

KIC 011872848

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})
011872848-01	OBS	No	1.458020	131.797761	255.1	6.005	13.4	14.8	2.81	8158	5.90	33196.63
011872848-02	OBS	No	1.457819	132.579717	154.1	7.859	11.0	10.6	2.81	8158	3.53	33202.73

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011872848-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
011872848-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_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.

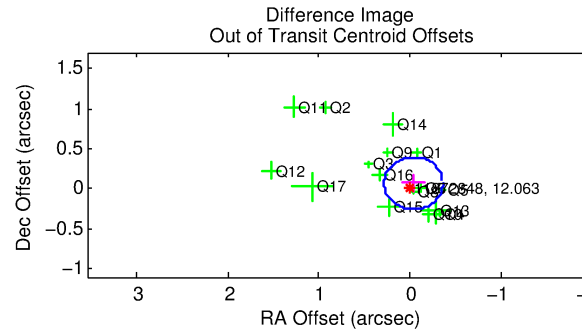
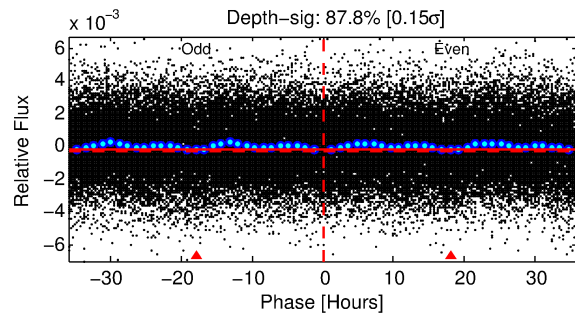
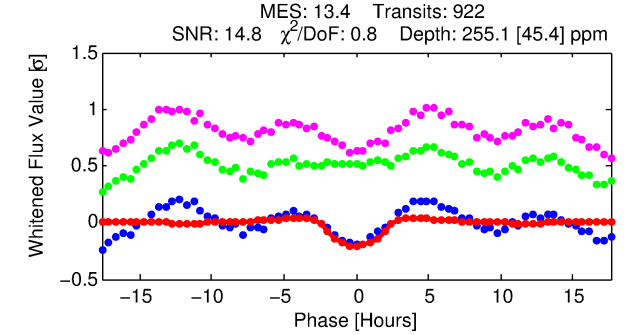
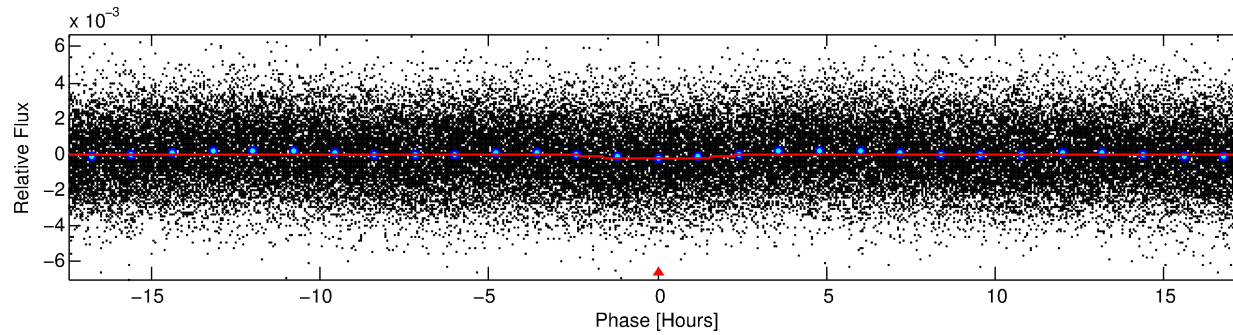
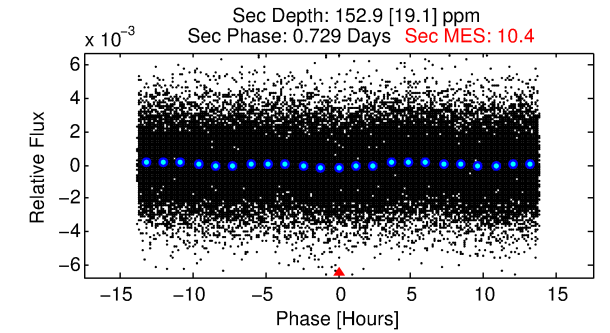
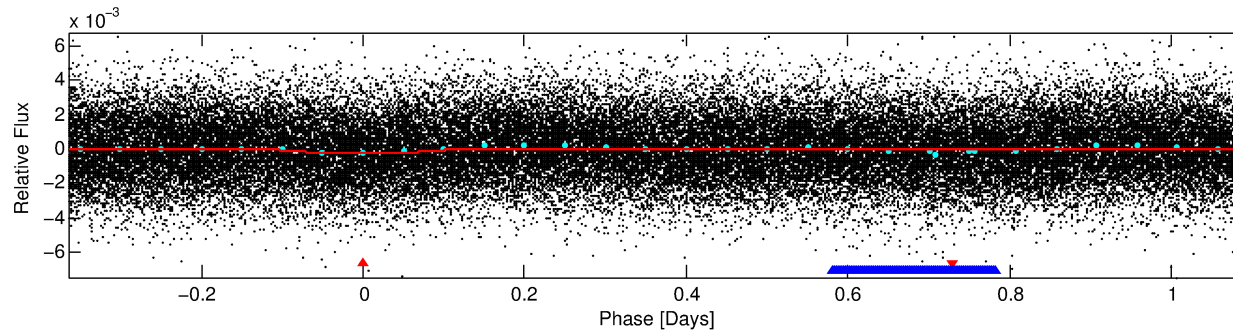
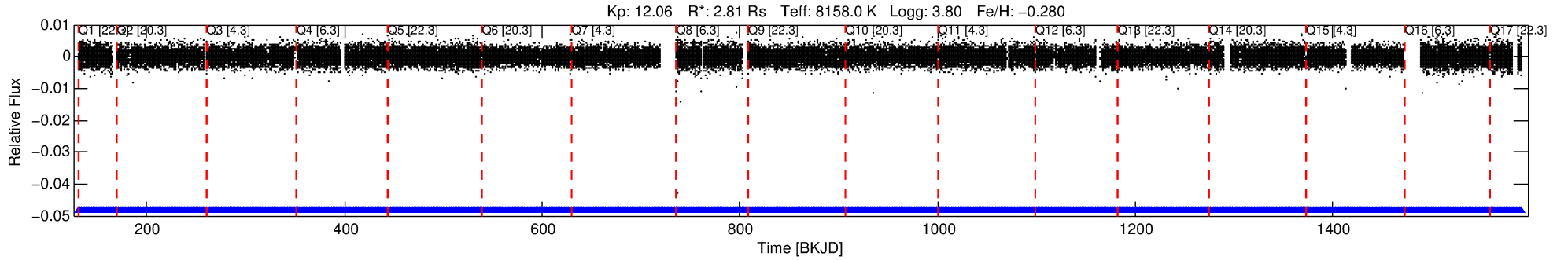
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011872848-01

No Significant Match Found

DV One-Page Summary

KIC: 11872848 Candidate: 1 of 2 Period: 1.458 d



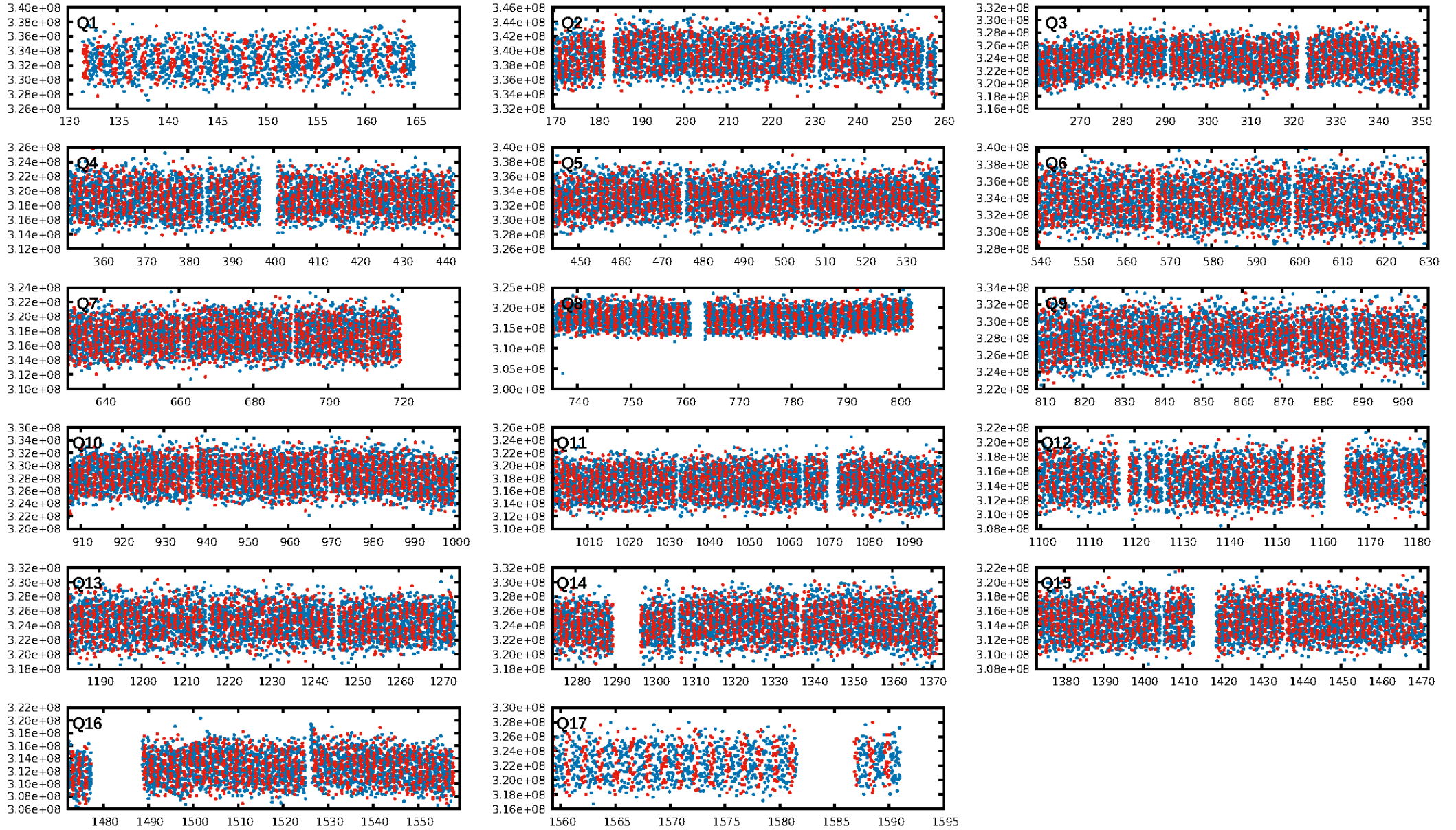
DV Fit Results:

Period = 1.45802 [0.00001] d
Epoch = 131.7978 [0.0067] BKJD
Rp/R* = 0.0192 [0.0024]
a/R* = 1.12 [0.04]
b = 0.98 [0.01]
Seff = 33196.63 [22545.34]
Teff = 3442 [584] K
Rp = 5.90 [2.51] Re
a = 0.0308 [0.0124] AU
Ag = 2.29 [1.63] [0.79σ]
Teffp = 6543 [530] K [3.93σ]

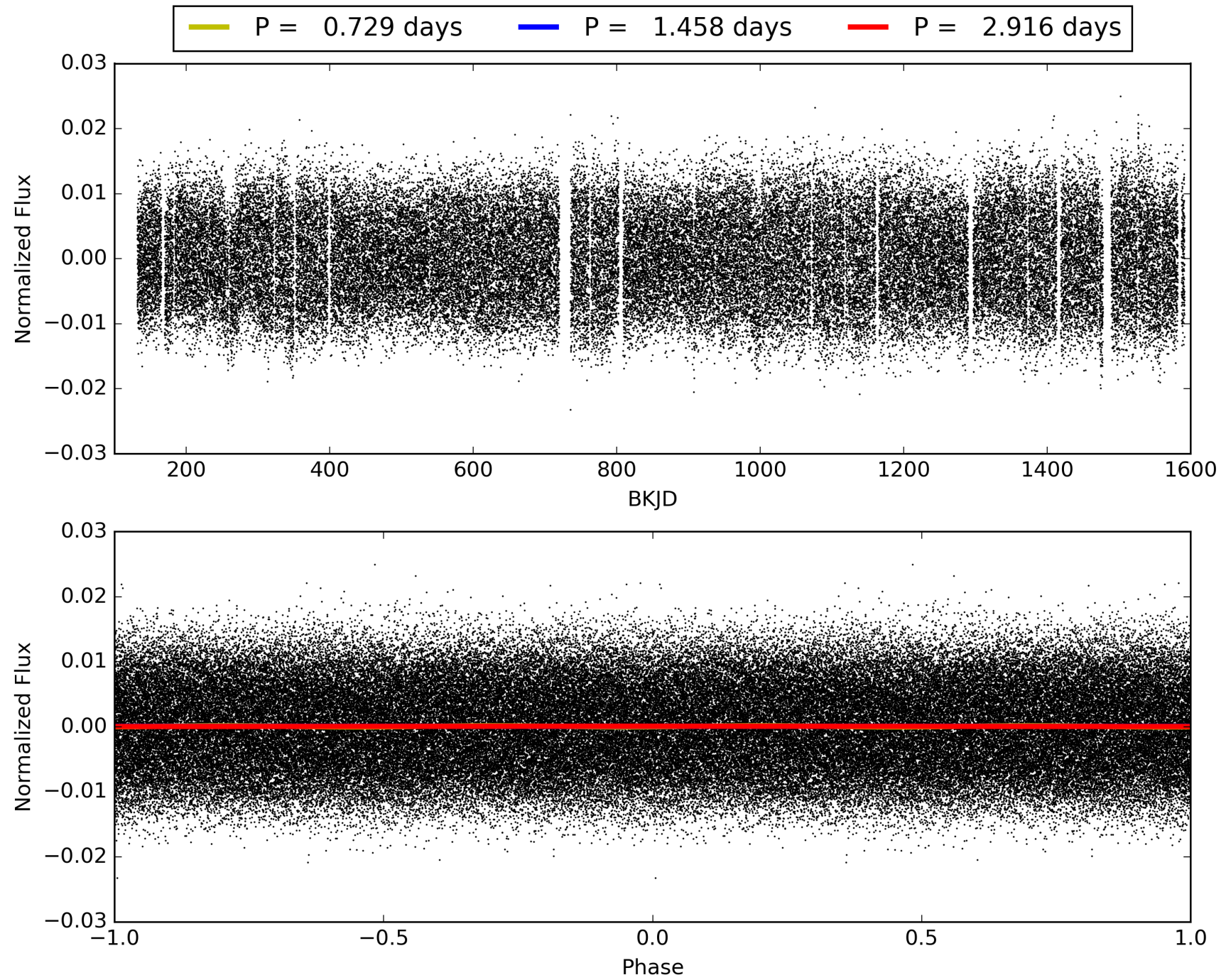
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [880/880]
GhostDiagnostic-chr: 0.9897
Centroid-sig: 41.5%
Centroid-so: 0.091 arcsec [1.25σ]
OotOffset-rm: 0.079 arcsec [0.73σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.141 arcsec [1.26σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 0.59 [10/17]

TCE 011872848-01, PDC Light Curves

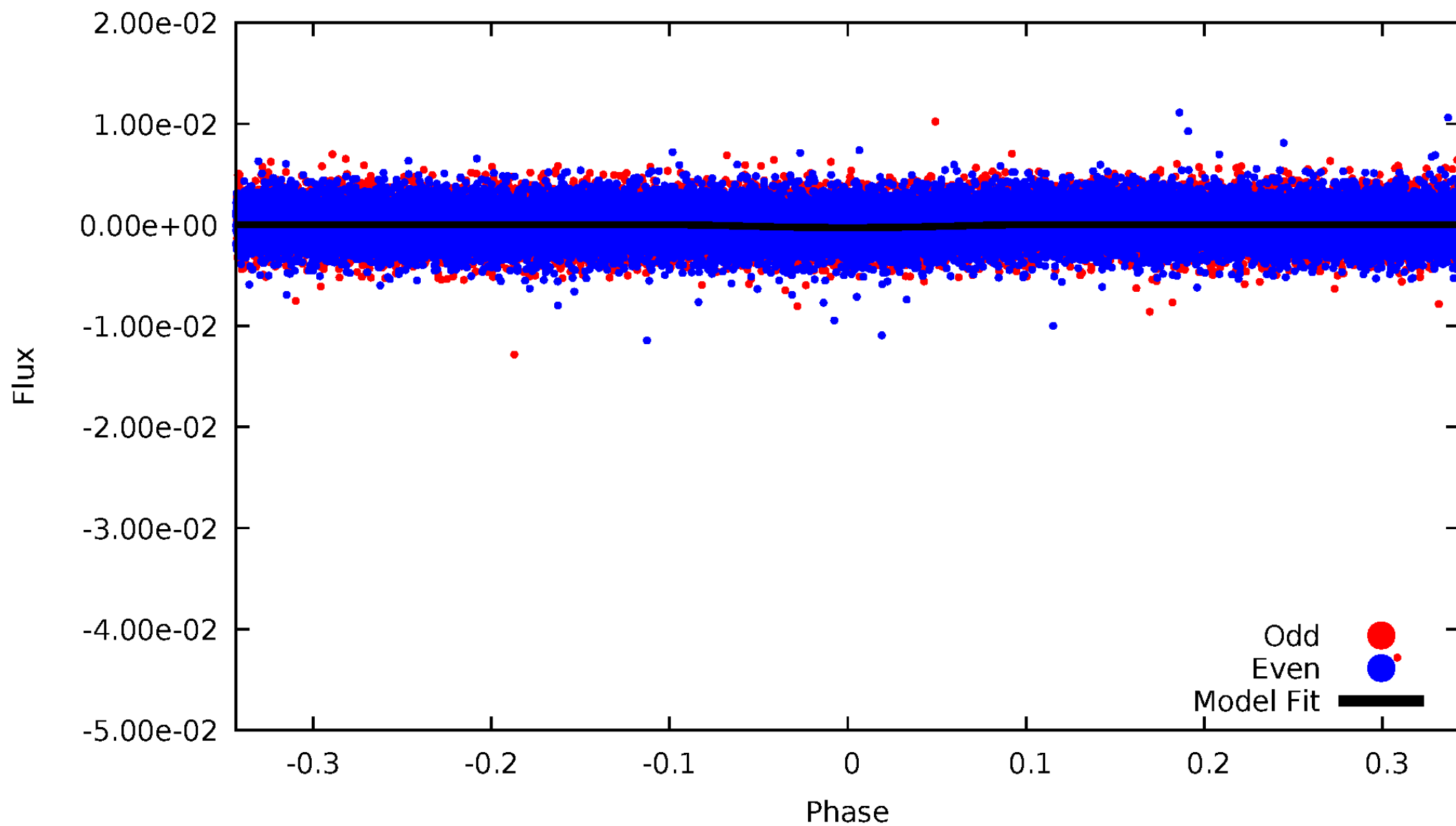


TCE 011872848-01



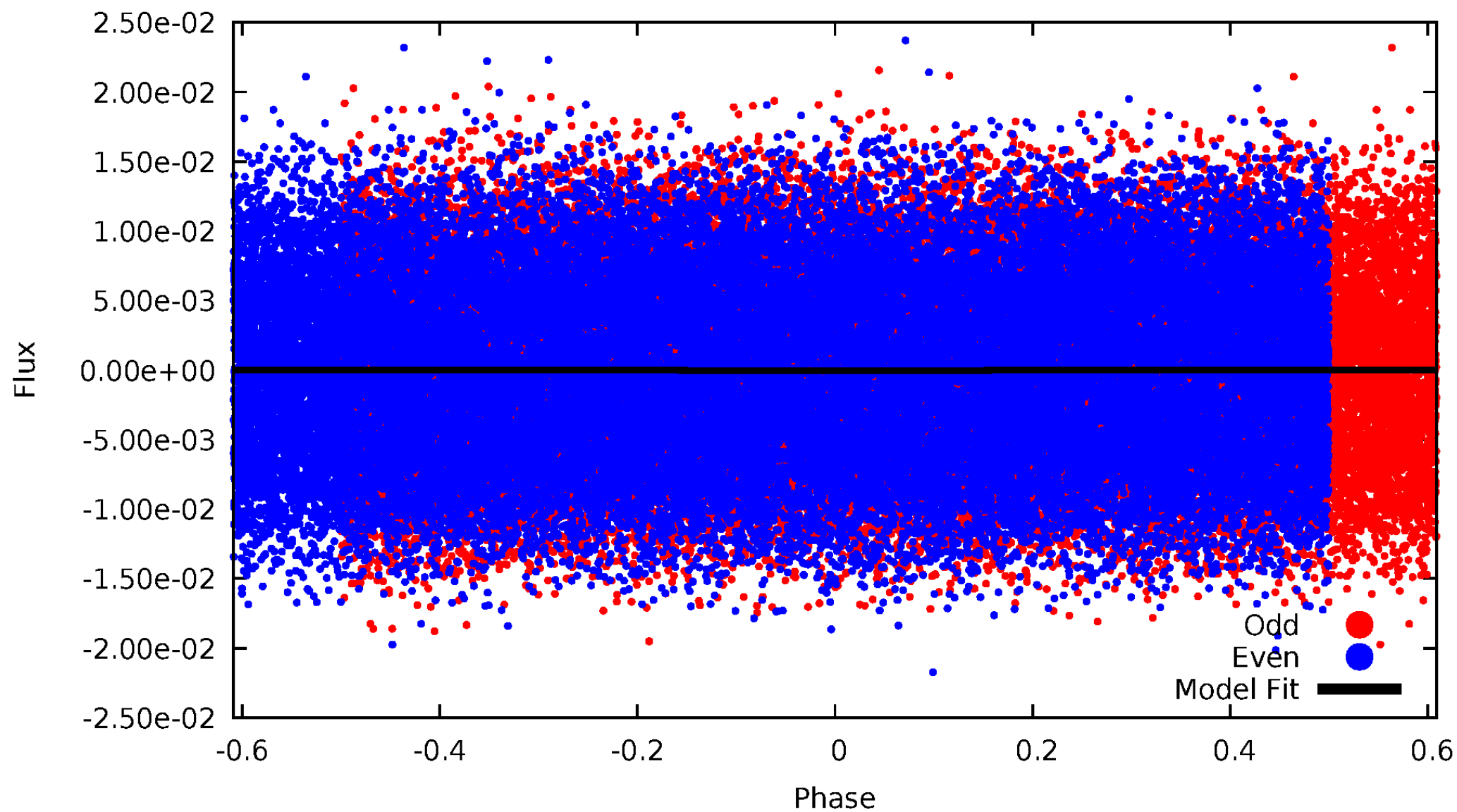
DV Odd/Even

TCE 011872848-01



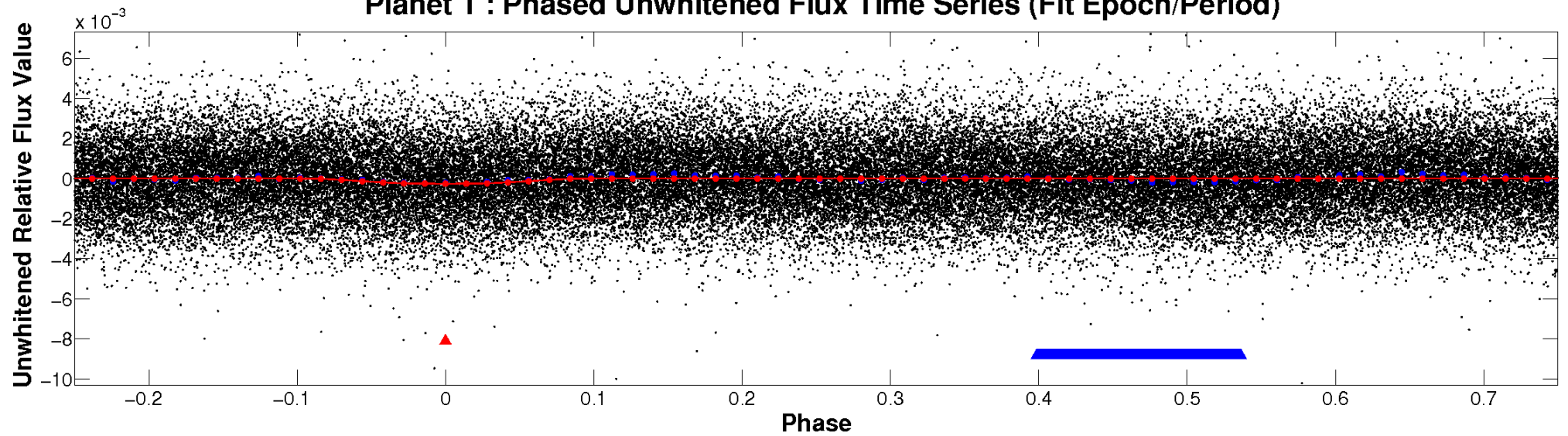
ALT Odd/Even

TCE 011872848-01

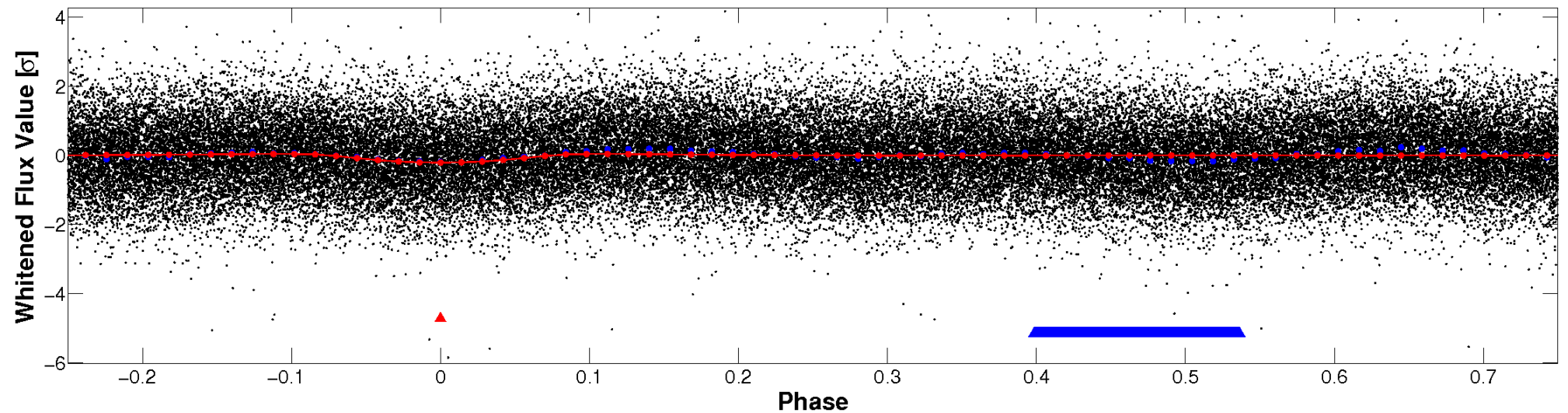


Non-Whitened Vs. Whitened Light Curve

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

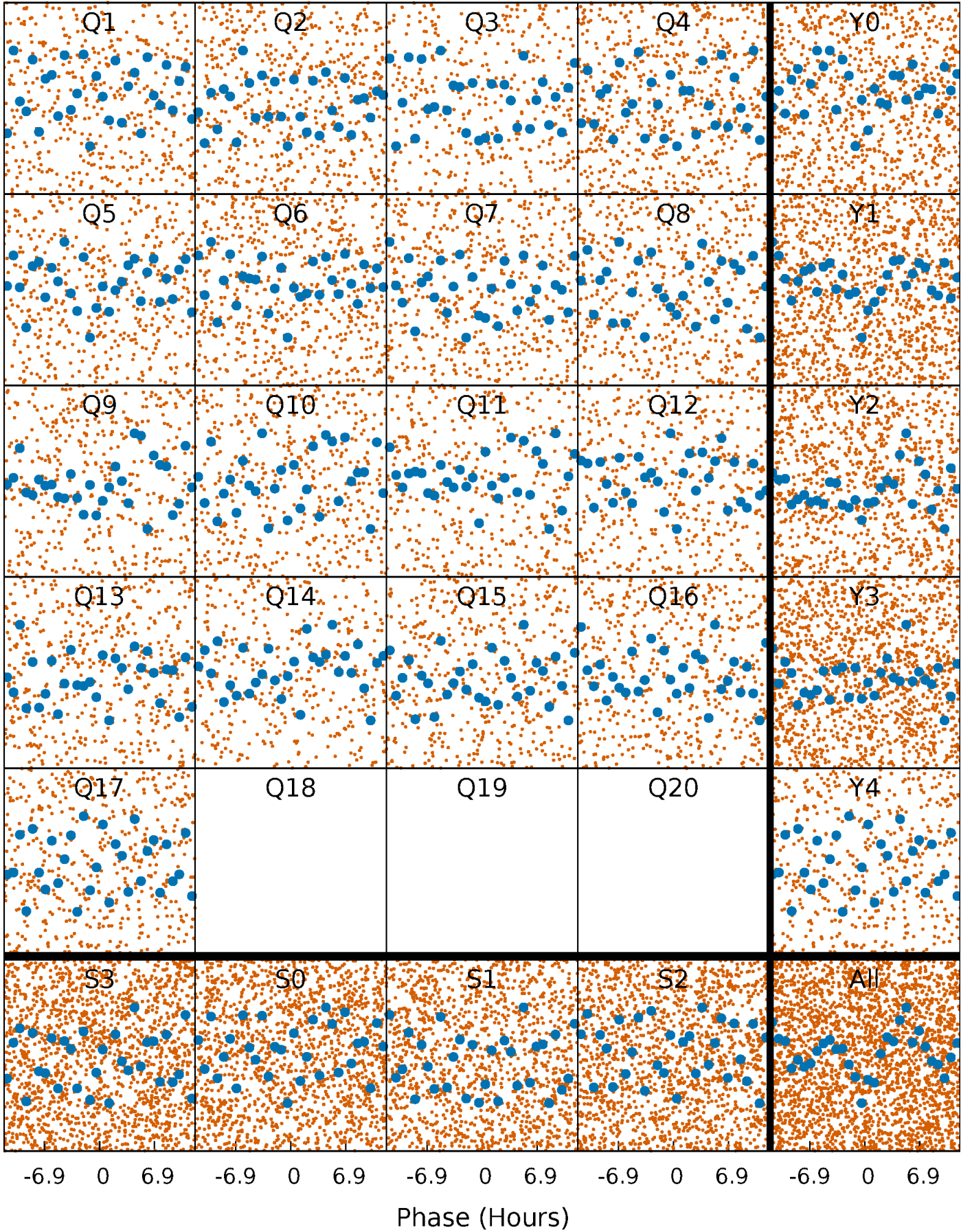


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



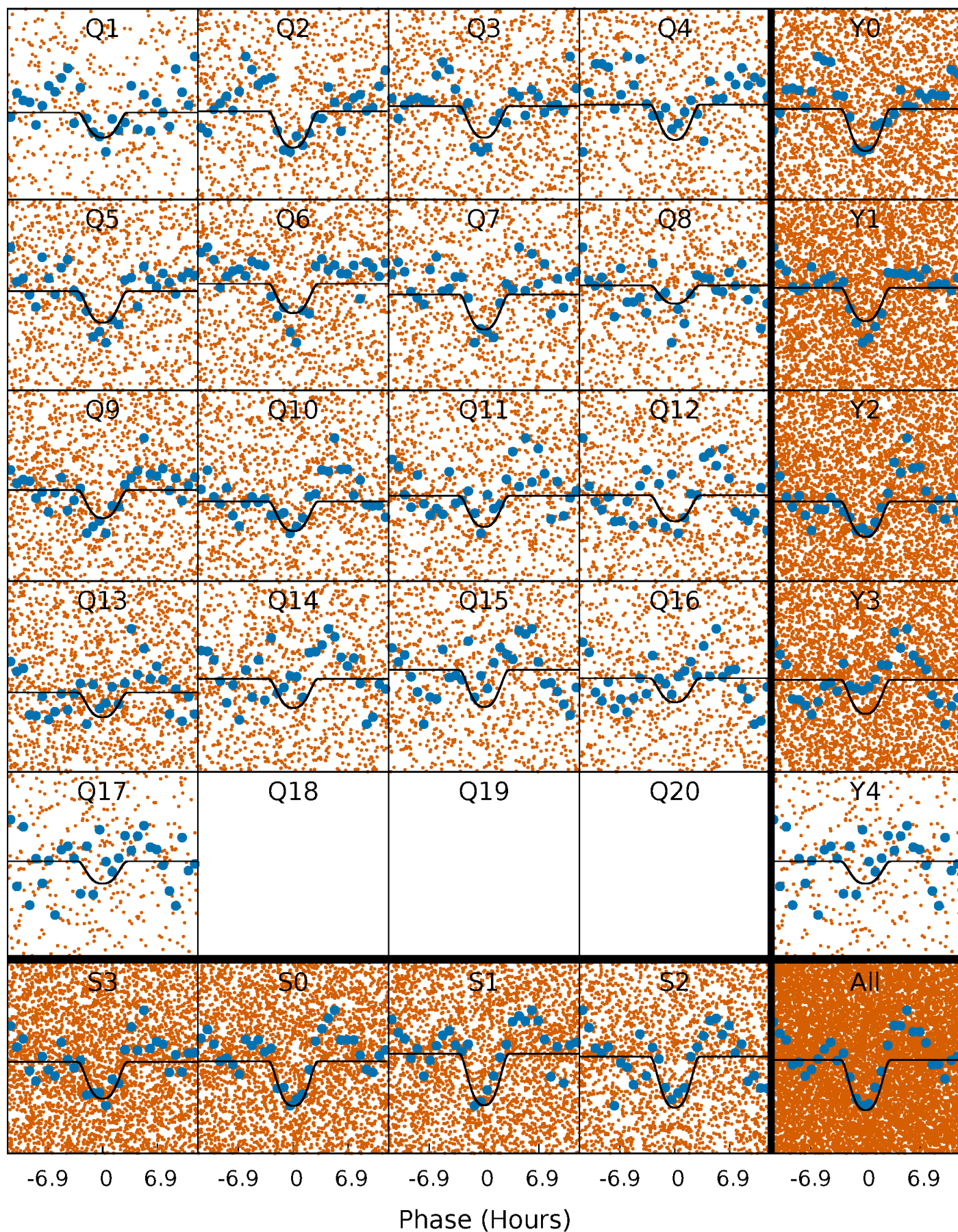
PDC Quarter-Phased Transit Curves

TCE 011872848-01 P= 1.458020 Days $T_0=131.797761$ (BKJD)



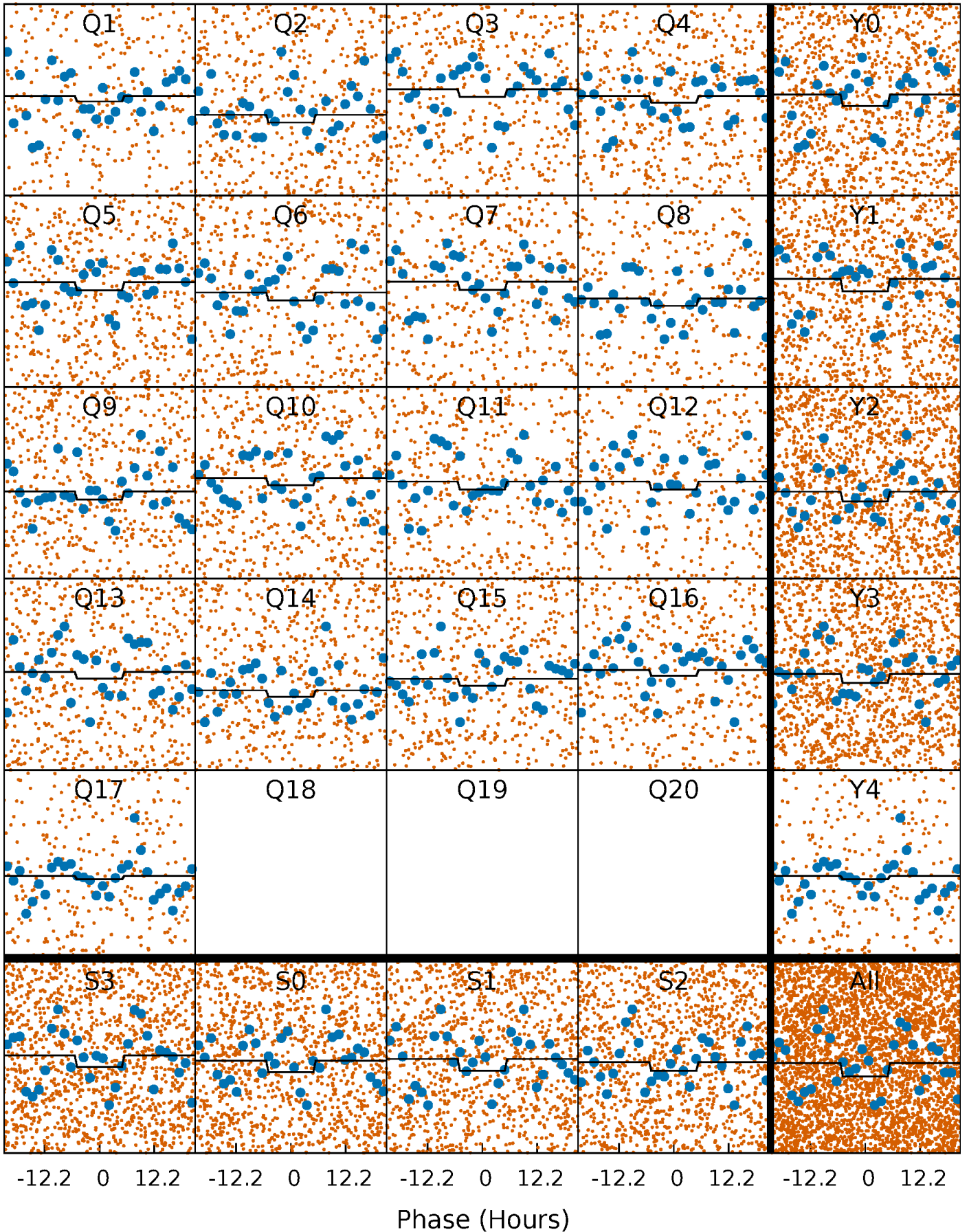
DV Quarter-Phased Transit Curves

TCE 011872848-01 P= 1.458020 Days $T_0=131.797761$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

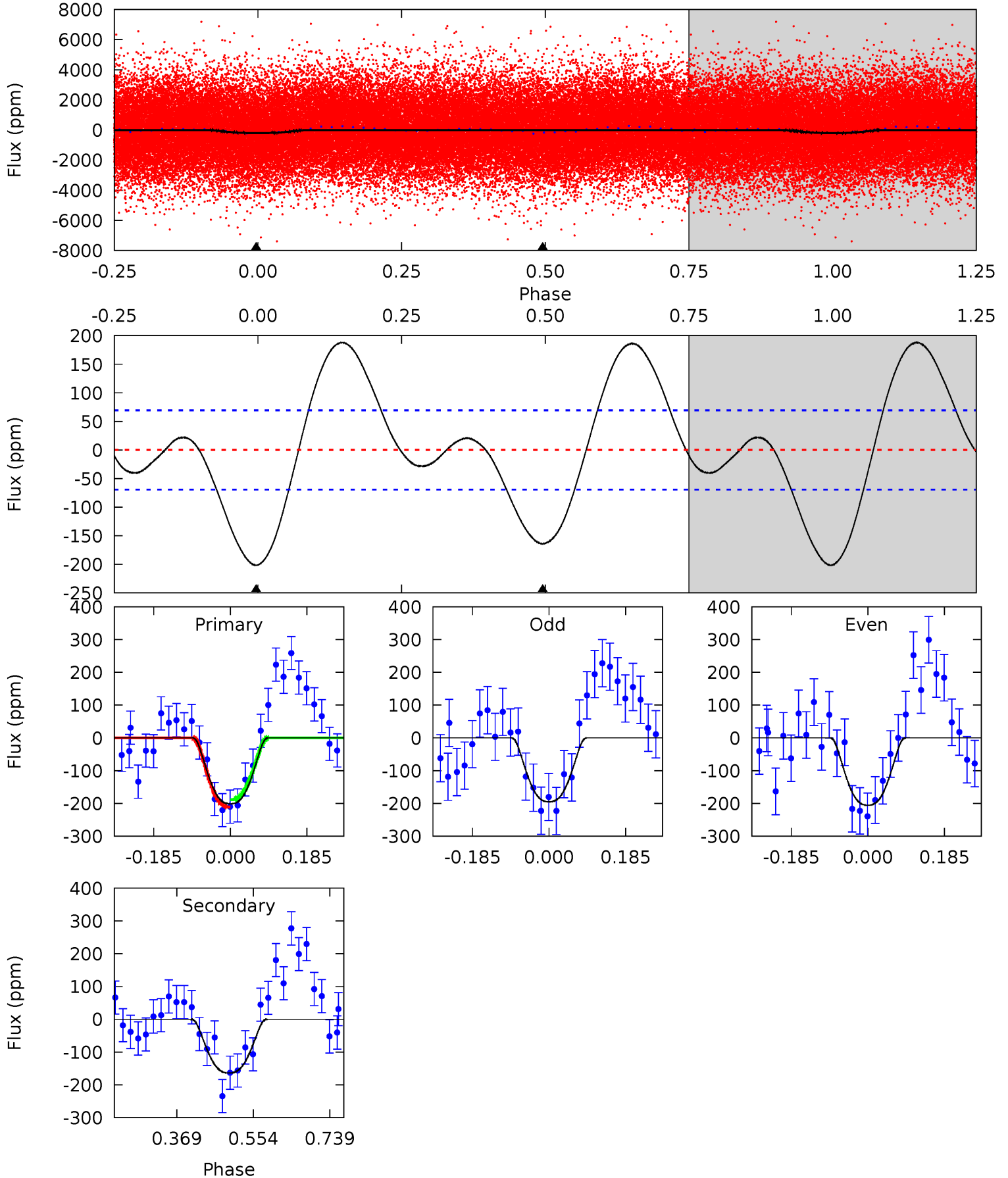
TCE 011872848-01 P= 1.458058 Days $T_0=131.644605$ (BKJD)



DV Model-Shift Uniqueness Test

011872848-01, P = 1.458020 Days, E = 130.339741 Days

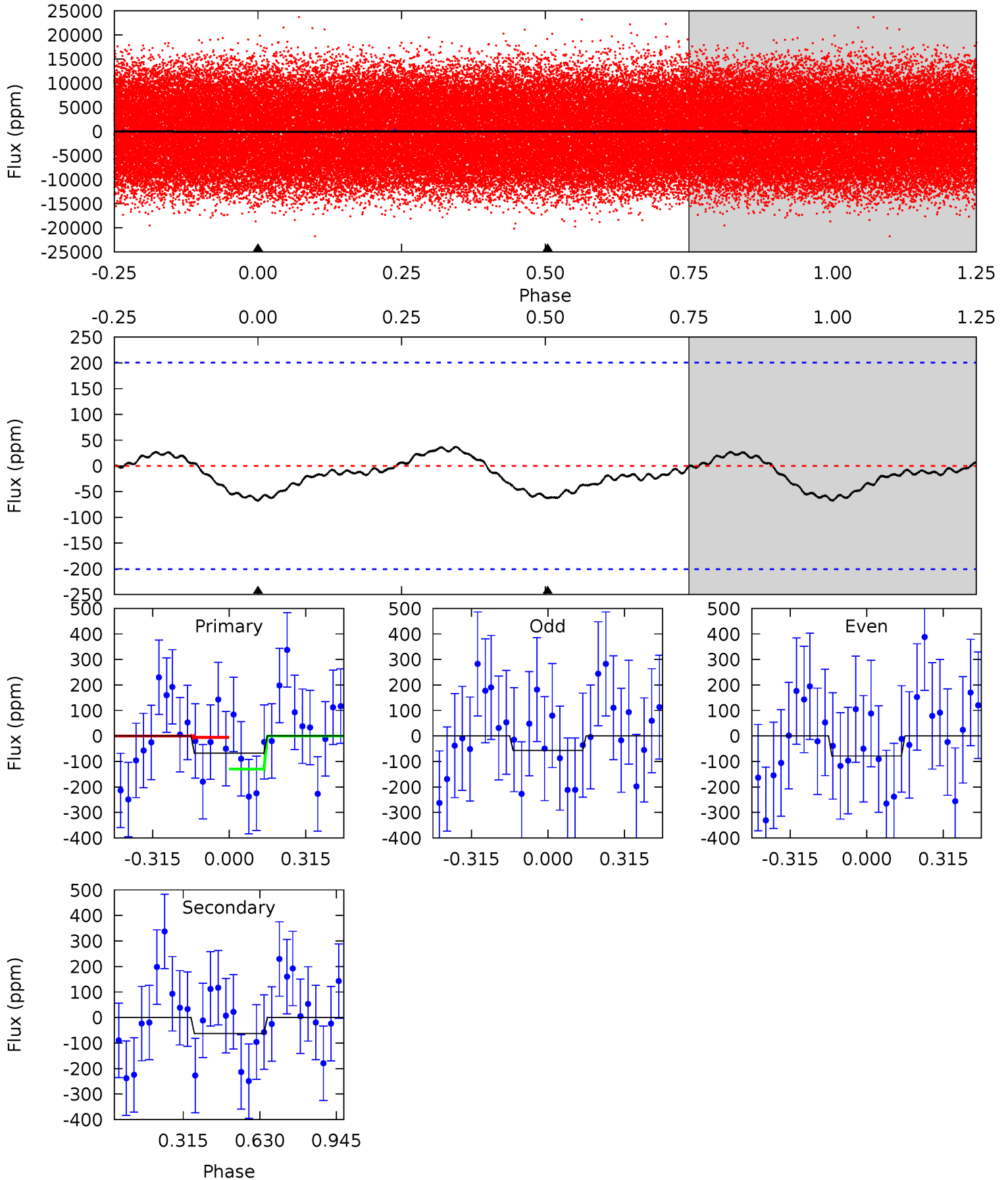
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.9	10.5	0	0	4.43	1.33	3.89	12.9	12.9	10.5	10.5	0.33	1.09	0.48	0.73



Alt Model-Shift Uniqueness Test

011872848-01, P = 1.458058 Days, E = 130.186547 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.45	1.35	0	0	4.32	1.00	0.20	1.45	1.45	1.35	1.35	0.24	1.25	0.35	1.33



Stellar Parameters For KIC 011872848

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8158^{+226}_{-340}	$3.801^{+0.391}_{-0.069}$	$-0.280^{+0.200}_{-0.300}$	$2.814^{+0.304}_{-1.142}$	$1.826^{+0.093}_{-0.373}$	$0.116^{+0.371}_{-0.026}$
	+3%/-4%	+10%/-2%	+71%/-107%	+11%/-41%	+5%/-20%	+322%/-22%
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 011872848-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-164 ± 16	$5.37^{+1.17}_{-1.30}$	4635^{+318}_{-498}	6272^{+563}_{-489}	$2.949^{+1.926}_{-0.979}$
Alt.	-63 ± 46	$2.24^{+0.82}_{-0.77}$	4652^{+294}_{-488}	7879^{+2761}_{-2727}	$6.405^{+9.265}_{-5.028}$

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 $A_{obs} \gg 1.0$

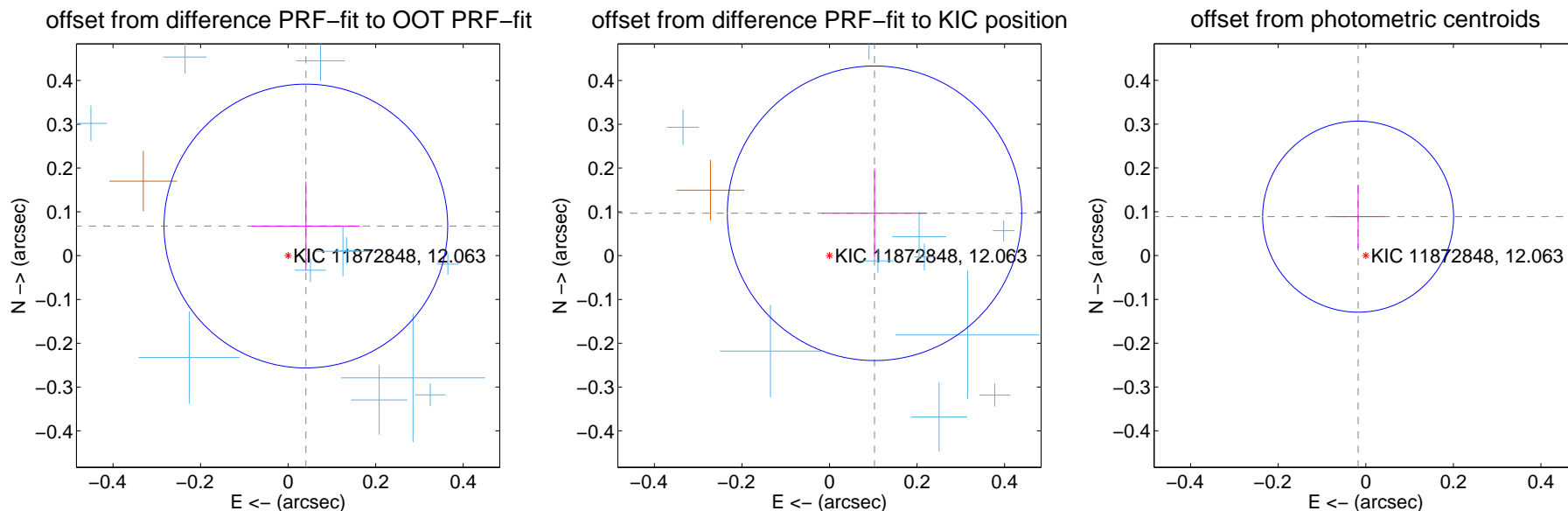
DV Centroid Data

Supplemental centroid analysis for 011872848-01. Kepler magnitude: 12.06. Transit SNR 14.77

There are 15 quarters with good PRF difference image offsets

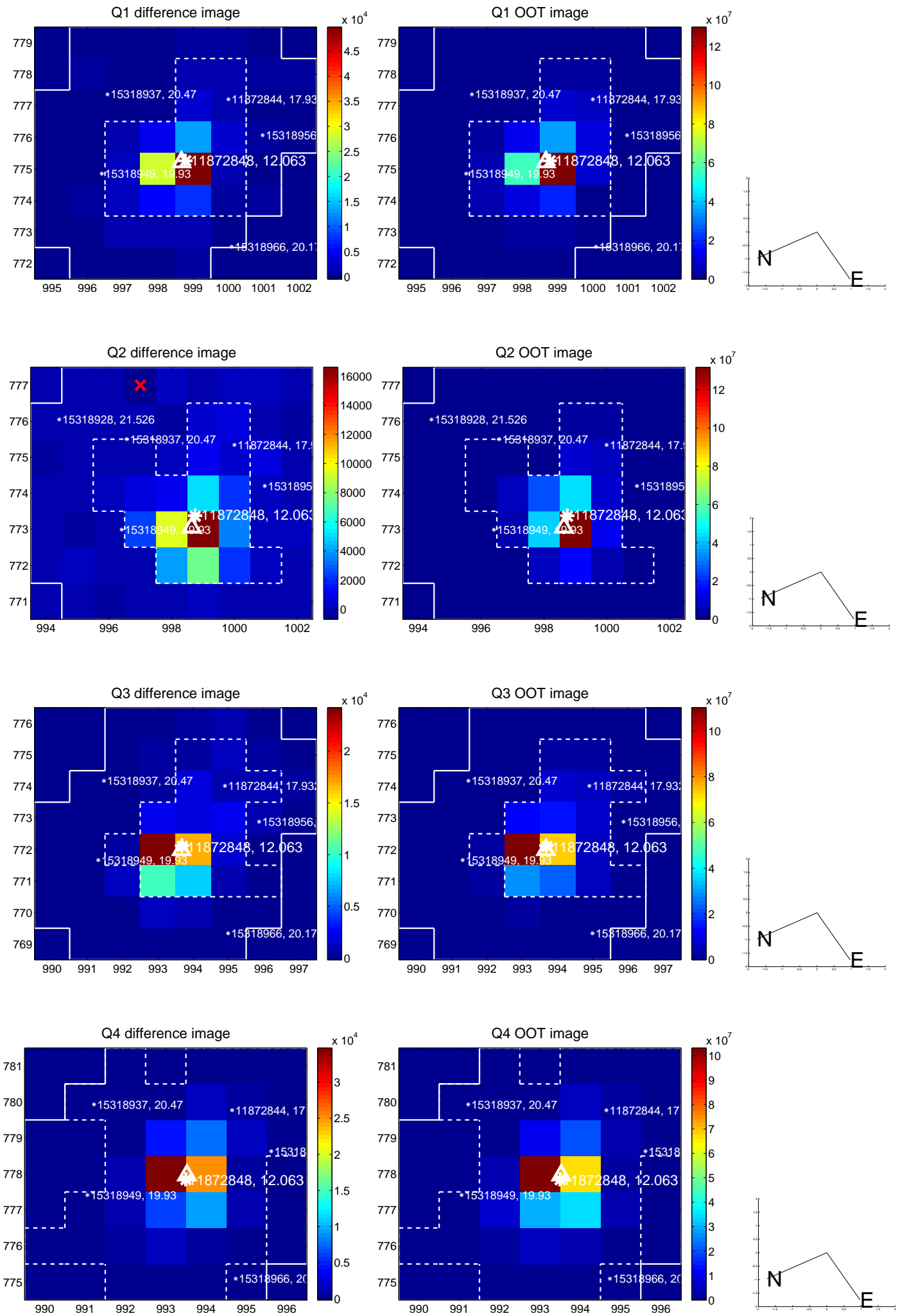
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.079 ± 0.108	0.73	-0.041 ± 0.123	0.068 ± 0.102
PRF-fit source offset from KIC position	0.141 ± 0.112	1.26	-0.103 ± 0.120	0.097 ± 0.102
photometric centroid source offset	0.09 ± 0.07	1.25	0.02 ± 0.06	0.09 ± 0.07

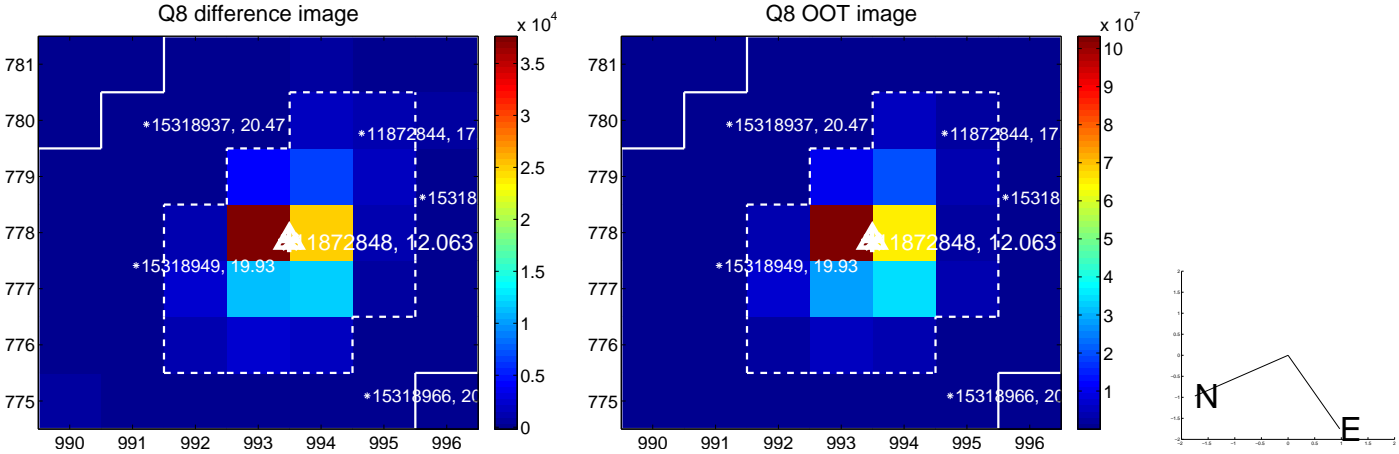
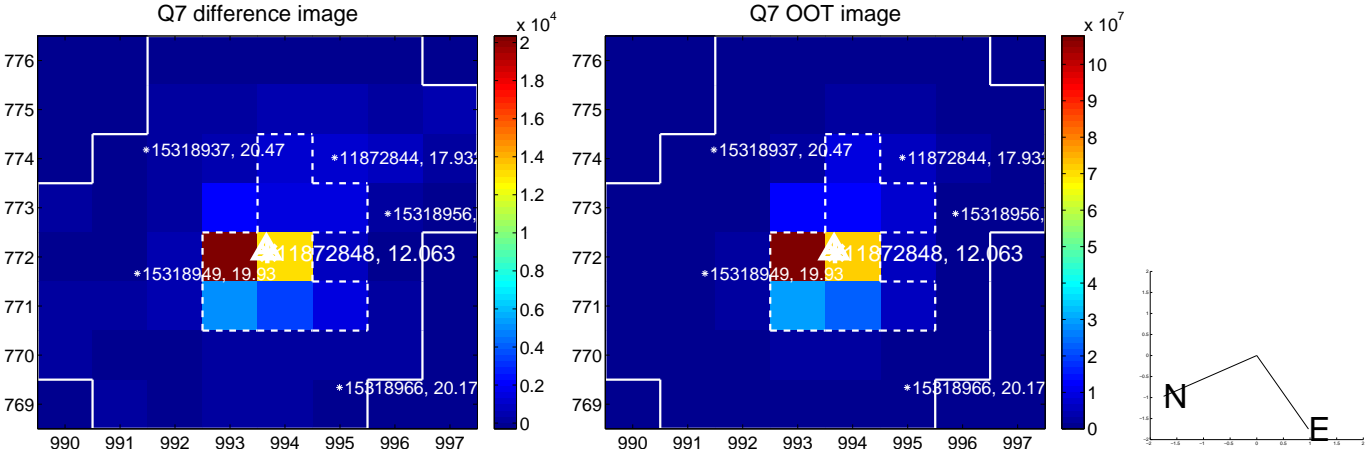
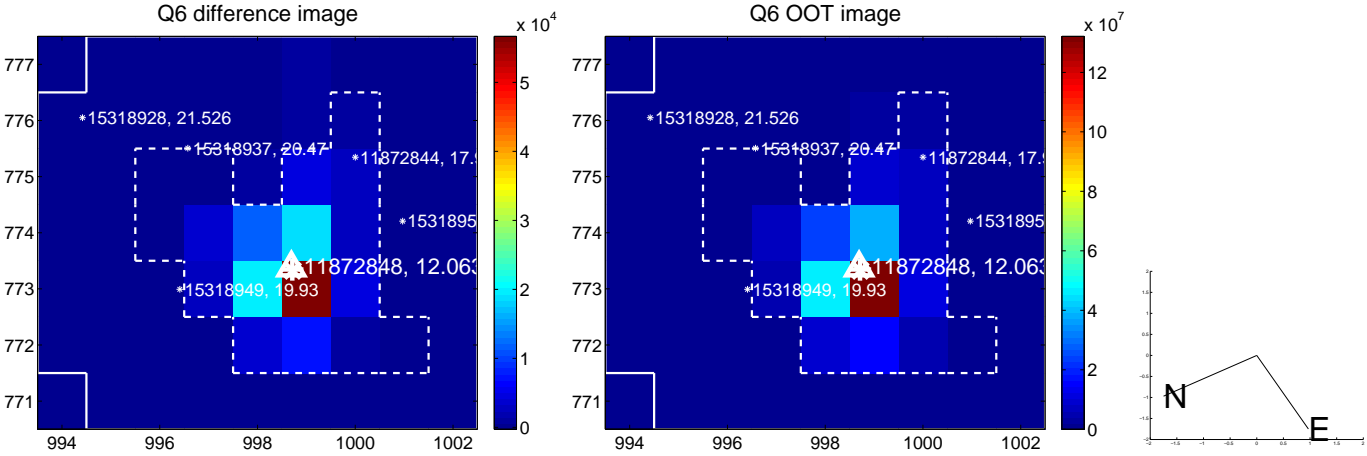
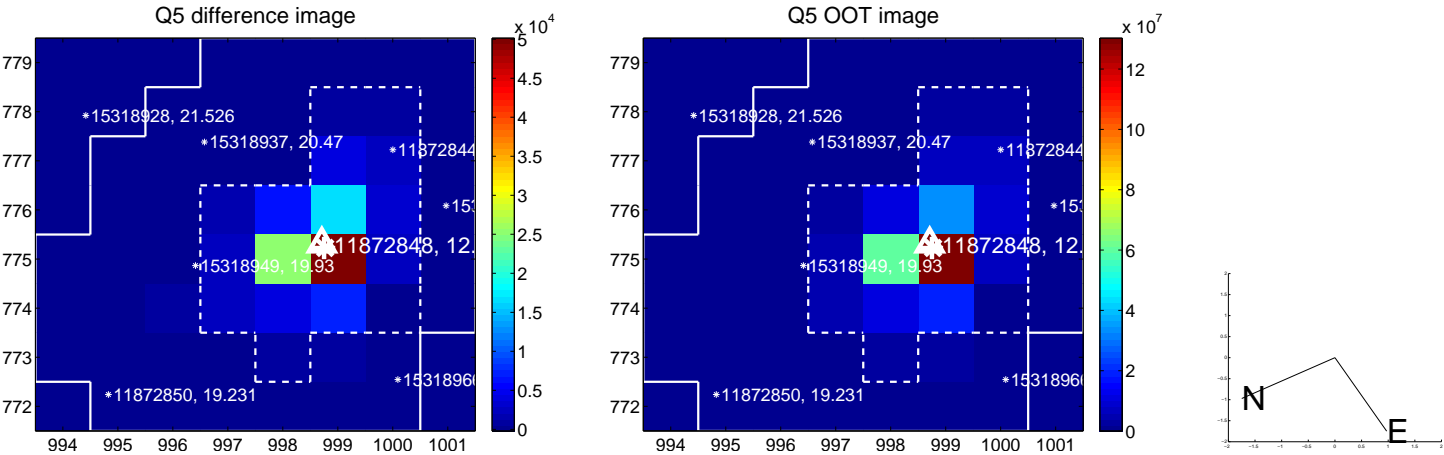


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

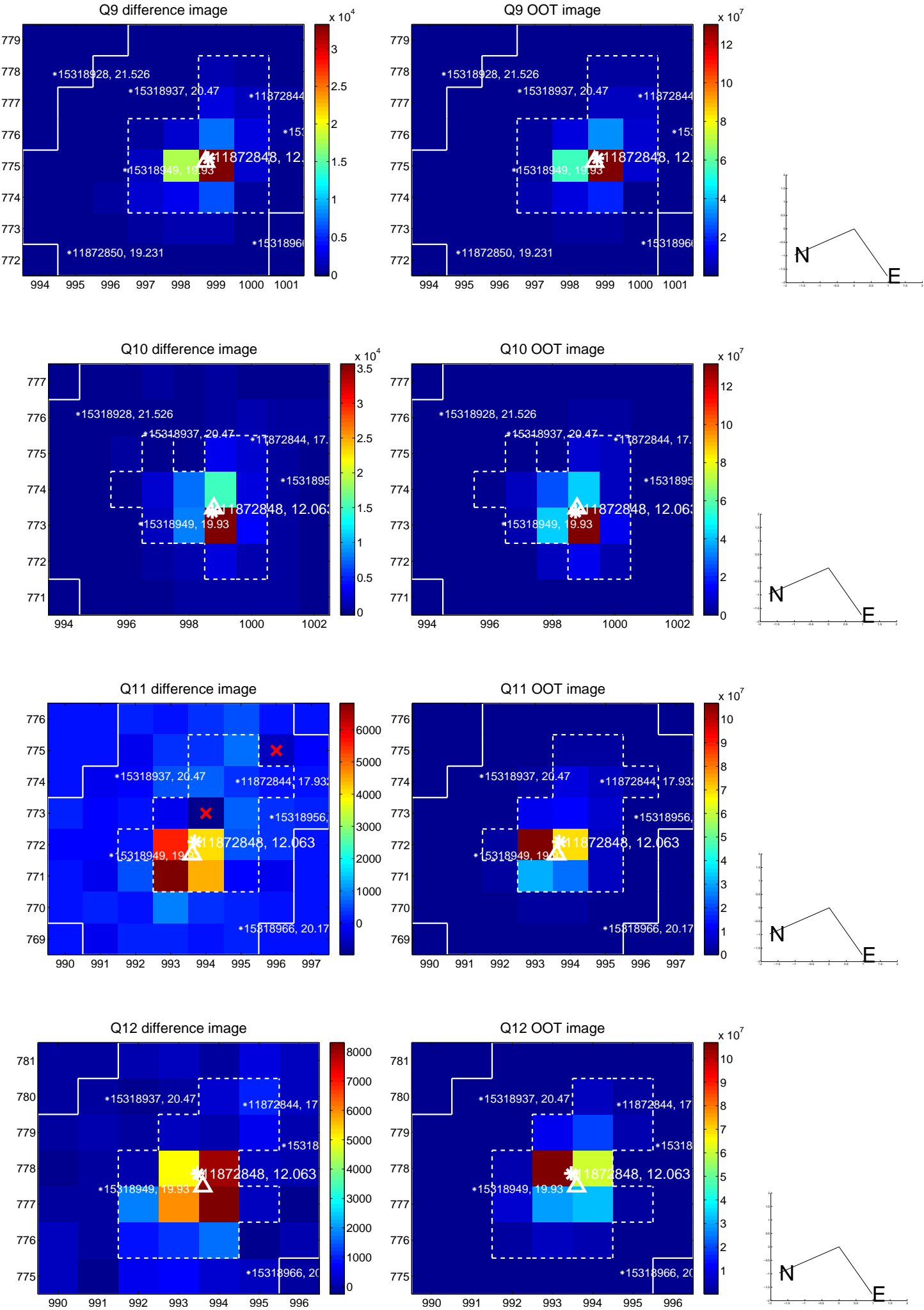
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



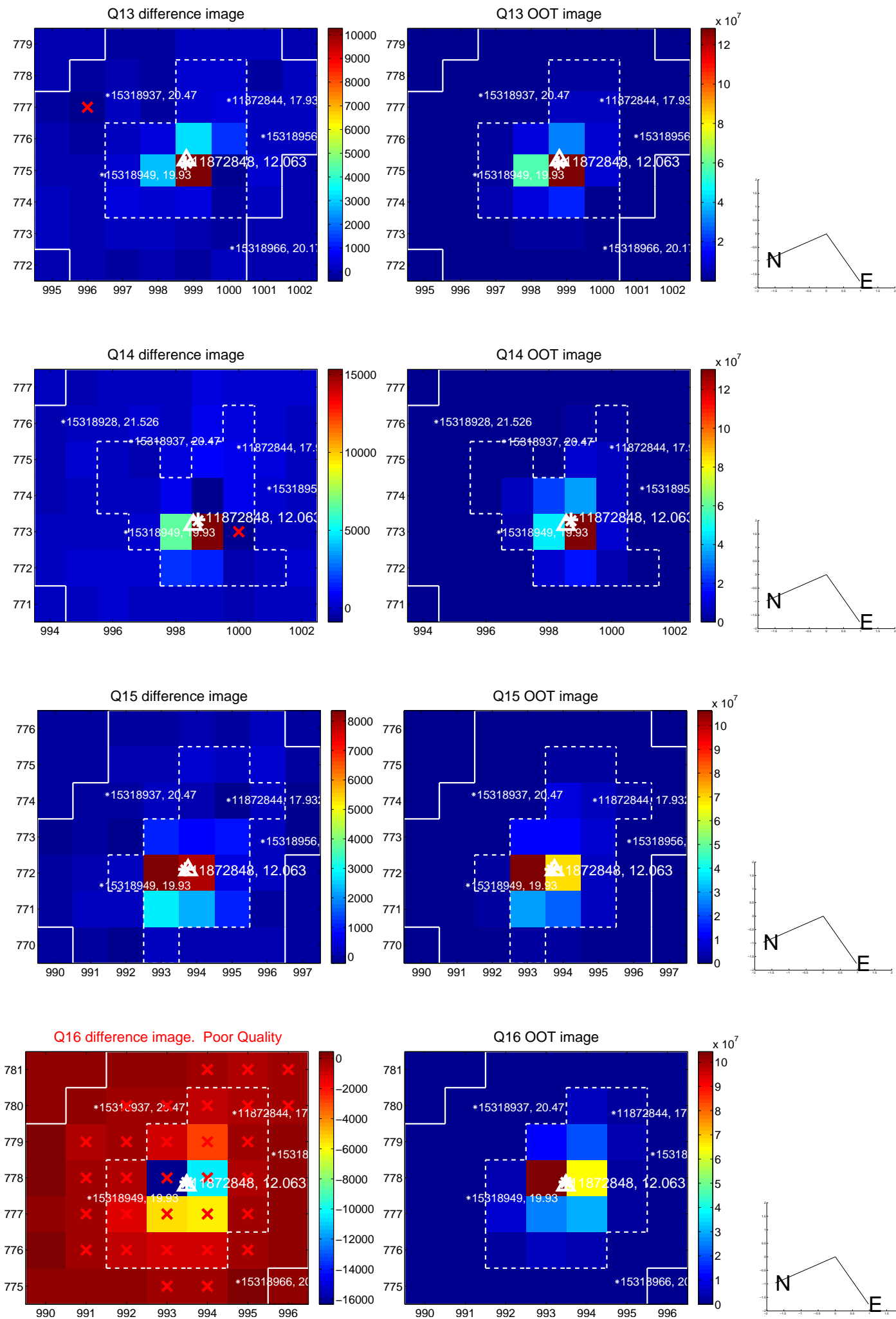
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



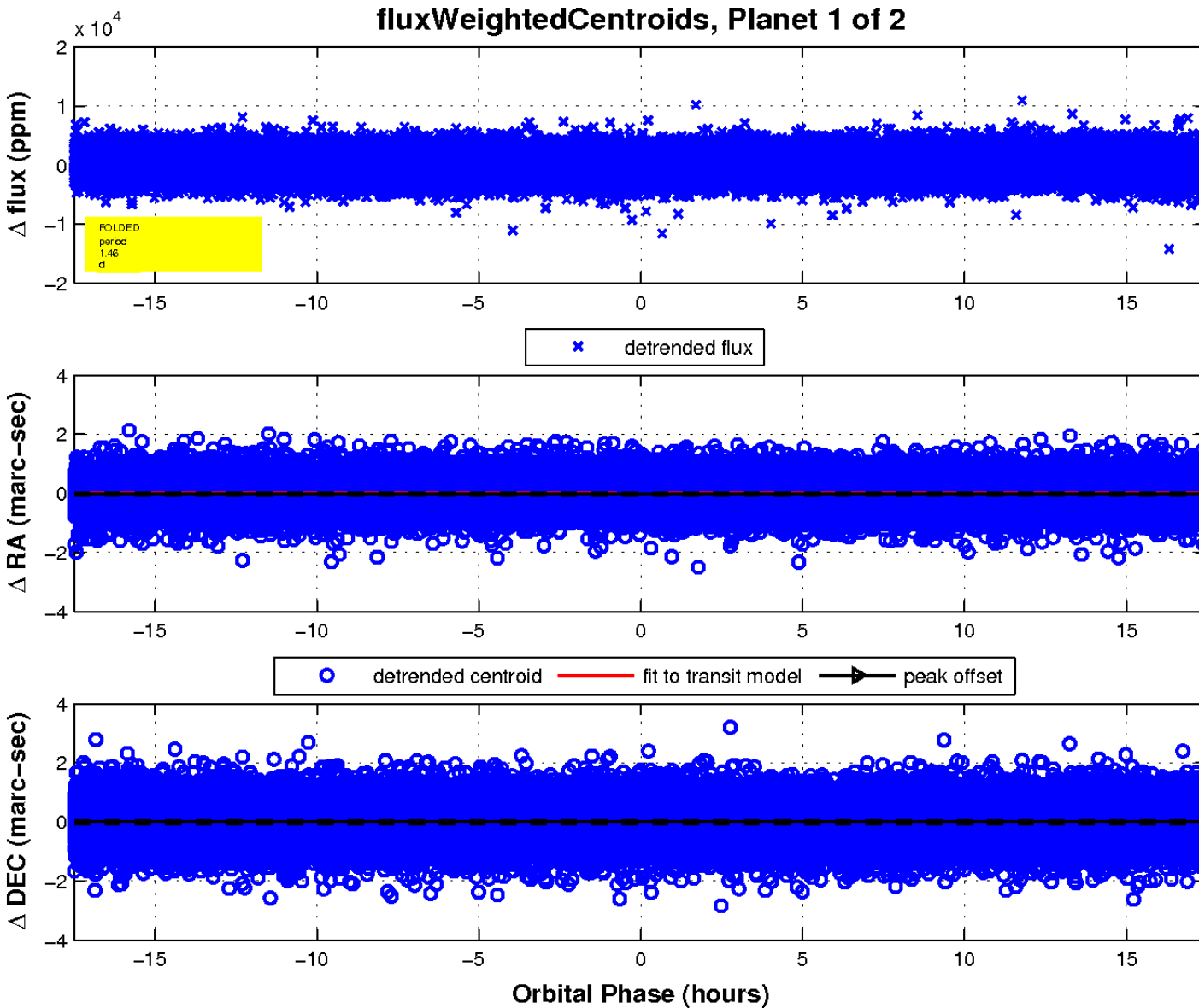
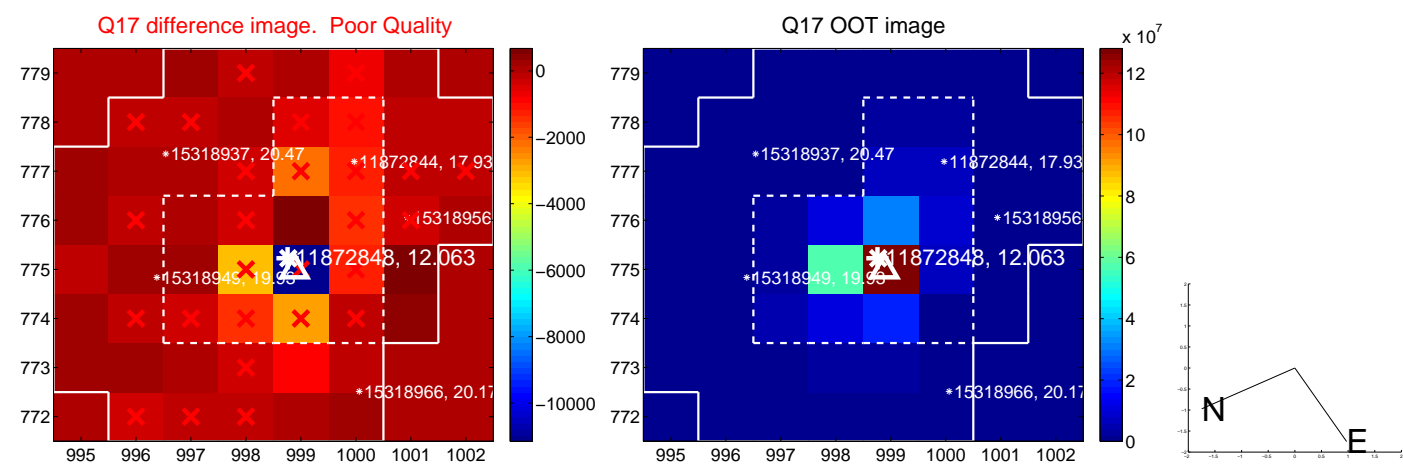
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

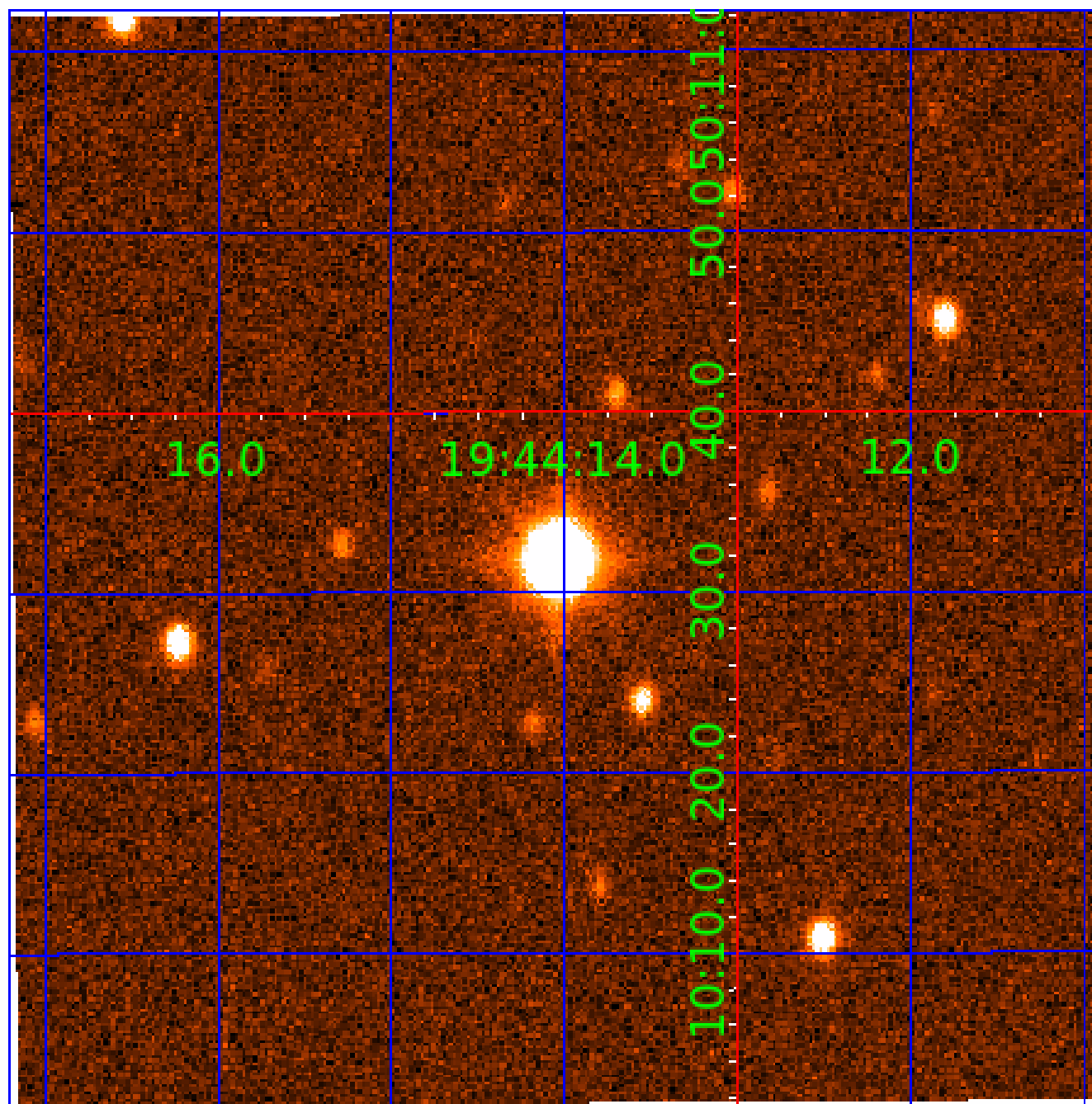


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011872848

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})
011872848-01	OBS	No	1.458020	131.797761	255.1	6.005	13.4	14.8	2.81	8158	5.90	33196.63
011872848-02	OBS	No	1.457819	132.579717	154.1	7.859	11.0	10.6	2.81	8158	3.53	33202.73

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011872848-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
011872848-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_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.

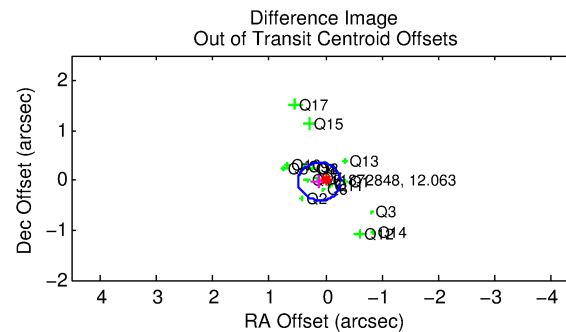
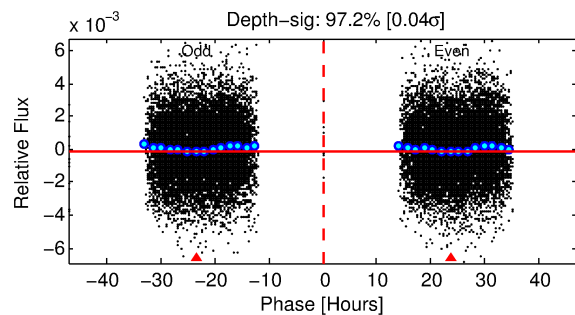
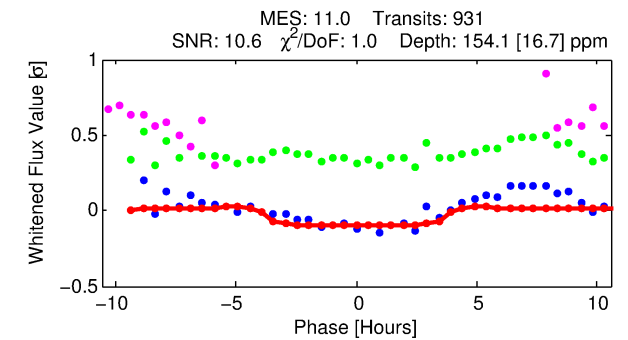
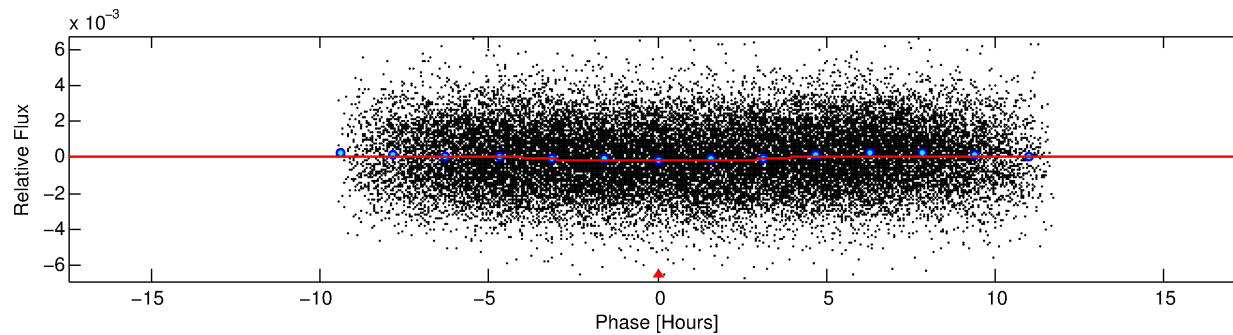
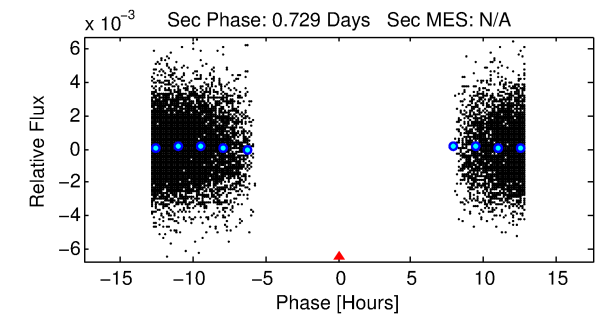
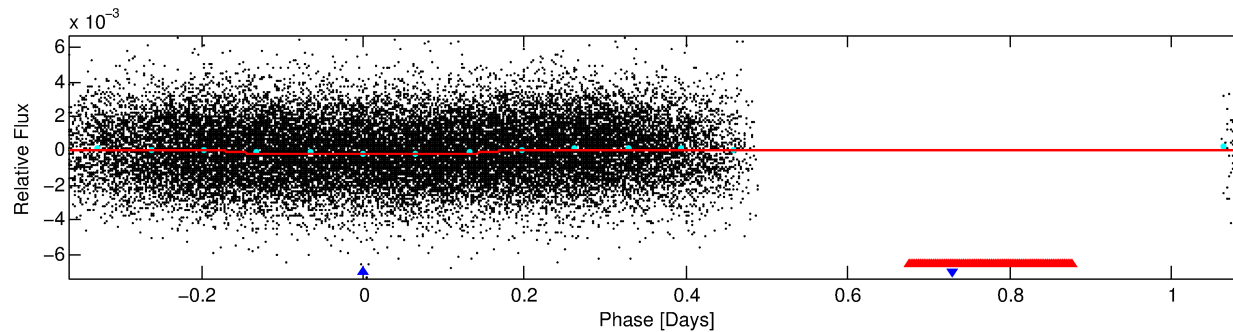
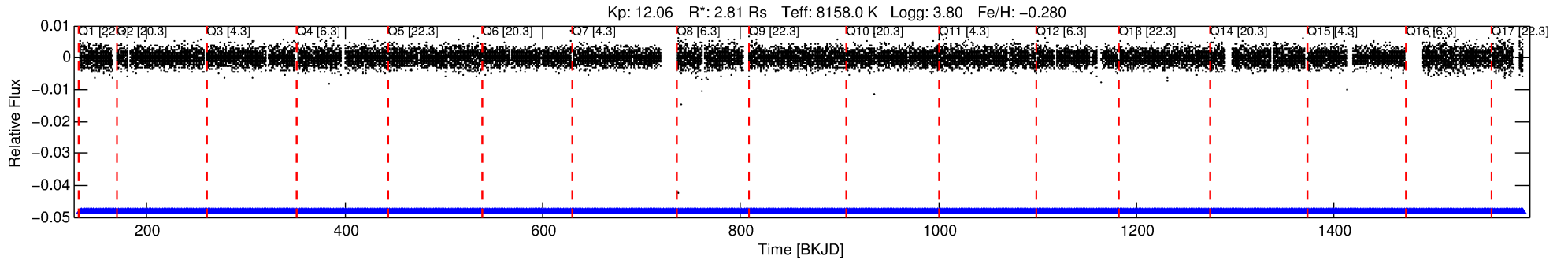
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011872848-02

No Significant Match Found

DV One-Page Summary

KIC: 11872848 Candidate: 2 of 2 Period: 1.458 d



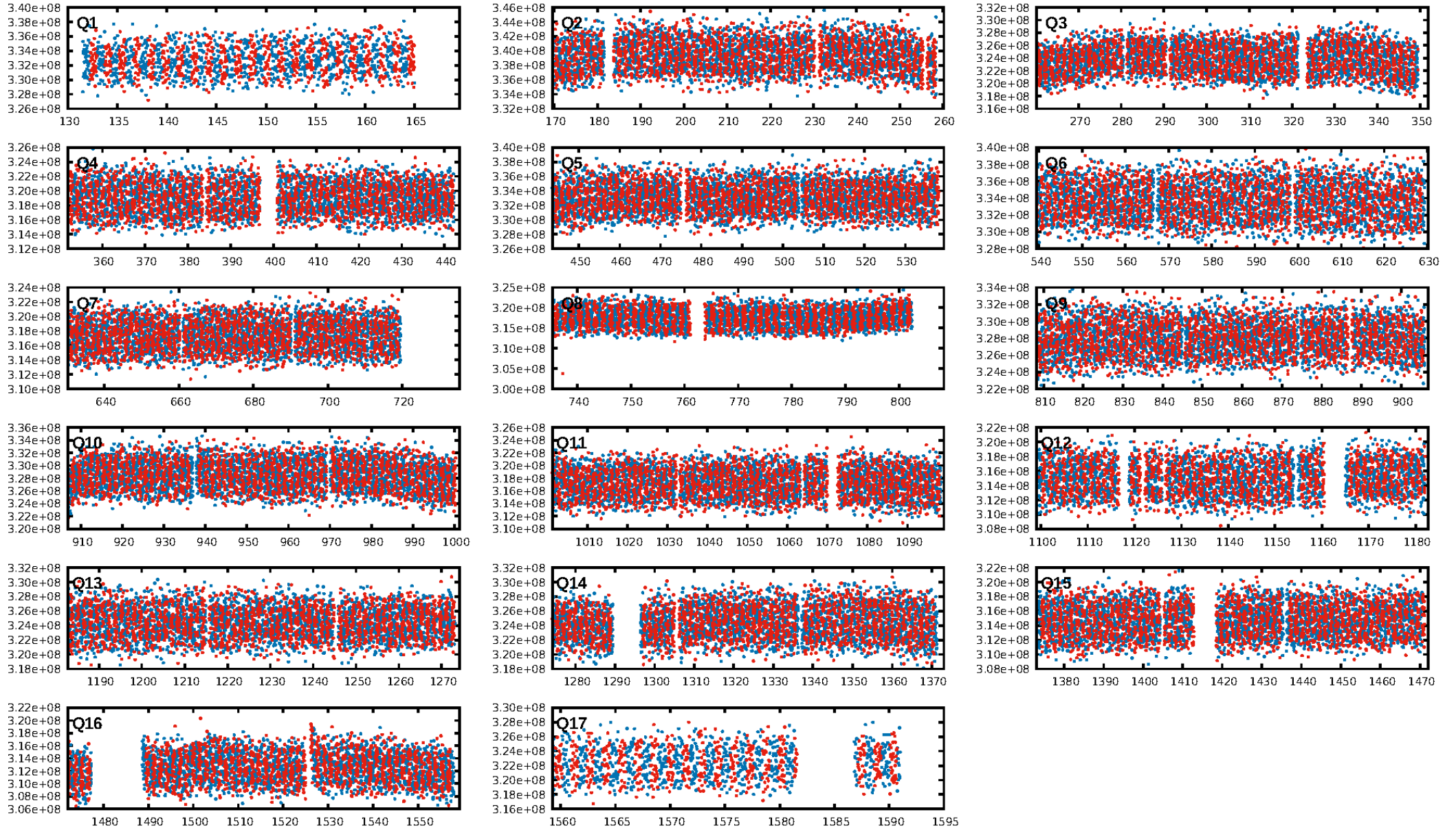
DV Fit Results:

Period = 1.45782 [0.00002] d
Epoch = 132.5797 [0.0084] BKJD
Rp/R* = 0.0115 [0.0231]
a/R* = 1.56 [10.35]
b = 0.10 [114.22]
Seff = 33202.73 [22549.48]
Teq = 3442 [584] K
Rp = 3.53 [7.24] Re
a = 0.0308 [0.0124] AU

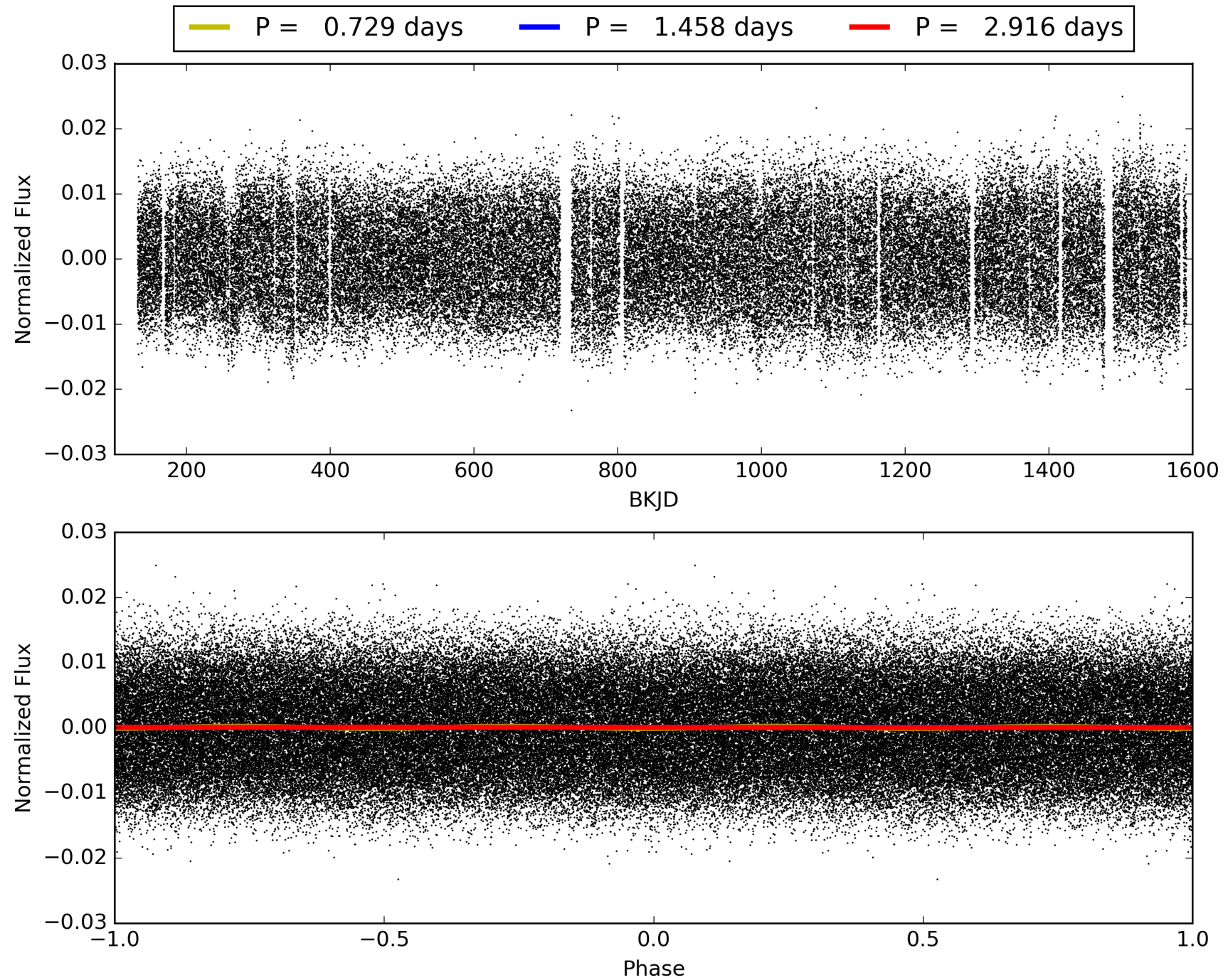
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [889/889]
GhostDiagnostic-chr: 1.086
Centroid-sig: 0.0%
Centroid-so: 0.292 arcsec [3.22σ]
OotOffset-rm: 0.113 arcsec [0.90σ]
KicOffset-rm: 0.058 arcsec [0.44σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 011872848-02, PDC Light Curves

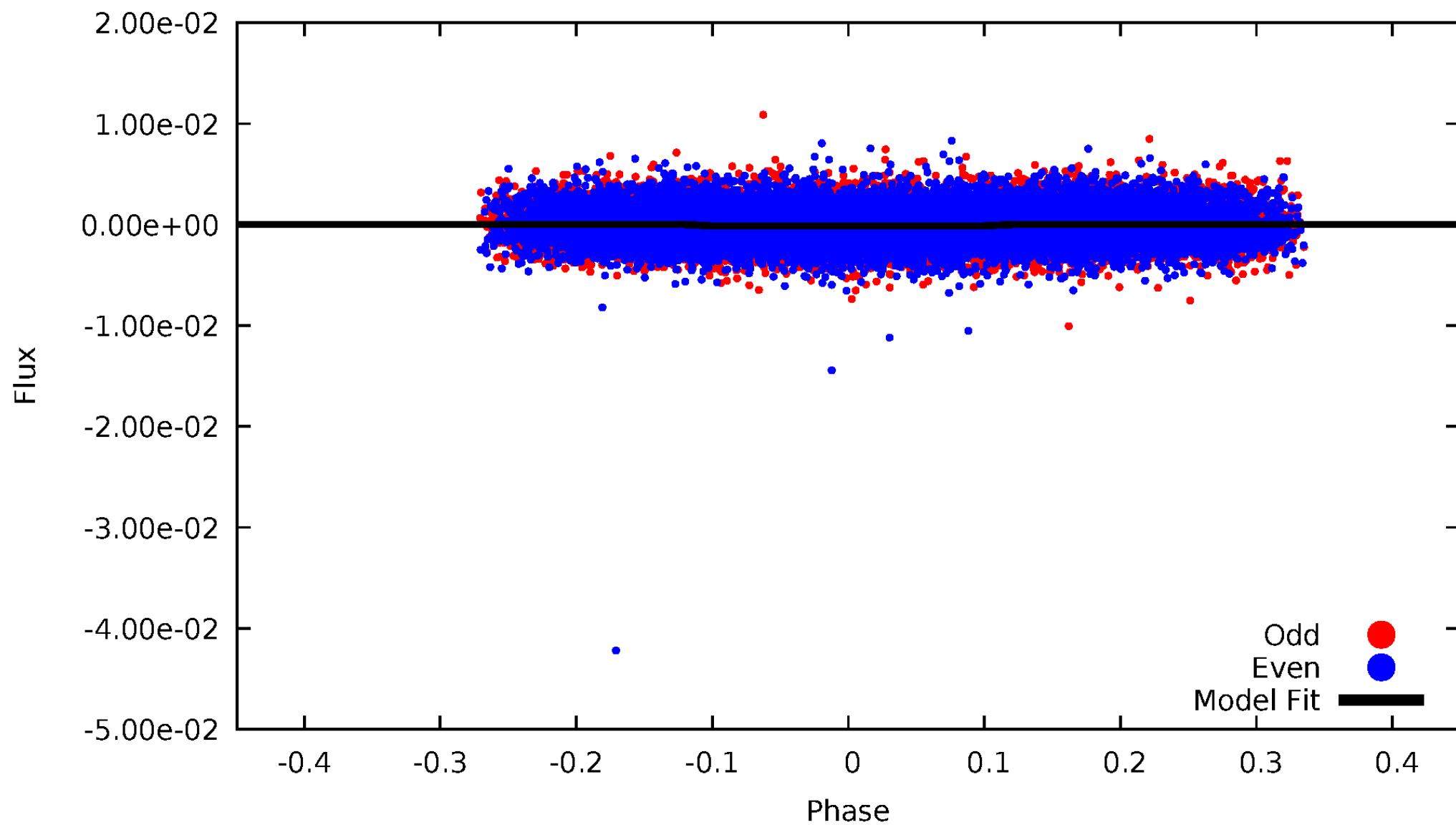


TCE 011872848-02



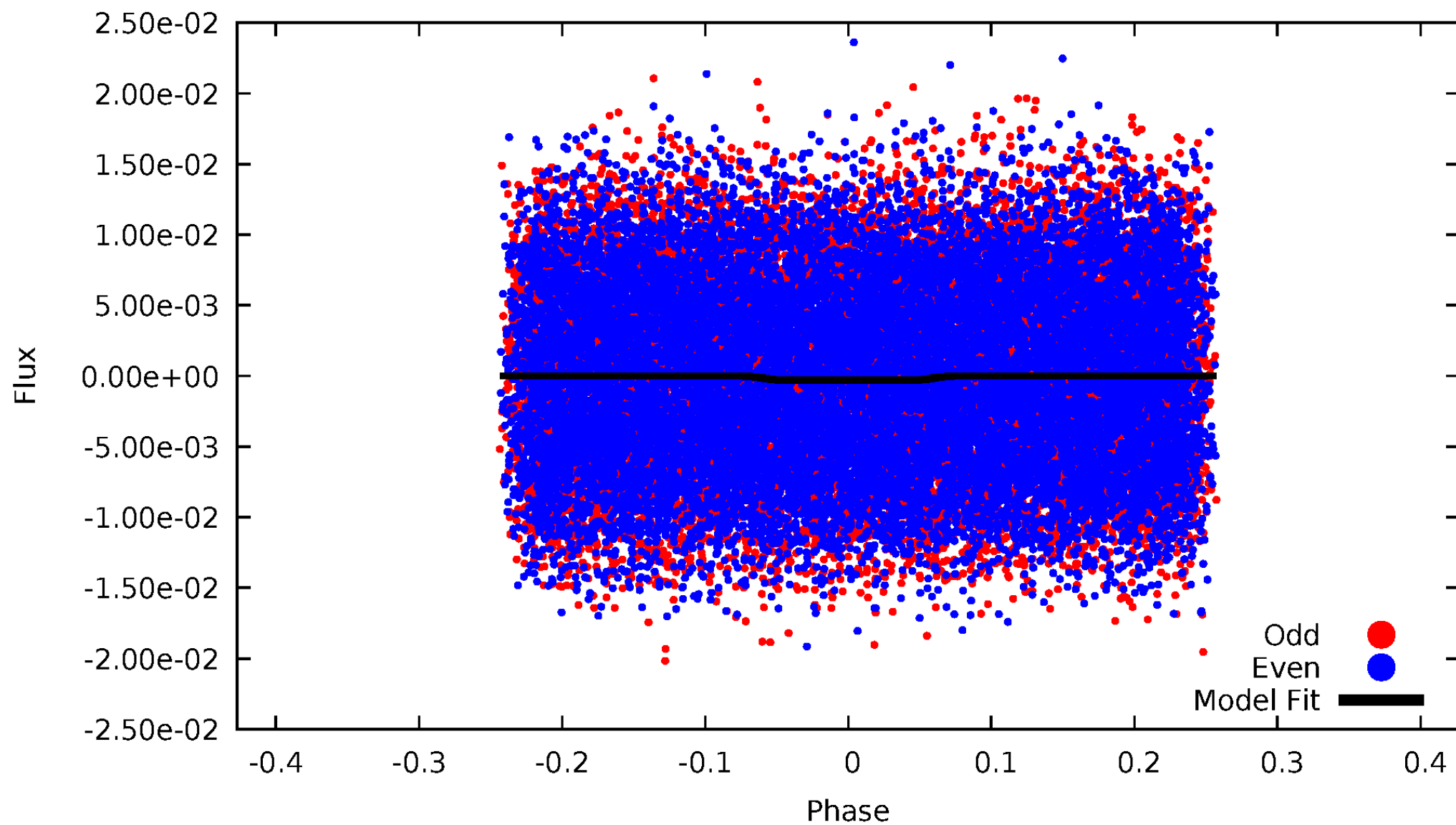
DV Odd/Even

TCE 011872848-02



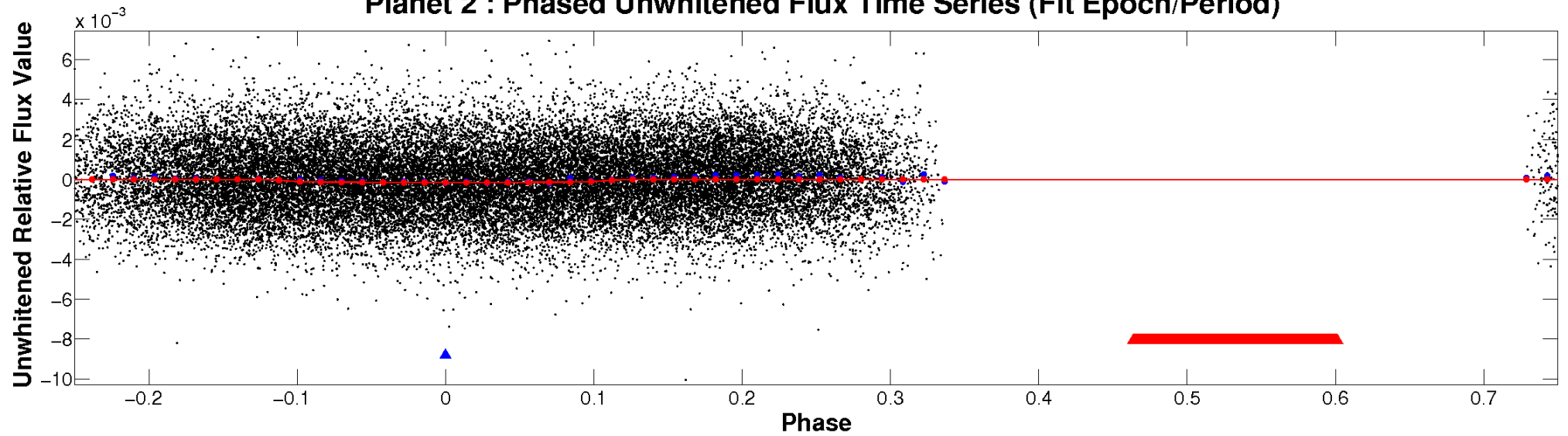
ALT Odd/Even

TCE 011872848-02

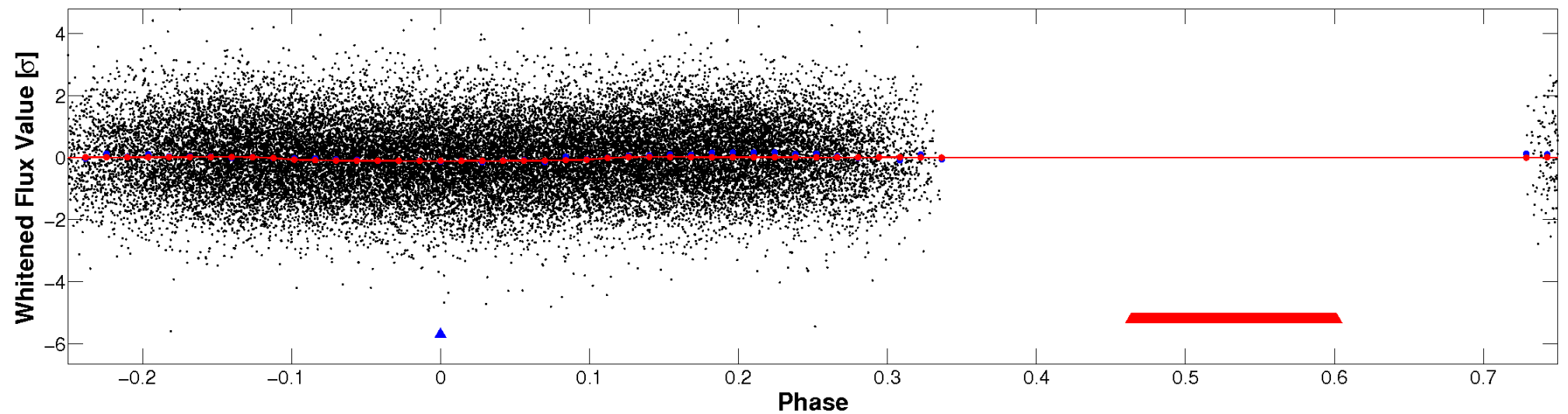


Non-Whitened Vs. Whitened Light Curve

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

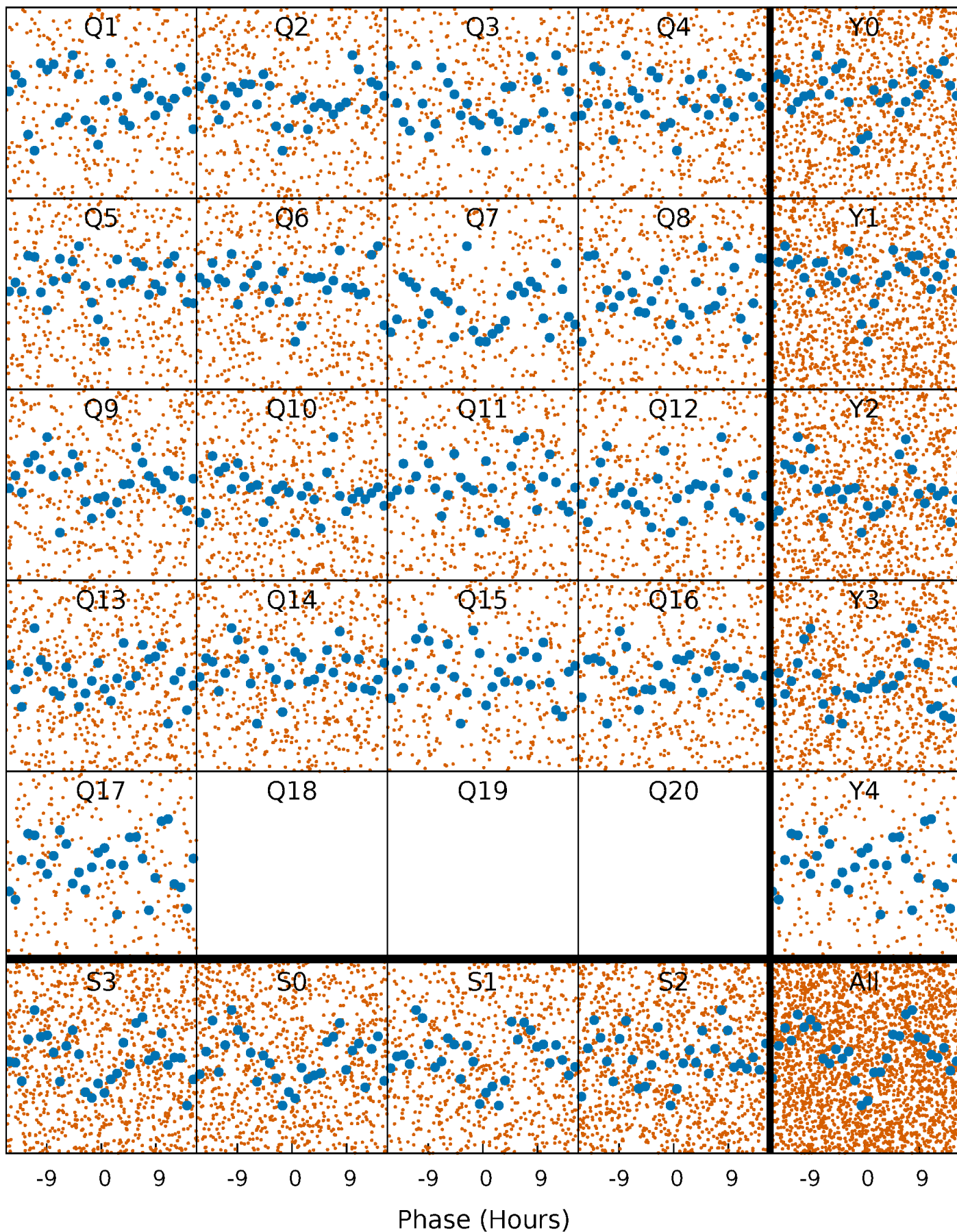


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



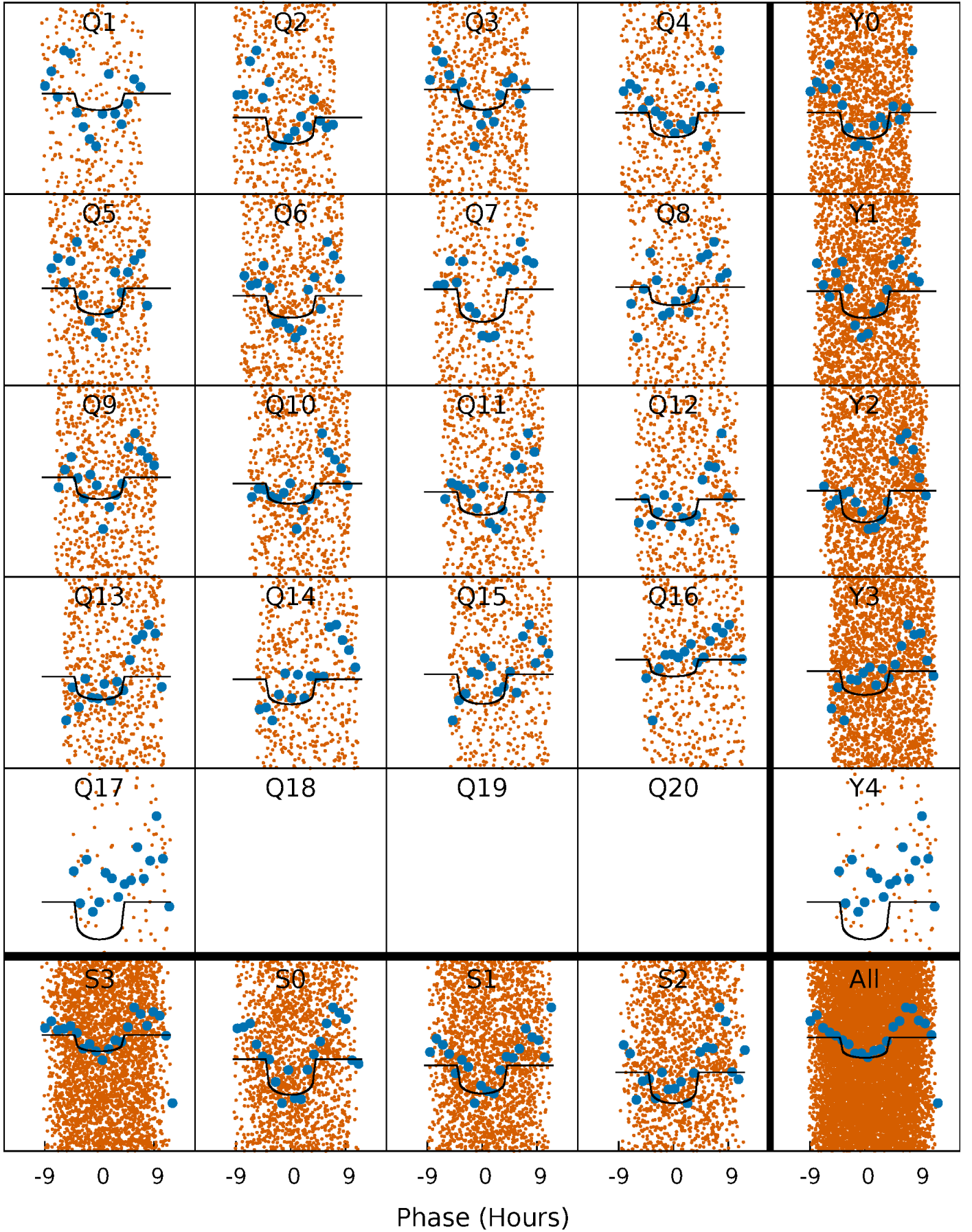
PDC Quarter-Phased Transit Curves

TCE 011872848-02 P= 1.457819 Days $T_0=132.579717$ (BKJD)



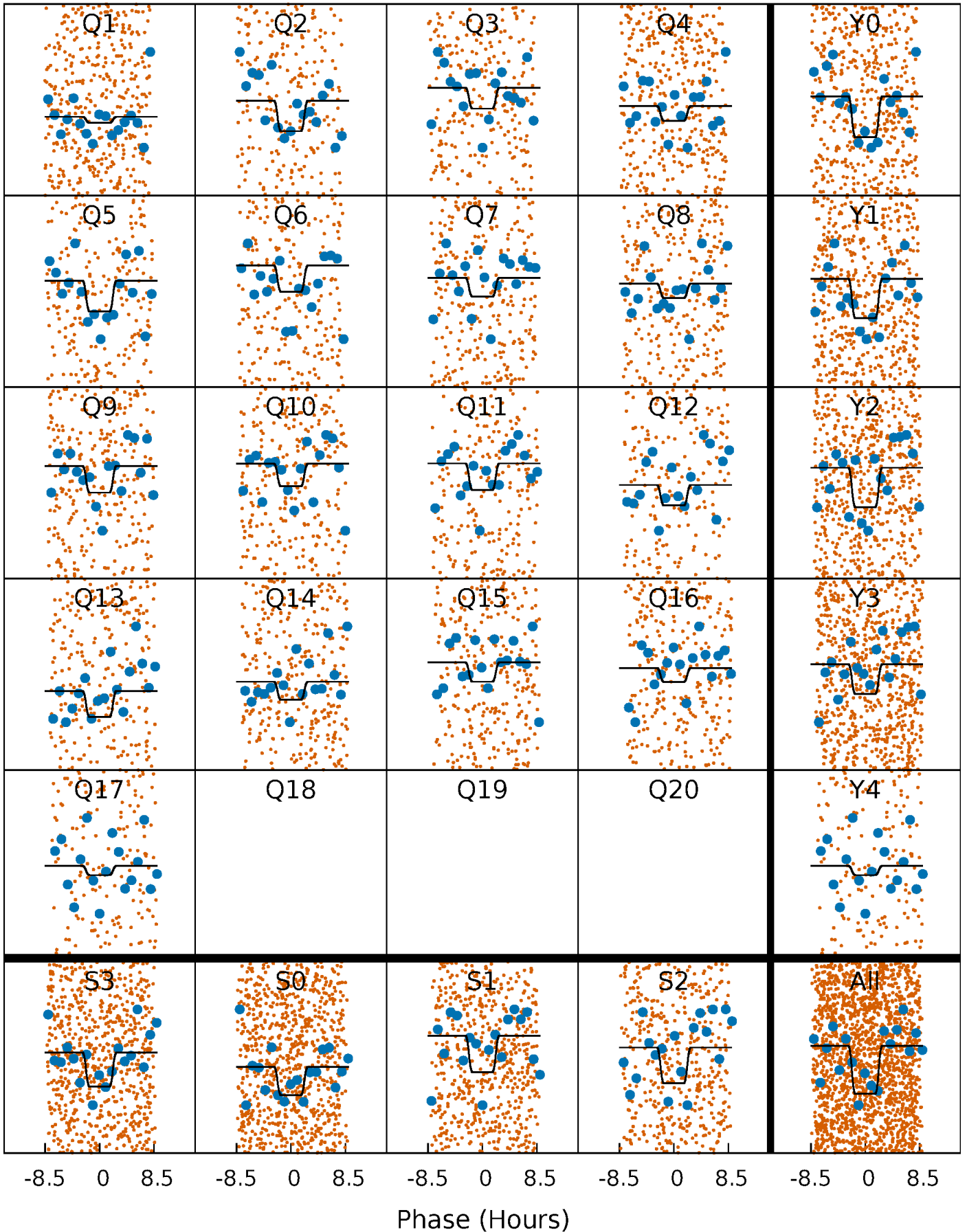
DV Quarter-Phased Transit Curves

TCE 011872848-02 P= 1.457819 Days $T_0=132.579717$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

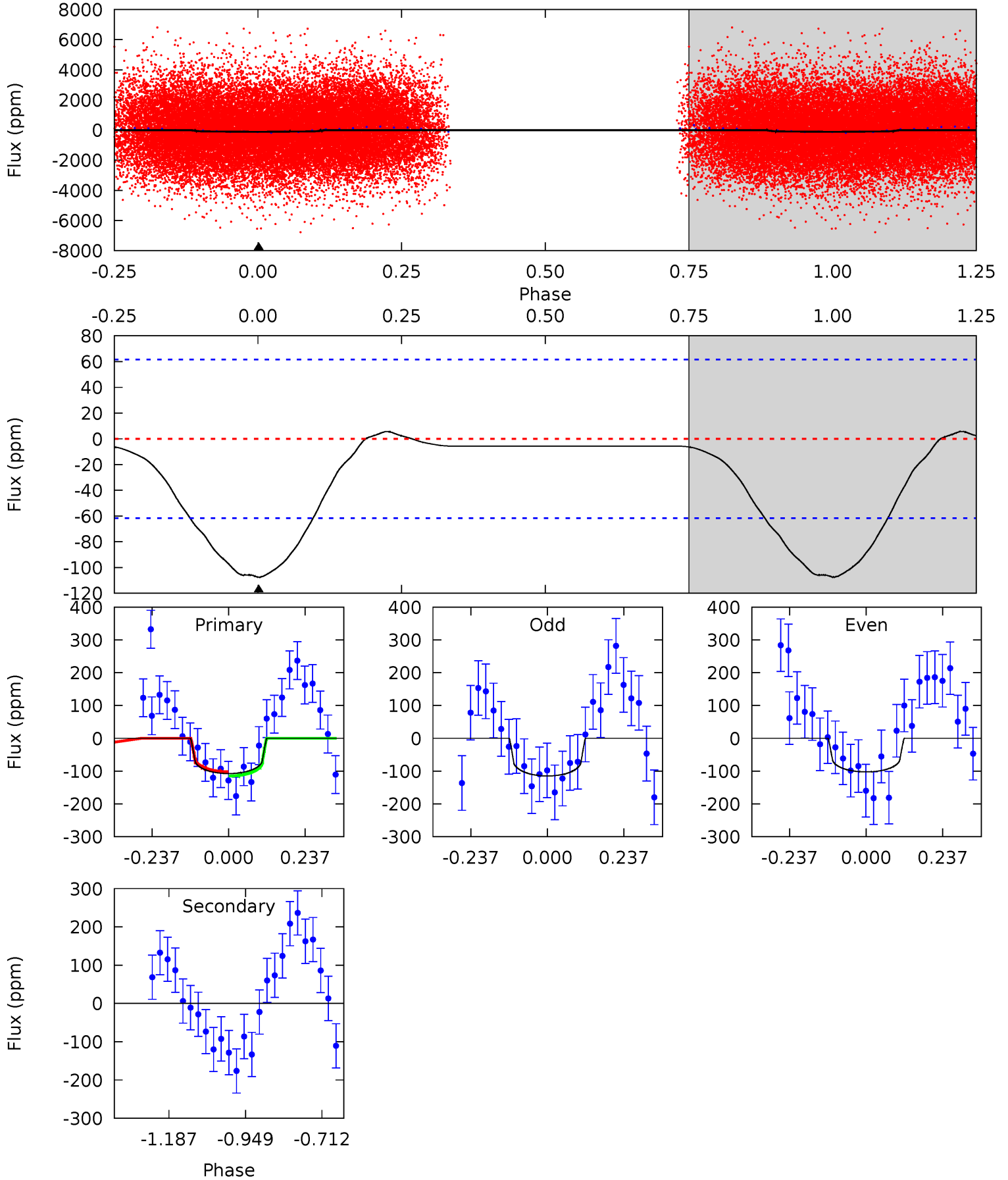
TCE 011872848-02 P= 1.457974 Days $T_0=132.539127$ (BKJD)



DV Model-Shift Uniqueness Test

011872848-02, P = 1.457819 Days, E = 131.121898 Days

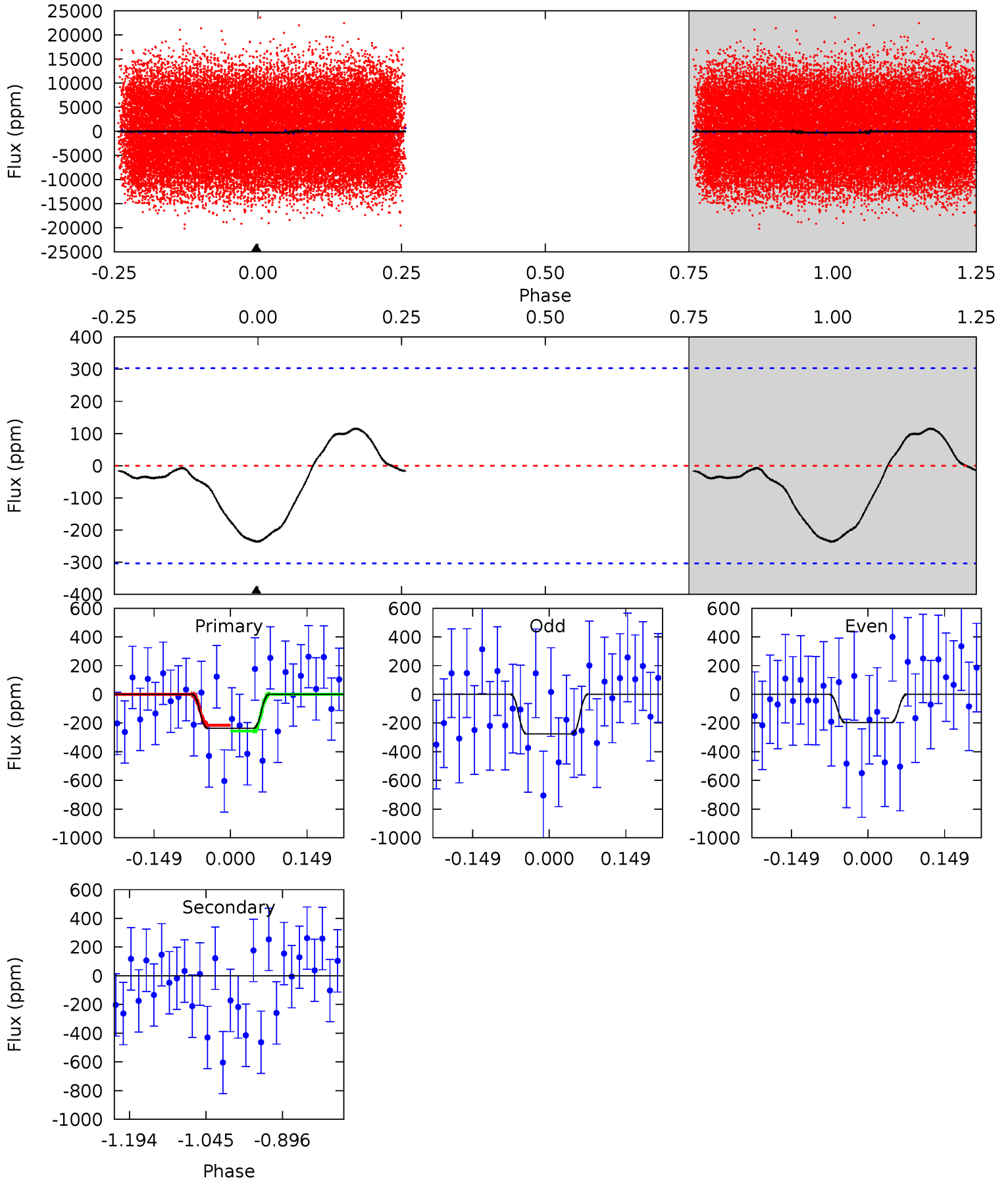
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.64	0	0	0	4.38	1.18	0.28	7.64	7.64	0	0	0.44	1.06	0.05	0.46



Alt Model-Shift Uniqueness Test

011872848-02, P = 1.457974 Days, E = 131.081153 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.49	0	0	0	4.48	1.44	0.89	3.49	3.49	0	0	0.58	1.08	0.33	0.30



Stellar Parameters For KIC 011872848

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8158^{+226}_{-340}	$3.801^{+0.391}_{-0.069}$	$-0.280^{+0.200}_{-0.300}$	$2.814^{+0.304}_{-1.142}$	$1.826^{+0.093}_{-0.373}$	$0.116^{+0.371}_{-0.026}$
	+3%/-4%	+10%/-2%	+71%/-107%	+11%/-41%	+5%/-20%	+322%/-22%
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 011872848-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 14	$5.56^{+5.43}_{-3.61}$	4666^{+313}_{-471}	-4010^{+5706}_{-682}	$0.003^{+0.297}_{-0.396}$
Alt.	0 ± 68	$6.25^{+6.10}_{-4.19}$	4663^{+306}_{-448}	-4034^{+9108}_{-1653}	$-0.018^{+1.471}_{-1.473}$

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

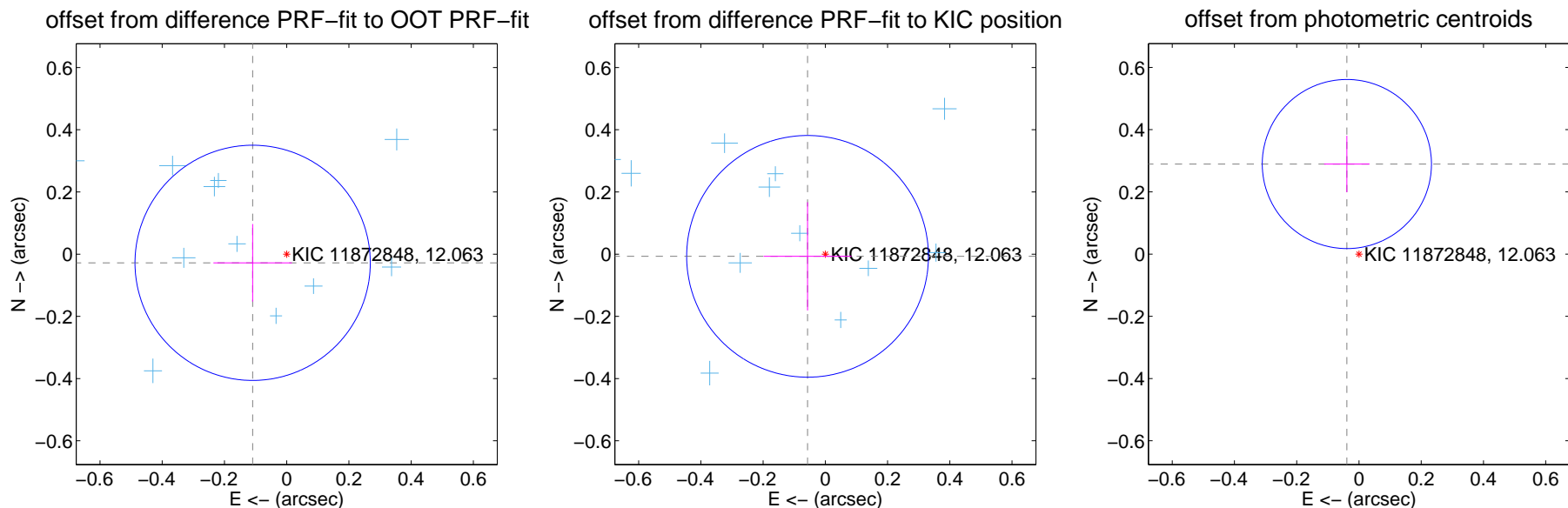
DV Centroid Data

Supplemental centroid analysis for 011872848-02. Kepler magnitude: 12.06. Transit SNR 10.63

There are 17 quarters with good PRF difference image offsets

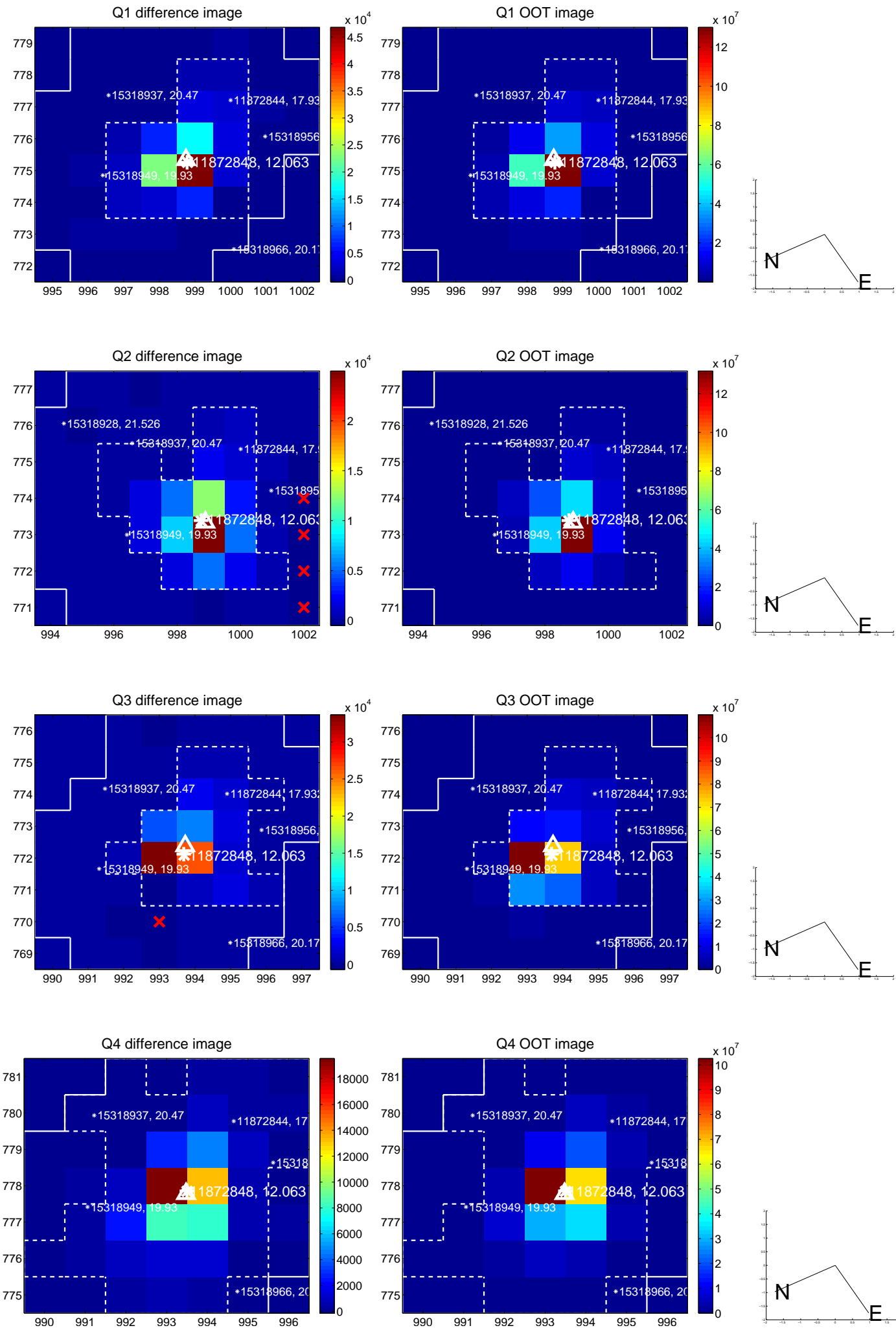
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.113 ± 0.126	0.90	0.109 ± 0.126	-0.028 ± 0.125
PRF-fit source offset from KIC position	0.058 ± 0.130	0.44	0.057 ± 0.141	-0.007 ± 0.174
photometric centroid source offset	0.29 ± 0.09	3.22	0.04 ± 0.07	0.29 ± 0.09

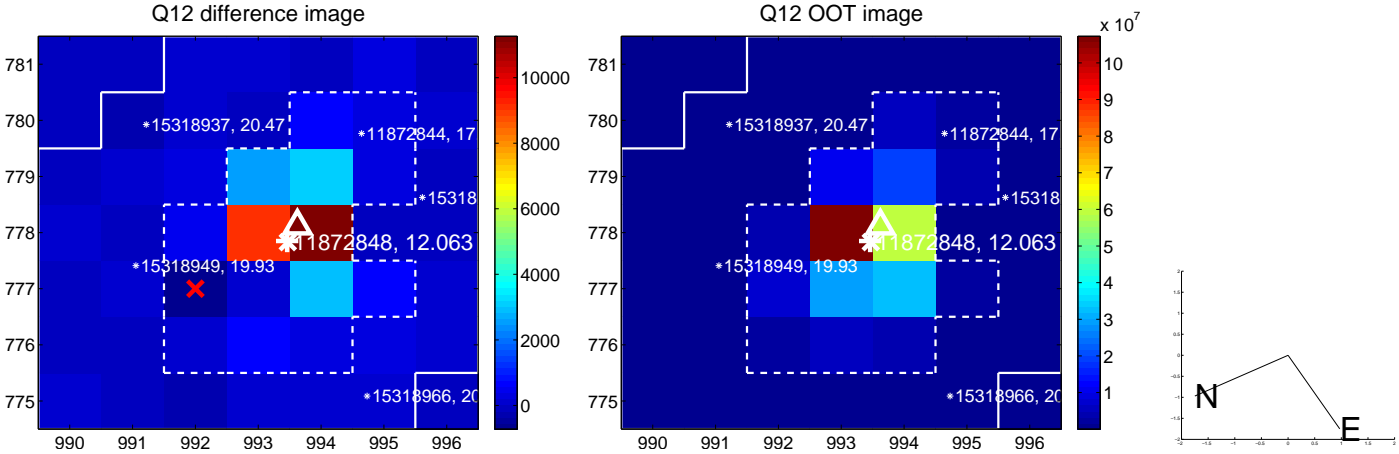
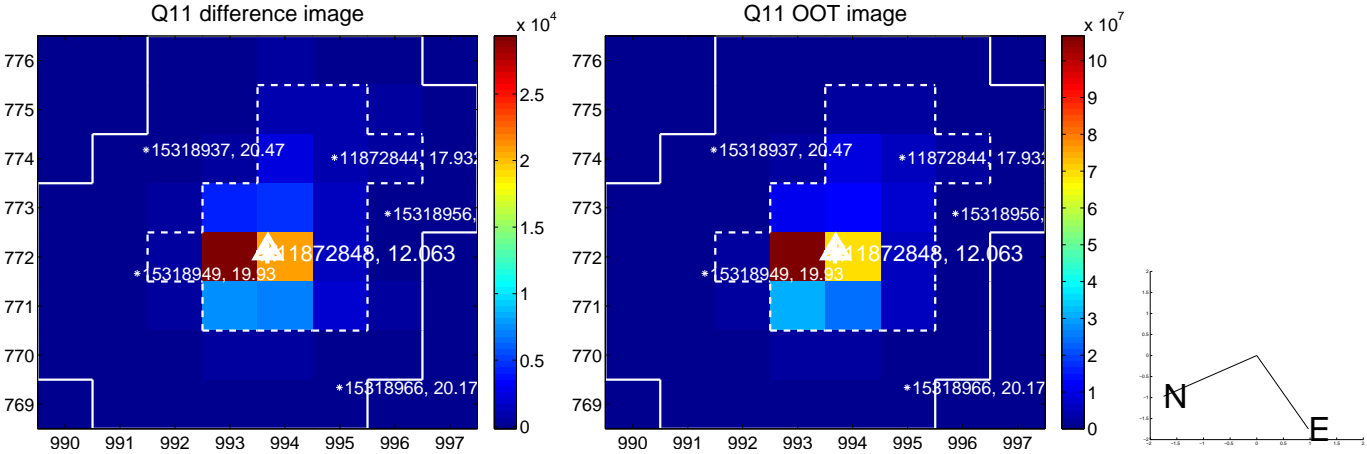
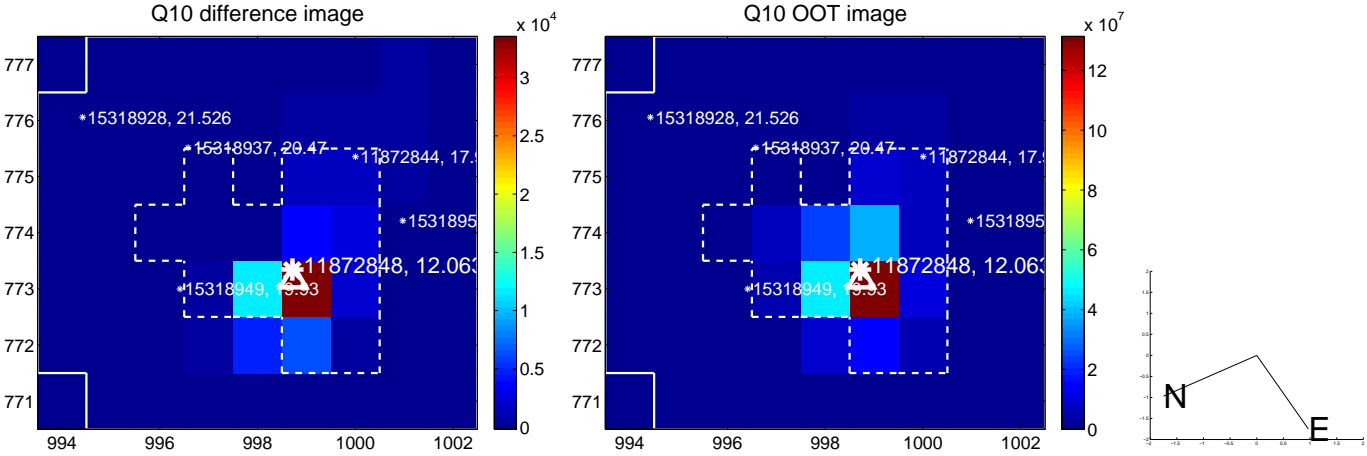
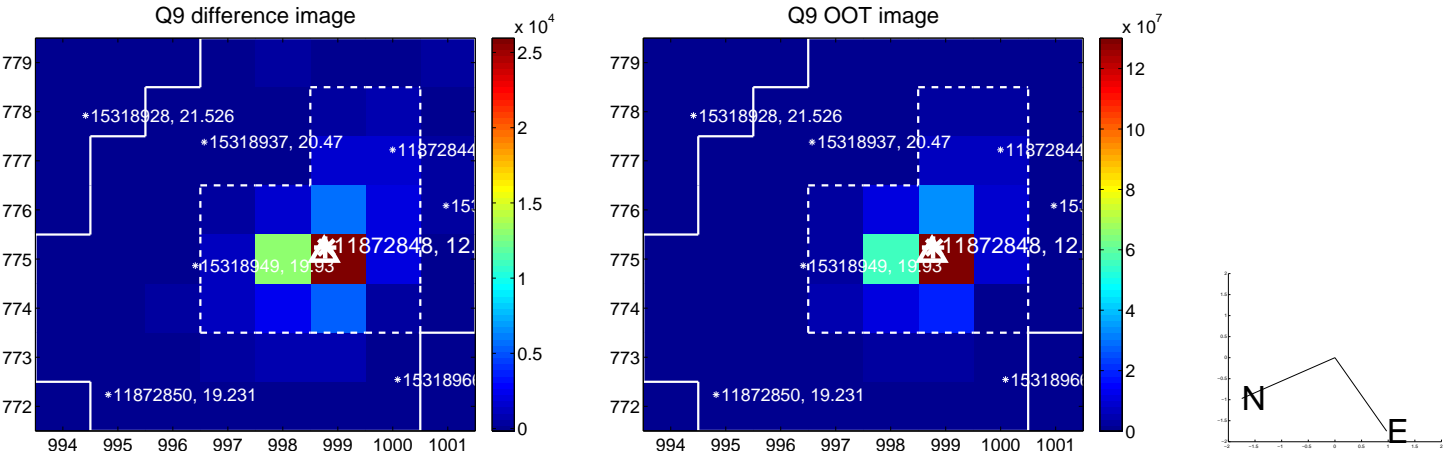


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

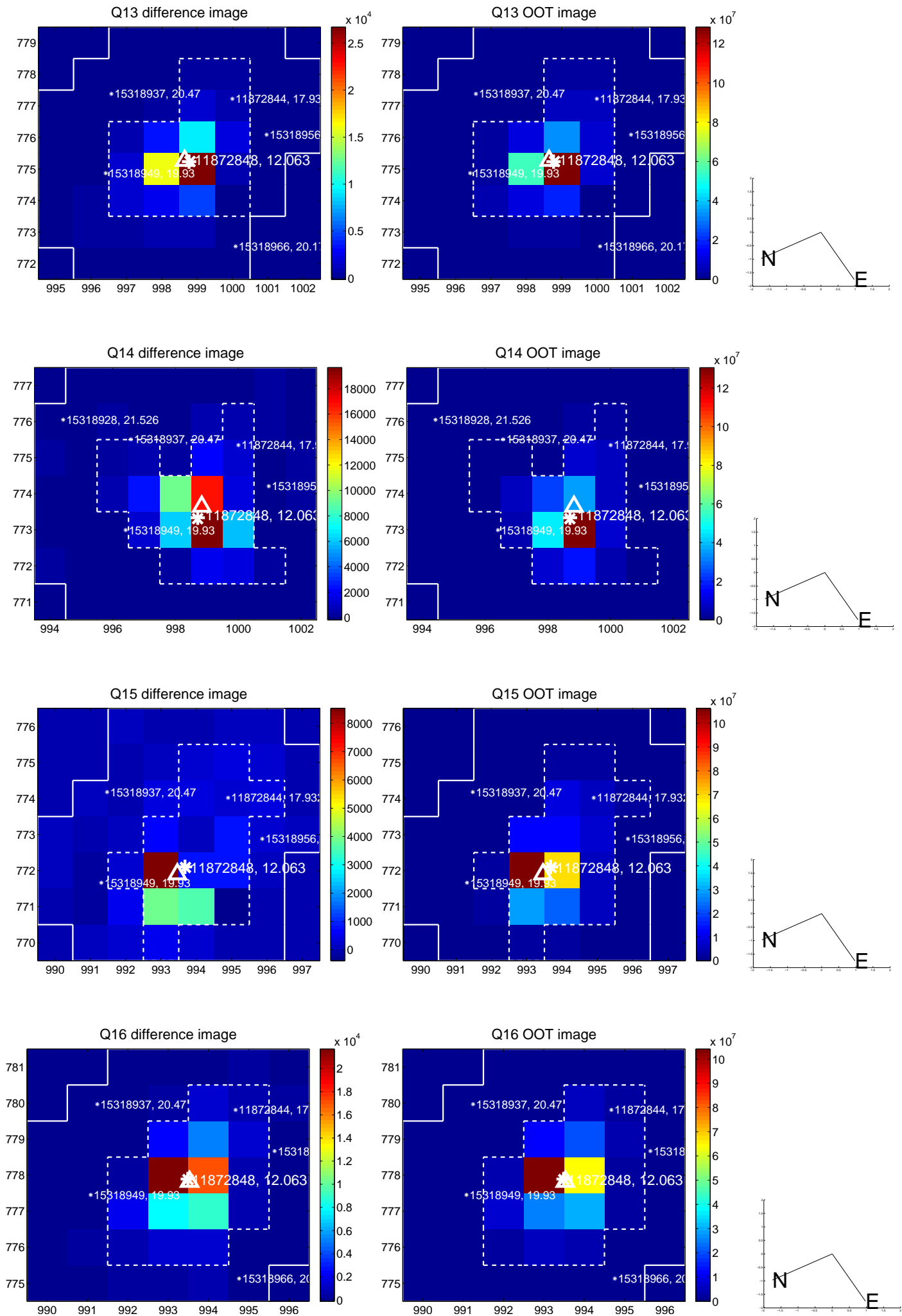
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



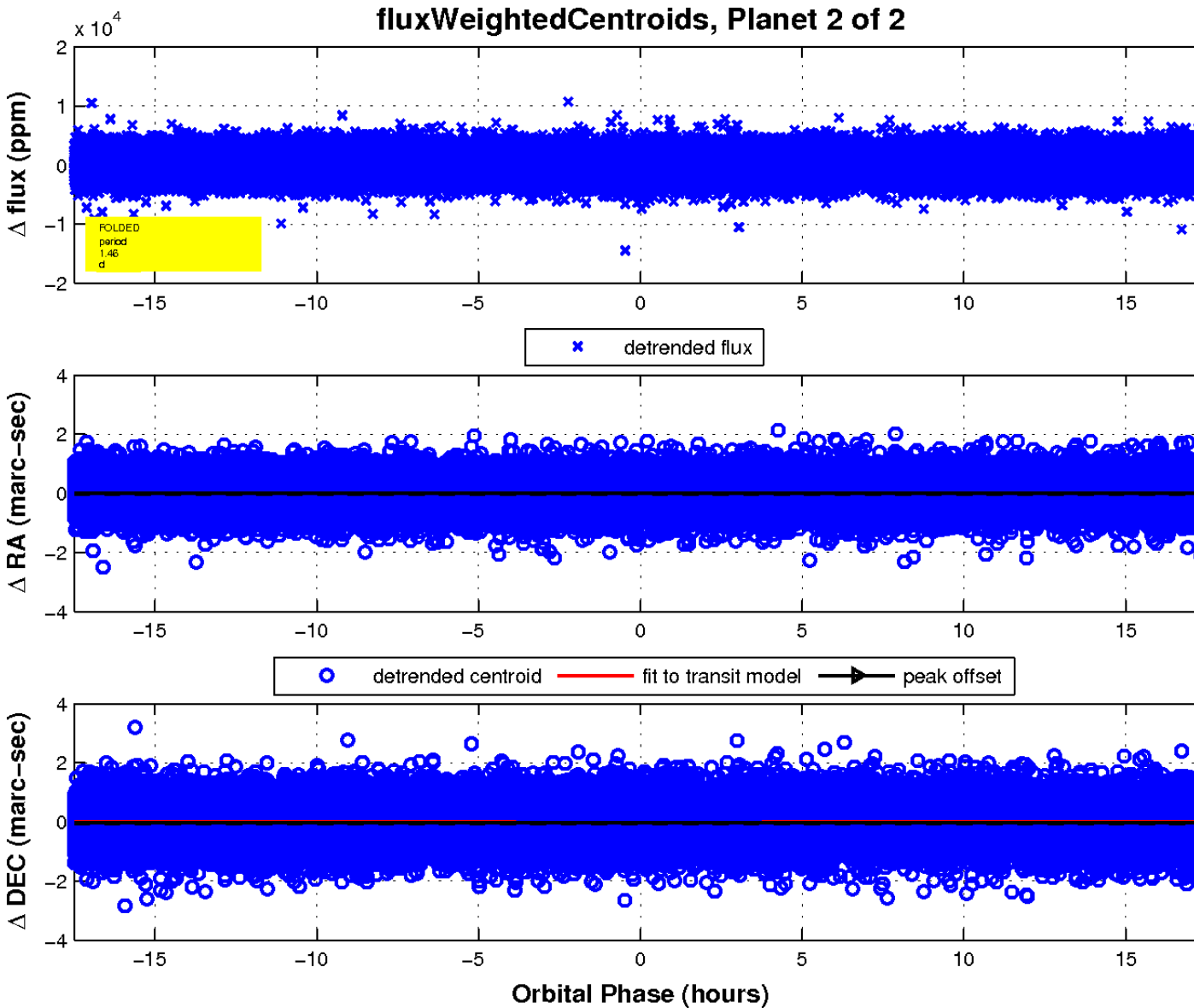
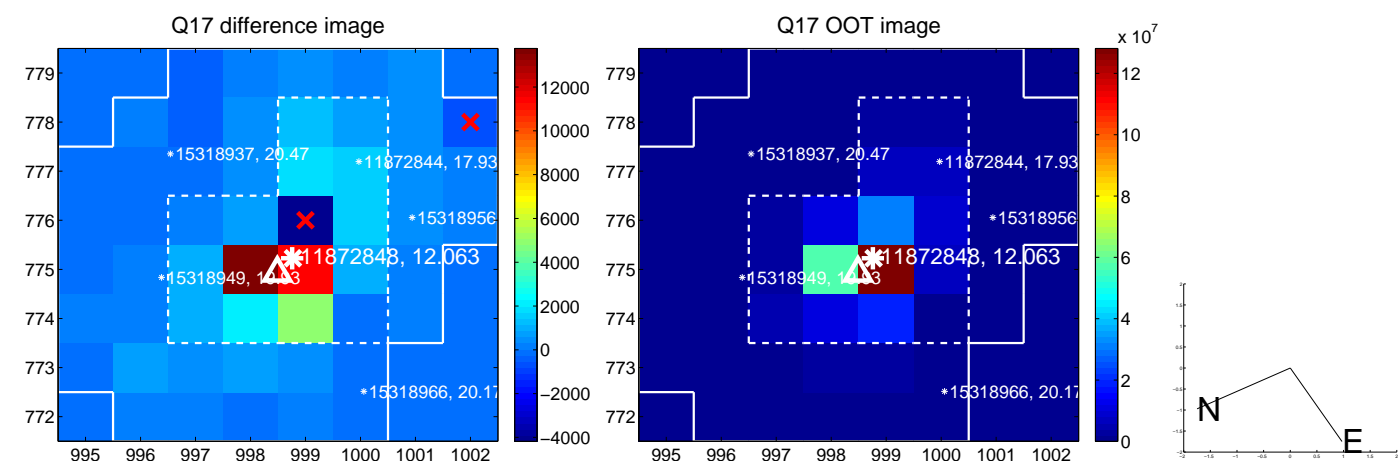
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

