

KIC 011391181

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})
011391181-01	OBS	7442.01	8.617339	139.069310	185647.7	4.058	4963.5	3592.6	0.87	5387	55.56	94.94
011391181-02	OBS	No	8.617336	135.691268	108136.5	4.380	3160.3	2367.8	0.87	5387	42.20	94.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011391181-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
011391181-02	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.

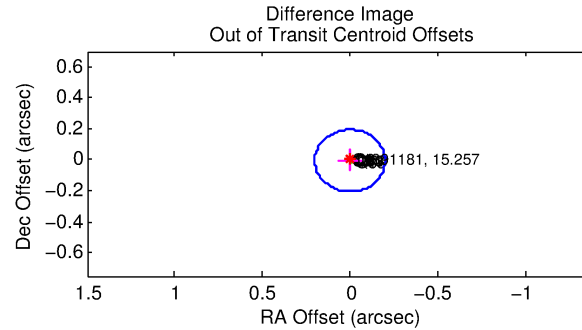
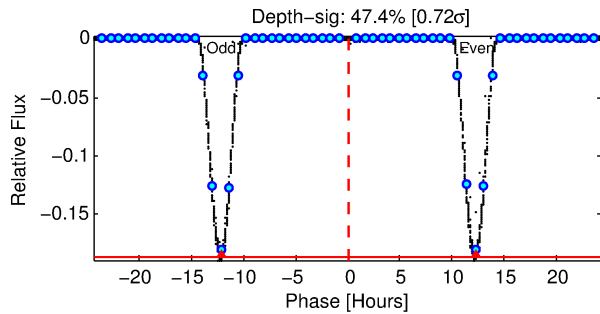
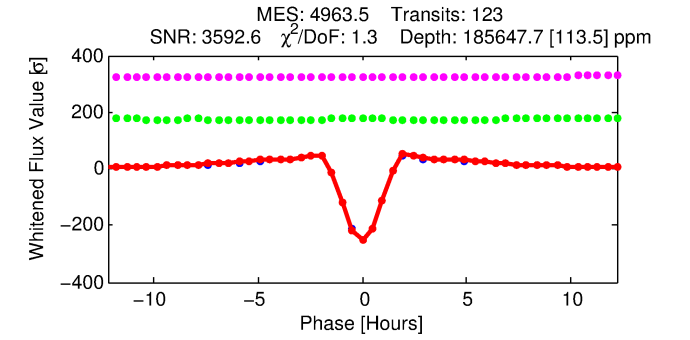
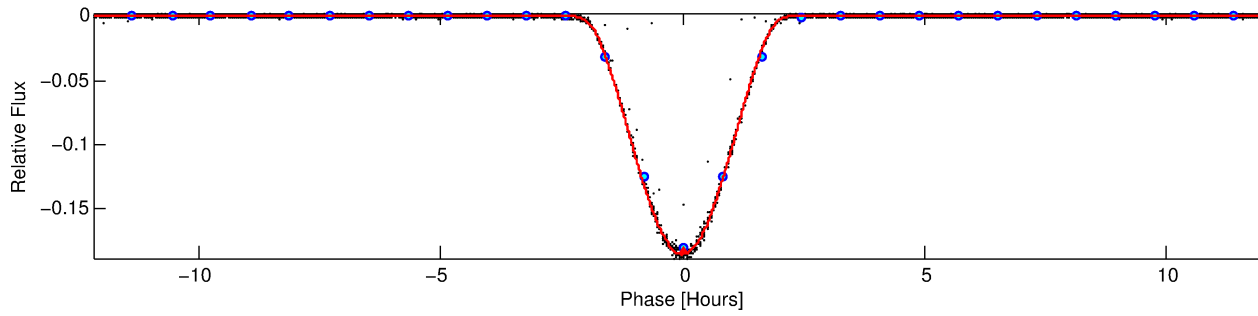
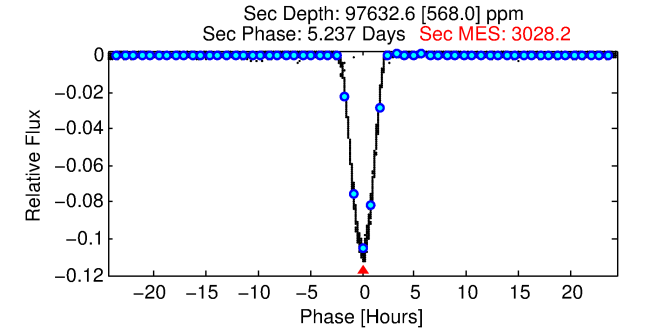
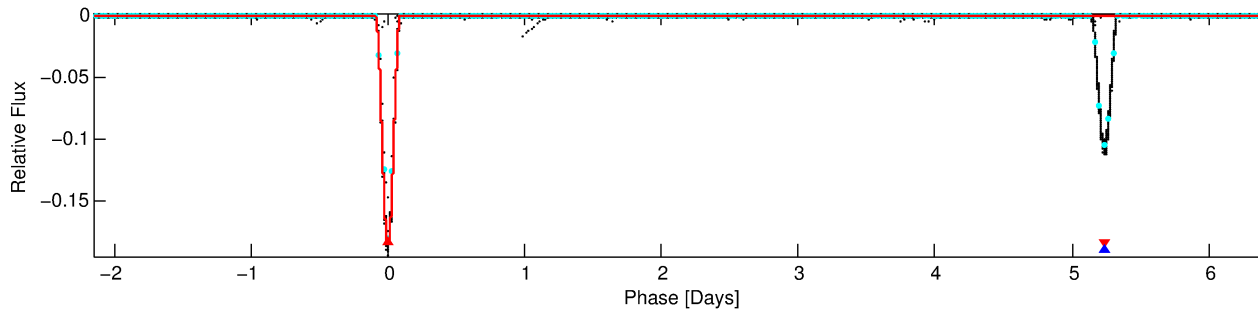
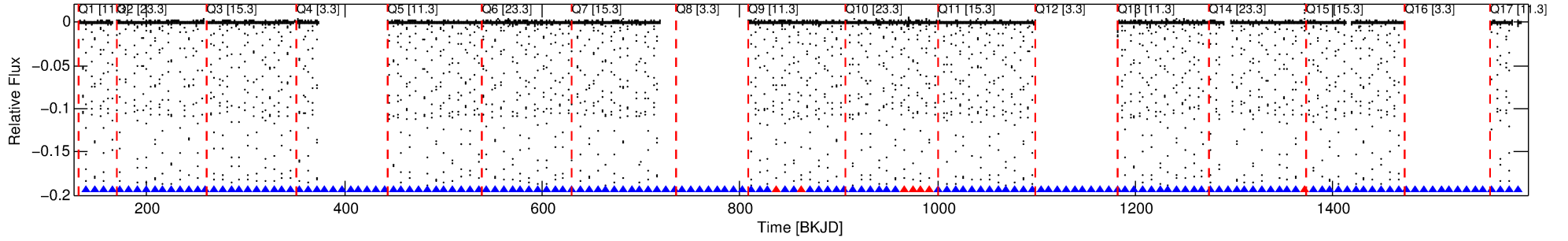
Ephemeris Match Information For 011391181-01

No Significant Match Found

DV One-Page Summary

KIC: 11391181 Candidate: 1 of 2 Period: 8.617 d
KOI: K07442.01 Corr: 1.000

Kp: 15.26 R*: 0.87 Rs Teff: 5387.0 K Logg: 4.48 Fe/H: -0.060



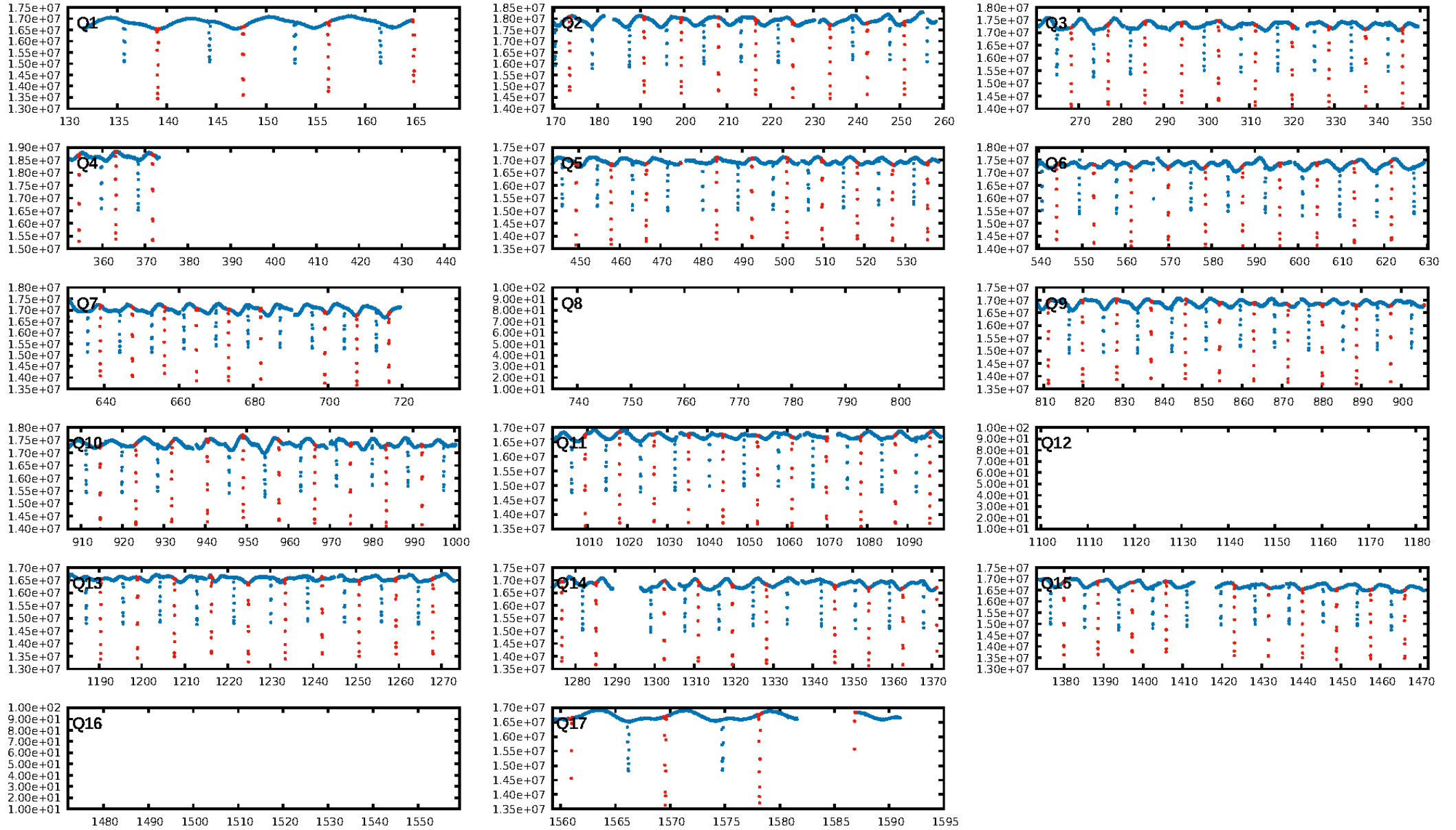
DV Fit Results:

Period = 8.61734 [0.00000] d
Epoch = 139.0693 [0.0000] BKJD
Rp/R* = 0.5852 [0.0181]
a/R* = 21.39 [0.10]
b = 0.88 [0.03]
Seff = 94.94 [25.88]
Teq = 796 [54] K
Rp = 55.56 [10.74] Re
a = 0.0776 [0.0126] AU
Ag = 104.66 [25.87] [4.01σ]
Teffp = 3936 [142] K [20.61σ]

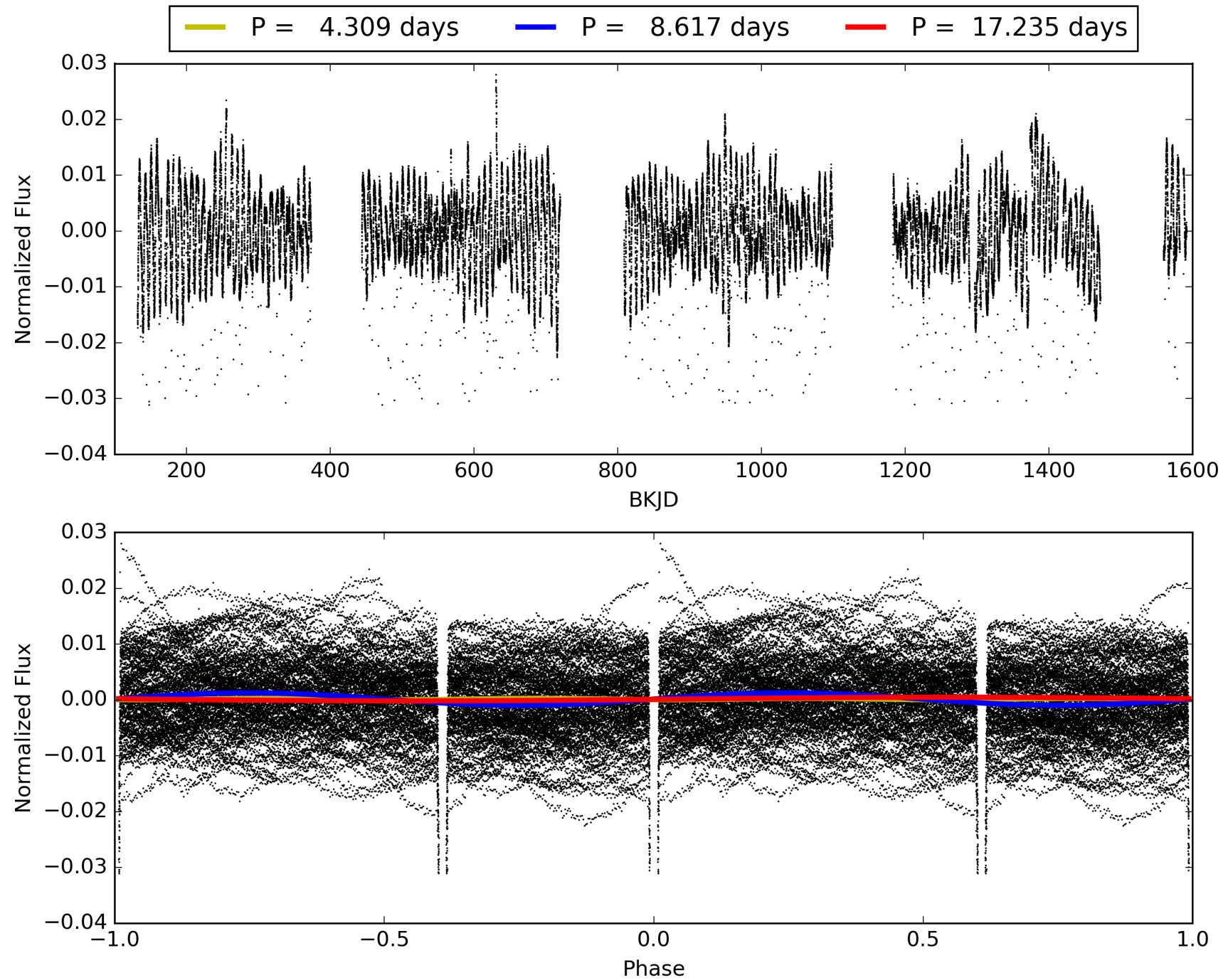
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.94 [105/112]
GhostDiagnostic-chr: 2.304
Centroid-sig: 0.0%
Centroid-so: 0.051 arcsec [27.49σ]
OotOffset-rm: 0.007 arcsec [0.10σ]
KicOffset-rm: 0.031 arcsec [0.46σ]
OotOffset-st: 4/4/1/5 [14]
KicOffset-st: 4/4/1/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
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TCE 011391181-01, PDC Light Curves

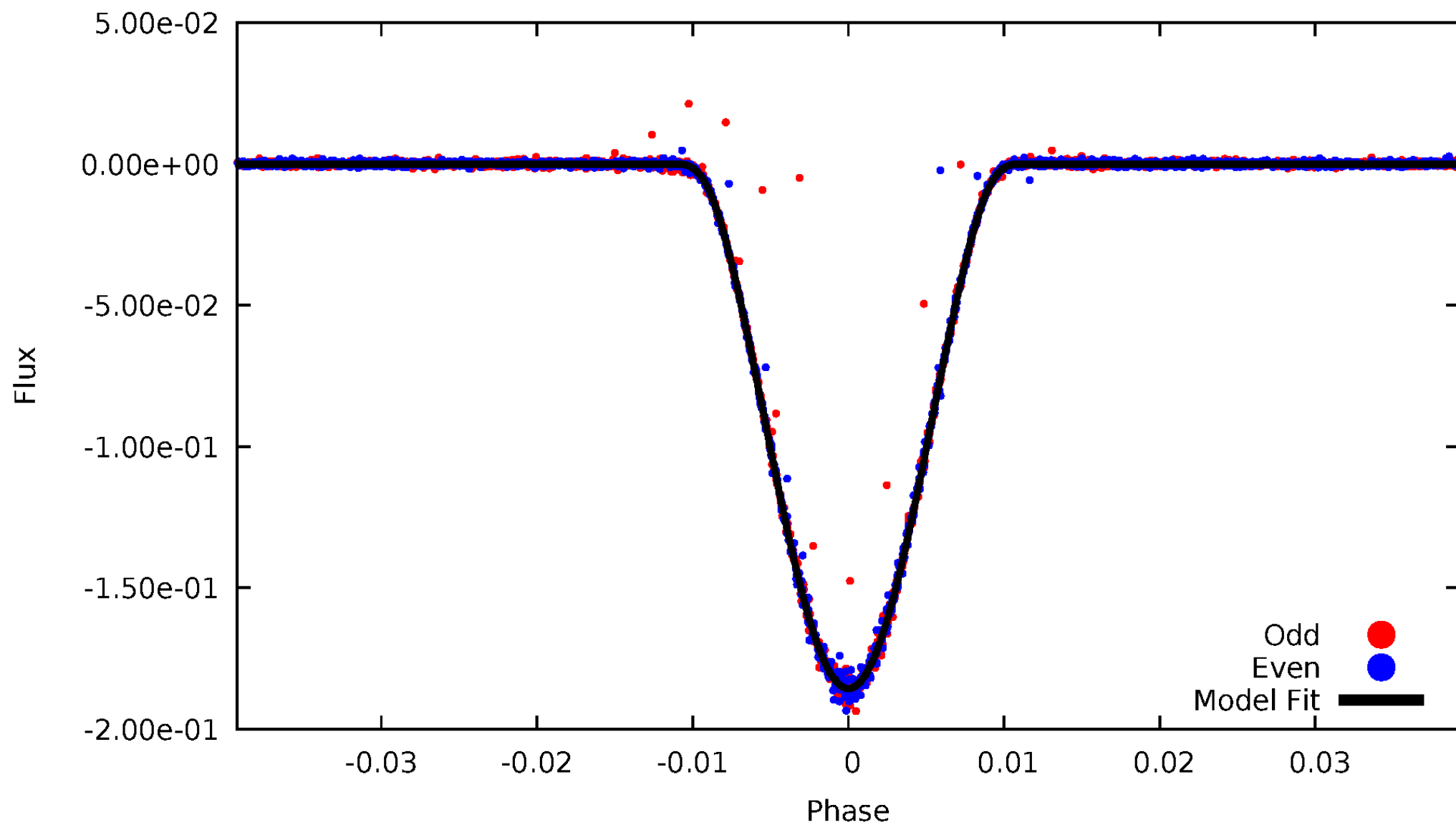


TCE 011391181-01



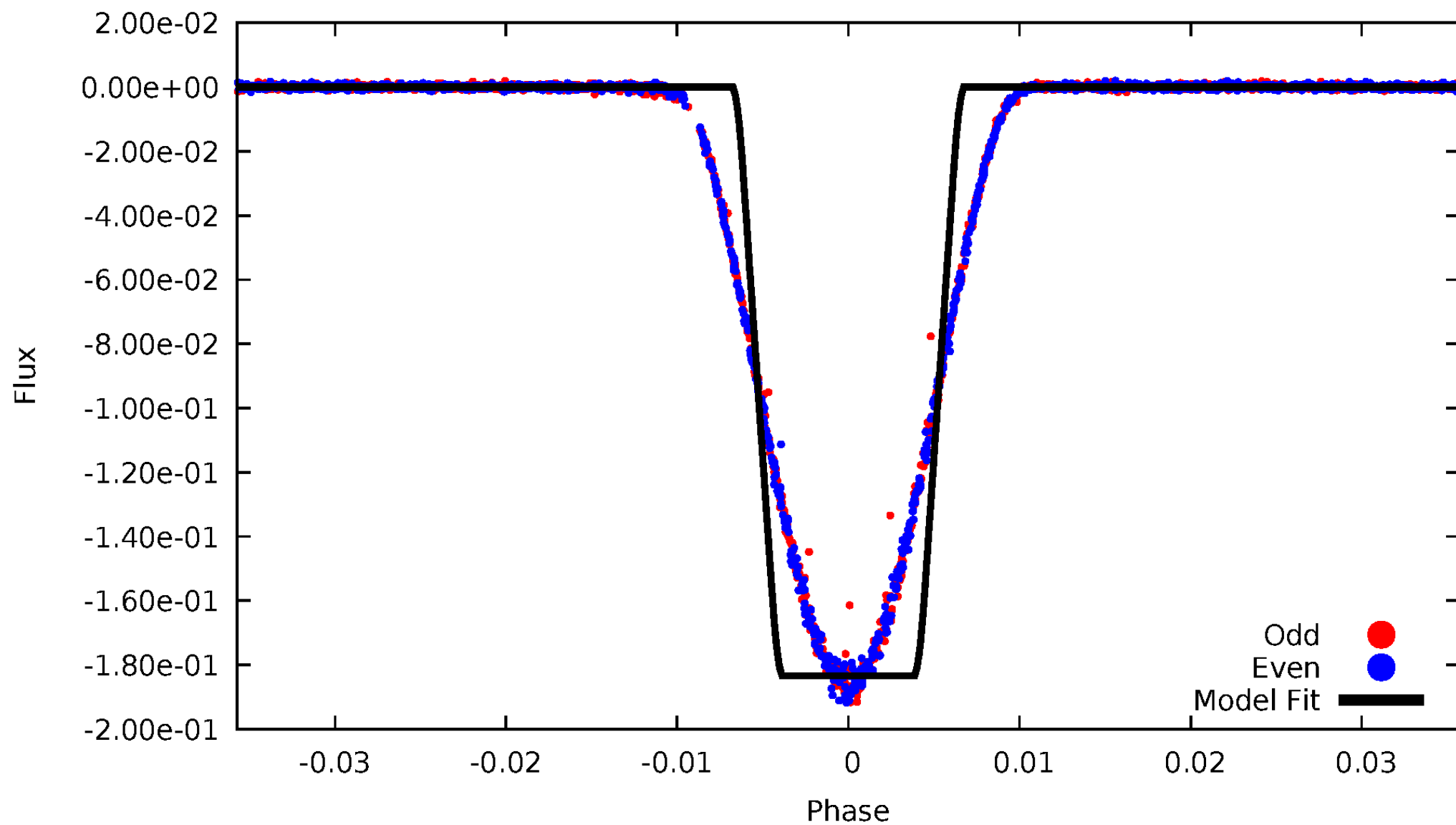
DV Odd/Even

TCE 011391181-01



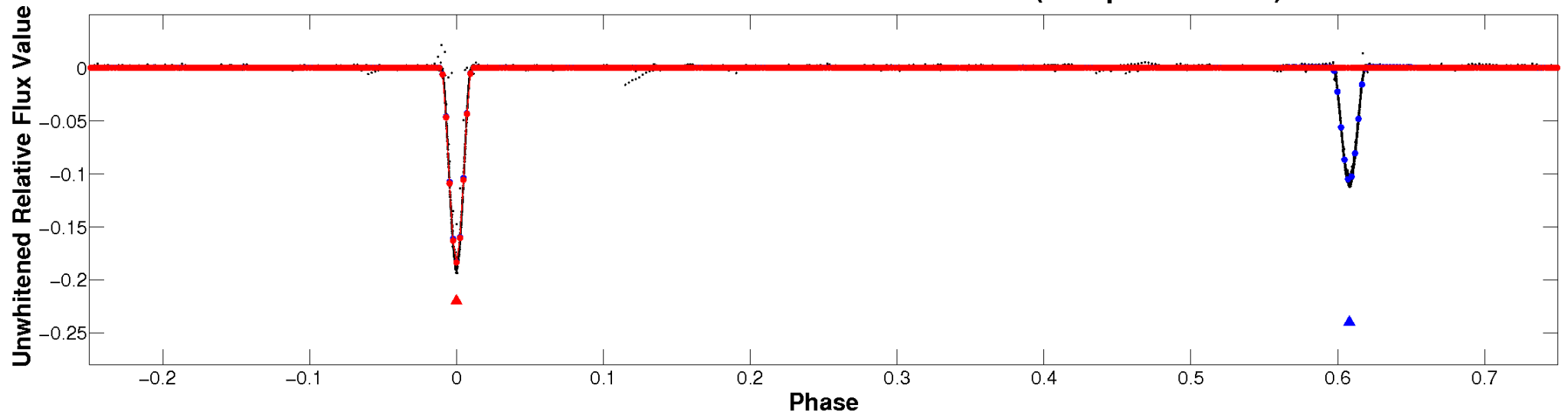
ALT Odd/Even

TCE 011391181-01

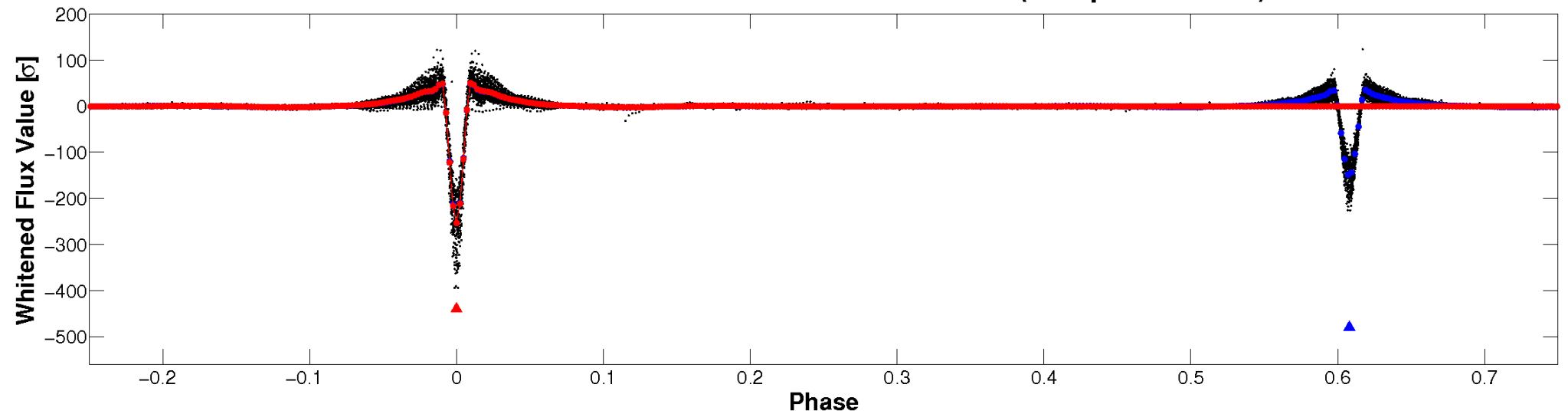


Non-Whitened Vs. Whitened Light Curve

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

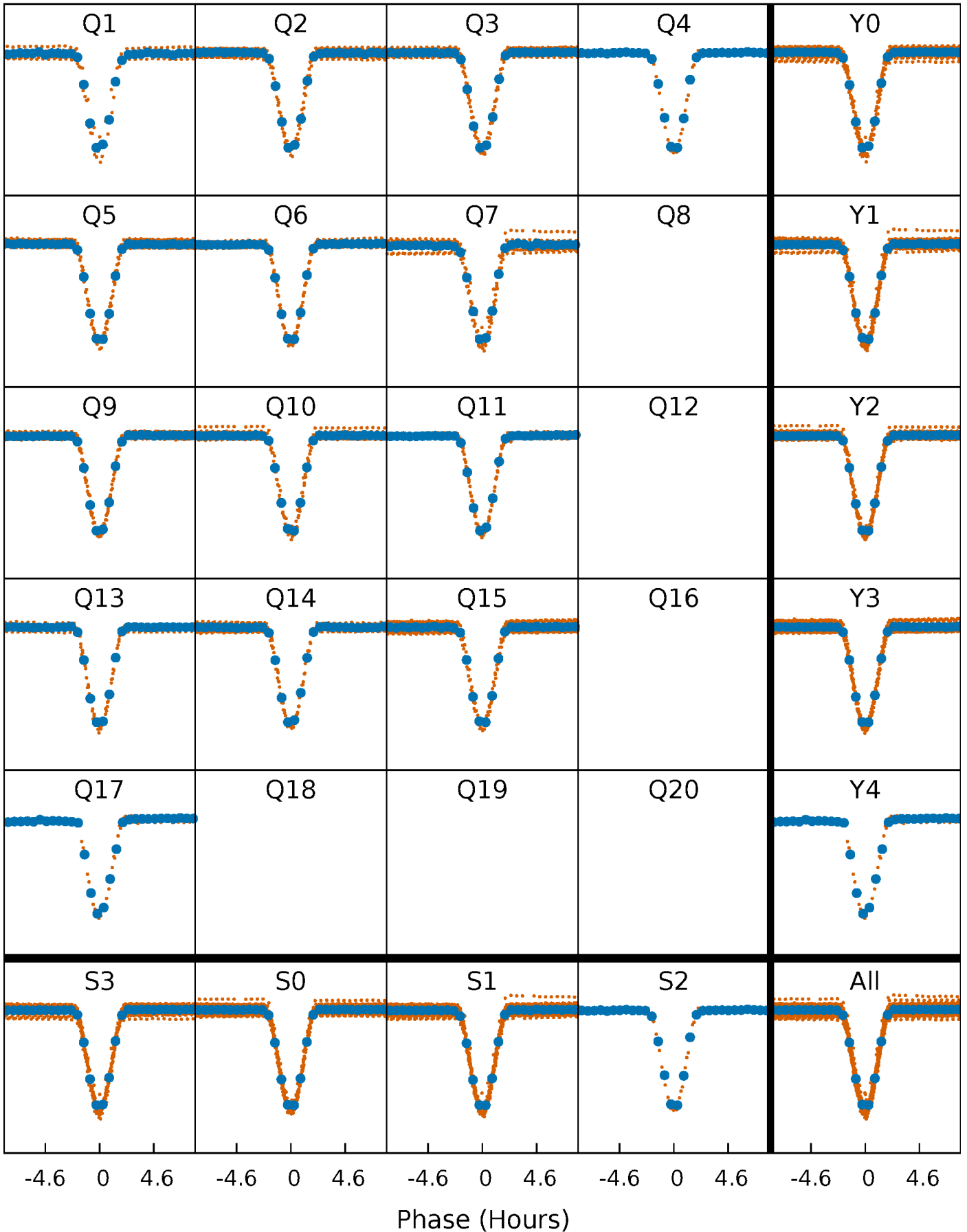


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



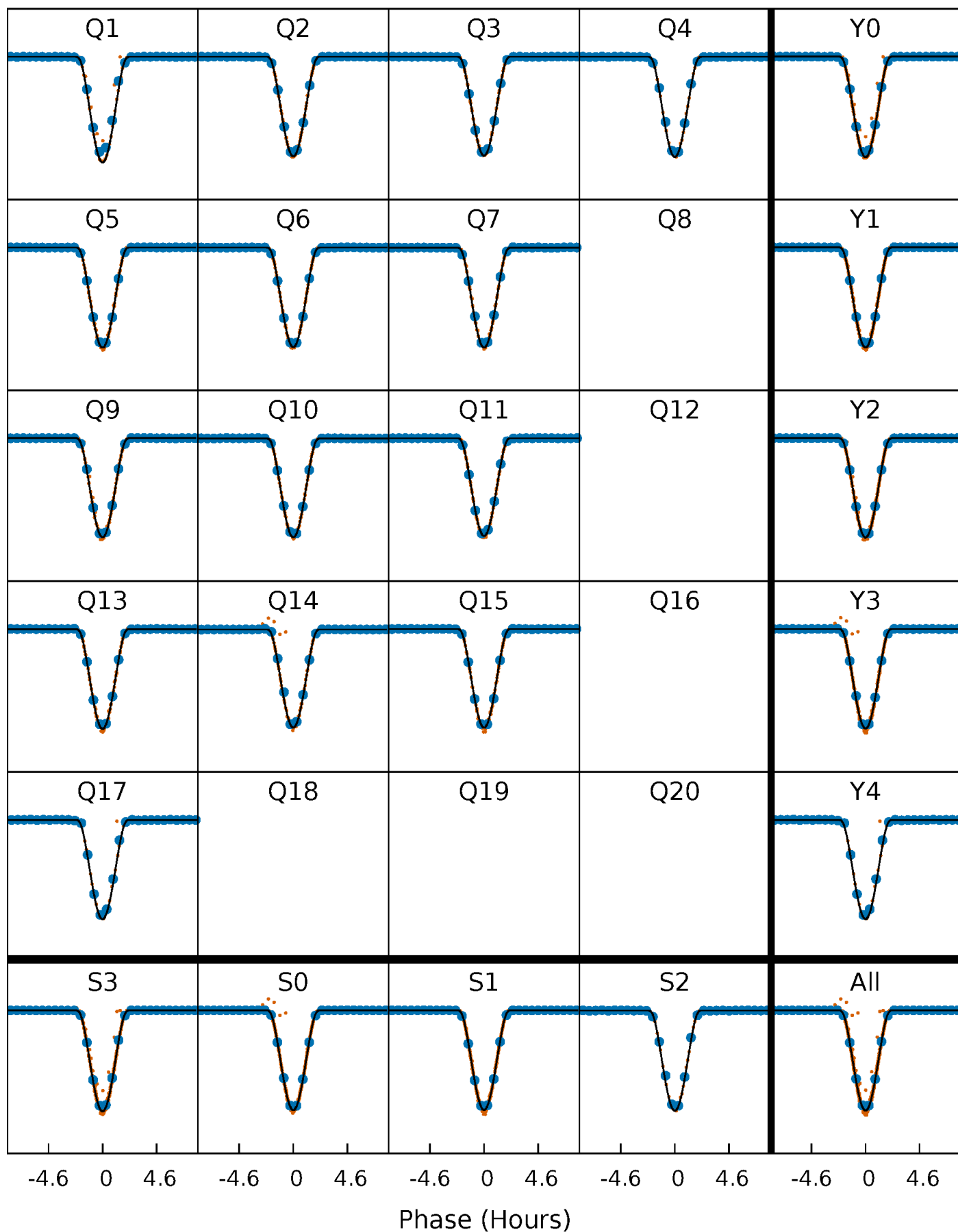
PDC Quarter-Phased Transit Curves

TCE 011391181-01 P= 8.617339 Days $T_0=139.069310$ (BKJD)



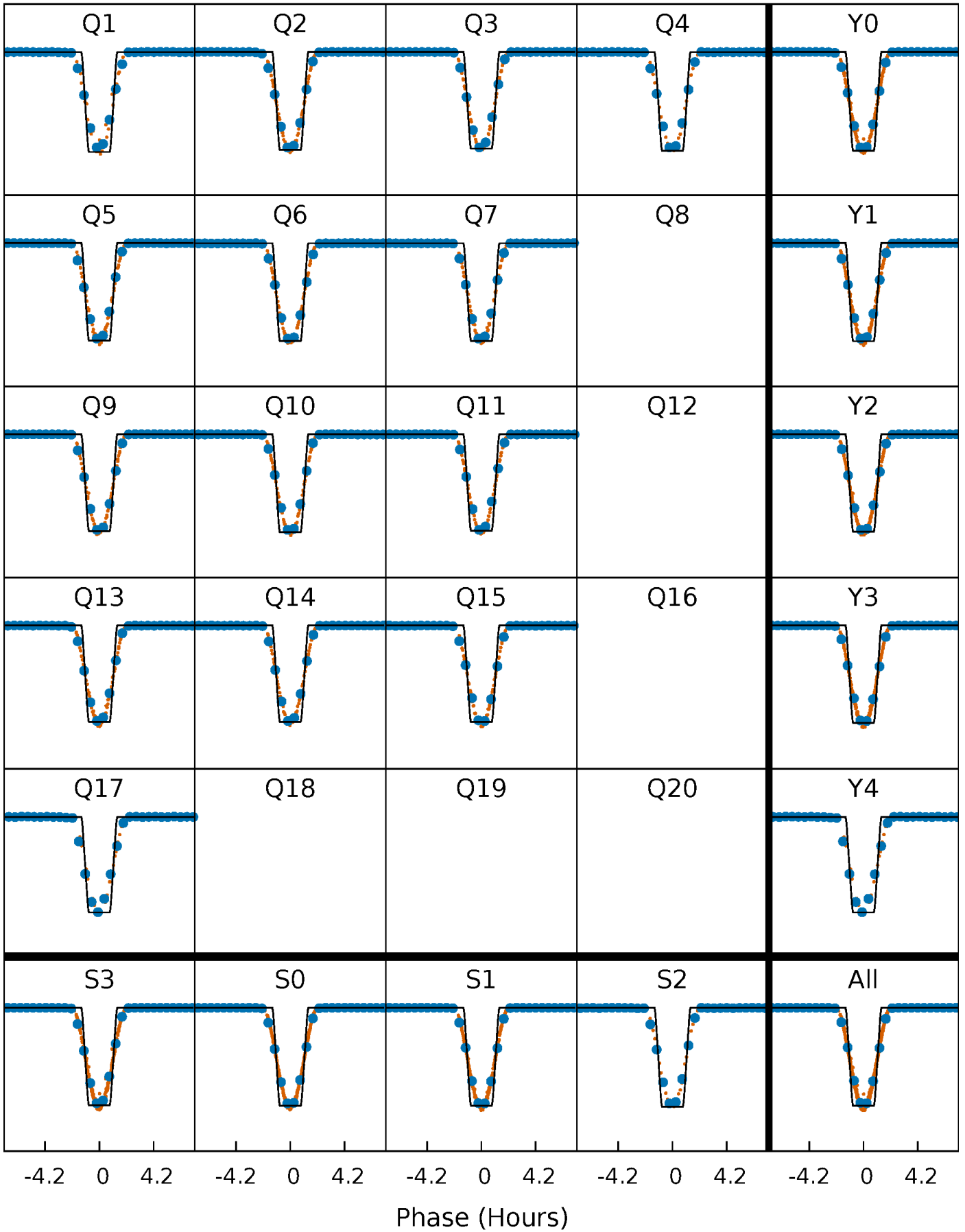
DV Quarter-Phased Transit Curves

TCE 011391181-01 P= 8.617339 Days $T_0=139.069310$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

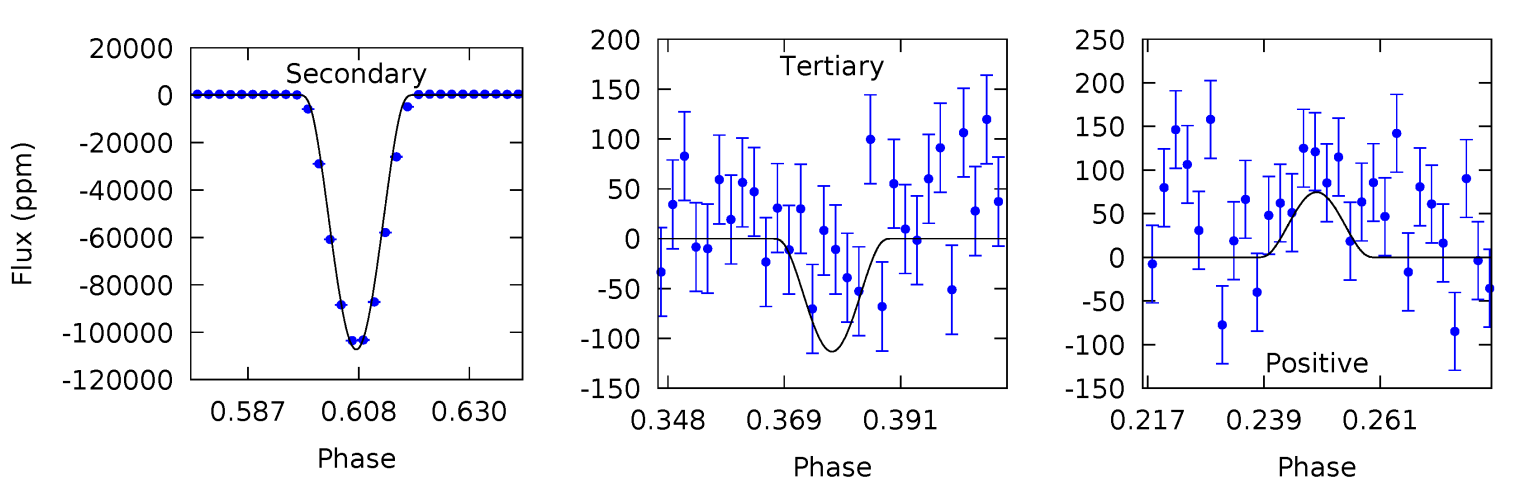
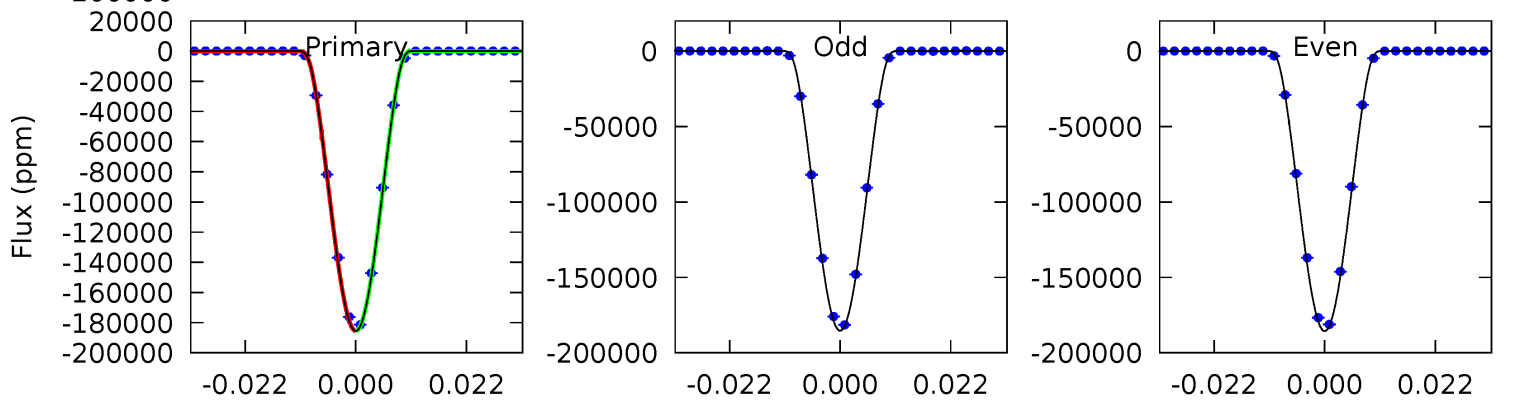
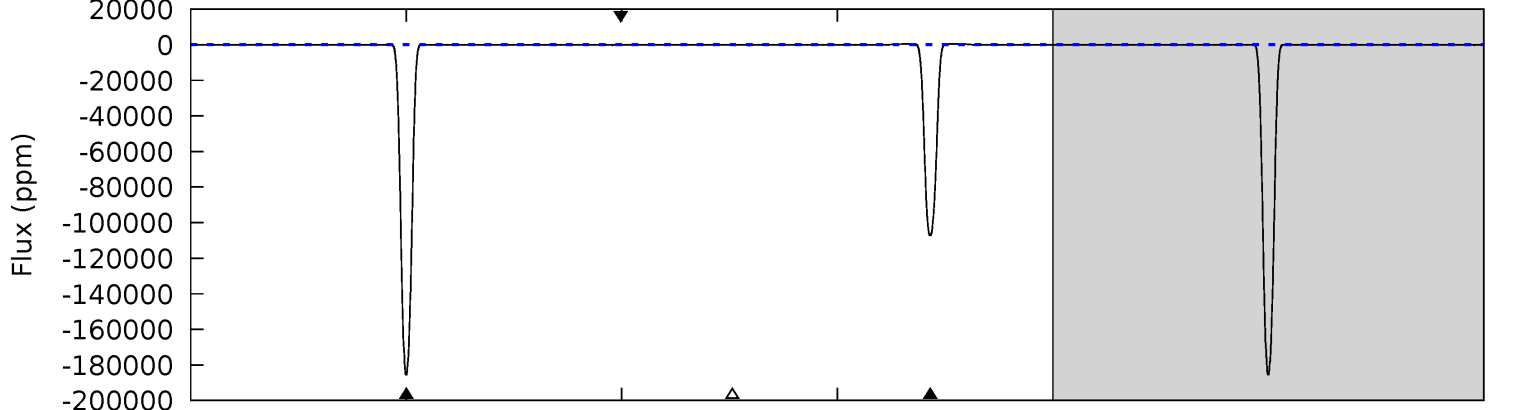
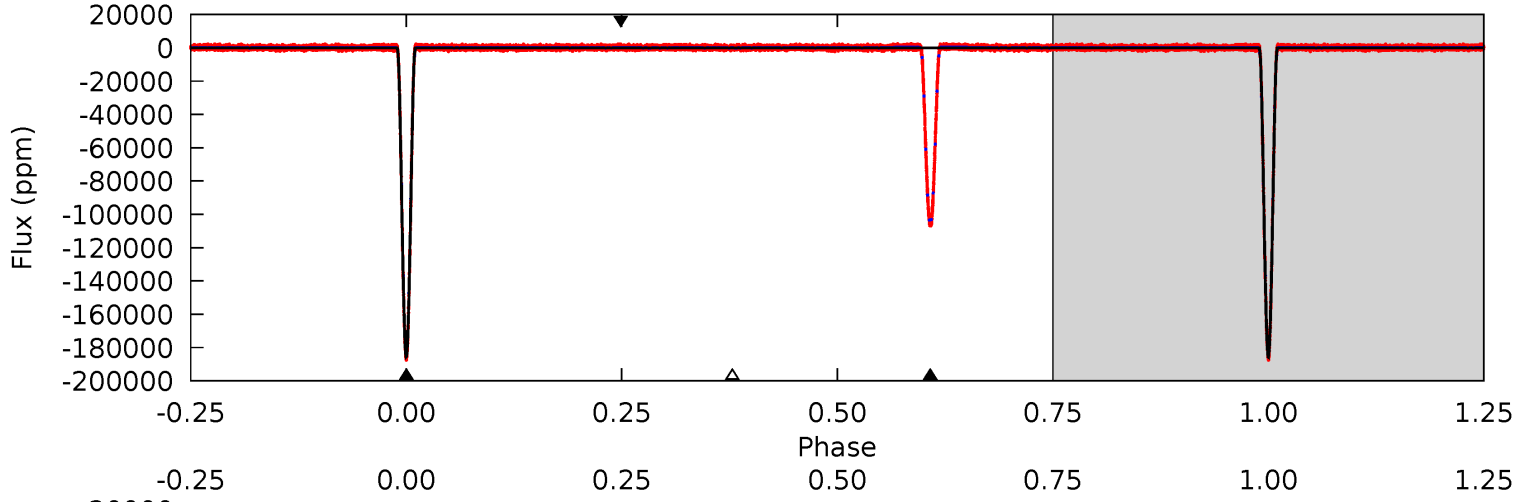
TCE 011391181-01 P= 8.617335 Days $T_0=139.069597$ (BKJD)



DV Model-Shift Uniqueness Test

011391181-01, P = 8.617339 Days, E = 130.451971 Days

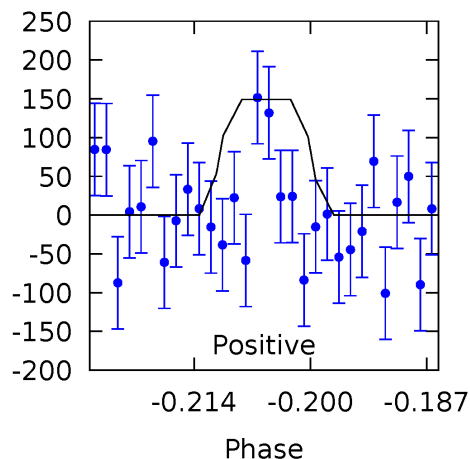
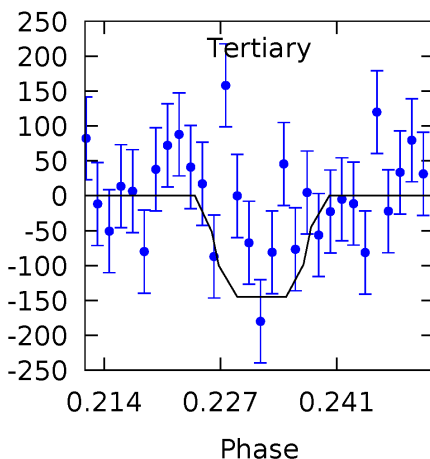
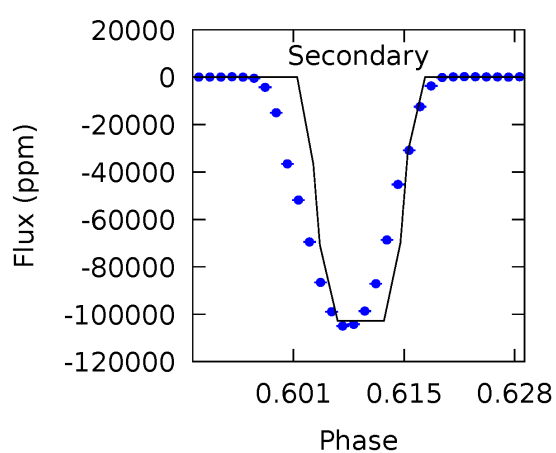
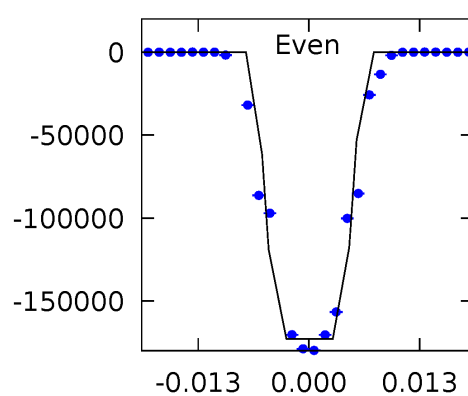
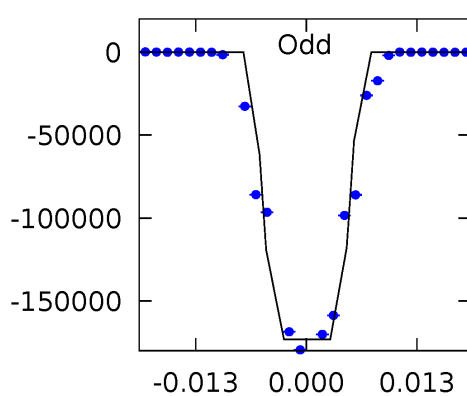
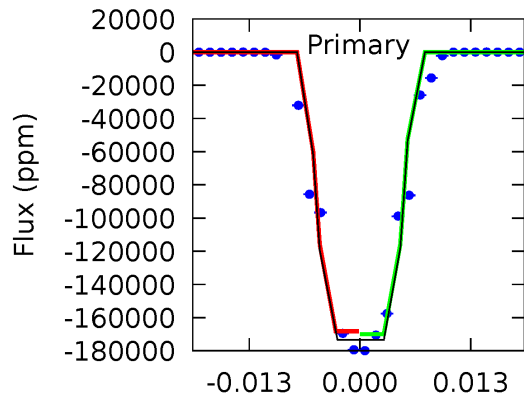
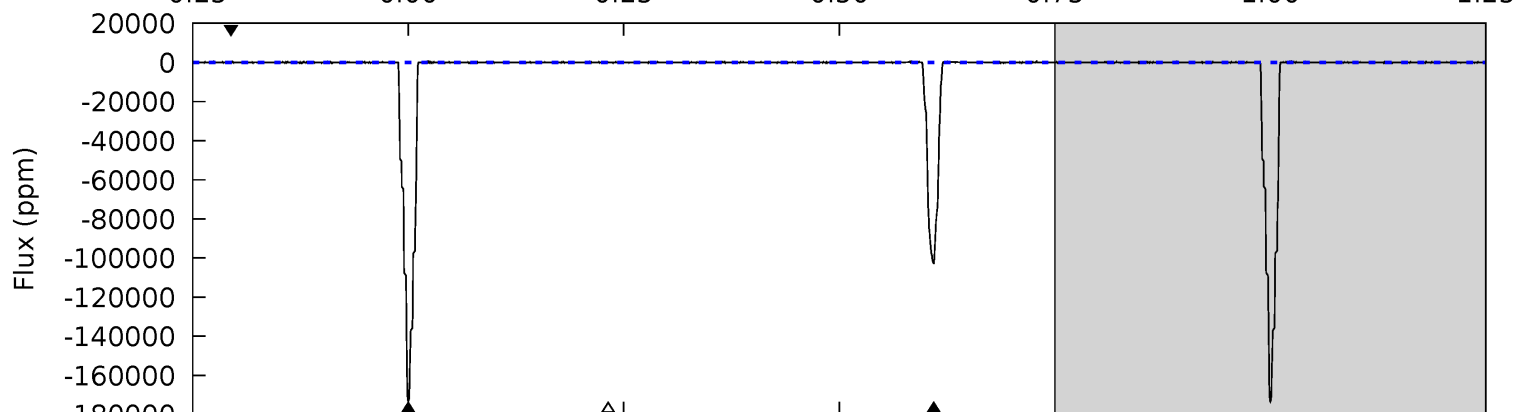
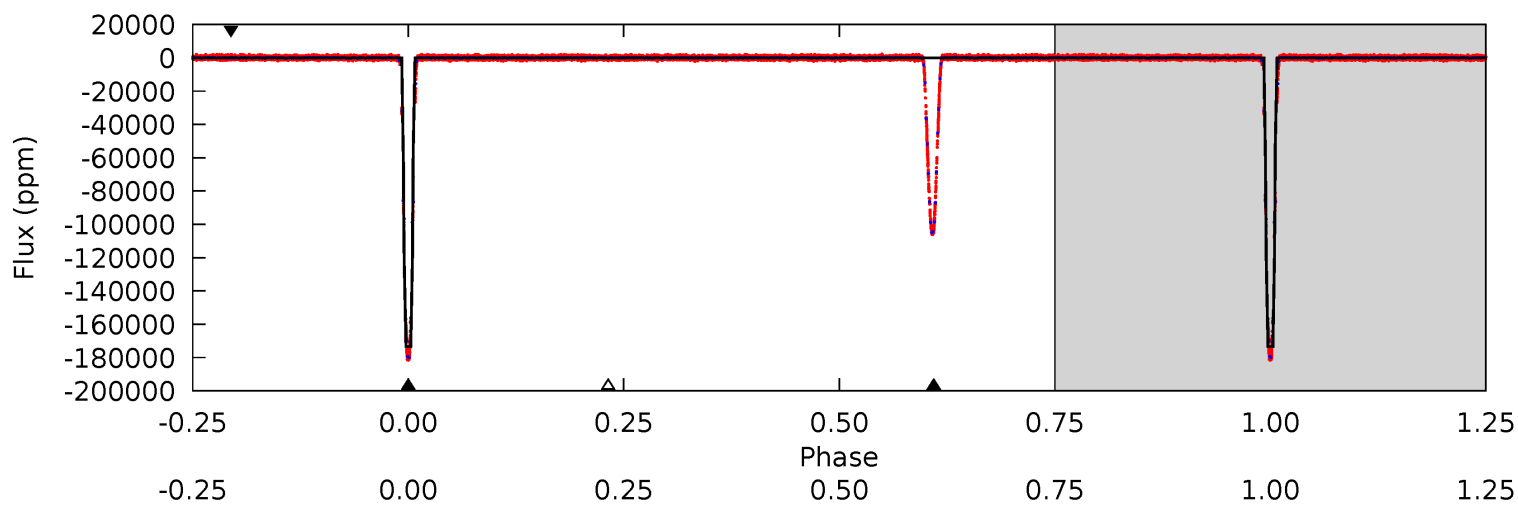
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9831	5684	6.01	3.96	4.88	2.30	5.34	9825	9827	5678	5680	5.23	0.98	0.00	0.06



Alt Model-Shift Uniqueness Test

011391181-01, P = 8.617335 Days, E = 130.452262 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4592	2721	3.84	3.95	4.97	2.47	1.33	4588	4588	2717	2717	3.24	1.00	0.00	0



Stellar Parameters For KIC 011391181

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5387^{+176}_{-160}	$4.482^{+0.088}_{-0.132}$	$-0.060^{+0.300}_{-0.300}$	$0.870^{+0.166}_{-0.102}$	$0.837^{+0.097}_{-0.071}$	$1.793^{+0.674}_{-0.679}$
	+3%/-3%	+2%/-3%	+500%/-500%	+19%/-12%	+12%/-8%	+38%/-38%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 011391181-01 / KOI 7442.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-107236 ± 19	$55.82^{+6.33}_{-4.21}$	1123^{+62}_{-57}	4352^{+126}_{-117}	127^{+22}_{-21}
Alt.	-102727 ± 38	$41.02^{+5.15}_{-3.60}$	1120^{+63}_{-50}	4866^{+161}_{-149}	225^{+41}_{-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 $A_{obs} \gg 1.0$

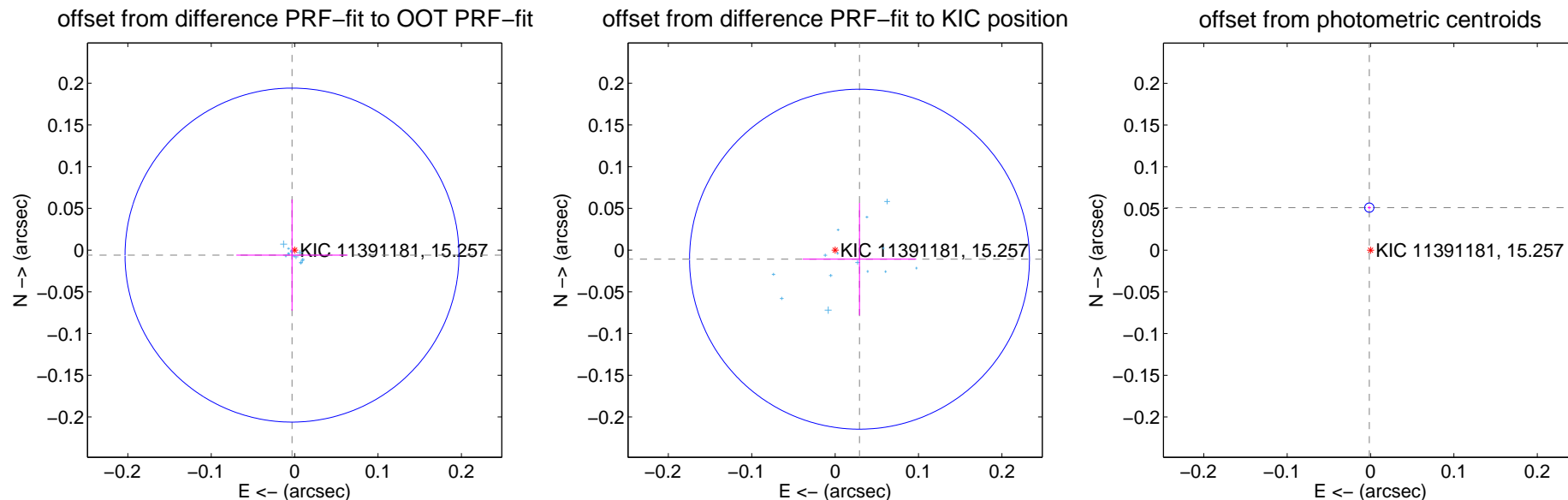
DV Centroid Data

Supplemental centroid analysis for 011391181-01. Kepler magnitude: 15.26. Transit SNR 3592.64

There are 14 quarters with good PRF difference image offsets

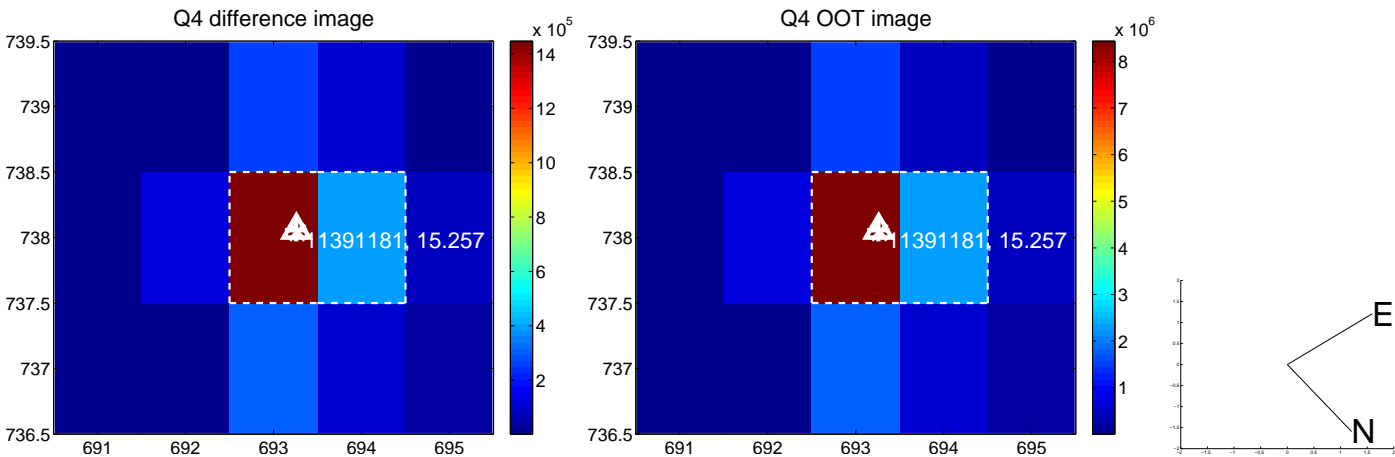
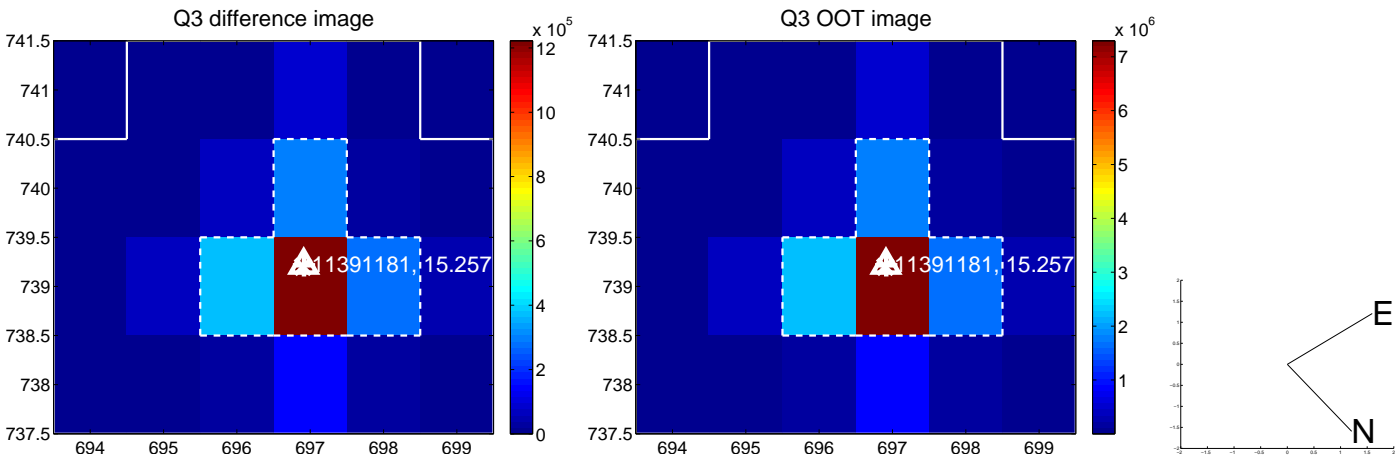
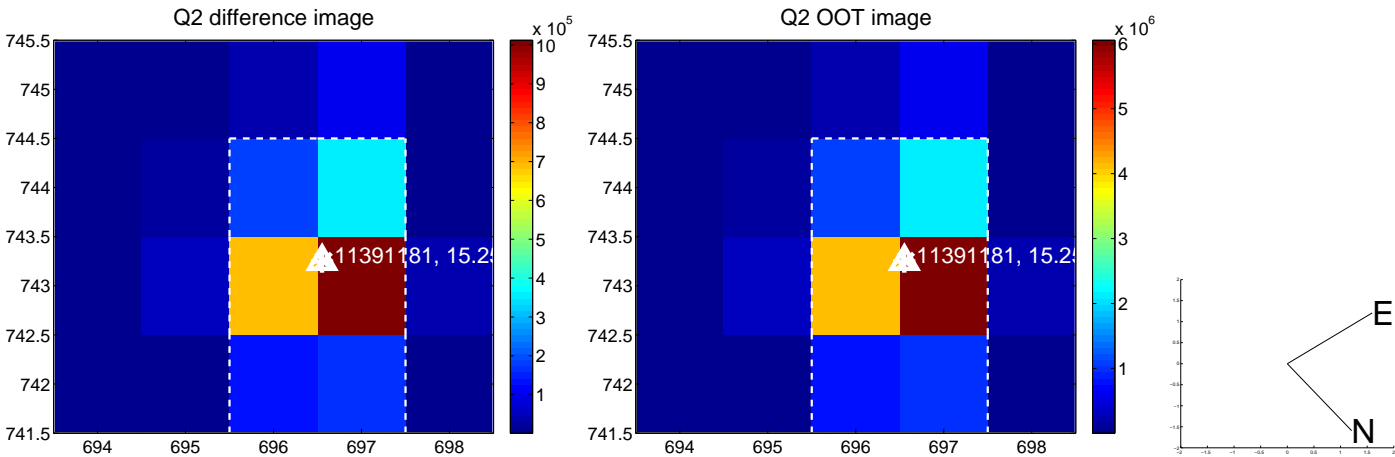
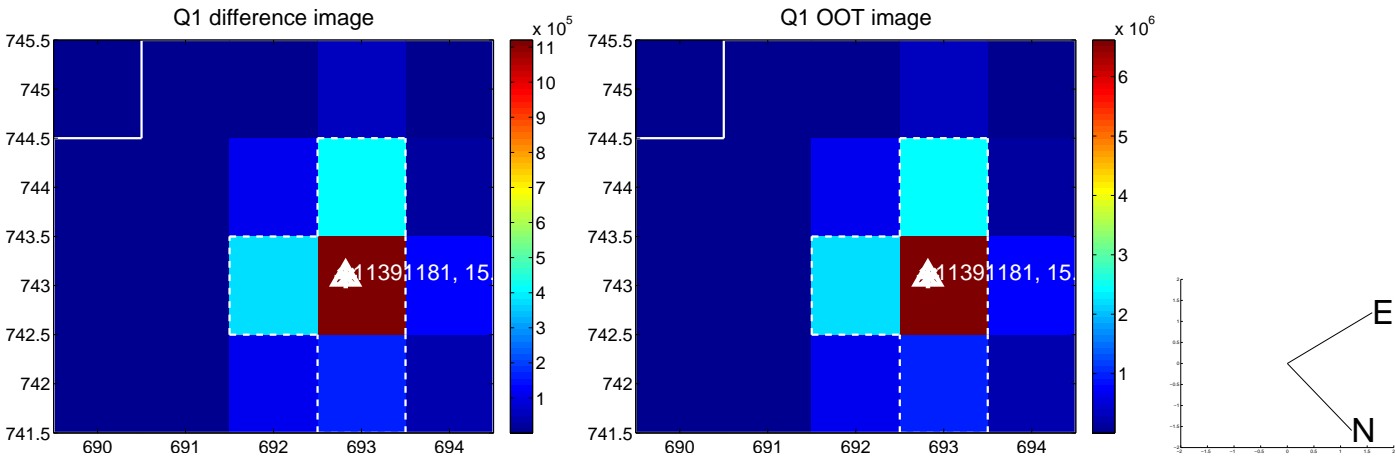
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.007 ± 0.067	0.10	0.003 ± 0.067	-0.006 ± 0.067
PRF-fit source offset from KIC position	0.031 ± 0.068	0.46	-0.029 ± 0.068	-0.011 ± 0.067
photometric centroid source offset	0.05 ± 0.00	27.49	0.00 ± 0.00	0.05 ± 0.00

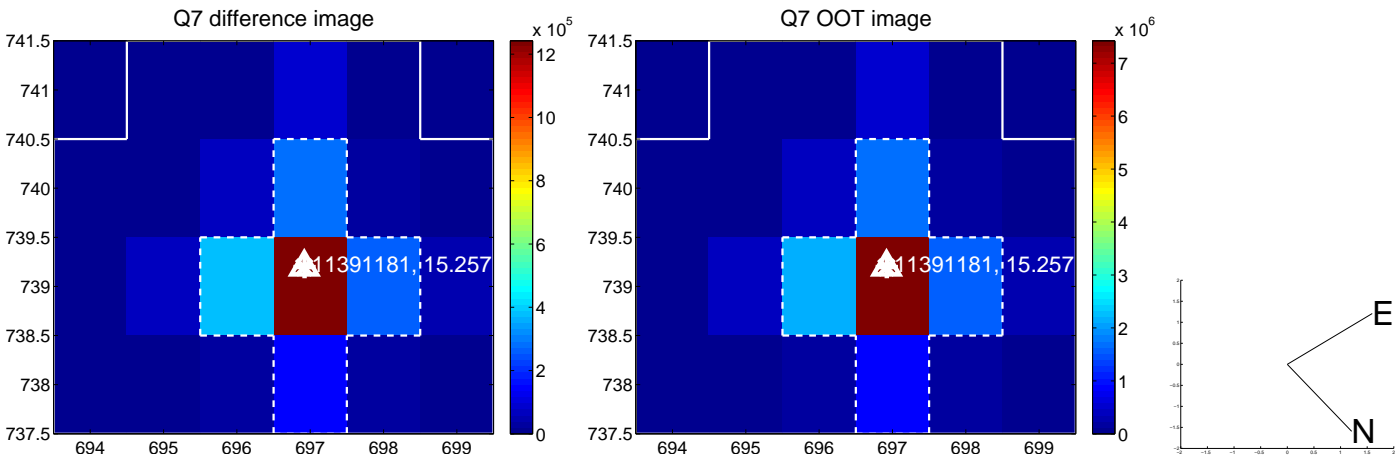
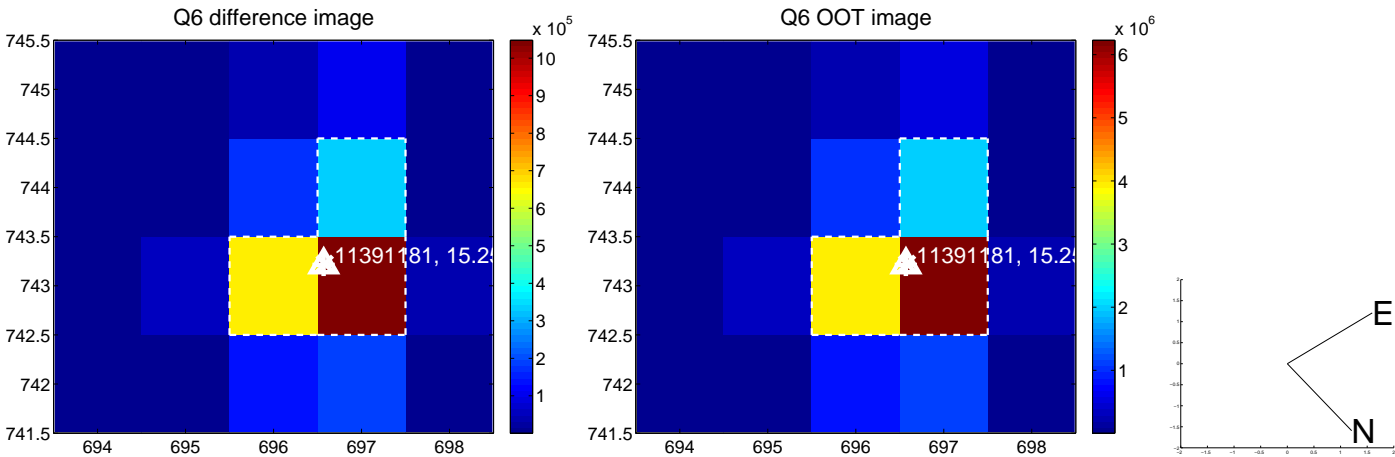
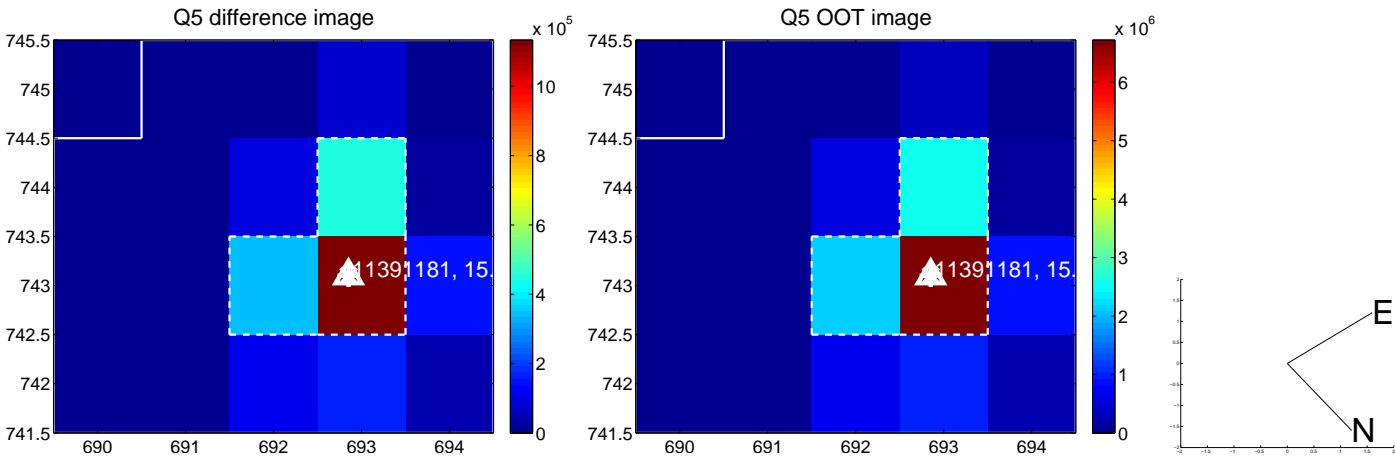


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

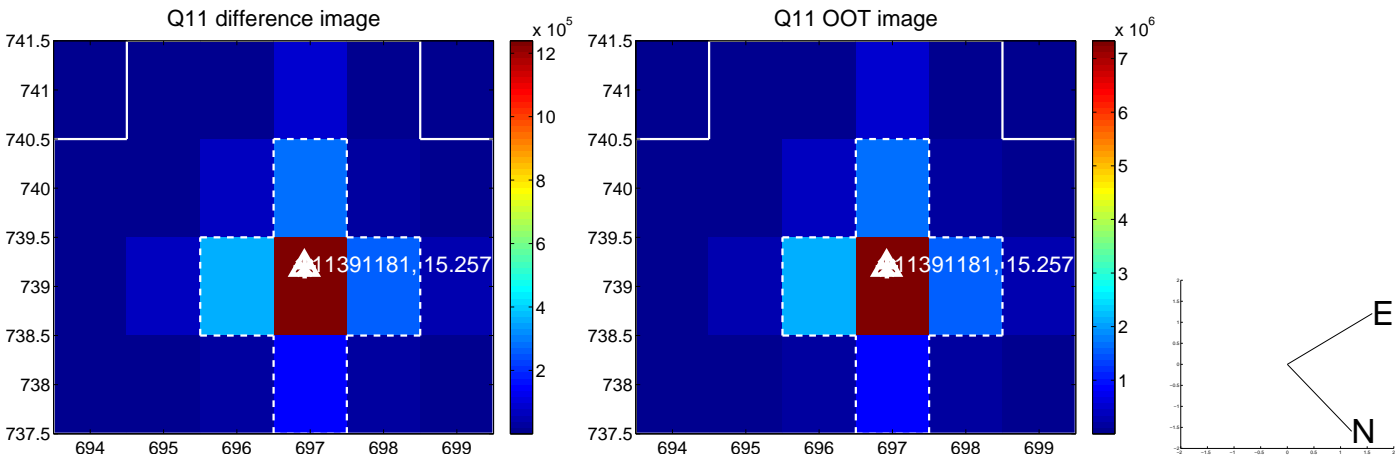
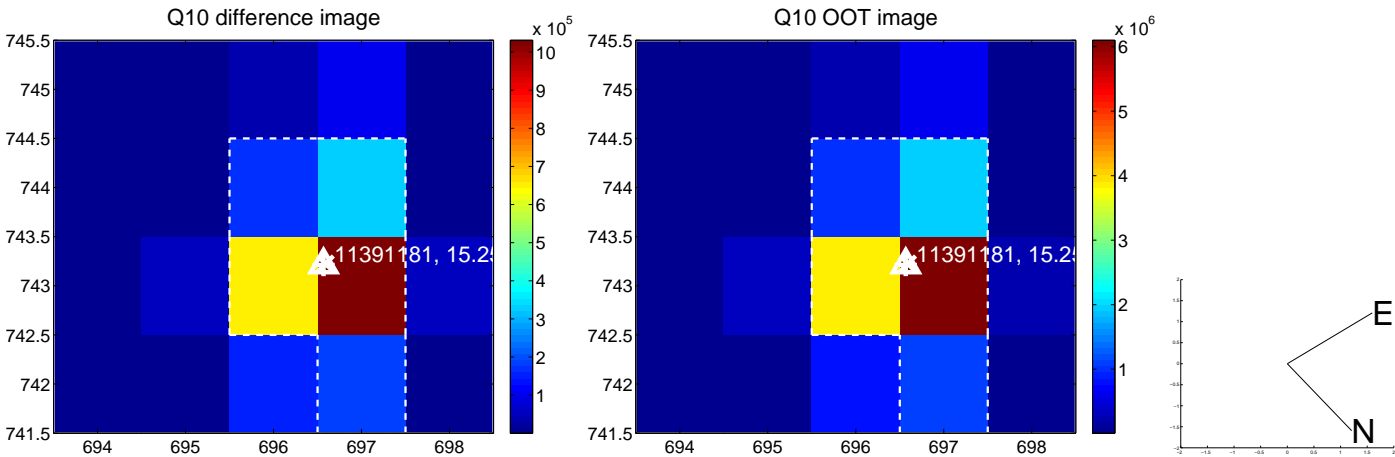
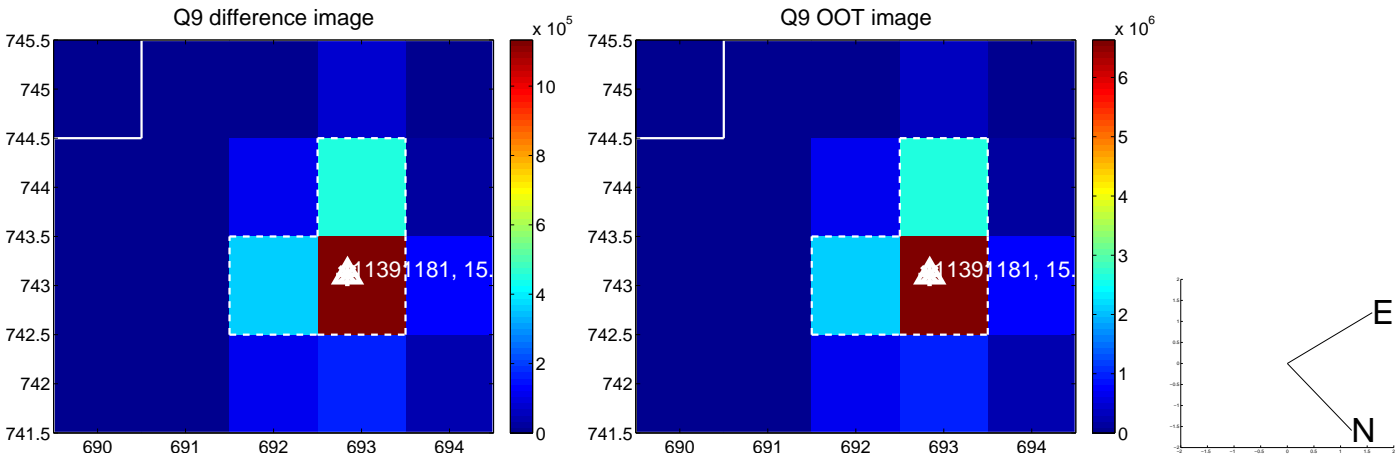
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



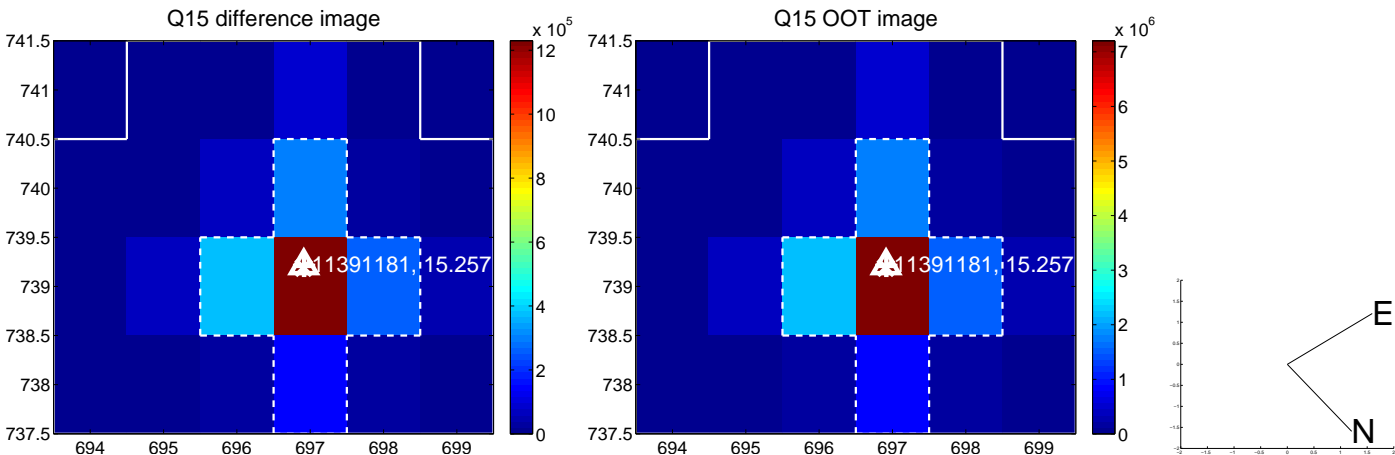
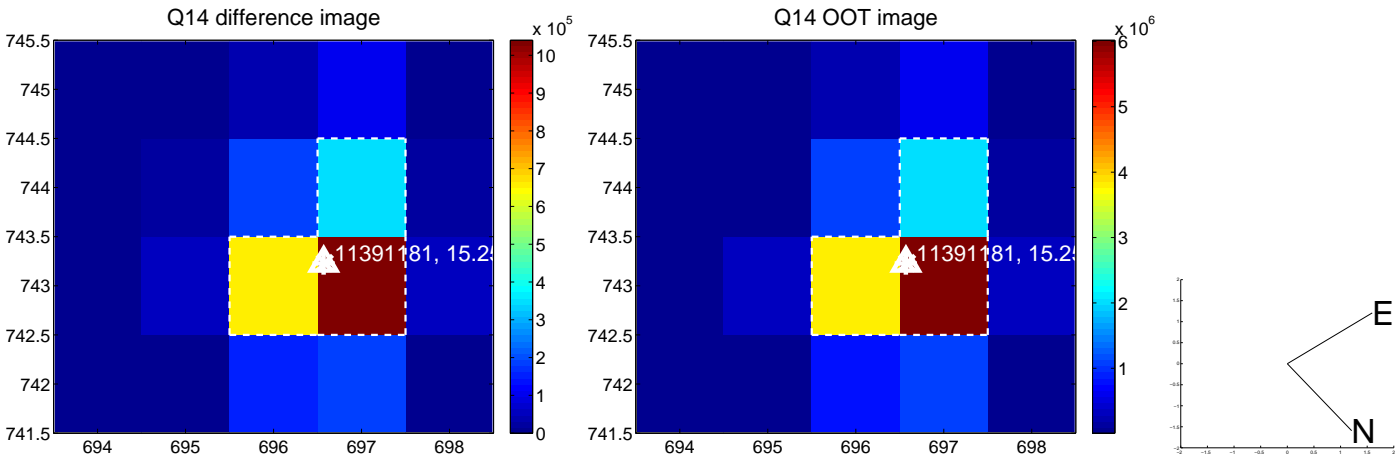
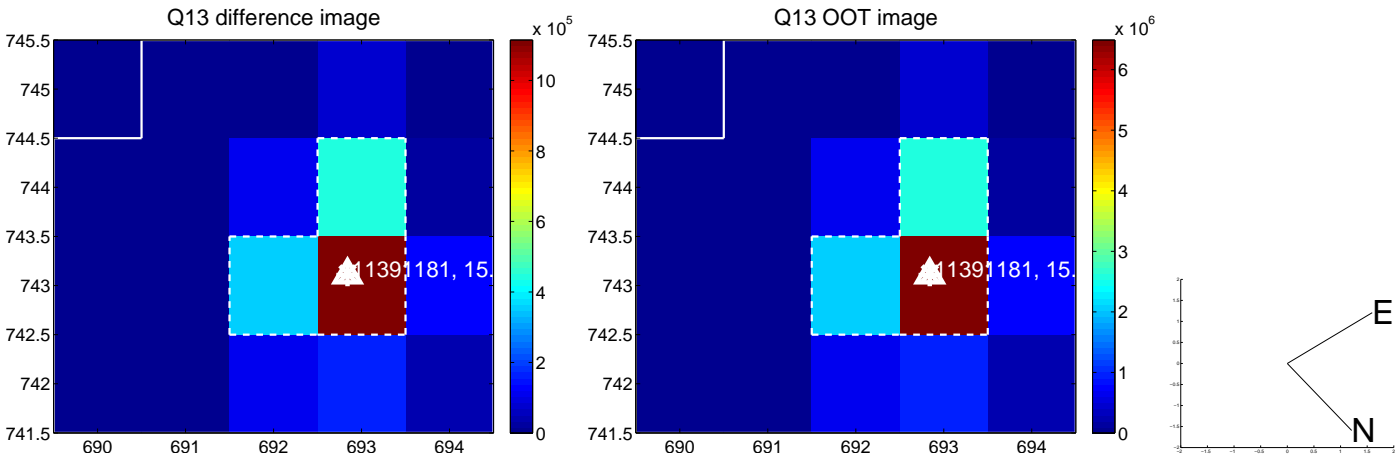
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



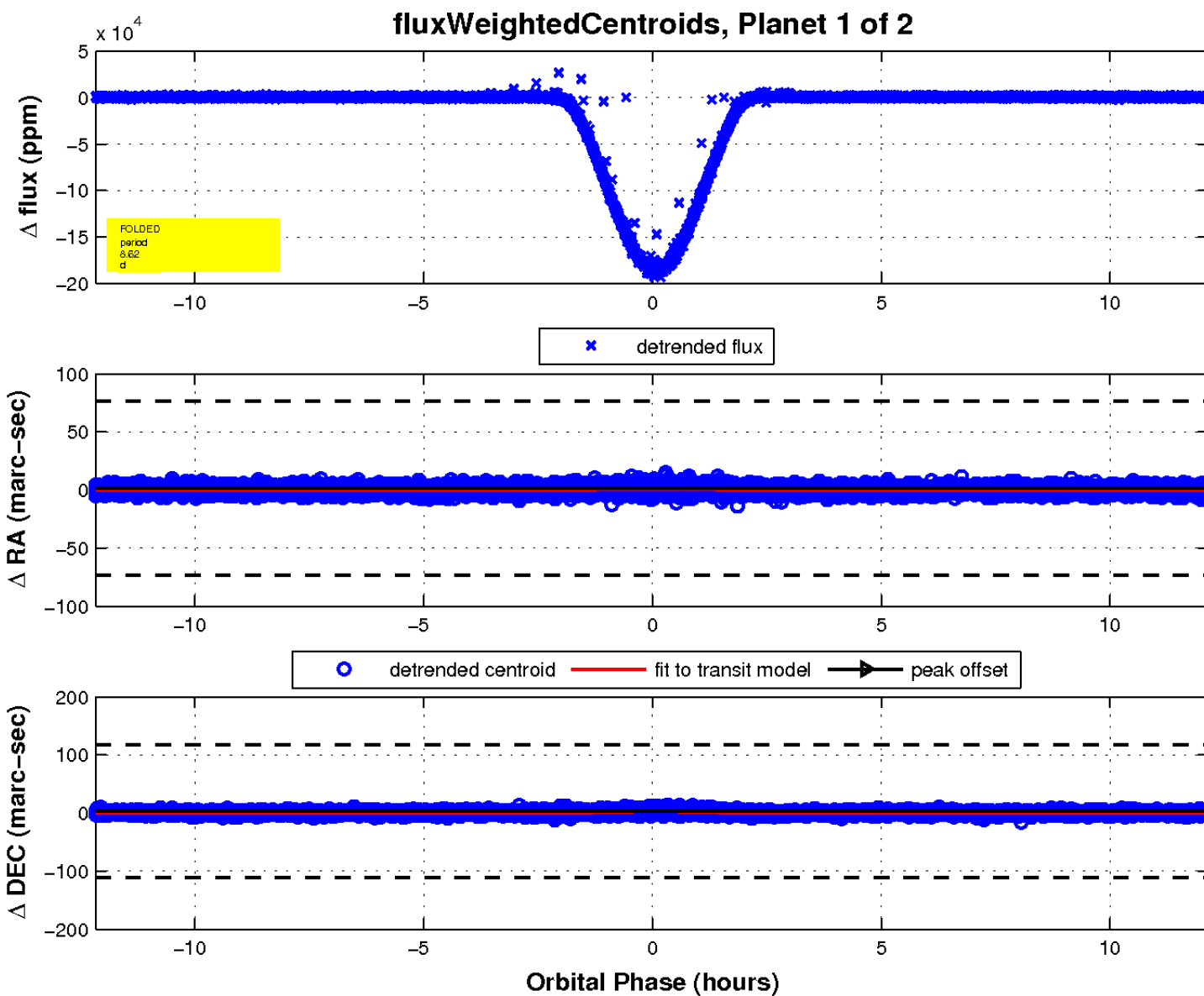
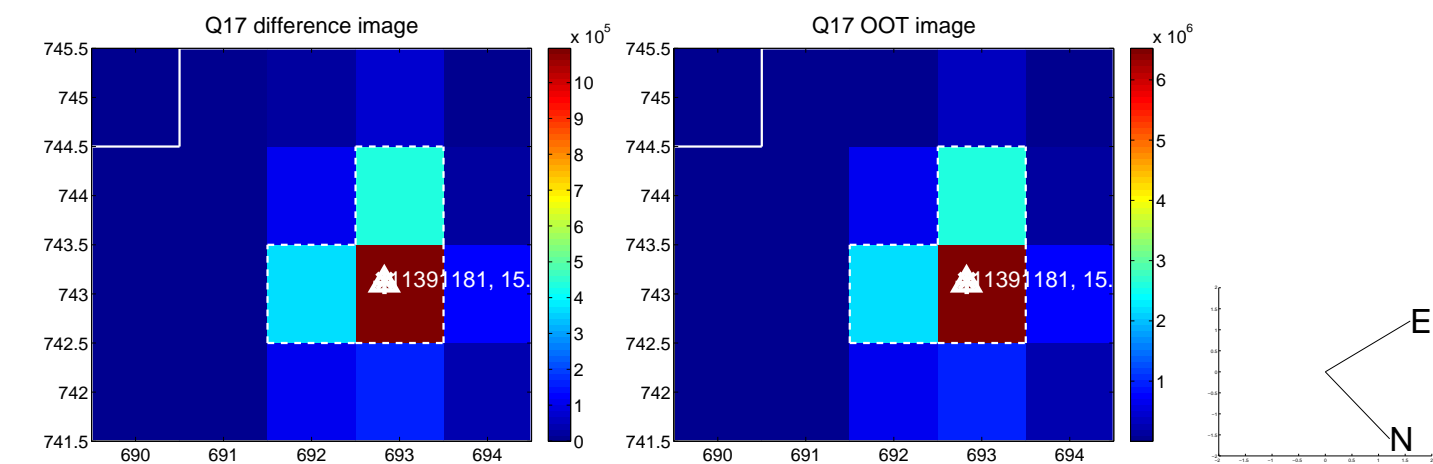
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

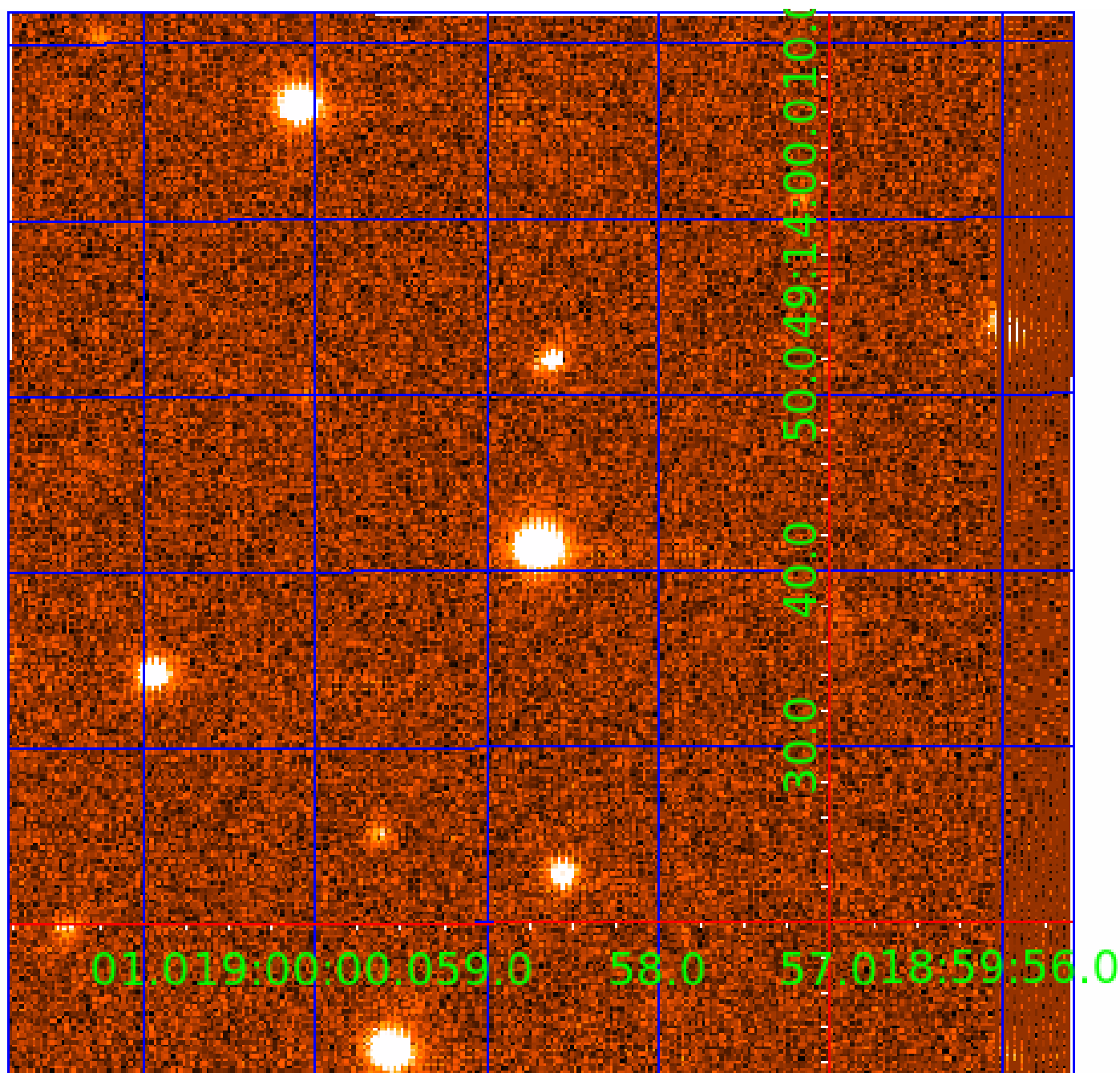


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011391181

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})
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011391181-02	OBS	No	8.617336	135.691268	108136.5	4.380	3160.3	2367.8	0.87	5387	42.20	94.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011391181-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
011391181-02	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.

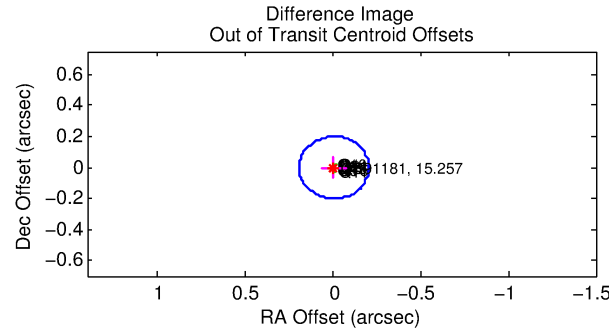
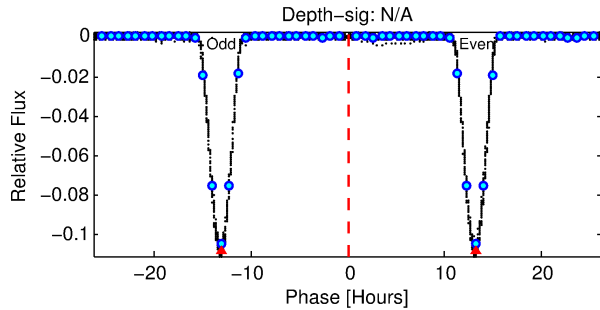
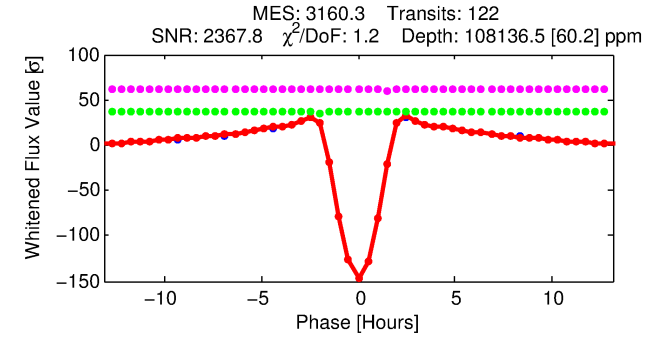
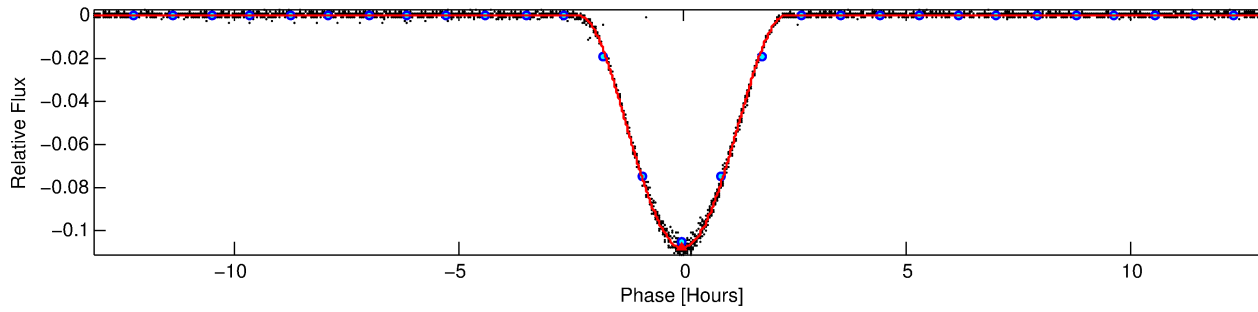
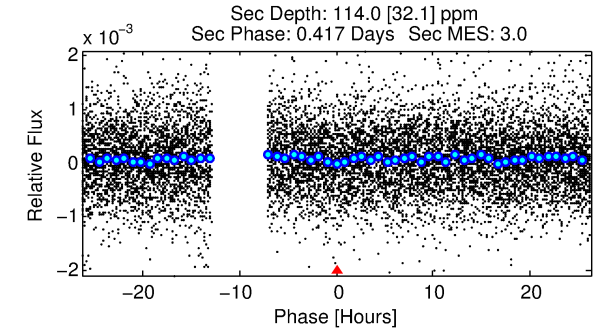
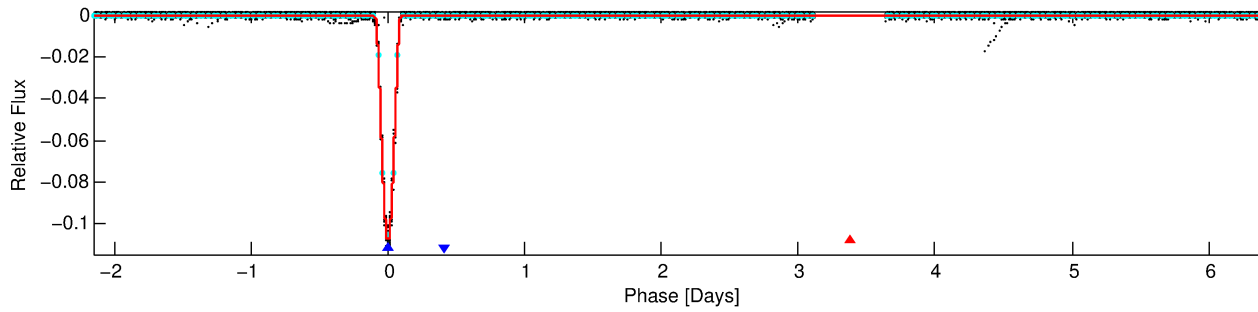
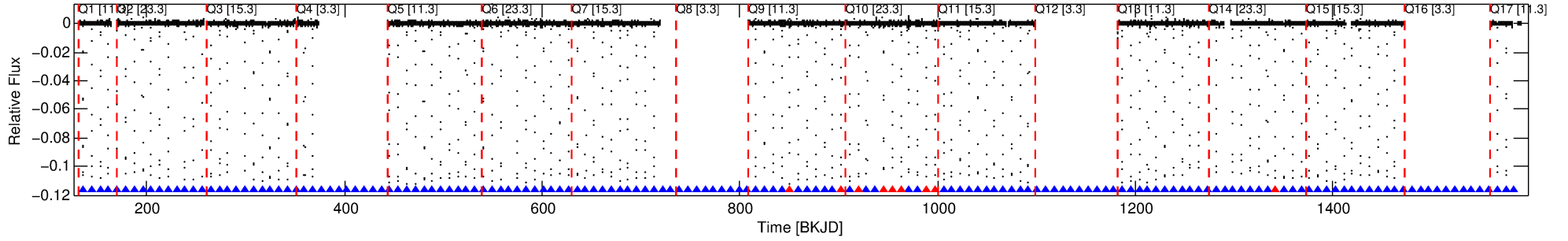
Ephemeris Match Information For 011391181-02

No Significant Match Found

DV One-Page Summary

KIC: 11391181 Candidate: 2 of 2 Period: 8.617 d
KOI: K07442 Corr: No Ephemeris Match

Kp: 15.26 R*: 0.87 Rs Teff: 5387.0 K Logg: 4.48 Fe/H: -0.060



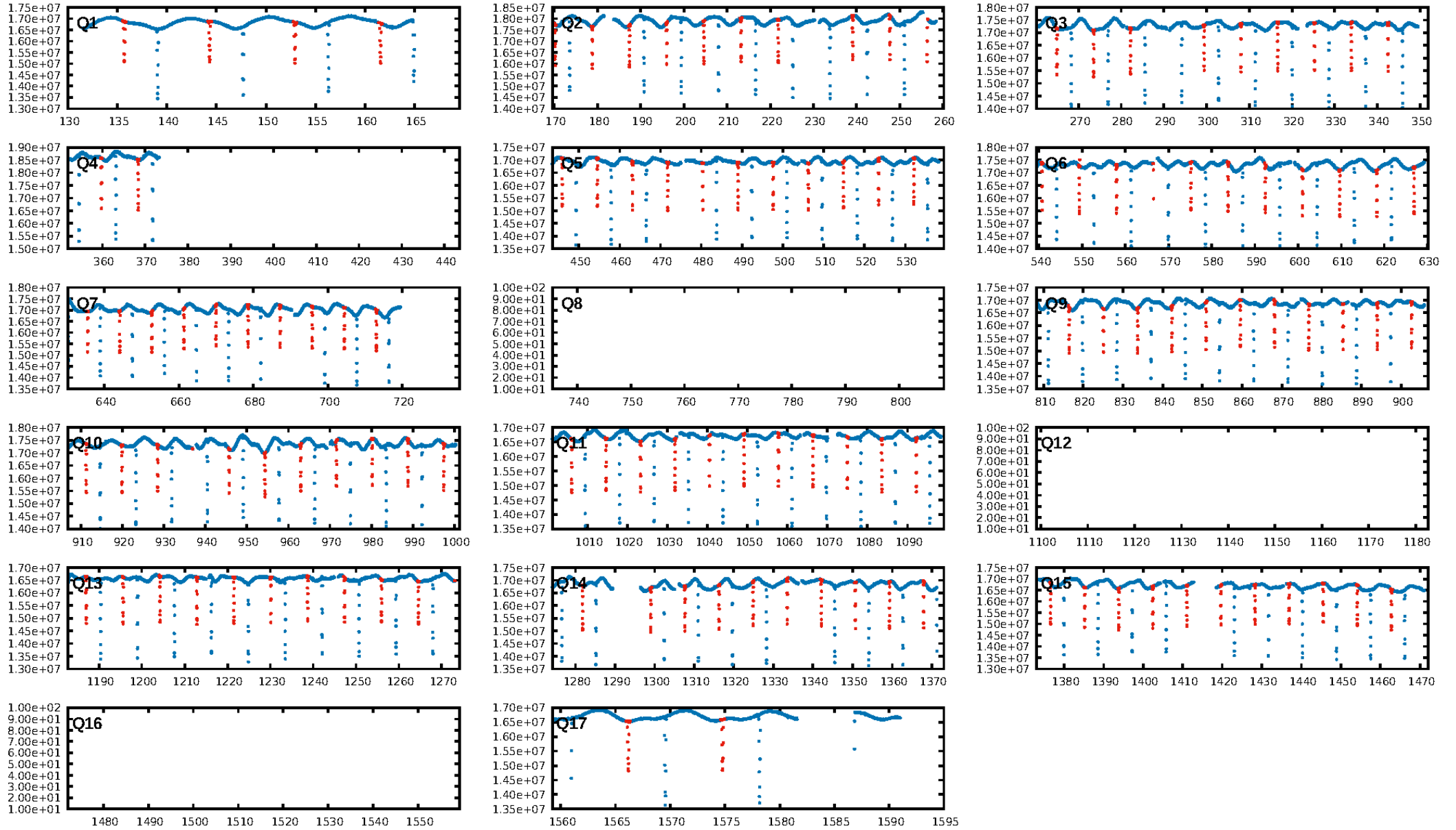
DV Fit Results:

Period = 8.61734 [0.00000] d
Epoch = 135.6913 [0.0000] BKJD
Rp/R* = 0.4445 [0.0206]
a/R* = 16.99 [0.04]
b = 0.90 [0.03]
Seff = 94.94 [25.88]
Teq = 796 [54] K
Rp = 42.20 [8.29] Re
a = 0.0776 [0.0126] AU
Ag = 0.21 [0.08] [-9.77σ]
Teffp = 835 [68] K [0.45σ]

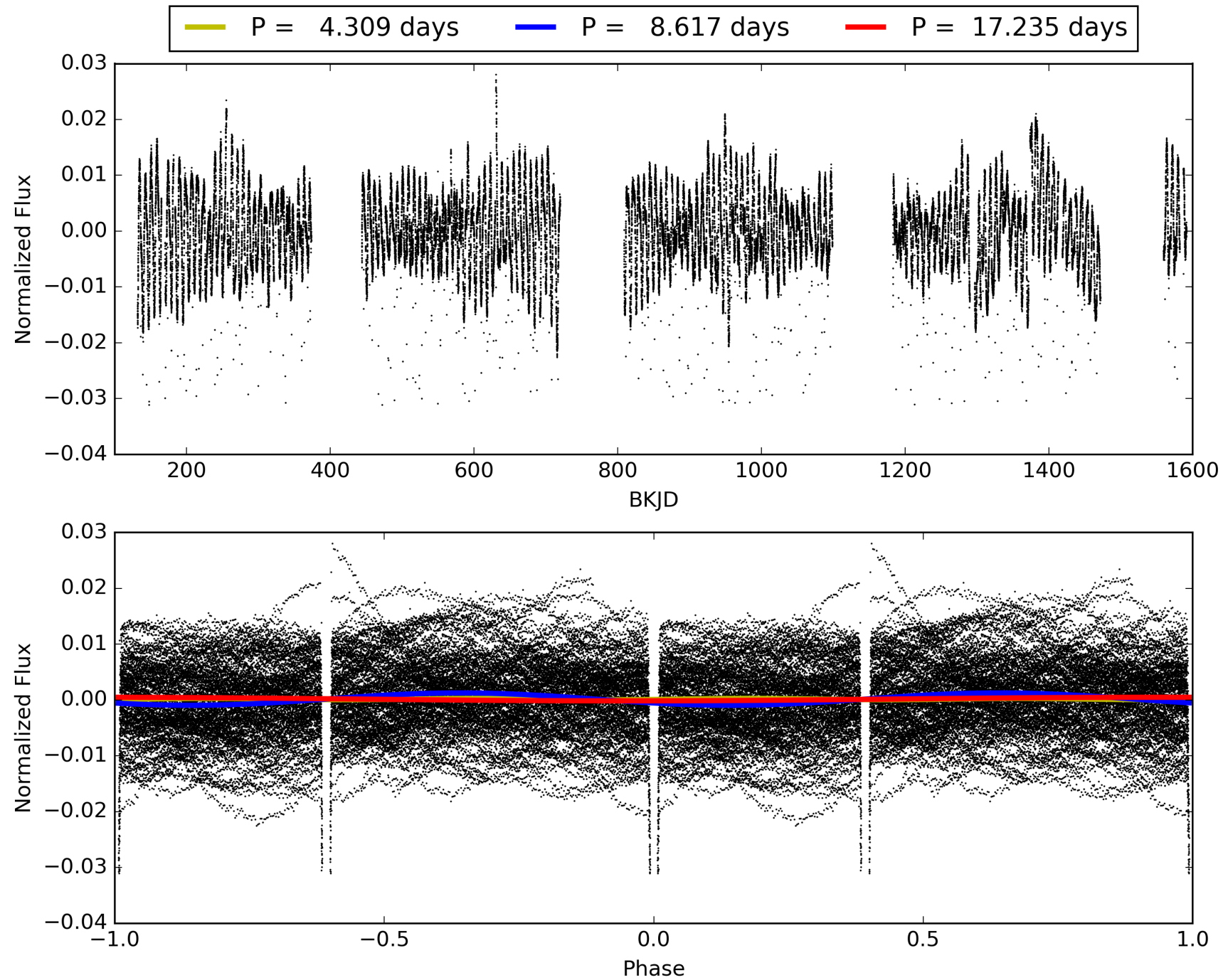
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.92 [105/114]
GhostDiagnostic-chr: 2.348
Centroid-sig: 0.0%
Centroid-so: 0.067 arcsec [22.52σ]
OotOffset-rm: 0.007 arcsec [0.10σ]
KicOffset-rm: 0.043 arcsec [0.63σ]
OotOffset-st: 4/4/1/5 [14]
KicOffset-st: 4/4/1/5 [14]
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TCE 011391181-02, PDC Light Curves

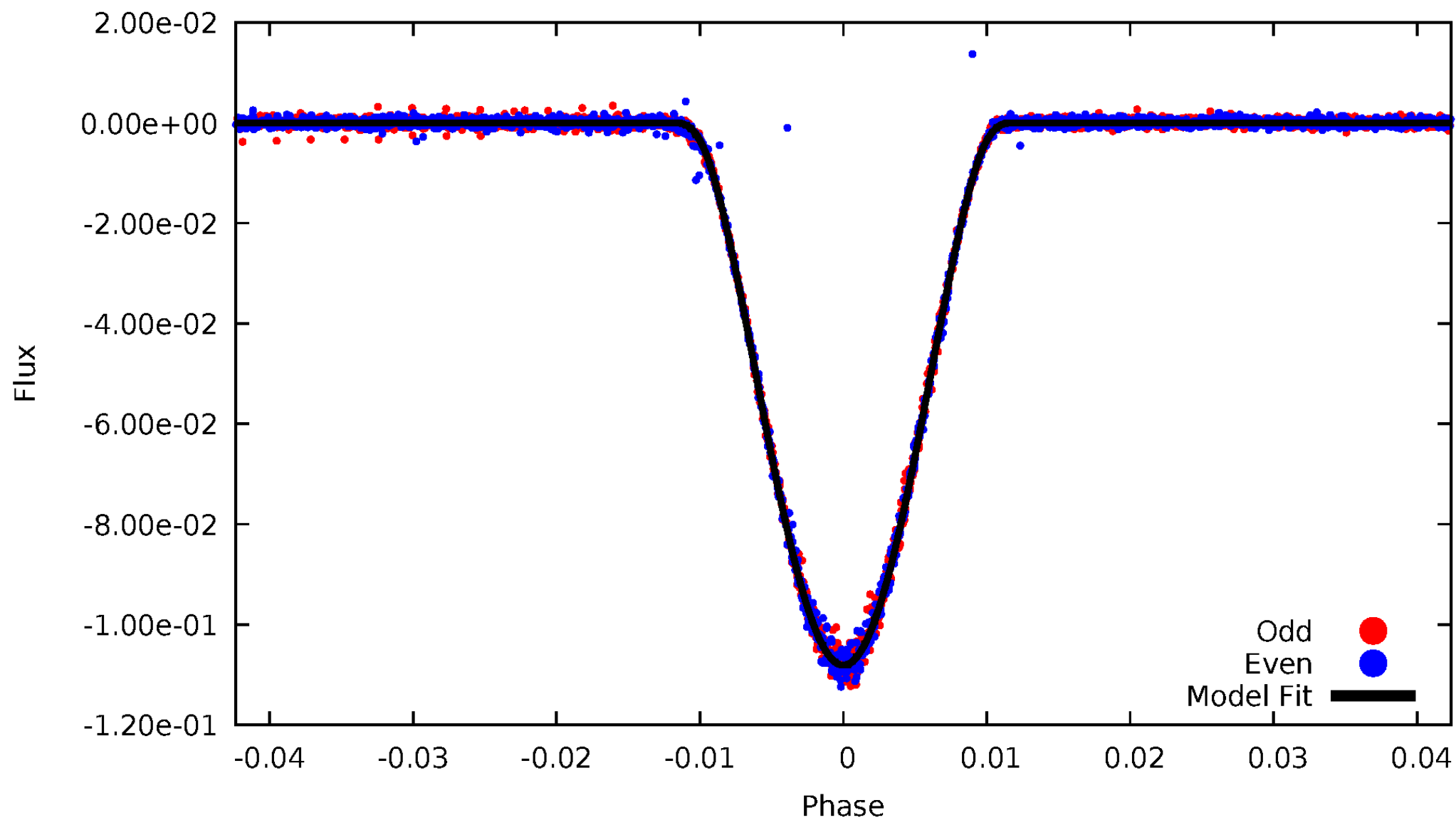


TCE 011391181-02



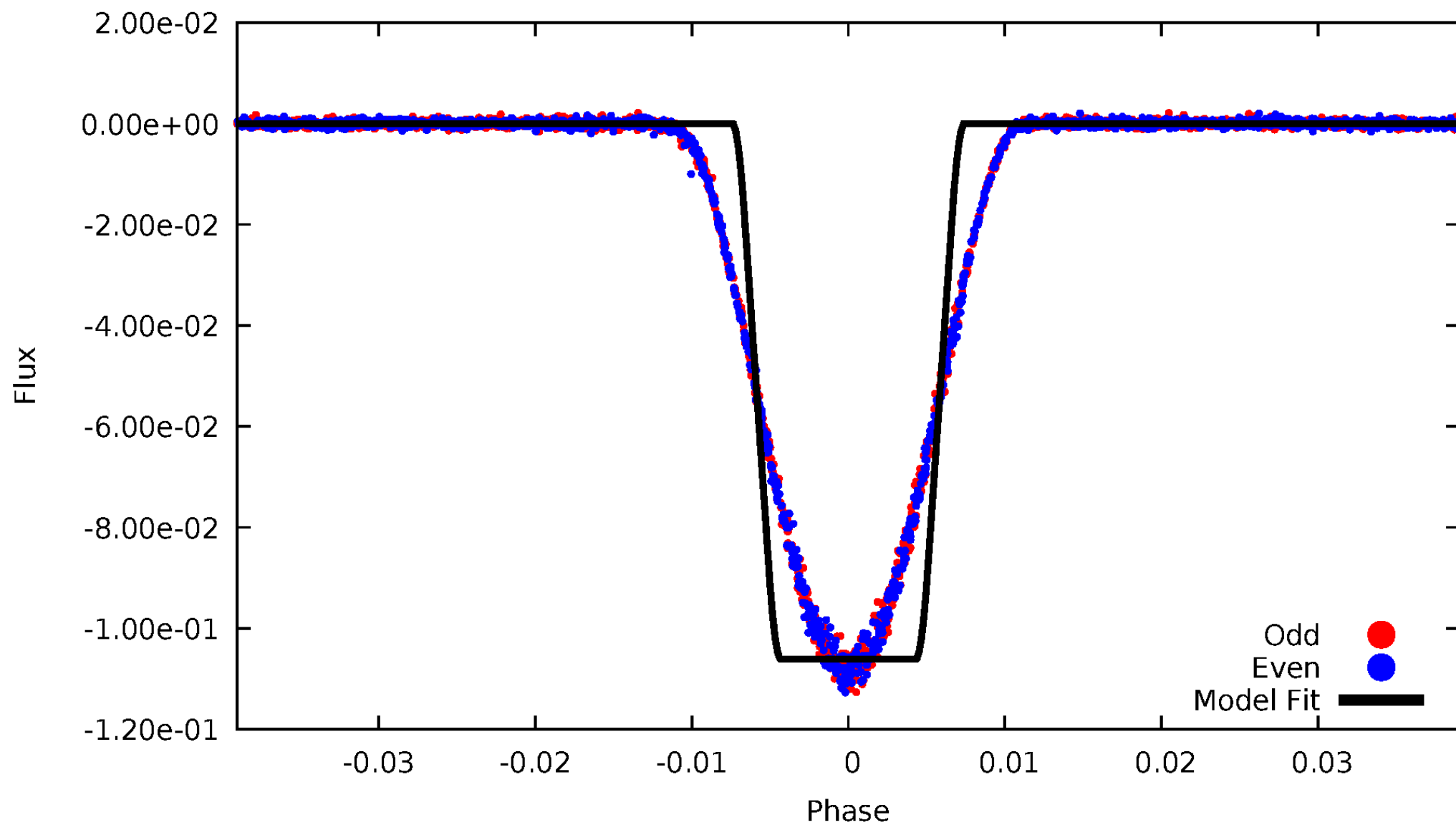
DV Odd/Even

TCE 011391181-02



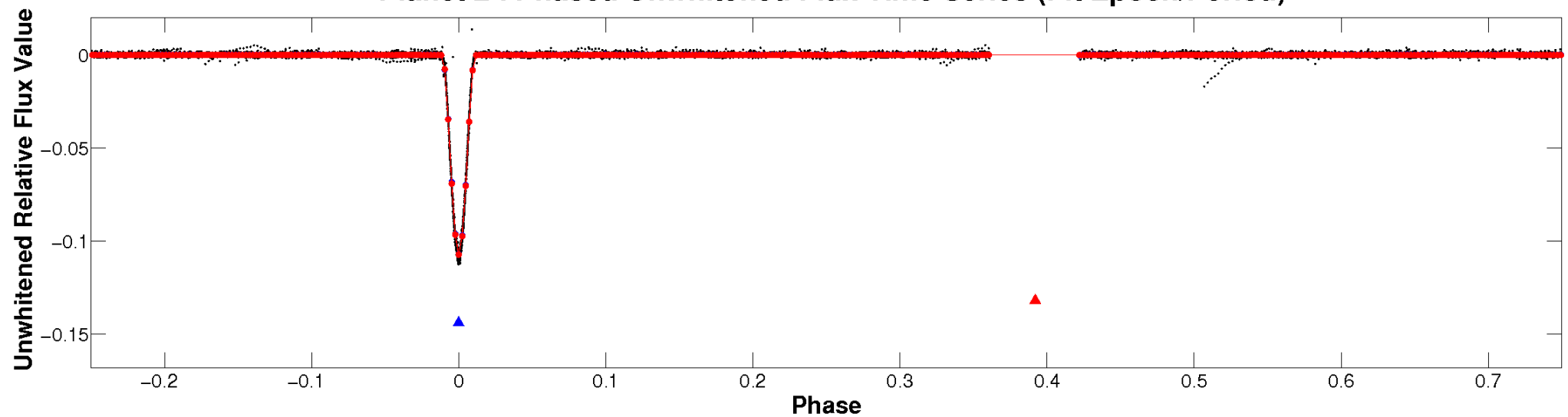
ALT Odd/Even

TCE 011391181-02

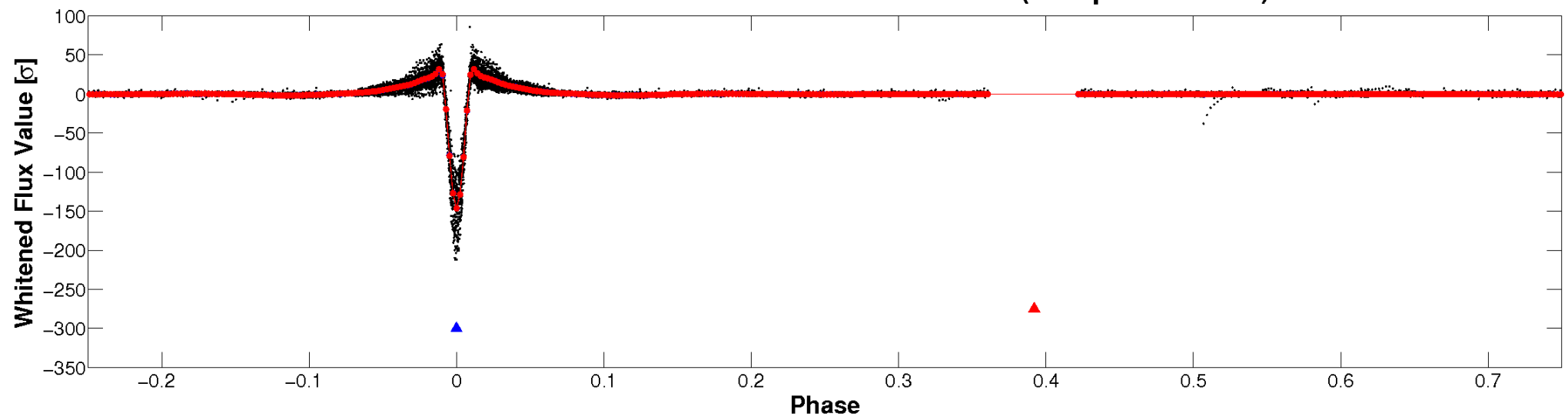


Non-Whitened Vs. Whitened Light Curve

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

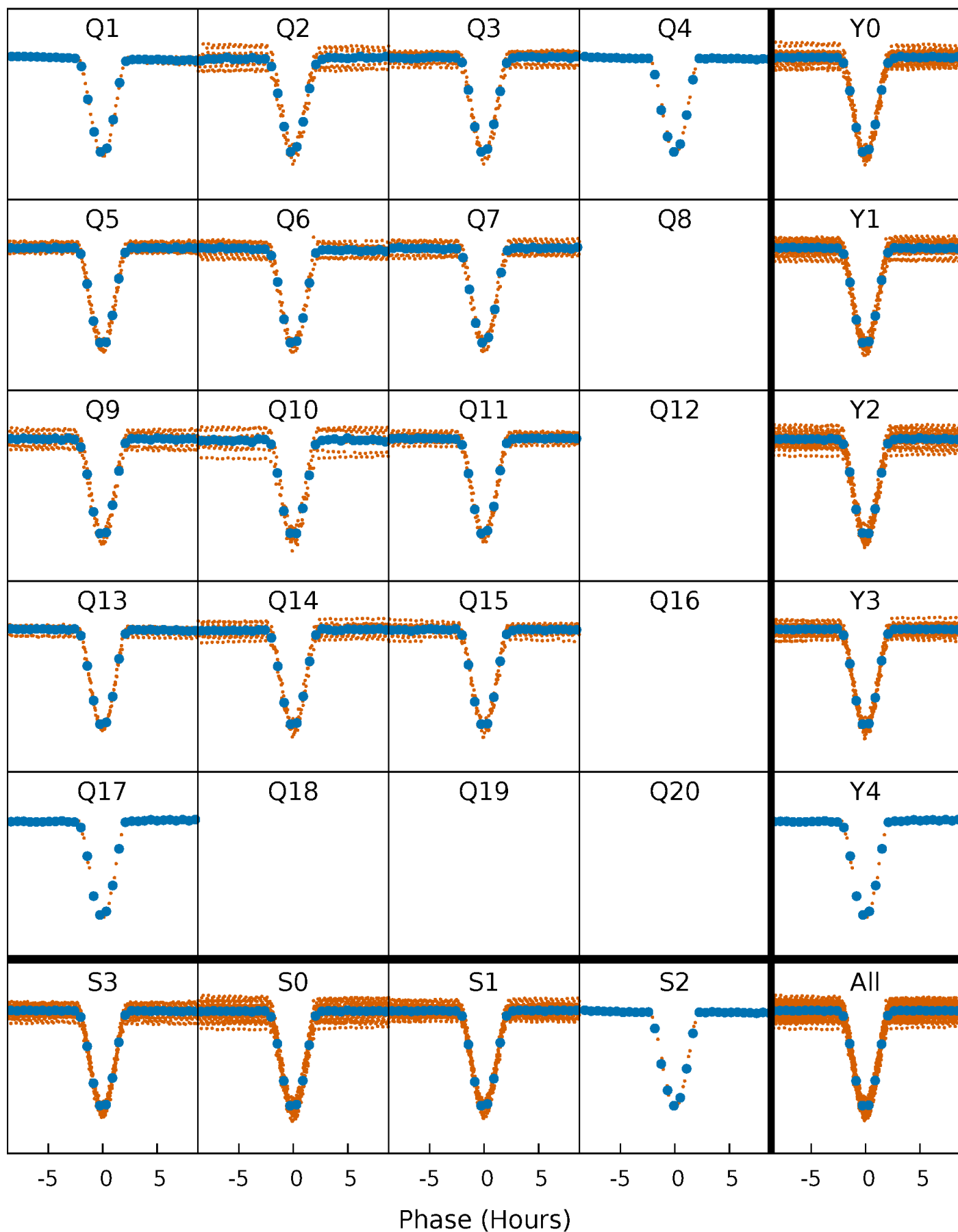


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



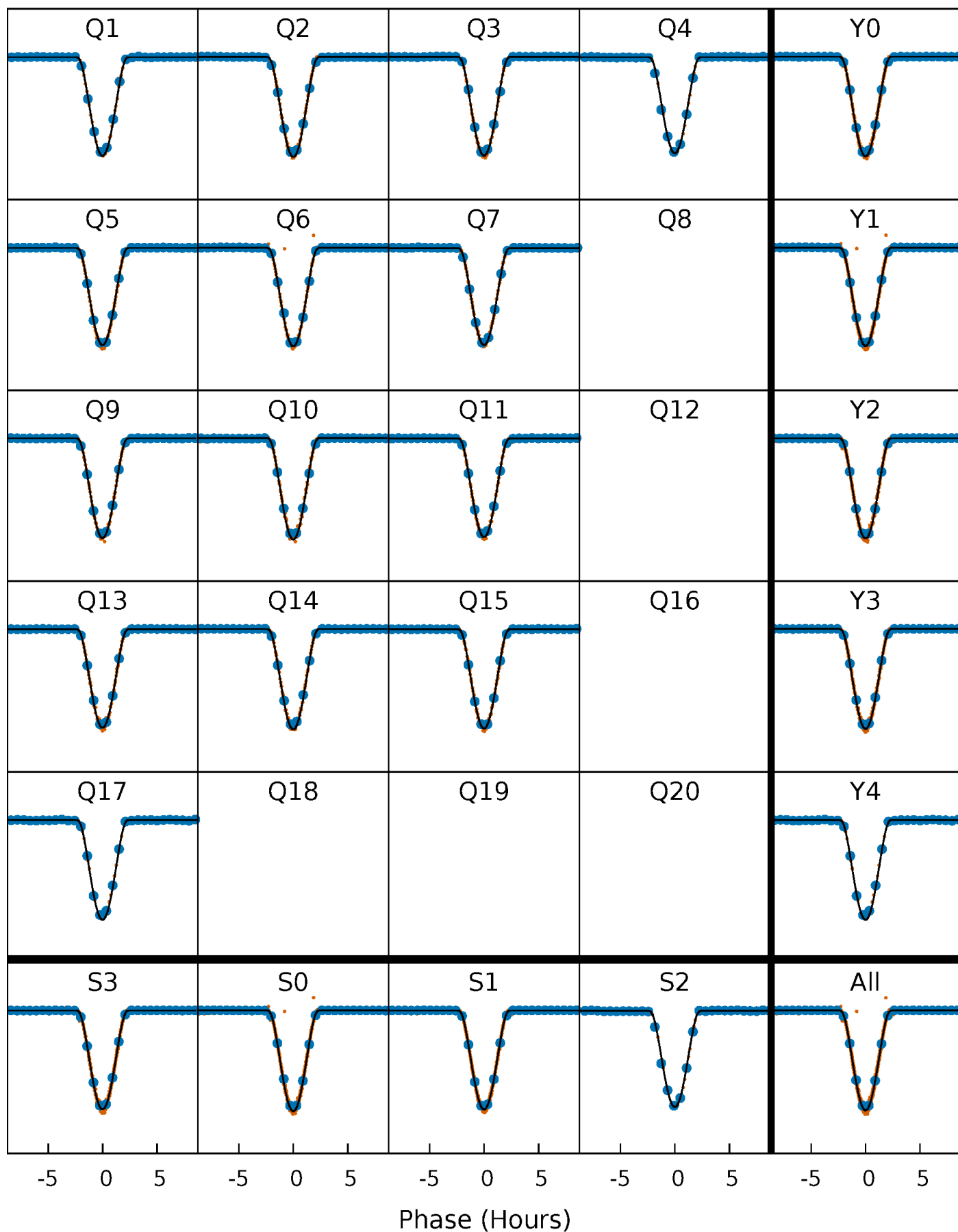
PDC Quarter-Phased Transit Curves

TCE 011391181-02 P= 8.617336 Days $T_0=135.691268$ (BKJD)



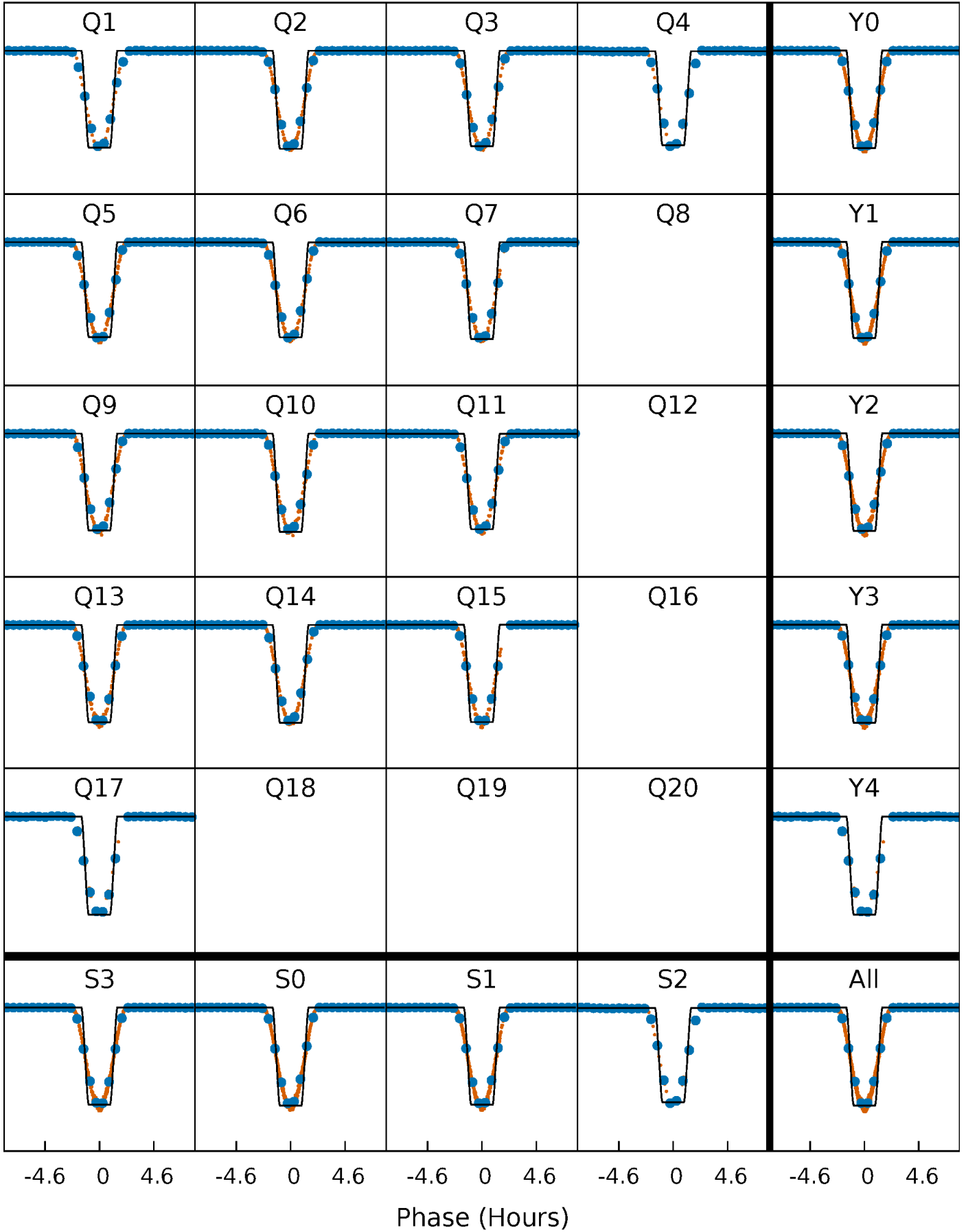
DV Quarter-Phased Transit Curves

TCE 011391181-02 P= 8.617336 Days $T_0=135.691268$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

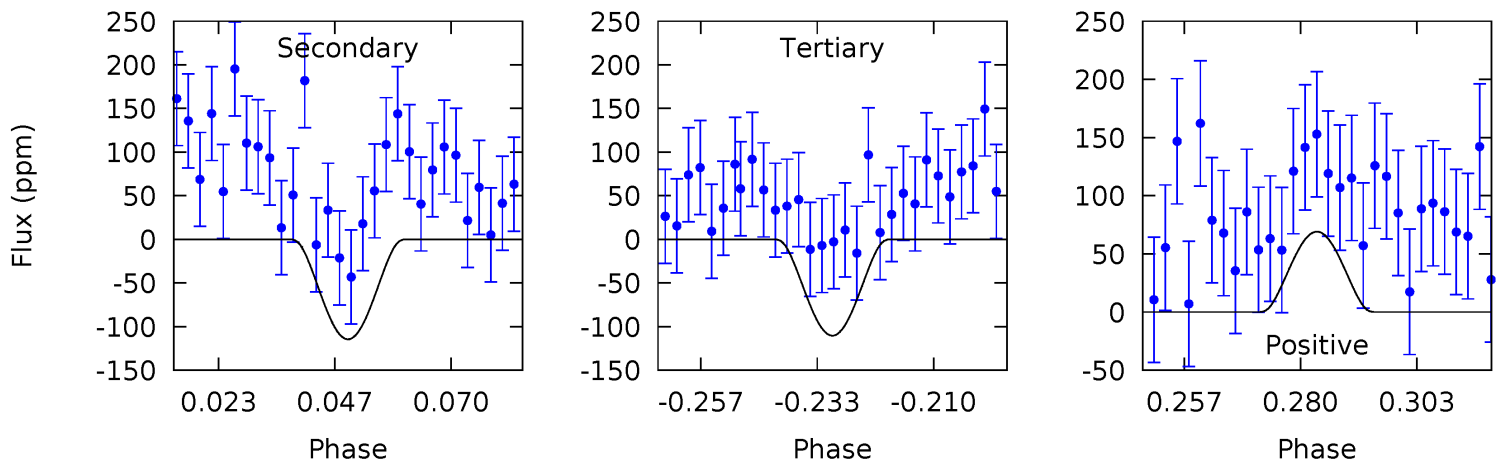
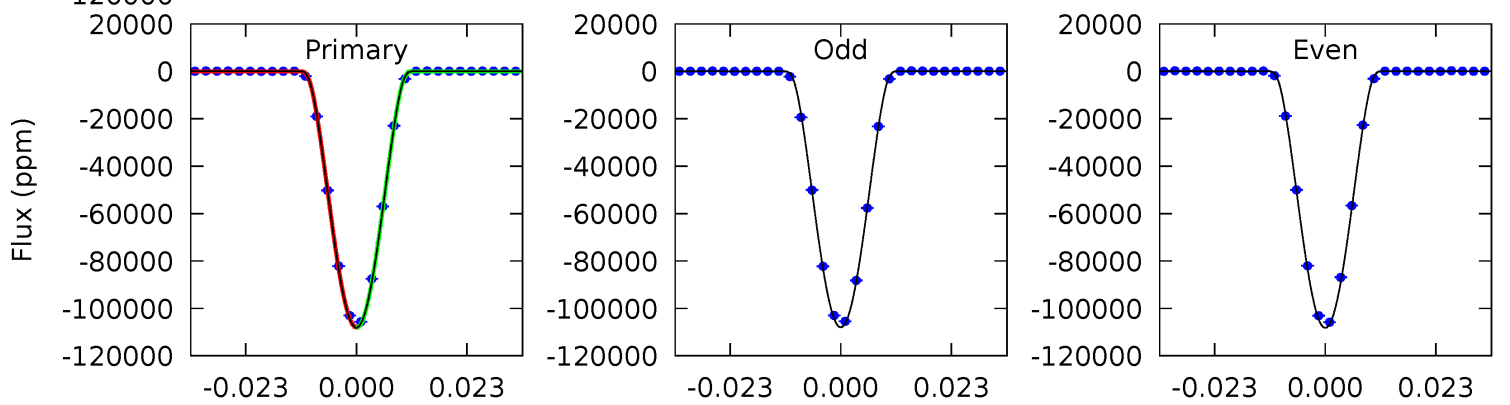
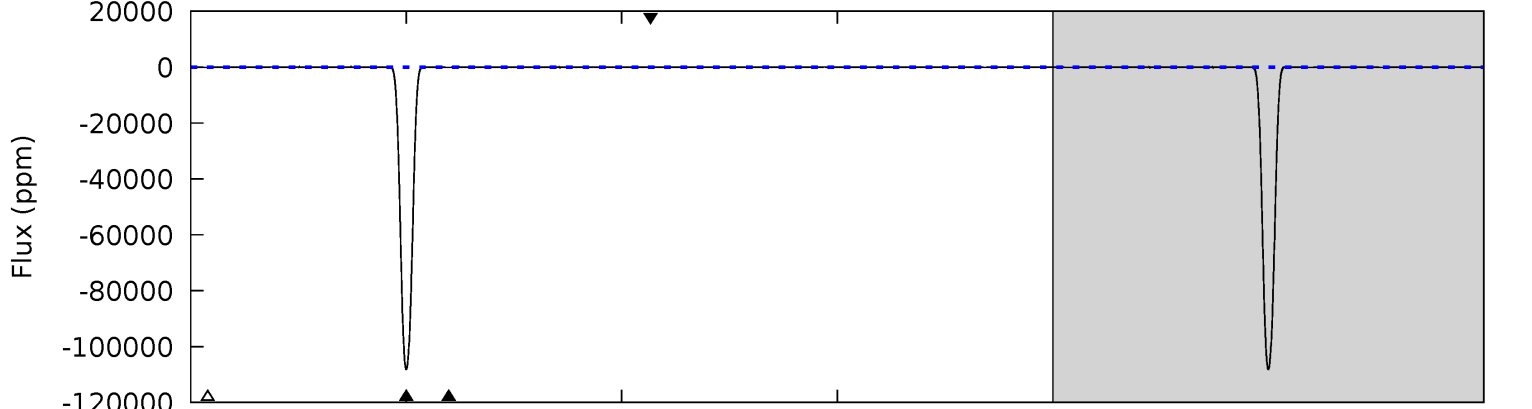
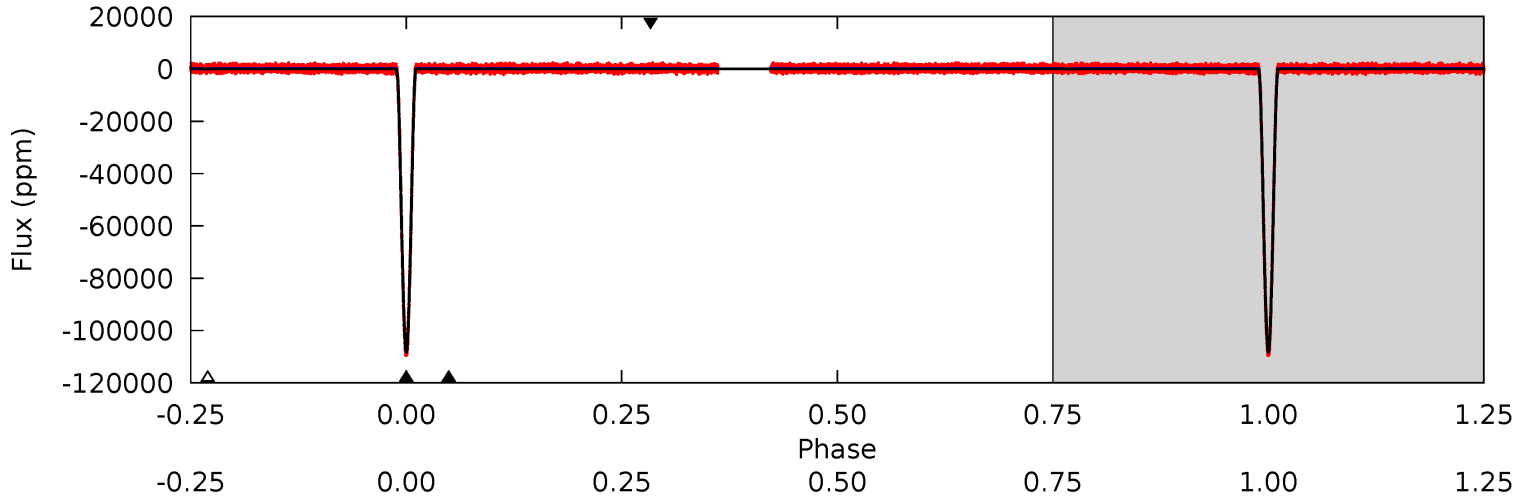
TCE 011391181-02 P= 8.617335 Days $T_0=135.691334$ (BKJD)



DV Model-Shift Uniqueness Test

011391181-02, P = 8.617336 Days, E = 127.073932 Days

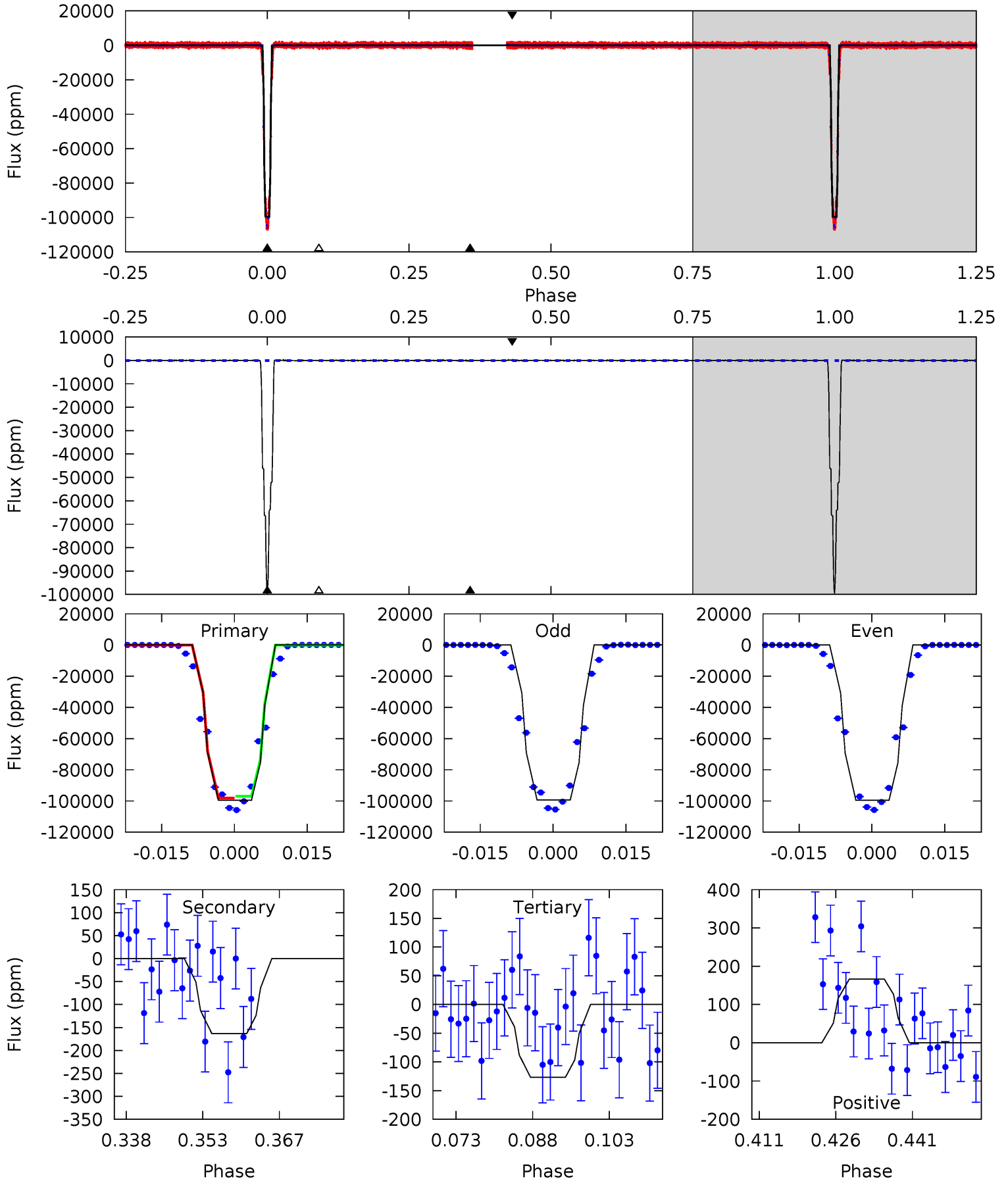
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6131	6.49	6.26	3.92	4.86	2.27	2.03	6124	6127	0.23	2.57	7.48	0.99	0.00	0



Alt Model-Shift Uniqueness Test

011391181-02, P = 8.617335 Days, E = 127.073999 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3147	5.17	4.01	5.27	4.95	2.44	1.24	3143	3141	1.15	-0.10	3.24	1.00	0.00	15.5



Stellar Parameters For KIC 011391181

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5387^{+176}_{-160}	$4.482^{+0.088}_{-0.132}$	$-0.060^{+0.300}_{-0.300}$	$0.870^{+0.166}_{-0.102}$	$0.837^{+0.097}_{-0.071}$	$1.793^{+0.674}_{-0.679}$
	+3%/-3%	+2%/-3%	+500%/-500%	+19%/-12%	+12%/-8%	+38%/-38%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 011391181-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-114 ± 18	$42.64^{+4.62}_{-3.57}$	1120^{+60}_{-52}	-1726^{+133}_{-93}	$0.204^{+0.054}_{-0.045}$
Alt.	-163 ± 32	$31.24^{+3.74}_{-3.01}$	1117^{+64}_{-51}	1891^{+94}_{-132}	$0.550^{+0.172}_{-0.143}$

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 $A_{obs} \gg 1.0$

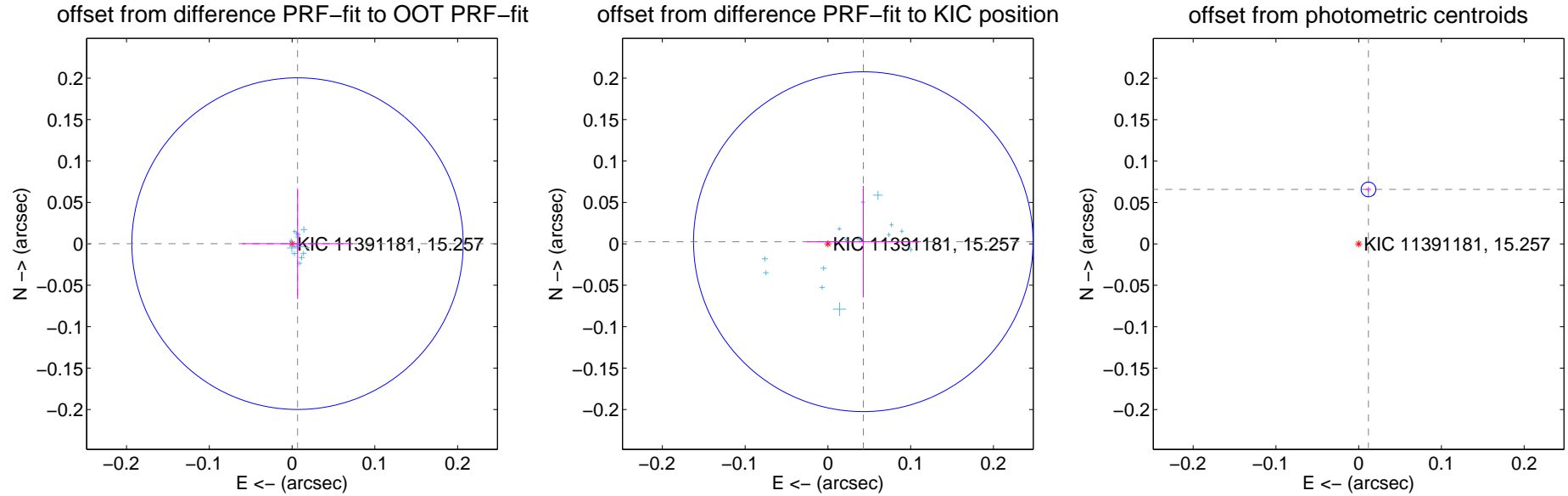
DV Centroid Data

Supplemental centroid analysis for 011391181-02. Kepler magnitude: 15.26. Transit SNR 2367.77

There are 14 quarters with good PRF difference image offsets

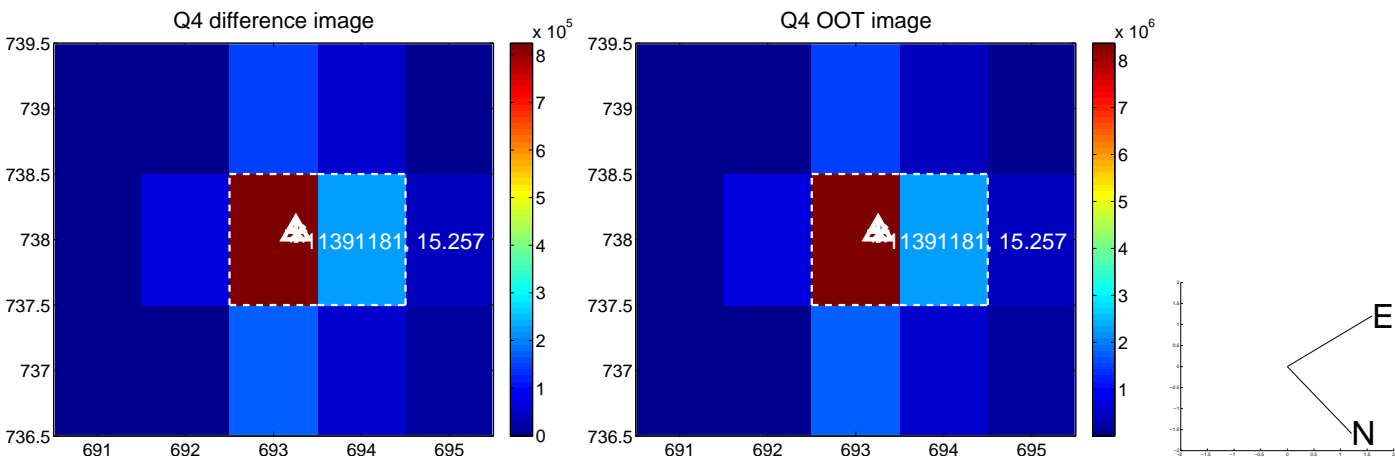
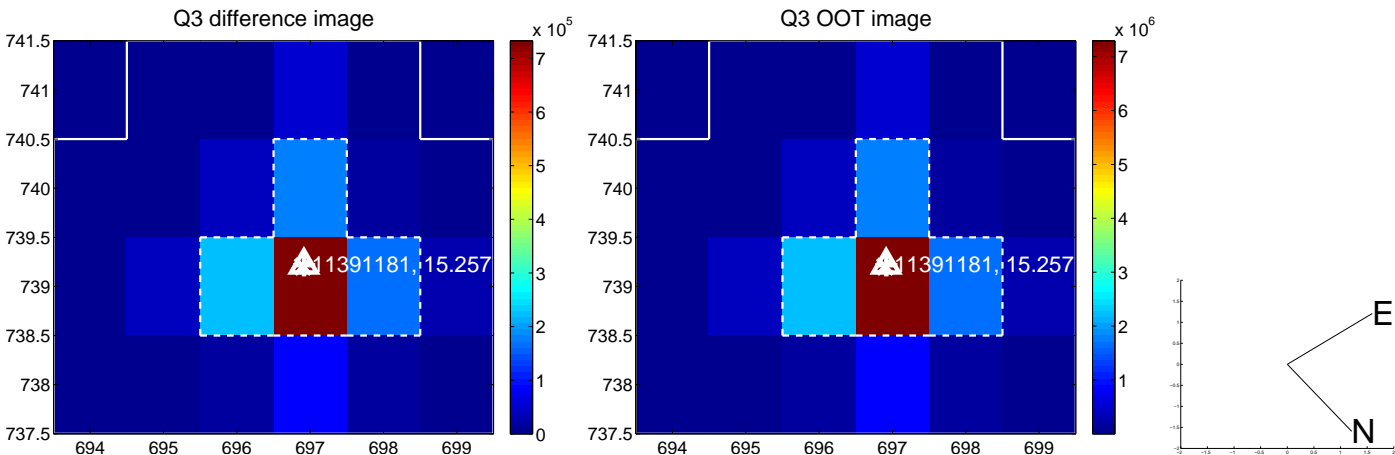
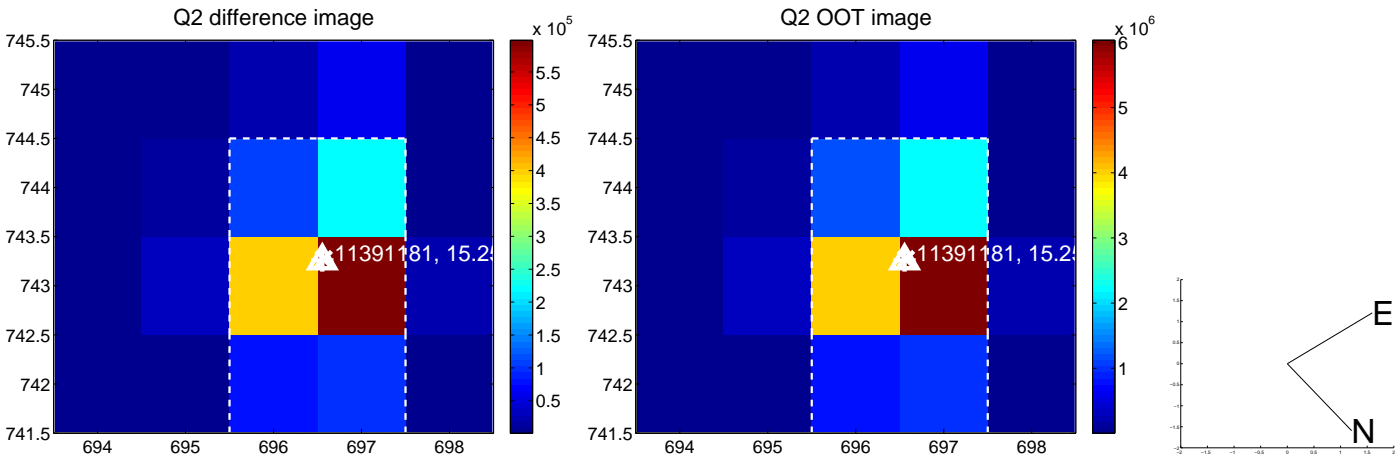
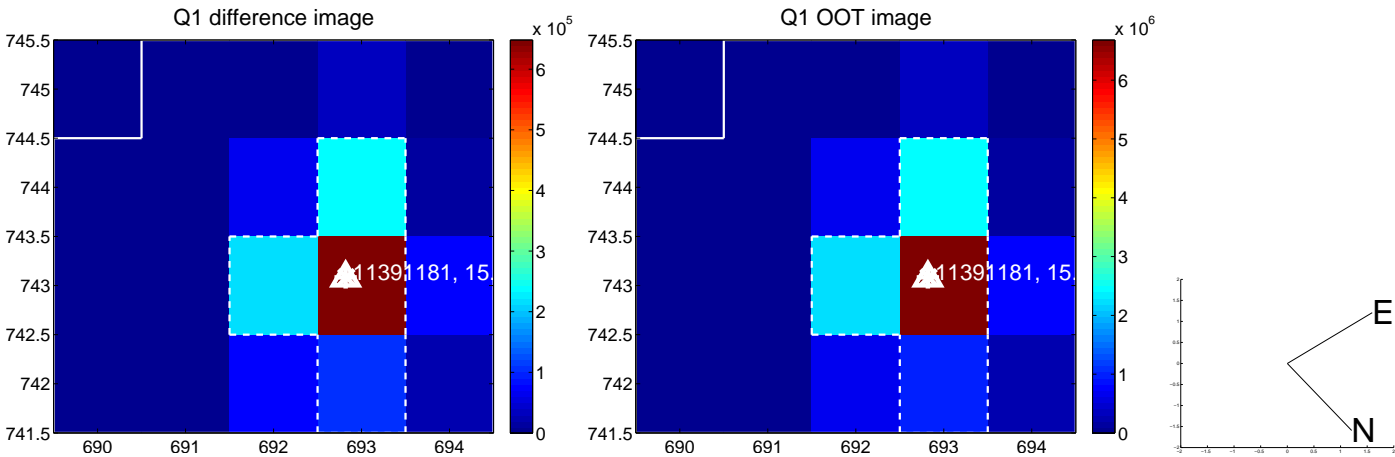
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.007 ± 0.067	0.10	-0.007 ± 0.067	0.000 ± 0.067
PRF-fit source offset from KIC position	0.043 ± 0.068	0.63	-0.043 ± 0.068	0.003 ± 0.067
photometric centroid source offset	0.07 ± 0.00	22.52	-0.01 ± 0.00	0.07 ± 0.00

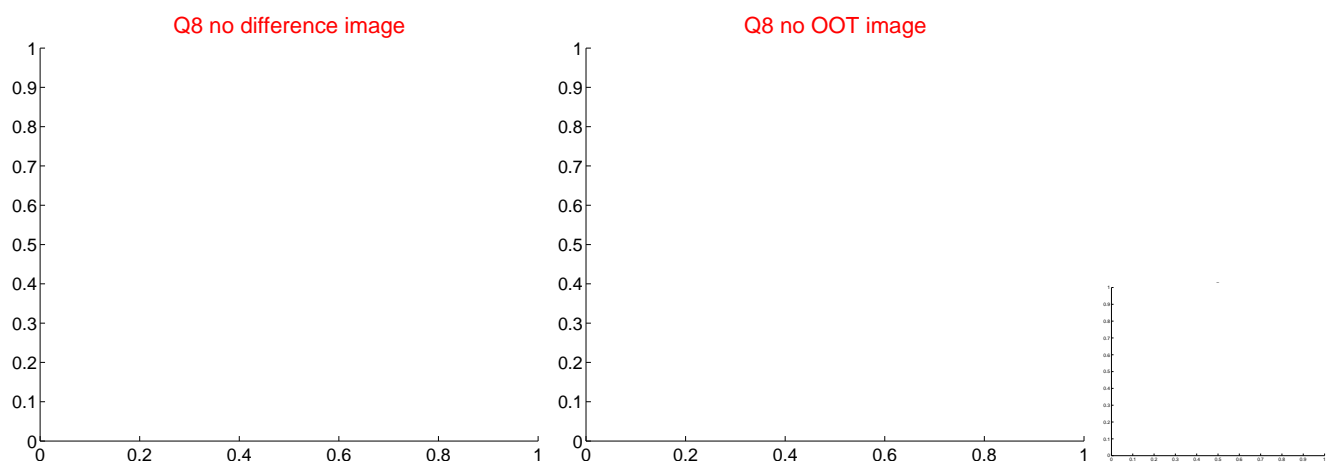
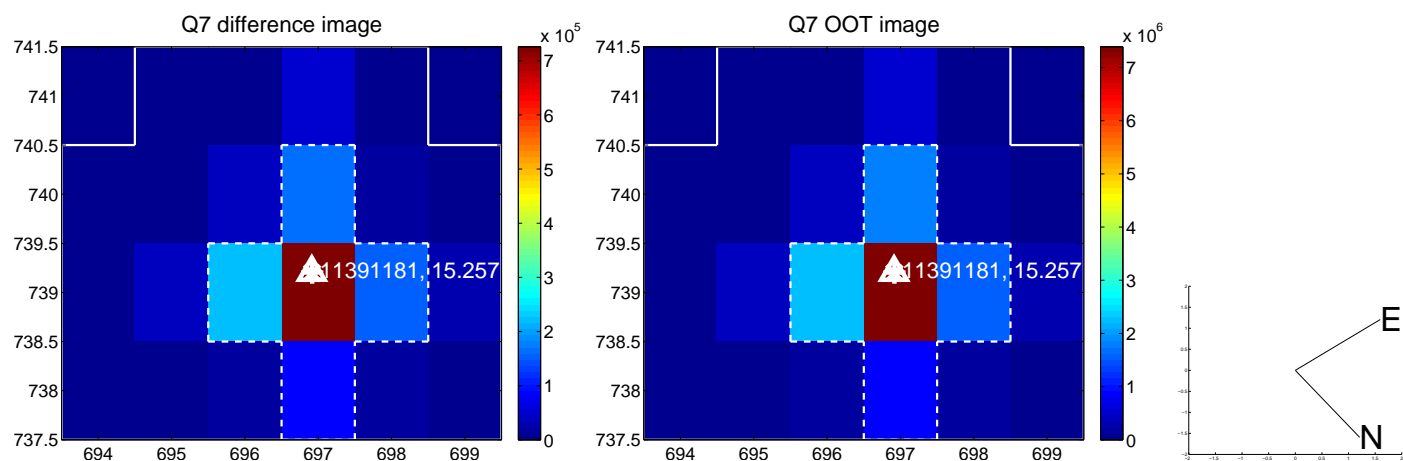
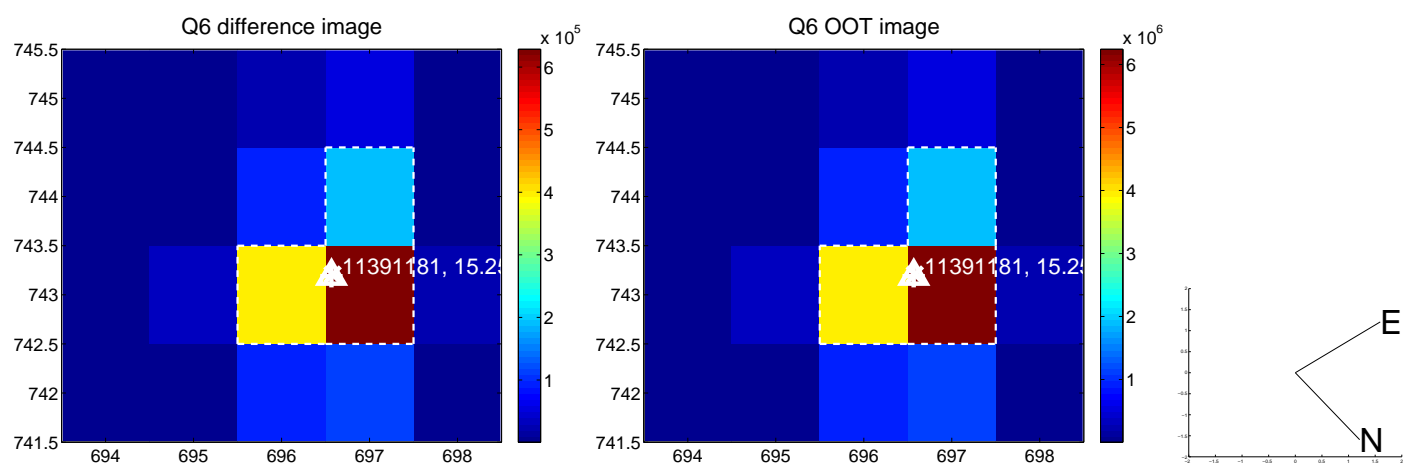
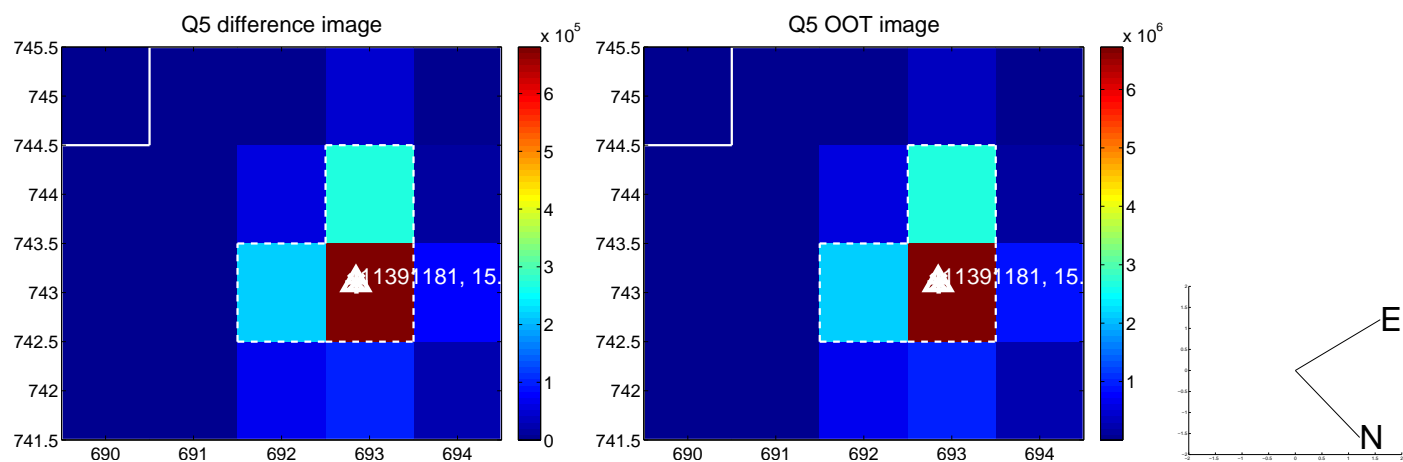


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

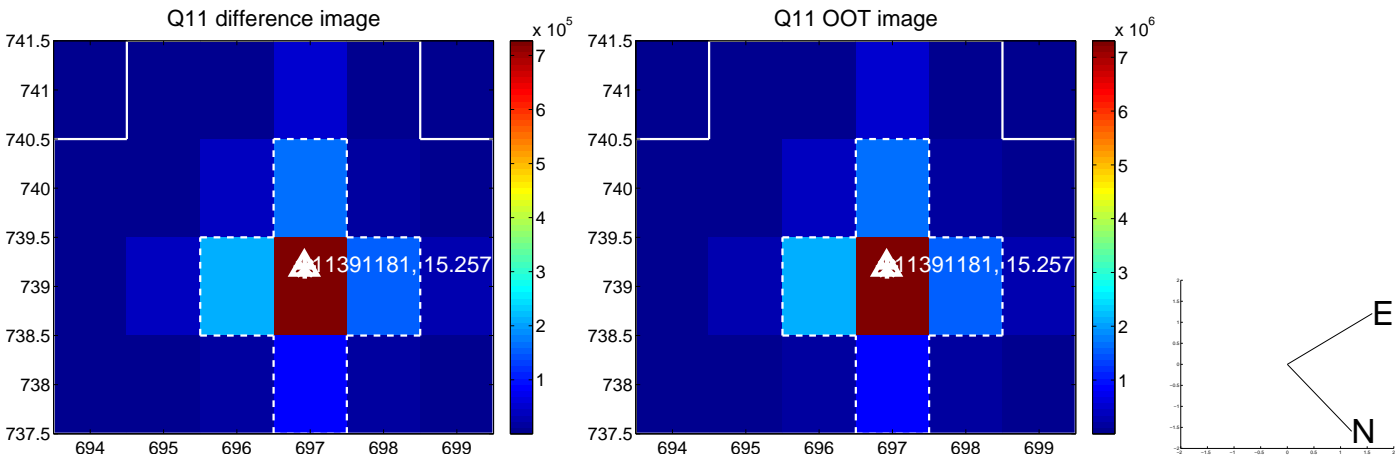
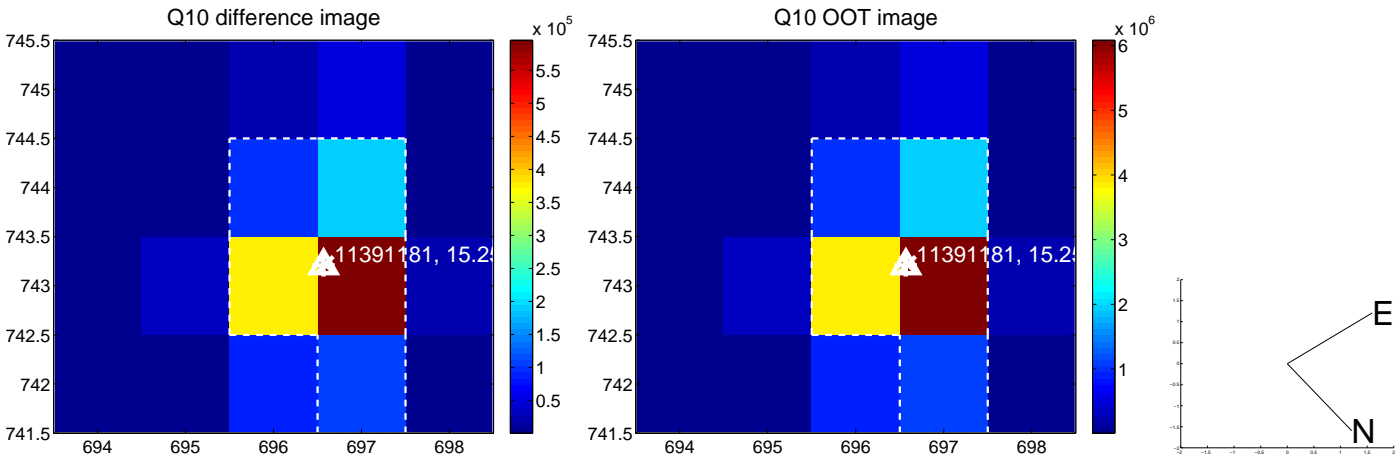
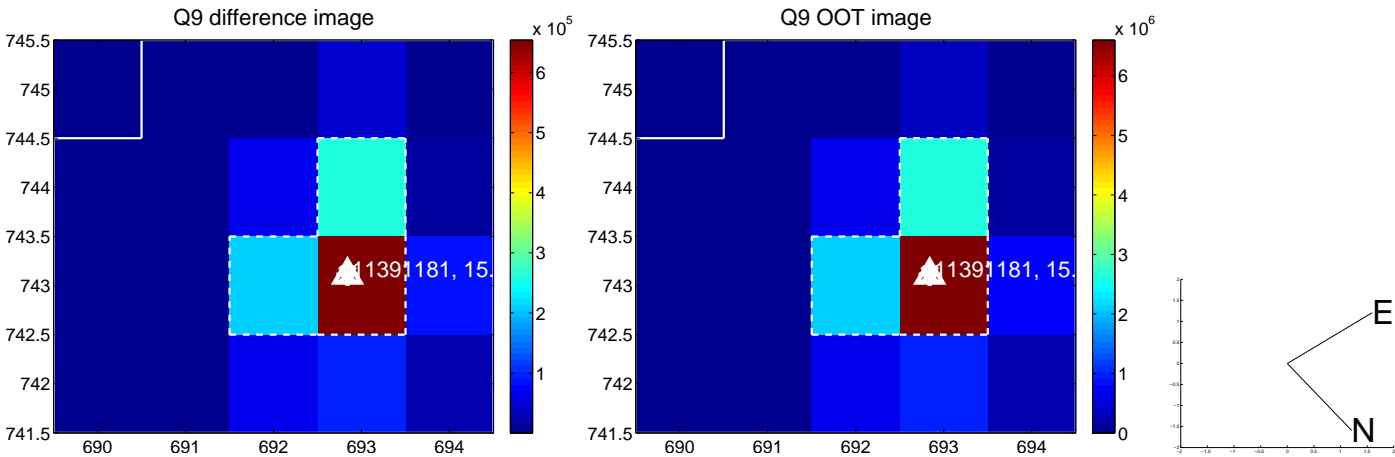
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



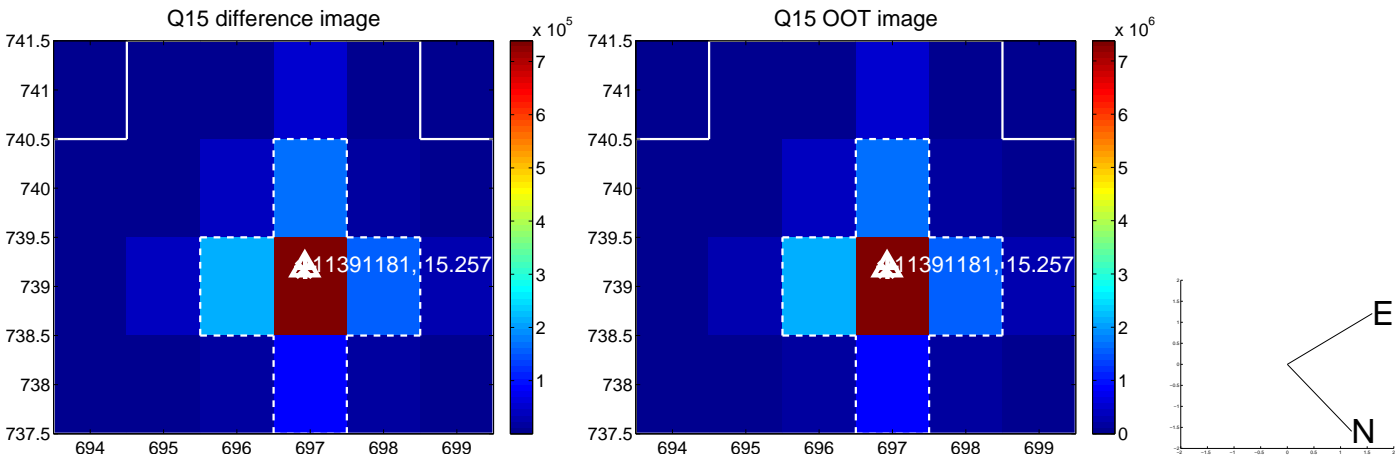
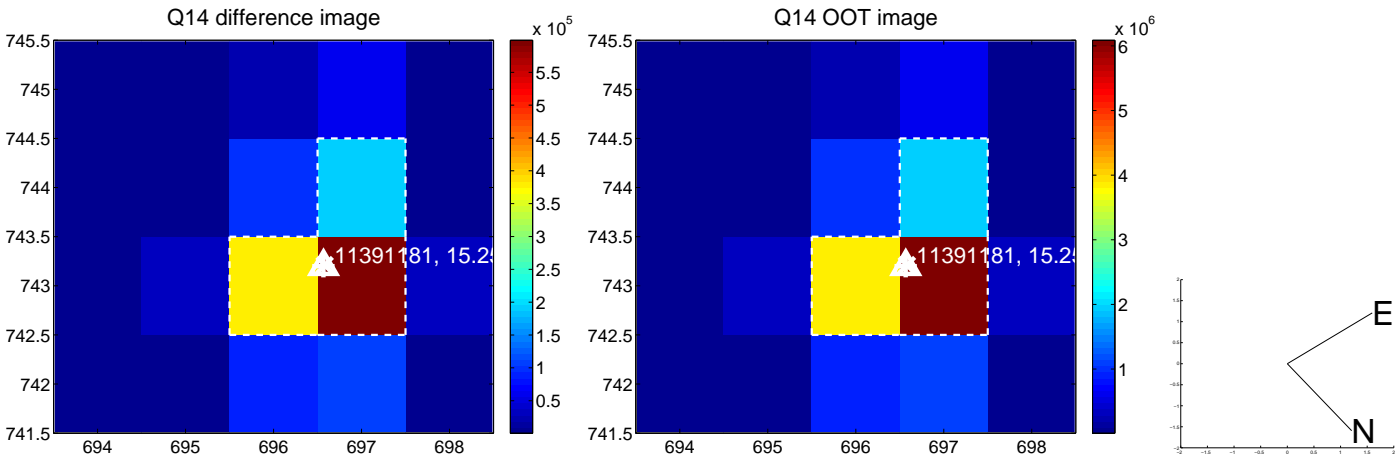
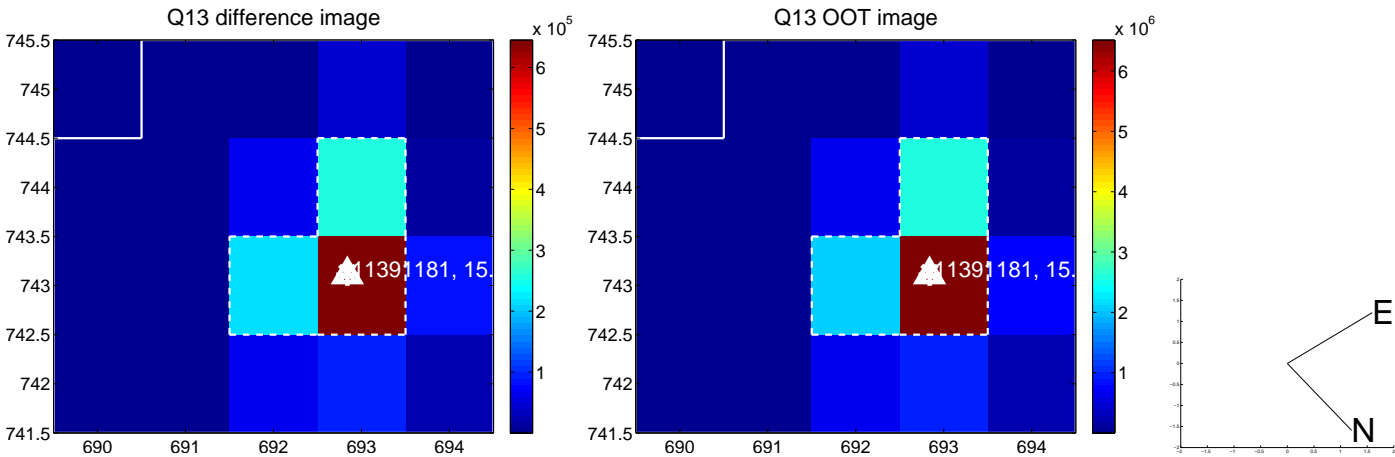
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



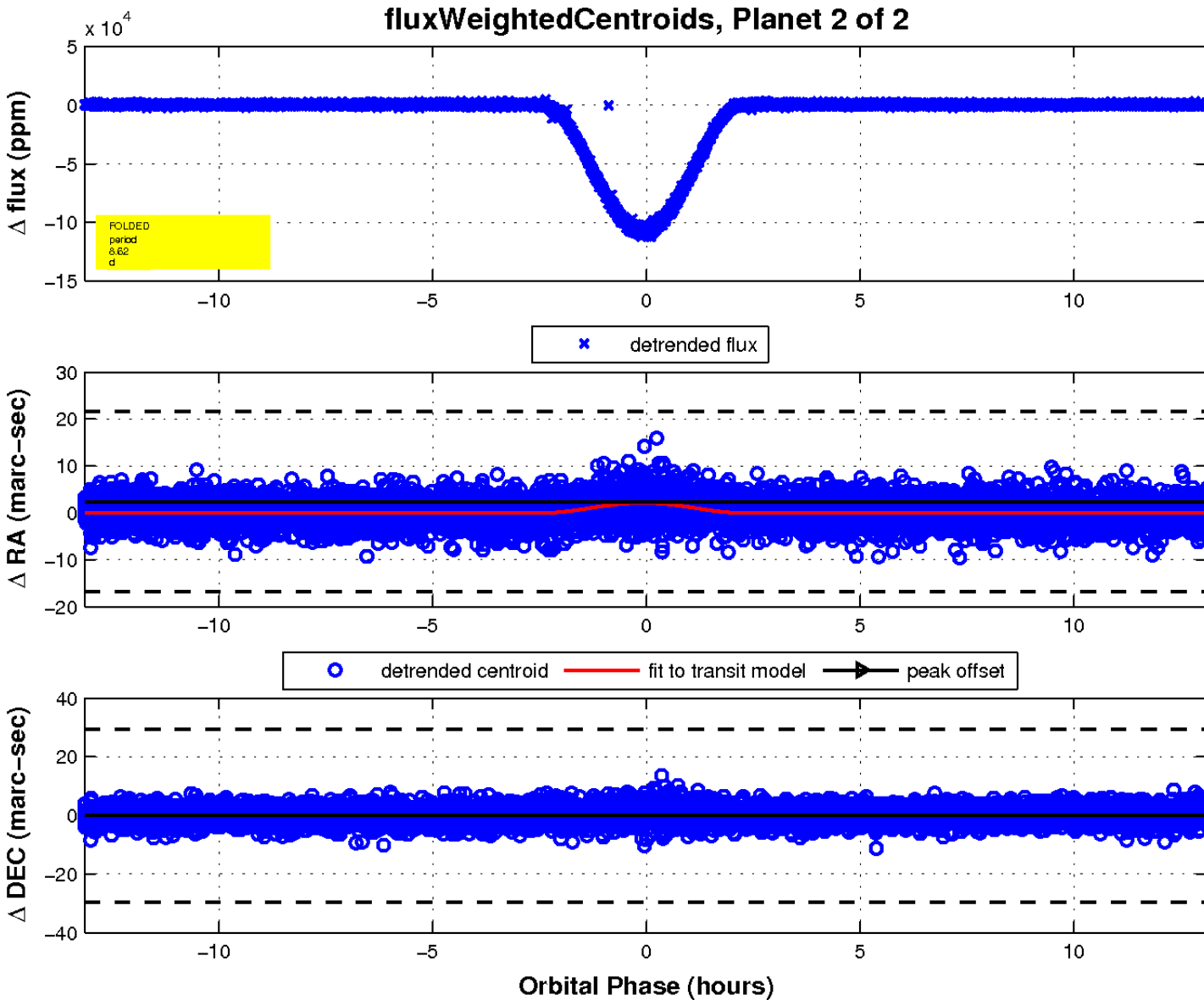
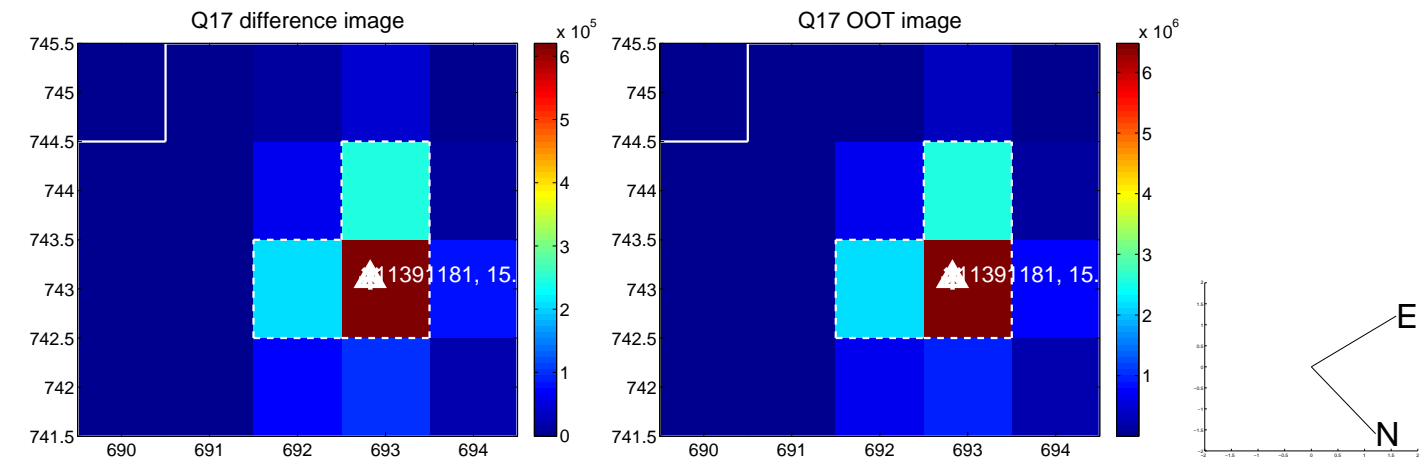
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

