

KIC 008871405

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})
008871405-01	OBS	No	483.554261	314.854207	718.0	4.993	7.2	7.5	1.08	6116	3.29	0.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008871405-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

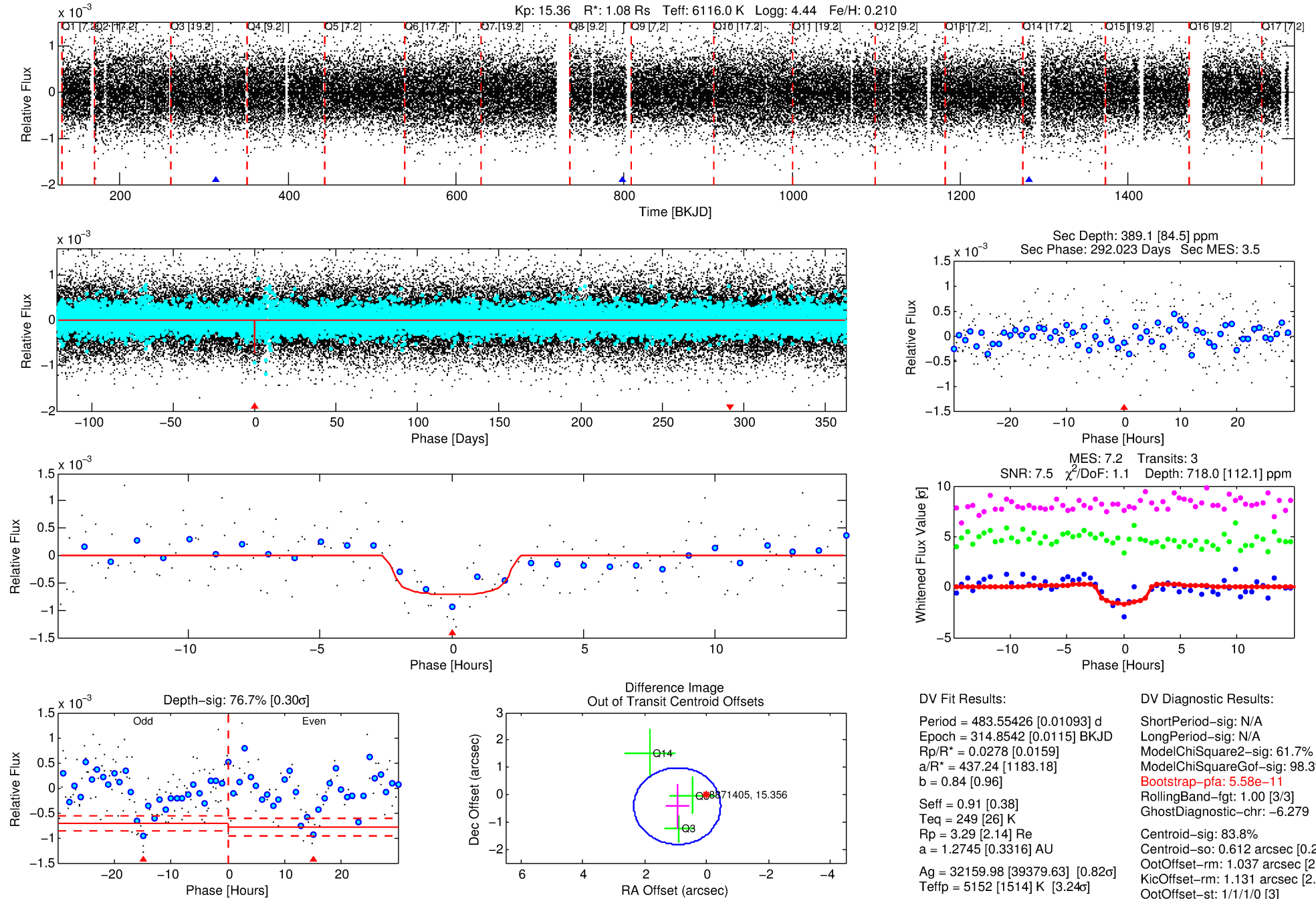
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008871405-01

No Significant Match Found

DV One-Page Summary

KIC: 8871405 Candidate: 1 of 1 Period: 483.554 d



DV Fit Results:

Period = 483.55426 [0.01093] d
 Epoch = 314.8542 [0.0115] BKJD
 Rp/R* = 0.0278 [0.0159]
 a/R* = 437.24 [1183.18]
 b = 0.84 [0.96]
 Seff = 0.91 [0.38]
 Teq = 249 [26] K
 Rp = 3.29 [2.14] Re
 a = 1.2745 [0.3316] AU
 Ag = 32159.98 [39379.63] [0.82 σ]
 Tefp = 5152 [1514] K [3.24 σ]

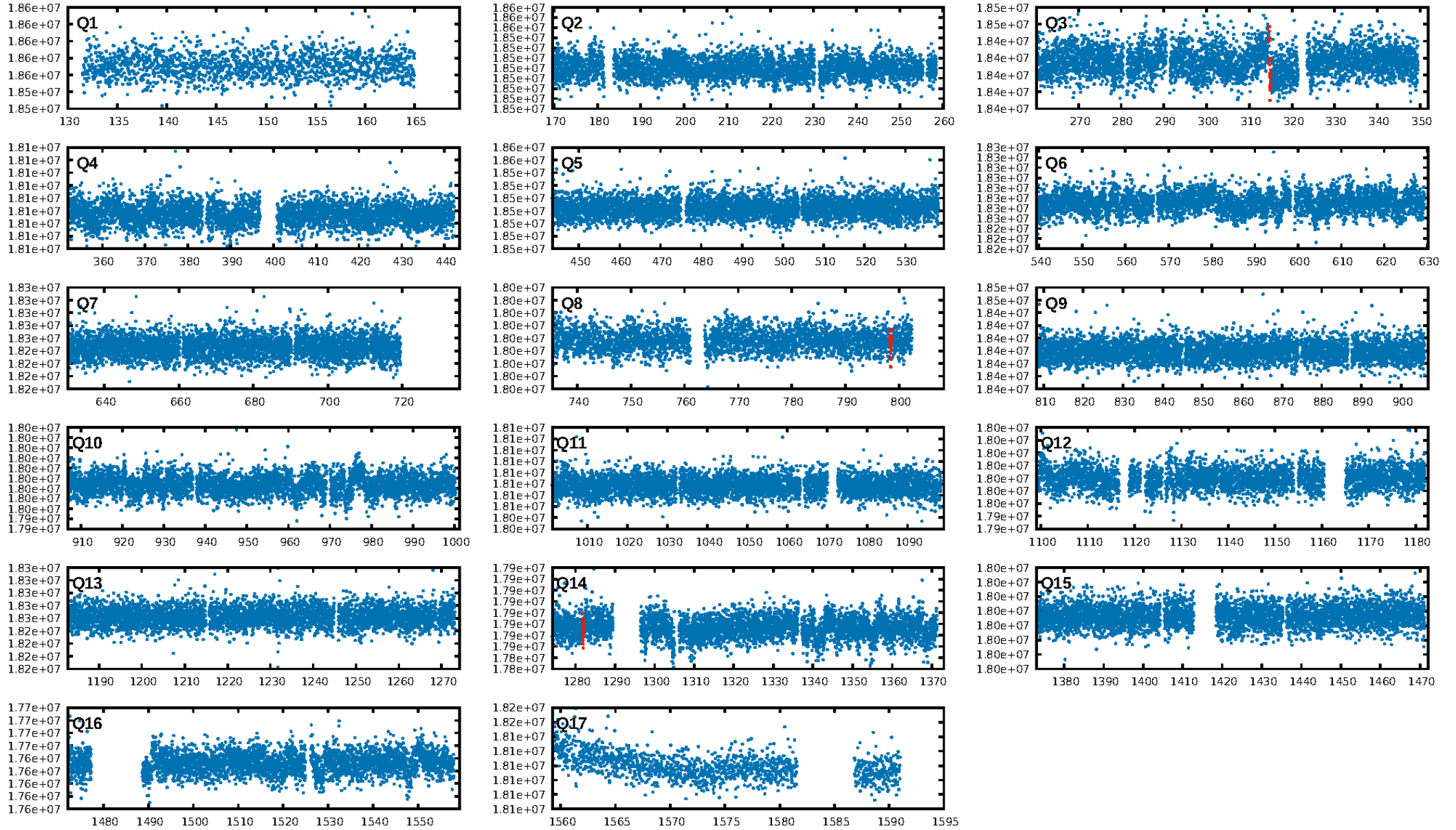
DV Diagnostic Results:

ShortPeriod-sig: N/A
 LongPeriod-sig: N/A
 ModelChiSquare2-sig: 61.7%
 ModelChiSquareGof-sig: 98.3%
Bootstrap-pfa: 5.58e-11
 RollingBand-fgt: 1.00 [3/3]
 GhostDiagnostic-chr: -6.279
 Centroid-sig: 83.8%
 Centroid-so: 0.612 arcsec [0.29 σ]
 OotOffset-rm: 1.037 arcsec [2.22 σ]
 OotOffset-st: 1/1/1/0 [3]
 KicOffset-rm: 1.131 arcsec [2.40 σ]
 KicOffset-st: 1/1/1/0 [3]
 DiffImageQuality-fgm: 0.67 [2/3]
 DiffImageOverlap-fno: 1.00 [3/3]

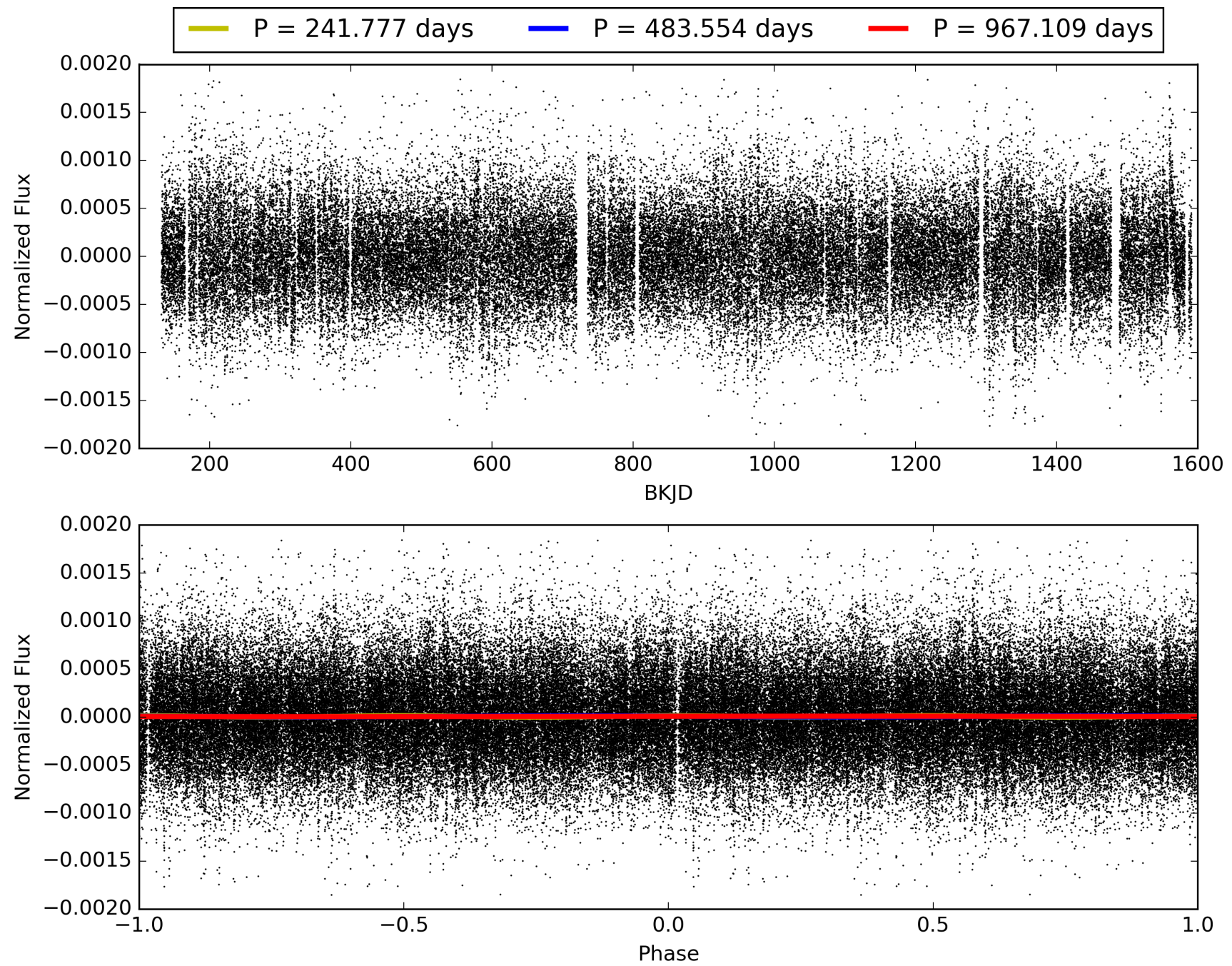
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:50:07 Z

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

TCE 008871405-01, PDC Light Curves

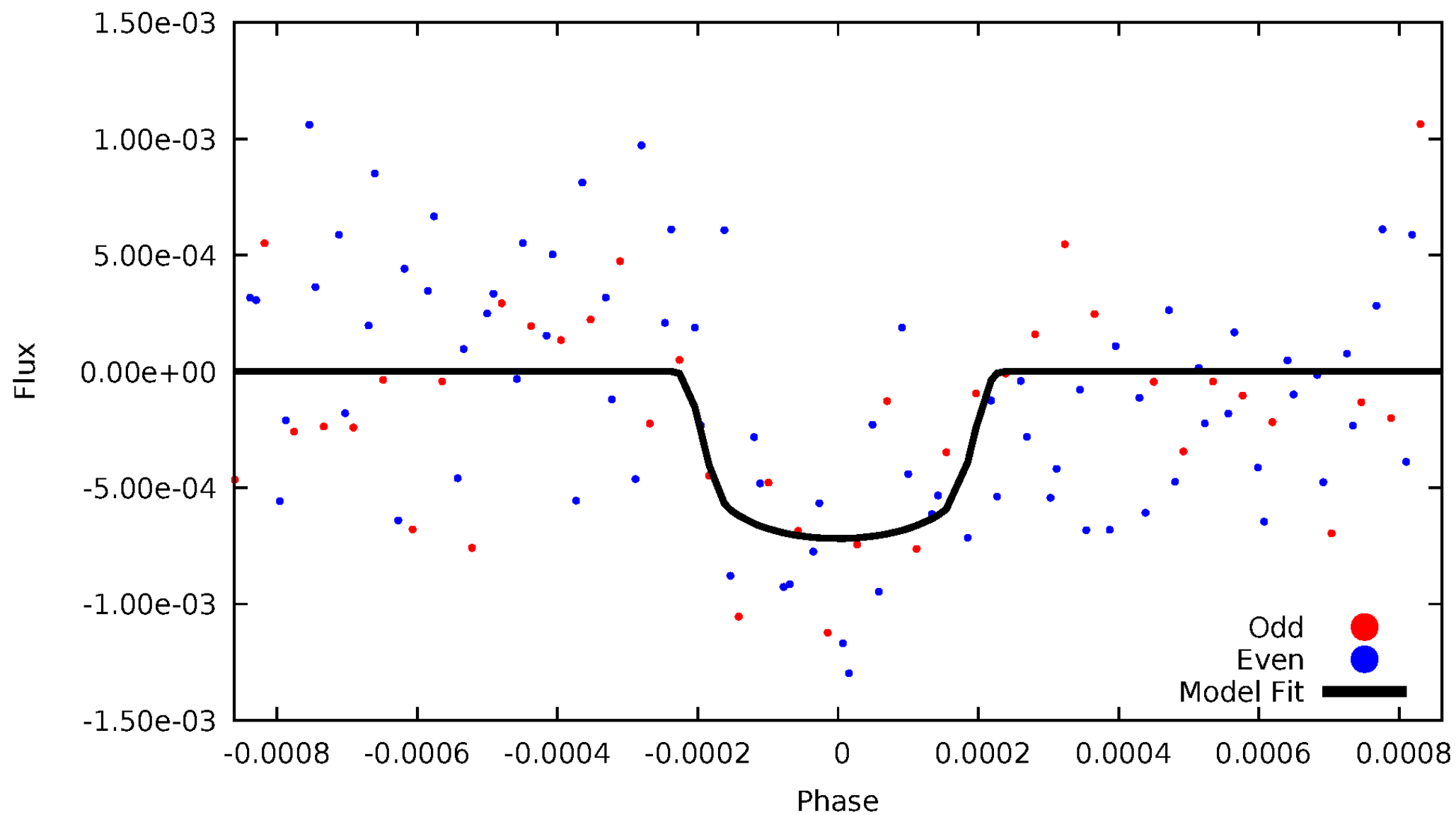


TCE 008871405-01



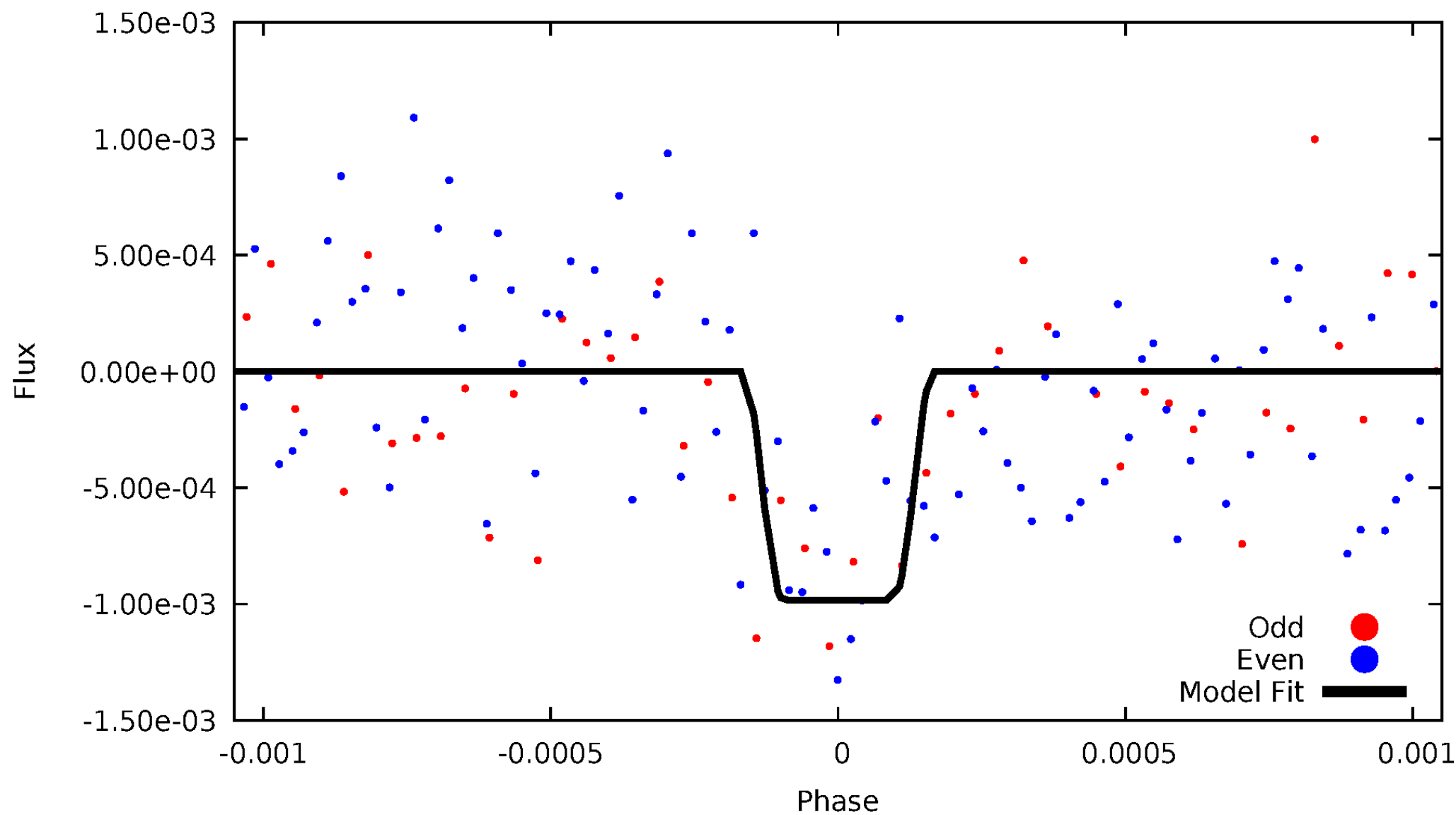
DV Odd/Even

TCE 008871405-01

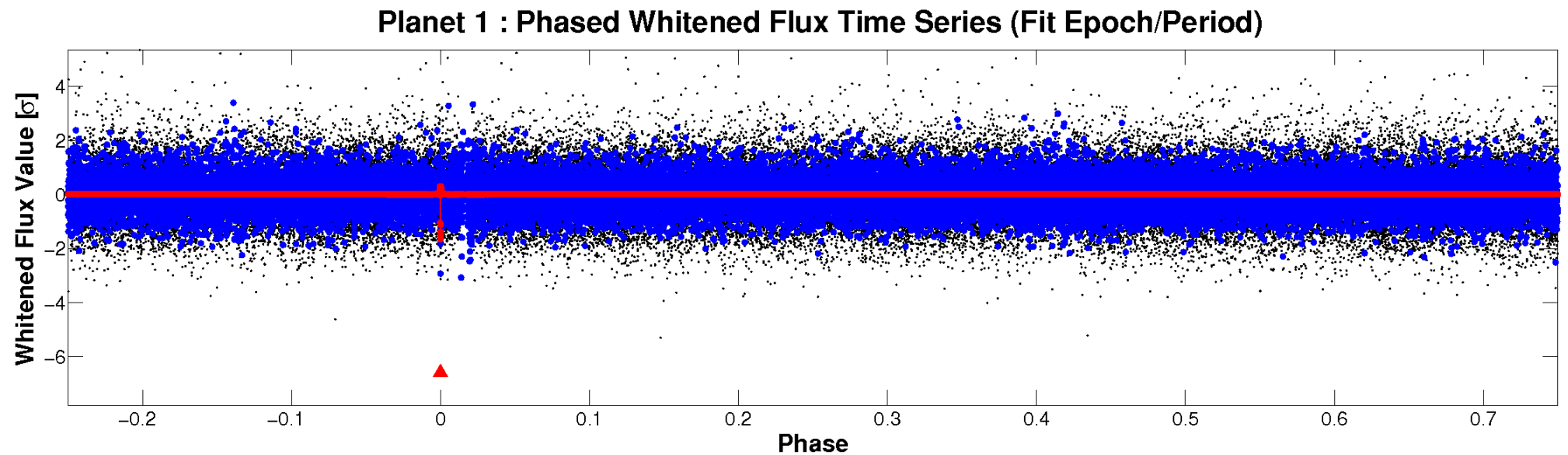
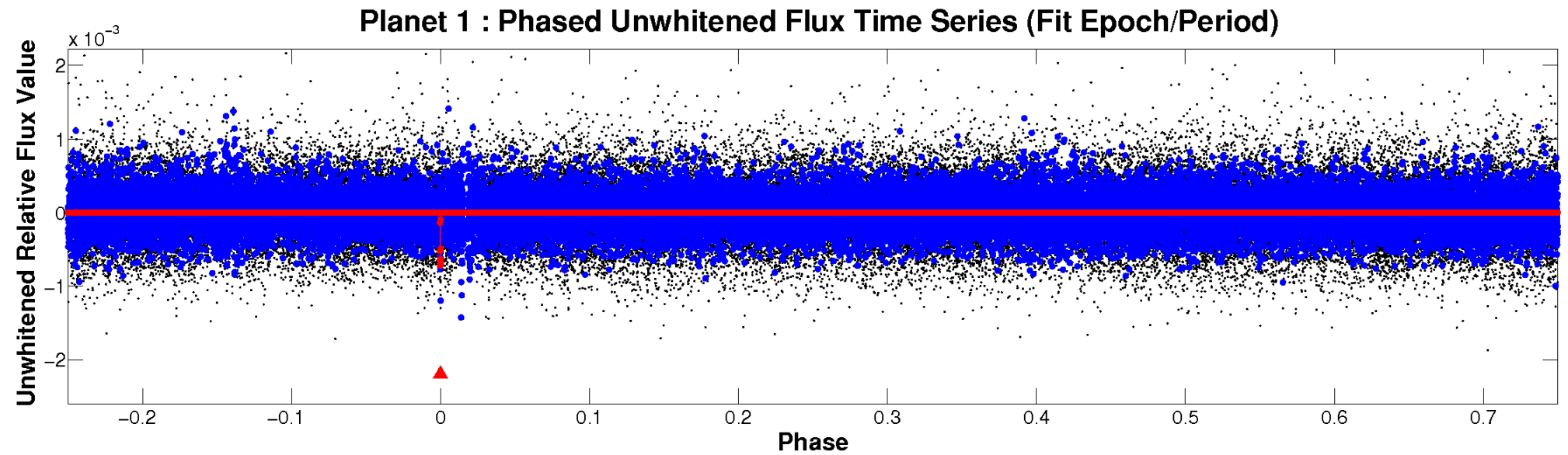


ALT Odd/Even

TCE 008871405-01

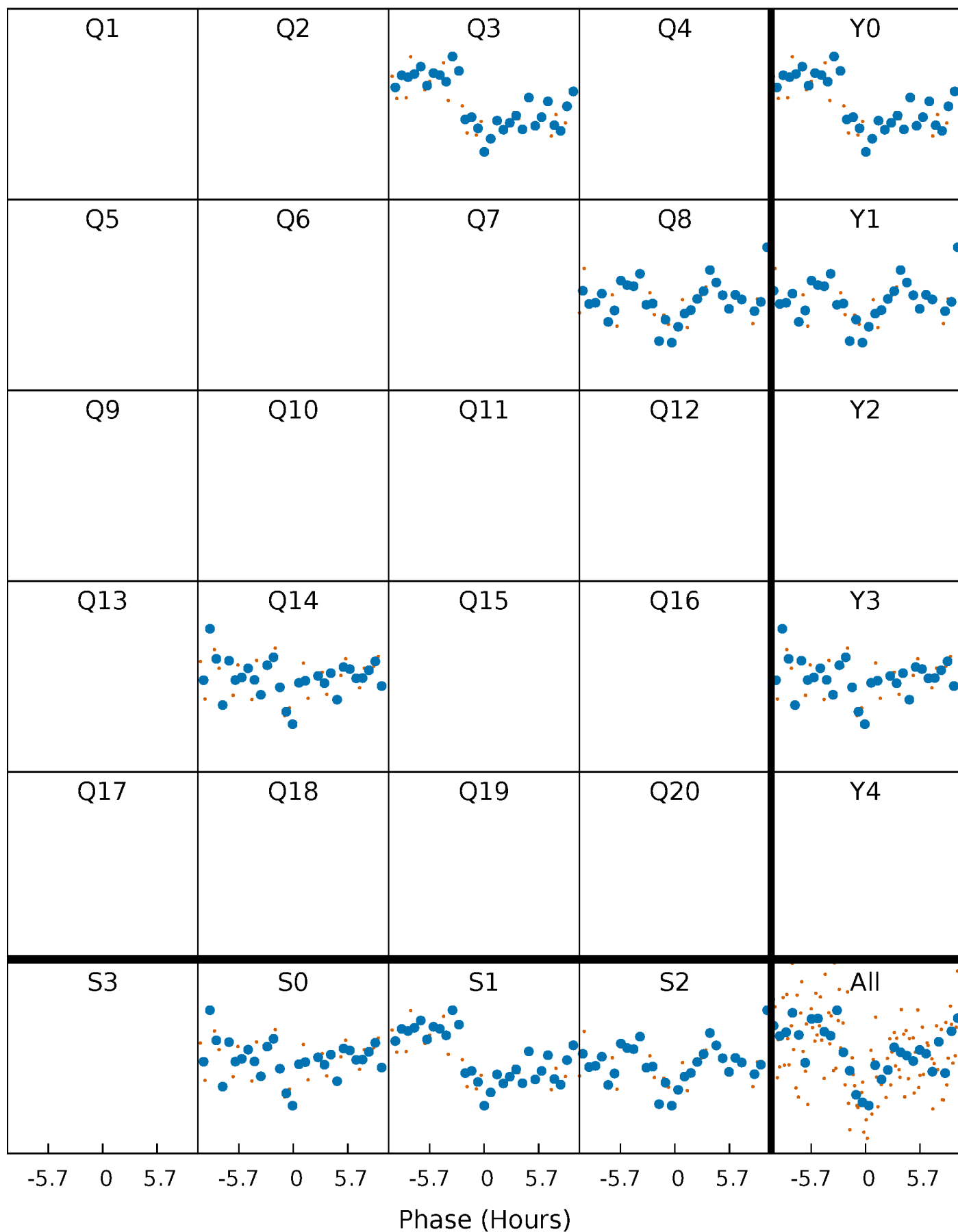


Non-Whitened Vs. Whitened Light Curve



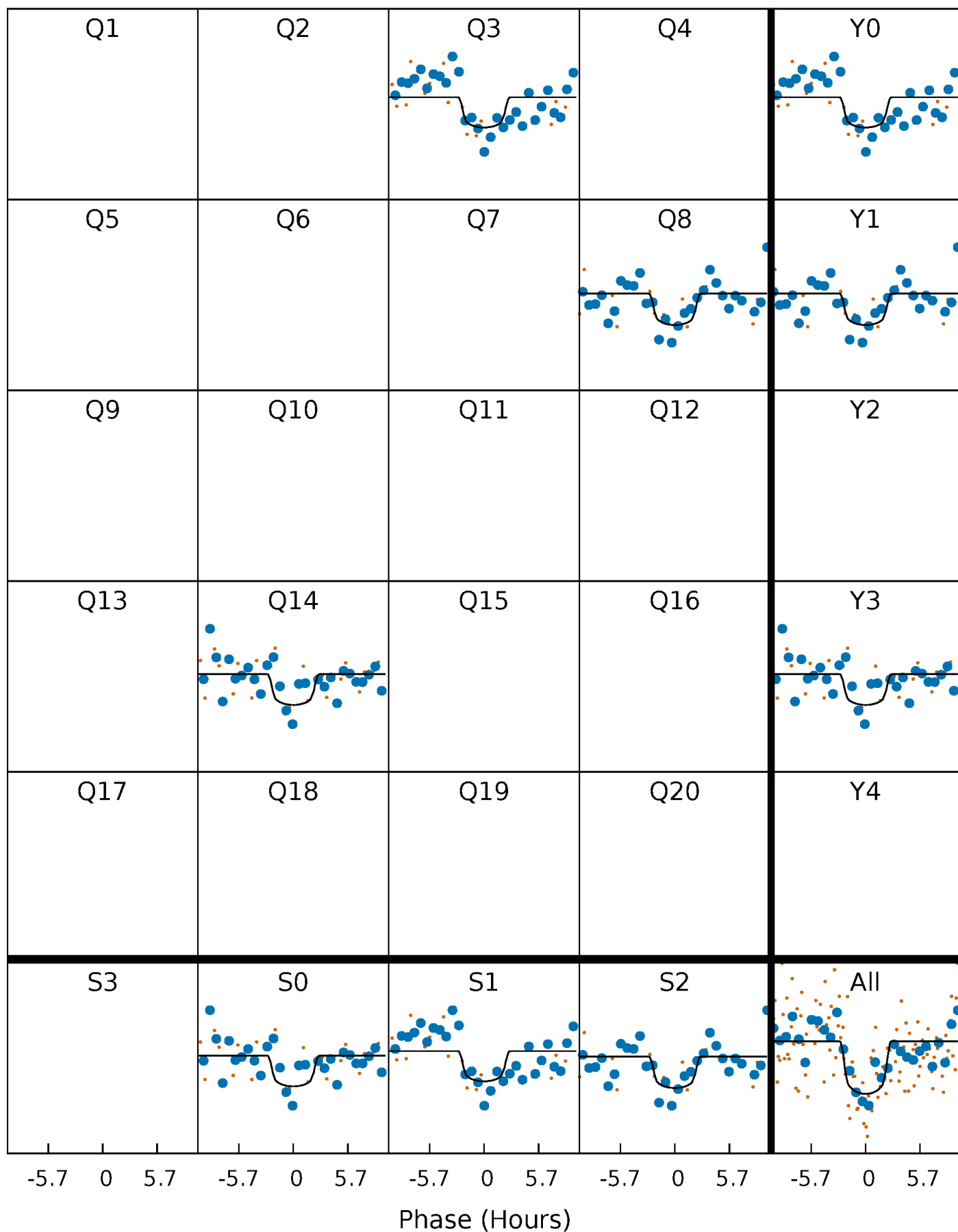
PDC Quarter-Phased Transit Curves

TCE 008871405-01 P=483.554261 Days $T_0=314.854207$ (BKJD)



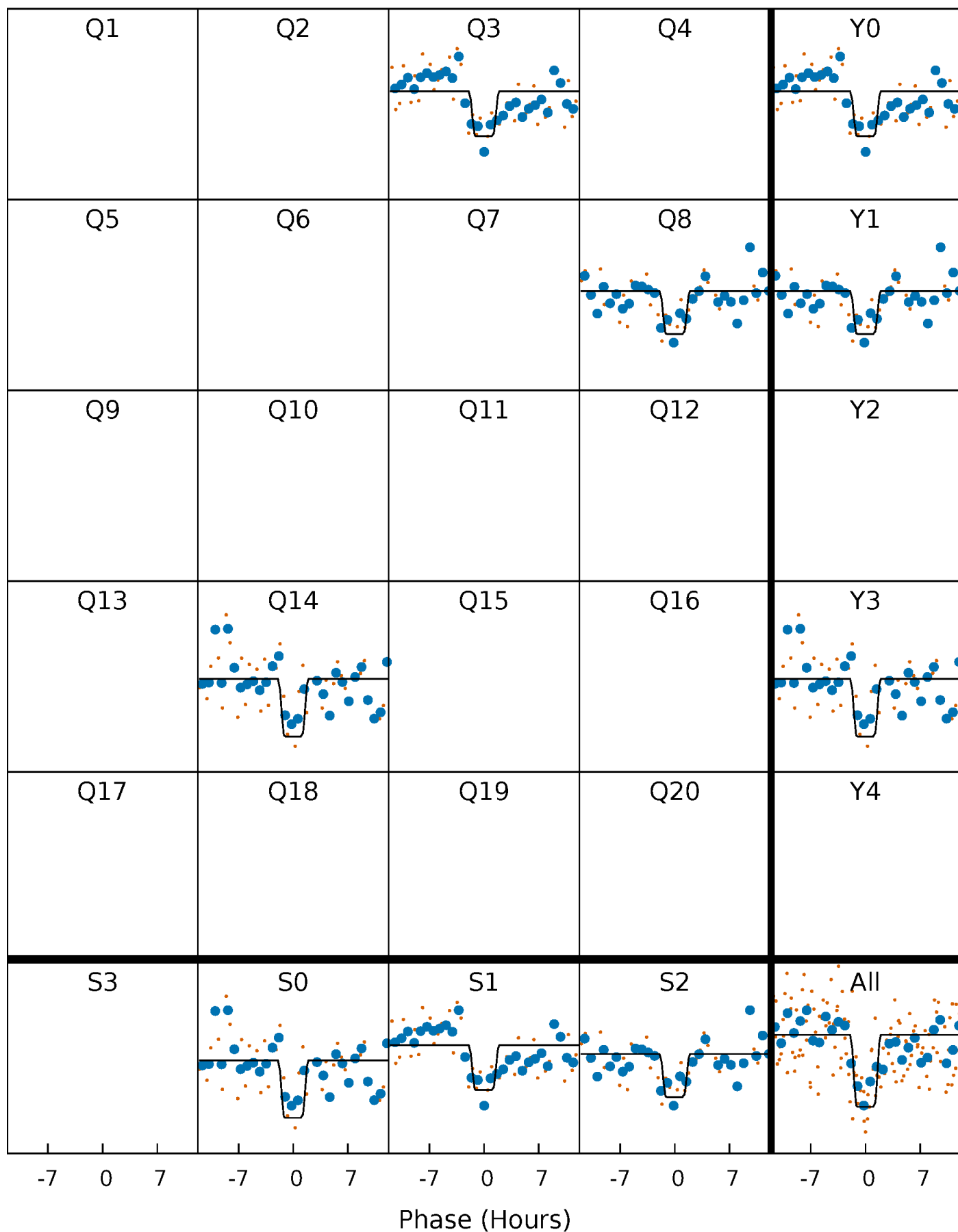
DV Quarter-Phased Transit Curves

TCE 008871405-01 P=483.554261 Days $T_0=314.854207$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

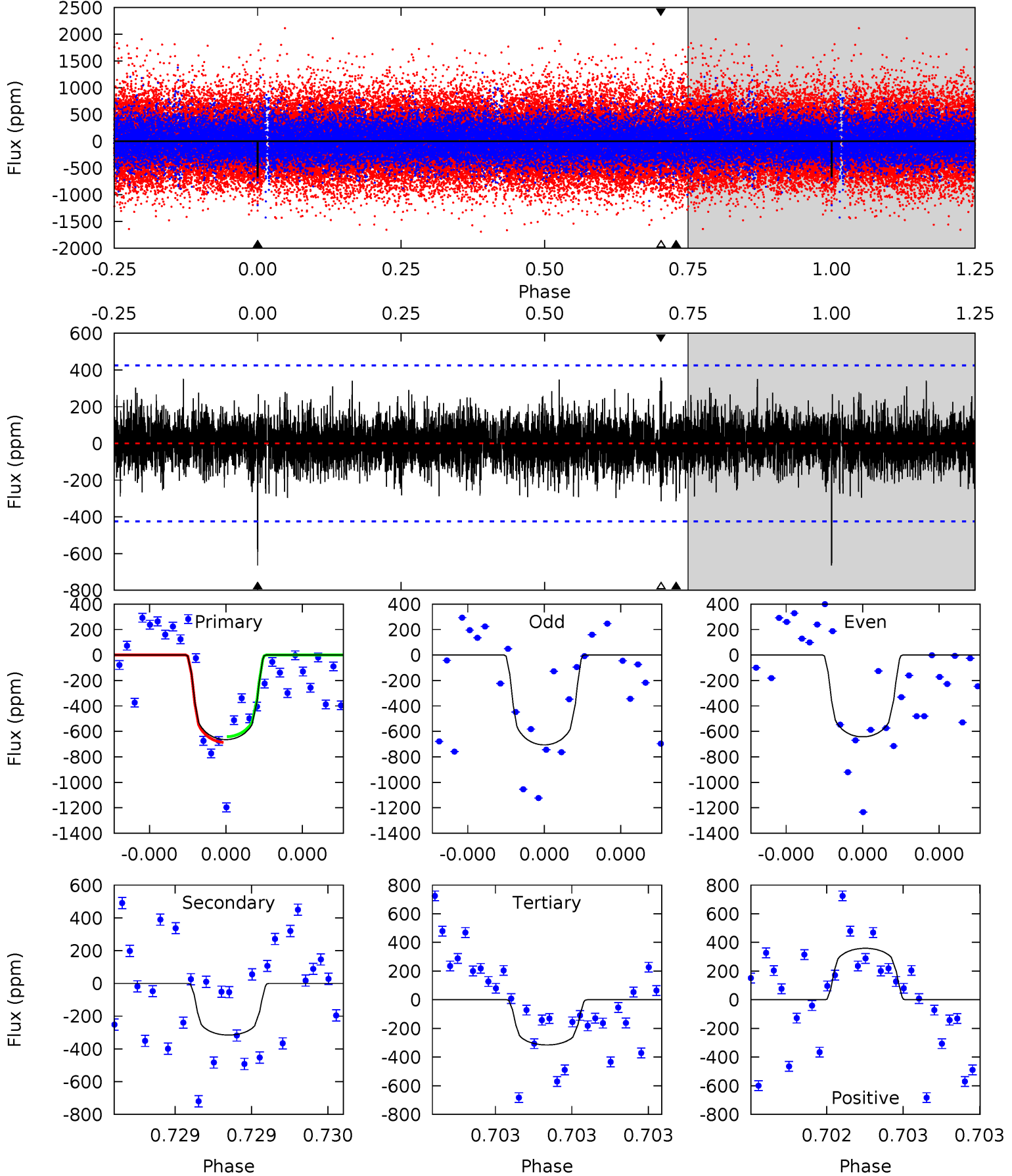
TCE 008871405-01 P=483.546575 Days $T_0=314.862137$ (BKJD)



DV Model-Shift Uniqueness Test

008871405-01, P = 483.554261 Days, E = 314.854207 Days

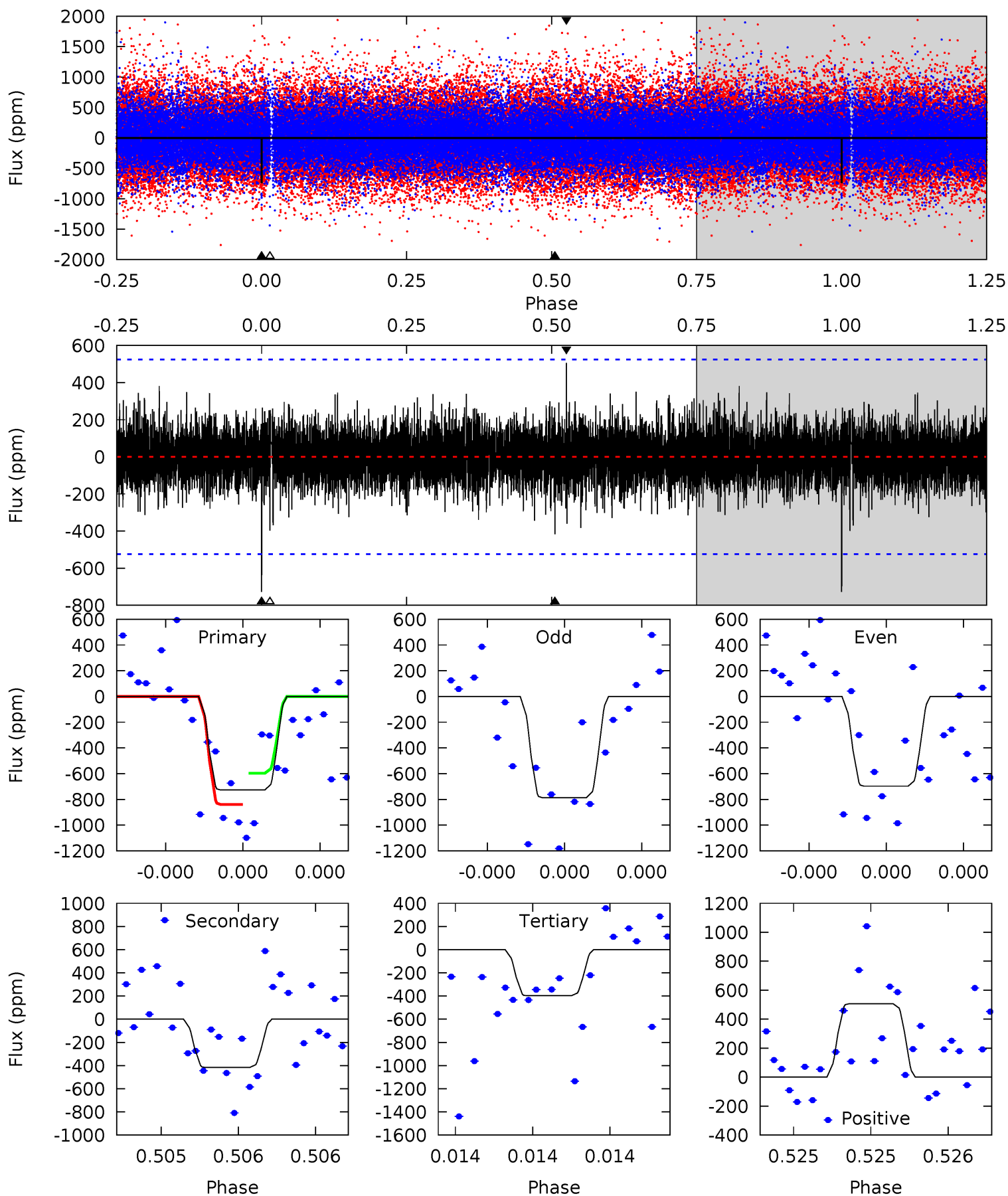
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.74	4.15	4.15	4.72	5.59	3.51	1.15	4.59	4.01	0.00	-0.57	0.39	0.93	0.35	0.29



Alt Model-Shift Uniqueness Test

008871405-01, P = 483.546575 Days, E = 314.862137 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.85	4.50	4.30	5.47	5.66	3.62	1.06	3.55	2.38	0.21	-0.96	0.44	0.93	0.41	1.31



Stellar Parameters For KIC 008871405

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6116^{+190}_{-253}	$4.440^{+0.052}_{-0.208}$	$0.210^{+0.200}_{-0.350}$	$1.084^{+0.334}_{-0.133}$	$1.181^{+0.136}_{-0.166}$	$1.307^{+0.354}_{-0.668}$
	+3%/-4%	+1%/-5%	+95%/-167%	+31%/-12%	+12%/-14%	+27%/-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 008871405-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-315 ± 76	$3.43^{+2.03}_{-1.68}$	355^{+25}_{-19}	4936^{+1946}_{-777}	22424^{+63312}_{-13506}
Alt.	-417 ± 93	$3.96^{+1.99}_{-1.86}$	354^{+24}_{-19}	4912^{+1778}_{-724}	22787^{+59810}_{-13011}

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

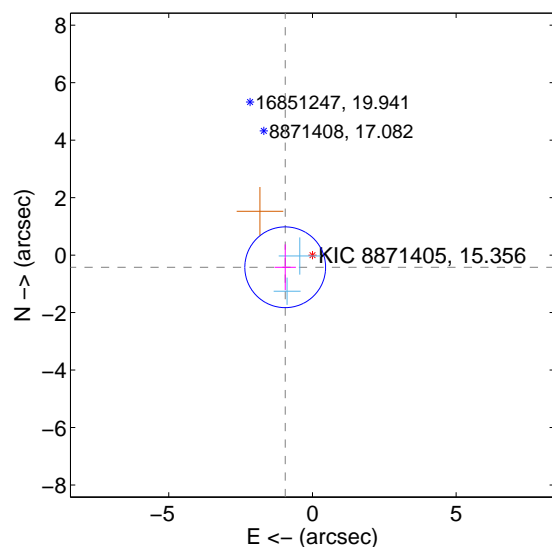
Supplemental centroid analysis for 008871405-01. Kepler magnitude: 15.36. Transit SNR 7.52

There are 2 quarters with good PRF difference image offsets

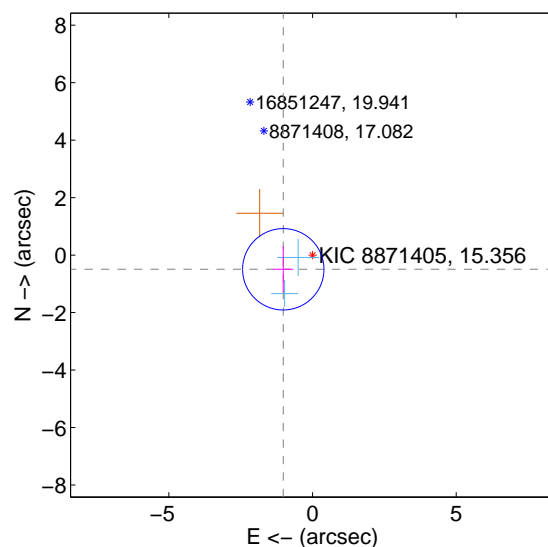
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.037 ± 0.468	2.22	0.947 ± 0.370	-0.423 ± 0.795
PRF-fit source offset from KIC position	1.131 ± 0.472	2.40	1.018 ± 0.350	-0.494 ± 0.804
photometric centroid source offset	0.61 ± 2.13	0.29	0.45 ± 2.02	-0.42 ± 2.26

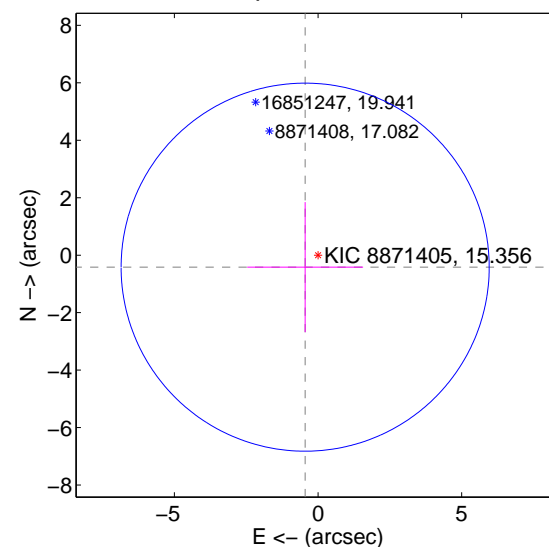
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

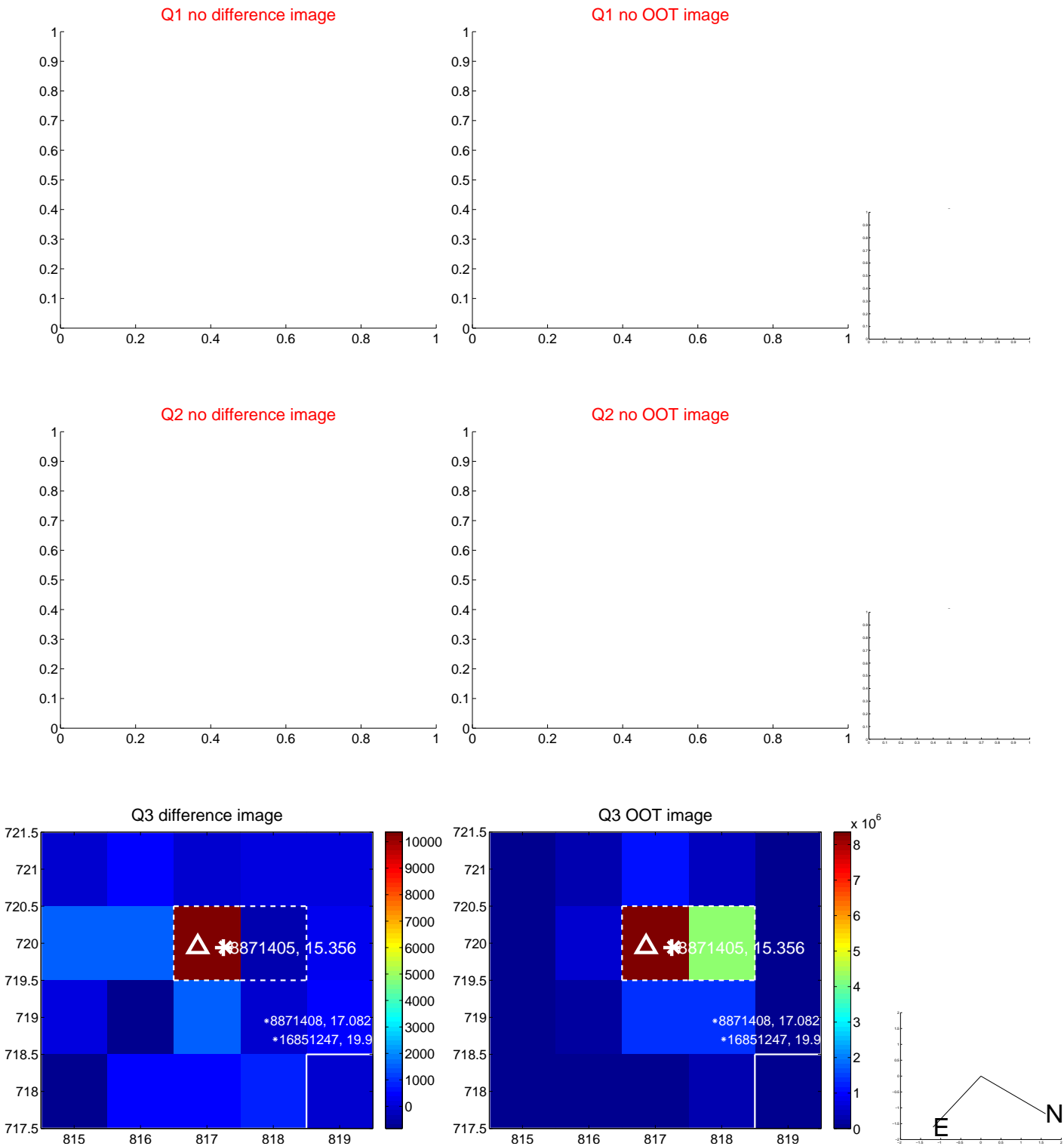


offset from photometric centroids

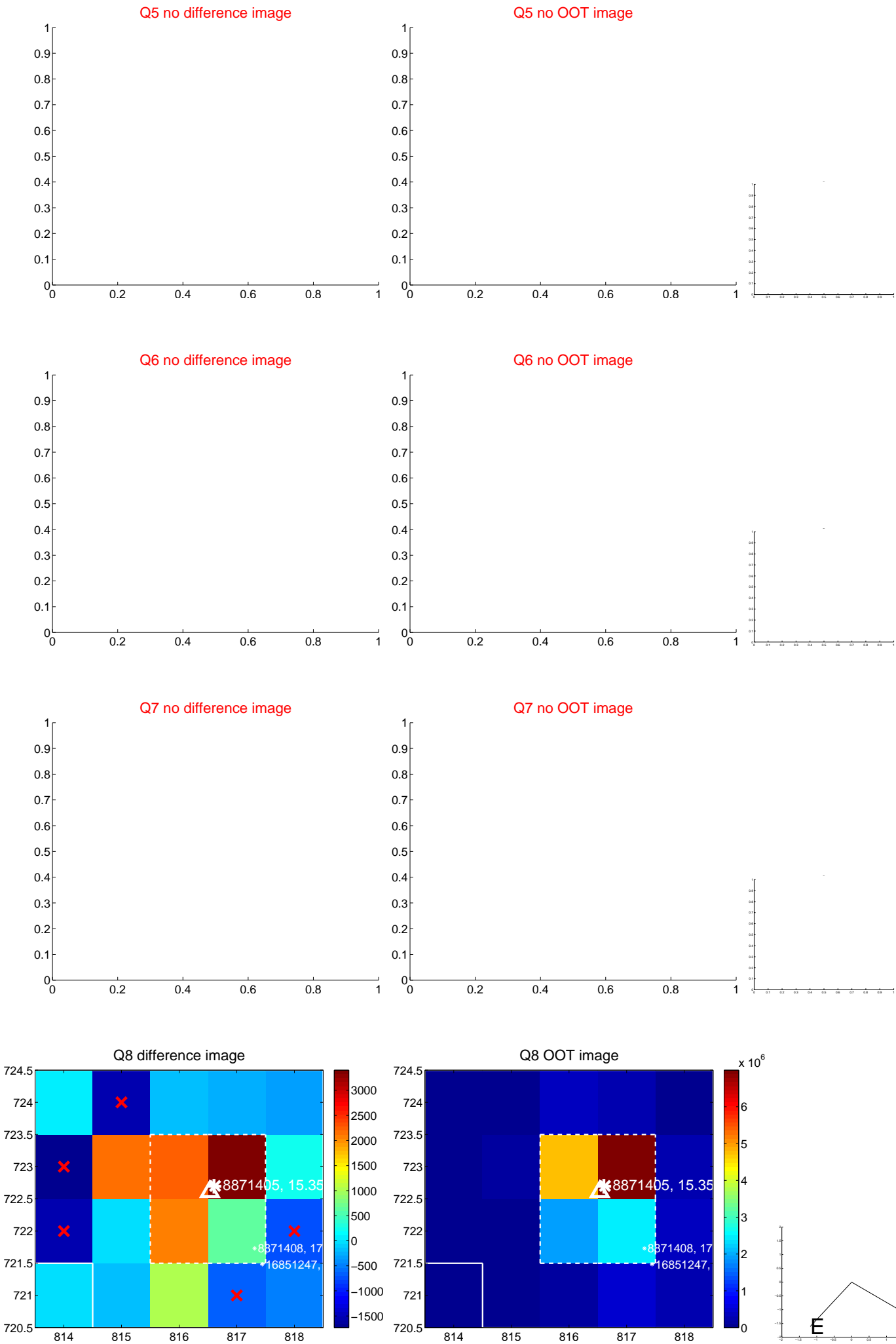


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



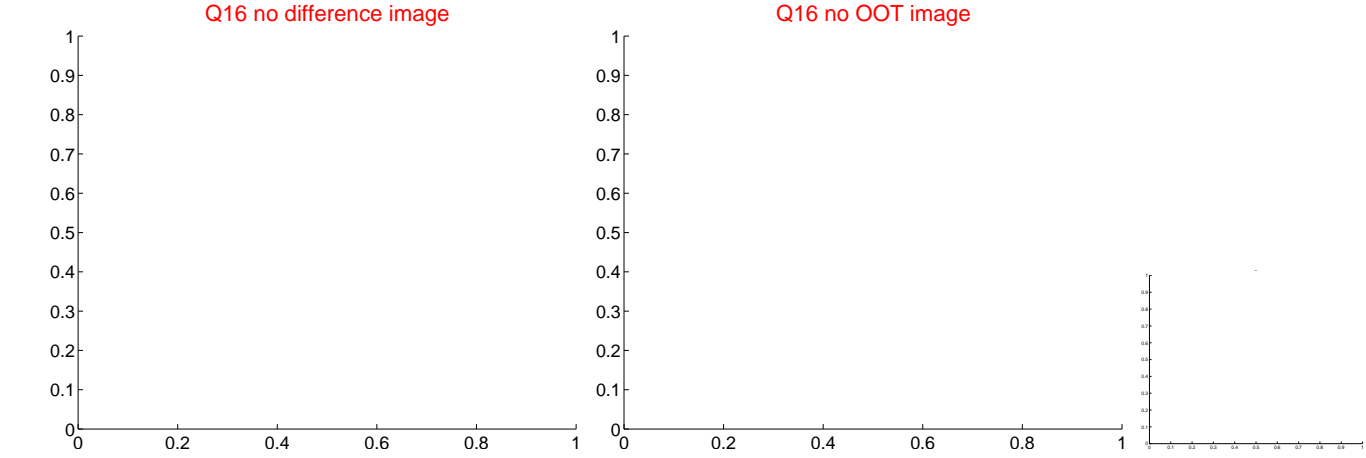
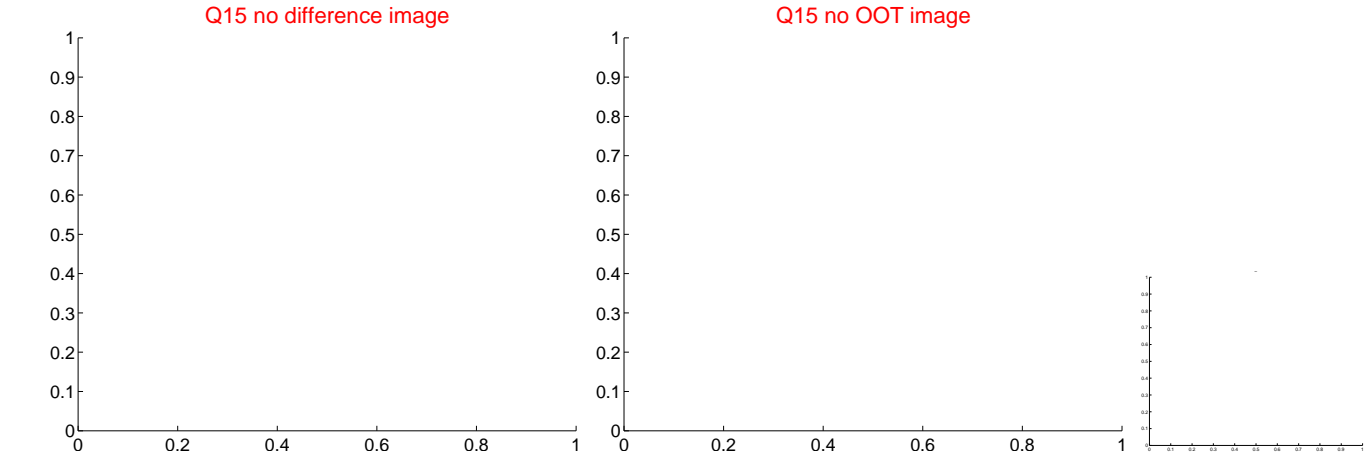
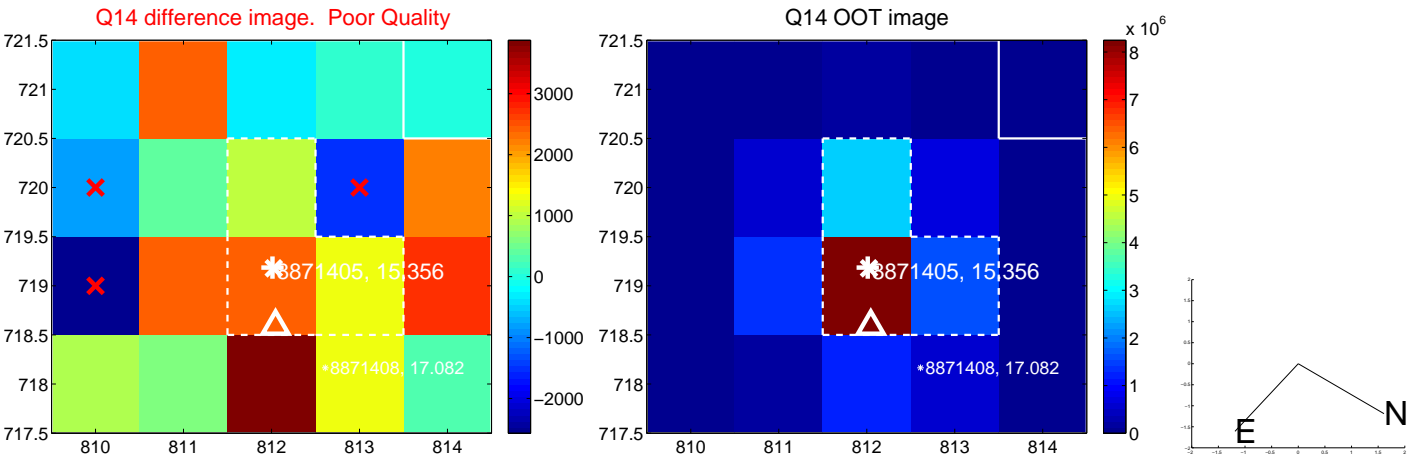
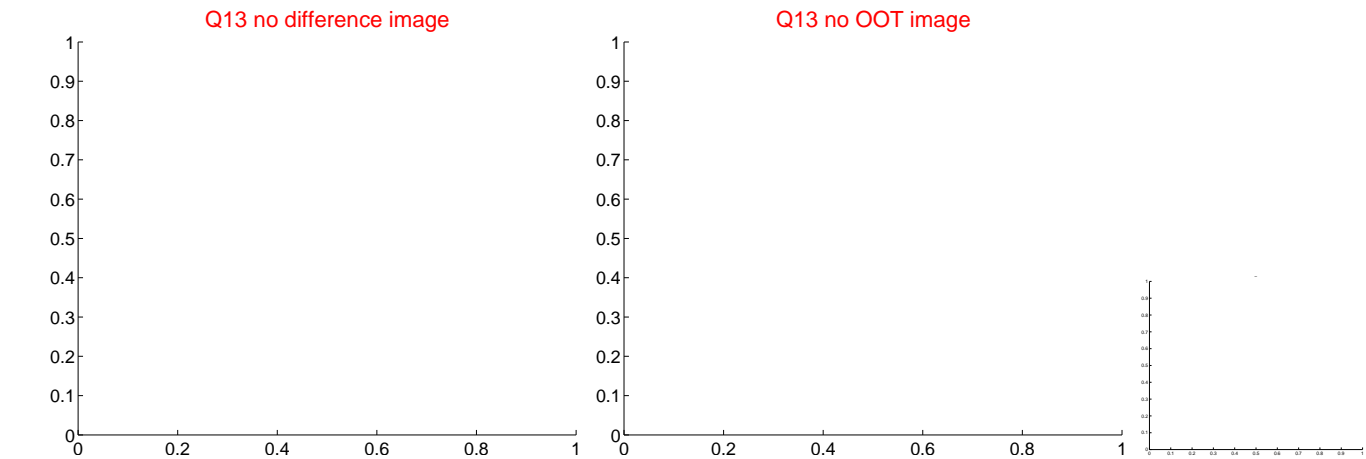
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



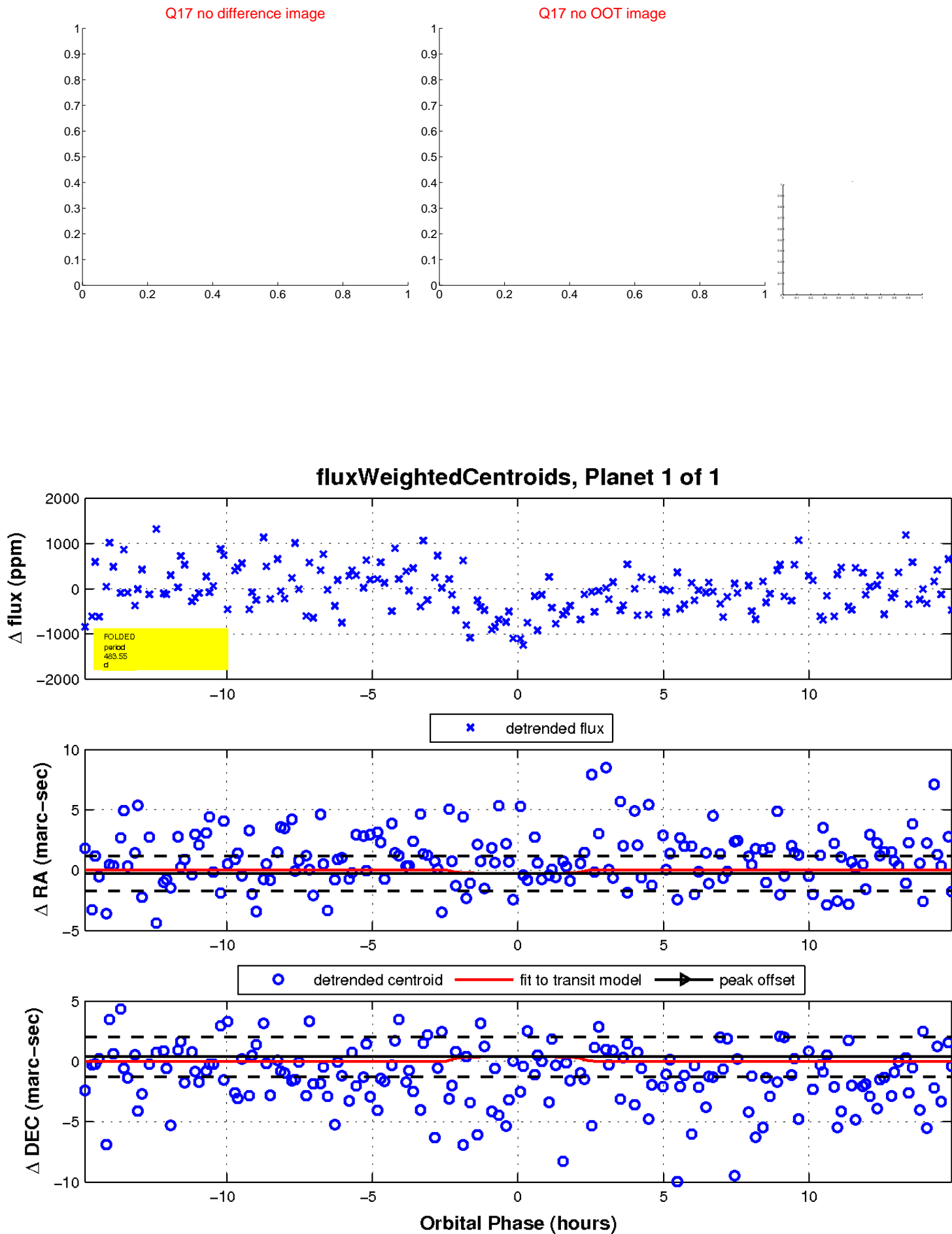
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

