

KIC 003867794

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})
003867794-01	OBS	4685.01	0.988485	131.843011	185.4	0.804	10.0	8.1	1.00	5763	1.65	2437.53
003867794-02	OBS	No	0.988480	132.342201	153.6	1.557	9.3	9.7	1.00	5763	1.48	2437.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003867794-01	OBS	PC	0.81	0	0	0	0	MOD_SEC_DV—MOD_SEC_ALT—PLANET_PERIOD_IS_HALF_ALT—HAS_SEC_TCE—CENT_FEW_MEAS
003867794-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

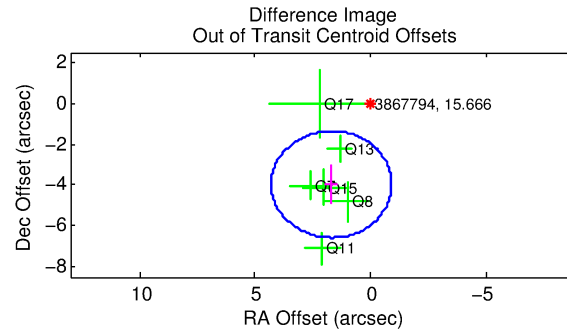
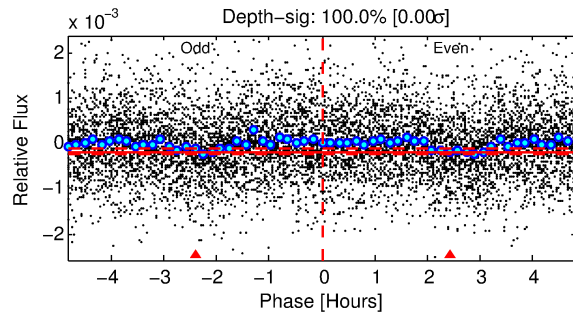
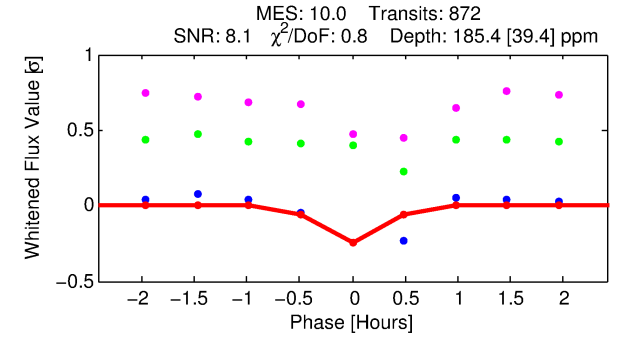
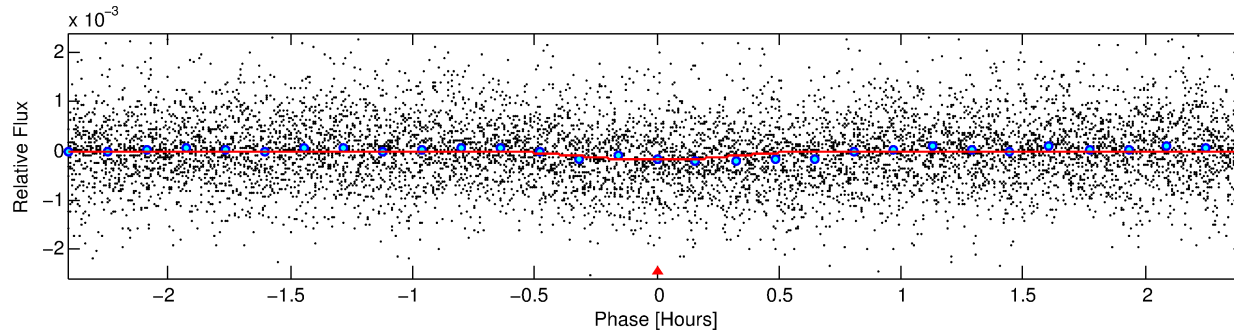
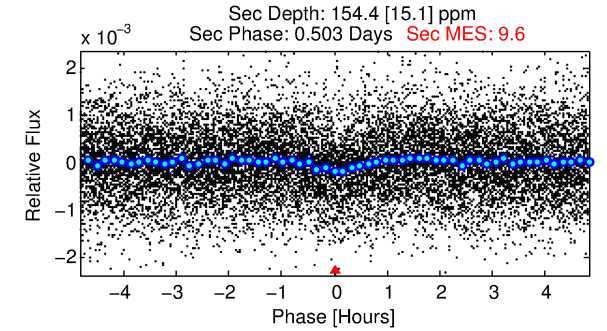
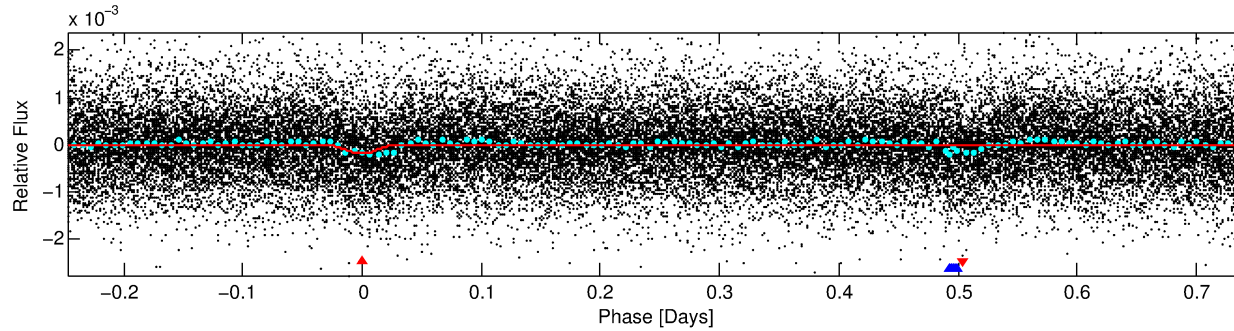
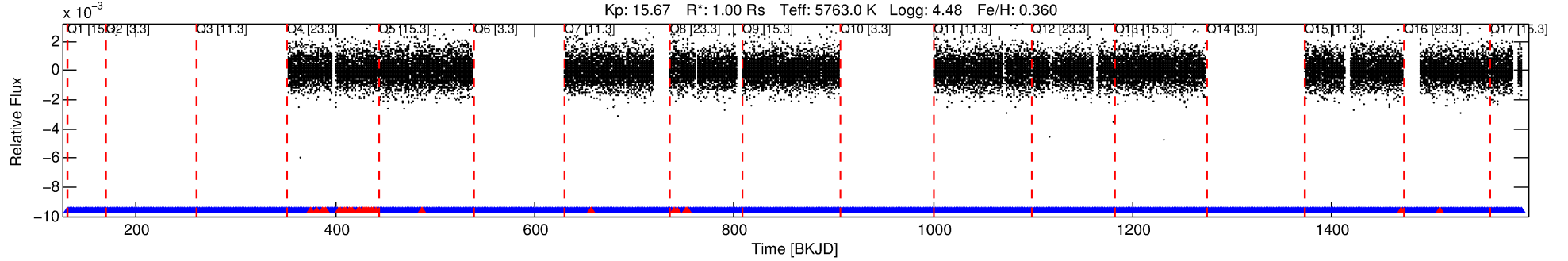
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003867794-01

No Significant Match Found

DV One-Page Summary

KIC: 3867794 Candidate: 1 of 2 Period: 0.988 d
KOI: K04685.01 Corr: 0.776



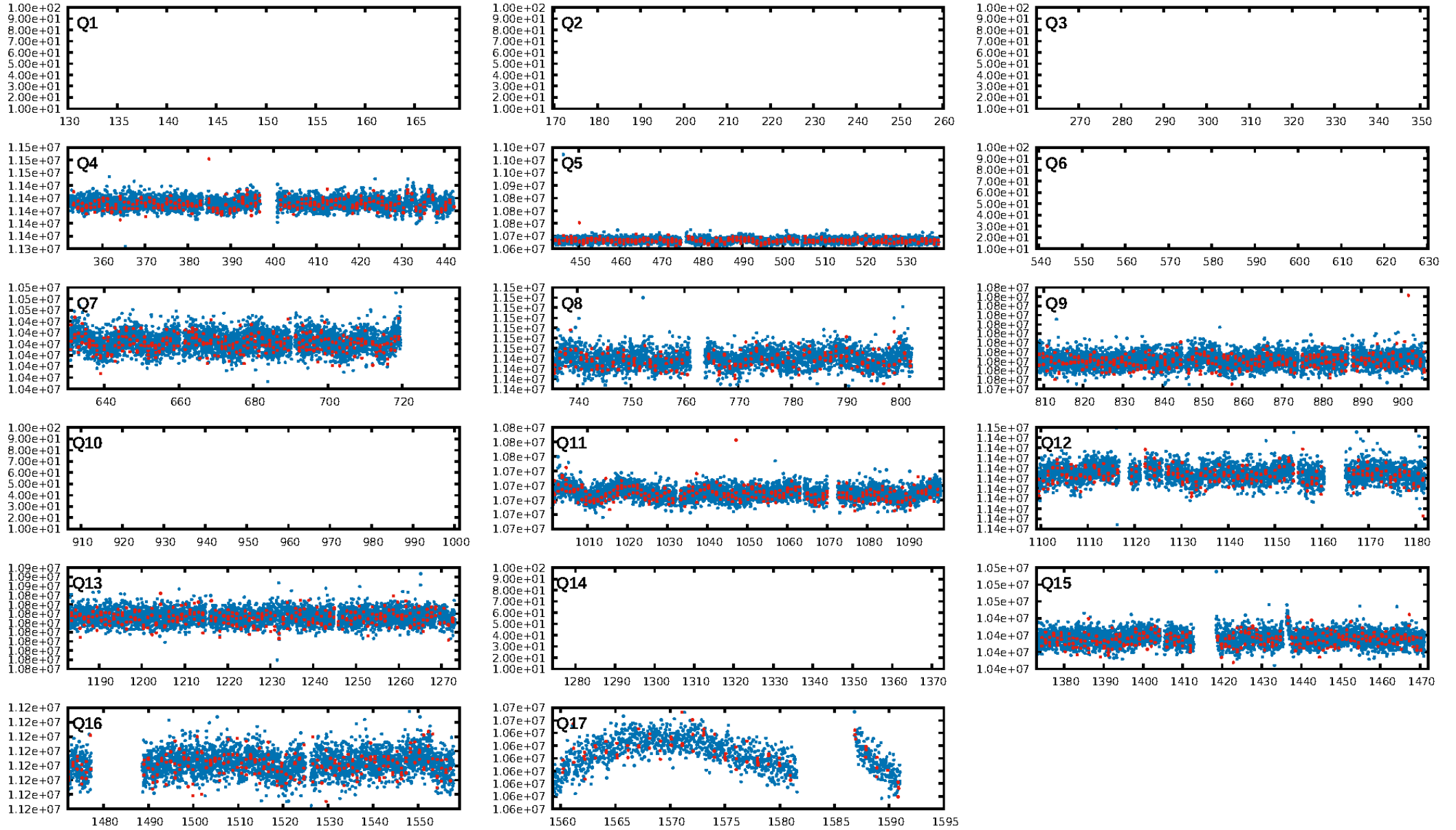
DV Fit Results:

Period = 0.98848 [0.00001] d
Epoch = 131.8430 [0.0018] BKJD
Rp/R* = 0.0152 [0.0150]
a/R* = 4.51 [19.13]
b = 0.90 [0.97]
Seff = 2437.53 [876.20]
Teq = 1792 [161] K
Rp = 1.65 [1.68] Re
a = 0.0201 [0.0045] AU
Ag = 12.57 [25.17] [0.46σ]
Teffp = 5216 [2581] K [1.32σ]

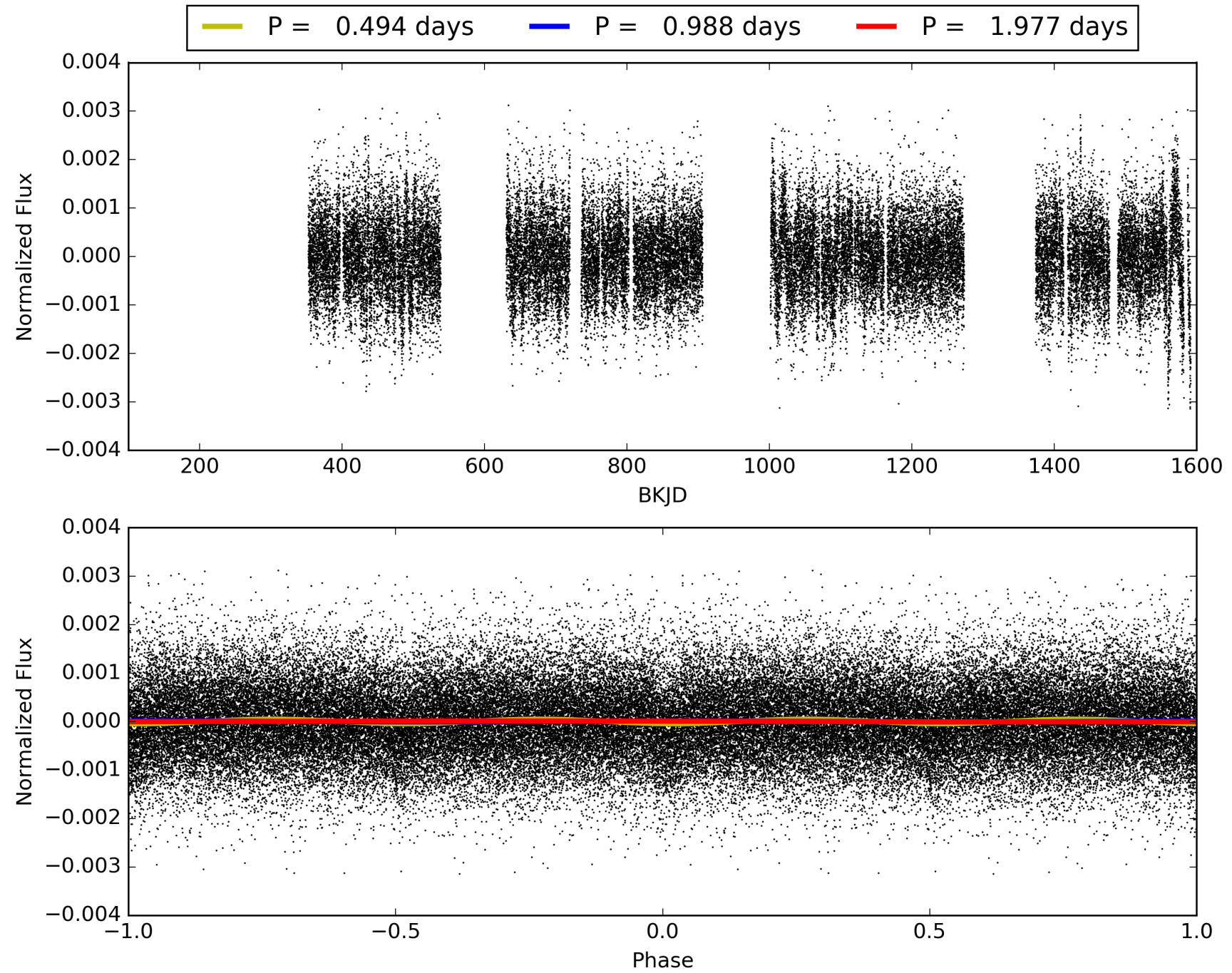
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.81e-26
RollingBand-fgt: 0.95 [805/844]
GhostDiagnostic-chr: 1.522
Centroid-sig: 0.0%
Centroid-so: 1.871 arcsec [1.69σ]
OotOffset-rm: 4.319 arcsec [4.96σ]
OotOffset-st: 0/3/1/2 [6]
KicOffset-rm: 1.377 arcsec [2.85σ]
KicOffset-st: 0/3/1/2 [6]
DiffImageQuality-fgm: 0.17 [1/6]
DiffImageOverlap-fno: 1.00 [11/11]

TCE 003867794-01, PDC Light Curves

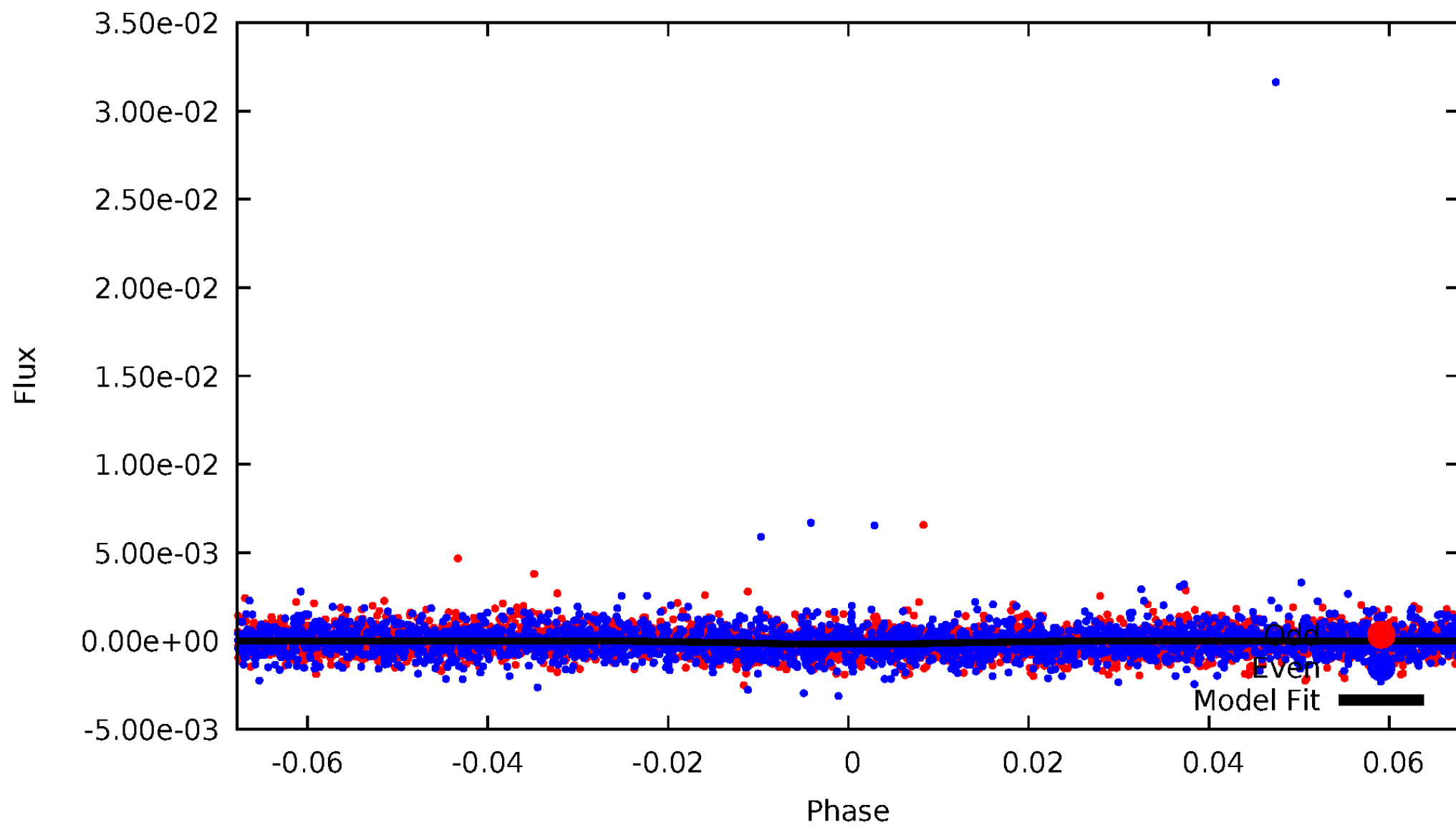


TCE 003867794-01



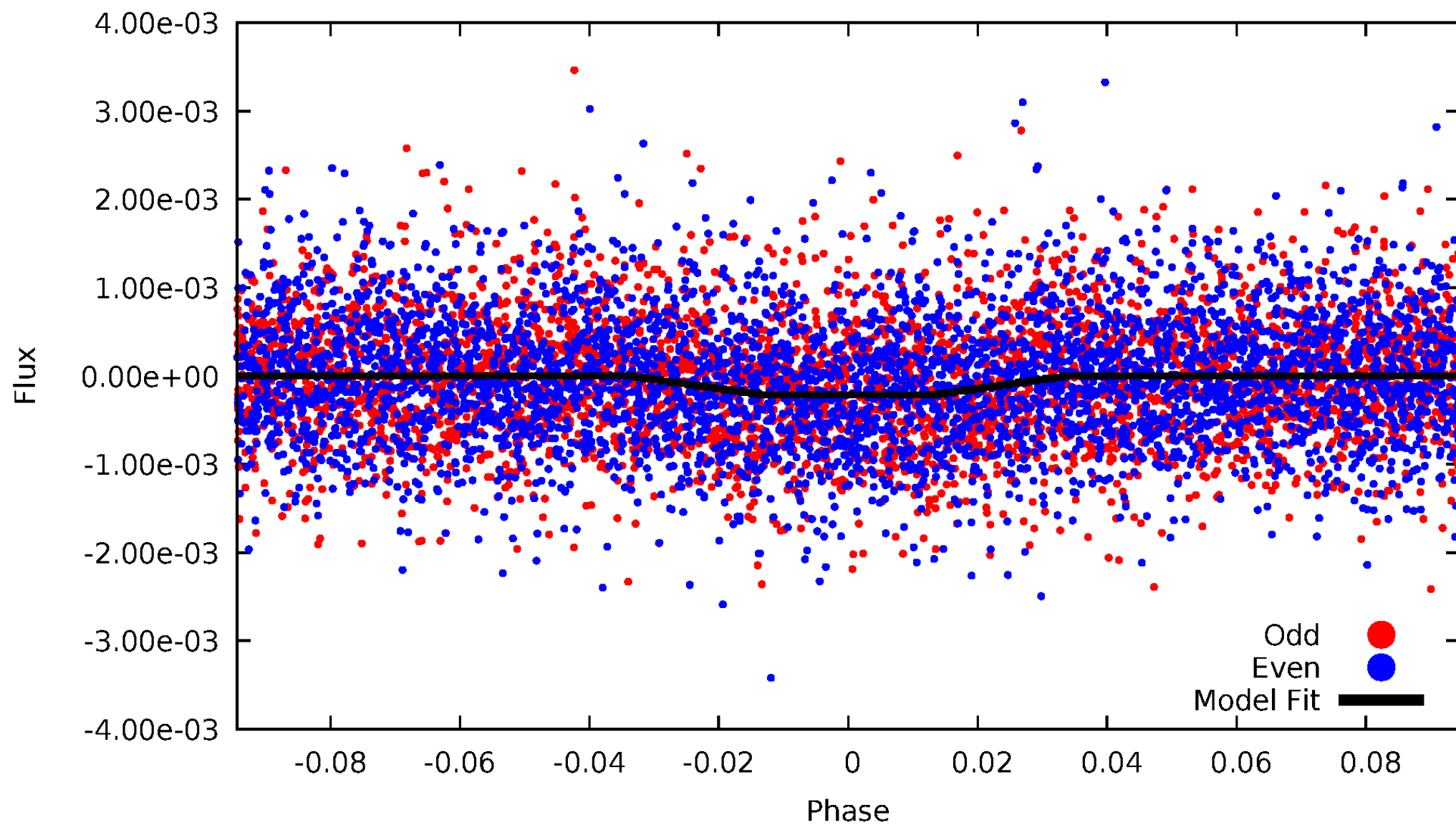
DV Odd/Even

TCE 003867794-01

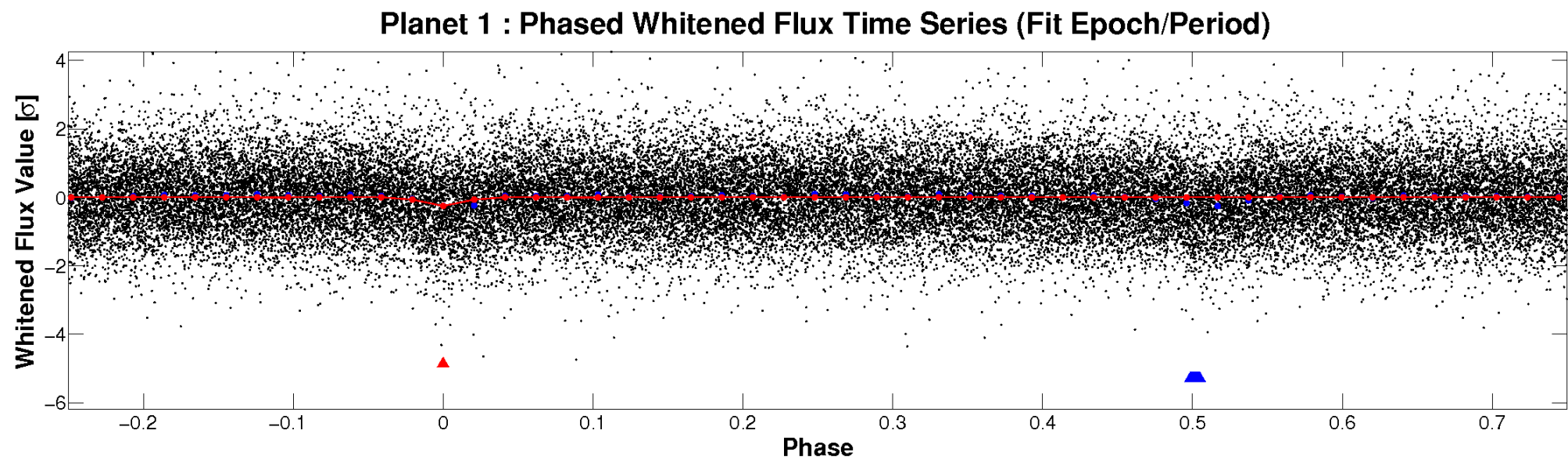
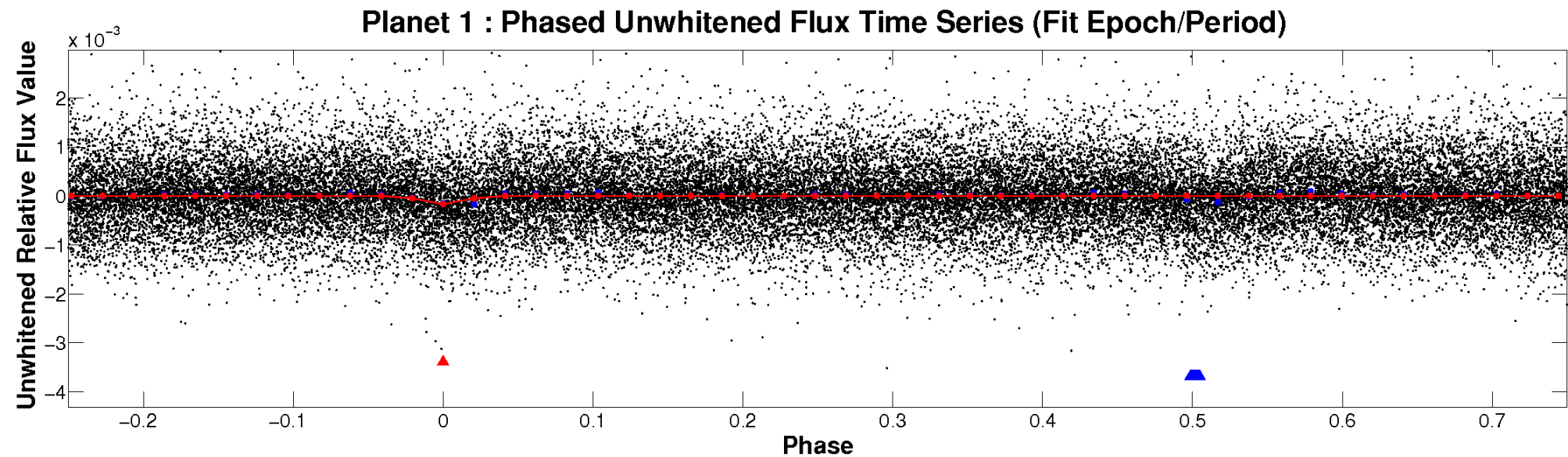


ALT Odd/Even

TCE 003867794-01

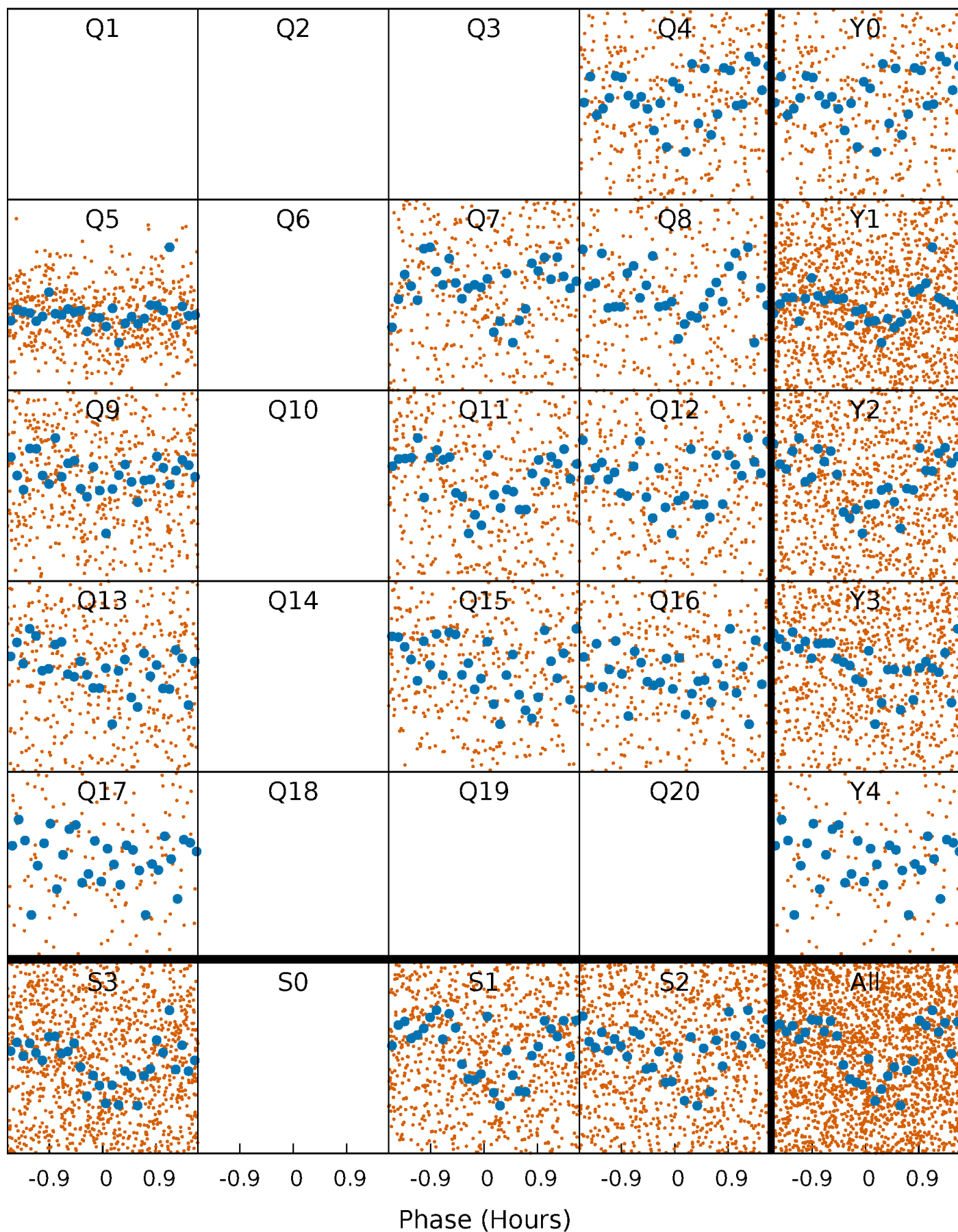


Non-Whitened Vs. Whitened Light Curve



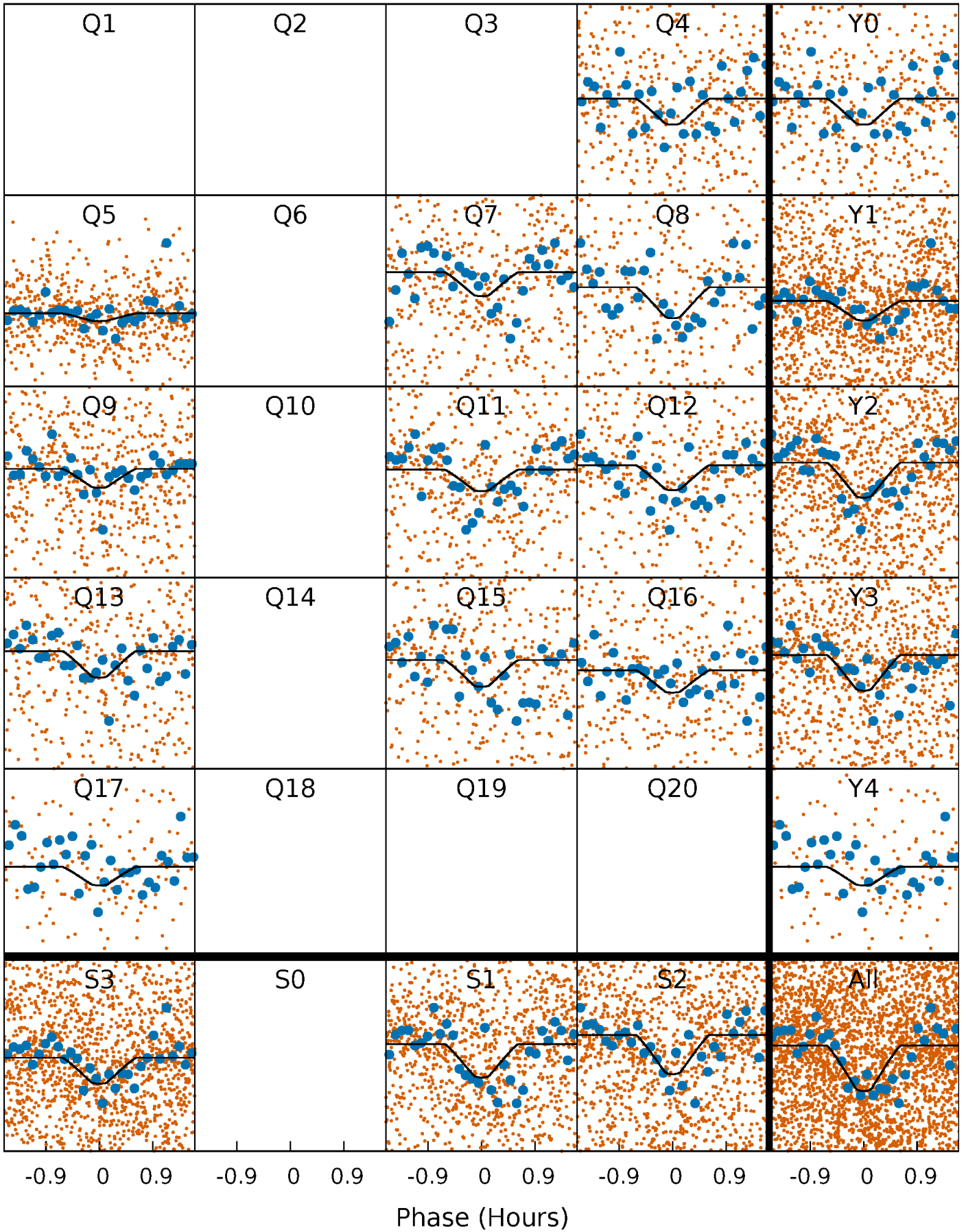
PDC Quarter-Phased Transit Curves

TCE 003867794-01 P= 0.988485 Days $T_0=131.843011$ (BKJD)



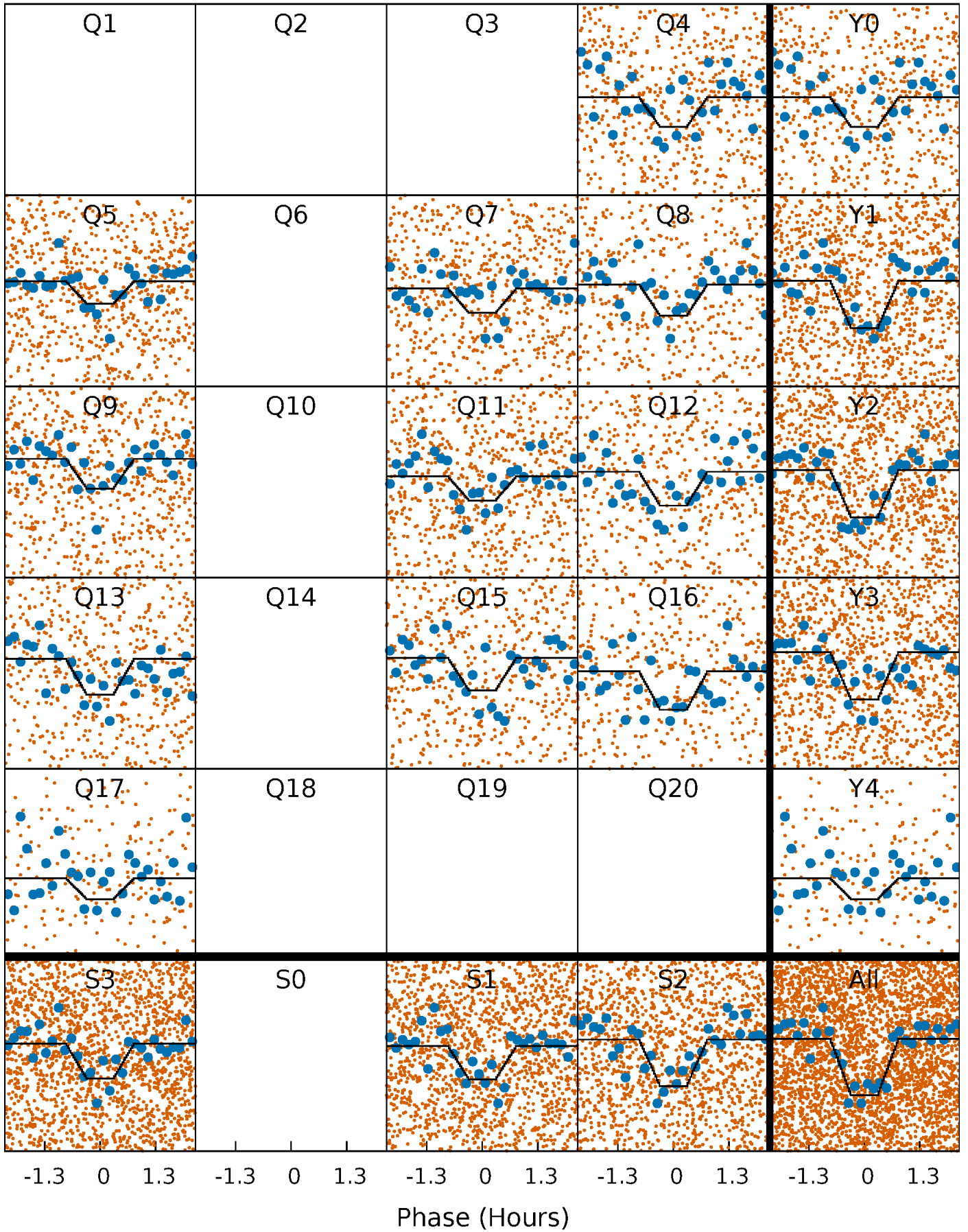
DV Quarter-Phased Transit Curves

TCE 003867794-01 P= 0.988485 Days $T_0=131.843011$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

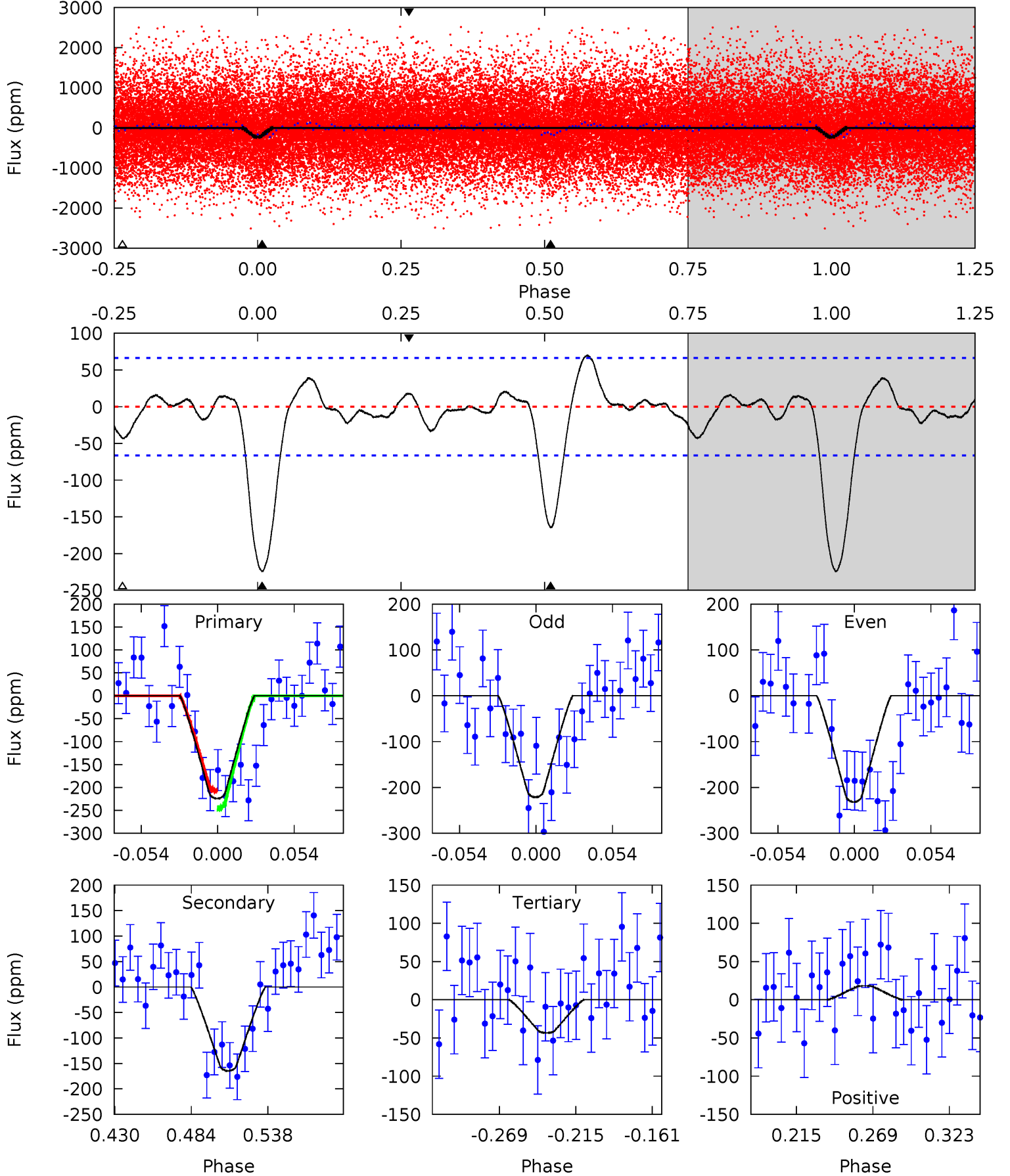
TCE 003867794-01 P= 0.988495 Days $T_0=131.843004$ (BKJD)



DV Model-Shift Uniqueness Test

003867794-01, P = 0.988485 Days, E = 131.843011 Days

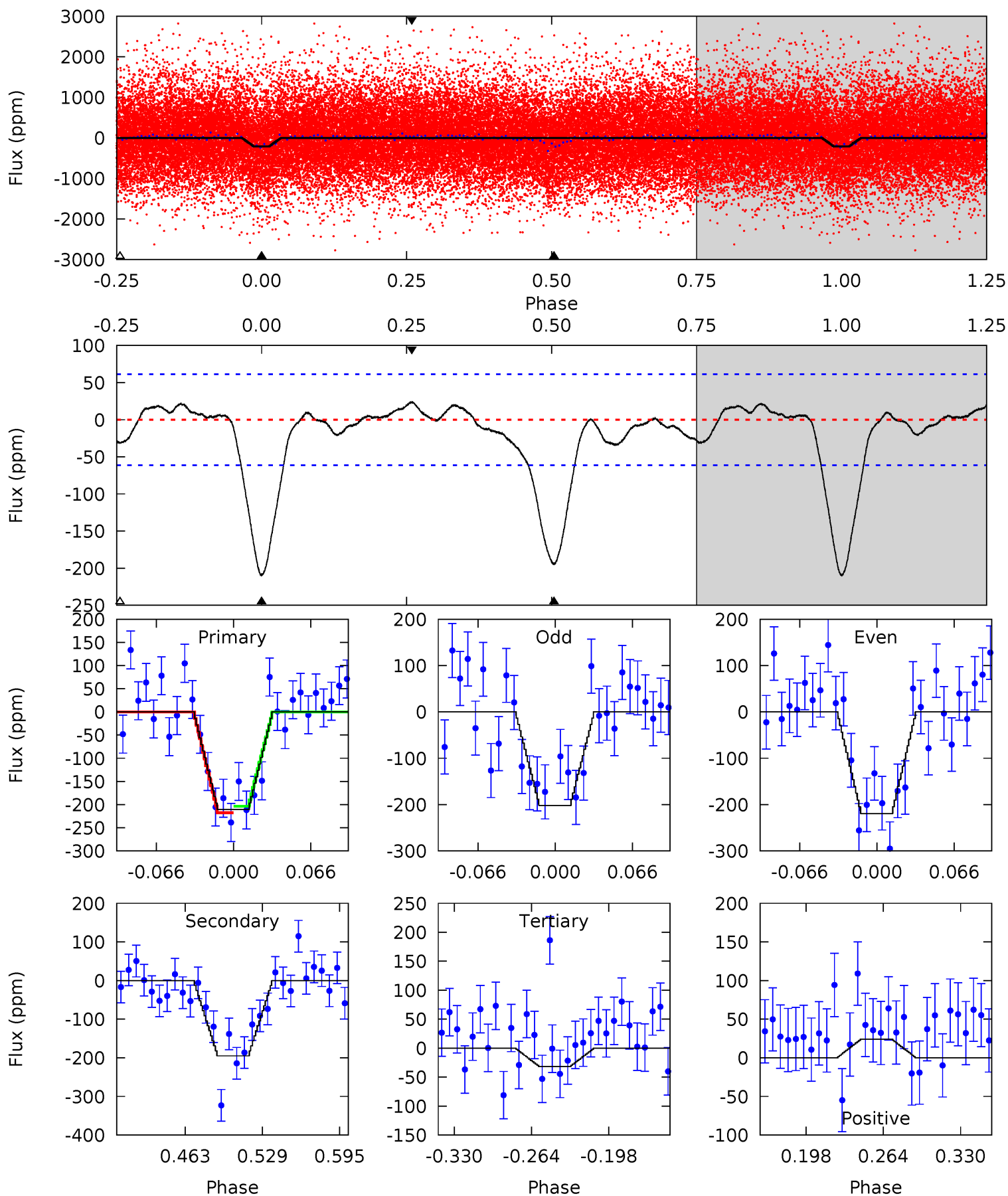
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	11.7	3.07	1.29	4.69	1.93	1.36	12.8	14.6	8.59	10.4	0.37	0.88	0.24	1.40



Alt Model-Shift Uniqueness Test

003867794-01, P = 0.988495 Days, E = 131.843004 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.0	14.8	2.41	1.83	4.65	1.84	1.14	13.6	14.2	12.4	13.0	0.67	0.99	0.10	0.53



Stellar Parameters For KIC 003867794

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5763^{+180}_{-200}	$4.484^{+0.046}_{-0.184}$	$0.360^{+0.100}_{-0.300}$	$0.998^{+0.260}_{-0.093}$	$1.107^{+0.097}_{-0.146}$	$1.568^{+0.368}_{-0.733}$
	+3%/-3%	+1%/-4%	+28%/-83%	+26%/-9%	+9%/-13%	+23%/-47%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003867794-01 / KOI 4685.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-165 ± 14	$2.10^{+1.48}_{-1.35}$	2564^{+151}_{-136}	4882^{+3244}_{-968}	$8.281^{+55.494}_{-5.414}$
Alt.	-195 ± 13	$2.08^{+1.52}_{-1.24}$	2547^{+169}_{-110}	5051^{+2974}_{-1000}	$9.860^{+47.237}_{-6.527}$

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 $A_{obs} \gg 1.0$

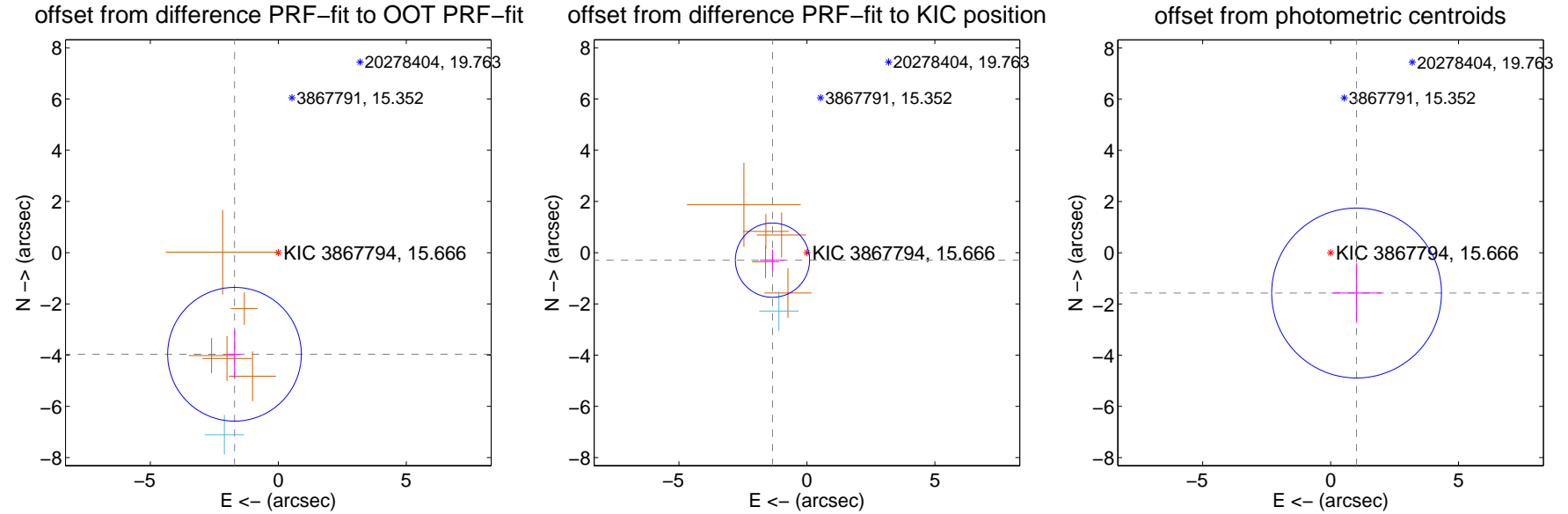
DV Centroid Data

Supplemental centroid analysis for 003867794-01. Kepler magnitude: 15.67. Transit SNR 8.10

There are 1 quarters with good PRF difference image offsets

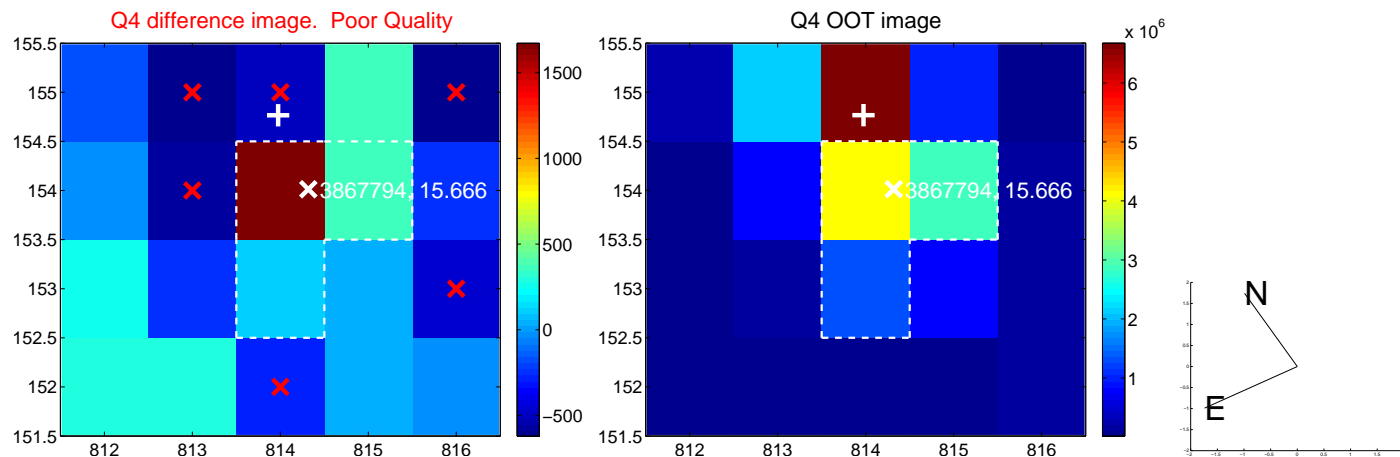
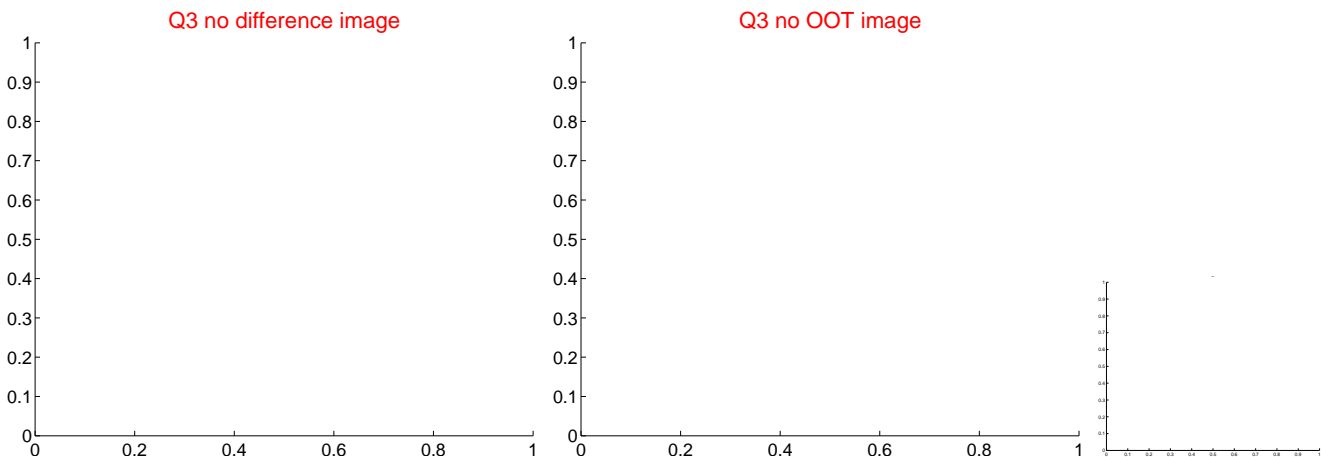
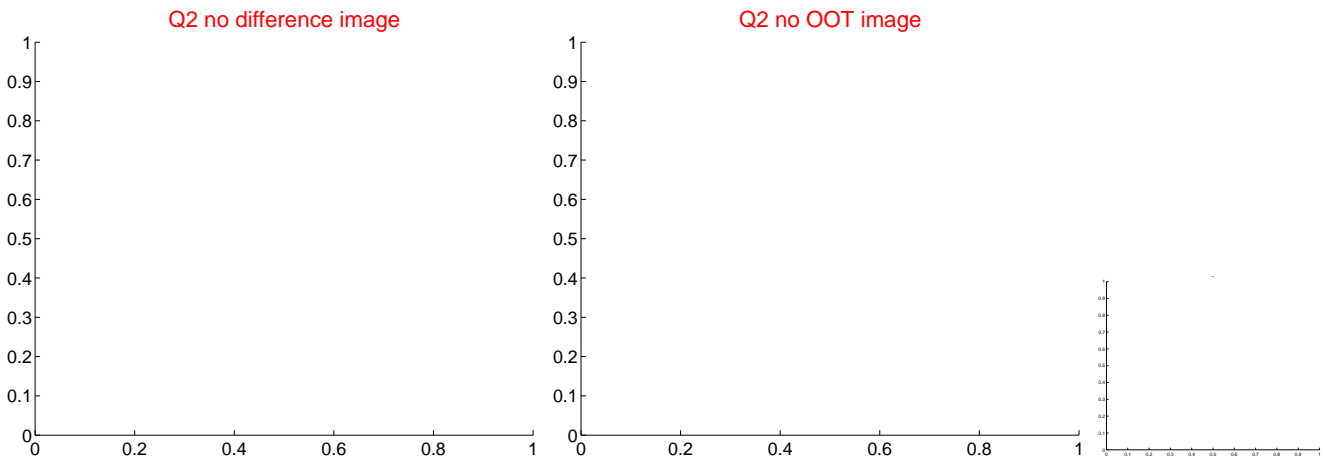
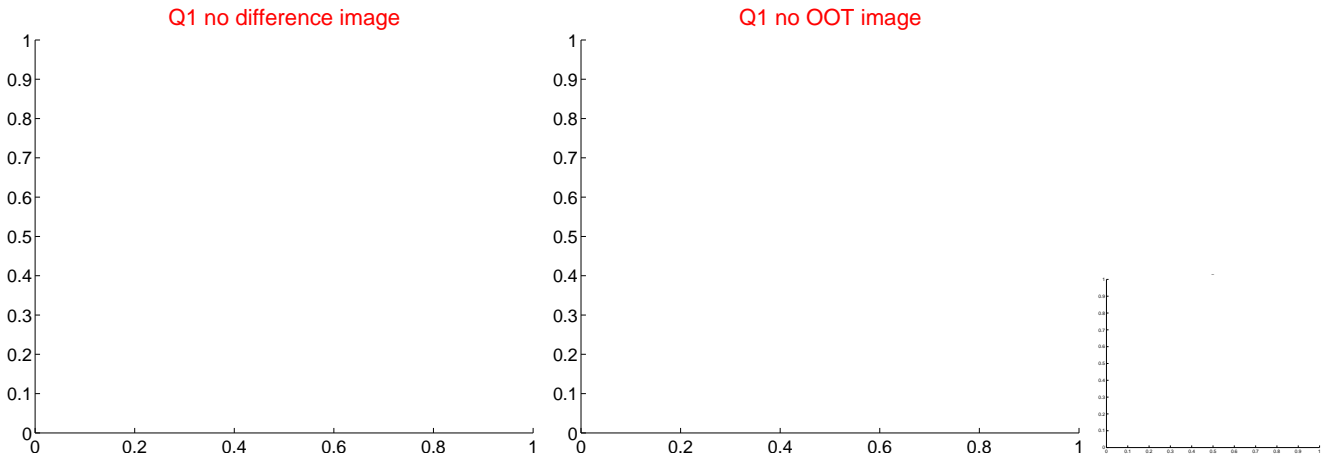
The direct PRF centroid is offset from the target star catalog position by about 1.87 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.319 \pm 0.870	4.96	1.712 \pm 0.268	-3.966 \pm 0.941
PRF-fit source offset from KIC position	1.377 \pm 0.483	2.85	1.346 \pm 0.486	-0.292 \pm 0.410
photometric centroid source offset	1.87 \pm 1.11	1.69	-1.01 \pm 0.98	-1.57 \pm 1.16

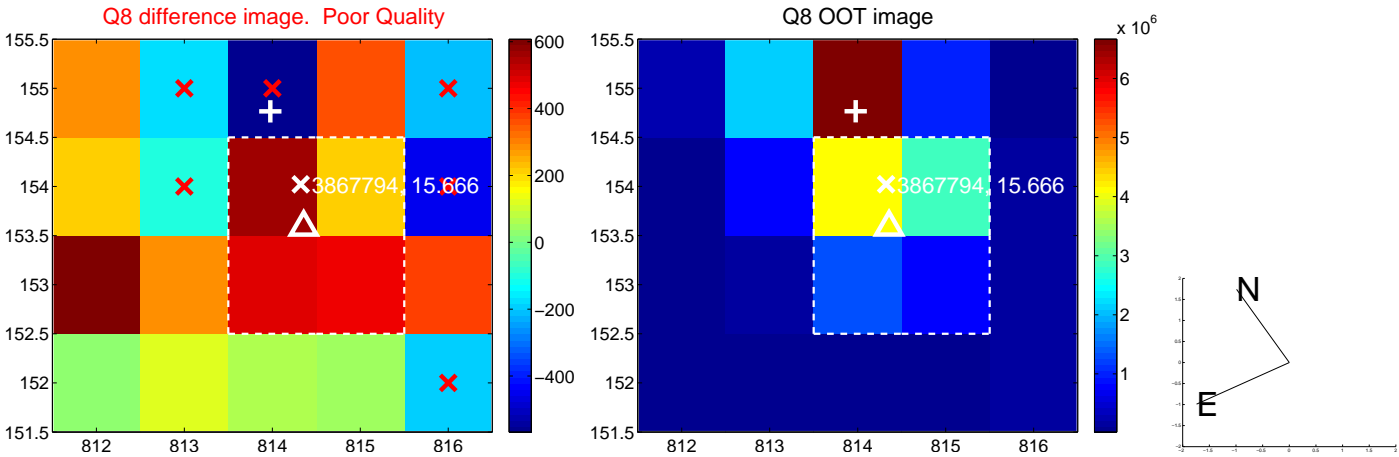
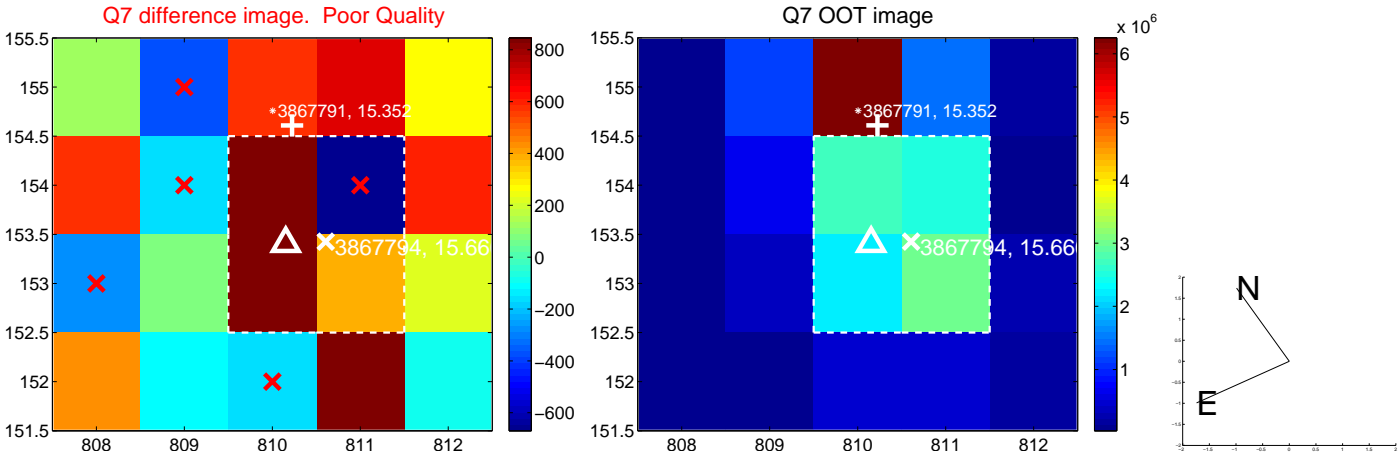
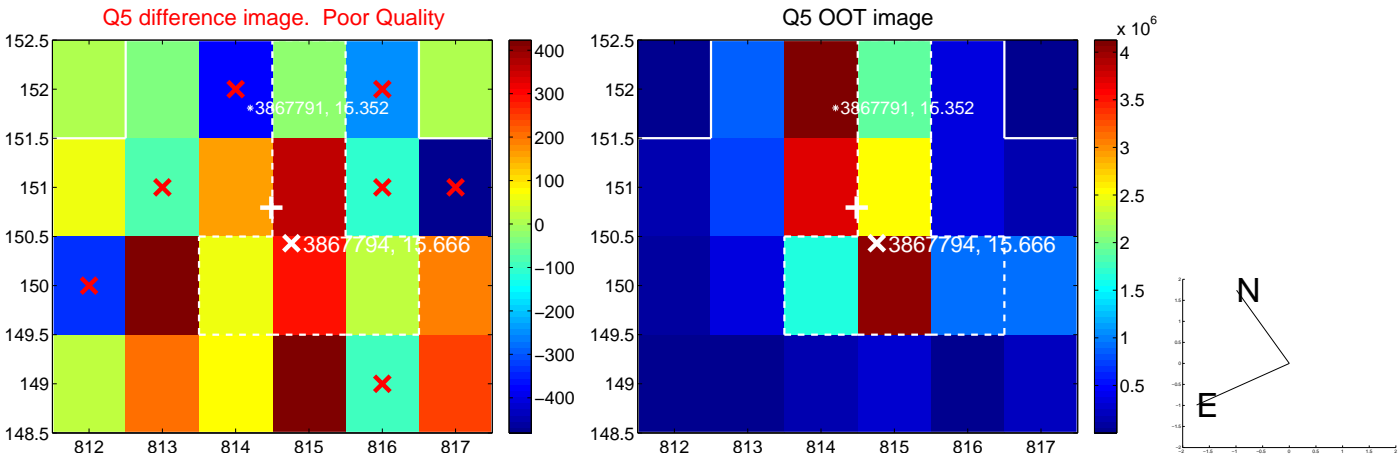


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

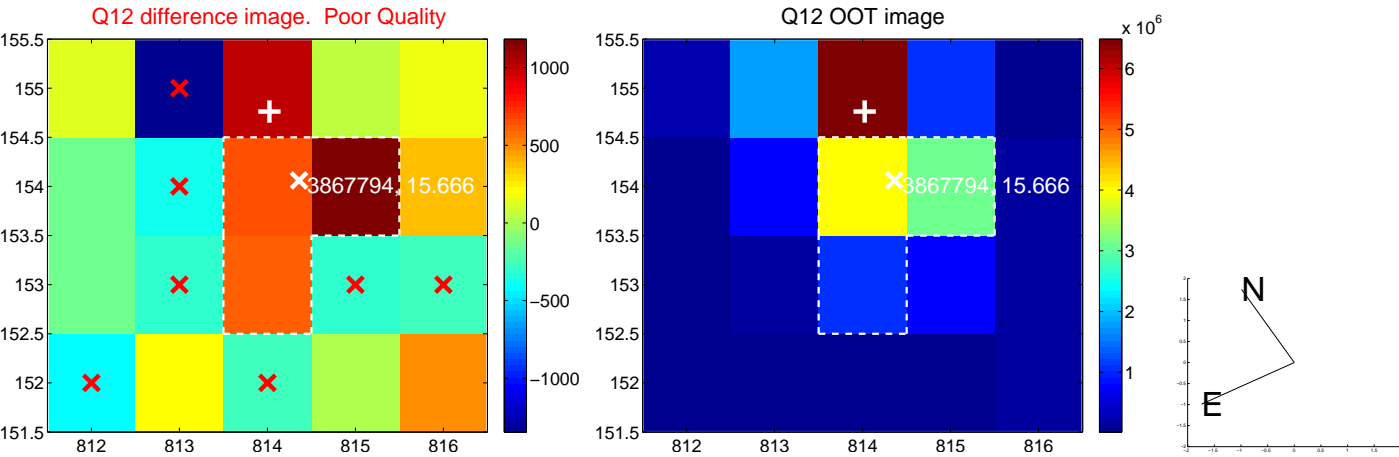
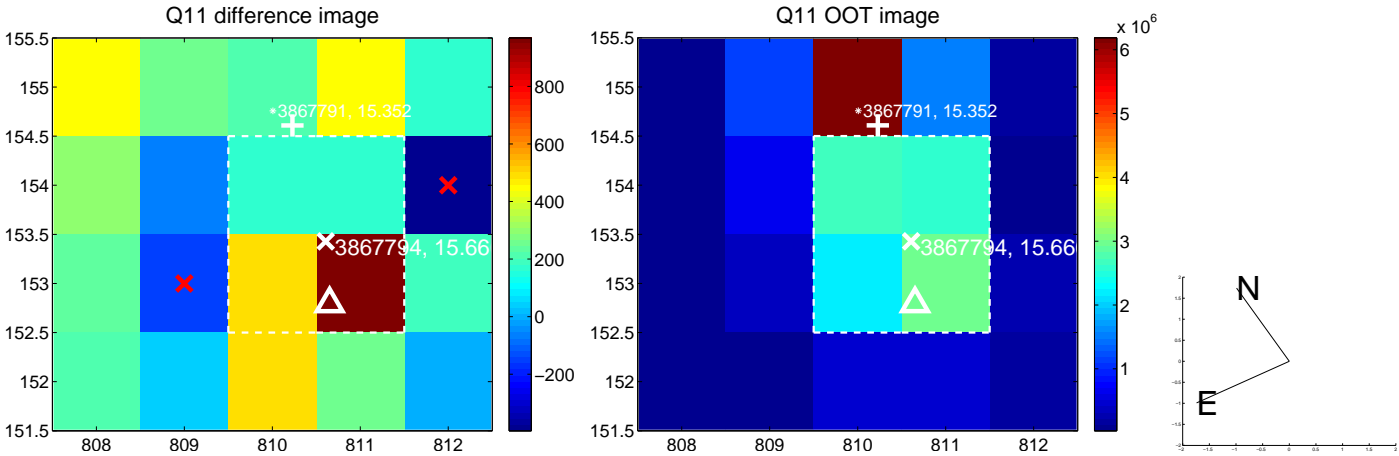
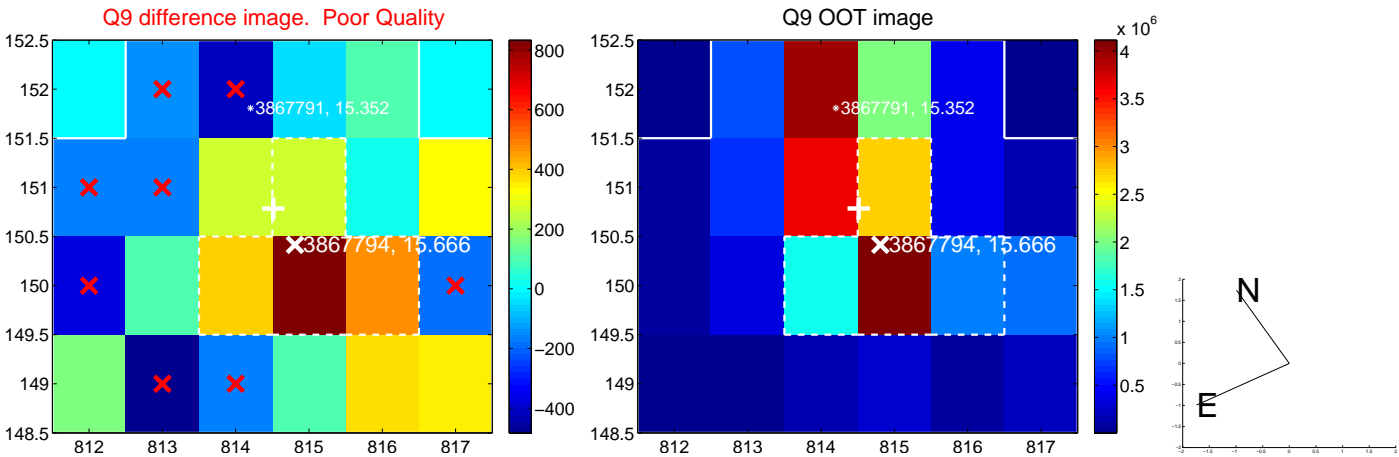
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



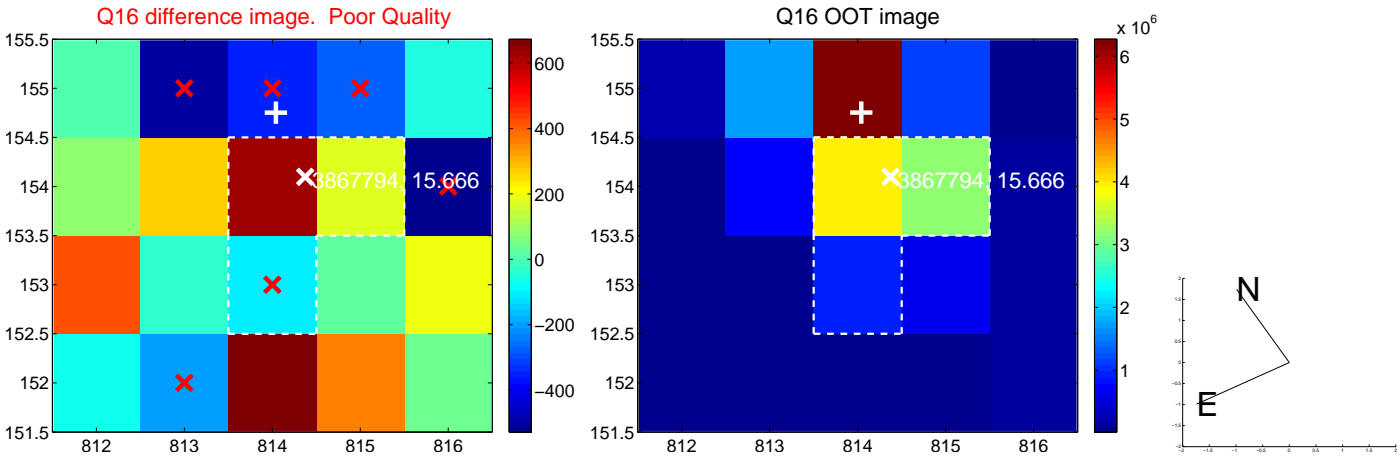
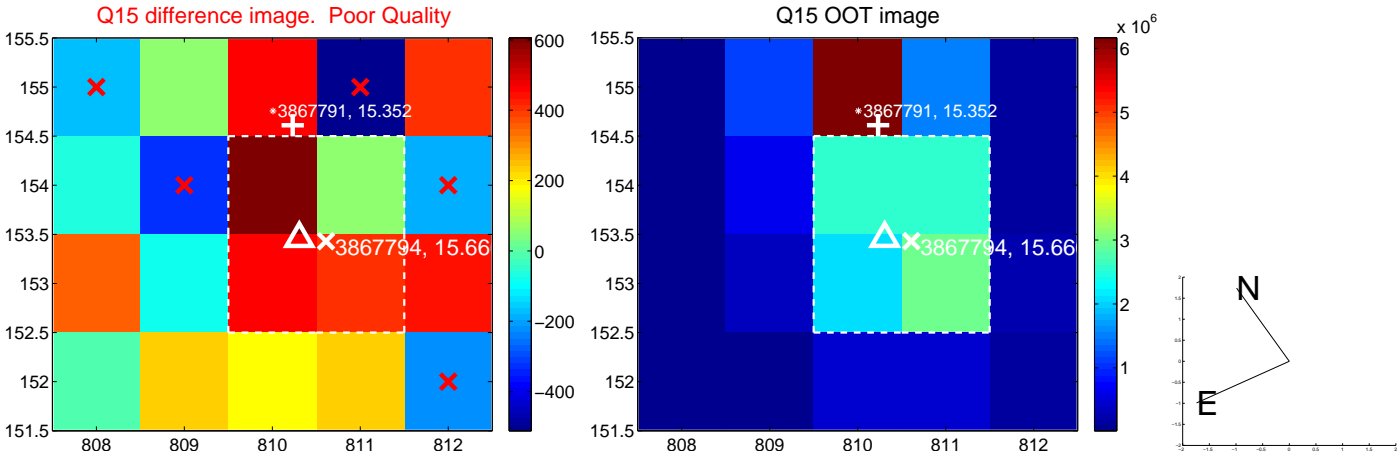
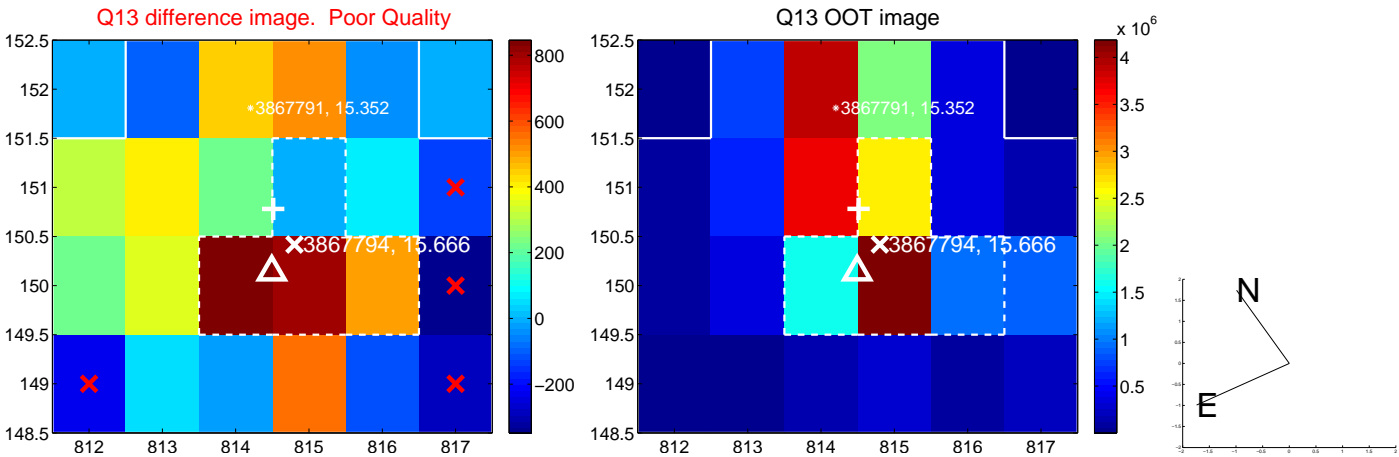
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



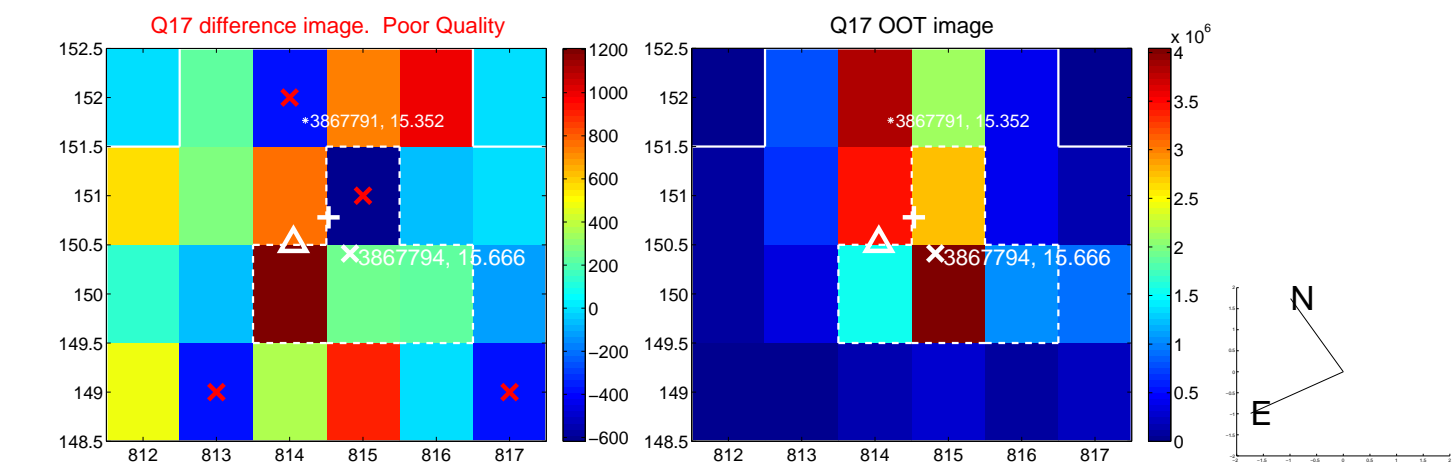
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



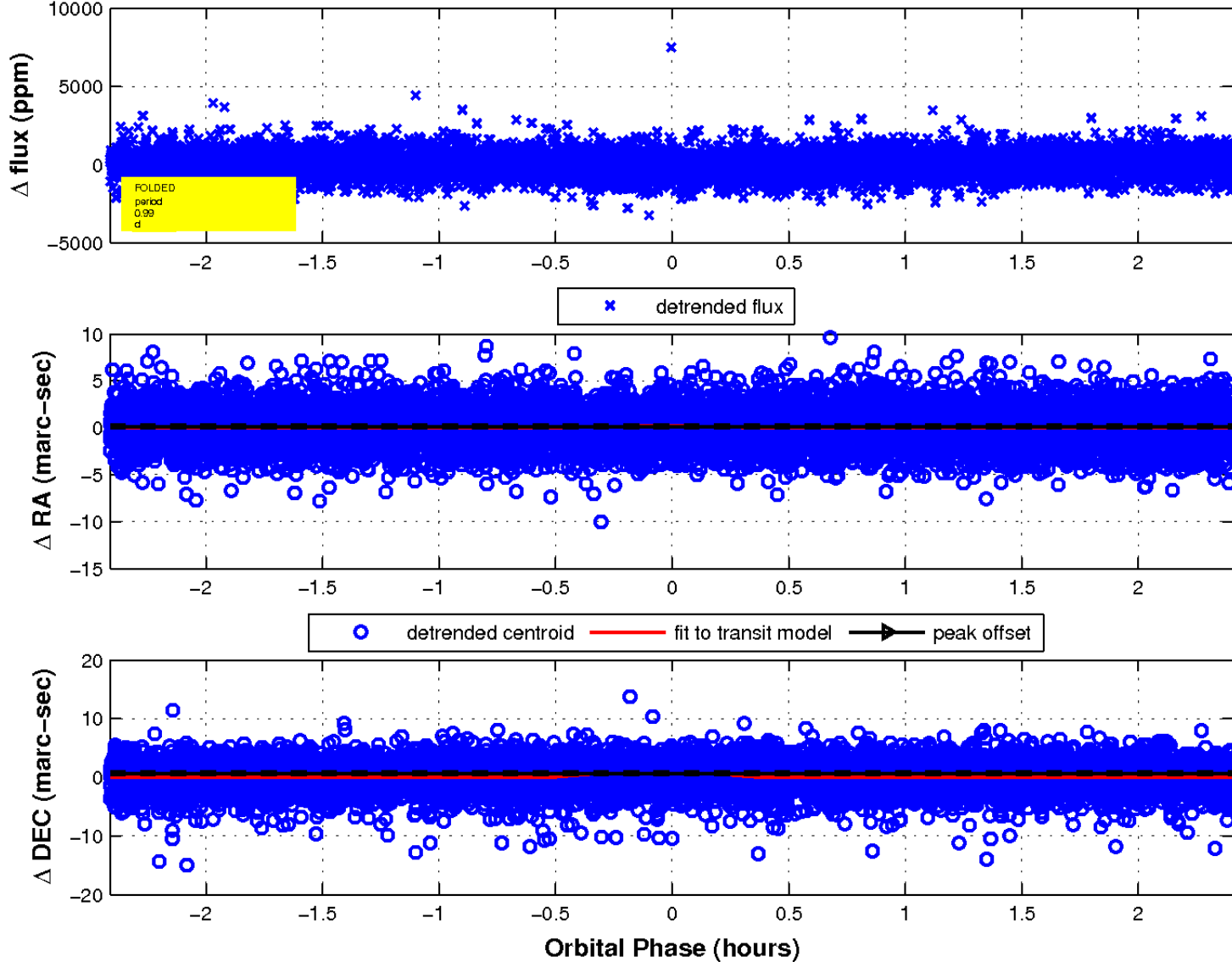
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

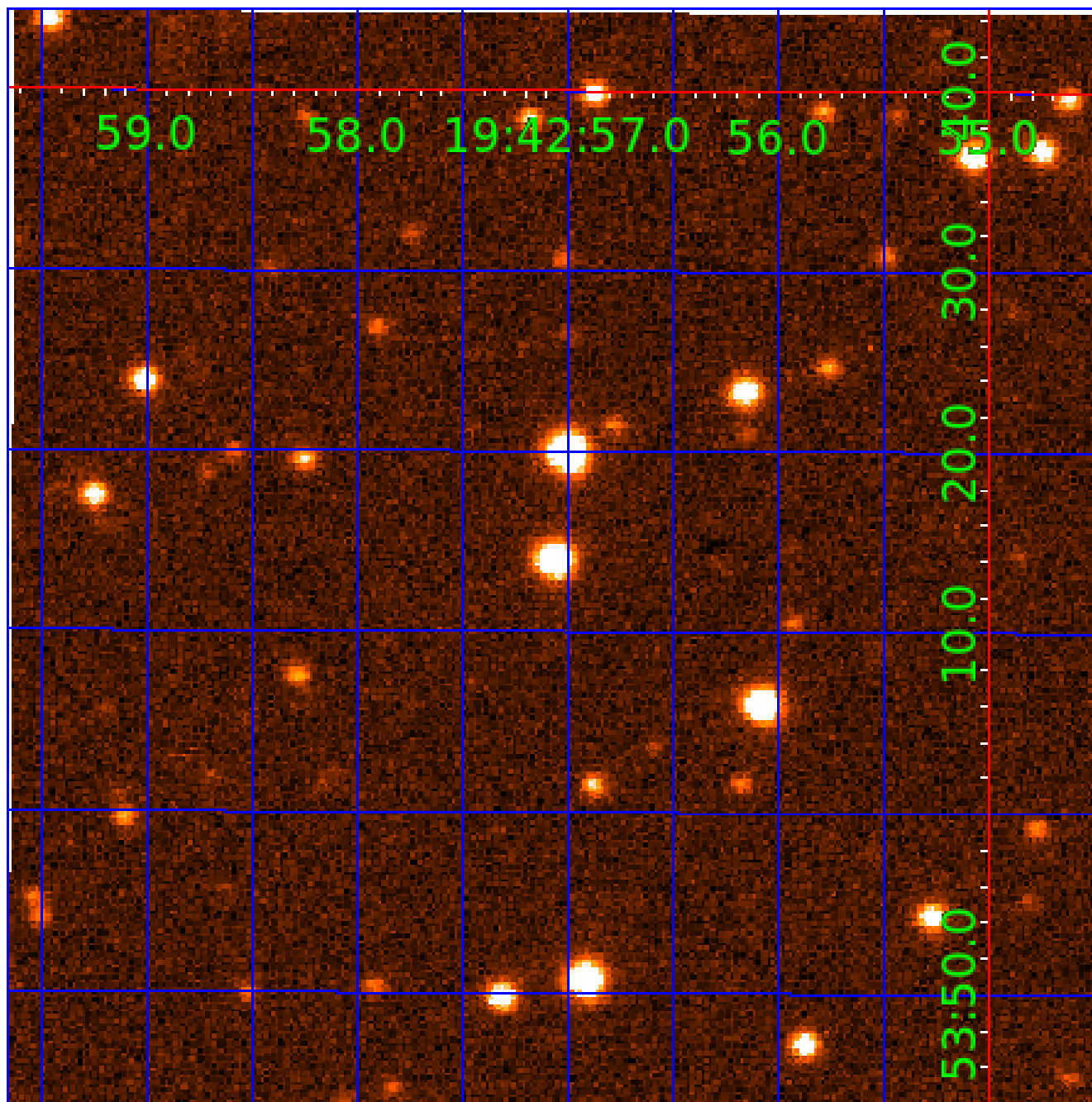


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 003867794

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})
003867794-01	OBS	4685.01	0.988485	131.843011	185.4	0.804	10.0	8.1	1.00	5763	1.65	2437.53
003867794-02	OBS	No	0.988480	132.342201	153.6	1.557	9.3	9.7	1.00	5763	1.48	2437.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003867794-01	OBS	PC	0.81	0	0	0	0	MOD_SEC_DV—MOD_SEC_ALT—PLANET_PERIOD_IS_HALF_ALT—HAS_SEC_TCE—CENT_FEW_MEAS
003867794-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_FEW_DIFFS

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 003867794-02

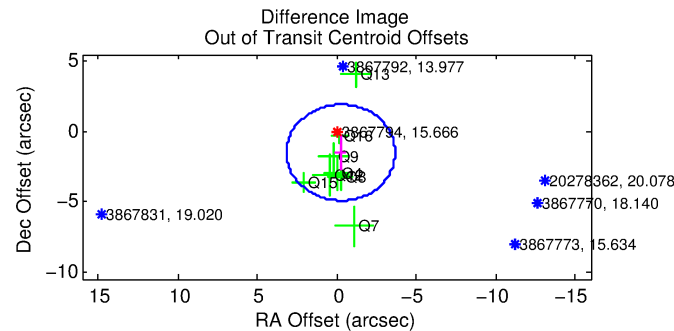
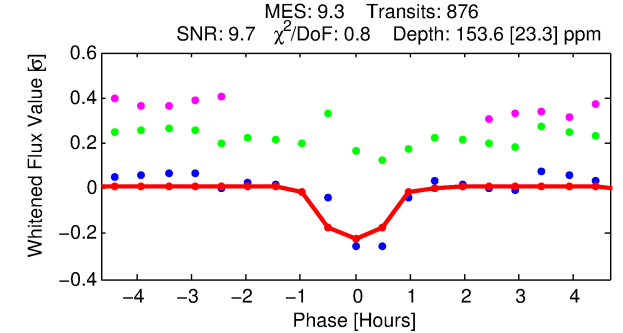
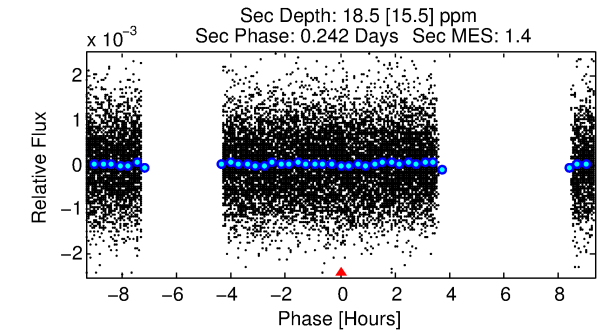
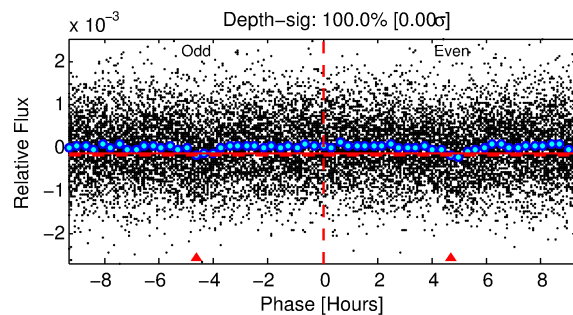
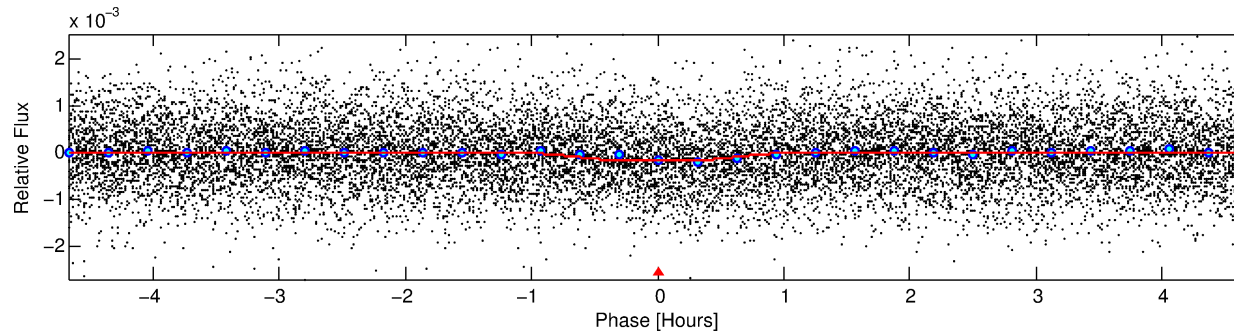
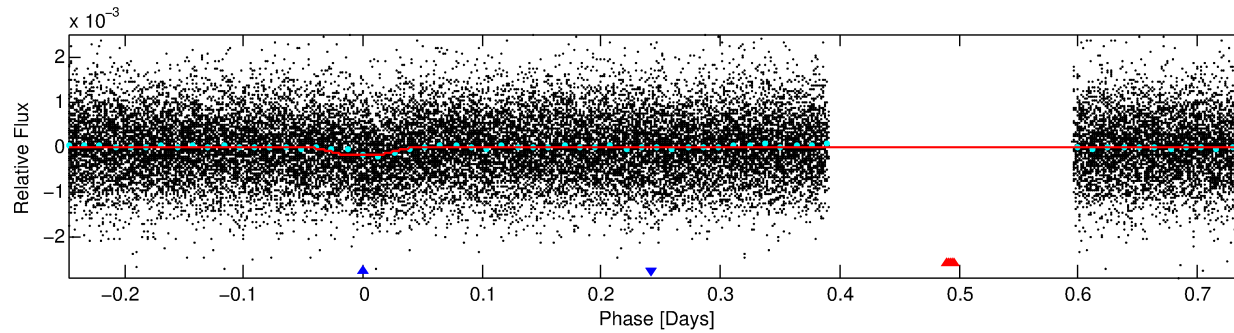
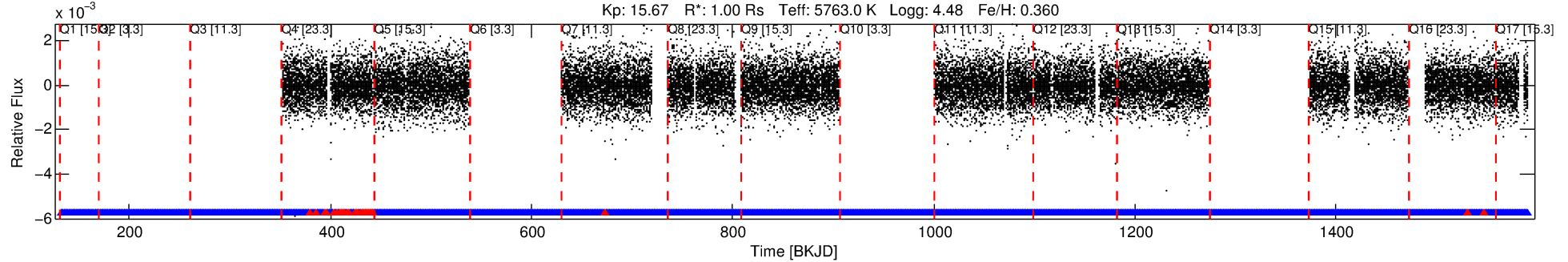
No Significant Match Found

DV One-Page Summary

KIC: 3867794 Candidate: 2 of 2 Period: 0.988 d

KOI: K04685 Corr: No Ephemeris Match

Kp: 15.67 R*: 1.00 Rs Teff: 5763.0 K Logg: 4.48 Fe/H: 0.360



DV Fit Results:

Period = 0.98848 [0.00001] d
Epoch = 132.3422 [0.0025] BKJD
Rp/R* = 0.0136 [0.0136]
a/R* = 2.45 [9.29]
b = 0.90 [0.99]
Seff = 2437.54 [876.20]
Teq = 1792 [161] K
Rp = 1.48 [1.53] Re
a = 0.0201 [0.0045] AU
Ag = 1.87 [4.08] [0.21σ]
Teffp = 3237 [1755] K [0.82σ]

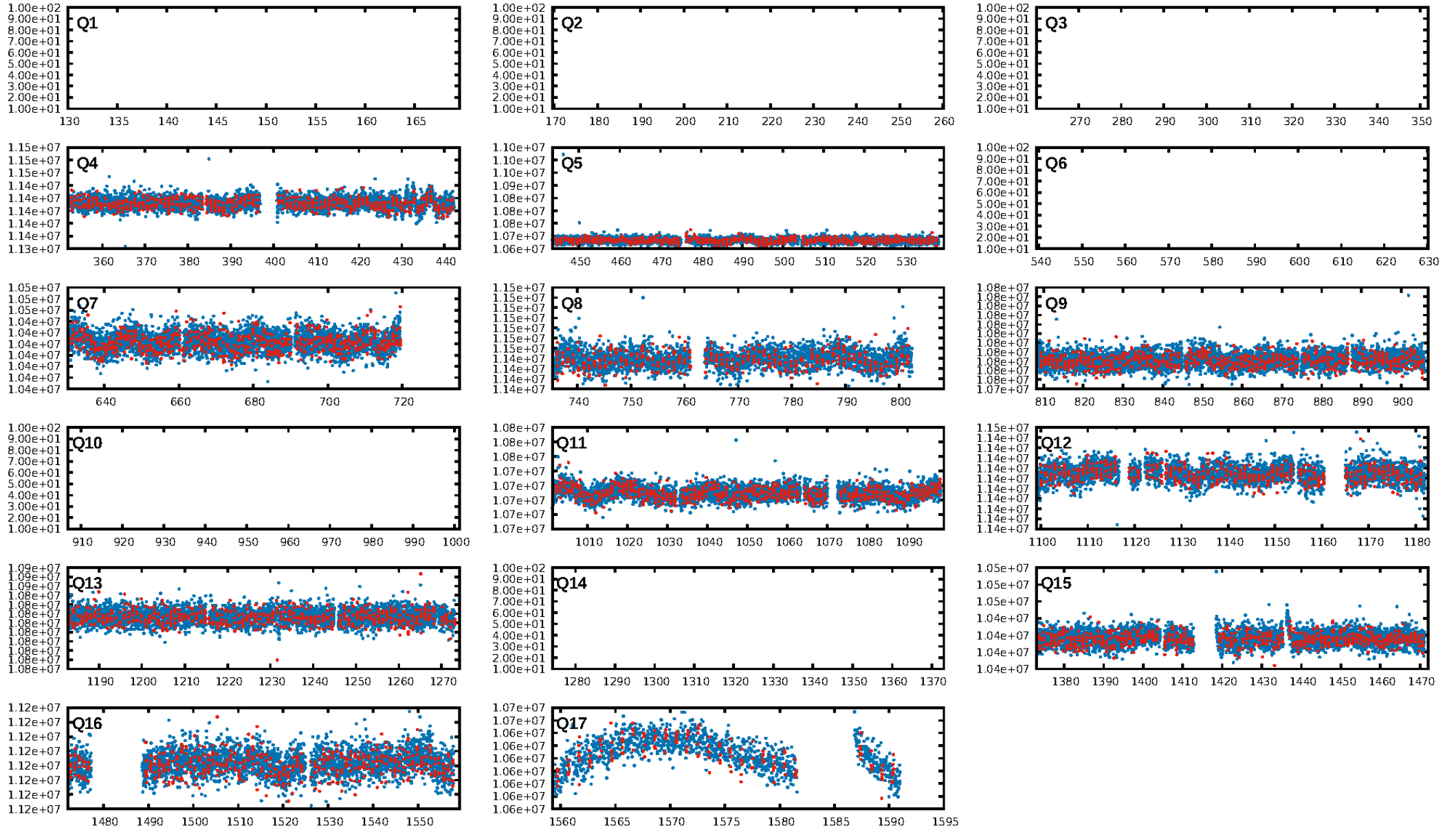
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.87e-23
RollingBand-fgt: 0.96 [818/849]
GhostDiagnostic-chr: -10.74
Centroid-sig: 0.0%
Centroid-so: 2.819 arcsec [3.42σ]
OotOffset-rm: 1.520 arcsec [1.33σ]
KicOffset-rm: 1.691 arcsec [2.16σ]
OotOffset-st: 0/2/4/2 [8]
KicOffset-st: 0/2/4/2 [8]
DiffImageQuality-fgm: 0.38 [3/8]
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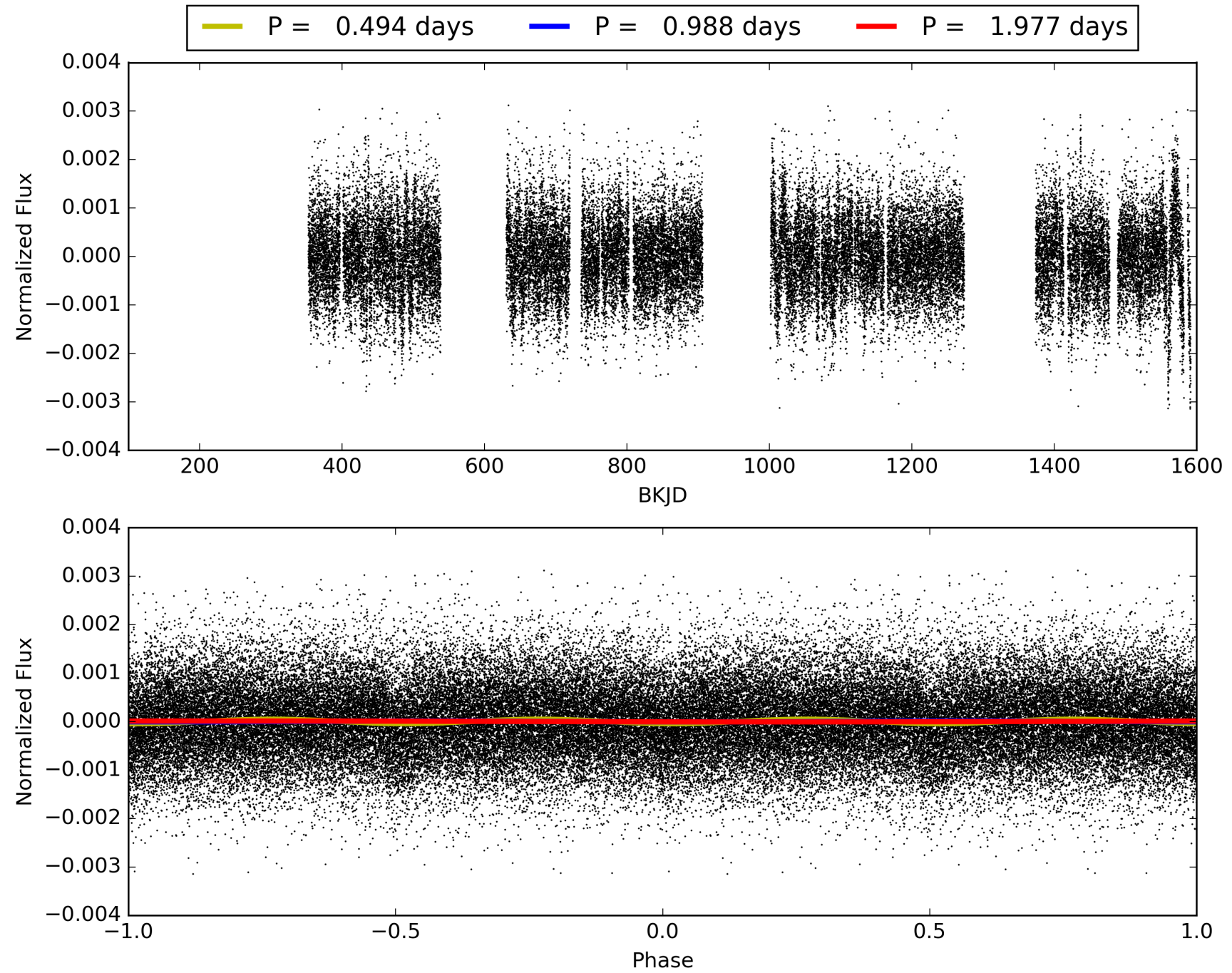
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 07:29:28 Z

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

TCE 003867794-02, PDC Light Curves

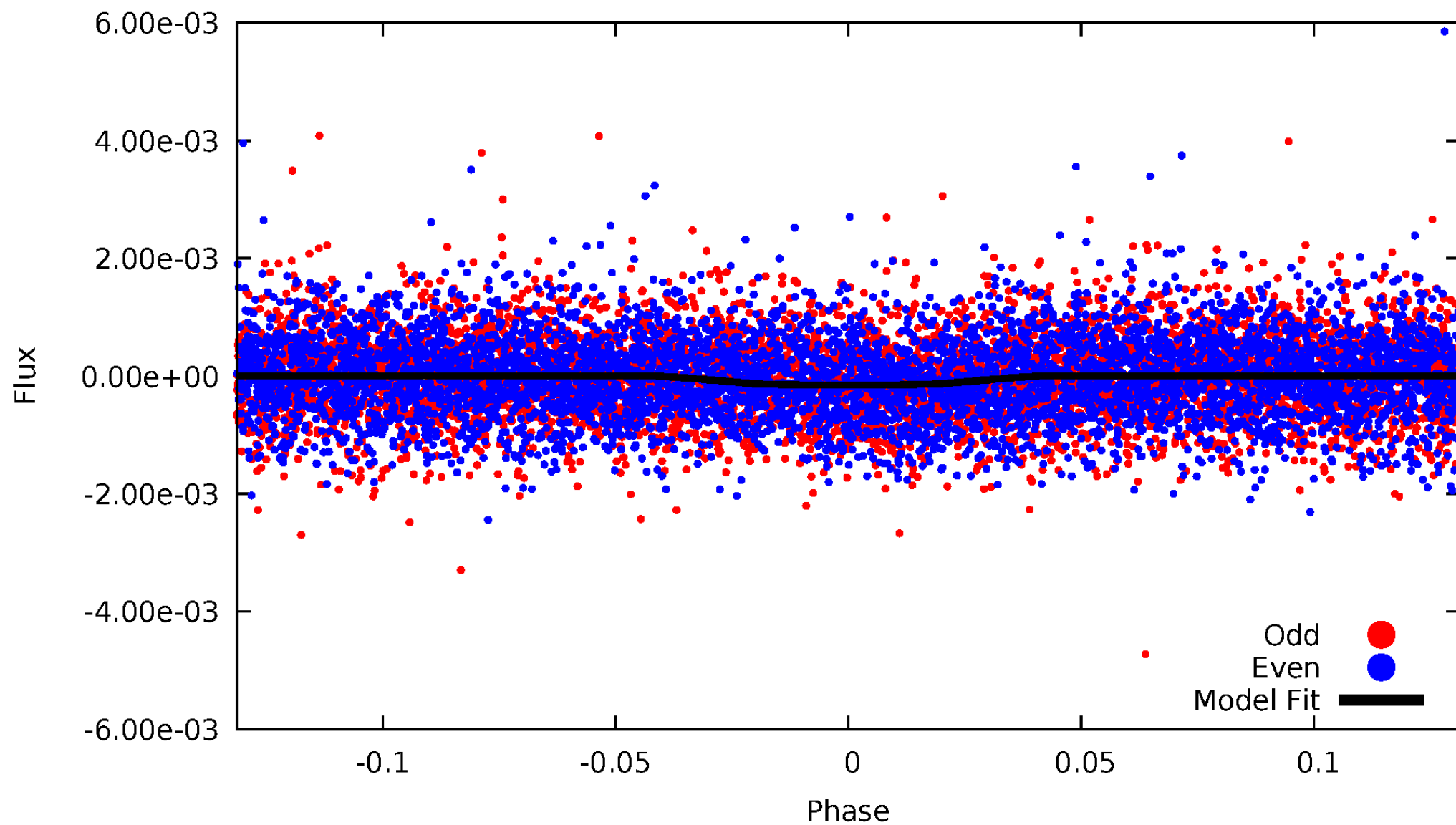


TCE 003867794-02



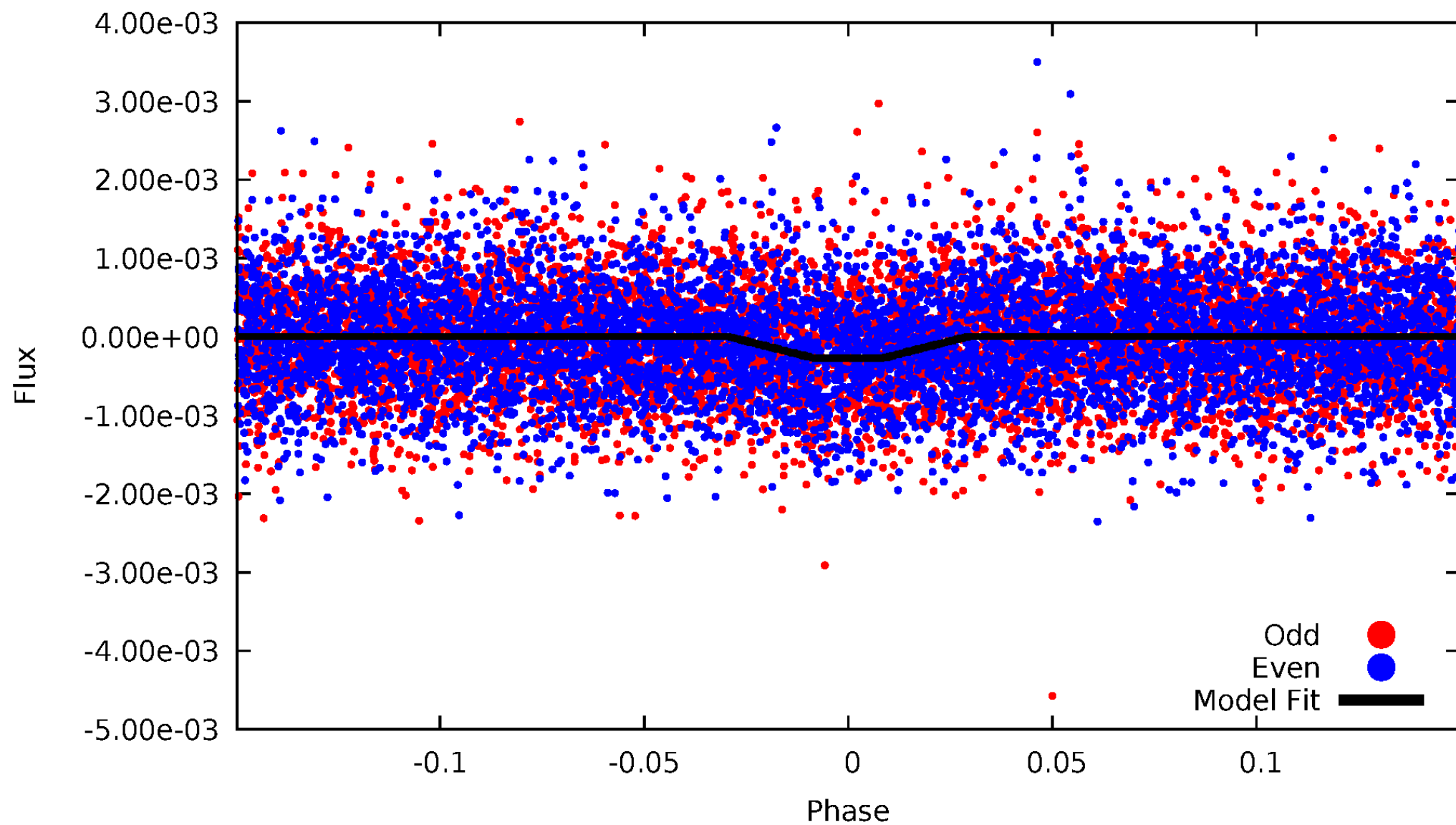
DV Odd/Even

TCE 003867794-02



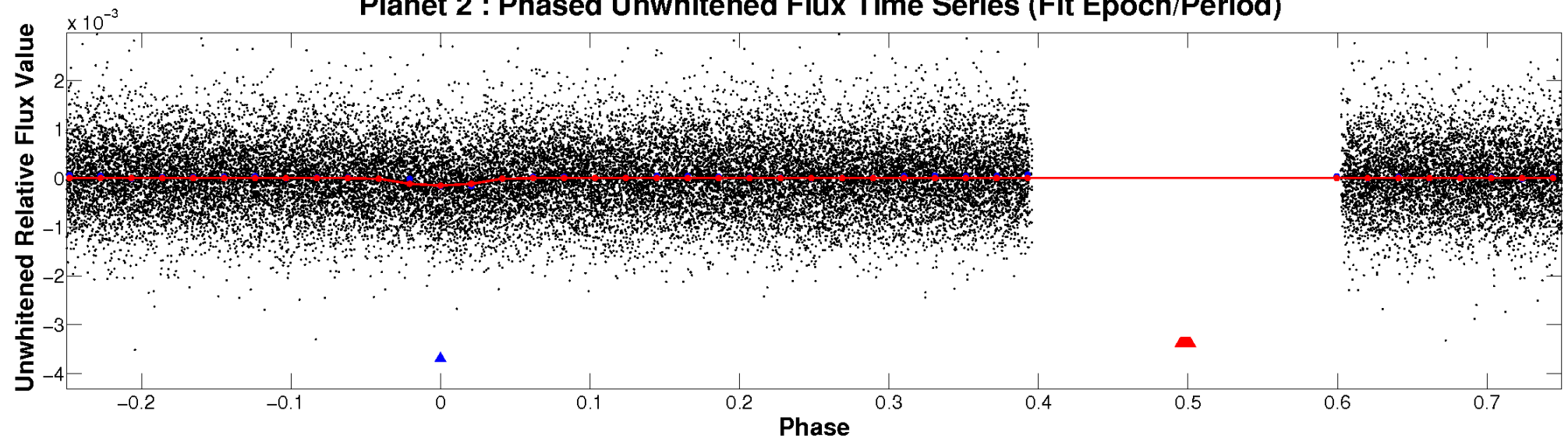
ALT Odd/Even

TCE 003867794-02

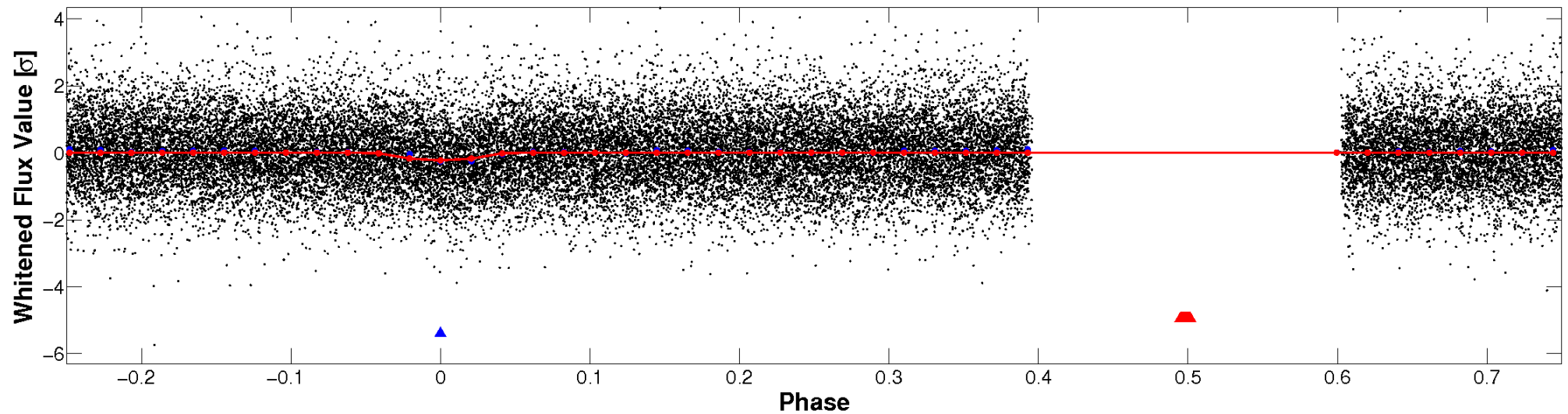


Non-Whitened Vs. Whitened Light Curve

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

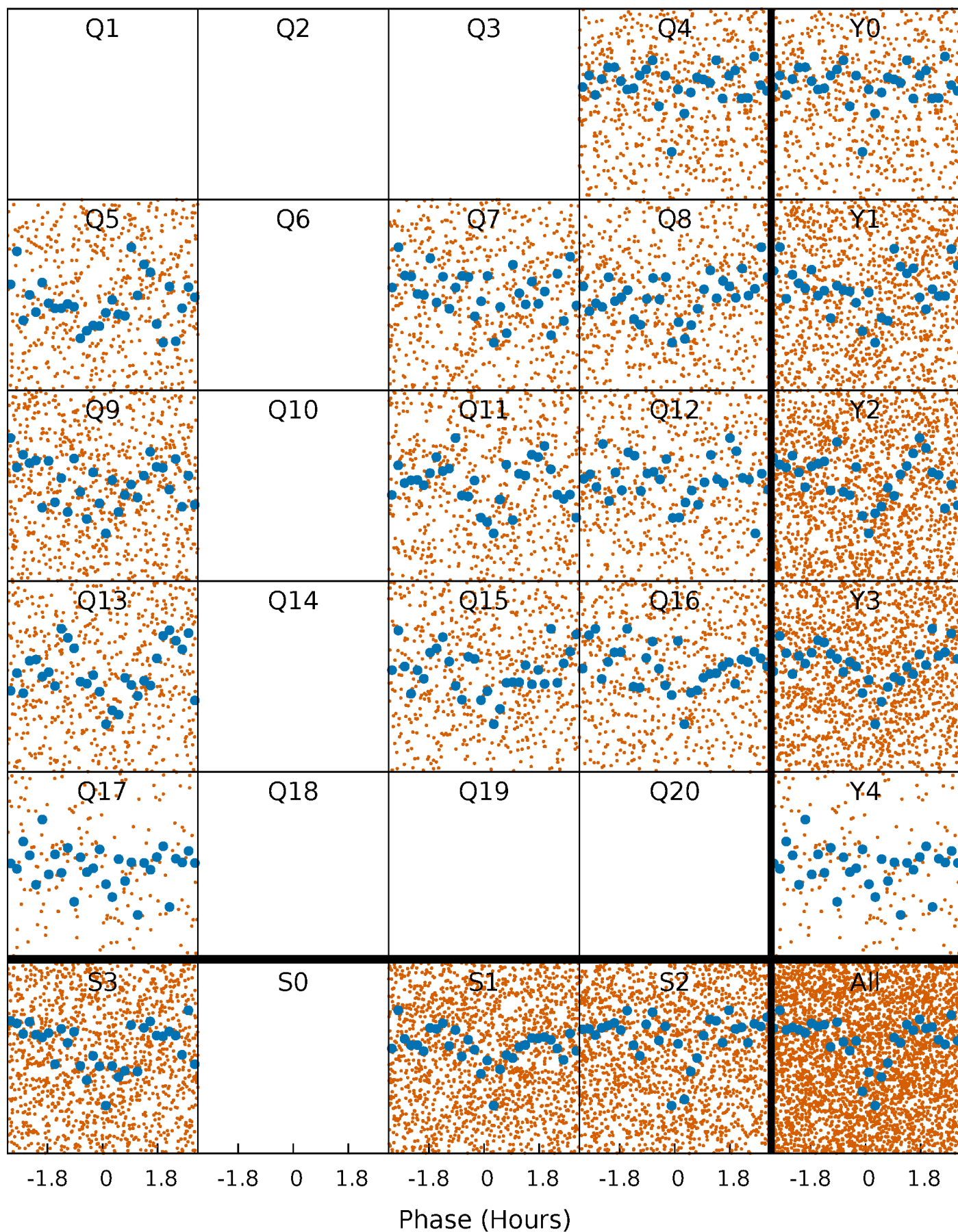


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



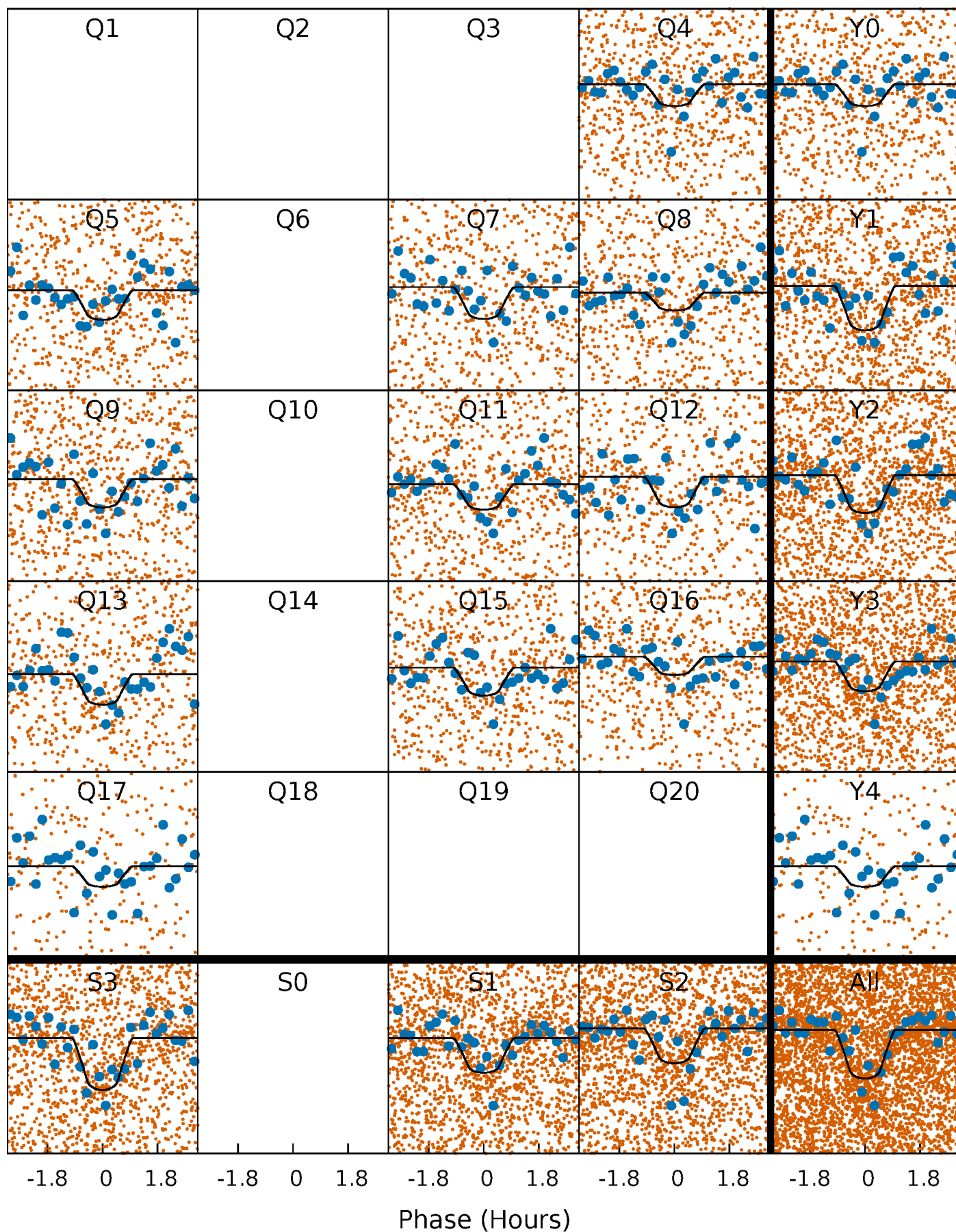
PDC Quarter-Phased Transit Curves

TCE 003867794-02 P= 0.988480 Days $T_0=132.342201$ (BKJD)



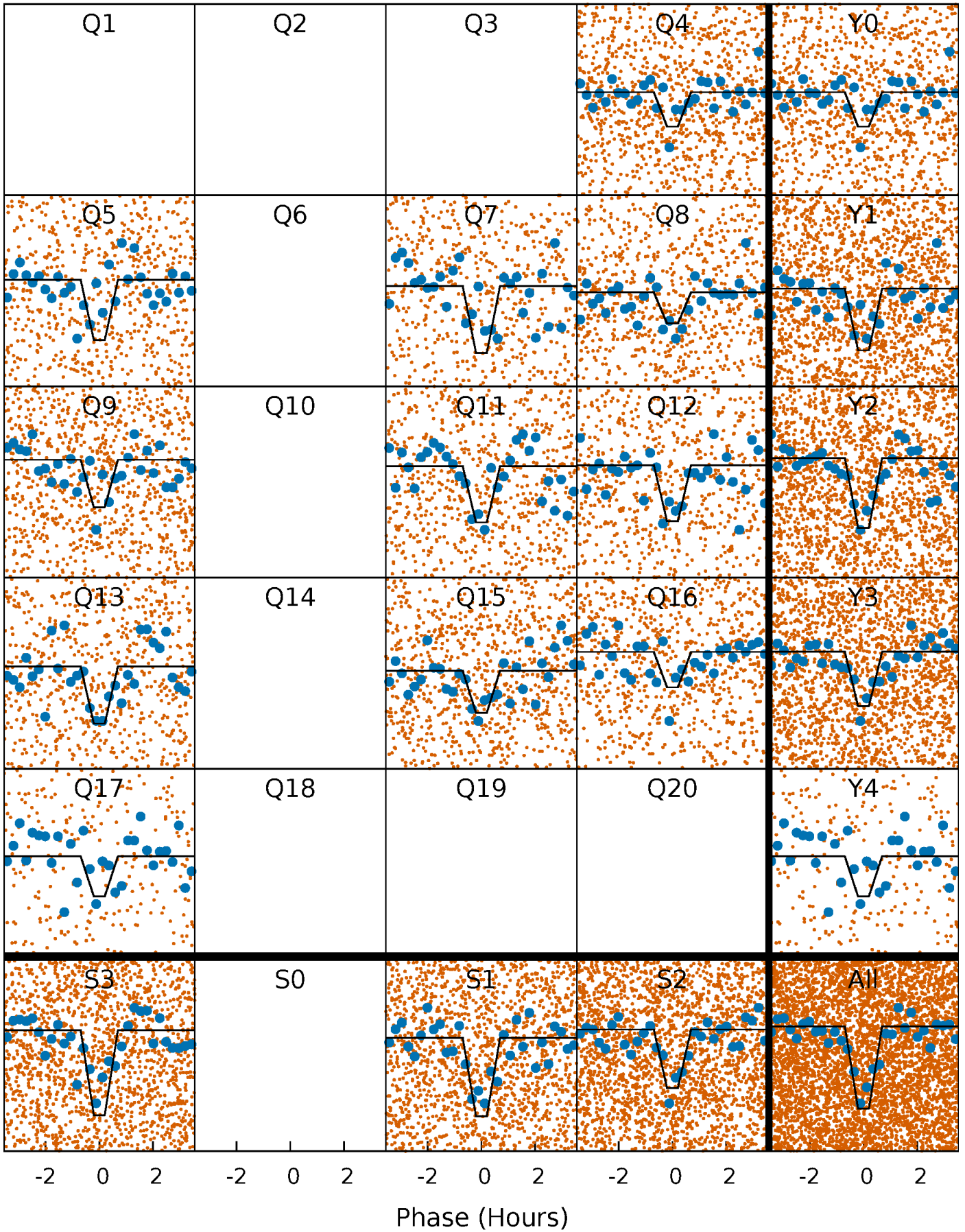
DV Quarter-Phased Transit Curves

TCE 003867794-02 P= 0.988480 Days $T_0=132.342201$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

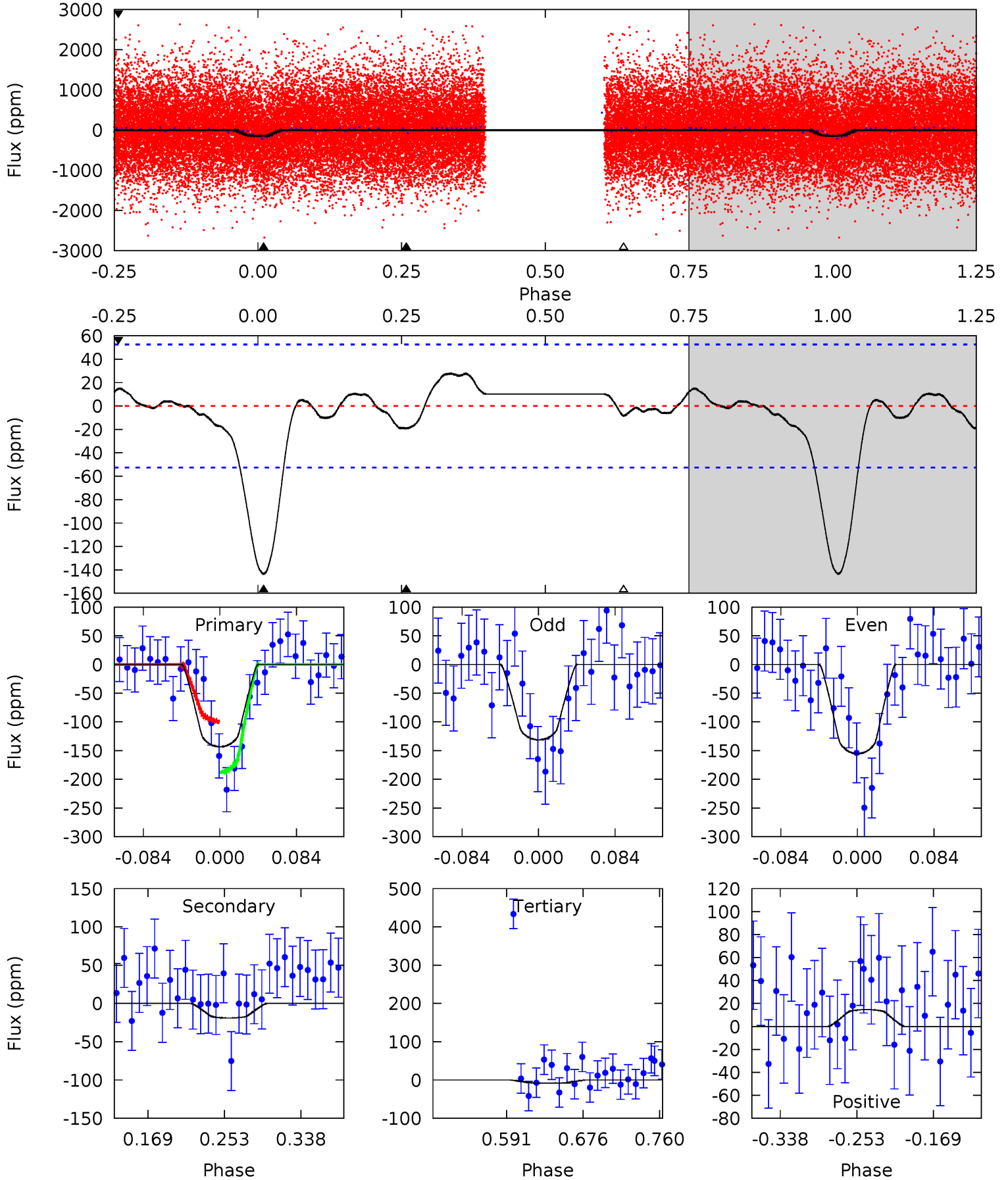
TCE 003867794-02 P= 0.988495 Days $T_0=132.339724$ (BKJD)



DV Model-Shift Uniqueness Test

003867794-02, P = 0.988480 Days, E = 132.342201 Days

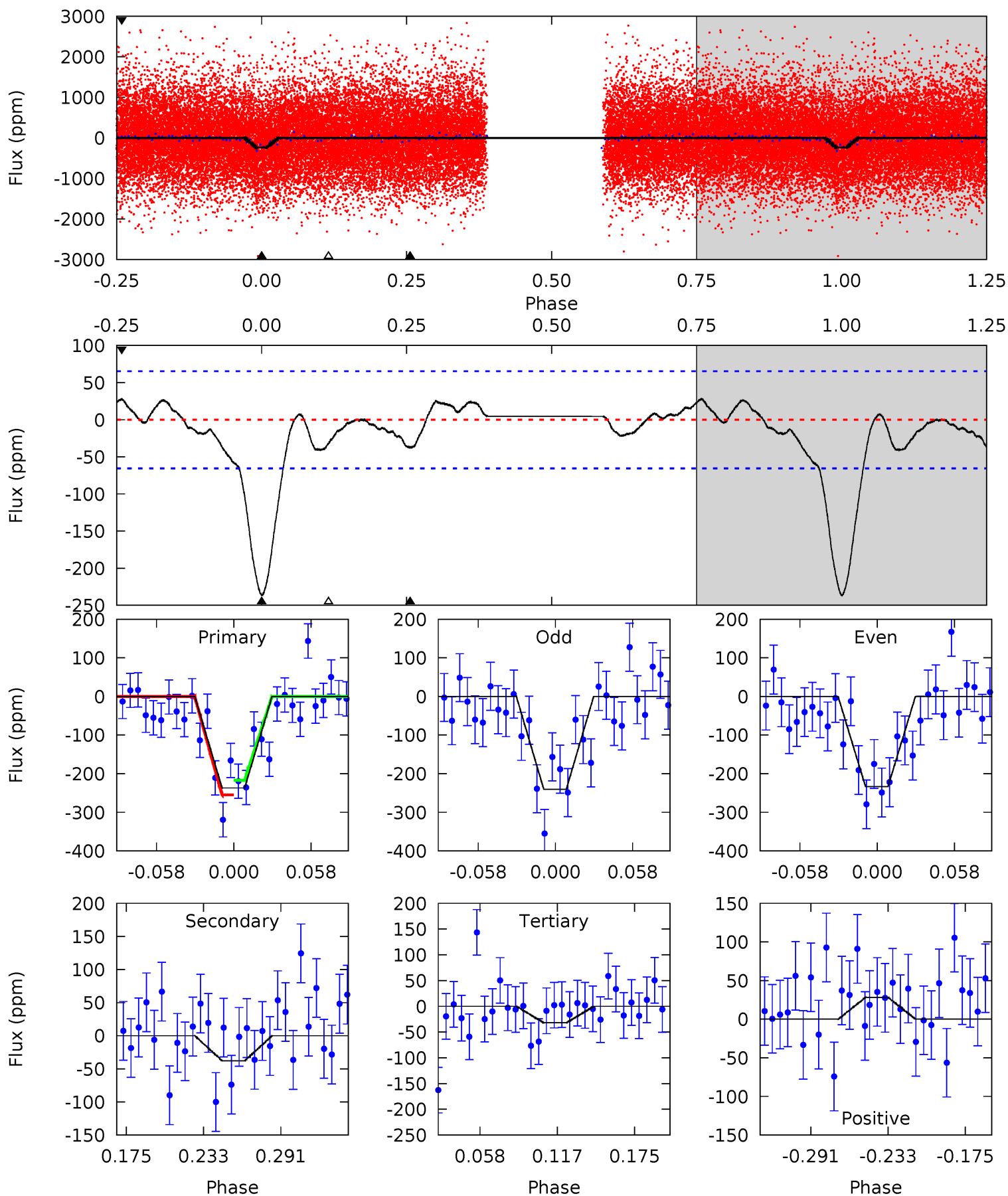
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	1.67	0.72	1.28	4.60	1.73	0.84	11.8	11.3	0.95	0.39	1.05	0.96	0.16	3.90



Alt Model-Shift Uniqueness Test

003867794-02, P = 0.988495 Days, E = 132.339724 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.9	2.70	2.29	2.01	4.68	1.89	1.28	14.6	14.9	0.41	0.69	0.25	1.04	0.11	1.34



Stellar Parameters For KIC 003867794

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5763^{+180}_{-200}	$4.484^{+0.046}_{-0.184}$	$0.360^{+0.100}_{-0.300}$	$0.998^{+0.260}_{-0.093}$	$1.107^{+0.097}_{-0.146}$	$1.568^{+0.368}_{-0.733}$
	+3%/-3%	+1%/-4%	+28%/-83%	+26%/-9%	+9%/-13%	+23%/-47%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003867794-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-19 ± 11	$1.82^{+1.49}_{-1.09}$	2560^{+168}_{-130}	3243^{+1468}_{-5599}	$1.062^{+5.609}_{-0.827}$
Alt.	-38 ± 14	$2.23^{+1.33}_{-1.25}$	2549^{+174}_{-120}	3471^{+1519}_{-781}	$1.538^{+7.868}_{-1.046}$

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 $A_{obs} \gg 1.0$

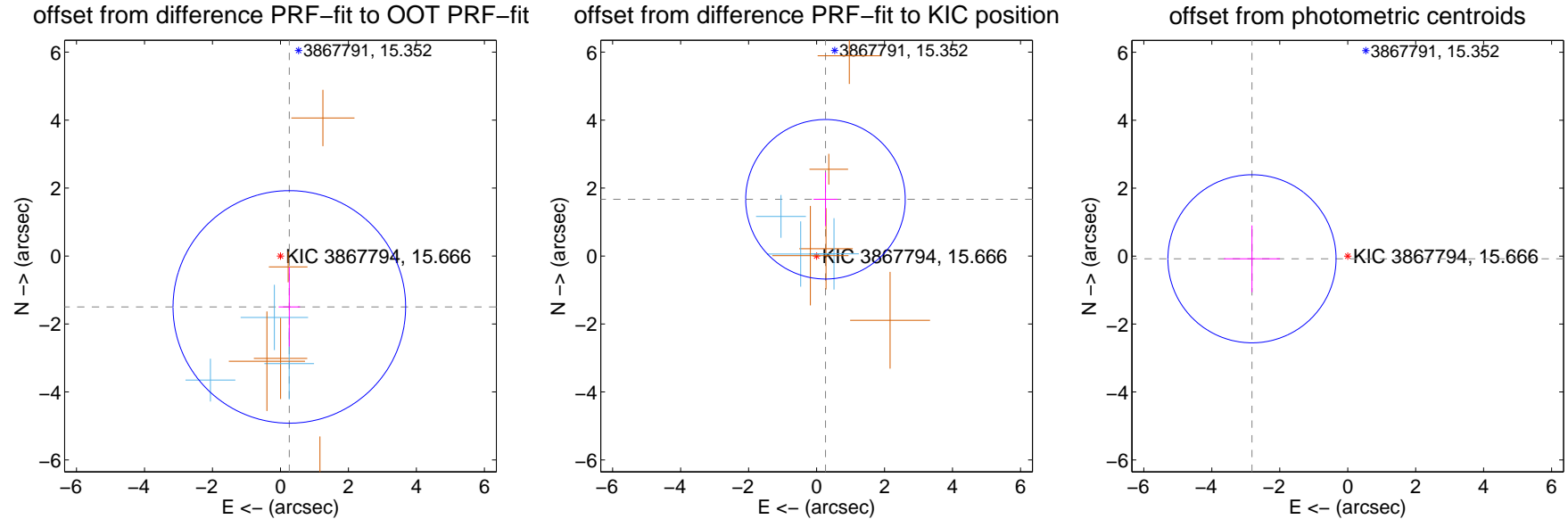
DV Centroid Data

Supplemental centroid analysis for 003867794-02. Kepler magnitude: 15.67. Transit SNR 9.74

There are 3 quarters with good PRF difference image offsets

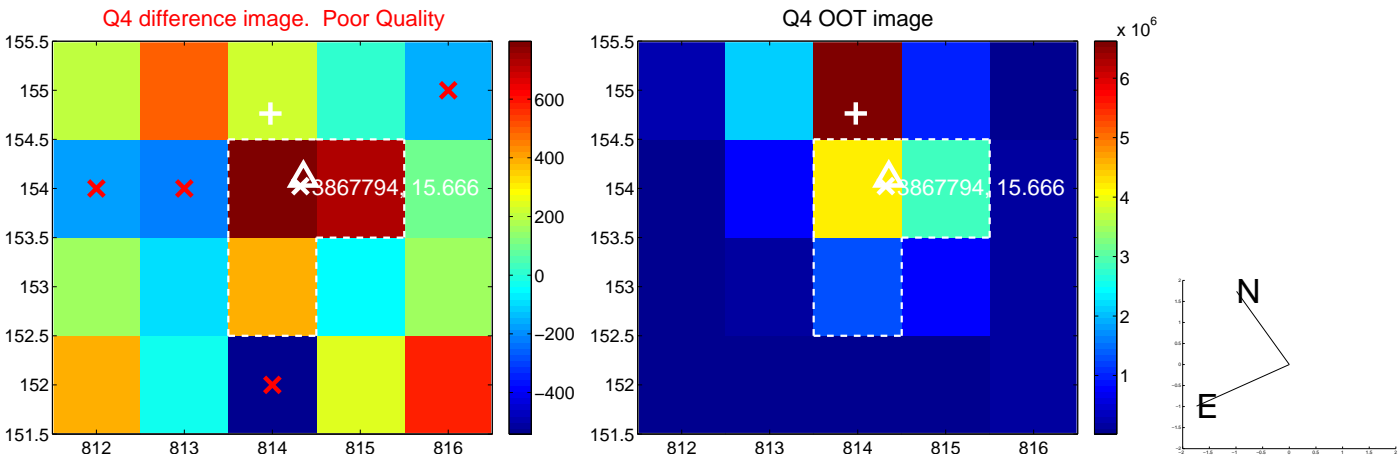
The OOT PRF centroid is offset from the target star catalog position by about 2.88 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.520 ± 1.140	1.33	-0.261 ± 0.315	-1.498 ± 1.170
PRF-fit source offset from KIC position	1.691 ± 0.782	2.16	-0.262 ± 0.349	1.670 ± 0.791
photometric centroid source offset	2.82 ± 0.82	3.42	2.82 ± 0.82	-0.08 ± 0.98

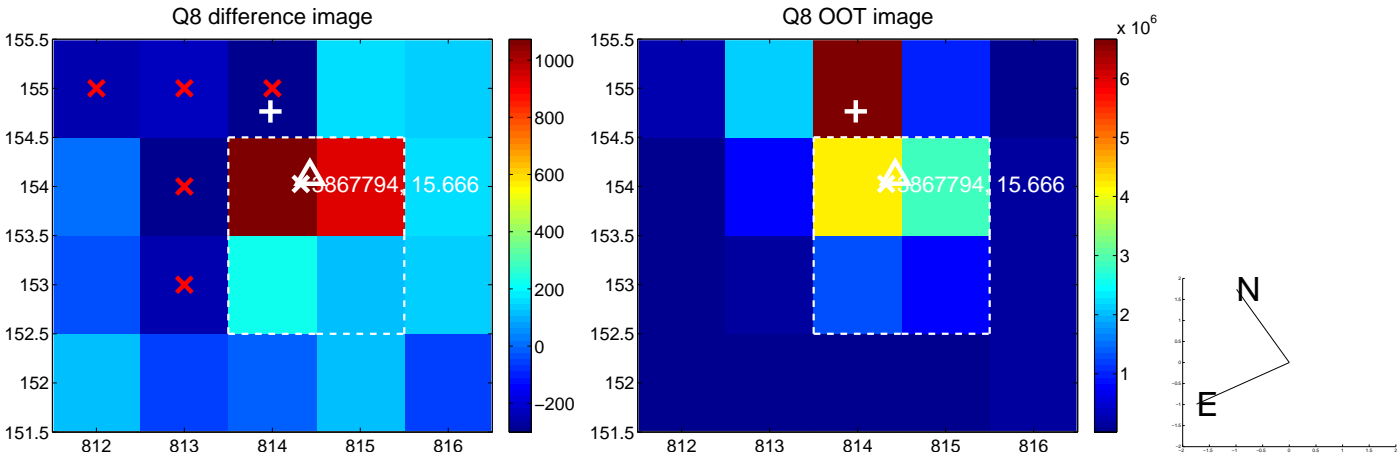
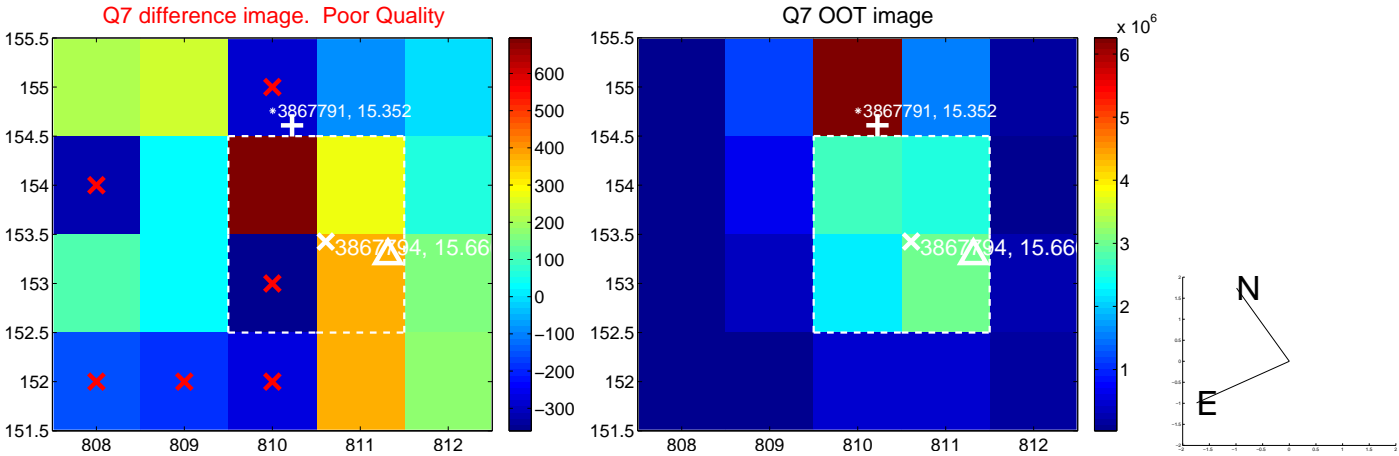
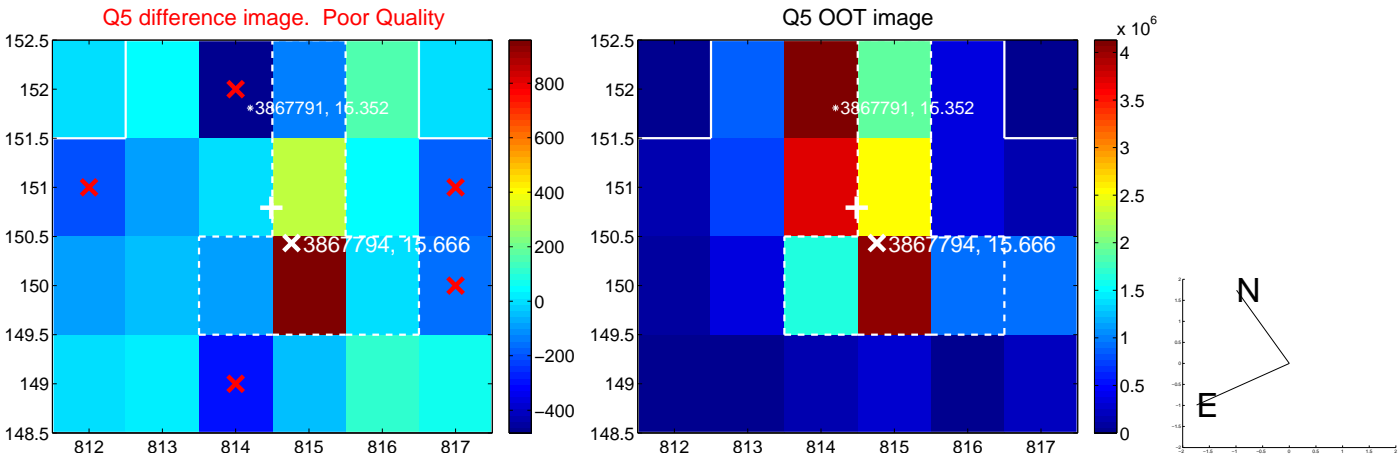


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

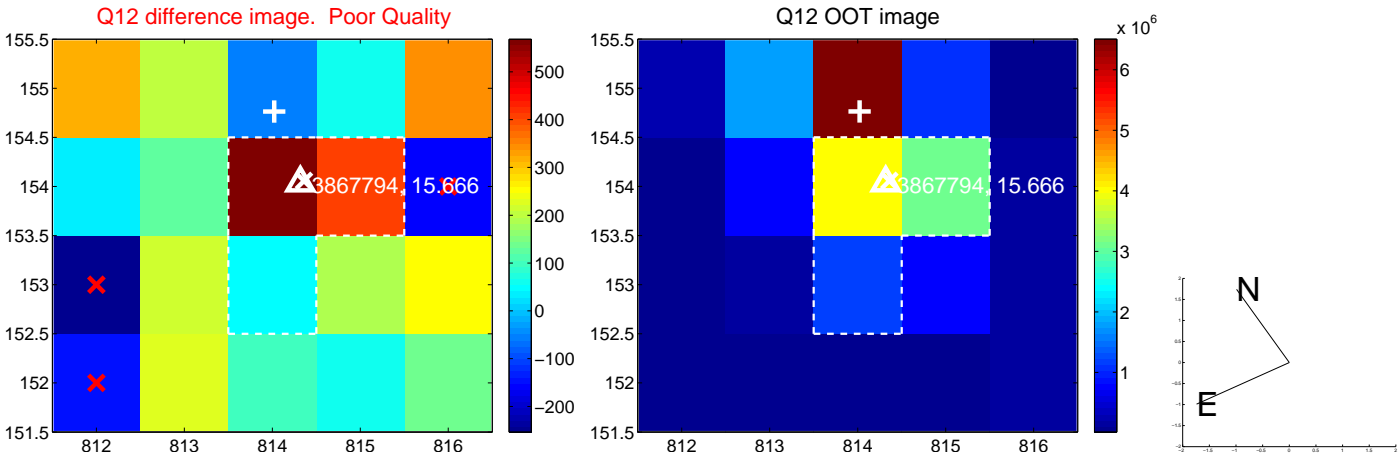
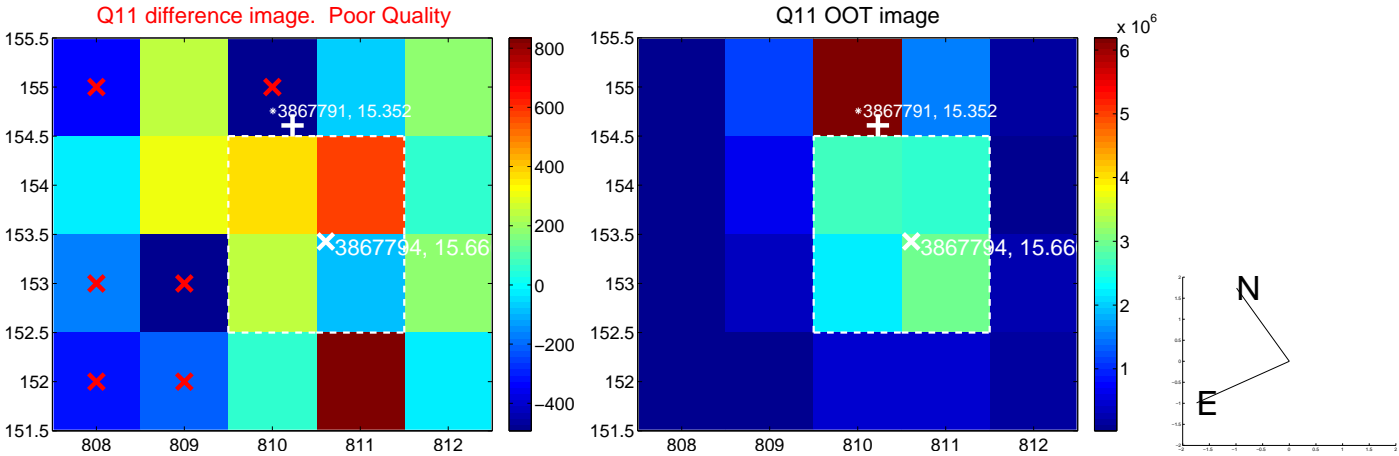
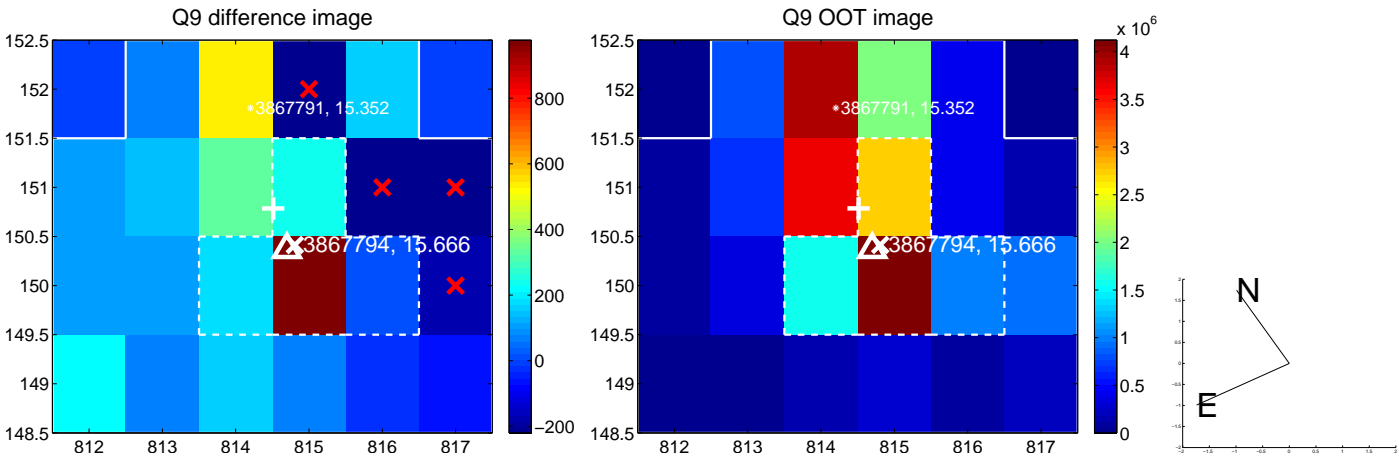
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



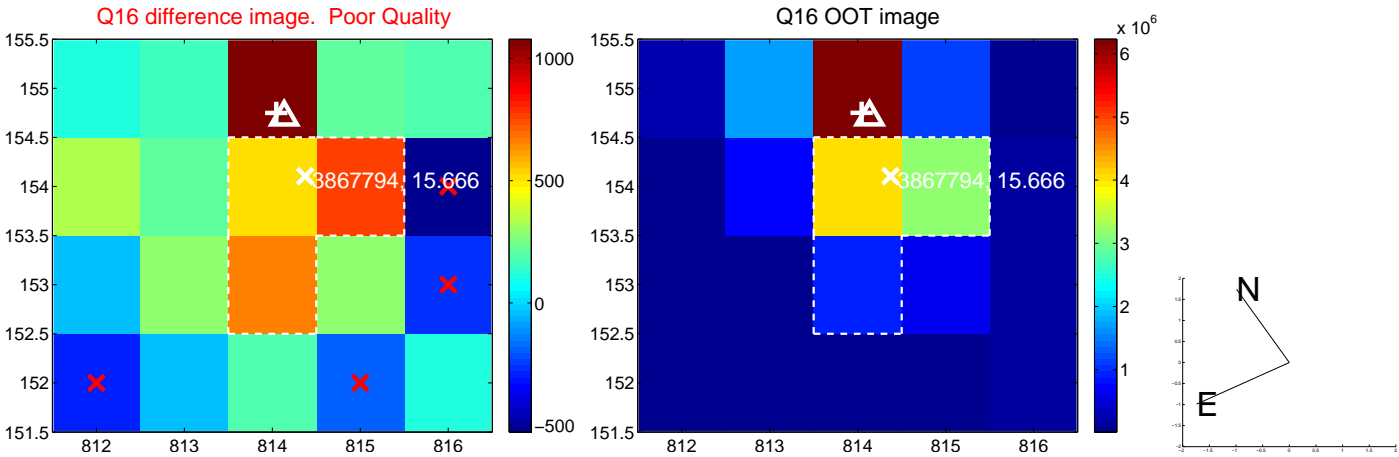
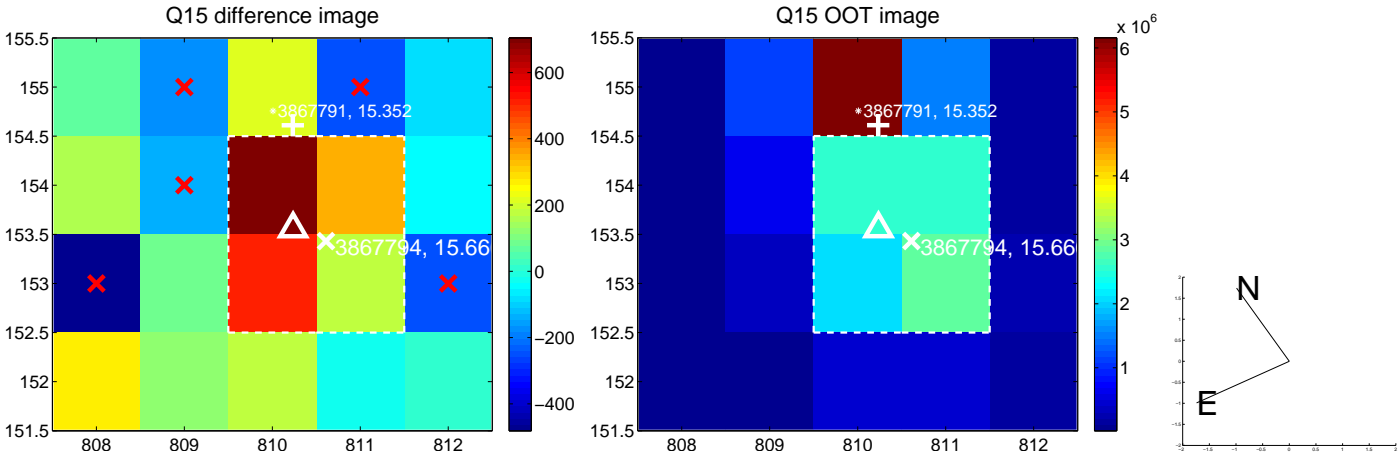
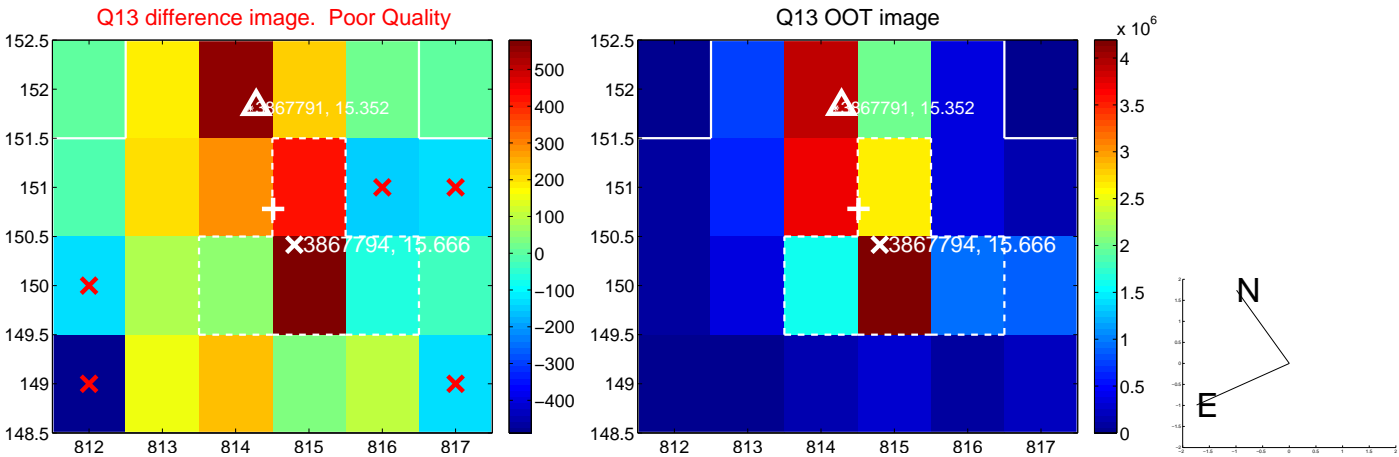
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



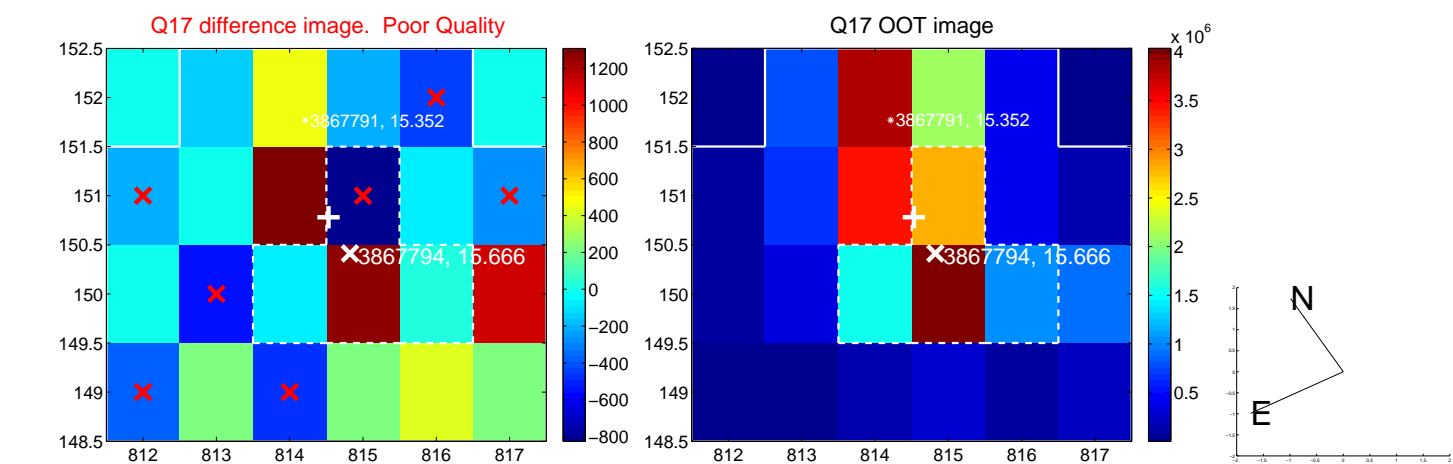
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



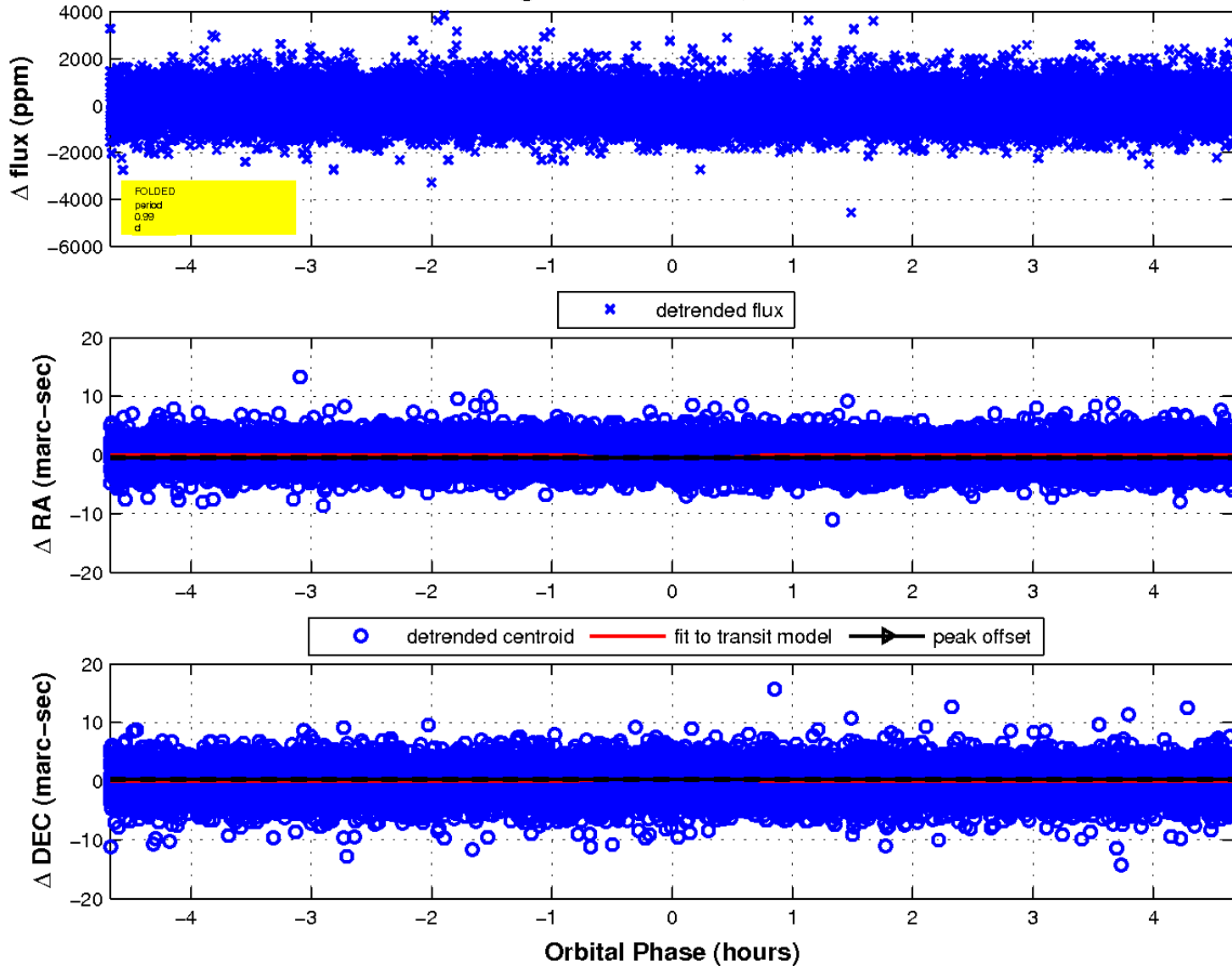
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

