

KIC 008841894

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})
008841894-01	OBS	No	2.398384	132.055081	13.0	4.714	11.4	3.3	1.75	6261	0.63	3055.64
008841894-02	OBS	No	2.396796	132.786501	58.9	4.077	8.9	10.1	1.75	6261	1.45	3058.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008841894-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
008841894-02	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—HALO_GHOST

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

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

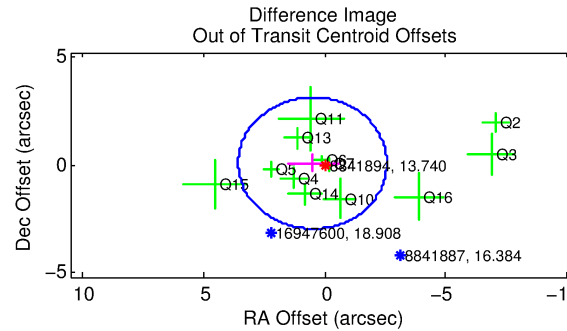
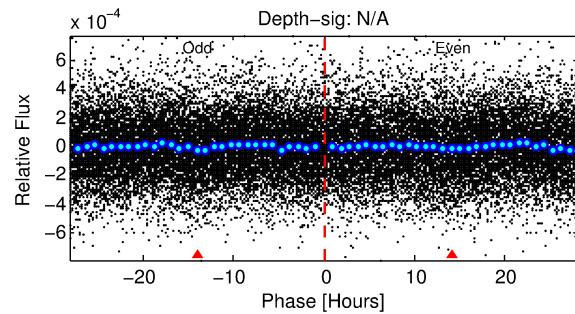
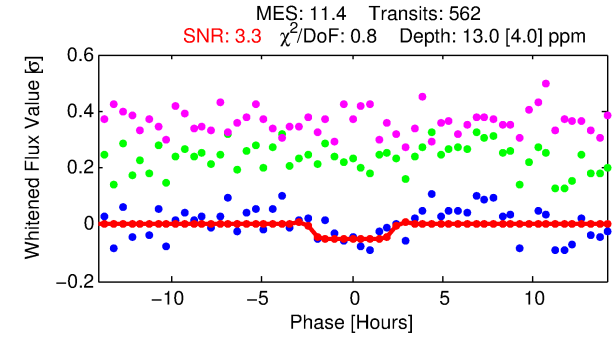
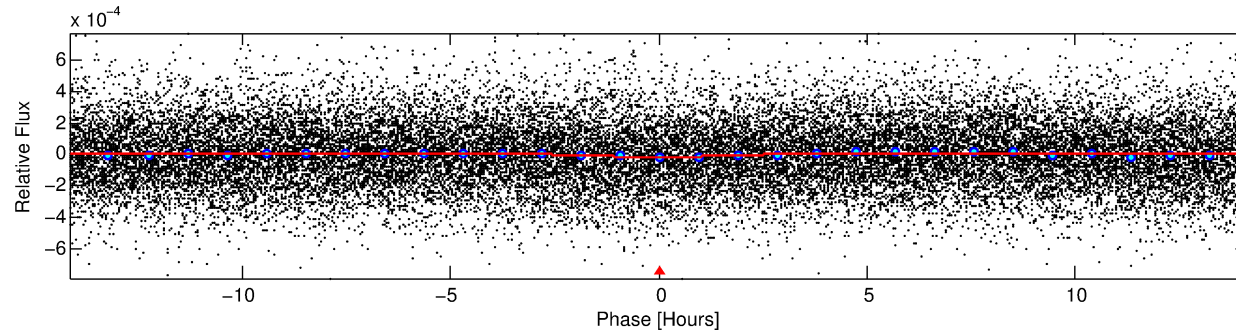
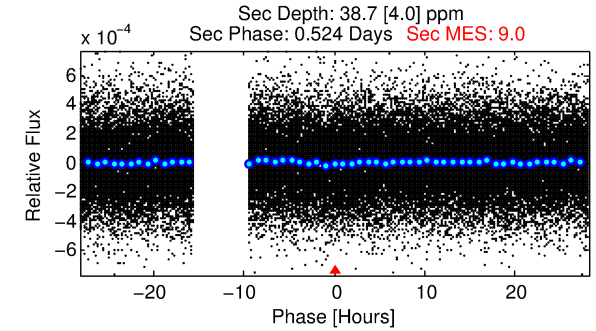
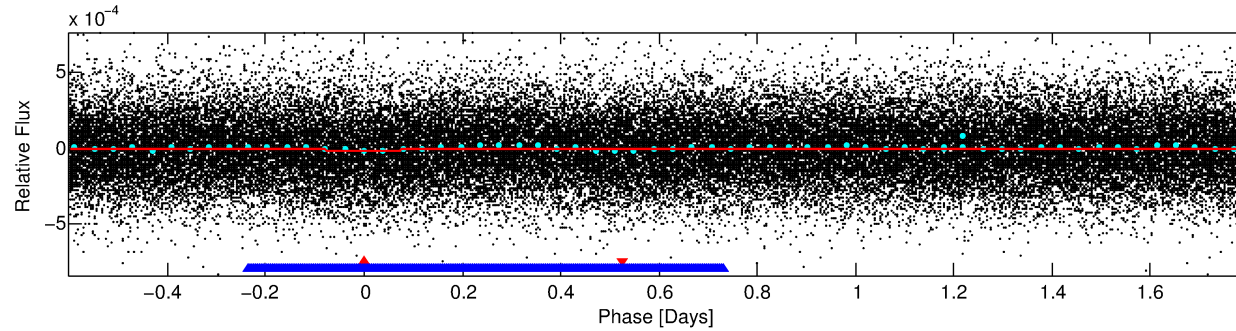
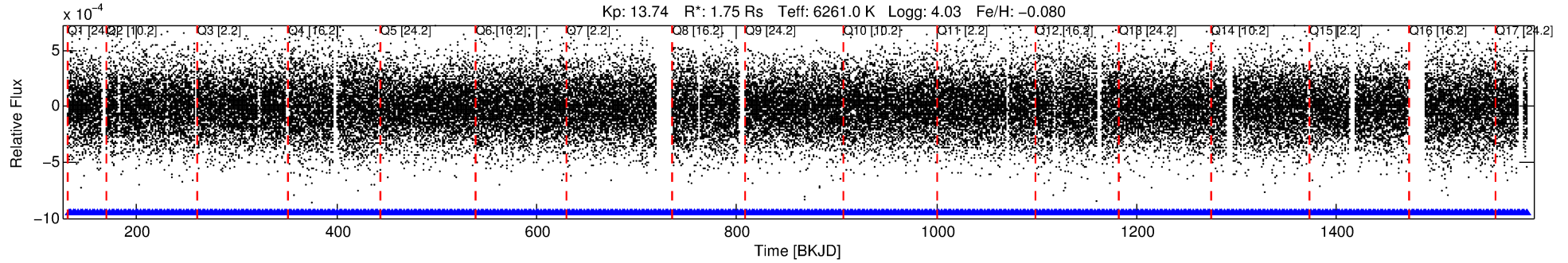
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008841894-01

No Significant Match Found

DV One-Page Summary

KIC: 8841894 Candidate: 1 of 2 Period: 2.398 d



DV Fit Results:

Period = 2.39838 [0.00007] d
Epoch = 132.0551 [0.0154] BKJD
Rp/R* = 0.0033 [0.0013]
a/R* = 3.94 [6.45]
b = 0.05 [30.56]
Seff = 3055.64 [1679.28]
Teq = 1896 [260] K
Rp = 0.63 [0.33] Re
a = 0.0372 [0.0123] AU
Ag = 73.41 [68.85] [1.05σ]
Teffp = 8580 [1685] K [3.92σ]

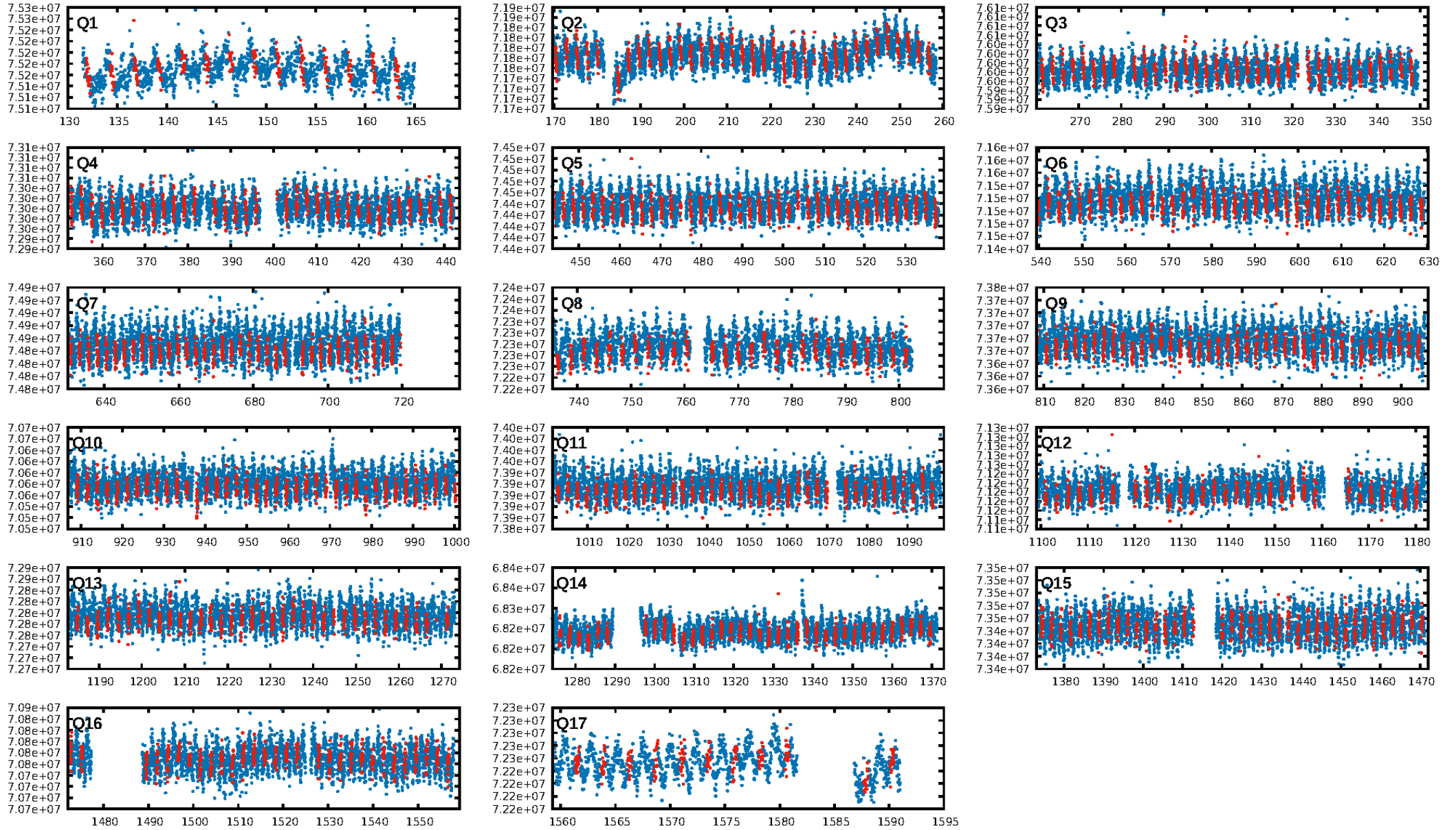
DV Diagnostic Results:

ShortPeriod-sig: 0.5% [0.01σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.42e-26
RollingBand-fgt: 1.00 [537/537]
GhostDiagnostic-chr: 4.415
Centroid-sig: 5.6%
Centroid-so: 3.943 arcsec [1.24σ]
OotOffset-rm: 0.503 arcsec [0.49σ]
OotOffset-st: 4/4/2/2 [12]
KicOffset-rm: 0.554 arcsec [0.59σ]
KicOffset-st: 4/4/2/2 [12]
DiffImageQuality-fgm: 0.50 [6/12]
DiffImageOverlap-fno: 0.29 [5/17]

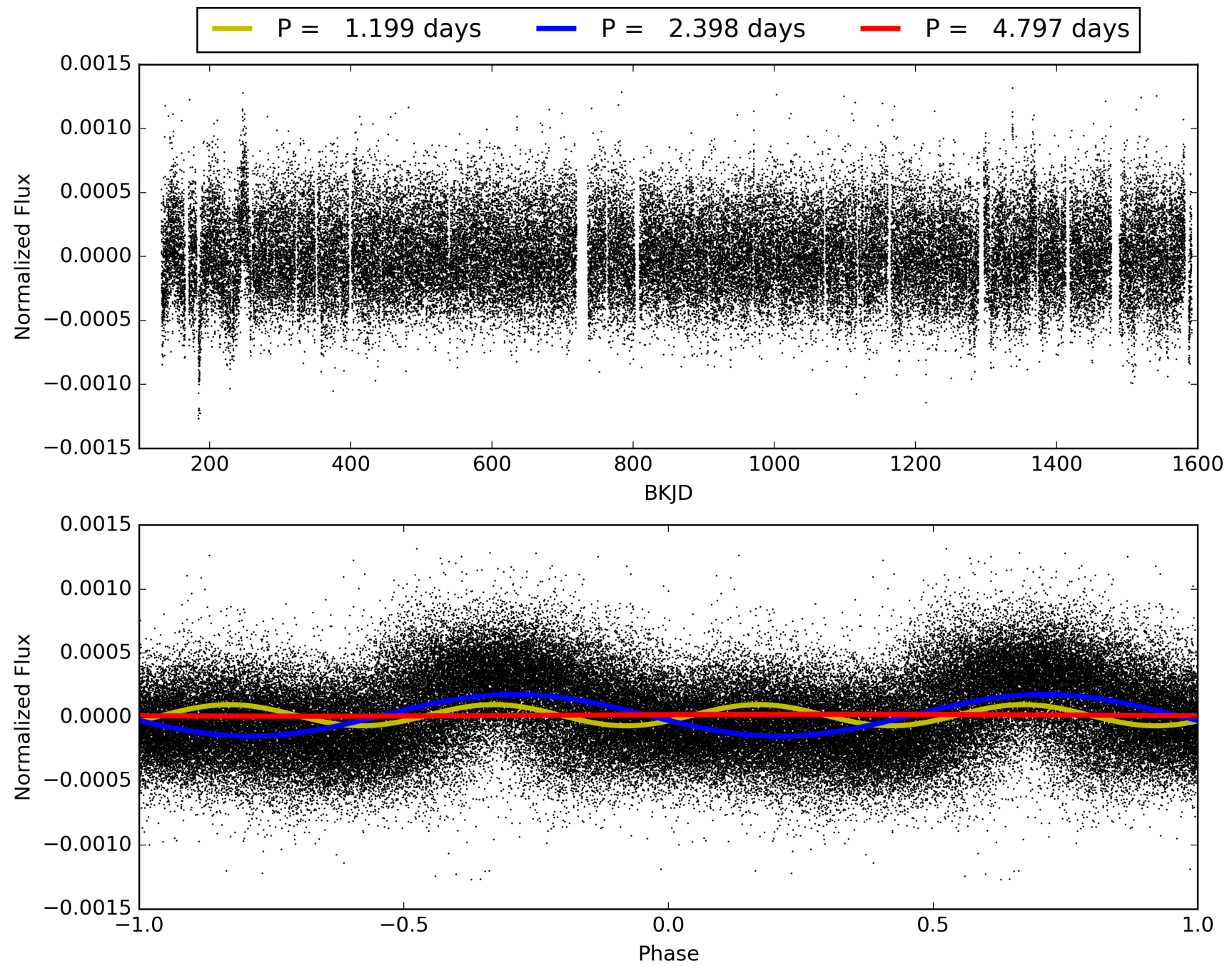
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008841894-01, PDC Light Curves

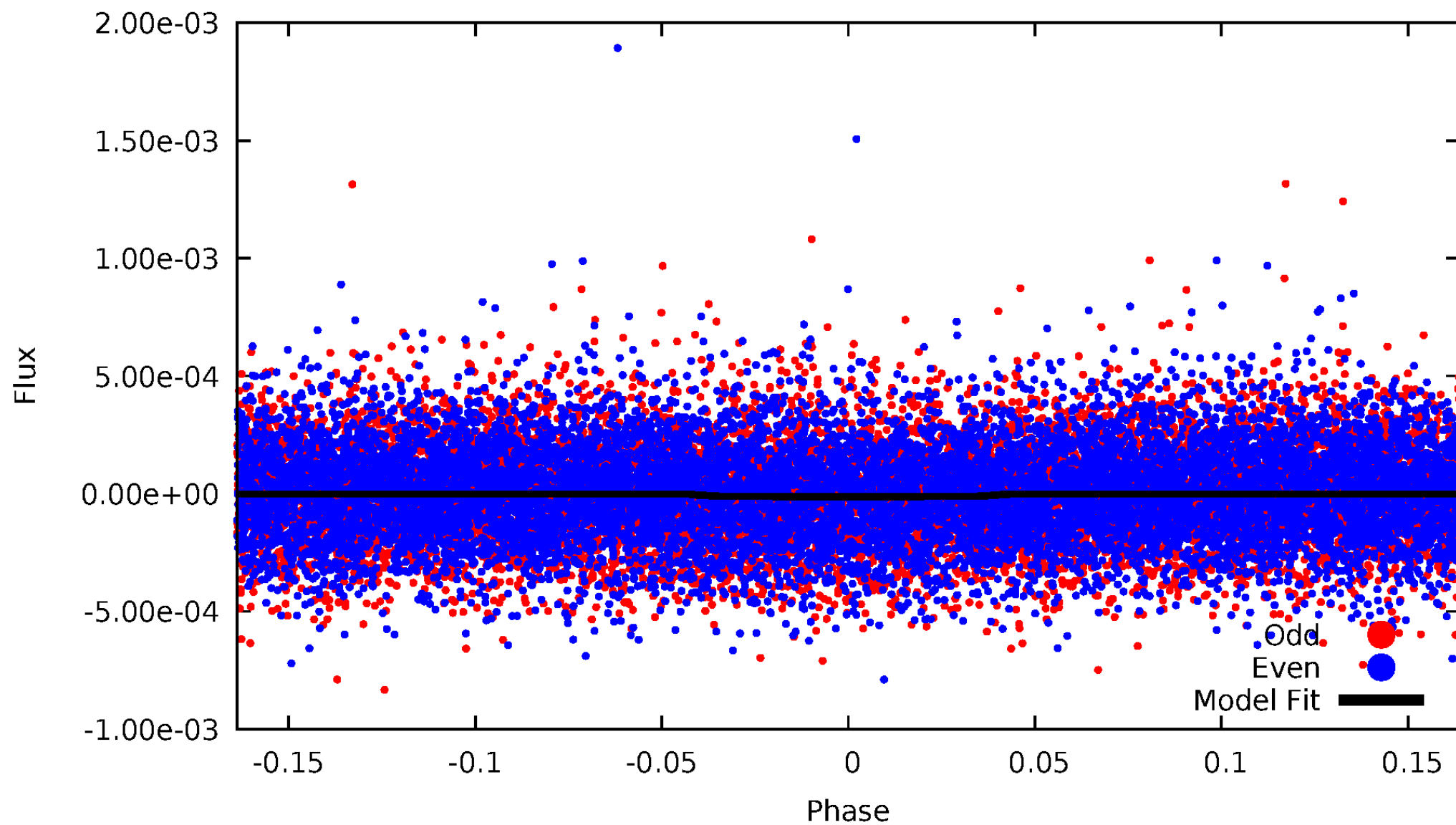


TCE 008841894-01



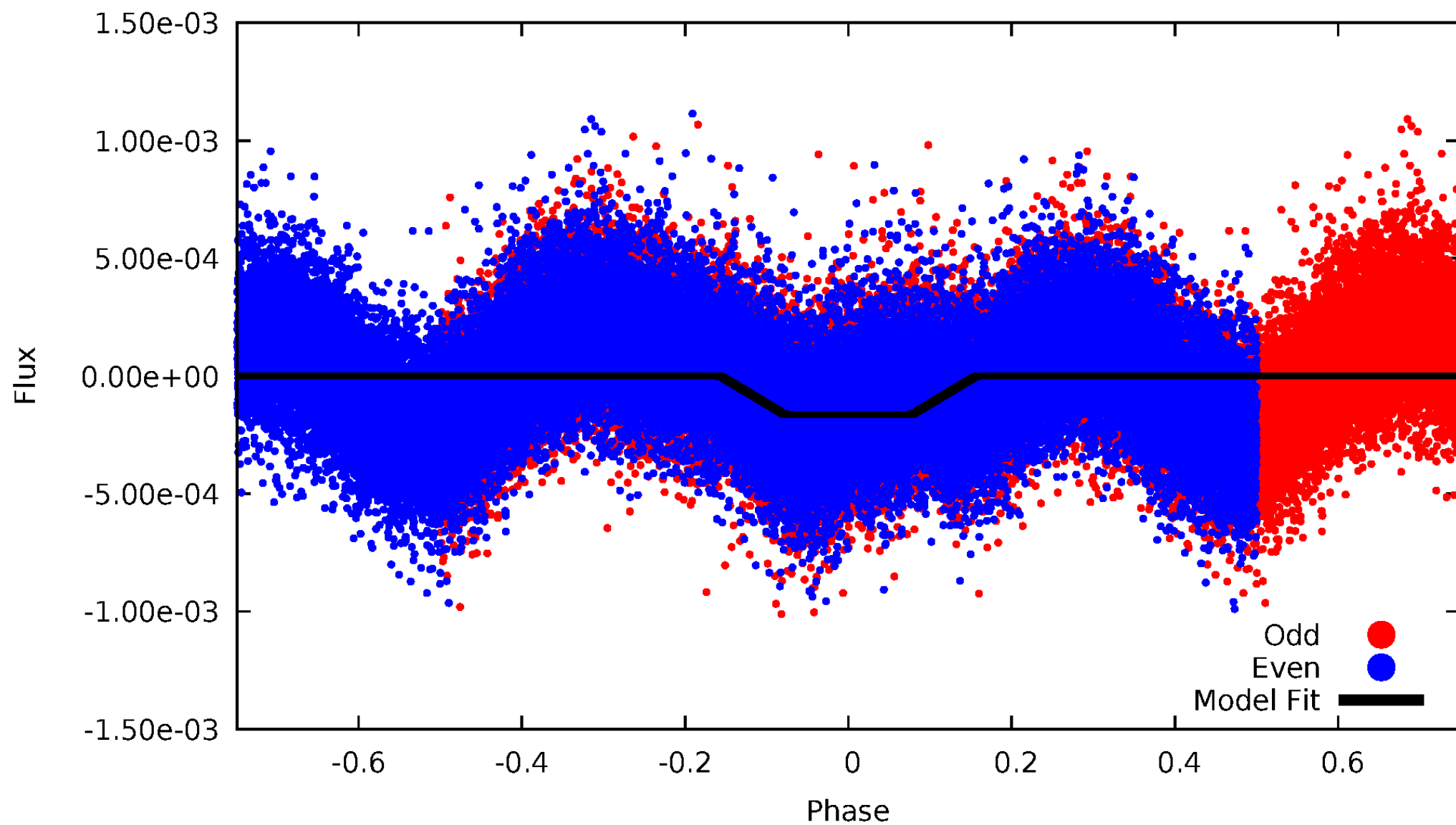
DV Odd/Even

TCE 008841894-01

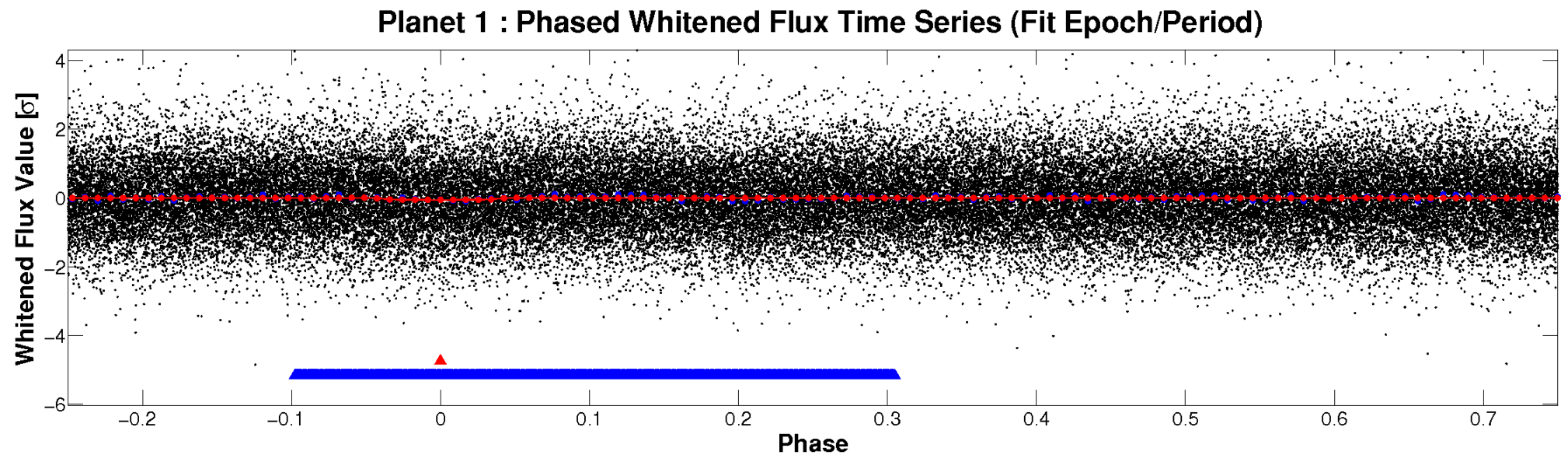
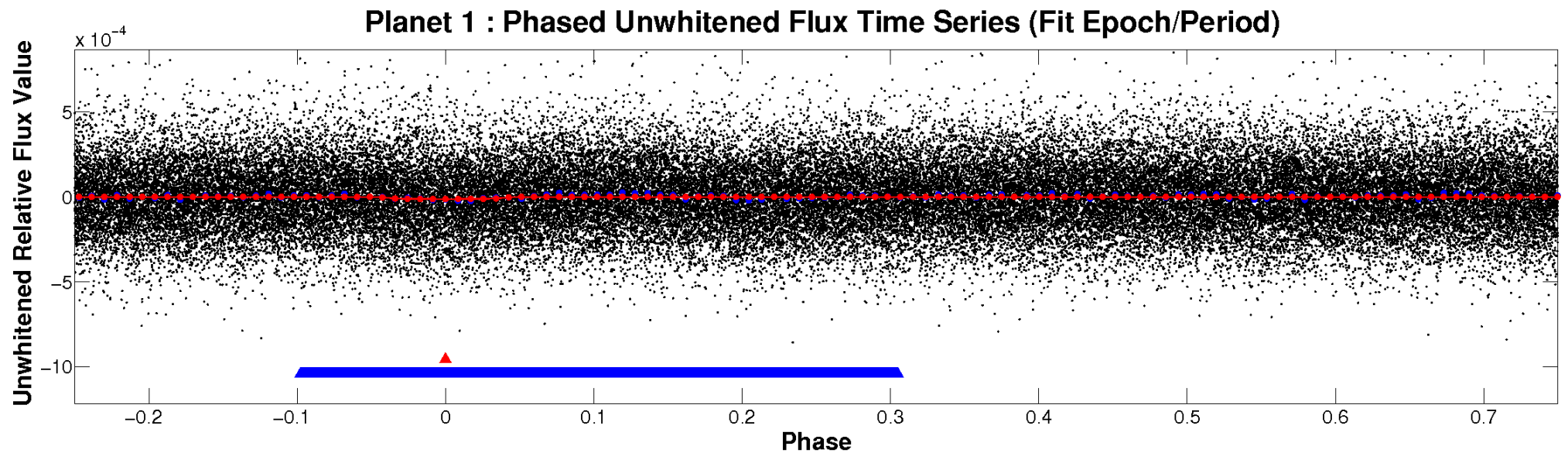


ALT Odd/Even

TCE 008841894-01

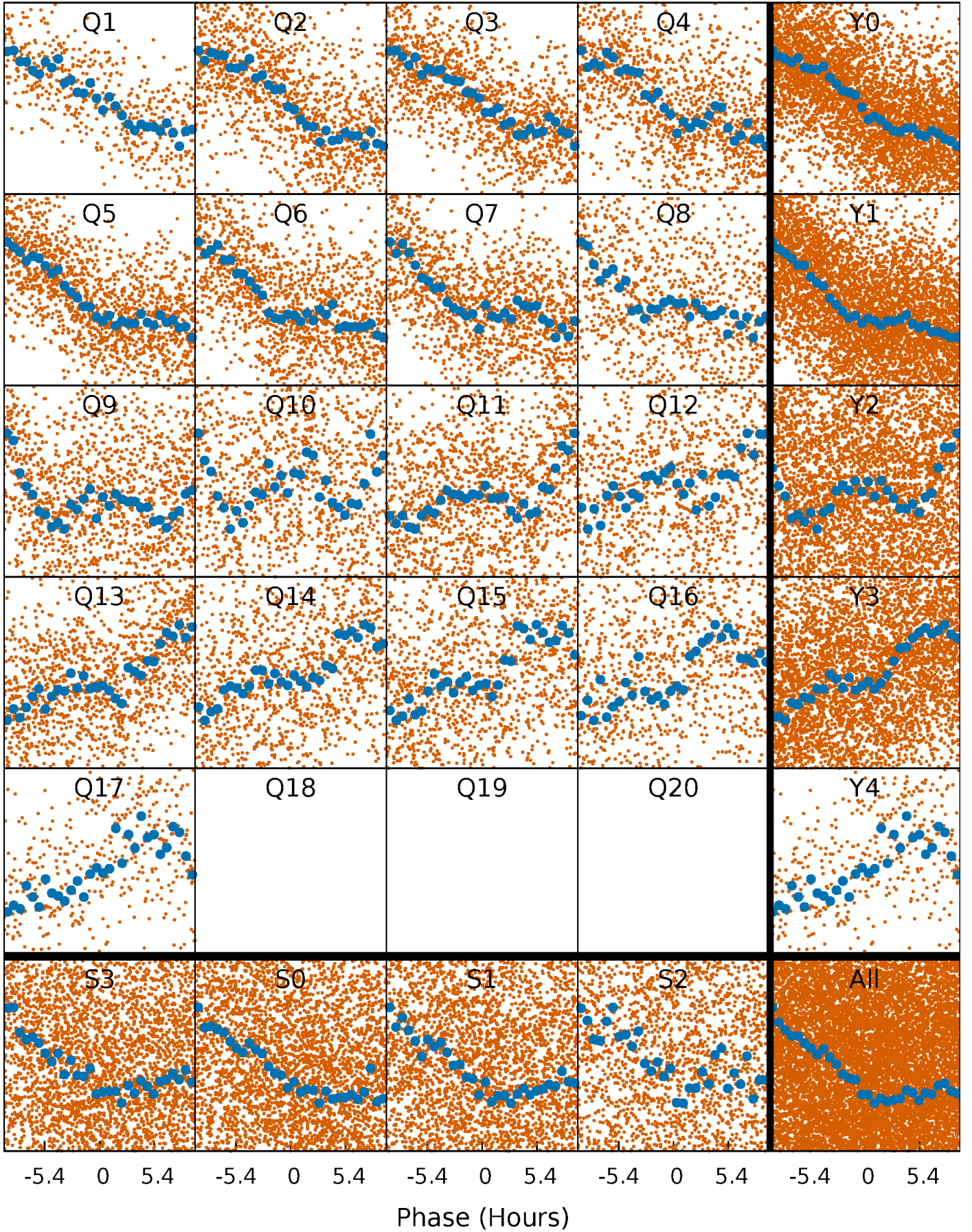


Non-Whitened Vs. Whitened Light Curve



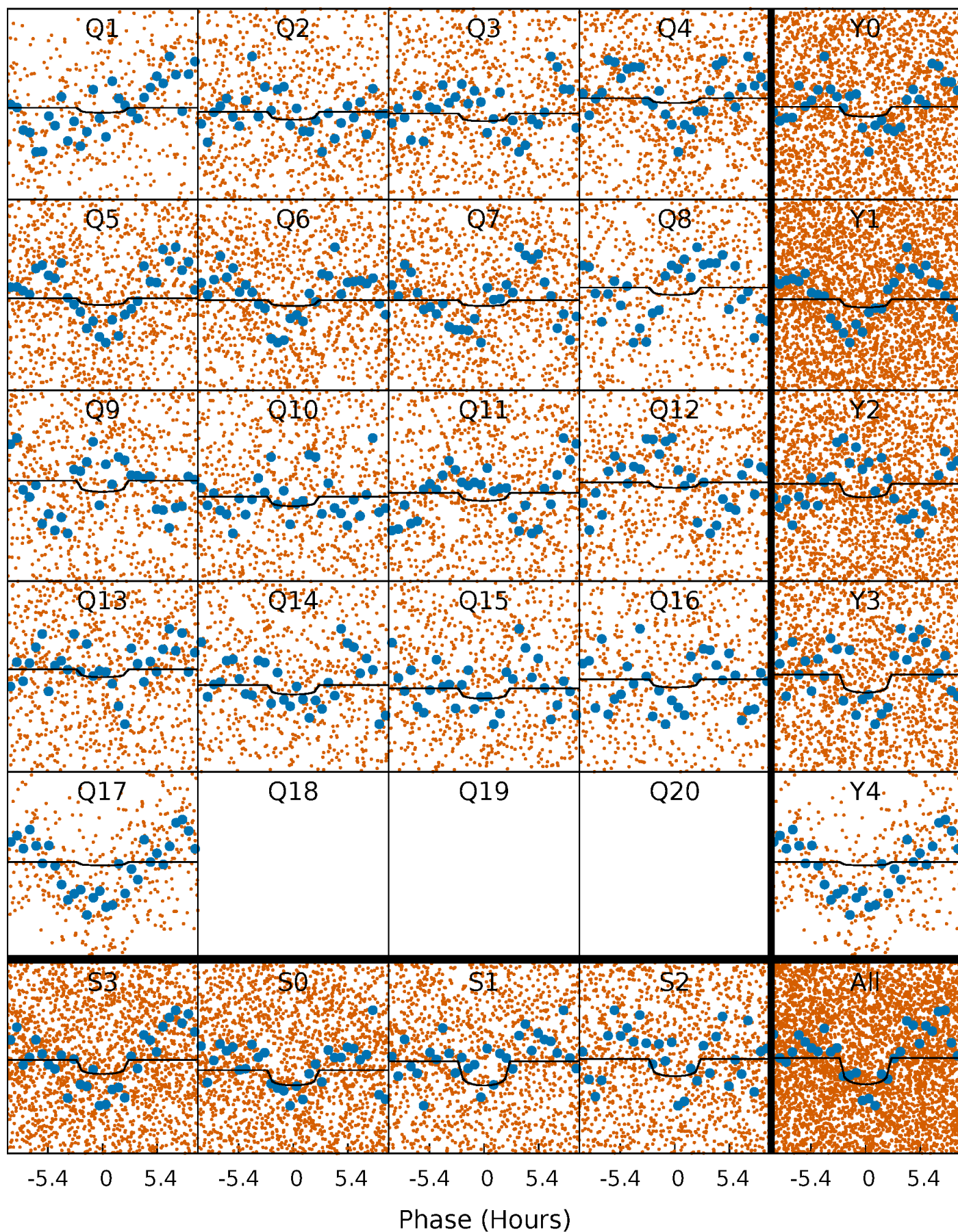
PDC Quarter-Phased Transit Curves

TCE 008841894-01 P= 2.398384 Days $T_0=132.055081$ (BKJD)



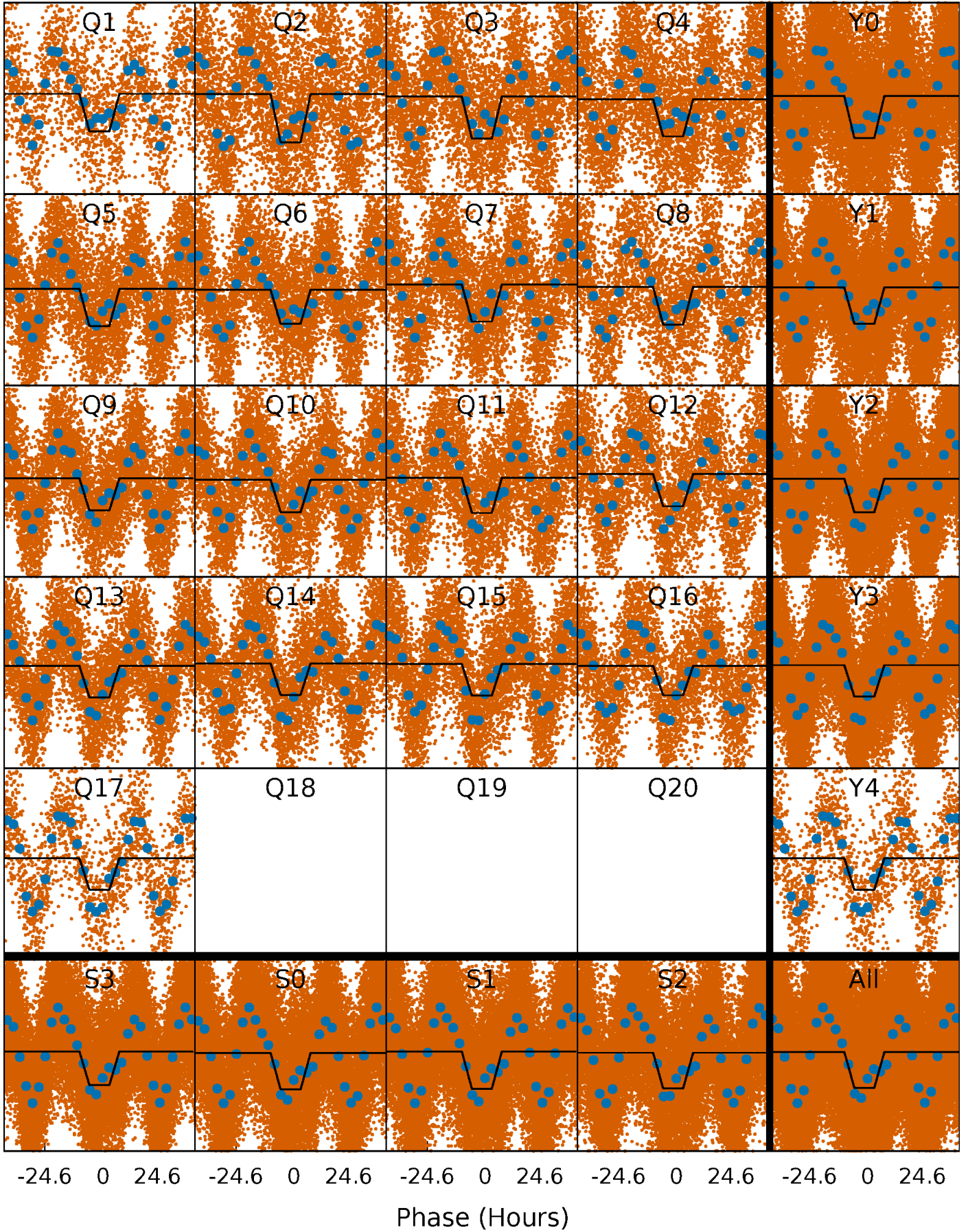
DV Quarter-Phased Transit Curves

TCE 008841894-01 P= 2.398384 Days $T_0=132.055081$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

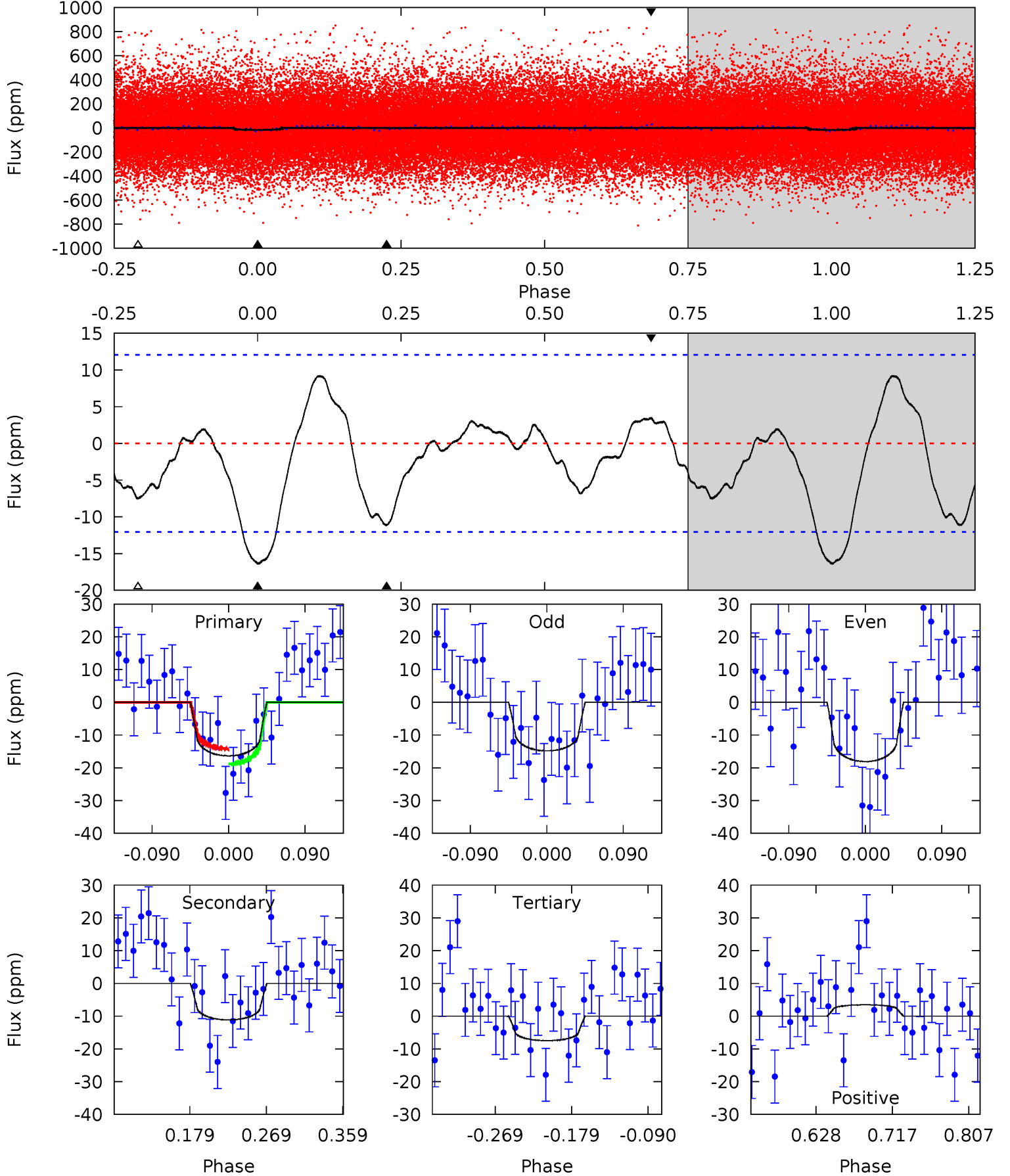
TCE 008841894-01 P= 2.397032 Days $T_0=132.369164$ (BKJD)



DV Model-Shift Uniqueness Test

008841894-01, P = 2.398384 Days, E = 129.656697 Days

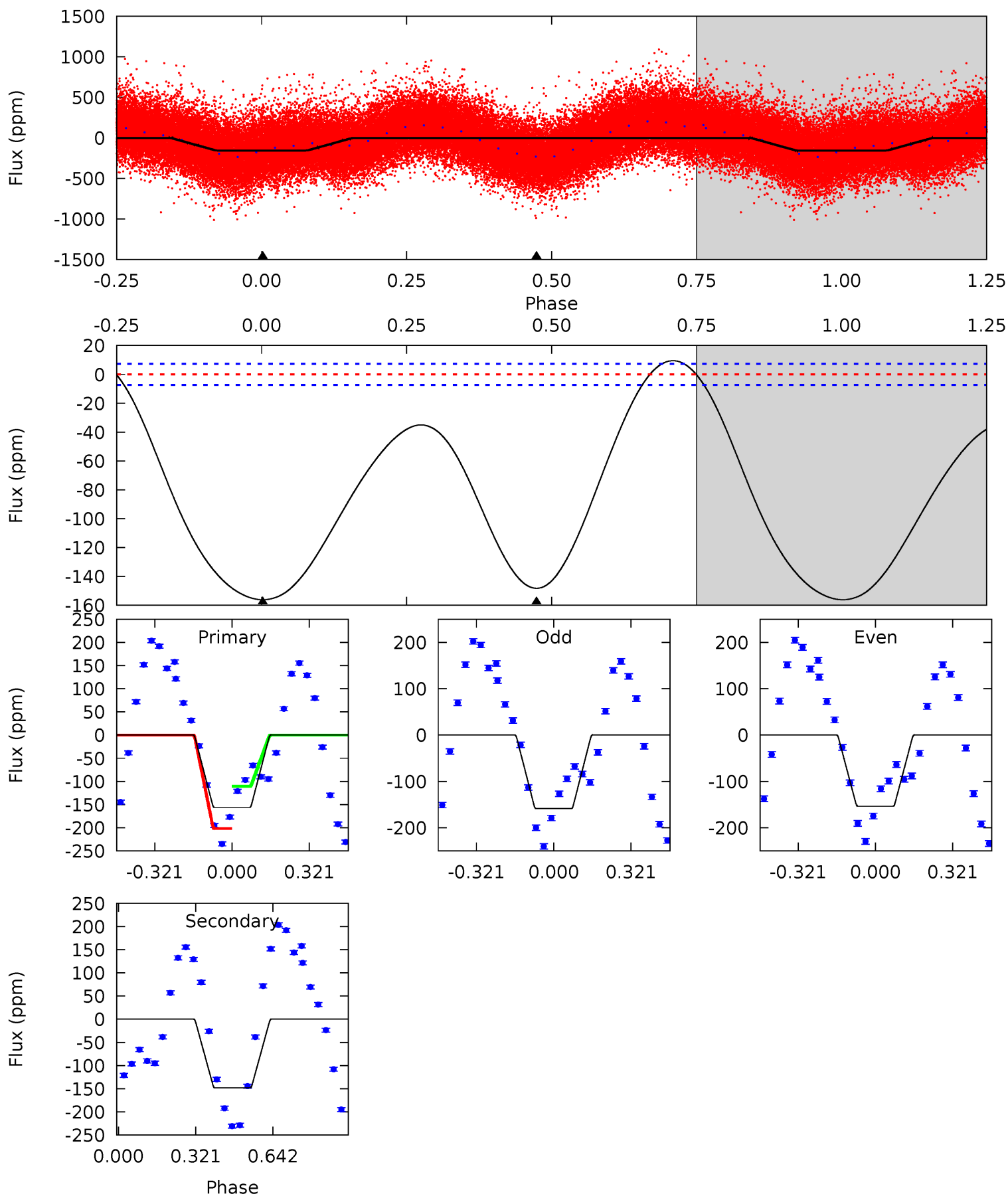
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.23	4.24	2.85	1.32	4.59	1.70	1.46	3.38	4.91	1.39	2.92	0.62	0.96	0.36	0.88



Alt Model-Shift Uniqueness Test

008841894-01, P = 2.397032 Days, E = 129.972132 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
92.6	87.9	0	0	4.31	0.99	11.5	92.6	92.6	87.9	87.9	1.53	0.95	0.06	31.3



Stellar Parameters For KIC 008841894

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6261^{+177}_{-221}	$4.027^{+0.312}_{-0.144}$	$-0.080^{+0.250}_{-0.300}$	$1.751^{+0.493}_{-0.603}$	$1.192^{+0.182}_{-0.202}$	$0.312^{+0.726}_{-0.140}$
	+3%/-4%	+8%/-4%	+312%/-375%	+28%/-34%	+15%/-17%	+232%/-45%
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 008841894-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-11 ± 3	$0.58^{+0.27}_{-0.22}$	2593^{+198}_{-271}	6312^{+2003}_{-1044}	25^{+44}_{-13}
Alt.	-148 ± 2	$2.35^{+0.46}_{-0.47}$	2601^{+209}_{-234}	6075^{+417}_{-345}	20^{+11}_{-6}

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 $A_{obs} \gg 1.0$

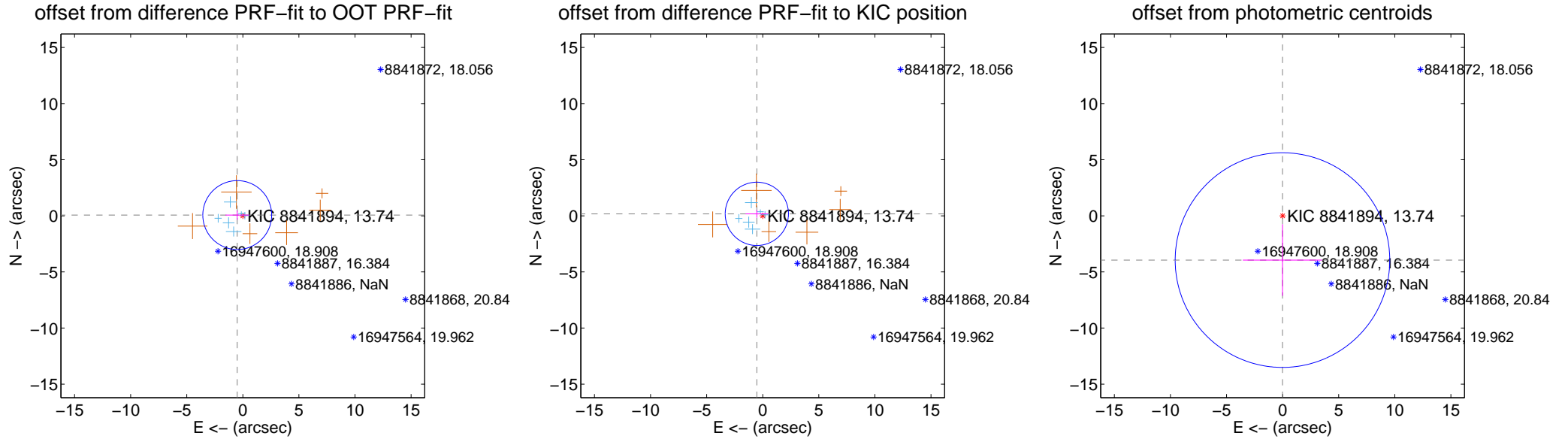
DV Centroid Data

Supplemental centroid analysis for 008841894-01. Kepler magnitude: 13.74. Transit SNR 3.34

There are 6 quarters with good PRF difference image offsets

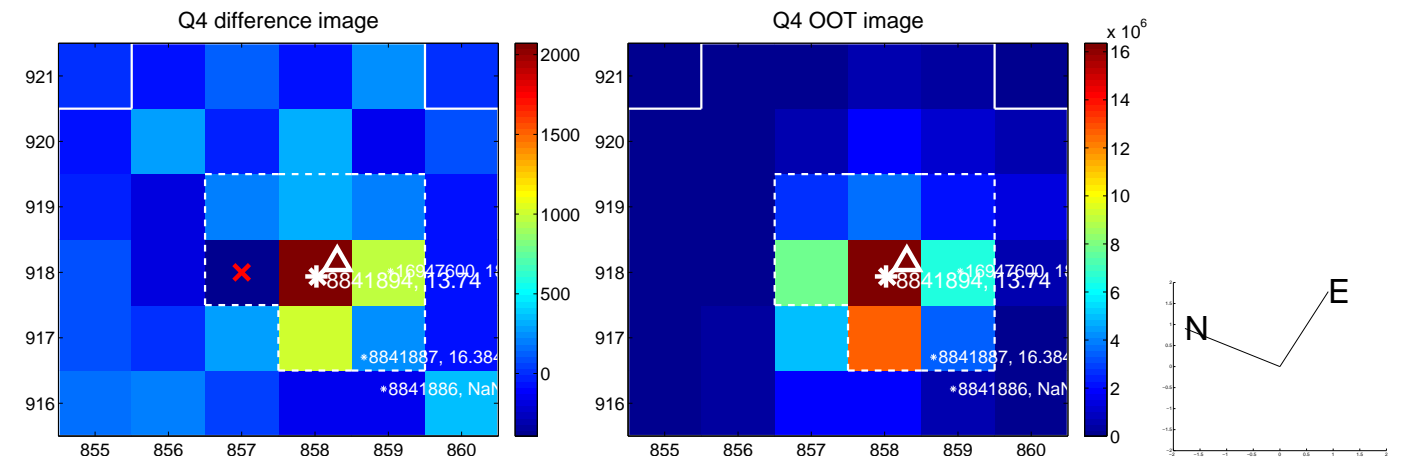
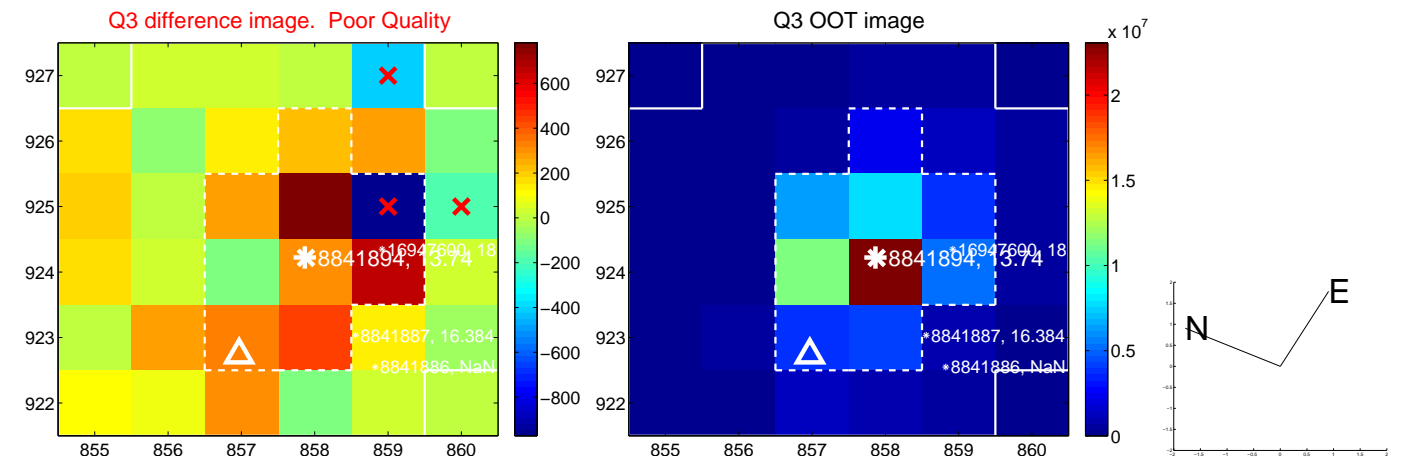
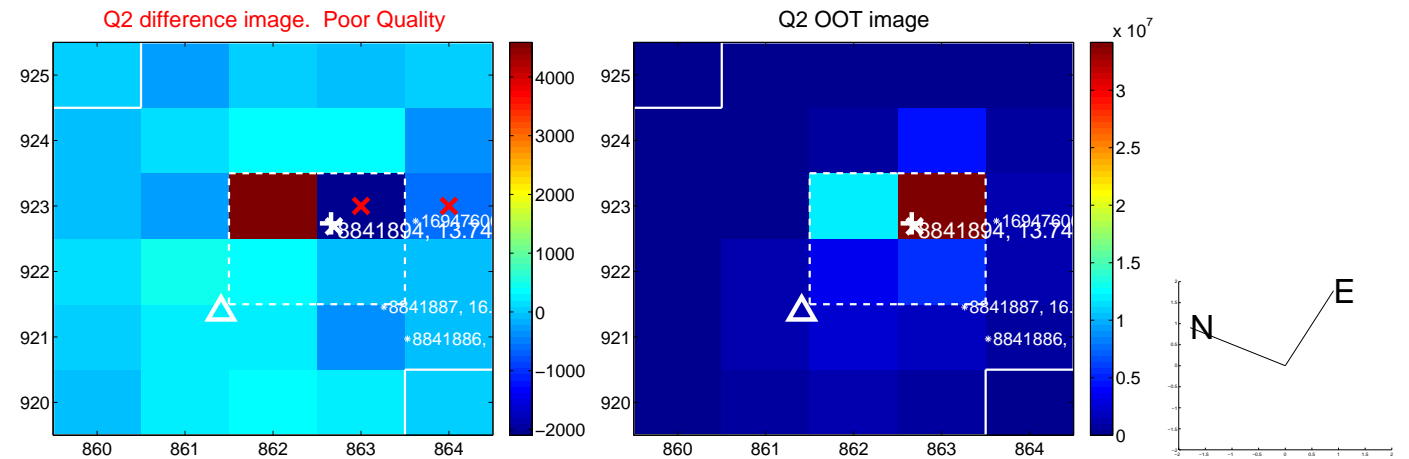
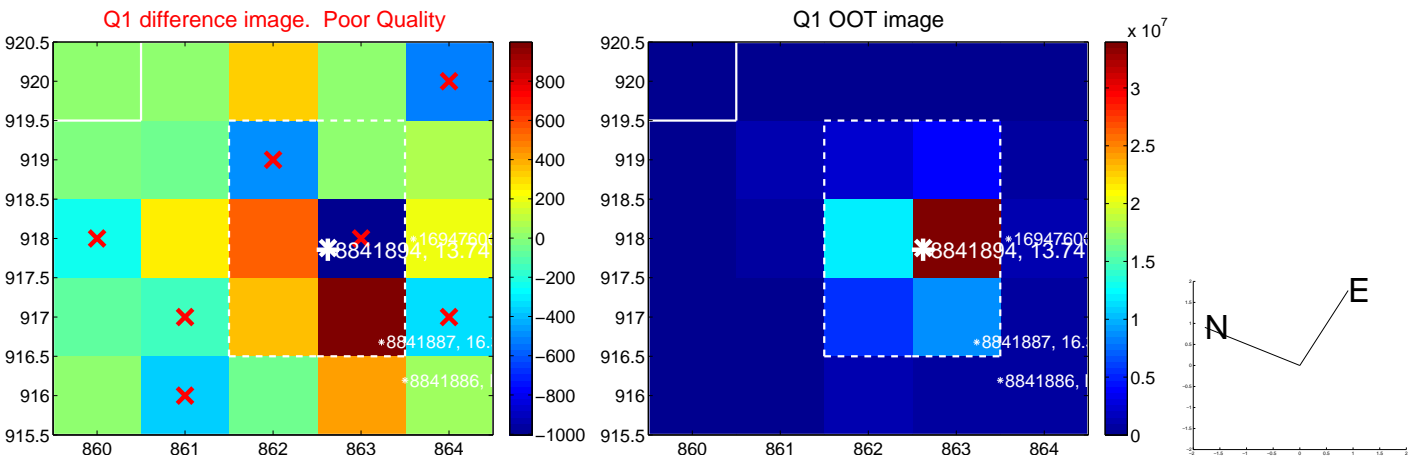
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.503 ± 1.023	0.49	0.499 ± 1.044	0.067 ± 0.407
PRF-fit source offset from KIC position	0.554 ± 0.940	0.59	0.526 ± 1.003	0.176 ± 0.357
photometric centroid source offset	3.94 ± 3.19	1.24	0.01 ± 3.53	-3.94 ± 3.19

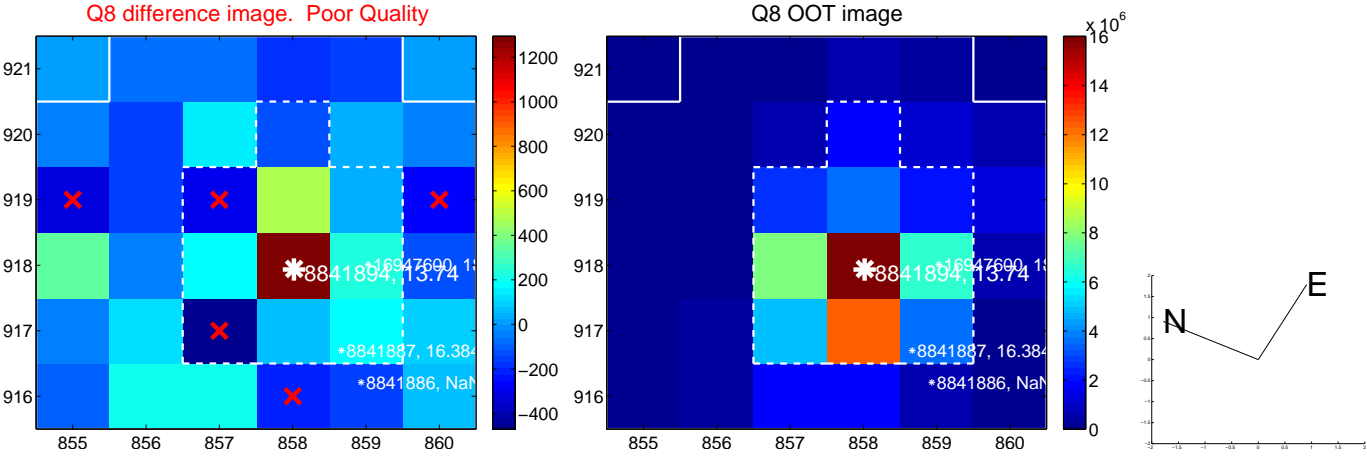
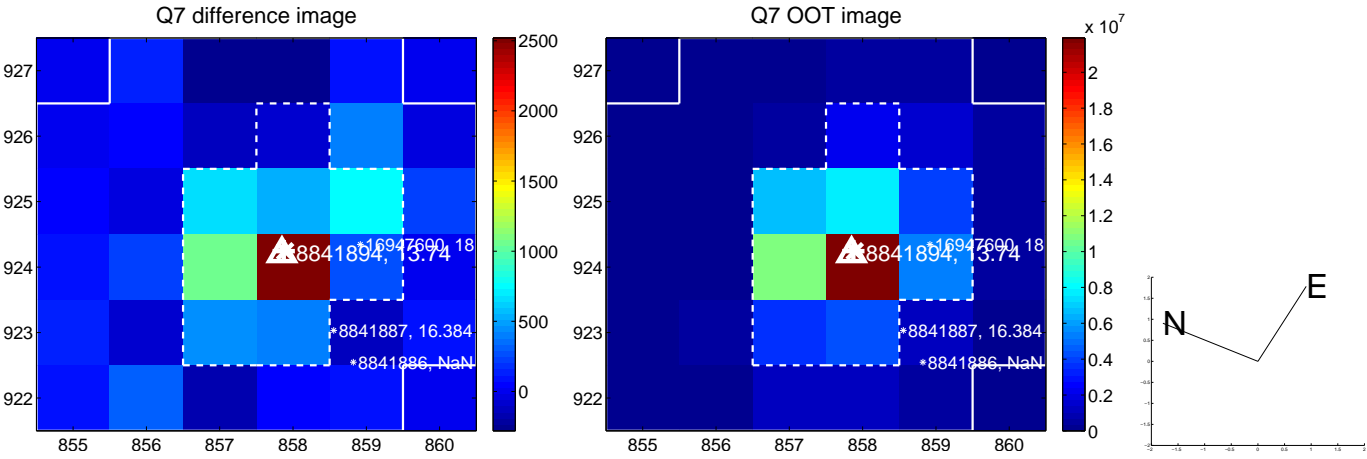
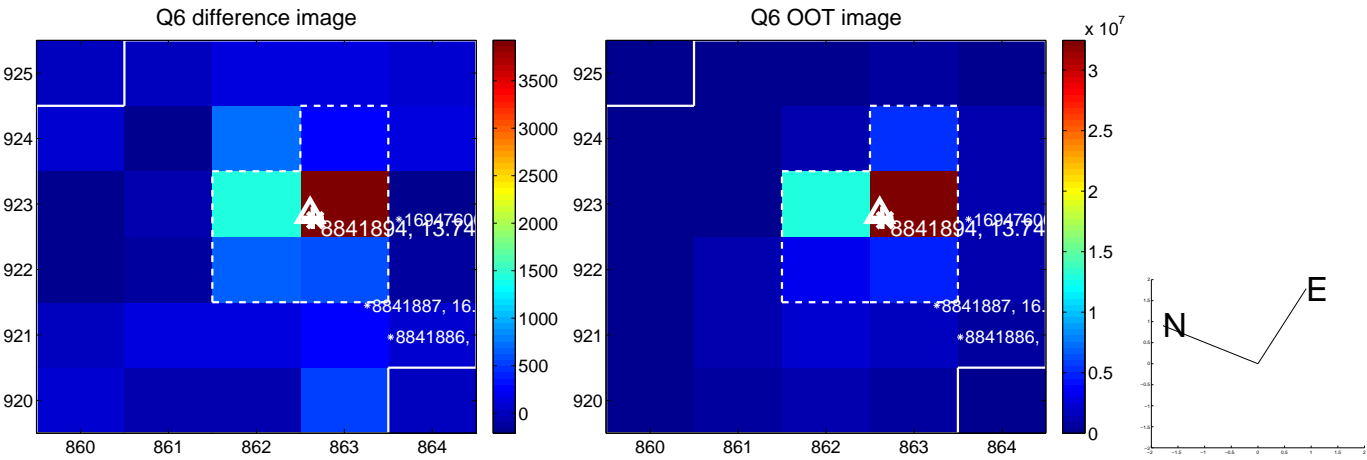
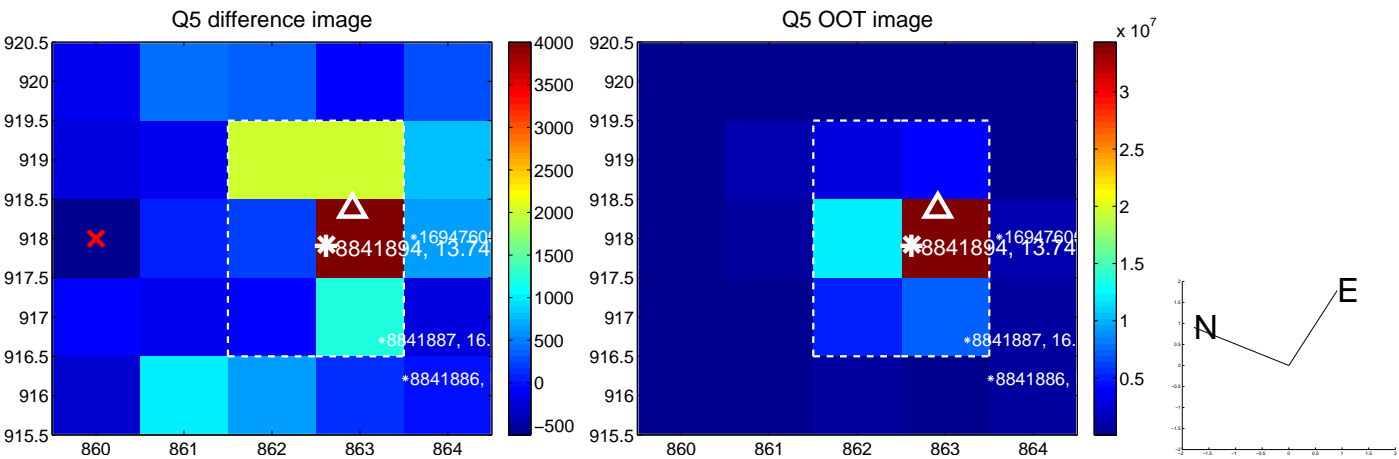


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

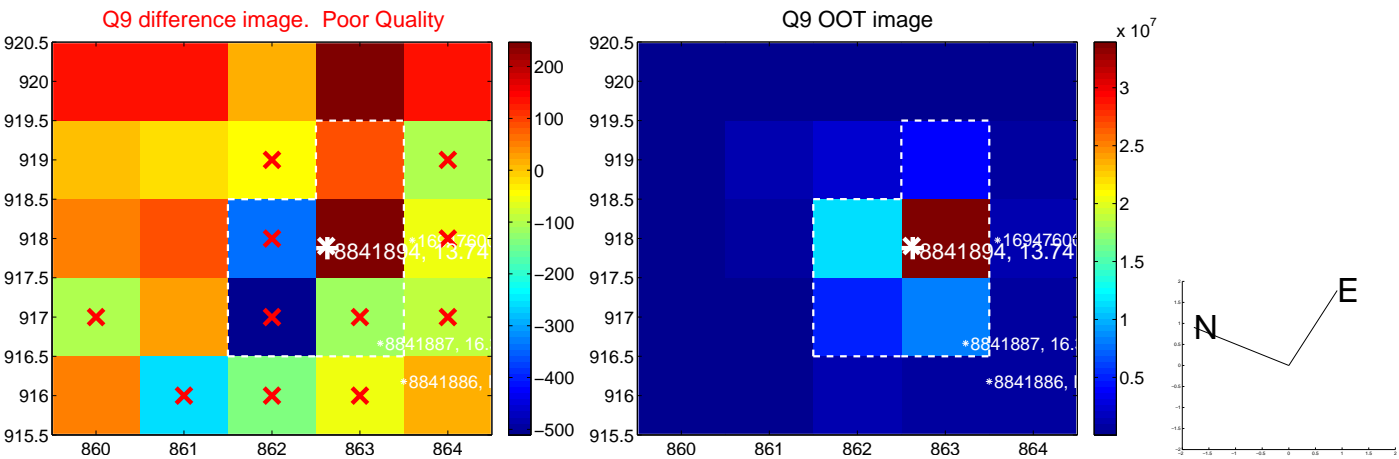
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



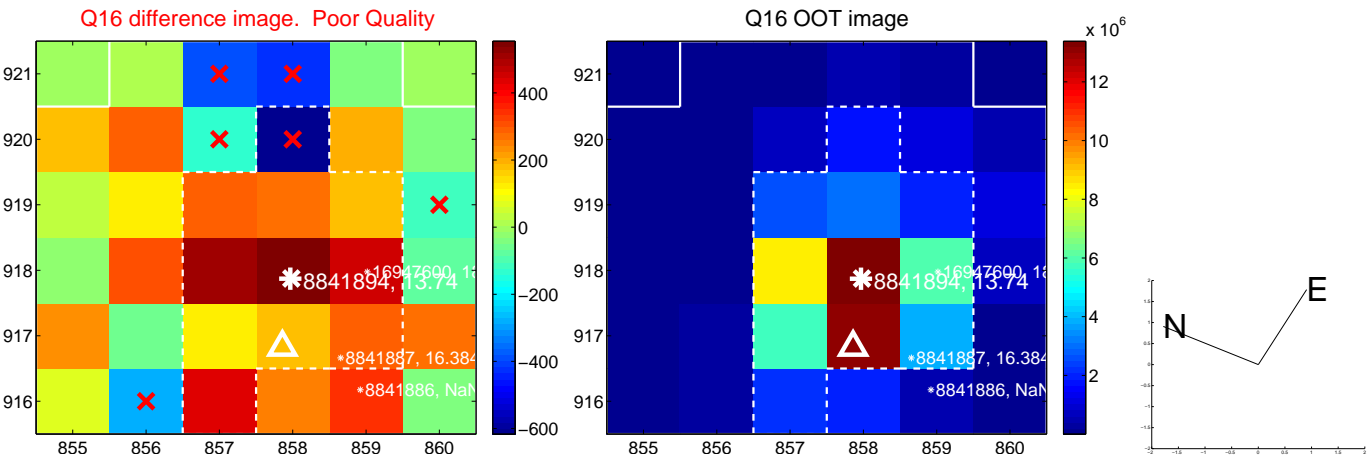
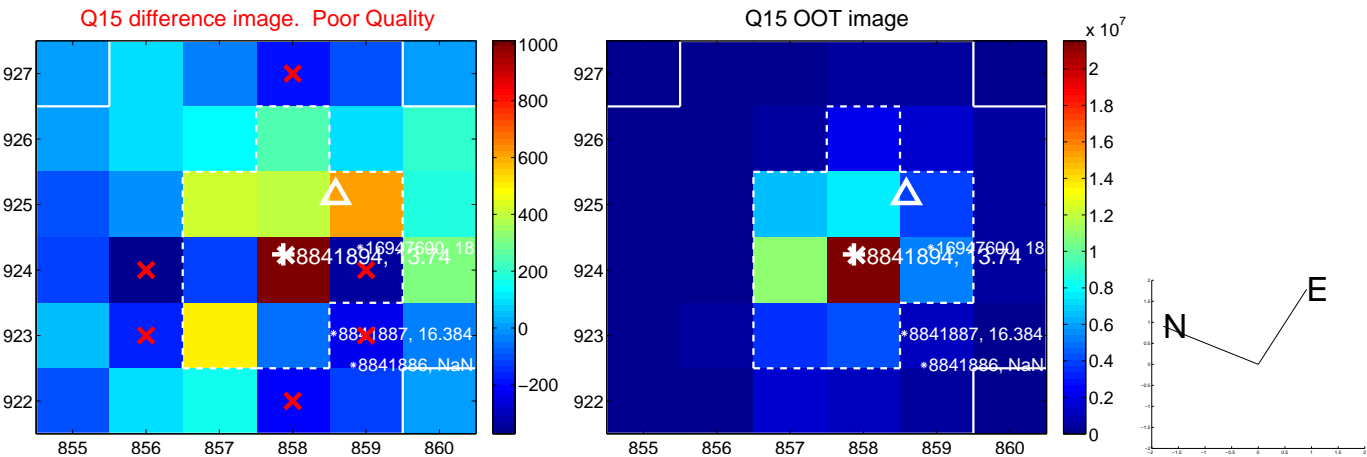
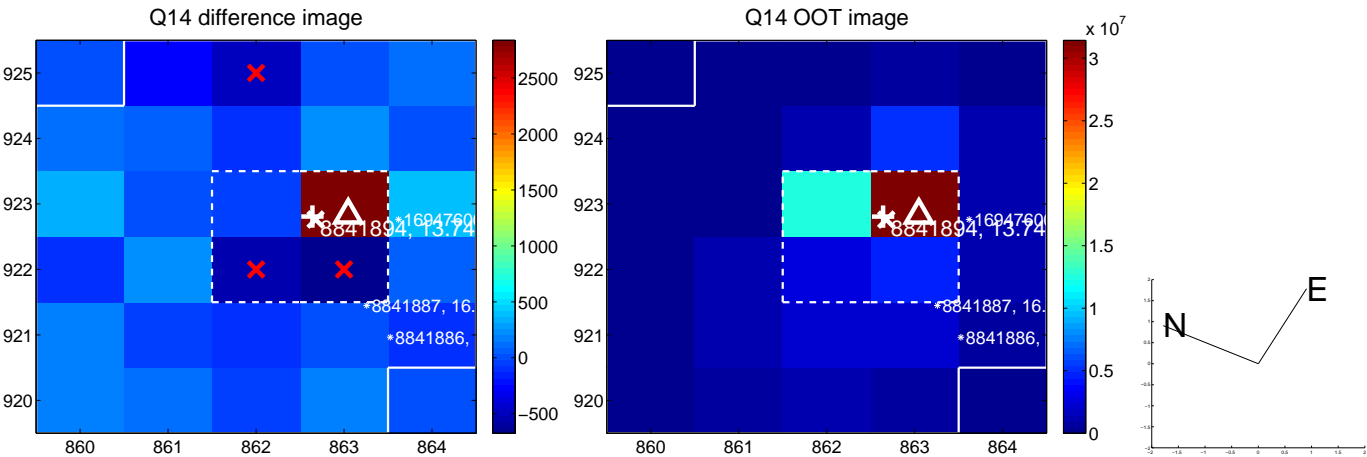
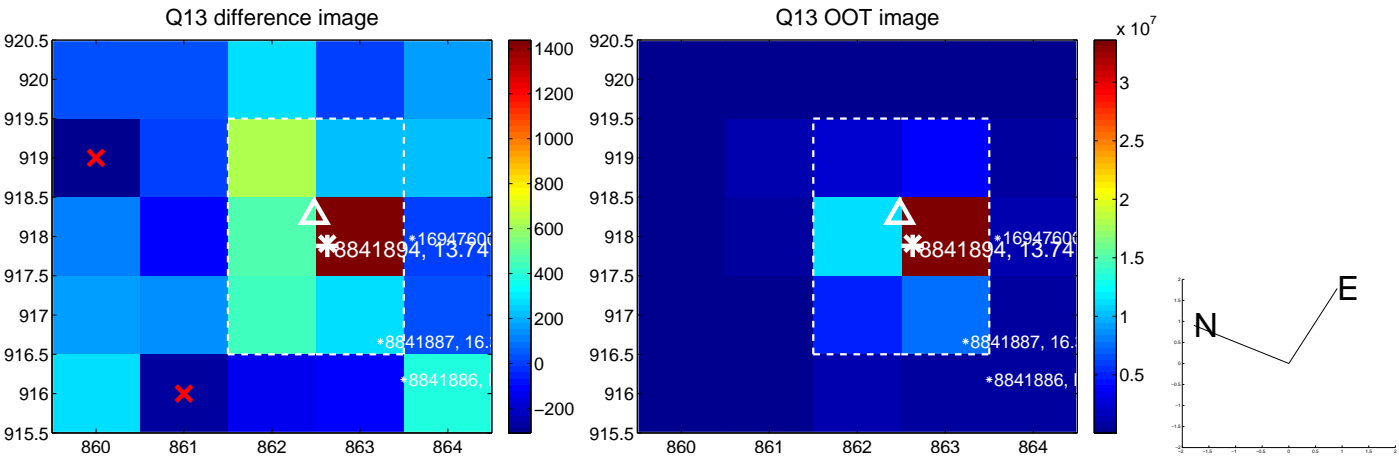
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



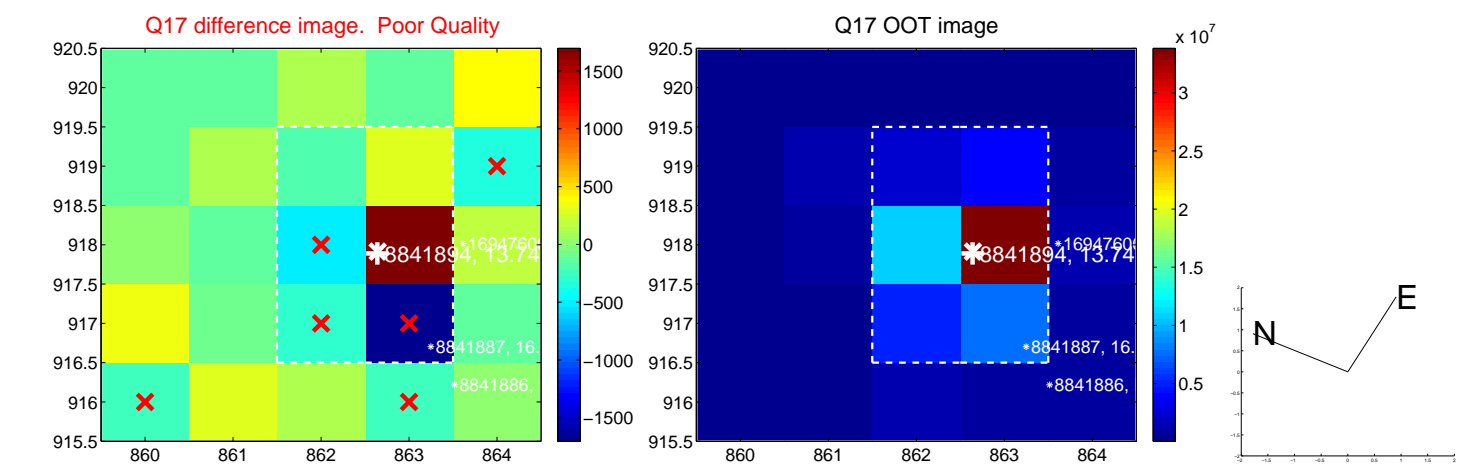
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



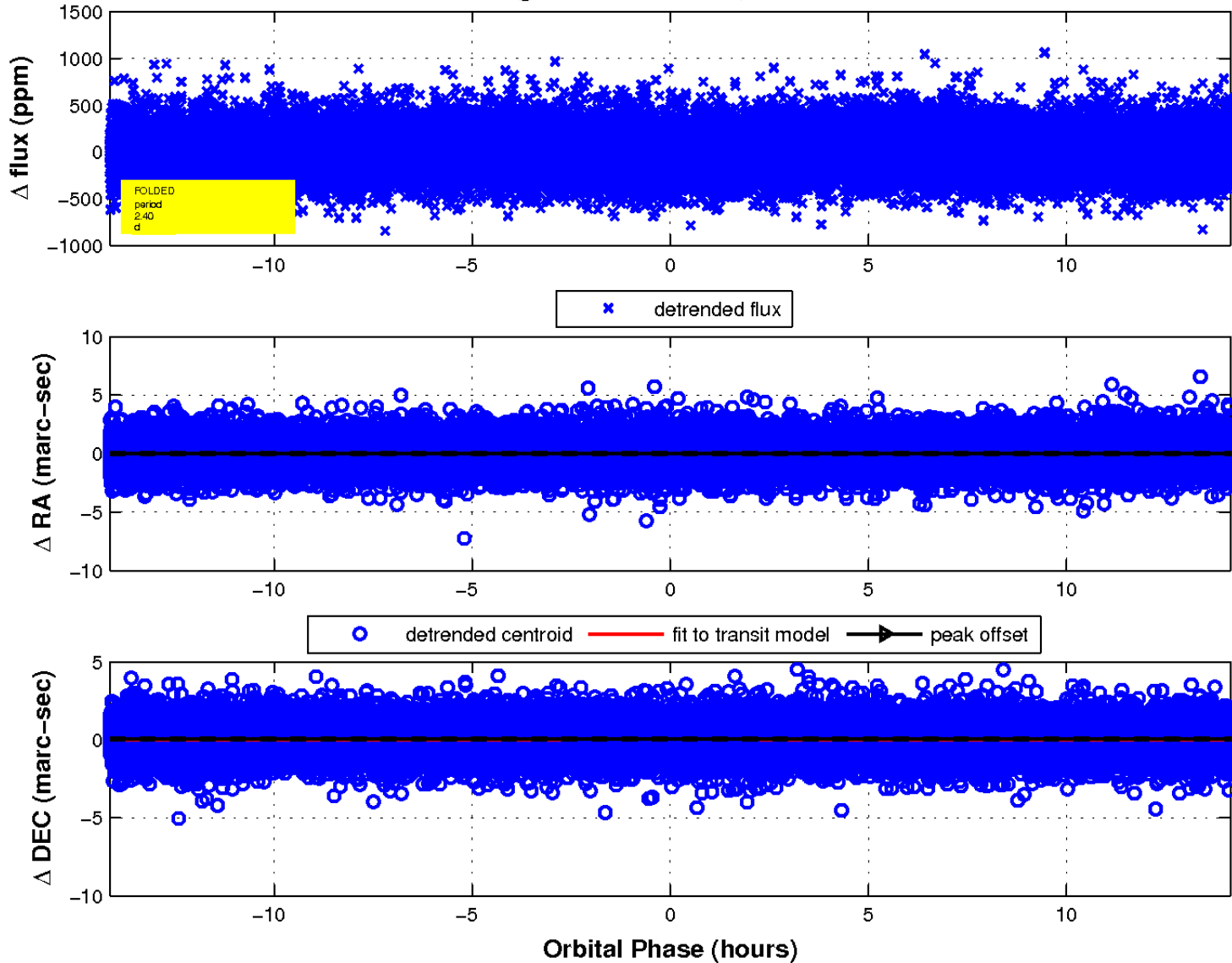
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

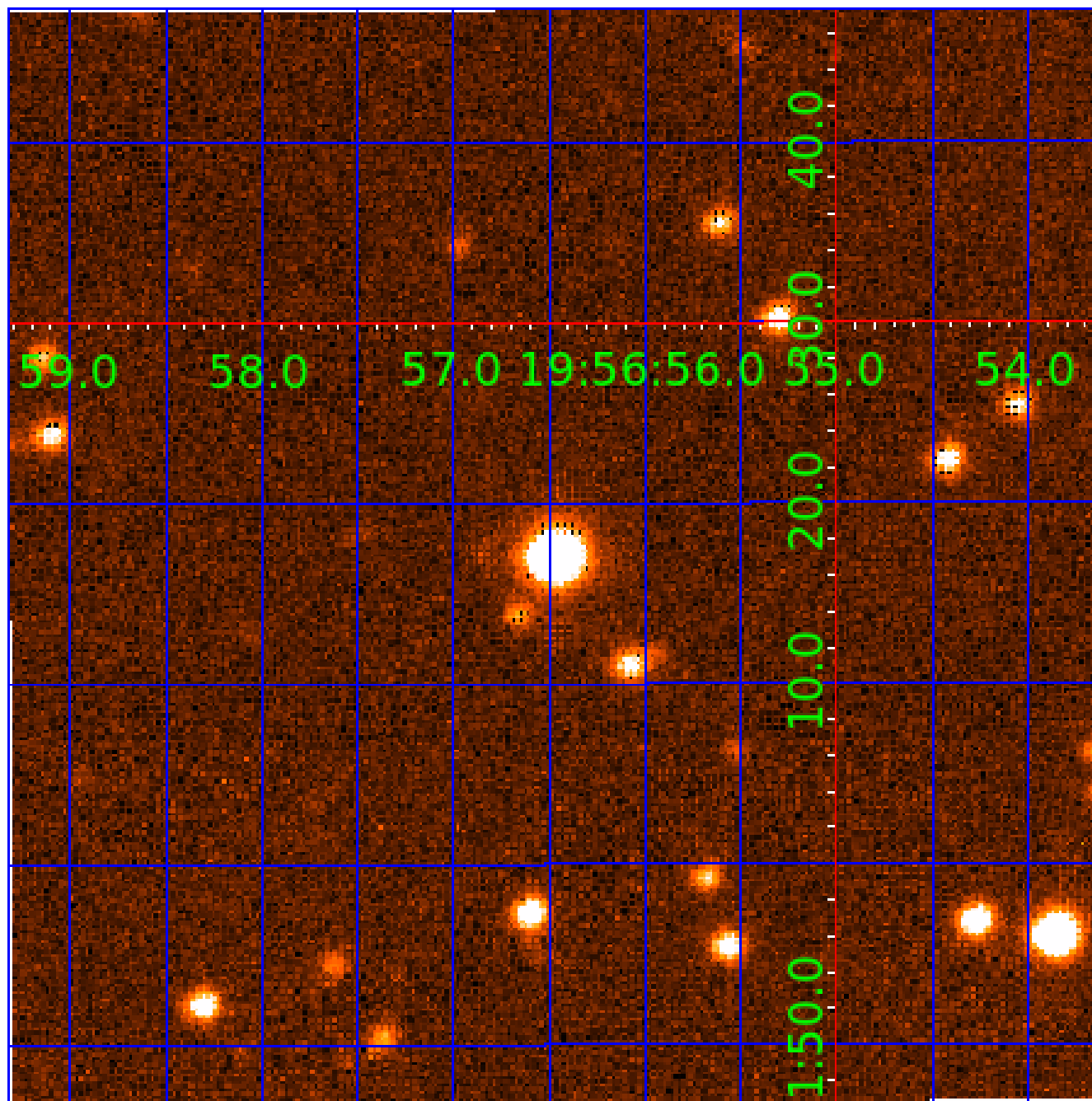


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 008841894

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})
008841894-01	OBS	No	2.398384	132.055081	13.0	4.714	11.4	3.3	1.75	6261	0.63	3055.64
008841894-02	OBS	No	2.396796	132.786501	58.9	4.077	8.9	10.1	1.75	6261	1.45	3058.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008841894-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
008841894-02	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—HALO_GHOST

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

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

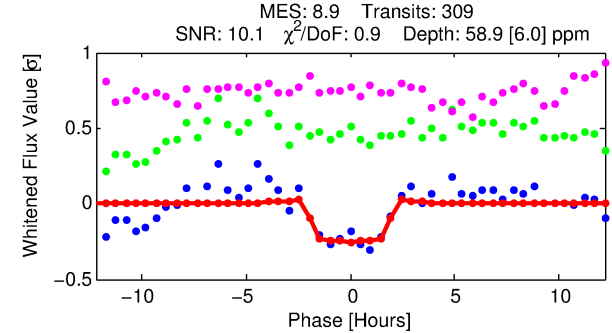
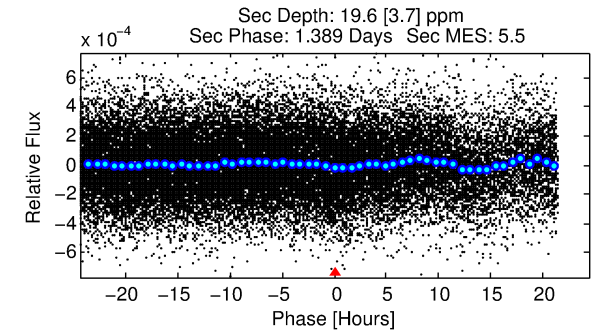
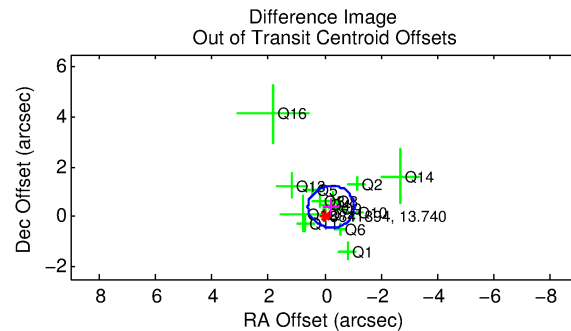
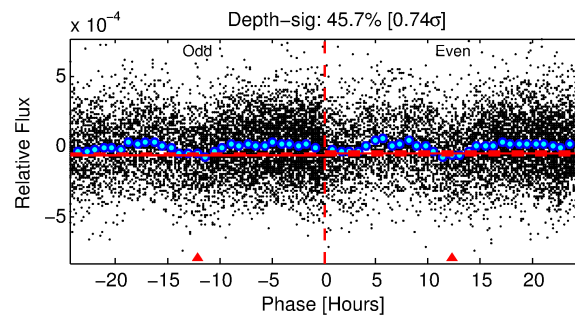
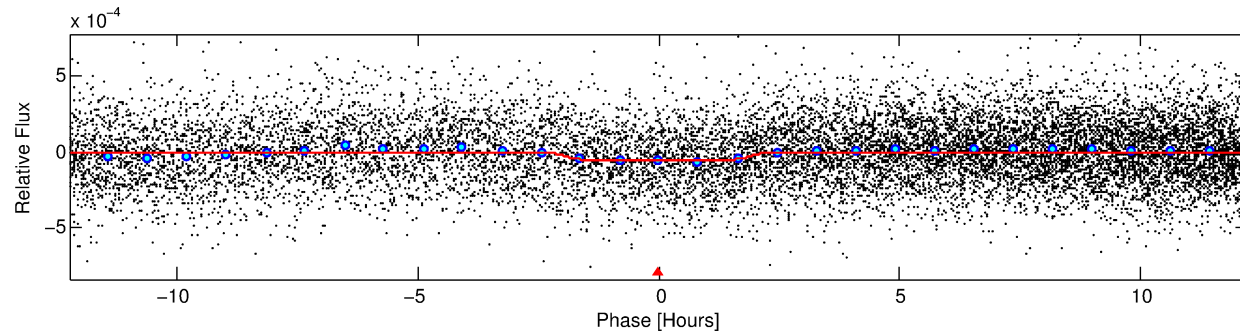
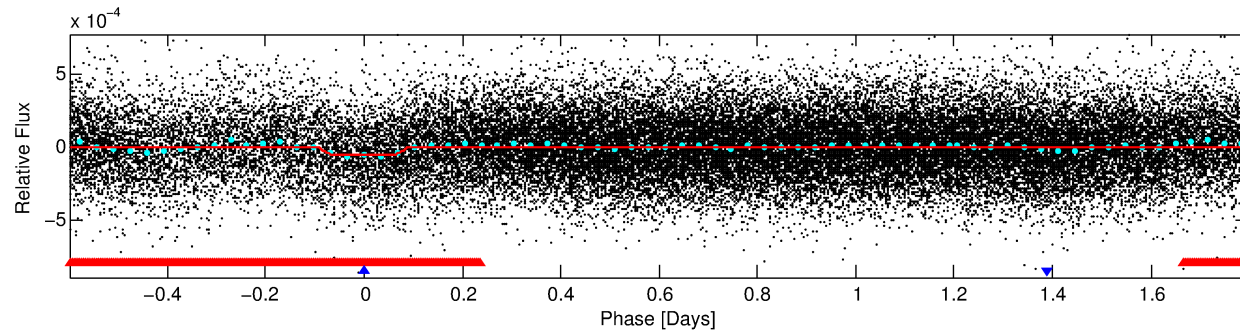
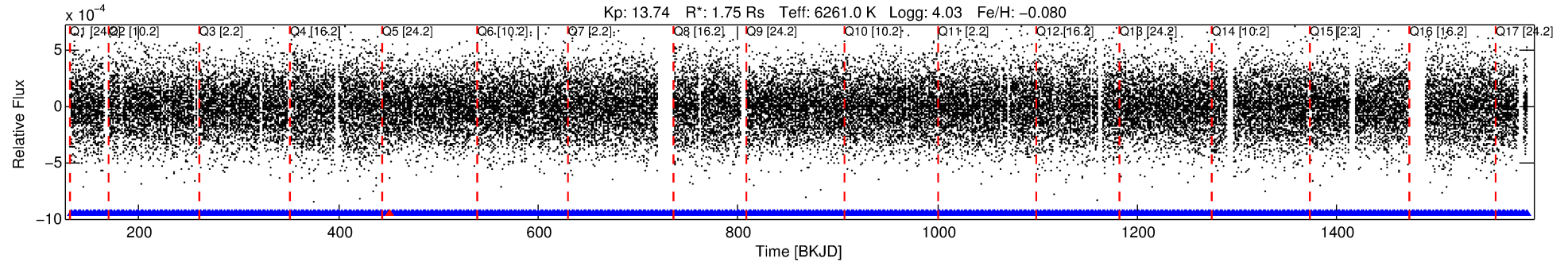
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008841894-02

No Significant Match Found

DV One-Page Summary

KIC: 8841894 Candidate: 2 of 2 Period: 2.397 d



DV Fit Results:

Period = 2.39680 [0.00004] d
Epoch = 132.7865 [0.0056] BKJD
Rp/R* = 0.0076 [0.0037]
a/R* = 3.20 [7.29]
b = 0.74 [1.58]
Seff = 3058.34 [1680.76]
Teff = 1896 [261] K
Rp = 1.45 [0.86] Re
a = 0.0372 [0.0123] AU
Ag = 7.05 [7.89] [0.77 σ]
Teffp = 4777 [1189] K [2.37 σ]

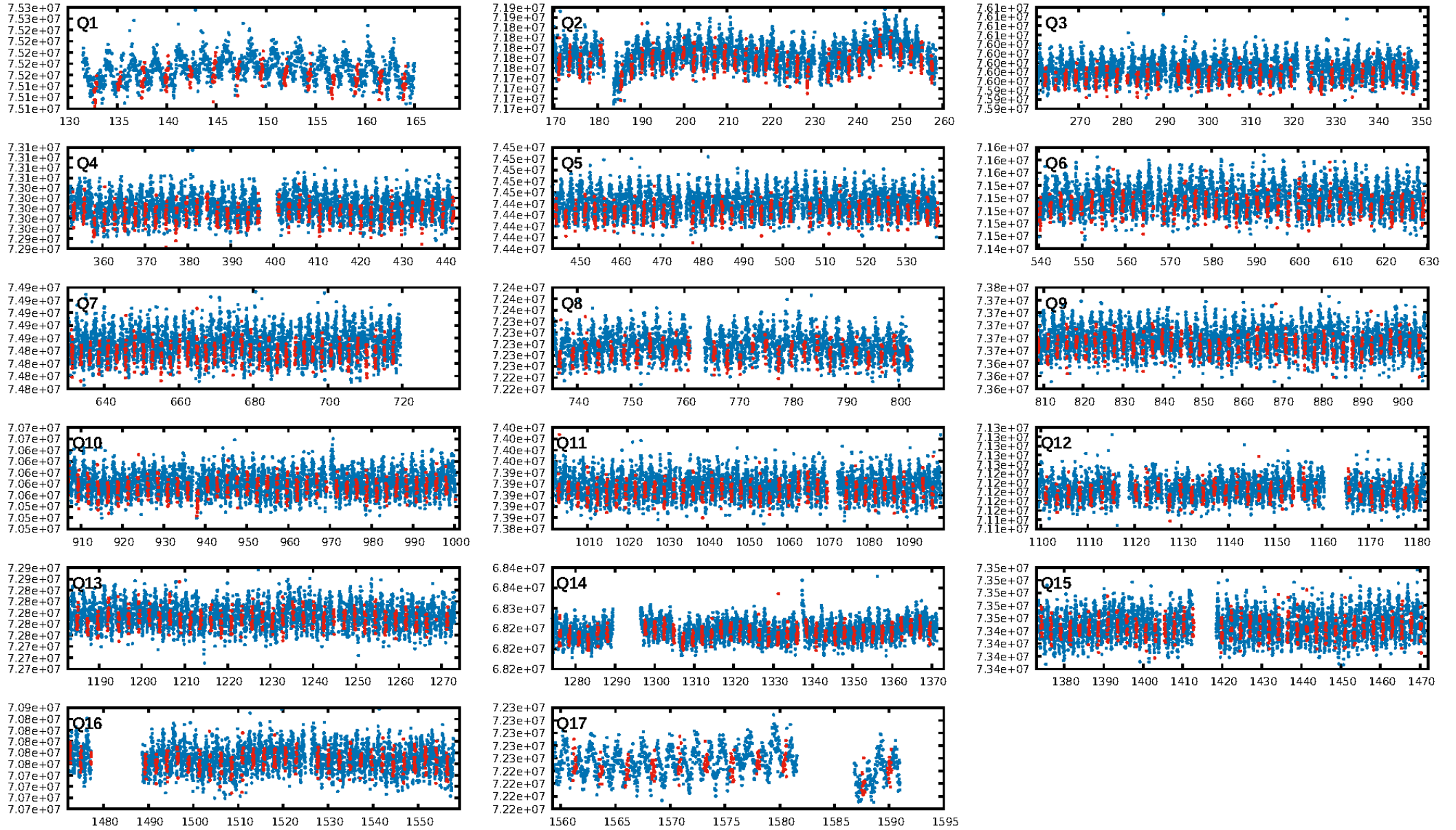
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.5% [0.01 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.65e-17
RollingBand-fgt: 1.00 [287/288]
GhostDiagnostic-chr: 0.1742
Centroid-sig: 1.1%
Centroid-so: 1.044 arcsec [1.39 σ]
OotOffset-rm: 0.455 arcsec [1.64 σ]
KicOffset-rm: 0.493 arcsec [1.80 σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 0.87 [13/15]
DiffImageOverlap-fno: 0.29 [5/17]

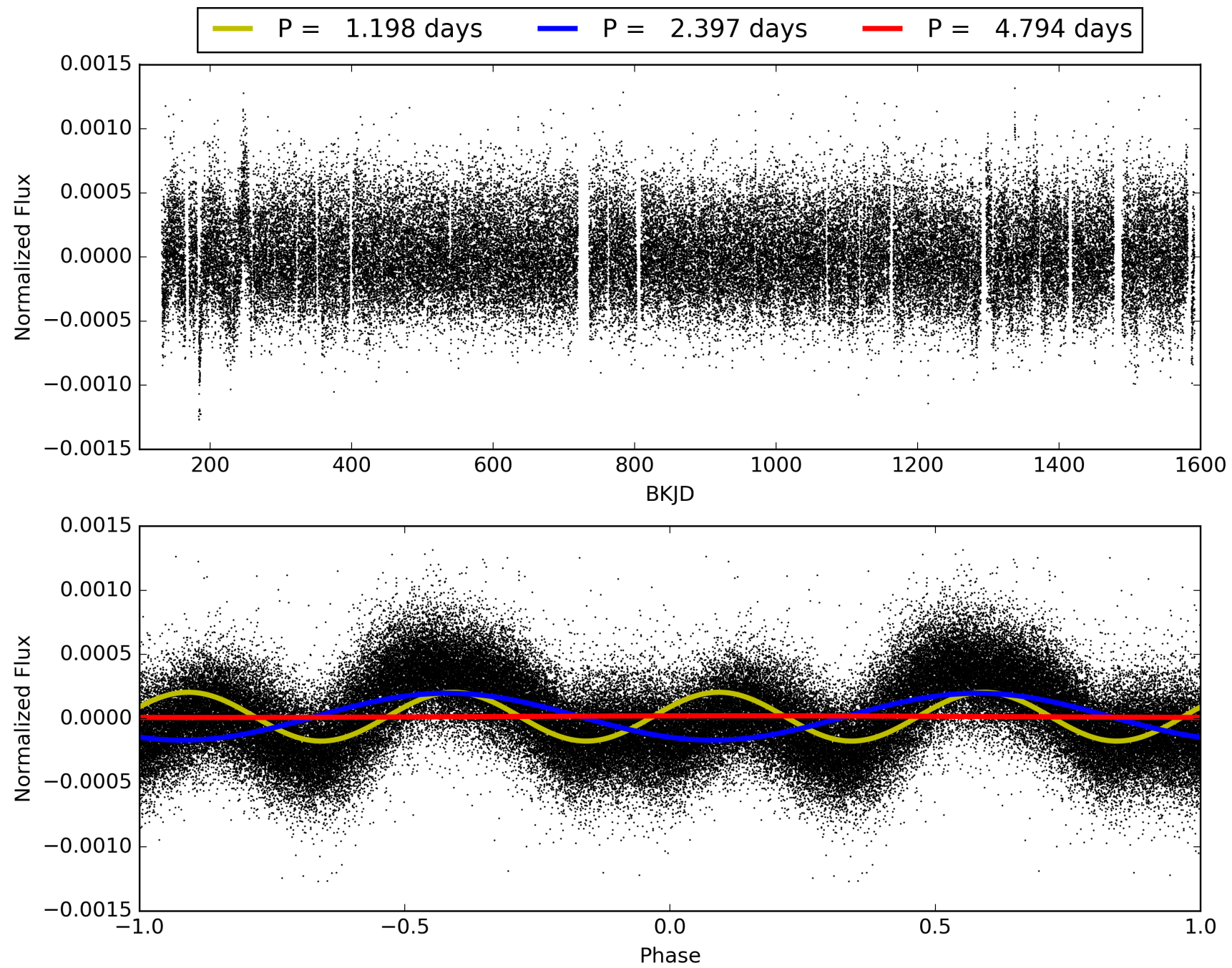
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:34:38 Z

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

TCE 008841894-02, PDC Light Curves

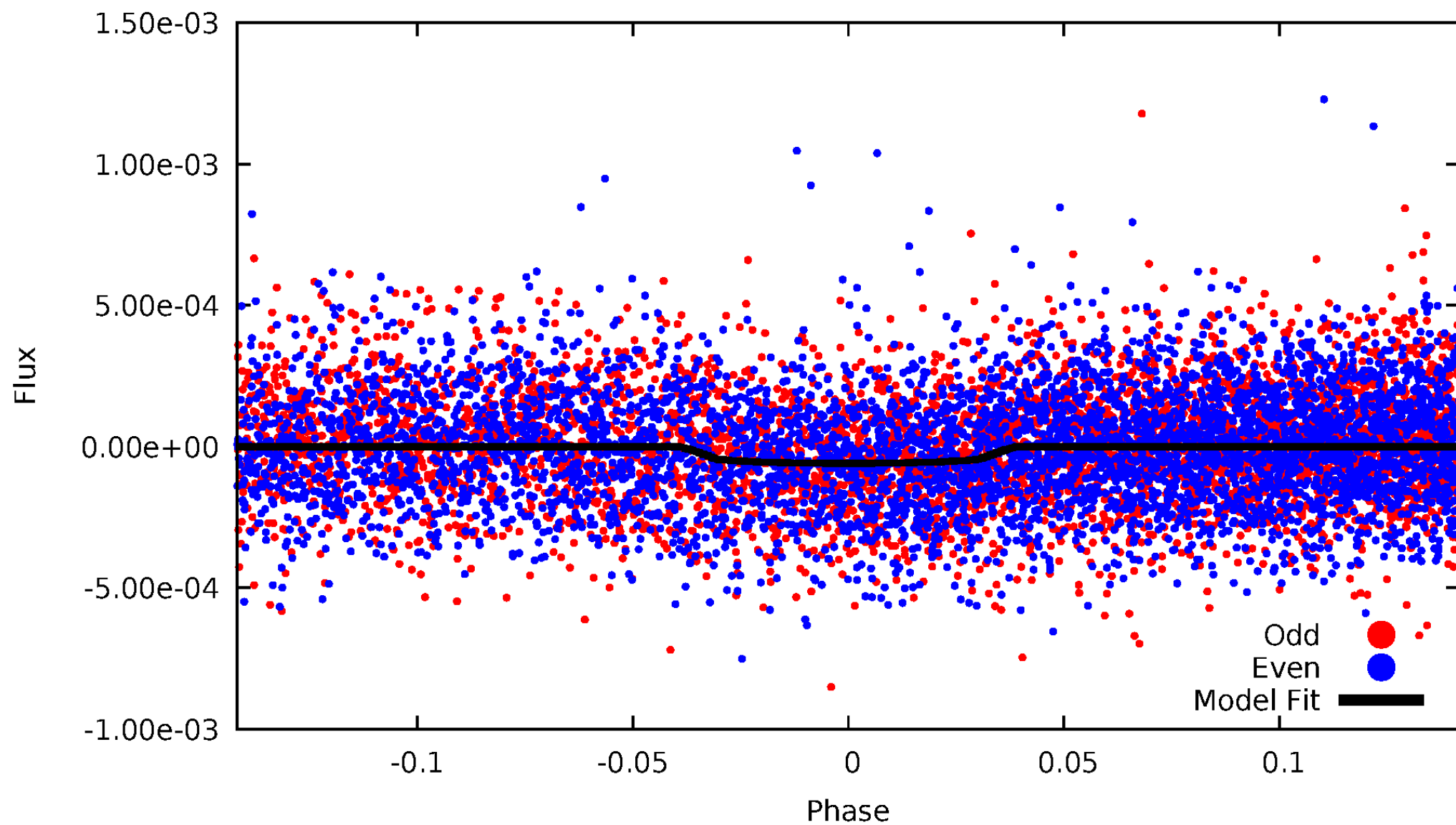


TCE 008841894-02



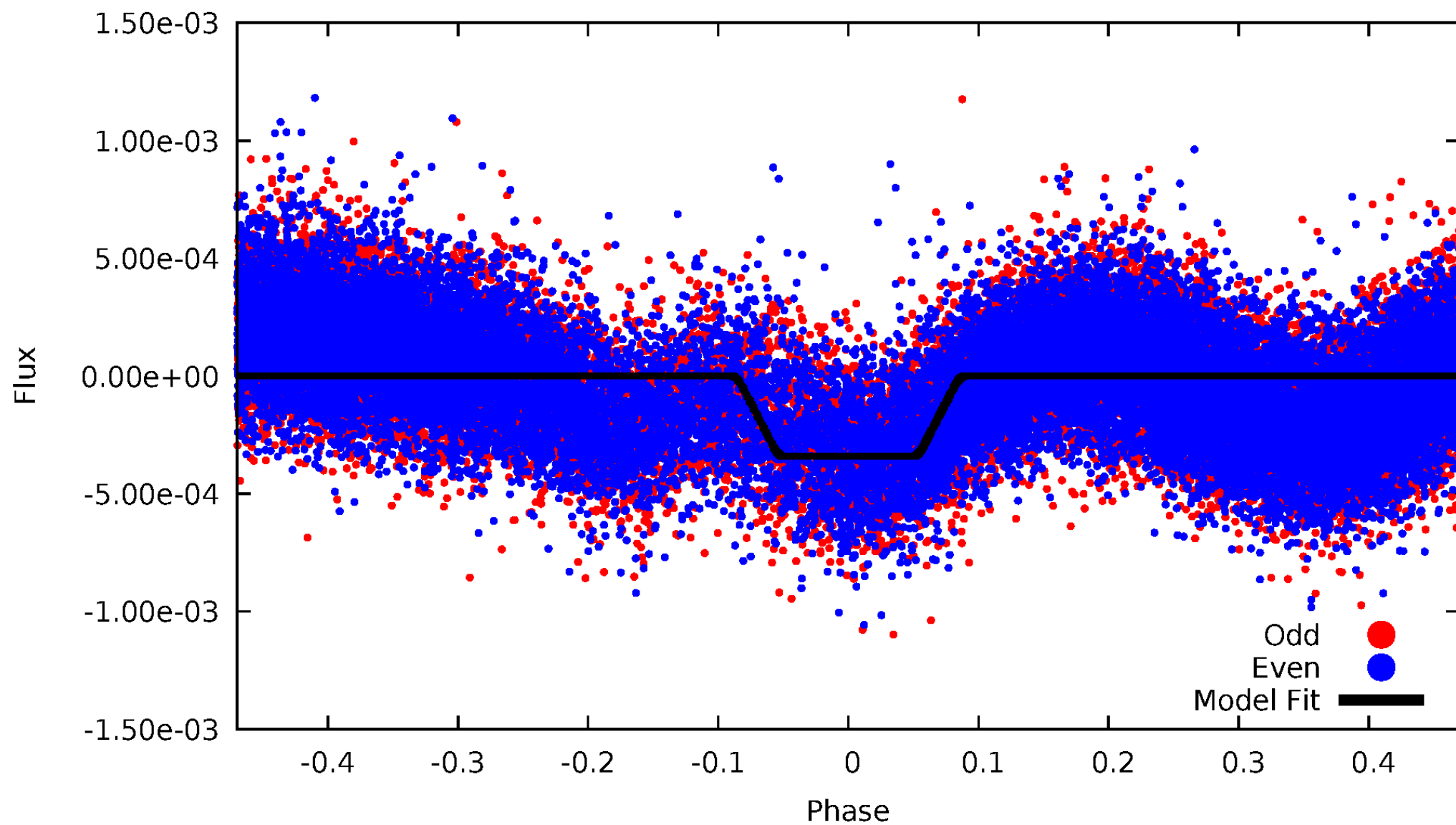
DV Odd/Even

TCE 008841894-02



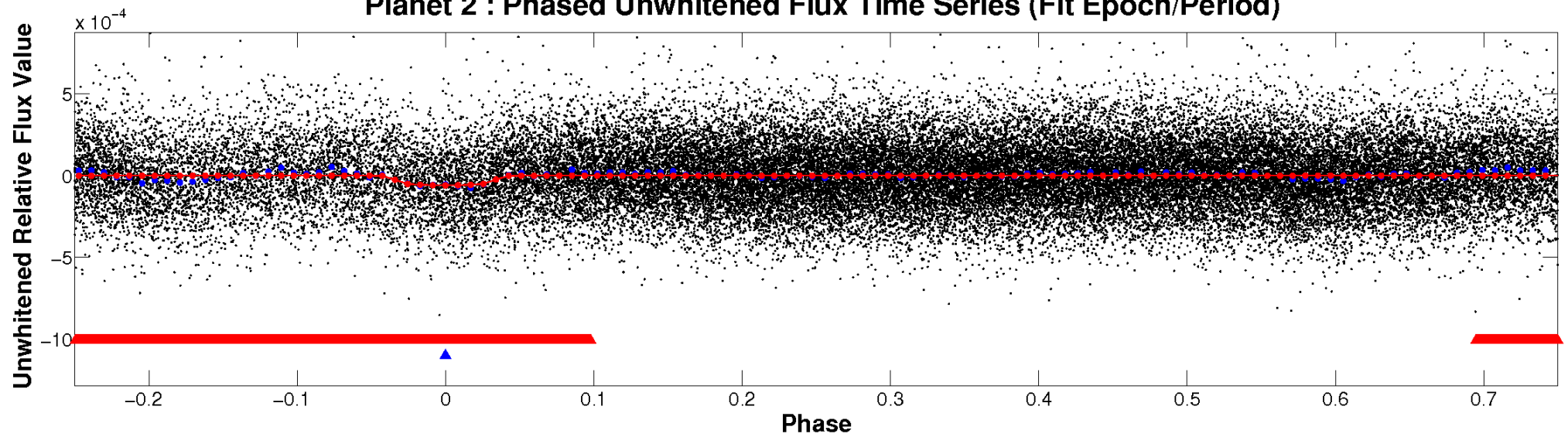
ALT Odd/Even

TCE 008841894-02

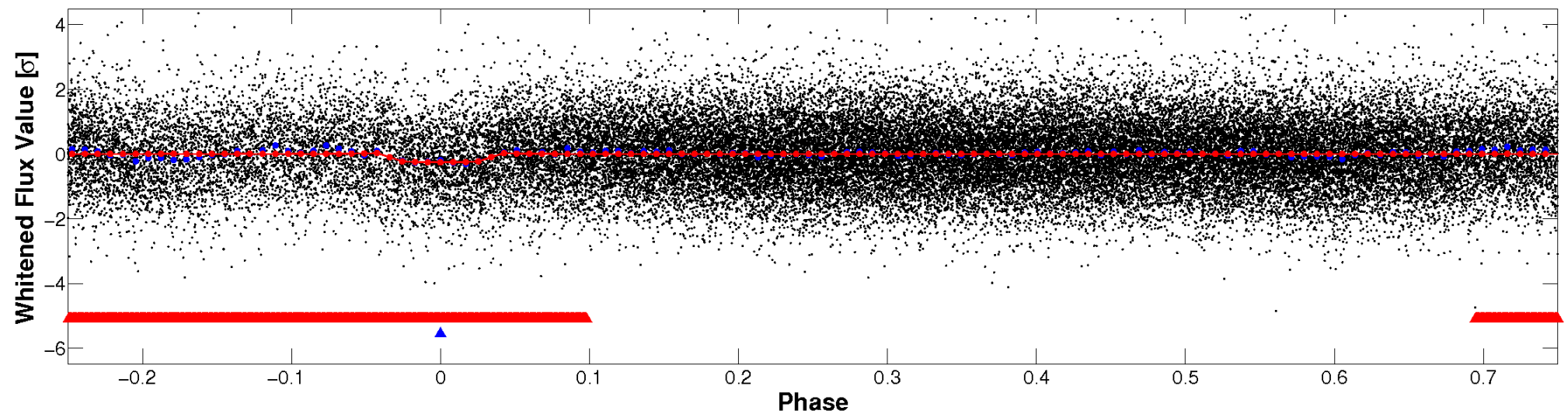


Non-Whitened Vs. Whitened Light Curve

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

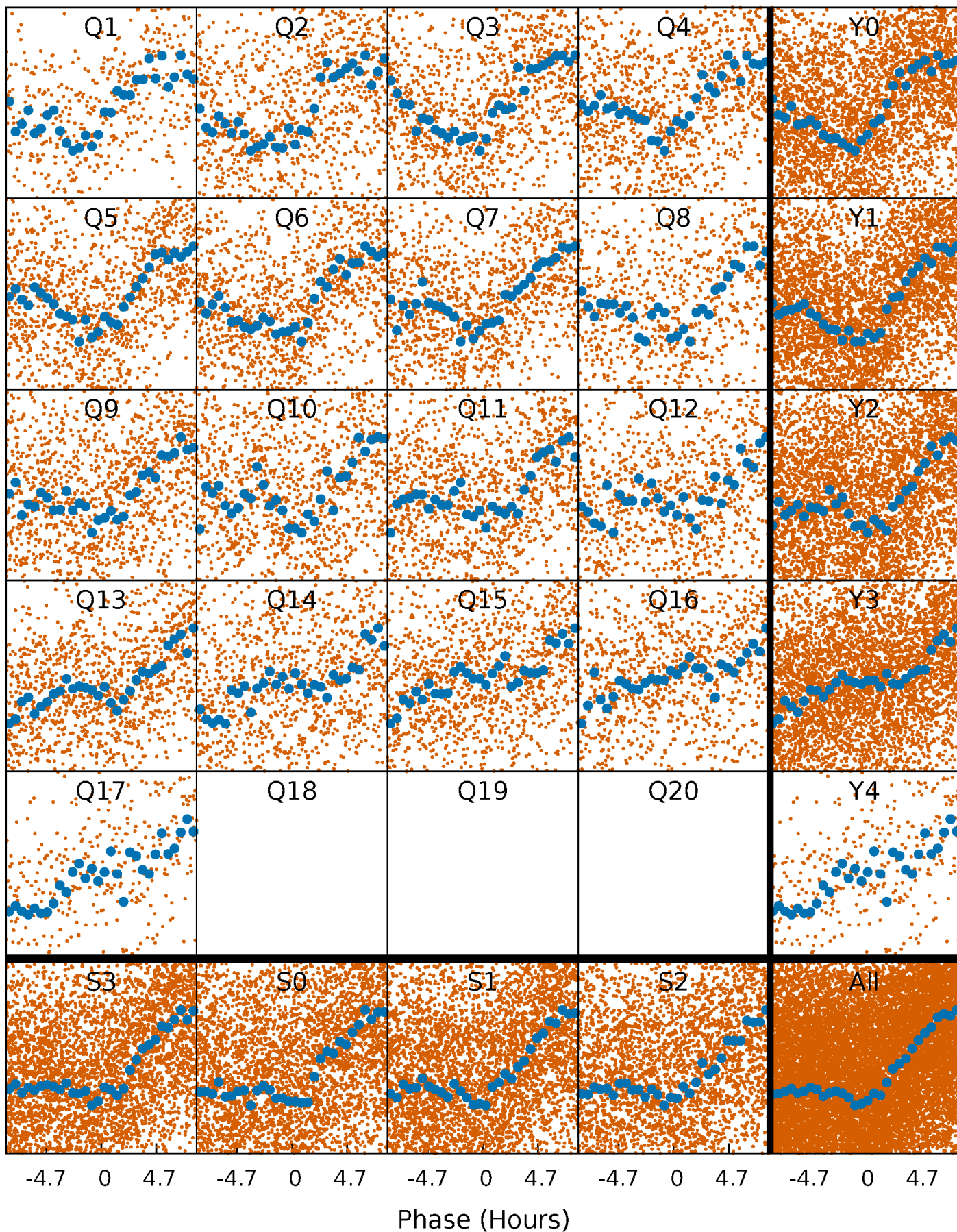


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



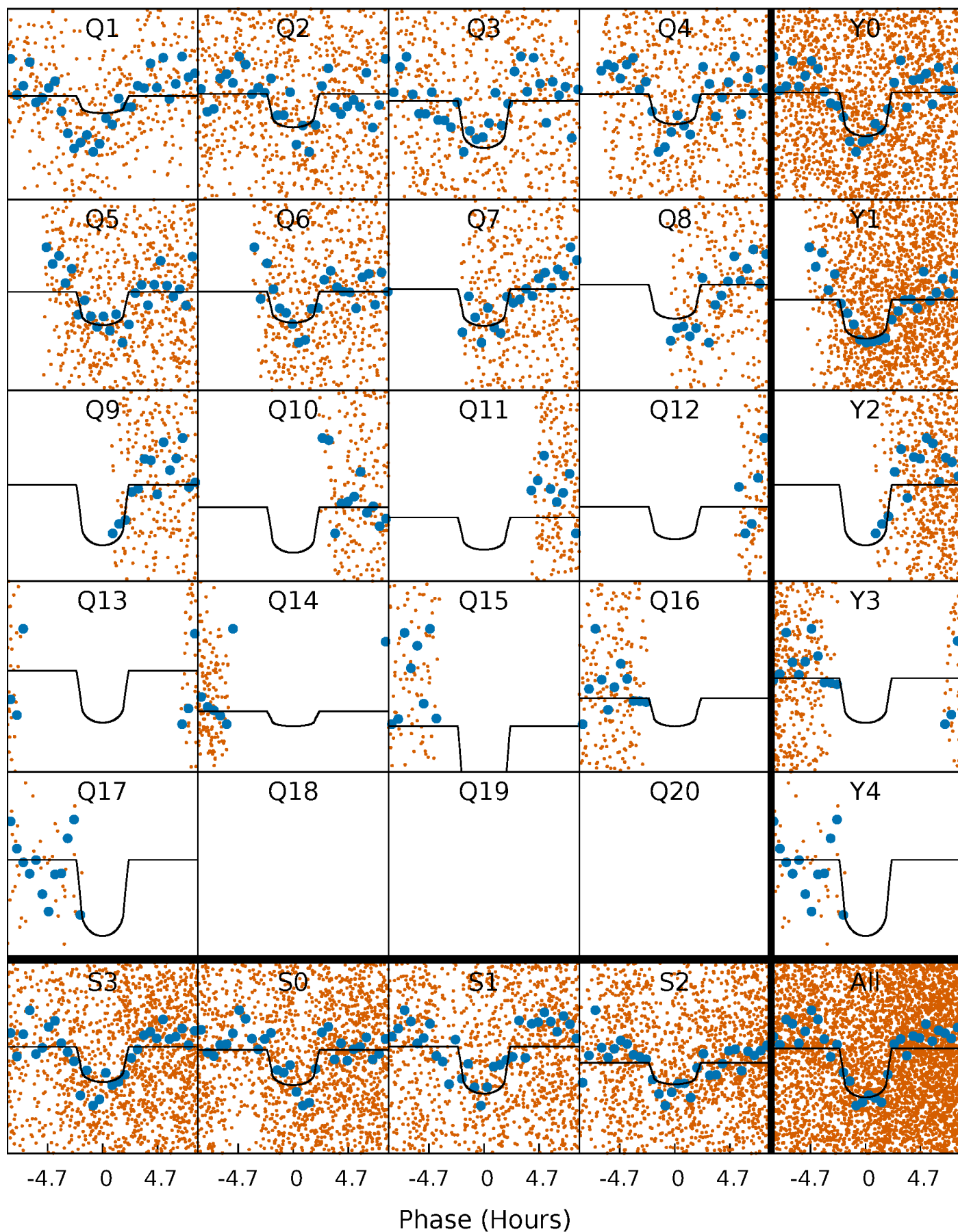
PDC Quarter-Phased Transit Curves

TCE 008841894-02 P= 2.396796 Days $T_0=132.786501$ (BKJD)



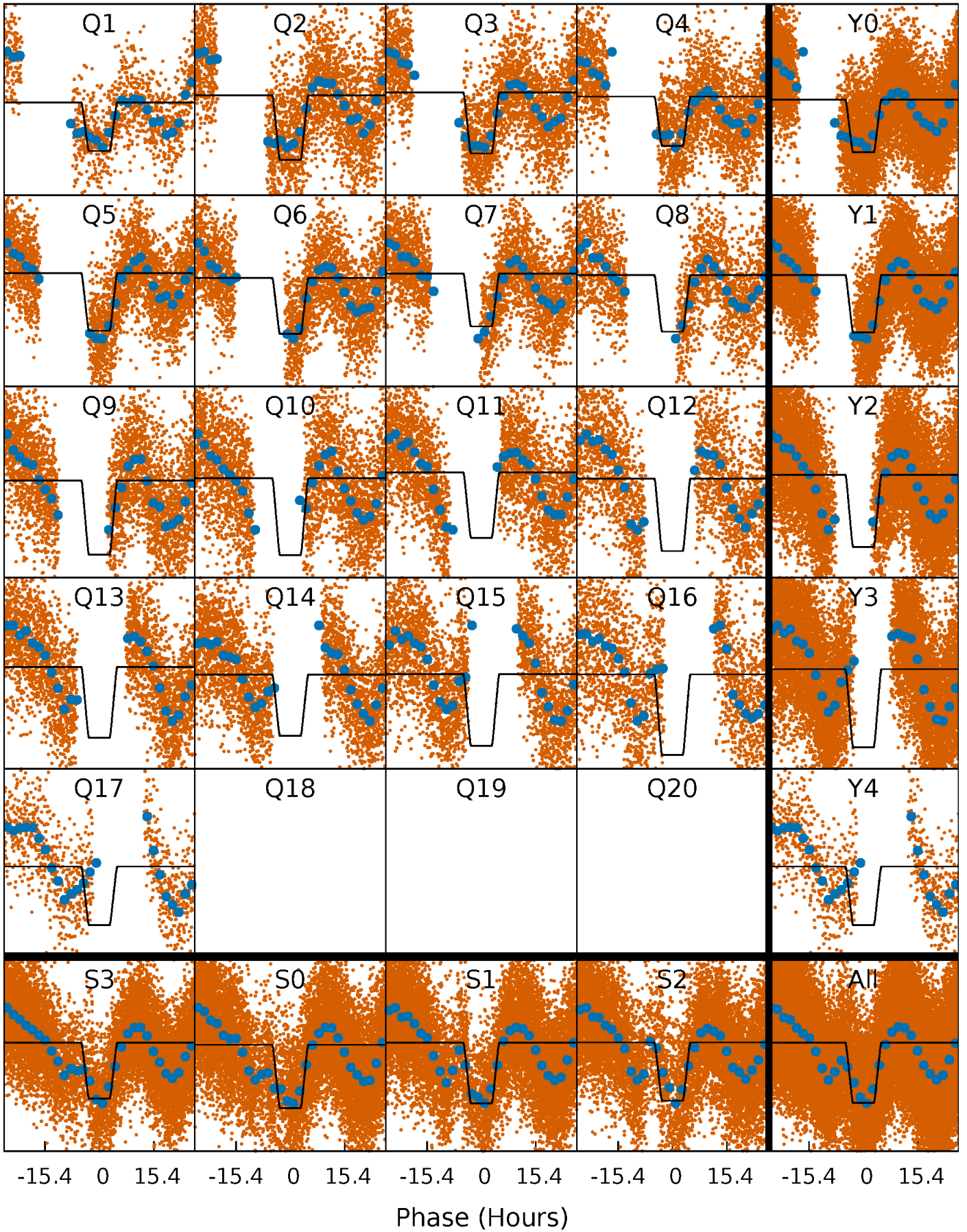
DV Quarter-Phased Transit Curves

TCE 008841894-02 P= 2.396796 Days $T_0=132.786501$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

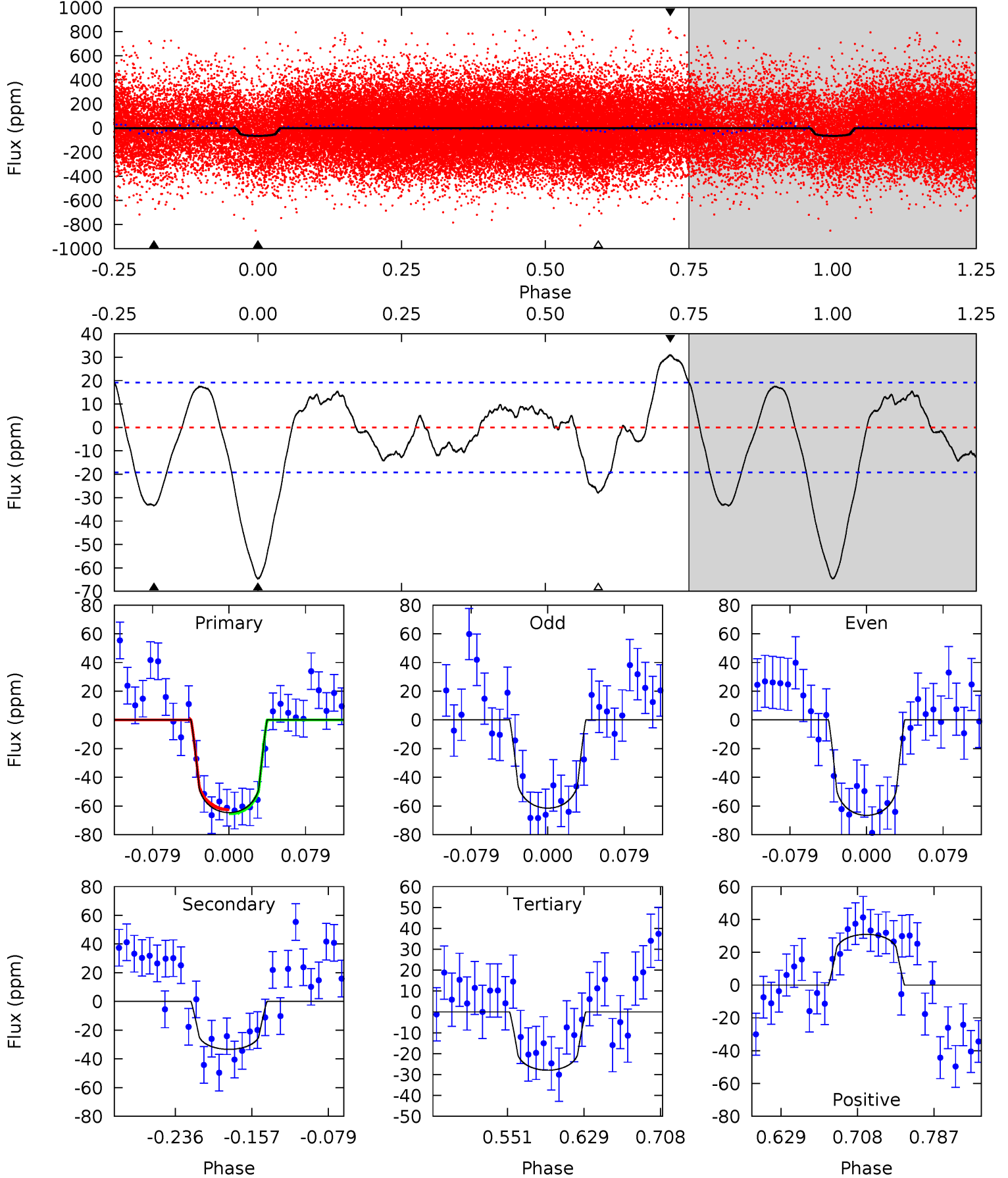
TCE 008841894-02 P= 2.396970 Days $T_0=132.676449$ (BKJD)



DV Model-Shift Uniqueness Test

008841894-02, P = 2.396796 Days, E = 130.389705 Days

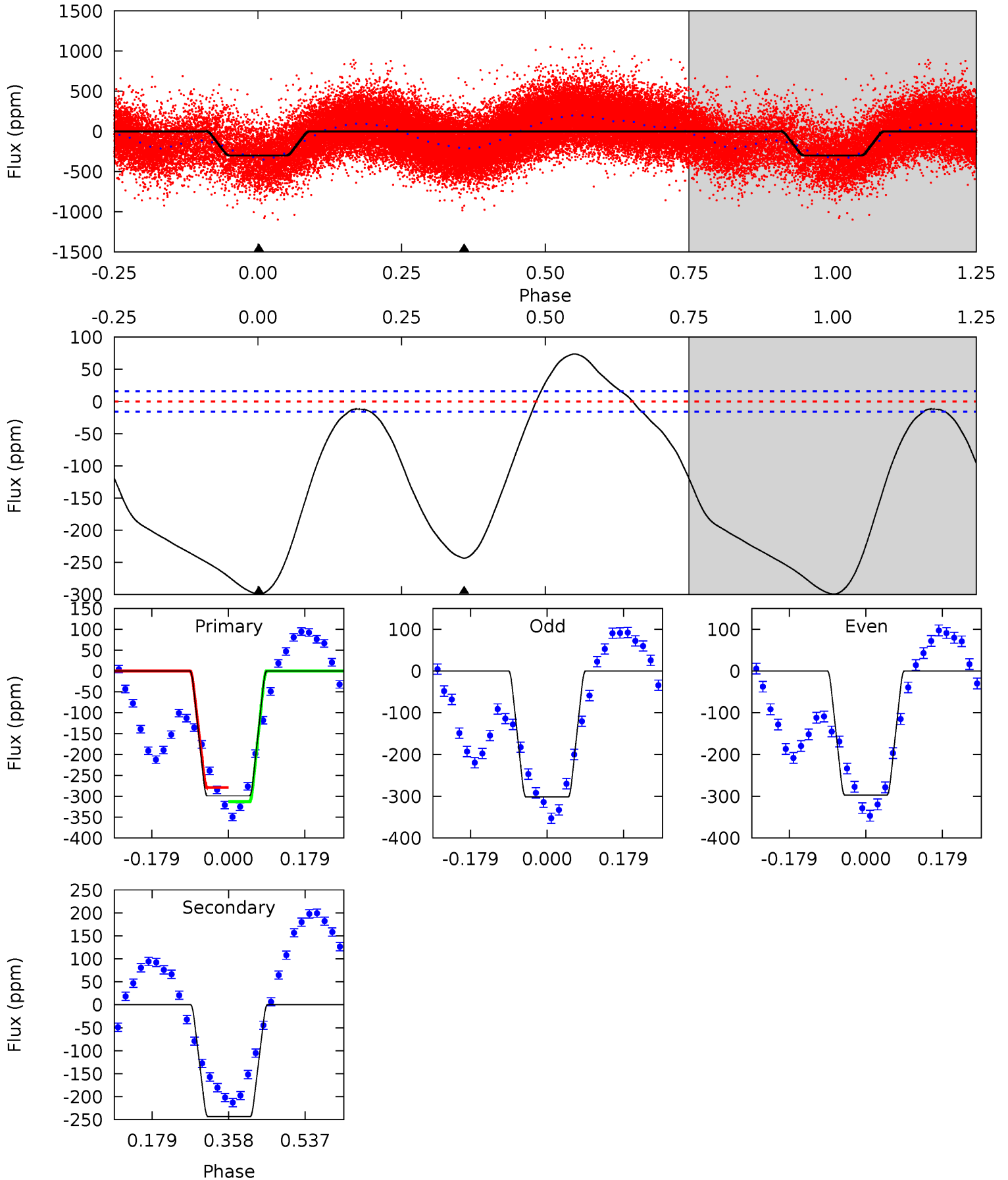
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	8.02	6.72	7.43	4.61	1.76	2.89	8.81	8.10	1.30	0.59	0.60	0.98	0.32	0.34



Alt Model-Shift Uniqueness Test

008841894-02, P = 2.396970 Days, E = 130.279479 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
84.4	68.7	0	0	4.44	1.34	23.5	84.4	84.4	68.7	68.7	0.61	0.84	0.20	5.04



Stellar Parameters For KIC 008841894

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6261^{+177}_{-221}	$4.027^{+0.312}_{-0.144}$	$-0.080^{+0.250}_{-0.300}$	$1.751^{+0.493}_{-0.603}$	$1.192^{+0.182}_{-0.202}$	$0.312^{+0.726}_{-0.140}$
	+3%/-4%	+8%/-4%	+312%/-375%	+28%/-34%	+15%/-17%	+232%/-45%
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 008841894-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-33 ± 4	$1.40^{+0.74}_{-0.68}$	2599^{+212}_{-218}	5430^{+1935}_{-871}	13^{+36}_{-7}
Alt.	-243 ± 4	$3.31^{+1.01}_{-0.83}$	2603^{+193}_{-248}	5750^{+737}_{-513}	17^{+12}_{-7}

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

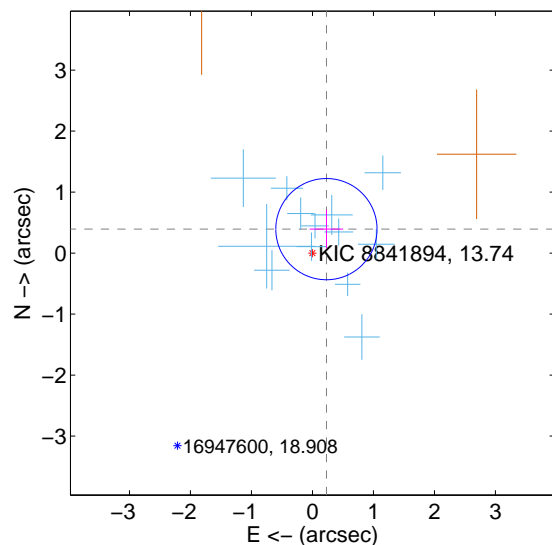
Supplemental centroid analysis for 008841894-02. Kepler magnitude: 13.74. Transit SNR 10.14

There are 13 quarters with good PRF difference image offsets

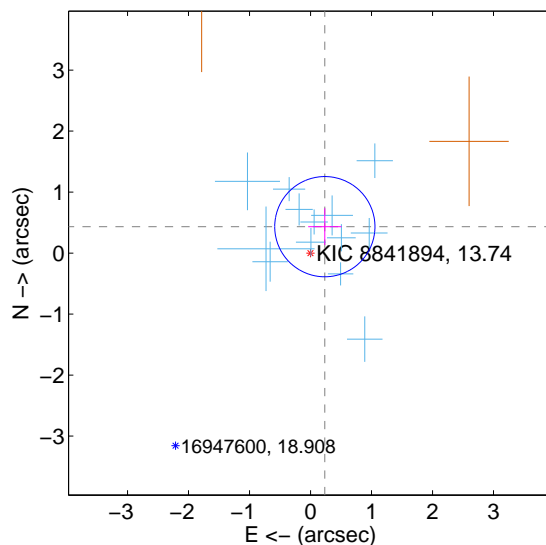
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.455 ± 0.277	1.64	-0.229 ± 0.275	0.393 ± 0.319
PRF-fit source offset from KIC position	0.493 ± 0.274	1.80	-0.235 ± 0.274	0.433 ± 0.301
photometric centroid source offset	1.04 ± 0.75	1.39	0.03 ± 0.83	1.04 ± 0.75

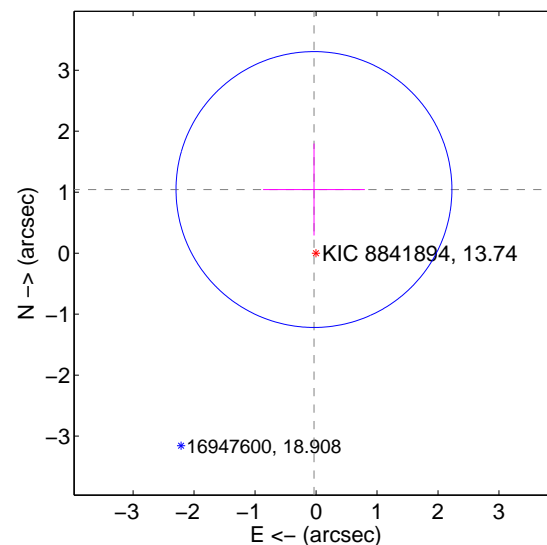
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

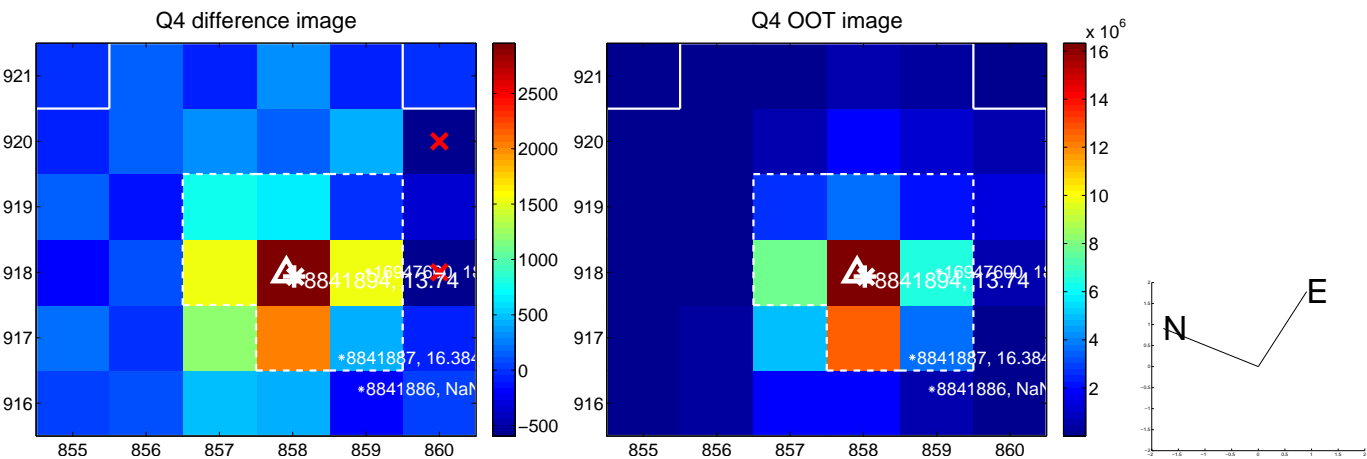
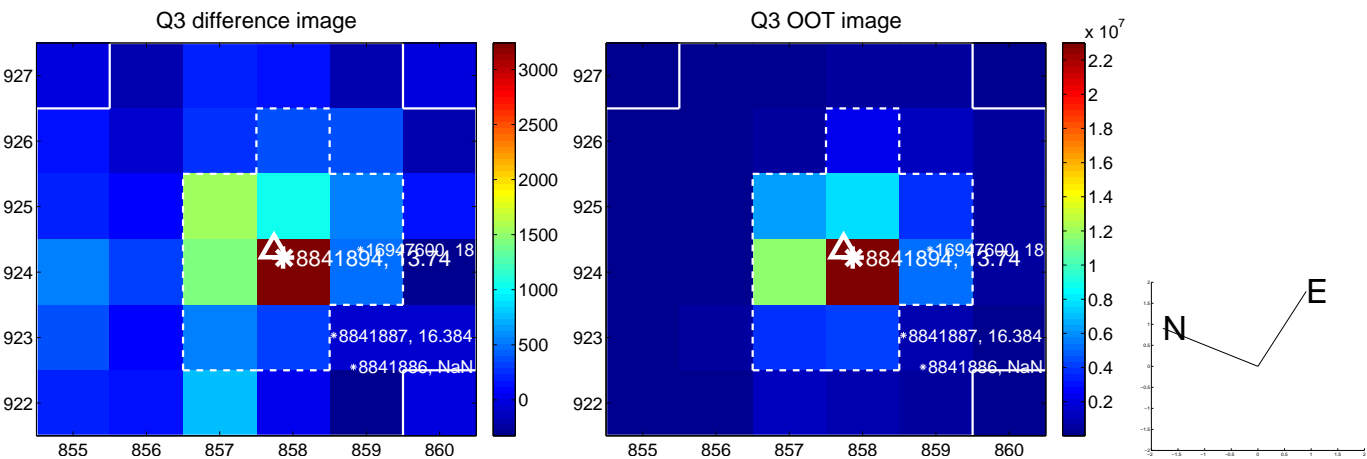
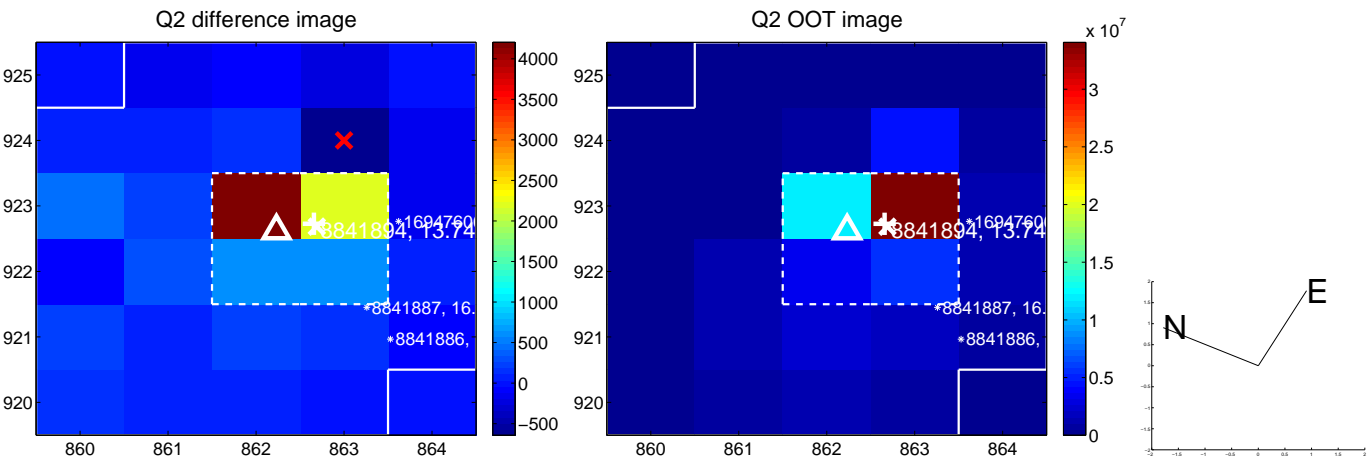
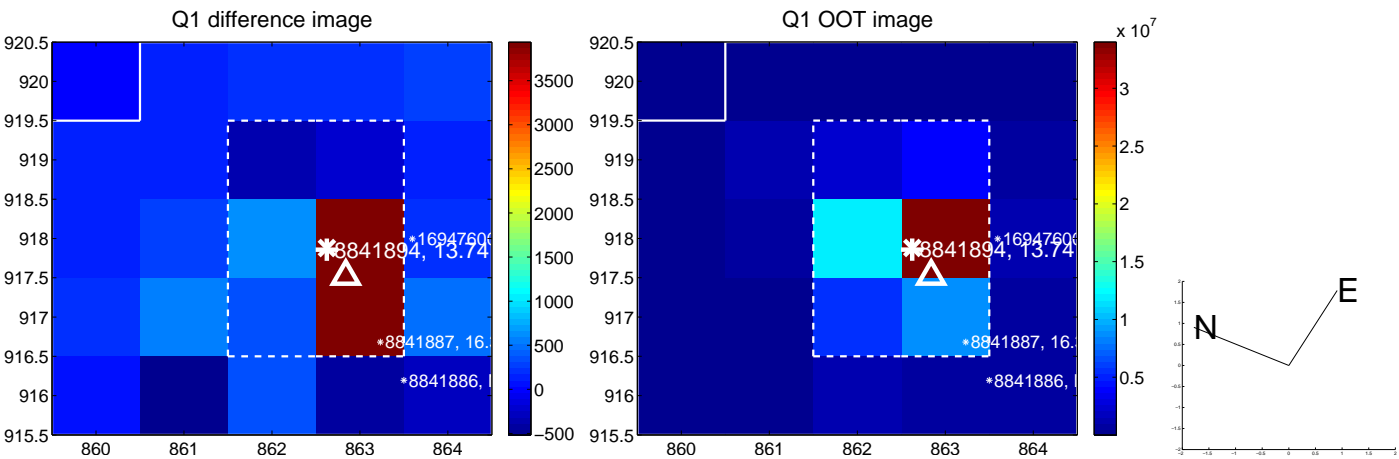


offset from photometric centroids

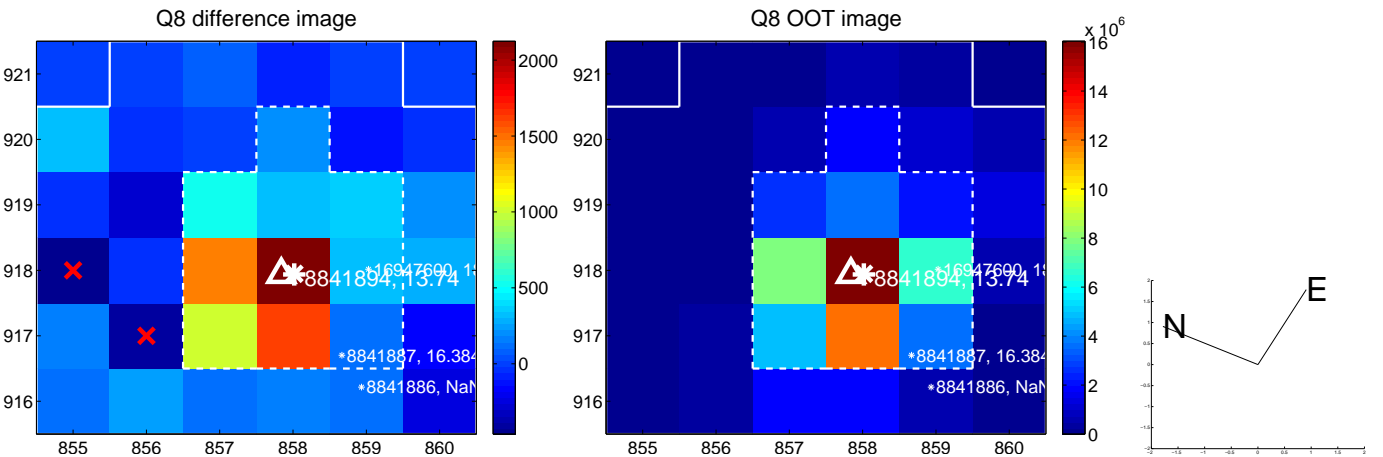
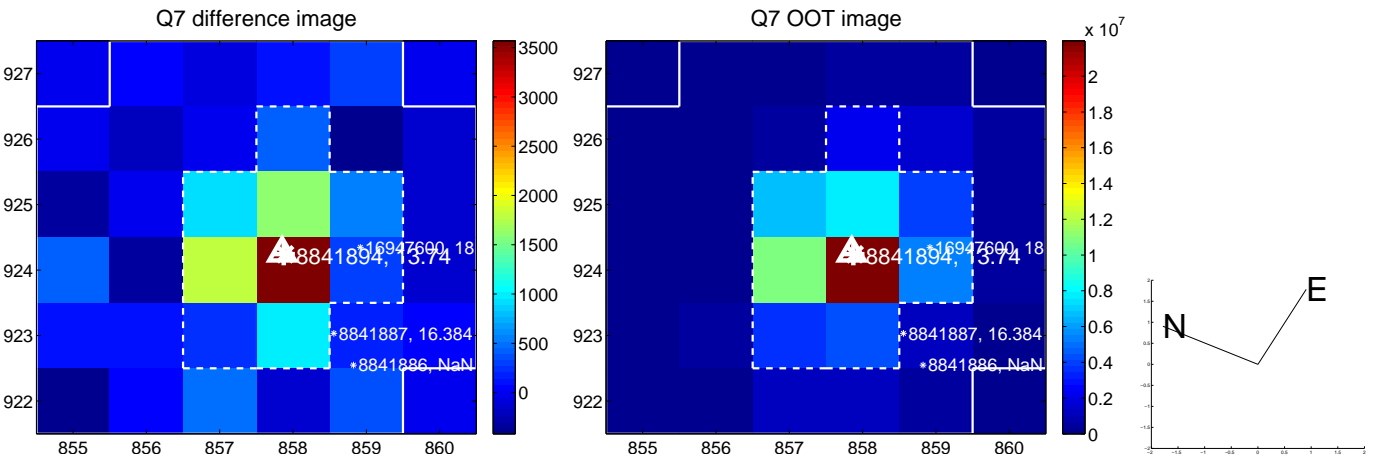
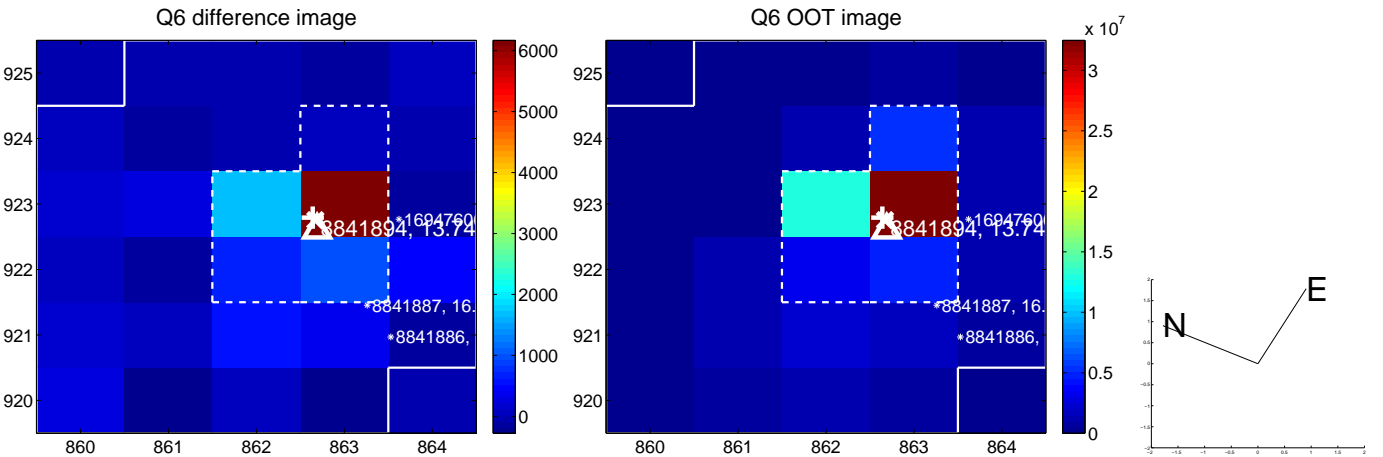
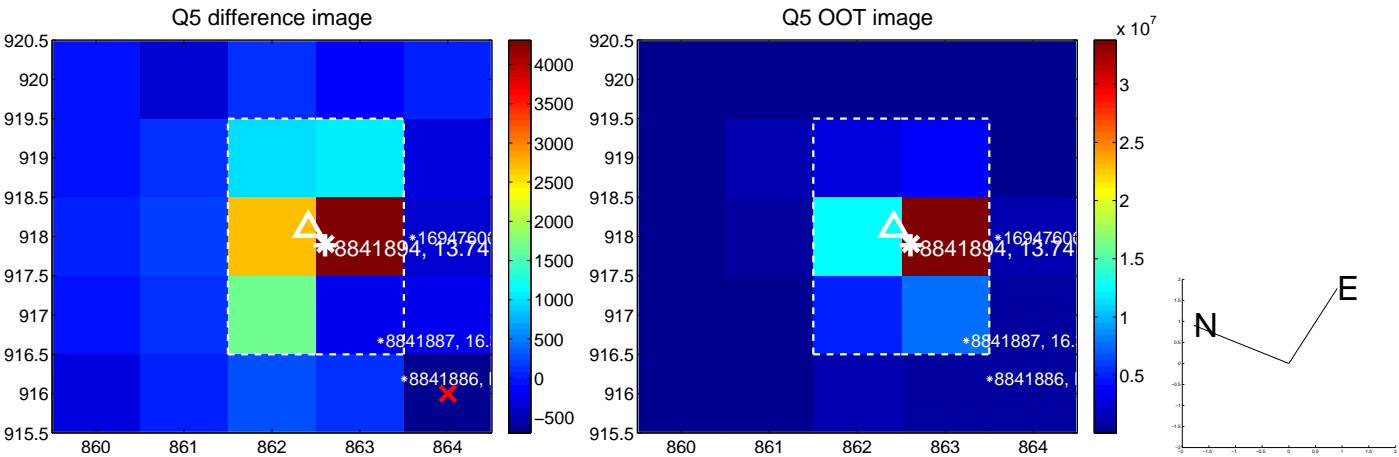


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

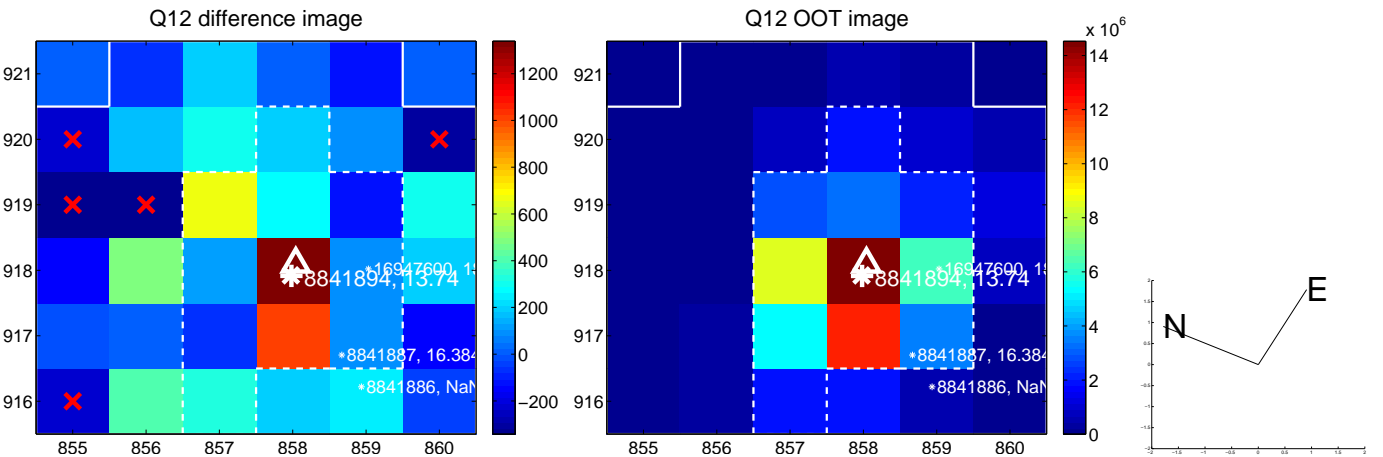
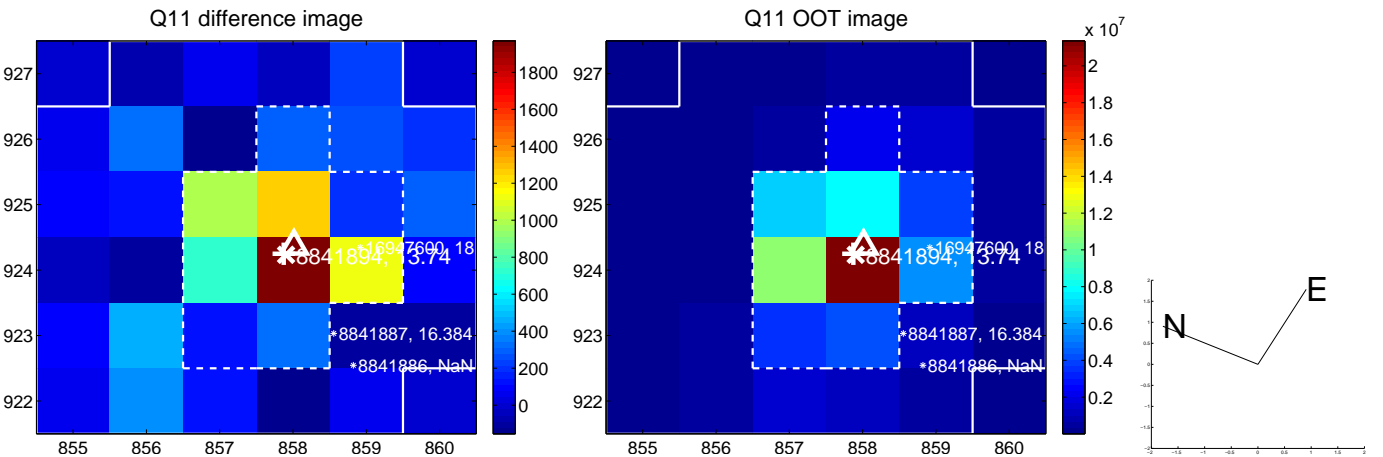
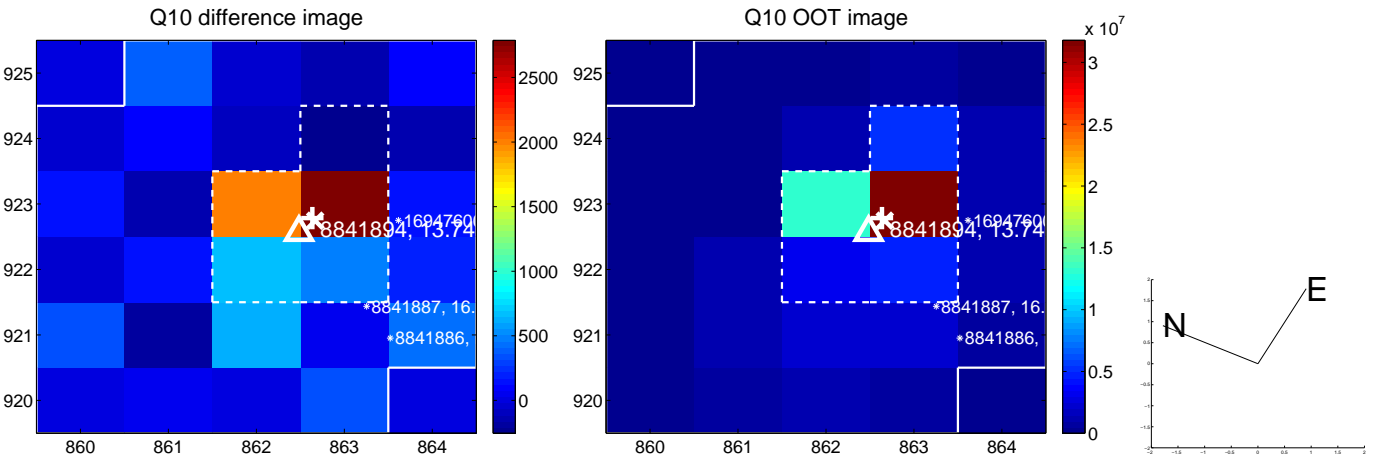
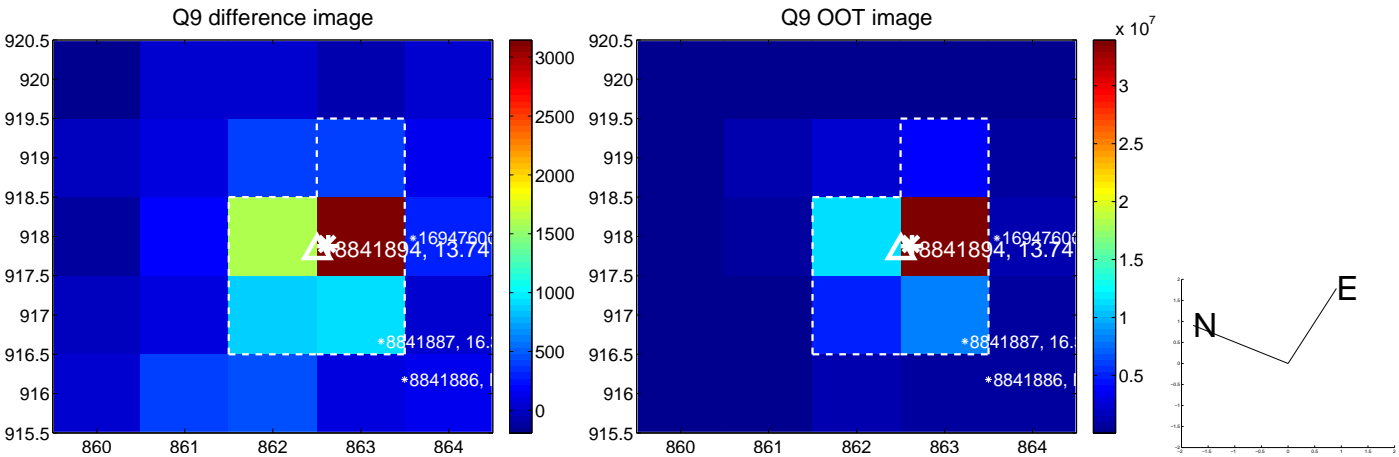
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



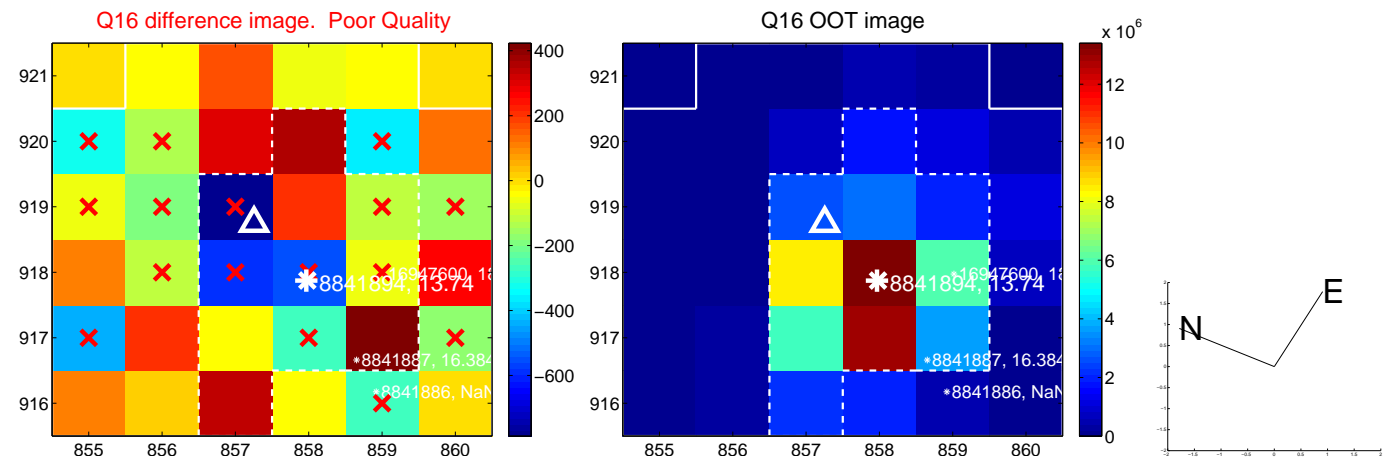
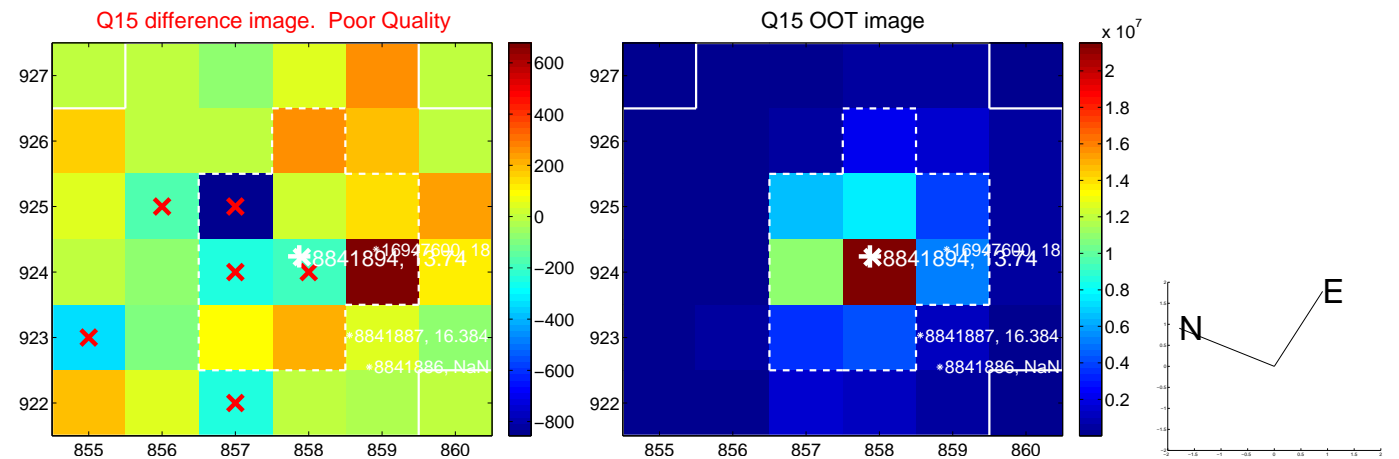
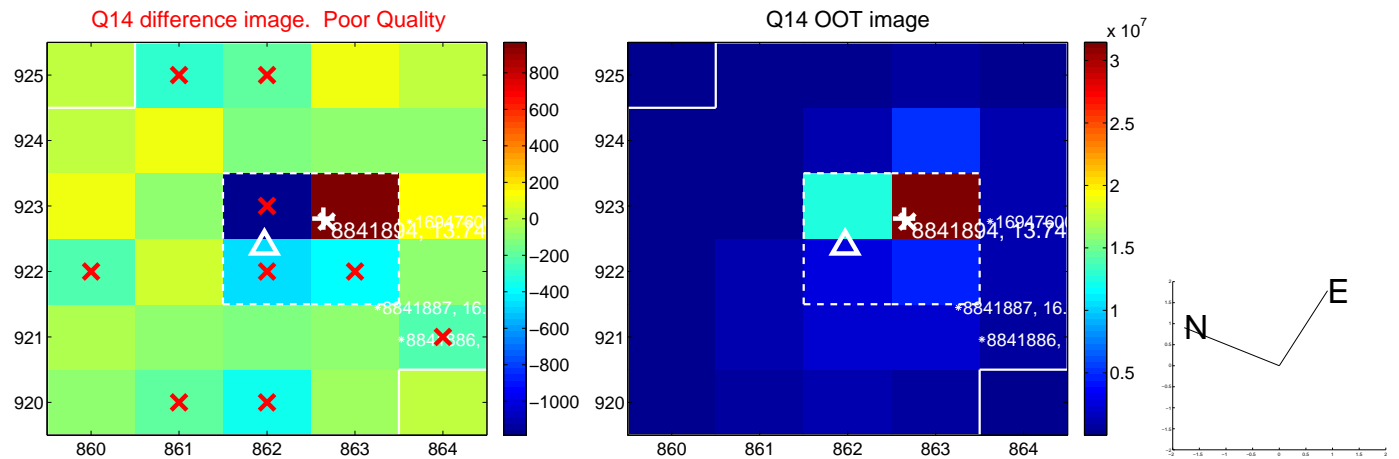
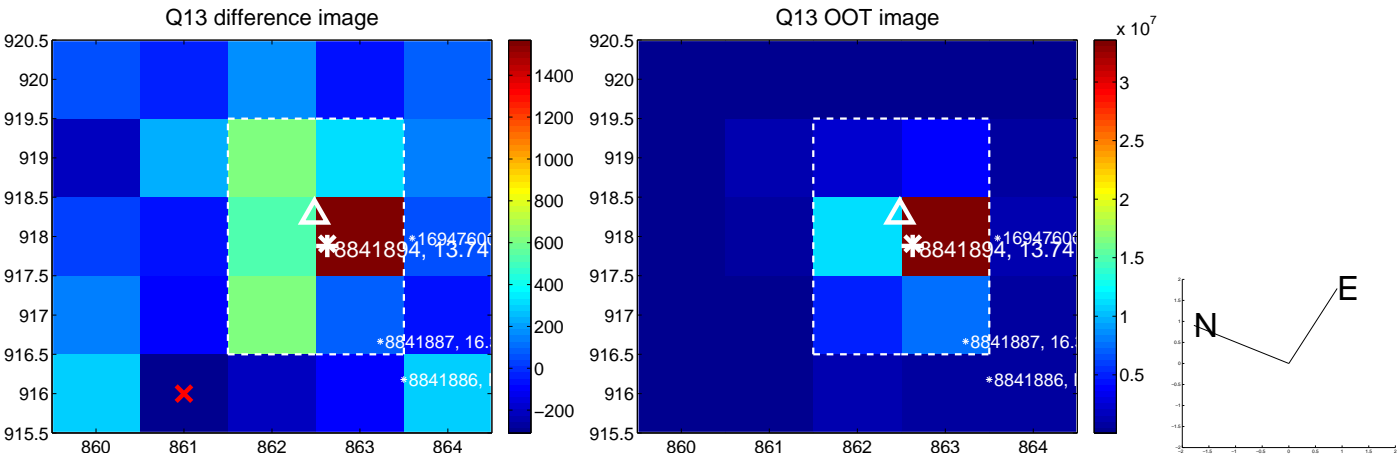
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



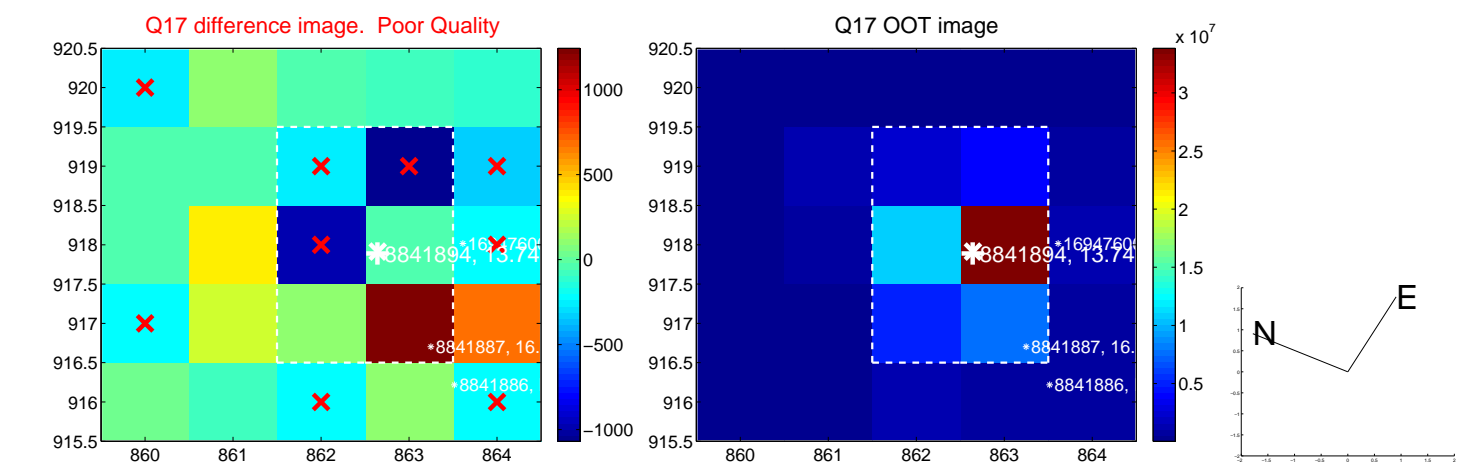
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



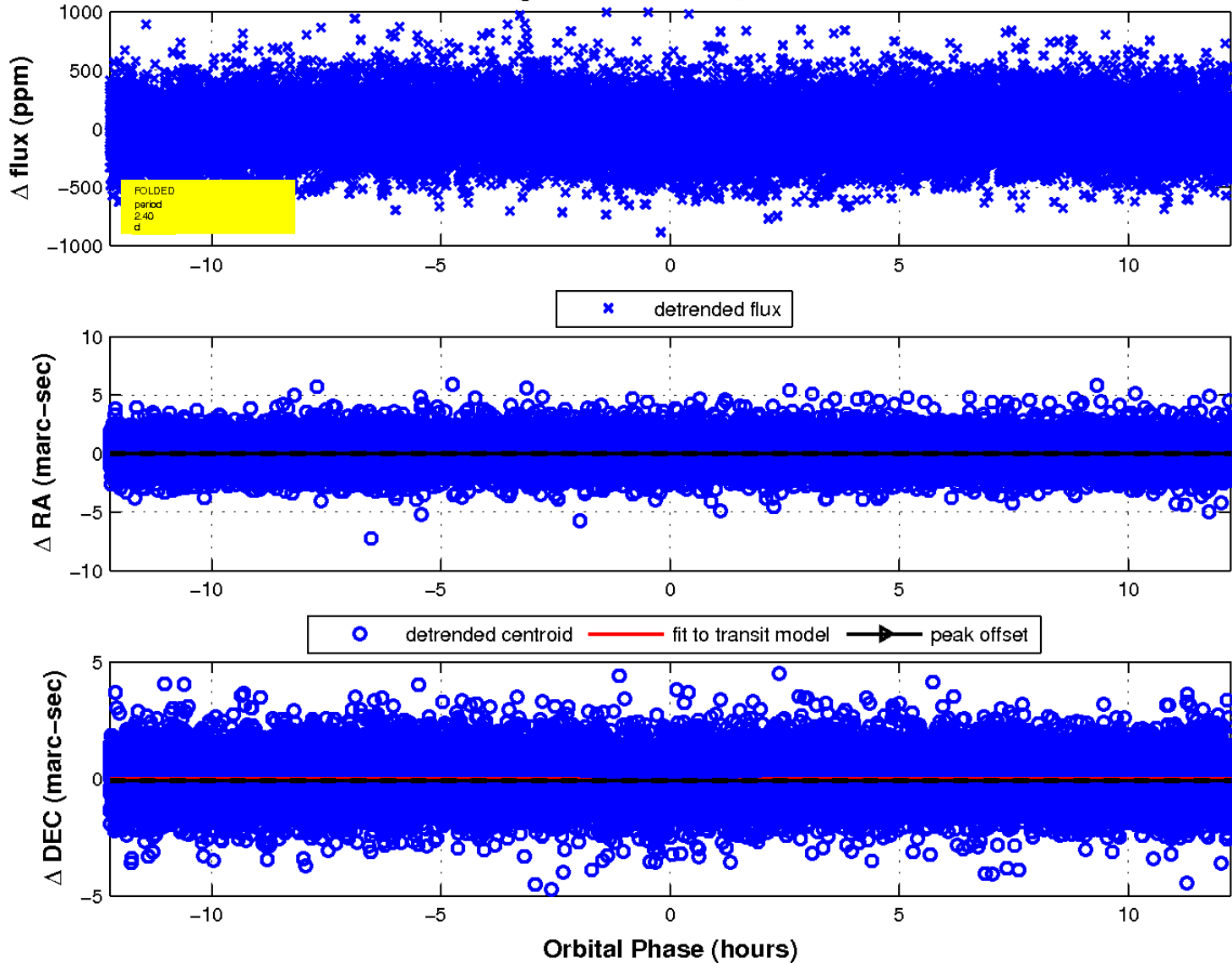
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

