

KIC 008228631

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})
008228631-01	OBS	No	374.232018	259.688225	2086.9	42.828	13.8	20.5	0.73	4934	6.52	0.33

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008228631-01	OBS	FP	0.00	1	0	0	1	INDIV_TRANS_MARSHALL_SKYE—INCONSISTENT_TRANS—CENT_FEW_DIFFS—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.

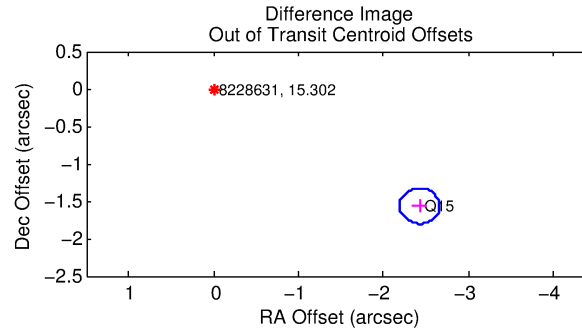
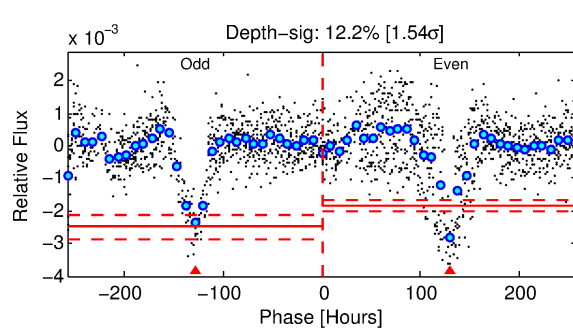
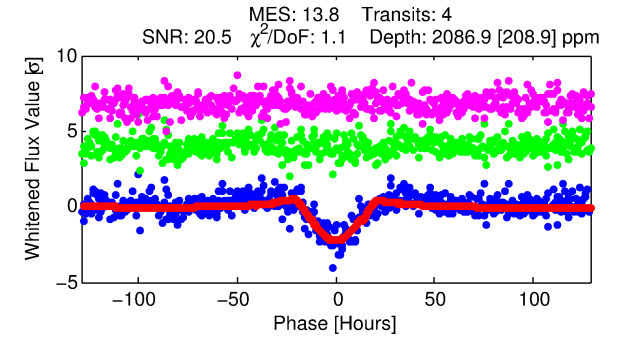
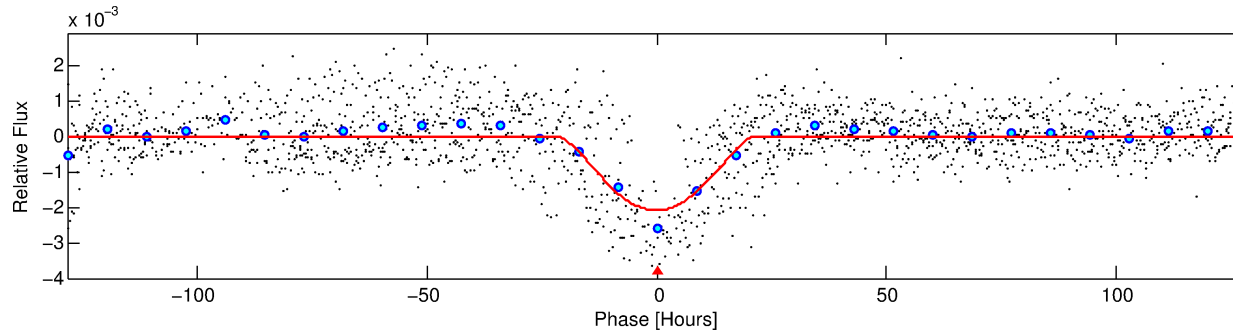
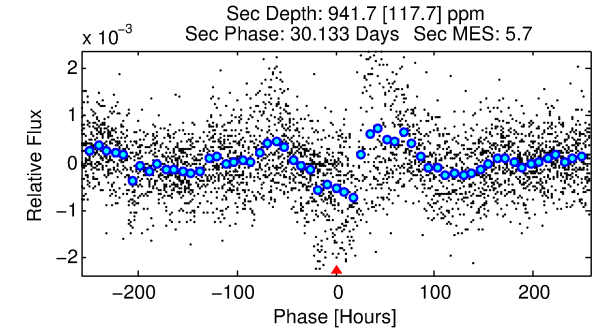
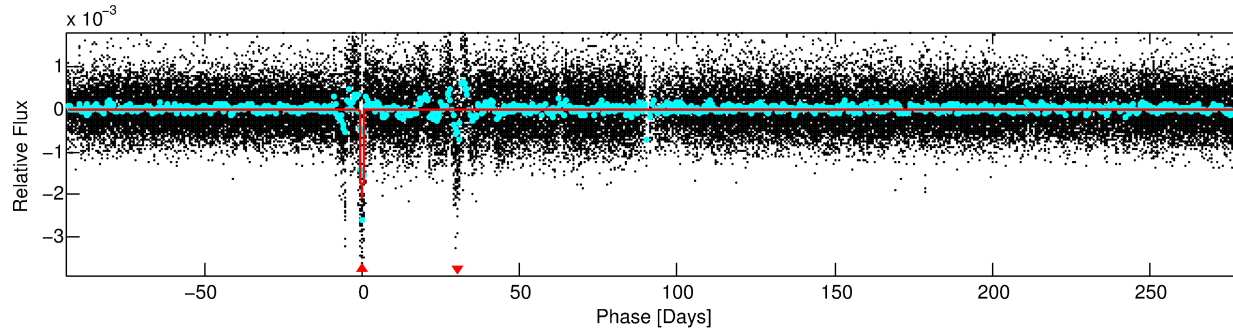
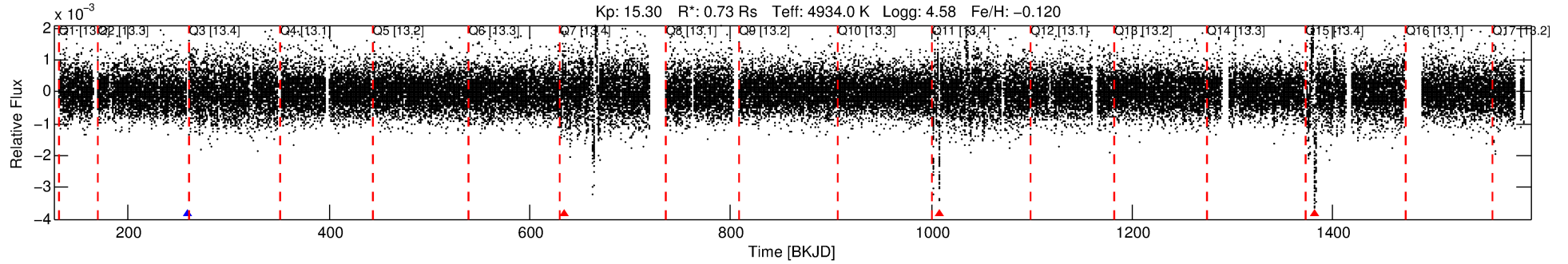
Ephemeris Match Information For 008228631-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist (\prime)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
008228631-01	8228631	008295843-01	8295843	1:1	769.7	-193	-1	15.96	15.30	1.35	Col-Anomaly	1	0.93	0.35

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 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 $\sigma_P < 5.0$ and $\sigma_T < 5.0$. 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: 8228631 Candidate: 1 of 1 Period: 374.232 d



DV Fit Results:

Period = 374.23202 [0.01992] d
Epoch = 259.6882 [0.0417] BKJD
Rp/R* = 0.0818 [0.1257]
a/R* = 27.80 [8.69]
b = 1.00 [0.18]
Seff = 0.33 [0.05]
Teq = 194 [7] K
Rp = 6.52 [10.03] Re
a = 0.9205 [0.0669] AU
Ag = 10337.23 [31814.75] [0.32σ]
Teff = 3022 [2326] K [1.22σ]

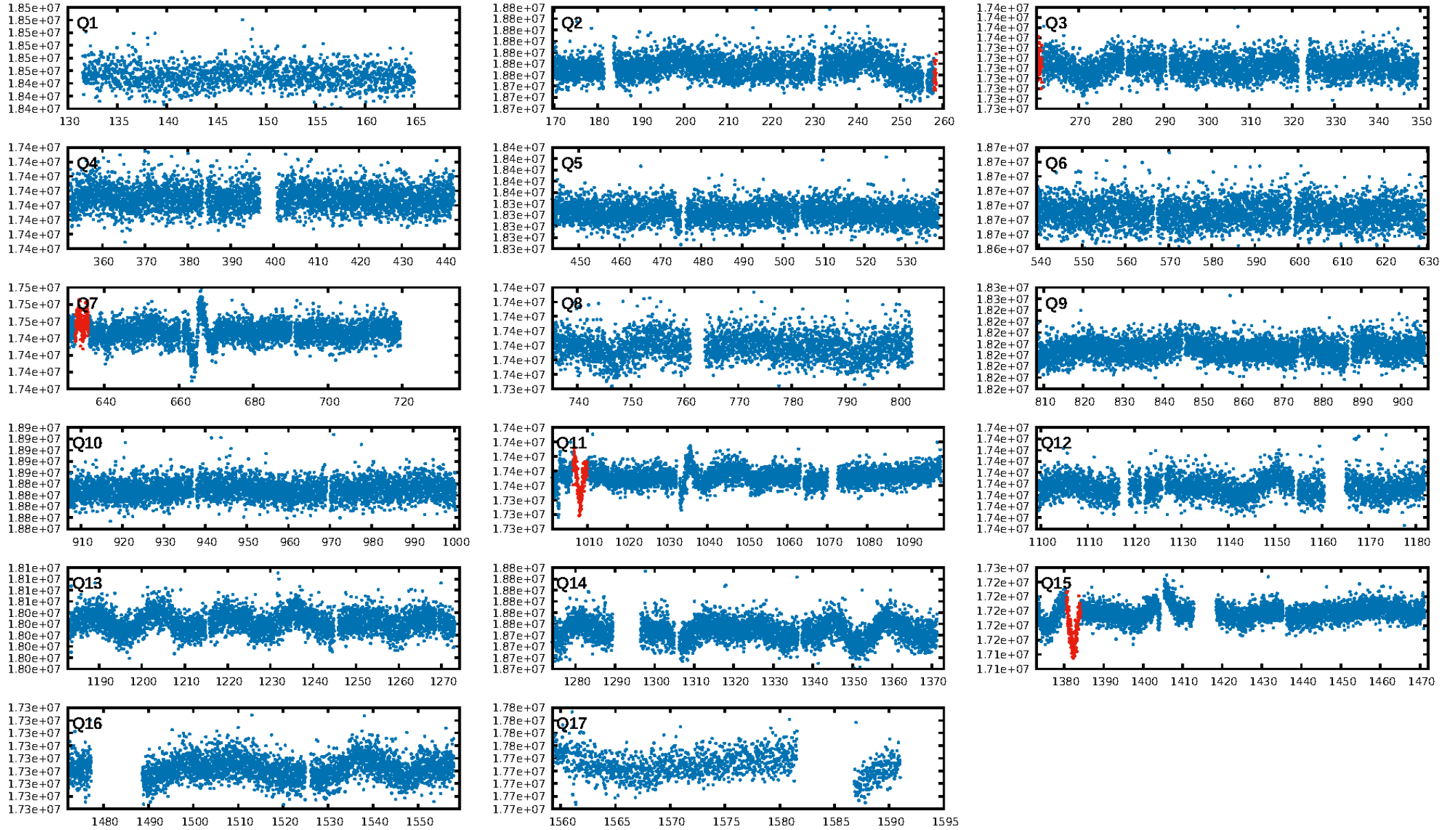
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 2.86e-30
RollingBand-fgt: 0.25 [1/4]
GhostDiagnostic-chr: 0.3889
Centroid-sig: 26.8%
Centroid-so: 1.263 arcsec [1.29σ]
OotOffset-rm: 2.887 arcsec [36.51σ]
KicOffset-rm: 3.203 arcsec [40.51σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [1/1]

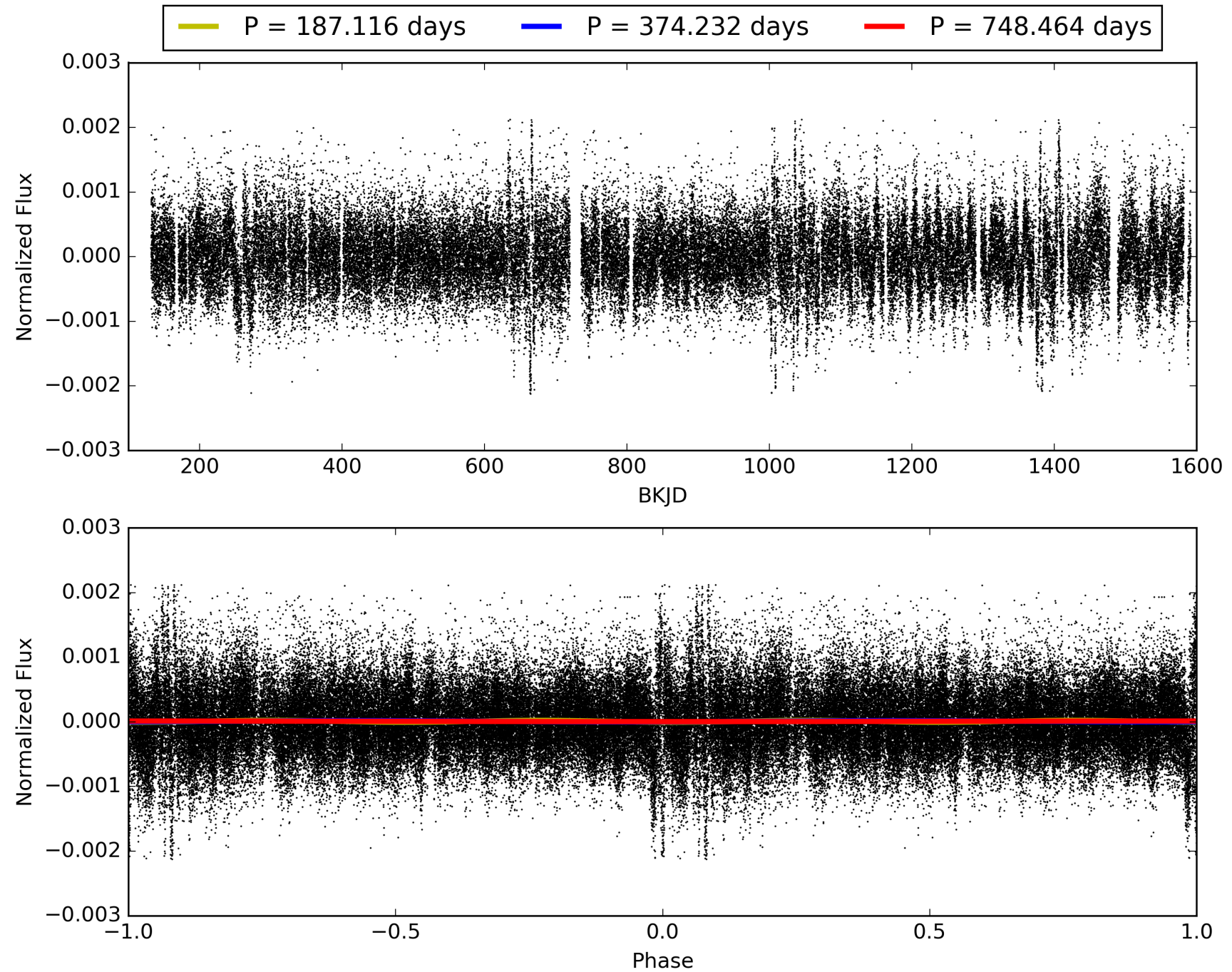
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:01:42 Z

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

TCE 008228631-01, PDC Light Curves

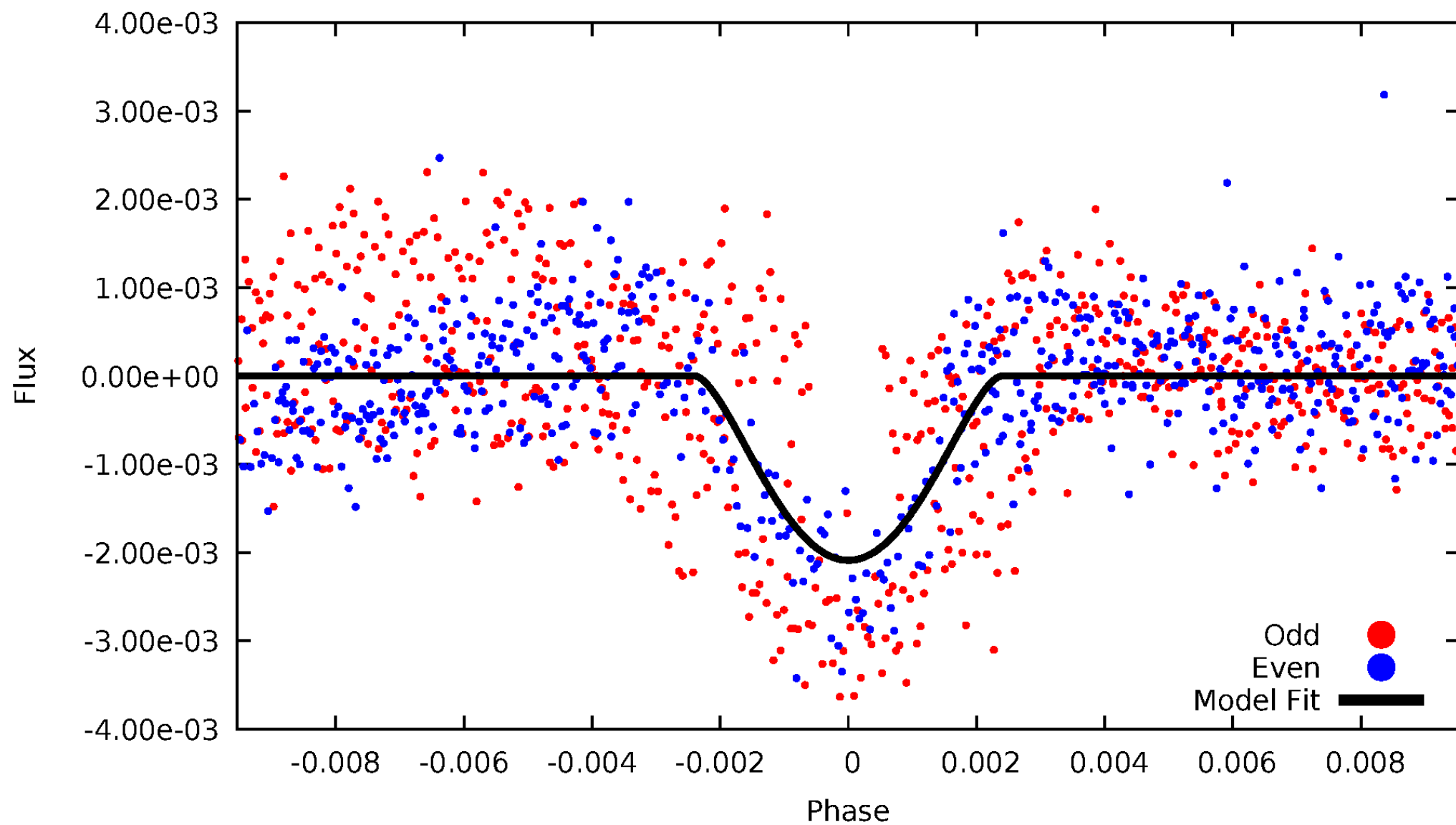


TCE 008228631-01



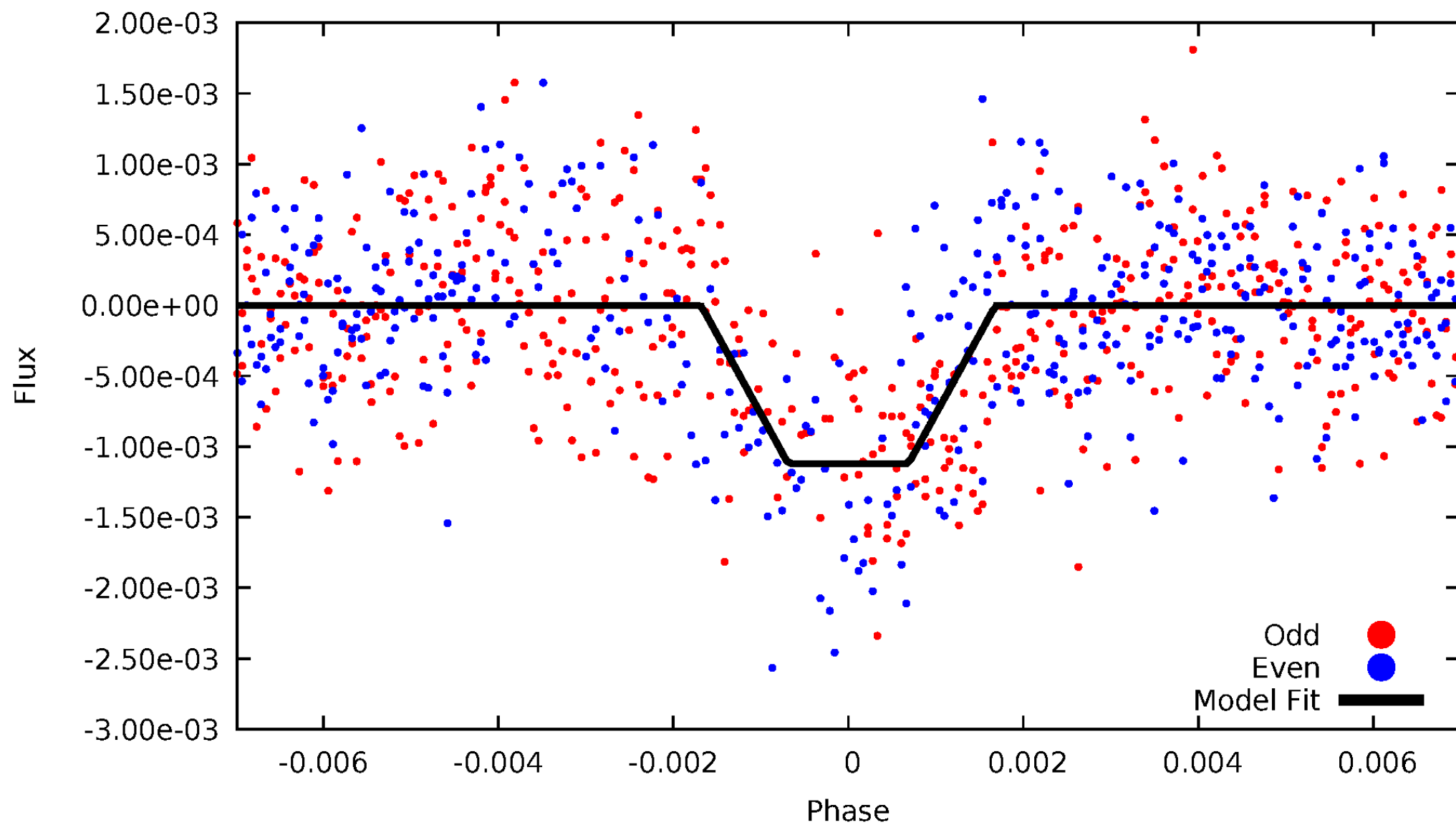
DV Odd/Even

TCE 008228631-01



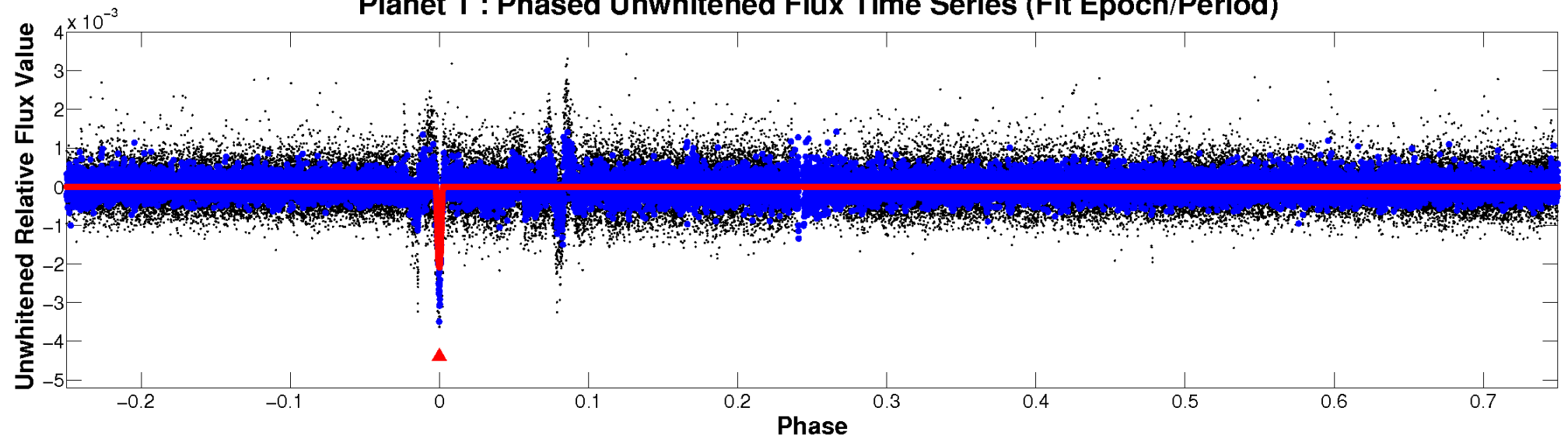
ALT Odd/Even

TCE 008228631-01

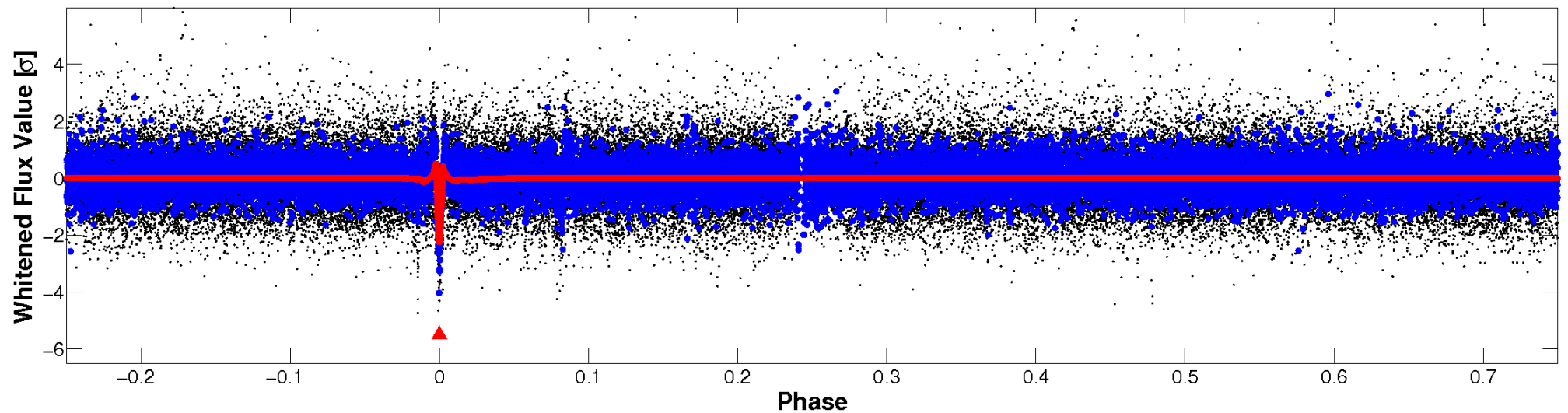


Non-Whitened Vs. Whitened Light Curve

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

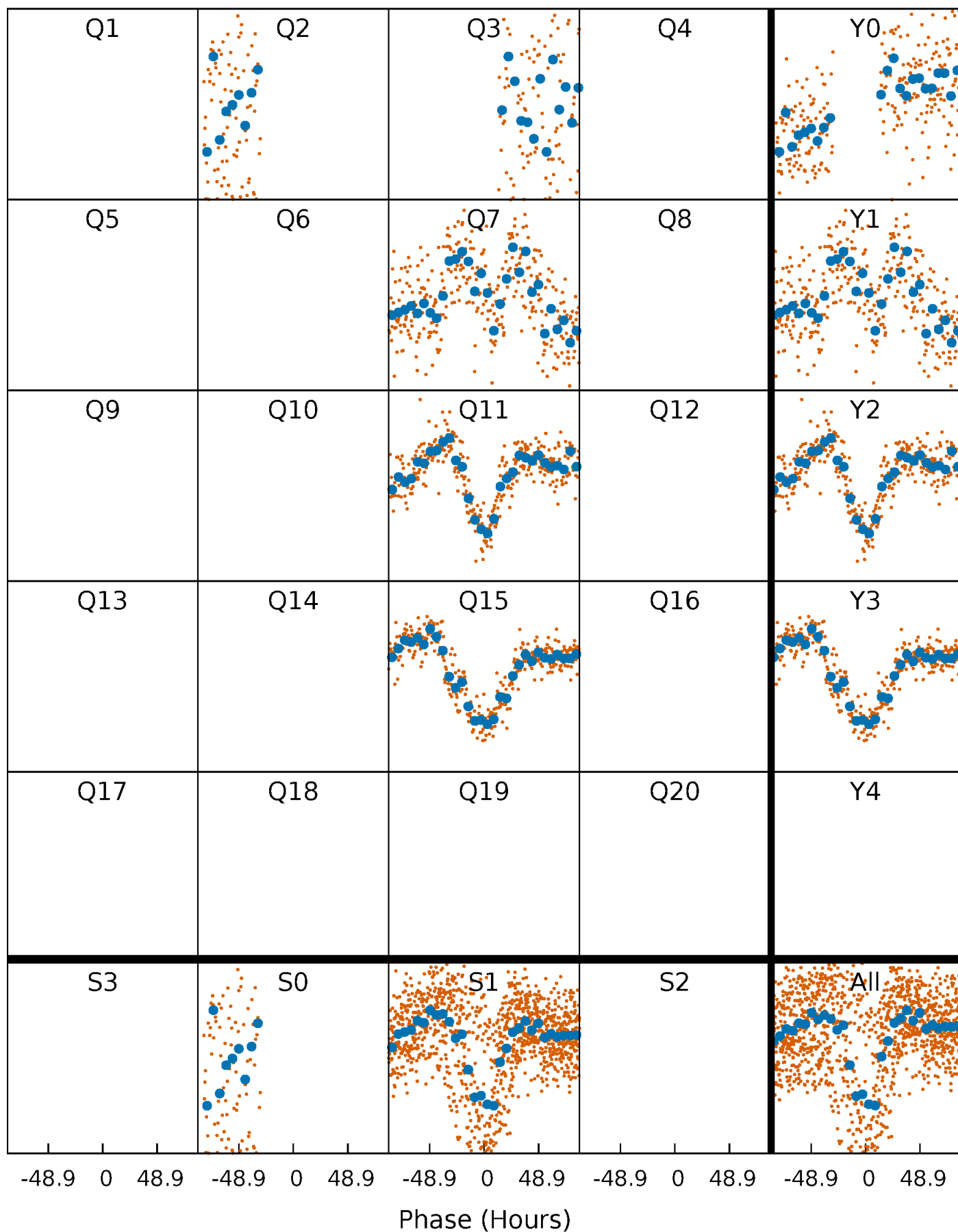


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



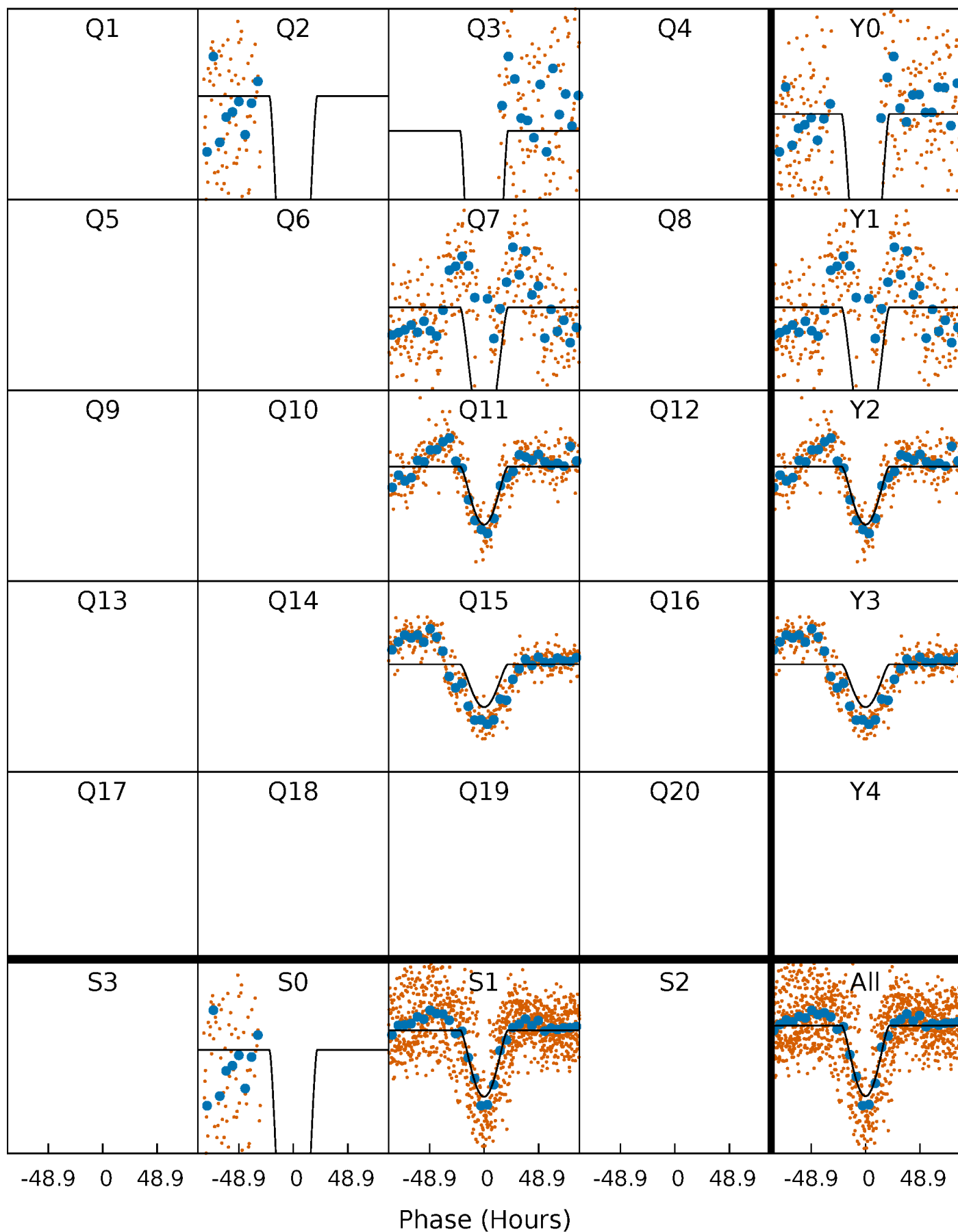
PDC Quarter-Phased Transit Curves

TCE 008228631-01 P=374.232018 Days $T_0=259.688225$ (BKJD)



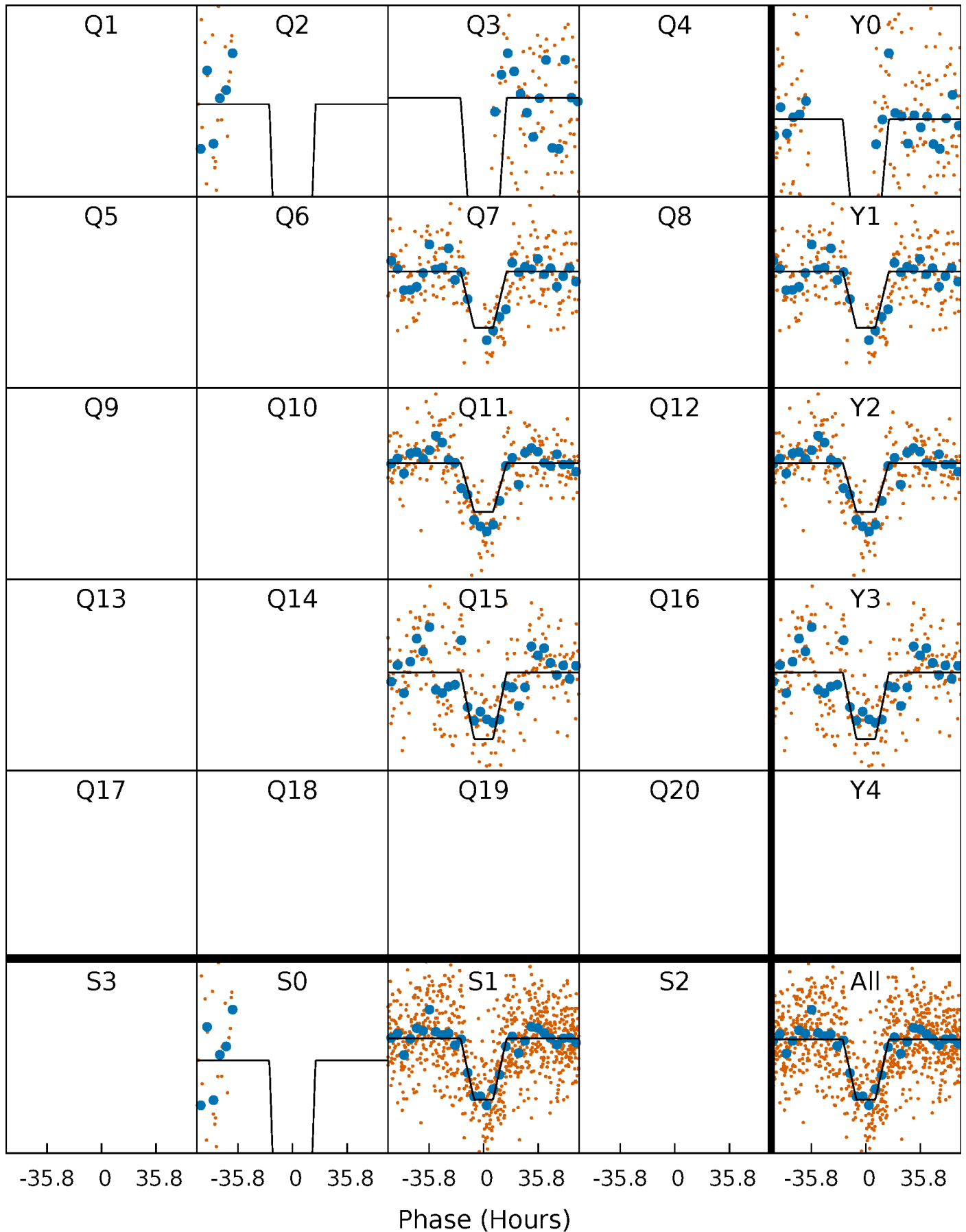
DV Quarter-Phased Transit Curves

TCE 008228631-01 P=374.232018 Days $T_0=259.688225$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

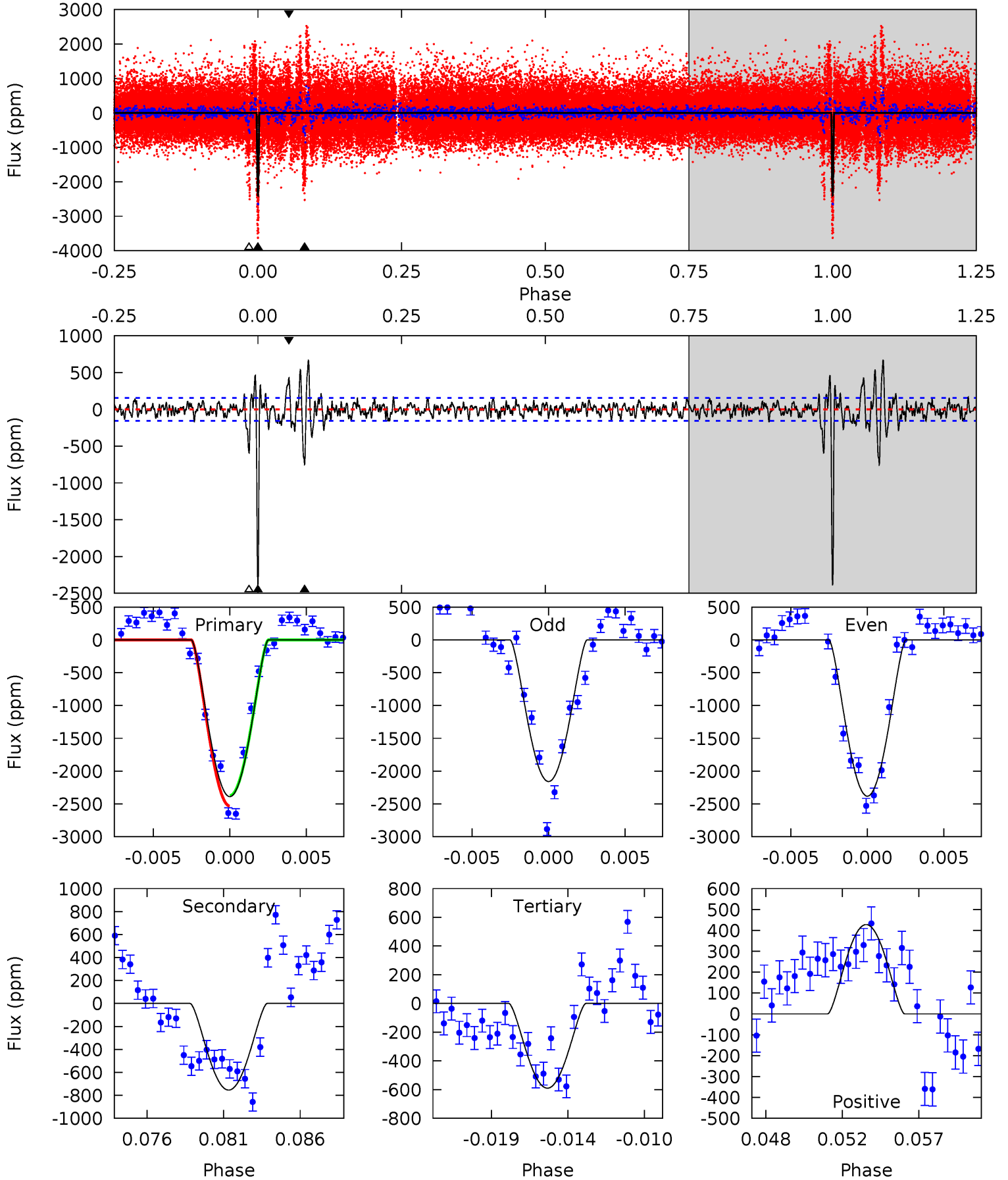
TCE 008228631-01 P=374.077183 Days $T_0=260.019130$ (BKJD)



DV Model-Shift Uniqueness Test

008228631-01, P = 374.232018 Days, E = 259.688225 Days

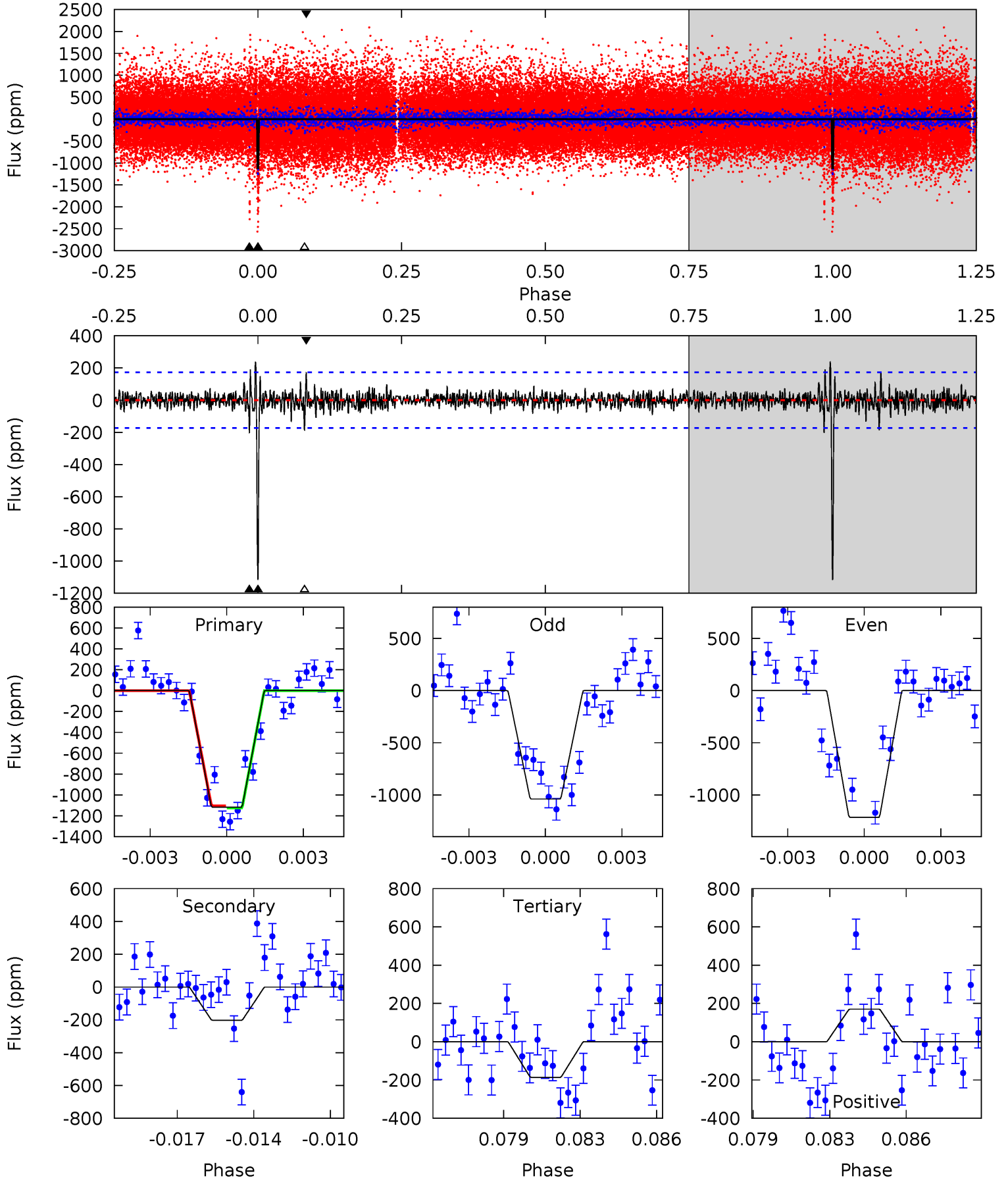
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
79.1	25.0	19.6	14.2	5.17	2.82	3.24	59.6	65.0	5.44	10.8	3.70	1.14	0.22	2.58



Alt Model-Shift Uniqueness Test

008228631-01, P = 374.077183 Days, E = 260.019130 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.8	6.12	5.62	5.14	5.23	2.93	1.00	28.1	28.6	0.50	0.97	2.65	0.84	0.18	0.30



Stellar Parameters For KIC 008228631

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4934^{+148}_{-148}	$4.582^{+0.045}_{-0.045}$	$-0.120^{+0.300}_{-0.300}$	$0.730^{+0.070}_{-0.063}$	$0.743^{+0.076}_{-0.062}$	$2.689^{+0.578}_{-0.475}$
	+3%/-3%	+1%/-1%	+250%/-250%	+10%/-9%	+10%/-8%	+21%/-18%
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 008228631-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-755 ± 30	$10.35^{+7.51}_{-6.59}$	271^{+10}_{-10}	2914^{+1117}_{-380}	3339^{+22713}_{-2232}
Alt.	-202 ± 33	$8.04^{+8.06}_{-5.48}$	271^{+9}_{-10}	2640^{+1003}_{-415}	1415^{+12350}_{-1040}

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

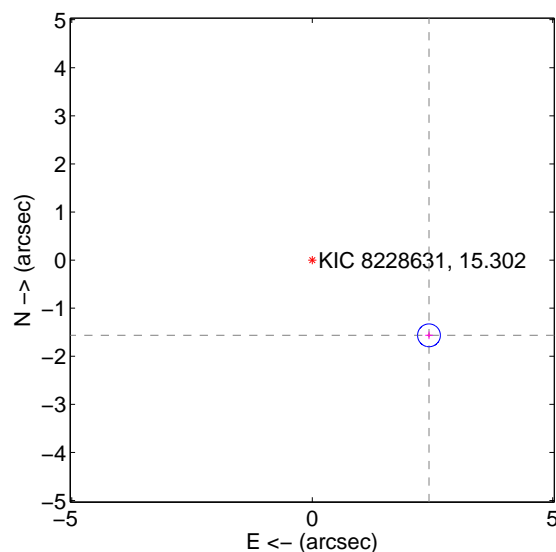
Supplemental centroid analysis for 008228631-01. Kepler magnitude: 15.30. Transit SNR 20.45

There are 0 quarters with good PRF difference image offsets

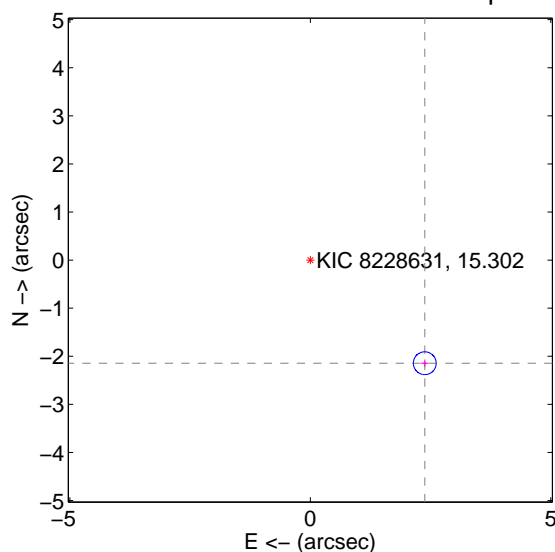
The direct PRF centroid is offset from the target star catalog position by about 0.58 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.887 ± 0.079	36.51	-2.427 ± 0.079	-1.564 ± 0.079
PRF-fit source offset from KIC position	3.203 ± 0.079	40.51	-2.379 ± 0.079	-2.144 ± 0.079
photometric centroid source offset	1.26 ± 0.98	1.29	0.70 ± 0.66	-1.05 ± 1.09

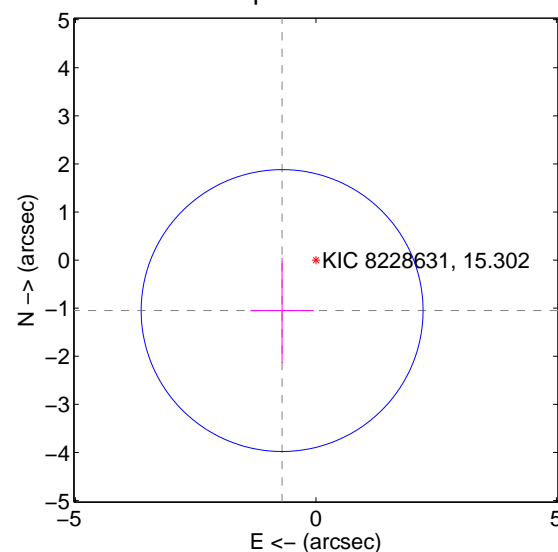
offset from difference PRF-fit to OOT PRF-fit



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.



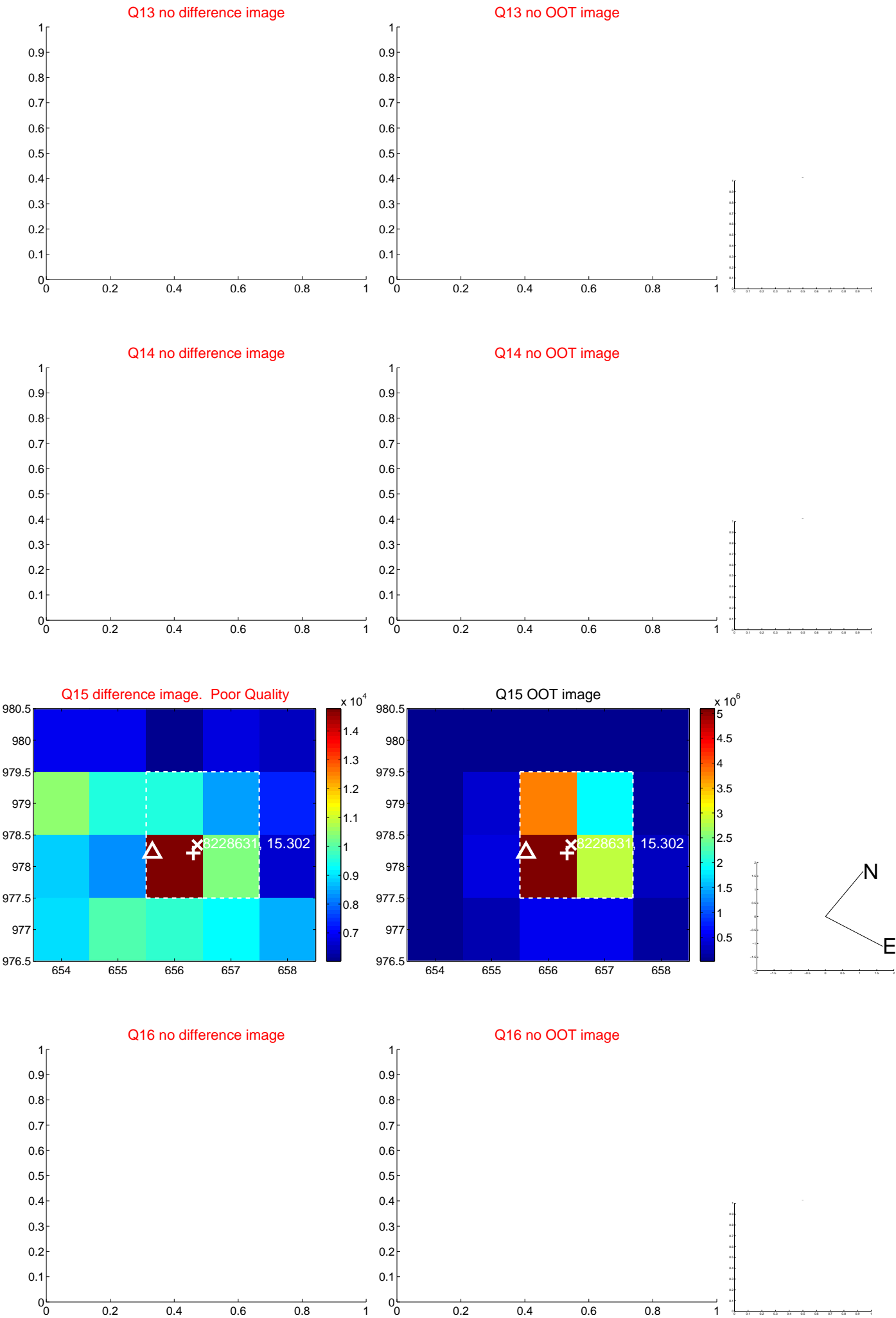
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



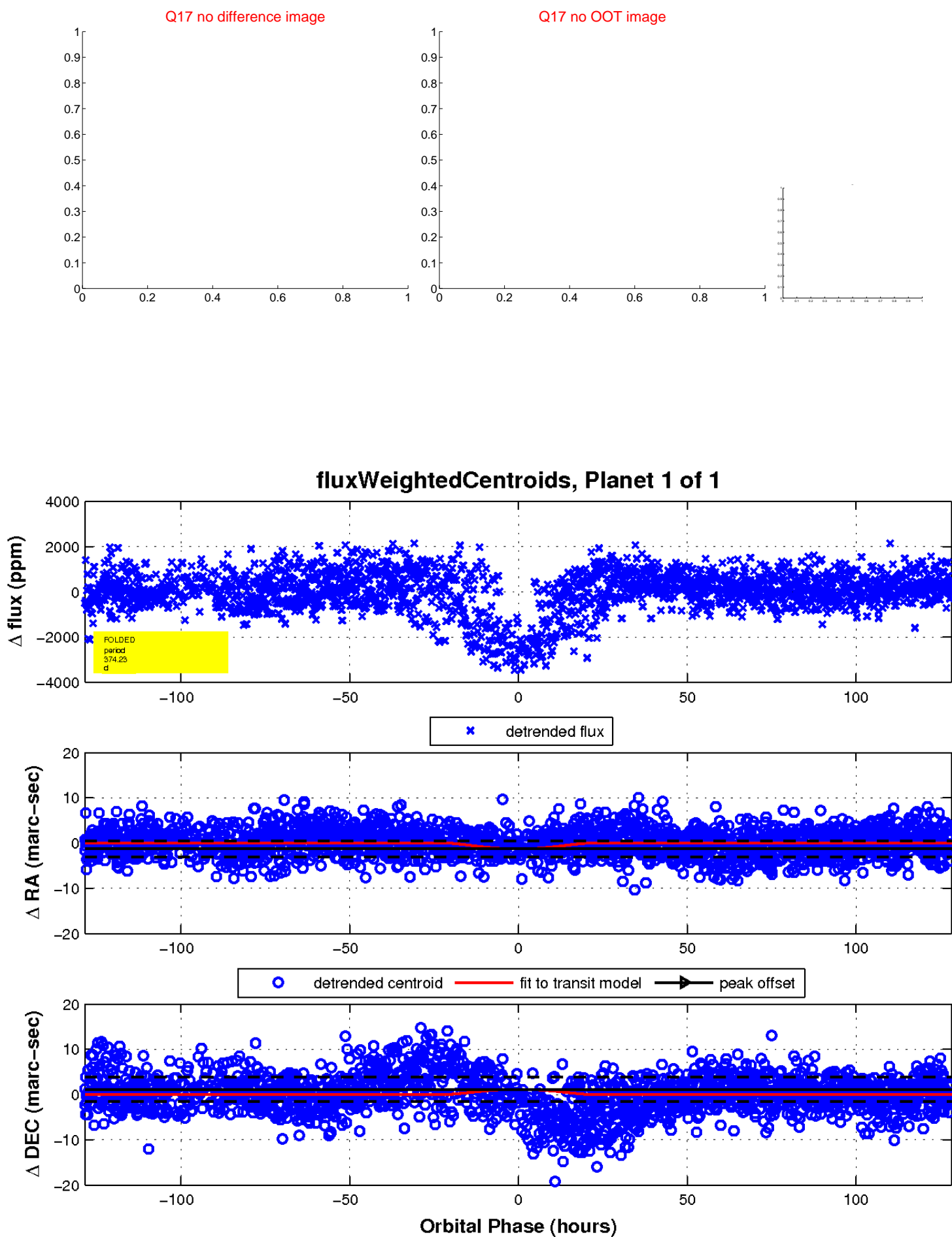
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

