

KIC 005428471

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R _★ (R _☉)	T _★ (K)	R _p (R _⊕)	S _p (S _⊕)
005428471-01	OBS	4671.01	0.755091	131.814776	192.0	2.560	8.3	8.3	0.95	5743	1.55	3414.90

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005428471-01	OBS	FP	0.00	0	0	1	1	CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH

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 005428471-01

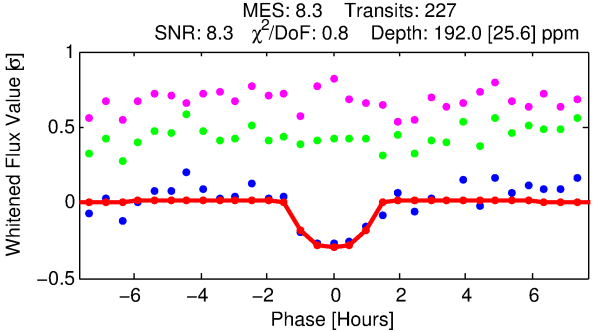
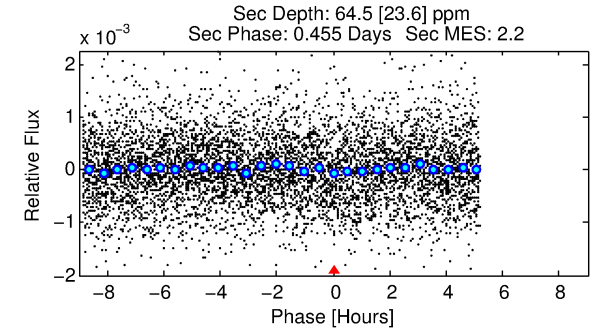
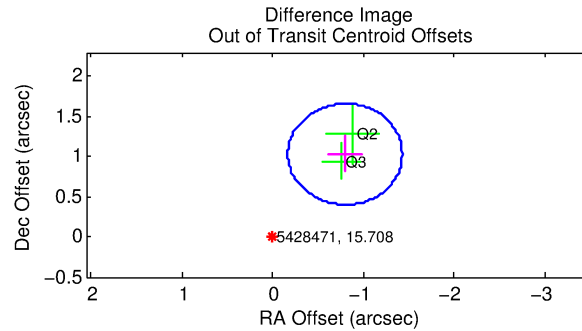
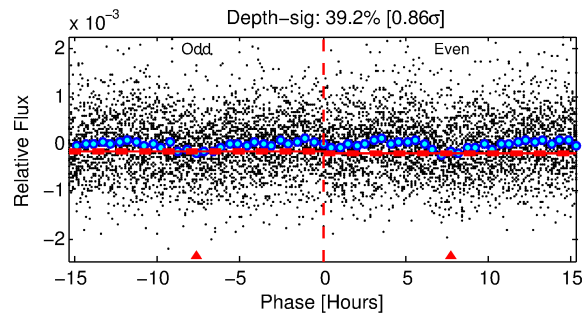
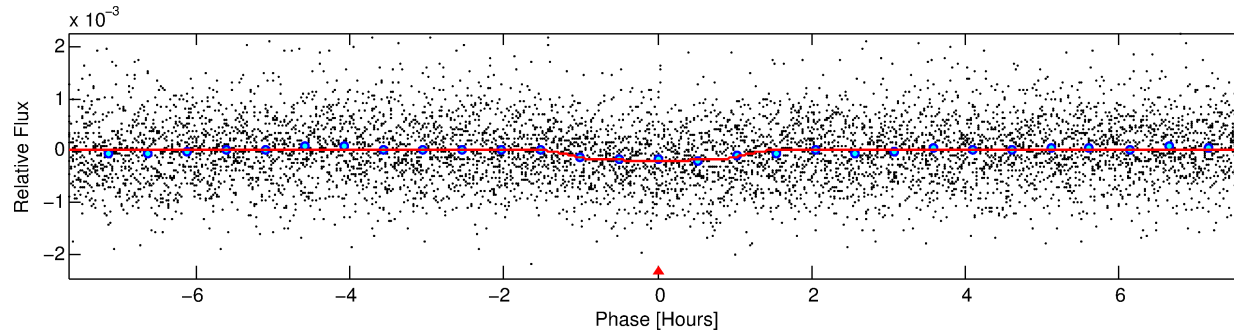
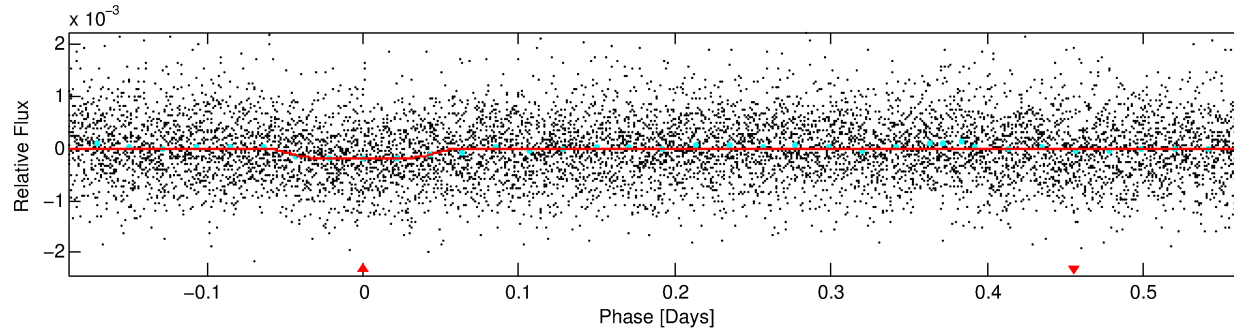
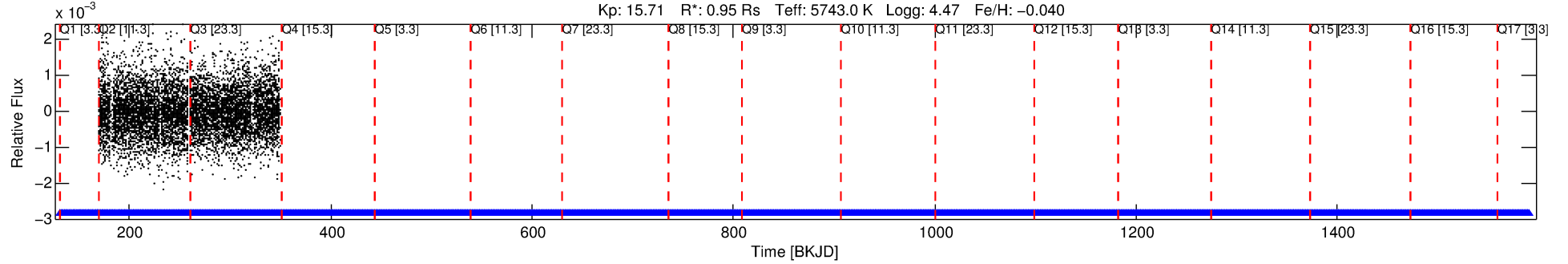
TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	ΔRow	ΔCol	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ _P	σ _T
005428471-01	5428471	005513861-pri	5513861	1:2	87.2	-15	-16	11.64	15.71	1319.80	Direct-PRF	0	4.13	0.21

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant σ_P < 5.0 and σ_T < 5.0. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 5428471 Candidate: 1 of 1 Period: 0.755 d
KOI: K04671 Corr: No Ephemeris Match

Kp: 15.71 R*: 0.95 Rs Teff: 5743.0 K Logg: 4.47 Fe/H: -0.040



DV Fit Results:

Period = 0.75509 [0.00004] d
Epoch = 131.8148 [0.0060] BKJD
Rp/R* = 0.0151 [0.0123]
a/R* = 1.43 [2.80]
b = 0.90 [0.87]
Seff = 3414.90 [1276.79]
Teq = 1949 [182] K
Rp = 1.56 [1.34] Re
a = 0.0160 [0.0039] AU
Ag = 3.75 [6.39] [0.43σ]
Teff = 4193 [1754] K [1.27σ]

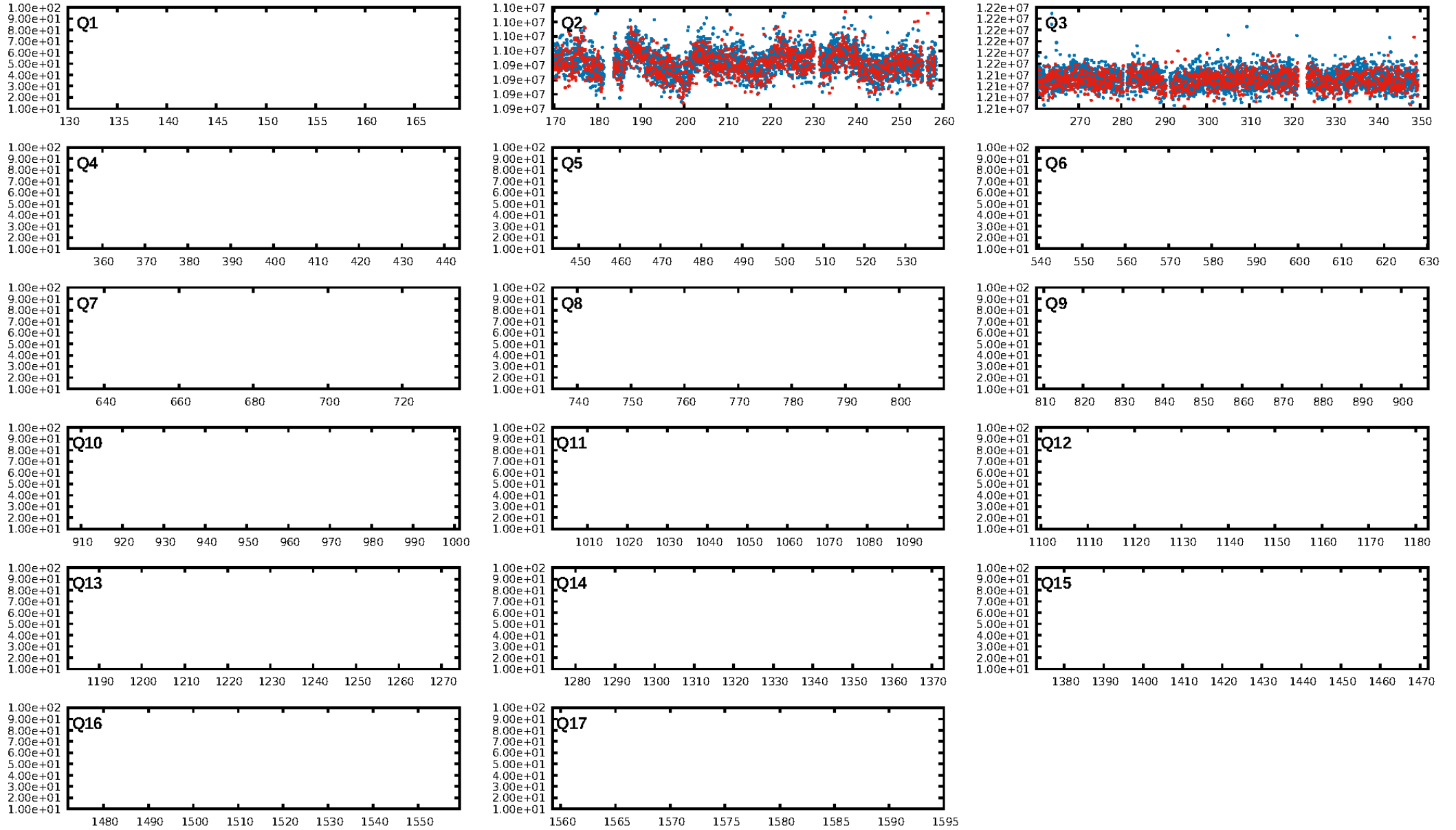
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.11e-14
RollingBand-fgt: 1.00 [227/227]
GhostDiagnostic-chr: 0.1112
Centroid-sig: 0.0%
Centroid-so: 6.970 arcsec [3.73σ]
OotOffset-rm: 1.305 arcsec [6.22σ]
KicOffset-rm: 1.160 arcsec [5.60σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [2/2]

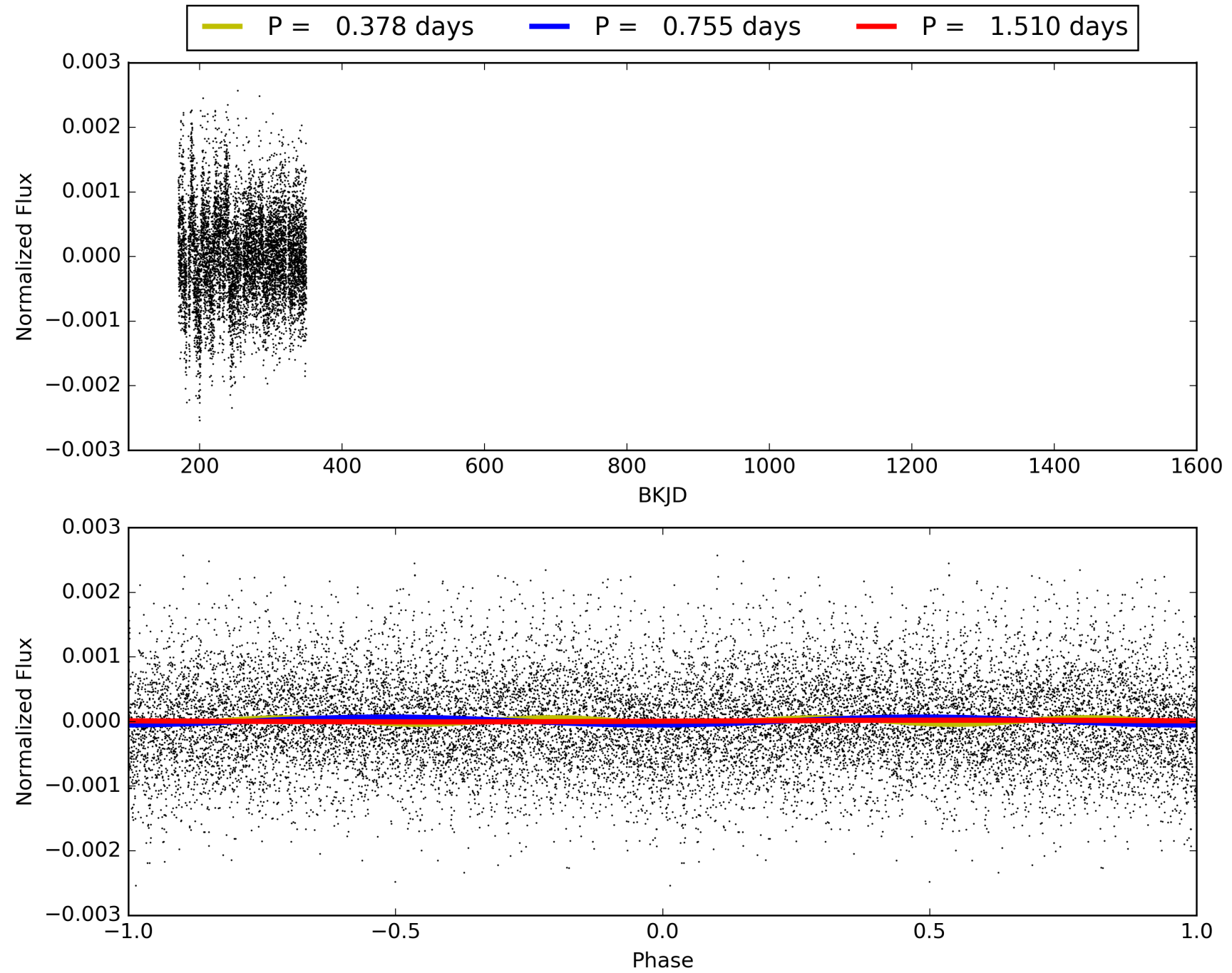
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 09:22:24 Z

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

TCE 005428471-01, PDC Light Curves

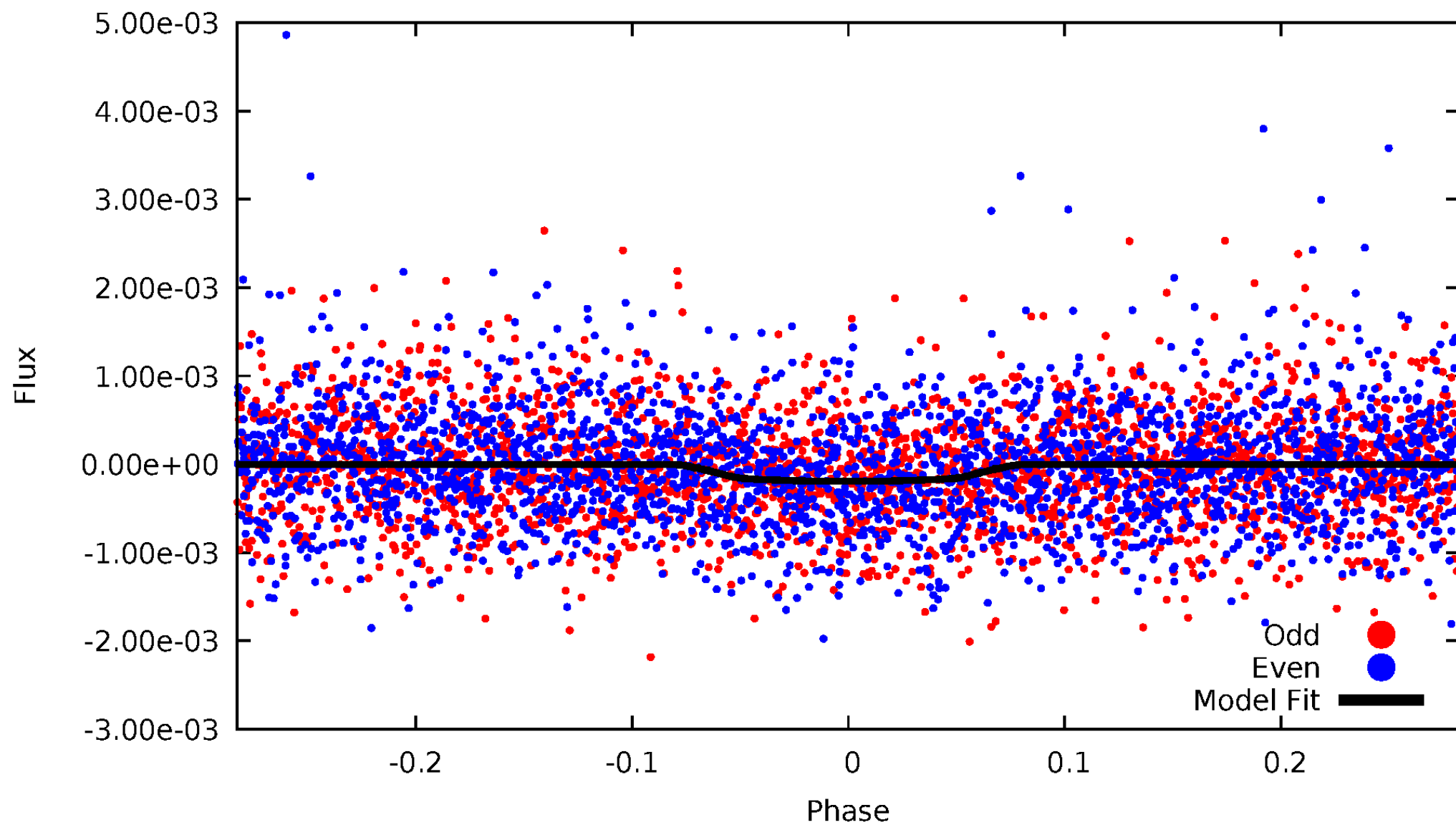


TCE 005428471-01



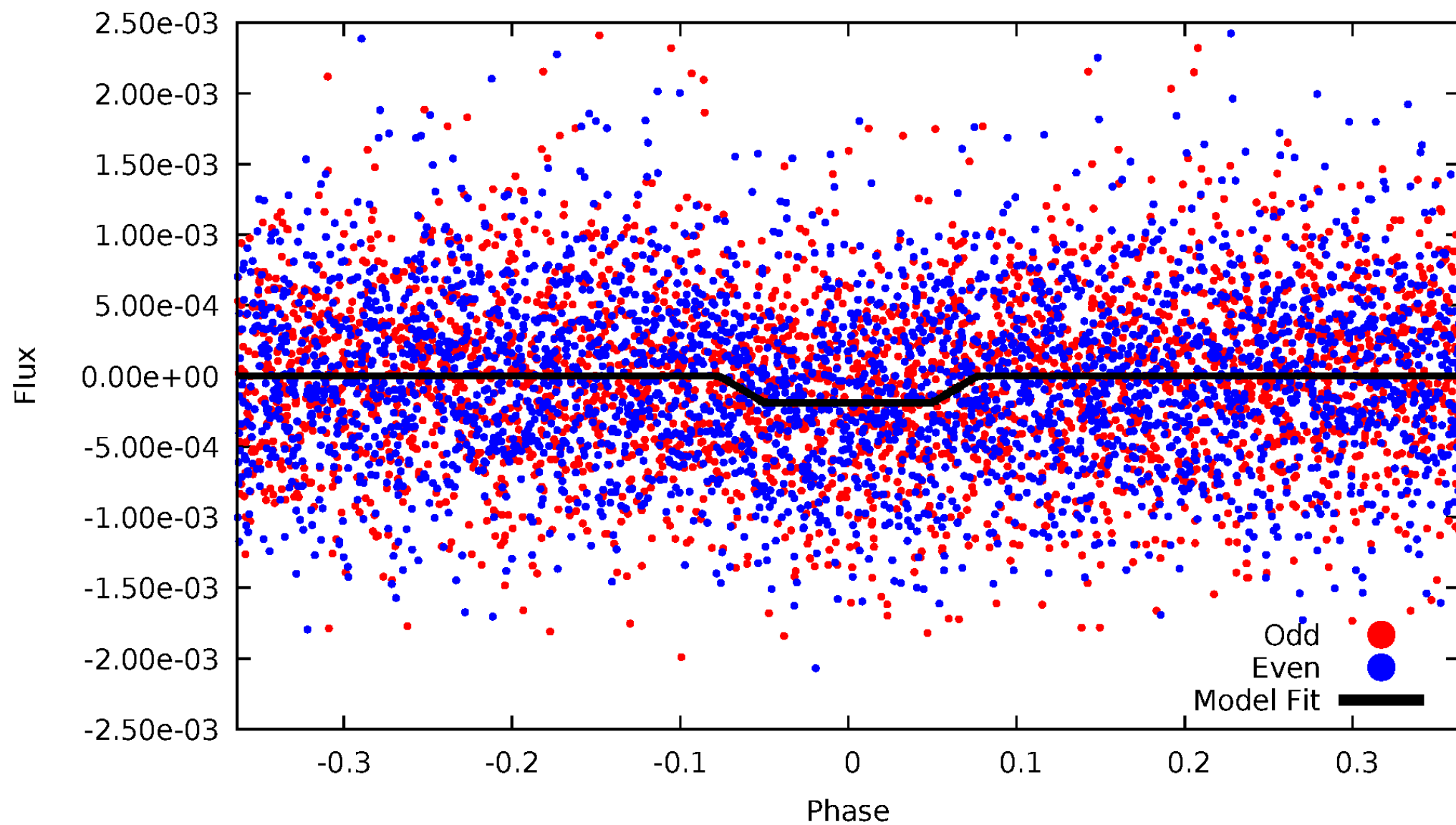
DV Odd/Even

TCE 005428471-01

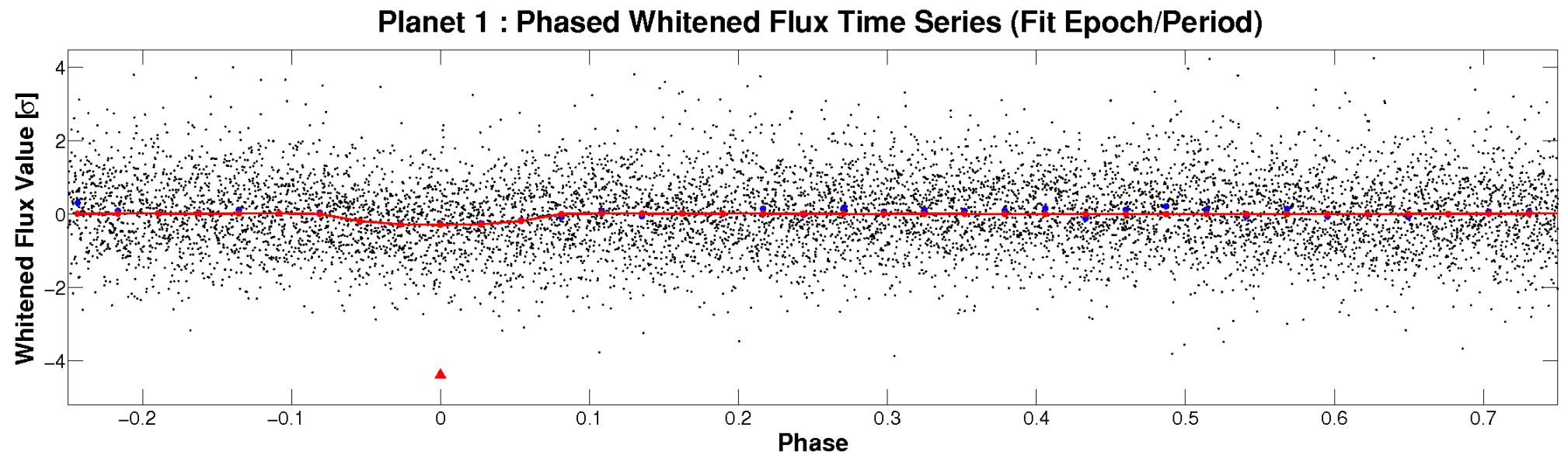
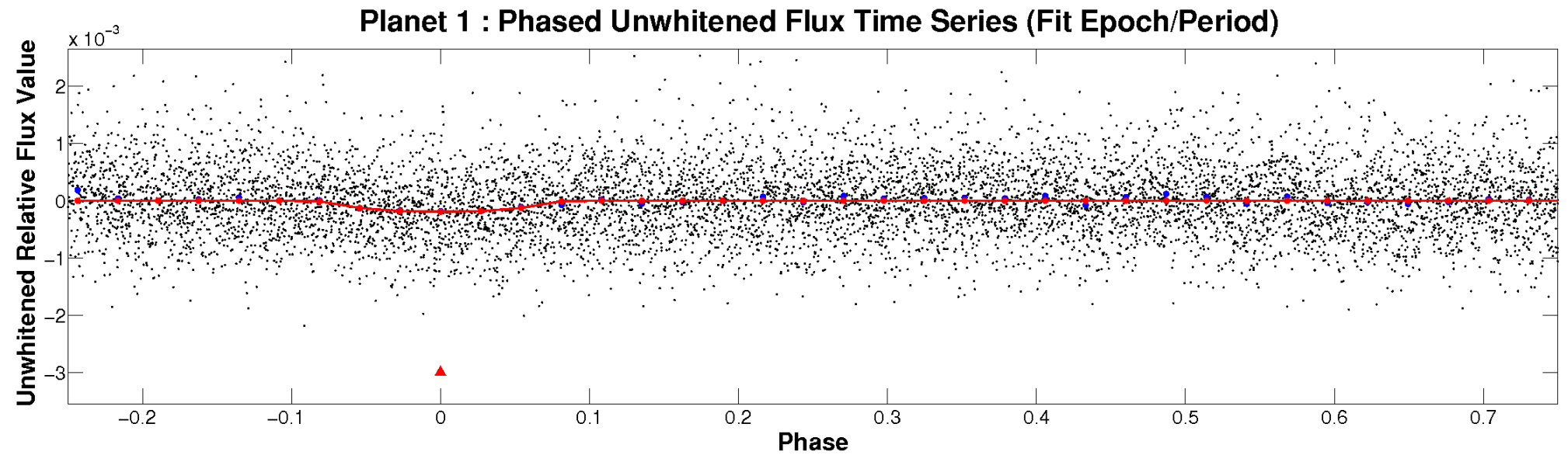


ALT Odd/Even

TCE 005428471-01

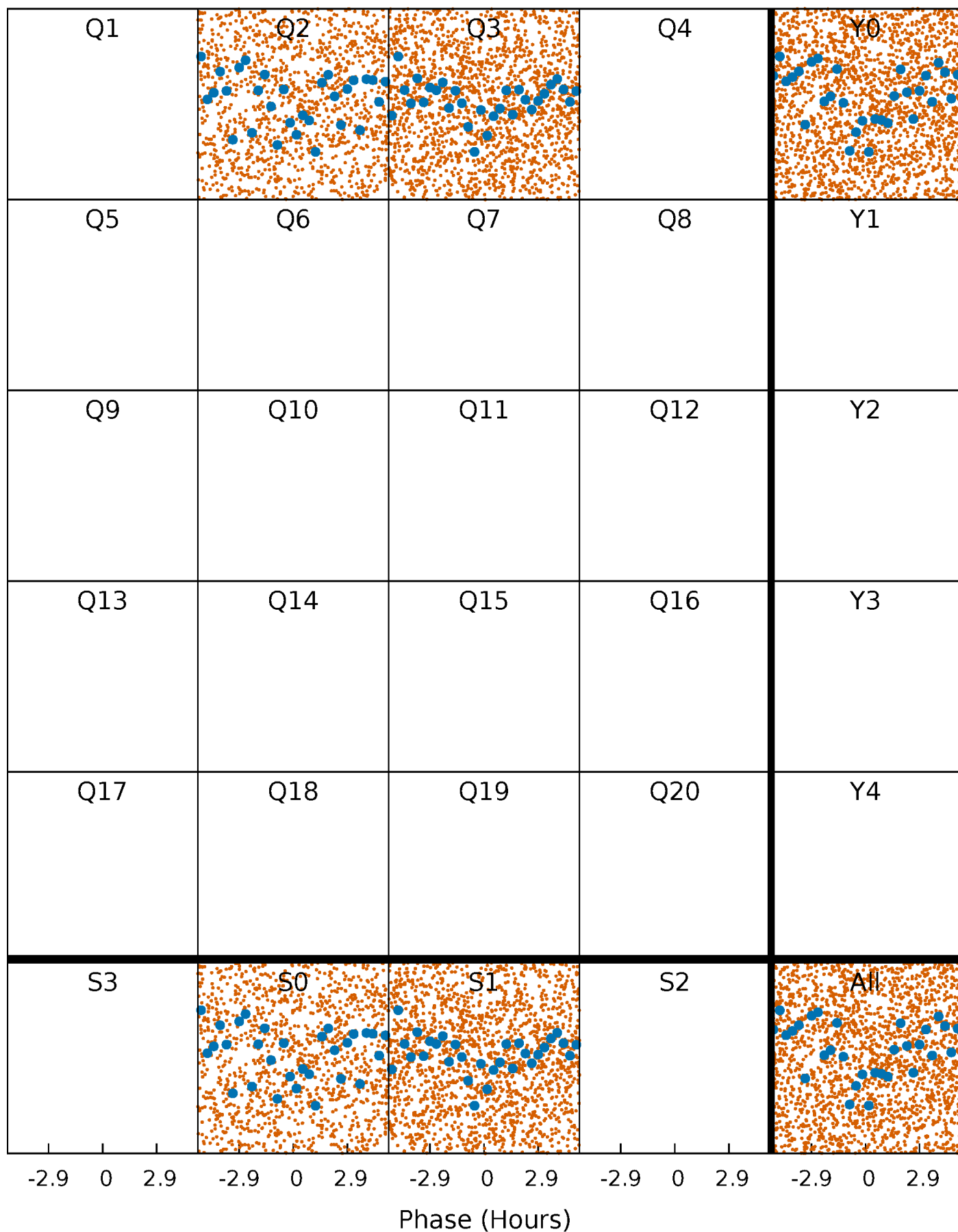


Non-Whitened Vs. Whitened Light Curve



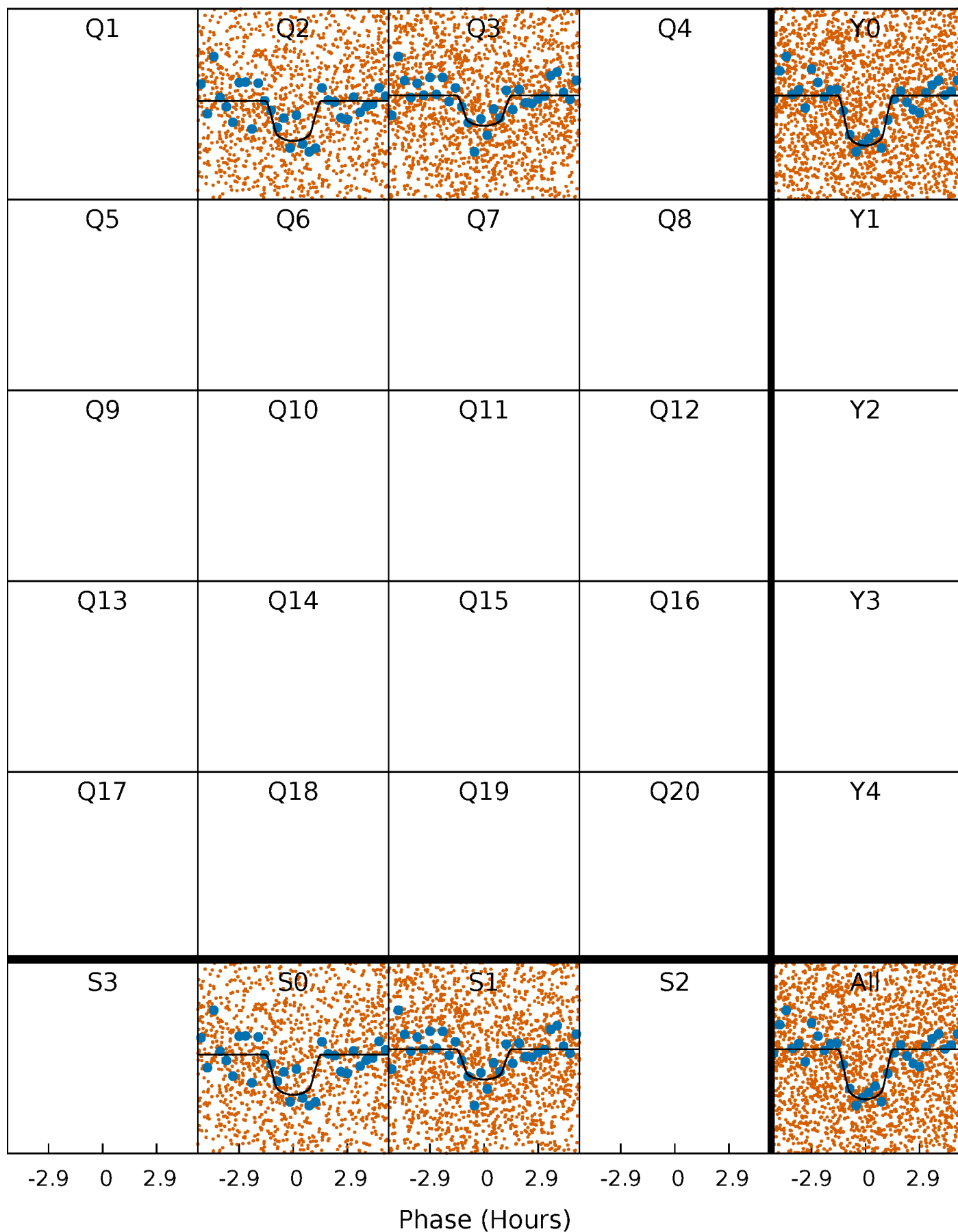
PDC Quarter-Phased Transit Curves

TCE 005428471-01 P= 0.755091 Days $T_0=131.814776$ (BKJD)



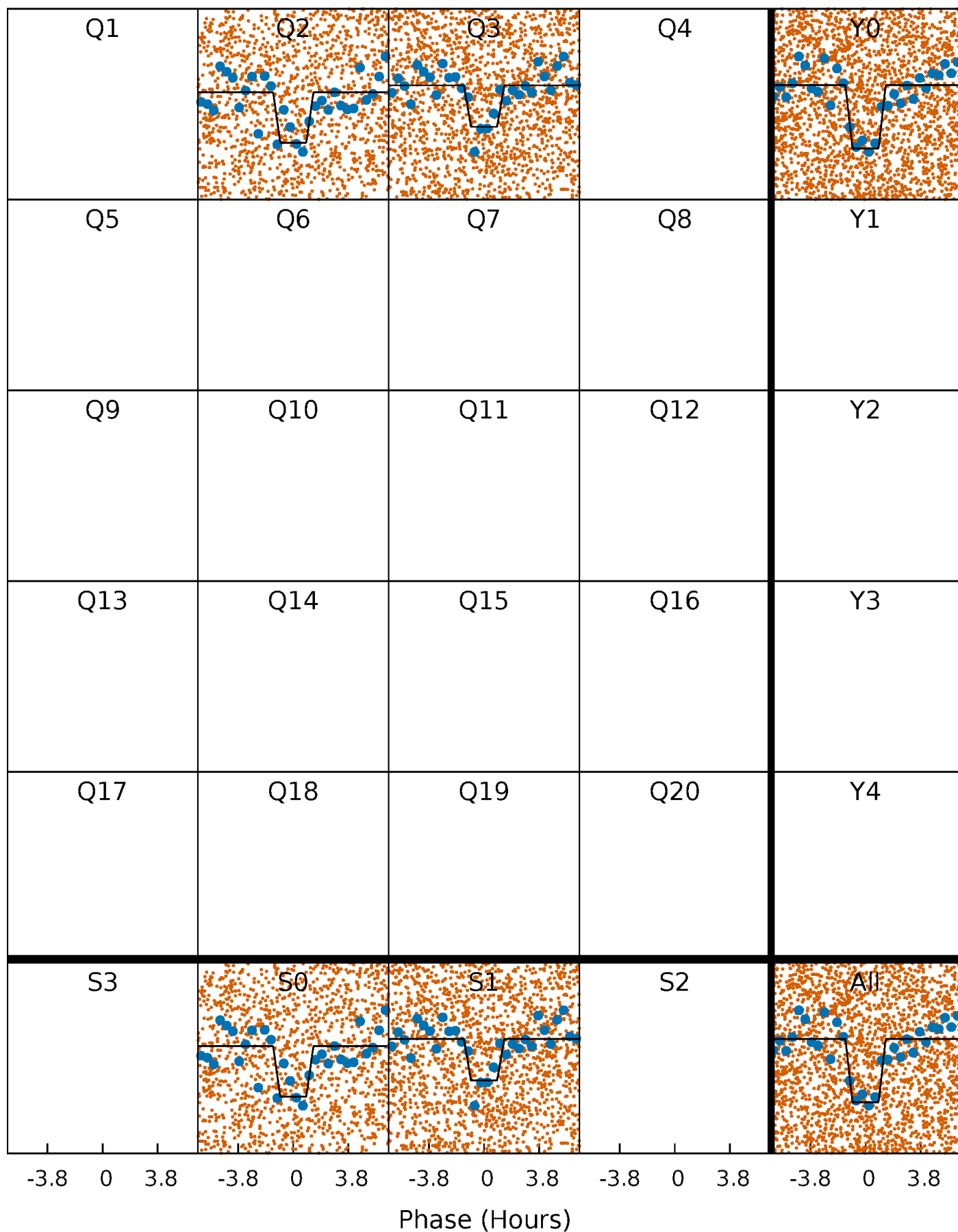
DV Quarter-Phased Transit Curves

TCE 005428471-01 P= 0.755091 Days $T_0=131.814776$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

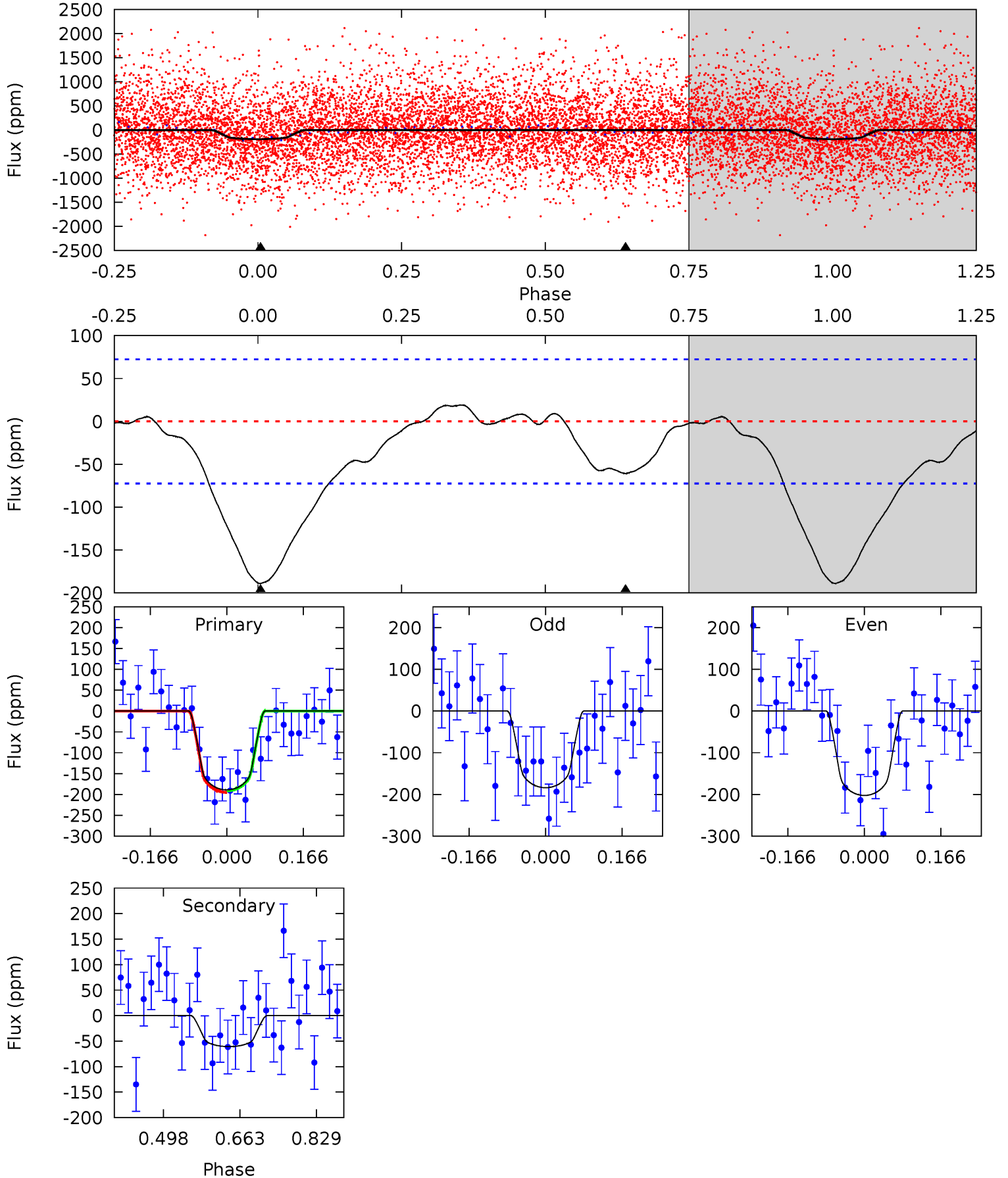
TCE 005428471-01 P= 0.755026 Days $T_0=131.829596$ (BKJD)



DV Model-Shift Uniqueness Test

005428471-01, P = 0.755091 Days, E = 131.814776 Days

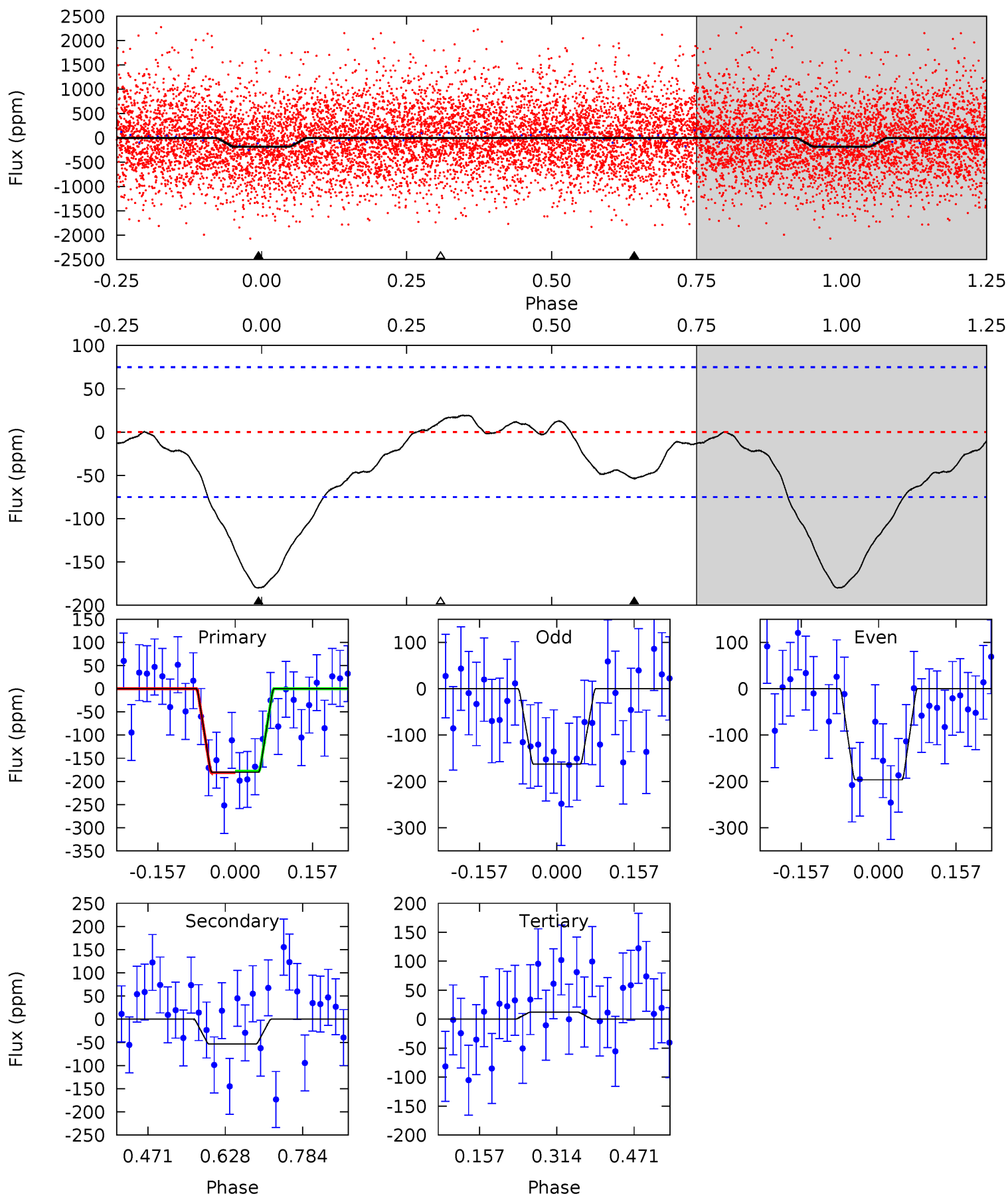
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.6	3.74	0	0	4.46	1.39	1.15	11.6	11.6	3.74	3.74	0.57	0.91	0.09	0.12



Alt Model-Shift Uniqueness Test

005428471-01, P = 0.755026 Days, E = 131.829596 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	3.20	-0.73	0	4.47	1.42	1.18	11.5	10.7	3.93	3.20	1.01	0.97	0.10	0.09



Stellar Parameters For KIC 005428471

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5743^{+156}_{-173}	$4.466^{+0.078}_{-0.195}$	$-0.040^{+0.300}_{-0.300}$	$0.946^{+0.268}_{-0.115}$	$0.953^{+0.114}_{-0.103}$	$1.587^{+0.532}_{-0.777}$
	+3%/-3%	+2%/-4%	+750%/-750%	+28%/-12%	+12%/-11%	+34%/-49%
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 005428471-01 / KOI 4671.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-61 ± 16	$1.77^{+1.26}_{-1.03}$	2756^{+195}_{-139}	4113^{+1793}_{-880}	$2.706^{+12.074}_{-1.855}$
Alt.	-54 ± 17	$1.74^{+1.24}_{-1.02}$	2767^{+205}_{-134}	4050^{+1905}_{-878}	$2.431^{+11.737}_{-1.653}$

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 $A_{obs} \gg 1.0$

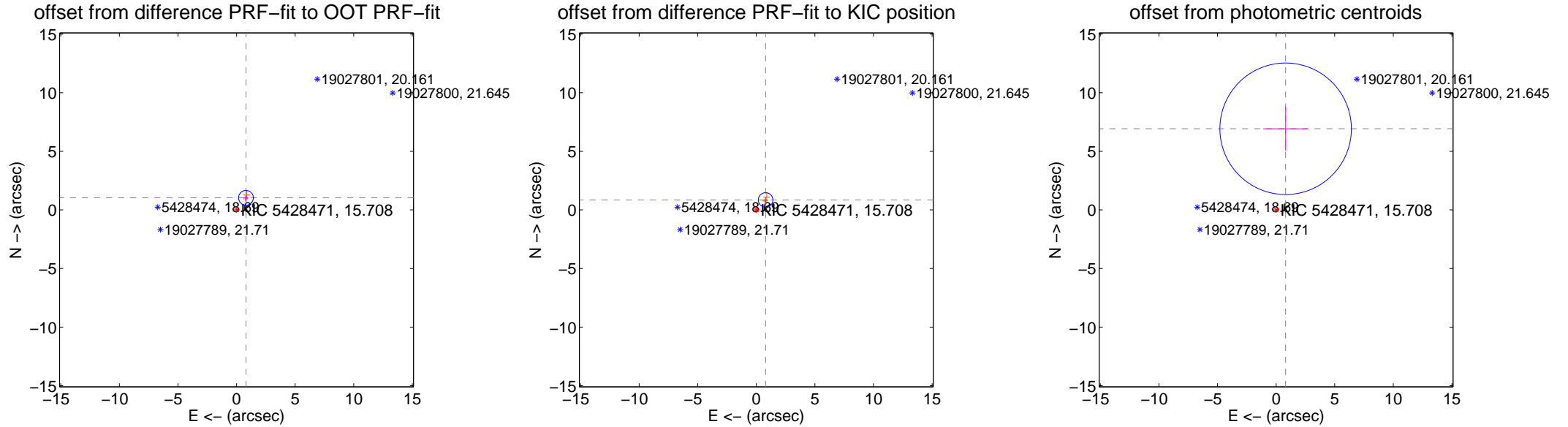
DV Centroid Data

Supplemental centroid analysis for 005428471-01. Kepler magnitude: 15.71. Transit SNR 8.26

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.305 ± 0.210	6.22	-0.801 ± 0.189	1.031 ± 0.222
PRF-fit source offset from KIC position	1.160 ± 0.207	5.60	-0.791 ± 0.189	0.848 ± 0.222
photometric centroid source offset	6.97 ± 1.87	3.73	-0.81 ± 1.90	6.92 ± 1.87



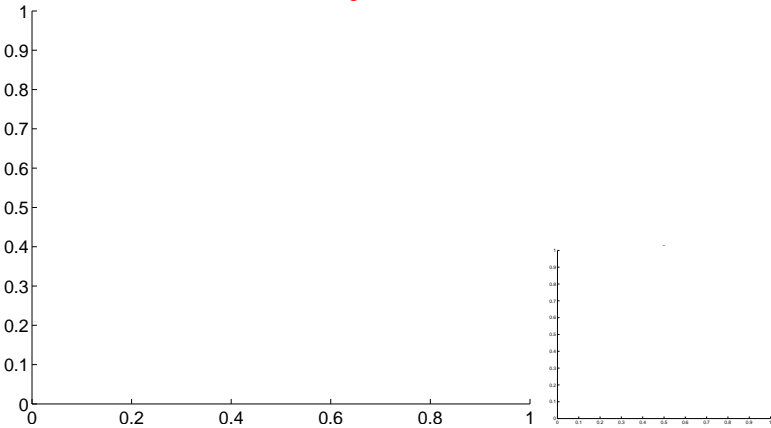
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

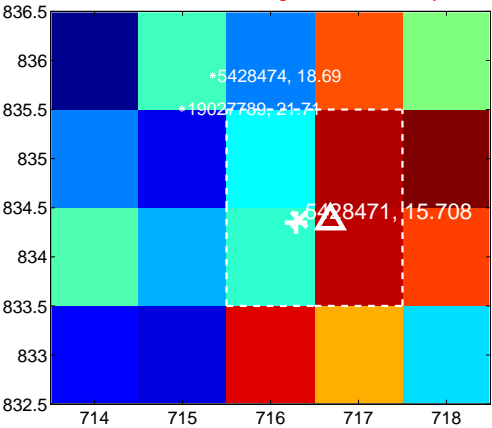
Q1 no difference image



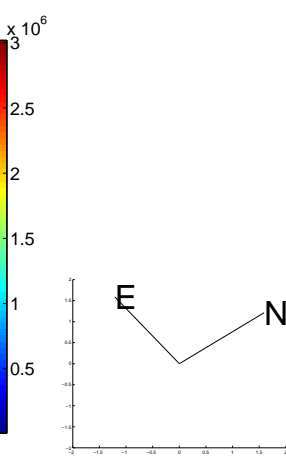
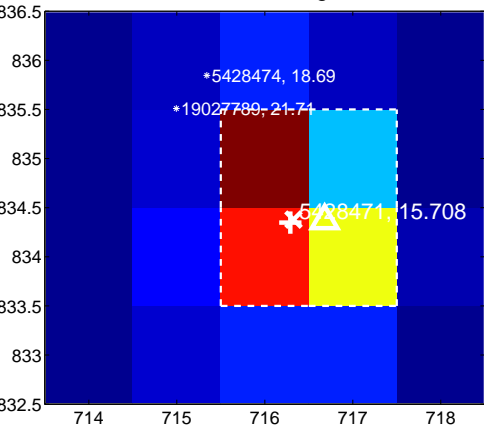
Q1 no OOT image



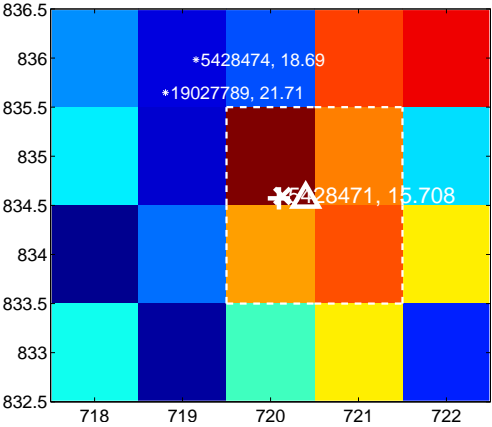
Q2 difference image. Poor Quality



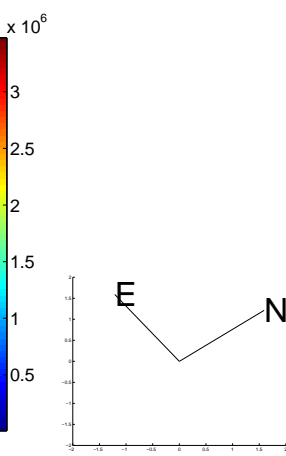
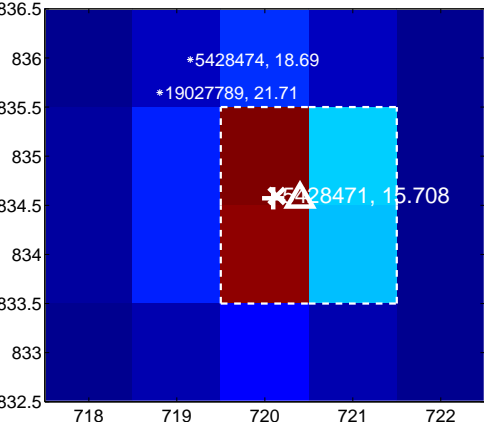
Q2 OOT image



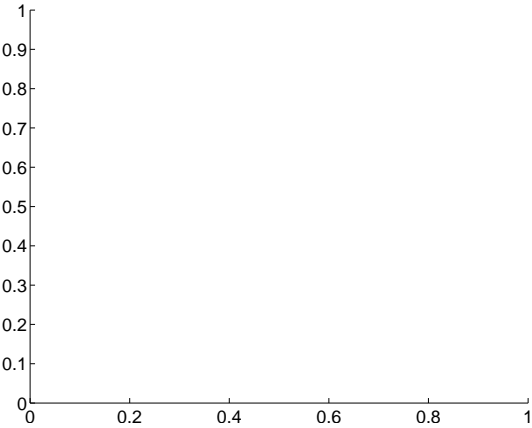
Q3 difference image. Poor Quality



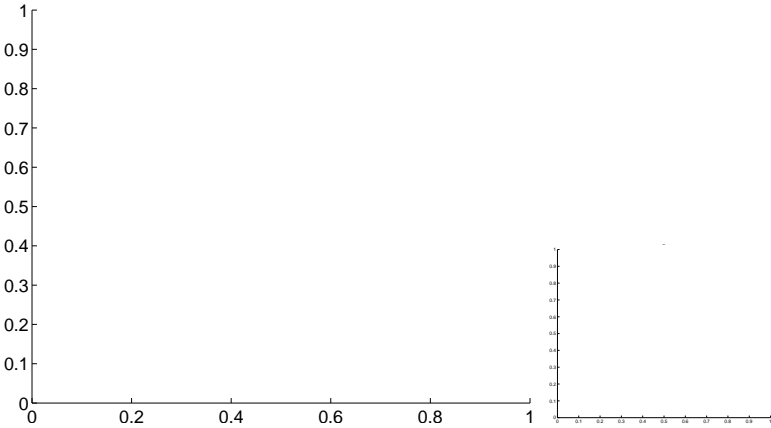
Q3 OOT image



Q4 no difference image



Q4 no OOT image



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



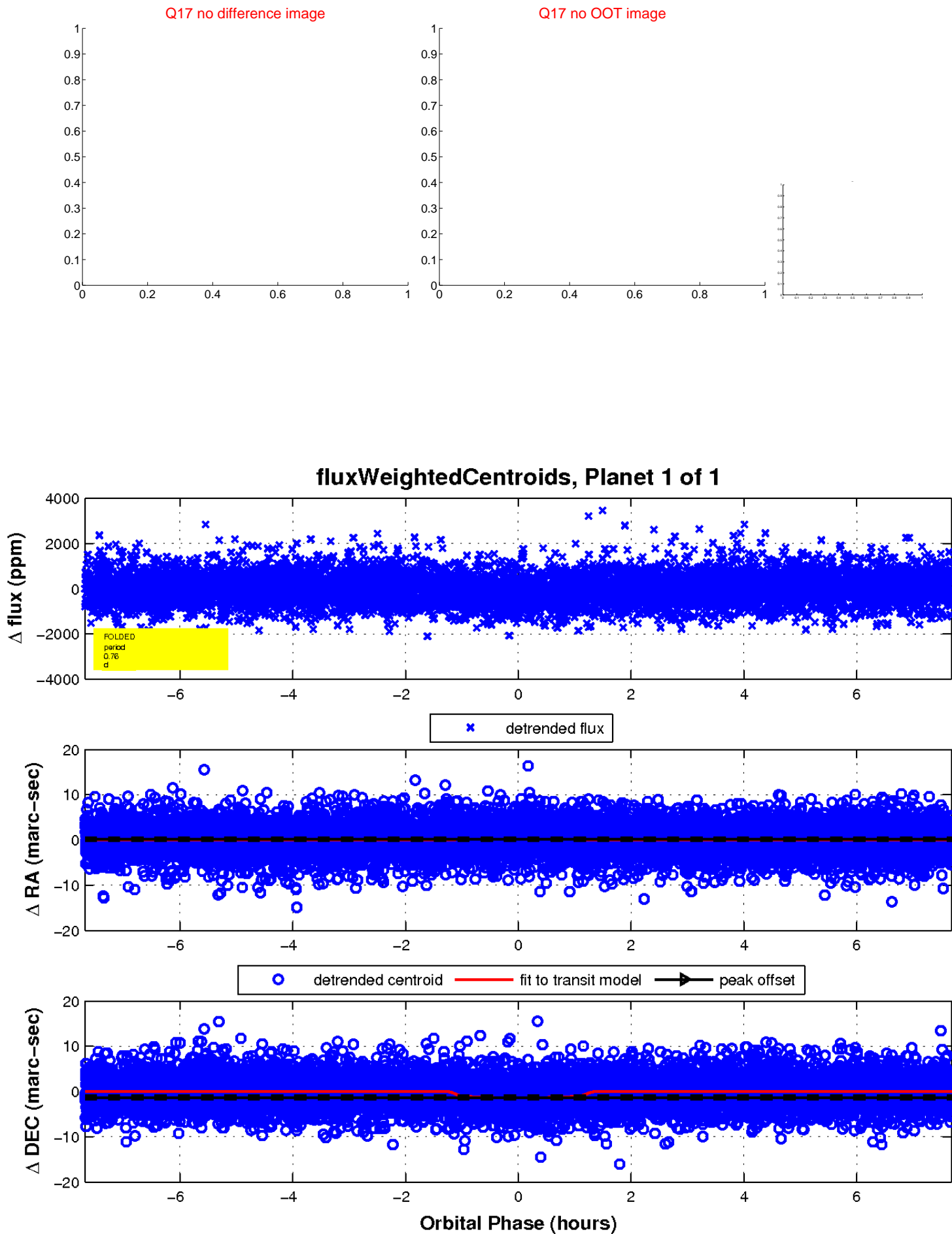
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

