

KIC 008708961

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})
008708961-01	OBS	8163.01	370.944453	308.241314	485.0	16.251	7.3	7.4	1.63	6028	4.31	3.08

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008708961-01	OBS	PC	0.21	0	0	0	0	NO_COMMENT

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

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

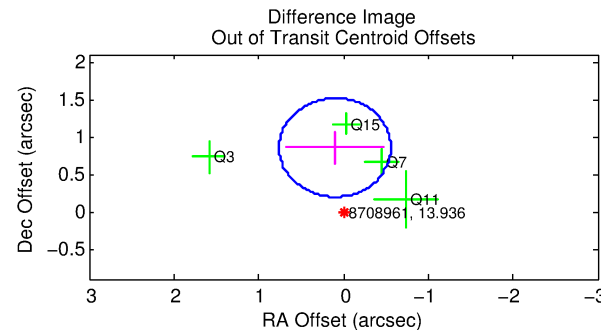
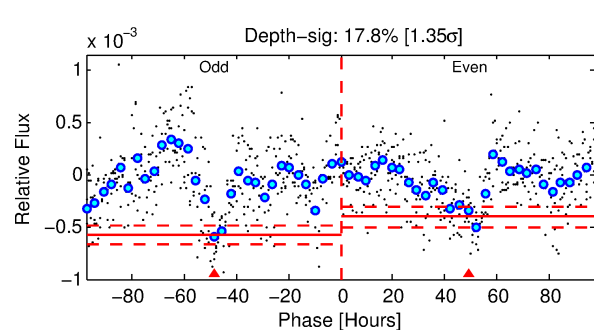
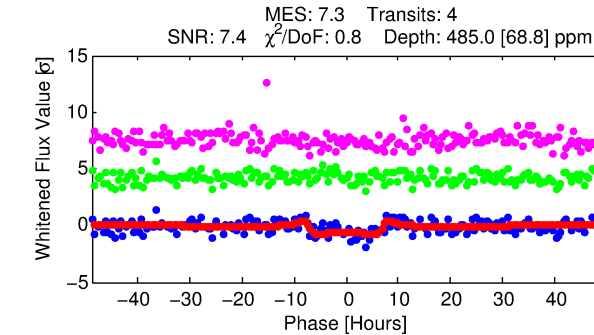
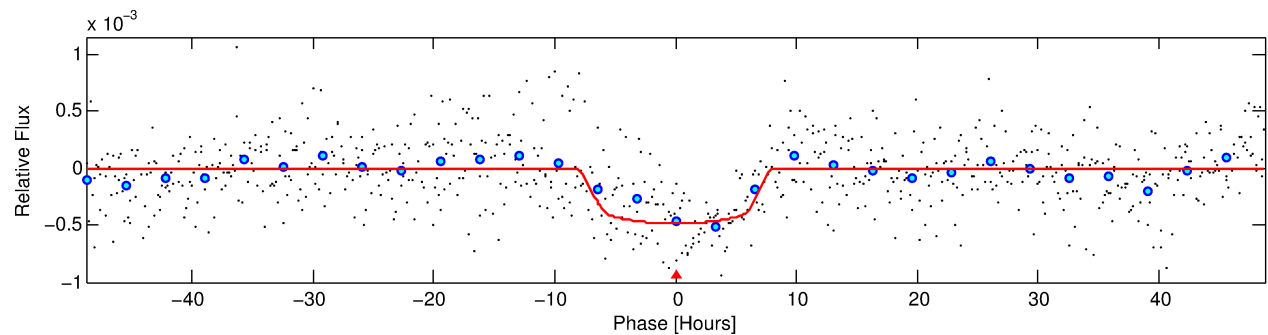
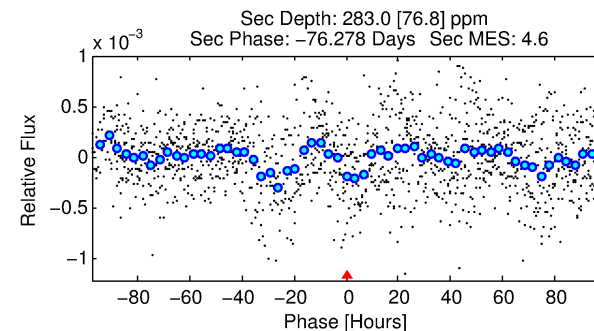
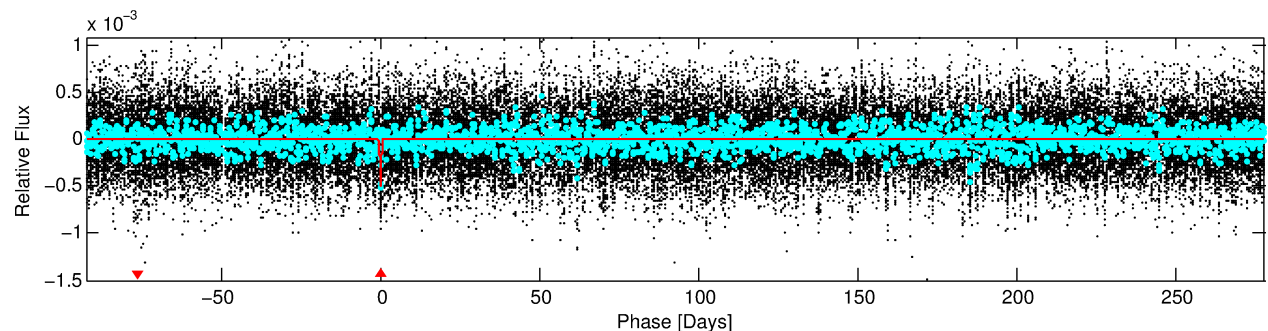
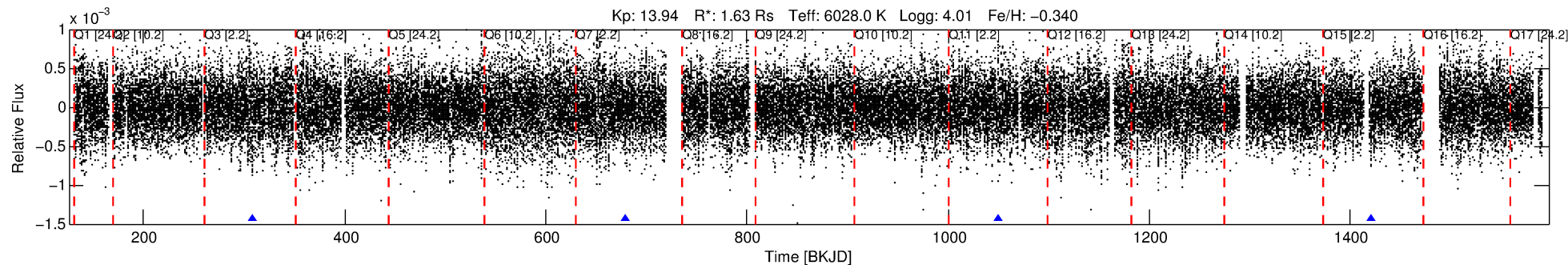
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008708961-01

No Significant Match Found

DV One-Page Summary

KIC: 8708961 Candidate: 1 of 1 Period: 370.944 d



DV Fit Results:

Period = 370.94445 [0.00968] d
Epoch = 308.2413 [0.0180] BKJD
Rp/R* = 0.0242 [0.0021]
a/R* = 77.91 [17.10]
b = 0.92 [0.04]
Seff = 3.08 [2.18]
Teq = 338 [60] K
Rp = 4.31 [1.76] Re
a = 1.0101 [0.4221] AU
Ag = 8546.11 [6571.75] [1.30σ]
Teffp = 5022 [434] K [10.70σ]

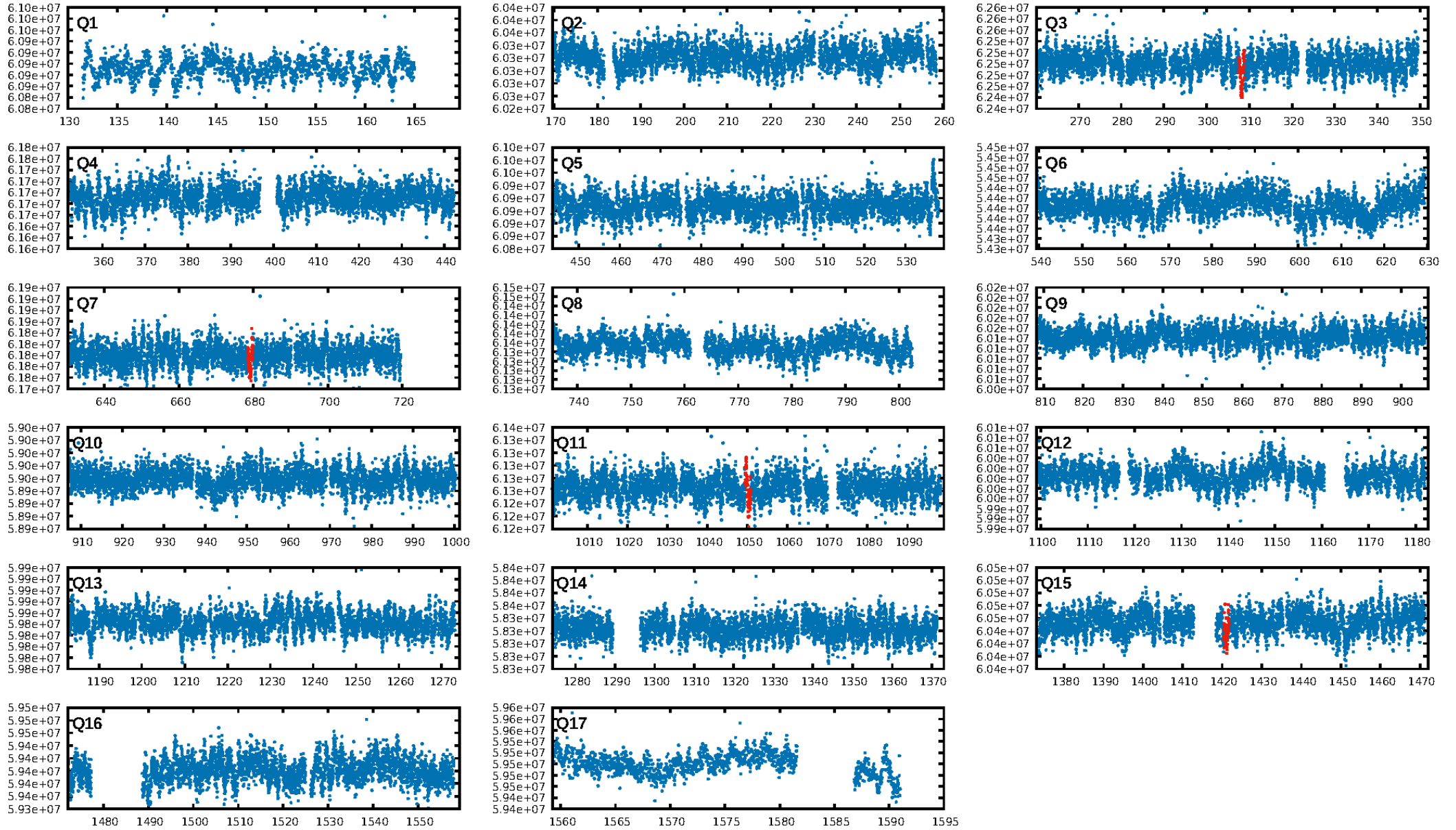
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 56.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.58e-12
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 23.51
Centroid-sig: 26.9%
Centroid-so: 0.367 arcsec [0.54σ]
OotOffset-rm: 0.859 arcsec [3.92σ]
KicOffset-rm: 0.867 arcsec [3.54σ]
OotOffset-st: 0/4/0/0 [4]
KicOffset-st: 0/4/0/0 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [4/4]

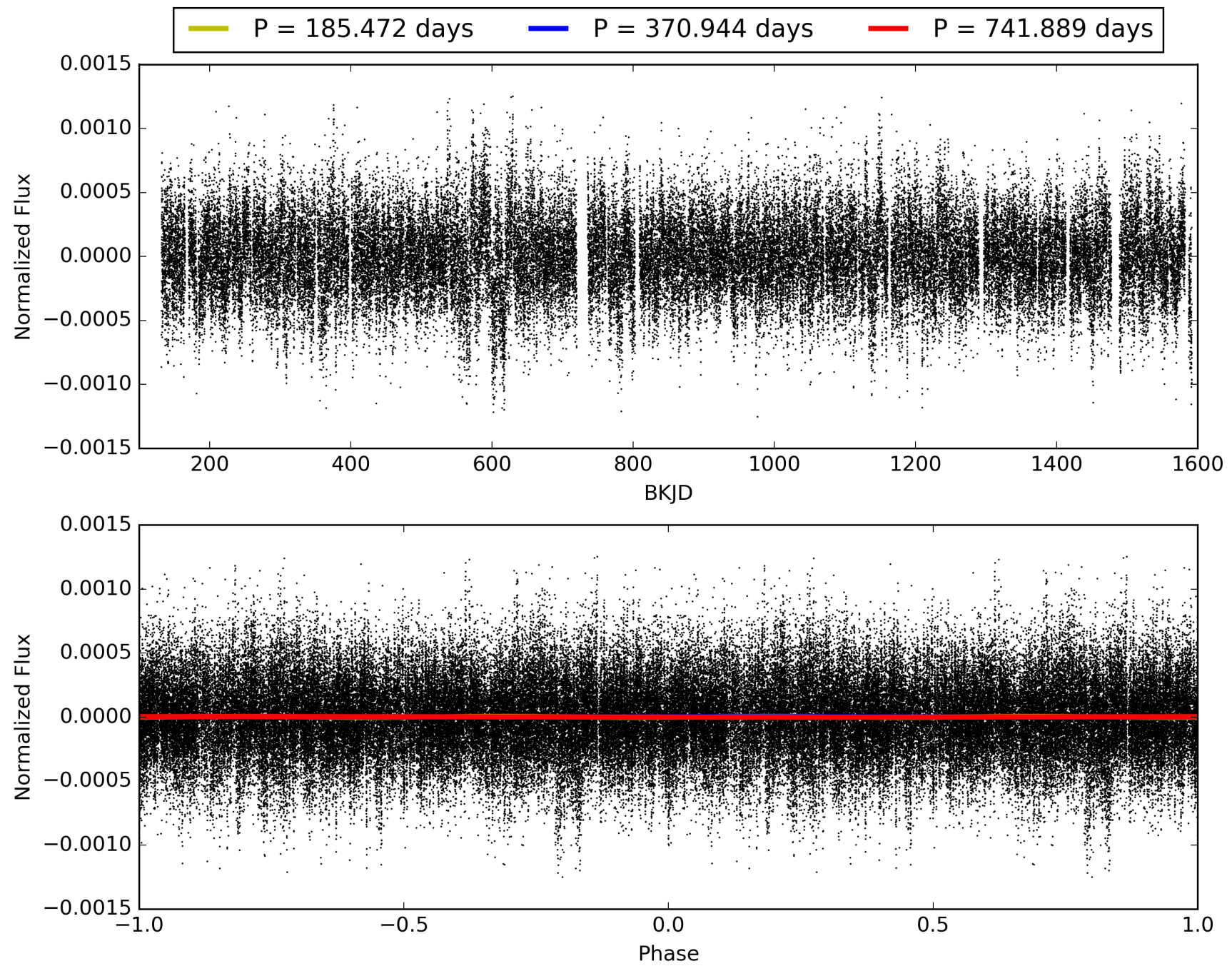
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:54:46 Z

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

TCE 008708961-01, PDC Light Curves

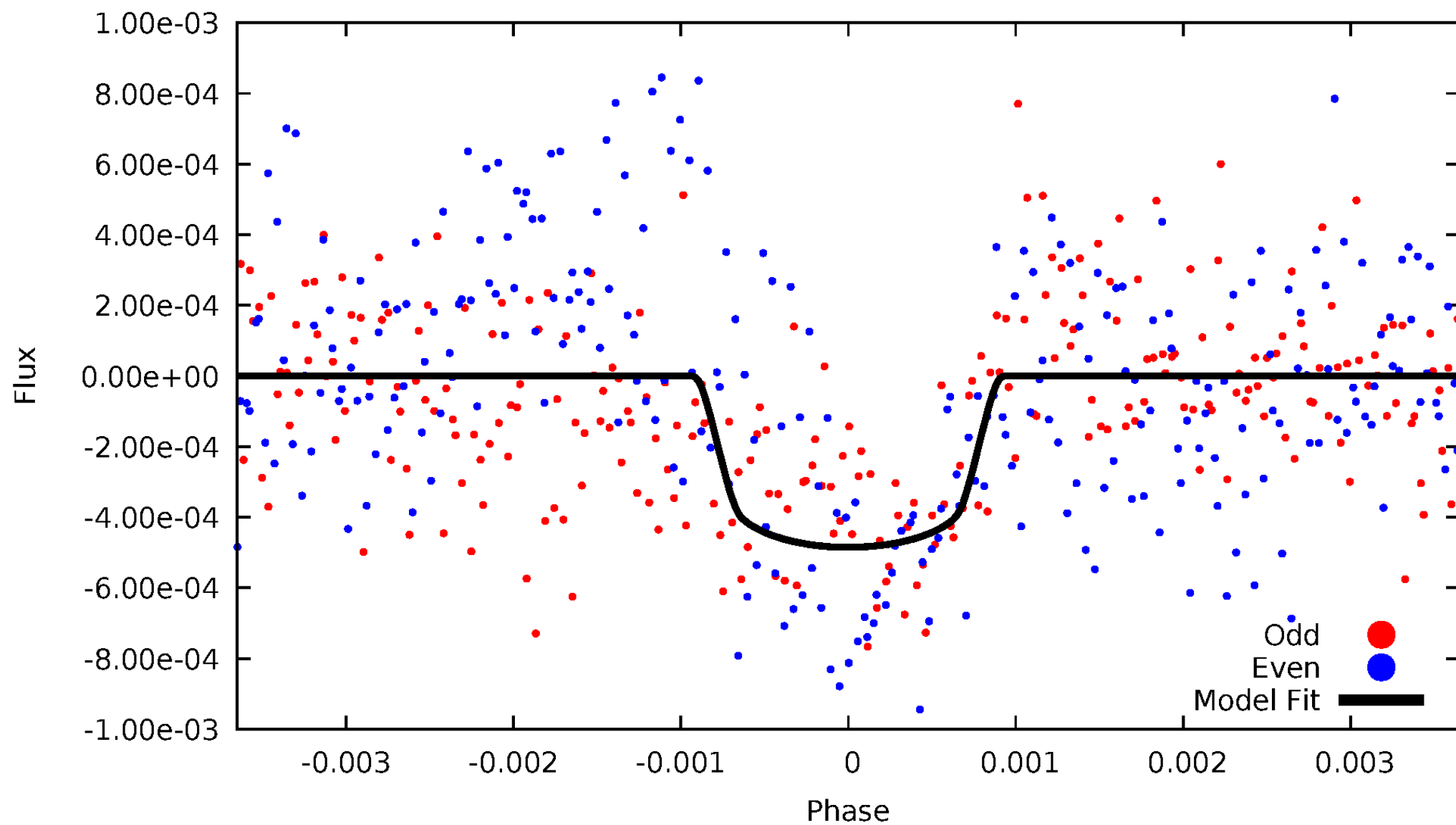


TCE 008708961-01



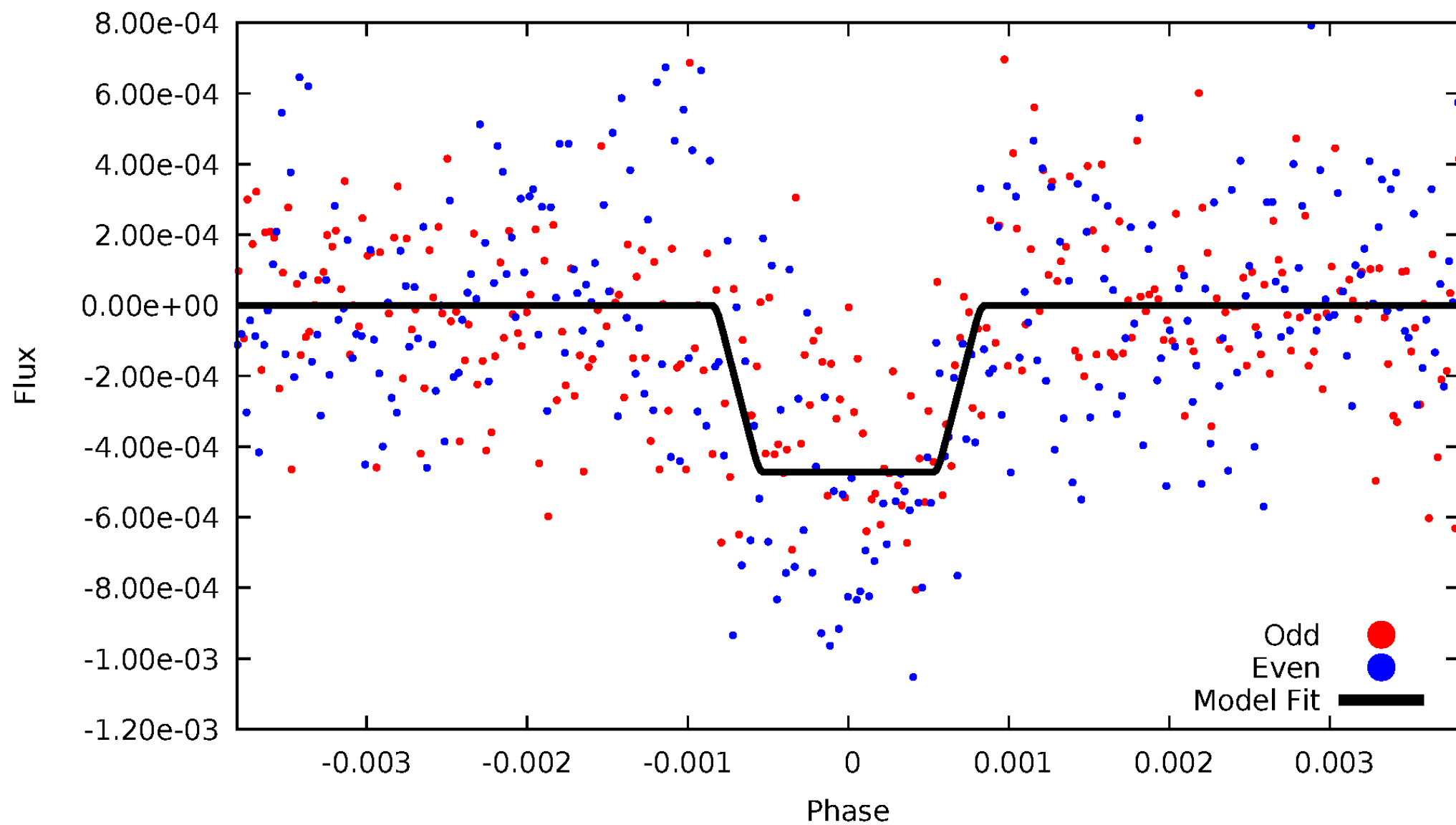
DV Odd/Even

TCE 008708961-01



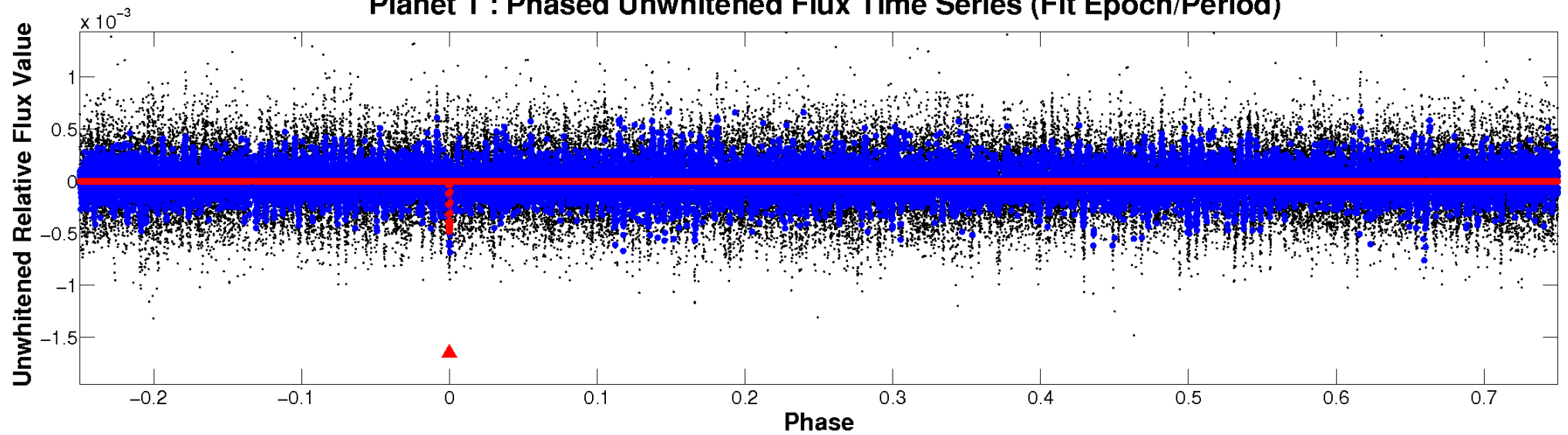
ALT Odd/Even

TCE 008708961-01

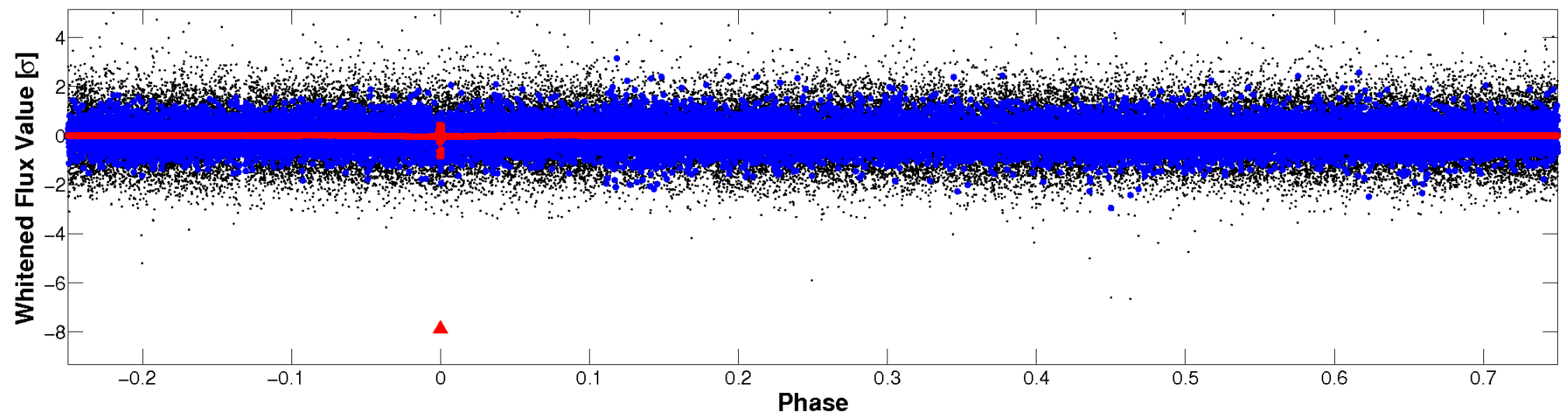


Non-Whitened Vs. Whitened Light Curve

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

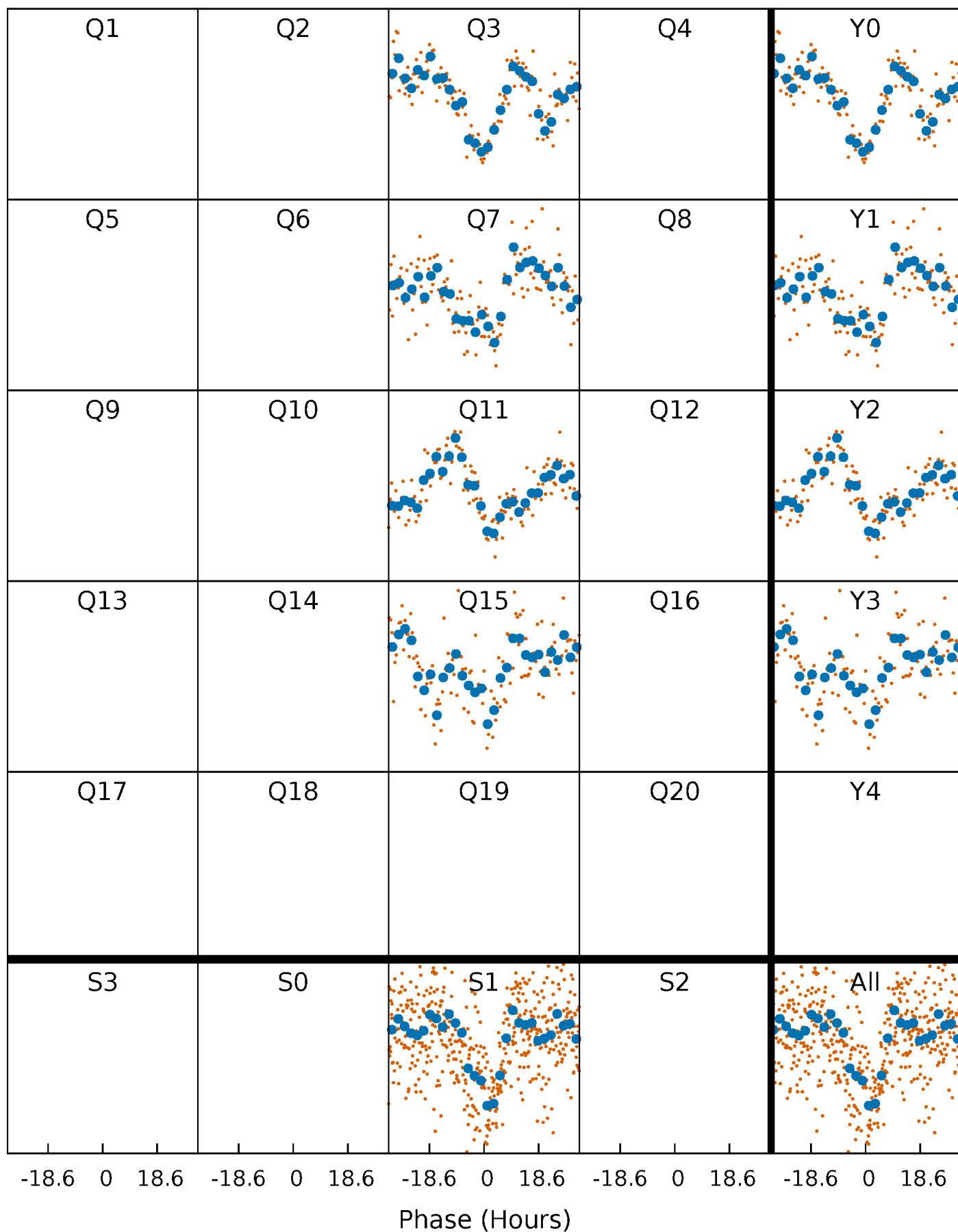


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



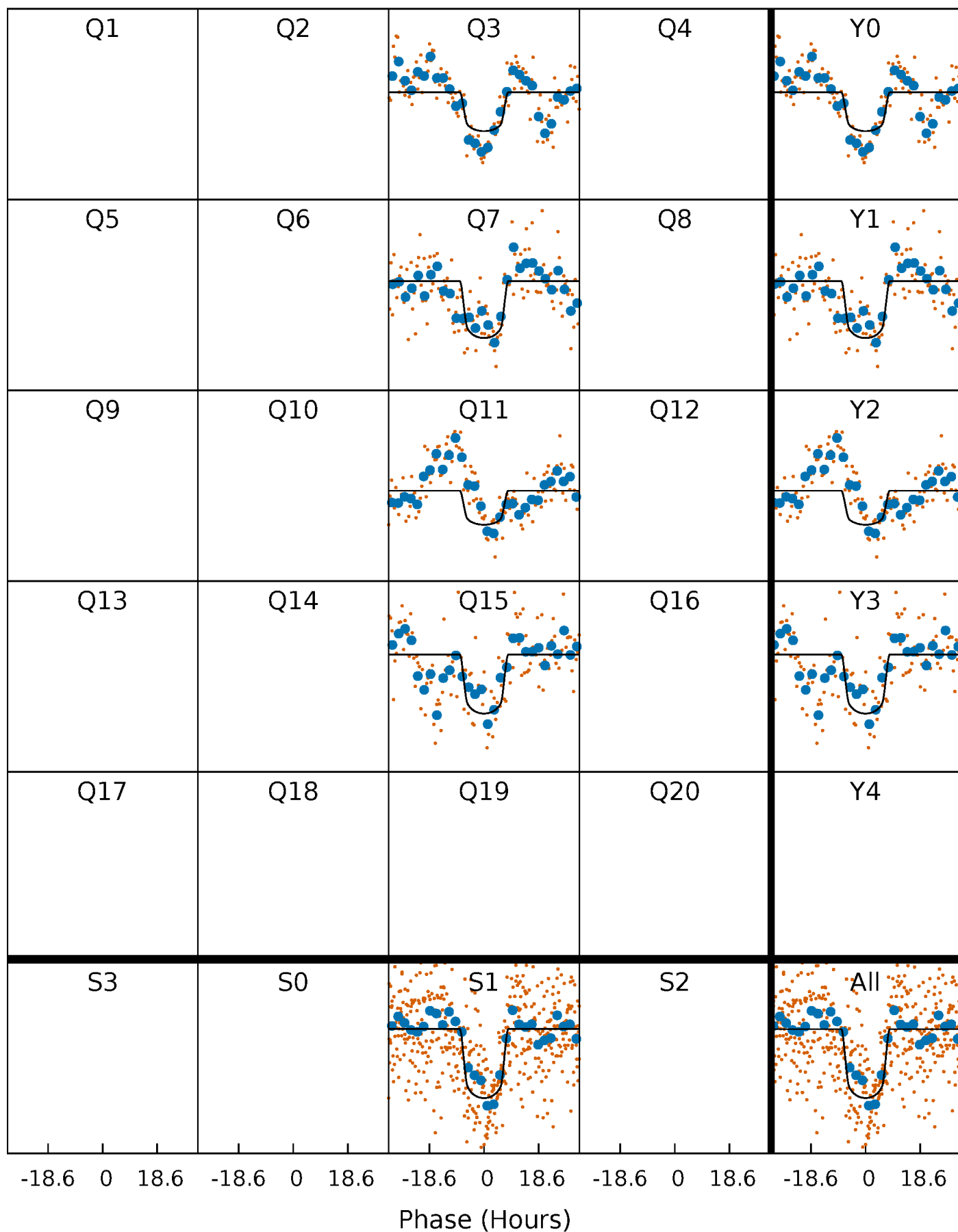
PDC Quarter-Phased Transit Curves

TCE 008708961-01 P=370.944453 Days $T_0=308.241314$ (BKJD)



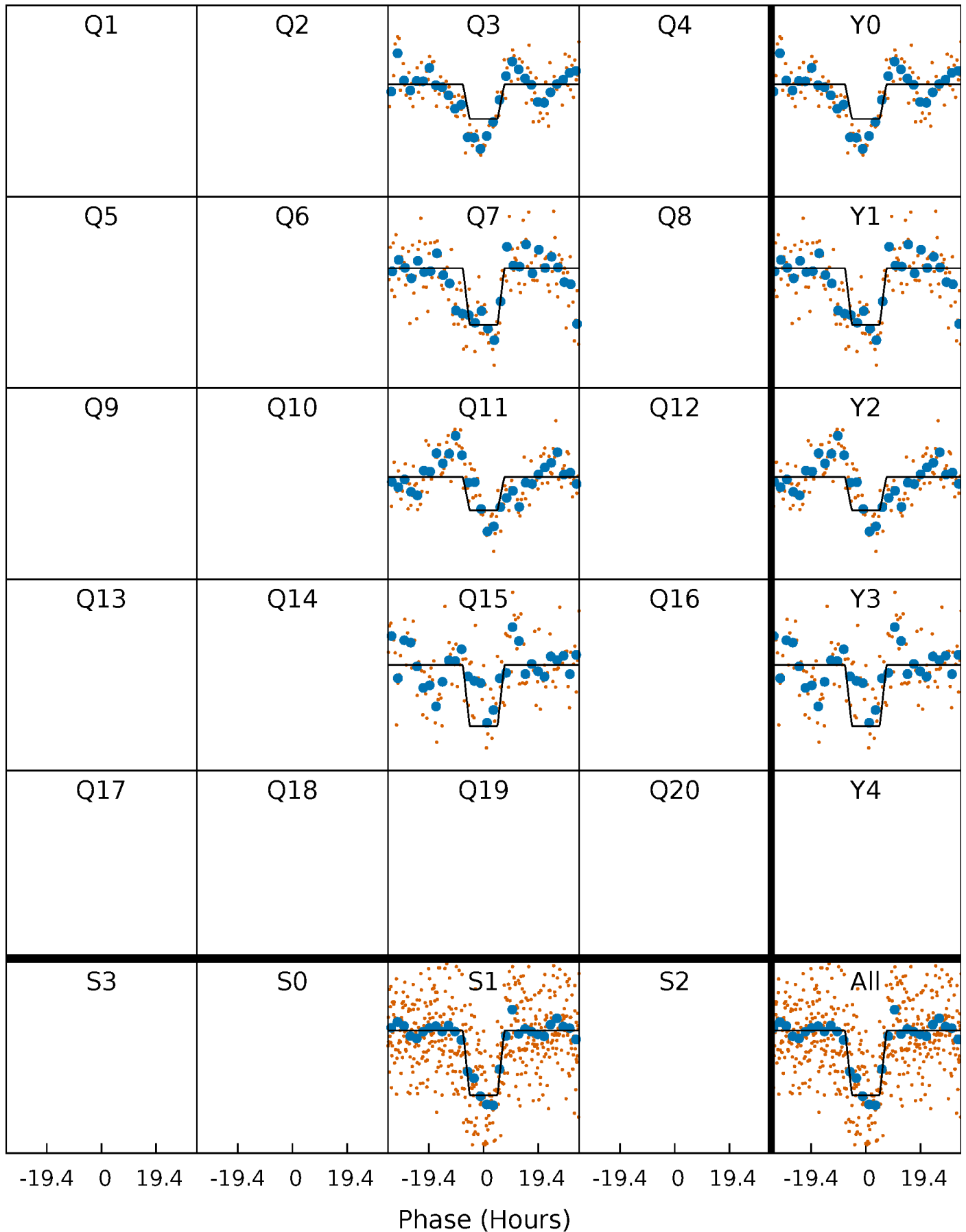
DV Quarter-Phased Transit Curves

TCE 008708961-01 P=370.944453 Days $T_0=308.241314$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

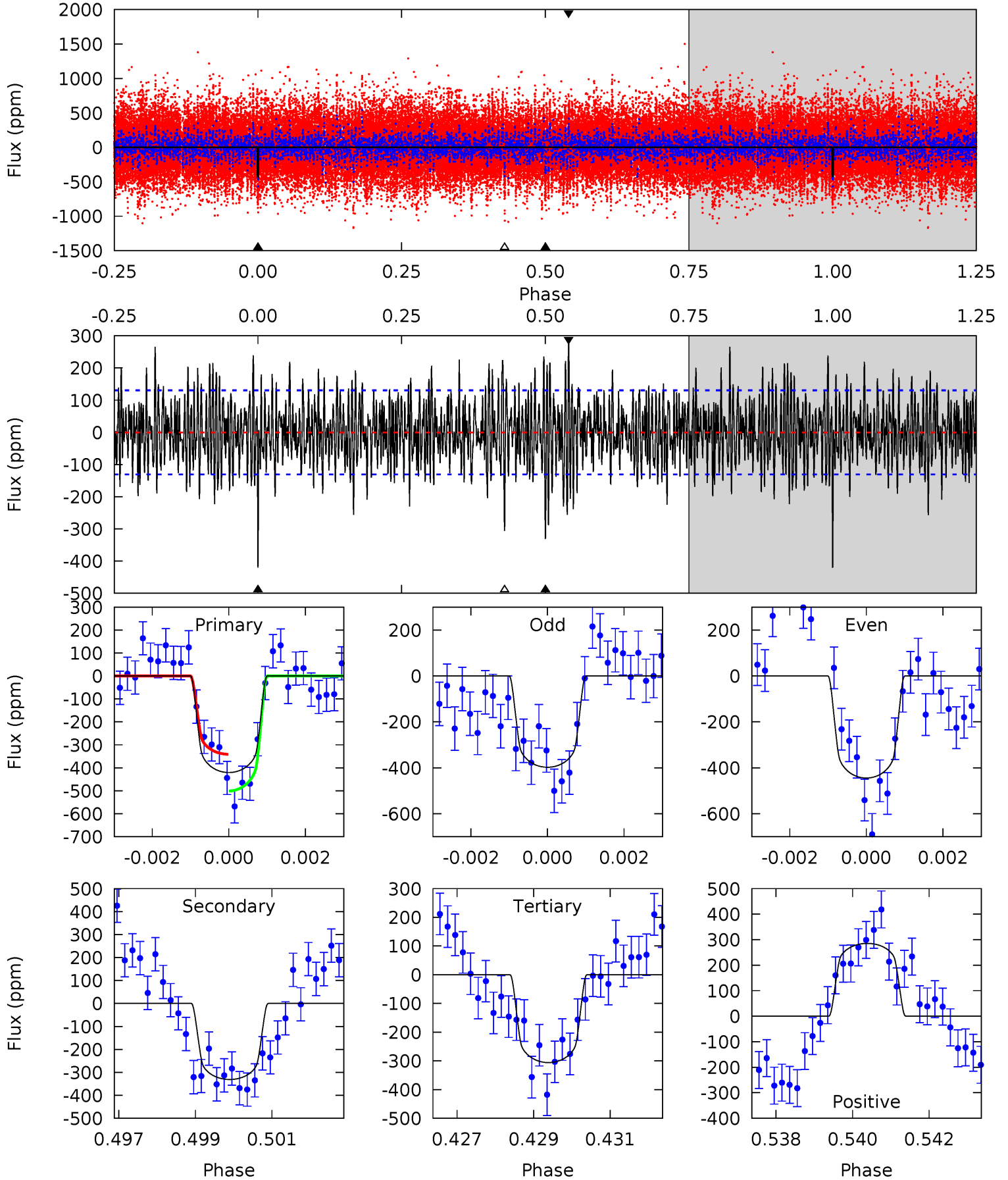
TCE 008708961-01 P=370.937226 Days $T_0=308.264022$ (BKJD)



DV Model-Shift Uniqueness Test

008708961-01, $P = 370.944453$ Days, $E = 308.241314$ Days

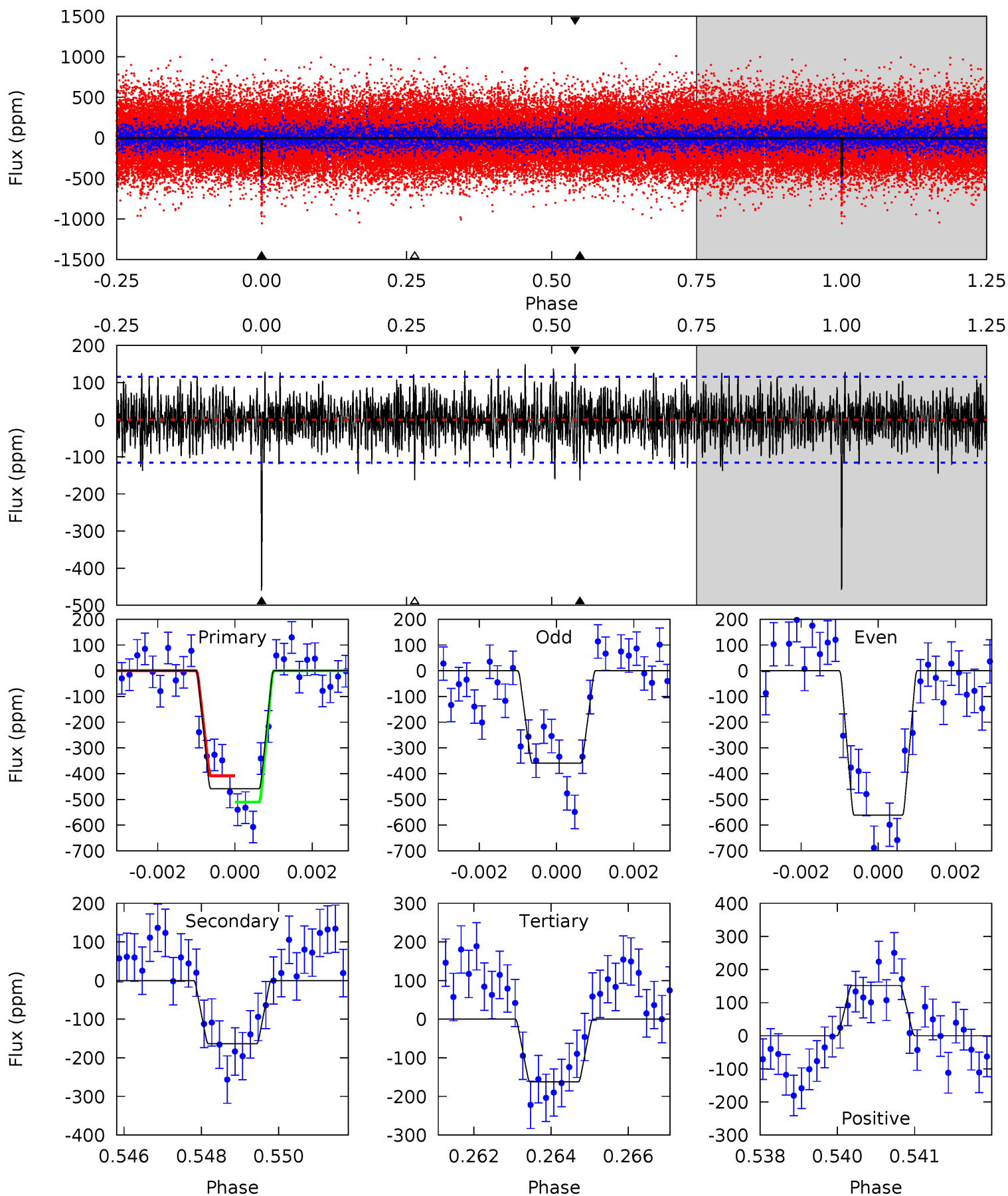
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.2	13.5	12.5	11.7	5.34	3.11	3.52	4.68	5.52	1.03	1.87	0.96	1.06	0.40	3.26



Alt Model-Shift Uniqueness Test

008708961-01, $P = 370.937226$ Days, $E = 308.264022$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.2	7.58	7.52	7.01	5.36	3.14	2.11	13.7	14.2	0.06	0.56	4.67	1.01	0.25	2.36



Stellar Parameters For KIC 008708961

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6028^{+181}_{-181}	$4.013^{+0.420}_{-0.140}$	$-0.340^{+0.300}_{-0.300}$	$1.630^{+0.433}_{-0.650}$	$0.999^{+0.153}_{-0.139}$	$0.325^{+1.093}_{-0.123}$
	+3%/-3%	+10%/-3%	+88%/-88%	+27%/-40%	+15%/-14%	+336%/-38%
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 008708961-01 / KOI 8163.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-331 ± 24	$4.13^{+0.76}_{-0.89}$	461^{+39}_{-51}	5258^{+294}_{-256}	11167^{+6585}_{-3454}
Alt.	-164 ± 22	$3.62^{+0.83}_{-0.82}$	462^{+35}_{-58}	4745^{+298}_{-235}	7071^{+4446}_{-2450}

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

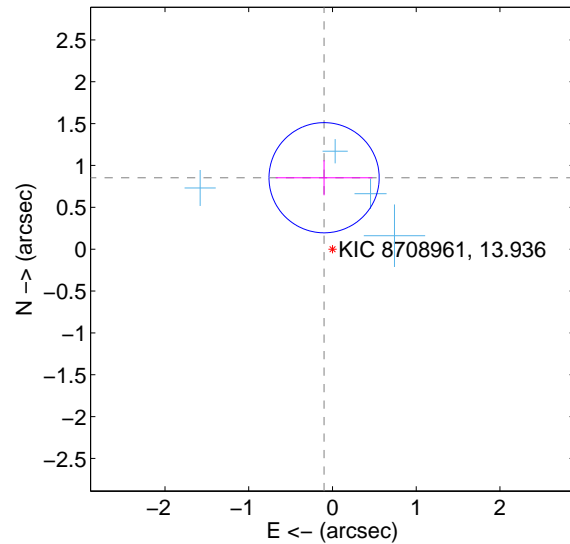
Supplemental centroid analysis for 008708961-01. Kepler magnitude: 13.94. Transit SNR 7.35

There are 4 quarters with good PRF difference image offsets

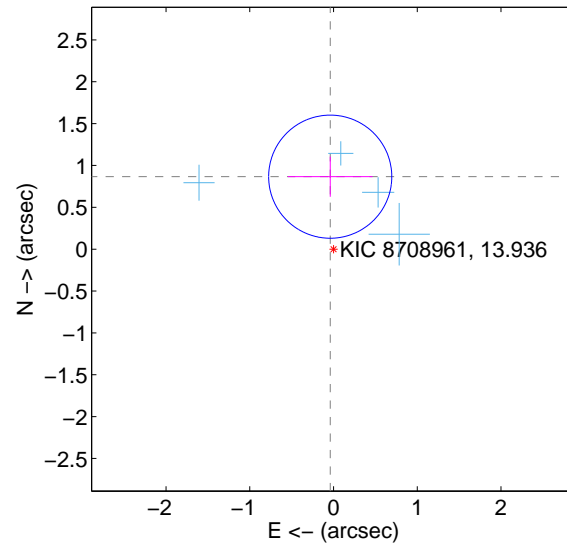
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.859 \pm 0.219	3.92	0.100 \pm 0.577	0.854 \pm 0.210
PRF-fit source offset from KIC position	0.867 \pm 0.245	3.54	0.039 \pm 0.506	0.866 \pm 0.240
photometric centroid source offset	0.37 \pm 0.68	0.54	0.13 \pm 0.82	-0.34 \pm 0.66

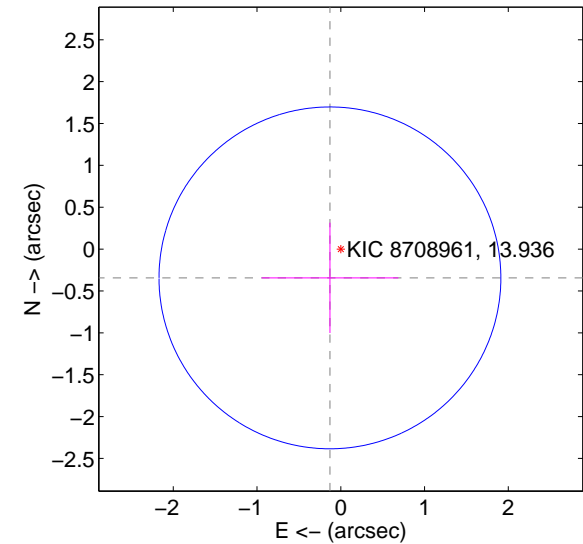
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

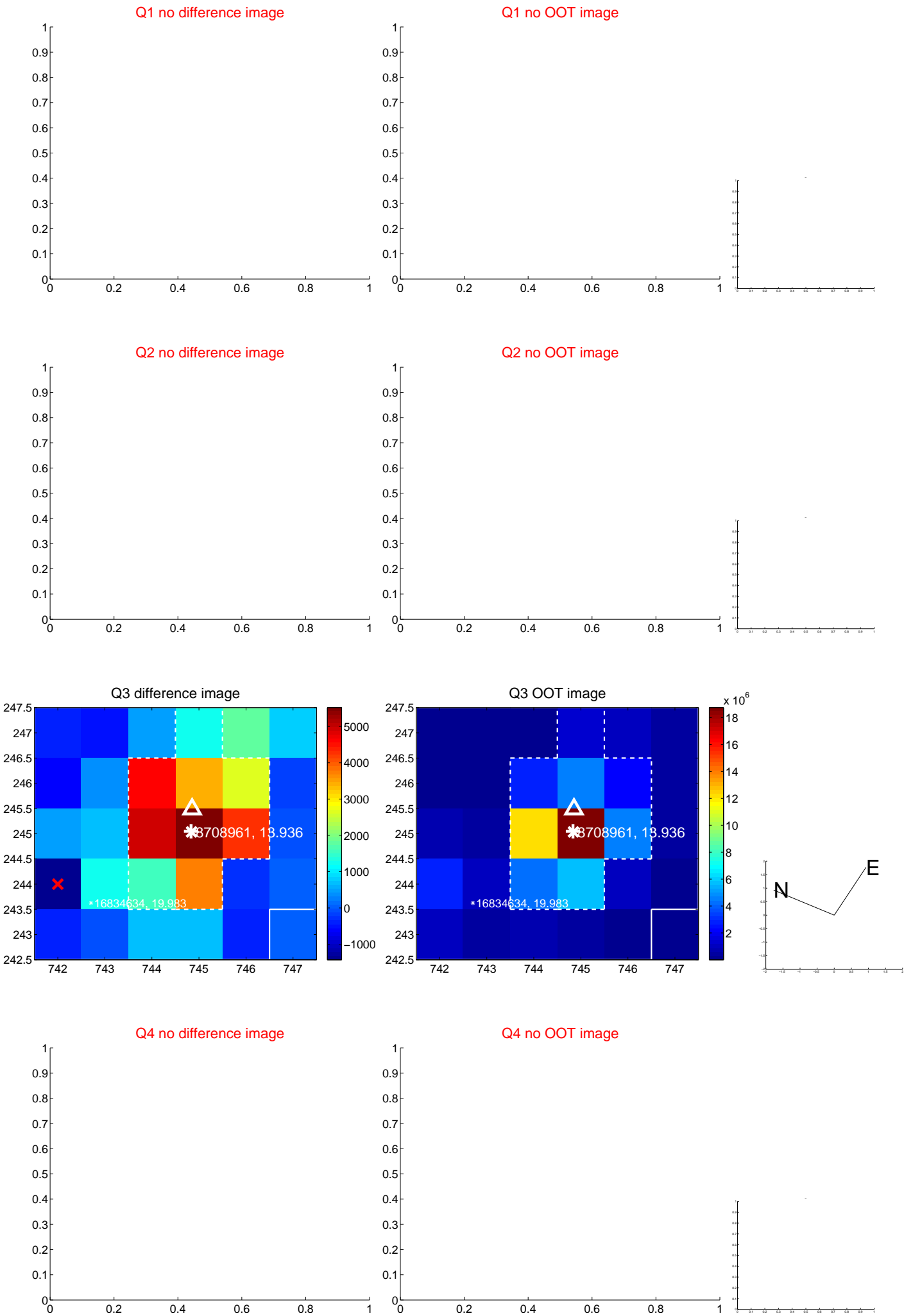


offset from photometric centroids

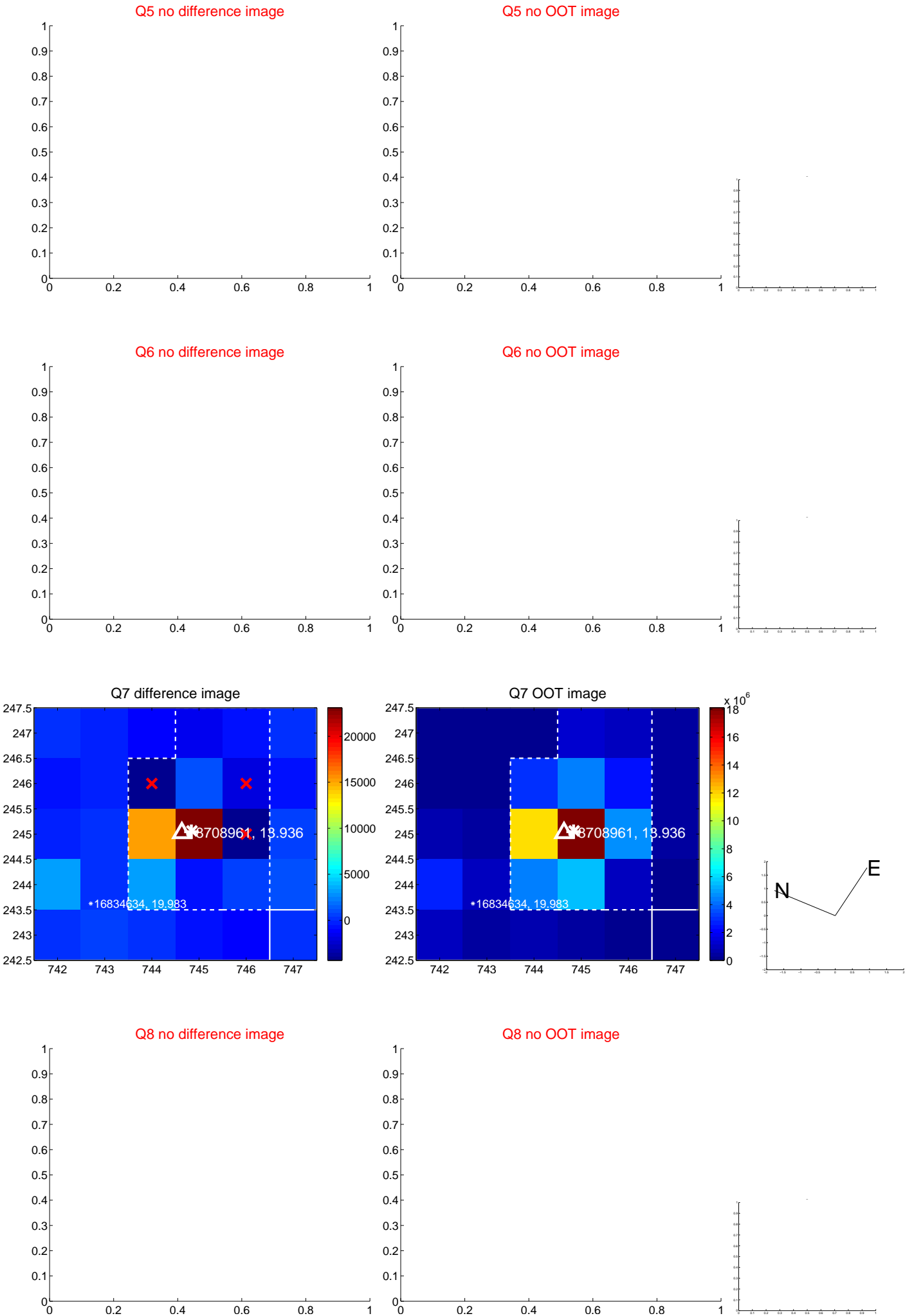


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

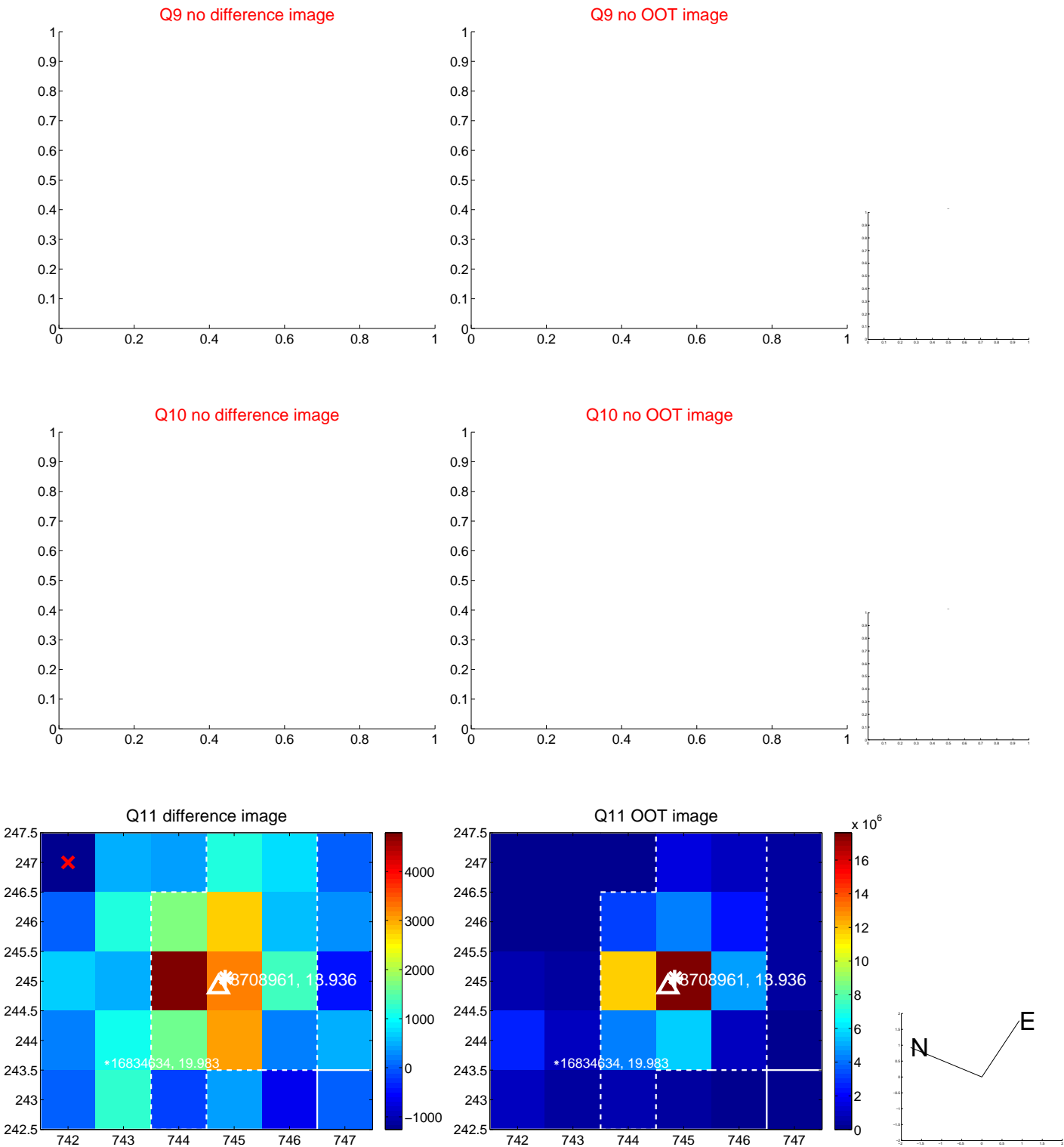
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



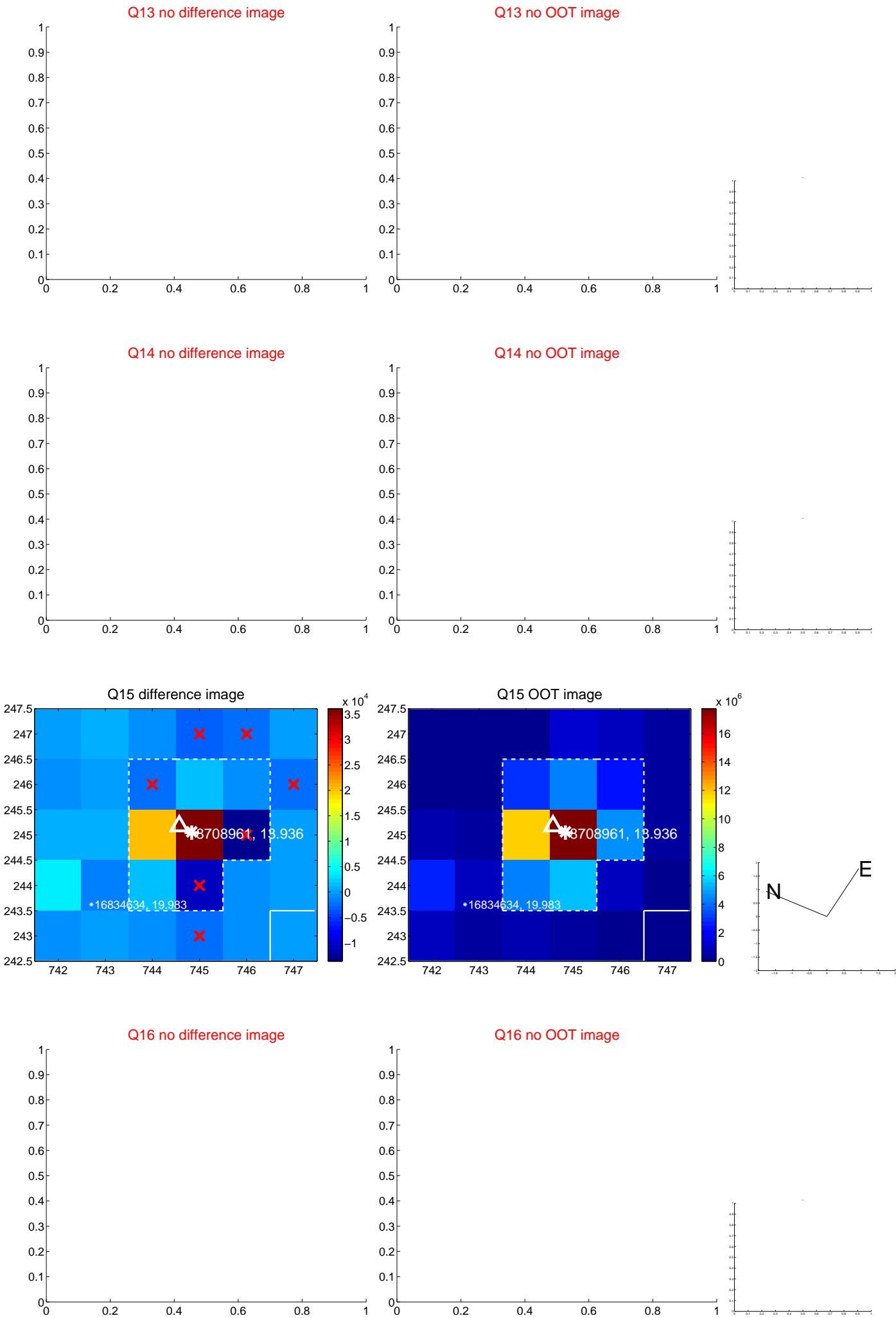
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



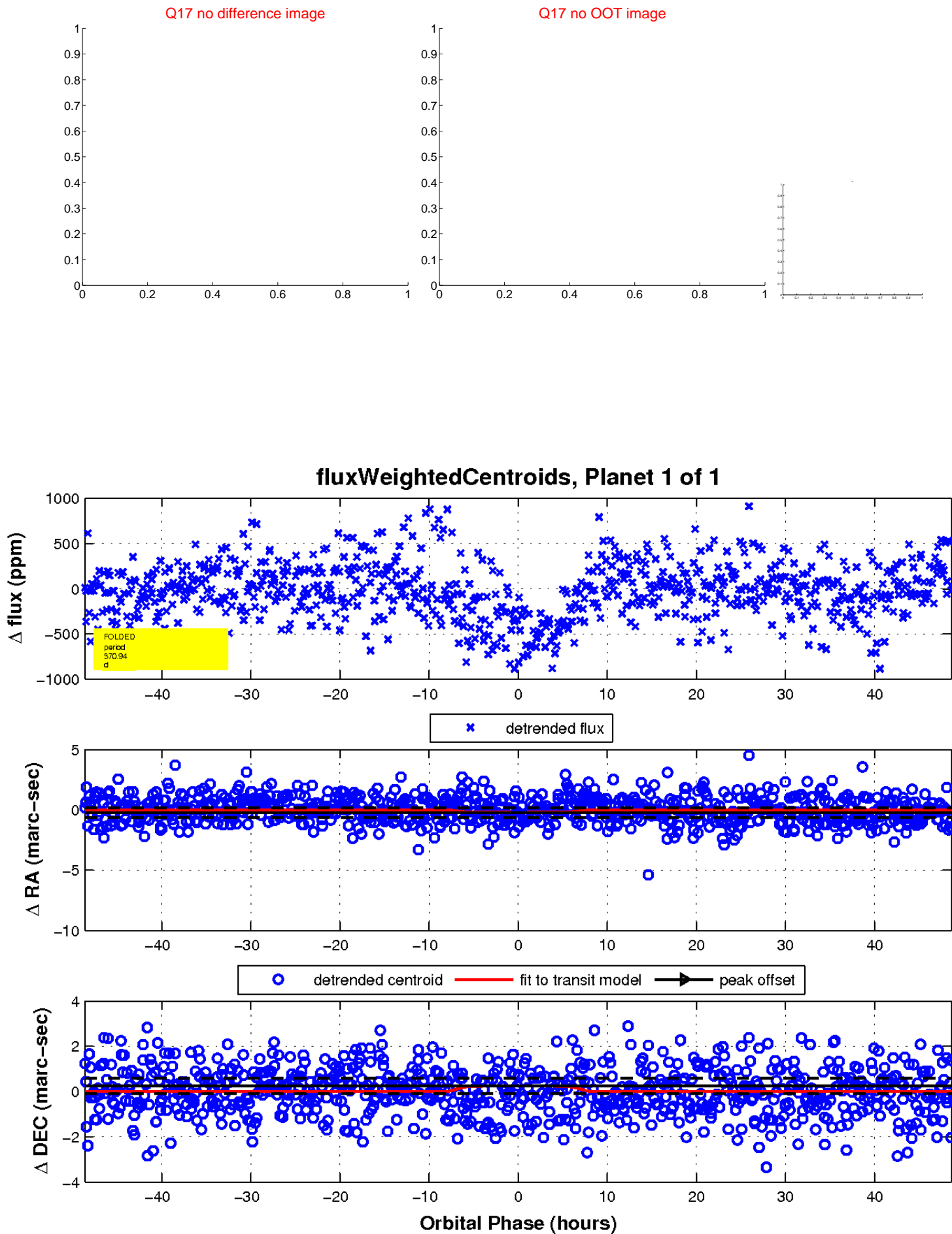
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



white \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

