

KIC 010677186

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})
010677186-01	OBS	3595.01	100.401310	216.083278	53817.7	9.751	1430.8	1250.6	1.10	5903	26.05	7.39
010677186-02	OBS	No	100.400391	182.696279	4252.3	18.121	126.7	122.2	1.10	5903	8.46	7.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010677186-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
010677186-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

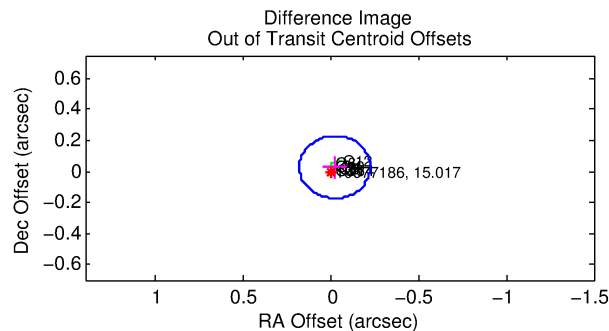
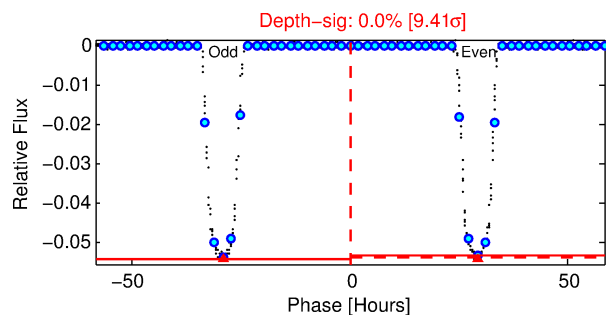
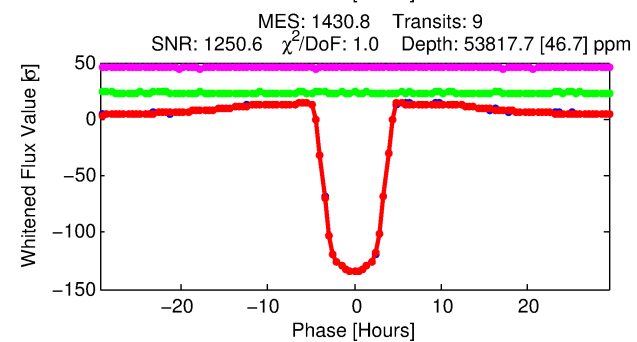
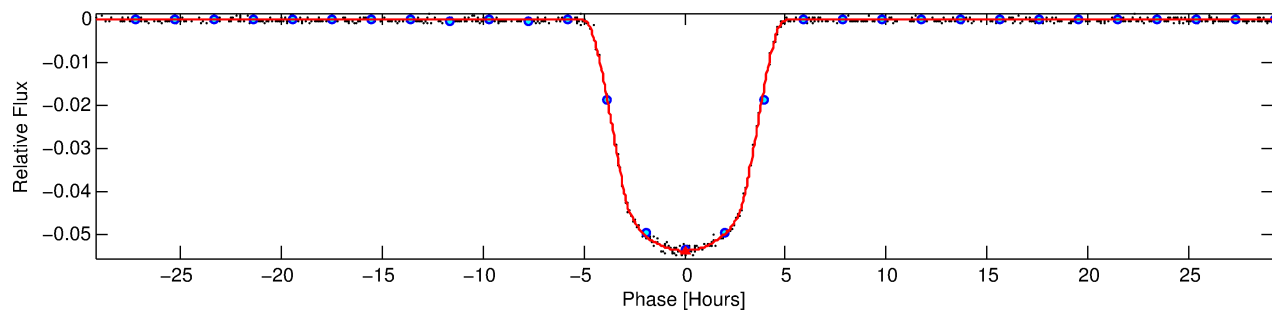
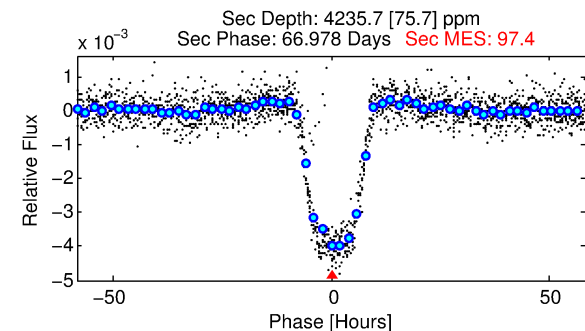
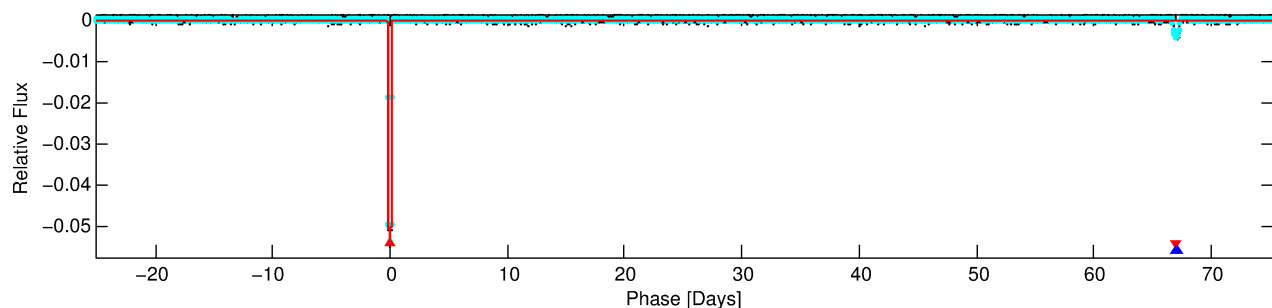
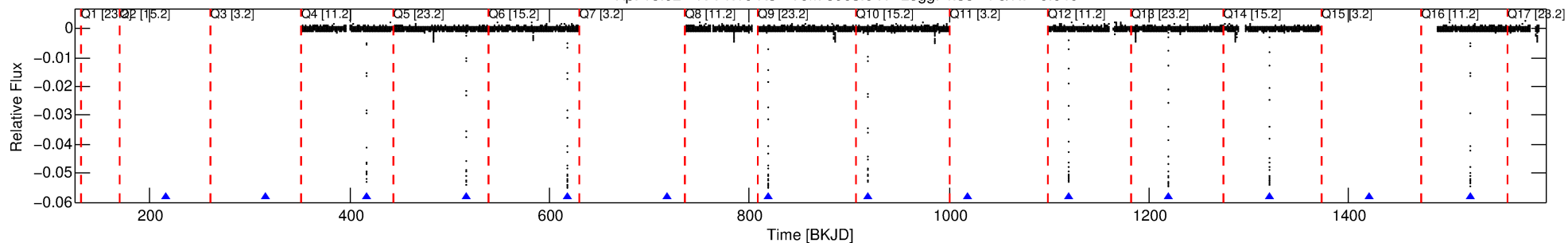
Ephemeris Match Information For 010677186-01

No Significant Match Found

DV One-Page Summary

KIC: 10677186 Candidate: 1 of 2 Period: 100.401 d
KOI: K03595.01 Corr: 0.999

Kp: 15.02 R*: 1.10 Rs Teff: 5903.0 K Logg: 4.35 Fe/H: -0.040



DV Fit Results:

Period = 100.40131 [0.00002] d
Epoch = 216.0833 [0.0002] BKJD
Rp/R* = 0.2170 [0.0002]
a/R* = 89.10 [0.23]
b = 0.45 [0.00]
Seff = 7.39 [2.81]
Teq = 420 [40] K
Rp = 26.05 [7.63] Re
a = 0.4221 [0.1032] AU
Ag = 611.98 [216.60] [2.82σ]
Teffp = 3233 [113] K [23.43σ]

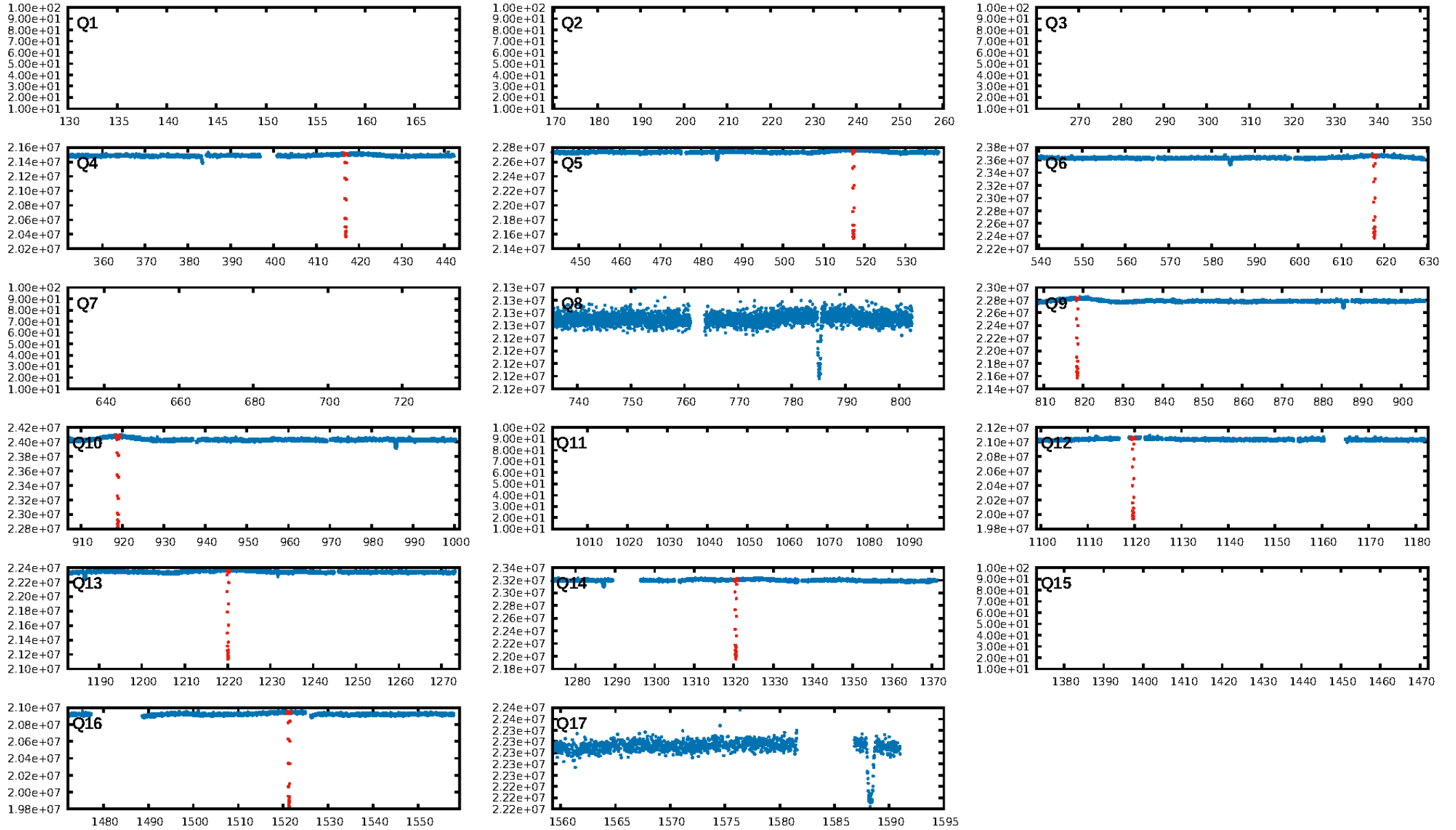
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 97.8%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: 5.685
Centroid-sig: 0.0%
Centroid-so: 0.241 arcsec [24.47σ]
OotOffset-rm: 0.036 arcsec [0.54σ]
OotOffset-st: 3/0/3/2 [8]
KicOffset-rm: 0.165 arcsec [2.35σ]
KicOffset-st: 3/0/3/2 [8]
DiffImageQuality-fgm: 1.00 [8/8]
DiffImageOverlap-fno: 1.00 [8/8]

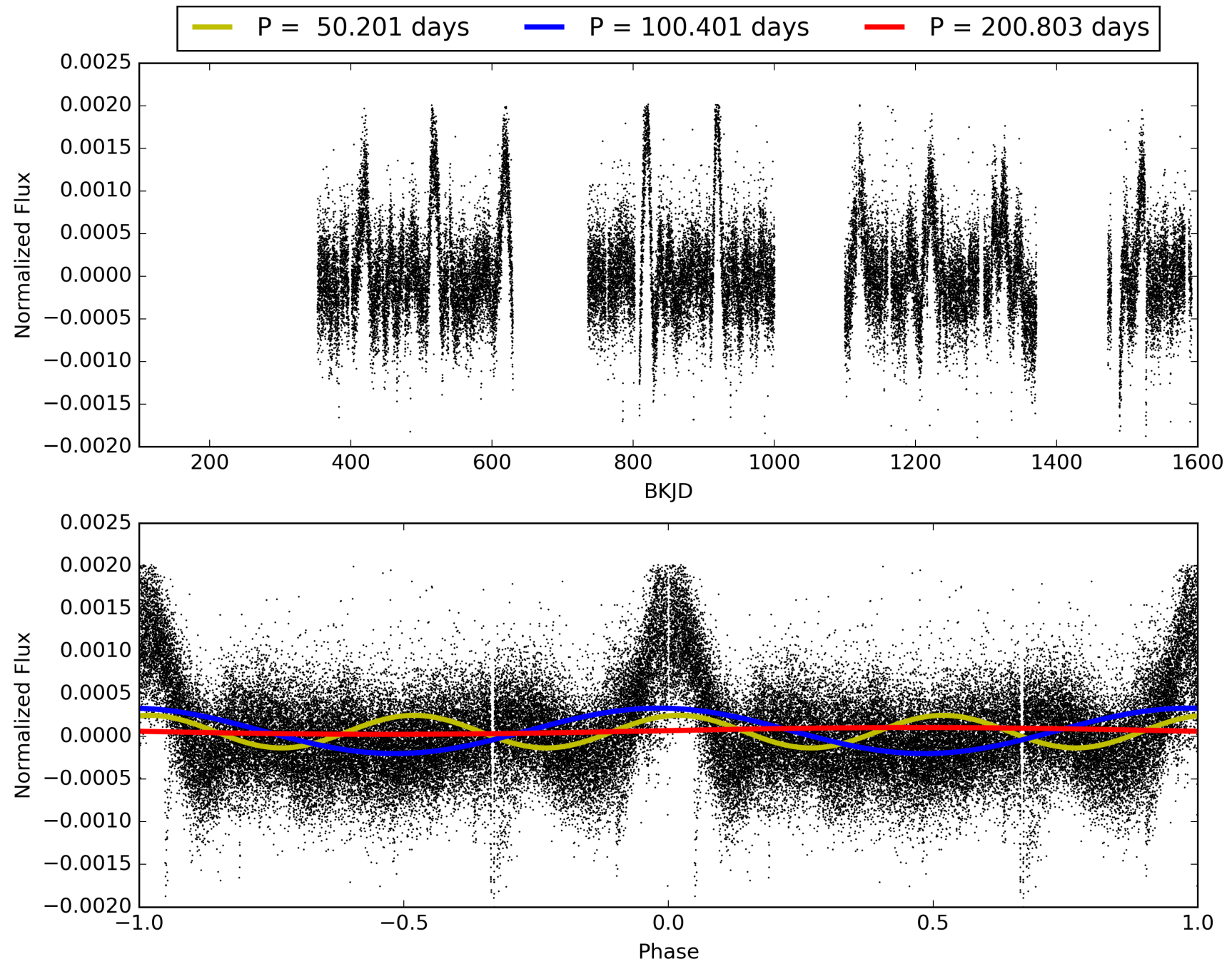
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:22:51 Z

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

TCE 010677186-01, PDC Light Curves

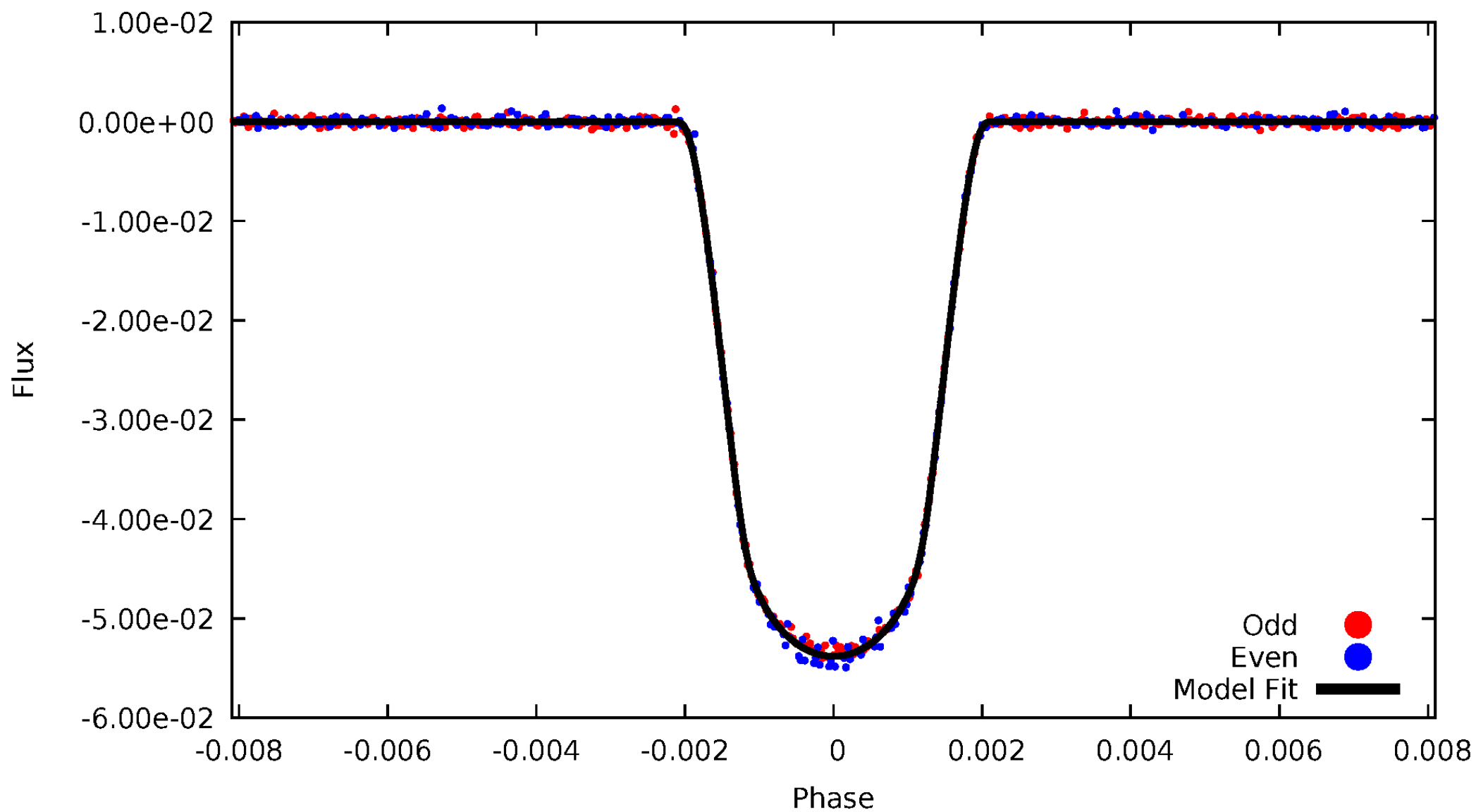


TCE 010677186-01



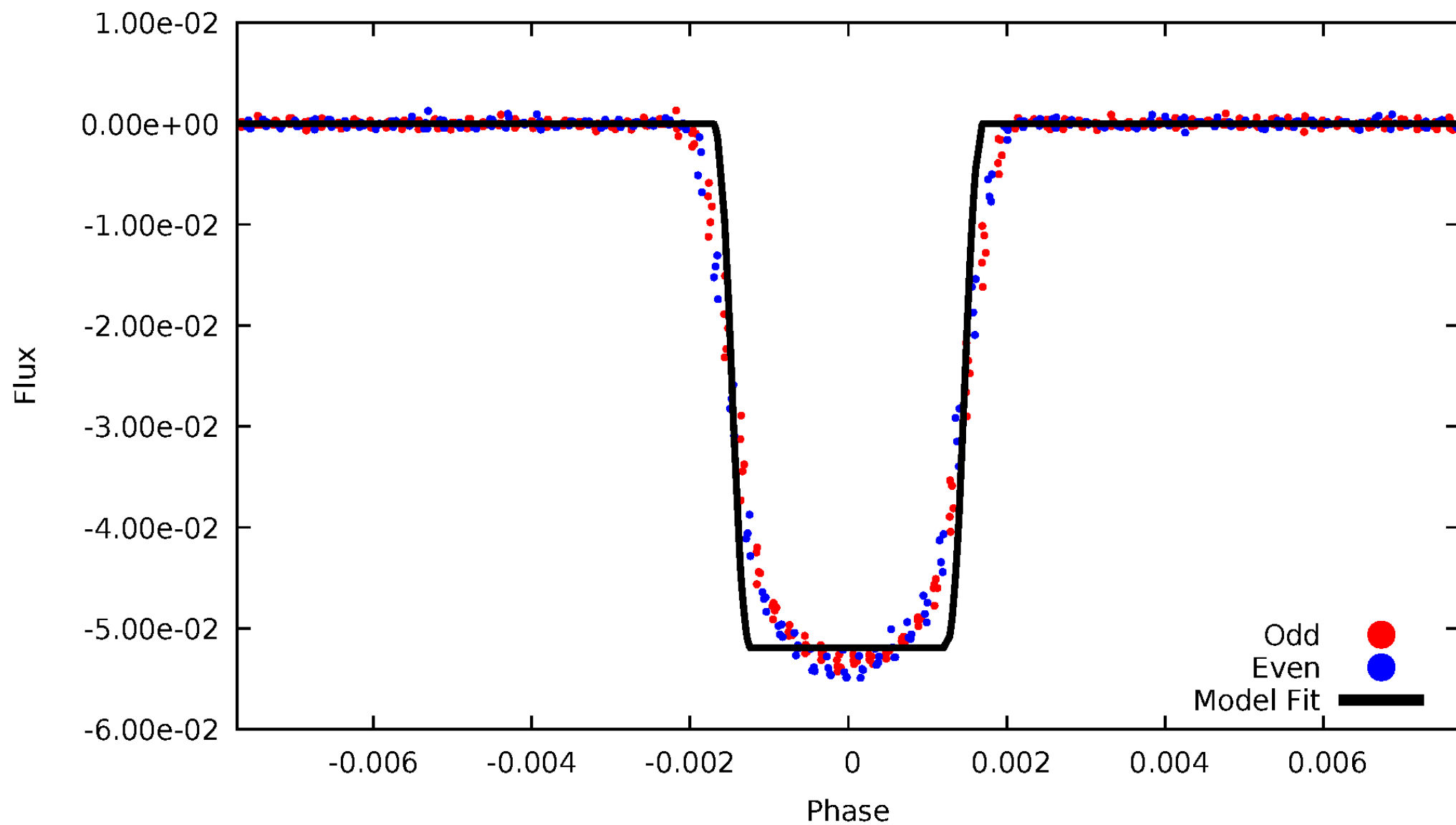
DV Odd/Even

TCE 010677186-01



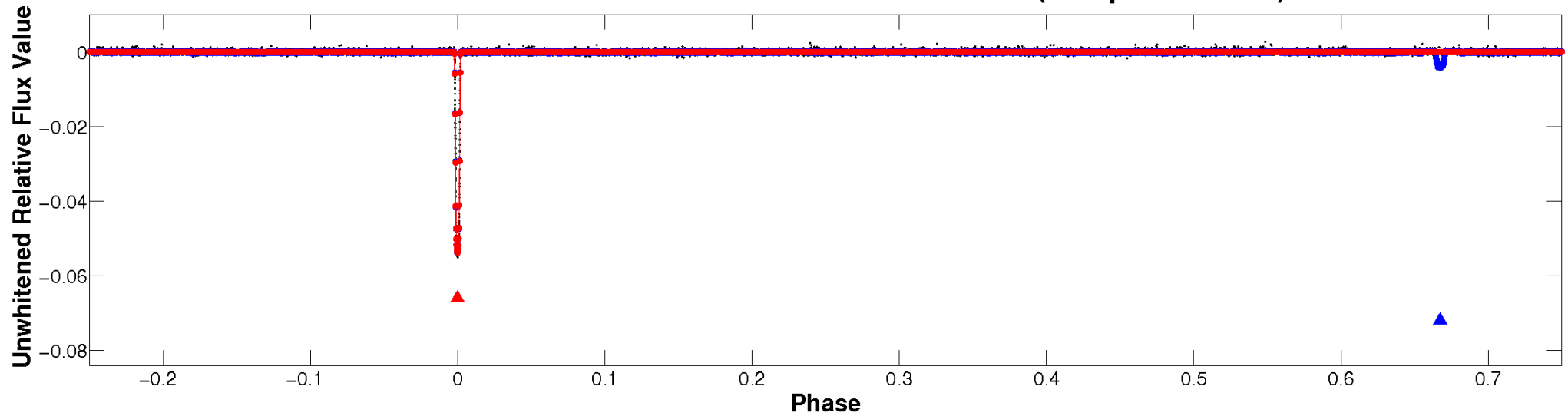
ALT Odd/Even

TCE 010677186-01

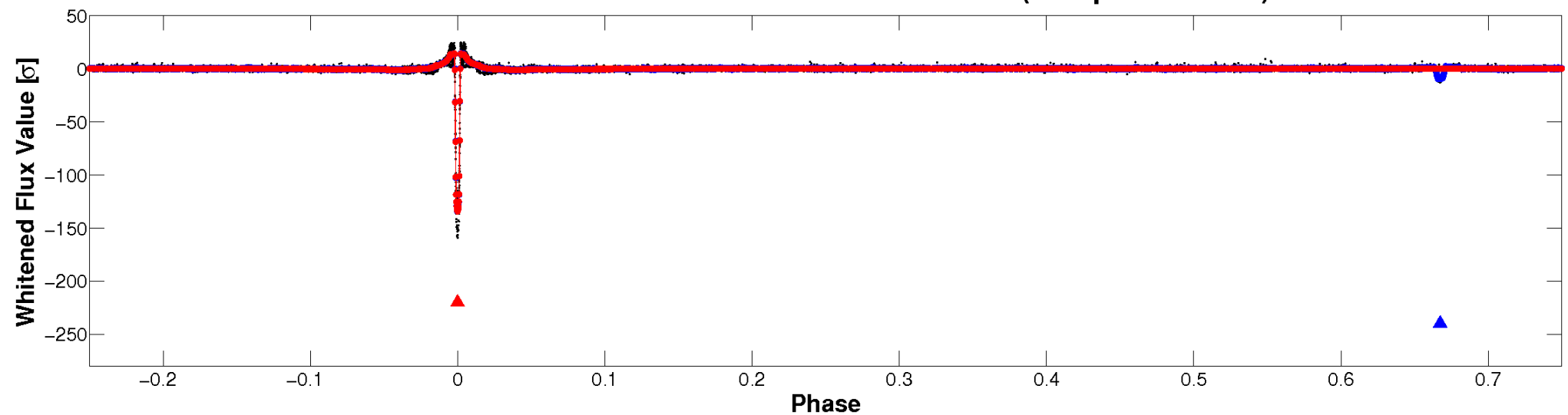


Non-Whitened Vs. Whitened Light Curve

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

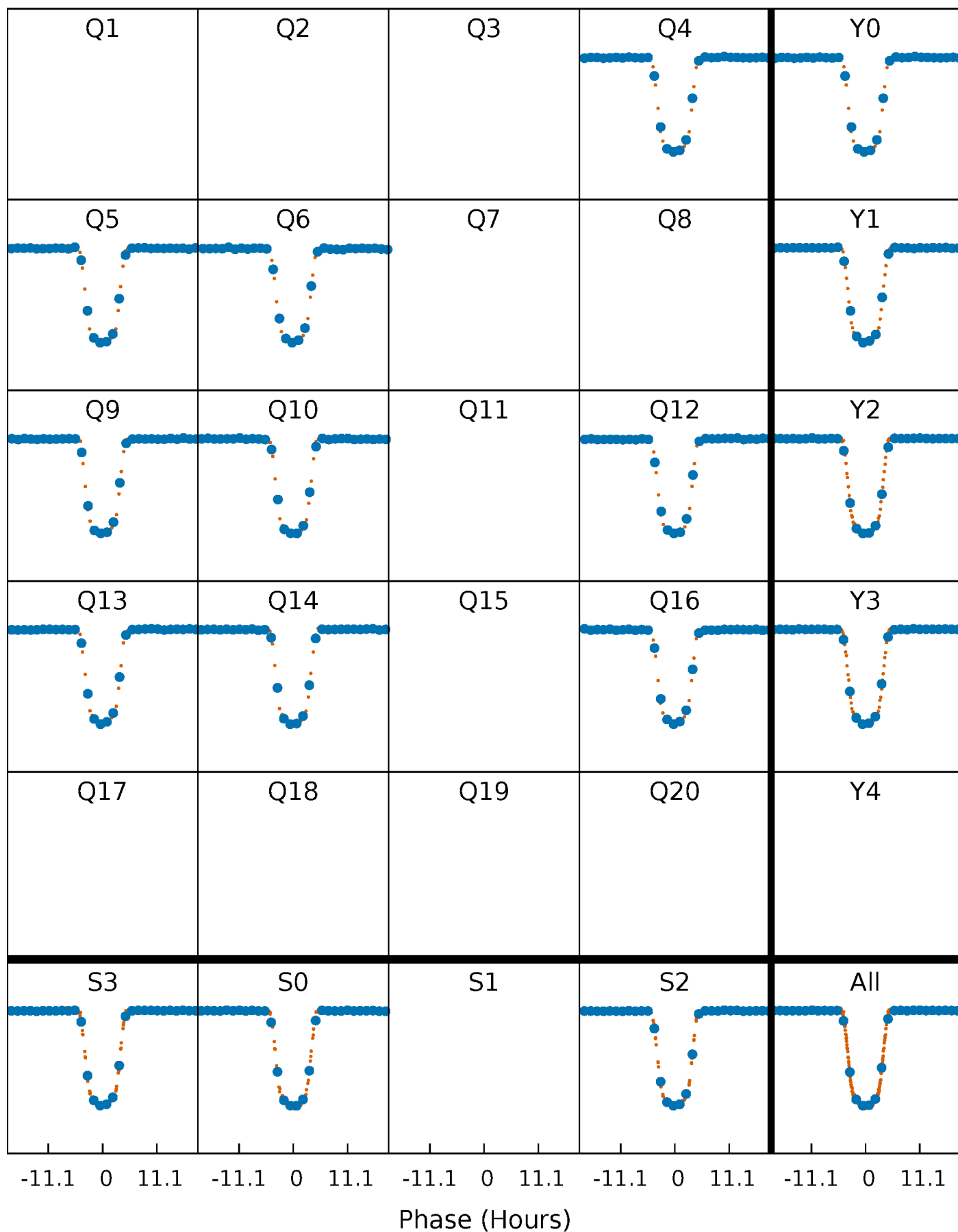


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



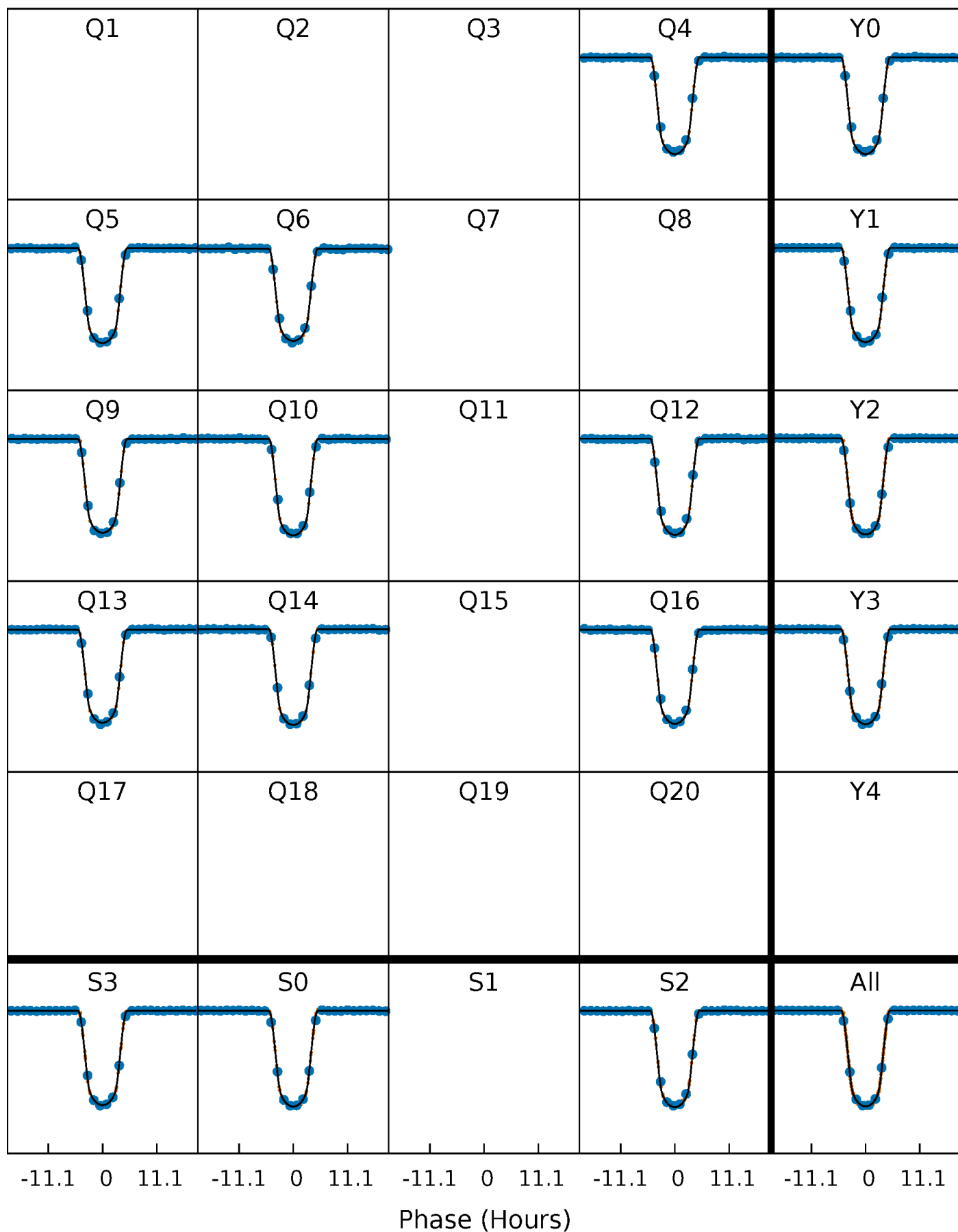
PDC Quarter-Phased Transit Curves

TCE 010677186-01 P=100.401310 Days $T_0=216.083278$ (BKJD)



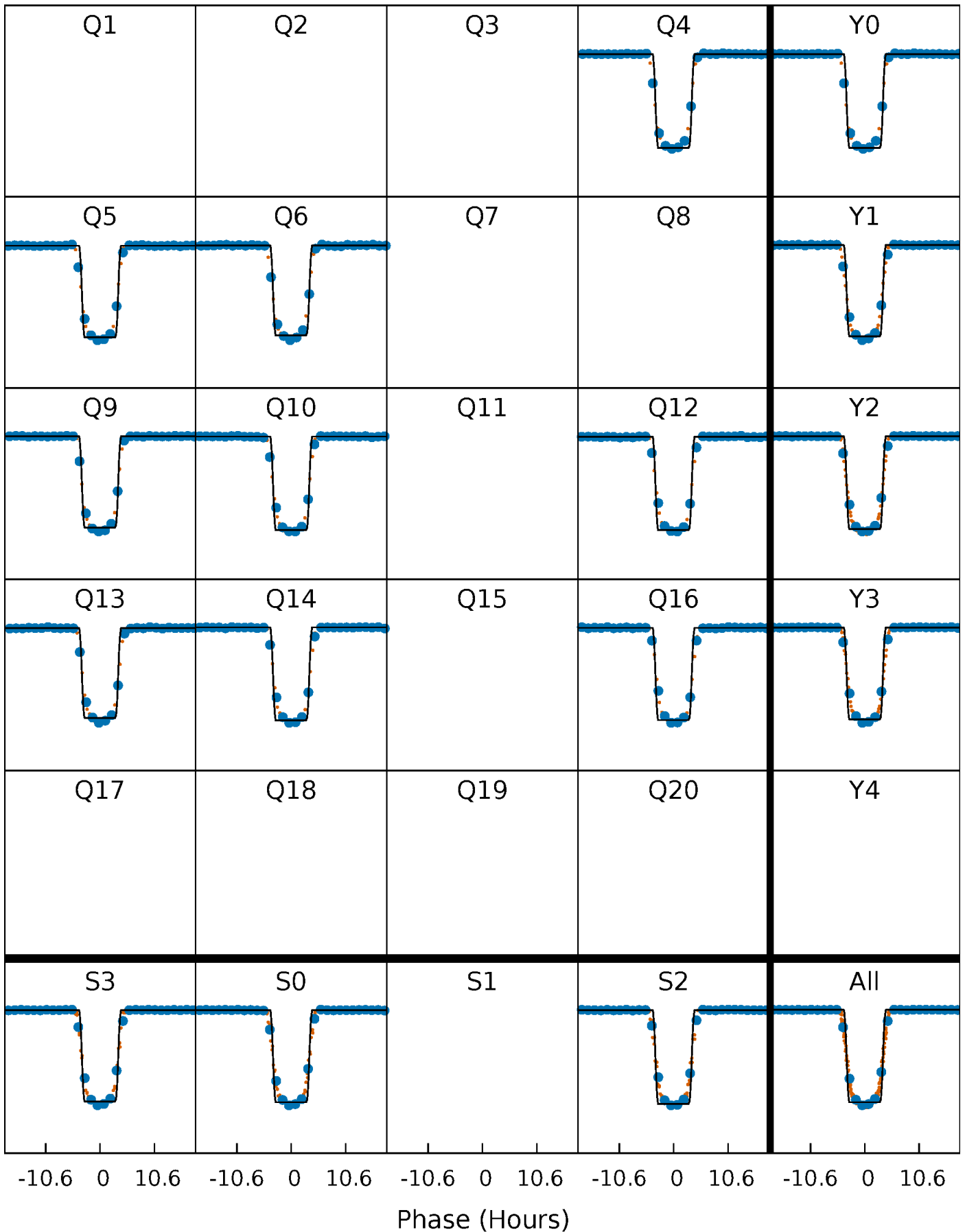
DV Quarter-Phased Transit Curves

TCE 010677186-01 P=100.401310 Days $T_0=216.083278$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

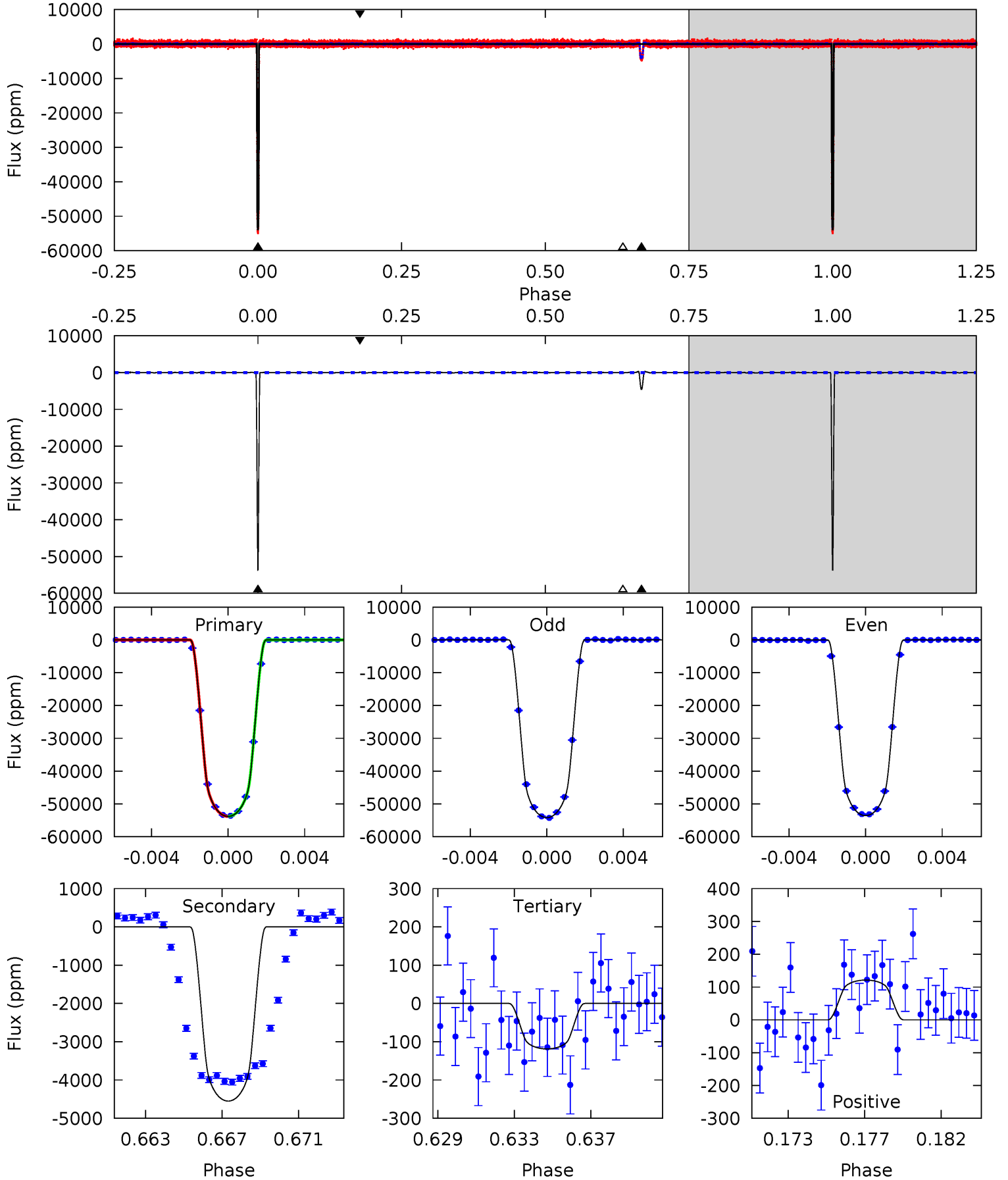
TCE 010677186-01 P=100.400138 Days $T_0=216.091782$ (BKJD)



DV Model-Shift Uniqueness Test

010677186-01, P = 100.401310 Days, E = 216.083278 Days

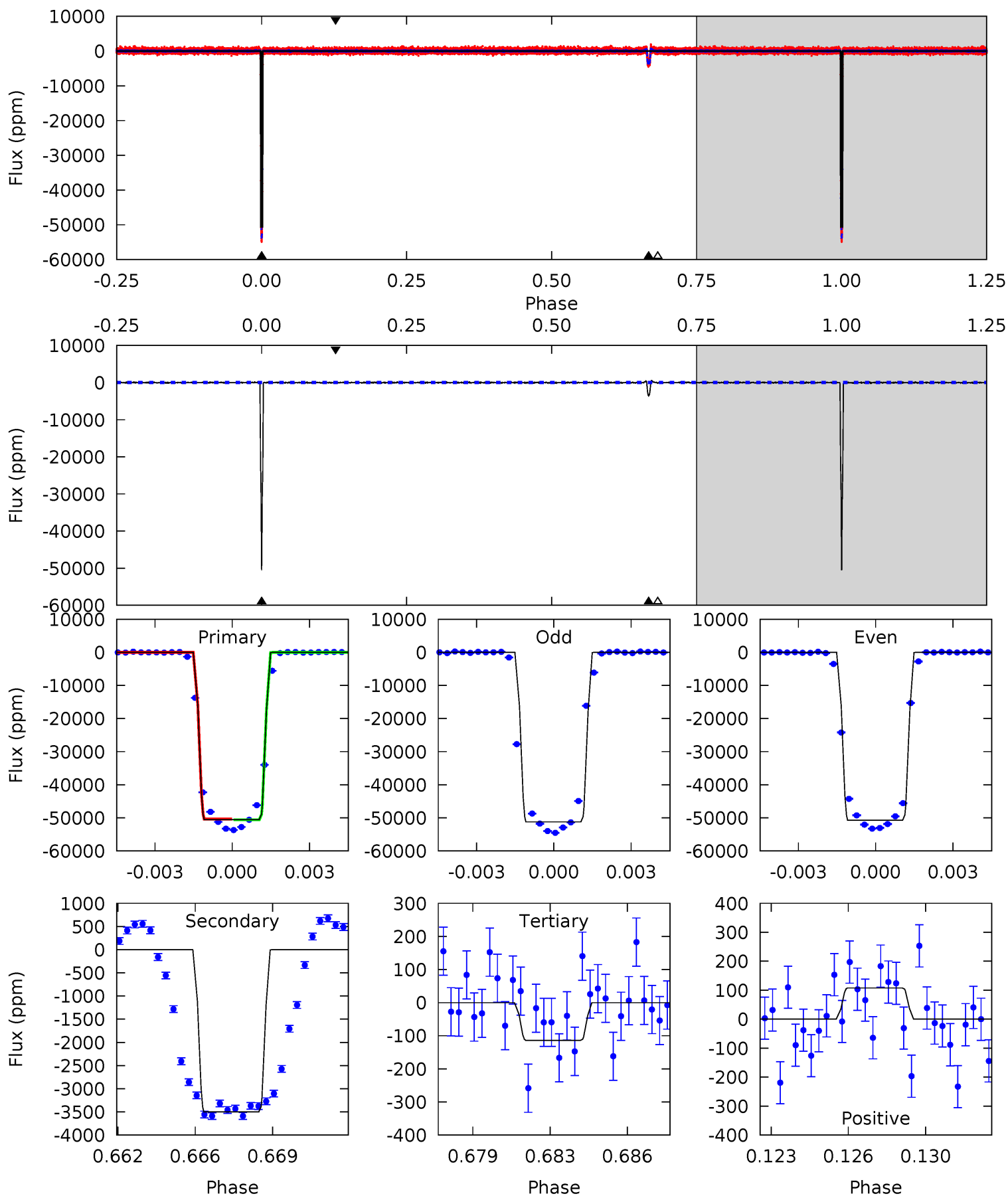
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2117	179.0	4.67	4.77	5.19	2.86	1.64	2112	2112	174.3	174.2	11.7	1.00	0.01	0



Alt Model-Shift Uniqueness Test

010677186-01, P = 100.400138 Days, E = 216.091782 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1510	104.6	3.40	3.22	5.23	2.93	1.29	1507	1507	101.2	101.4	7.61	1.00	0.01	3.14



Stellar Parameters For KIC 010677186

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5903^{+184}_{-205}	$4.353^{+0.128}_{-0.192}$	$-0.040^{+0.250}_{-0.300}$	$1.100^{+0.322}_{-0.198}$	$0.995^{+0.140}_{-0.115}$	$1.054^{+0.645}_{-0.544}$
	+3%/-3%	+3%/-4%	+625%/-750%	+29%/-18%	+14%/-12%	+61%/-52%
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 010677186-01 / KOI 3595.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-4550 ± 25	$26.16^{+3.99}_{-2.66}$	590^{+45}_{-37}	3711^{+75}_{-96}	649^{+154}_{-151}
Alt.	-3500 ± 33	$27.41^{+4.69}_{-2.50}$	591^{+48}_{-35}	3496^{+72}_{-79}	452^{+97}_{-112}

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

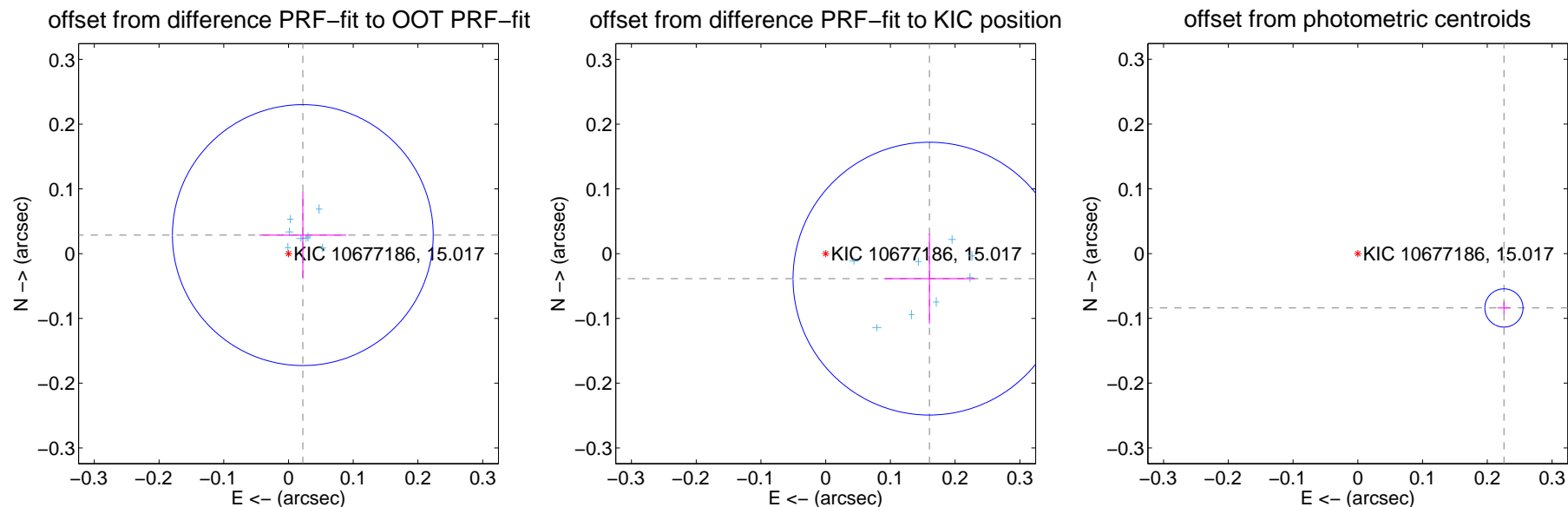
DV Centroid Data

Supplemental centroid analysis for 010677186-01. Kepler magnitude: 15.02. Transit SNR 1250.60

There are 8 quarters with good PRF difference image offsets

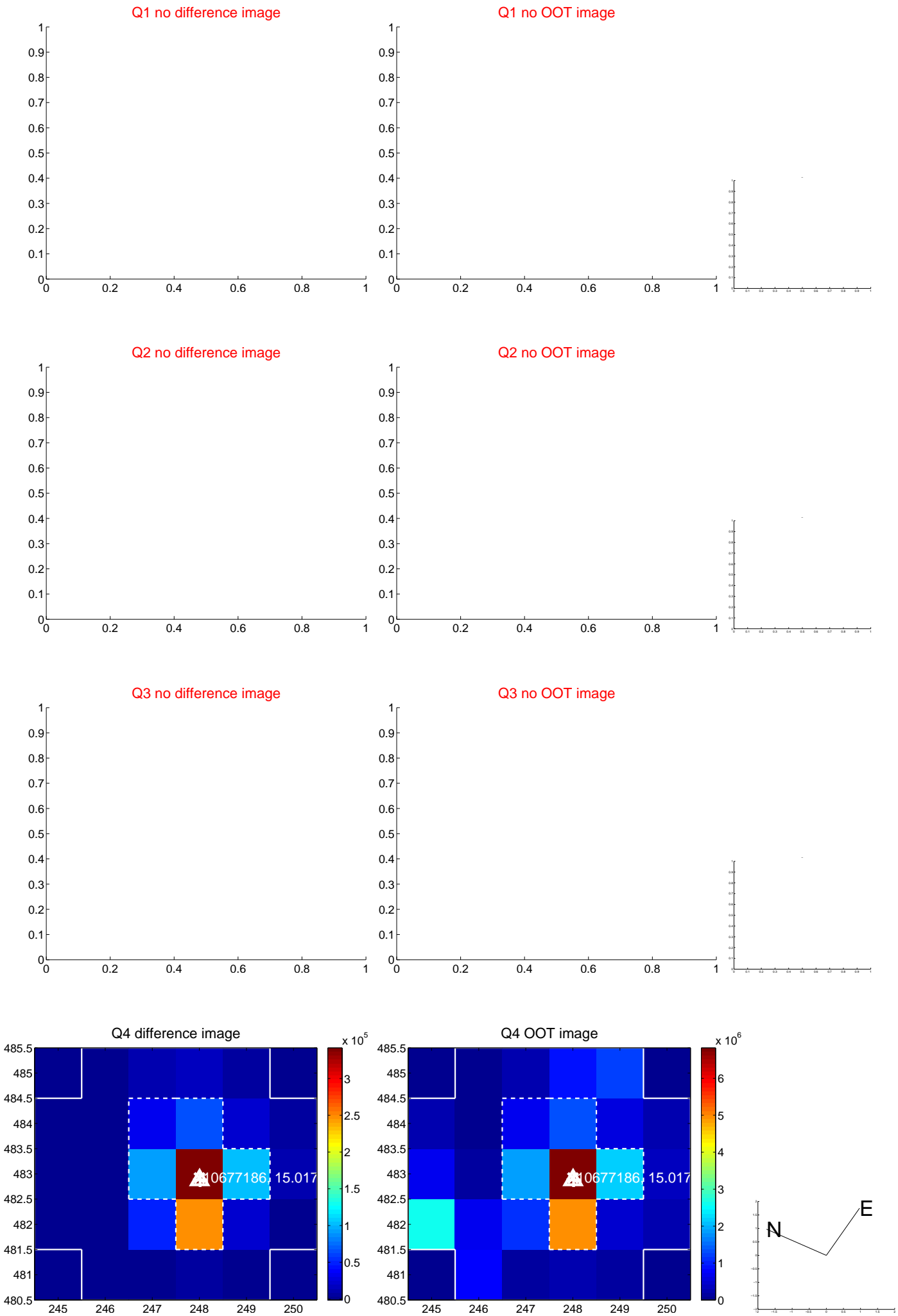
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.036 ± 0.067	0.54	-0.022 ± 0.067	0.029 ± 0.067
PRF-fit source offset from KIC position	0.165 ± 0.070	2.35	-0.160 ± 0.070	-0.039 ± 0.070
photometric centroid source offset	0.24 ± 0.01	24.47	-0.23 ± 0.01	-0.08 ± 0.01

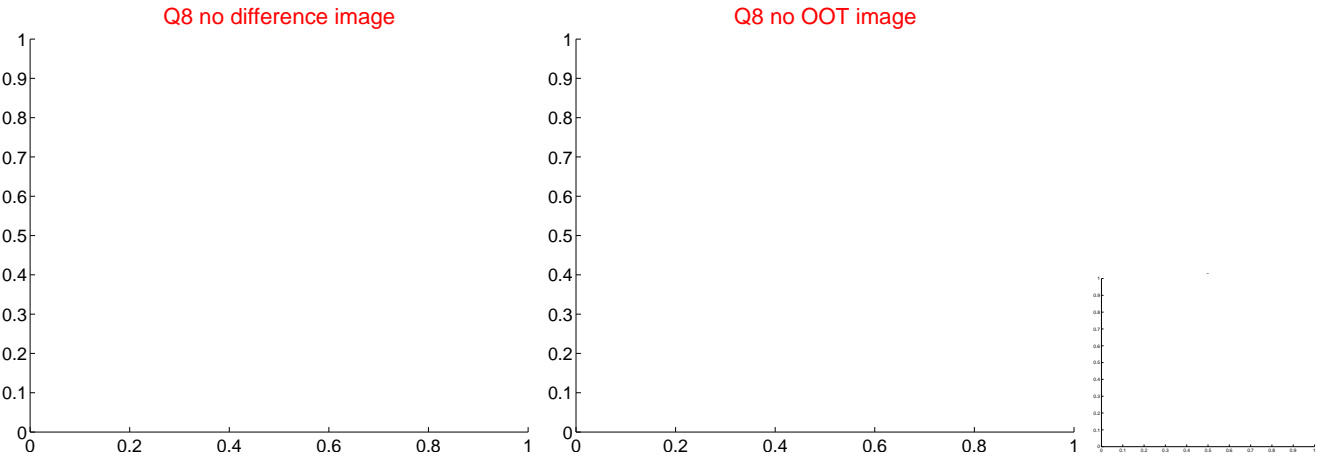
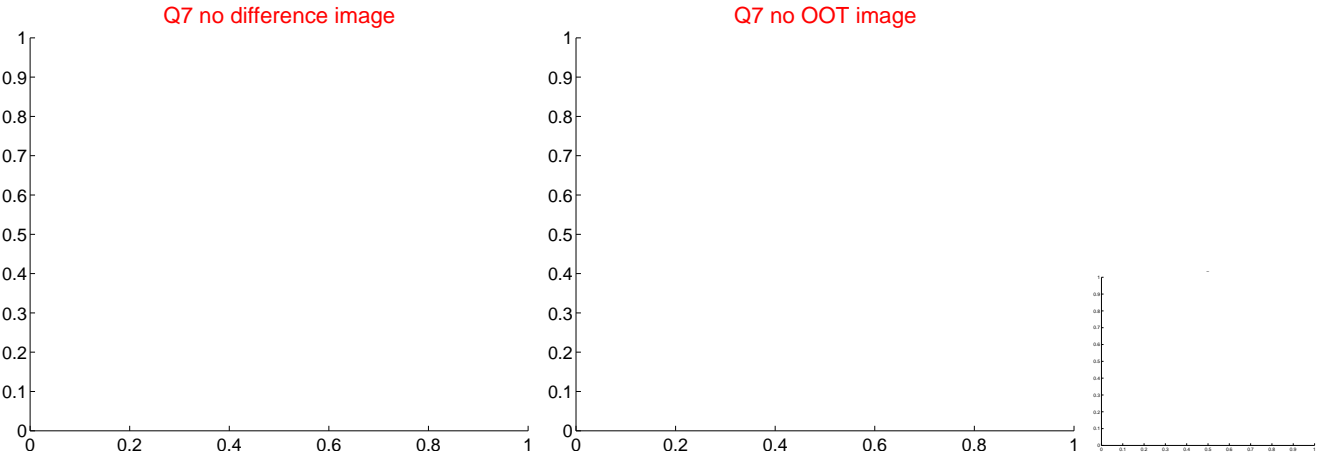
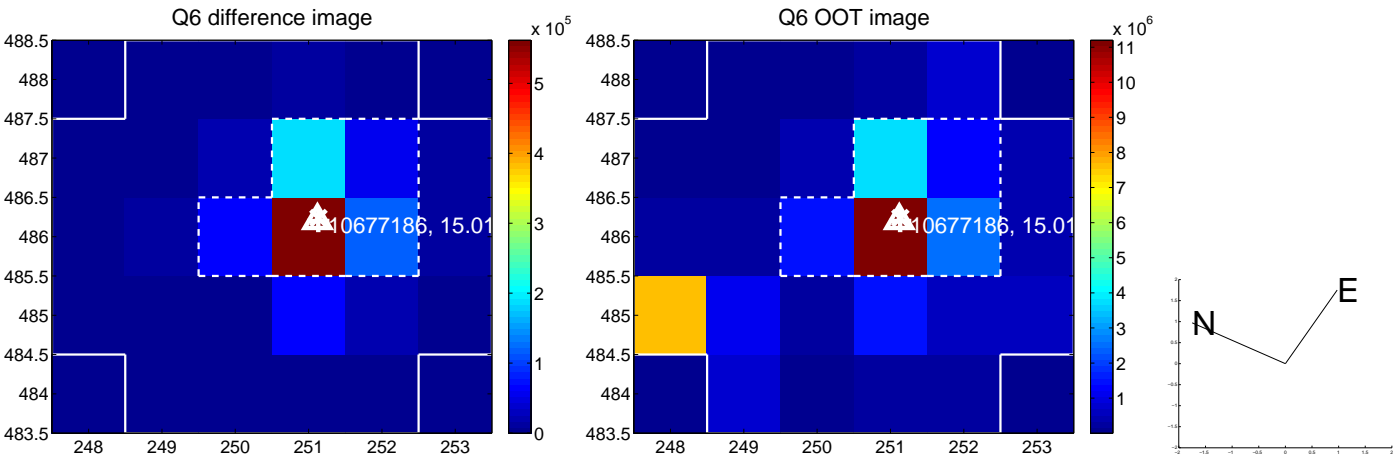
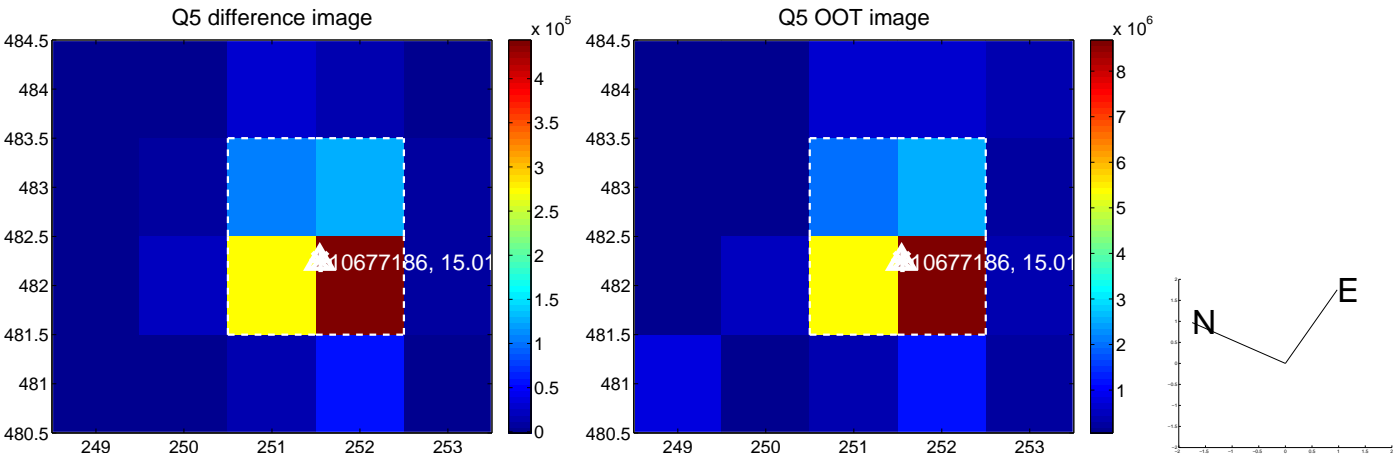


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

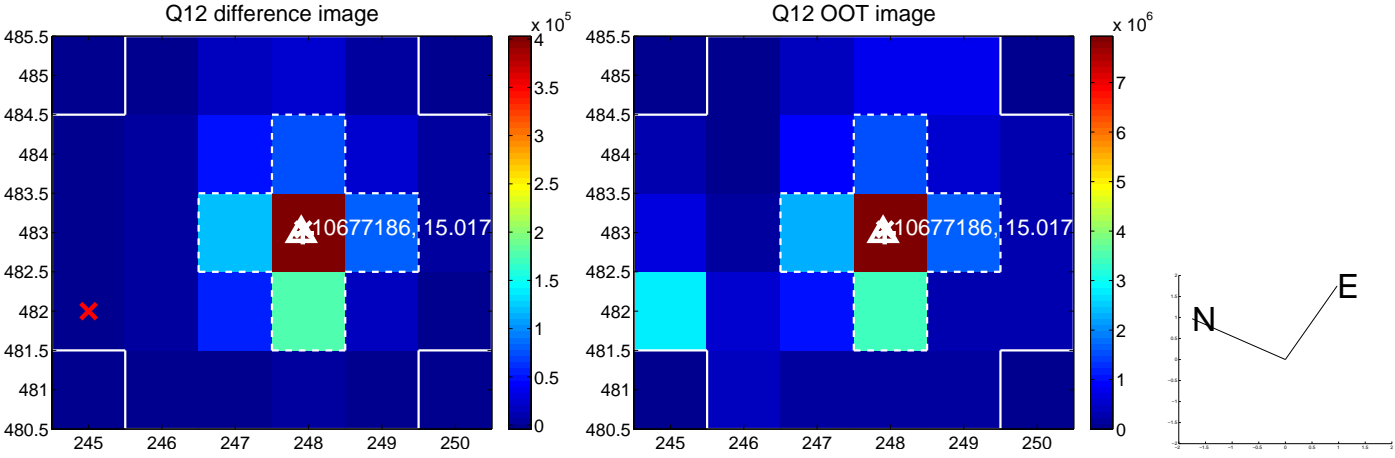
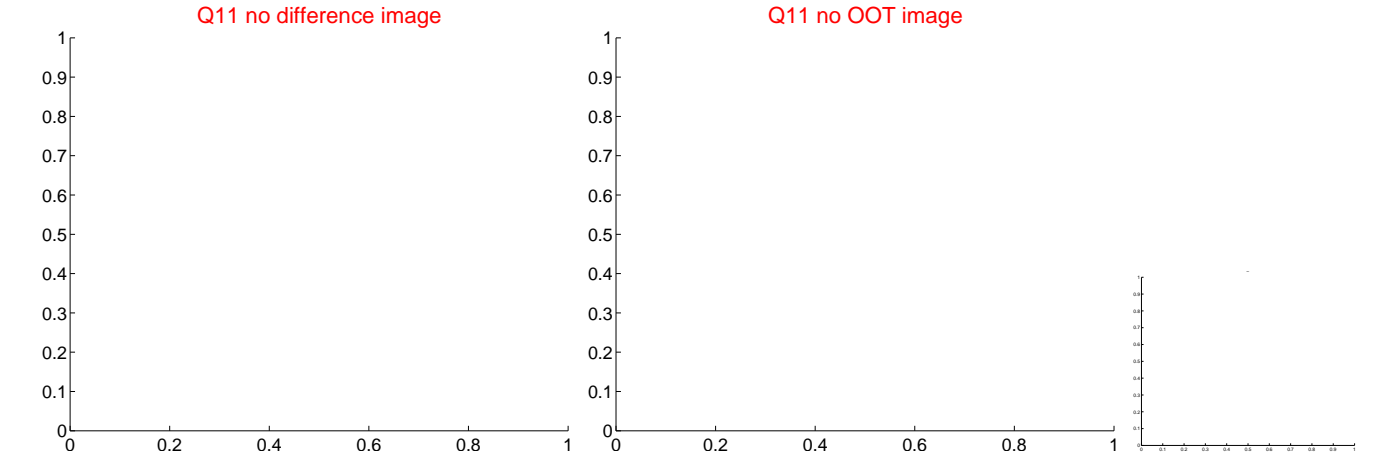
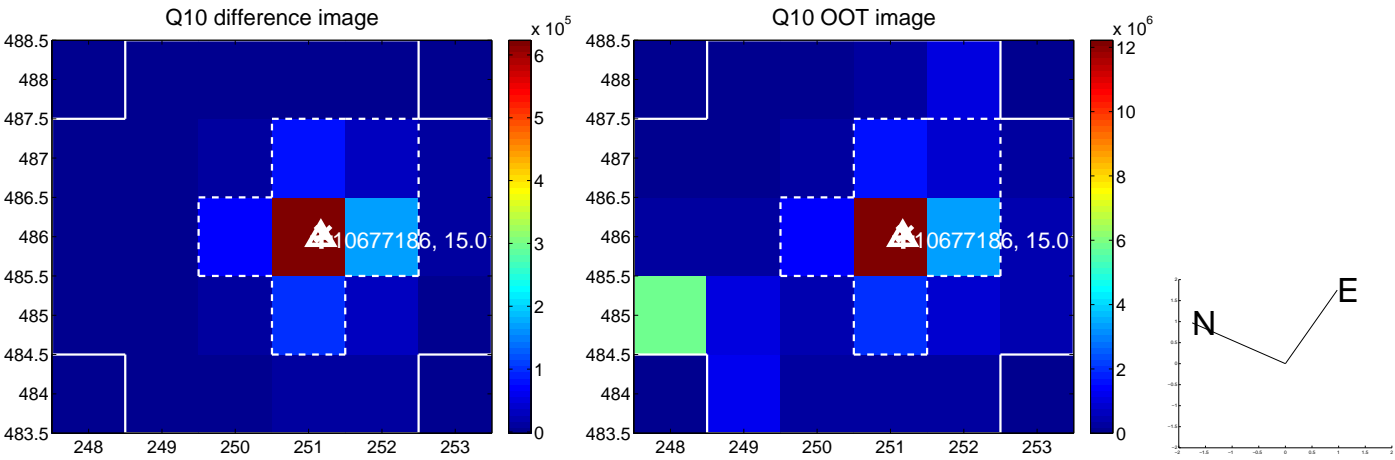
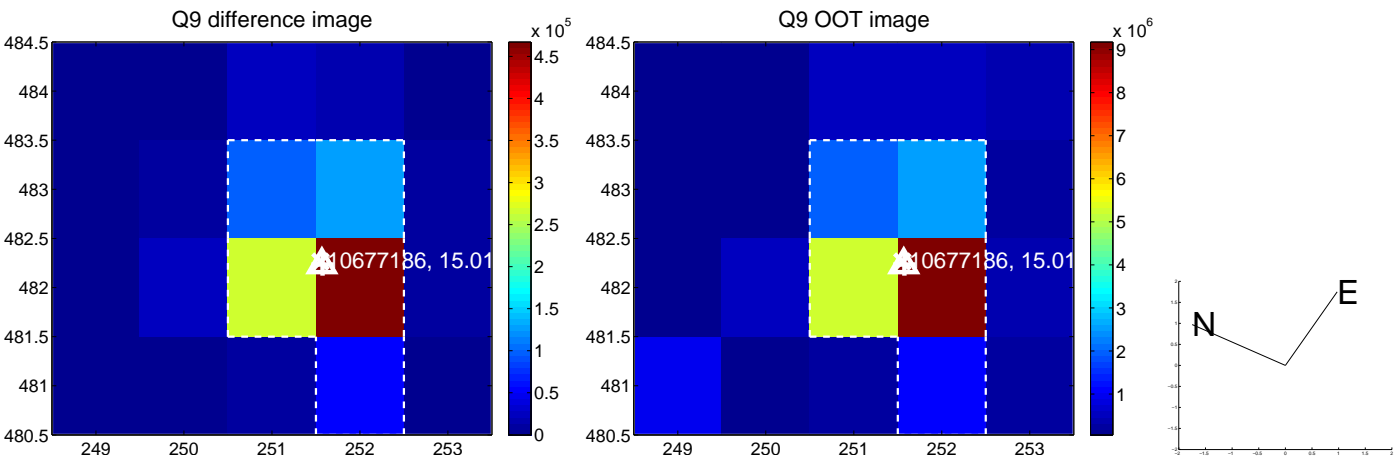
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

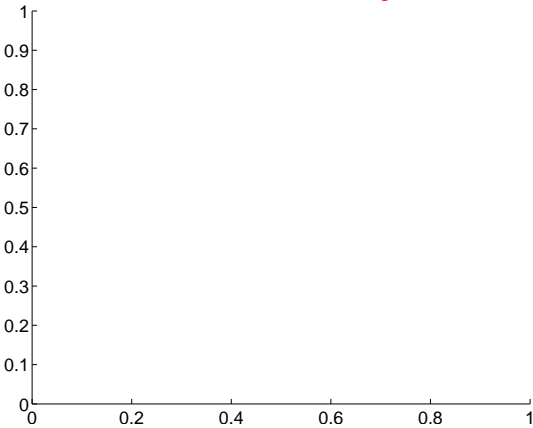


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

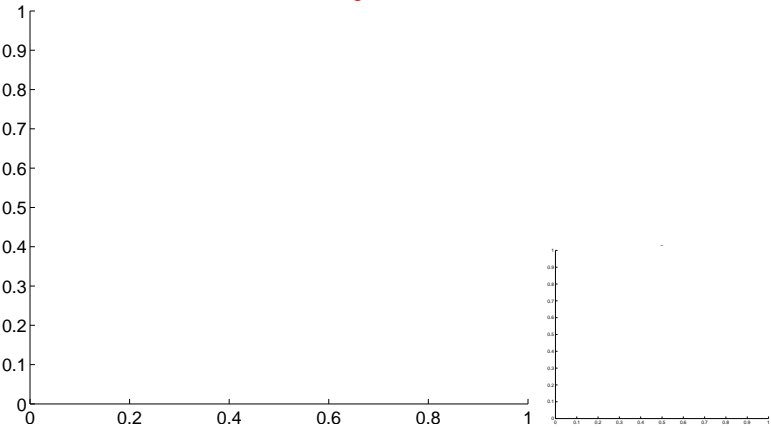


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

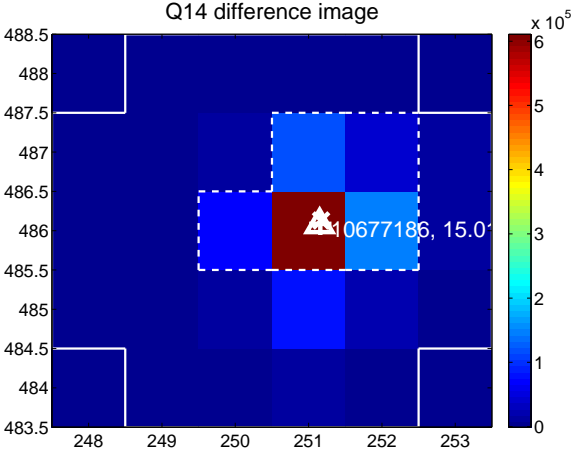
Q13 no difference image



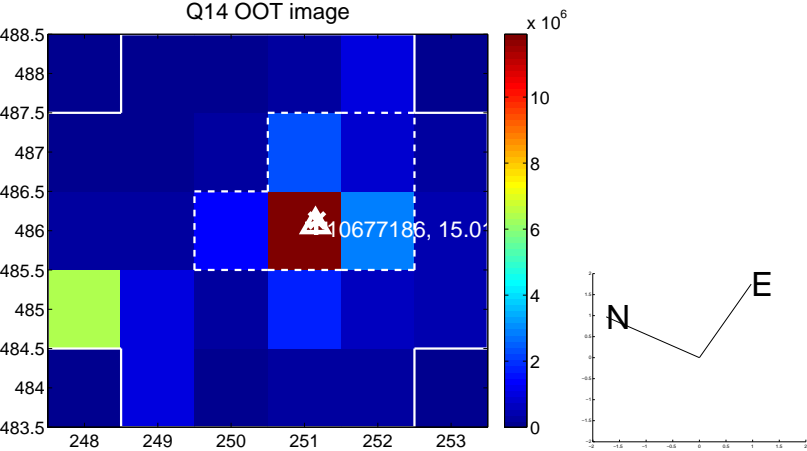
Q13 no OOT image



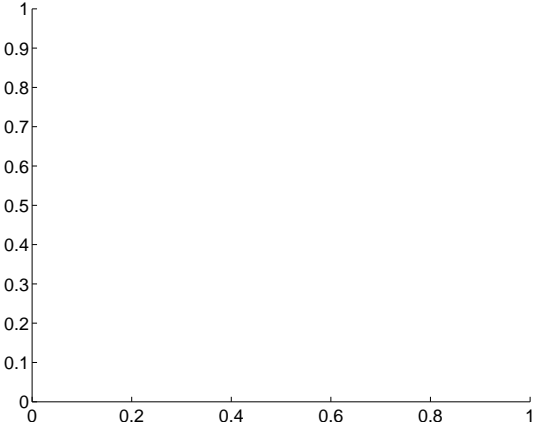
Q14 difference image



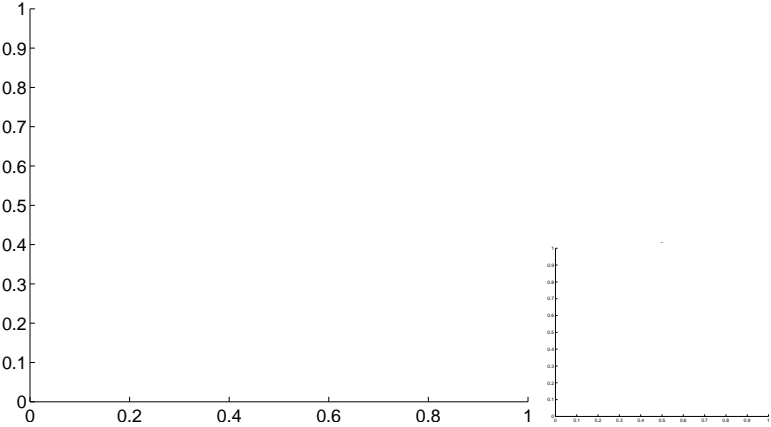
Q14 OOT image



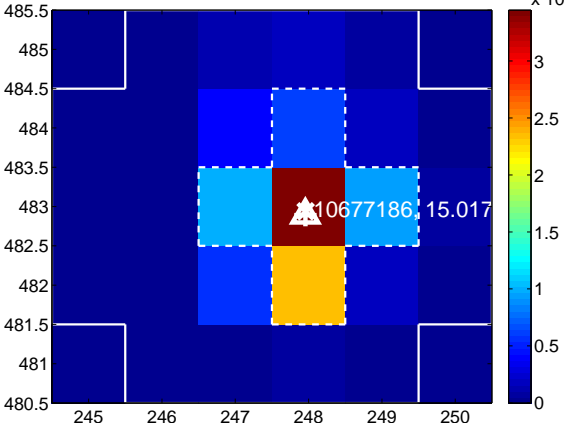
Q15 no difference image



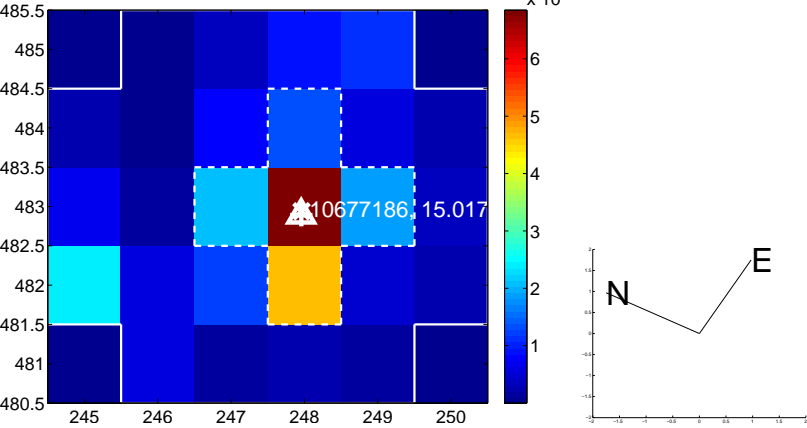
Q15 no OOT image



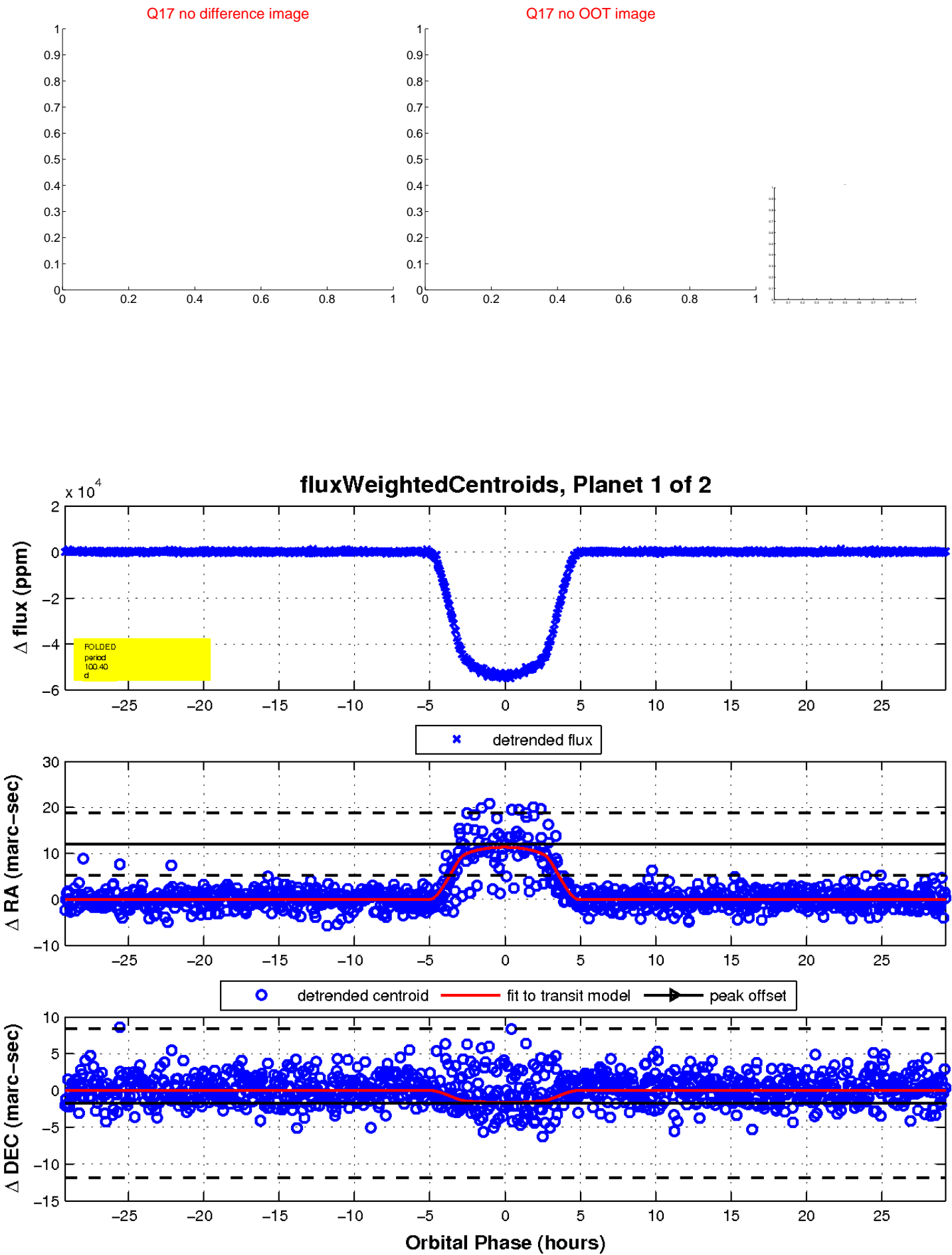
Q16 difference image



Q16 OOT image

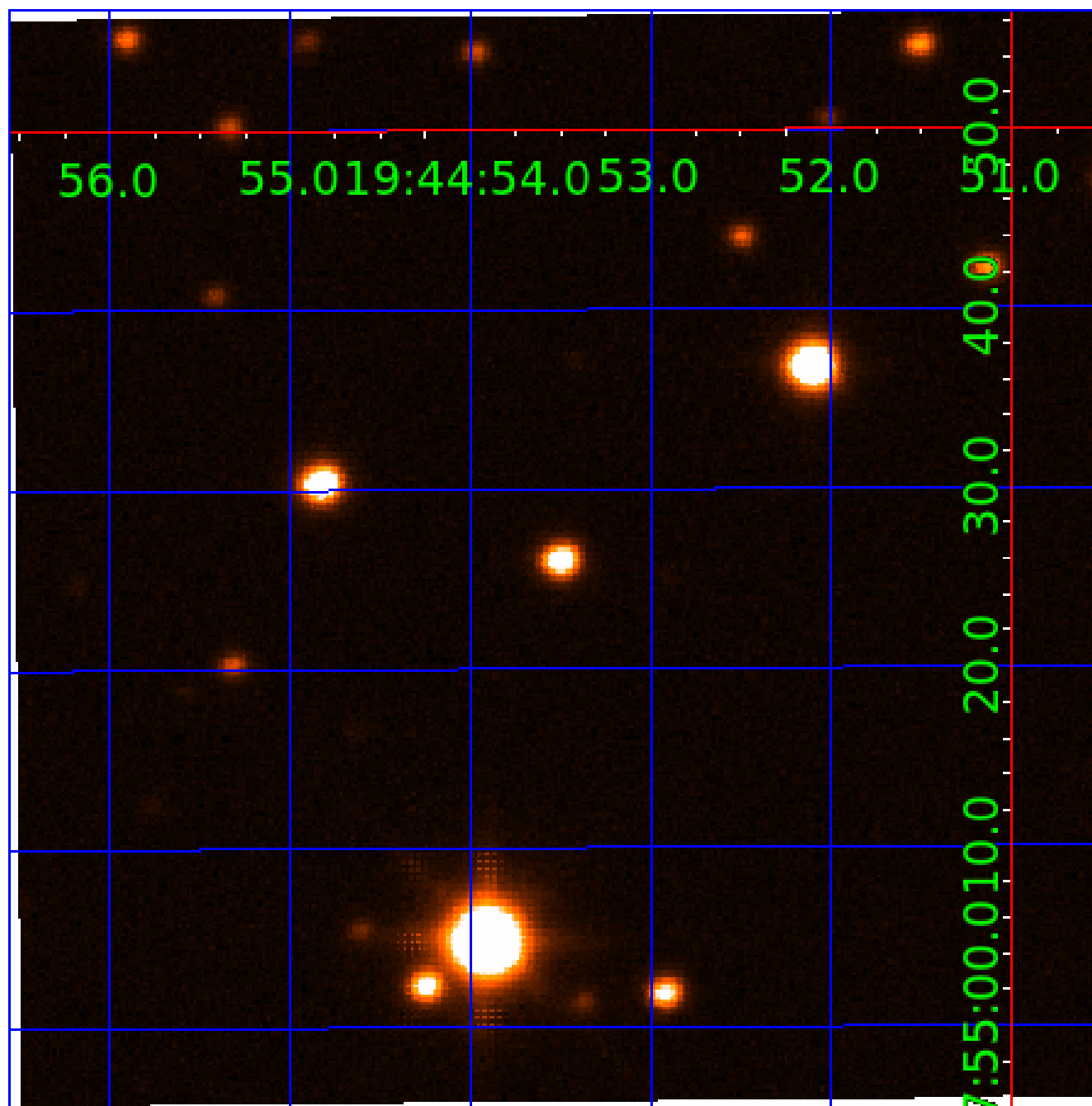


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010677186

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})
010677186-01	OBS	3595.01	100.401310	216.083278	53817.7	9.751	1430.8	1250.6	1.10	5903	26.05	7.39
010677186-02	OBS	No	100.400391	182.696279	4252.3	18.121	126.7	122.2	1.10	5903	8.46	7.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010677186-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
010677186-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

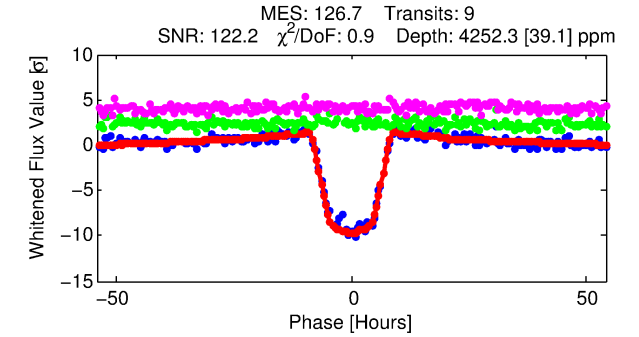
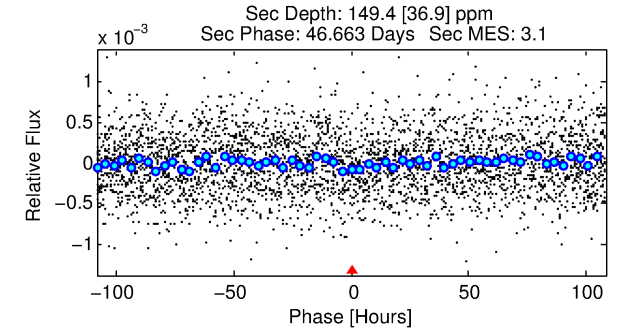
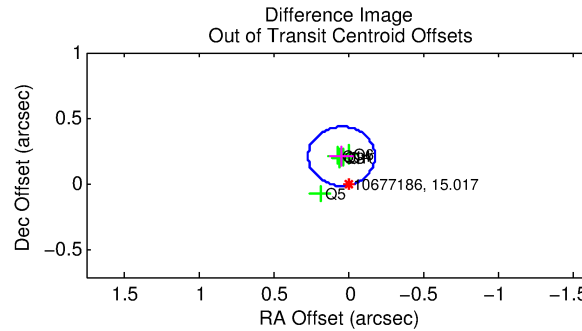
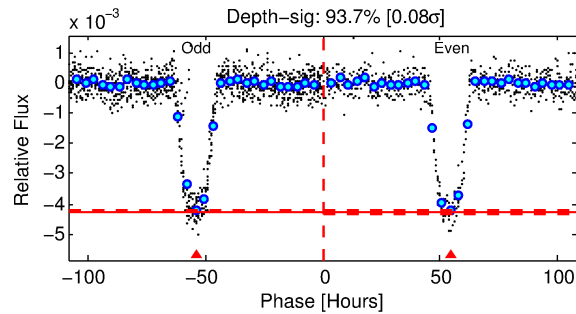
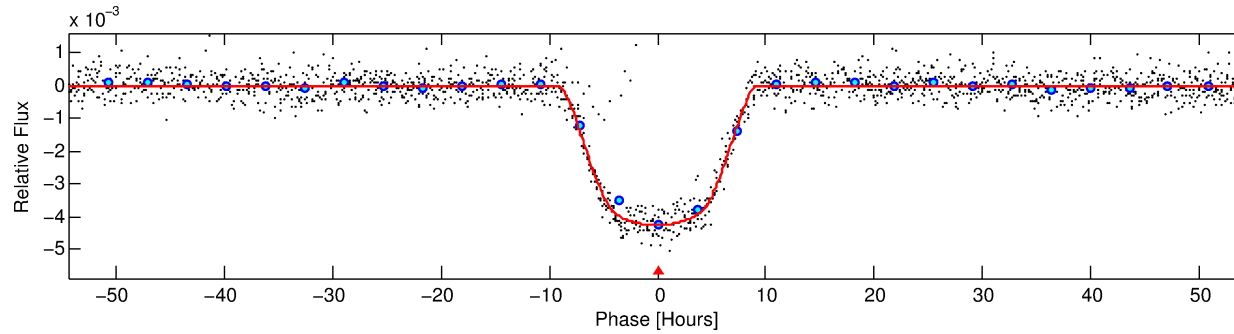
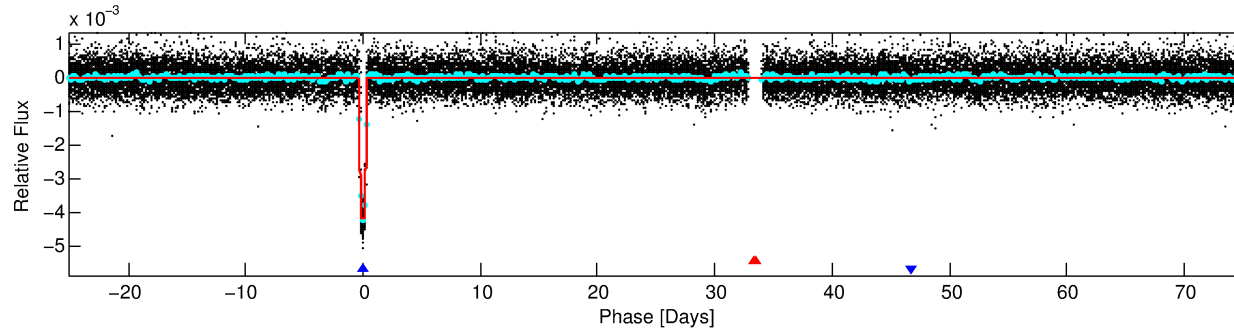
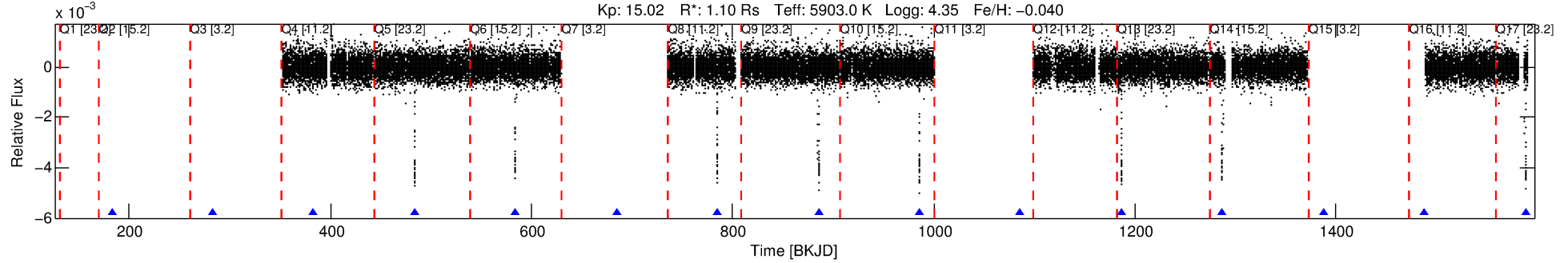
Ephemeris Match Information For 010677186-02

No Significant Match Found

DV One-Page Summary

KIC: 10677186 Candidate: 2 of 2 Period: 100.400 d
KOI: K03595 Corr: No Ephemeris Match

Kp: 15.02 R*: 1.10 Rs Teff: 5903.0 K Logg: 4.35 Fe/H: -0.040



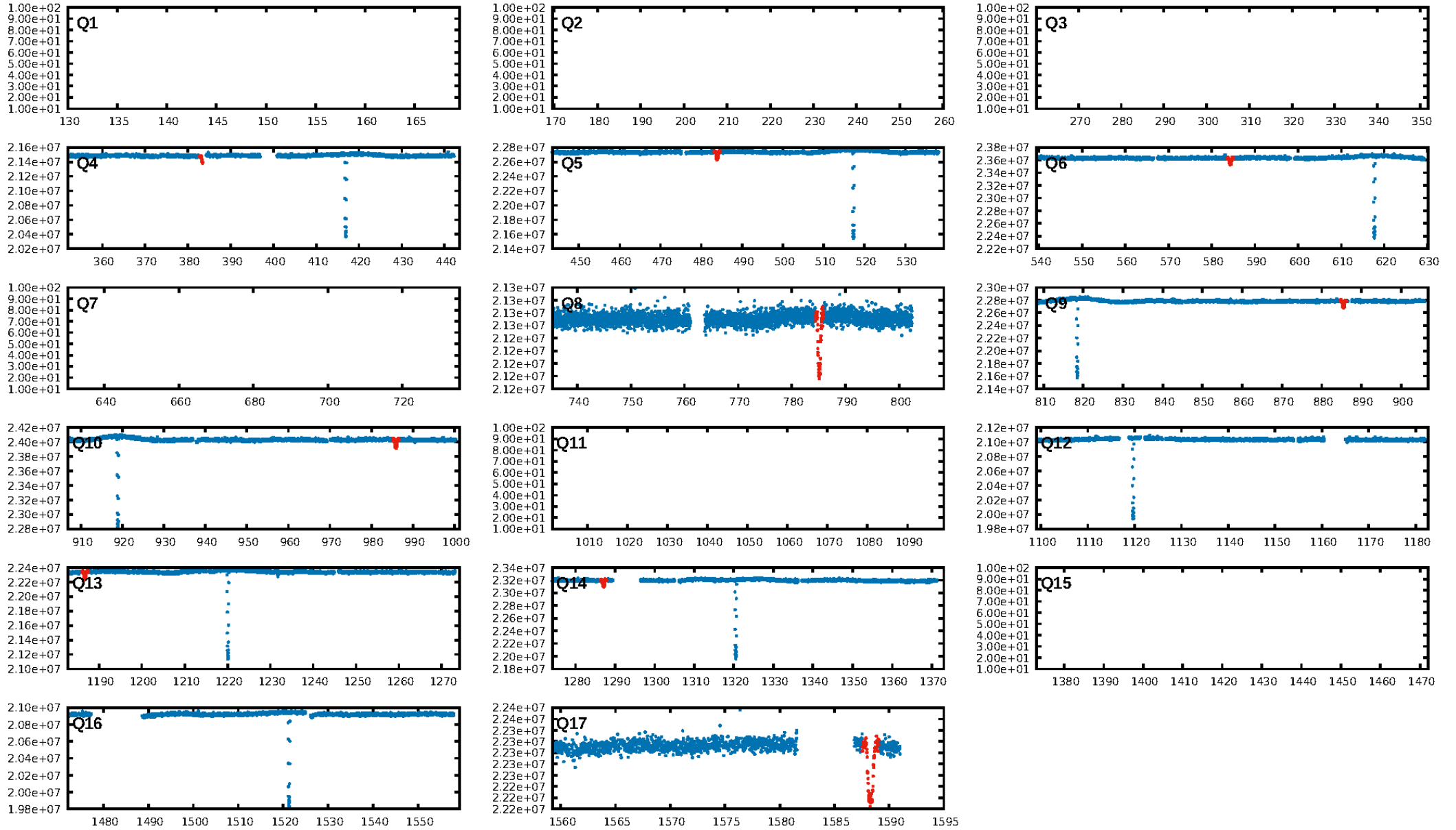
DV Fit Results:

Period = 100.40039 [0.00043] d
Epoch = 182.6963 [0.0036] BKJD
Rp/R* = 0.0704 [0.0005]
a/R* = 25.15 [0.45]
b = 0.89 [0.00]
Seff = 7.39 [2.81]
Teq = 420 [40] K
Rp = 8.45 [2.48] Re
a = 0.4221 [0.1032] AU
Ag = 204.85 [88.35] [2.31σ]
Teffp = 2459 [174] K [11.40σ]

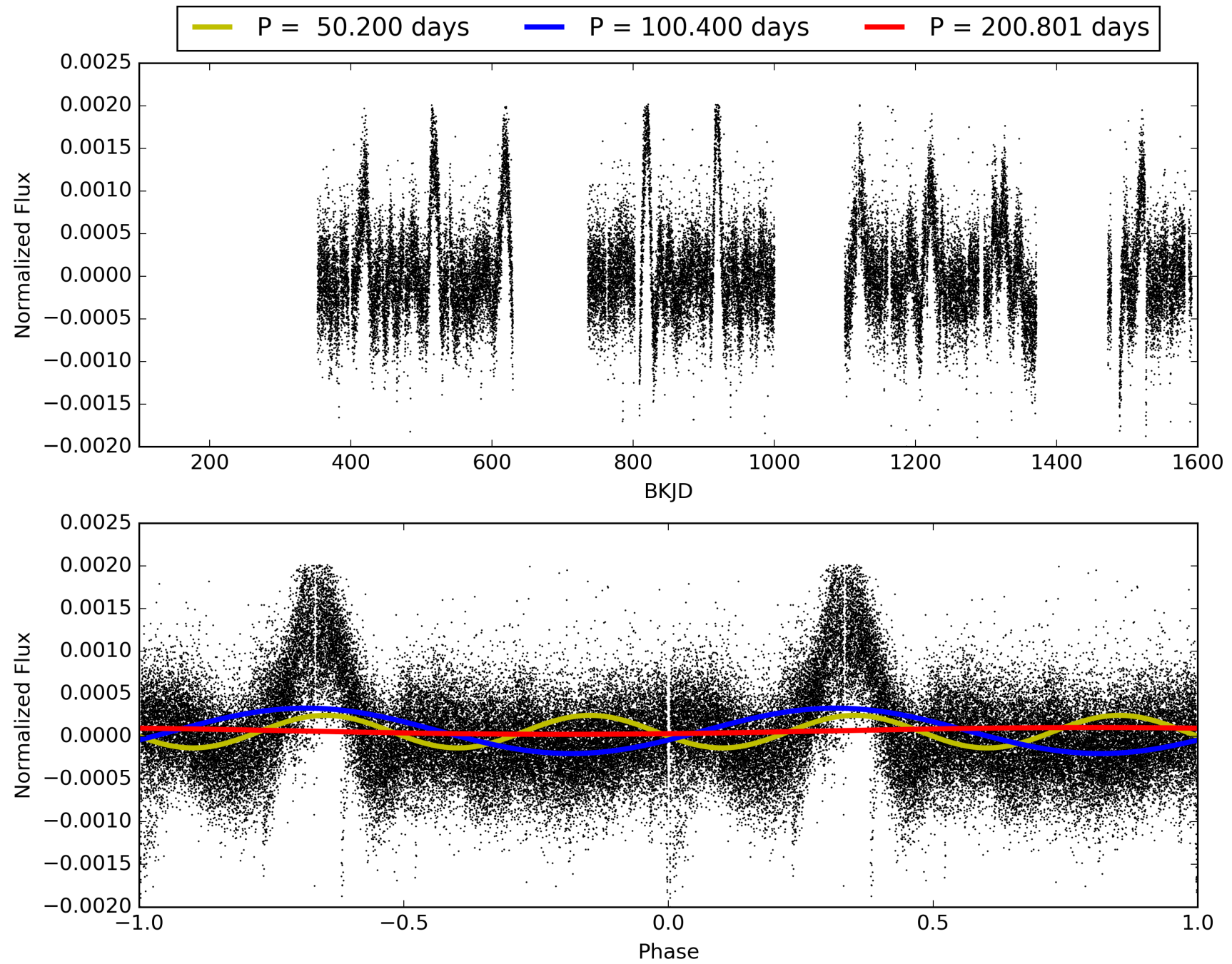
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: 16.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 5.272
Centroid-sig: 77.1%
Centroid-so: 0.153 arcsec [1.70σ]
OotOffset-rm: 0.217 arcsec [2.91σ]
OotOffset-st: 3/0/1/1 [5]
KicOffset-rm: 0.188 arcsec [2.12σ]
KicOffset-st: 3/0/1/1 [5]
DiffImageQuality-fgm: 1.00 [5/5]
DiffImageOverlap-fno: 1.00 [5/5]

TCE 010677186-02, PDC Light Curves

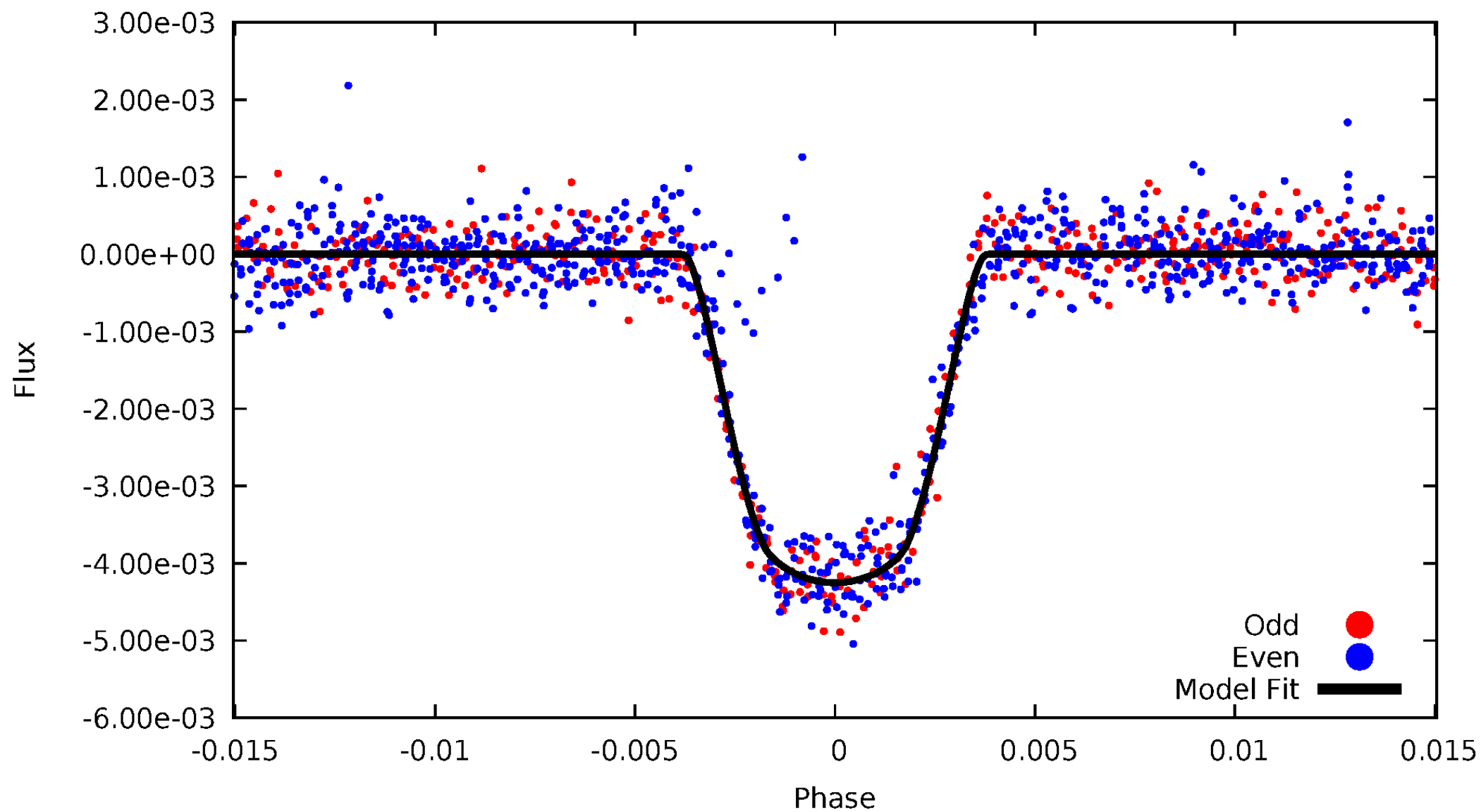


TCE 010677186-02



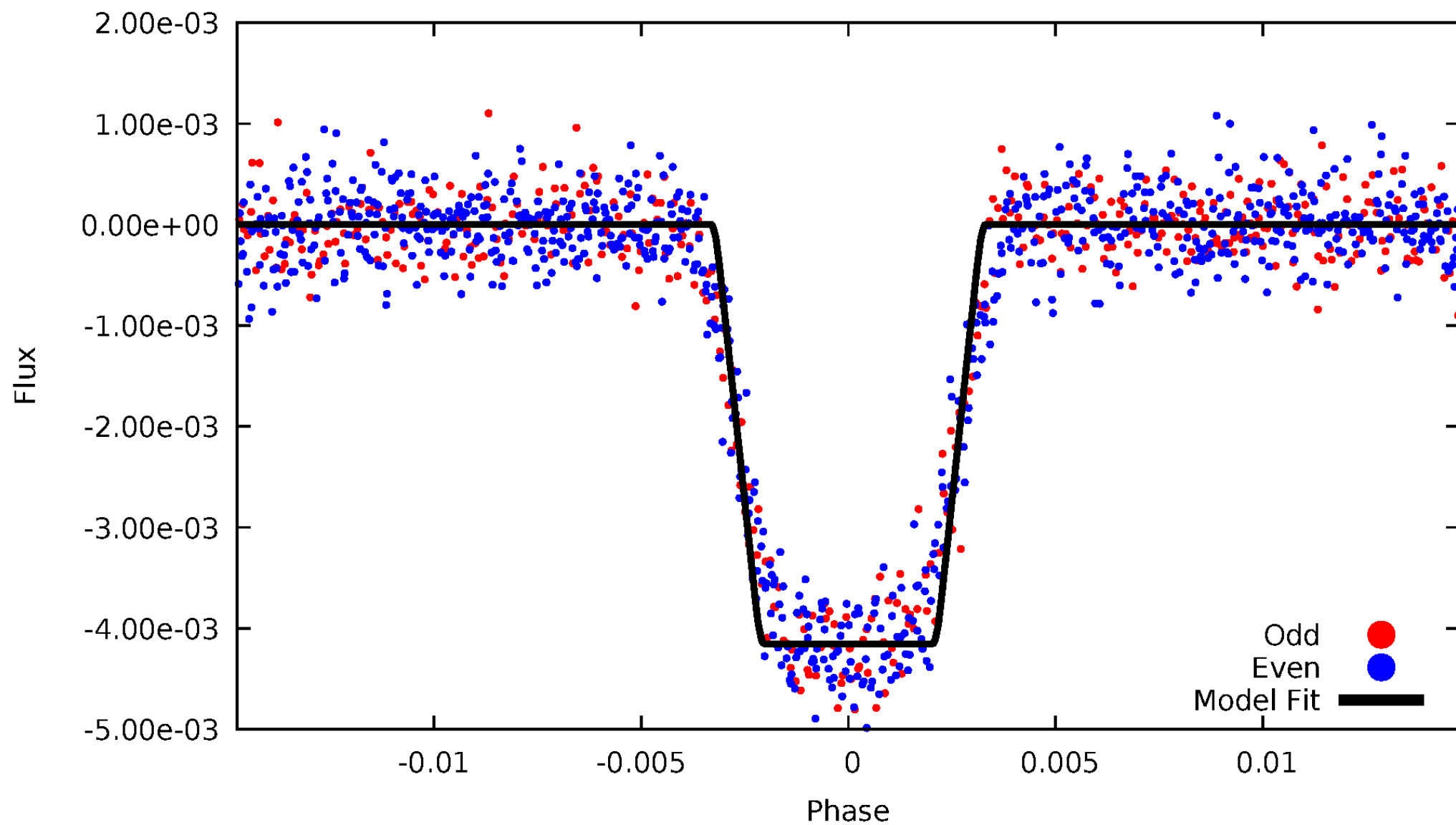
DV Odd/Even

TCE 010677186-02



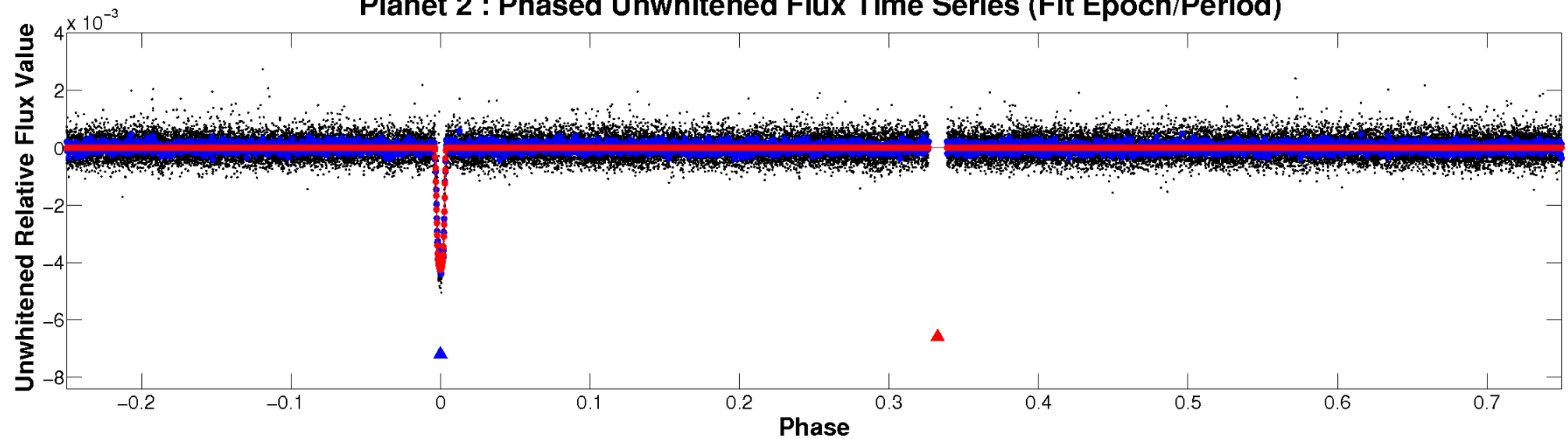
ALT Odd/Even

TCE 010677186-02

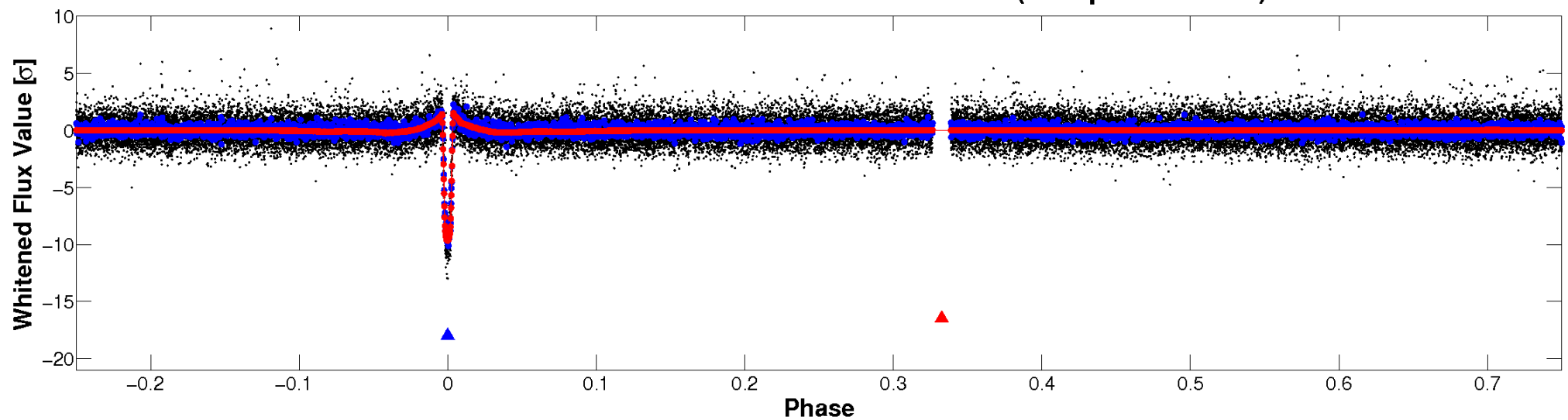


Non-Whitened Vs. Whitened Light Curve

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

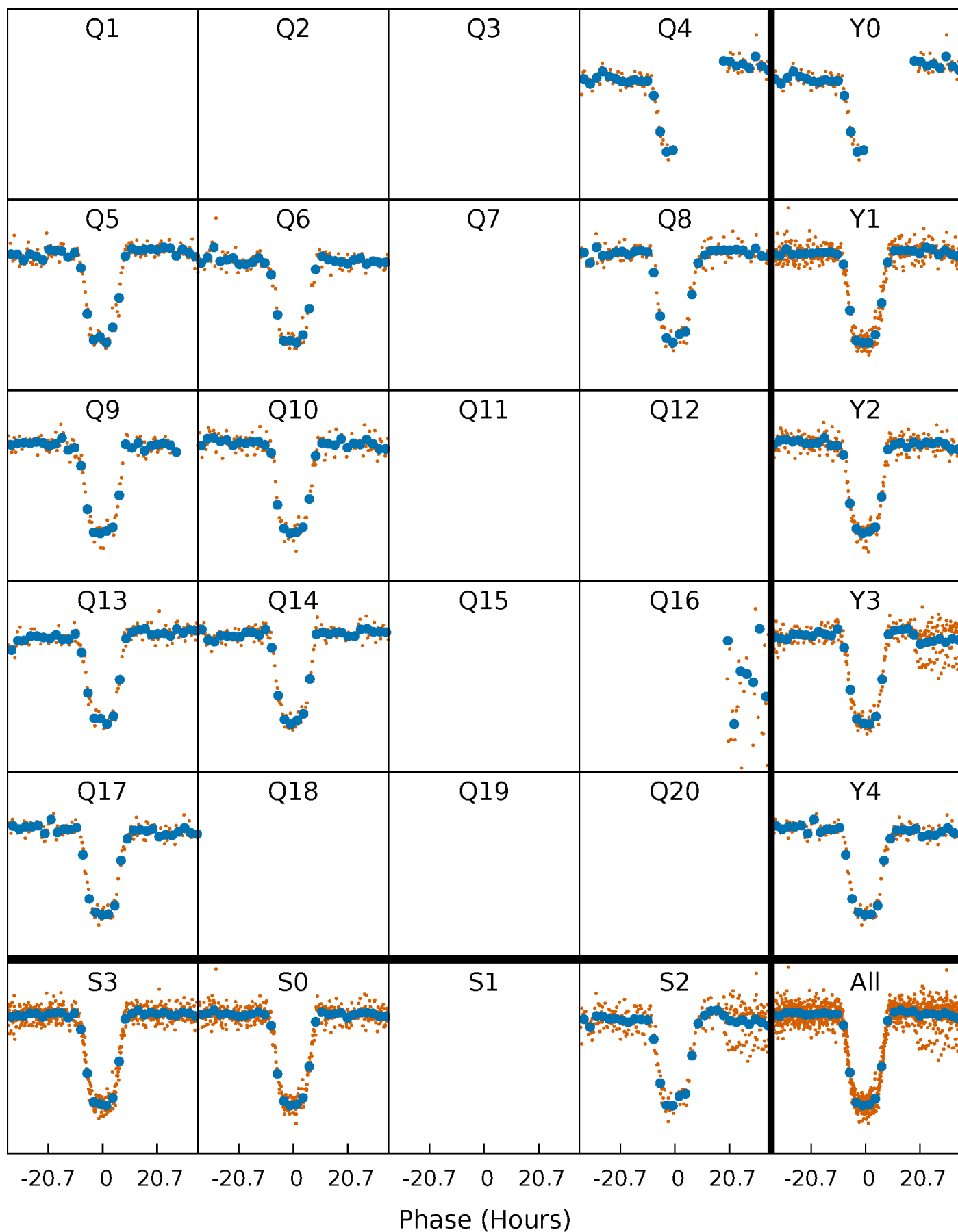


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



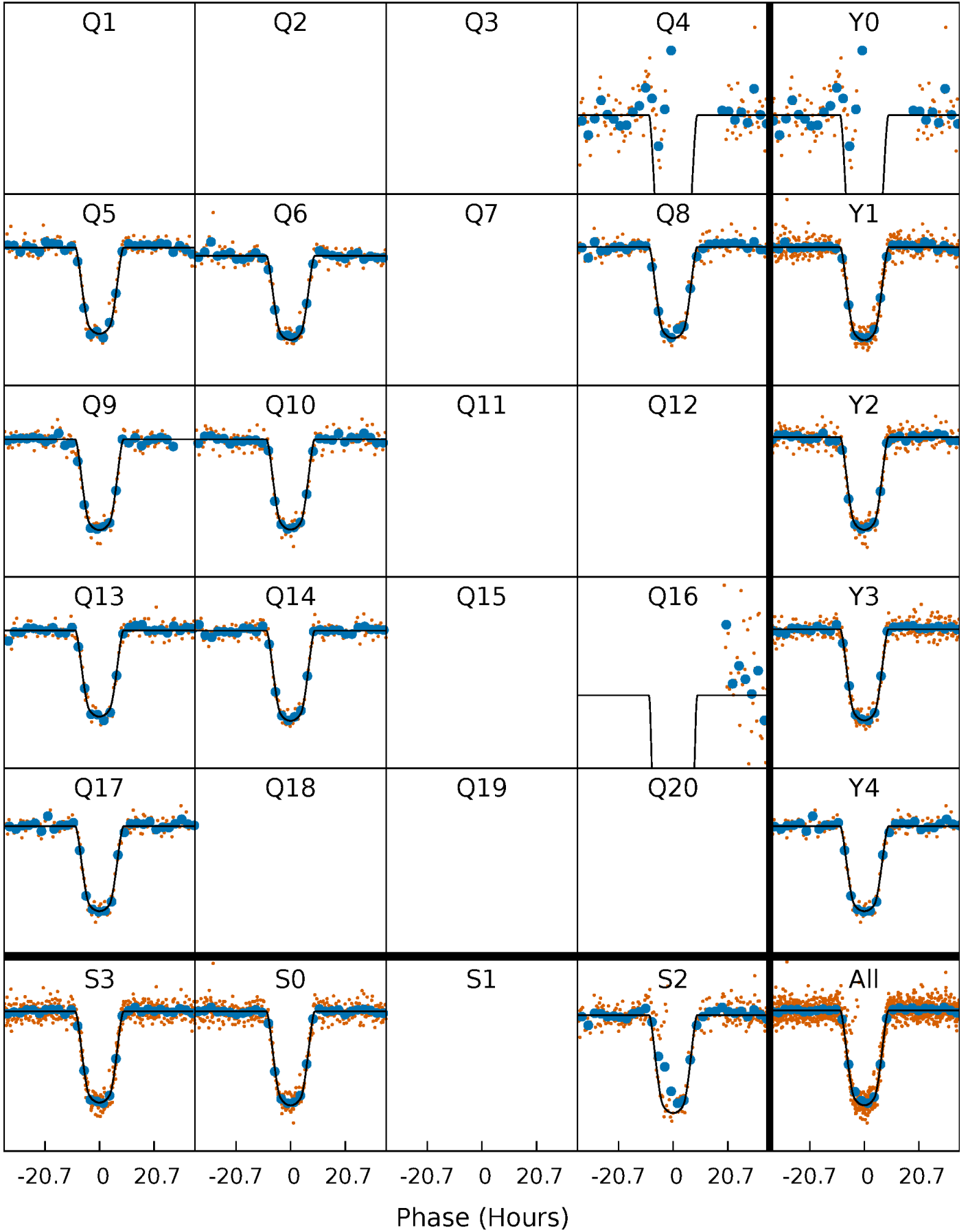
PDC Quarter-Phased Transit Curves

TCE 010677186-02 P=100.400391 Days $T_0=182.696279$ (BKJD)



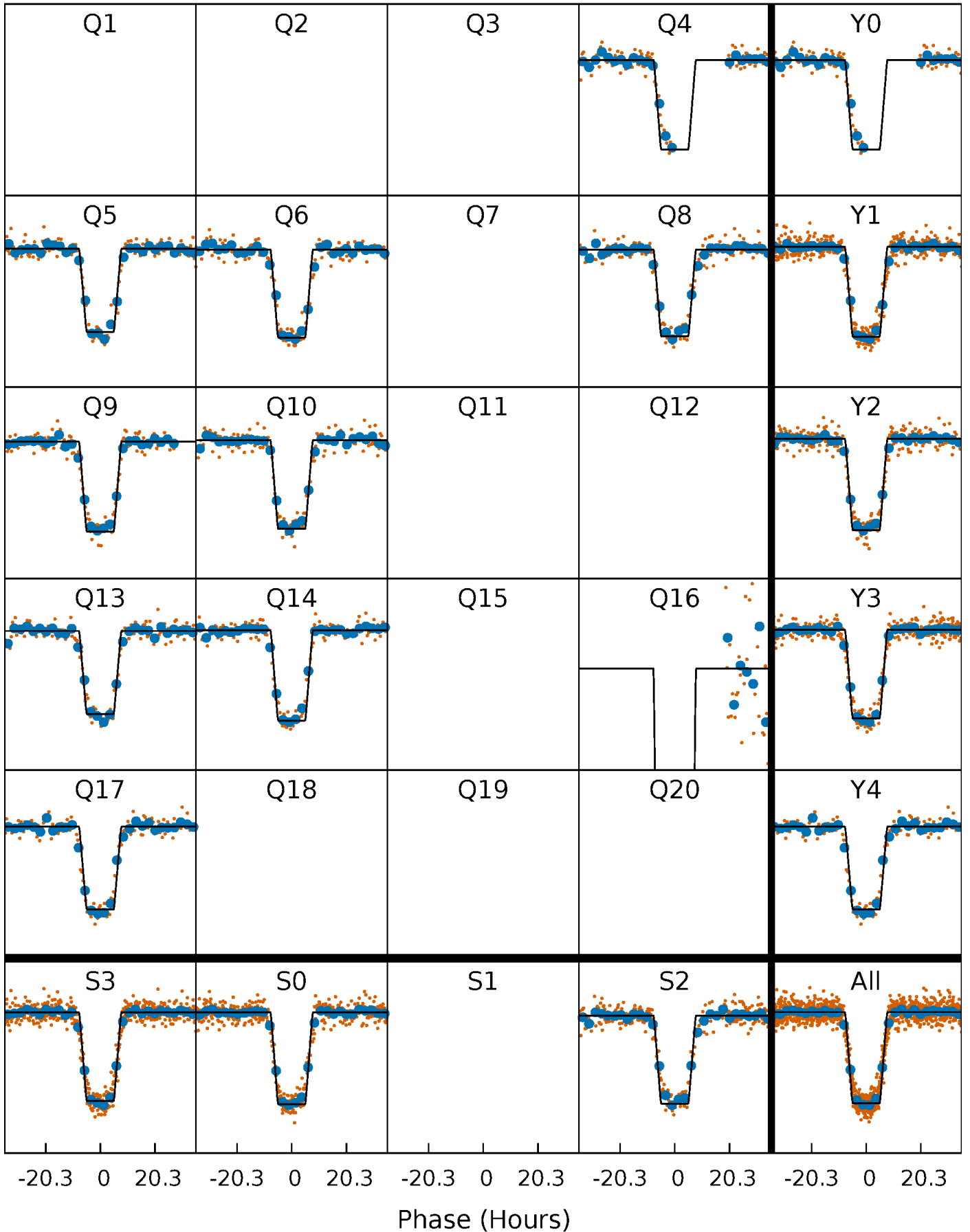
DV Quarter-Phased Transit Curves

TCE 010677186-02 $P=100.400391$ Days $T_0=182.696279$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

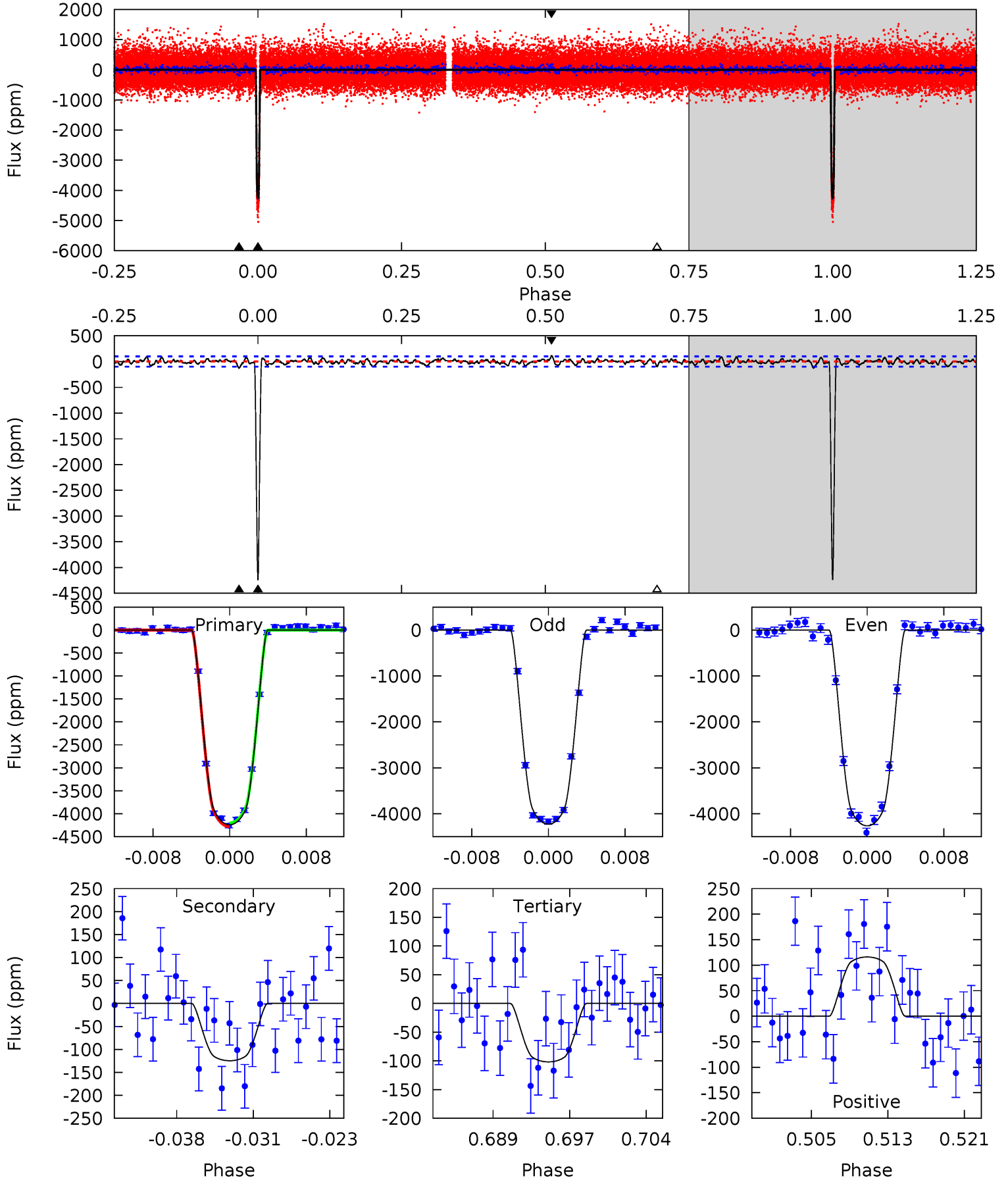
TCE 010677186-02 P=100.403703 Days $T_0=182.670754$ (BKJD)



DV Model-Shift Uniqueness Test

010677186-02, P = 100.400391 Days, E = 182.696279 Days

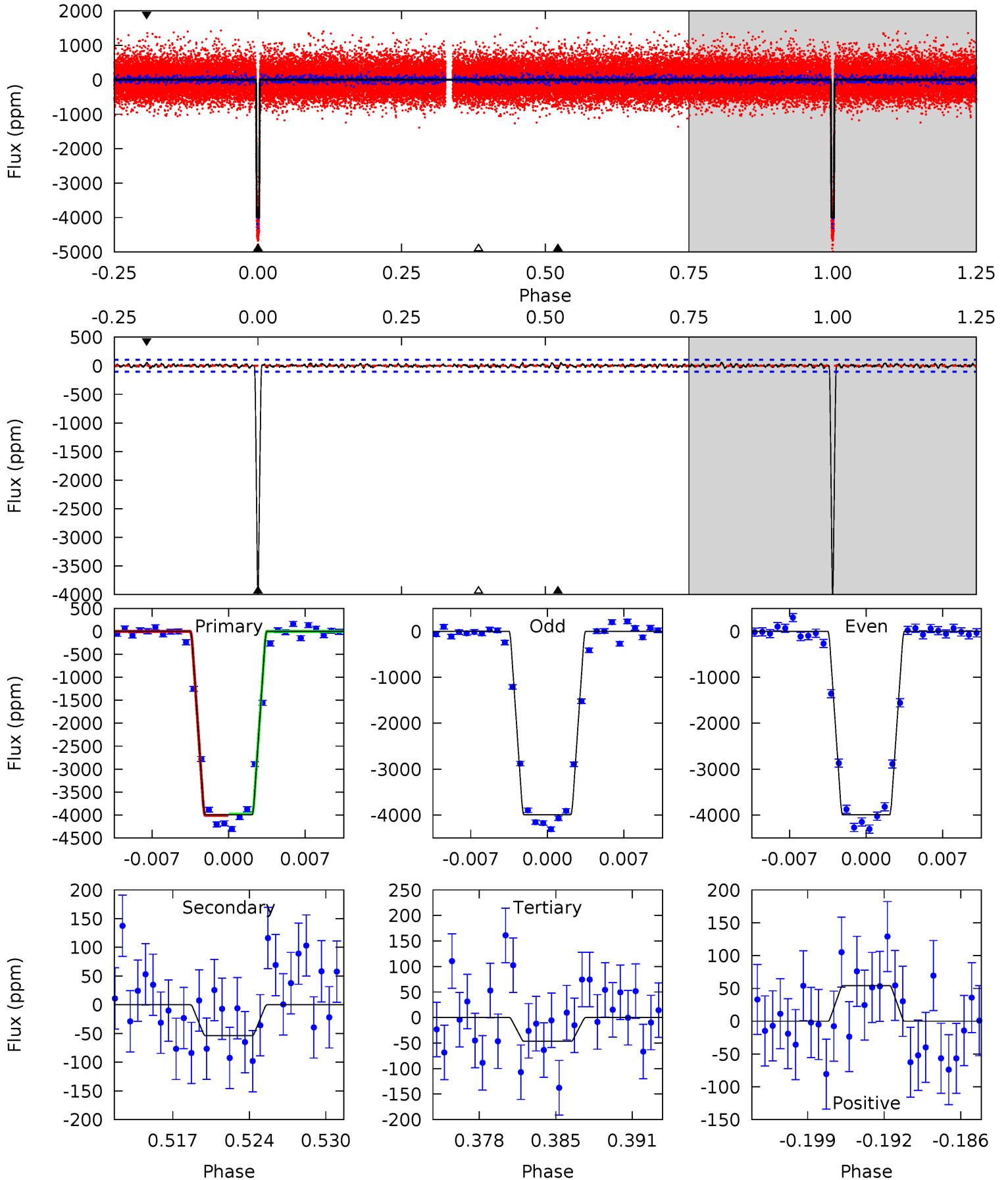
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
214.2	6.30	5.14	5.86	5.08	2.67	1.66	209.0	208.3	1.16	0.43	0.89	0.89	0.03	2.05



Alt Model-Shift Uniqueness Test

010677186-02, P = 100.403703 Days, E = 182.670754 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
195.8	2.63	2.29	2.65	5.10	2.71	0.78	193.5	193.2	0.34	-0.02	0.09	1.00	0.01	0.71



Stellar Parameters For KIC 010677186

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5903^{+184}_{-205}	$4.353^{+0.128}_{-0.192}$	$-0.040^{+0.250}_{-0.300}$	$1.100^{+0.322}_{-0.198}$	$0.995^{+0.140}_{-0.115}$	$1.054^{+0.645}_{-0.544}$
	+3%/-3%	+3%/-4%	+625%/-750%	+29%/-18%	+14%/-12%	+61%/-52%
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 010677186-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-125 ± 20	$8.54^{+1.42}_{-0.89}$	592^{+44}_{-39}	3010^{+89}_{-95}	163^{+52}_{-44}
Alt.	-54 ± 20	$7.74^{+1.24}_{-0.69}$	589^{+45}_{-33}	2750^{+125}_{-179}	83^{+41}_{-33}

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

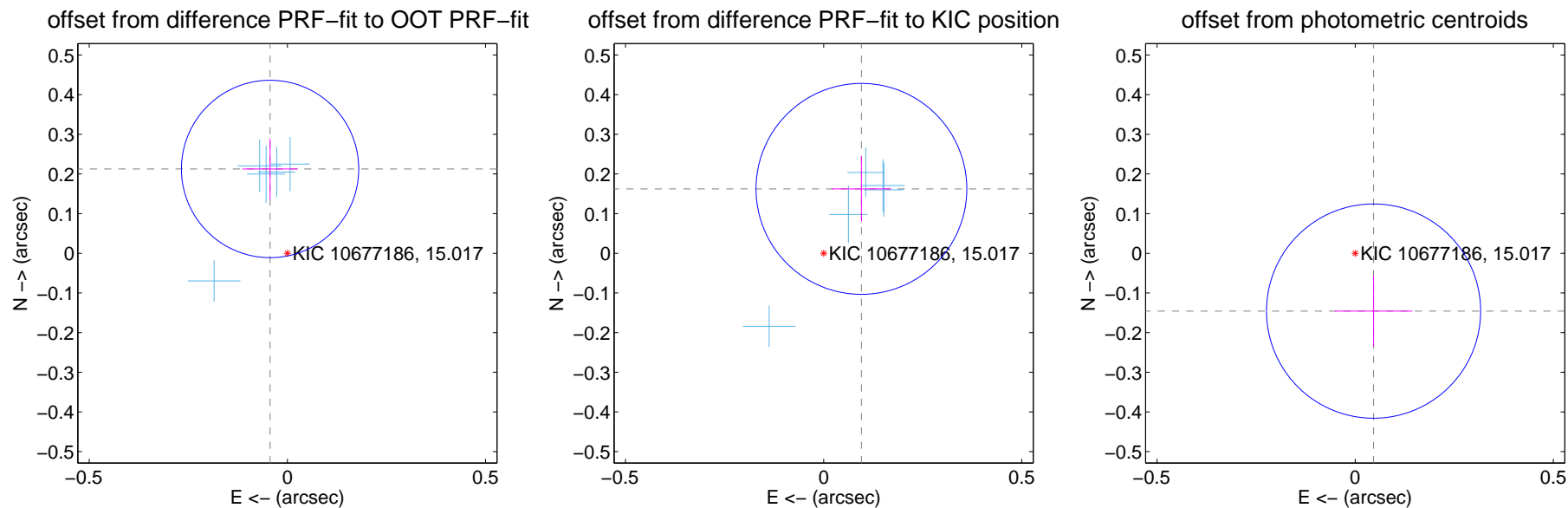
DV Centroid Data

Supplemental centroid analysis for 010677186-02. Kepler magnitude: 15.02. Transit SNR 122.16

There are 5 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.217 ± 0.075	2.91	0.044 ± 0.070	0.213 ± 0.077
PRF-fit source offset from KIC position	0.188 ± 0.089	2.12	-0.095 ± 0.075	0.162 ± 0.083
photometric centroid source offset	0.15 ± 0.09	1.70	-0.05 ± 0.10	-0.15 ± 0.09

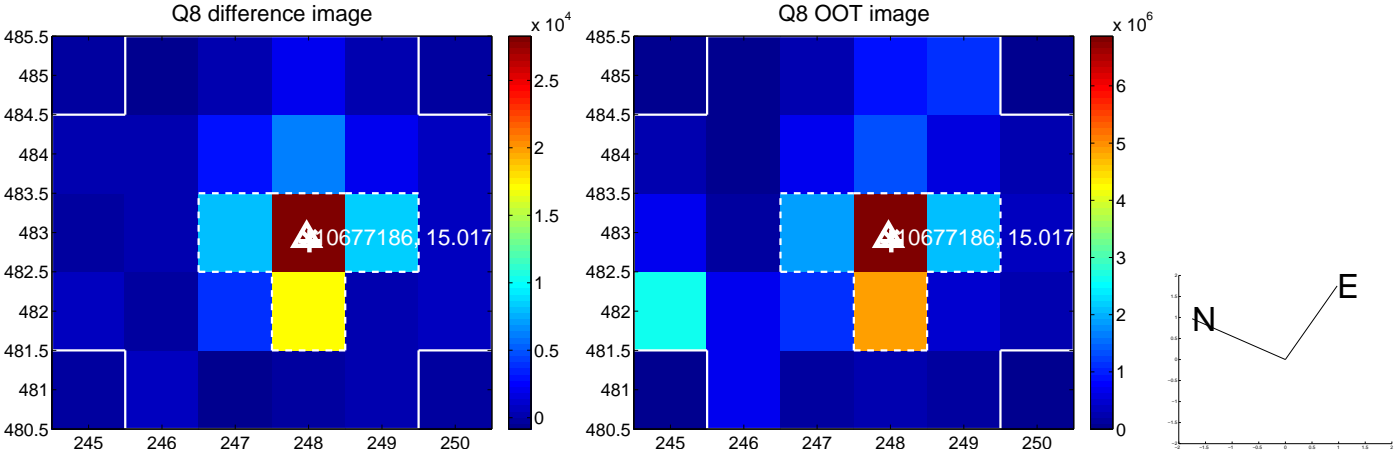
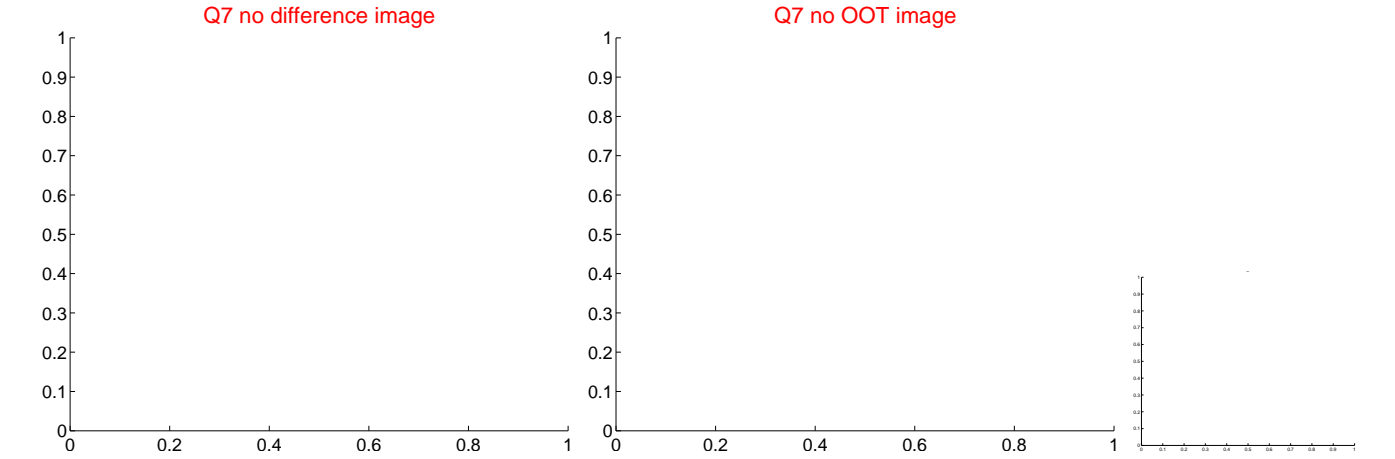
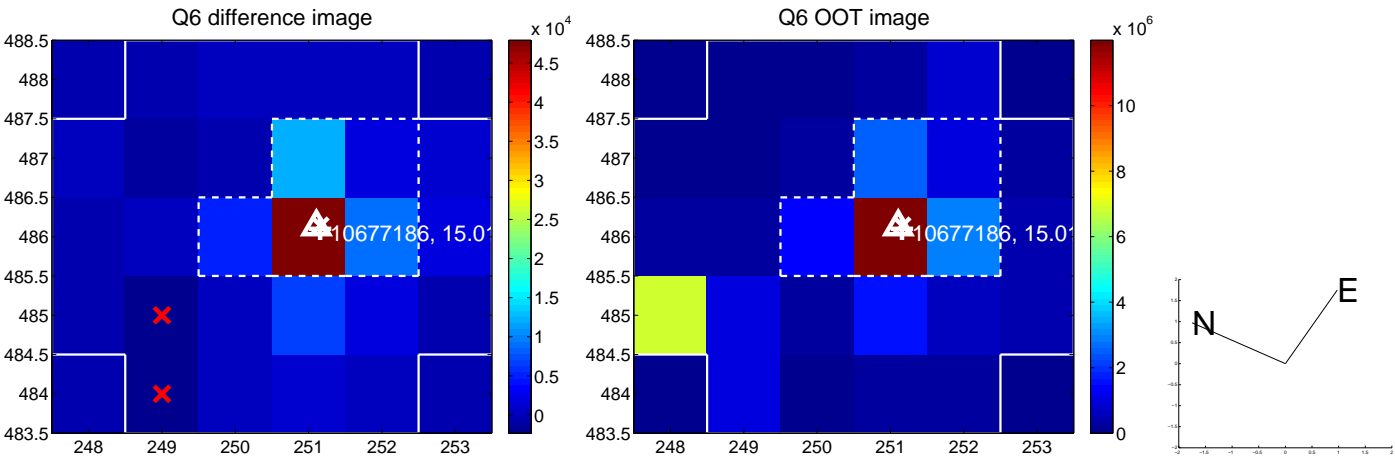
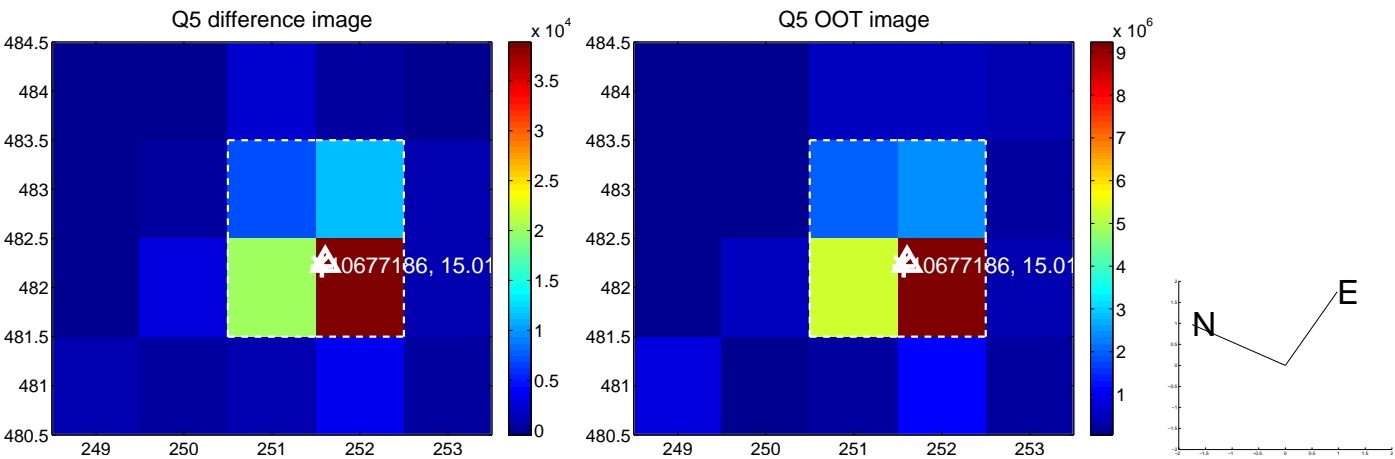


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

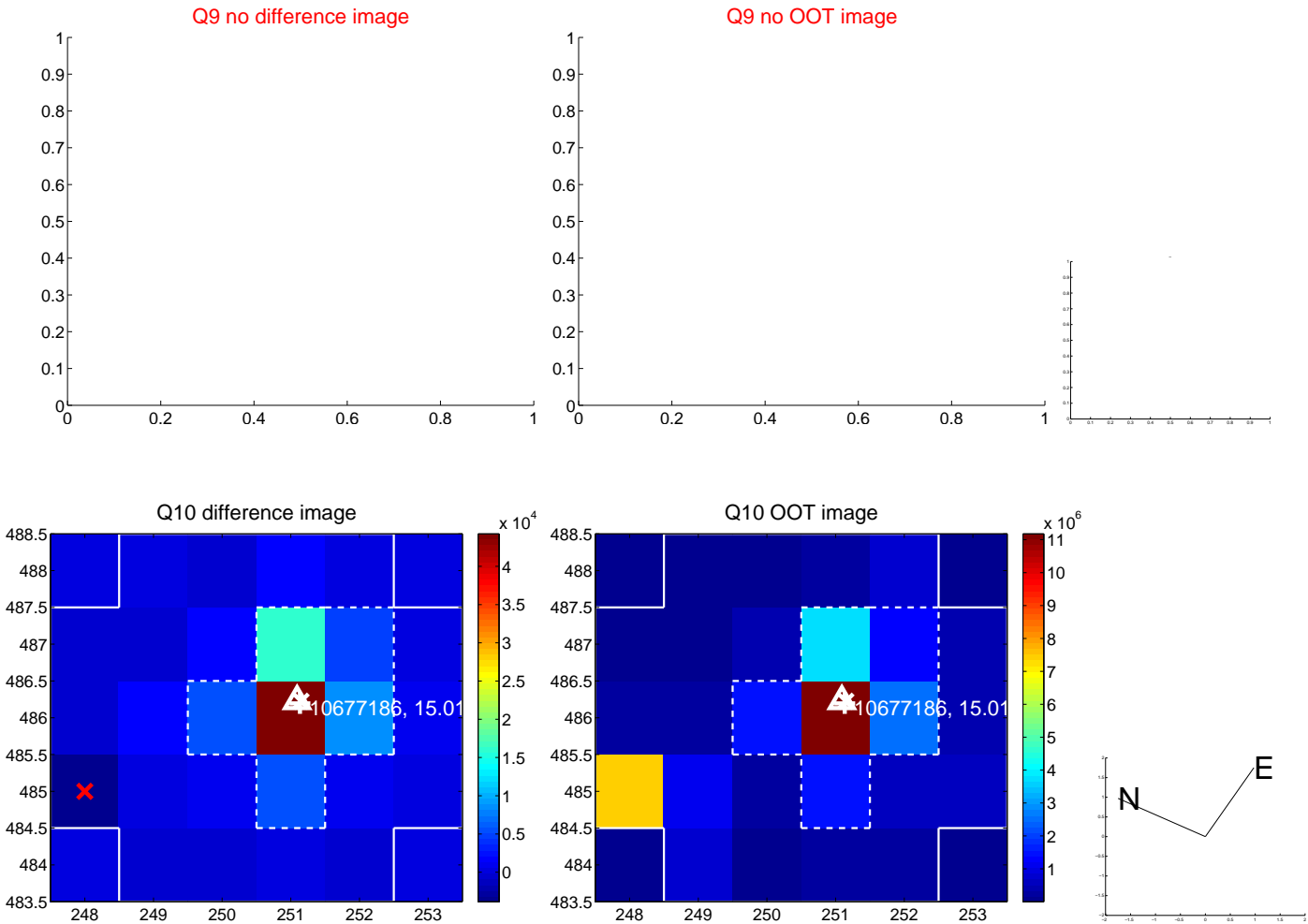
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



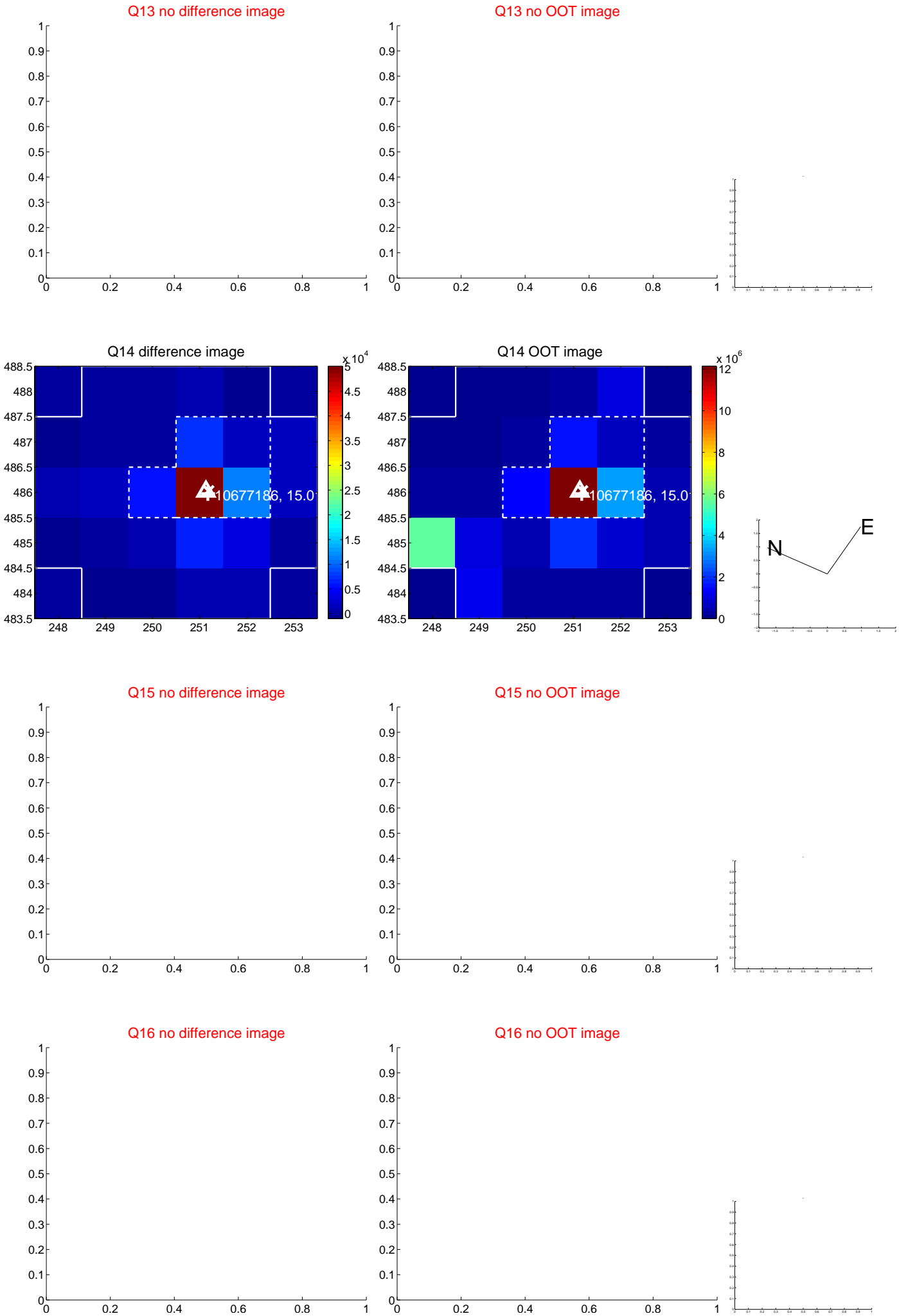
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



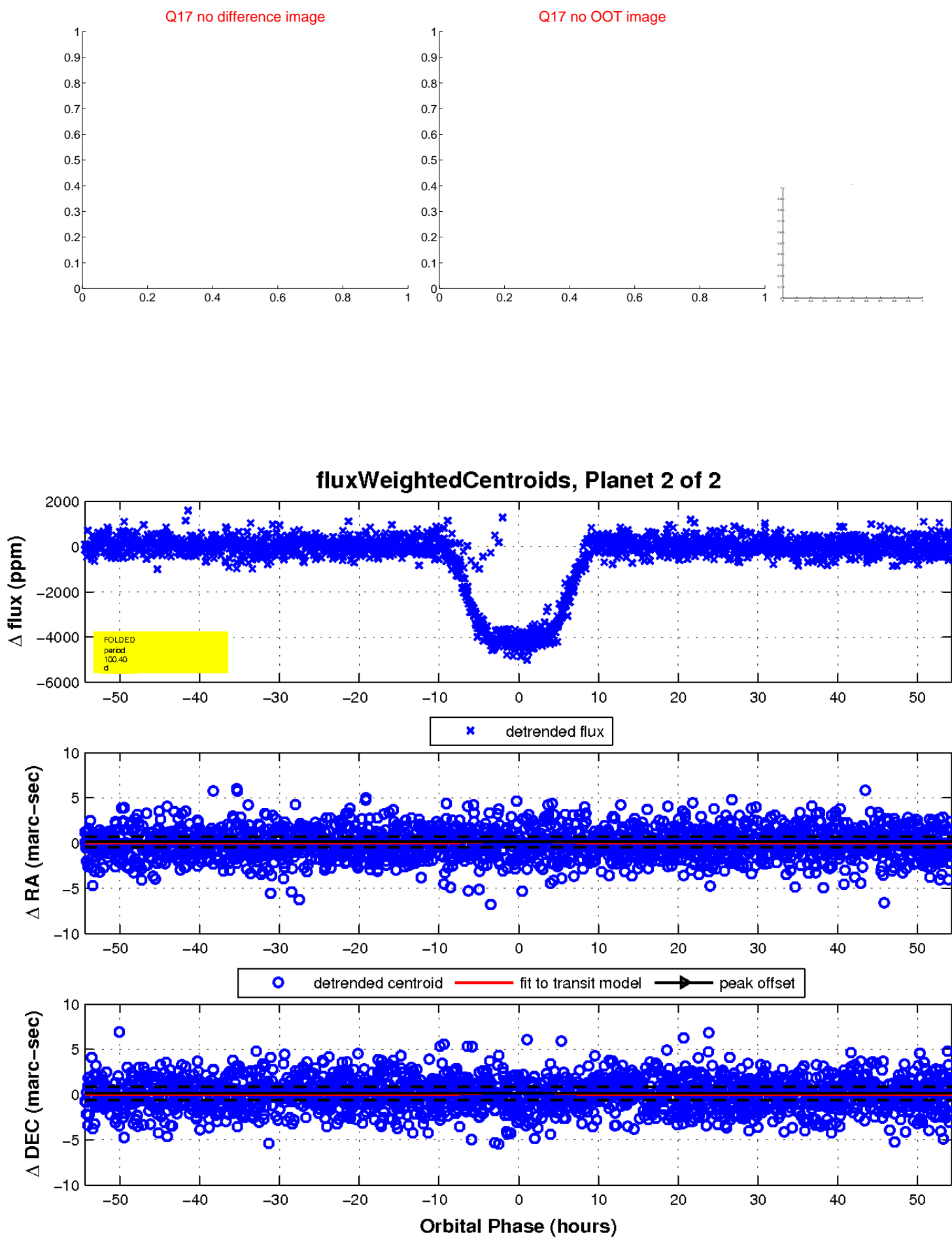
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

