

KIC 008009496

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})
008009496-01	OBS	No	384.767826	189.049426	4246.2	4.862	90.0	78.3	2.16	6079	18.31	4.82
008009496-02	OBS	No	384.767843	227.528562	3123.4	4.959	81.8	50.3	2.16	6079	14.36	4.82
008009496-03	OBS	1869.01	38.477290	150.560758	217.4	4.986	19.2	14.2	2.16	6079	5.37	103.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008009496-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—HAS_SEC_TCE—PERIOD_ALIAS_DV—PERIOD_ALIAS_ALT—CENT_RESOLVED_OFFSET—EPHEM_MATCH
008009496-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH
008009496-03	OBS	FP	0.00	1	0	1	1	RESIDUAL_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH

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 008009496-01

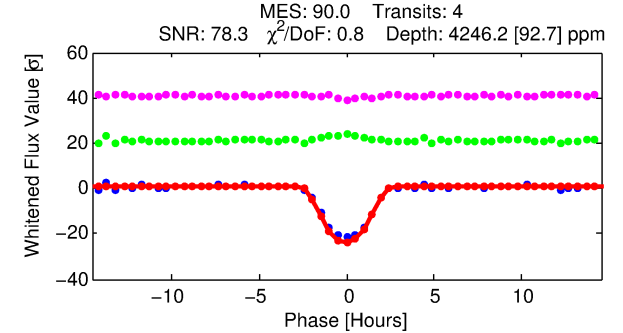
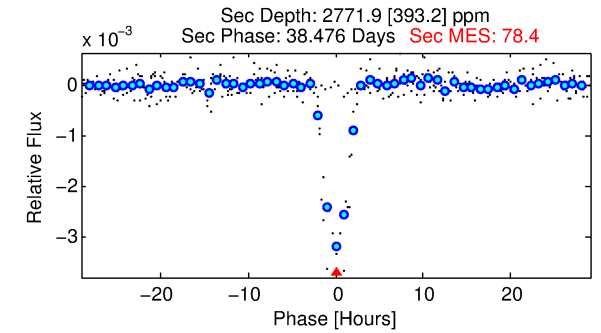
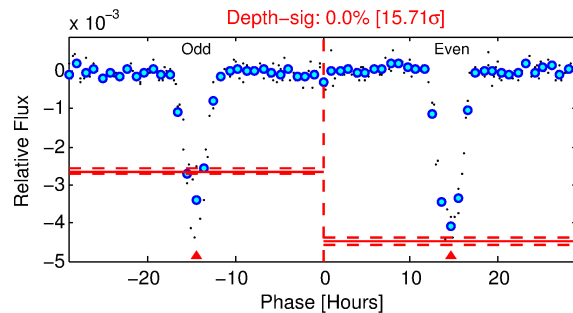
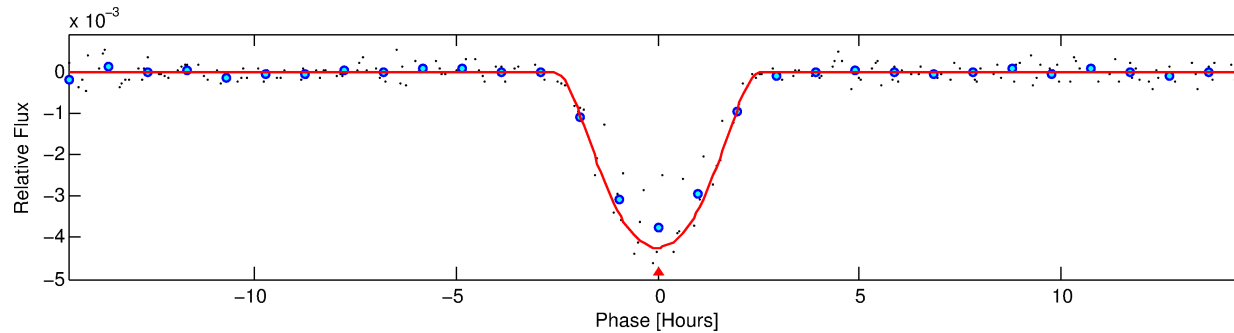
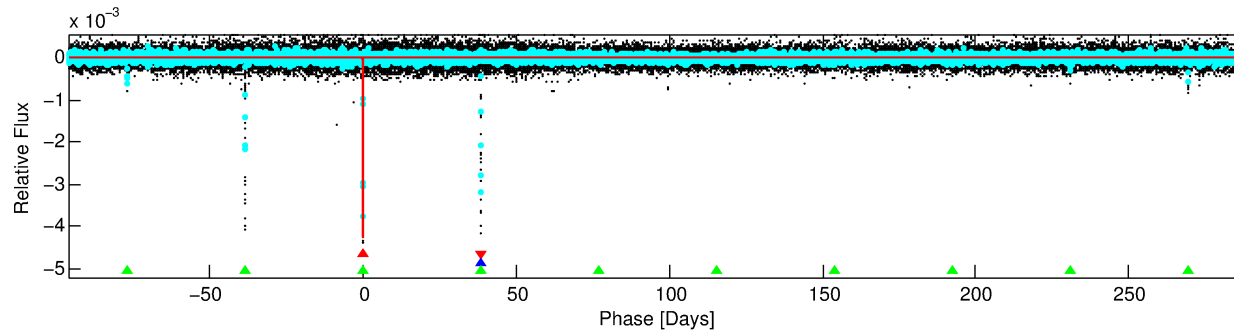
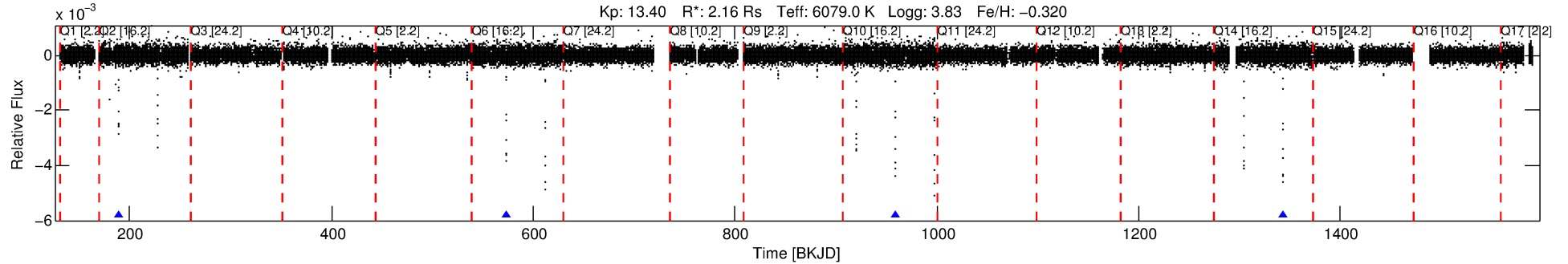
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
008009496-01	8009496	6951.01	8009500	10:1	15.3	2	3	14.58	13.40	41.03	Direct-PRF	0	0.24	0.03

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 8009496 Candidate: 1 of 3 Period: 384.768 d
KOI: K01869 Corr: No Ephemeris Match

Kp: 13.40 R*: 2.16 Rs Teff: 6079.0 K Logg: 3.83 Fe/H: -0.320



DV Fit Results:

Period = 384.76783 [0.00060] d
Epoch = 189.0494 [0.0011] BKJD
Rp/R* = 0.0776 [0.0065]
a/R* = 314.87 [14.83]
b = 0.94 [0.02]
Seff = 4.82 [2.65]
Teq = 378 [52] K
Rp = 18.31 [6.78] Re
a = 1.0894 [0.3714] AU
Ag = 5399.56 [3146.29] [1.72σ]
Teff = 5008 [305] K [14.97σ]

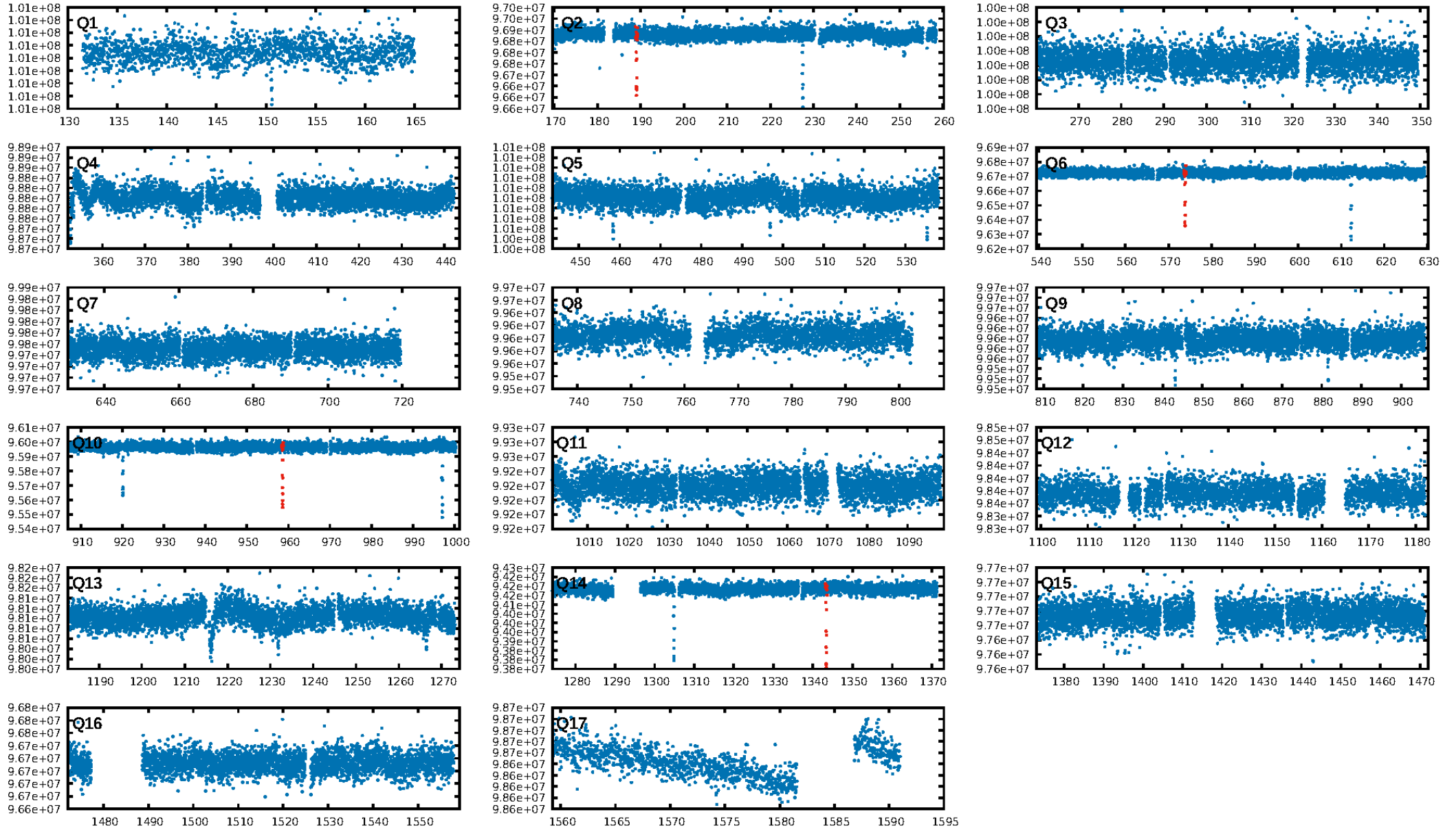
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1193.45σ]
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.4136
Centroid-sig: N/A
Centroid-so: 29.121 arcsec [127.68σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 0.00 [0/4]

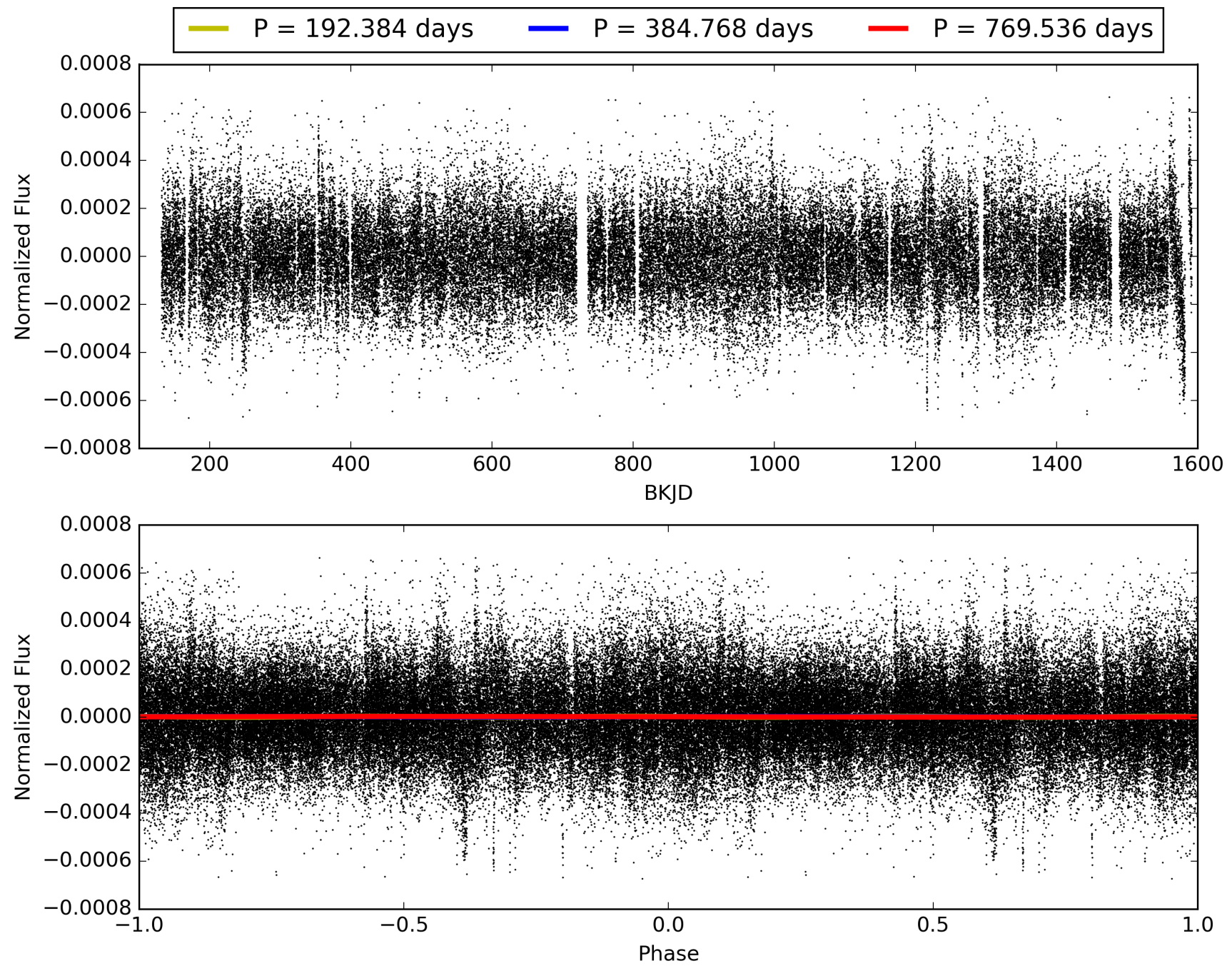
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 06:06:34 Z

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

TCE 008009496-01, PDC Light Curves

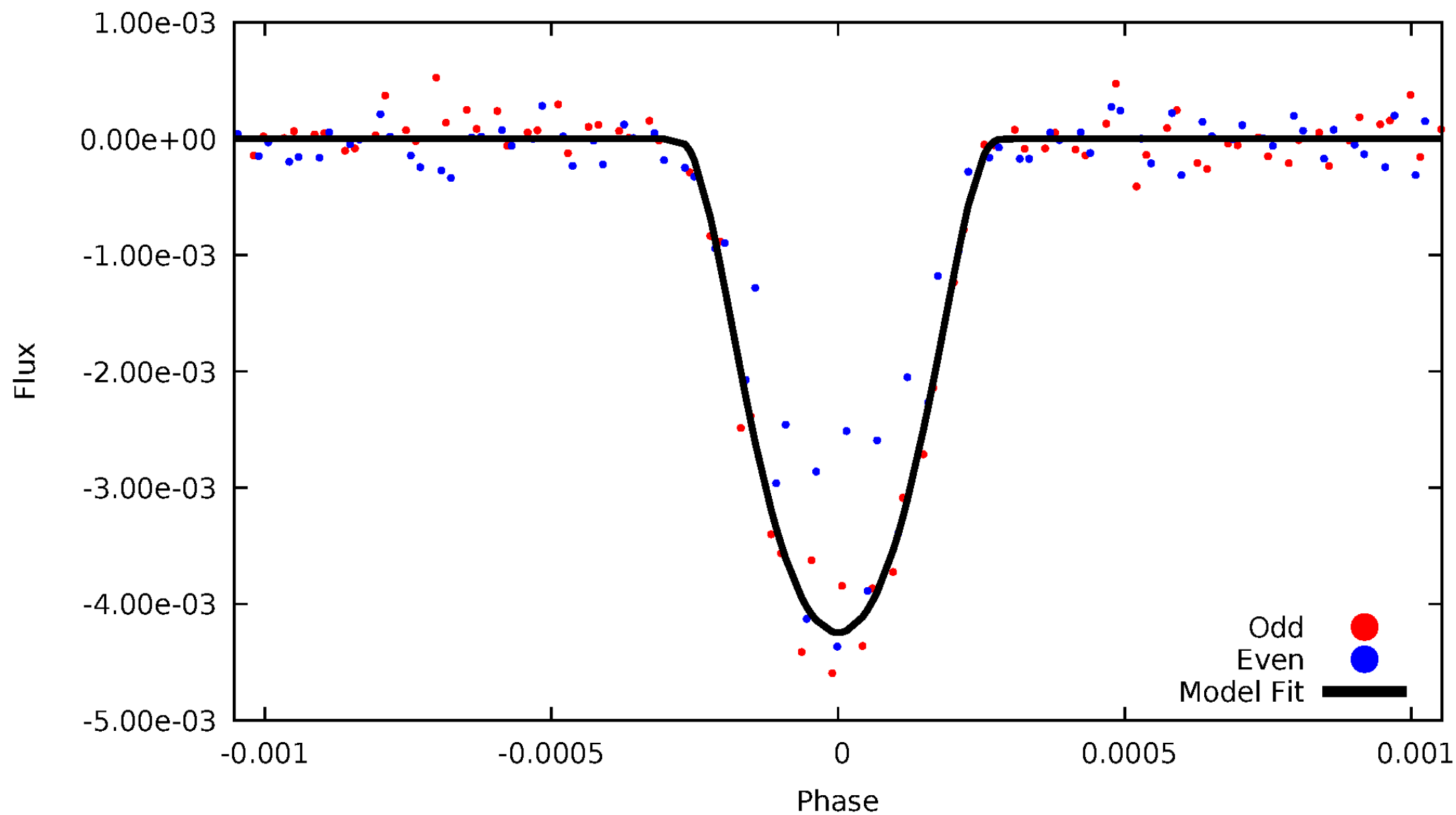


TCE 008009496-01



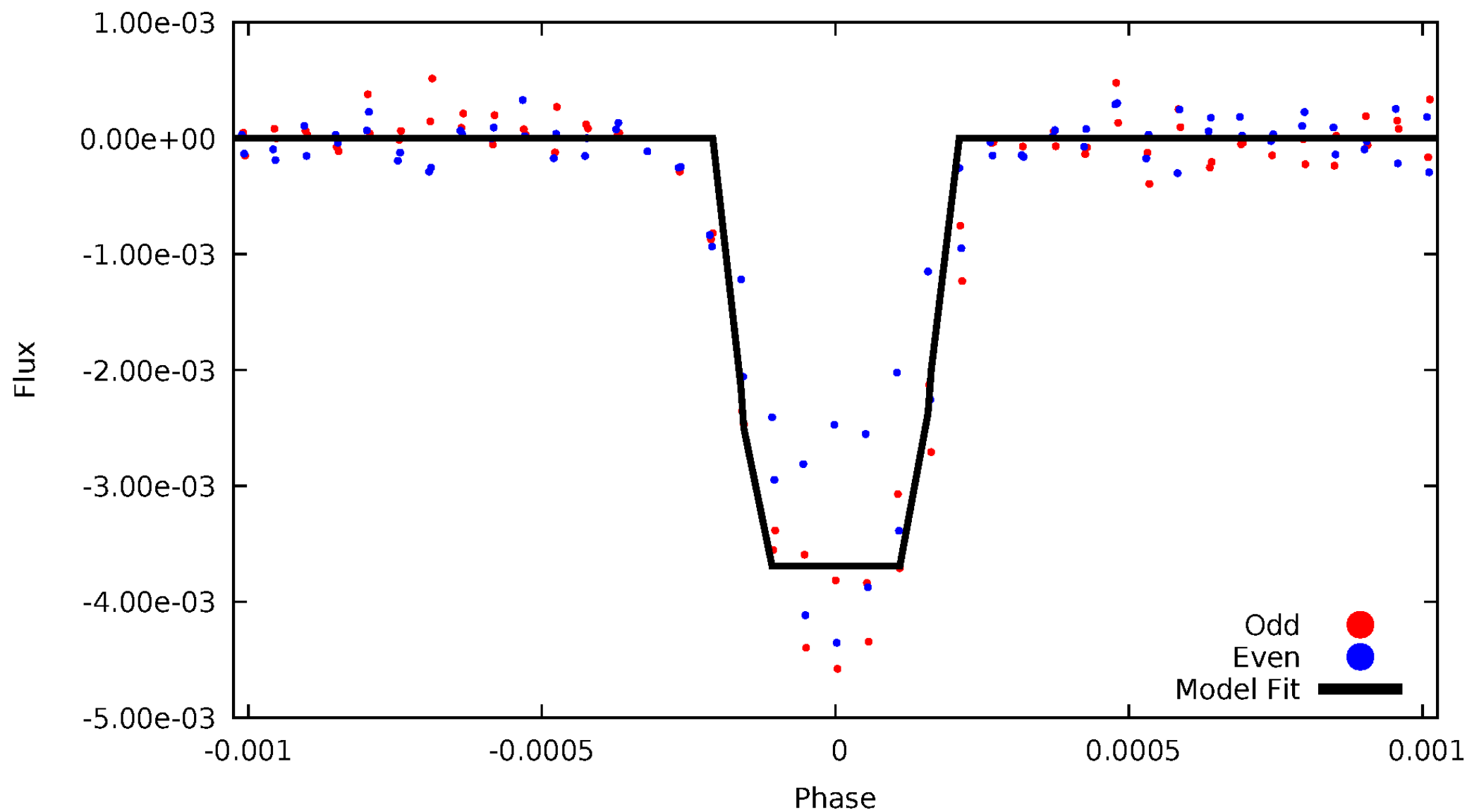
DV Odd/Even

TCE 008009496-01



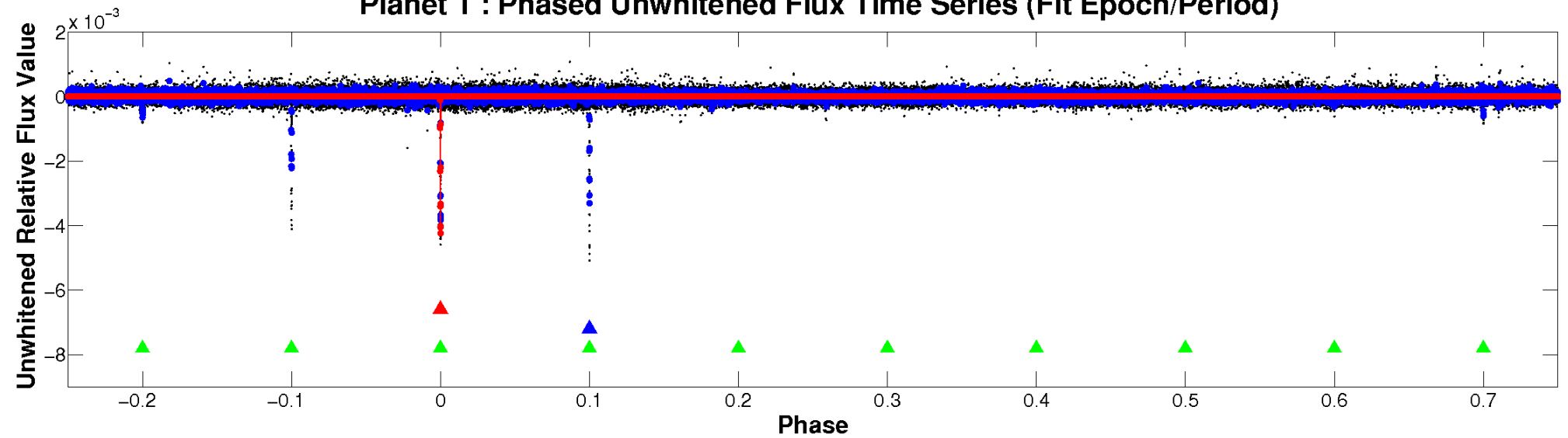
ALT Odd/Even

TCE 008009496-01

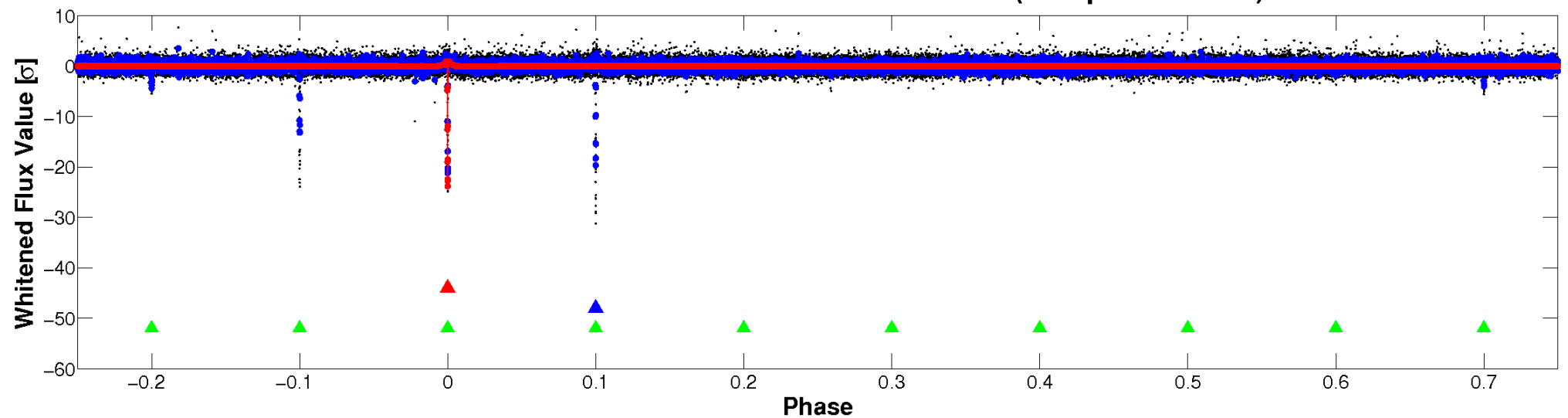


Non-Whitened Vs. Whitened Light Curve

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

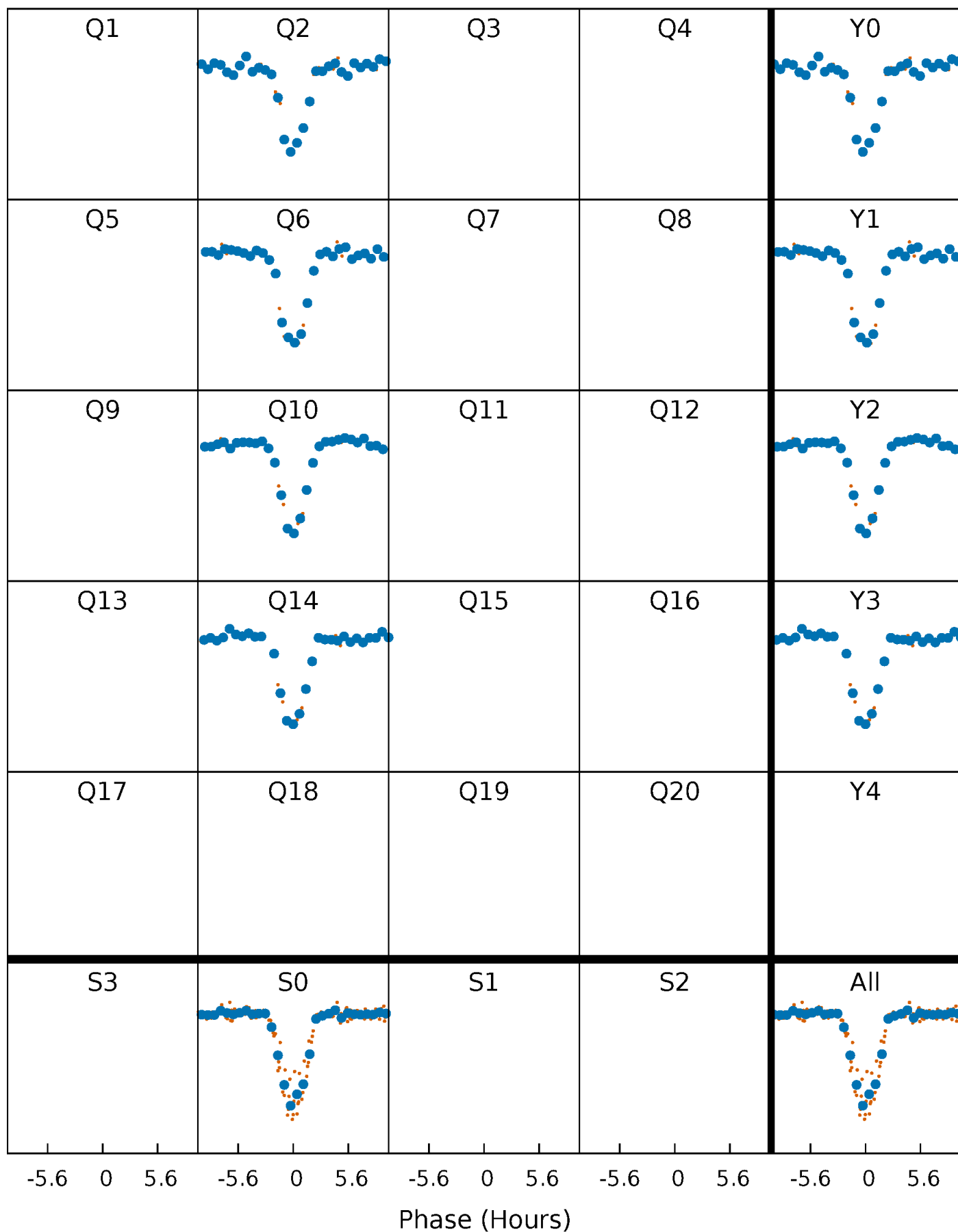


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



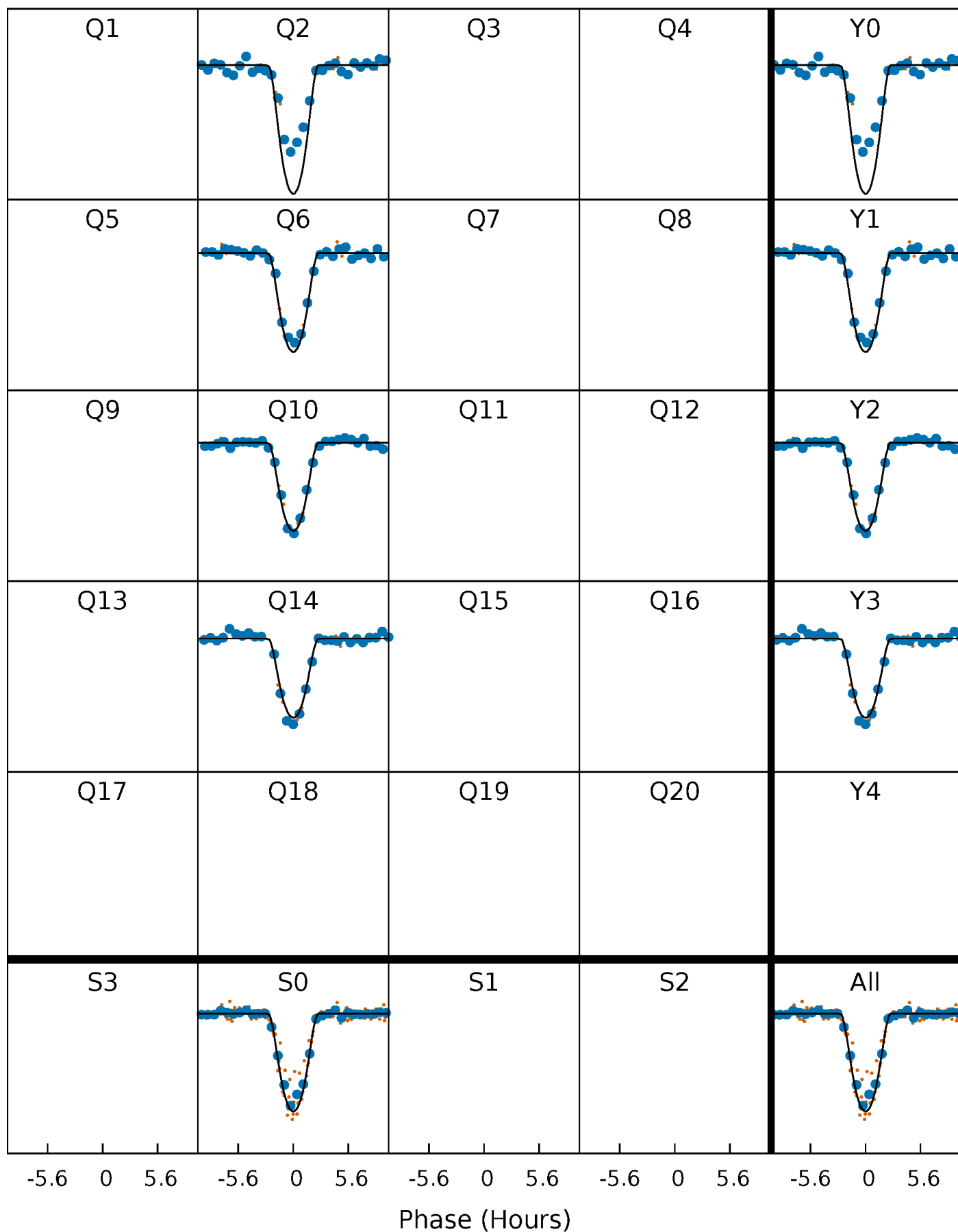
PDC Quarter-Phased Transit Curves

TCE 008009496-01 P=384.767826 Days $T_0=189.049426$ (BKJD)



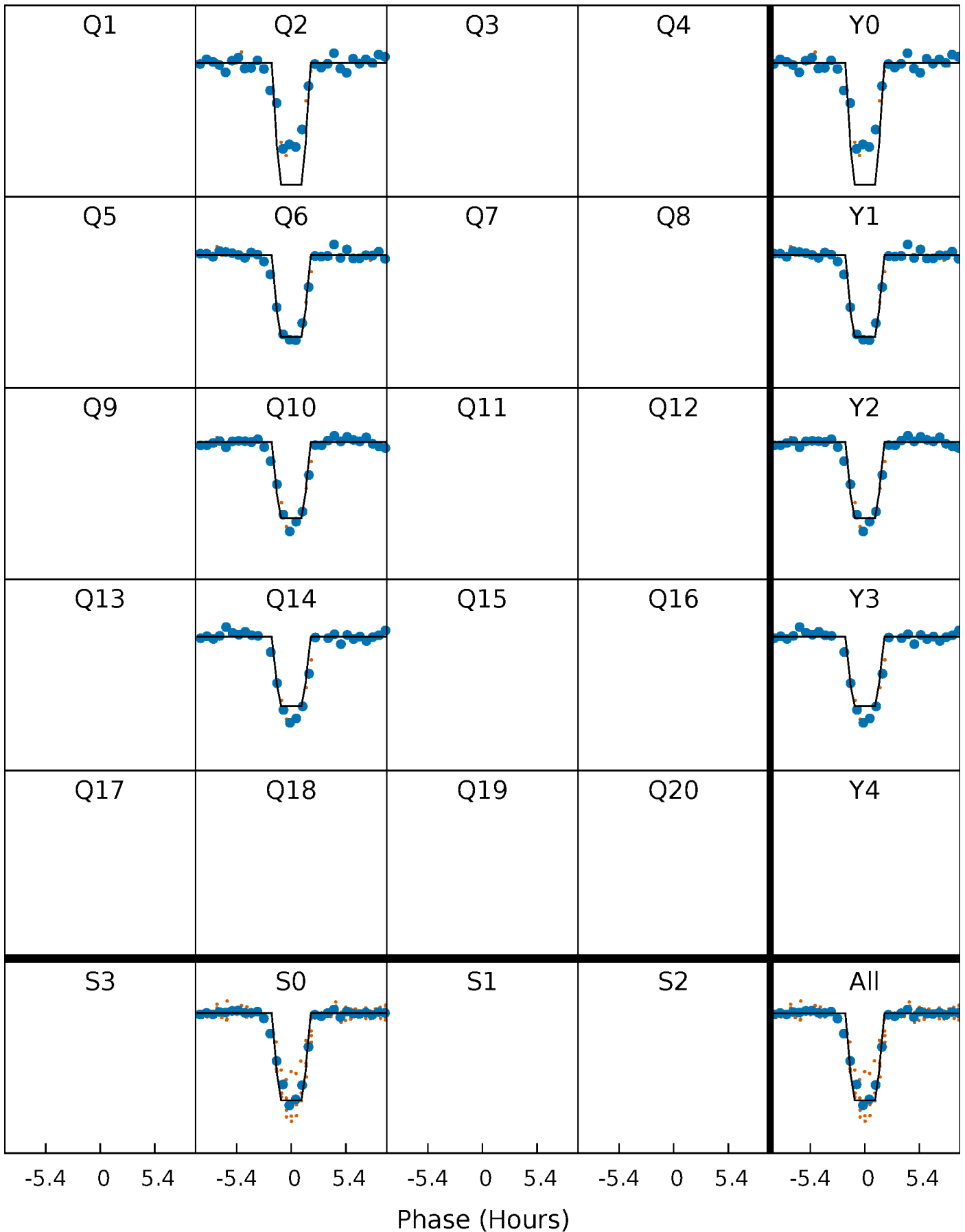
DV Quarter-Phased Transit Curves

TCE 008009496-01 P=384.767826 Days $T_0=189.049426$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

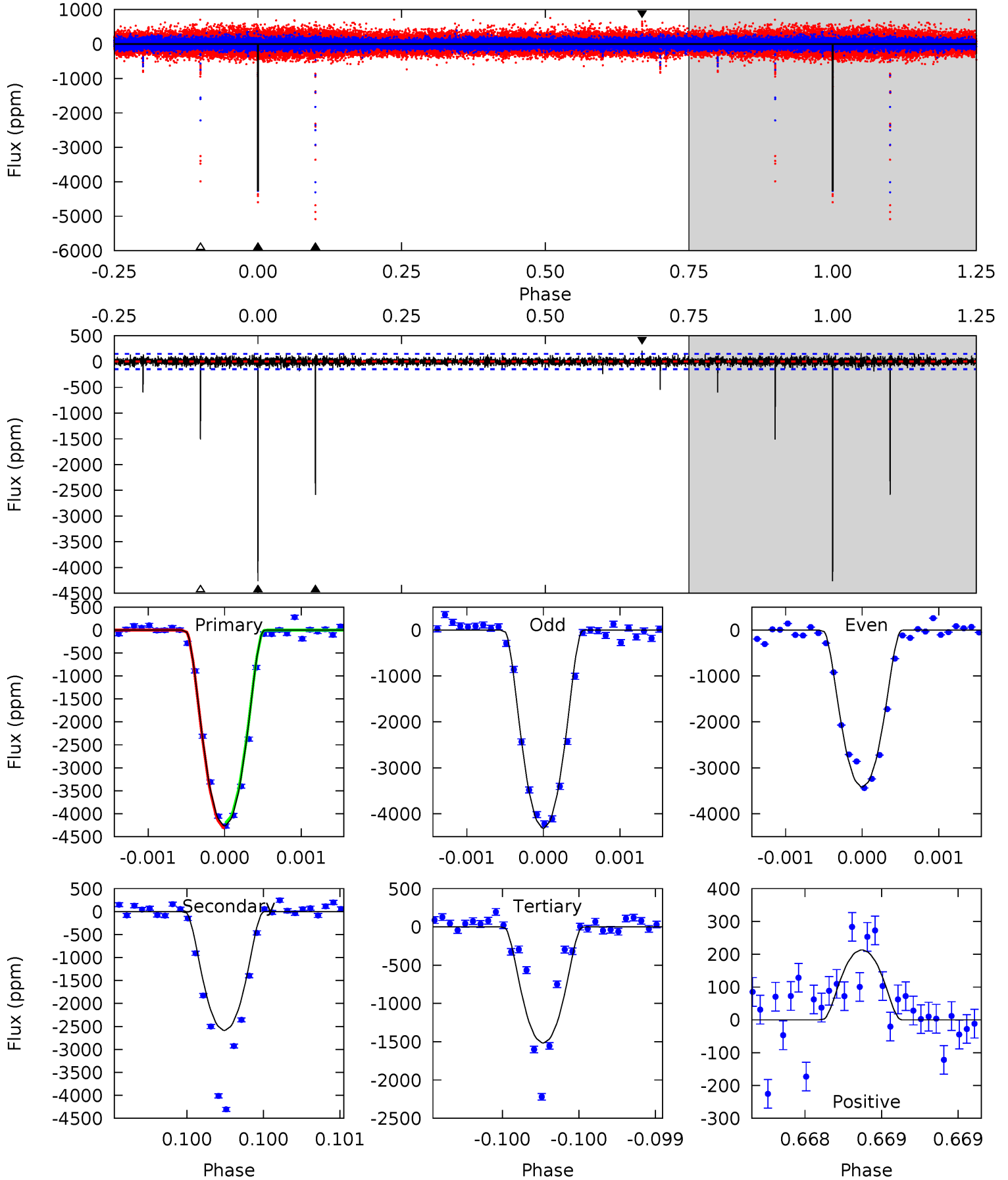
TCE 008009496-01 P=384.763935 Days $T_0=189.055775$ (BKJD)



DV Model-Shift Uniqueness Test

008009496-01, P = 384.767826 Days, E = 189.049426 Days

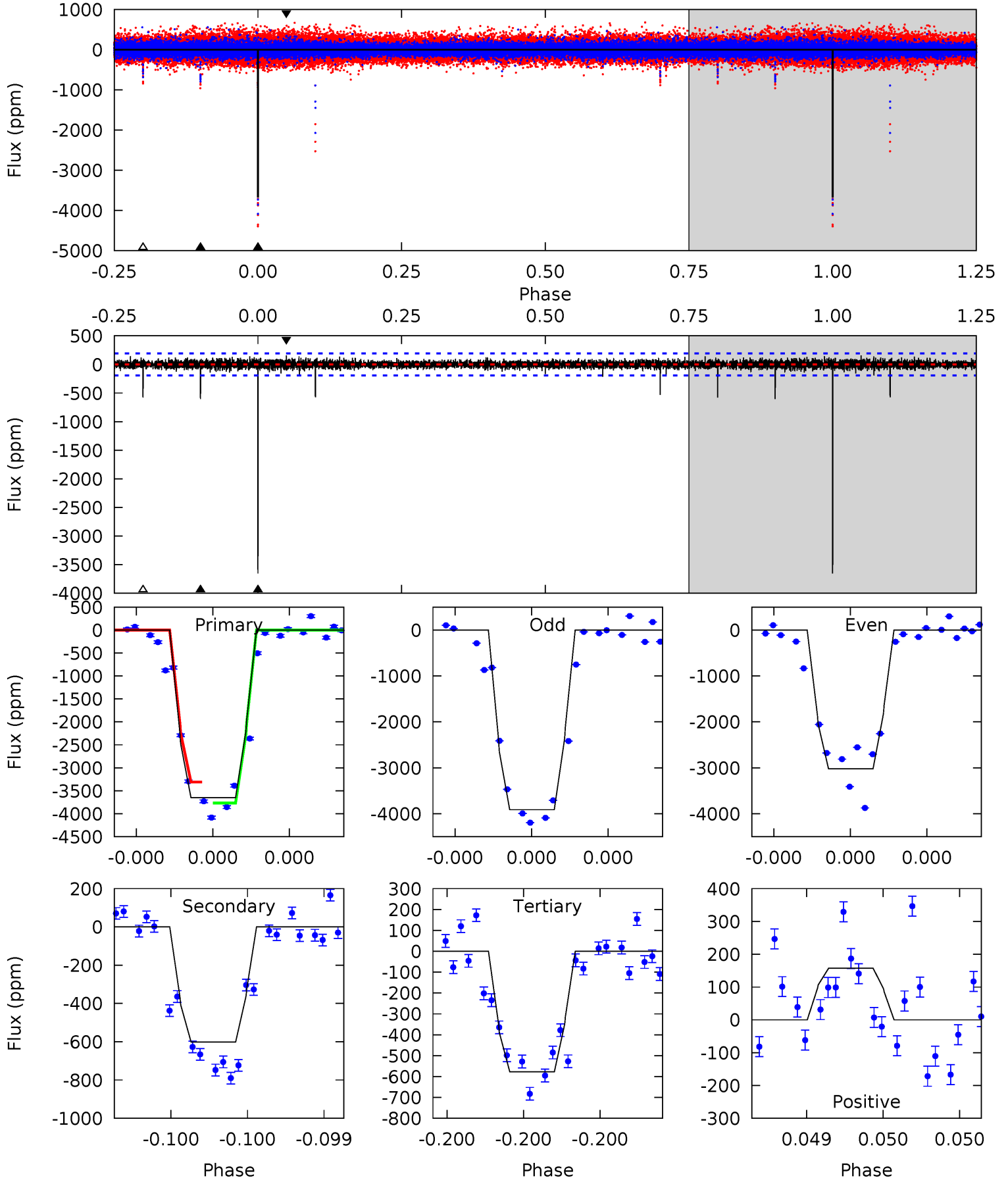
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
160.0	97.1	56.9	8.00	5.56	3.46	1.80	103.1	152.0	40.2	89.1	18.3	0.95	0.05	2.07



Alt Model-Shift Uniqueness Test

008009496-01, P = 384.763935 Days, E = 189.055775 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
105.8	17.4	16.7	4.55	5.63	3.56	1.15	89.0	101.2	0.69	12.9	14.3	0.94	0.04	0



Stellar Parameters For KIC 008009496

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6079^{+162}_{-162}	$3.834^{+0.315}_{-0.105}$	$-0.320^{+0.350}_{-0.250}$	$2.163^{+0.420}_{-0.780}$	$1.164^{+0.208}_{-0.208}$	$0.162^{+0.370}_{-0.054}$
	+3%/-3%	+8%/-3%	+109%/-78%	+19%/-36%	+18%/-18%	+228%/-33%
Source	PHO1	FLK73	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 008009496-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2586 ± 27	$17.75^{+2.86}_{-3.41}$	520^{+29}_{-46}	5012^{+223}_{-211}	5544^{+2386}_{-1413}
Alt.	-601 ± 35	$13.64^{+2.62}_{-2.64}$	518^{+33}_{-49}	4143^{+206}_{-173}	2126^{+1067}_{-609}

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 $A_{obs} \gg 1.0$

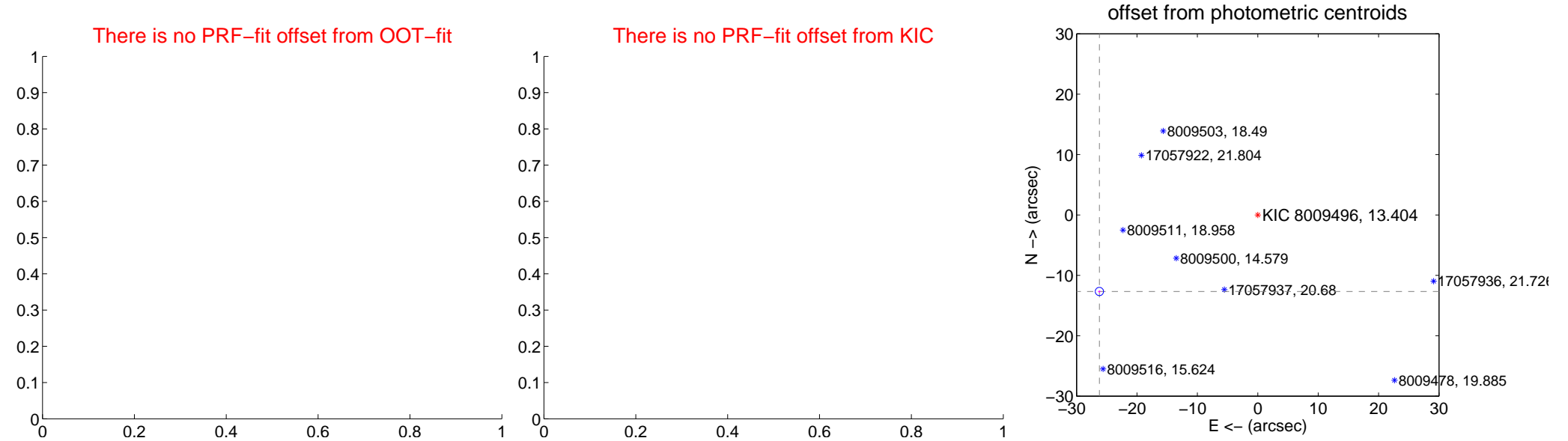
DV Centroid Data

Supplemental centroid analysis for 008009496-01. Kepler magnitude: 13.40. Transit SNR 78.32

There are 0 quarters with good PRF difference image offsets

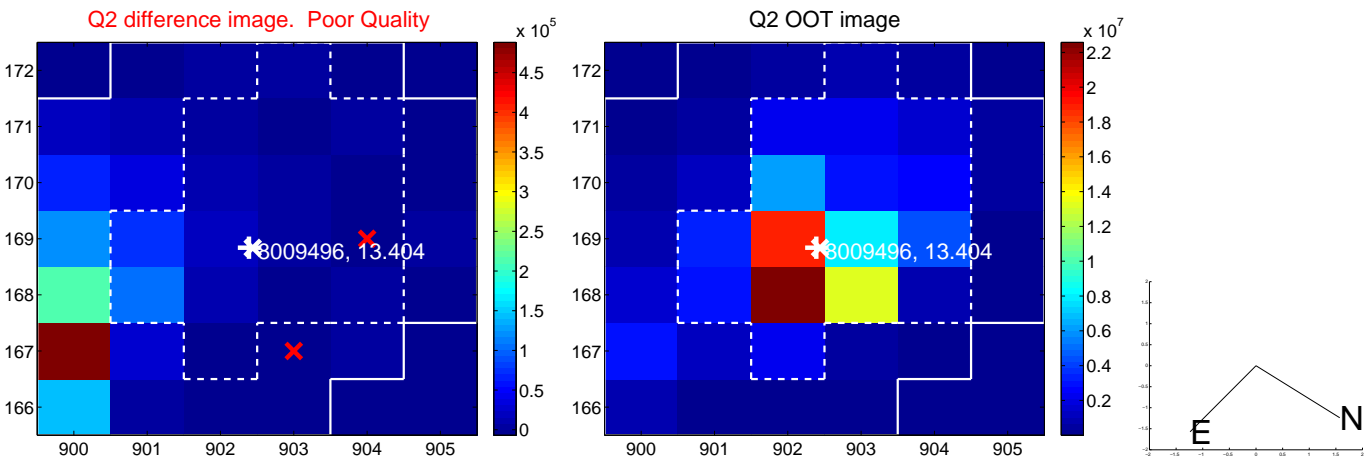
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	29.12 ± 0.23	127.68	26.22 ± 0.24	-12.67 ± 0.18

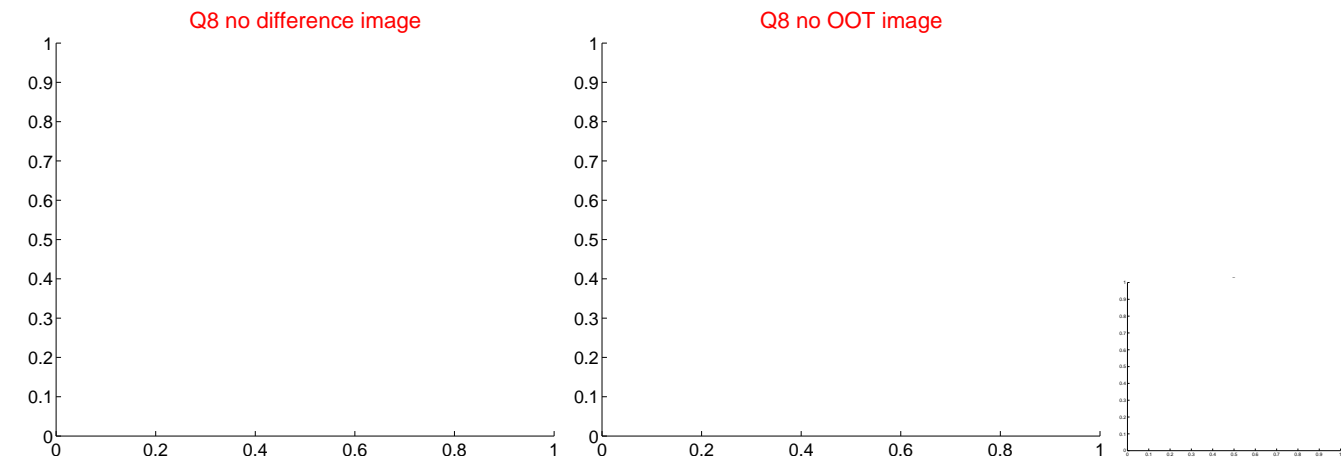
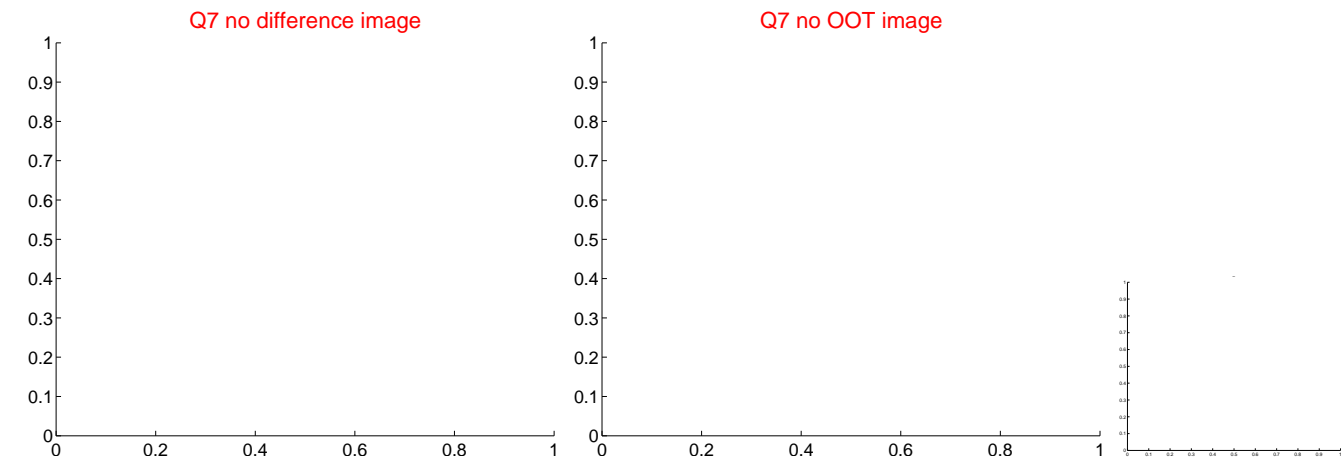
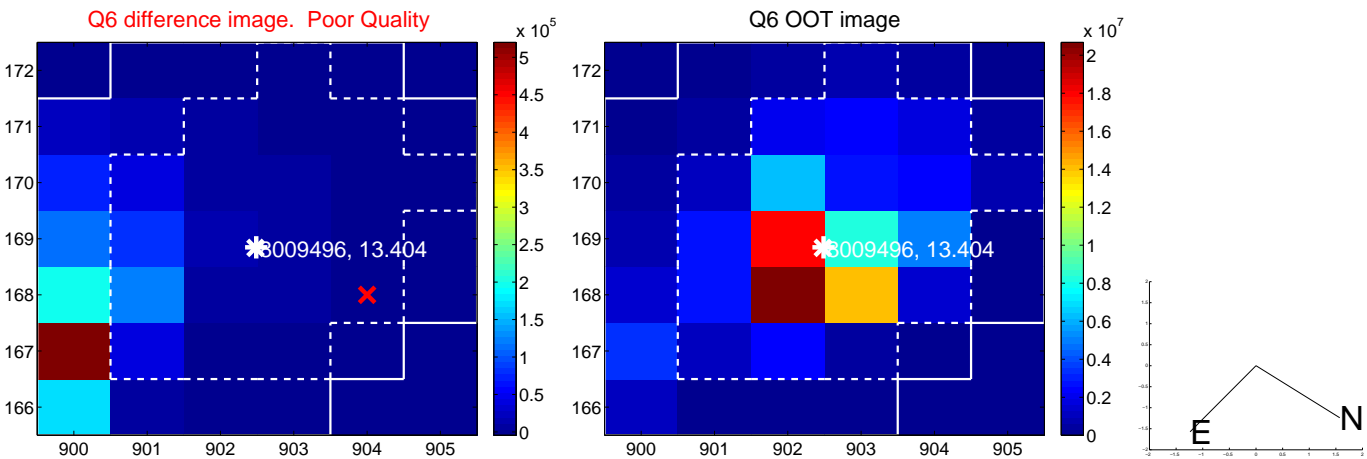


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

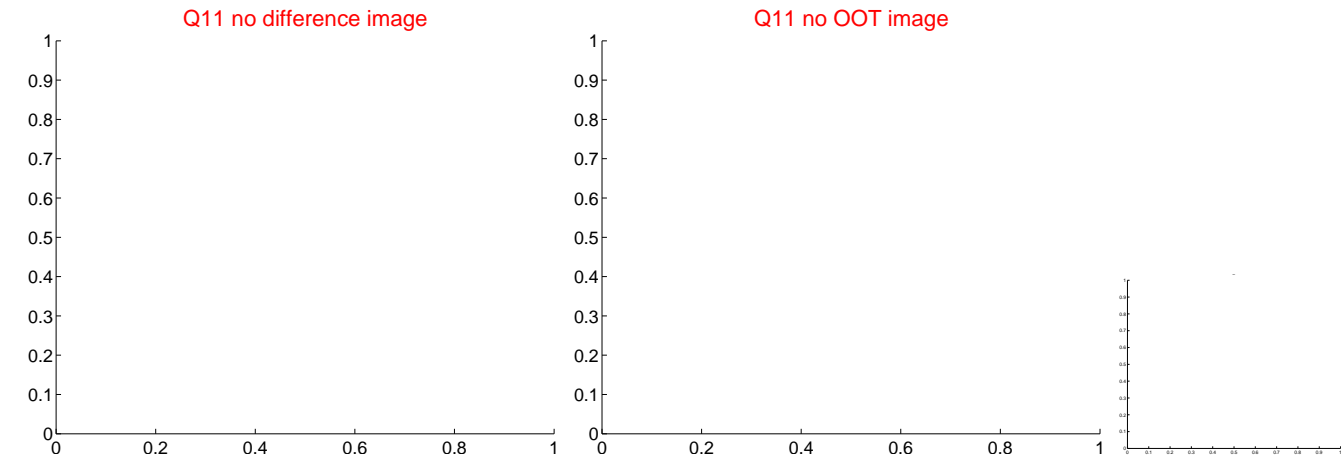
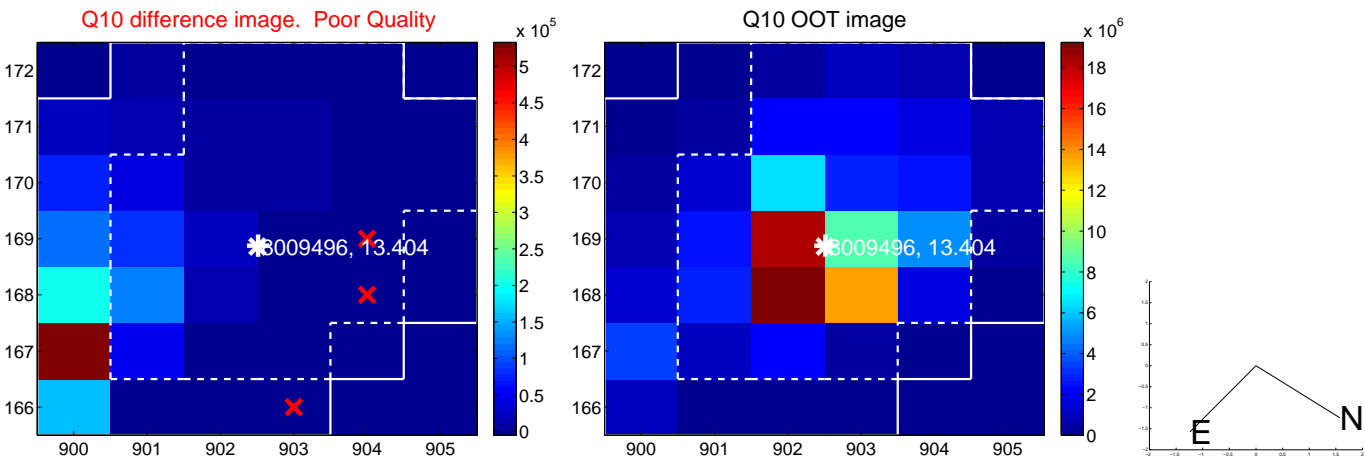
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



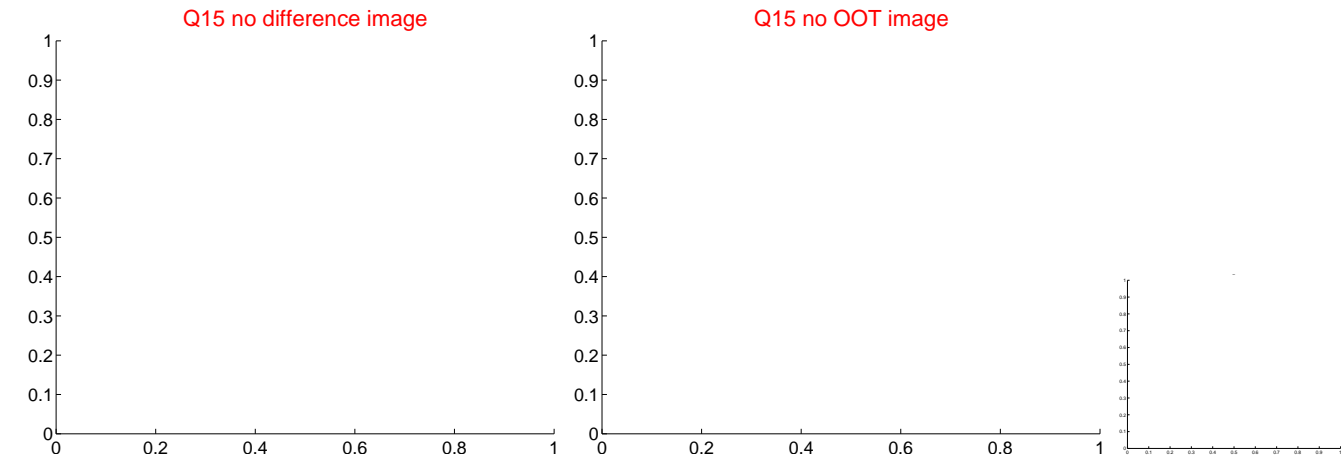
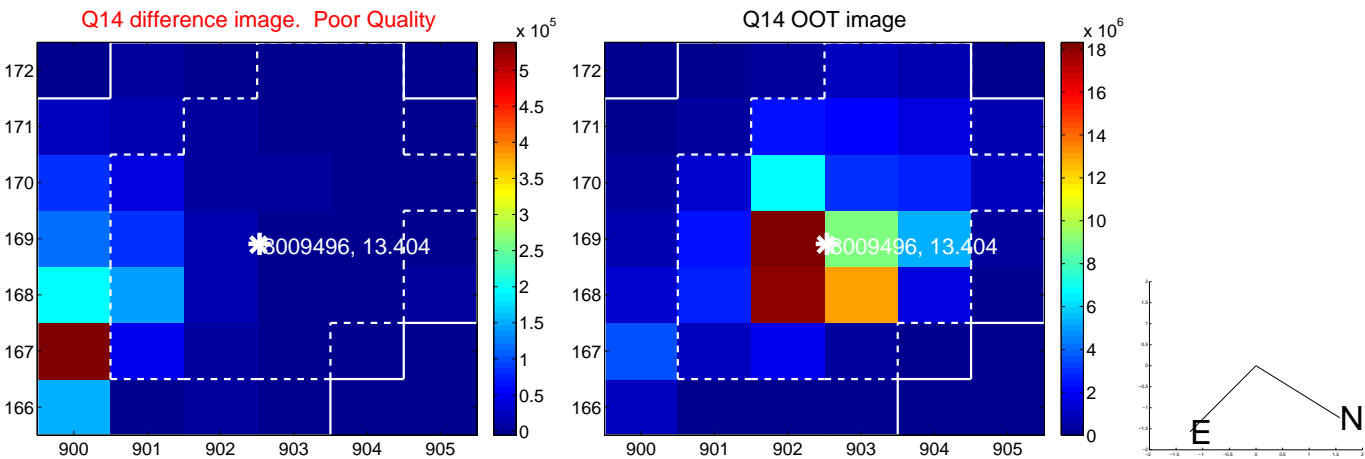
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



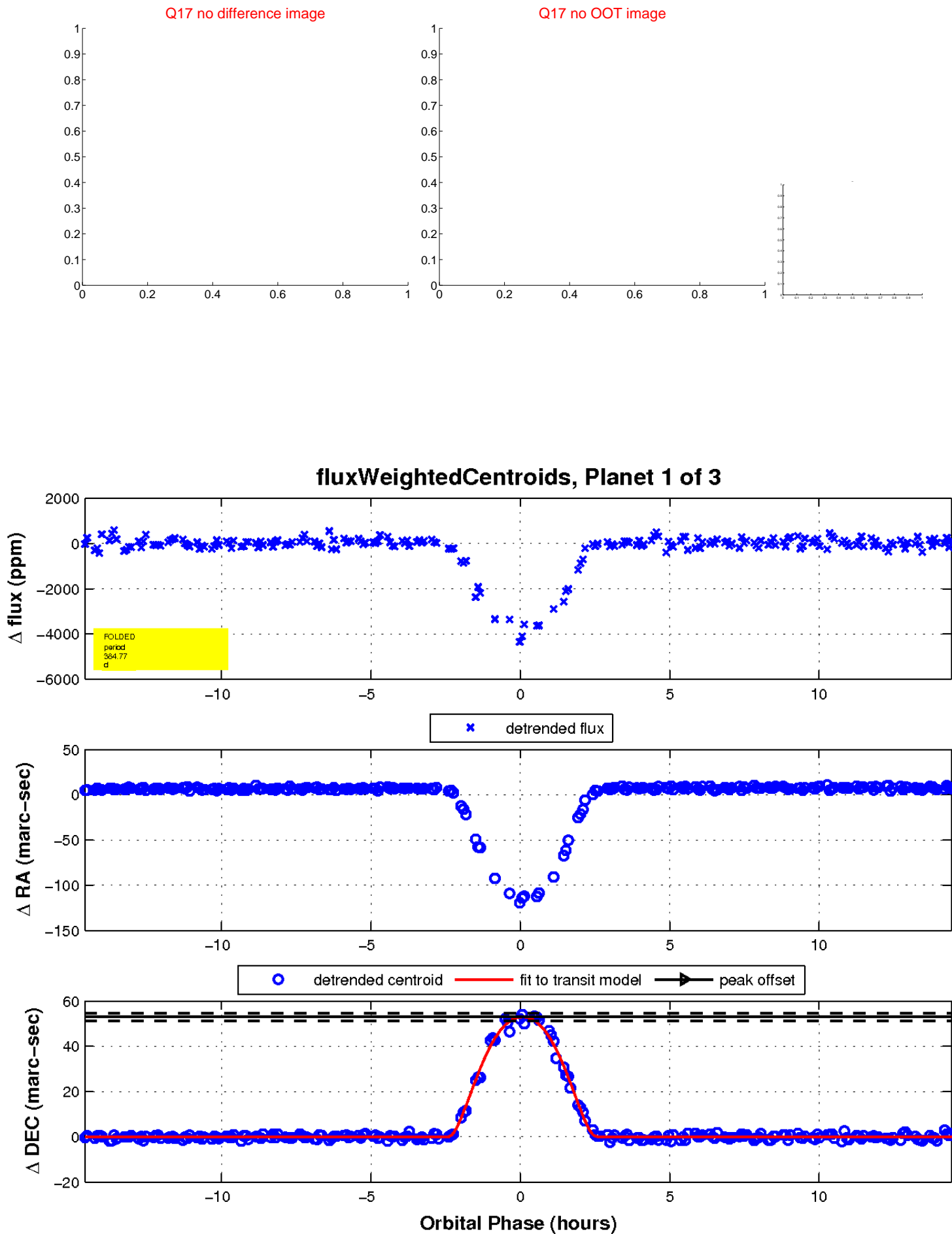
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

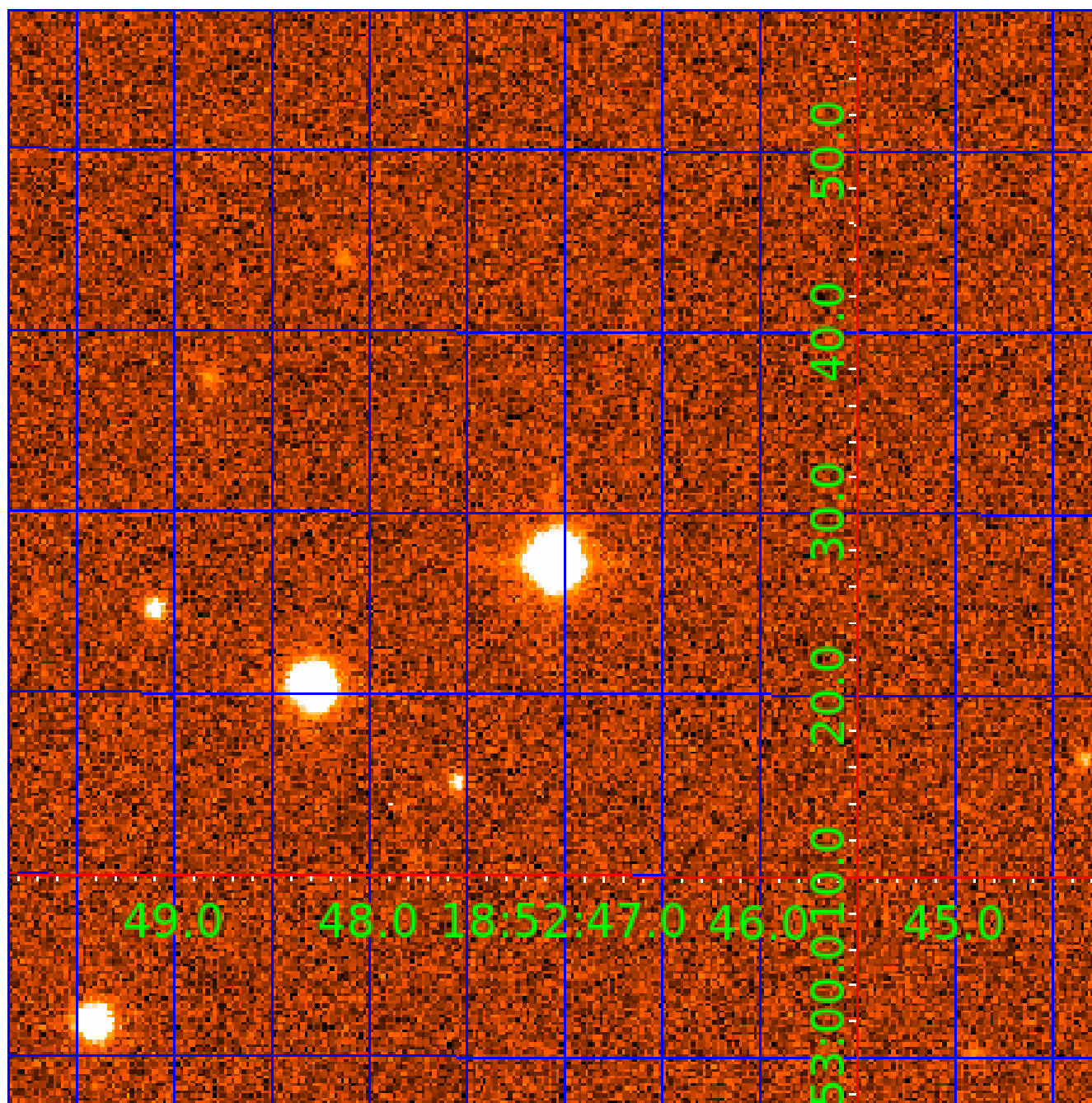


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008009496

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})
008009496-01	OBS	No	384.767826	189.049426	4246.2	4.862	90.0	78.3	2.16	6079	18.31	4.82
008009496-02	OBS	No	384.767843	227.528562	3123.4	4.959	81.8	50.3	2.16	6079	14.36	4.82
008009496-03	OBS	1869.01	38.477290	150.560758	217.4	4.986	19.2	14.2	2.16	6079	5.37	103.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008009496-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—HAS_SEC_TCE—PERIOD_ALIAS_DV—PERIOD_ALIAS_ALT—CENT_RESOLVED_OFFSET—EPHEM_MATCH
008009496-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH
008009496-03	OBS	FP	0.00	1	0	1	1	RESIDUAL_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH

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 008009496-02

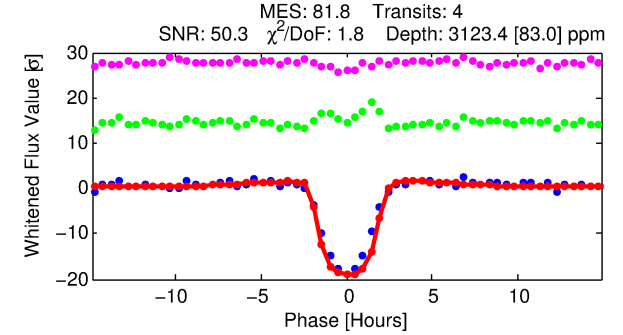
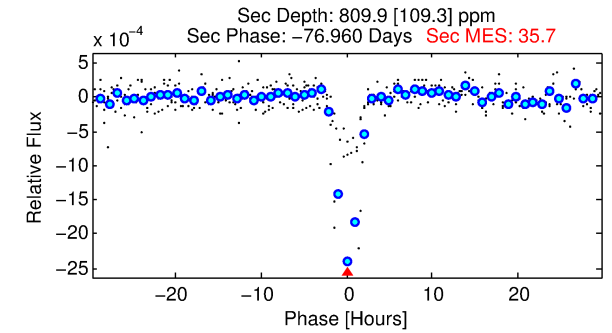
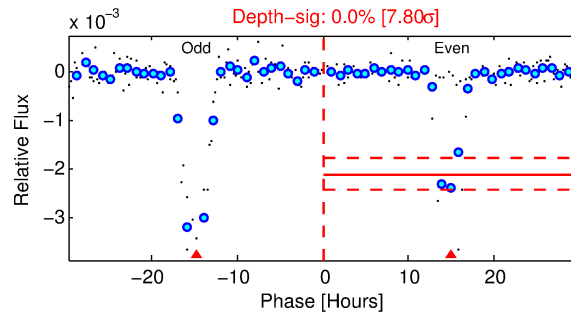
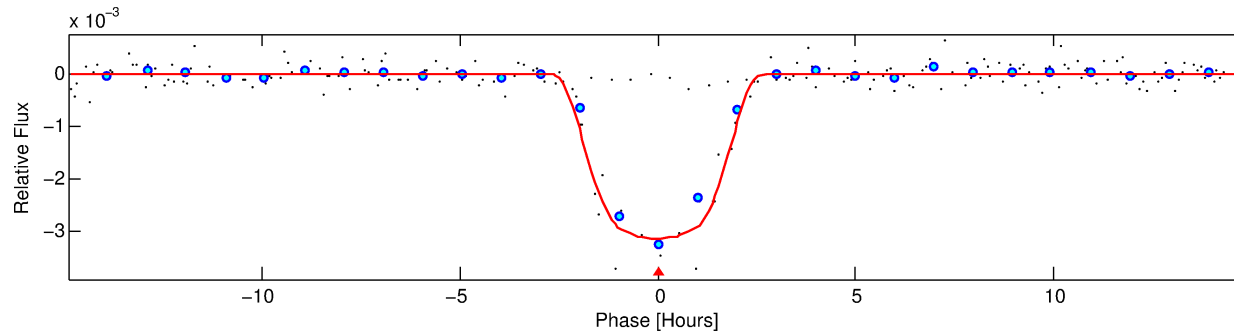
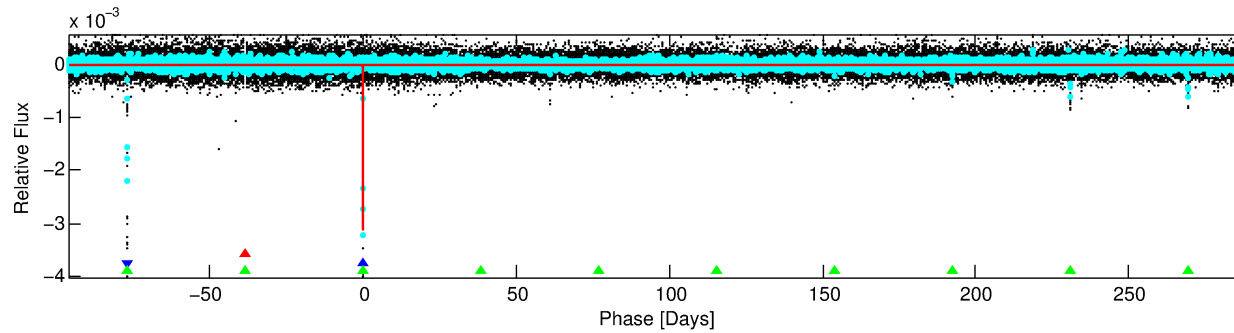
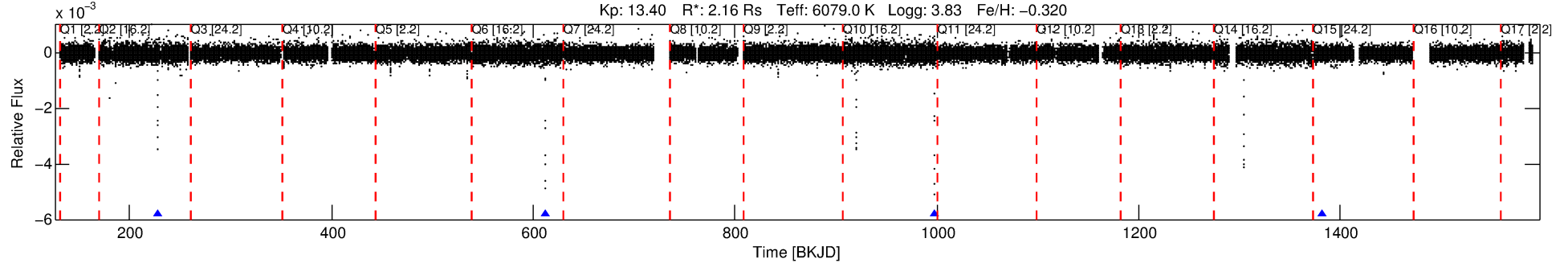
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
008009496-02	8009496	6951.01	8009500	10:1	15.3	2	3	14.58	13.40	55.79	Direct-PRF	0	0.25	0.02

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 8009496 Candidate: 2 of 3 Period: 384.768 d
KOI: K01869 Corr: No Ephemeris Match

Kp: 13.40 R*: 2.16 Rs Teff: 6079.0 K Logg: 3.83 Fe/H: -0.320



DV Fit Results:

Period = 384.76784 [0.00112] d
Epoch = 227.5286 [0.0024] BKJD
Rp/R* = 0.0608 [0.0014]
a/R* = 325.63 [21.90]
b = 0.91 [0.01]
Seff = 4.82 [2.65]
Teq = 378 [52] K
Rp = 14.36 [5.19] Re
a = 1.0894 [0.3714] AU
Ag = 2564.84 [1432.53] [1.79σ]
Teff = 4158 [185] K [19.66σ]

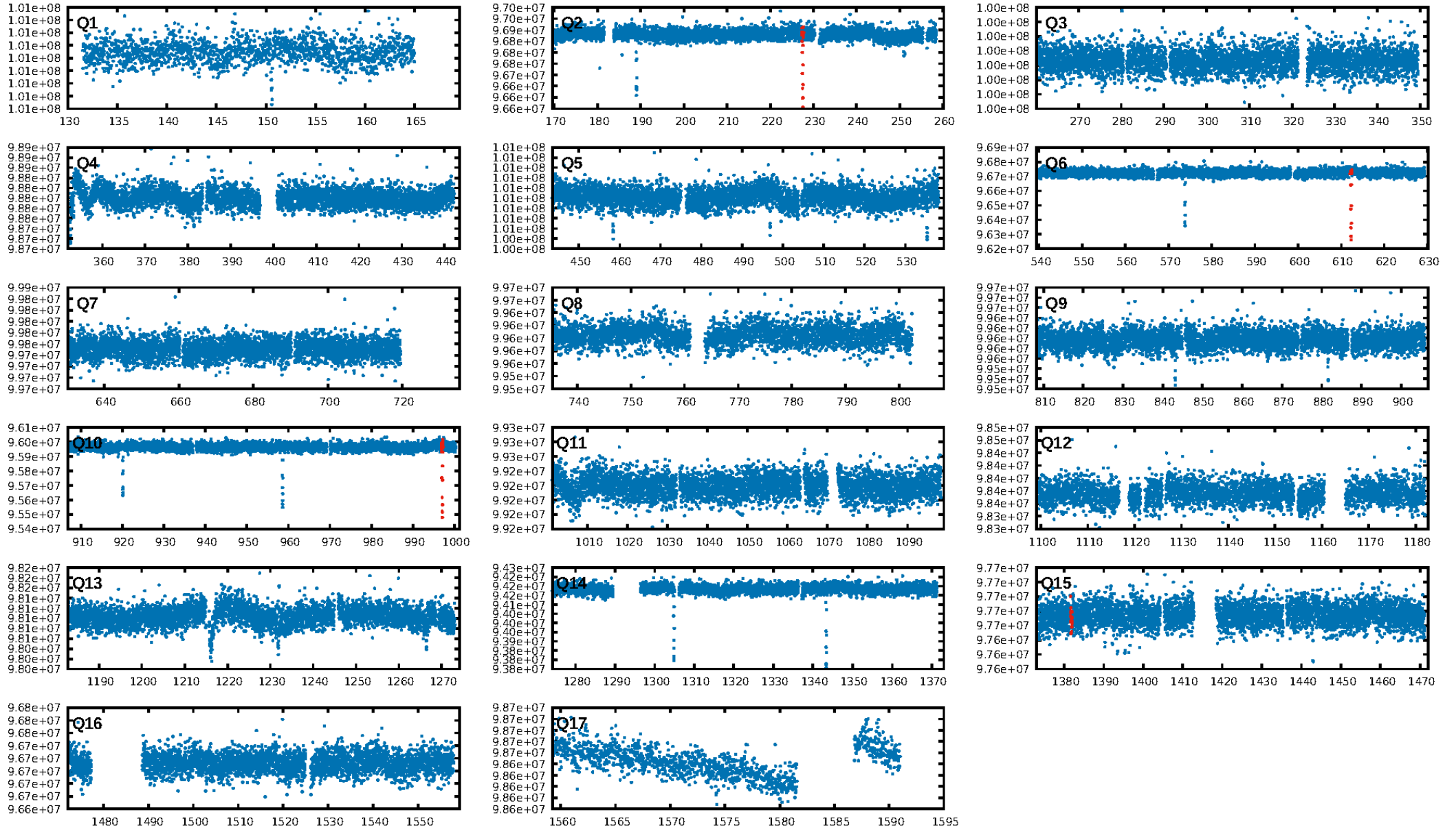
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 31.2%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.7439
Centroid-sig: N/A
Centroid-so: 21.521 arcsec [104.07σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 0.00 [0/4]

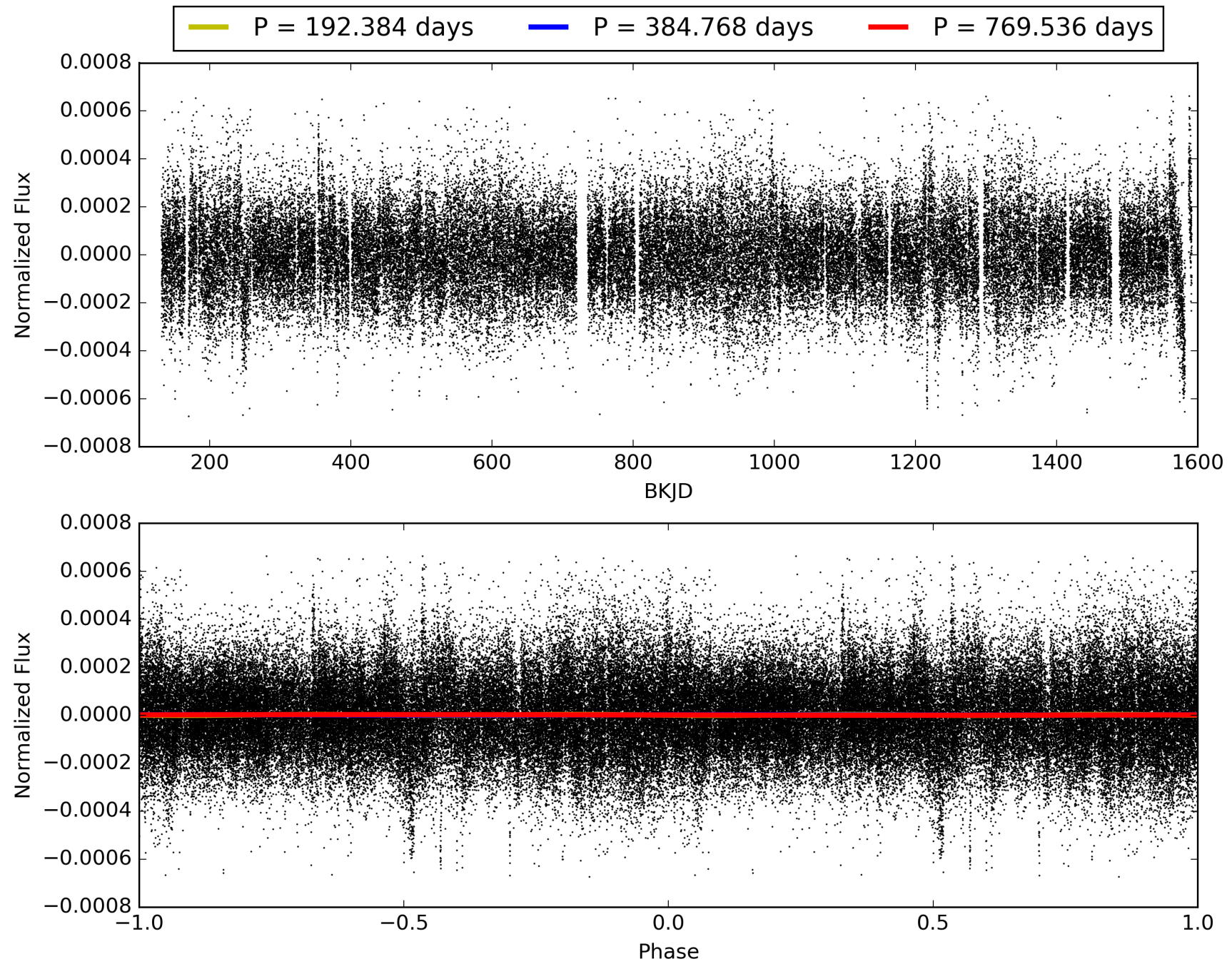
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 06:06:47 Z

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

TCE 008009496-02, PDC Light Curves

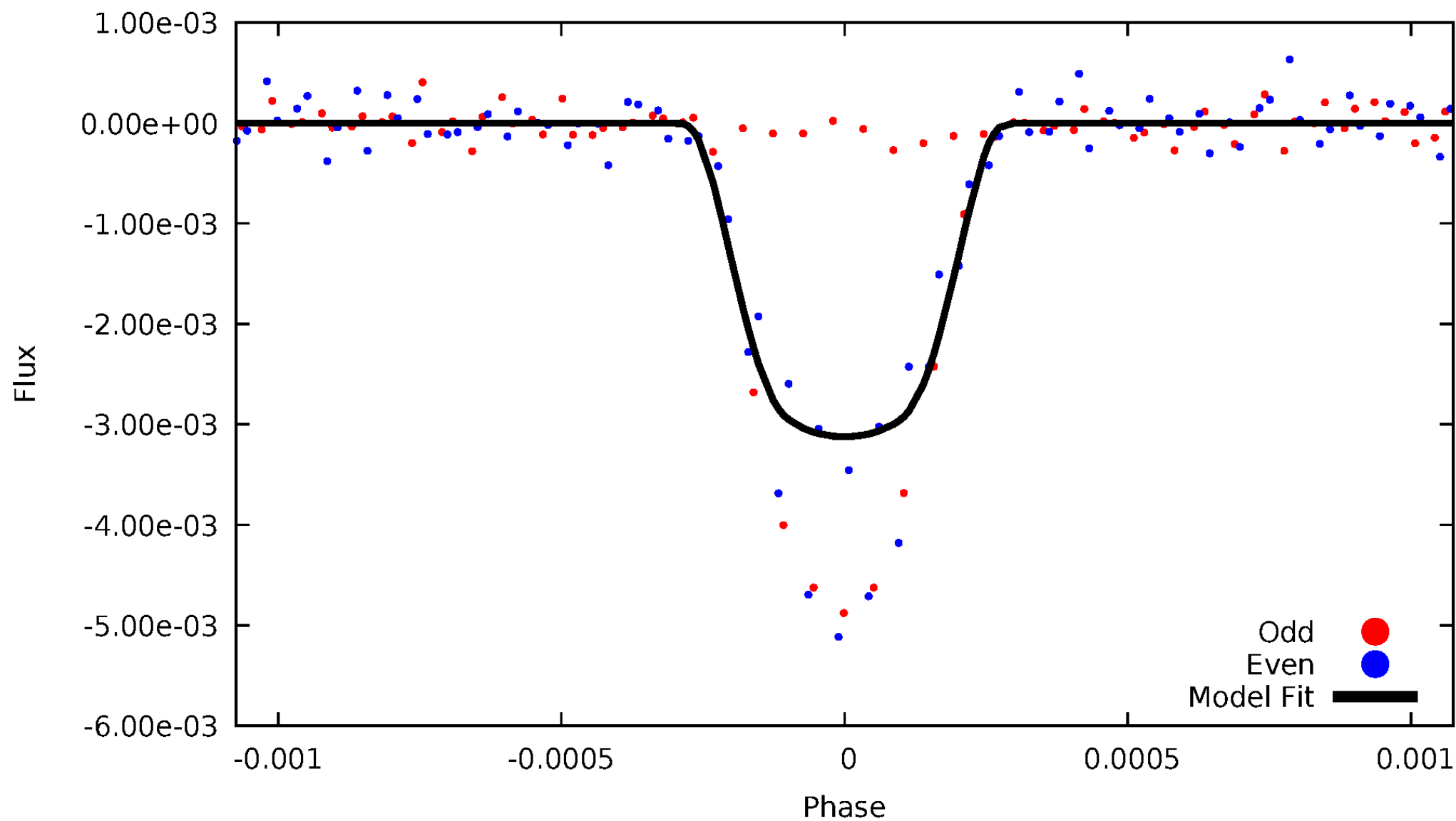


TCE 008009496-02



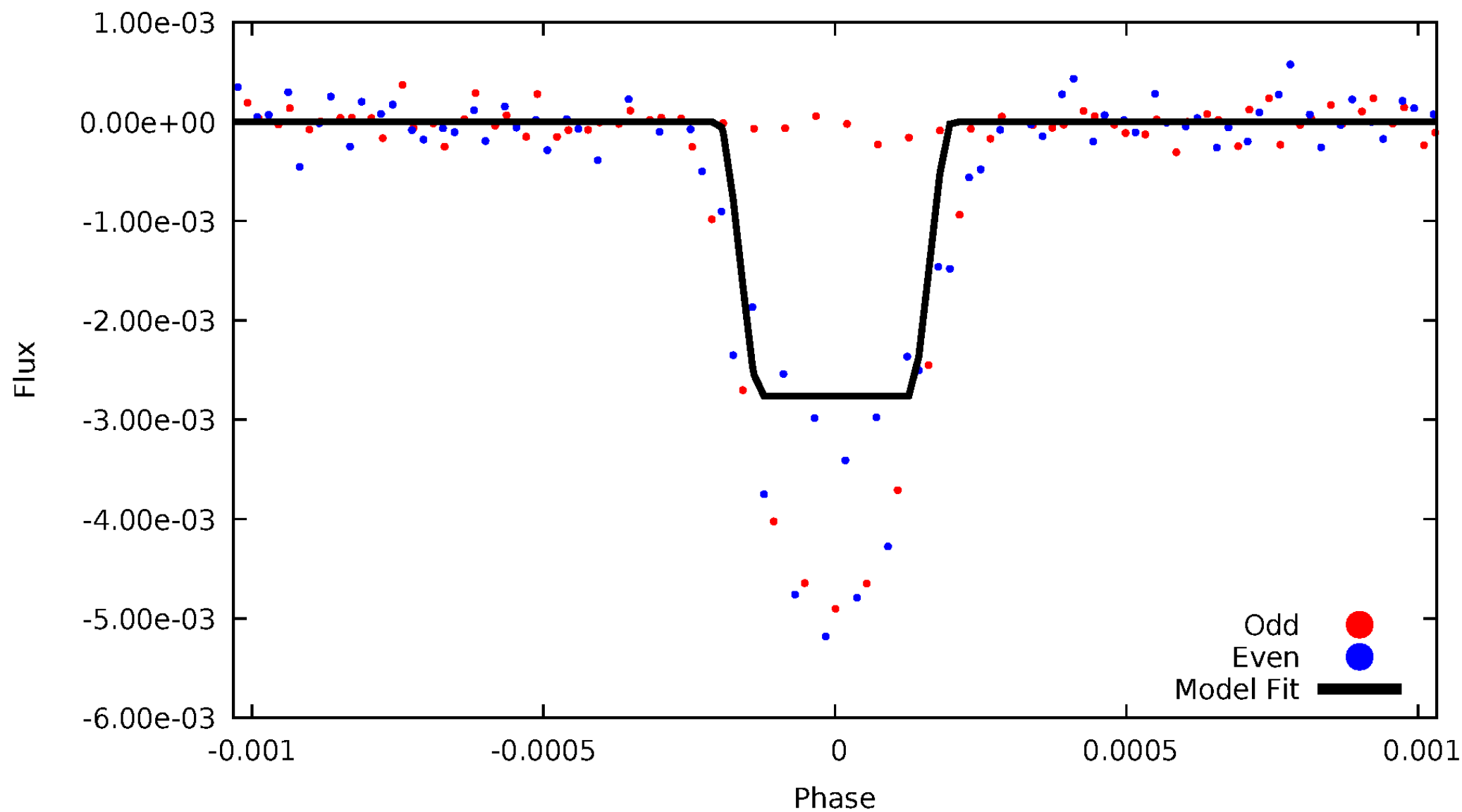
DV Odd/Even

TCE 008009496-02



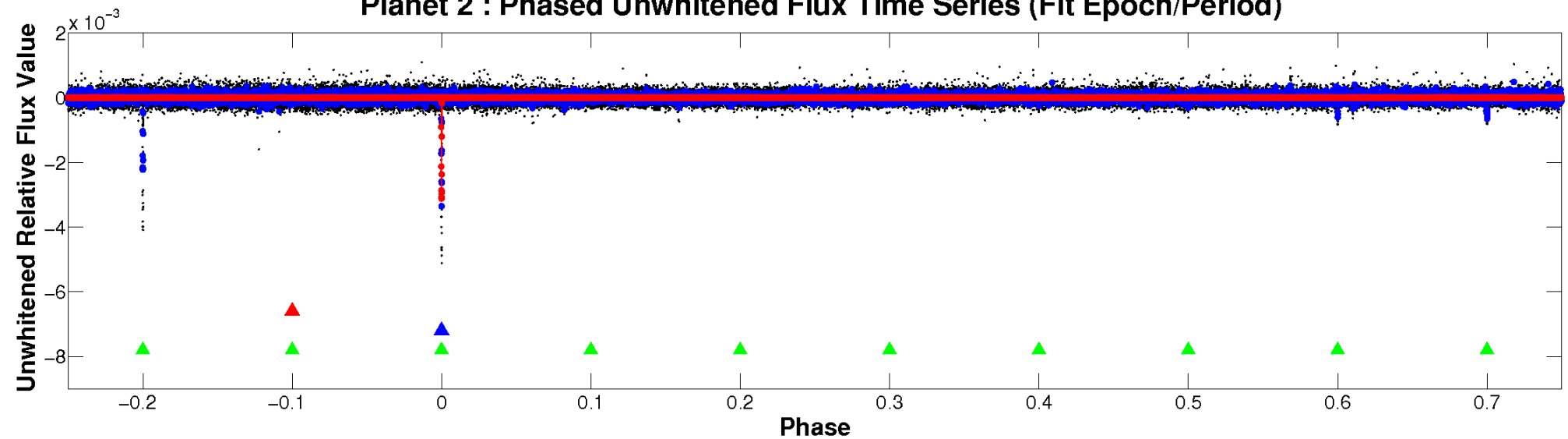
ALT Odd/Even

TCE 008009496-02

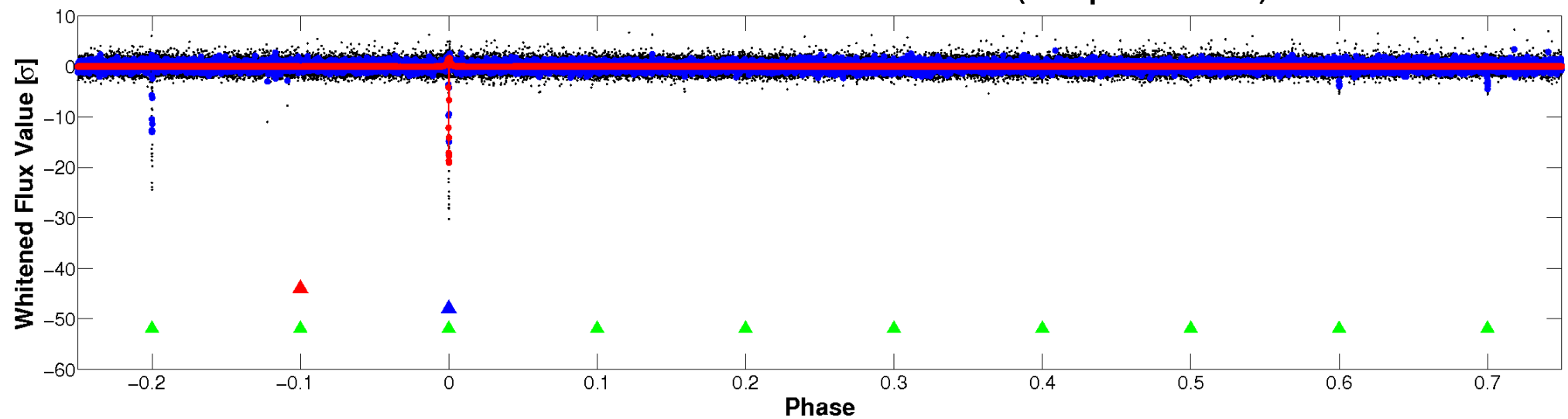


Non-Whitened Vs. Whitened Light Curve

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

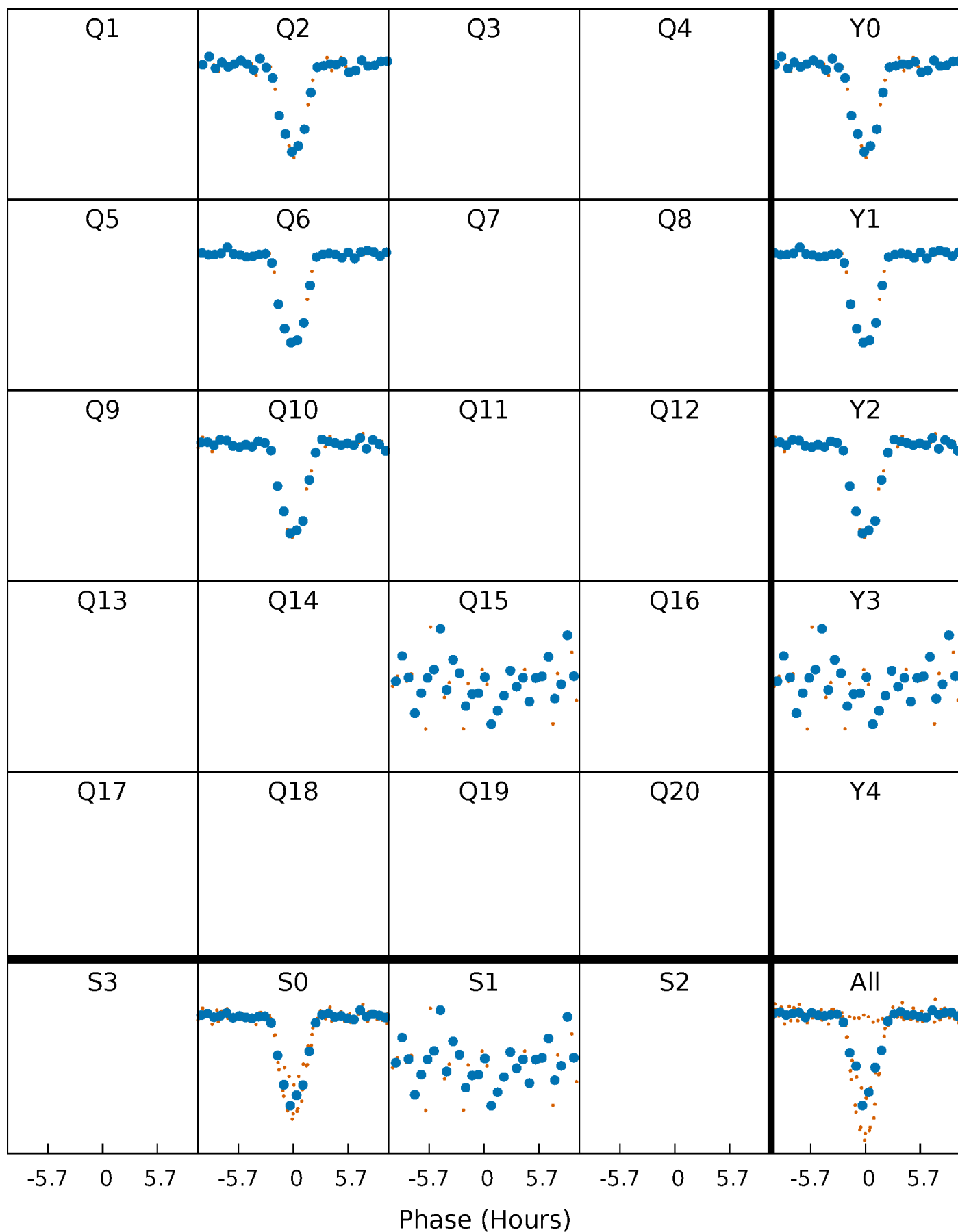


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



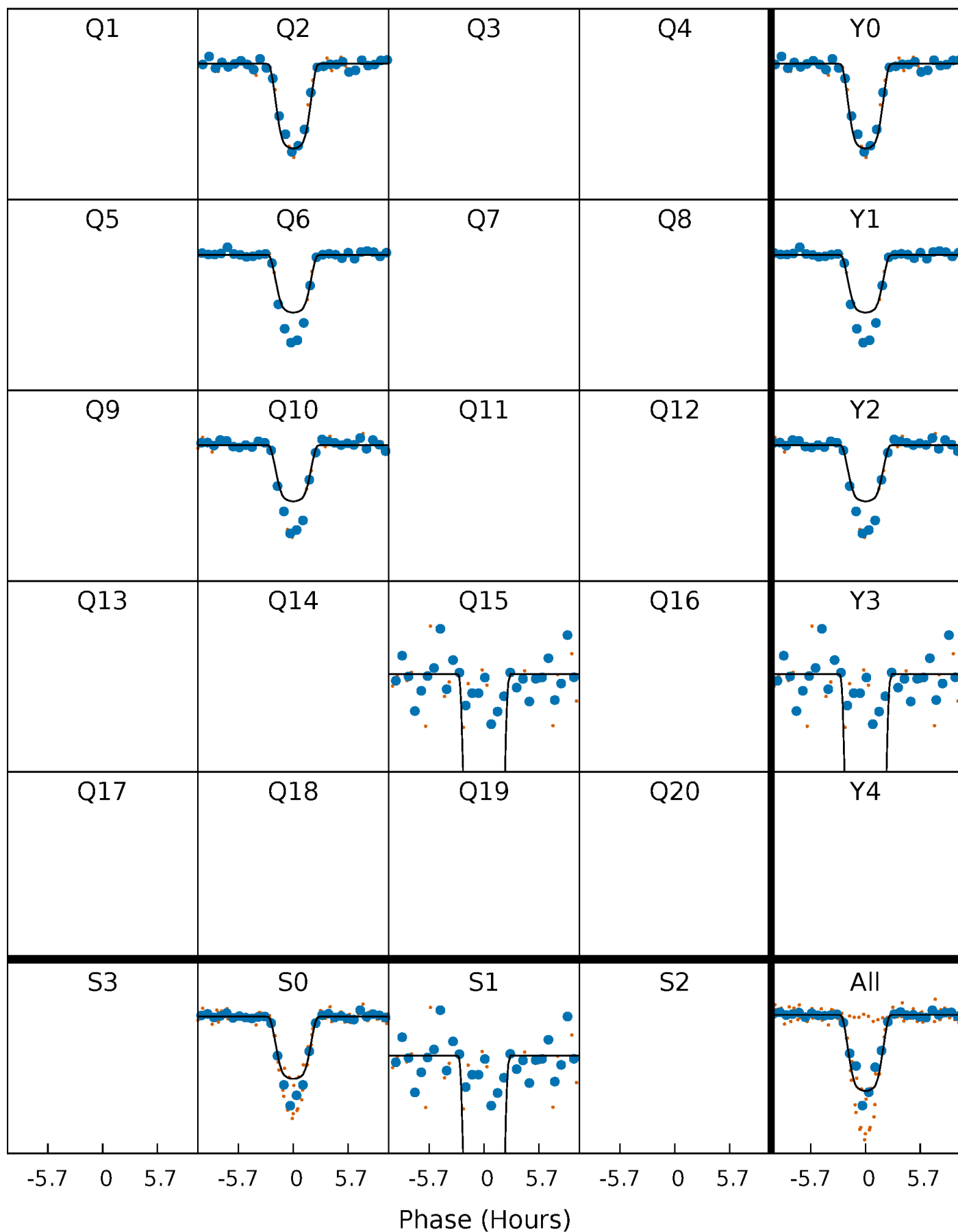
PDC Quarter-Phased Transit Curves

TCE 008009496-02 $P=384.767843$ Days $T_0=227.528562$ (BKJD)



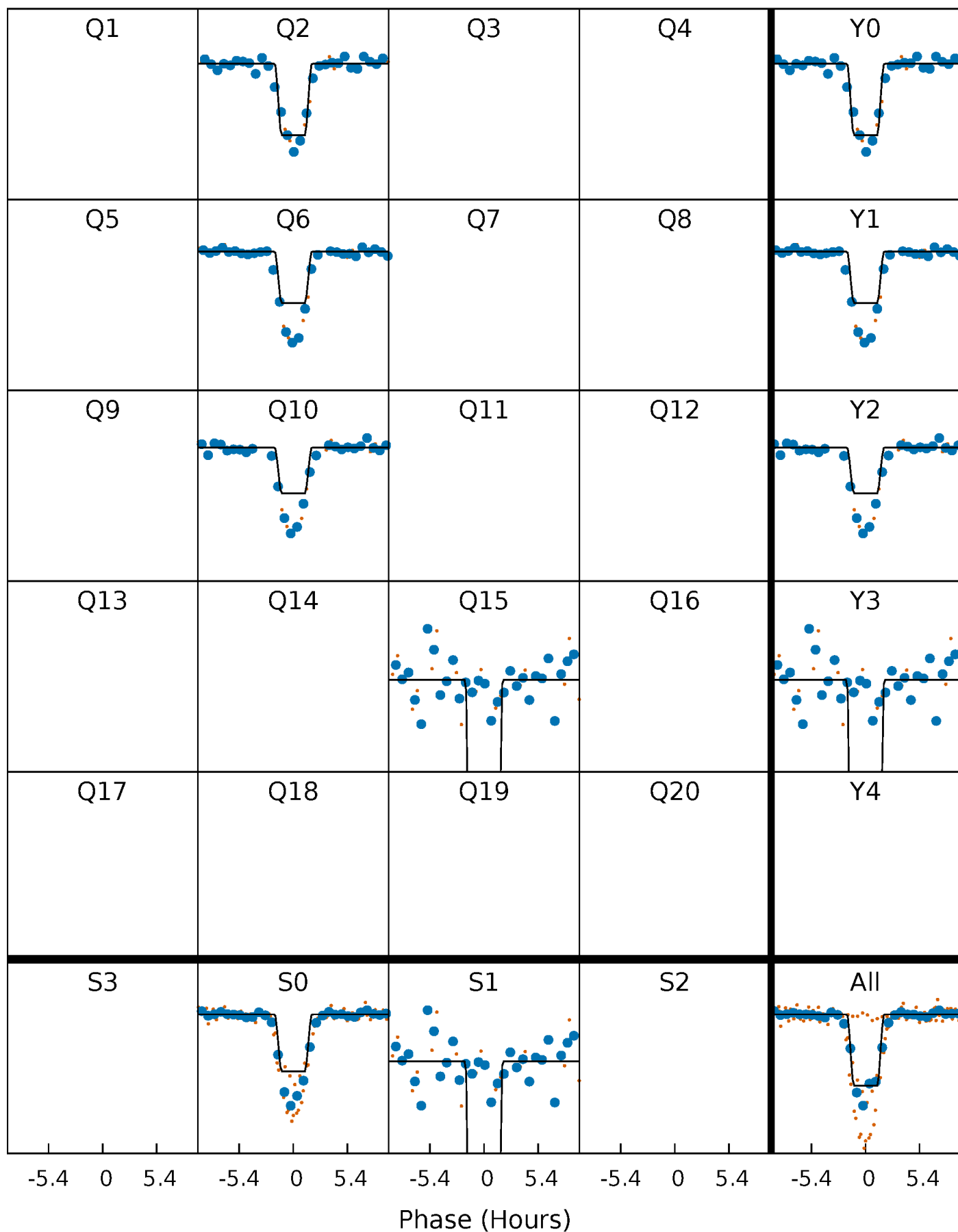
DV Quarter-Phased Transit Curves

TCE 008009496-02 $P=384.767843$ Days $T_0=227.528562$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

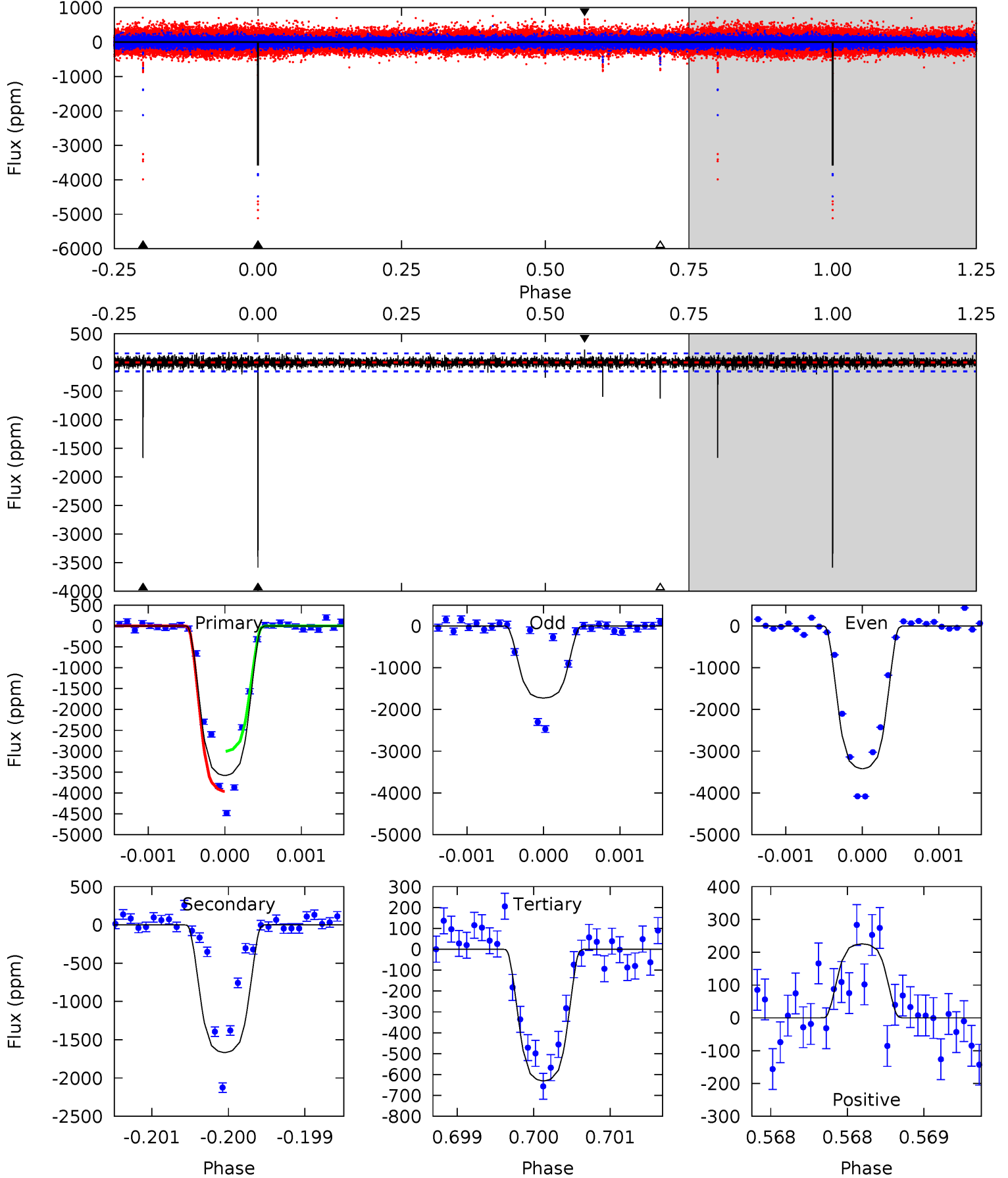
TCE 008009496-02 P=384.770746 Days $T_0=227.524561$ (BKJD)



DV Model-Shift Uniqueness Test

008009496-02, P = 384.767843 Days, E = 227.528562 Days

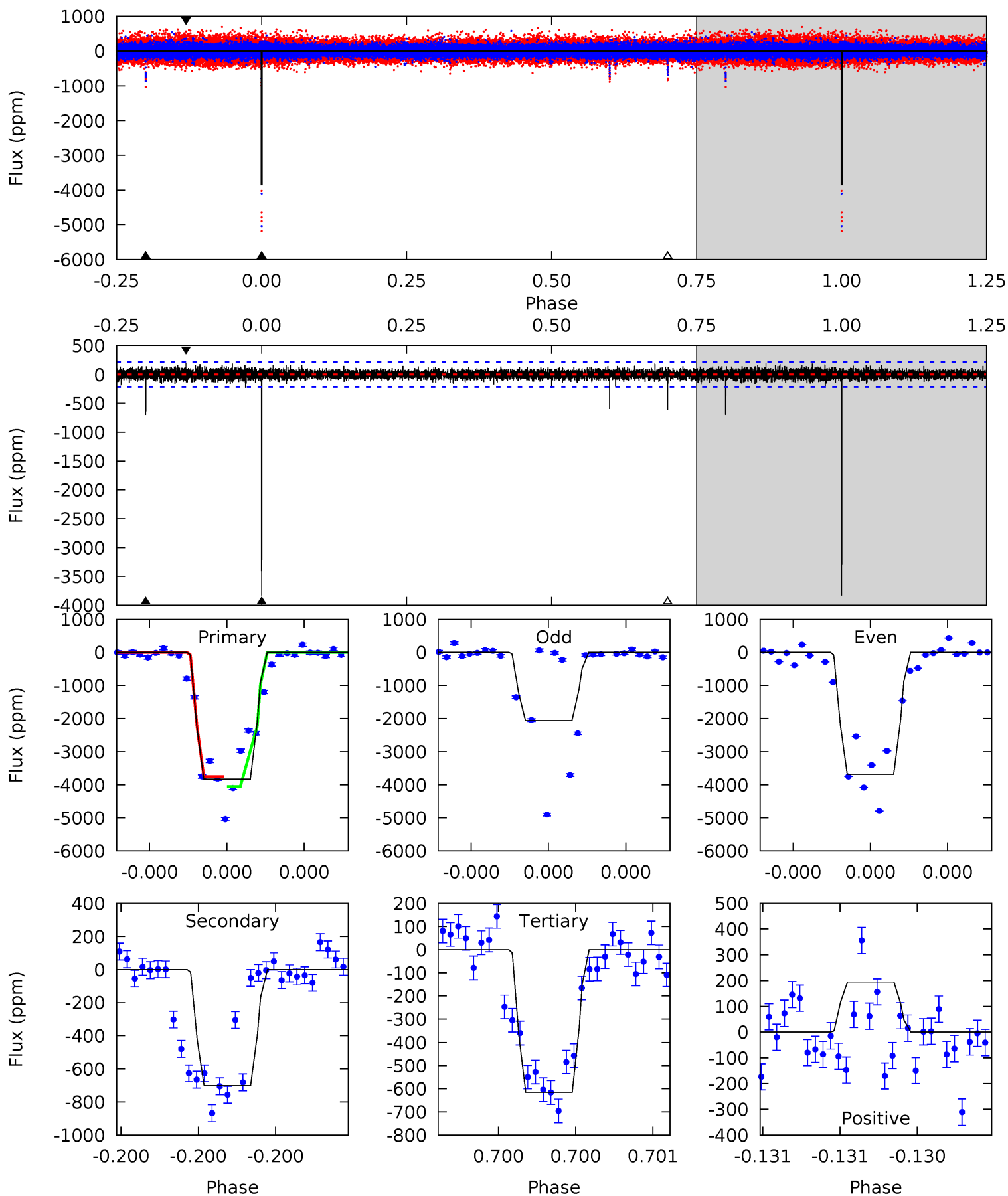
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
126.2	58.7	22.2	7.94	5.55	3.44	1.57	104.0	118.3	36.5	50.8	30.6	0.81	0.06	16.3



Alt Model-Shift Uniqueness Test

008009496-02, P = 384.770746 Days, E = 227.524561 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
99.3	18.2	16.0	5.04	5.61	3.53	1.17	83.4	94.3	2.25	13.2	23.3	0.81	0.05	3.30



Stellar Parameters For KIC 008009496

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6079^{+162}_{-162}	$3.834^{+0.315}_{-0.105}$	$-0.320^{+0.350}_{-0.250}$	$2.163^{+0.420}_{-0.780}$	$1.164^{+0.208}_{-0.208}$	$0.162^{+0.370}_{-0.054}$
	+3%/-3%	+8%/-3%	+109%/-78%	+19%/-36%	+18%/-18%	+228%/-33%
Source	PHO1	FLK73	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 008009496-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1667 ± 28	$14.08^{+1.86}_{-2.68}$	518^{+36}_{-49}	5068^{+124}_{-127}	5692^{+2530}_{-1183}
Alt.	-703 ± 39	$12.29^{+1.54}_{-2.41}$	521^{+32}_{-48}	4504^{+119}_{-119}	3148^{+1401}_{-645}

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

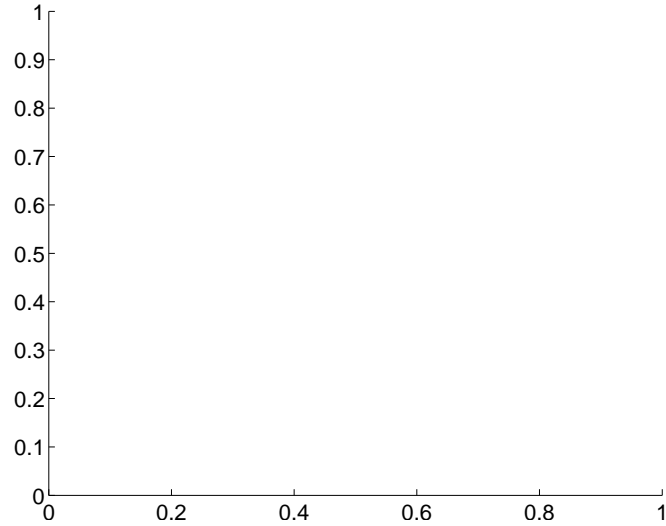
Supplemental centroid analysis for 008009496-02. Kepler magnitude: 13.40. Transit SNR 50.30

There are 0 quarters with good PRF difference image offsets

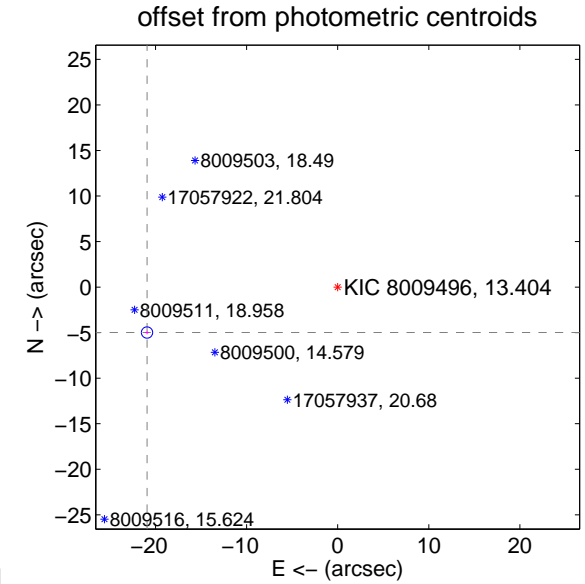
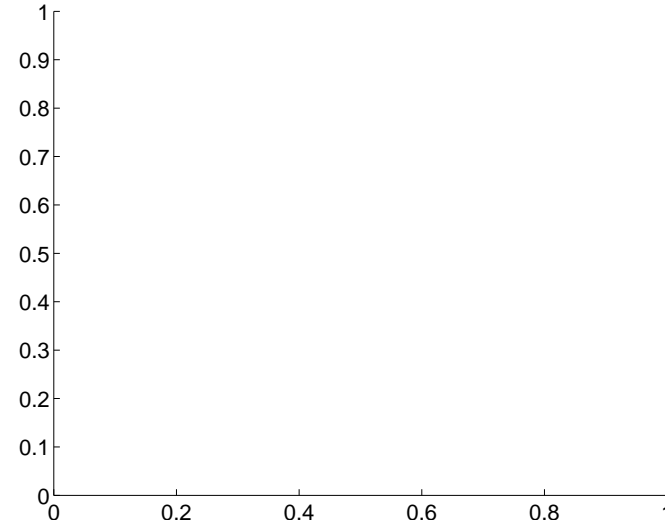
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	21.52 ± 0.21	104.07	20.94 ± 0.21	-4.99 ± 0.19

There is no PRF-fit offset from OOT-fit

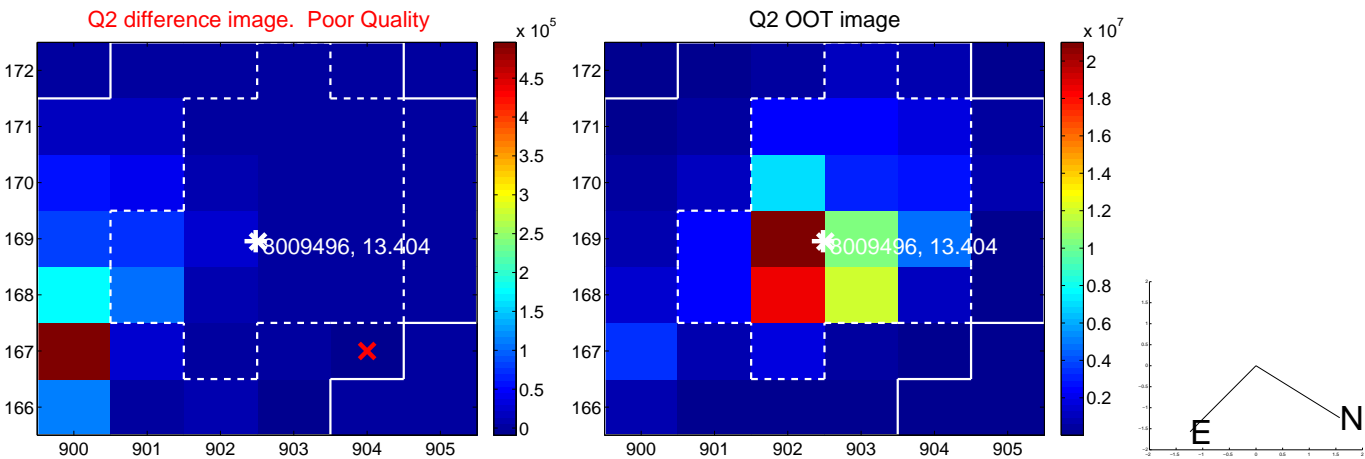


There is no PRF-fit offset from KIC

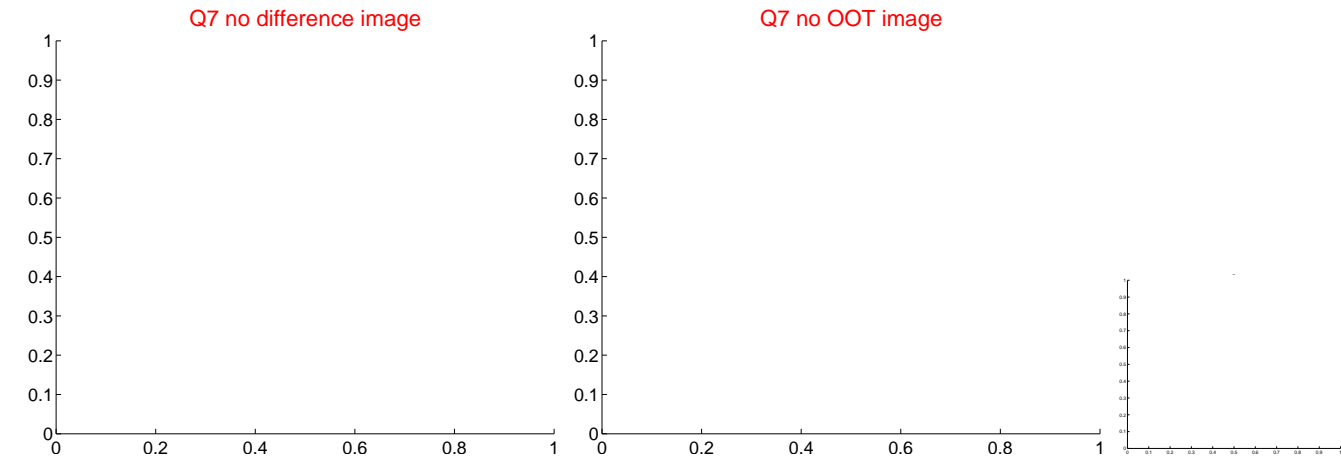
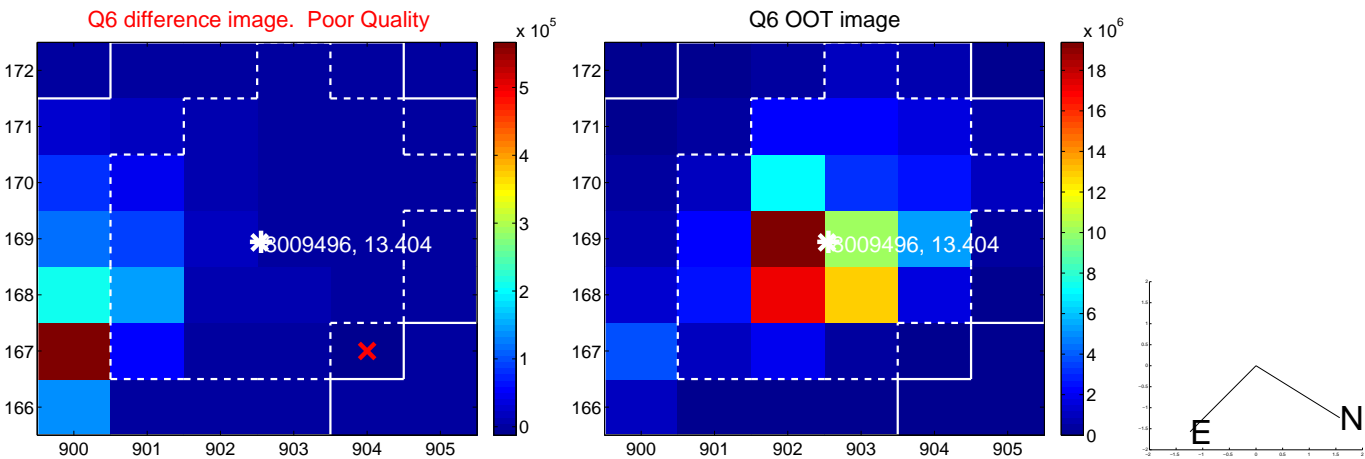


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

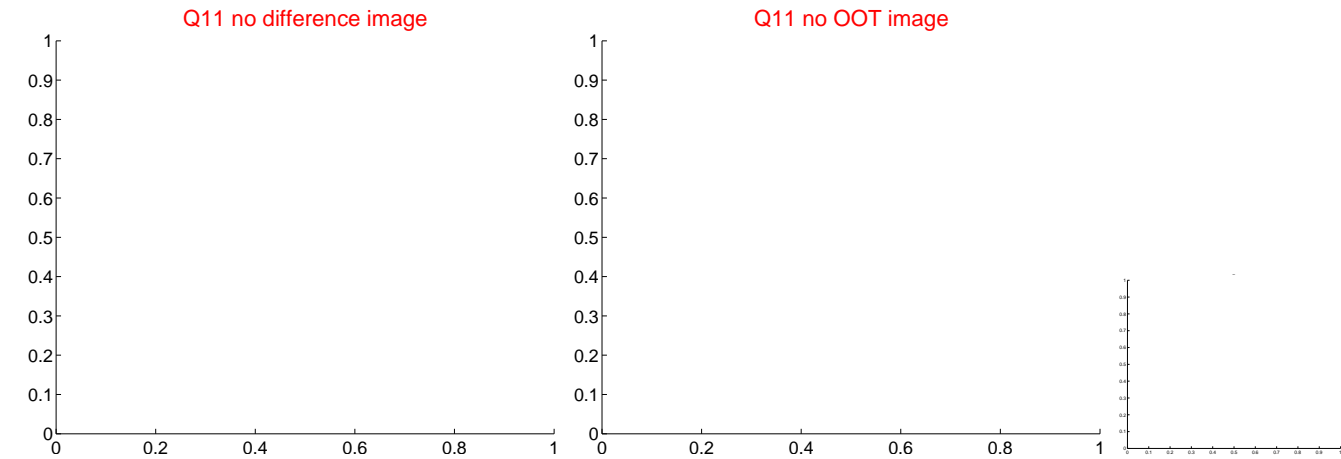
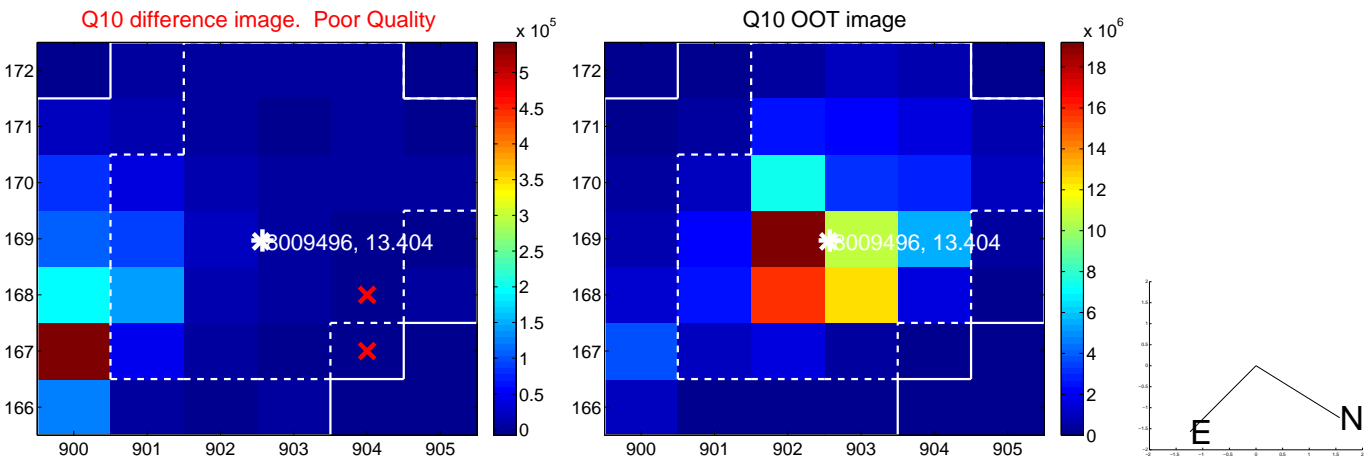
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



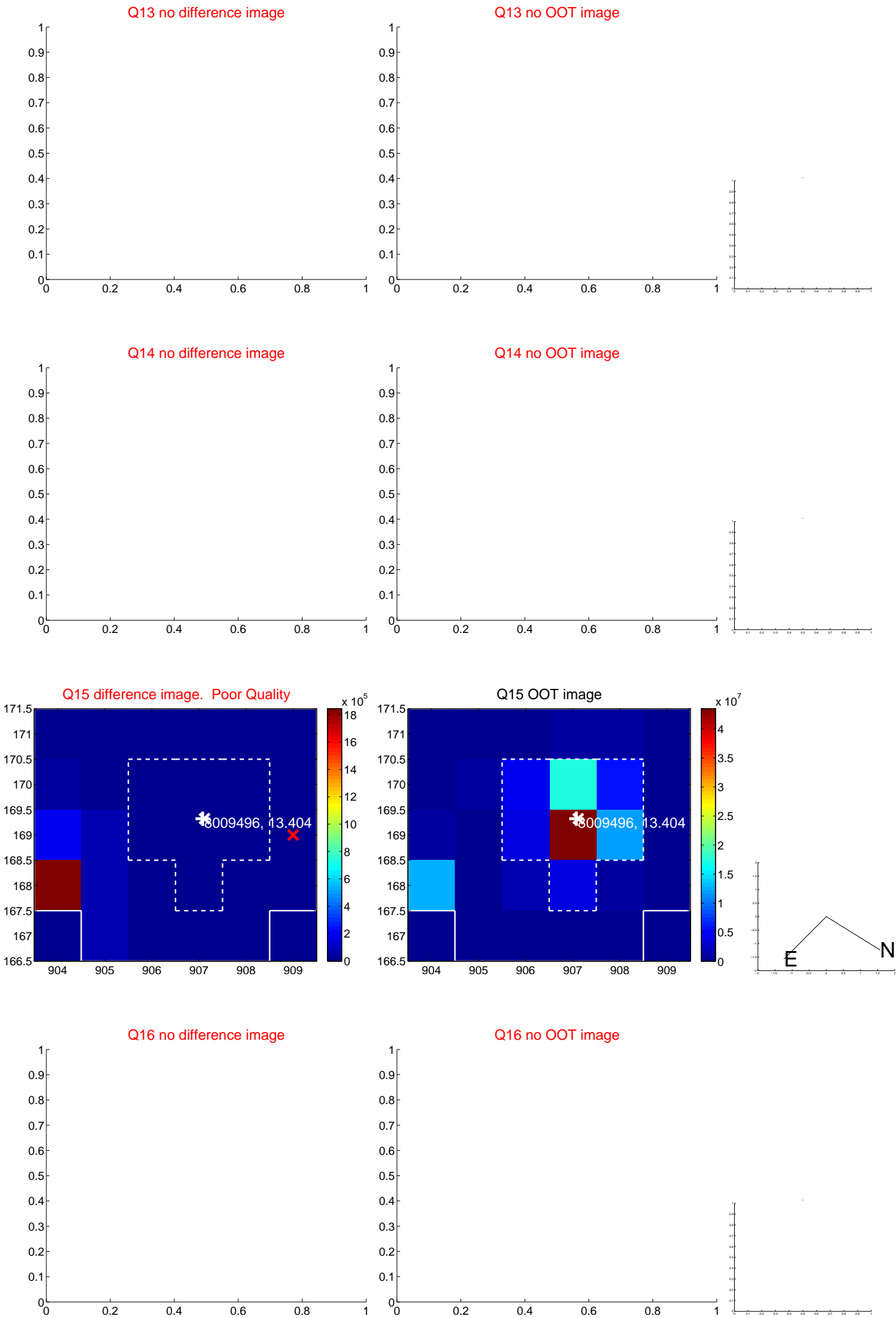
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



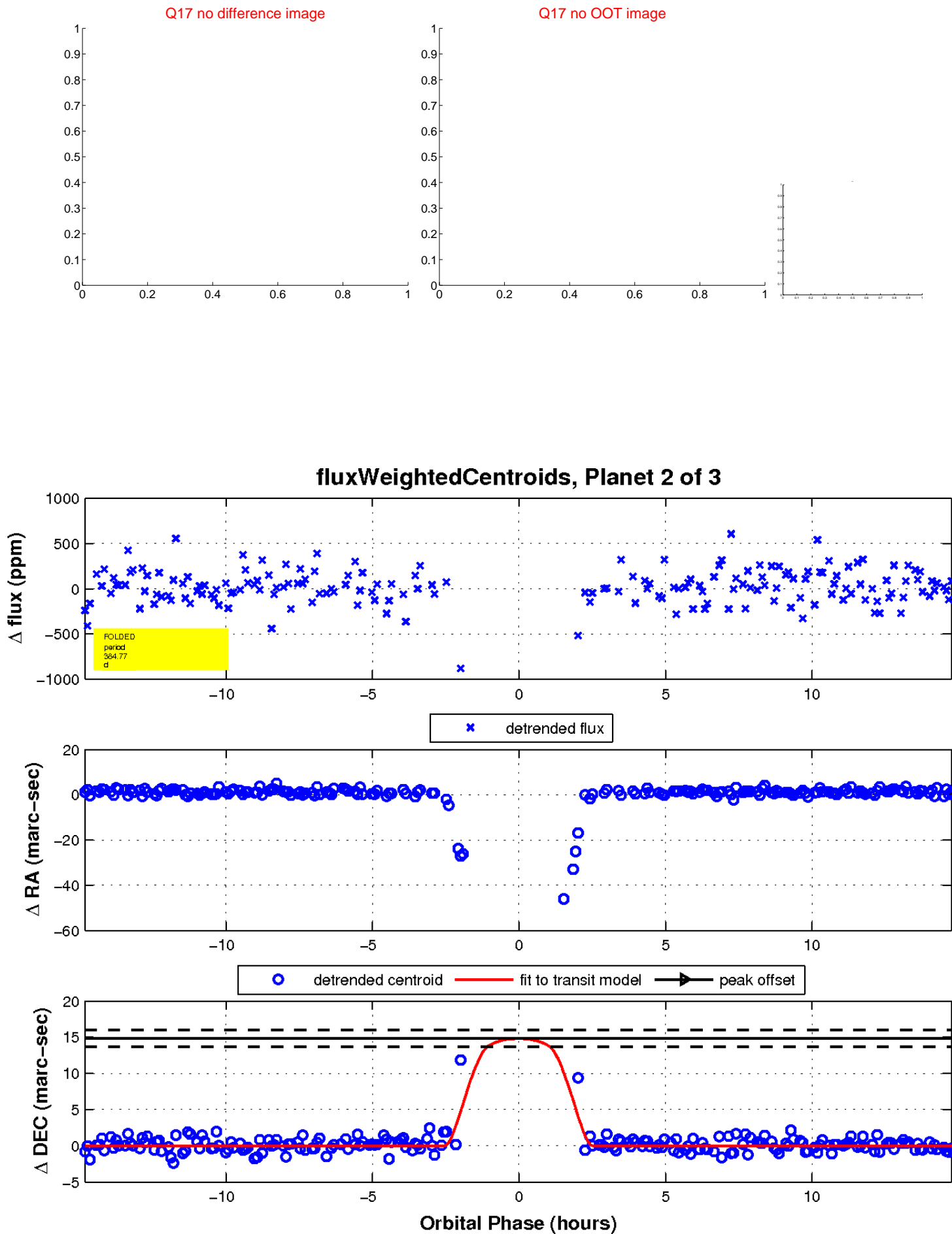
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

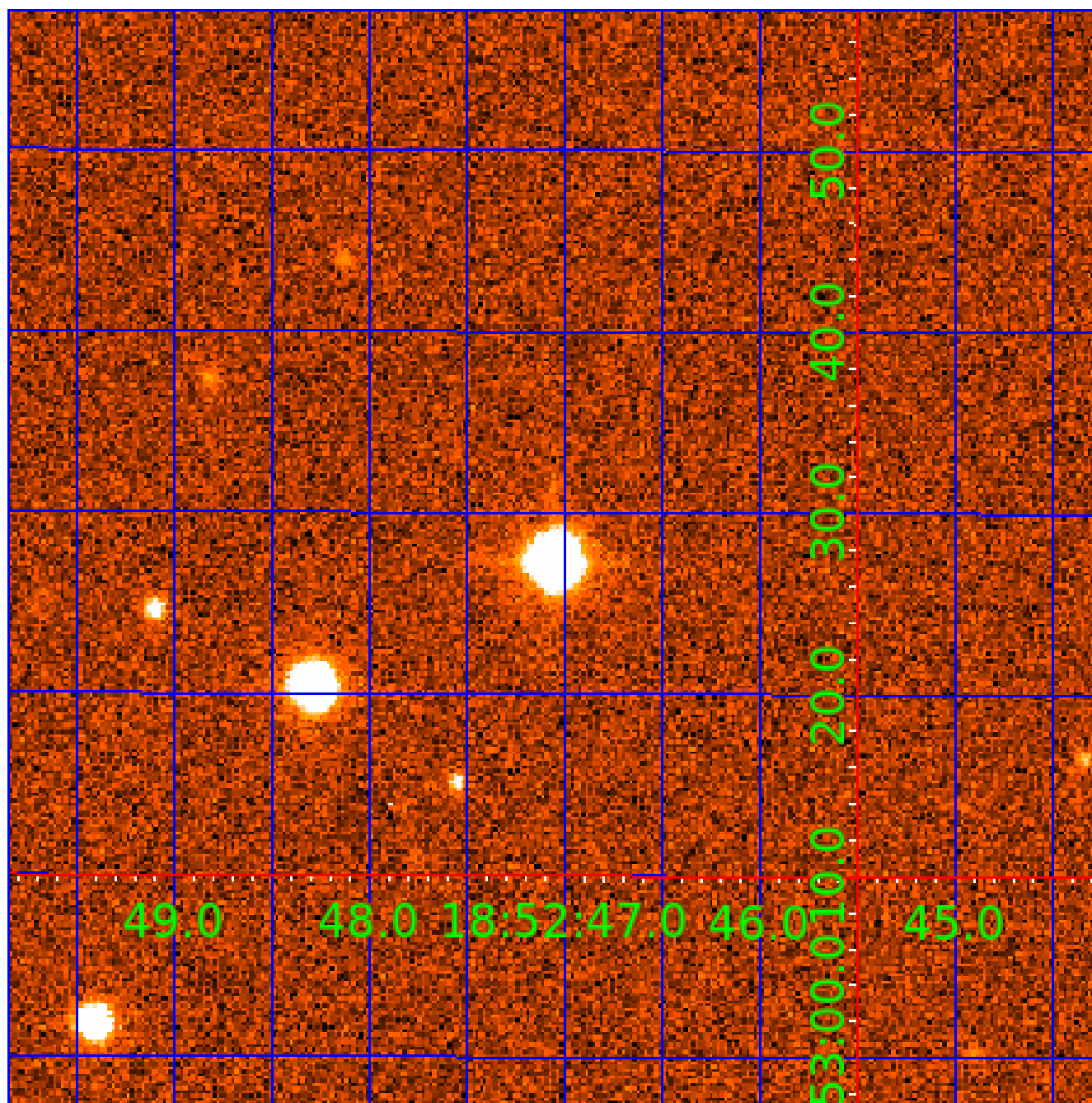


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008009496

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})
008009496-01	OBS	No	384.767826	189.049426	4246.2	4.862	90.0	78.3	2.16	6079	18.31	4.82
008009496-02	OBS	No	384.767843	227.528562	3123.4	4.959	81.8	50.3	2.16	6079	14.36	4.82
008009496-03	OBS	1869.01	38.477290	150.560758	217.4	4.986	19.2	14.2	2.16	6079	5.37	103.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008009496-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—HAS_SEC_TCE—PERIOD_ALIAS_DV—PERIOD_ALIAS_ALT—CENT_RESOLVED_OFFSET—EPHEM_MATCH
008009496-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH
008009496-03	OBS	FP	0.00	1	0	1	1	RESIDUAL_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH

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.

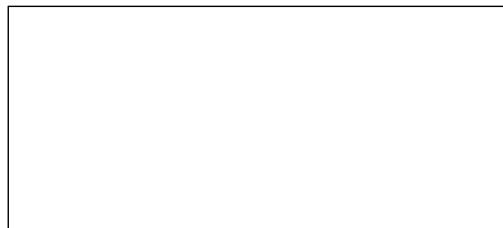
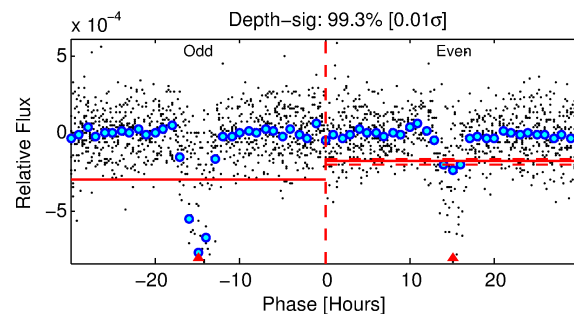
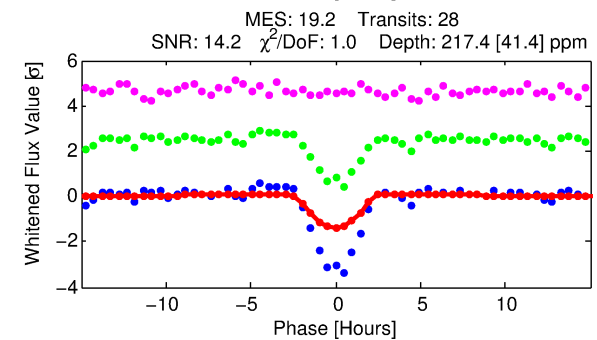
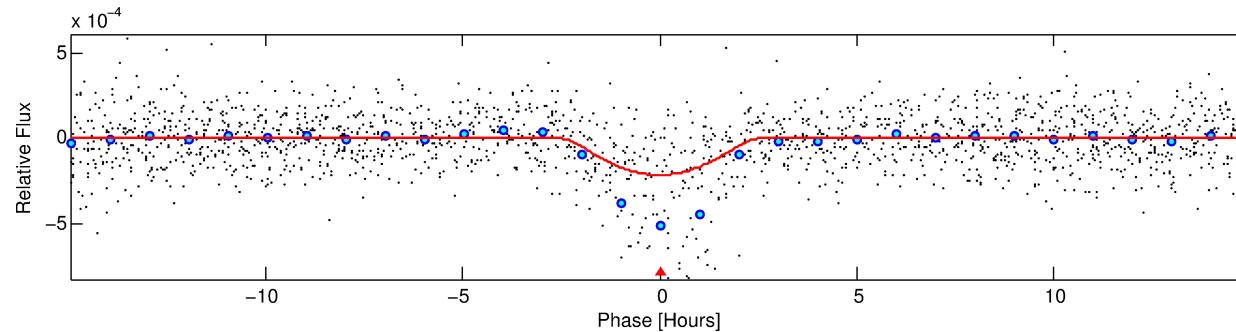
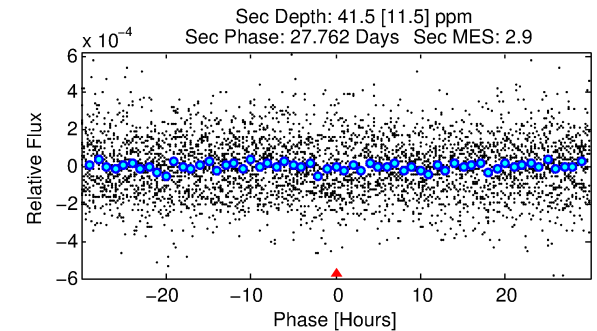
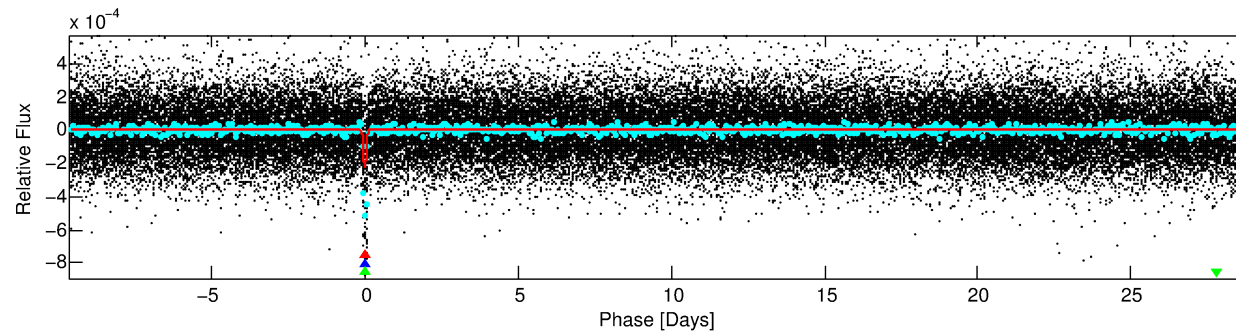
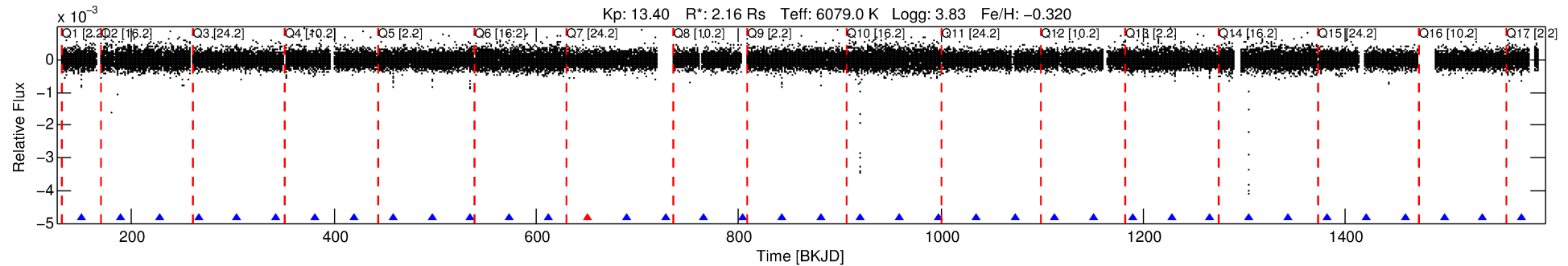
Ephemeris Match Information For 008009496-03

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
008009496-03	8009496	6951.01	8009500	1:1	15.3	2	3	14.58	13.40	802.90	Direct-PRF	0	0.33	0.26

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 8009496 Candidate: 3 of 3 Period: 38.477 d
KOI: K01869.01 Corr: 0.870



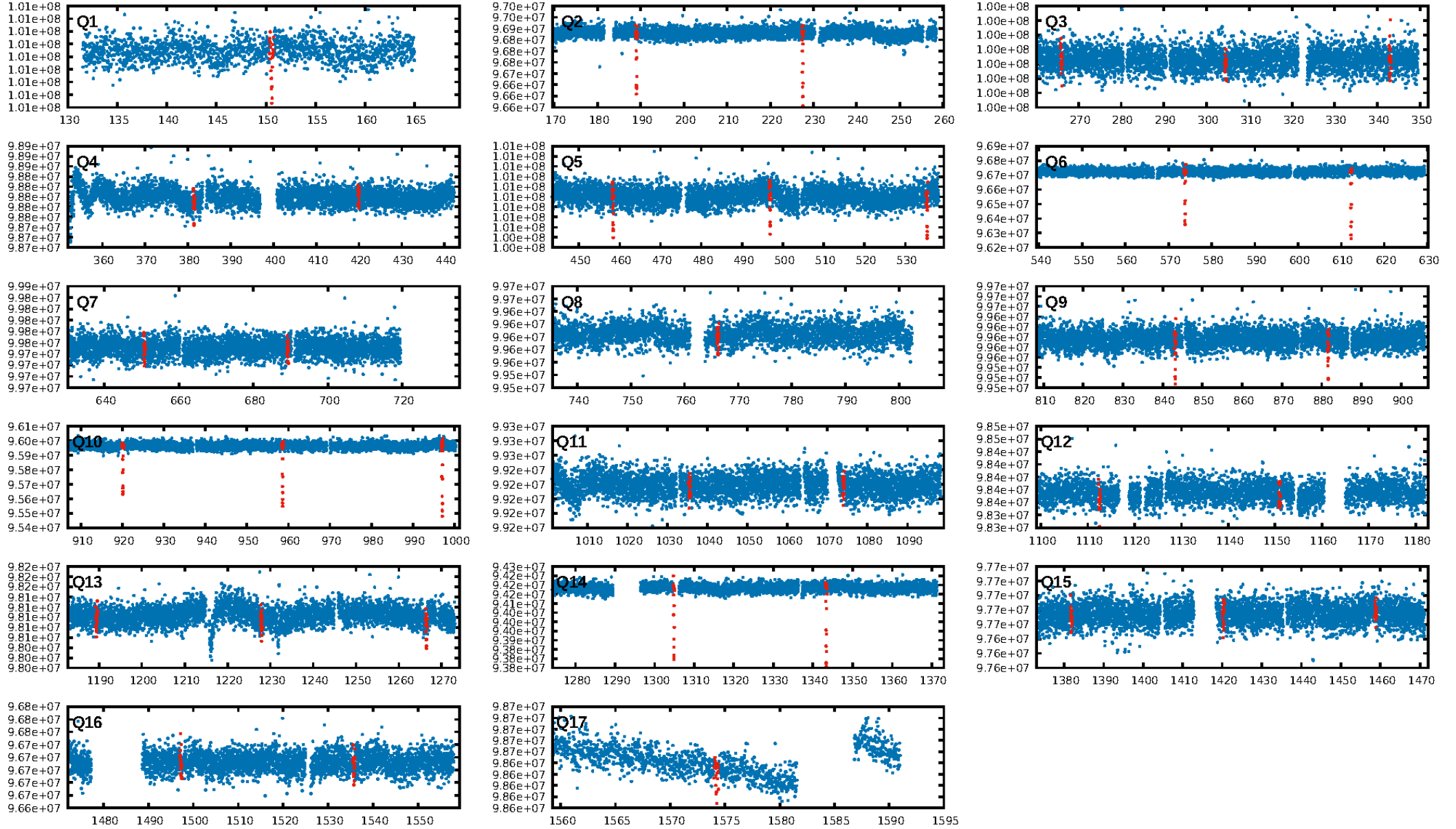
DV Fit Results:

Period = 38.47729 [0.00038] d
Epoch = 150.5608 [0.0082] BKJD
Rp/R* = 0.0227 [0.0292]
a/R* = 14.47 [6.67]
b = 0.99 [0.05]
Seff = 103.91 [57.19]
Teq = 814 [112] K
Rp = 5.37 [7.16] Re
a = 0.2347 [0.0800] AU
Ag = 43.66 [115.28] [0.37σ]
Teffp = 3236 [2092] K [1.16σ]

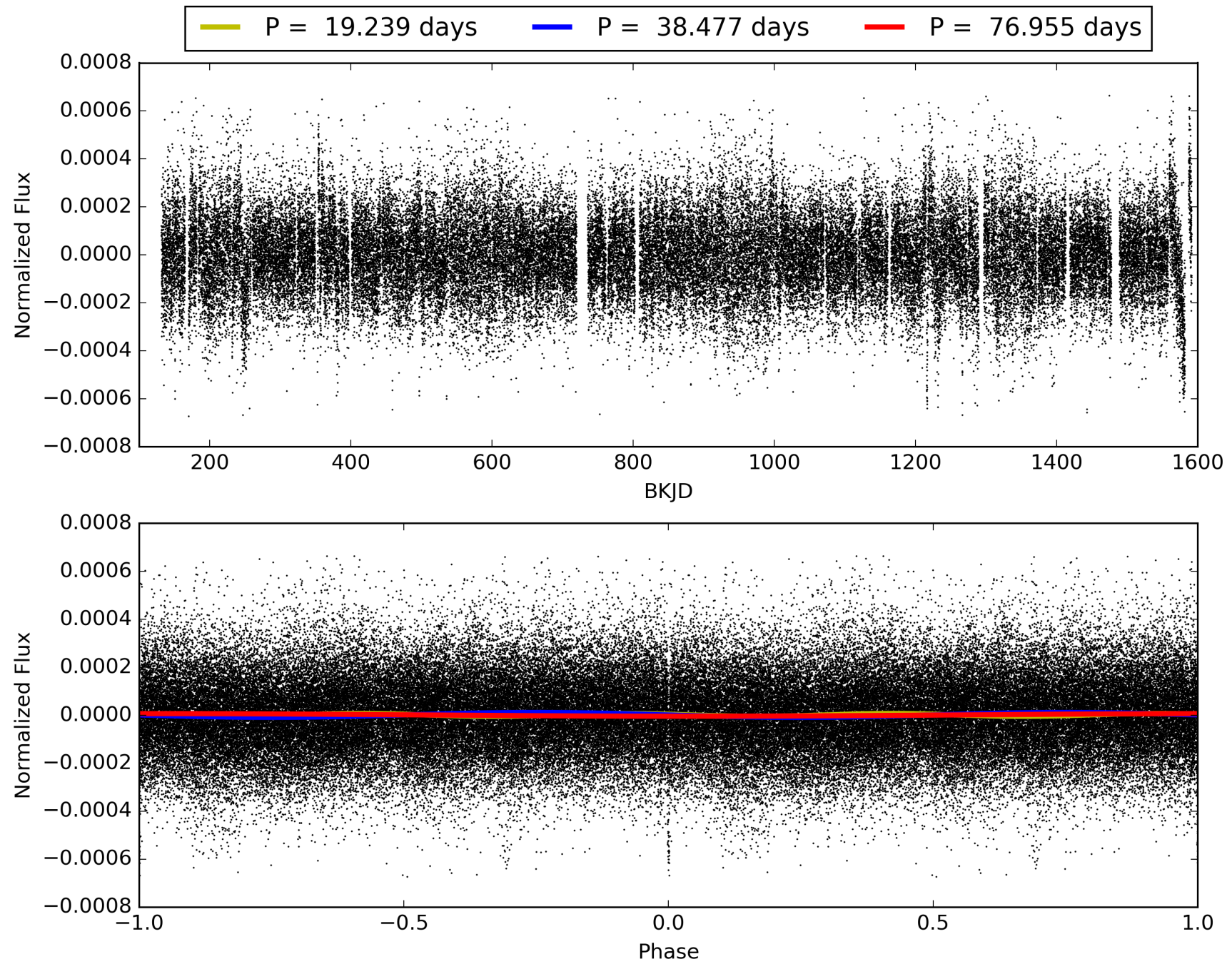
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1193.45σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 99.5%
Bootstrap-pfa: 1.28e-79
RollingBand-fgt: 0.96 [25/26]
GhostDiagnostic-chr: -0.4512
Centroid-sig: N/A
Centroid-so: 54.560 arcsec [58.34σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 0.82 [14/17]

TCE 008009496-03, PDC Light Curves

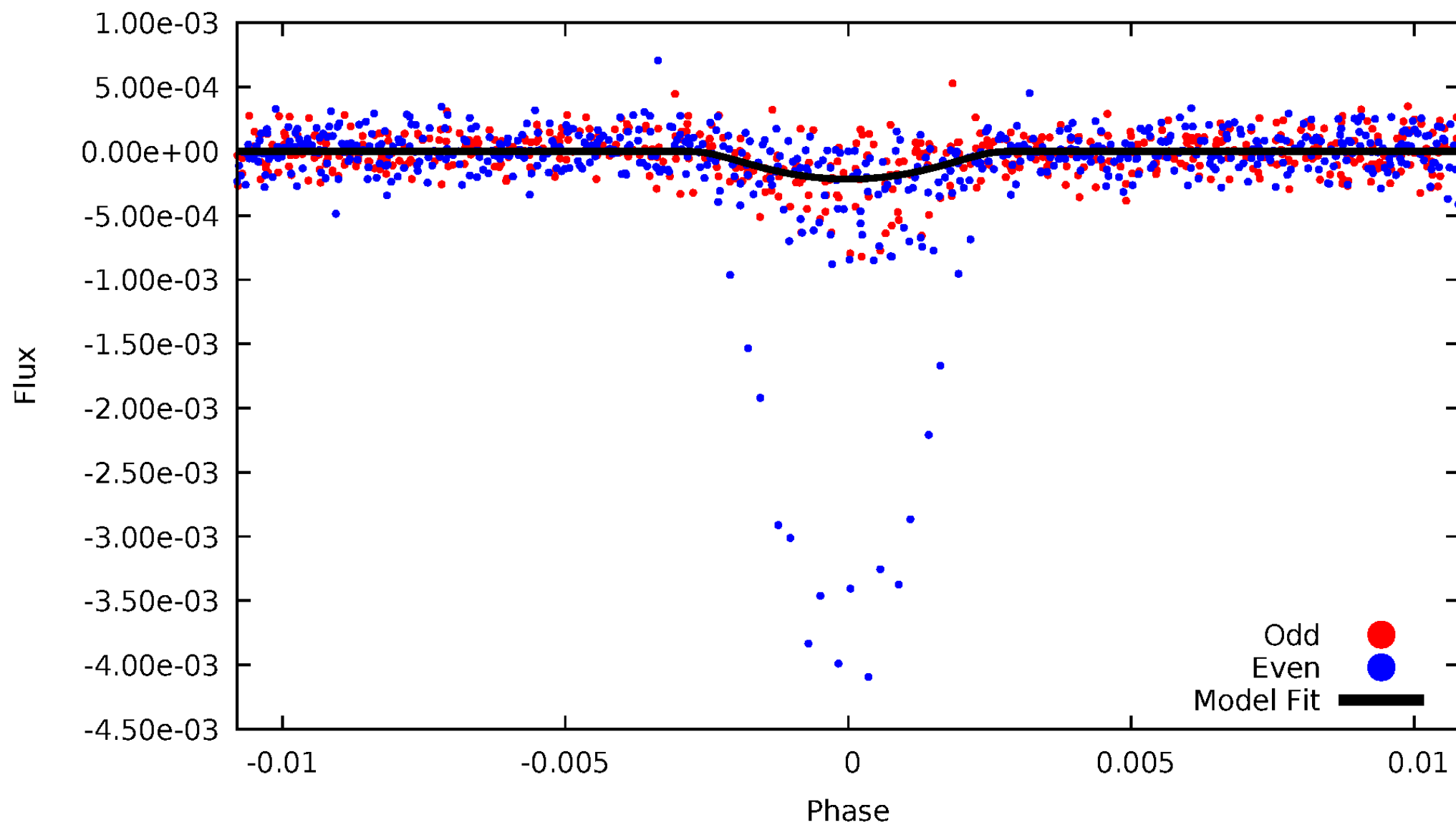


TCE 008009496-03



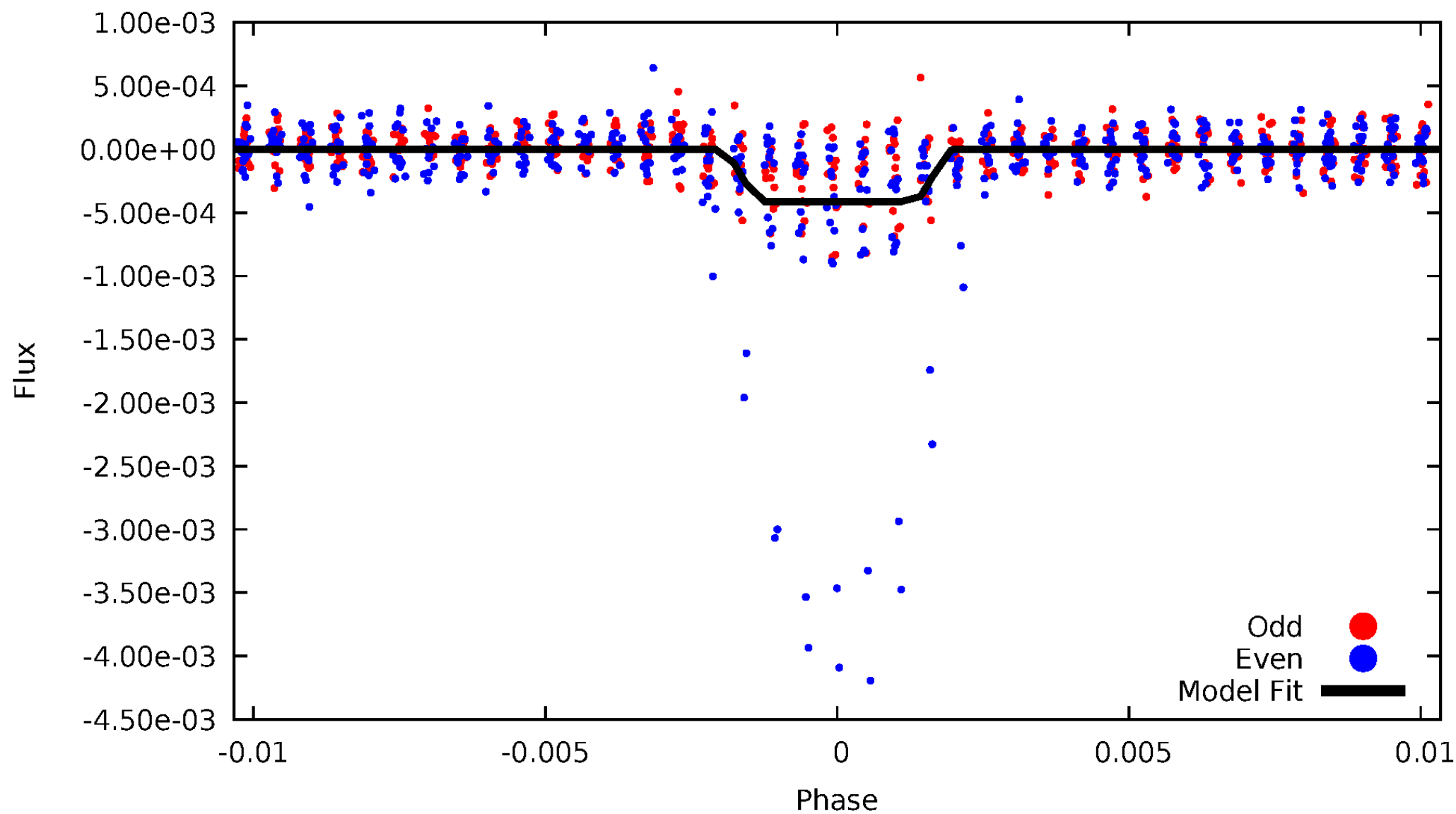
DV Odd/Even

TCE 008009496-03



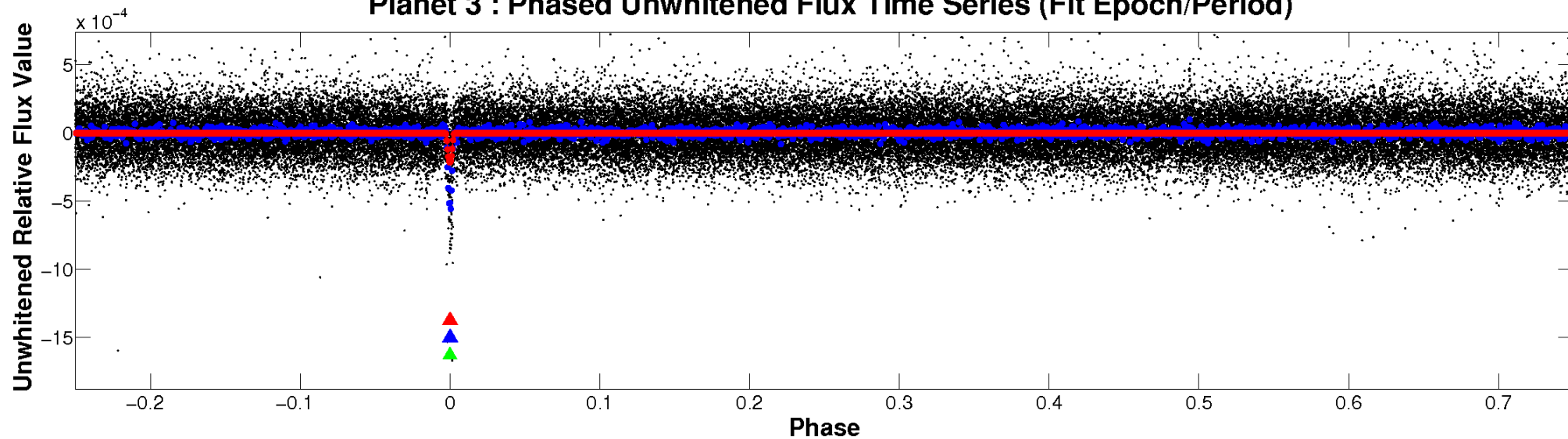
ALT Odd/Even

TCE 008009496-03

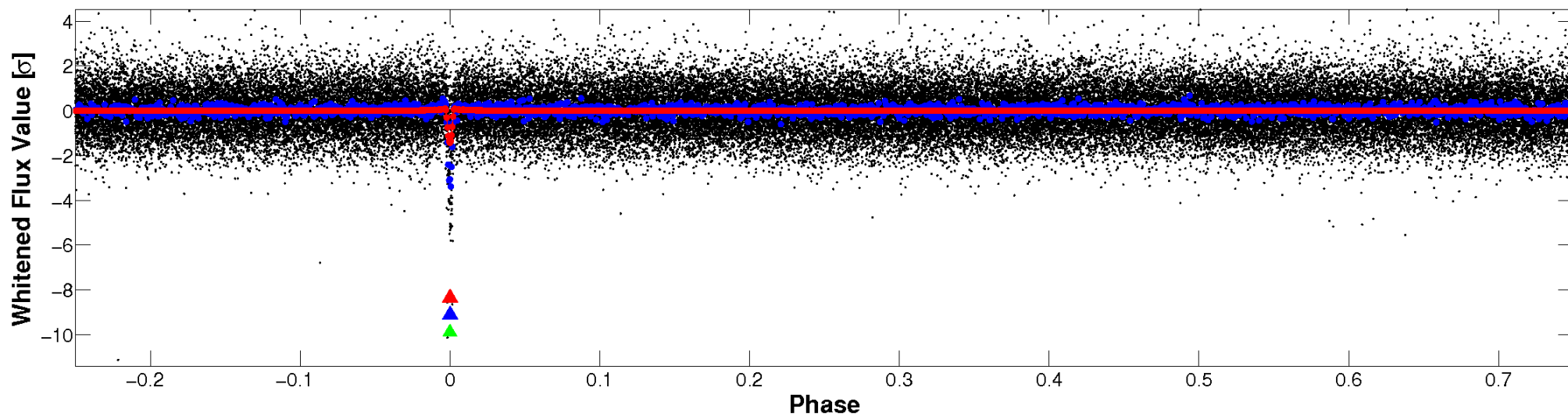


Non-Whitened Vs. Whitened Light Curve

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

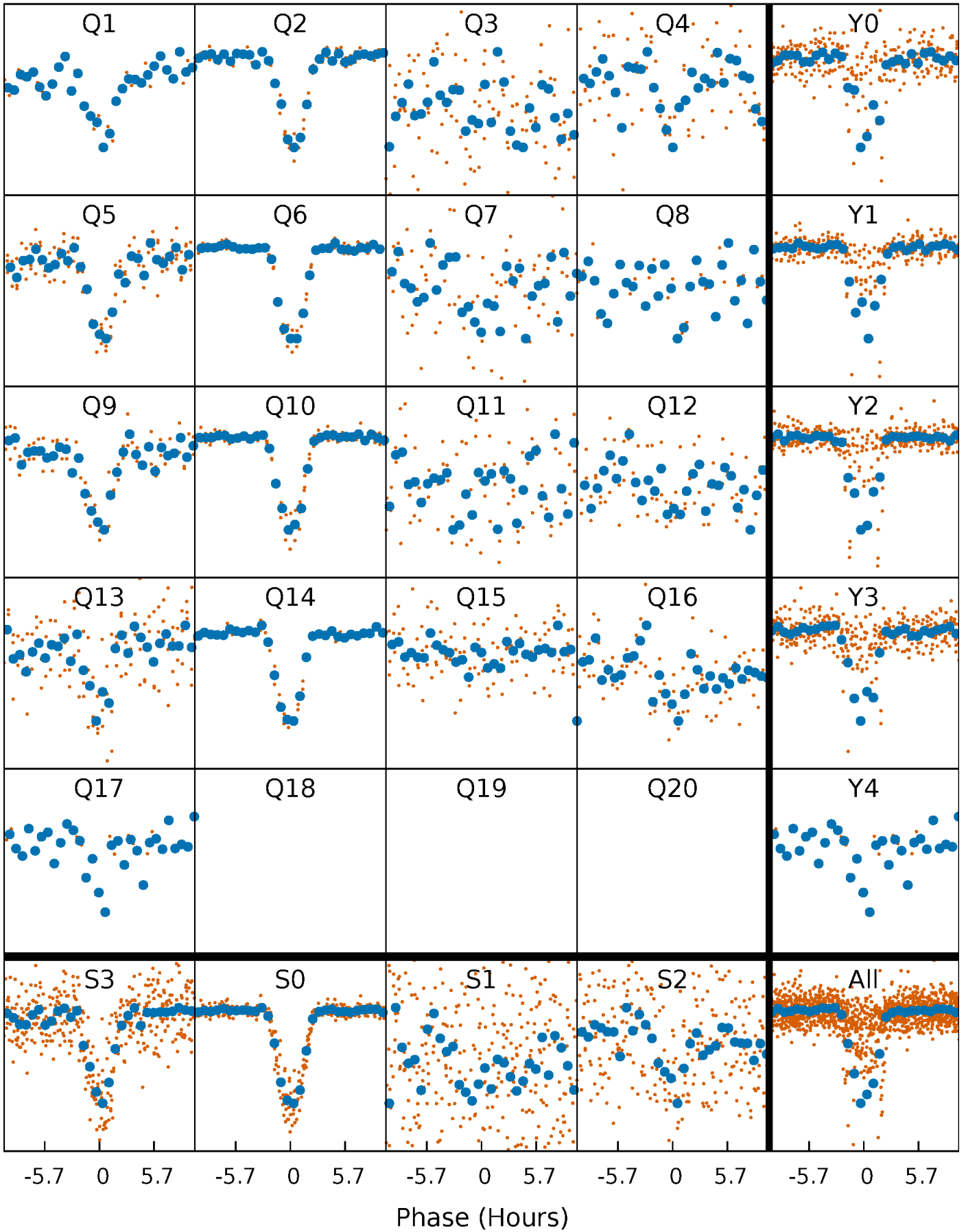


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



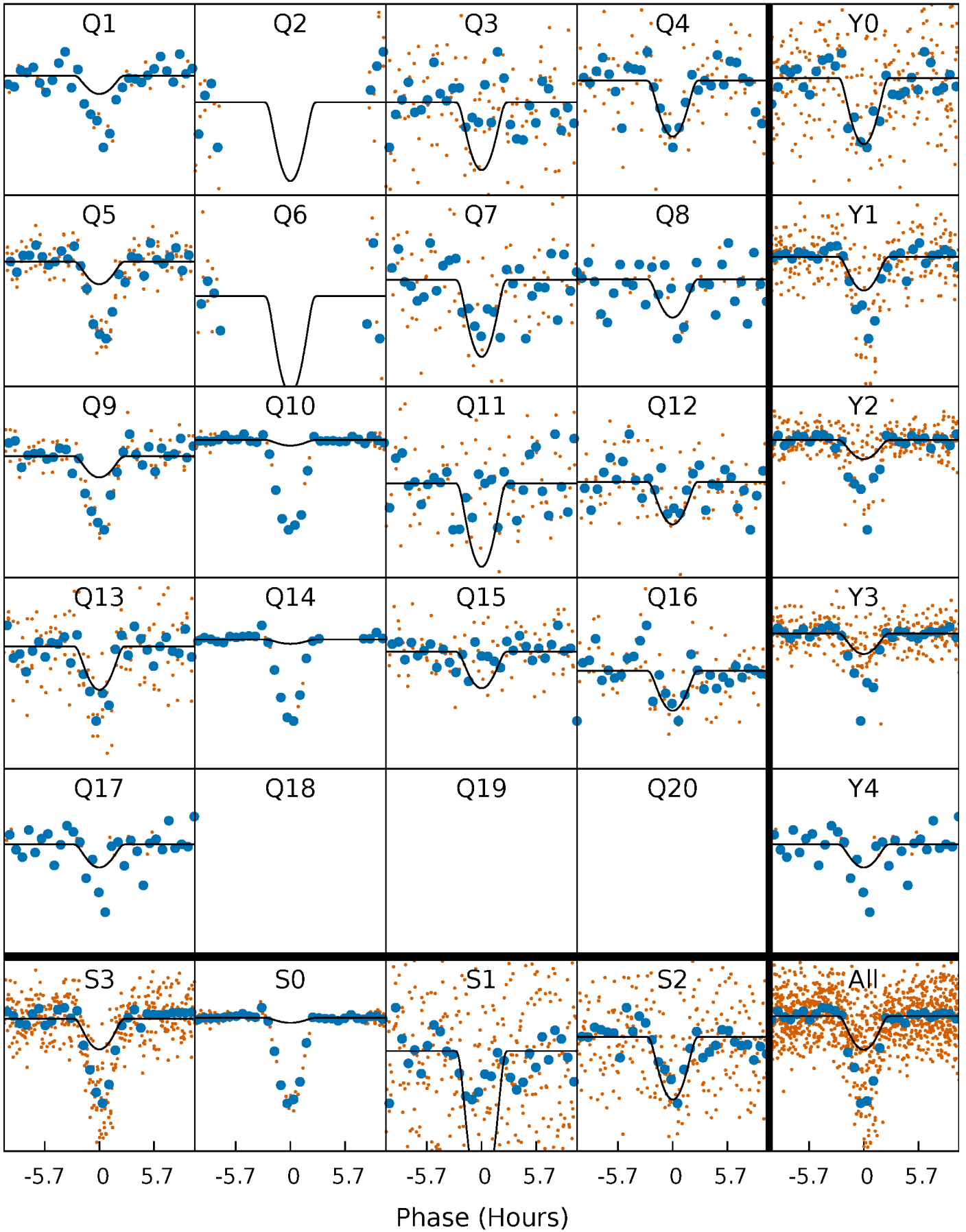
PDC Quarter-Phased Transit Curves

TCE 008009496-03 P= 38.477290 Days $T_0=150.560758$ (BKJD)



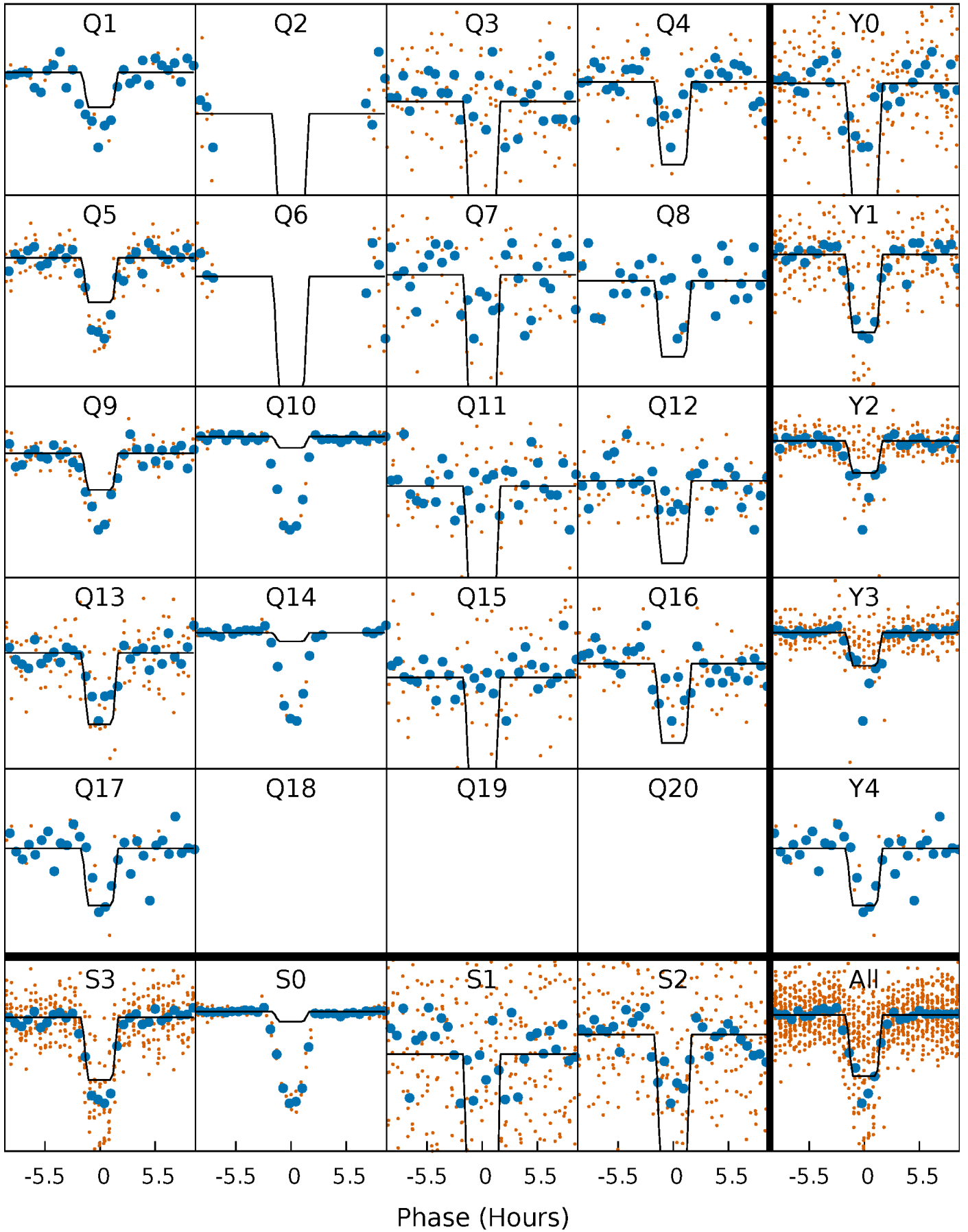
DV Quarter-Phased Transit Curves

TCE 008009496-03 $P = 38.477290$ Days $T_0 = 150.560758$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

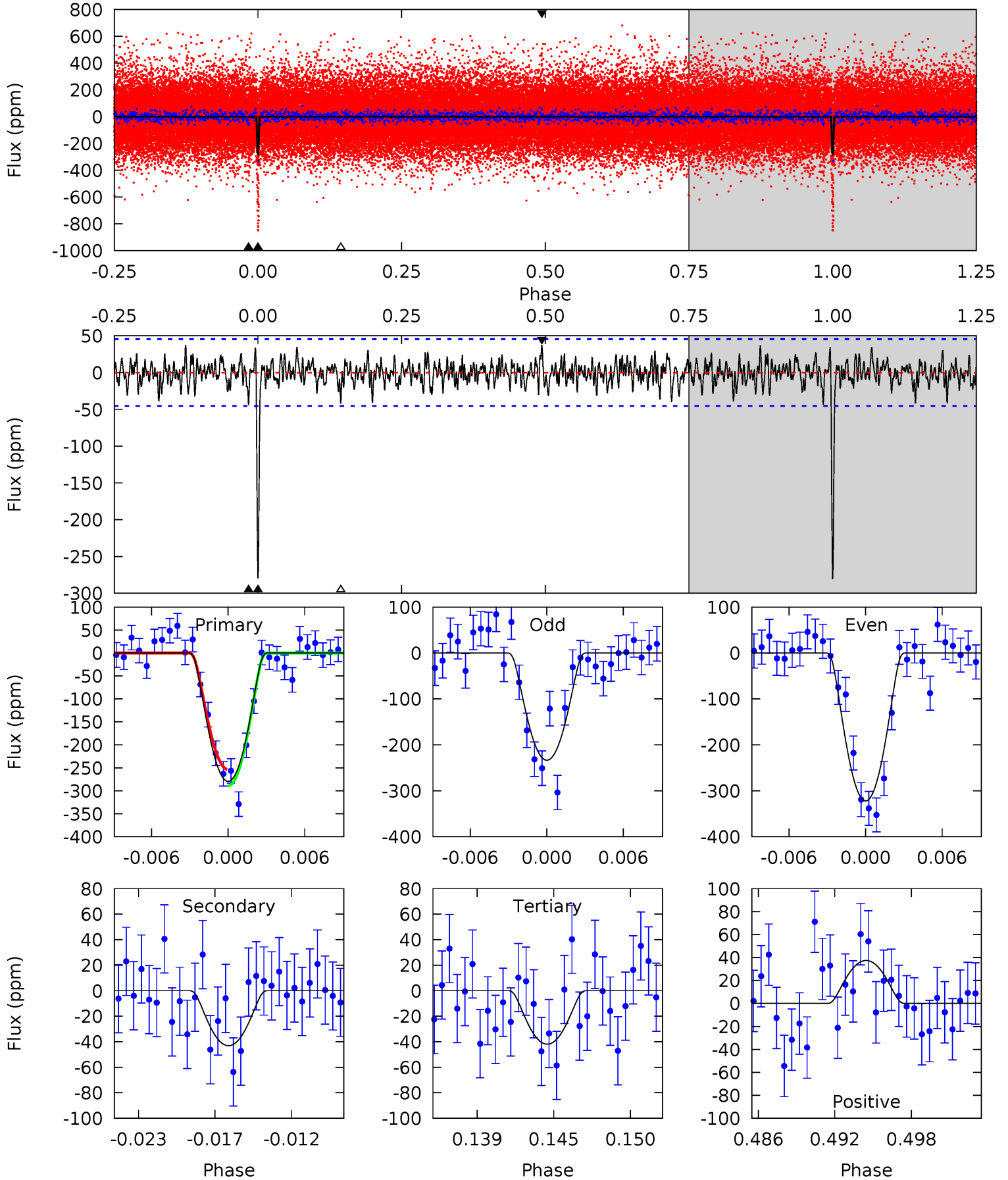
TCE 008009496-03 P= 38.476321 Days $T_0=150.581676$ (BKJD)



DV Model-Shift Uniqueness Test

008009496-03, $P = 38.477290$ Days, $E = 112.083468$ Days

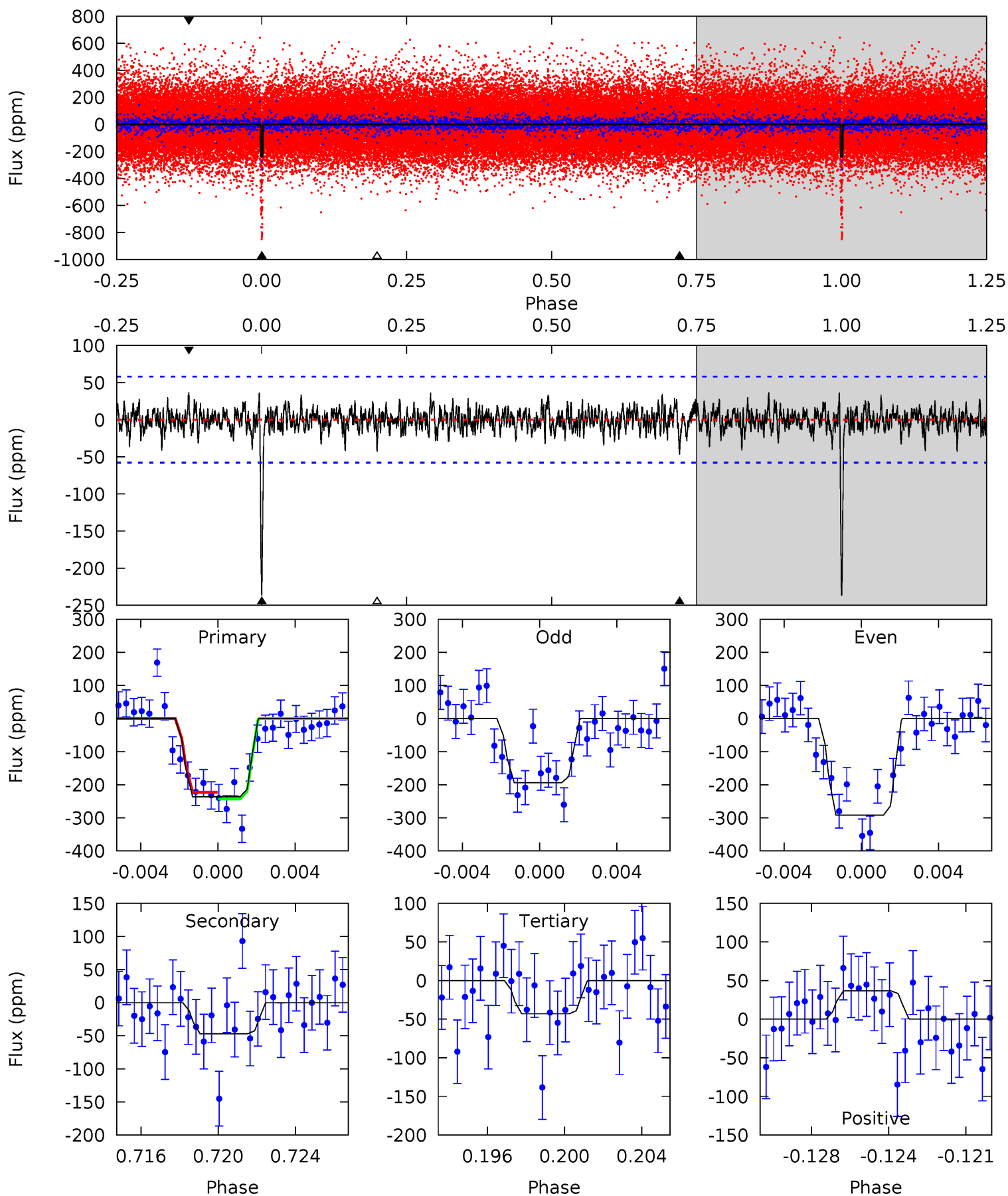
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.6	4.87	4.74	4.22	5.13	2.76	1.40	26.8	27.3	0.13	0.64	5.03	2.52	0.12	2.02



Alt Model-Shift Uniqueness Test

008009496-03, P = 38.476321 Days, E = 112.105355 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.3	4.23	3.88	3.30	5.21	2.90	1.05	17.4	18.0	0.35	0.93	4.42	2.90	0.13	0



Stellar Parameters For KIC 008009496

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6079^{+162}_{-162}	$3.834^{+0.315}_{-0.105}$	$-0.320^{+0.350}_{-0.250}$	$2.163^{+0.420}_{-0.780}$	$1.164^{+0.208}_{-0.208}$	$0.162^{+0.370}_{-0.054}$
	+3%/-3%	+8%/-3%	+109%/-78%	+19%/-36%	+18%/-18%	+228%/-33%
Source	PHO1	FLK73	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 008009496-03 / KOI 1869.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-43 ± 9	$6.71^{+6.47}_{-4.55}$	1113^{+69}_{-102}	3346^{+1622}_{-601}	29^{+216}_{-22}
Alt.	-47 ± 11	$6.64^{+6.01}_{-4.37}$	1115^{+73}_{-105}	3397^{+1646}_{-572}	33^{+244}_{-24}

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

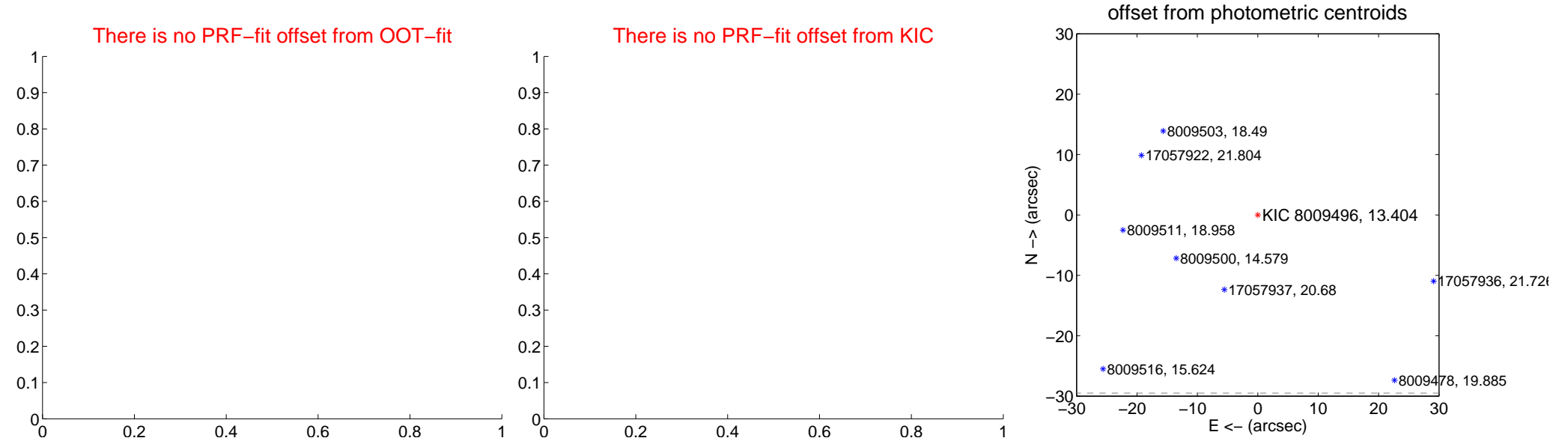
DV Centroid Data

Supplemental centroid analysis for 008009496-03. Kepler magnitude: 13.40. Transit SNR 14.22

There are 0 quarters with good PRF difference image offsets

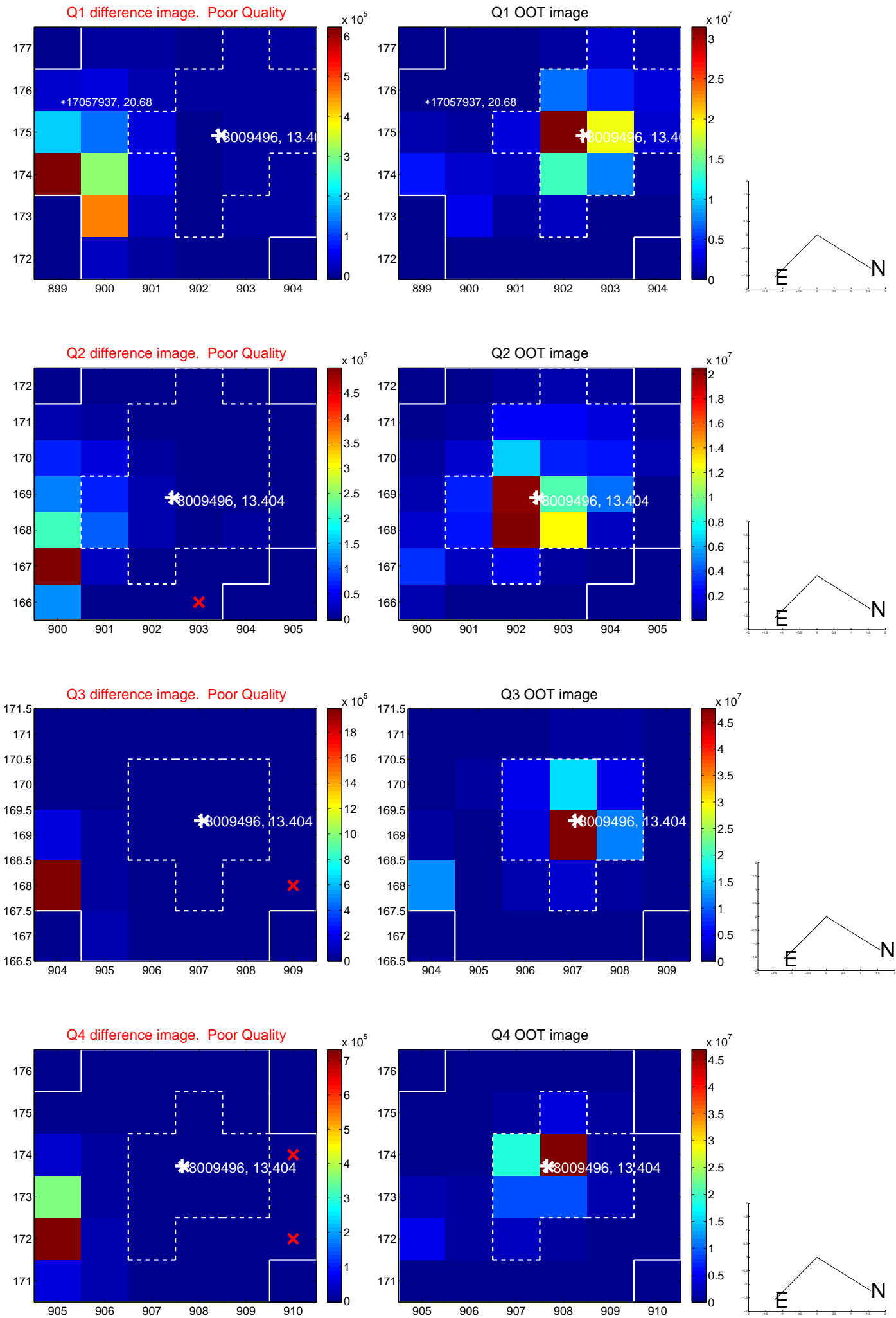
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	54.57 ± 0.94	58.34	45.90 ± 0.95	-29.50 ± 0.90

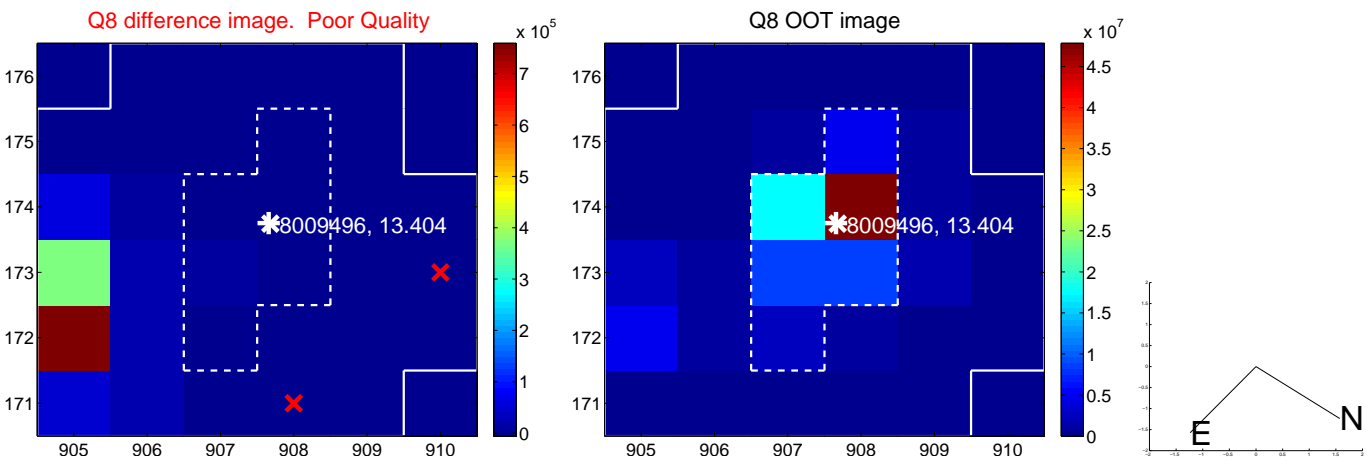
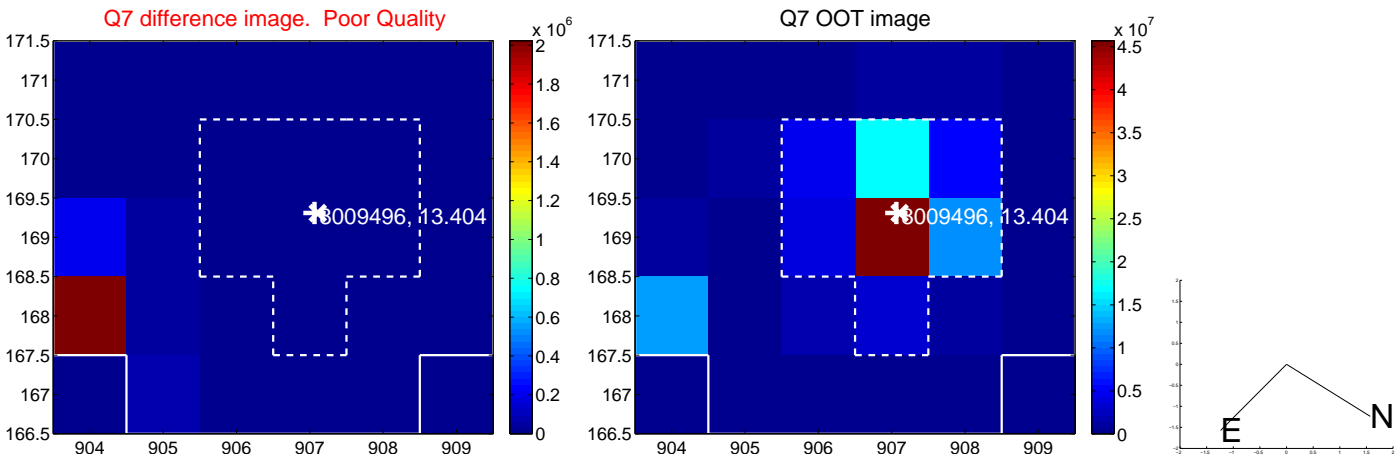
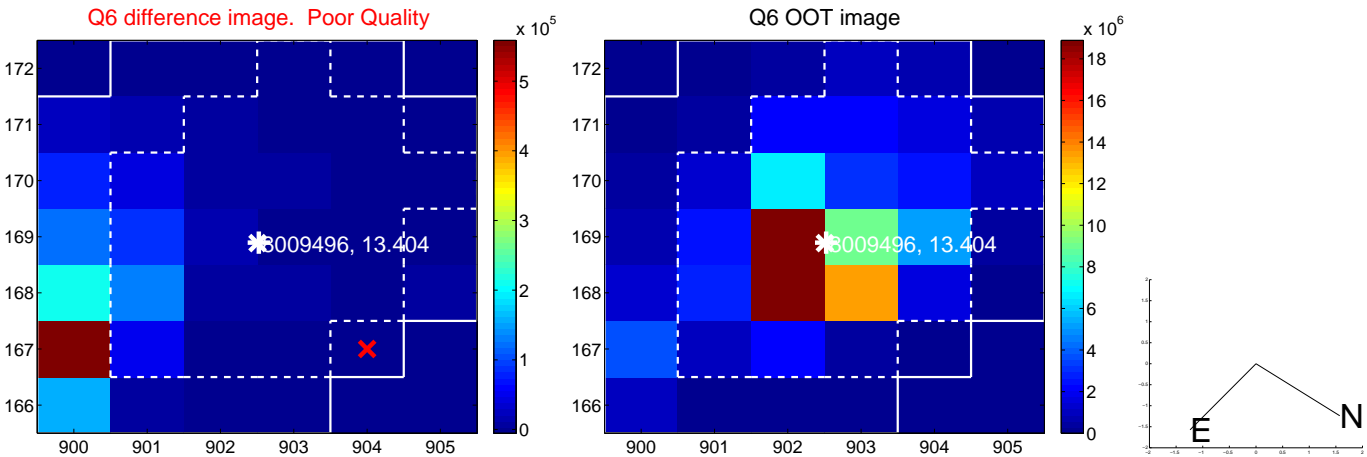
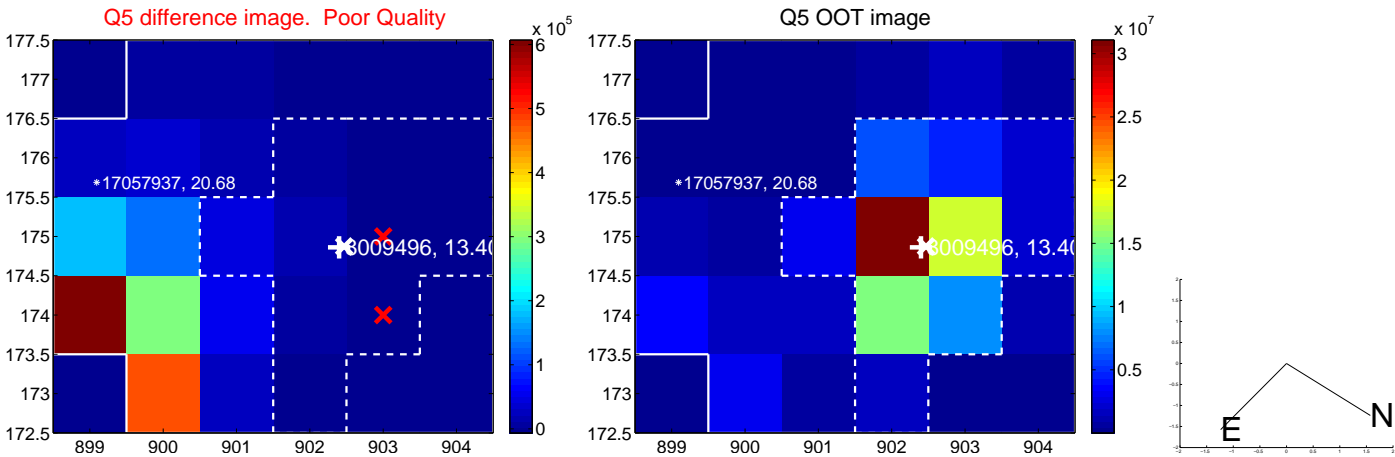


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

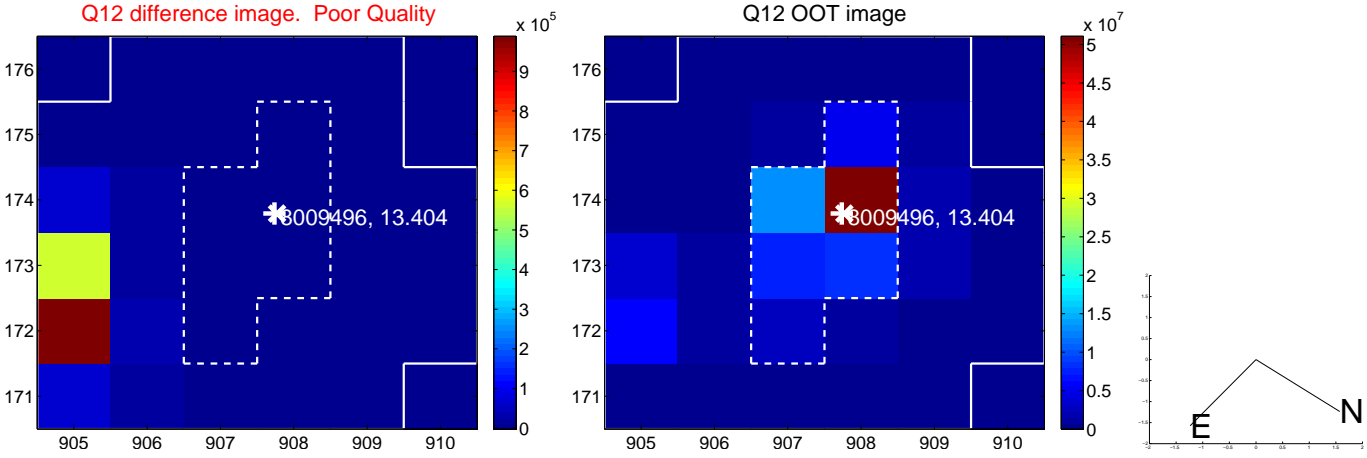
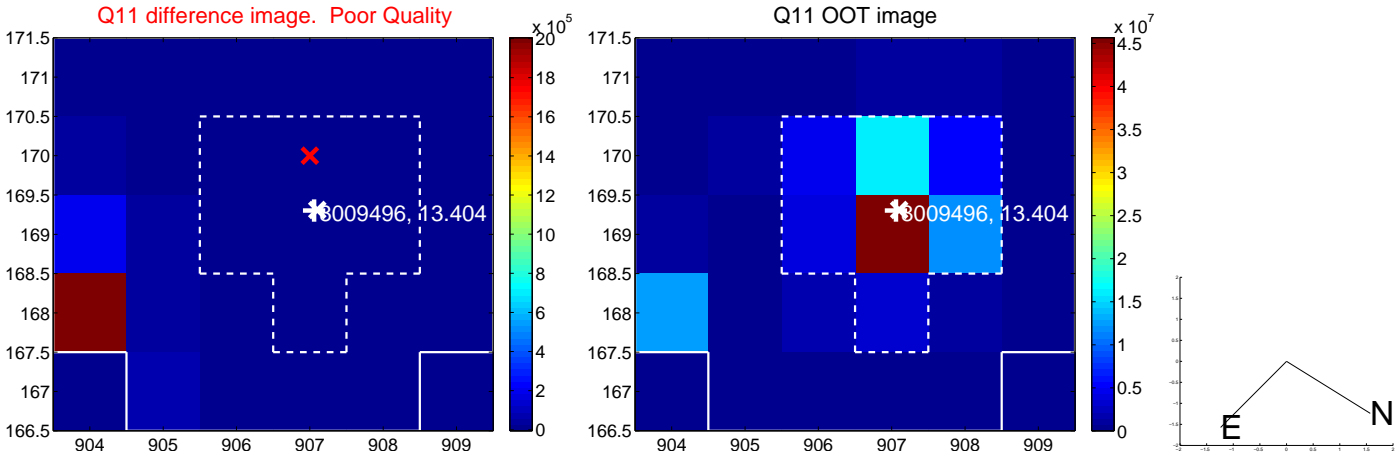
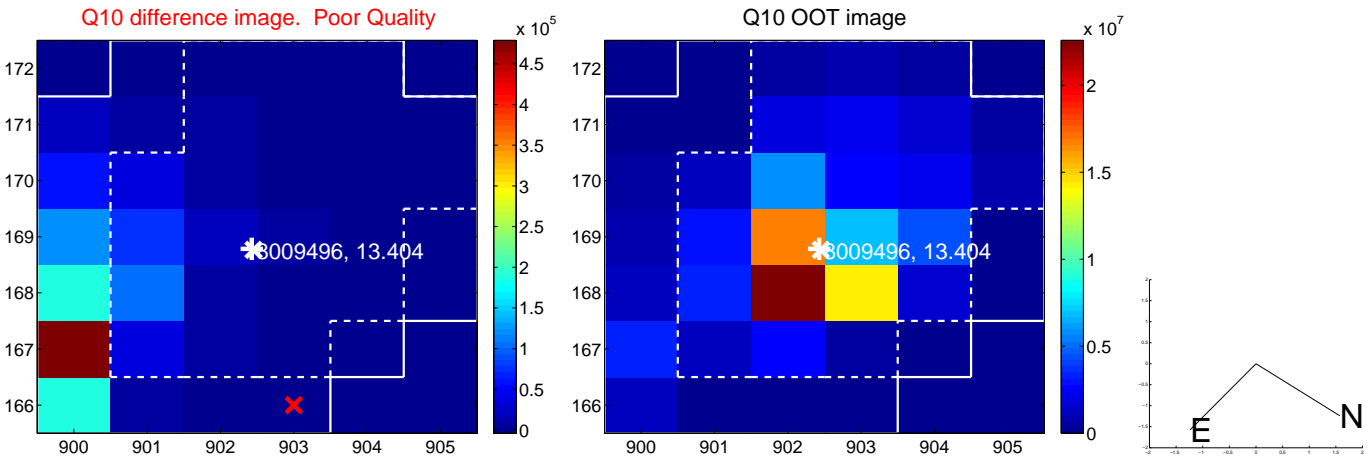
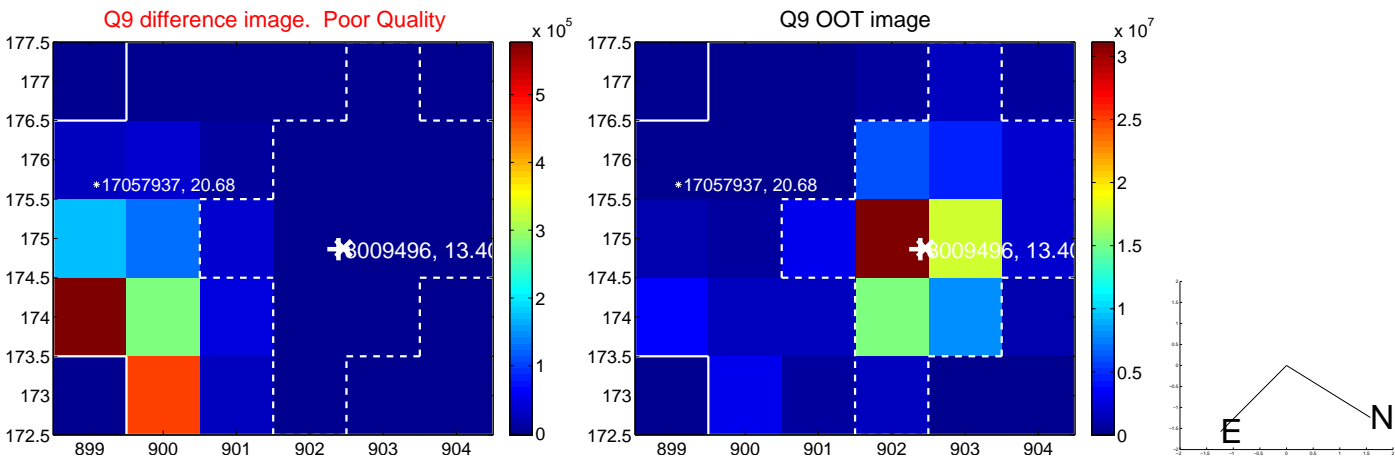
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



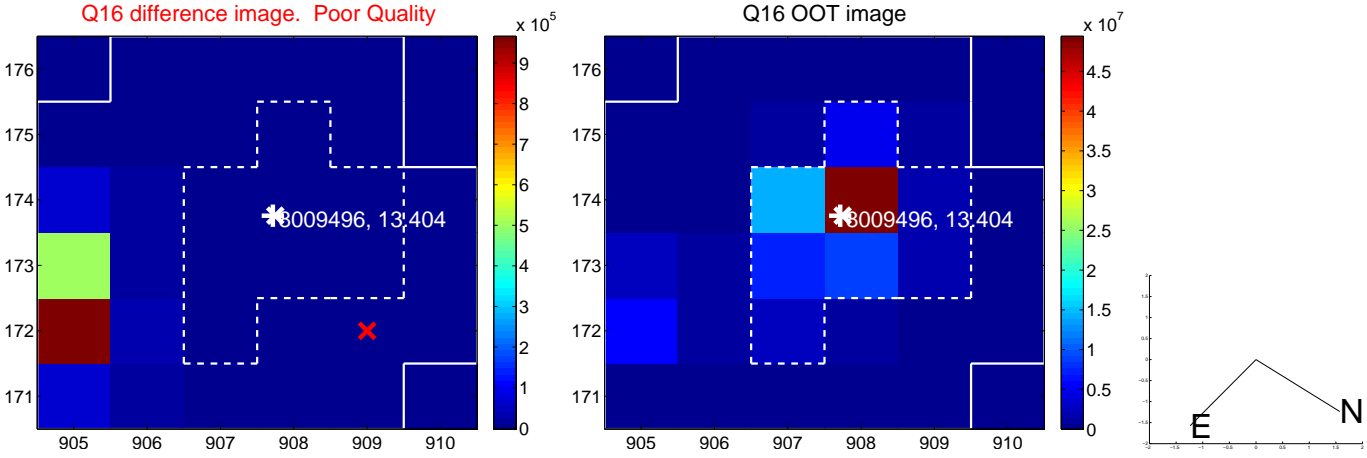
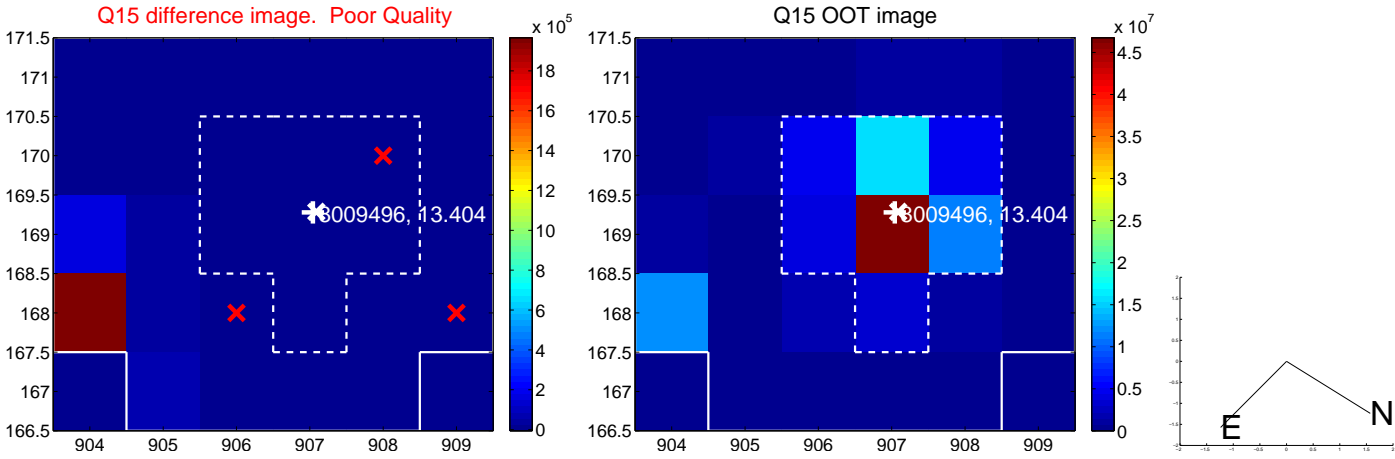
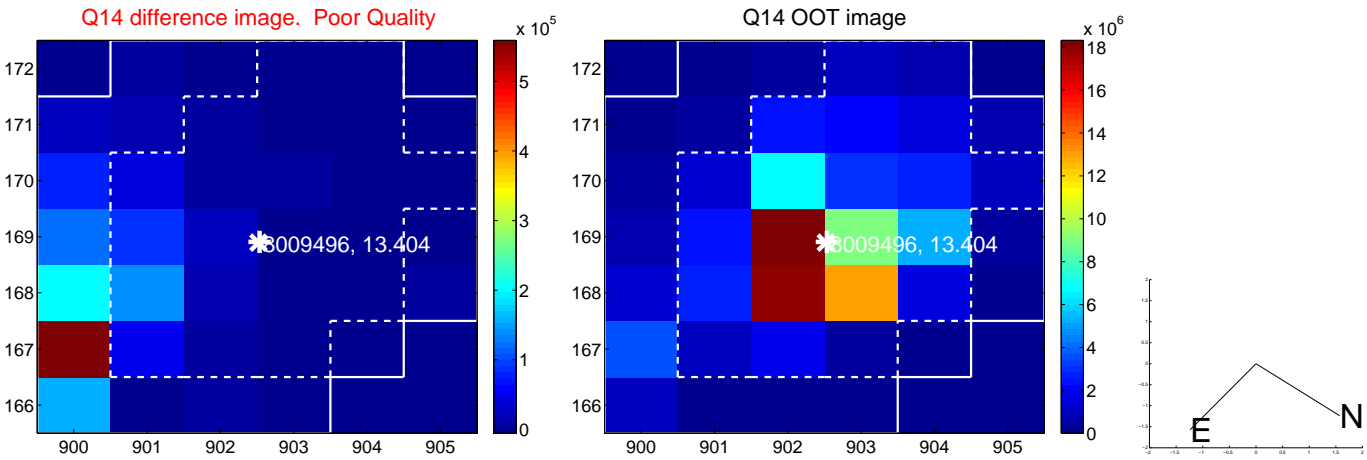
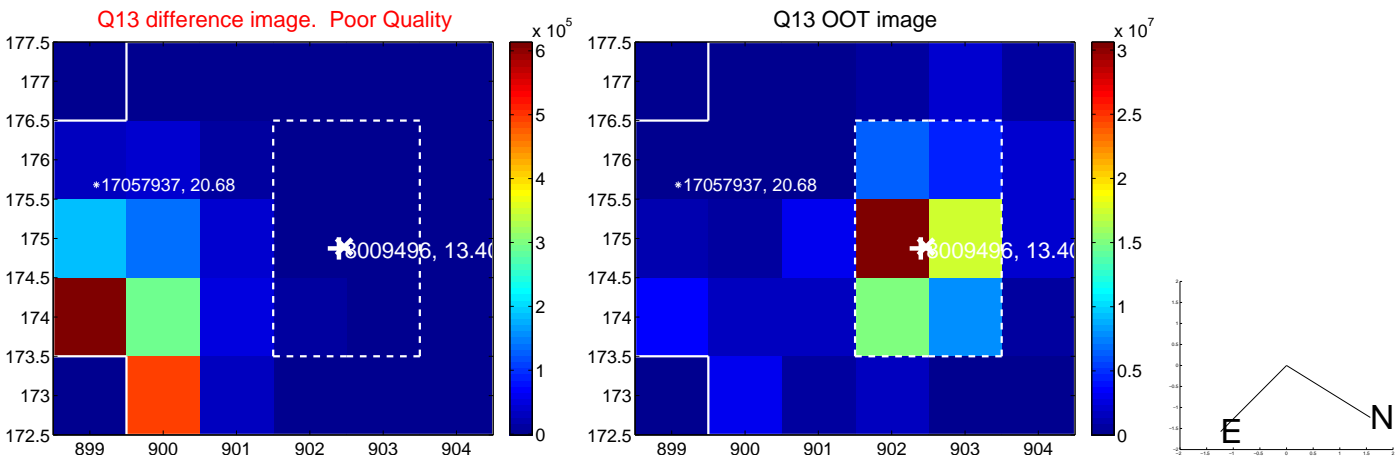
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



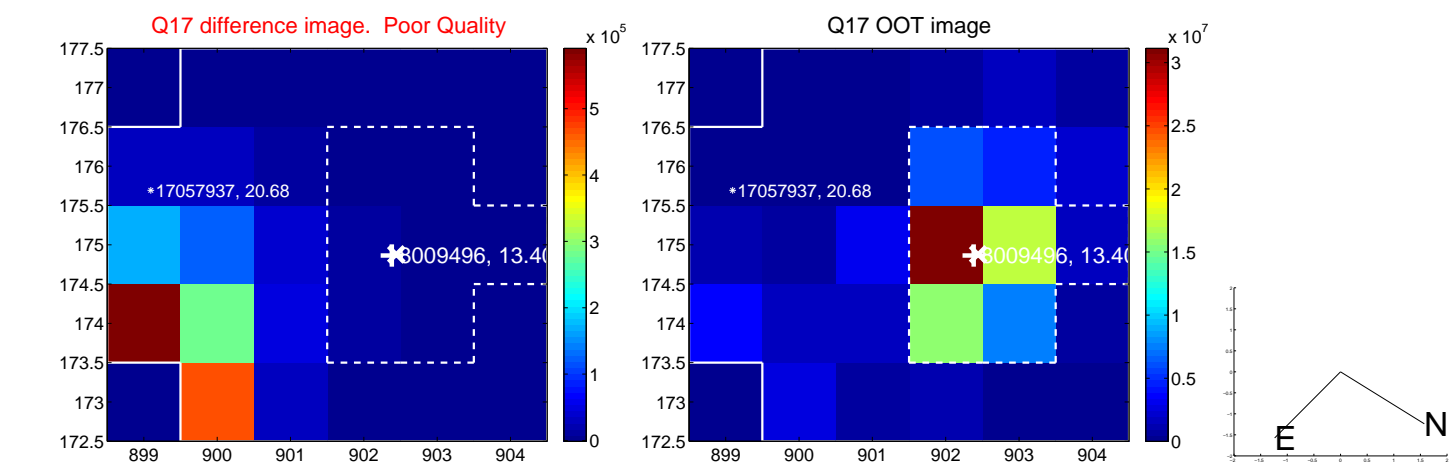
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



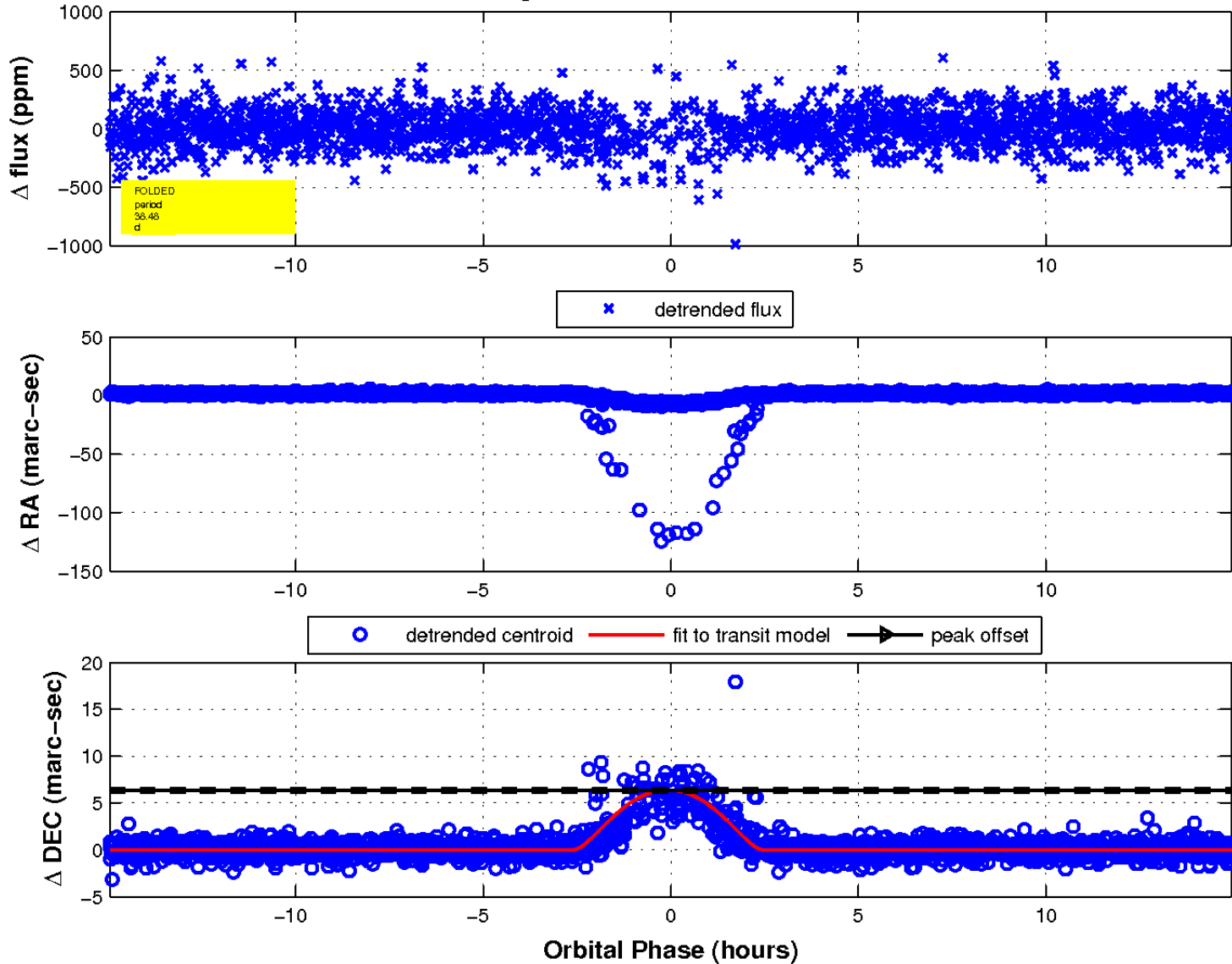
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

