

KIC 009641722

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})
009641722-01	OBS	No	398.470554	206.692463	741.6	11.288	7.3	7.1	0.97	5957	4.96	0.90

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009641722-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—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.

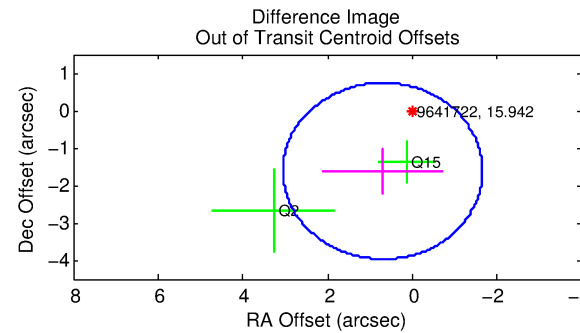
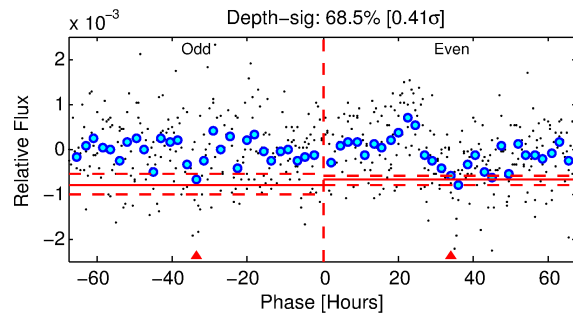
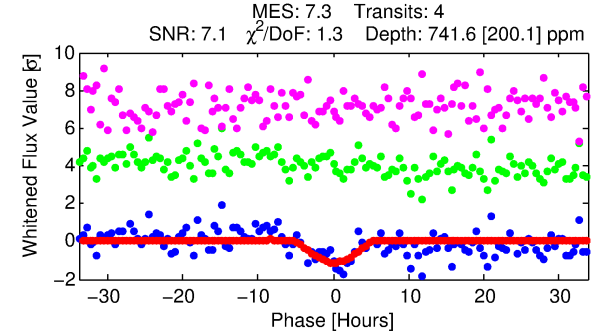
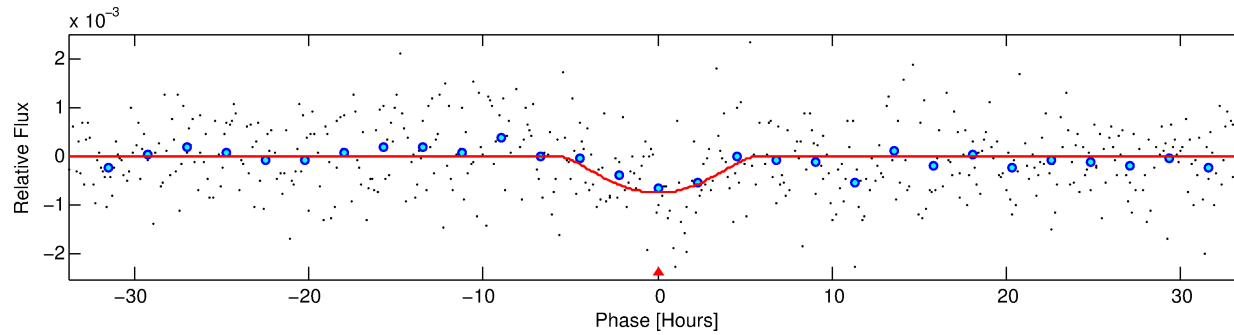
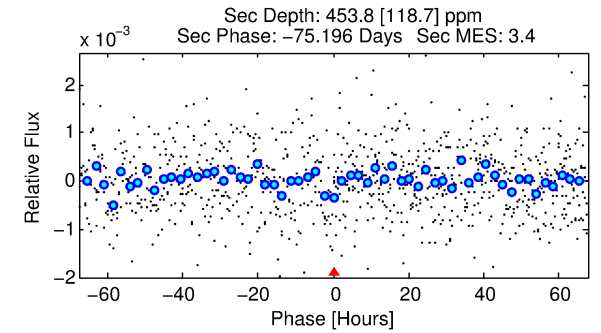
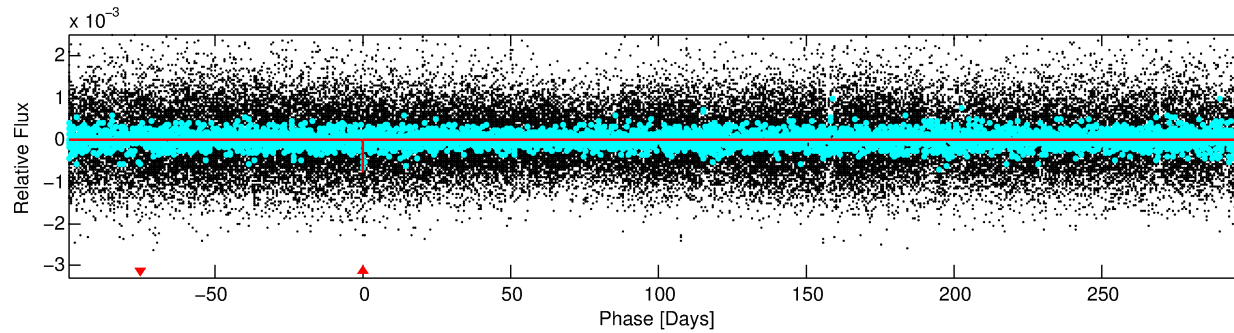
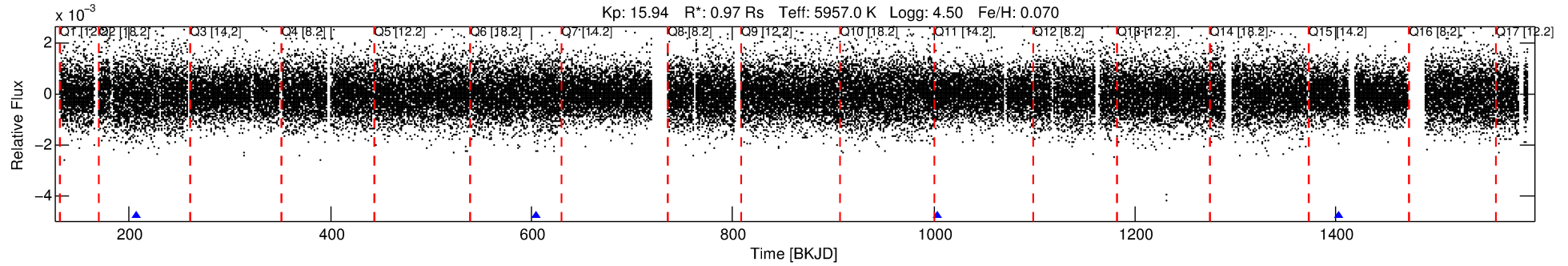
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009641722-01

No Significant Match Found

DV One-Page Summary

KIC: 9641722 Candidate: 1 of 1 Period: 398.471 d



DV Fit Results:

Period = 398.47055 [0.02227] d
Epoch = 206.6925 [0.0481] BKJD
Rp/R* = 0.0468 [0.2745]
a/R* = 86.13 [130.65]
b = 1.00 [0.42]
Seff = 0.90 [0.34]
Teq = 248 [23] K
Rp = 4.95 [29.12] Re
a = 1.0884 [0.2648] AU
Ag = 12047.78 [141557.03] [0.09σ]
Teff = 4021 [11806] K [0.32σ]

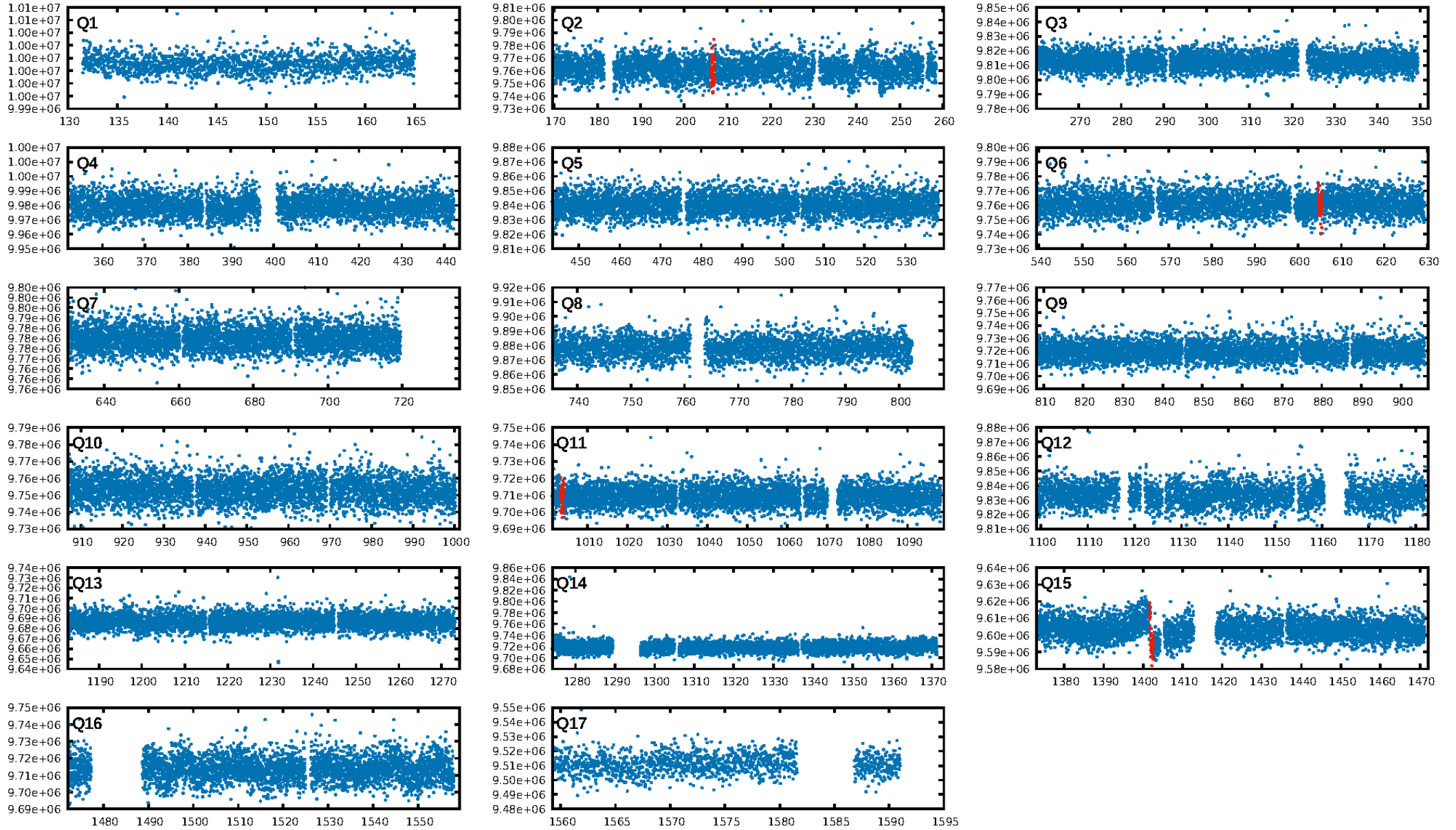
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 20.1%
ModelChiSquareGof-sig: 84.9%
Bootstrap-pfa: 8.68e-14
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 6.605
Centroid-sig: 39.4%
Centroid-so: 1.694 arcsec [0.84σ]
OotOffset-rm: 1.761 arcsec [2.24σ]
KicOffset-rm: 1.807 arcsec [2.32σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

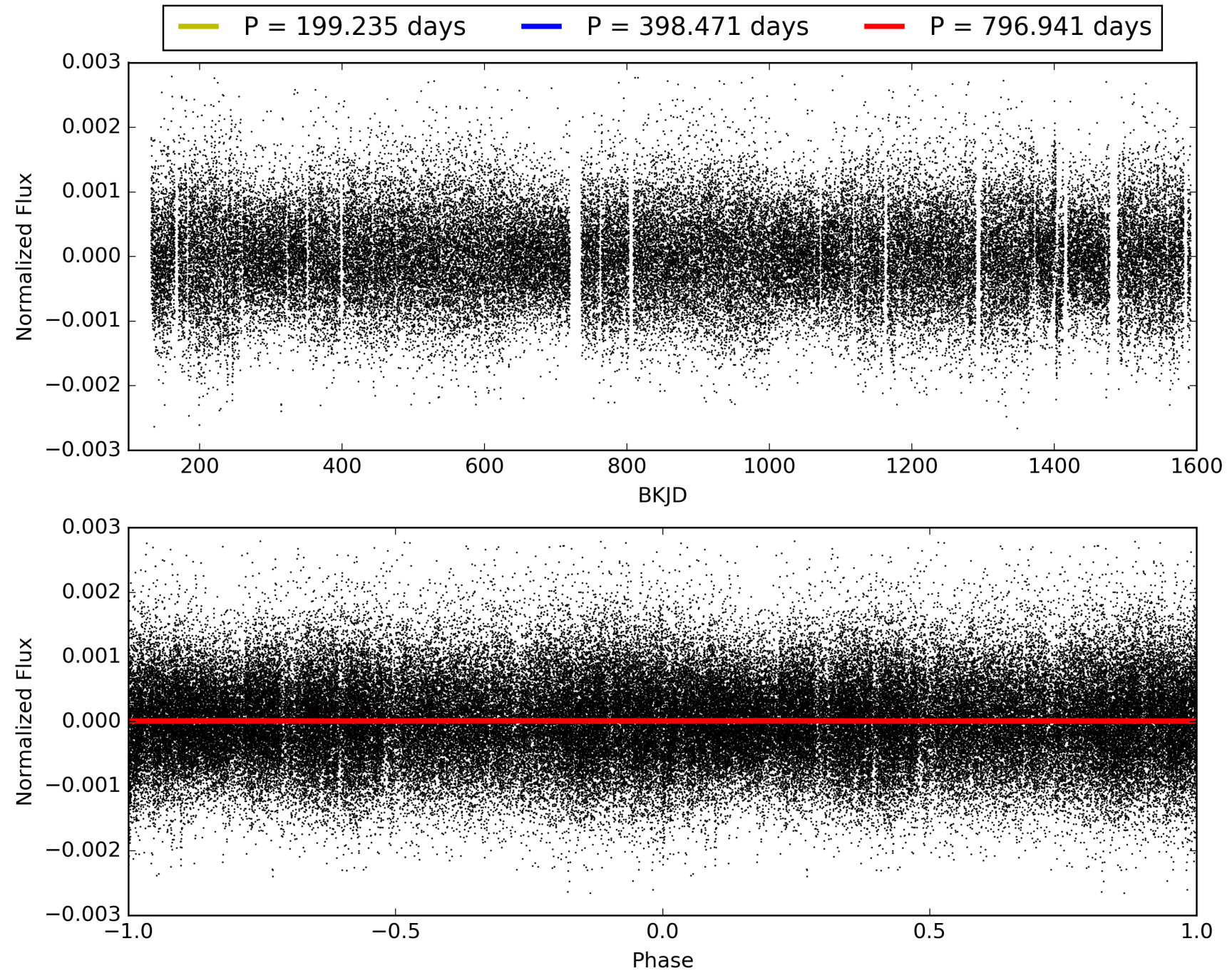
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:37:39 Z

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

TCE 009641722-01, PDC Light Curves

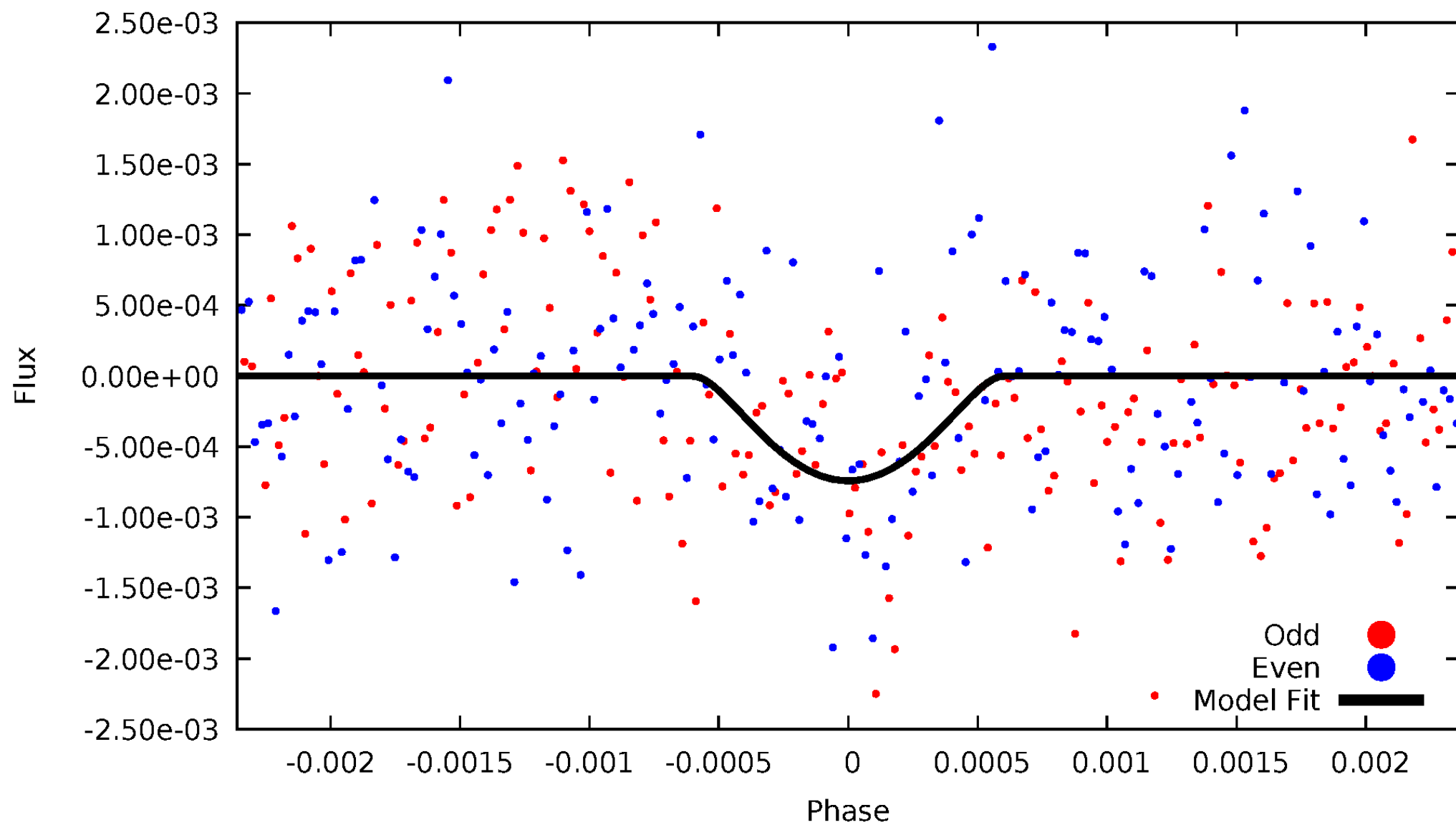


TCE 009641722-01



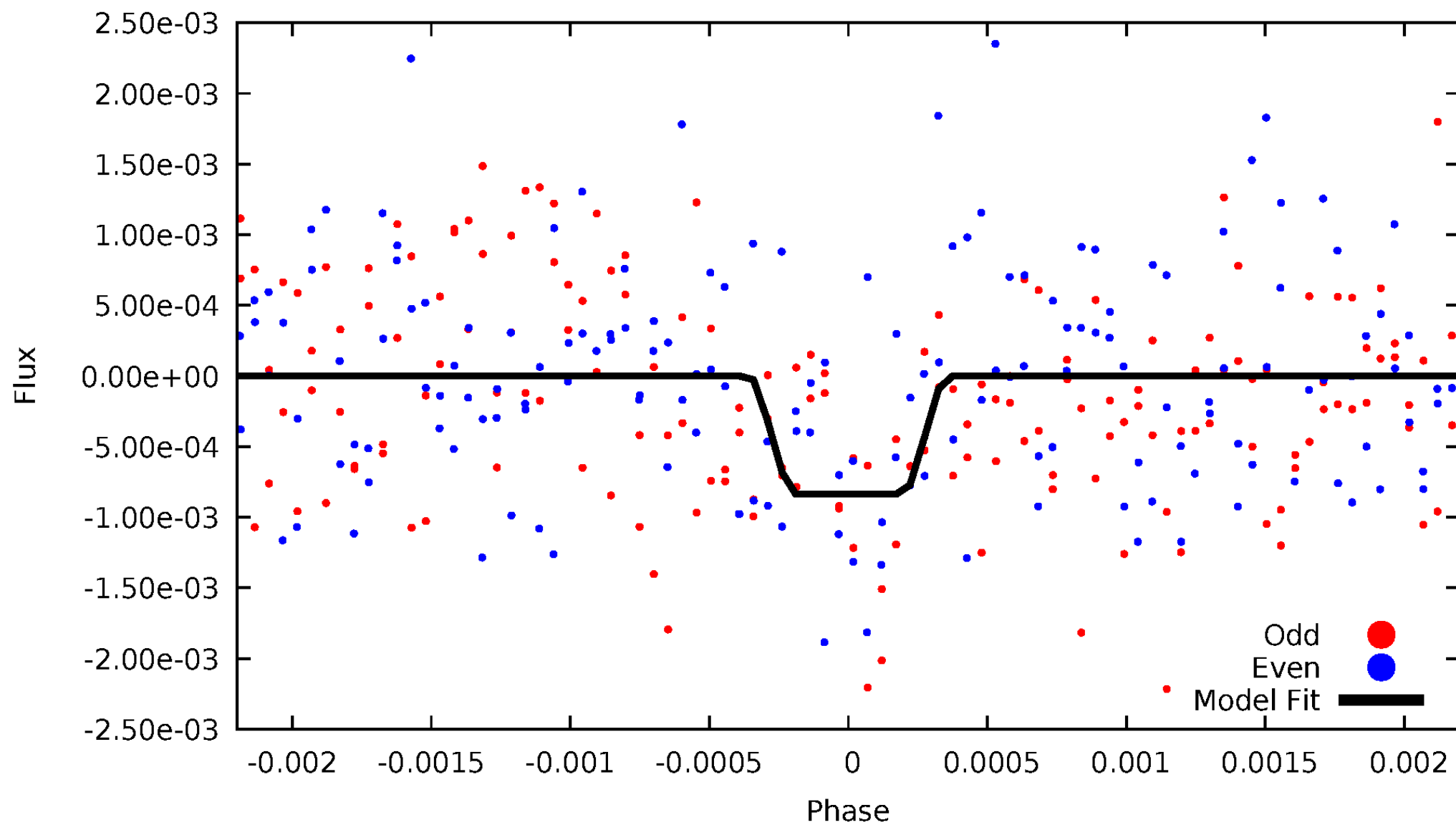
DV Odd/Even

TCE 009641722-01



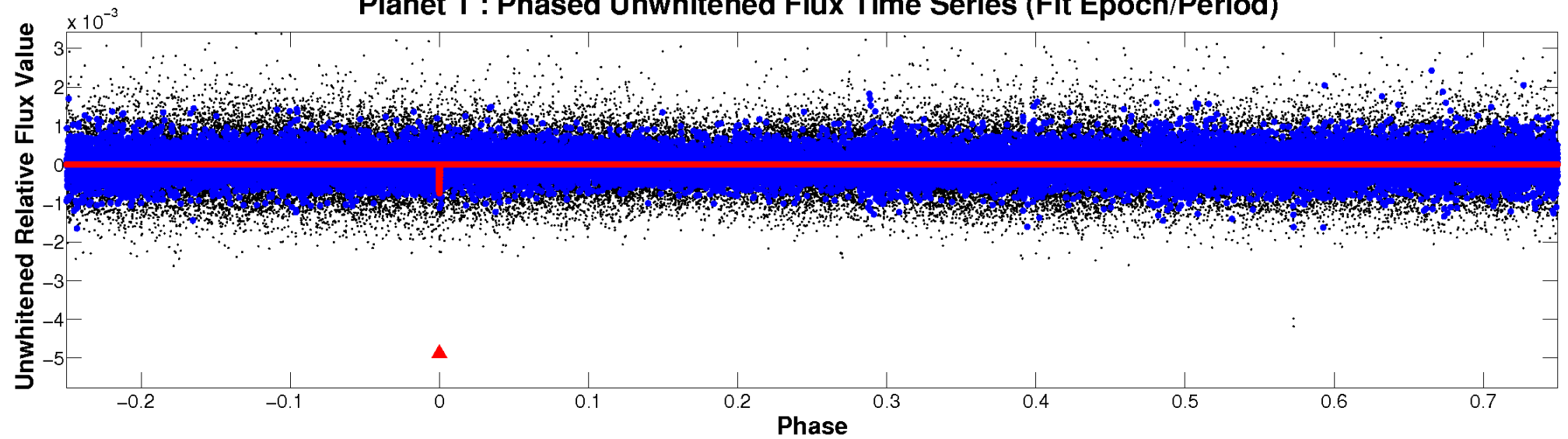
ALT Odd/Even

TCE 009641722-01

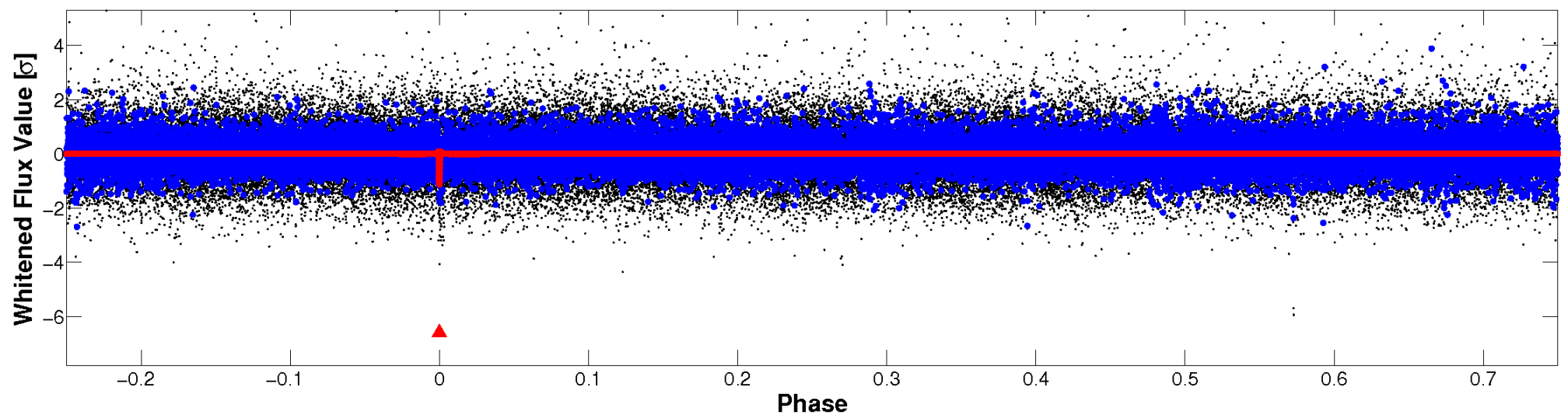


Non-Whitened Vs. Whitened Light Curve

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

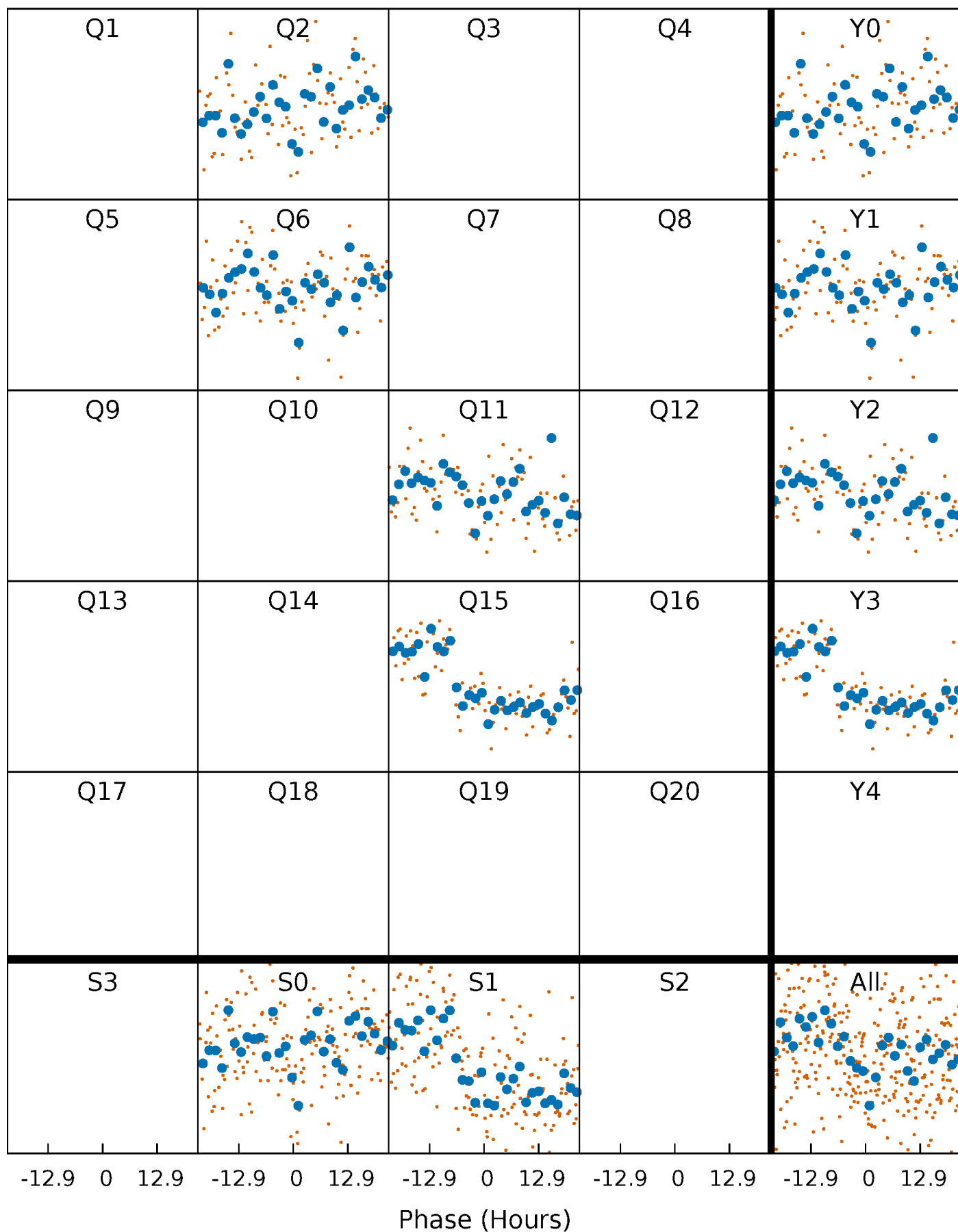


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



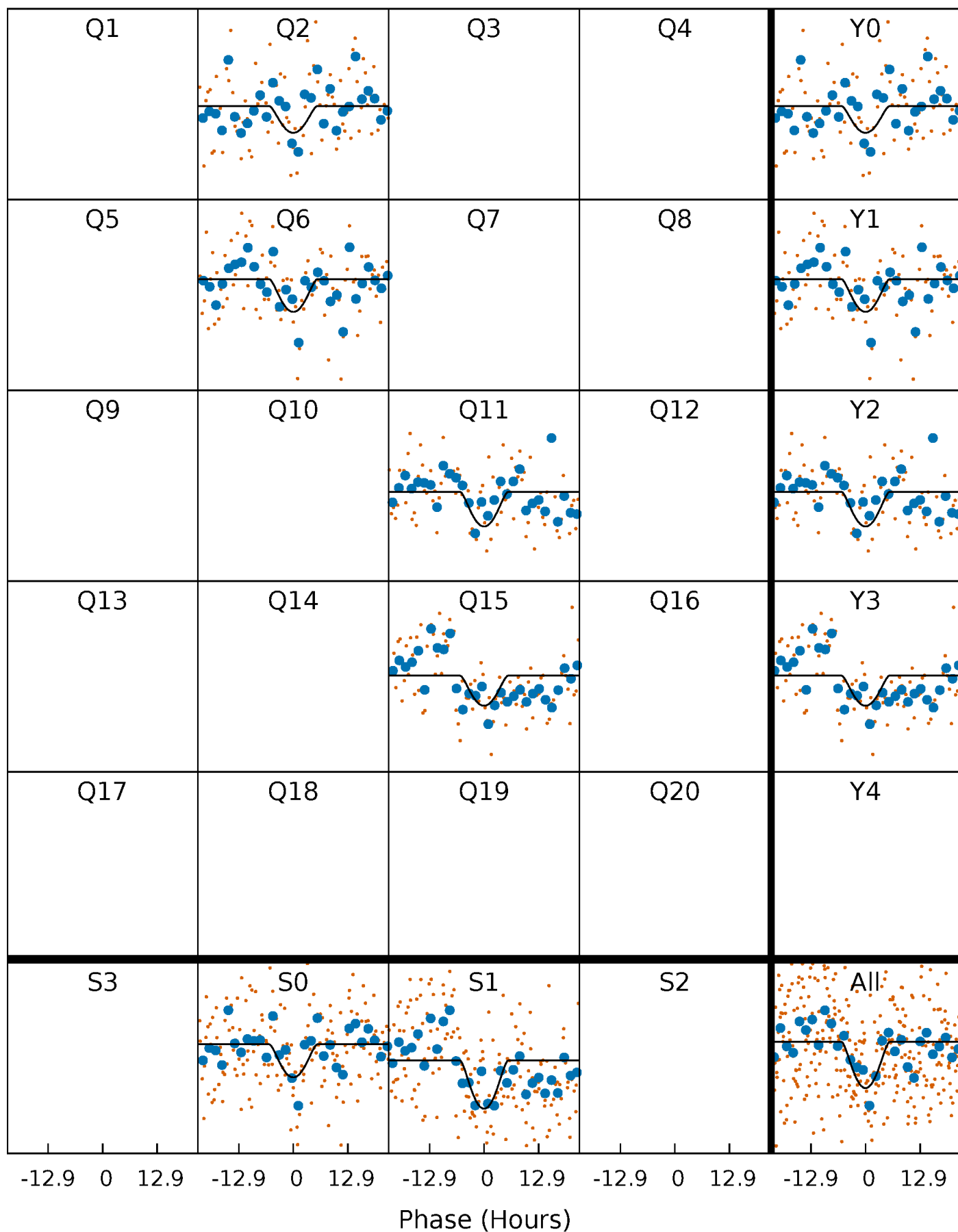
PDC Quarter-Phased Transit Curves

TCE 009641722-01 P=398.470554 Days $T_0=206.692463$ (BKJD)



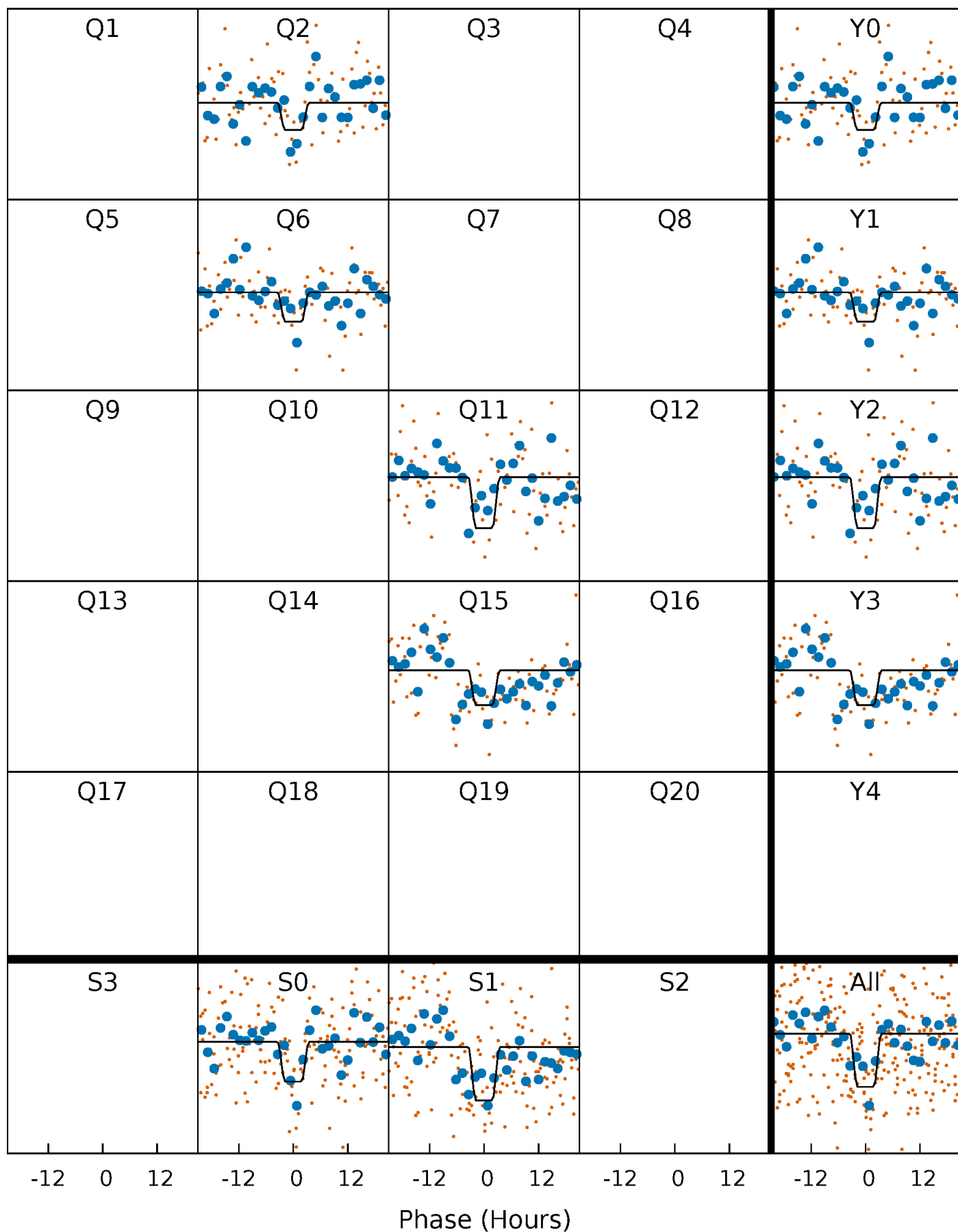
DV Quarter-Phased Transit Curves

TCE 009641722-01 $P=398.470554$ Days $T_0=206.692463$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

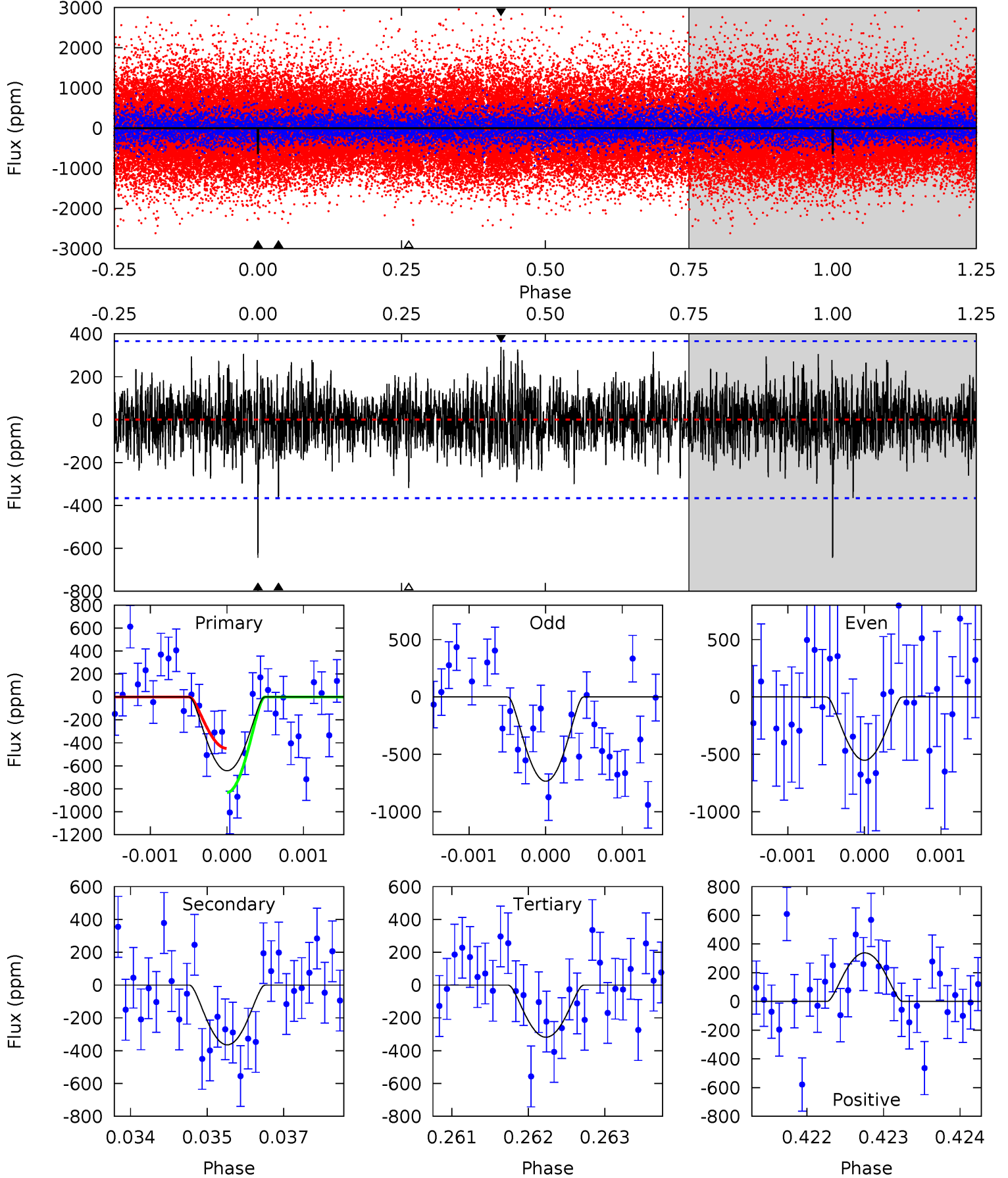
TCE 009641722-01 P=398.474853 Days $T_0=206.703156$ (BKJD)



DV Model-Shift Uniqueness Test

009641722-01, P = 398.470554 Days, E = 206.692463 Days

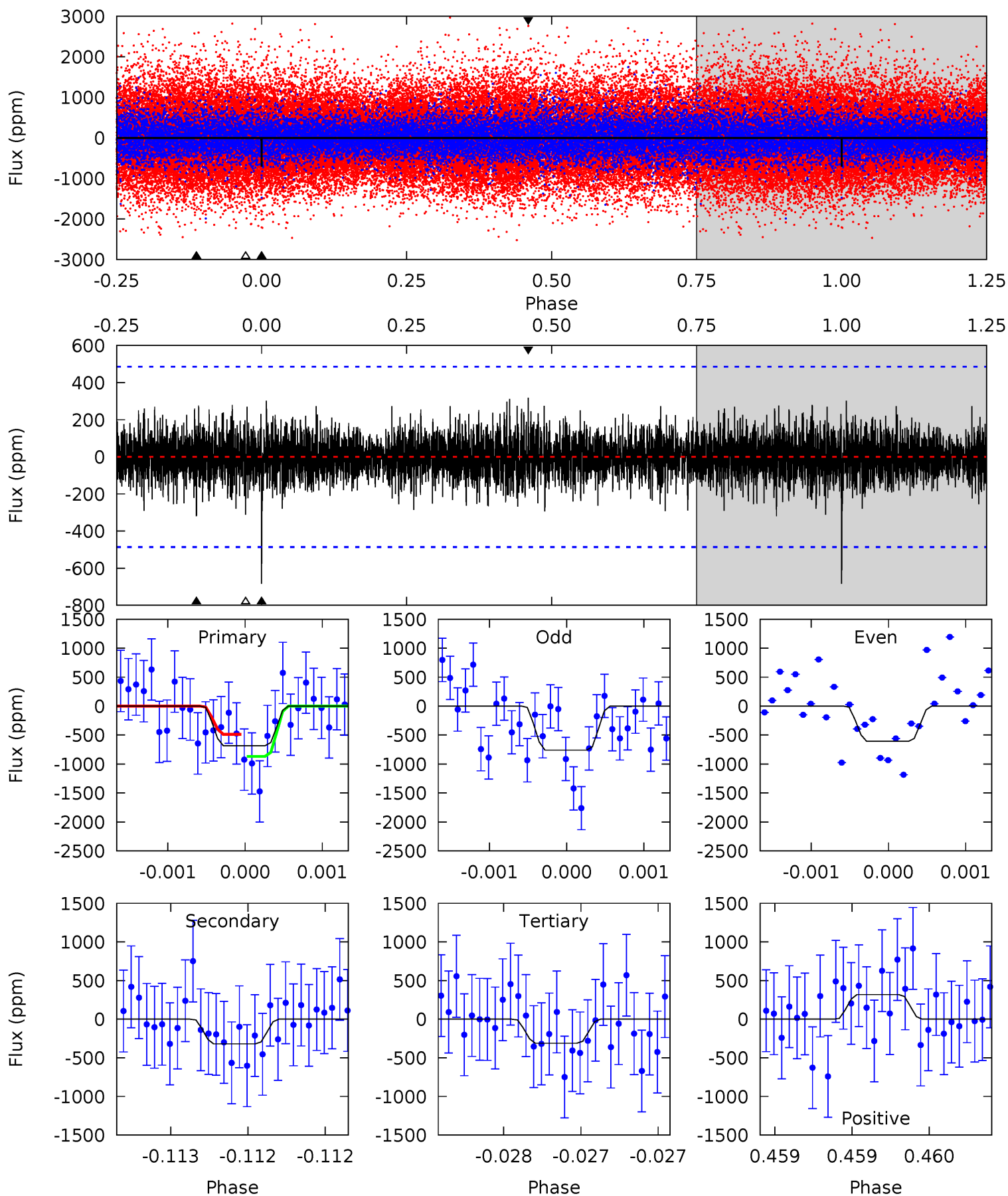
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.52	5.40	4.71	5.01	5.42	3.23	1.42	4.81	4.51	0.69	0.38	1.36	0.96	0.34	2.84



Alt Model-Shift Uniqueness Test

009641722-01, P = 398.474853 Days, E = 206.703156 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.77	3.64	3.53	3.62	5.52	3.40	1.00	4.24	4.15	0.10	0.02	0.88	0.93	0.32	2.16



Stellar Parameters For KIC 009641722

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5957^{+164}_{-205}	$4.498^{+0.048}_{-0.192}$	$0.070^{+0.250}_{-0.300}$	$0.971^{+0.282}_{-0.094}$	$1.083^{+0.115}_{-0.153}$	$1.665^{+0.329}_{-0.857}$
	+3%/-3%	+1%/-4%	+357%/-429%	+29%/-10%	+11%/-14%	+20%/-51%
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 009641722-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-364 ± 68	$22.13^{+23.07}_{-15.78}$	354^{+23}_{-17}	2625^{+1207}_{-398}	461^{+4969}_{-351}
Alt.	-320 ± 88	$20.56^{+22.40}_{-14.07}$	354^{+26}_{-16}	2641^{+1004}_{-445}	449^{+3984}_{-350}

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

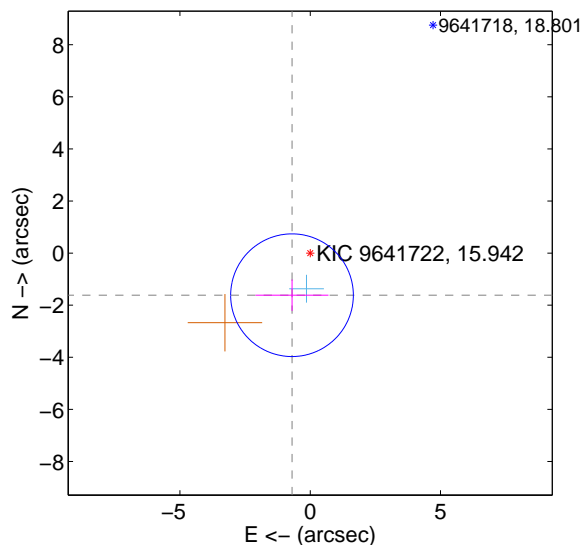
Supplemental centroid analysis for 009641722-01. Kepler magnitude: 15.94. Transit SNR 7.14

There are 1 quarters with good PRF difference image offsets

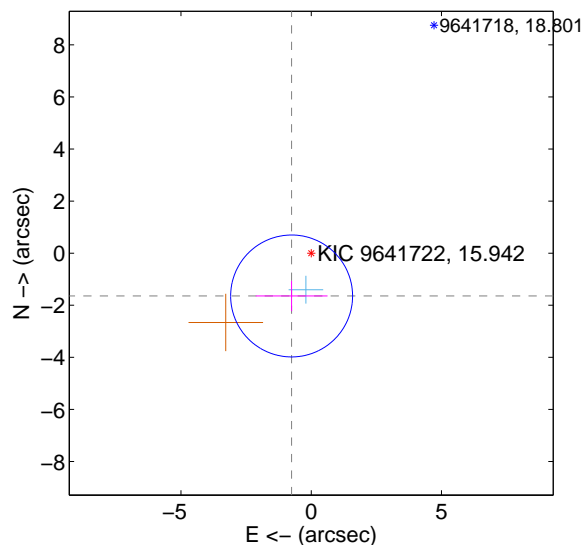
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.761 ± 0.785	2.24	0.699 ± 1.402	-1.617 ± 0.603
PRF-fit source offset from KIC position	1.807 ± 0.780	2.32	0.753 ± 1.377	-1.643 ± 0.582
photometric centroid source offset	1.69 ± 2.02	0.84	-1.27 ± 2.02	-1.12 ± 2.01

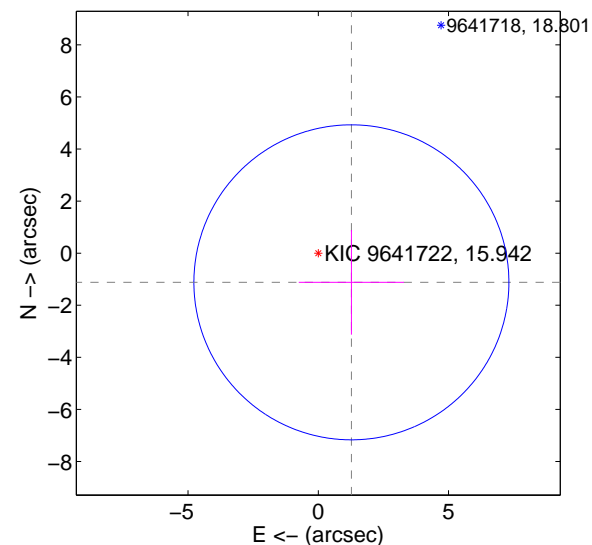
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

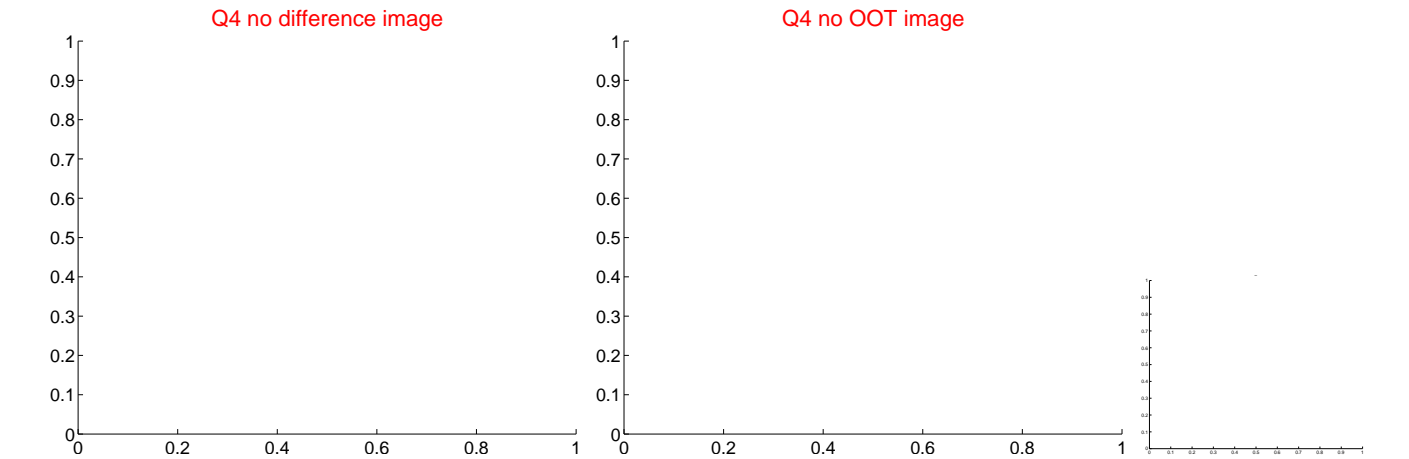
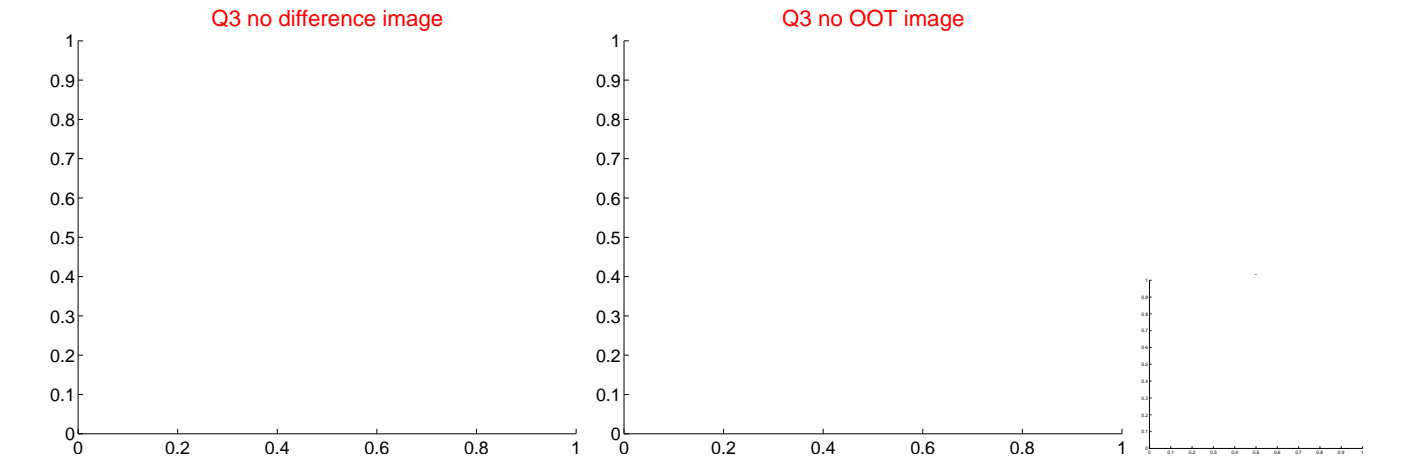
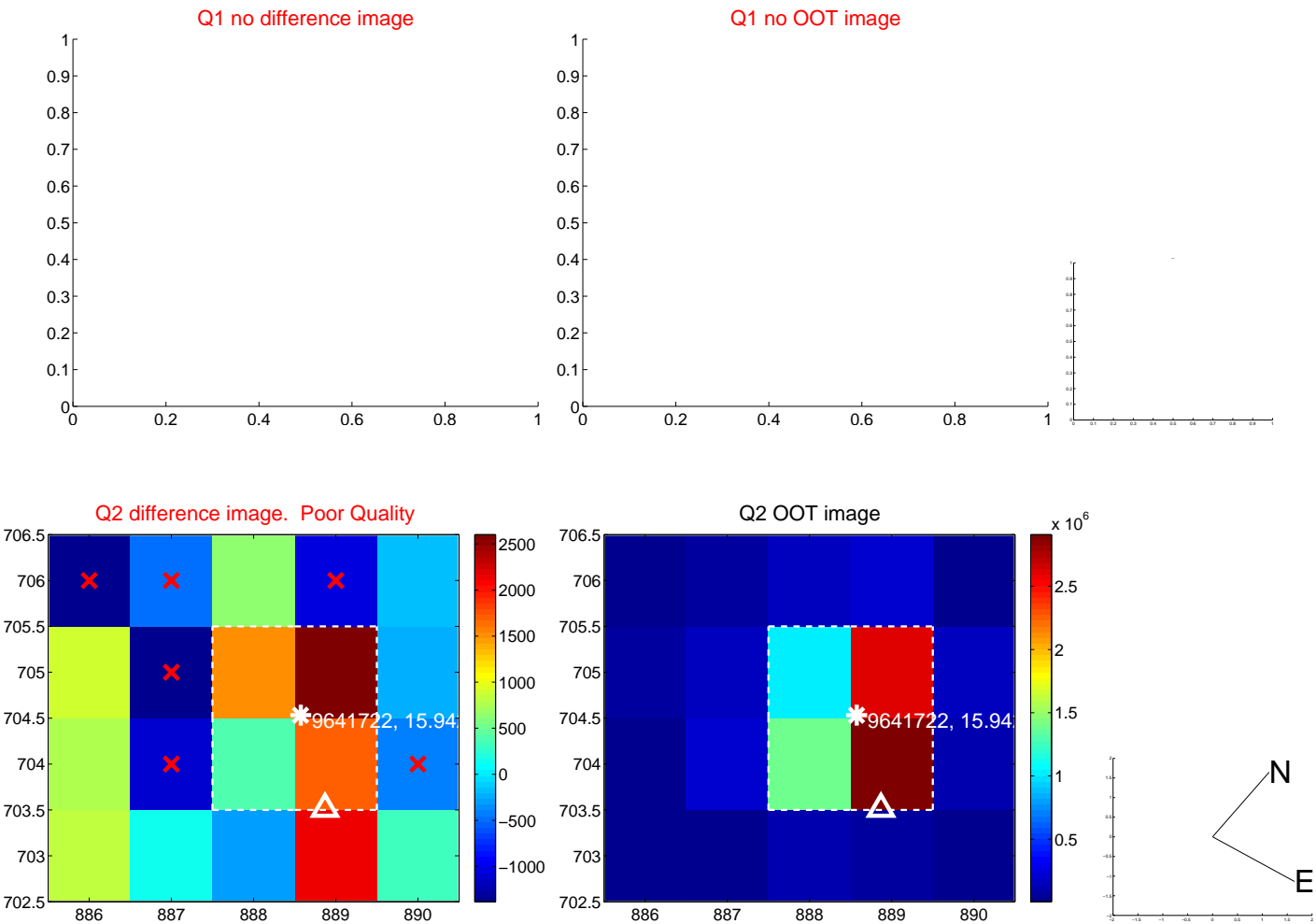


offset from photometric centroids

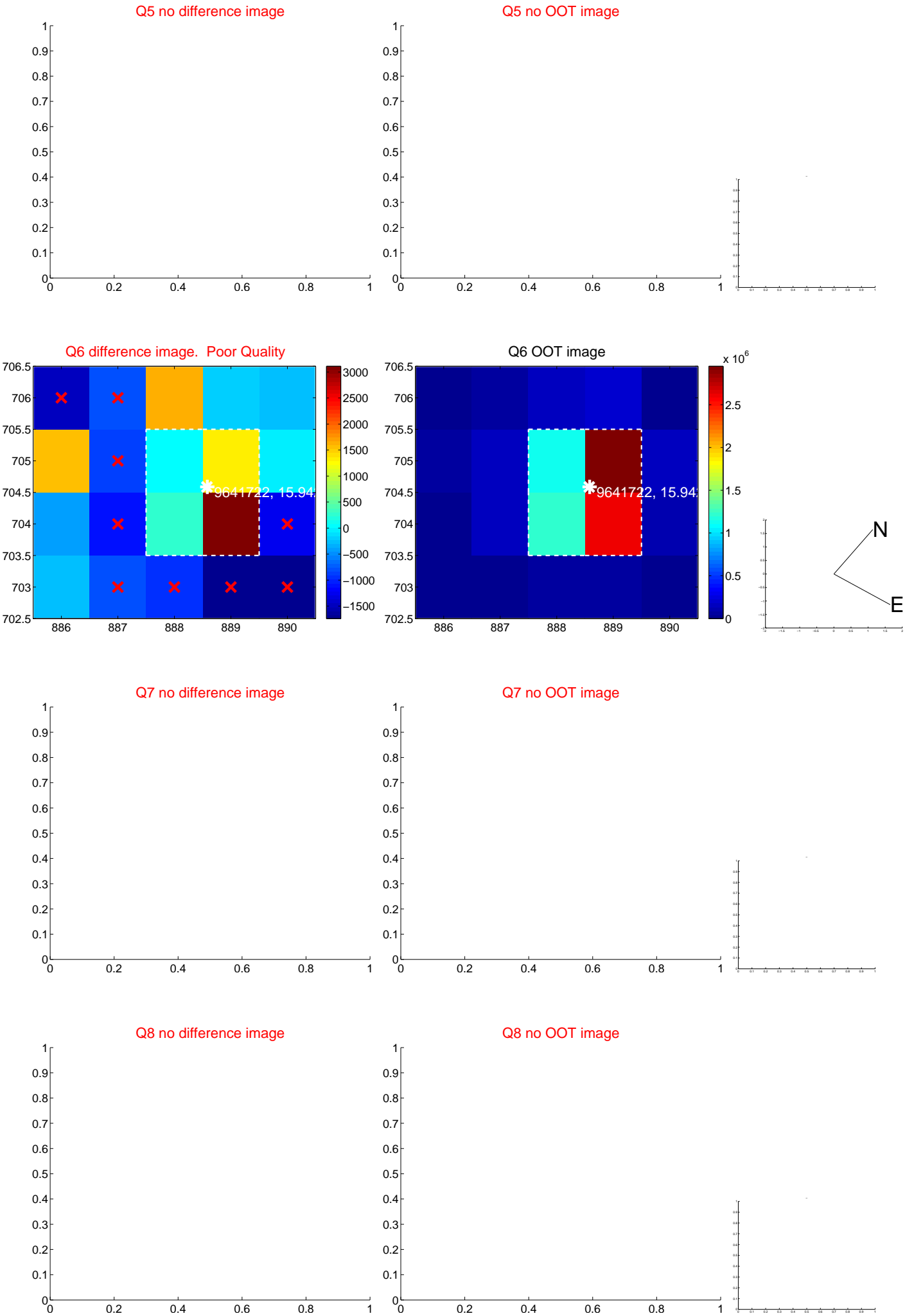


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



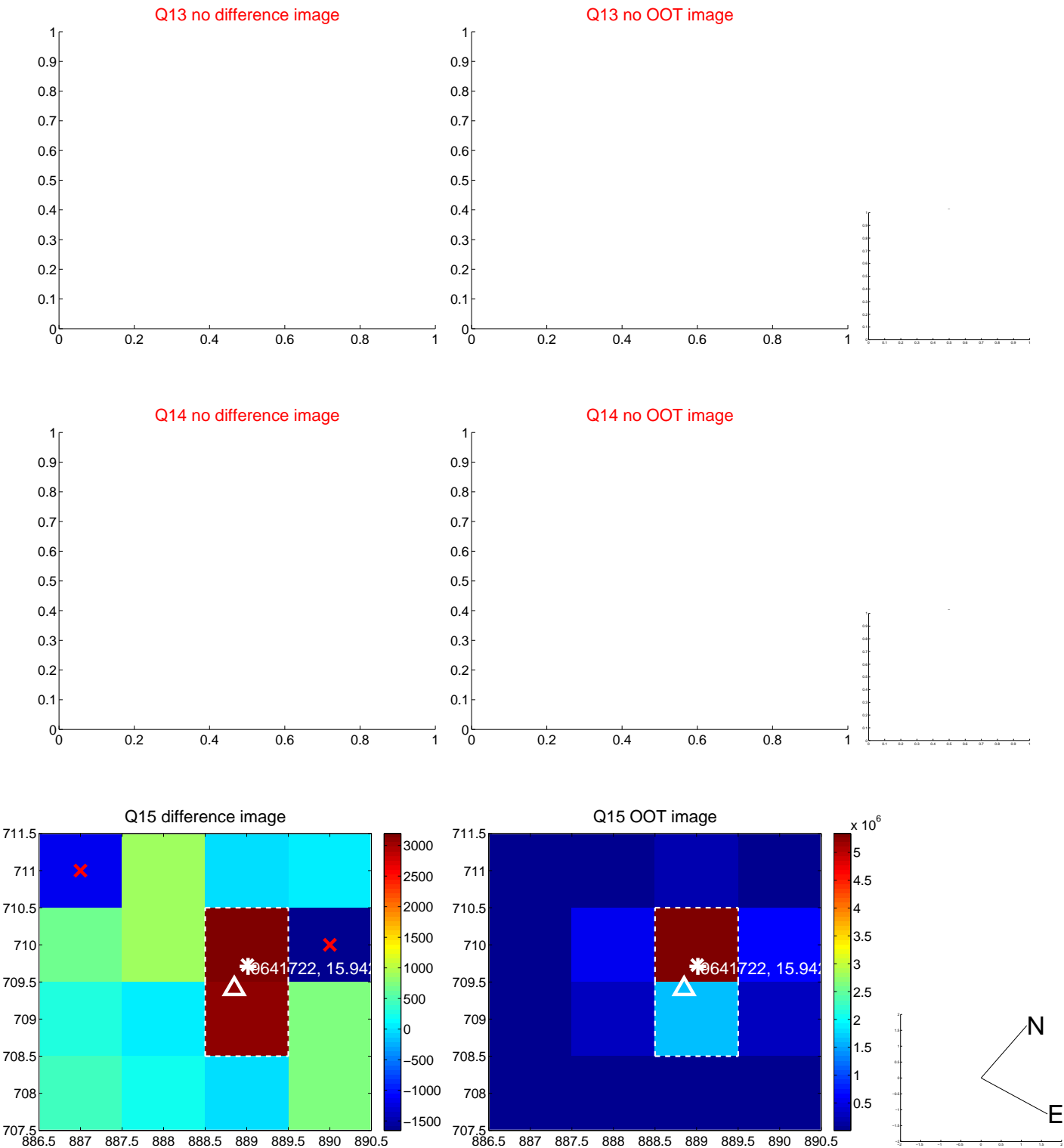
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



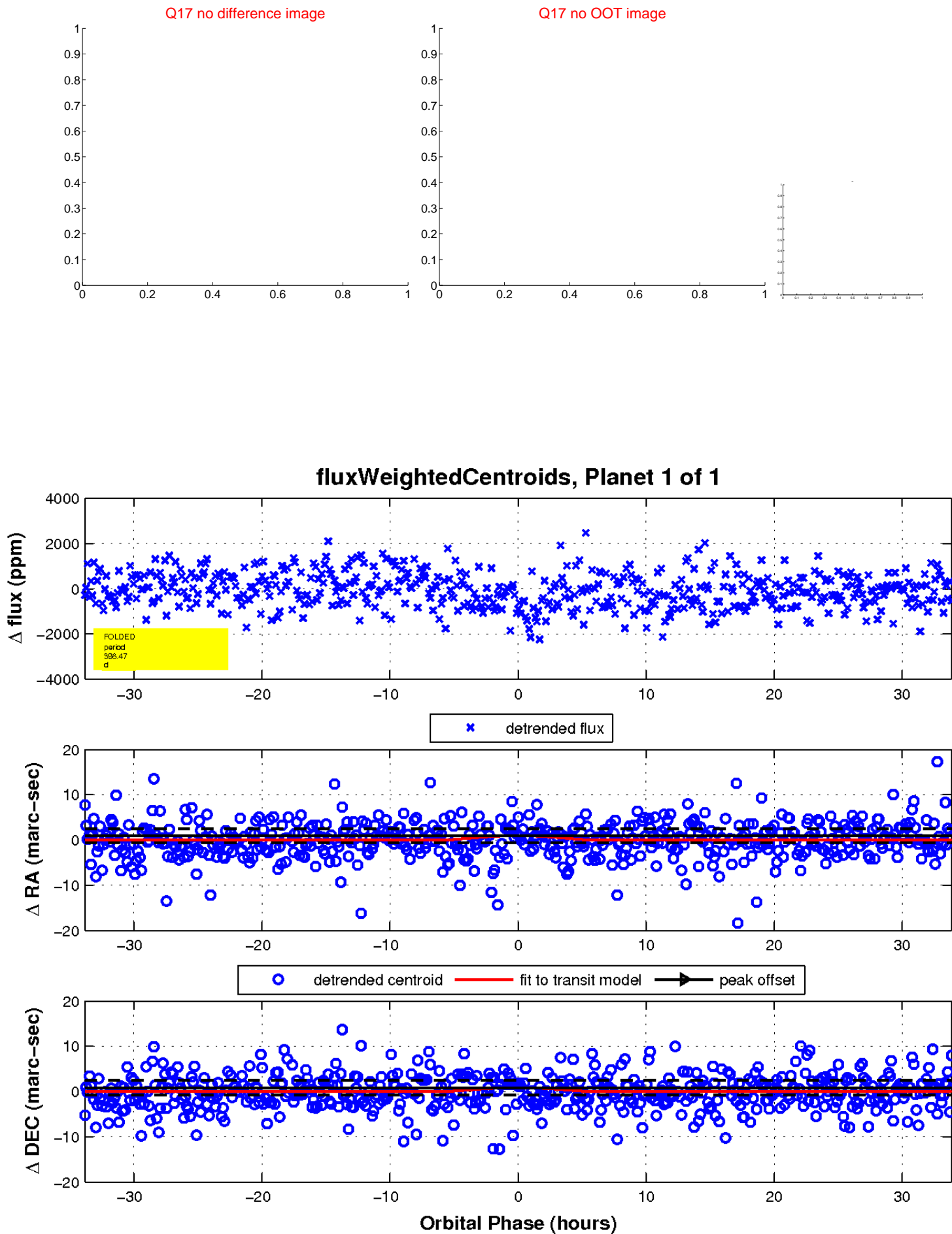
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

