

KIC 007670617

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})
007670617-01	OBS	6901.01	24.704022	136.127769	187344.7	7.069	4912.6	1619.3	0.65	5030	37.16	11.02
007670617-02	OBS	No	24.705714	151.264114	48626.3	4.873	935.2	504.9	0.65	5030	16.93	11.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007670617-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—DEEP_V_SHAPED—HAS_SEC_TCE
007670617-02	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.

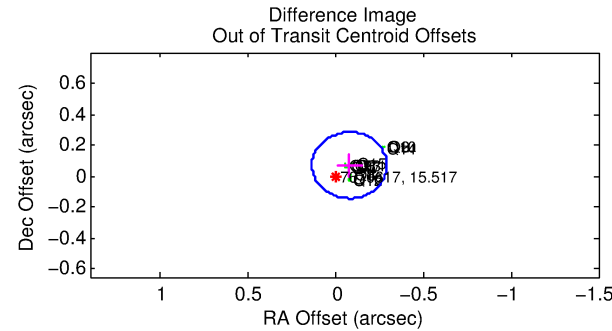
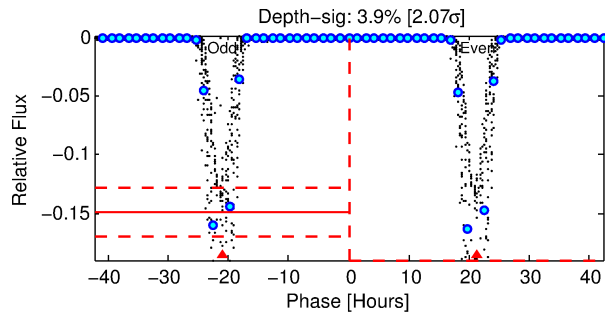
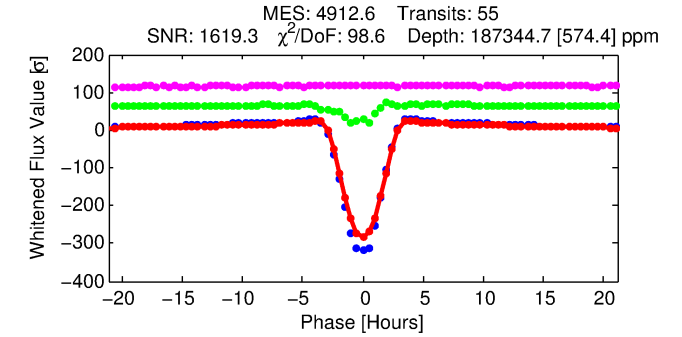
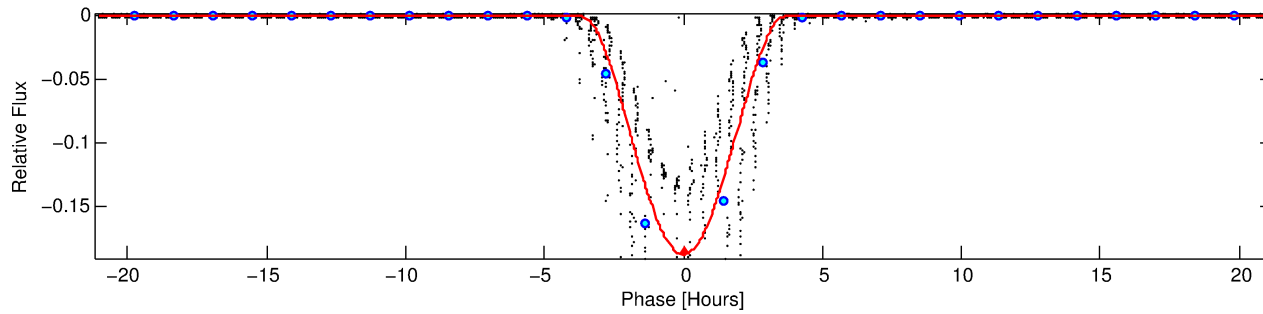
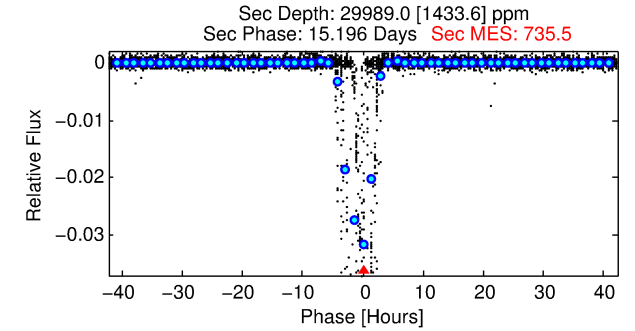
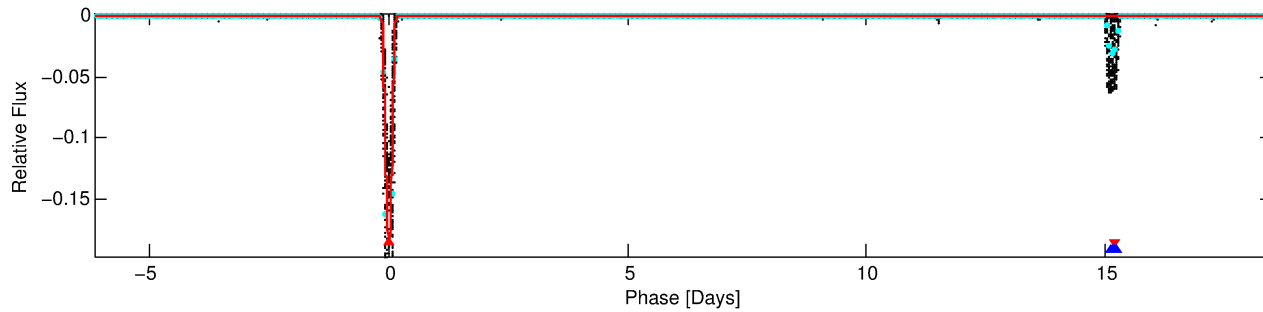
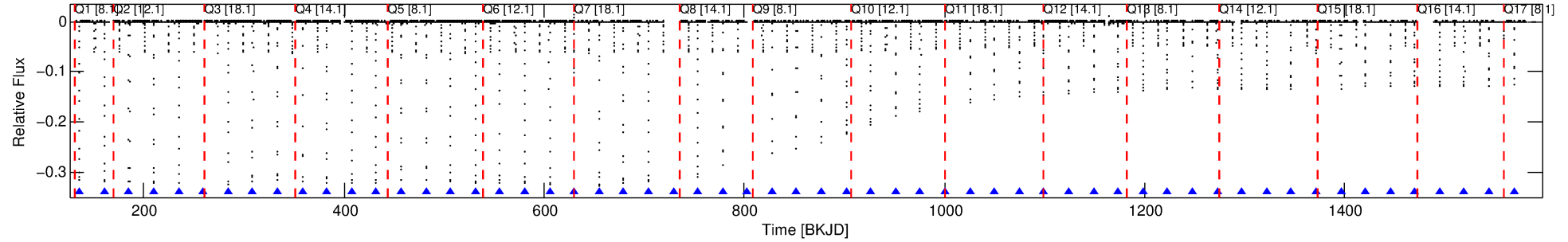
Ephemeris Match Information For 007670617-01

No Significant Match Found

DV One-Page Summary

KIC: 7670617 Candidate: 1 of 2 Period: 24.704 d
KOI: K06901.01 Corr: 0.986

Kp: 15.52 R*: 0.65 Rs Teff: 5030.0 K Logg: 4.67 Fe/H: -0.460



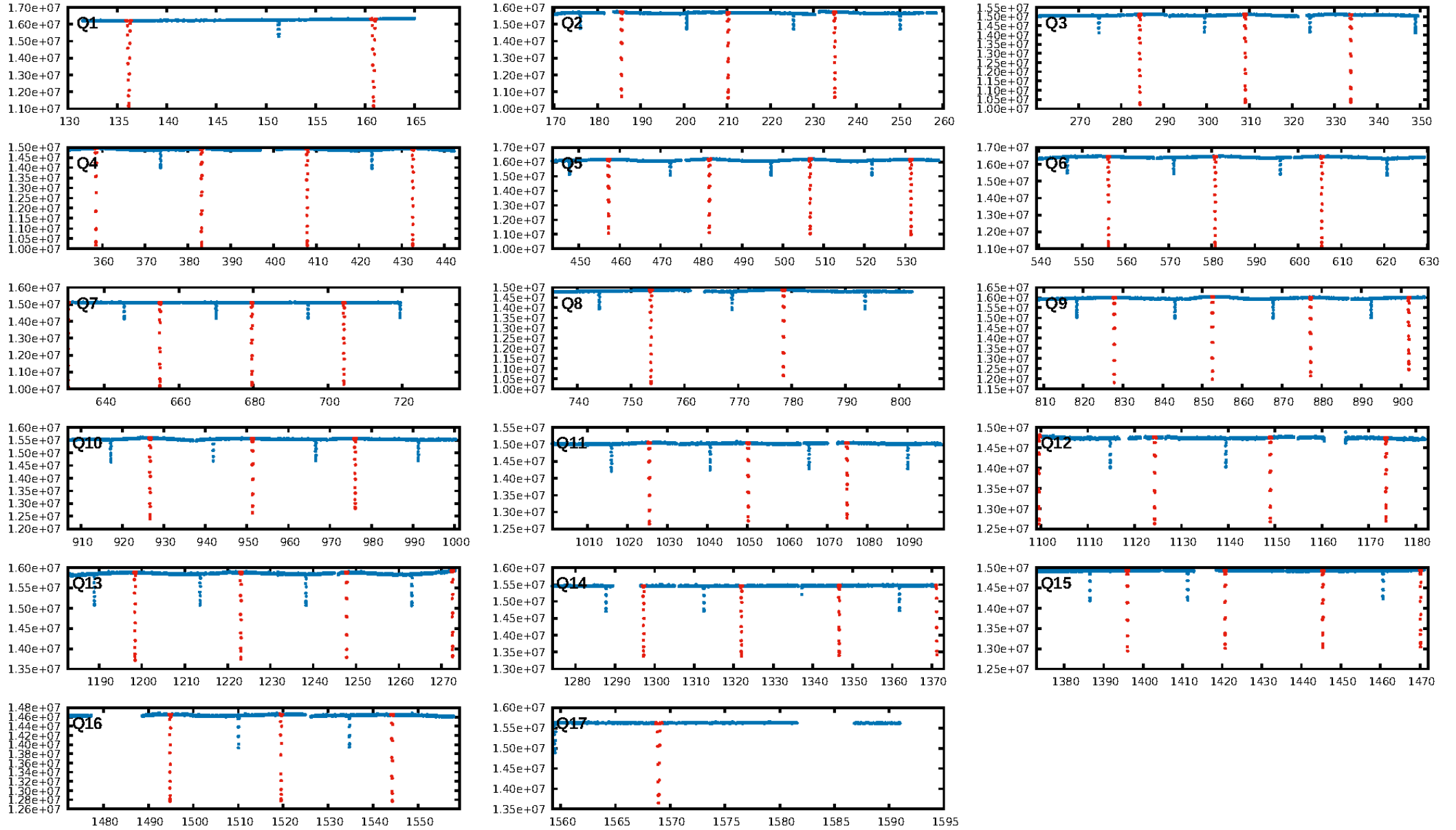
DV Fit Results:

Period = 24.70402 [0.00001] d
Epoch = 136.1278 [0.0004] BKJD
Rp/R* = 0.5239 [0.2734]
a/R* = 34.78 [1.82]
b = 0.79 [0.42]
Seff = 11.02 [2.08]
Teq = 465 [22] K
Rp = 37.16 [19.98] Re
a = 0.1483 [0.0155] AU
Ag = 262.76 [277.17] [0.94σ]
Teffp = 2892 [760] K [3.19σ]

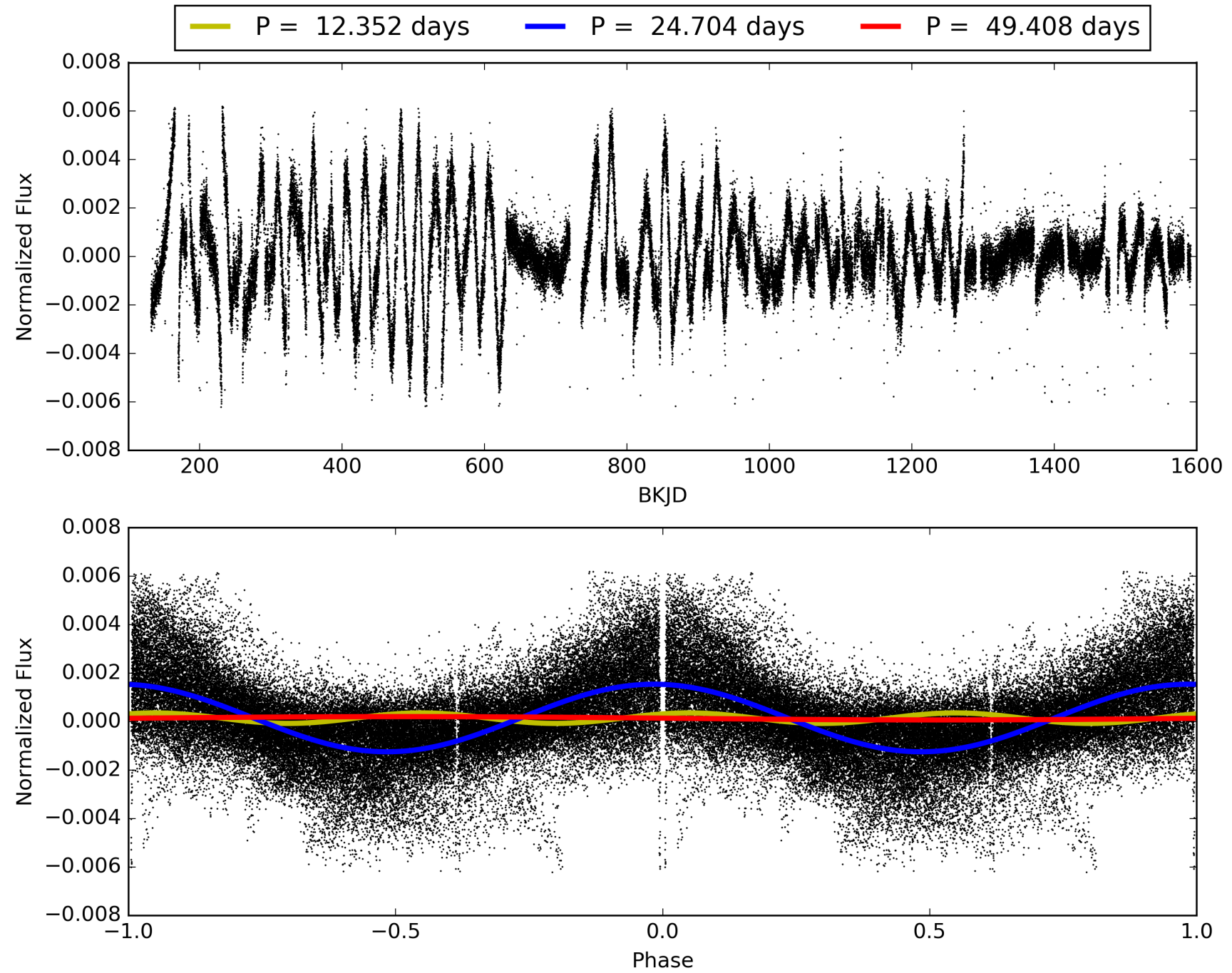
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.4% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [52/52]
GhostDiagnostic-chr: 1.776
Centroid-sig: 0.0%
Centroid-so: 0.206 arcsec [111.89σ]
OotOffset-rm: 0.106 arcsec [1.48σ]
KicOffset-rm: 0.044 arcsec [0.65σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 007670617-01, PDC Light Curves

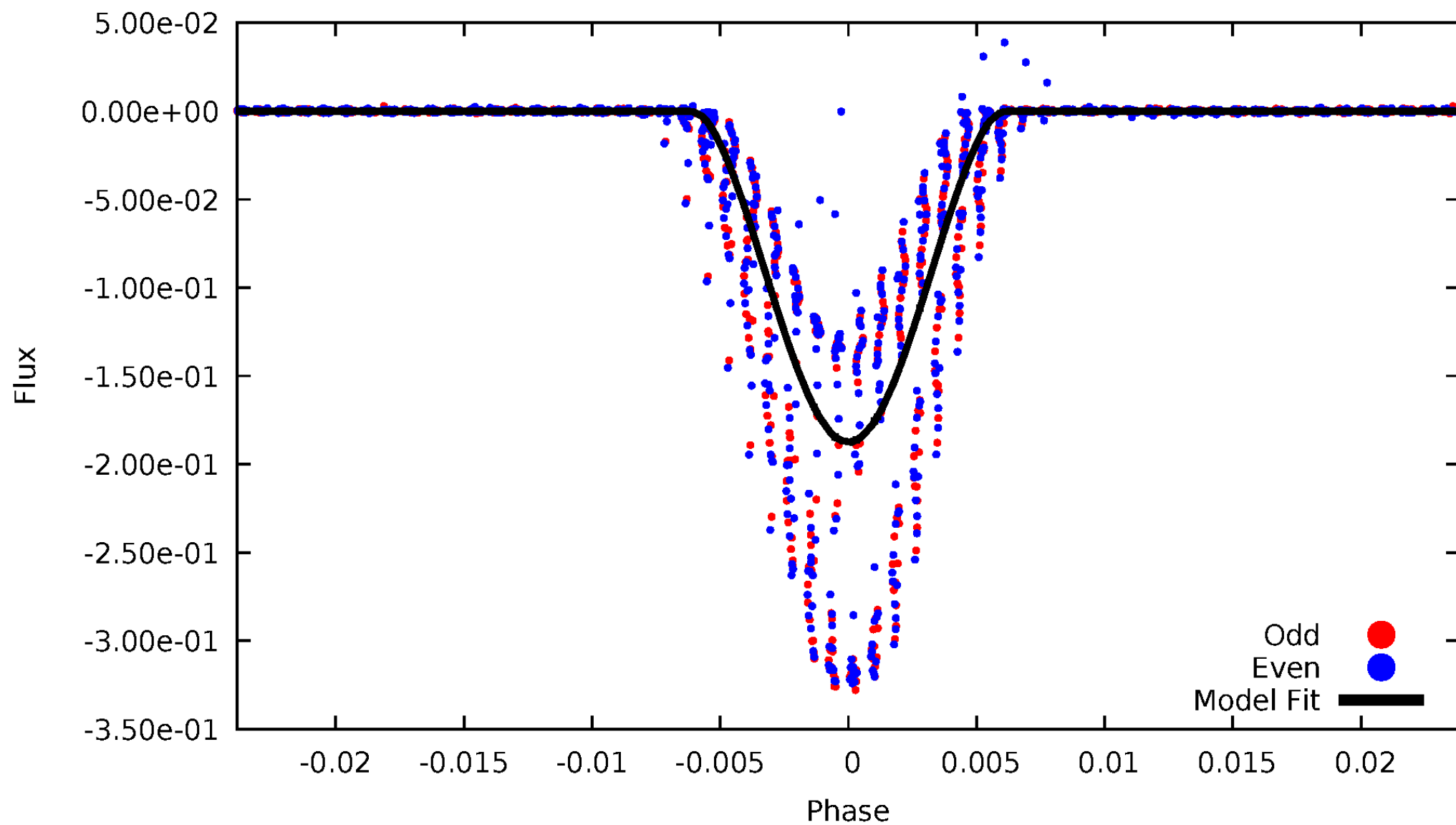


TCE 007670617-01



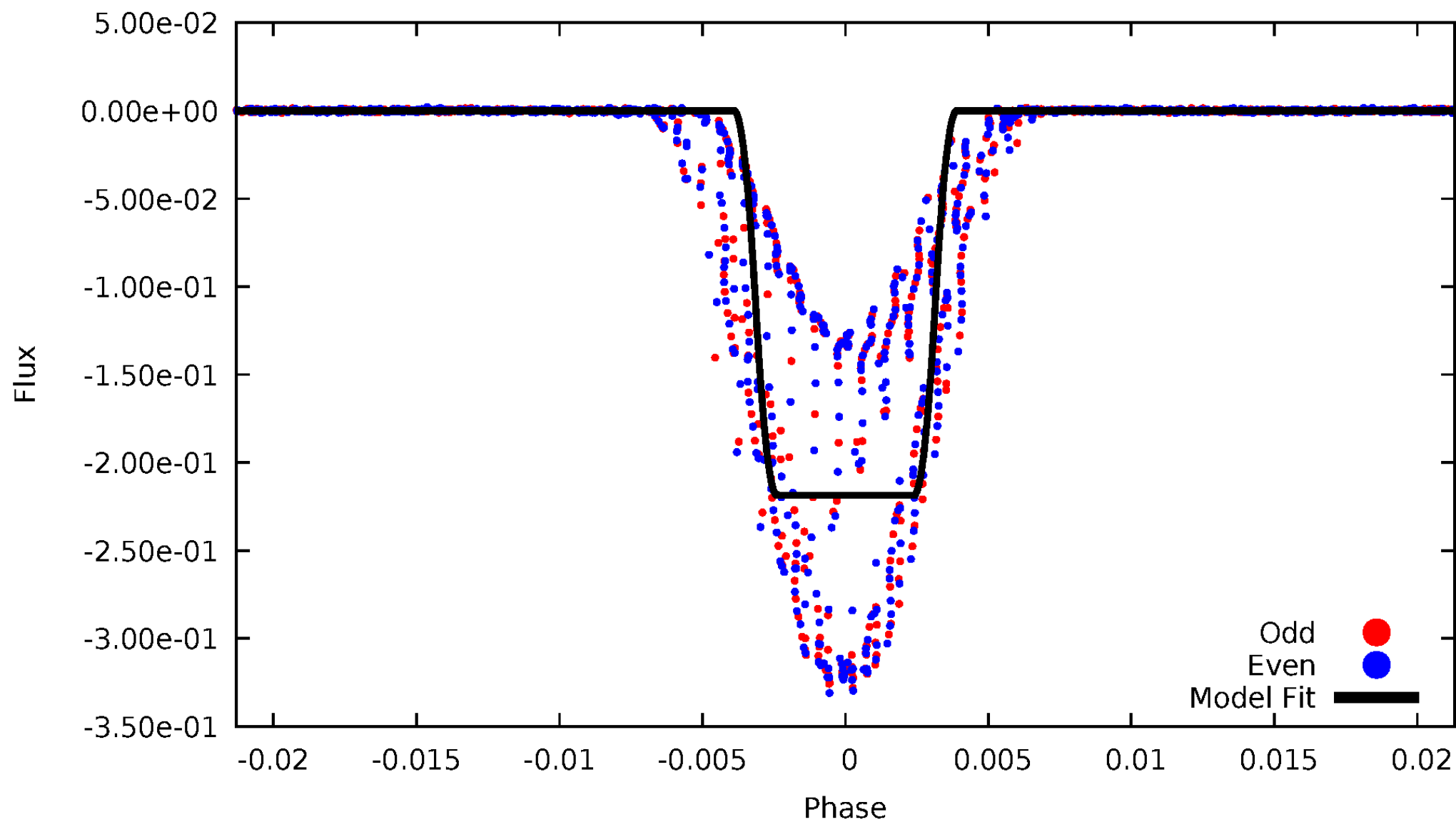
DV Odd/Even

TCE 007670617-01



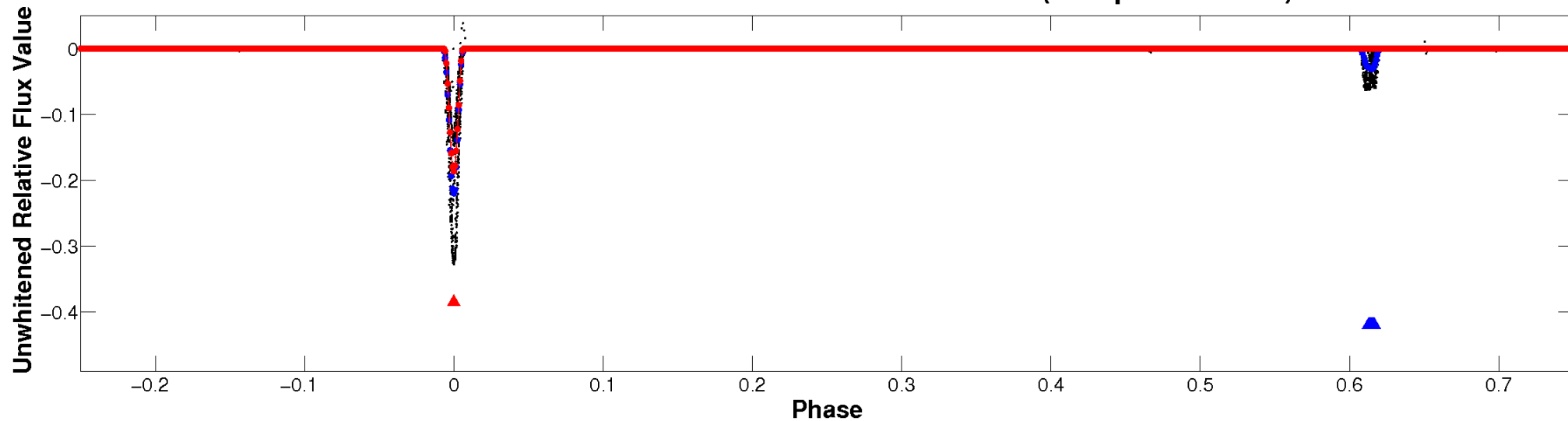
ALT Odd/Even

TCE 007670617-01

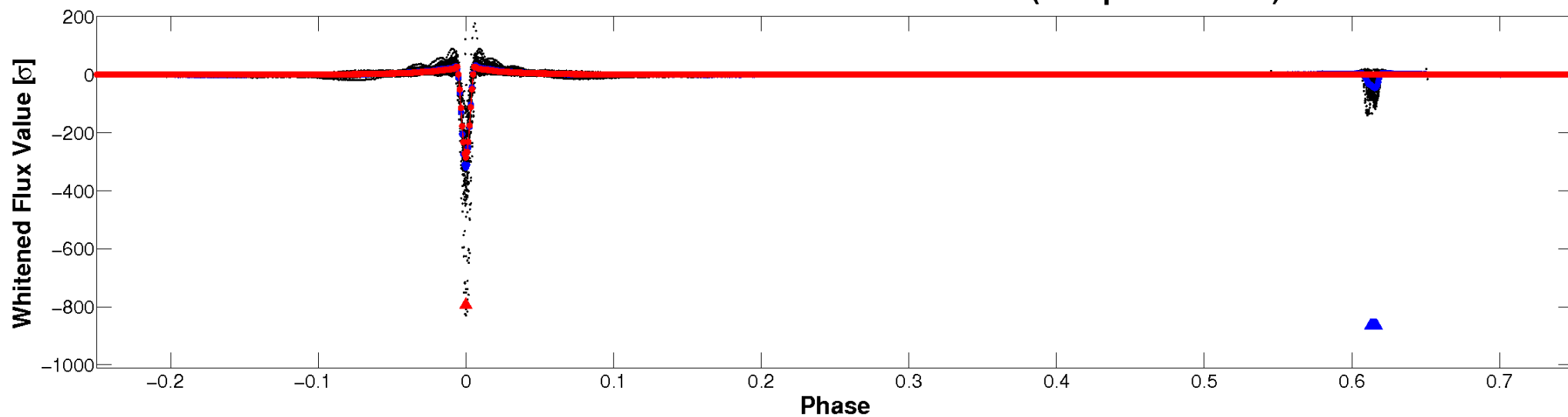


Non-Whitened Vs. Whitened Light Curve

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

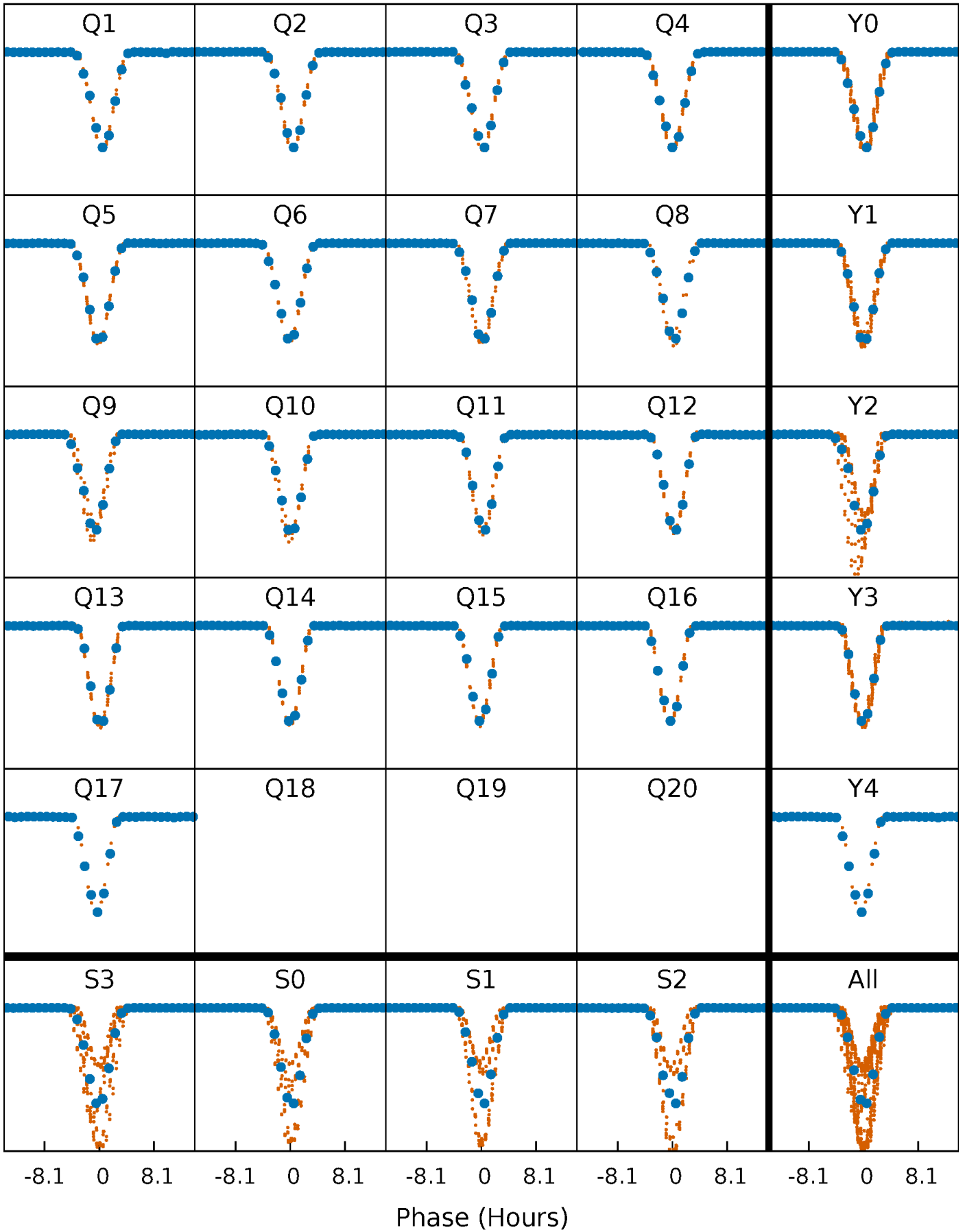


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



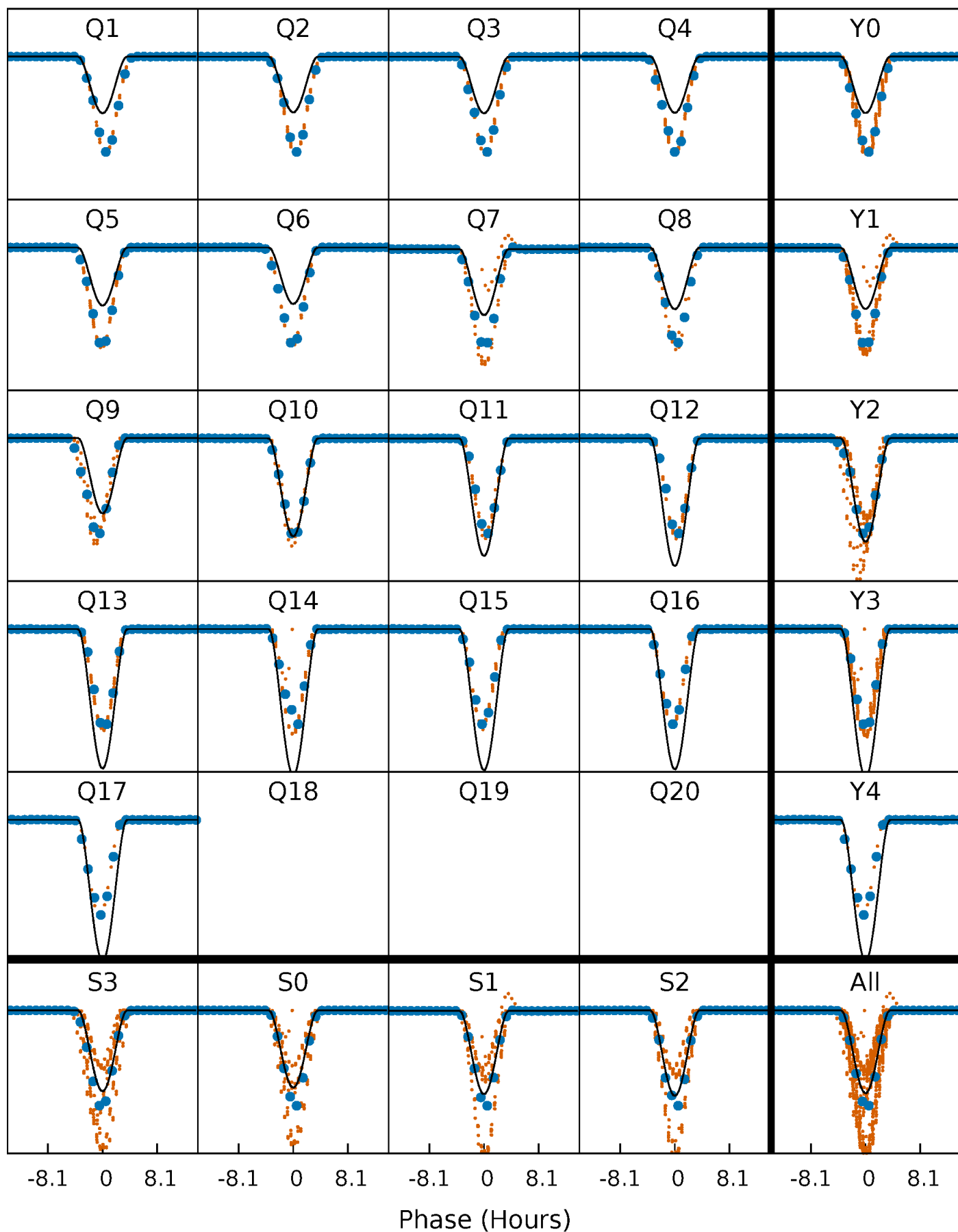
PDC Quarter-Phased Transit Curves

TCE 007670617-01 P= 24.704022 Days $T_0=136.127769$ (BKJD)



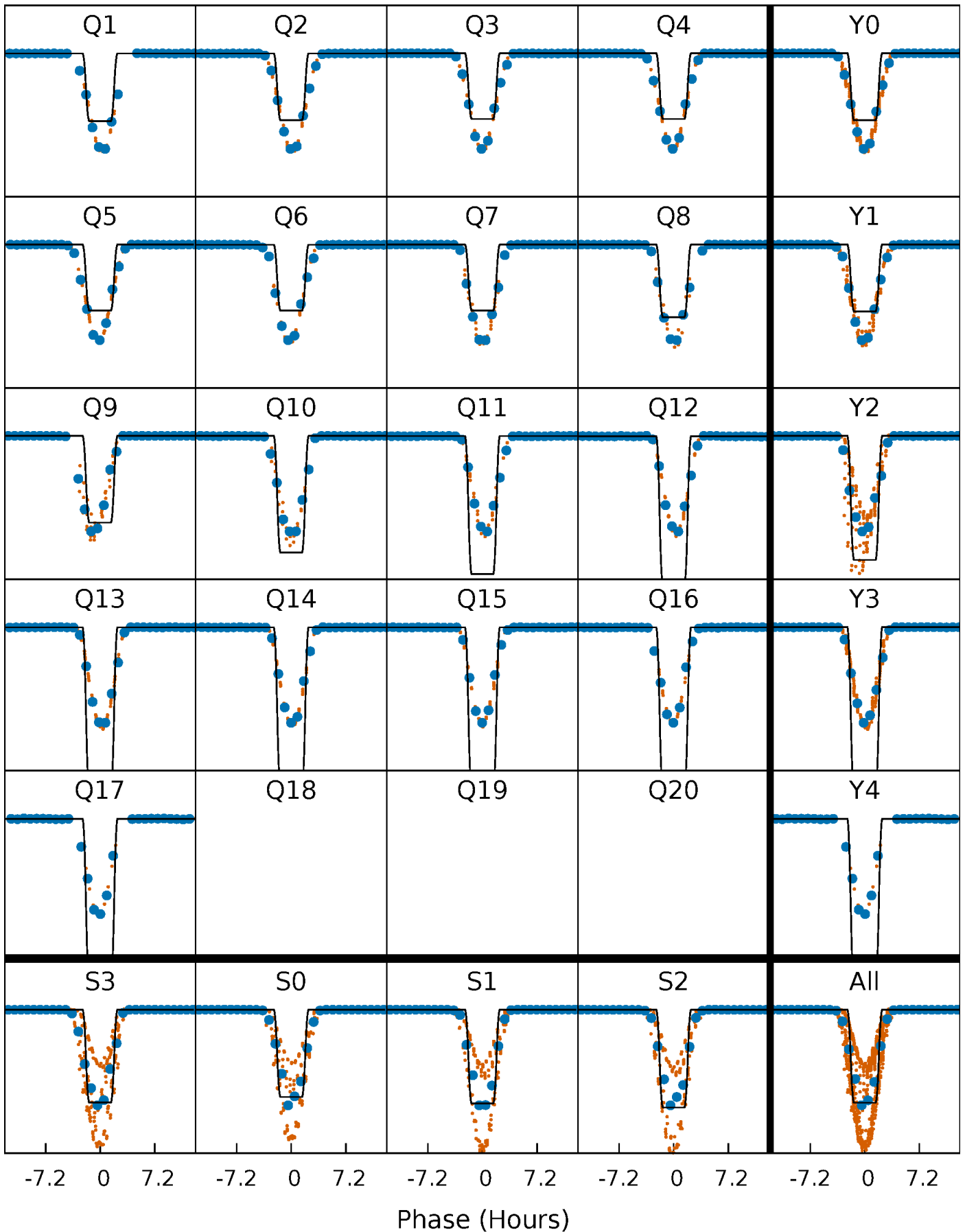
DV Quarter-Phased Transit Curves

TCE 007670617-01 P= 24.704022 Days $T_0=136.127769$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

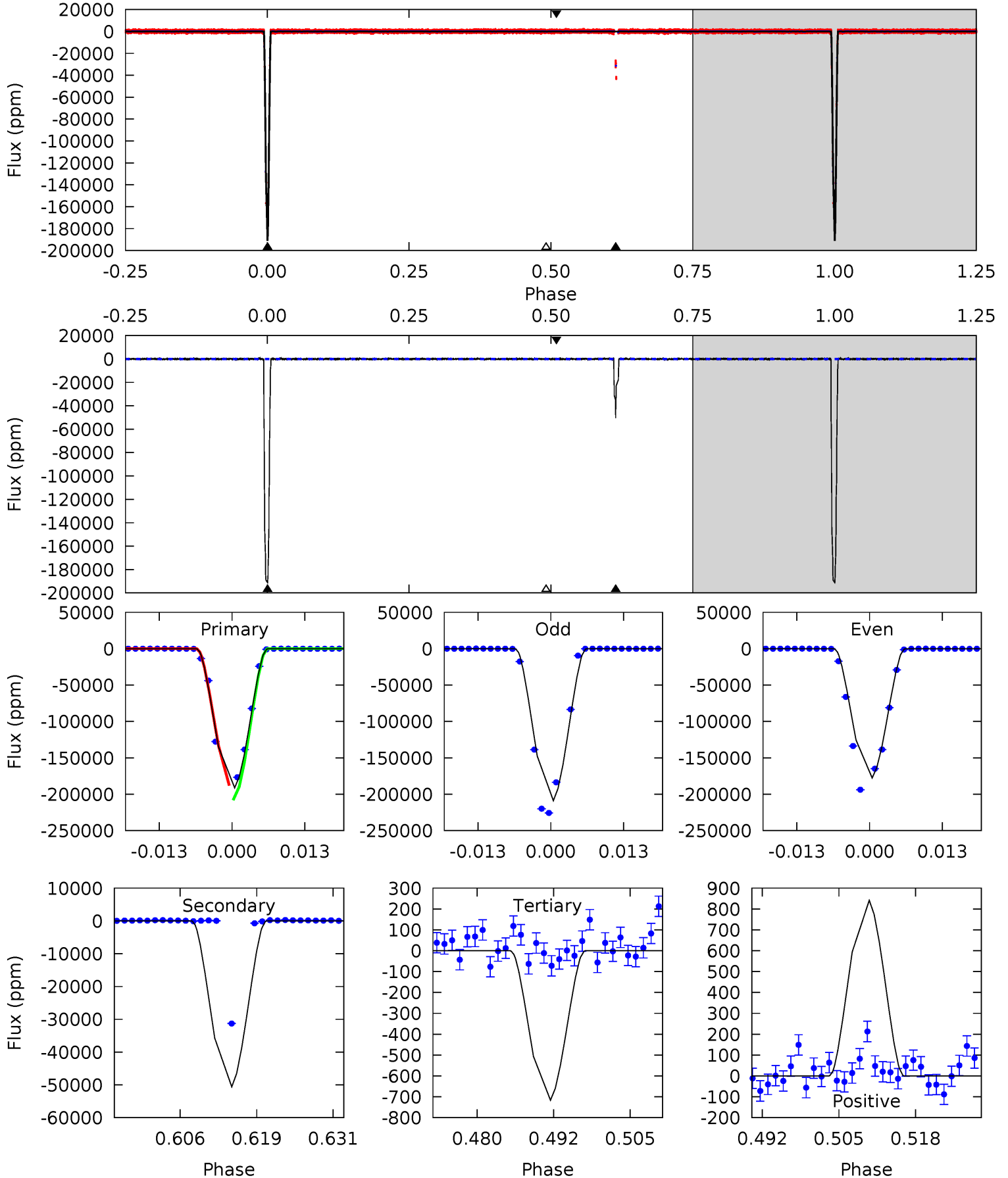
TCE 007670617-01 P= 24.703682 Days $T_0=136.135429$ (BKJD)



DV Model-Shift Uniqueness Test

007670617-01, P = 24.704022 Days, E = 111.423747 Days

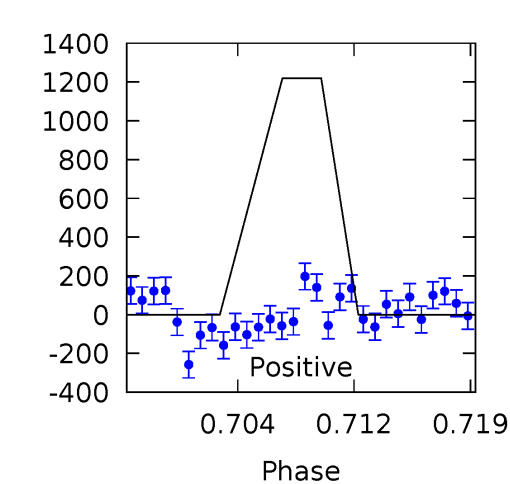
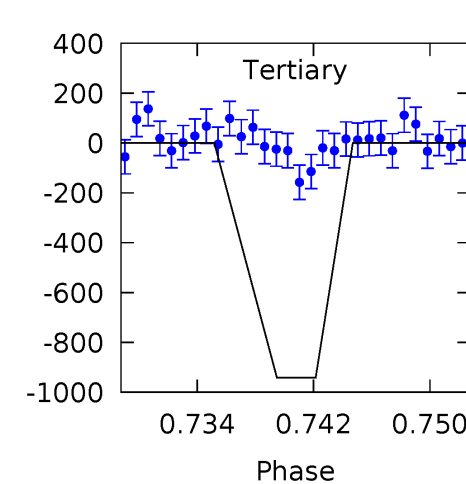
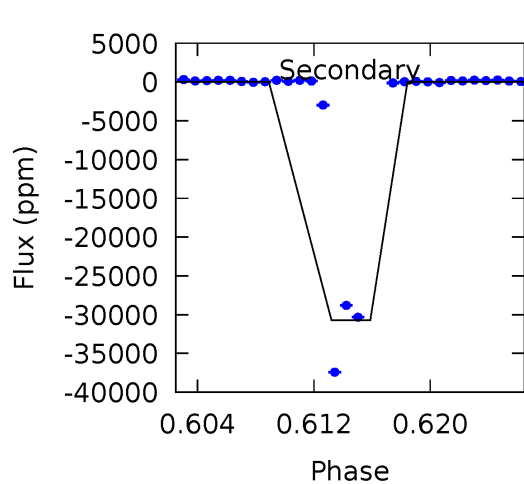
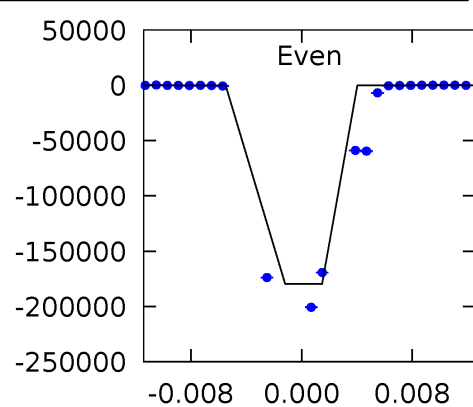
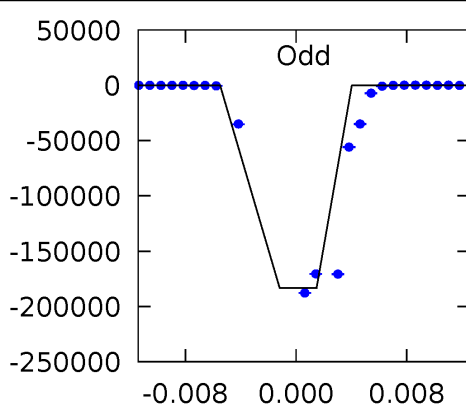
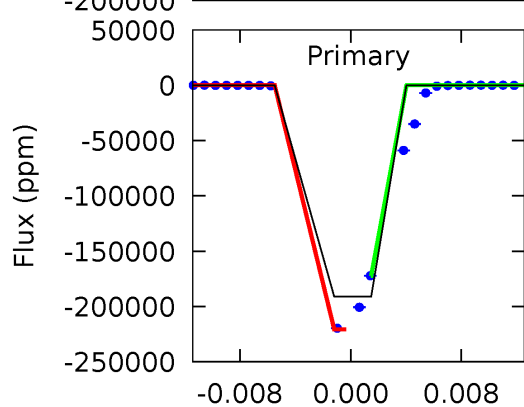
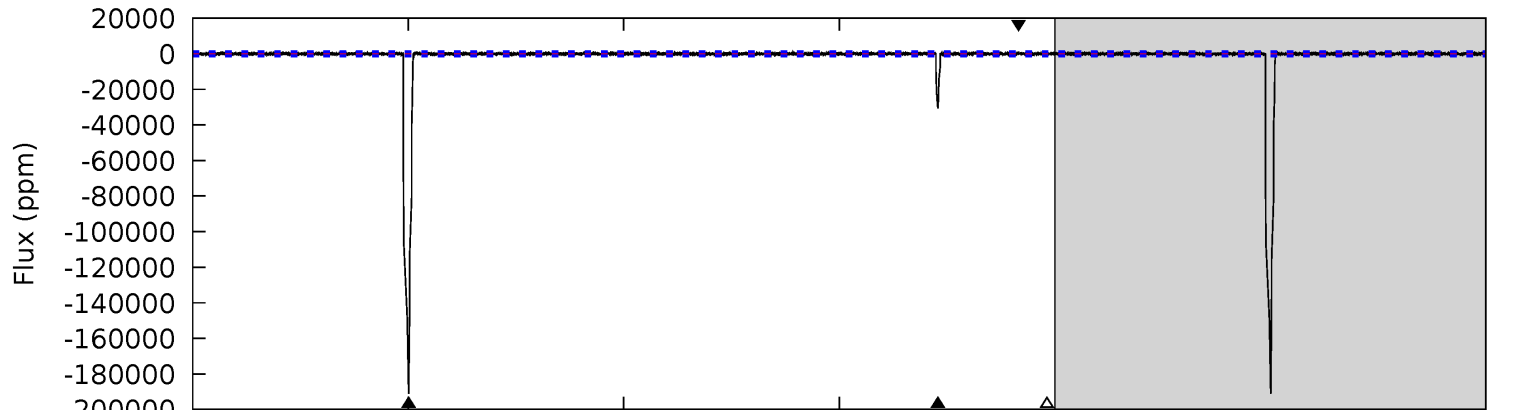
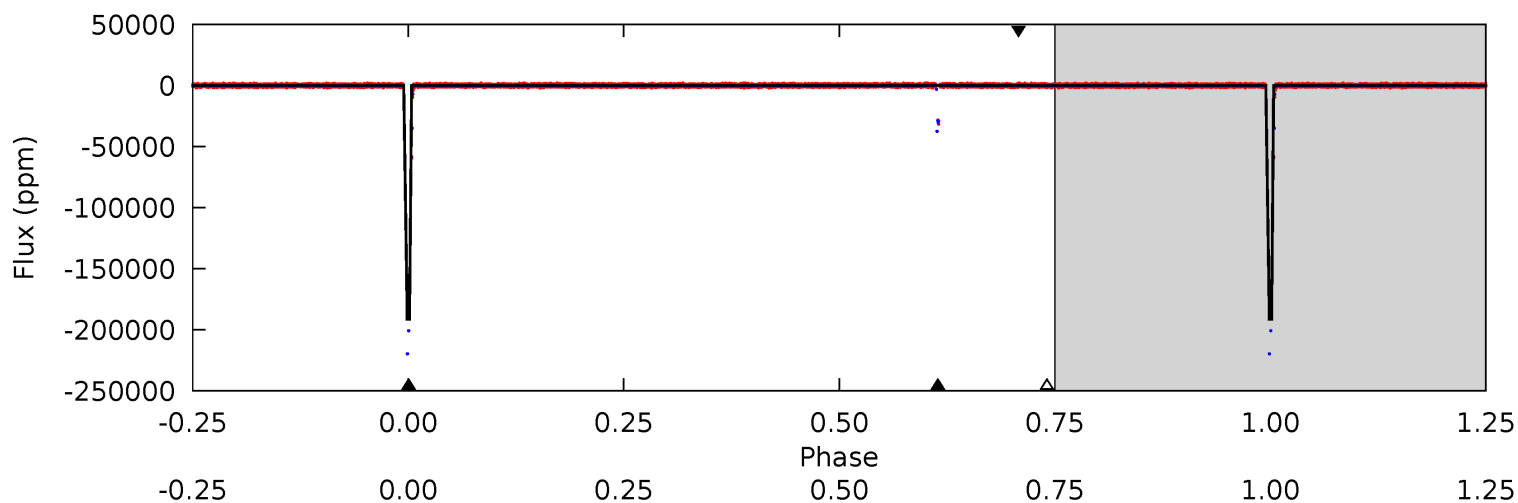
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3376	893.6	12.7	14.9	4.98	2.49	3.55	3363	3361	880.9	878.7	284.2	1.02	0.01	0



Alt Model-Shift Uniqueness Test

007670617-01, P = 24.703682 Days, E = 111.431747 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
869.6	139.7	4.28	5.54	5.08	2.67	1.12	865.3	864.0	135.4	134.1	10.2	1.02	0.01	0



Stellar Parameters For KIC 007670617

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5030^{+151}_{-136}	$4.665^{+0.028}_{-0.077}$	$-0.460^{+0.300}_{-0.300}$	$0.650^{+0.084}_{-0.045}$	$0.717^{+0.071}_{-0.064}$	$3.675^{+0.482}_{-0.917}$
	+3%/-3%	+1%/-2%	+65%/-65%	+13%/-7%	+10%/-9%	+13%/-25%
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 007670617-01 / KOI 6901.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-50591 ± 57	$38.12^{+19.48}_{-17.66}$	657^{+25}_{-23}	3693^{+983}_{-442}	444^{+1116}_{-248}
Alt.	-30709 ± 220	$34.83^{+20.05}_{-15.93}$	656^{+26}_{-22}	3488^{+868}_{-438}	314^{+778}_{-188}

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 $A_{obs} \gg 1.0$

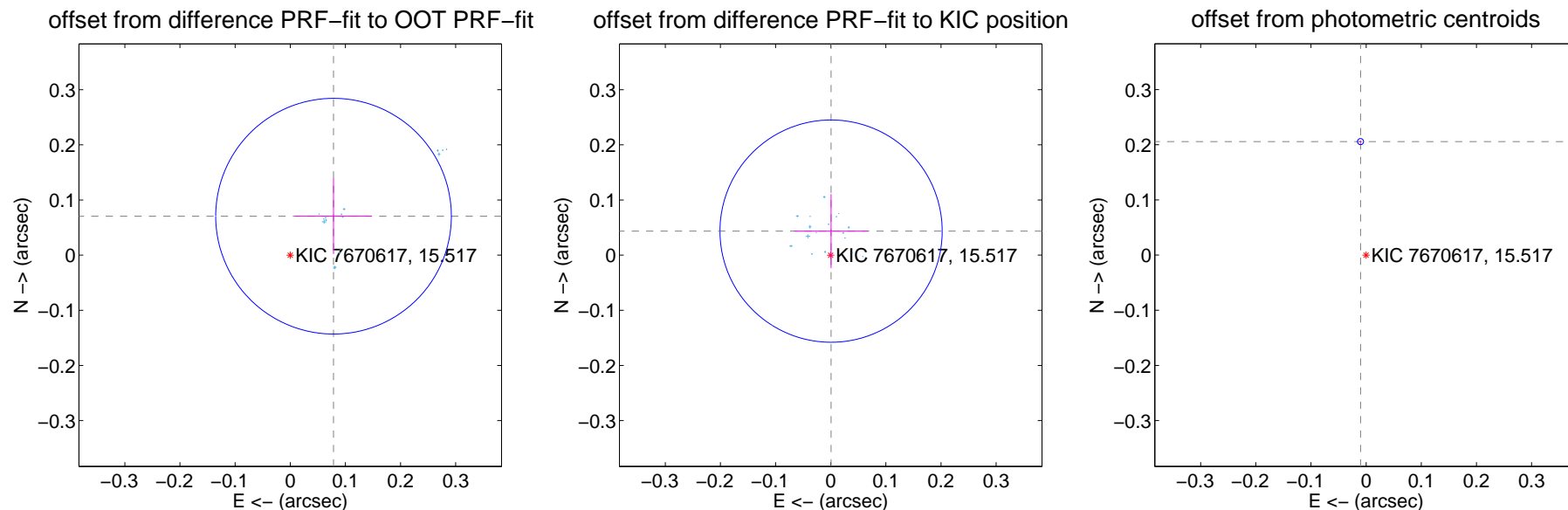
DV Centroid Data

Supplemental centroid analysis for 007670617-01. Kepler magnitude: 15.52. Transit SNR 1619.25

There are 17 quarters with good PRF difference image offsets

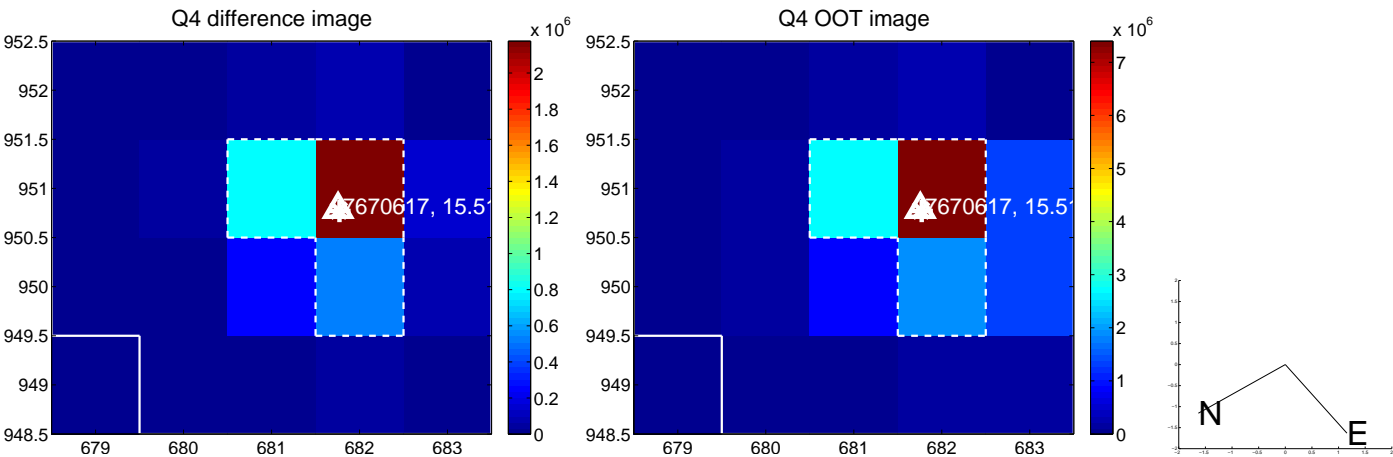
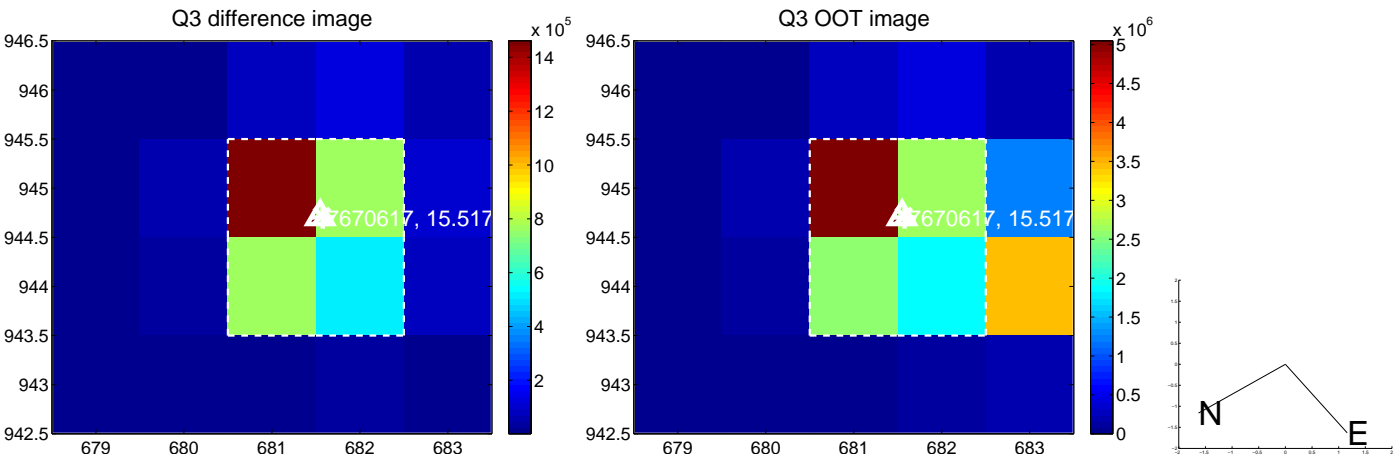
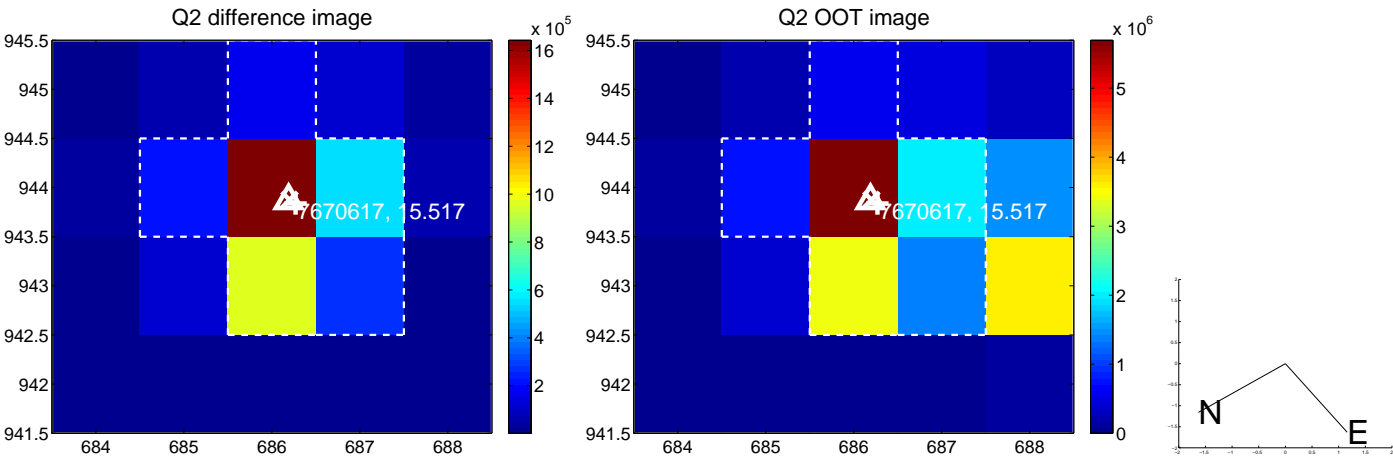
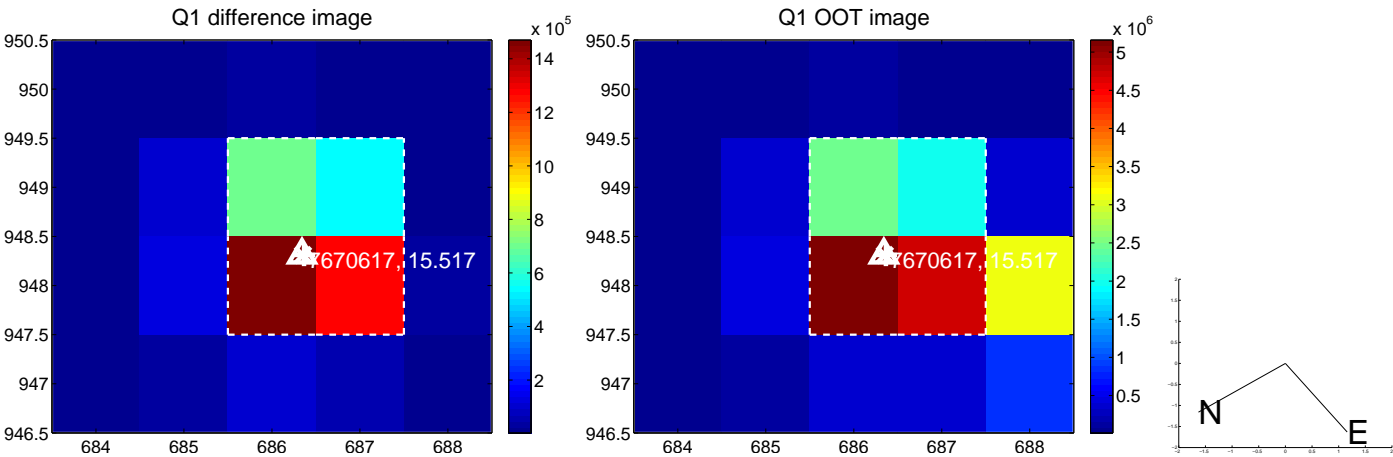
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.106 ± 0.071	1.48	-0.078 ± 0.070	0.071 ± 0.069
PRF-fit source offset from KIC position	0.044 ± 0.067	0.65	-0.001 ± 0.067	0.044 ± 0.067
photometric centroid source offset	0.21 ± 0.00	111.89	0.01 ± 0.00	0.21 ± 0.00

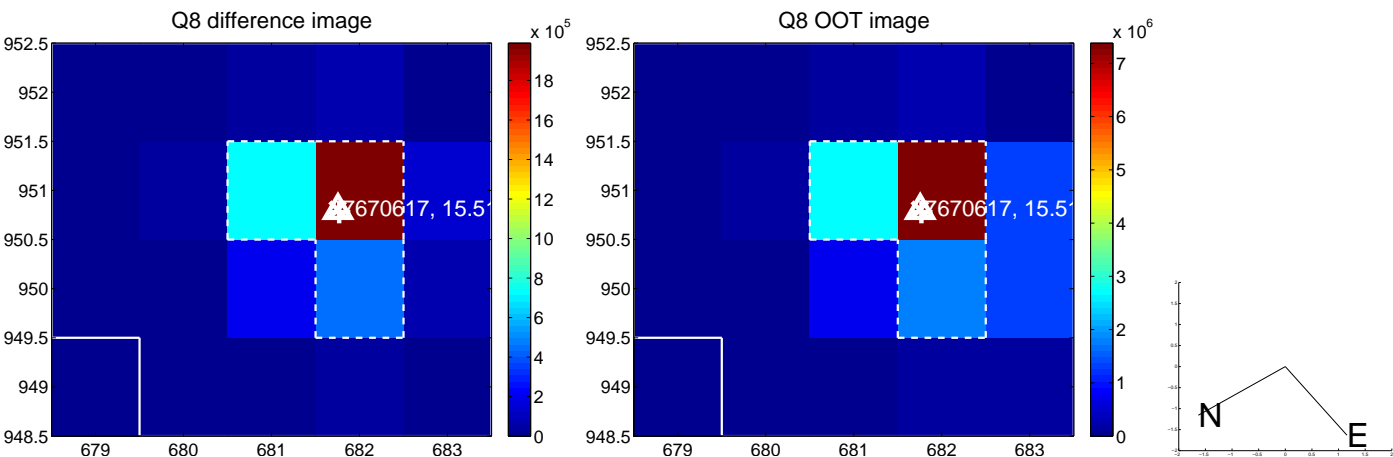
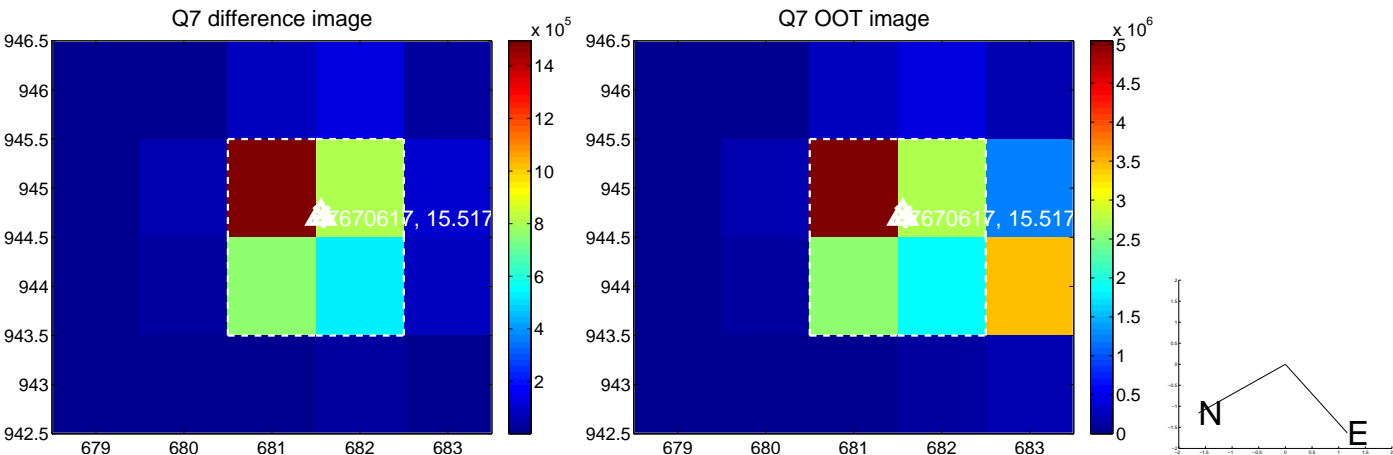
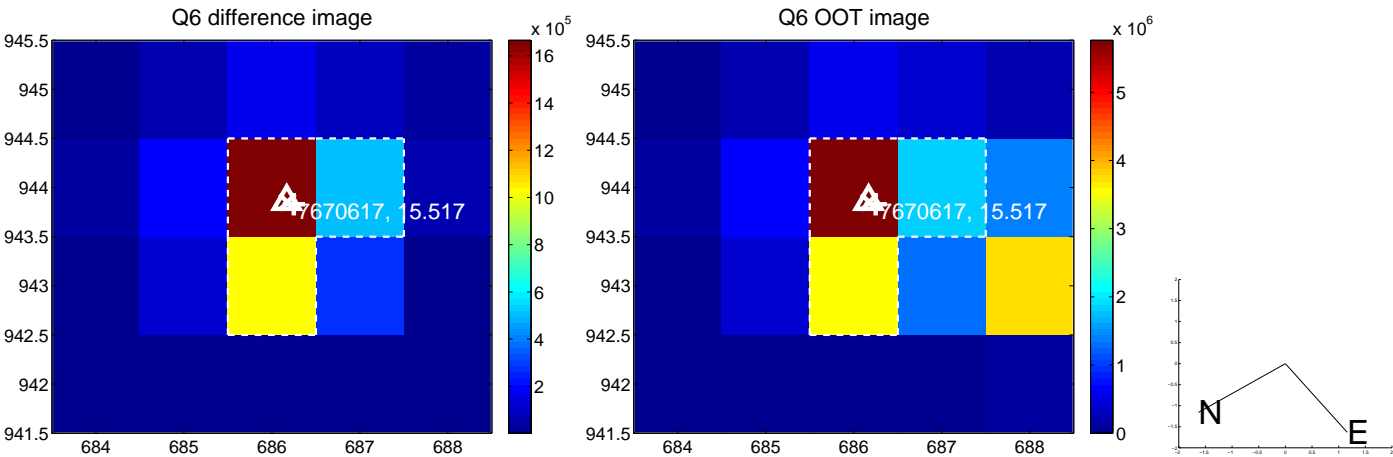
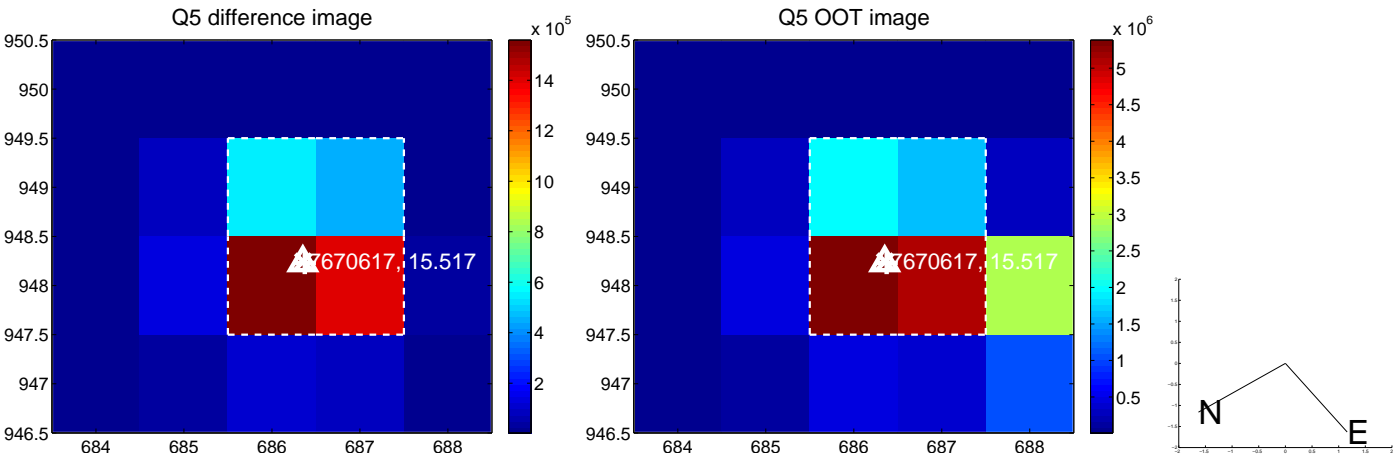


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

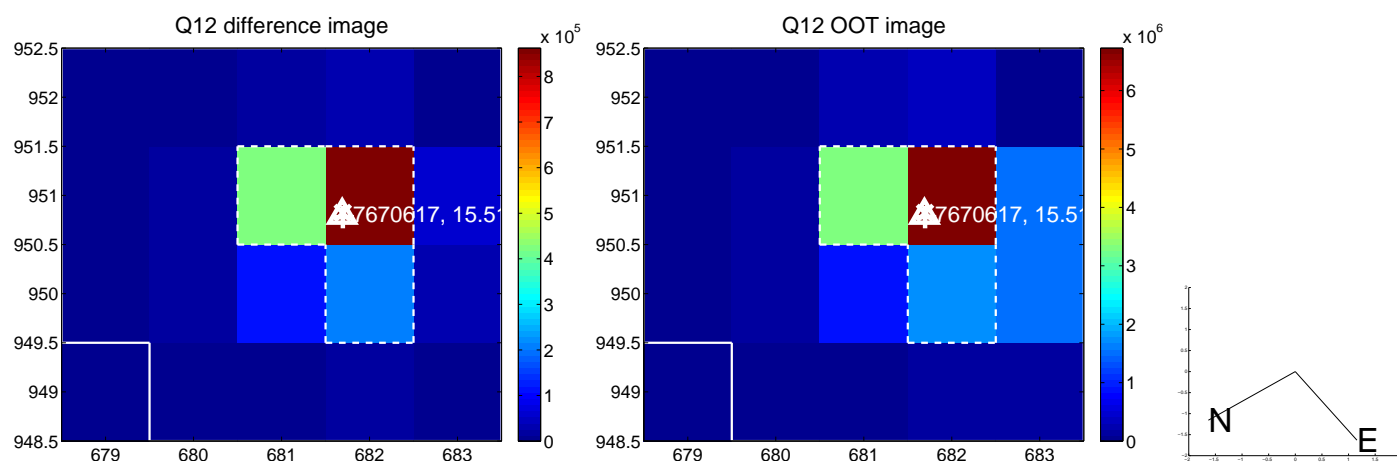
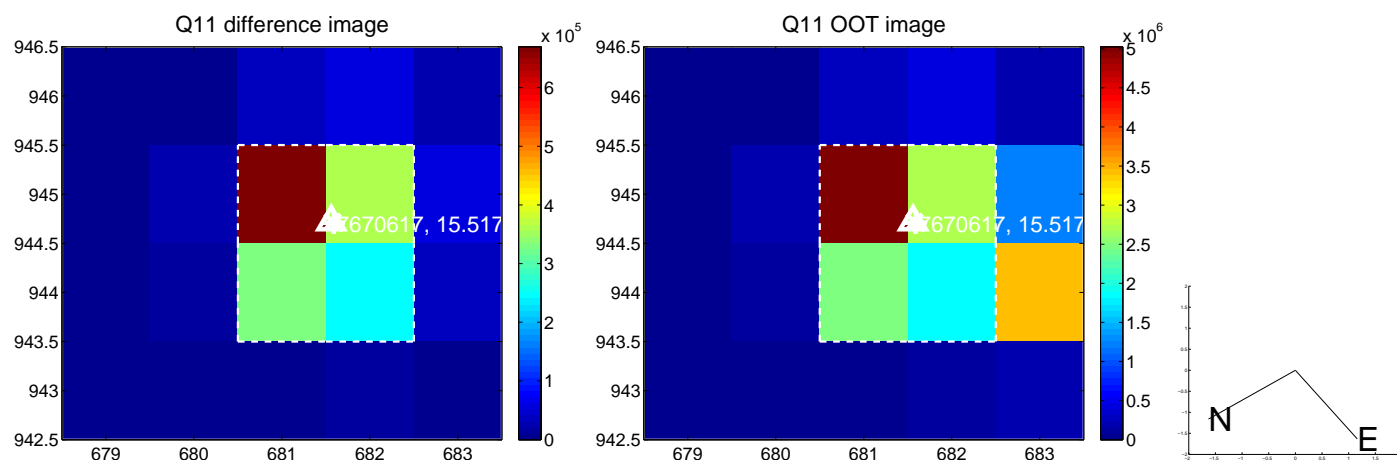
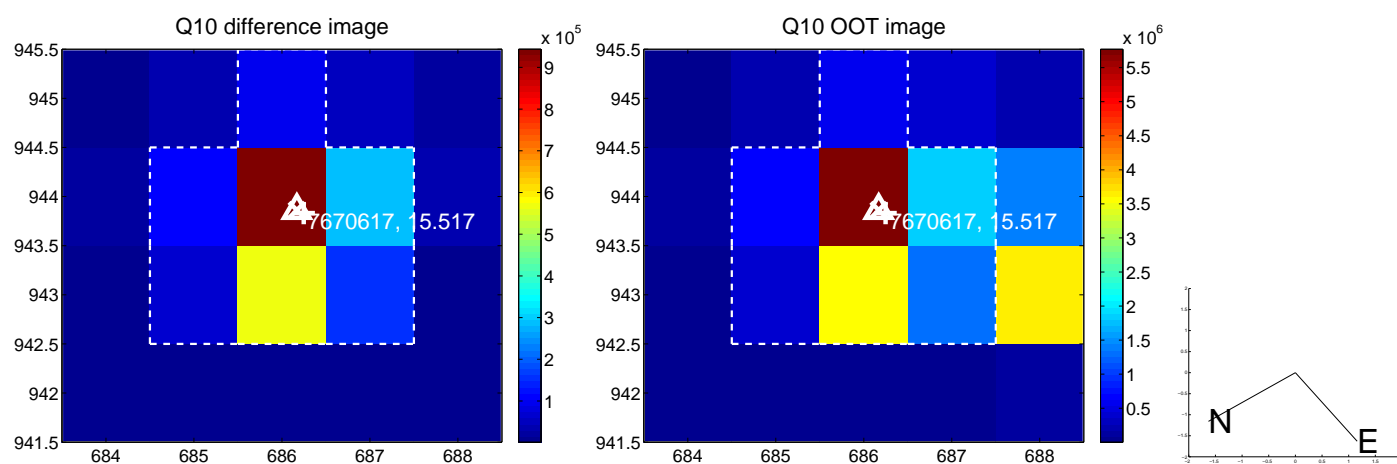
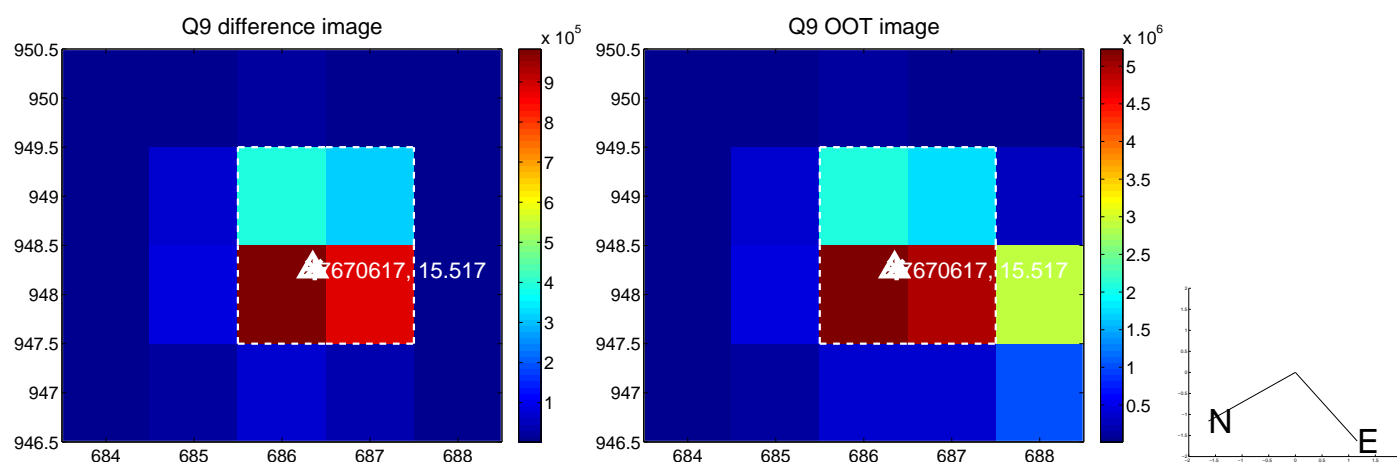
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



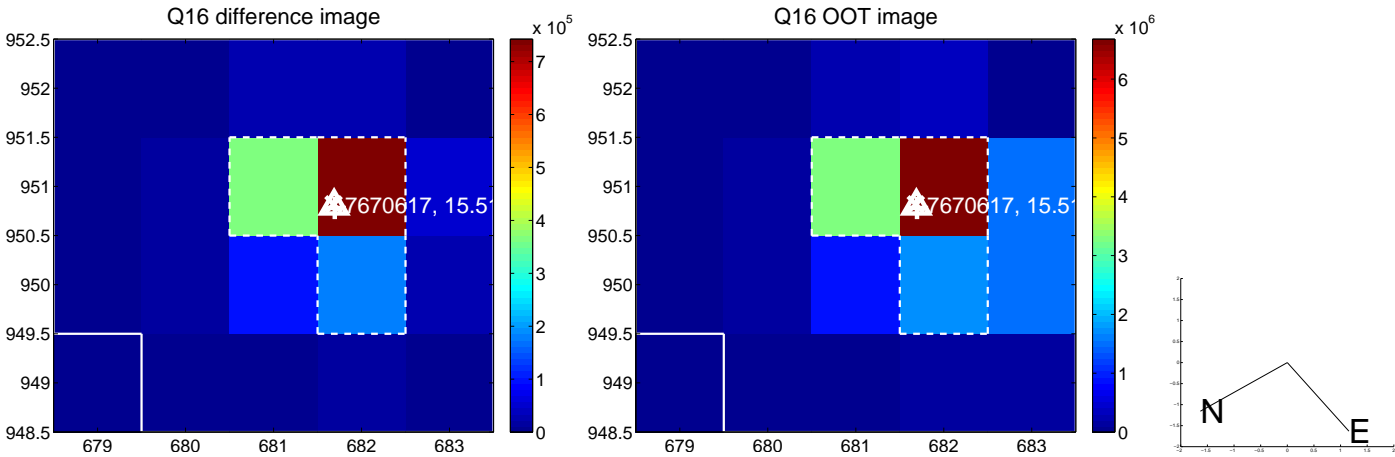
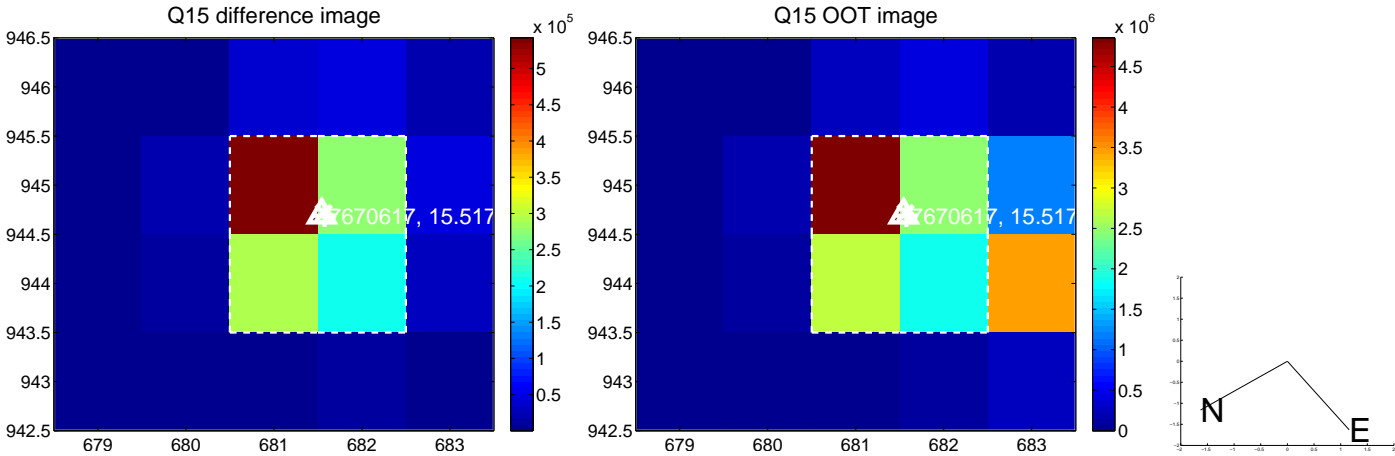
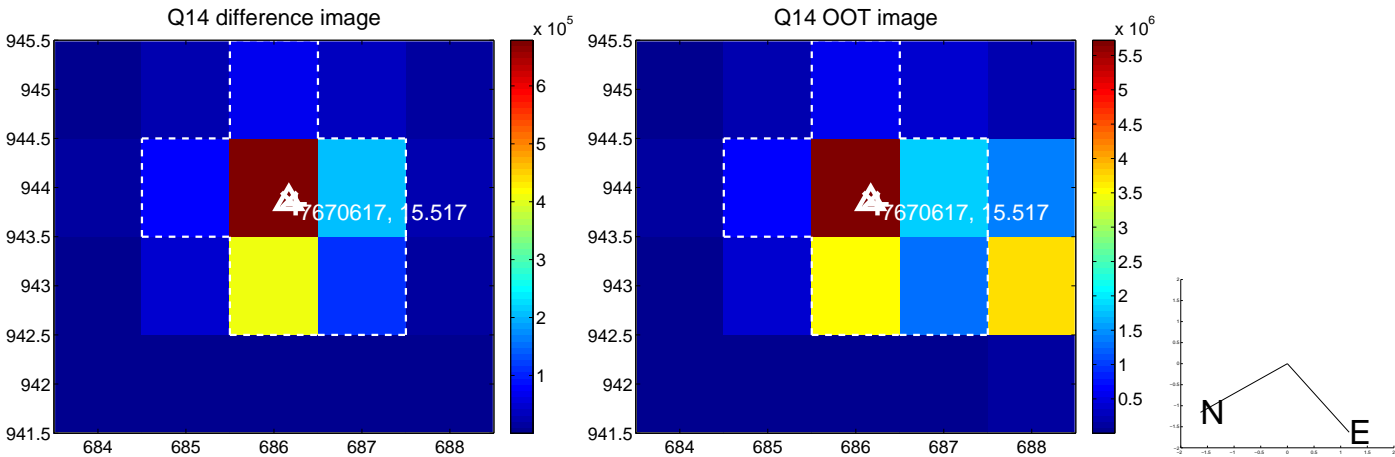
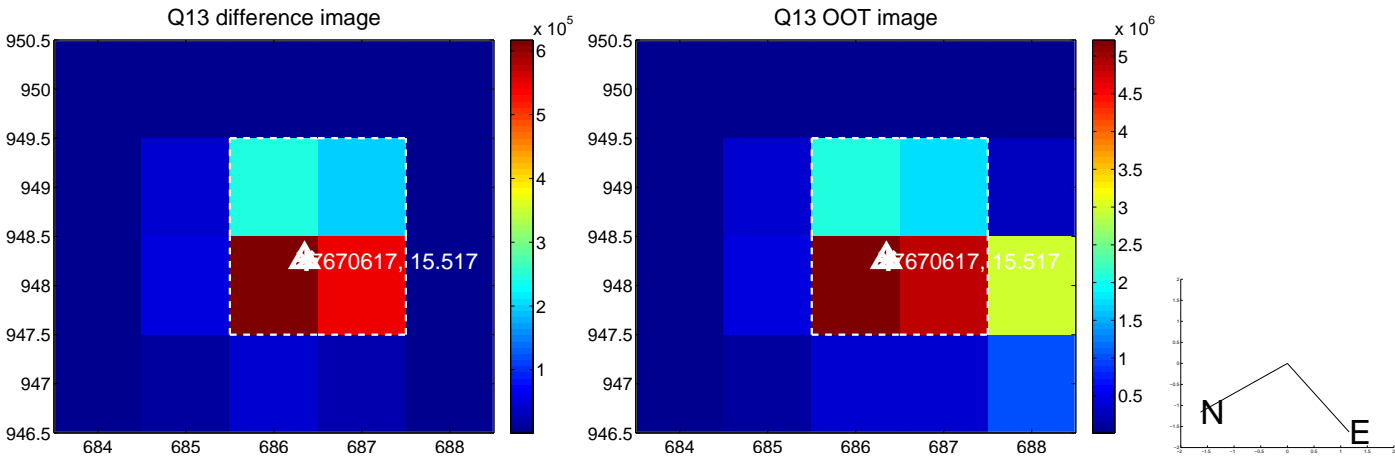
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



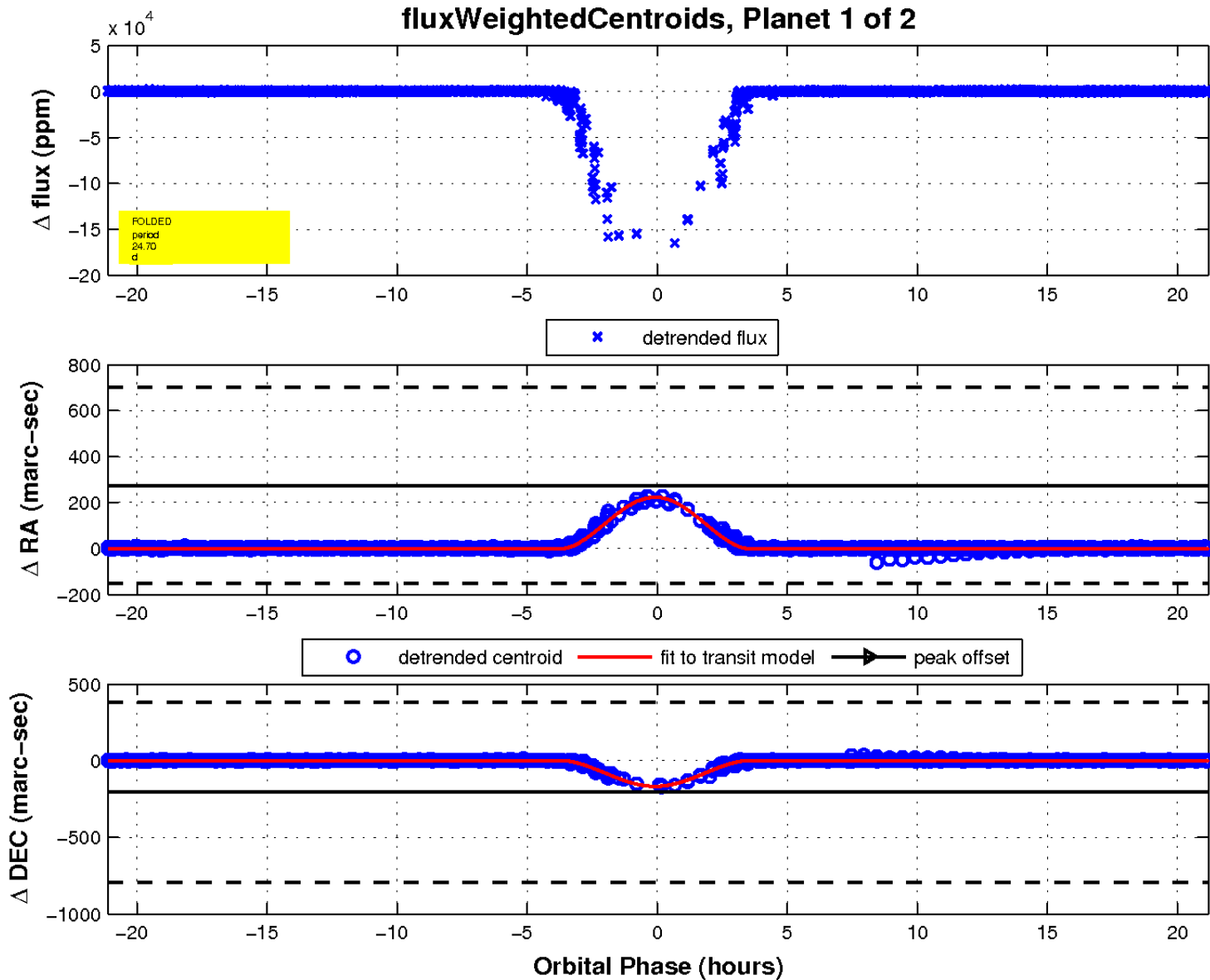
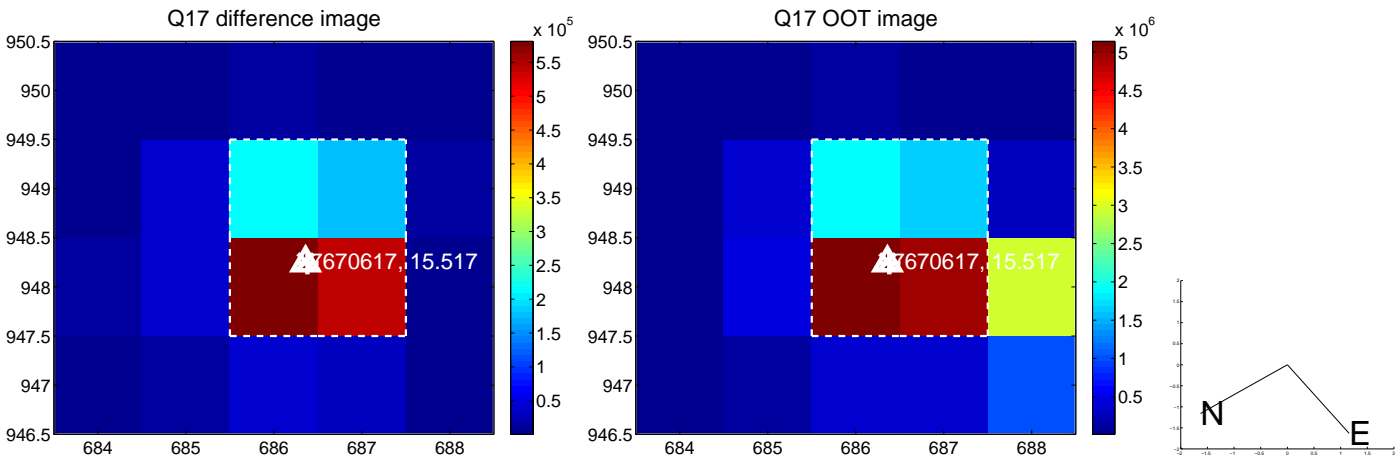
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



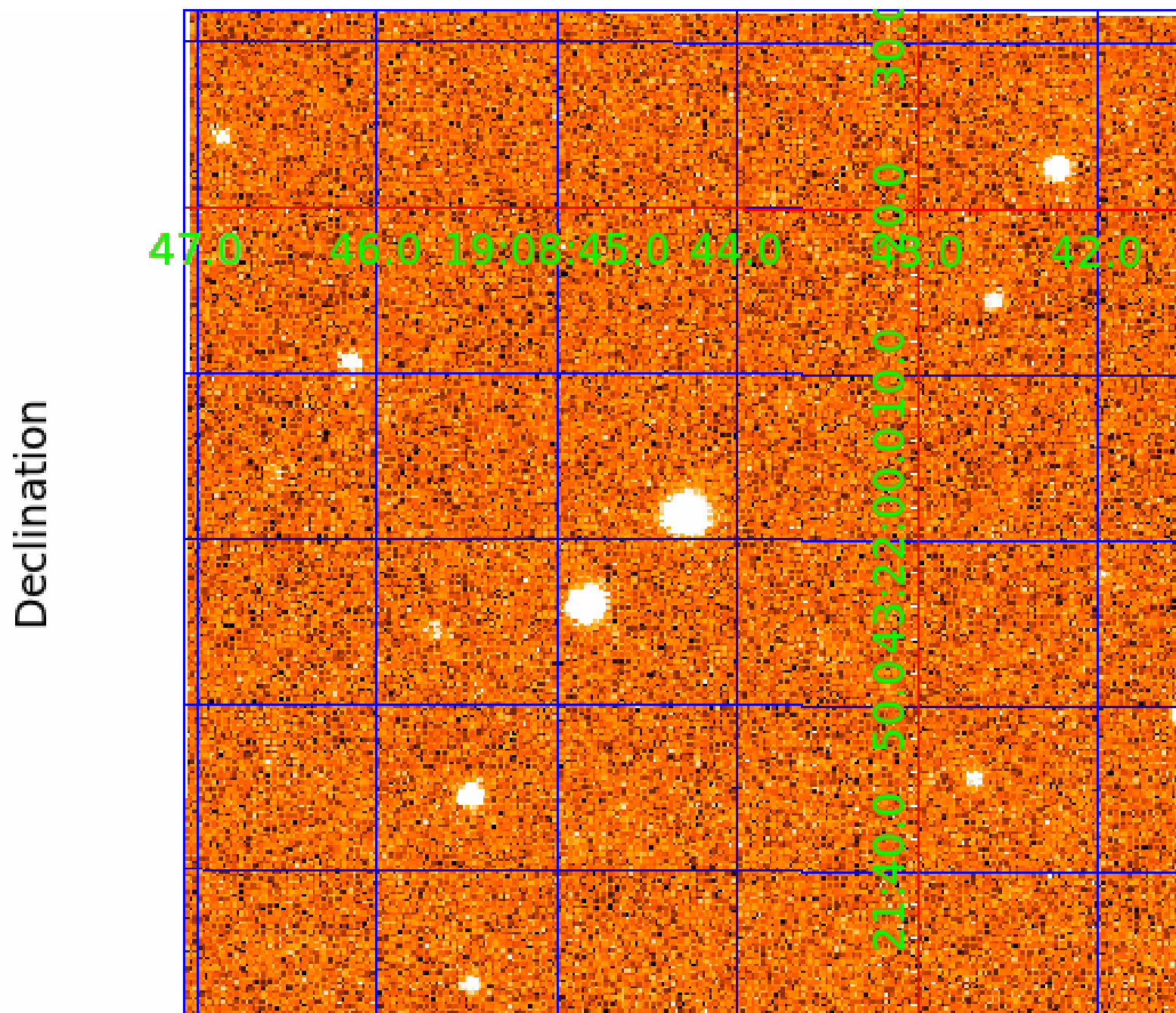
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 007670617

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})
007670617-01	OBS	6901.01	24.704022	136.127769	187344.7	7.069	4912.6	1619.3	0.65	5030	37.16	11.02
007670617-02	OBS	No	24.705714	151.264114	48626.3	4.873	935.2	504.9	0.65	5030	16.93	11.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007670617-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—DEEP_V_SHAPED—HAS_SEC_TCE
007670617-02	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.

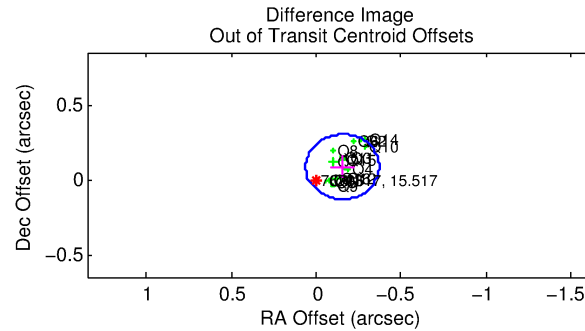
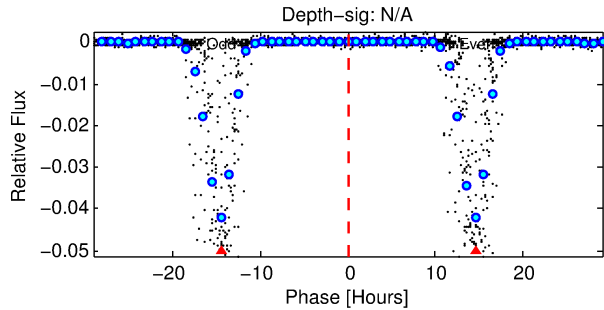
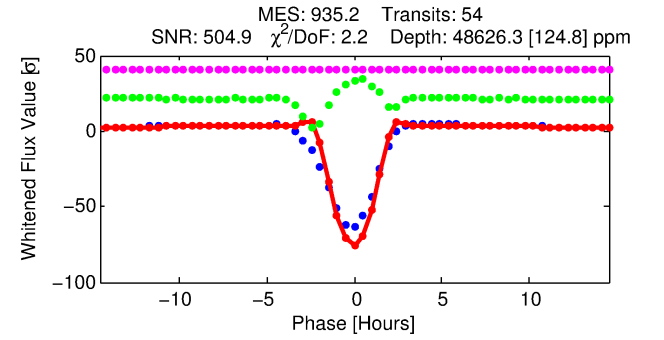
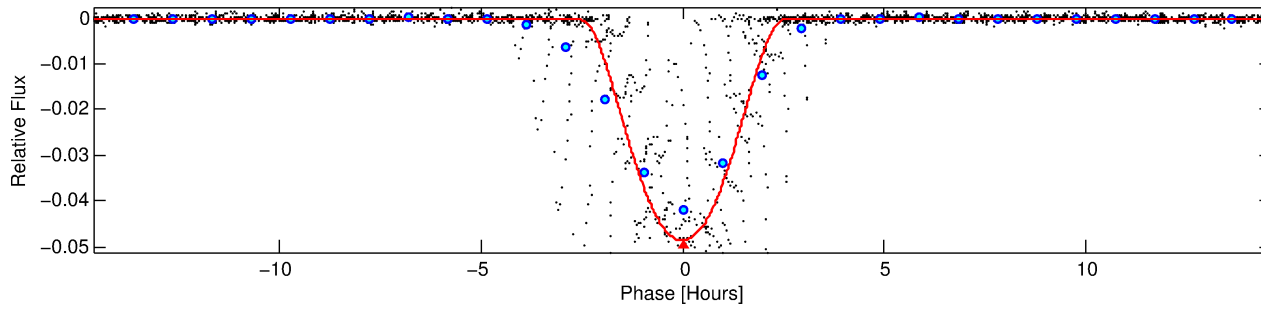
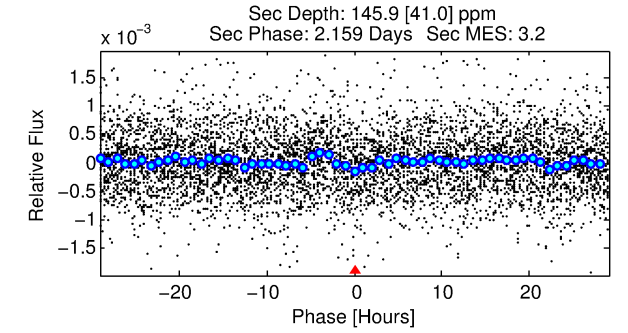
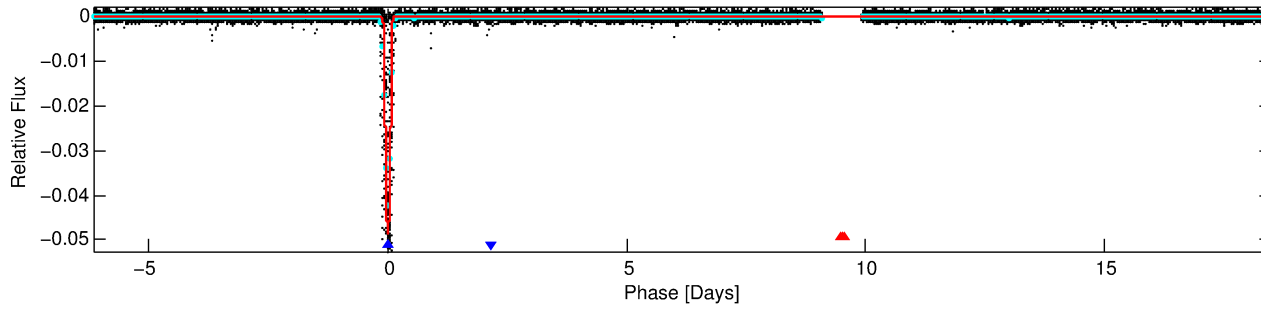
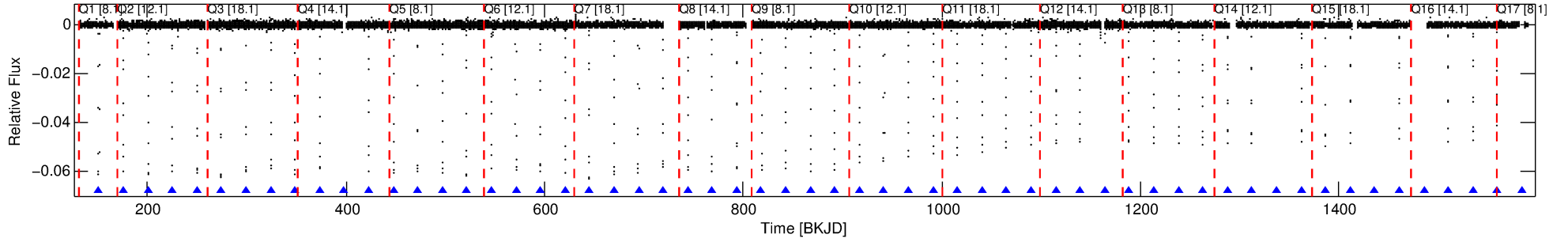
Ephemeris Match Information For 007670617-02

No Significant Match Found

DV One-Page Summary

KIC: 7670617 Candidate: 2 of 2 Period: 24.706 d
KOI: K06901 Corr: No Ephemeris Match

Kp: 15.52 R*: 0.65 Rs Teff: 5030.0 K Logg: 4.67 Fe/H: -0.460



DV Fit Results:

Period = 24.70571 [0.00001] d
Epoch = 151.2641 [0.0002] BKJD
Rp/R* = 0.2387 [0.0027]
a/R* = 36.32 [0.16]
b = 0.81 [0.01]
Seff = 11.02 [2.08]
Teq = 465 [22] K
Rp = 16.93 [2.20] Re
a = 0.1483 [0.0155] AU
Ag = 6.16 [1.96] [2.64σ]
Teffp = 1132 [87] K [7.47σ]

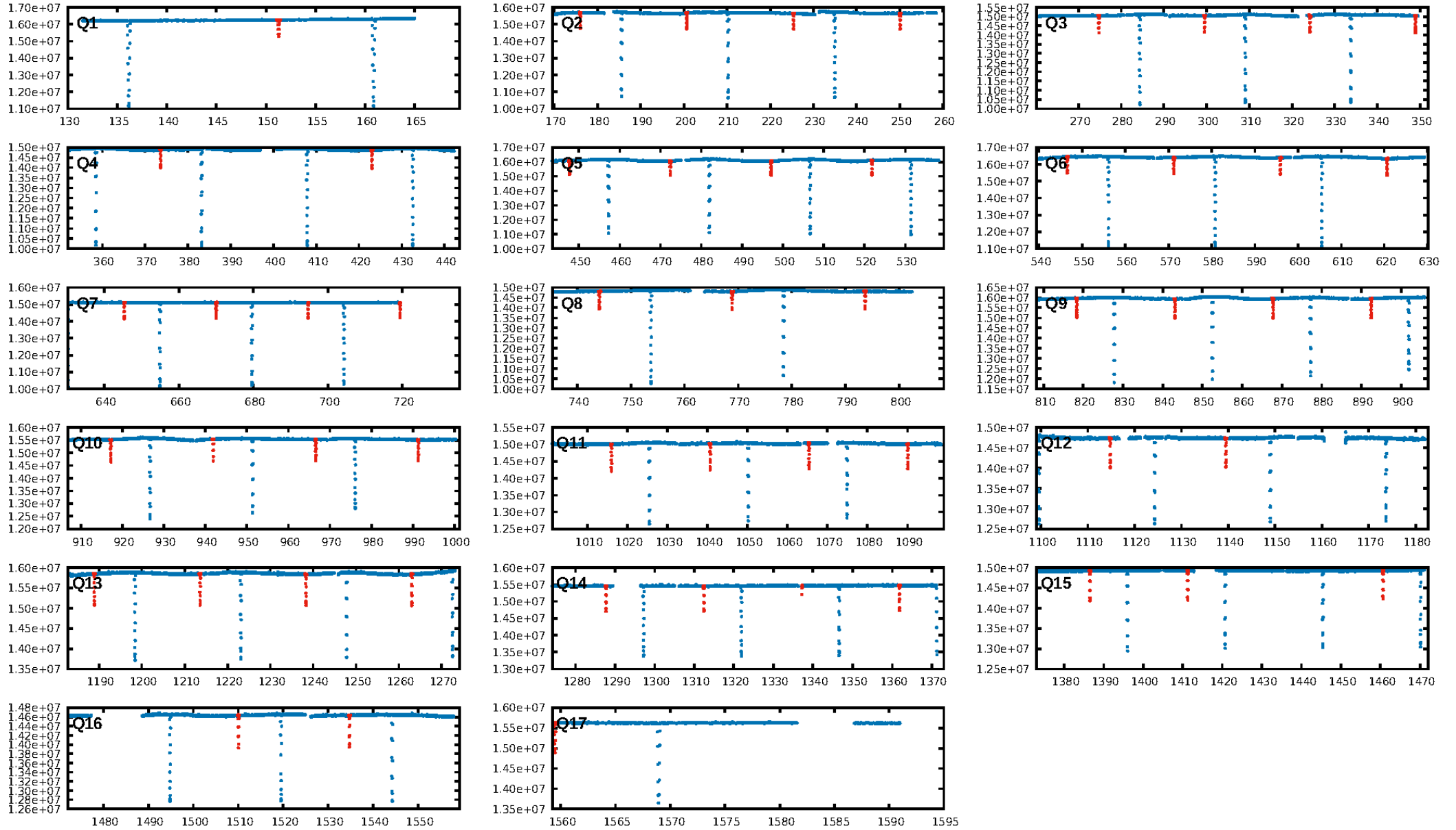
DV Diagnostic Results:

ShortPeriod-sig: 0.4% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [52/52]
GhostDiagnostic-chr: 4.17
Centroid-sig: 0.0%
Centroid-so: 0.295 arcsec [36.07σ]
OotOffset-rm: 0.177 arcsec [2.45σ]
KicOffset-rm: 0.063 arcsec [0.89σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
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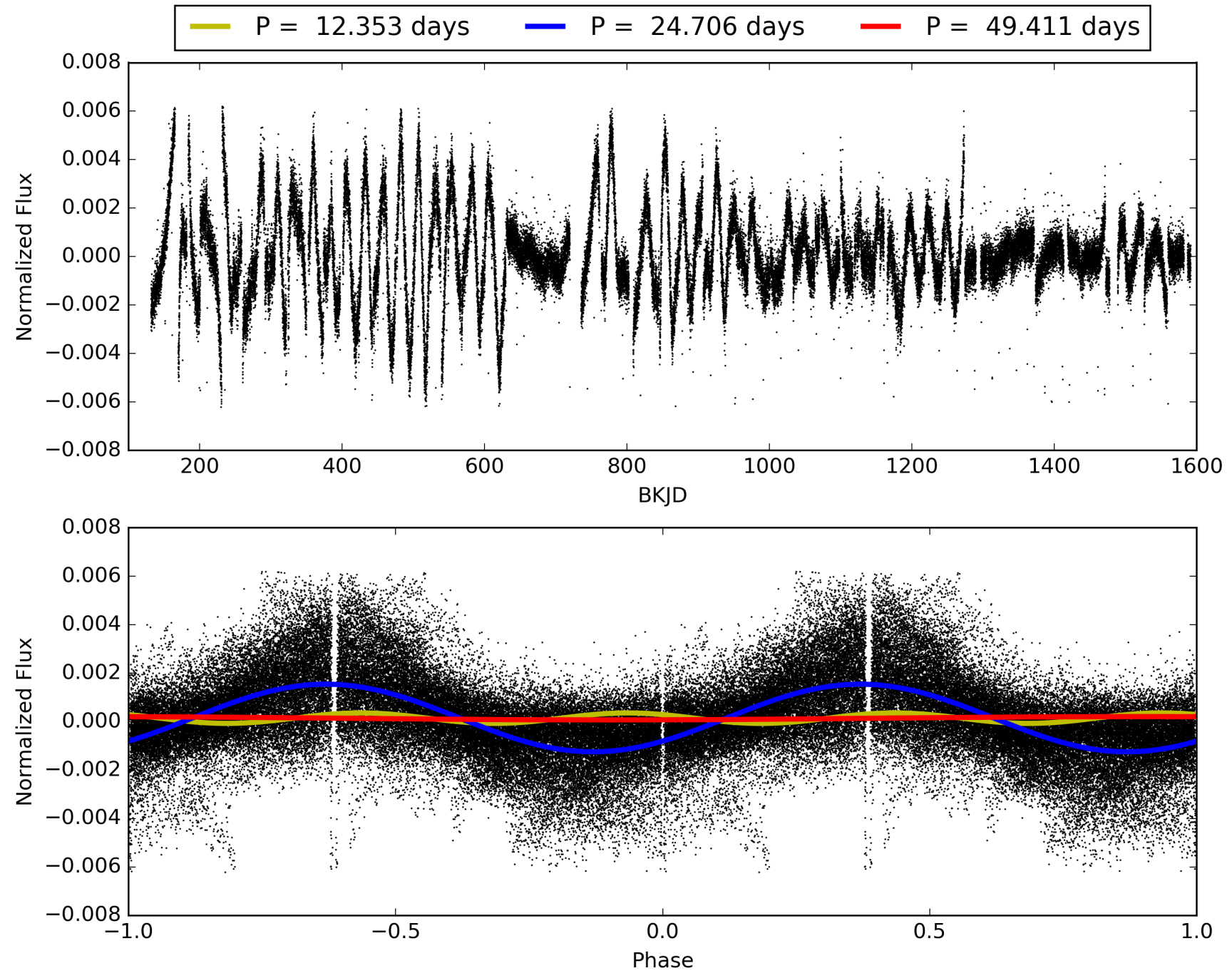
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007670617-02, PDC Light Curves

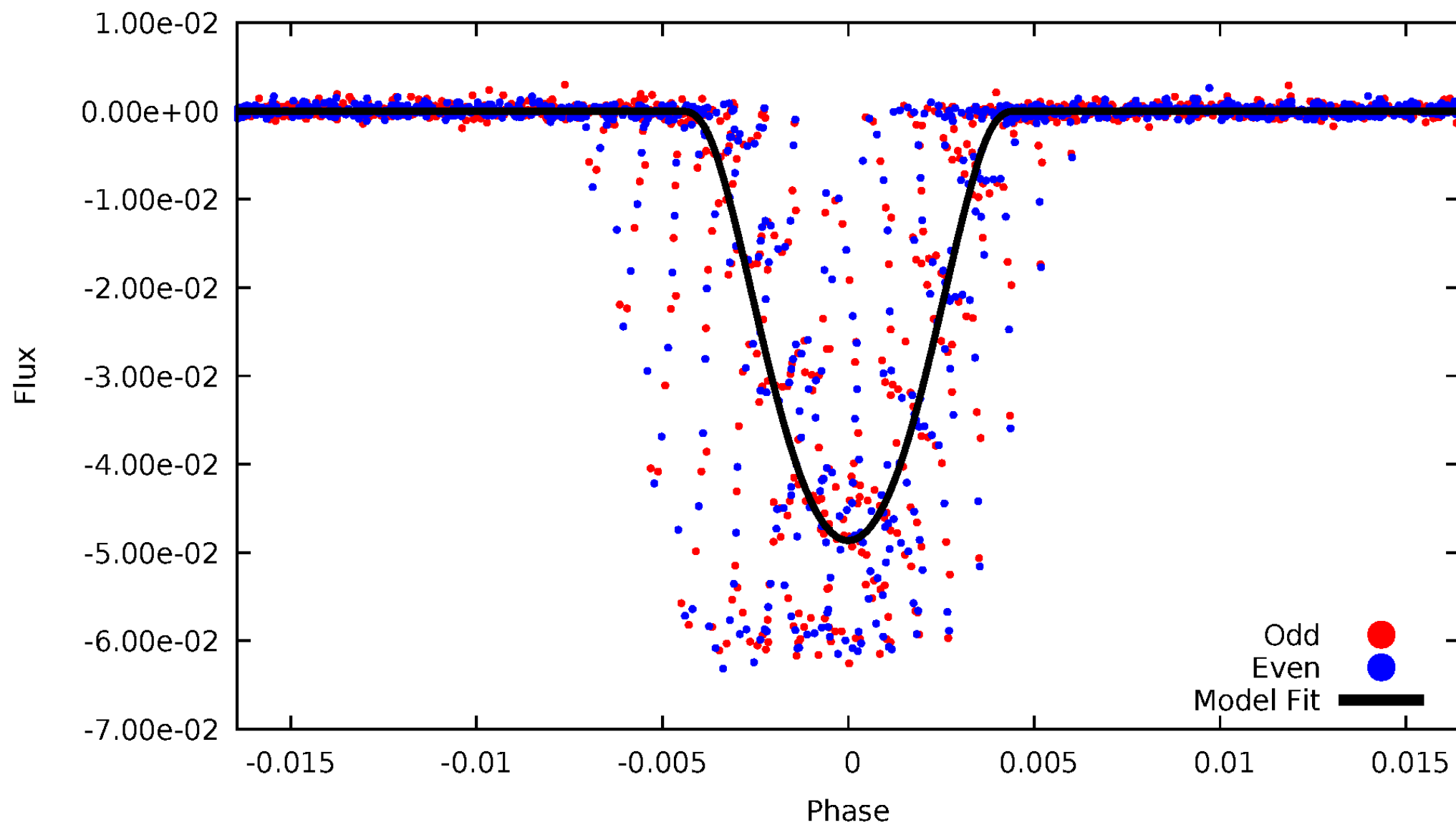


TCE 007670617-02



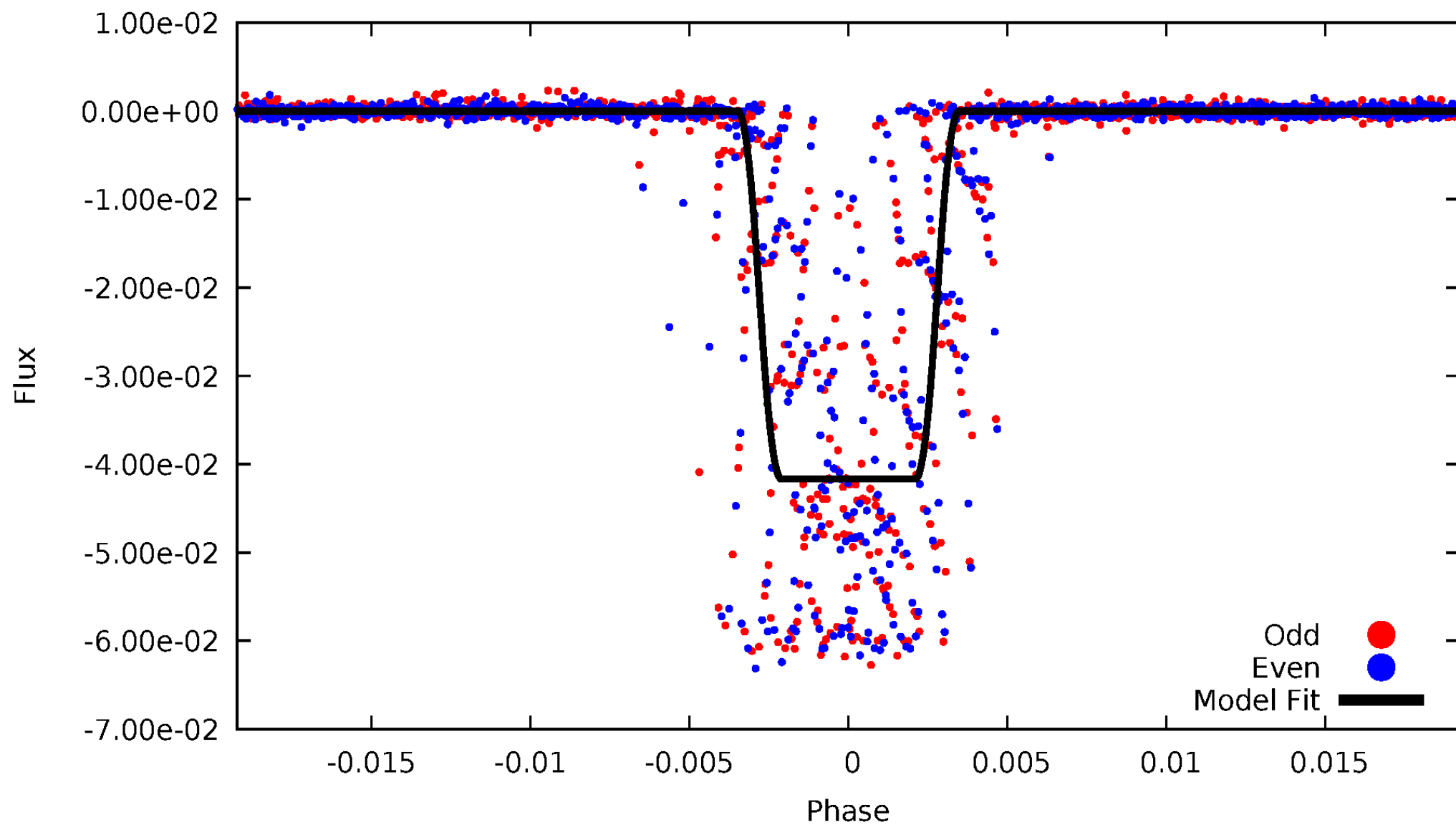
DV Odd/Even

TCE 007670617-02



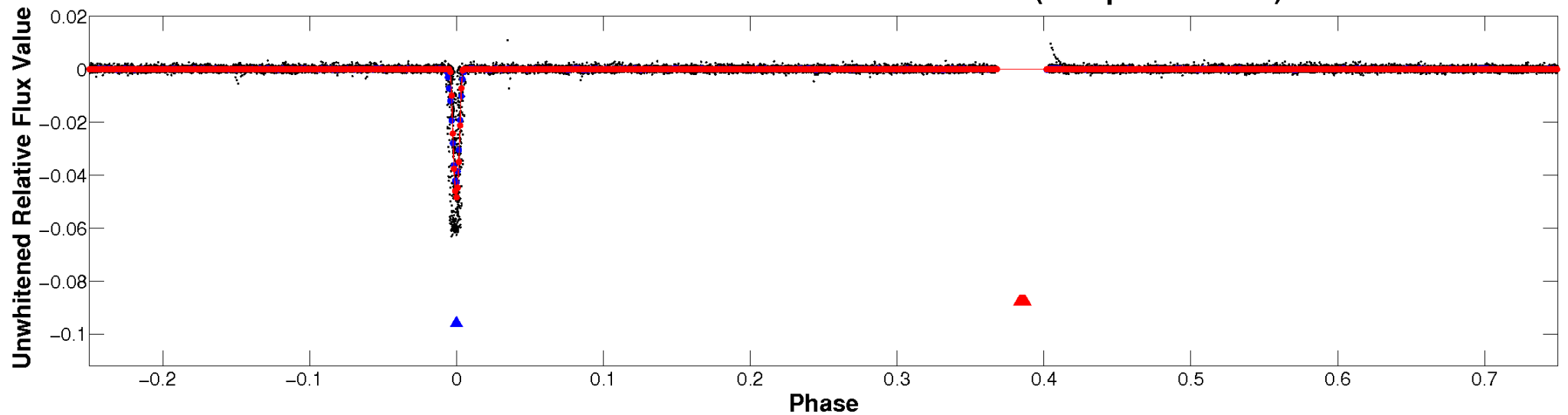
ALT Odd/Even

TCE 007670617-02

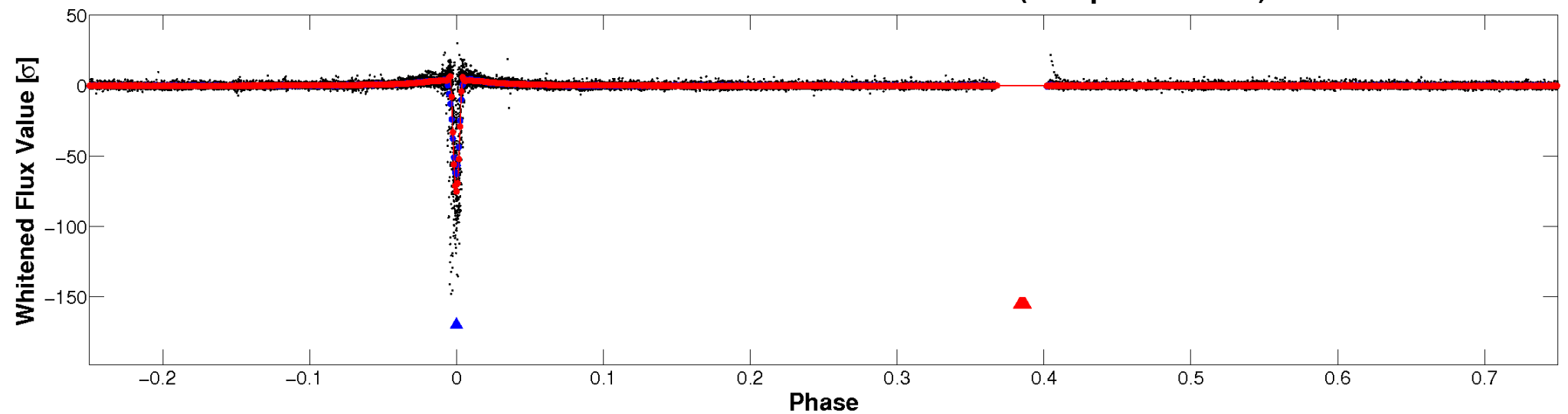


Non-Whitened Vs. Whitened Light Curve

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

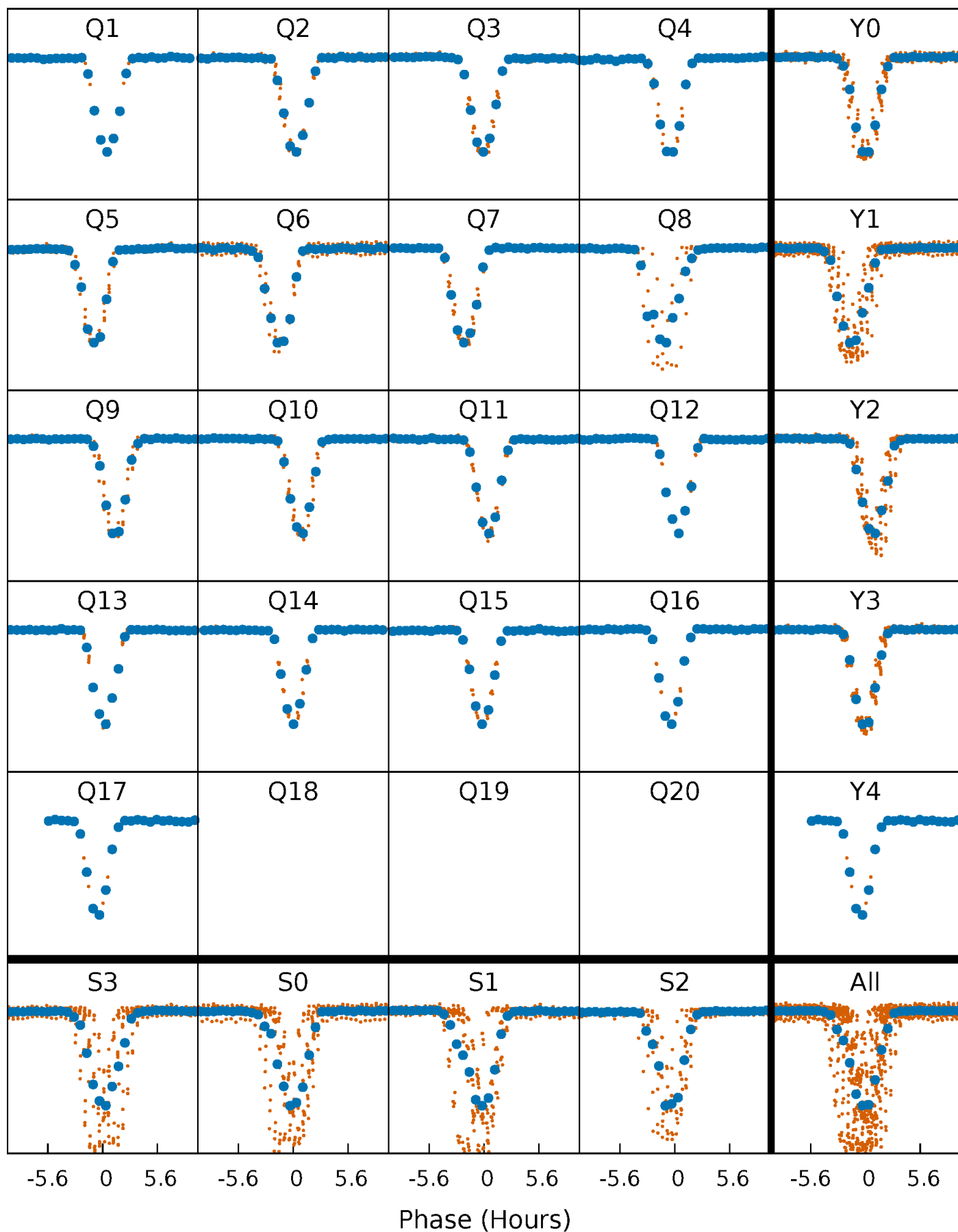


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



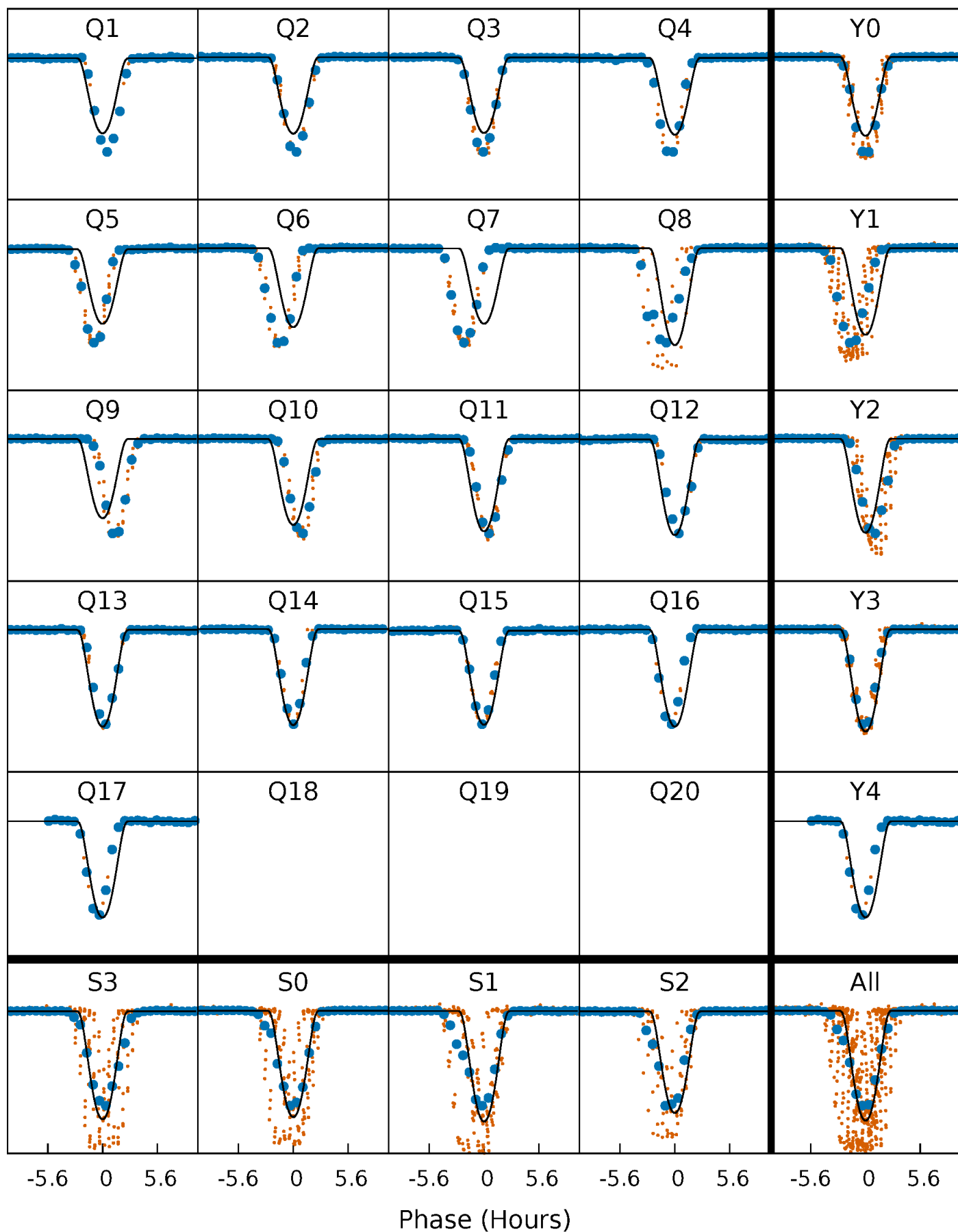
PDC Quarter-Phased Transit Curves

TCE 007670617-02 P= 24.705714 Days $T_0=151.264114$ (BKJD)



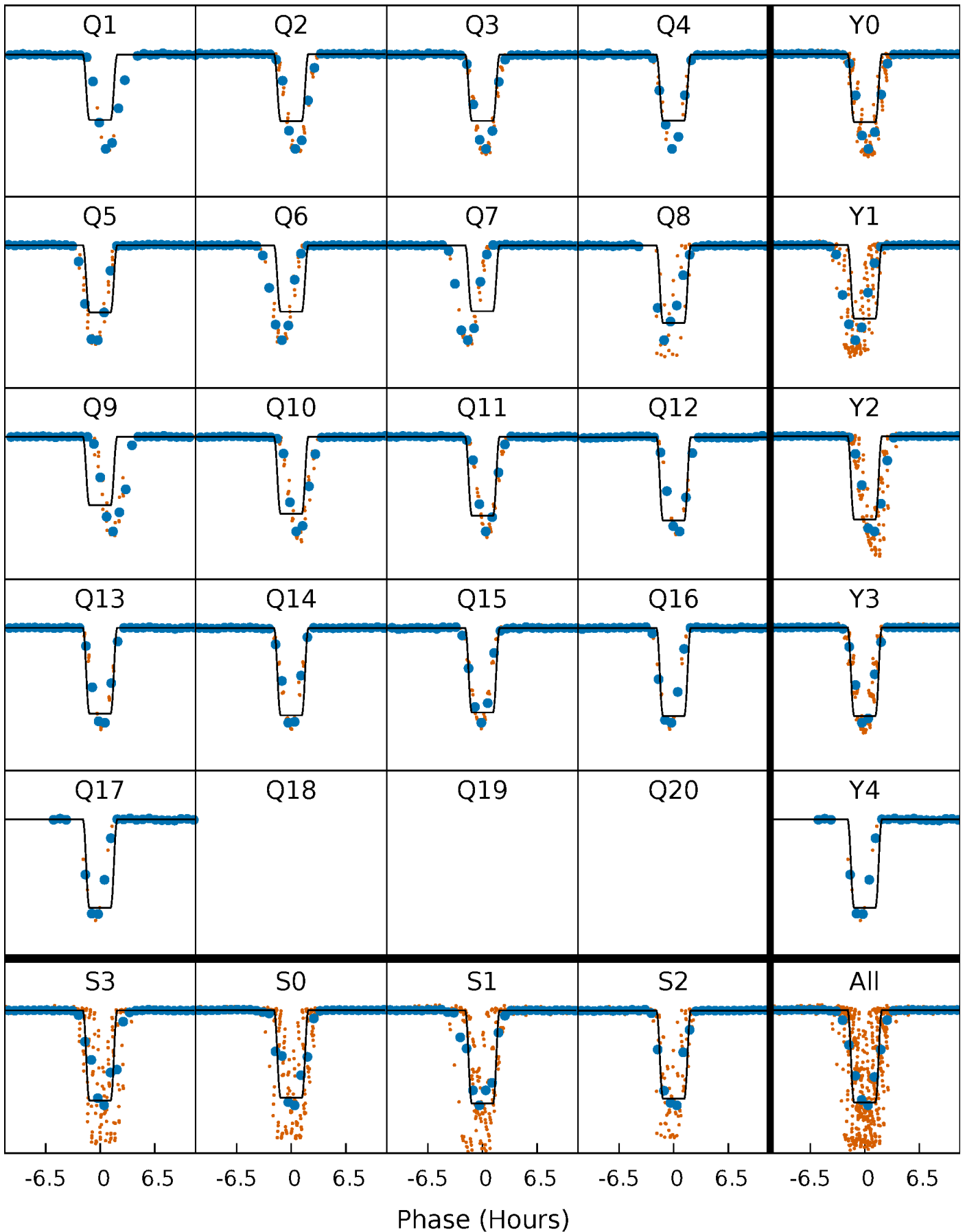
DV Quarter-Phased Transit Curves

TCE 007670617-02 P= 24.705714 Days $T_0=151.264114$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

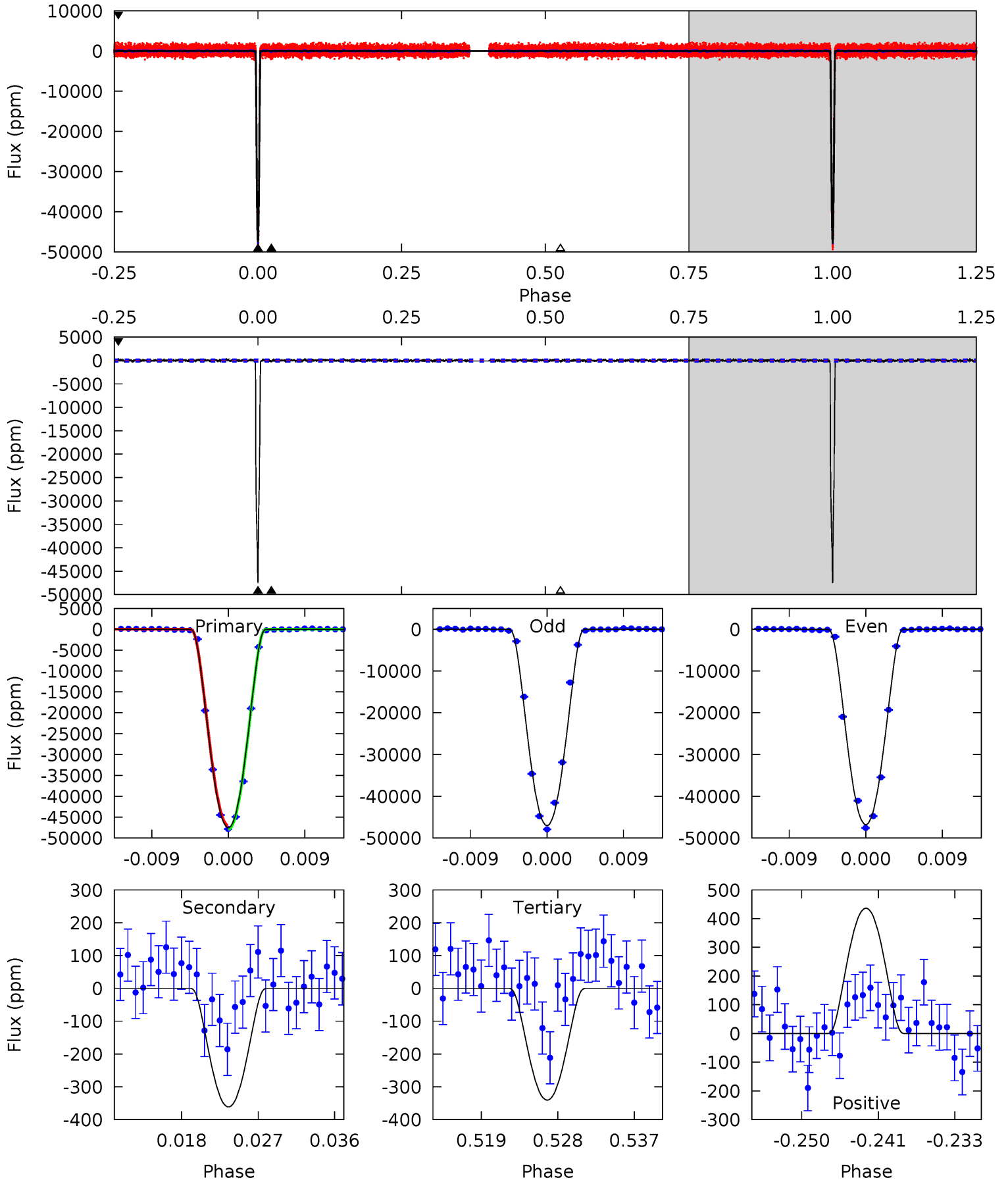
TCE 007670617-02 P= 24.706113 Days $T_0=151.245071$ (BKJD)



DV Model-Shift Uniqueness Test

007670617-02, P = 24.705714 Days, E = 126.558400 Days

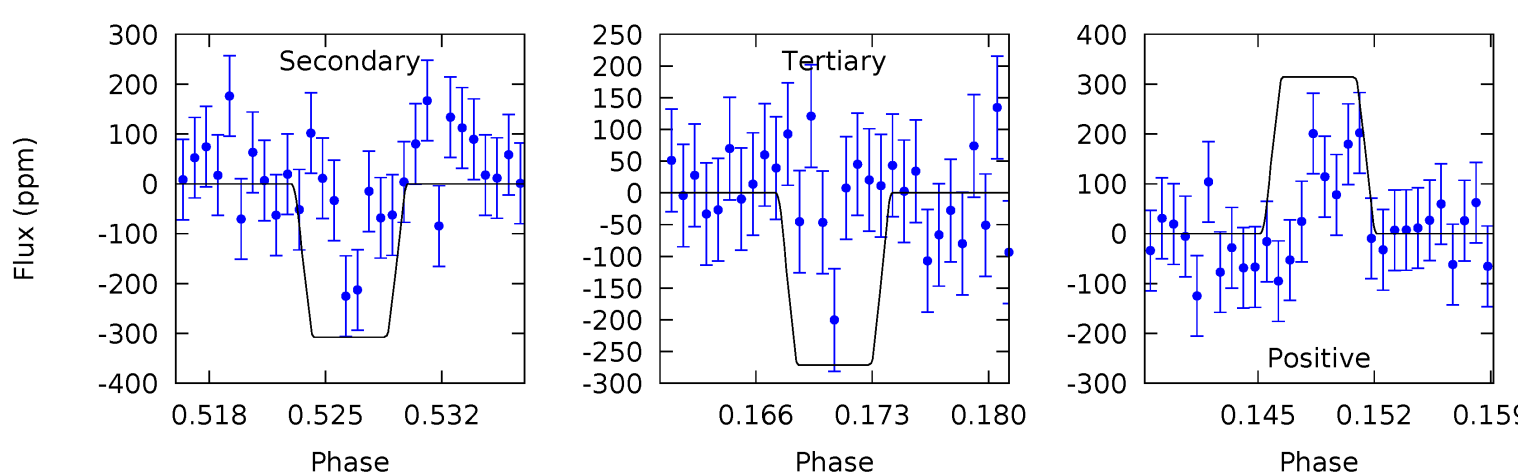
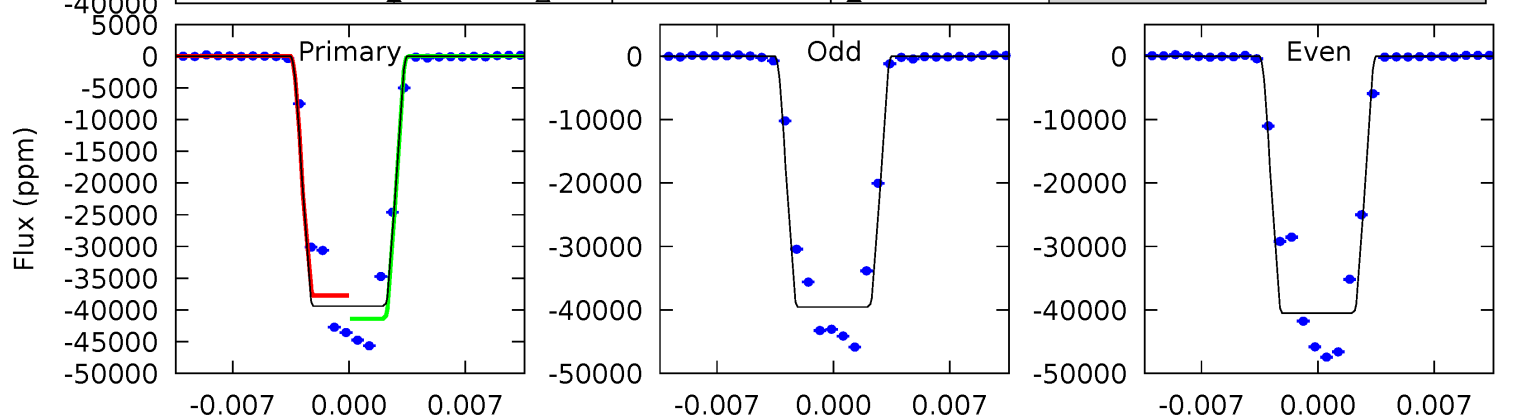
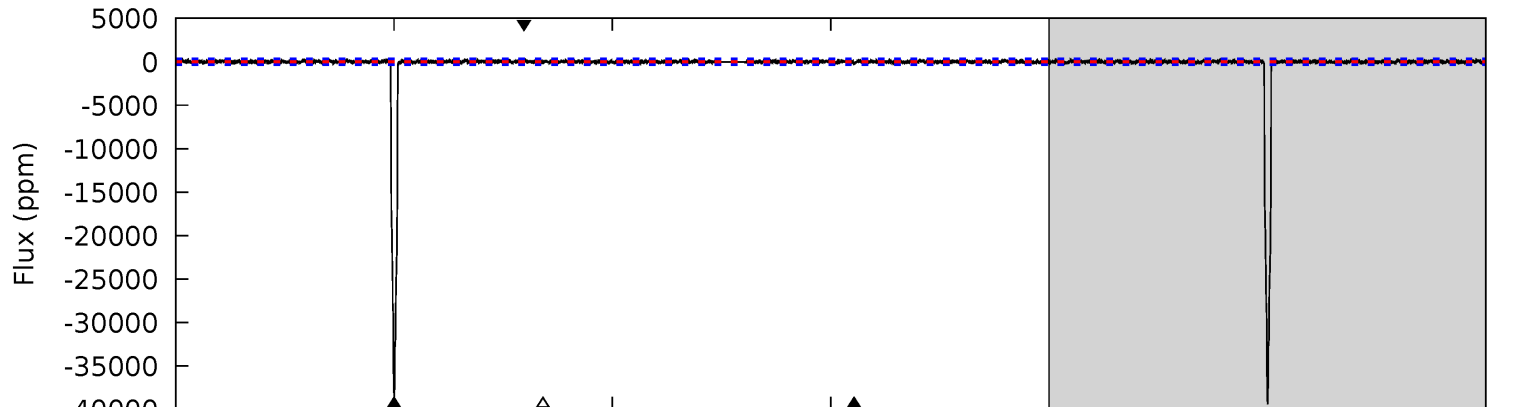
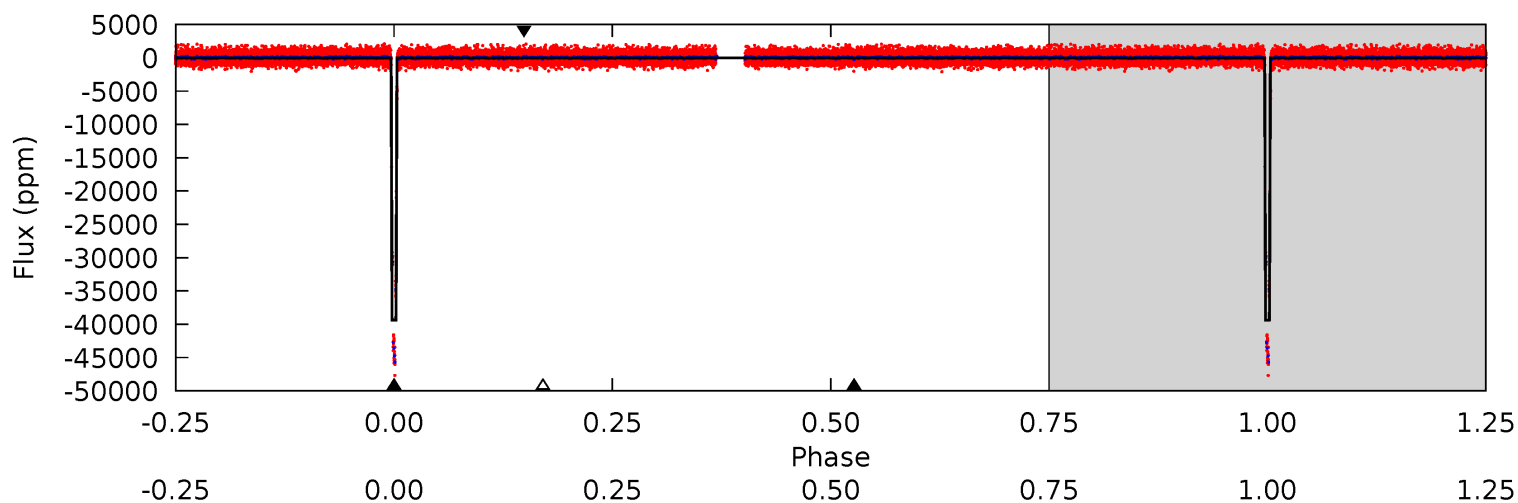
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
984.6	7.48	7.05	9.03	5.05	2.61	1.98	977.5	975.5	0.43	-1.55	2.44	0.99	0.01	8.92



Alt Model-Shift Uniqueness Test

007670617-02, P = 24.706113 Days, E = 126.538958 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
582.2	4.55	4.01	4.65	5.10	2.70	1.17	578.2	577.5	0.54	-0.10	7.77	1.03	0.01	0



Stellar Parameters For KIC 007670617

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5030^{+151}_{-136}	$4.665^{+0.028}_{-0.077}$	$-0.460^{+0.300}_{-0.300}$	$0.650^{+0.084}_{-0.045}$	$0.717^{+0.071}_{-0.064}$	$3.675^{+0.482}_{-0.917}$
	+3%/-3%	+1%/-2%	+65%/-65%	+13%/-7%	+10%/-9%	+13%/-25%
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 007670617-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-361 ± 48	$17.22^{+1.19}_{-0.85}$	656^{+25}_{-23}	2312^{+47}_{-51}	15^{+2}_{-2}
Alt.	-308 ± 68	$14.69^{+1.10}_{-0.75}$	657^{+25}_{-23}	2349^{+67}_{-77}	17^{+4}_{-4}

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

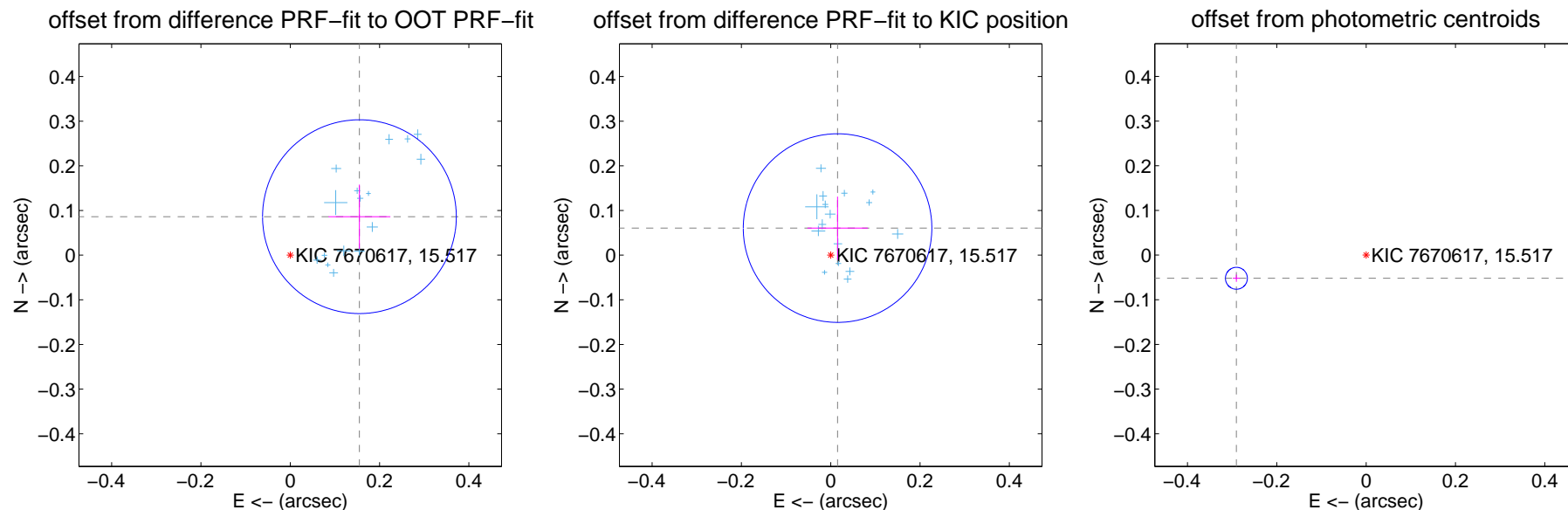
DV Centroid Data

Supplemental centroid analysis for 007670617-02. Kepler magnitude: 15.52. Transit SNR 504.85

There are 16 quarters with good PRF difference image offsets

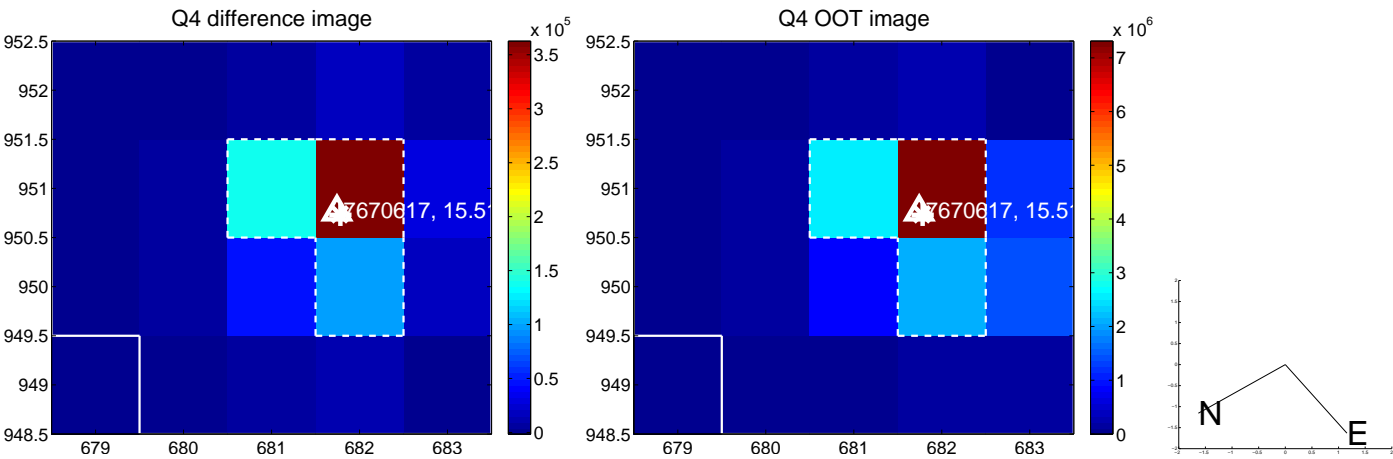
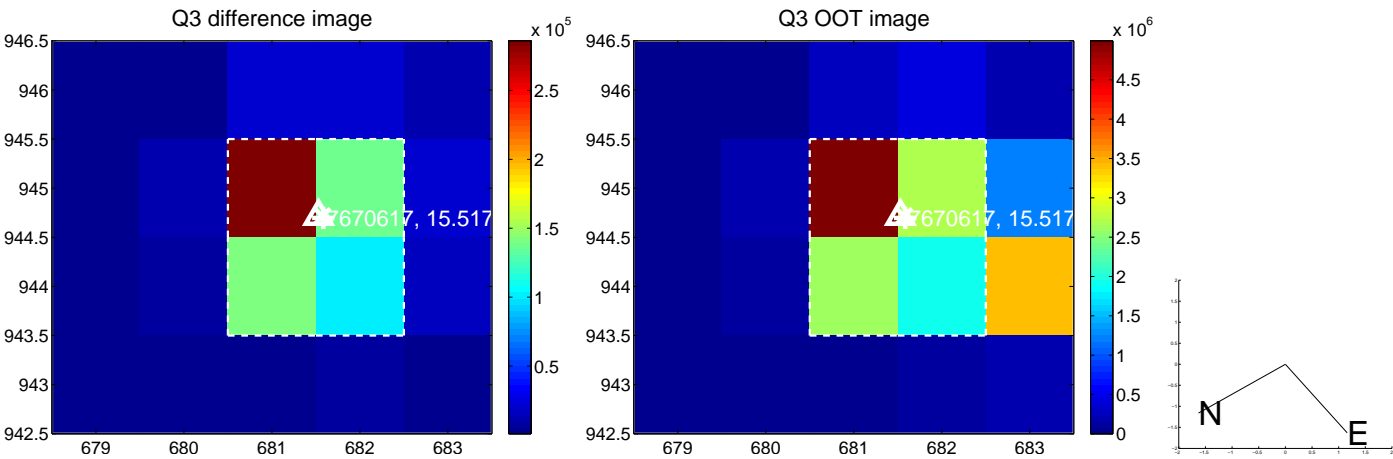
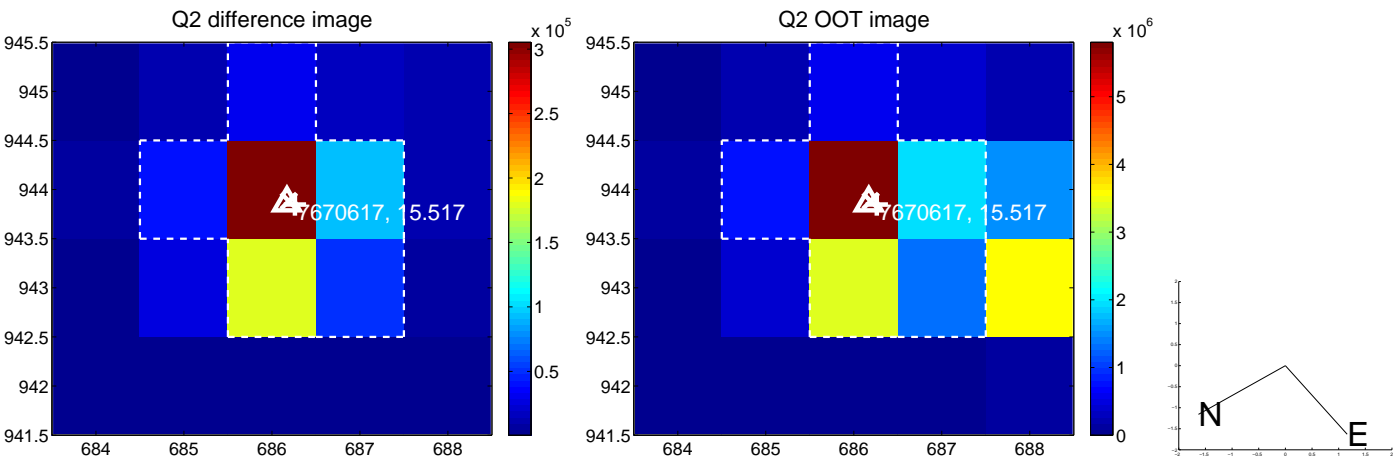
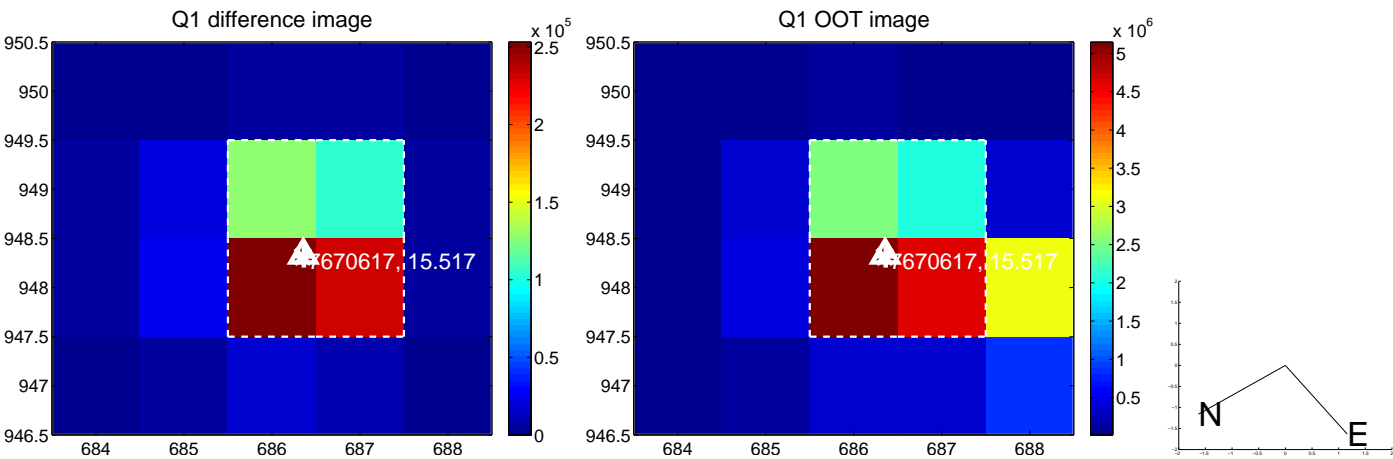
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.177 ± 0.072	2.45	-0.155 ± 0.069	0.086 ± 0.072
PRF-fit source offset from KIC position	0.063 ± 0.070	0.89	-0.015 ± 0.068	0.061 ± 0.071
photometric centroid source offset	0.30 ± 0.01	36.07	0.29 ± 0.01	-0.05 ± 0.01

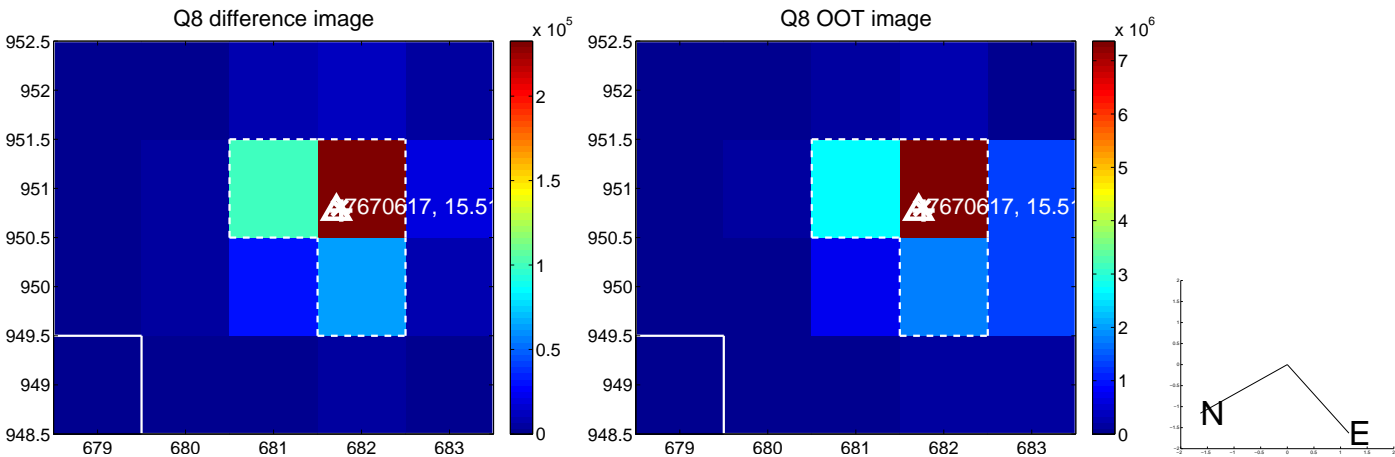
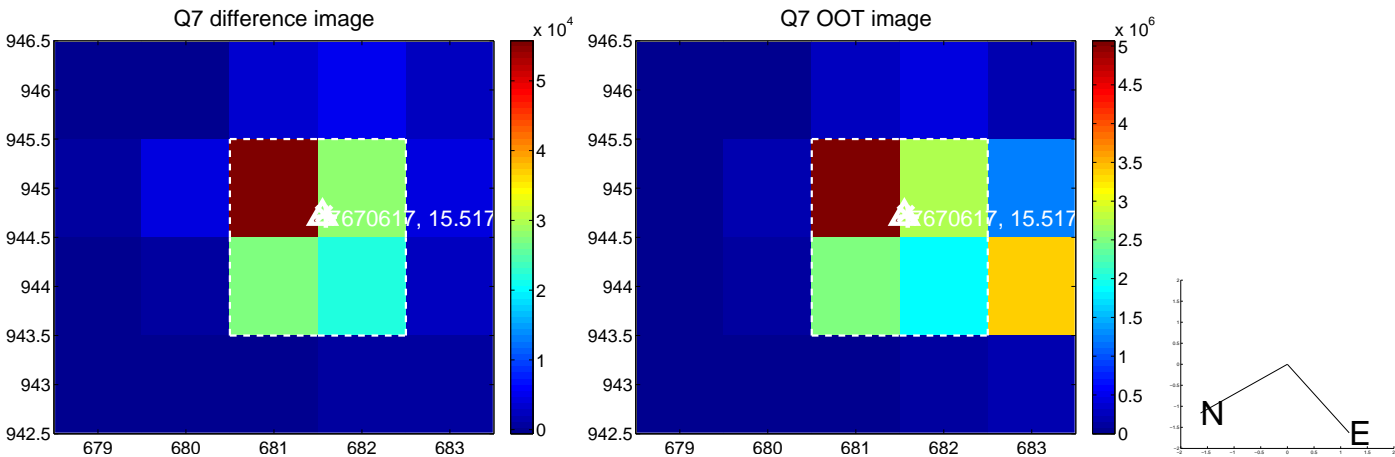
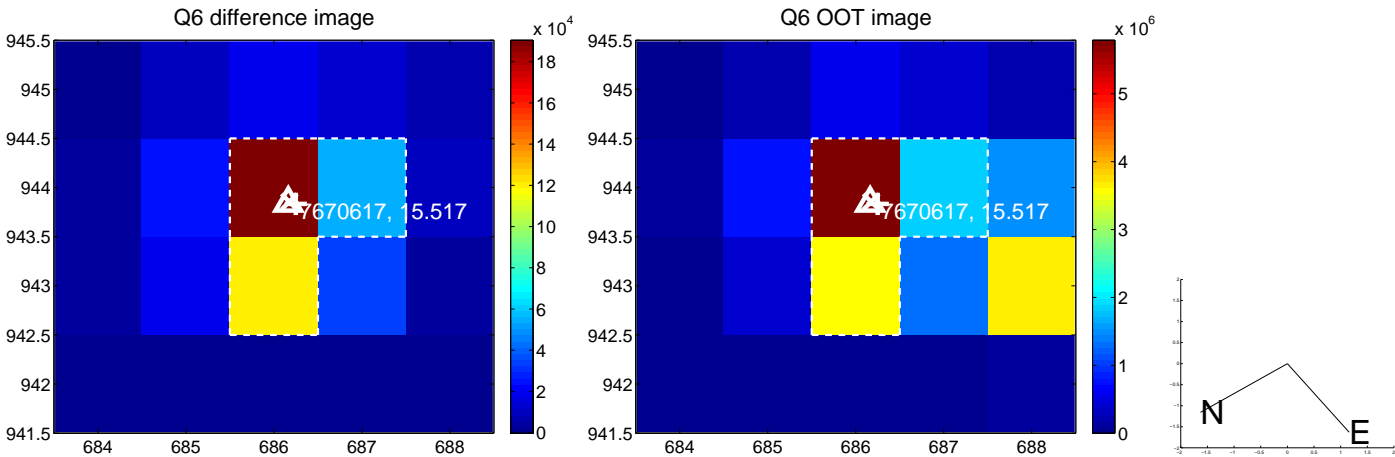
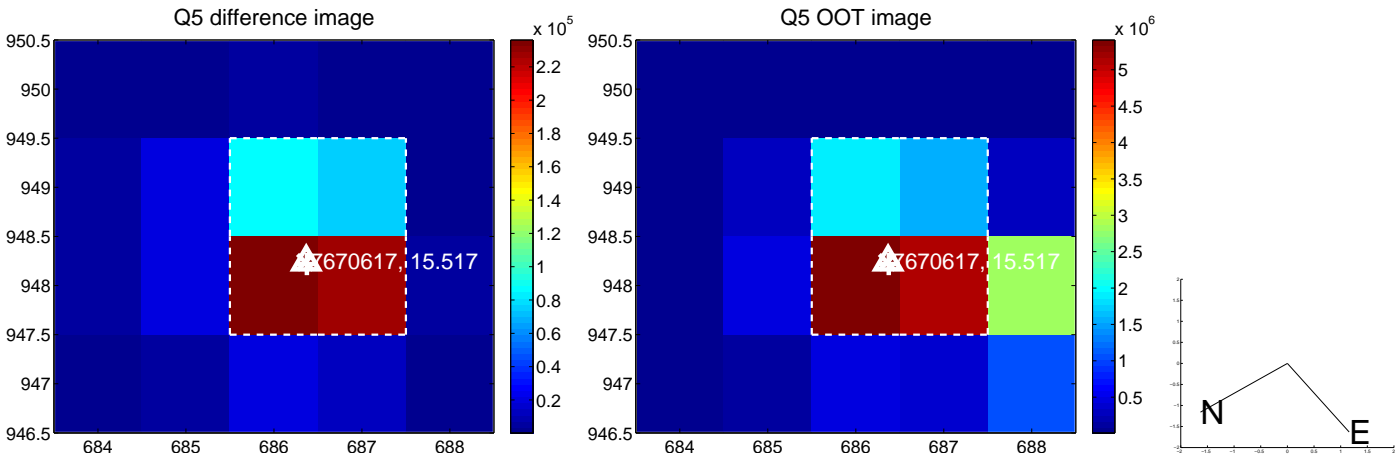


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

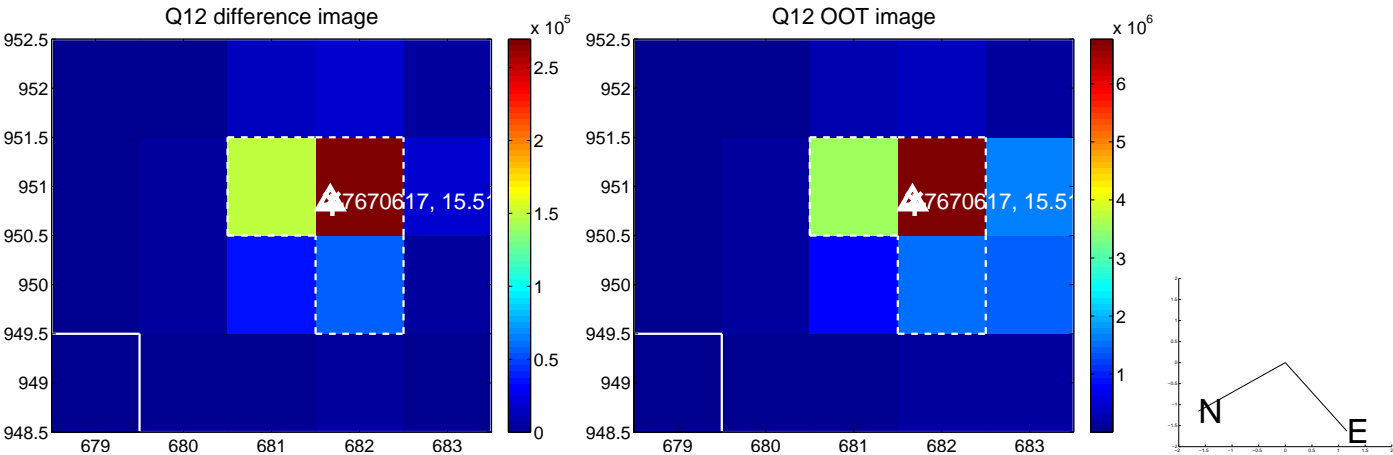
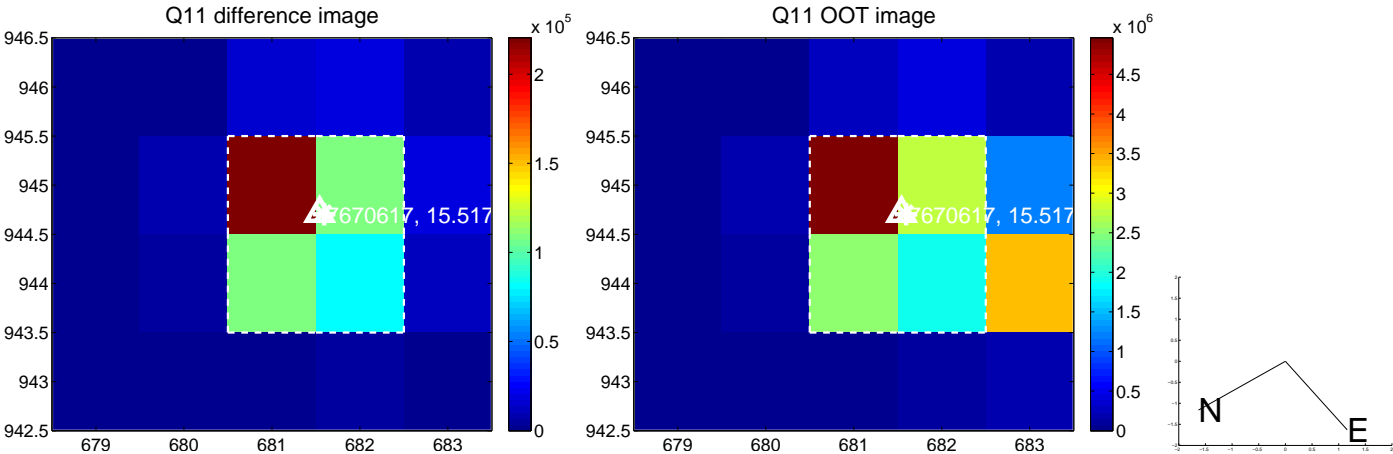
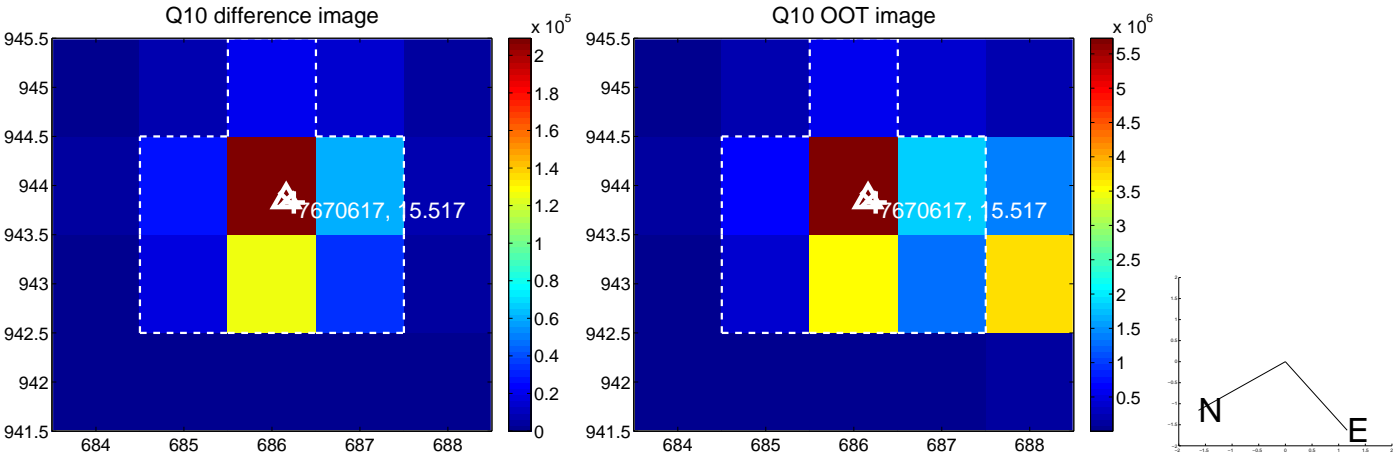
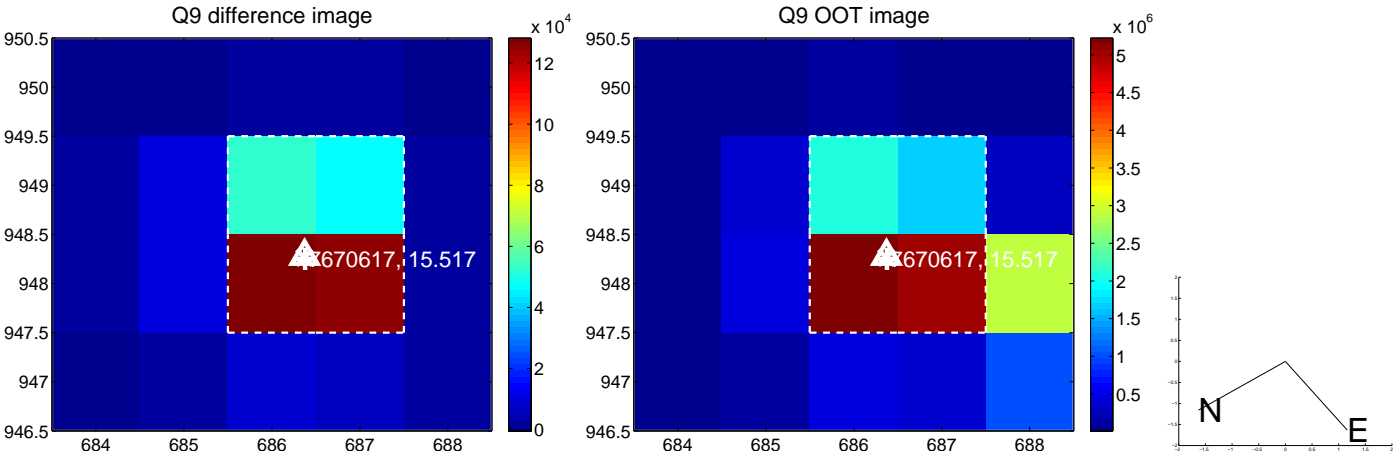
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



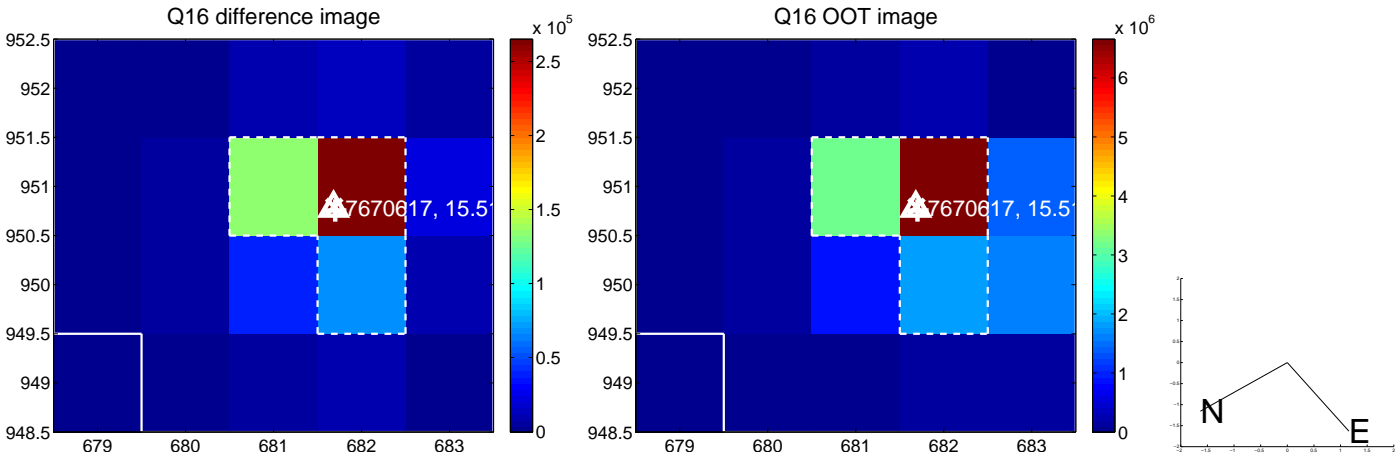
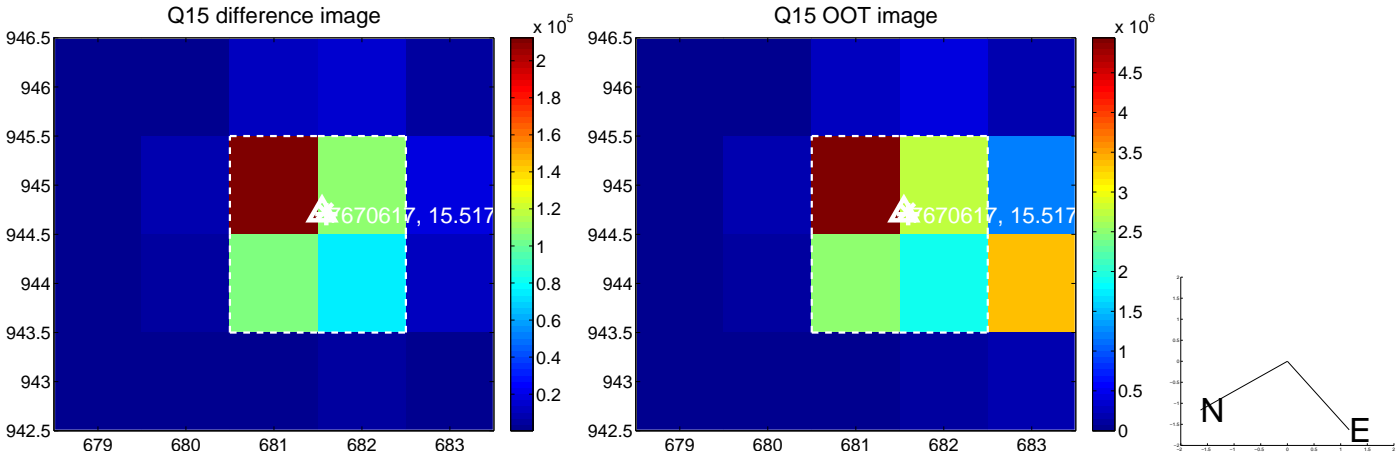
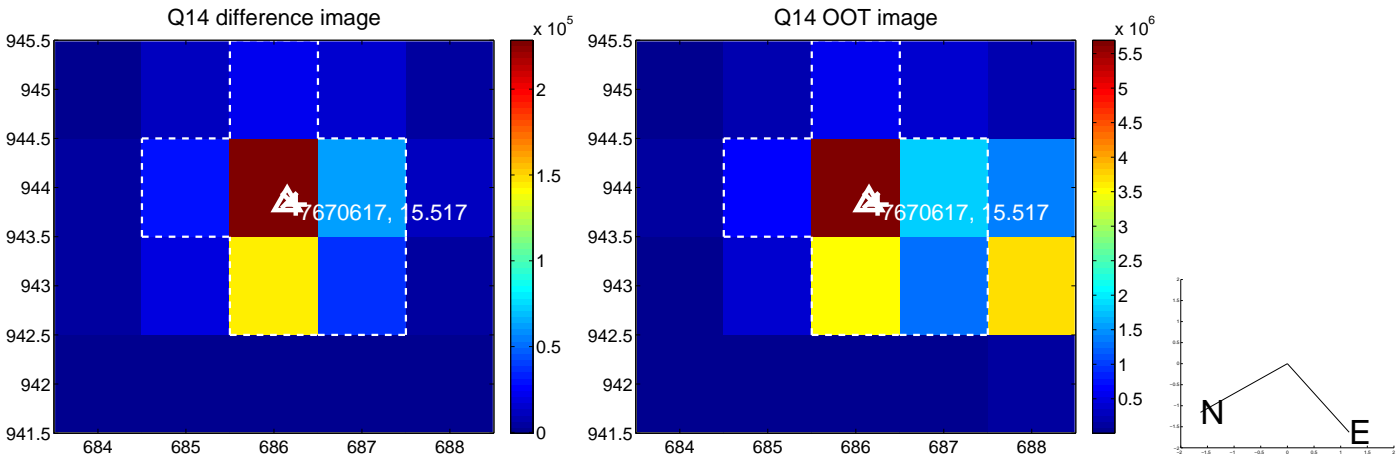
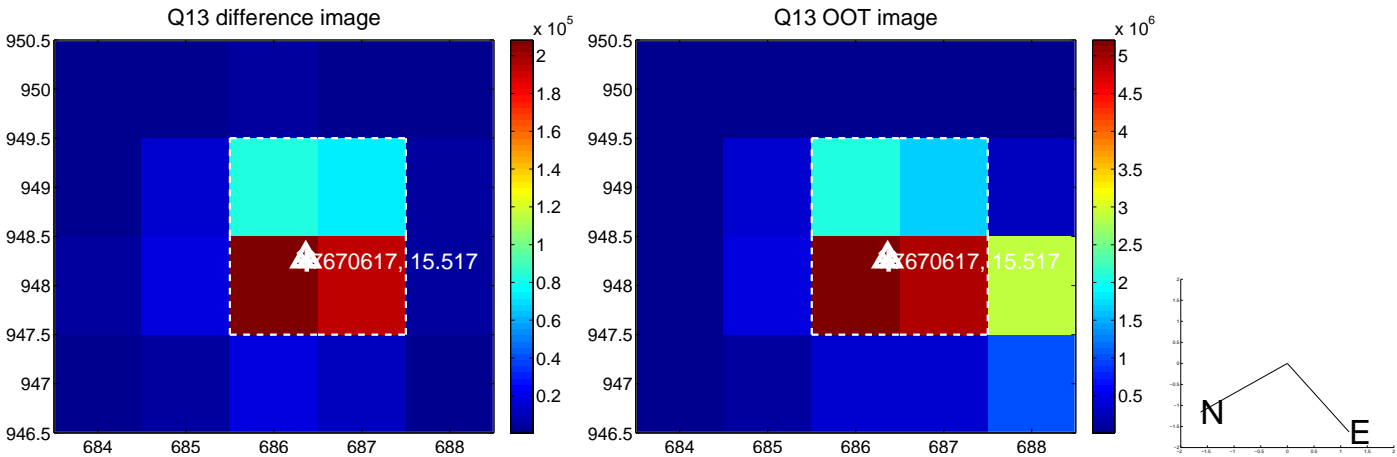
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



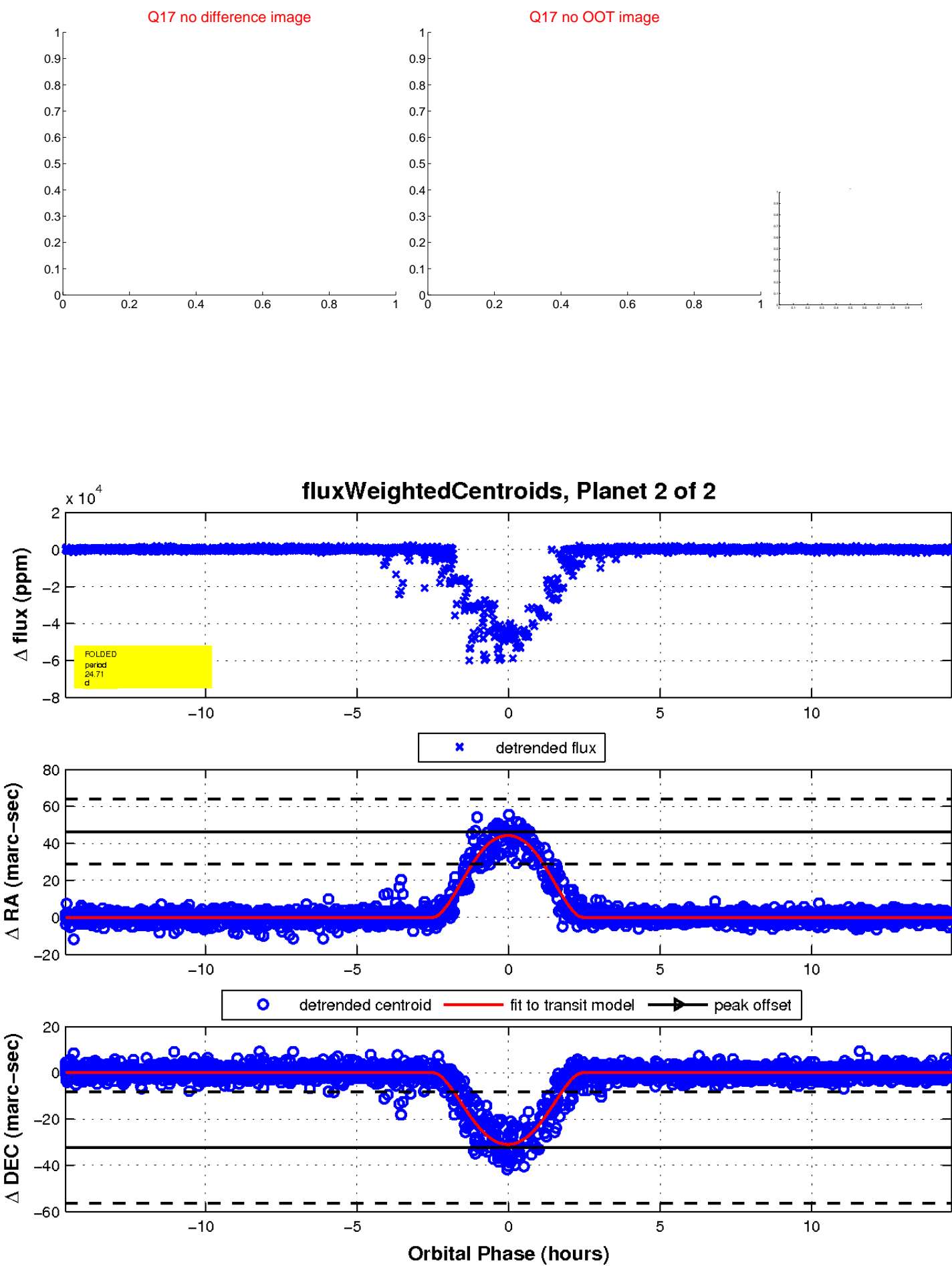
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

