

KIC 003864122

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})
003864122-01	OBS	No	292.609829	177.277267	942.6	5.126	15.4	4.0	0.88	5382	2.75	0.90
003864122-02	OBS	No	205.030874	309.500137	876.2	2.776	13.8	5.4	0.88	5382	2.67	1.44
003864122-03	OBS	No	346.688245	415.546686	1539.8	14.203	12.4	5.0	0.88	5382	3.41	0.71
003864122-04	OBS	No	383.189188	420.331092	1521.6	4.482	12.3	7.4	0.88	5382	3.58	0.62
003864122-05	OBS	No	430.713813	335.281943	1258.7	3.378	11.2	7.4	0.88	5382	3.18	0.54
003864122-06	OBS	No	462.534064	213.844618	645.3	4.500	11.2	-1.0	0.88	5382	2.18	0.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003864122-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003864122-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
003864122-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003864122-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003864122-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003864122-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_POS_ALT—CENT_NOFITS

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

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

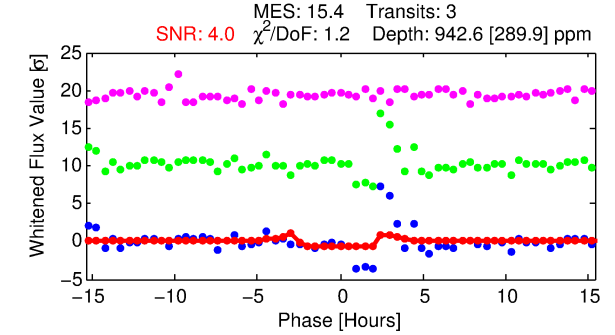
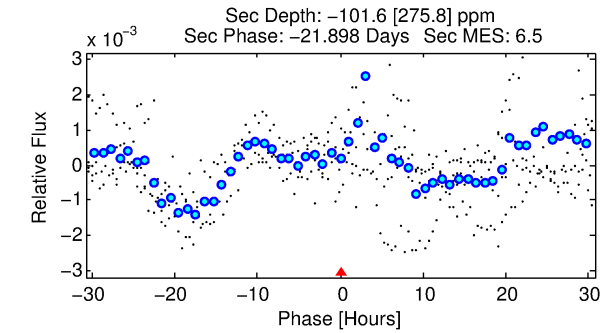
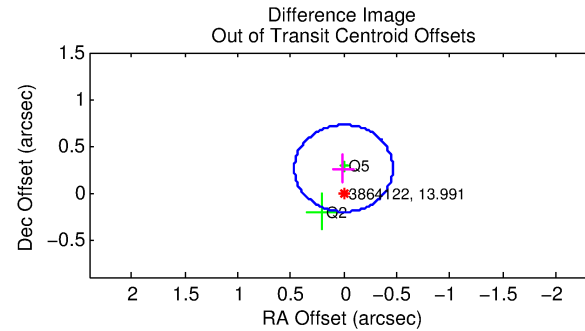
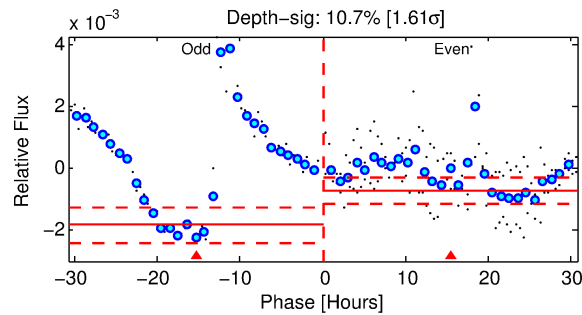
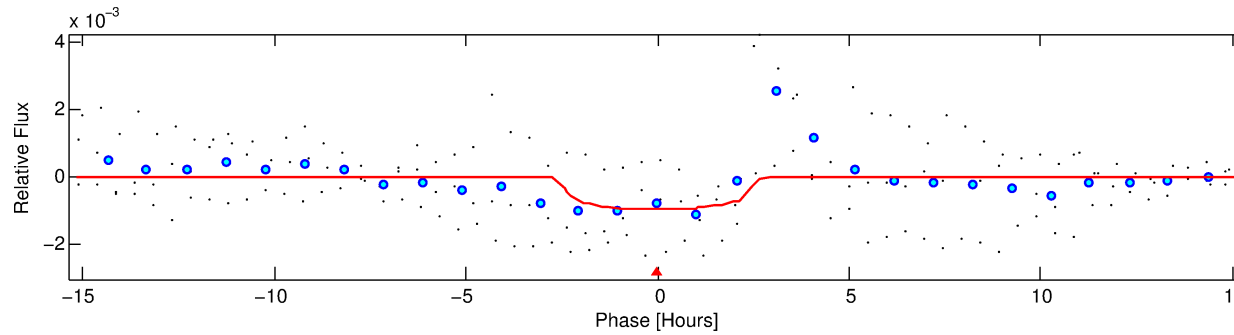
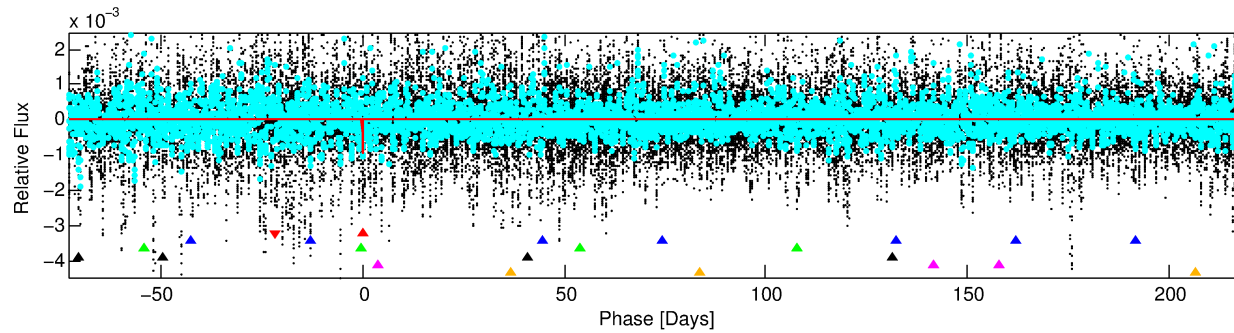
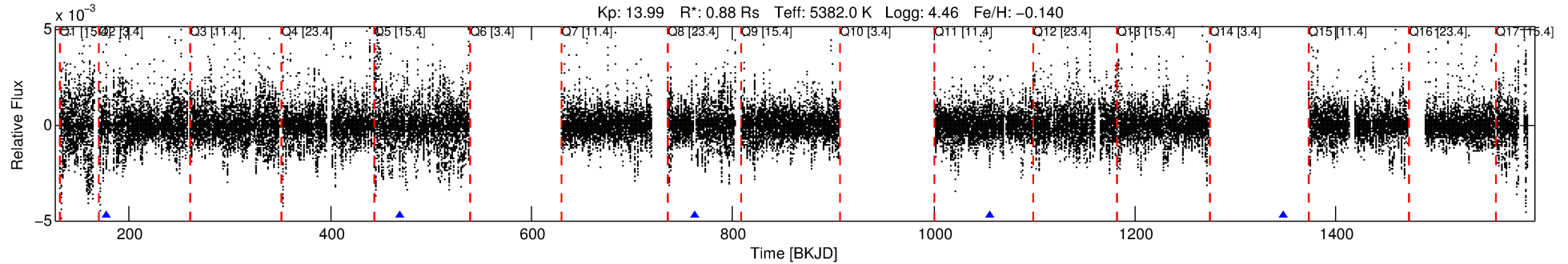
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003864122-01

No Significant Match Found

DV One-Page Summary

KIC: 3864122 Candidate: 1 of 6 Period: 292.610 d



DV Fit Results:

Period = 292.60983 [0.00524] d
Epoch = 177.2773 [0.0105] BKJD
Rp/R* = 0.0288 [0.0540]
a/R* = 381.64 [2775.73]
b = 0.54 [9.64]
Seff = 0.90 [0.24]
Teq = 248 [17] K
Rp = 2.75 [5.17] Re
a = 0.8015 [0.1271] AU
Ag = N/A
Teffp = N/A

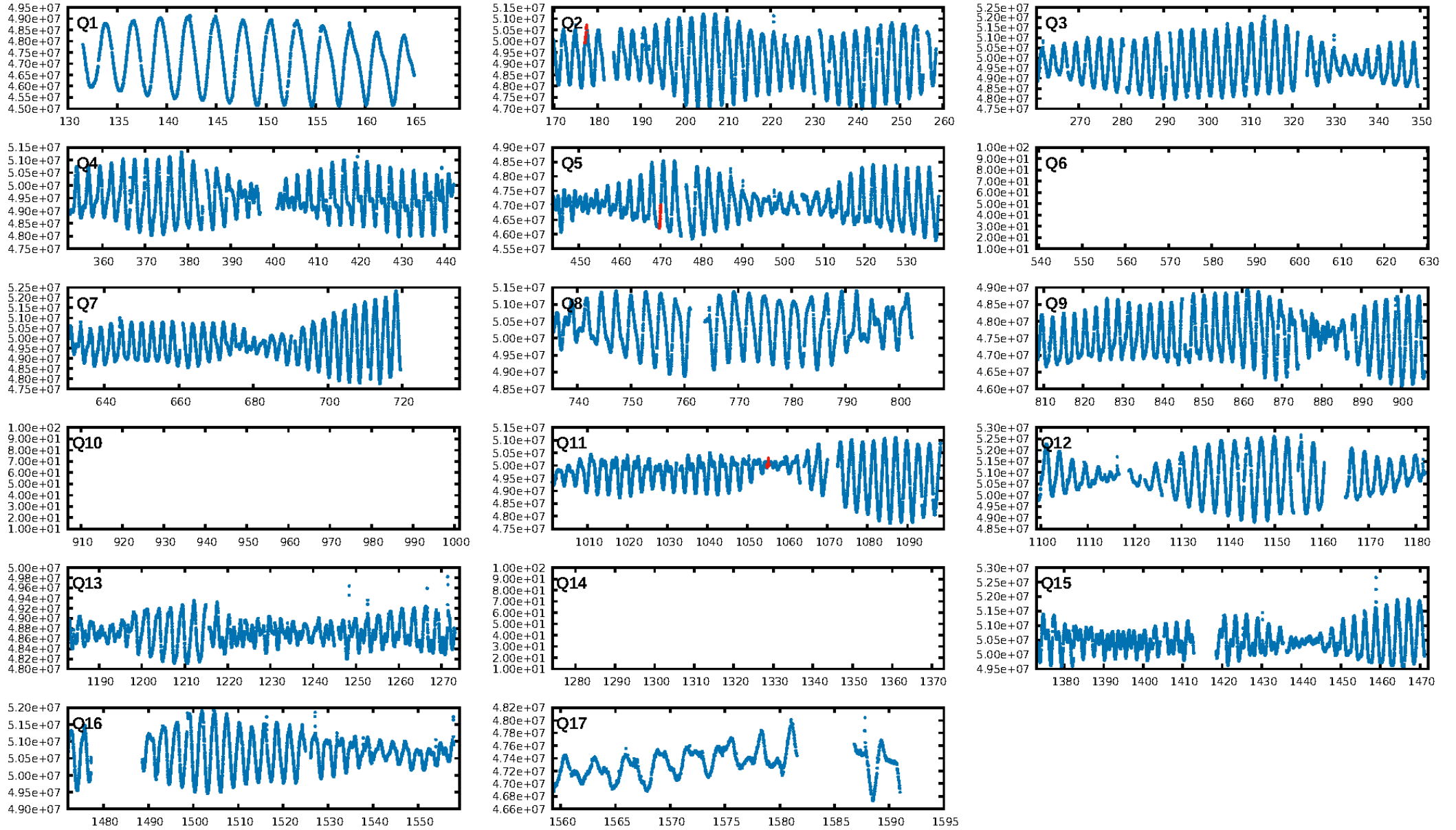
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [360.58 σ]
LongPeriod-sig: 100.0% [85.95 σ]
ModelChiSquare2-sig: 86.8%
ModelChiSquareGof-sig: 69.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.278
Centroid-sig: 38.3%
Centroid-so: 1.141 arcsec [0.98 σ]
OotOffset-rm: 0.259 arcsec [1.68 σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-rm: 0.047 arcsec [0.38 σ]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

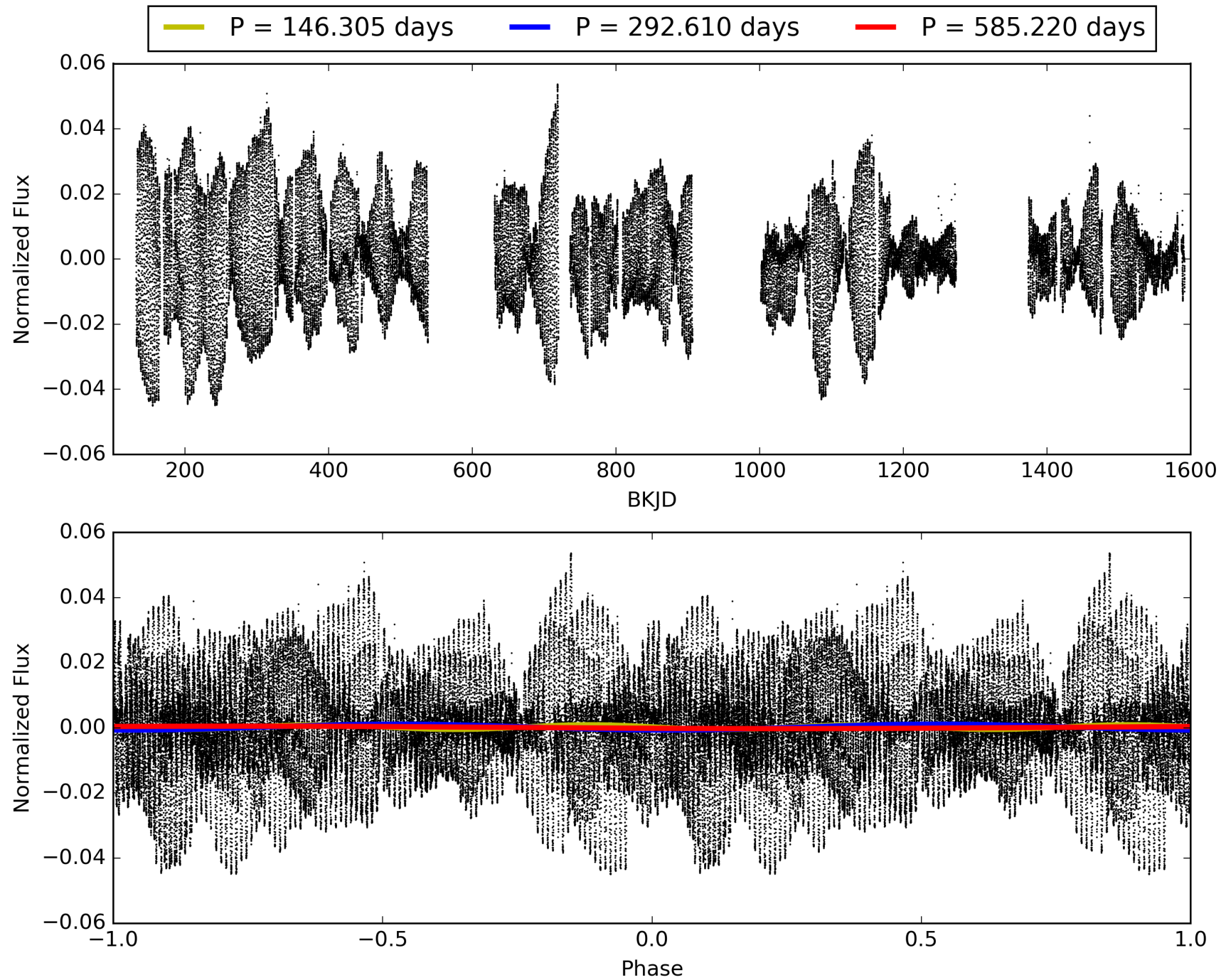
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:22:50 Z

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

TCE 003864122-01, PDC Light Curves

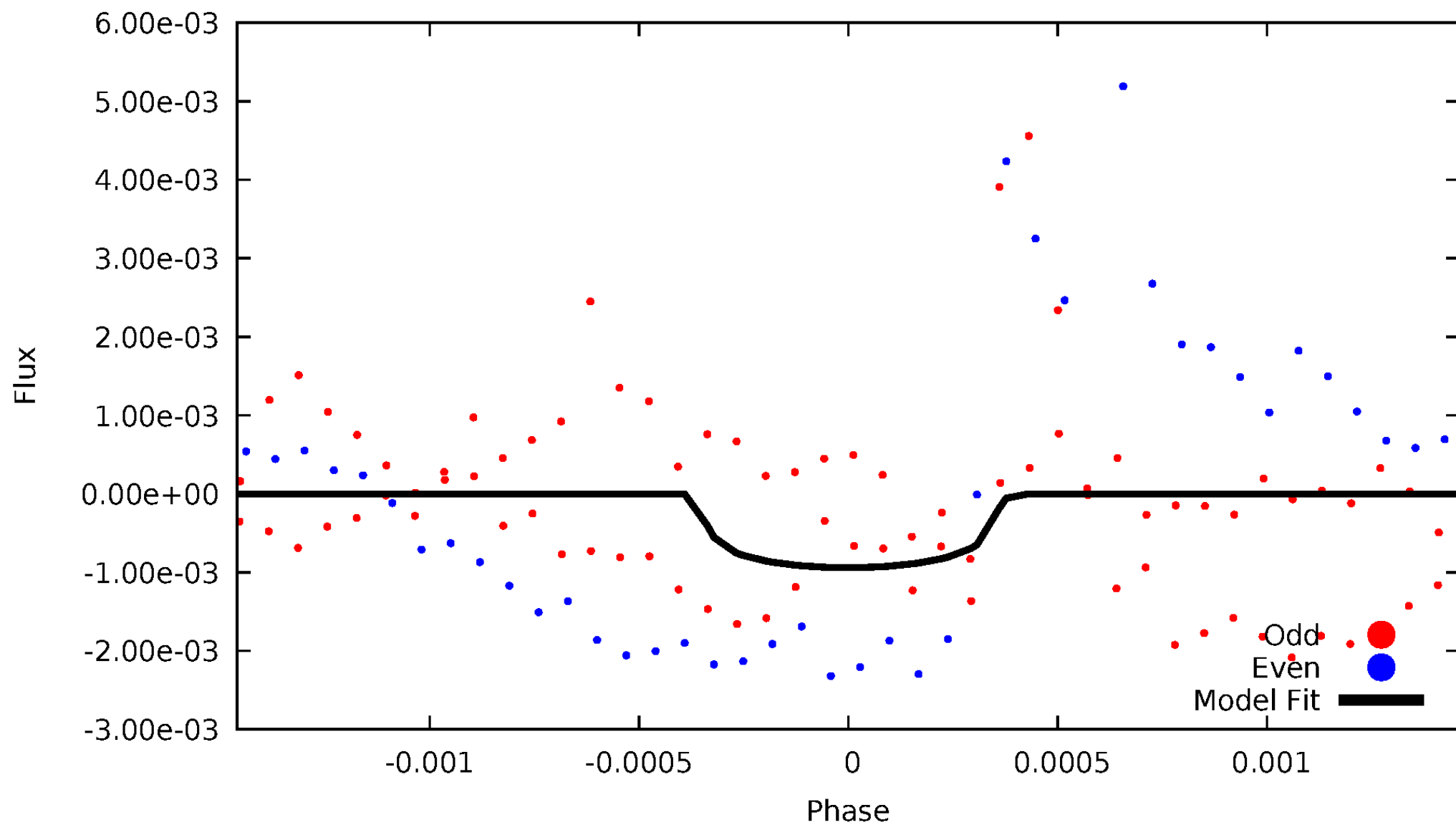


TCE 003864122-01



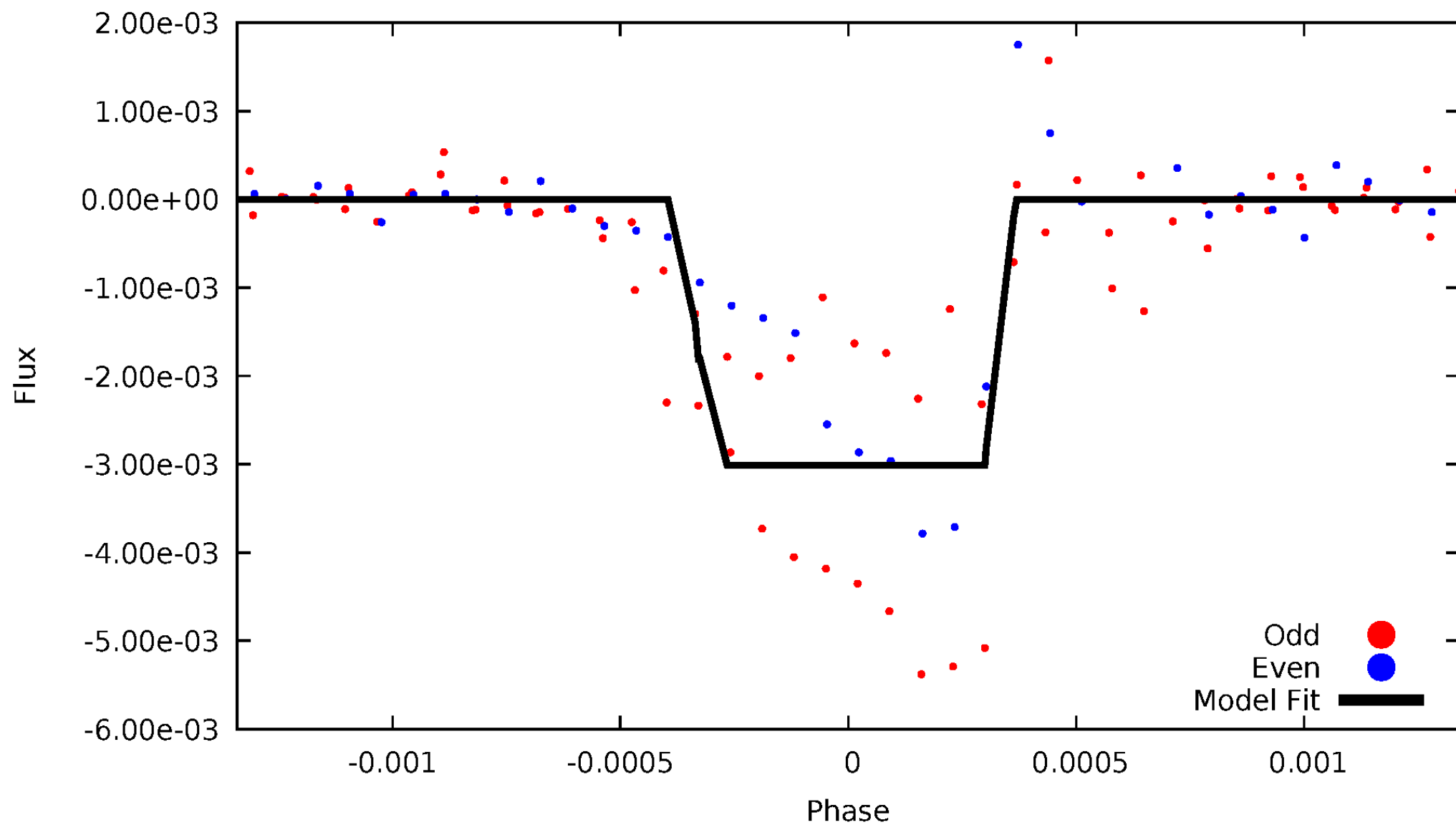
DV Odd/Even

TCE 003864122-01



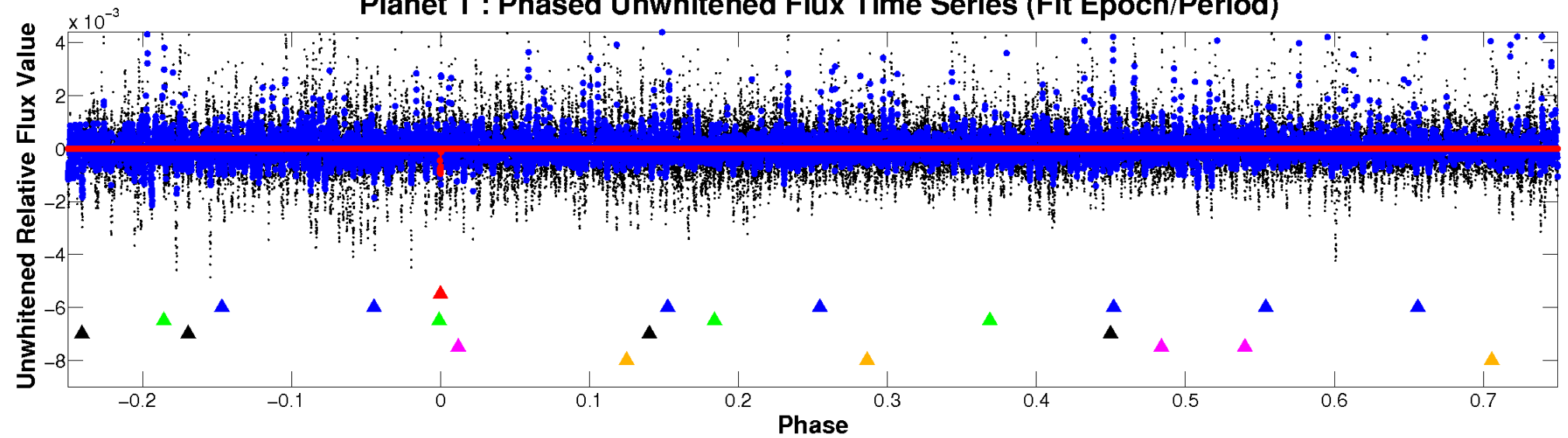
ALT Odd/Even

TCE 003864122-01

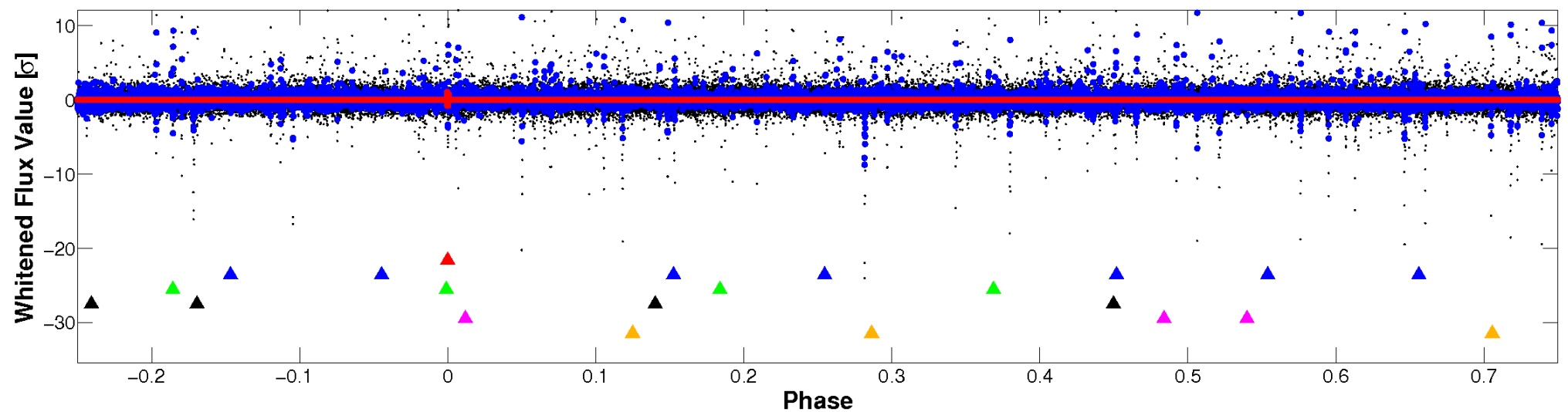


Non-Whitened Vs. Whitened Light Curve

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

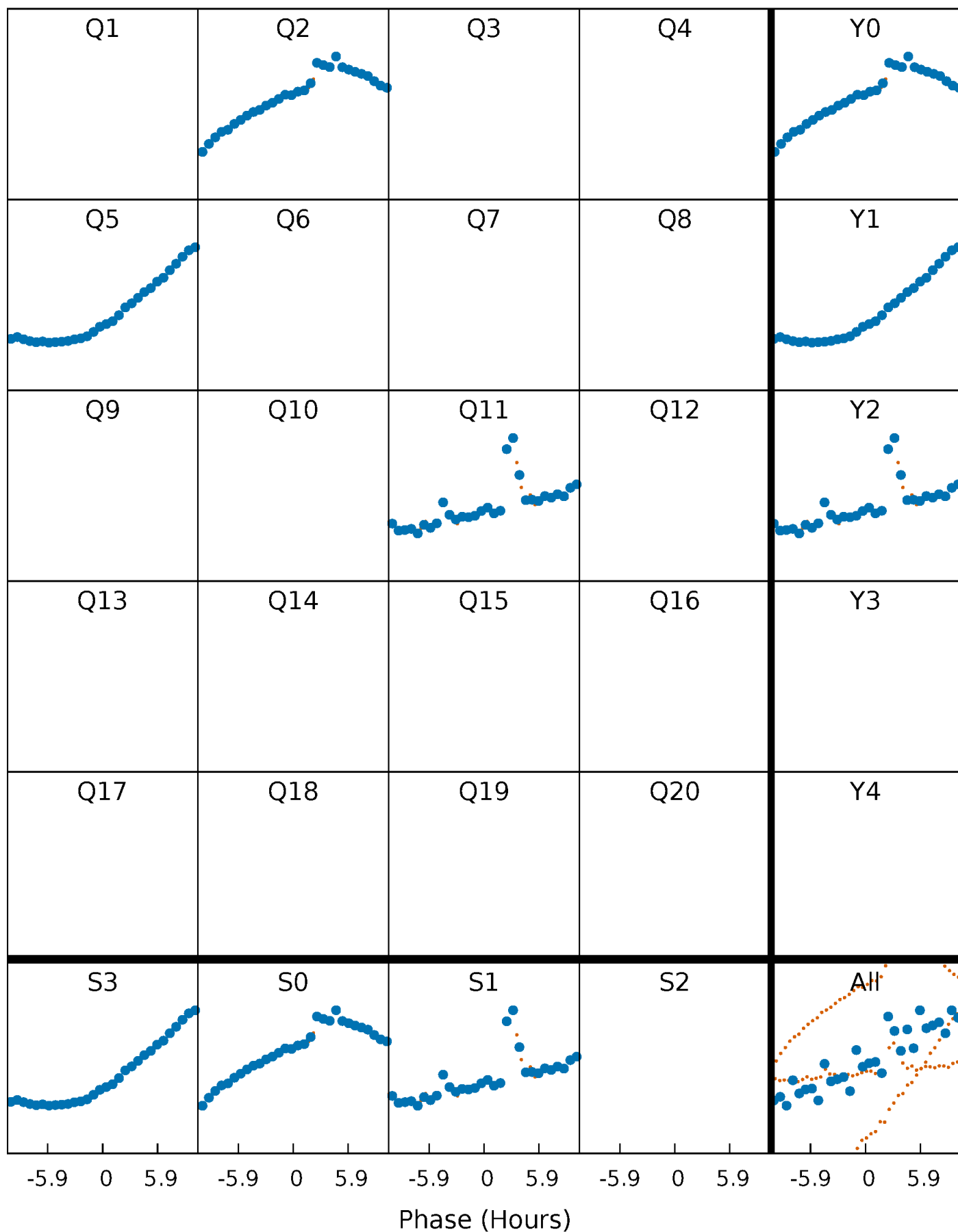


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



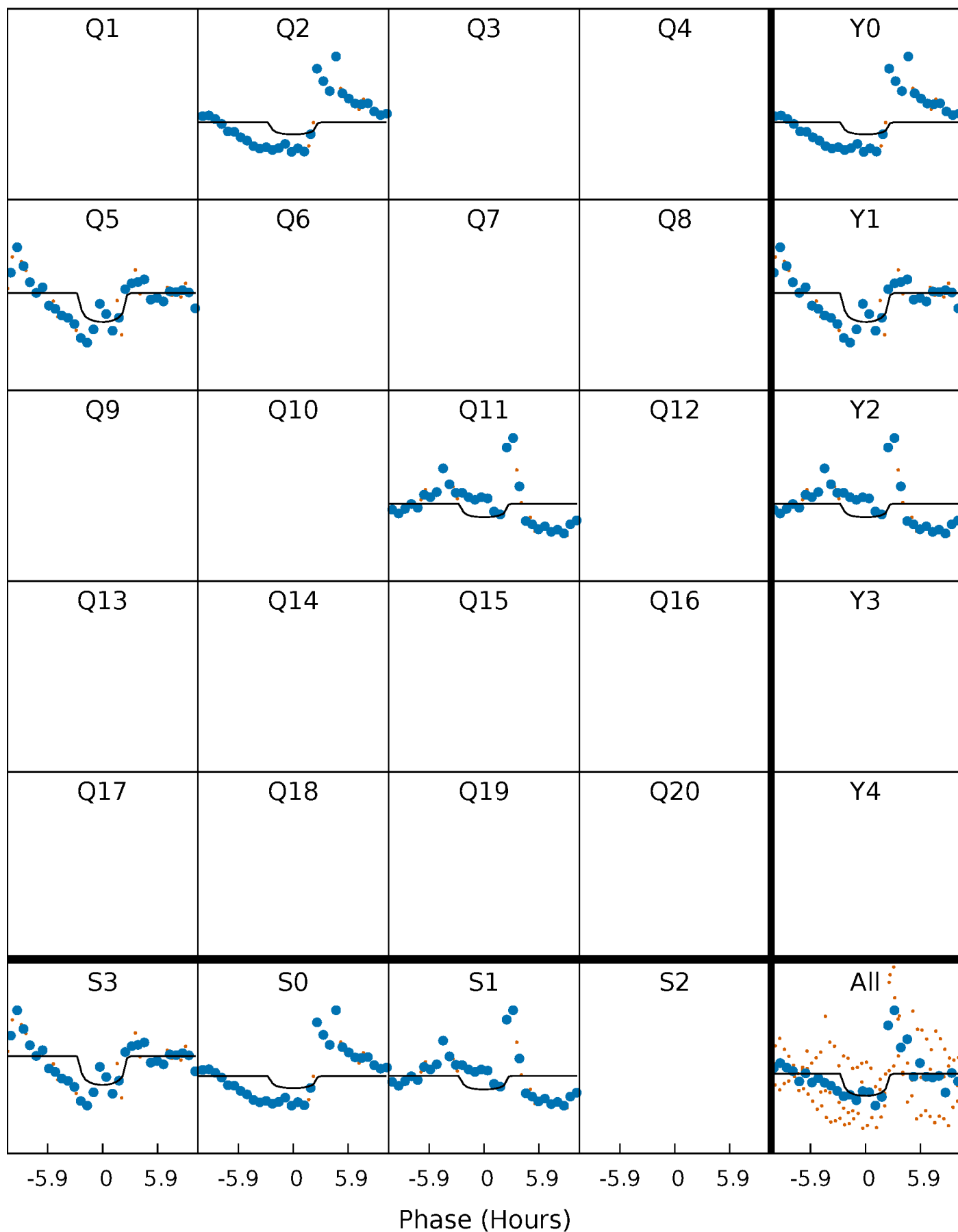
PDC Quarter-Phased Transit Curves

TCE 003864122-01 P=292.609829 Days $T_0=177.277267$ (BKJD)



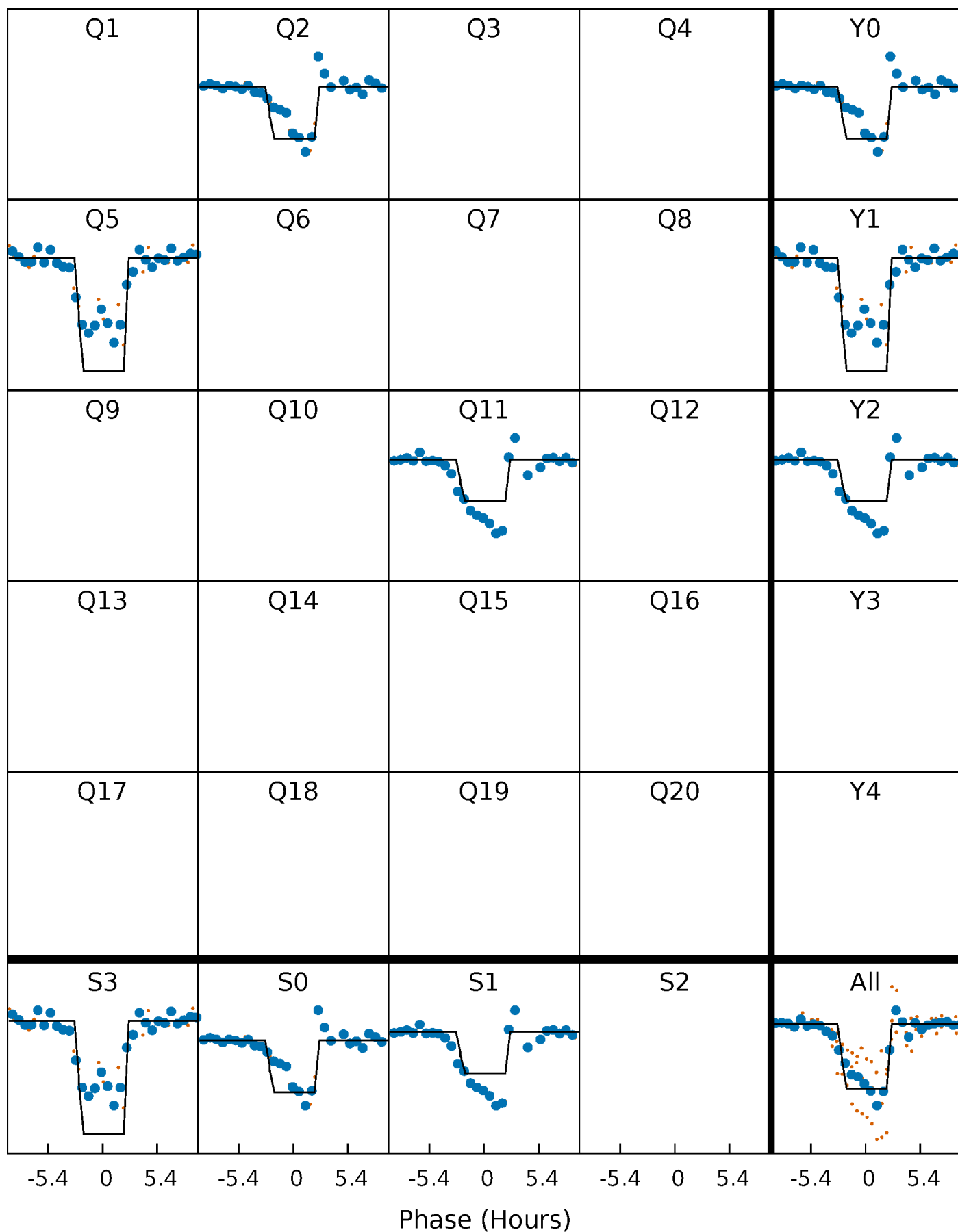
DV Quarter-Phased Transit Curves

TCE 003864122-01 P=292.609829 Days $T_0=177.277267$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

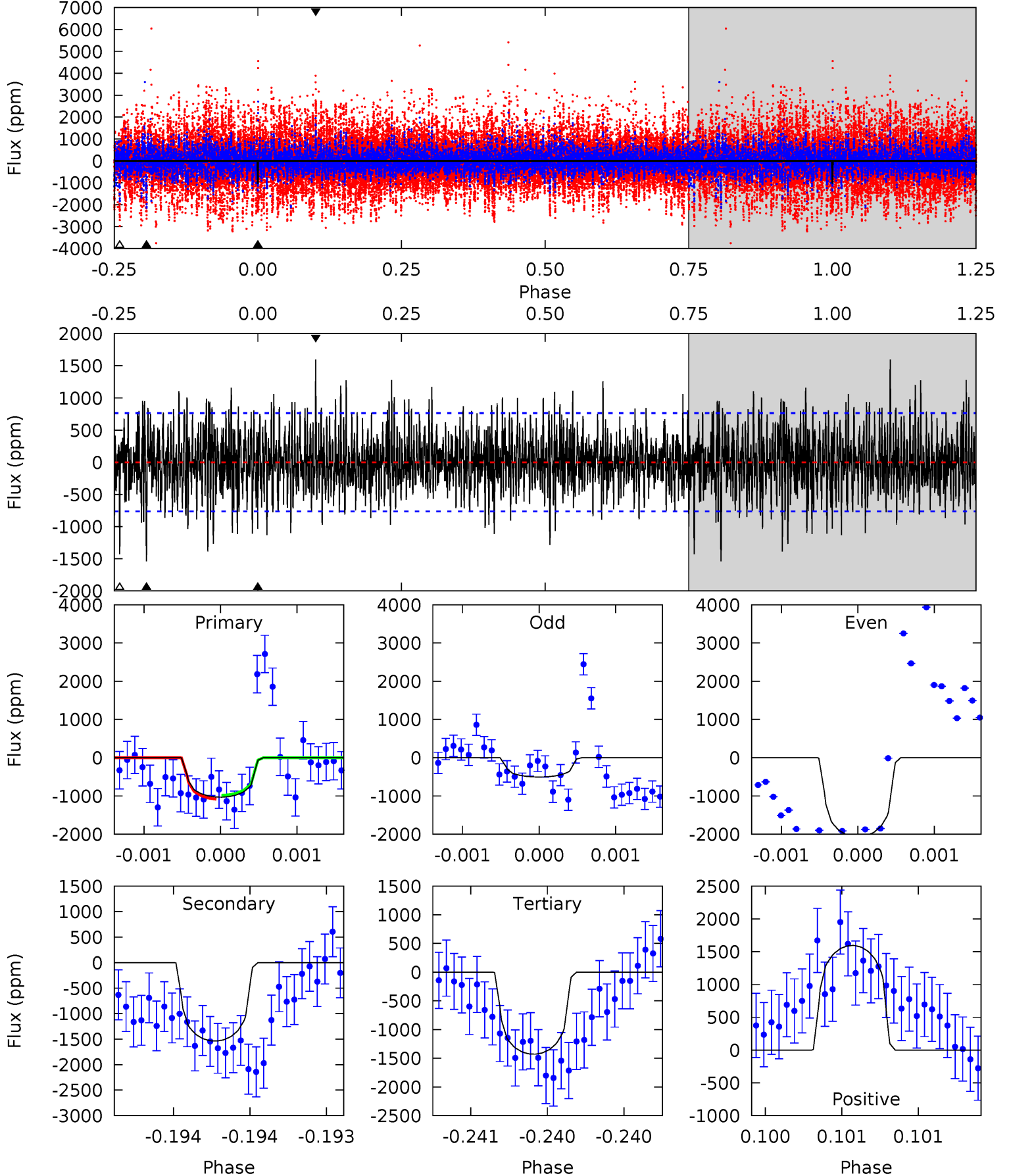
TCE 003864122-01 P=292.608579 Days $T_0=177.278640$ (BKJD)



DV Model-Shift Uniqueness Test

003864122-01, P = 292.609829 Days, E = 177.277267 Days

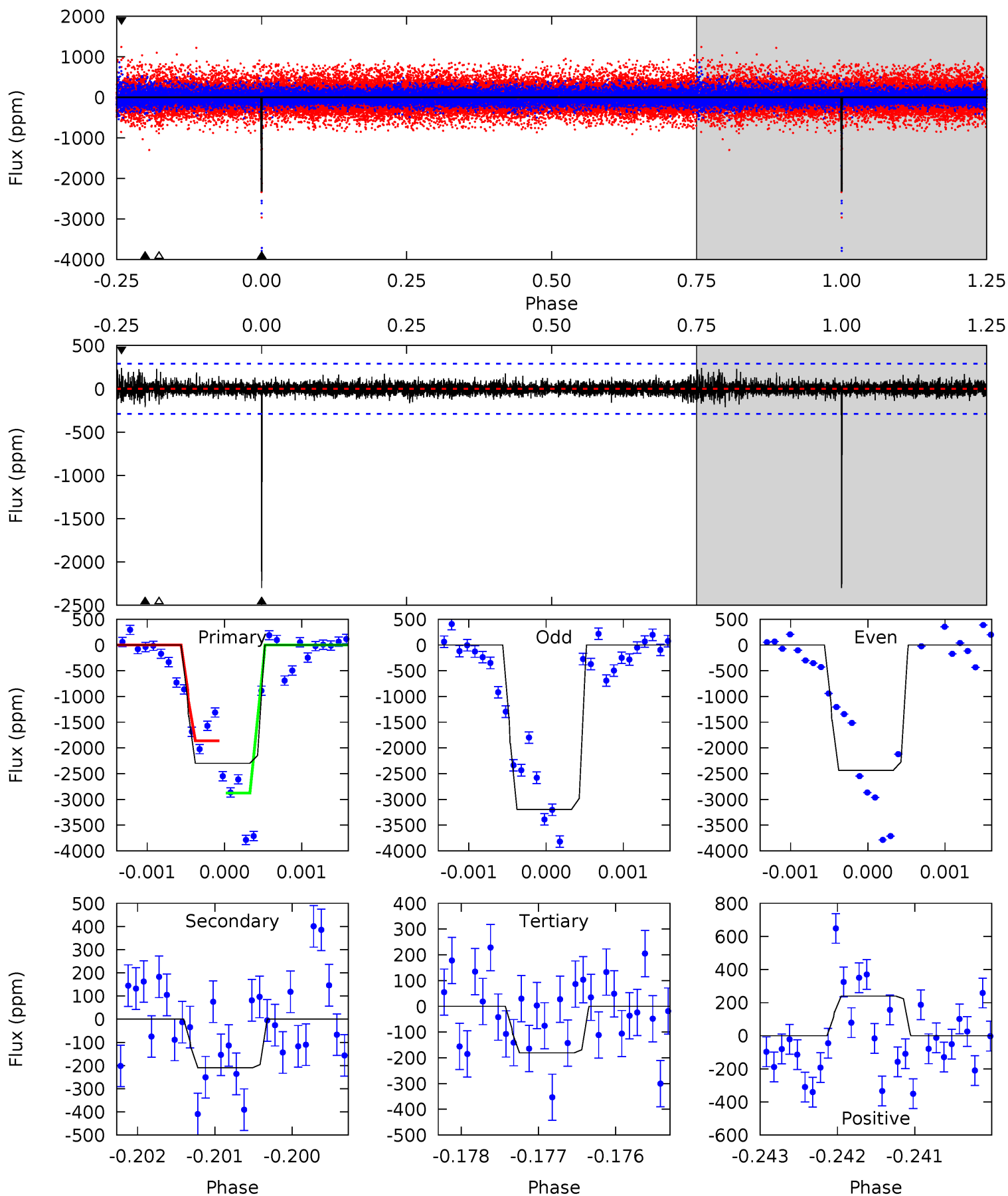
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.42	11.1	10.3	11.5	5.50	3.36	2.67	-2.86	-4.05	0.78	-0.41	4.93	0.90	0.51	0.37



Alt Model-Shift Uniqueness Test

003864122-01, P = 292.608579 Days, E = 177.278640 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
43.7	3.98	3.44	4.55	5.51	3.39	0.76	40.2	39.1	0.55	-0.56	8.22	1.18	0.09	9.09



Stellar Parameters For KIC 003864122

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5382^{+159}_{-143}	$4.458^{+0.112}_{-0.138}$	$-0.140^{+0.300}_{-0.300}$	$0.875^{+0.155}_{-0.113}$	$0.803^{+0.113}_{-0.061}$	$1.688^{+0.809}_{-0.640}$
	+3%/-3%	+3%/-3%	+214%/-214%	+18%/-13%	+14%/-8%	+48%/-38%
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 003864122-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1537 ± 139	$4.38^{+4.60}_{-2.98}$	348^{+18}_{-18}	5051^{+4444}_{-1177}	$28971^{+243978}_{-21959}$
Alt.	-210 ± 53	$6.20^{+4.97}_{-4.05}$	348^{+19}_{-16}	3147^{+1259}_{-487}	1872^{+13505}_{-1307}

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

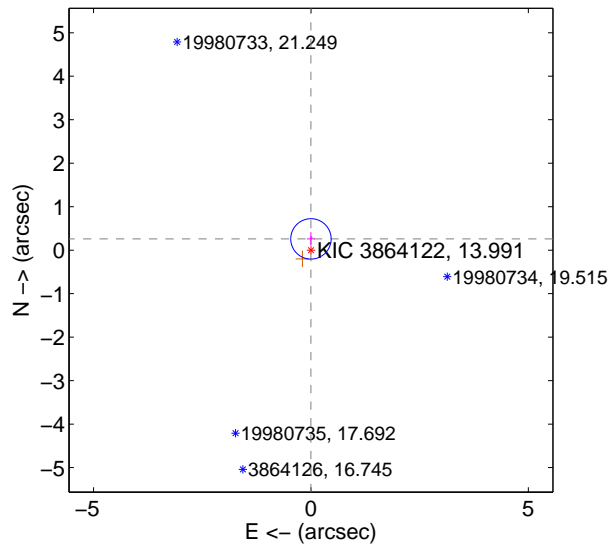
Supplemental centroid analysis for 003864122-01. Kepler magnitude: 13.99. Transit SNR 4.01

There are 1 quarters with good PRF difference image offsets

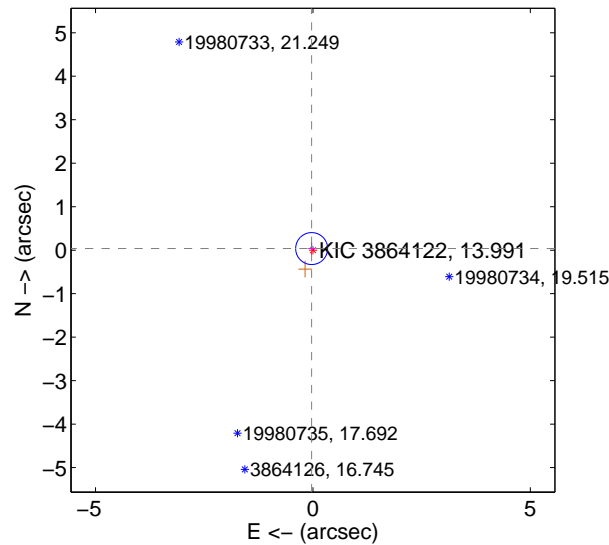
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.259 ± 0.155	1.68	0.000 ± 0.090	0.259 ± 0.155
PRF-fit source offset from KIC position	0.047 ± 0.122	0.38	0.029 ± 0.079	0.037 ± 0.143
photometric centroid source offset	1.14 ± 1.17	0.98	0.99 ± 1.11	-0.57 ± 1.32

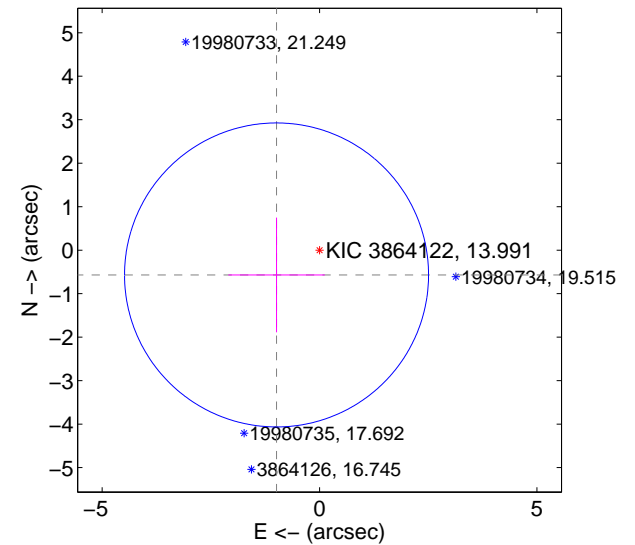
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

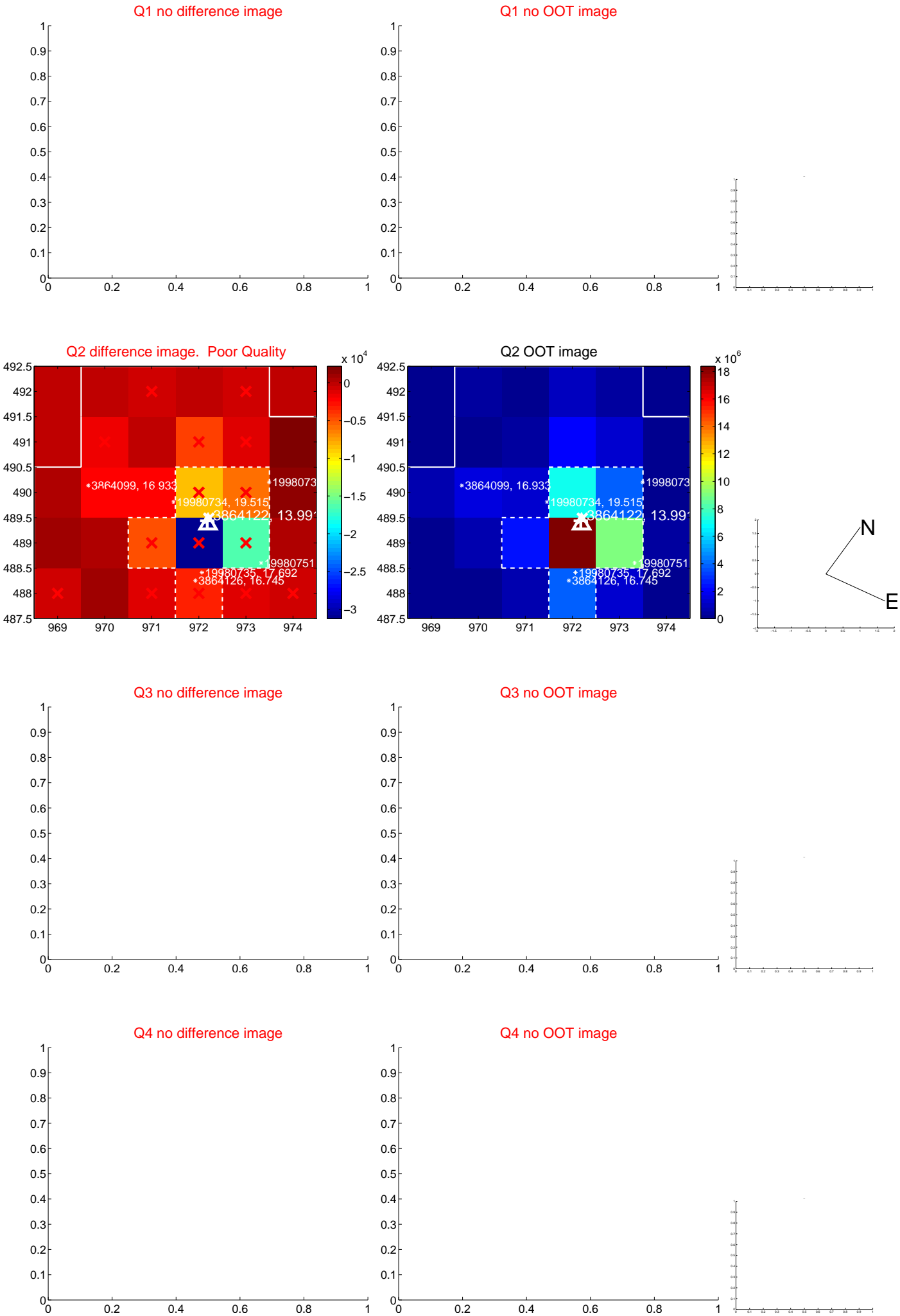


offset from photometric centroids

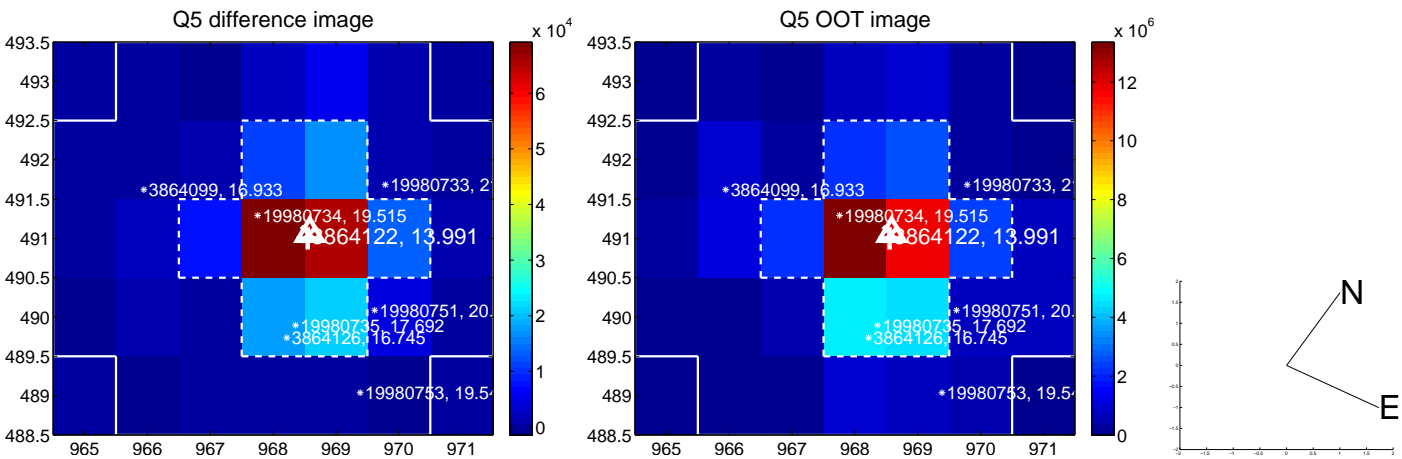


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

Q9 no difference image



Q9 no OOT image



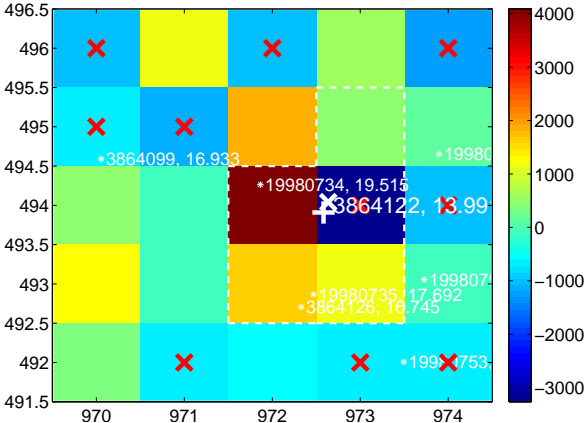
Q10 no difference image



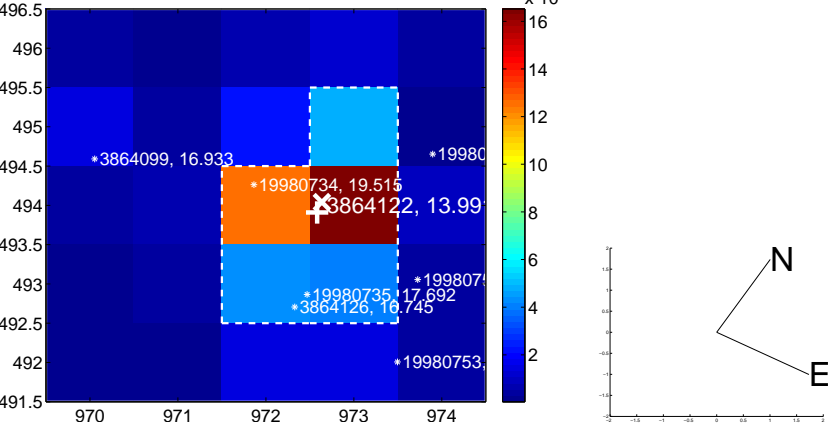
Q10 no OOT image



Q11 difference image. Poor Quality



Q11 OOT image



Q12 no difference image



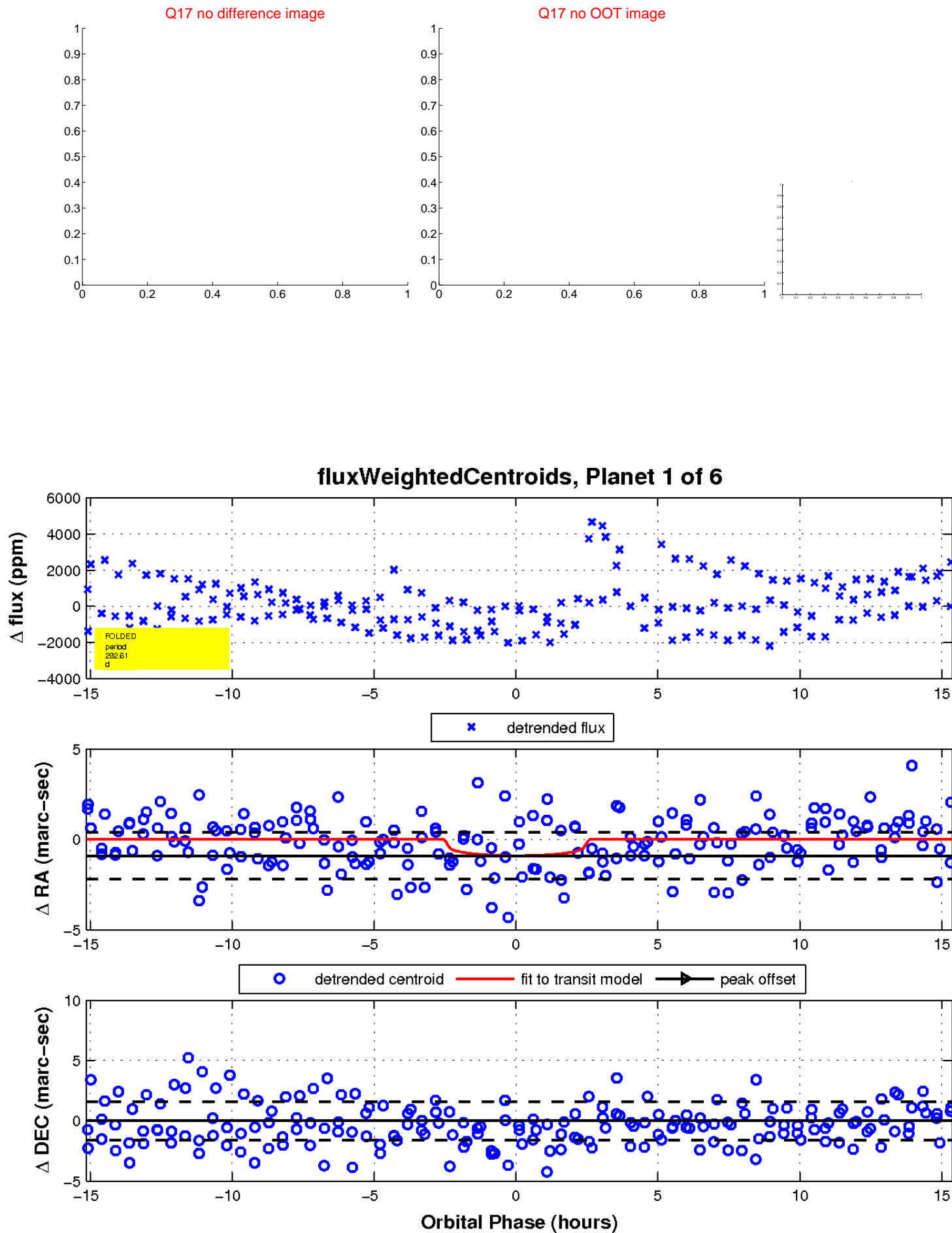
Q12 no OOT image



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

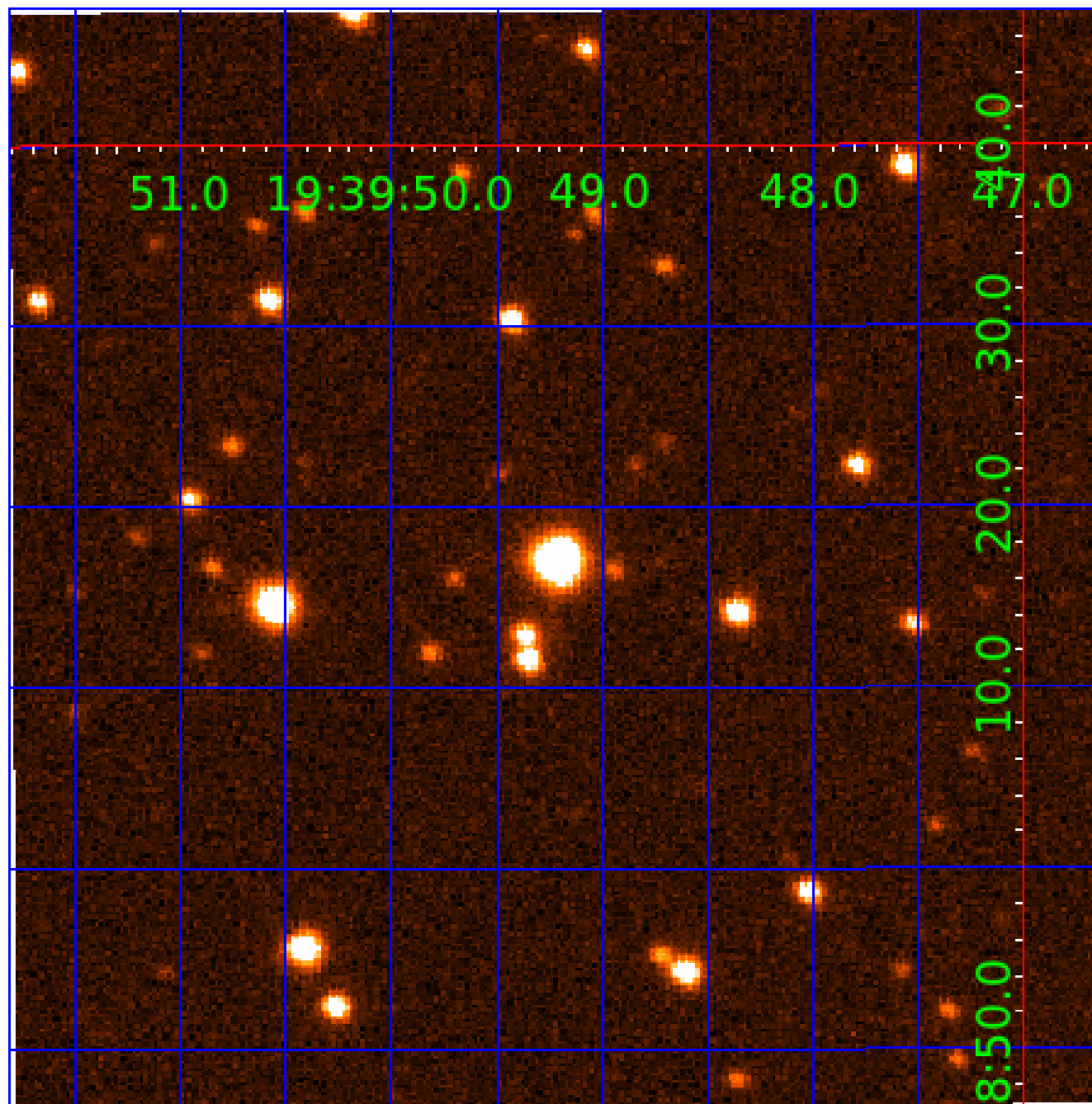


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003864122

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})
003864122-01	OBS	No	292.609829	177.277267	942.6	5.126	15.4	4.0	0.88	5382	2.75	0.90
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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003864122-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
003864122-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003864122-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003864122-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003864122-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_POS_ALT—CENT_NOFITS

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

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

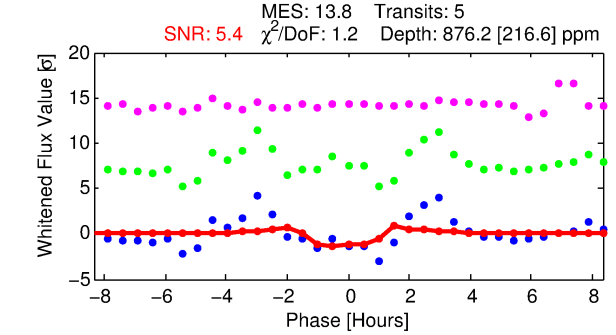
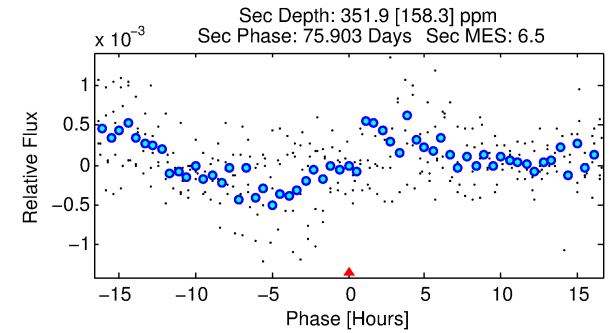
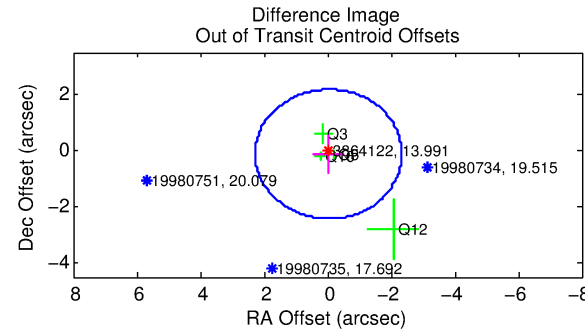
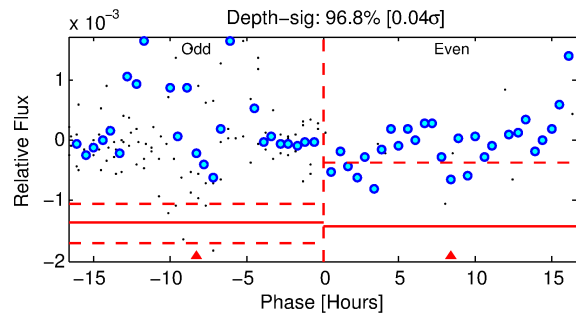
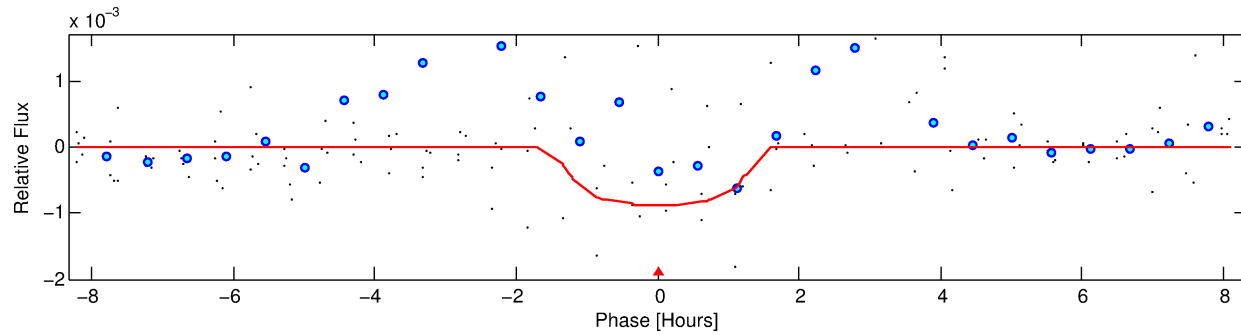
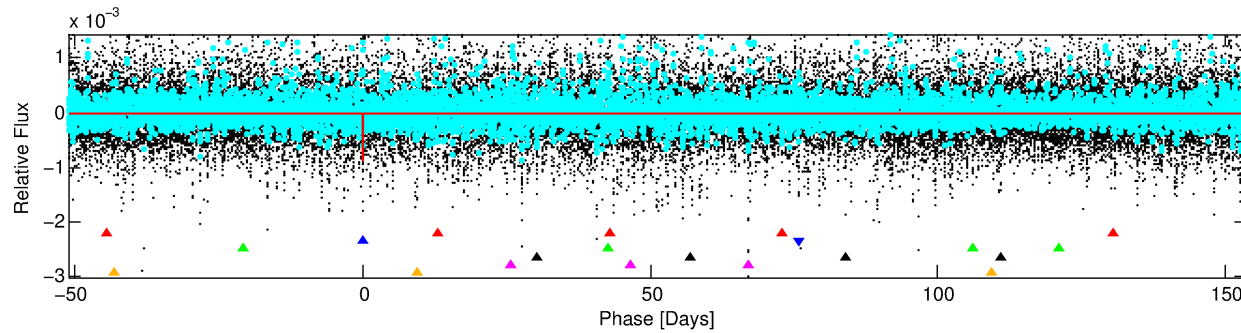
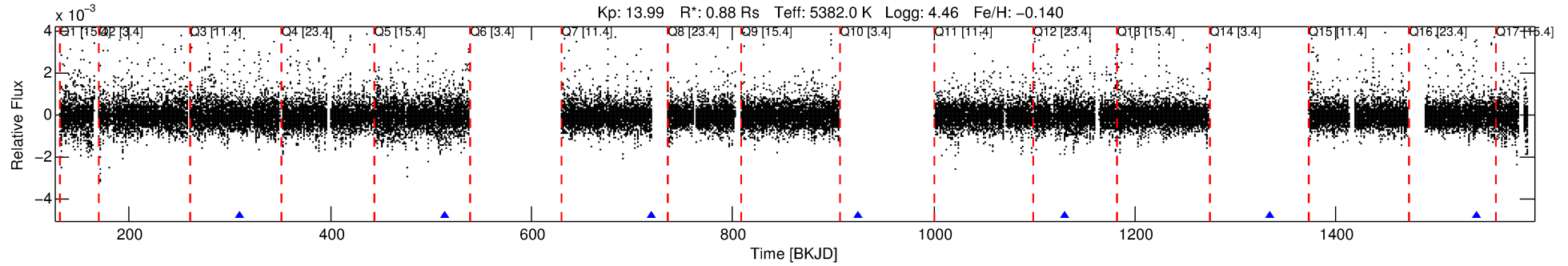
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003864122-02

No Significant Match Found

DV One-Page Summary

KIC: 3864122 Candidate: 2 of 6 Period: 205.031 d



DV Fit Results:

Period = 205.03087 [0.00217] d
Epoch = 309.5001 [0.0082] BKJD
Rp/R* = 0.0279 [0.0682]
a/R* = 485.88 [4599.91]
b = 0.56 [11.68]
Seff = 1.44 [0.39]
Teq = 279 [19] K
Rp = 2.67 [6.53] Re
a = 0.6323 [0.1003] AU
Ag = 10868.16 [53325.73] [0.20 σ]
Teffp = 4409 [5404] K [0.76 σ]

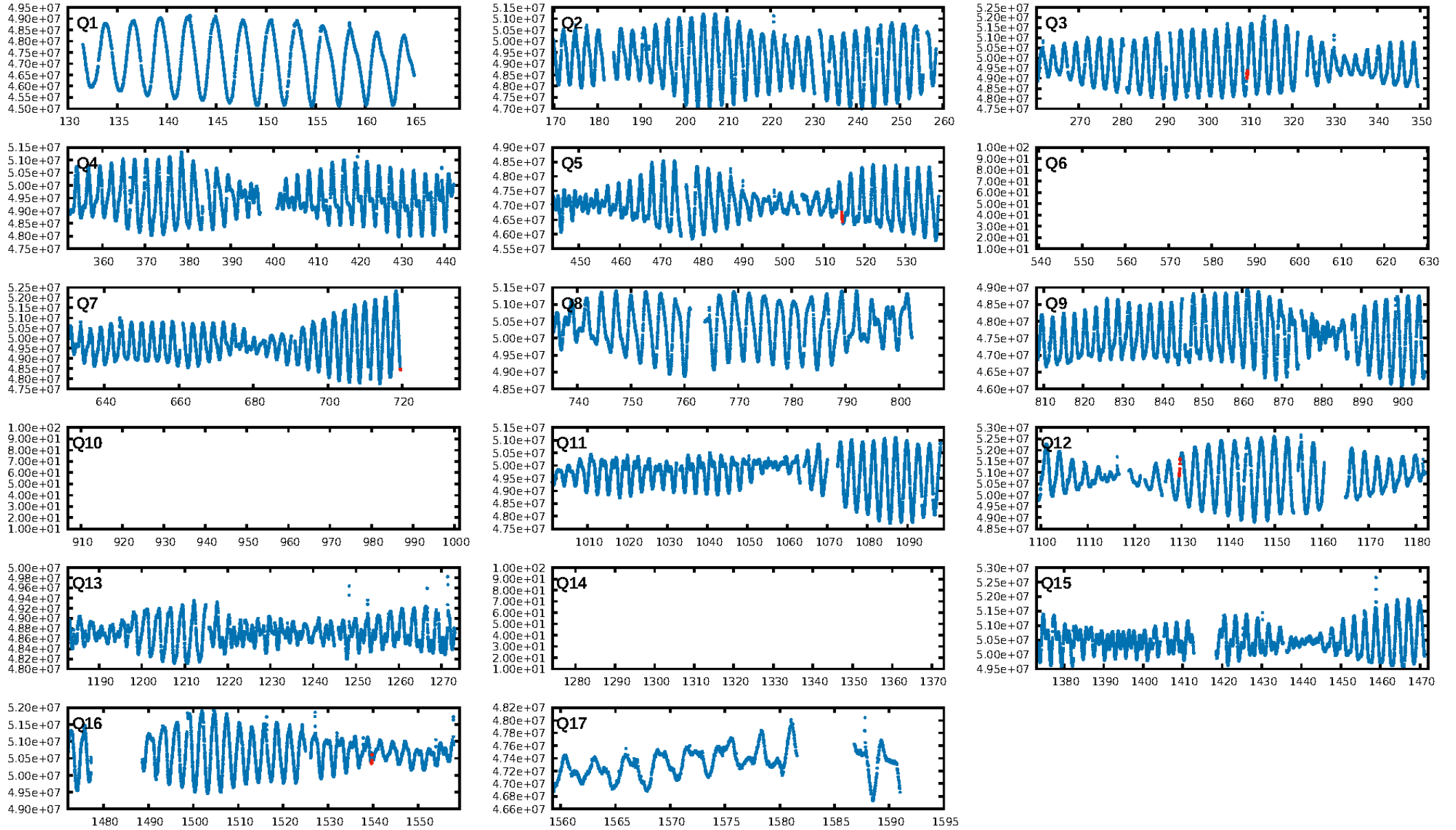
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [360.58 σ]
ModelChiSquare2-sig: 22.0%
ModelChiSquareGof-sig: 97.3%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -1.534
Centroid-sig: 50.4%
Centroid-so: 1.113 arcsec [0.88 σ]
OotOffset-rm: 0.128 arcsec [0.17 σ]
OotOffset-st: 0/1/2/1 [4]
KicOffset-rm: 0.351 arcsec [0.46 σ]
KicOffset-st: 0/1/2/1 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [4/4]

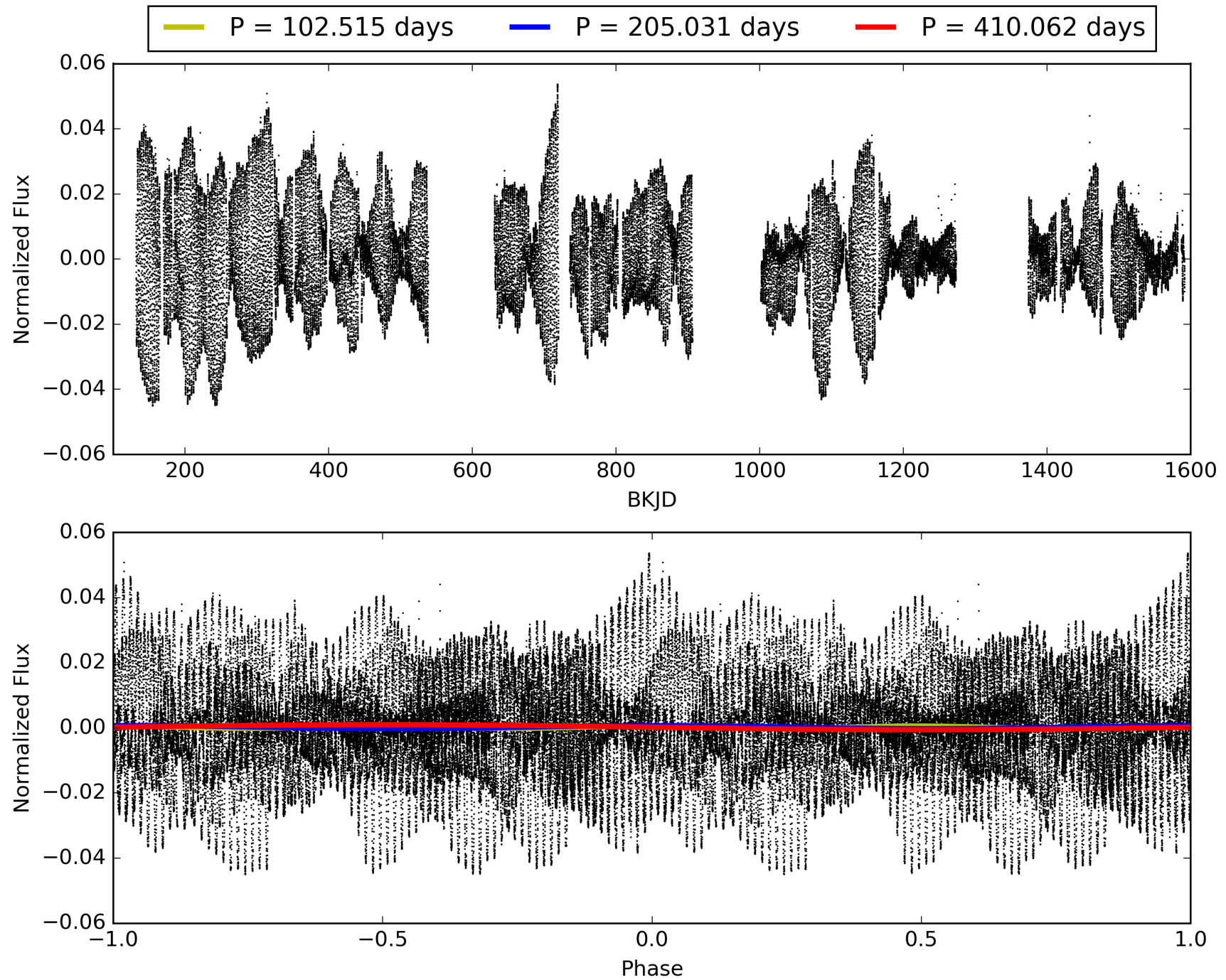
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:23:01 Z

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

TCE 003864122-02, PDC Light Curves

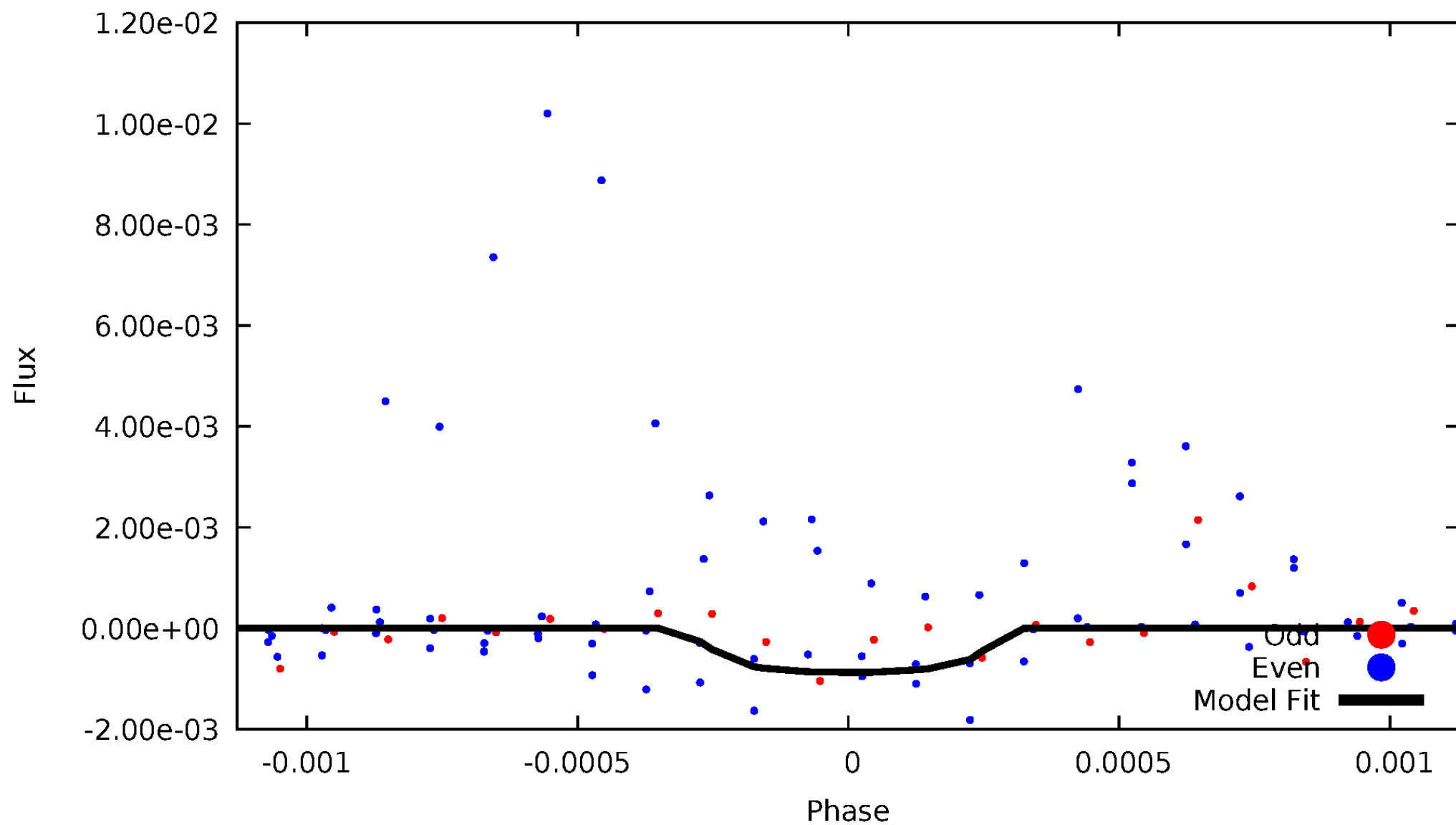


TCE 003864122-02



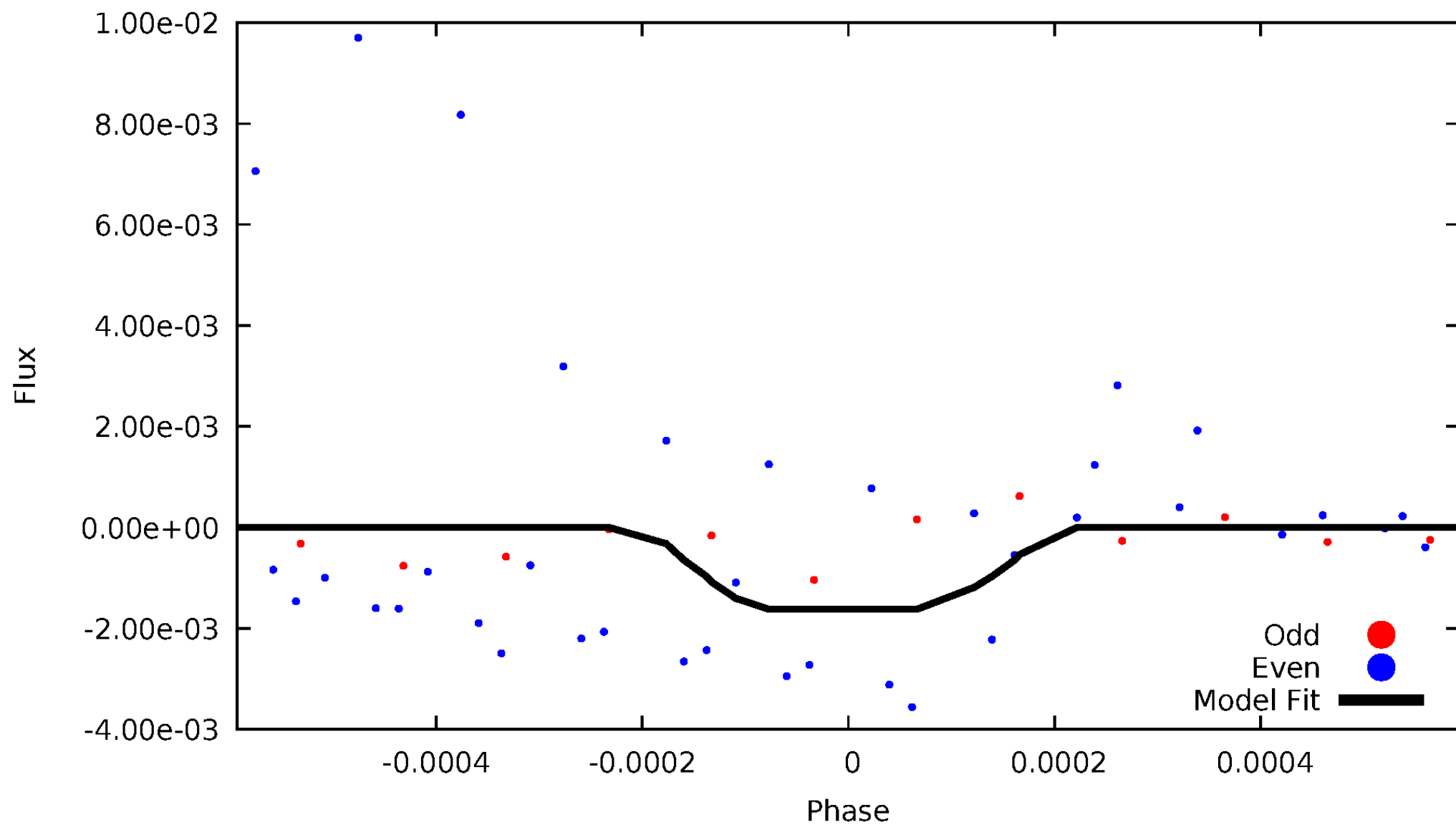
DV Odd/Even

TCE 003864122-02



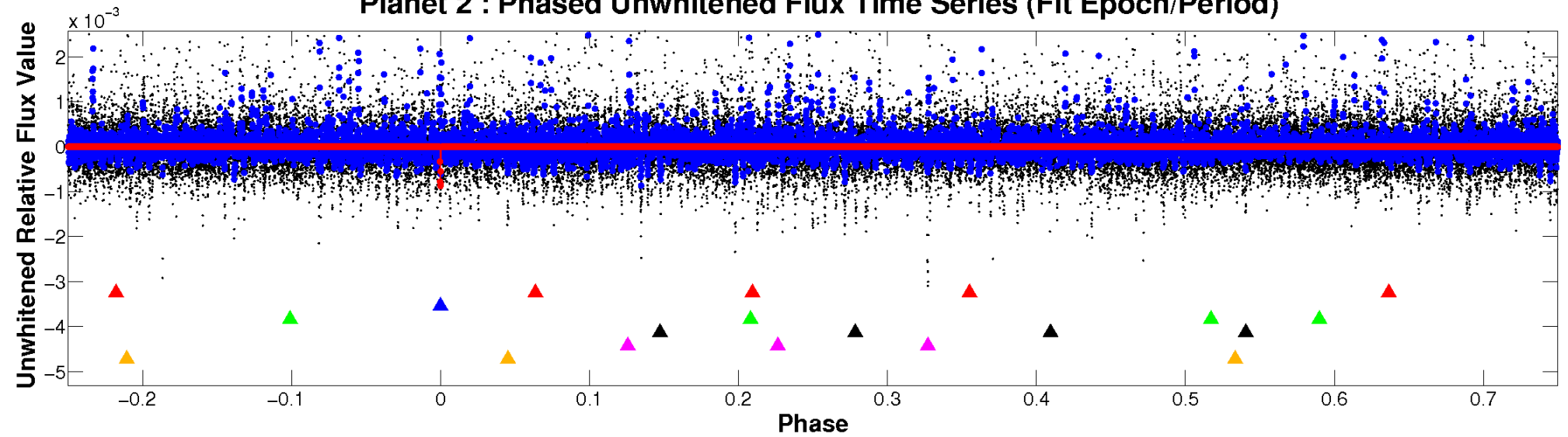
ALT Odd/Even

TCE 003864122-02

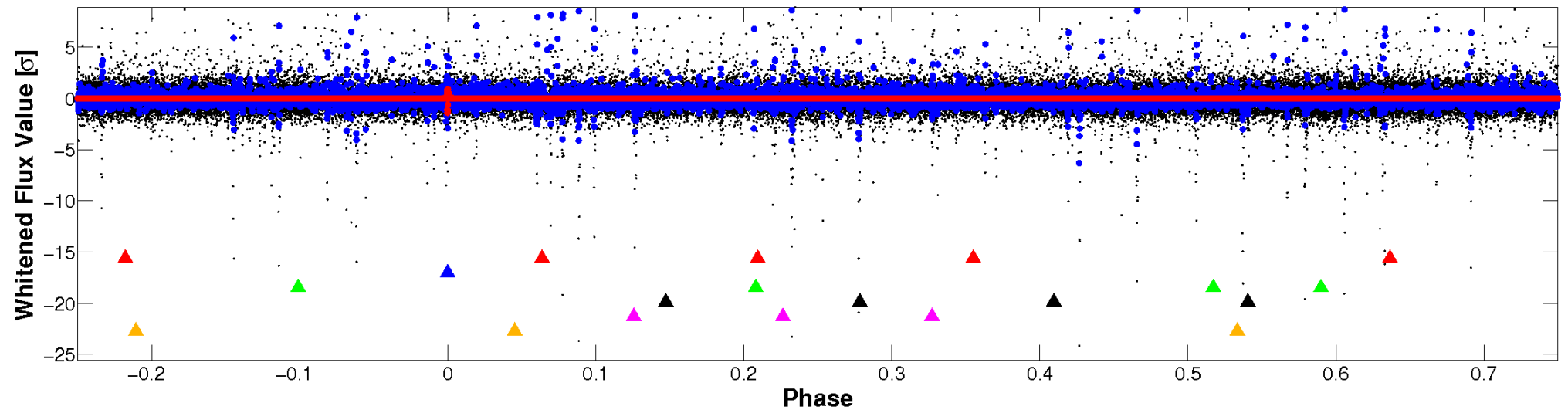


Non-Whitened Vs. Whitened Light Curve

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

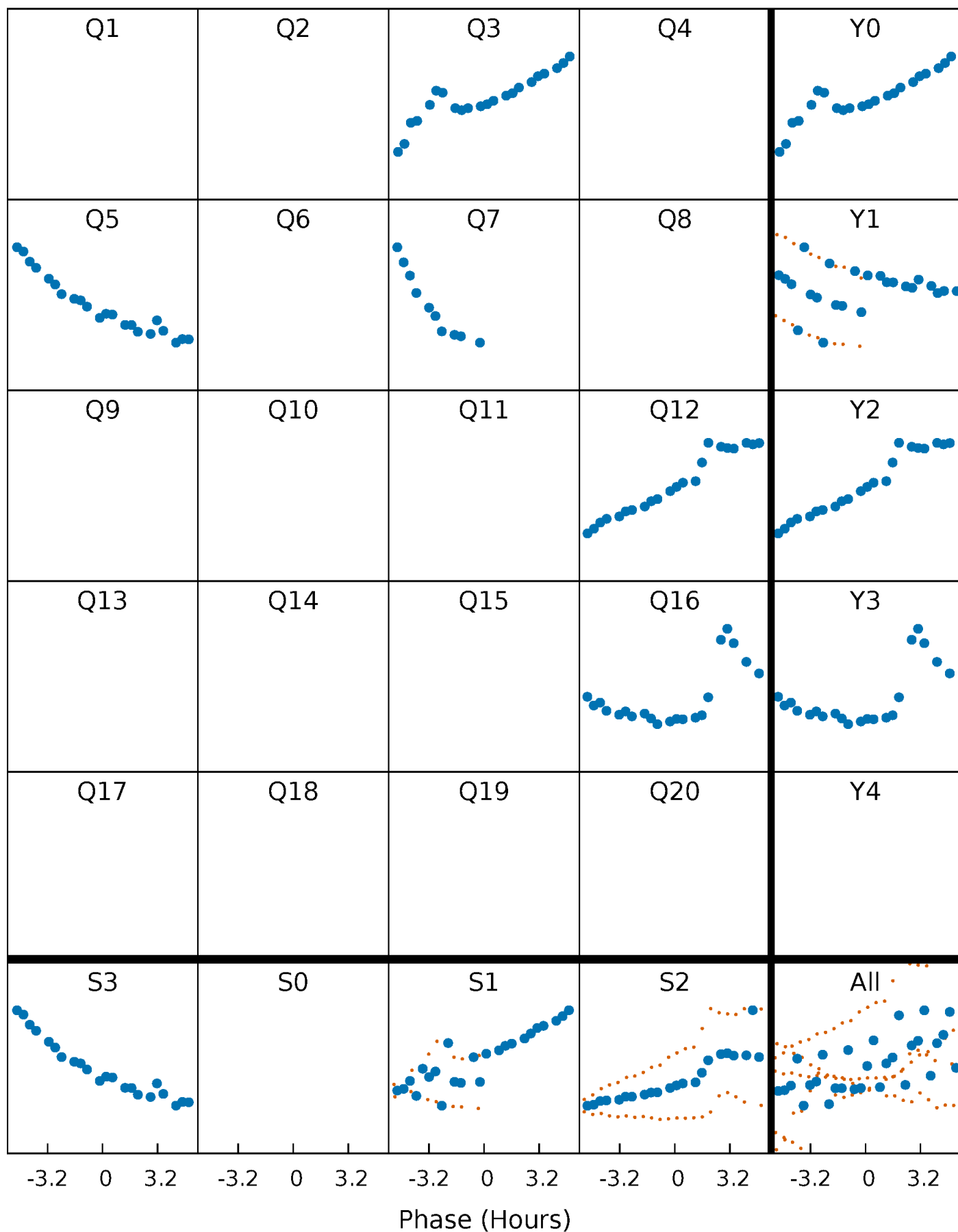


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



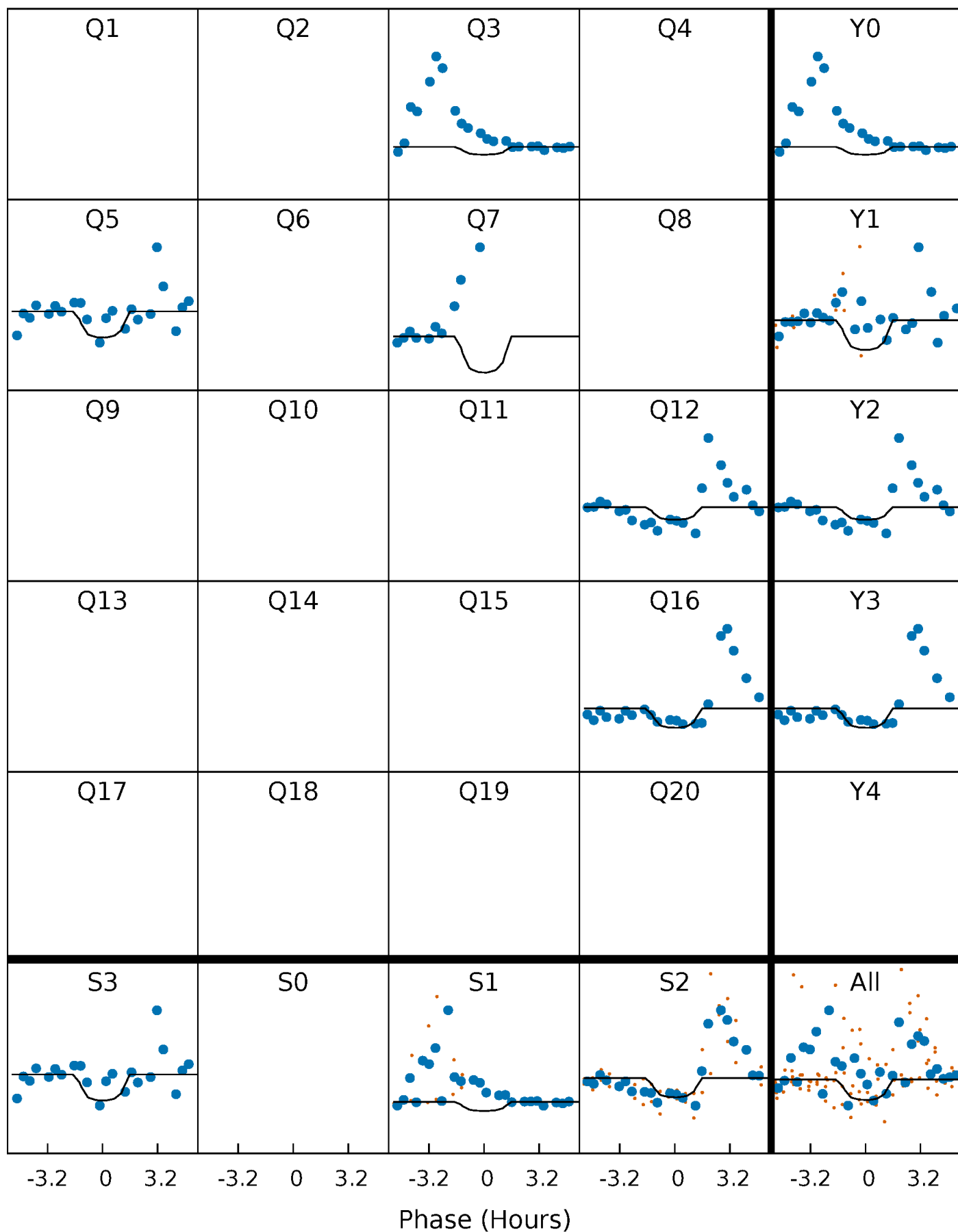
PDC Quarter-Phased Transit Curves

TCE 003864122-02 $P=205.030874$ Days $T_0=309.500137$ (BKJD)



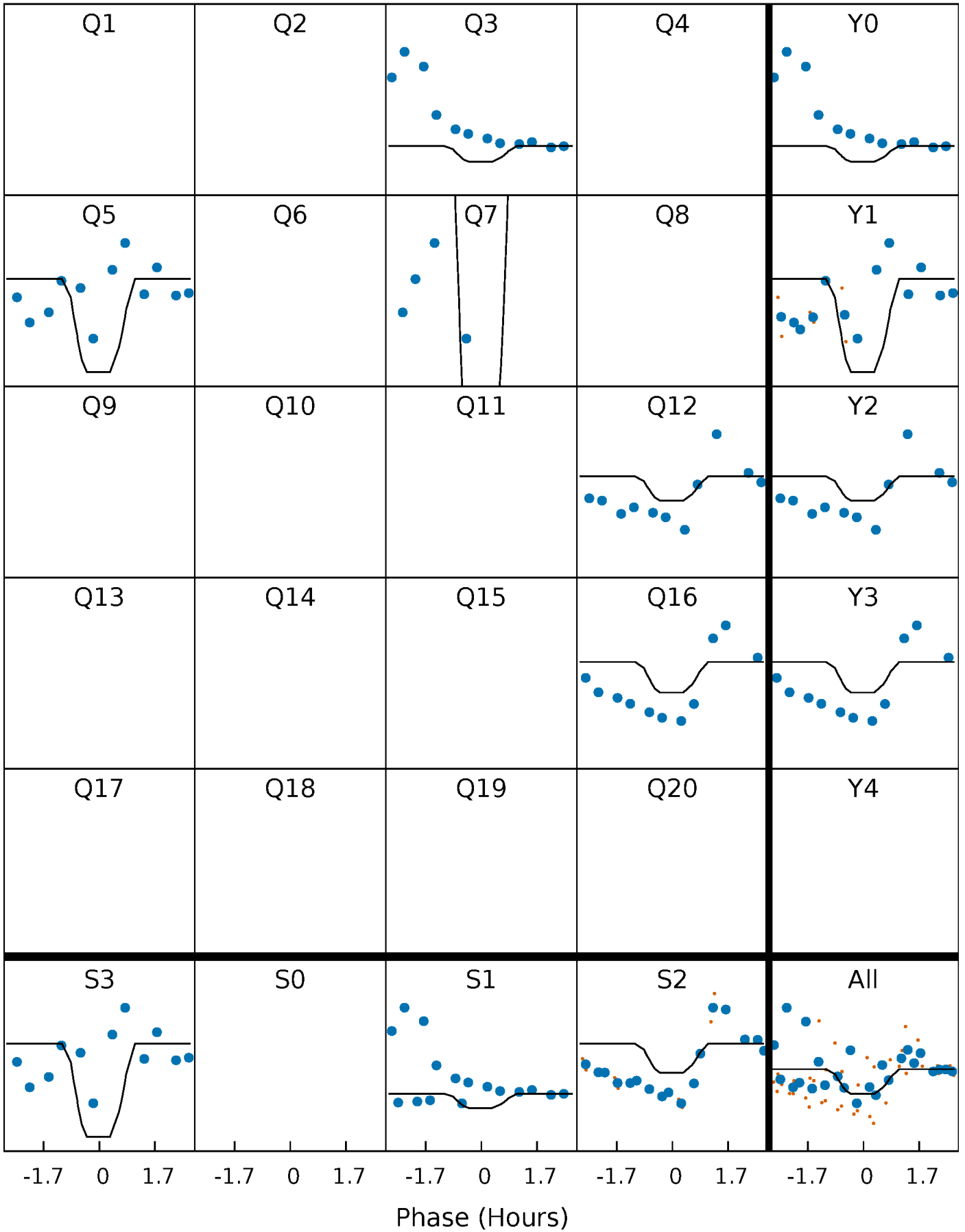
DV Quarter-Phased Transit Curves

TCE 003864122-02 $P=205.030874$ Days $T_0=309.500137$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

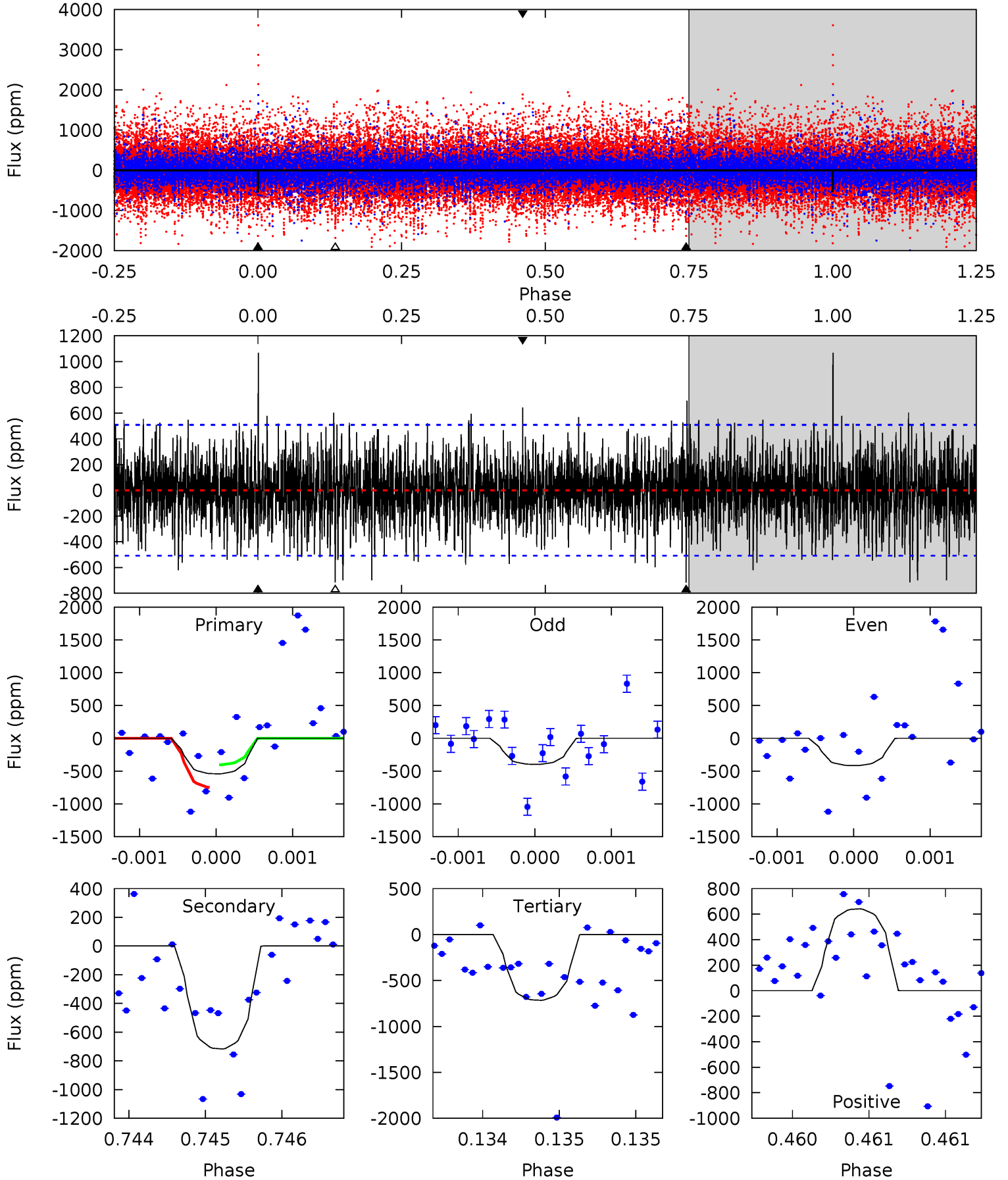
TCE 003864122-02 P=205.043313 Days $T_0=309.483787$ (BKJD)



DV Model-Shift Uniqueness Test

003864122-02, P = 205.030874 Days, E = 104.469263 Days

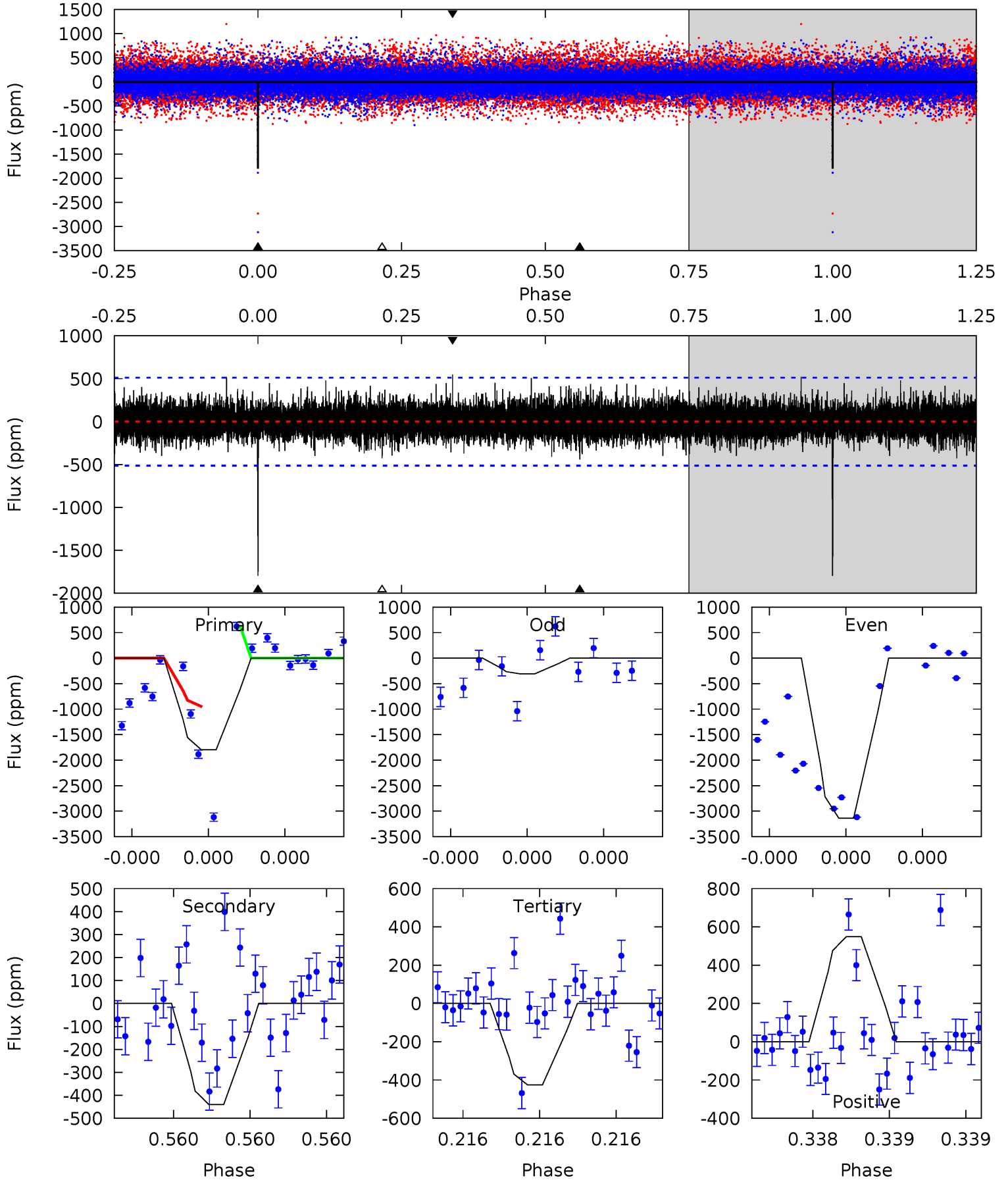
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.91	7.82	7.80	7.00	5.54	3.43	1.93	-1.89	-1.08	0.02	0.82	0.08	-0.73	0.60	1.87



Alt Model-Shift Uniqueness Test

003864122-02, P = 205.043313 Days, E = 104.440474 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	4.82	4.66	6.01	5.61	3.54	1.18	15.0	13.6	0.16	-1.19	19.3	0.84	0.23	1.29



Stellar Parameters For KIC 003864122

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5382^{+159}_{-143}	$4.458^{+0.112}_{-0.138}$	$-0.140^{+0.300}_{-0.300}$	$0.875^{+0.155}_{-0.113}$	$0.803^{+0.113}_{-0.061}$	$1.688^{+0.809}_{-0.640}$
	+3%/-3%	+3%/-3%	+214%/-214%	+18%/-13%	+14%/-8%	+48%/-38%
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 003864122-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-717 ± 92	$5.92^{+5.32}_{-4.08}$	392^{+23}_{-19}	3897^{+2373}_{-716}	4528^{+42491}_{-3256}
Alt.	-440 ± 91	$6.53^{+5.27}_{-4.03}$	392^{+21}_{-19}	3494^{+1457}_{-601}	2394^{+13179}_{-1718}

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 $A_{obs} \gg 1.0$

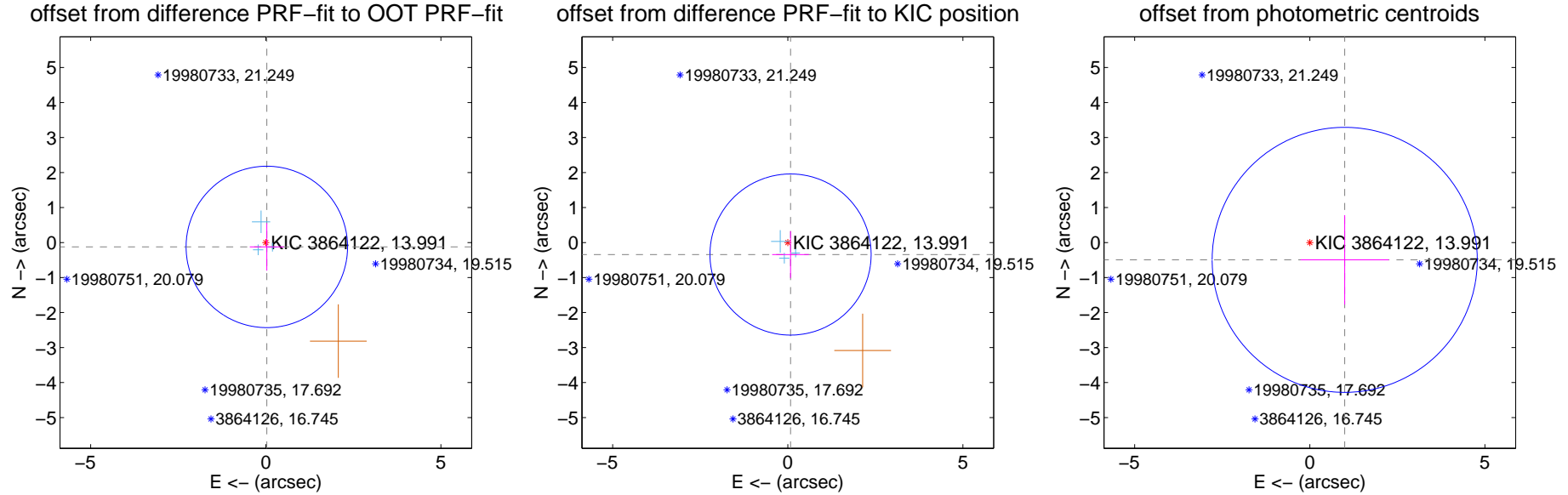
DV Centroid Data

Supplemental centroid analysis for 003864122-02. Kepler magnitude: 13.99. Transit SNR 5.39

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.128 ± 0.768	0.17	-0.029 ± 0.487	-0.125 ± 0.678
PRF-fit source offset from KIC position	0.351 ± 0.767	0.46	-0.078 ± 0.524	-0.342 ± 0.669
photometric centroid source offset	1.11 ± 1.26	0.88	-1.00 ± 1.26	-0.49 ± 1.28



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



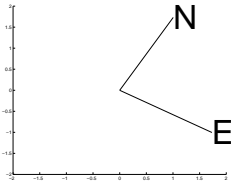
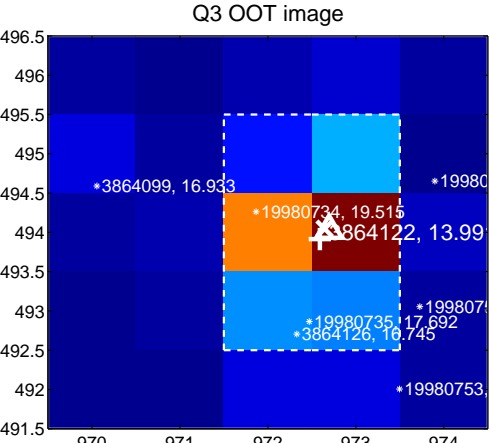
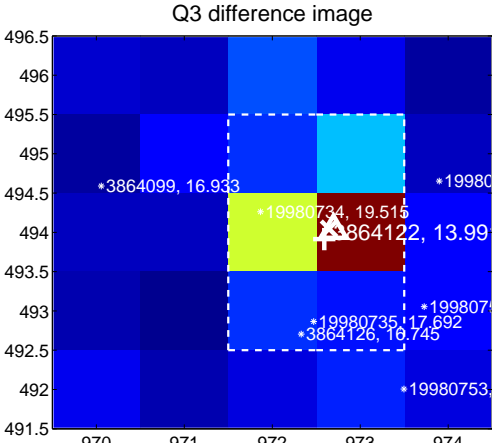
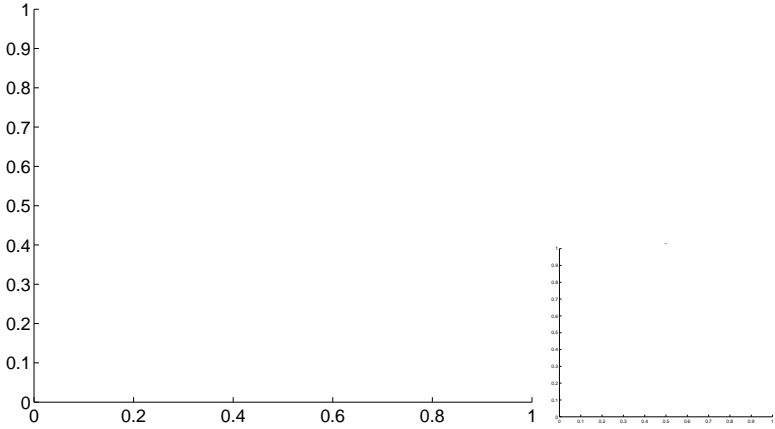
Q1 no OOT image



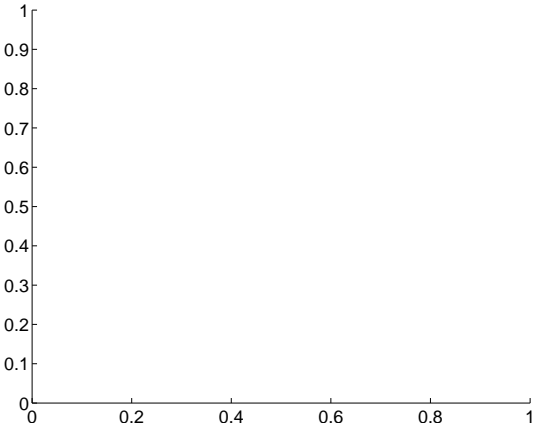
Q2 no difference image



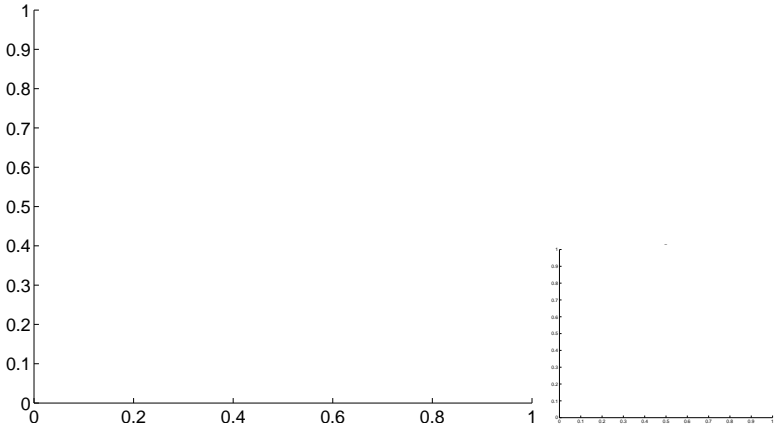
Q2 no OOT image



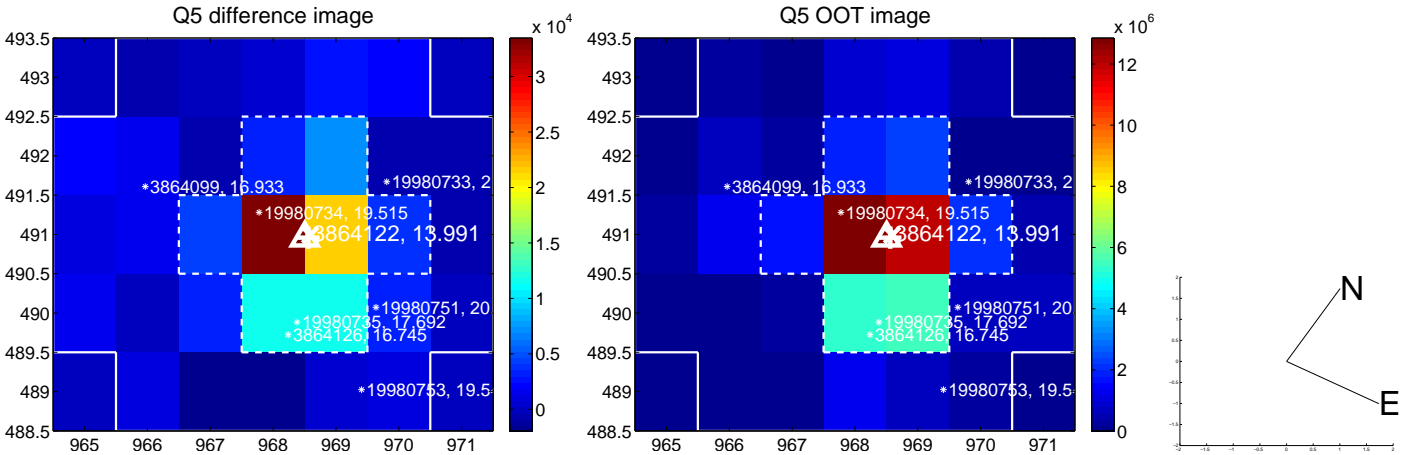
Q4 no difference image



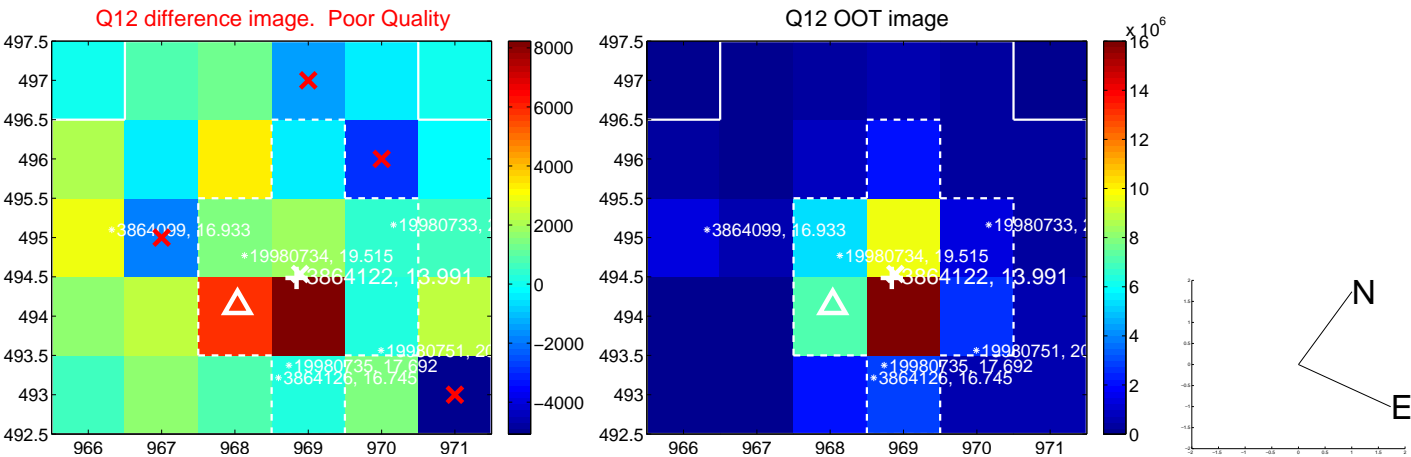
Q4 no OOT image



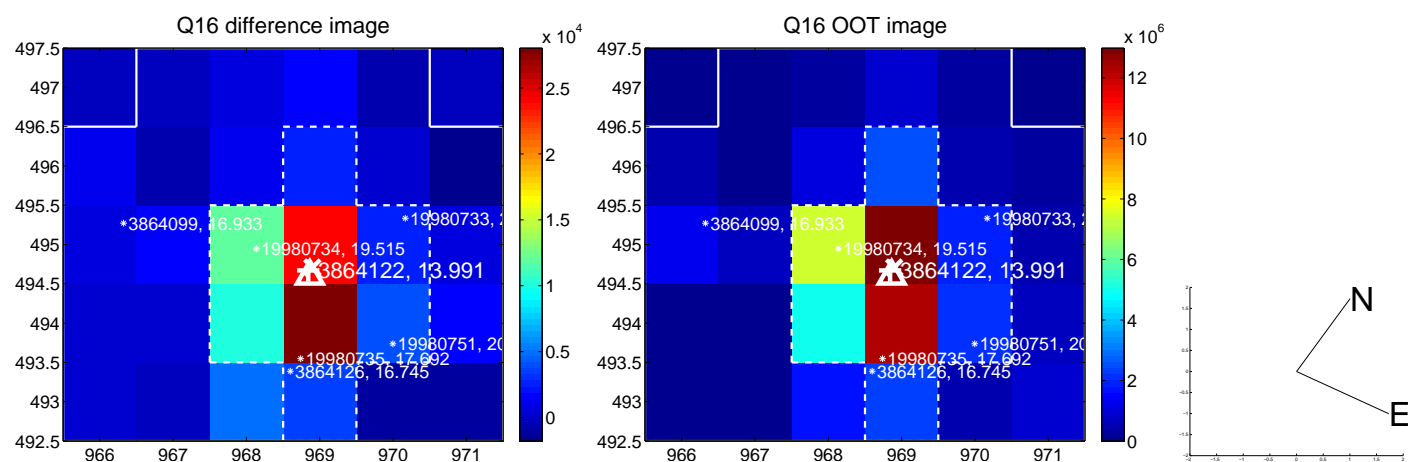
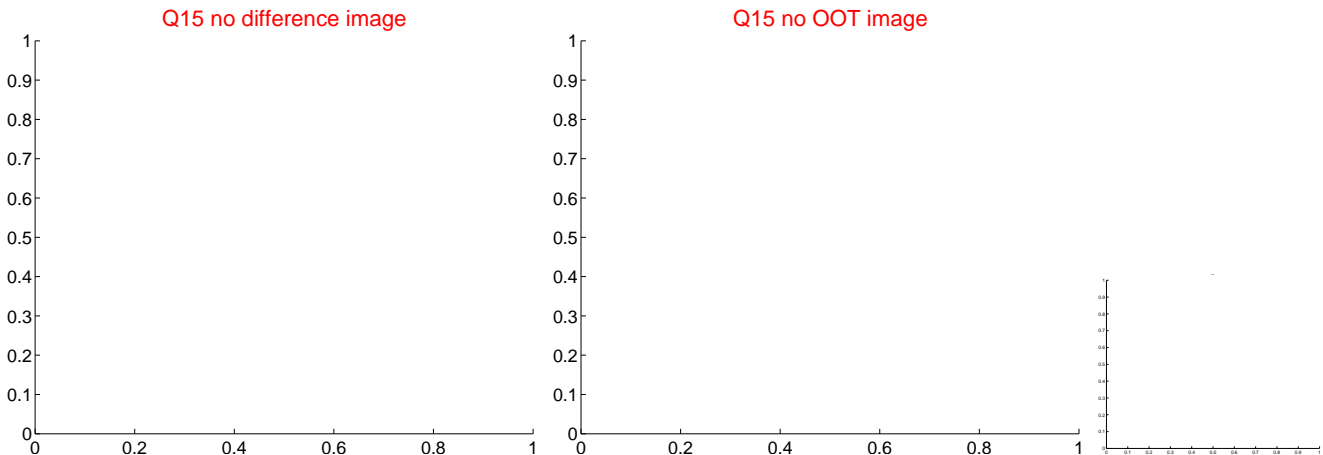
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



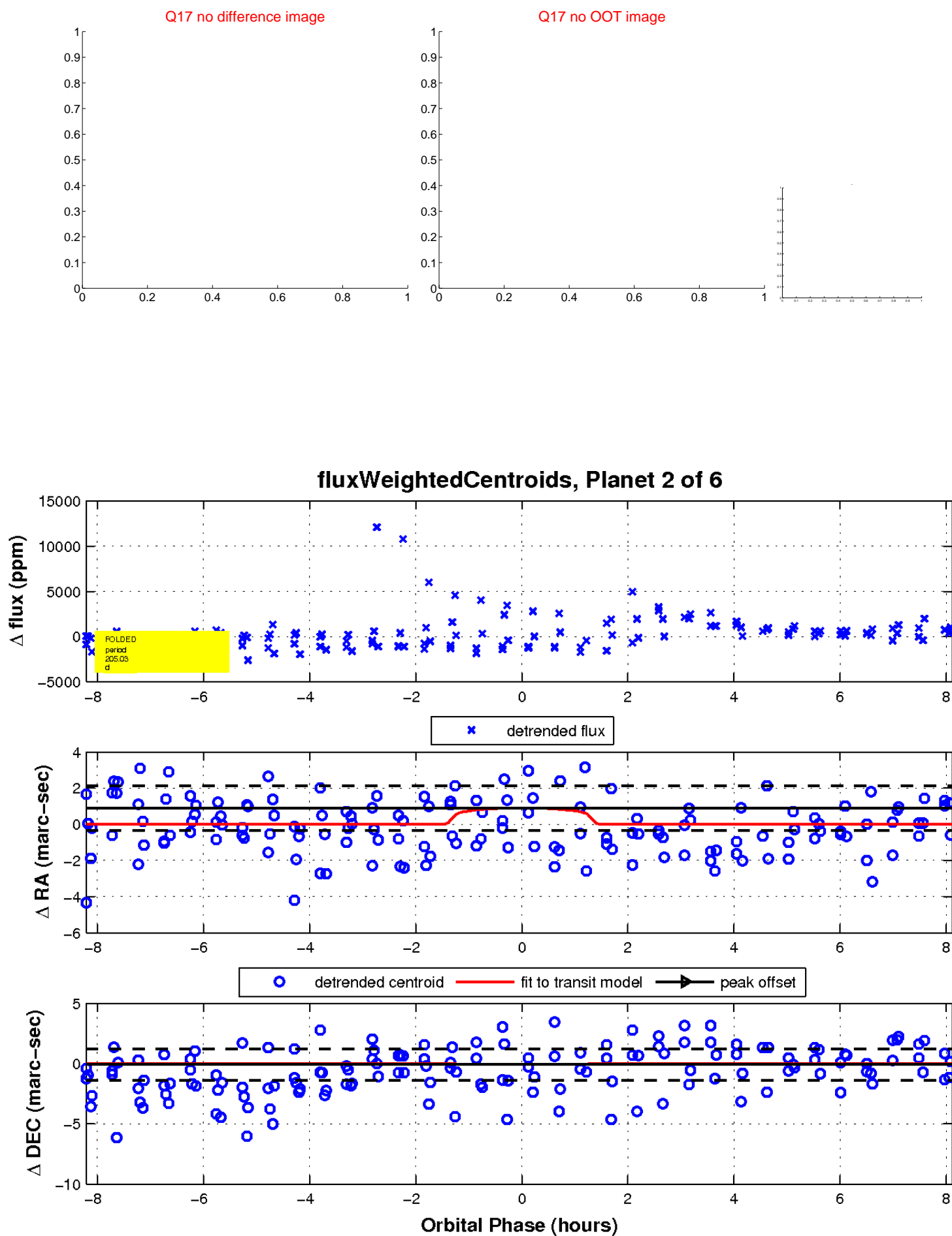
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

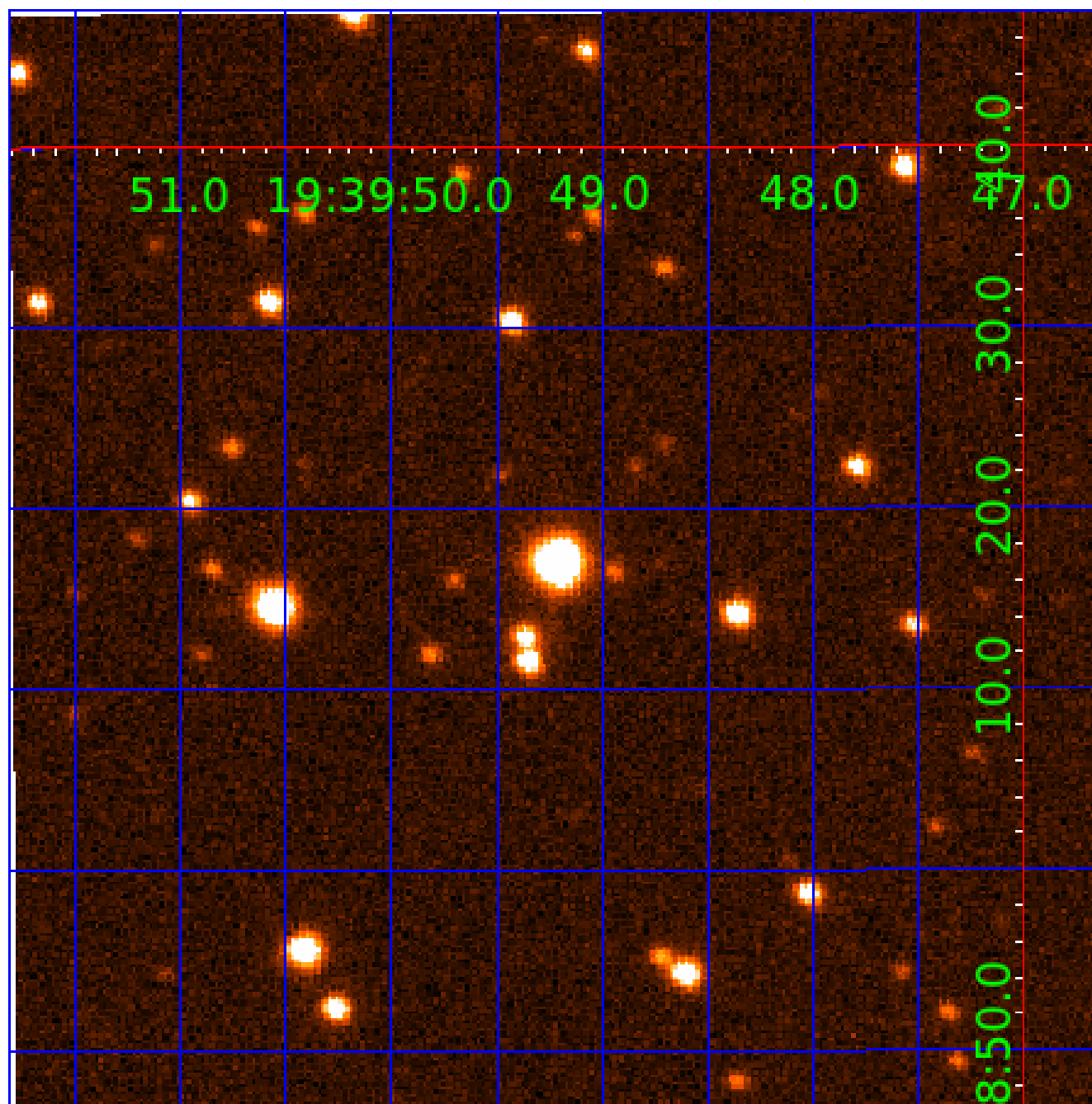


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003864122

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})
003864122-01	OBS	No	292.609829	177.277267	942.6	5.126	15.4	4.0	0.88	5382	2.75	0.90
003864122-02	OBS	No	205.030874	309.500137	876.2	2.776	13.8	5.4	0.88	5382	2.67	1.44
003864122-03	OBS	No	346.688245	415.546686	1539.8	14.203	12.4	5.0	0.88	5382	3.41	0.71
003864122-04	OBS	No	383.189188	420.331092	1521.6	4.482	12.3	7.4	0.88	5382	3.58	0.62
003864122-05	OBS	No	430.713813	335.281943	1258.7	3.378	11.2	7.4	0.88	5382	3.18	0.54
003864122-06	OBS	No	462.534064	213.844618	645.3	4.500	11.2	-1.0	0.88	5382	2.18	0.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003864122-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003864122-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
003864122-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003864122-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003864122-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003864122-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_POS_ALT—CENT_NOFITS

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

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

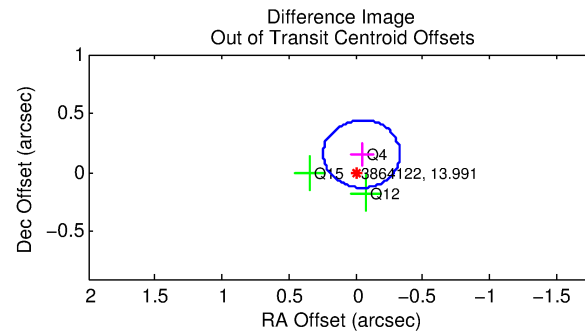
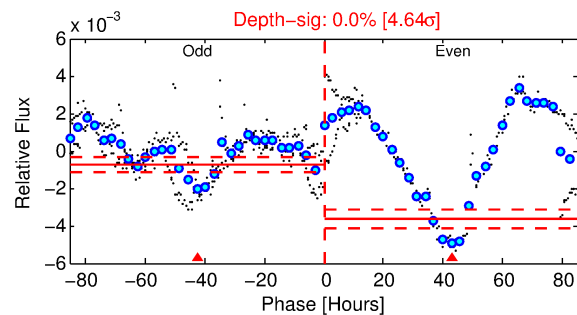
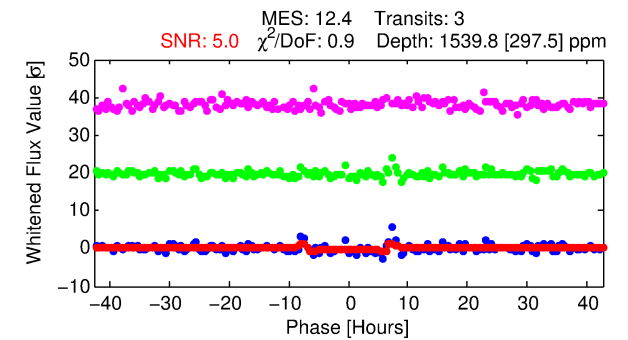
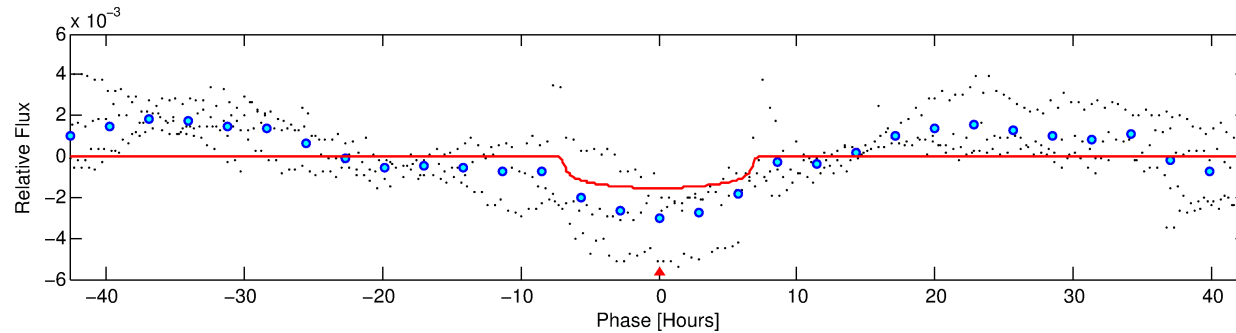
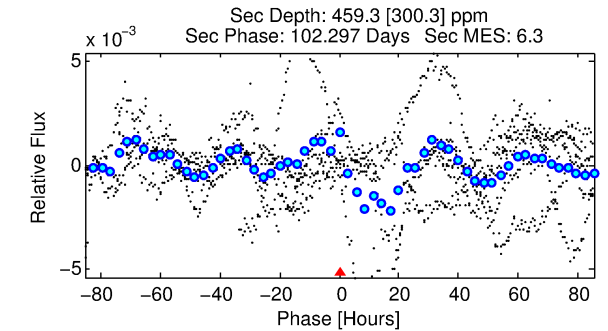
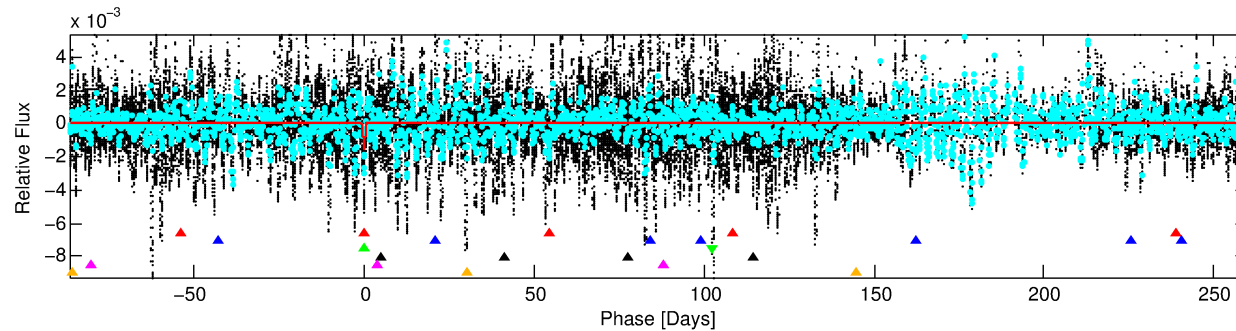
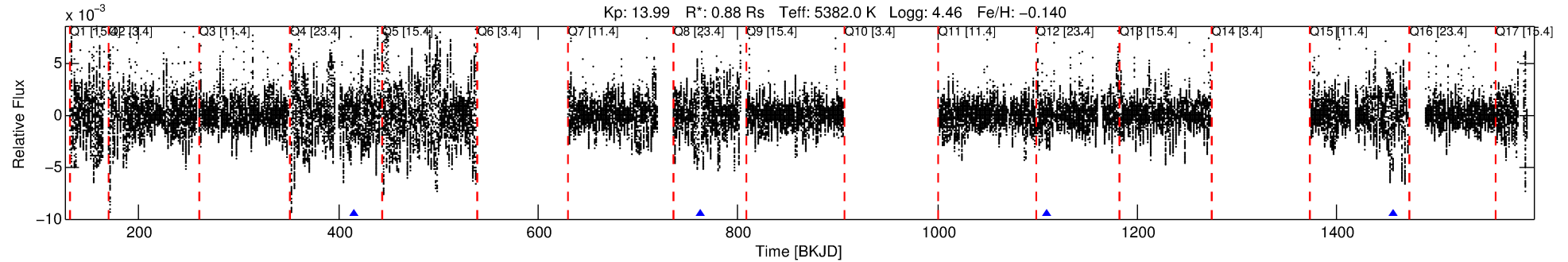
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003864122-03

No Significant Match Found

DV One-Page Summary

KIC: 3864122 Candidate: 3 of 6 Period: 346.688 d



DV Fit Results:

Period = 346.68825 [0.00381] d
Epoch = 415.5467 [0.0089] BKJD
Rp/R* = 0.0357 [0.0084]
a/R* = 184.49 [137.18]
b = 0.31 [2.21]
Seff = 0.71 [0.19]
Teq = 234 [16] K
Rp = 3.41 [1.00] Re
a = 0.8974 [0.1424] AU
Ag = 17538.71 [14733.71] [1.19 σ]
Teffp = 4171 [848] K [4.64 σ]

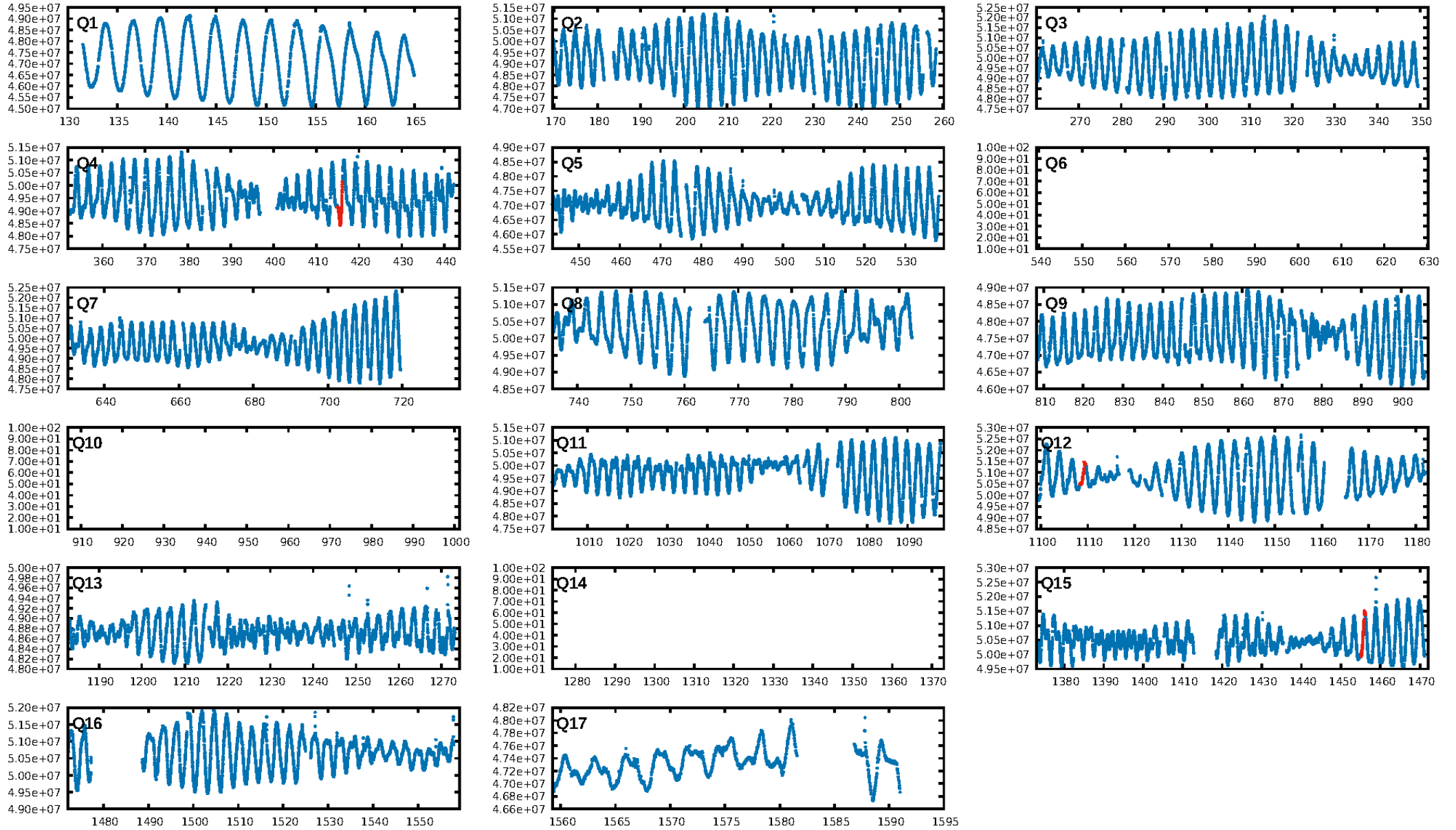
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [85.95 σ]
LongPeriod-sig: 100.0% [58.82 σ]
ModelChiSquare2-sig: 6.3%
ModelChiSquareGof-sig: 99.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.231
Centroid-sig: 8.9%
Centroid-so: 0.774 arcsec [1.30 σ]
OotOffset-rm: 0.162 arcsec [1.70 σ]
OotOffset-st: 0/1/2/0 [3]
KicOffset-rm: 0.119 arcsec [1.18 σ]
KicOffset-st: 0/1/2/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

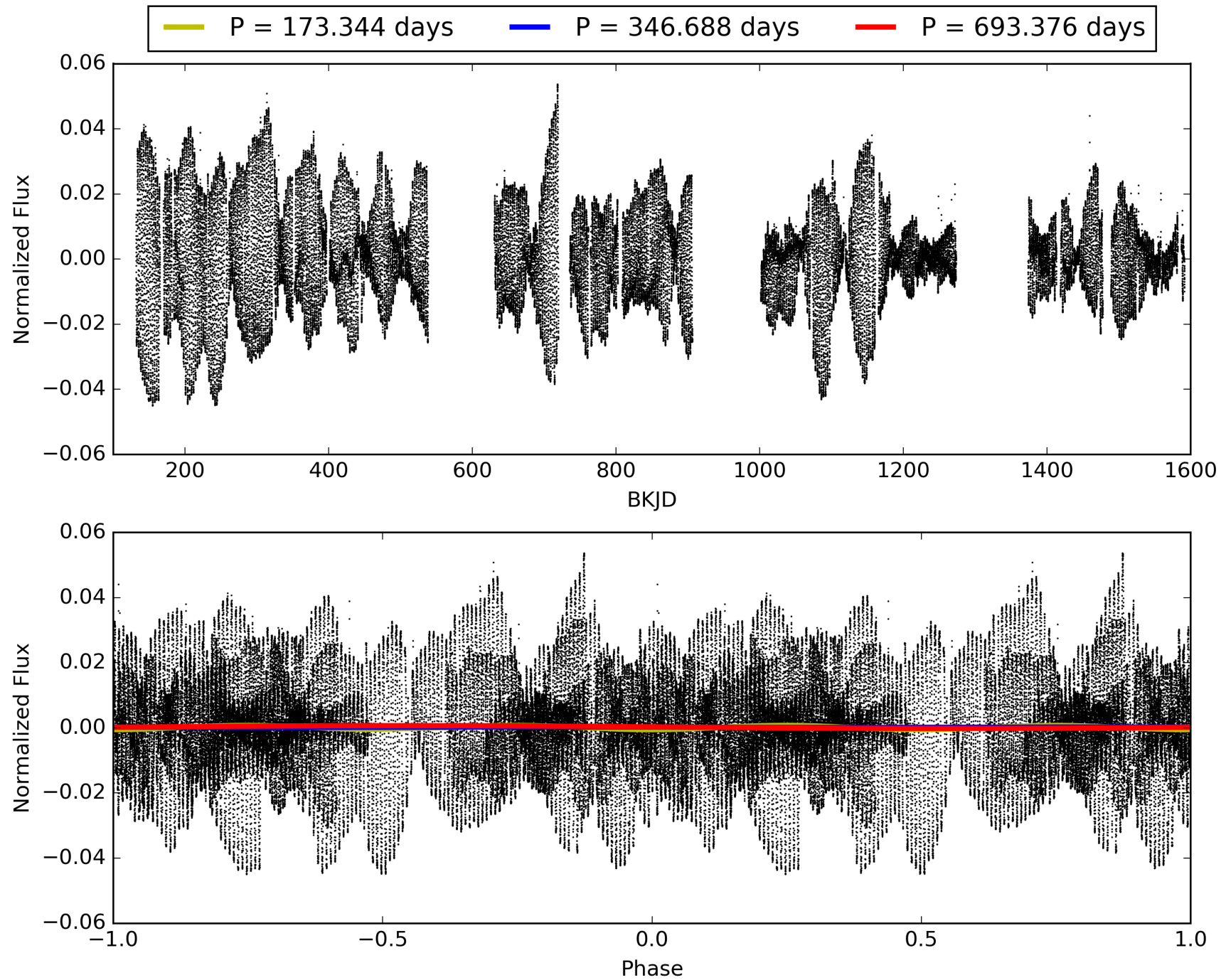
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:23:09 Z

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

TCE 003864122-03, PDC Light Curves

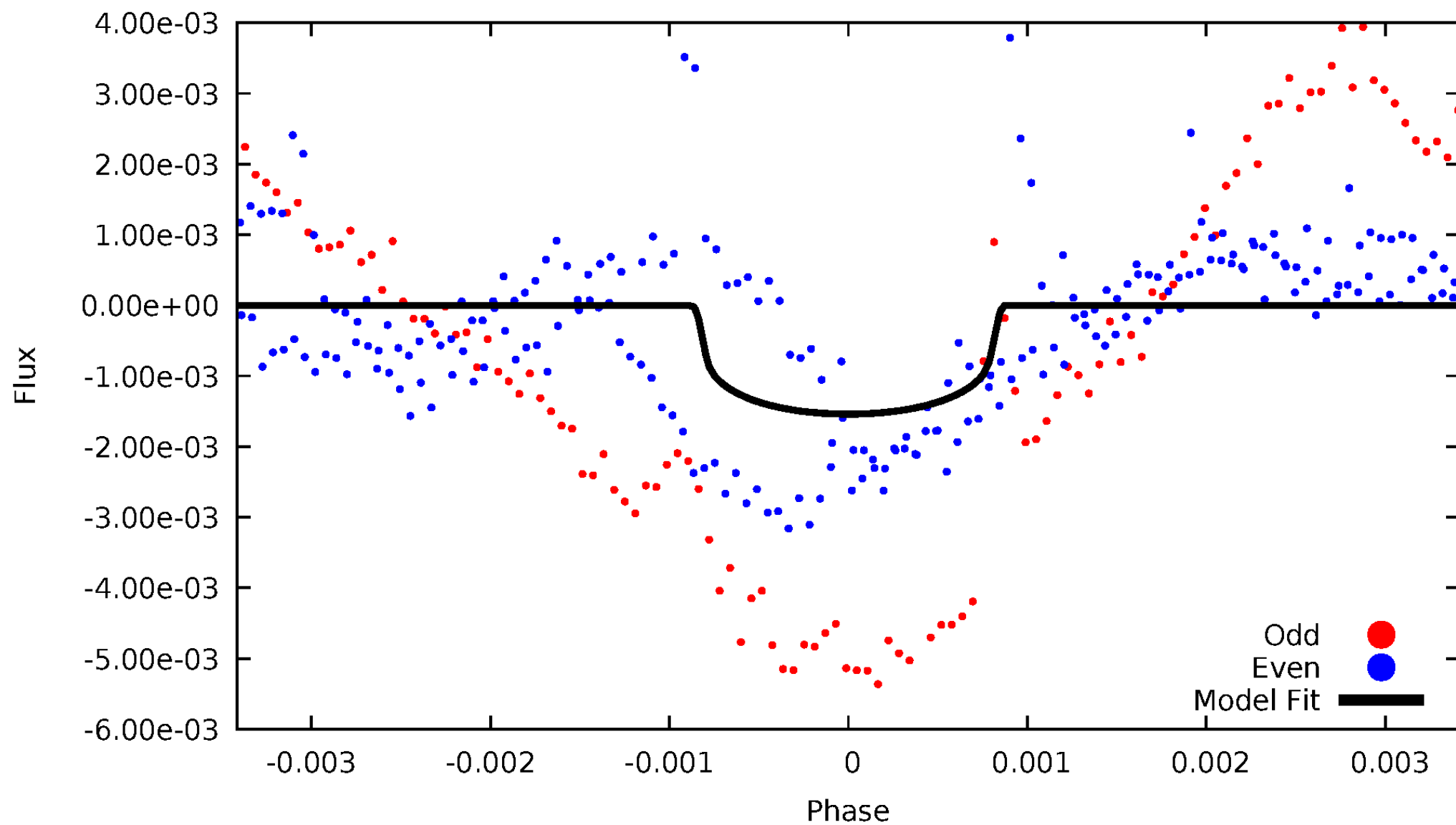


TCE 003864122-03



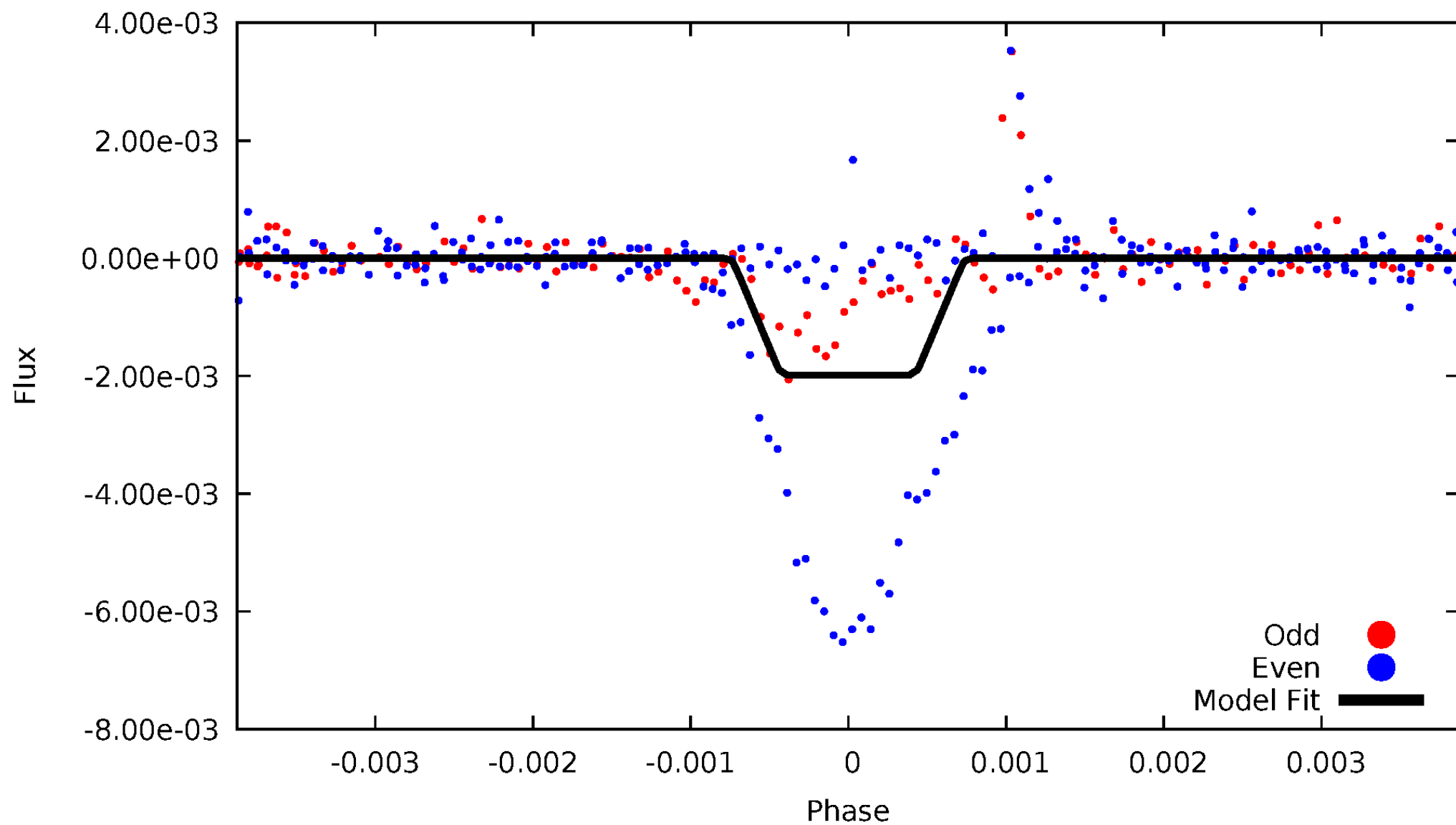
DV Odd/Even

TCE 003864122-03



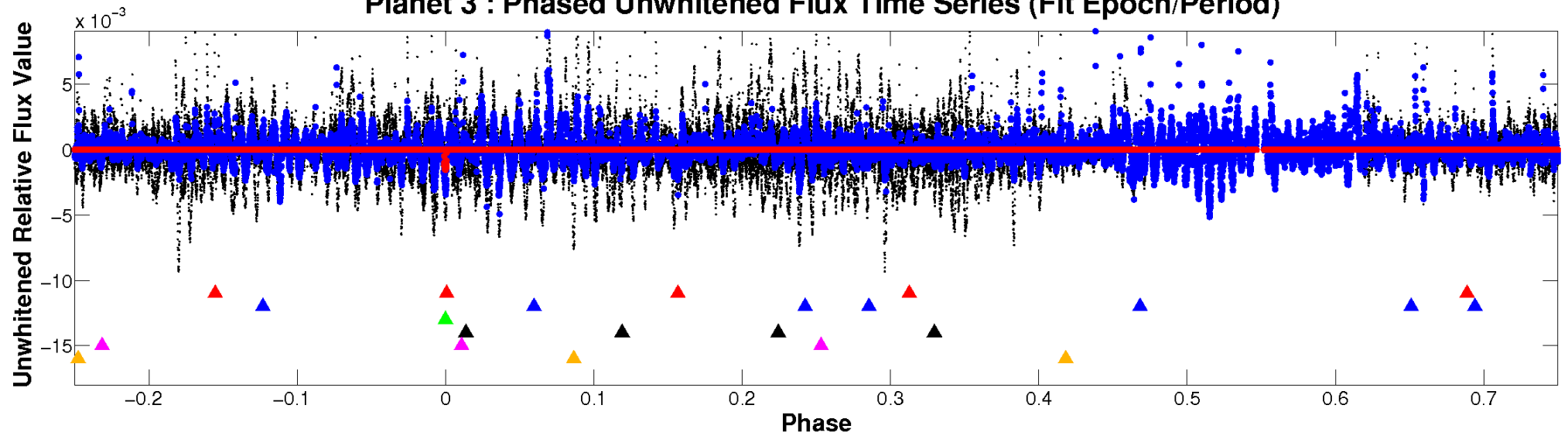
ALT Odd/Even

TCE 003864122-03

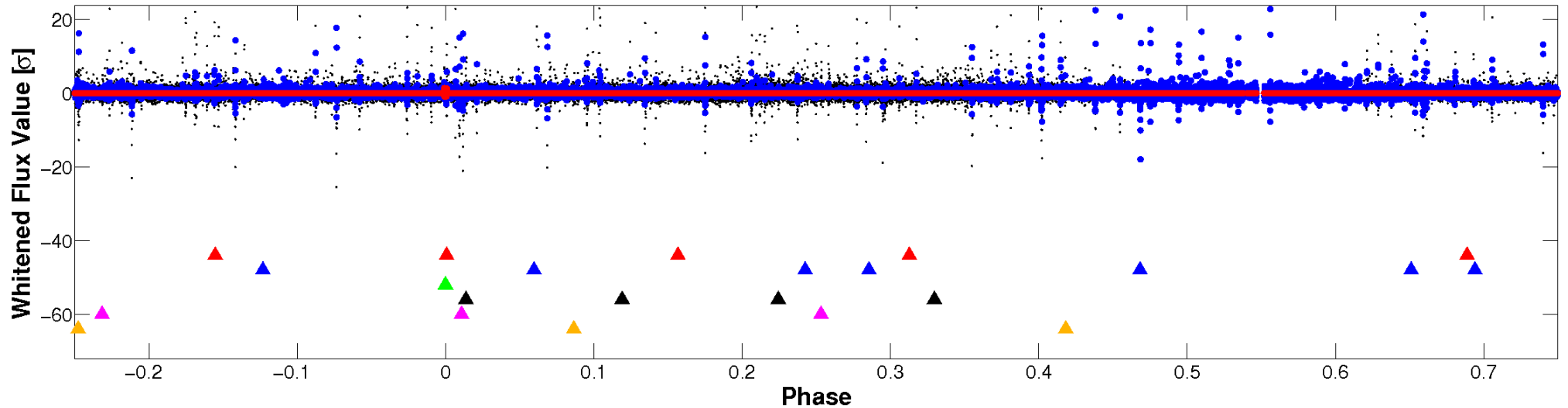


Non-Whitened Vs. Whitened Light Curve

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

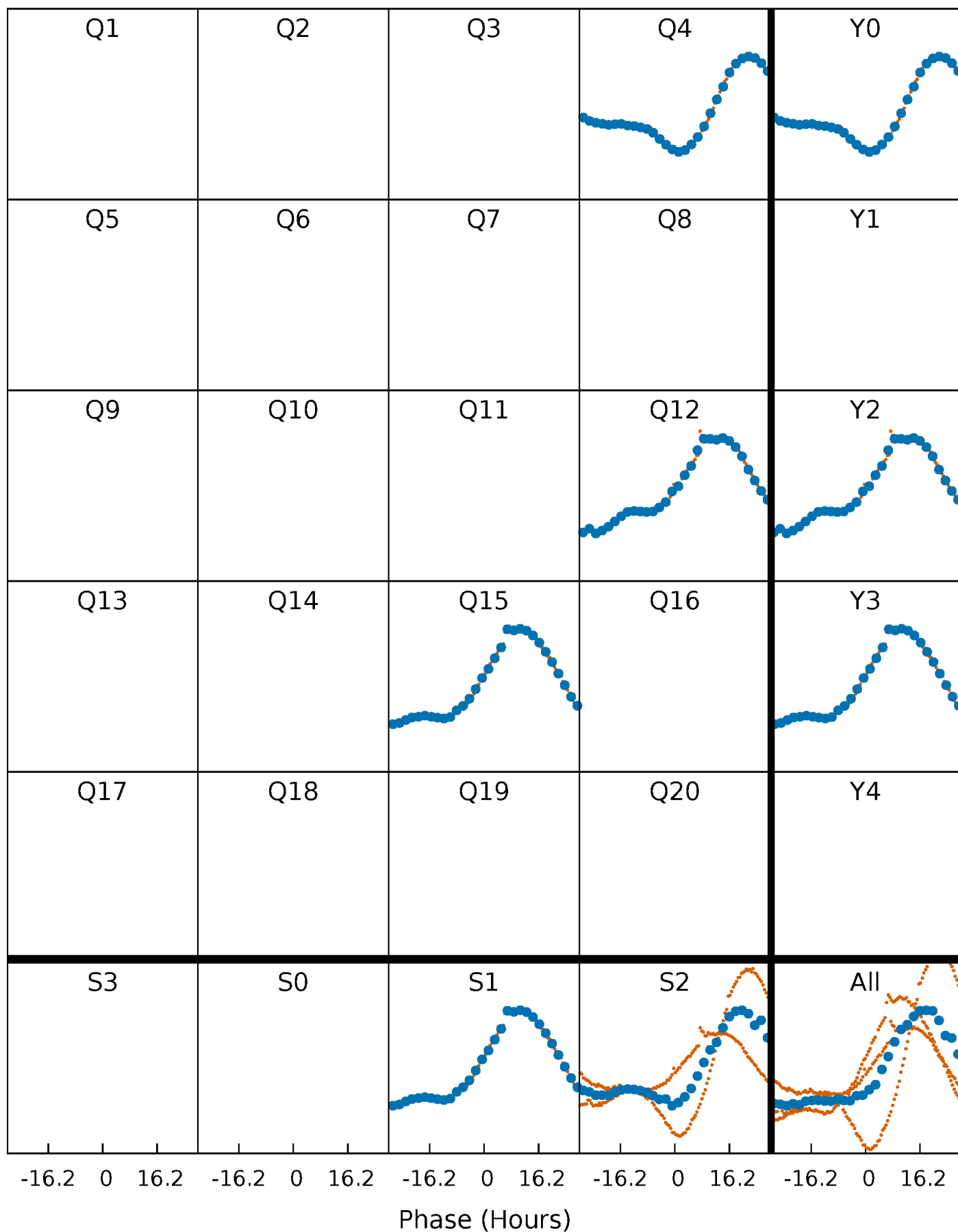


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



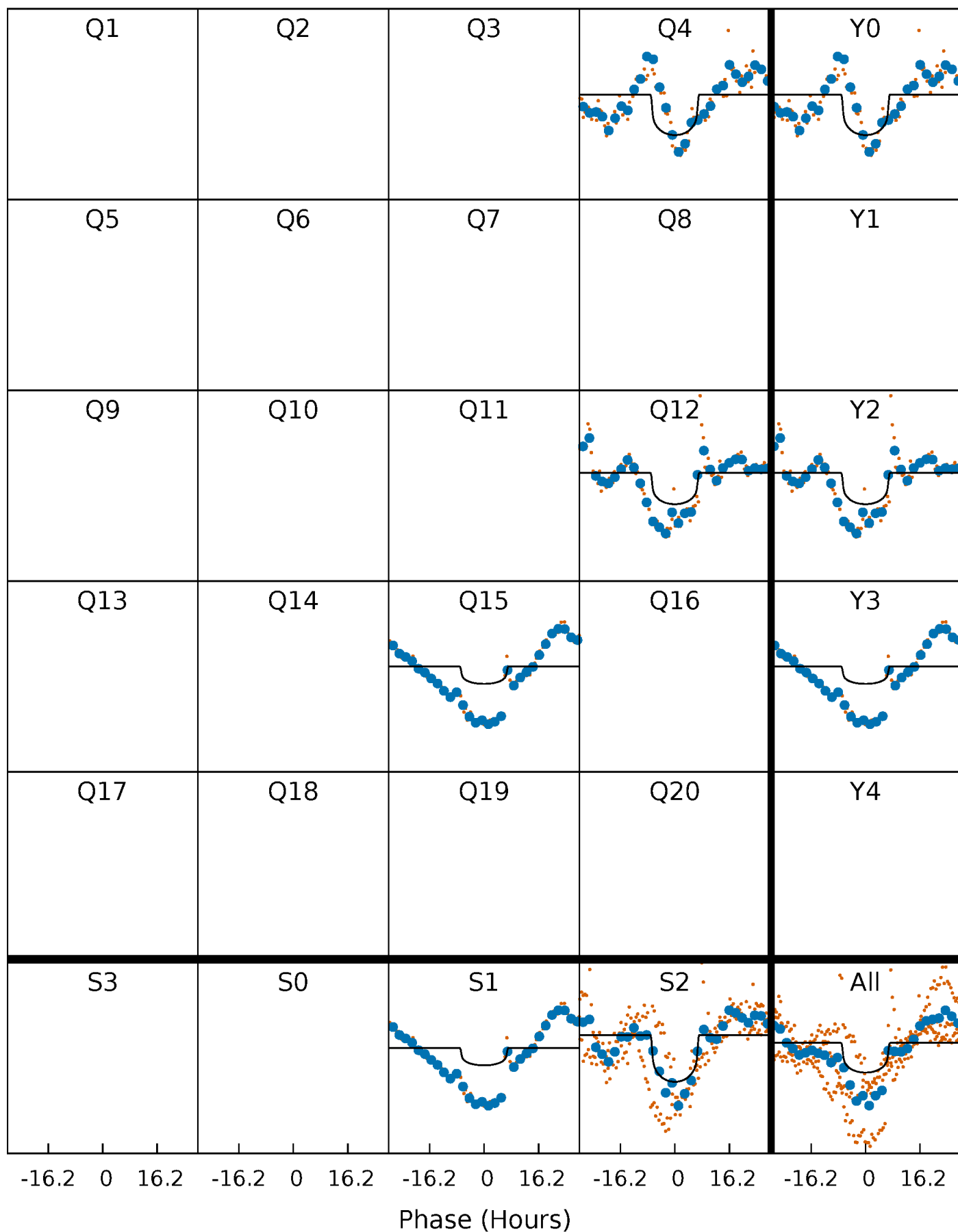
PDC Quarter-Phased Transit Curves

TCE 003864122-03 $P=346.688245$ Days $T_0=415.546686$ (BKJD)



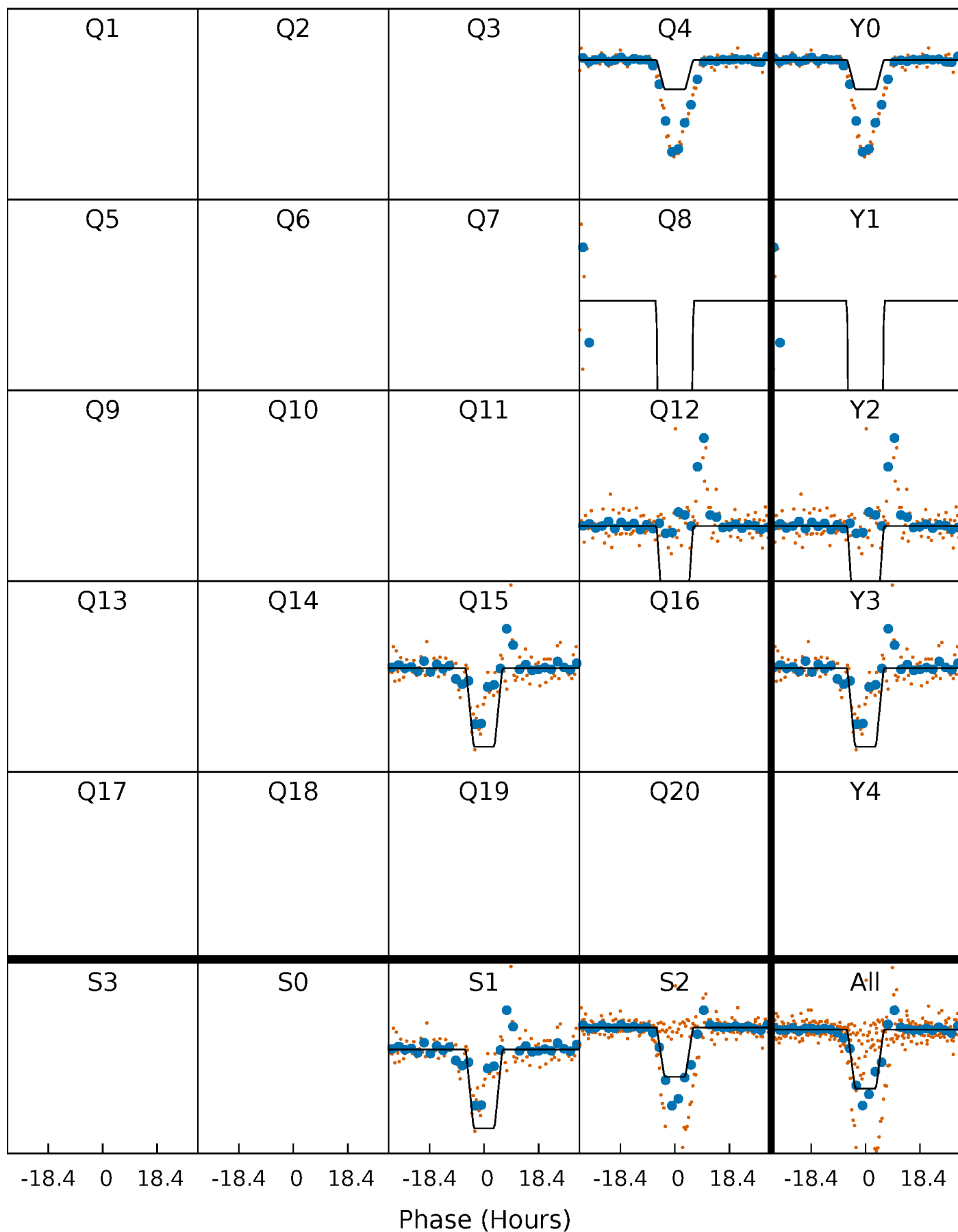
DV Quarter-Phased Transit Curves

TCE 003864122-03 $P=346.688245$ Days $T_0=415.546686$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

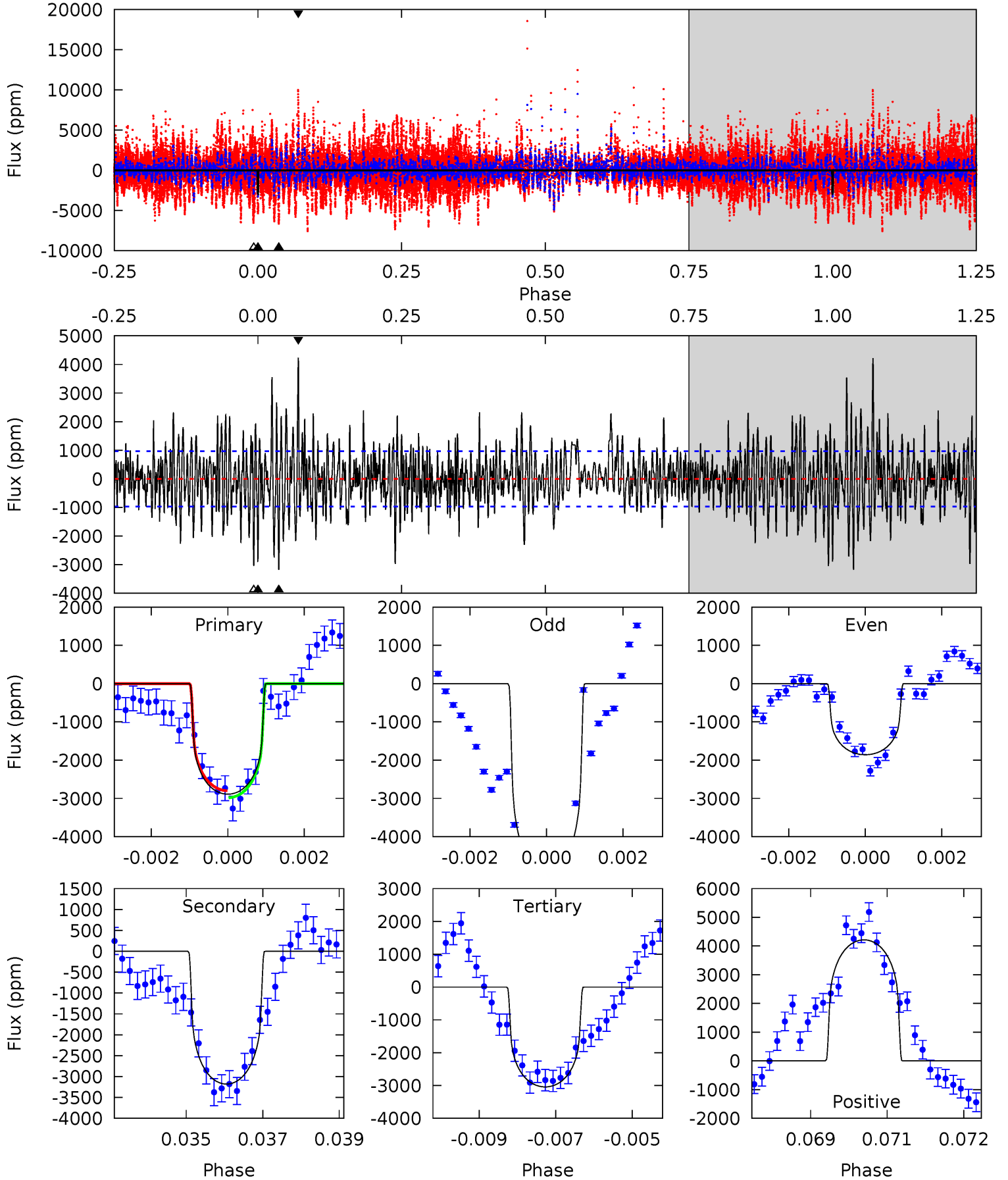
TCE 003864122-03 P=346.634912 Days $T_0=415.629761$ (BKJD)



DV Model-Shift Uniqueness Test

003864122-03, $P = 346.688245$ Days, $E = 68.858441$ Days

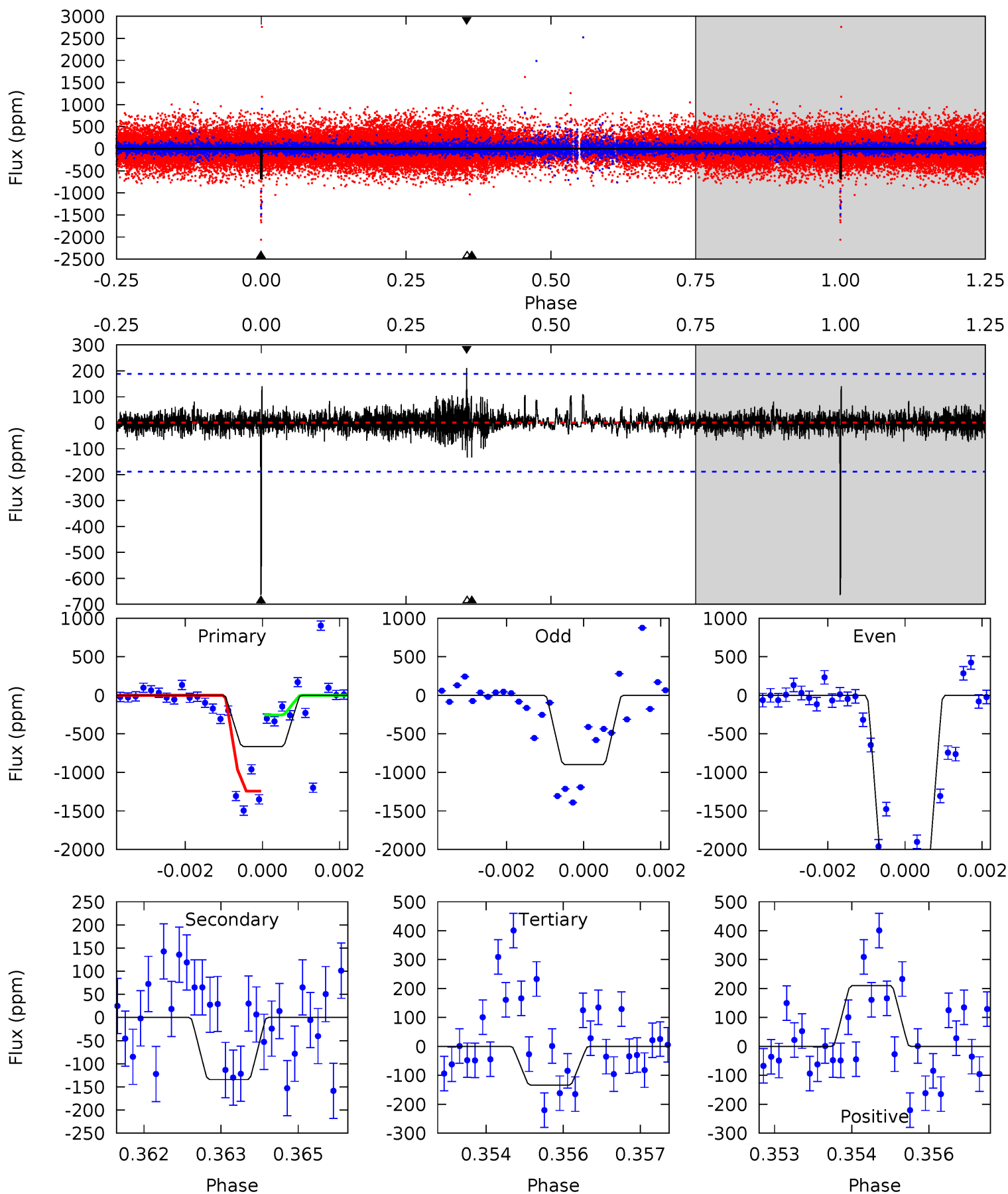
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.0	17.6	16.8	23.3	5.35	3.13	4.69	-0.85	-7.32	0.75	-5.72	8.15	1.13	0.57	0.51



Alt Model-Shift Uniqueness Test

003864122-03, P = 346.634912 Days, E = 68.994849 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.0	3.83	3.82	6.01	5.37	3.17	0.67	15.1	13.0	0.01	-2.18	31.6	2.17	0.24	13.8



Stellar Parameters For KIC 003864122

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5382^{+159}_{-143}	$4.458^{+0.112}_{-0.138}$	$-0.140^{+0.300}_{-0.300}$	$0.875^{+0.155}_{-0.113}$	$0.803^{+0.113}_{-0.061}$	$1.688^{+0.809}_{-0.640}$
	+3%/-3%	+3%/-3%	+214%/-214%	+18%/-13%	+14%/-8%	+48%/-38%
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 003864122-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-3180 ± 181	$3.47^{+0.89}_{-0.85}$	329^{+16}_{-15}	6742^{+1120}_{-701}	120327^{+88405}_{-43529}
Alt.	-134 ± 35	$4.31^{+0.94}_{-0.88}$	329^{+18}_{-15}	3284^{+259}_{-212}	3243^{+1896}_{-1295}

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

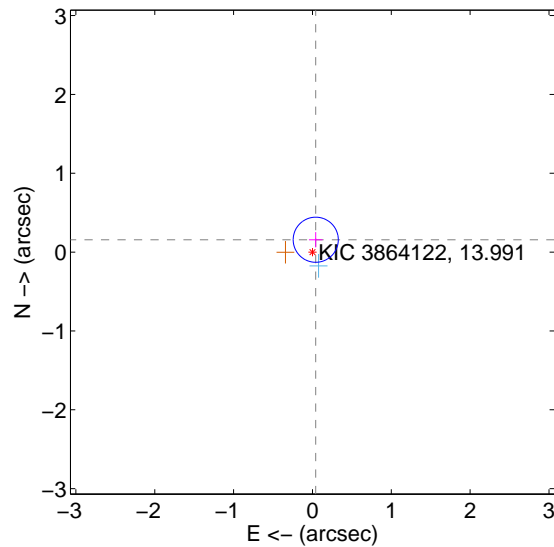
Supplemental centroid analysis for 003864122-03. Kepler magnitude: 13.99. Transit SNR 4.98

There are 2 quarters with good PRF difference image offsets

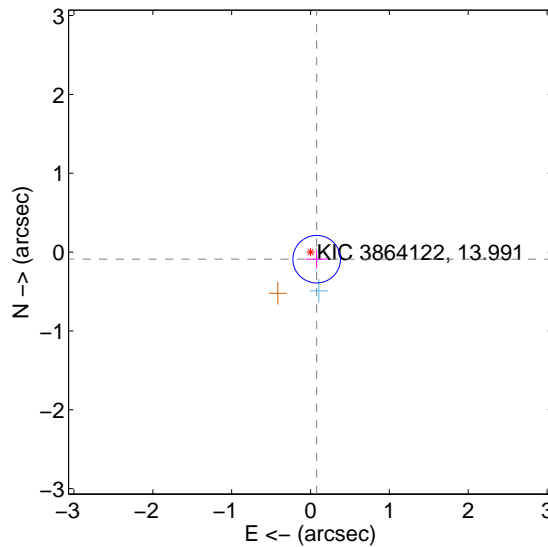
The direct PRF centroid is offset from the target star catalog position by about 0.53 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.162 ± 0.095	1.70	-0.042 ± 0.085	0.157 ± 0.096
PRF-fit source offset from KIC position	0.119 ± 0.101	1.18	-0.078 ± 0.137	-0.090 ± 0.119
photometric centroid source offset	0.77 ± 0.59	1.30	-0.76 ± 0.59	-0.14 ± 0.77

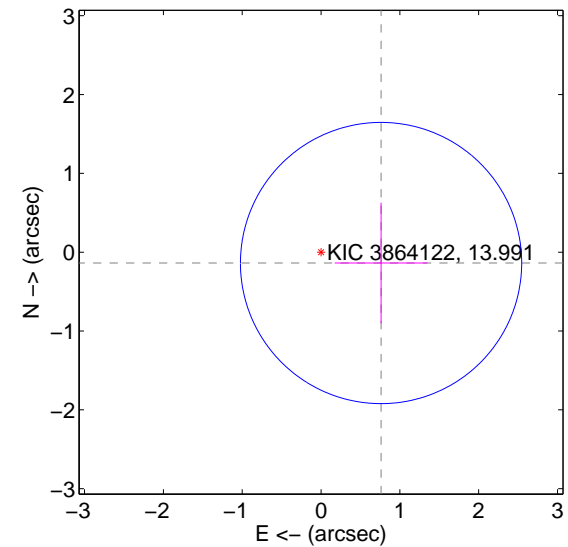
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

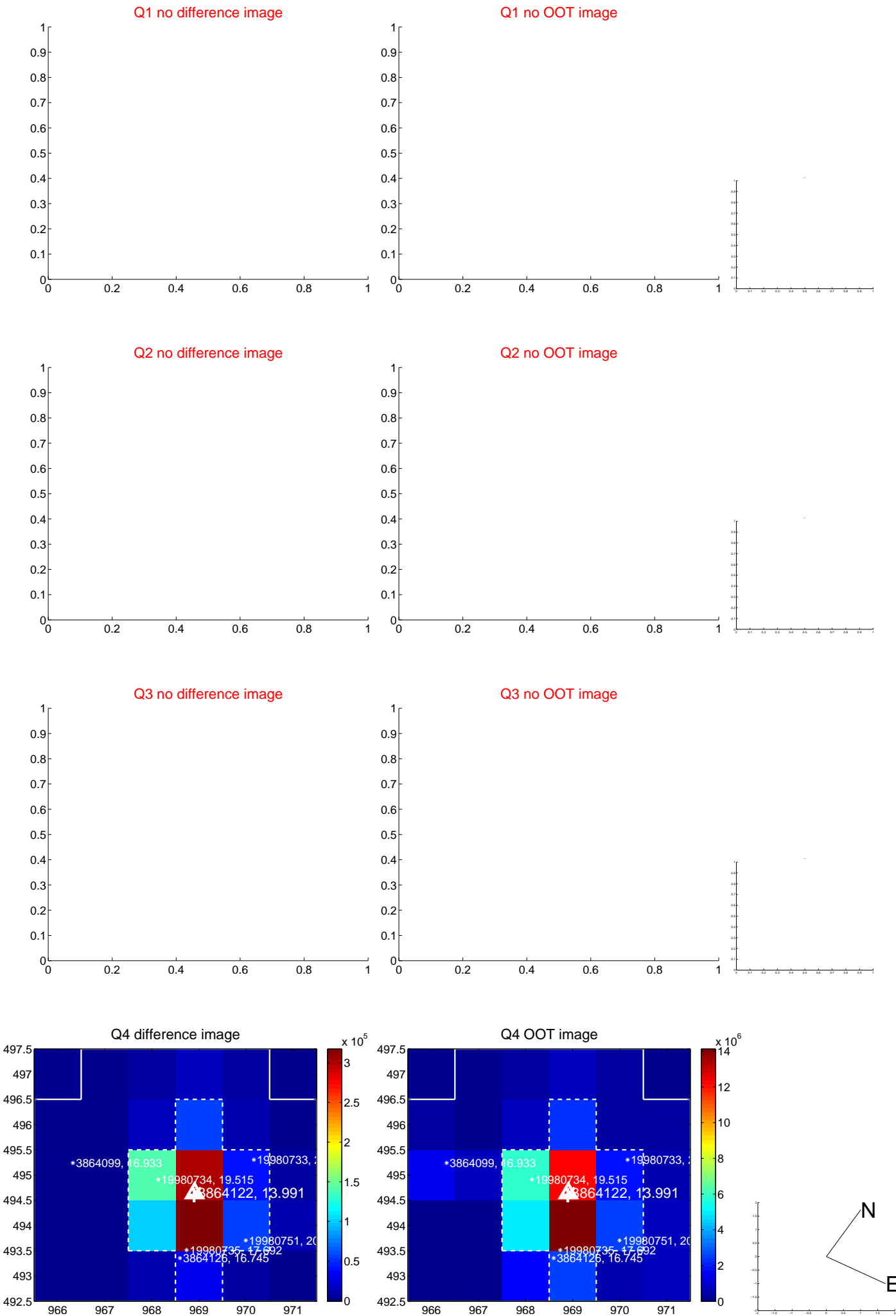


offset from photometric centroids



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.

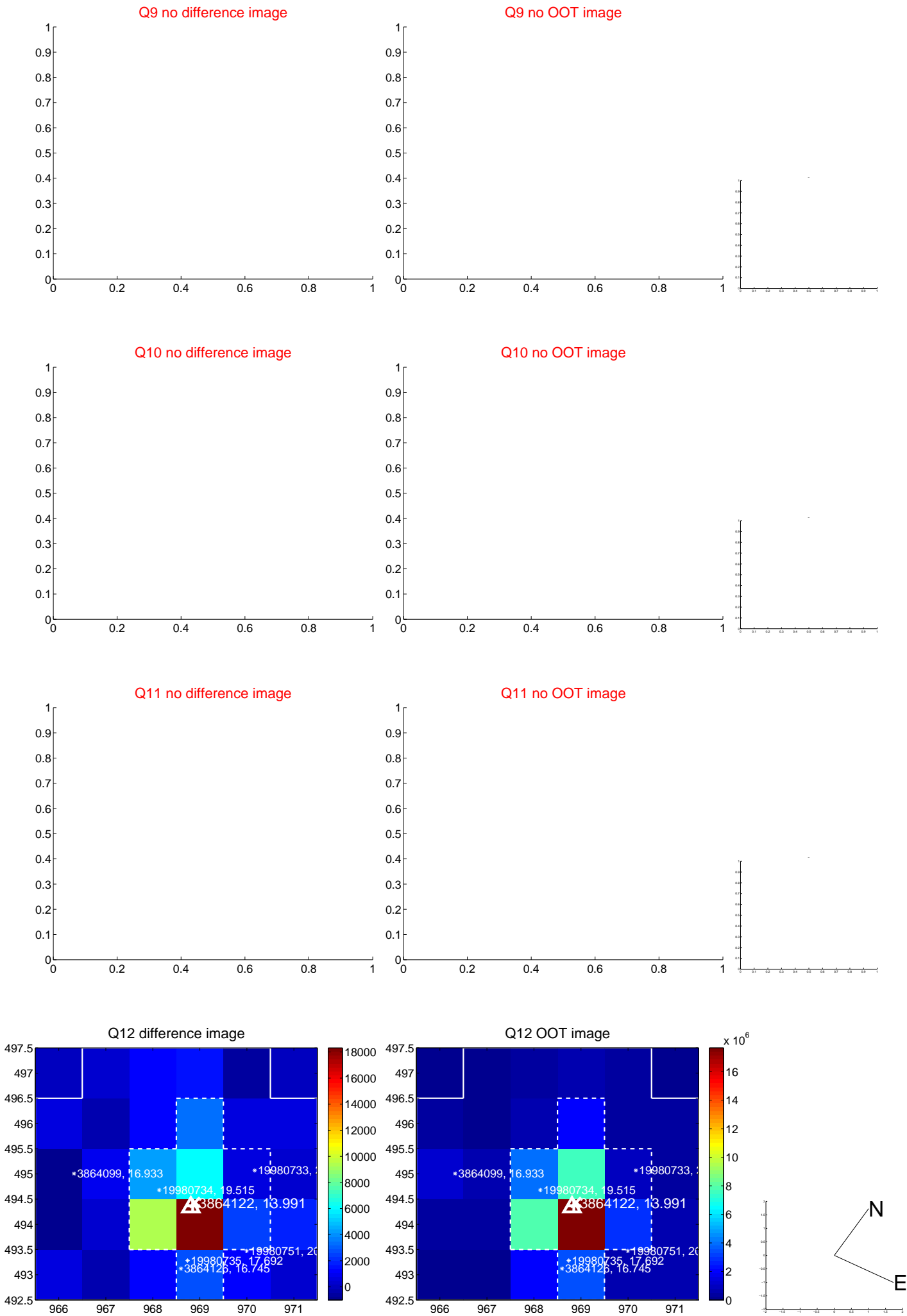
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

Q13 no difference image



Q13 no OOT image



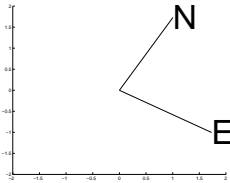
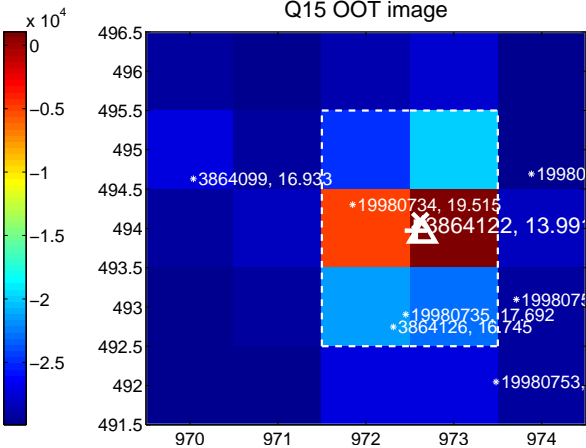
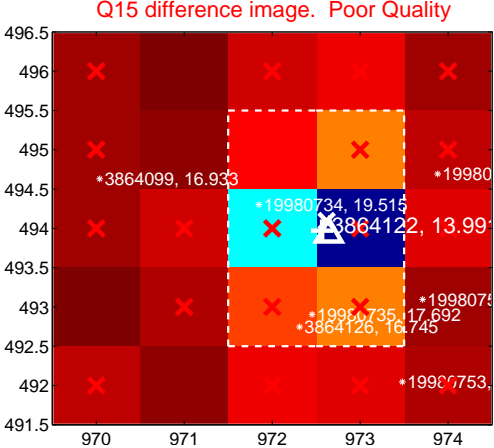
Q14 no difference image



Q14 no OOT image



Q15 difference image. Poor Quality



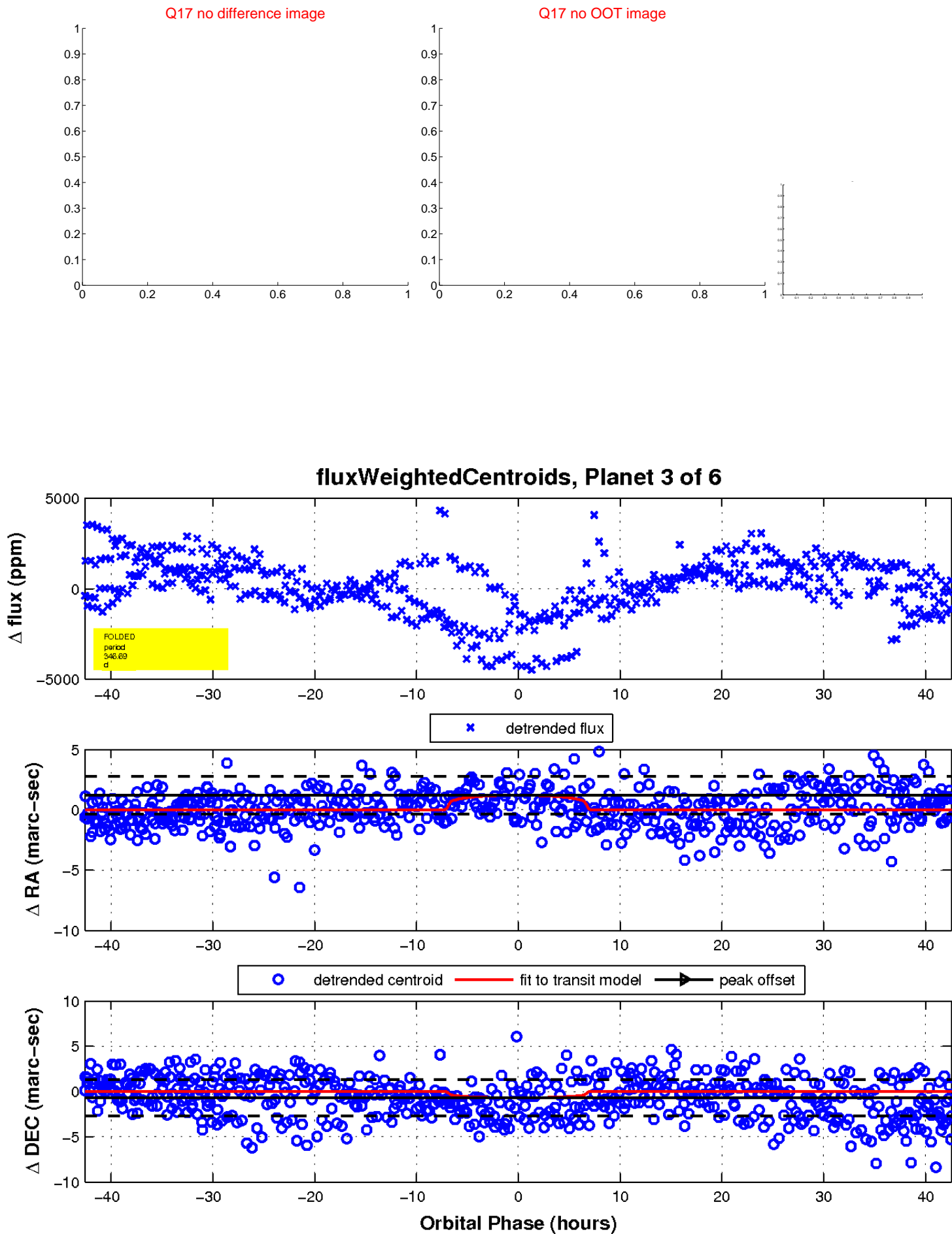
Q16 no difference image



Q16 no OOT image

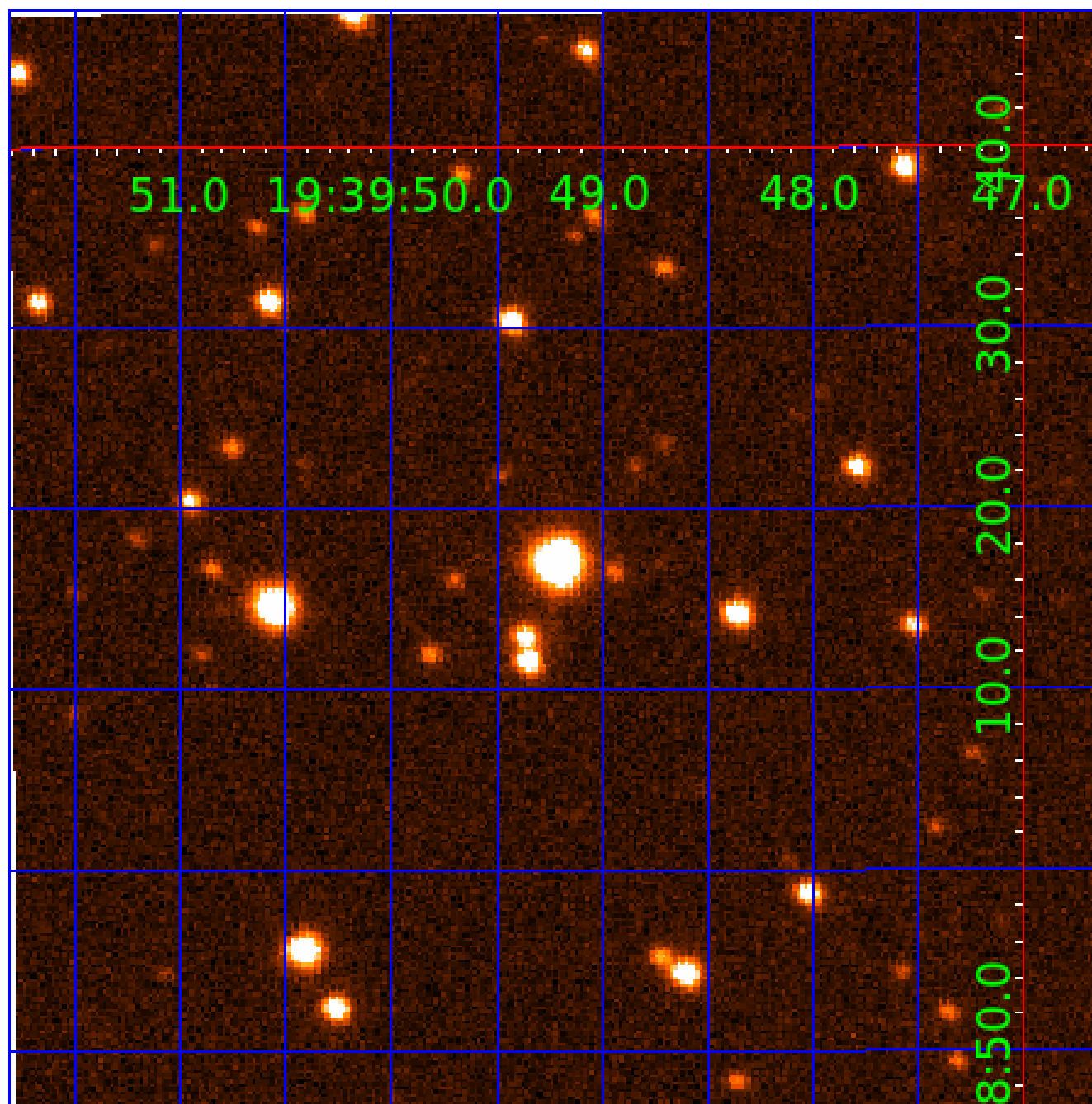


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003864122

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})
003864122-01	OBS	No	292.609829	177.277267	942.6	5.126	15.4	4.0	0.88	5382	2.75	0.90
003864122-02	OBS	No	205.030874	309.500137	876.2	2.776	13.8	5.4	0.88	5382	2.67	1.44
003864122-03	OBS	No	346.688245	415.546686	1539.8	14.203	12.4	5.0	0.88	5382	3.41	0.71
003864122-04	OBS	No	383.189188	420.331092	1521.6	4.482	12.3	7.4	0.88	5382	3.58	0.62
003864122-05	OBS	No	430.713813	335.281943	1258.7	3.378	11.2	7.4	0.88	5382	3.18	0.54
003864122-06	OBS	No	462.534064	213.844618	645.3	4.500	11.2	-1.0	0.88	5382	2.18	0.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003864122-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003864122-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
003864122-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003864122-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003864122-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003864122-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_POS_ALT—CENT_NOFITS

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

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

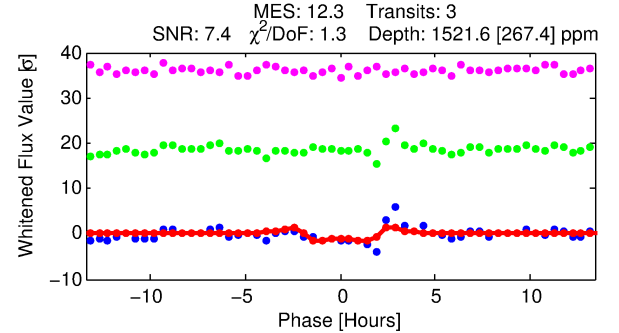
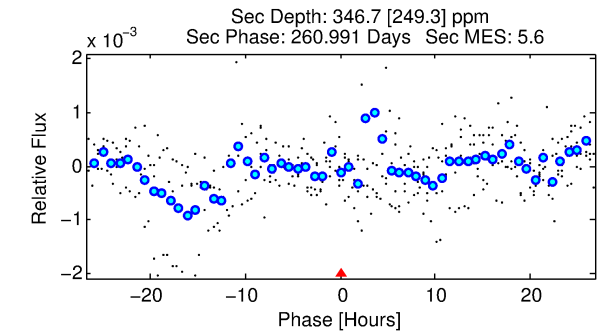
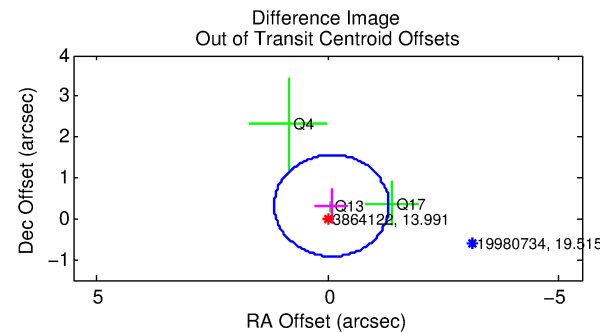
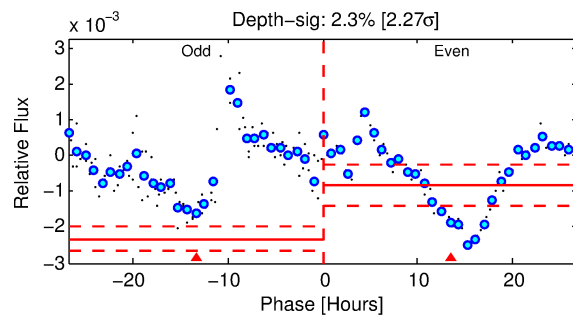
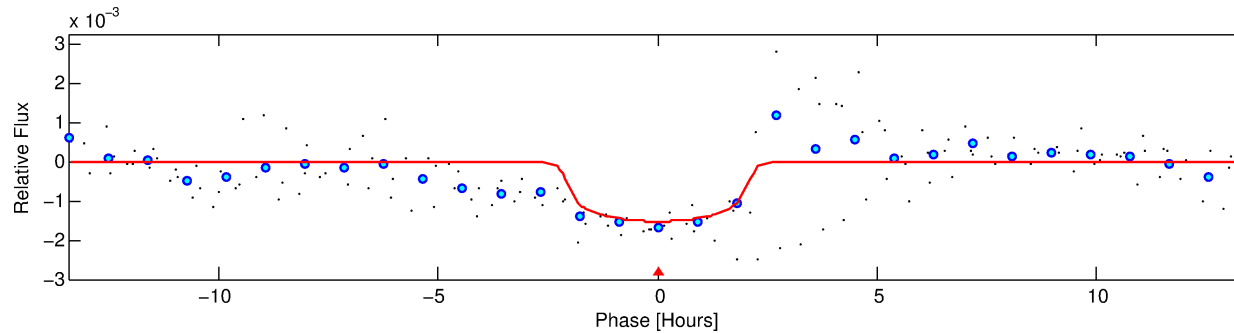
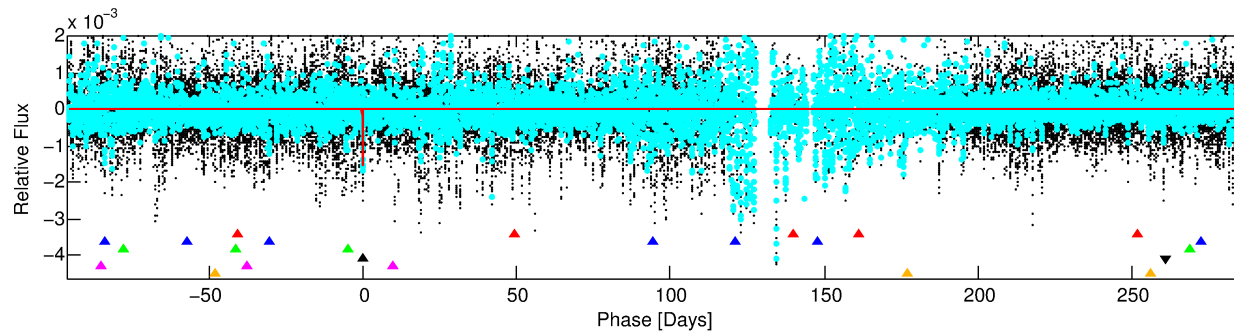
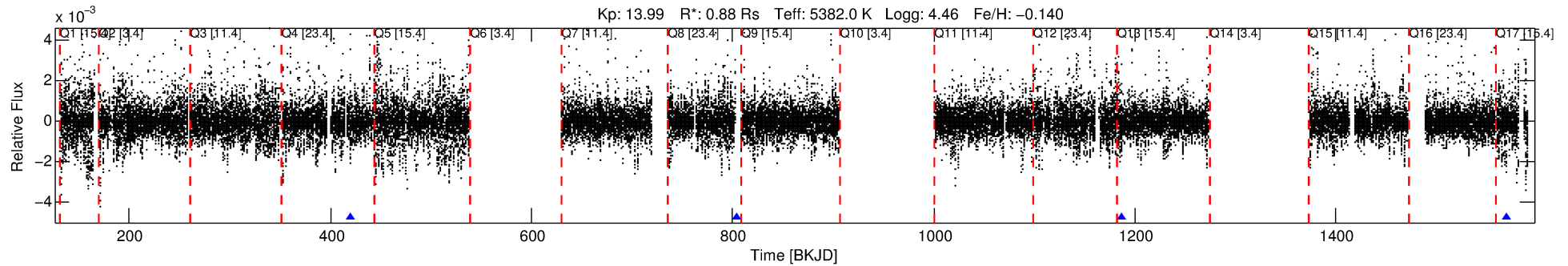
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003864122-04

No Significant Match Found

DV One-Page Summary

KIC: 3864122 Candidate: 4 of 6 Period: 383.189 d



DV Fit Results:

Period = 383.18919 [0.00355] d
Epoch = 420.3311 [0.0074] BKJD
Rp/R* = 0.0375 [0.0260]
a/R* = 530.51 [1390.08]
b = 0.65 [2.41]
Seff = 0.63 [0.17]
Teq = 227 [15] K
Rp = 3.58 [2.56] Re
a = 0.9594 [0.1522] AU
Ag = 13666.28 [21576.40] [0.63 σ]
Teffp = 3791 [1483] K [2.40 σ]

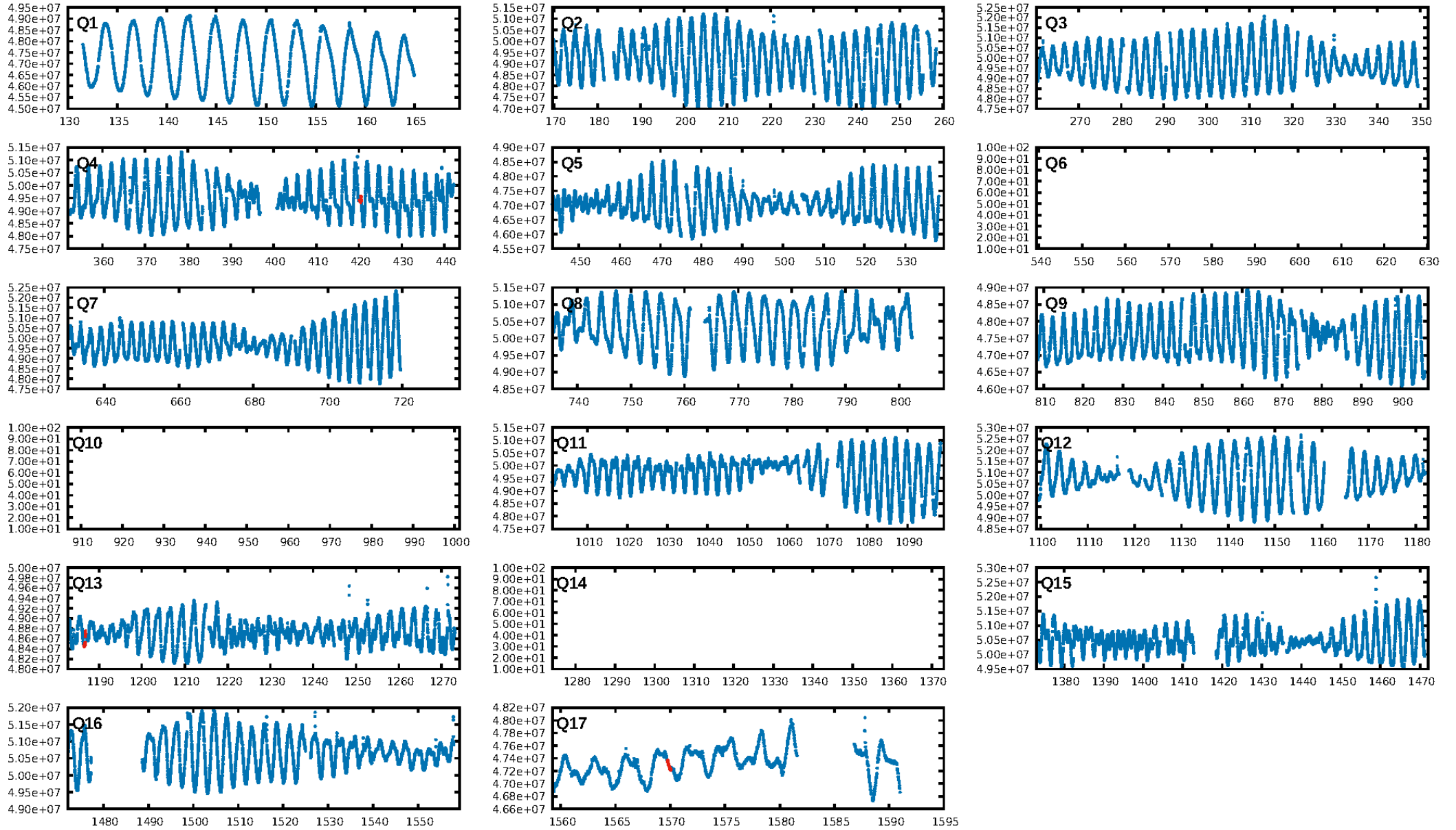
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [58.82 σ]
LongPeriod-sig: 100.0% [203.24 σ]
ModelChiSquare2-sig: 2.5%
ModelChiSquareGof-sig: 89.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 0.6989
Centroid-sig: 62.1%
Centroid-so: 0.496 arcsec [0.67 σ]
OotOffset-rm: 0.330 arcsec [0.80 σ]
OotOffset-st: 0/0/1/2 [3]
KicOffset-rm: 0.135 arcsec [0.37 σ]
KicOffset-st: 0/0/1/2 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

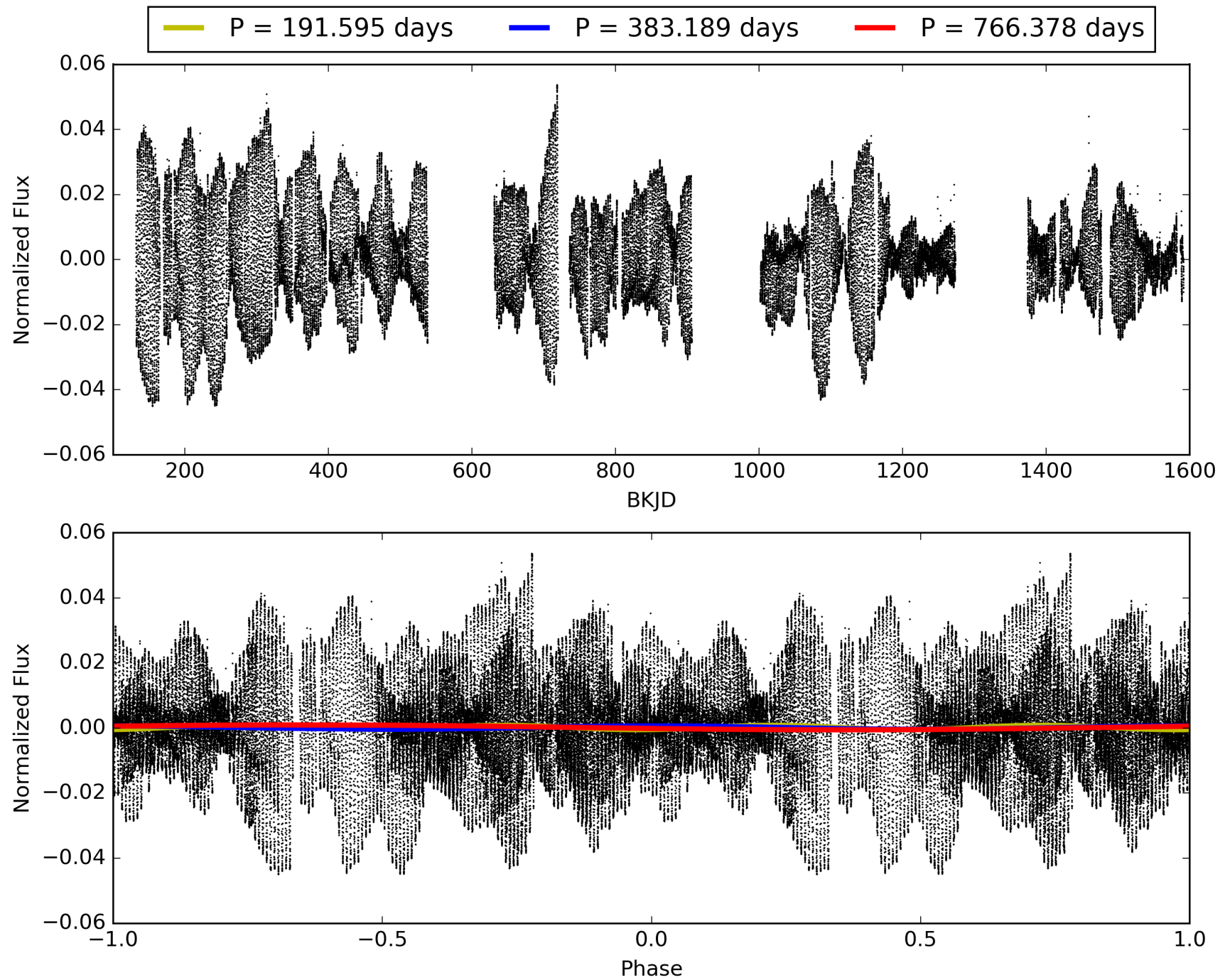
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:23:21 Z

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

TCE 003864122-04, PDC Light Curves

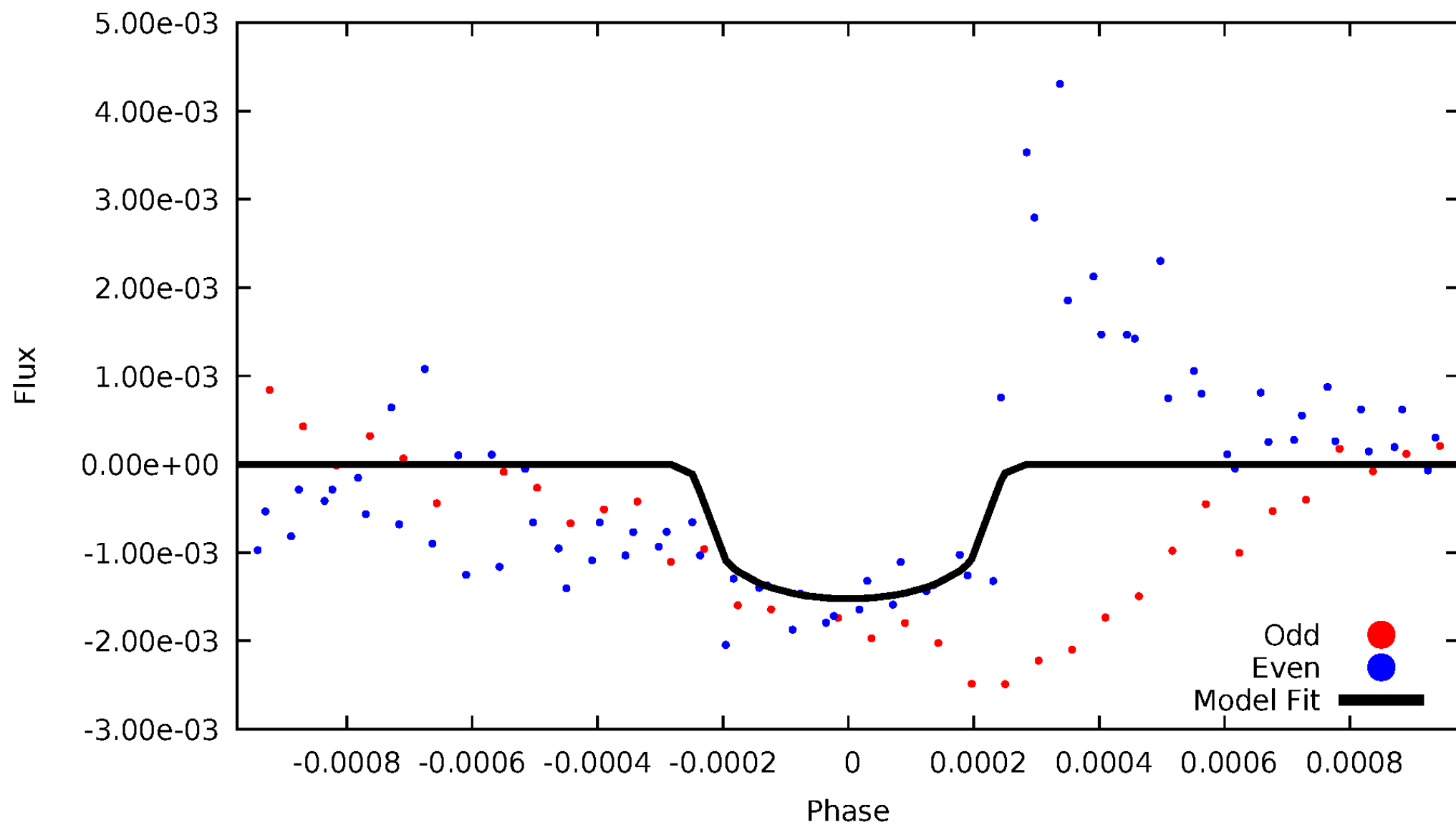


TCE 003864122-04



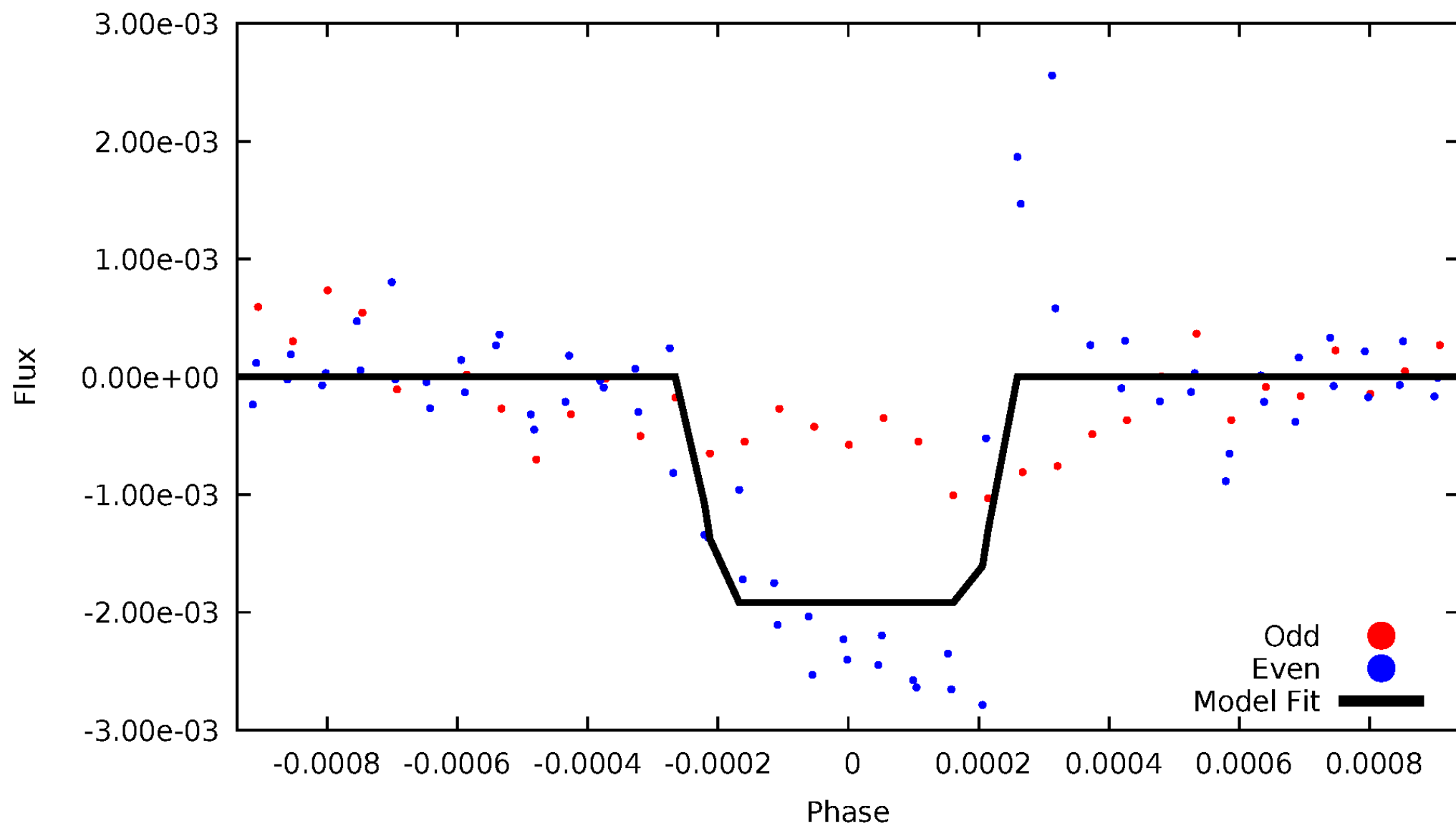
DV Odd/Even

TCE 003864122-04



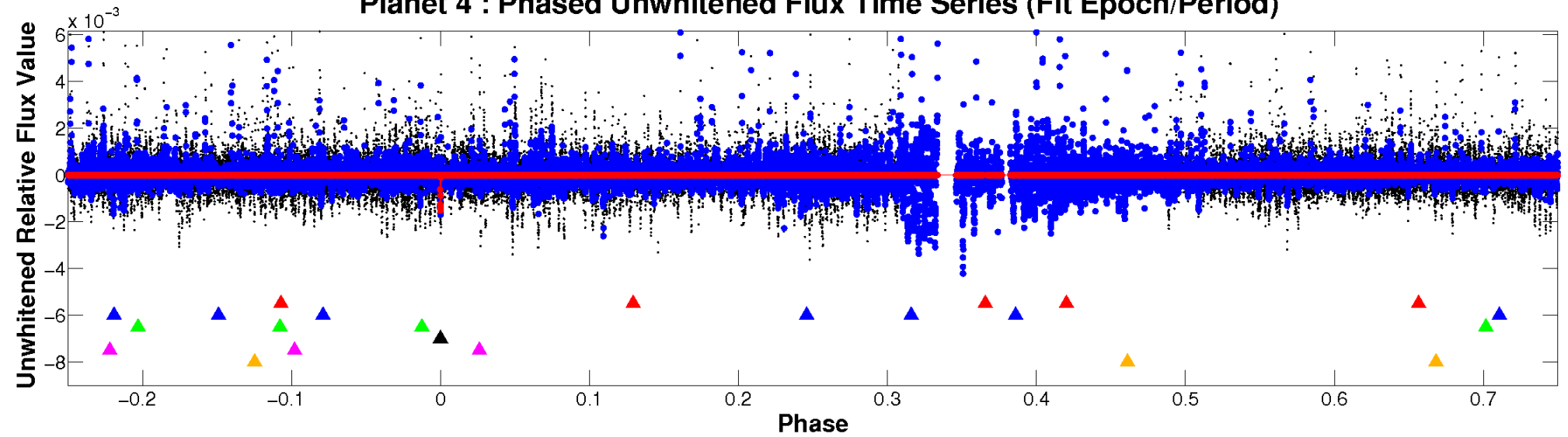
ALT Odd/Even

TCE 003864122-04

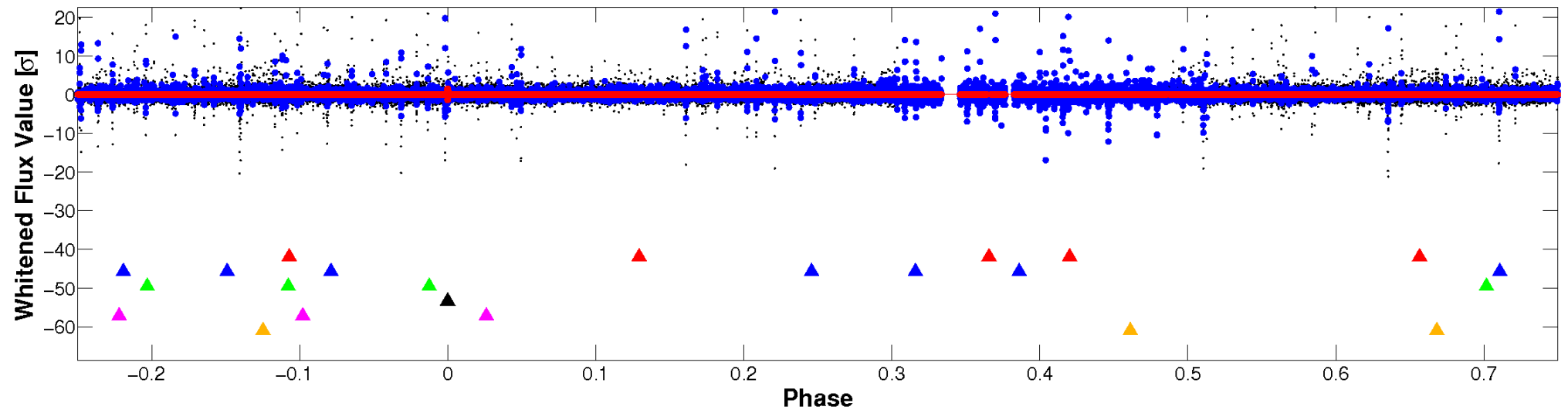


Non-Whitened Vs. Whitened Light Curve

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

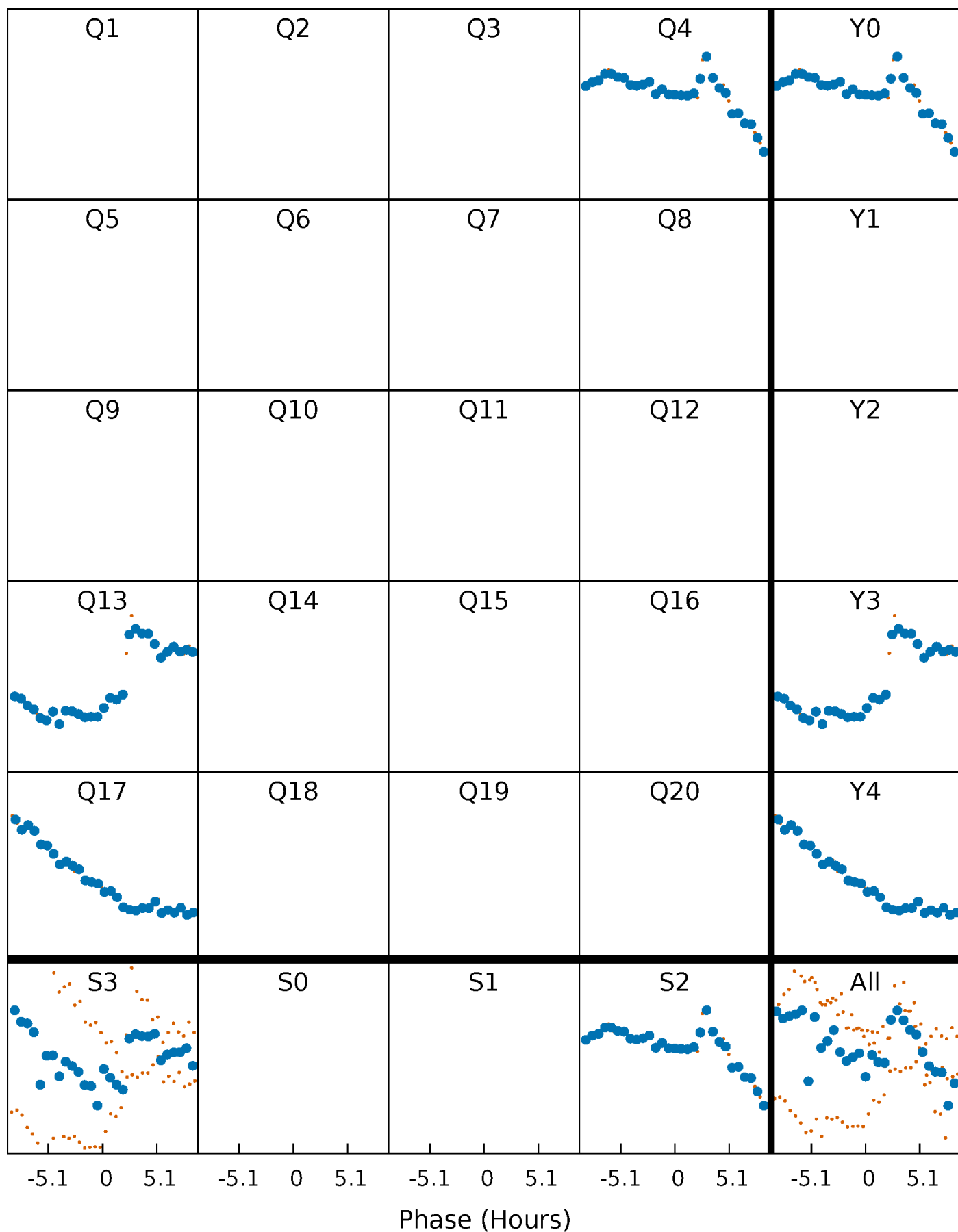


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



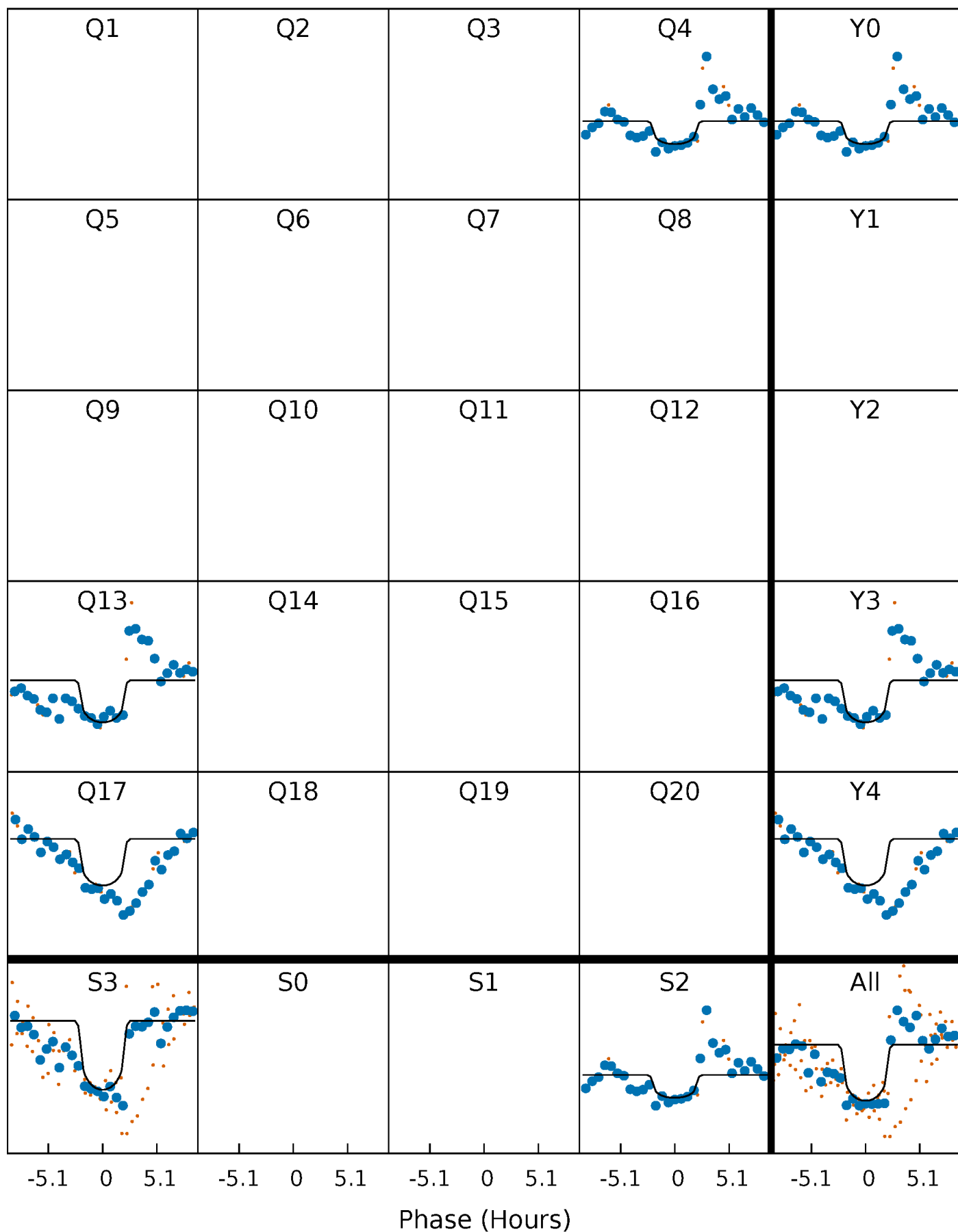
PDC Quarter-Phased Transit Curves

TCE 003864122-04 P=383.189188 Days $T_0=420.331092$ (BKJD)



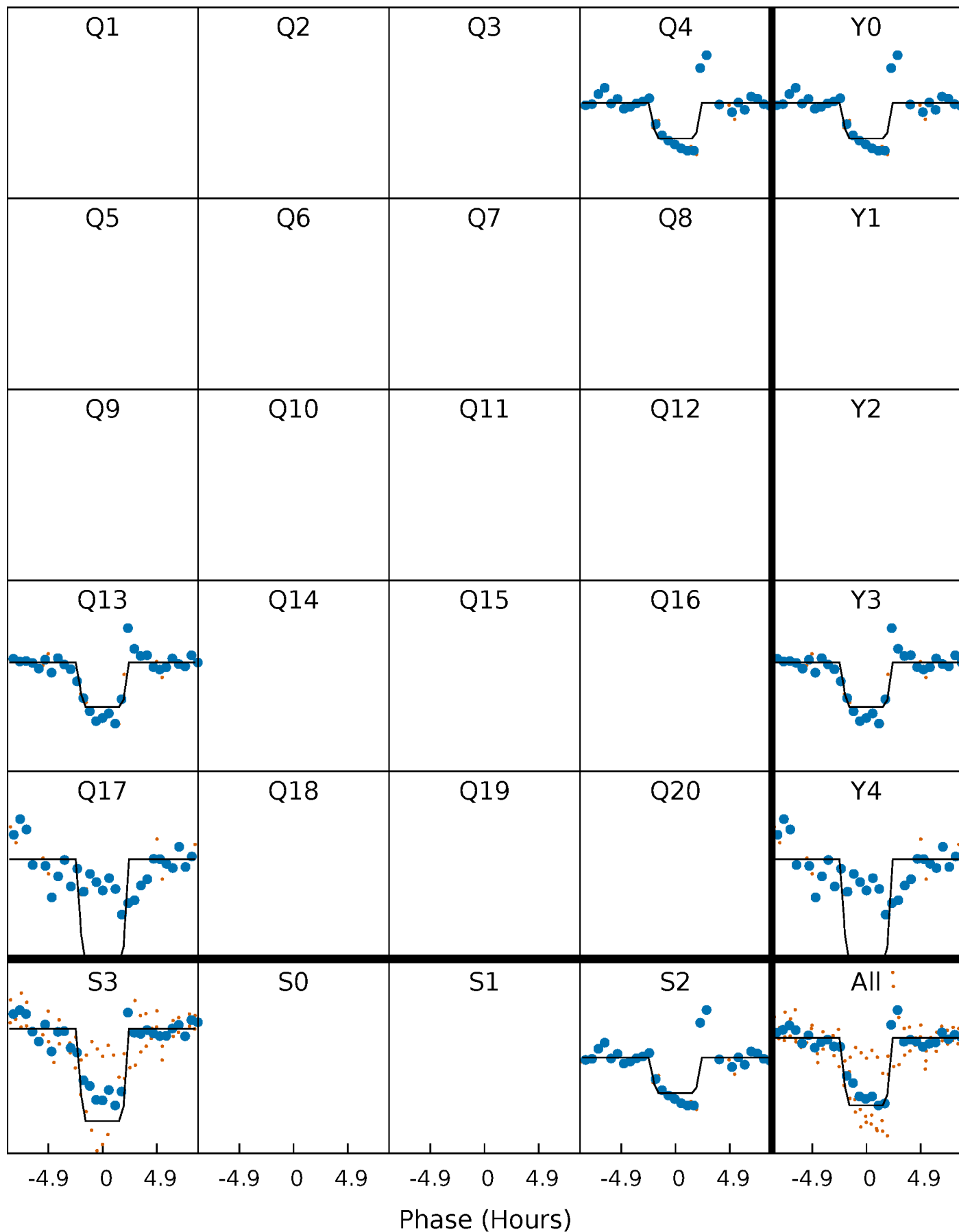
DV Quarter-Phased Transit Curves

TCE 003864122-04 $P=383.189188$ Days $T_0=420.331092$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

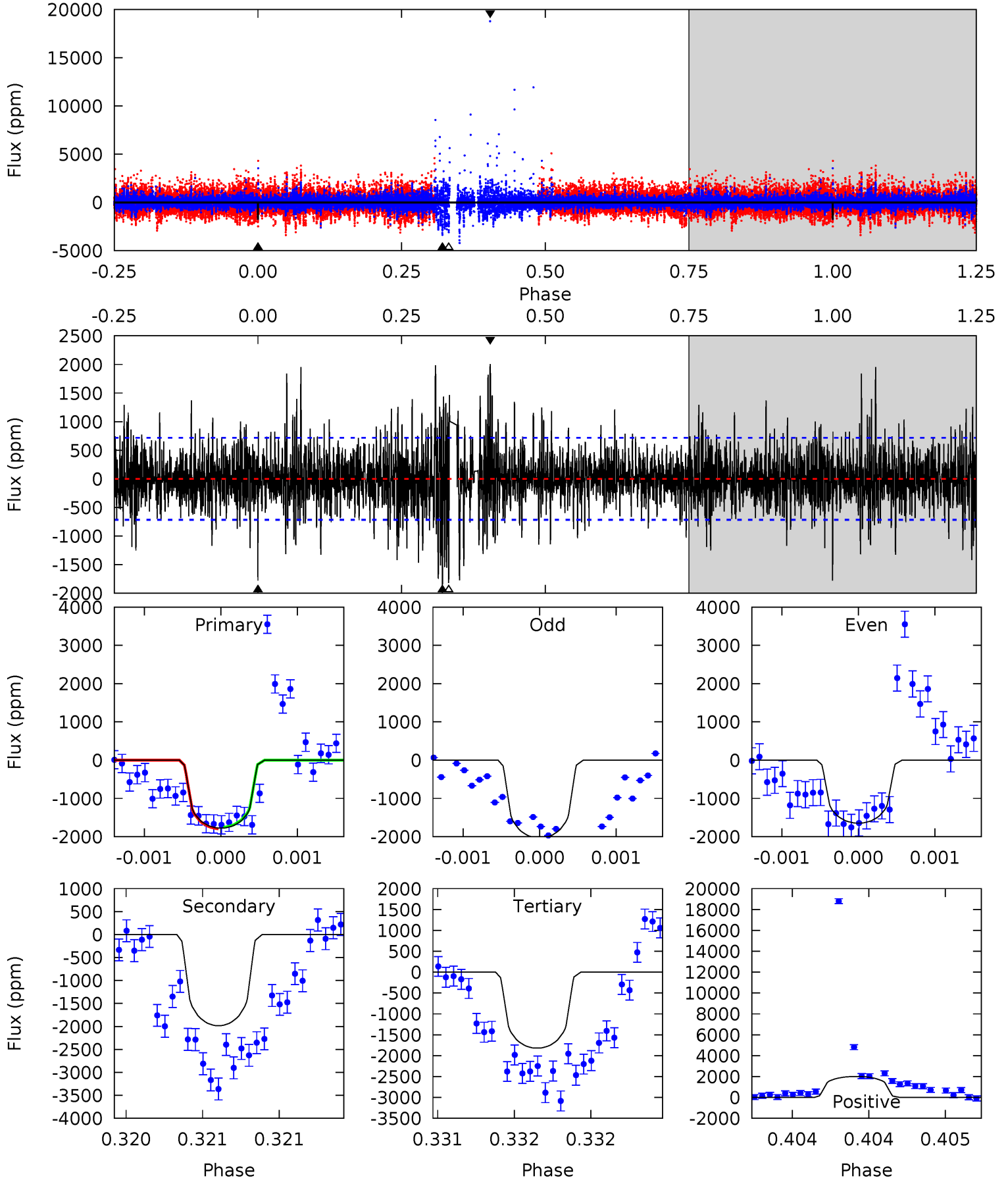
TCE 003864122-04 $P=383.190551$ Days $T_0=420.340723$ (BKJD)



DV Model-Shift Uniqueness Test

003864122-04, P = 383.189188 Days, E = 37.141904 Days

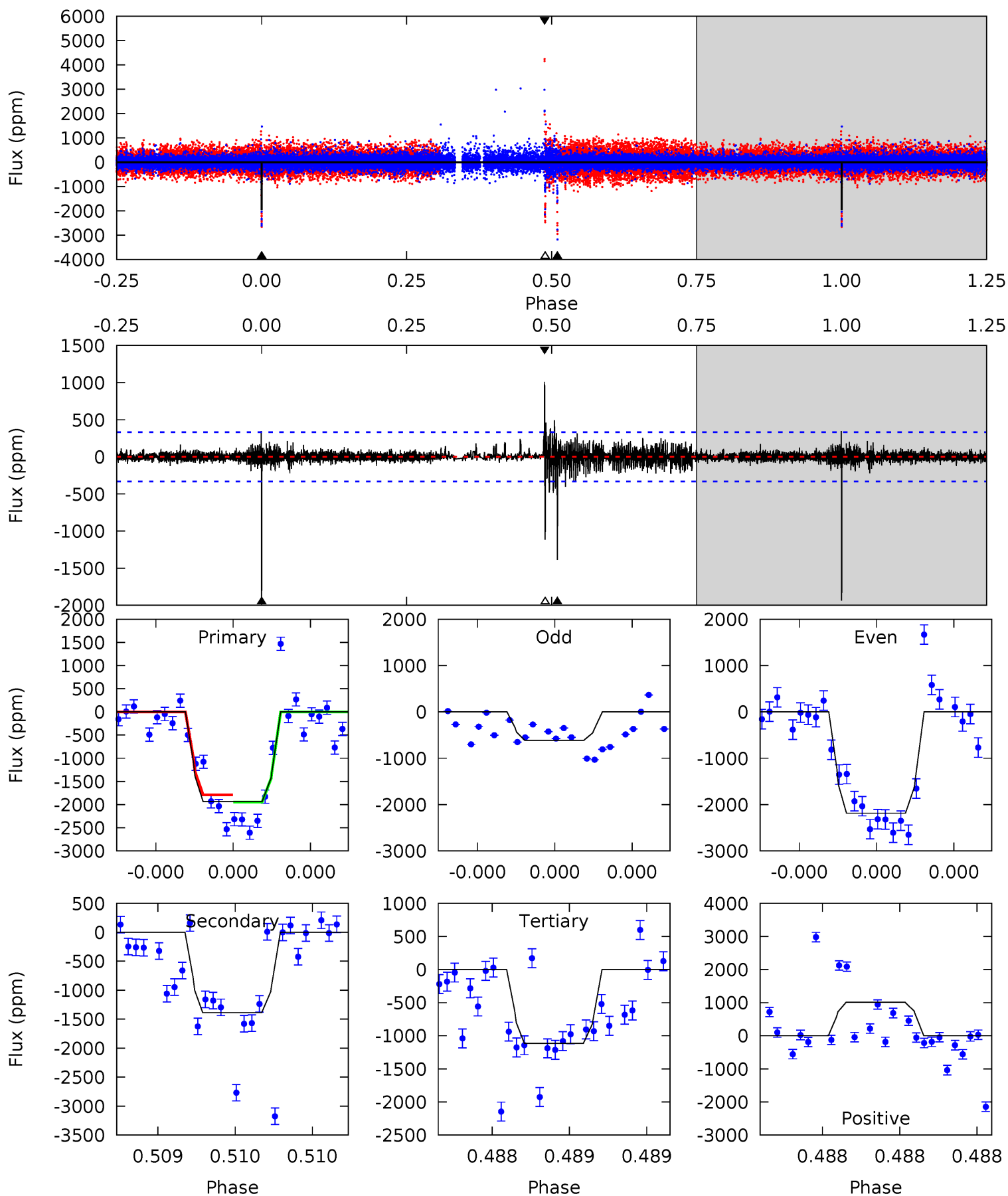
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	15.4	14.1	15.6	5.57	3.47	2.93	-0.35	-1.80	1.27	-0.18	1.33	0.99	0.50	0.15



Alt Model-Shift Uniqueness Test

003864122-04, P = 383.190551 Days, E = 37.150172 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.7	23.4	18.8	17.0	5.60	3.52	1.20	13.8	15.6	4.60	6.38	12.8	0.76	0.34	1.32



Stellar Parameters For KIC 003864122

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5382^{+159}_{-143}	$4.458^{+0.112}_{-0.138}$	$-0.140^{+0.300}_{-0.300}$	$0.875^{+0.155}_{-0.113}$	$0.803^{+0.113}_{-0.061}$	$1.688^{+0.809}_{-0.640}$
	+3%/-3%	+3%/-3%	+214%/-214%	+18%/-13%	+14%/-8%	+48%/-38%
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 003864122-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1983 ± 129	$3.89^{+2.37}_{-2.26}$	319^{+18}_{-16}	5666^{+3576}_{-1053}	$66957^{+310964}_{-41482}$
Alt.	-1386 ± 59	$4.40^{+2.55}_{-2.53}$	318^{+18}_{-16}	4954^{+2555}_{-768}	$36399^{+163488}_{-21373}$

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 $A_{obs} \gg 1.0$

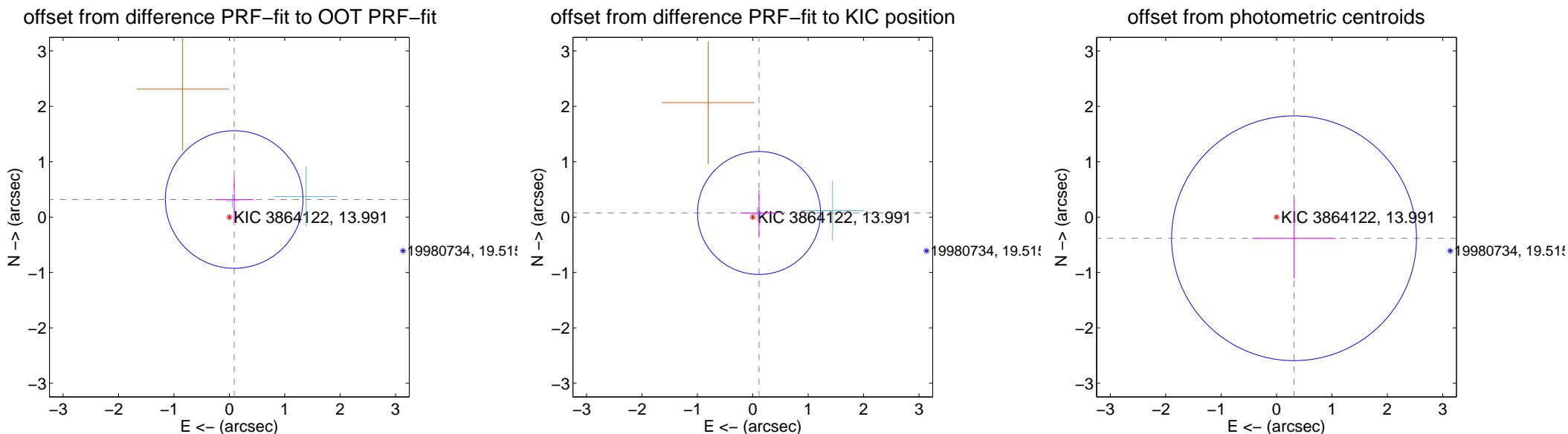
DV Centroid Data

Supplemental centroid analysis for 003864122-04. Kepler magnitude: 13.99. Transit SNR 7.36

There are 2 quarters with good PRF difference image offsets

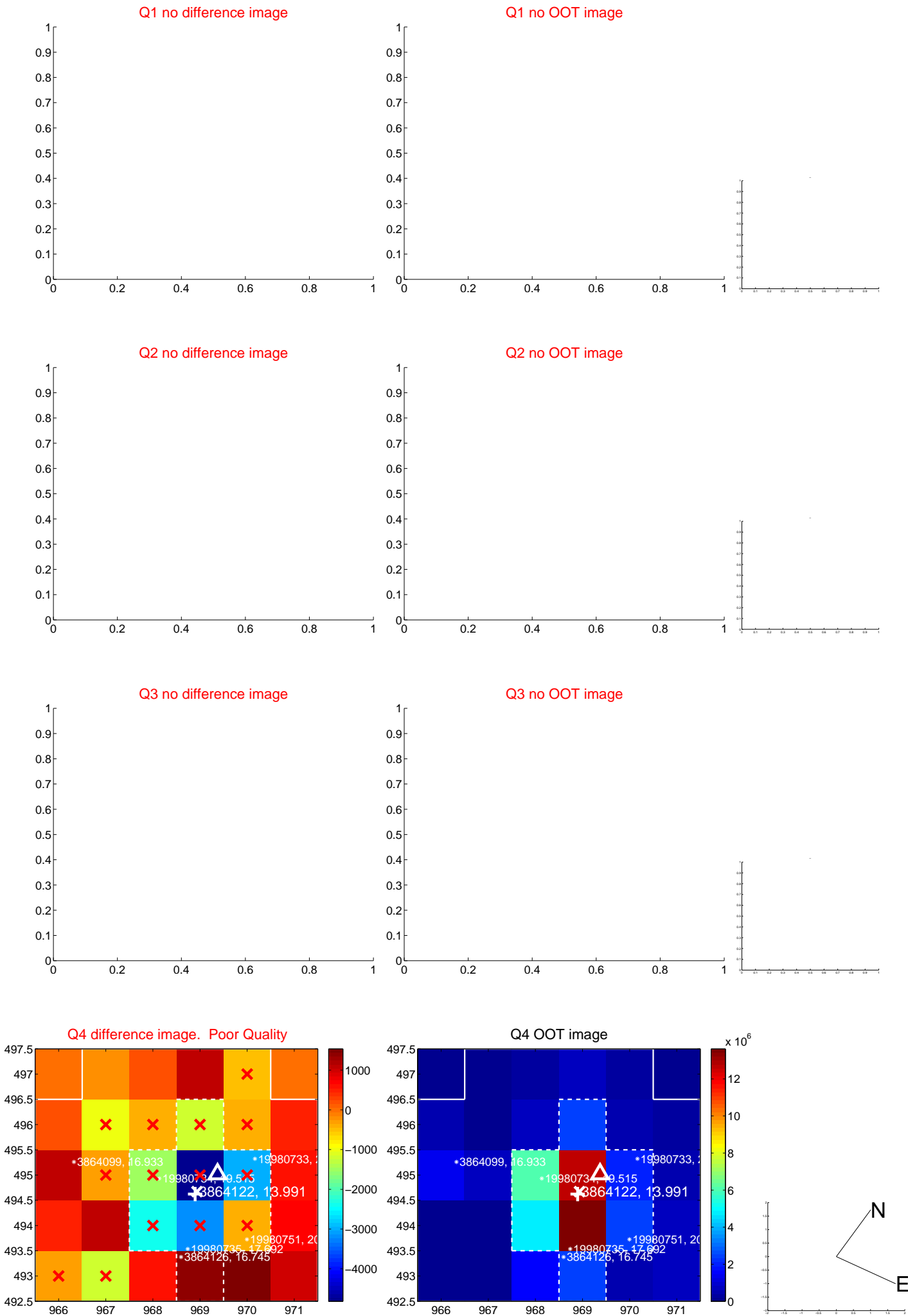
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.330 ± 0.414	0.80	-0.088 ± 0.346	0.318 ± 0.419
PRF-fit source offset from KIC position	0.135 ± 0.370	0.37	-0.112 ± 0.346	0.075 ± 0.419
photometric centroid source offset	0.50 ± 0.74	0.67	-0.32 ± 0.75	-0.38 ± 0.72



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.



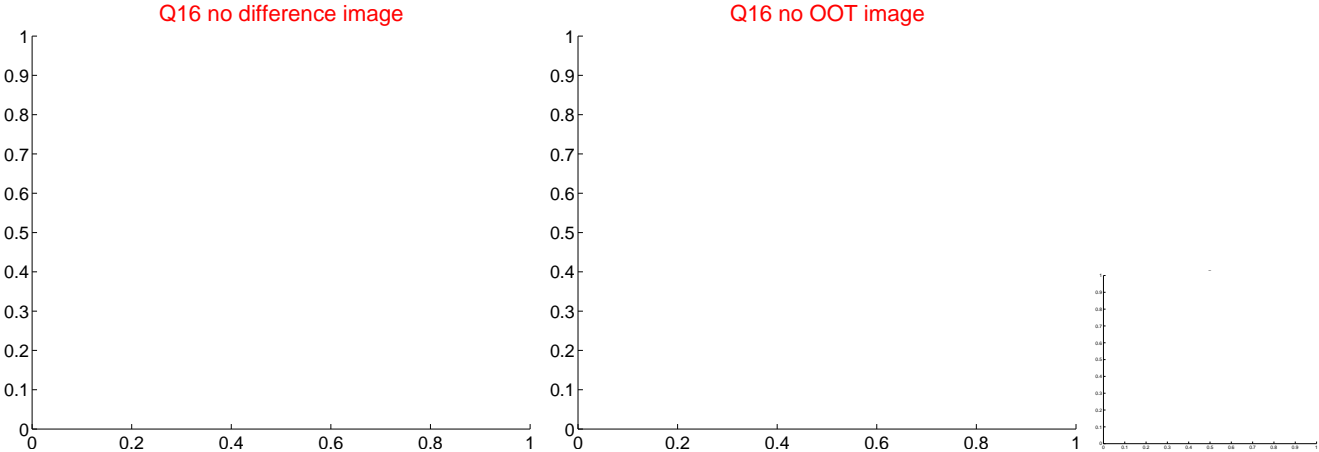
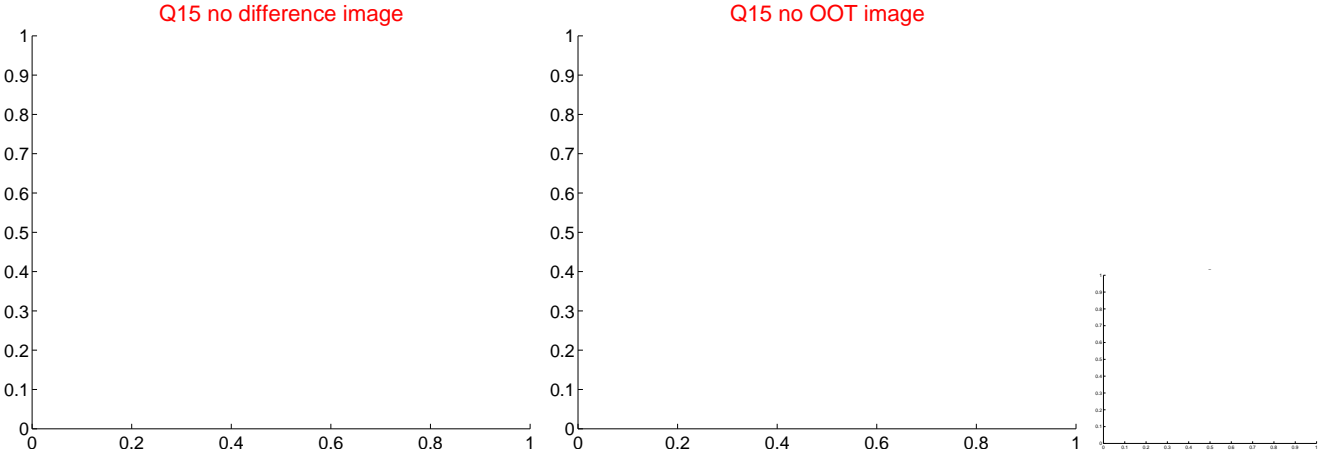
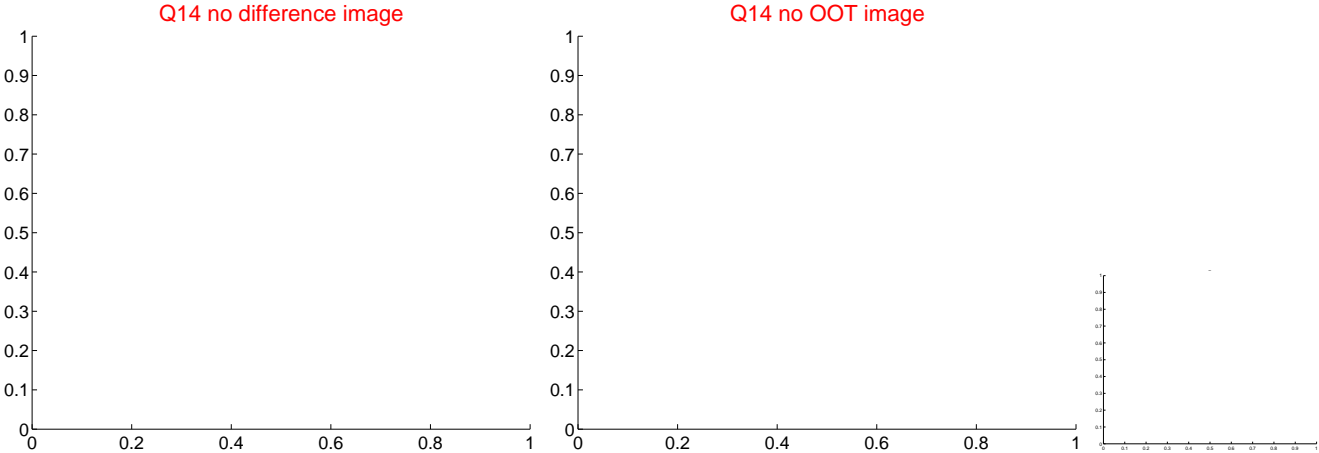
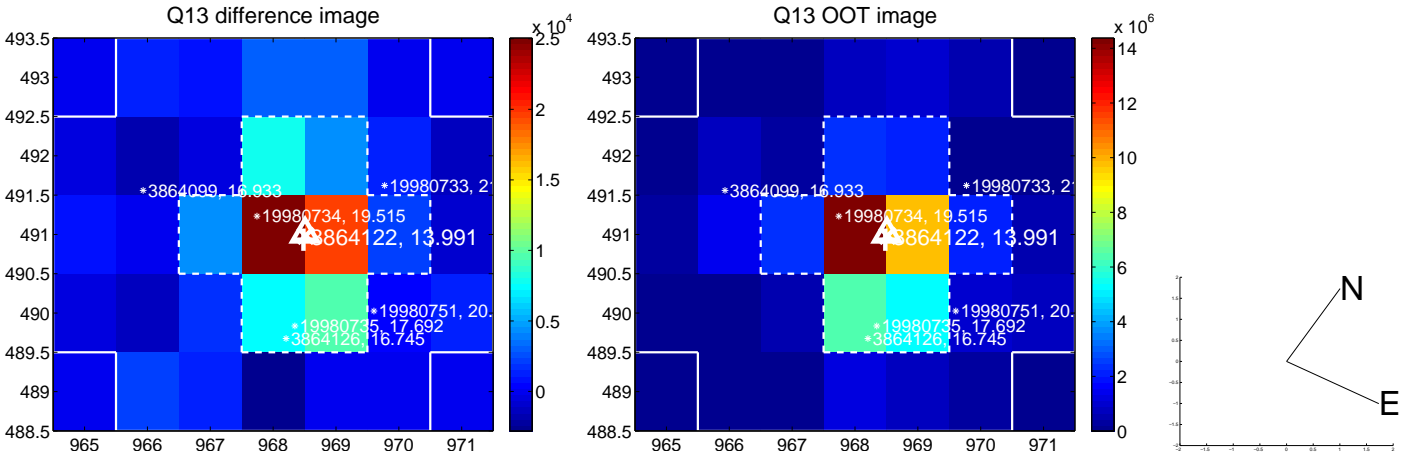
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



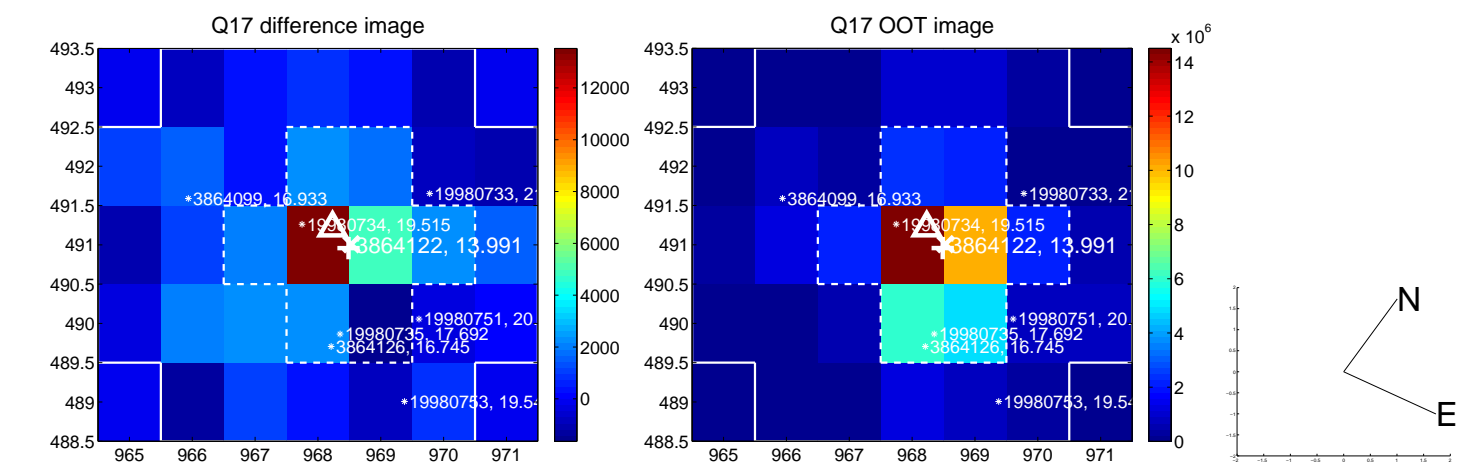
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



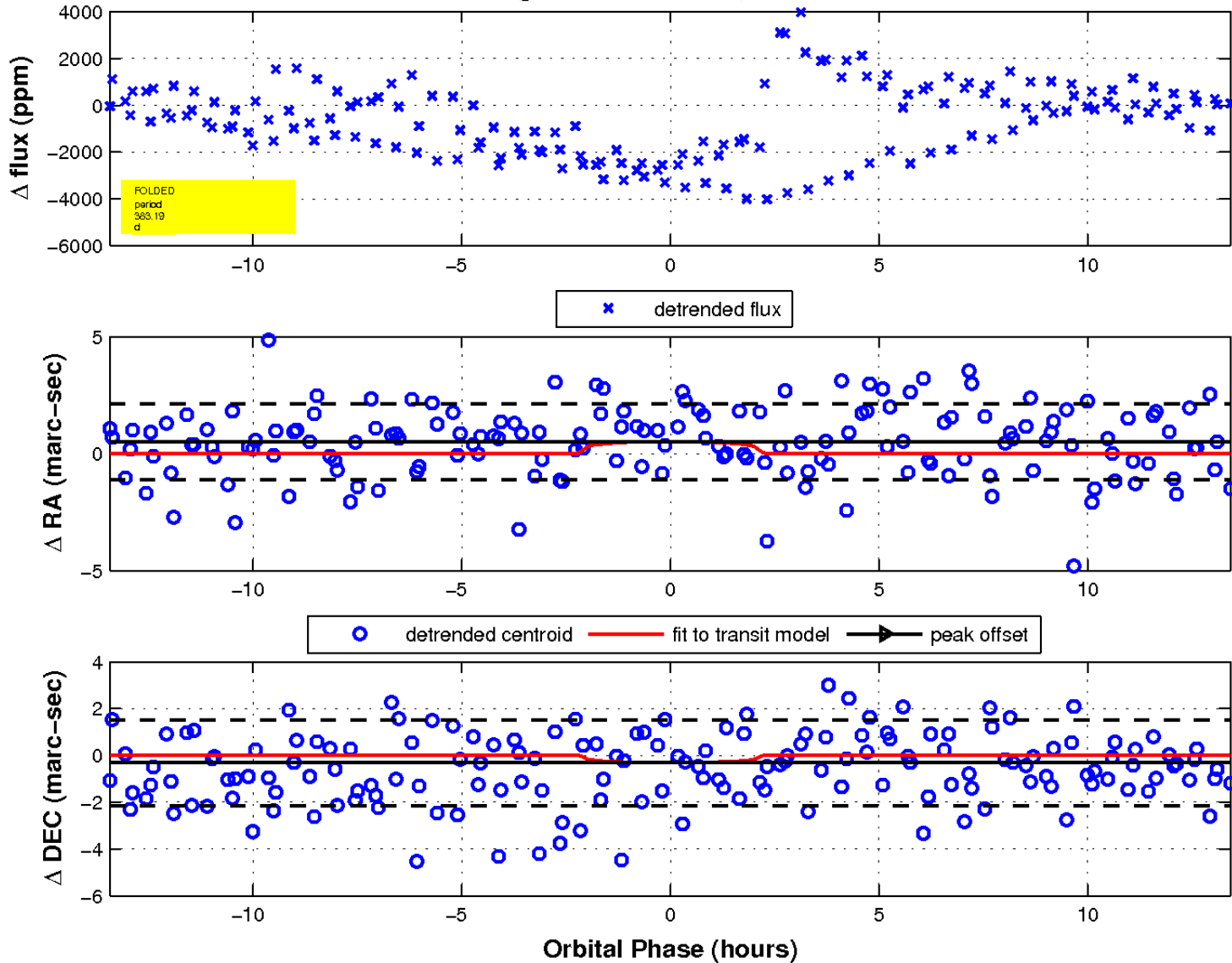
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

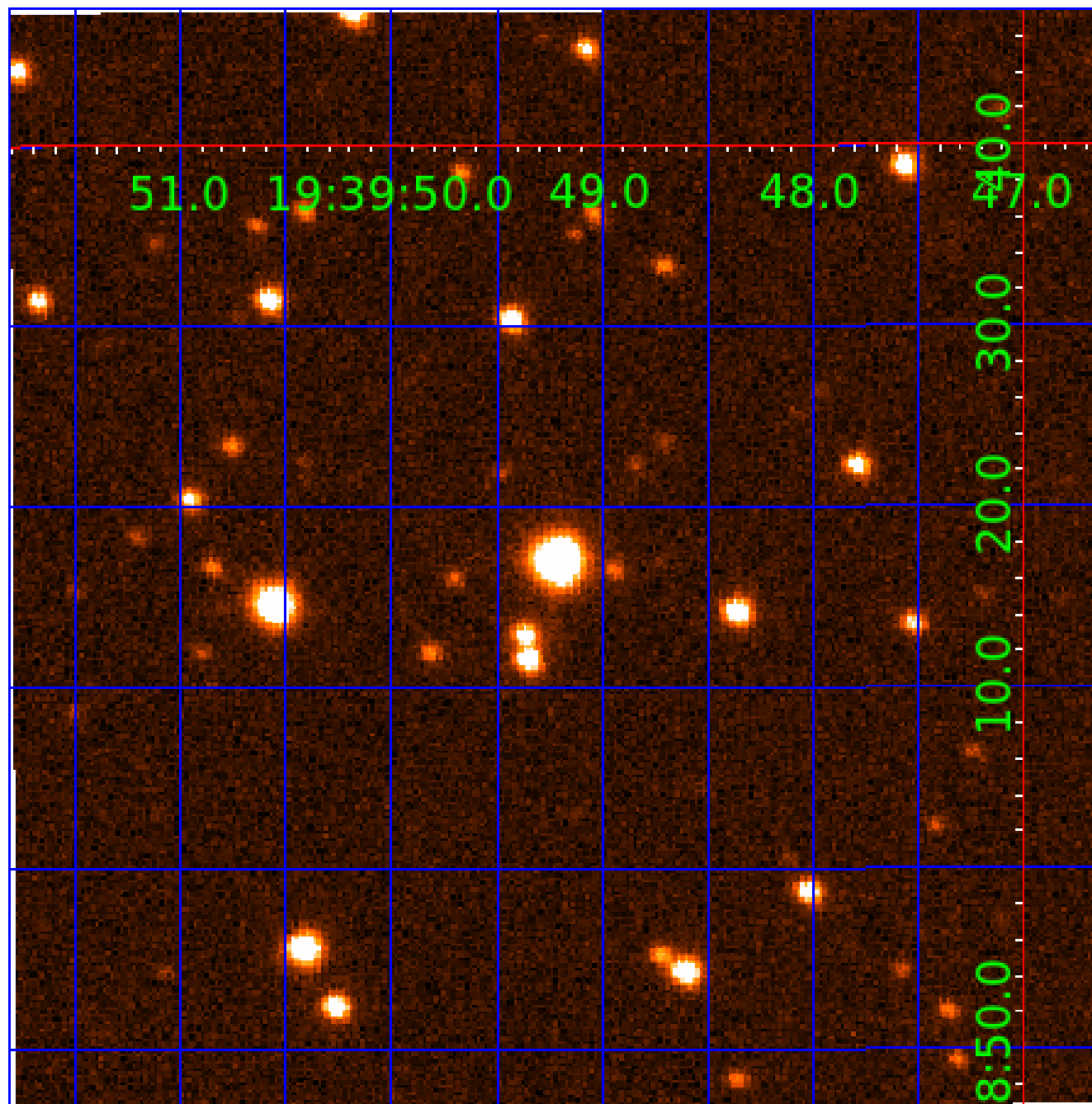


fluxWeightedCentroids, Planet 4 of 6



UKIRT Image

Declination



KIC 003864122

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})
003864122-01	OBS	No	292.609829	177.277267	942.6	5.126	15.4	4.0	0.88	5382	2.75	0.90
003864122-02	OBS	No	205.030874	309.500137	876.2	2.776	13.8	5.4	0.88	5382	2.67	1.44
003864122-03	OBS	No	346.688245	415.546686	1539.8	14.203	12.4	5.0	0.88	5382	3.41	0.71
003864122-04	OBS	No	383.189188	420.331092	1521.6	4.482	12.3	7.4	0.88	5382	3.58	0.62
003864122-05	OBS	No	430.713813	335.281943	1258.7	3.378	11.2	7.4	0.88	5382	3.18	0.54
003864122-06	OBS	No	462.534064	213.844618	645.3	4.500	11.2	-1.0	0.88	5382	2.18	0.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003864122-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003864122-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
003864122-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003864122-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003864122-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003864122-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_POS_ALT—CENT_NOFITS

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

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

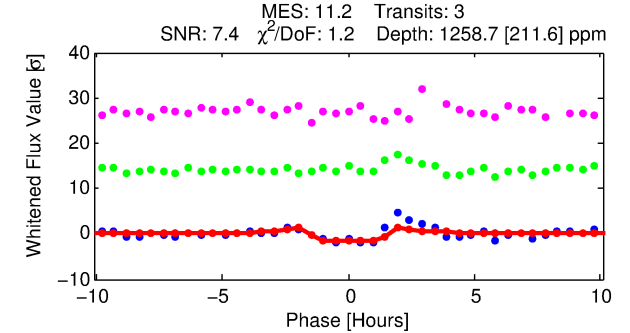
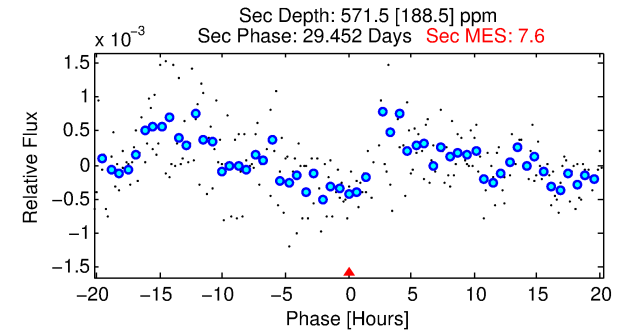
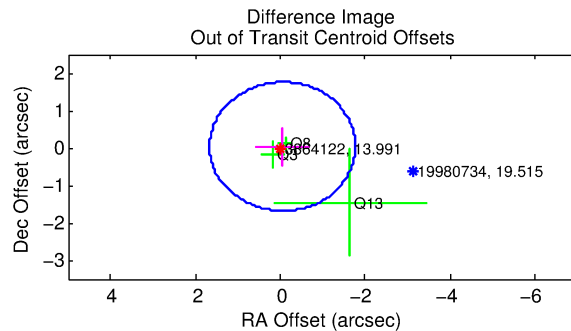
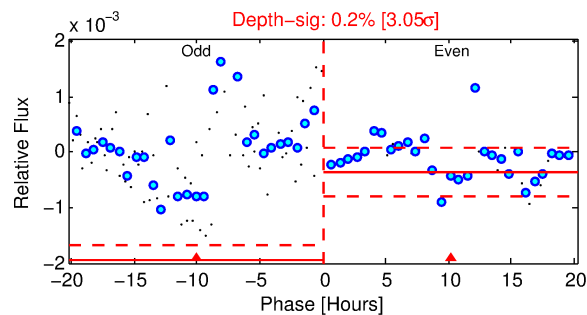
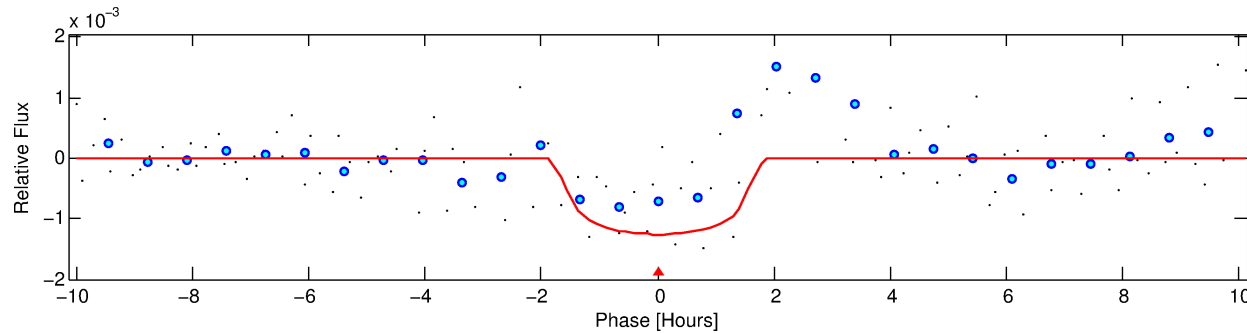
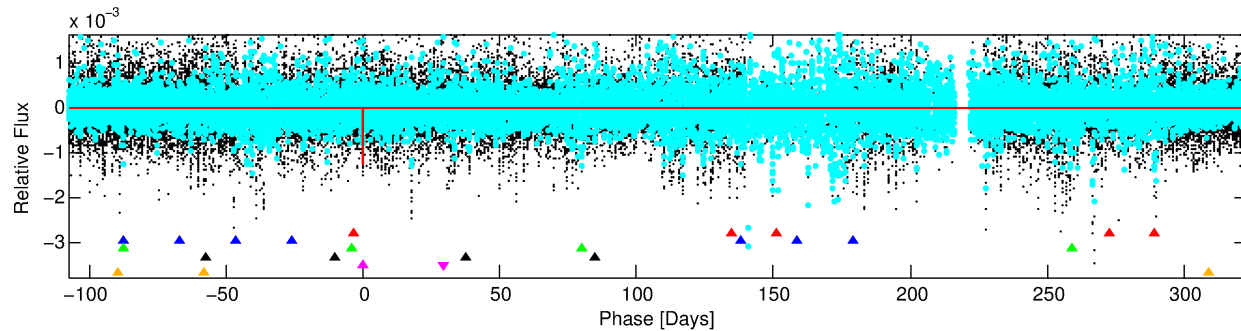
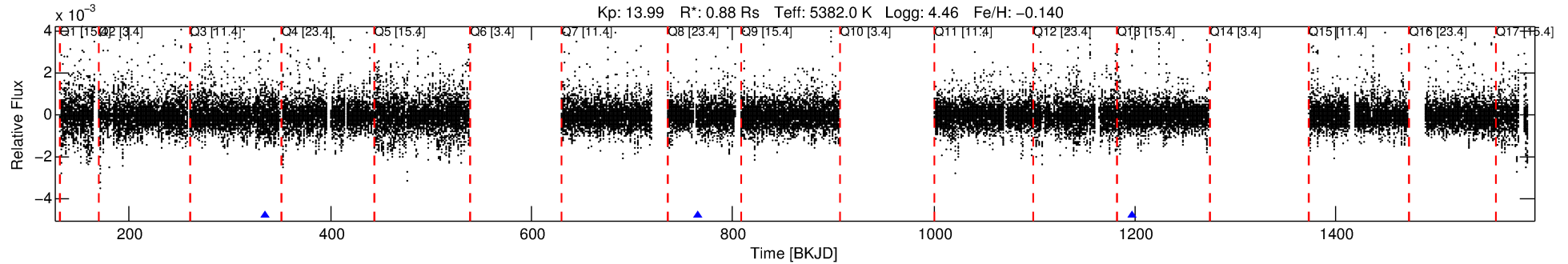
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003864122-05

No Significant Match Found

DV One-Page Summary

KIC: 3864122 Candidate: 5 of 6 Period: 430.714 d



DV Fit Results:

Period = 430.71381 [0.00548] d
Epoch = 335.2819 [0.0078] BKJD
Rp/R* = 0.0333 [0.0536]
a/R* = 861.67 [5373.53]
b = 0.53 [8.42]
Seff = 0.54 [0.14]
Teq = 218 [15] K
Rp = 3.18 [5.15] Re
a = 1.0371 [0.1645] AU
Ag = 33506.78 [108753.16] [0.31 σ]
Teff = 4562 [3694] K [1.18 σ]

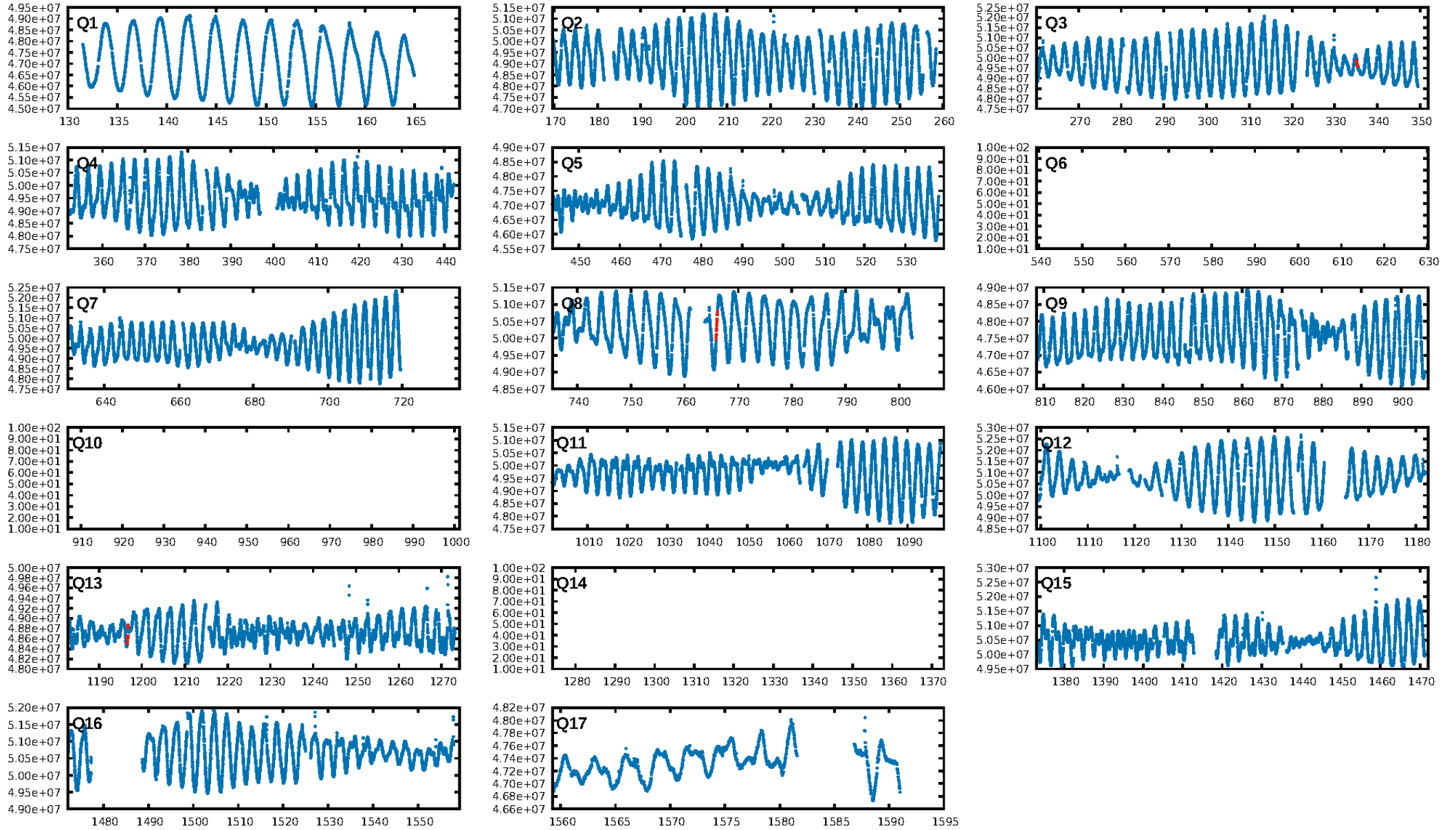
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [203.24 σ]
LongPeriod-sig: 100.0% [135.73 σ]
ModelChiSquare2-sig: 1.0%
ModelChiSquareGof-sig: 89.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.045
Centroid-sig: 21.5%
Centroid-so: 0.417 arcsec [0.42 σ]
OotOffset-rm: 0.068 arcsec [0.12 σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-rm: 0.309 arcsec [0.61 σ]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

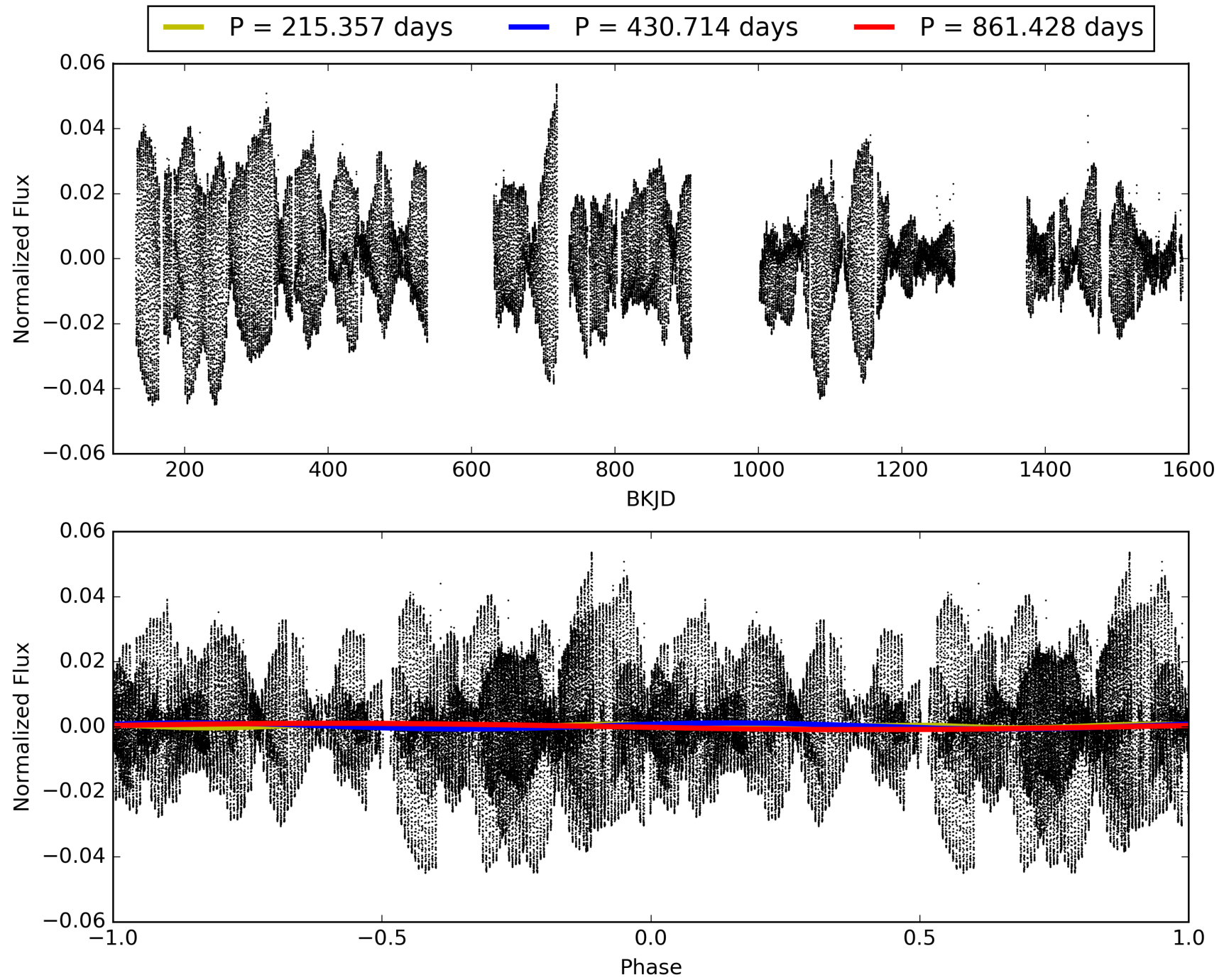
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:23:36 Z

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

TCE 003864122-05, PDC Light Curves

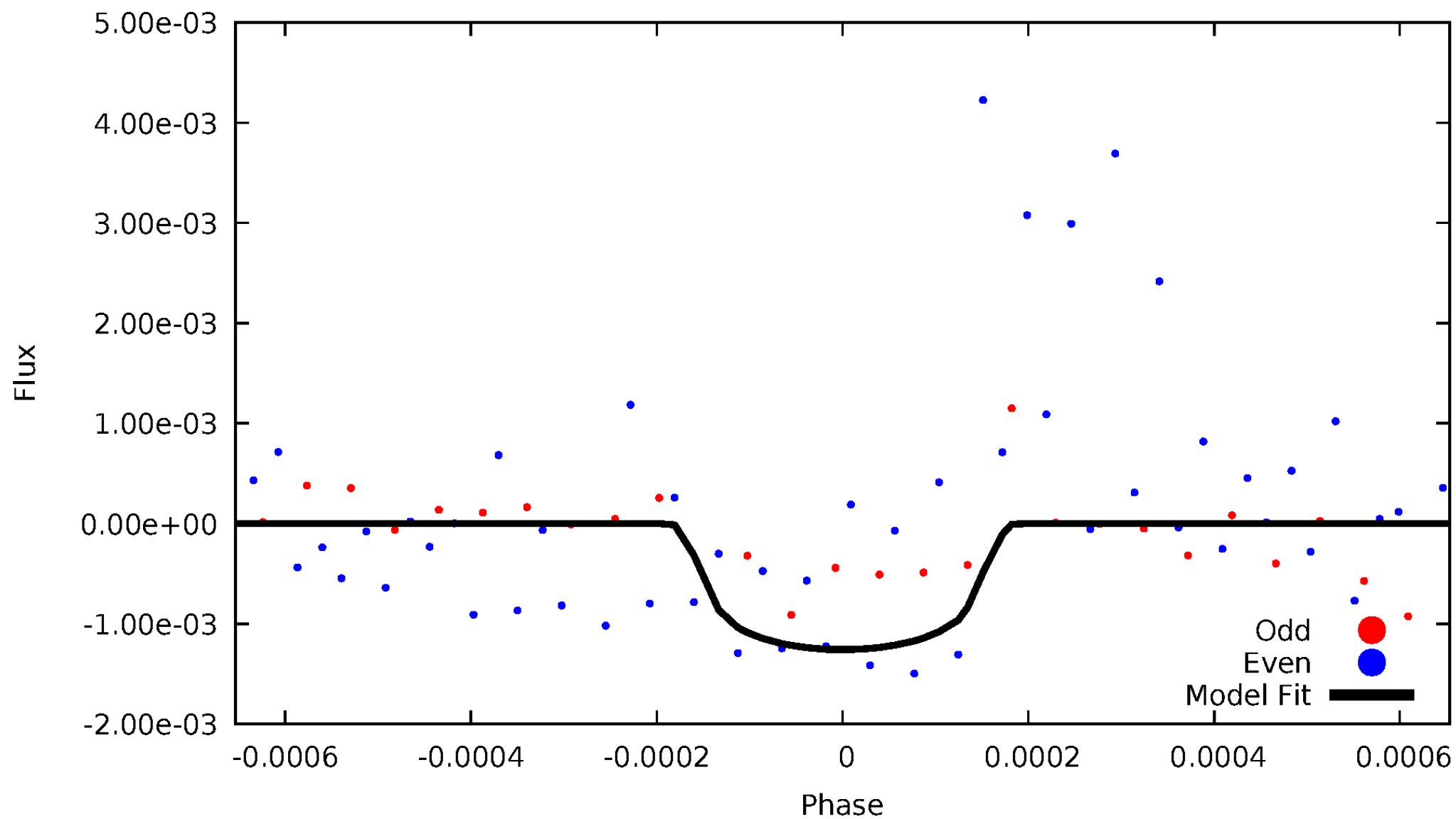


TCE 003864122-05



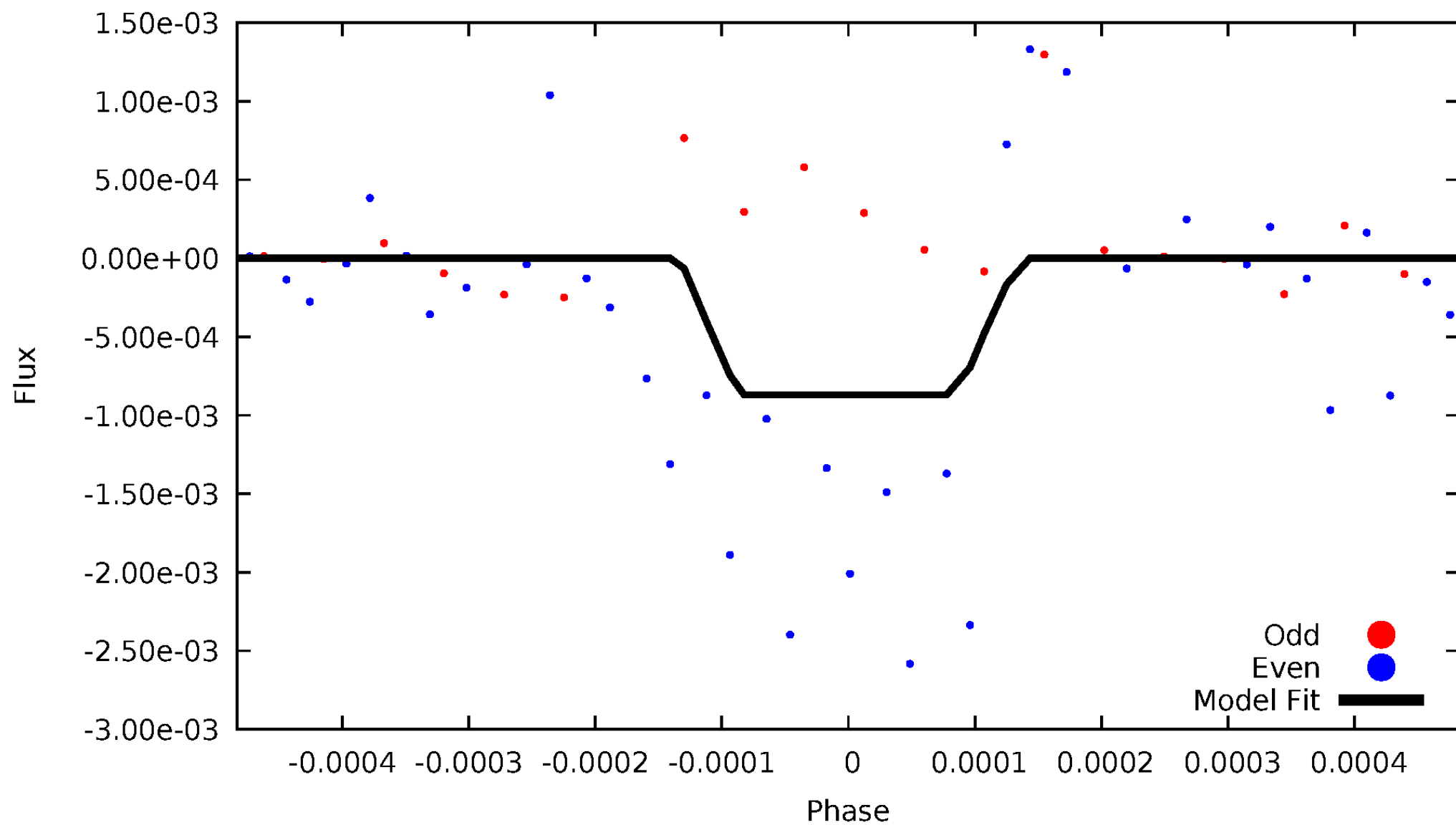
DV Odd/Even

TCE 003864122-05



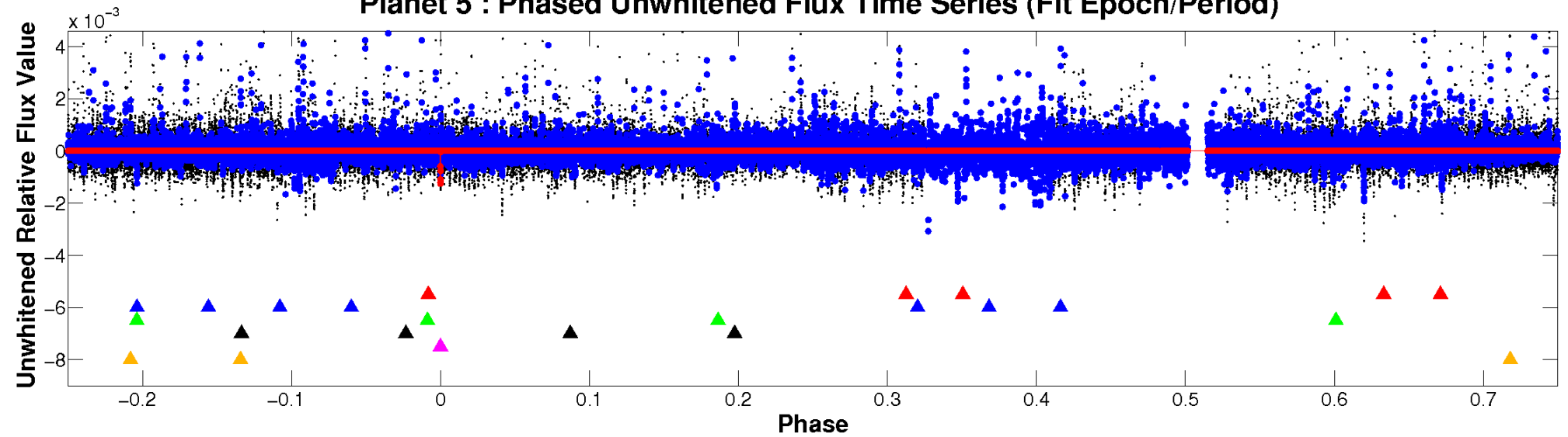
ALT Odd/Even

TCE 003864122-05

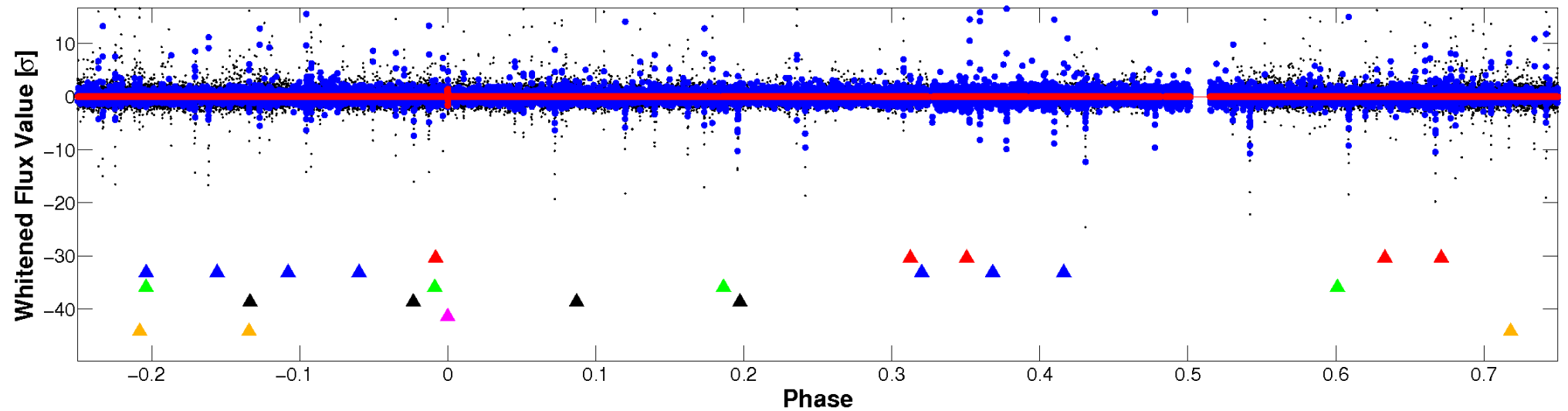


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

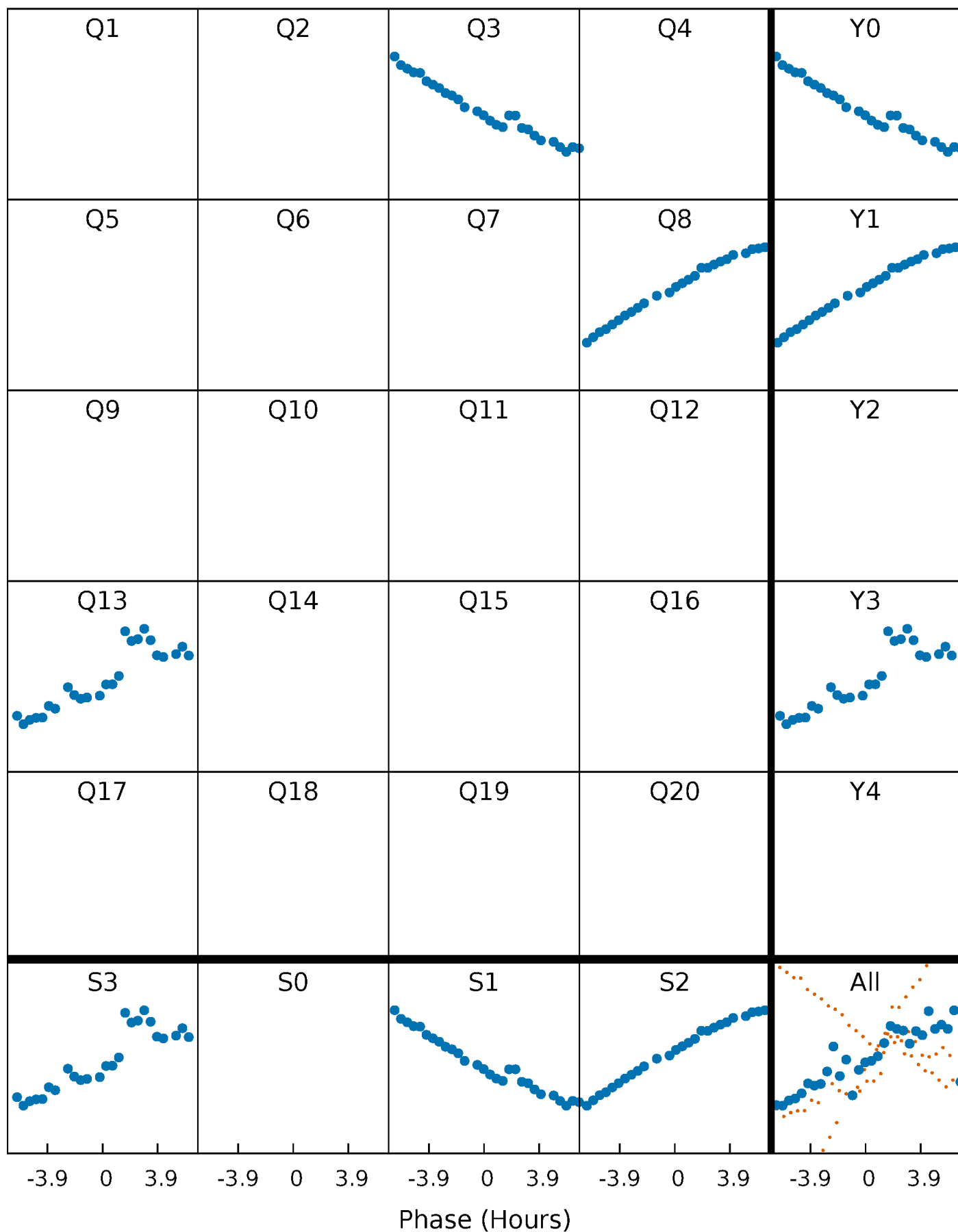


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



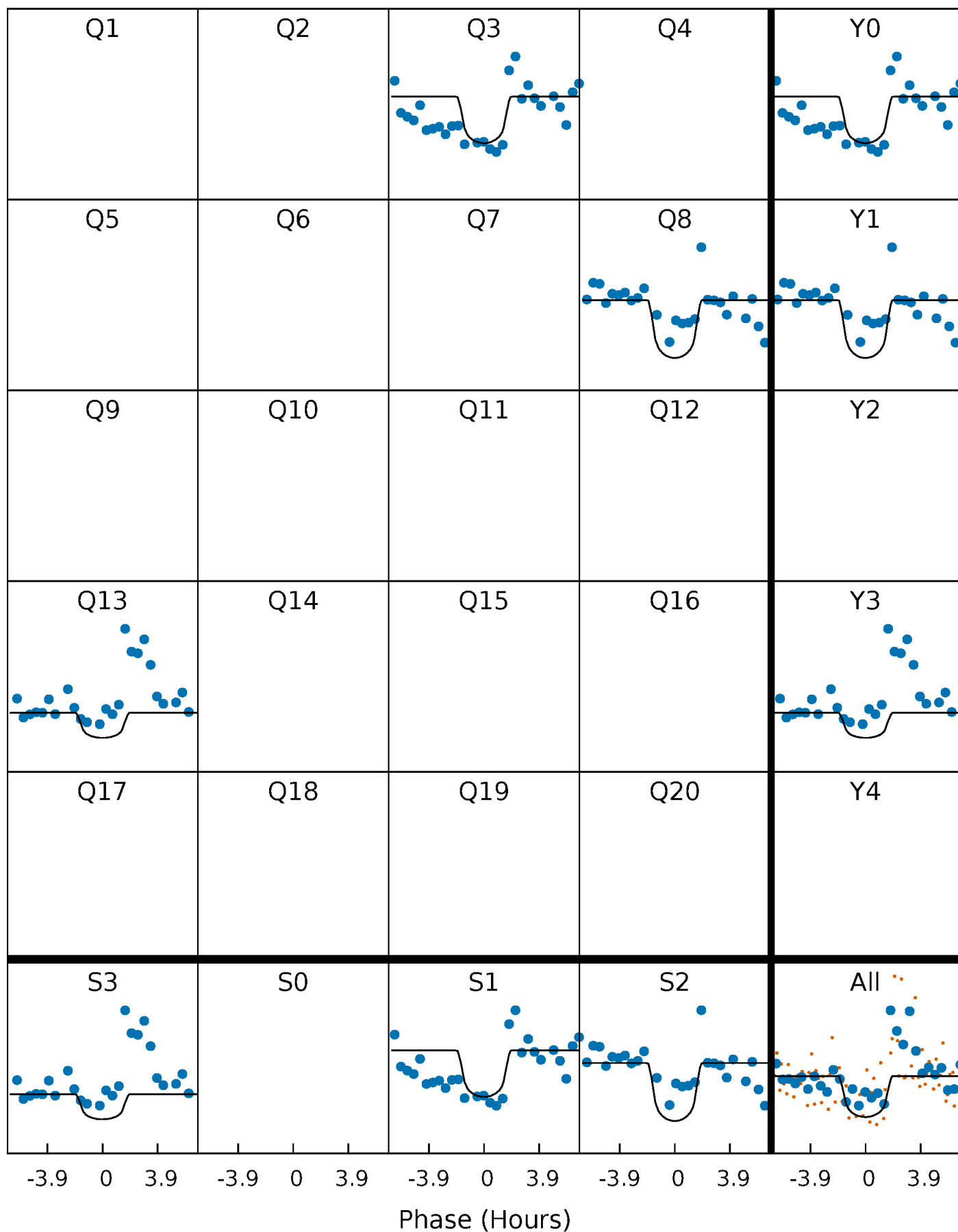
PDC Quarter-Phased Transit Curves

TCE 003864122-05 $P=430.713813$ Days $T_0=335.281943$ (BKJD)



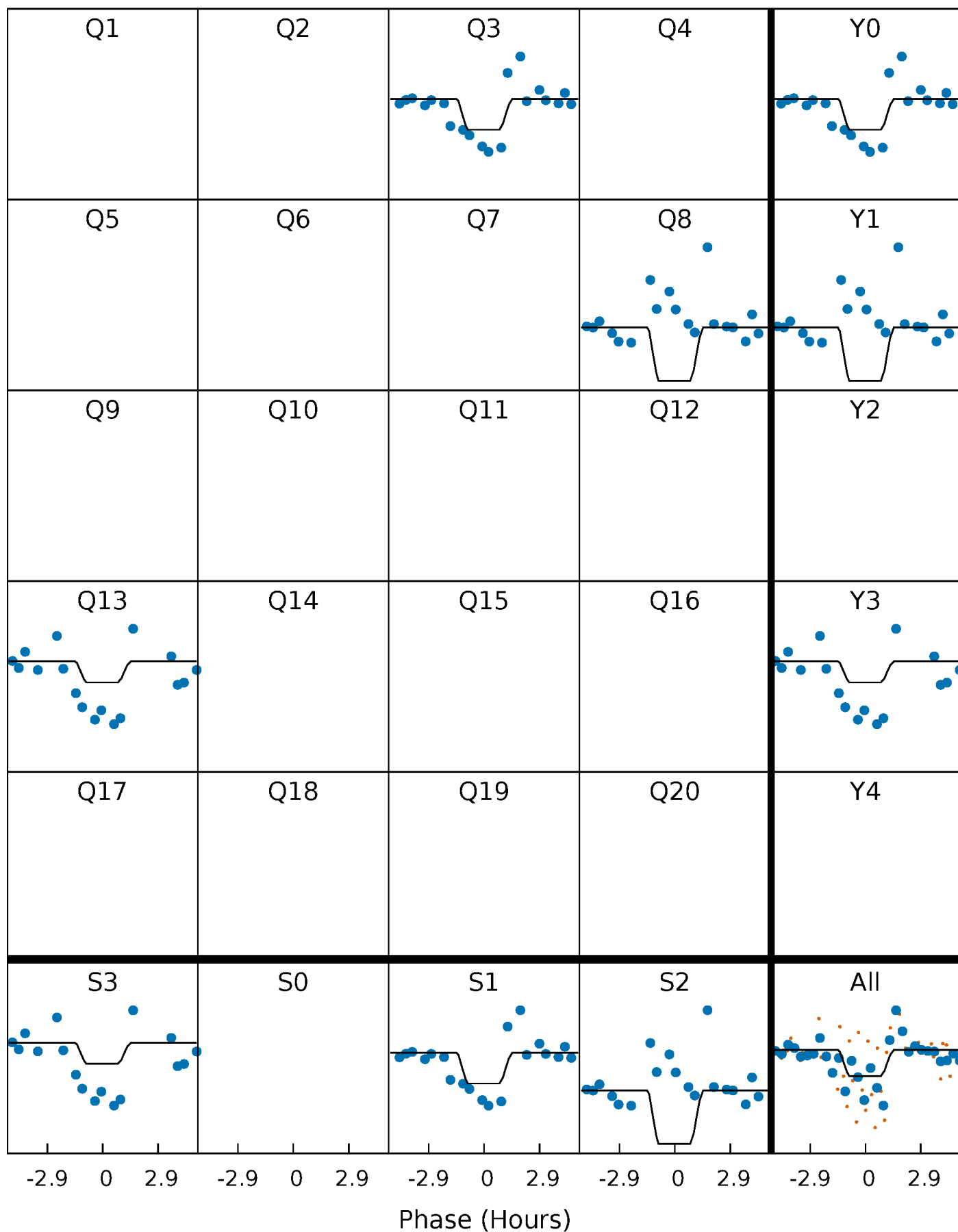
DV Quarter-Phased Transit Curves

TCE 003864122-05 $P=430.713813$ Days $T_0=335.281943$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

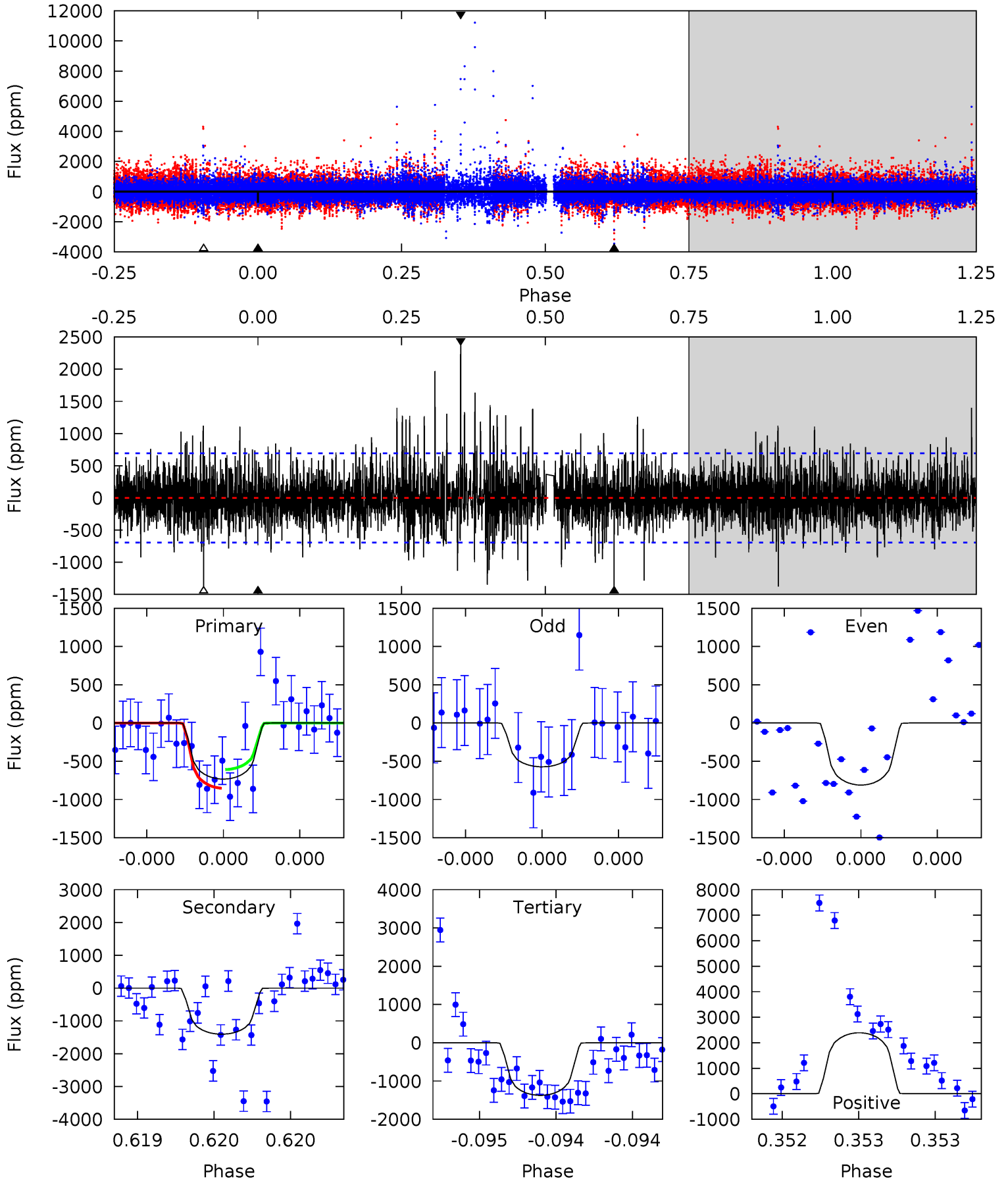
TCE 003864122-05 $P=430.705389$ Days $T_0=335.302117$ (BKJD)



DV Model-Shift Uniqueness Test

003864122-05, P = 430.713813 Days, E = 335.281943 Days

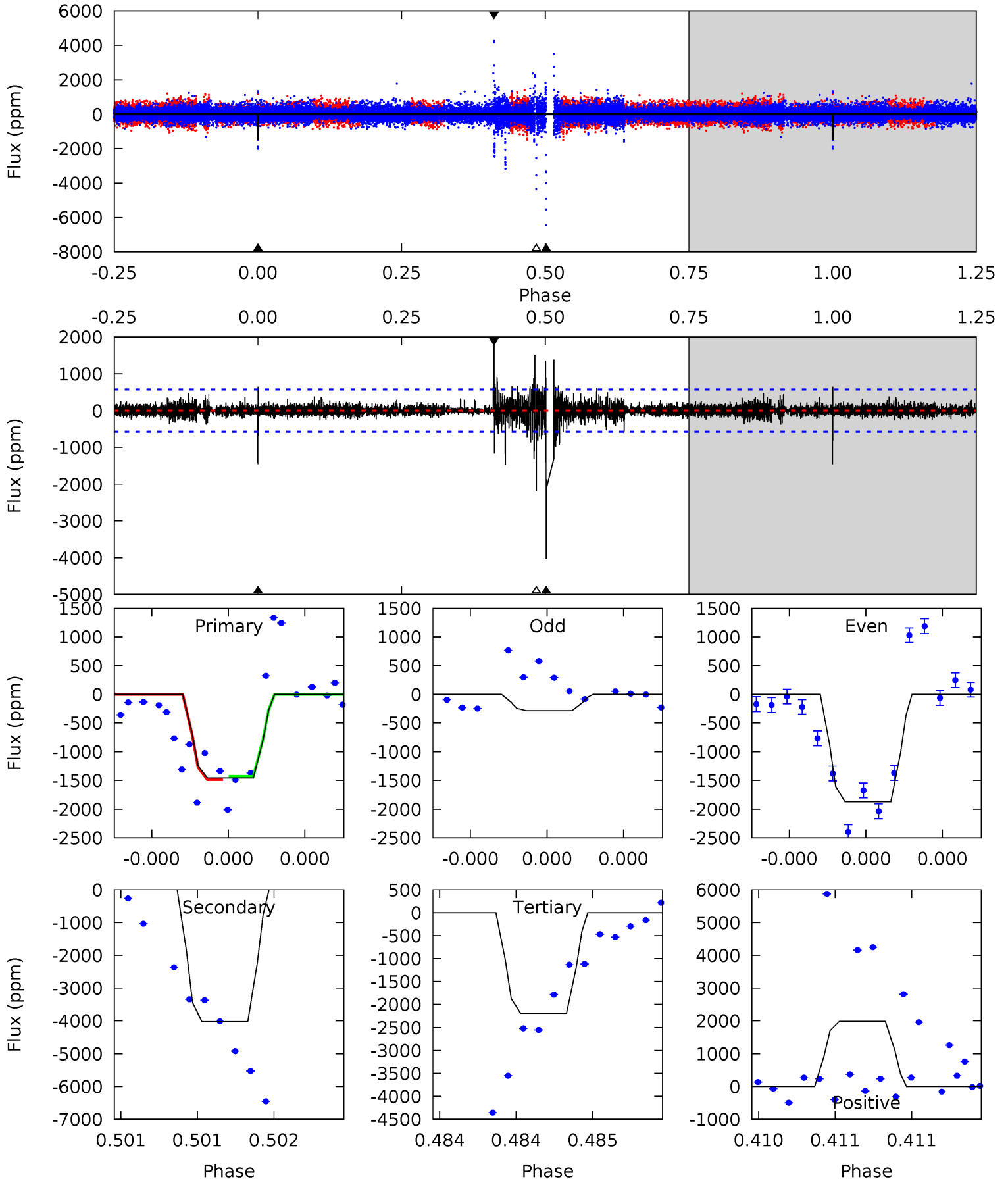
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.96	11.4	11.2	19.4	5.64	3.58	2.34	-5.22	-13.5	0.25	-8.02	0.81	1.08	0.63	0.98



Alt Model-Shift Uniqueness Test

003864122-05, P = 430.705389 Days, E = 335.302117 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	39.9	21.8	19.8	5.70	3.68	1.22	-7.28	-5.29	18.2	20.2	9.13	0.88	0.33	0.27



Stellar Parameters For KIC 003864122

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5382^{+159}_{-143}	$4.458^{+0.112}_{-0.138}$	$-0.140^{+0.300}_{-0.300}$	$0.875^{+0.155}_{-0.113}$	$0.803^{+0.113}_{-0.061}$	$1.688^{+0.809}_{-0.640}$
	+3%/-3%	+3%/-3%	+214%/-214%	+18%/-13%	+14%/-8%	+48%/-38%
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 003864122-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1405 ± 123	$4.93^{+4.50}_{-3.44}$	307^{+15}_{-14}	4748^{+3927}_{-999}	$35082^{+326465}_{-25694}$
Alt.	-4020 ± 101	$4.65^{+4.42}_{-3.10}$	307^{+17}_{-16}	6170^{+6753}_{-1554}	$111155^{+919050}_{-81337}$

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

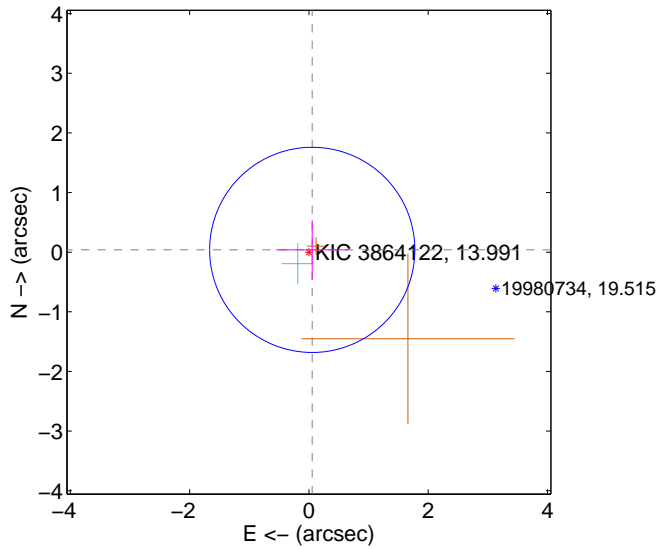
Supplemental centroid analysis for 003864122-05. Kepler magnitude: 13.99. Transit SNR 7.40

There are 1 quarters with good PRF difference image offsets

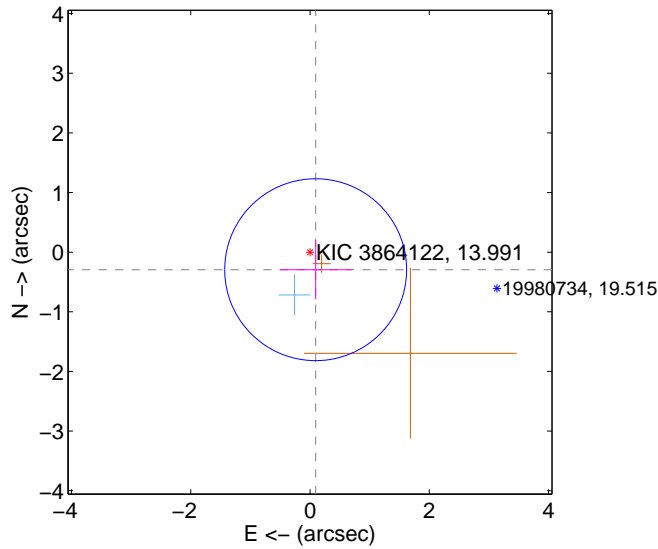
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.068 ± 0.573	0.12	-0.056 ± 0.607	0.039 ± 0.497
PRF-fit source offset from KIC position	0.309 ± 0.508	0.61	-0.095 ± 0.607	-0.294 ± 0.497
photometric centroid source offset	0.42 ± 0.99	0.42	-0.33 ± 0.97	0.25 ± 1.02

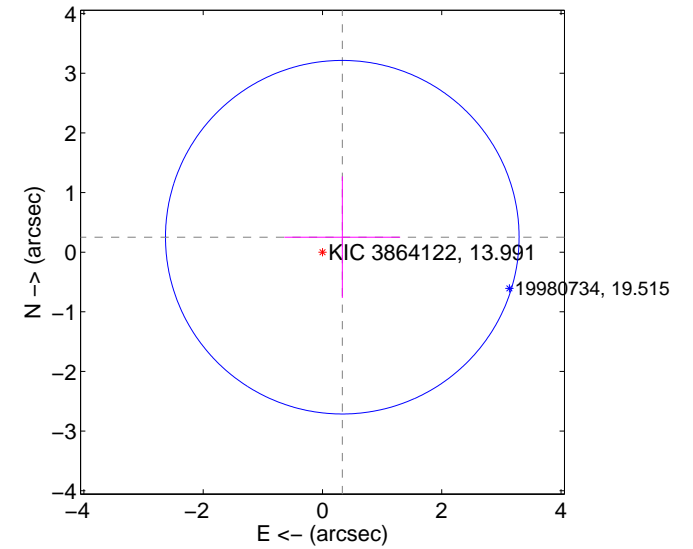
offset from difference PRF-fit to OOT PRF-fit



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.

Q1 no difference image



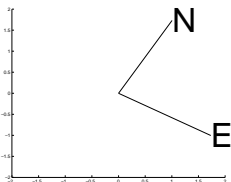
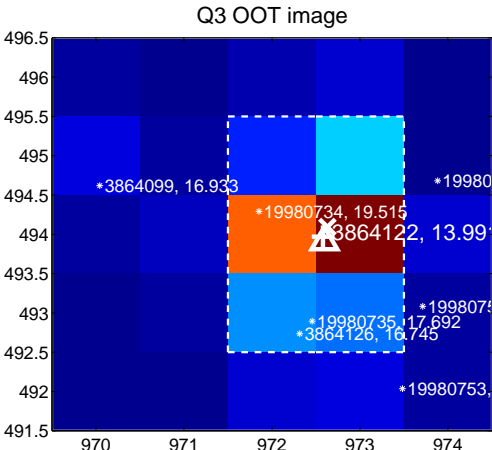
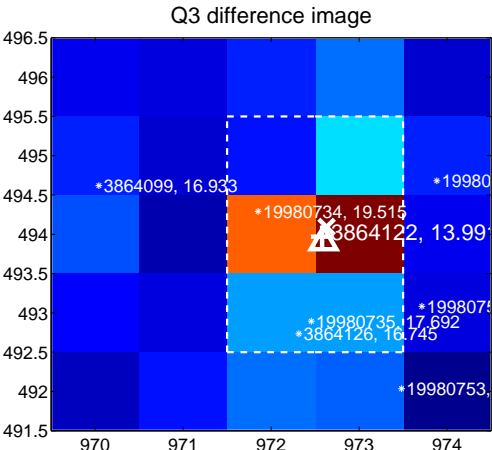
Q1 no OOT image



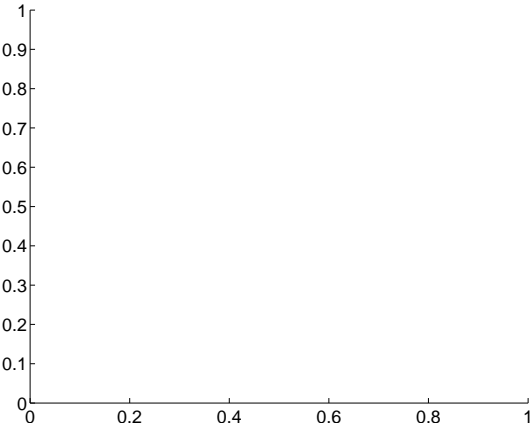
Q2 no difference image



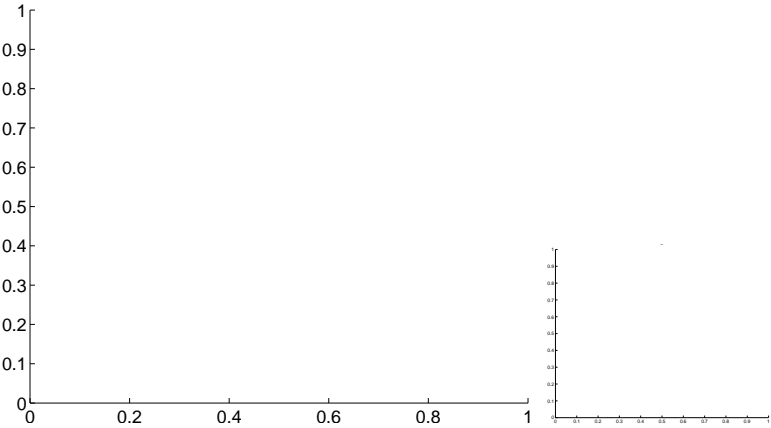
Q2 no OOT image



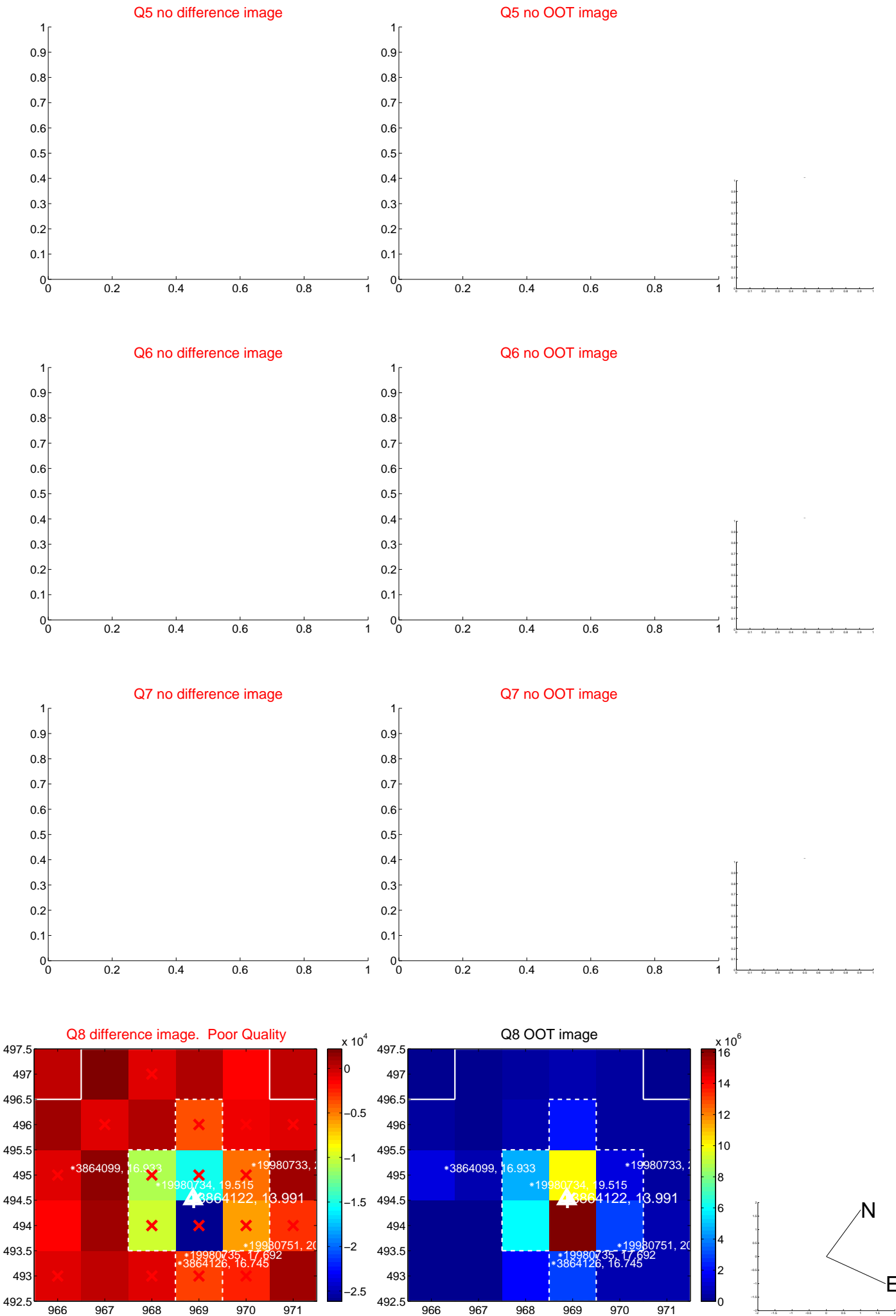
Q4 no difference image



Q4 no OOT image



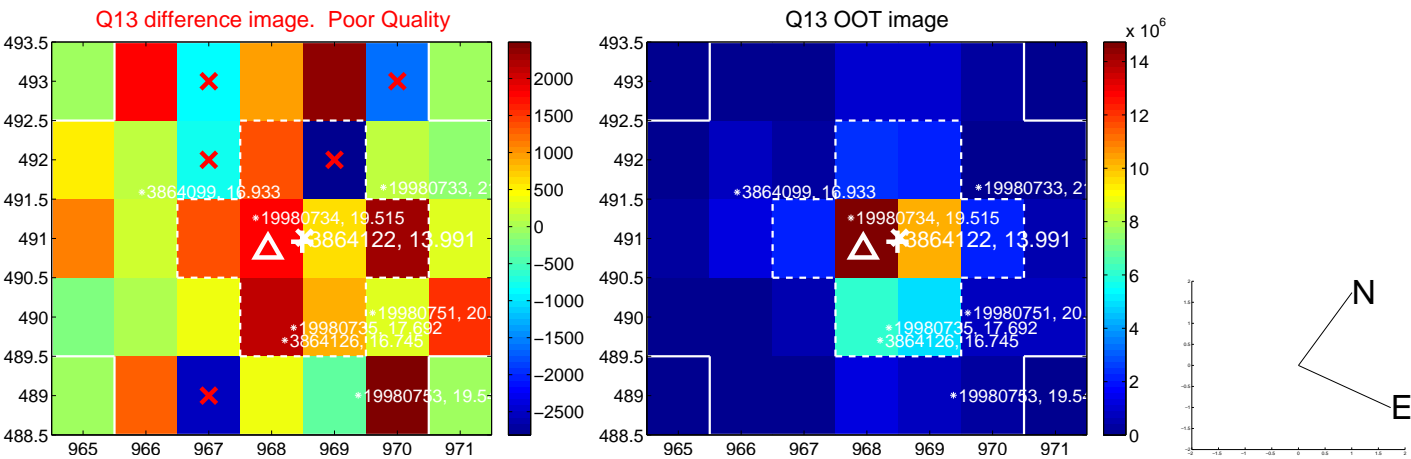
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



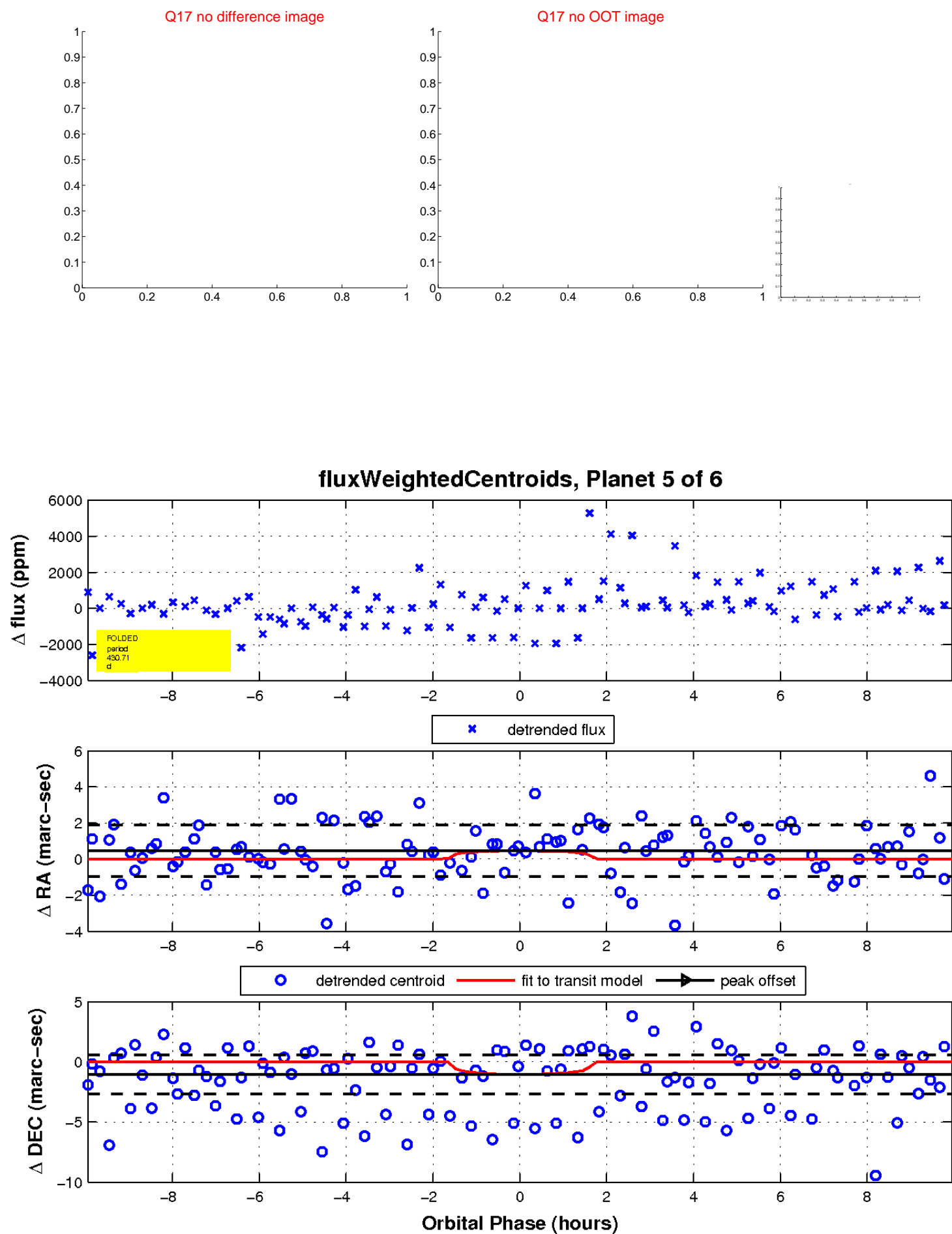
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

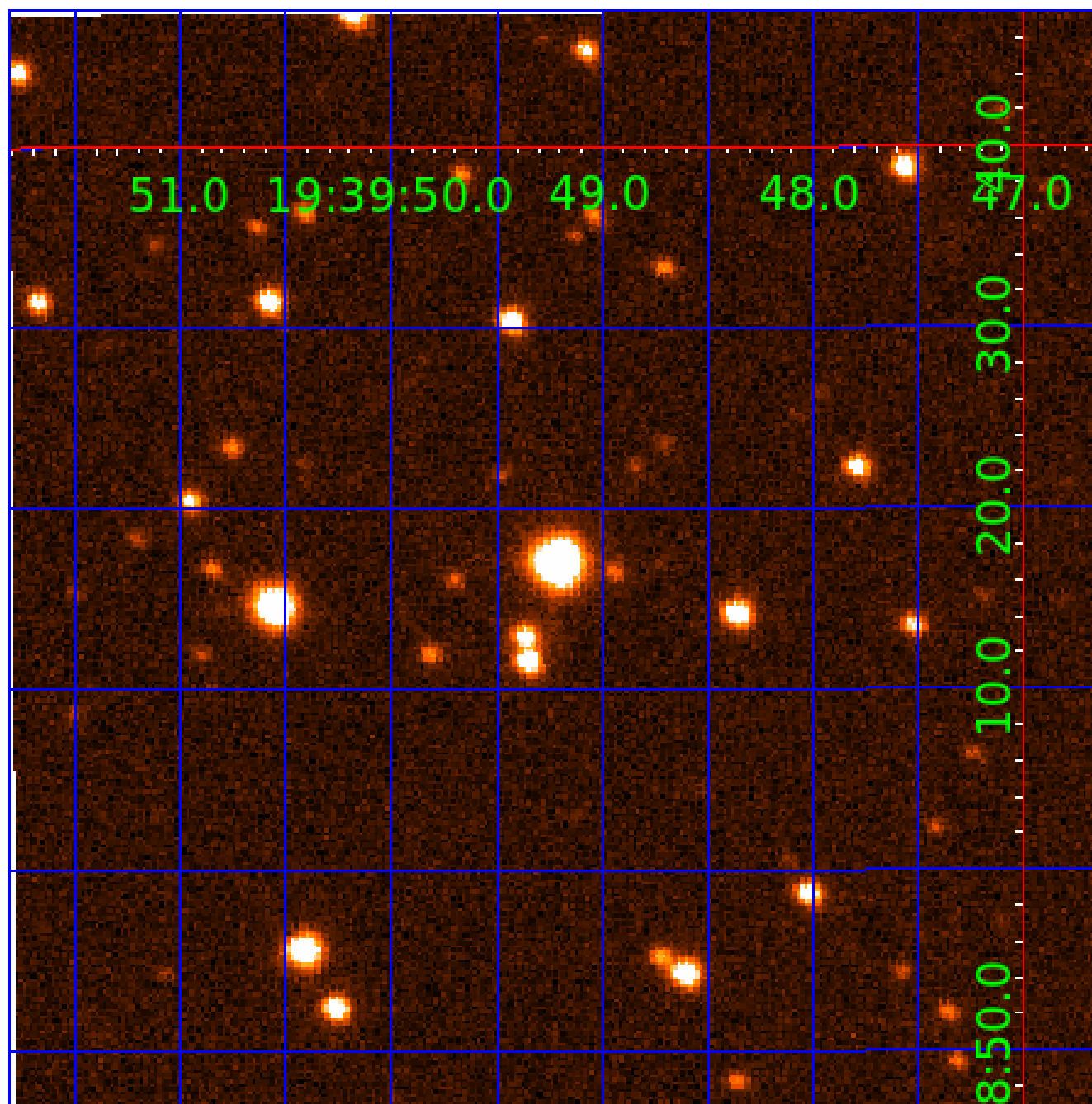


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003864122

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})
003864122-01	OBS	No	292.609829	177.277267	942.6	5.126	15.4	4.0	0.88	5382	2.75	0.90
003864122-02	OBS	No	205.030874	309.500137	876.2	2.776	13.8	5.4	0.88	5382	2.67	1.44
003864122-03	OBS	No	346.688245	415.546686	1539.8	14.203	12.4	5.0	0.88	5382	3.41	0.71
003864122-04	OBS	No	383.189188	420.331092	1521.6	4.482	12.3	7.4	0.88	5382	3.58	0.62
003864122-05	OBS	No	430.713813	335.281943	1258.7	3.378	11.2	7.4	0.88	5382	3.18	0.54
003864122-06	OBS	No	462.534064	213.844618	645.3	4.500	11.2	-1.0	0.88	5382	2.18	0.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003864122-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003864122-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
003864122-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003864122-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003864122-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003864122-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_POS_ALT—CENT_NOFITS

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

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

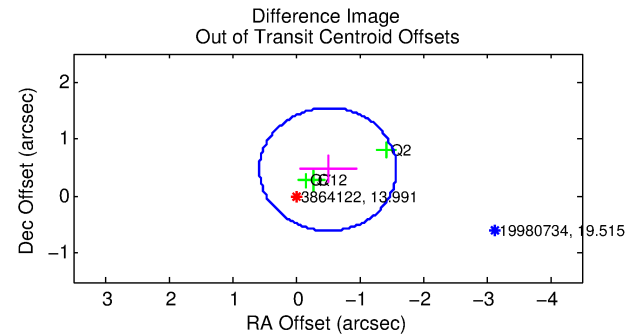
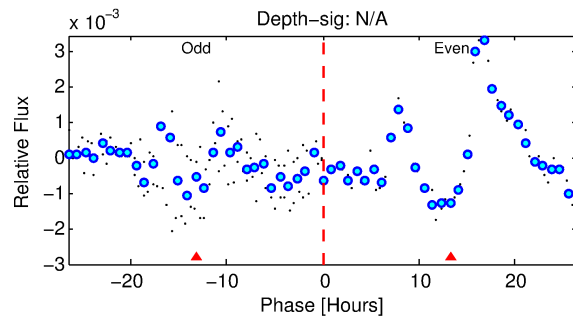
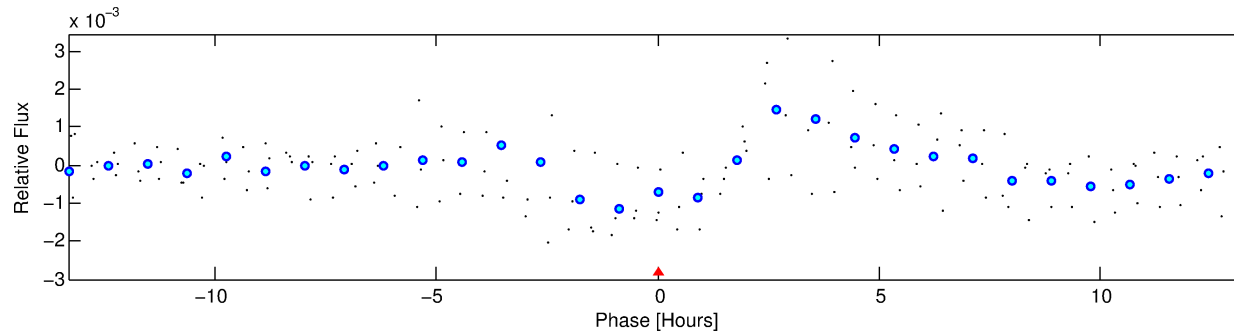
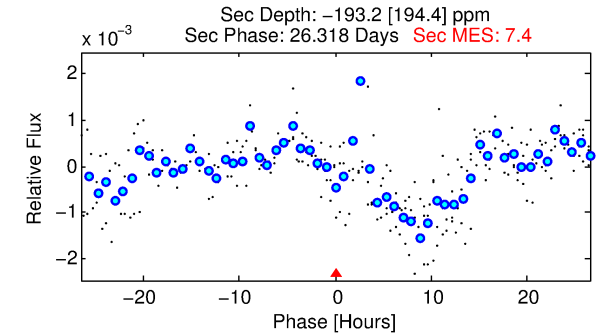
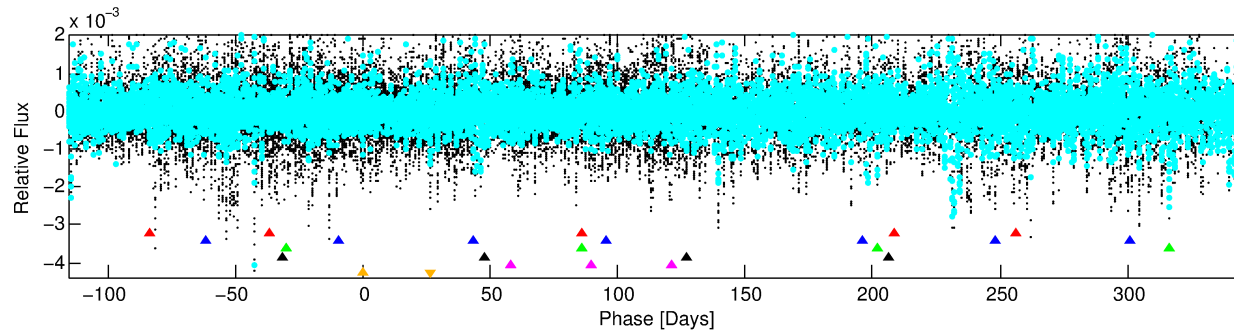
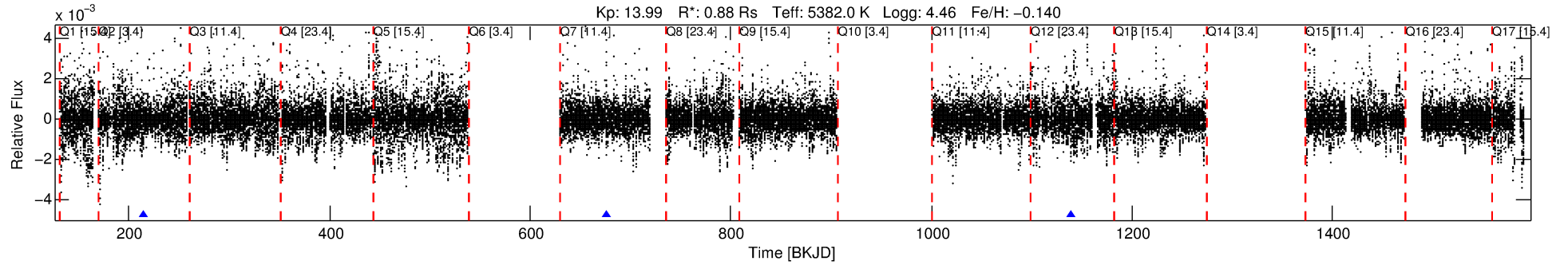
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003864122-06

No Significant Match Found

DV One-Page Summary

KIC: 3864122 Candidate: 6 of 6 Period: 462.534 d



TPS TCE Results:

Period = 462.53406 d
Epoch = 213.8446 BKJD

DV fit results are unavailable

DV Diagnostic Results:

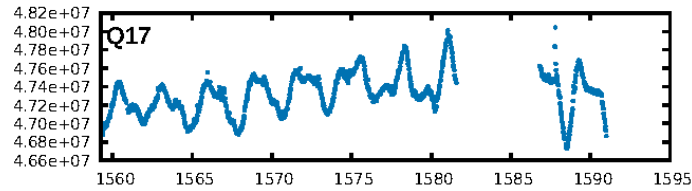
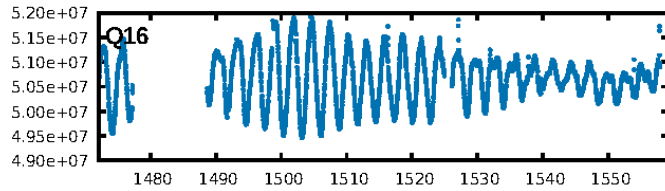
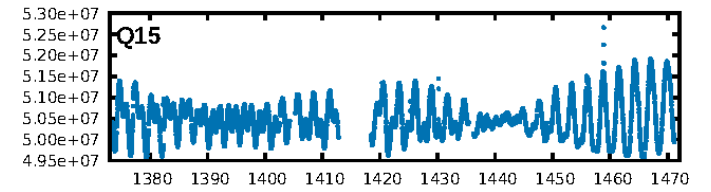
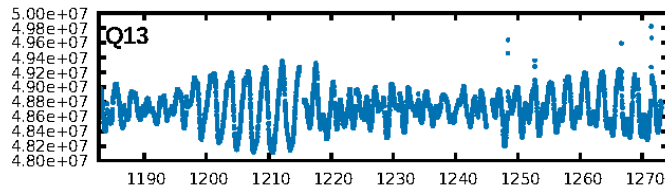
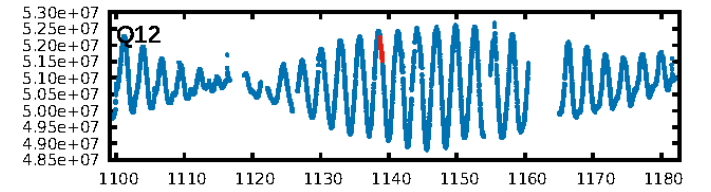
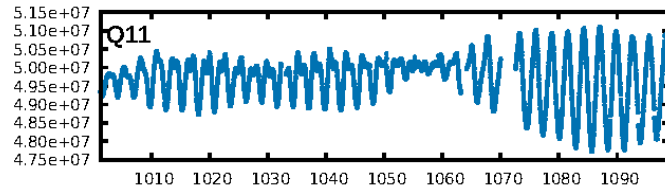
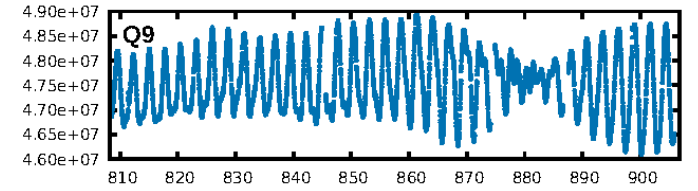
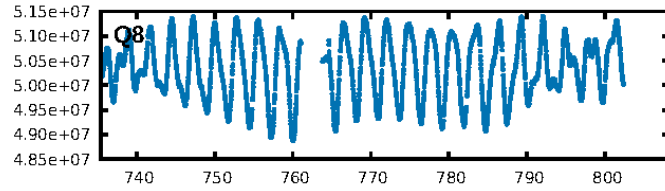
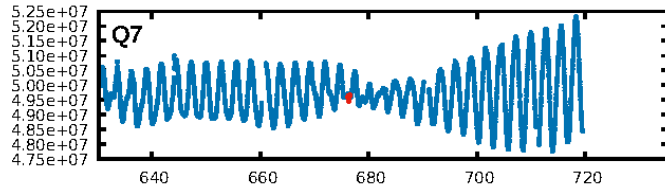
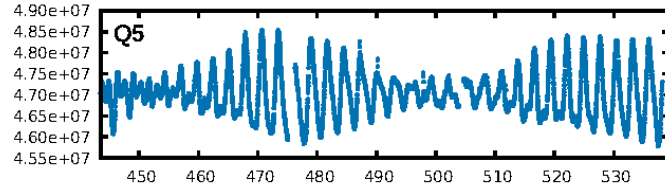
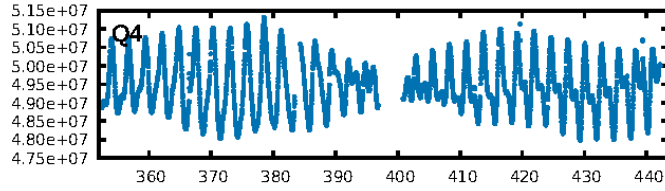
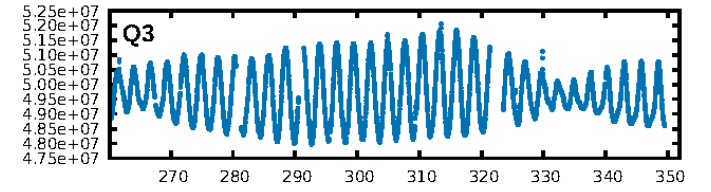
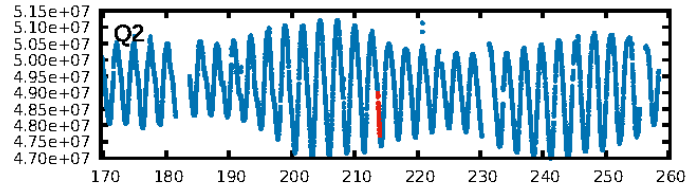
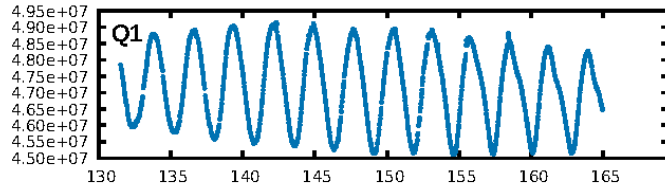
ShortPeriod-sig: 100.0% [135.73σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.396

Centroid-sig: 58.3%
Centroid-so: 1.076 arcsec [1.30σ]
OotOffset-rm: 0.693 arcsec [1.93σ]
KicOffset-rm: 0.421 arcsec [1.07σ]
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]

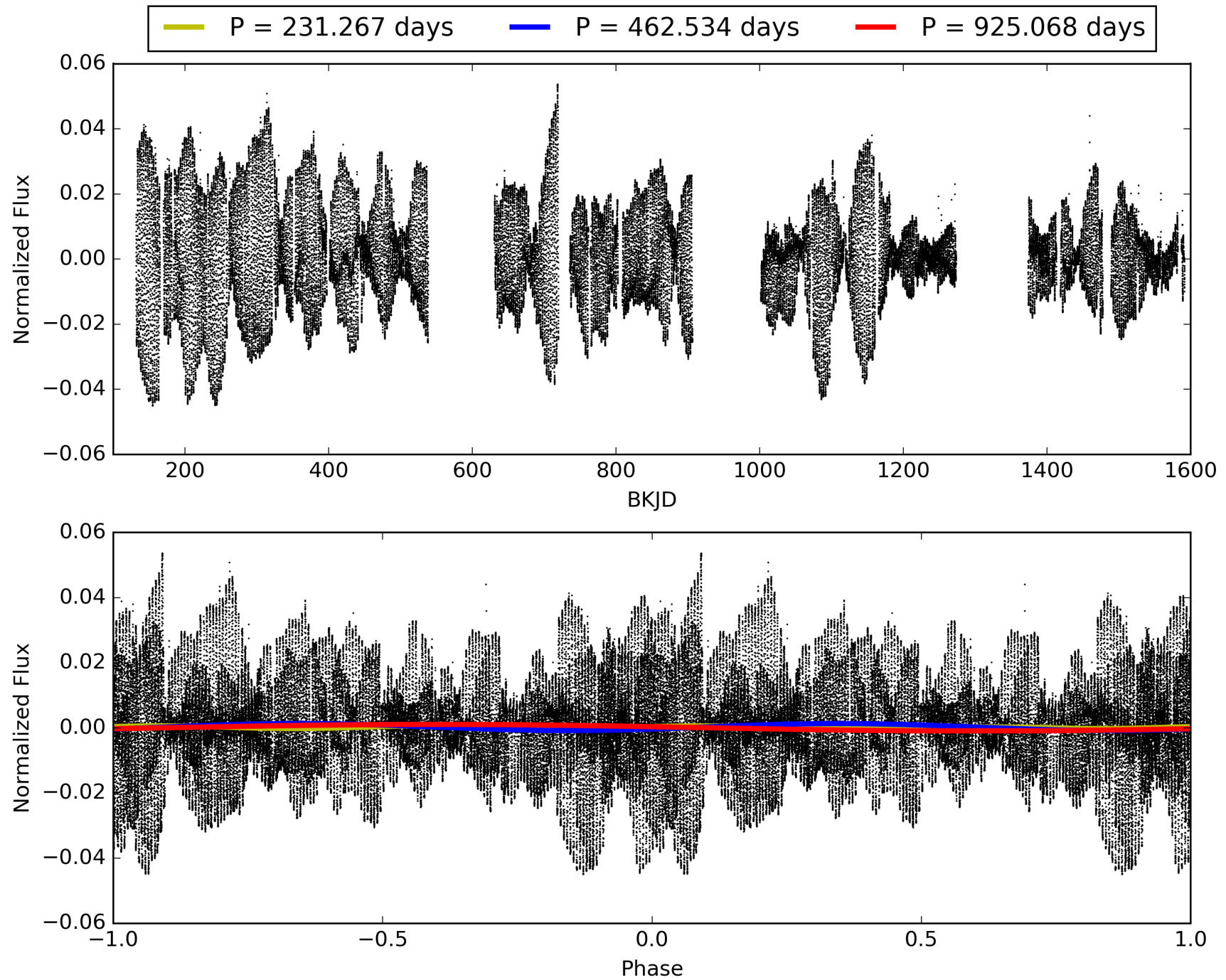
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:23:50 Z

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

TCE 003864122-06, PDC Light Curves

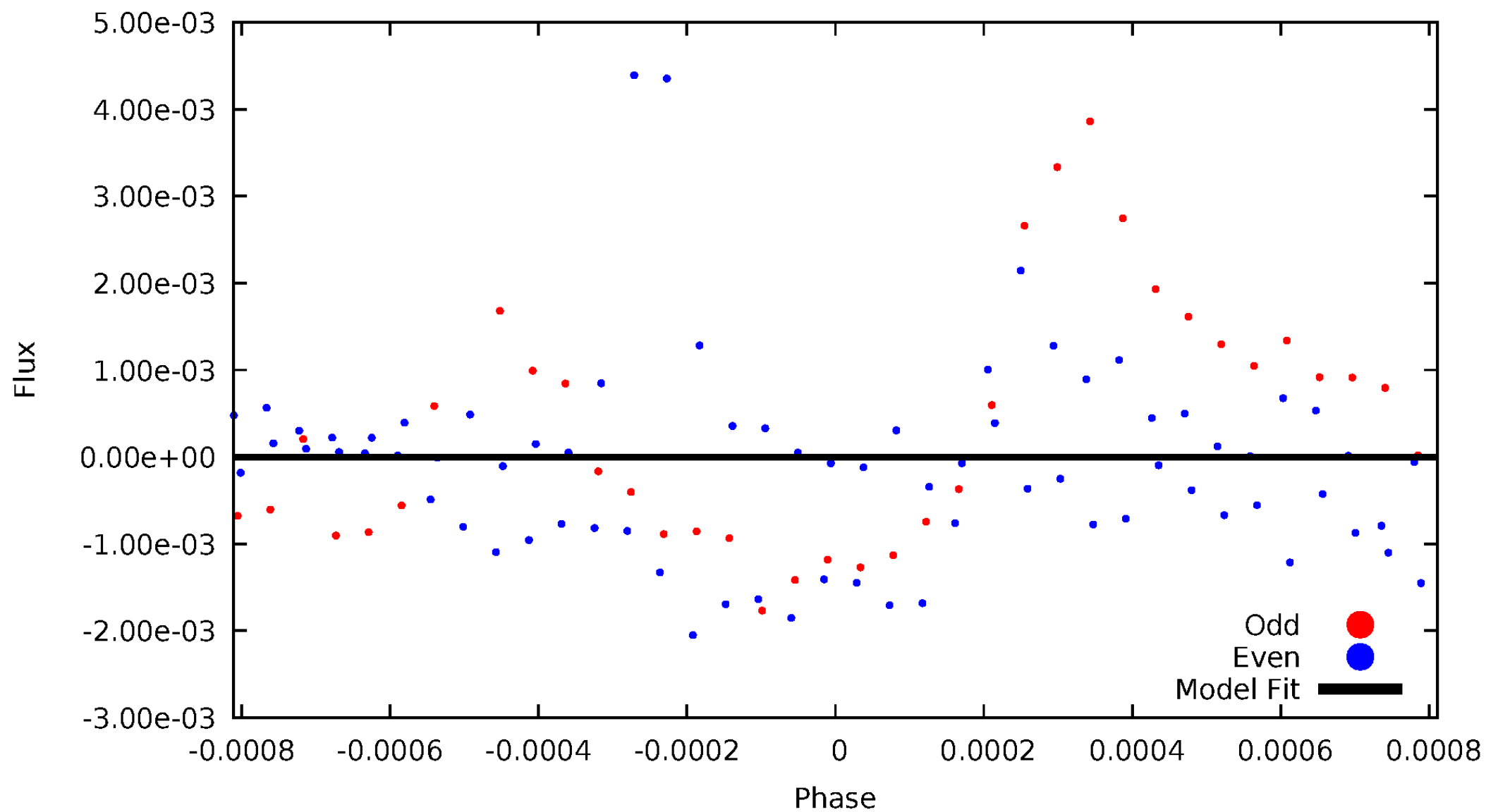


TCE 003864122-06



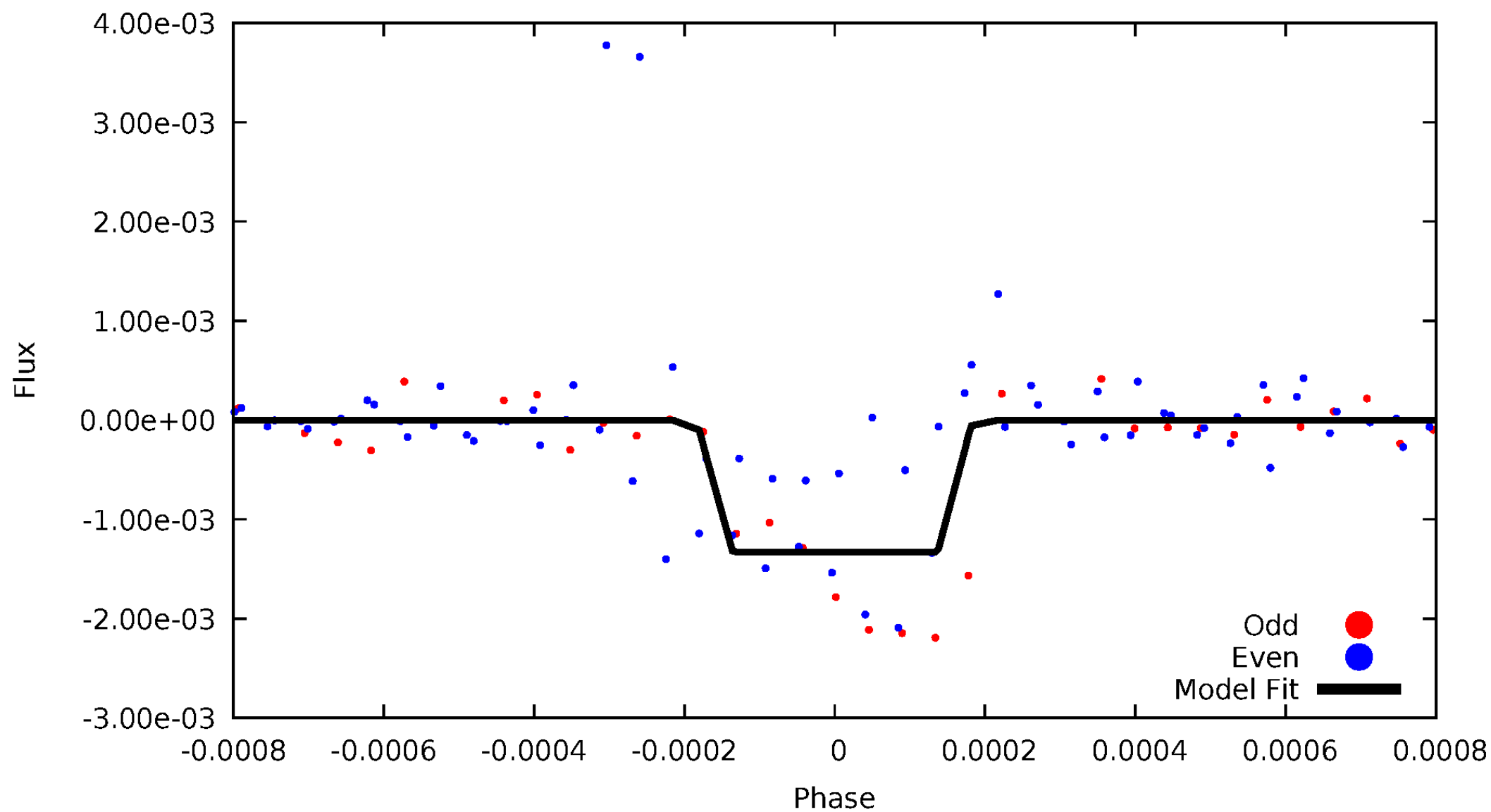
DV Odd/Even

TCE 003864122-06



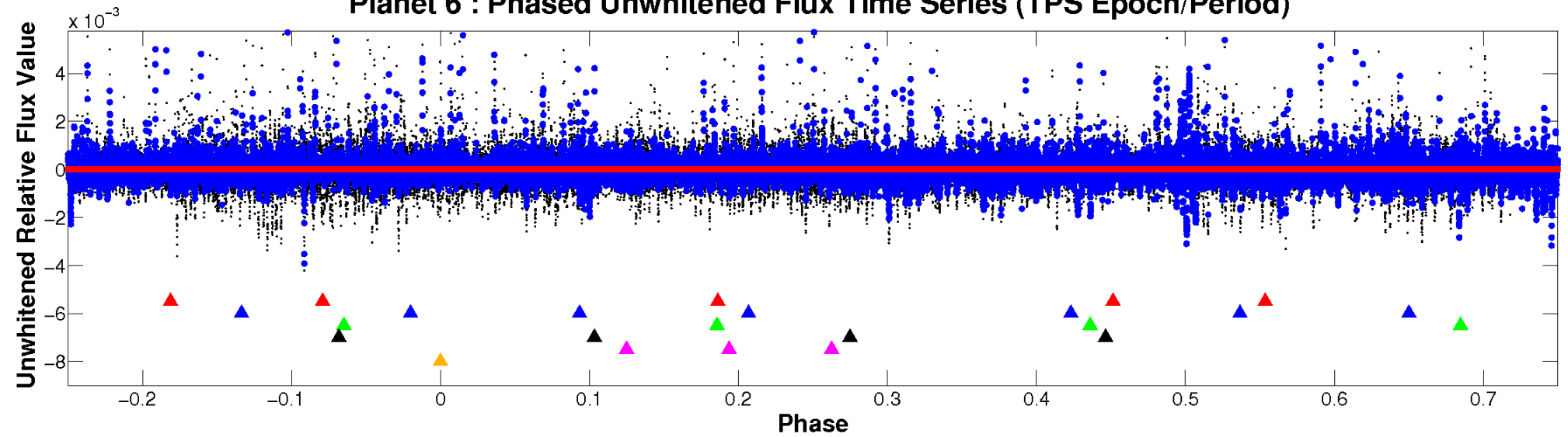
ALT Odd/Even

TCE 003864122-06



Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

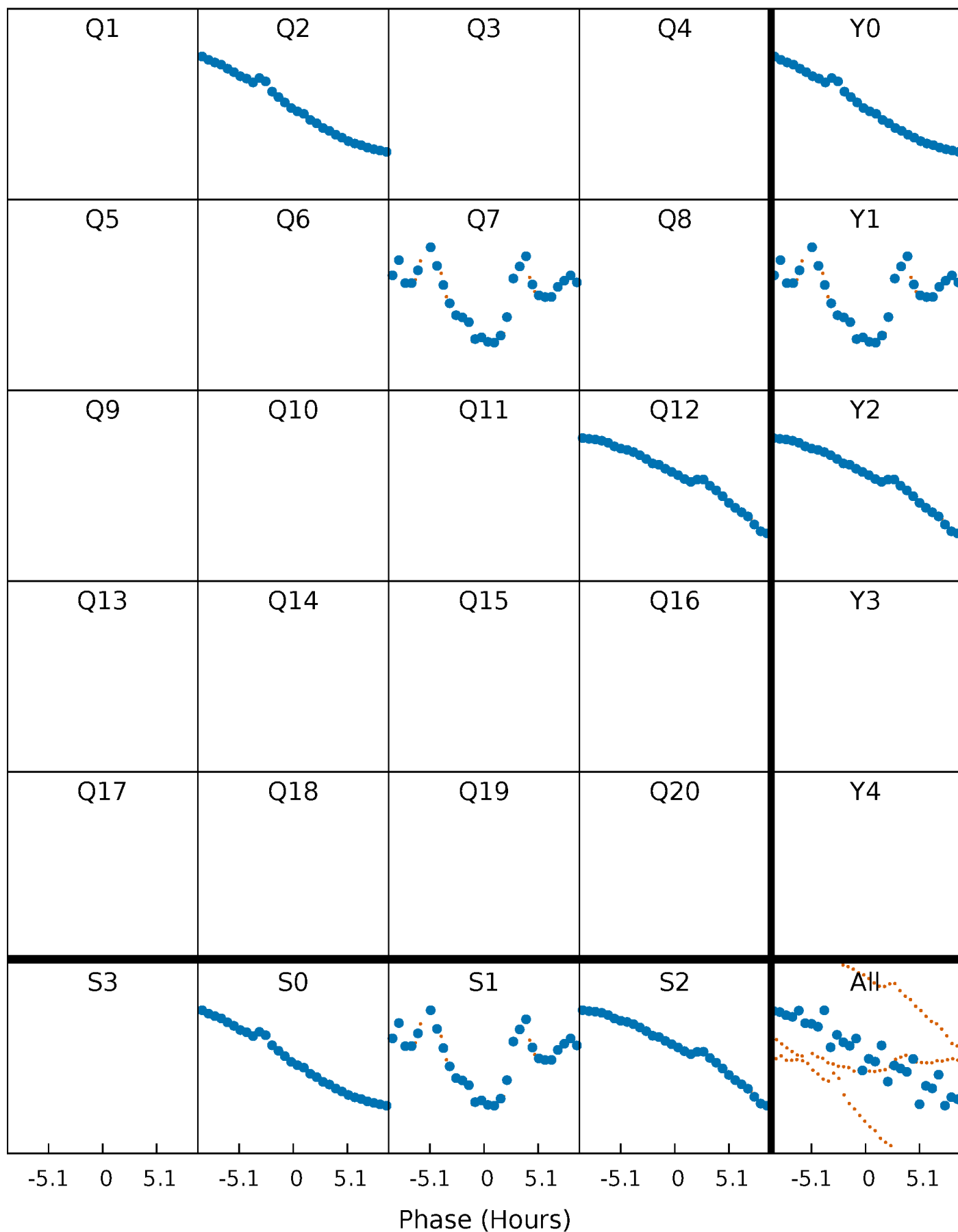


Planet 6 : Phased Whitened Flux Time Series (TPS Epoch/Period)



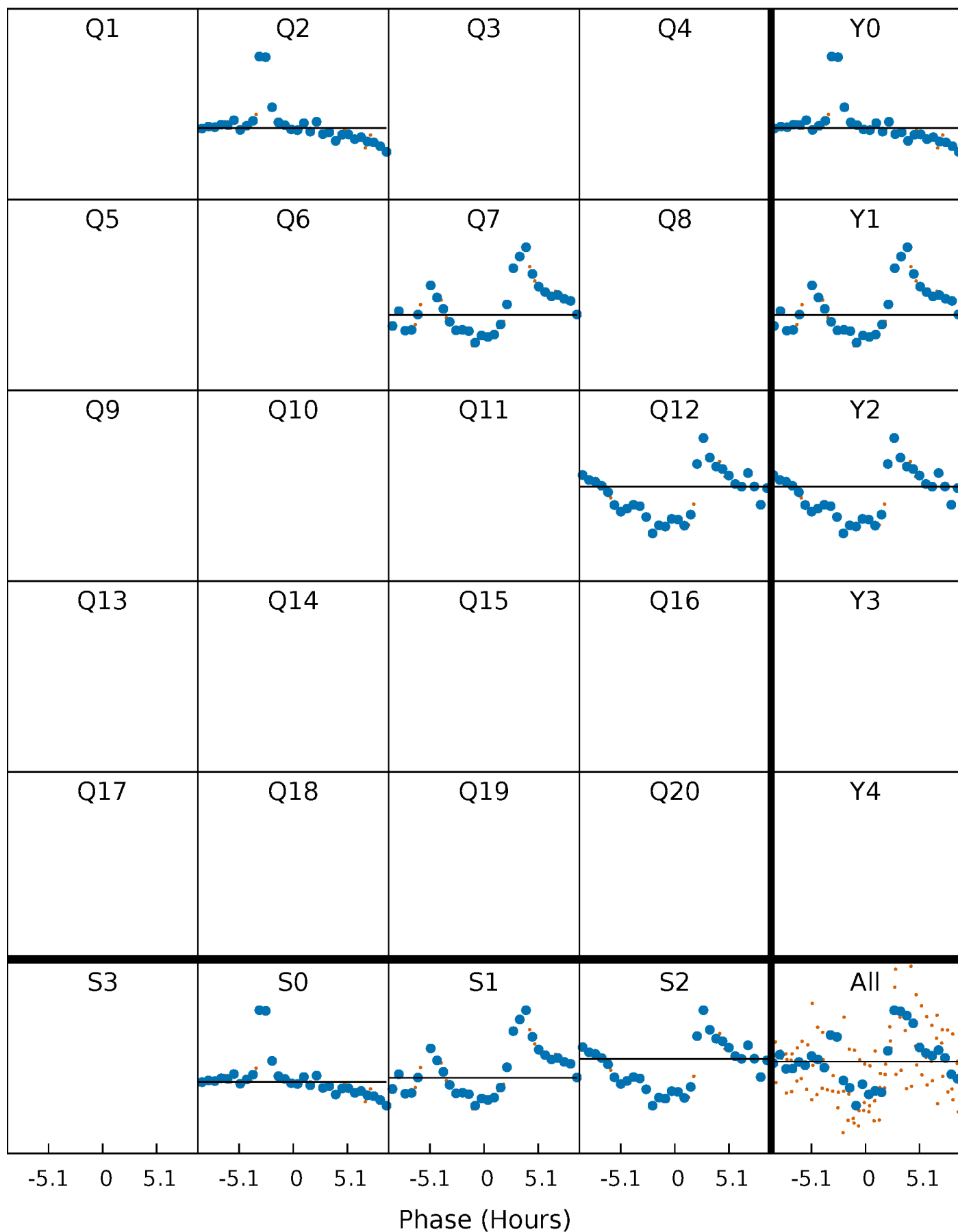
PDC Quarter-Phased Transit Curves

TCE 003864122-06 P=462.534064 Days $T_0=213.844618$ (BKJD)



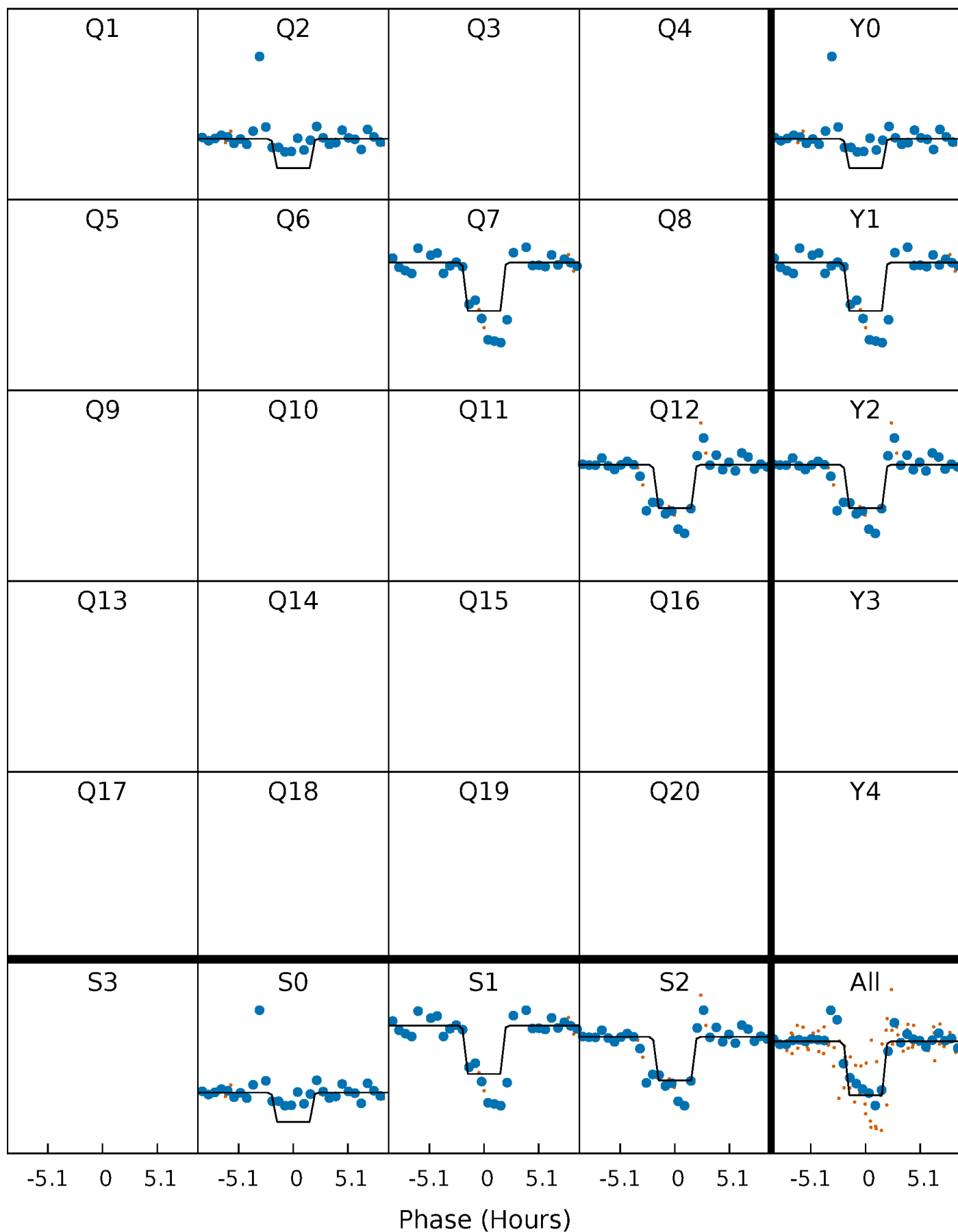
DV Quarter-Phased Transit Curves

TCE 003864122-06 P=462.534064 Days $T_0=213.844618$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

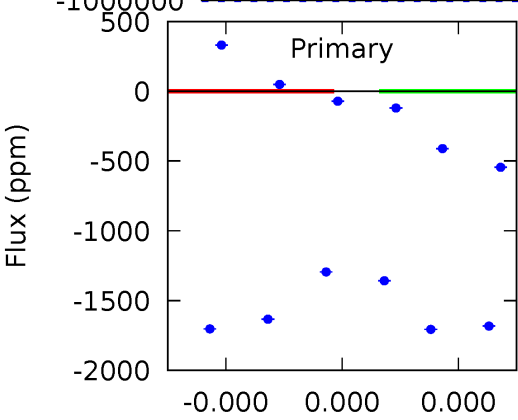
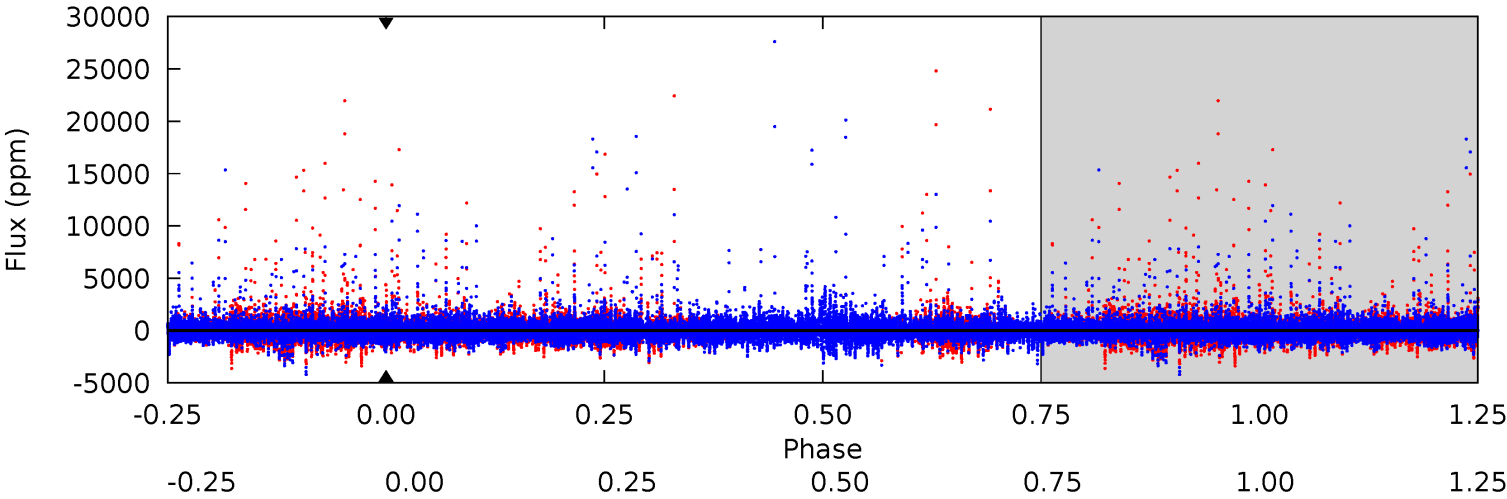
TCE 003864122-06 P=462.534064 Days $T_0=213.859576$ (BKJD)



DV Model-Shift Uniqueness Test

003864122-06, P = 462.534064 Days, E = 213.844618 Days

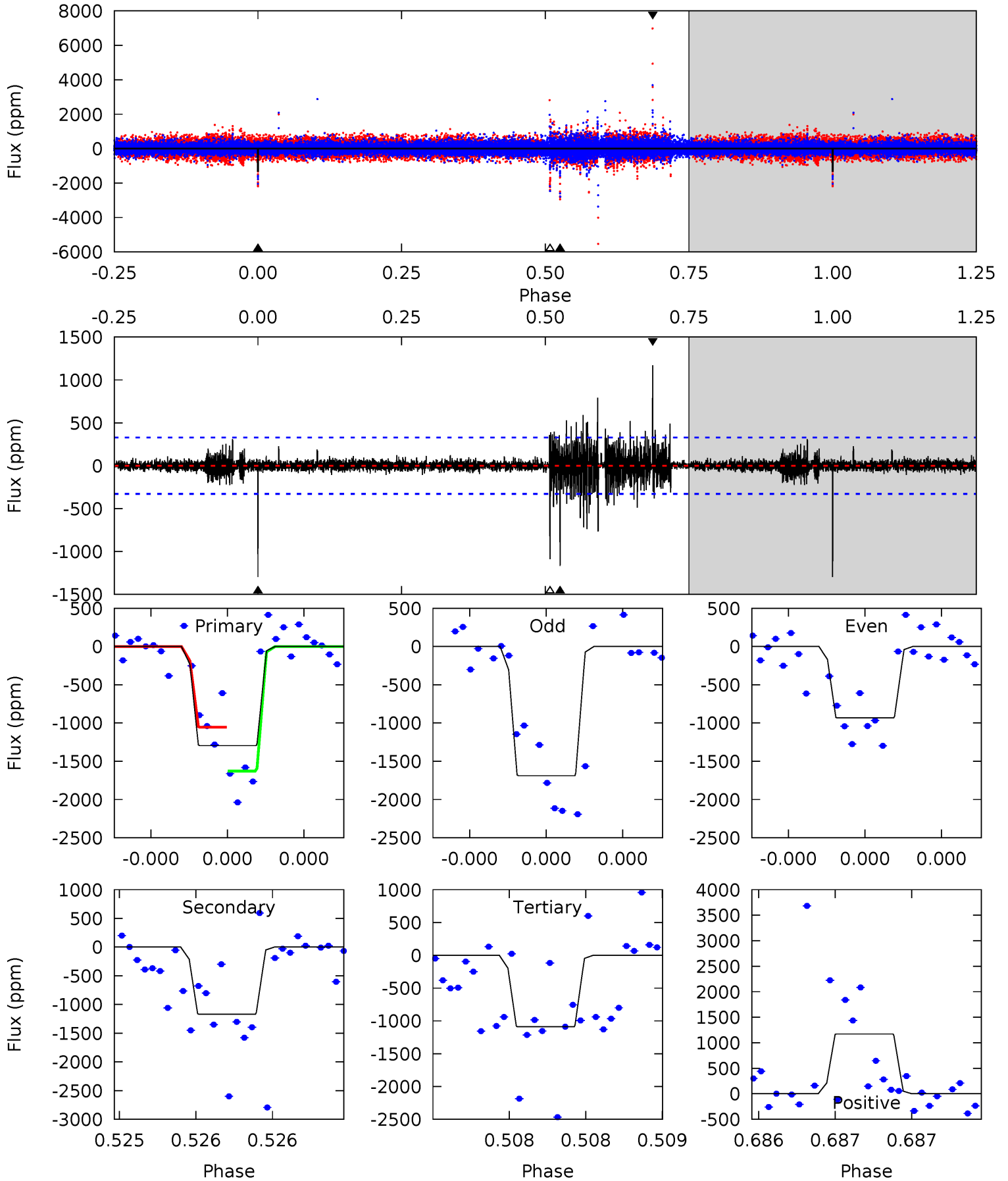
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

003864122-06, P = 462.534064 Days, E = 213.859576 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.2	20.0	18.6	20.1	5.63	3.57	1.54	3.55	2.12	1.36	-0.07	5.88	0.78	0.47	4.73



Stellar Parameters For KIC 003864122

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5382^{+159}_{-143}	$4.458^{+0.112}_{-0.138}$	$-0.140^{+0.300}_{-0.300}$	$0.875^{+0.155}_{-0.113}$	$0.803^{+0.113}_{-0.061}$	$1.688^{+0.809}_{-0.640}$
	+3%/-3%	+3%/-3%	+214%/-214%	+18%/-13%	+14%/-8%	+48%/-38%
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 003864122-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$7.41^{+7.60}_{-5.11}$	298^{+17}_{-14}	-3896^{+19701}_{-12764}	$-12926.126^{+1756769.740}_{-1875406.077}$
Alt.	-1168 ± 58	$7.72^{+8.78}_{-5.30}$	299^{+17}_{-15}	3842^{+2443}_{-767}	$13009^{+119700}_{-10190}$

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 $A_{obs} \gg 1.0$

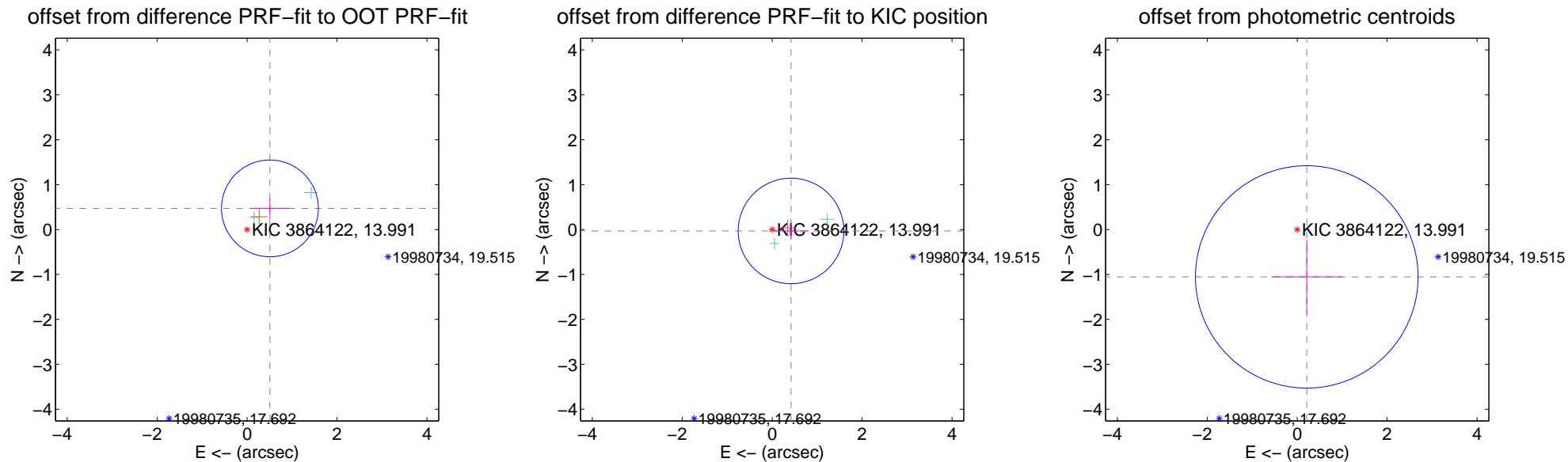
DV Centroid Data

Supplemental centroid analysis for 003864122-06. Kepler magnitude: 13.99. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

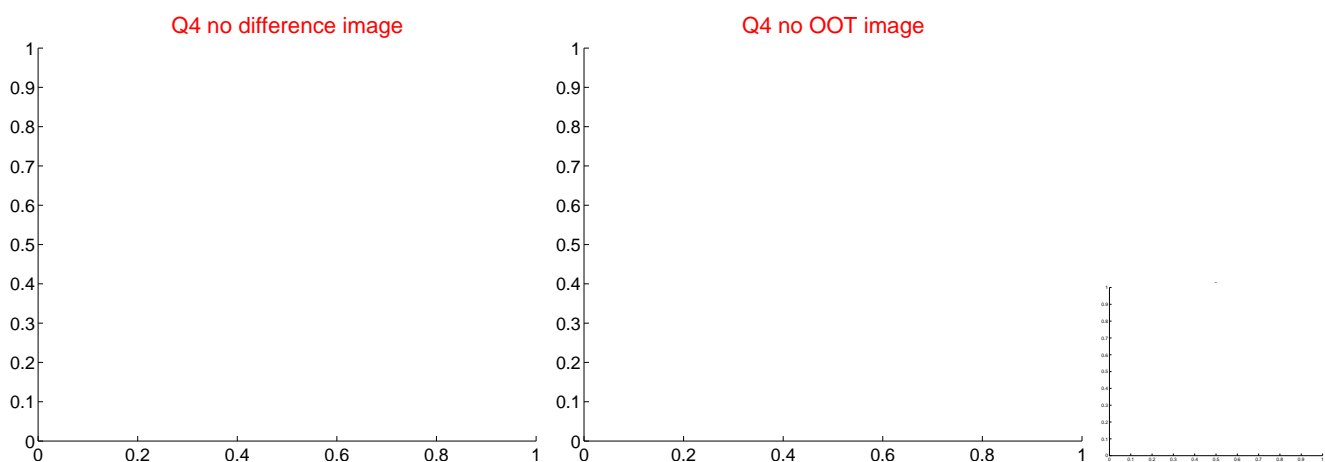
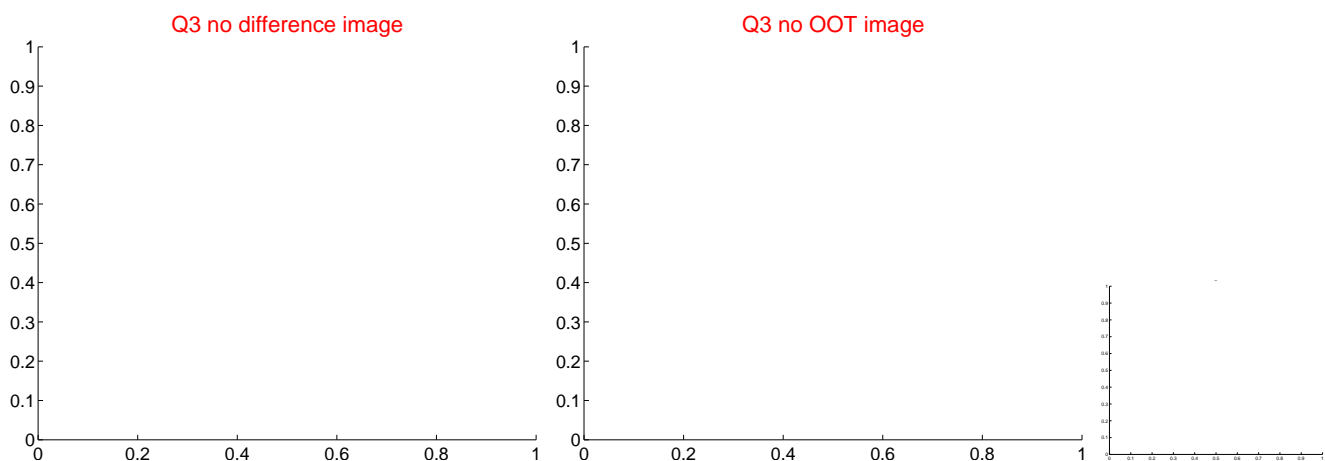
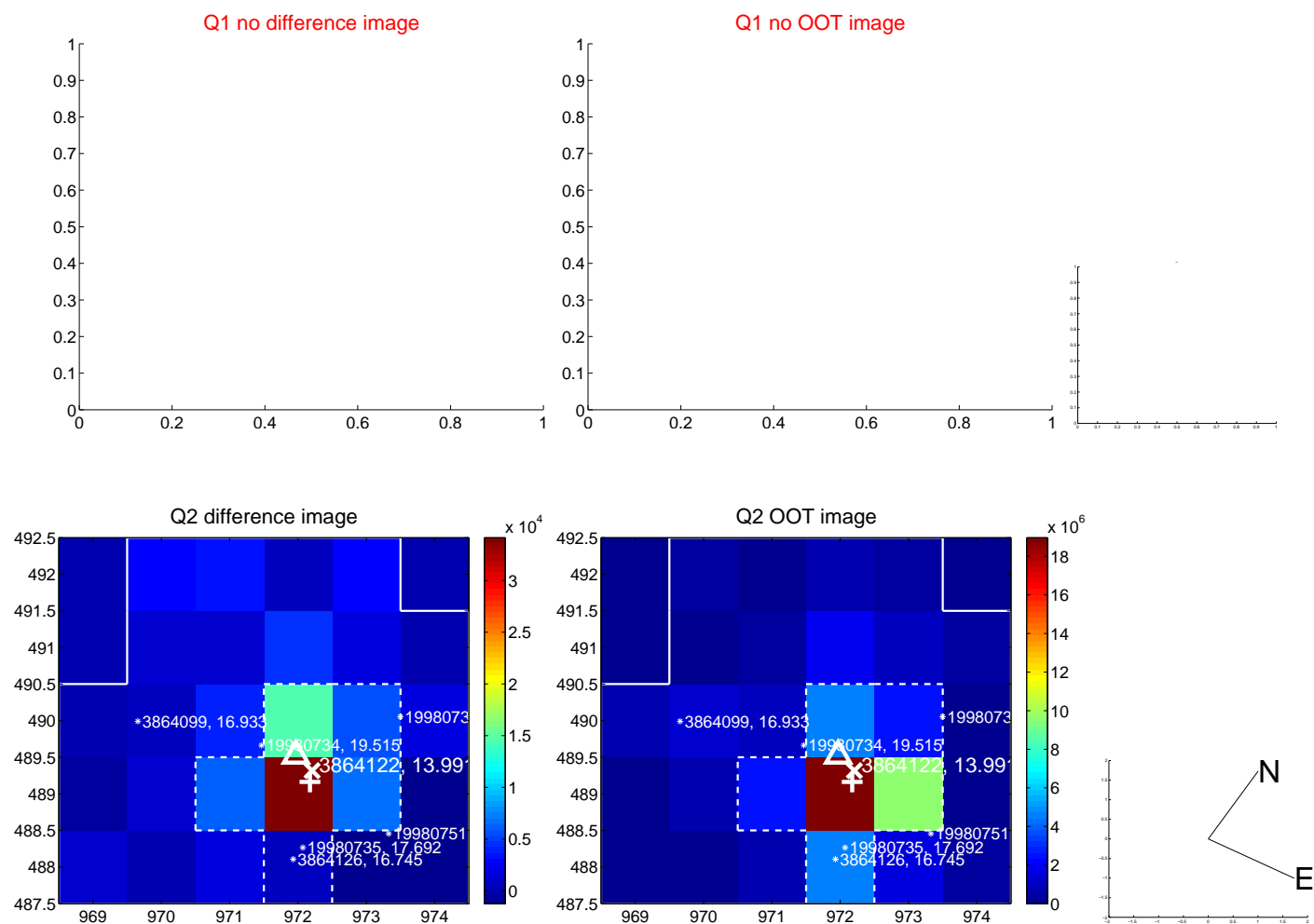
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.693 ± 0.359	1.93	-0.508 ± 0.442	0.471 ± 0.228
PRF-fit source offset from KIC position	0.421 ± 0.392	1.07	-0.420 ± 0.392	-0.031 ± 0.199
photometric centroid source offset	1.08 ± 0.83	1.30	-0.21 ± 0.78	-1.05 ± 0.83



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

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



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

Q5 no difference image



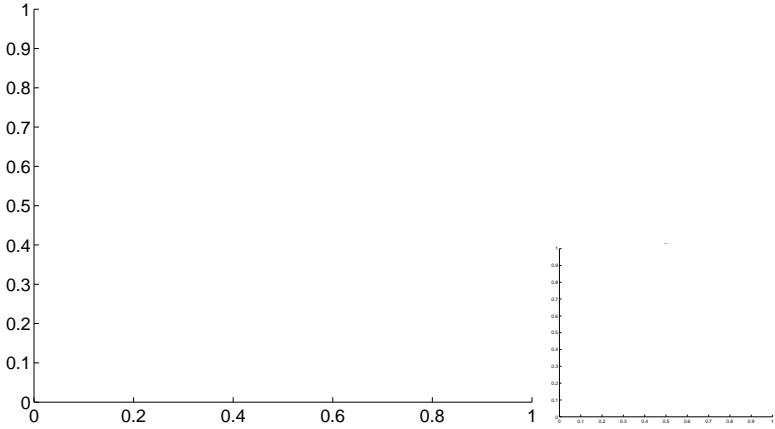
Q5 no OOT image



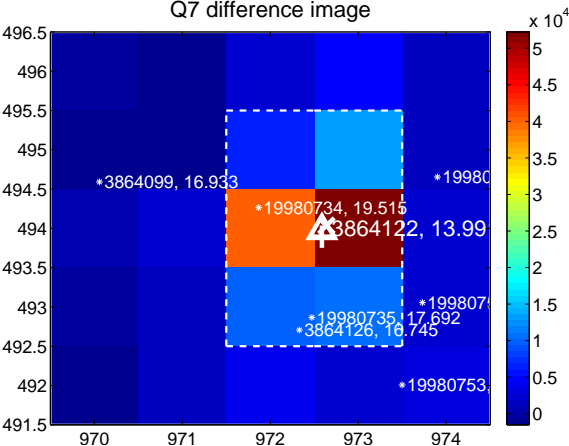
Q6 no difference image



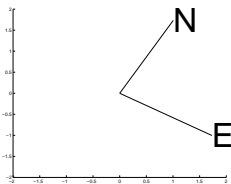
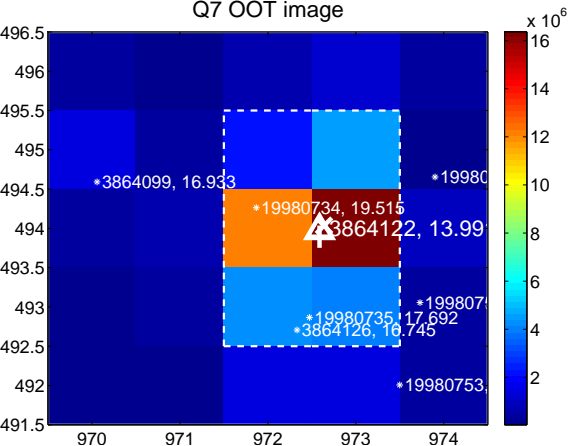
Q6 no OOT image



Q7 difference image



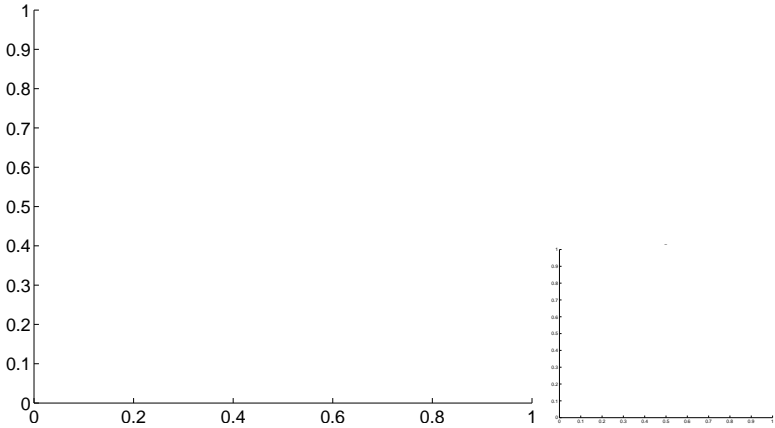
Q7 OOT image



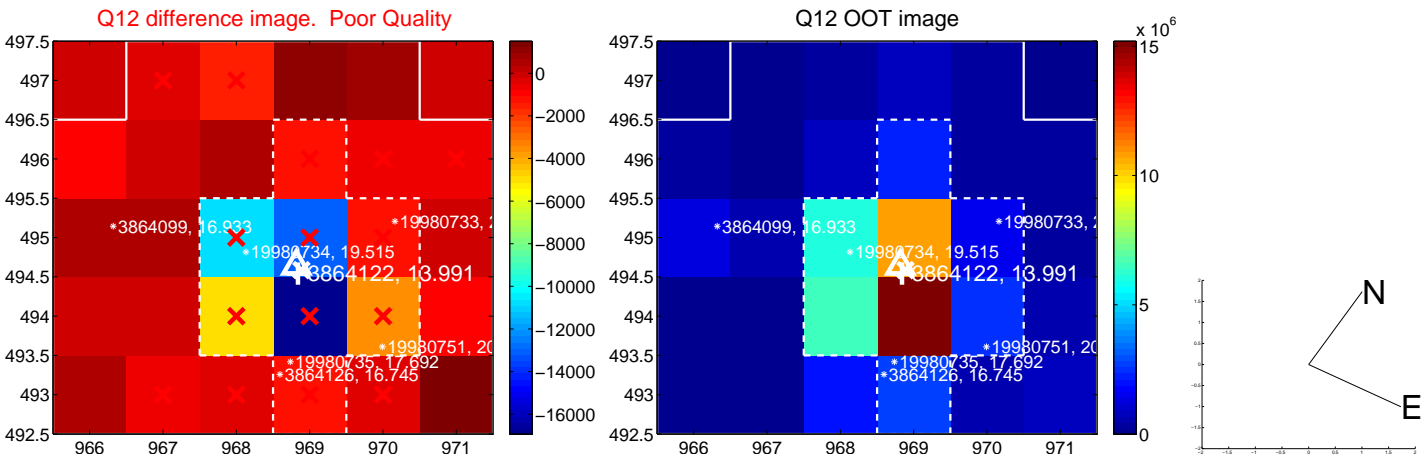
Q8 no difference image



Q8 no OOT image



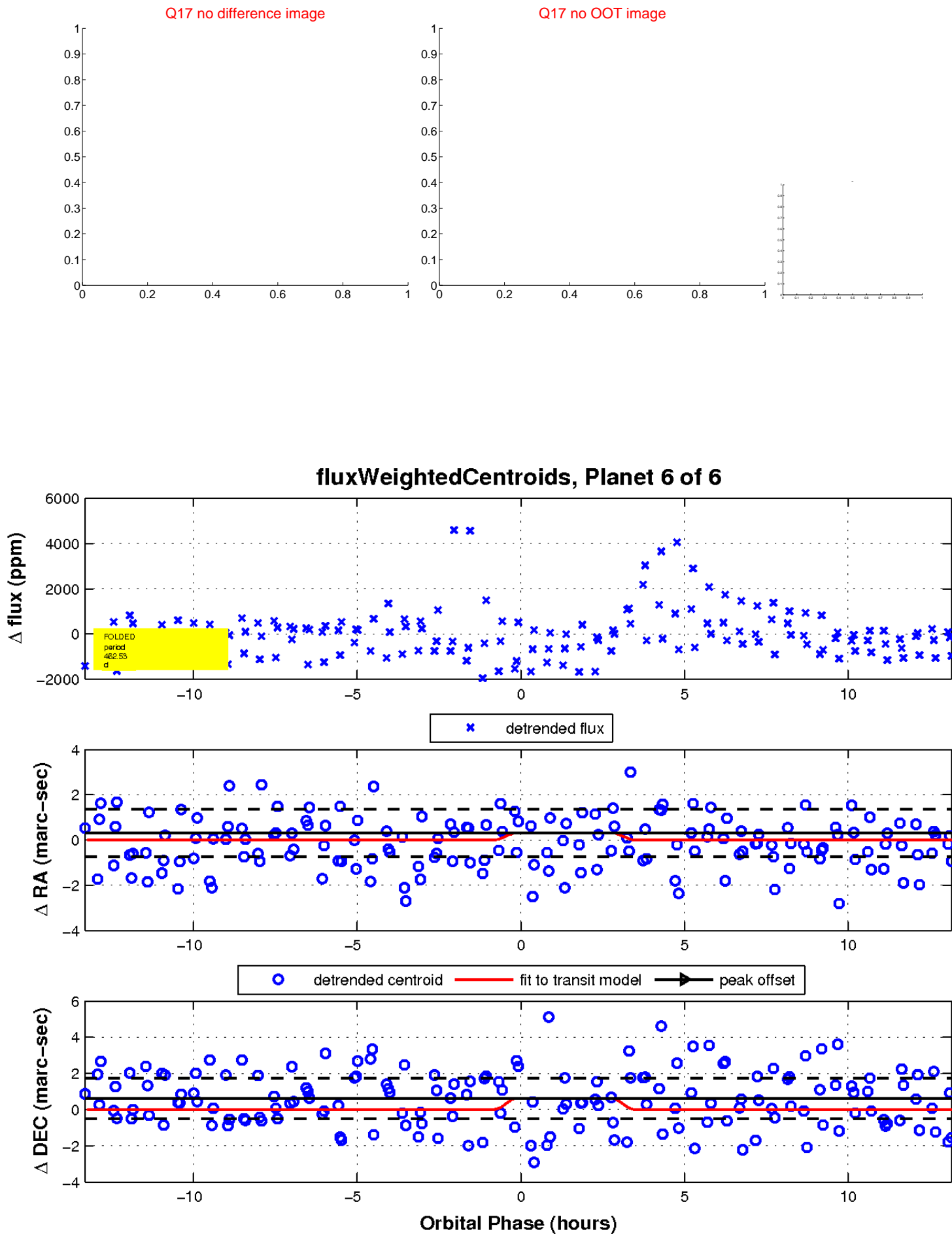
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

