

KIC 009773270

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})
009773270-01	OBS	4636.01	122.744731	171.034843	908.3	6.511	14.4	15.8	0.98	5619	2.94	3.48

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009773270-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

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 009773270-01

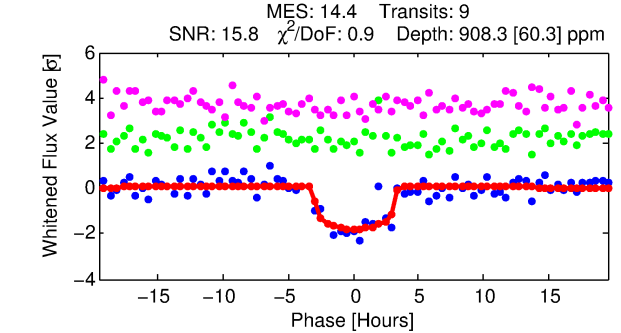
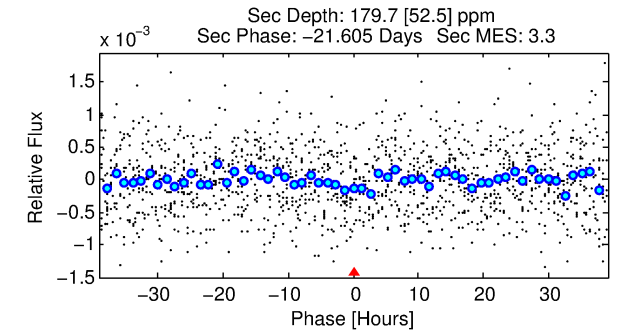
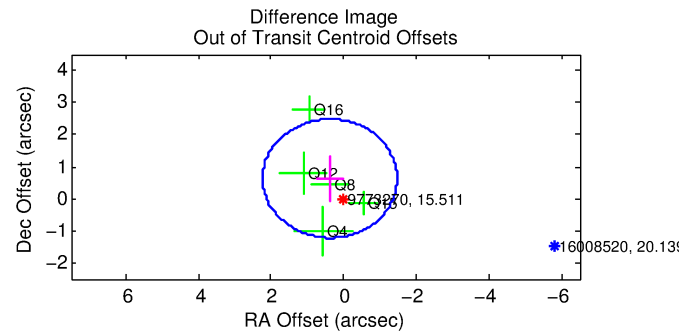
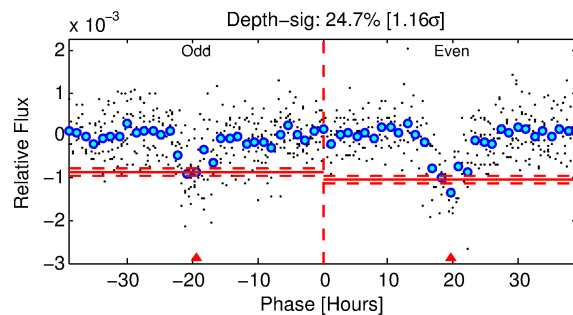
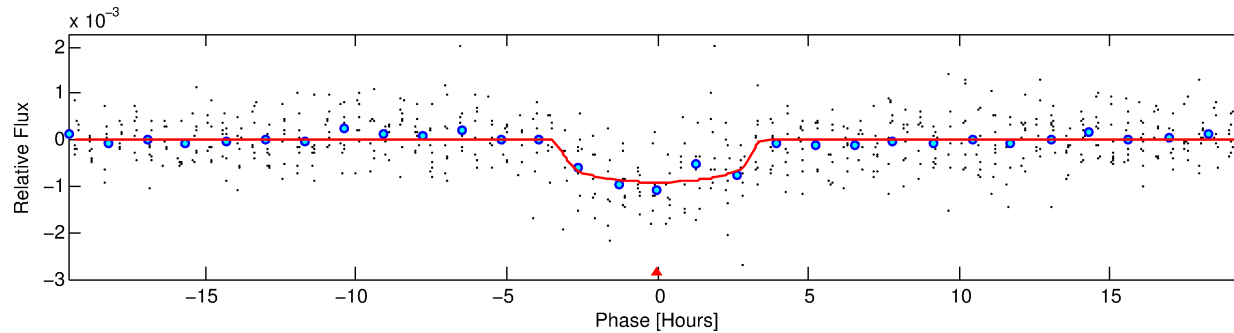
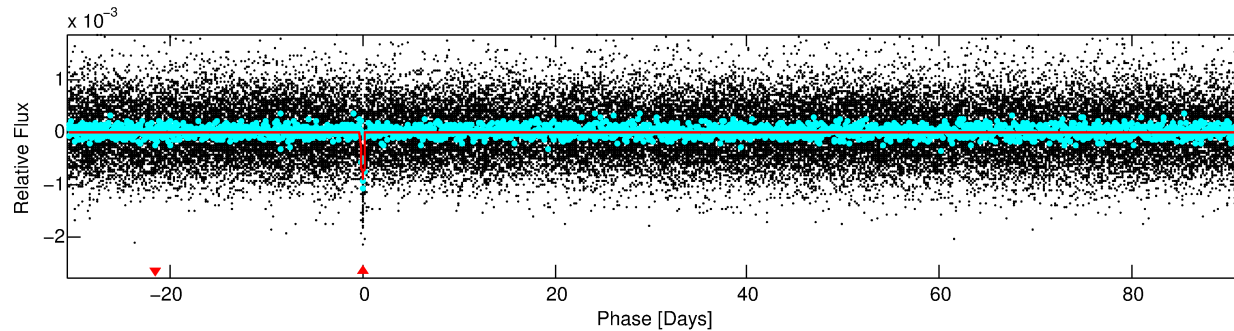
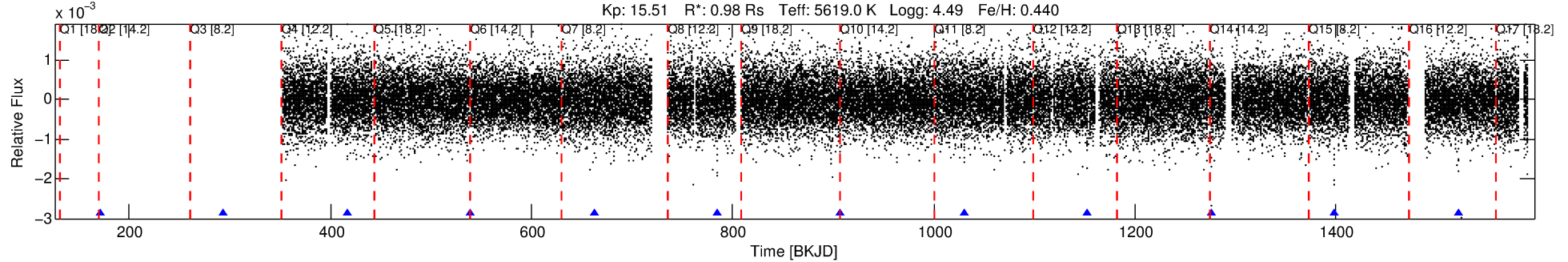
No Significant Match Found

DV One-Page Summary

KIC: 9773270 Candidate: 1 of 1 Period: 122.745 d

KOI: K04636.01 Corr: 0.900

Kp: 15.51 R*: 0.98 Rs Teff: 5619.0 K Logg: 4.49 Fe/H: 0.440



DV Fit Results:

Period = 122.74473 [0.00152] d
Epoch = 171.0348 [0.0112] BKJD
Rp/R* = 0.0276 [0.0483]
a/R* = 136.94 [926.22]
b = 0.39 [14.92]
Seff = 3.48 [1.37]
Teq = 348 [34] K
Rp = 2.94 [5.21] Re
a = 0.4943 [0.1224] AU
Ag = 2792.77 [9853.61] [0.28σ]
Teffp = 3915 [3437] K [1.04σ]

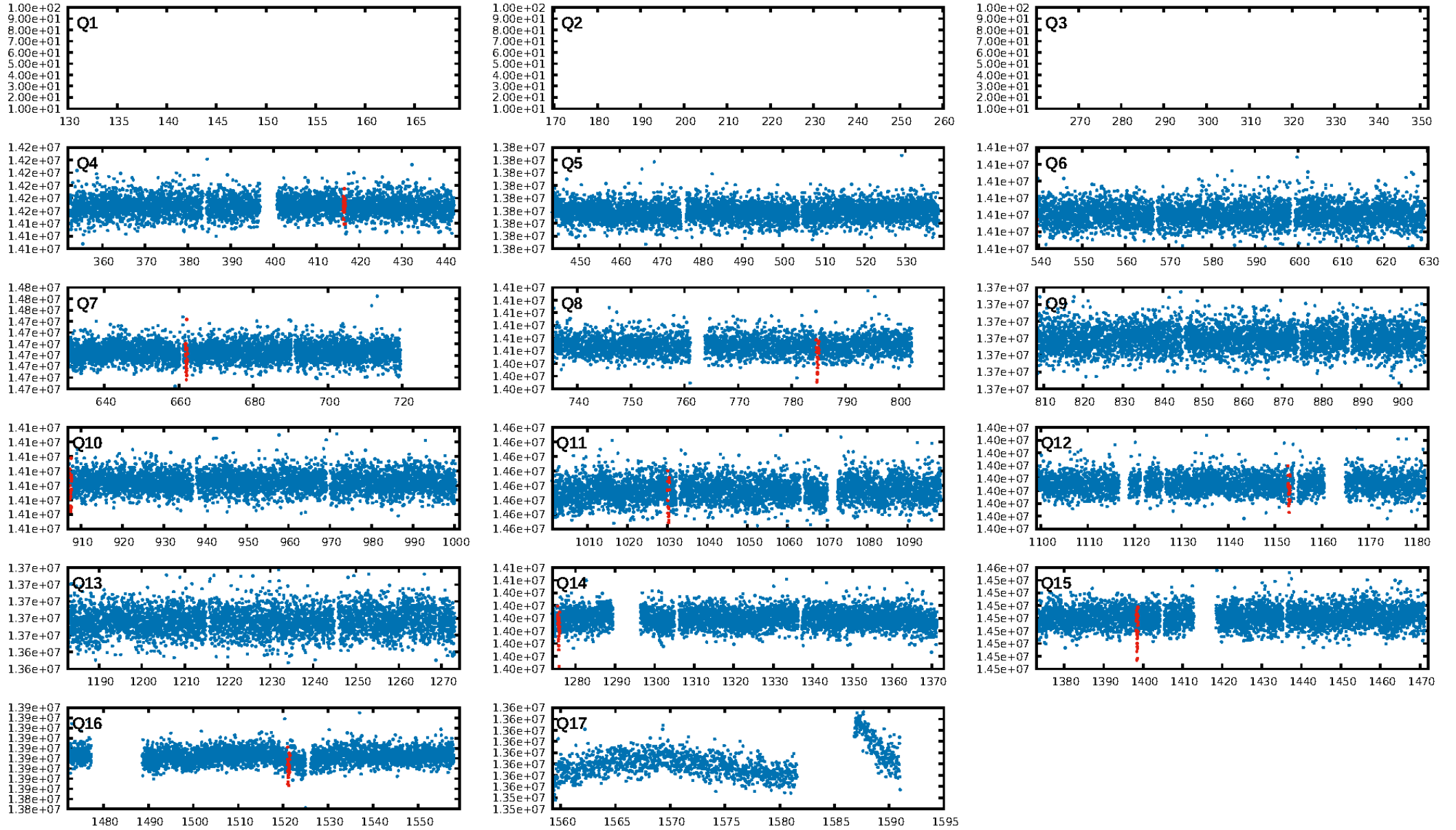
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.5%
ModelChiSquareGof-sig: 97.5%
Bootstrap-pfa: 1.71e-48
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: 1.766
Centroid-sig: 0.2%
Centroid-so: 1.211 arcsec [1.50σ]
OotOffset-rm: 0.737 arcsec [1.19σ]
KicOffset-rm: 0.749 arcsec [1.98σ]
OotOffset-st: 0/1/4/0 [5]
KicOffset-st: 0/1/4/0 [5]
DiffImageQuality-fgm: 0.80 [4/5]
DiffImageOverlap-fno: 1.00 [6/6]

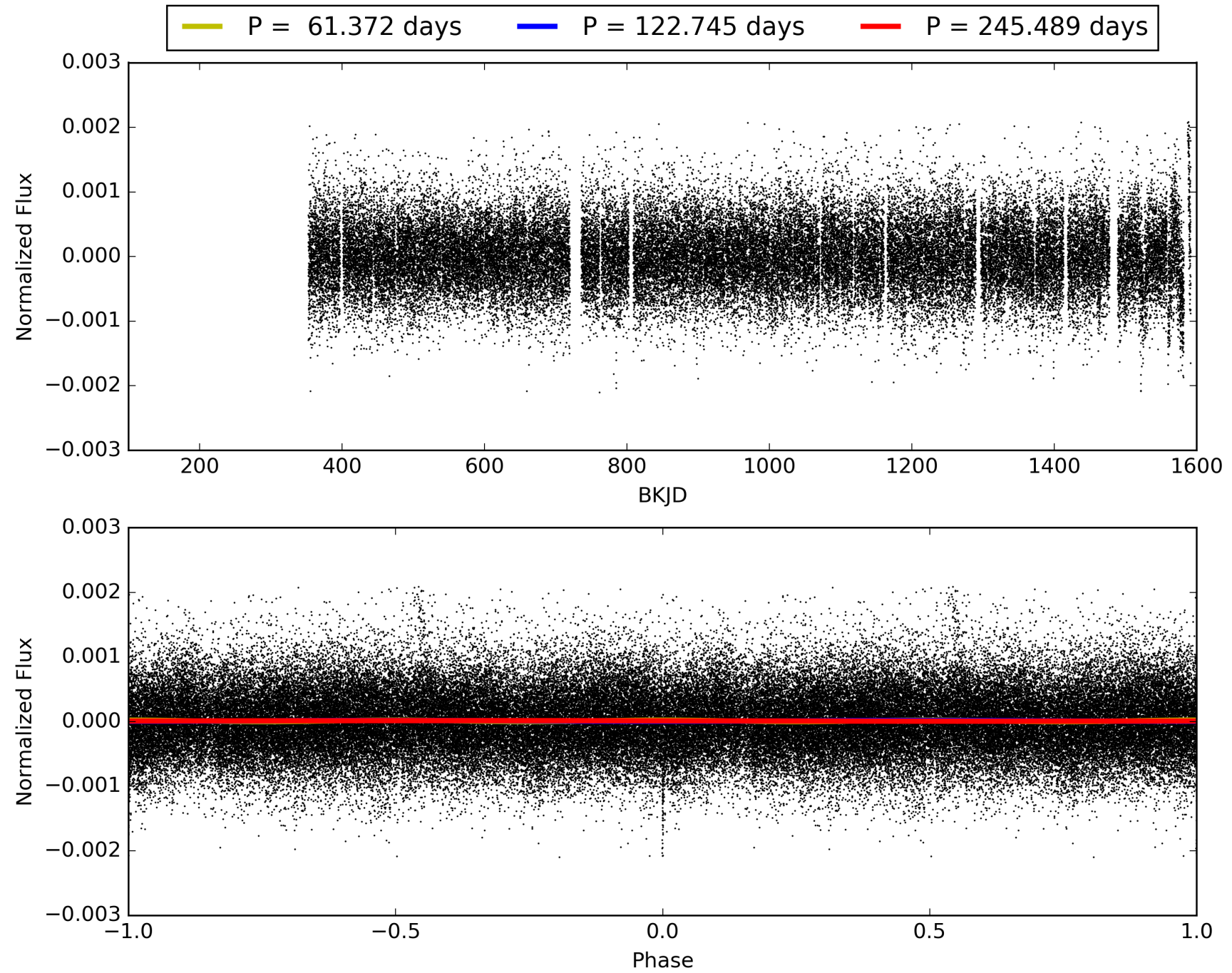
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:20:15 Z

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

TCE 009773270-01, PDC Light Curves

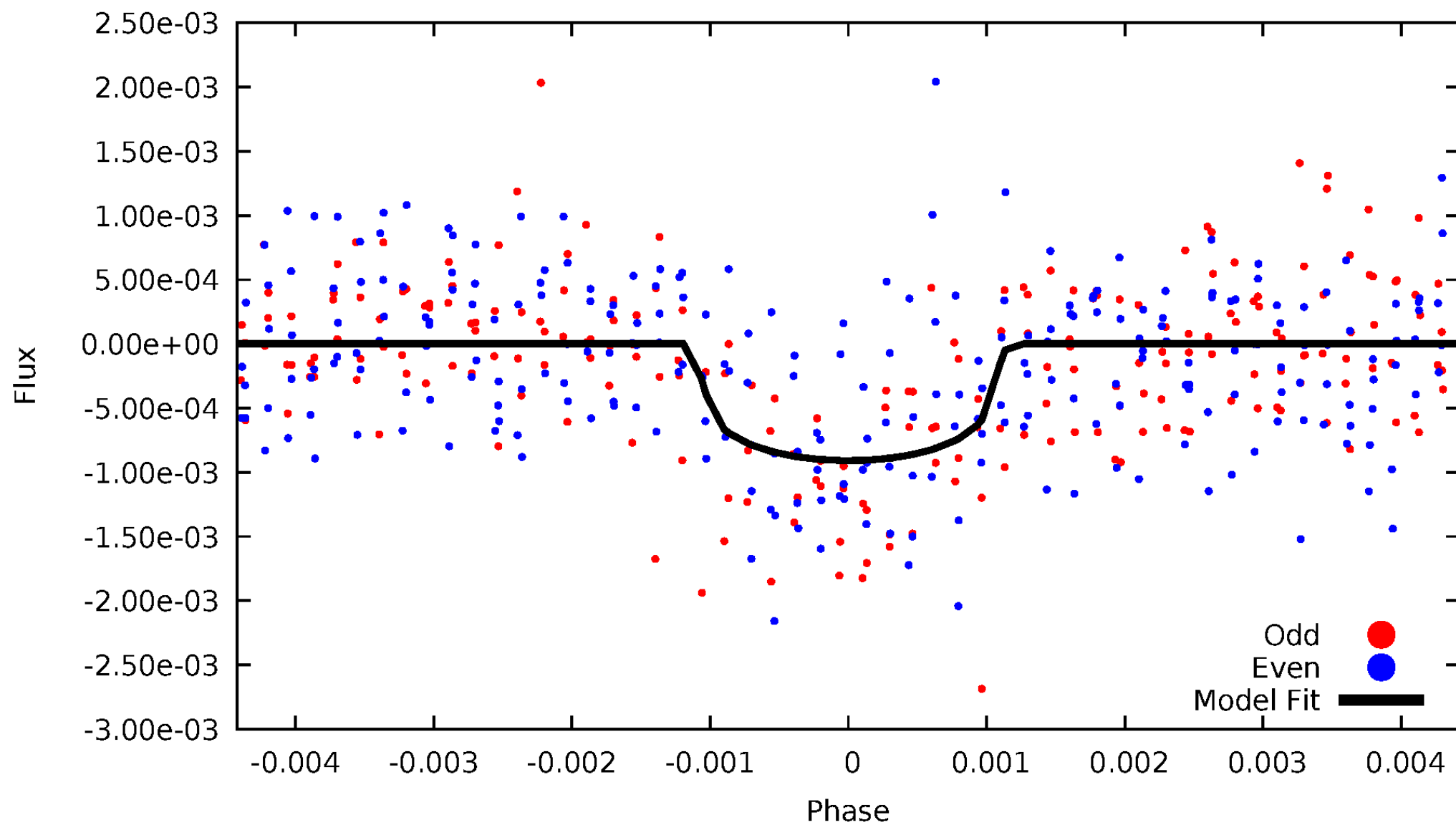


TCE 009773270-01



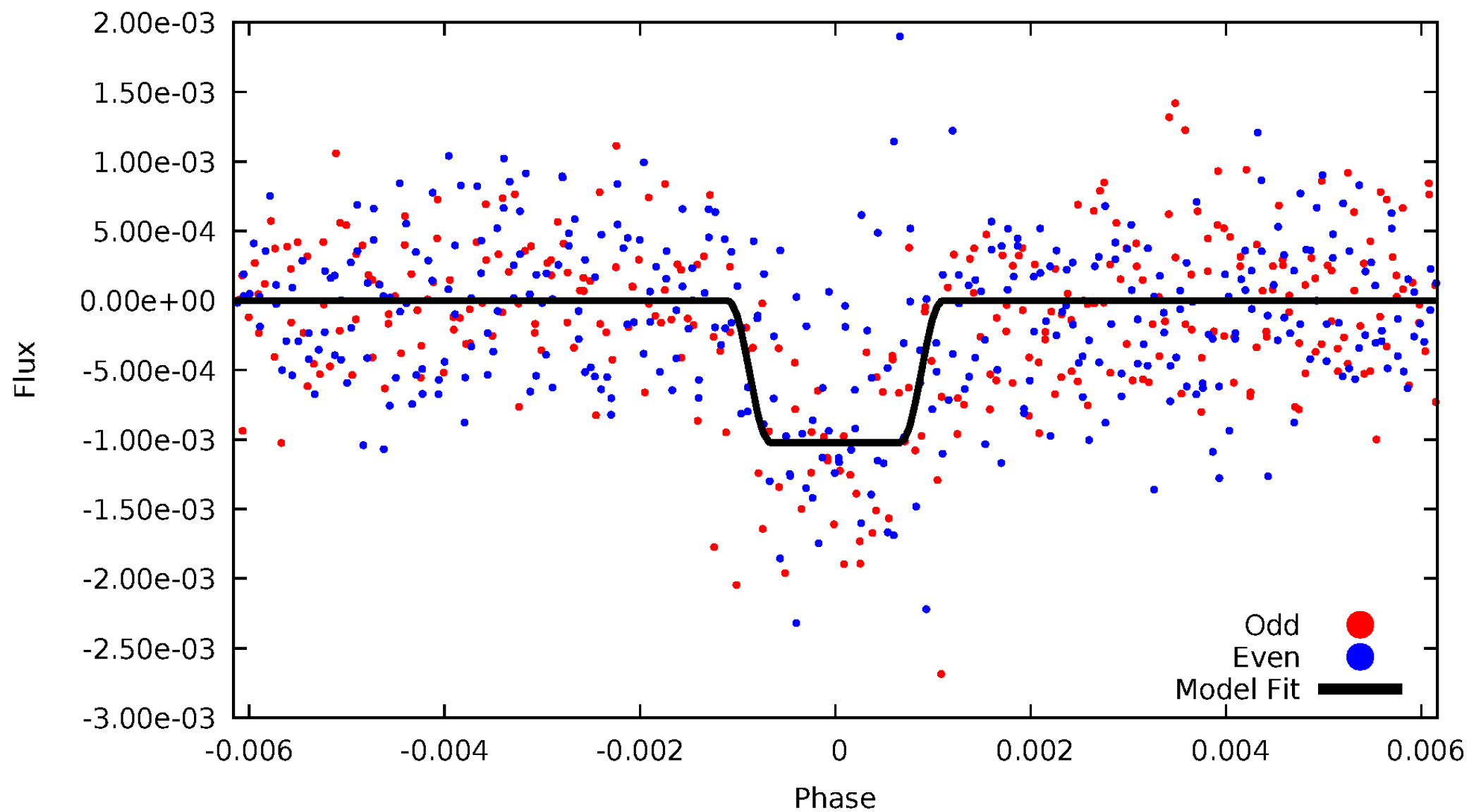
DV Odd/Even

TCE 009773270-01



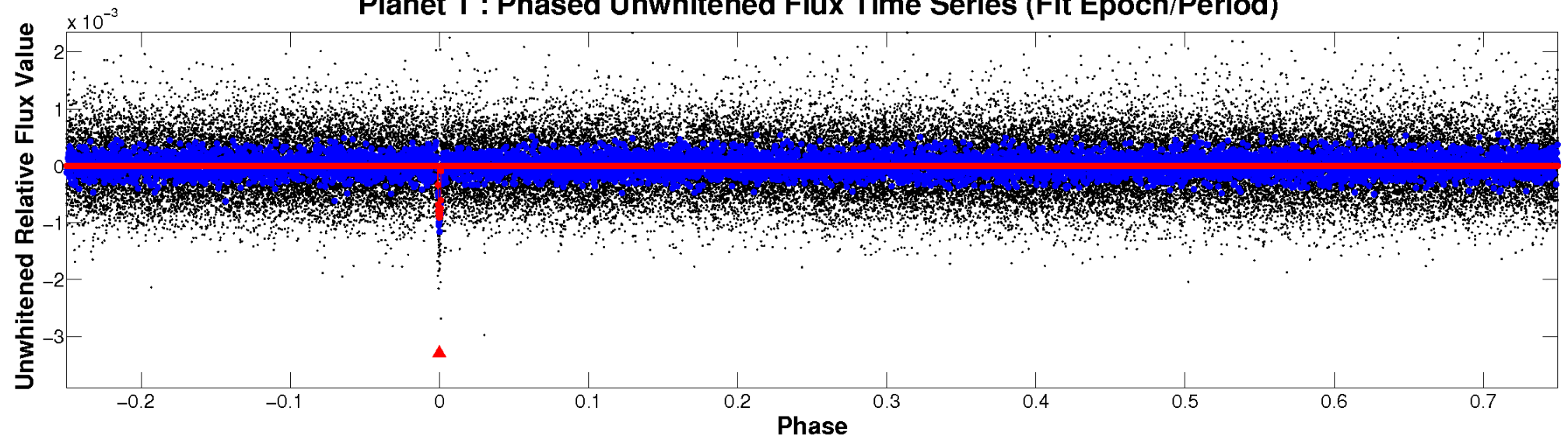
ALT Odd/Even

TCE 009773270-01

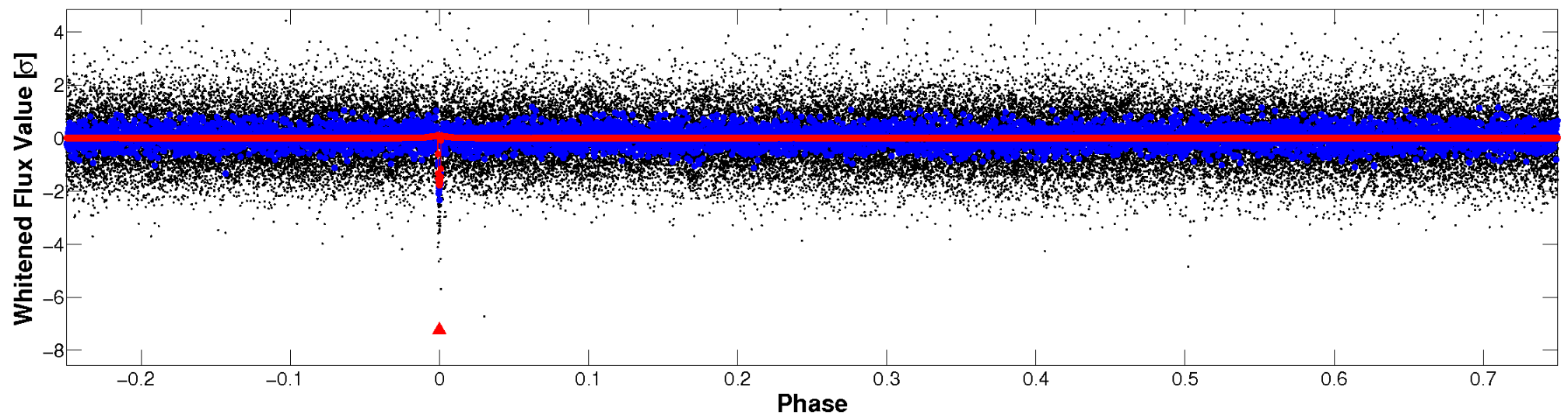


Non-Whitened Vs. Whitened Light Curve

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

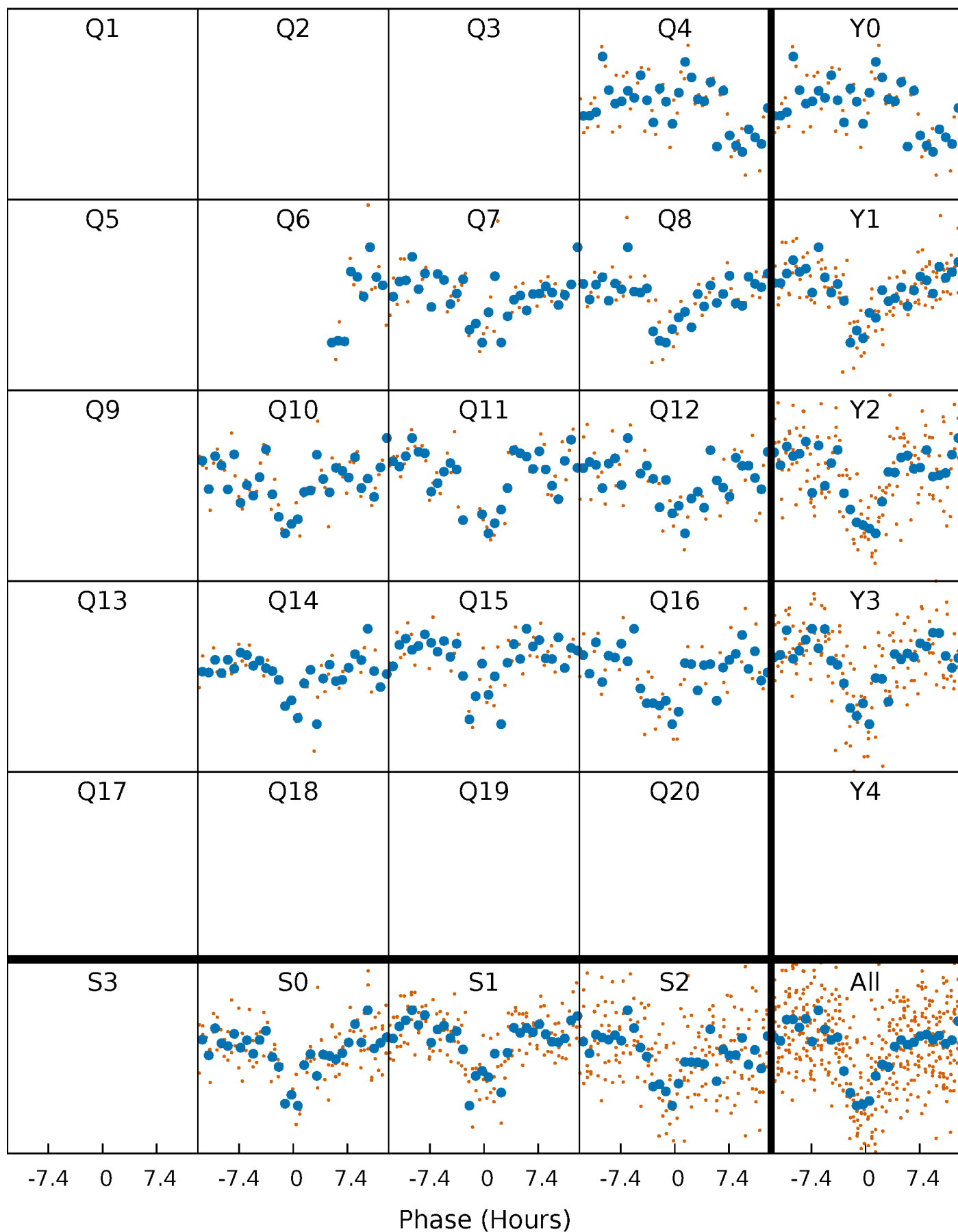


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



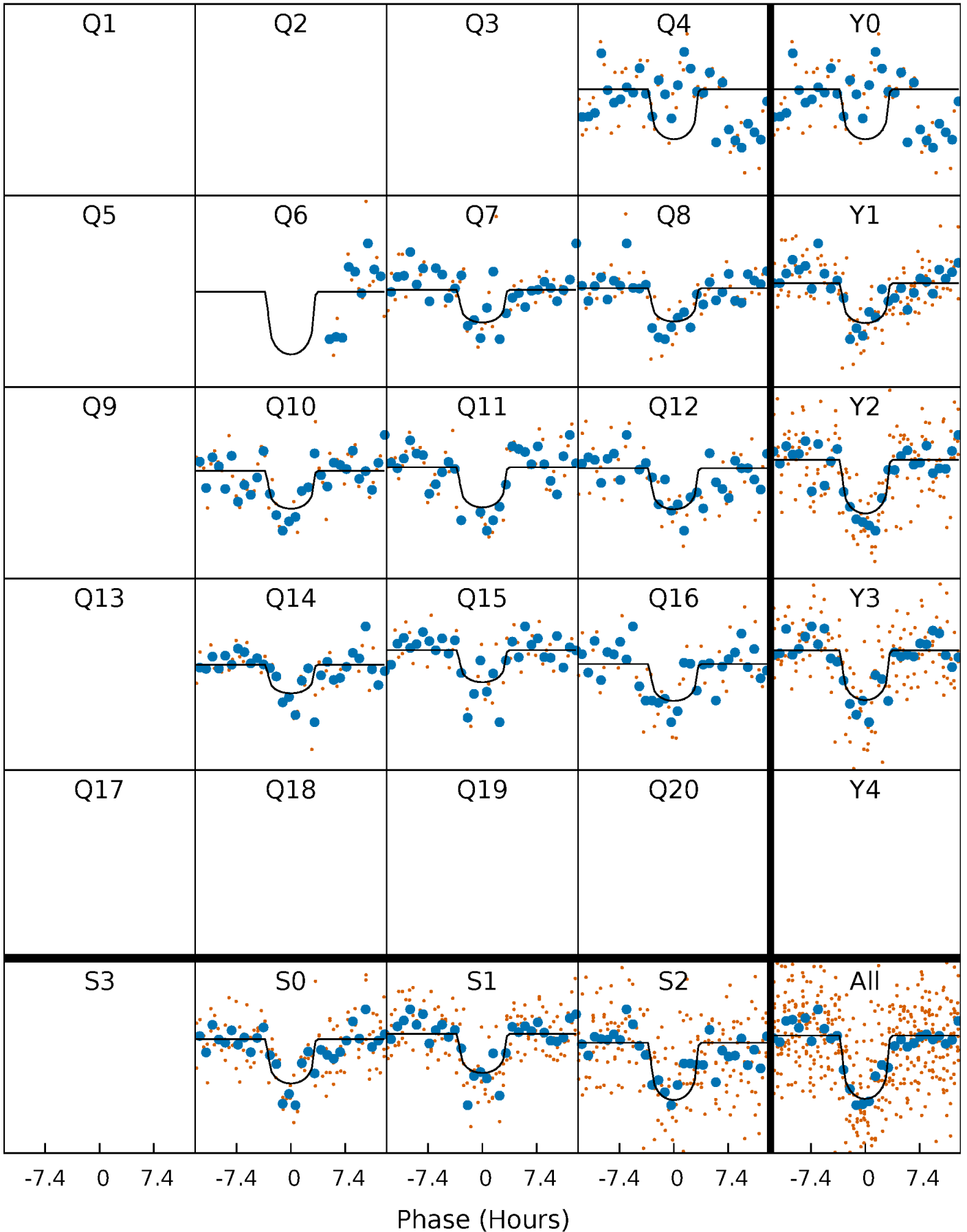
PDC Quarter-Phased Transit Curves

TCE 009773270-01 P=122.744731 Days $T_0=171.034843$ (BKJD)



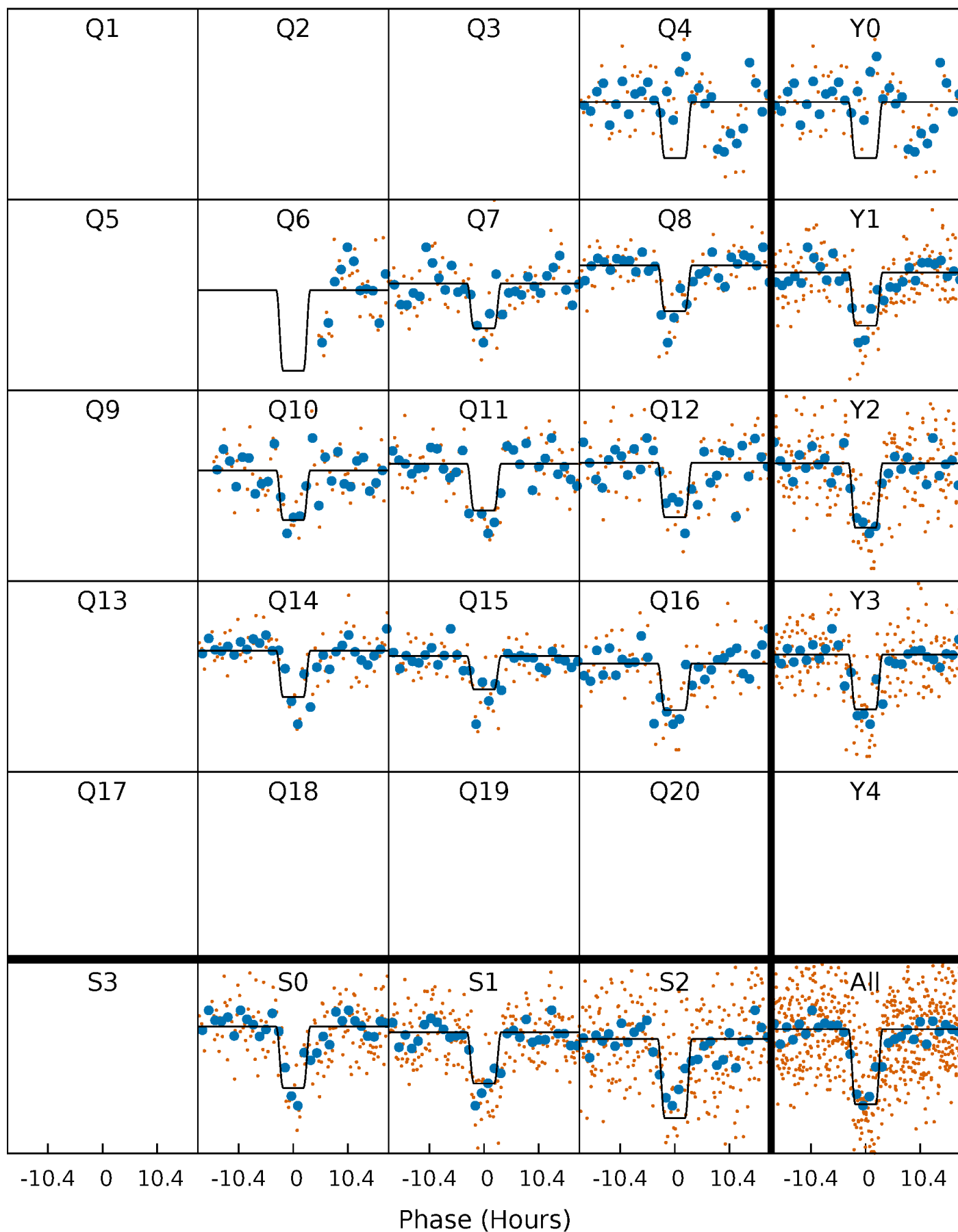
DV Quarter-Phased Transit Curves

TCE 009773270-01 P=122.744731 Days $T_0=171.034843$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

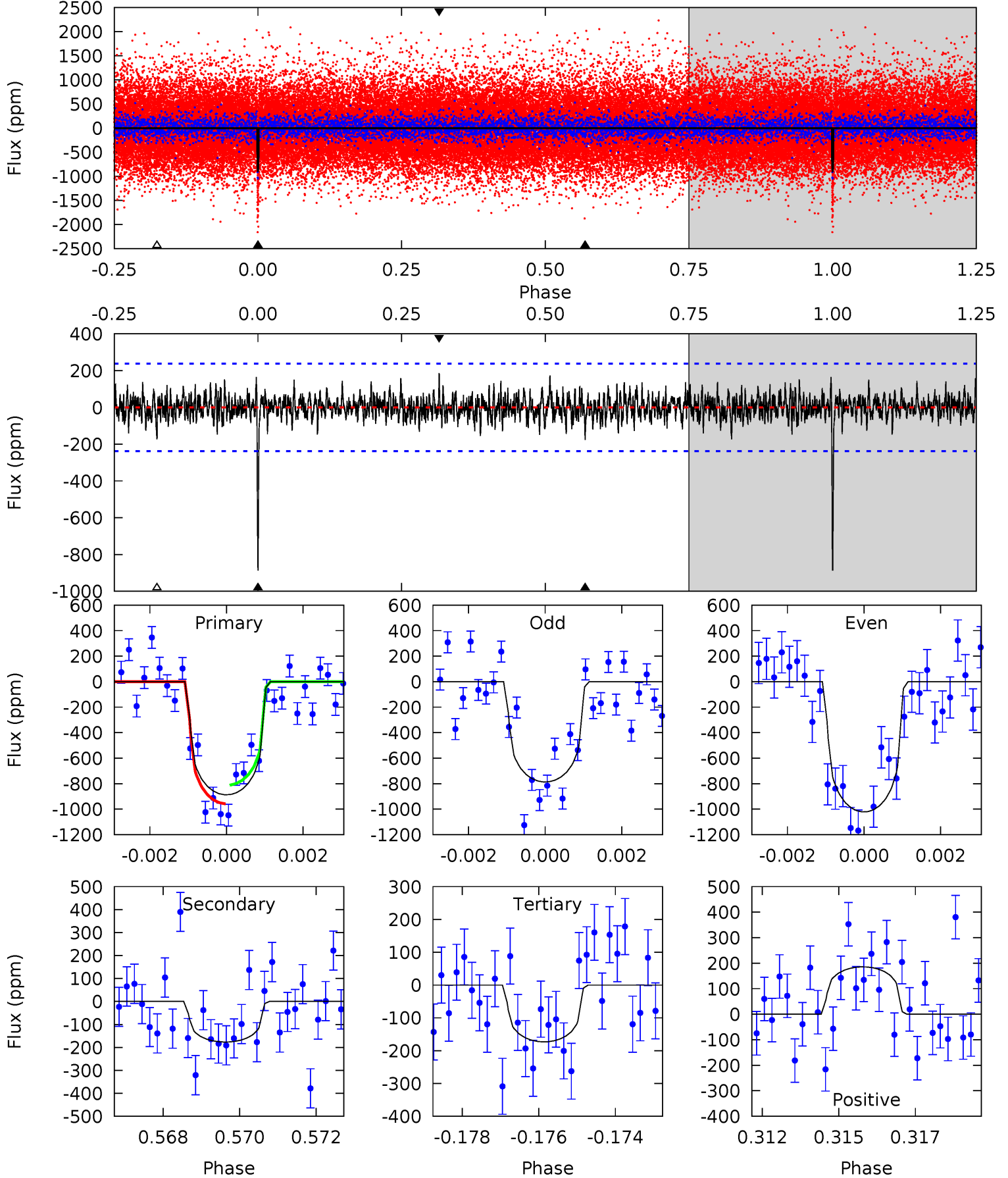
TCE 009773270-01 P=122.742520 Days $T_0=171.040328$ (BKJD)



DV Model-Shift Uniqueness Test

009773270-01, P = 122.744731 Days, E = 171.034843 Days

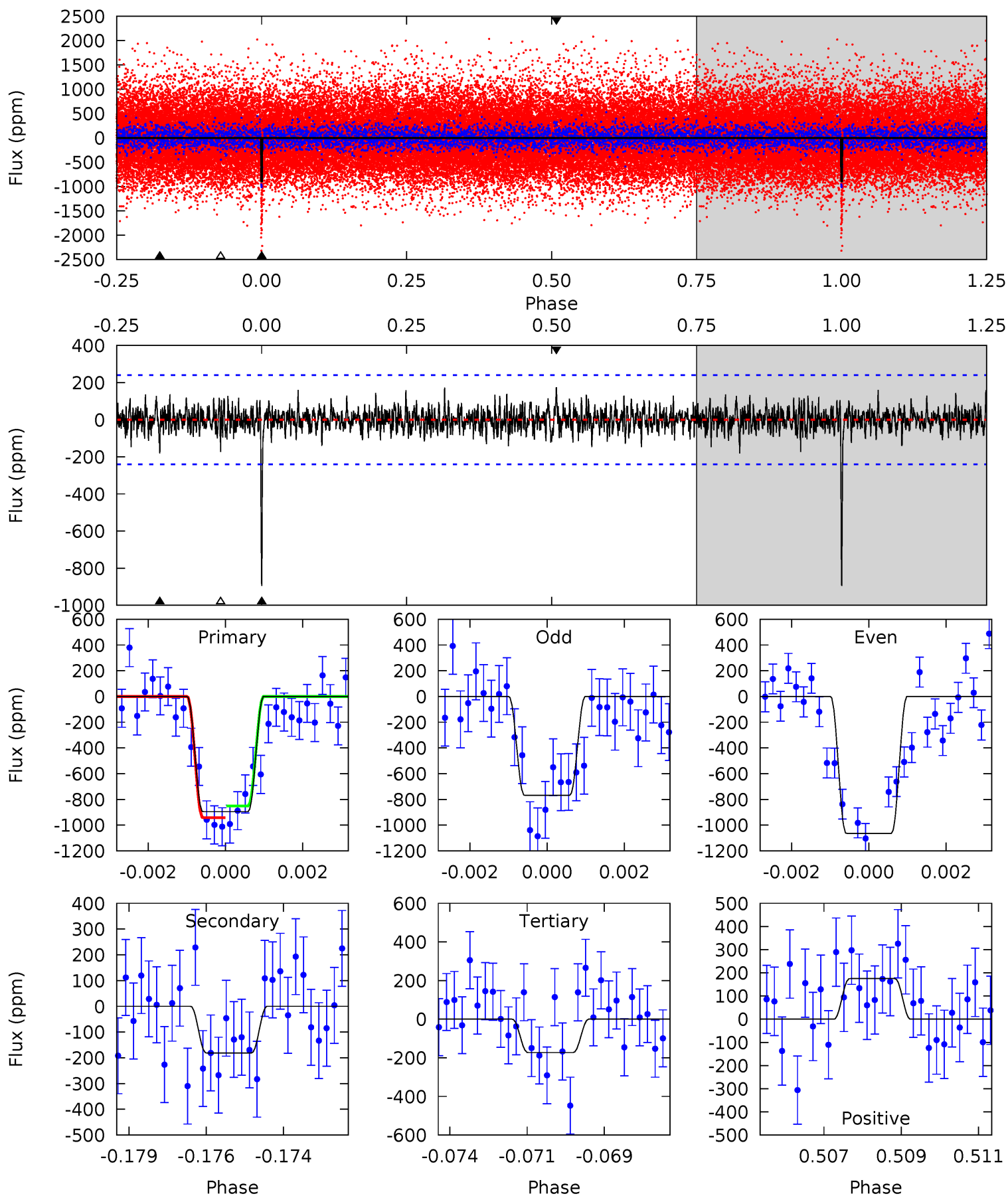
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.8	3.95	3.86	4.14	5.31	3.06	1.10	15.9	15.7	0.08	-0.20	2.60	0.90	0.17	1.64



Alt Model-Shift Uniqueness Test

009773270-01, P = 122.742520 Days, E = 171.040328 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.8	4.00	3.82	3.87	5.31	3.06	1.04	15.9	15.9	0.18	0.13	3.25	0.99	0.16	1.00



Stellar Parameters For KIC 009773270

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5619^{+180}_{-200}	$4.488^{+0.048}_{-0.204}$	$0.440^{+0.050}_{-0.300}$	$0.976^{+0.281}_{-0.088}$	$1.069^{+0.089}_{-0.122}$	$1.620^{+0.322}_{-0.838}$
	+3%/-4%	+1%/-5%	+11%/-68%	+29%/-9%	+8%/-11%	+20%/-52%
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 009773270-01 / KOI 4636.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-177 ± 45	$5.28^{+4.64}_{-3.40}$	497^{+34}_{-25}	3474^{+1484}_{-608}	833^{+5528}_{-611}
Alt.	-181 ± 45	$5.29^{+4.45}_{-3.43}$	496^{+32}_{-25}	3445^{+1614}_{-573}	827^{+5863}_{-594}

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

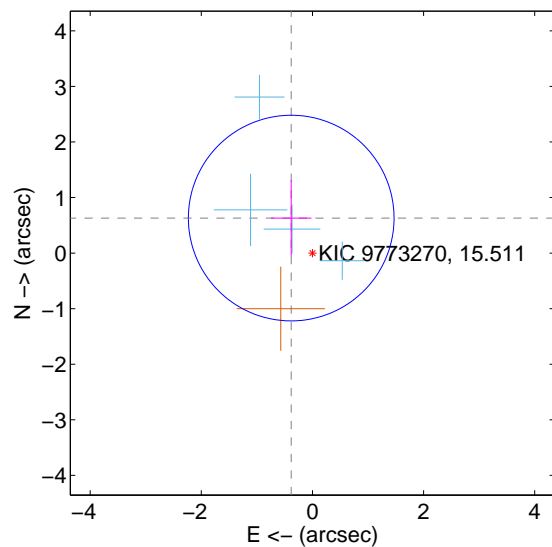
Supplemental centroid analysis for 009773270-01. Kepler magnitude: 15.51. Transit SNR 15.79

There are 4 quarters with good PRF difference image offsets

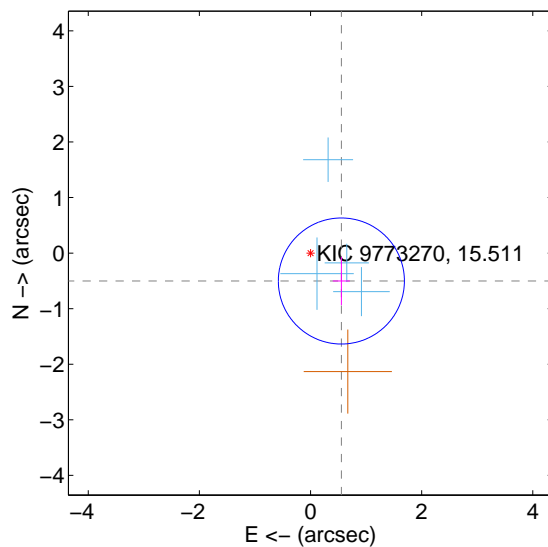
The direct PRF centroid is offset from the target star catalog position by about 1.70 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.737 ± 0.617	1.19	0.382 ± 0.365	0.630 ± 0.687
PRF-fit source offset from KIC position	0.749 ± 0.378	1.98	-0.555 ± 0.153	-0.502 ± 0.435
photometric centroid source offset	1.21 ± 0.81	1.50	-0.71 ± 0.84	0.98 ± 0.79

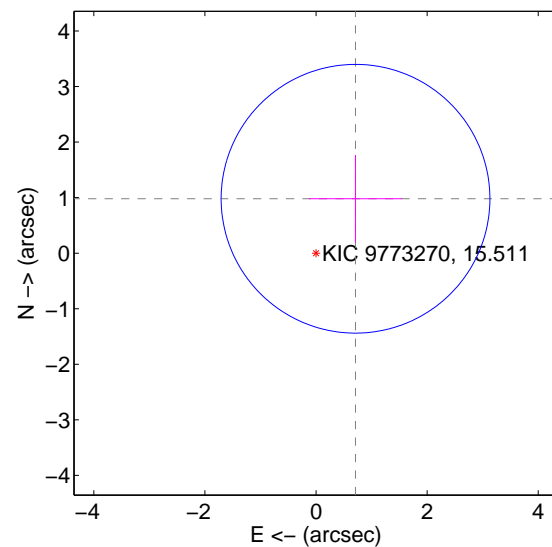
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

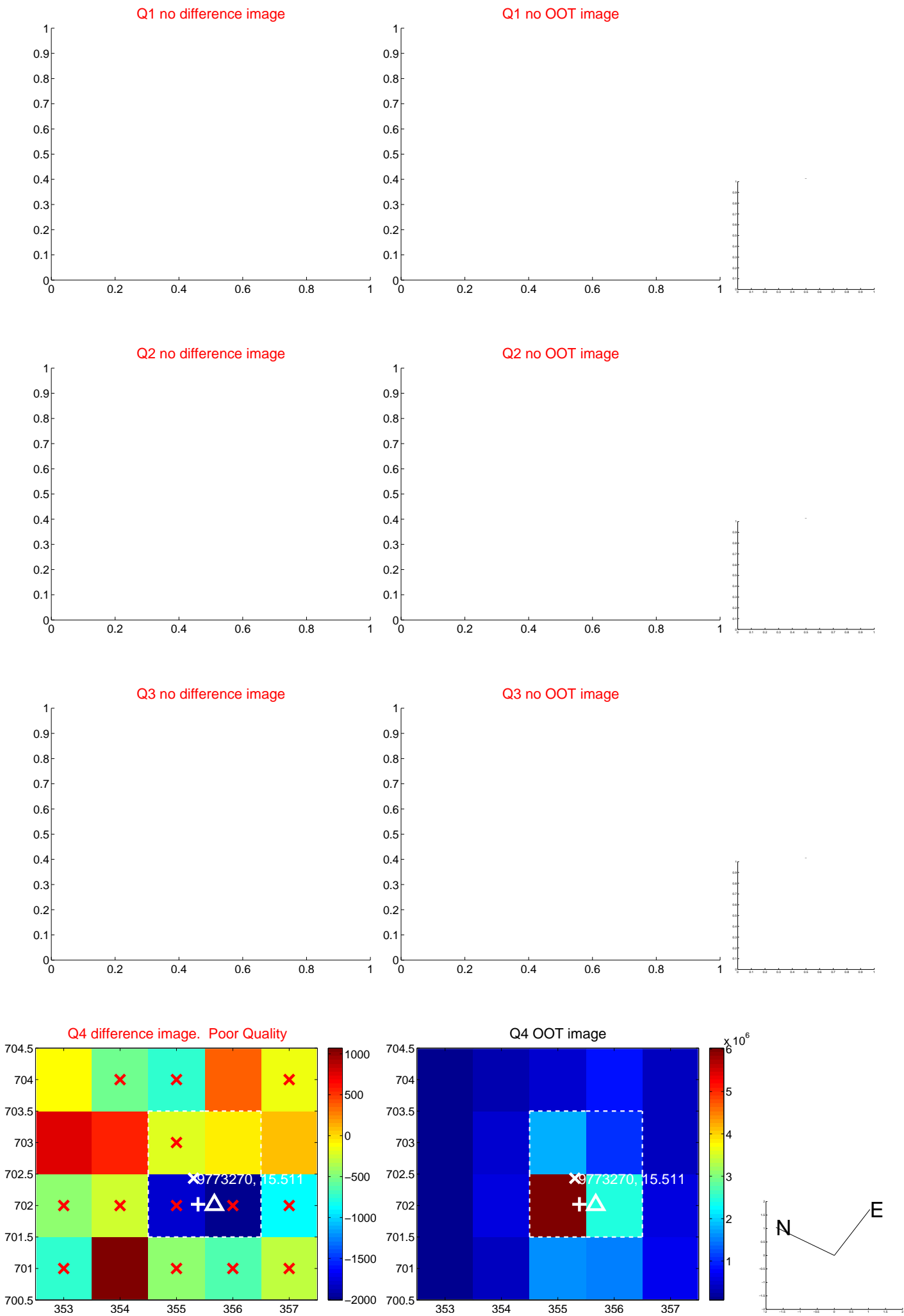


offset from photometric centroids

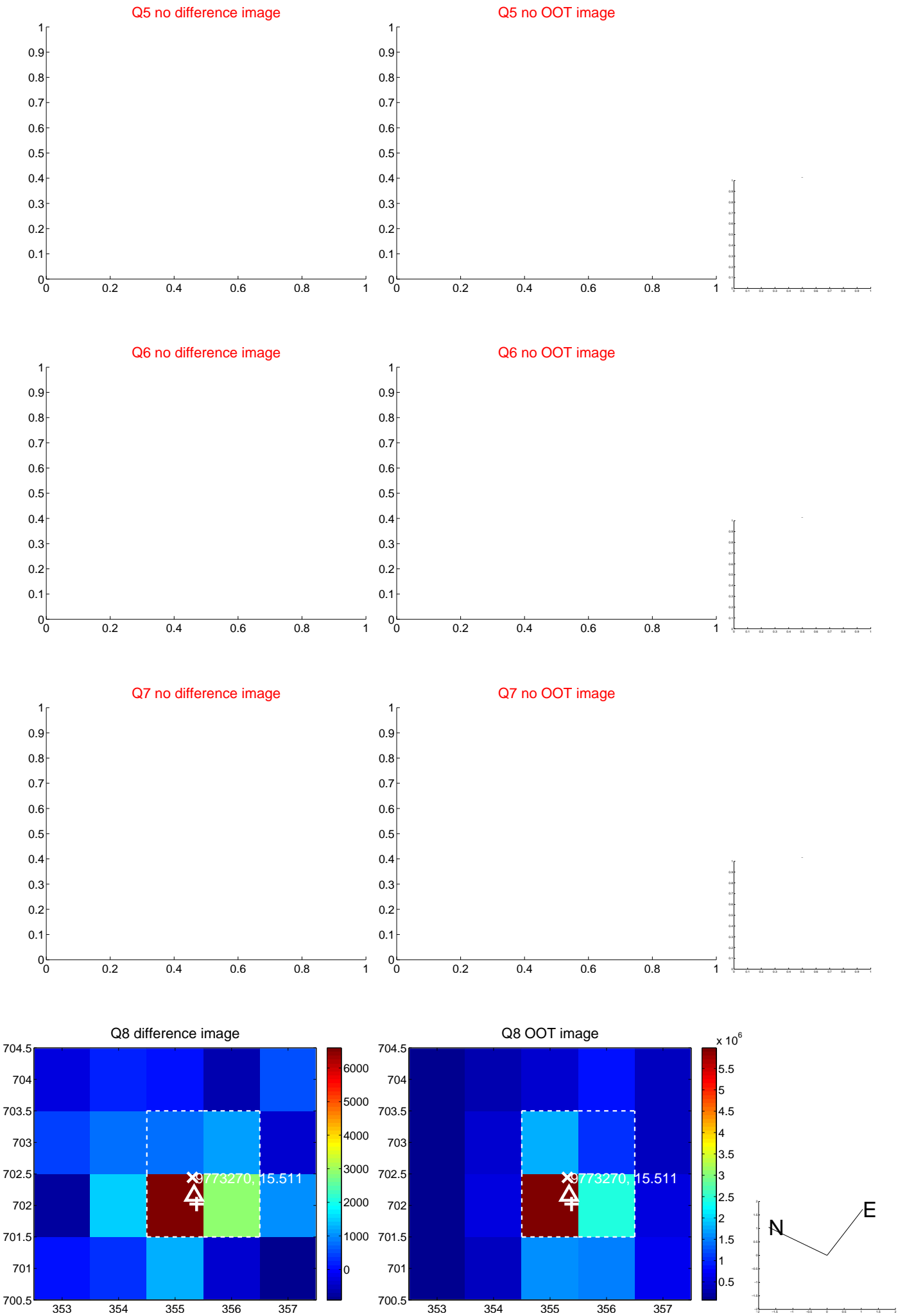


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

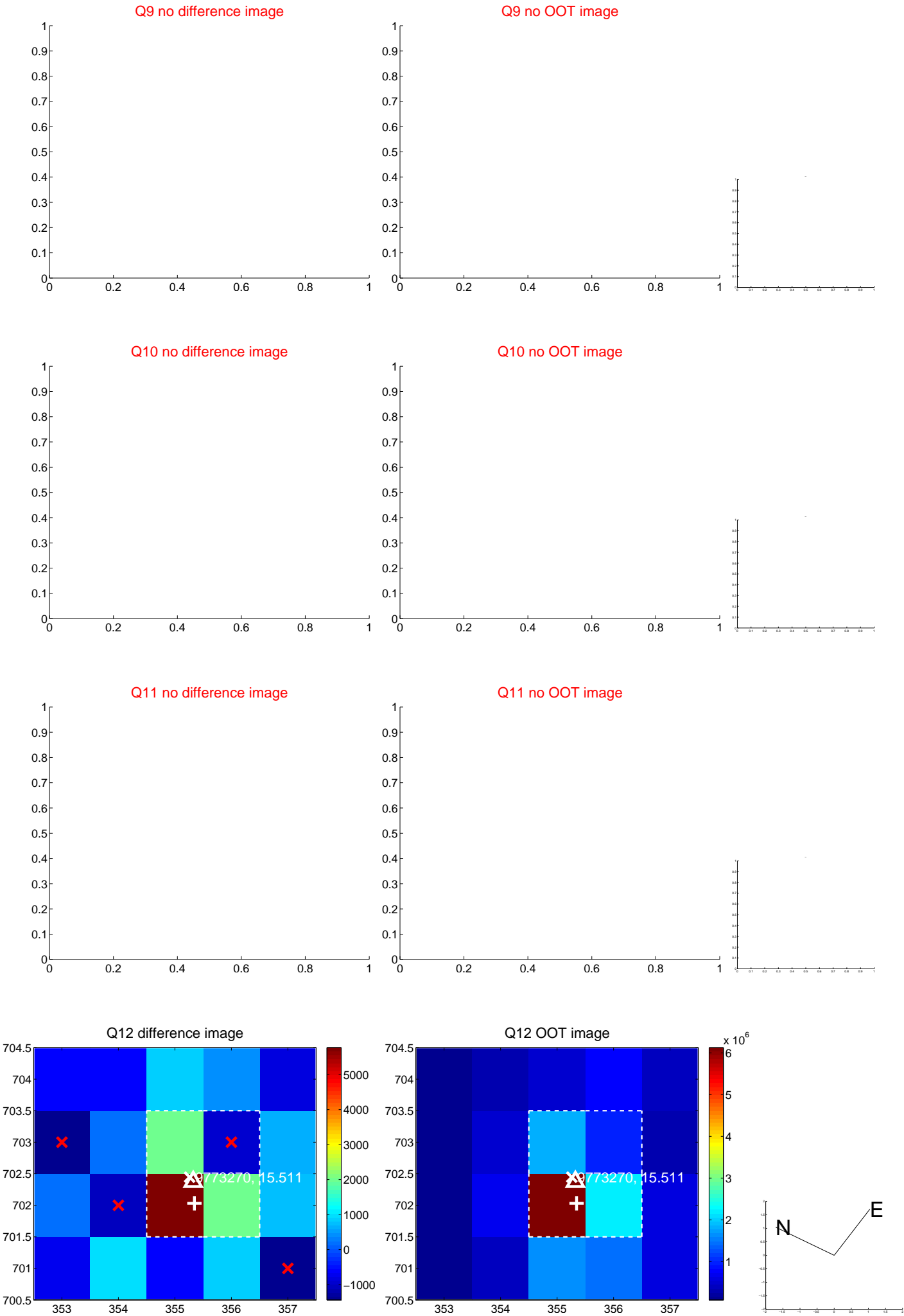
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



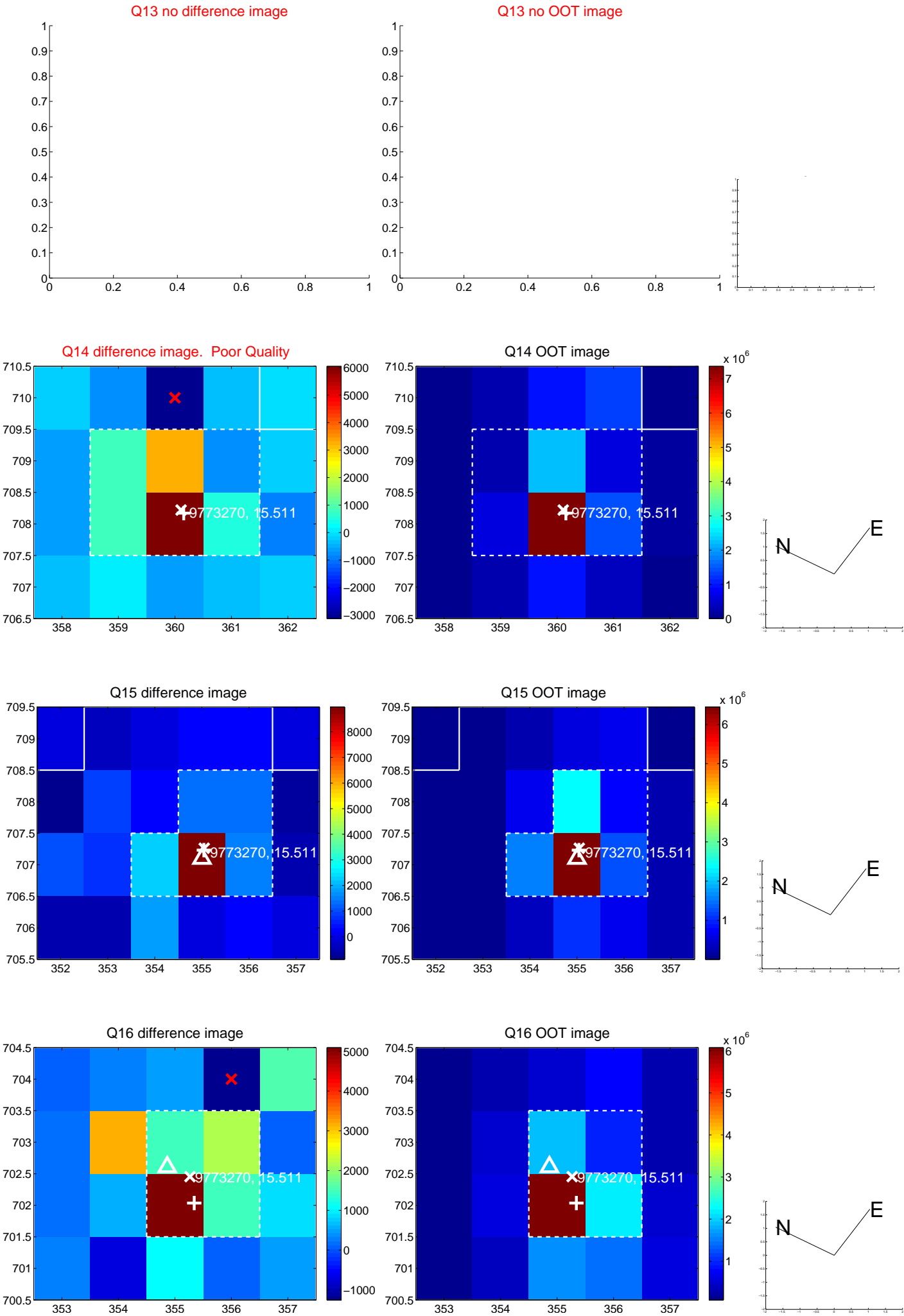
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



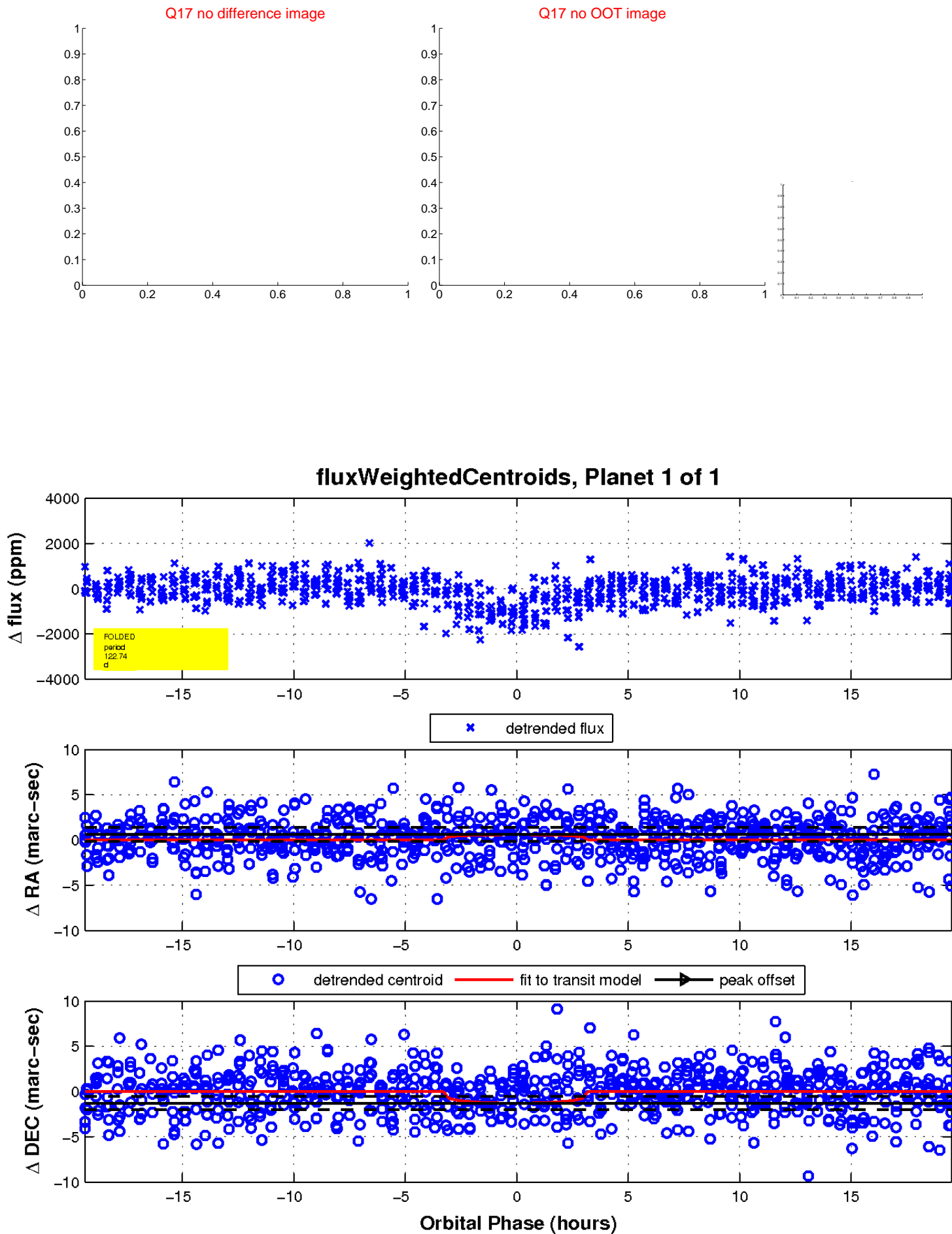
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

