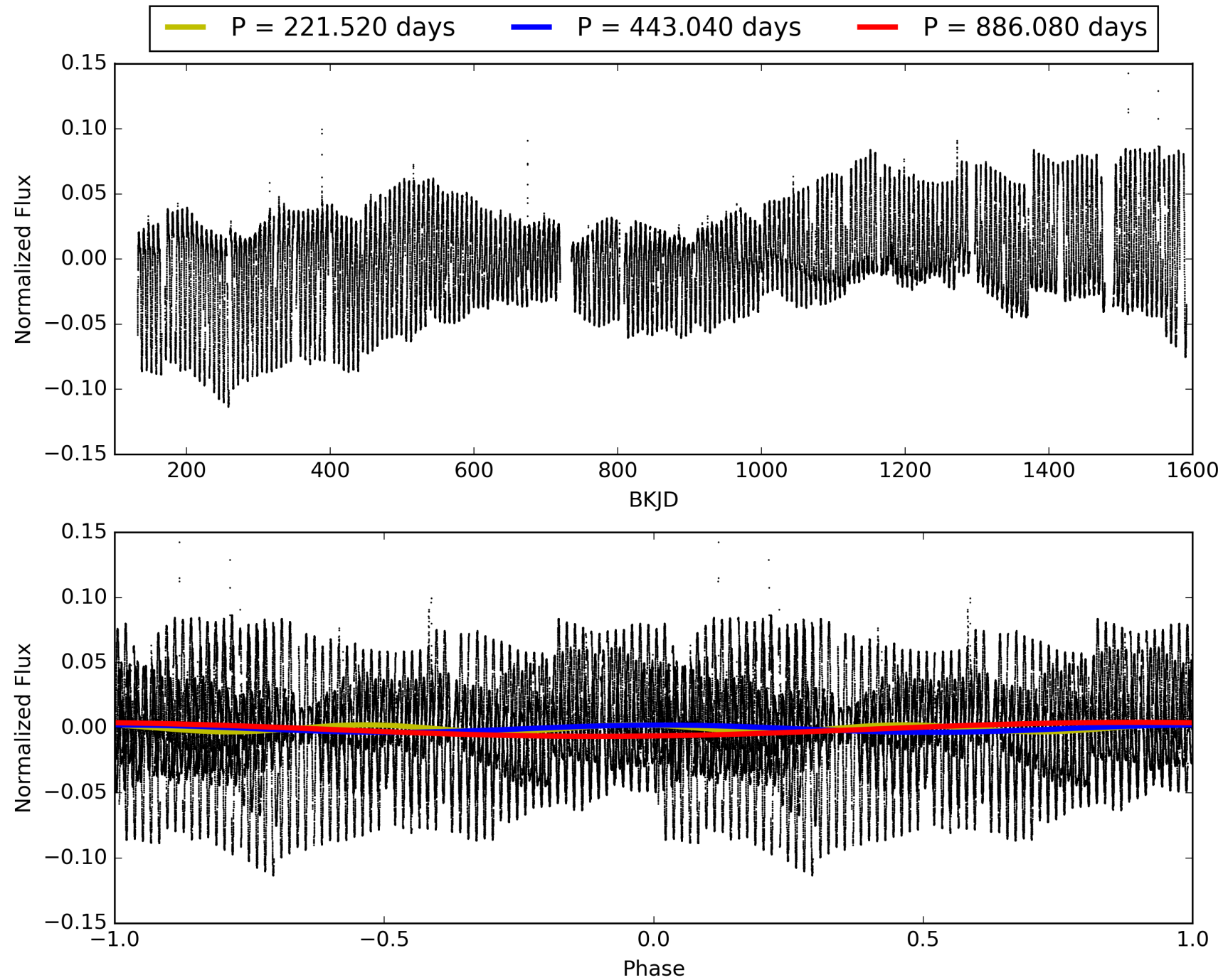
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:37:42 Z

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

TCE 003634755-03, PDC Light Curves

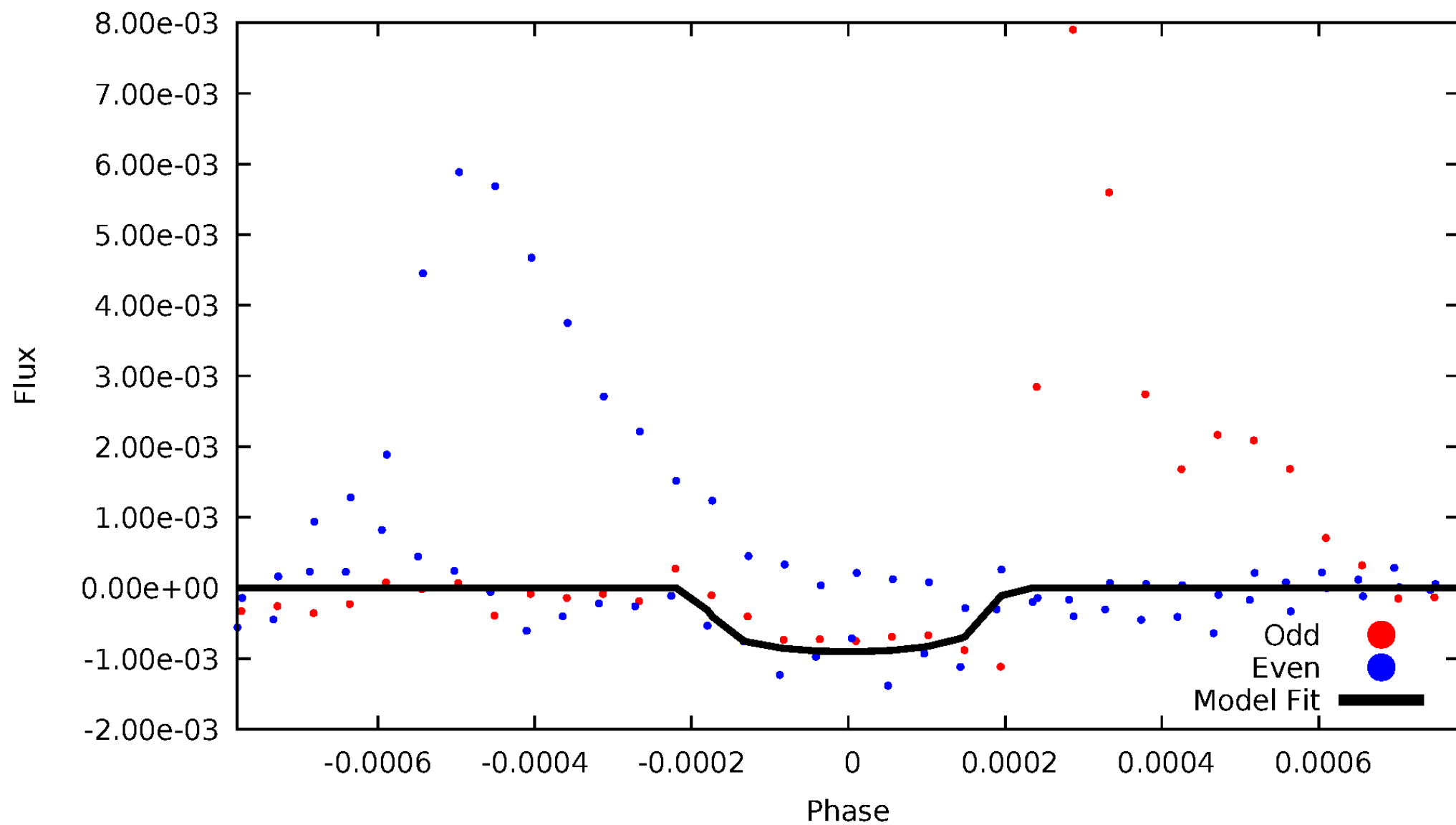


TCE 003634755-03



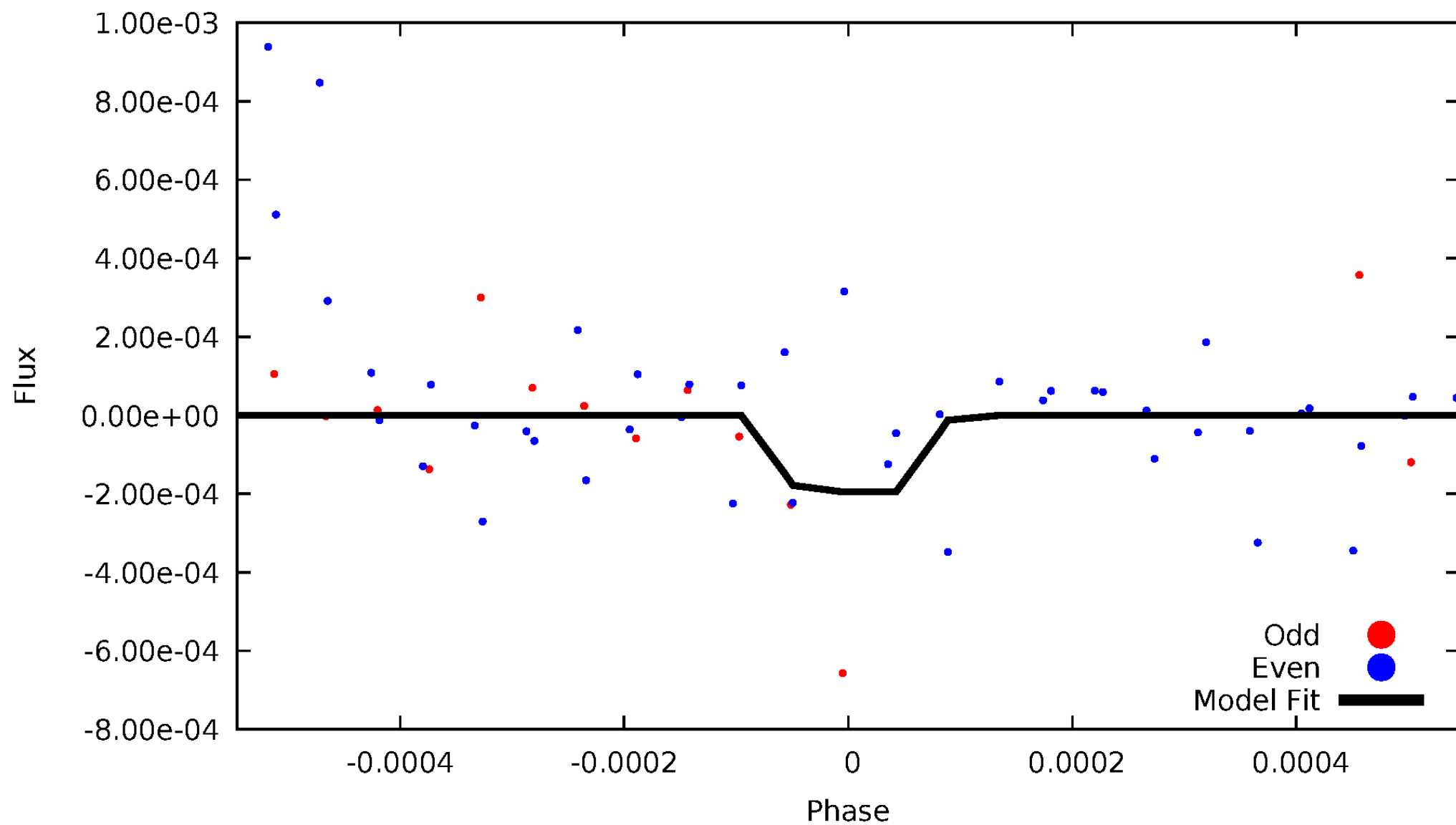
DV Odd/Even

TCE 003634755-03



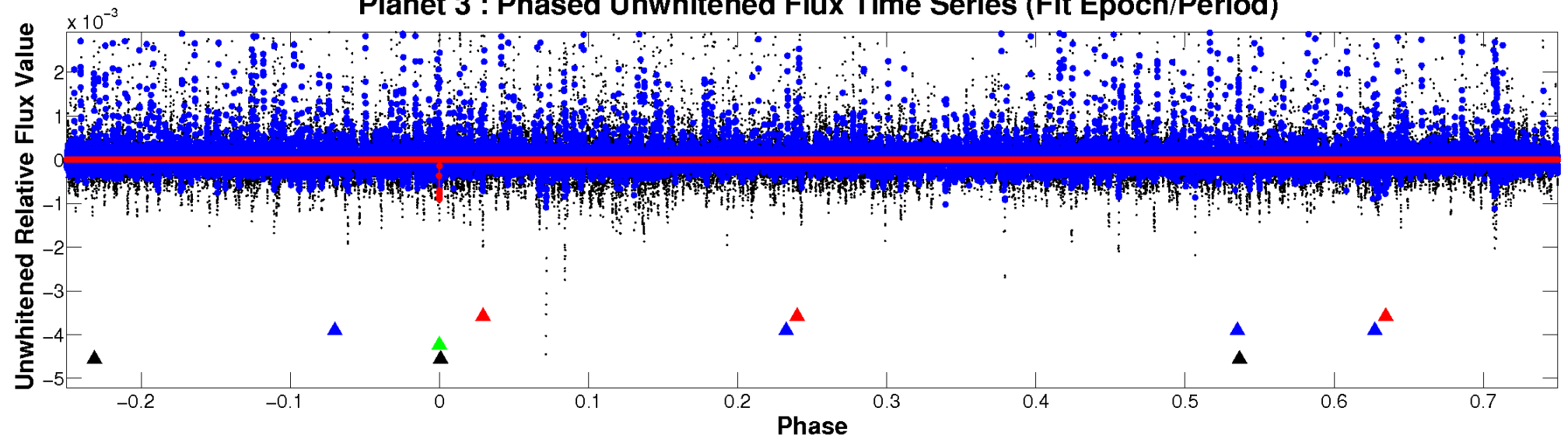
ALT Odd/Even

TCE 003634755-03

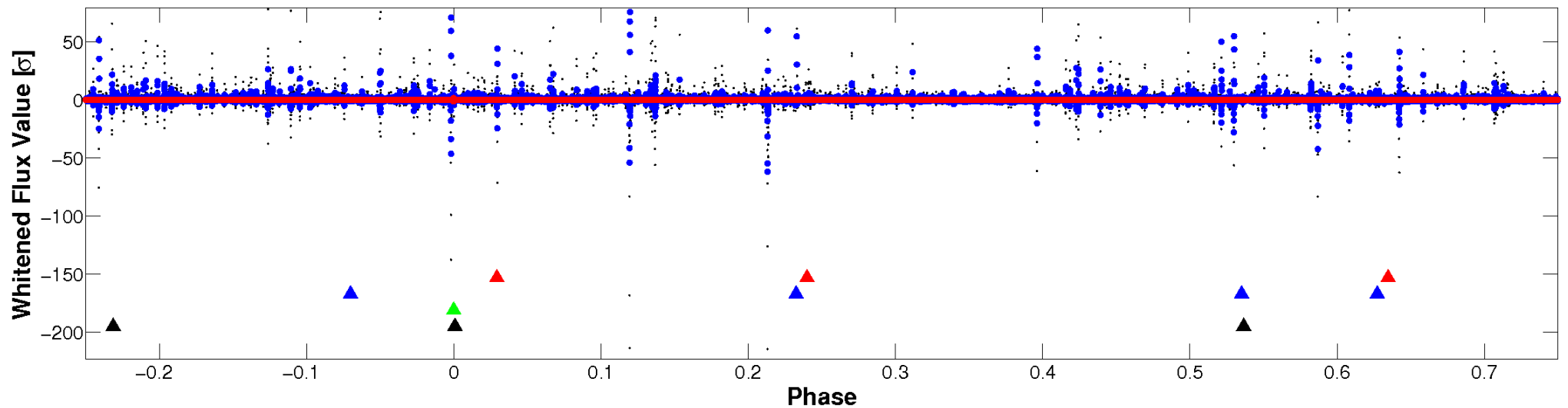


Non-Whitened Vs. Whitened Light Curve

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

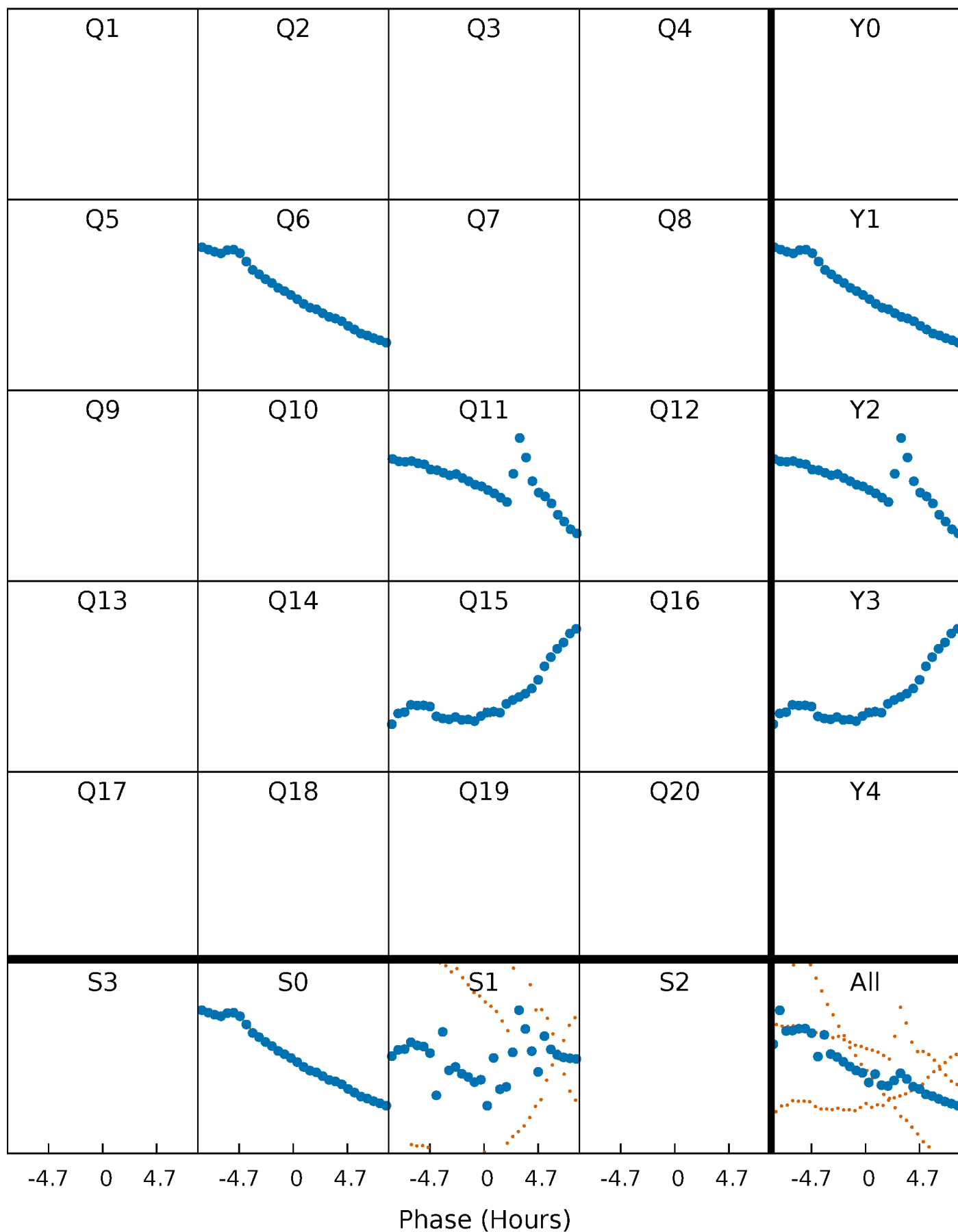


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



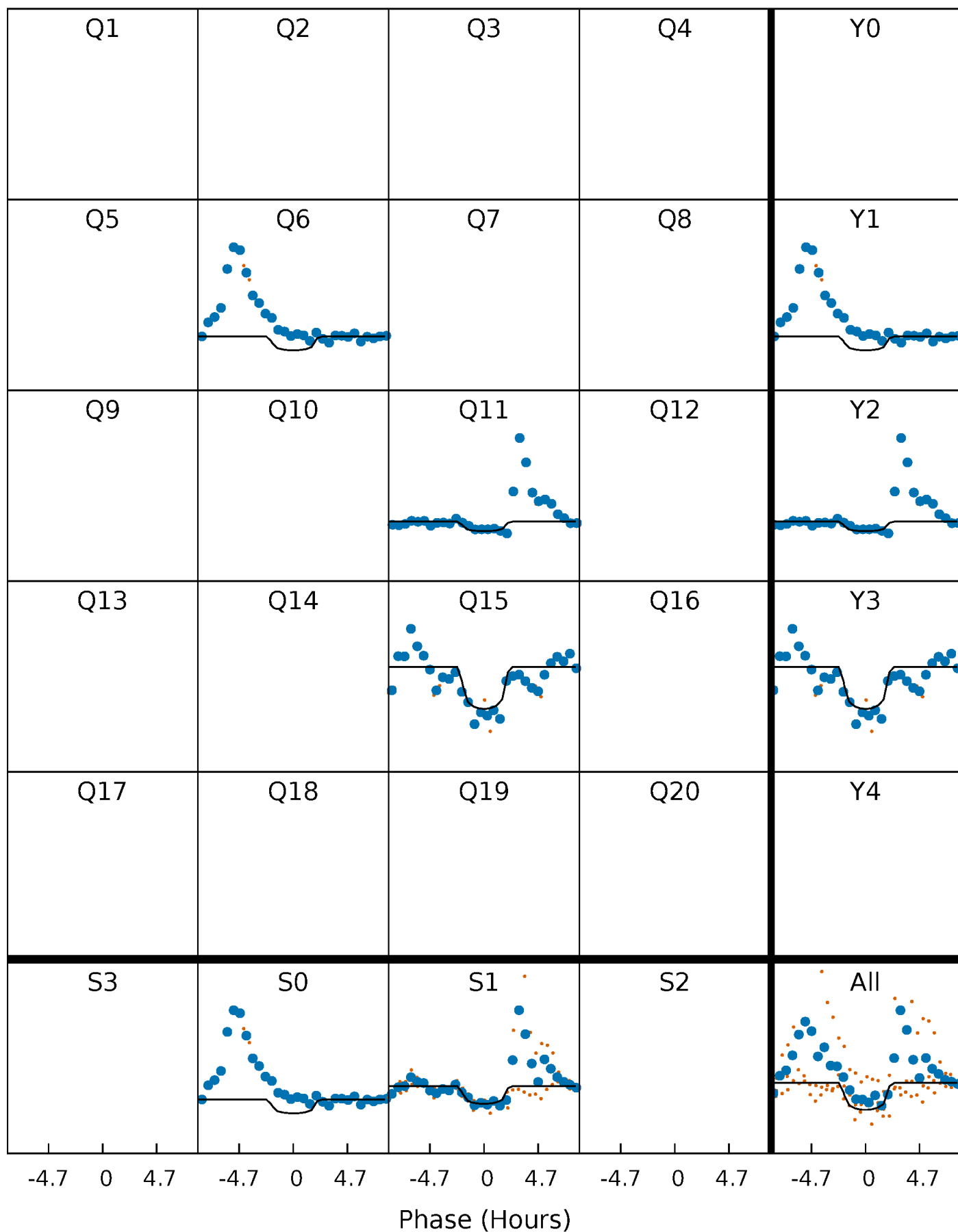
PDC Quarter-Phased Transit Curves

TCE 003634755-03 P=443.040224 Days $T_0=570.913998$ (BKJD)



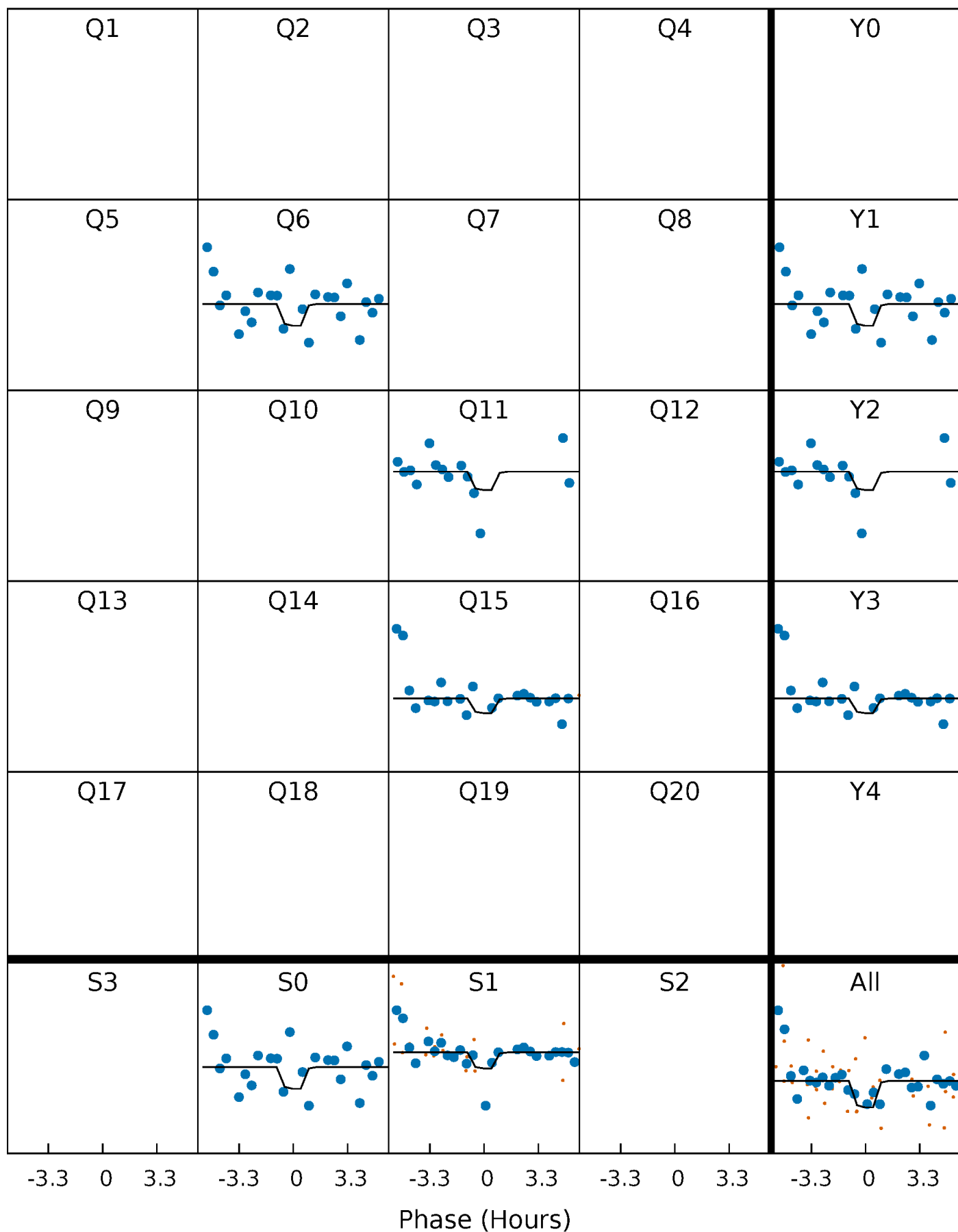
DV Quarter-Phased Transit Curves

TCE 003634755-03 P=443.040224 Days $T_0=570.913998$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

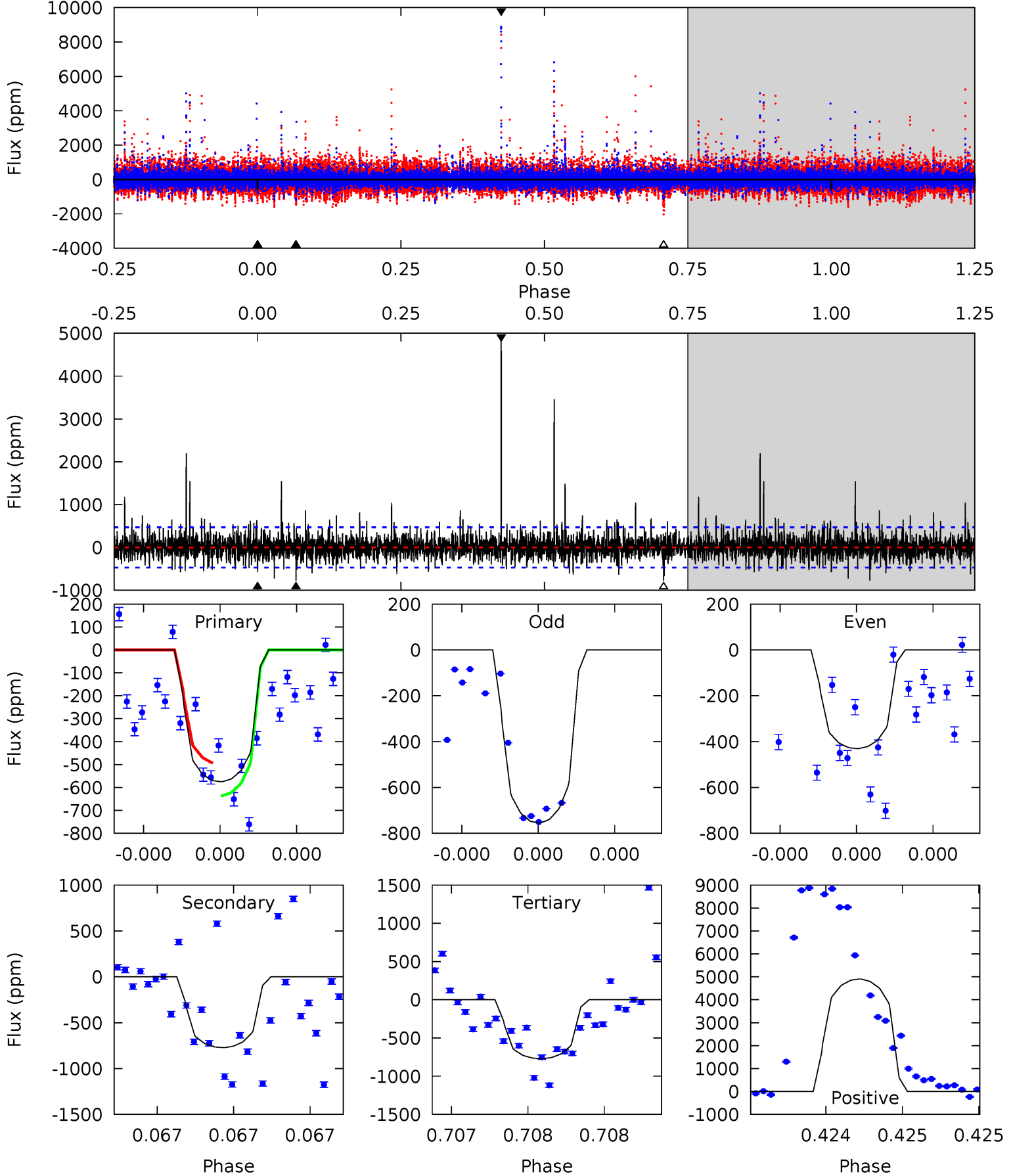
TCE 003634755-03 P=442.999581 Days $T_0=571.002083$ (BKJD)



DV Model-Shift Uniqueness Test

003634755-03, P = 443.040224 Days, E = 127.873774 Days

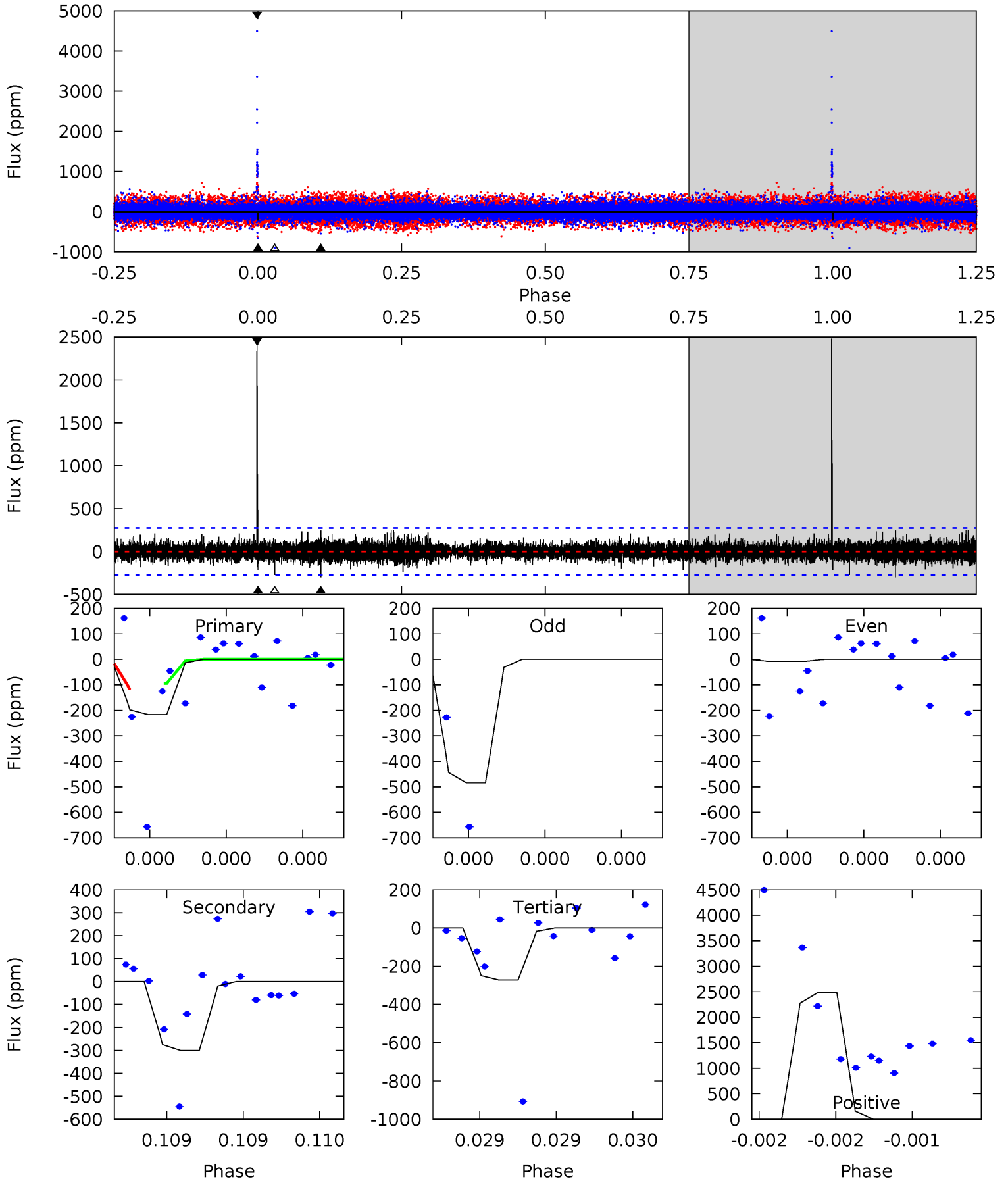
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.90	9.26	9.25	58.8	5.63	3.56	2.49	-2.35	-51.9	0.01	-49.6	0.91	0.71	0.86	0.84



Alt Model-Shift Uniqueness Test

003634755-03, P = 442.999581 Days, E = 128.002502 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.52	6.26	5.68	51.9	5.74	3.73	1.16	-1.16	-47.4	0.58	-45.6	3.83	83.9	0.89	0



Stellar Parameters For KIC 003634755

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4875^{+145}_{-160}	$4.693^{+0.052}_{-0.028}$	$-1.220^{+0.300}_{-0.300}$	$0.559^{+0.033}_{-0.036}$	$0.563^{+0.040}_{-0.023}$	$4.532^{+0.892}_{-0.512}$
	+3%/-3%	+1%/-1%	+25%/-25%	+6%/-6%	+7%/-4%	+20%/-11%
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 003634755-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-772 ± 83	$3.95^{+3.55}_{-2.78}$	231^{+8}_{-9}	3569^{+2179}_{-633}	$24797^{+250362}_{-18372}$
Alt.	-300 ± 48	$3.22^{+3.48}_{-2.17}$	231^{+7}_{-9}	3290^{+1591}_{-624}	$14447^{+118879}_{-11286}$

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 $A_{obs} \gg 1.0$

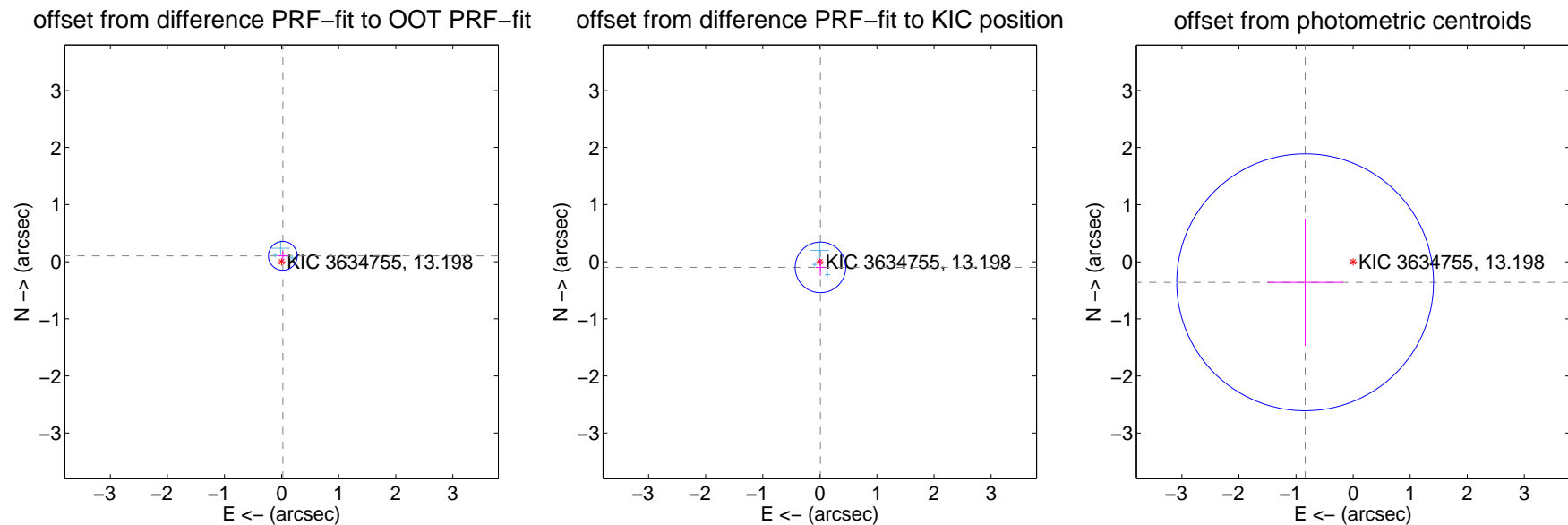
DV Centroid Data

Supplemental centroid analysis for 003634755-03. Kepler magnitude: 13.20. Transit SNR 6.71

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.104 ± 0.084	1.24	-0.022 ± 0.088	0.102 ± 0.084
PRF-fit source offset from KIC position	0.100 ± 0.148	0.68	-0.010 ± 0.082	-0.099 ± 0.148
photometric centroid source offset	0.91 ± 0.75	1.22	0.84 ± 0.66	-0.36 ± 1.12



Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

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



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

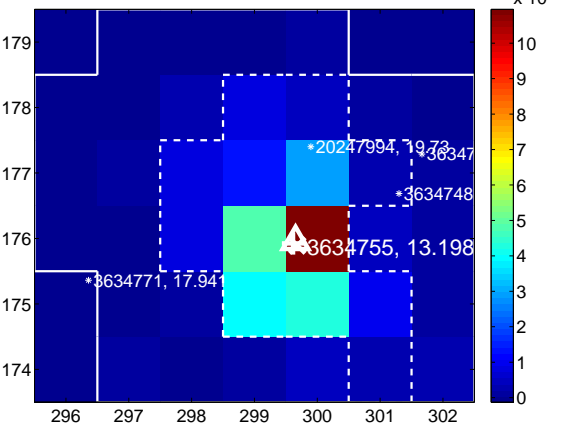
Q5 no difference image



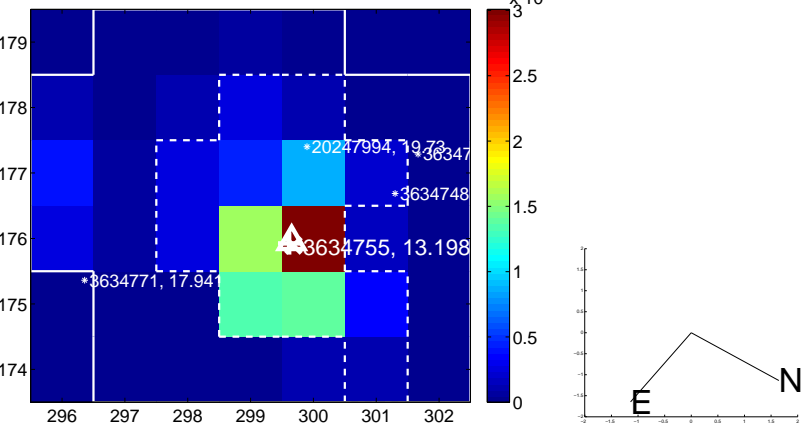
Q5 no OOT image



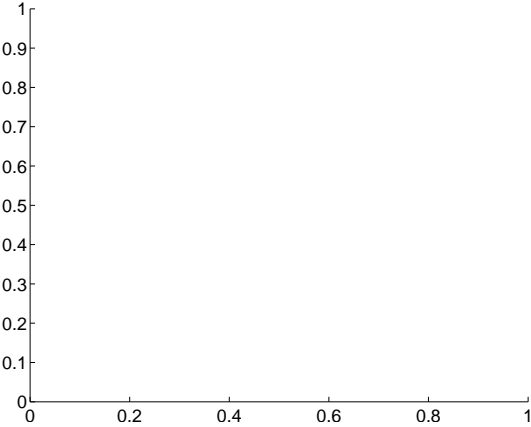
Q6 difference image



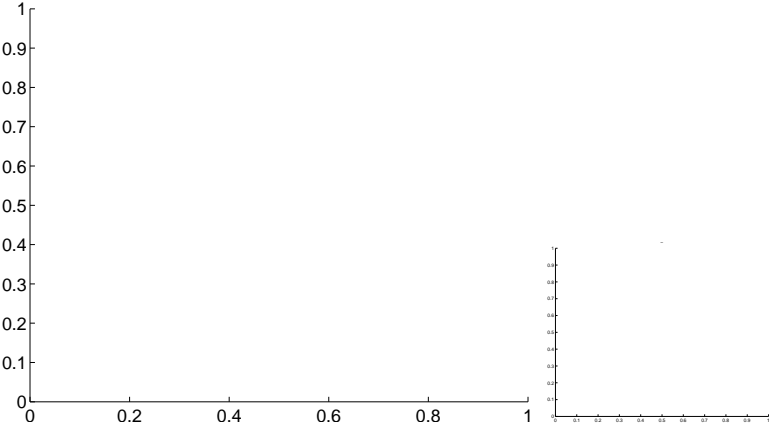
Q6 OOT image



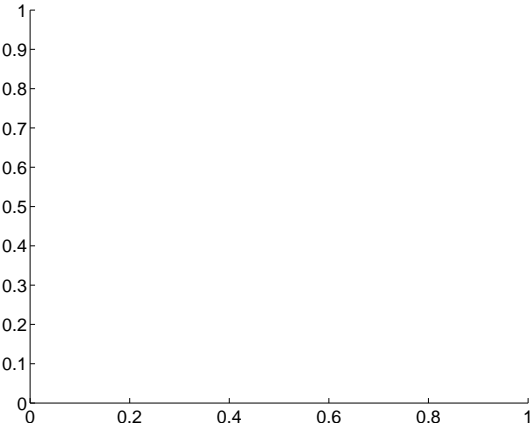
Q7 no difference image



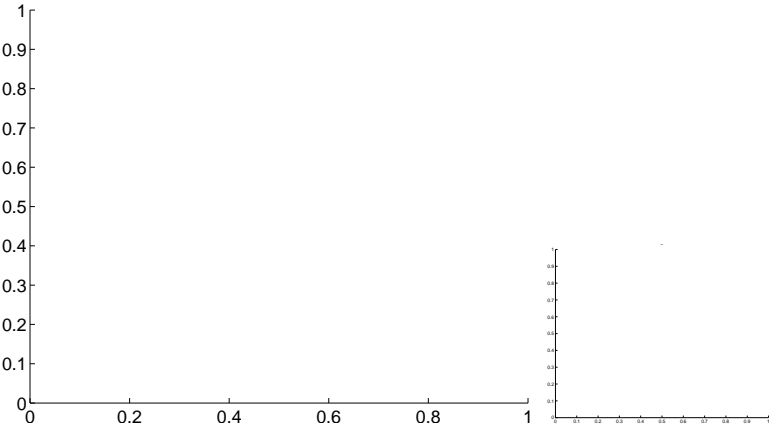
Q7 no OOT image



Q8 no difference image



Q8 no OOT image



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

Q9 no difference image



Q9 no OOT image



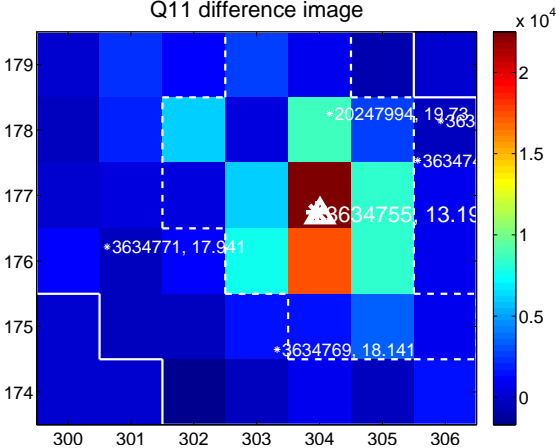
Q10 no difference image



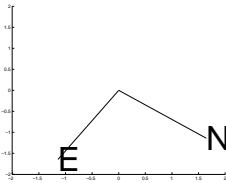
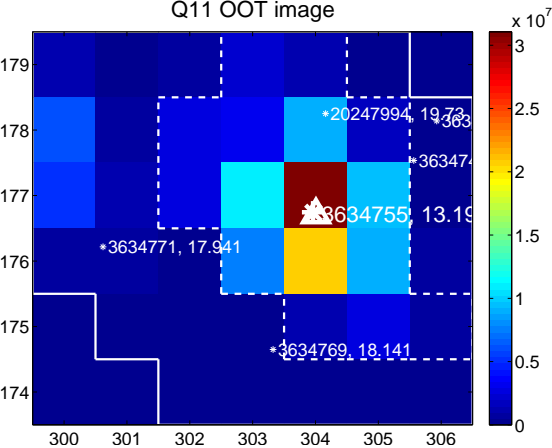
Q10 no OOT image



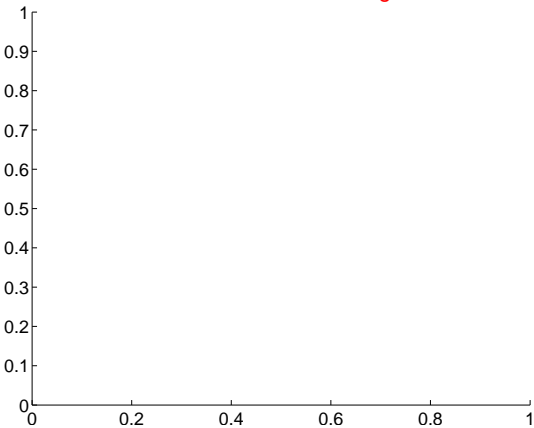
Q11 difference image



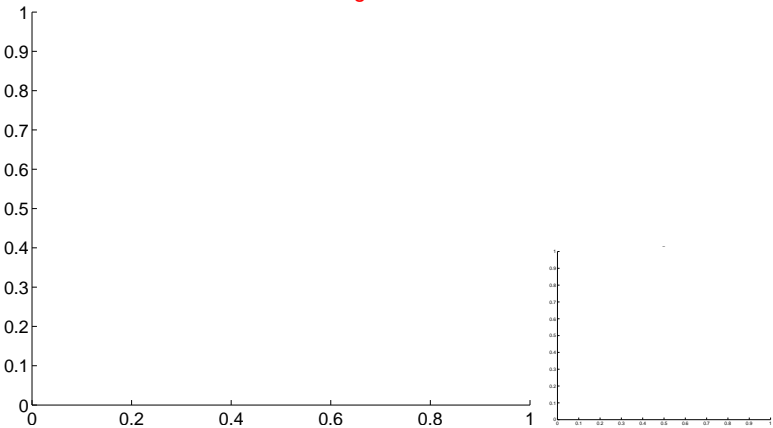
Q11 OOT image



Q12 no difference image



Q12 no OOT image



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

Q13 no difference image



Q13 no OOT image



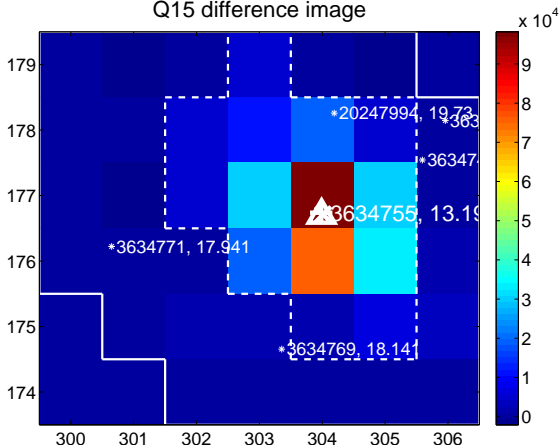
Q14 no difference image



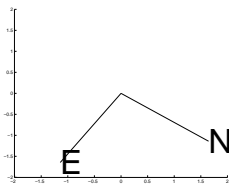
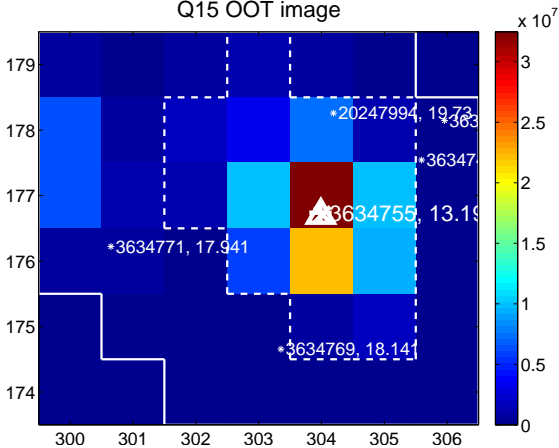
Q14 no OOT image



Q15 difference image



Q15 OOT image



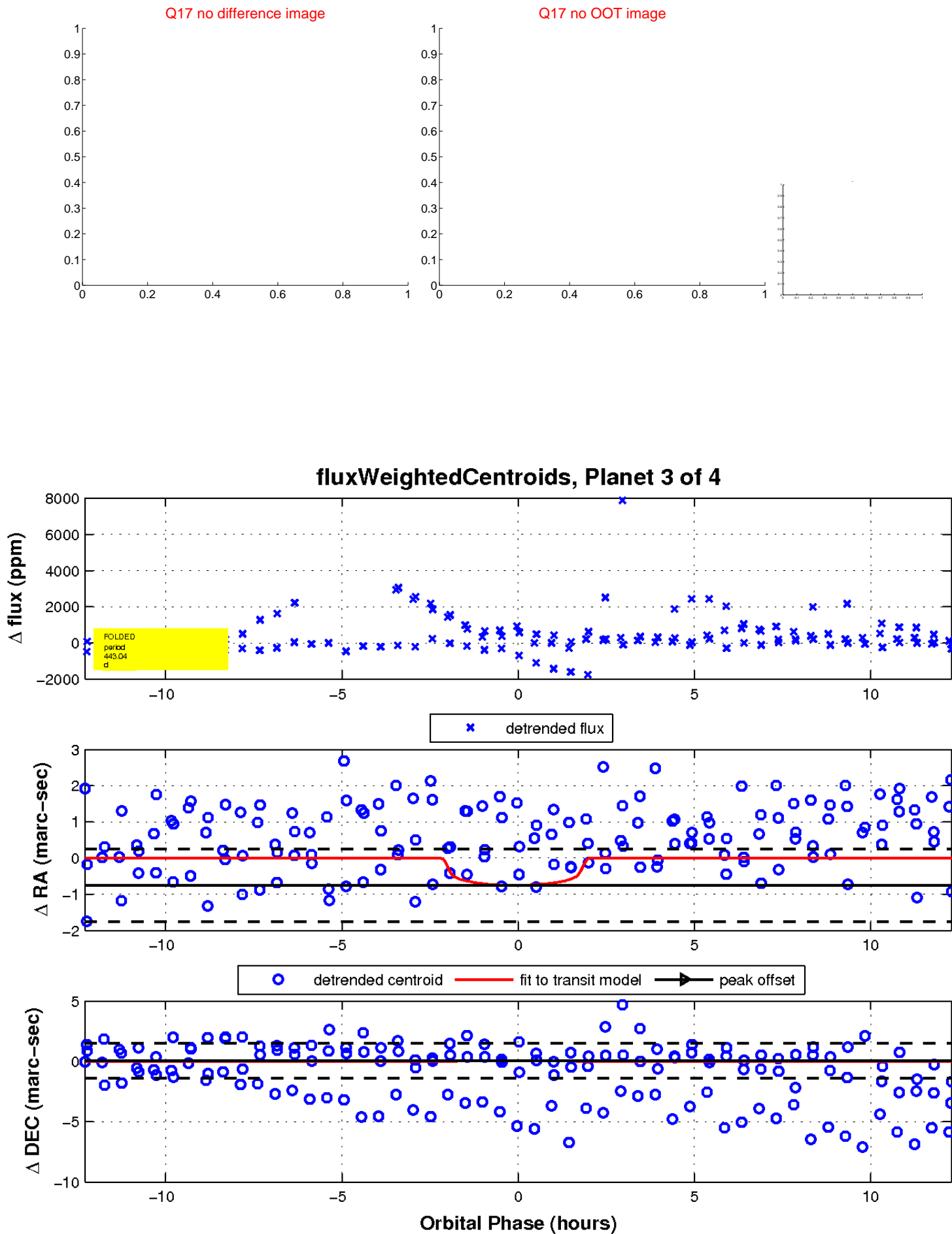
Q16 no difference image



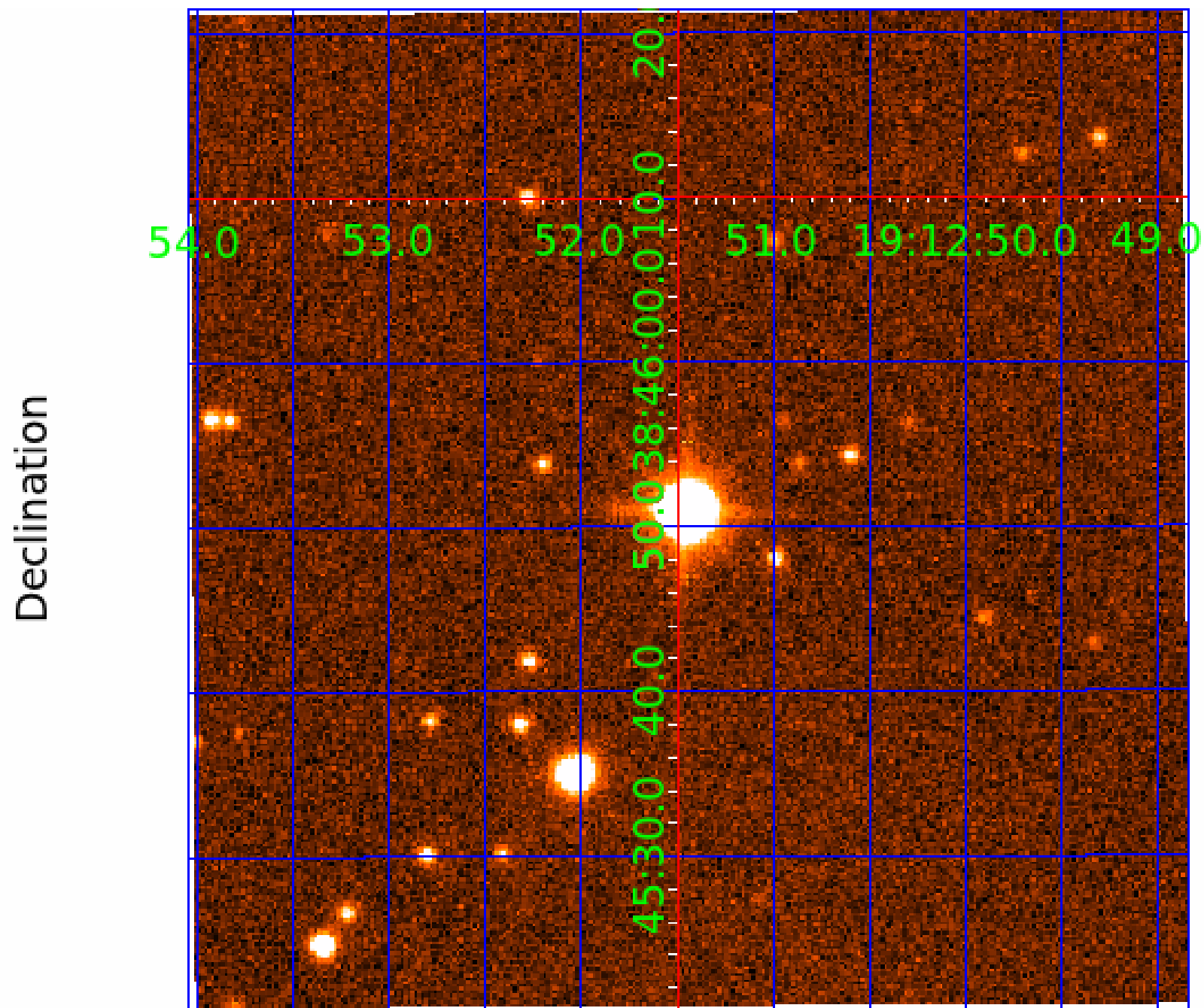
Q16 no OOT image



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



UKIRT Image



KIC 003634755

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})
003634755-01	OBS	No	711.220882	140.856146	1389.4	7.789	30.4	7.7	0.56	4875	2.41	0.10
003634755-02	OBS	No	308.961264	364.978663	1690.7	2.944	386.4	10.8	0.56	4875	2.33	0.29
003634755-03	OBS	No	443.040224	570.913998	904.6	4.144	79.2	6.7	0.56	4875	1.83	0.18
003634755-04	OBS	No	545.888201	365.594548	620.6	13.175	69.9	3.3	0.56	4875	1.42	0.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003634755-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003634755-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003634755-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003634755-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—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.

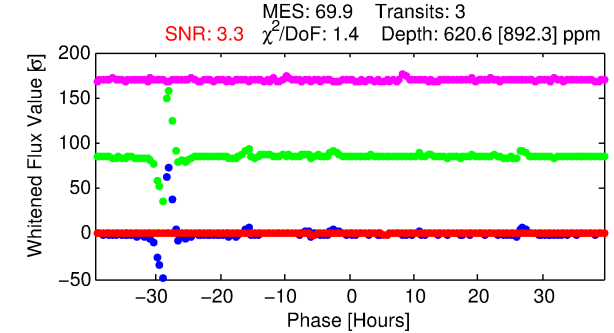
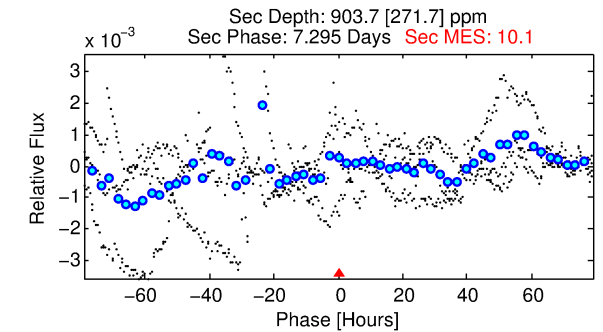
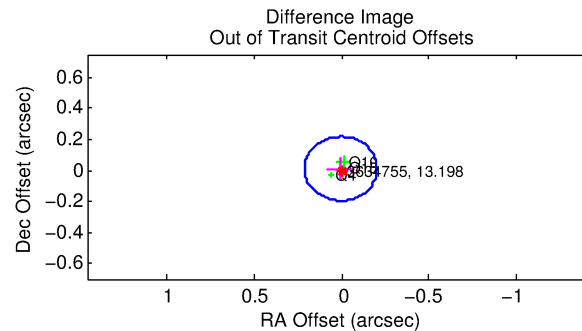
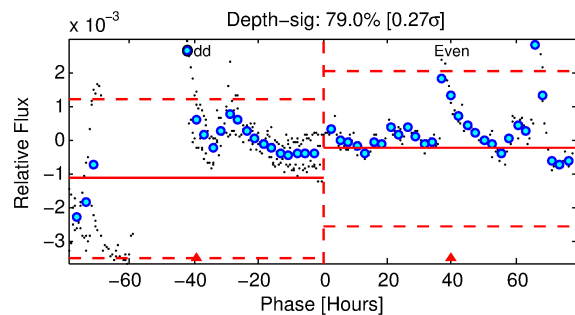
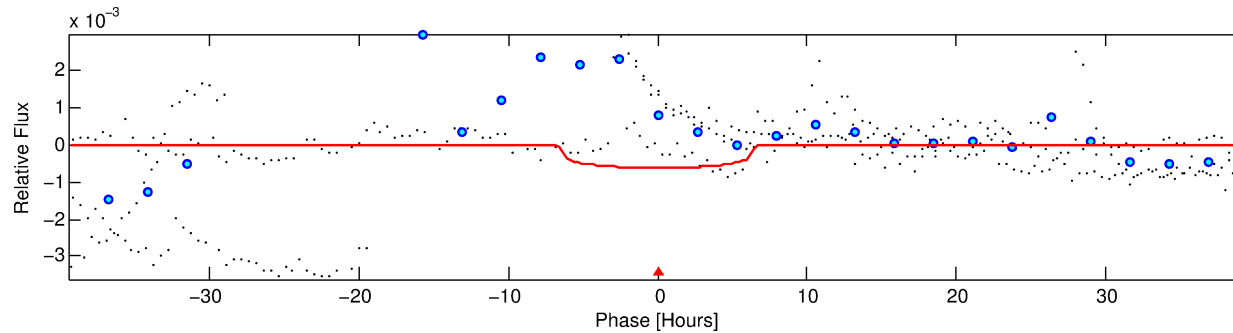
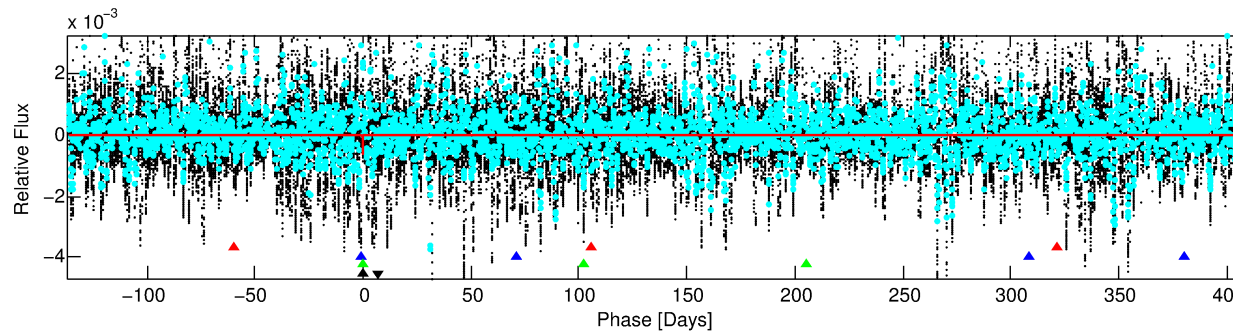
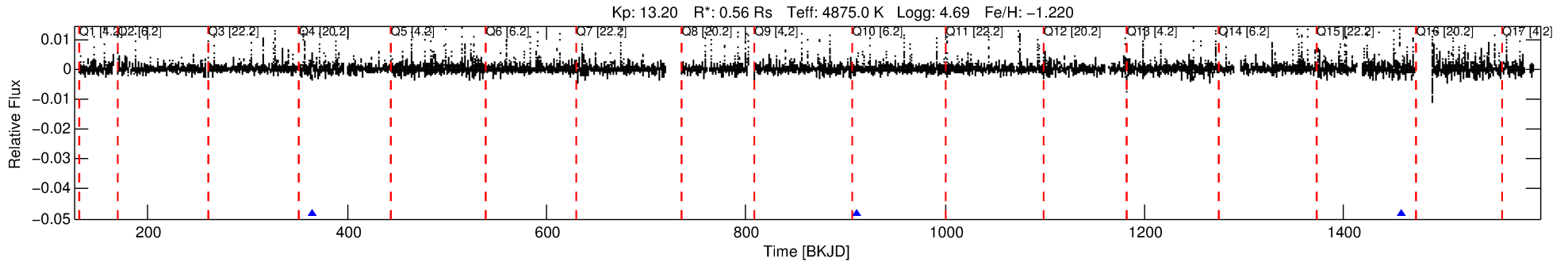
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003634755-04

No Significant Match Found

DV One-Page Summary

KIC: 3634755 Candidate: 4 of 4 Period: 545.888 d



DV Fit Results:

Period = 545.88820 [0.04216] d
Epoch = 365.5945 [0.0401] BKJD
Rp/R* = 0.0232 [0.0891]
a/R* = 281.39 [4254.17]
b = 0.51 [22.31]
Seff = 0.14 [0.02]
Teq = 155 [6] K
Rp = 1.42 [5.44] Re
a = 1.0790 [0.0633] AU
Ag = 287960.99 [2210639.60] [0.13 σ]
Teffp = 5544 [10641] K [0.51 σ]

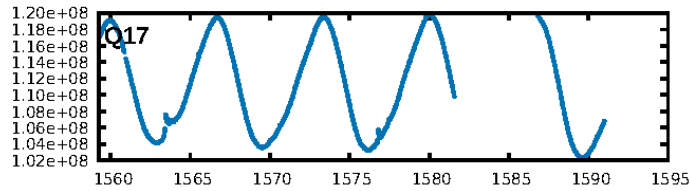
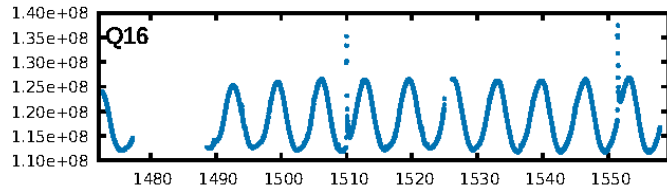
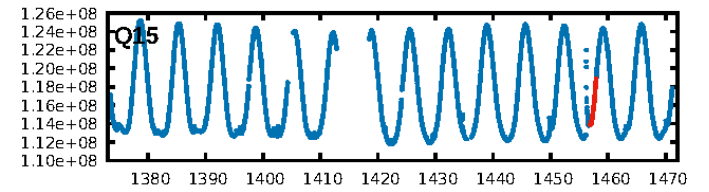
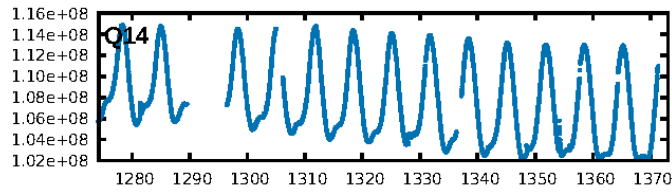
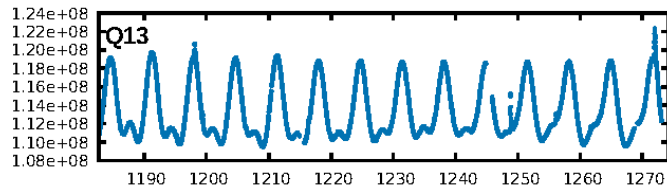
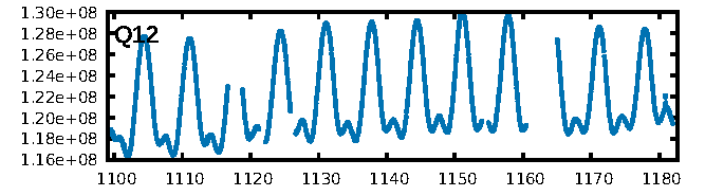
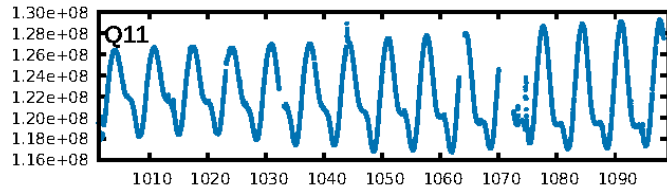
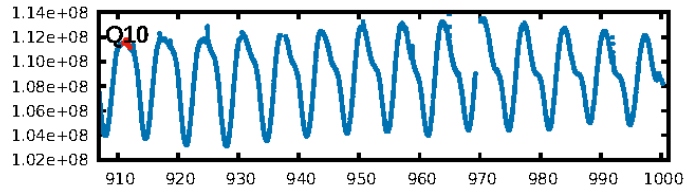
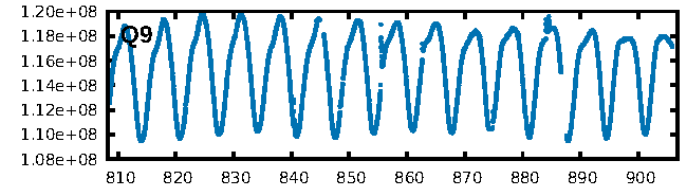
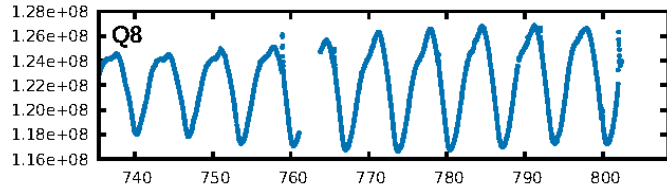
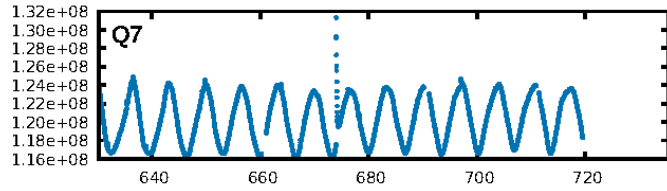
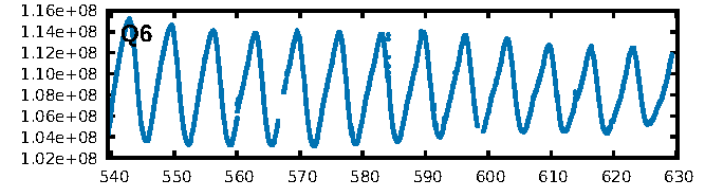
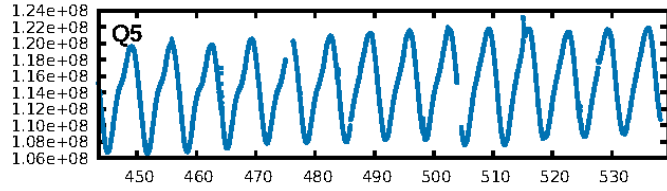
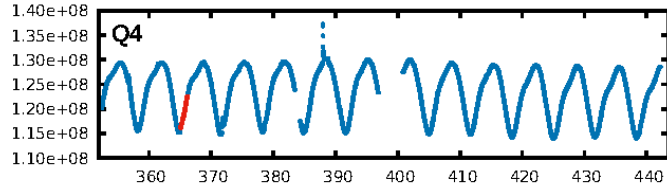
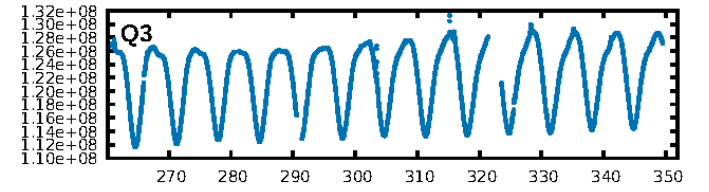
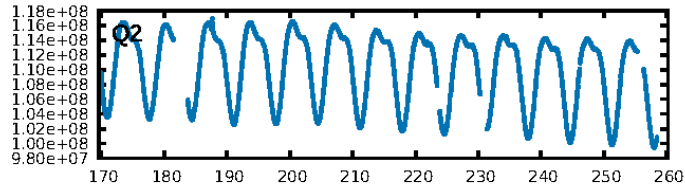
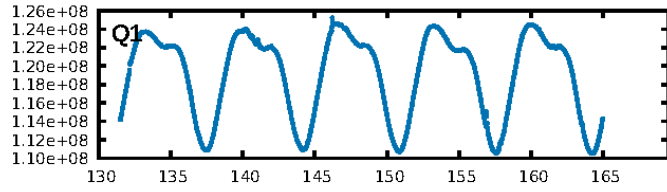
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [178.72 σ]
LongPeriod-sig: 100.0% [259.26 σ]
ModelChiSquare2-sig: 10.9%
ModelChiSquareGof-sig: 77.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.2516
Centroid-sig: 0.5%
Centroid-so: 1.890 arcsec [2.32 σ]
OotOffset-rm: 0.013 arcsec [0.19 σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-rm: 0.138 arcsec [1.95 σ]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.33 [1/3]

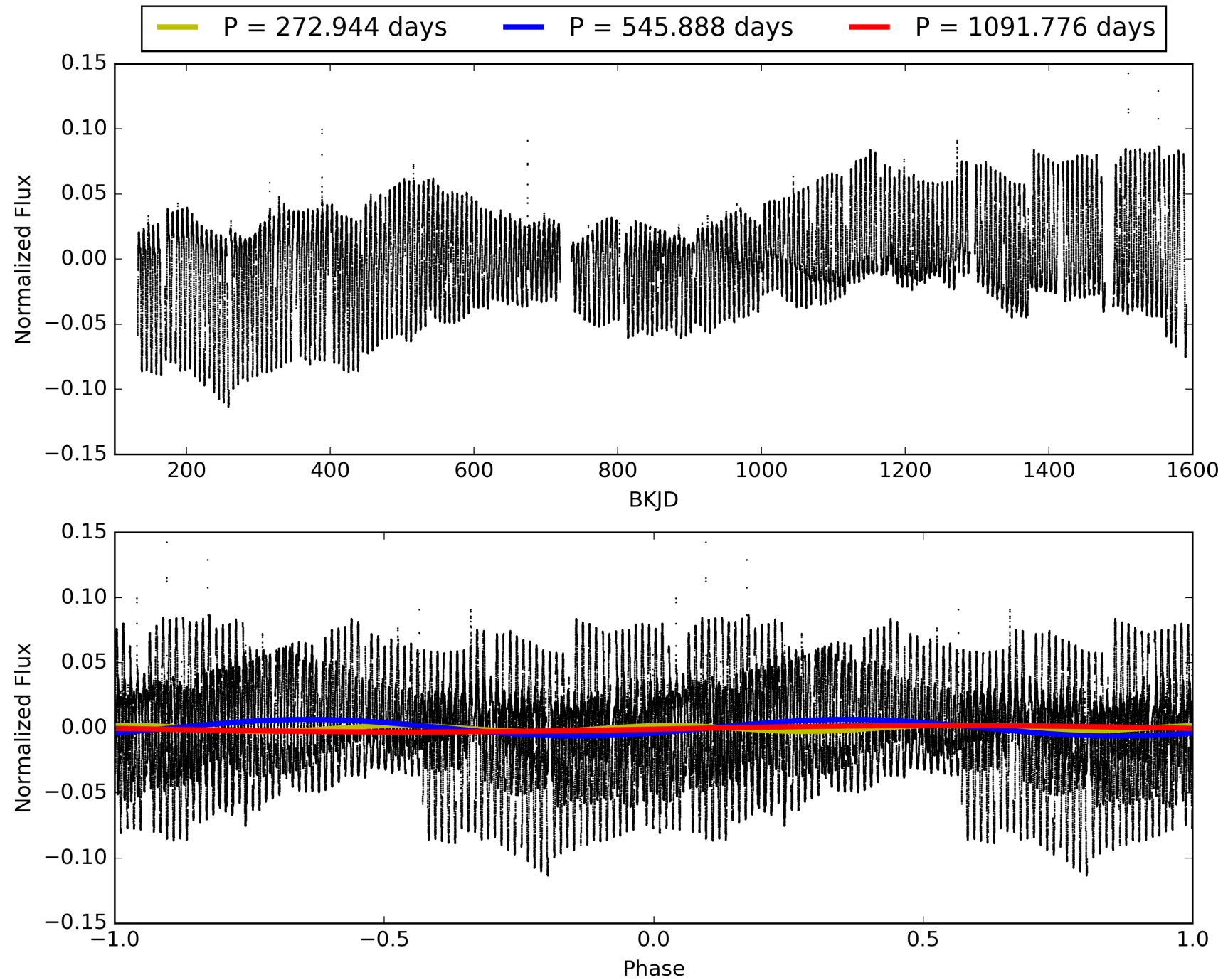
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:37:52 Z

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

TCE 003634755-04, PDC Light Curves

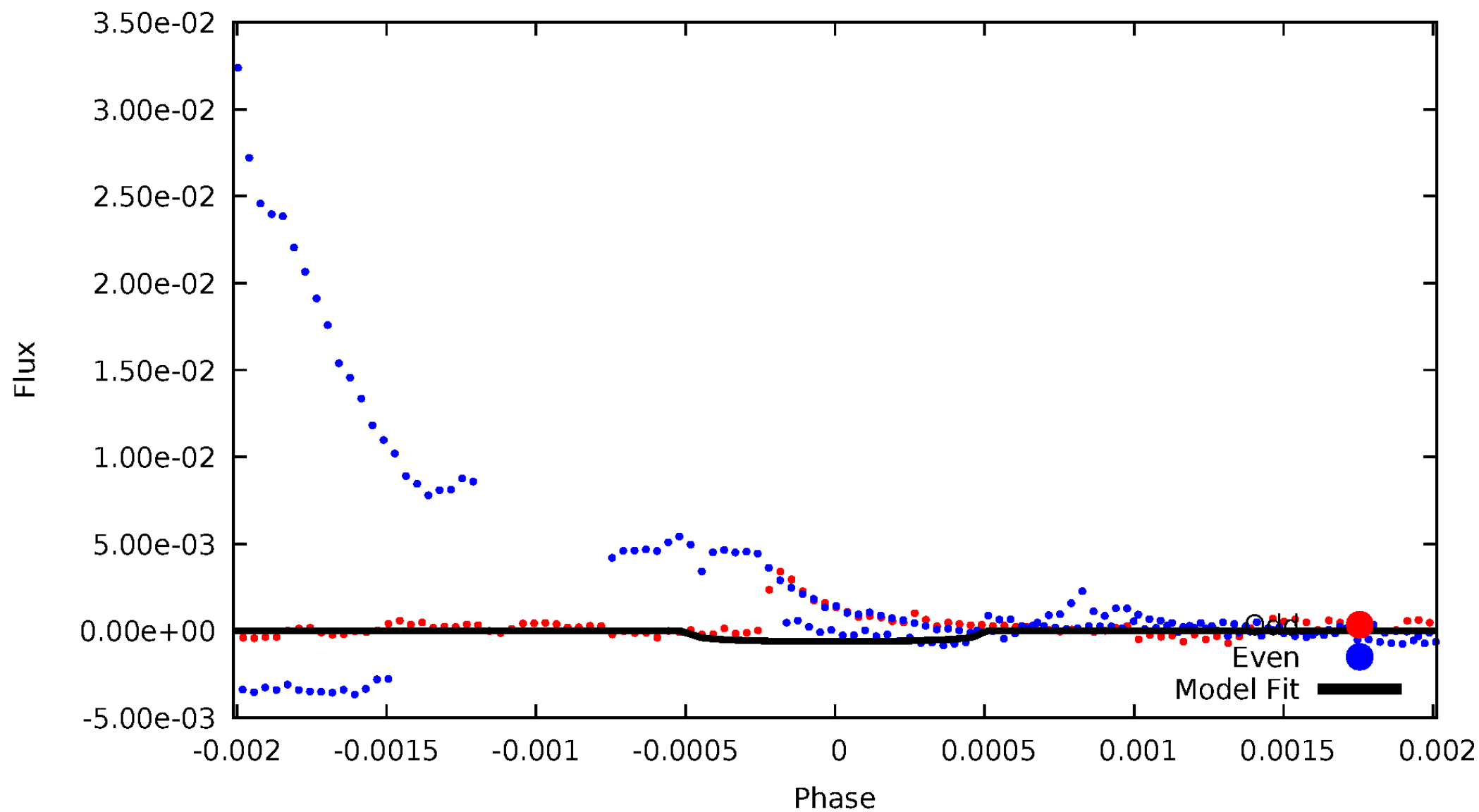


TCE 003634755-04



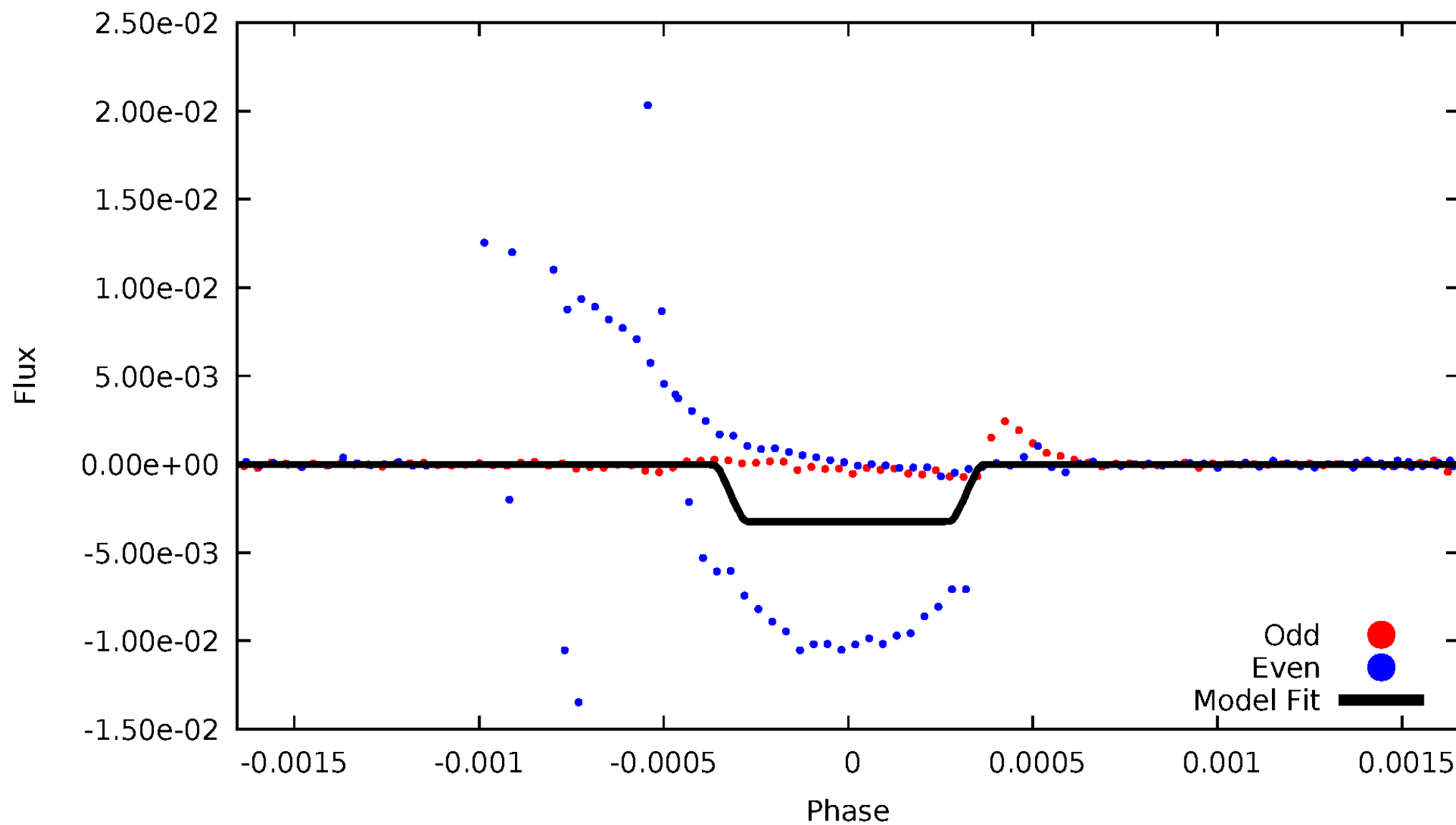
DV Odd/Even

TCE 003634755-04



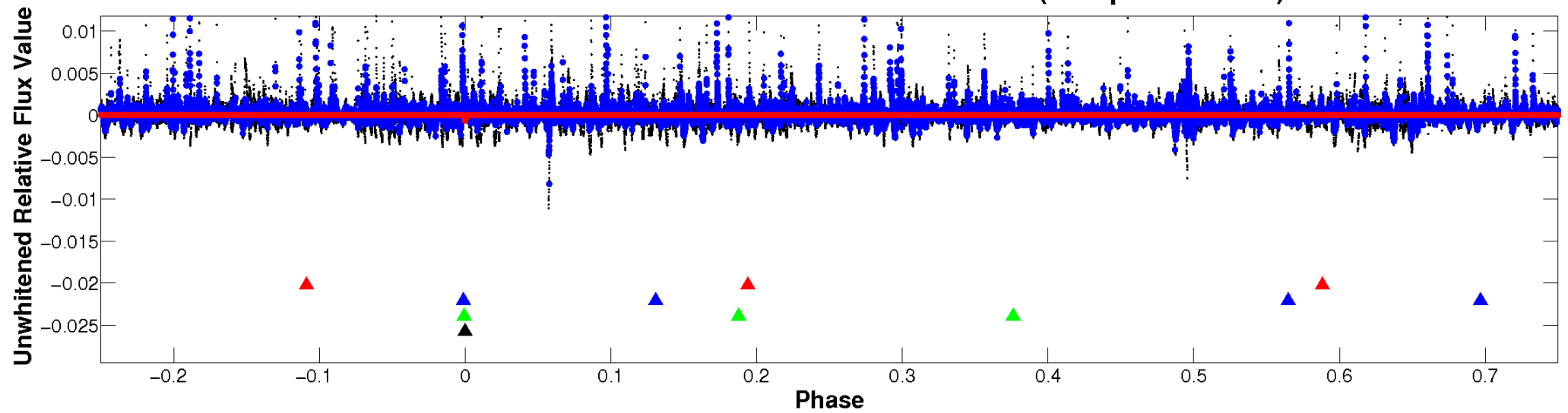
ALT Odd/Even

TCE 003634755-04

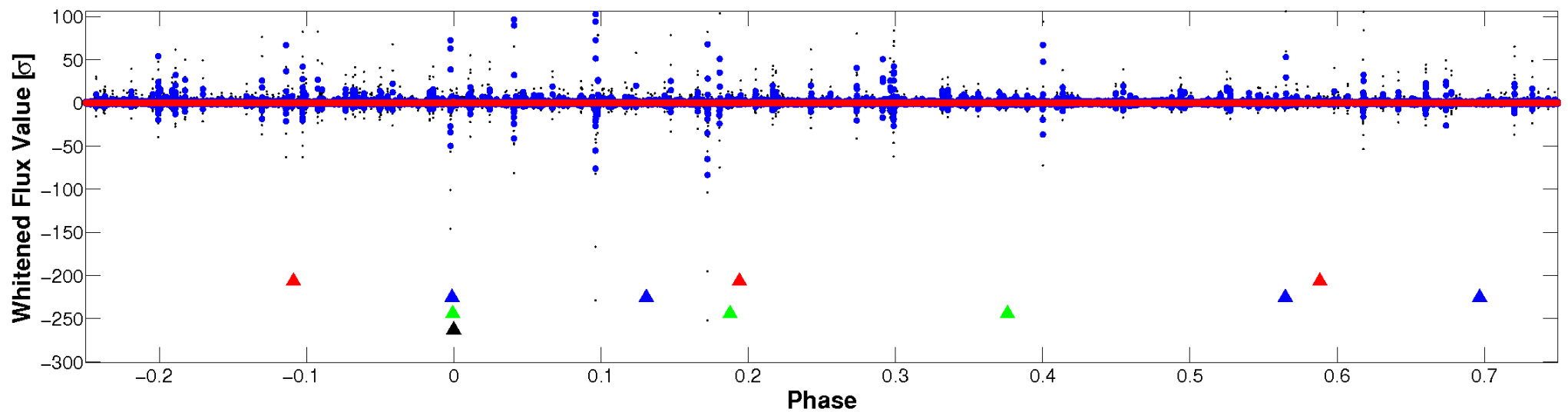


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

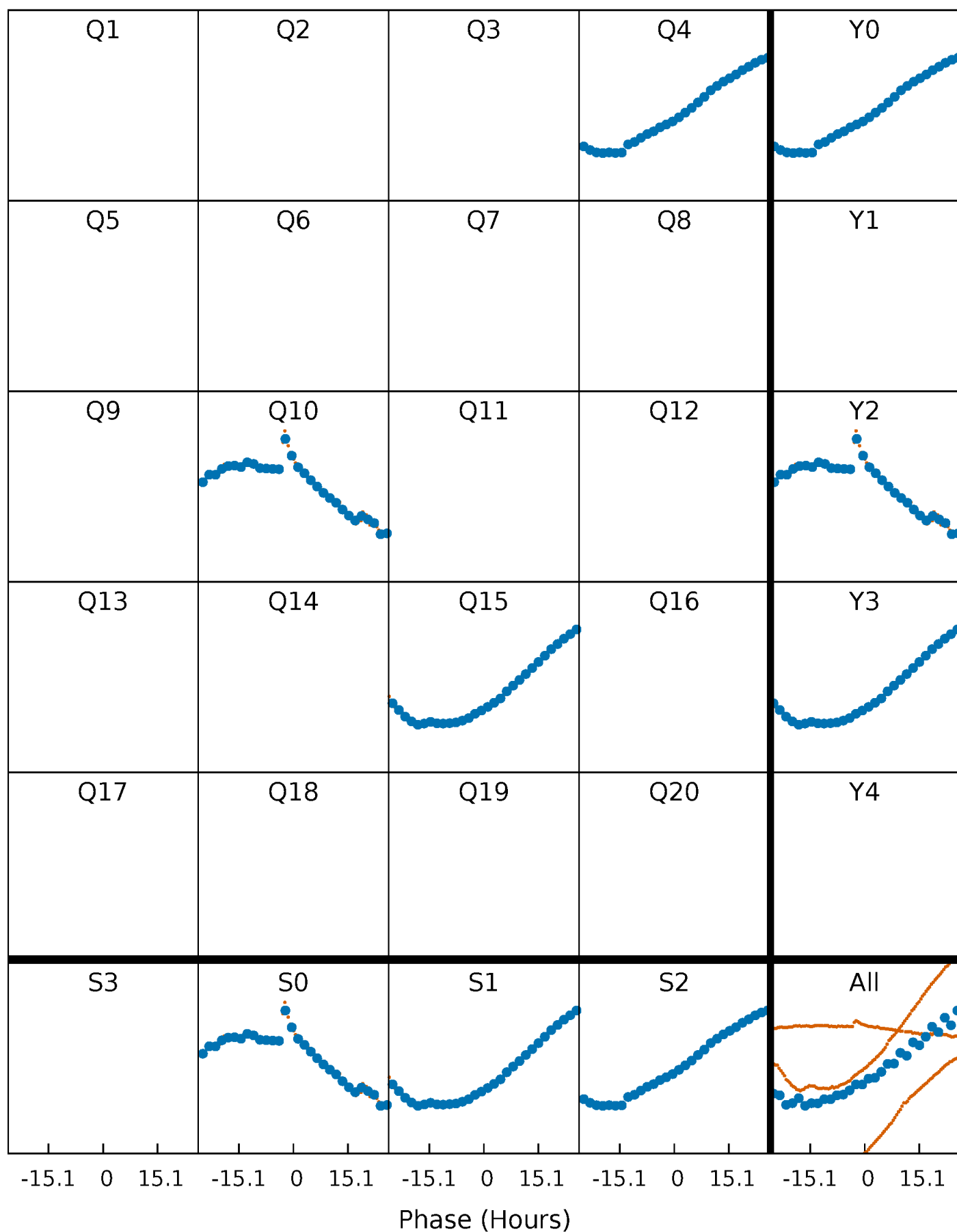


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



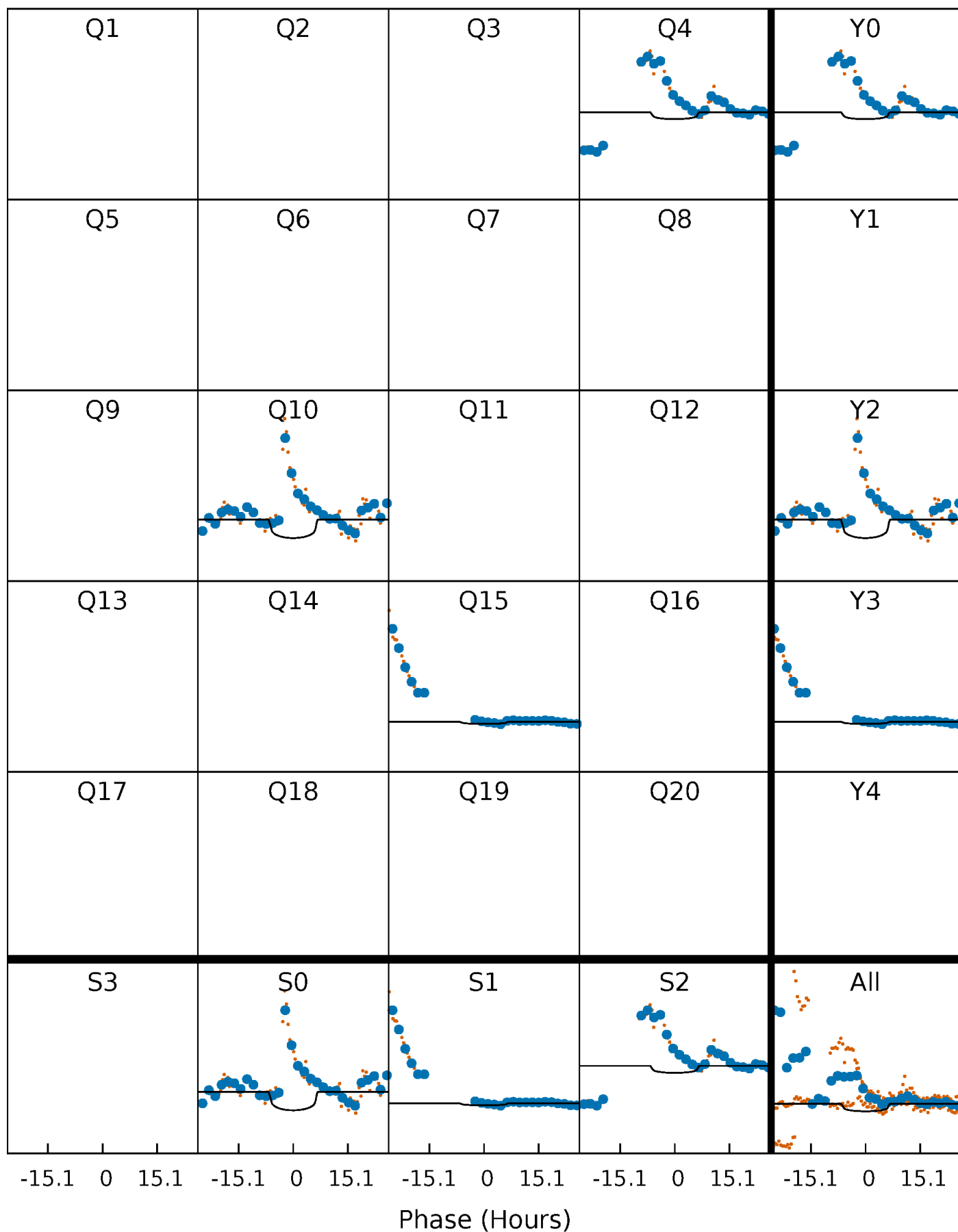
PDC Quarter-Phased Transit Curves

TCE 003634755-04 P=545.888202 Days $T_0=365.594548$ (BKJD)



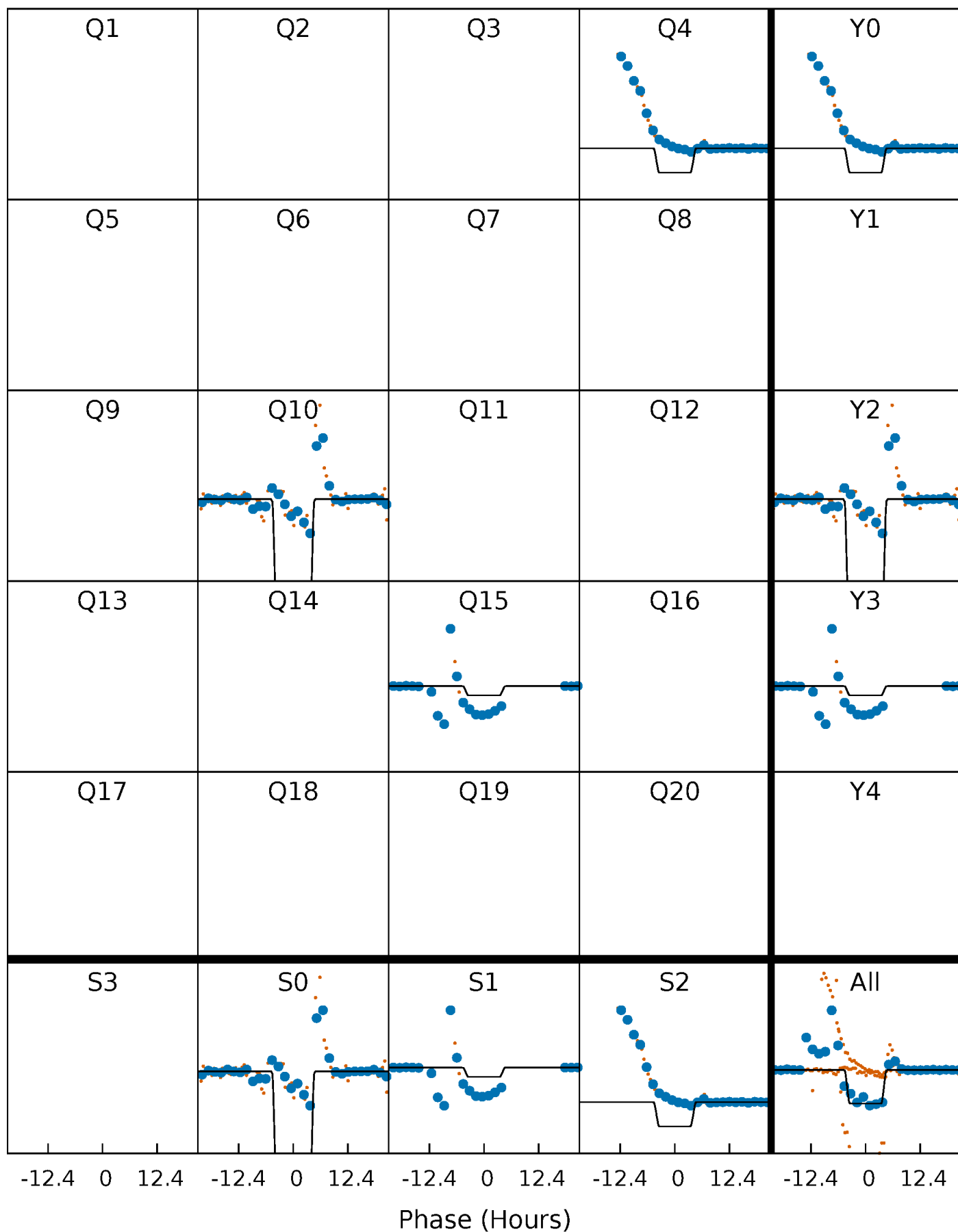
DV Quarter-Phased Transit Curves

TCE 003634755-04 $P=545.888202$ Days $T_0=365.594548$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

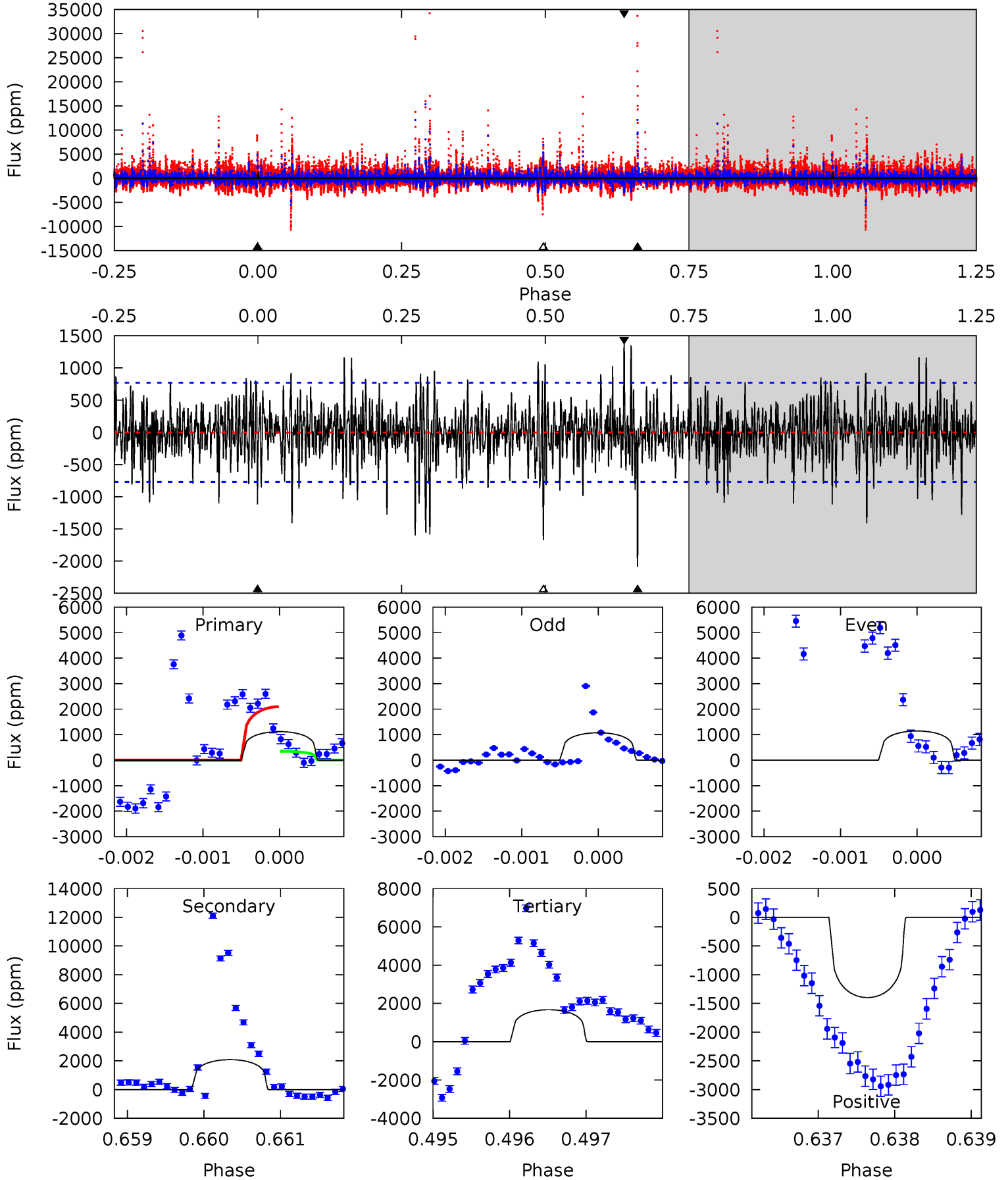
TCE 003634755-04 P=545.385339 Days $T_0=365.766142$ (BKJD)



DV Model-Shift Uniqueness Test

003634755-04, P = 545.888202 Days, E = 365.594548 Days

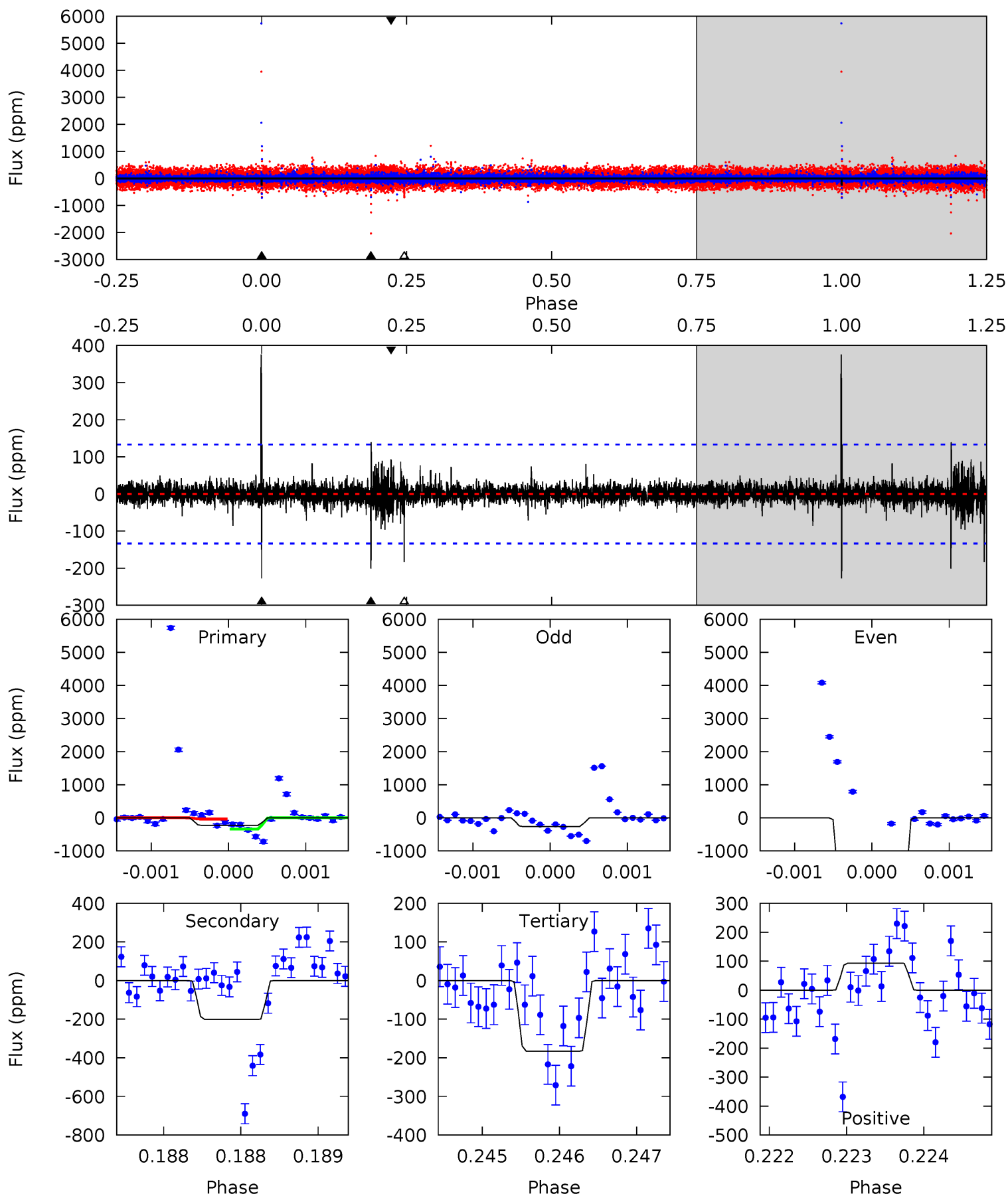
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.88	14.7	11.8	9.85	5.45	3.28	2.34	-3.91	-1.97	2.90	4.84	0.19	0.93	0.40	6.18



Alt Model-Shift Uniqueness Test

003634755-04, P = 545.385339 Days, E = 365.766142 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.40	8.29	7.55	3.86	5.51	3.38	0.64	1.85	5.54	0.74	4.43	57.4	11.9	0.62	6.24



Stellar Parameters For KIC 003634755

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4875^{+145}_{-160}	$4.693^{+0.052}_{-0.028}$	$-1.220^{+0.300}_{-0.300}$	$0.559^{+0.033}_{-0.036}$	$0.563^{+0.040}_{-0.023}$	$4.532^{+0.892}_{-0.512}$
	+3%/-3%	+1%/-1%	+25%/-25%	+6%/-6%	+7%/-4%	+20%/-11%
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 003634755-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2084 ± 142	$4.53^{+4.17}_{-2.96}$	216^{+7}_{-8}	4058^{+2331}_{-788}	$67127^{+509724}_{-49284}$
Alt.	-201 ± 24	$5.11^{+4.81}_{-3.26}$	215^{+7}_{-8}	2729^{+919}_{-405}	5001^{+31851}_{-3625}

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 $A_{obs} \gg 1.0$

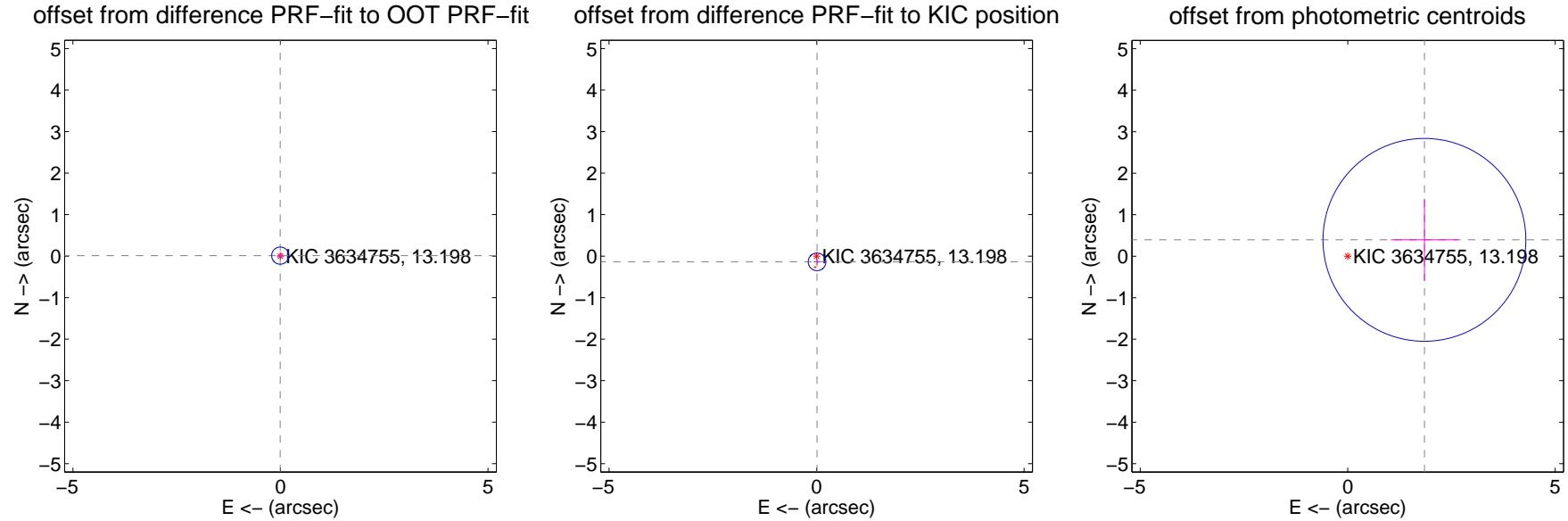
DV Centroid Data

Supplemental centroid analysis for 003634755-04. Kepler magnitude: 13.20. Transit SNR 3.28

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.013 ± 0.069	0.19	0.005 ± 0.071	0.012 ± 0.069
PRF-fit source offset from KIC position	0.138 ± 0.071	1.95	-0.011 ± 0.072	-0.138 ± 0.071
photometric centroid source offset	1.89 ± 0.81	2.32	-1.85 ± 0.81	0.39 ± 0.99



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.

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



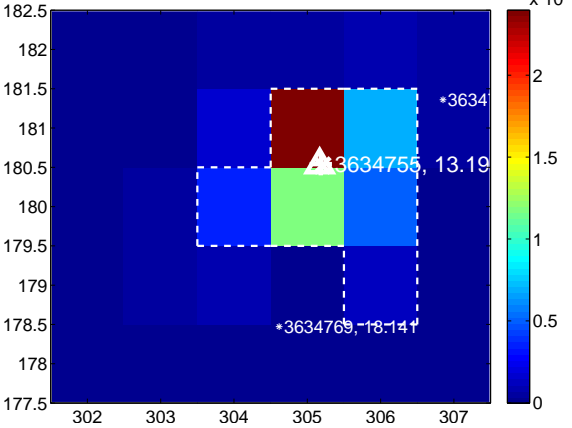
Q3 no difference image



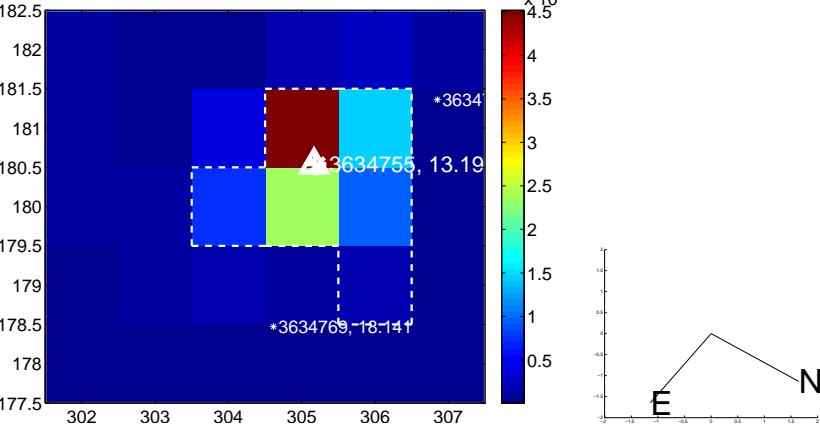
Q3 no OOT image



Q4 difference image



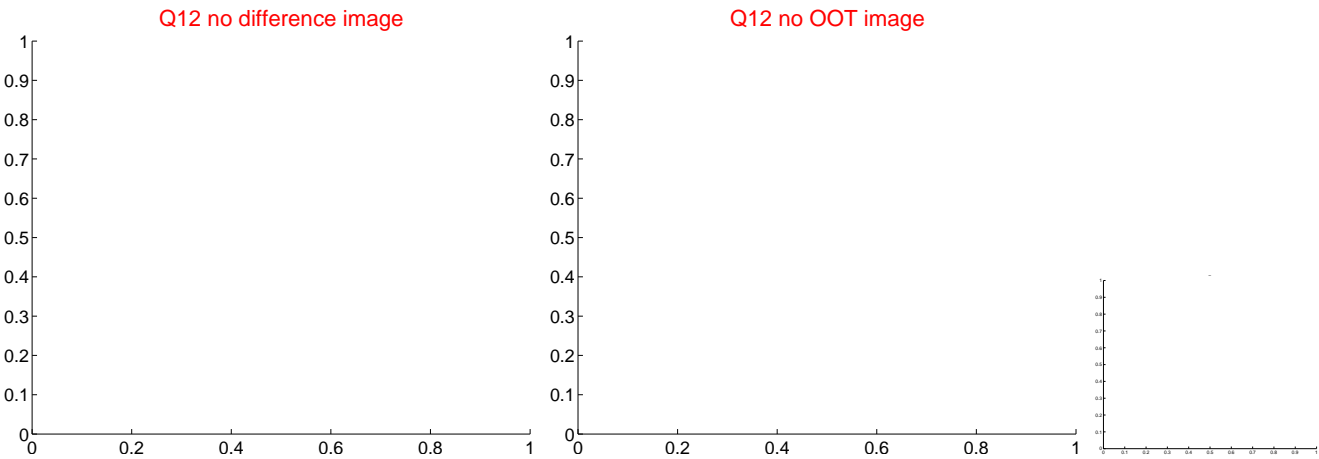
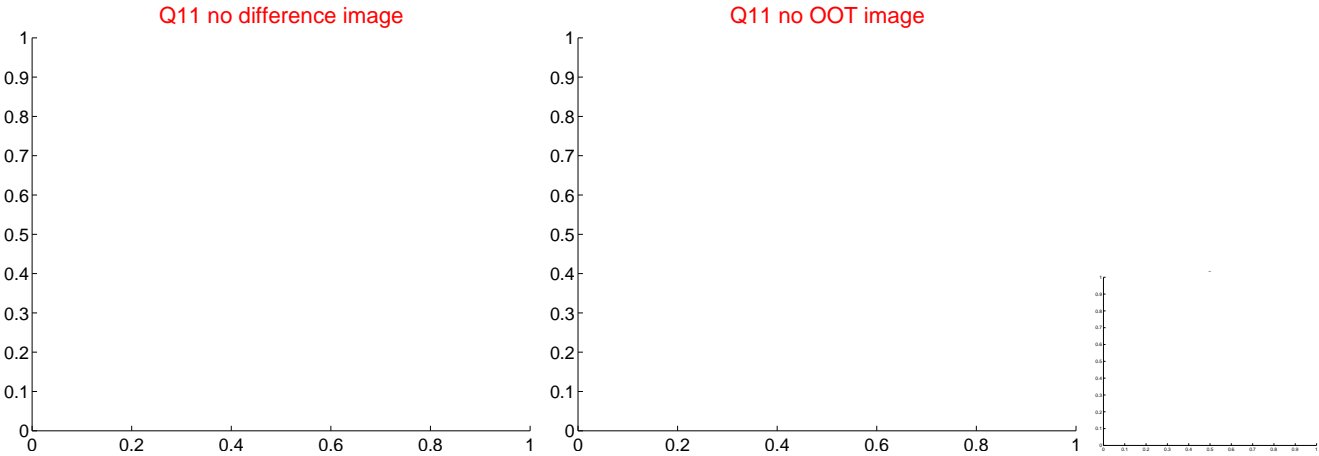
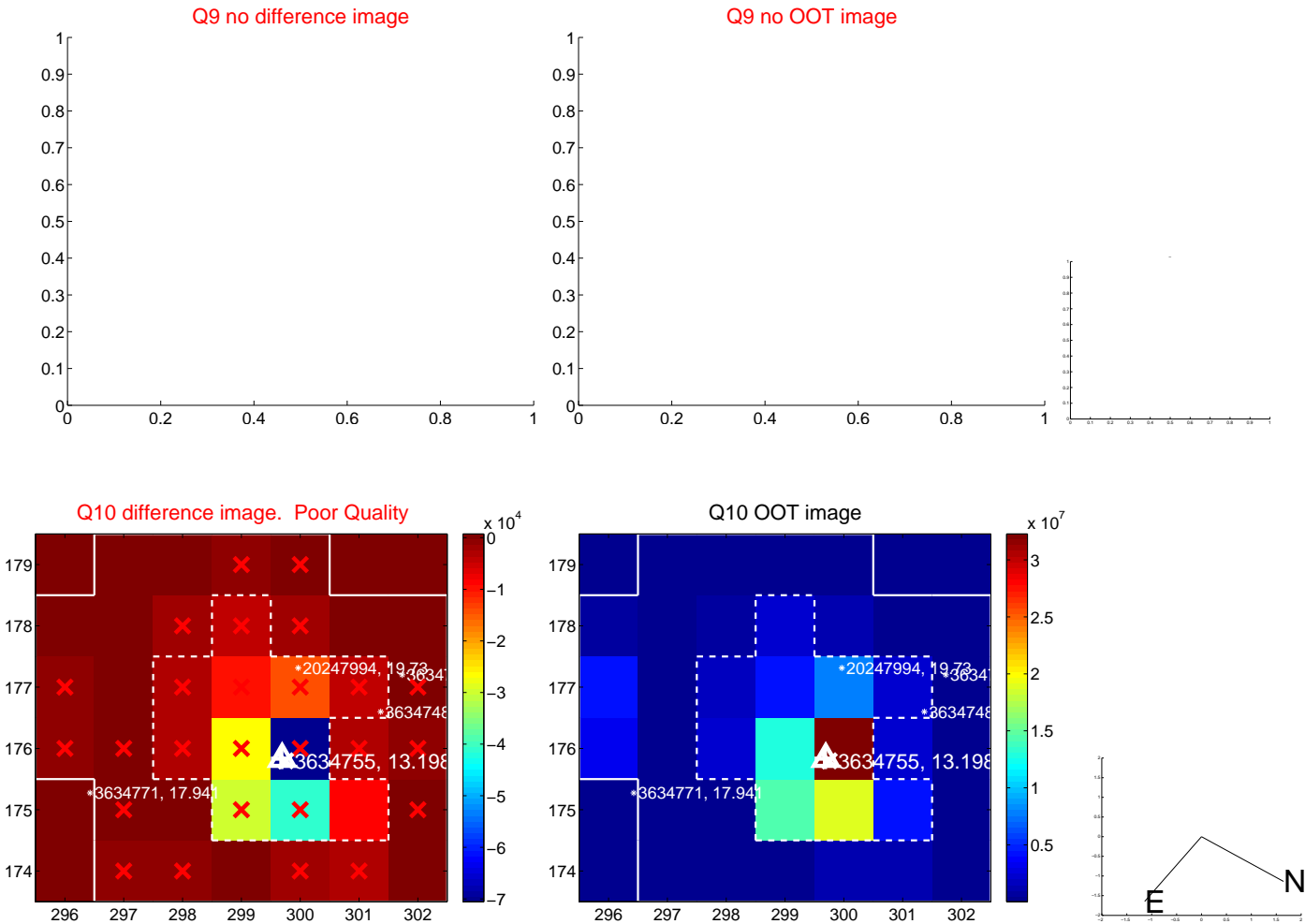
Q4 OOT image



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



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



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

Q13 no difference image



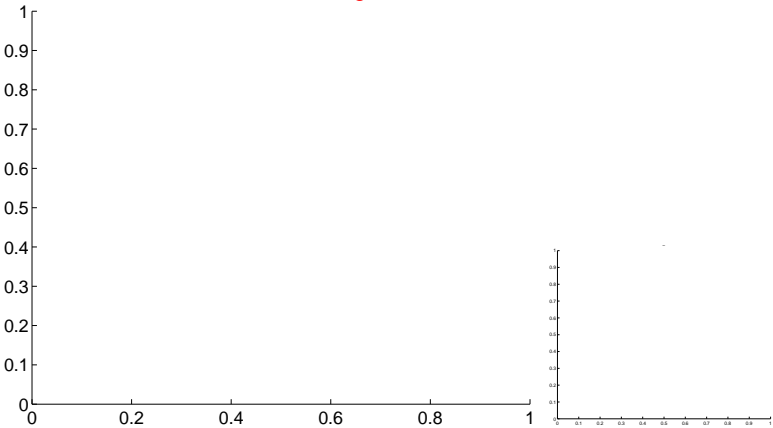
Q13 no OOT image



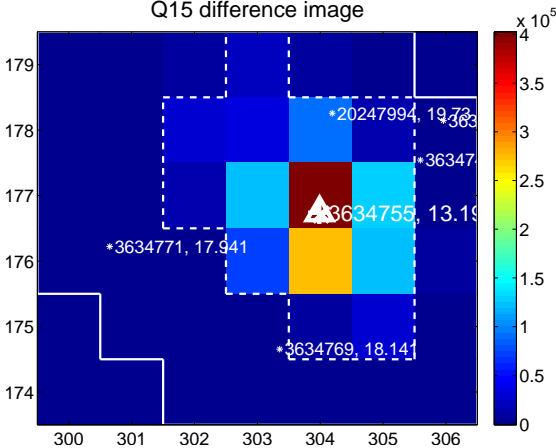
Q14 no difference image



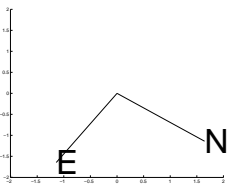
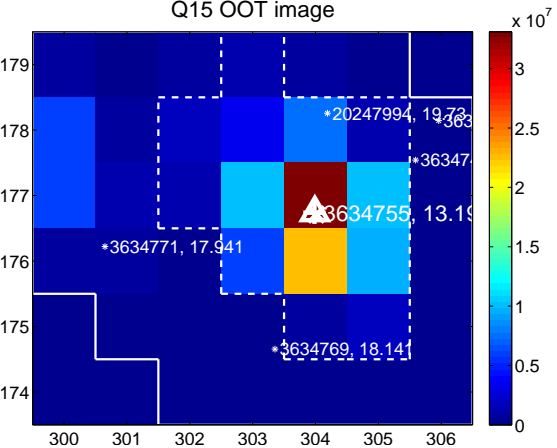
Q14 no OOT image



Q15 difference image



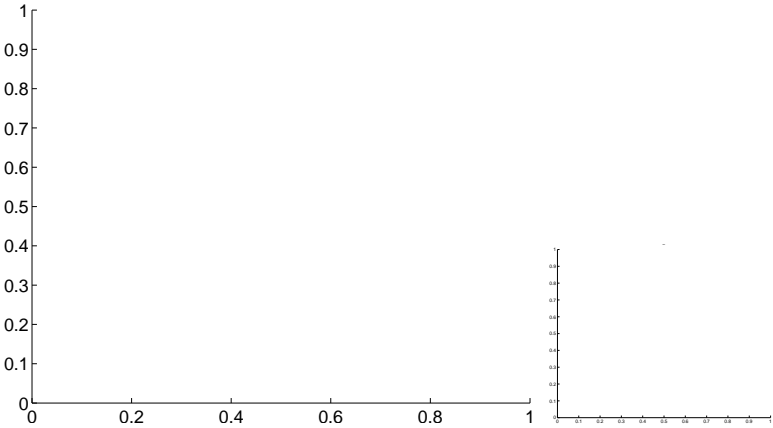
Q15 OOT image



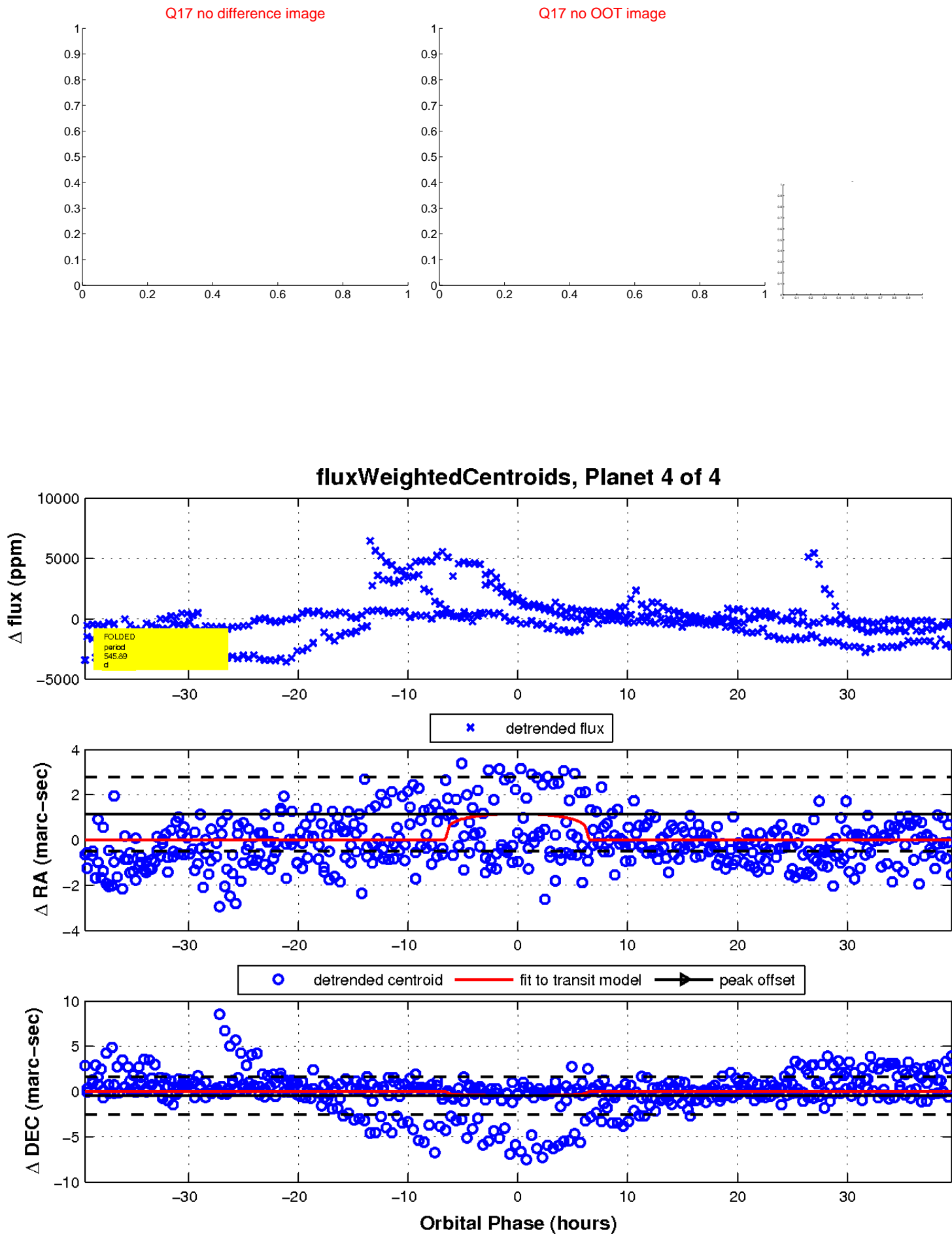
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

