

KIC 008426021

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})
008426021-01	OBS	No	587.932877	154.048614	449.0	11.030	7.8	7.4	0.81	4829	2.18	0.20

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008426021-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—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.

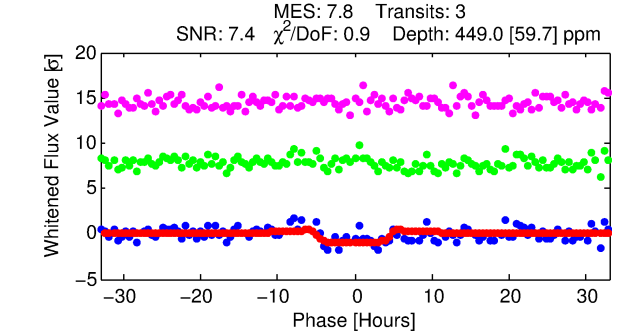
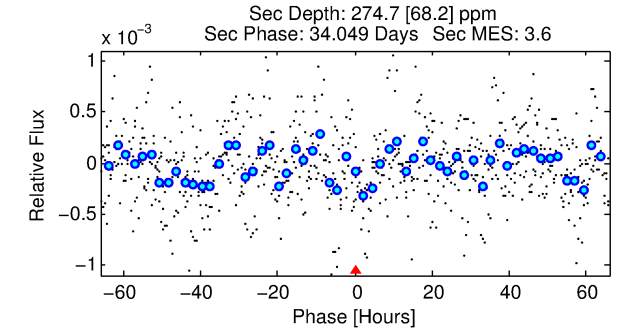
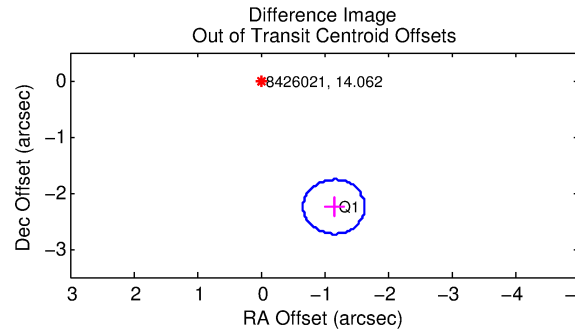
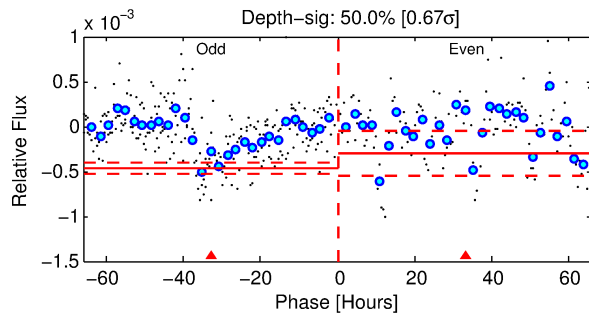
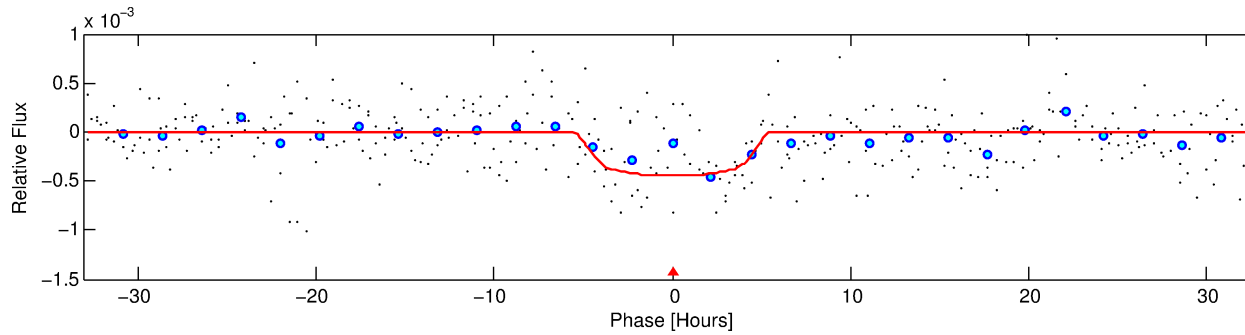
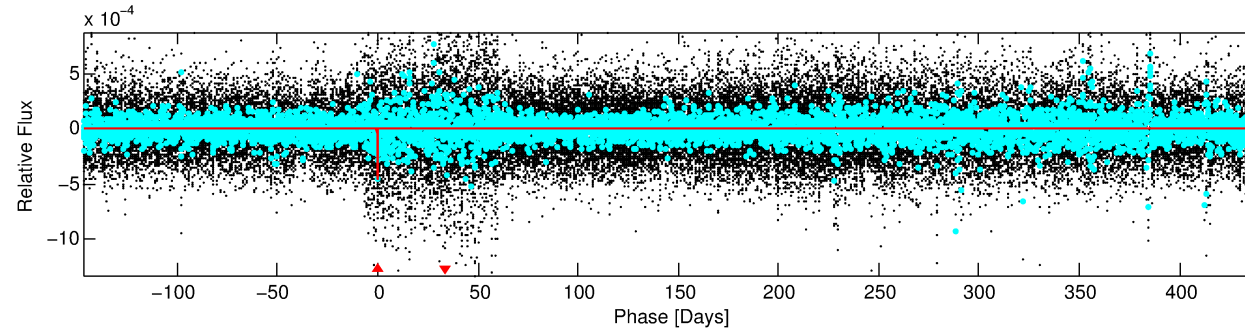
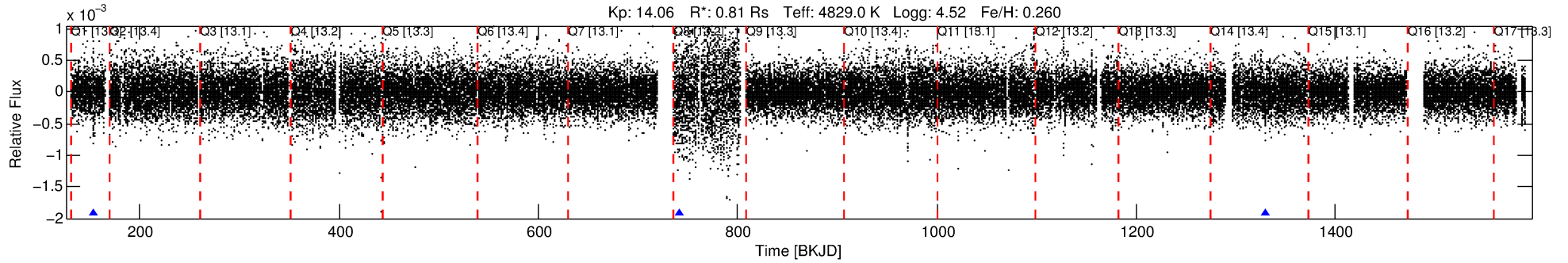
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008426021-01

No Significant Match Found

DV One-Page Summary

KIC: 8426021 Candidate: 1 of 1 Period: 587.933 d



DV Fit Results:

Period = 587.93288 [0.01191] d
Epoch = 154.0486 [0.0151] BKJD
Rp/R* = 0.0246 [0.0031]
a/R* = 180.19 [68.84]
b = 0.92 [0.06]
Seff = 0.20 [0.04]
Teq = 170 [8] K
Rp = 2.18 [0.35] Re
a = 1.2674 [0.1164] AU
Ag = 51192.03 [19373.77] [2.64σ]
Teffp = 3961 [367] K [10.31σ]

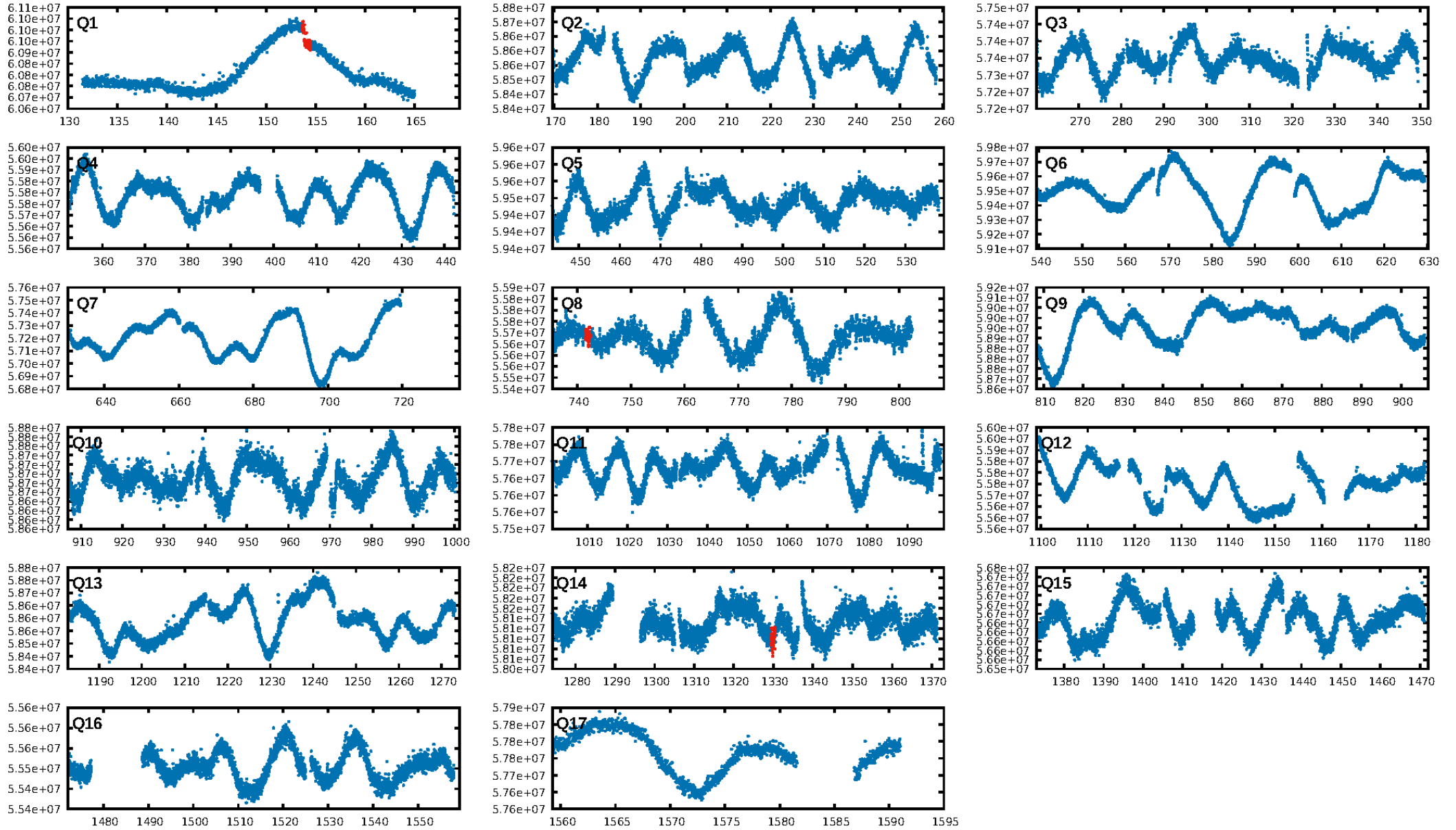
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 14.7%
ModelChiSquareGof-sig: 99.3%
Bootstrap-pfa: 5.02e-09
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 2.038
Centroid-sig: 64.0%
Centroid-so: 0.392 arcsec [0.47σ]
OotOffset-rm: 2.529 arcsec [15.65σ]
KicOffset-rm: 2.774 arcsec [17.19σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

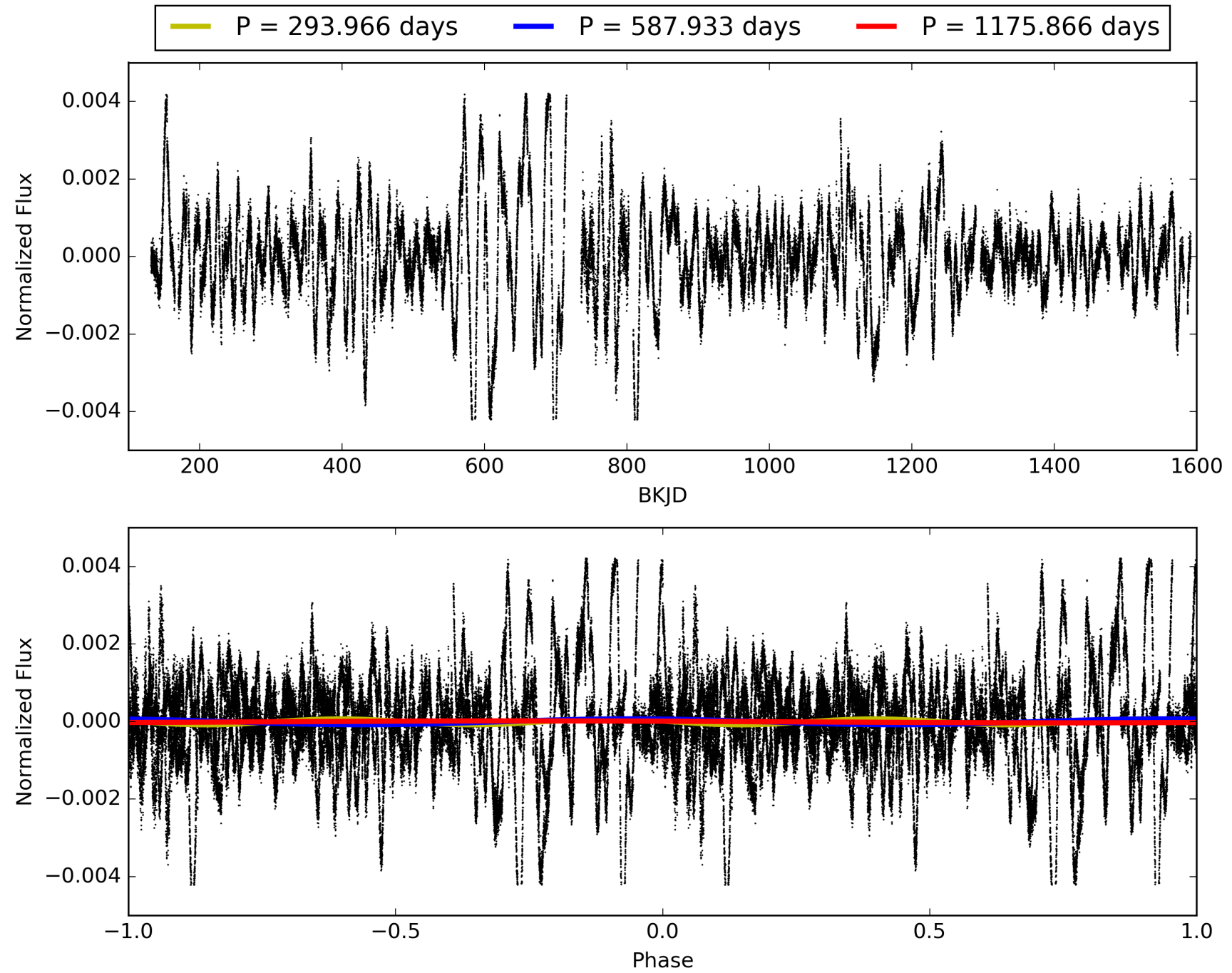
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:27:24 Z

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

TCE 008426021-01, PDC Light Curves

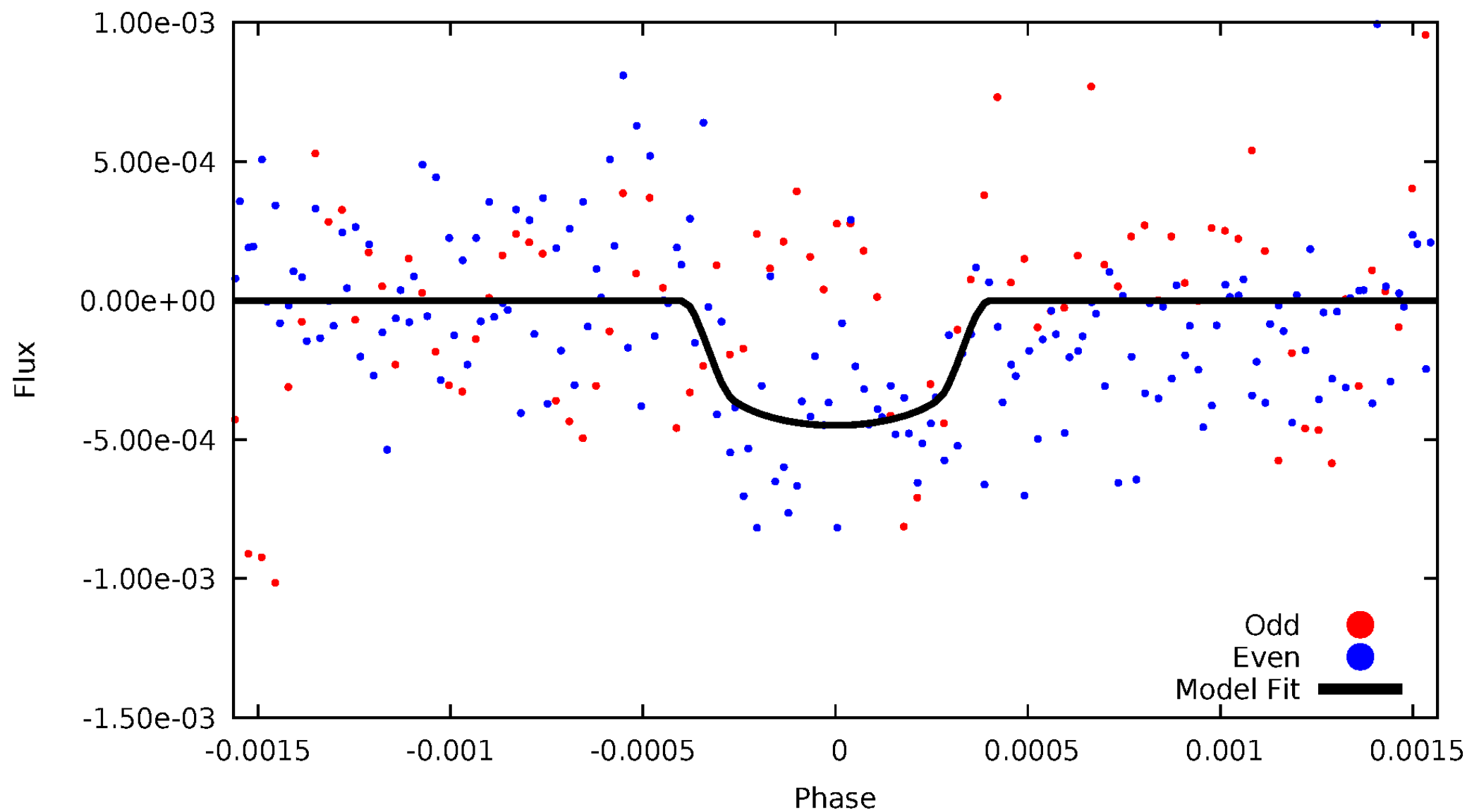


TCE 008426021-01



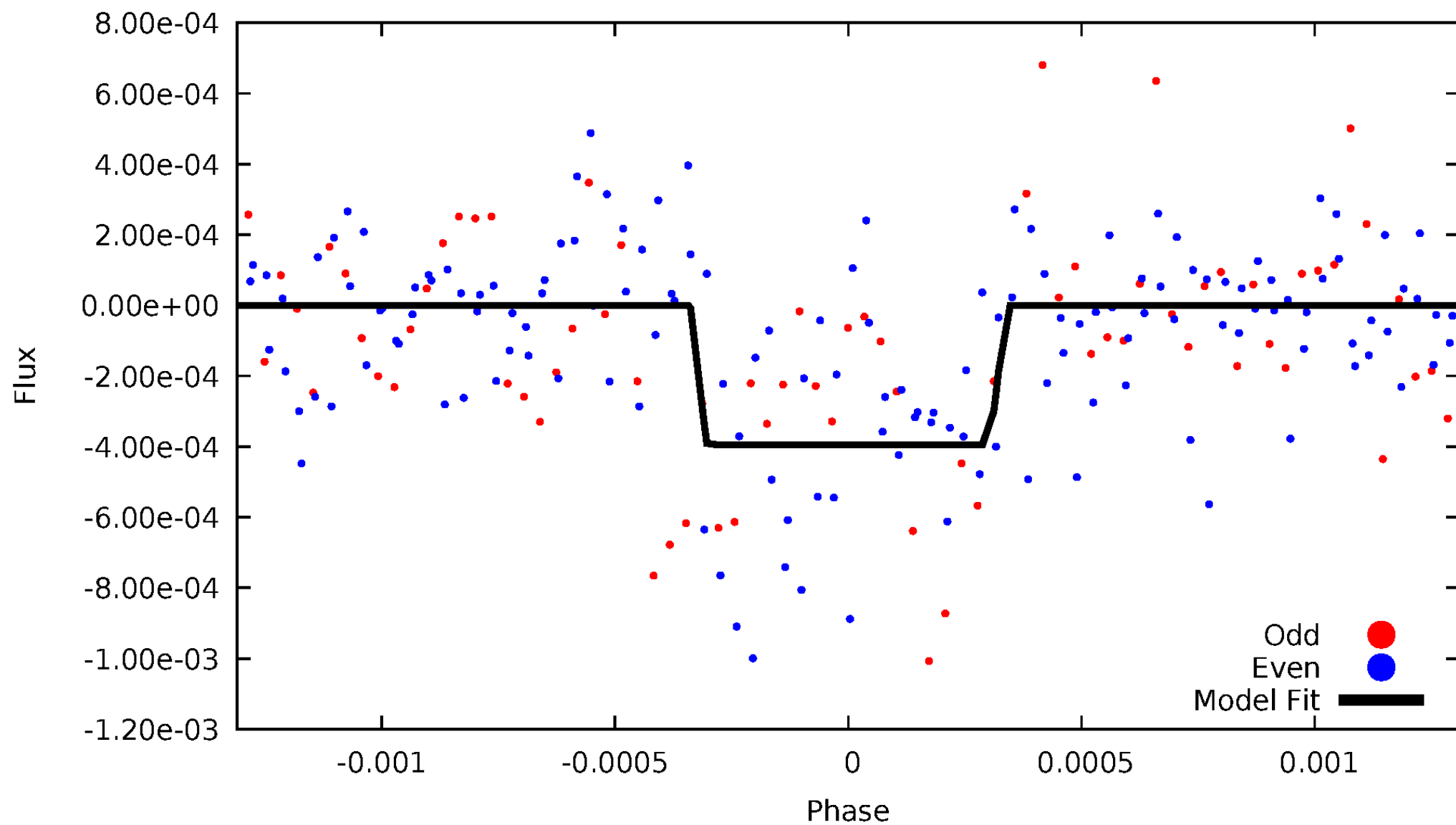
DV Odd/Even

TCE 008426021-01



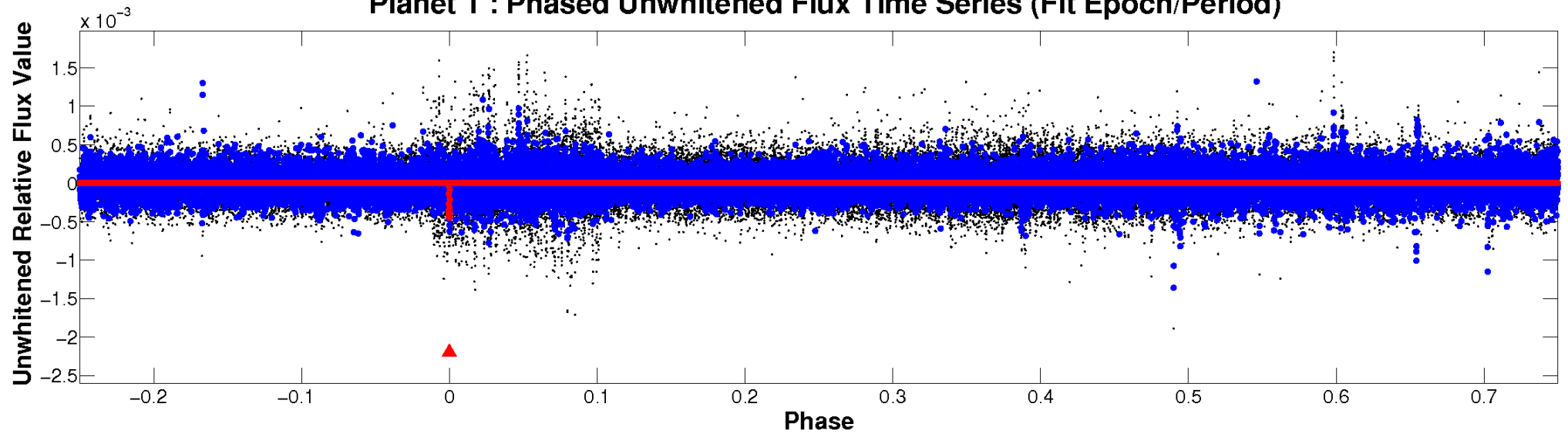
ALT Odd/Even

TCE 008426021-01

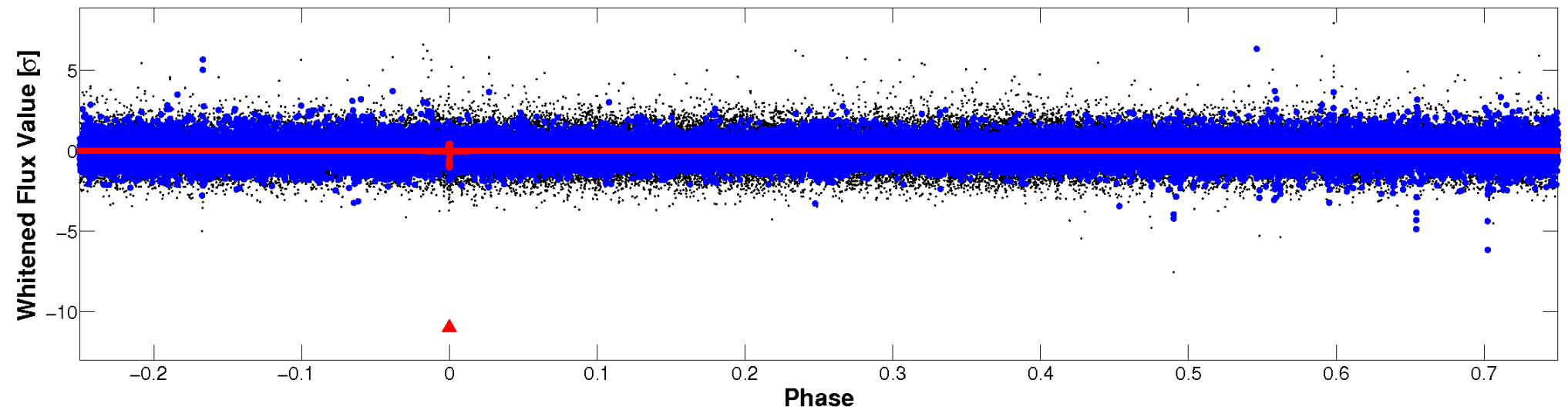


Non-Whitened Vs. Whitened Light Curve

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

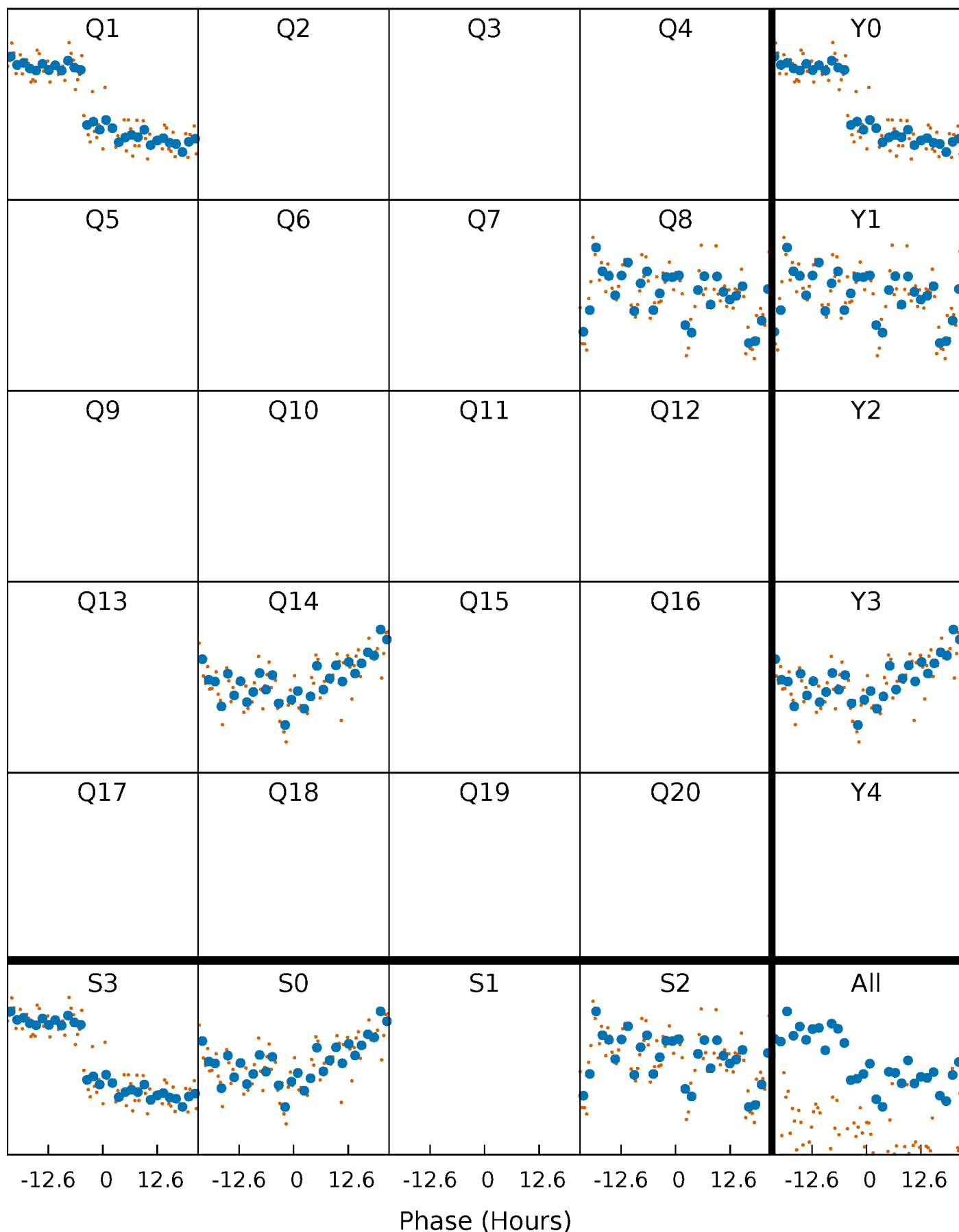


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



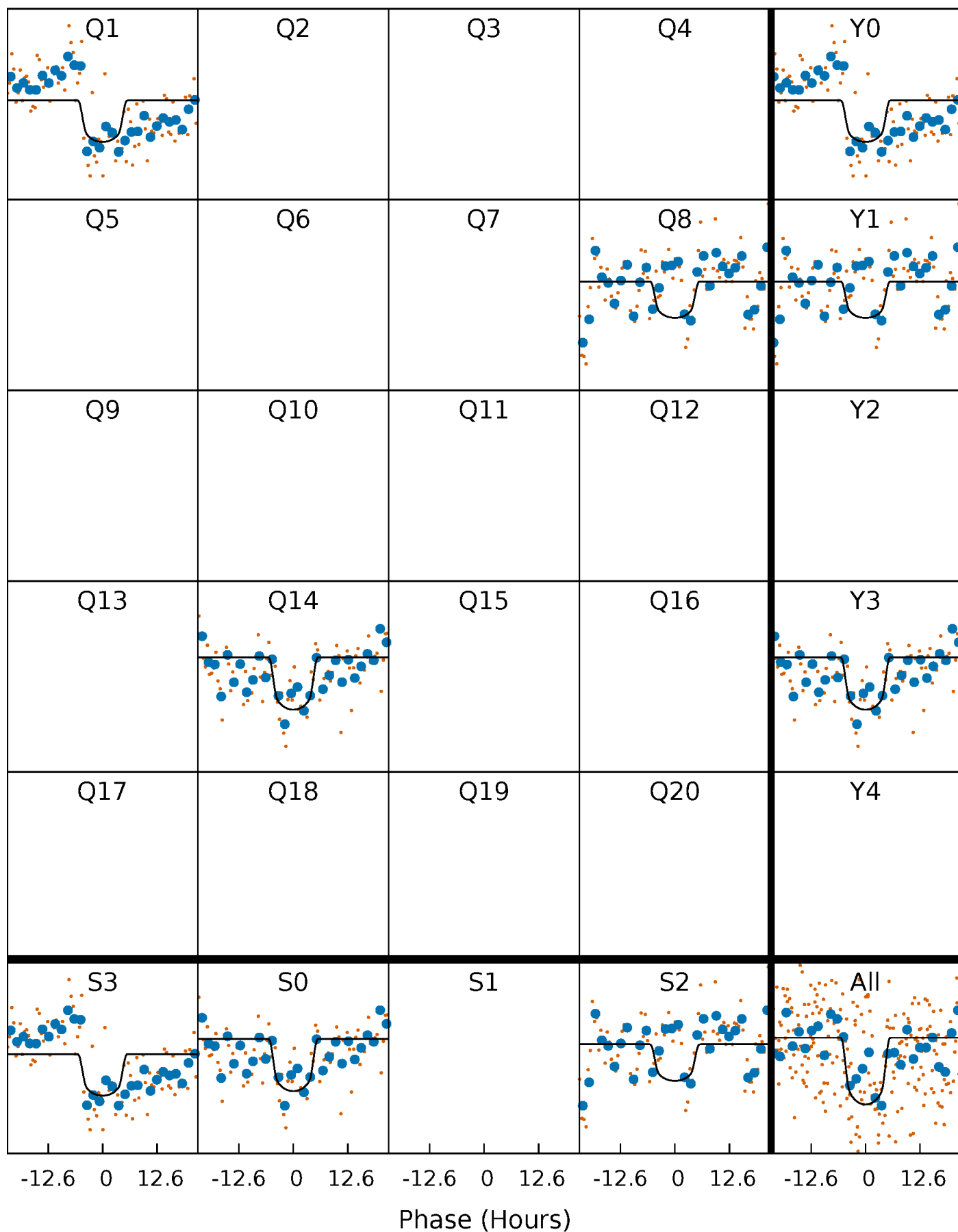
PDC Quarter-Phased Transit Curves

TCE 008426021-01 P=587.932877 Days $T_0=154.048614$ (BKJD)



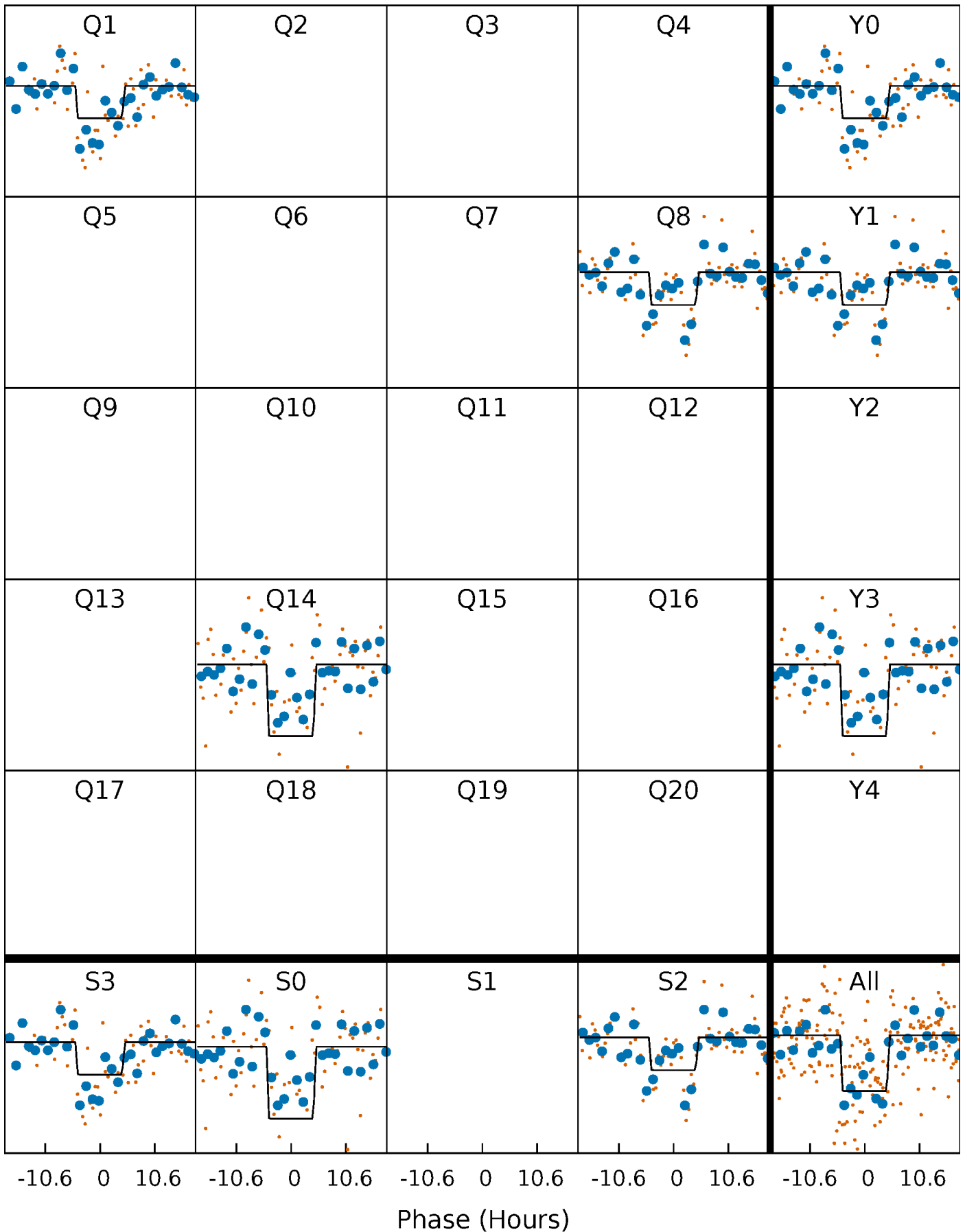
DV Quarter-Phased Transit Curves

TCE 008426021-01 P=587.932877 Days $T_0=154.048614$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

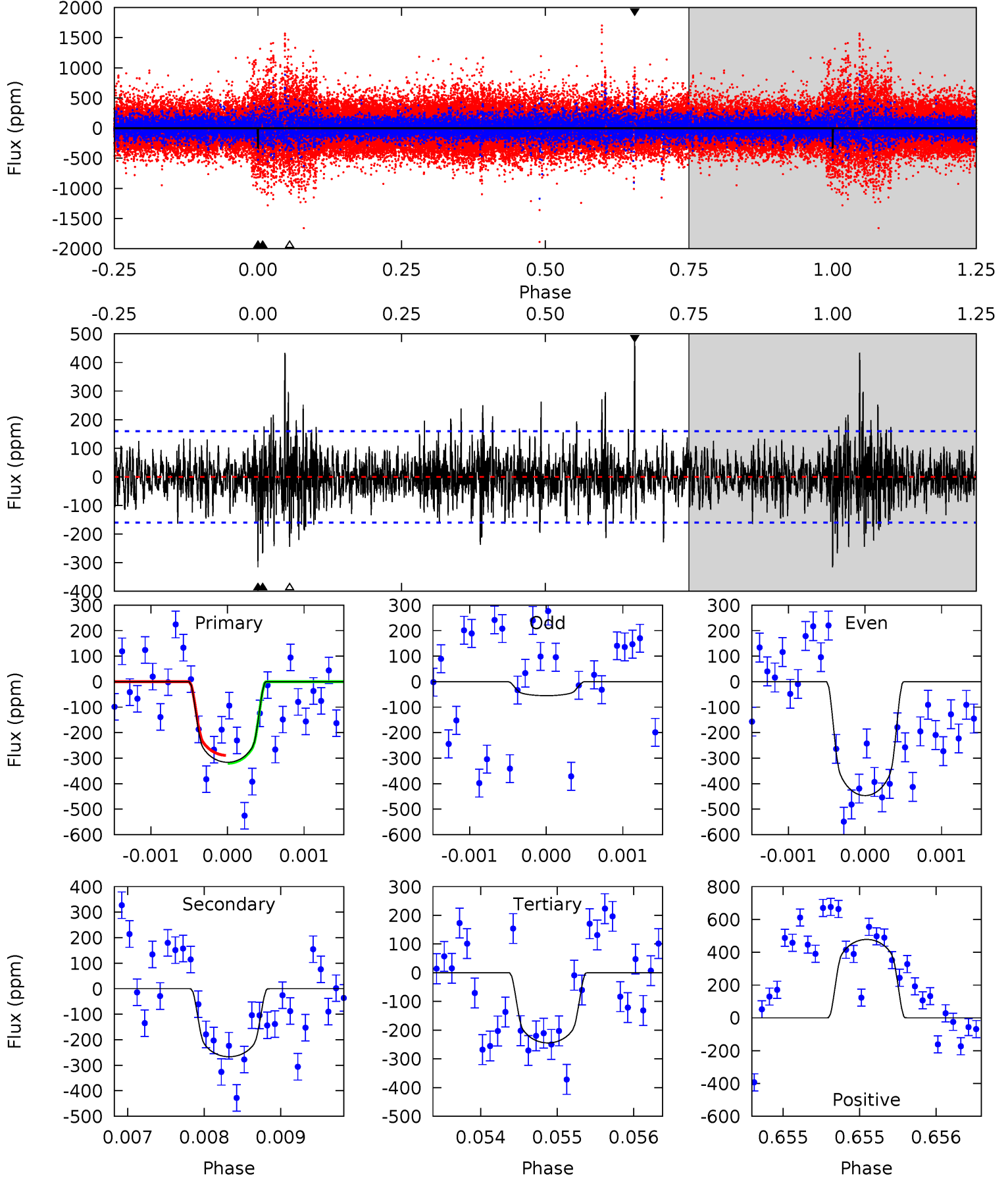
TCE 008426021-01 P=587.934822 Days $T_0=154.049248$ (BKJD)



DV Model-Shift Uniqueness Test

008426021-01, P = 587.932877 Days, E = 154.048614 Days

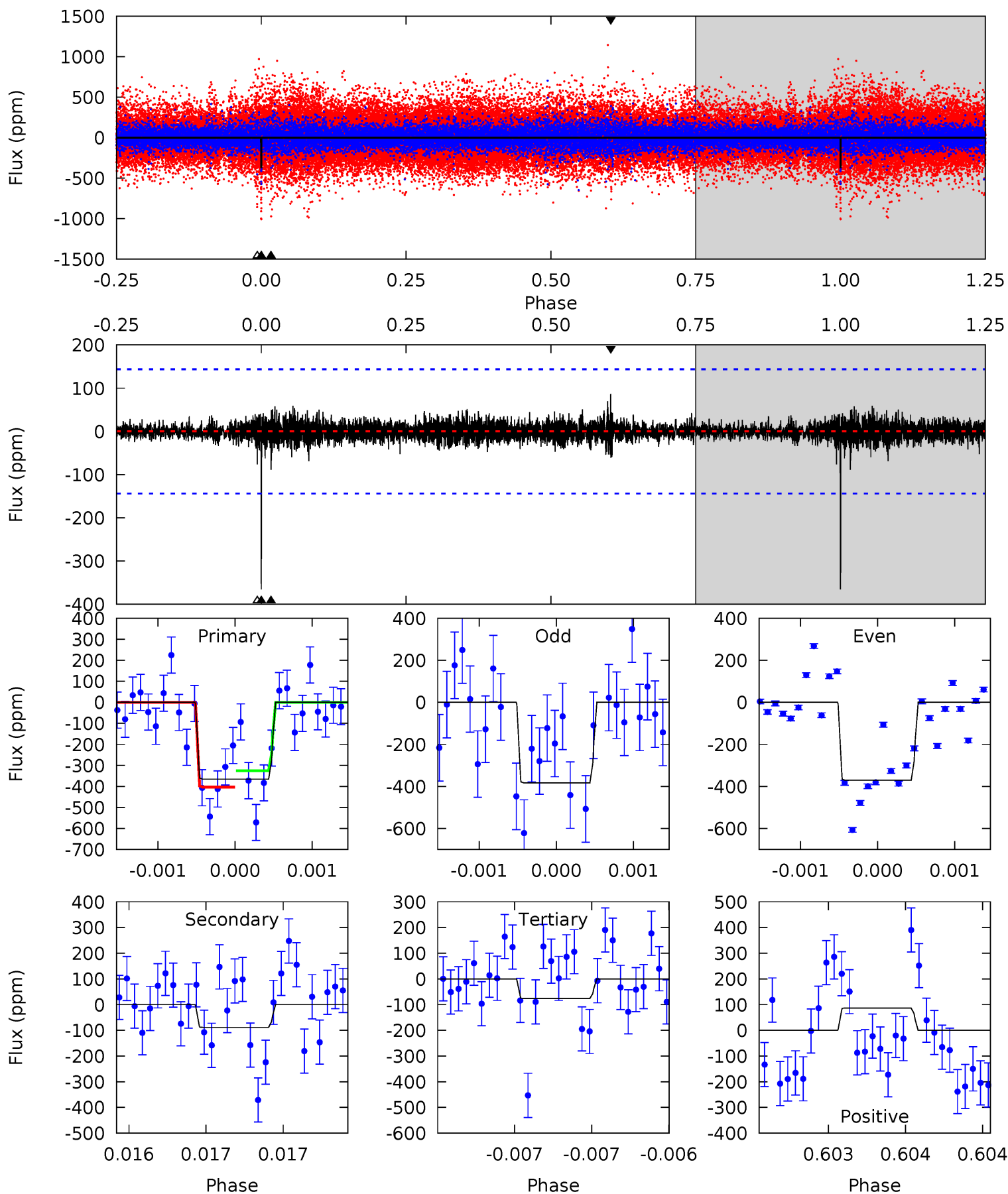
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	9.16	8.39	16.4	5.49	3.35	2.15	2.46	-5.56	0.76	-7.25	6.08	0.76	0.60	0.53



Alt Model-Shift Uniqueness Test

008426021-01, P = 587.934822 Days, E = 154.049248 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.0	3.40	2.93	3.33	5.52	3.41	0.52	11.1	10.7	0.47	0.07	0.23	0.98	0.19	1.50



Stellar Parameters For KIC 008426021

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4829^{+144}_{-129}	$4.516^{+0.080}_{-0.072}$	$0.260^{+0.200}_{-0.300}$	$0.810^{+0.056}_{-0.083}$	$0.784^{+0.060}_{-0.054}$	$2.079^{+0.663}_{-0.420}$
	+3%/-3%	+2%/-2%	+77%/-115%	+7%/-10%	+8%/-7%	+32%/-20%
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 008426021-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-267 ± 29	$2.19^{+0.29}_{-0.30}$	238^{+10}_{-8}	4116^{+238}_{-197}	49536^{+17739}_{-11987}
Alt.	-89 ± 26	$1.76^{+0.28}_{-0.29}$	238^{+9}_{-9}	3660^{+298}_{-250}	24866^{+14459}_{-8644}

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

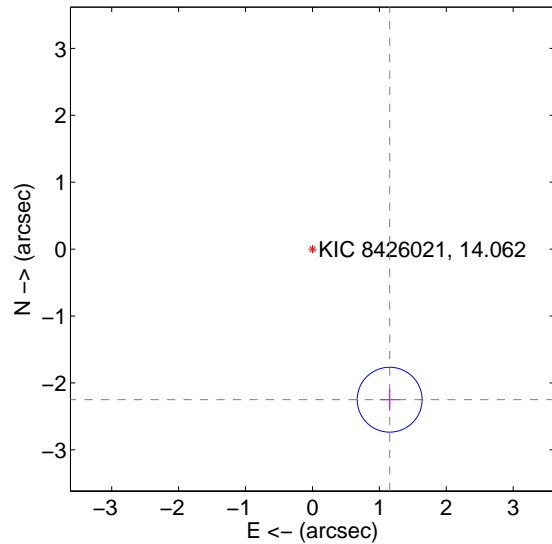
Supplemental centroid analysis for 008426021-01. Kepler magnitude: 14.06. Transit SNR 7.43

There are 1 quarters with good PRF difference image offsets

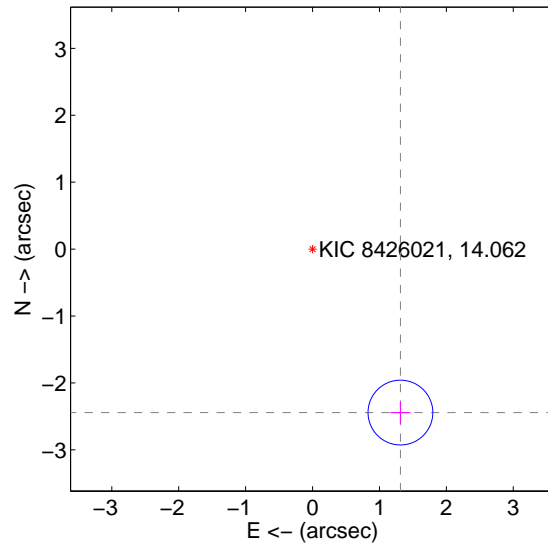
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.529 ± 0.162	15.65	-1.154 ± 0.150	-2.251 ± 0.164
PRF-fit source offset from KIC position	2.774 ± 0.161	17.19	-1.314 ± 0.150	-2.443 ± 0.164
photometric centroid source offset	0.39 ± 0.83	0.47	0.38 ± 0.82	-0.11 ± 0.90

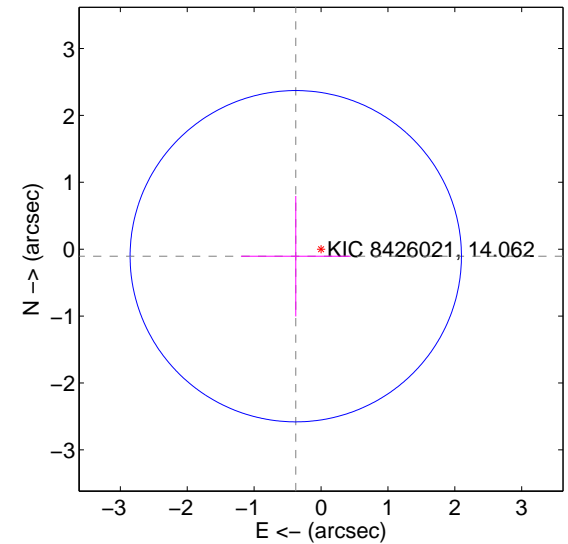
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

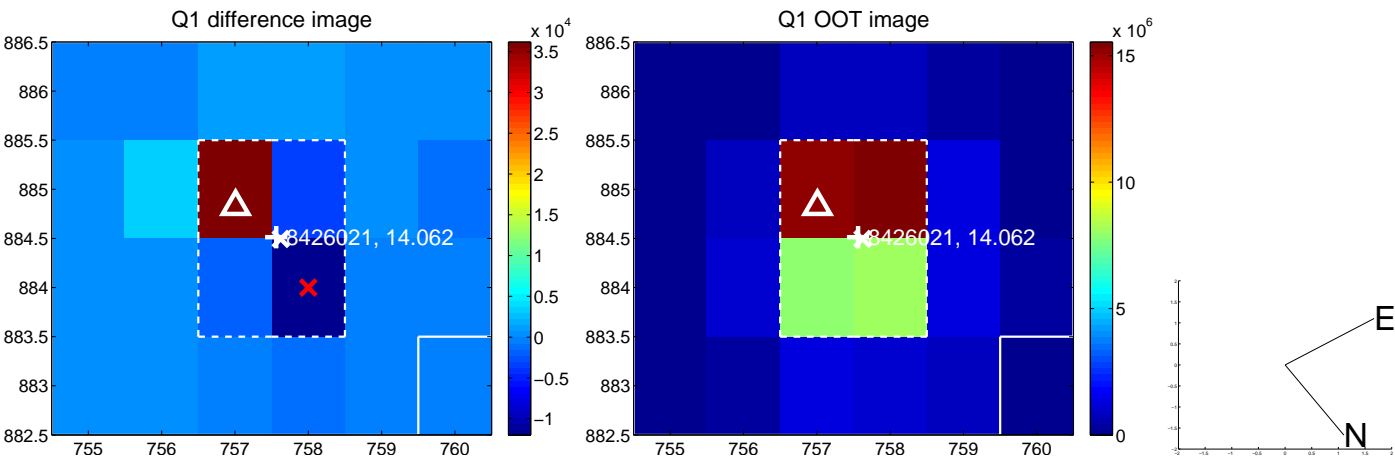


offset from photometric centroids

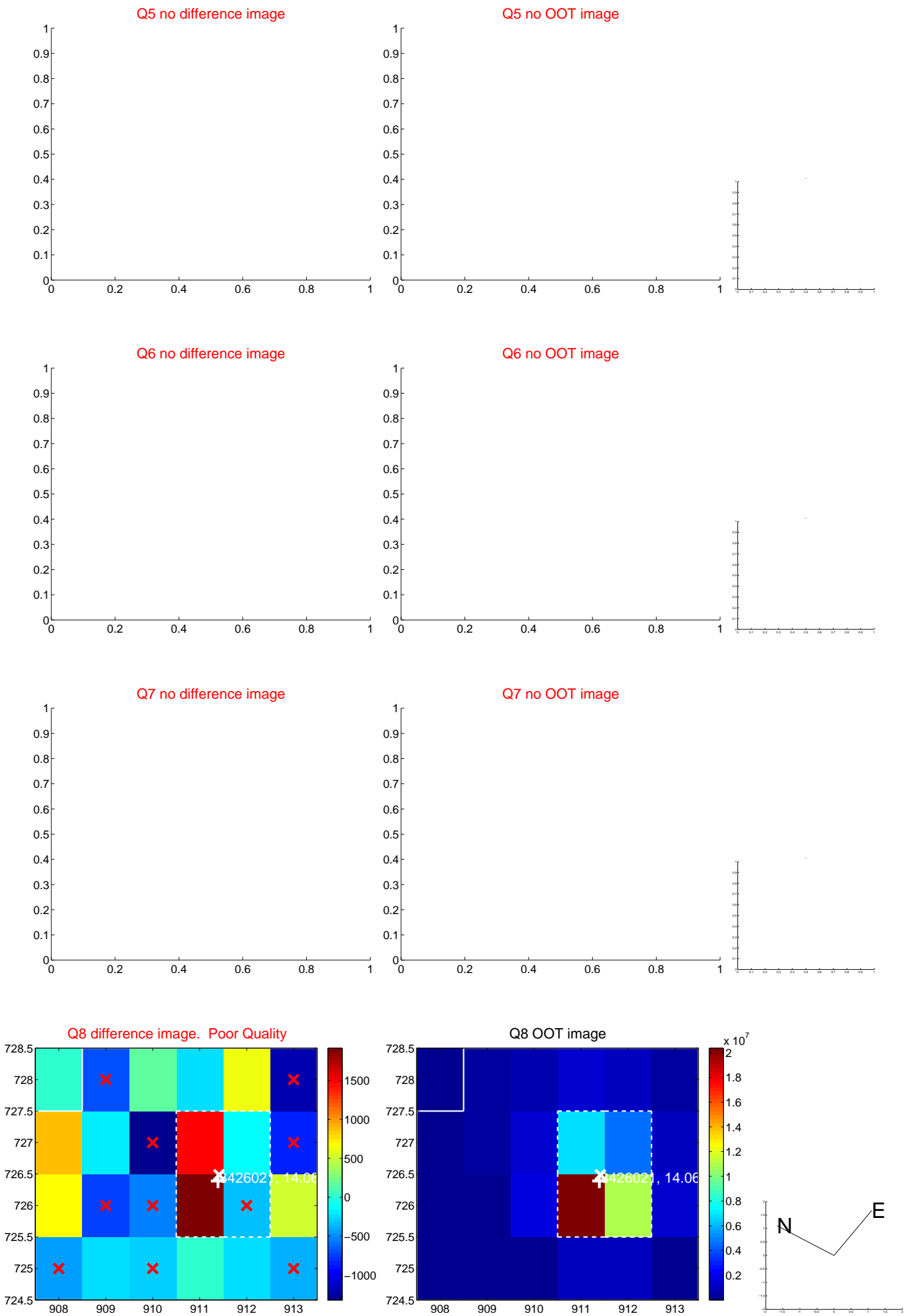


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



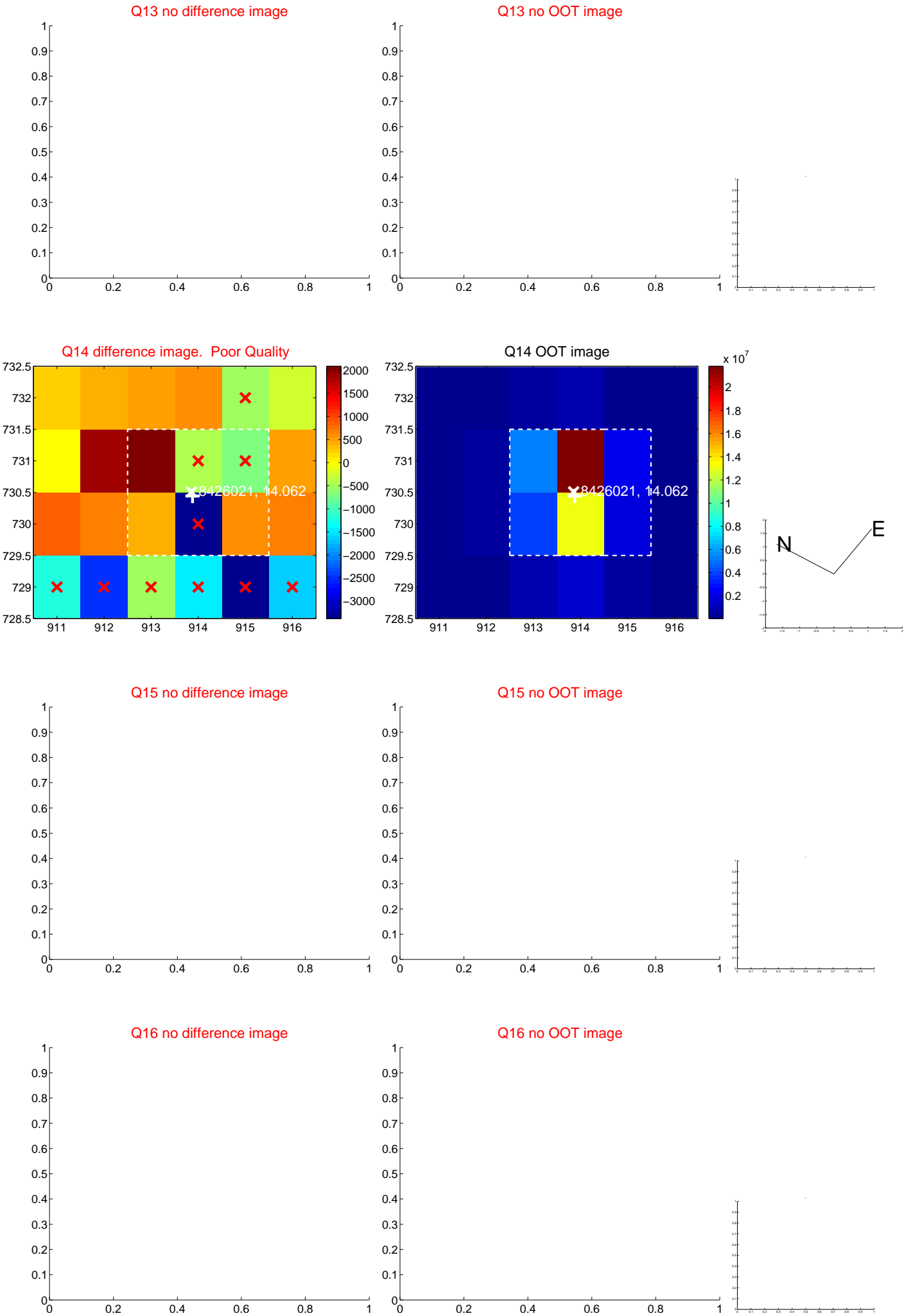
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



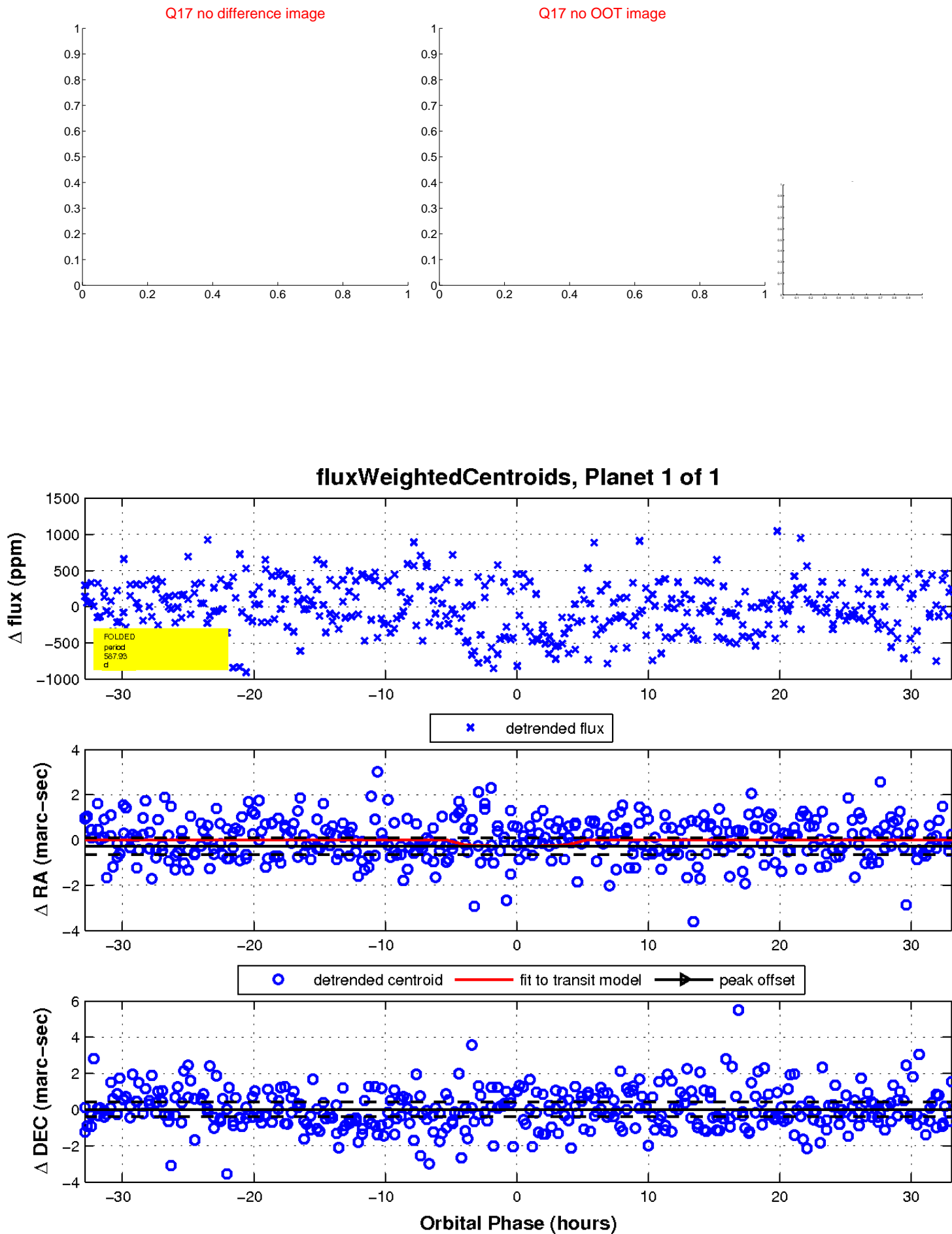
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

