

KIC 008373773

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})
008373773-01	OBS	No	368.063400	235.211062	2546.2	15.812	11.6	13.0	0.82	6050	7.64	0.85
008373773-02	OBS	No	369.426378	234.041083	1918.8	14.997	9.5	10.1	0.82	6050	4.19	0.85

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008373773-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—CENT_FEW_DIFFS
008373773-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—CENT_FEW_DIFFS

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

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

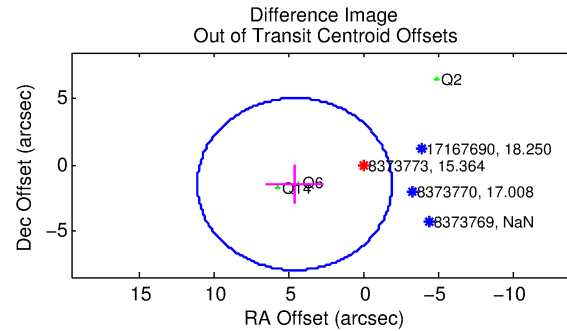
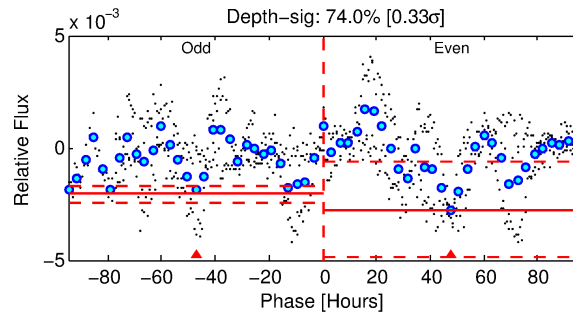
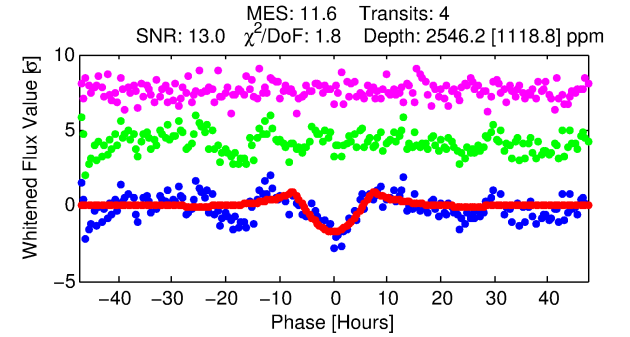
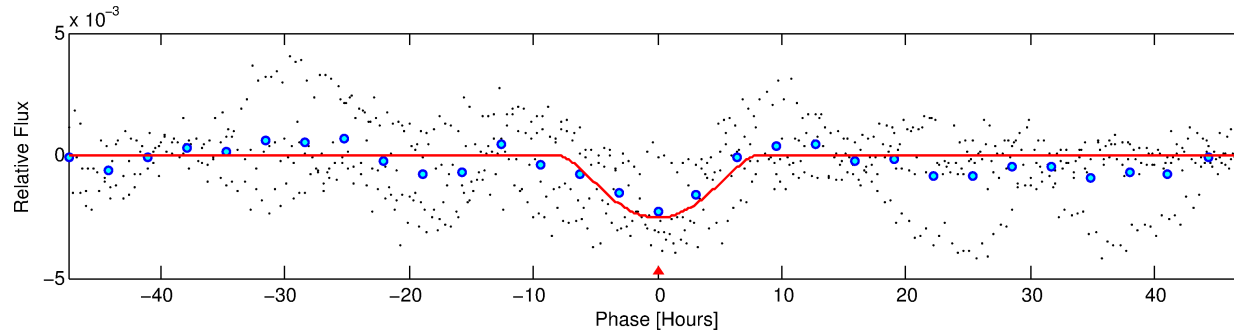
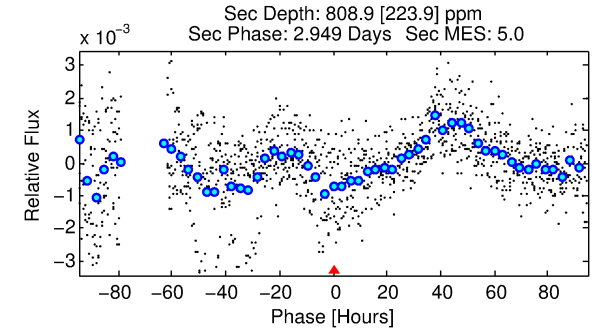
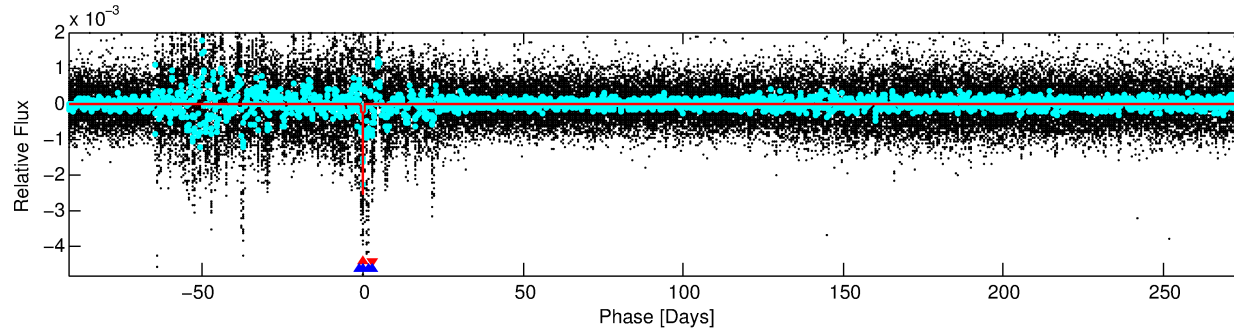
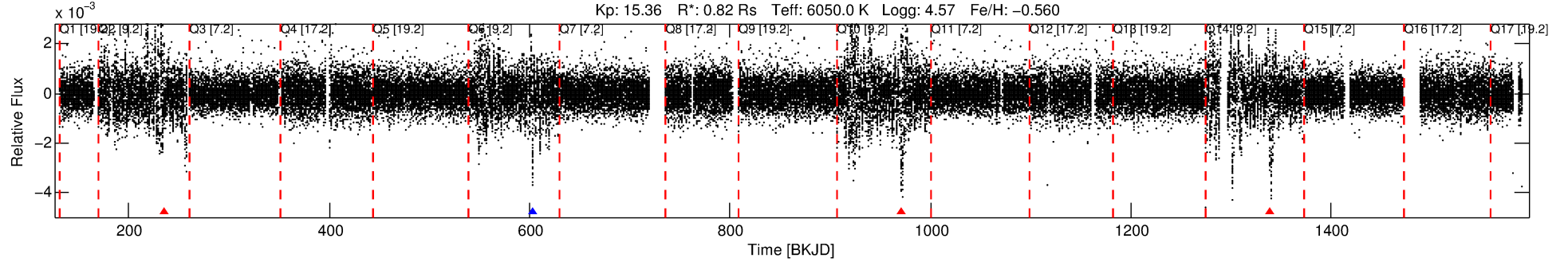
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008373773-01

No Significant Match Found

DV One-Page Summary

KIC: 8373773 Candidate: 1 of 2 Period: 368.063 d



DV Fit Results:

Period = 368.06340 [0.01217] d
Epoch = 235.2111 [0.0248] BKJD
Rp/R* = 0.0855 [0.1766]
a/R* = 75.09 [32.58]
b = 1.00 [0.23]
Seff = 0.86 [0.32]
Teq = 245 [23] K
Rp = 7.64 [15.93] Re
a = 0.9701 [0.2312] AU
Ag = 7179.63 [29850.20] [0.24σ]
Teffp = 3490 [3616] K [0.90σ]

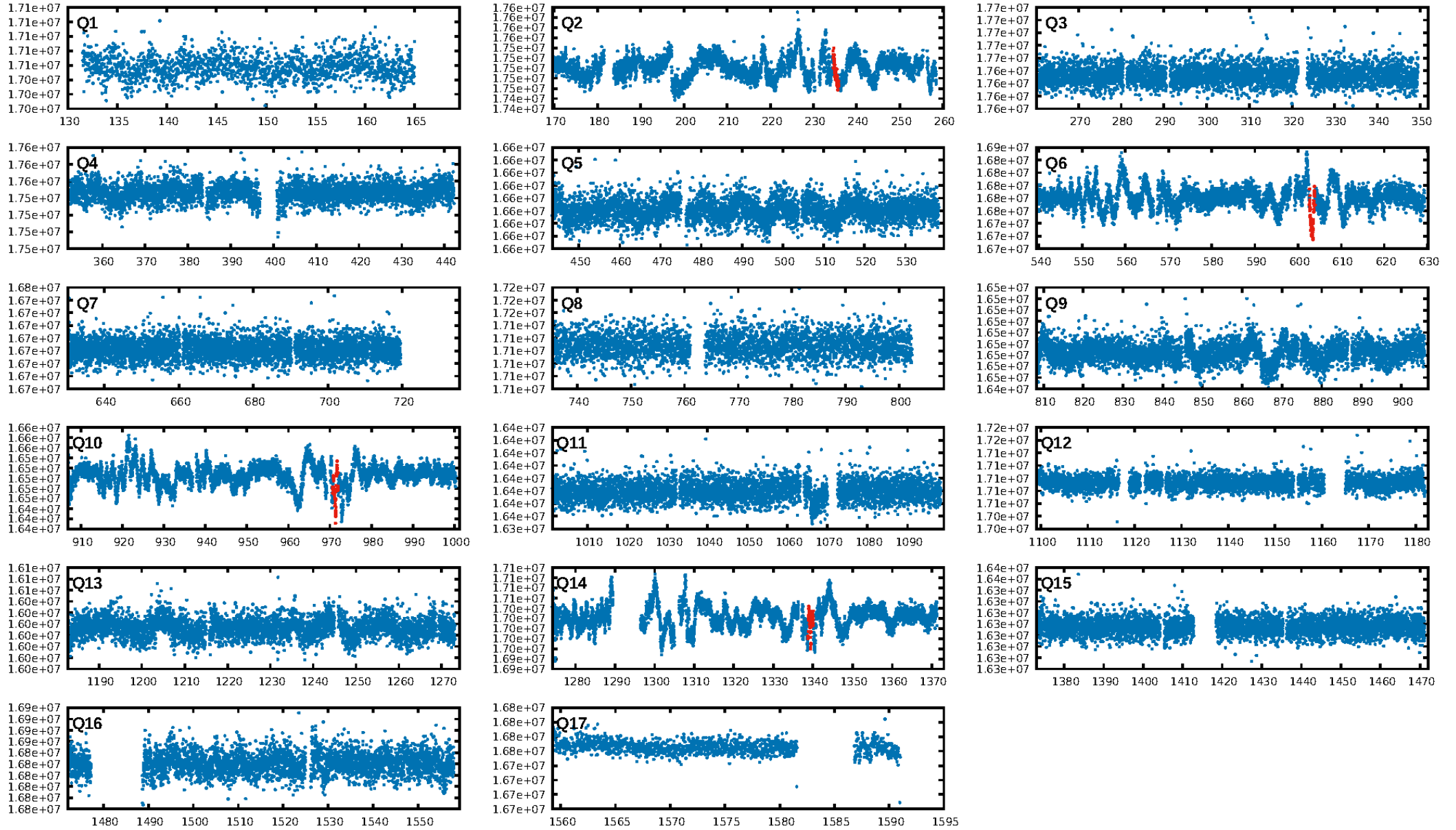
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 86.7% [1.50σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.9%
Bootstrap-pfa: 2.02e-15
RollingBand-fgt: 0.25 [1/4]
GhostDiagnostic-chr: -0.8532
Centroid-sig: 2.6%
Centroid-so: 1.795 arcsec [1.40σ]
OotOffset-rm: 4.797 arcsec [2.21σ]
KicOffset-rm: 4.589 arcsec [1.41σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 0.33 [1/3]

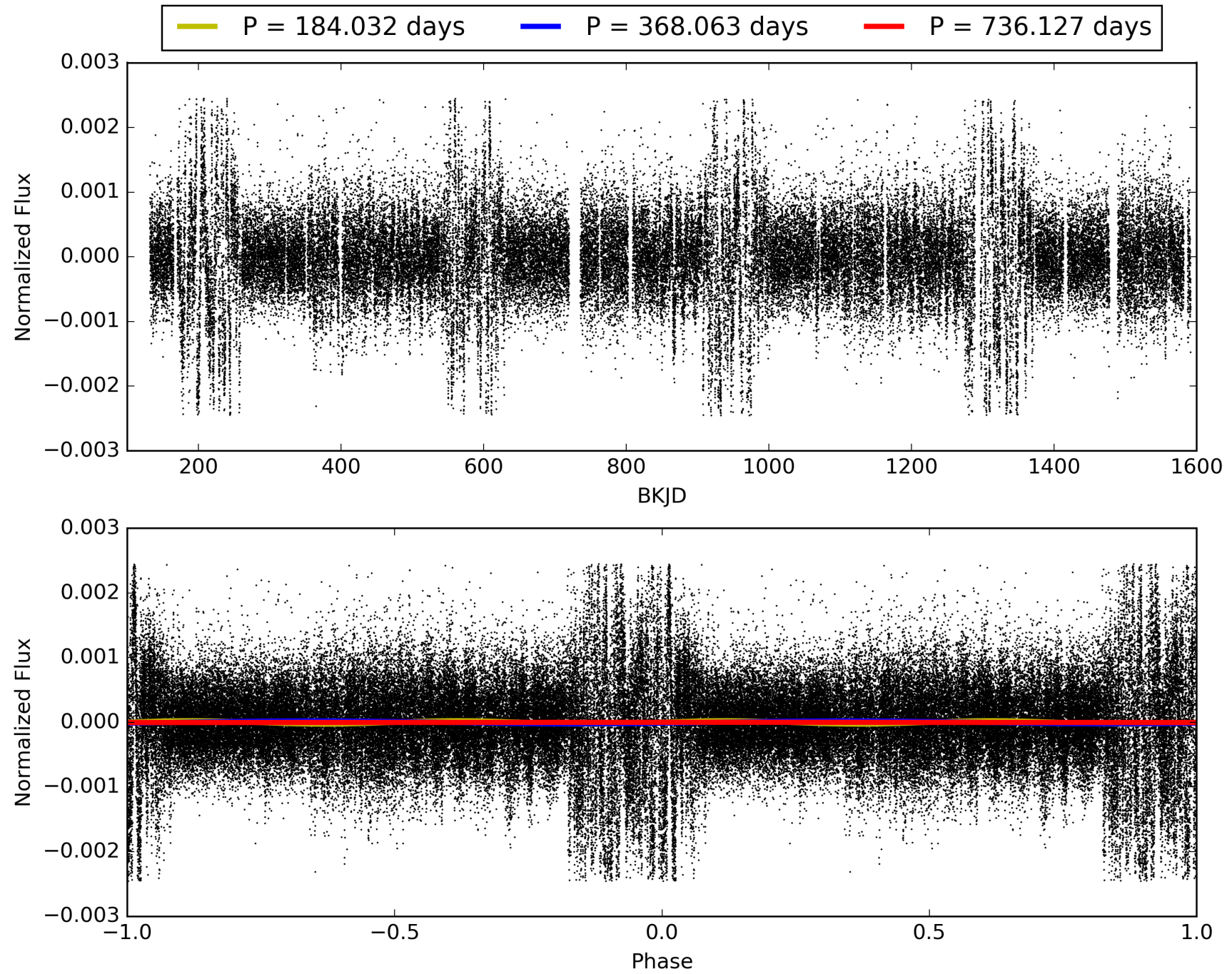
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:18:45 Z

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

TCE 008373773-01, PDC Light Curves

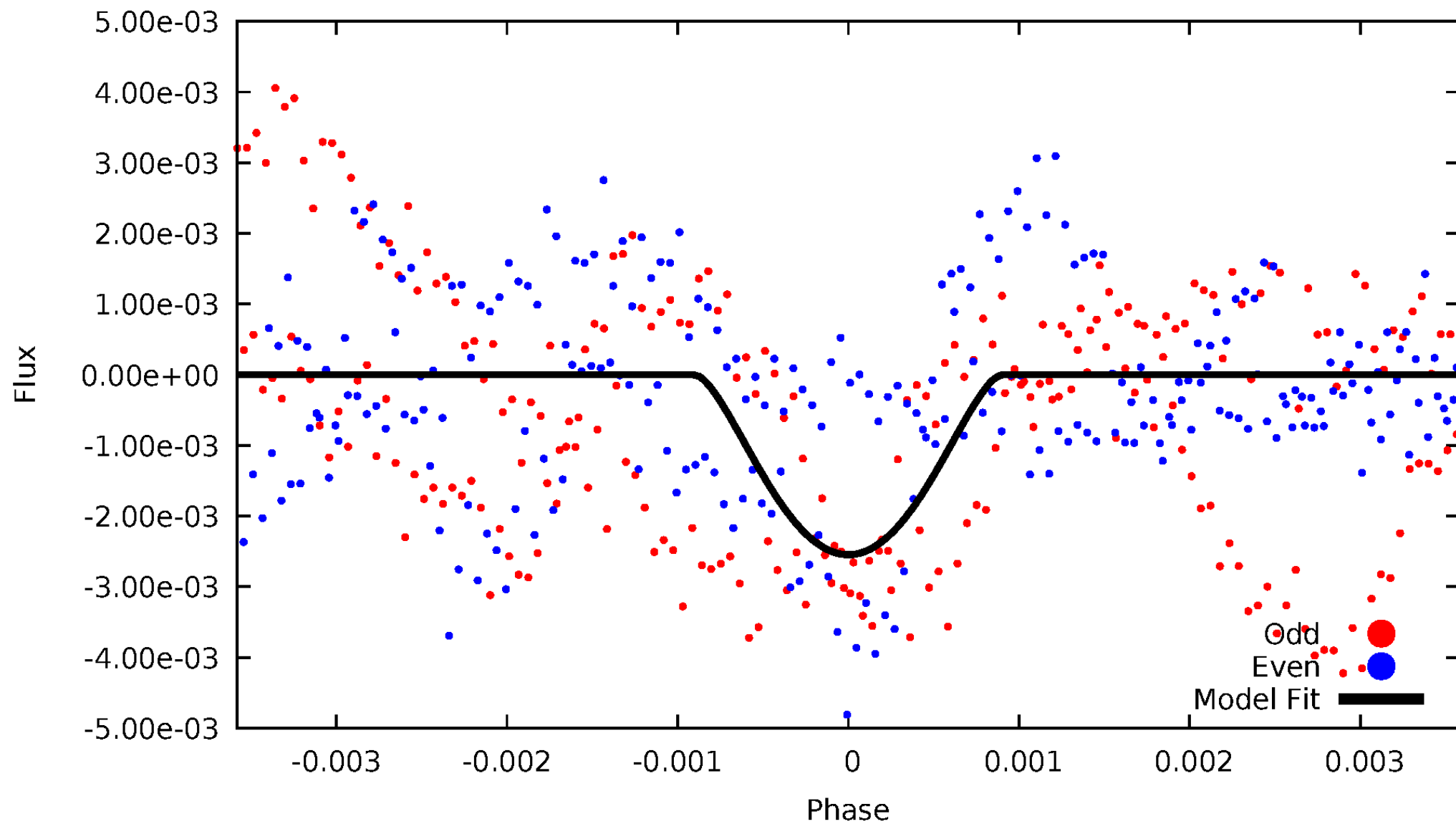


TCE 008373773-01



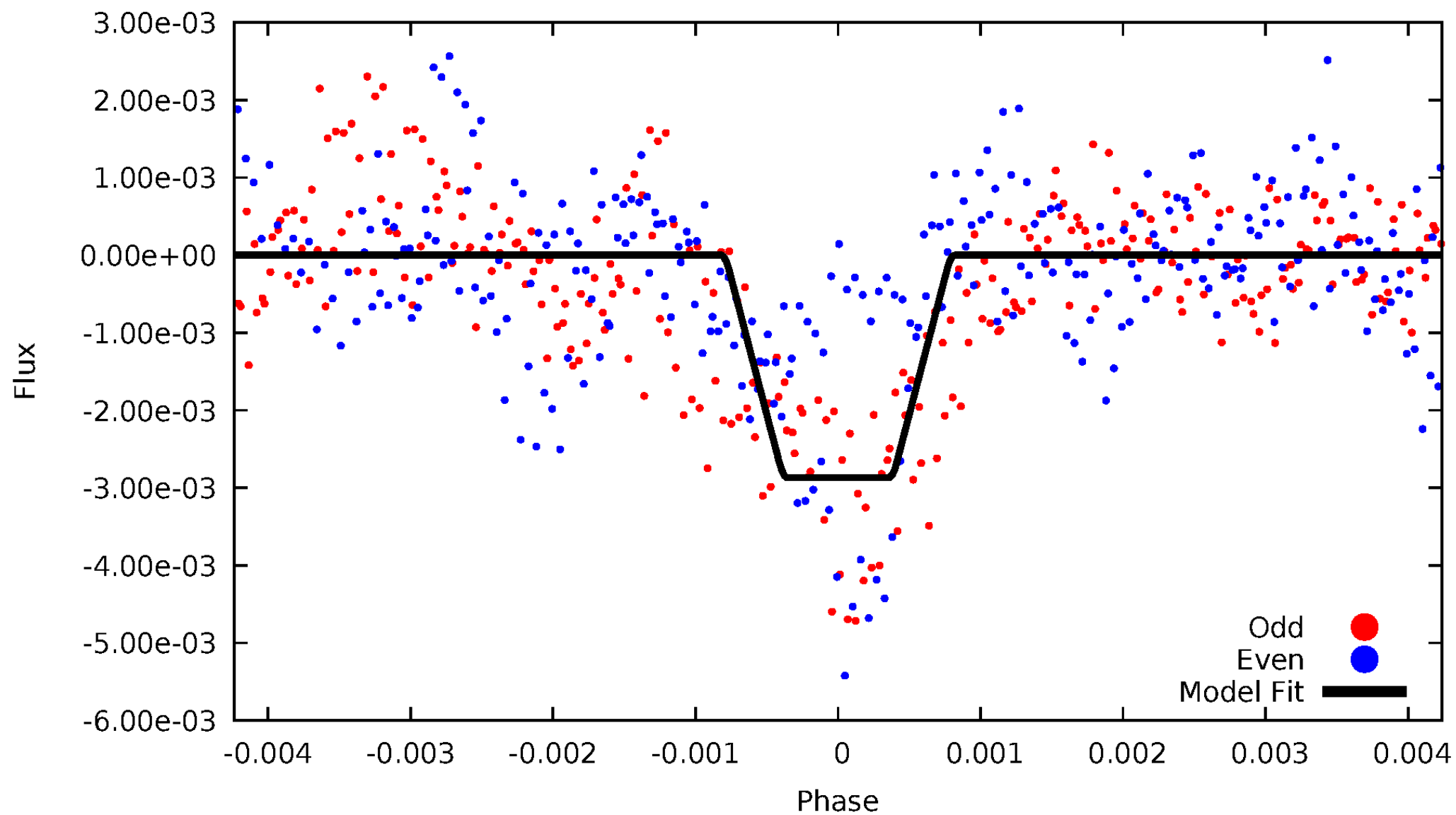
DV Odd/Even

TCE 008373773-01



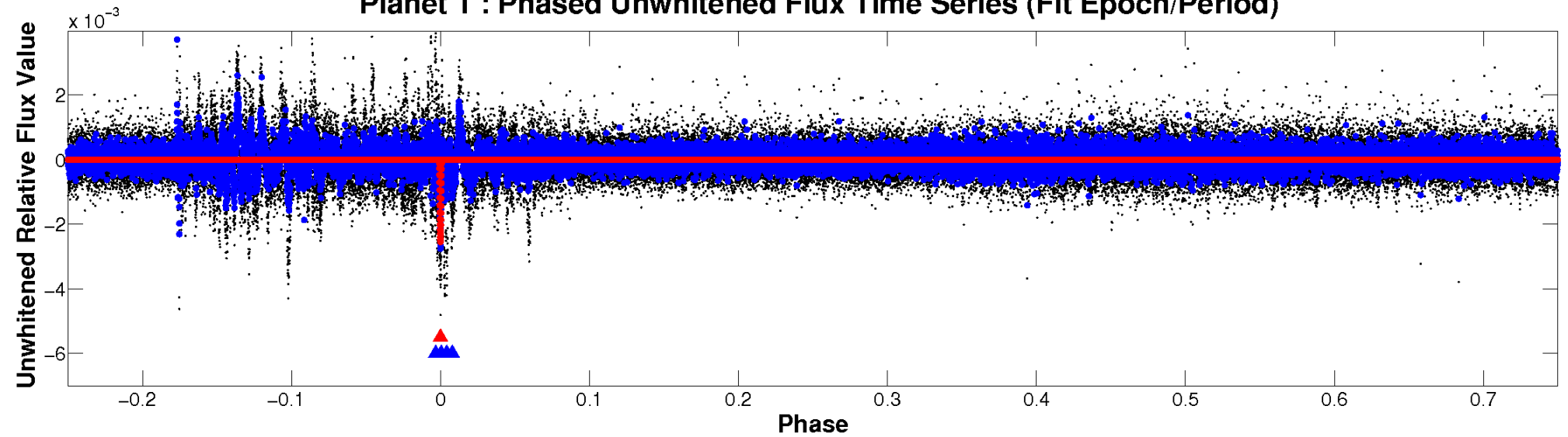
ALT Odd/Even

TCE 008373773-01

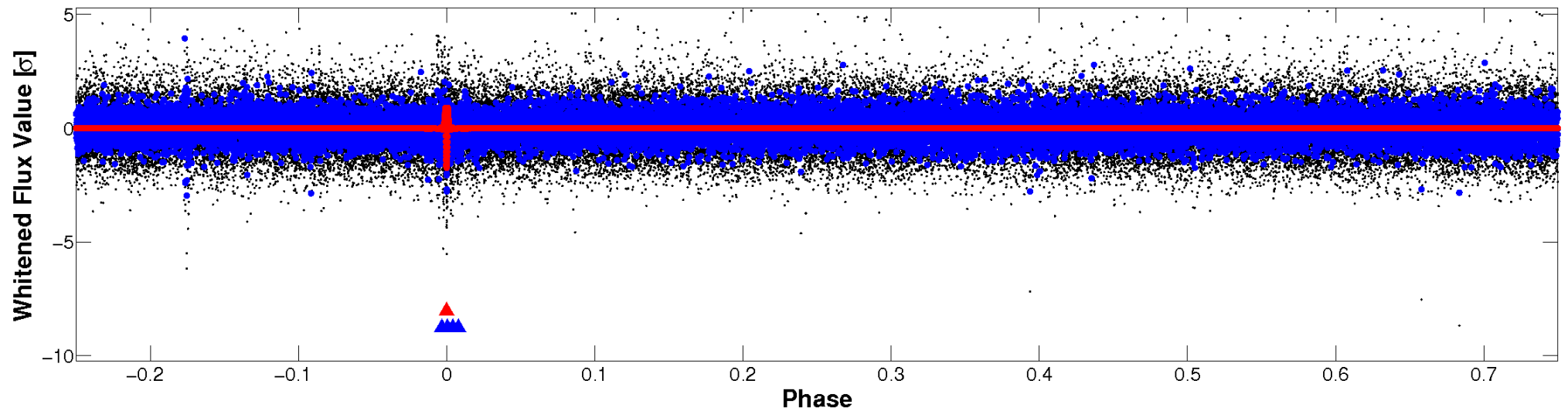


Non-Whitened Vs. Whitened Light Curve

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

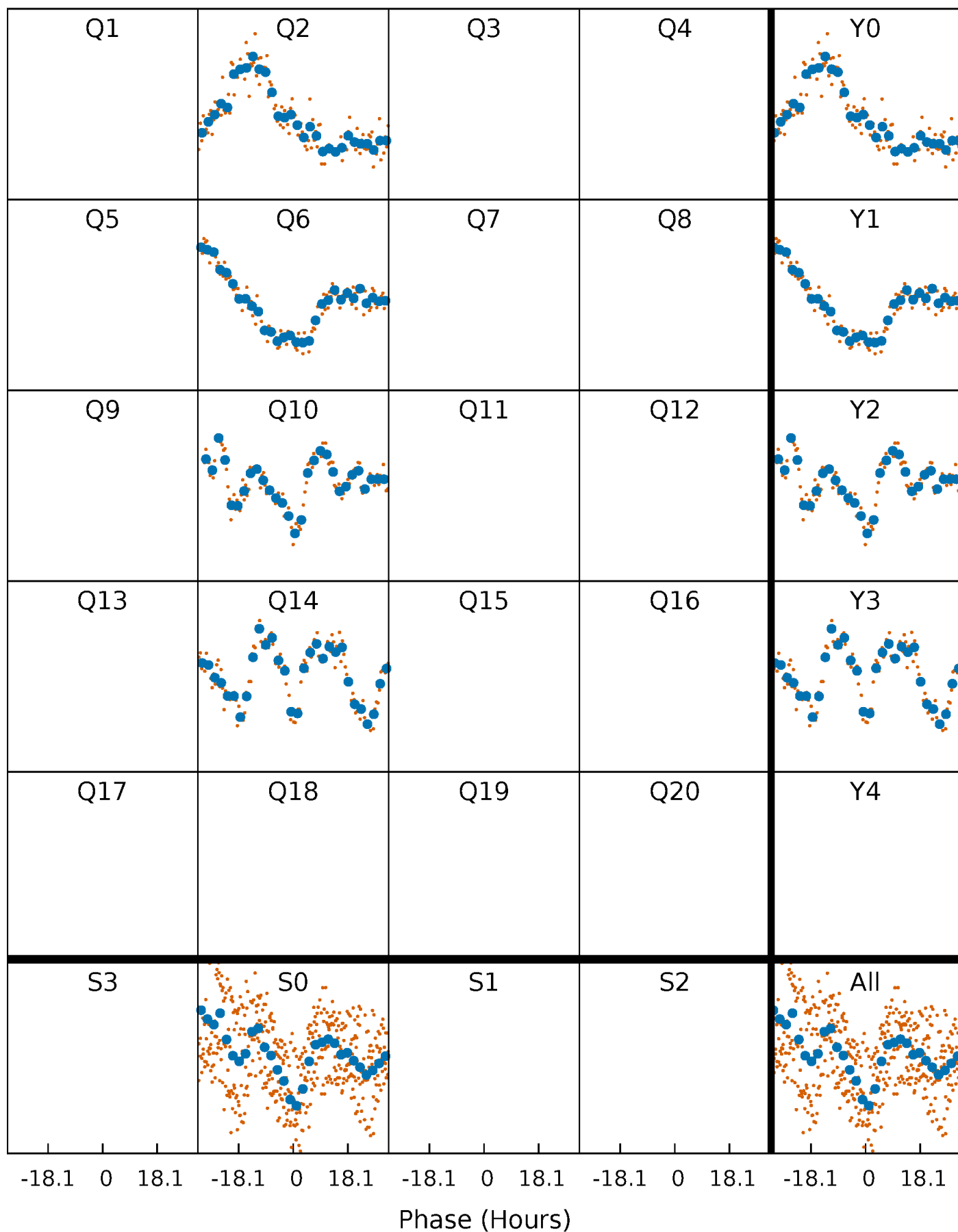


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



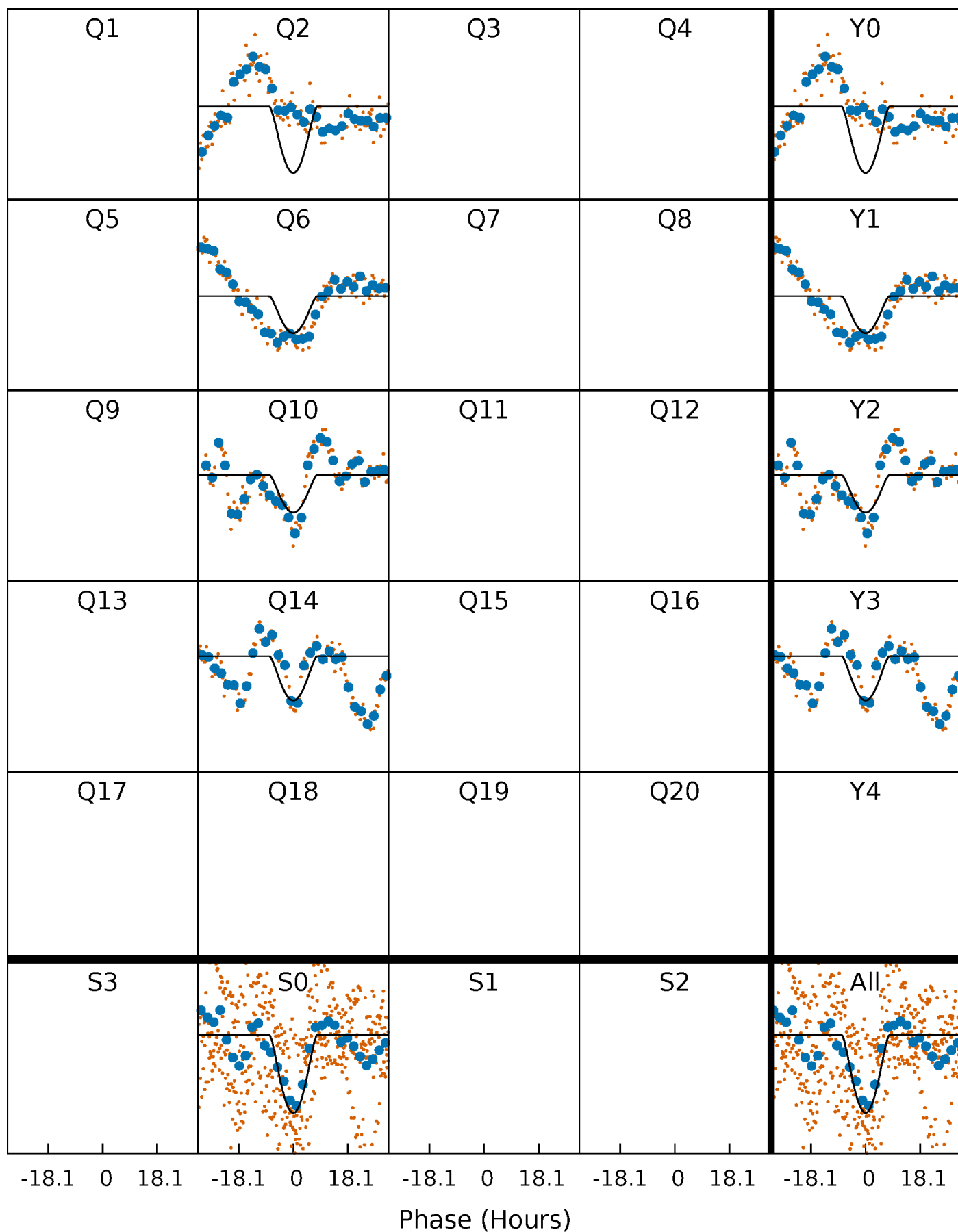
PDC Quarter-Phased Transit Curves

TCE 008373773-01 P=368.063400 Days $T_0=235.211062$ (BKJD)



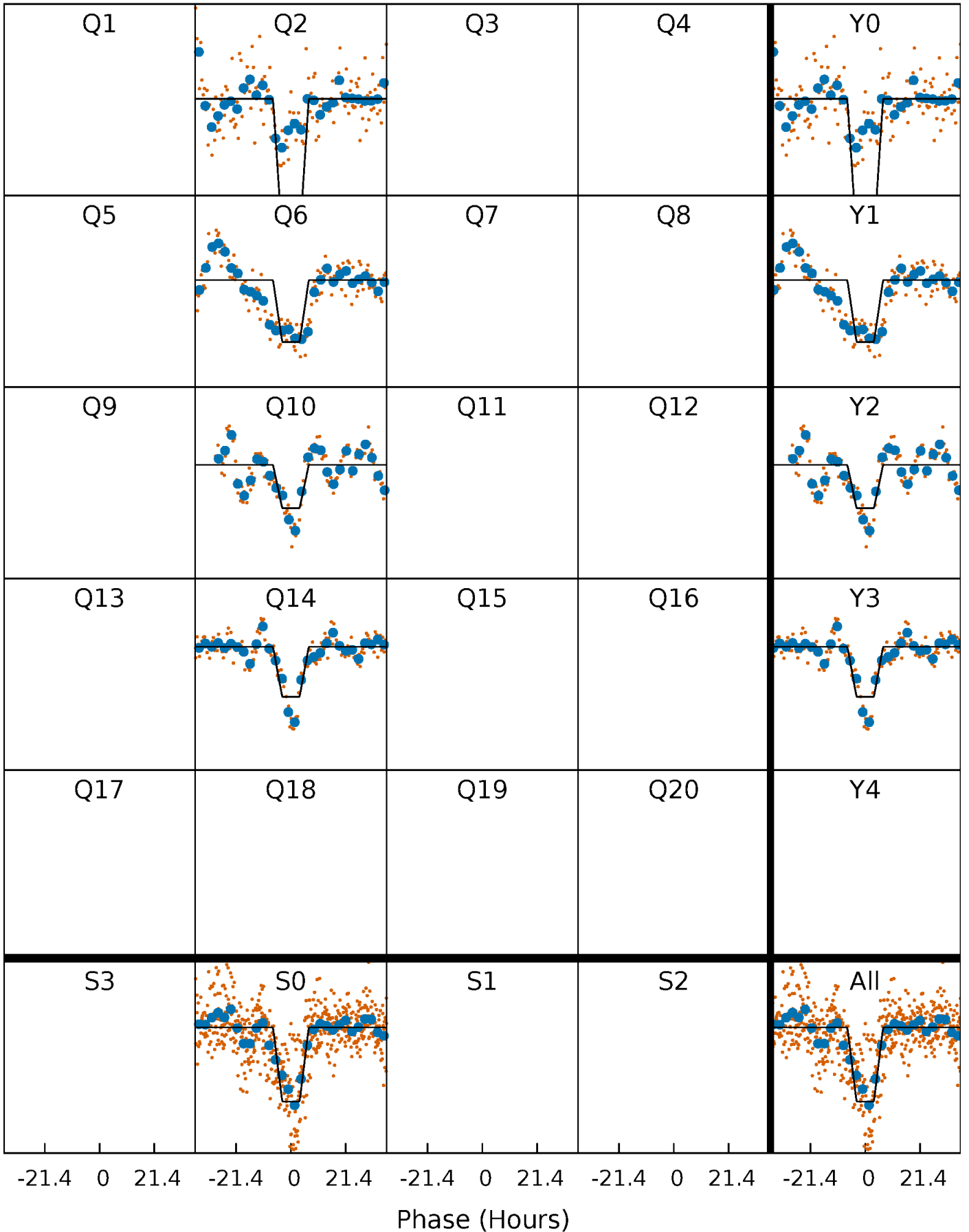
DV Quarter-Phased Transit Curves

TCE 008373773-01 P=368.063400 Days $T_0=235.211062$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

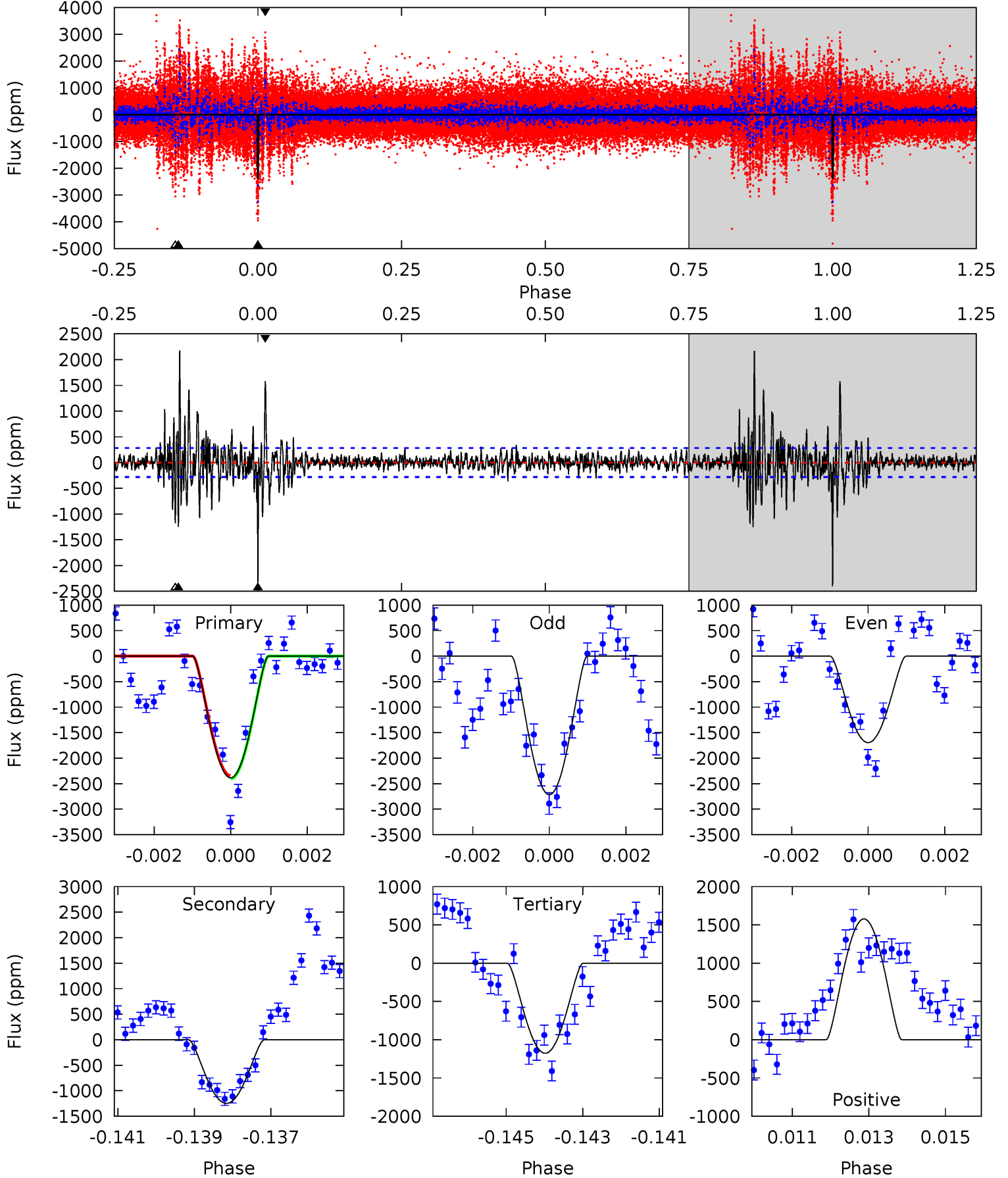
TCE 008373773-01 P=368.062905 Days $T_0=235.191574$ (BKJD)



DV Model-Shift Uniqueness Test

008373773-01, P = 368.063400 Days, E = 235.211062 Days

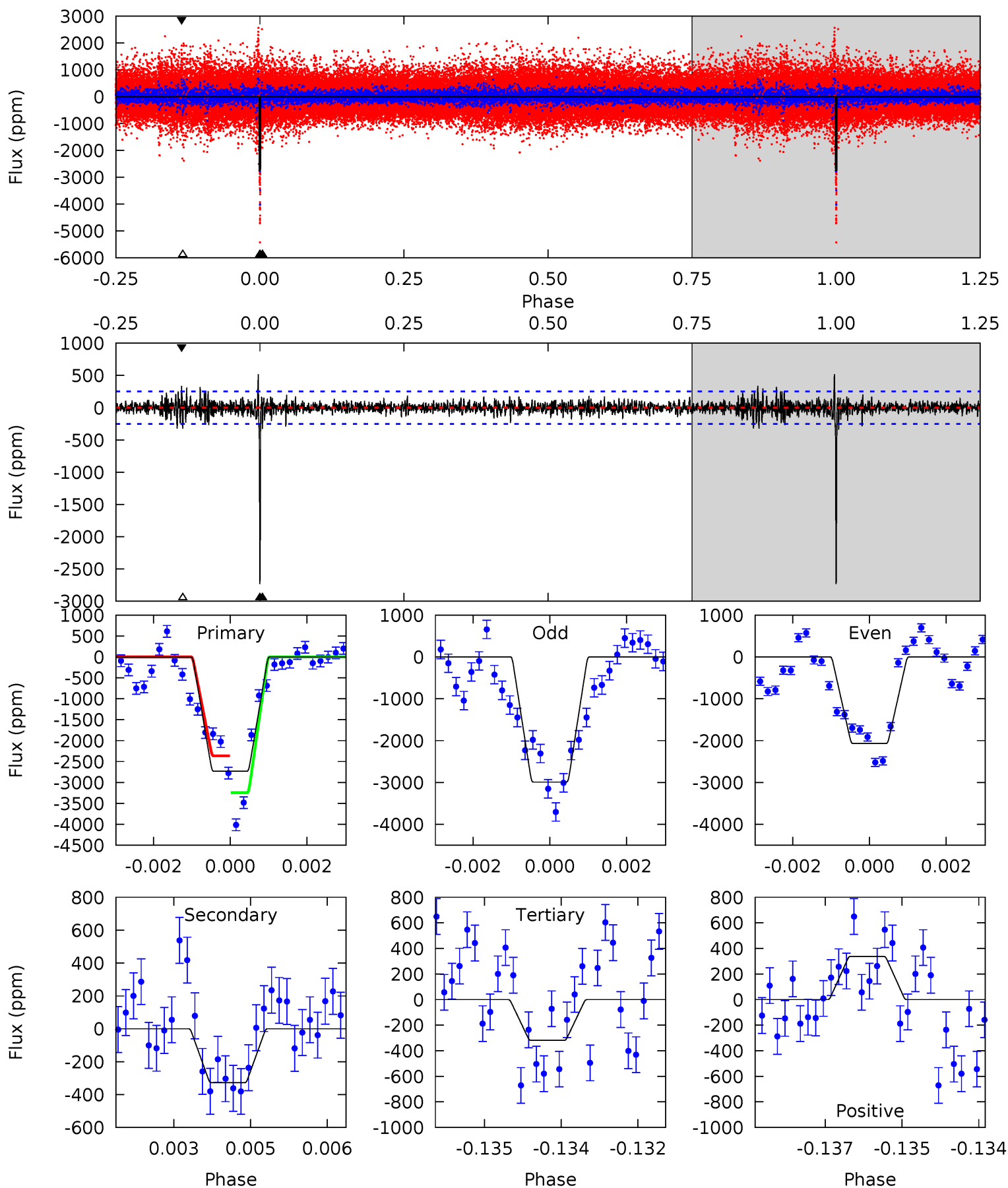
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
45.2	23.6	22.3	29.9	5.34	3.12	4.13	22.9	15.3	1.32	-6.27	9.78	0.92	0.48	0.58



Alt Model-Shift Uniqueness Test

008373773-01, P = 368.062905 Days, E = 235.191574 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
58.1	6.97	6.78	7.18	5.37	3.15	1.40	51.3	50.9	0.19	-0.21	10.2	0.85	0.16	9.23



Stellar Parameters For KIC 008373773

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6050^{+181}_{-181}	$4.565^{+0.035}_{-0.196}$	$-0.560^{+0.300}_{-0.300}$	$0.819^{+0.227}_{-0.071}$	$0.899^{+0.089}_{-0.099}$	$2.301^{+0.416}_{-1.118}$
	+3%/-3%	+1%/-4%	+54%/-54%	+28%/-9%	+10%/-11%	+18%/-49%
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 008373773-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1247 ± 53	$15.23^{+13.38}_{-10.13}$	352^{+22}_{-15}	3360^{+1658}_{-563}	2688^{+21981}_{-1943}
Alt.	-328 ± 47	$13.33^{+13.44}_{-8.79}$	352^{+23}_{-16}	2864^{+1247}_{-457}	909^{+7272}_{-685}

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

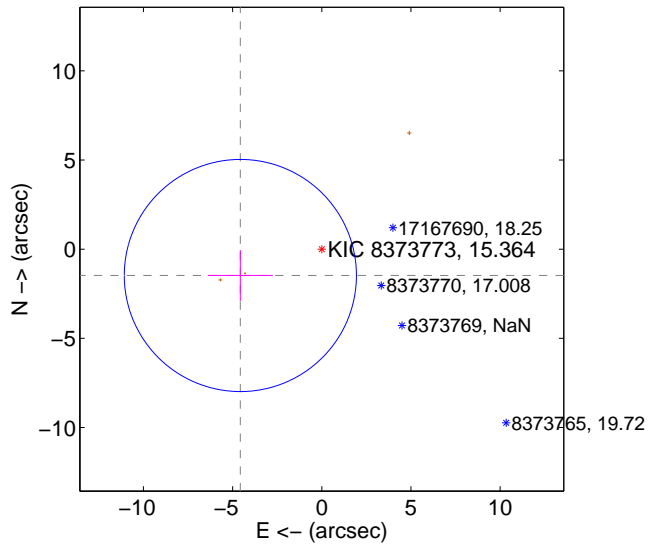
Supplemental centroid analysis for 008373773-01. Kepler magnitude: 15.36. Transit SNR 13.01

There are 0 quarters with good PRF difference image offsets

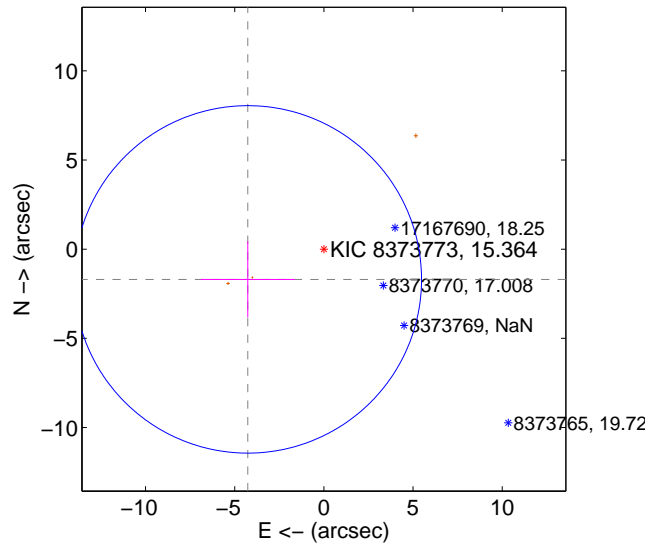
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.797 ± 2.169	2.21	4.565 ± 1.821	-1.476 ± 1.430
PRF-fit source offset from KIC position	4.589 ± 3.246	1.41	4.264 ± 2.647	-1.695 ± 2.134
photometric centroid source offset	1.80 ± 1.28	1.40	-0.24 ± 1.03	1.78 ± 1.29

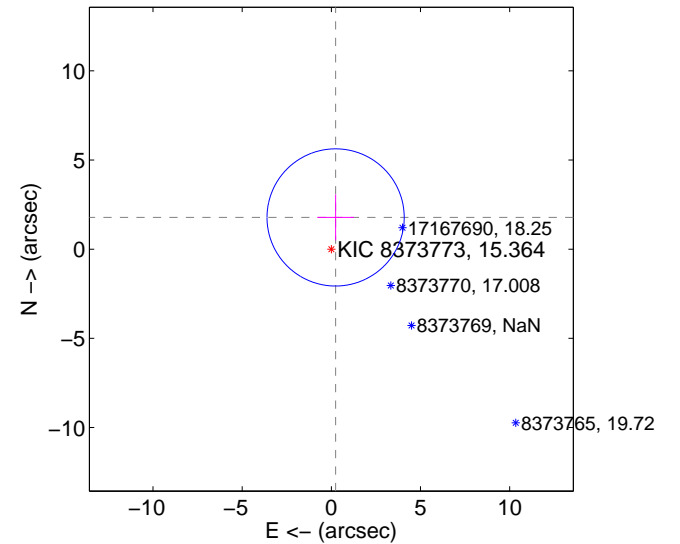
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

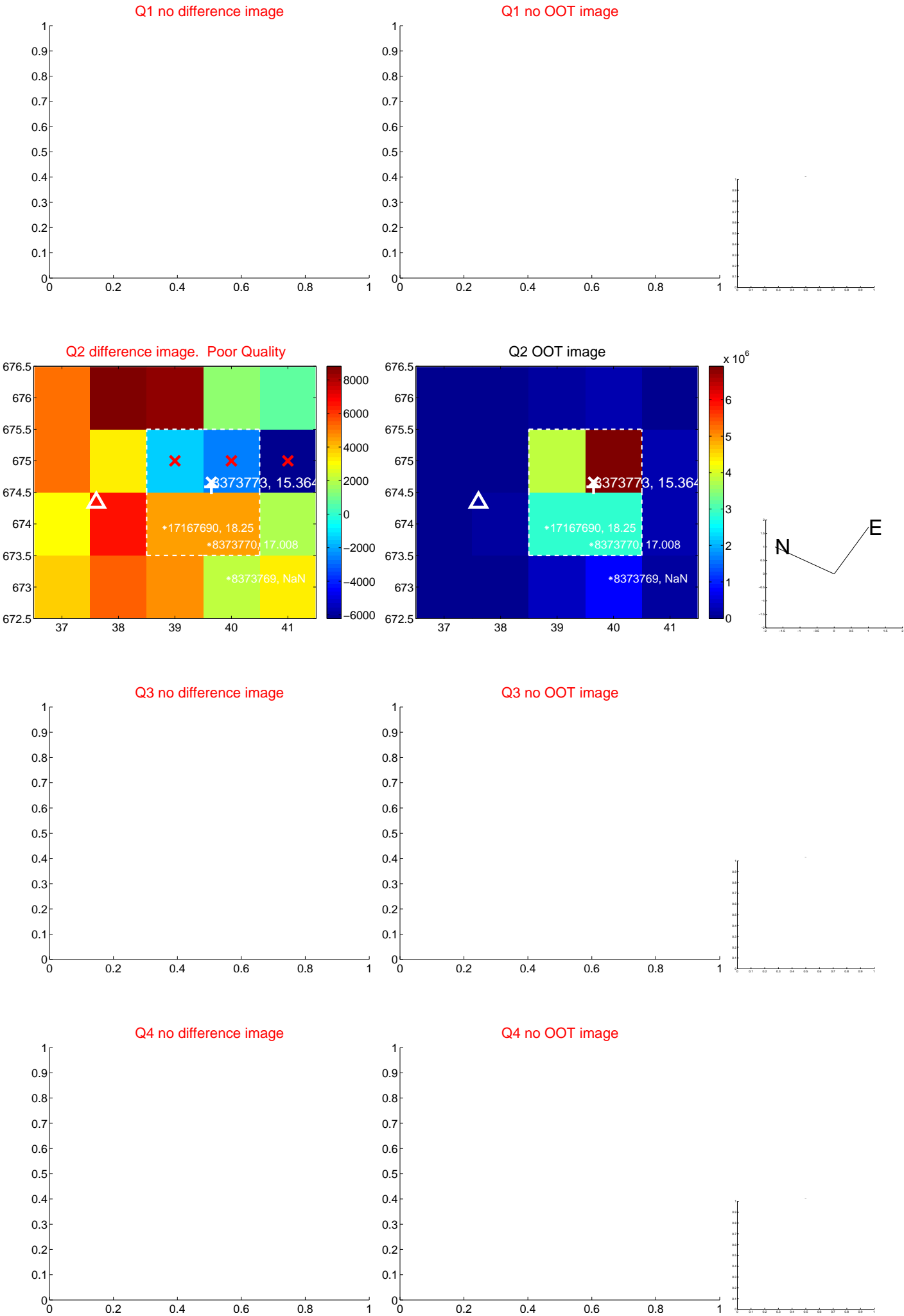


offset from photometric centroids

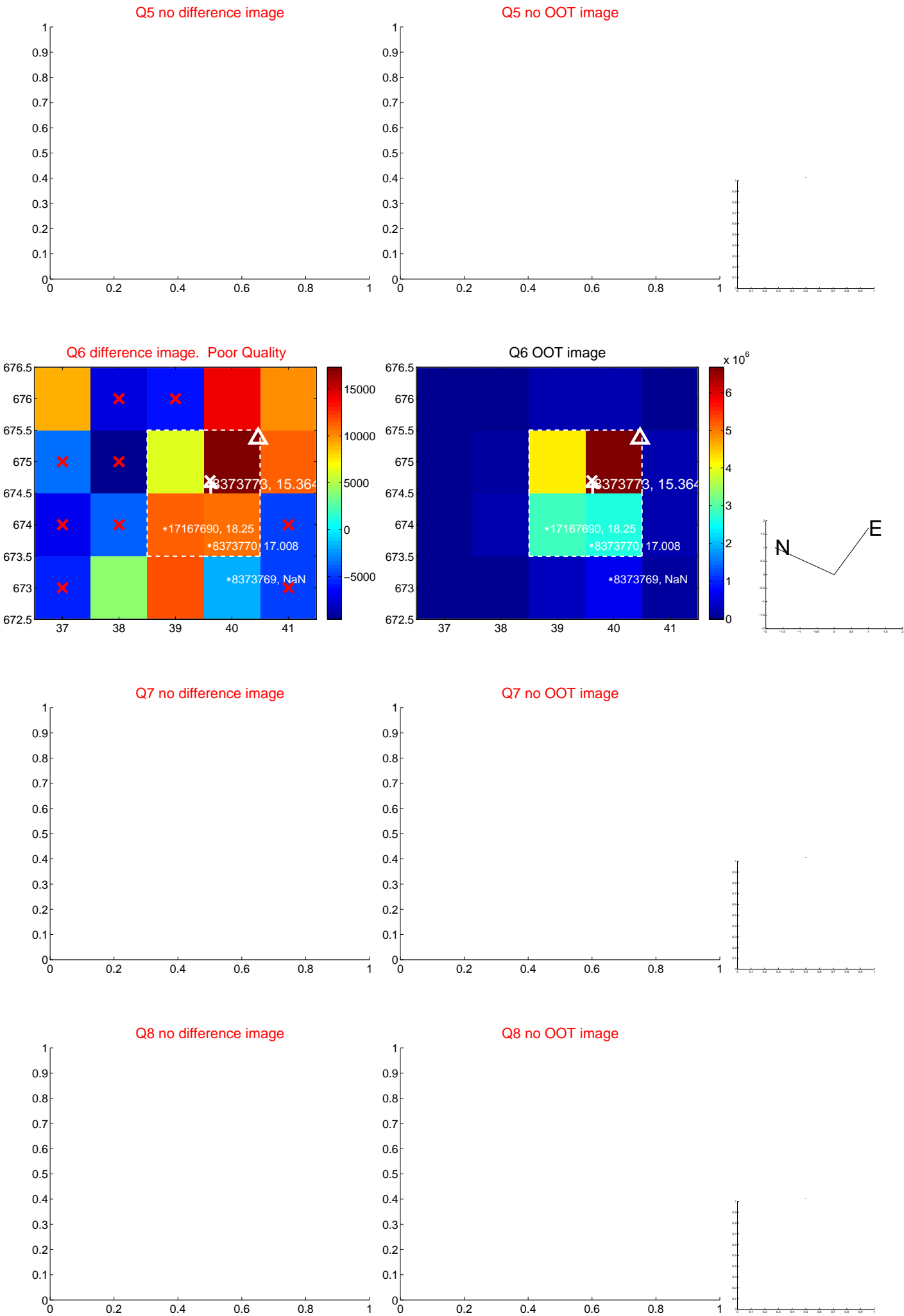


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



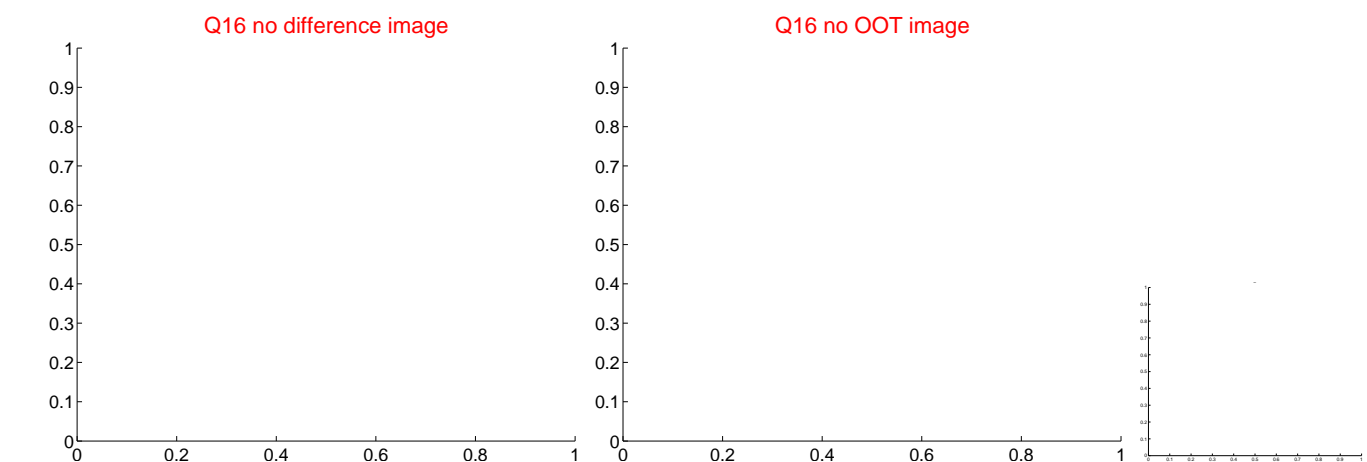
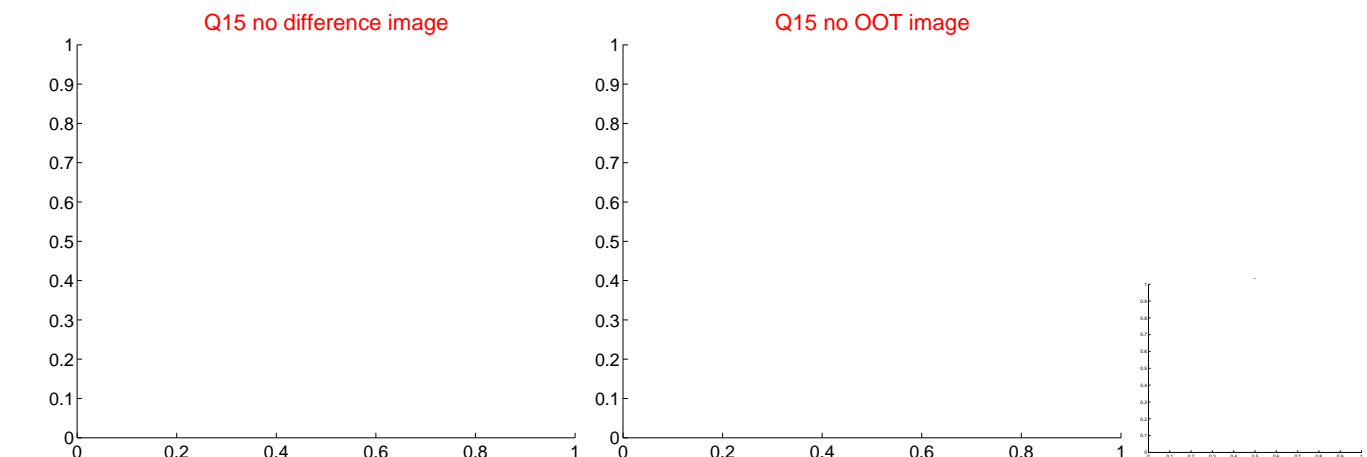
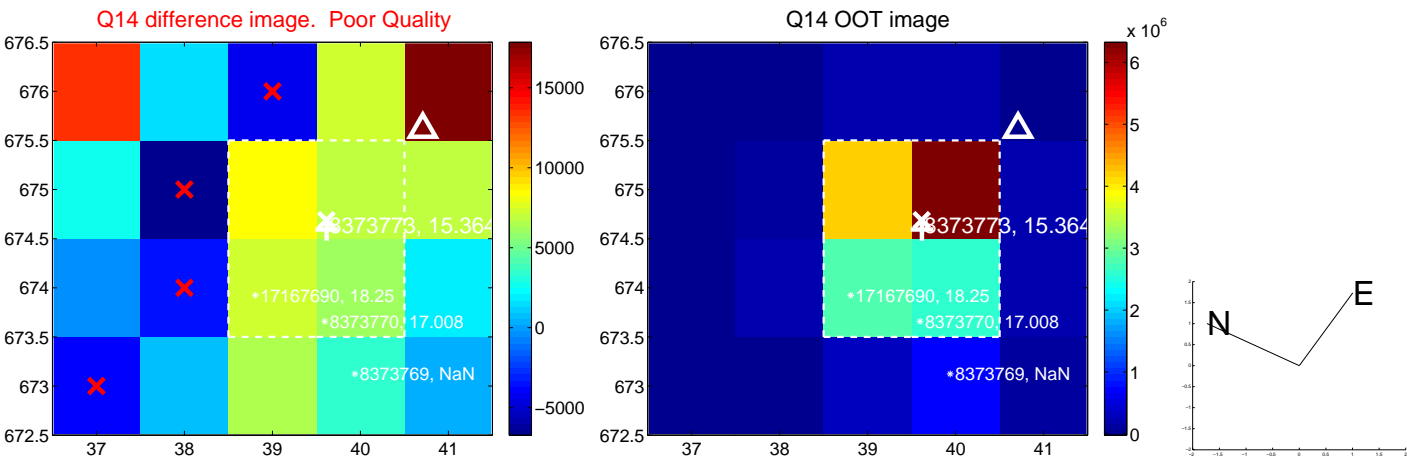
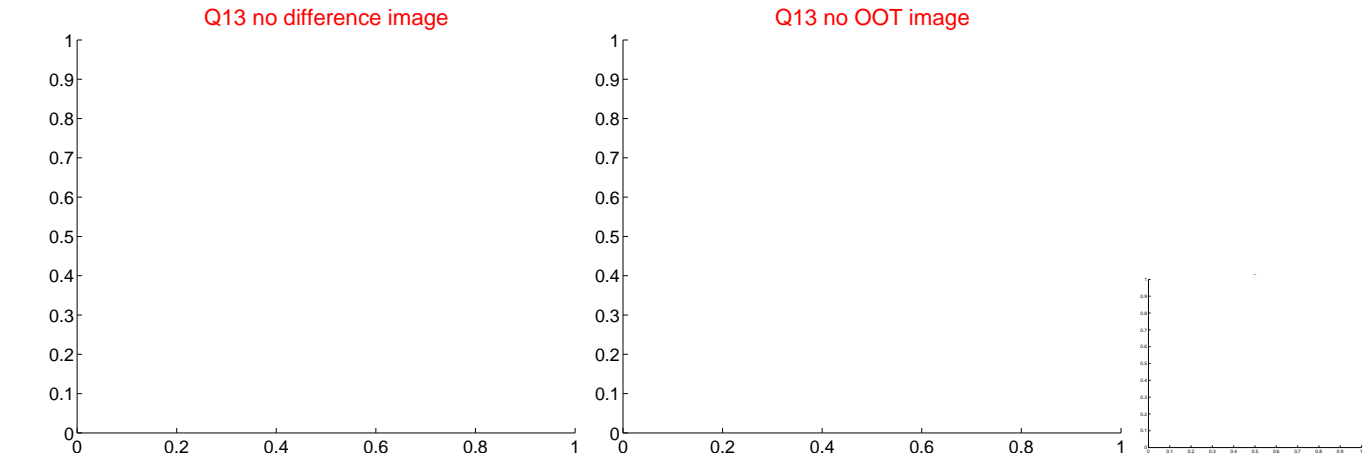
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



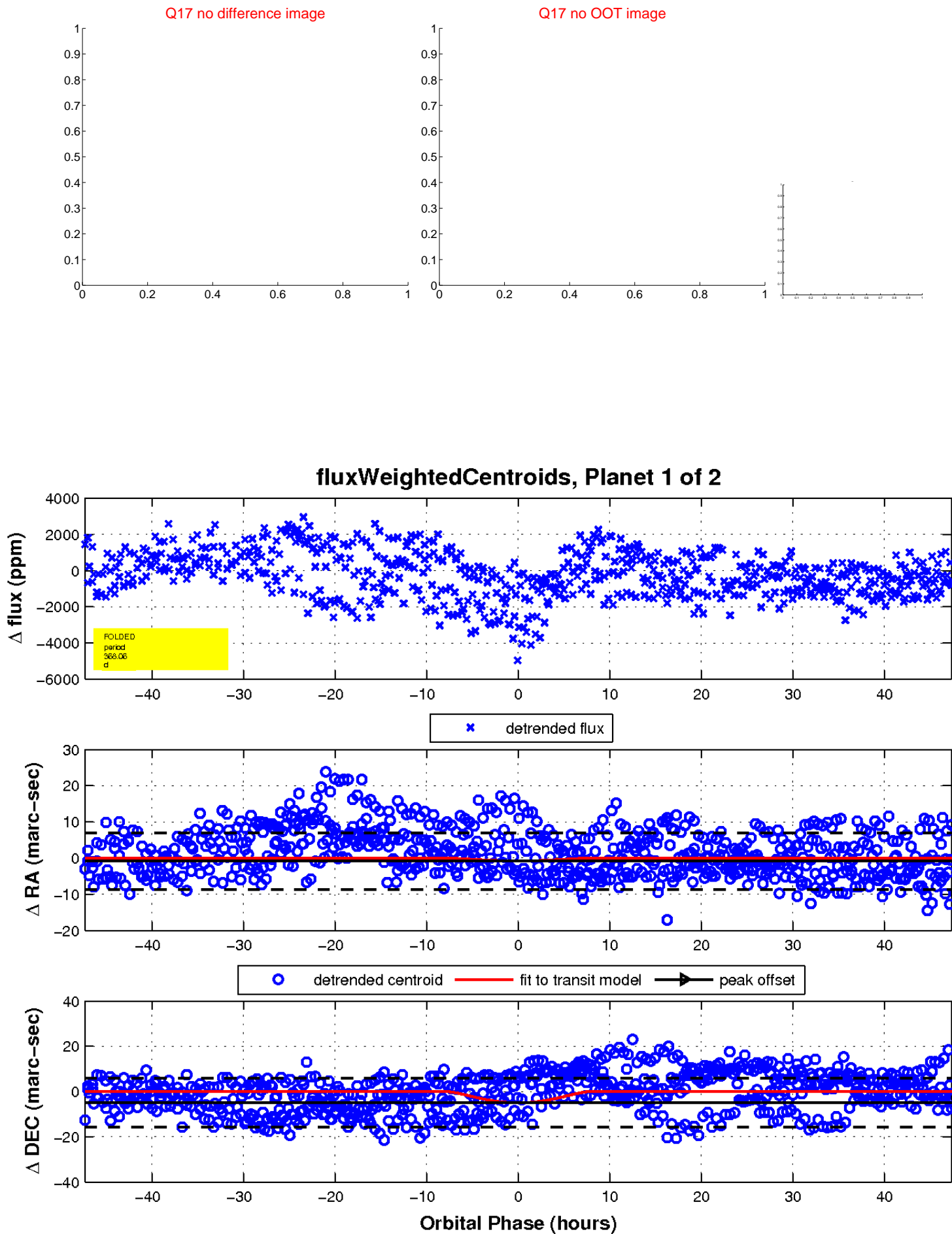
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

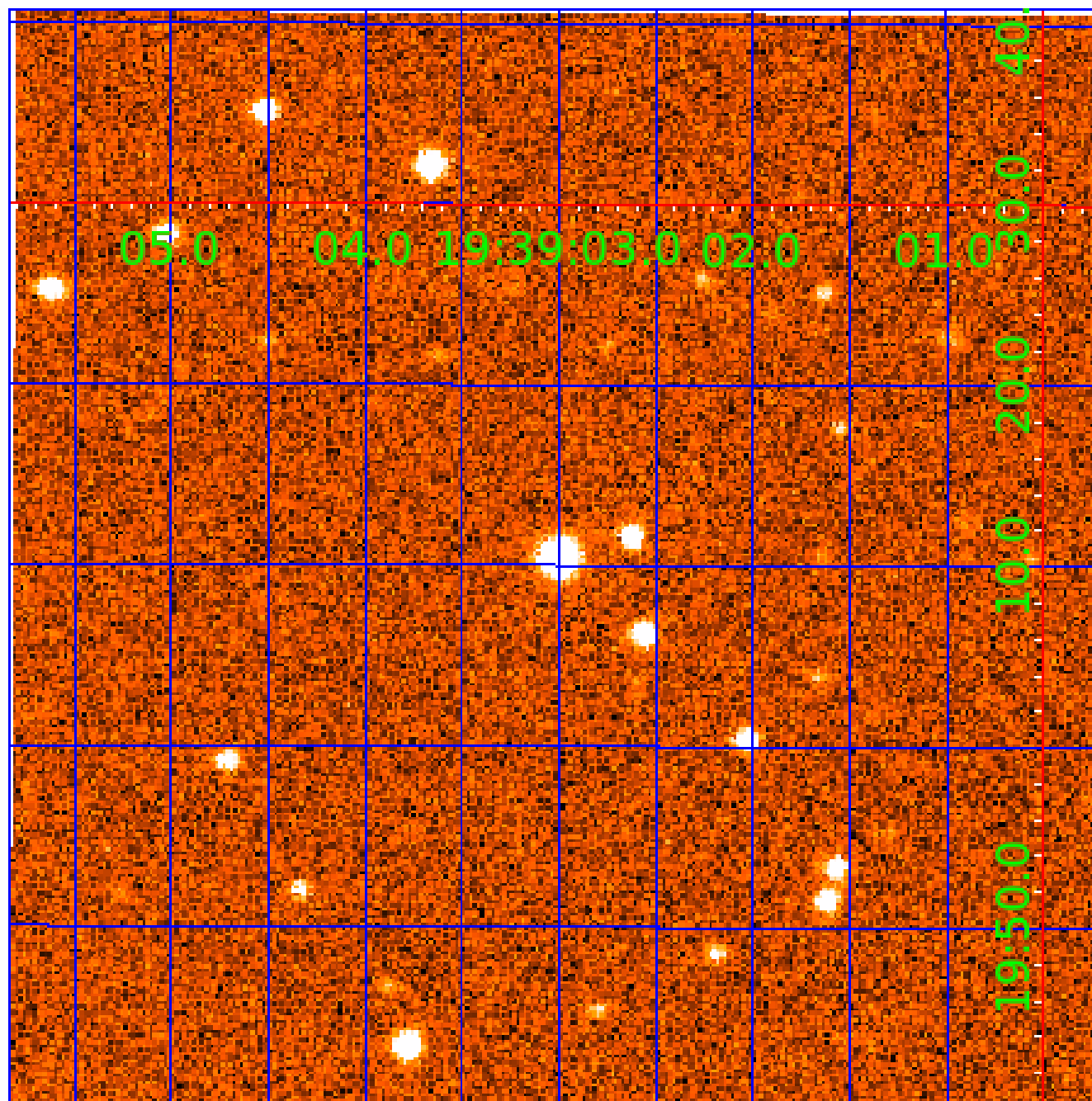


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008373773

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})
008373773-01	OBS	No	368.063400	235.211062	2546.2	15.812	11.6	13.0	0.82	6050	7.64	0.85
008373773-02	OBS	No	369.426378	234.041083	1918.8	14.997	9.5	10.1	0.82	6050	4.19	0.85

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008373773-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—CENT_FEW_DIFFS
008373773-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—CENT_FEW_DIFFS

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

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

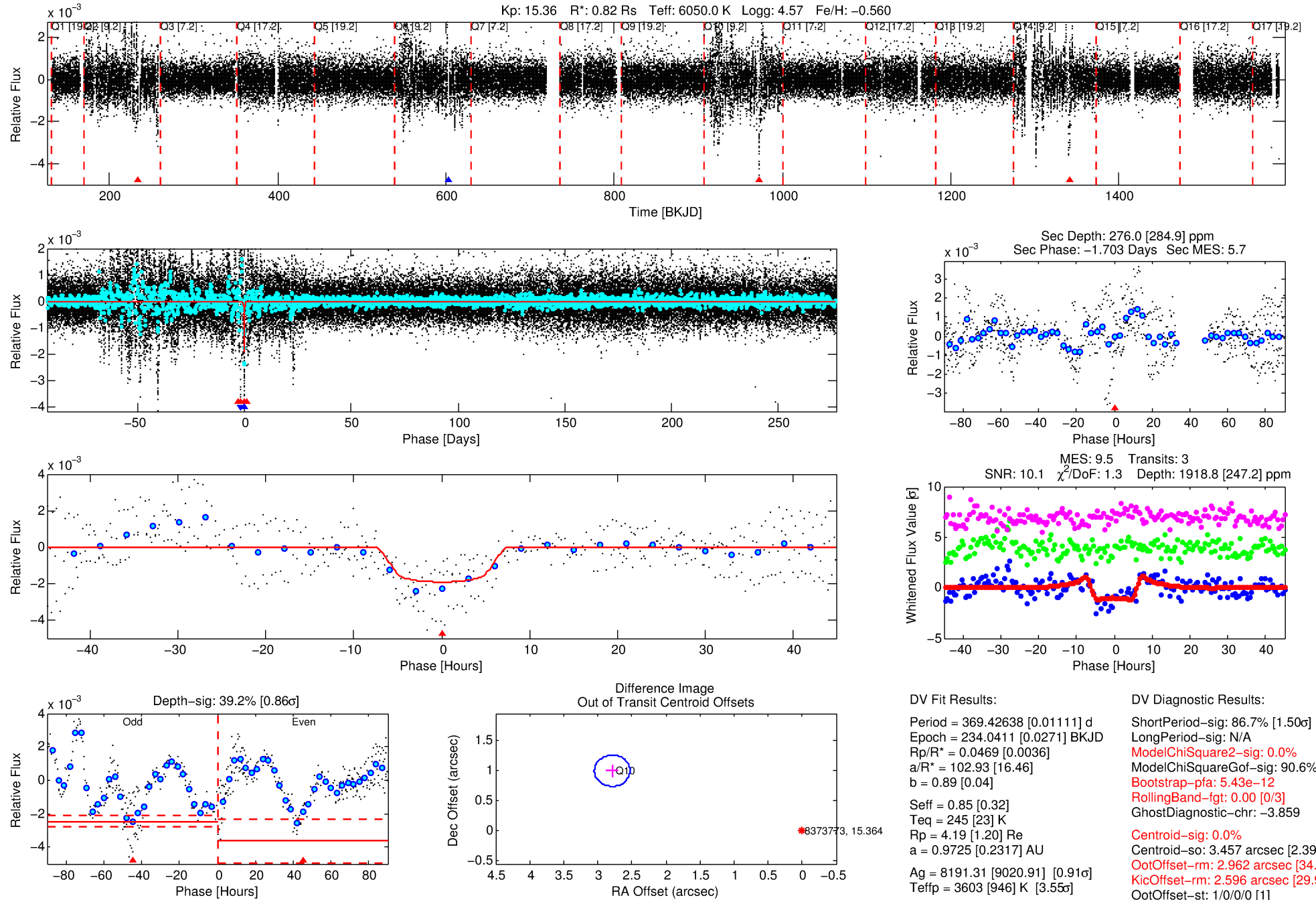
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008373773-02

No Significant Match Found

DV One-Page Summary

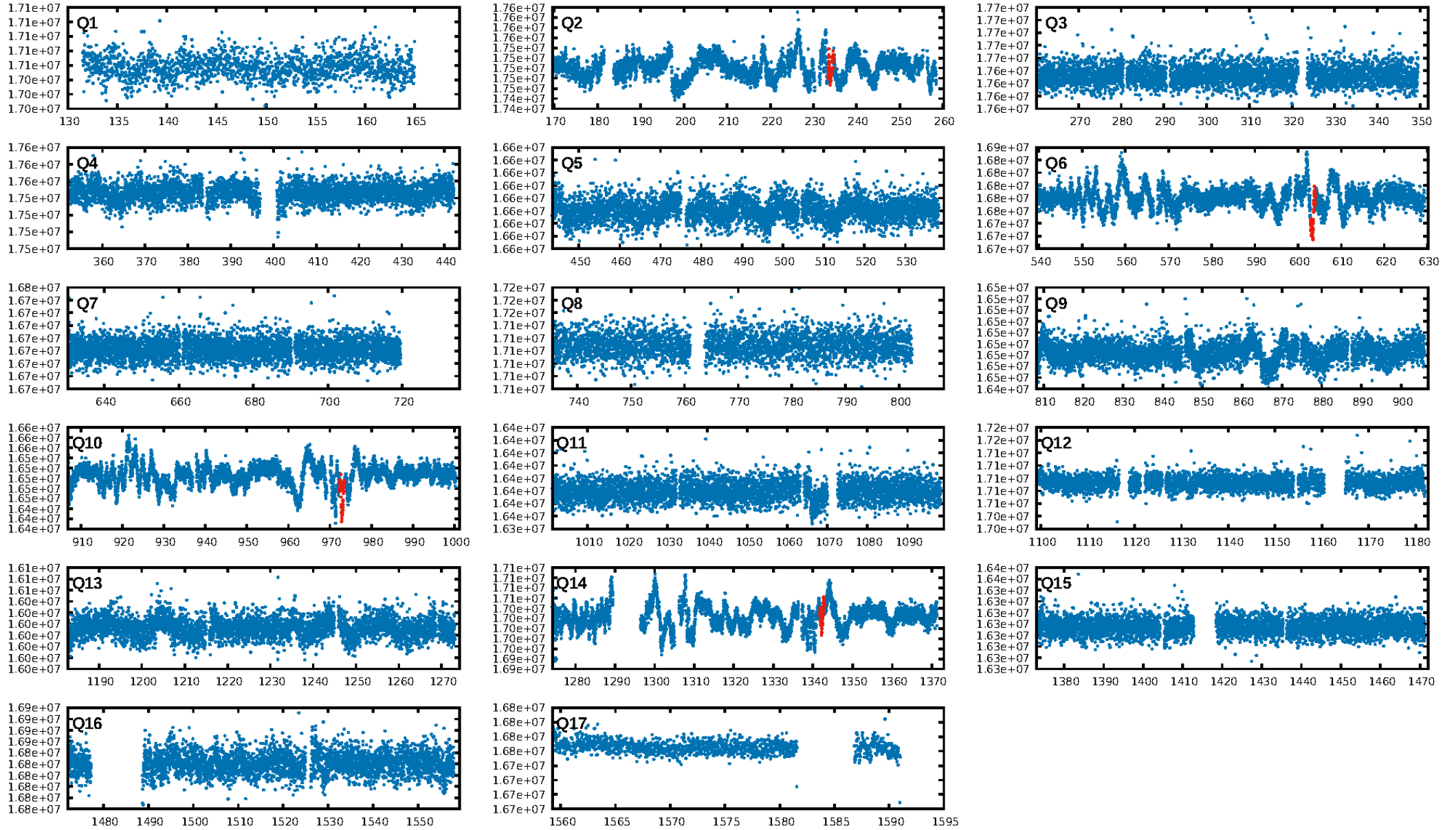
KIC: 8373773 Candidate: 2 of 2 Period: 369.426 d



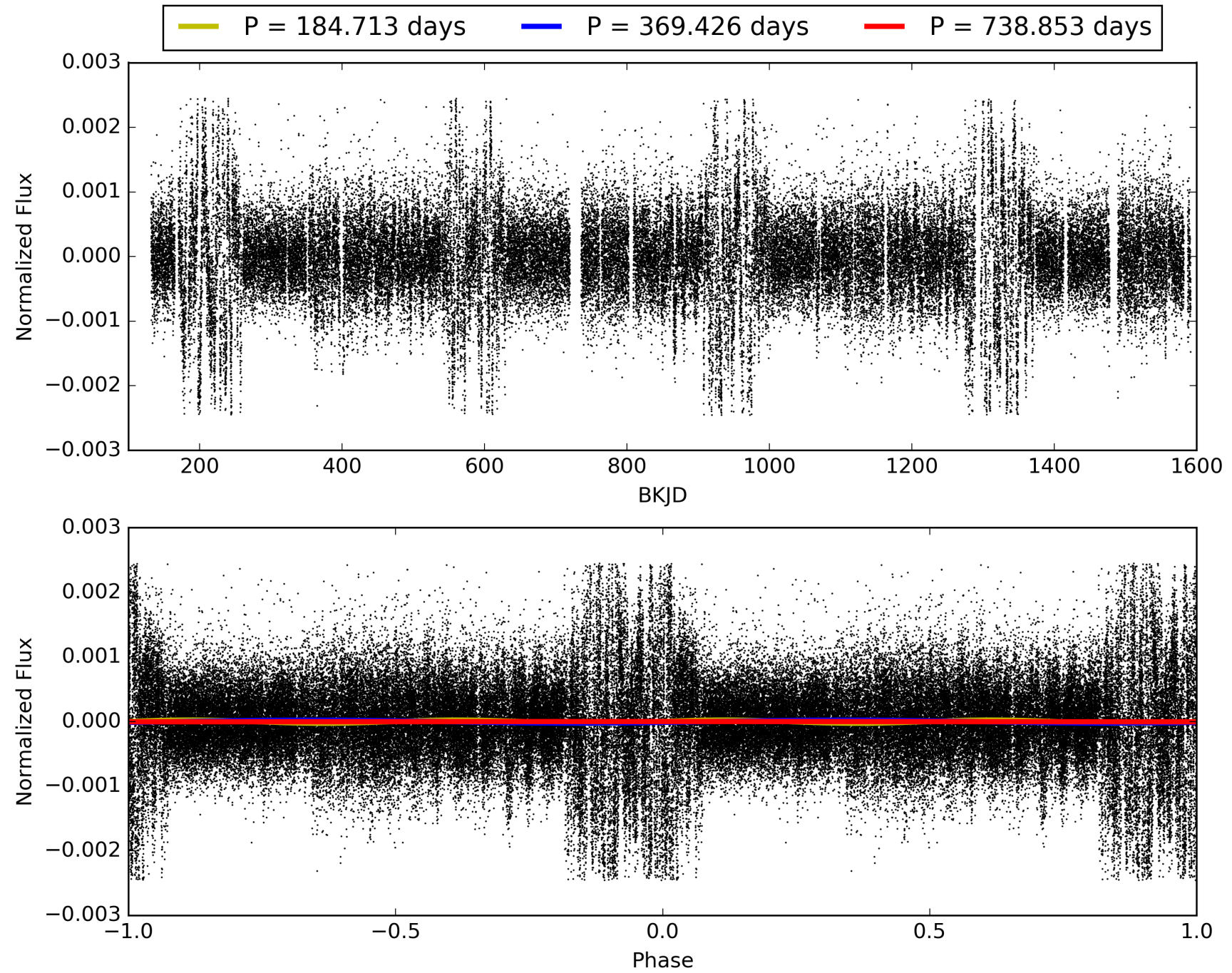
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:18:53 Z

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

TCE 008373773-02, PDC Light Curves

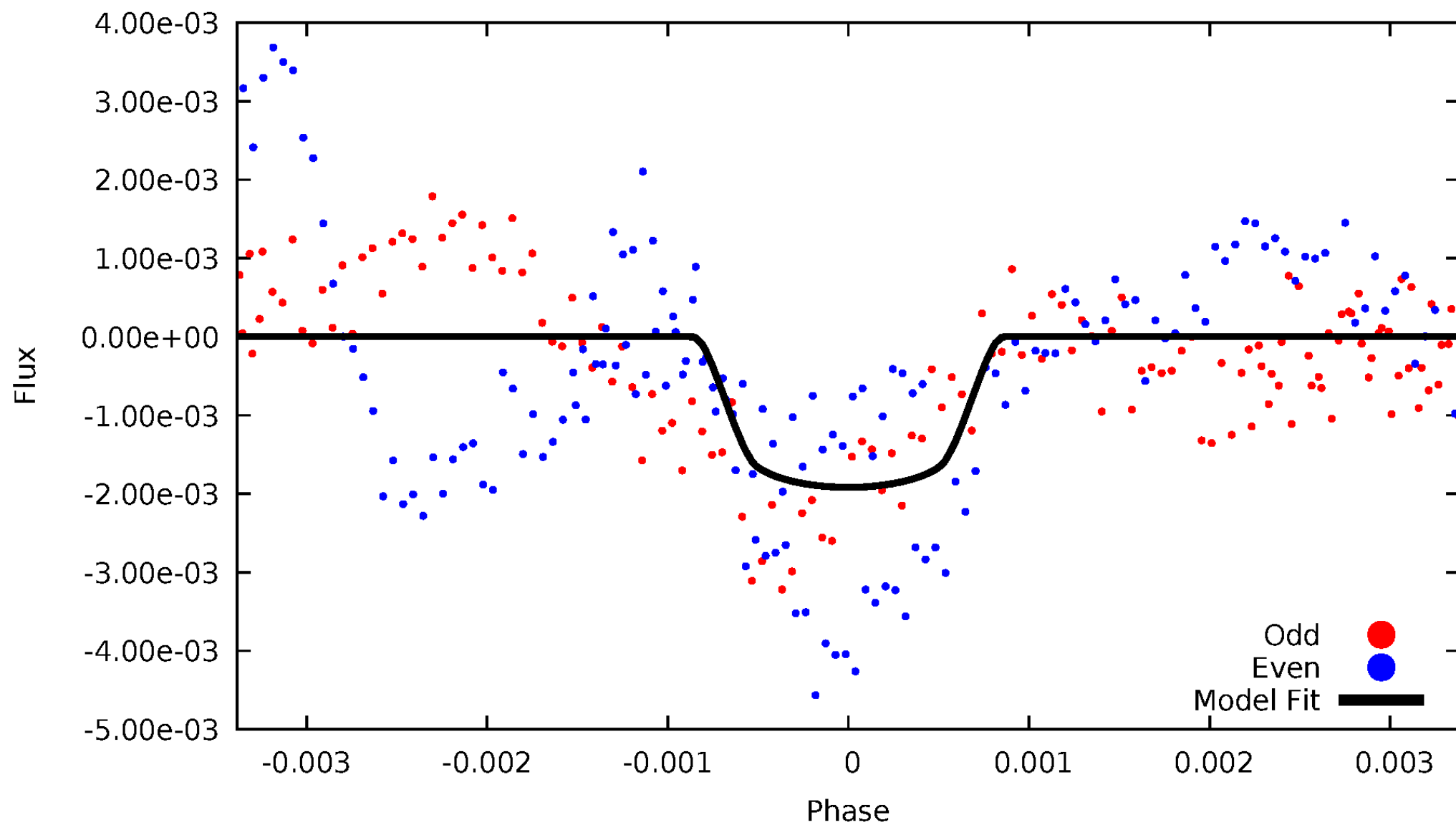


TCE 008373773-02



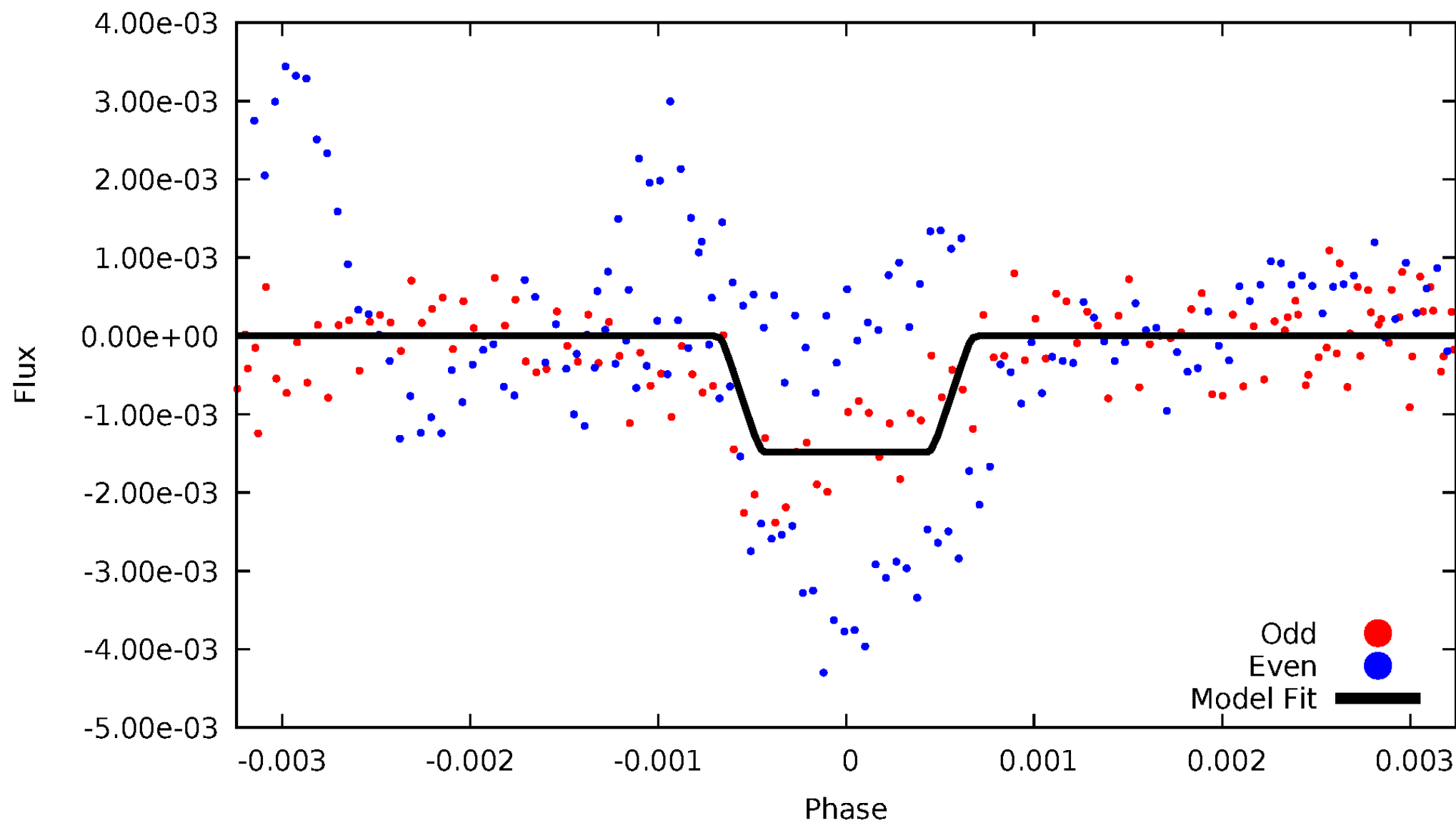
DV Odd/Even

TCE 008373773-02



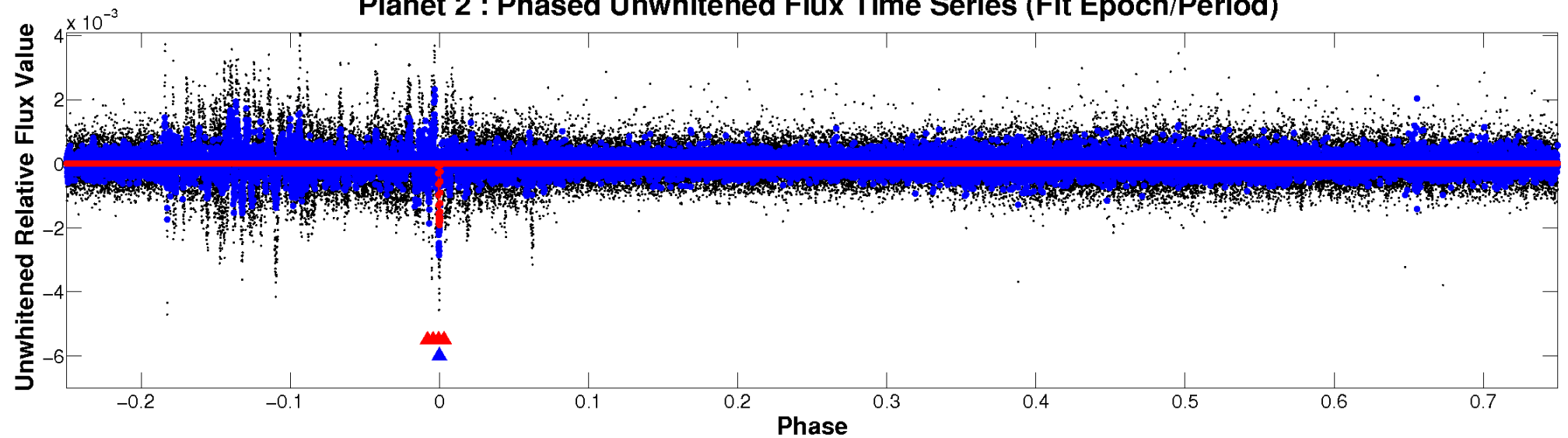
ALT Odd/Even

TCE 008373773-02

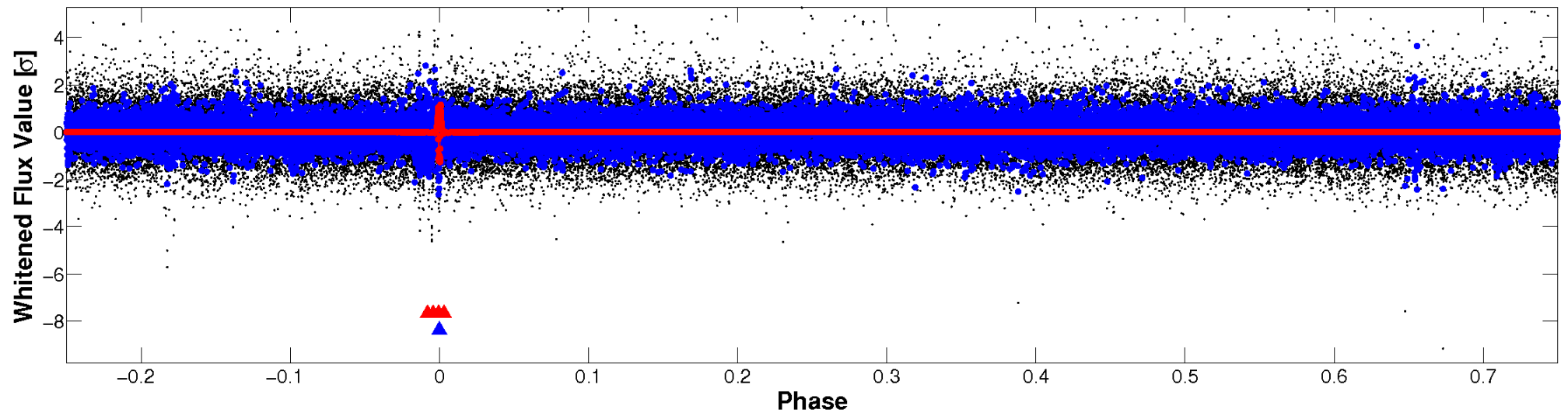


Non-Whitened Vs. Whitened Light Curve

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

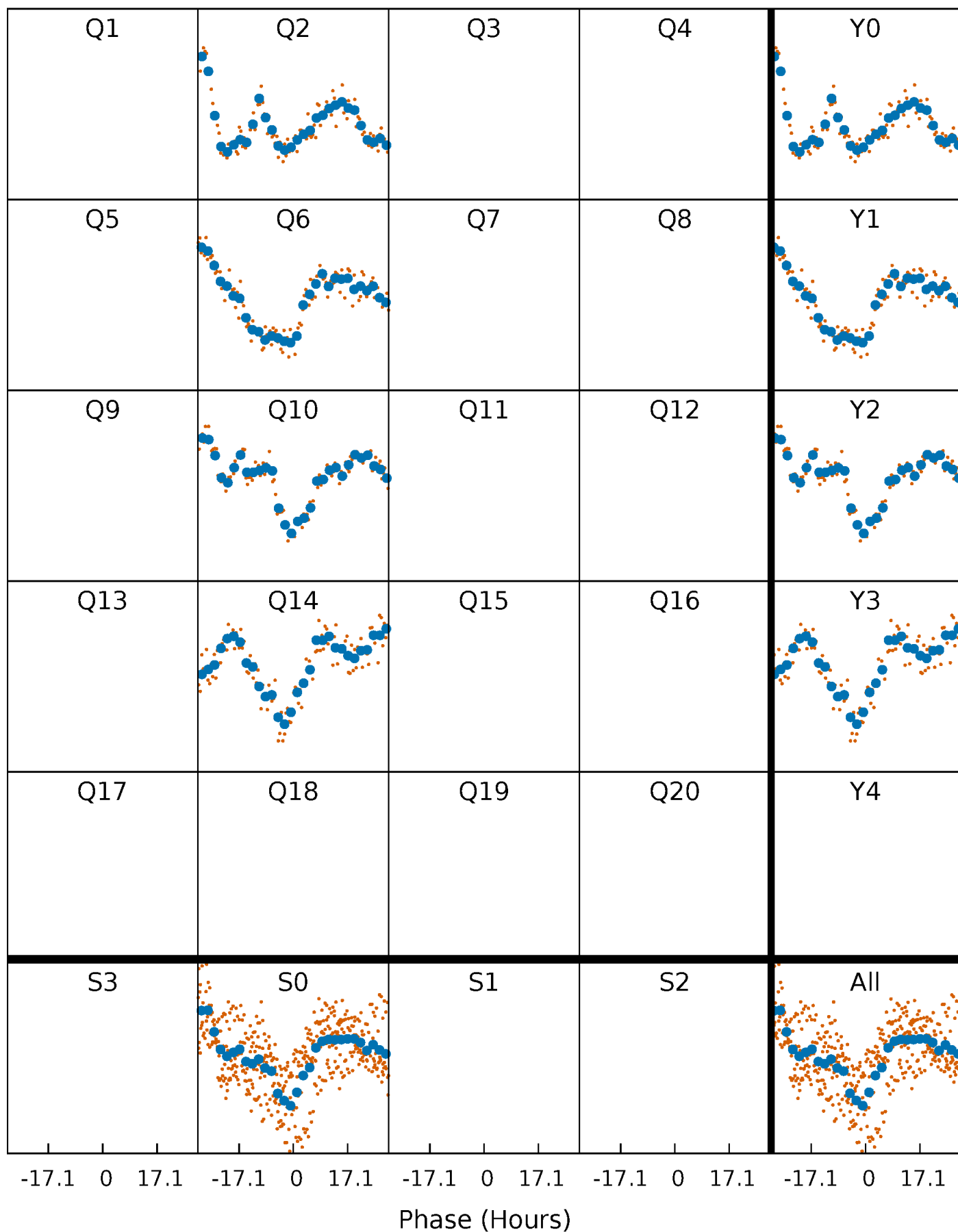


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



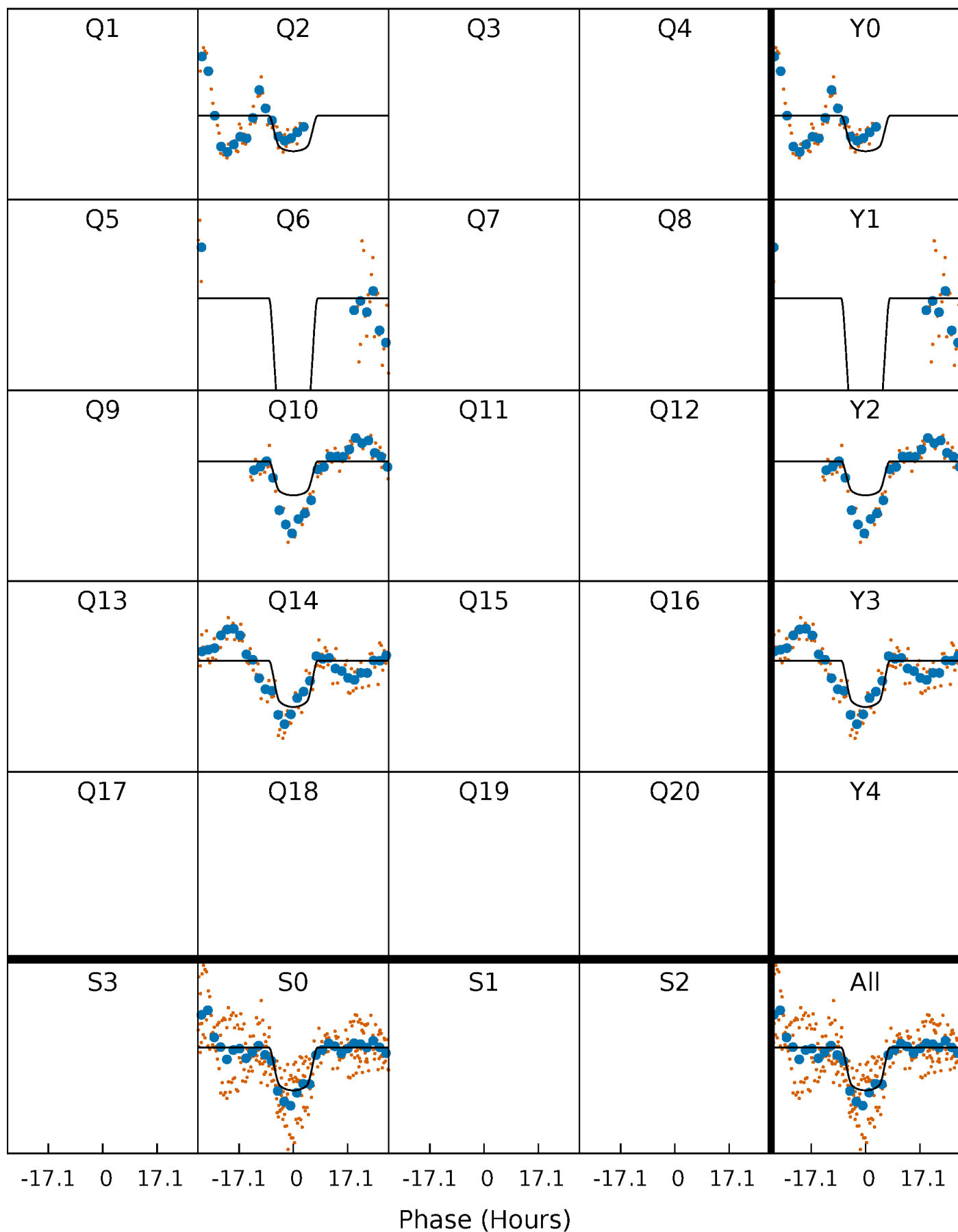
PDC Quarter-Phased Transit Curves

TCE 008373773-02 $P=369.426378$ Days $T_0=234.041083$ (BKJD)



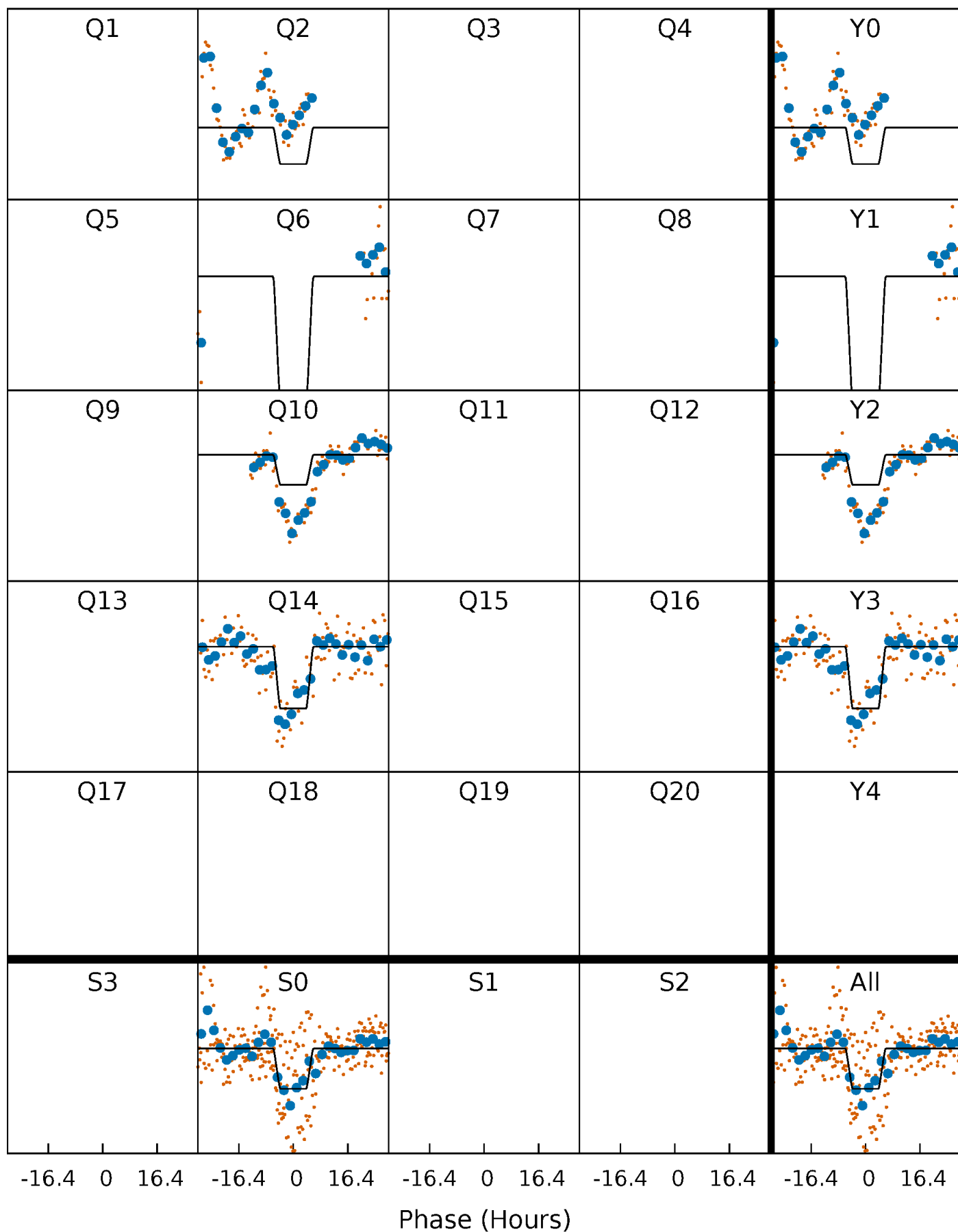
DV Quarter-Phased Transit Curves

TCE 008373773-02 P=369.426378 Days $T_0=234.041083$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

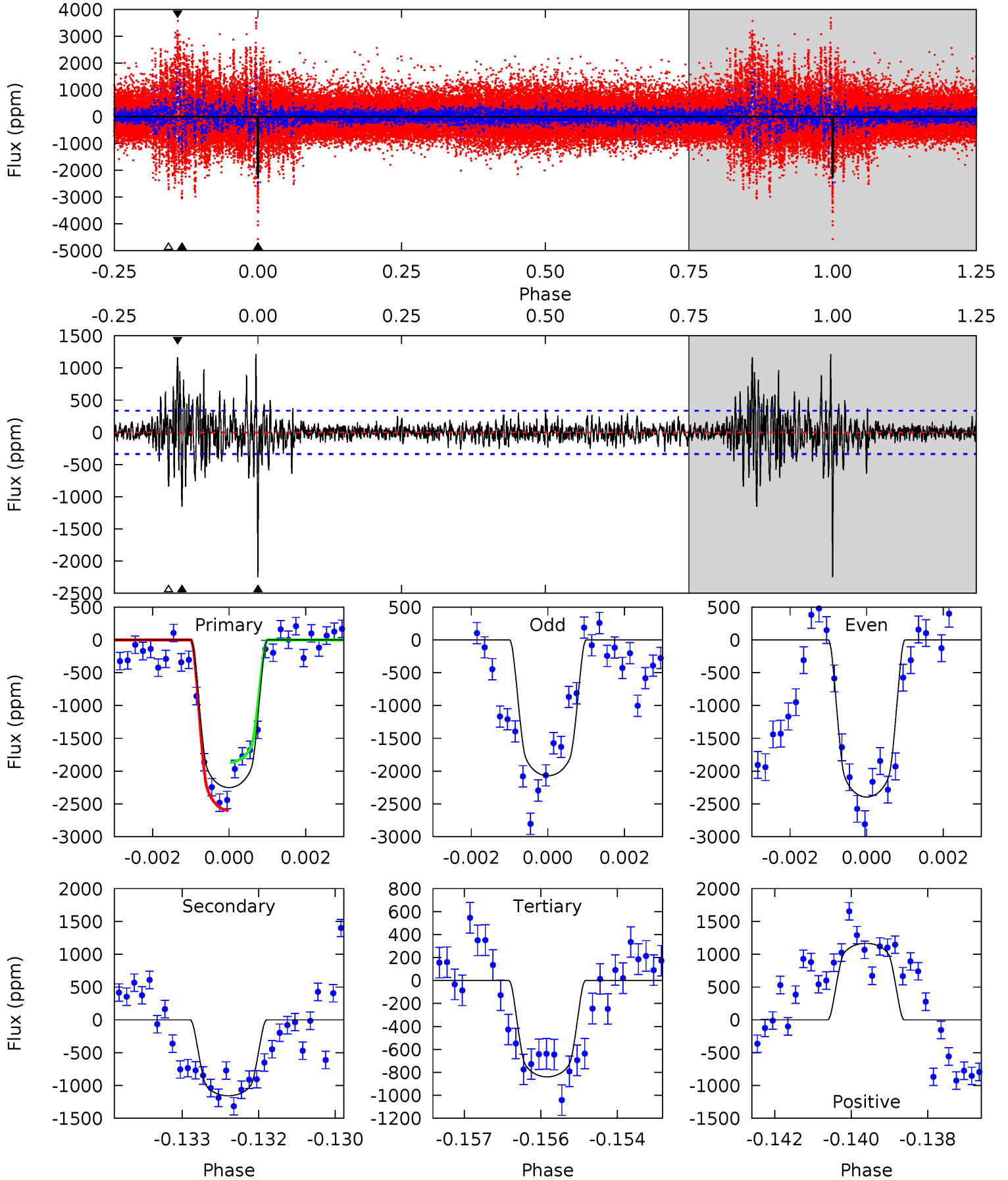
TCE 008373773-02 P=369.452387 Days $T_0=233.966725$ (BKJD)



DV Model-Shift Uniqueness Test

008373773-02, $P = 369.426378$ Days, $E = 234.041083$ Days

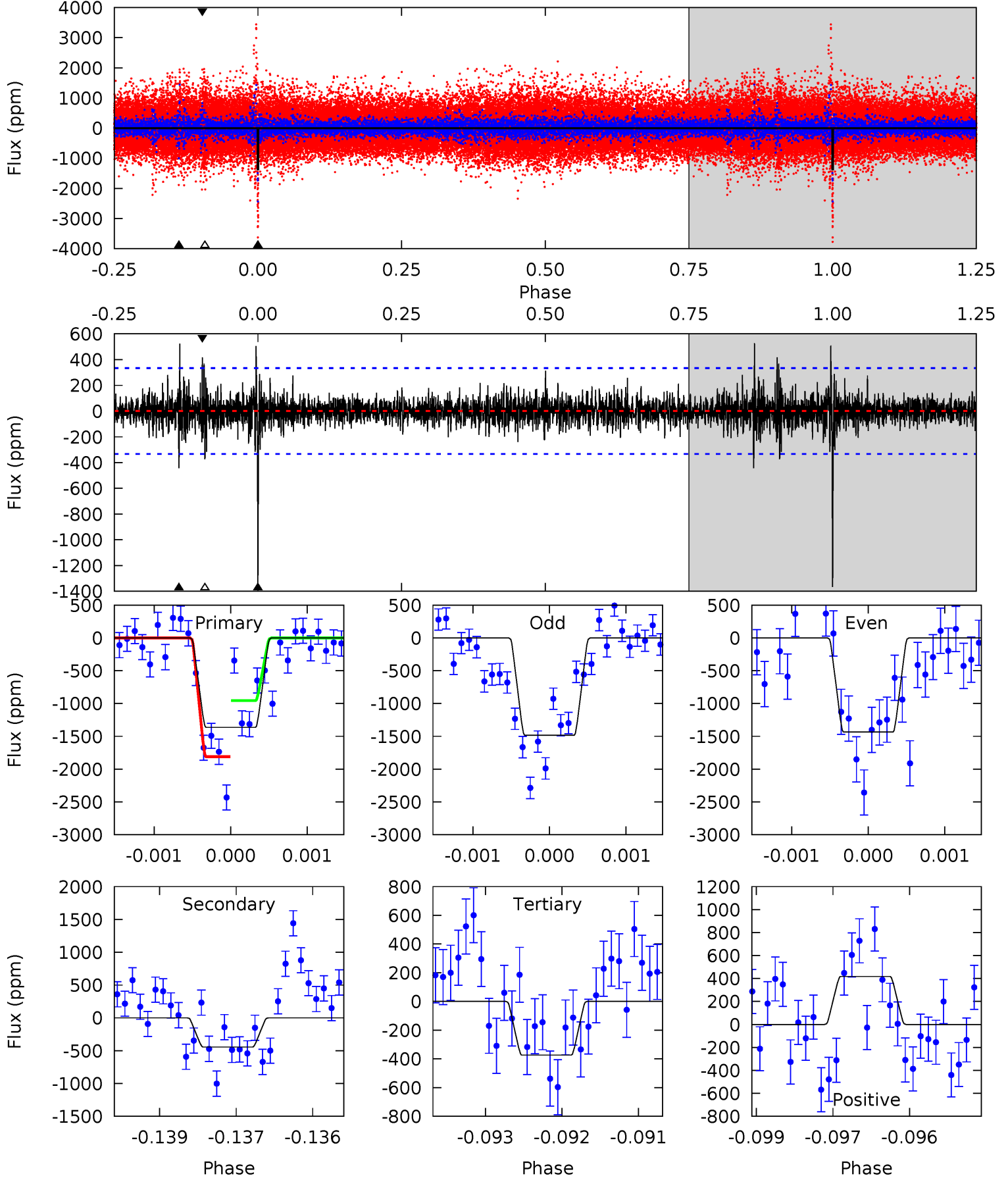
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.9	18.4	13.4	18.6	5.35	3.13	2.68	22.5	17.3	5.06	-0.16	2.46	1.08	0.35	5.87



Alt Model-Shift Uniqueness Test

008373773-02, P = 369.452387 Days, E = 233.966725 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.1	7.19	6.04	6.76	5.40	3.21	1.19	16.1	15.3	1.15	0.43	0.41	0.98	0.28	6.82



Stellar Parameters For KIC 008373773

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6050^{+181}_{-181}	$4.565^{+0.035}_{-0.196}$	$-0.560^{+0.300}_{-0.300}$	$0.819^{+0.227}_{-0.071}$	$0.899^{+0.089}_{-0.099}$	$2.301^{+0.416}_{-1.118}$
	+3%/-3%	+1%/-4%	+54%/-54%	+28%/-9%	+10%/-11%	+18%/-49%
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 008373773-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1157 ± 63	$4.34^{+0.67}_{-0.46}$	350^{+23}_{-16}	5233^{+235}_{-236}	31632^{+7639}_{-7588}
Alt.	-444 ± 62	$3.62^{+0.58}_{-0.47}$	352^{+22}_{-16}	4626^{+271}_{-221}	17442^{+5259}_{-4878}

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

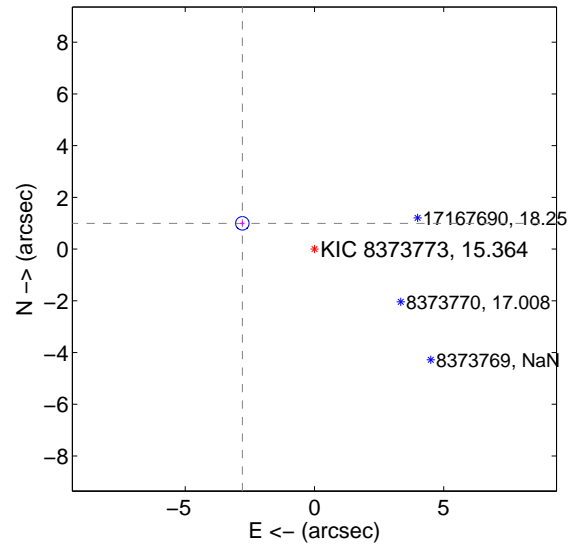
Supplemental centroid analysis for 008373773-02. Kepler magnitude: 15.36. Transit SNR 10.13

There are 0 quarters with good PRF difference image offsets

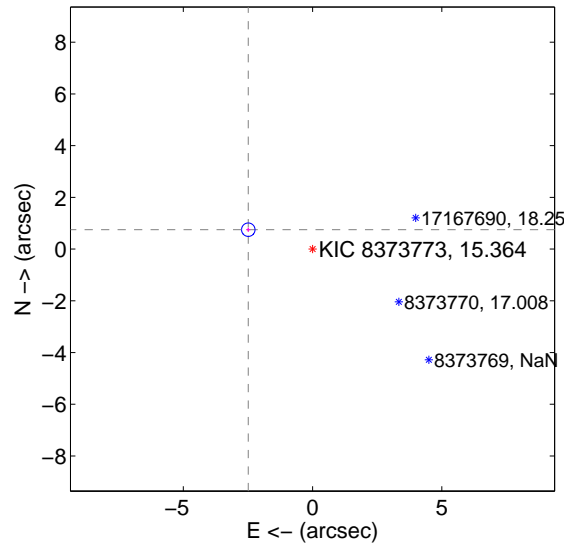
The direct PRF centroid is offset from the target star catalog position by about 0.39 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.962 ± 0.087	34.16	2.790 ± 0.087	0.996 ± 0.088
PRF-fit source offset from KIC position	2.596 ± 0.087	29.95	2.486 ± 0.087	0.750 ± 0.088
photometric centroid source offset	3.46 ± 1.45	2.39	0.76 ± 1.18	-3.37 ± 1.46

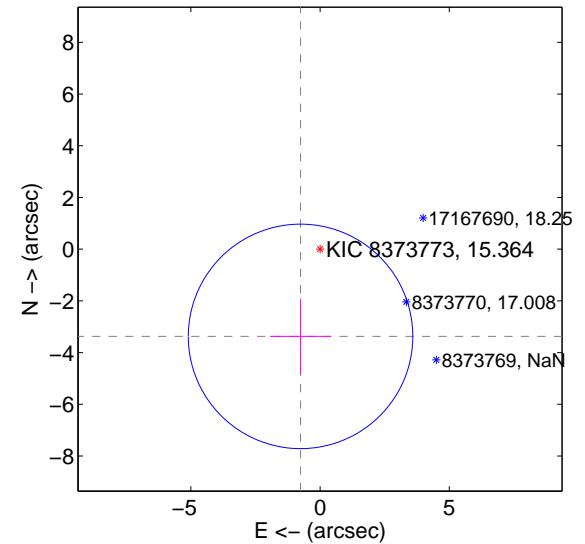
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

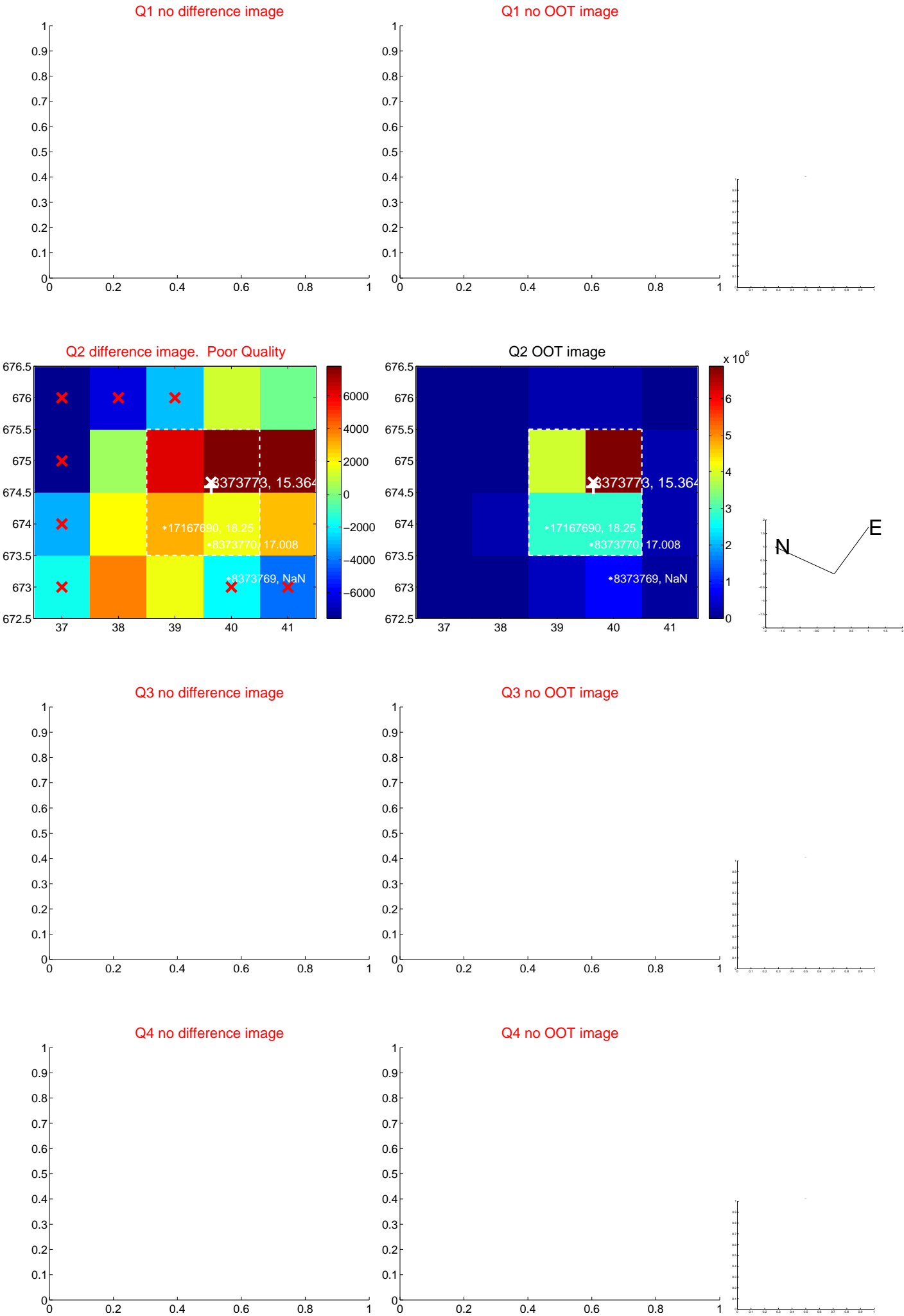


offset from photometric centroids

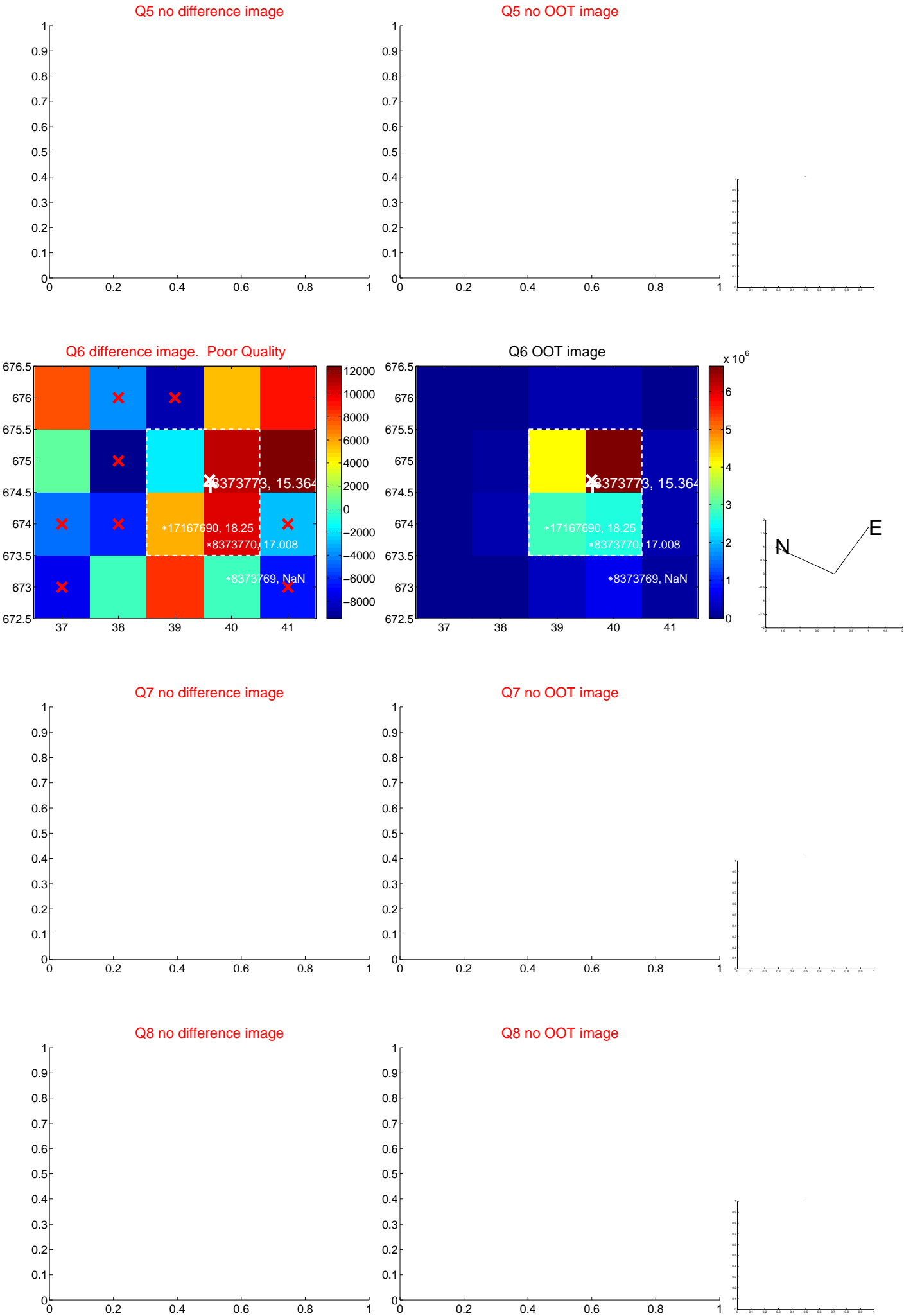


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

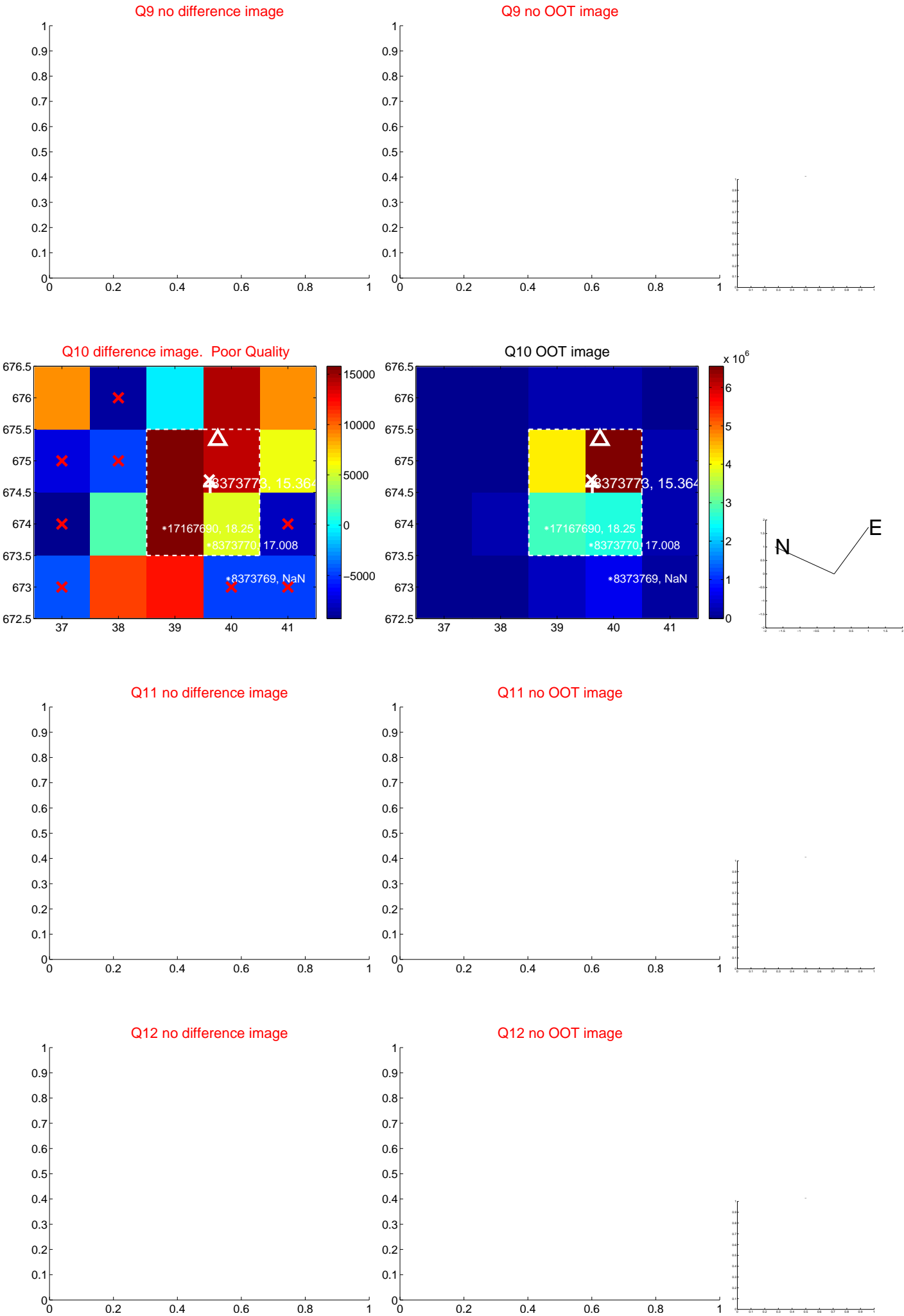
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



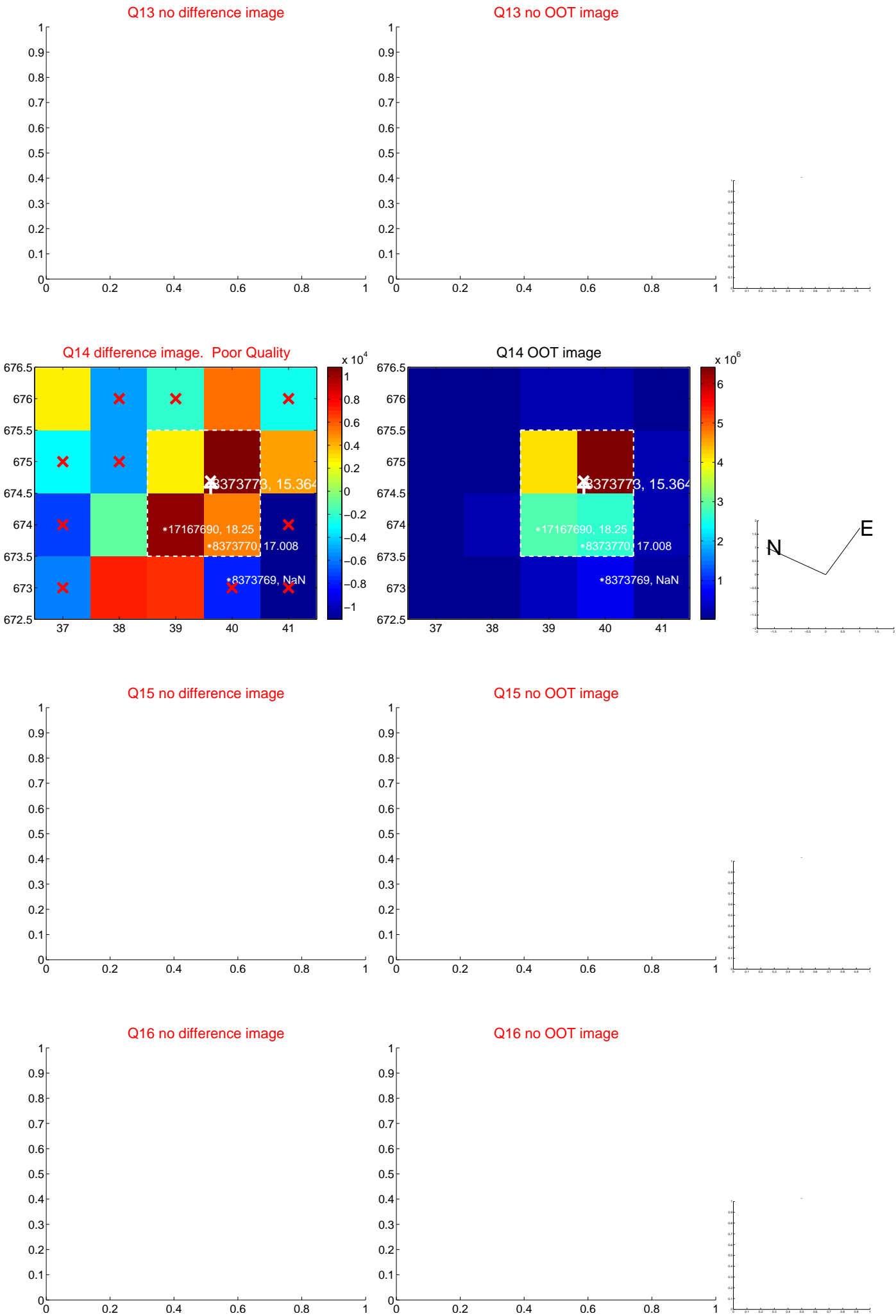
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



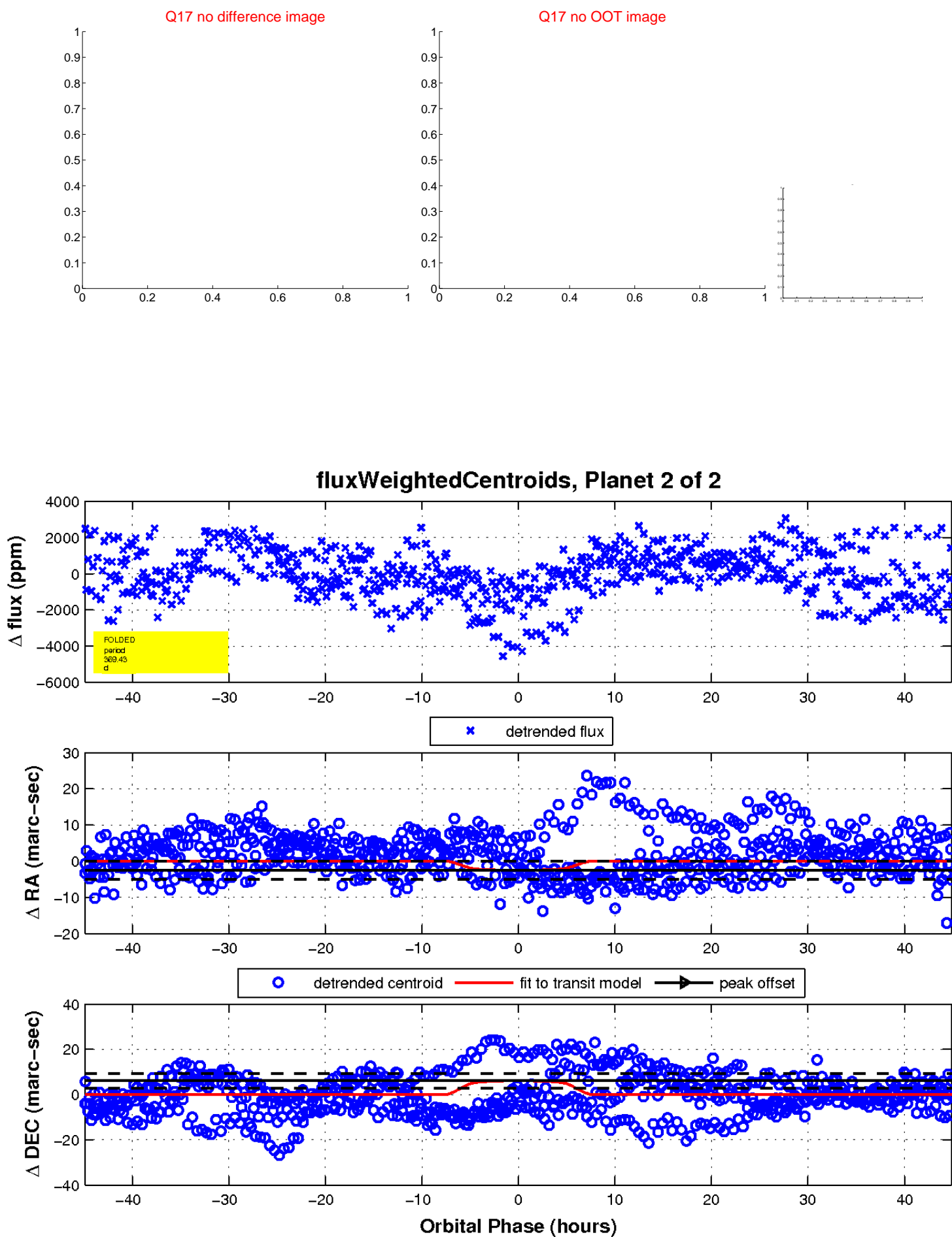
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



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



UKIRT Image

Declination

