

KIC 010255401

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})
010255401-01	OBS	No	443.010340	458.068167	320.4	3.987	11.0	8.6	37.94	4566	73.60	520.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010255401-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—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.

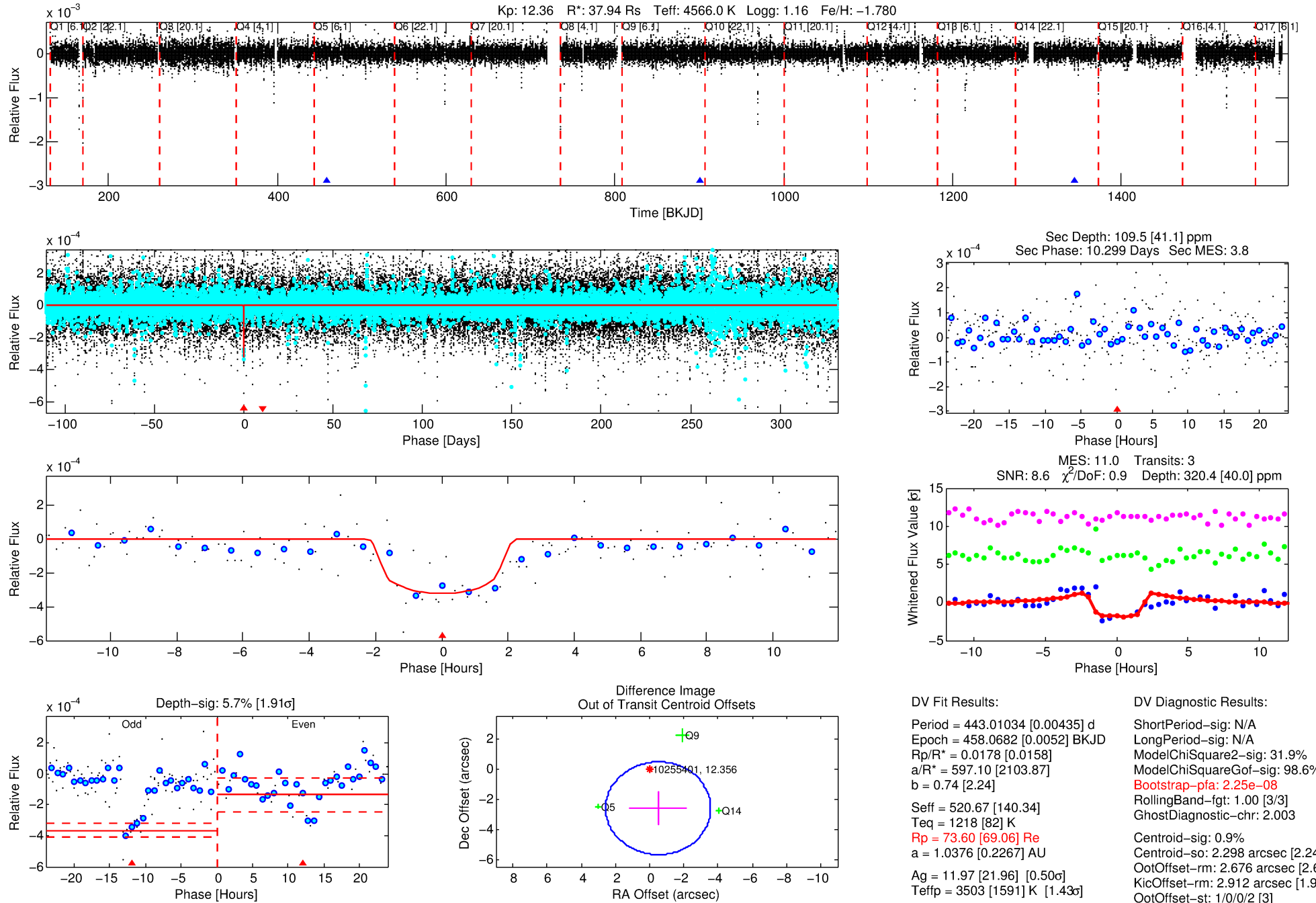
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010255401-01

No Significant Match Found

DV One-Page Summary

KIC: 10255401 Candidate: 1 of 1 Period: 443.010 d



DV Fit Results:

Period = 443.01034 [0.00435] d
Epoch = 458.0682 [0.0052] BKJD
Rp/R* = 0.0178 [0.0158]
a/R* = 597.10 [2103.87]
b = 0.74 [2.24]
Seff = 520.67 [140.34]
Teq = 1218 [82] K
Rp = 73.60 [69.06] Re
a = 1.0376 [0.2267] AU
Ag = 11.97 [21.96] [0.50σ]
Teffp = 3503 [1591] K [1.43σ]

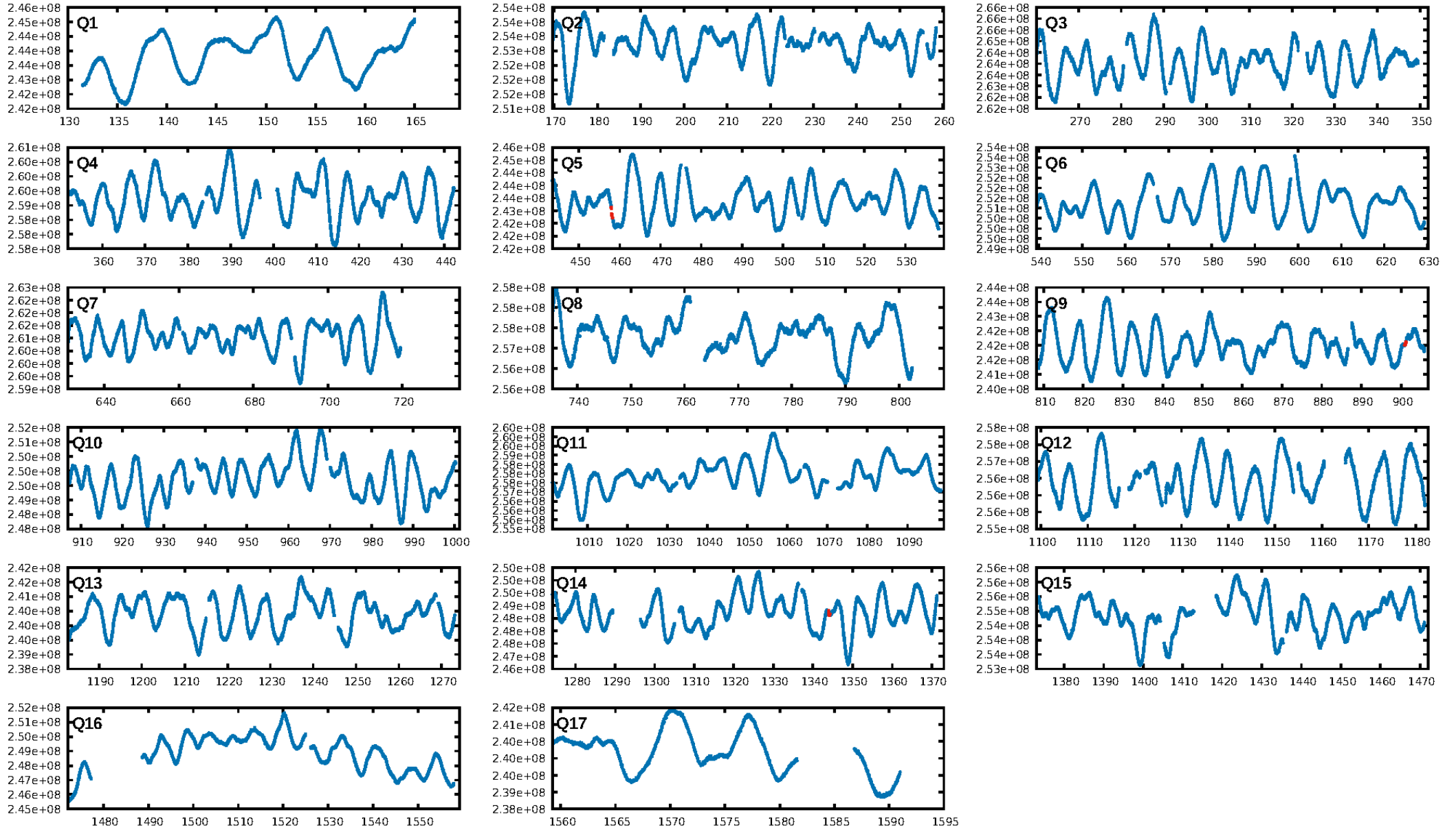
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 31.9%
ModelChiSquareGof-sig: 98.6%
Bootstrap-pfa: 2.25e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.003
Centroid-sig: 0.9%
Centroid-so: 2.298 arcsec [2.24σ]
OotOffset-rm: 2.676 arcsec [2.61σ]
OotOffset-st: 1/0/0/2 [3]
KicOffset-rm: 2.912 arcsec [1.97σ]
KicOffset-st: 1/0/0/2 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

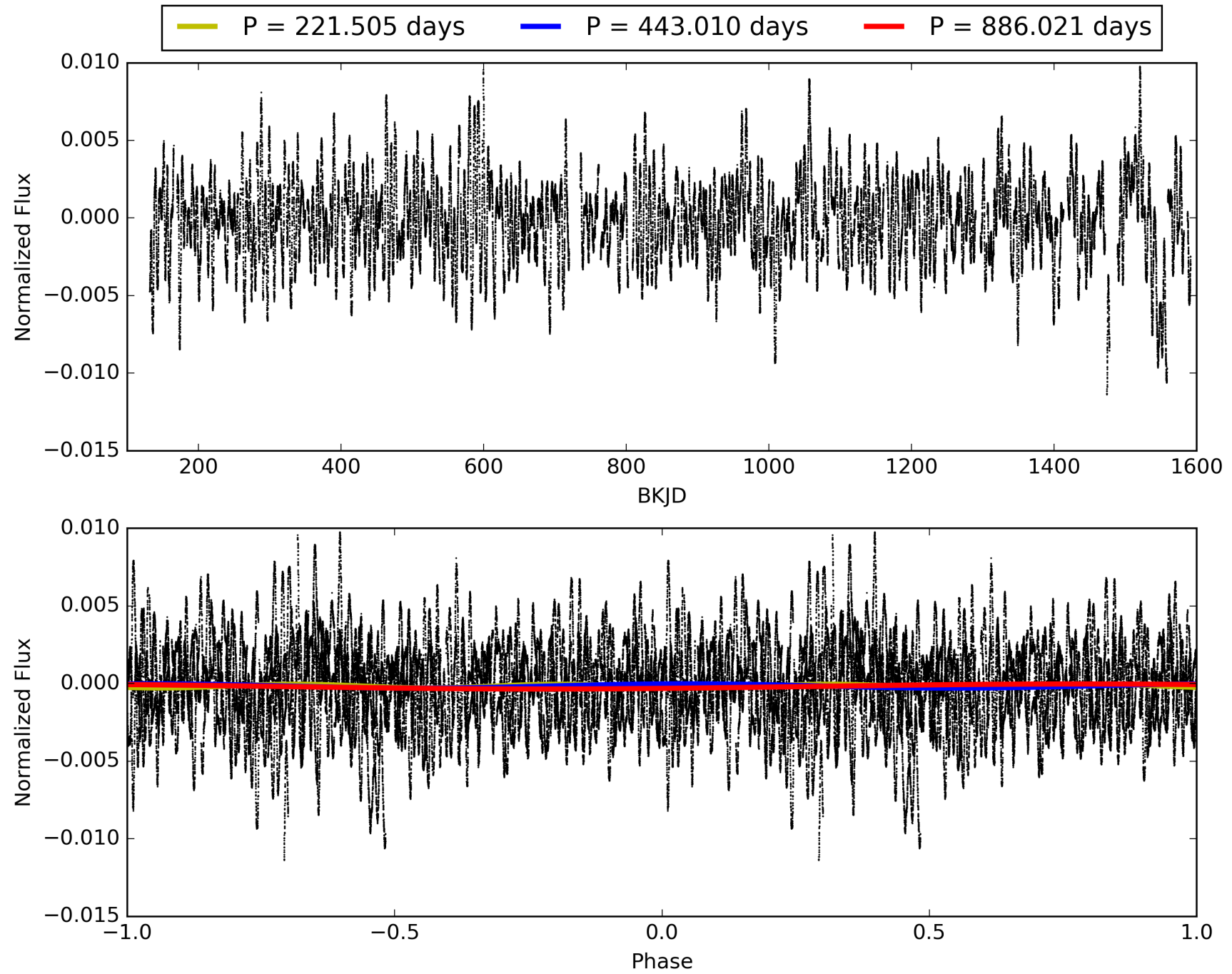
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:27:17 Z

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

TCE 010255401-01, PDC Light Curves

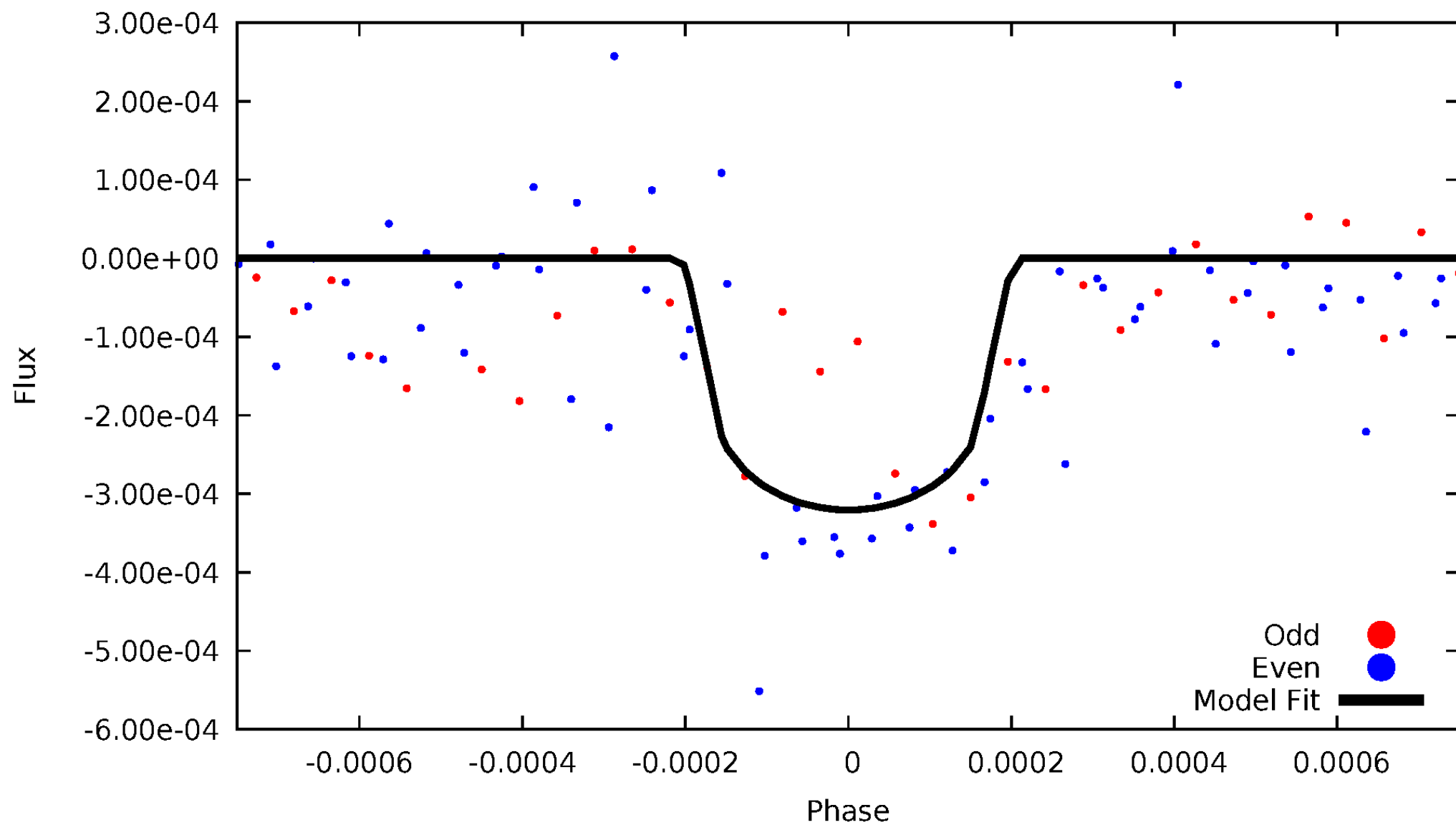


TCE 010255401-01



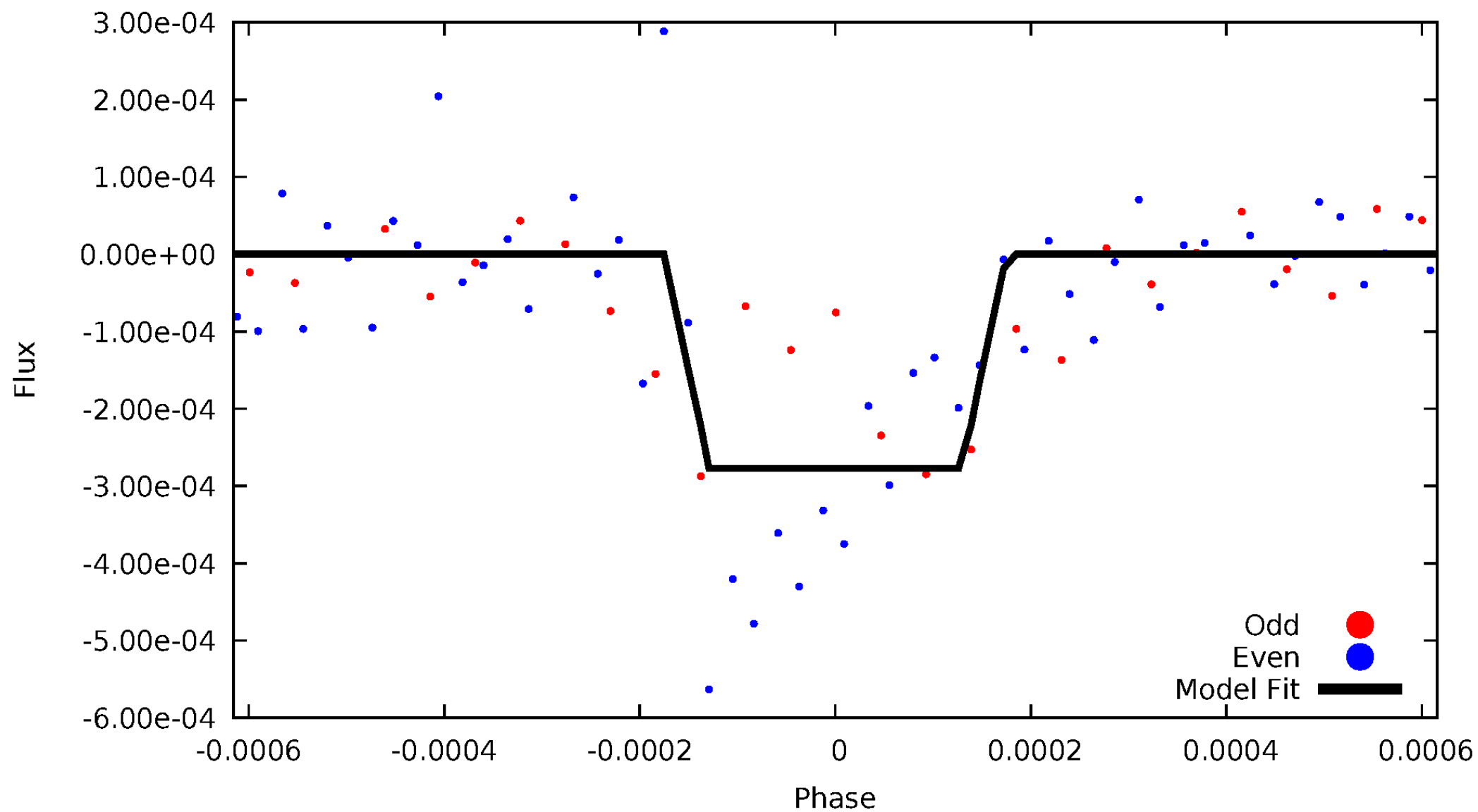
DV Odd/Even

TCE 010255401-01



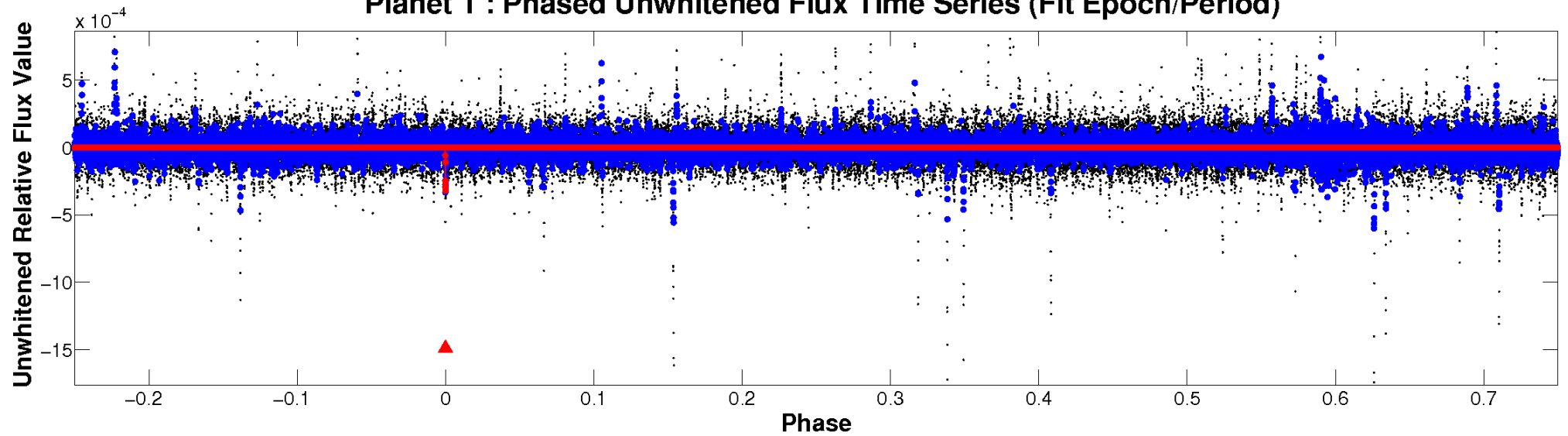
ALT Odd/Even

TCE 010255401-01

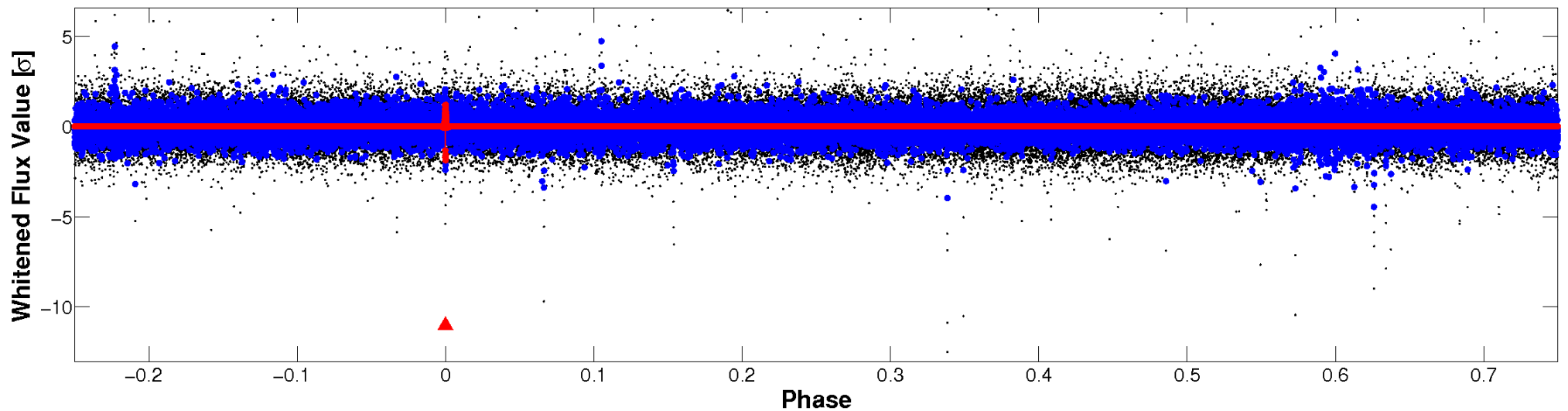


Non-Whitened Vs. Whitened Light Curve

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

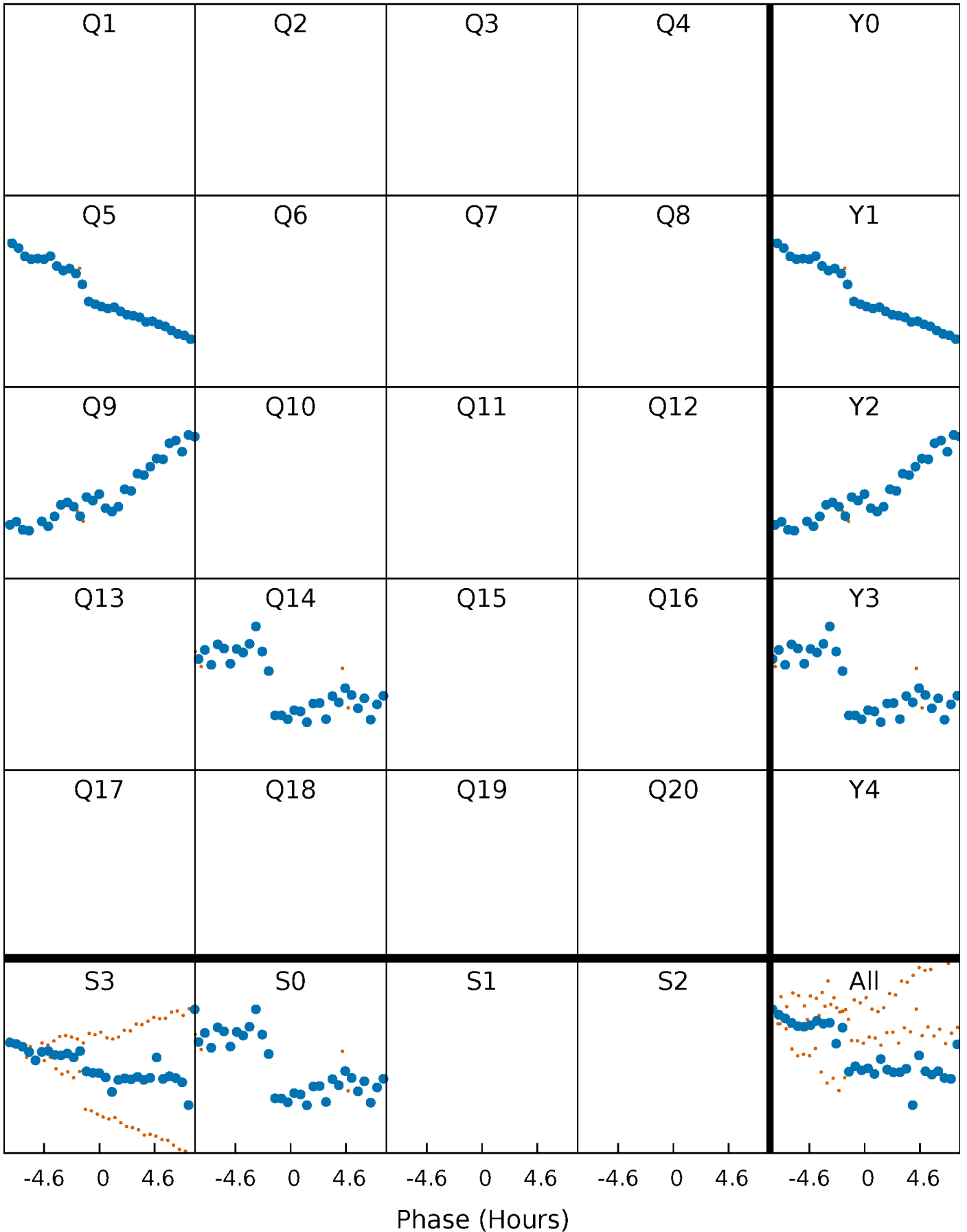


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



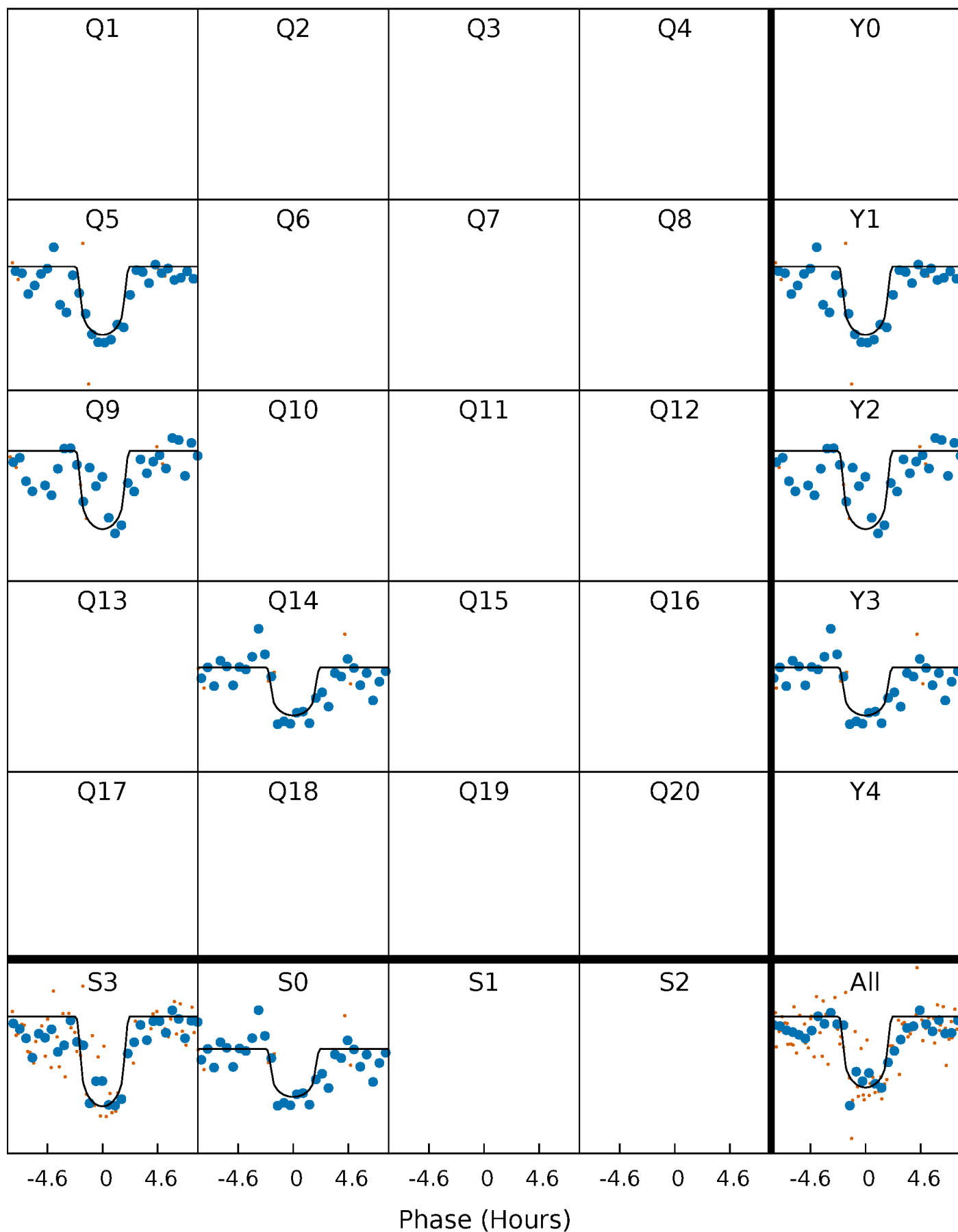
PDC Quarter-Phased Transit Curves

TCE 010255401-01 P=443.010340 Days $T_0=458.068167$ (BKJD)



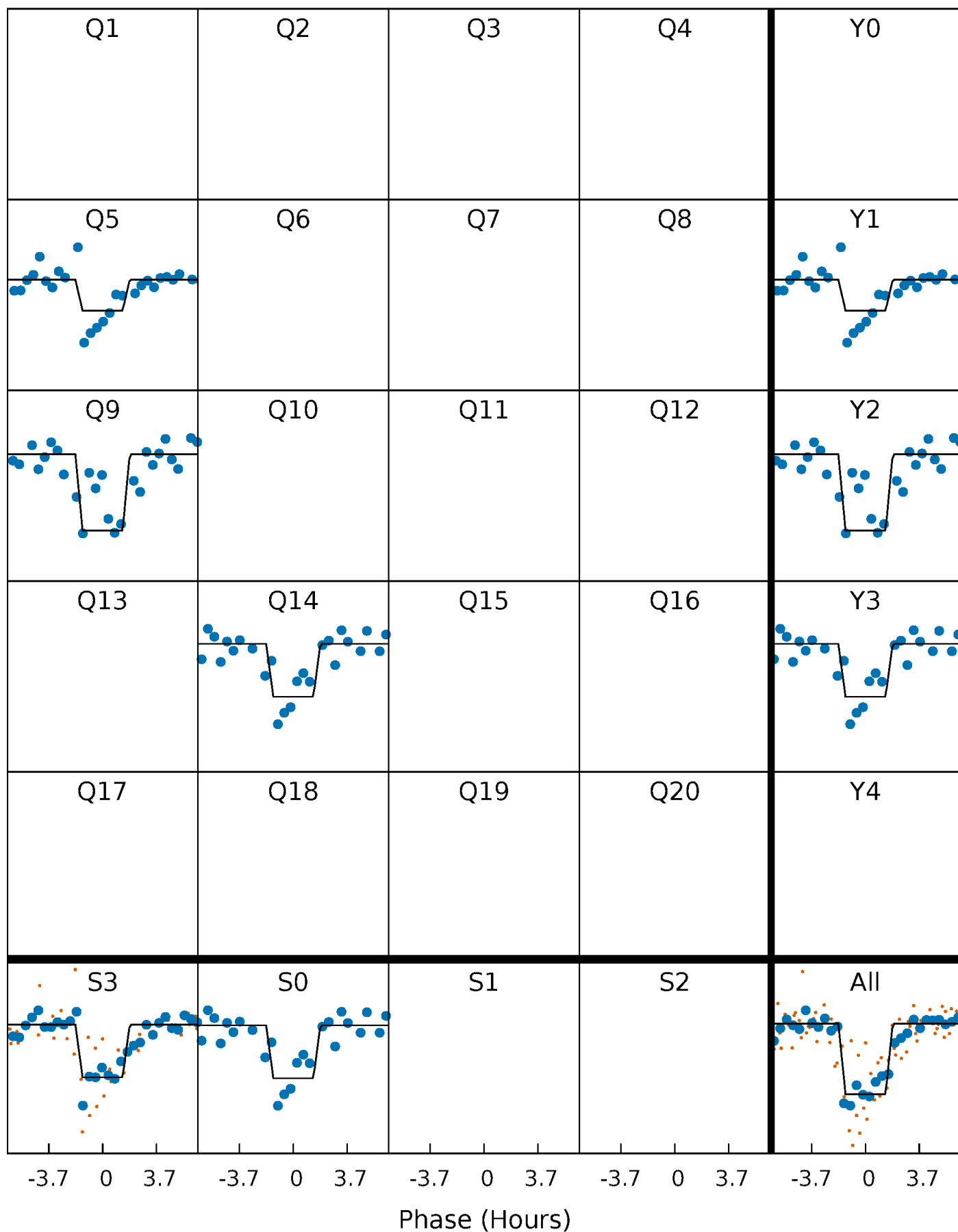
DV Quarter-Phased Transit Curves

TCE 010255401-01 P=443.010340 Days $T_0=458.068167$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

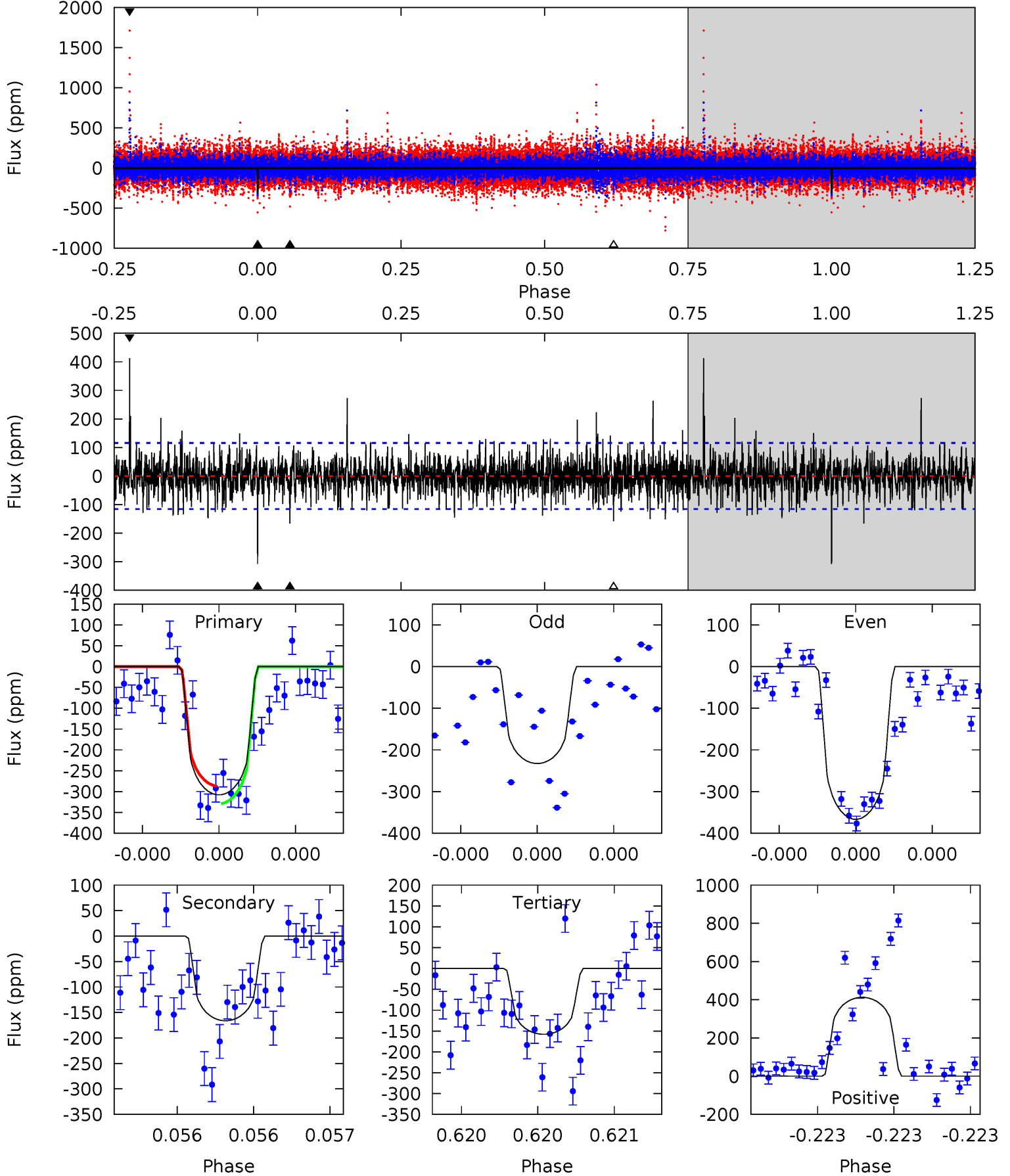
TCE 010255401-01 P=443.006392 Days $T_0=458.076914$ (BKJD)



DV Model-Shift Uniqueness Test

010255401-01, P = 443.010340 Days, E = 15.057827 Days

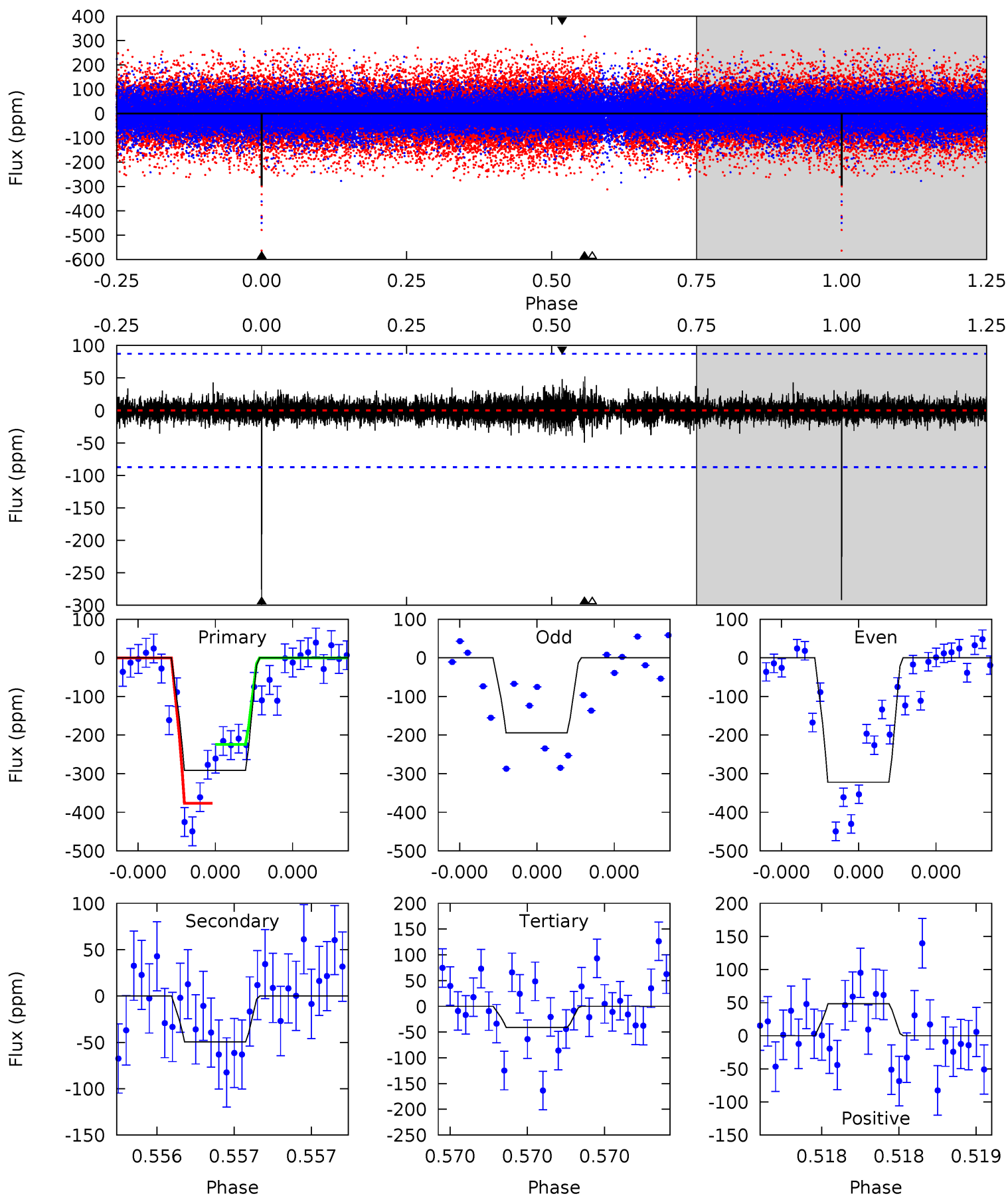
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.9	8.05	7.65	20.0	5.61	3.53	1.95	7.26	-5.09	0.40	-11.9	2.85	0.90	0.57	1.01



Alt Model-Shift Uniqueness Test

010255401-01, $P = 443.006392$ Days, $E = 15.070522$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.9	3.20	2.66	3.12	5.65	3.60	0.58	16.2	15.8	0.54	0.08	3.89	1.03	0.15	4.78



Stellar Parameters For KIC 010255401

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4566^{+68}_{-55}	$1.160^{+0.110}_{-0.110}$	$-1.780^{+0.150}_{-0.100}$	$37.941^{+11.466}_{-3.822}$	$0.759^{+0.349}_{-0.015}$	$0.000^{+0.000}_{-0.000}$
	+1%/-1%	+9%/-9%	+8%/-6%	+30%/-10%	+46%/-2%	+39%/-37%
Source	SPE74	SPE74	SPE74	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010255401-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-166 ± 21	$86.66^{+63.34}_{-52.22}$	1692^{+86}_{-62}	3836^{+1613}_{-628}	14^{+72}_{-9}
Alt.	-49 ± 15	$84.70^{+63.85}_{-52.92}$	1696^{+87}_{-65}	3180^{+1309}_{-532}	$4.392^{+28.526}_{-3.035}$

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

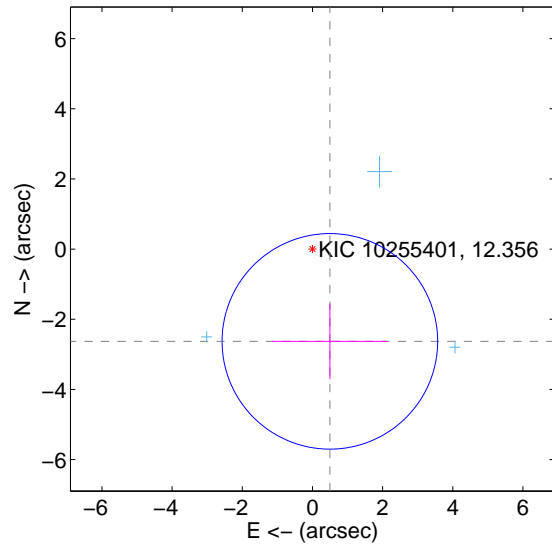
Supplemental centroid analysis for 010255401-01. Kepler magnitude: 12.36. Transit SNR 8.64

There are 3 quarters with good PRF difference image offsets

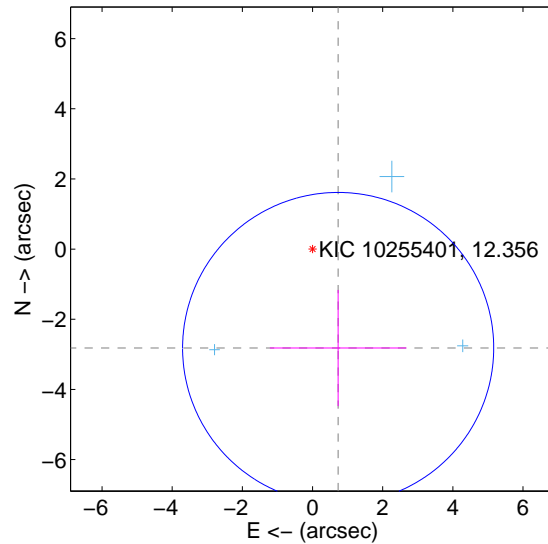
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.676 ± 1.024	2.61	-0.497 ± 1.642	-2.630 ± 1.075
PRF-fit source offset from KIC position	2.912 ± 1.478	1.97	-0.731 ± 1.945	-2.819 ± 1.654
photometric centroid source offset	2.30 ± 1.03	2.24	-0.59 ± 1.29	-2.22 ± 1.01

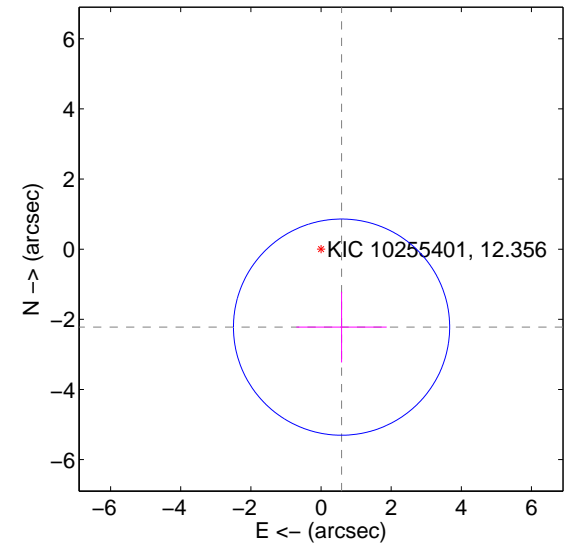
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

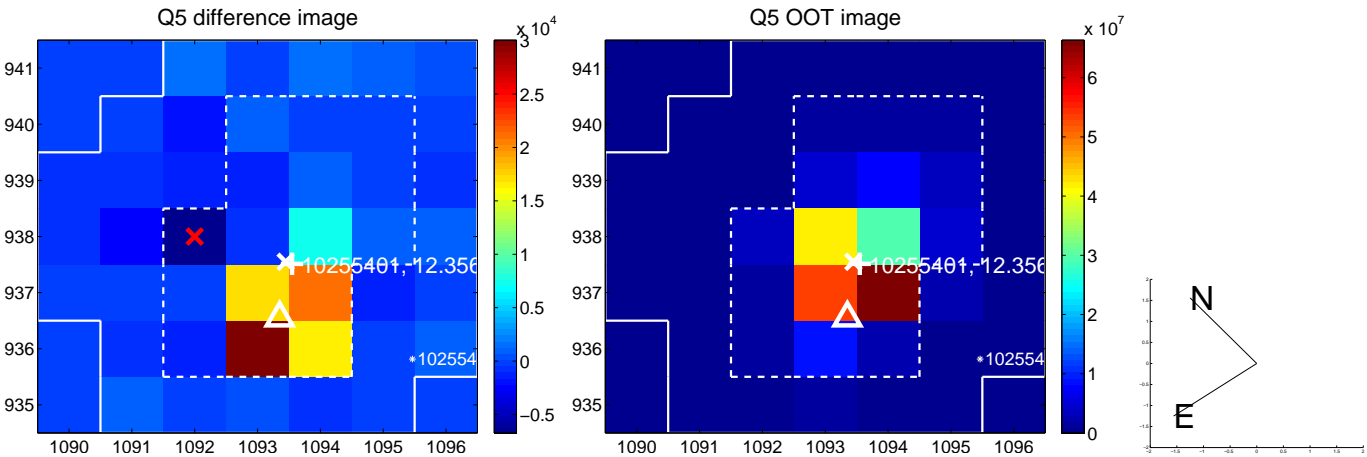


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

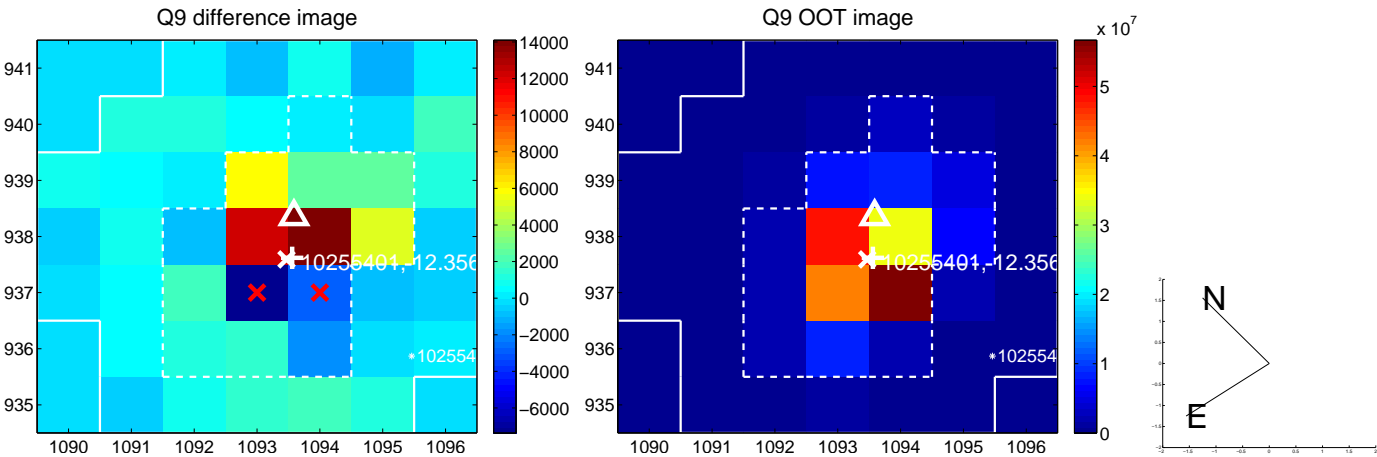
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



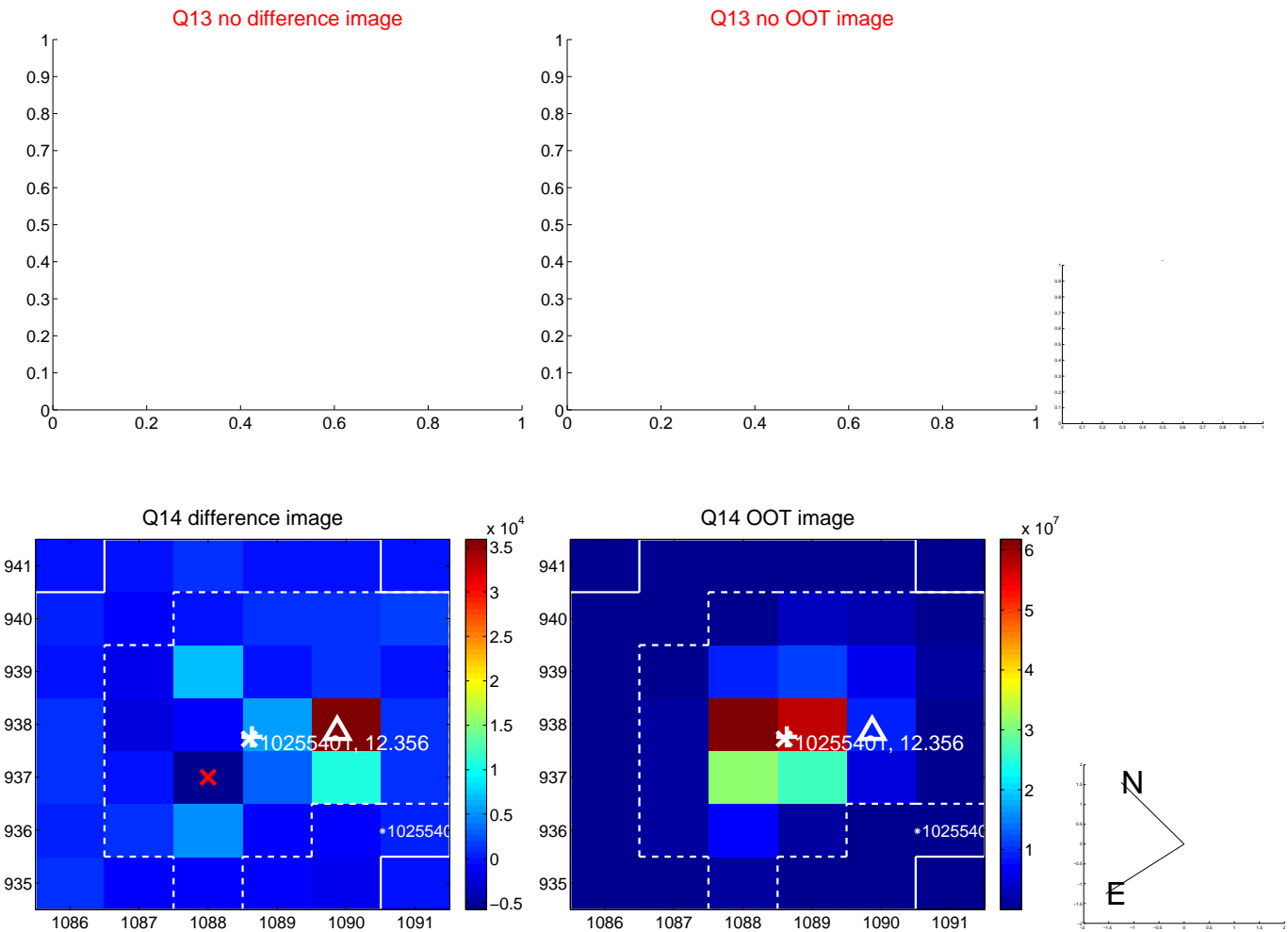
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



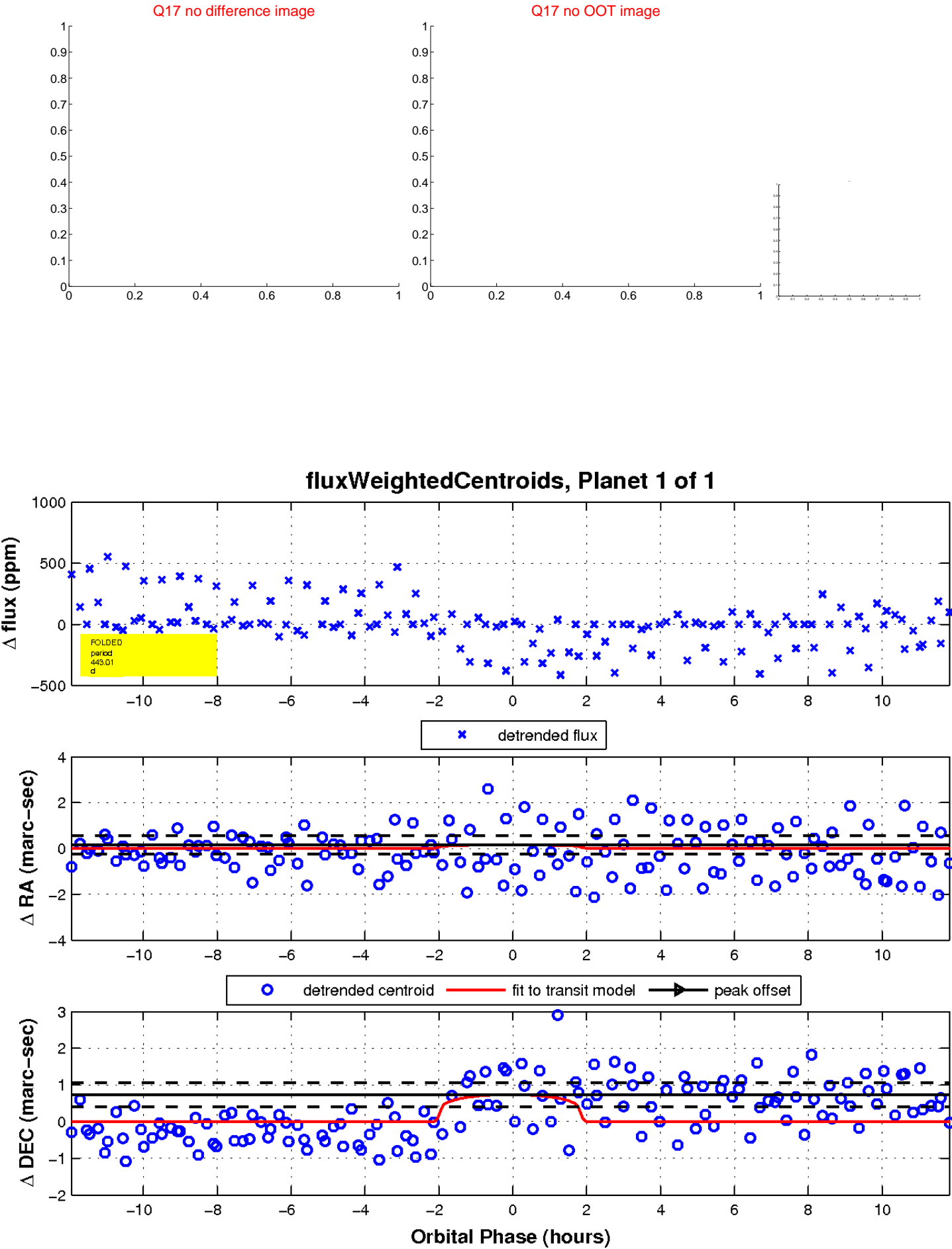
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: 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

