

KIC 010383696

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})
010383696-01	OBS	3671.01	8.487890	134.492766	117653.5	4.342	829.5	532.9	0.85	5553	42.59	96.22
010383696-02	OBS	No	8.487872	138.385835	26904.2	4.133	201.2	189.2	0.85	5553	21.35	96.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010383696-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—SEASONAL_DEPTH_ALT—CENT_KIC_POS
010383696-02	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.

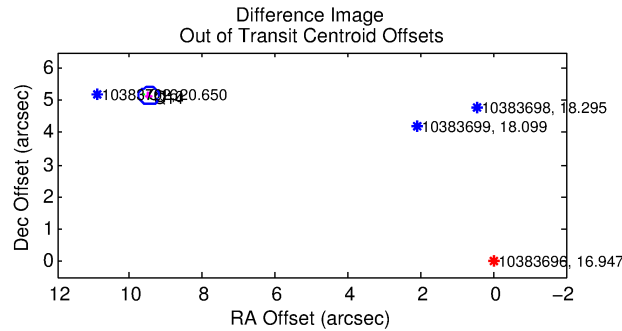
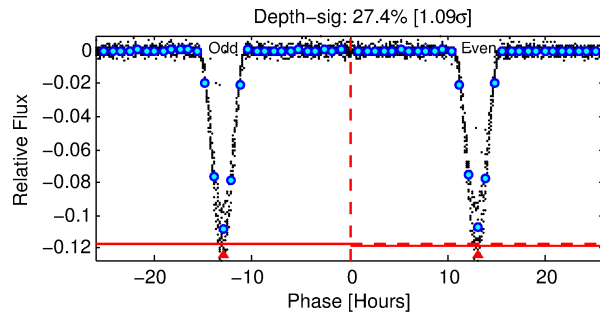
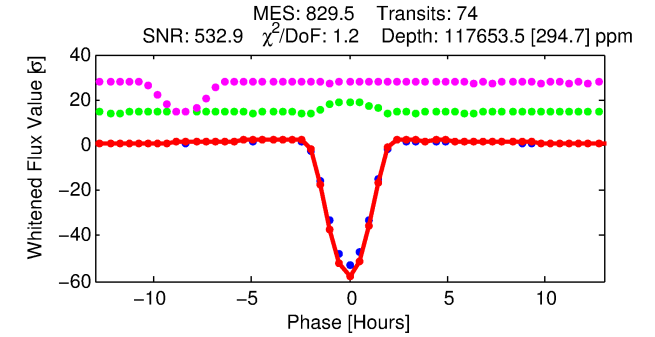
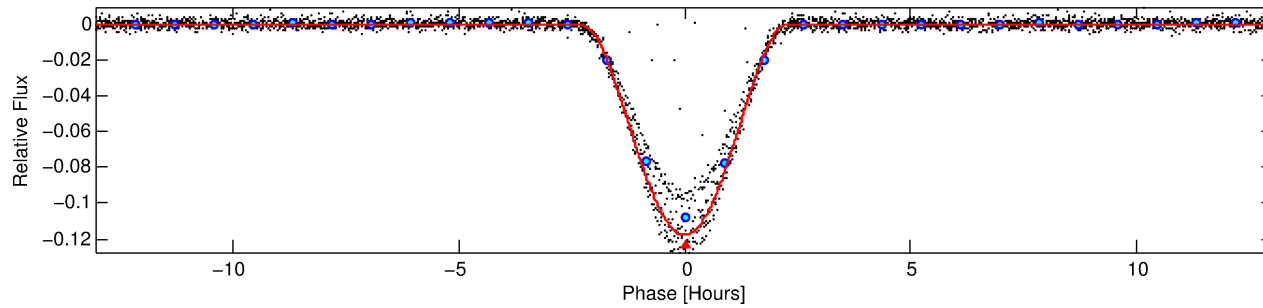
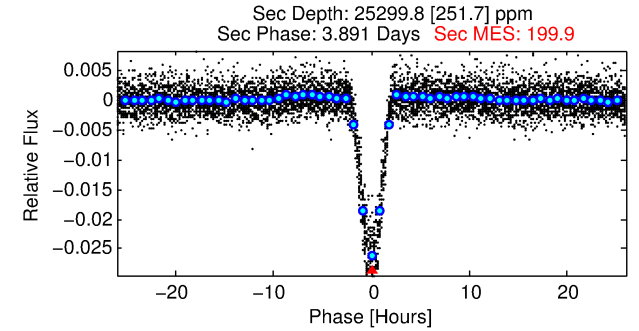
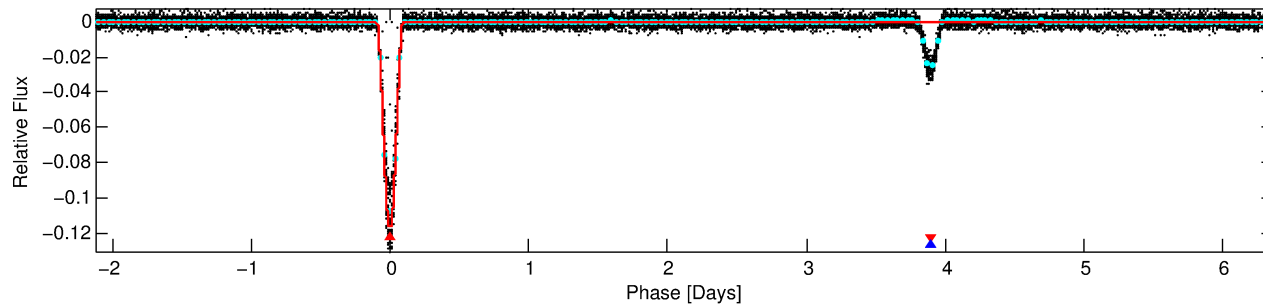
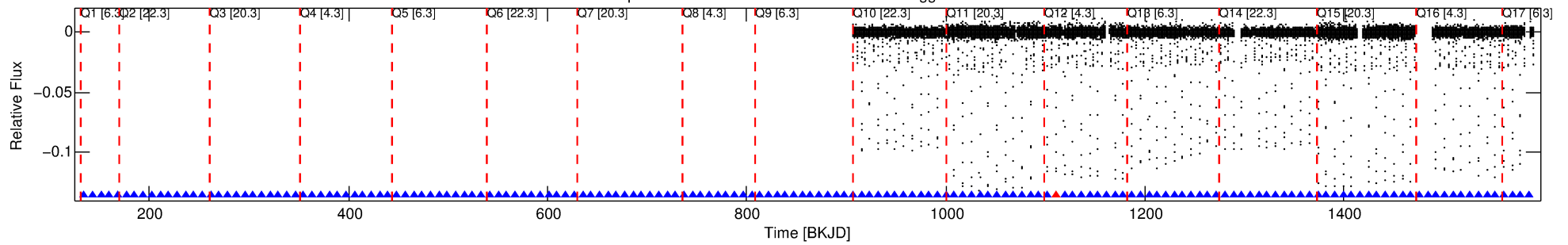
Ephemeris Match Information For 010383696-01

No Significant Match Found

DV One-Page Summary

KIC: 10383696 Candidate: 1 of 2 Period: 8.488 d
KOI: K03671.01 Corr: 0.992

Kp: 16.95 R*: 0.85 Rs Teff: 5553.0 K Logg: 4.56 Fe/H: 0.070



DV Fit Results:

Period = 8.48789 [0.00000] d
Epoch = 134.4928 [0.0004] BKJD
Rp/R* = 0.4565 [0.1013]
a/R* = 17.26 [0.20]
b = 0.89 [0.15]
Seff = 96.22 [35.44]
Teq = 799 [74] K
Rp = 42.59 [15.13] Re
a = 0.0805 [0.0189] AU
Ag = 49.66 [27.89] [1.74σ]
Teffp = 3278 [380] K [6.41σ]

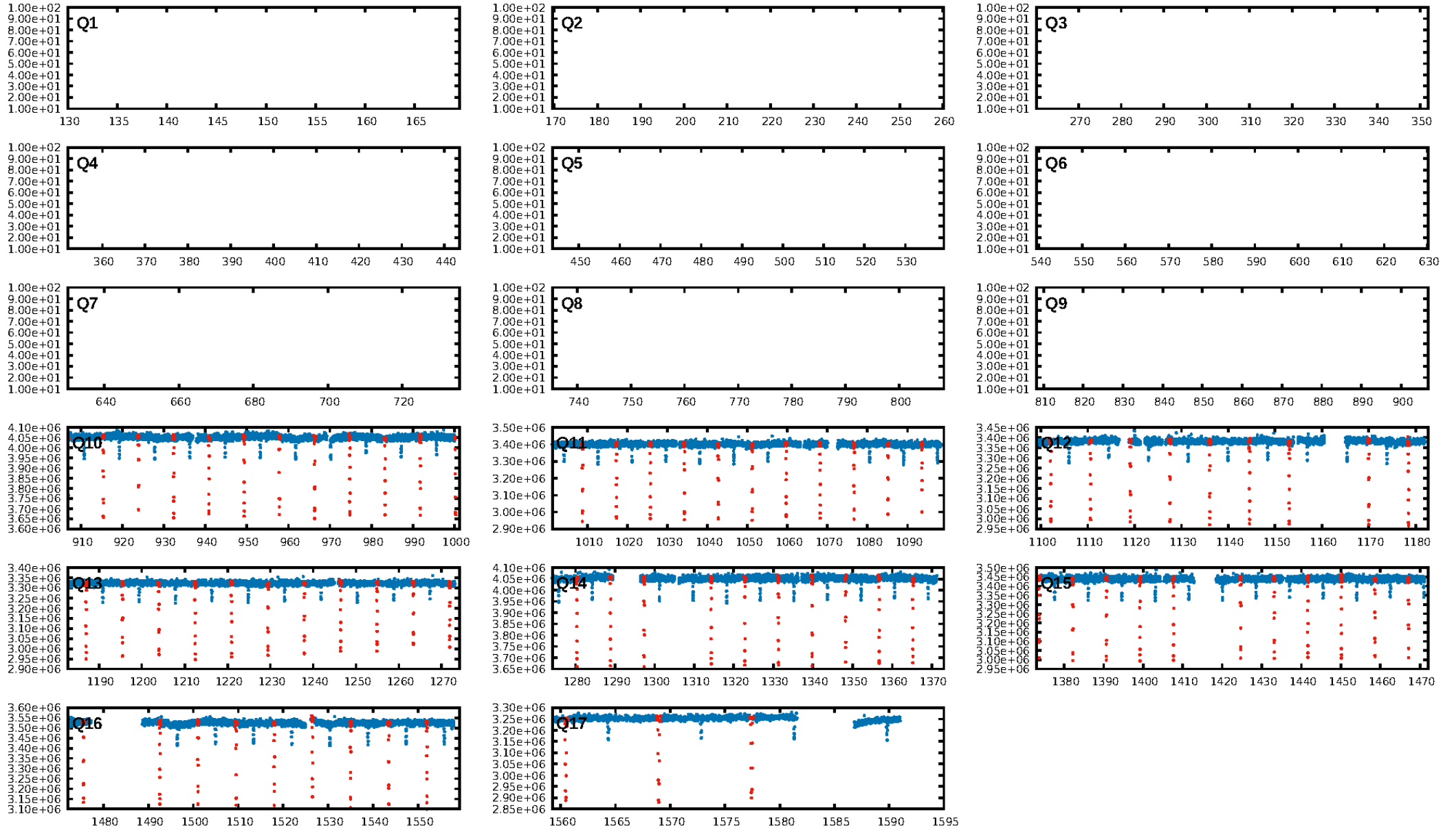
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.99 [70/71]
GhostDiagnostic-chr: 3.014
Centroid-sig: 0.0%
Centroid-so: 3.311 arcsec [675.99σ]
OotOffset-rm: 10.791 arcsec [116.26σ]
KicOffset-rm: 0.078 arcsec [1.01σ]
OotOffset-st: 2/0/1/0 [3]
KicOffset-st: 2/2/2/2 [8]
DiffImageQuality-fgm: 1.00 [8/8]
DiffImageOverlap-fno: 1.00 [8/8]

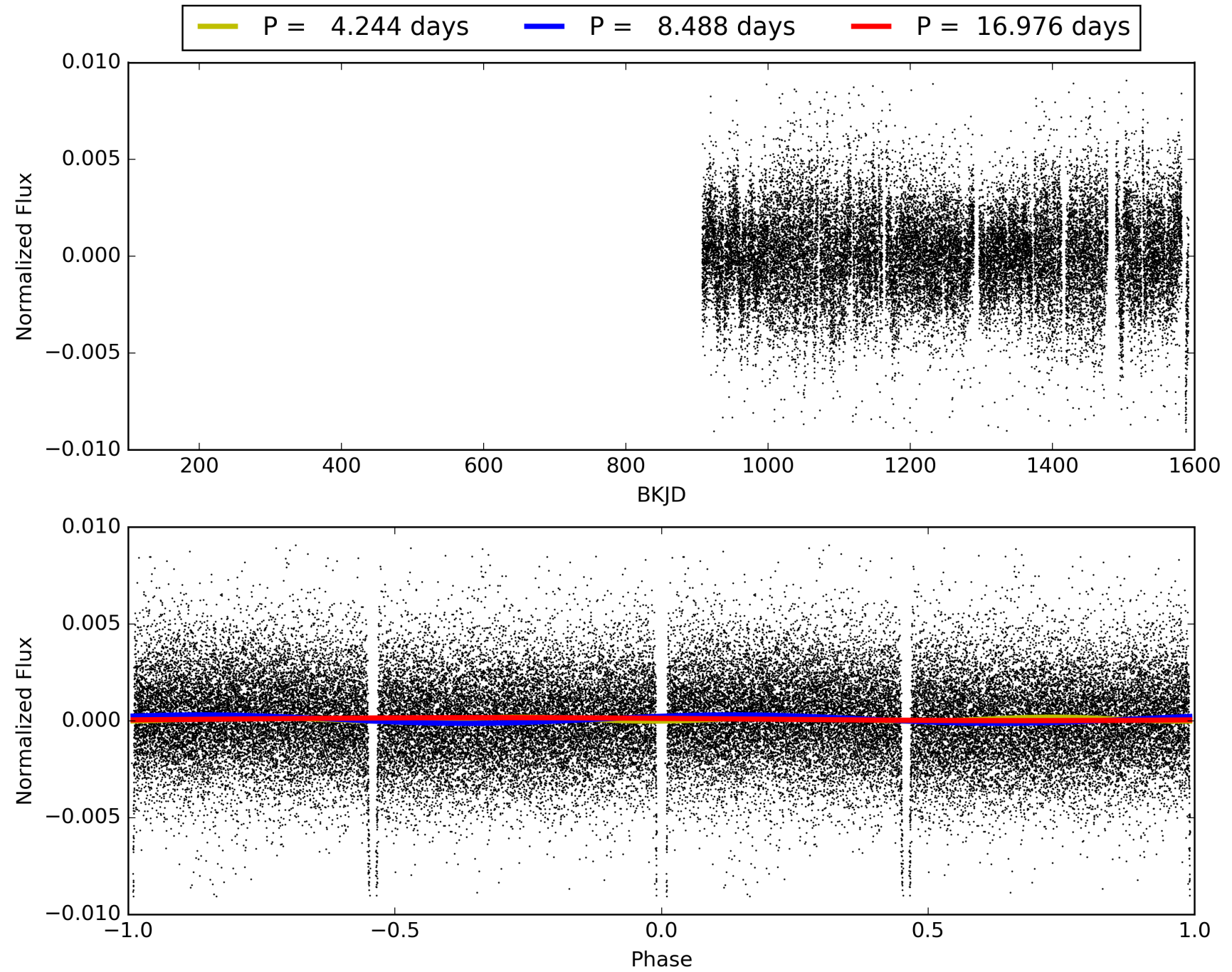
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:08:38 Z

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

TCE 010383696-01, PDC Light Curves

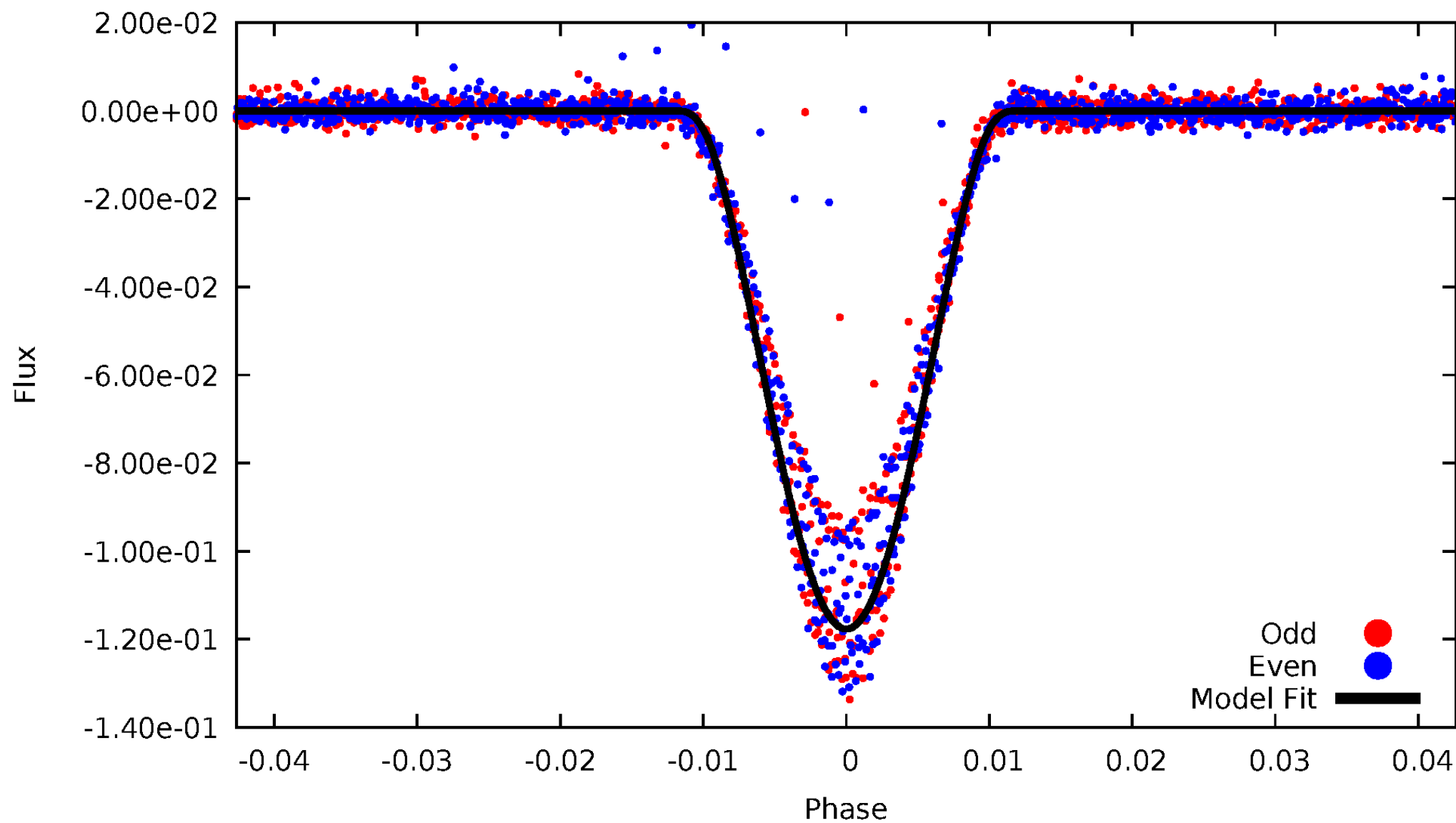


TCE 010383696-01



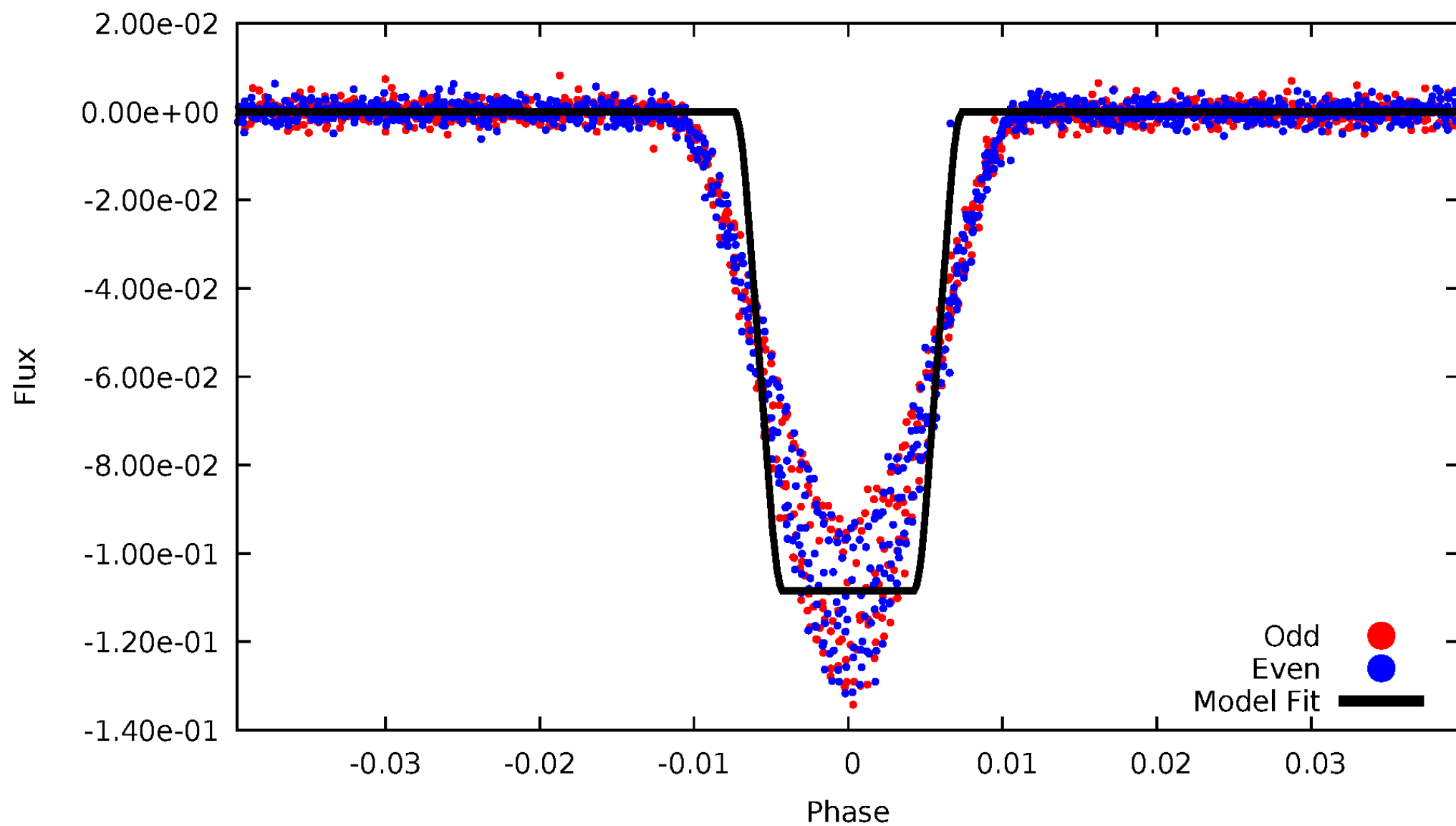
DV Odd/Even

TCE 010383696-01



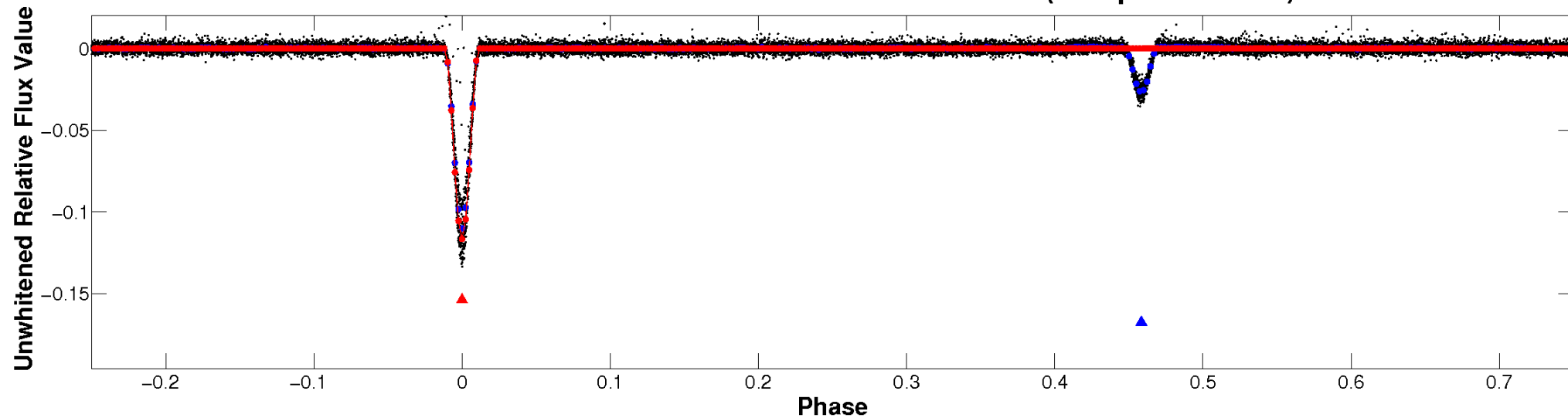
ALT Odd/Even

TCE 010383696-01

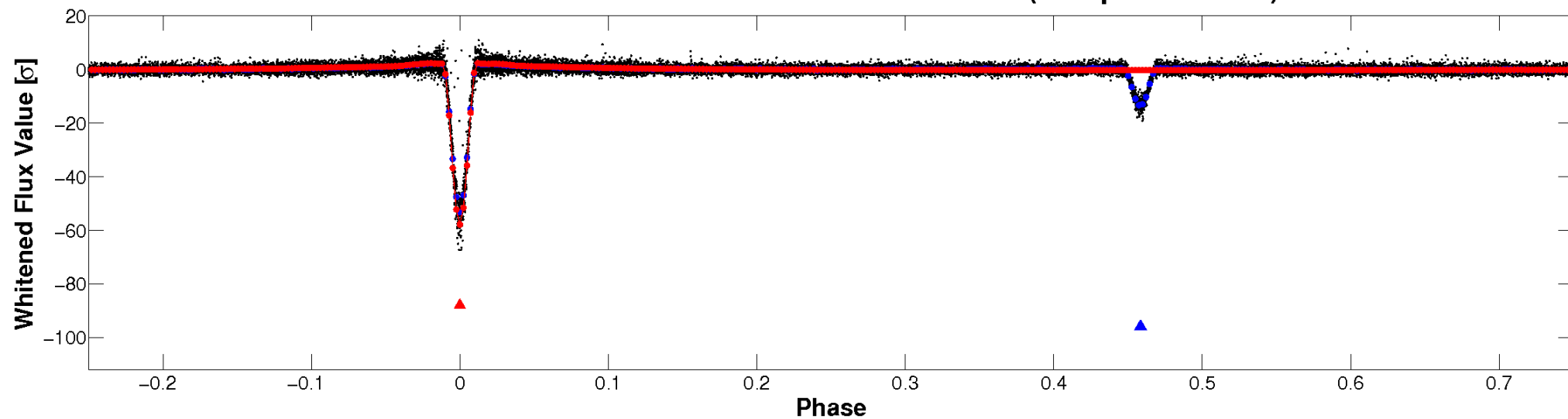


Non-Whitened Vs. Whitened Light Curve

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

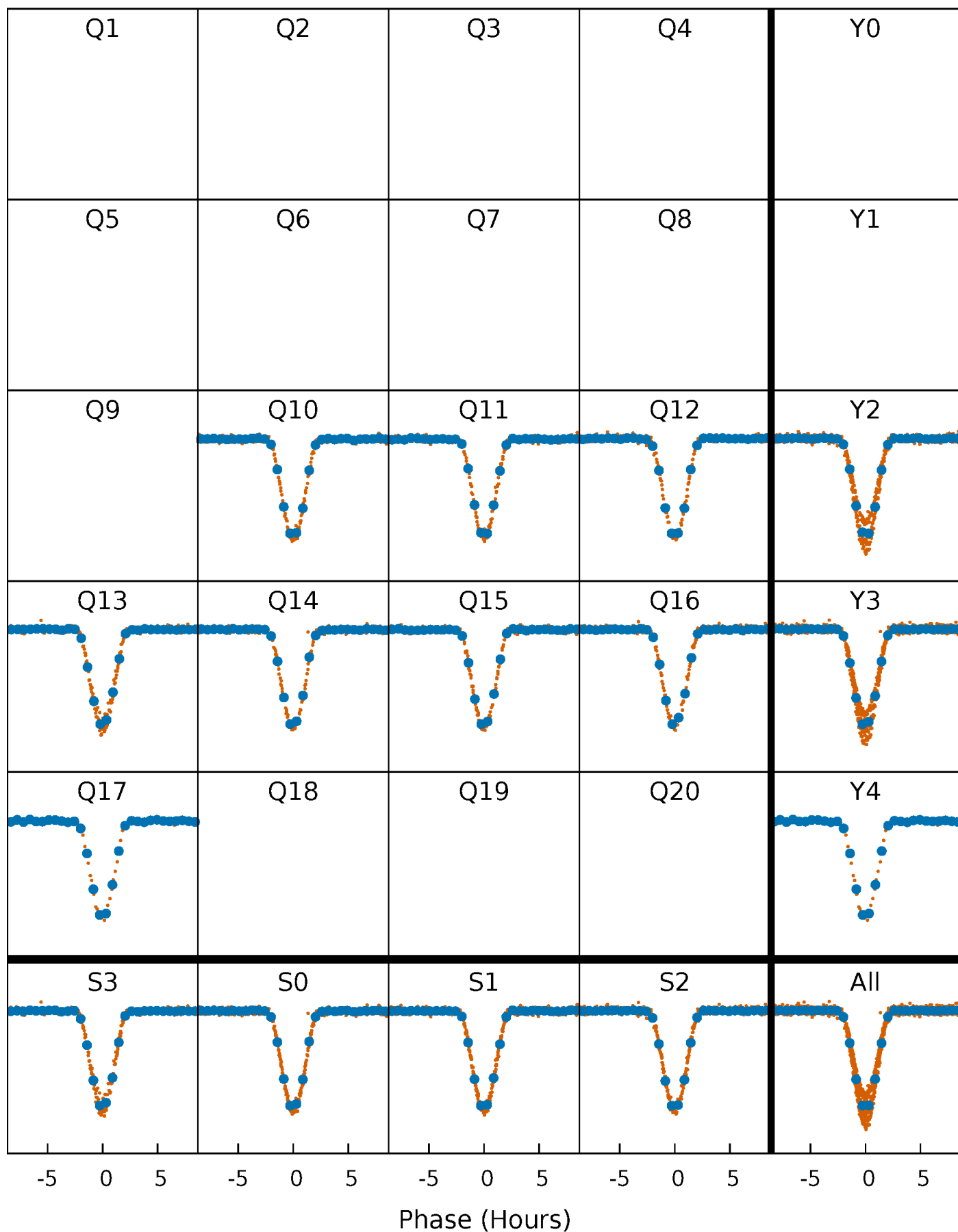


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



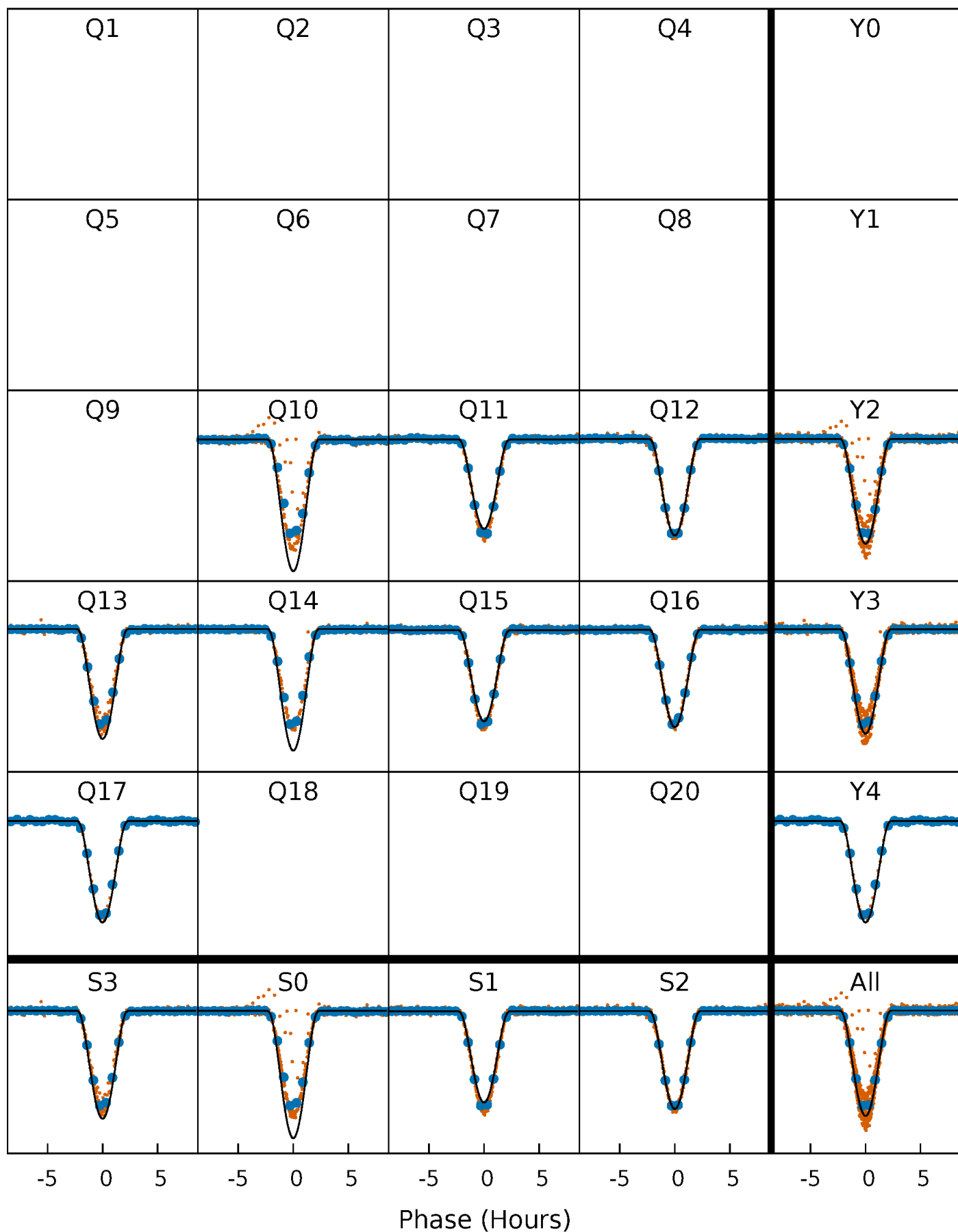
PDC Quarter-Phased Transit Curves

TCE 010383696-01 $P = 8.487890$ Days $T_0 = 134.492766$ (BKJD)



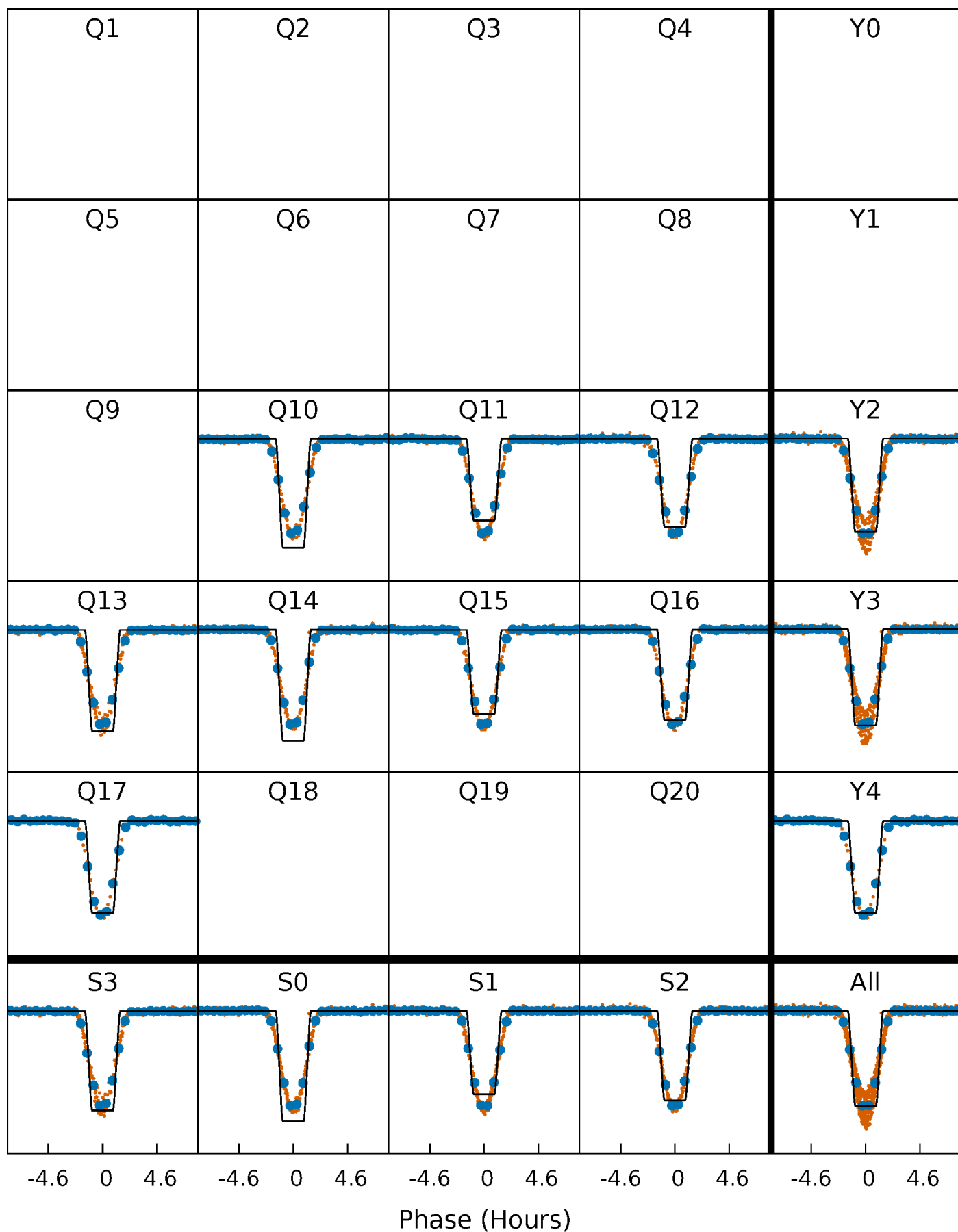
DV Quarter-Phased Transit Curves

TCE 010383696-01 P= 8.487890 Days $T_0=134.492766$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

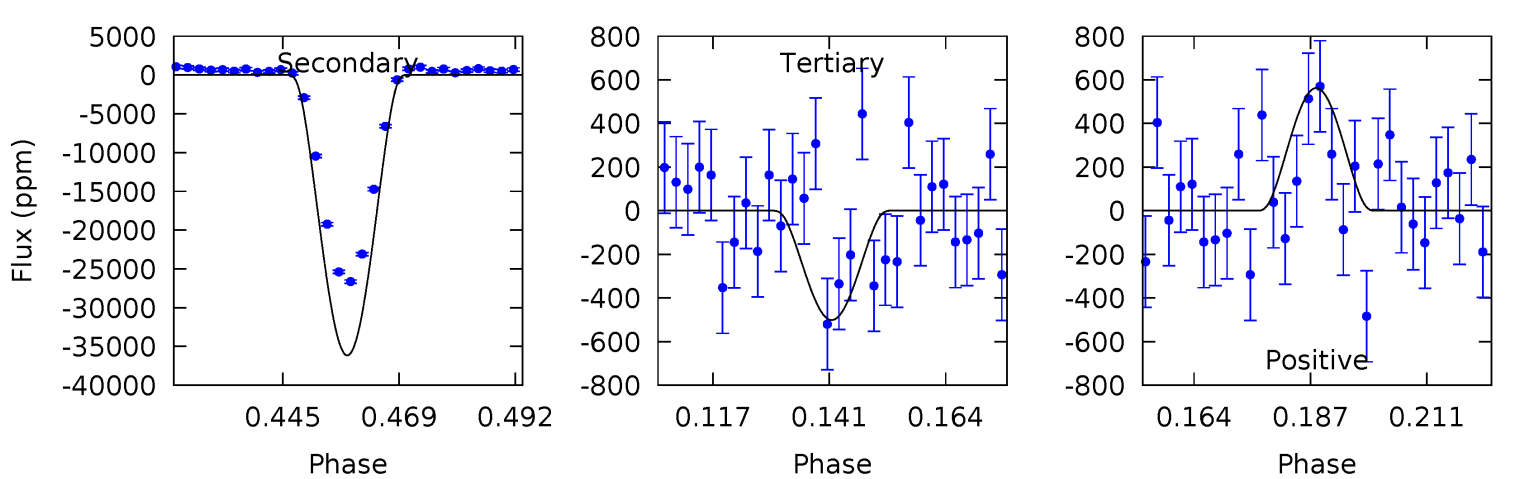
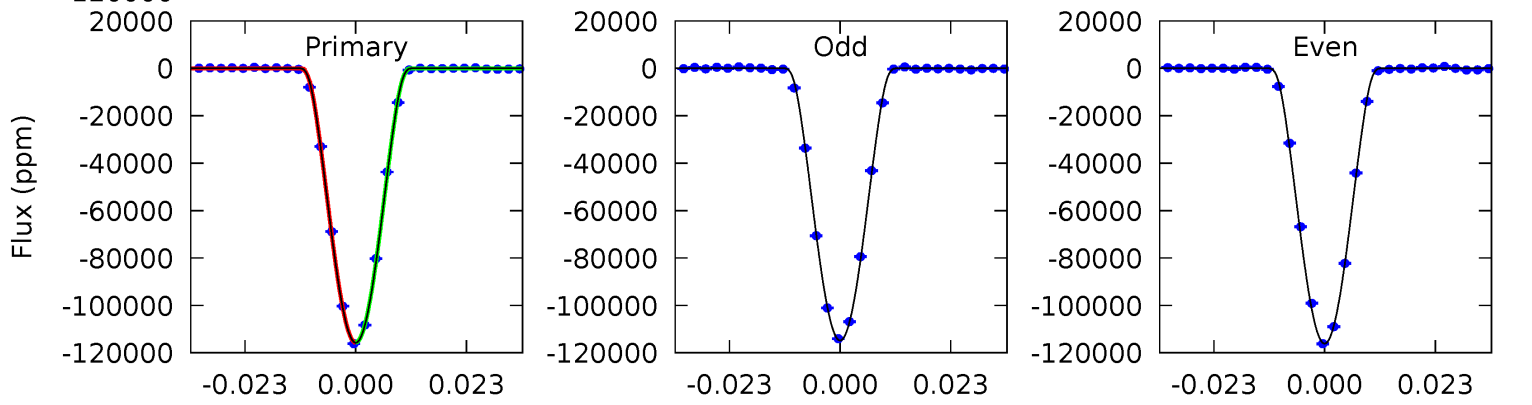
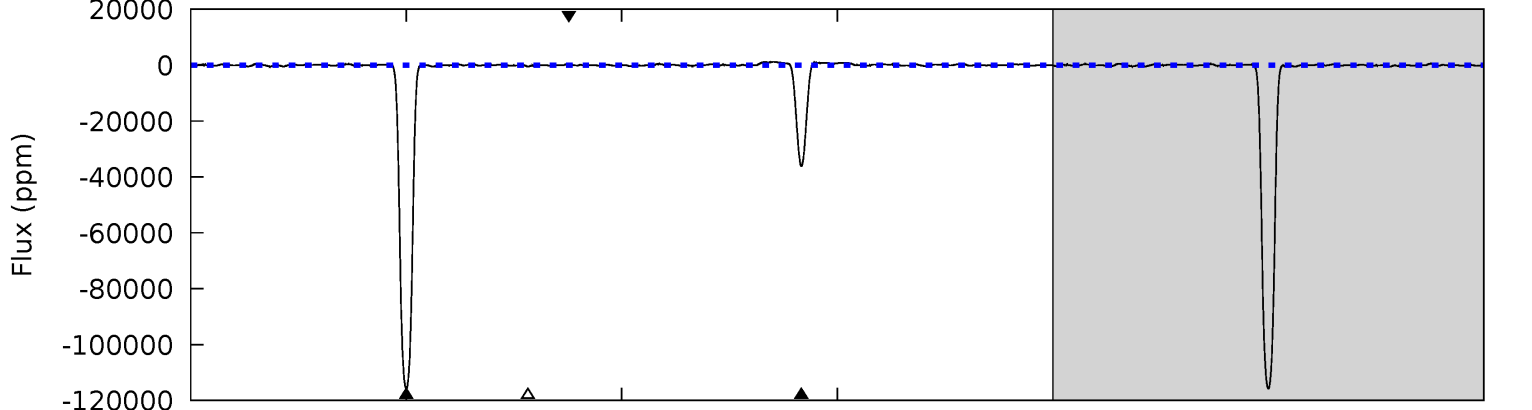
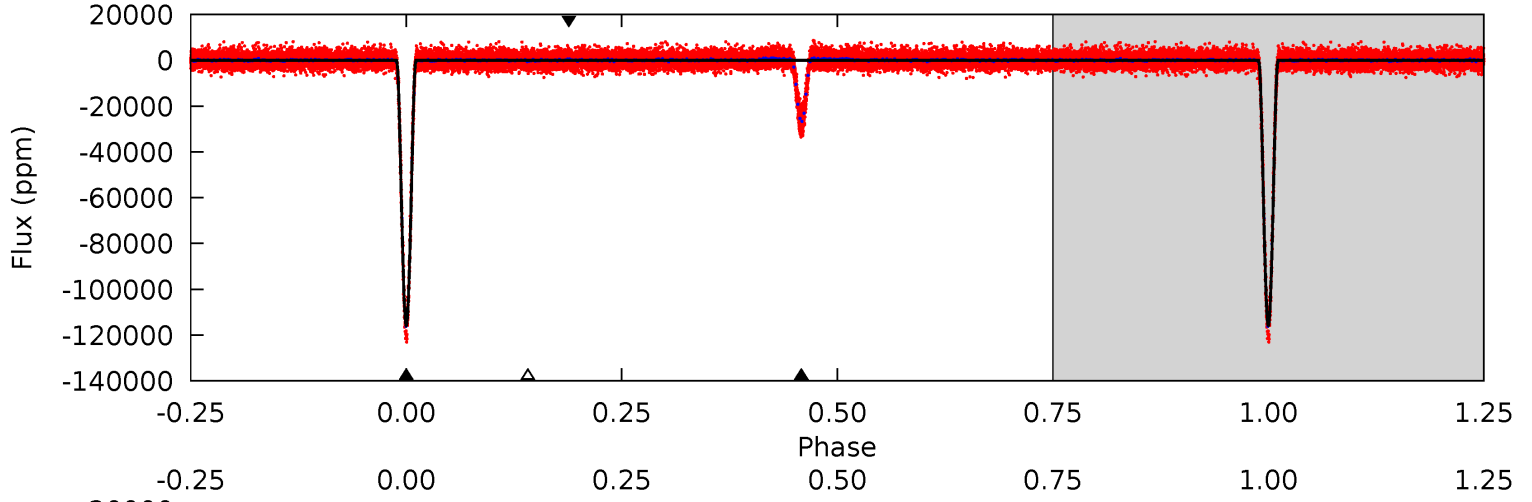
TCE 010383696-01 P= 8.487916 Days $T_0=134.489335$ (BKJD)



DV Model-Shift Uniqueness Test

010383696-01, P = 8.487890 Days, E = 134.492766 Days

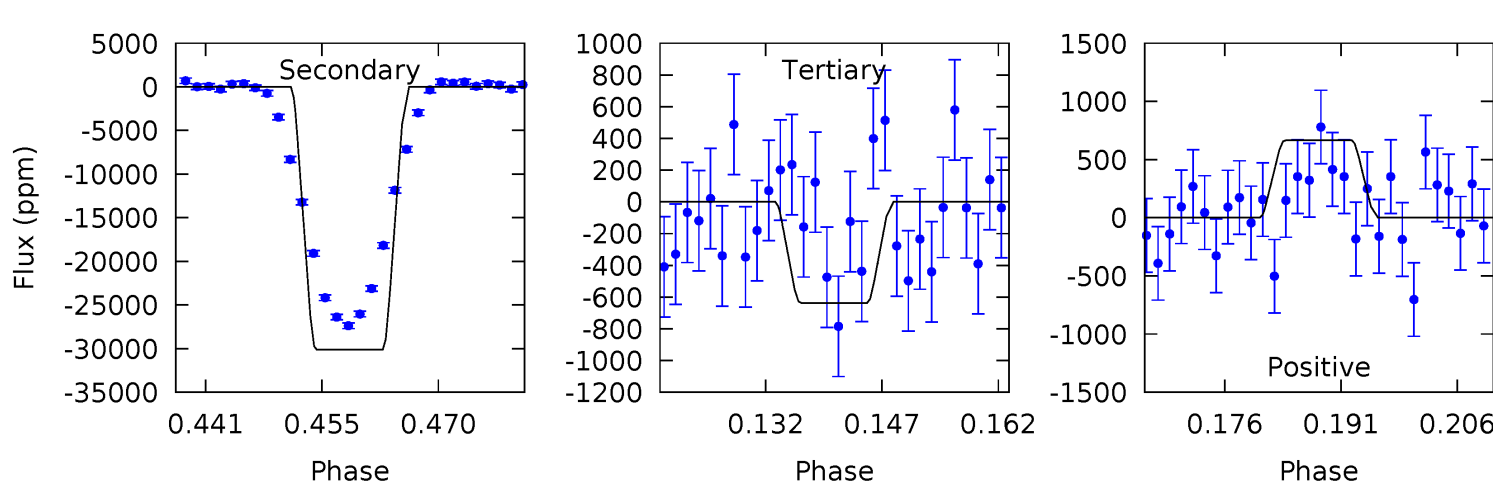
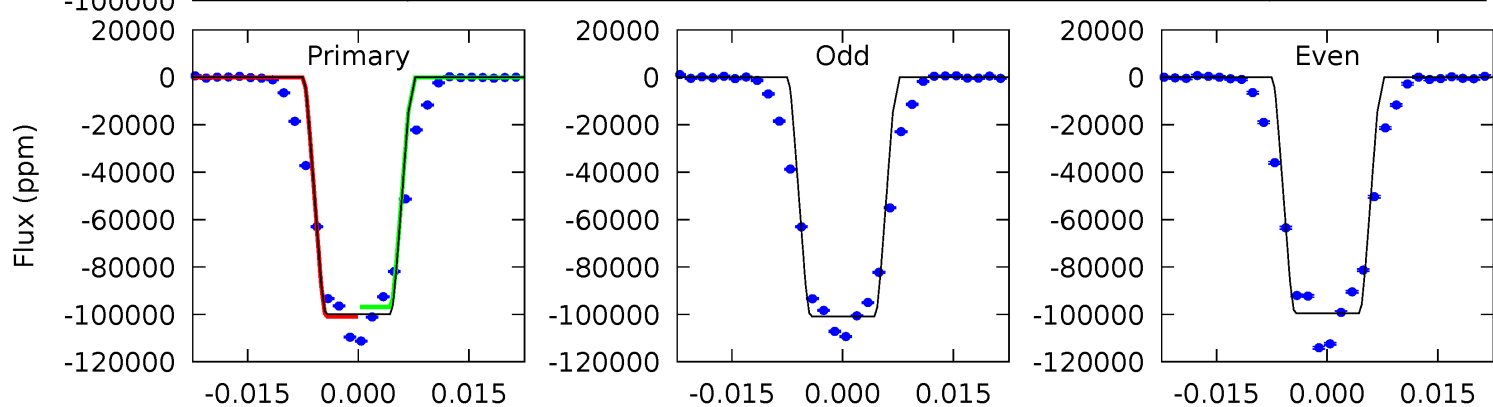
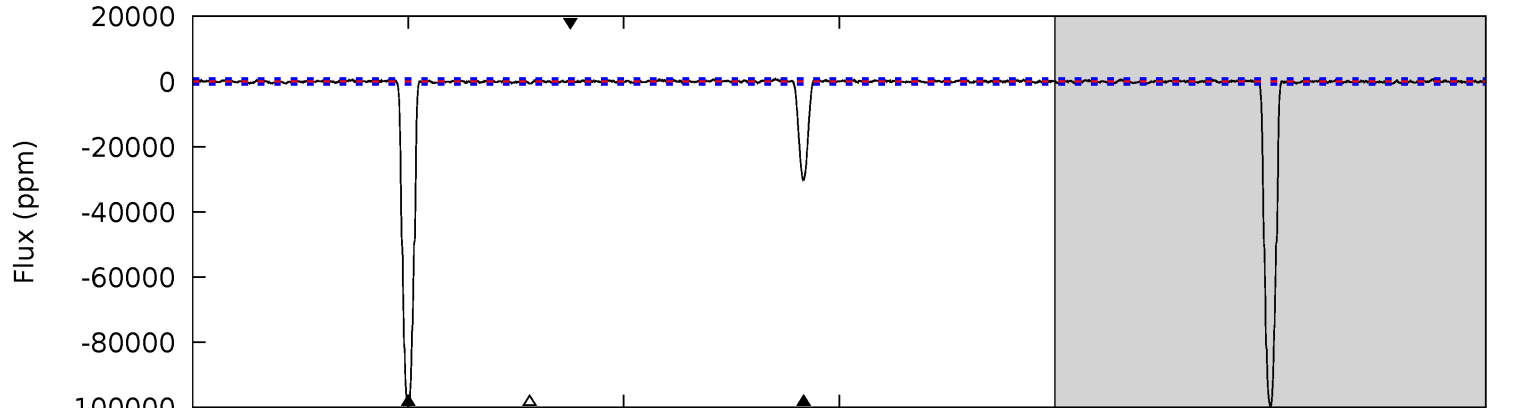
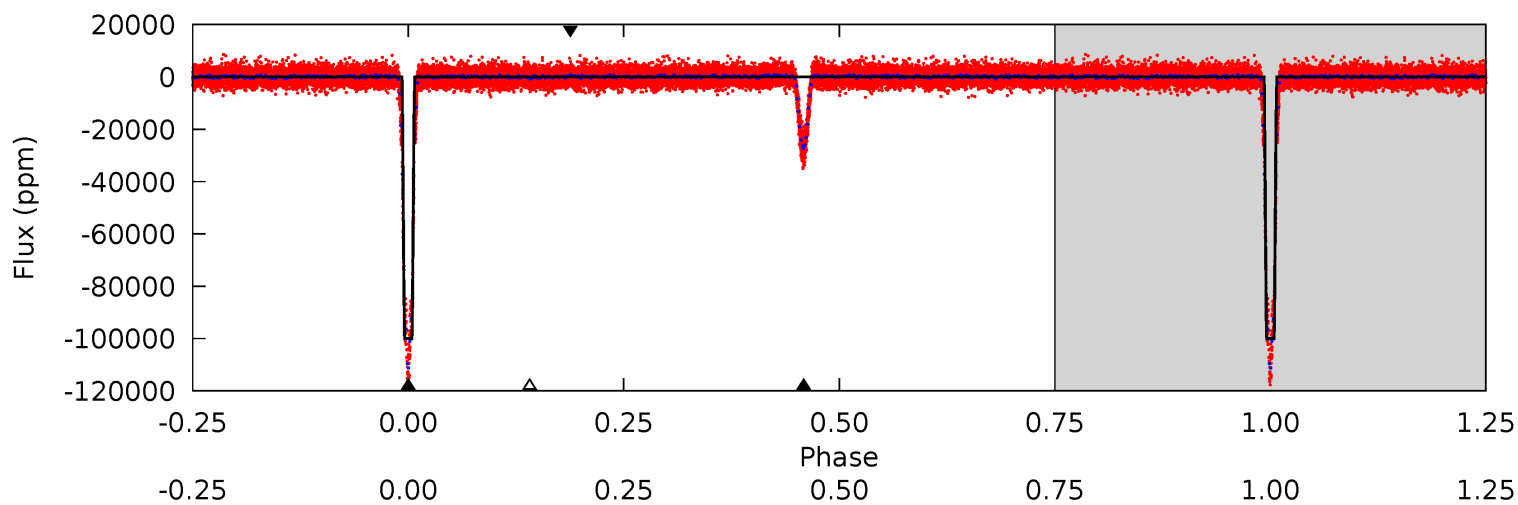
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1294	404.2	5.60	6.29	4.86	2.27	3.17	1288	1288	398.6	397.9	7.35	0.96	0.01	0



Alt Model-Shift Uniqueness Test

010383696-01, P = 8.487916 Days, E = 134.489335 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
621.8	187.4	3.96	4.14	4.95	2.44	1.30	617.9	617.7	183.5	183.3	3.80	0.98	0.01	7.52



Stellar Parameters For KIC 010383696

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5553^{+183}_{-183}	$4.558^{+0.032}_{-0.189}$	$0.070^{+0.250}_{-0.300}$	$0.855^{+0.237}_{-0.063}$	$0.964^{+0.085}_{-0.113}$	$2.173^{+0.394}_{-1.060}$
	+3%/-3%	+1%/-4%	+357%/-429%	+28%/-7%	+9%/-12%	+18%/-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 010383696-01 / KOI 3671.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-36155 ± 89	$44.18^{+11.42}_{-10.11}$	1145^{+70}_{-52}	3955^{+377}_{-289}	67^{+46}_{-25}
Alt.	-30134 ± 161	$32.48^{+10.11}_{-10.34}$	1141^{+73}_{-54}	4276^{+670}_{-406}	102^{+119}_{-42}

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 $A_{obs} \gg 1.0$

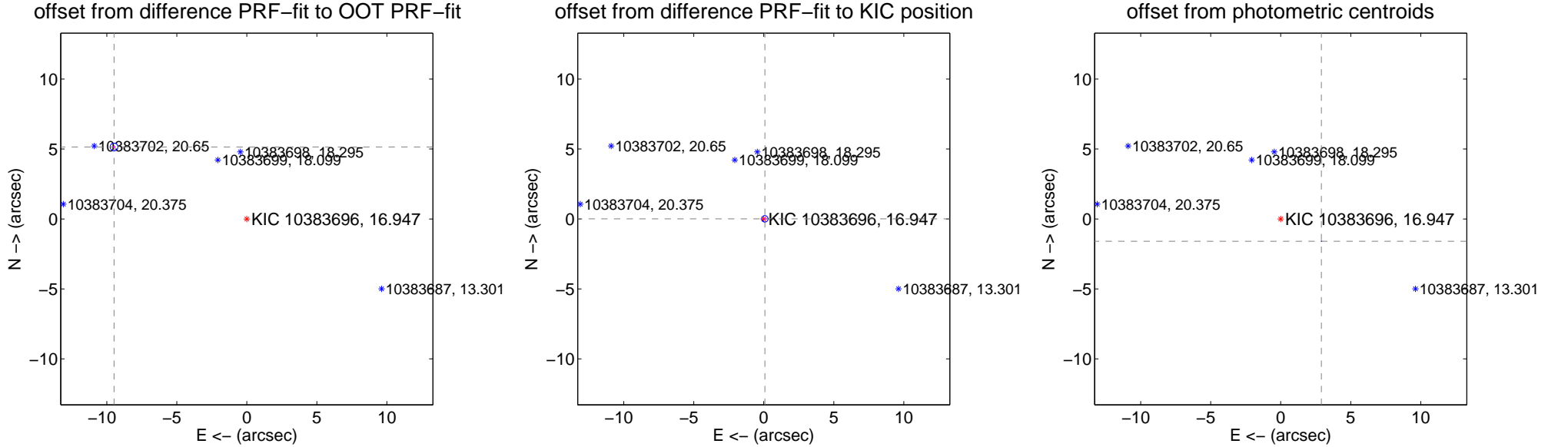
DV Centroid Data

Supplemental centroid analysis for 010383696-01. Kepler magnitude: 16.95. Transit SNR 532.95

There are 8 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 10.96 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	10.791 \pm 0.093	116.26	9.485 \pm 0.088	5.145 \pm 0.073
PRF-fit source offset from KIC position	0.078 \pm 0.077	1.01	-0.077 \pm 0.077	0.010 \pm 0.069
photometric centroid source offset	3.31 \pm 0.00	675.99	-2.90 \pm 0.01	-1.59 \pm 0.00

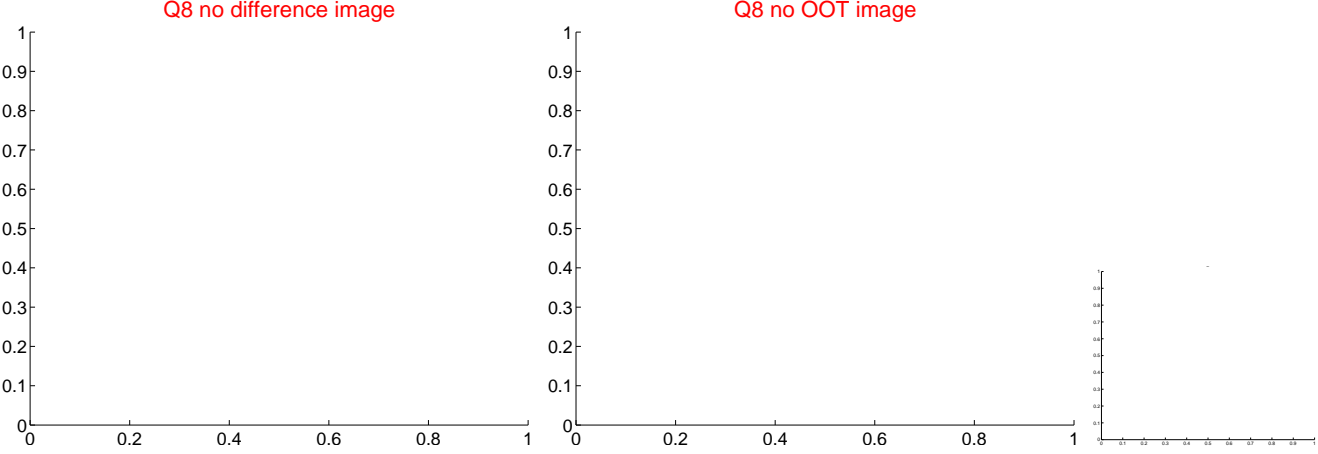
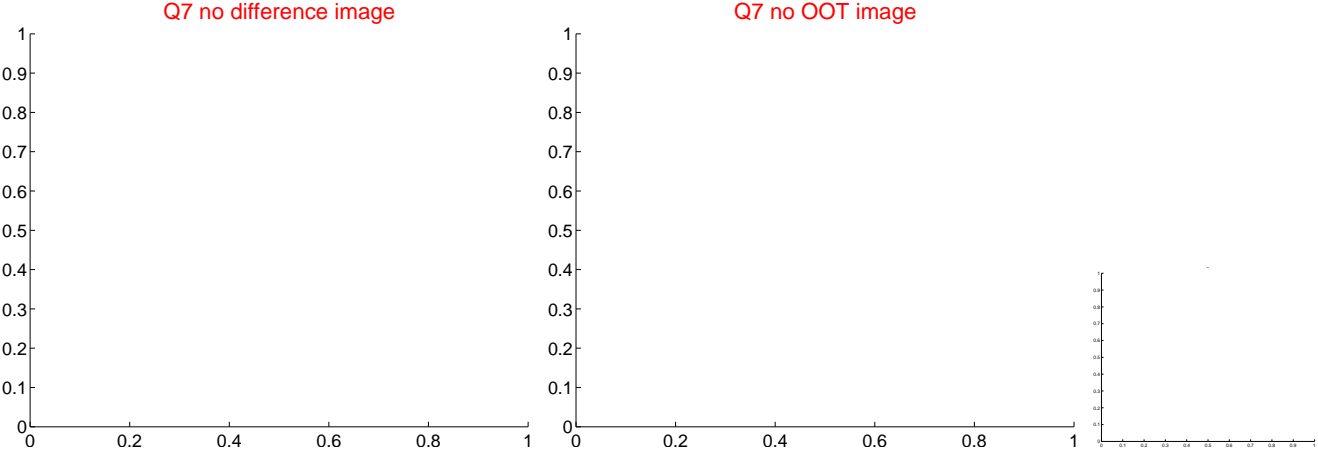
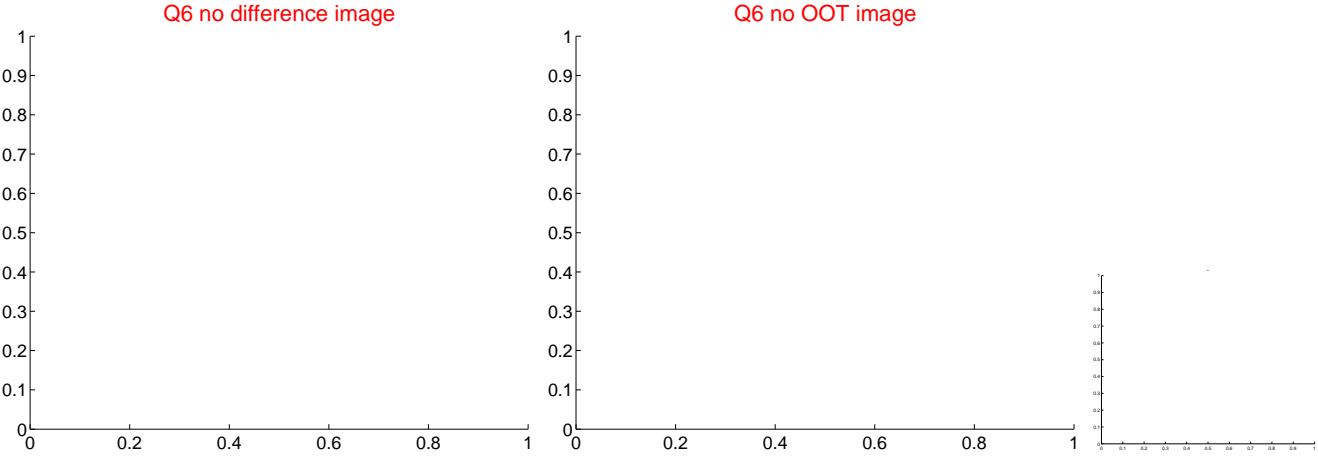
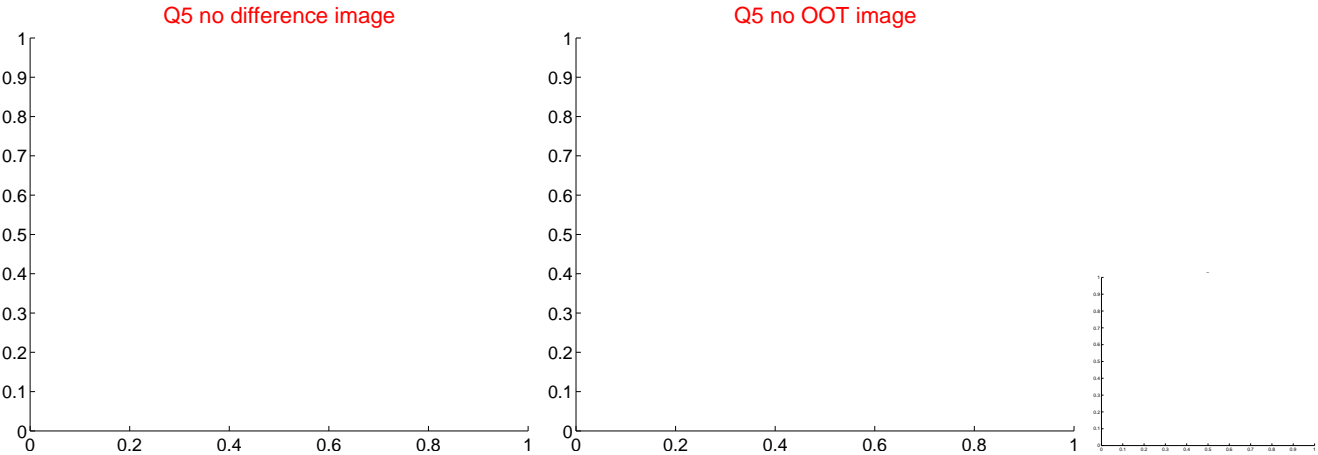


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

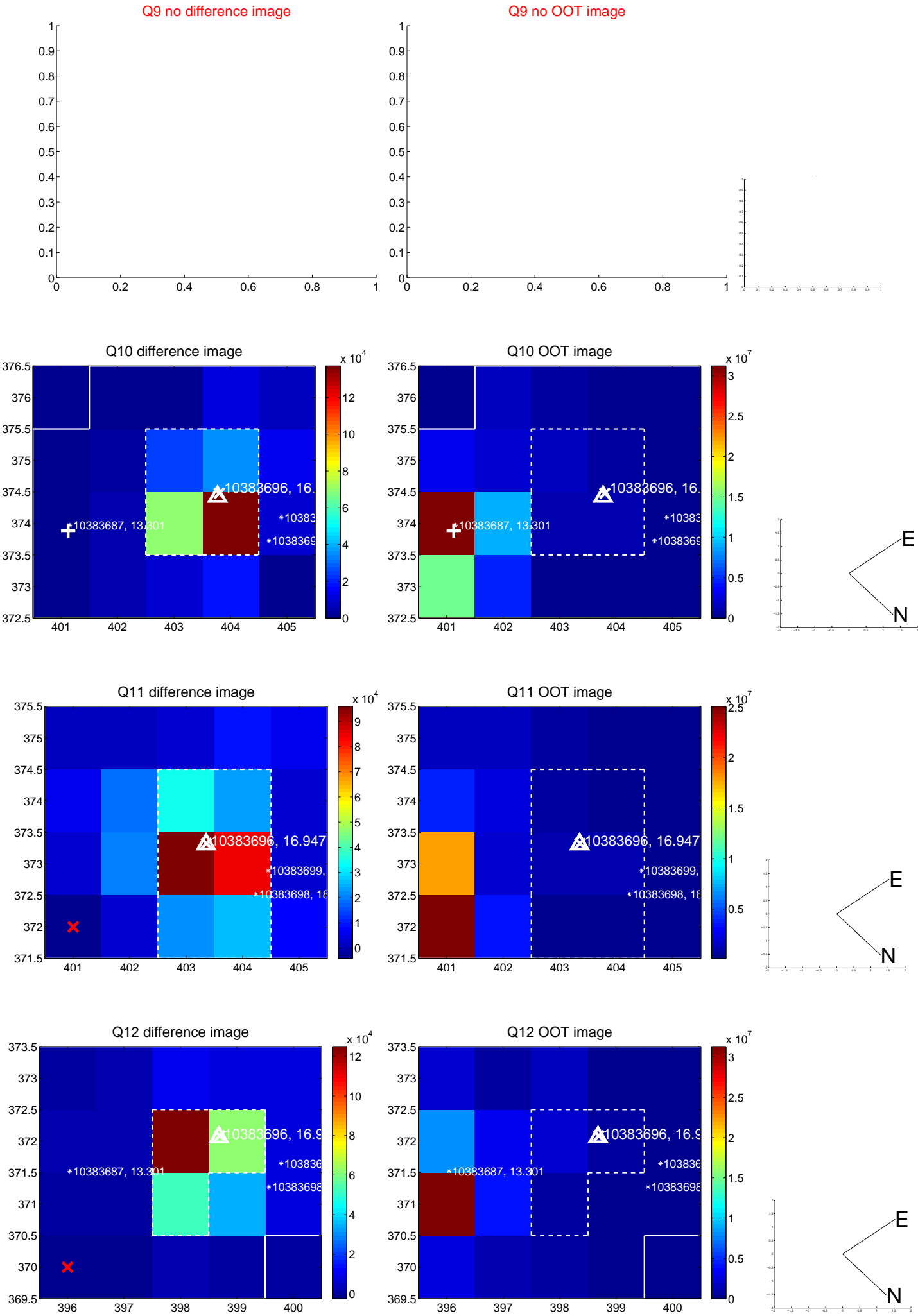
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



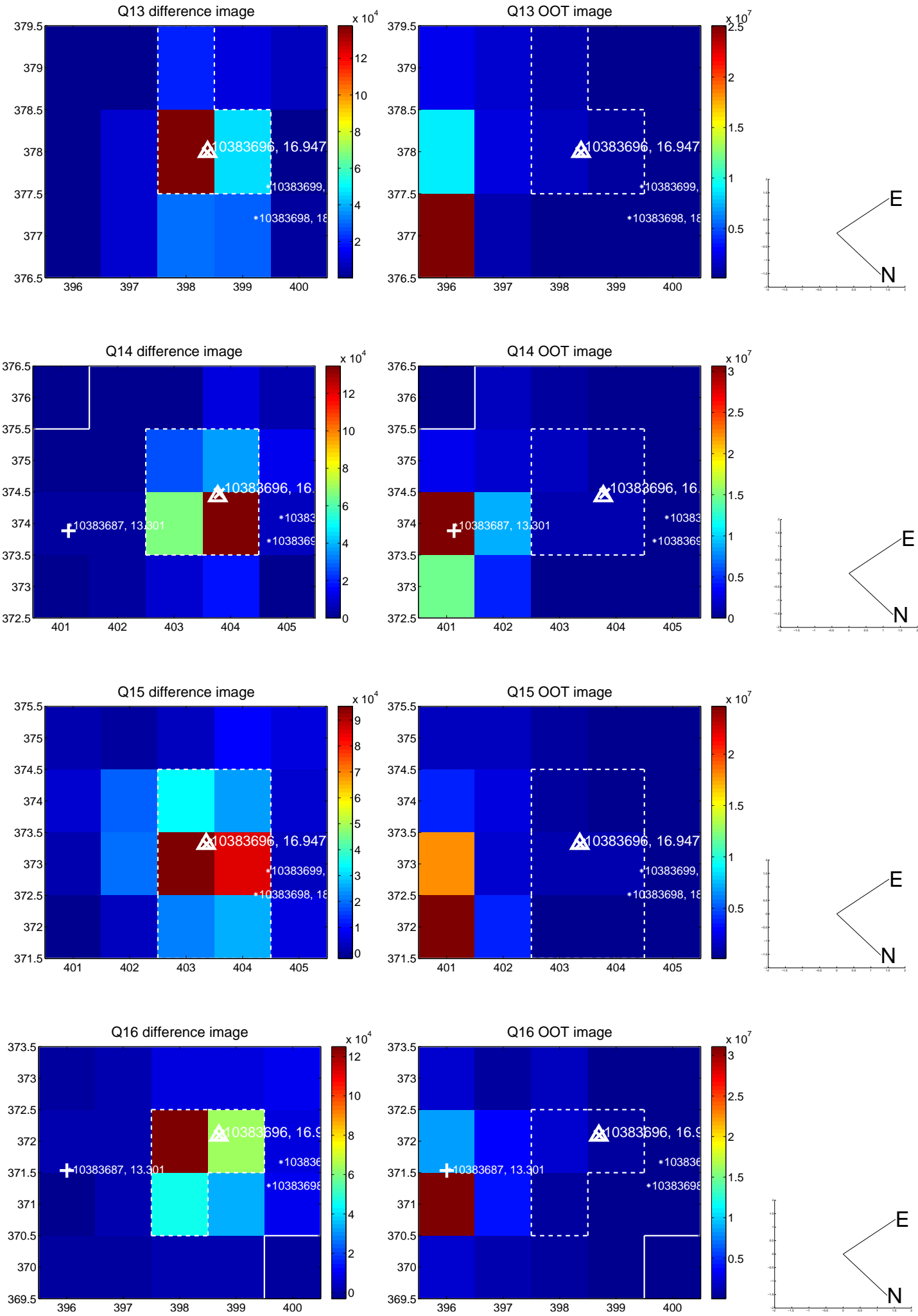
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



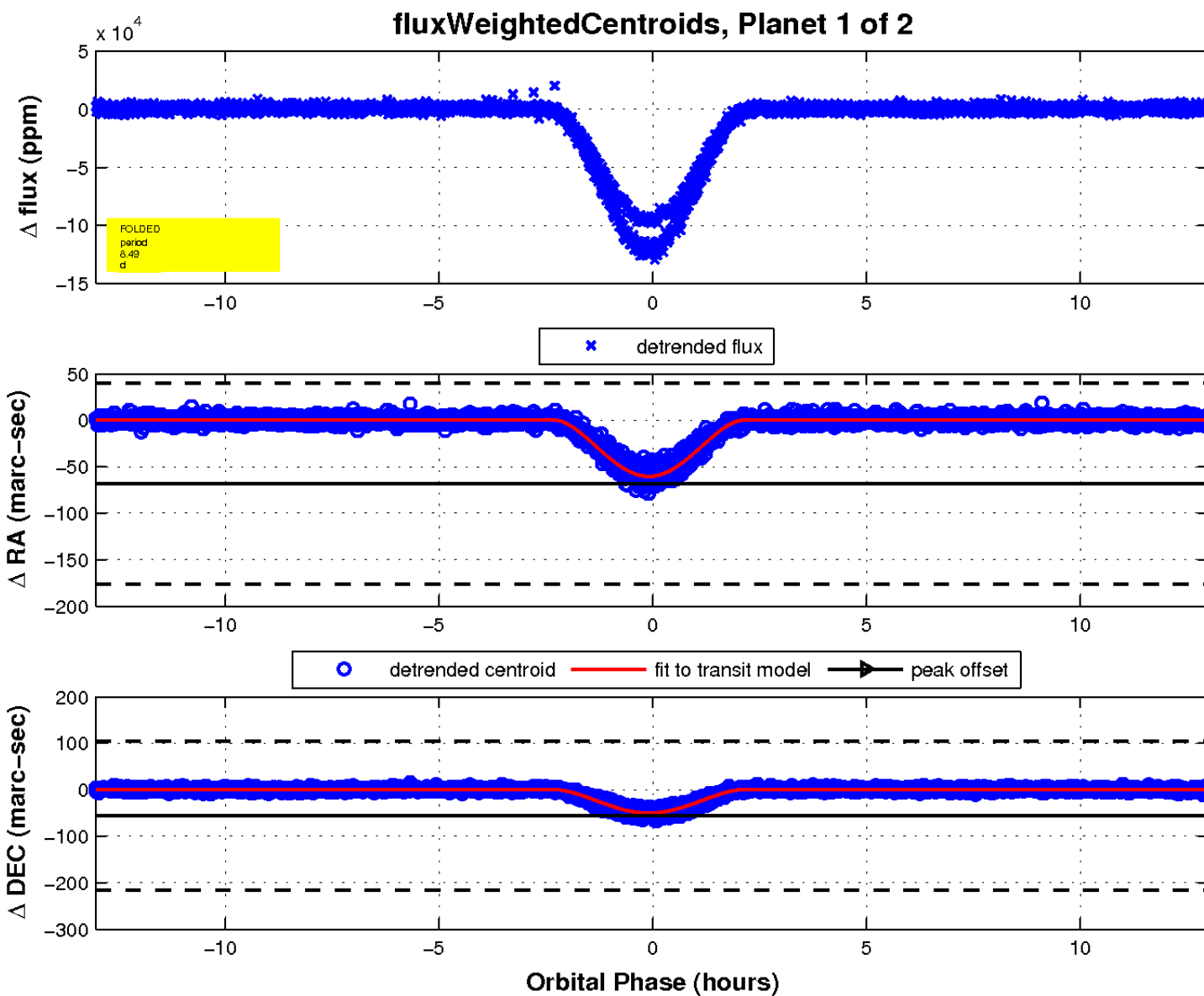
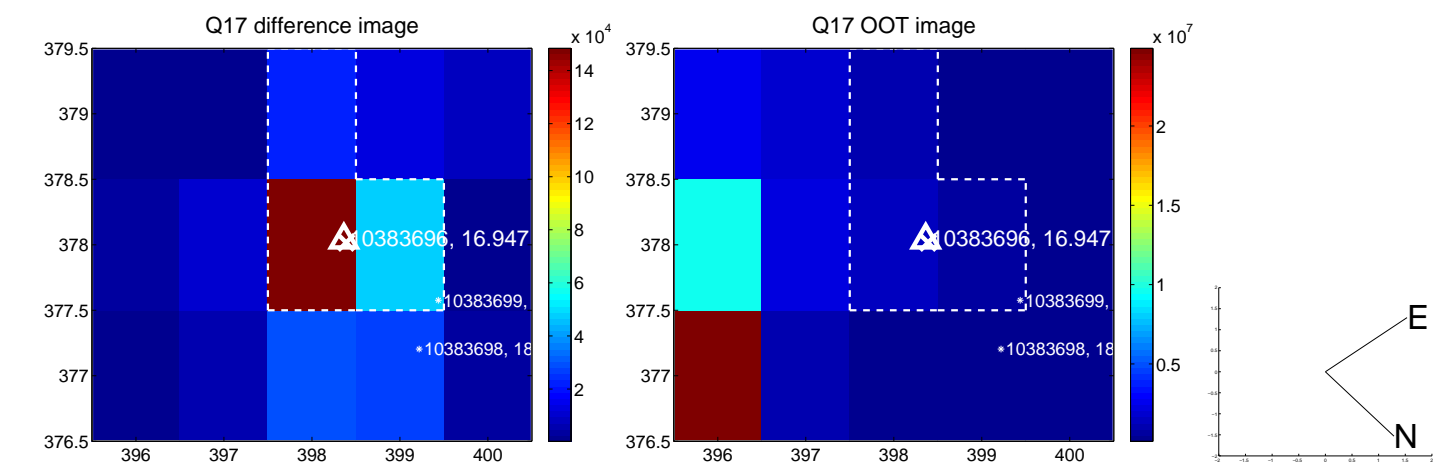
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

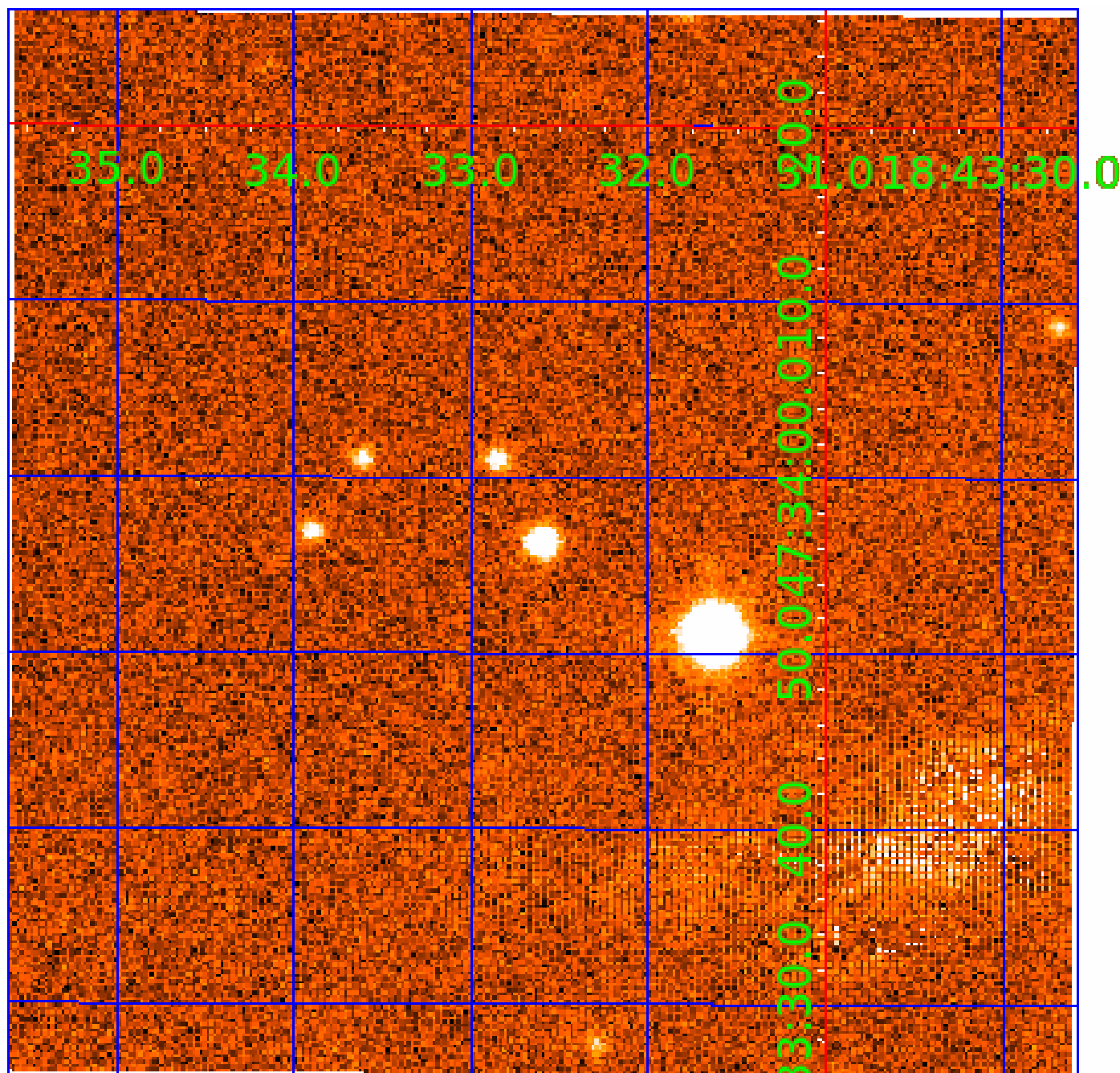


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010383696

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})
010383696-01	OBS	3671.01	8.487890	134.492766	117653.5	4.342	829.5	532.9	0.85	5553	42.59	96.22
010383696-02	OBS	No	8.487872	138.385835	26904.2	4.133	201.2	189.2	0.85	5553	21.35	96.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010383696-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—SEASONAL_DEPTH_ALT—CENT_KIC_POS
010383696-02	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.

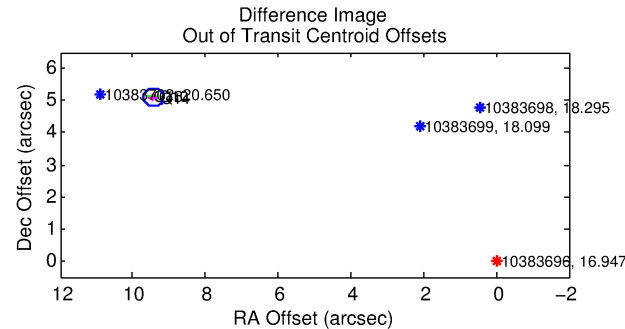
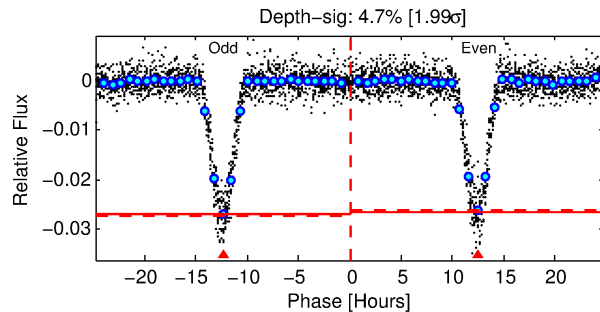
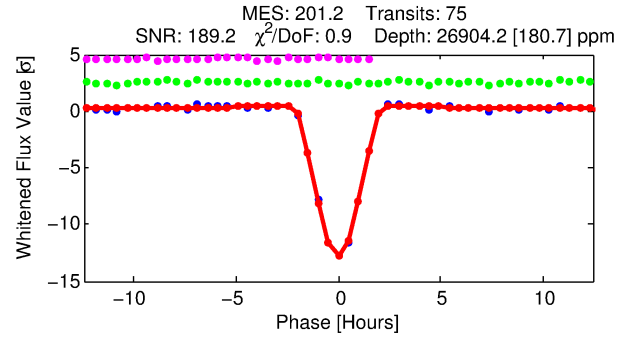
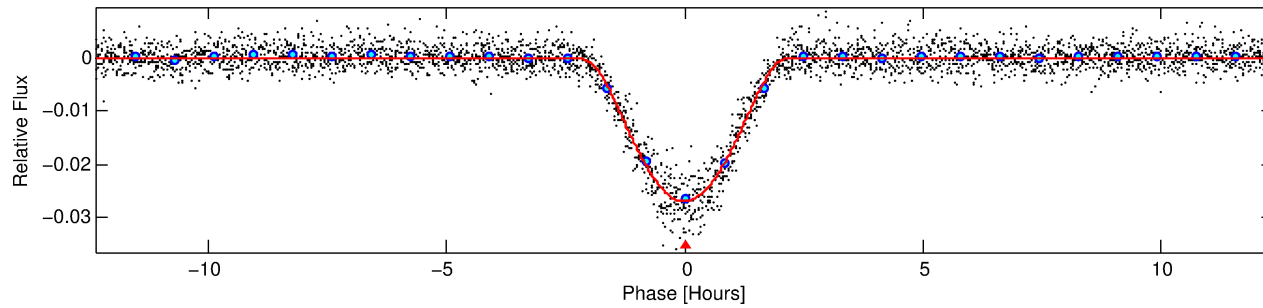
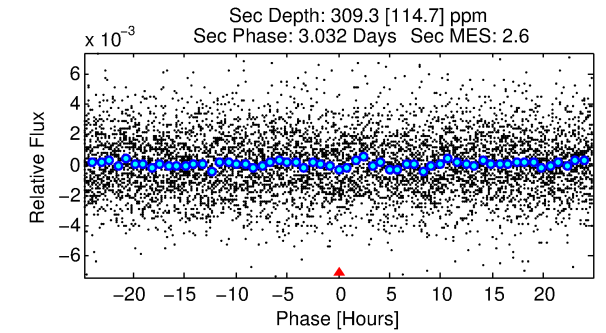
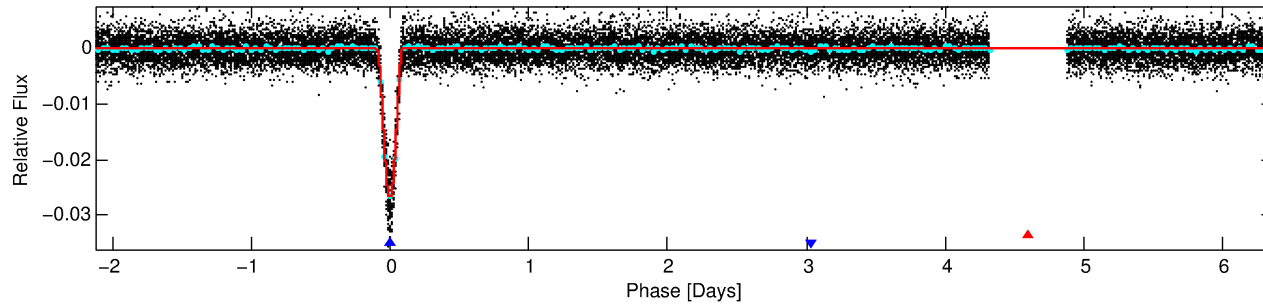
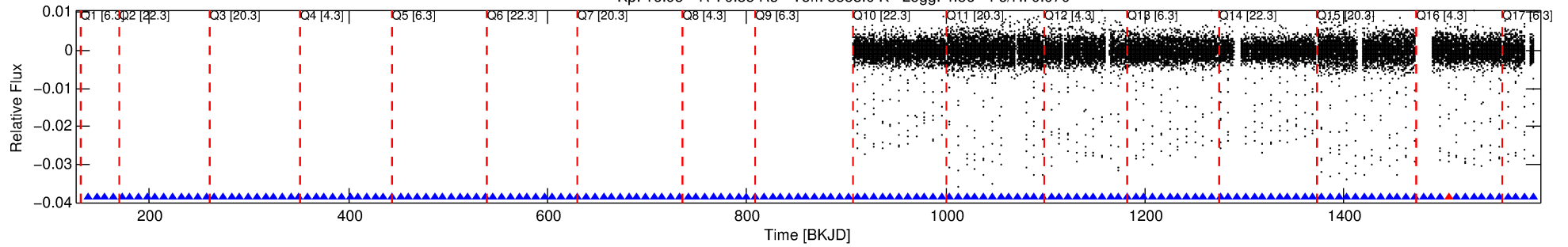
Ephemeris Match Information For 010383696-02

No Significant Match Found

DV One-Page Summary

KIC: 10383696 Candidate: 2 of 2 Period: 8.488 d
KOI: K03671 Corr: No Ephemeris Match

Kp: 16.95 R*: 0.85 Rs Teff: 5553.0 K Logg: 4.56 Fe/H: 0.070



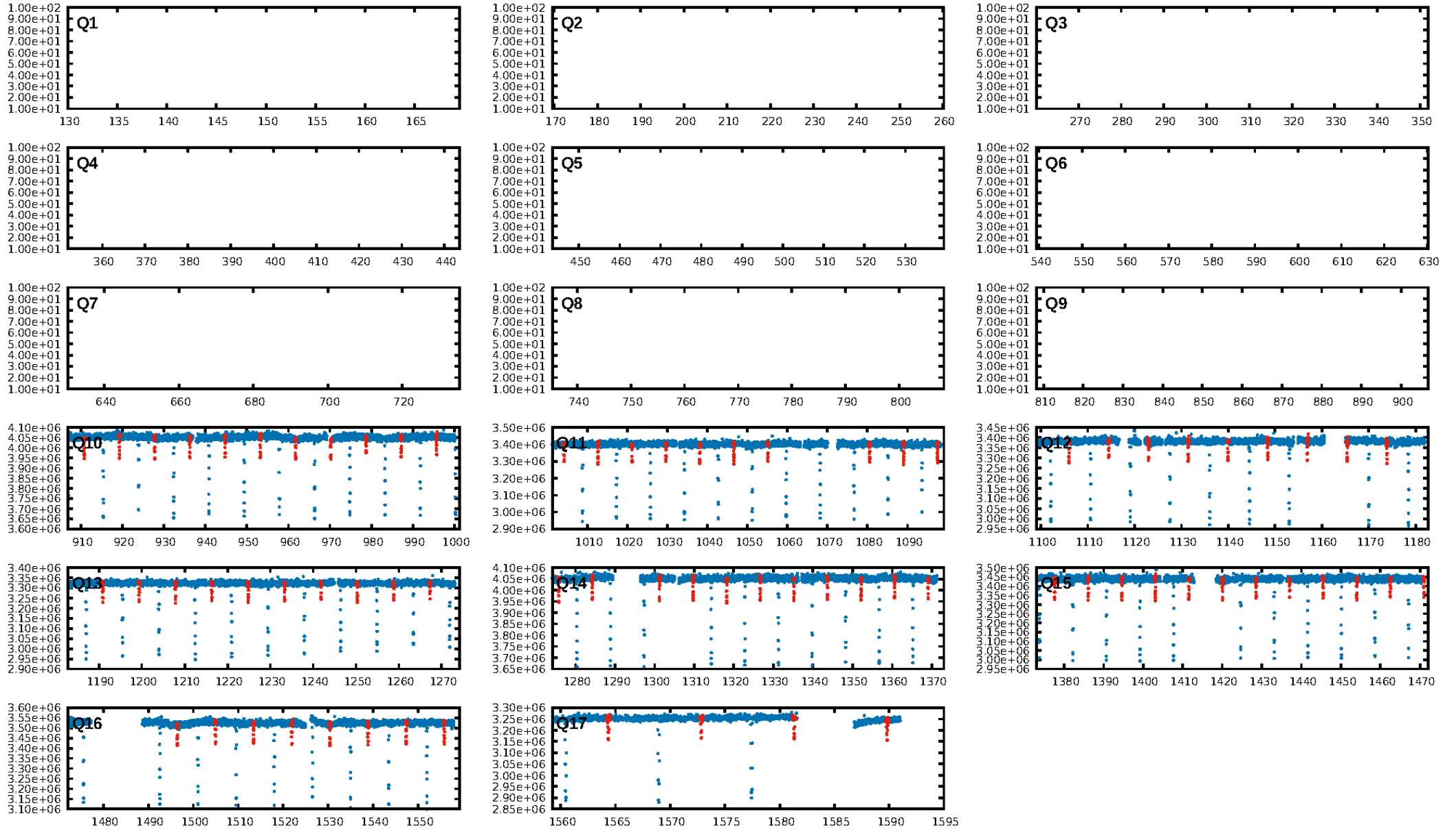
DV Fit Results:

Period = 8.48787 [0.00001] d
Epoch = 138.3858 [0.0013] BKJD
Rp/R* = 0.2289 [0.0501]
a/R* = 12.35 [0.36]
b = 0.95 [0.08]
Seff = 96.22 [35.44]
Teq = 799 [74] K
Rp = 21.35 [7.54] Re
a = 0.0805 [0.0189] AU
Ag = 2.42 [1.62] [0.88 σ]
Teffp = 1539 [227] K [3.11 σ]

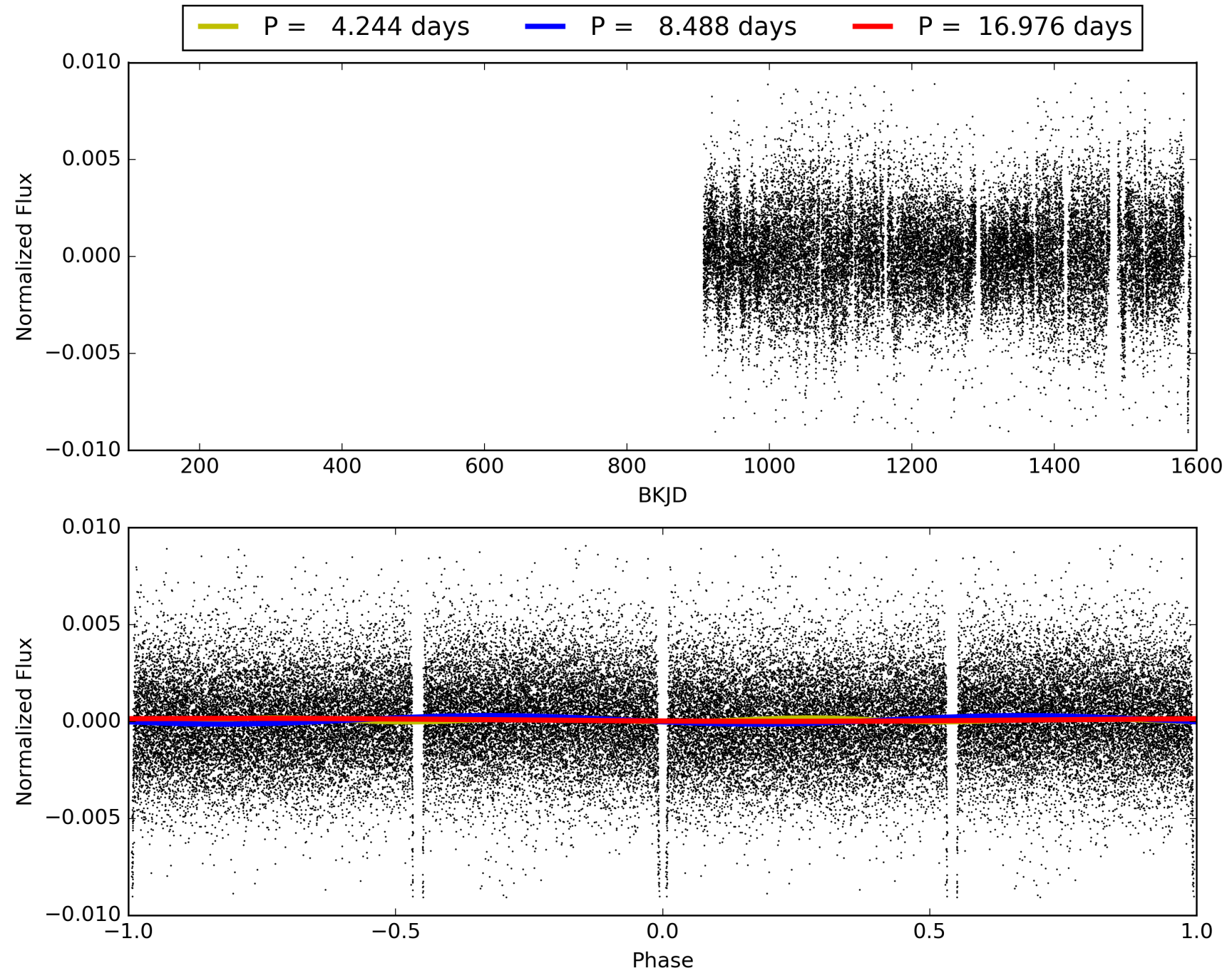
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.99 [70/71]
GhostDiagnostic-chr: 2.853
Centroid-sig: 0.0%
Centroid-so: 3.284 arcsec [157.87 σ]
OotOffset-rm: 10.723 arcsec [115.26 σ]
KicOffset-rm: 0.116 arcsec [1.47 σ]
OotOffset-st: 2/0/1/0 [3]
KicOffset-st: 2/2/2/2 [8]
DiffImageQuality-fgm: 1.00 [8/8]
DiffImageOverlap-fno: 1.00 [8/8]

TCE 010383696-02, PDC Light Curves

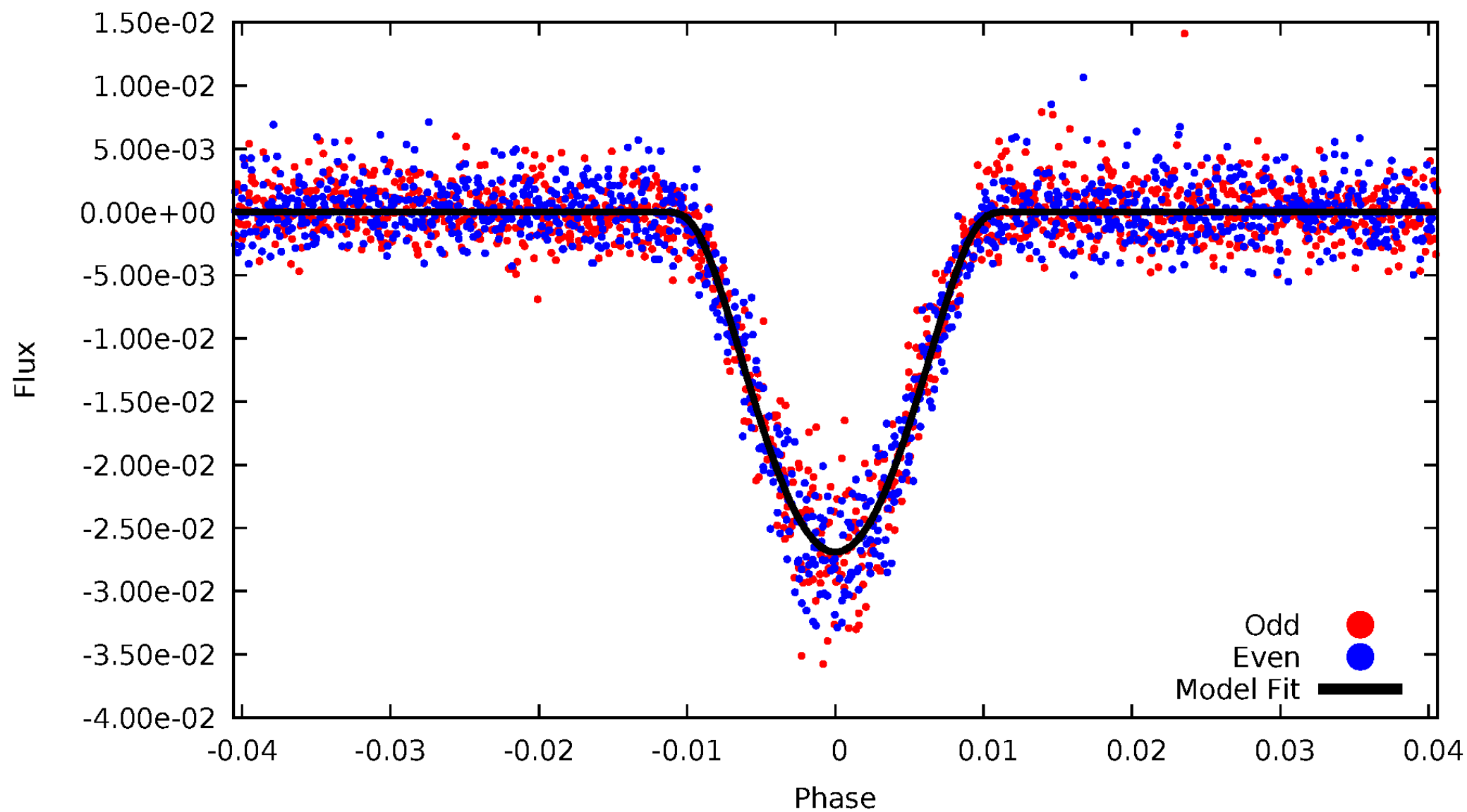


TCE 010383696-02



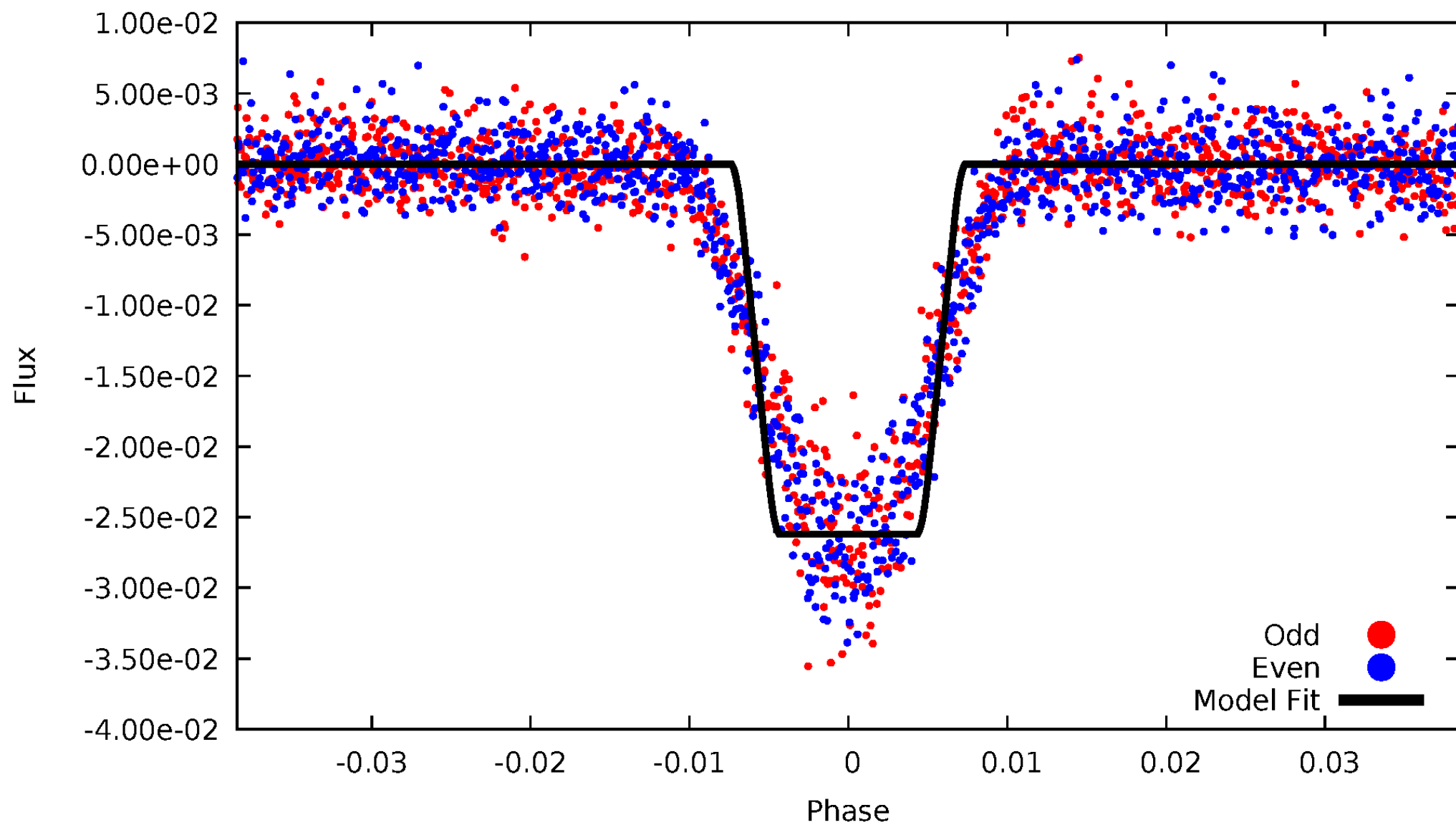
DV Odd/Even

TCE 010383696-02



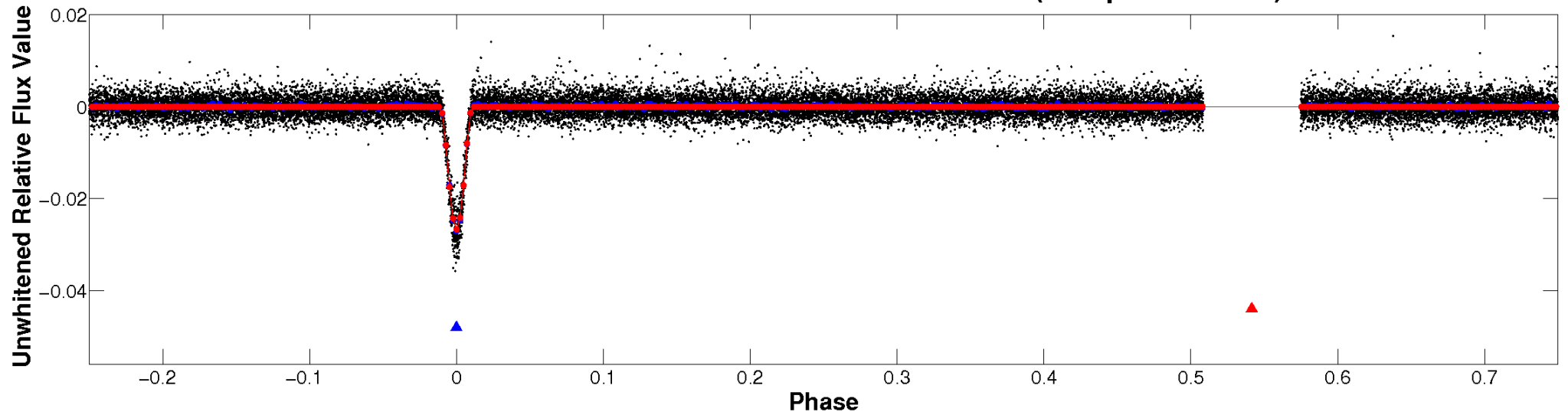
ALT Odd/Even

TCE 010383696-02

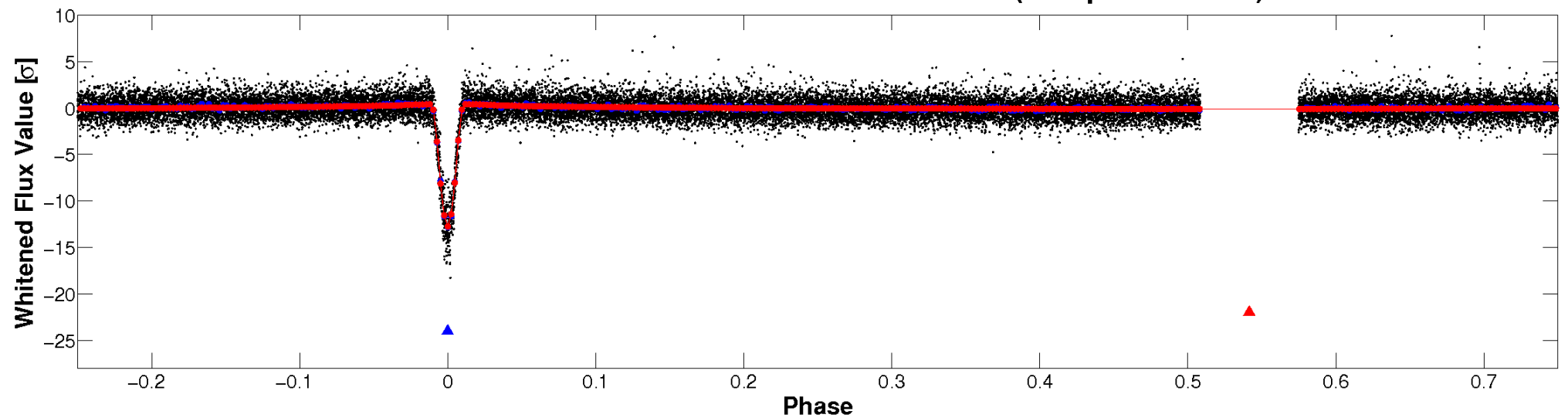


Non-Whitened Vs. Whitened Light Curve

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

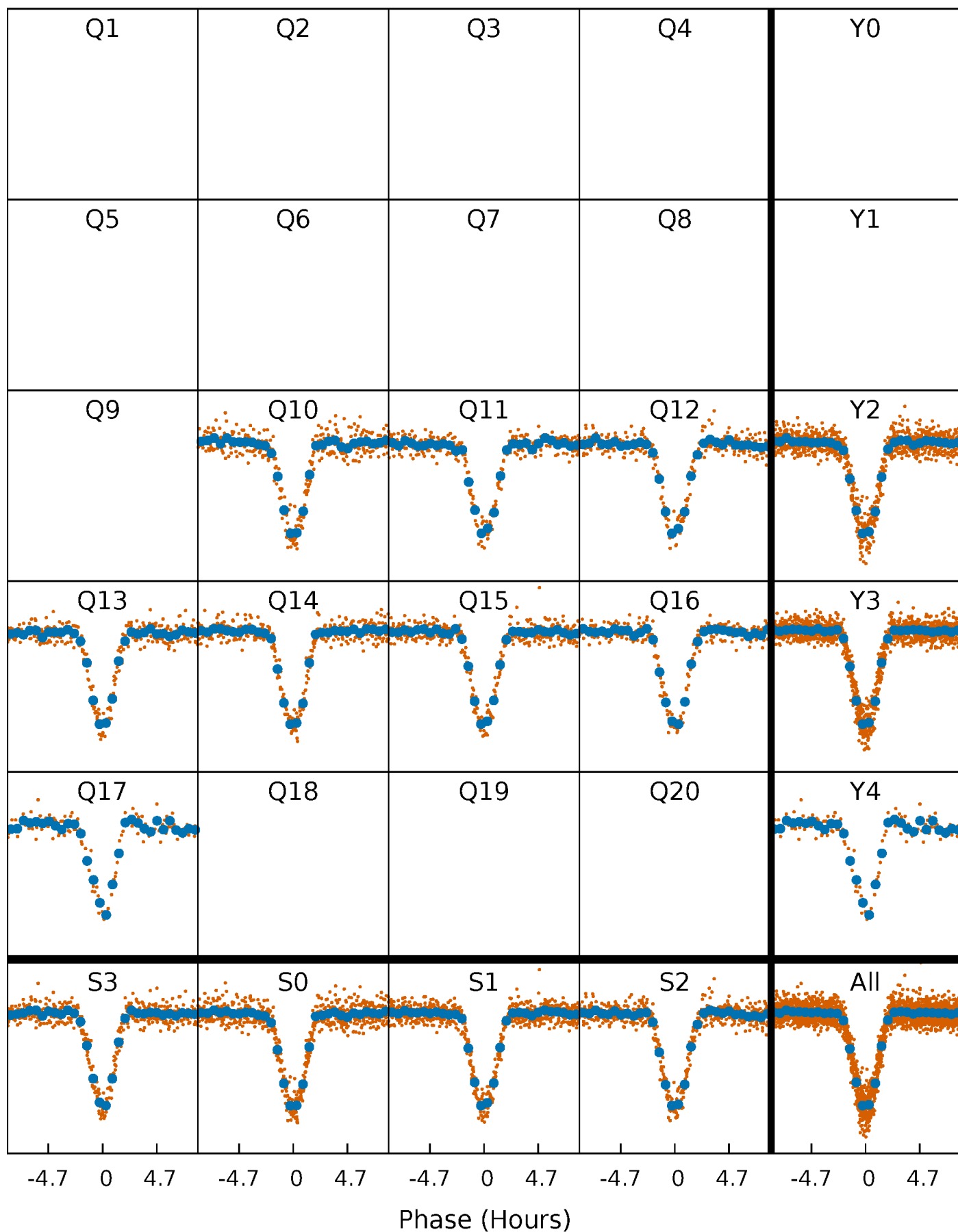


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



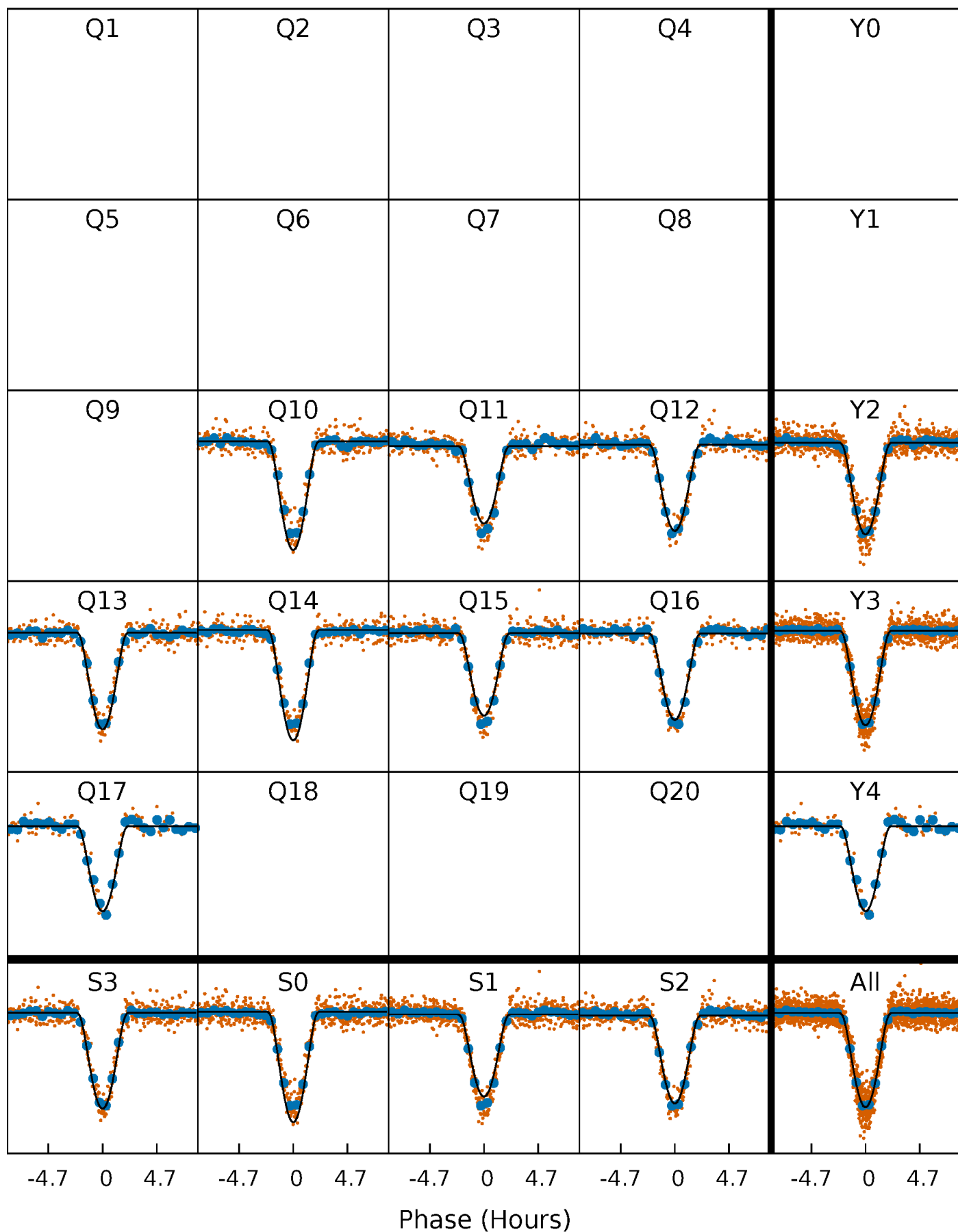
PDC Quarter-Phased Transit Curves

TCE 010383696-02 $P = 8.487872$ Days $T_0 = 138.385835$ (BKJD)



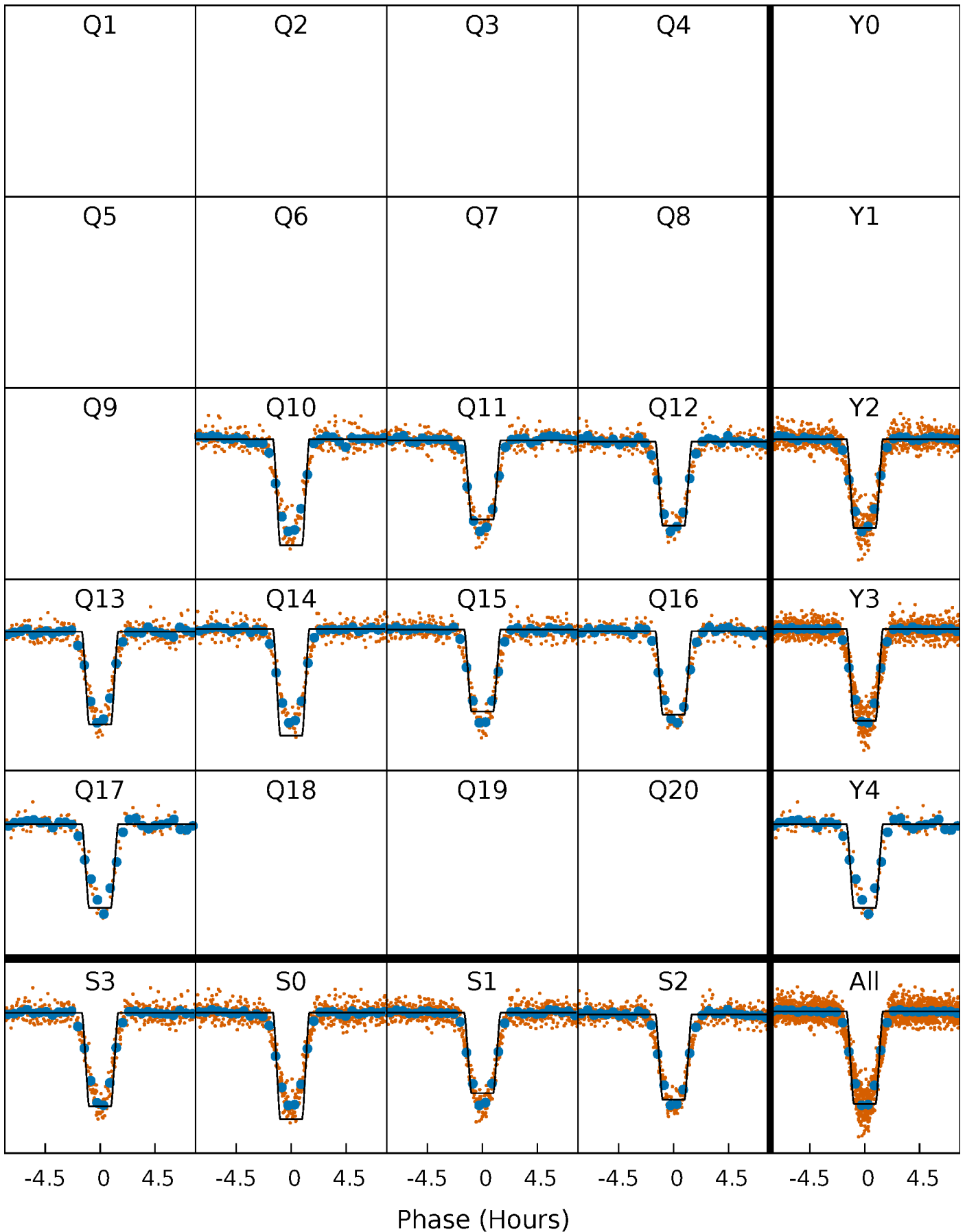
DV Quarter-Phased Transit Curves

TCE 010383696-02 $P = 8.487872$ Days $T_0 = 138.385835$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

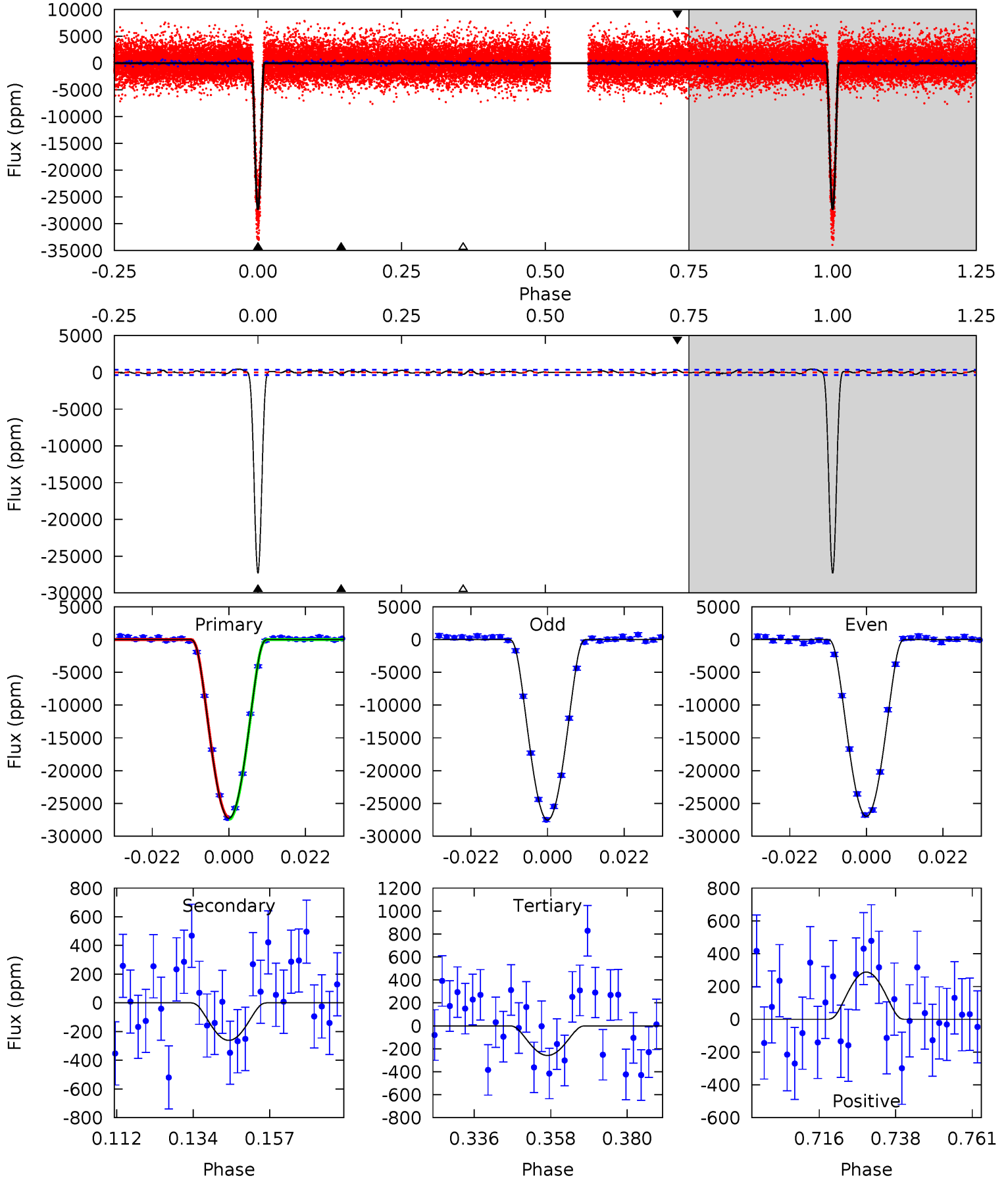
TCE 010383696-02 $P = 8.487793$ Days $T_0 = 138.396402$ (BKJD)



DV Model-Shift Uniqueness Test

010383696-02, P = 8.487872 Days, E = 138.385835 Days

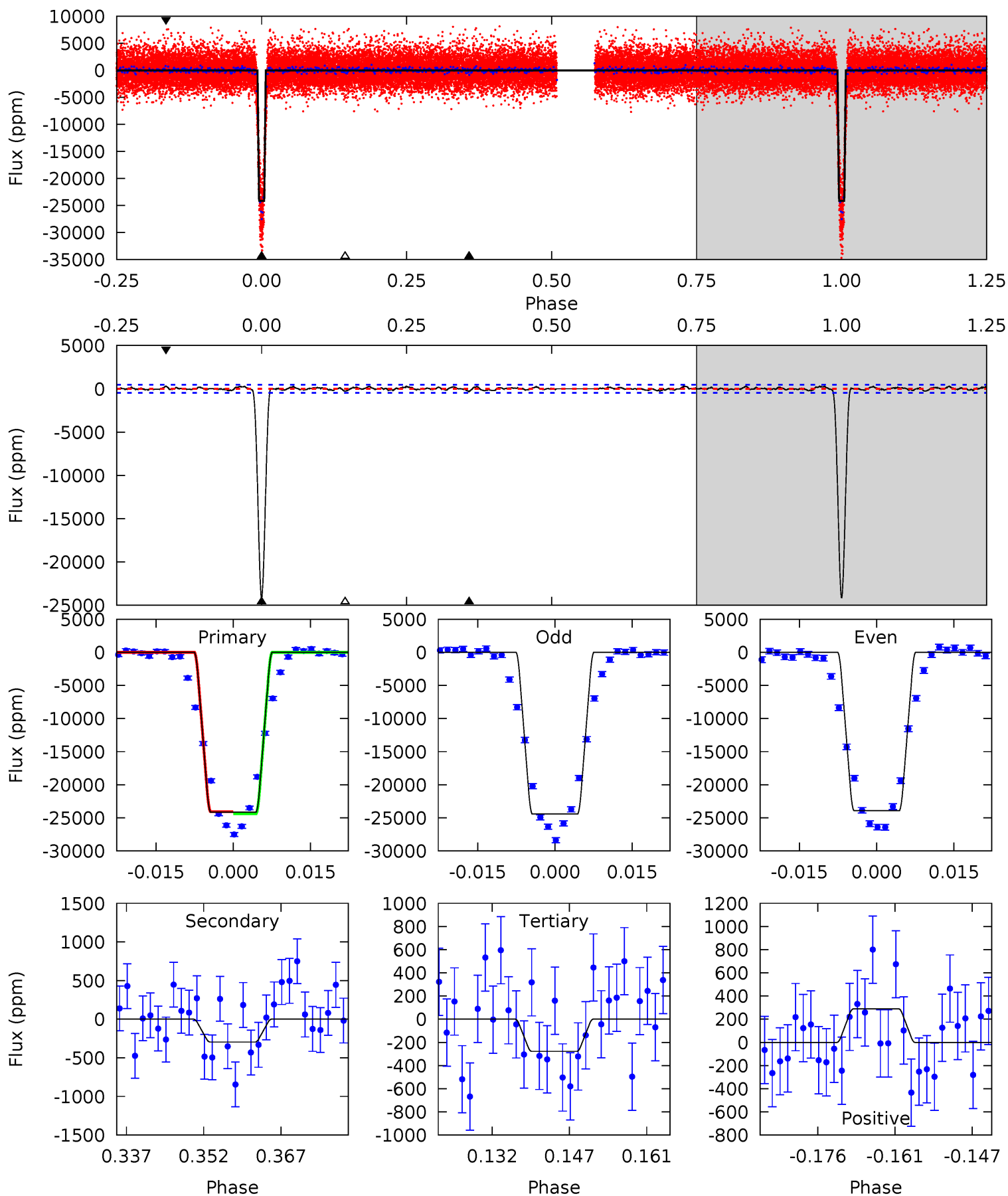
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
357.5	3.42	3.38	3.77	4.87	2.28	1.70	354.1	353.7	0.04	-0.35	3.65	0.98	0.02	1.96



Alt Model-Shift Uniqueness Test

010383696-02, P = 8.487793 Days, E = 138.396402 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
254.3	3.11	2.93	3.05	4.95	2.44	1.14	251.4	251.3	0.19	0.06	2.69	0.97	0.01	1.69



Stellar Parameters For KIC 010383696

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5553^{+183}_{-183}	$4.558^{+0.032}_{-0.189}$	$0.070^{+0.250}_{-0.300}$	$0.855^{+0.237}_{-0.063}$	$0.964^{+0.085}_{-0.113}$	$2.173^{+0.394}_{-1.060}$
	+3%/-3%	+1%/-4%	+357%/-429%	+28%/-7%	+9%/-12%	+18%/-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 010383696-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-261 ± 76	$22.03^{+5.74}_{-5.21}$	1146^{+81}_{-54}	2328^{+199}_{-179}	$1.815^{+1.528}_{-0.777}$
Alt.	-296 ± 95	$15.89^{+4.89}_{-4.98}$	1144^{+79}_{-53}	2582^{+297}_{-233}	$3.944^{+4.634}_{-1.920}$

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

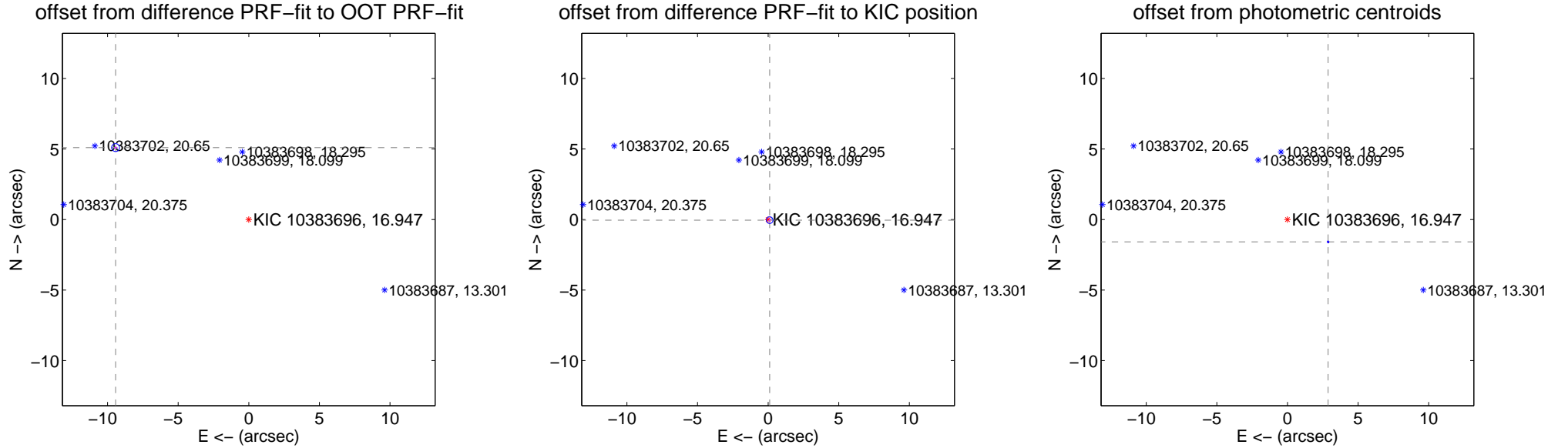
DV Centroid Data

Supplemental centroid analysis for 010383696-02. Kepler magnitude: 16.95. Transit SNR 189.19

There are 8 quarters with good PRF difference image offsets

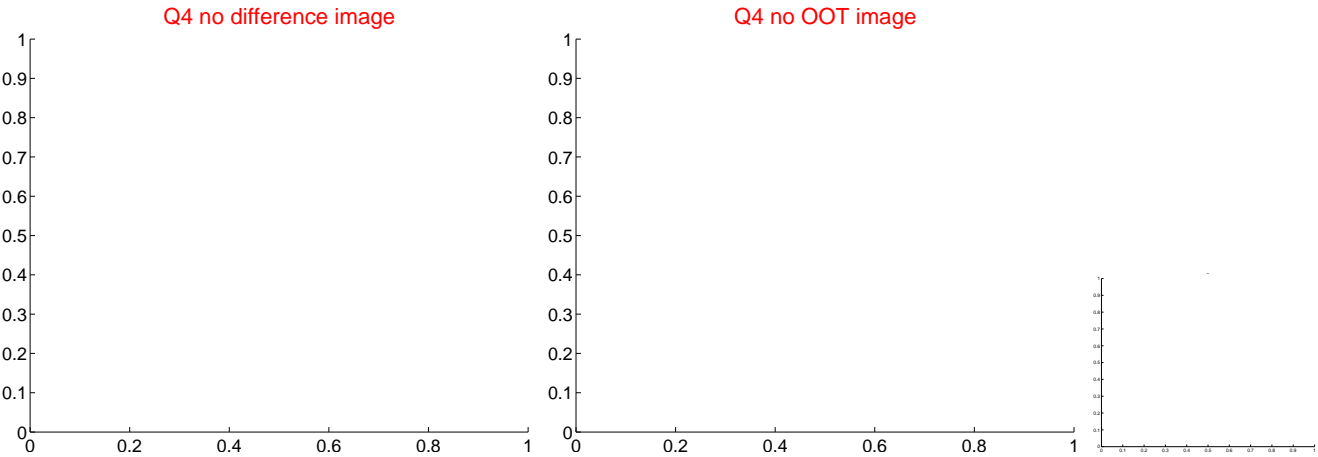
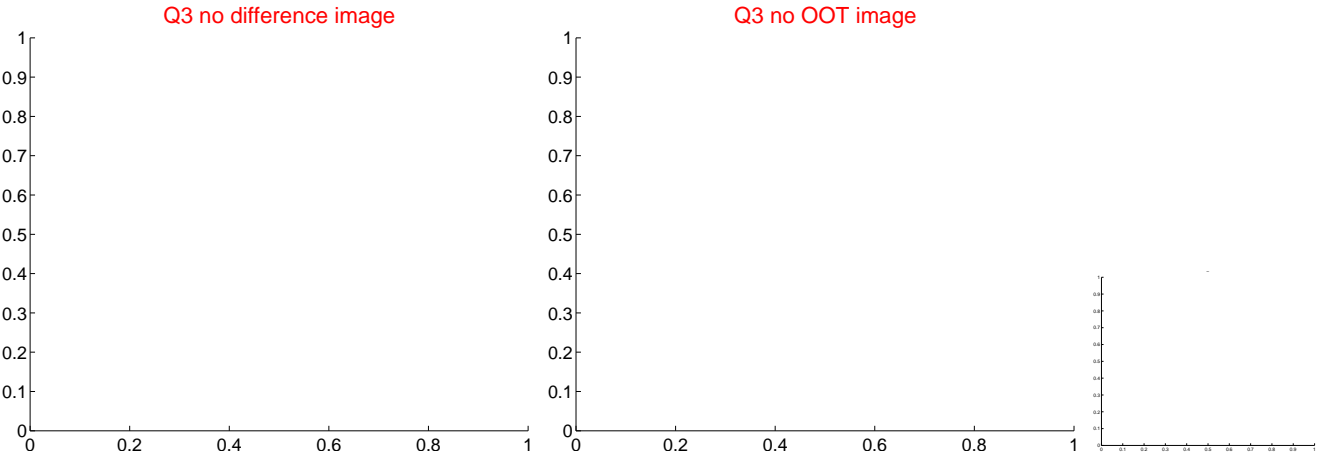
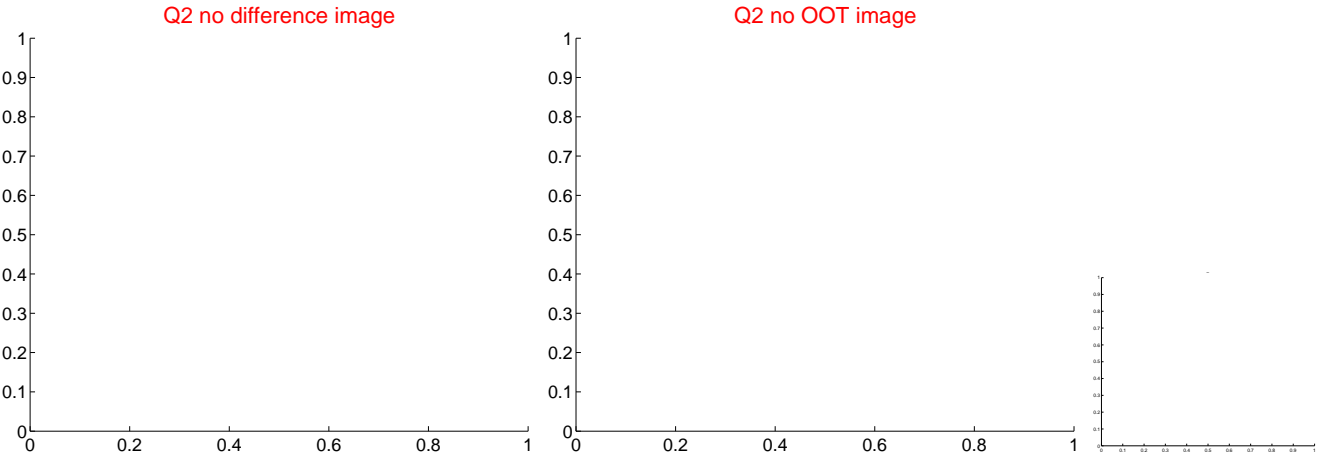
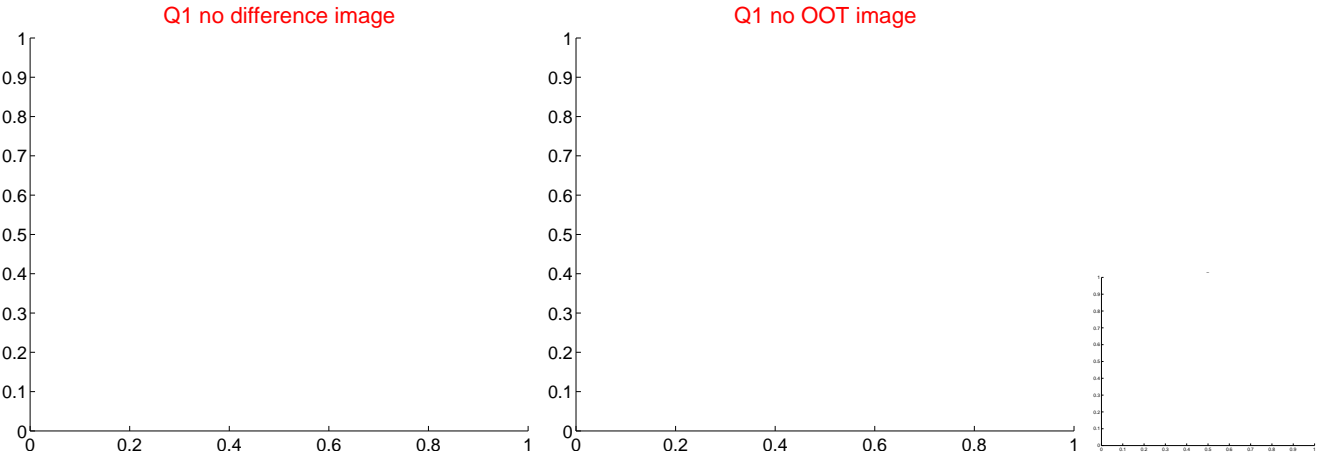
The OOT PRF centroid is offset from the target star catalog position by about 10.95 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	10.723 ± 0.093	115.26	9.434 ± 0.099	5.099 ± 0.069
PRF-fit source offset from KIC position	0.116 ± 0.079	1.47	-0.108 ± 0.080	-0.044 ± 0.073
photometric centroid source offset	3.28 ± 0.02	157.87	-2.88 ± 0.02	-1.58 ± 0.02

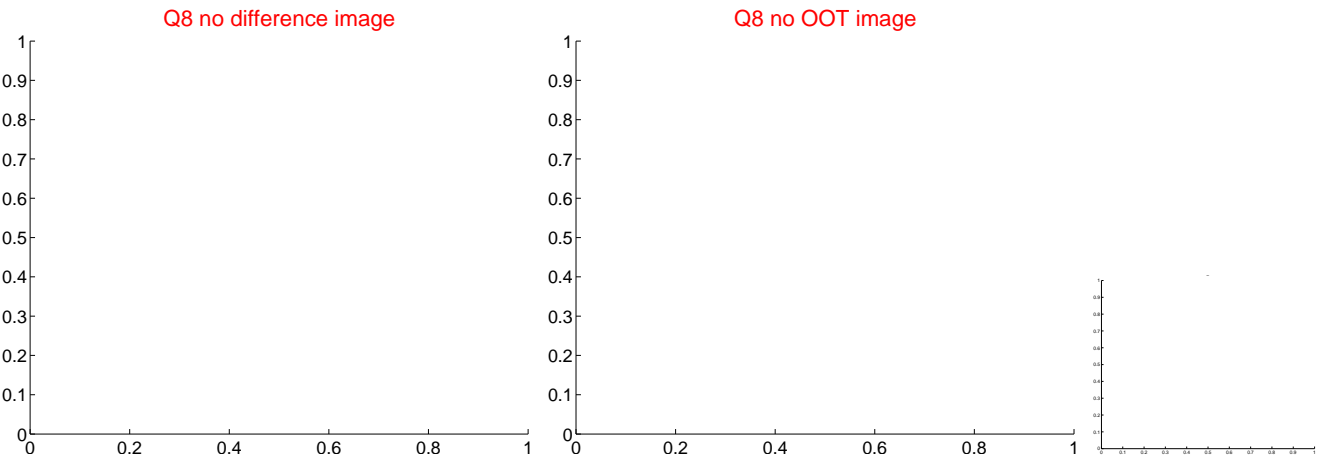
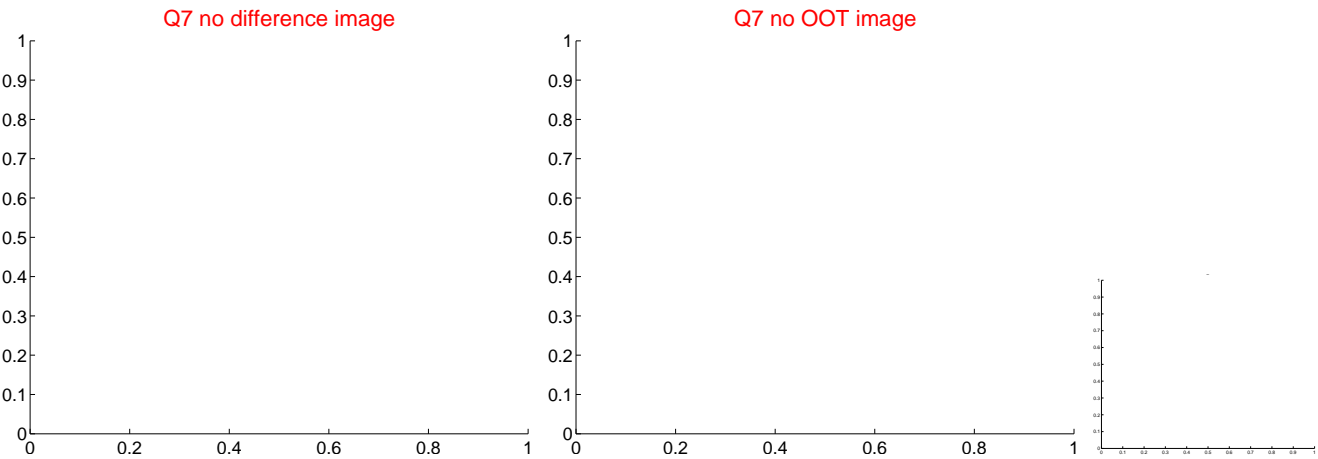
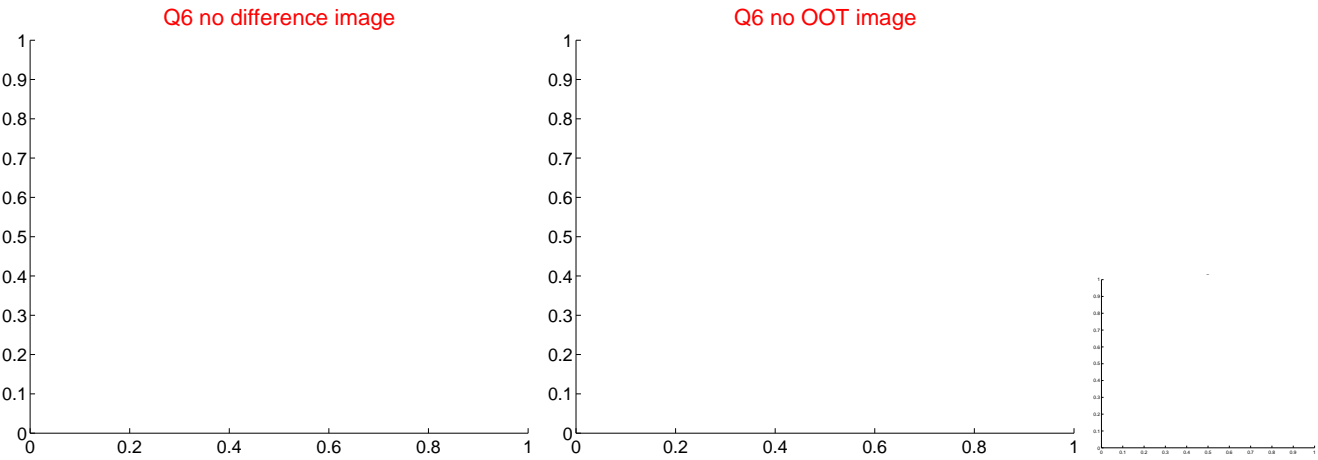
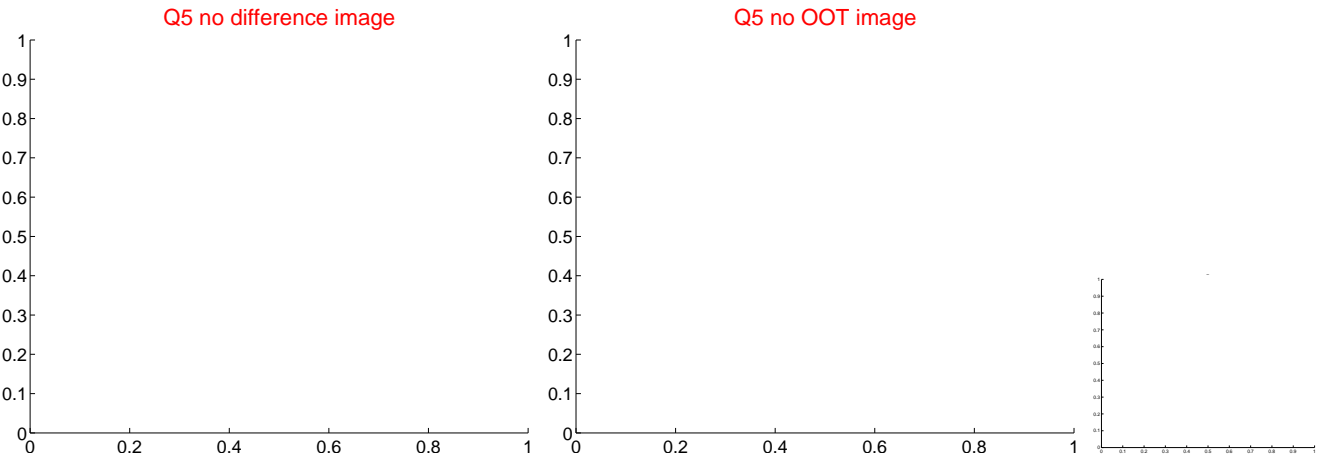


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

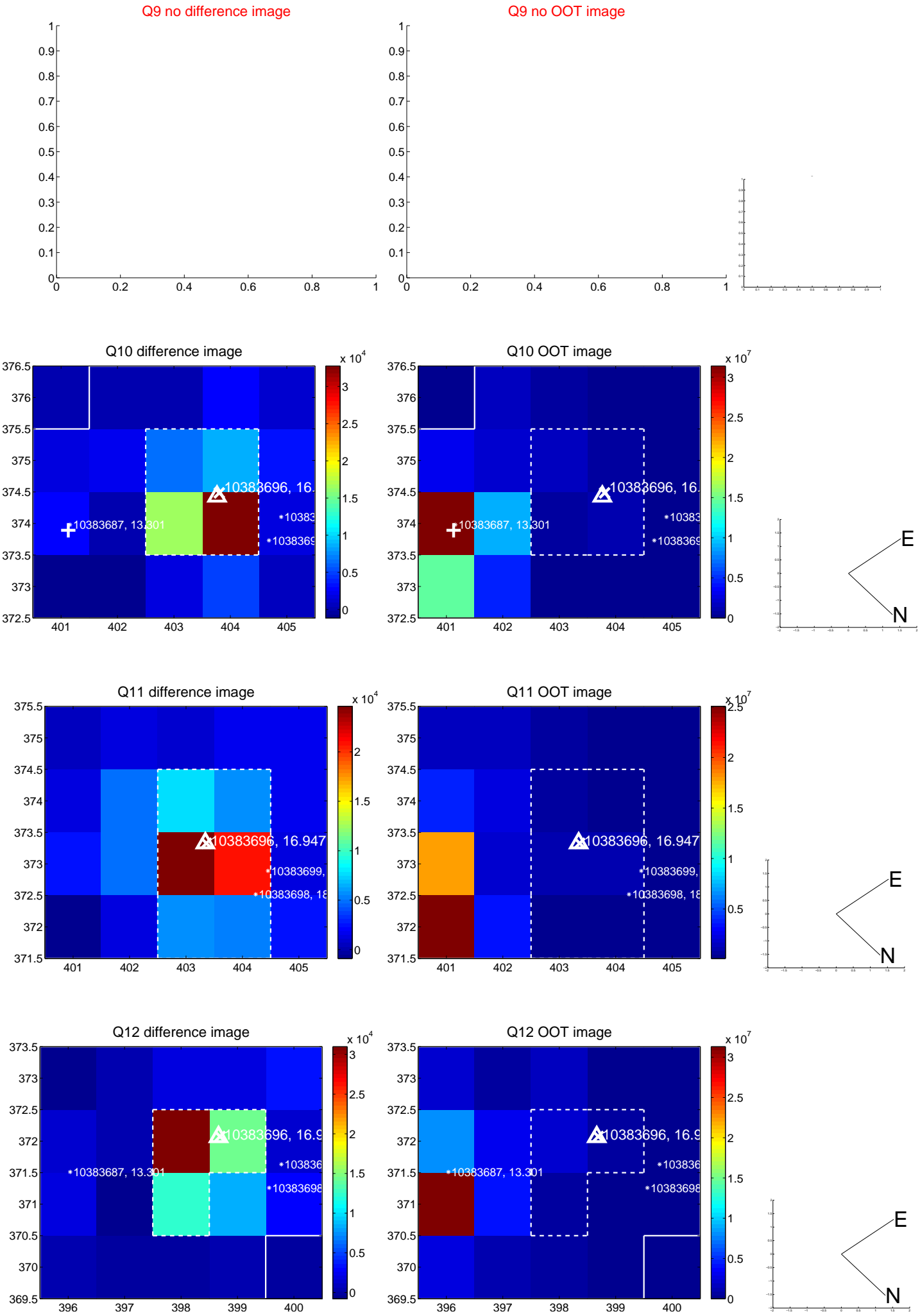
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



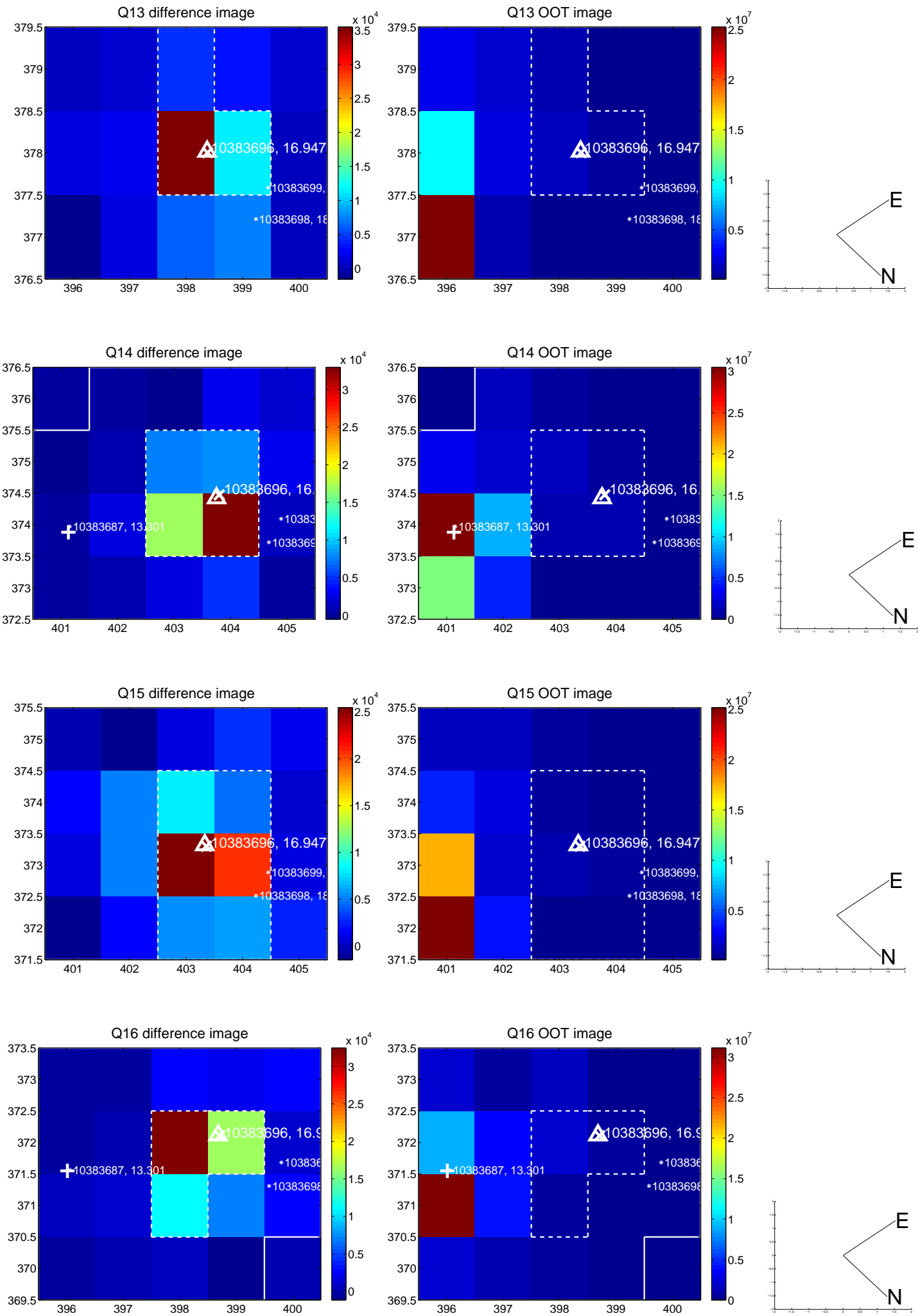
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



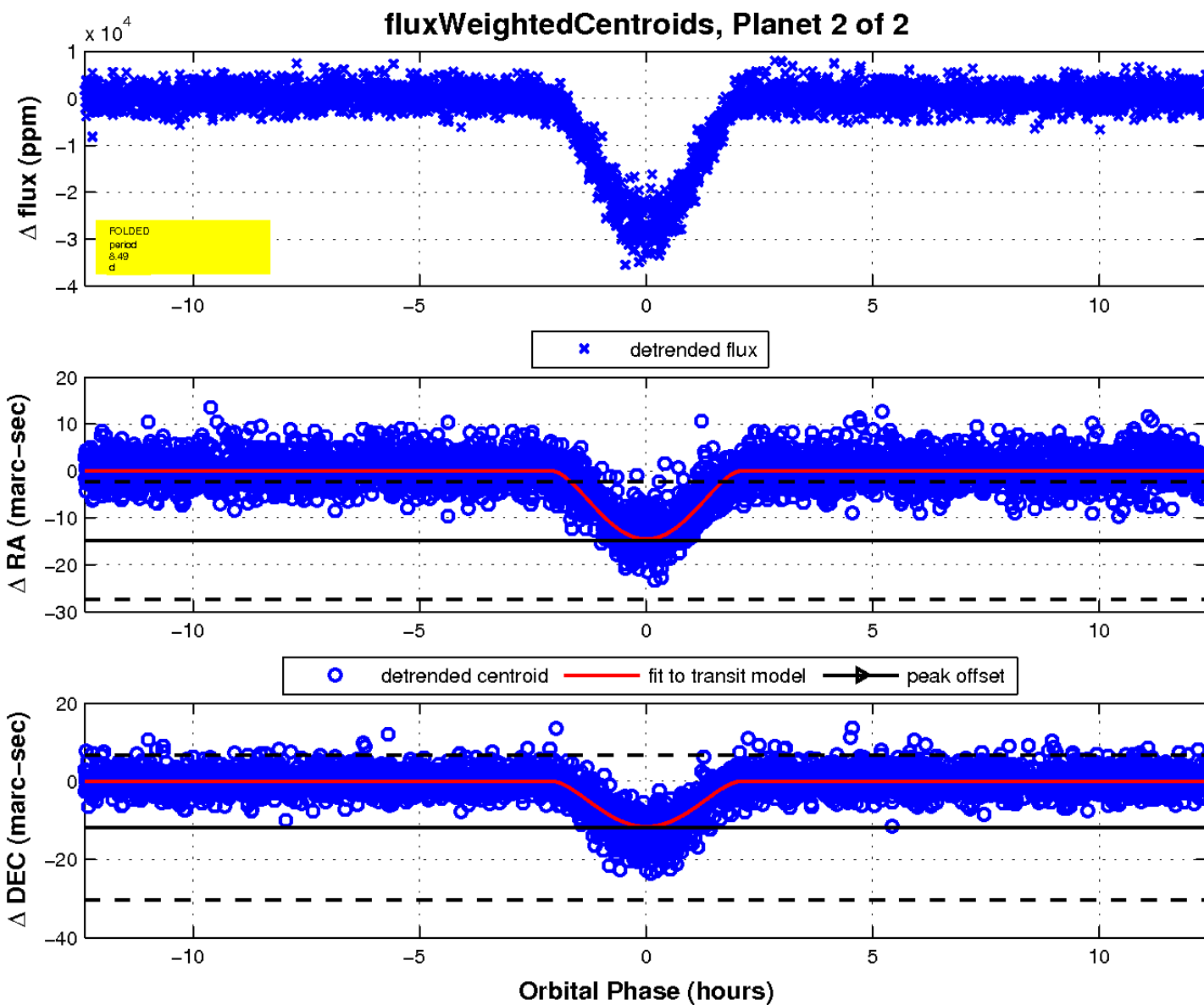
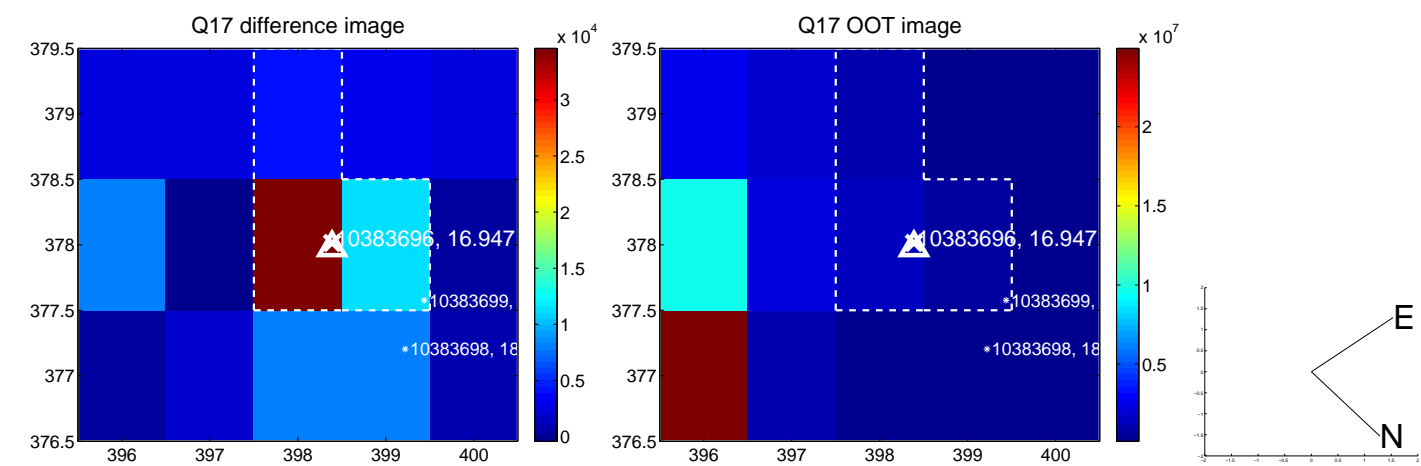
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

