

KIC 007840035

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})
007840035-01	OBS	3758.01	13.542037	144.006377	28705.7	4.901	218.2	210.6	0.93	5496	21.76	66.10
007840035-02	OBS	No	13.541936	133.181823	4454.4	4.839	33.8	36.4	0.93	5496	8.51	66.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007840035-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_KIC_POS
007840035-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_KIC_POS

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.

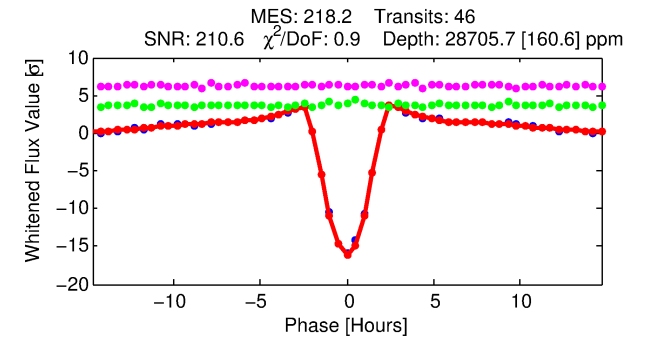
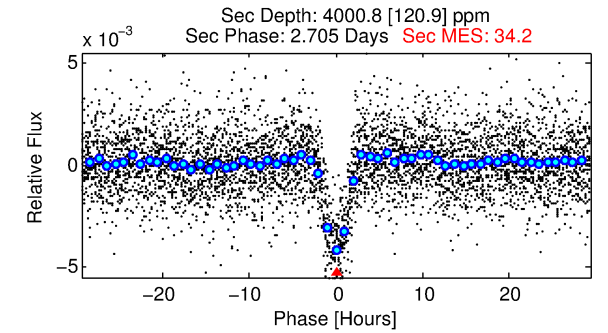
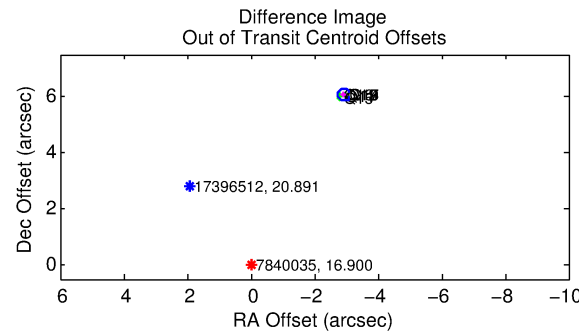
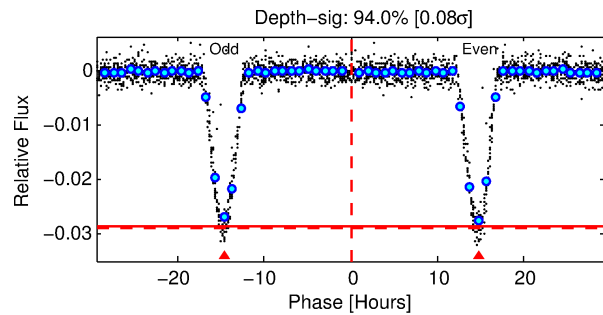
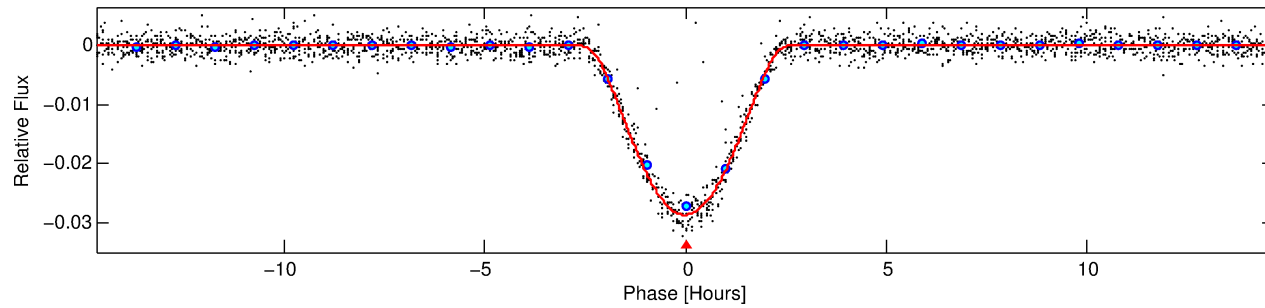
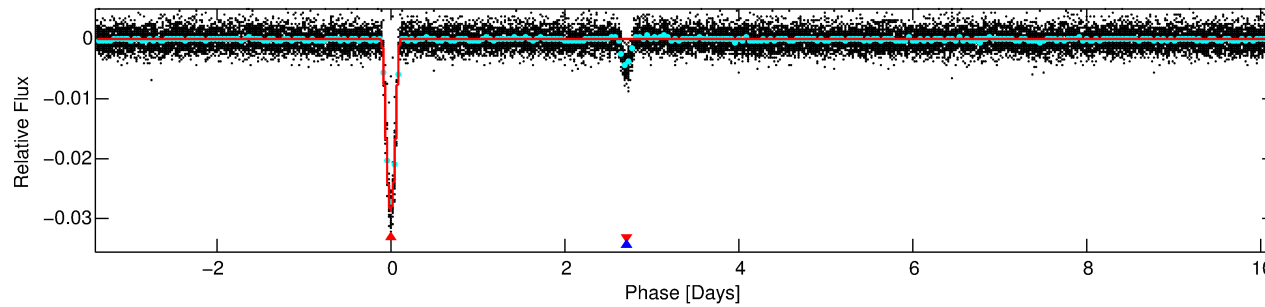
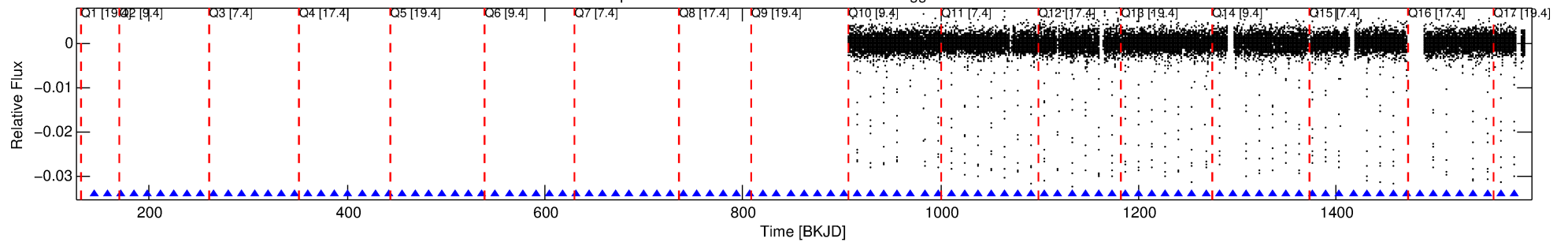
Ephemeris Match Information For 007840035-01

No Significant Match Found

DV One-Page Summary

KIC: 7840035 Candidate: 1 of 2 Period: 13.542 d
KOI: K03758.01 Corr: 0.998

Kp: 16.90 R*: 0.93 Rs Teff: 5496.0 K Logg: 4.41 Fe/H: -0.220



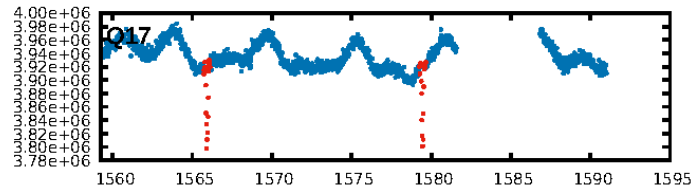
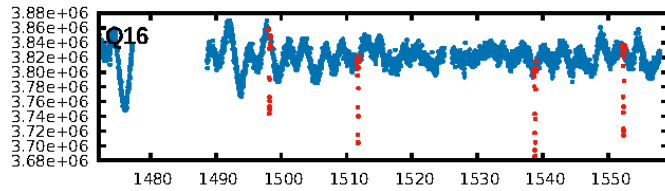
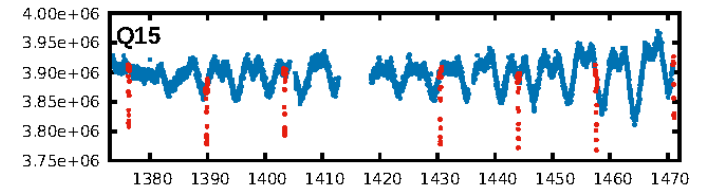
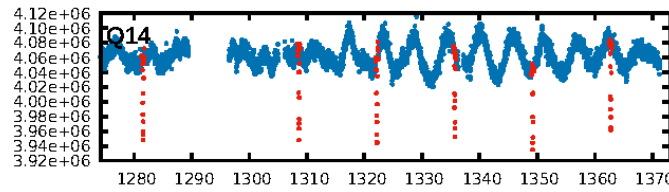
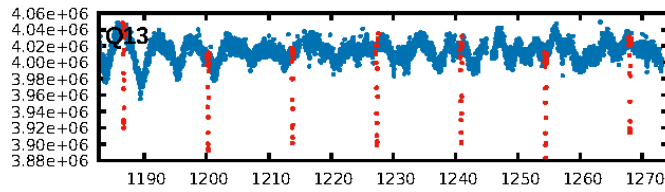
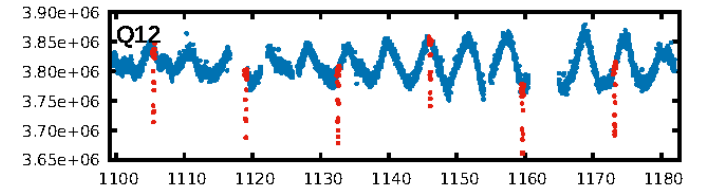
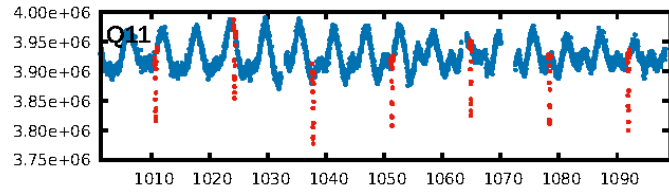
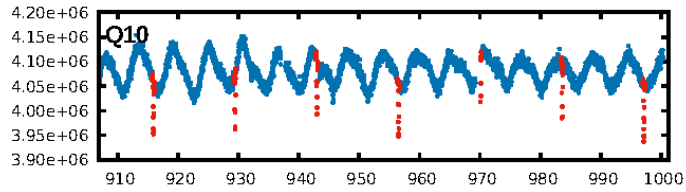
DV Fit Results:

Period = 13.54204 [0.00002] d
Epoch = 144.0064 [0.0013] BKJD
Rp/R* = 0.2151 [0.0191]
a/R* = 16.99 [0.29]
b = 0.91 [0.03]
Seff = 66.10 [24.41]
Teq = 727 [67] K
Rp = 21.76 [5.75] Re
a = 0.1031 [0.0229] AU
Ag = 49.41 [18.99] [2.55σ]
Teffp = 2980 [172] K [12.20σ]

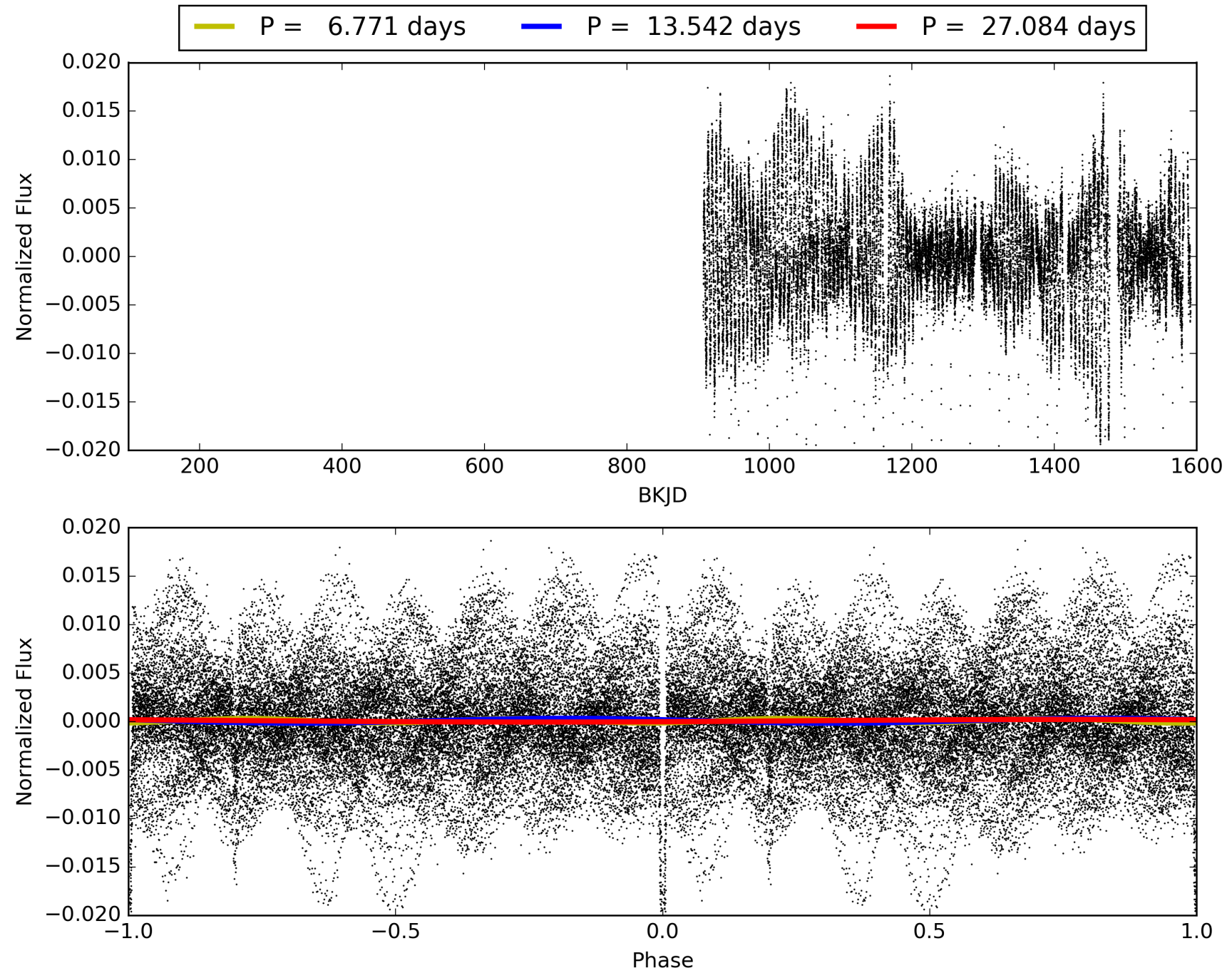
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [44/44]
GhostDiagnostic-chr: 4.196
Centroid-sig: 0.0%
Centroid-so: 3.055 arcsec [200.81σ]
OOTOffset-rm: 6.723 arcsec [95.64σ]
KicOffset-rm: 0.171 arcsec [2.17σ]
OOTOffset-st: 2/2/2/2 [8]
KicOffset-st: 2/2/2/2 [8]
DiffImageQuality-fgm: 1.00 [8/8]
DiffImageOverlap-fno: 1.00 [8/8]

TCE 007840035-01, PDC Light Curves

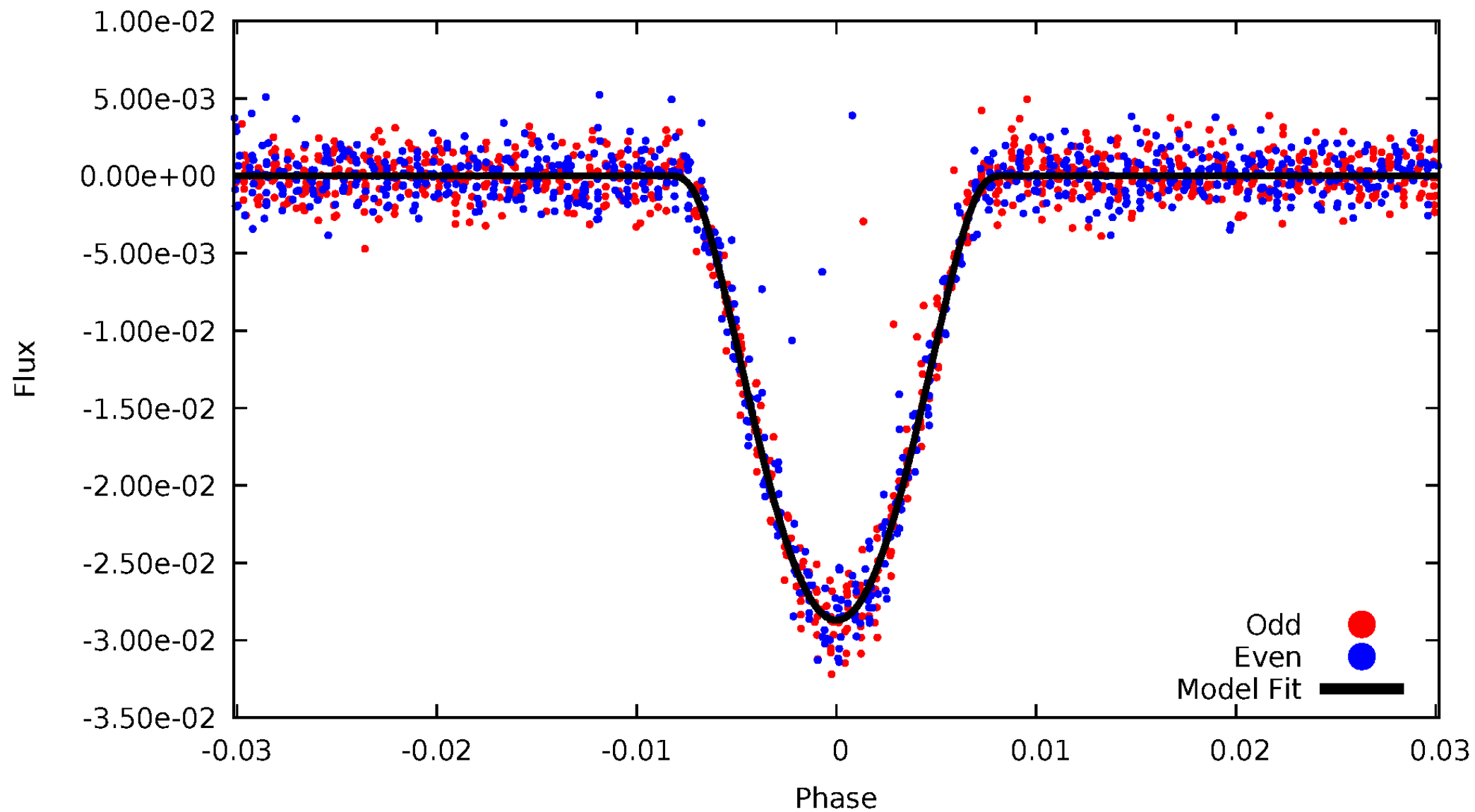


TCE 007840035-01



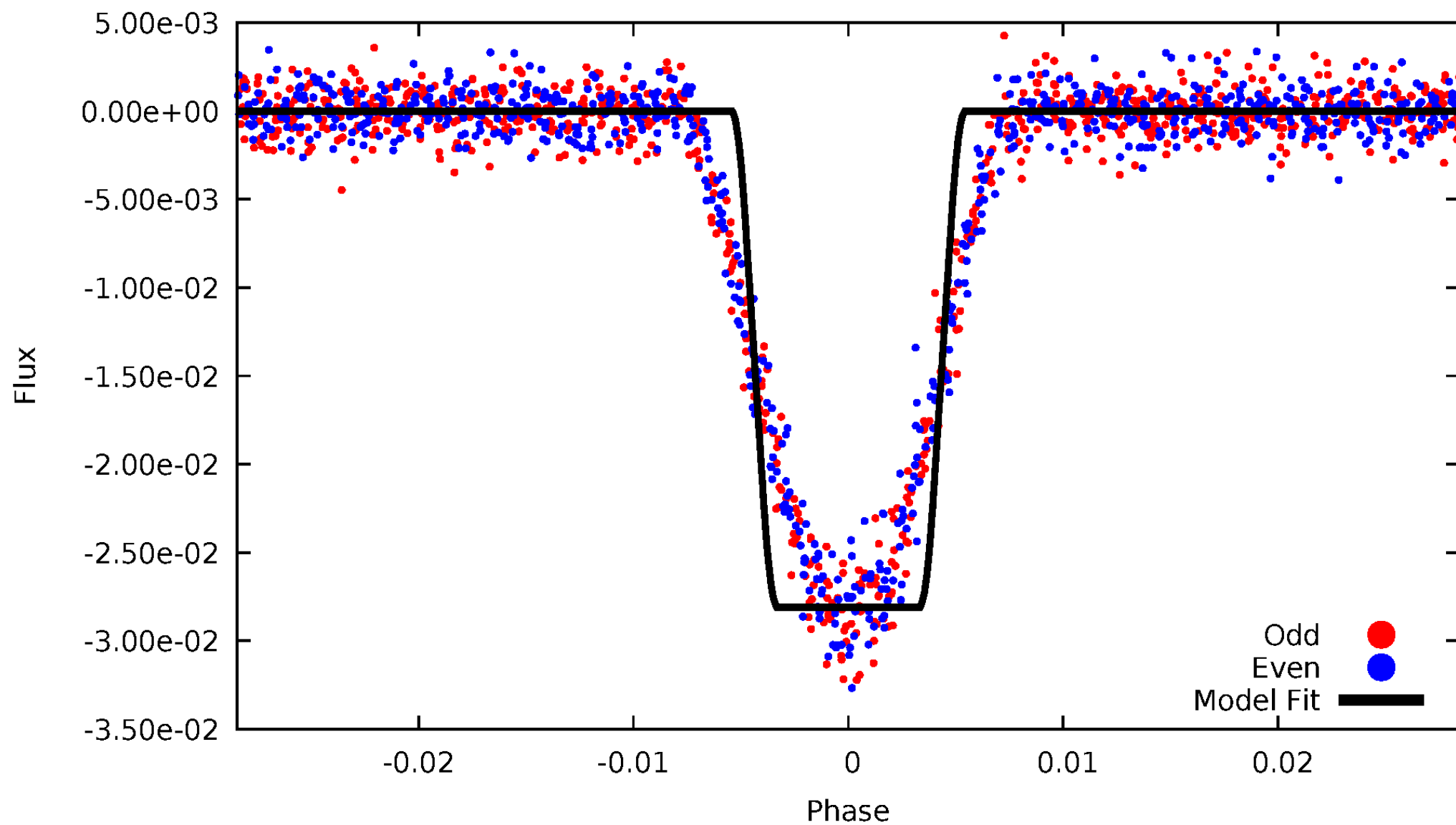
DV Odd/Even

TCE 007840035-01



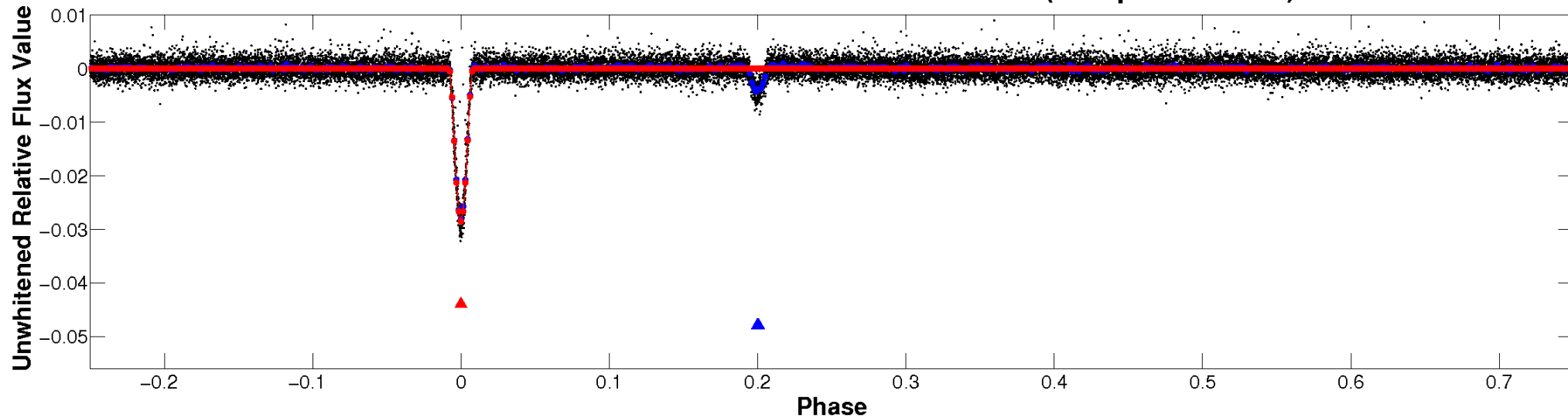
ALT Odd/Even

TCE 007840035-01

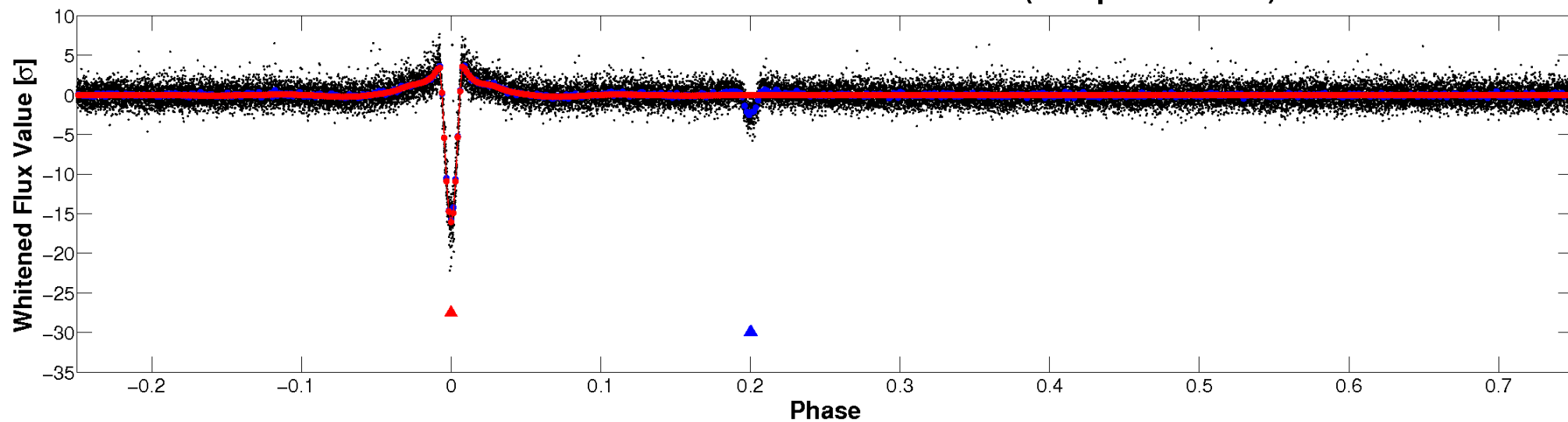


Non-Whitened Vs. Whitened Light Curve

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

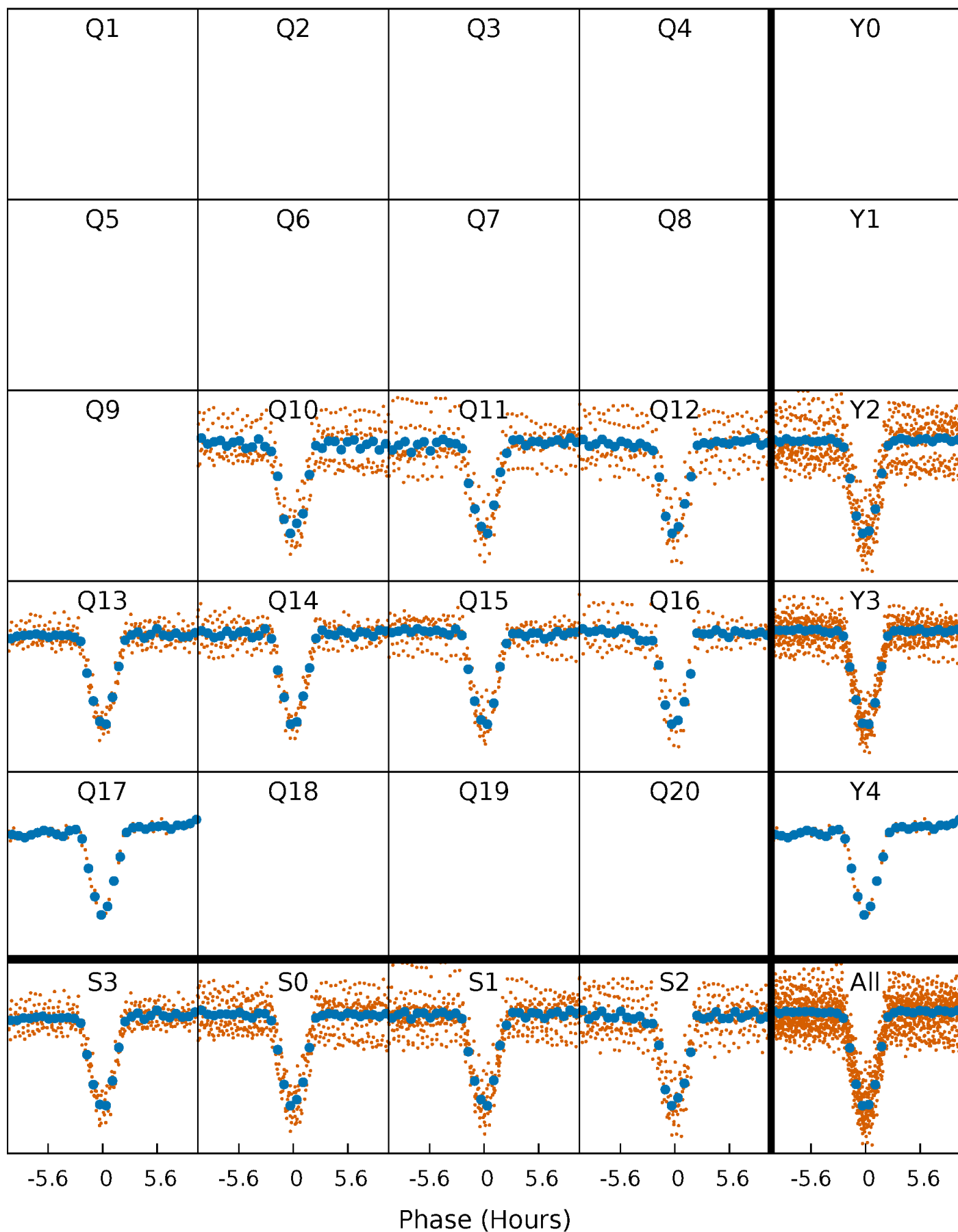


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



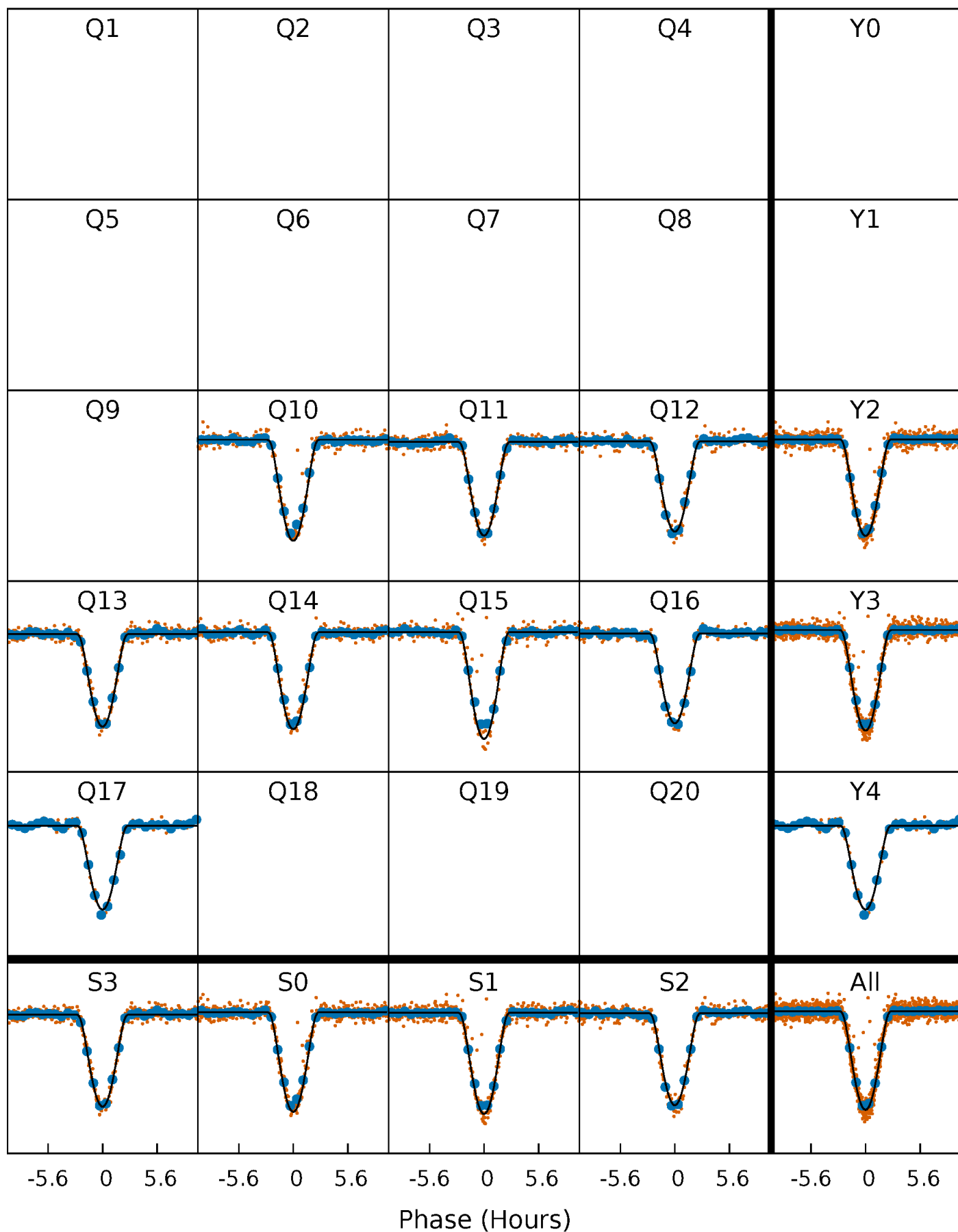
PDC Quarter-Phased Transit Curves

TCE 007840035-01 P= 13.542037 Days $T_0=144.006377$ (BKJD)



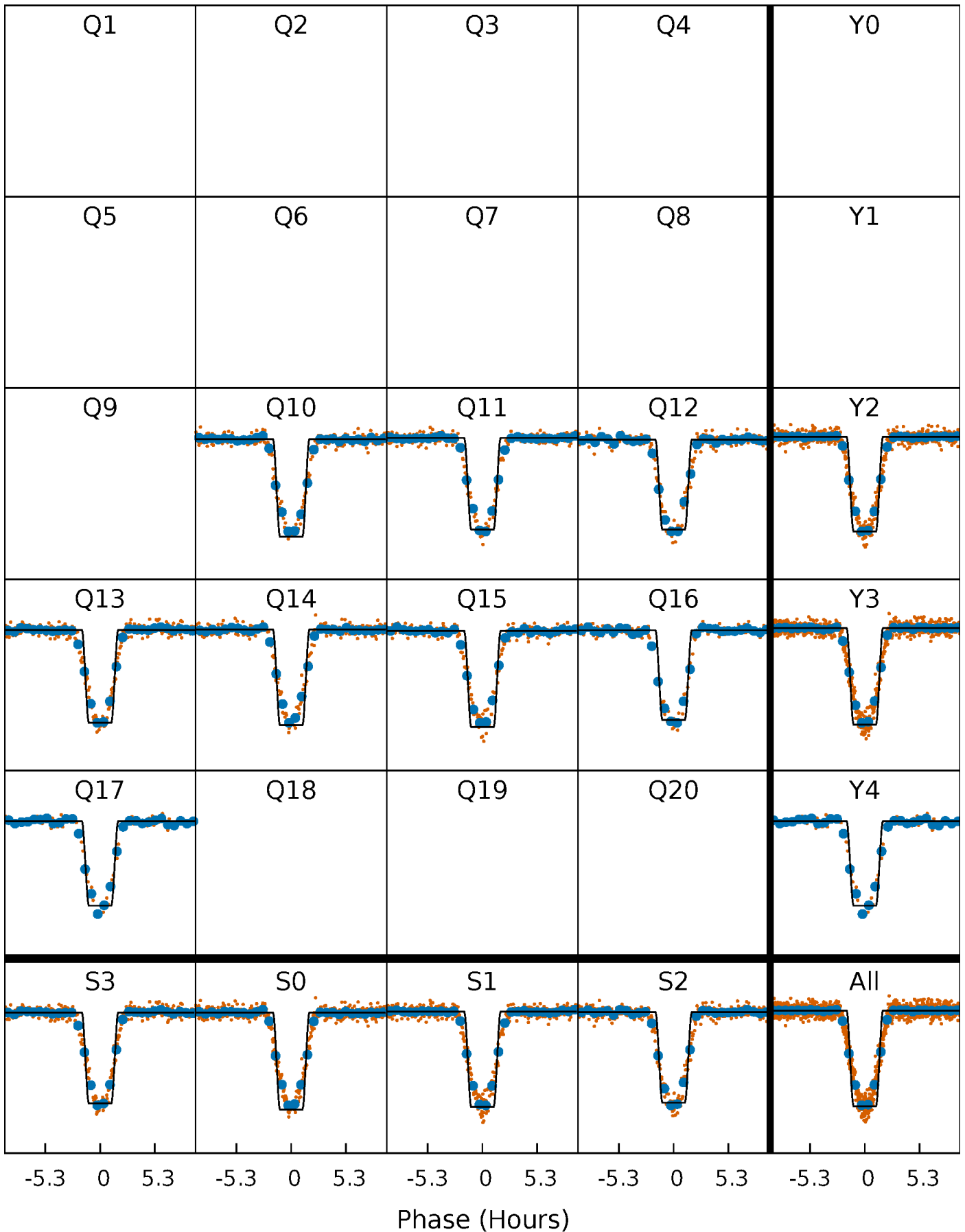
DV Quarter-Phased Transit Curves

TCE 007840035-01 P= 13.542037 Days $T_0=144.006377$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

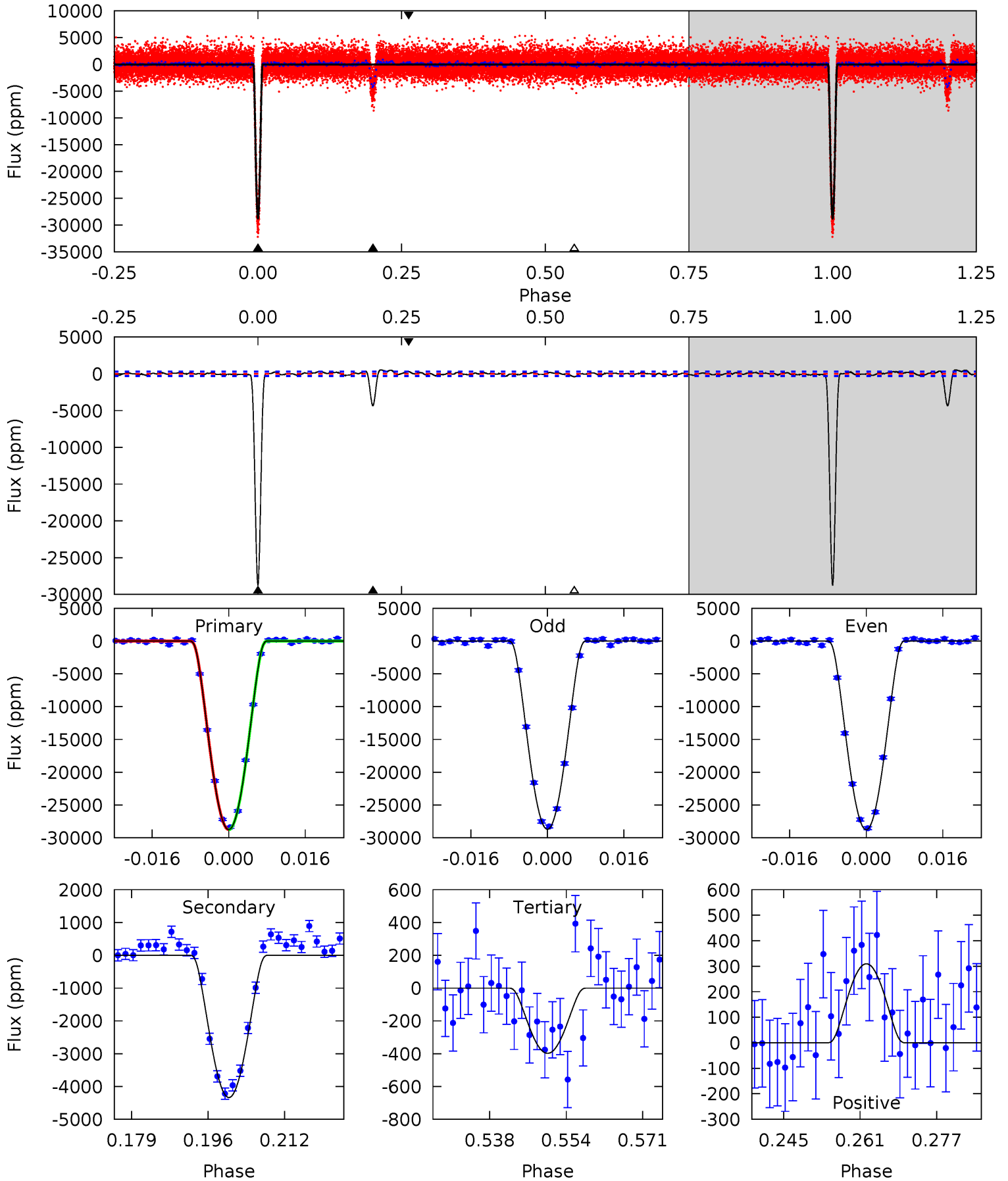
TCE 007840035-01 P= 13.542077 Days $T_0=144.003035$ (BKJD)



DV Model-Shift Uniqueness Test

007840035-01, P = 13.542037 Days, E = 144.006377 Days

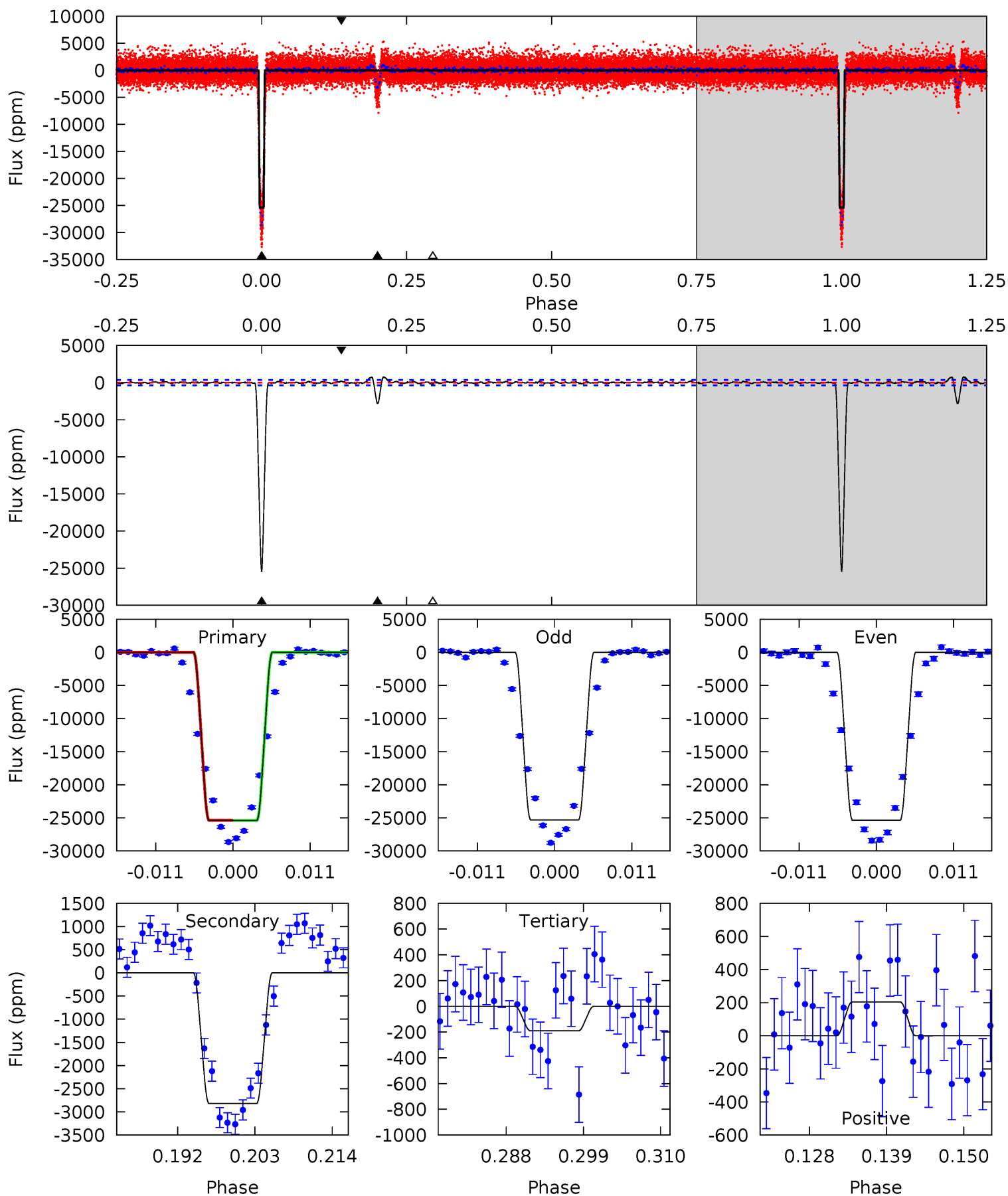
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
461.4	69.6	6.38	4.97	4.93	2.40	2.06	455.0	456.4	63.2	64.6	0.51	0.97	0.02	0.07



Alt Model-Shift Uniqueness Test

007840035-01, P = 13.542077 Days, E = 144.003035 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
344.7	38.2	2.59	2.78	5.01	2.55	1.35	342.2	342.0	35.6	35.4	0.15	1.00	0.03	0.23



Stellar Parameters For KIC 007840035

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5496^{+199}_{-182}	$4.405^{+0.158}_{-0.193}$	$-0.220^{+0.300}_{-0.300}$	$0.927^{+0.231}_{-0.154}$	$0.798^{+0.129}_{-0.055}$	$1.410^{+1.018}_{-0.688}$
	+4%/-3%	+4%/-4%	+136%/-136%	+25%/-17%	+16%/-7%	+72%/-49%
Source	KIC0	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 007840035-01 / KOI 3758.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-4335 ± 62	$21.99^{+3.73}_{-3.05}$	1022^{+75}_{-67}	3515^{+136}_{-126}	53^{+17}_{-15}
Alt.	-2817 ± 74	$17.10^{+3.14}_{-2.41}$	1019^{+79}_{-65}	3555^{+165}_{-167}	57^{+21}_{-16}

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

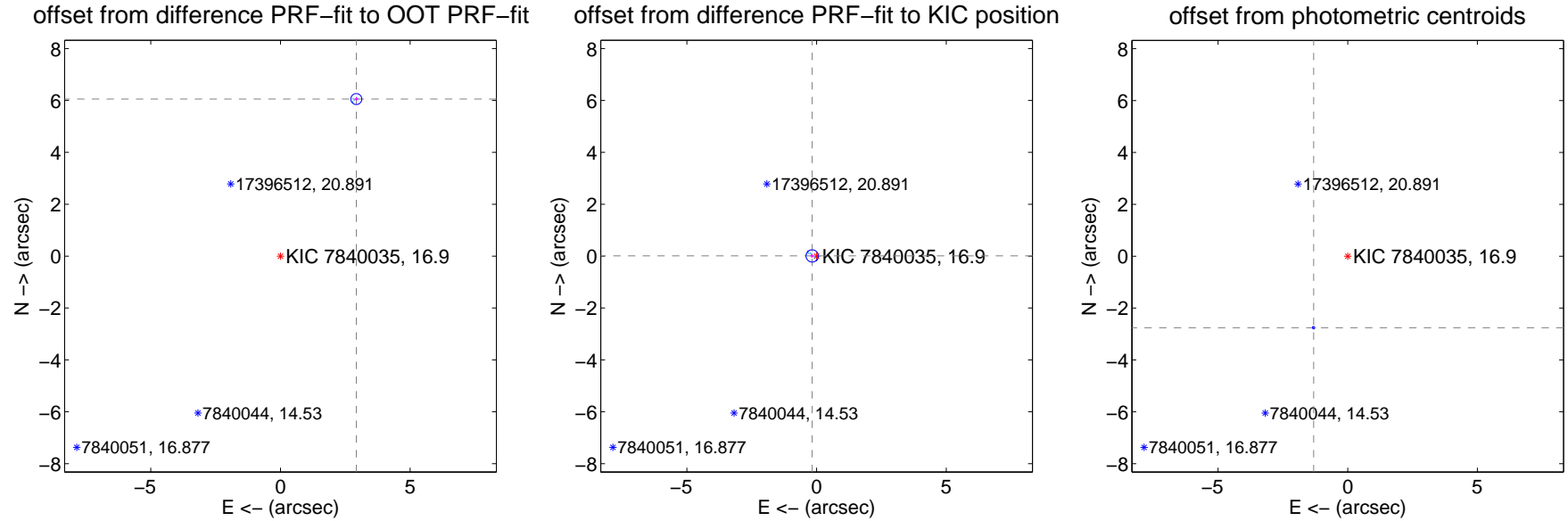
DV Centroid Data

Supplemental centroid analysis for 007840035-01. Kepler magnitude: 16.90. Transit SNR 210.56

There are 8 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 6.81 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.723 \pm 0.070	95.64	-2.924 \pm 0.071	6.054 \pm 0.068
PRF-fit source offset from KIC position	0.171 \pm 0.079	2.17	0.171 \pm 0.079	0.008 \pm 0.071
photometric centroid source offset	3.05 \pm 0.02	200.81	1.31 \pm 0.01	-2.76 \pm 0.02



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

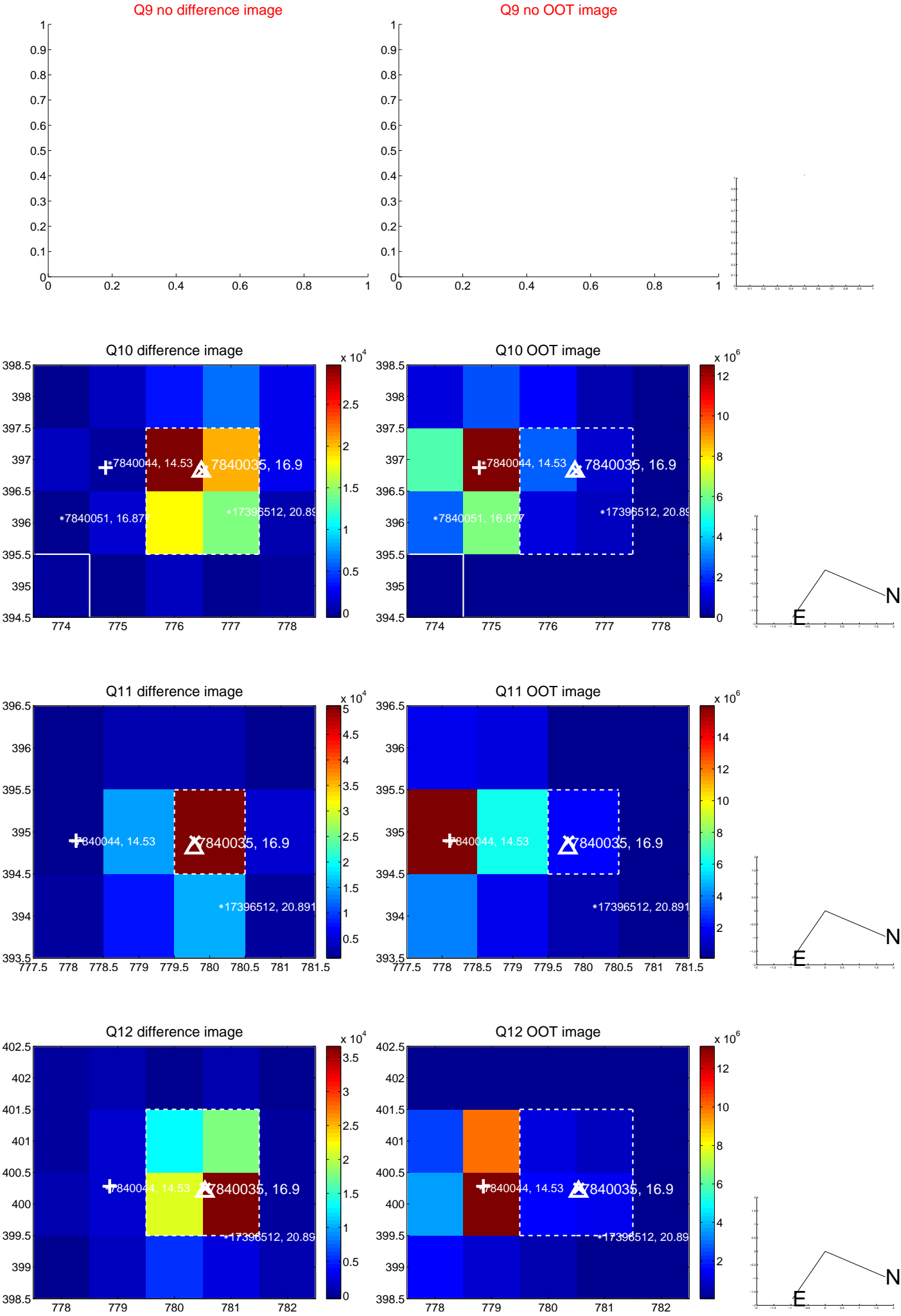
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



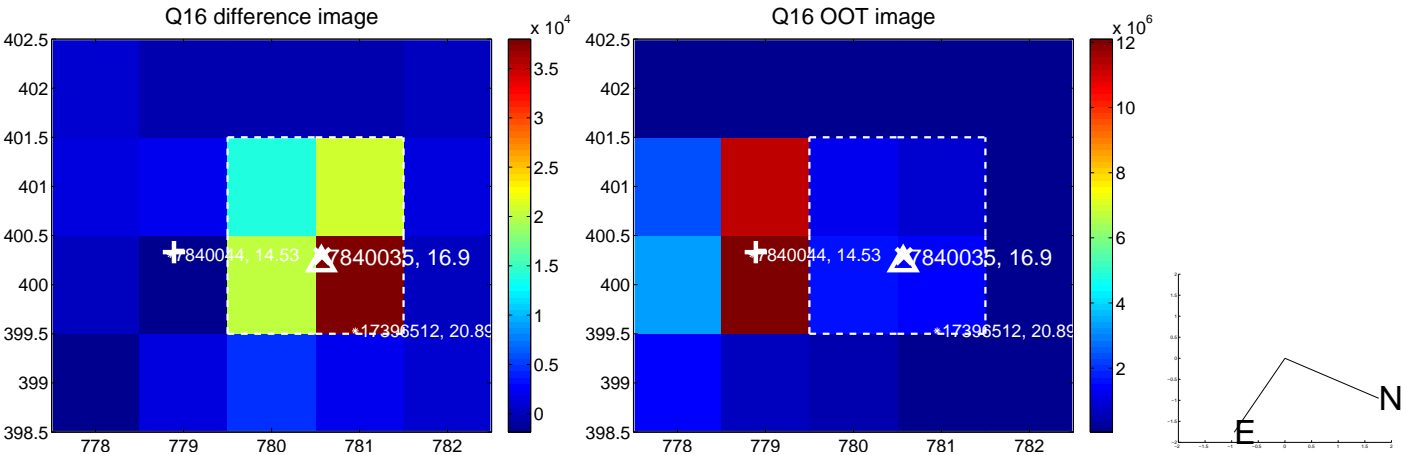
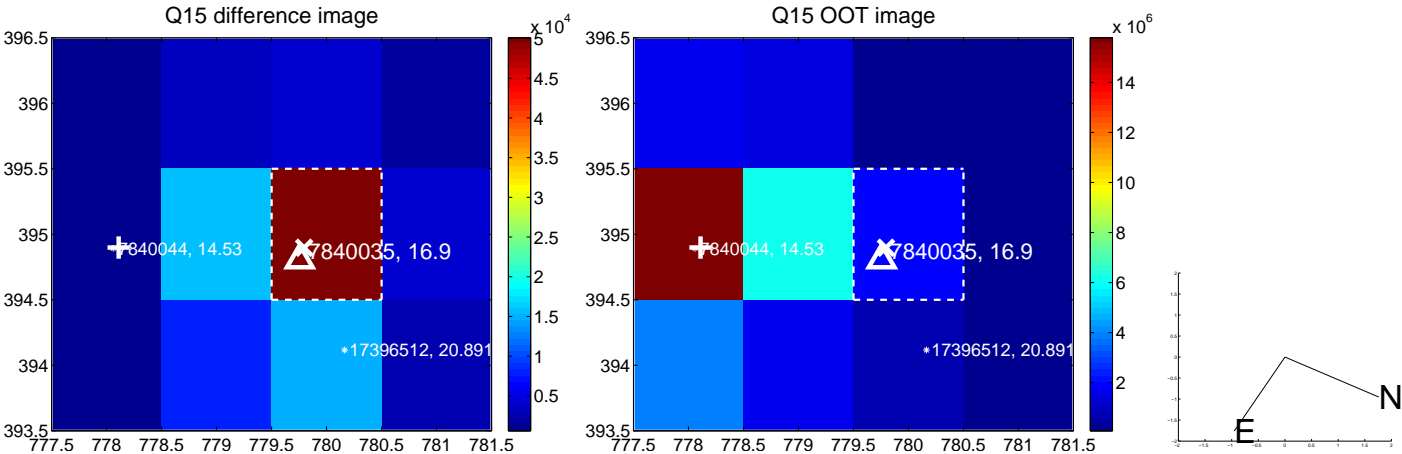
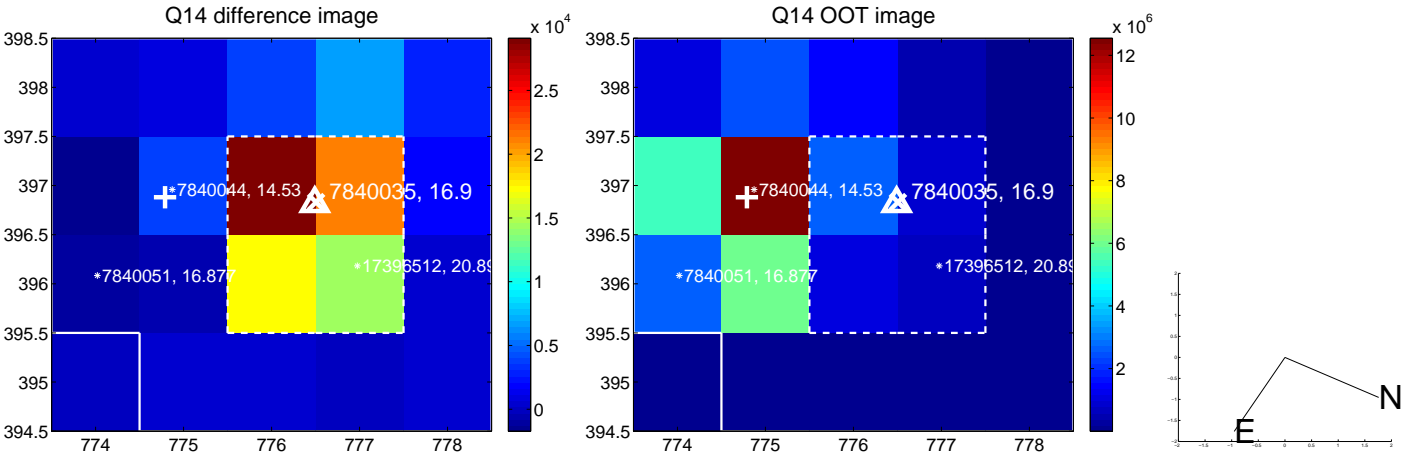
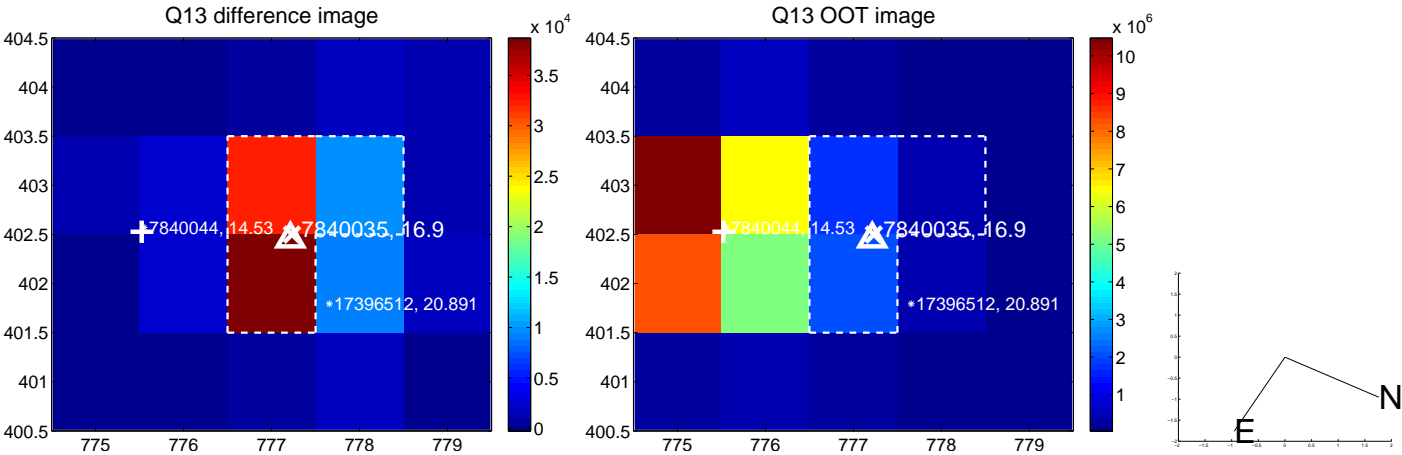
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



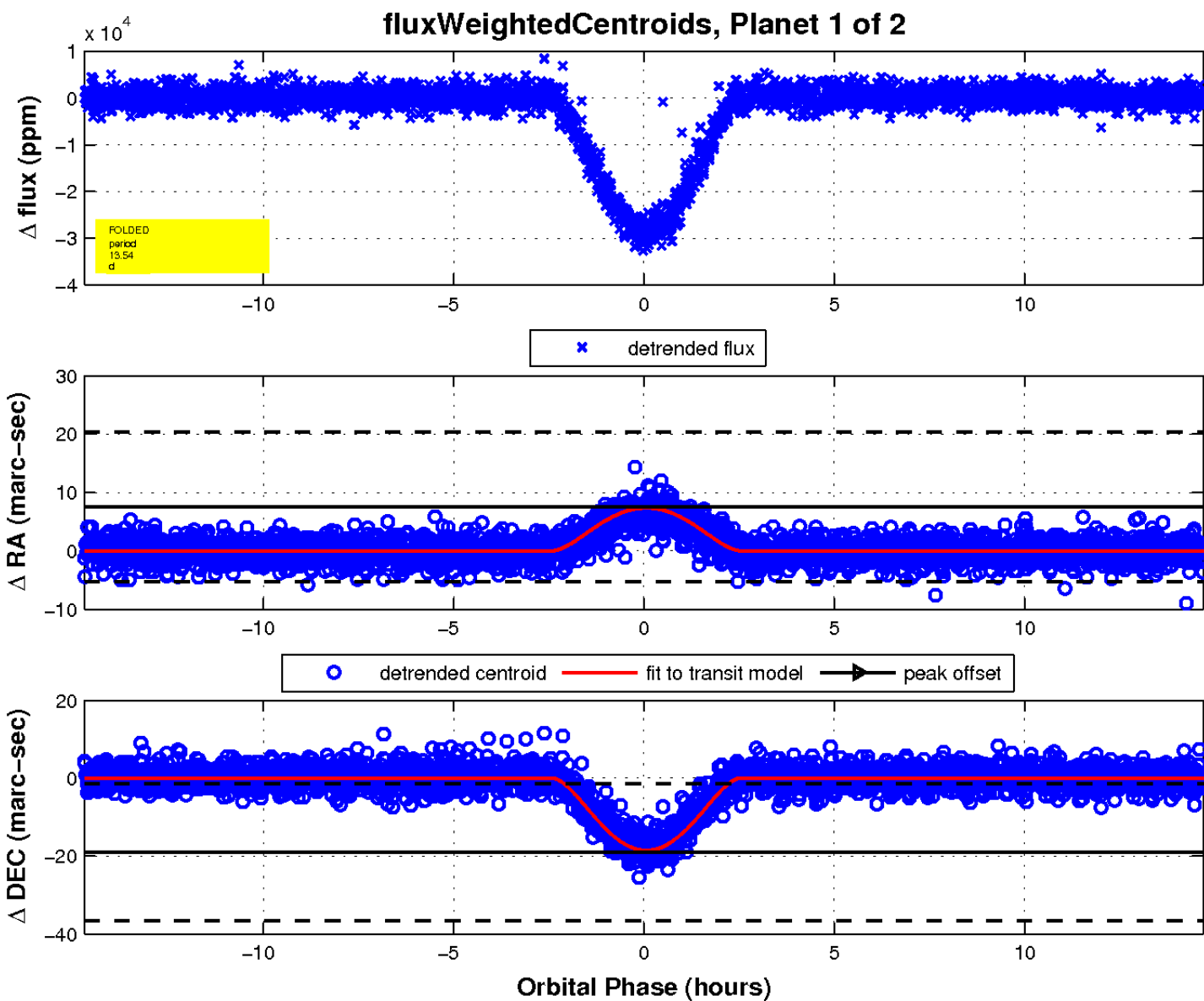
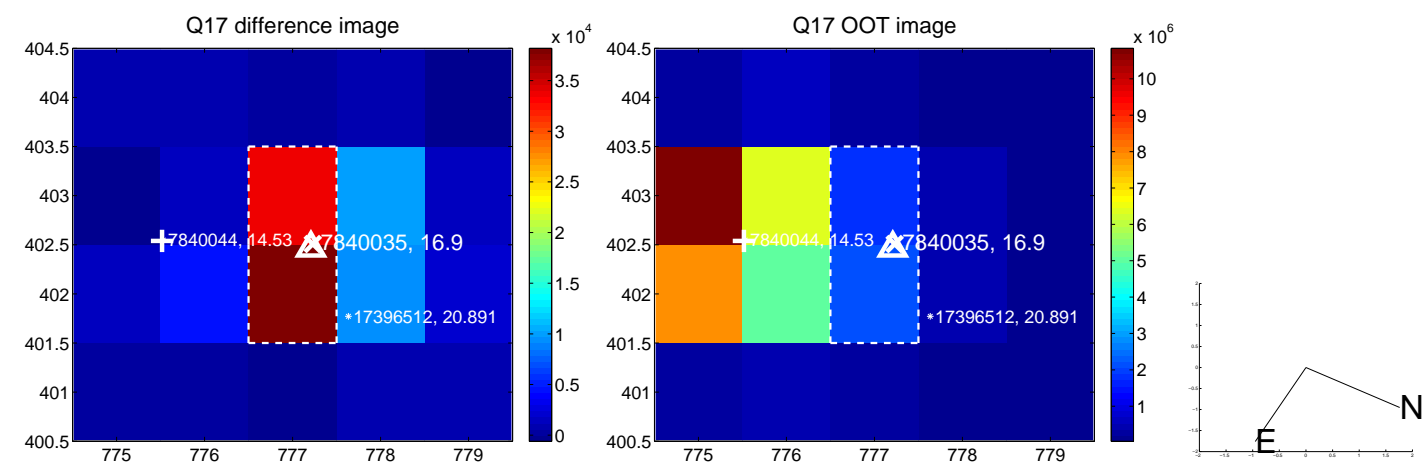
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

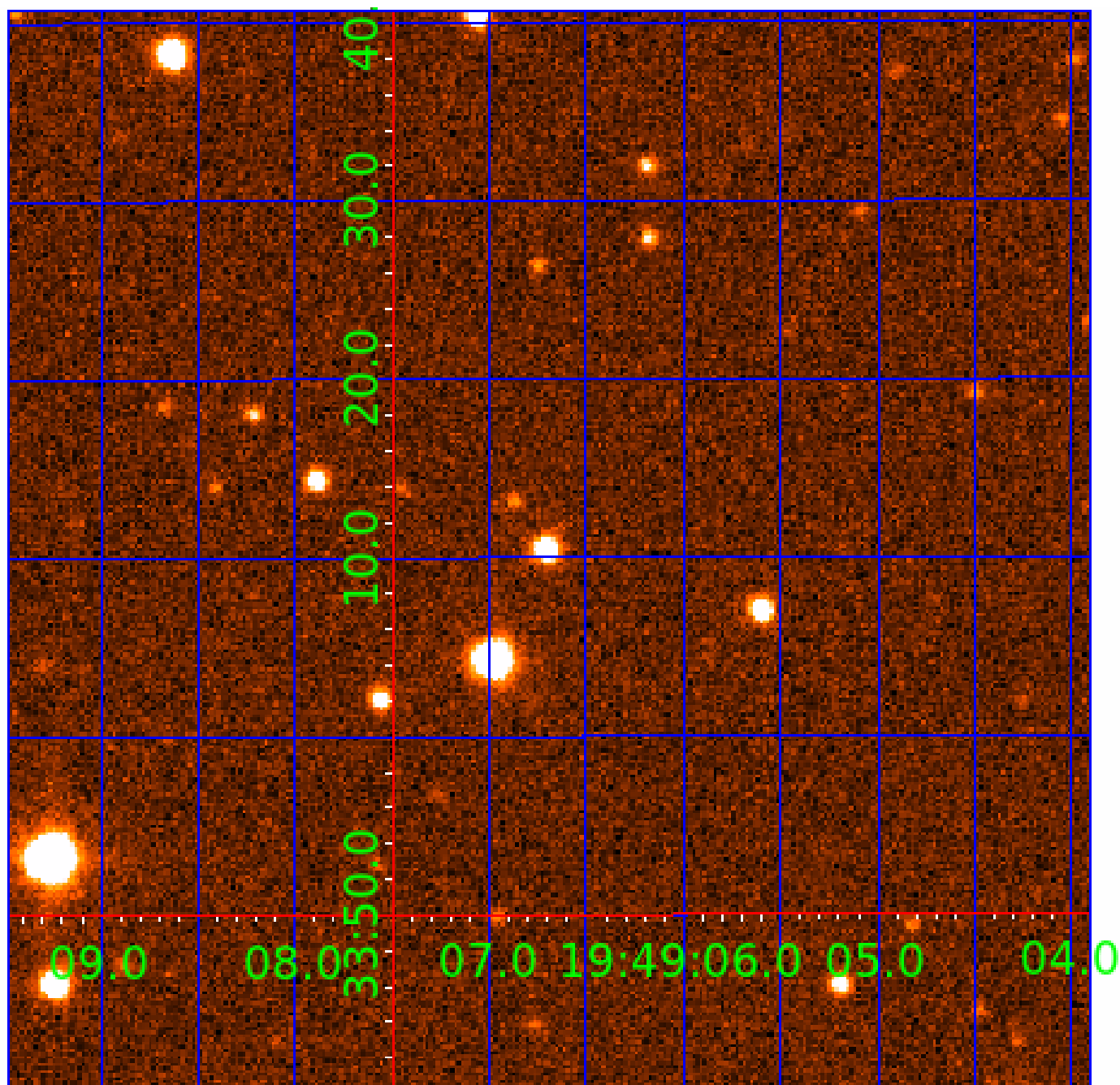


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007840035

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})
007840035-01	OBS	3758.01	13.542037	144.006377	28705.7	4.901	218.2	210.6	0.93	5496	21.76	66.10
007840035-02	OBS	No	13.541936	133.181823	4454.4	4.839	33.8	36.4	0.93	5496	8.51	66.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007840035-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_KIC_POS
007840035-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_KIC_POS

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 007840035-02

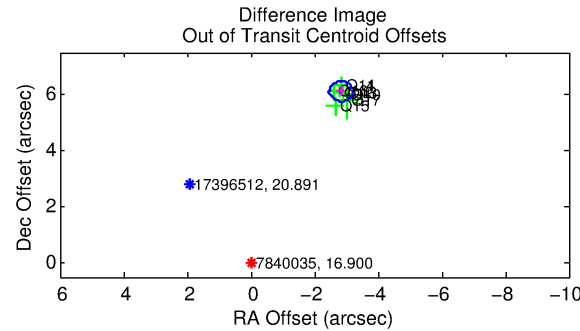
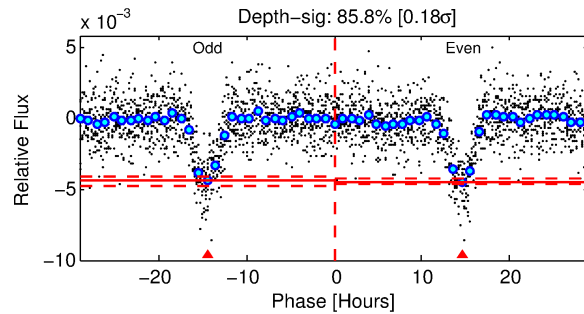
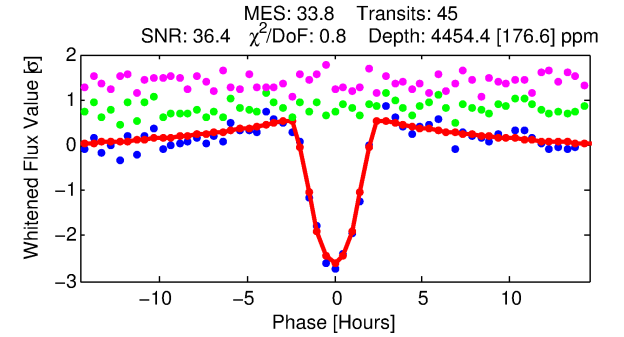
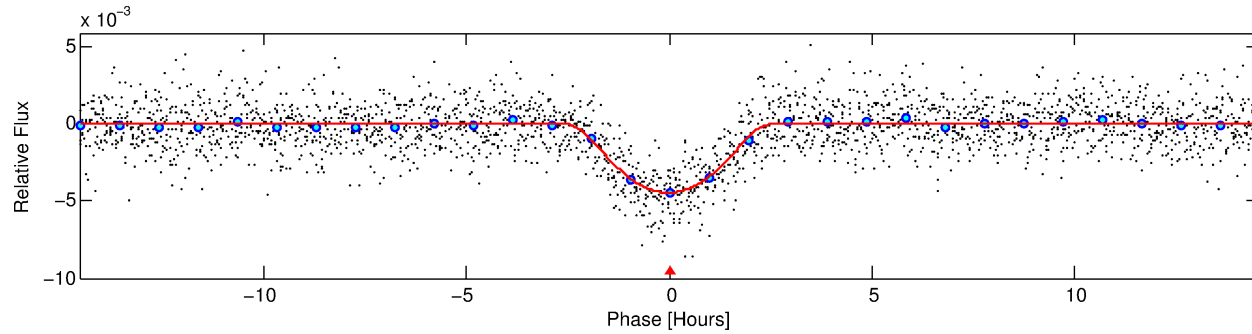
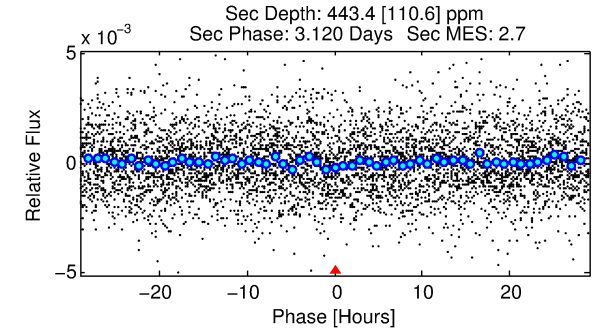
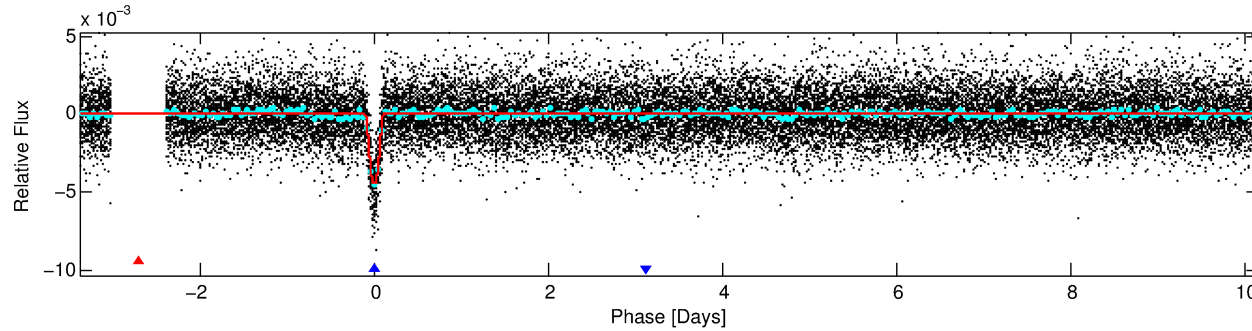
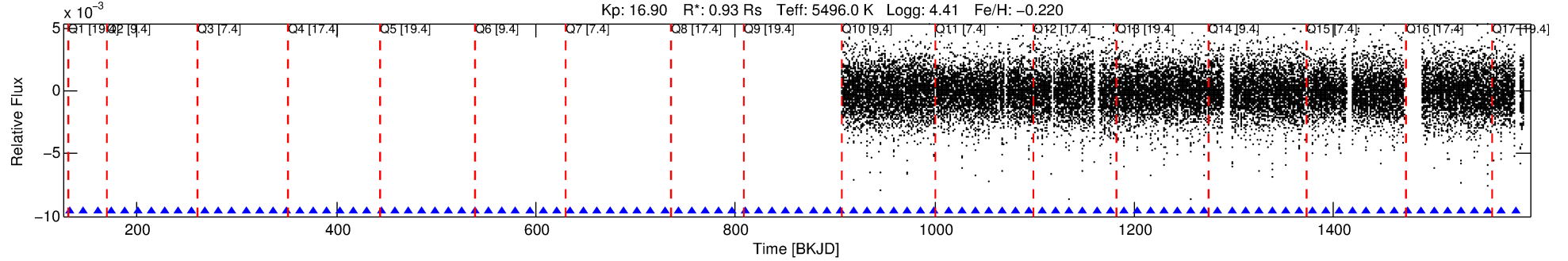
No Significant Match Found

DV One-Page Summary

KIC: 7840035 Candidate: 2 of 2 Period: 13.542 d

KOI: K03758 Corr: No Ephemeris Match

Kp: 16.90 R*: 0.93 Rs Teff: 5496.0 K Logg: 4.41 Fe/H: -0.220



DV Fit Results:

Period = 13.54194 [0.00009] d
Epoch = 133.1818 [0.0076] BKJD
Rp/R* = 0.0841 [0.0194]
a/R* = 11.28 [1.14]
b = 0.95 [0.04]
Seff = 66.10 [24.41]
Teff = 727 [67] K
Rp = 8.51 [2.89] Re
a = 0.1031 [0.0229] AU
Ag = 35.81 [22.40] [1.55σ]
Teffp = 2750 [375] K [5.32σ]

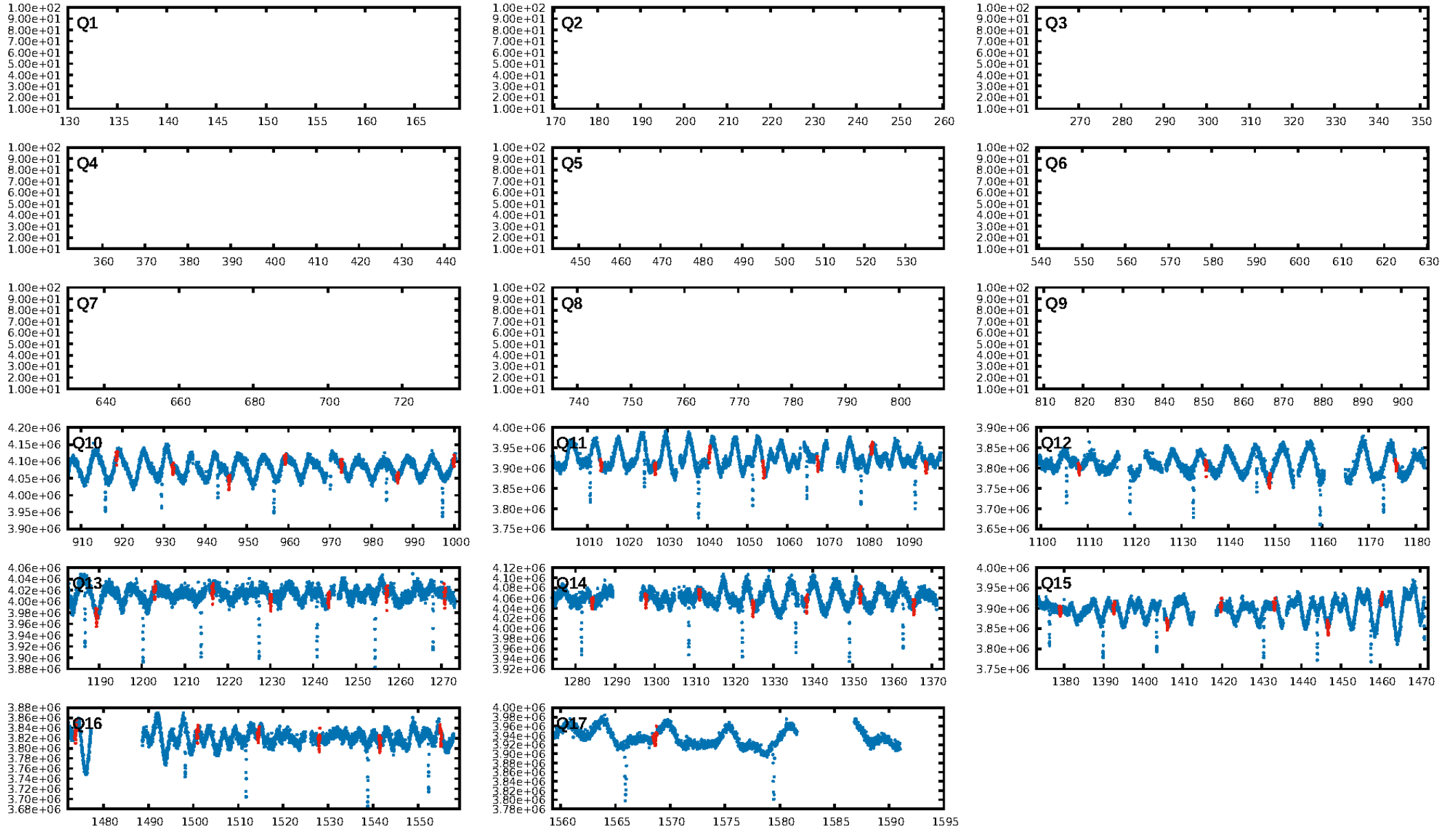
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.30e-254
RollingBand-fgt: 1.00 [44/44]
GhostDiagnostic-chr: 2.338
Centroid-sig: 0.0%
Centroid-so: 3.037 arcsec [31.81σ]
OotOffset-rm: 6.736 arcsec [55.92σ]
KicOffset-rm: 0.296 arcsec [2.90σ]
OotOffset-st: 2/2/2/2 [8]
KicOffset-st: 2/2/2/2 [8]
DiffImageQuality-fgm: 1.00 [8/8]
DiffImageOverlap-fno: 1.00 [8/8]

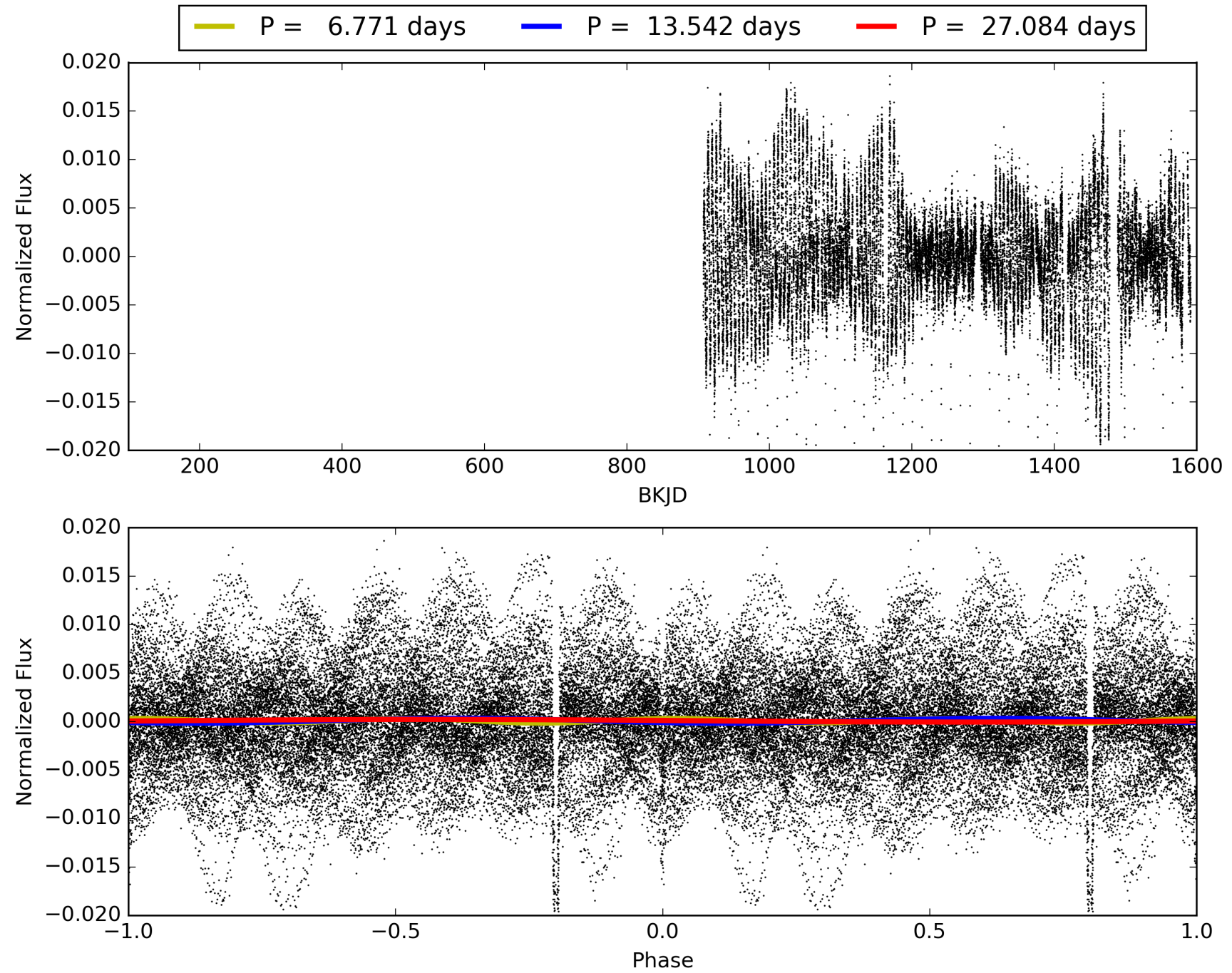
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:26:53 Z

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

TCE 007840035-02, PDC Light Curves

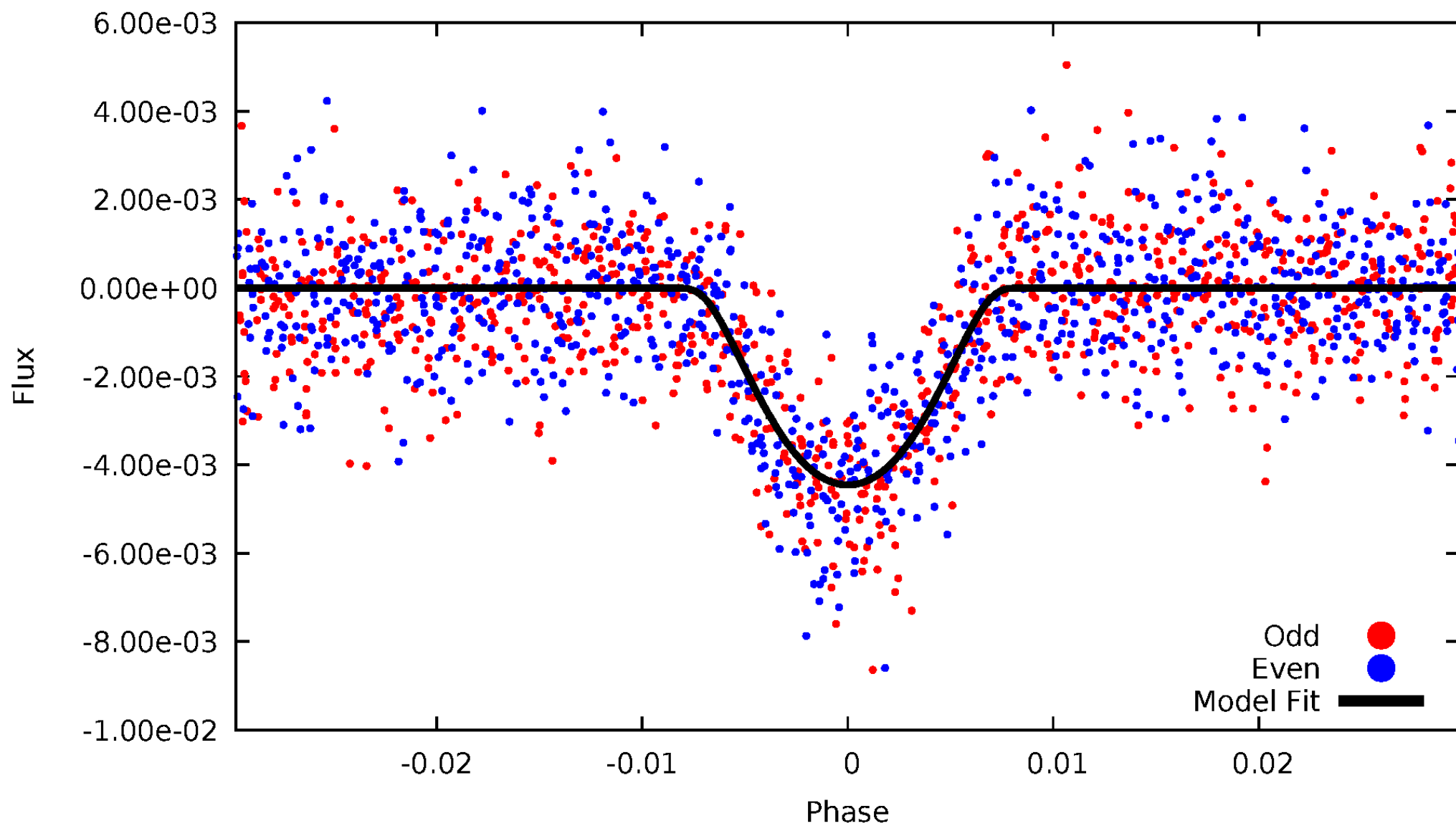


TCE 007840035-02



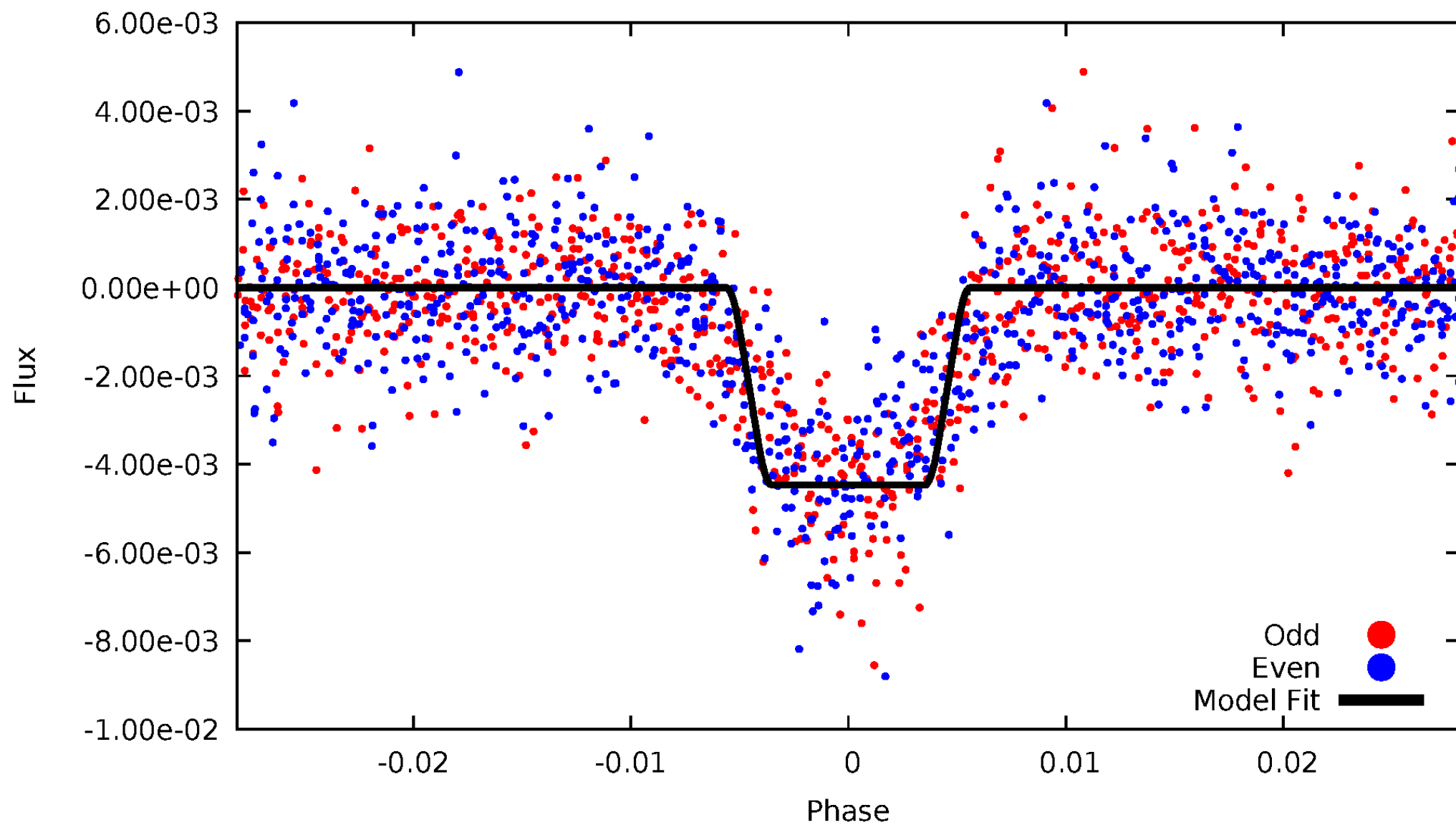
DV Odd/Even

TCE 007840035-02



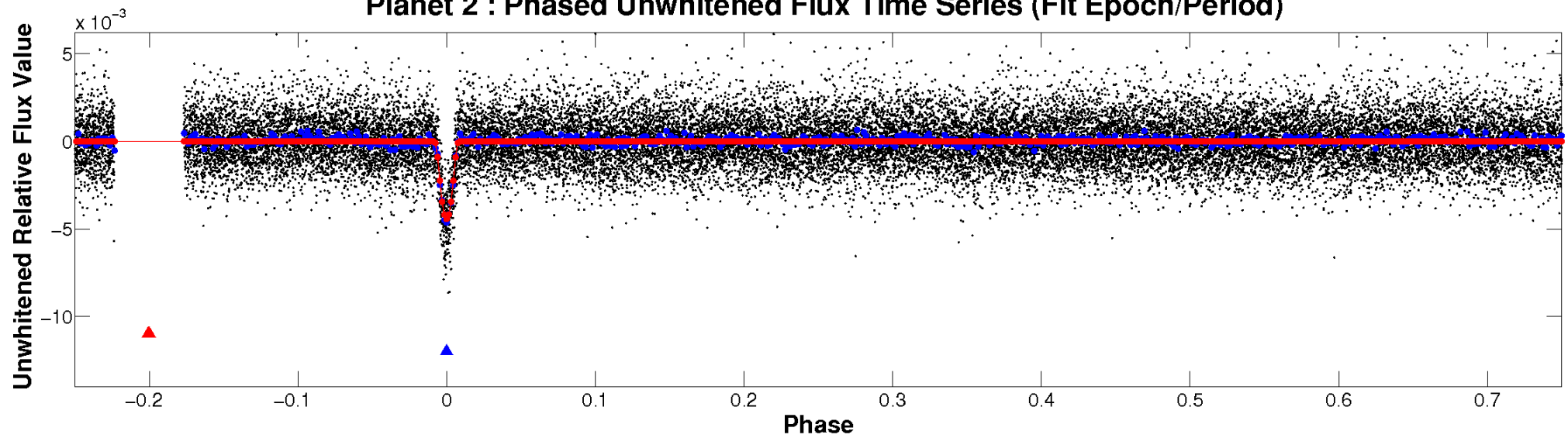
ALT Odd/Even

TCE 007840035-02

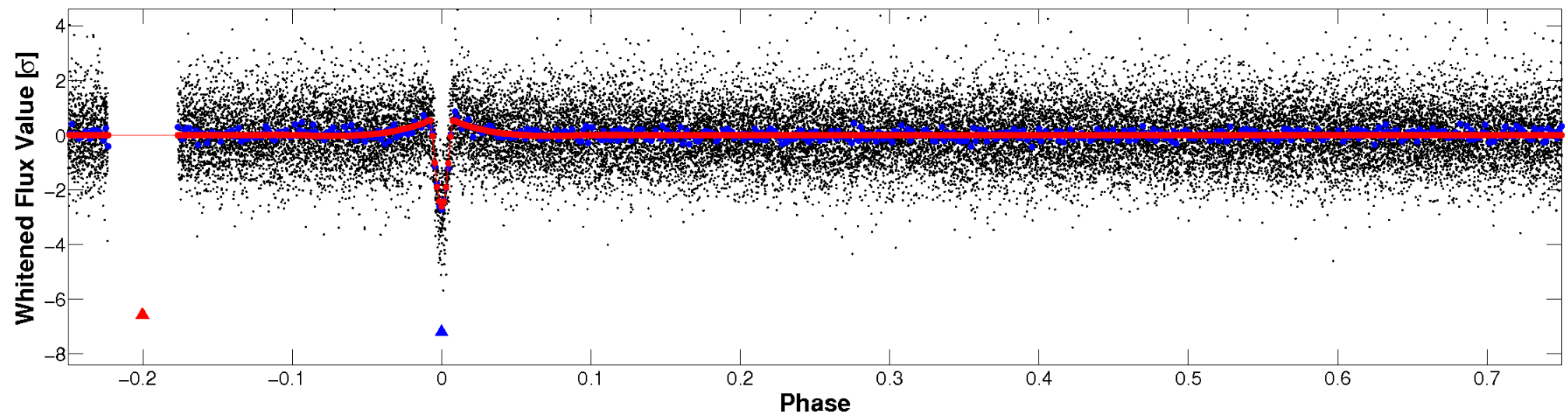


Non-Whitened Vs. Whitened Light Curve

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

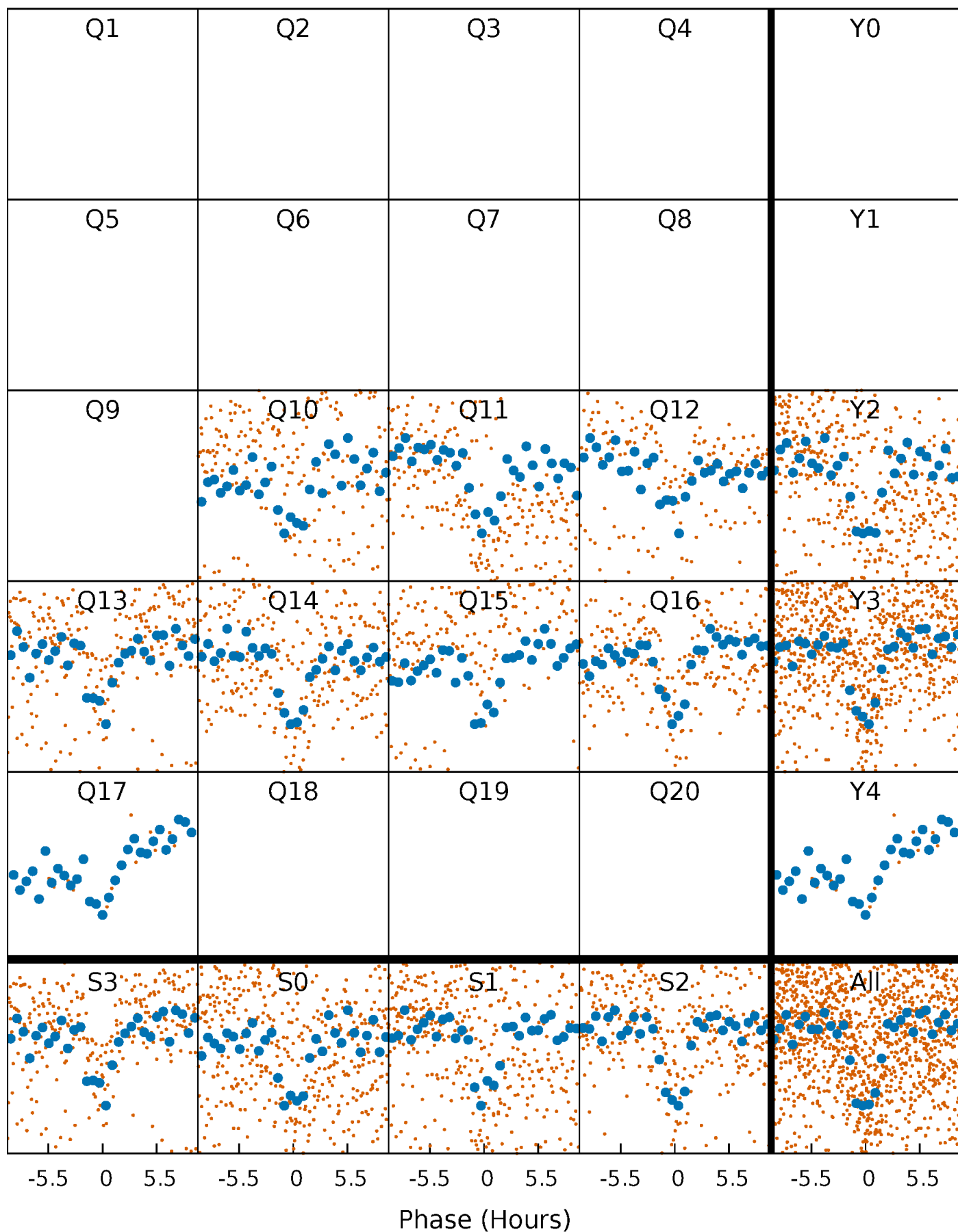


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



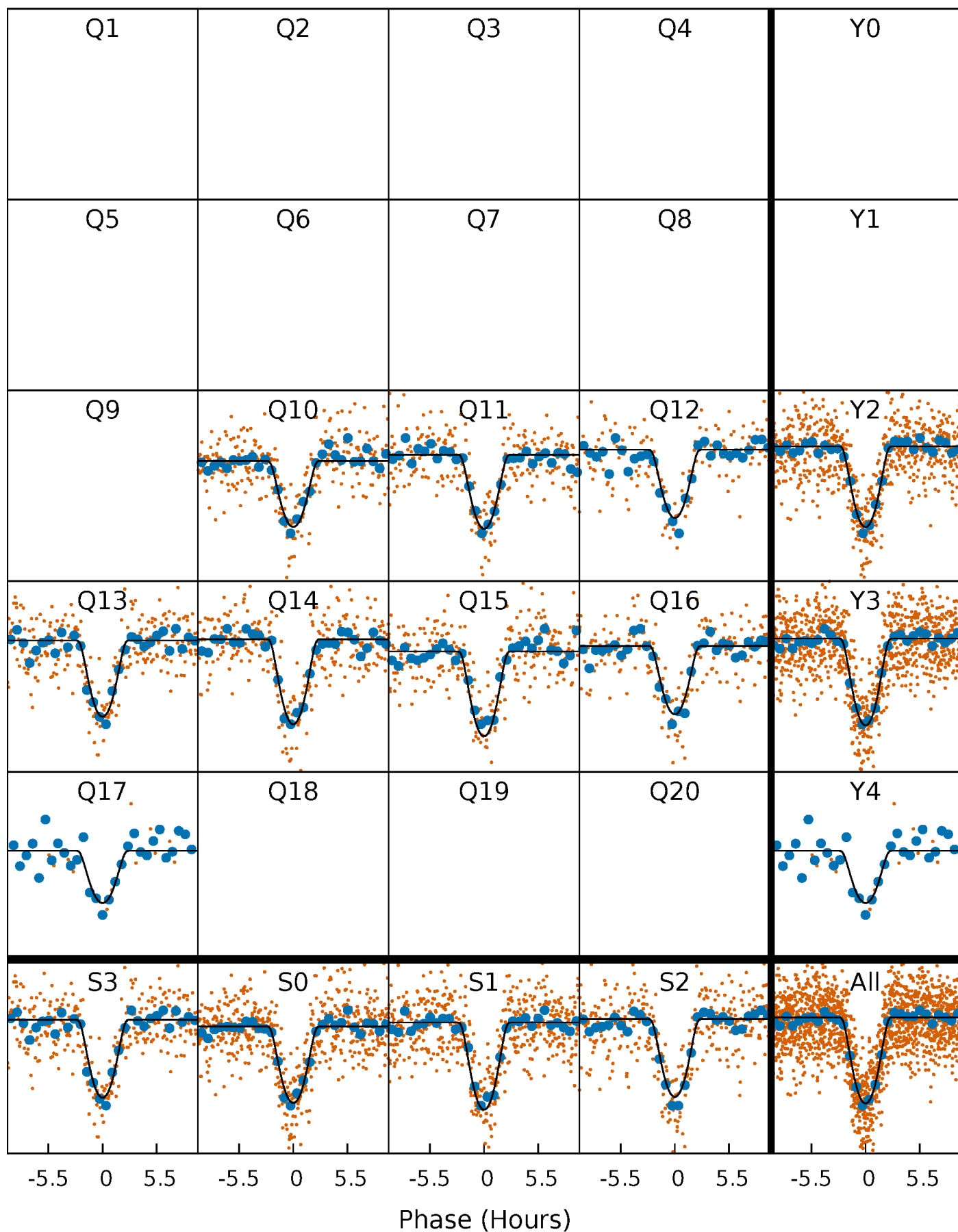
PDC Quarter-Phased Transit Curves

TCE 007840035-02 $P = 13.541936$ Days $T_0 = 133.181823$ (BKJD)



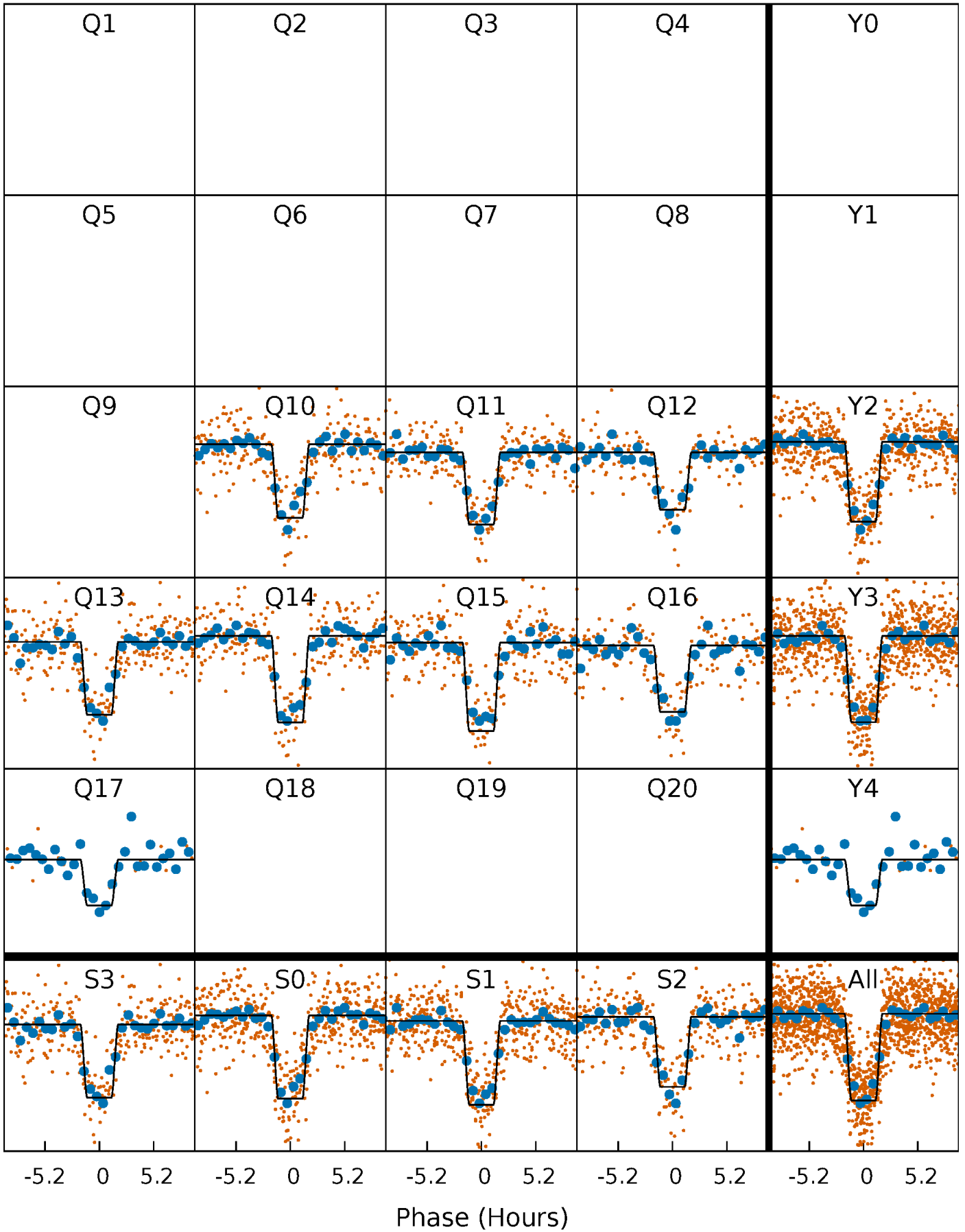
DV Quarter-Phased Transit Curves

TCE 007840035-02 P= 13.541936 Days $T_0=133.181823$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

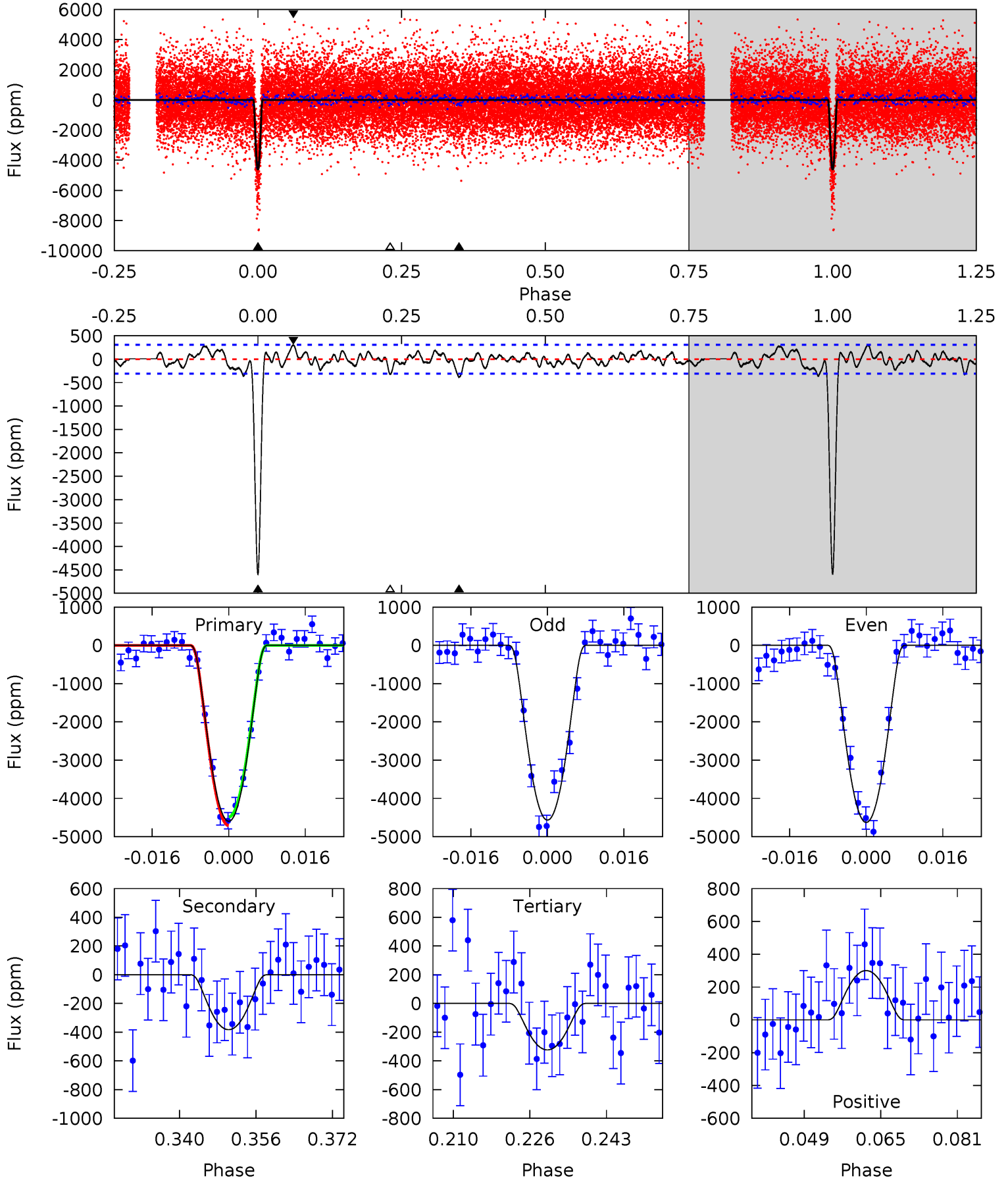
TCE 007840035-02 P= 13.541807 Days $T_0=133.192840$ (BKJD)



DV Model-Shift Uniqueness Test

007840035-02, $P = 13.541936$ Days, $E = 133.181823$ Days

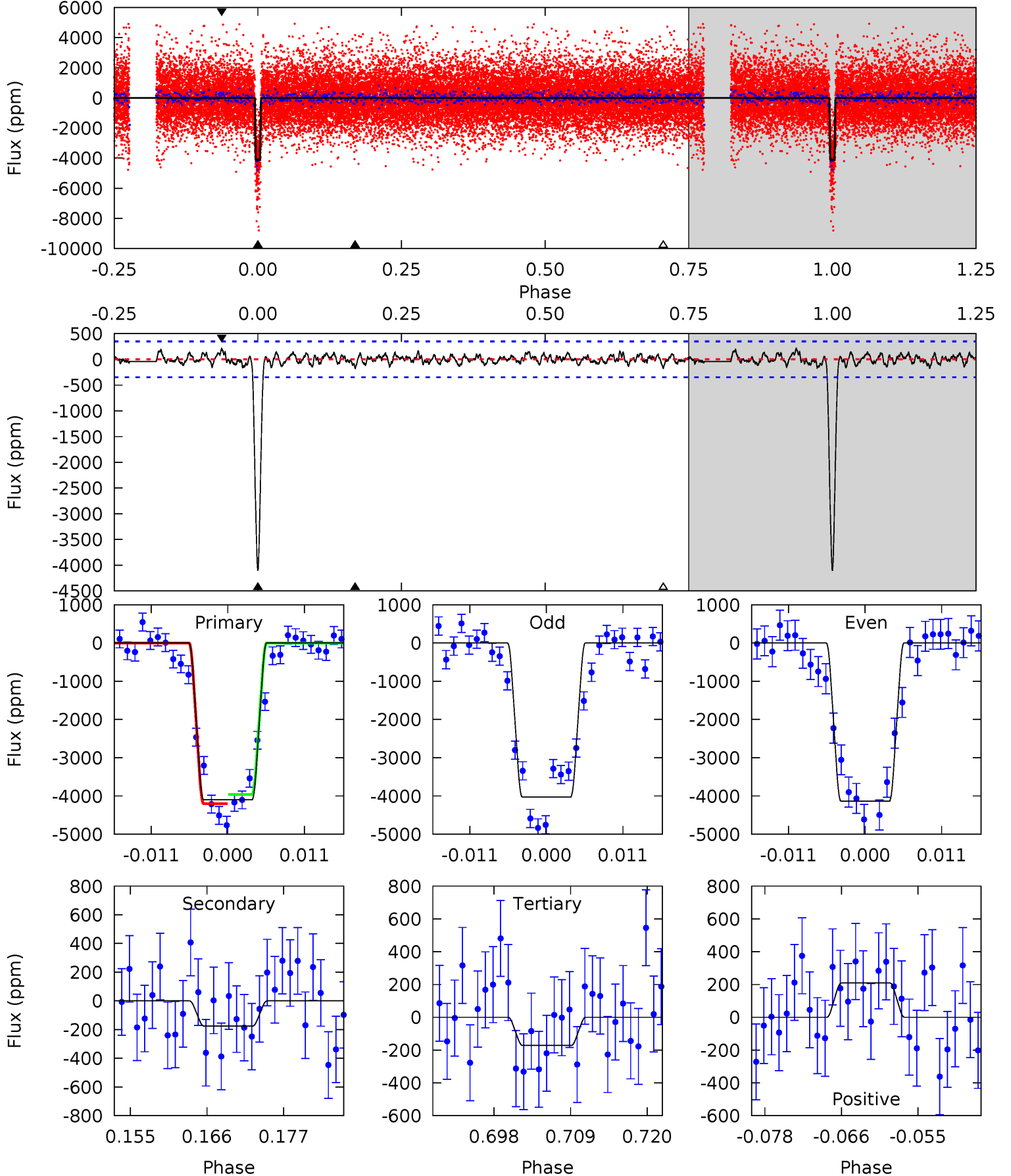
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
73.8	6.14	5.19	4.82	4.93	2.41	1.78	68.6	69.0	0.95	1.32	0.50	0.99	0.06	1.82



Alt Model-Shift Uniqueness Test

007840035-02, $P = 13.541807$ Days, $E = 133.192840$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
58.9	2.53	2.48	3.01	5.01	2.54	0.93	56.5	55.9	0.05	-0.48	0.79	1.00	0.05	1.71



Stellar Parameters For KIC 007840035

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5496^{+199}_{-182}	$4.405^{+0.158}_{-0.193}$	$-0.220^{+0.300}_{-0.300}$	$0.927^{+0.231}_{-0.154}$	$0.798^{+0.129}_{-0.055}$	$1.410^{+1.018}_{-0.688}$
	+4%/-3%	+4%/-4%	+136%/-136%	+25%/-17%	+16%/-7%	+72%/-49%
Source	KIC0	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 007840035-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-383 ± 62	$8.76^{+2.46}_{-2.30}$	1023^{+72}_{-64}	3218^{+306}_{-221}	30^{+26}_{-12}
Alt.	-176 ± 70	$6.83^{+2.22}_{-2.01}$	1019^{+83}_{-62}	3058^{+351}_{-277}	22^{+24}_{-11}

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

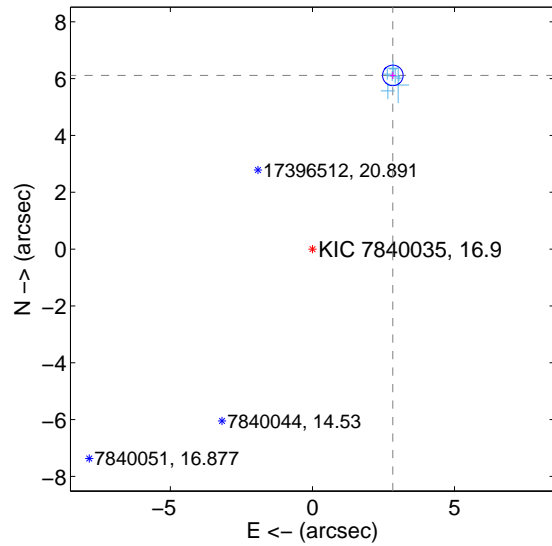
Supplemental centroid analysis for 007840035-02. Kepler magnitude: 16.90. Transit SNR 36.43

There are 8 quarters with good PRF difference image offsets

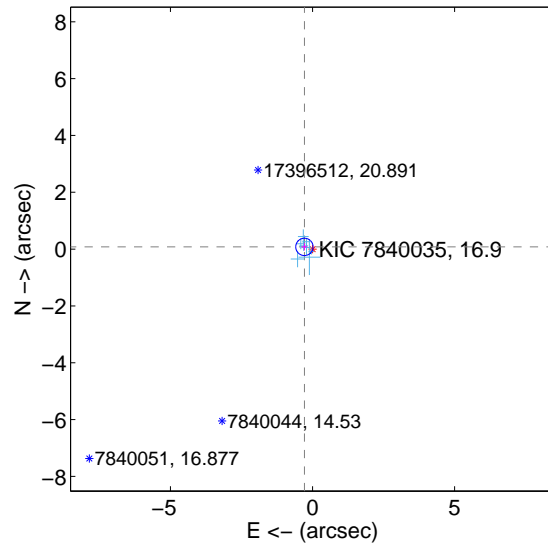
The OOT PRF centroid is offset from the target star catalog position by about 6.81 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.736 \pm 0.120	55.92	-2.829 \pm 0.100	6.113 \pm 0.124
PRF-fit source offset from KIC position	0.296 \pm 0.102	2.90	0.285 \pm 0.100	0.078 \pm 0.124
photometric centroid source offset	3.04 \pm 0.10	31.81	1.41 \pm 0.07	-2.69 \pm 0.10

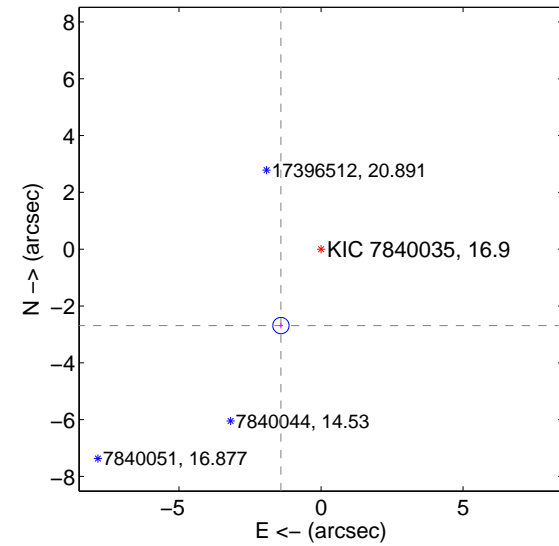
offset from difference PRF-fit to OOT PRF-fit



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.

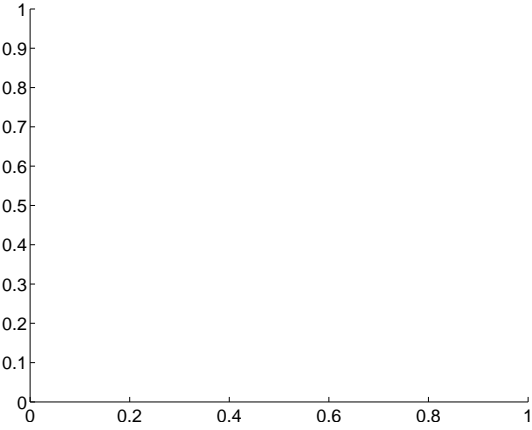


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

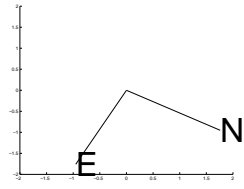
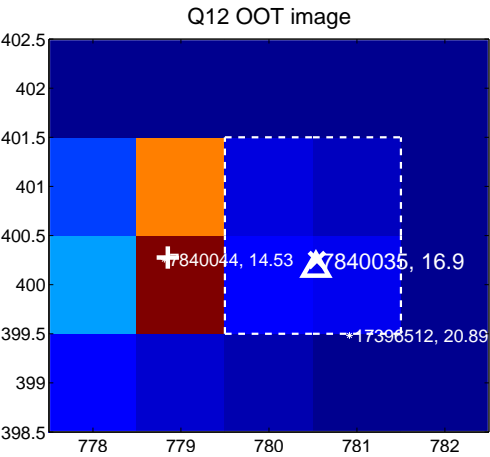
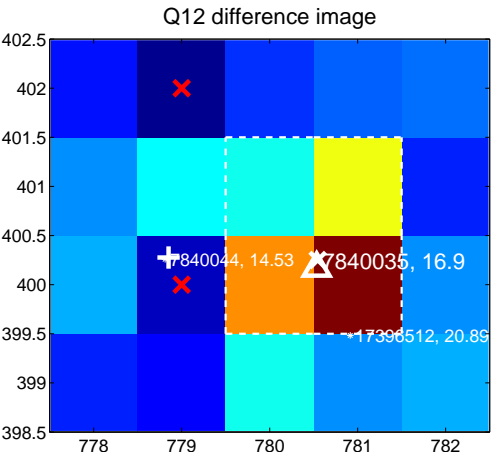
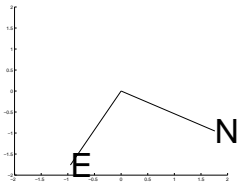
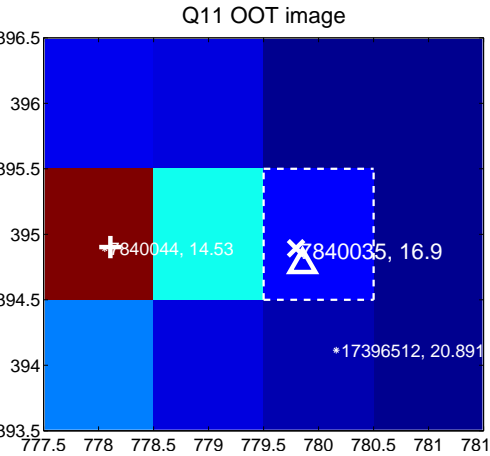
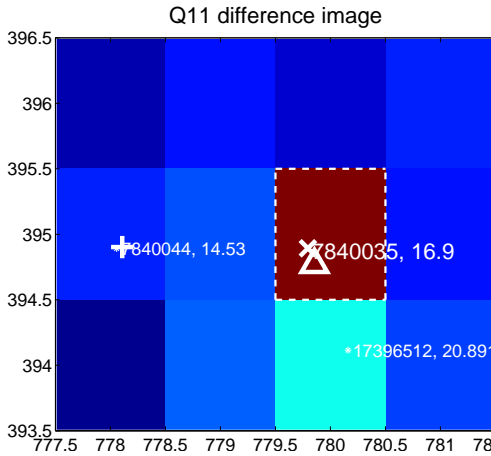
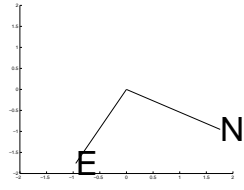
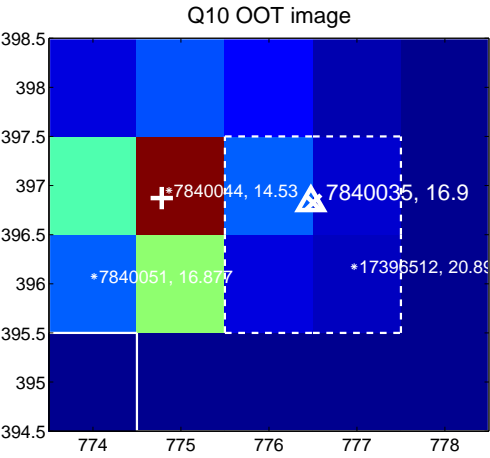
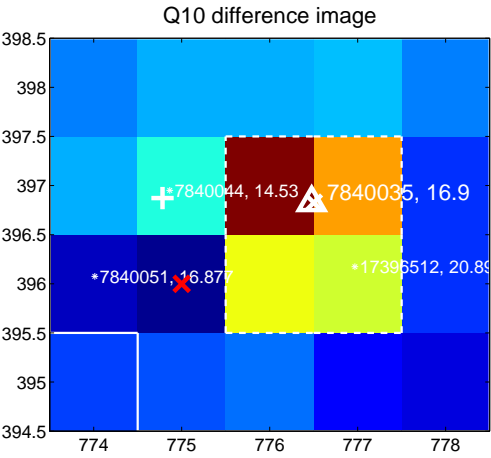
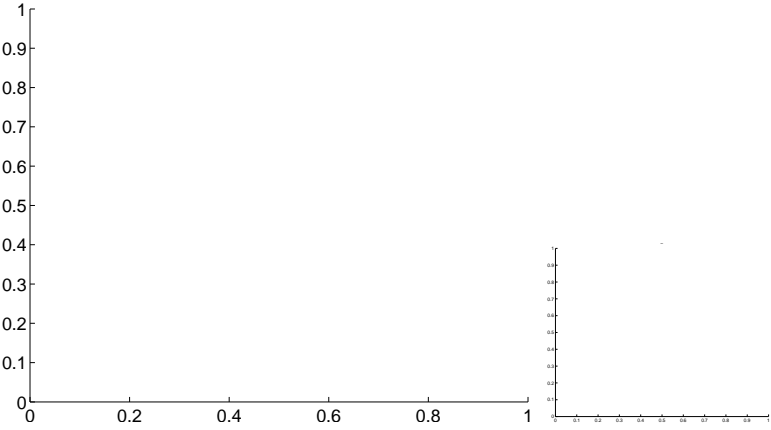


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

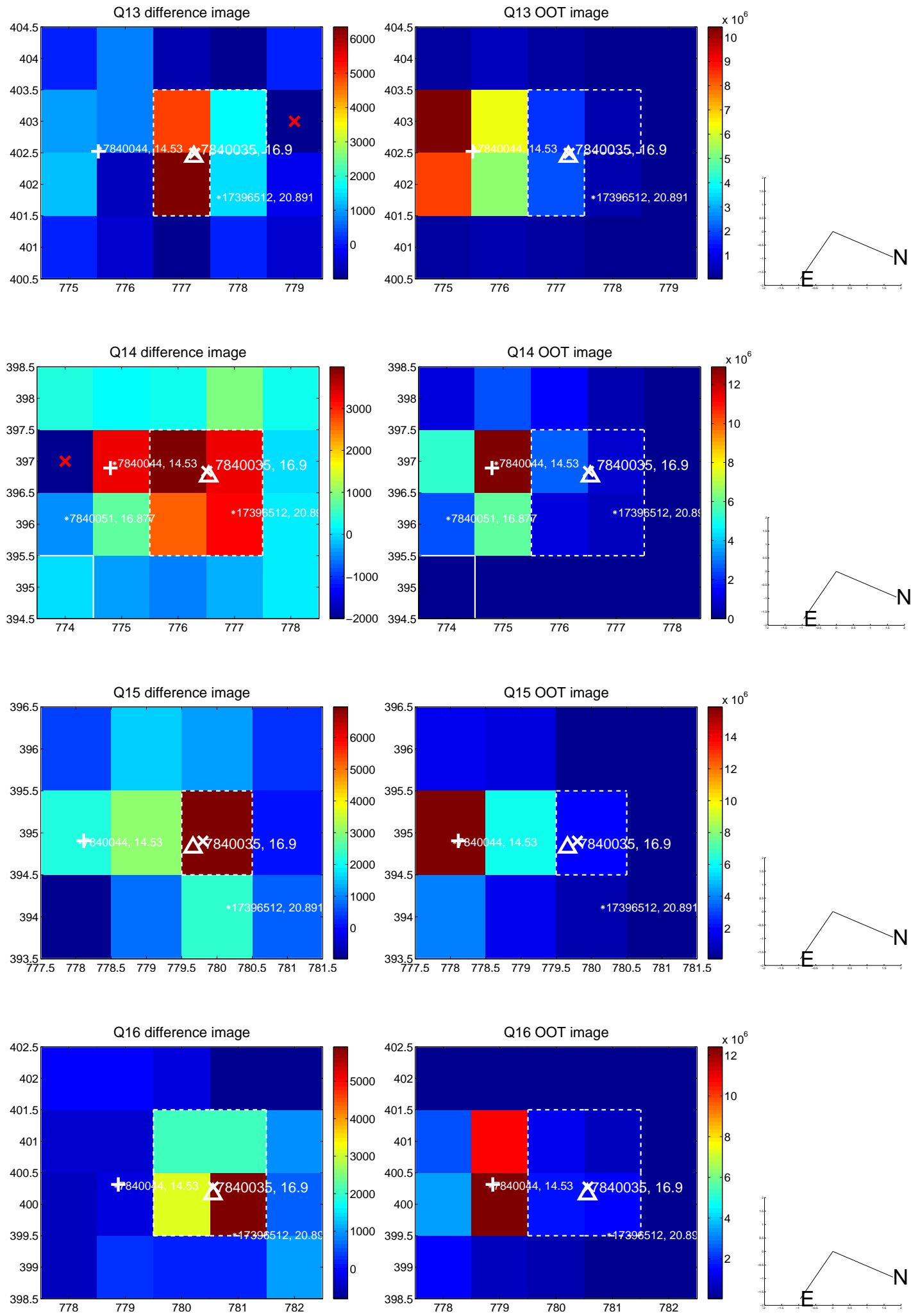
Q9 no difference image



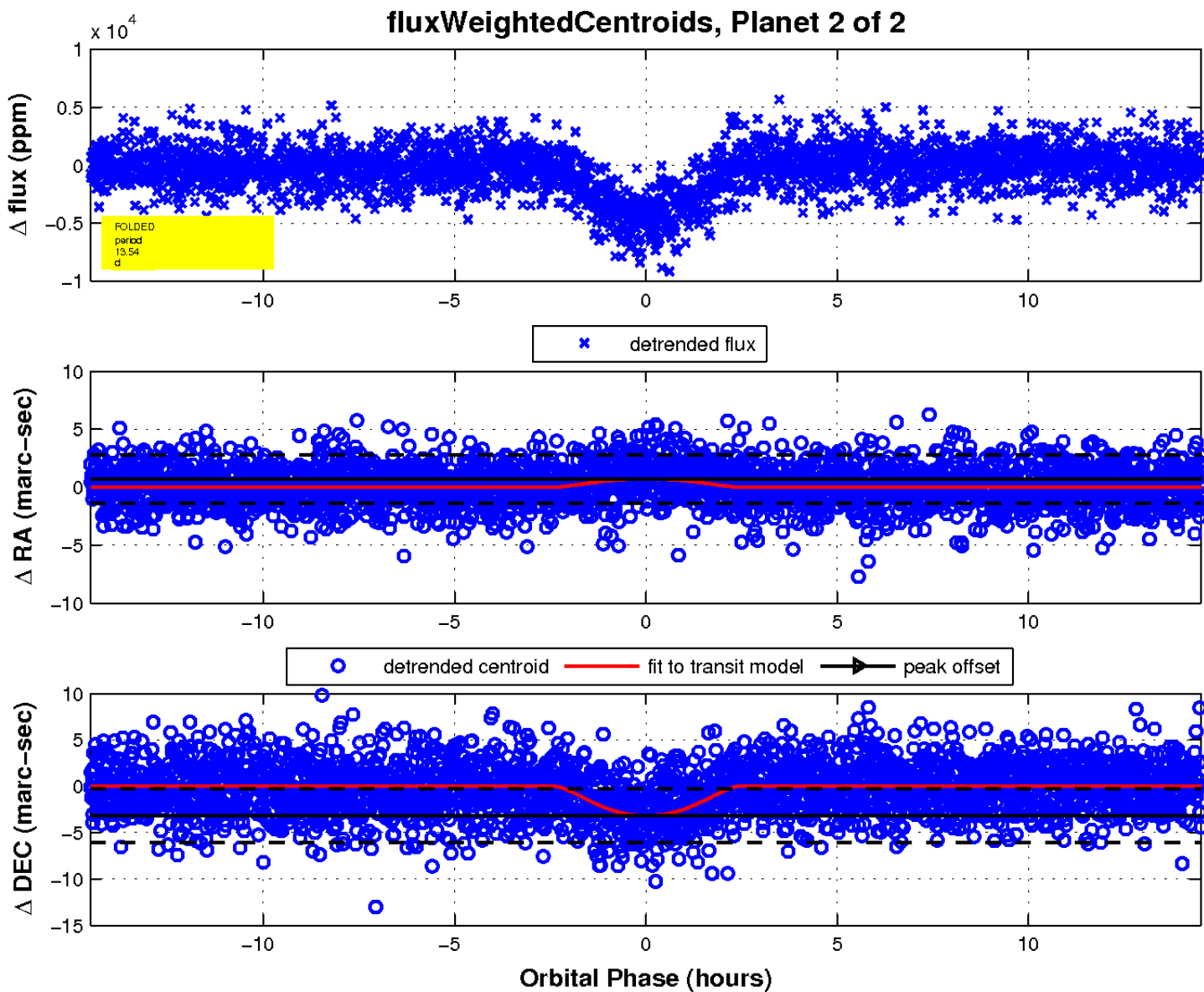
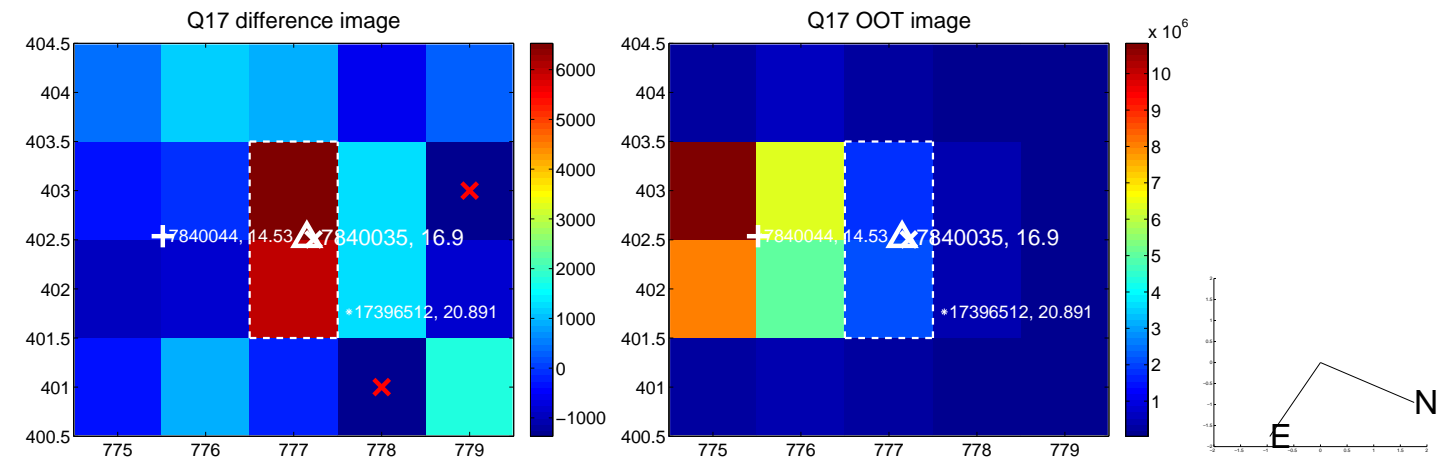
Q9 no OOT image



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

