

KIC 004843592

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})
004843592-01	OBS	No	0.967056	132.094299	130.2	1.016	10.5	14.0	1.02	5755	1.40	2875.90
004843592-02	OBS	4683.01	0.967052	131.611055	100.7	1.052	9.2	11.3	1.02	5755	1.23	2875.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004843592-01	OBS	FP	0.00	1	0	1	0	MOD_NONUNIQ_ALT—CENT_UNRESOLVED_OFFSET
004843592-02	OBS	FP	0.00	1	0	1	0	MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_UNRESOLVED_OFFSET

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 004843592-01

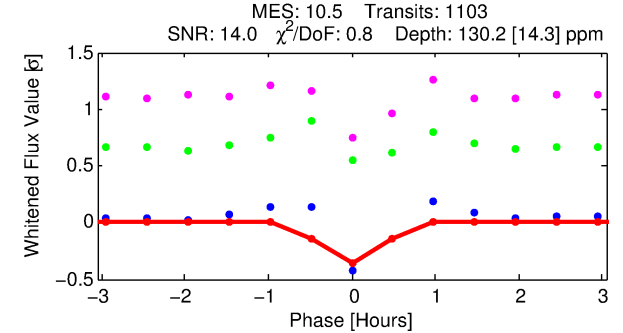
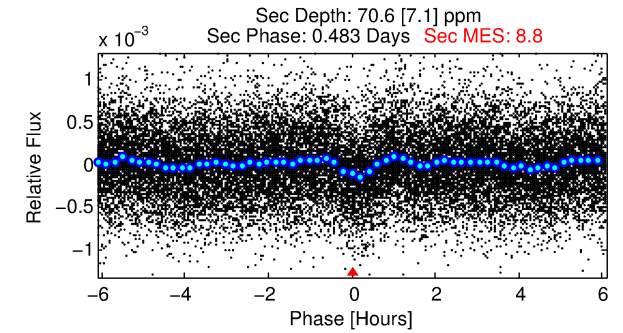
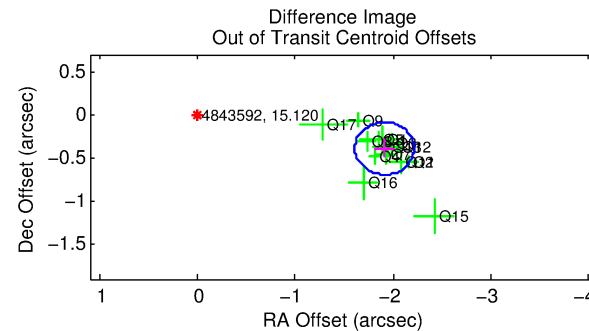
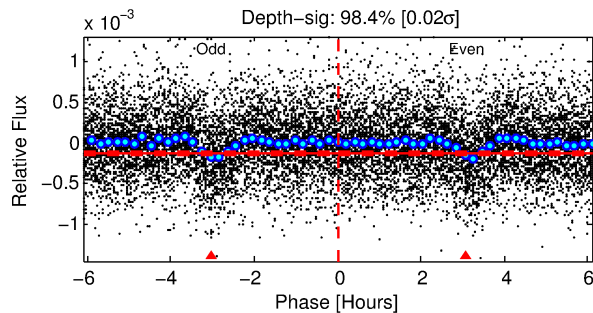
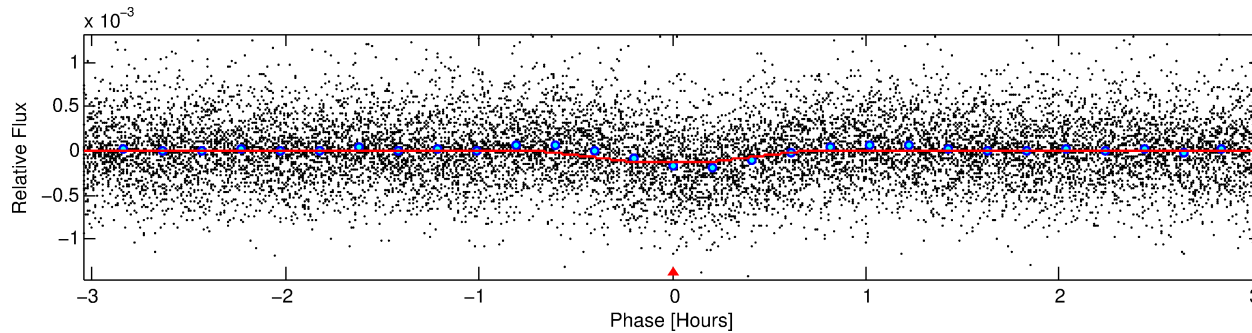
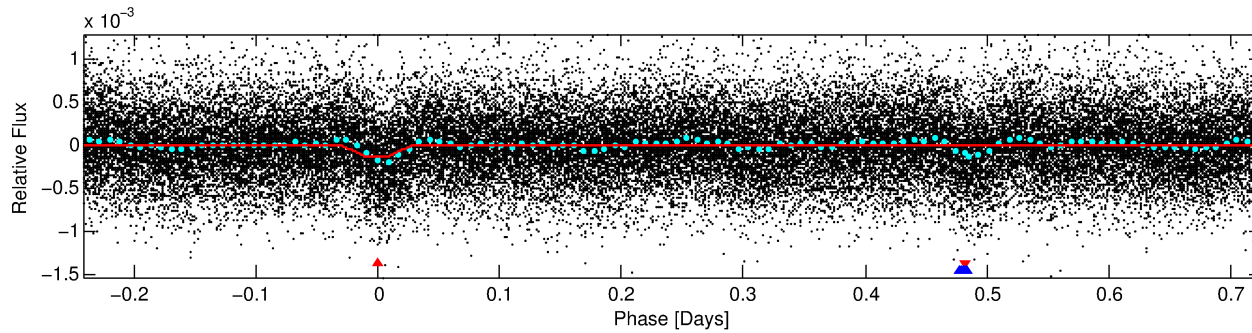
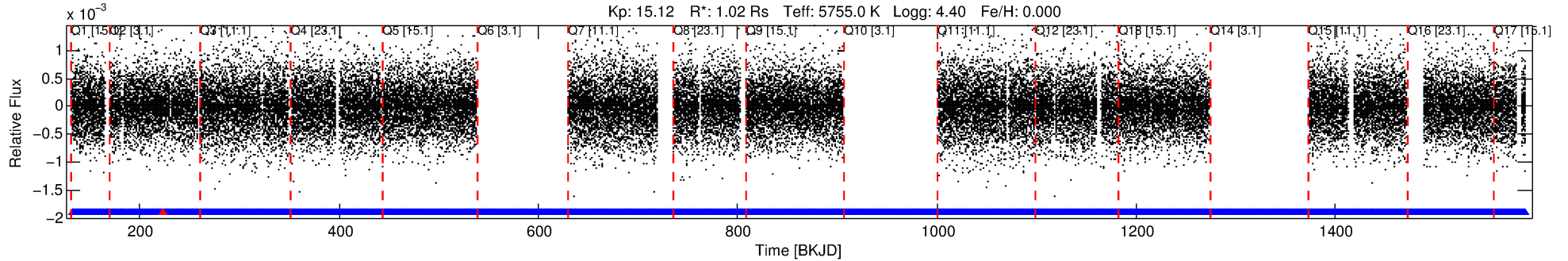
No Significant Match Found

DV One-Page Summary

KIC: 4843592 Candidate: 1 of 2 Period: 0.967 d

KOI: K04683 Corr: No Ephemeris Match

Kp: 15.12 R*: 1.02 Rs Teff: 5755.0 K Logg: 4.40 Fe/H: 0.000



DV Fit Results:

Period = 0.96706 [0.00001] d
Epoch = 132.0943 [0.0013] BKJD
Rp/R* = 0.0126 [0.0085]
a/R* = 3.46 [10.24]
b = 0.90 [0.68]
Seff = 2875.90 [1083.14]
Teq = 1867 [176] K
Rp = 1.40 [1.03] Re
a = 0.0189 [0.0045] AU
Ag = 7.03 [9.85] [0.61σ]
Teffp = 4701 [1601] K [1.76σ]

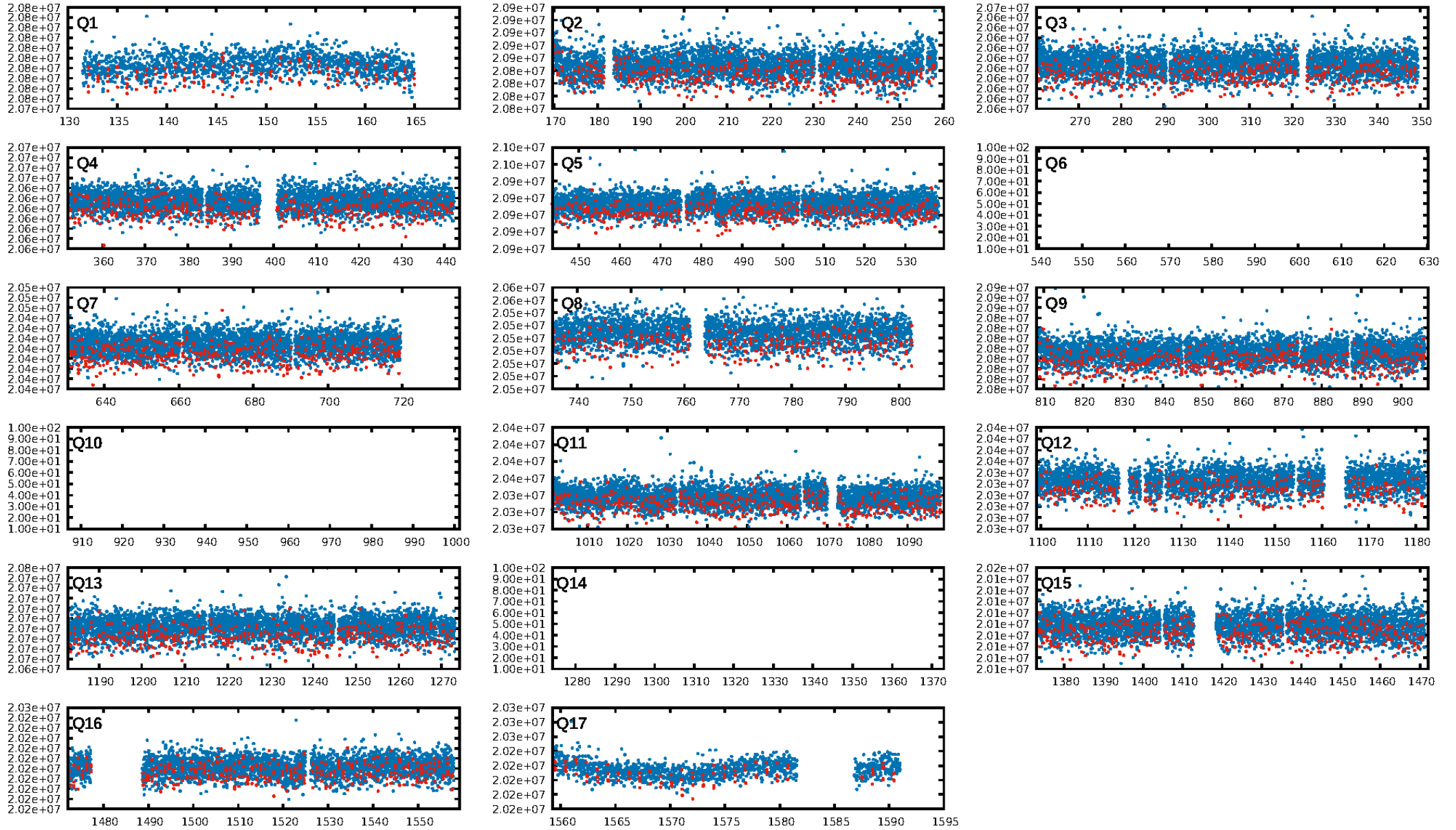
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.40e-26
RollingBand-fgt: 1.00 [1040/1041]
GhostDiagnostic-chr: 1.232
Centroid-sig: 0.0%
Centroid-so: 9.546 arcsec [9.73σ]
OotOffset-rm: 1.950 arcsec [19.34σ]
KicOffset-rm: 2.049 arcsec [18.96σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

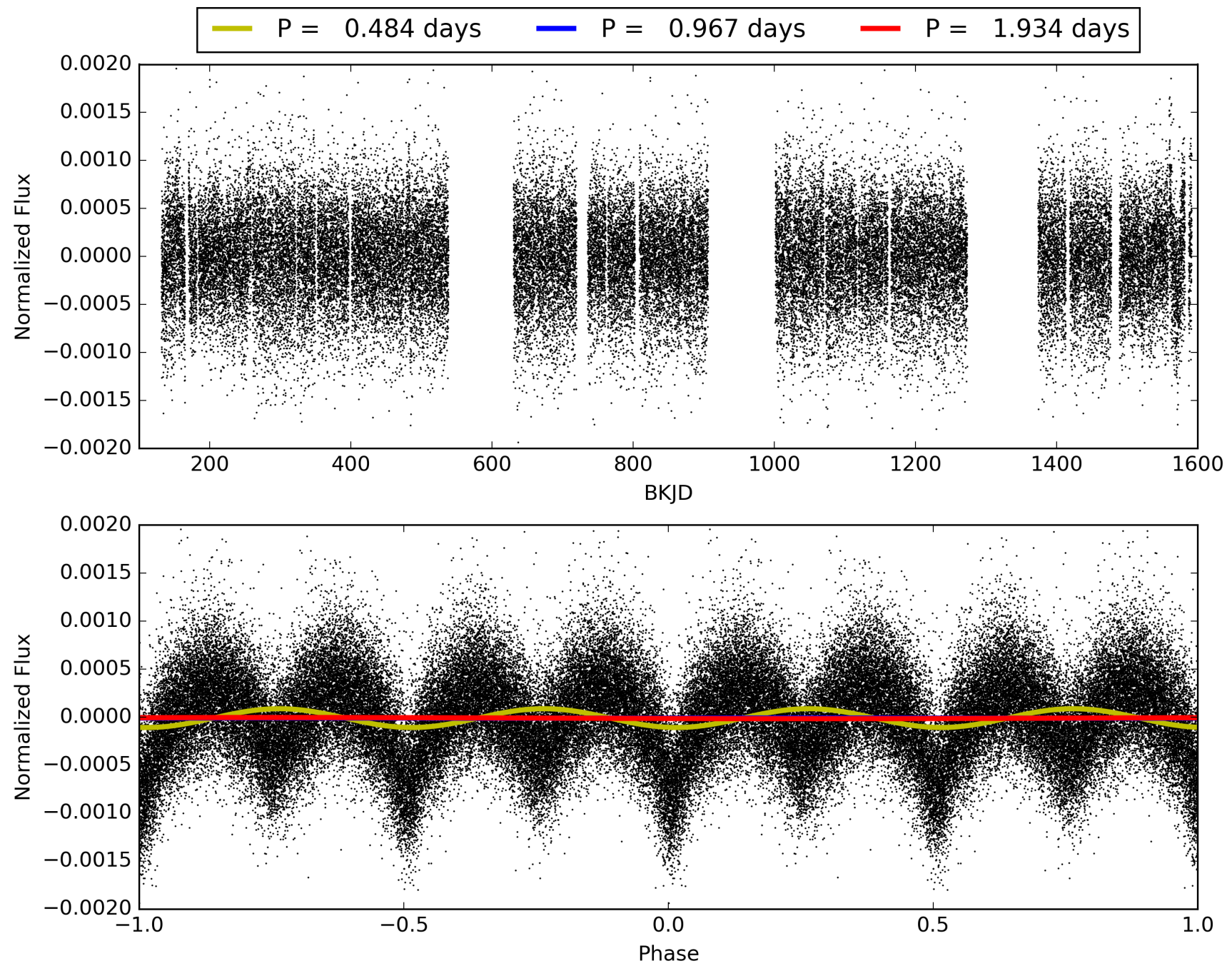
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:50:24 Z

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

TCE 004843592-01, PDC Light Curves

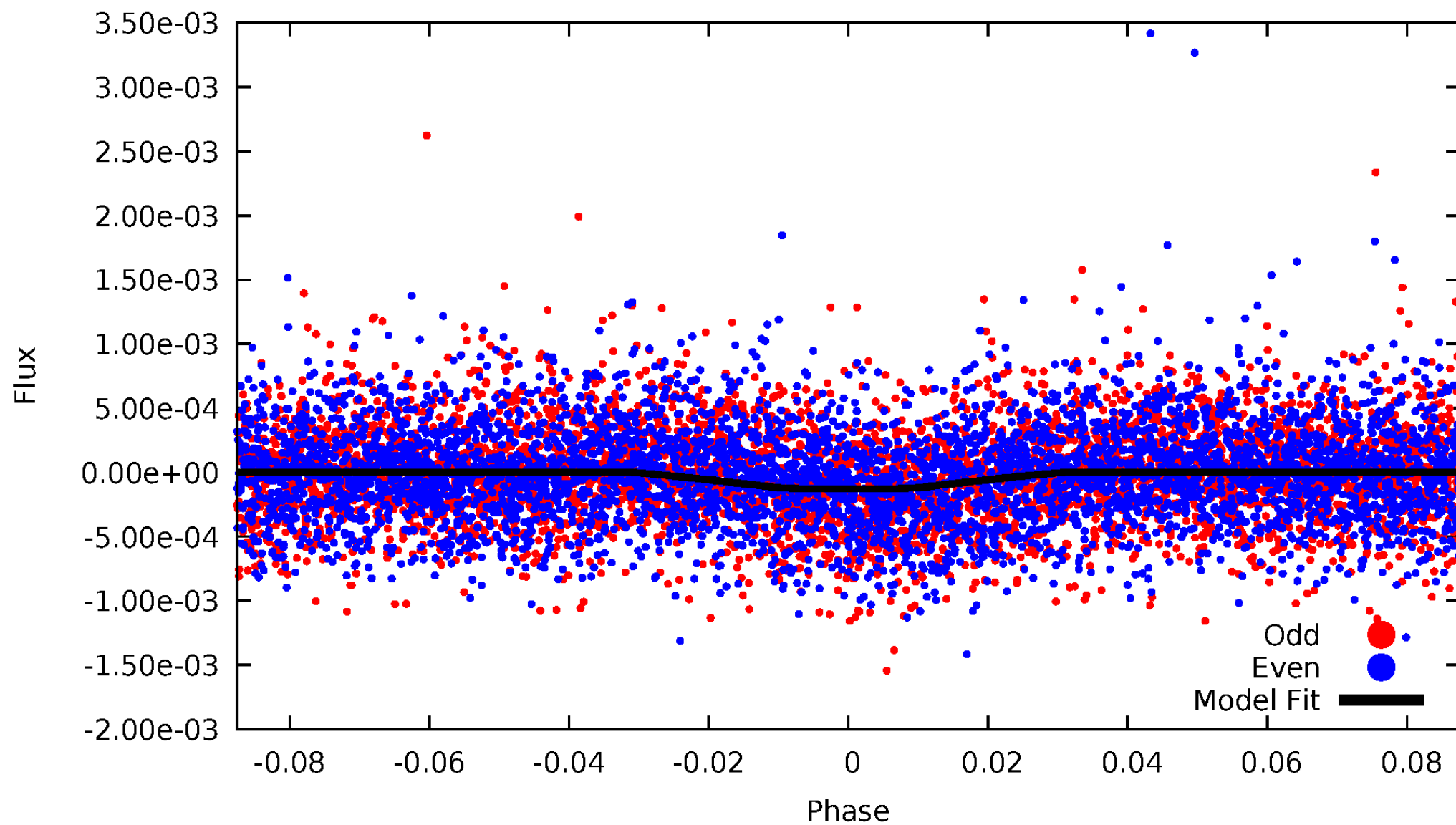


TCE 004843592-01



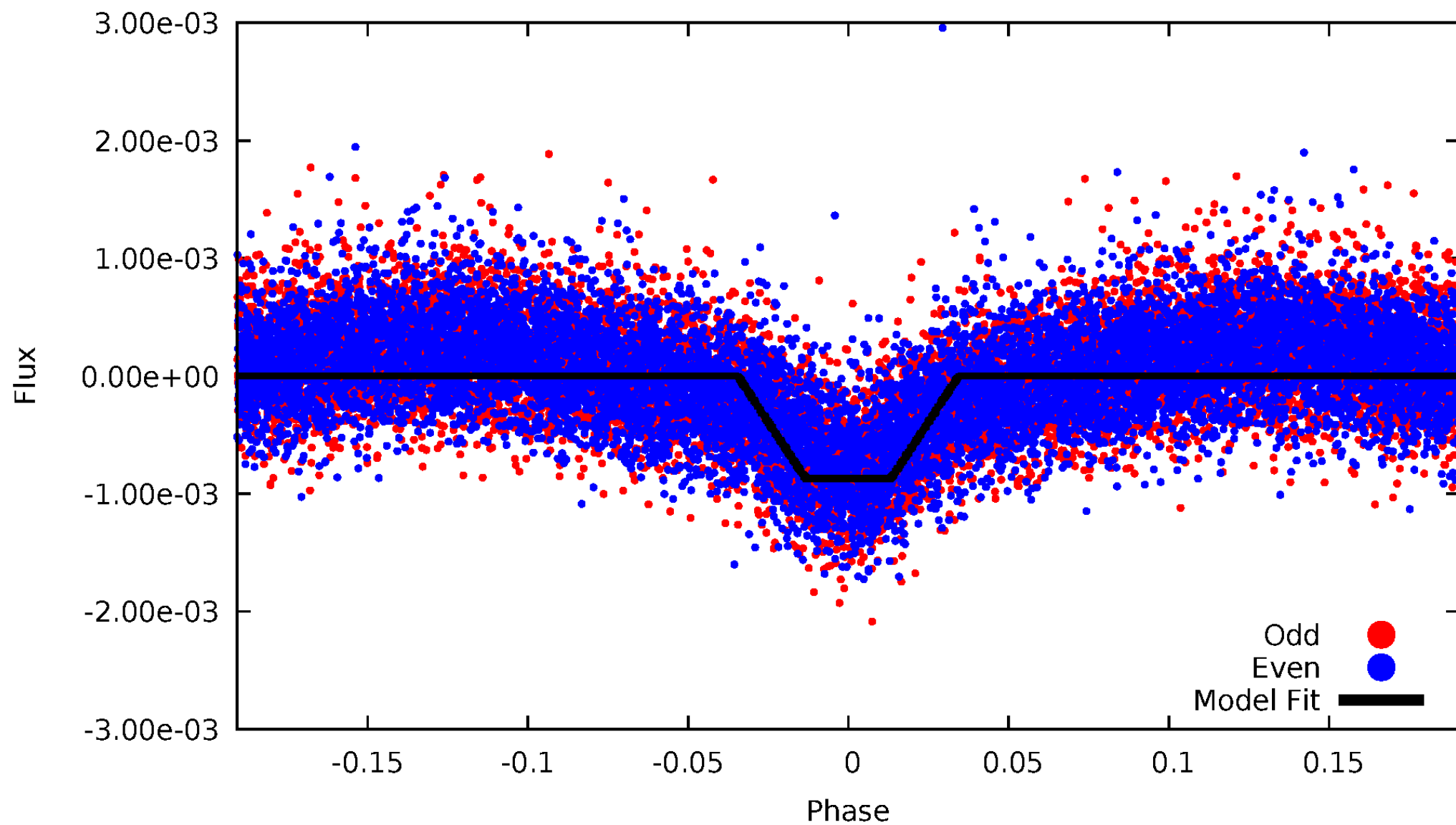
DV Odd/Even

TCE 004843592-01



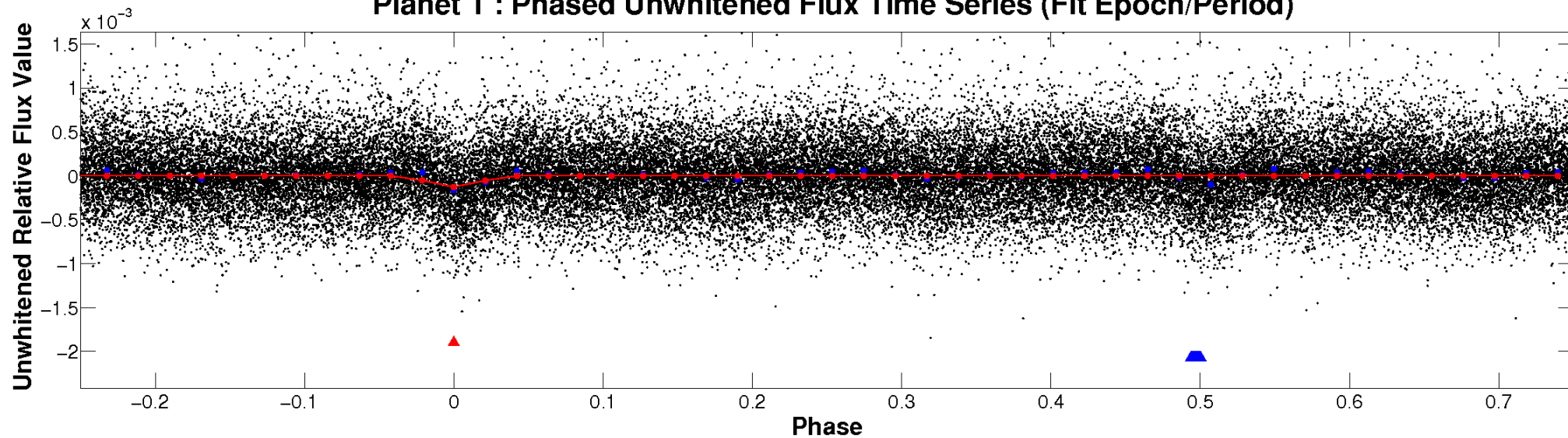
ALT Odd/Even

TCE 004843592-01

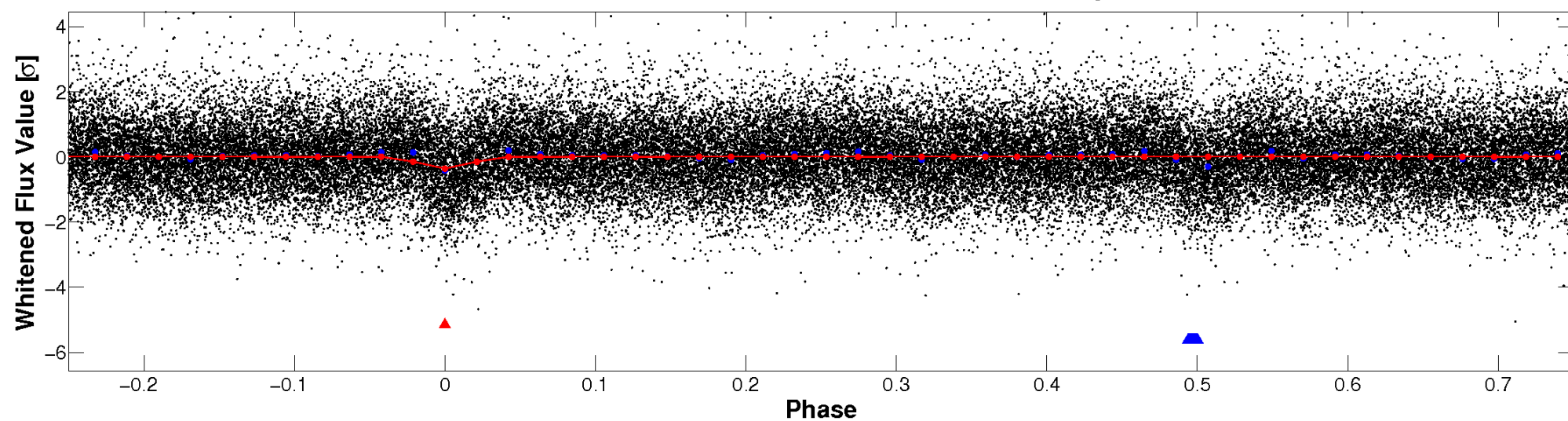


Non-Whitened Vs. Whitened Light Curve

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

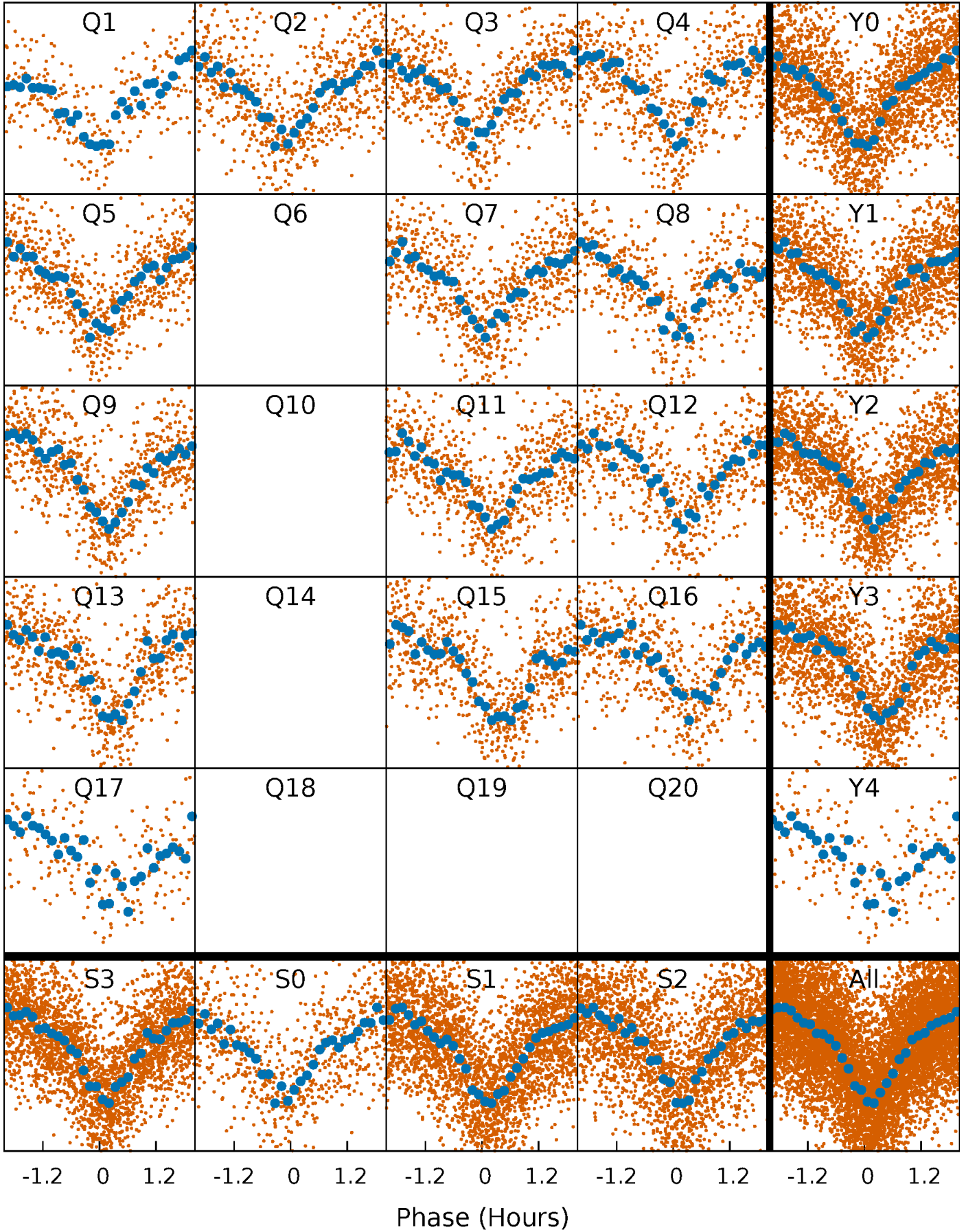


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



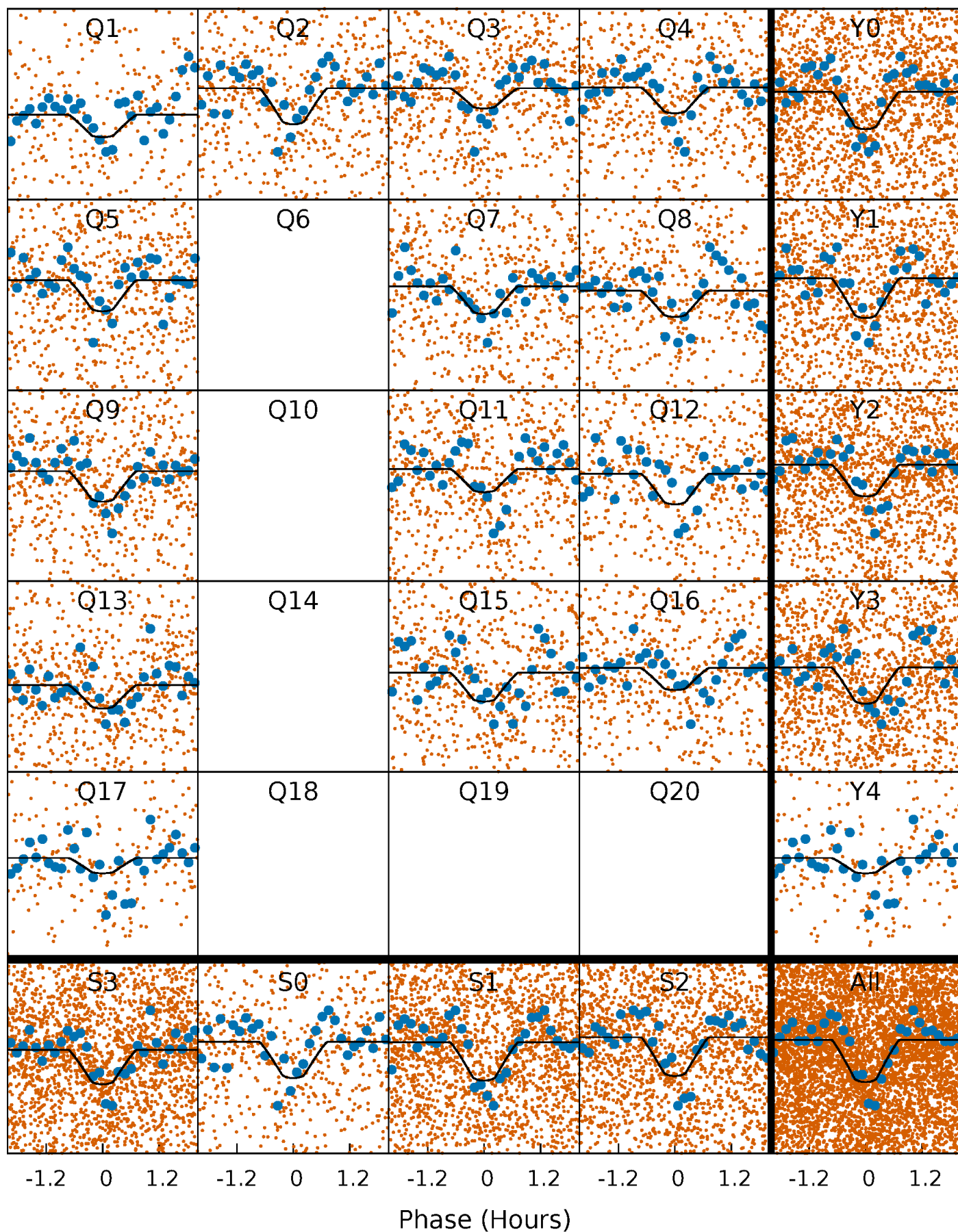
PDC Quarter-Phased Transit Curves

TCE 004843592-01 P= 0.967056 Days $T_0=132.094299$ (BKJD)



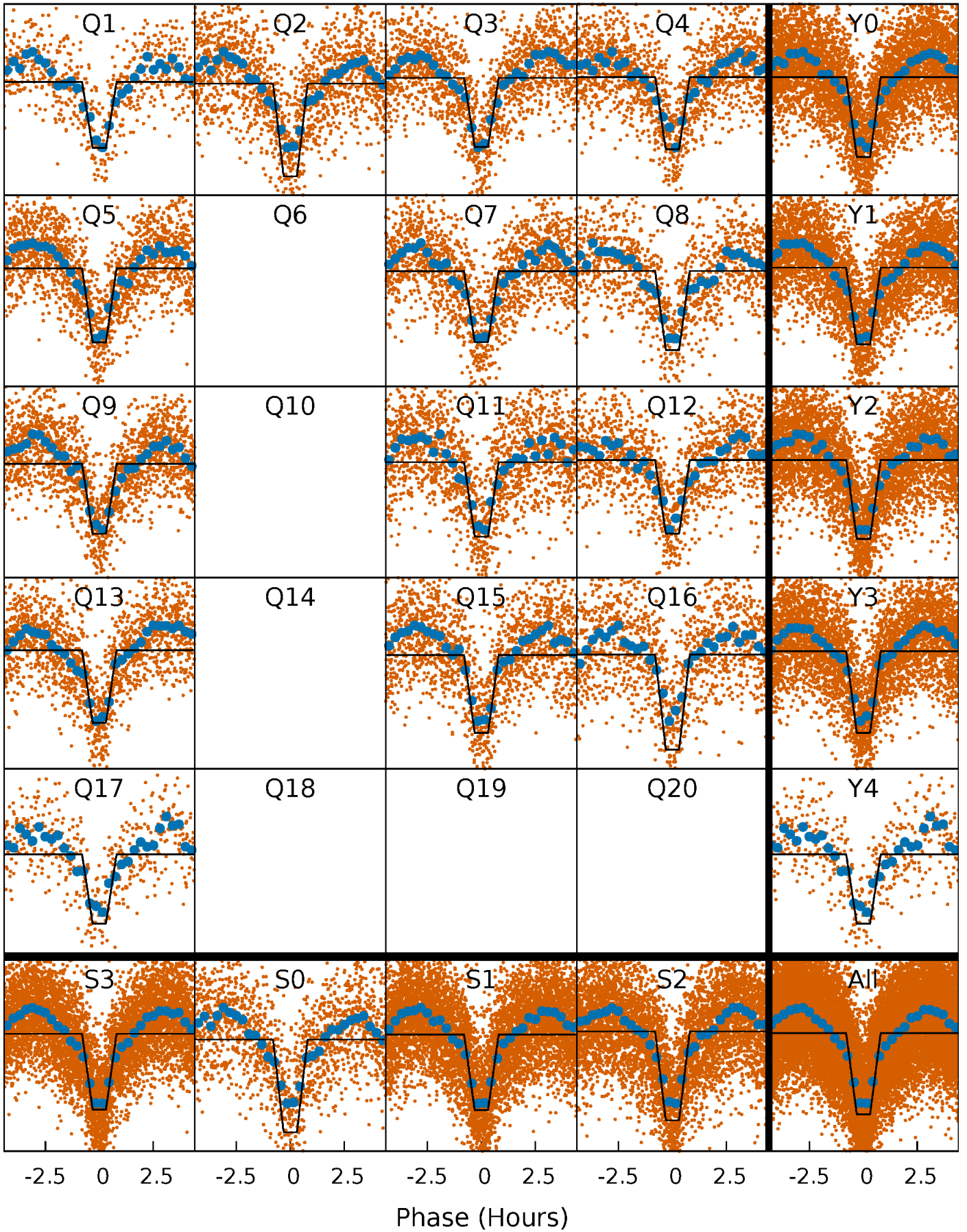
DV Quarter-Phased Transit Curves

TCE 004843592-01 P= 0.967056 Days $T_0=132.094299$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

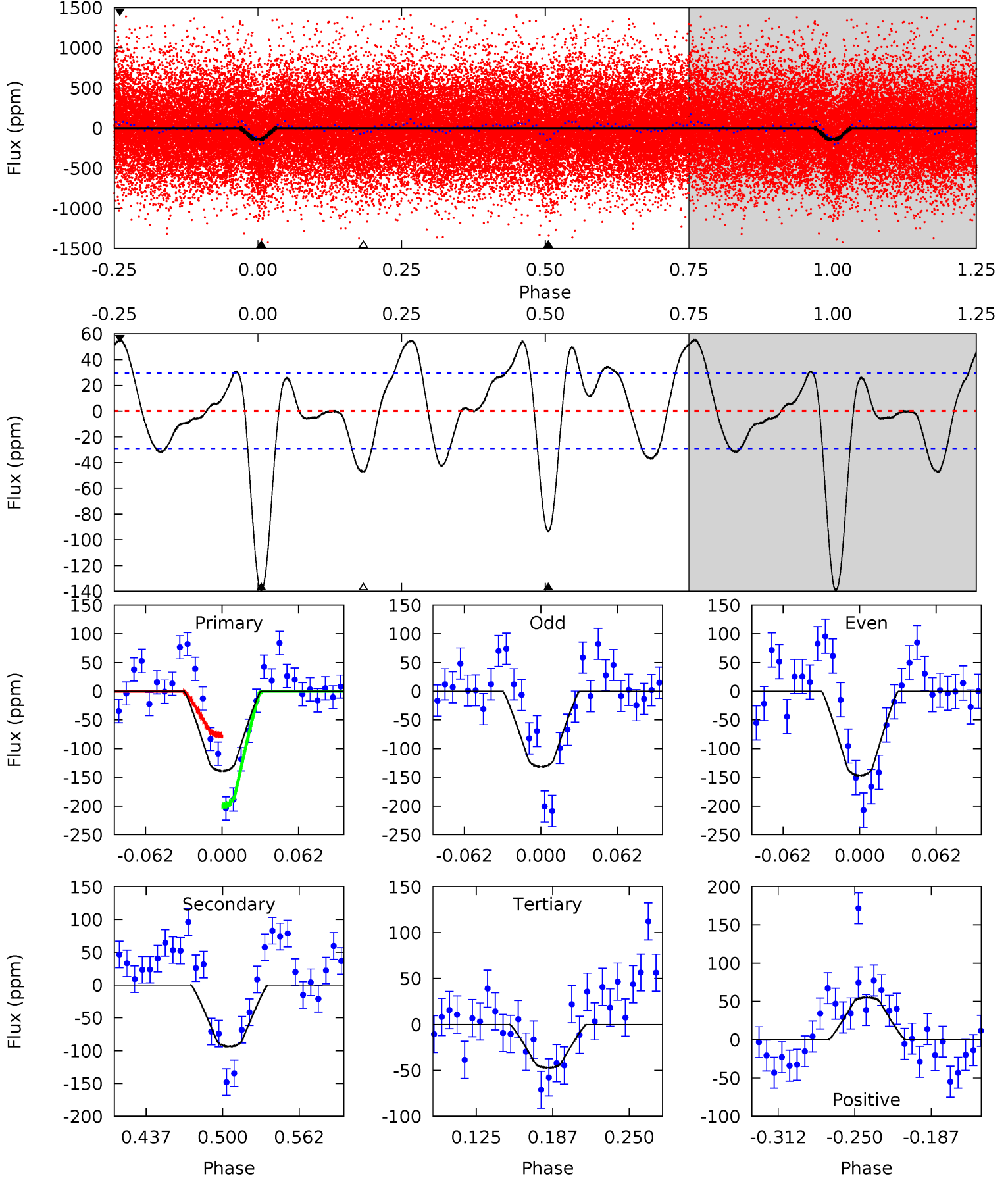
TCE 004843592-01 P= 0.967073 Days $T_0=132.088488$ (BKJD)



DV Model-Shift Uniqueness Test

004843592-01, P = 0.967056 Days, E = 131.127243 Days

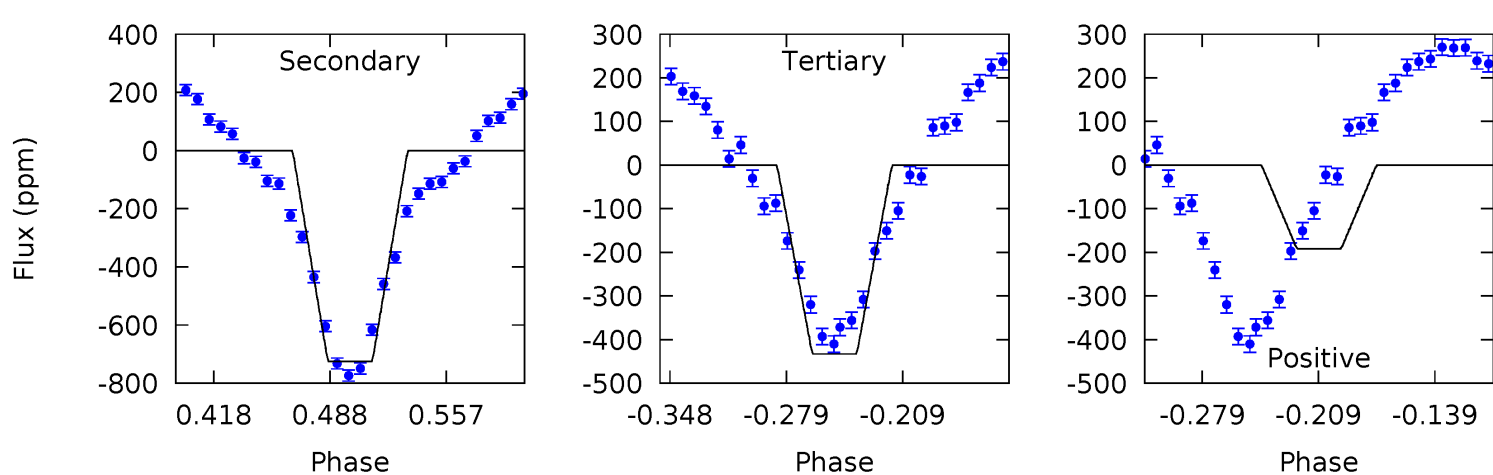
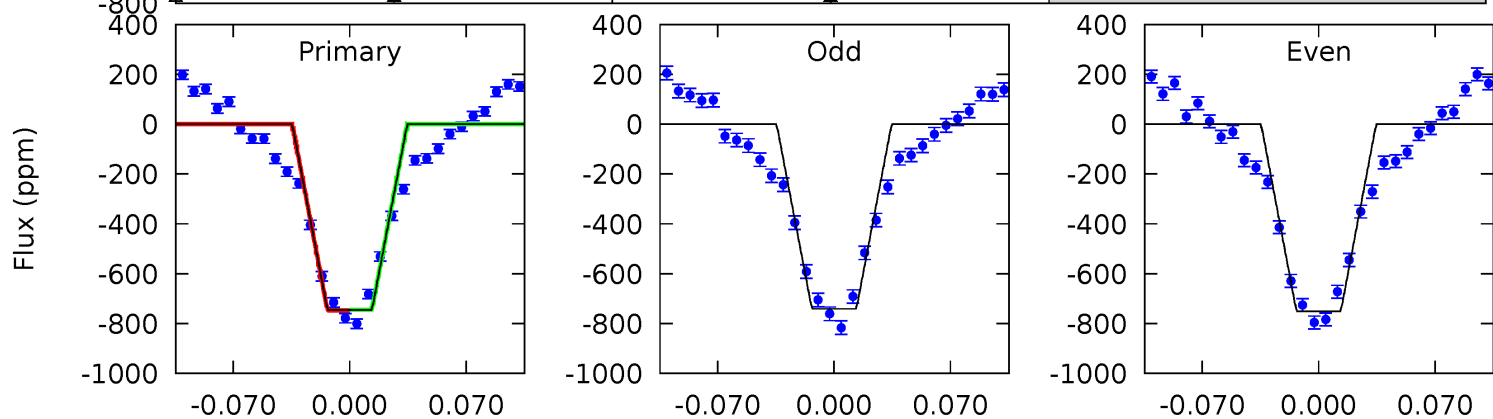
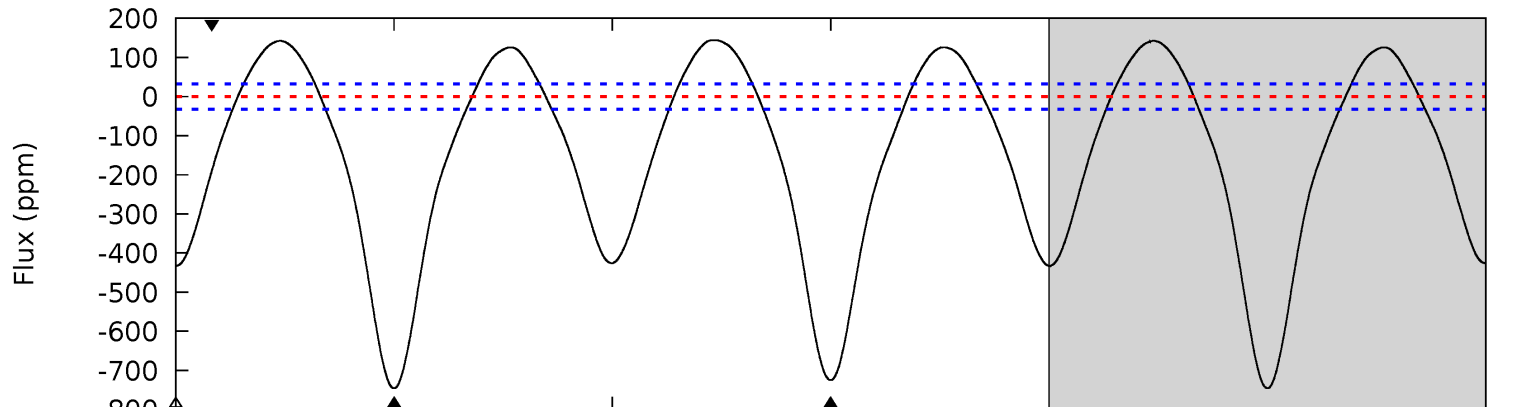
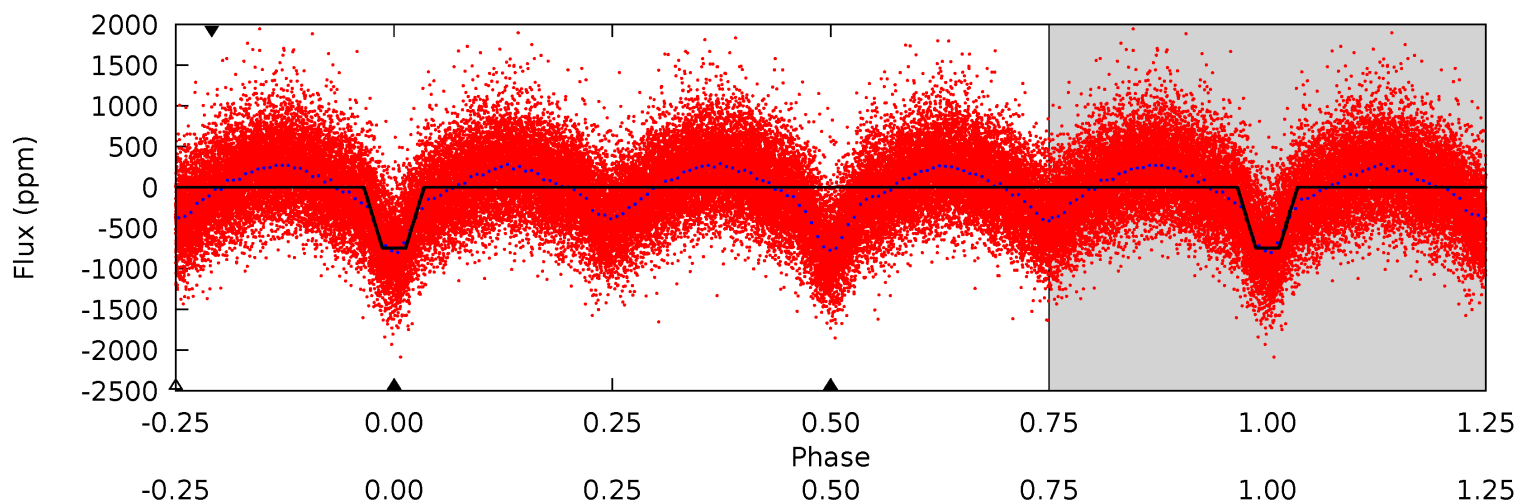
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.1	14.9	7.48	8.80	4.66	1.86	4.19	14.6	13.3	7.39	6.08	1.20	0.98	0.28	9.82



Alt Model-Shift Uniqueness Test

004843592-01, P = 0.967073 Days, E = 131.121415 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
106.5	103.6	61.8	-27.3	4.64	1.81	25.2	44.7	133.9	41.7	130.9	0.62	0.99	0.16	0.19



Stellar Parameters For KIC 004843592

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5755^{+156}_{-190}	$4.402^{+0.105}_{-0.195}$	$0.000^{+0.250}_{-0.300}$	$1.022^{+0.286}_{-0.132}$	$0.960^{+0.125}_{-0.102}$	$1.268^{+0.688}_{-0.600}$
	+3%/-3%	+2%/-4%	+inf%/-inf%	+28%/-13%	+13%/-11%	+54%/-47%
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 004843592-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-94 ± 6	$1.53^{+1.01}_{-0.81}$	2627^{+168}_{-143}	4893^{+2077}_{-870}	$7.795^{+25.650}_{-4.936}$
Alt.	-725 ± 7	$3.40^{+1.04}_{-1.01}$	2630^{+183}_{-141}	5480^{+929}_{-615}	12^{+12}_{-5}

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

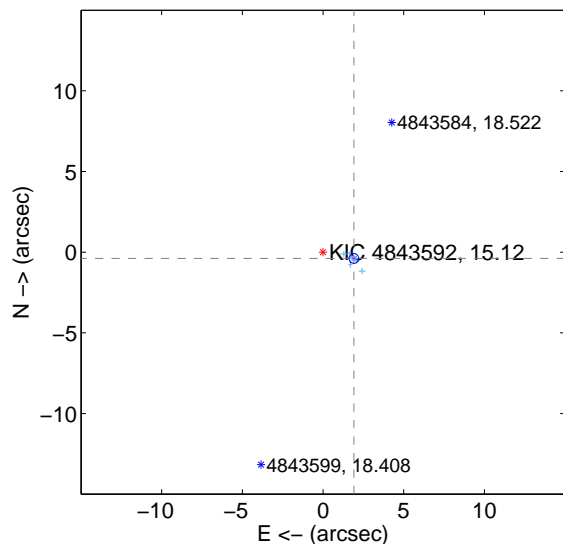
Supplemental centroid analysis for 004843592-01. Kepler magnitude: 15.12. Transit SNR 14.03

There are 14 quarters with good PRF difference image offsets

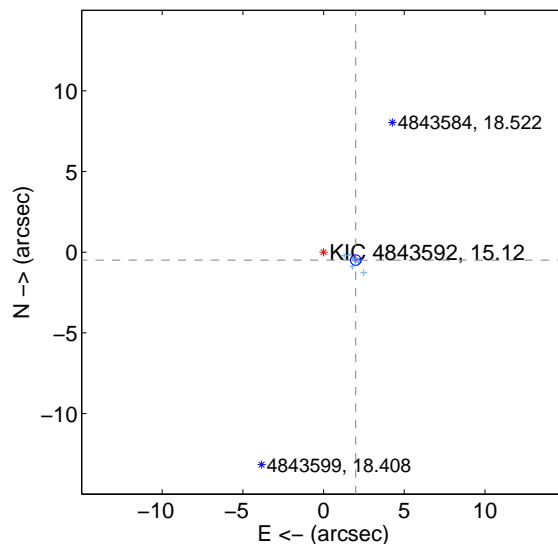
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.950 ± 0.101	19.34	-1.910 ± 0.094	-0.390 ± 0.096
PRF-fit source offset from KIC position	2.049 ± 0.108	18.96	-1.990 ± 0.100	-0.490 ± 0.102
photometric centroid source offset	9.55 ± 0.98	9.73	-7.73 ± 0.99	-5.60 ± 0.97

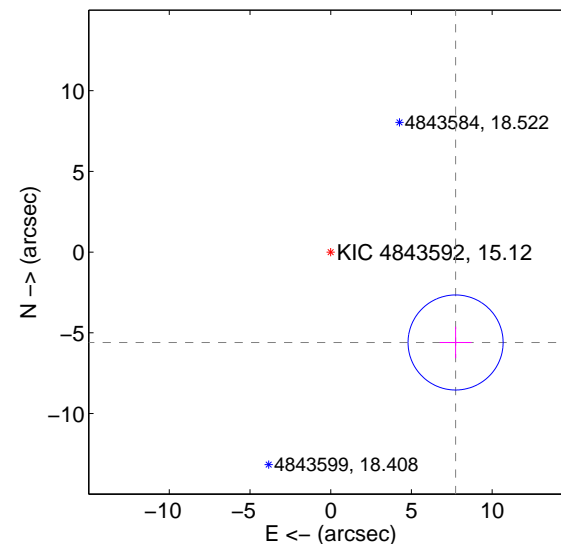
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

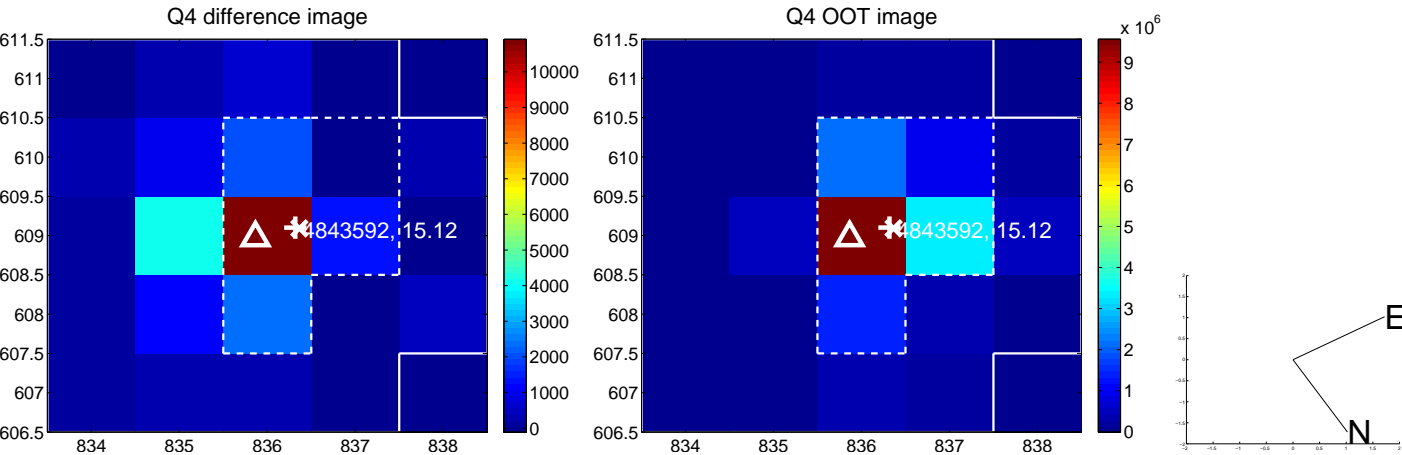
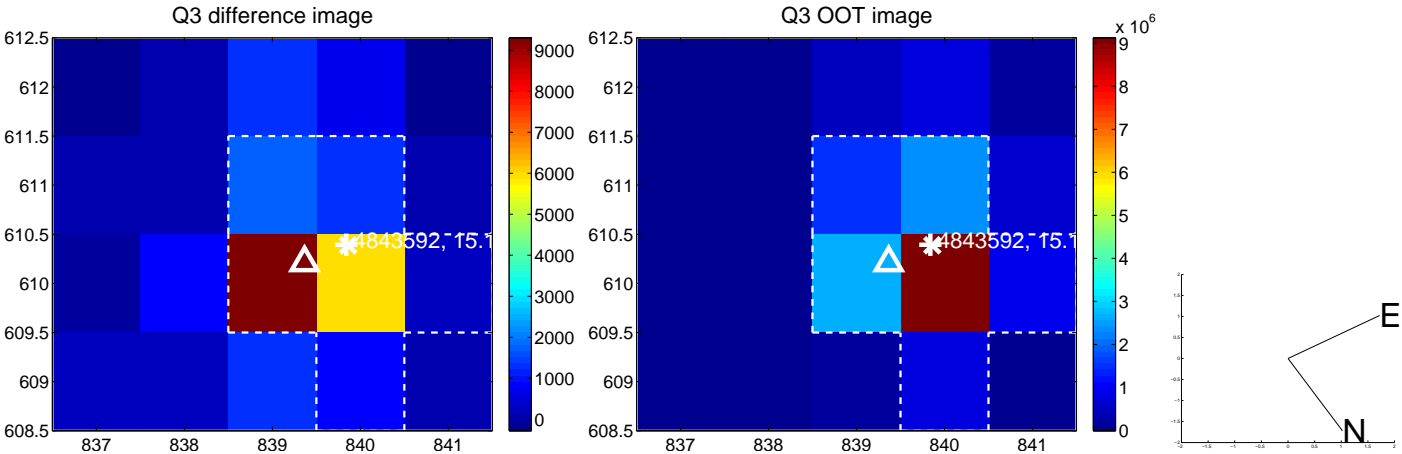
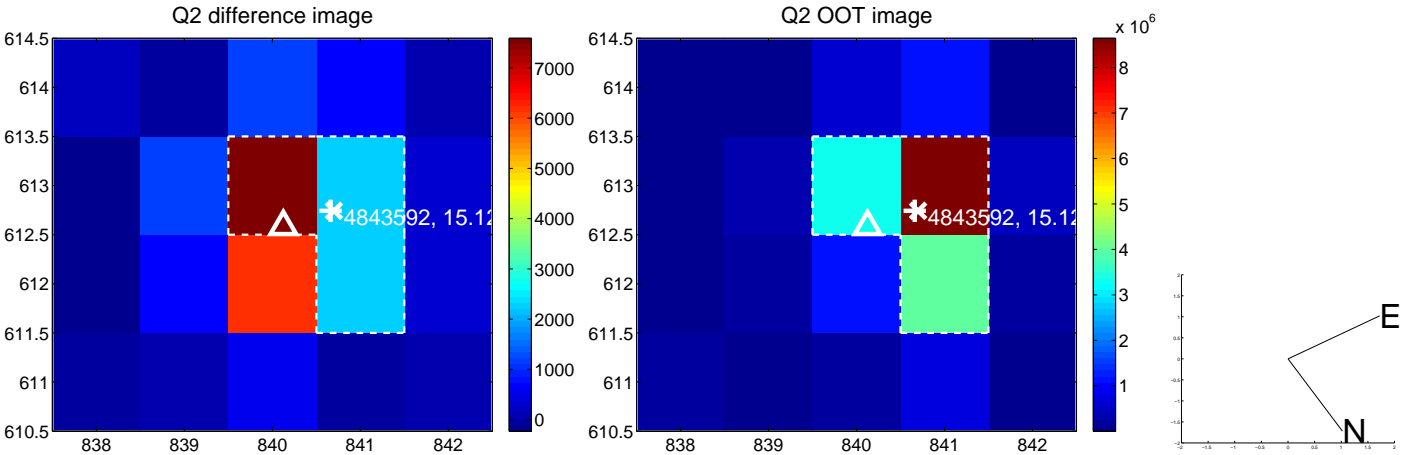
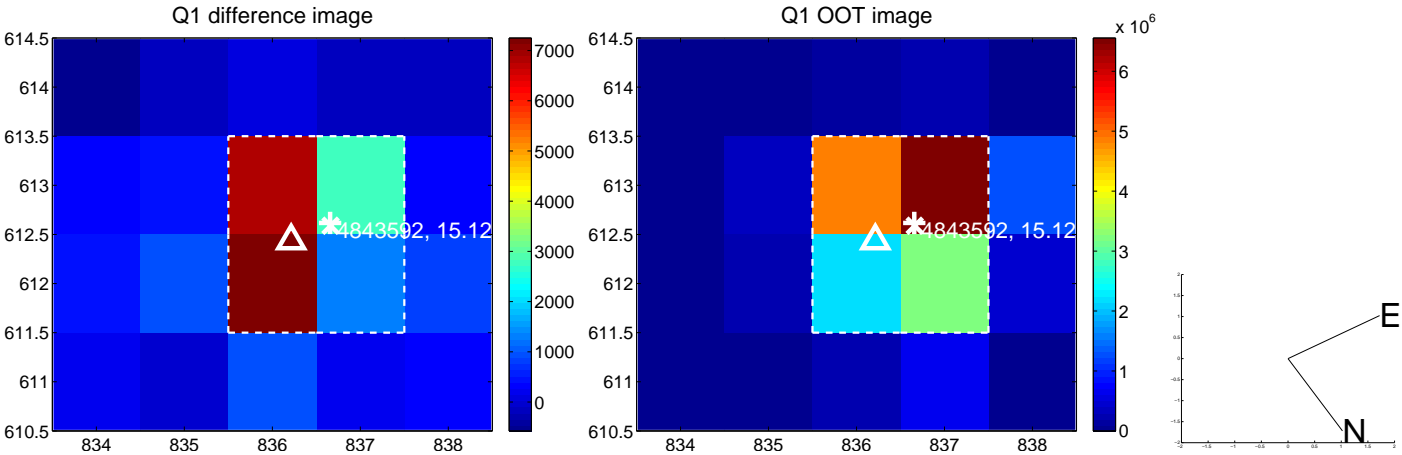


offset from photometric centroids

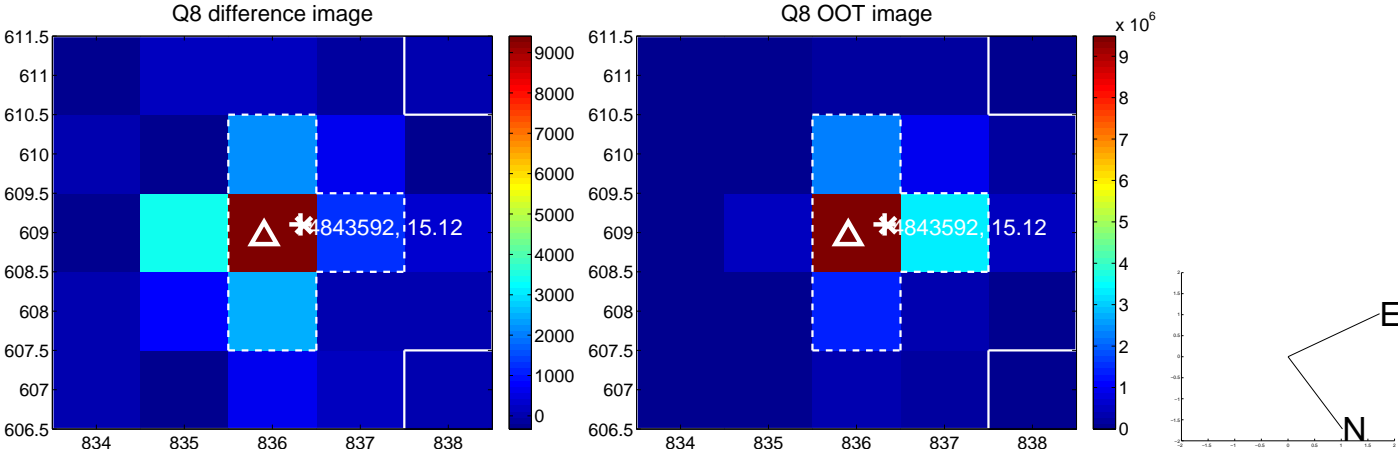
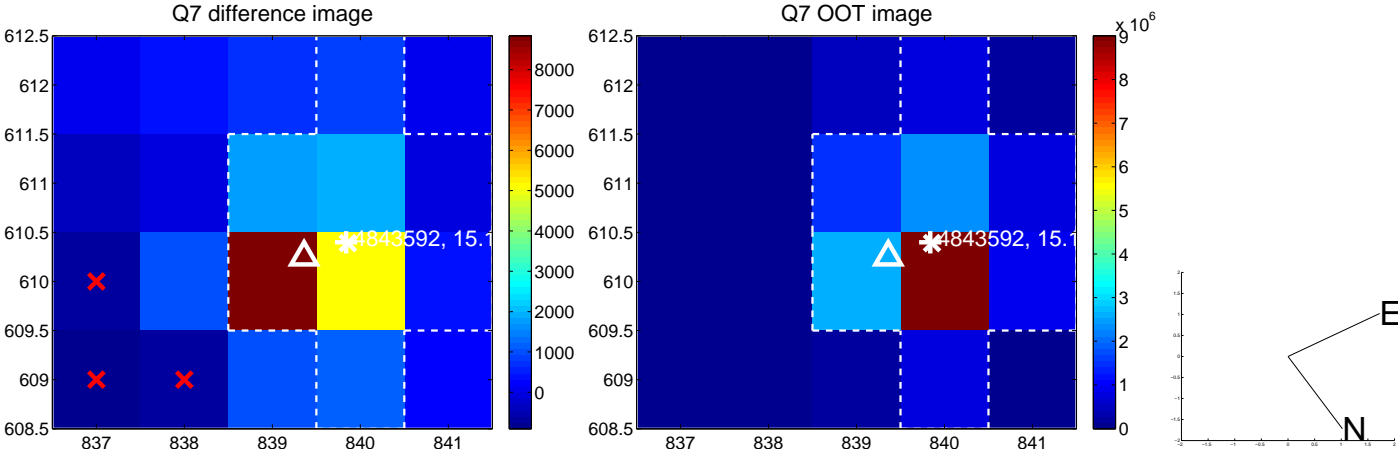
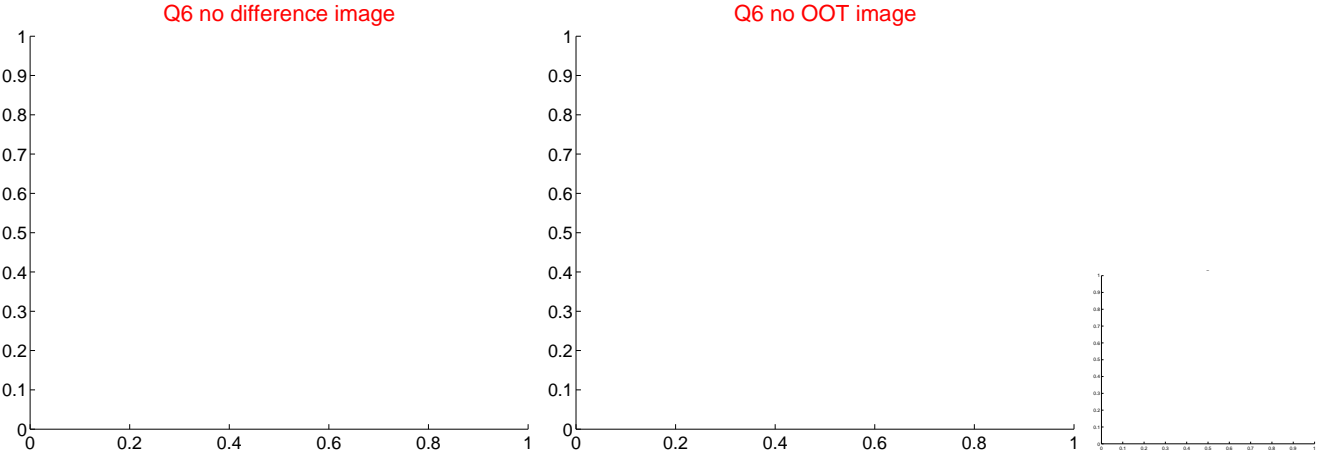
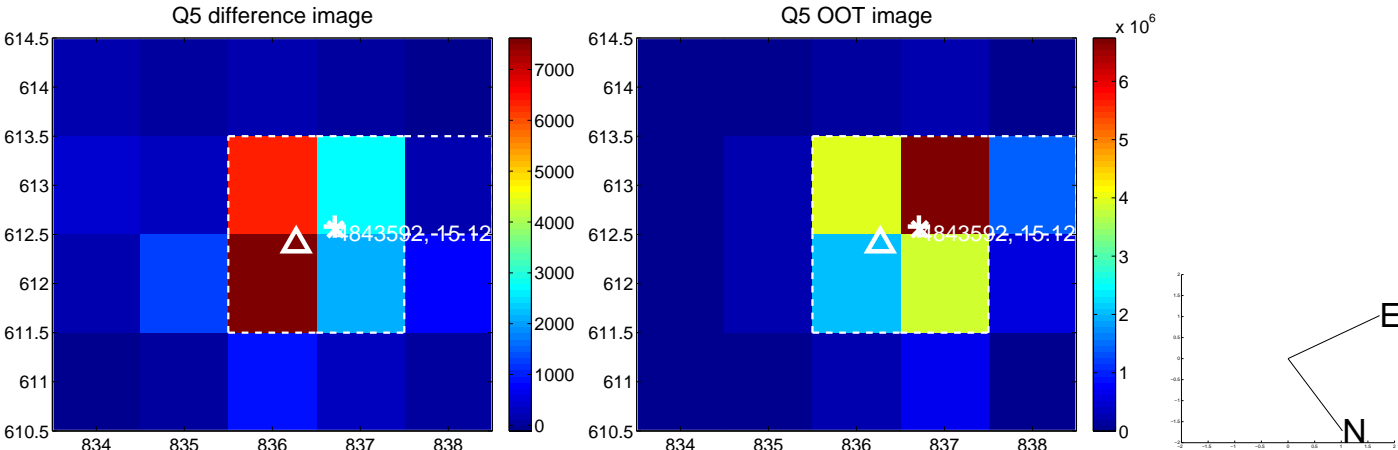


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

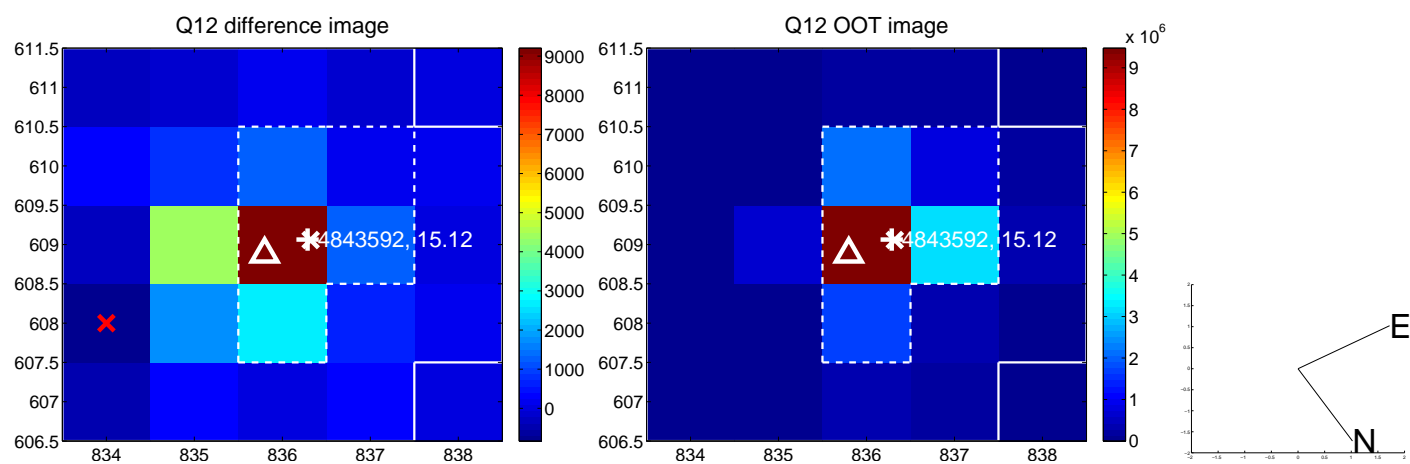
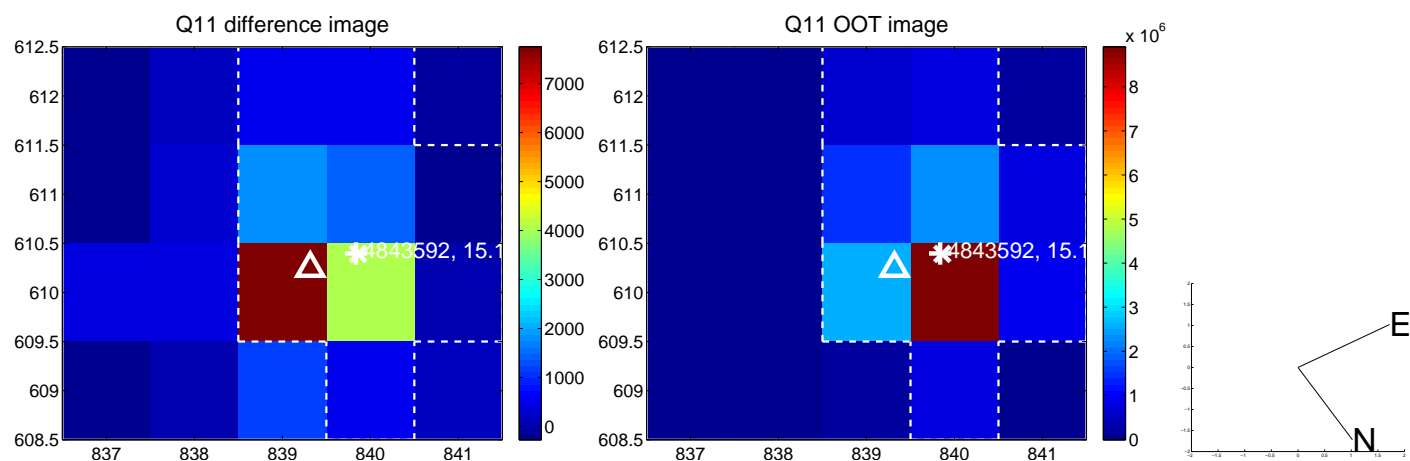
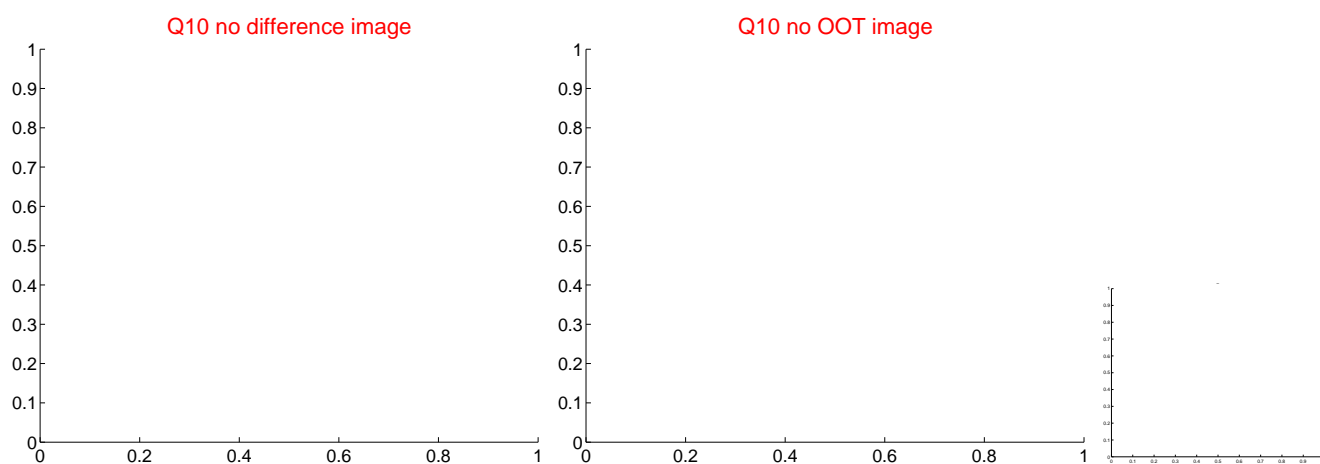
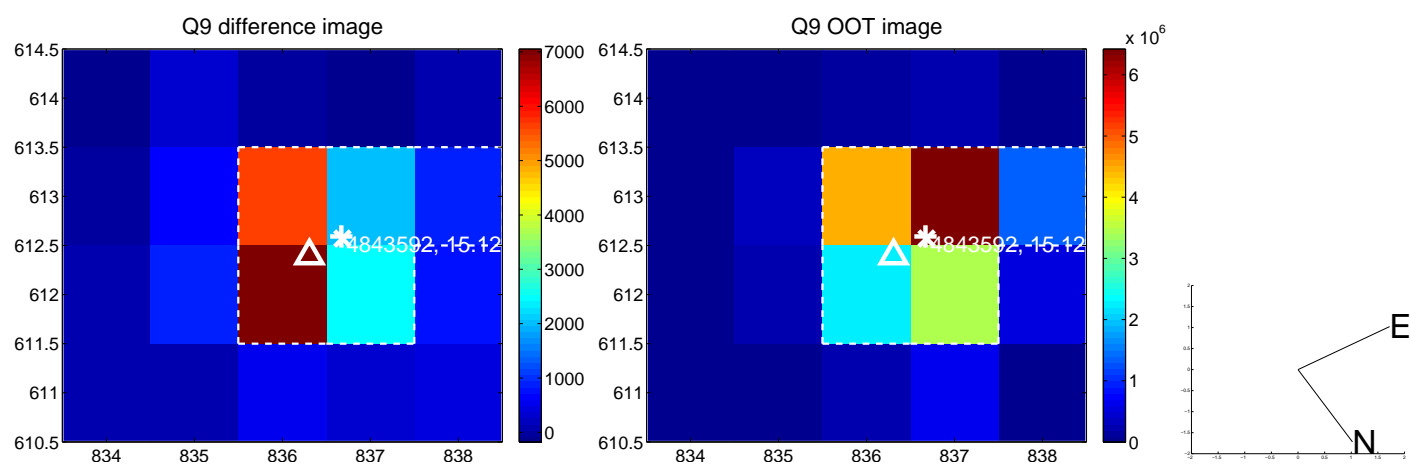
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



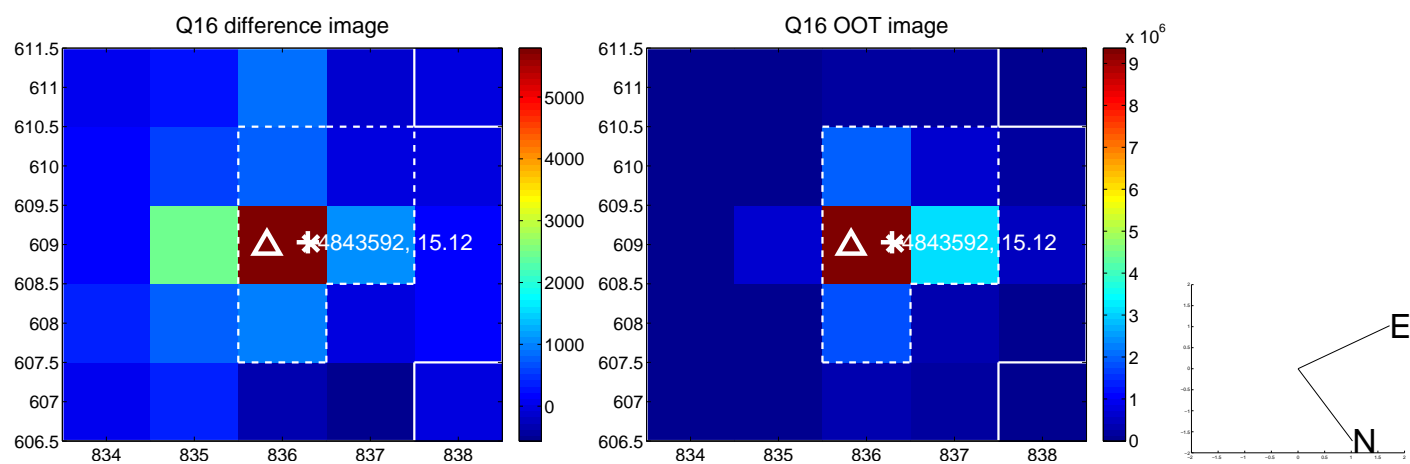
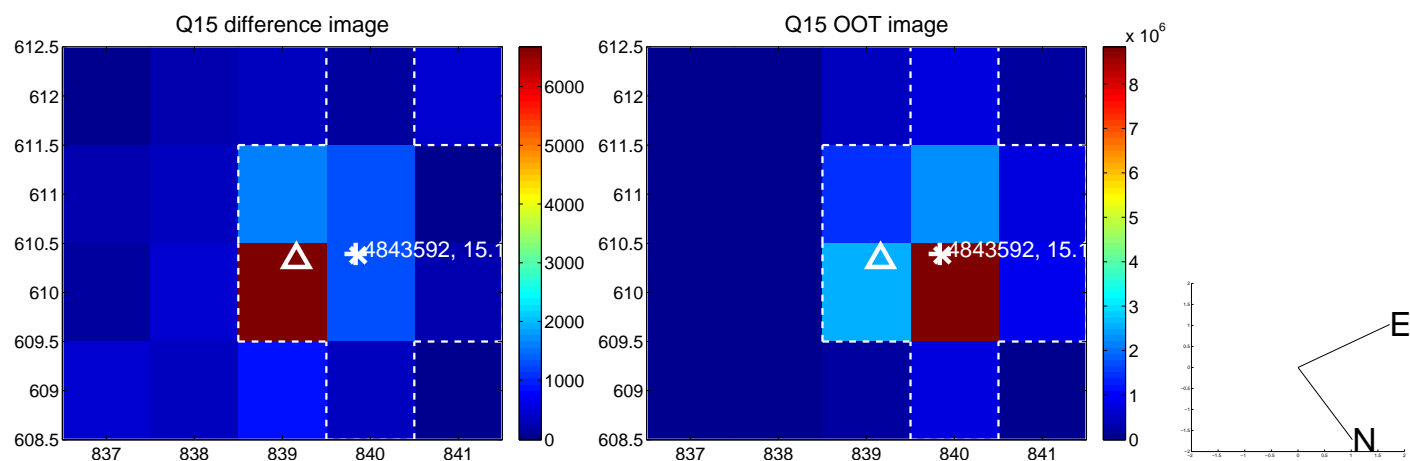
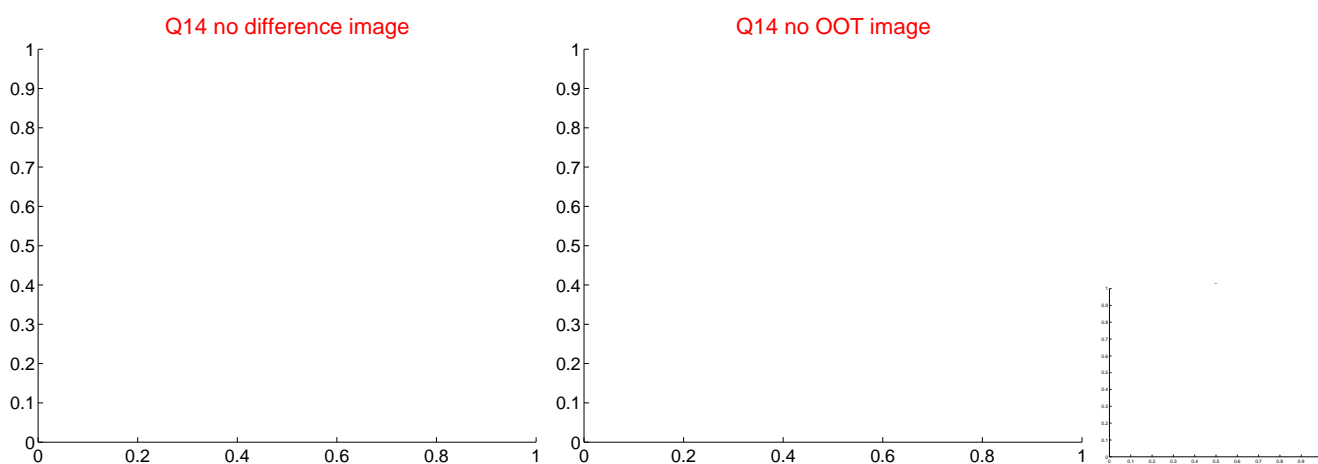
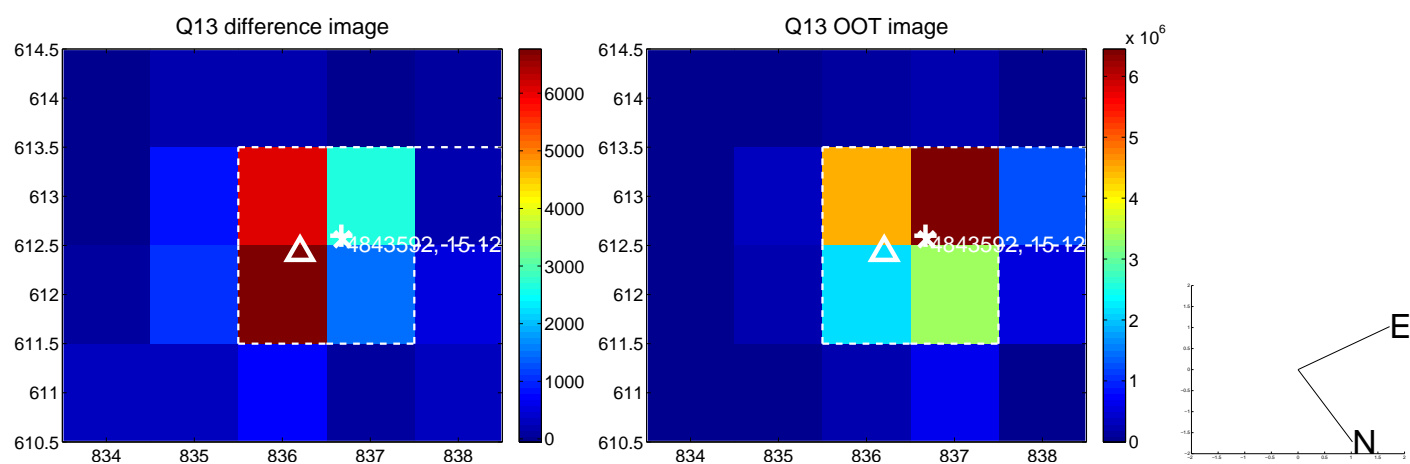
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



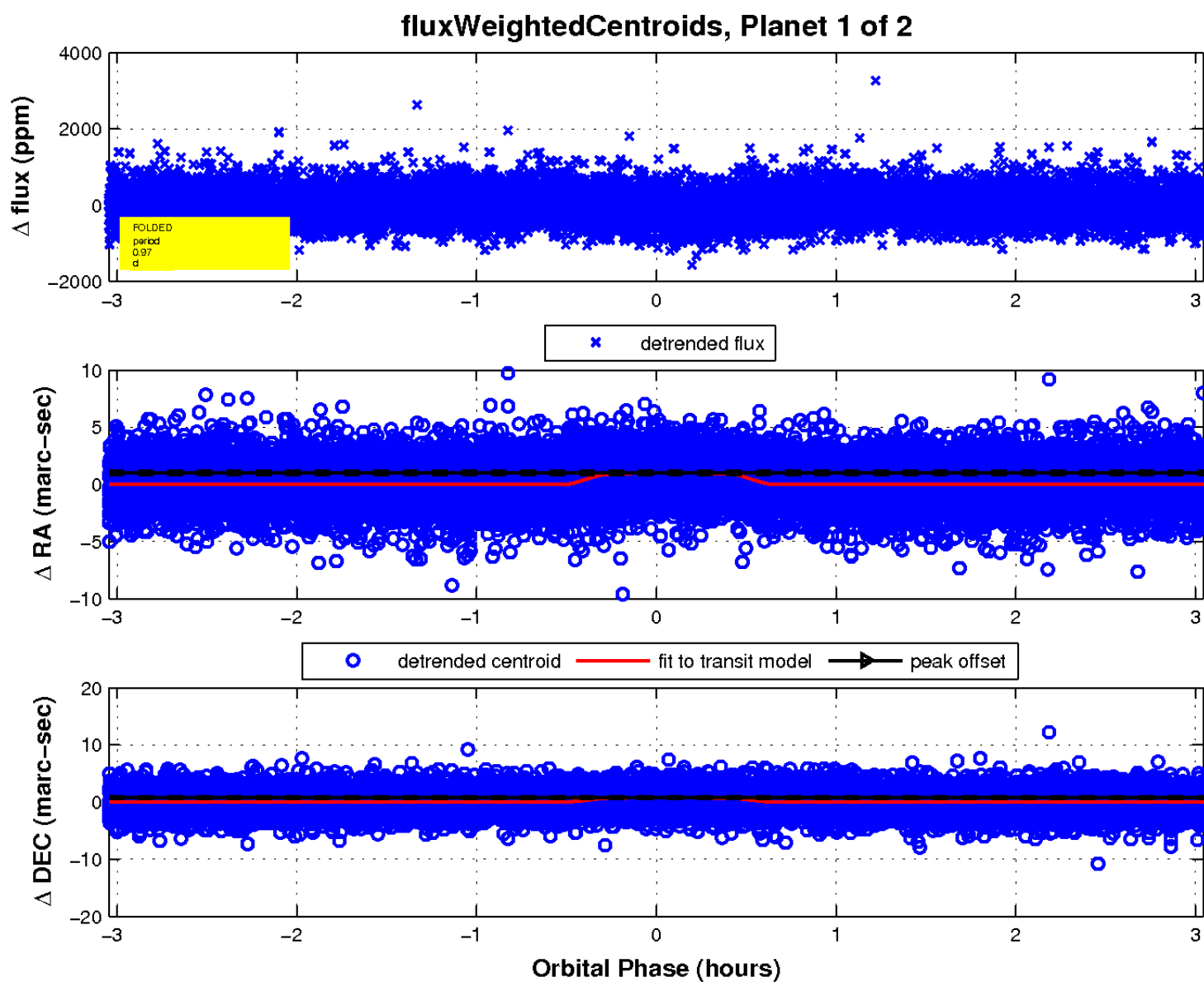
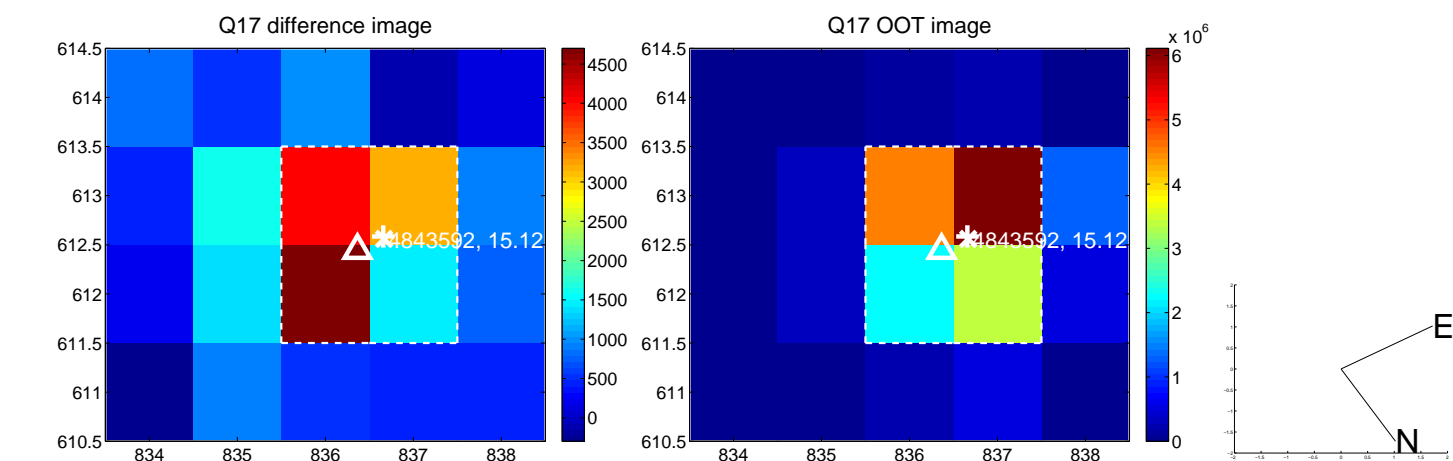
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

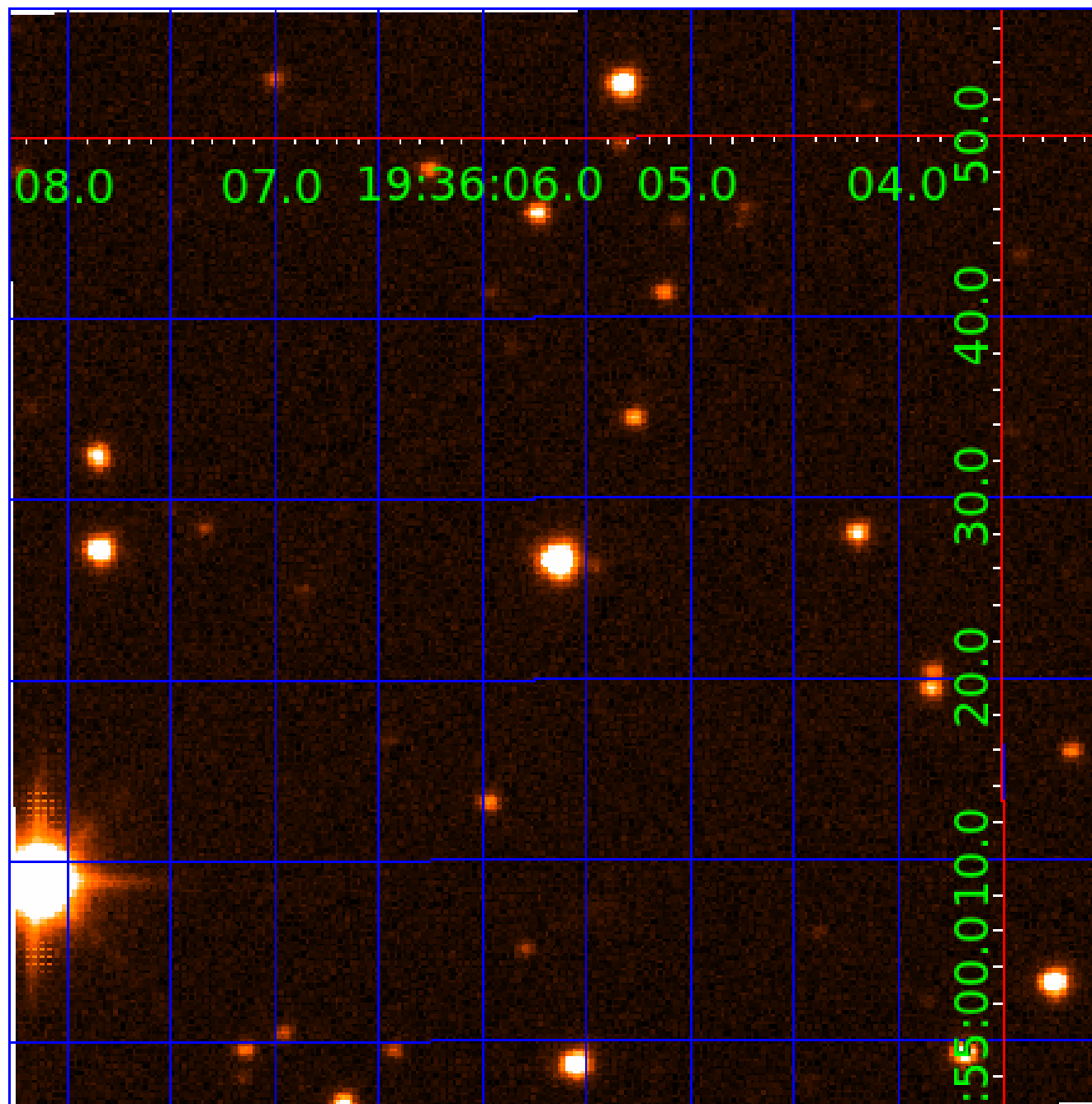


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004843592

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})
004843592-01	OBS	No	0.967056	132.094299	130.2	1.016	10.5	14.0	1.02	5755	1.40	2875.90
004843592-02	OBS	4683.01	0.967052	131.611055	100.7	1.052	9.2	11.3	1.02	5755	1.23	2875.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004843592-01	OBS	FP	0.00	1	0	1	0	MOD_NONUNIQ_ALT—CENT_UNRESOLVED_OFFSET
004843592-02	OBS	FP	0.00	1	0	1	0	MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_UNRESOLVED_OFFSET

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 004843592-02

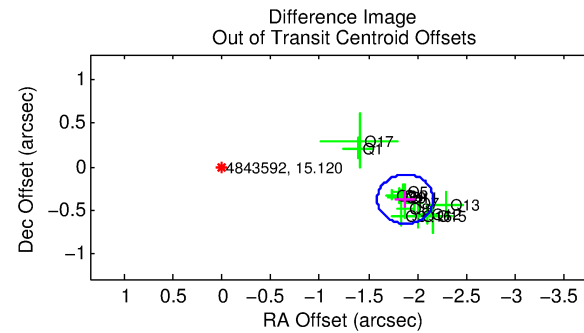
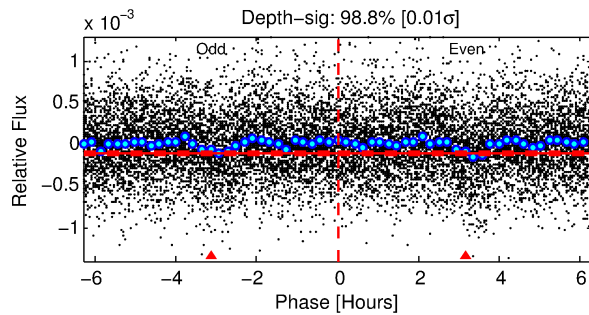
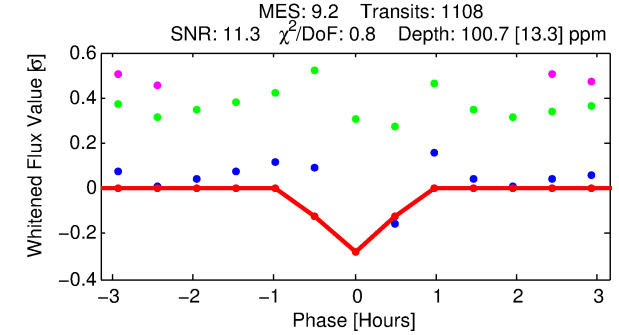
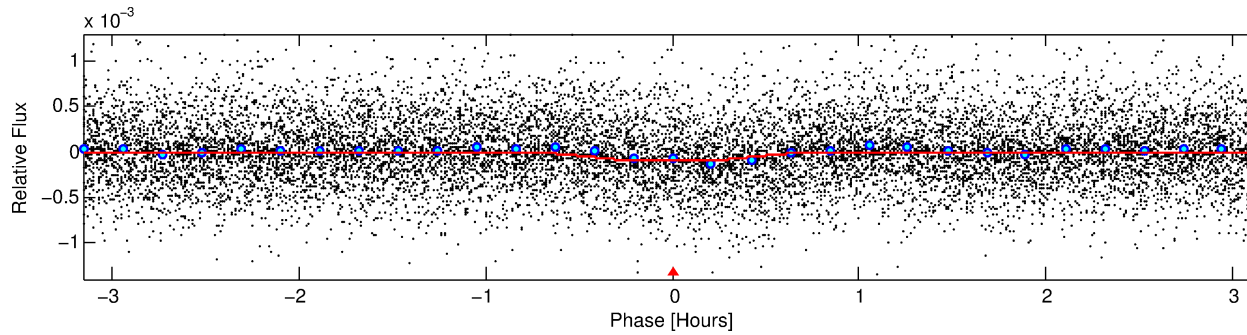
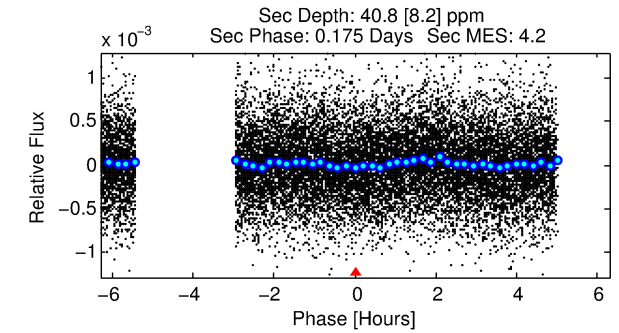
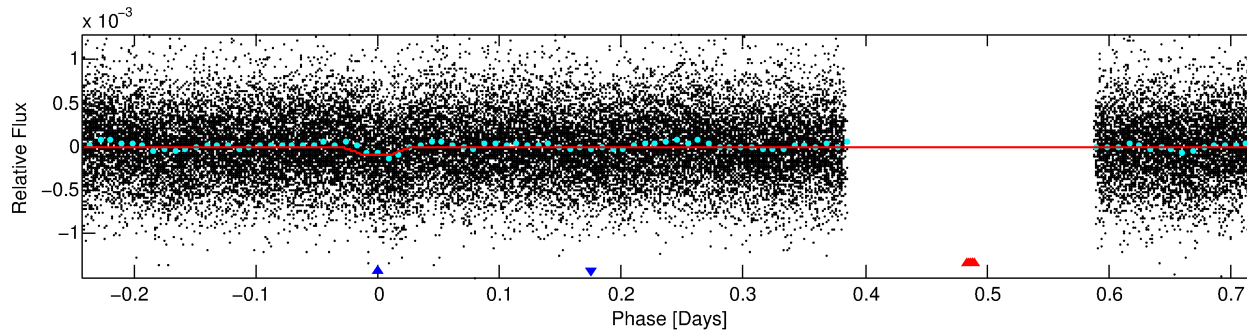
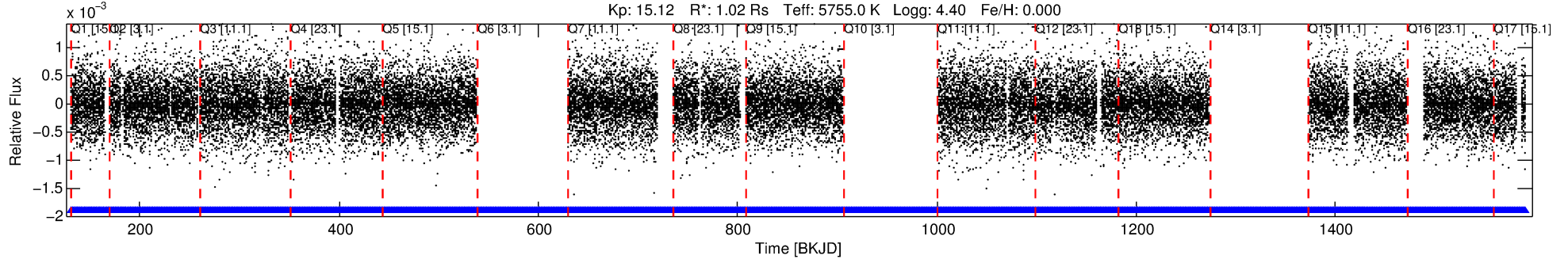
No Significant Match Found

DV One-Page Summary

KIC: 4843592 Candidate: 2 of 2 Period: 0.967 d

KOI: K04683 Corr: No Ephemeris Match

Kp: 15.12 R*: 1.02 Rs Teff: 5755.0 K Logg: 4.40 Fe/H: 0.000



DV Fit Results:

Period = 0.96705 [0.00001] d
Epoch = 131.6111 [0.0017] BKJD
Rp/R* = 0.0110 [0.0076]
a/R* = 3.36 [10.01]
b = 0.90 [0.70]
Seff = 2875.92 [1083.15]
Teq = 1867 [176] K
Rp = 1.23 [0.91] Re
a = 0.0189 [0.0045] AU
Ag = 5.28 [7.57] [0.57σ]
Teffp = 4376 [1526] K [1.63σ]

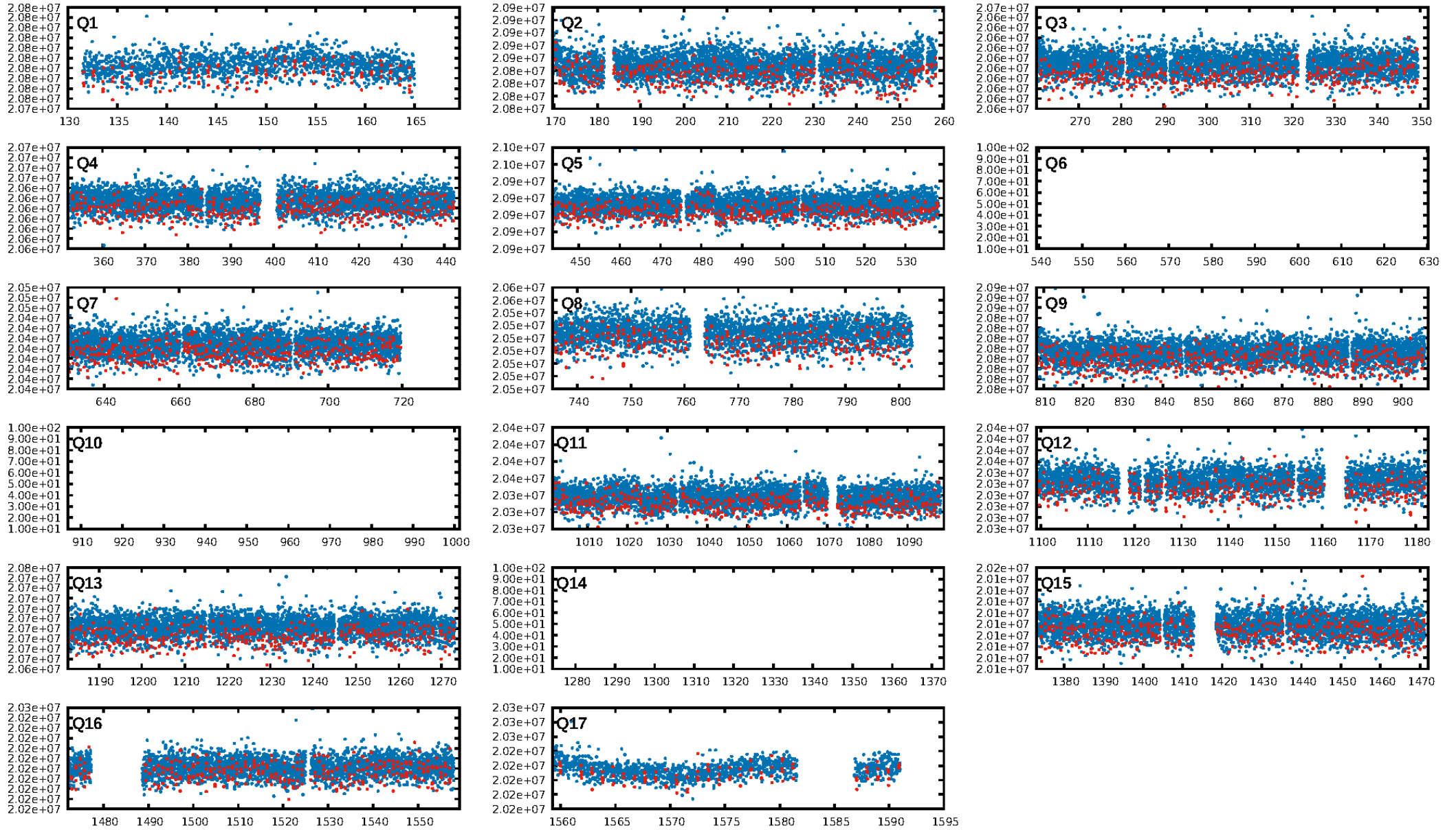
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.99e-21
RollingBand-fgt: 1.00 [1046/1046]
GhostDiagnostic-chr: 2.397
Centroid-sig: 0.0%
Centroid-so: 10.289 arcsec [8.37σ]
OotOffset-rm: 1.910 arcsec [20.02σ]
KicOffset-rm: 2.016 arcsec [20.46σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
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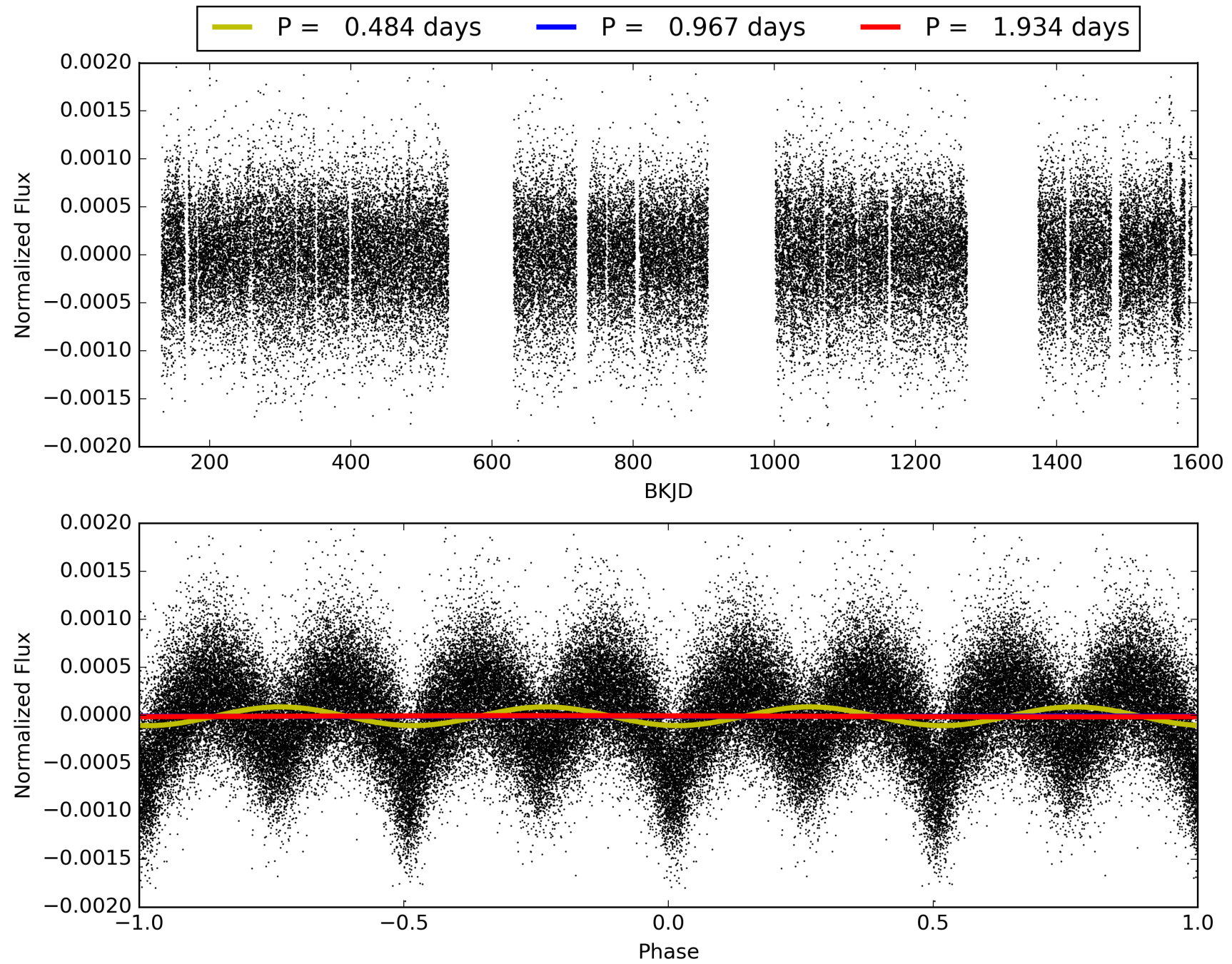
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:50:32 Z

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

TCE 004843592-02, PDC Light Curves

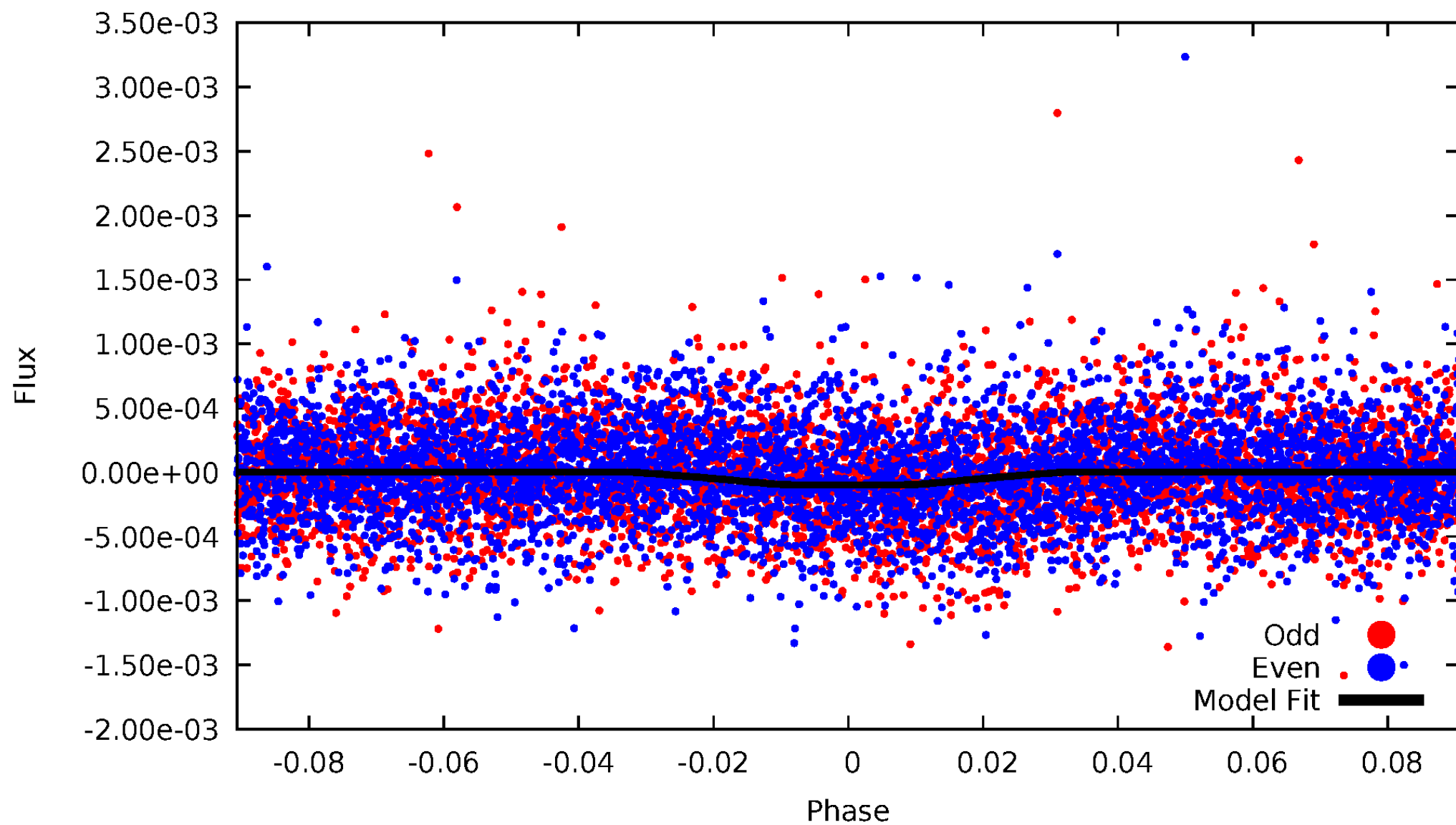


TCE 004843592-02



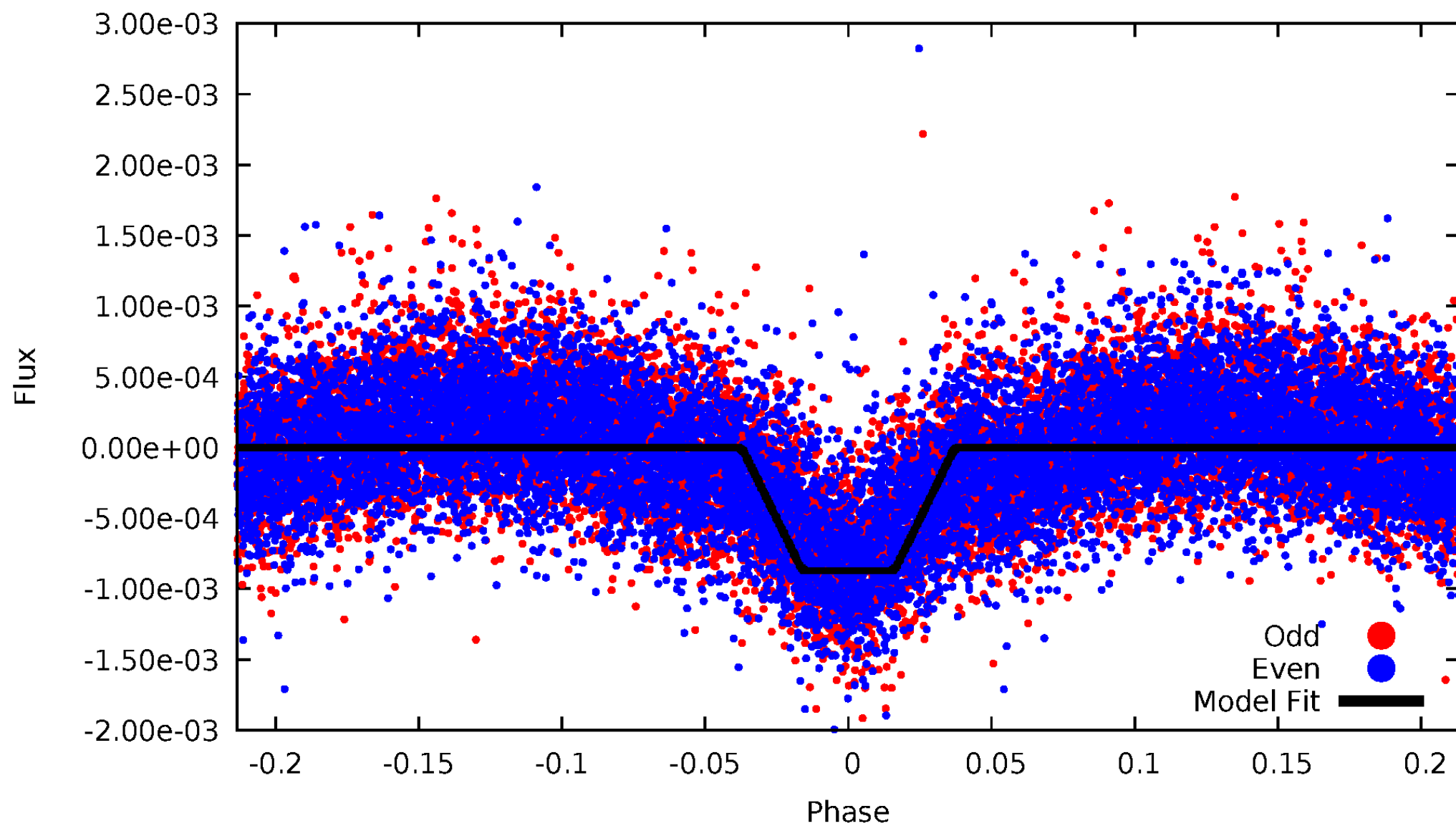
DV Odd/Even

TCE 004843592-02



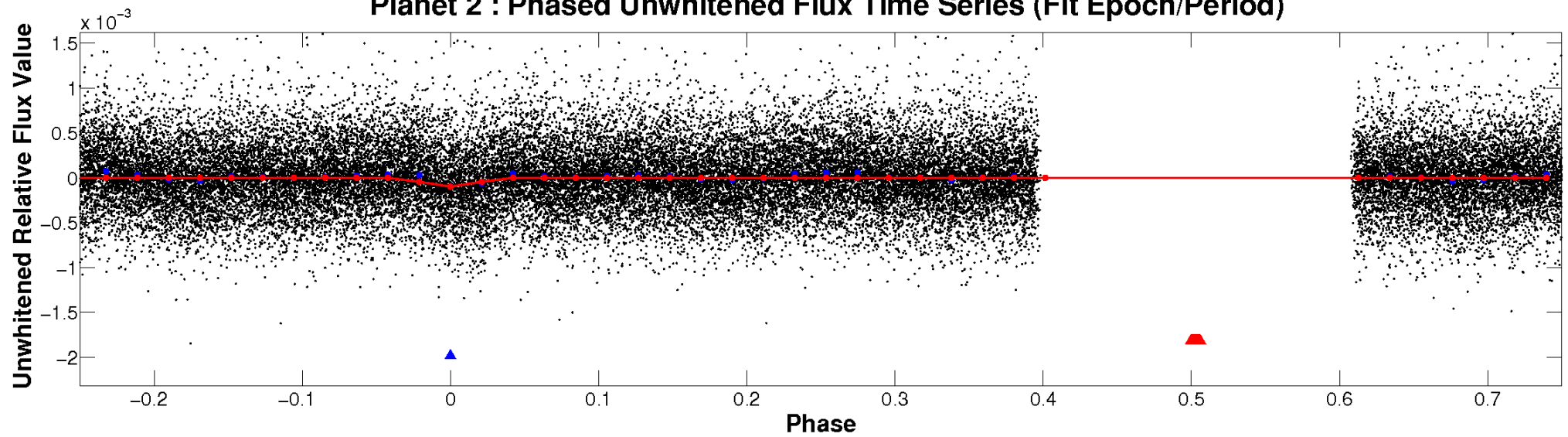
ALT Odd/Even

TCE 004843592-02

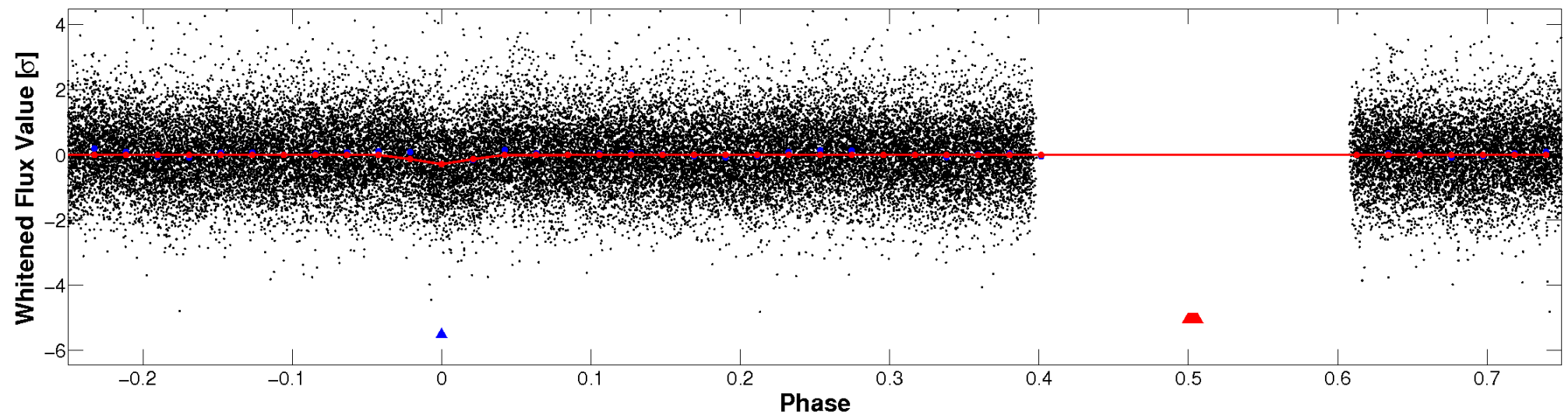


Non-Whitened Vs. Whitened Light Curve

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

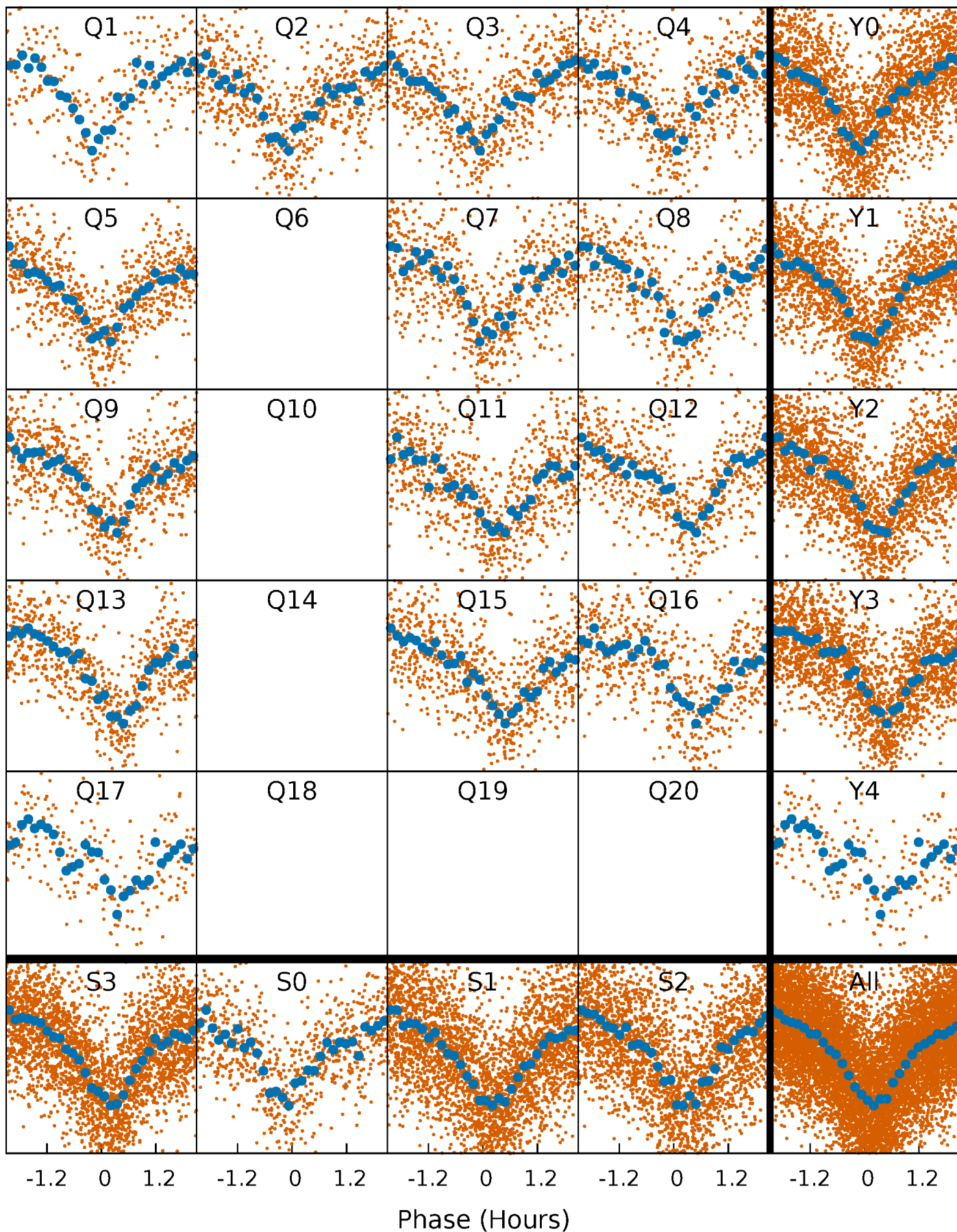


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



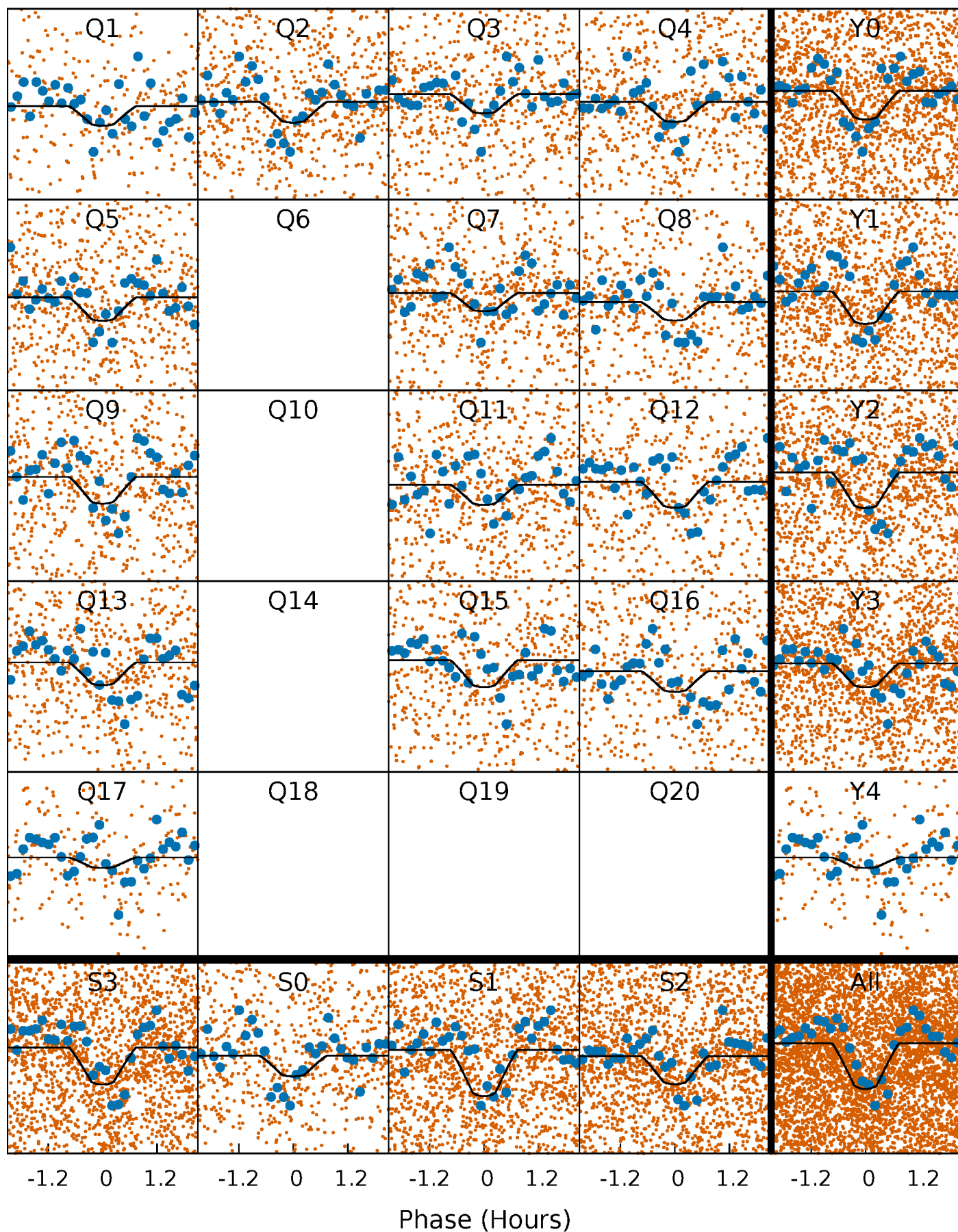
PDC Quarter-Phased Transit Curves

TCE 004843592-02 P= 0.967052 Days $T_0=131.611055$ (BKJD)



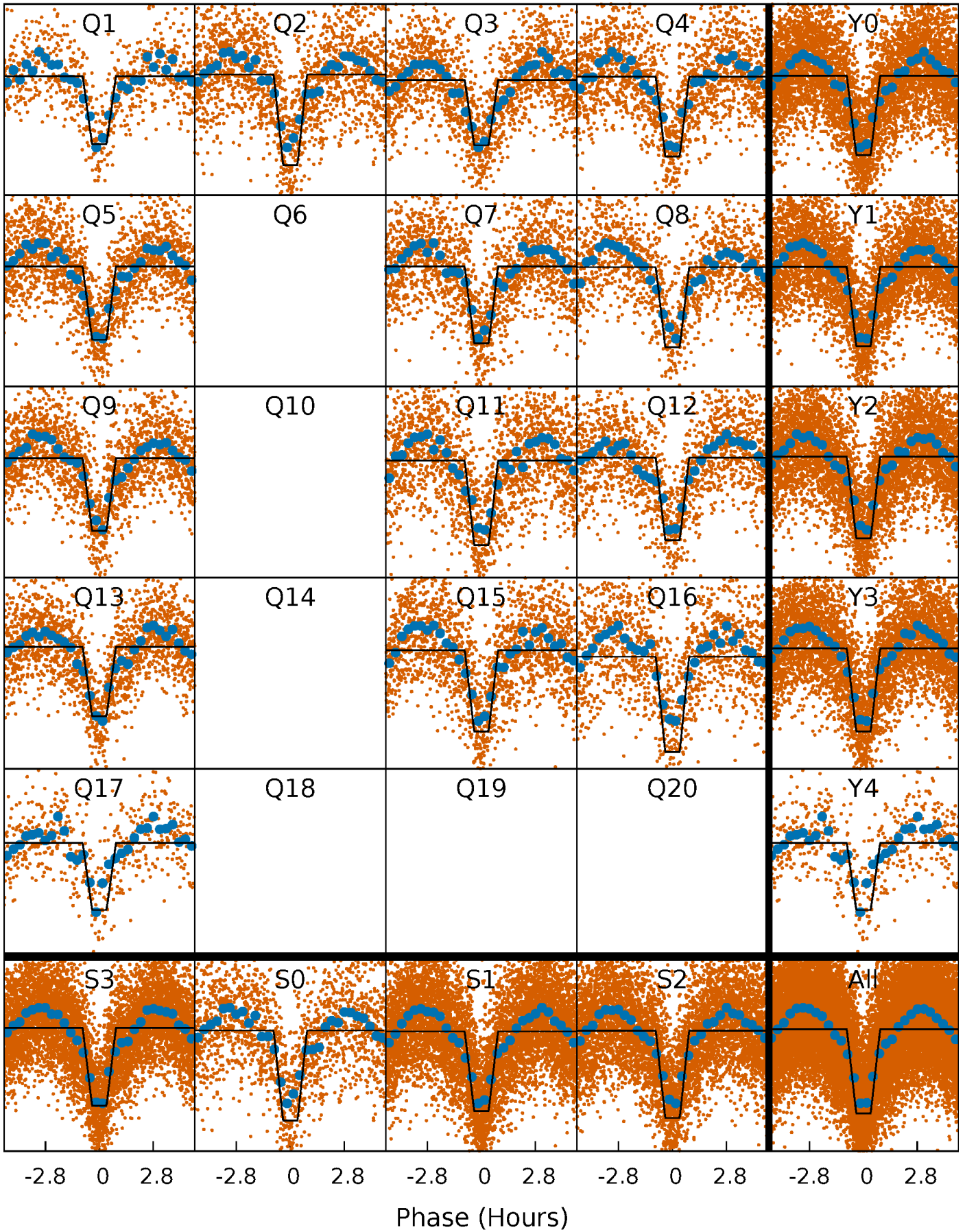
DV Quarter-Phased Transit Curves

TCE 004843592-02 $P = 0.967052$ Days $T_0 = 131.611055$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

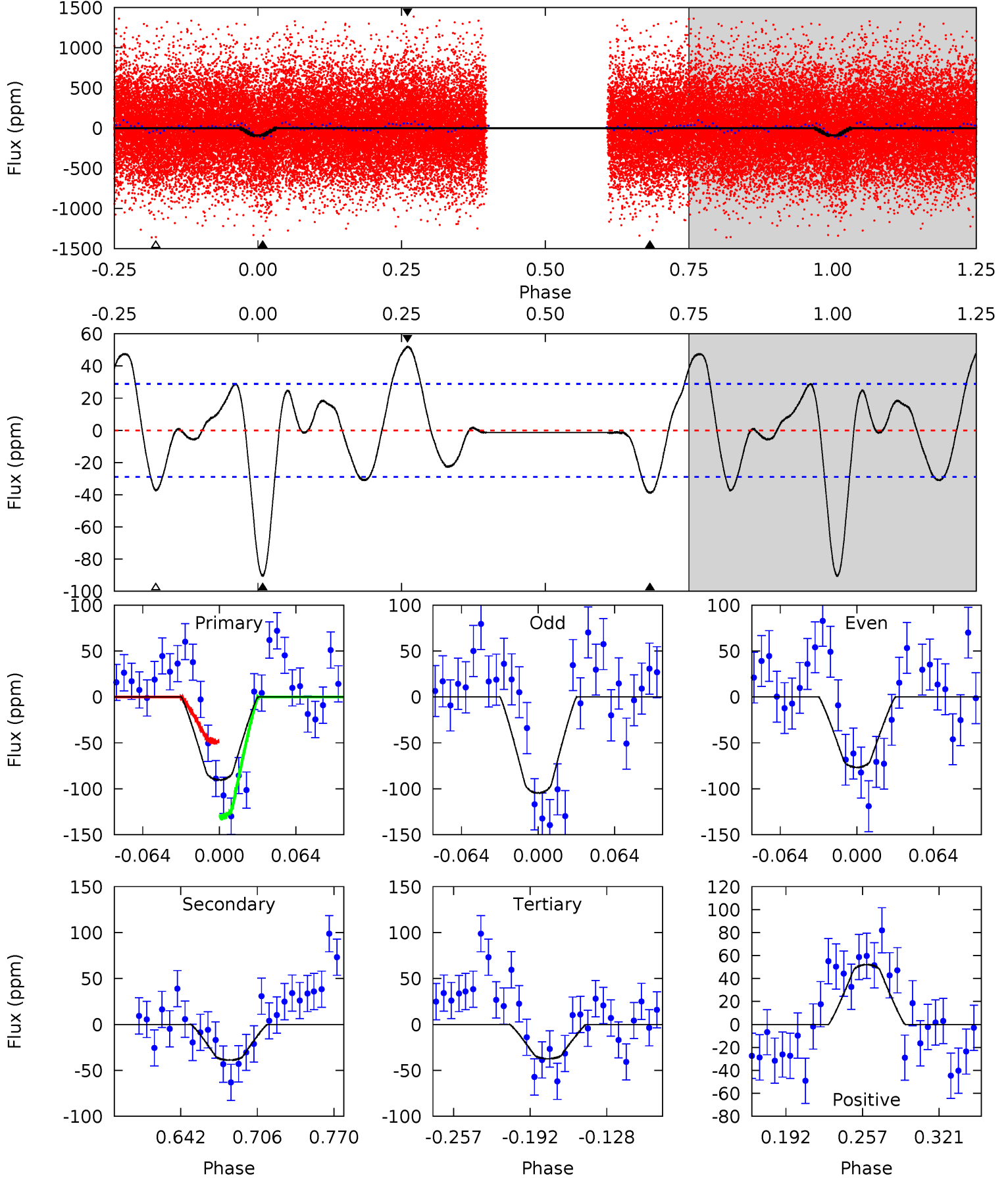
TCE 004843592-02 $P = 0.967073$ Days $T_0 = 131.604817$ (BKJD)



DV Model-Shift Uniqueness Test

004843592-02, P = 0.967052 Days, E = 130.644003 Days

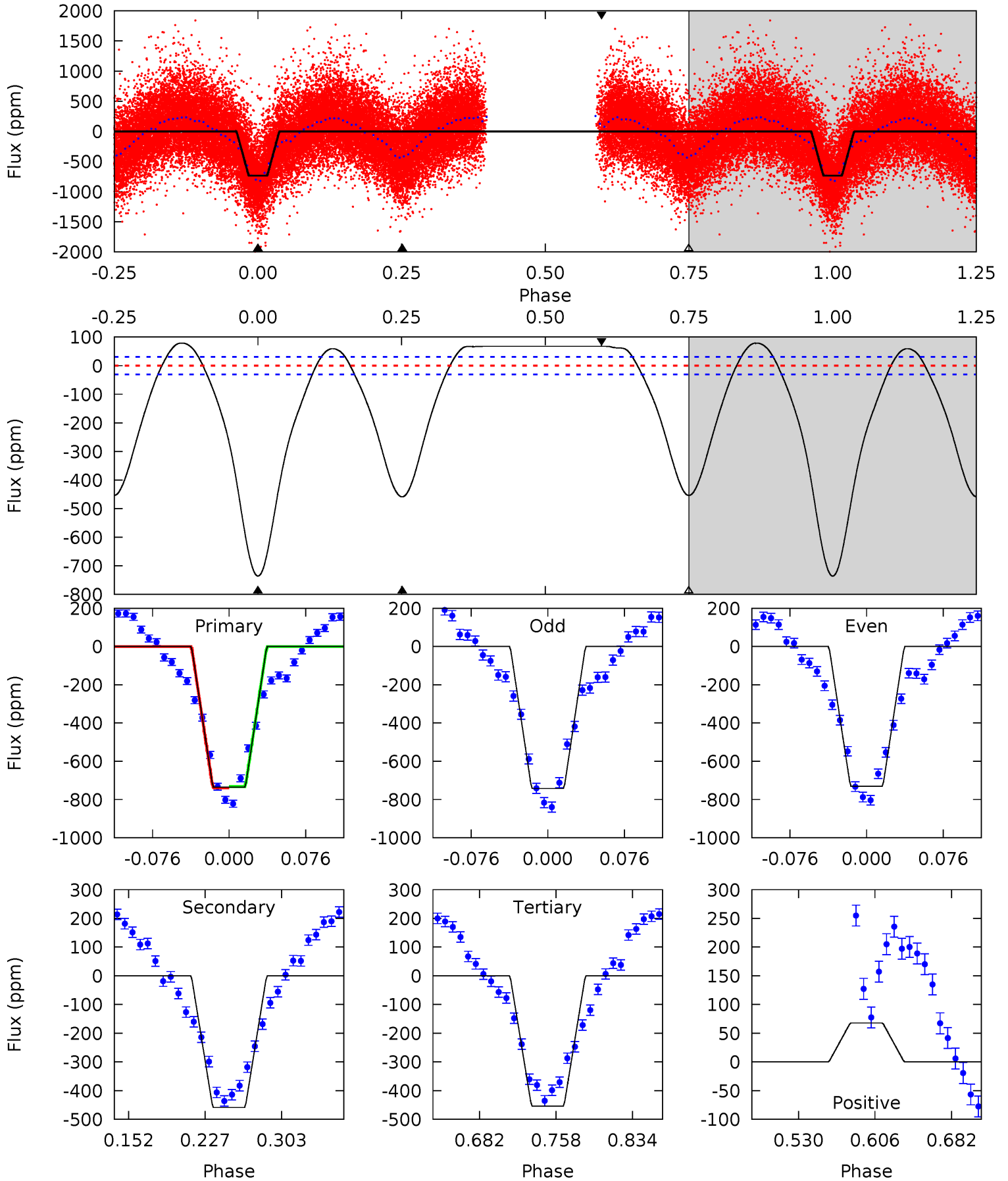
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.6	6.26	6.01	8.39	4.66	1.85	3.71	8.57	6.19	0.25	-2.13	2.26	0.85	0.37	6.66



Alt Model-Shift Uniqueness Test

004843592-02, P = 0.967073 Days, E = 130.637744 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
110.9	69.2	68.4	10.2	4.62	1.78	23.9	42.5	100.7	0.74	59.0	0.94	0.98	0.10	0.50



Stellar Parameters For KIC 004843592

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5755^{+156}_{-190}	$4.402^{+0.105}_{-0.195}$	$0.000^{+0.250}_{-0.300}$	$1.022^{+0.286}_{-0.132}$	$0.960^{+0.125}_{-0.102}$	$1.268^{+0.688}_{-0.600}$
	+3%/-3%	+2%/-4%	+inf%/-inf%	+28%/-13%	+13%/-11%	+54%/-47%
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 004843592-02 / KOI 4683.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-39 ± 6	$1.31^{+0.83}_{-0.72}$	2623^{+174}_{-147}	4380^{+1846}_{-789}	$4.477^{+17.033}_{-2.824}$
Alt.	-459 ± 7	$3.43^{+0.97}_{-0.91}$	2641^{+185}_{-143}	4925^{+676}_{-448}	$7.734^{+6.395}_{-3.051}$

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

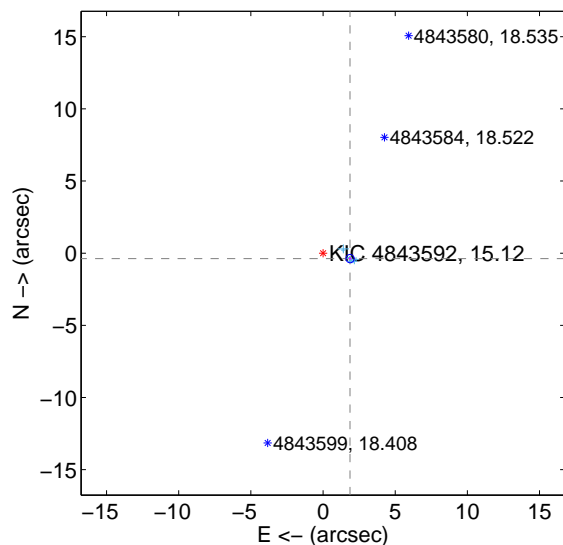
Supplemental centroid analysis for 004843592-02. Kepler magnitude: 15.12. Transit SNR 11.28

There are 14 quarters with good PRF difference image offsets

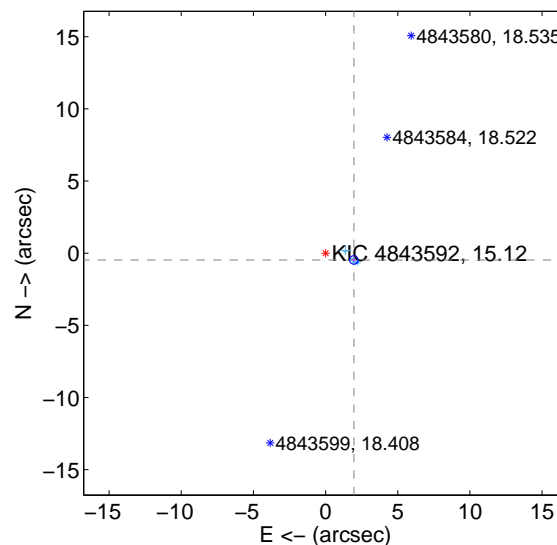
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.910 ± 0.095	20.02	-1.873 ± 0.089	-0.377 ± 0.091
PRF-fit source offset from KIC position	2.016 ± 0.099	20.46	-1.961 ± 0.090	-0.471 ± 0.092
photometric centroid source offset	10.29 ± 1.23	8.37	-7.53 ± 1.23	-7.01 ± 1.23

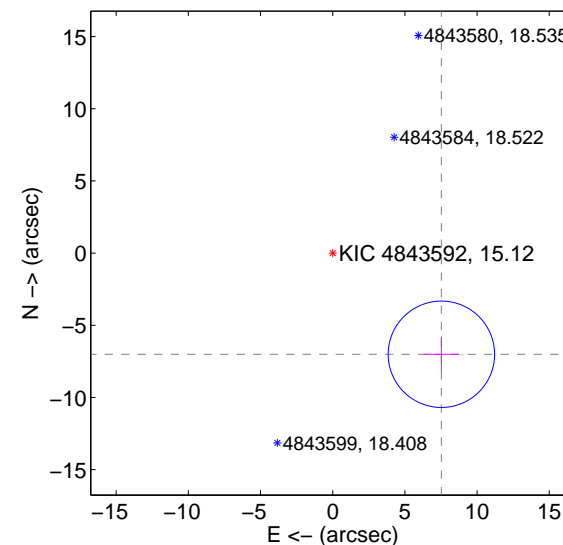
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

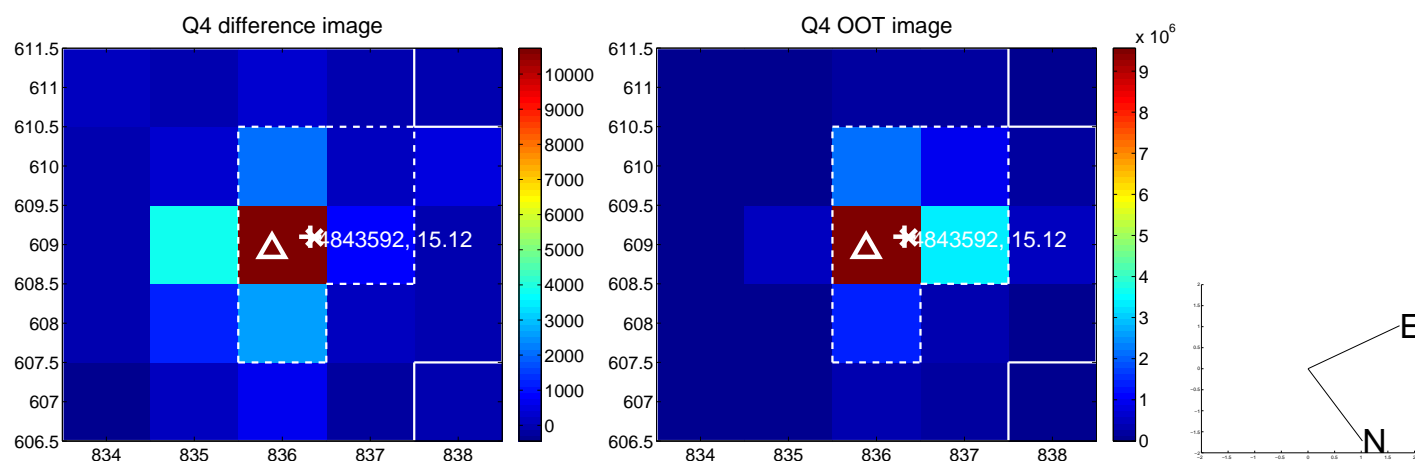
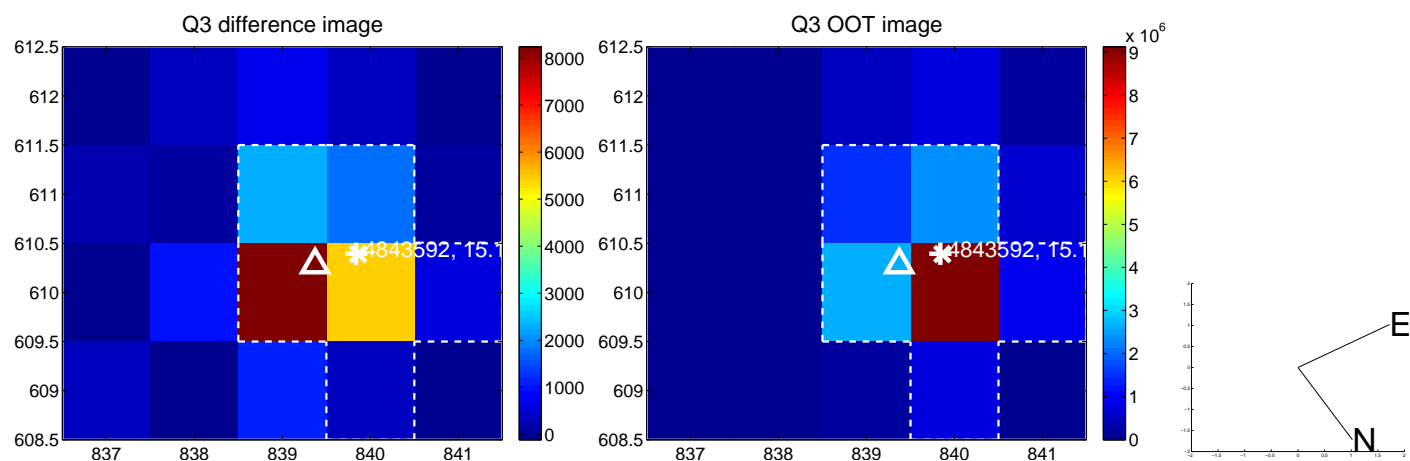
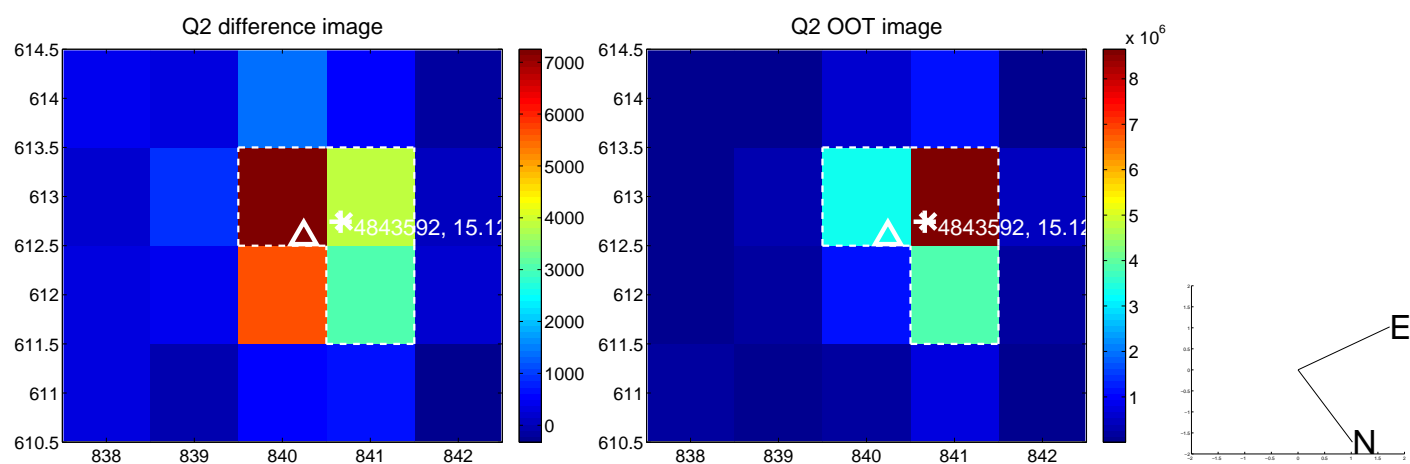
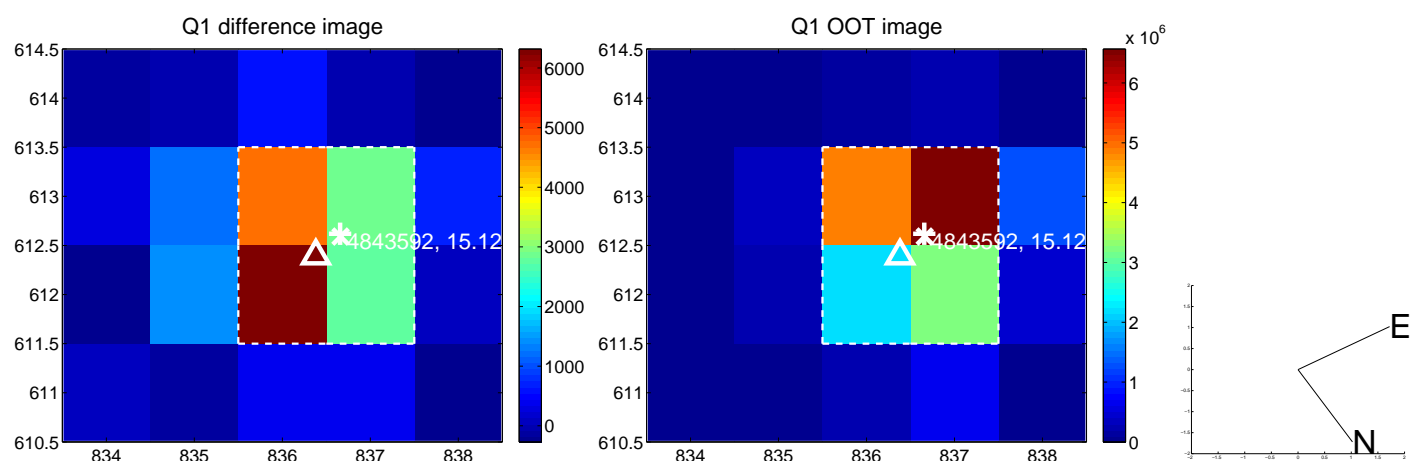


offset from photometric centroids

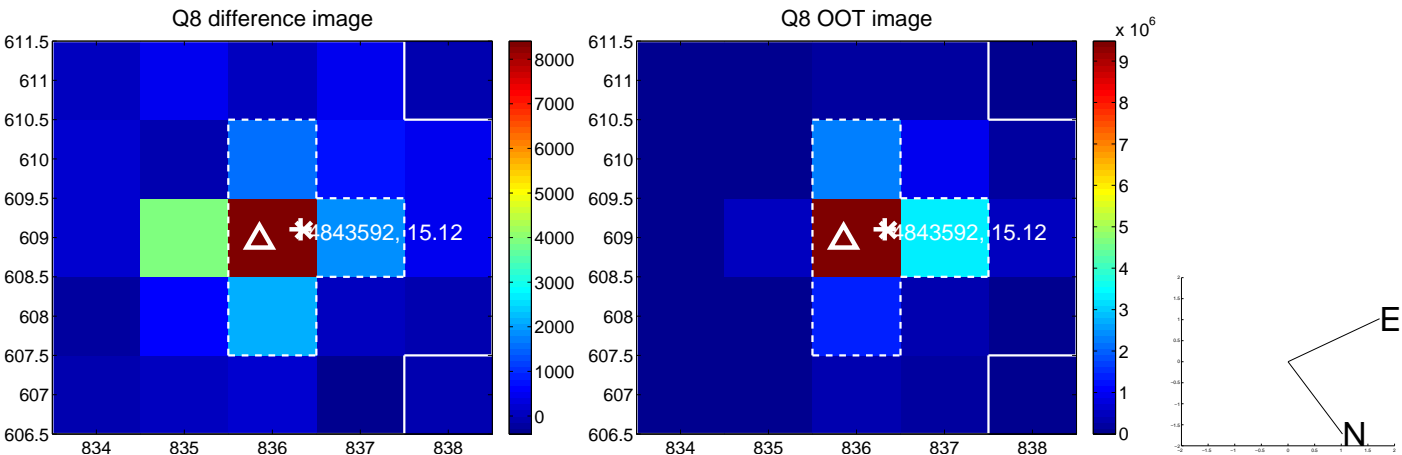
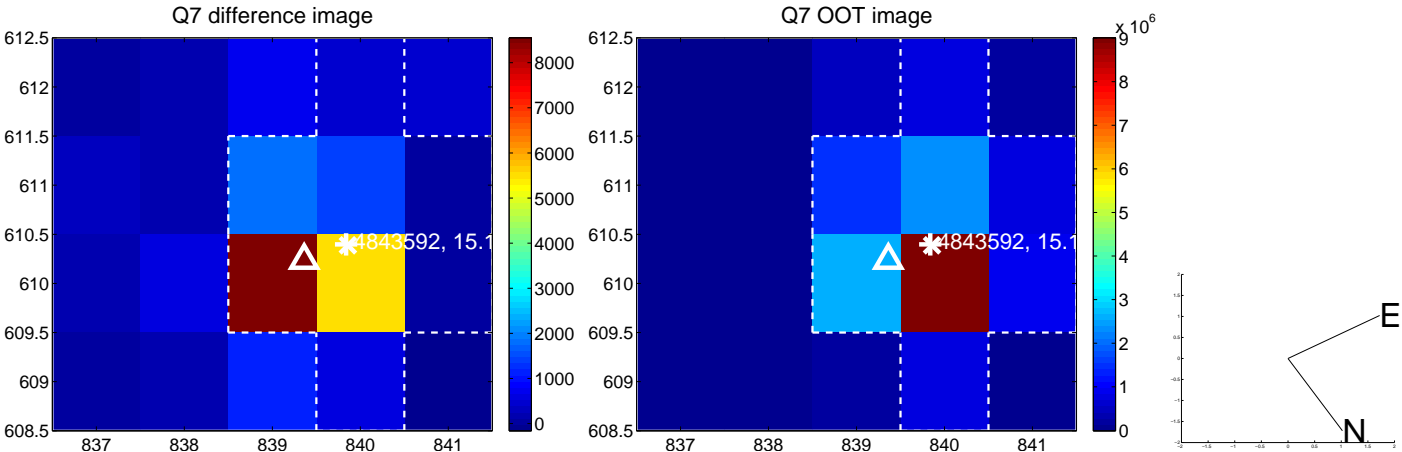
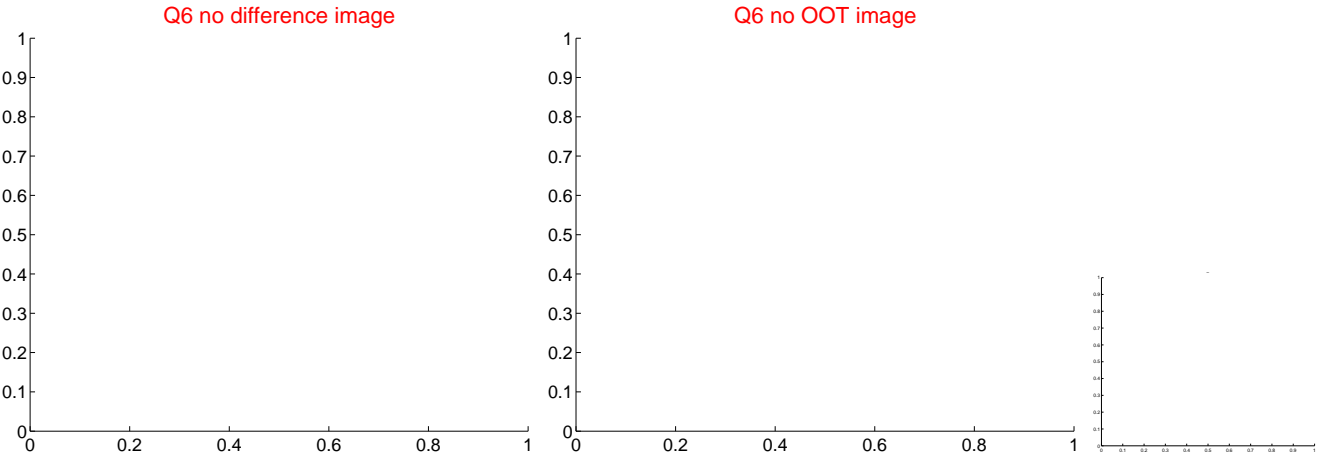
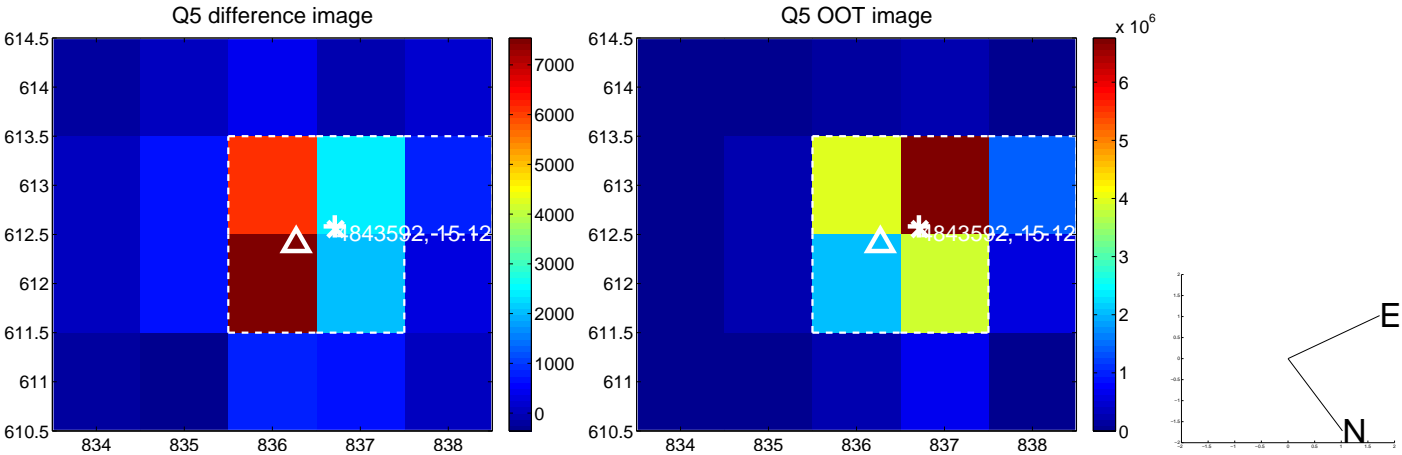


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

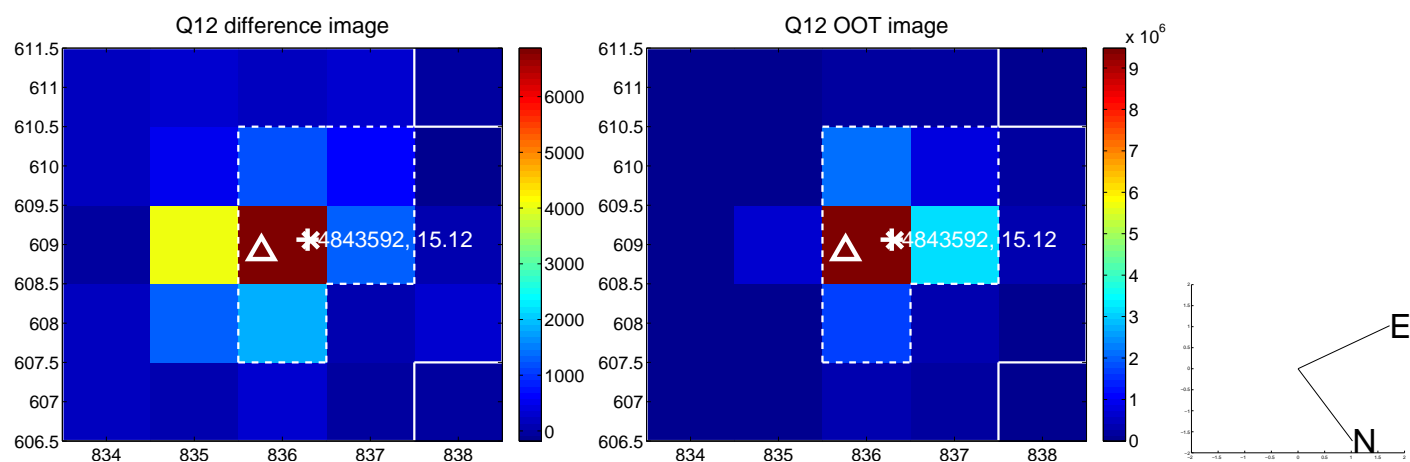
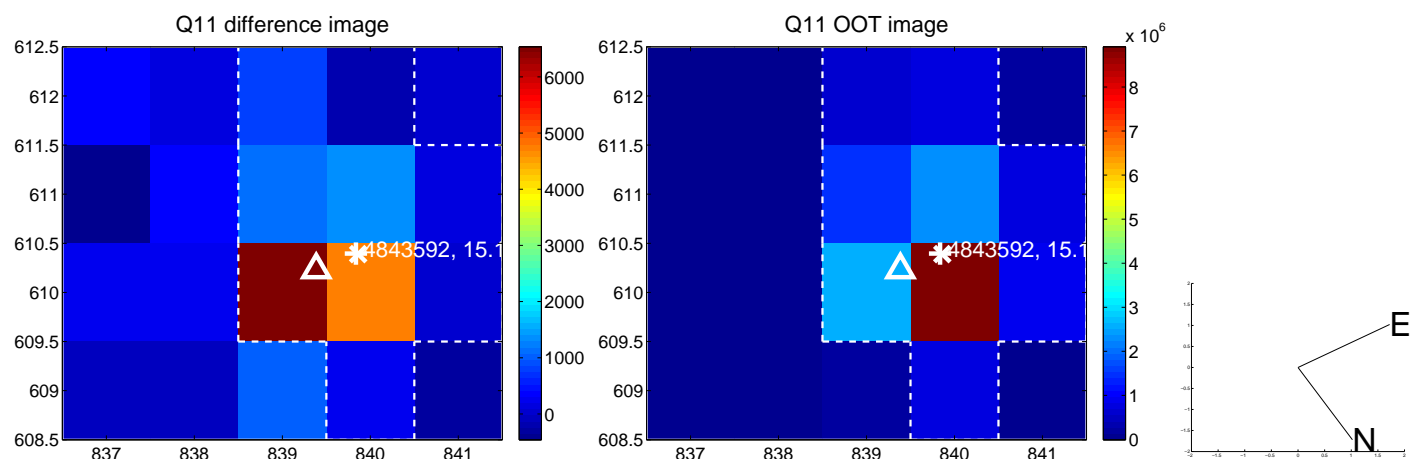
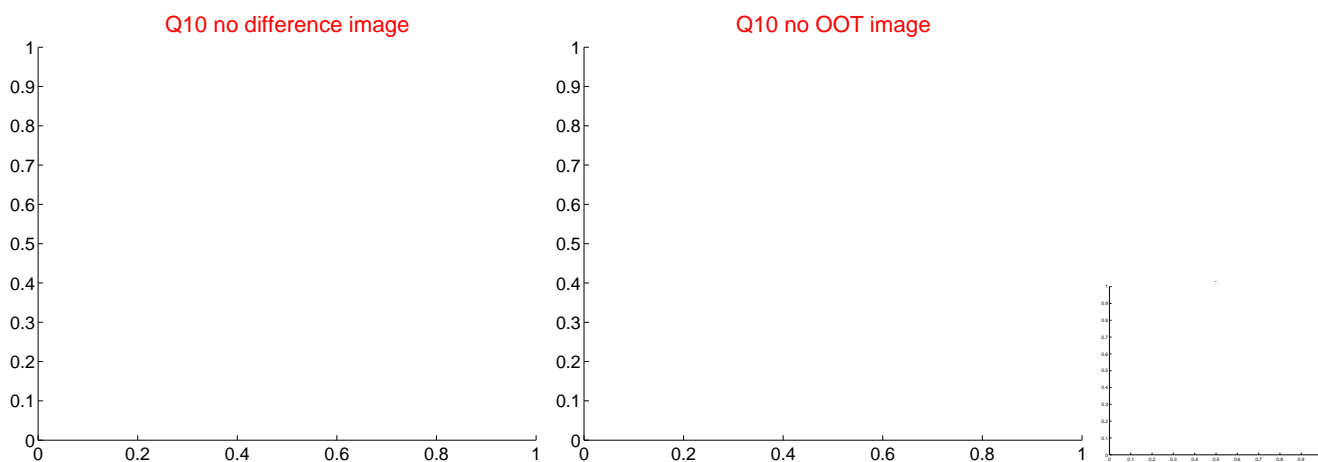
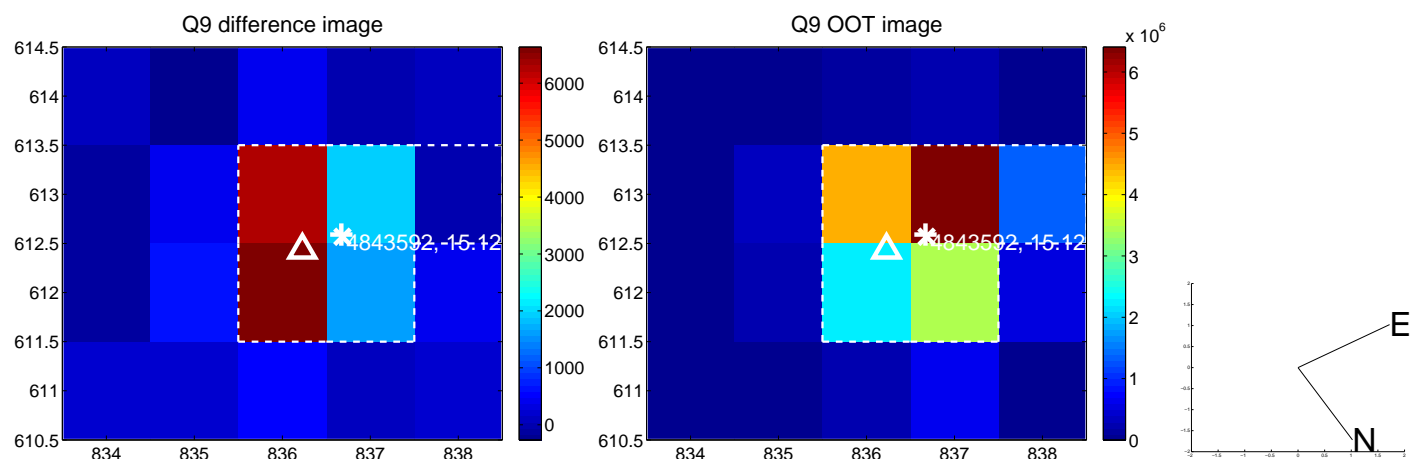
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



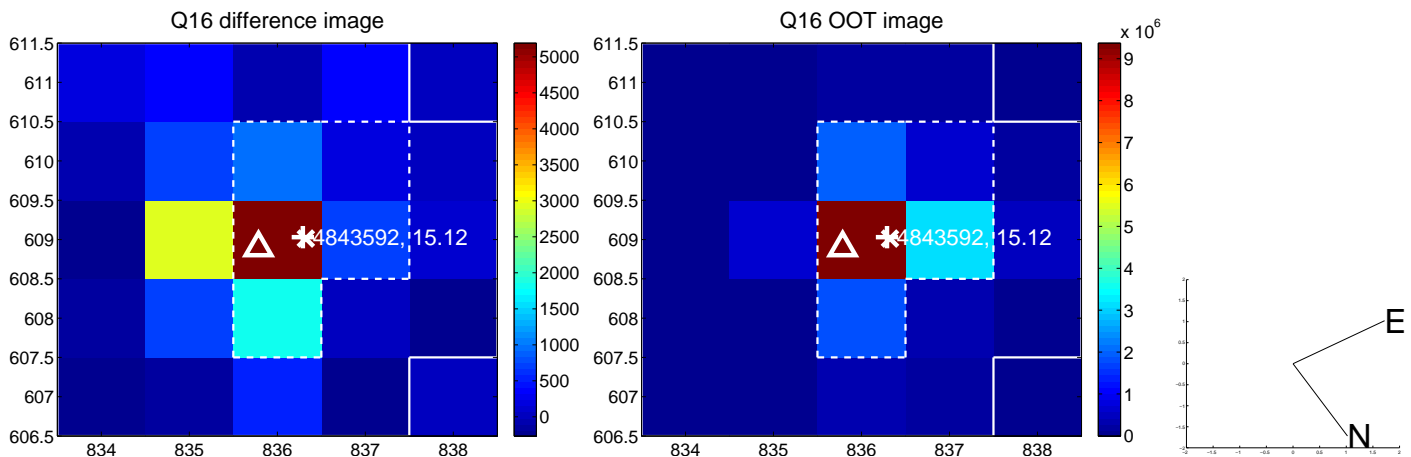
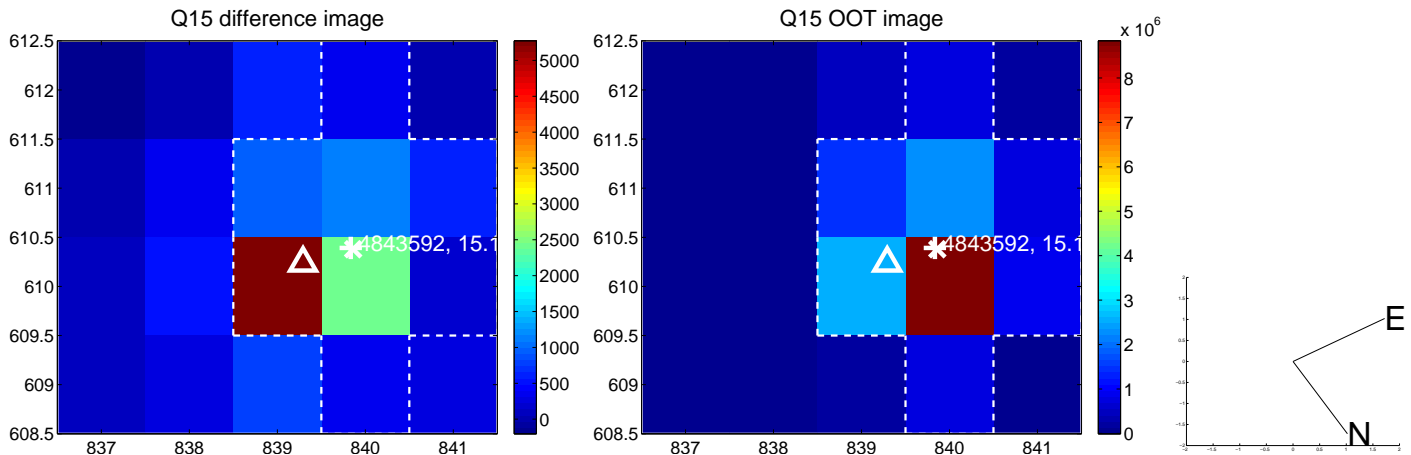
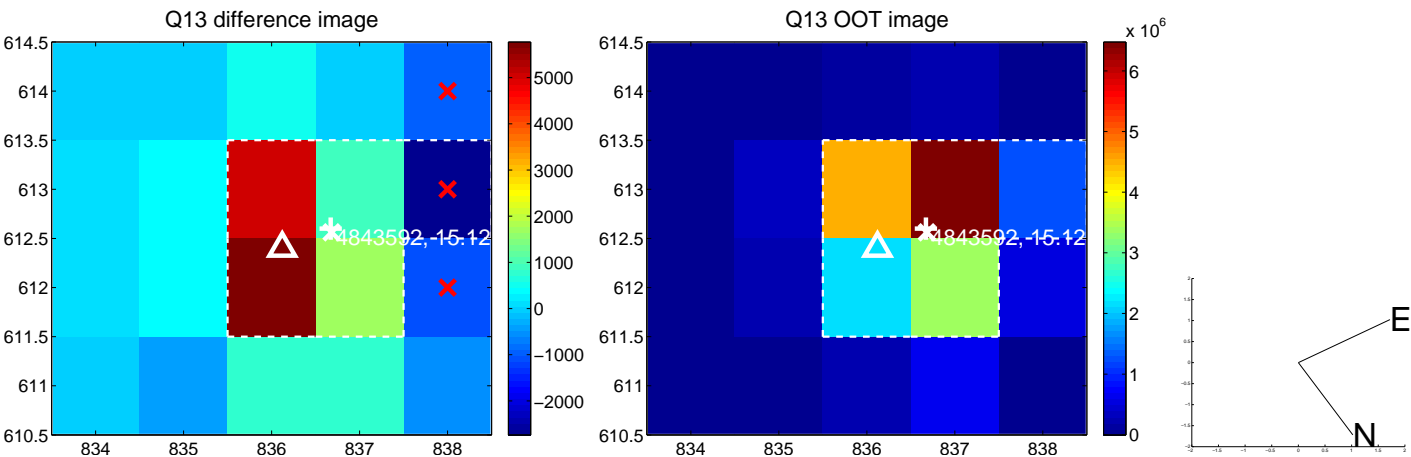
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



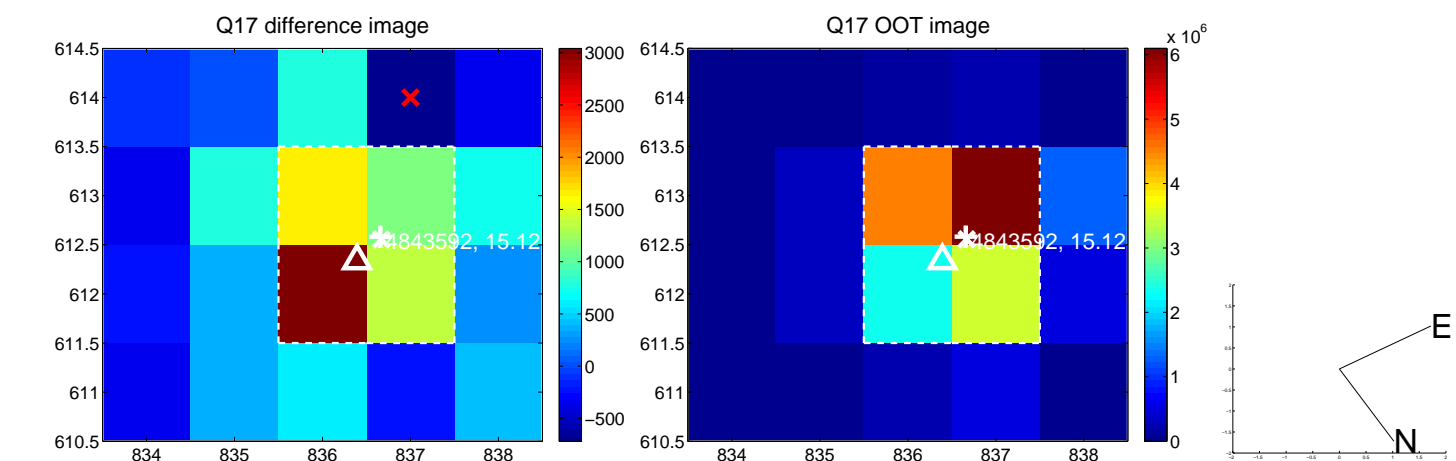
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



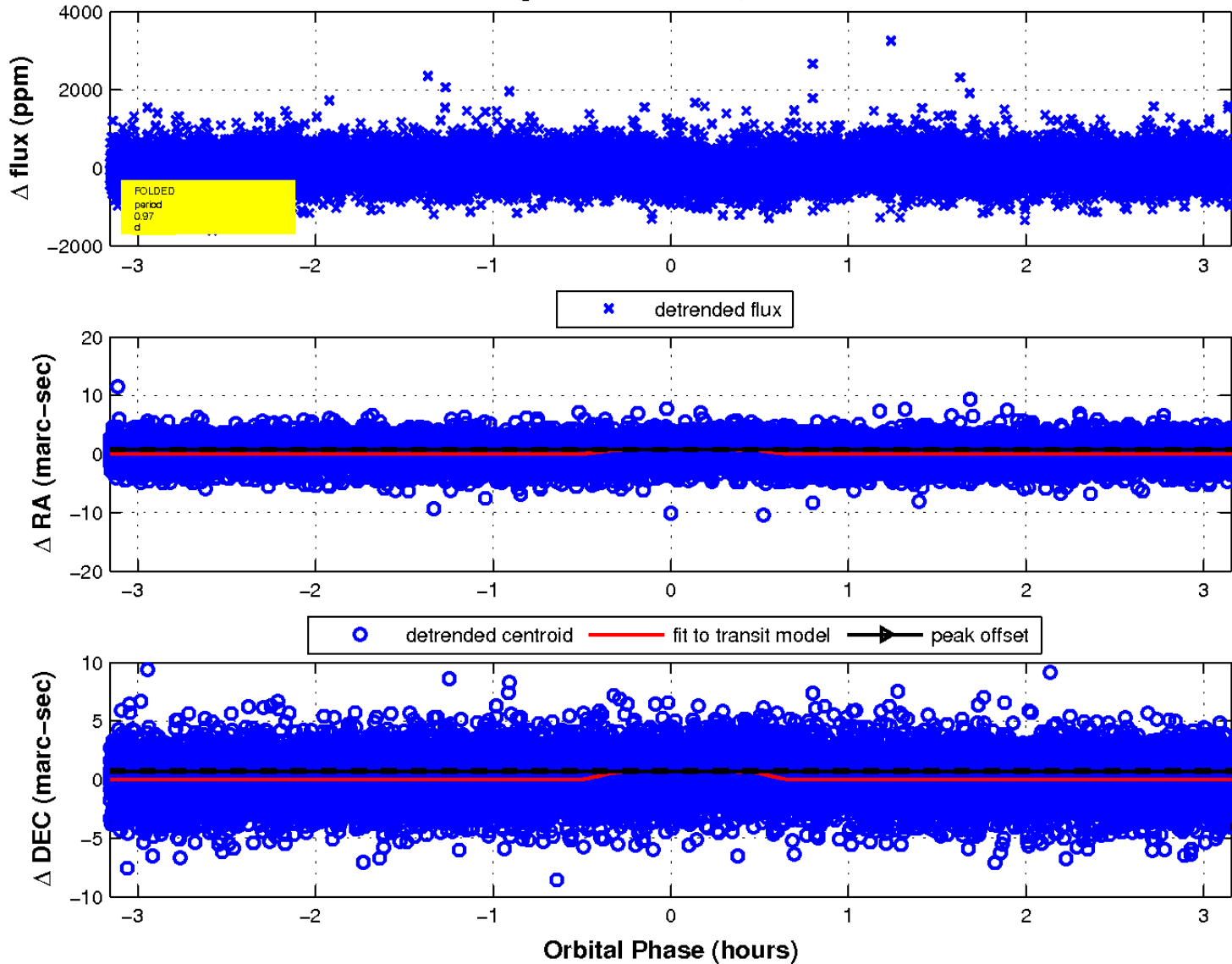
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

