

KIC 008871494

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})
008871494-01	OBS	No	0.857871	132.468925	13.2	3.608	9.7	7.9	4.53	11357	1.72	426570.49
008871494-02	OBS	No	0.857815	132.096246	7.6	6.409	9.7	6.1	4.53	11357	1.42	426607.55

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008871494-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—CENT_FEW_DIFFS
008871494-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

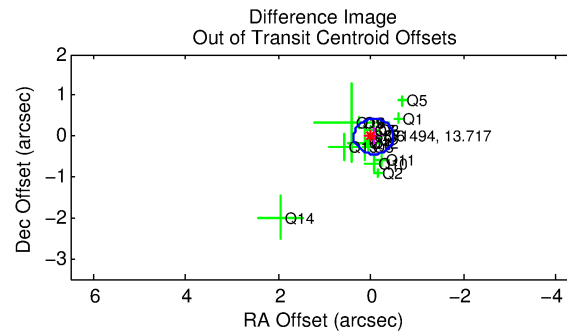
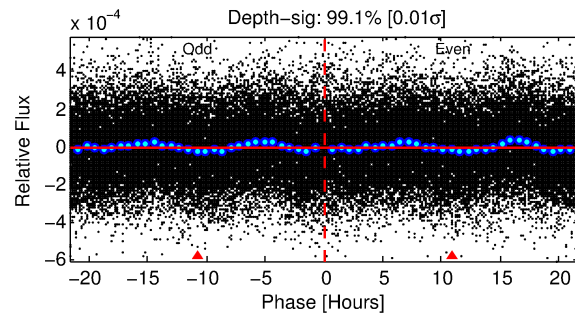
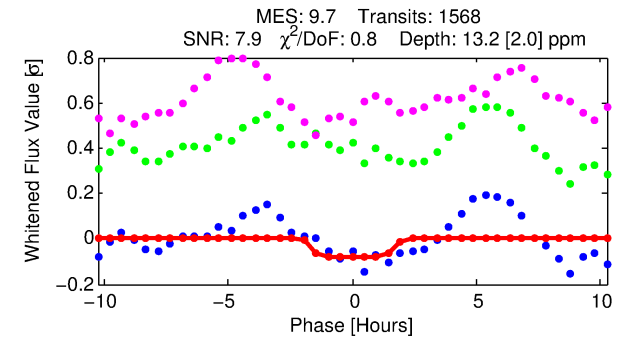
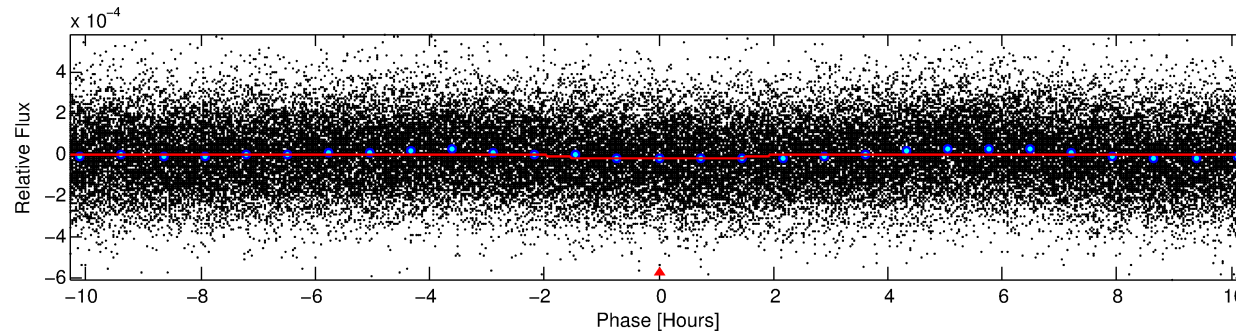
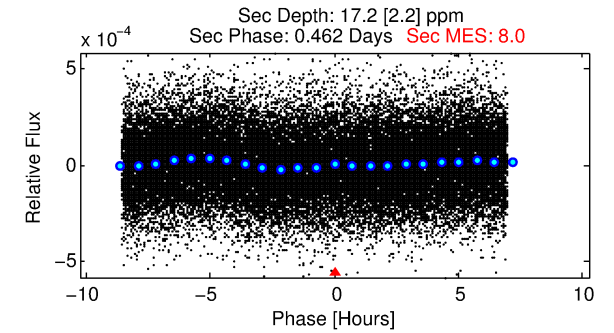
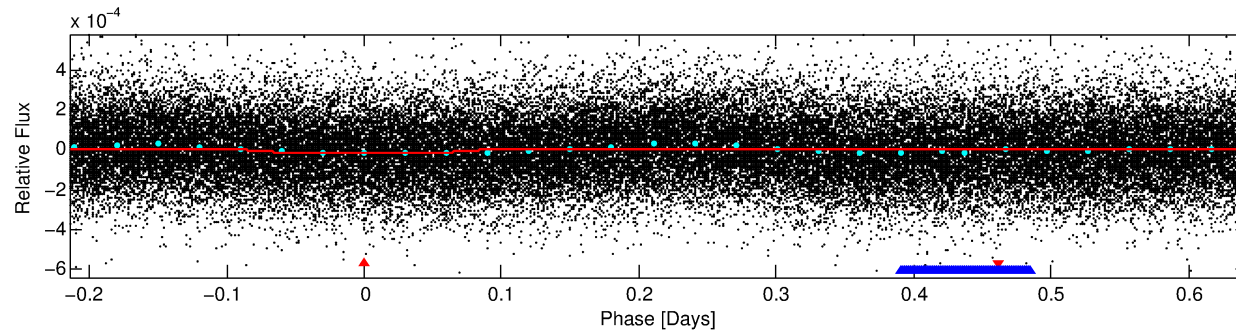
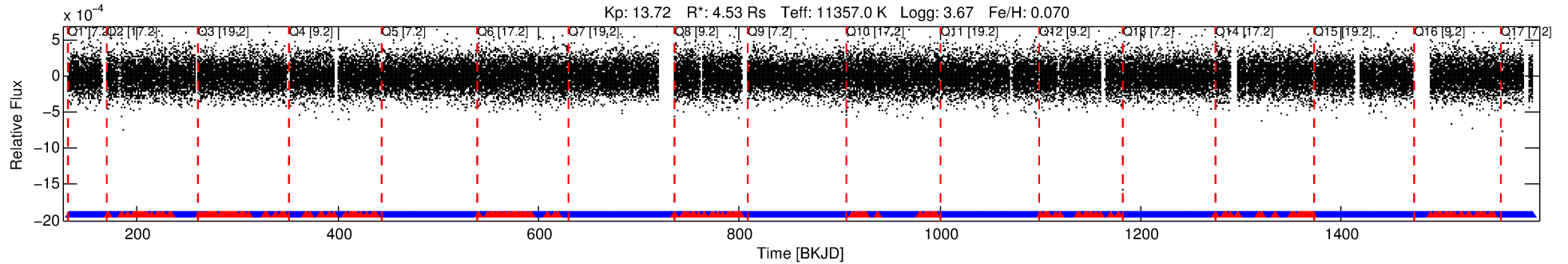
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008871494-01

No Significant Match Found

DV One-Page Summary

KIC: 8871494 Candidate: 1 of 2 Period: 0.858 d



DV Fit Results:

Period = 0.85787 [0.00001] d
Epoch = 132.4689 [0.0052] BKJD
Rp/R* = 0.0035 [0.0011]
a/R* = 1.80 [3.05]
b = 0.41 [5.01]
Seff = 426570.49 [453270.54]
Teq = 6517 [1731] K
Rp = 1.72 [1.08] Re
a = 0.0268 [0.0143] AU
Ag = 2.29 [2.46] [0.52σ]
Teffp = 12395 [2769] K [1.80σ]

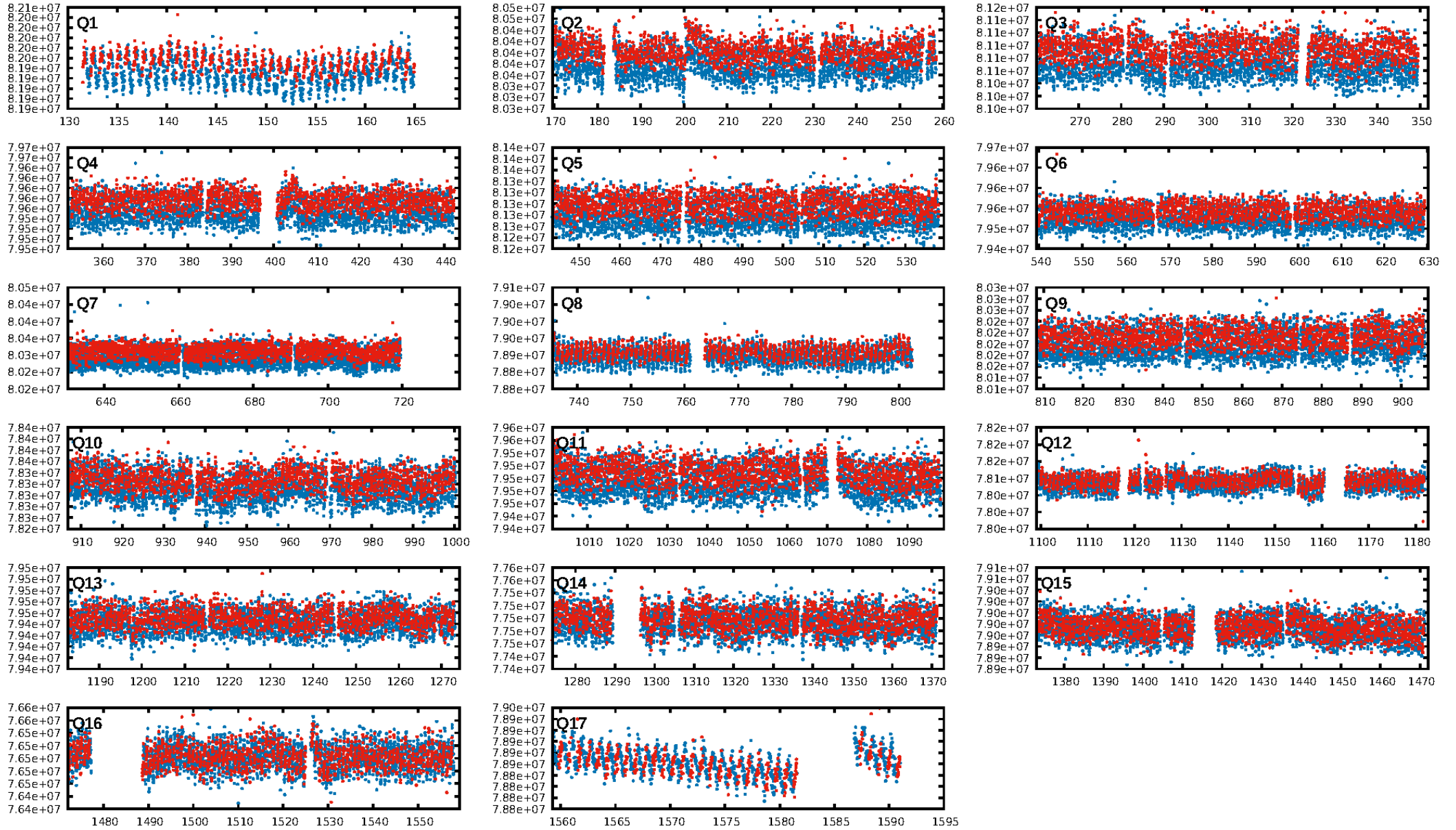
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.85 [1266/1497]
GhostDiagnostic-chr: 1.683
Centroid-sig: 12.1%
Centroid-so: 1.832 arcsec [1.05σ]
OotOffset-rm: 0.056 arcsec [0.40σ]
KicOffset-rm: 0.072 arcsec [0.38σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 0.07 [1/15]
DiffImageOverlap-fno: 0.00 [0/17]

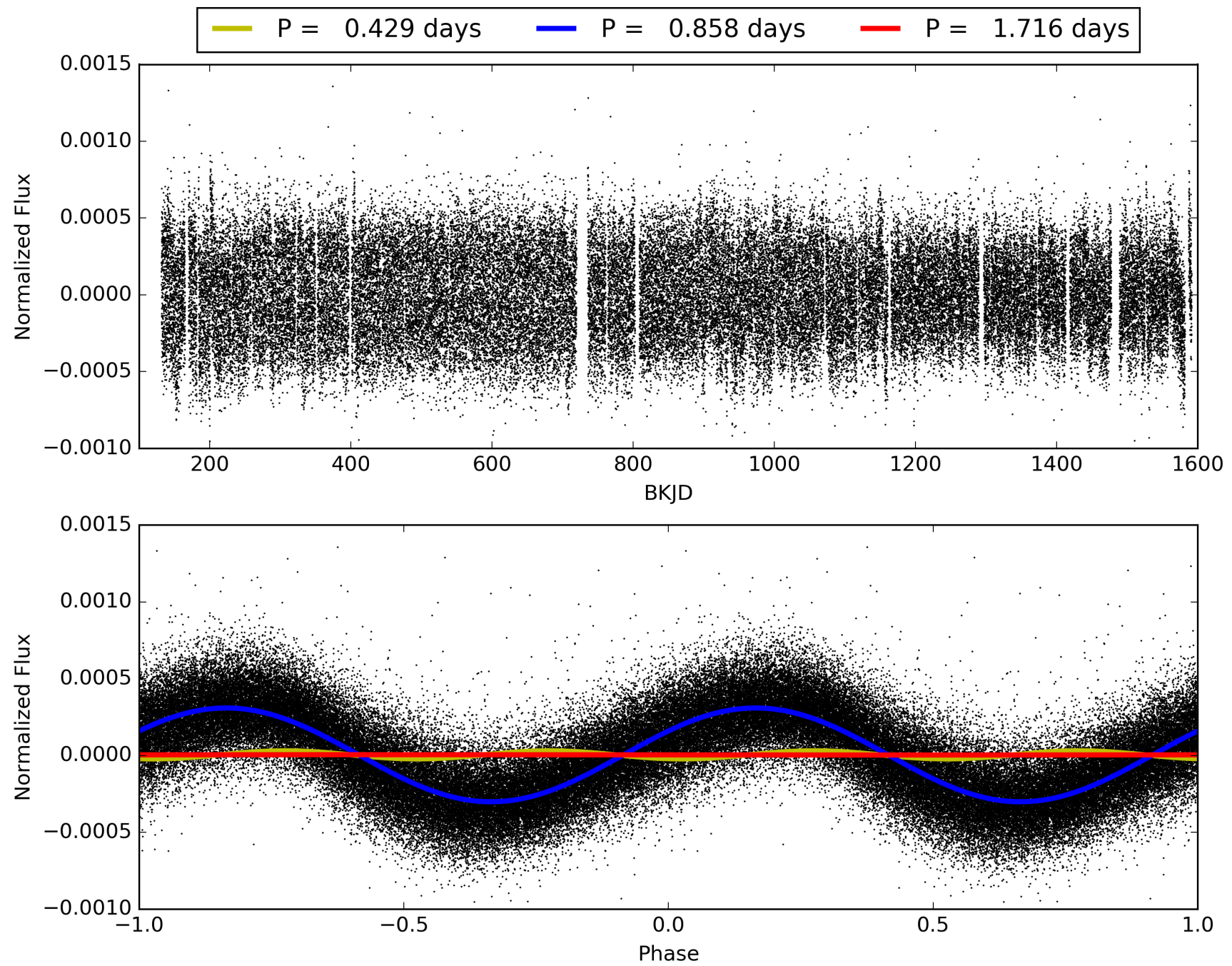
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 11:11:45 Z

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

TCE 008871494-01, PDC Light Curves

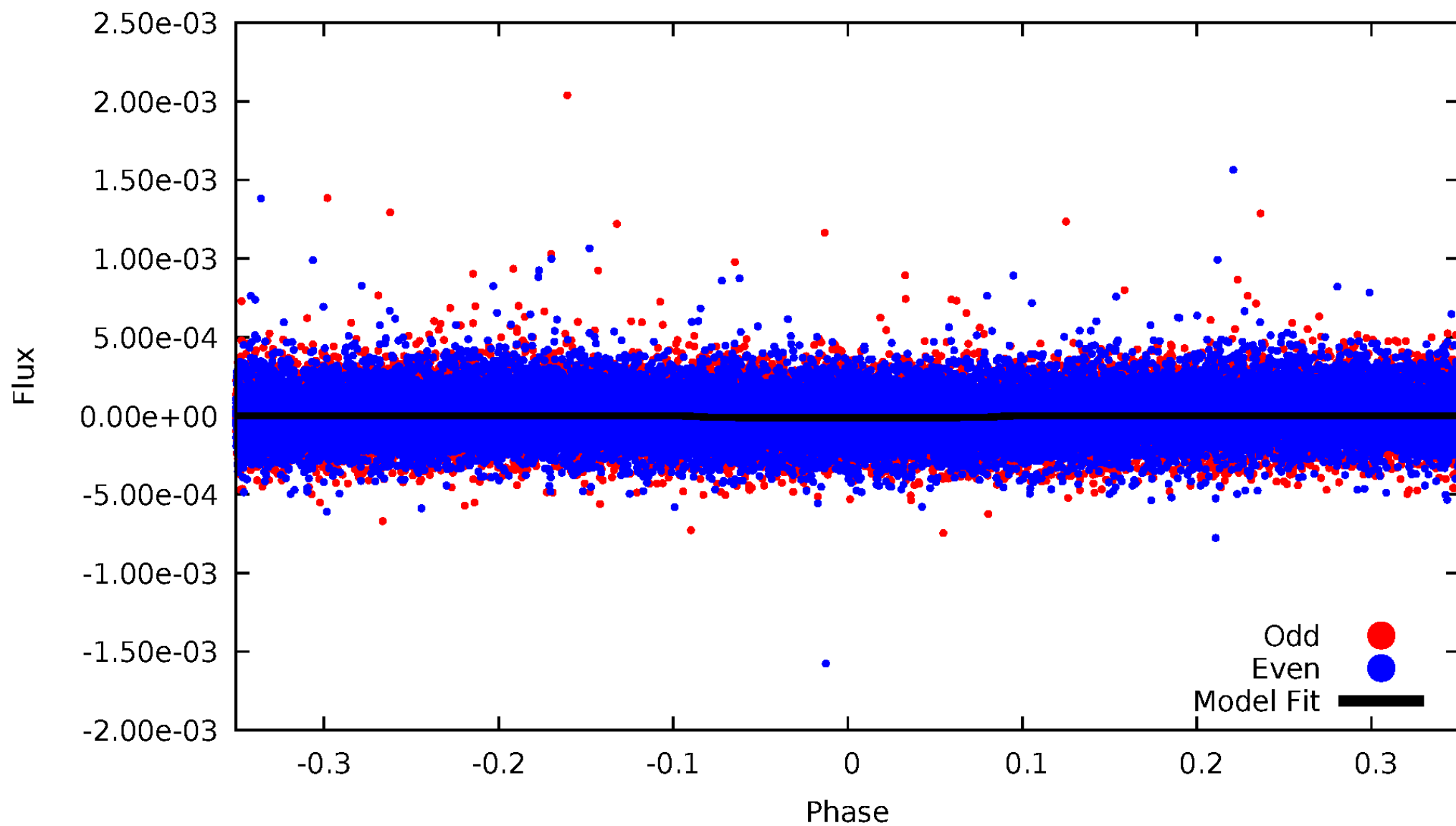


TCE 008871494-01



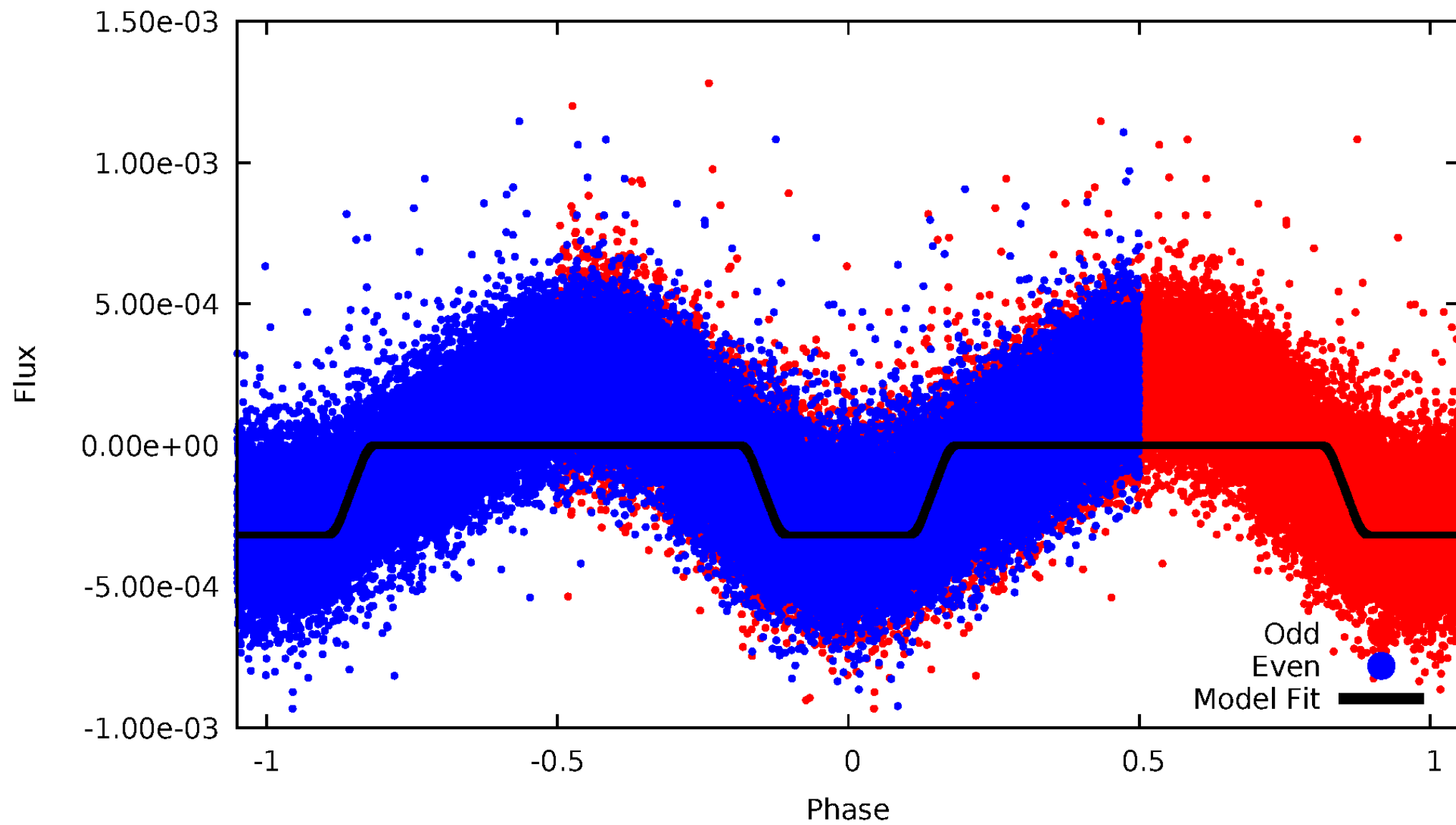
DV Odd/Even

TCE 008871494-01



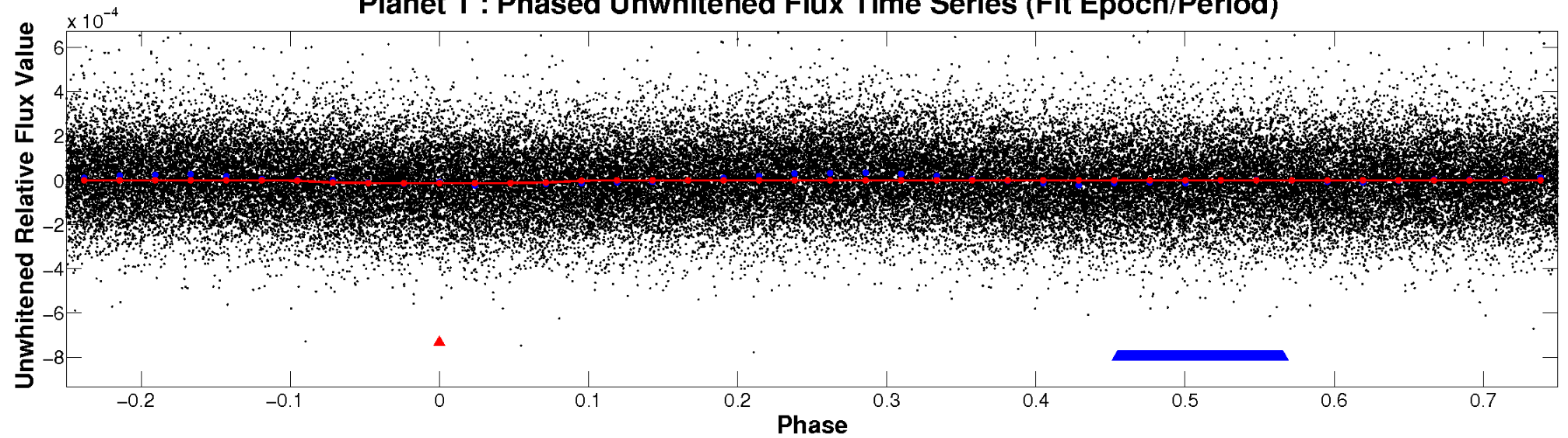
ALT Odd/Even

TCE 008871494-01

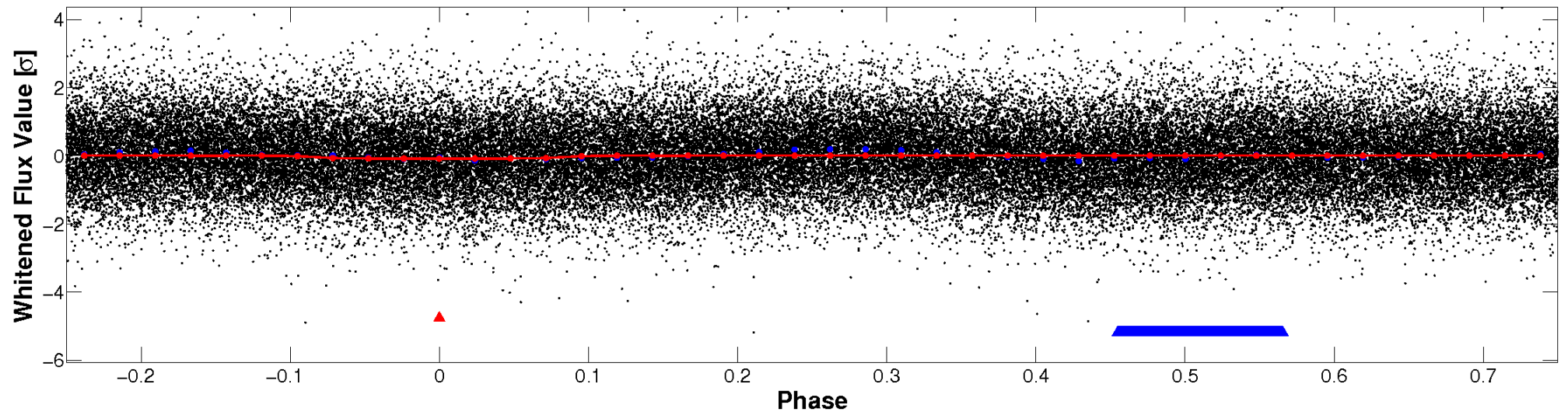


Non-Whitened Vs. Whitened Light Curve

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

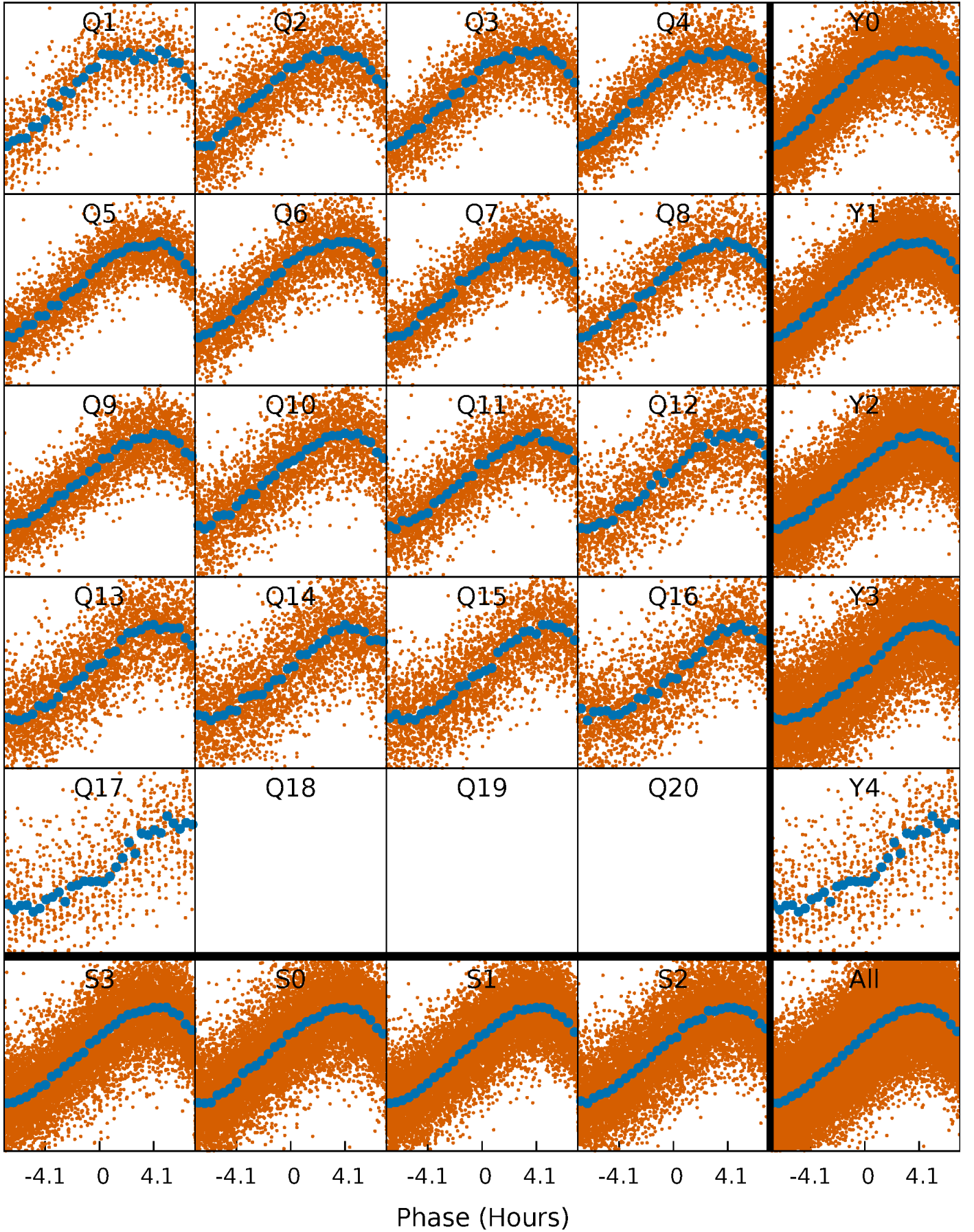


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



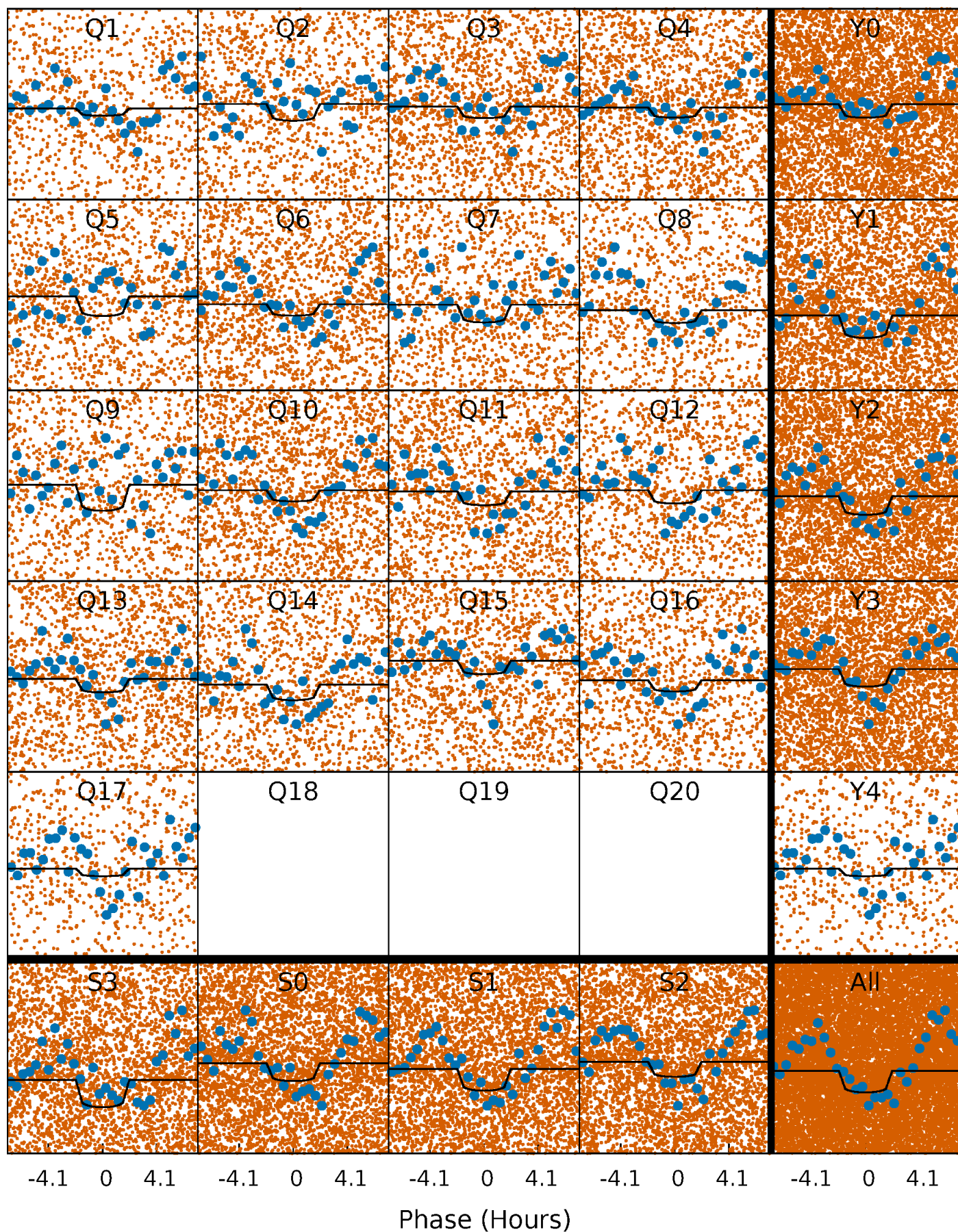
PDC Quarter-Phased Transit Curves

TCE 008871494-01 P= 0.857871 Days $T_0=132.468925$ (BKJD)



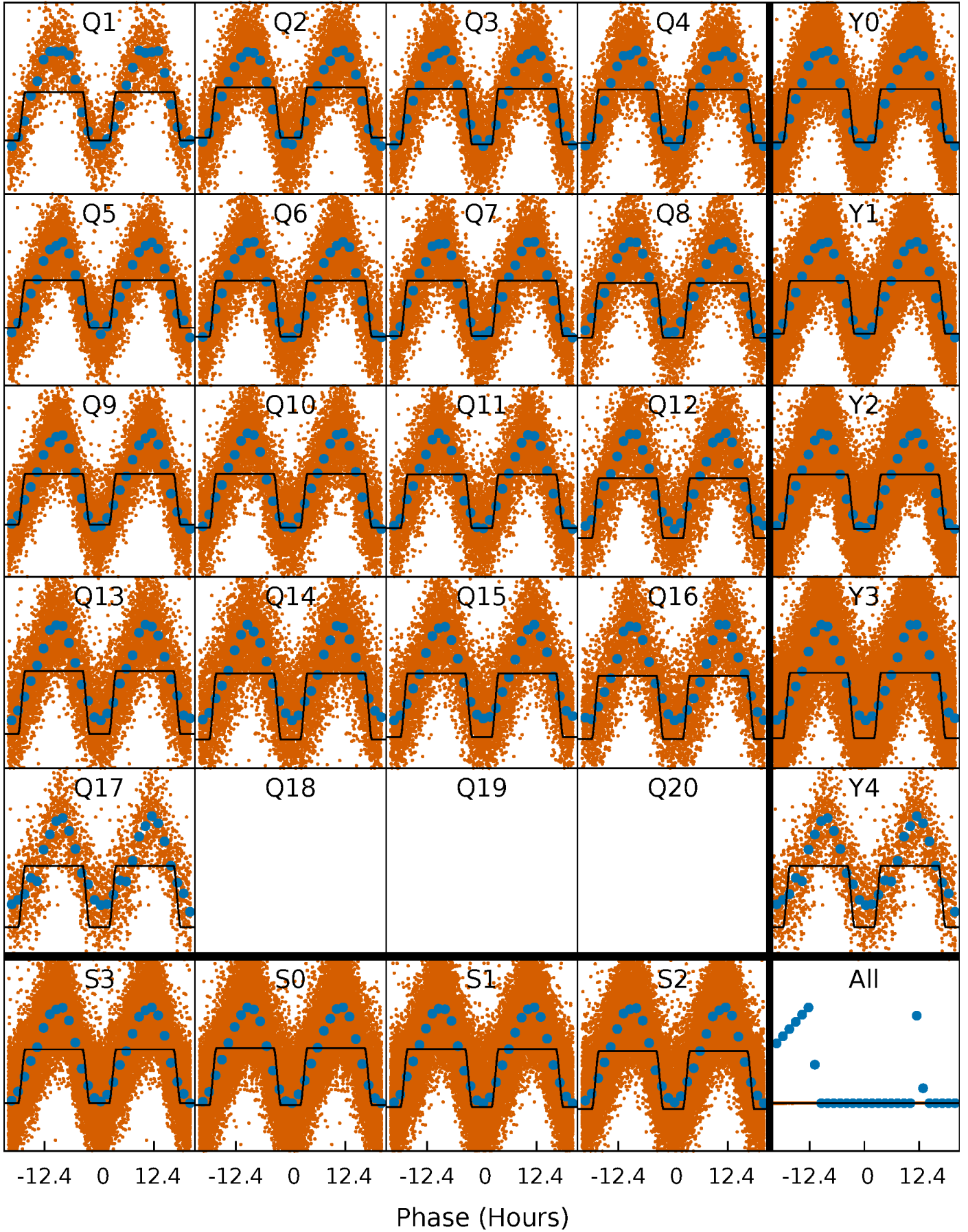
DV Quarter-Phased Transit Curves

TCE 008871494-01 P= 0.857871 Days $T_0=132.468925$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

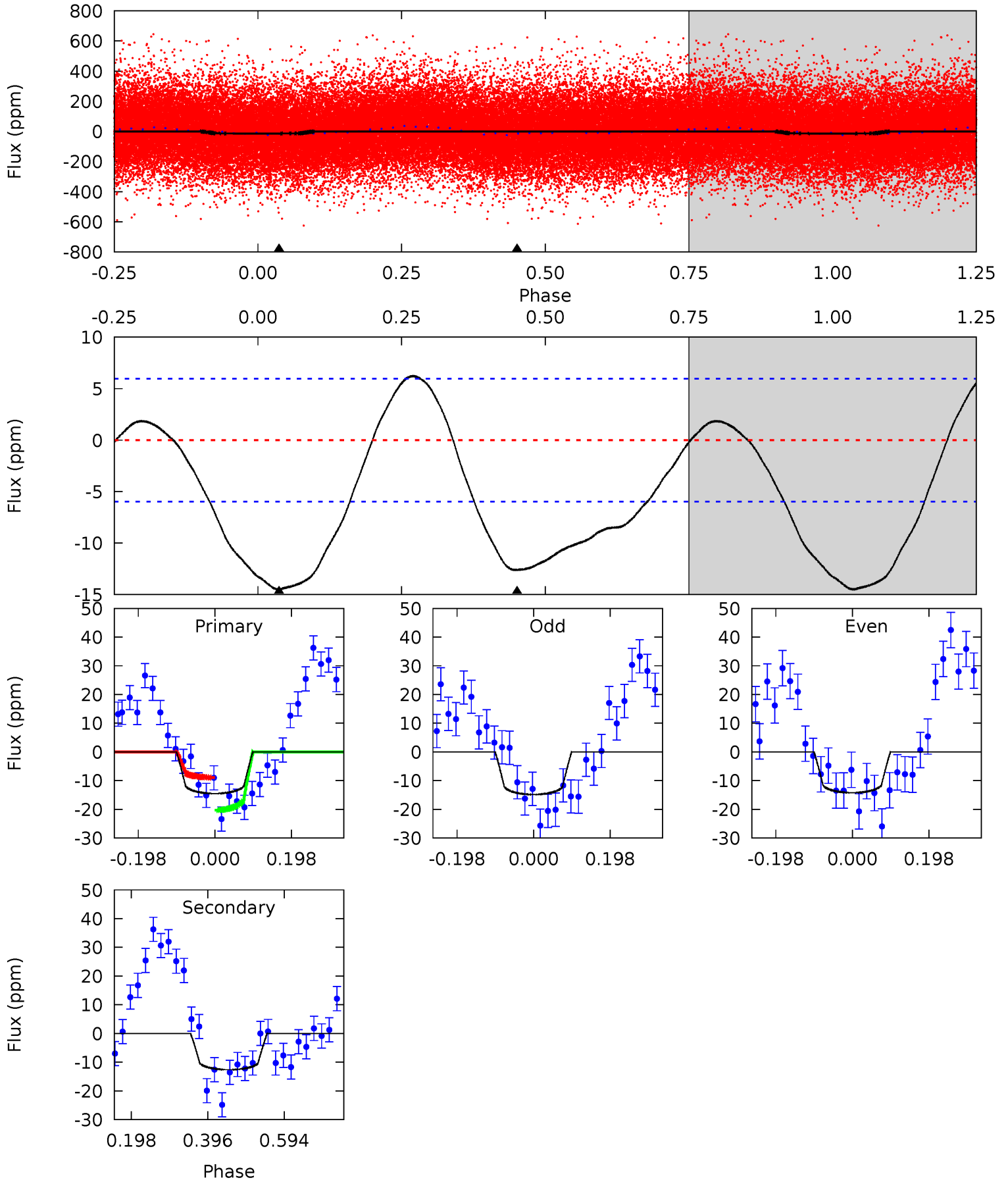
TCE 008871494-01 P= 0.857919 Days $T_0=132.124370$ (BKJD)



DV Model-Shift Uniqueness Test

008871494-01, P = 0.857871 Days, E = 130.753183 Days

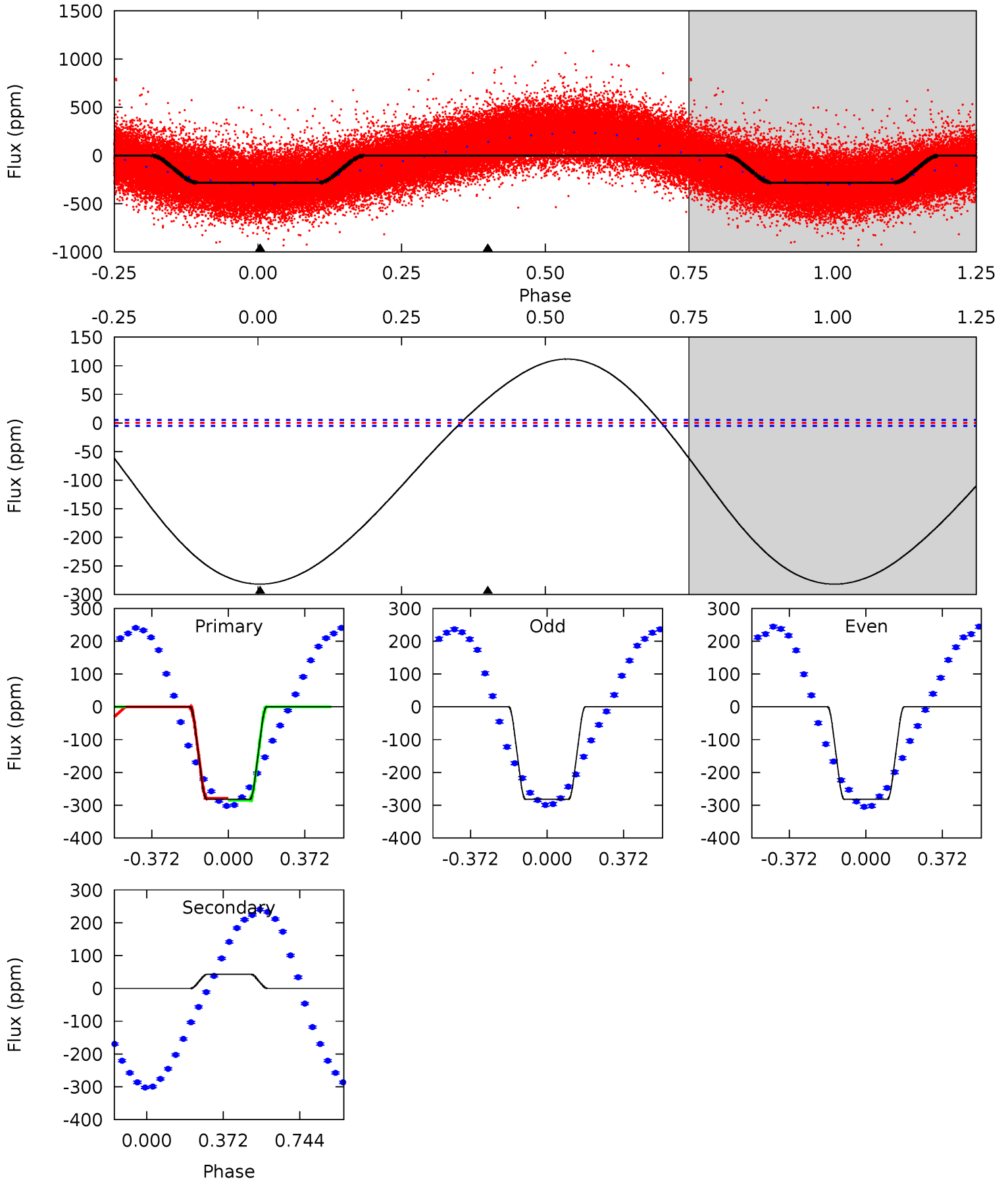
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	9.35	0	0	4.42	1.29	2.65	10.8	10.8	9.35	9.35	0.23	0.96	0.30	4.15



Alt Model-Shift Uniqueness Test

008871494-01, P = 0.857919 Days, E = 131.266451 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
234.5	-35.8	0	0	4.28	0.89	29.1	234.5	234.5	-35.8	-35.8	0.10	1.00	0.28	2.61



Stellar Parameters For KIC 008871494

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	11357^{+587}_{-1762}	$3.667^{+0.510}_{-0.090}$	$0.070^{+0.250}_{-0.550}$	$4.528^{+0.615}_{-2.459}$	$3.472^{+0.069}_{-1.265}$	$0.053^{+0.318}_{-0.015}$
	+5%/-16%	+14%/-2%	+357%/-786%	+14%/-54%	+2%/-36%	+603%/-29%
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 008871494-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-13 ± 1	$1.49^{+0.61}_{-0.56}$	8453^{+1065}_{-1568}	10376^{+4979}_{-2401}	$2.134^{+3.410}_{-1.083}$
Alt.	43 ± 1	$8.11^{+1.36}_{-2.33}$	8359^{+1119}_{-1515}	-7272^{+863}_{-657}	$-0.248^{+0.060}_{-0.204}$

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

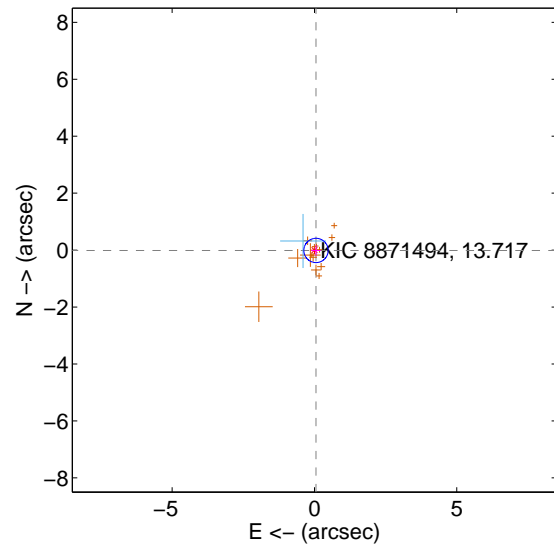
Supplemental centroid analysis for 008871494-01. Kepler magnitude: 13.72. Transit SNR 7.90

There are 1 quarters with good PRF difference image offsets

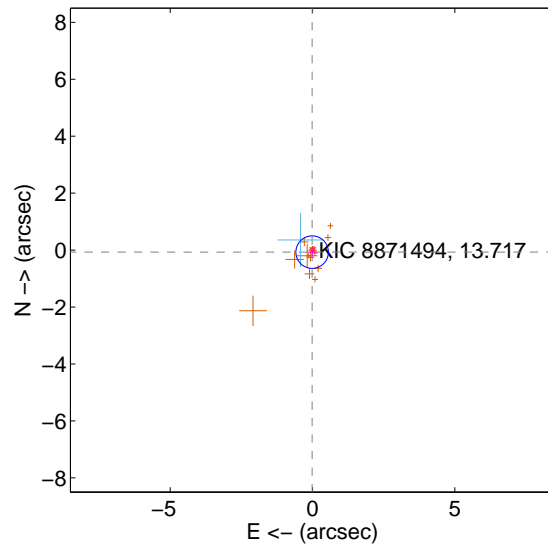
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.056 ± 0.142	0.40	-0.055 ± 0.167	-0.012 ± 0.185
PRF-fit source offset from KIC position	0.072 ± 0.190	0.38	0.014 ± 0.162	-0.071 ± 0.173
photometric centroid source offset	1.83 ± 1.75	1.05	0.26 ± 1.62	1.81 ± 1.75

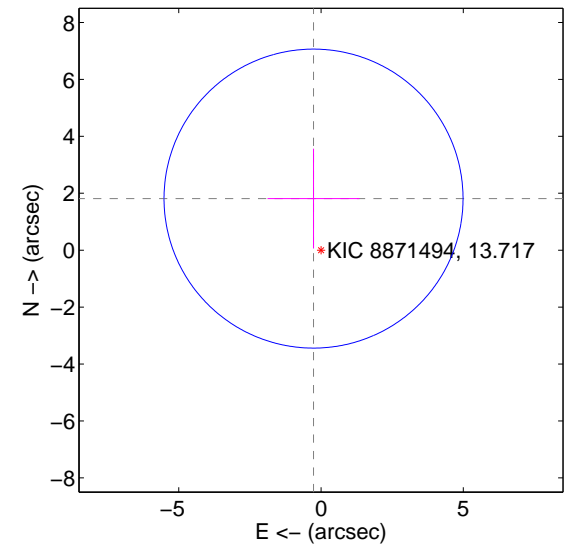
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

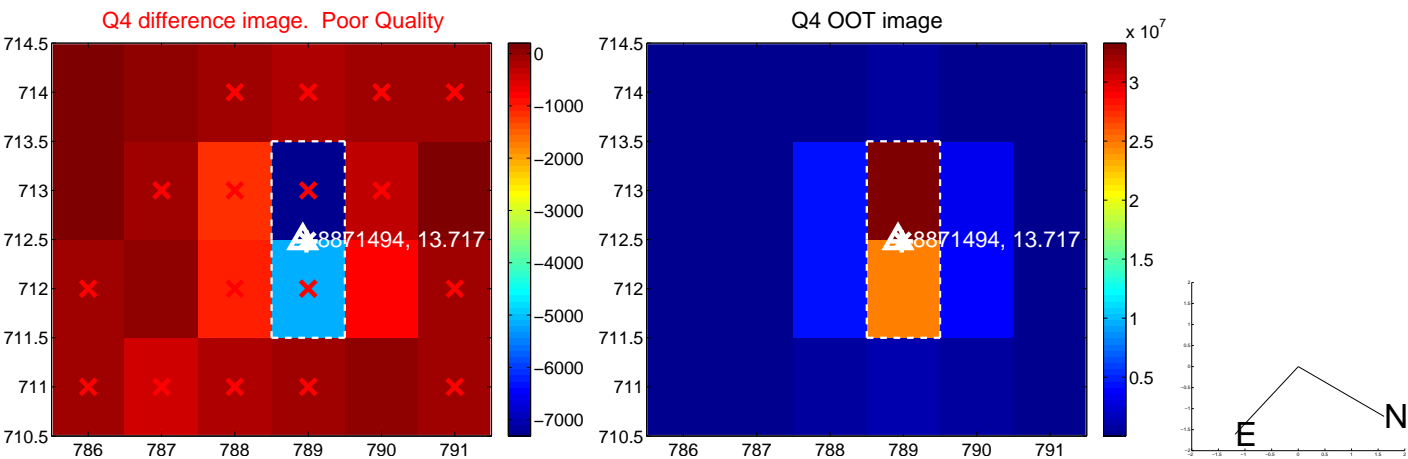
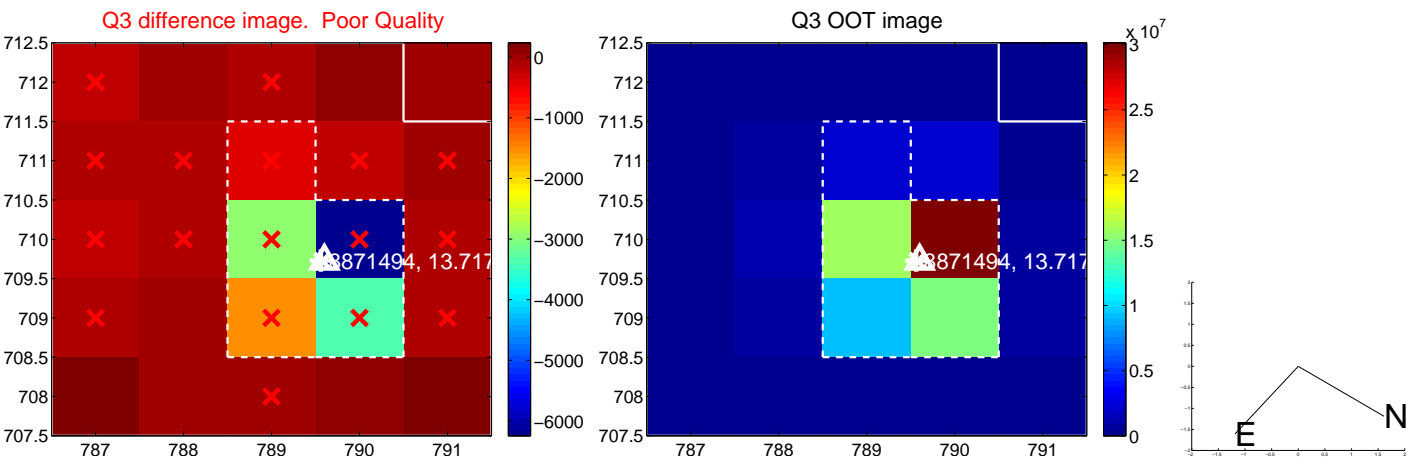
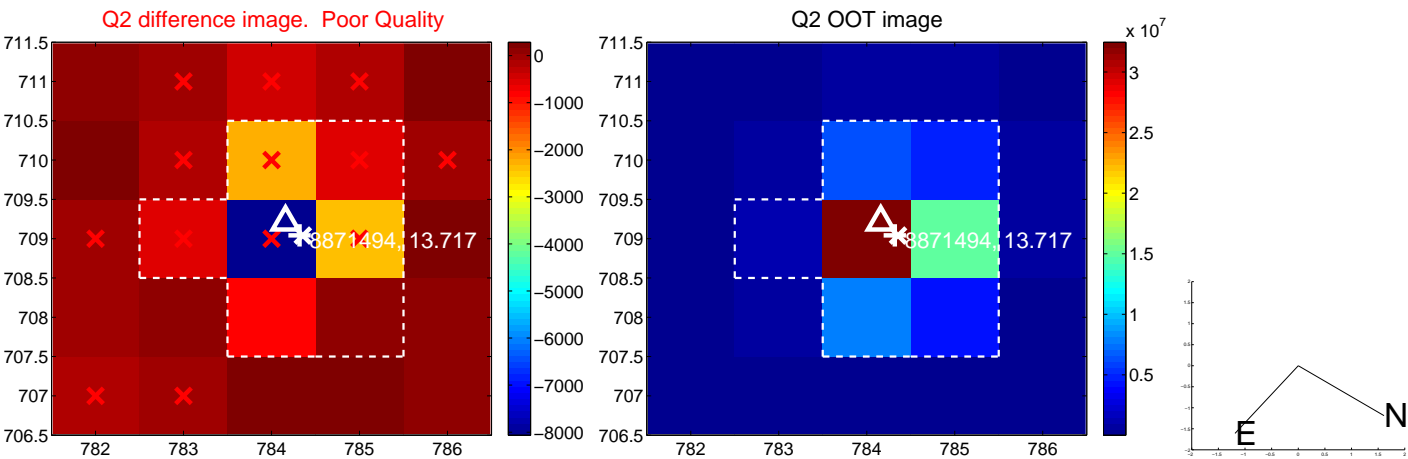
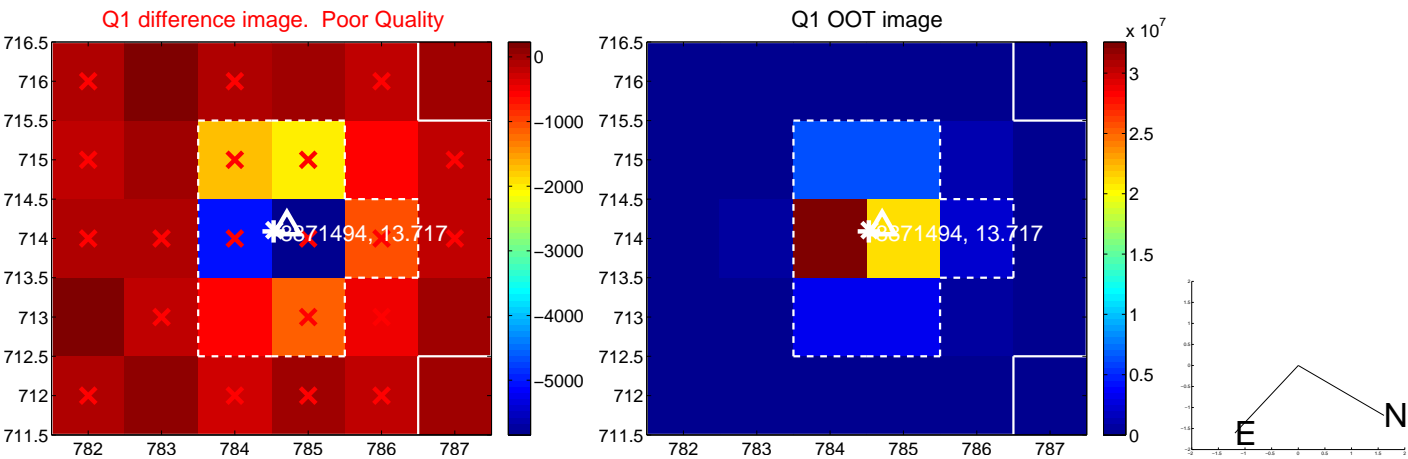


offset from photometric centroids

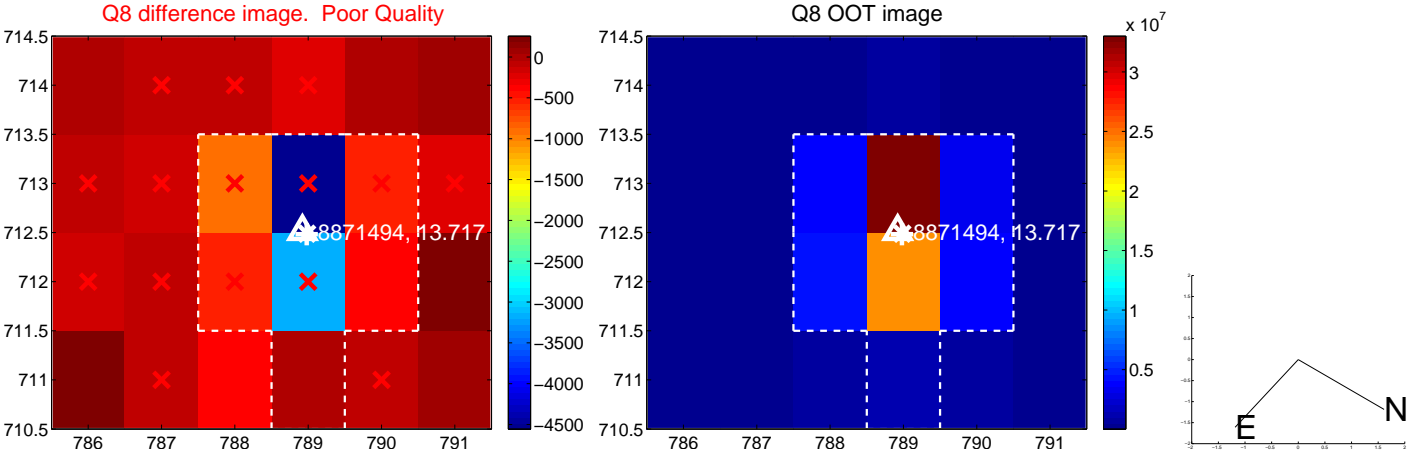
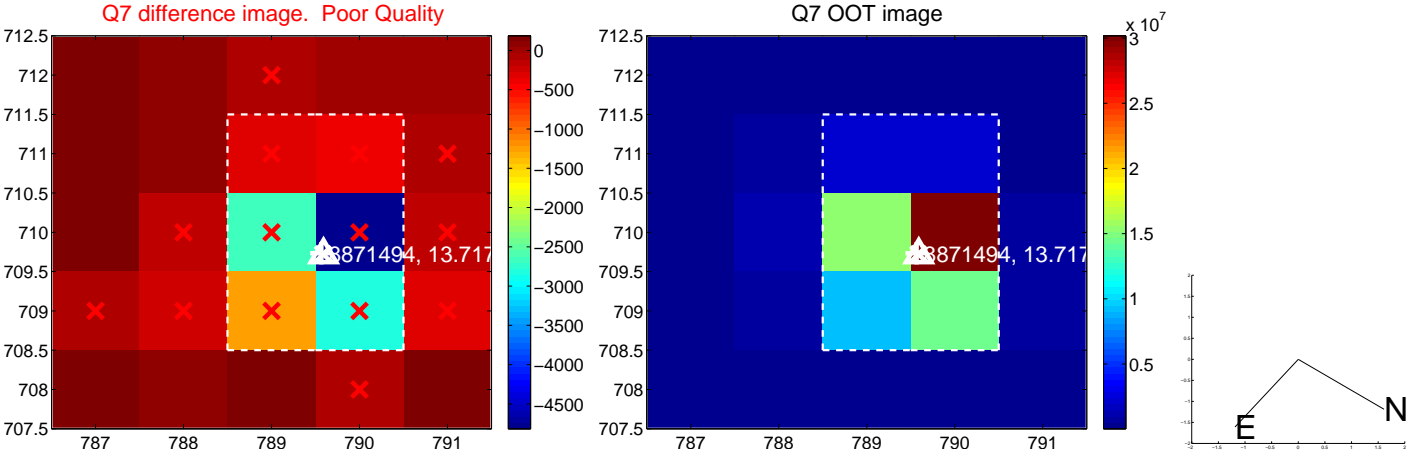
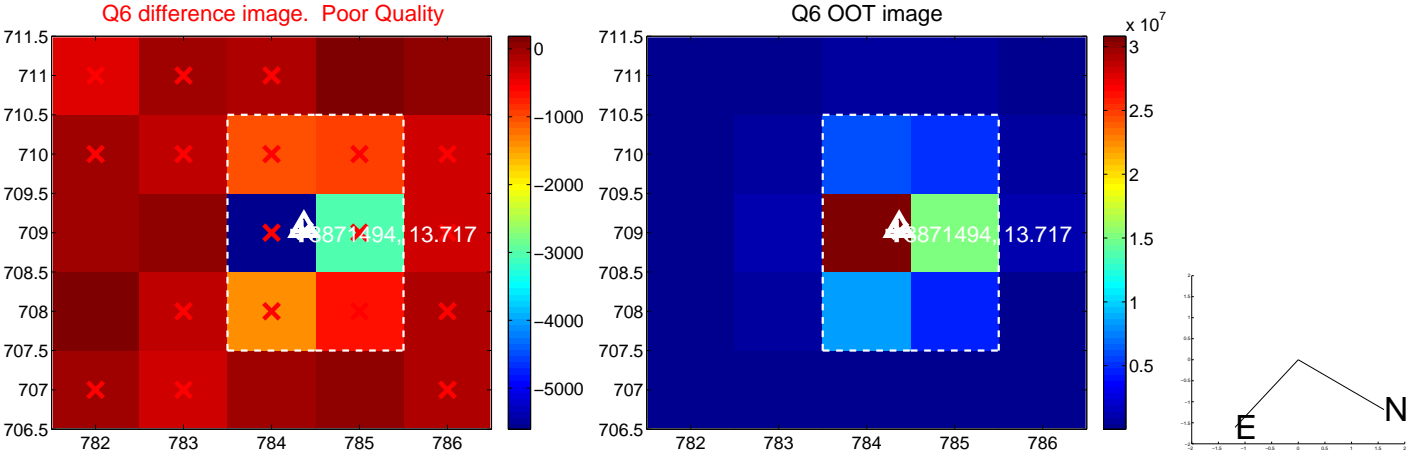
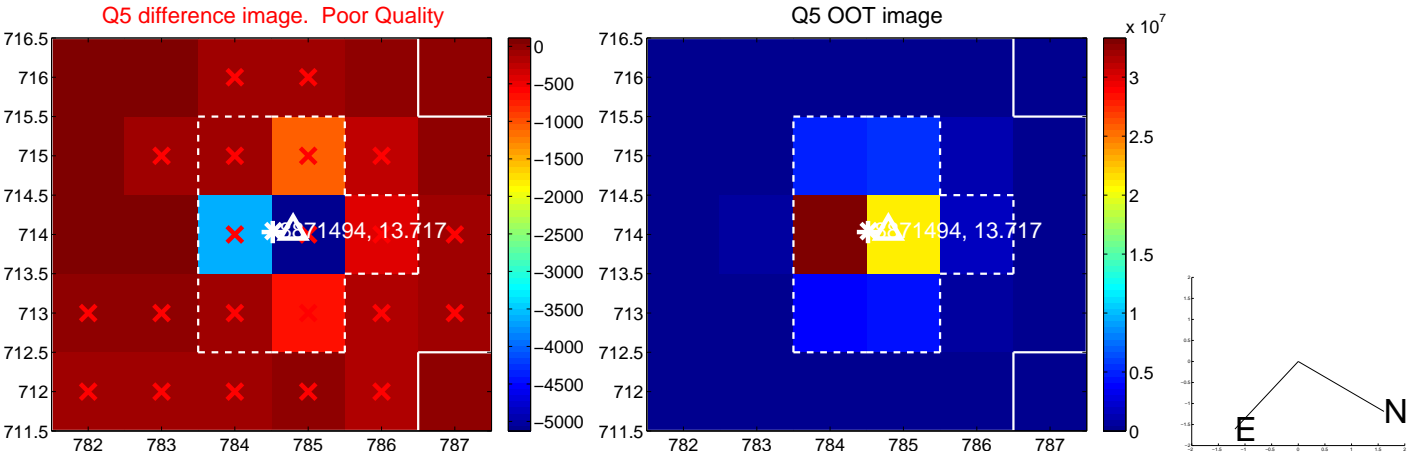


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

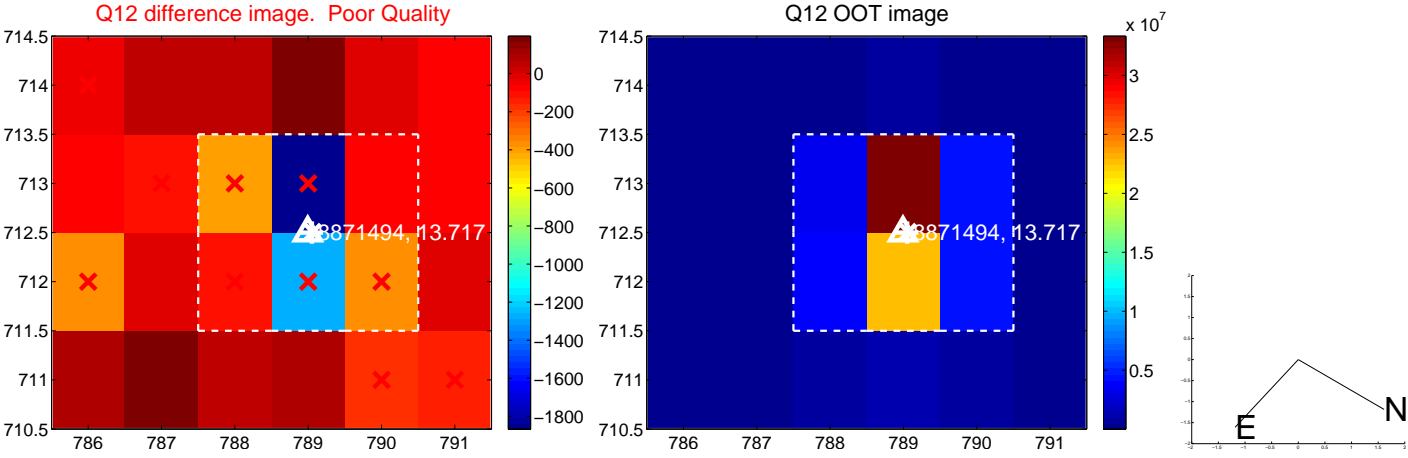
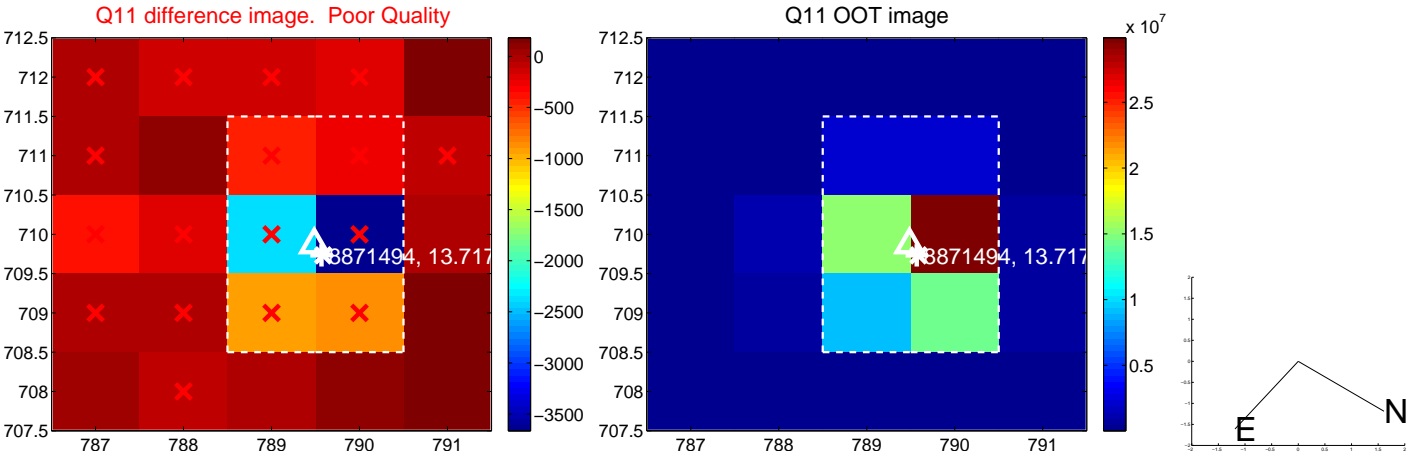
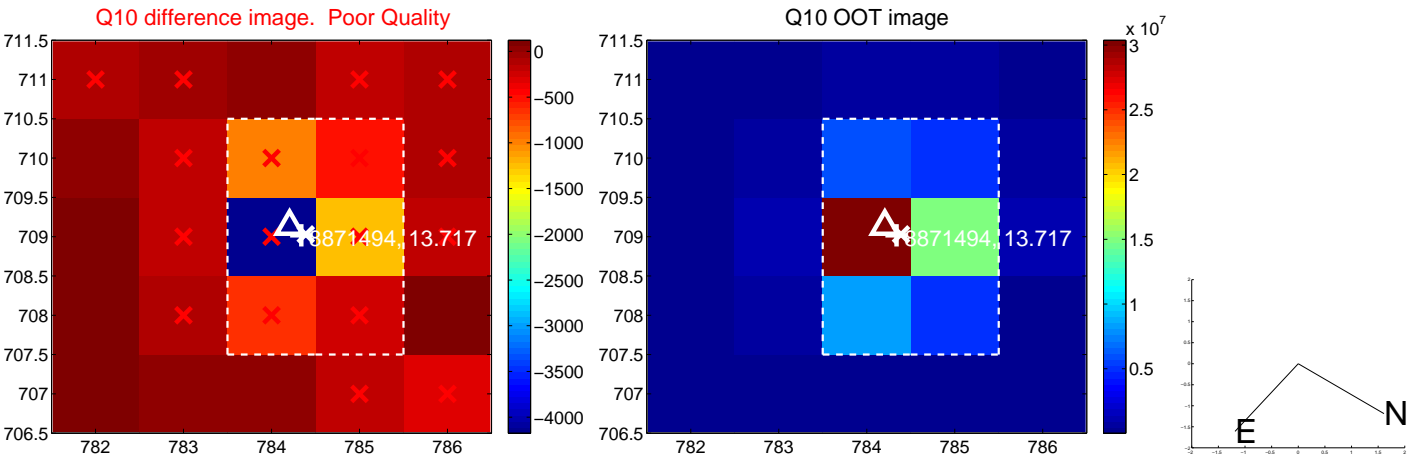
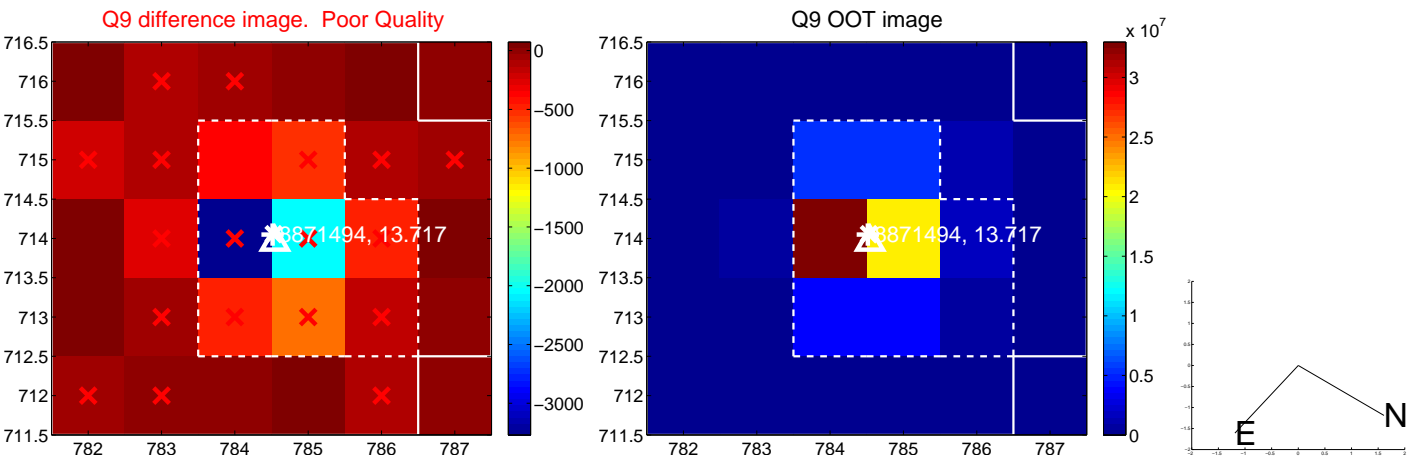
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



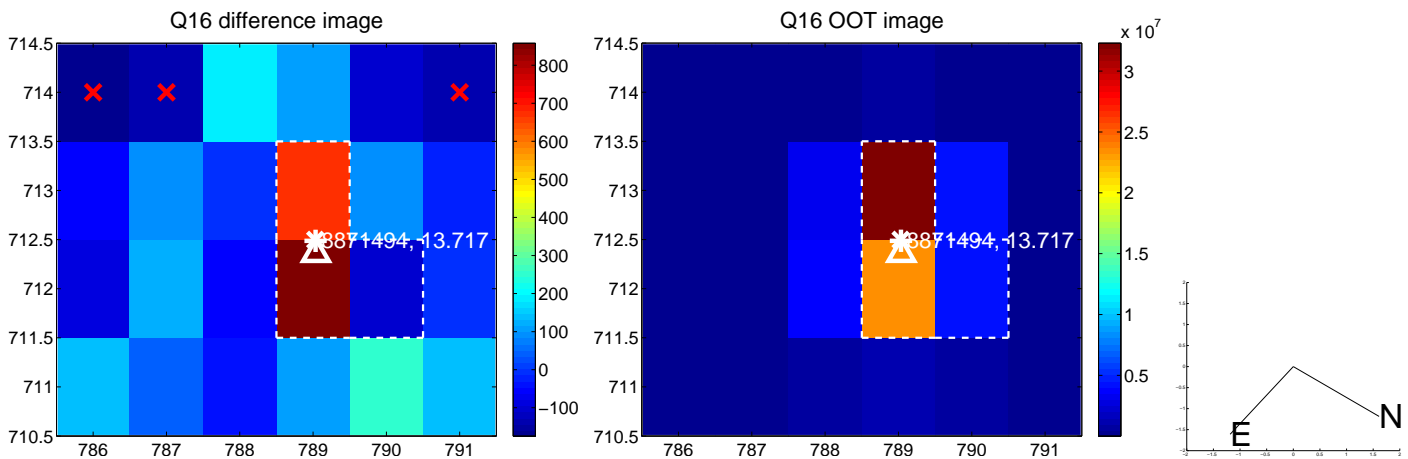
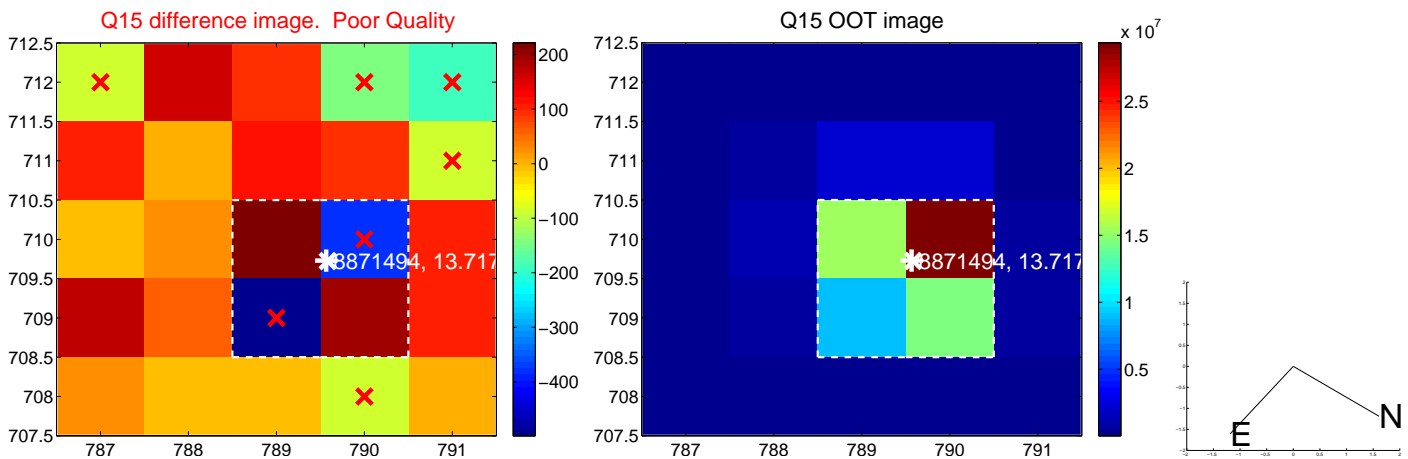
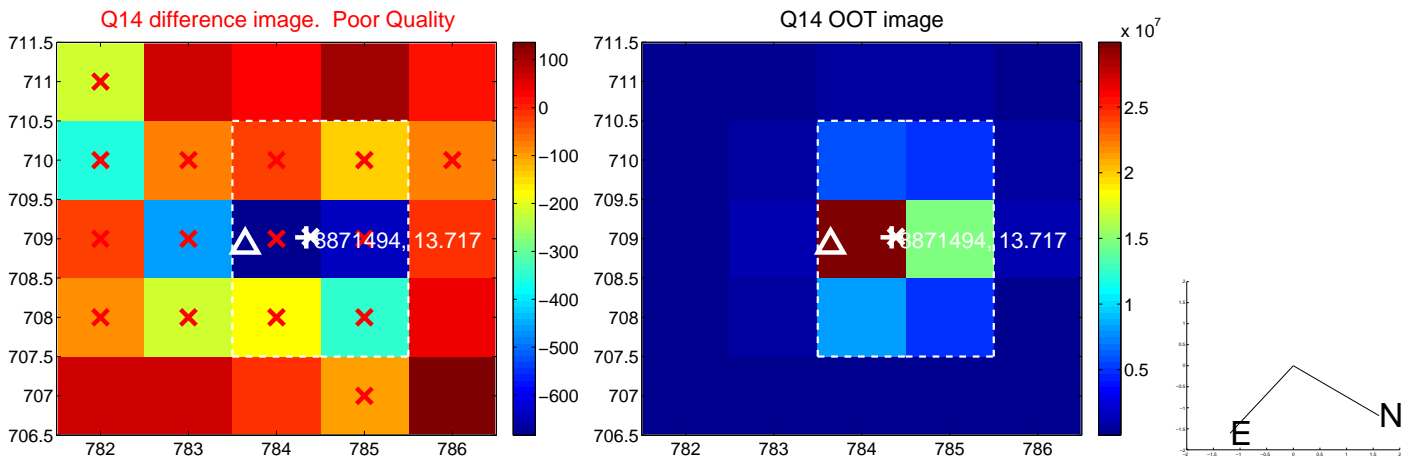
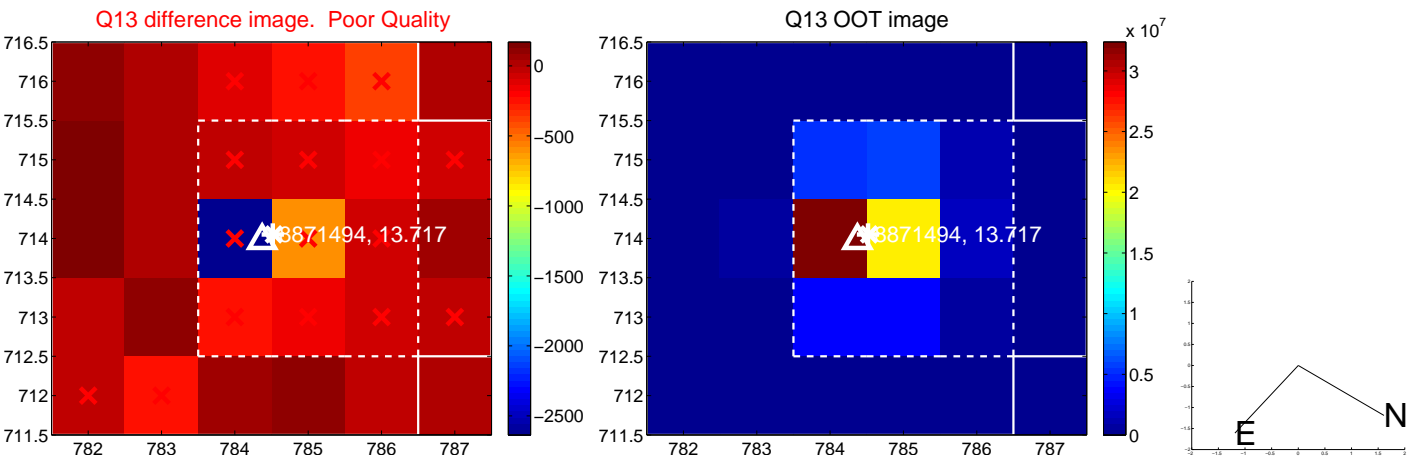
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



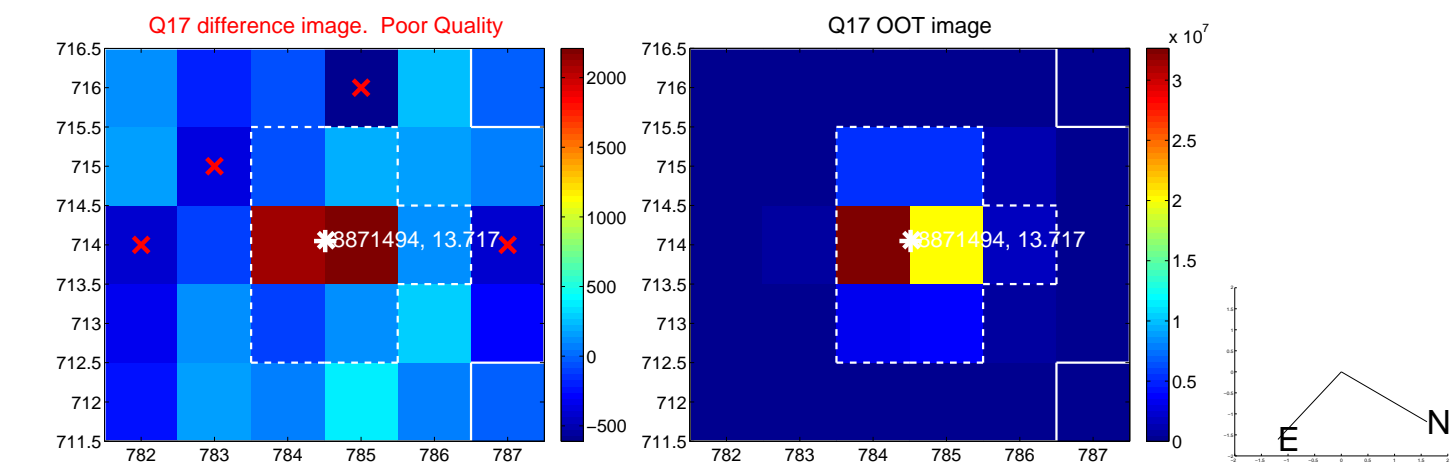
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



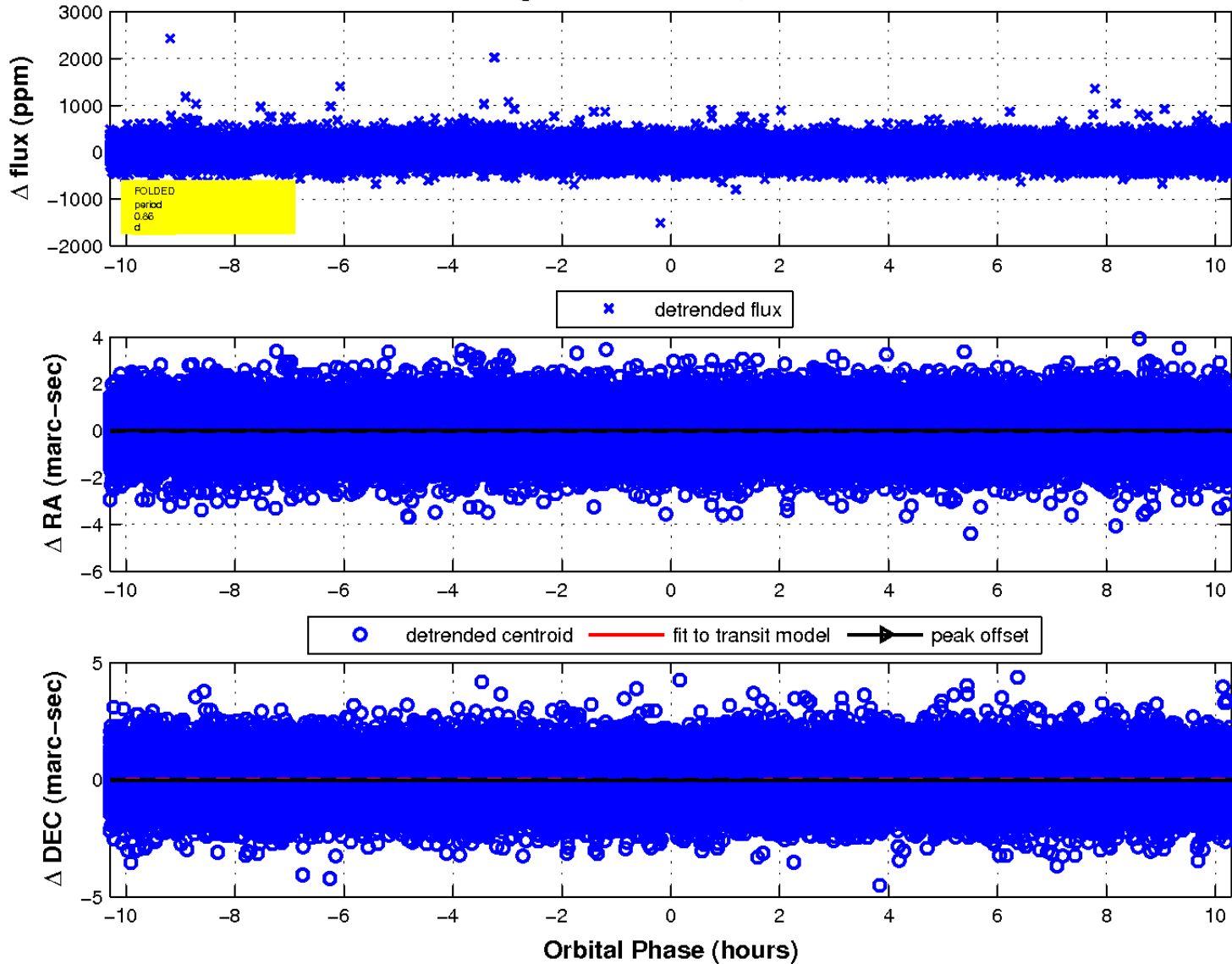
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

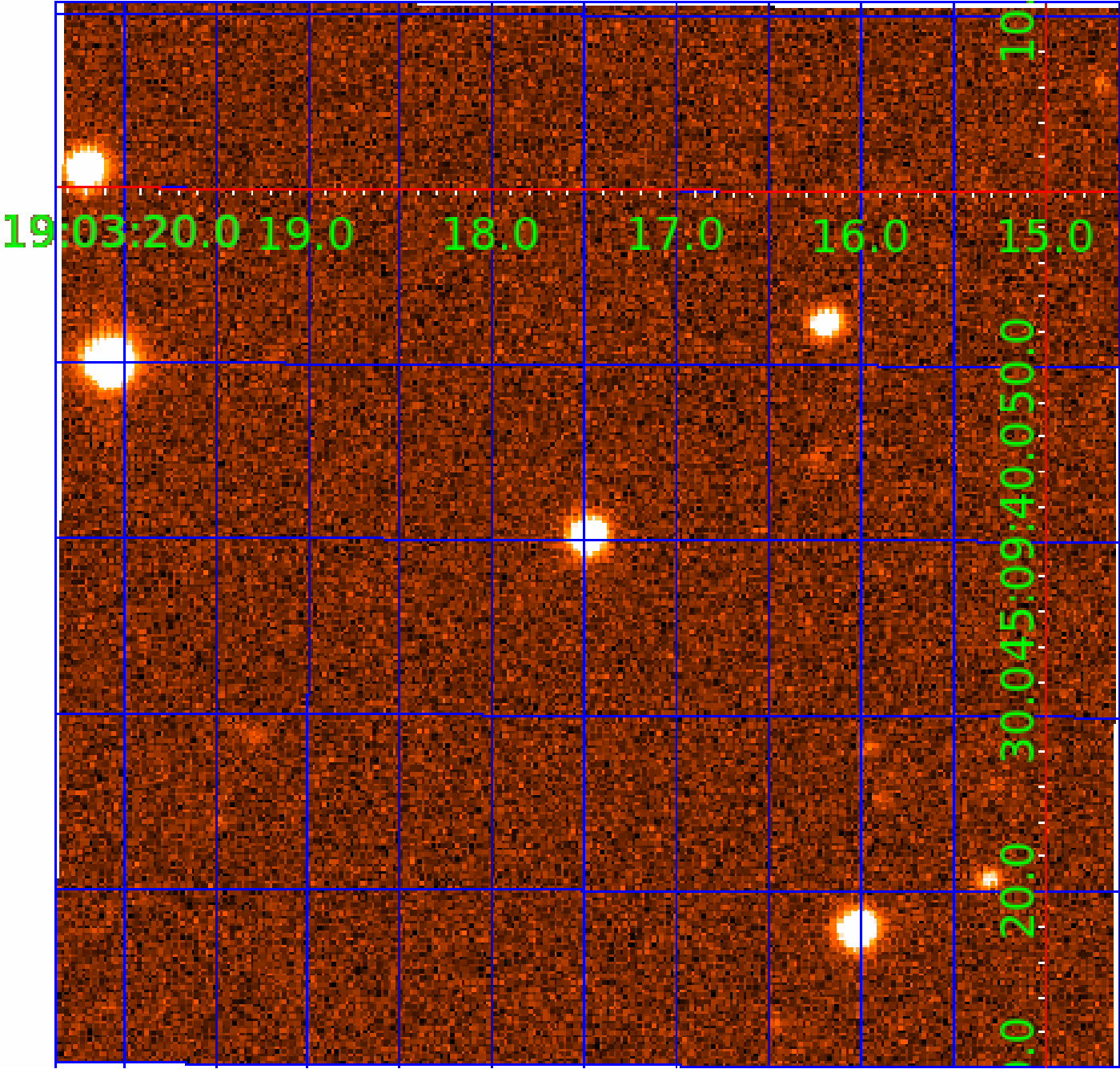


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 008871494

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})
008871494-01	OBS	No	0.857871	132.468925	13.2	3.608	9.7	7.9	4.53	11357	1.72	426570.49
008871494-02	OBS	No	0.857815	132.096246	7.6	6.409	9.7	6.1	4.53	11357	1.42	426607.55

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008871494-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—CENT_FEW_DIFFS
008871494-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

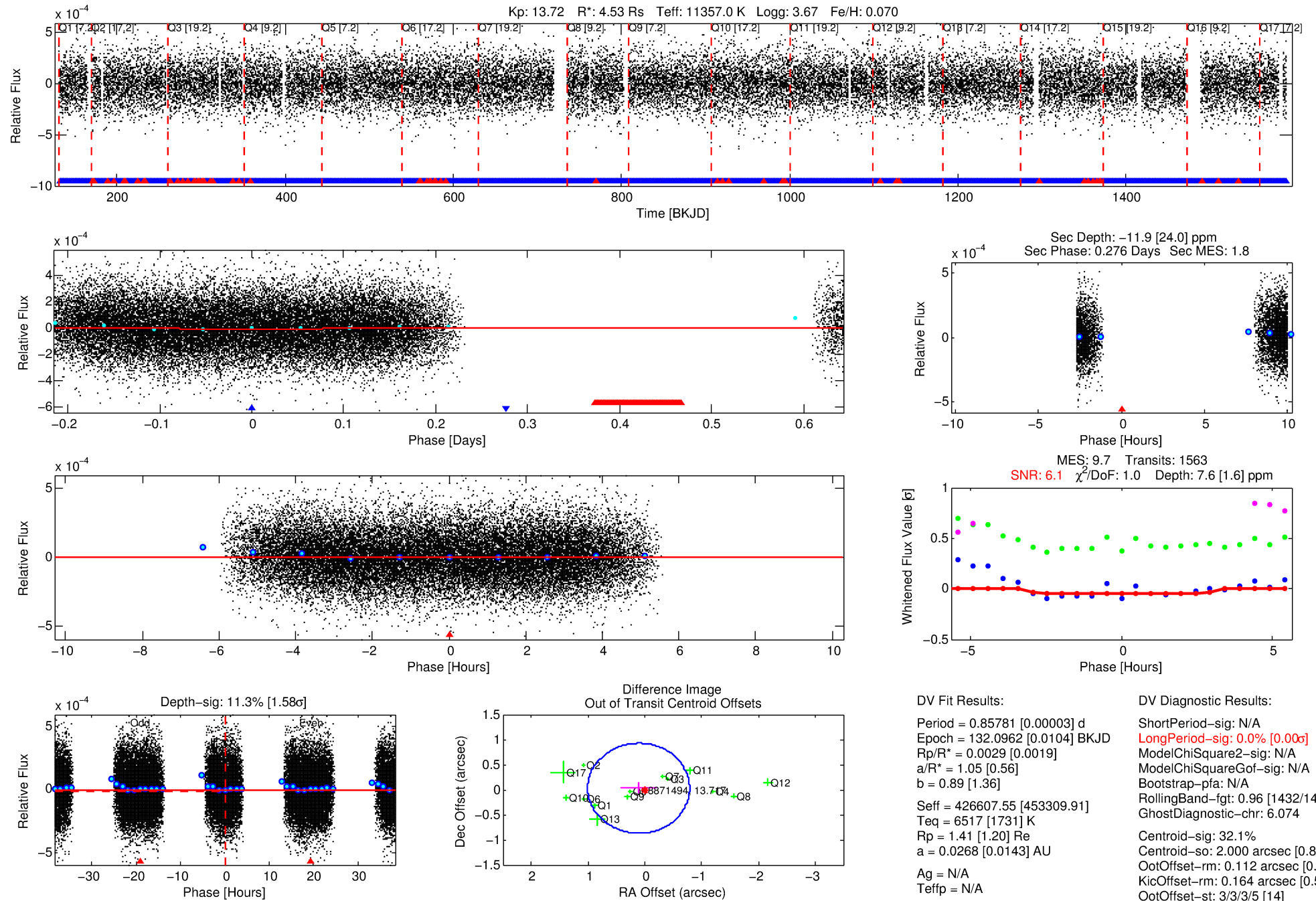
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008871494-02

No Significant Match Found

DV One-Page Summary

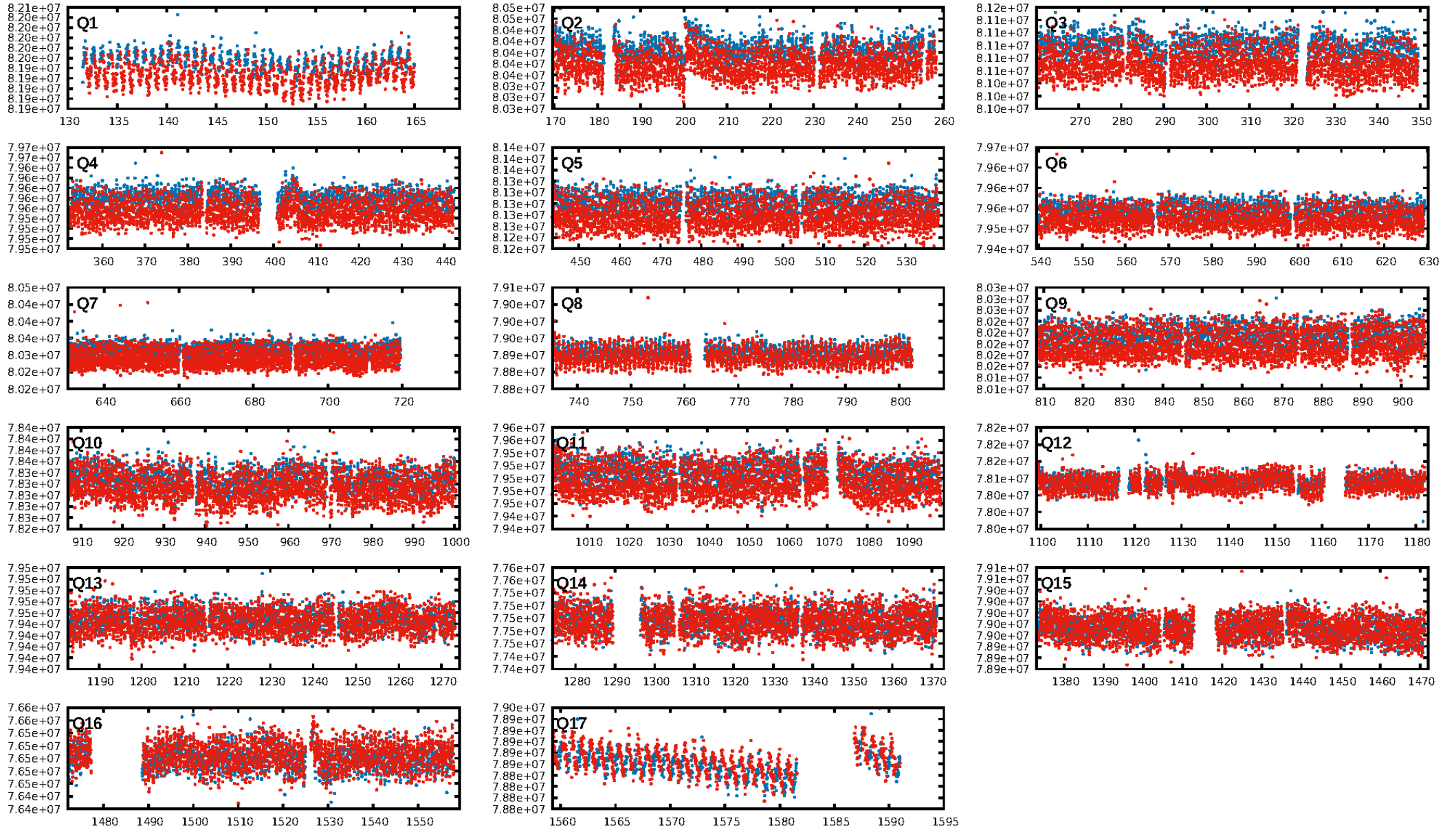
KIC: 8871494 Candidate: 2 of 2 Period: 0.858 d



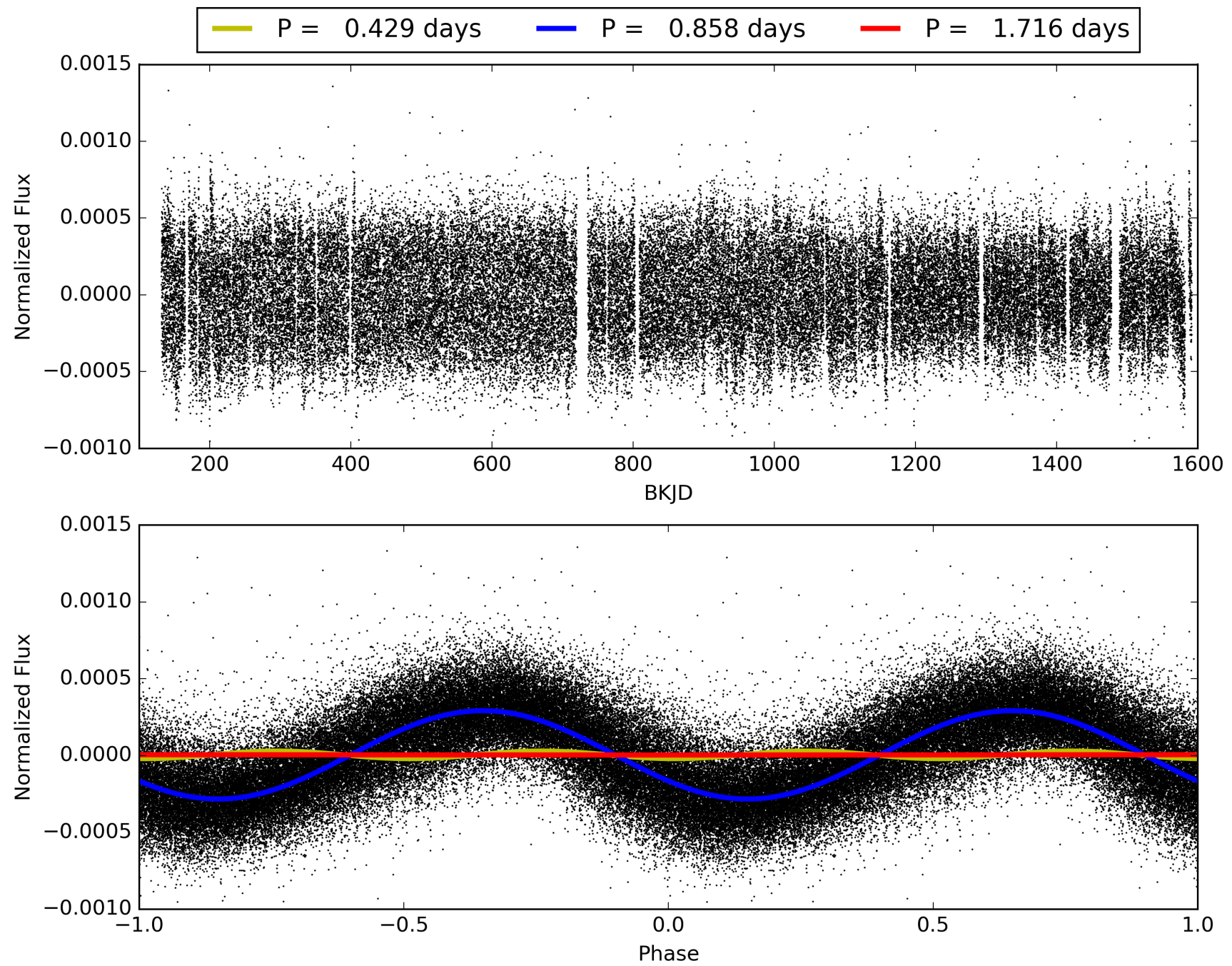
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 11:11:59 Z

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

TCE 008871494-02, PDC Light Curves

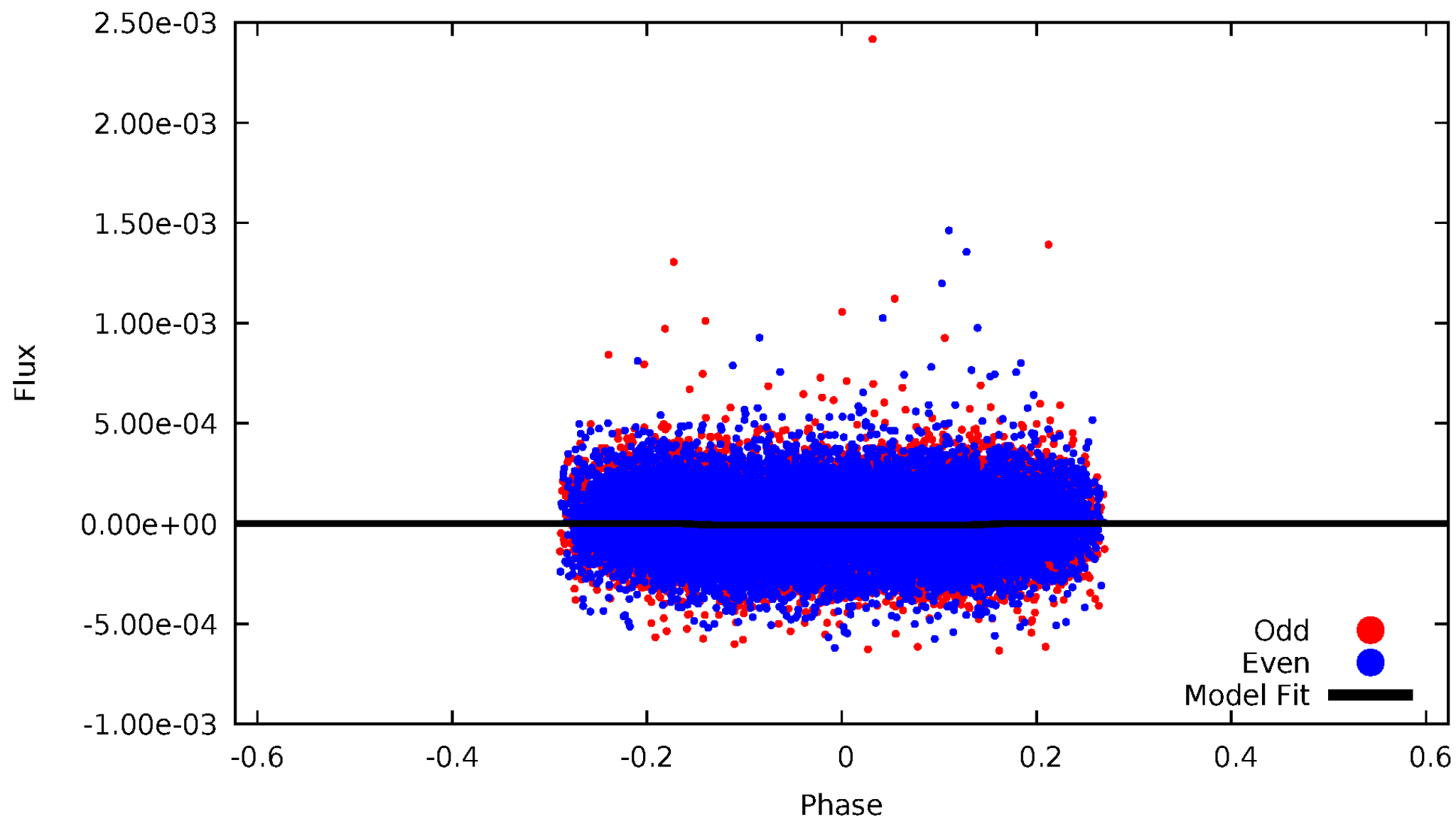


TCE 008871494-02



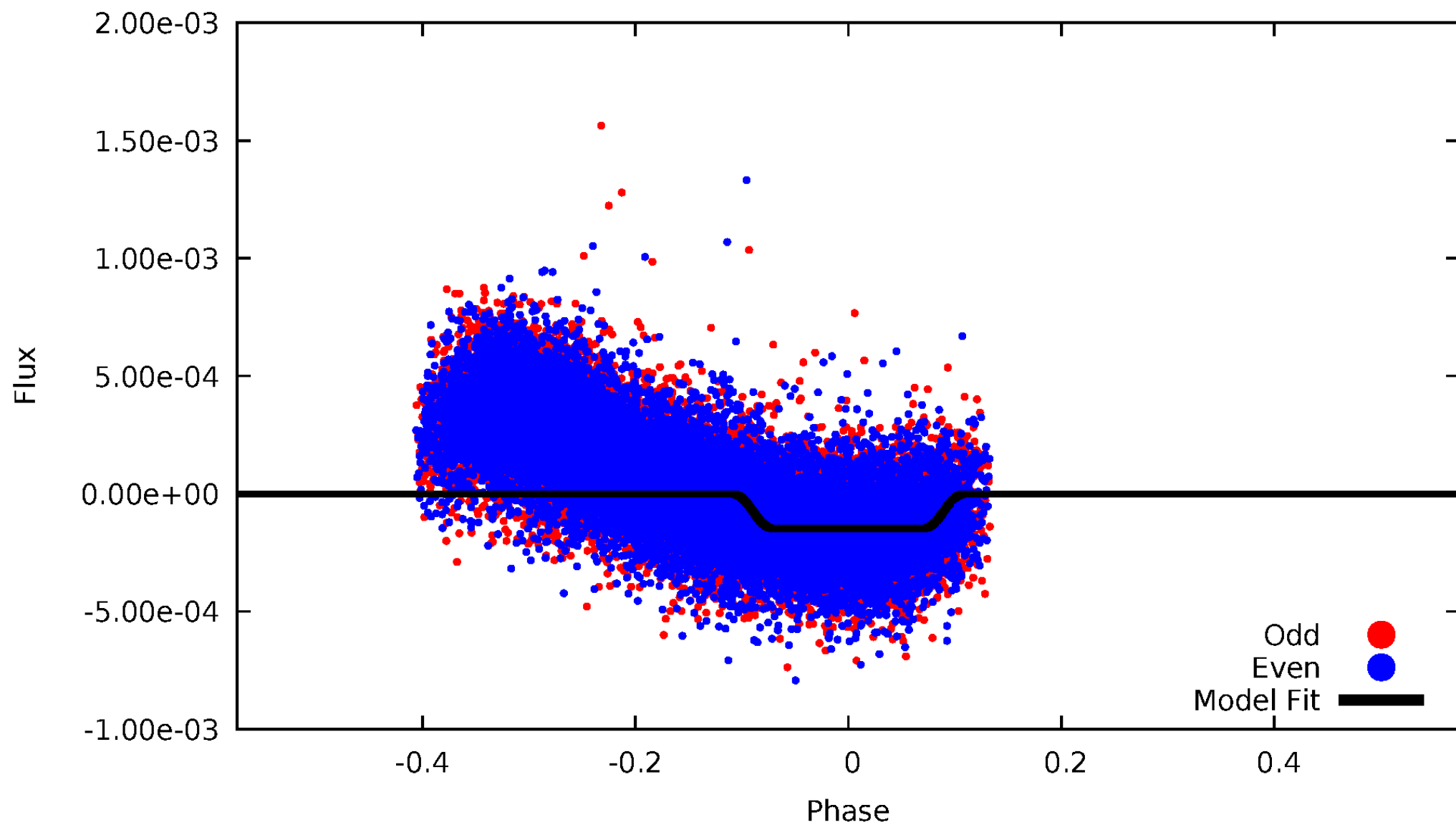
DV Odd/Even

TCE 008871494-02



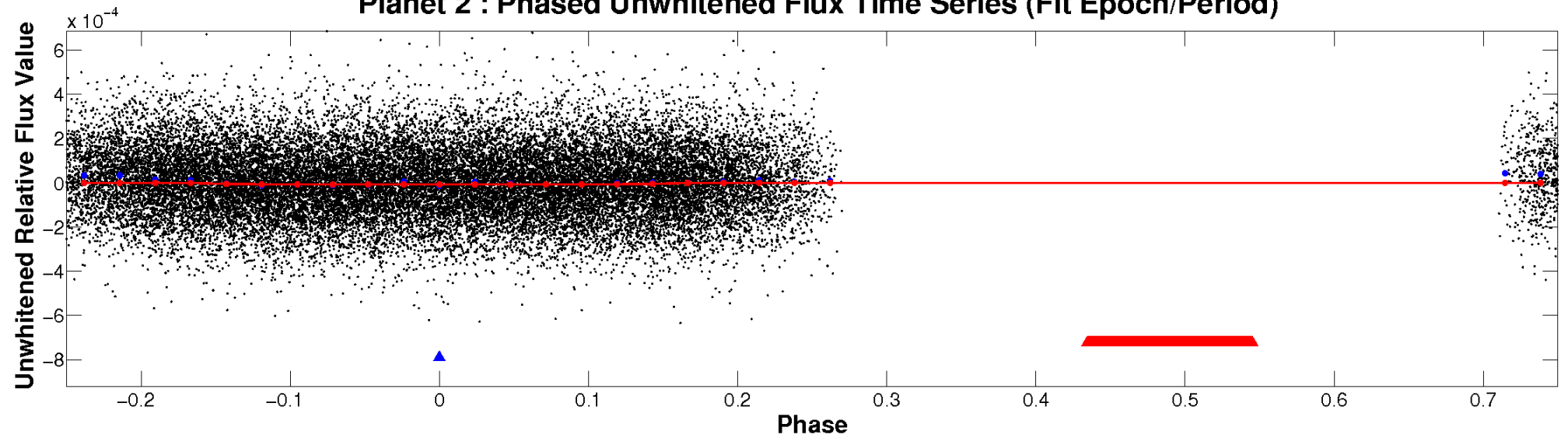
ALT Odd/Even

TCE 008871494-02

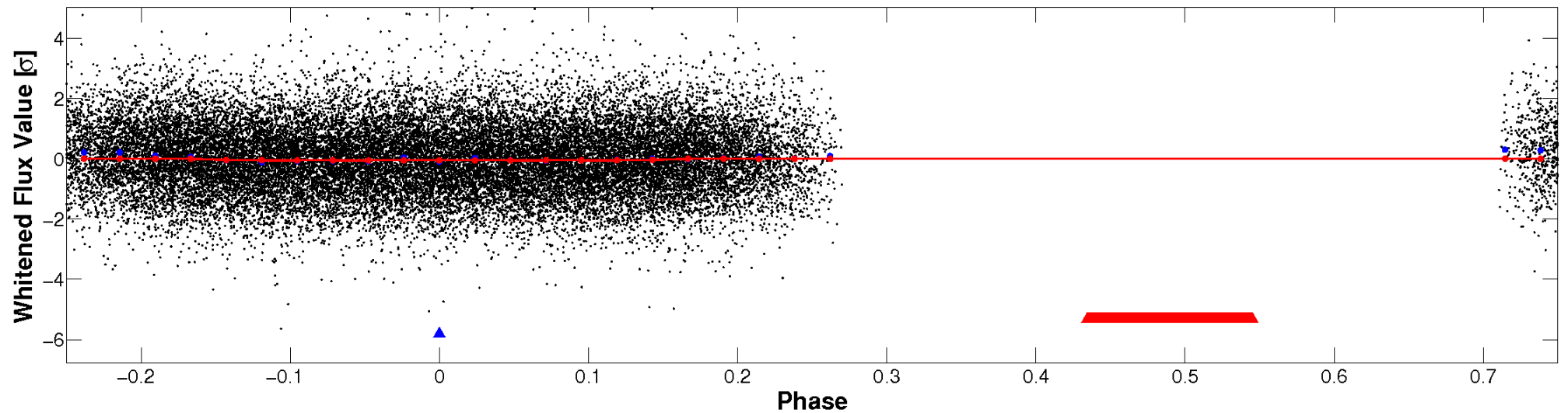


Non-Whitened Vs. Whitened Light Curve

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

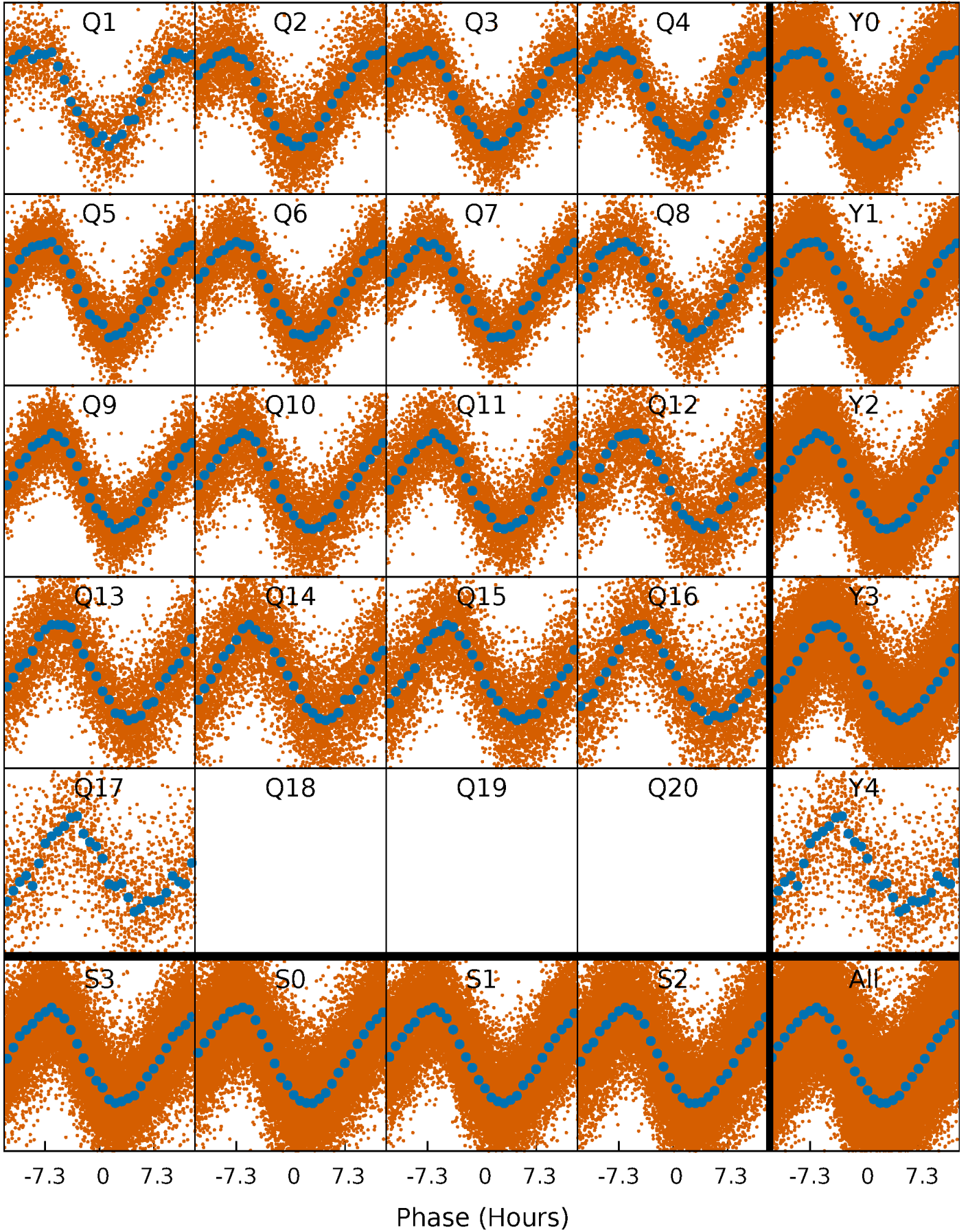


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



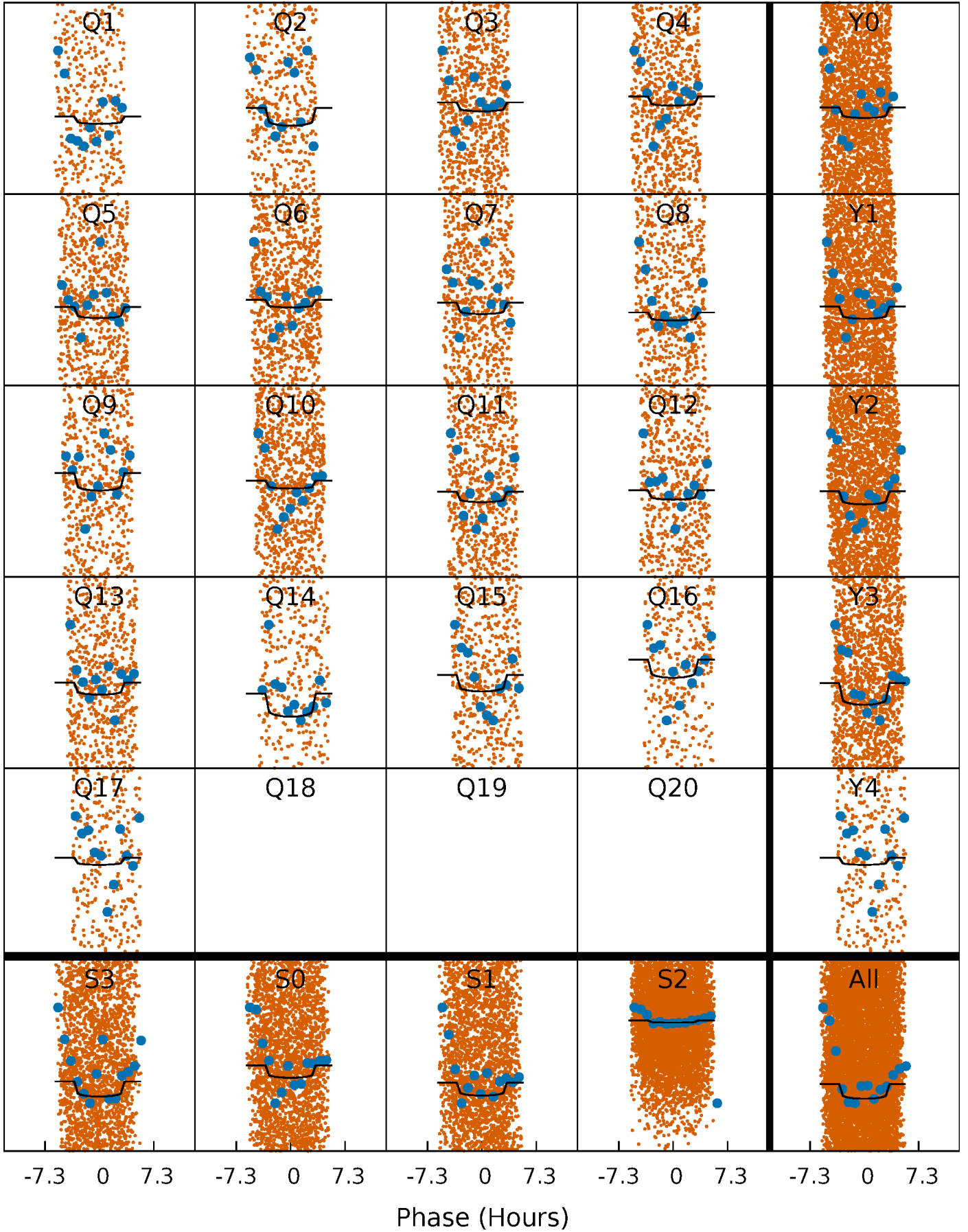
PDC Quarter-Phased Transit Curves

TCE 008871494-02 P= 0.857815 Days $T_0=132.096246$ (BKJD)



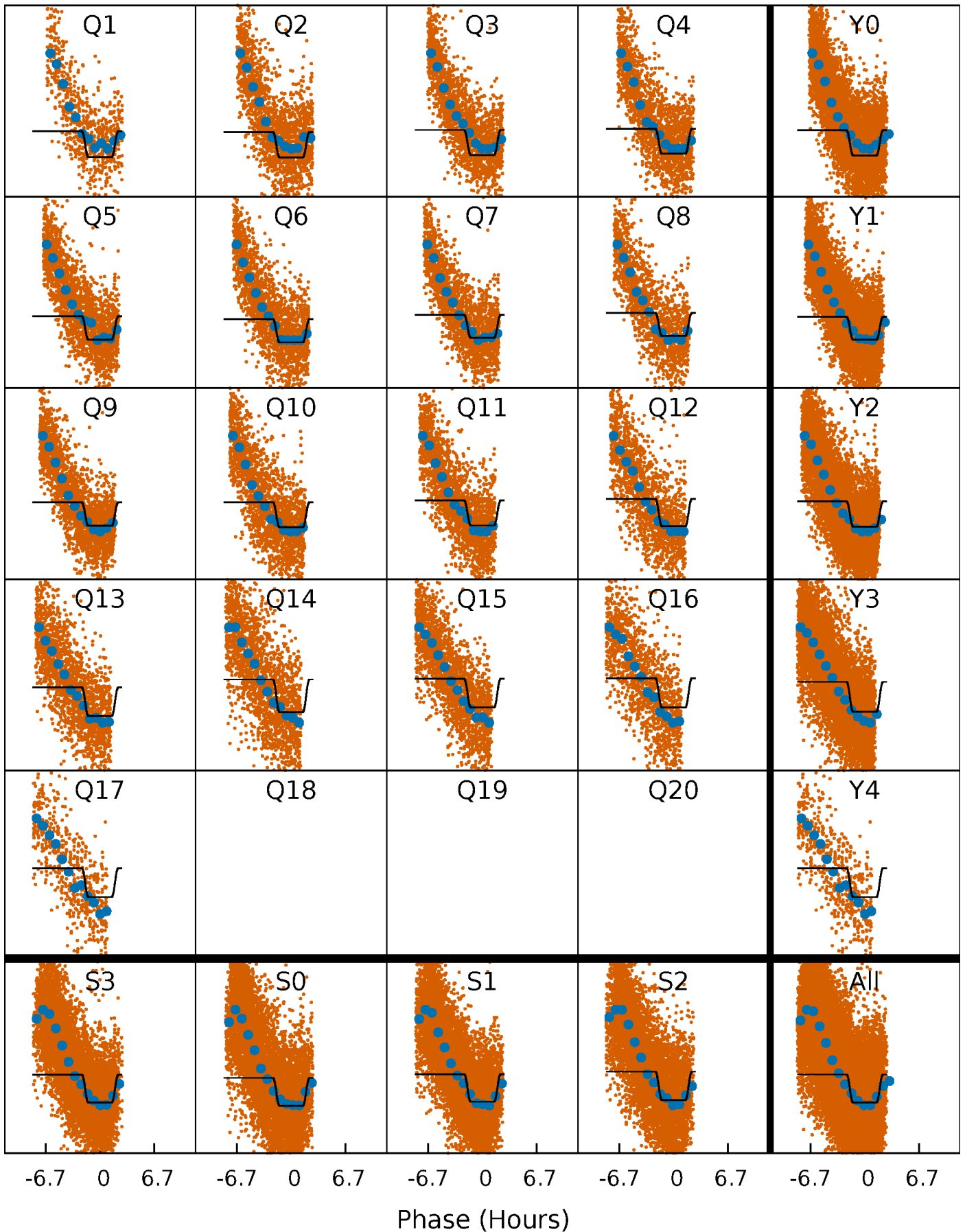
DV Quarter-Phased Transit Curves

TCE 008871494-02 P= 0.857815 Days $T_0=132.096246$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

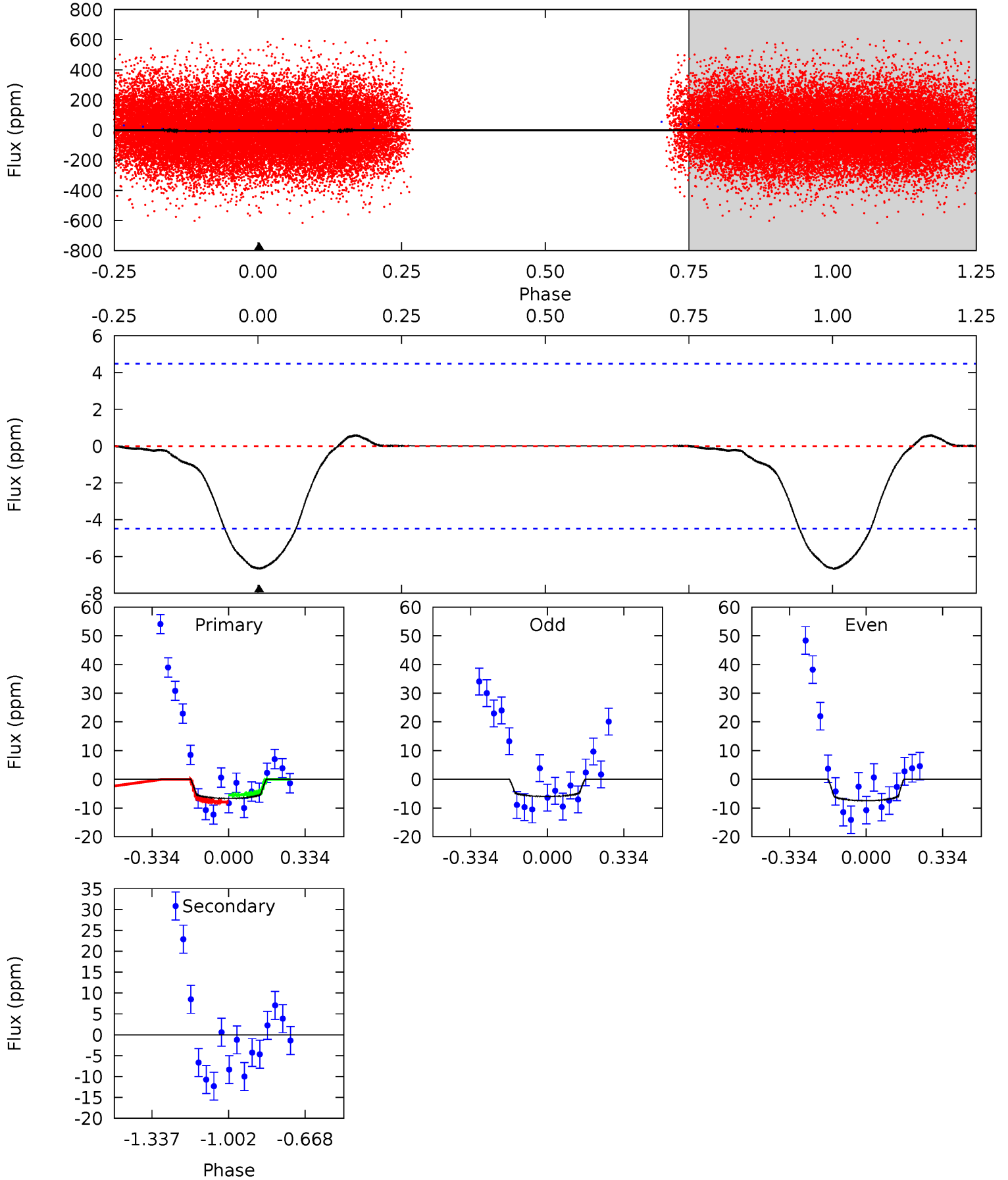
TCE 008871494-02 P= 0.857917 Days $T_0=132.118423$ (BKJD)



DV Model-Shift Uniqueness Test

008871494-02, P = 0.857815 Days, E = 131.238431 Days

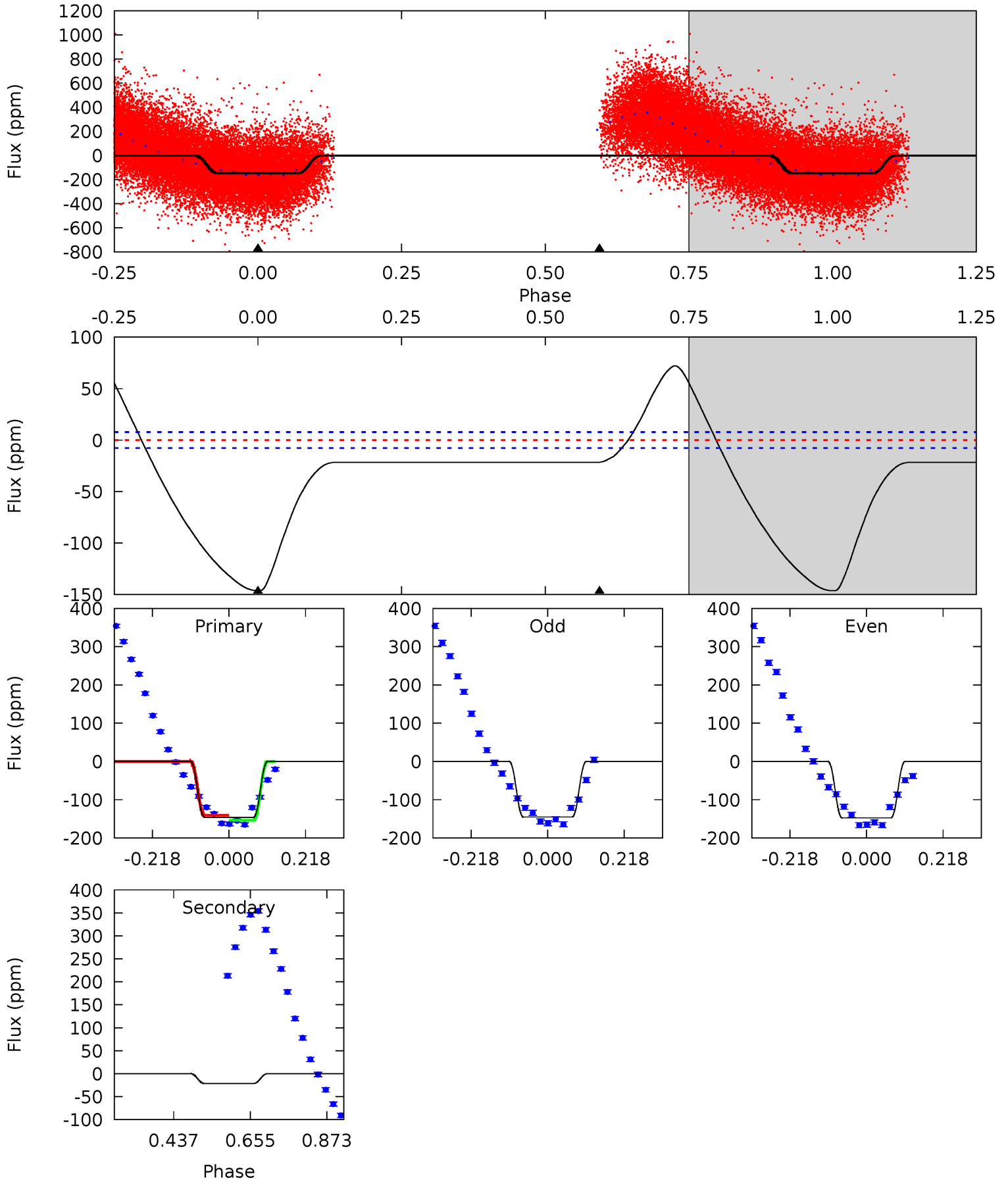
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.40	0	0	0	4.30	0.97	0.06	6.40	6.40	0	0	0.71	1.19	0.08	1.18



Alt Model-Shift Uniqueness Test

008871494-02, P = 0.857917 Days, E = 131.260506 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
83.3	12.2	0	0	4.40	1.23	8.76	83.3	83.3	12.2	12.2	0.64	1.01	0.33	4.23



Stellar Parameters For KIC 008871494

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	11357^{+587}_{-1762}	$3.667^{+0.510}_{-0.090}$	$0.070^{+0.250}_{-0.550}$	$4.528^{+0.615}_{-2.459}$	$3.472^{+0.069}_{-1.265}$	$0.053^{+0.318}_{-0.015}$
	+5%/-16%	+14%/-2%	+357%/-786%	+14%/-54%	+2%/-36%	+603%/-29%
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 008871494-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1	$1.17^{+0.98}_{-0.65}$	8468^{+1100}_{-1530}	-6093^{+10595}_{-1512}	$0.000^{+0.392}_{-0.360}$
Alt.	-21 ± 2	$5.20^{+1.43}_{-1.51}$	8323^{+1217}_{-1580}	2197^{+3126}_{-7346}	$0.301^{+0.268}_{-0.110}$

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

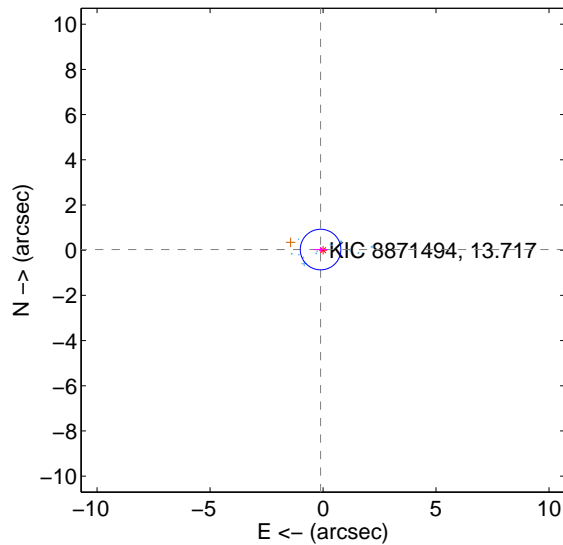
Supplemental centroid analysis for 008871494-02. Kepler magnitude: 13.72. Transit SNR 6.05

There are 13 quarters with good PRF difference image offsets

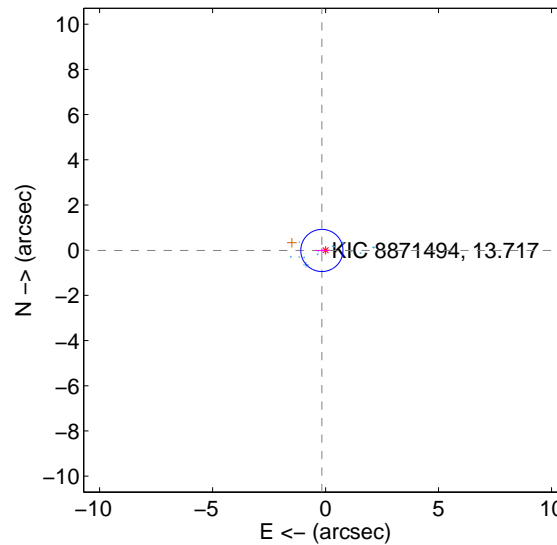
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.112 ± 0.299	0.37	0.108 ± 0.311	0.028 ± 0.101
PRF-fit source offset from KIC position	0.164 ± 0.311	0.53	0.164 ± 0.310	-0.013 ± 0.098
photometric centroid source offset	2.00 ± 2.31	0.87	1.04 ± 2.16	-1.71 ± 2.36

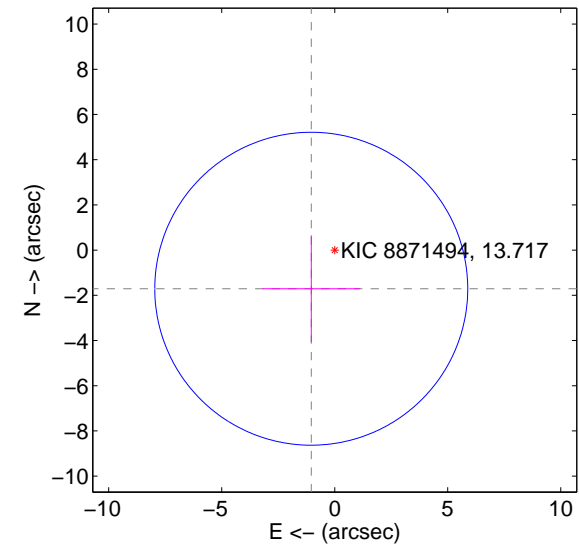
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

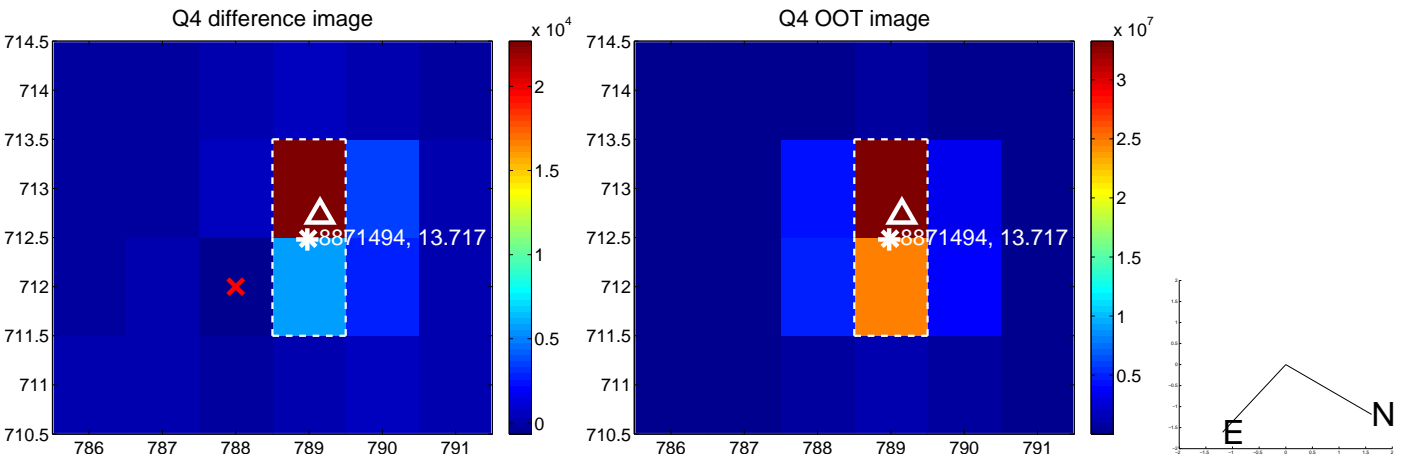
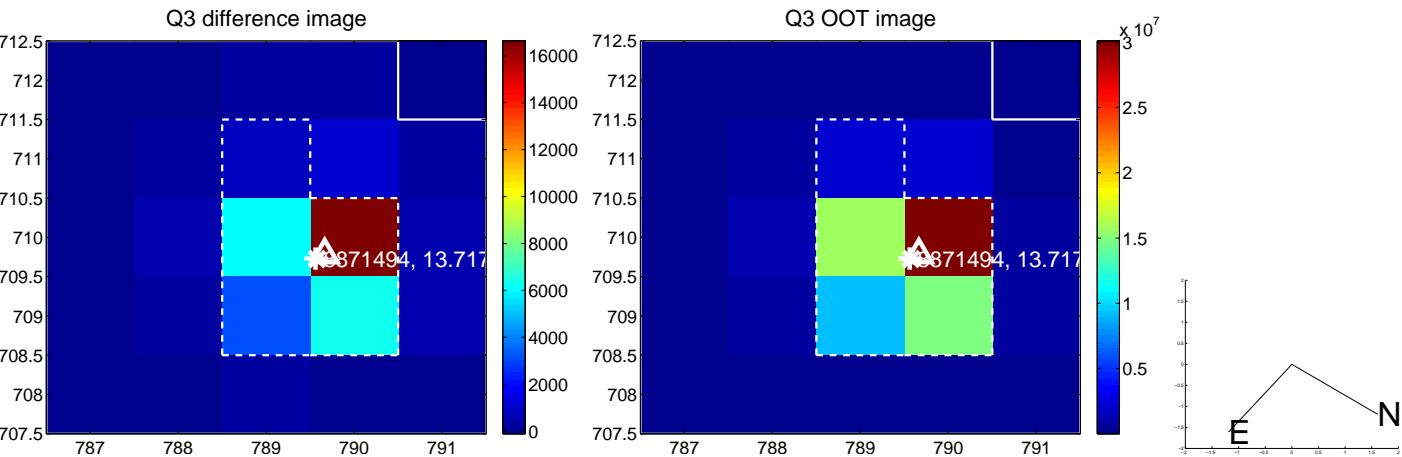
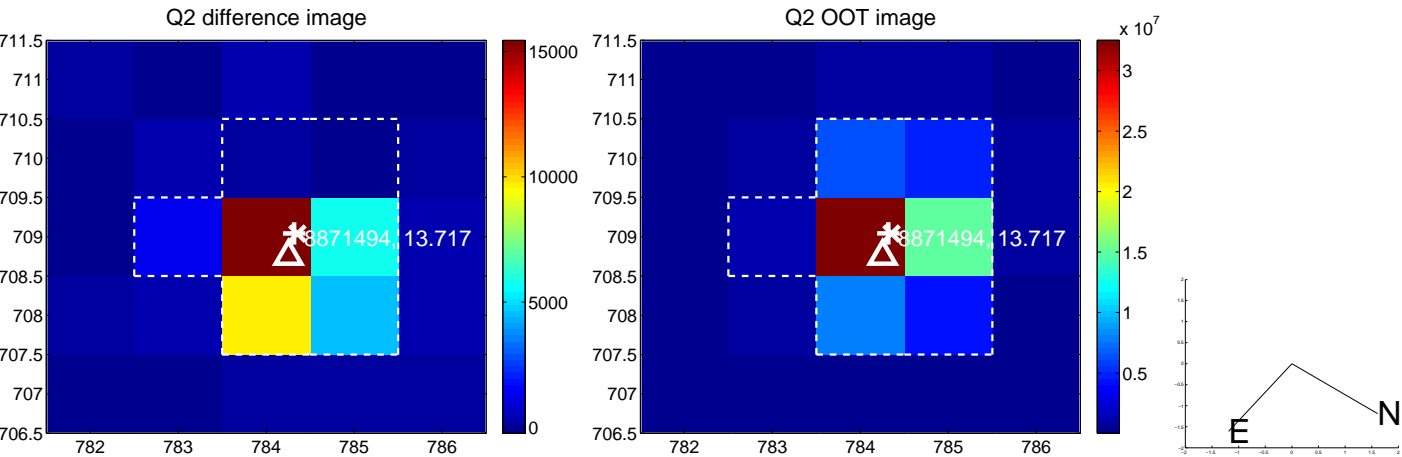
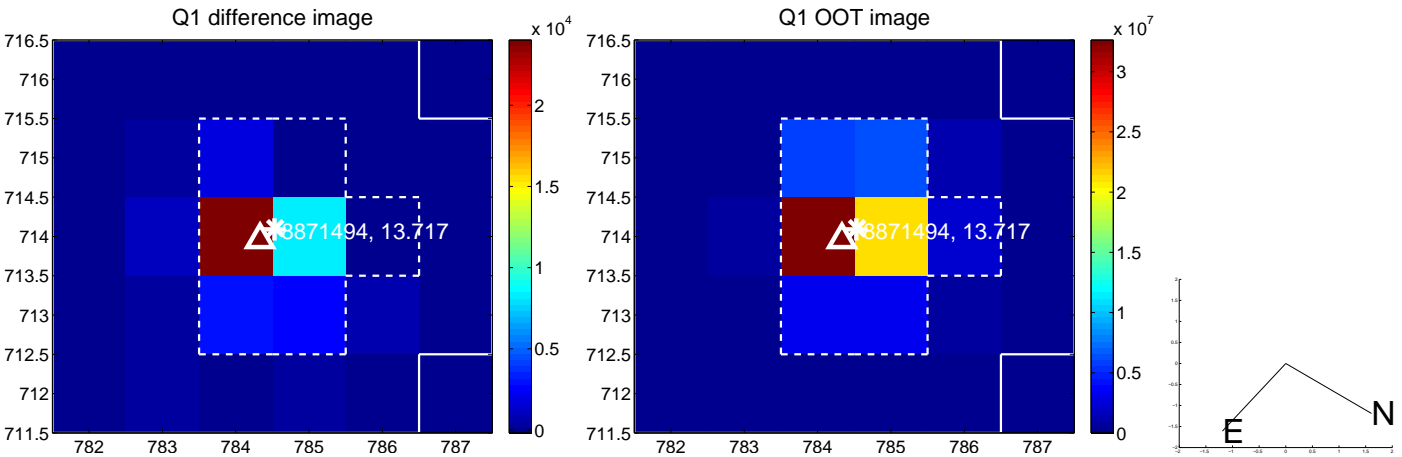


offset from photometric centroids

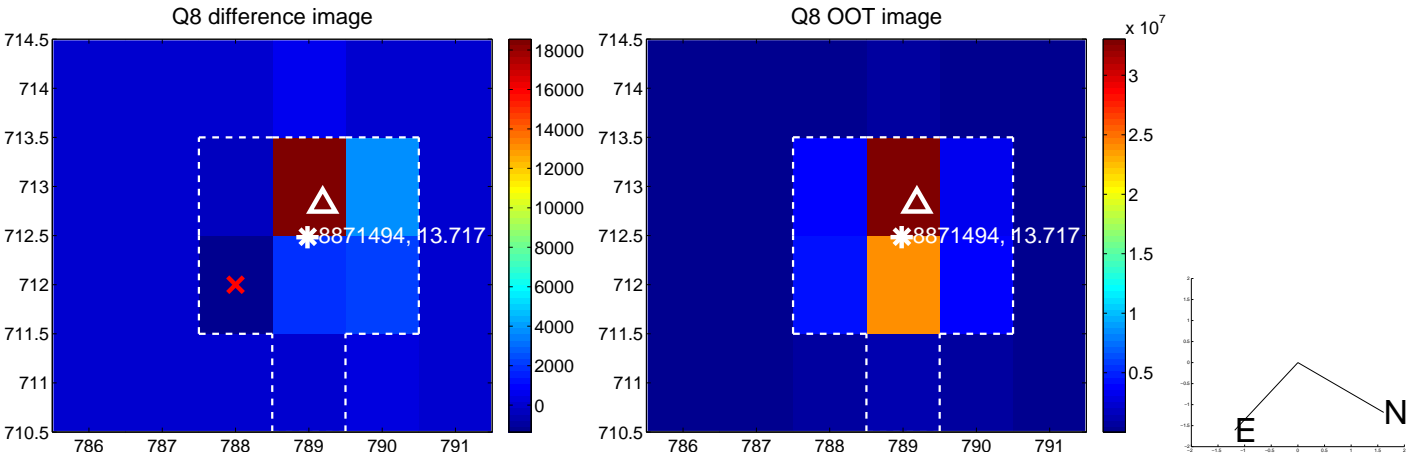
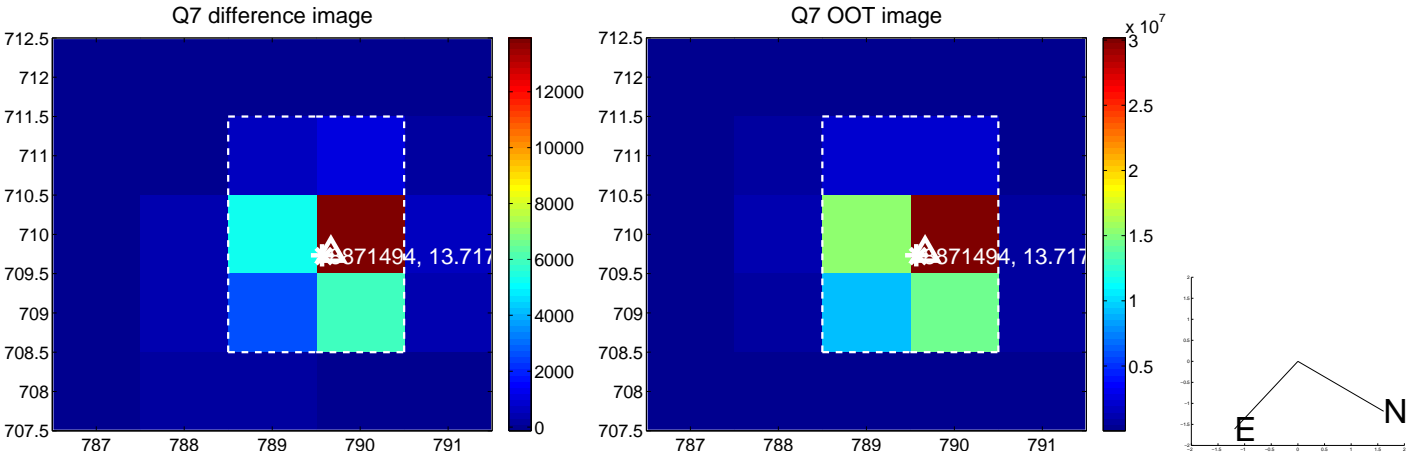
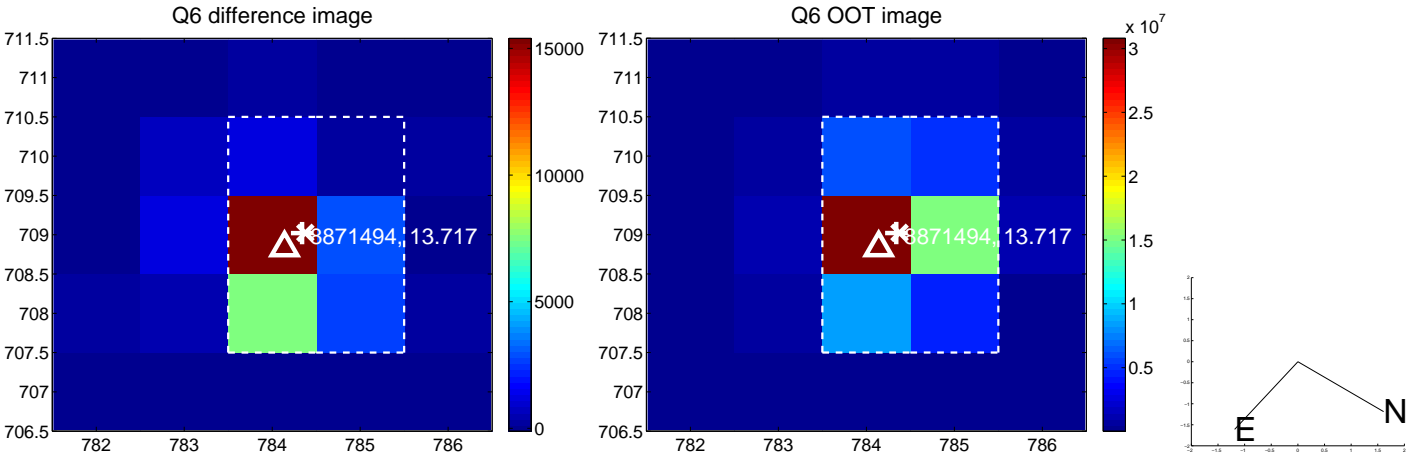
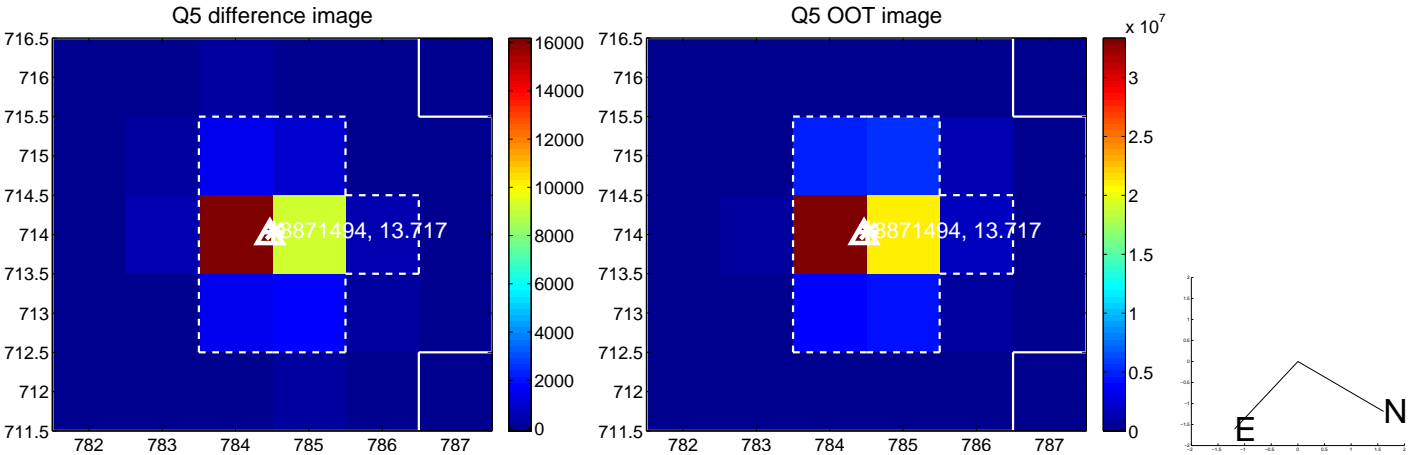


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

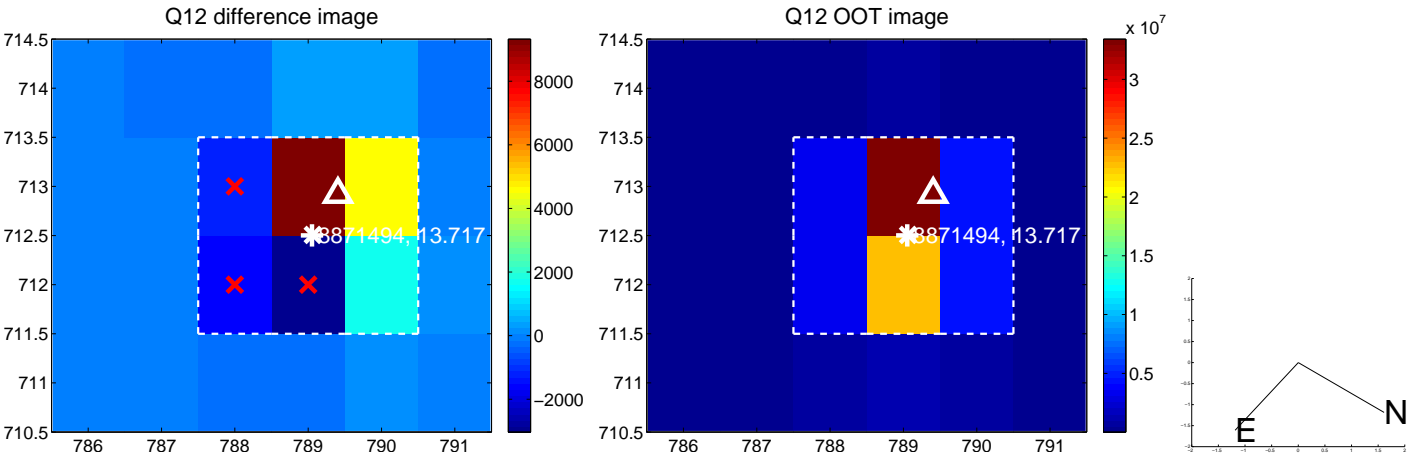
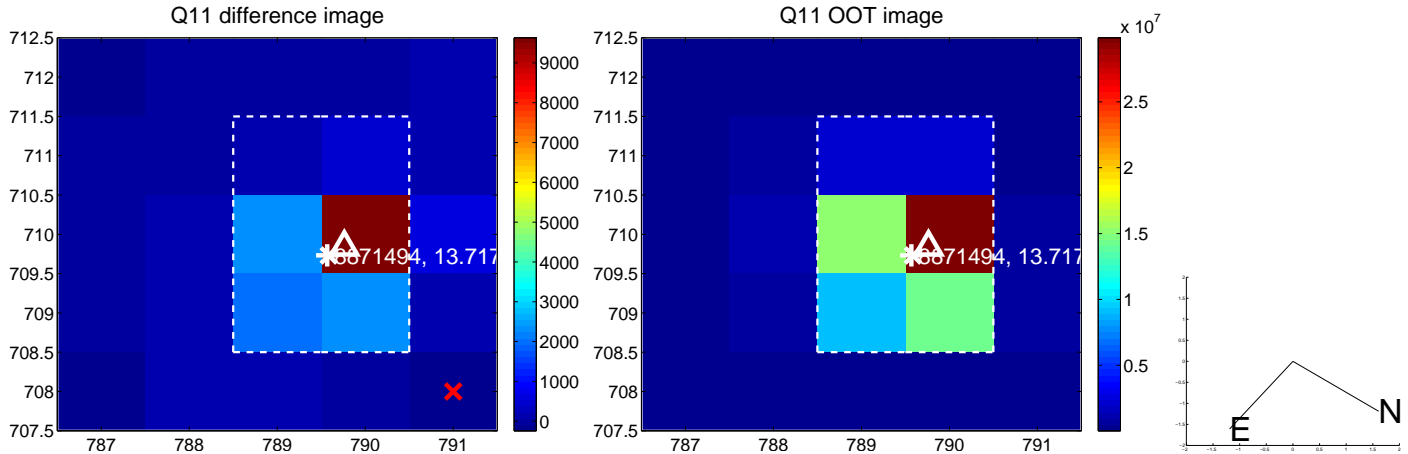
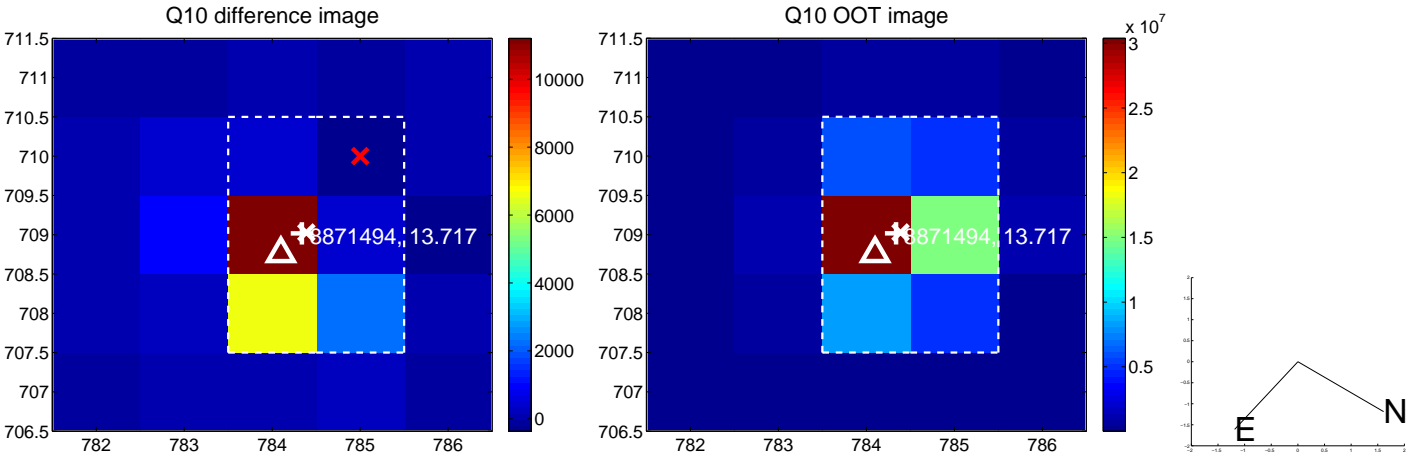
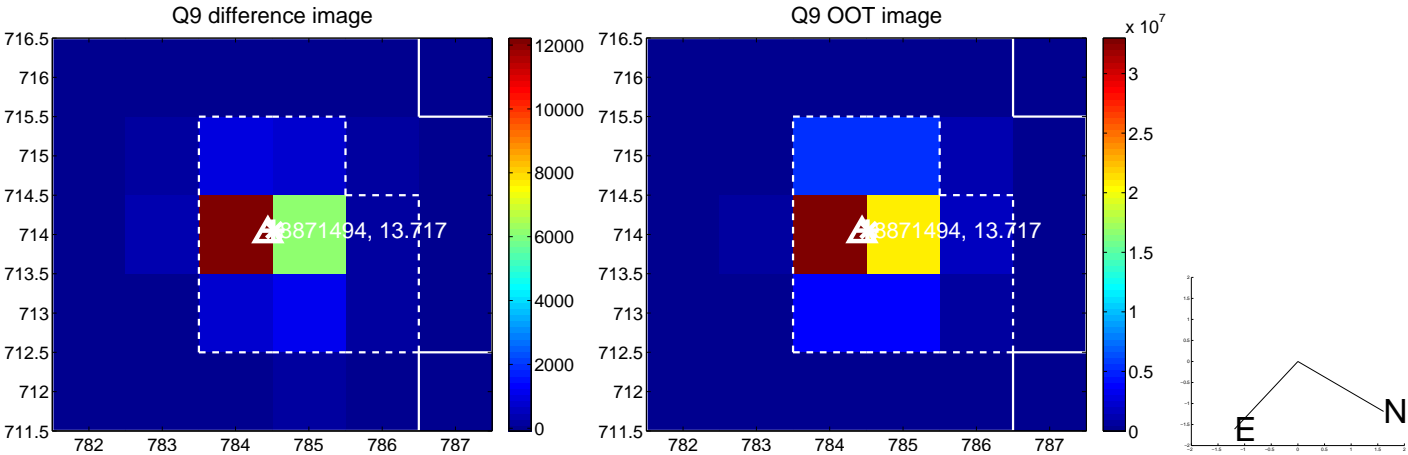
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



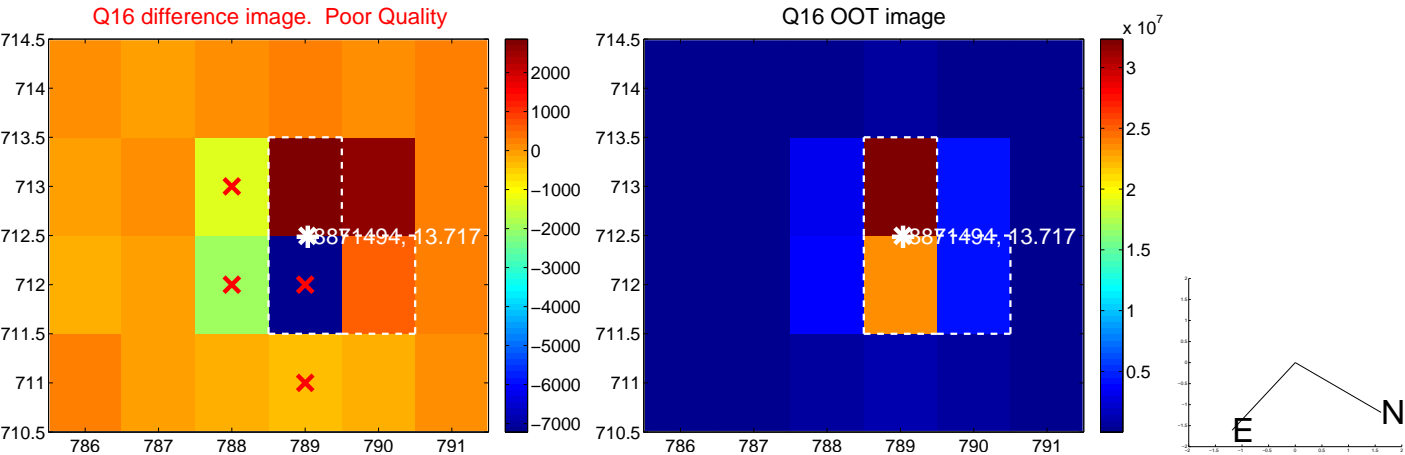
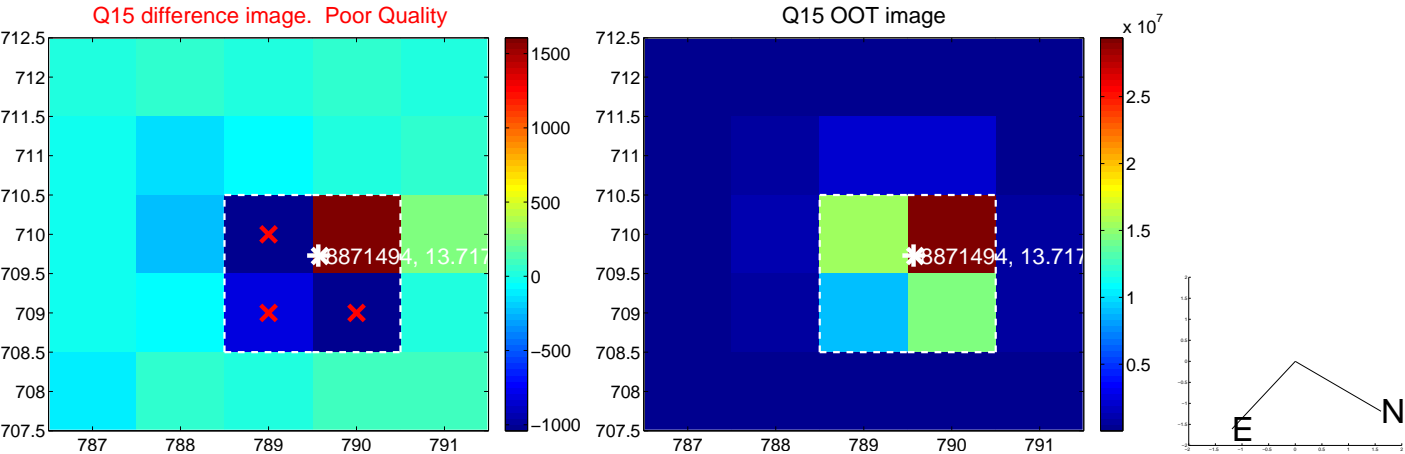
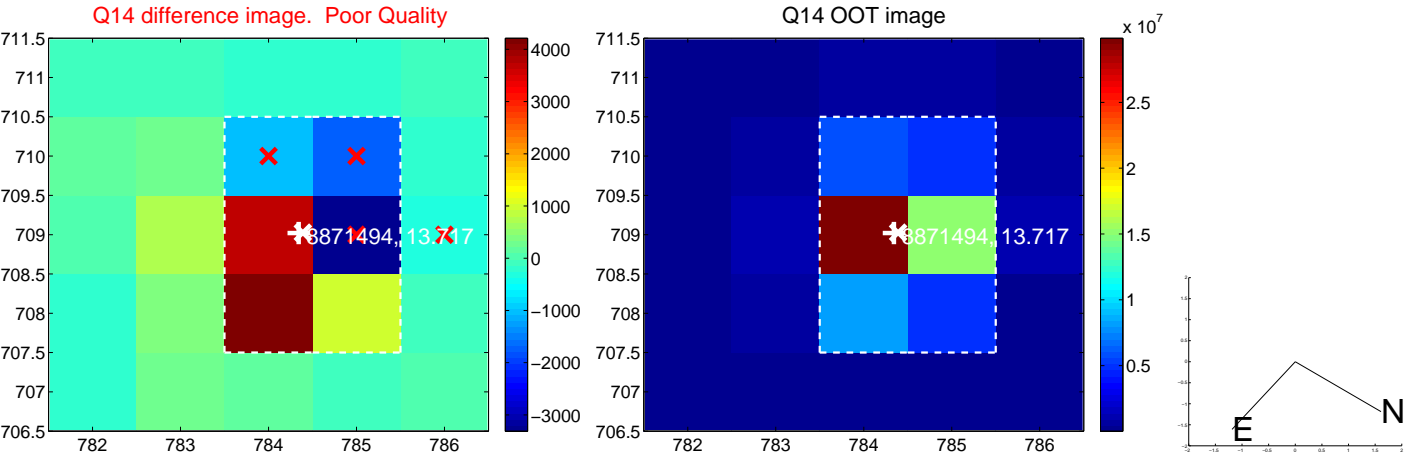
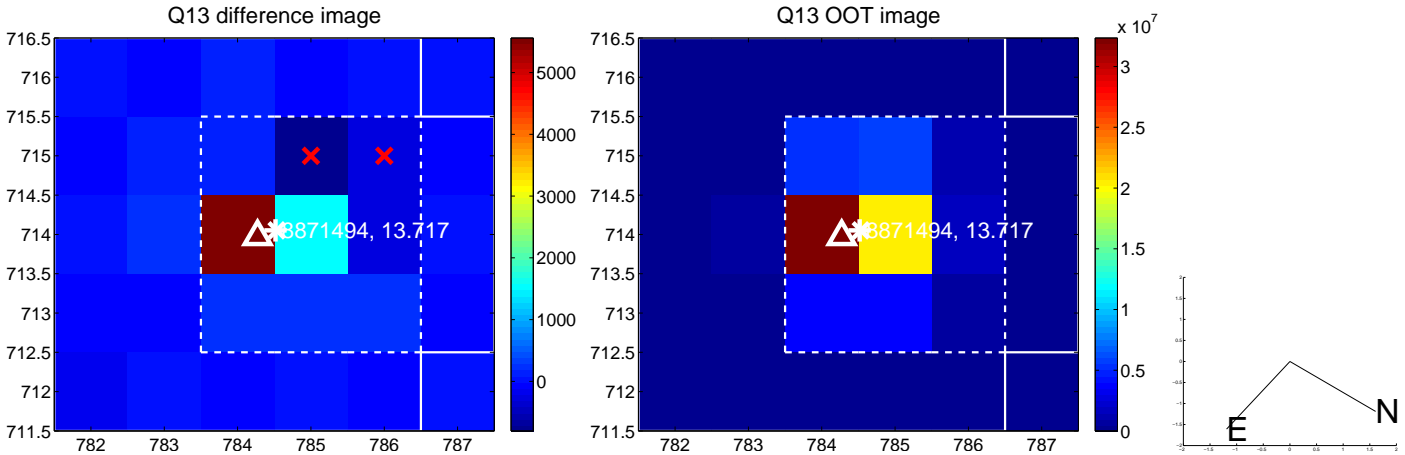
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



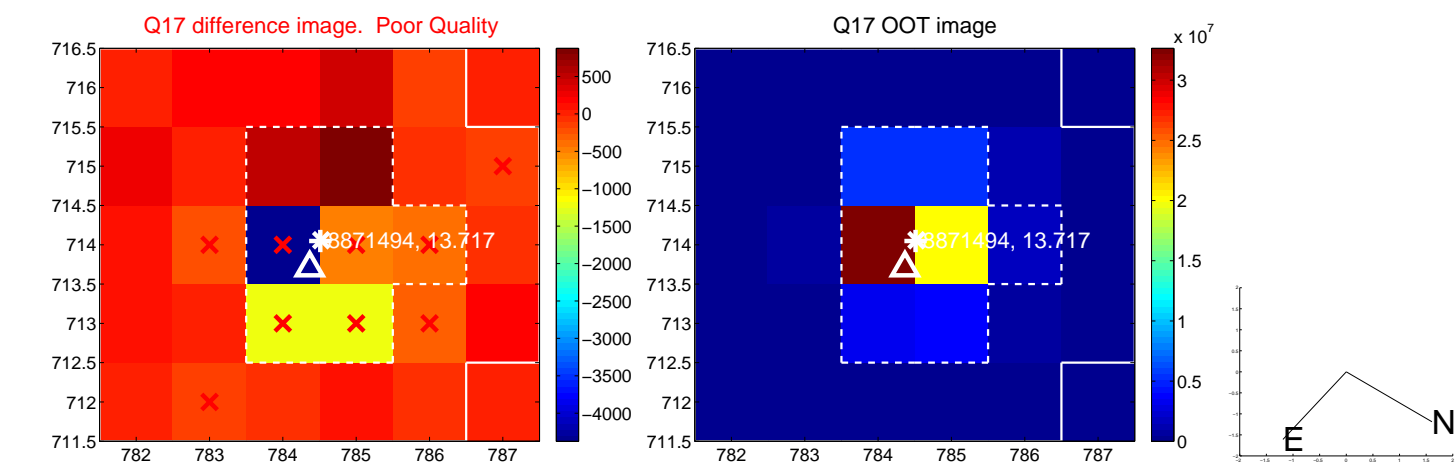
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



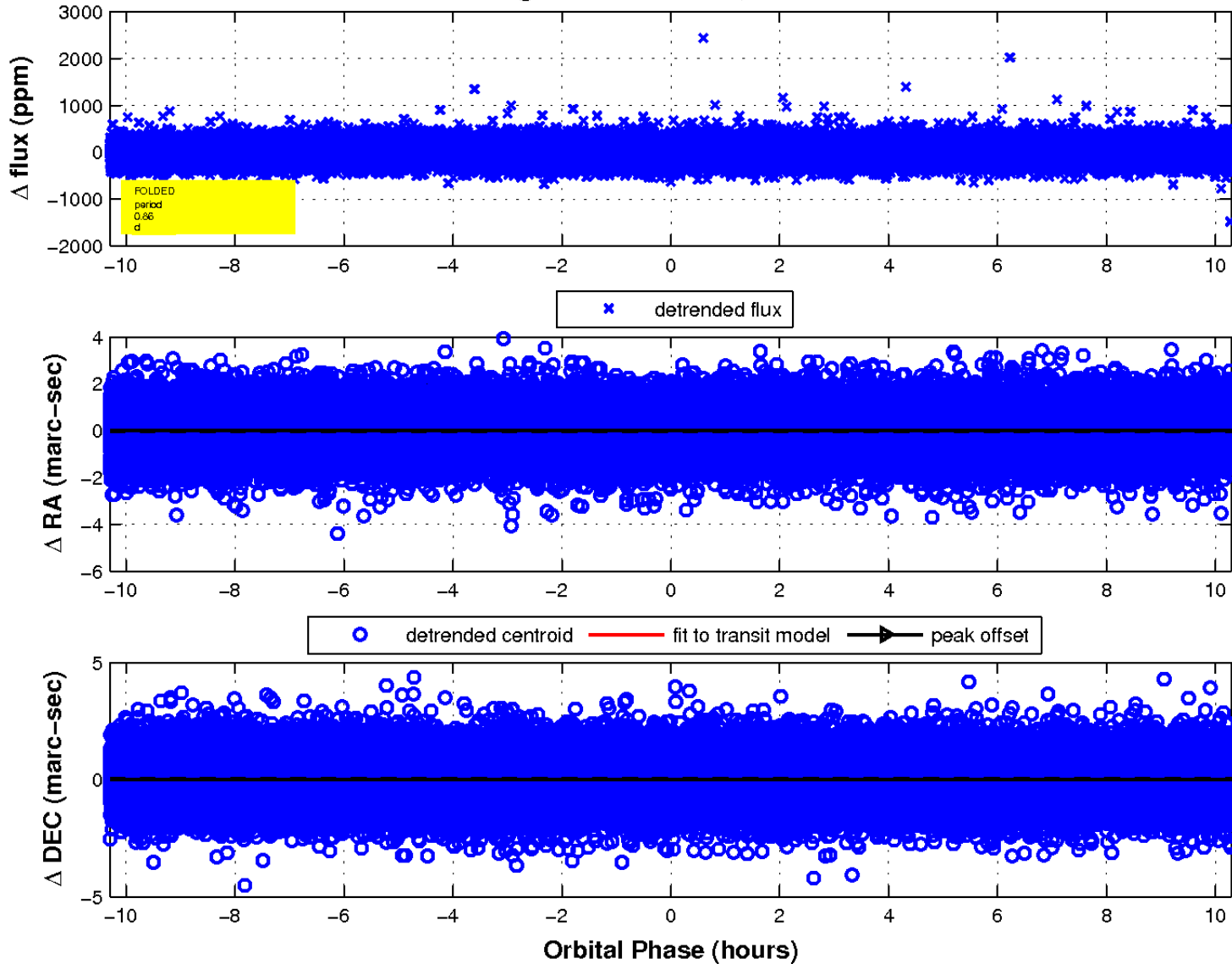
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

