

KIC 006113864

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})
006113864-01	OBS	No	0.669672	131.800987	267.6	0.741	10.7	17.7	3.34	8972	5.65	155524.61
006113864-02	OBS	No	0.669672	132.089567	285.7	1.012	9.9	20.2	3.34	8972	6.56	155524.83

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006113864-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
006113864-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

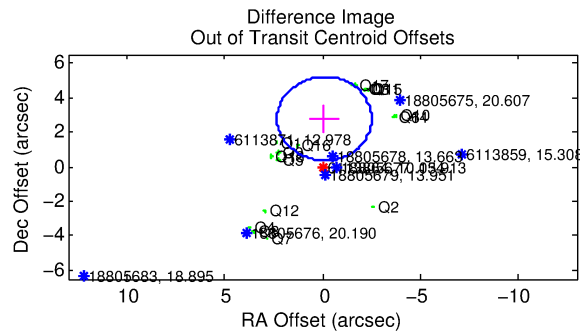
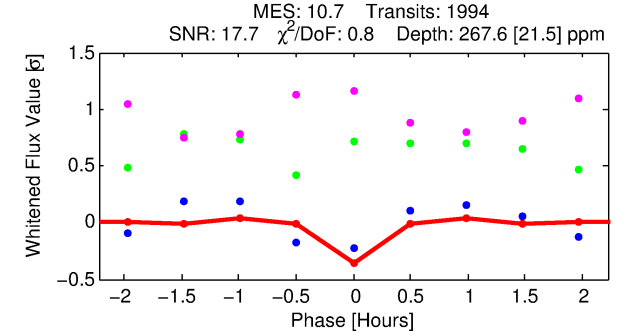
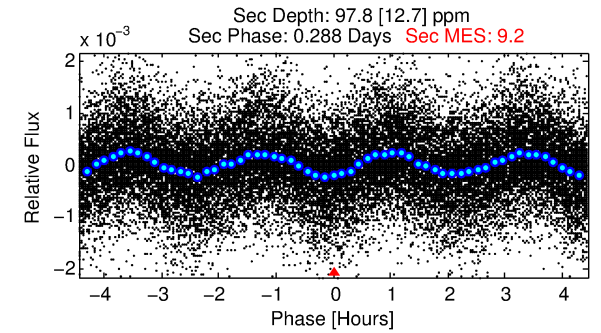
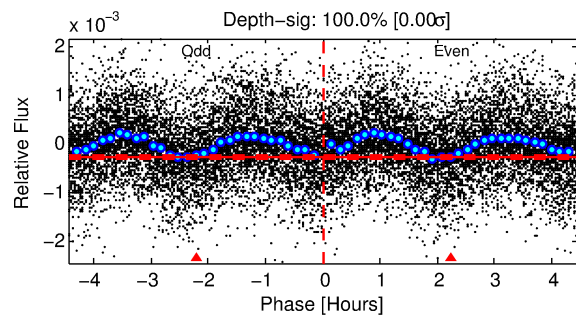
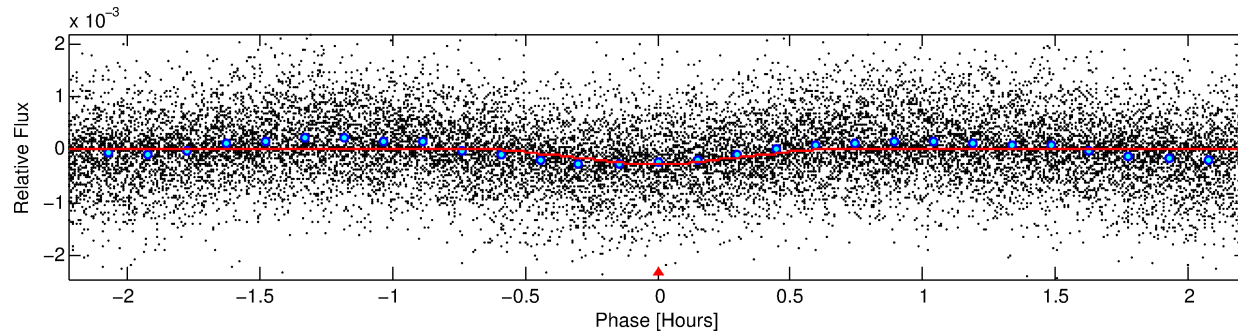
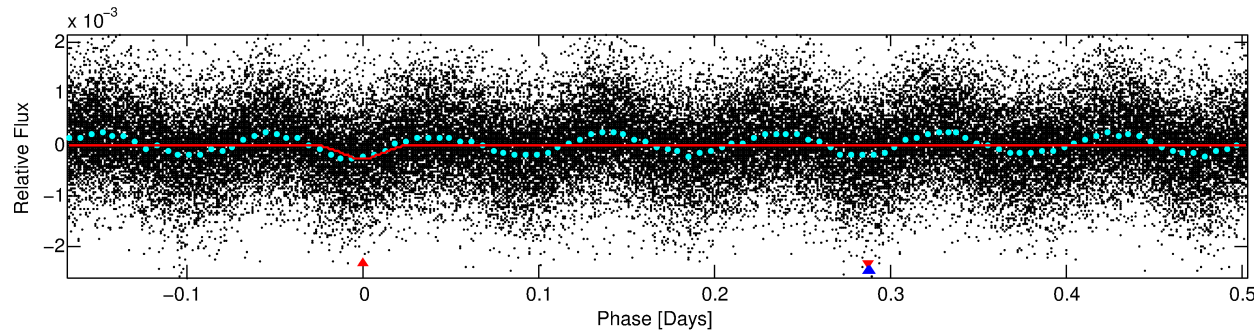
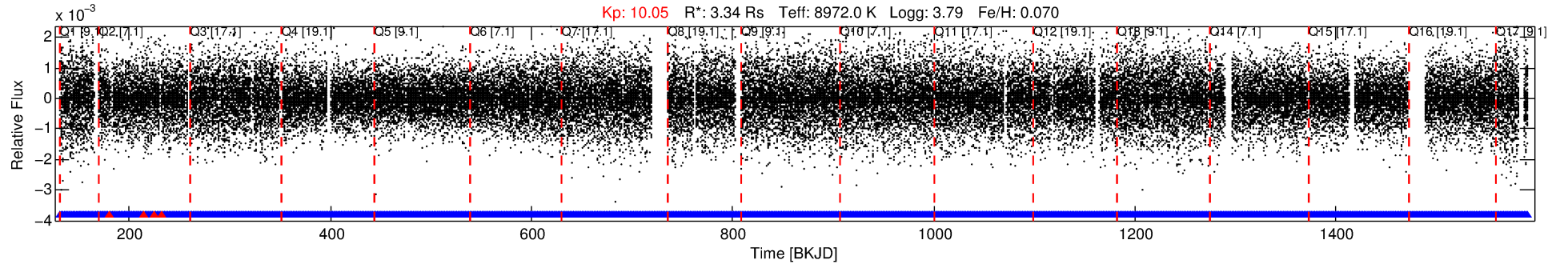
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006113864-01

No Significant Match Found

DV One-Page Summary

KIC: 6113864 Candidate: 1 of 2 Period: 0.670 d



DV Fit Results:

Period = 0.66967 [0.00001] d
Epoch = 131.8010 [0.0006] BKJD
Rp/R* = 0.0155 [0.0059]
a/R* = 7.01 [16.65]
b = 0.10 [24.11]
Seff = 155524.61 [107932.54]
Teq = 5064 [879] K
Rp = 5.65 [3.39] Re
a = 0.0204 [0.0087] AU
Ag = 0.70 [0.72] [-0.41σ]
Teffp = 7169 [1429] K [1.25σ]

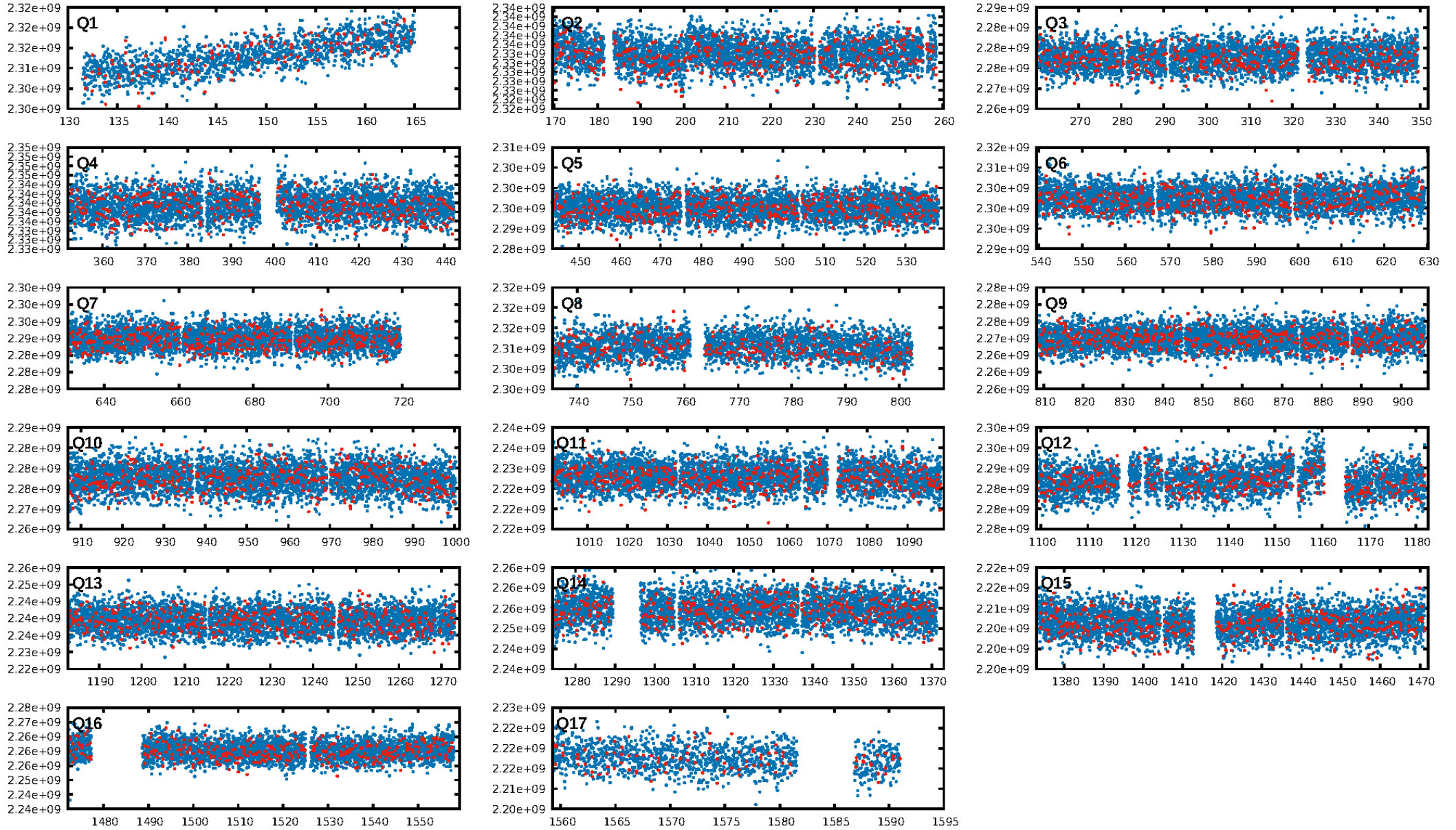
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.18e-23
RollingBand-fgt: 1.00 [1901/1905]
GhostDiagnostic-chr: N/A
Centroid-sig: 27.5%
Centroid-so: 0.295 arcsec [4.70σ]
OotOffset-rm: 2.773 arcsec [3.44σ]
KicOffset-rm: 2.315 arcsec [3.04σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 1.00 [17/17]

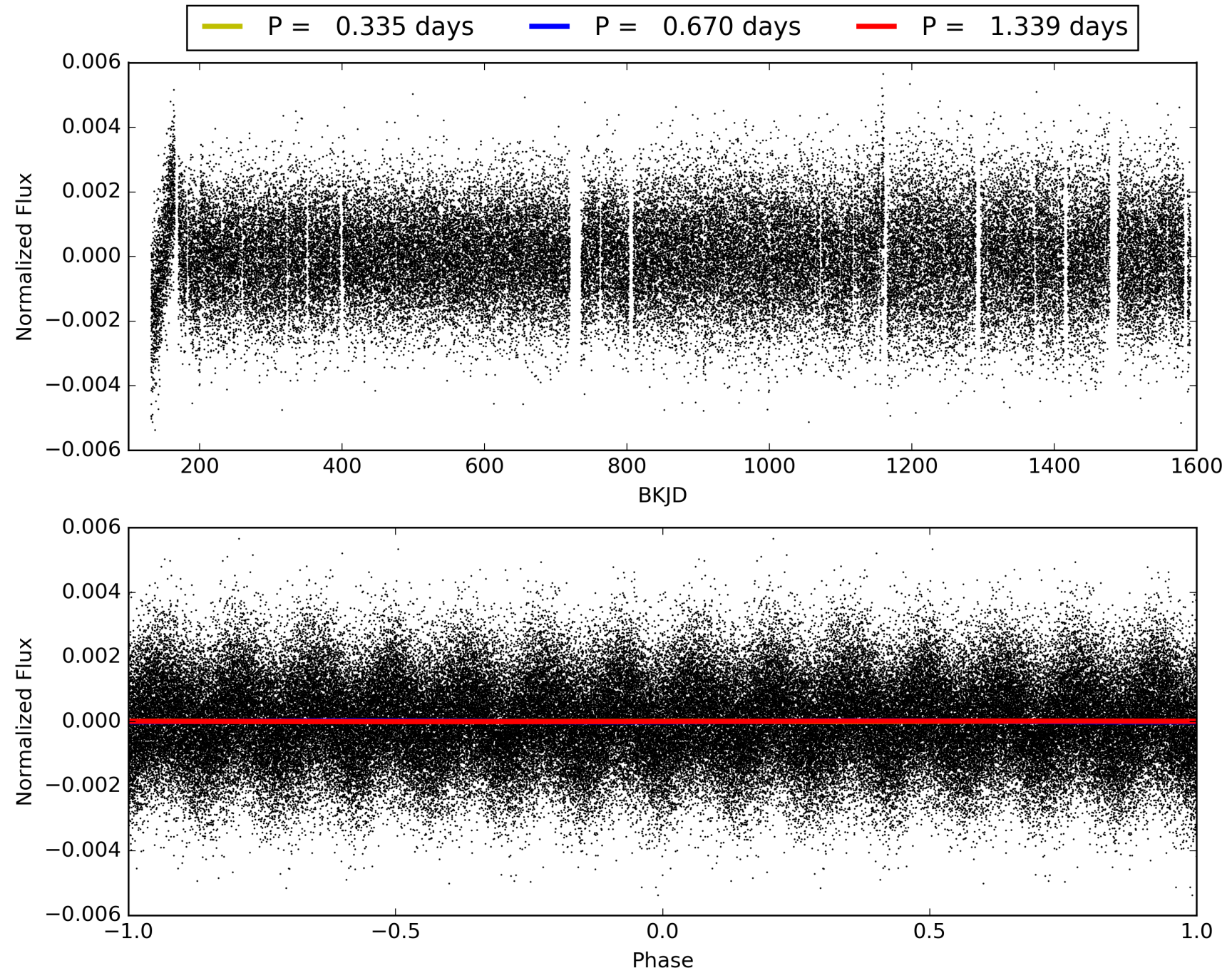
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 08:36:39 Z

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

TCE 006113864-01, PDC Light Curves

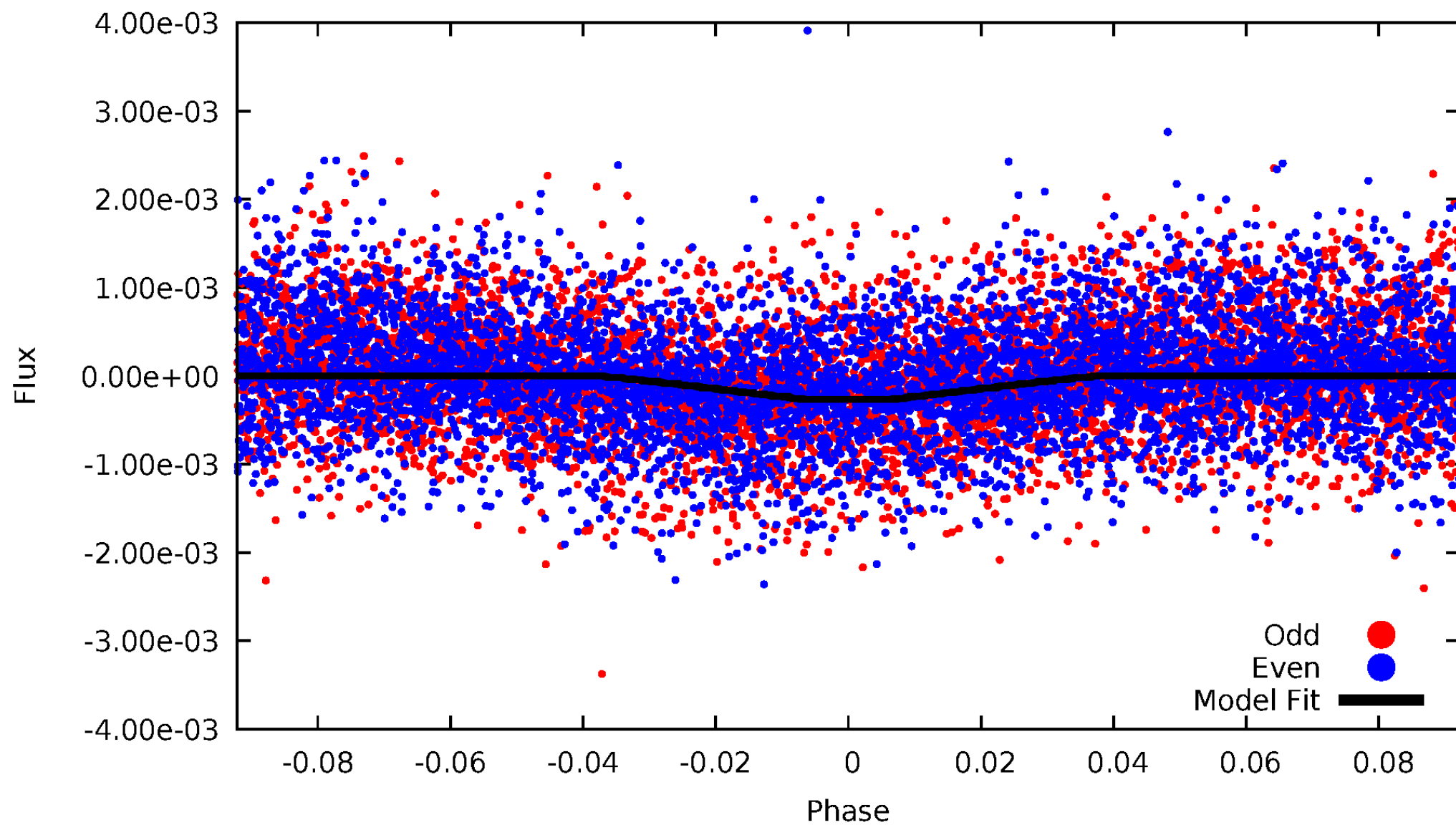


TCE 006113864-01



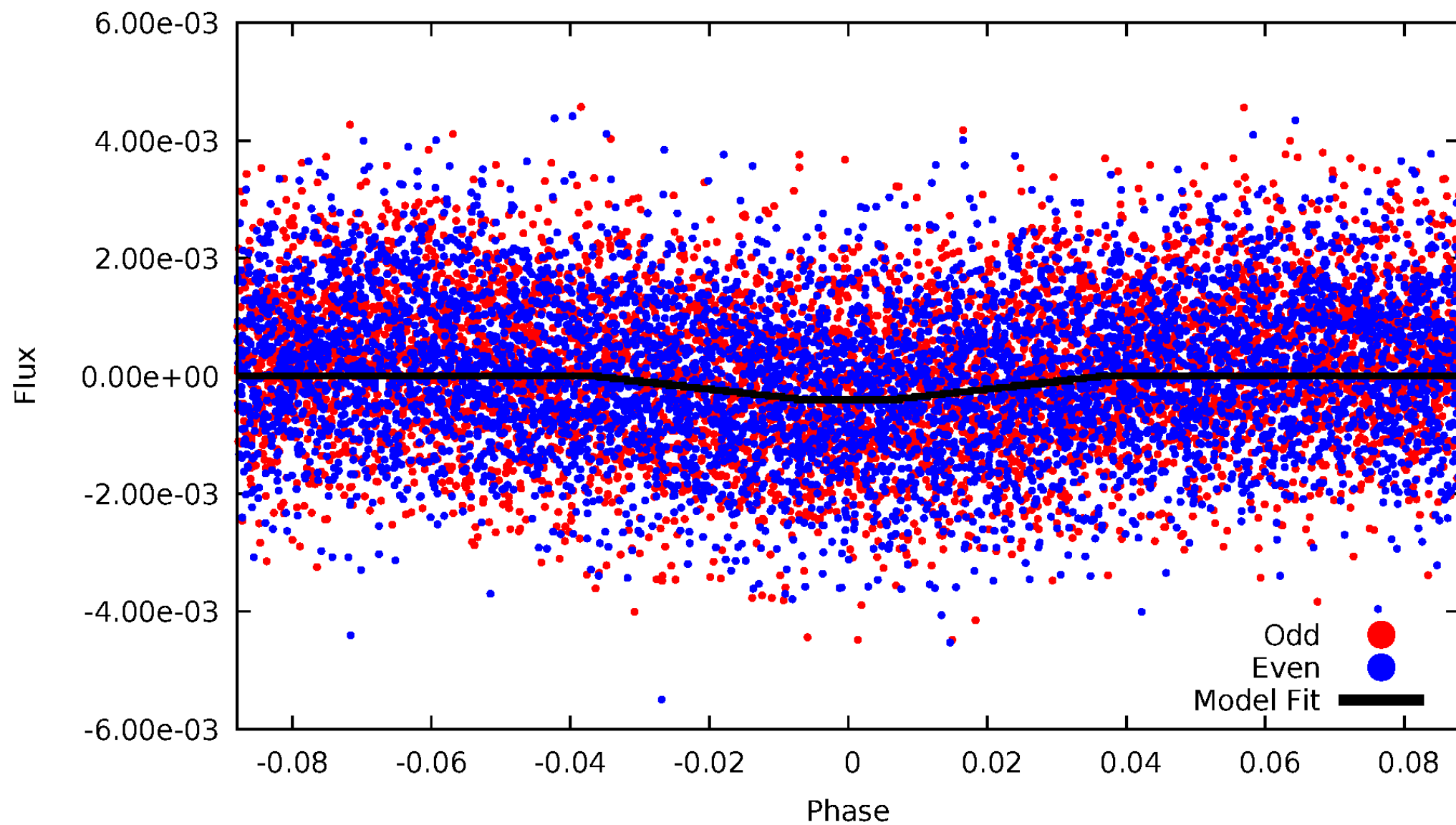
DV Odd/Even

TCE 006113864-01

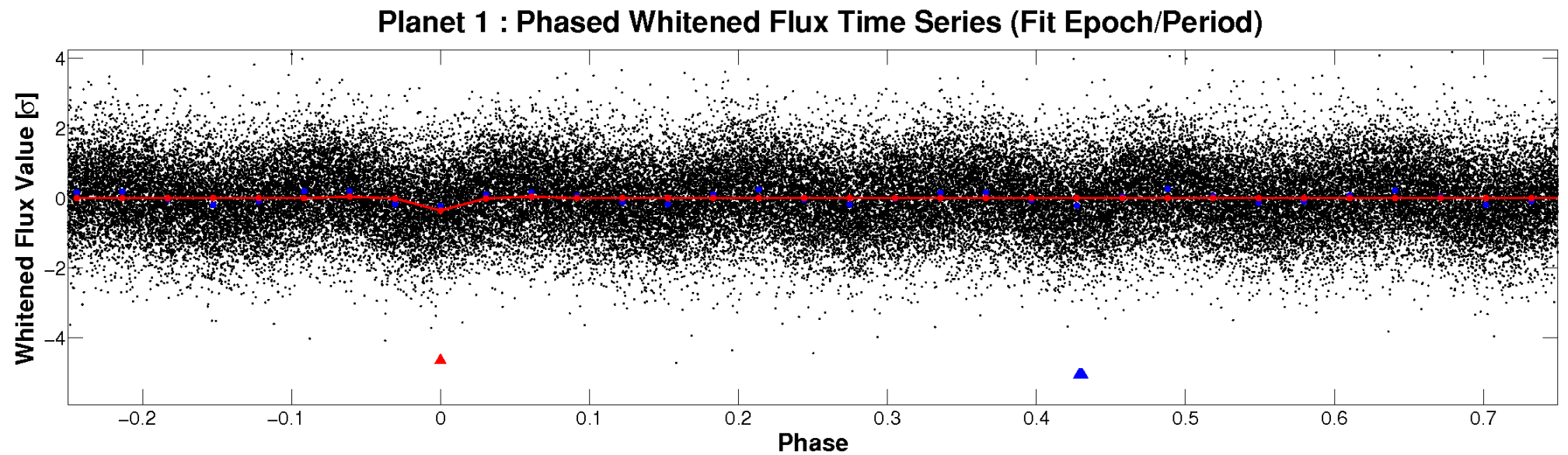
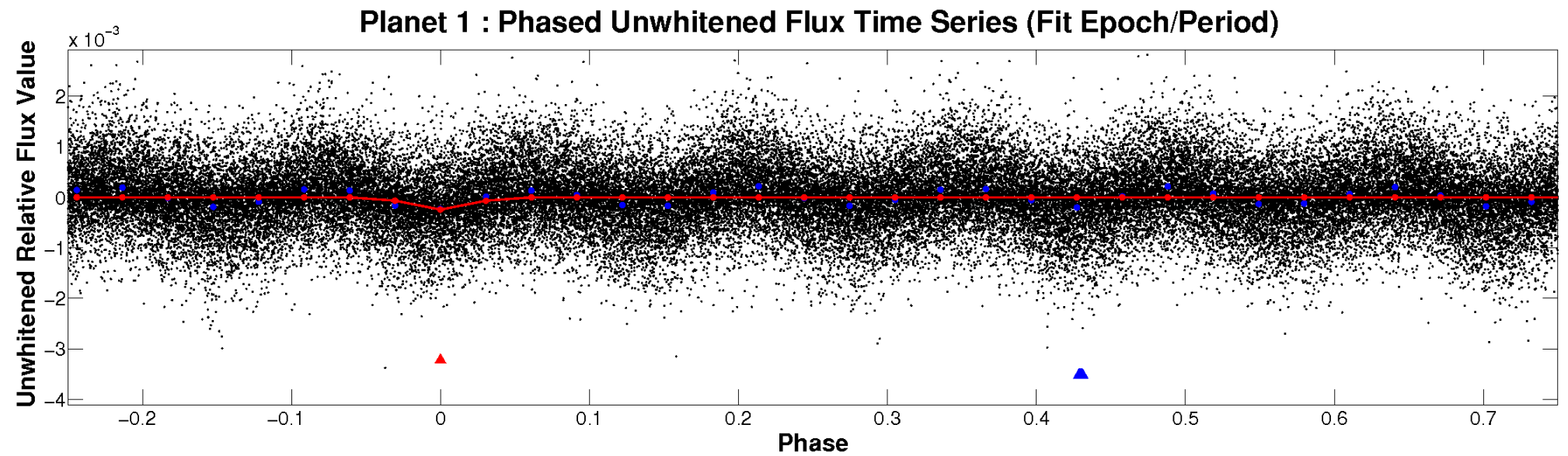


ALT Odd/Even

TCE 006113864-01

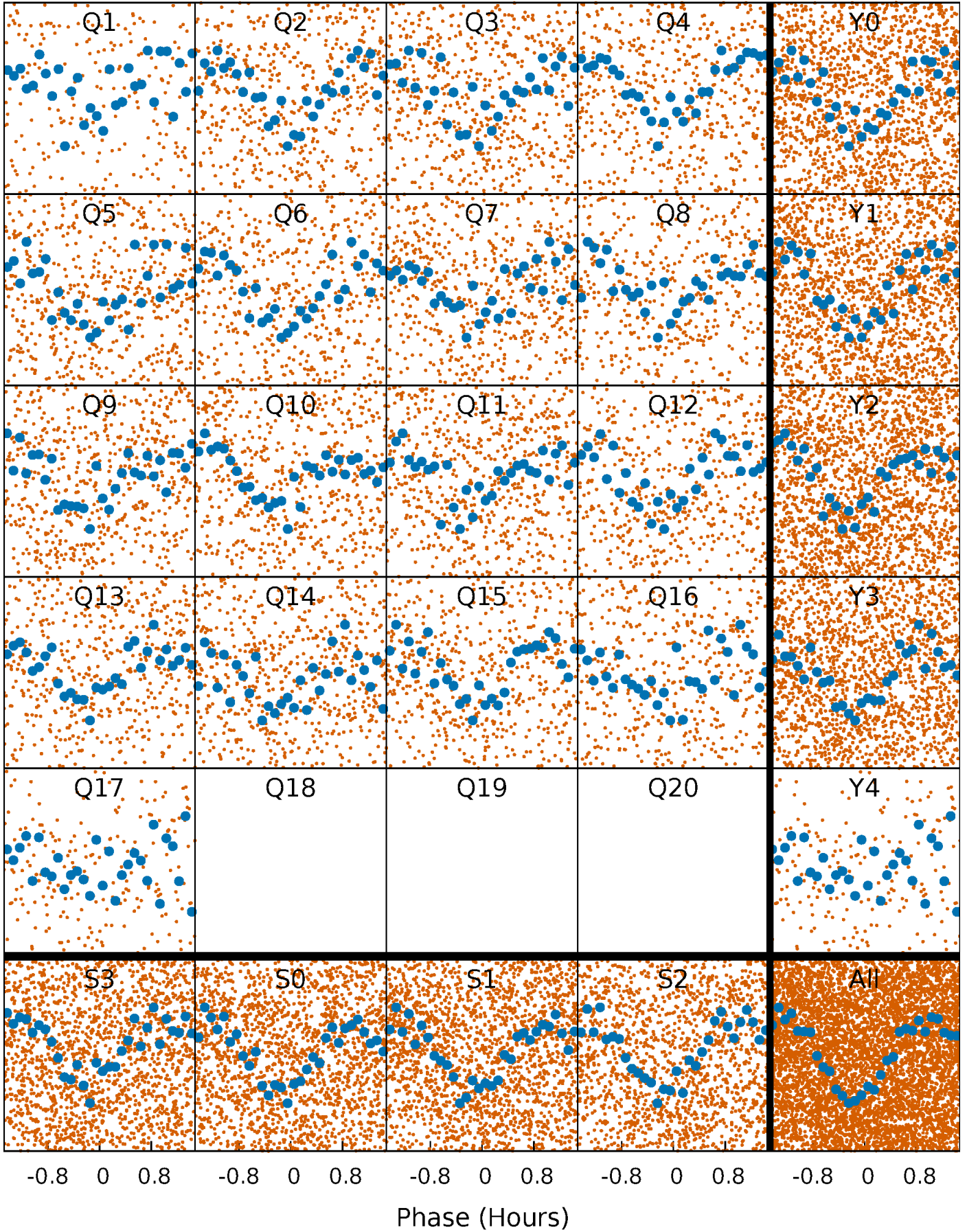


Non-Whitened Vs. Whitened Light Curve



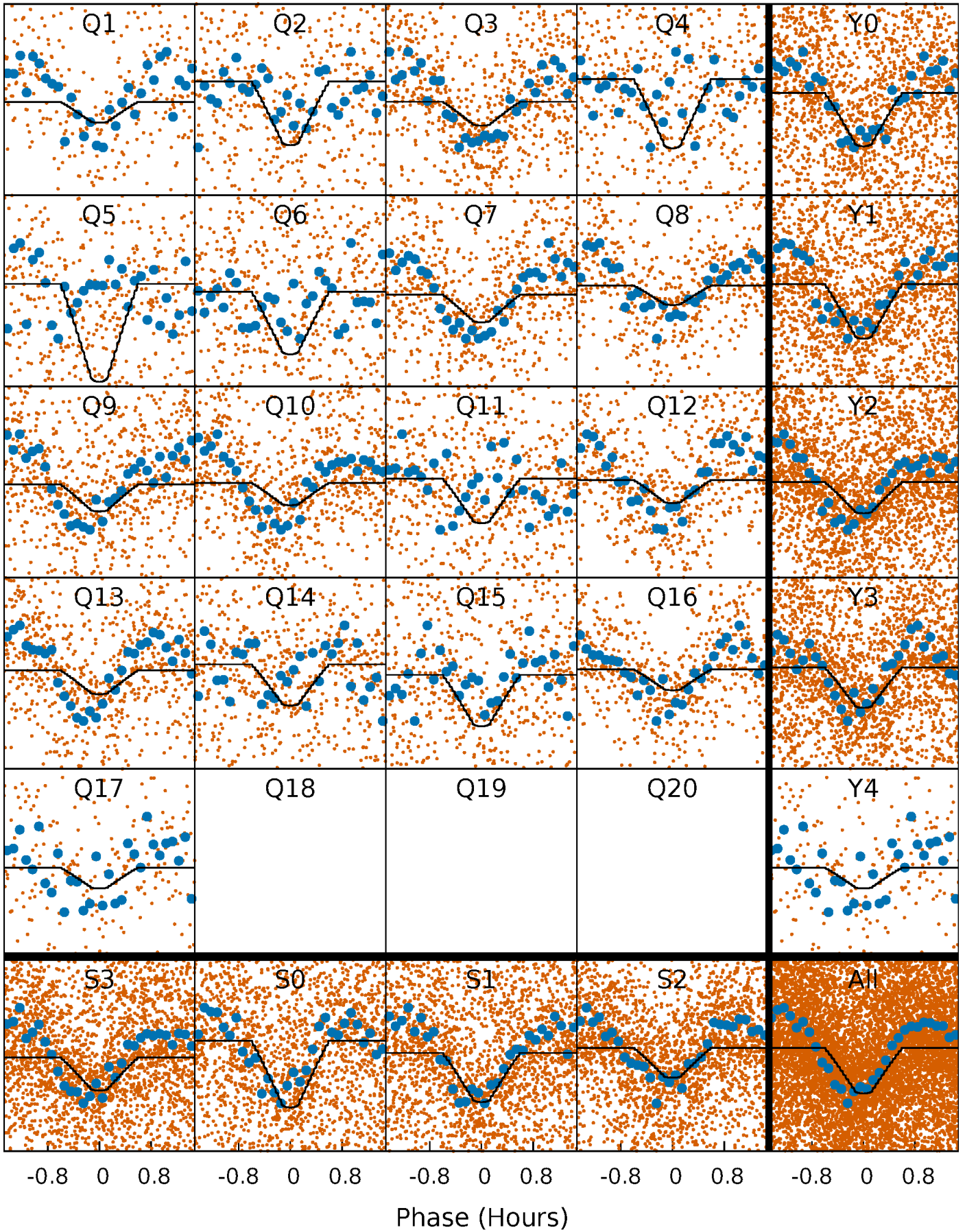
PDC Quarter-Phased Transit Curves

TCE 006113864-01 P= 0.669672 Days $T_0=131.800987$ (BKJD)



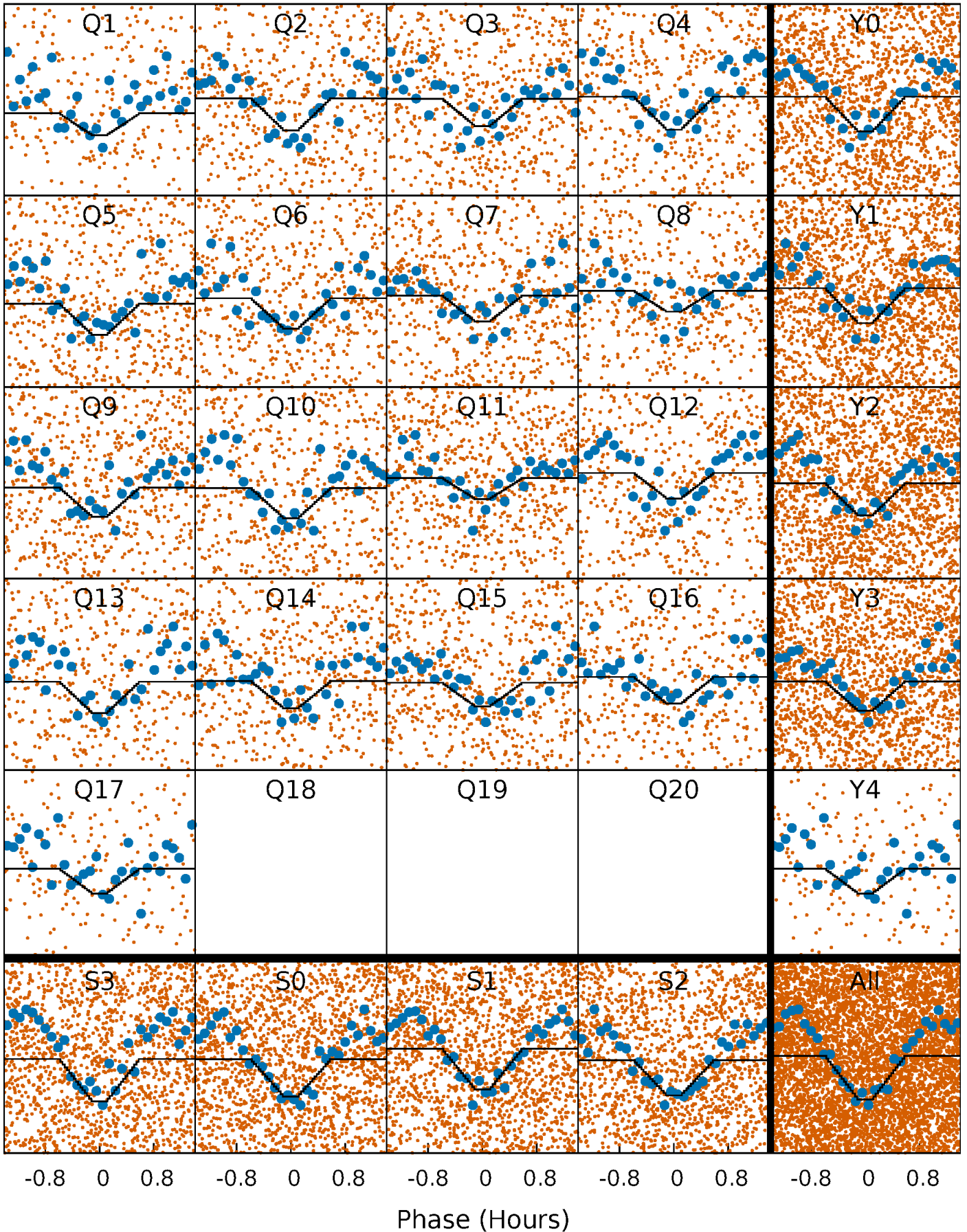
DV Quarter-Phased Transit Curves

TCE 006113864-01 P= 0.669672 Days $T_0=131.800987$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

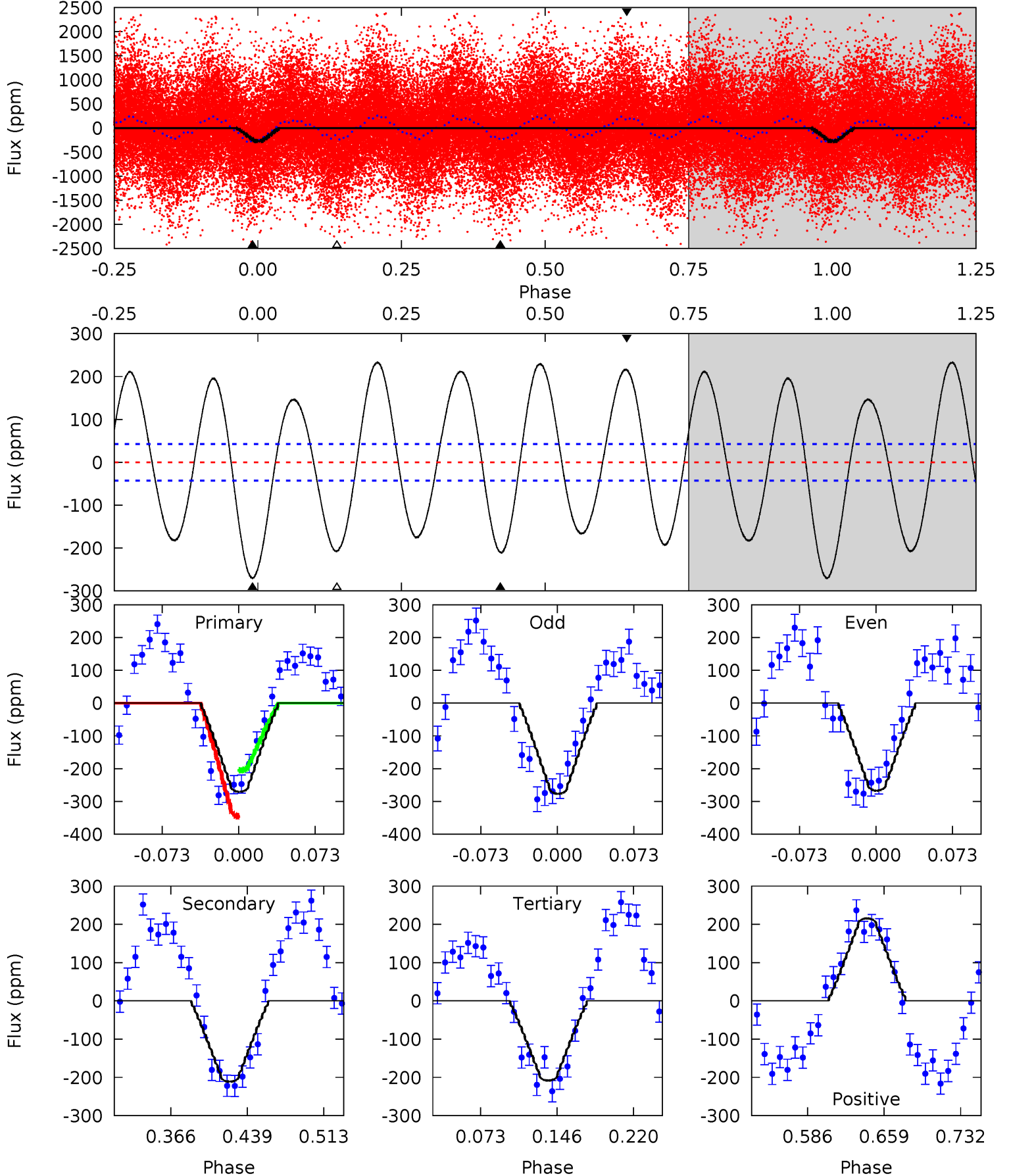
TCE 006113864-01 P= 0.669666 Days $T_0=131.801465$ (BKJD)



DV Model-Shift Uniqueness Test

006113864-01, P = 0.669672 Days, E = 131.131315 Days

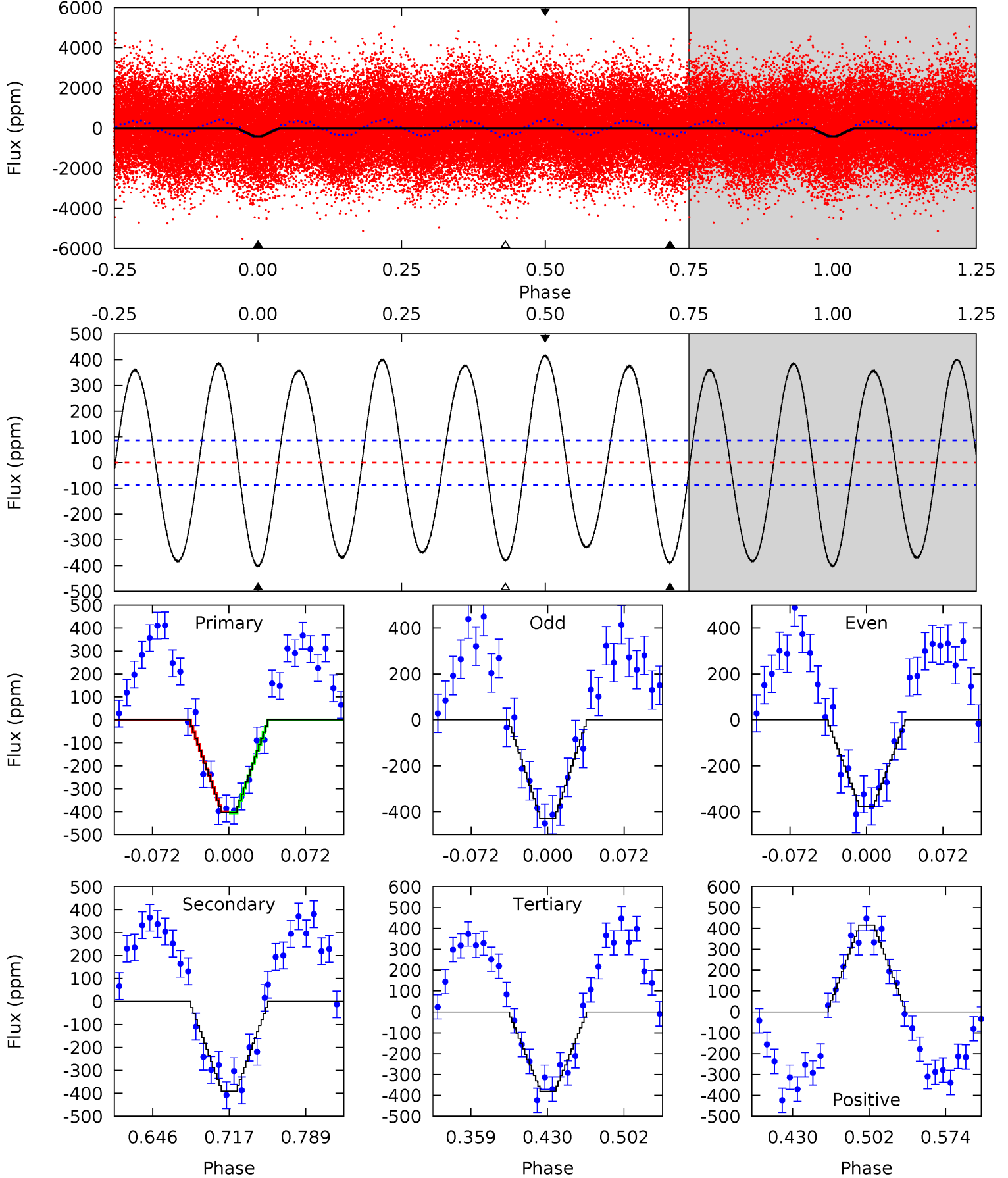
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.4	22.9	22.6	23.4	4.63	1.79	15.0	6.80	6.00	0.35	-0.45	0.52	1.00	0.46	7.66



Alt Model-Shift Uniqueness Test

006113864-01, P = 0.669666 Days, E = 131.131799 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.7	21.0	20.5	22.3	4.63	1.80	14.1	1.23	-0.65	0.55	-1.33	1.39	0.94	0.51	0.12



Stellar Parameters For KIC 006113864

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8972^{+251}_{-430}	$3.793^{+0.385}_{-0.165}$	$0.070^{+0.250}_{-0.650}$	$3.340^{+1.032}_{-1.549}$	$2.528^{+0.307}_{-0.922}$	$0.096^{+0.351}_{-0.047}$
	+3%/-5%	+10%/-4%	+357%/-929%	+31%/-46%	+12%/-36%	+368%/-49%
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 006113864-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-211 ± 9	$5.14^{+2.53}_{-2.15}$	6863^{+677}_{-860}	7989^{+3918}_{-1771}	$1.814^{+3.521}_{-0.983}$
Alt.	-391 ± 19	$6.59^{+2.79}_{-2.43}$	6909^{+602}_{-770}	8472^{+2695}_{-1670}	$2.019^{+2.696}_{-1.046}$

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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

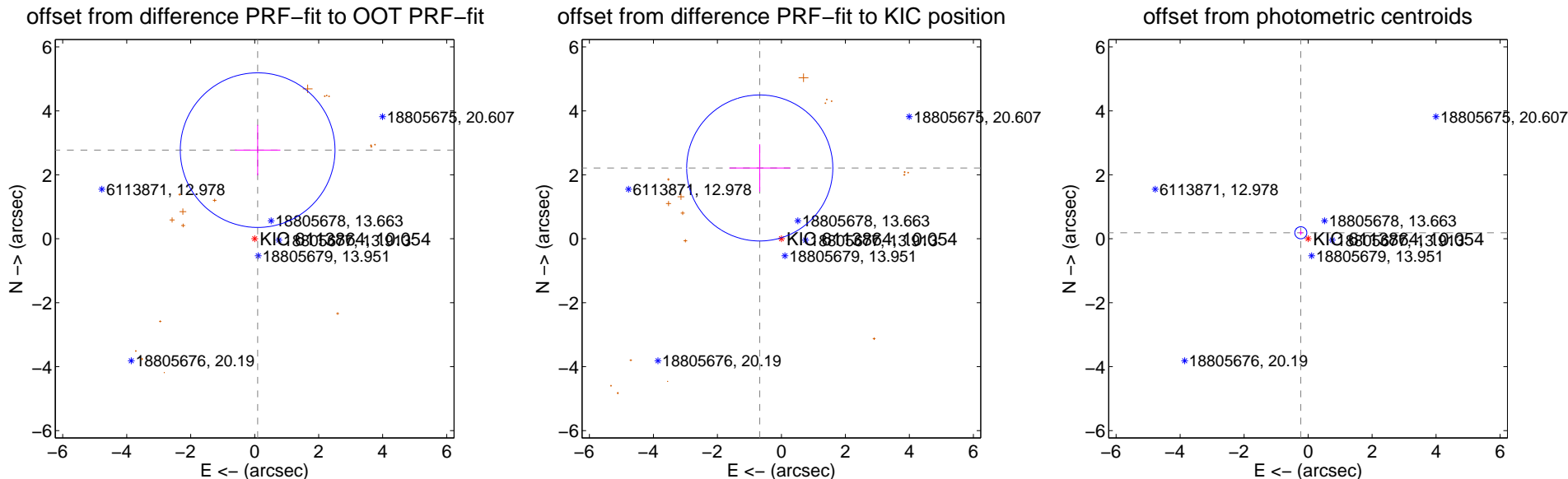
DV Centroid Data

Supplemental centroid analysis for 006113864-01. **Kepler magnitude: 10.05.** Transit SNR 17.67

There are 0 quarters with good PRF difference image offsets

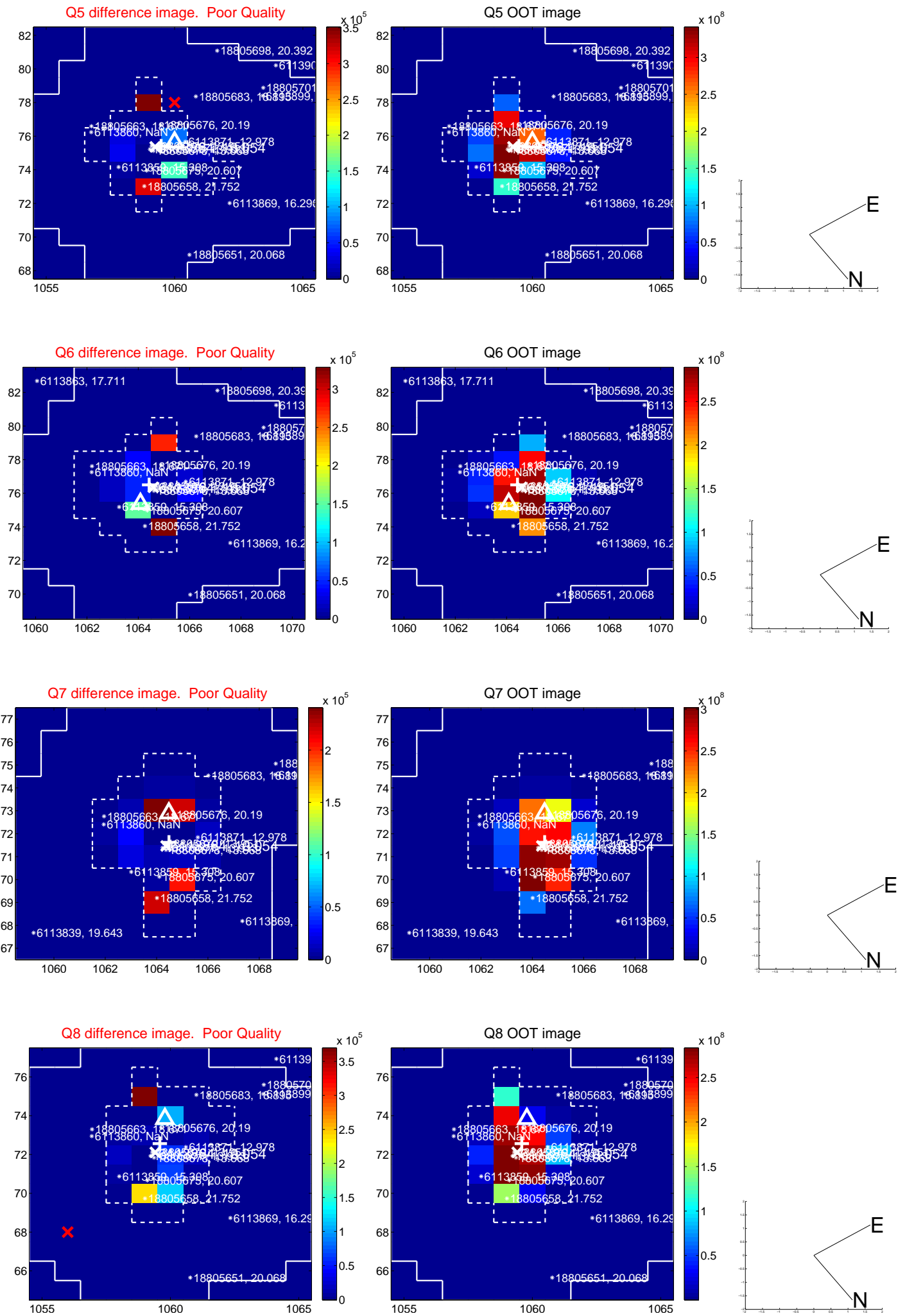
The direct PRF centroid is offset from the target star catalog position by about 1.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.773 ± 0.806	3.44	-0.092 ± 0.712	2.772 ± 0.789
PRF-fit source offset from KIC position	2.315 ± 0.761	3.04	0.677 ± 0.949	2.214 ± 0.741
photometric centroid source offset	0.29 ± 0.06	4.70	0.23 ± 0.06	0.19 ± 0.07

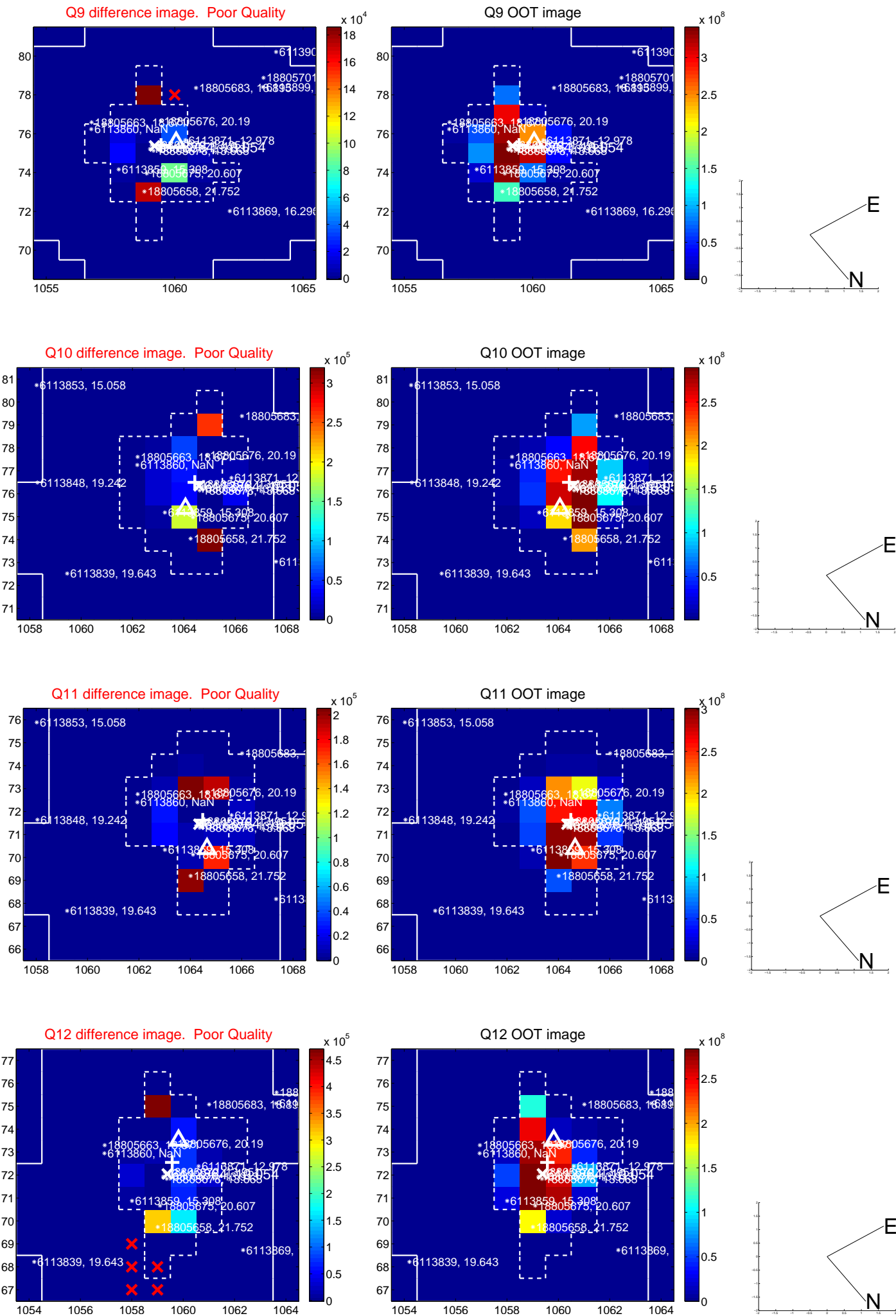


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

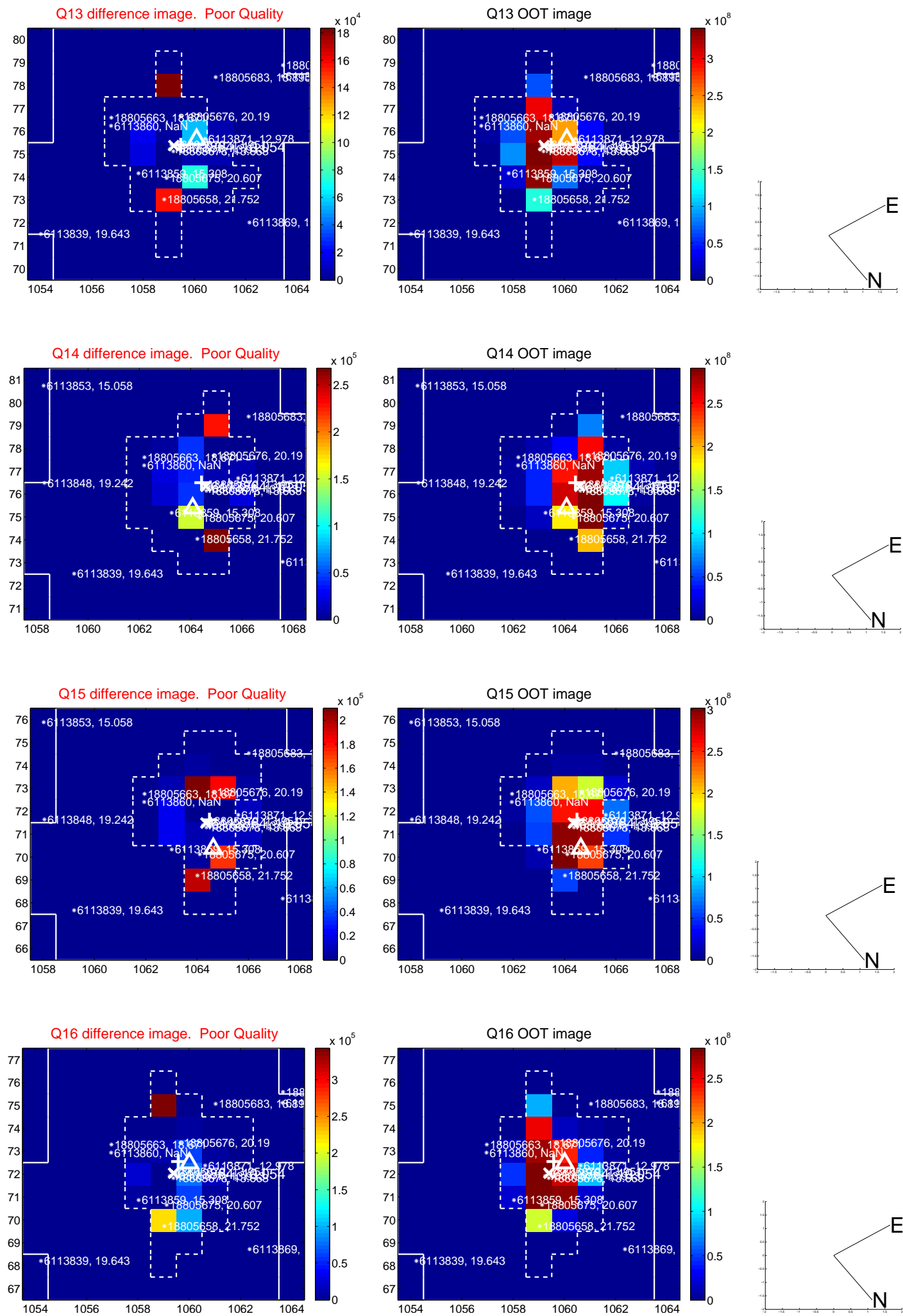
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



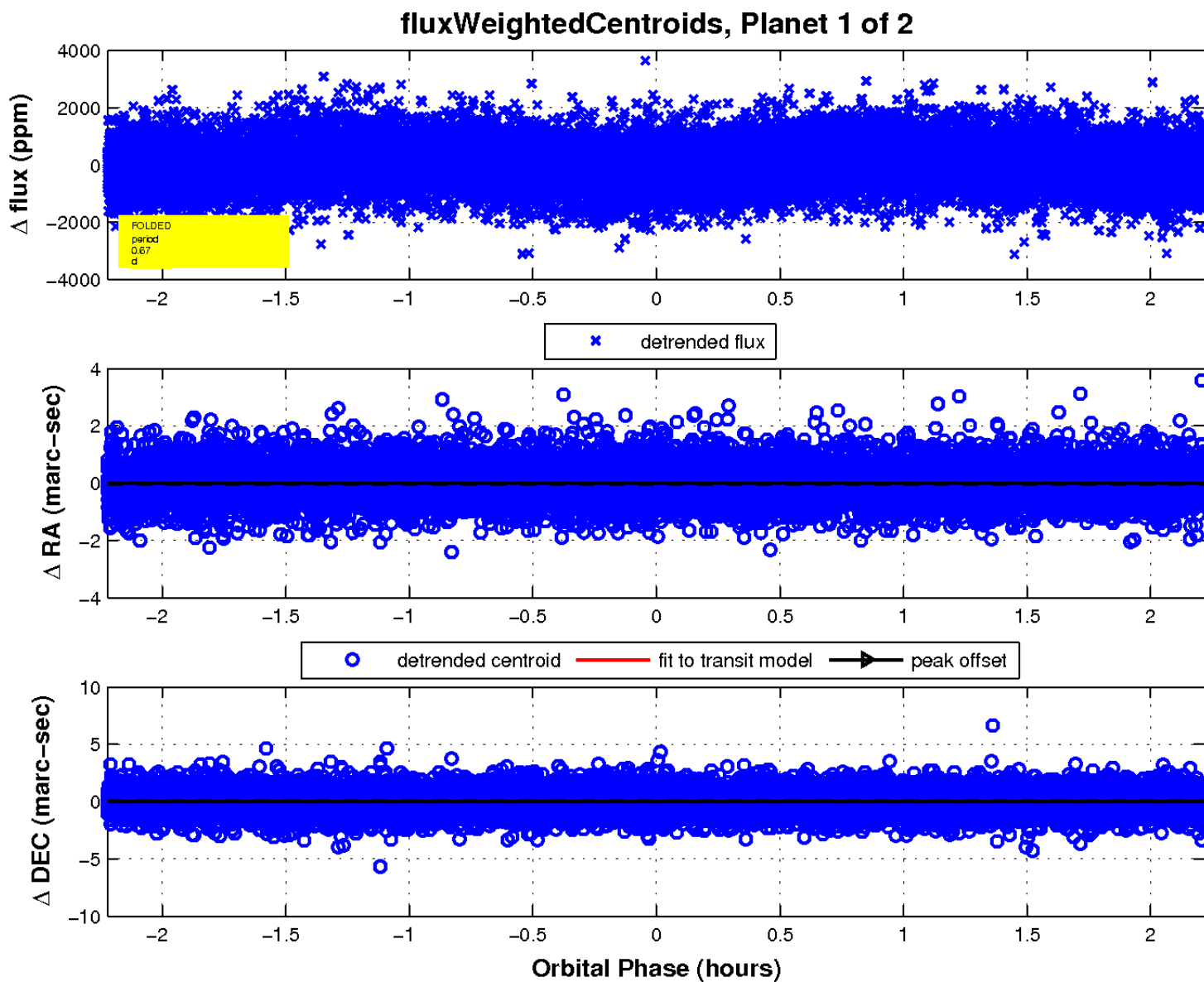
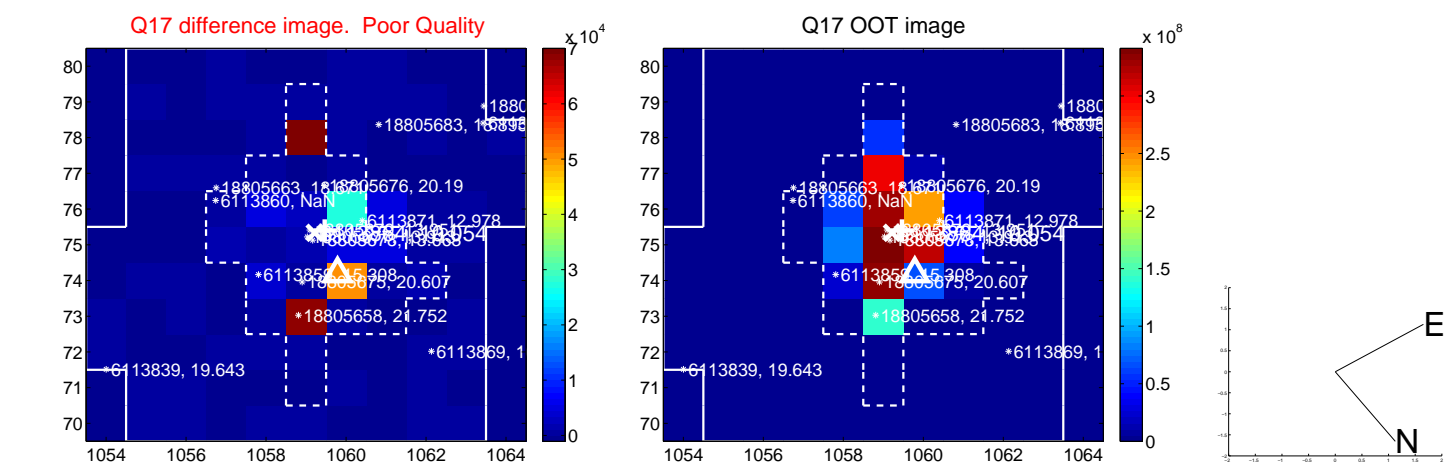
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

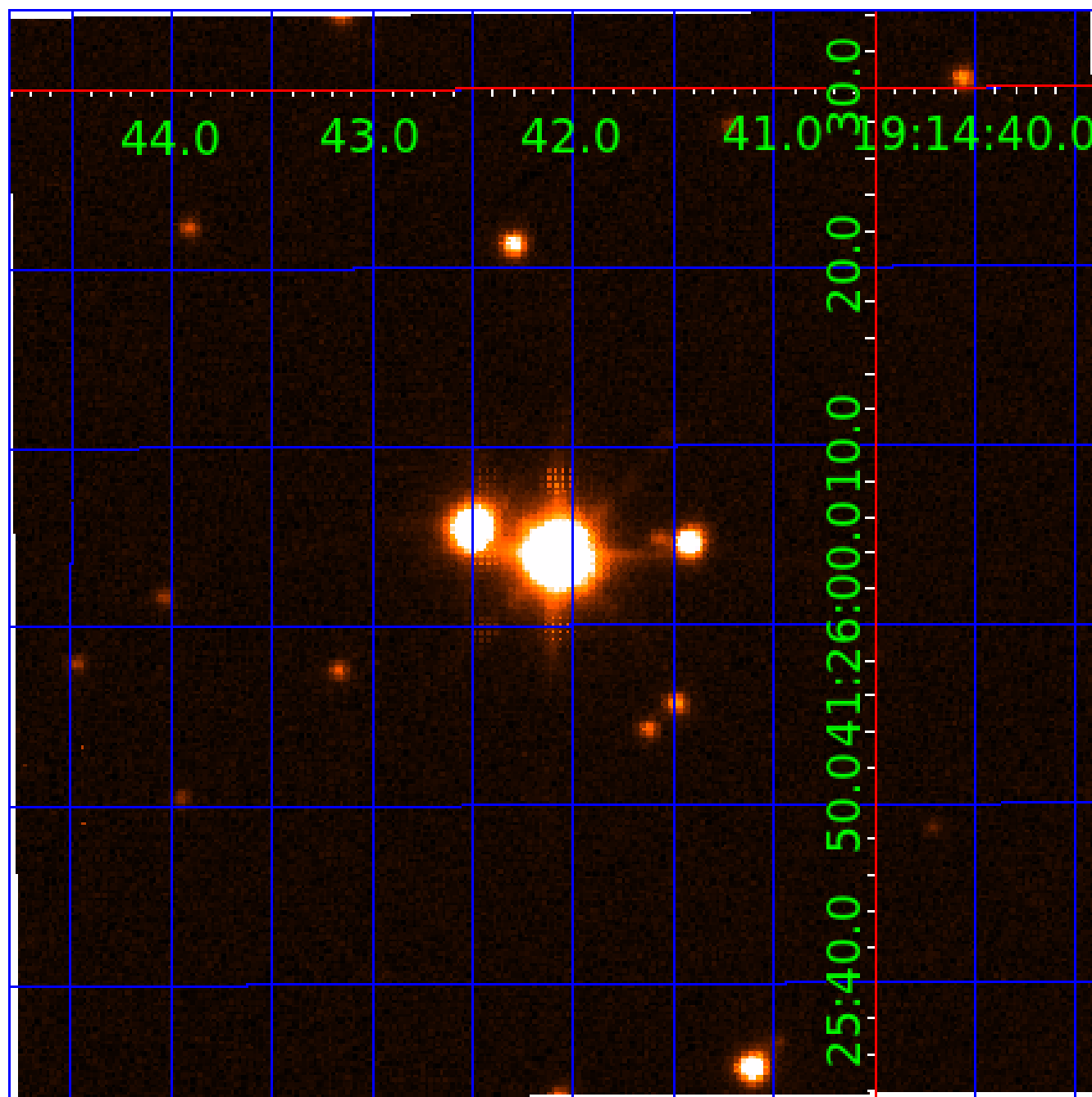


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006113864

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})
006113864-01	OBS	No	0.669672	131.800987	267.6	0.741	10.7	17.7	3.34	8972	5.65	155524.61
006113864-02	OBS	No	0.669672	132.089567	285.7	1.012	9.9	20.2	3.34	8972	6.56	155524.83

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006113864-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
006113864-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

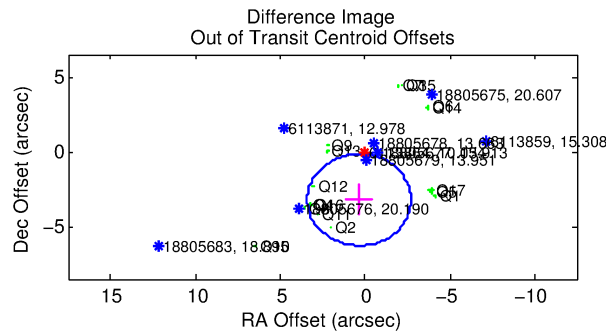
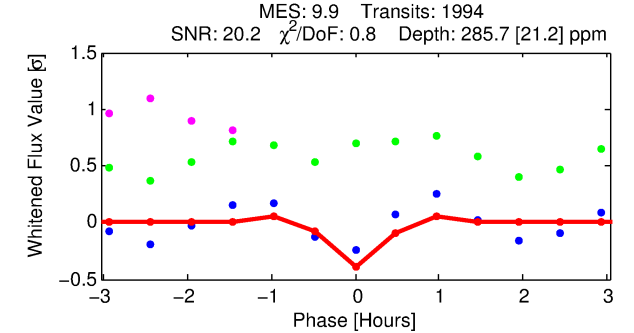
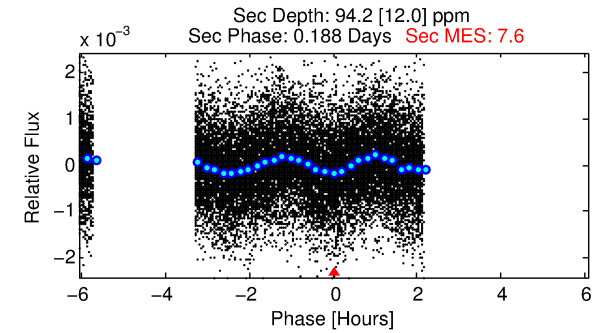
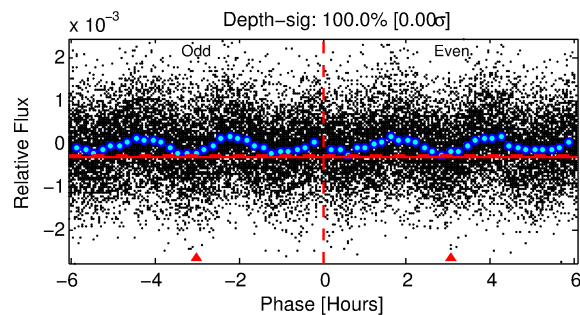
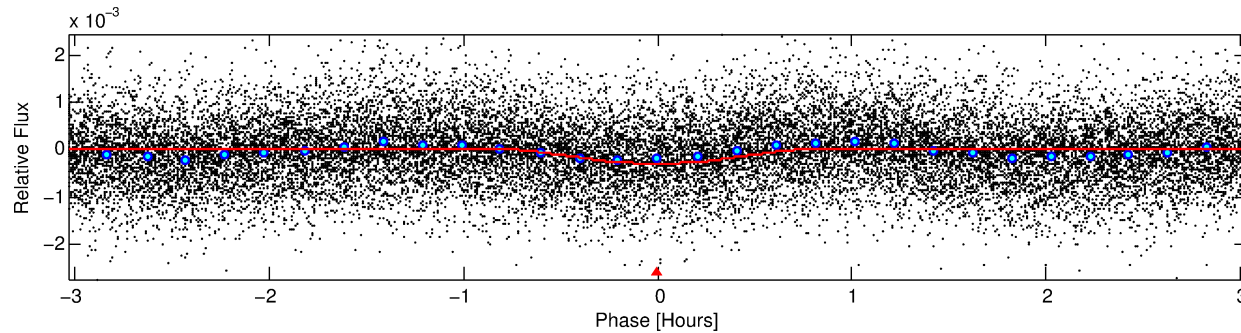
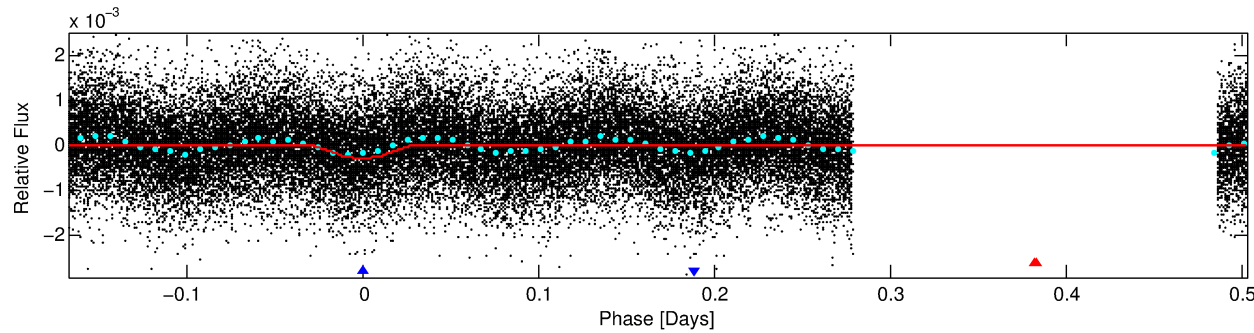
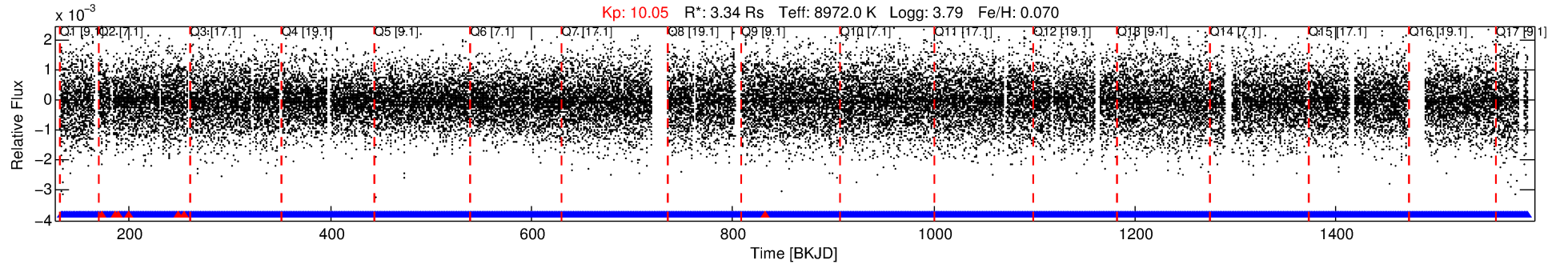
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006113864-02

No Significant Match Found

DV One-Page Summary

KIC: 6113864 Candidate: 2 of 2 Period: 0.670 d



DV Fit Results:

Period = 0.66967 [0.00001] d
Epoch = 132.0896 [0.0007] BKJD
Rp/R* = 0.0180 [0.0029]
a/R* = 2.58 [2.38]
b = 0.90 [0.23]
Seff = 155524.83 [107932.70]
Teq = 5064 [879] K
Rp = 6.56 [3.22] Re
a = 0.0204 [0.0087] AU
Ag = 0.50 [0.38] [-1.32 σ]
Teffp = 6591 [648] K [1.40 σ]

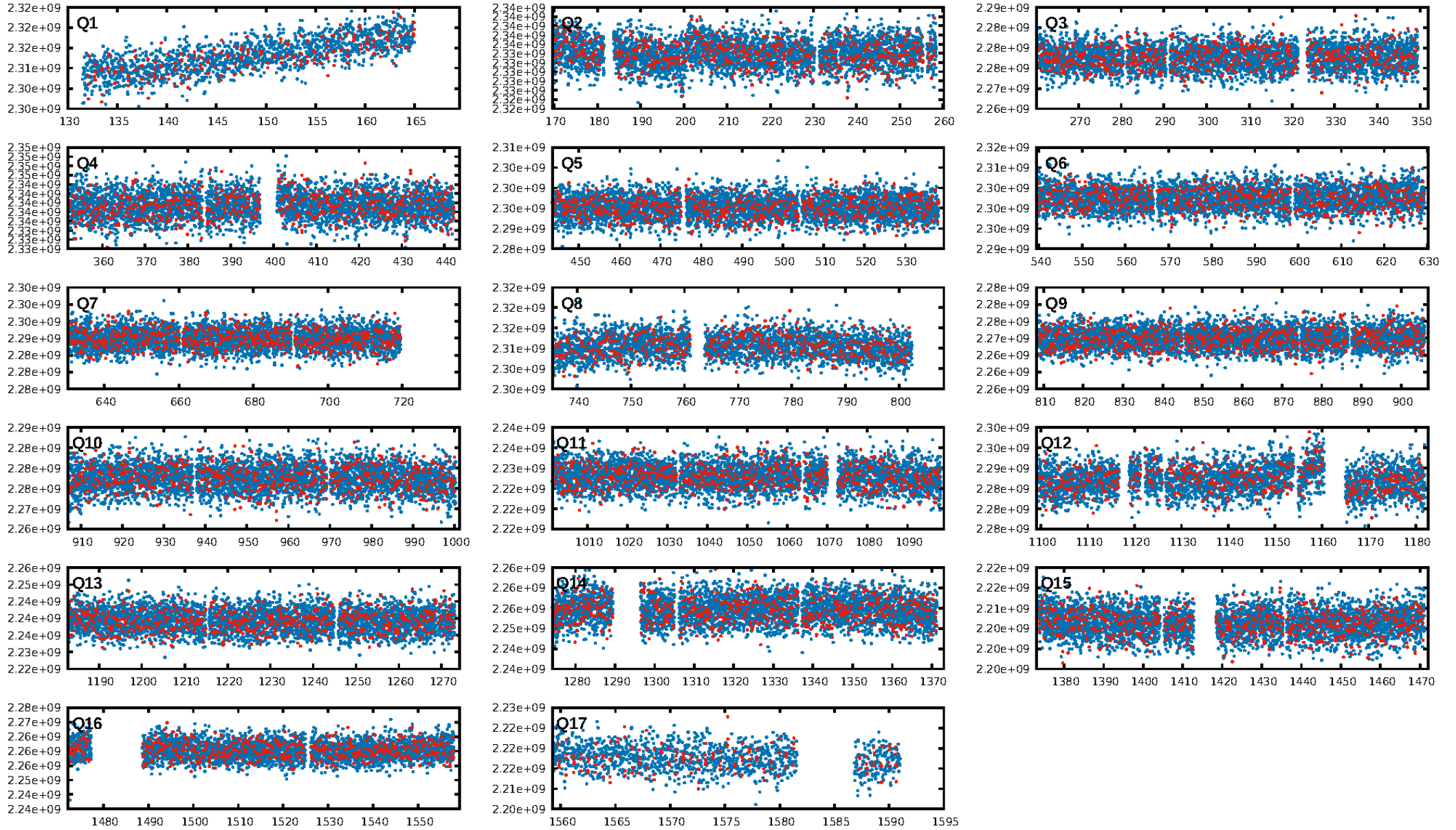
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.28e-20
RollingBand-fgt: 1.00 [1898/1905]
GhostDiagnostic-chr: N/A
Centroid-sig: 3.0%
Centroid-so: 0.305 arcsec [5.80 σ]
OotOffset-rm: 3.230 arcsec [3.17 σ]
KicOffset-rm: 2.761 arcsec [2.39 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 1.00 [17/17]

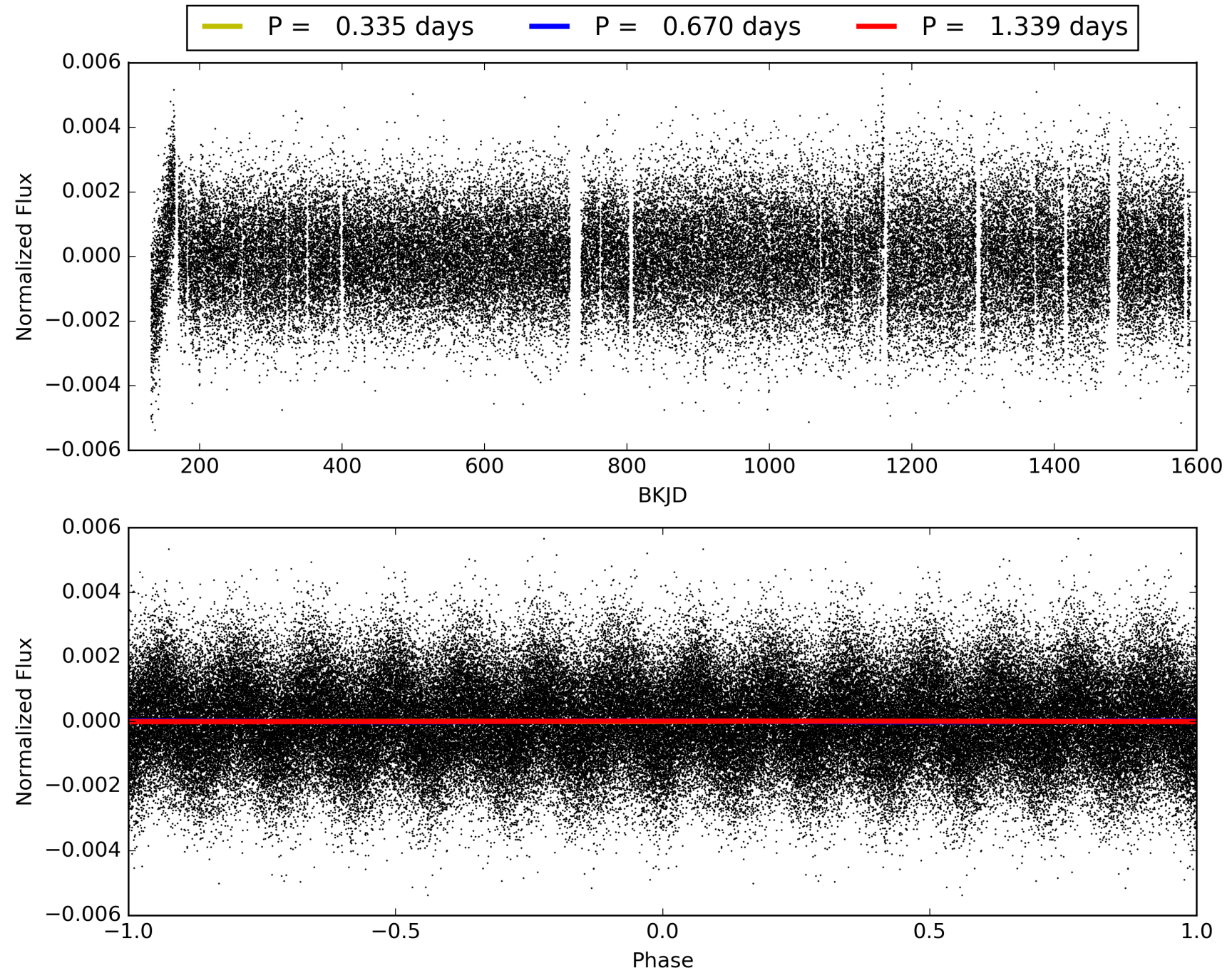
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 08:36:48 Z

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

TCE 006113864-02, PDC Light Curves

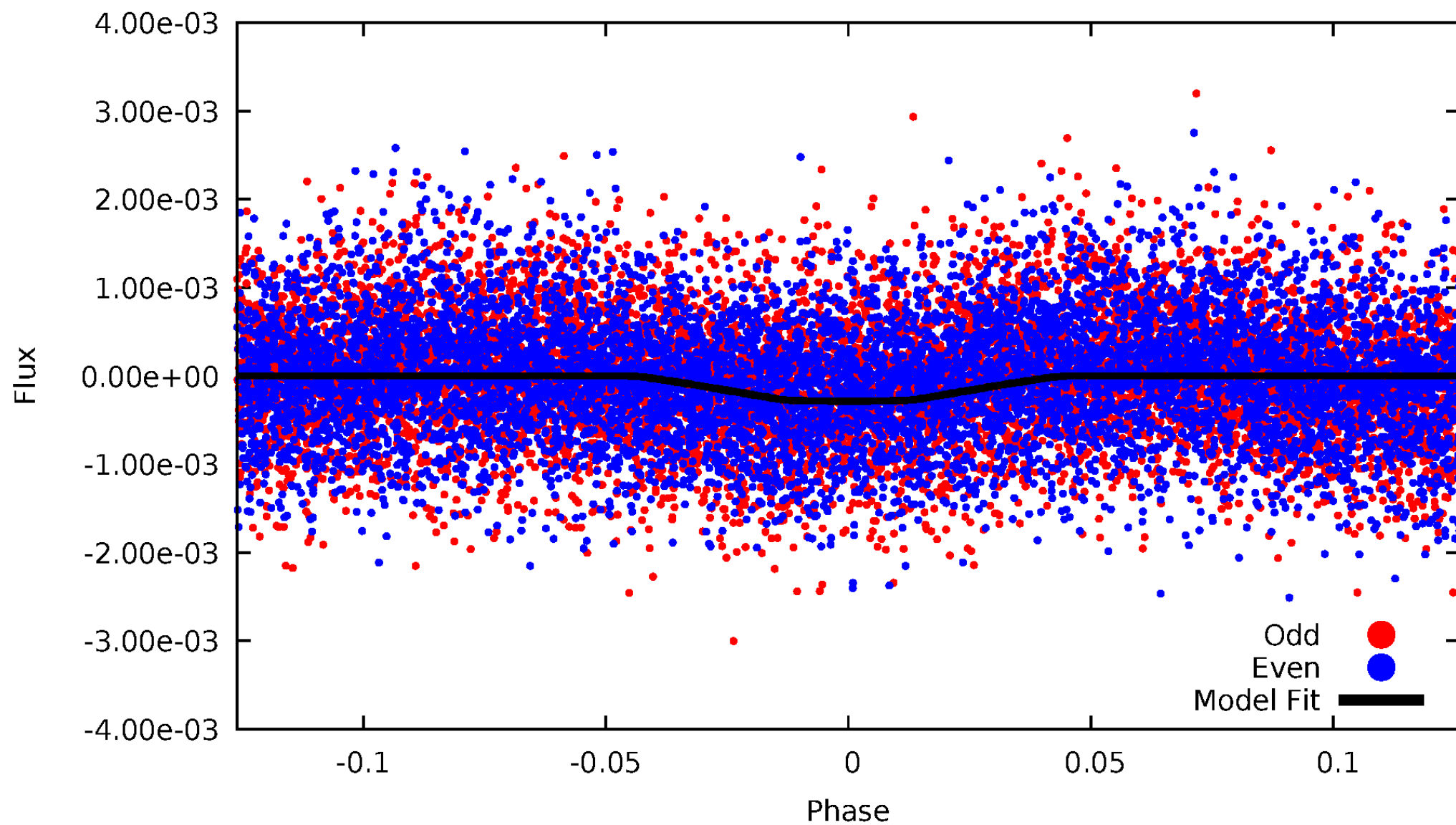


TCE 006113864-02



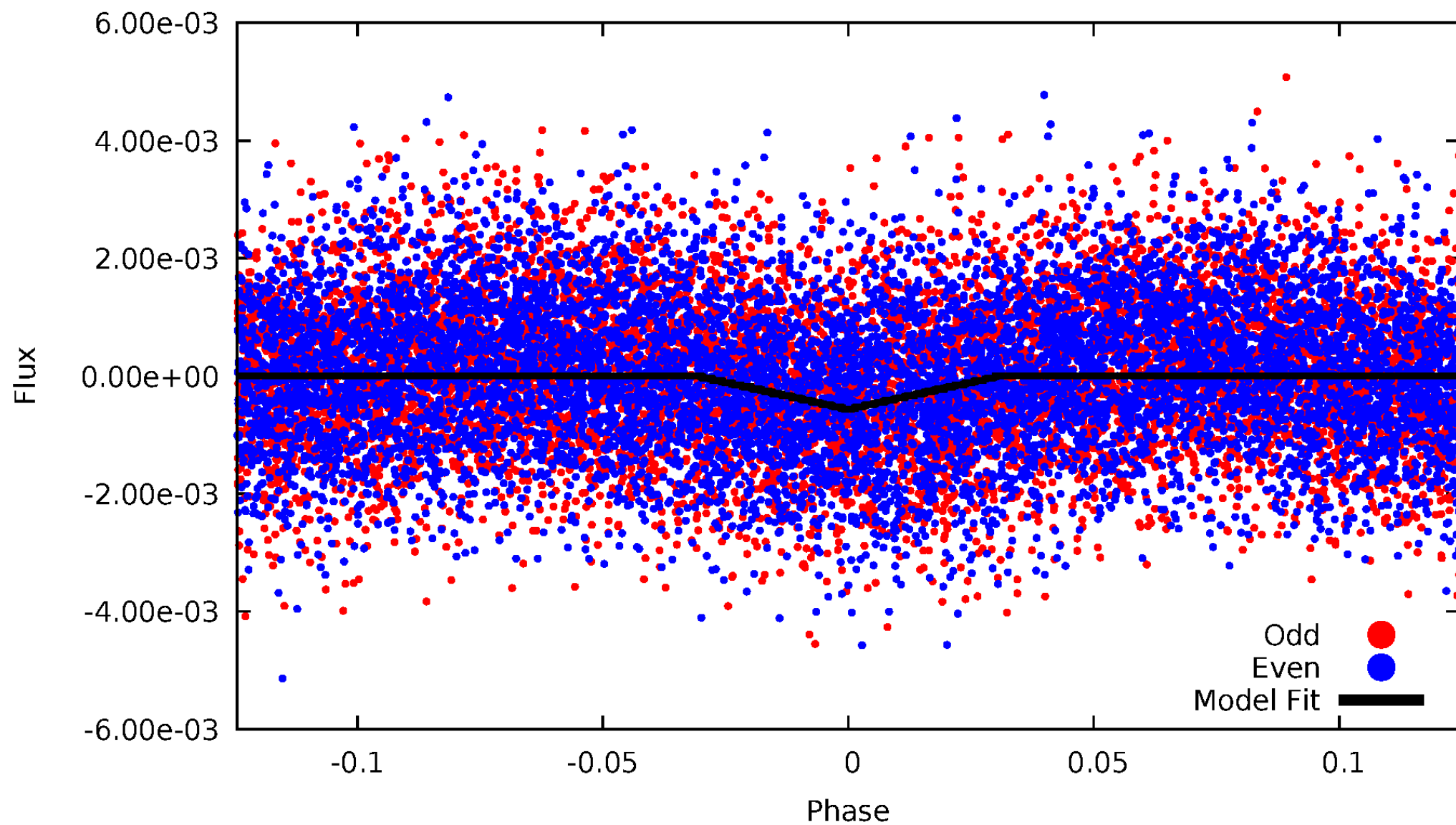
DV Odd/Even

TCE 006113864-02



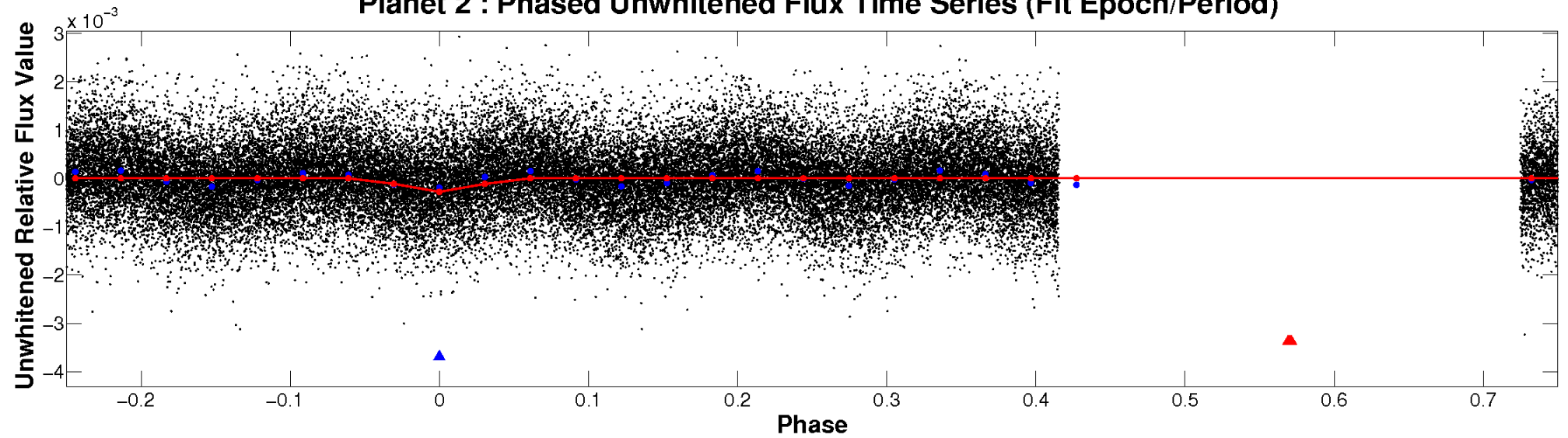
ALT Odd/Even

TCE 006113864-02

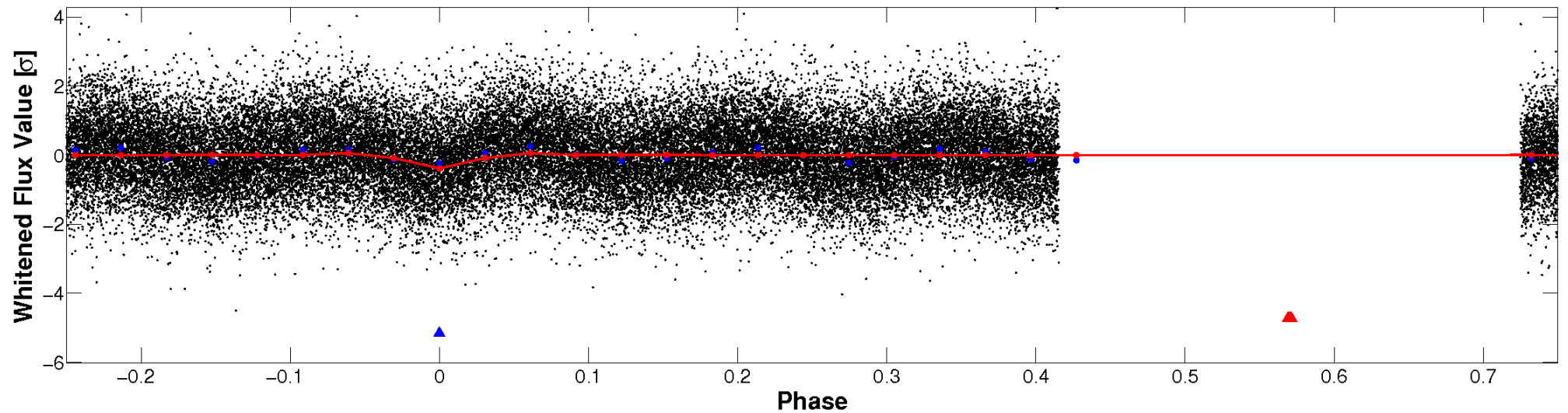


Non-Whitened Vs. Whitened Light Curve

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

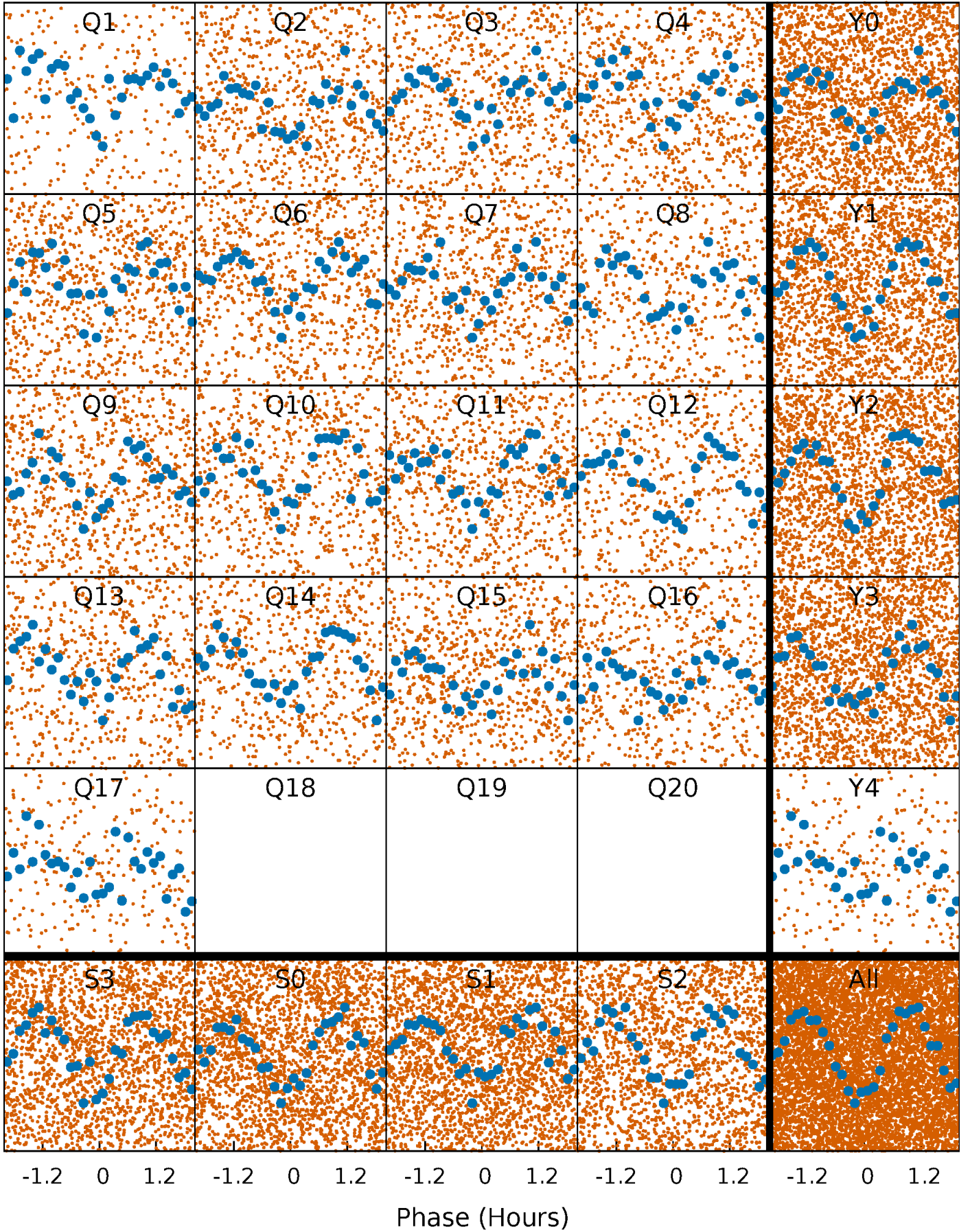


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



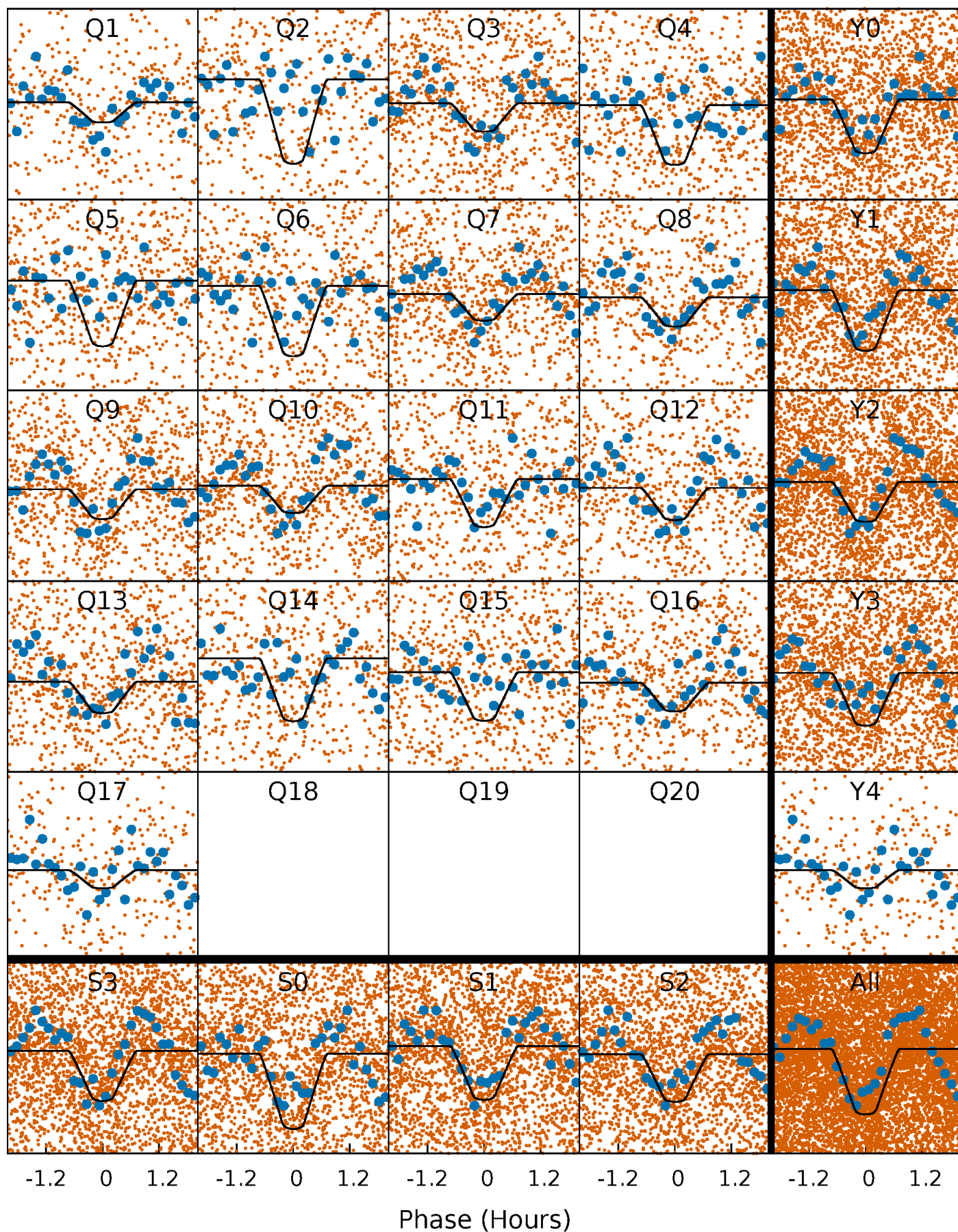
PDC Quarter-Phased Transit Curves

TCE 006113864-02 P= 0.669672 Days $T_0=132.089567$ (BKJD)



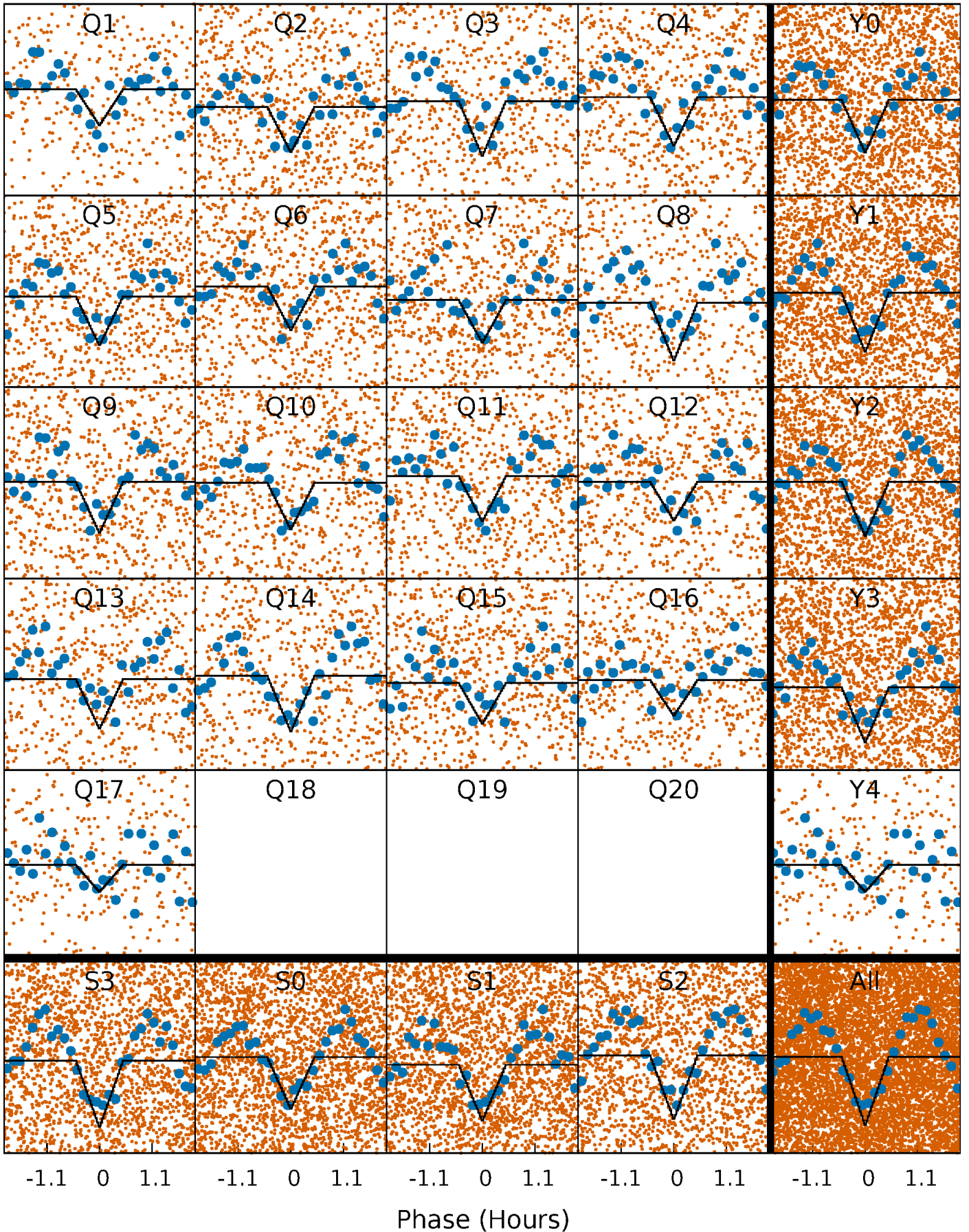
DV Quarter-Phased Transit Curves

TCE 006113864-02 P= 0.669672 Days $T_0=132.089567$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

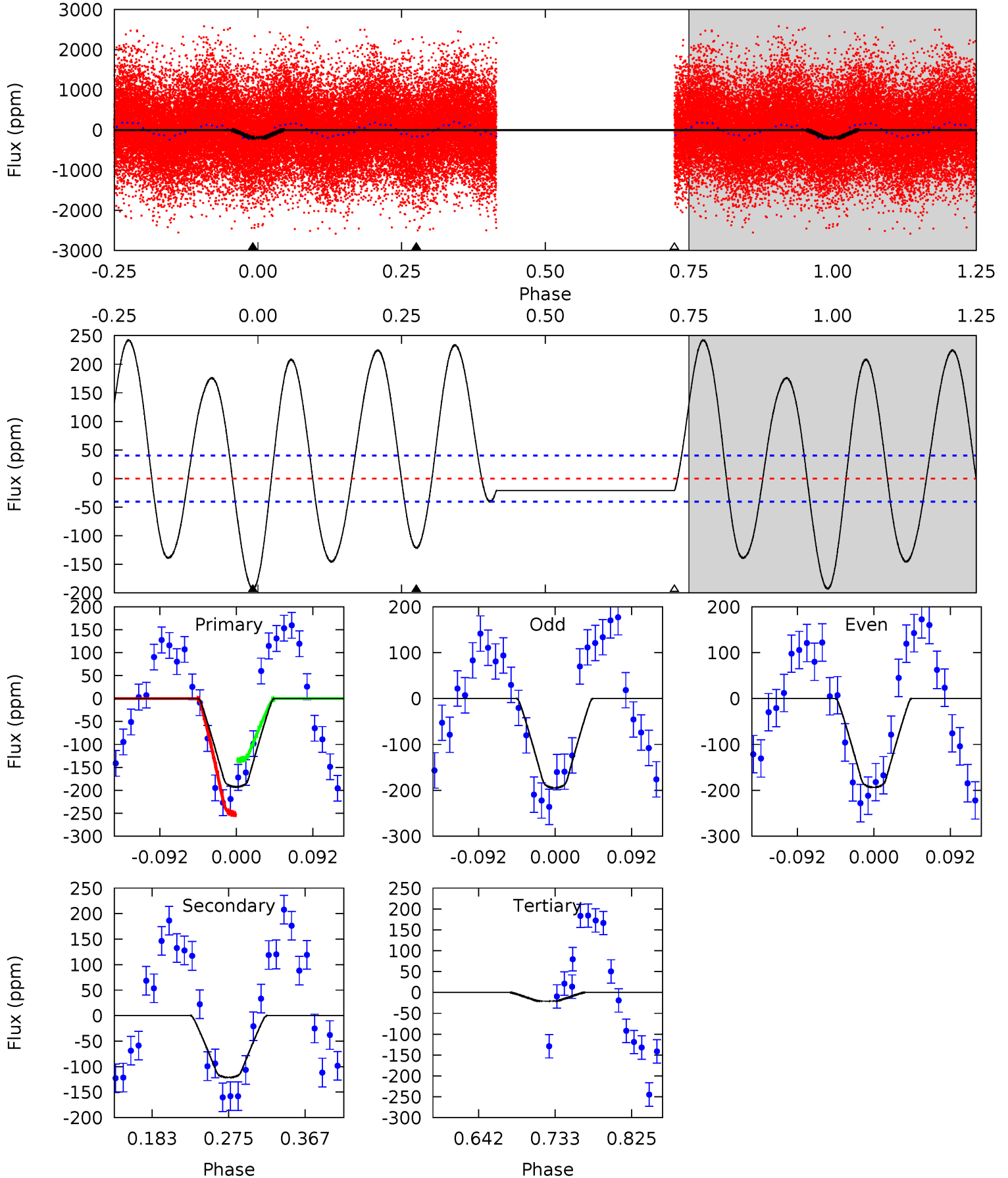
TCE 006113864-02 P= 0.669666 Days $T_0=132.089547$ (BKJD)



DV Model-Shift Uniqueness Test

006113864-02, P = 0.669672 Days, E = 131.419895 Days

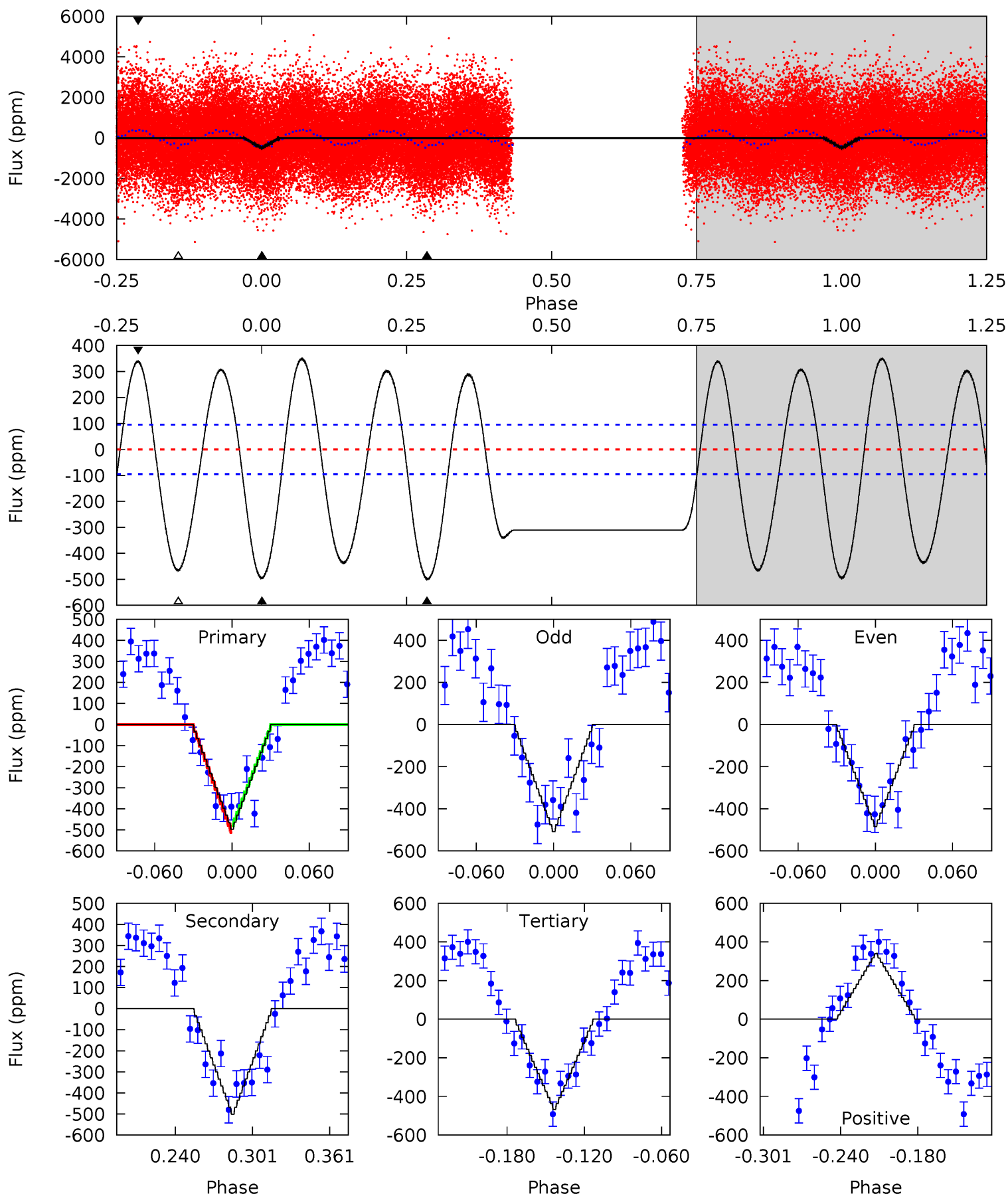
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.9	13.8	2.38	0	4.58	1.69	12.8	19.5	21.9	11.4	13.8	0.08	1.01	0.56	6.66



Alt Model-Shift Uniqueness Test

006113864-02, P = 0.669666 Days, E = 131.419881 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.5	24.7	23.0	16.7	4.67	1.88	13.3	1.42	7.73	1.64	7.95	0.61	1.10	0.41	0.82



Stellar Parameters For KIC 006113864

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8972^{+251}_{-430}	$3.793^{+0.385}_{-0.165}$	$0.070^{+0.250}_{-0.650}$	$3.340^{+1.032}_{-1.549}$	$2.528^{+0.307}_{-0.922}$	$0.096^{+0.351}_{-0.047}$
	+3%/-5%	+10%/-4%	+357%/-929%	+31%/-46%	+12%/-36%	+368%/-49%
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 006113864-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-121 ± 9	$6.15^{+1.67}_{-1.67}$	6956^{+563}_{-895}	5795^{+912}_{-971}	$0.720^{+0.555}_{-0.275}$
Alt.	-501 ± 20	$8.06^{+2.13}_{-2.15}$	6892^{+661}_{-860}	8069^{+861}_{-830}	$1.687^{+1.174}_{-0.581}$

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

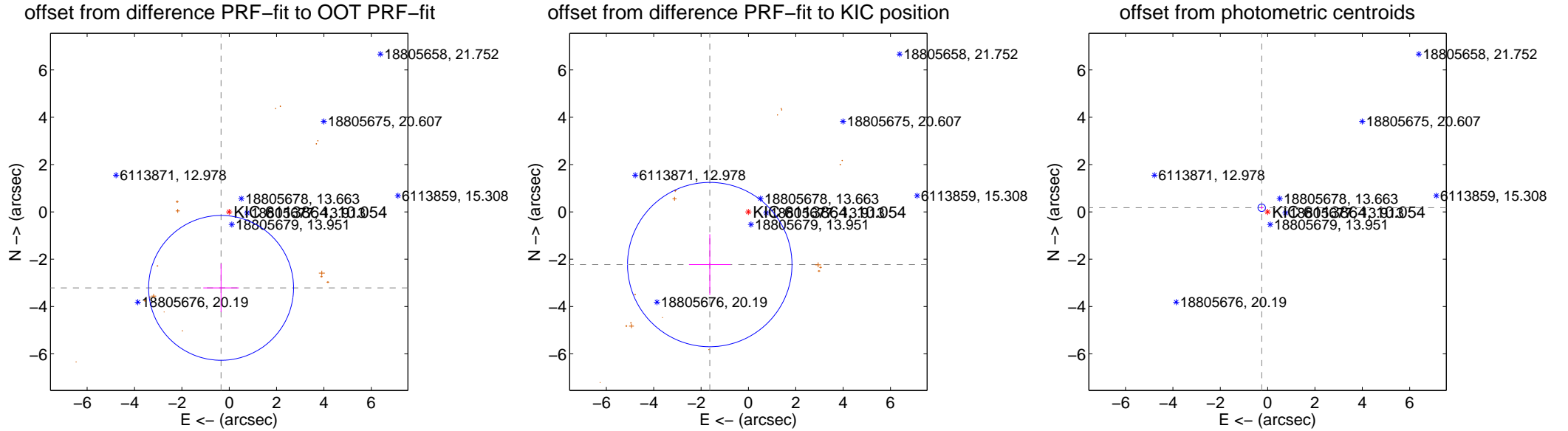
DV Centroid Data

Supplemental centroid analysis for 006113864-02. **Kepler magnitude: 10.05.** Transit SNR 20.16

There are 0 quarters with good PRF difference image offsets

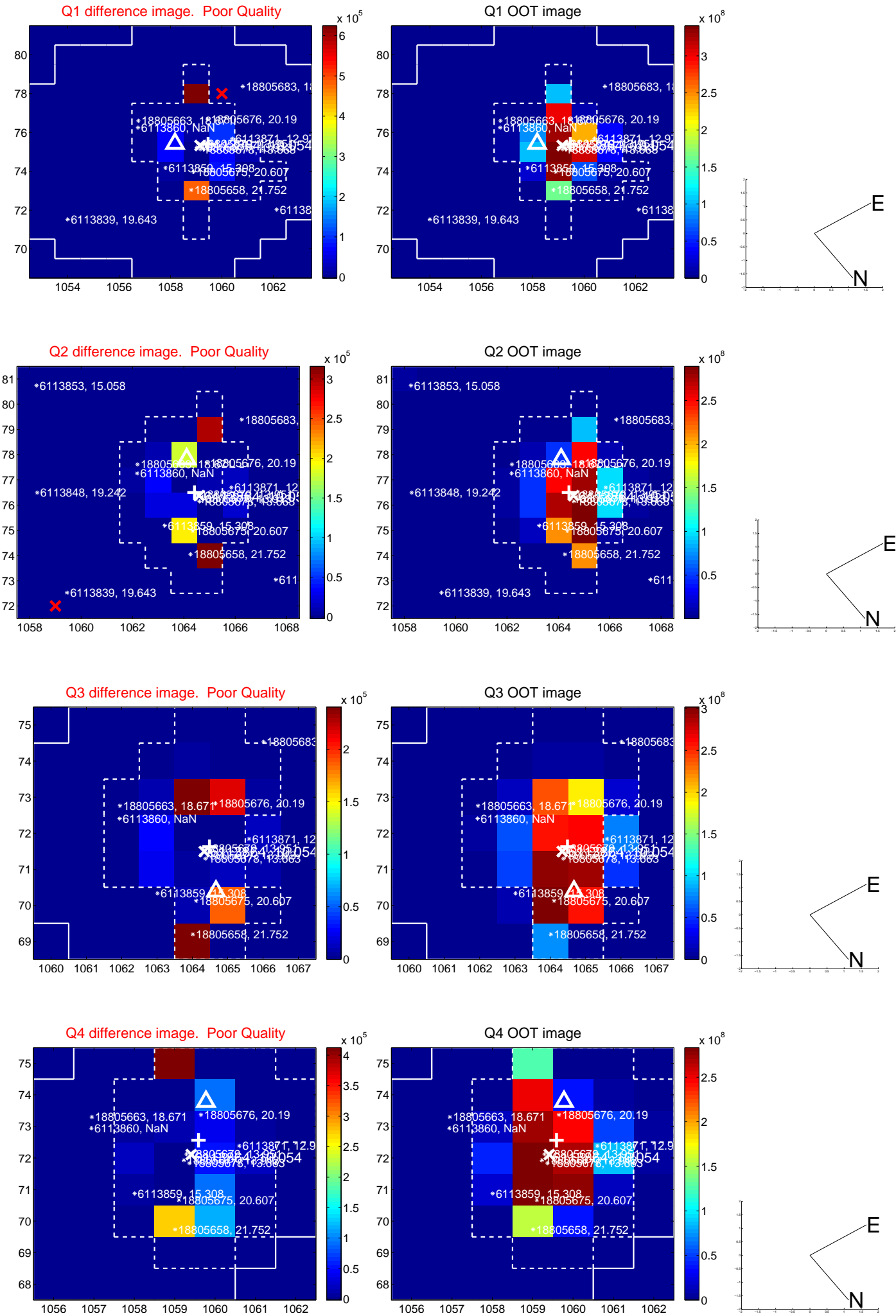
The direct PRF centroid is offset from the target star catalog position by about 1.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.230 ± 1.020	3.17	0.344 ± 0.750	-3.212 ± 1.023
PRF-fit source offset from KIC position	2.761 ± 1.157	2.39	1.632 ± 0.878	-2.226 ± 1.283
photometric centroid source offset	0.31 ± 0.05	5.80	0.25 ± 0.05	0.18 ± 0.06

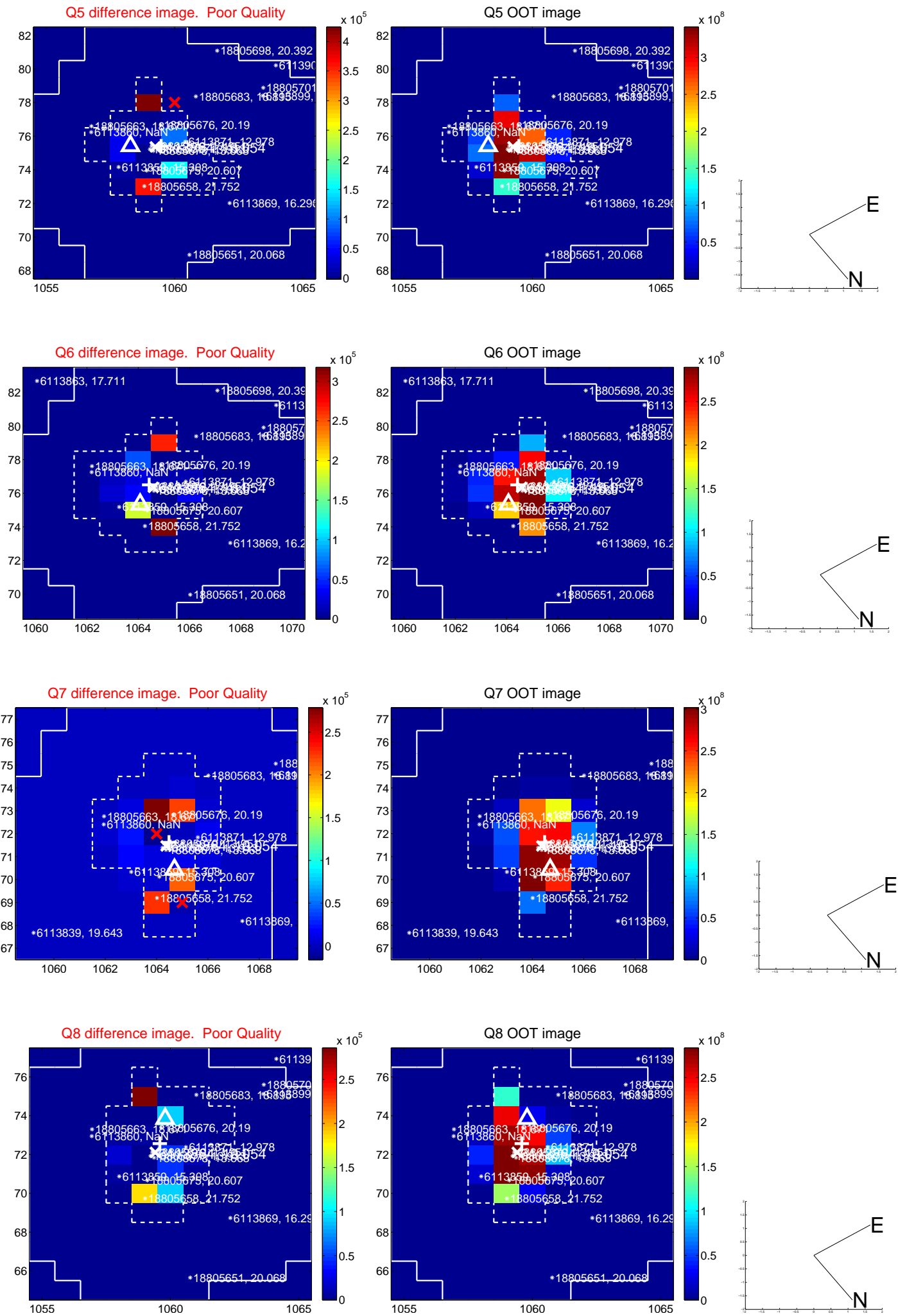


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

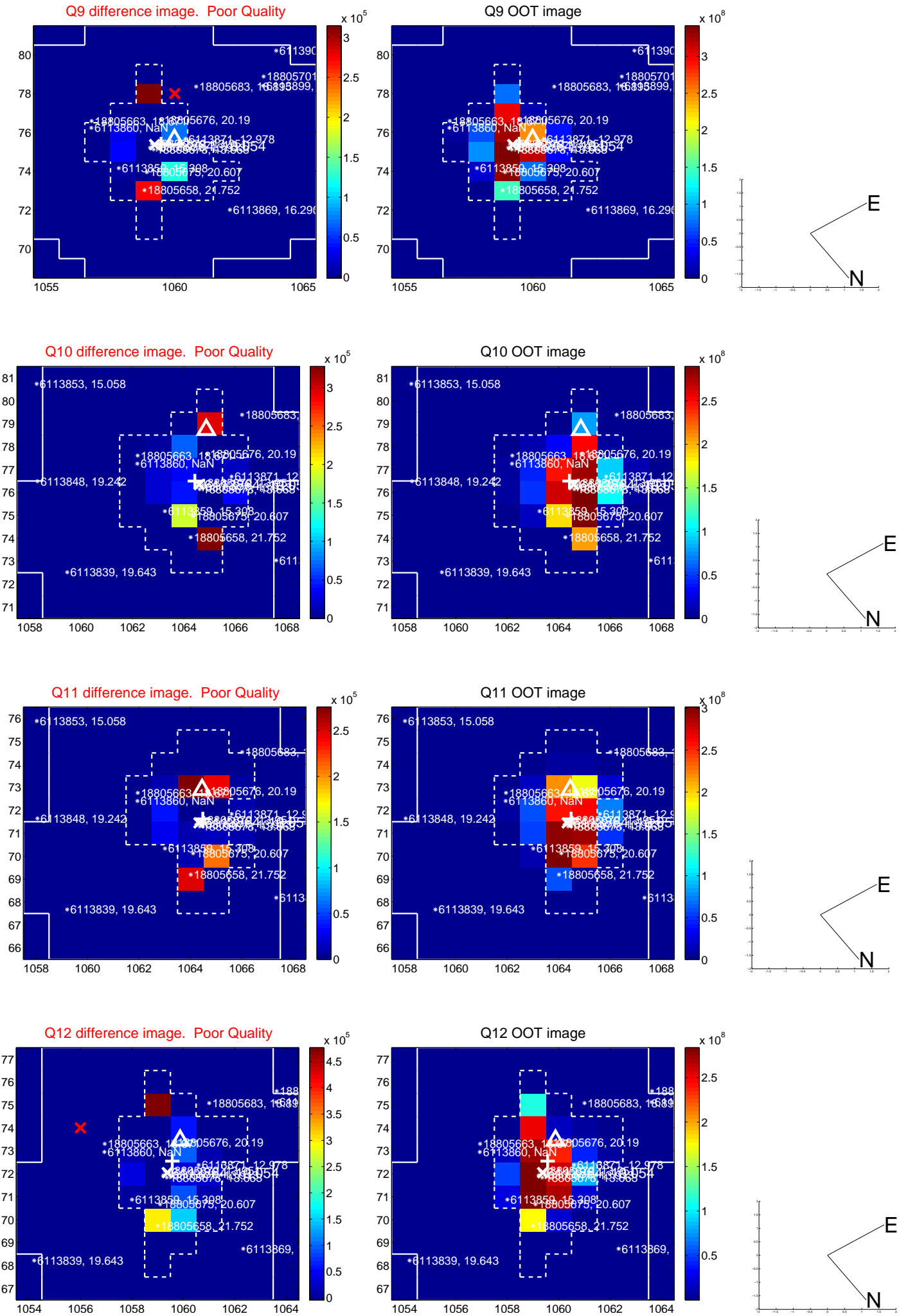
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



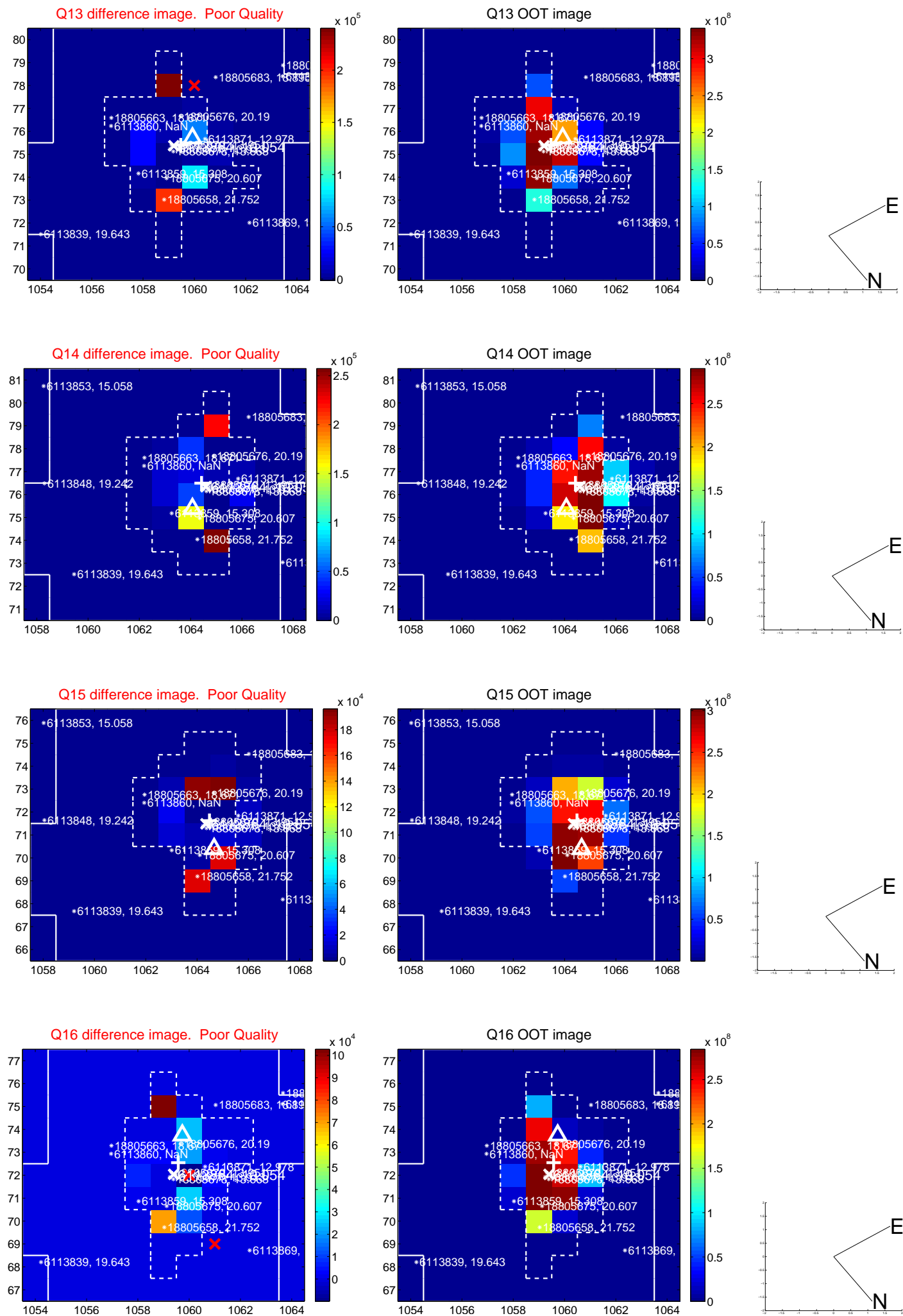
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



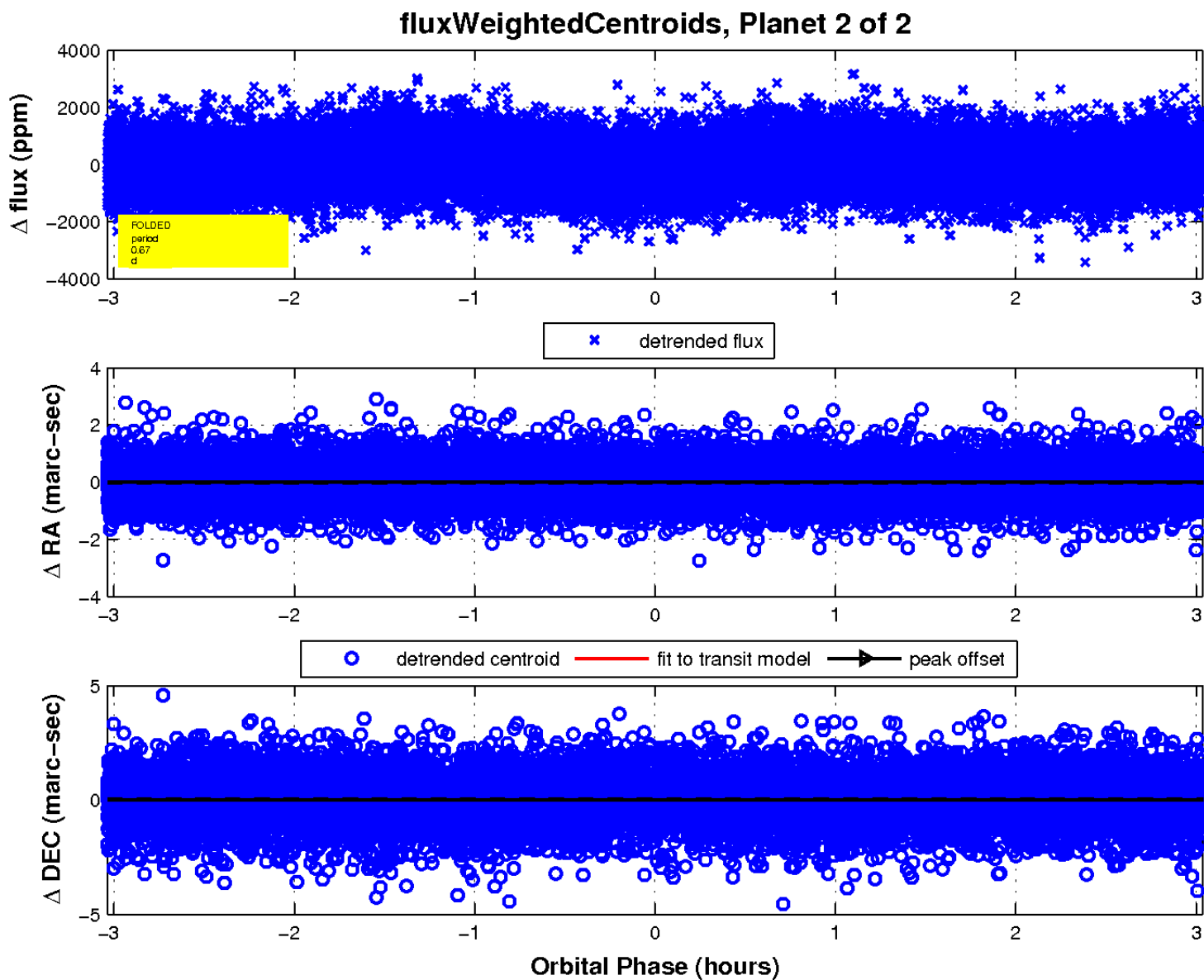
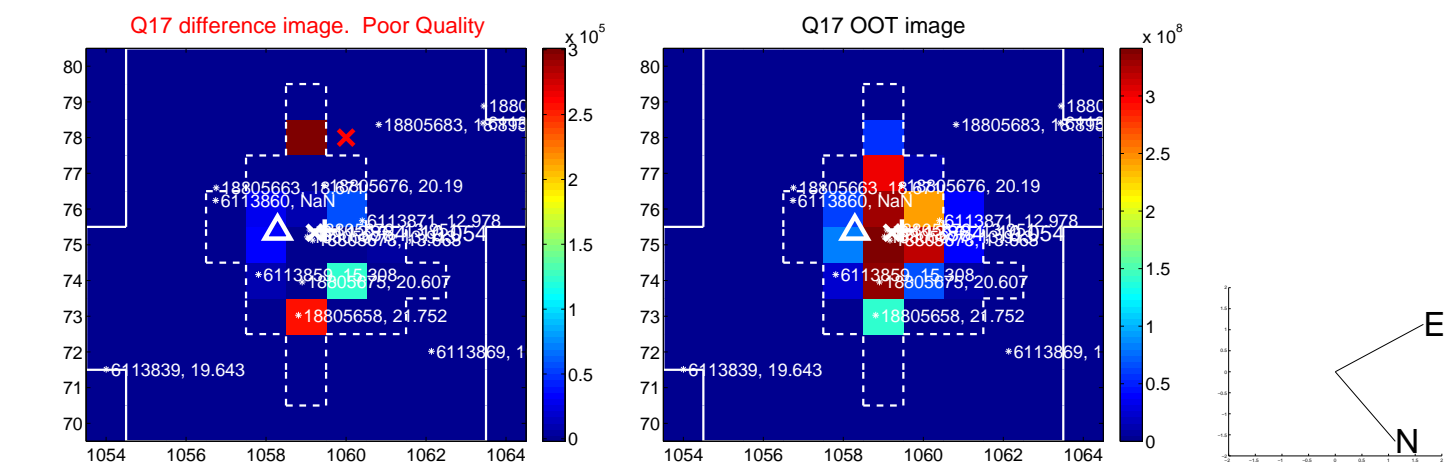
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

