

KIC 008017703

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})
008017703-01	OBS	0518.01	13.981784	140.029550	1017.5	3.081	86.6	89.1	0.65	4859	2.31	22.15
008017703-02	OBS	0518.03	247.354209	364.159957	1266.8	9.602	42.0	39.0	0.65	4859	2.71	0.48
008017703-03	OBS	0518.02	44.000431	166.760622	596.6	5.208	34.2	36.9	0.65	4859	1.72	4.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008017703-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
008017703-02	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
008017703-03	OBS	PC	1.00	0	0	0	0	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.

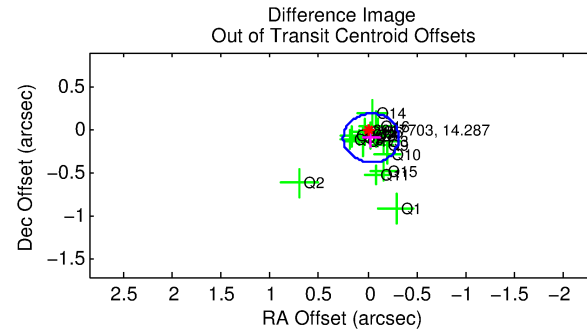
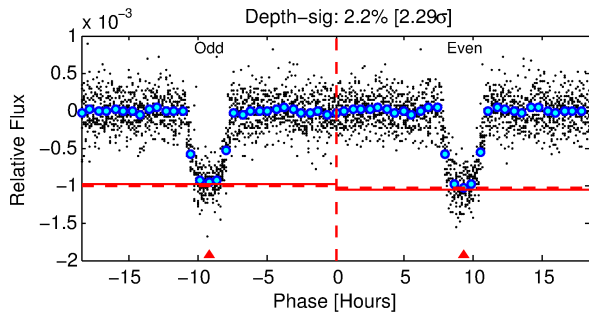
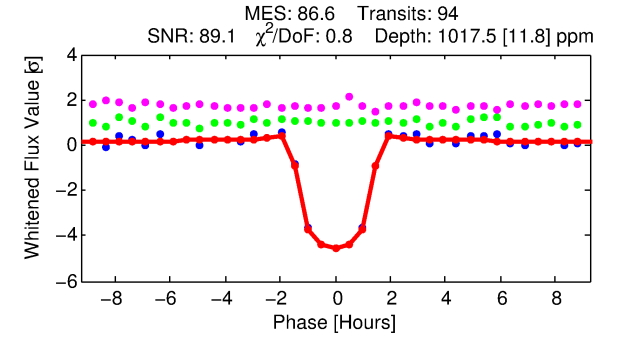
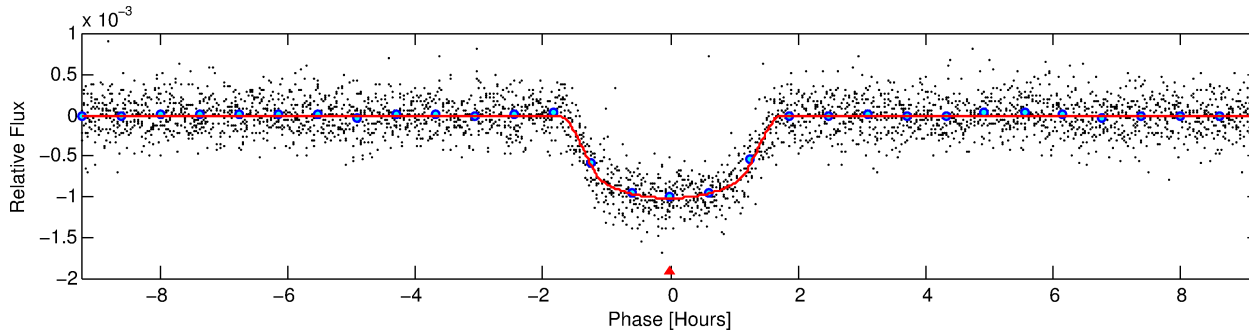
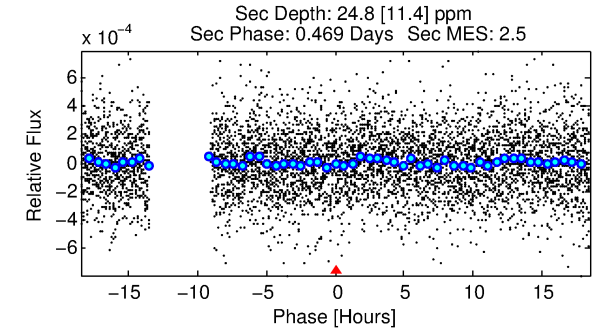
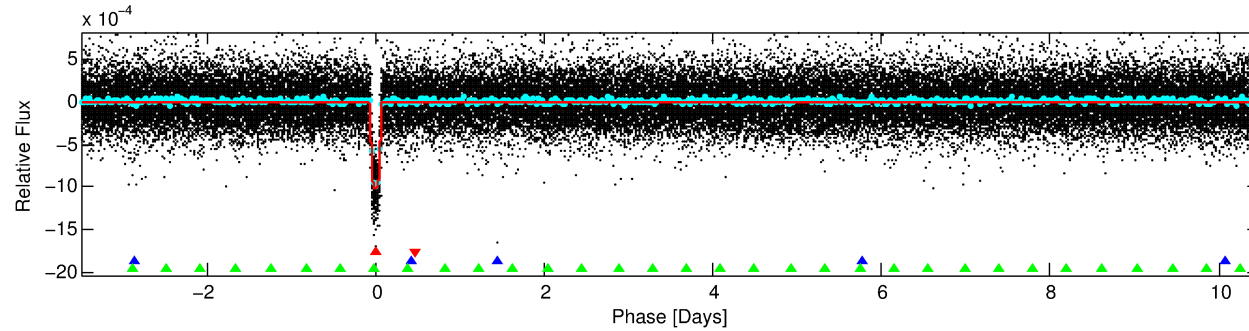
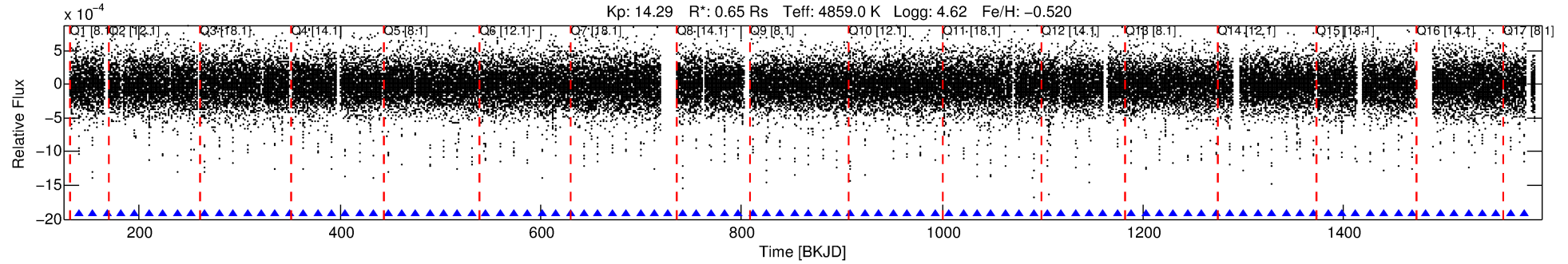
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008017703-01

No Significant Match Found

DV One-Page Summary

KIC: 8017703 Candidate: 1 of 3 Period: 13.982 d
KOI: K00518.01 Name: Kepler-174b Corr: 0.979



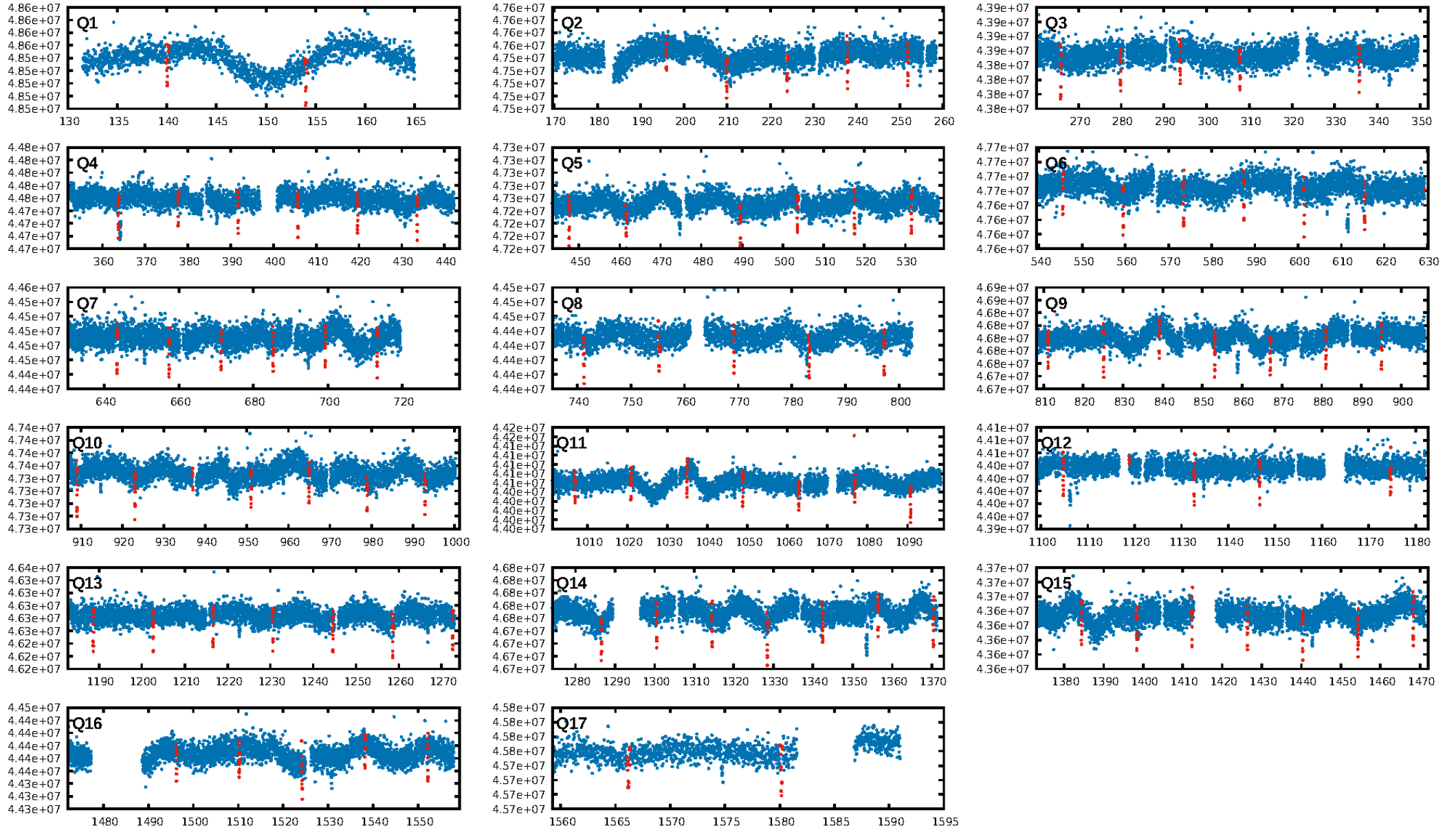
DV Fit Results:

Period = 13.98178 [0.00001] d
Epoch = 140.0296 [0.0008] BKJD
Rp/R* = 0.0326 [0.0032]
a/R* = 23.06 [8.08]
b = 0.79 [0.17]
Seff = 22.15 [2.56]
Teff = 553 [16] K
Rp = 2.31 [0.26] Re
a = 0.0978 [0.0051] AU
Ag = 24.36 [12.33] [1.90 σ]
Teffp = 1900 [240] K [5.60 σ]

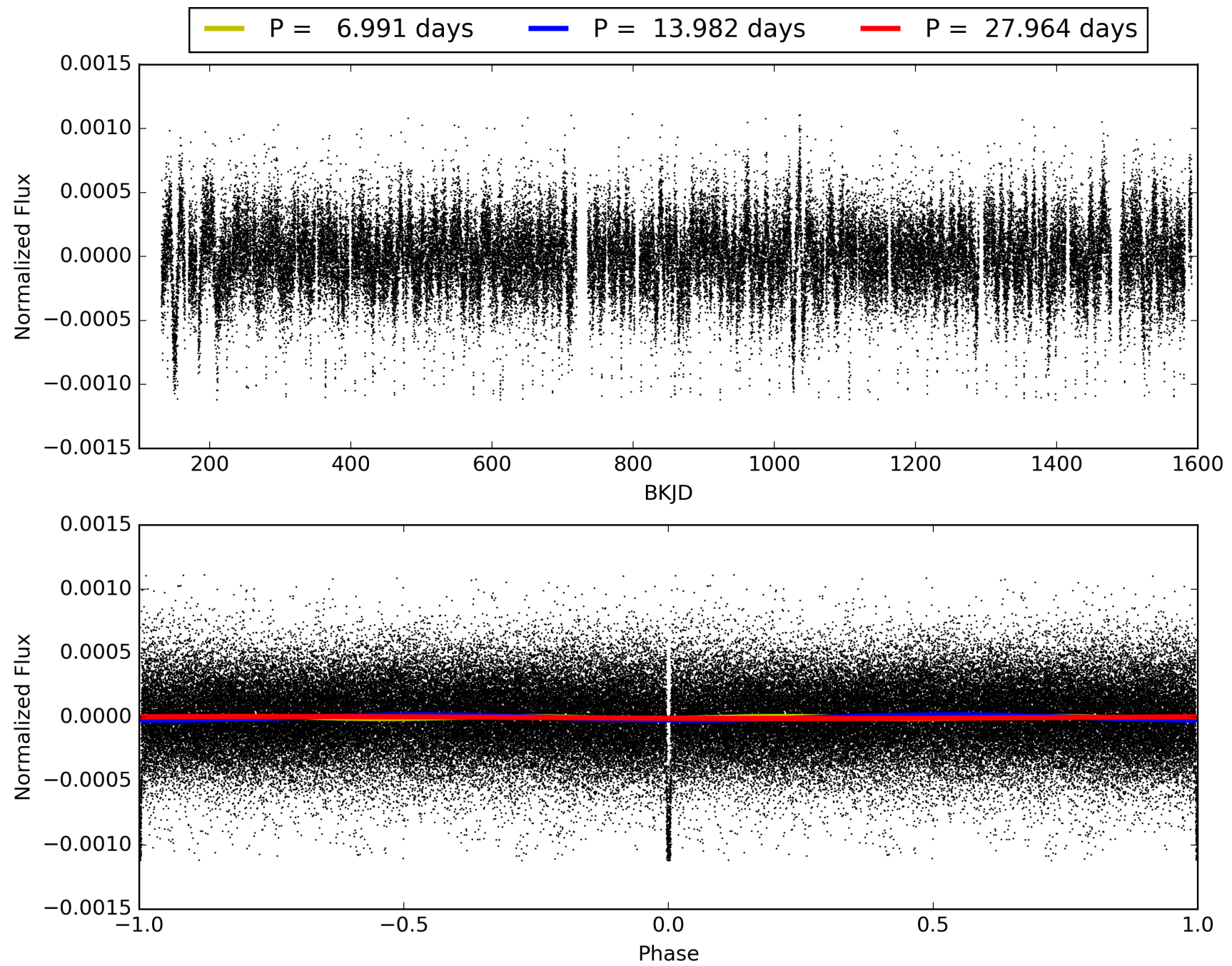
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [119.06 σ]
ModelChiSquare2-sig: 95.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [90/90]
GhostDiagnostic-chr: 7.284
Centroid-sig: 18.8%
Centroid-so: 0.590 arcsec [4.28 σ]
OotOffset-rm: 0.098 arcsec [1.03 σ]
KicOffset-rm: 0.672 arcsec [7.80 σ]
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 008017703-01, PDC Light Curves

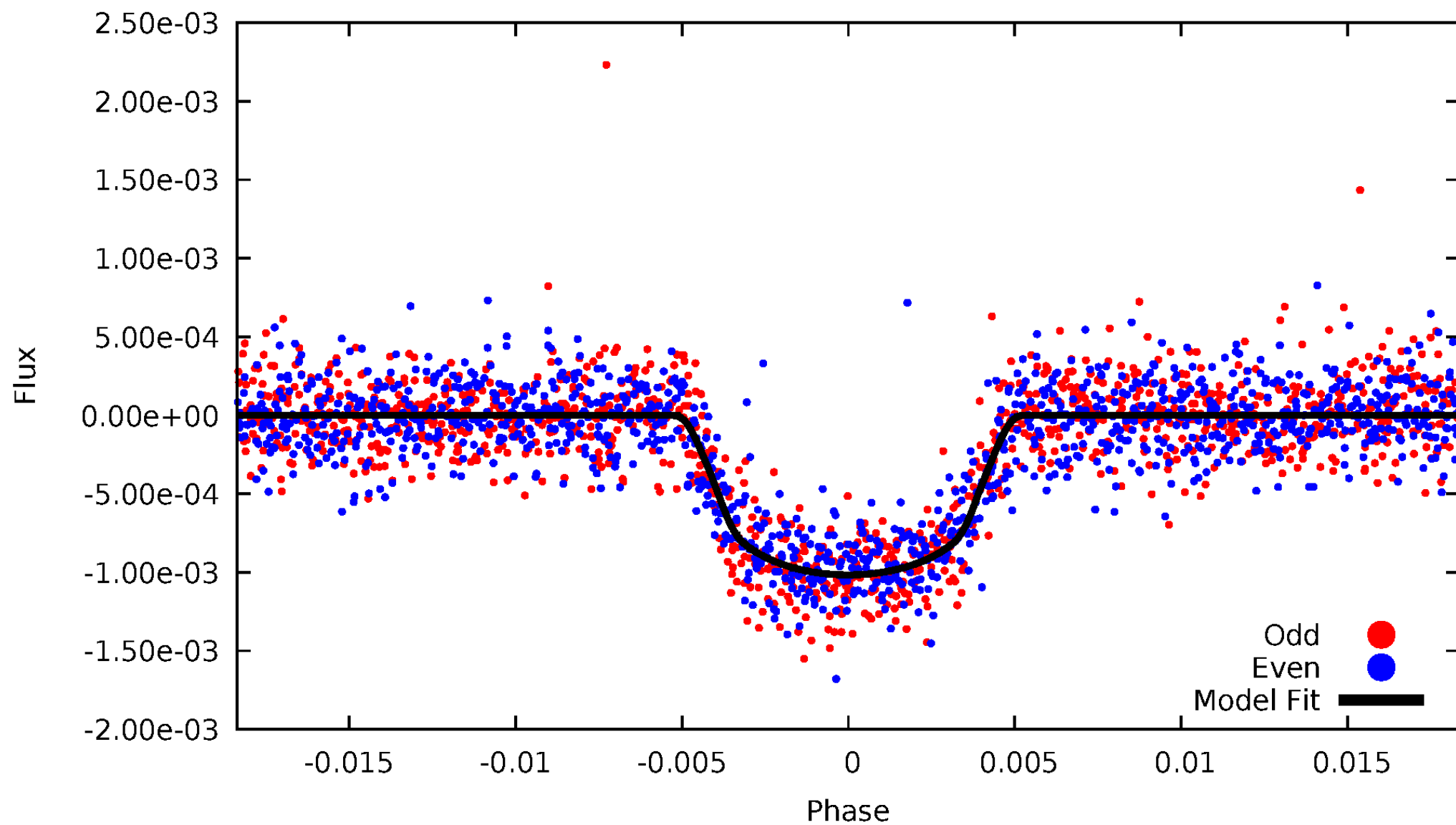


TCE 008017703-01



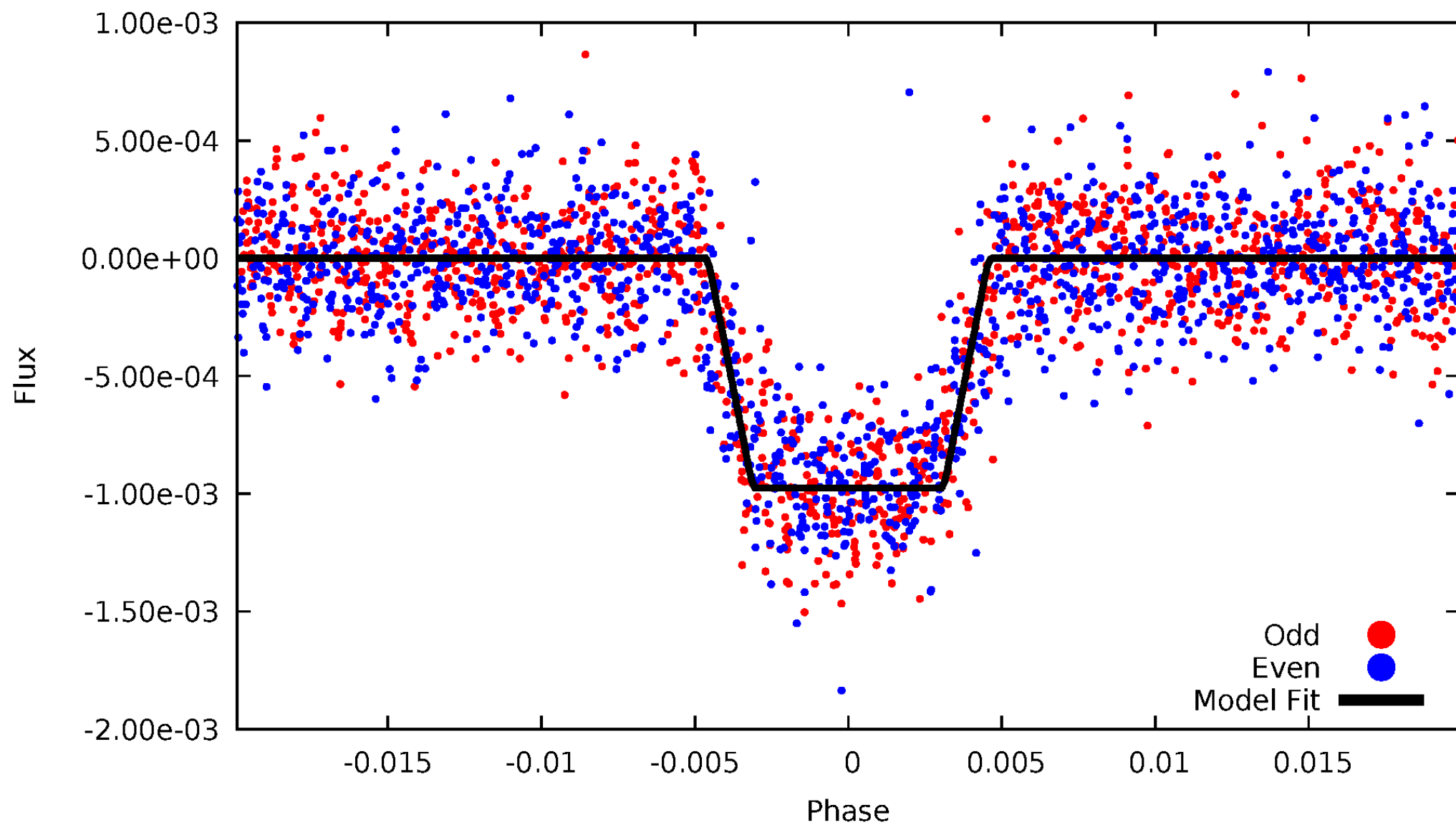
DV Odd/Even

TCE 008017703-01

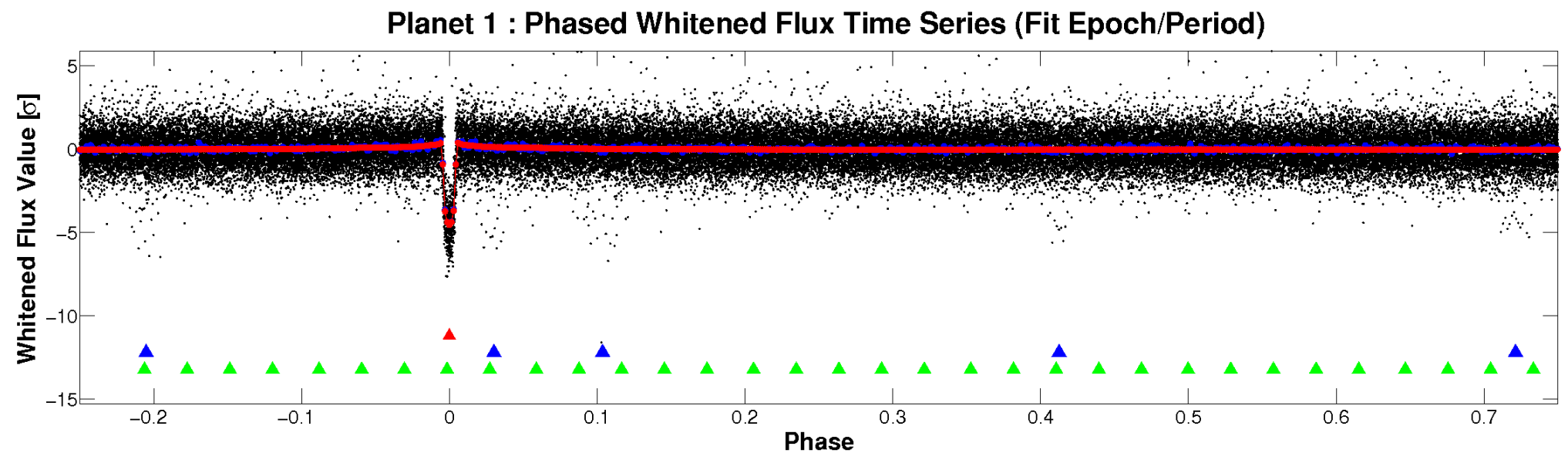
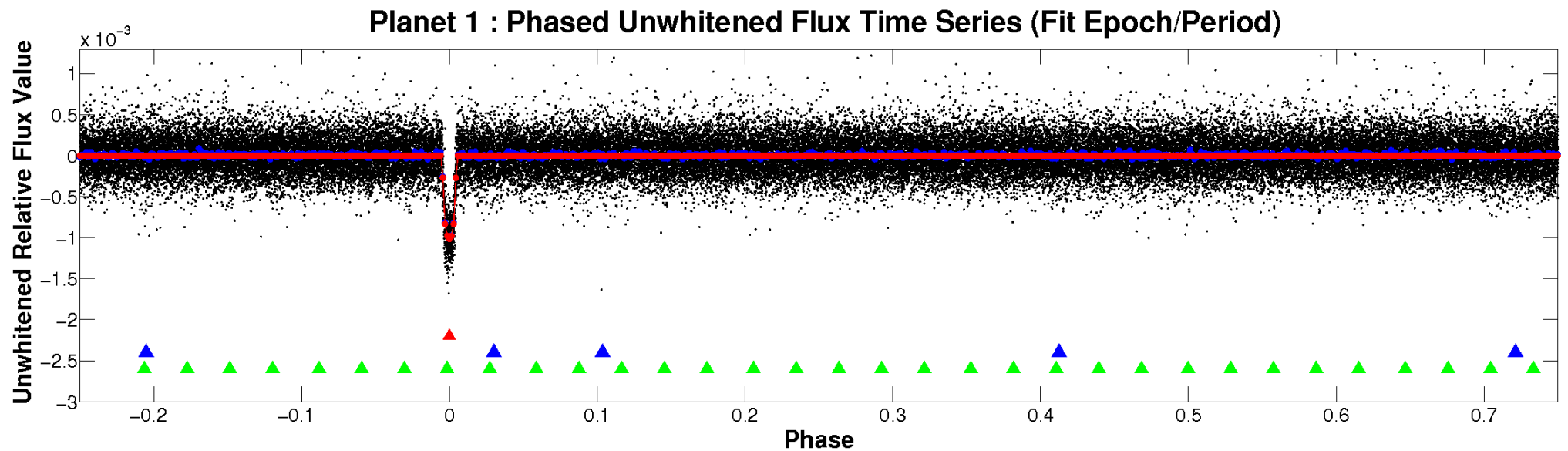


ALT Odd/Even

TCE 008017703-01

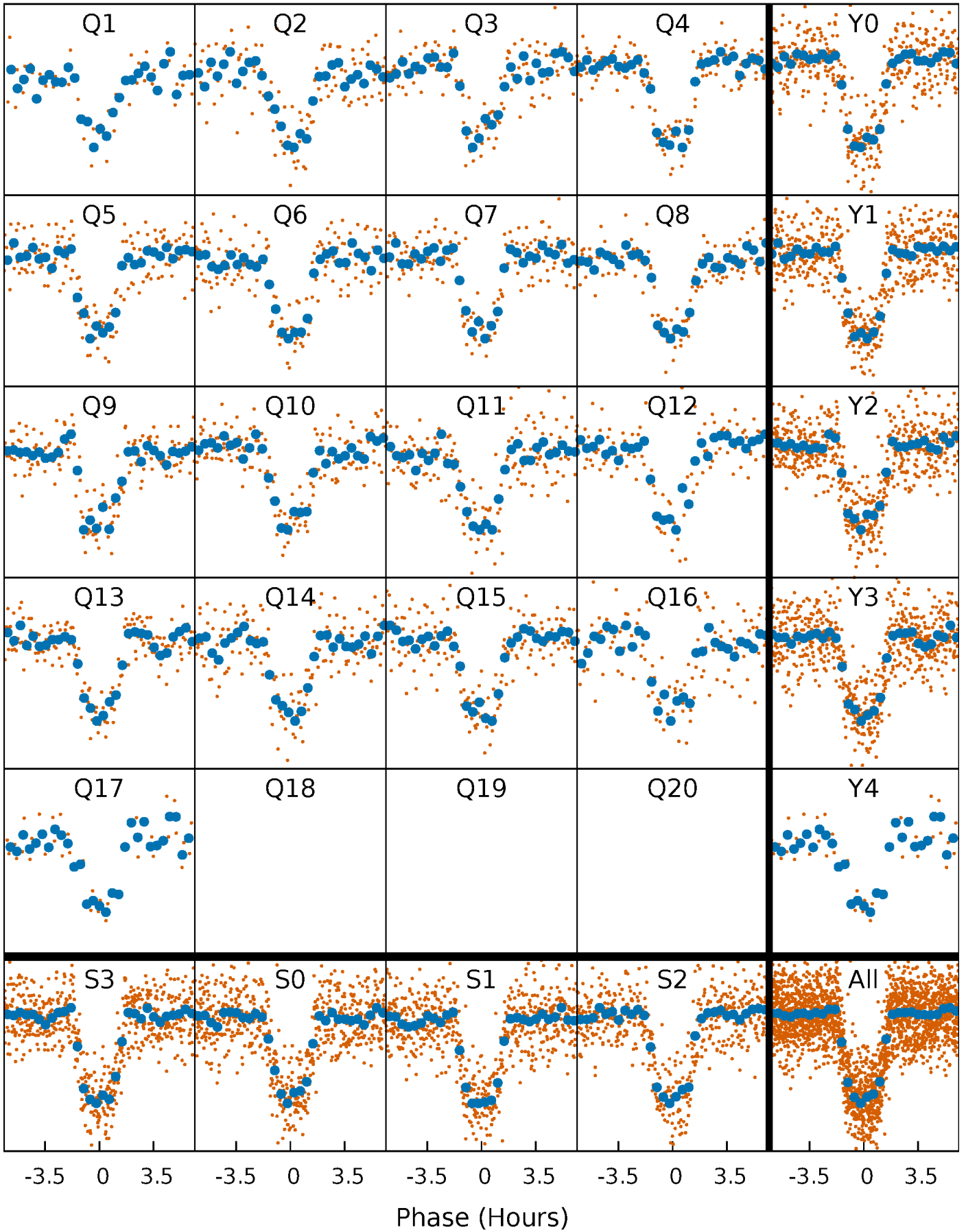


Non-Whitened Vs. Whitened Light Curve



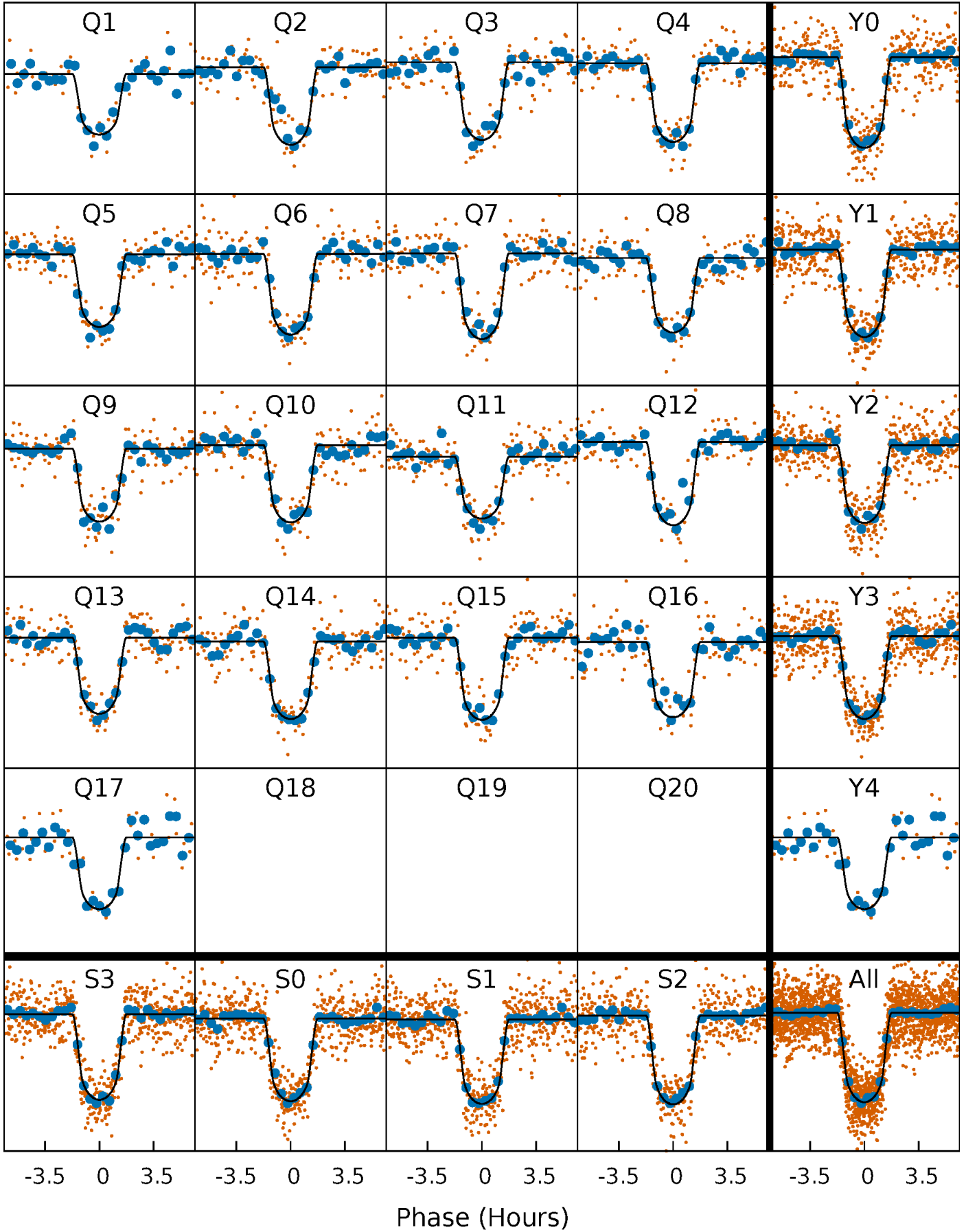
PDC Quarter-Phased Transit Curves

TCE 008017703-01 P= 13.981784 Days $T_0=140.029550$ (BKJD)



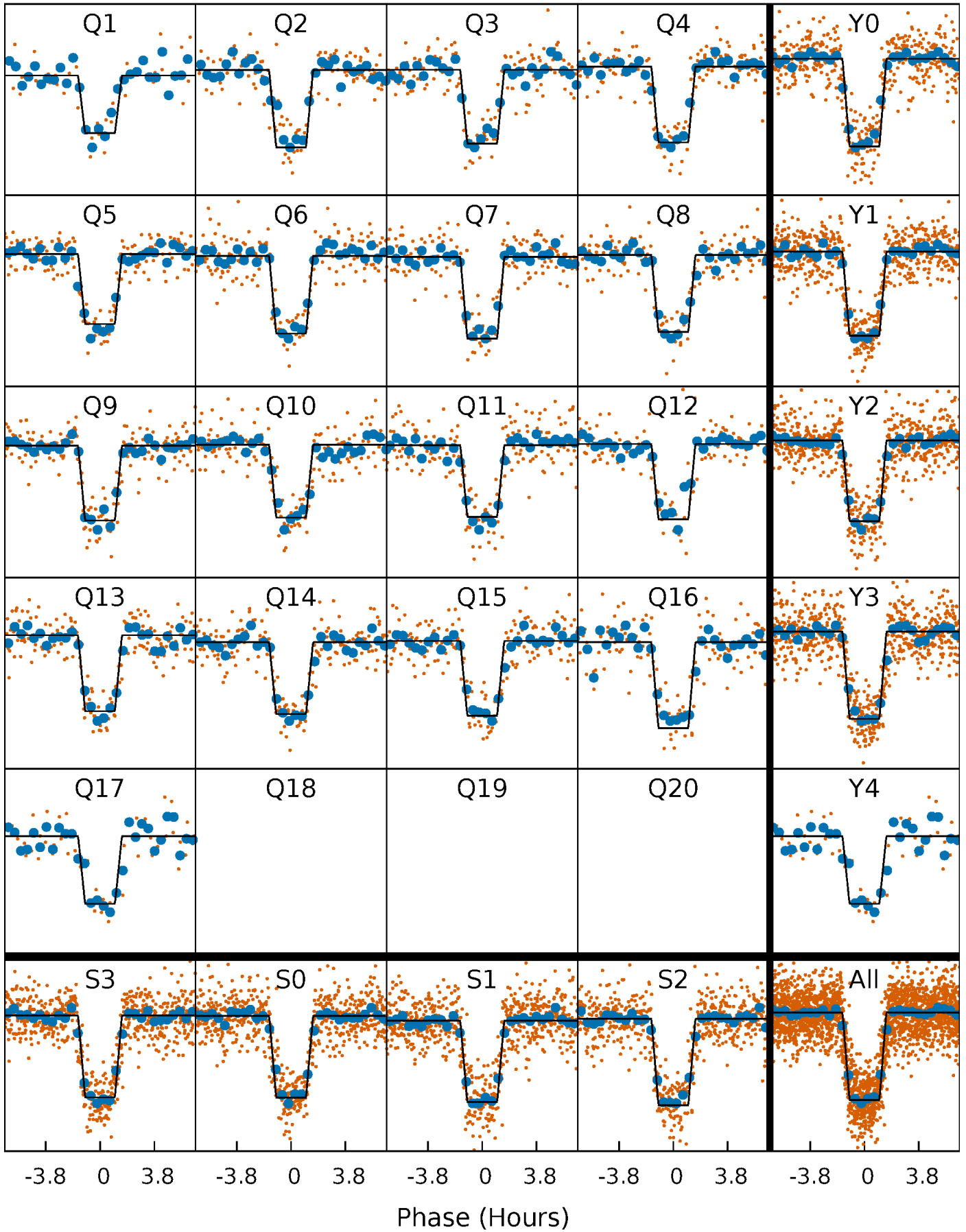
DV Quarter-Phased Transit Curves

TCE 008017703-01 P= 13.981784 Days $T_0=140.029550$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

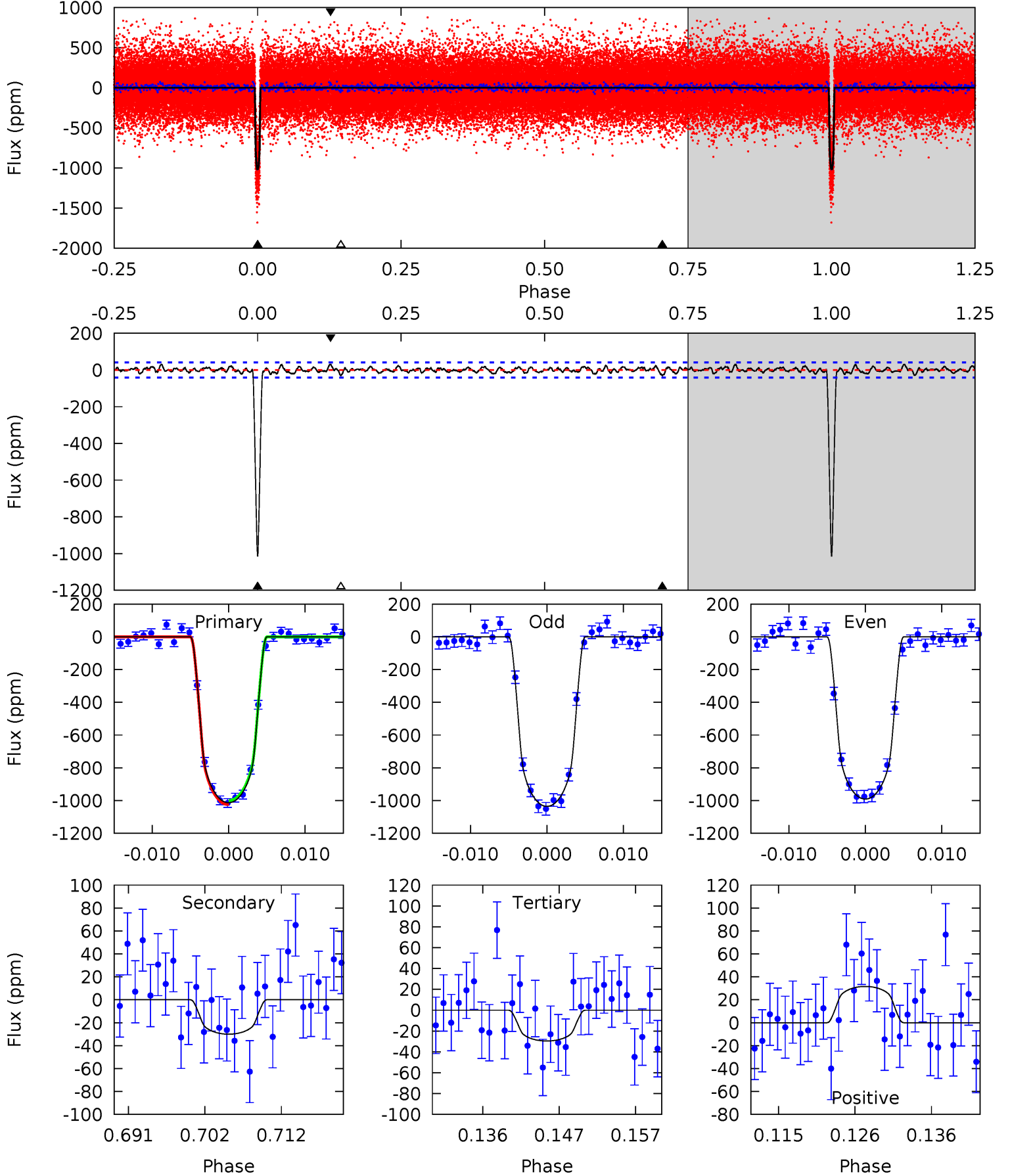
TCE 008017703-01 P= 13.981648 Days $T_0=140.036706$ (BKJD)



DV Model-Shift Uniqueness Test

008017703-01, $P = 13.981784$ Days, $E = 126.047766$ Days

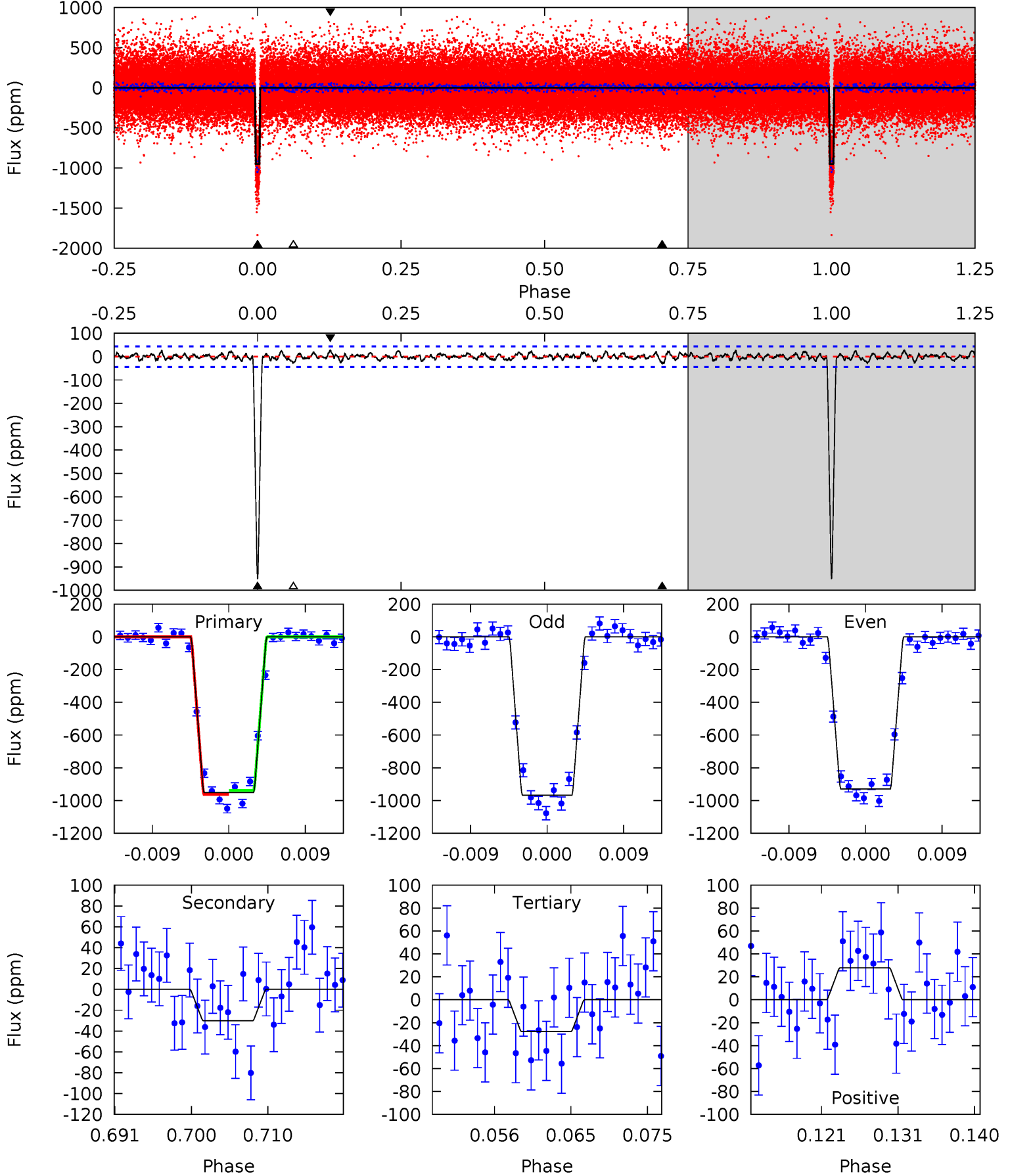
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
122.7	3.64	3.58	3.83	5.02	2.56	1.24	119.1	118.9	0.06	-0.19	2.69	1.01	0.03	1.45



Alt Model-Shift Uniqueness Test

008017703-01, P = 13.981648 Days, E = 126.055058 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
108.8	3.44	3.17	3.18	5.04	2.60	1.06	105.6	105.6	0.27	0.26	2.12	1.00	0.03	1.41



Stellar Parameters For KIC 008017703

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4859^{+97}_{-97}	$4.615^{+0.049}_{-0.021}$	$-0.520^{+0.150}_{-0.150}$	$0.651^{+0.029}_{-0.036}$	$0.636^{+0.046}_{-0.020}$	$3.249^{+0.578}_{-0.236}$
	+2%/-2%	+1%/-0%	+29%/-29%	+4%/-6%	+7%/-3%	+18%/-7%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 008017703-01 / KOI 0518.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-30 ± 8	$2.31^{+0.23}_{-0.23}$	770^{+19}_{-20}	2712^{+123}_{-126}	30^{+11}_{-9}
Alt.	-30 ± 9	$2.22^{+0.22}_{-0.25}$	769^{+18}_{-18}	2745^{+136}_{-139}	33^{+13}_{-10}

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

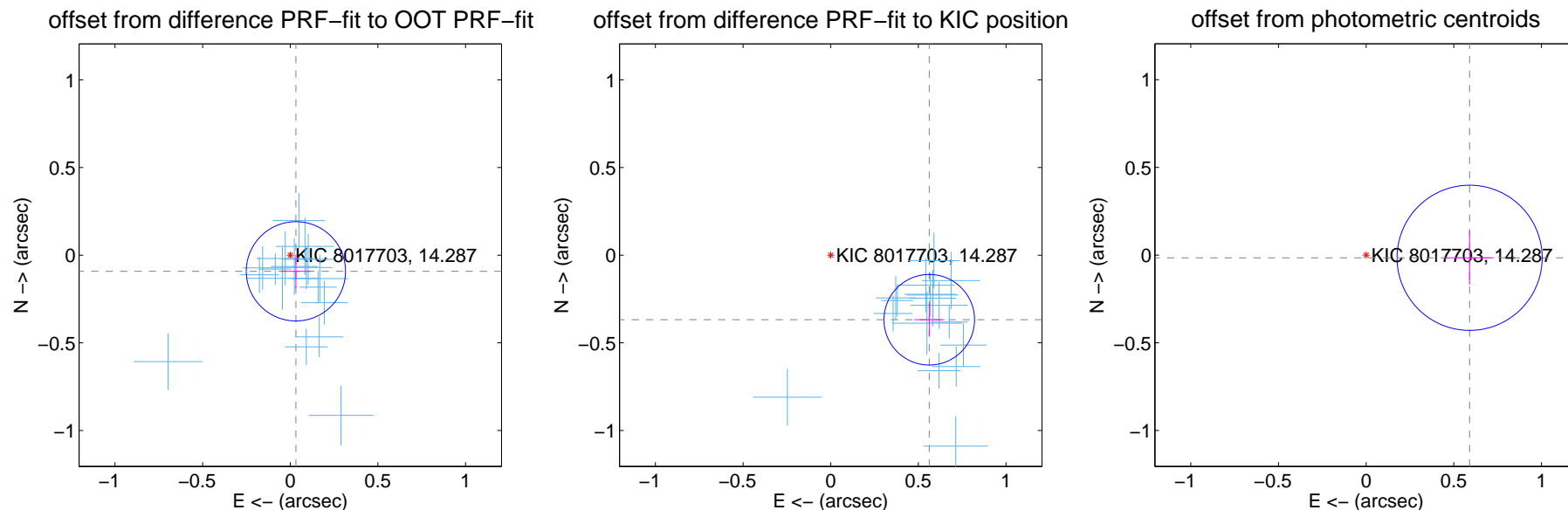
DV Centroid Data

Supplemental centroid analysis for 008017703-01. Kepler magnitude: 14.29. Transit SNR 89.11

There are 17 quarters with good PRF difference image offsets

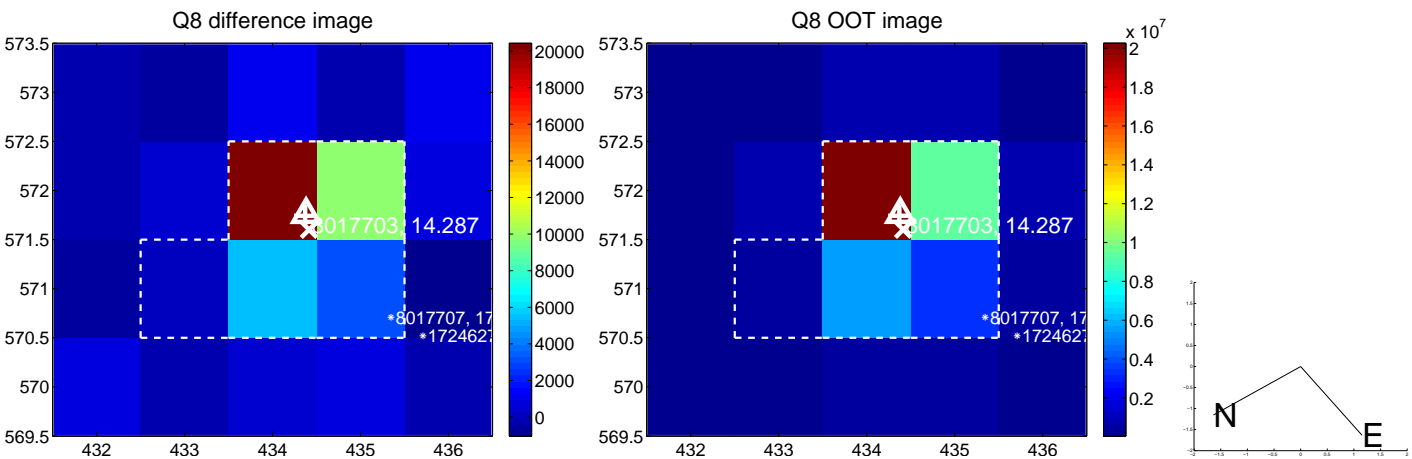
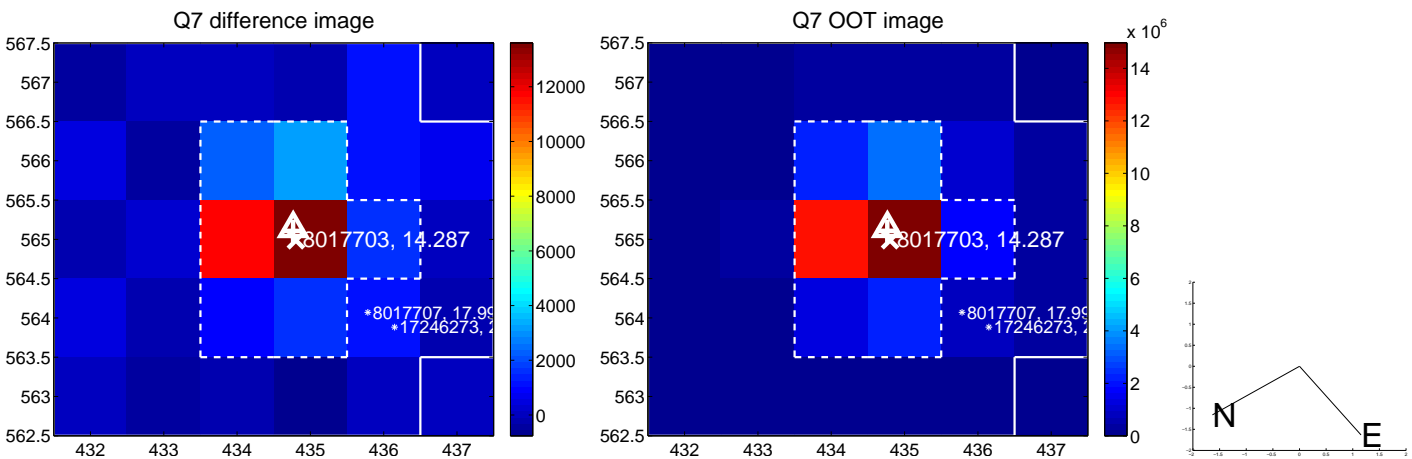
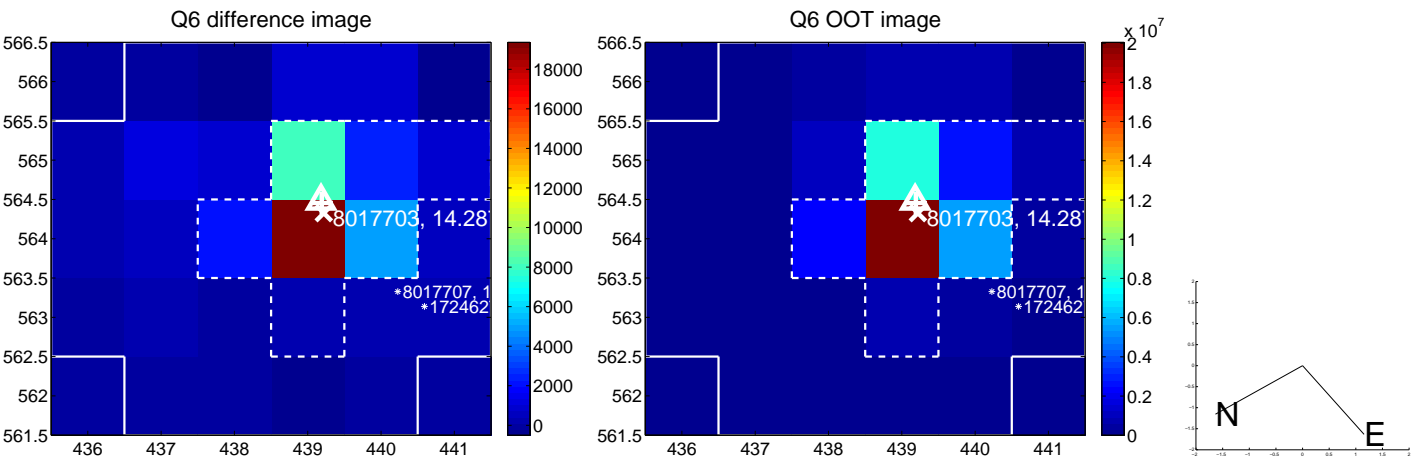
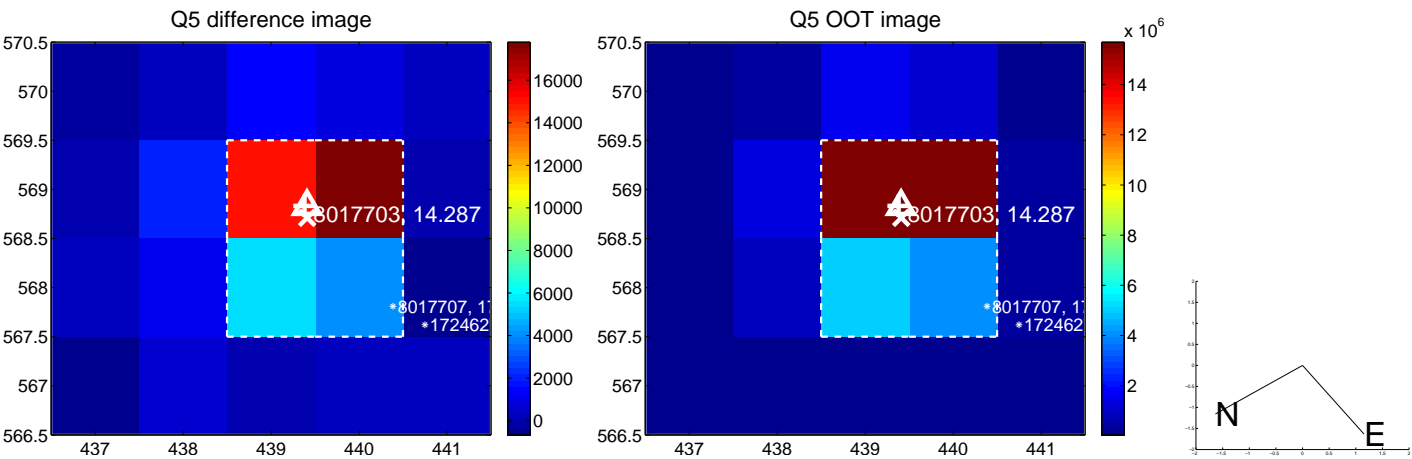
The direct PRF centroid is offset from the target star catalog position by about 0.65 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.098 ± 0.094	1.03	-0.032 ± 0.084	-0.092 ± 0.096
PRF-fit source offset from KIC position	0.672 ± 0.086	7.80	-0.562 ± 0.086	-0.368 ± 0.094
photometric centroid source offset	0.59 ± 0.14	4.28	-0.59 ± 0.14	-0.02 ± 0.15

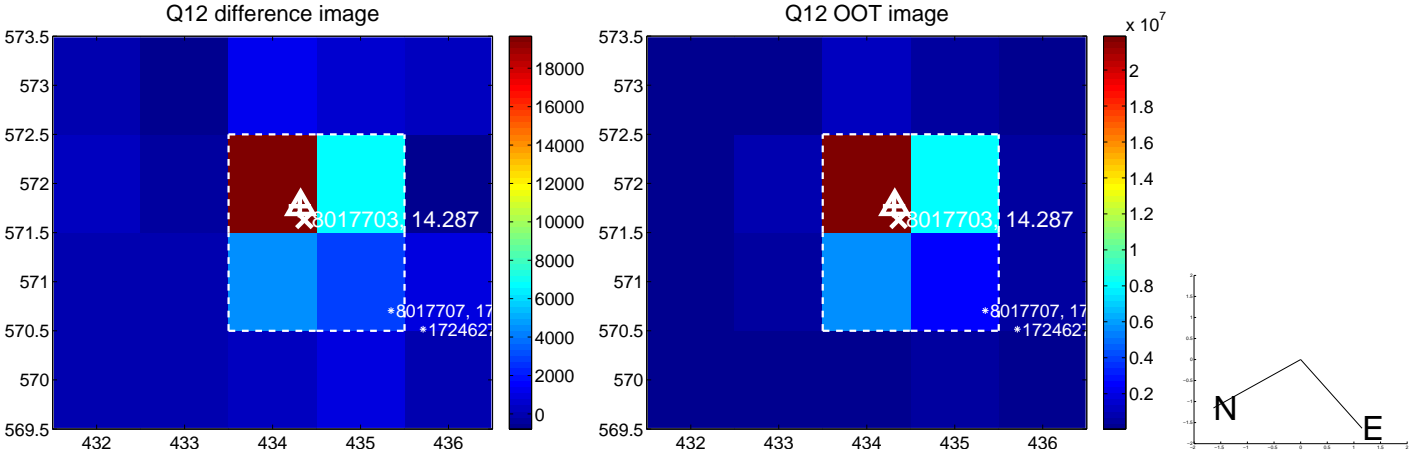
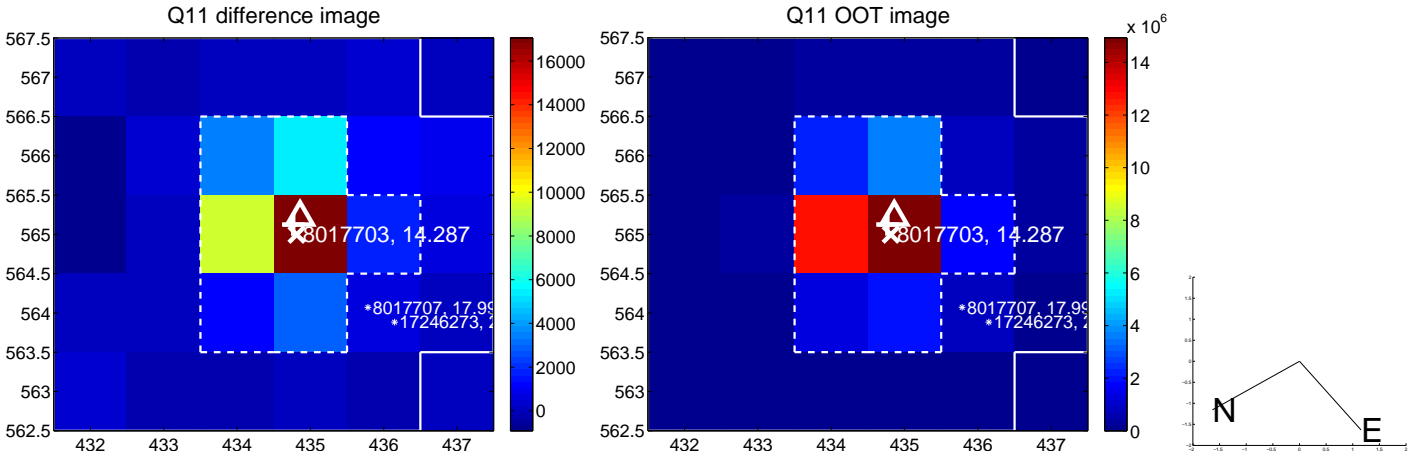
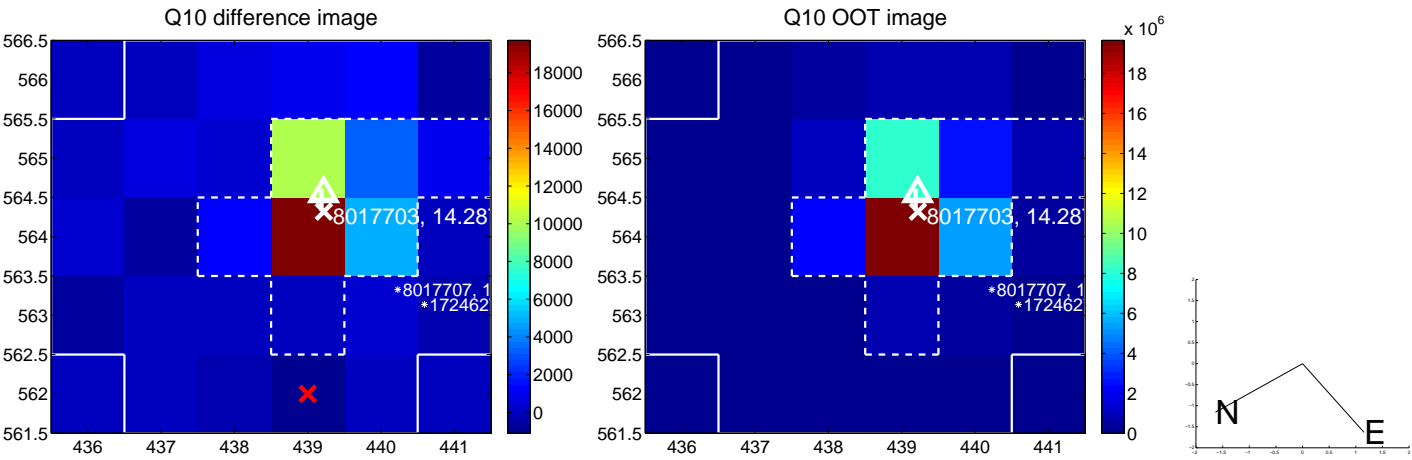
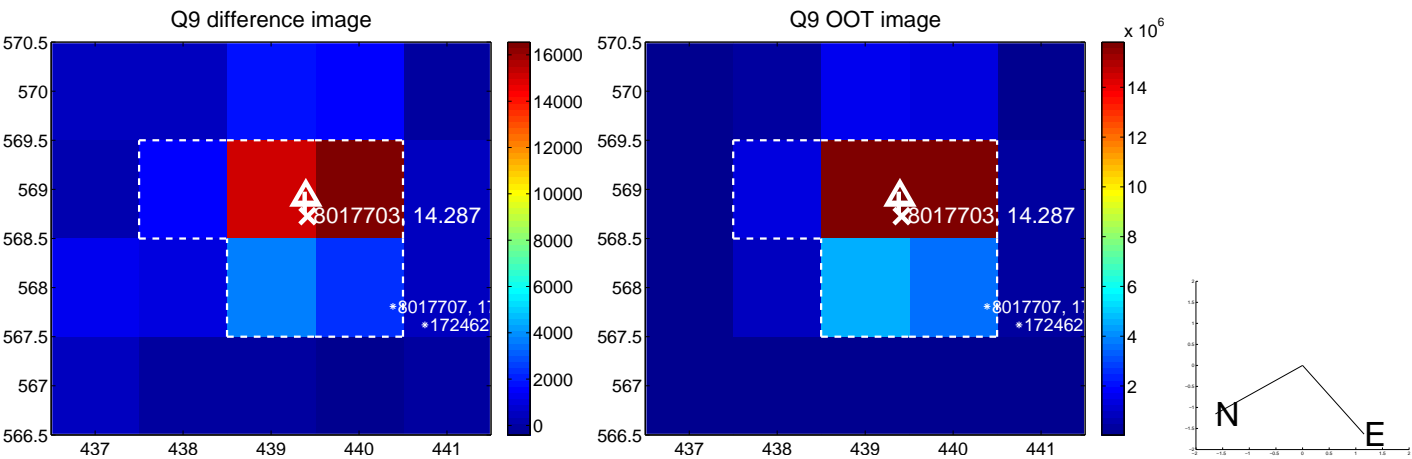


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

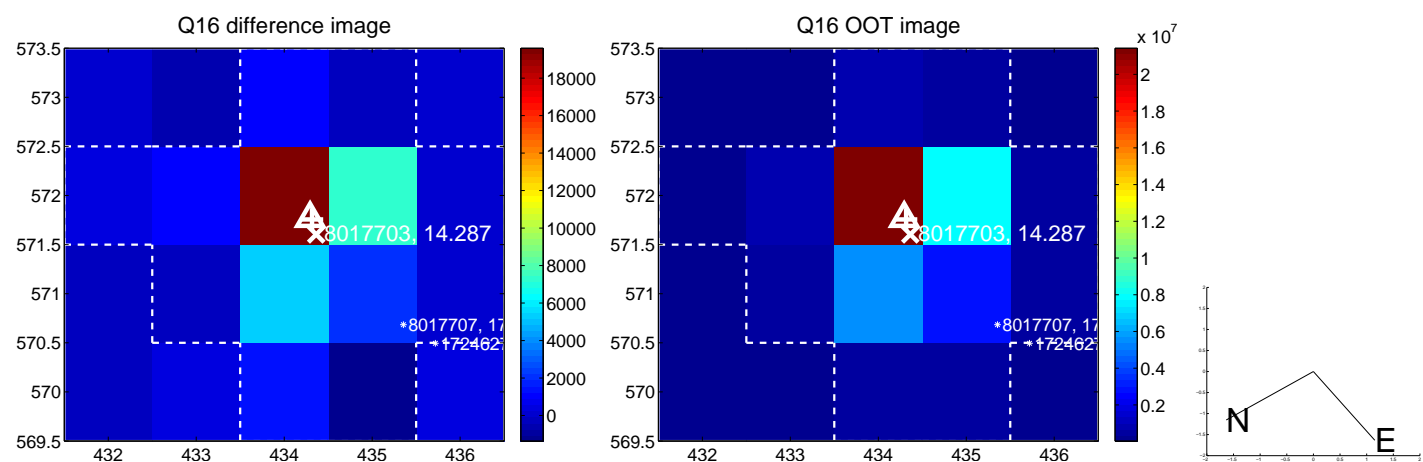
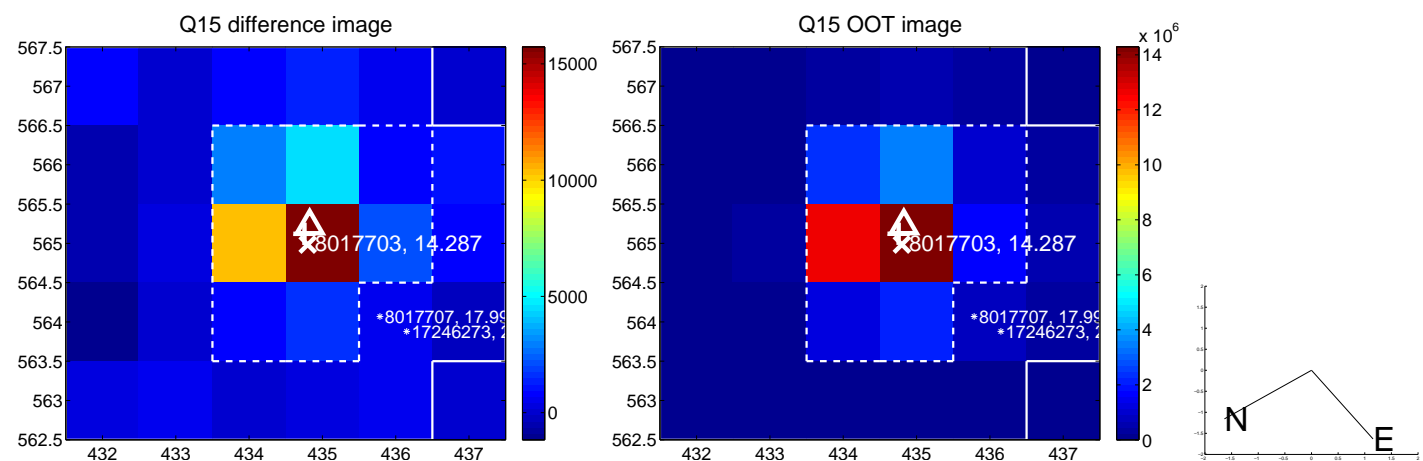
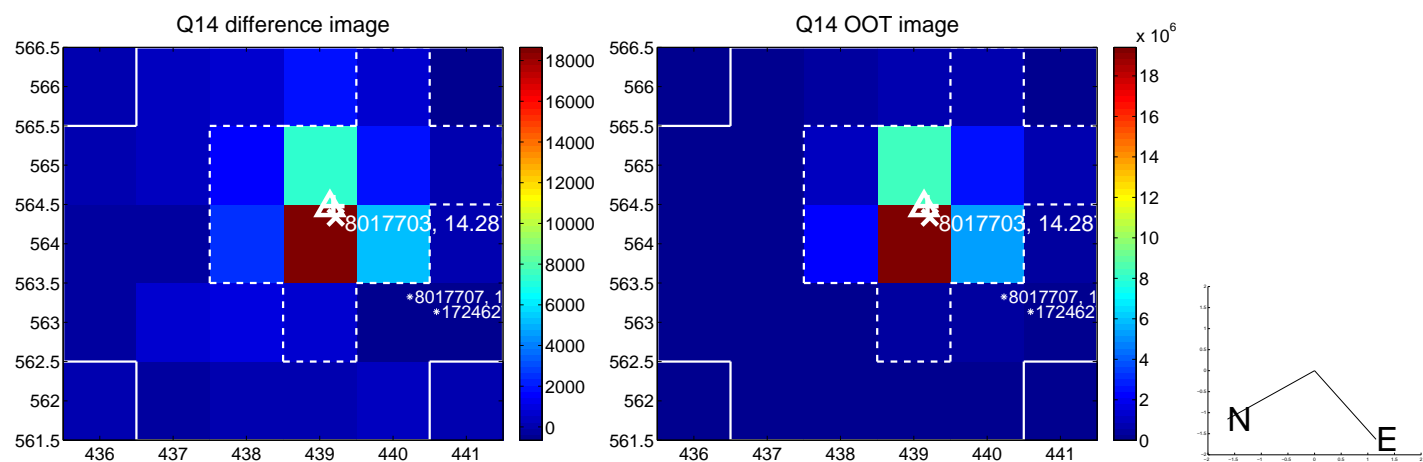
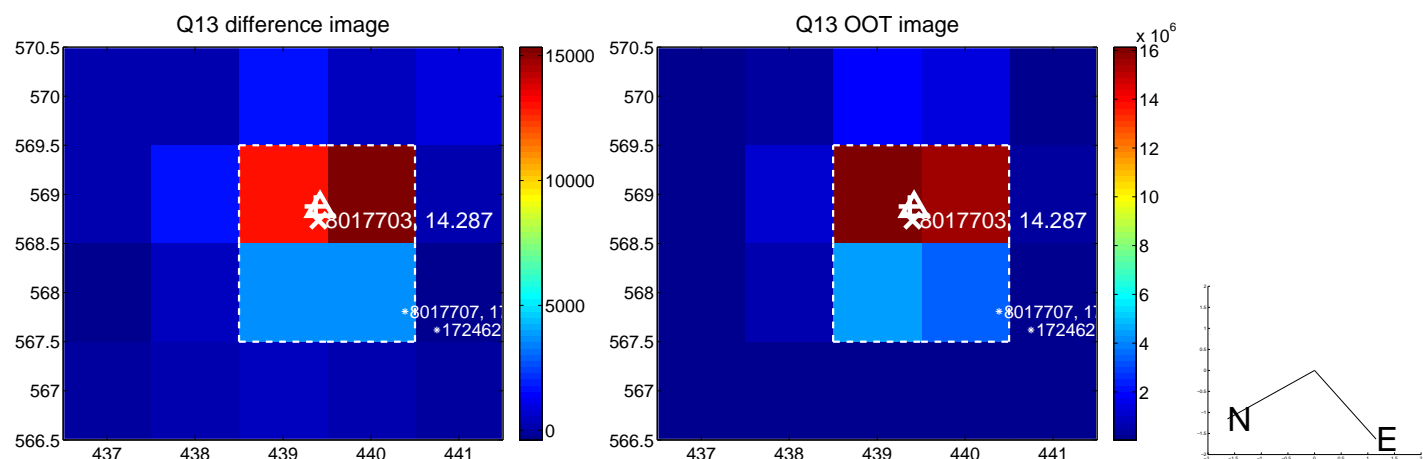
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



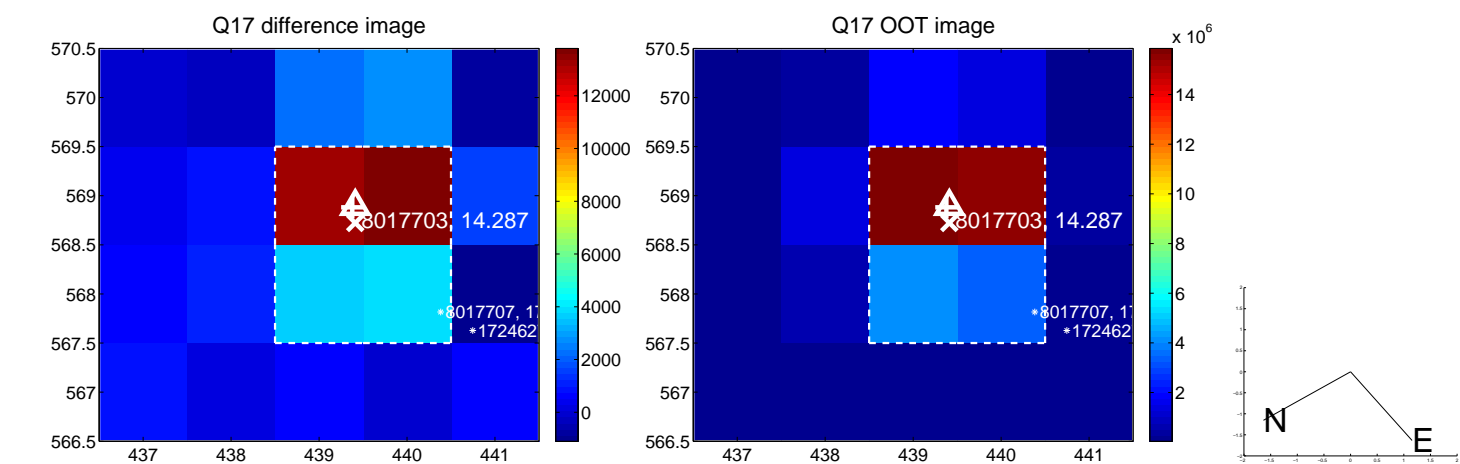
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



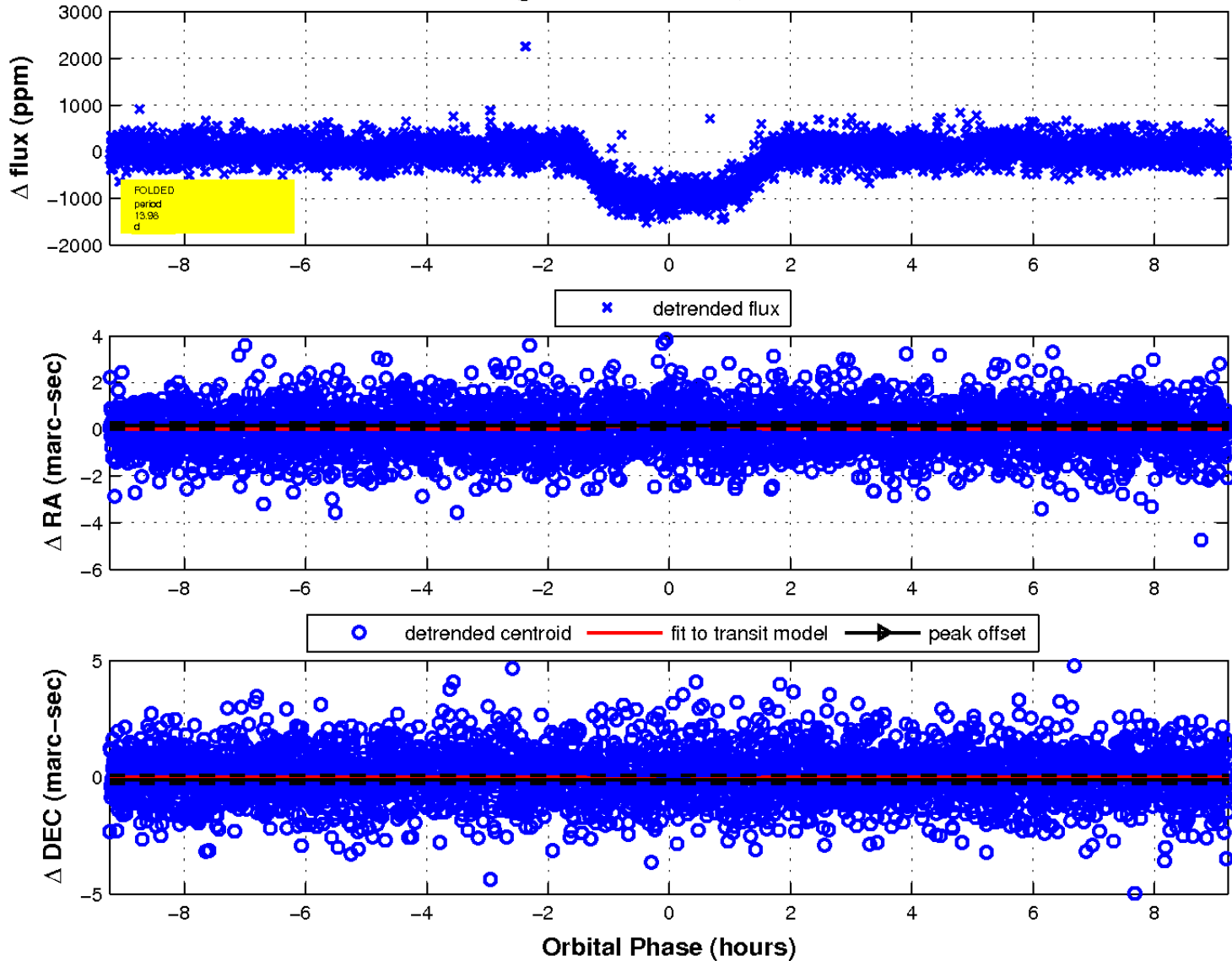
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

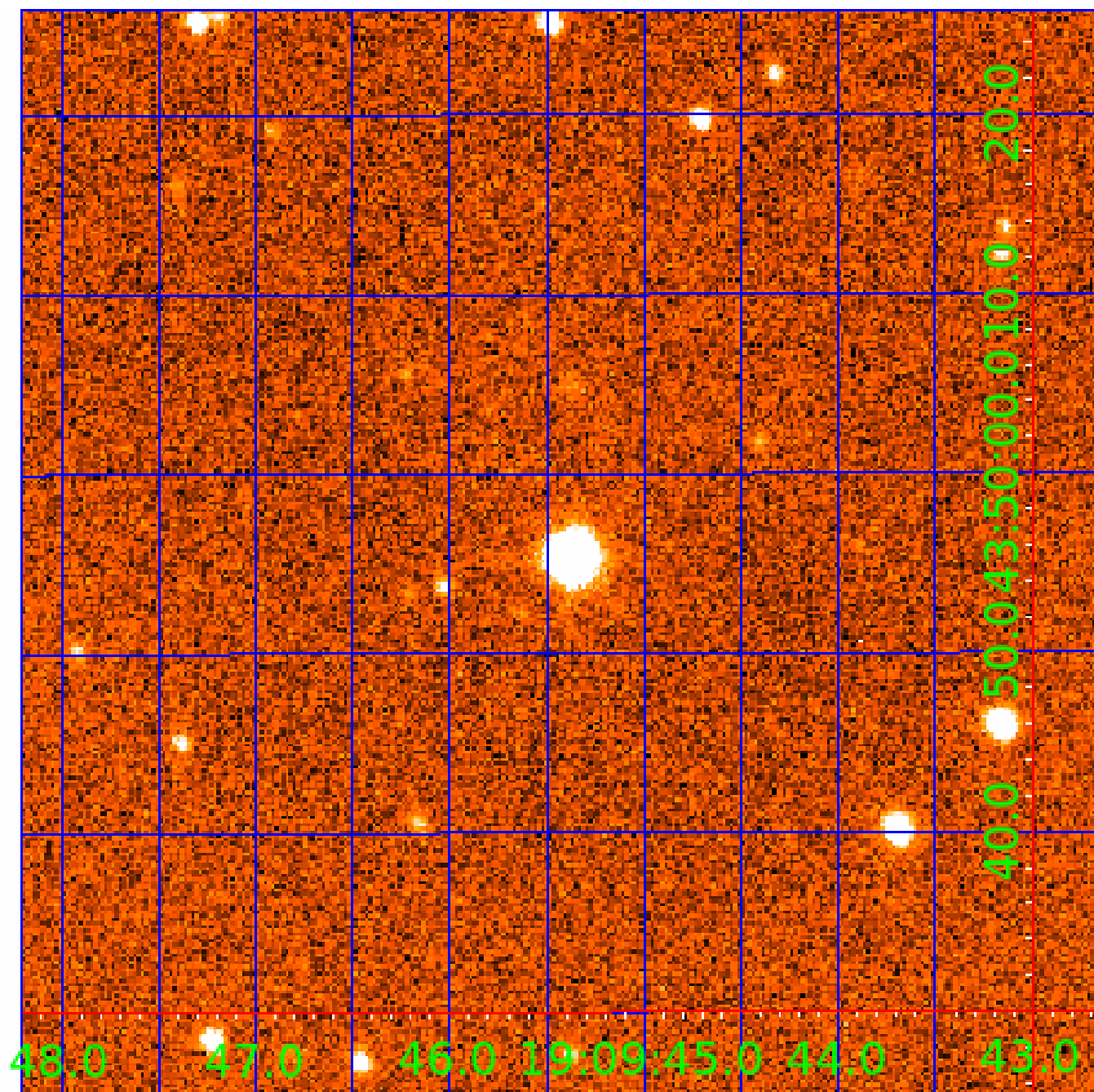


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 008017703

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})
008017703-01	OBS	0518.01	13.981784	140.029550	1017.5	3.081	86.6	89.1	0.65	4859	2.31	22.15
008017703-02	OBS	0518.03	247.354209	364.159957	1266.8	9.602	42.0	39.0	0.65	4859	2.71	0.48
008017703-03	OBS	0518.02	44.000431	166.760622	596.6	5.208	34.2	36.9	0.65	4859	1.72	4.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008017703-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
008017703-02	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
008017703-03	OBS	PC	1.00	0	0	0	0	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.

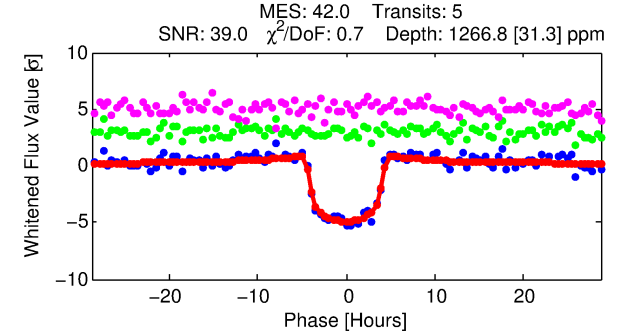
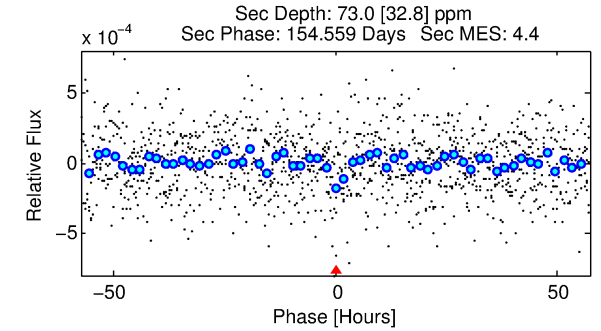
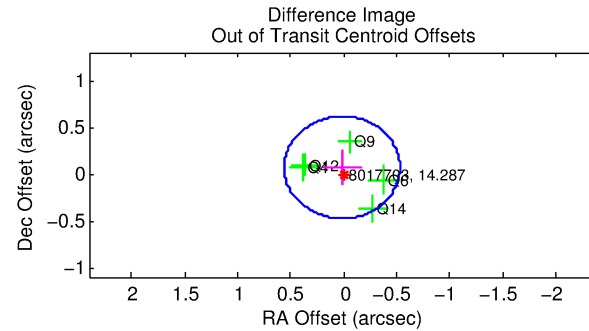
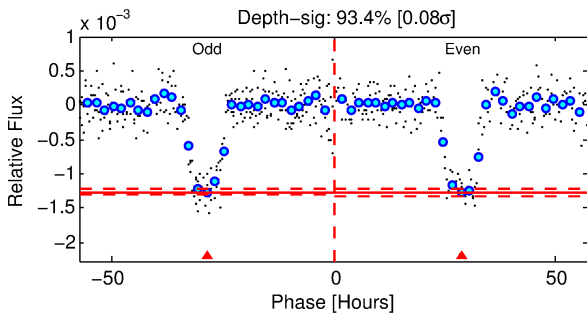
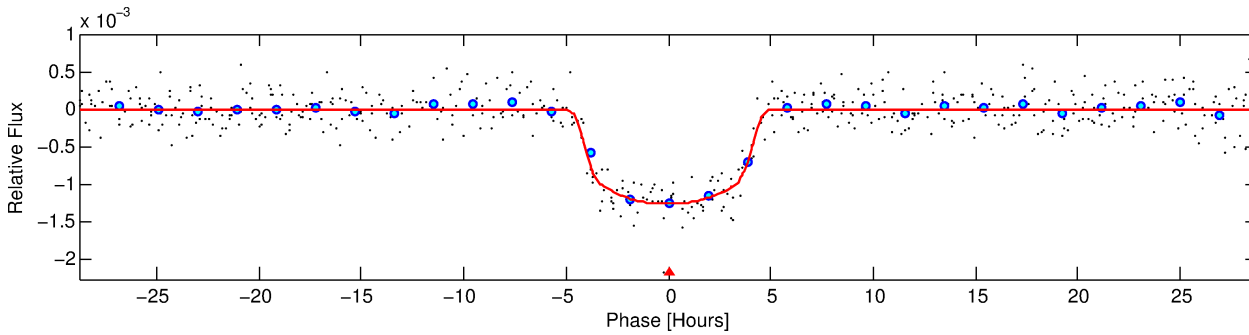
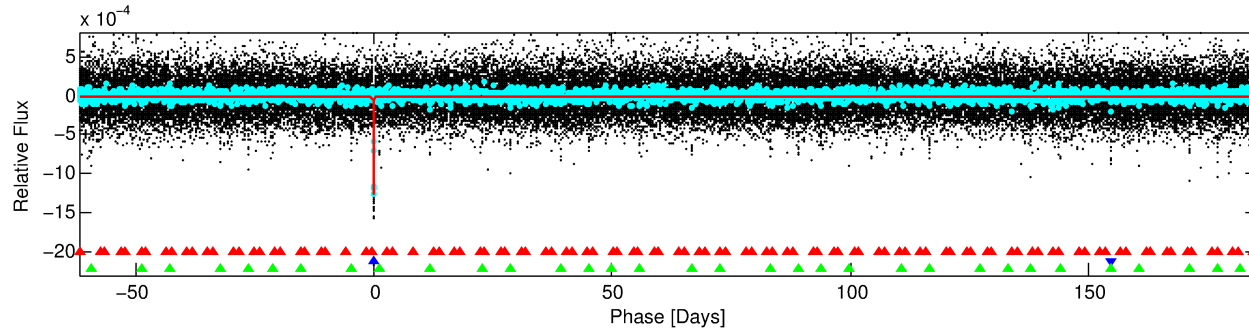
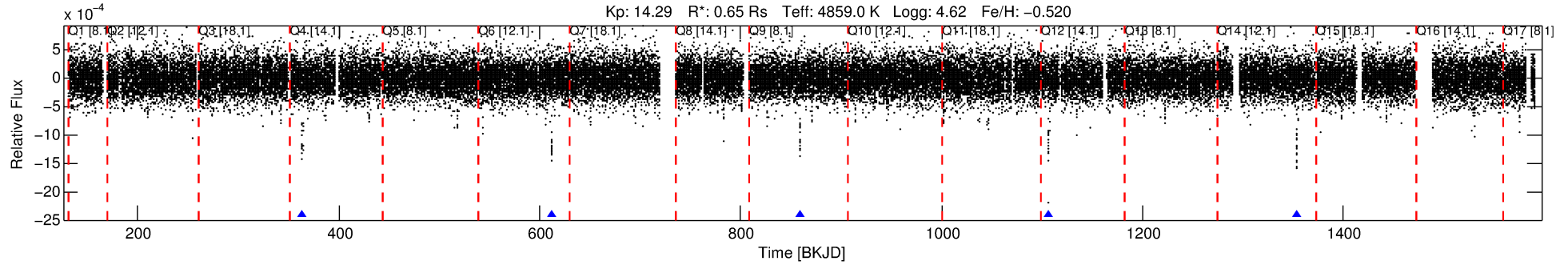
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008017703-02

No Significant Match Found

DV One-Page Summary

KIC: 8017703 Candidate: 2 of 3 Period: 247.354 d
KOI: K00518.03 Name: Kepler-174d Corr: 0.951



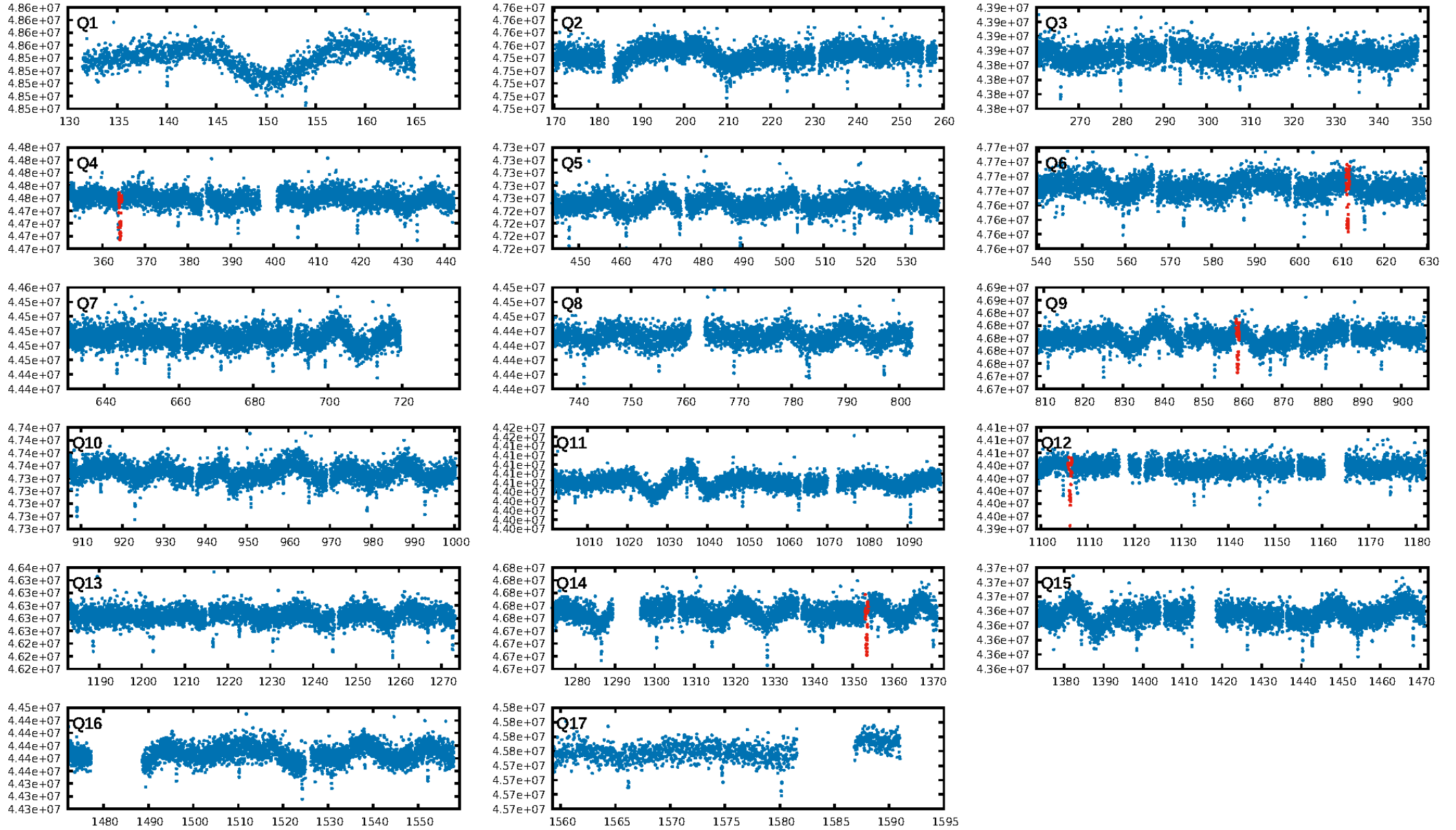
DV Fit Results:

Period = 247.35421 [0.00162] d
Epoch = 364.1600 [0.0041] BKJD
Rp/R* = 0.0381 [0.0015]
a/R* = 114.25 [15.01]
b = 0.86 [0.04]
Seff = 0.48 [0.06]
Teq = 212 [6] K
Rp = 2.71 [0.18] Re
a = 0.6637 [0.0350] AU
Ag = 2410.37 [1116.96] [2.16 σ]
Teffp = 2300 [266] K [7.84 σ]

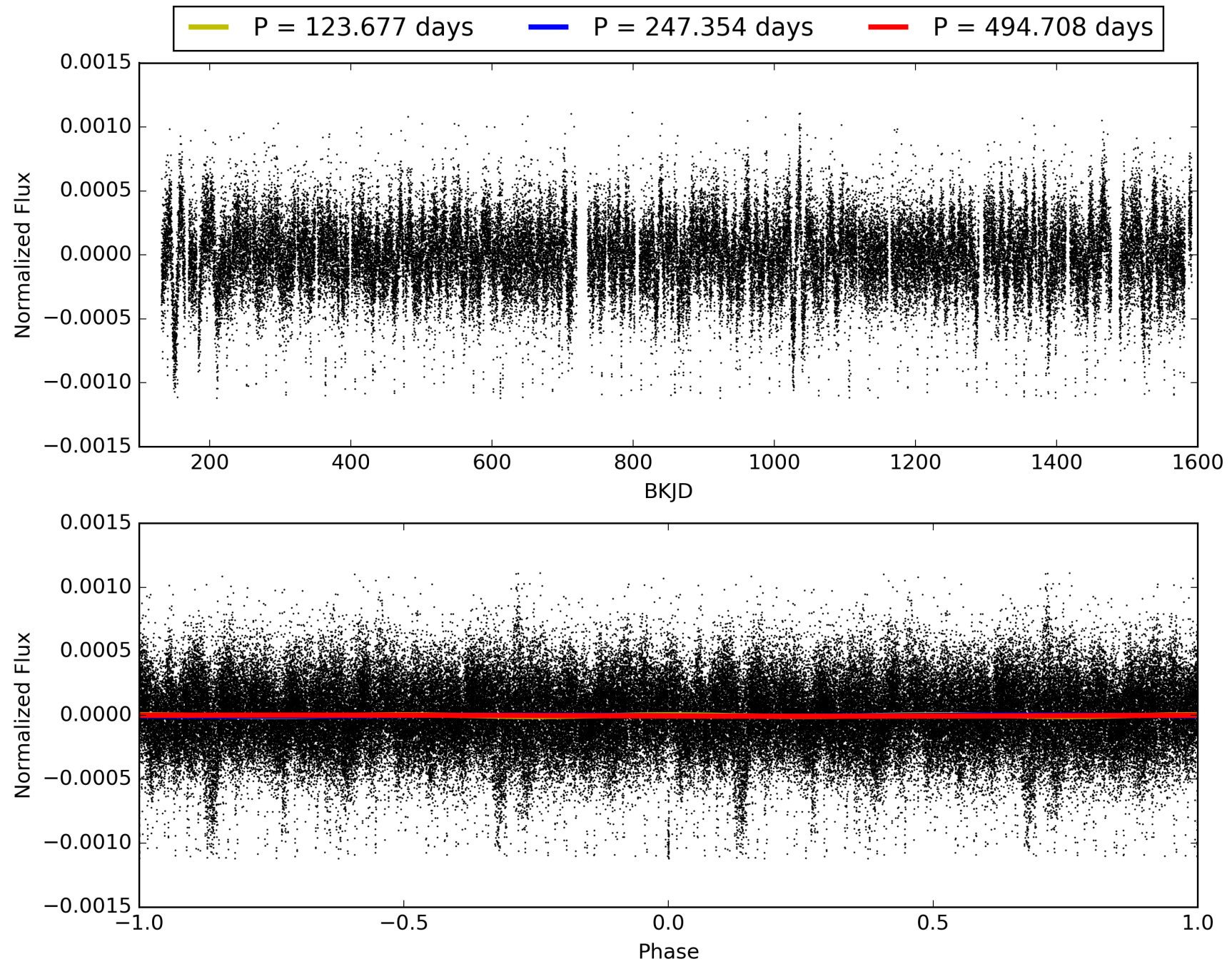
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [446.78 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 94.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 4.225
Centroid-sig: 19.8%
Centroid-so: 0.123 arcsec [0.45 σ]
OotOffset-rm: 0.071 arcsec [0.39 σ]
OotOffset-st: 2/0/2/1 [5]
KicOffset-rm: 0.533 arcsec [3.23 σ]
KicOffset-st: 2/0/2/1 [5]
DiffImageQuality-fgm: 1.00 [5/5]
DiffImageOverlap-fno: 0.80 [4/5]

TCE 008017703-02, PDC Light Curves

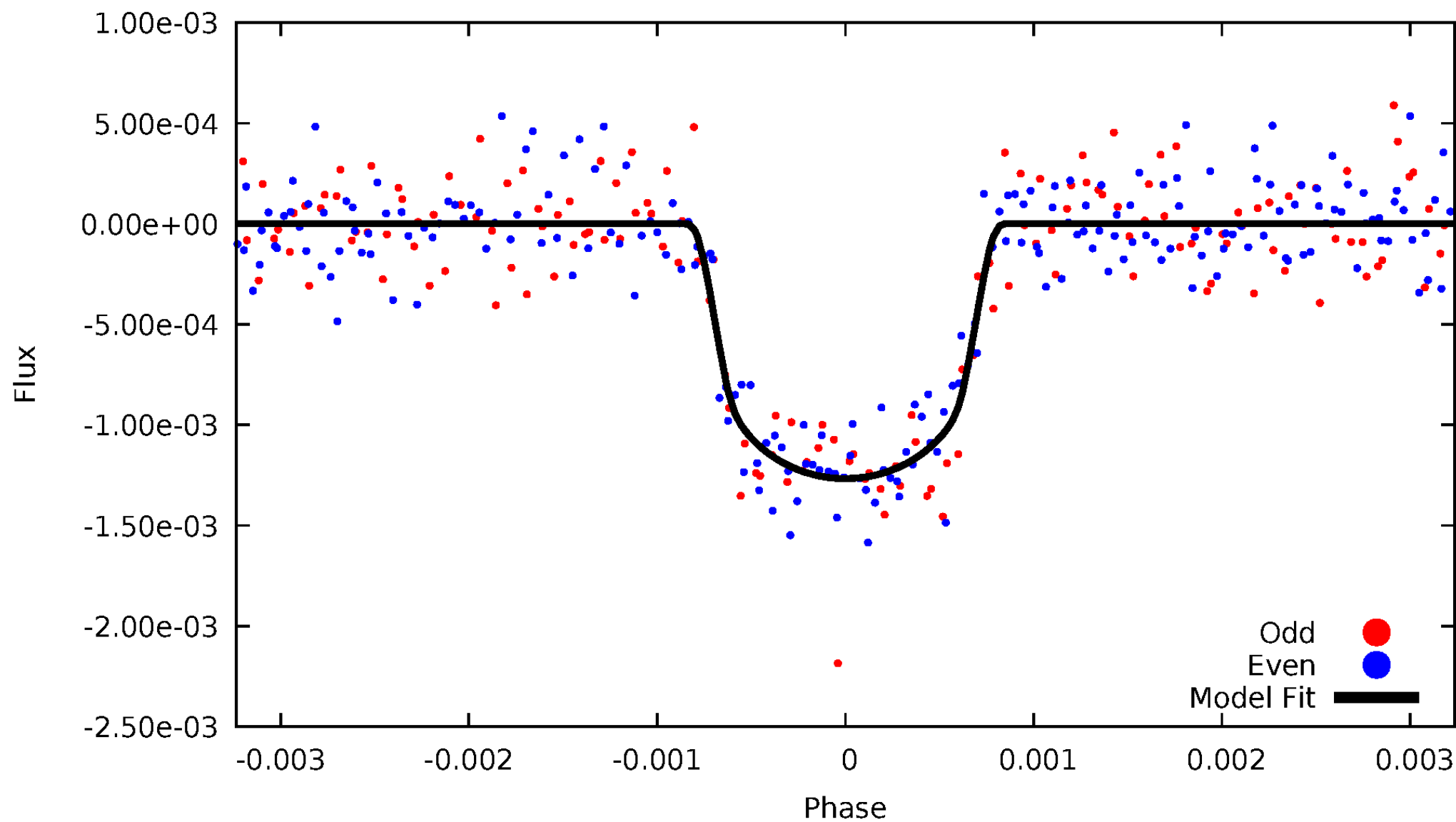


TCE 008017703-02



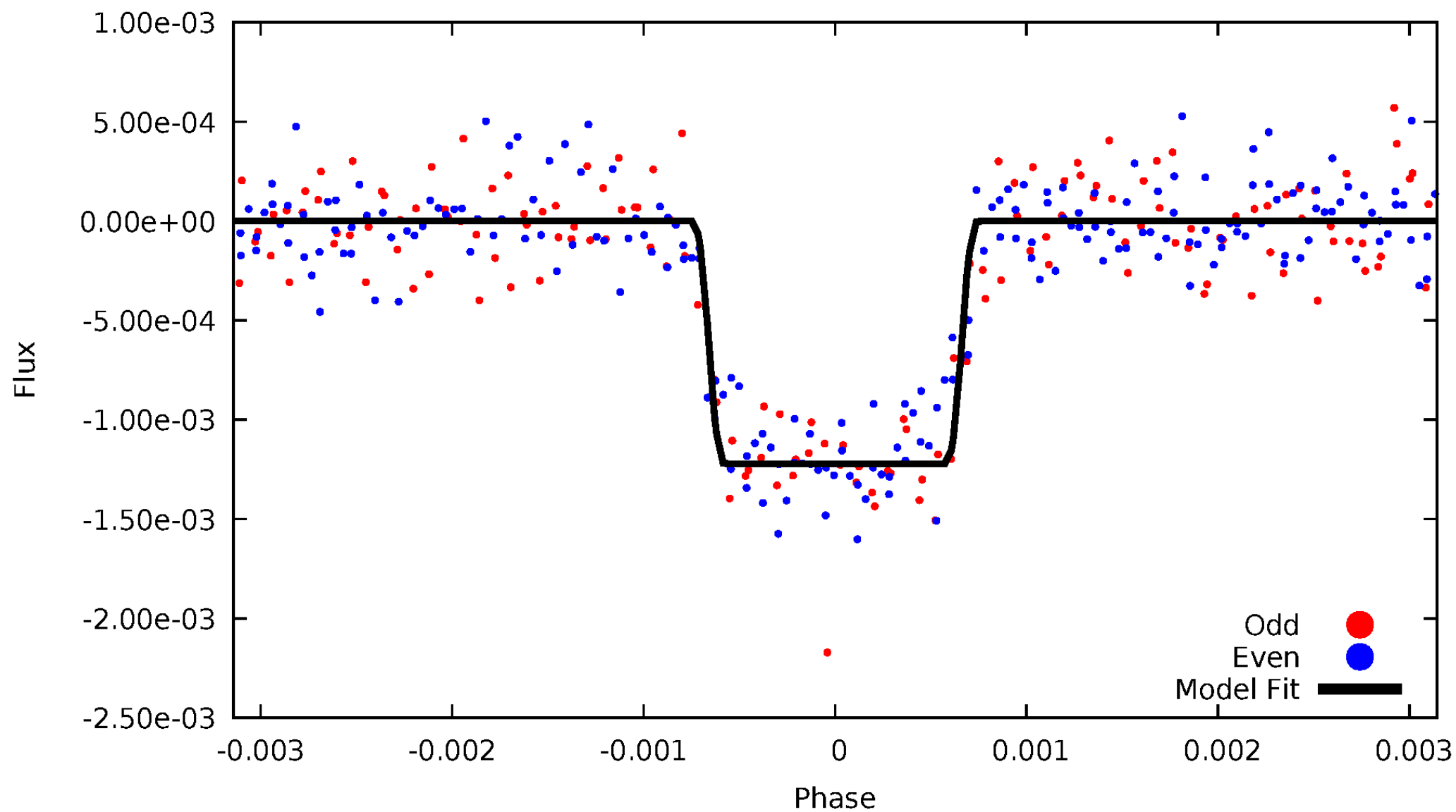
DV Odd/Even

TCE 008017703-02



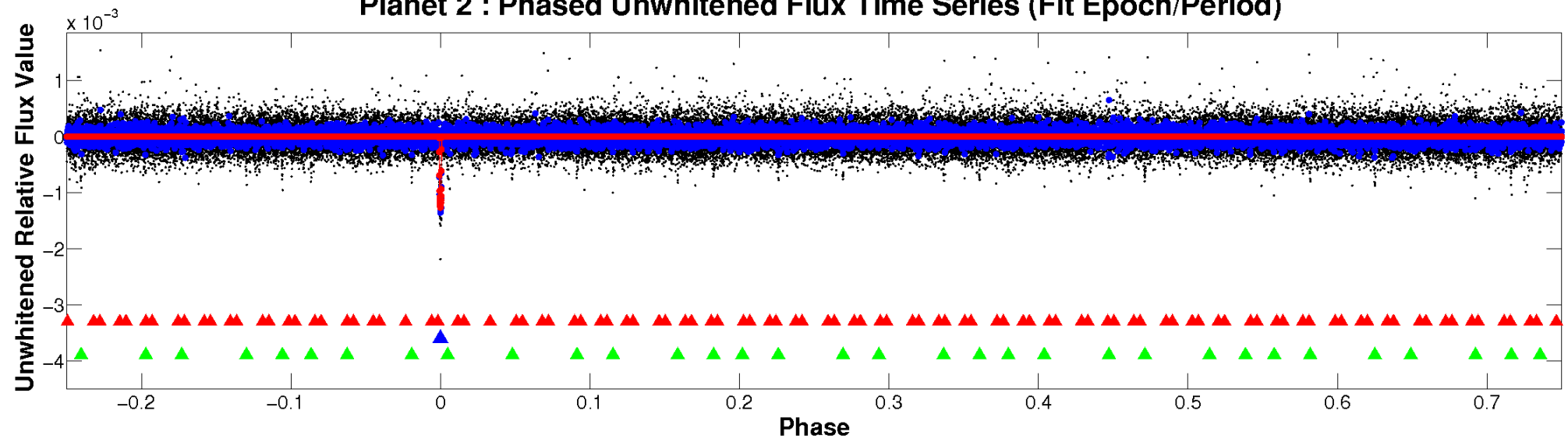
ALT Odd/Even

TCE 008017703-02

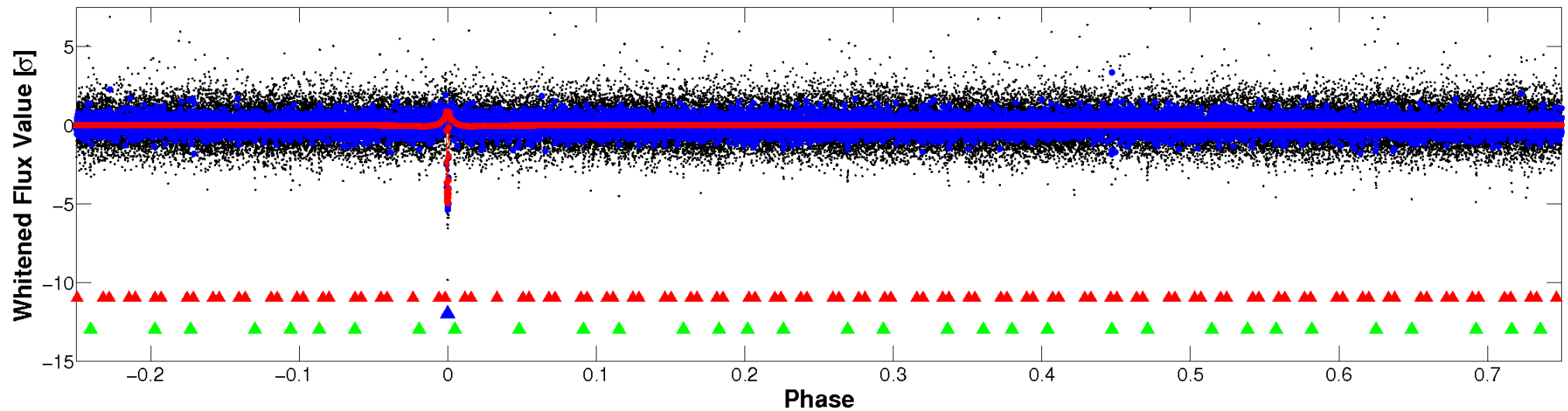


Non-Whitened Vs. Whitened Light Curve

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

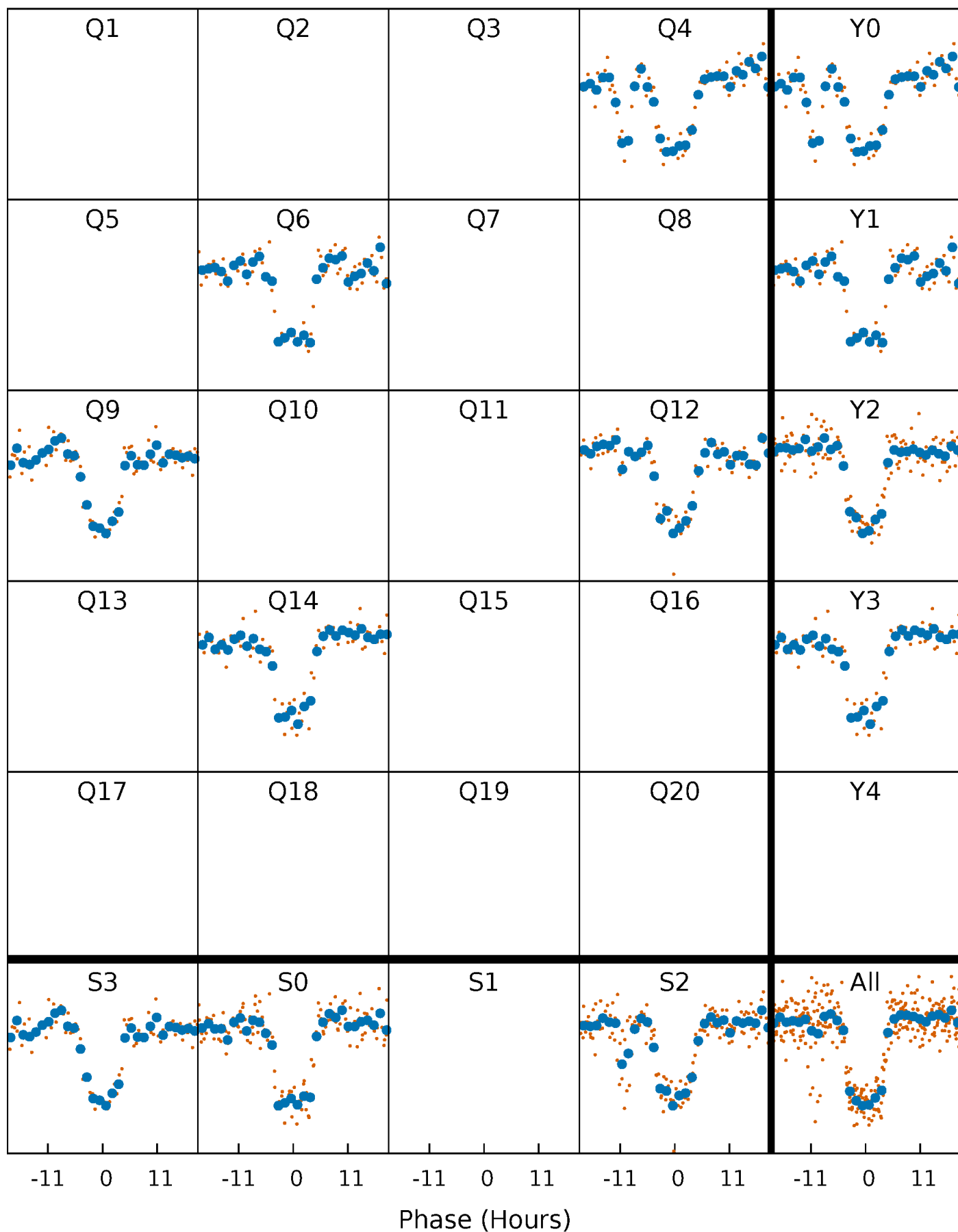


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



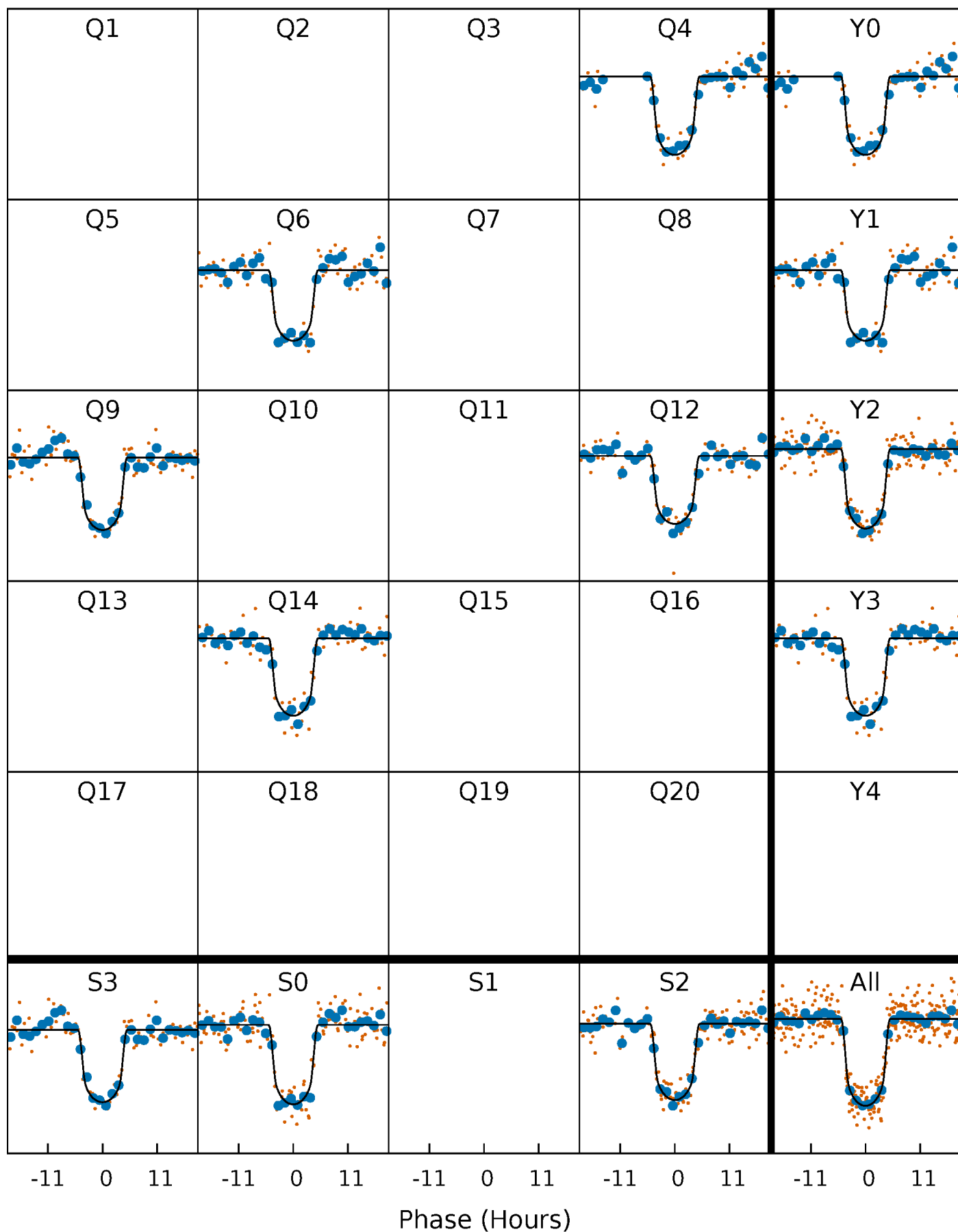
PDC Quarter-Phased Transit Curves

TCE 008017703-02 P=247.354209 Days $T_0=364.159957$ (BKJD)



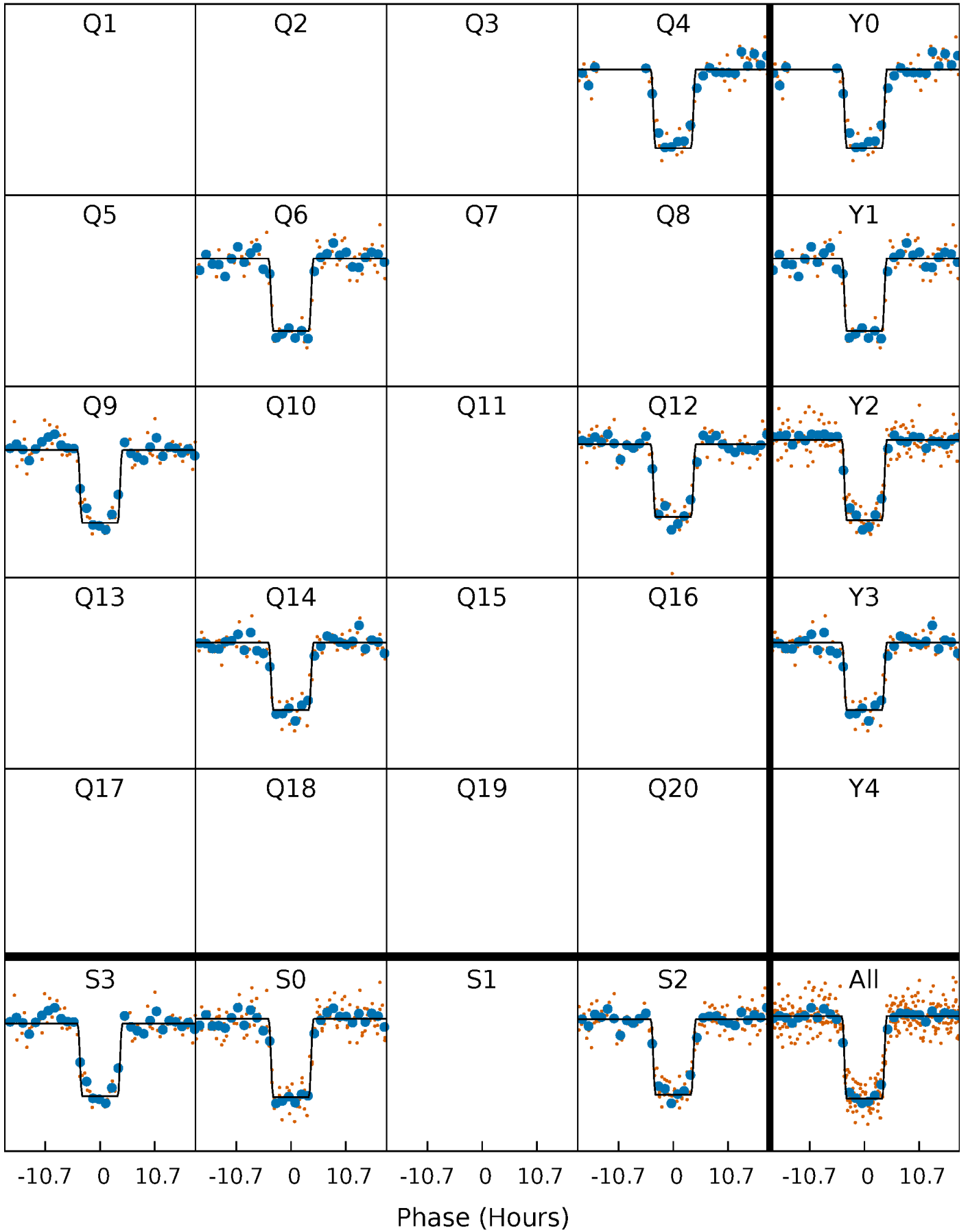
DV Quarter-Phased Transit Curves

TCE 008017703-02 P=247.354209 Days $T_0=364.159957$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

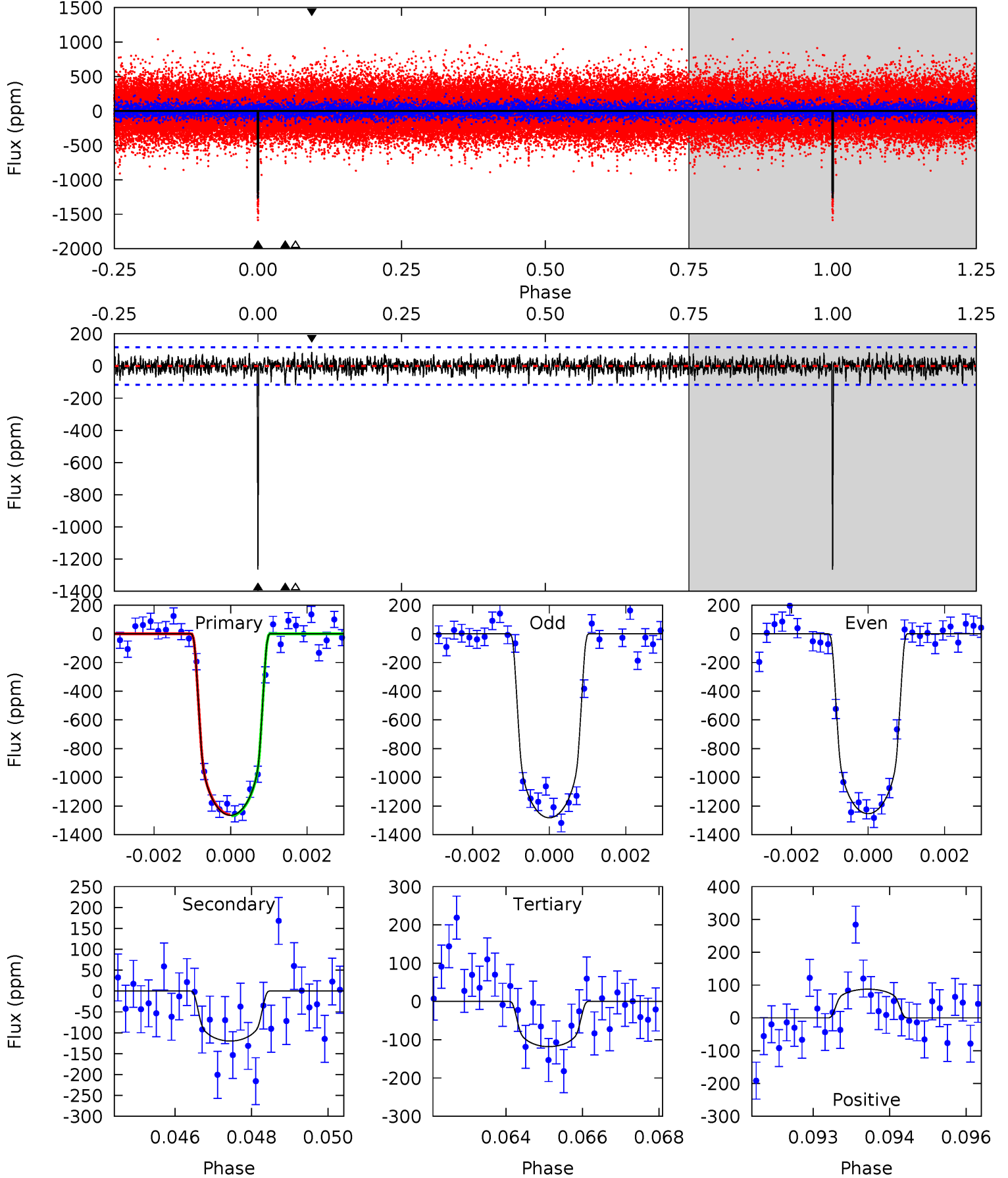
TCE 008017703-02 P=247.355055 Days $T_0=364.157749$ (BKJD)



DV Model-Shift Uniqueness Test

008017703-02, P = 247.354209 Days, E = 116.805748 Days

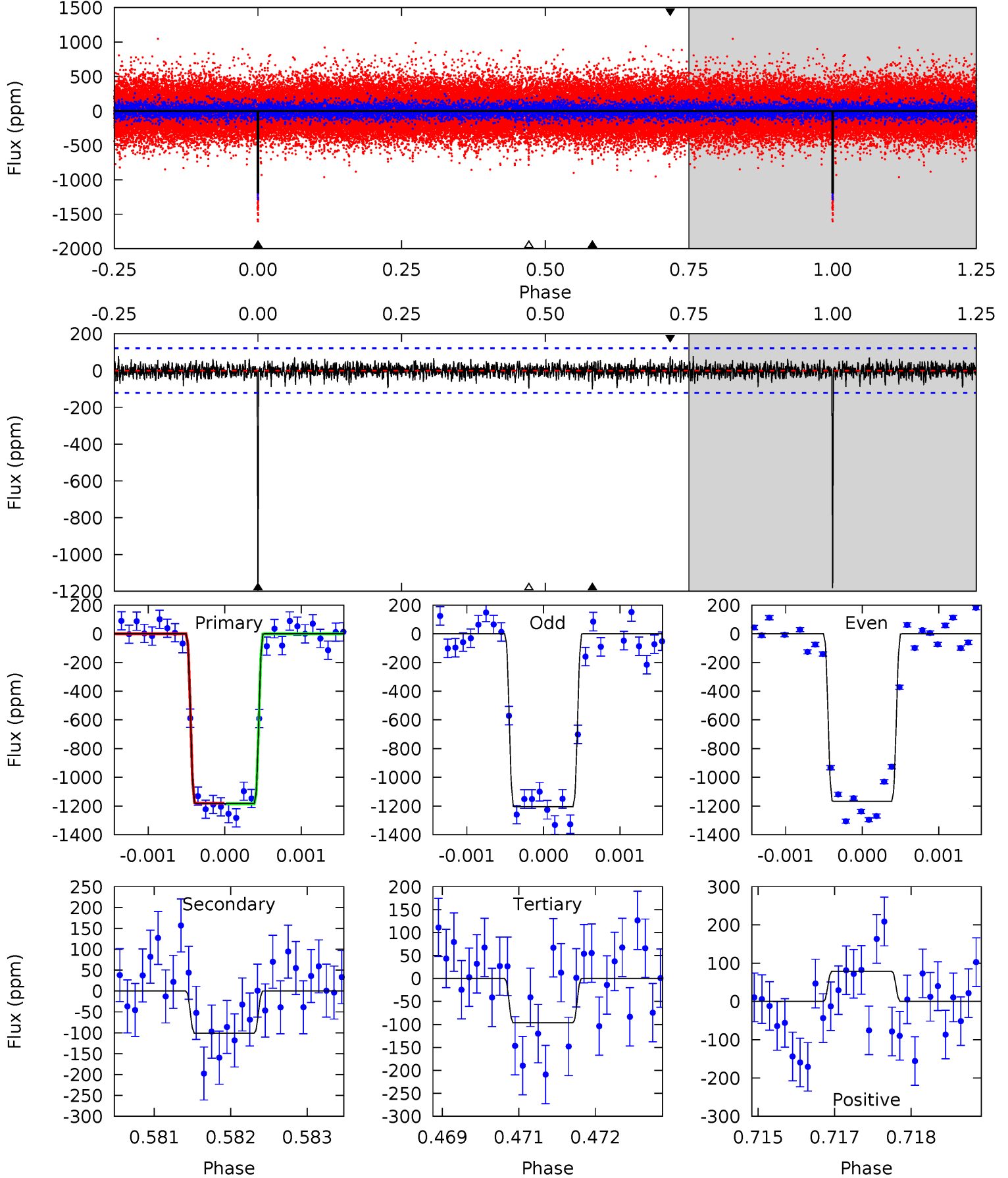
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
58.2	5.50	5.43	4.02	5.36	3.15	1.32	52.7	54.1	0.08	1.48	0.65	0.97	0.06	0.18



Alt Model-Shift Uniqueness Test

008017703-02, $P = 247.355055$ Days, $E = 116.802694$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
52.2	4.46	4.27	3.49	5.38	3.18	1.00	47.9	48.7	0.19	0.97	0.82	0.99	0.06	0.07



Stellar Parameters For KIC 008017703

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4859^{+97}_{-97}	$4.615^{+0.049}_{-0.021}$	$-0.520^{+0.150}_{-0.150}$	$0.651^{+0.029}_{-0.036}$	$0.636^{+0.046}_{-0.020}$	$3.249^{+0.578}_{-0.236}$
	+2%/-2%	+1%/-0%	+29%/-29%	+4%/-6%	+7%/-3%	+18%/-7%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 008017703-02 / KOI 0518.03

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-120 ± 22	$2.70^{+0.12}_{-0.13}$	295^{+7}_{-7}	3148^{+103}_{-102}	3960^{+902}_{-735}
Alt.	-101 ± 23	$2.47^{+0.13}_{-0.13}$	295^{+6}_{-8}	3156^{+108}_{-137}	4003^{+1036}_{-962}

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

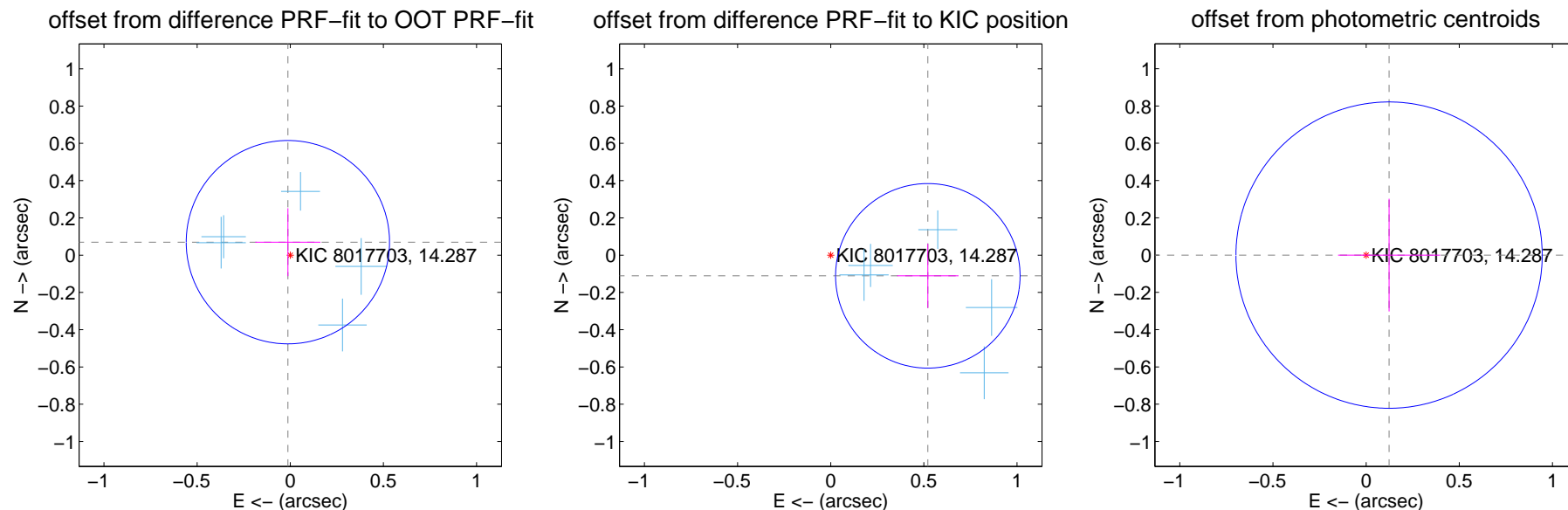
DV Centroid Data

Supplemental centroid analysis for 008017703-02. Kepler magnitude: 14.29. Transit SNR 39.01

There are 5 quarters with good PRF difference image offsets

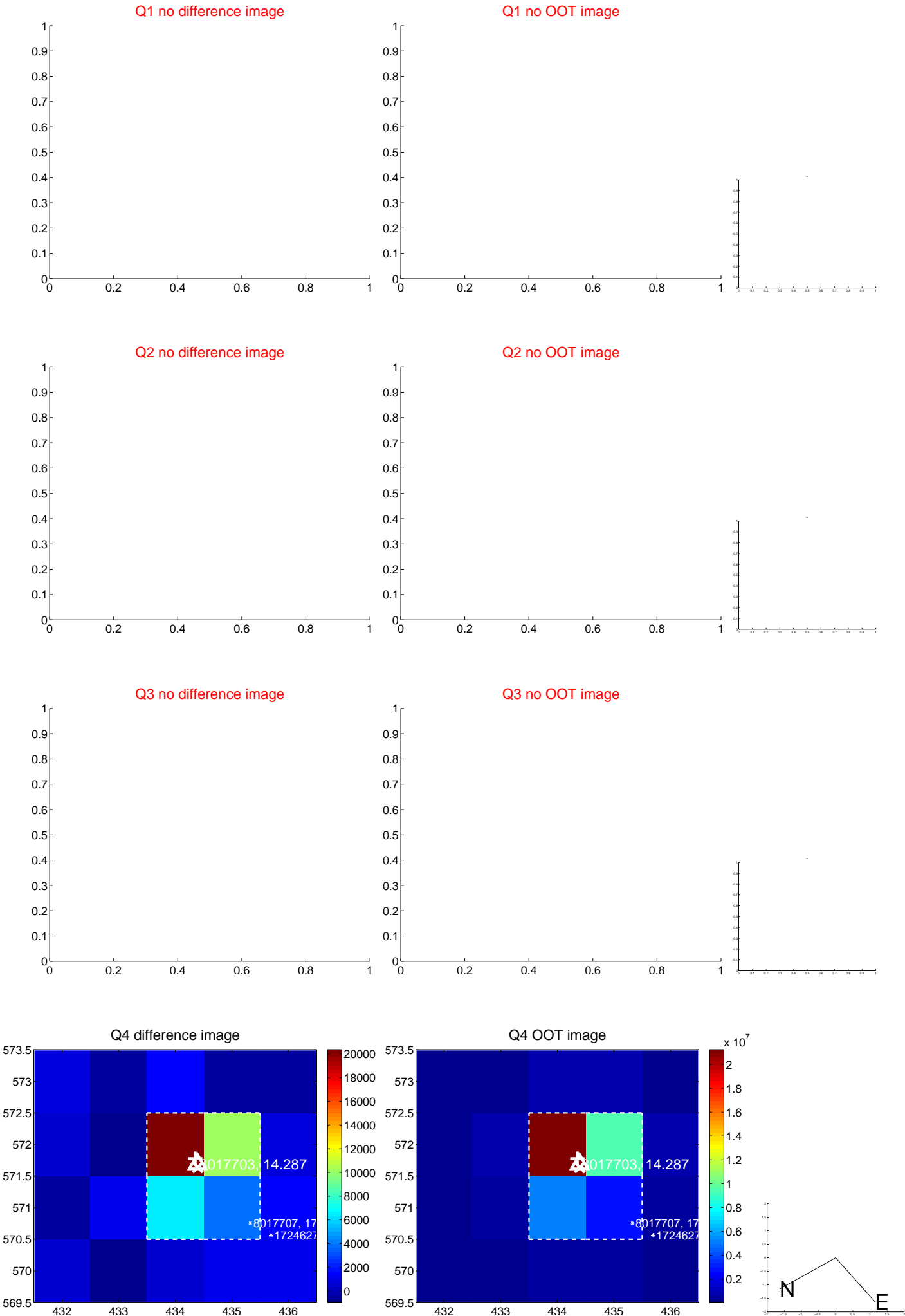
The direct PRF centroid is offset from the target star catalog position by about 0.60 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.071 ± 0.182	0.39	0.013 ± 0.175	0.070 ± 0.182
PRF-fit source offset from KIC position	0.533 ± 0.165	3.23	-0.521 ± 0.165	-0.111 ± 0.172
photometric centroid source offset	0.12 ± 0.27	0.45	-0.12 ± 0.27	-0.00 ± 0.30



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 ×: 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.

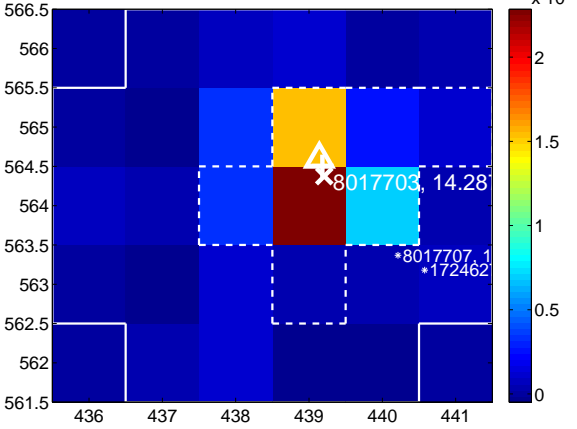
Q5 no difference image



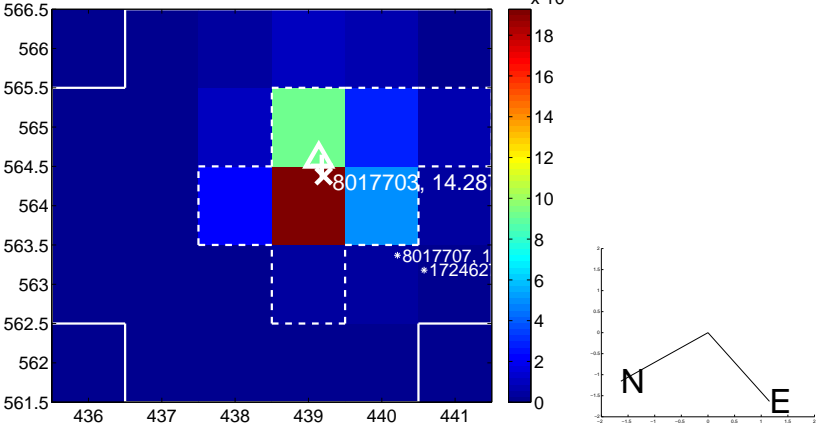
Q5 no OOT image



Q6 difference image



Q6 OOT image



Q7 no difference image



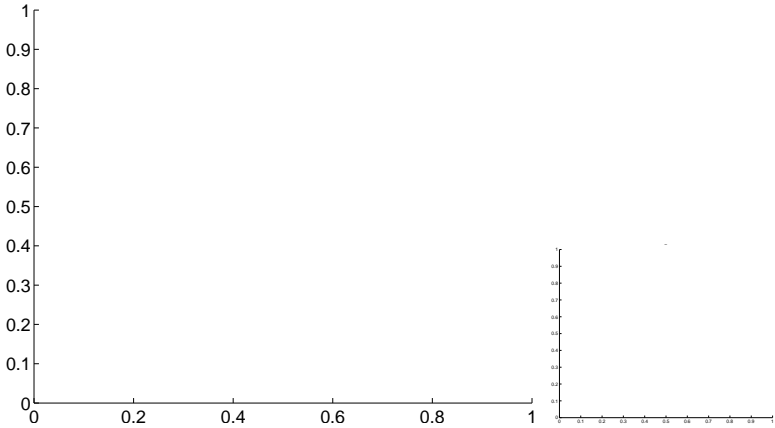
Q7 no OOT image



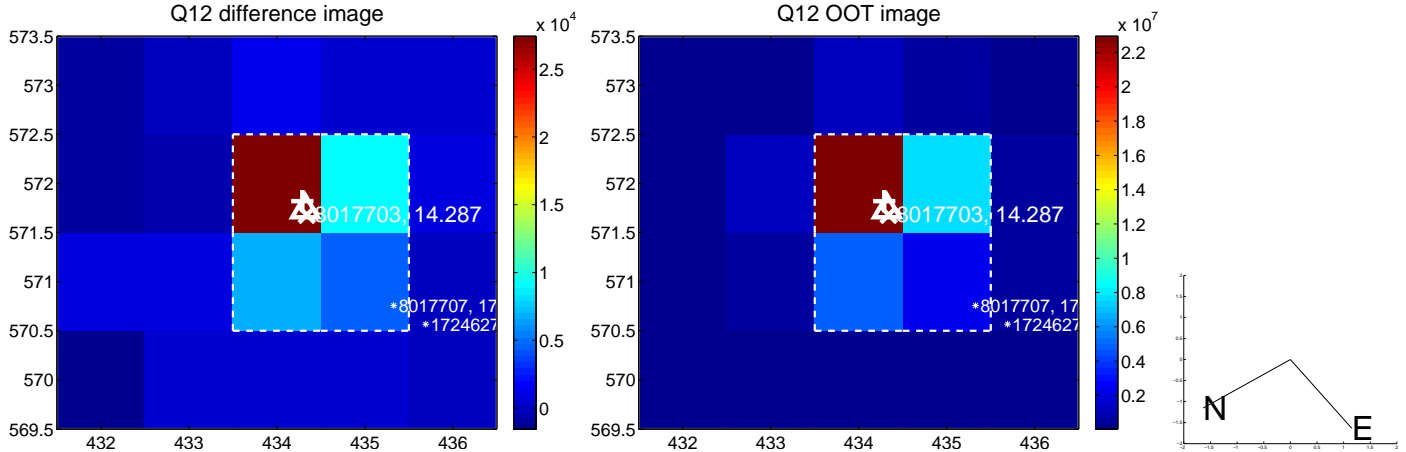
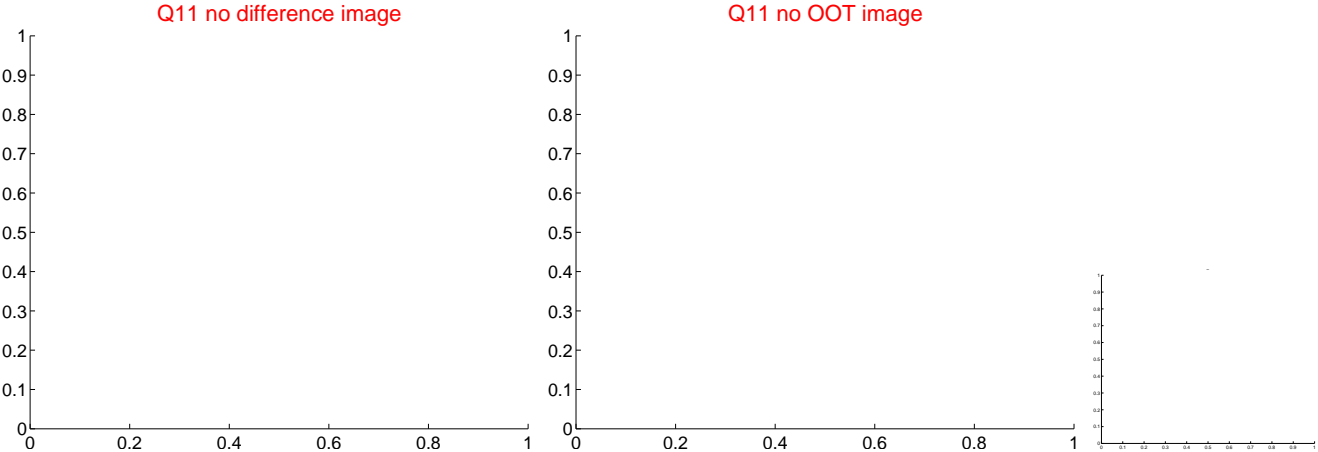
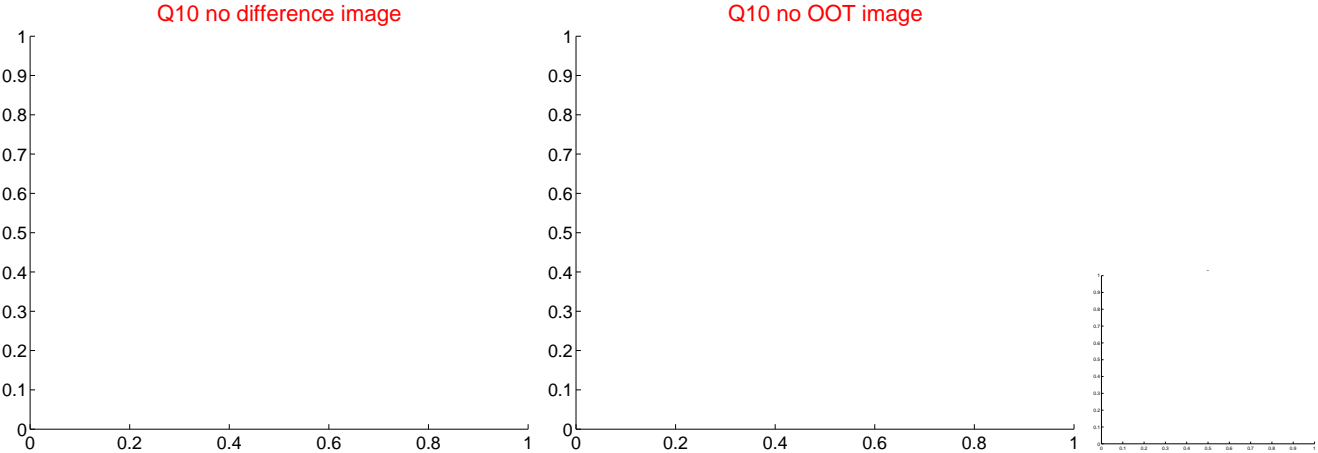
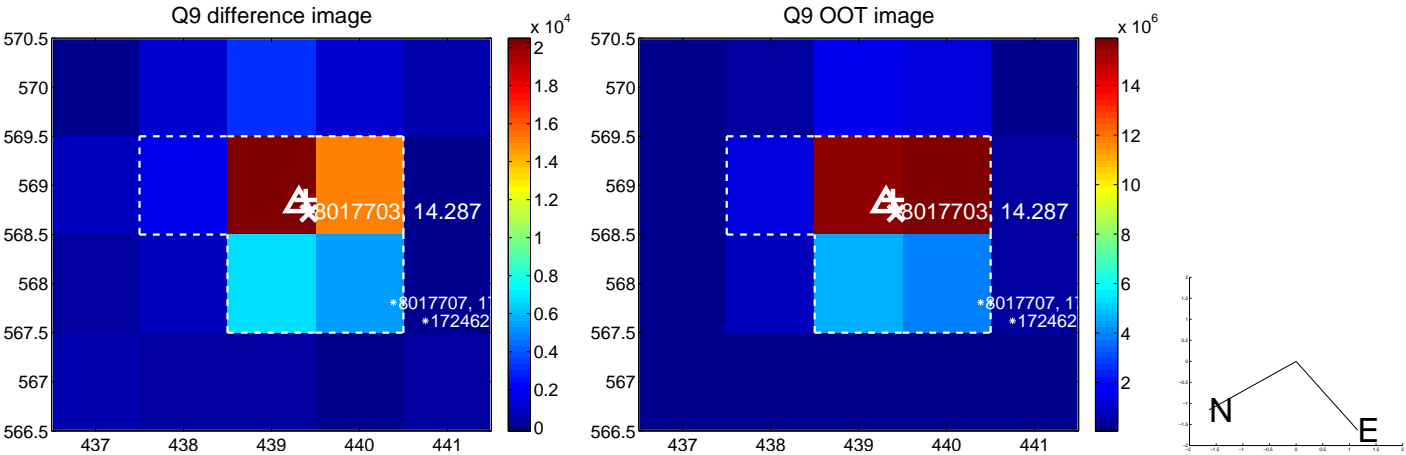
Q8 no difference image



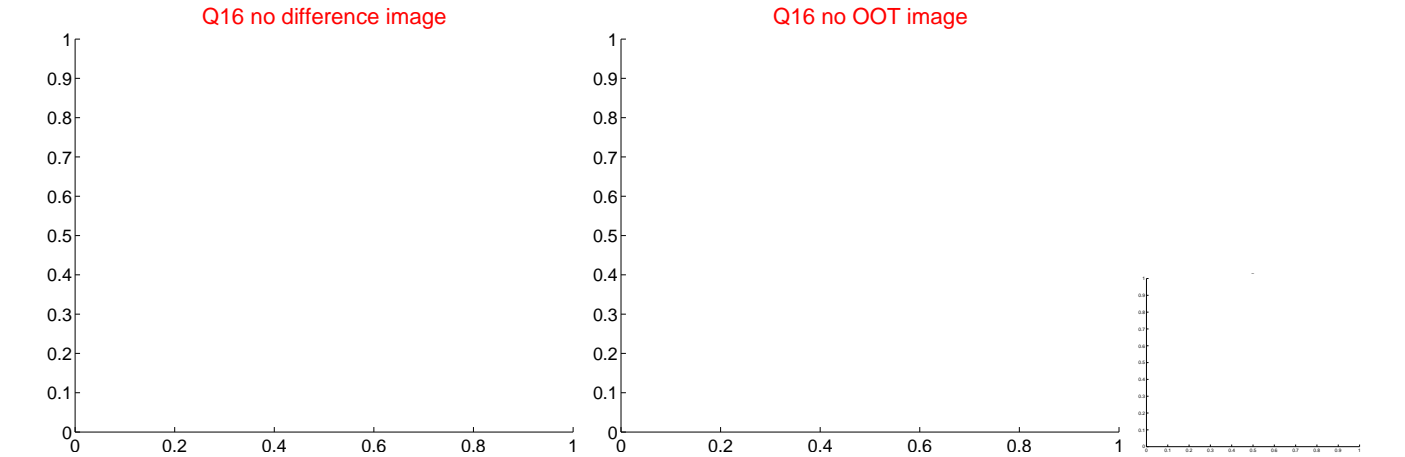
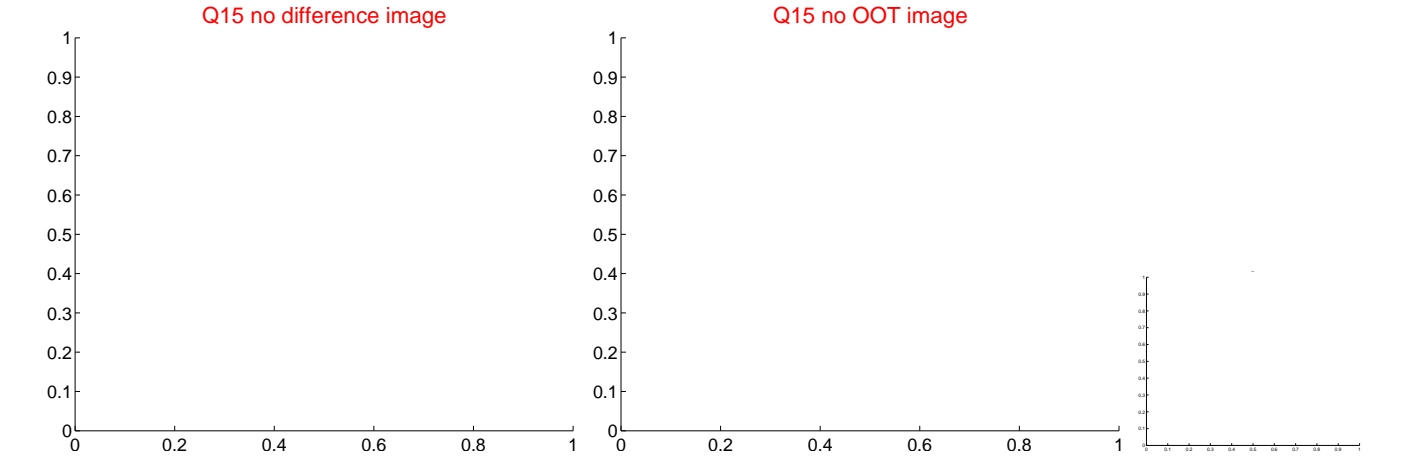
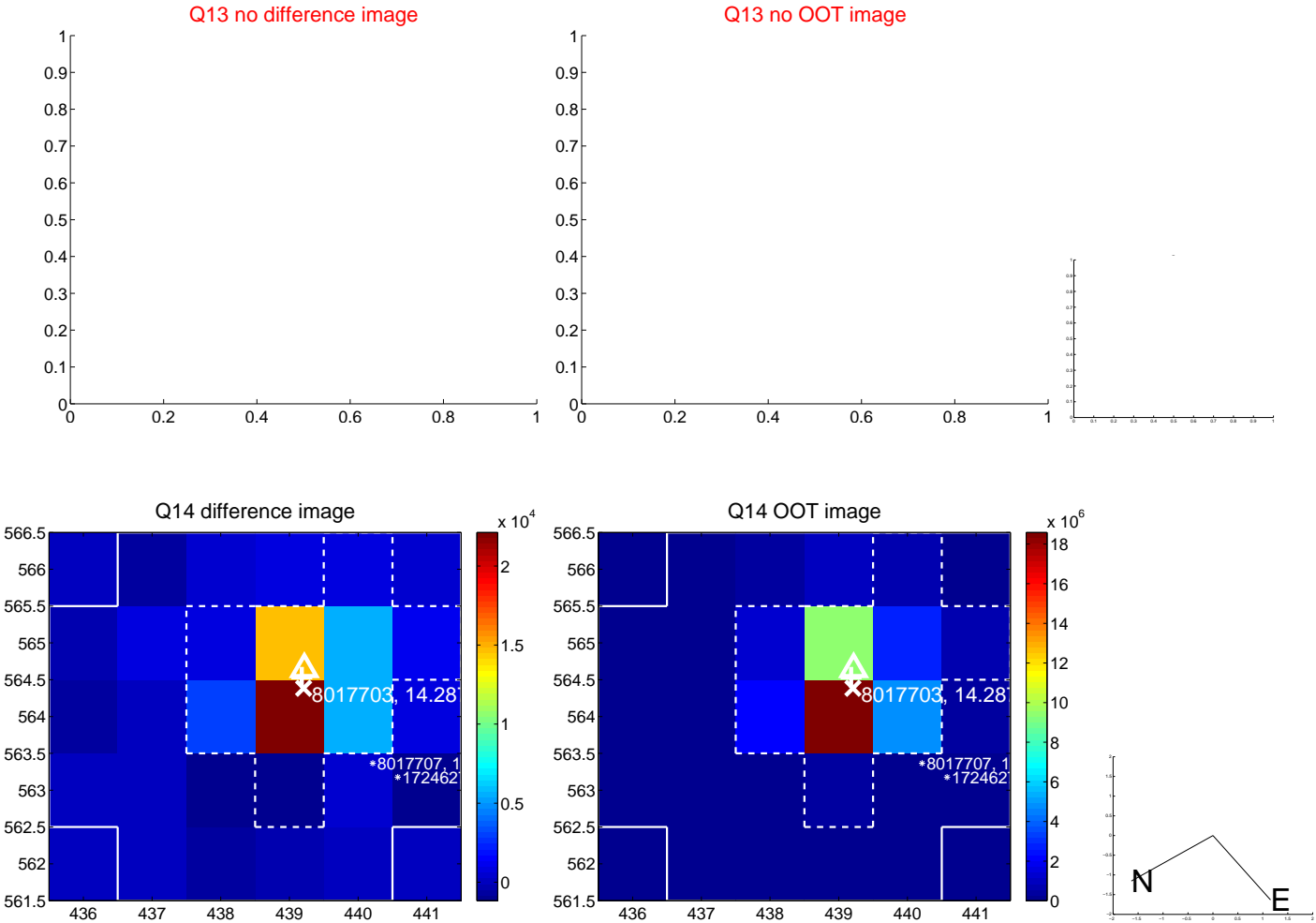
Q8 no OOT image



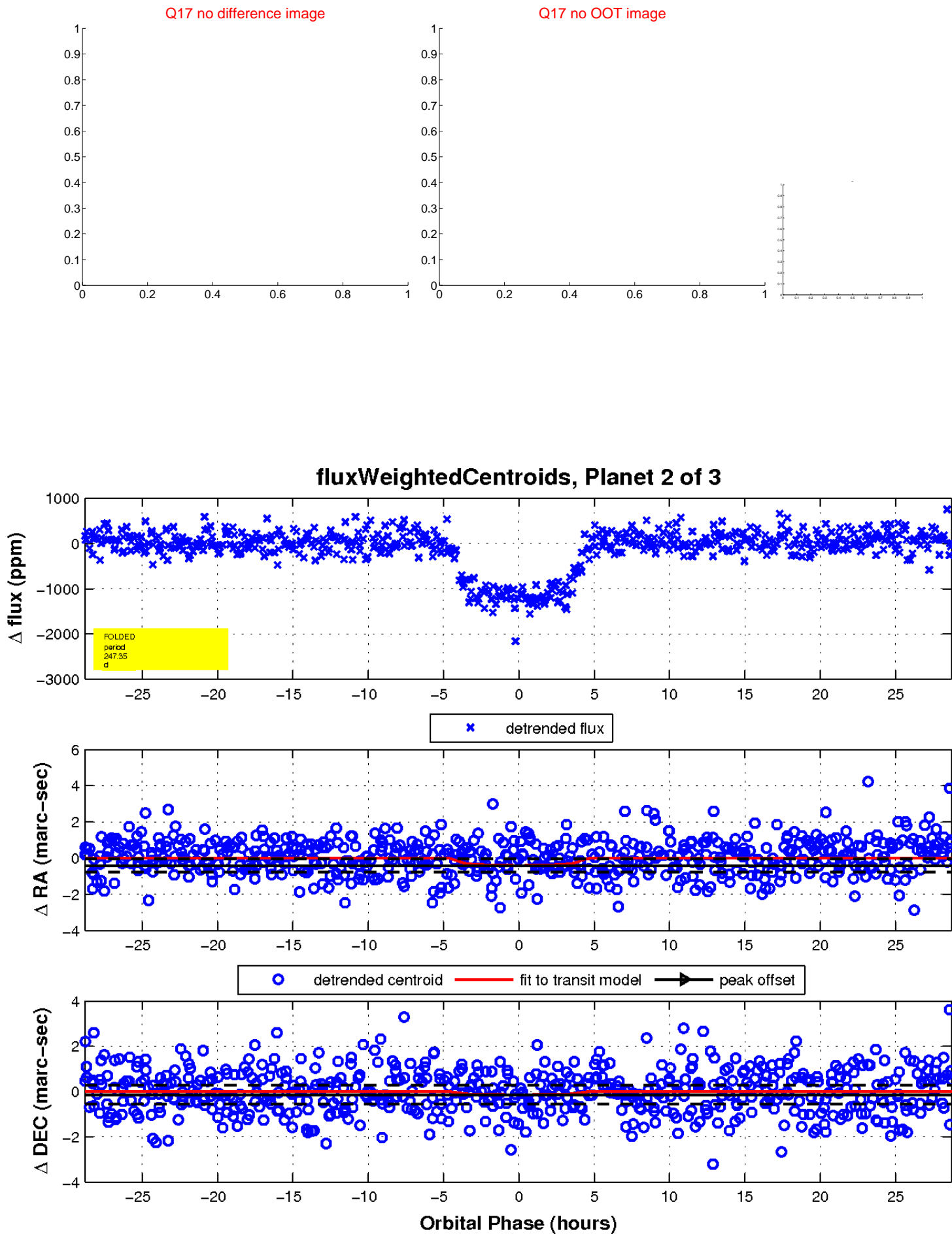
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

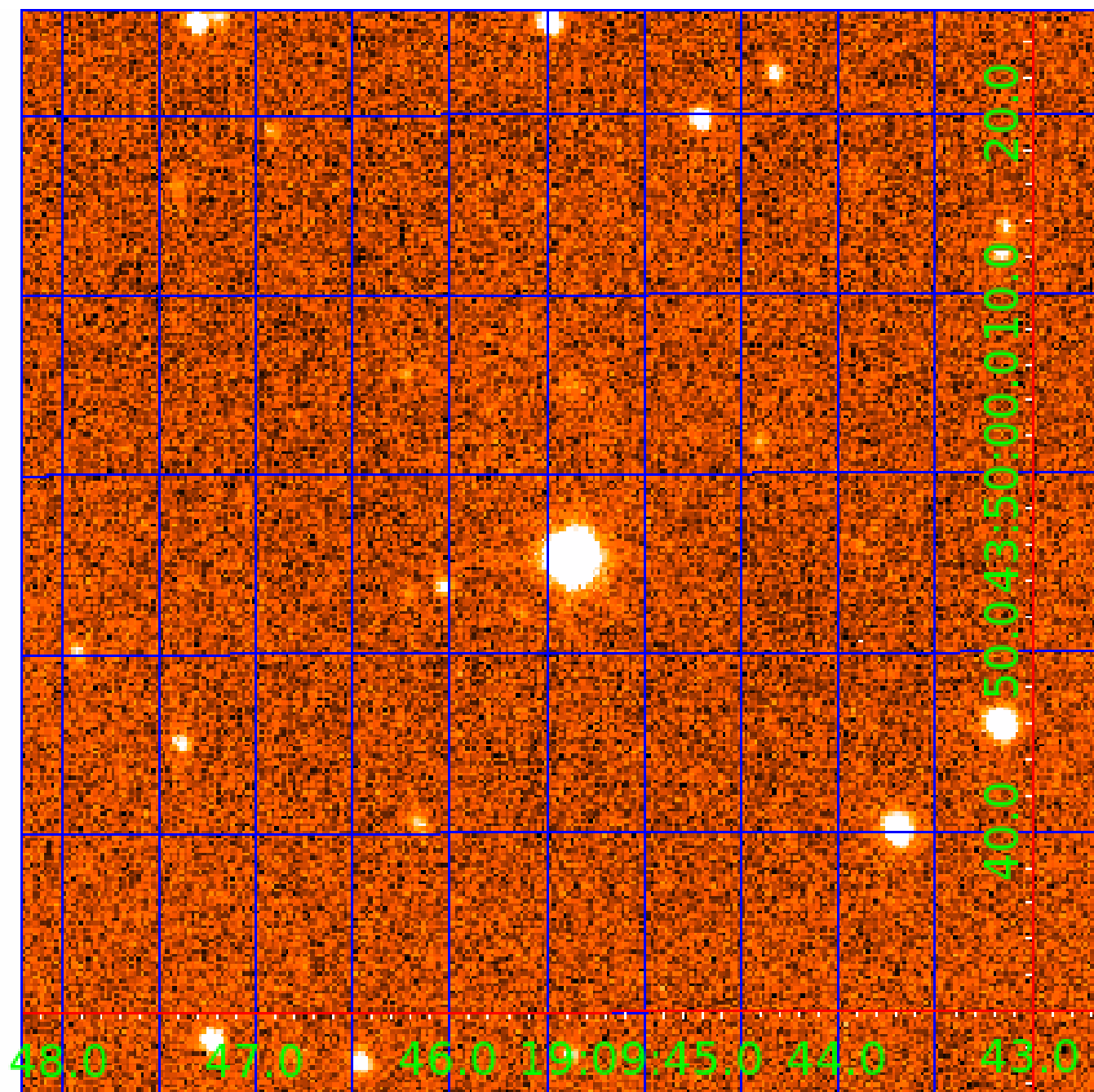


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008017703

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})
008017703-01	OBS	0518.01	13.981784	140.029550	1017.5	3.081	86.6	89.1	0.65	4859	2.31	22.15
008017703-02	OBS	0518.03	247.354209	364.159957	1266.8	9.602	42.0	39.0	0.65	4859	2.71	0.48
008017703-03	OBS	0518.02	44.000431	166.760622	596.6	5.208	34.2	36.9	0.65	4859	1.72	4.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008017703-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
008017703-02	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
008017703-03	OBS	PC	1.00	0	0	0	0	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.

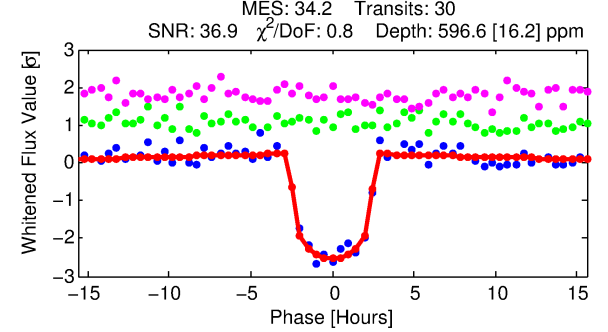
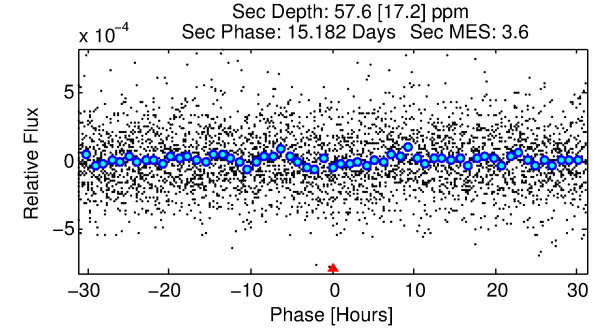
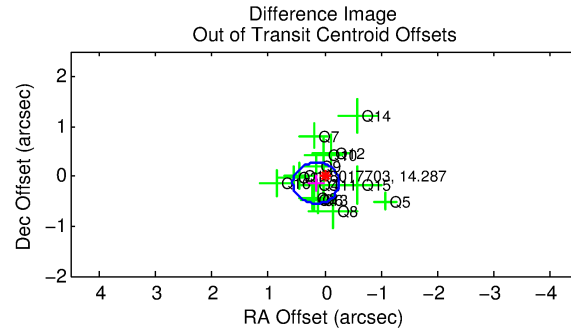
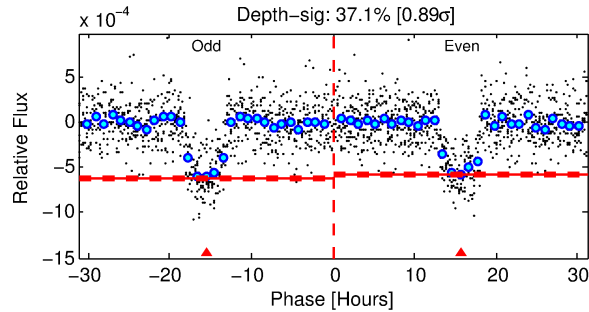
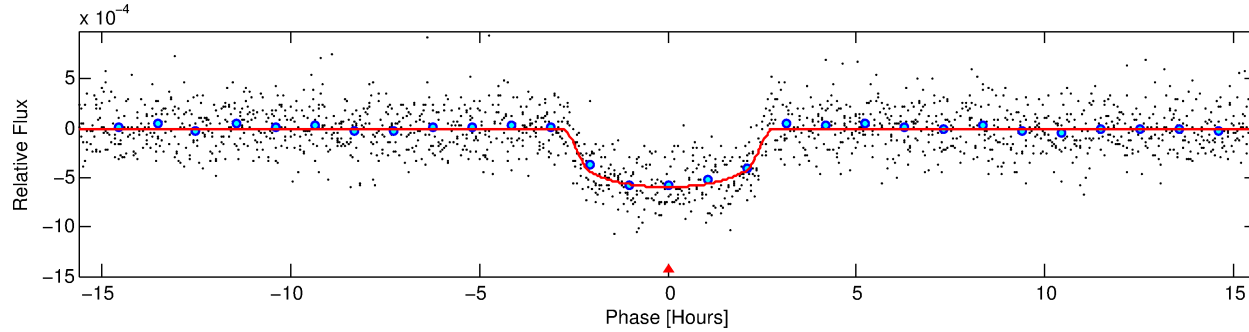
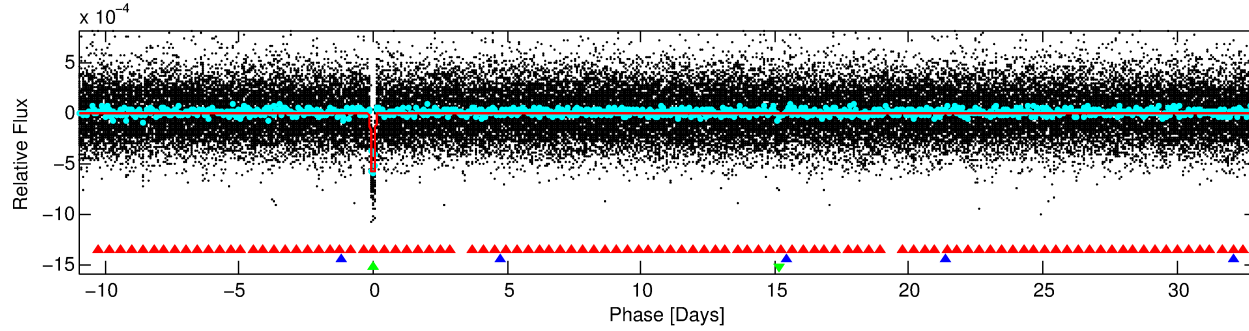
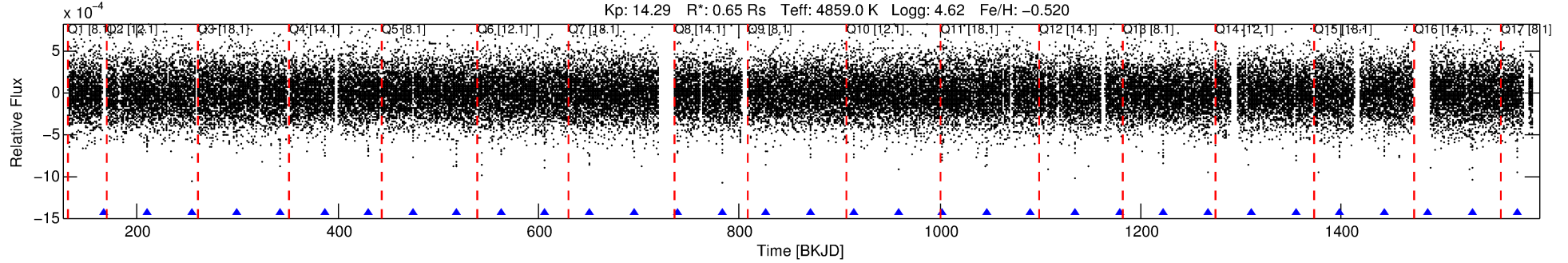
Ephemeris Match Information For 008017703-03

No Significant Match Found

DV One-Page Summary

KIC: 8017703 Candidate: 3 of 3 Period: 44.000 d
KOI: K00518.02 Name: Kepler-174c Corr: 0.996

Kp: 14.29 R*: 0.65 Rs Teff: 4859.0 K Logg: 4.62 Fe/H: -0.520



DV Fit Results:

Period = 44.00043 [0.00015] d
Epoch = 166.7606 [0.0028] BKJD
Rp/R* = 0.0242 [0.0061]
a/R* = 46.22 [41.28]
b = 0.73 [0.58]
Seff = 4.80 [0.56]
Teq = 377 [11] K
Rp = 1.72 [0.44] Re
a = 0.2099 [0.0111] AU
Ag = 473.13 [279.30] [1.69σ]
Teffp = 2722 [401] K [5.84σ]

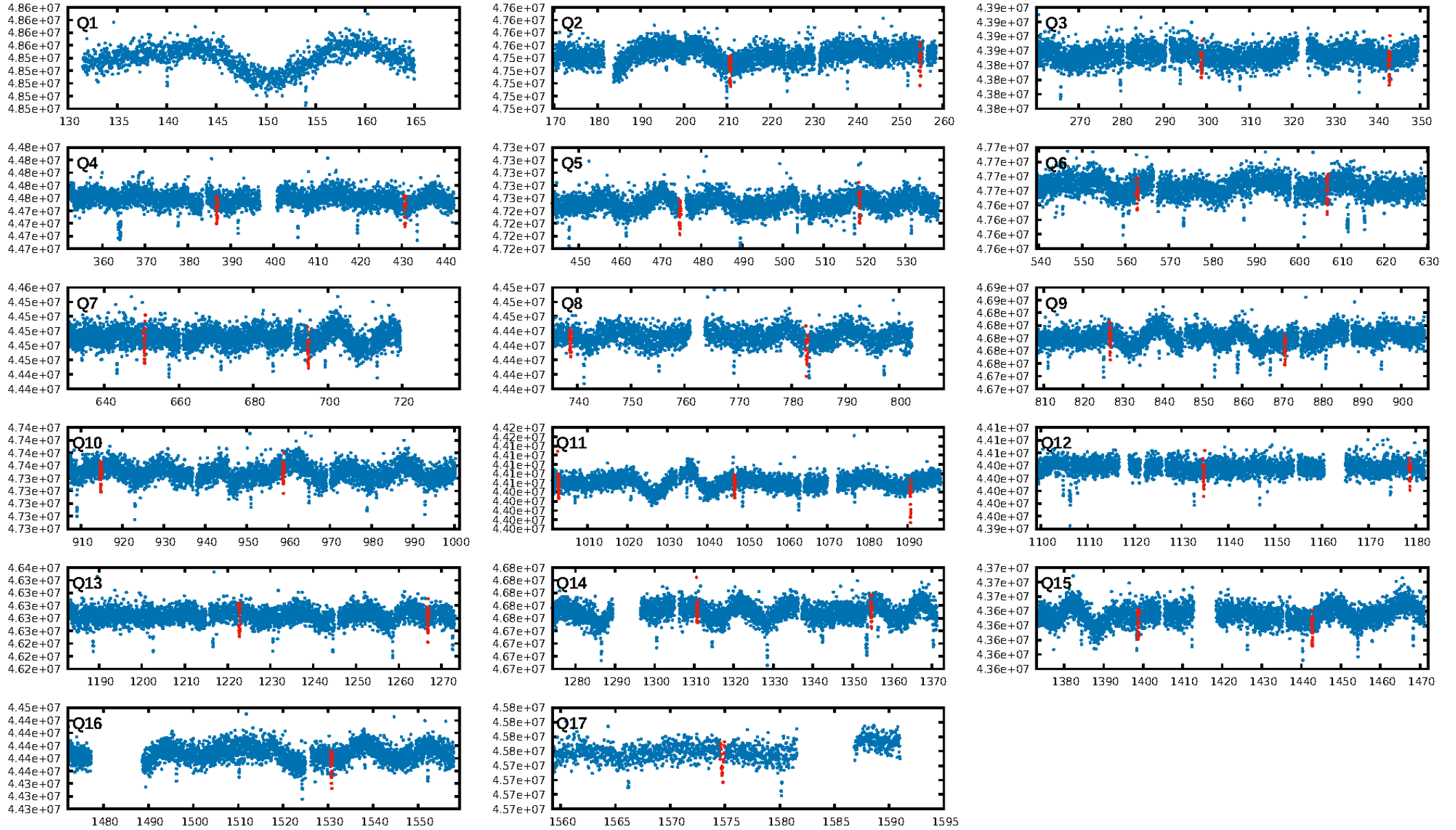
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [119.06σ]
LongPeriod-sig: 100.0% [446.78σ]
ModelChiSquare2-sig: 80.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.69e-253
RollingBand-fgt: 1.00 [29/29]
GhostDiagnostic-chr: 16.99
Centroid-sig: 58.0%
Centroid-so: 0.468 arcsec [1.44σ]
OotOffset-rm: 0.207 arcsec [1.52σ]
KicOffset-rm: 0.478 arcsec [3.54σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [16/16]

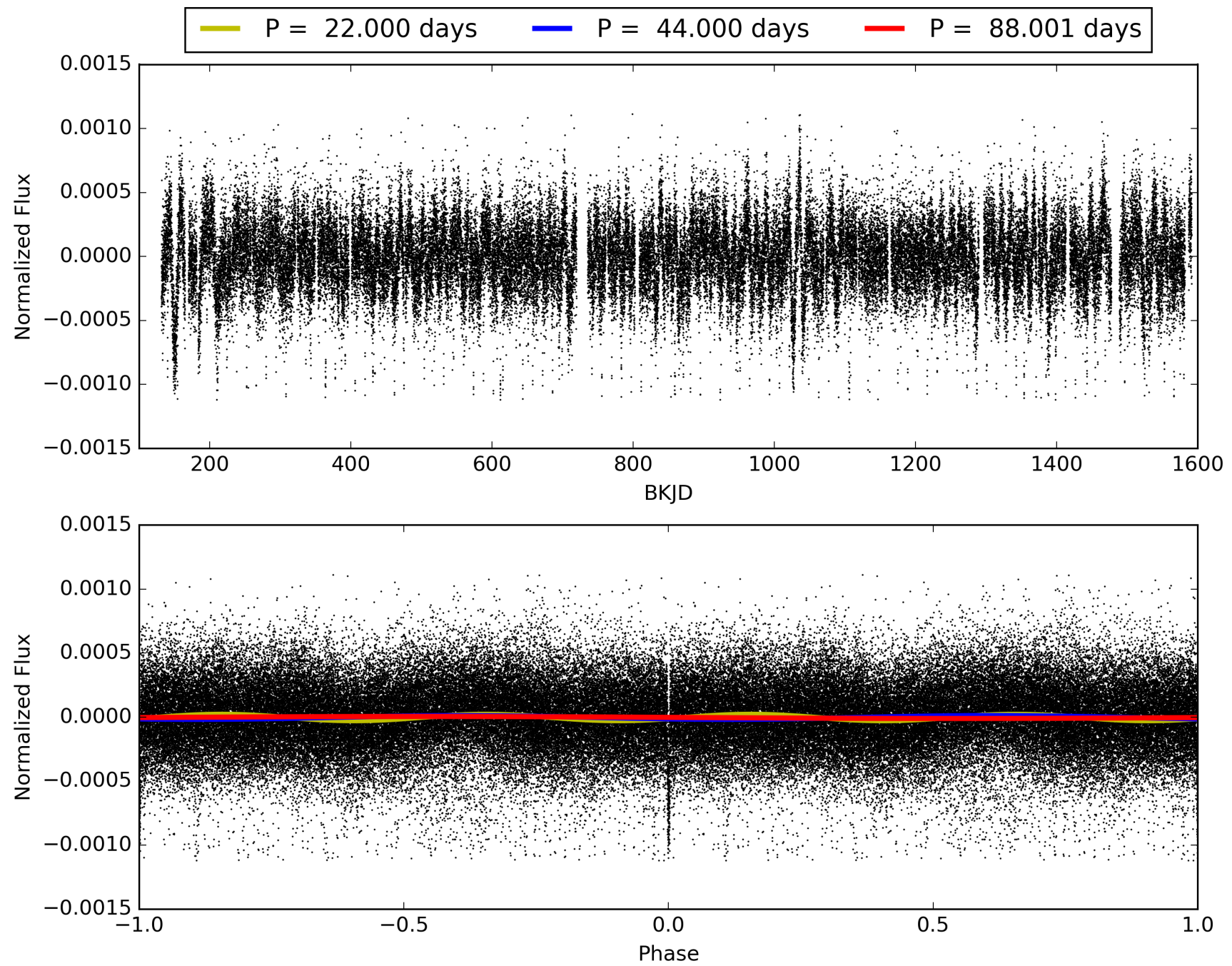
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:14:38 Z

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

TCE 008017703-03, PDC Light Curves

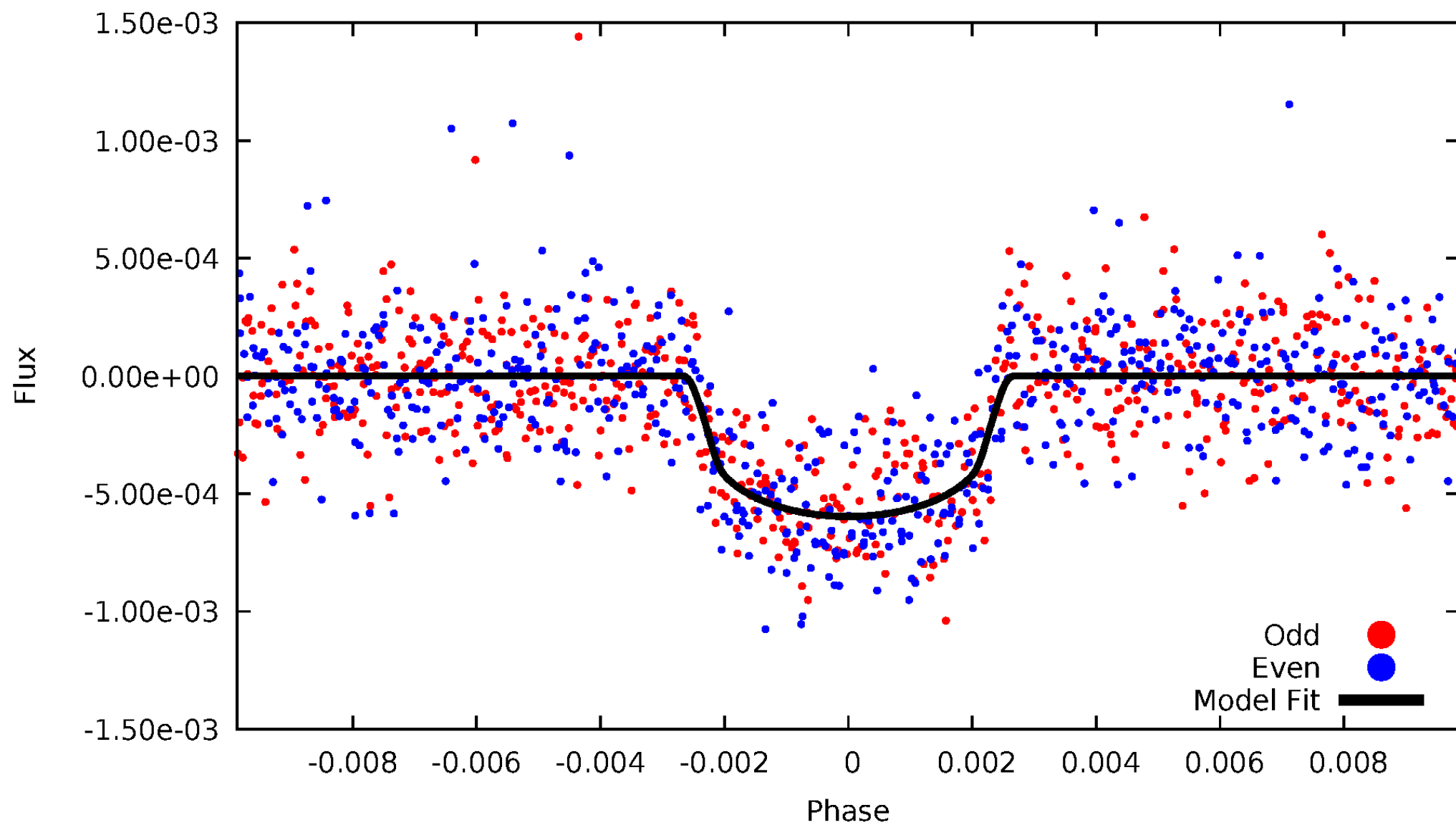


TCE 008017703-03



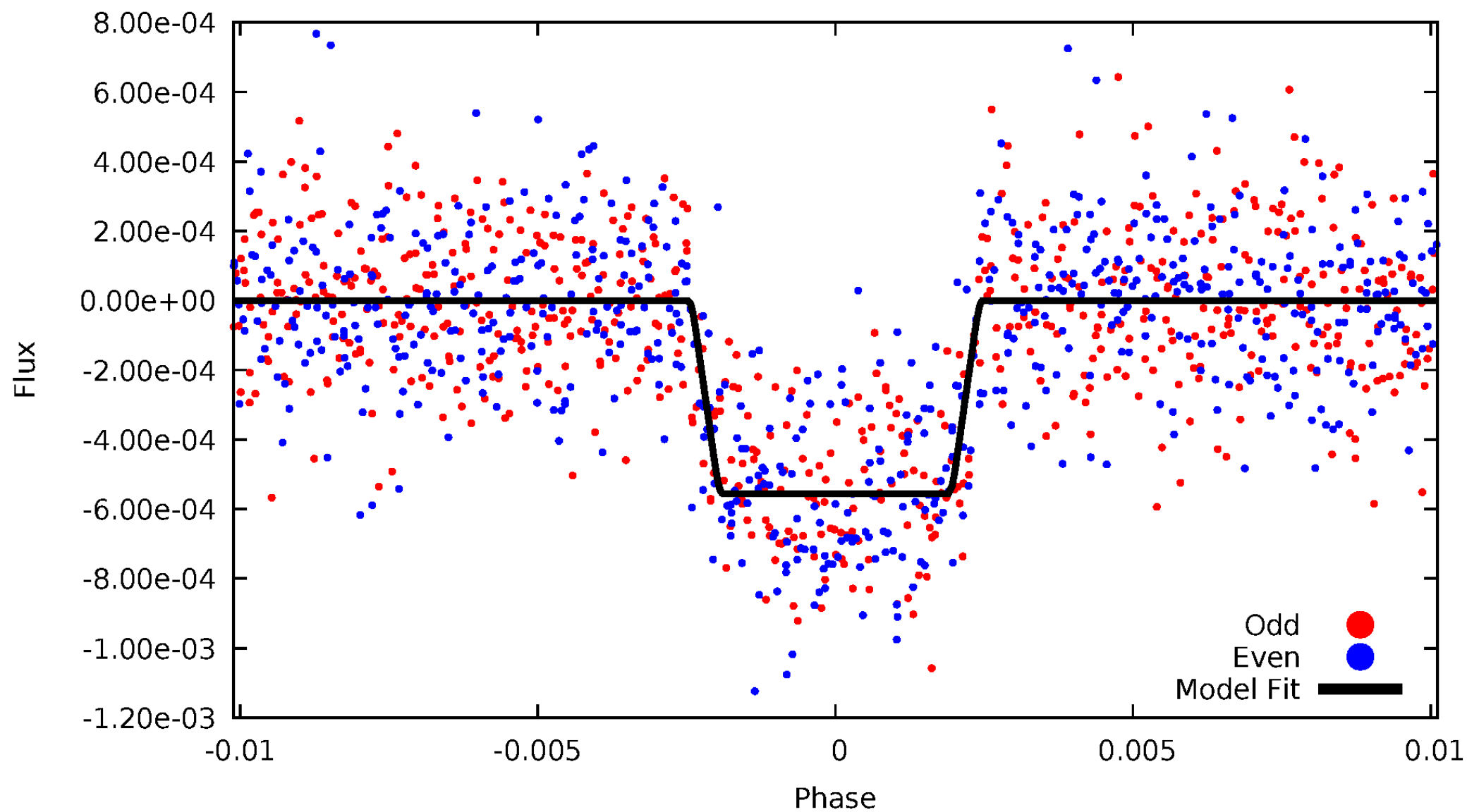
DV Odd/Even

TCE 008017703-03



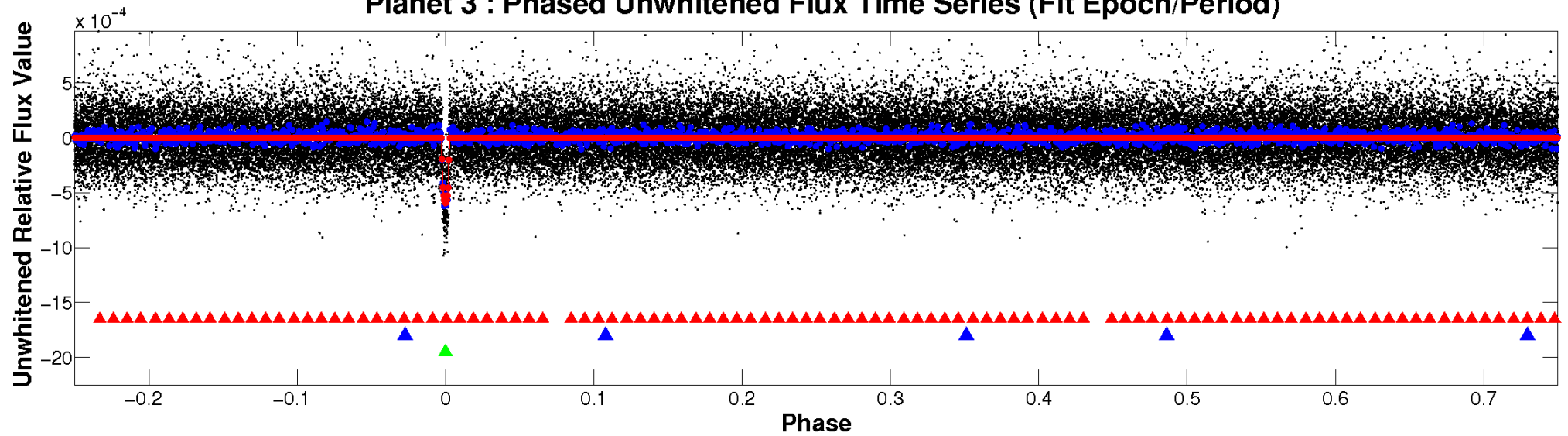
ALT Odd/Even

TCE 008017703-03

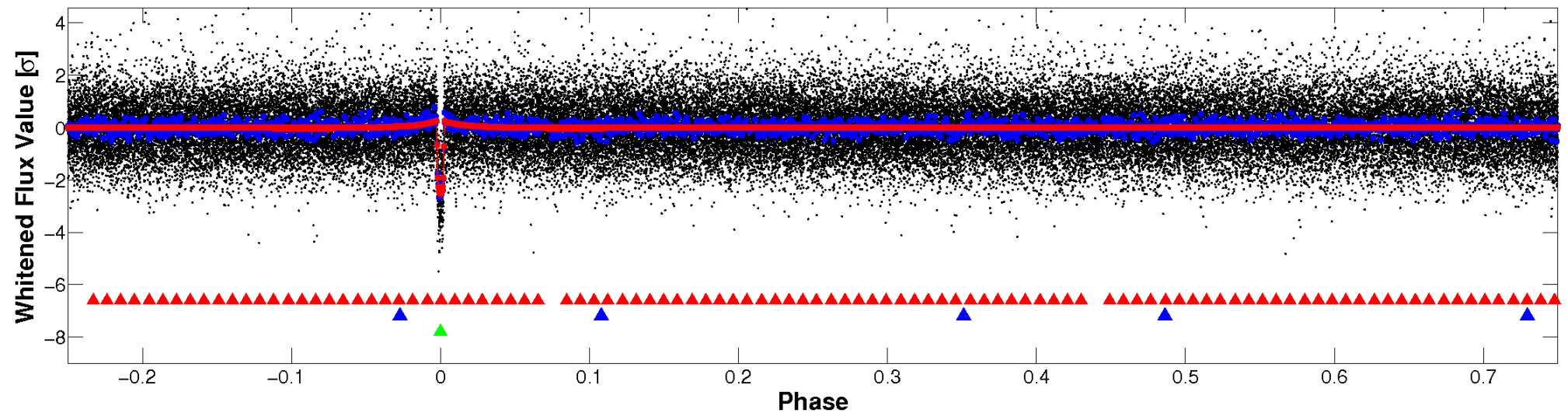


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

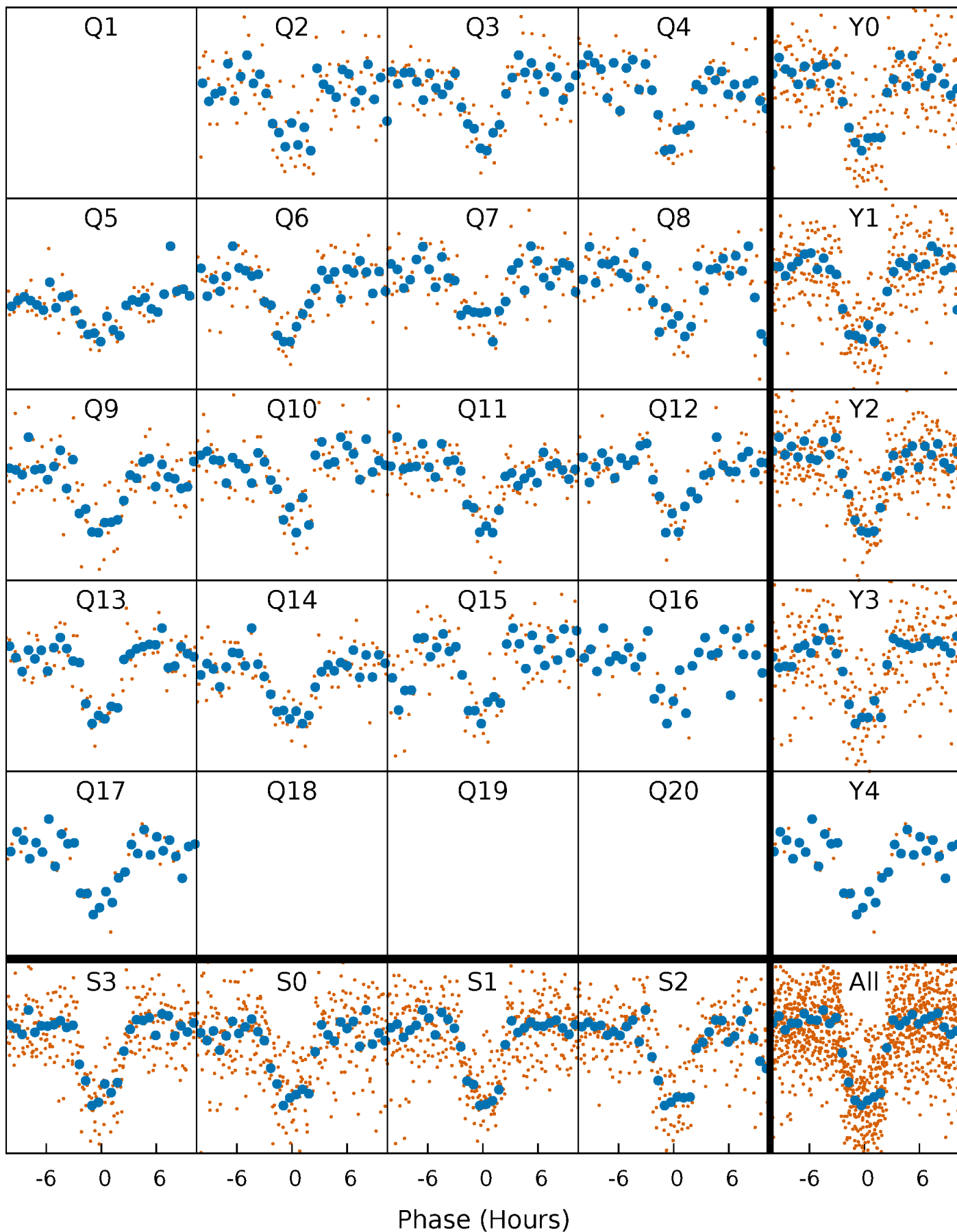


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



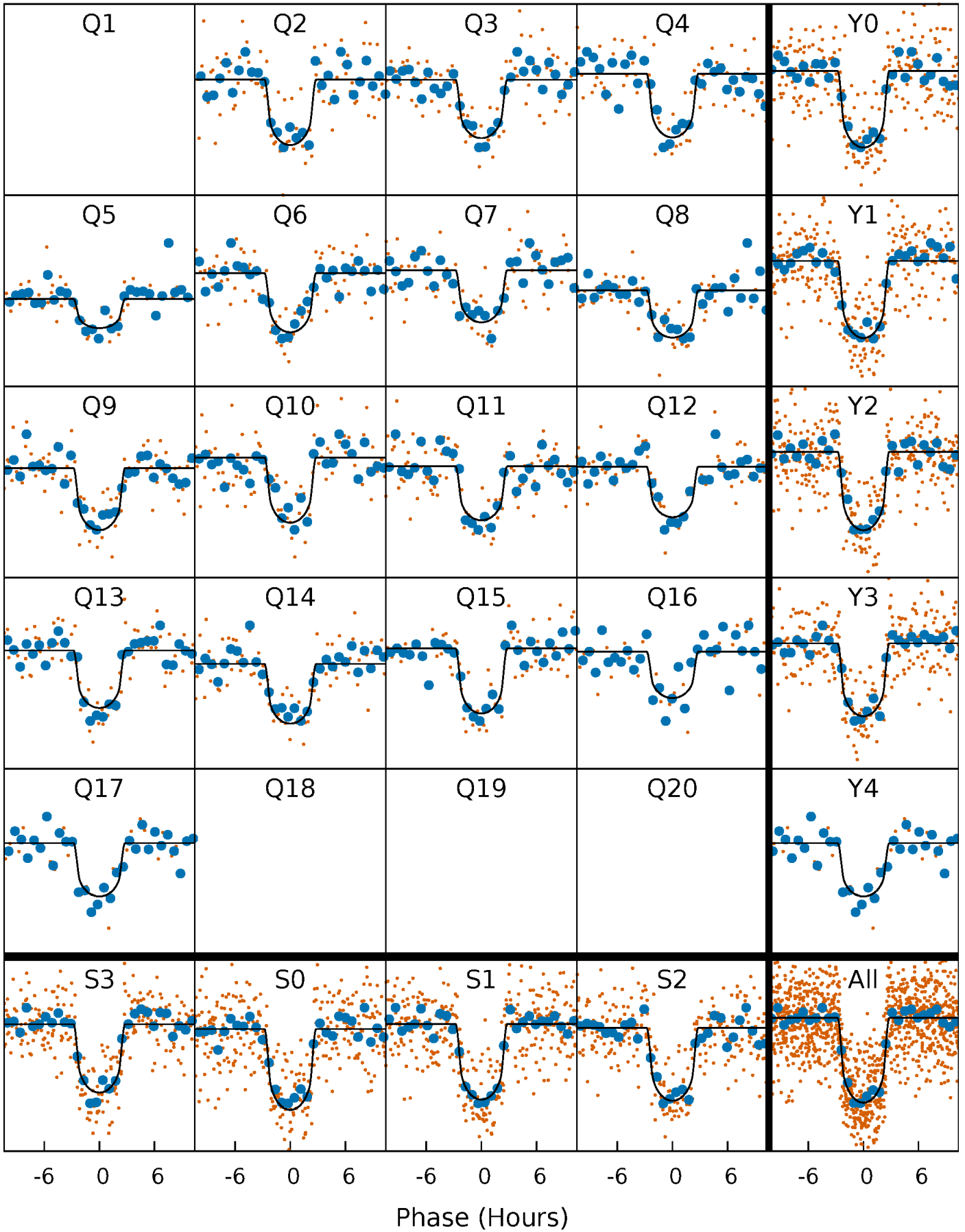
PDC Quarter-Phased Transit Curves

TCE 008017703-03 P= 44.000431 Days $T_0=166.760622$ (BKJD)



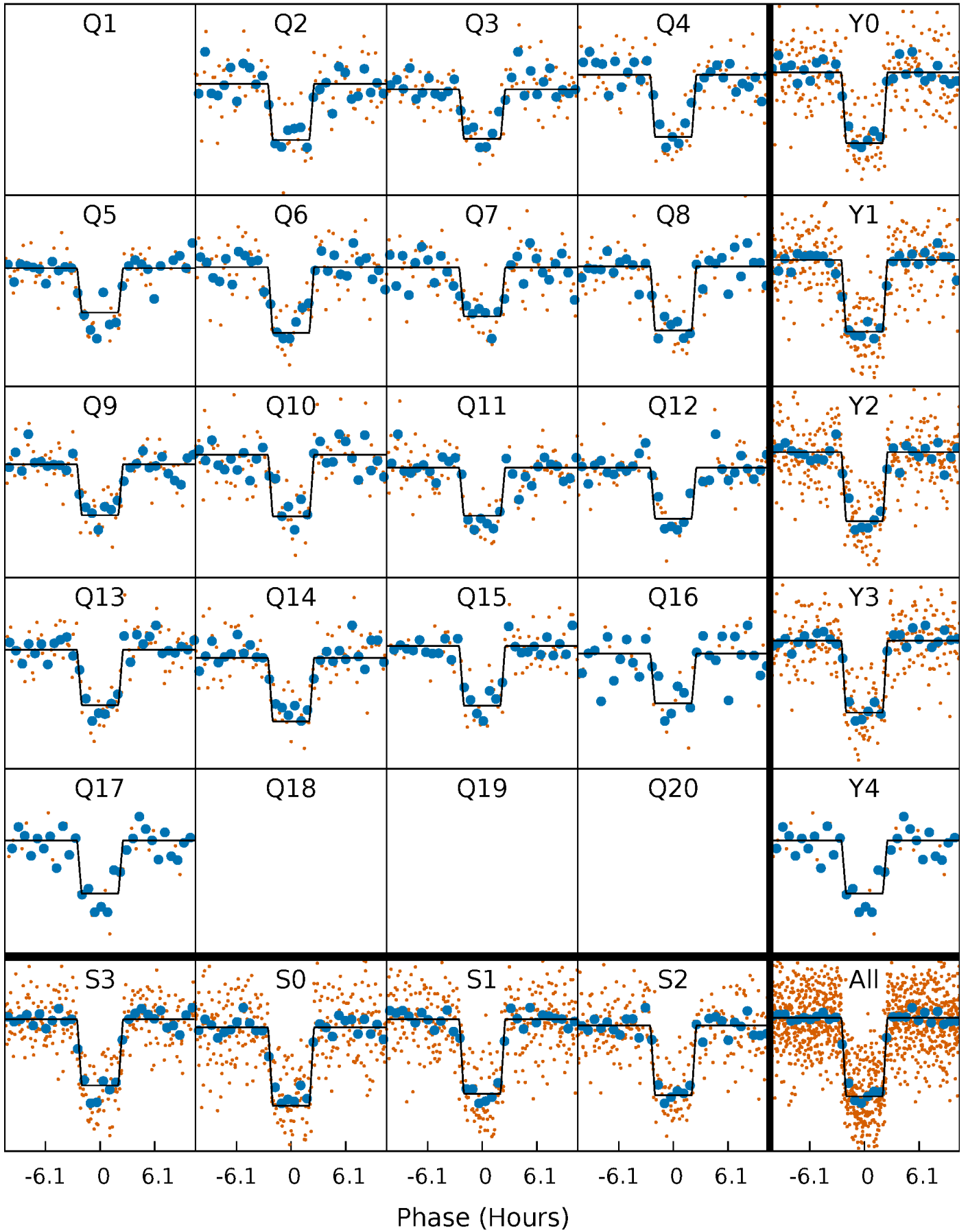
DV Quarter-Phased Transit Curves

TCE 008017703-03 P= 44.000431 Days $T_0=166.760622$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

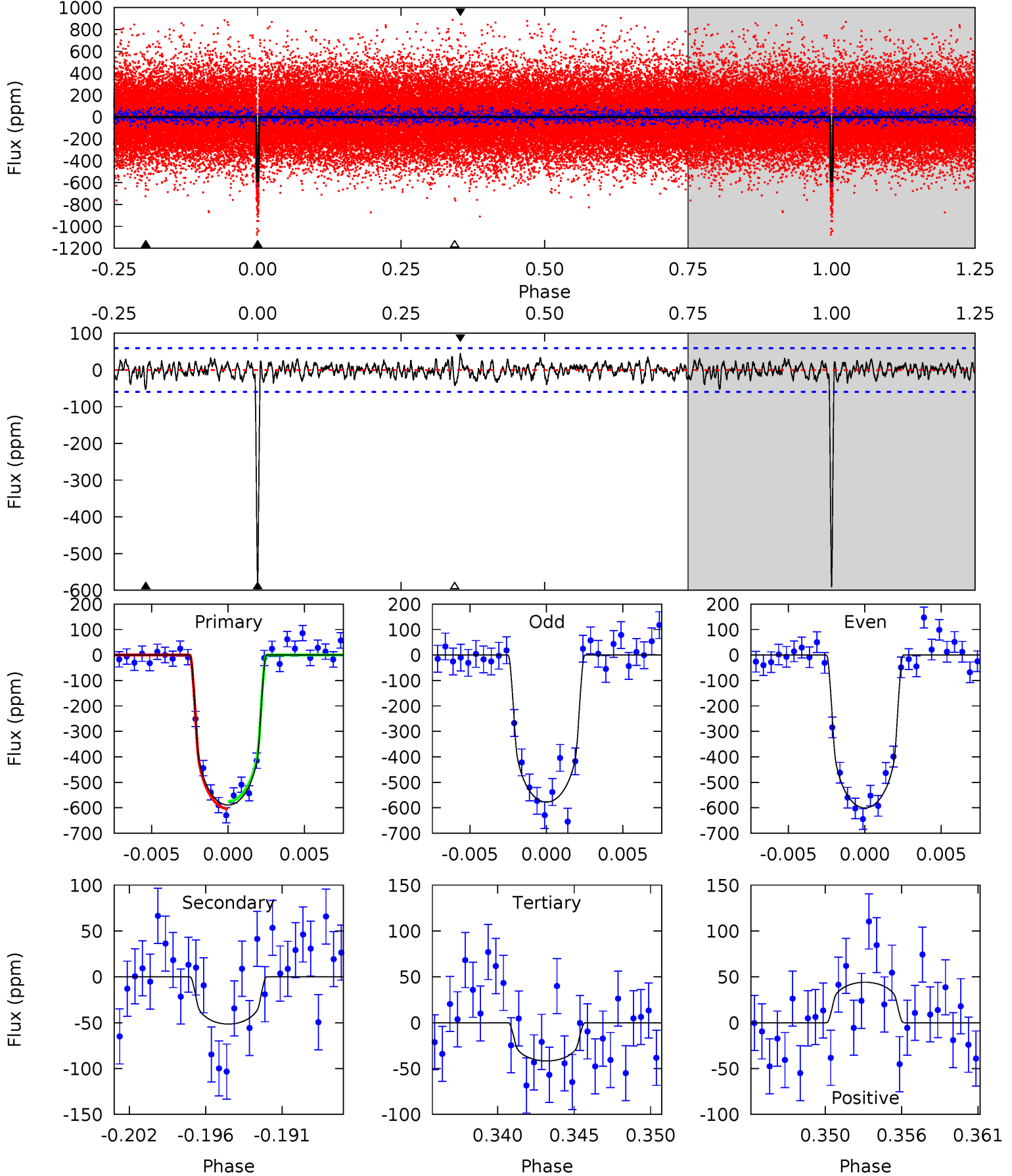
TCE 008017703-03 P= 44.000277 Days $T_0=166.763497$ (BKJD)



DV Model-Shift Uniqueness Test

008017703-03, P = 44.000431 Days, E = 122.760191 Days

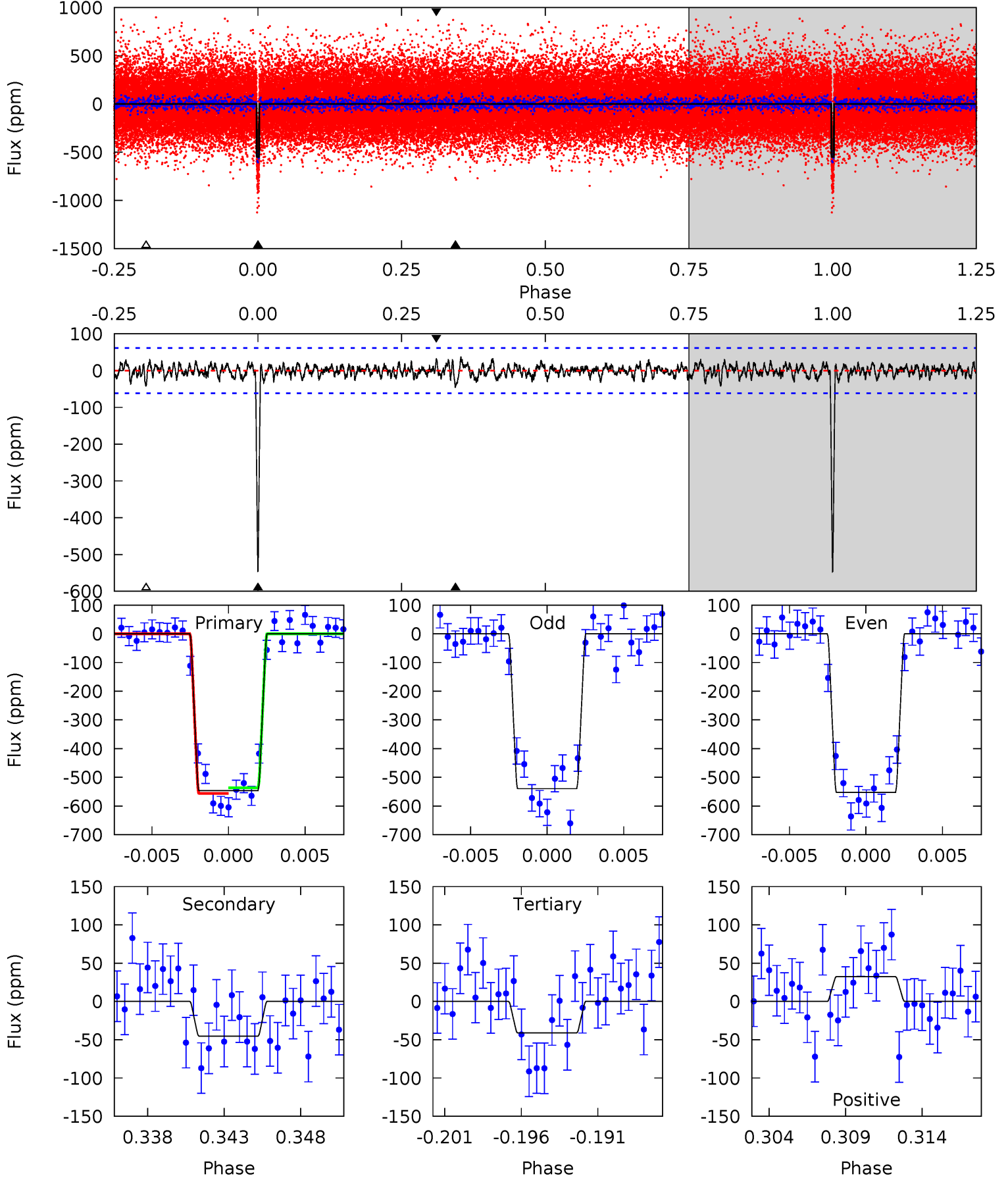
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
51.0	4.45	3.61	3.82	5.15	2.79	1.21	47.4	47.2	0.85	0.64	1.00	1.00	0.07	1.24



Alt Model-Shift Uniqueness Test

008017703-03, $P = 44.000277$ Days, $E = 122.763220$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
45.8	3.79	3.45	2.71	5.16	2.81	1.03	42.3	43.0	0.34	1.07	0.56	1.03	0.07	0.83



Stellar Parameters For KIC 008017703

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4859^{+97}_{-97}	$4.615^{+0.049}_{-0.021}$	$-0.520^{+0.150}_{-0.150}$	$0.651^{+0.029}_{-0.036}$	$0.636^{+0.046}_{-0.020}$	$3.249^{+0.578}_{-0.236}$
	+2%/-2%	+1%/-0%	+29%/-29%	+4%/-6%	+7%/-3%	+18%/-7%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 008017703-03 / KOI 0518.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-51 ± 12	$1.73^{+0.42}_{-0.47}$	524^{+13}_{-13}	3175^{+334}_{-232}	421^{+382}_{-166}
Alt.	-45 ± 12	$1.67^{+0.45}_{-0.44}$	526^{+12}_{-13}	3141^{+314}_{-250}	387^{+340}_{-169}

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 $A_{obs} \gg 1.0$

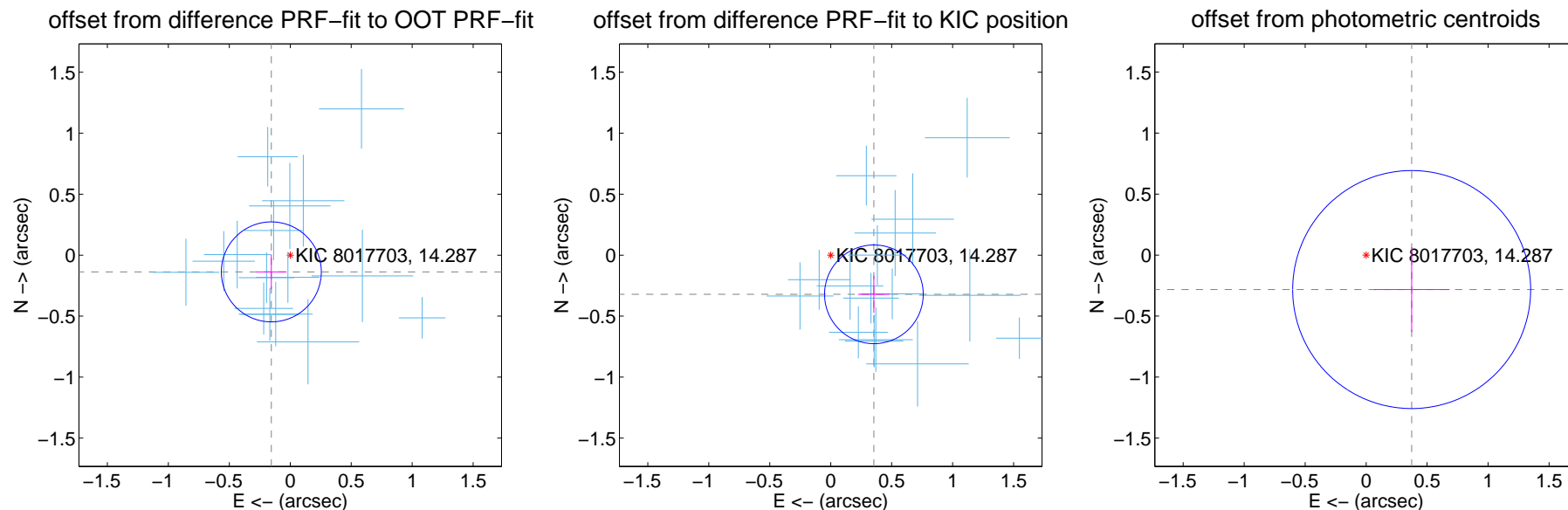
DV Centroid Data

Supplemental centroid analysis for 008017703-03. Kepler magnitude: 14.29. Transit SNR 36.90

There are 16 quarters with good PRF difference image offsets

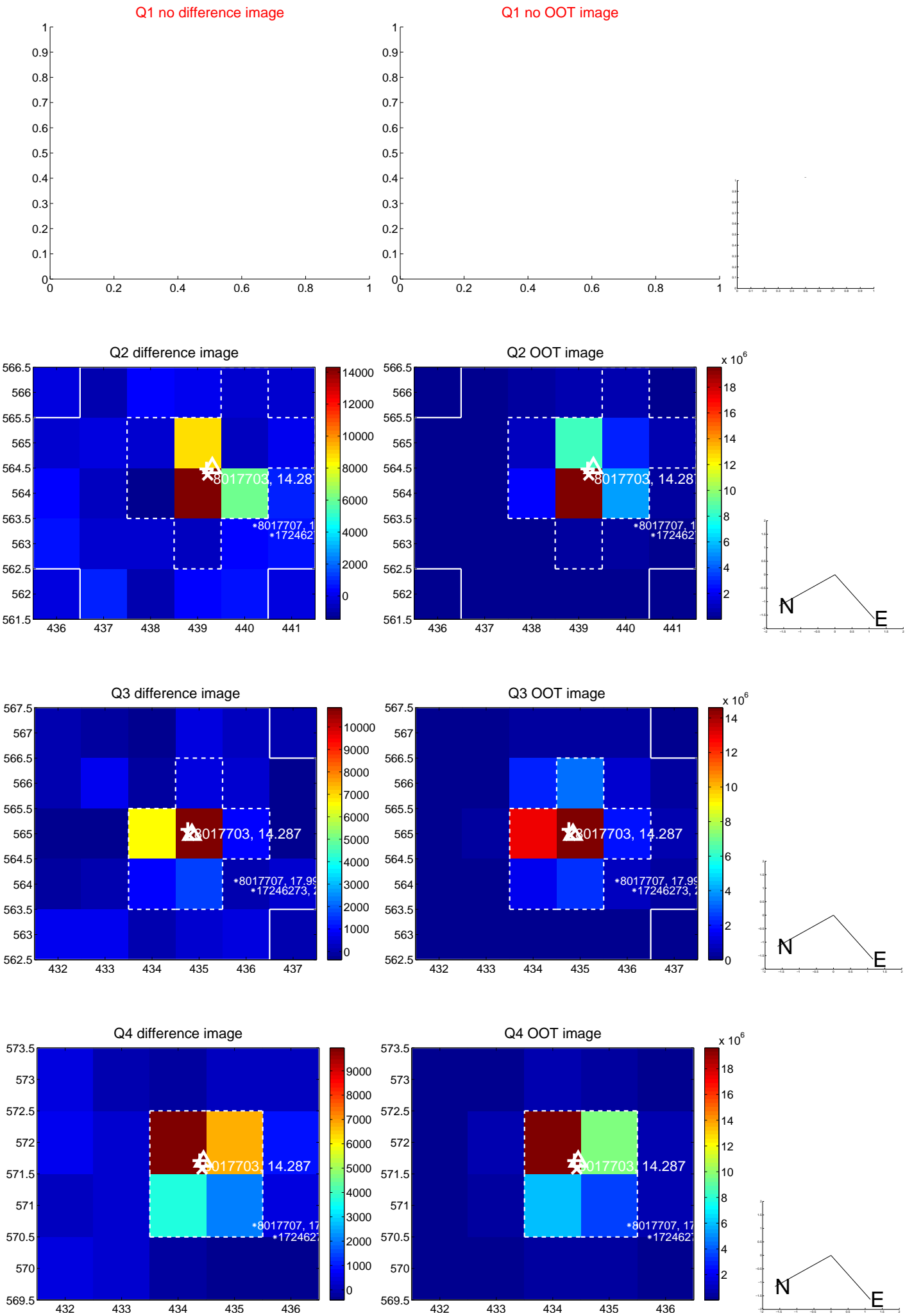
The direct PRF centroid is offset from the target star catalog position by about 0.65 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.207 ± 0.137	1.52	0.155 ± 0.124	-0.137 ± 0.143
PRF-fit source offset from KIC position	0.478 ± 0.135	3.54	-0.354 ± 0.130	-0.321 ± 0.153
photometric centroid source offset	0.47 ± 0.33	1.44	-0.37 ± 0.31	-0.28 ± 0.35

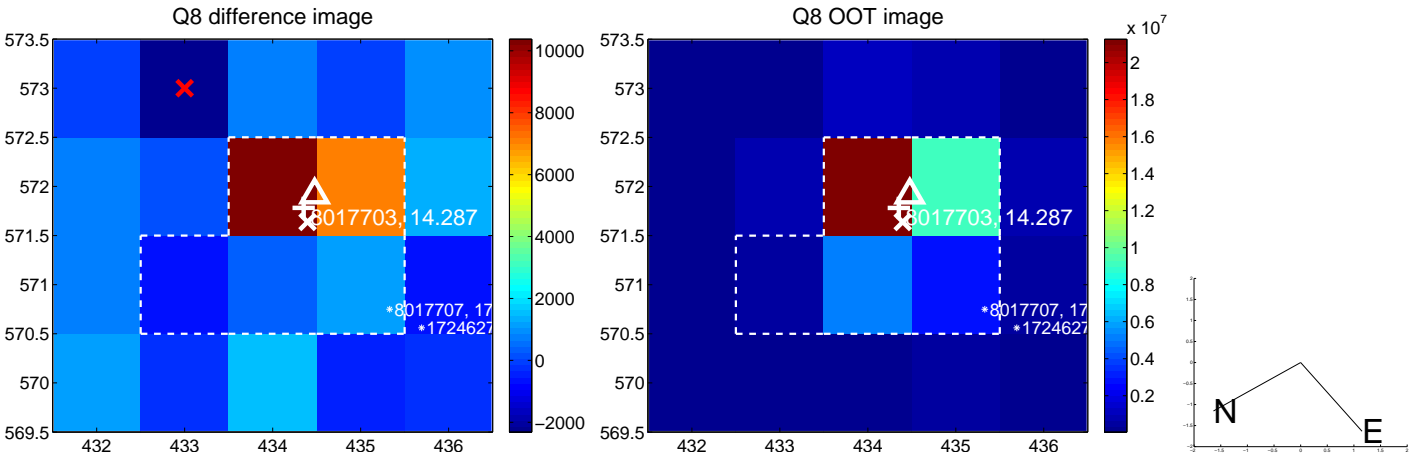
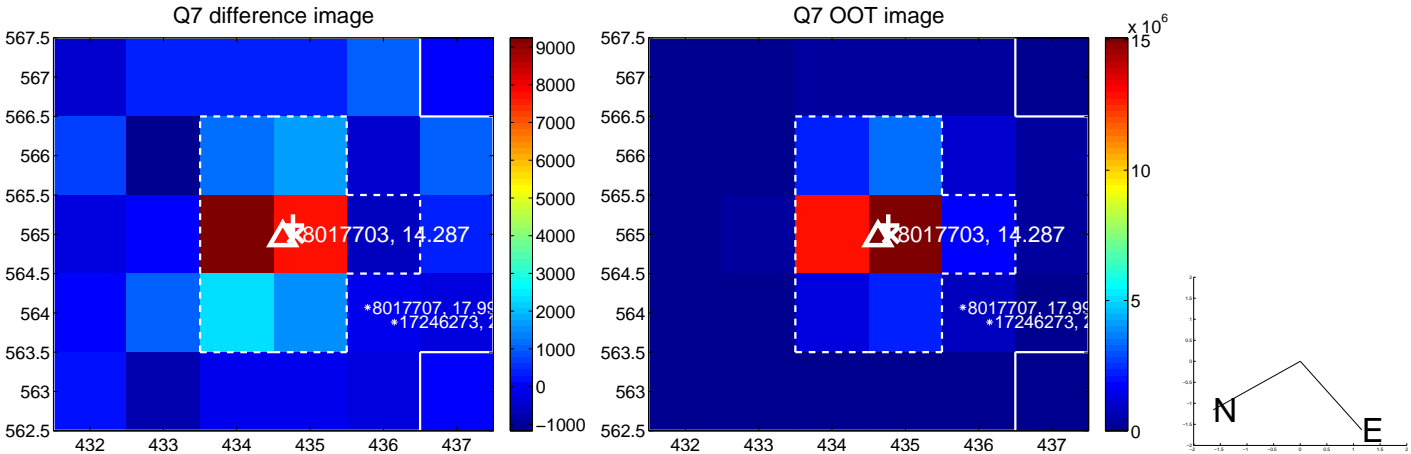
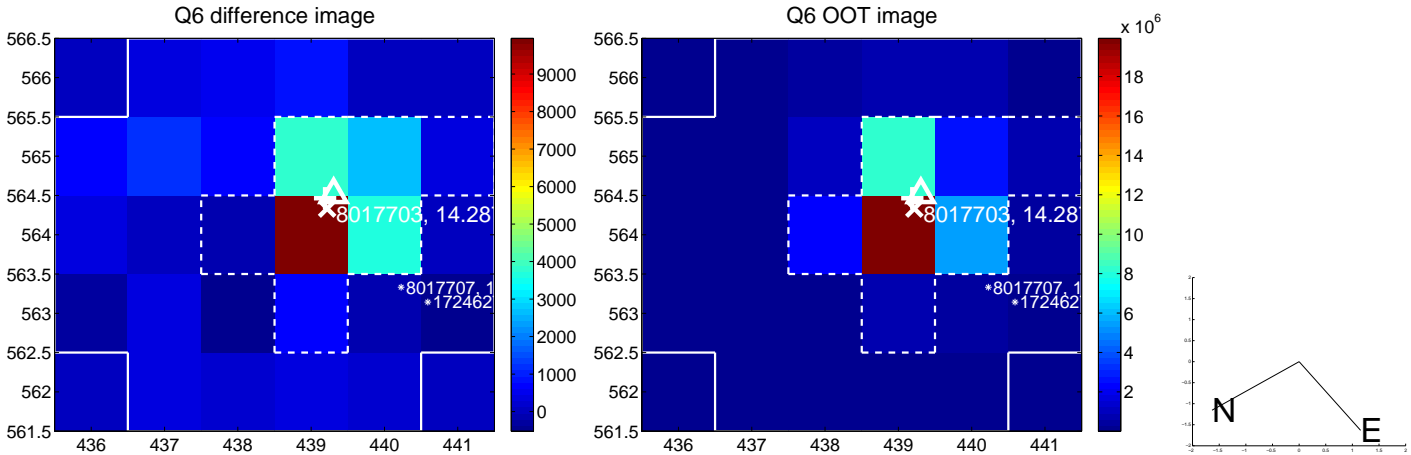
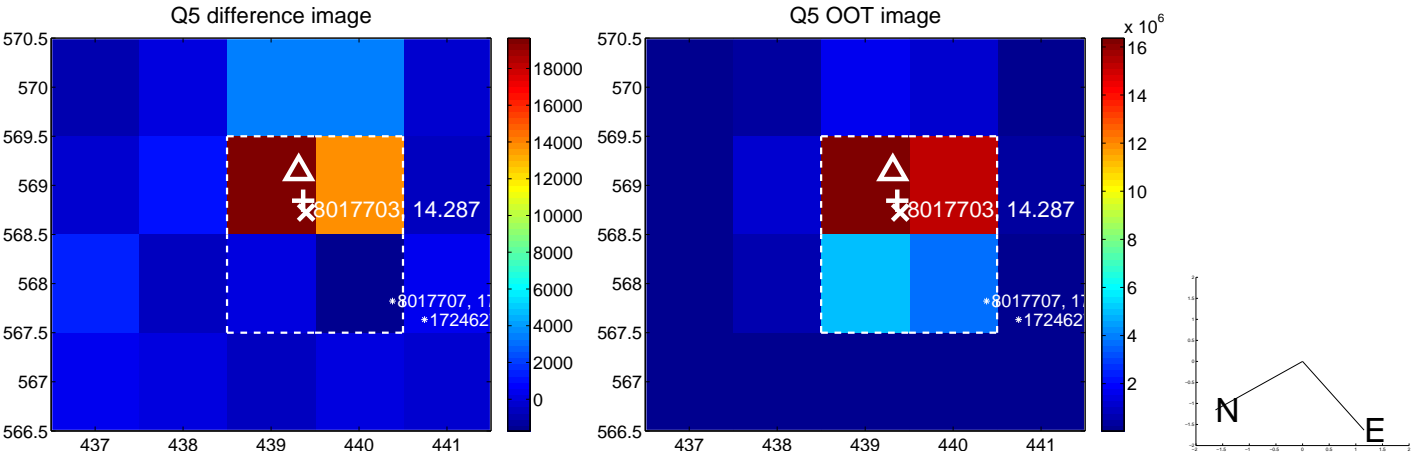


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

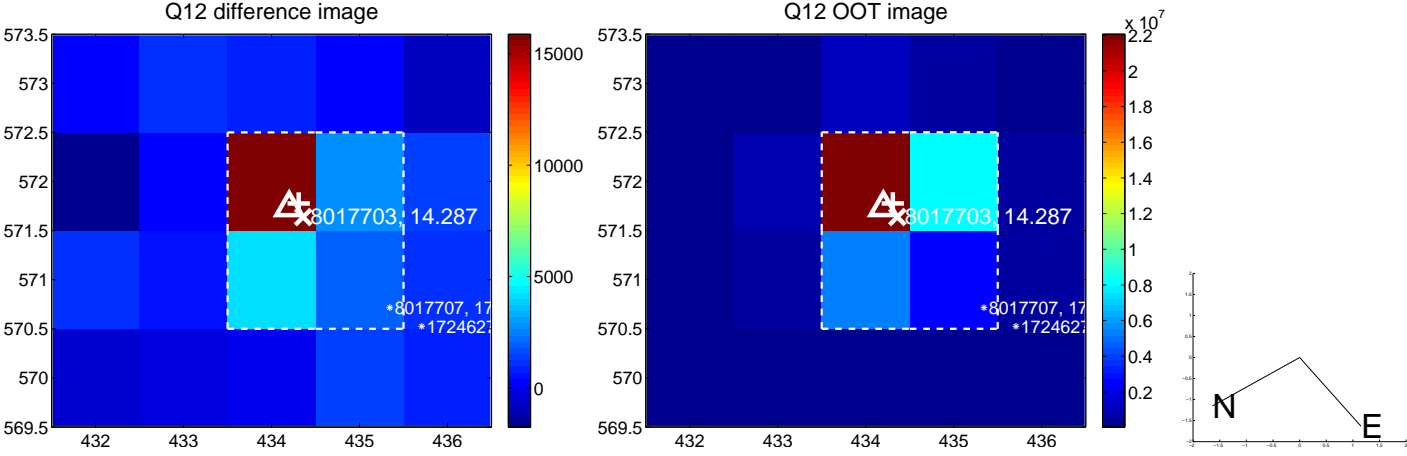
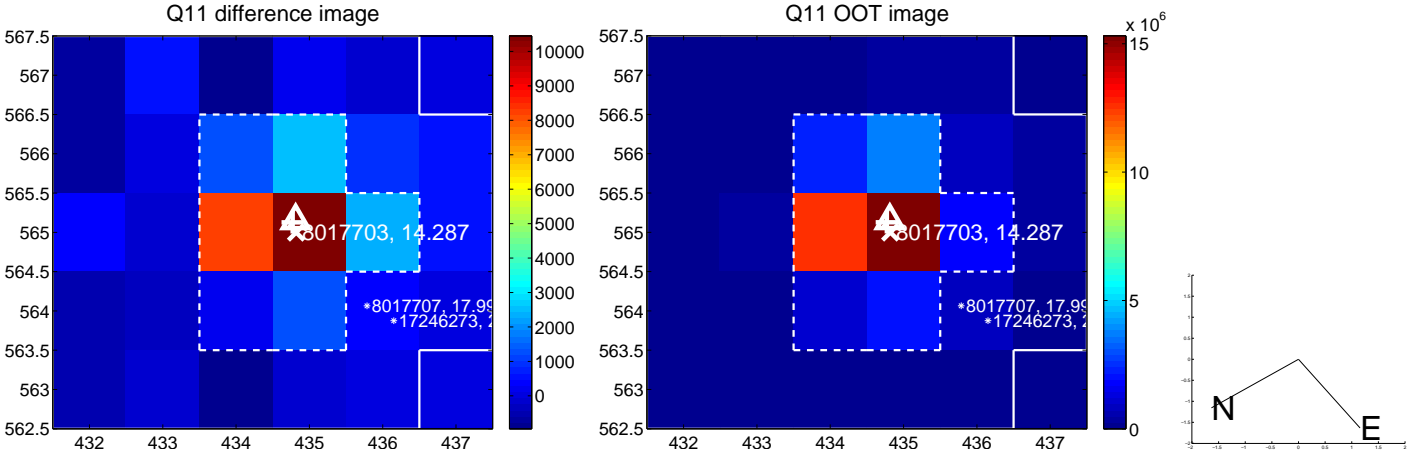
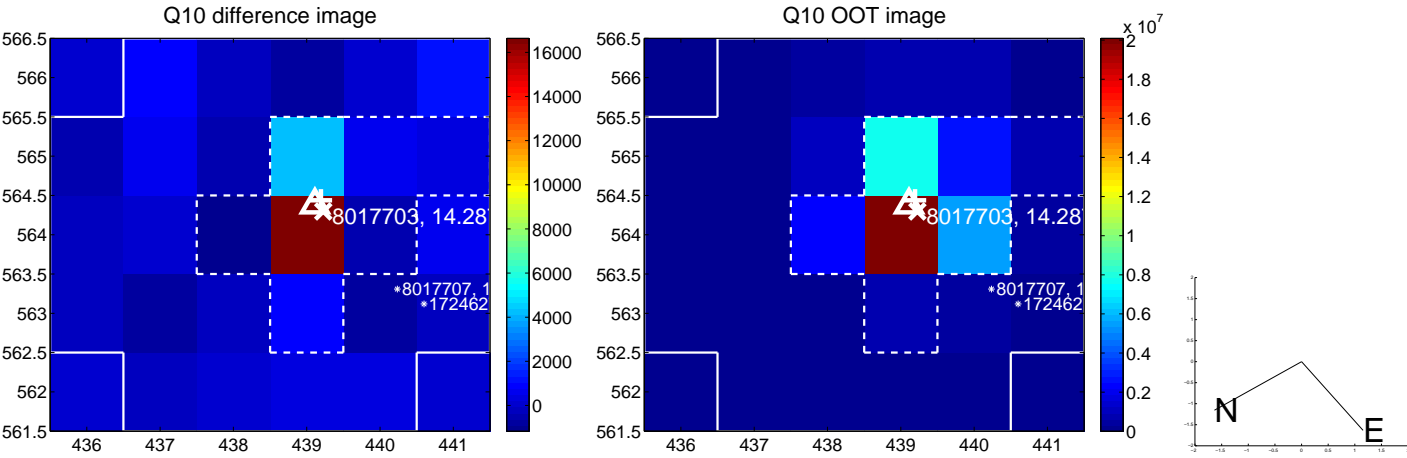
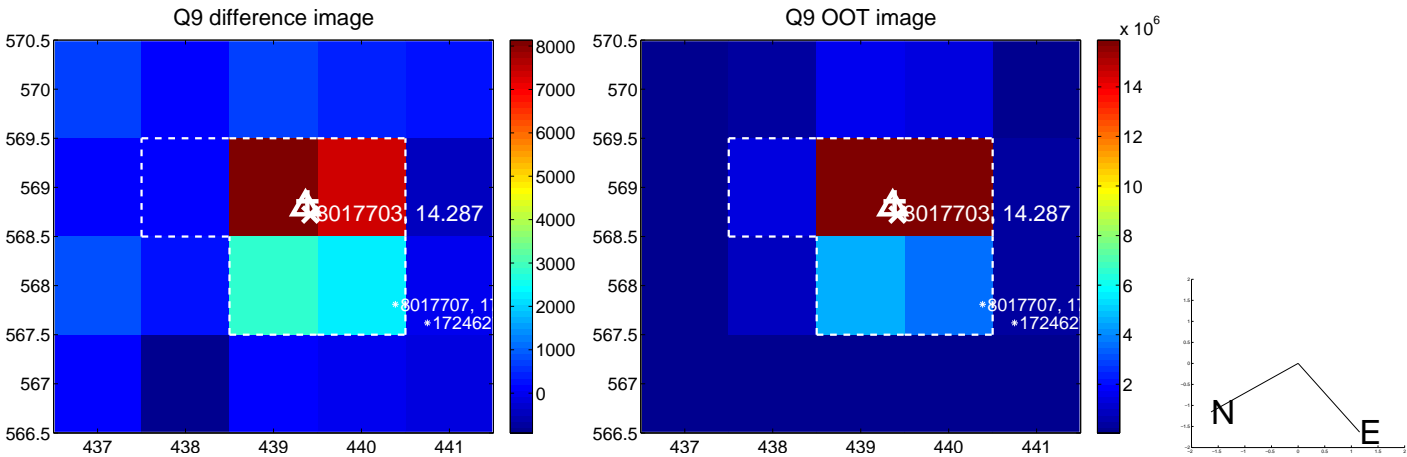
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



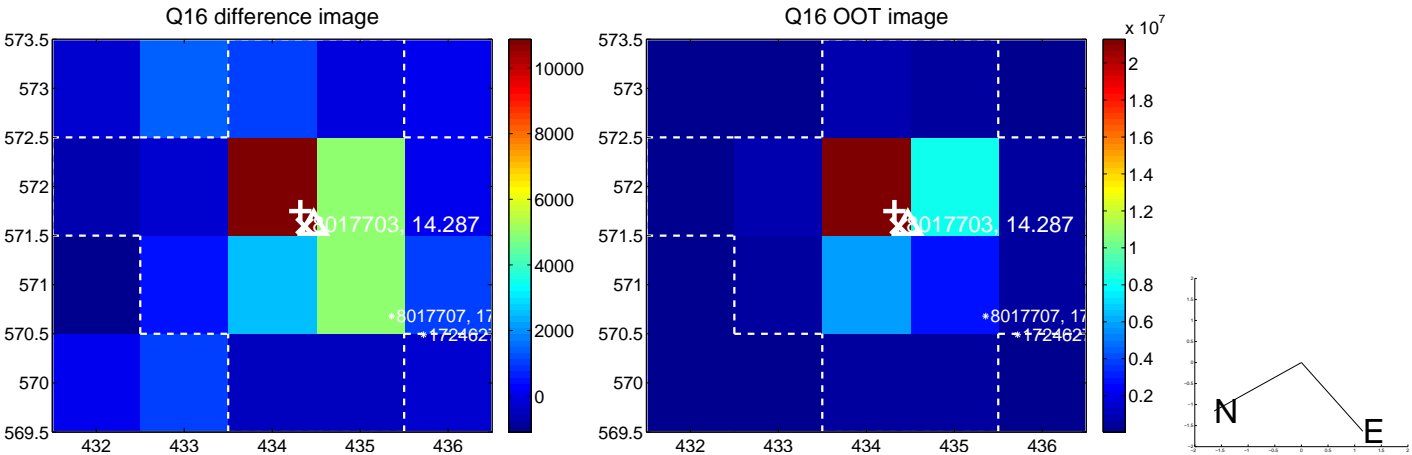
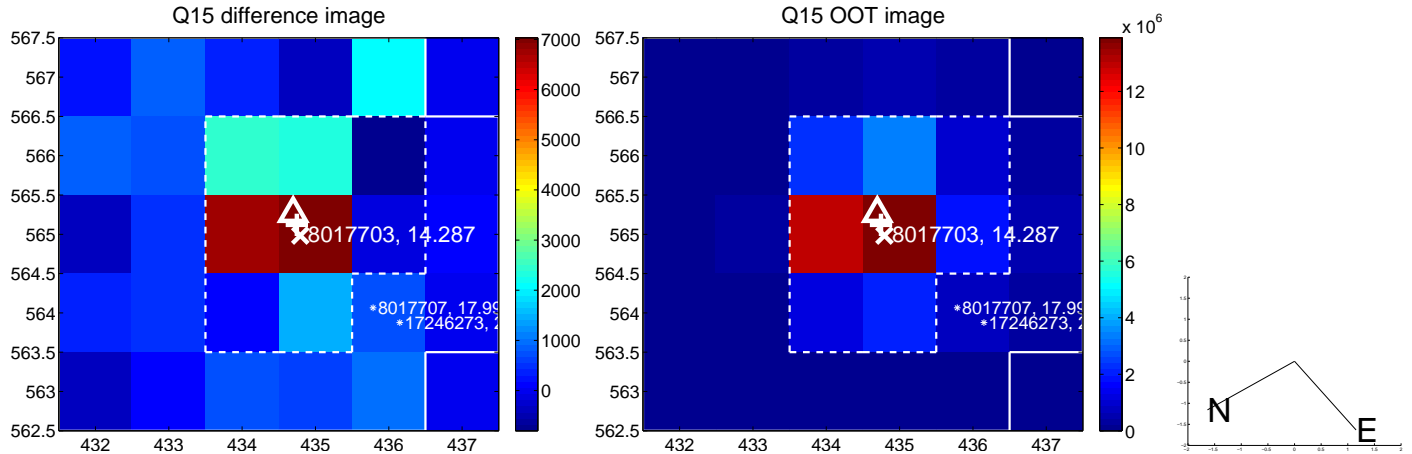
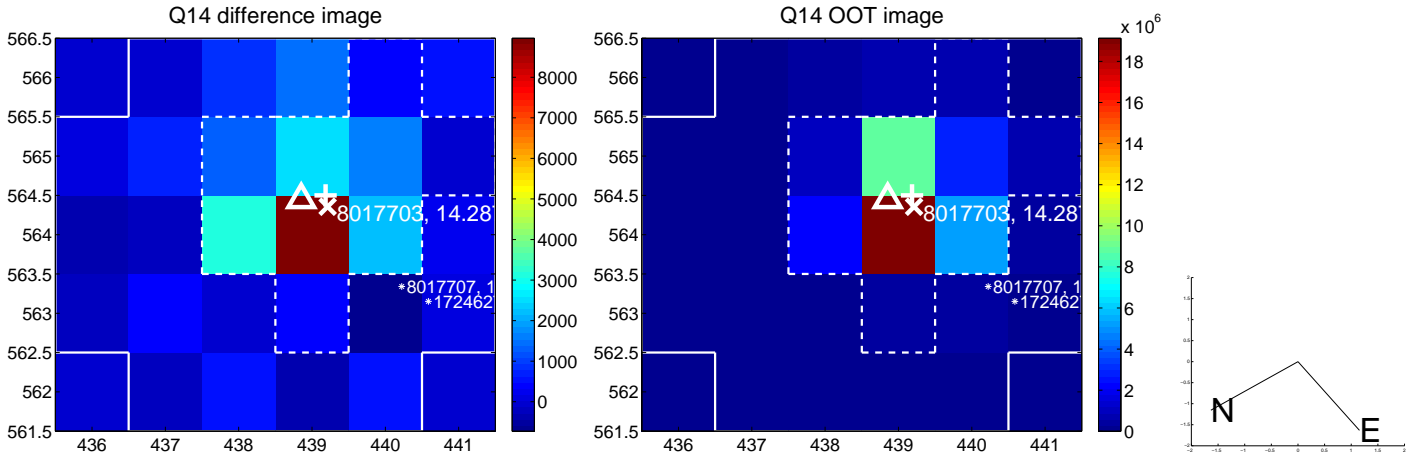
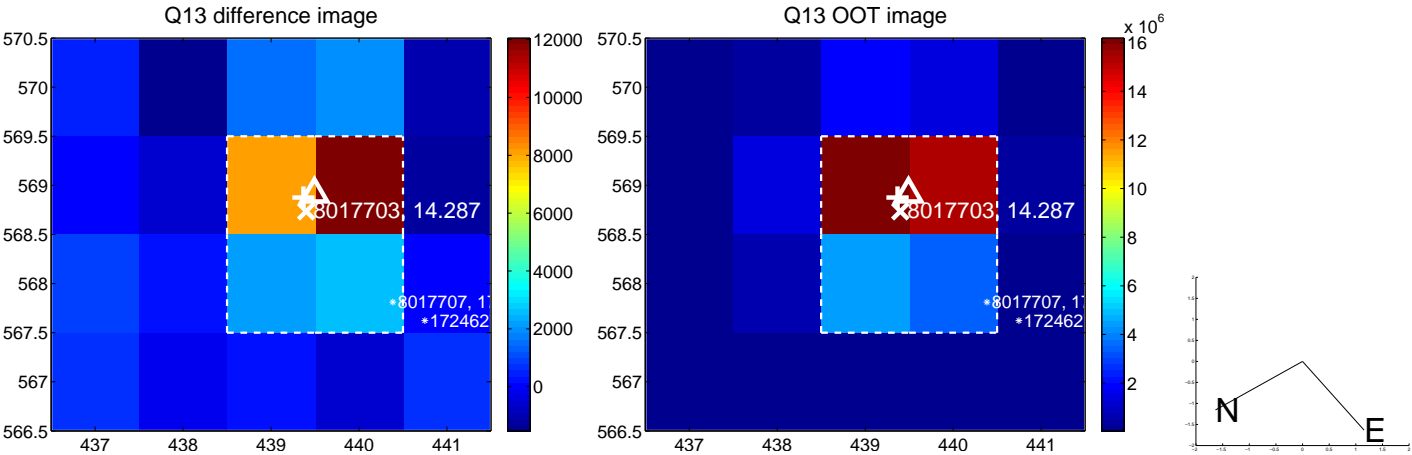
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



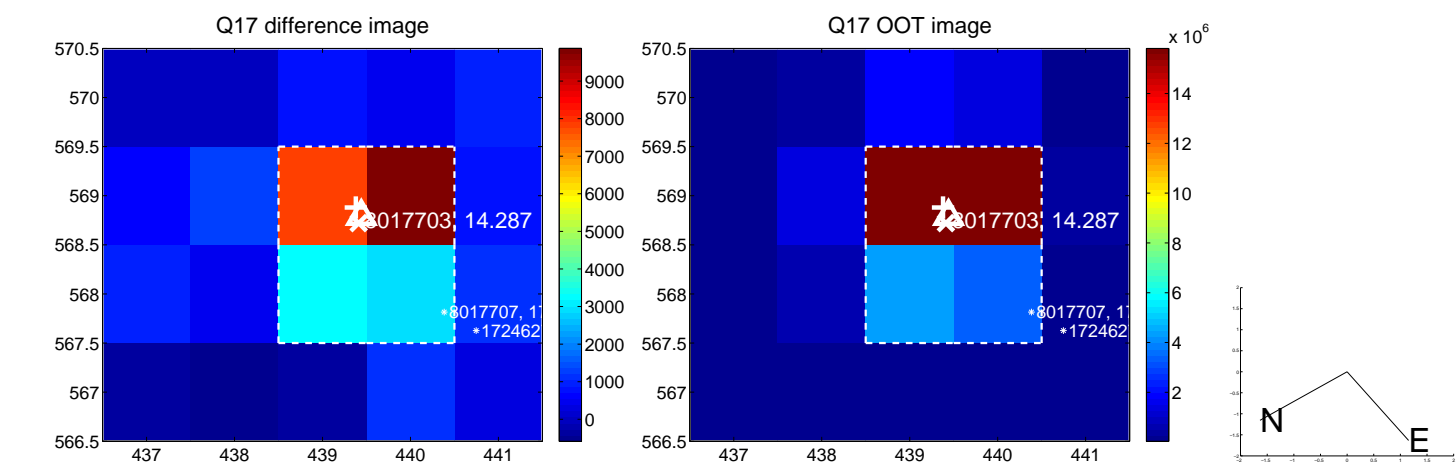
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



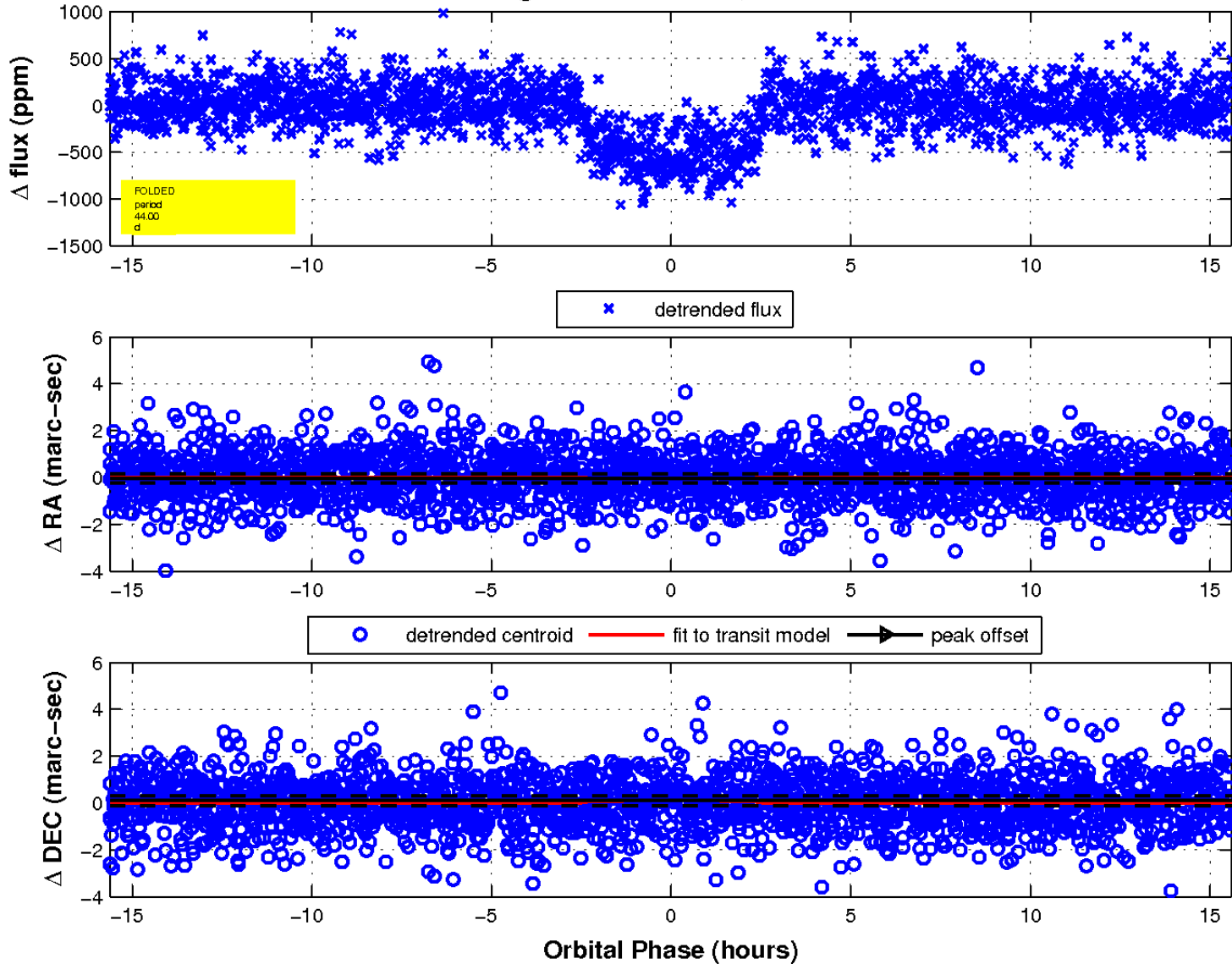
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

