

KIC 008687209

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})
008687209-01	OBS	No	375.592397	139.104258	1725.0	61.270	12.5	21.3	0.85	5654	4.42	0.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008687209-01	OBS	FP	0.00	1	0	0	1	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—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.

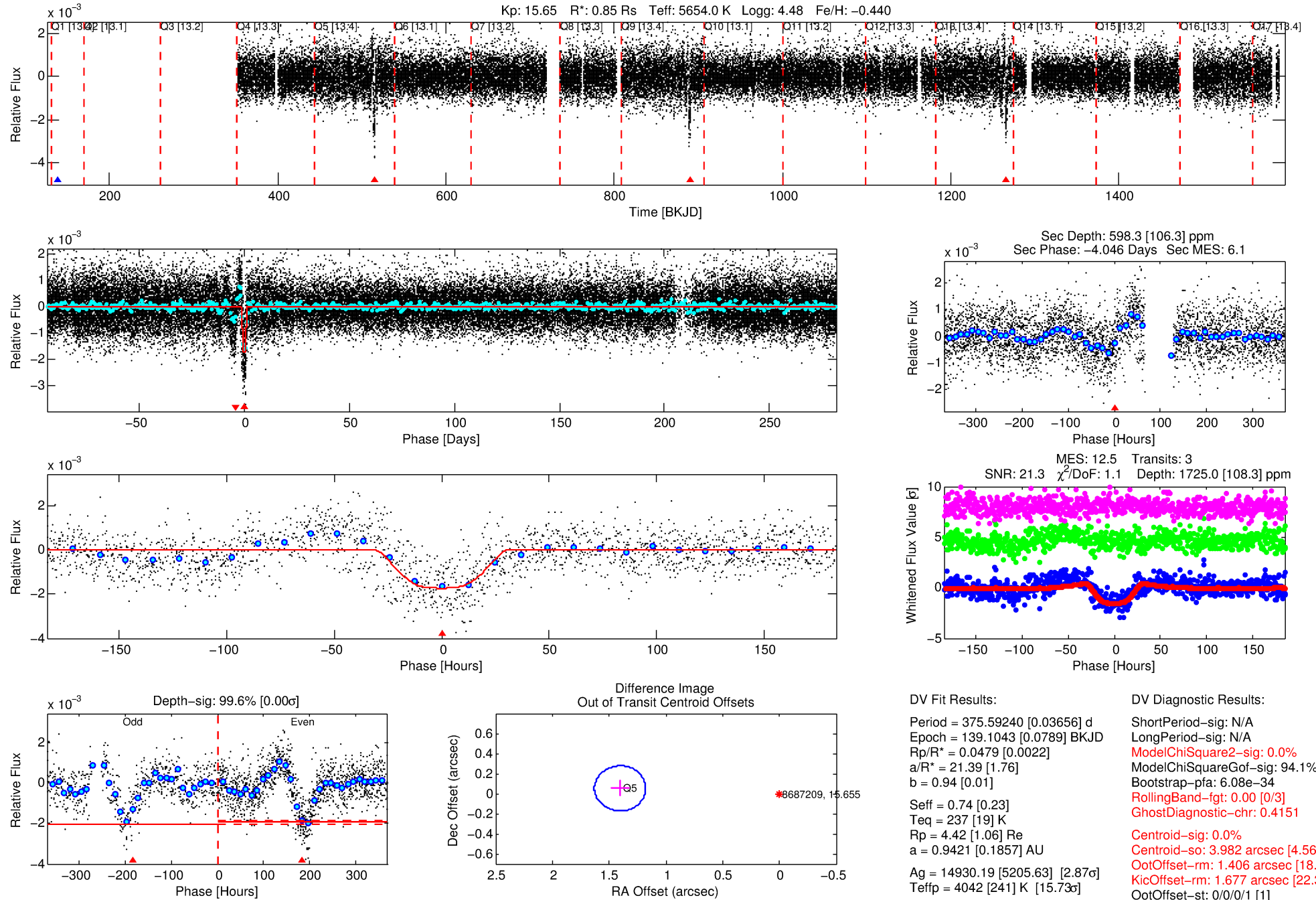
Ephemeris Match Information For 008687209-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
008687209-01	8687209	008884774-01	8884774	1:1	1422.7	357	3	14.80	15.66	0.44	Col-Anomaly	1	3.98	3.17

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: 8687209 Candidate: 1 of 1 Period: 375.592 d



DV Fit Results:

Period = 375.59240 [0.03656] d
Epoch = 139.1043 [0.0789] BKJD
Rp/R* = 0.0479 [0.0022]
a/R* = 21.39 [1.76]
b = 0.94 [0.01]
Seff = 0.74 [0.23]
Teq = 237 [19] K
Rp = 4.42 [1.06] Re
a = 0.9421 [0.1857] AU
Ag = 14930.19 [5205.63] [2.87σ]
Teff = 4042 [241] K [15.73σ]

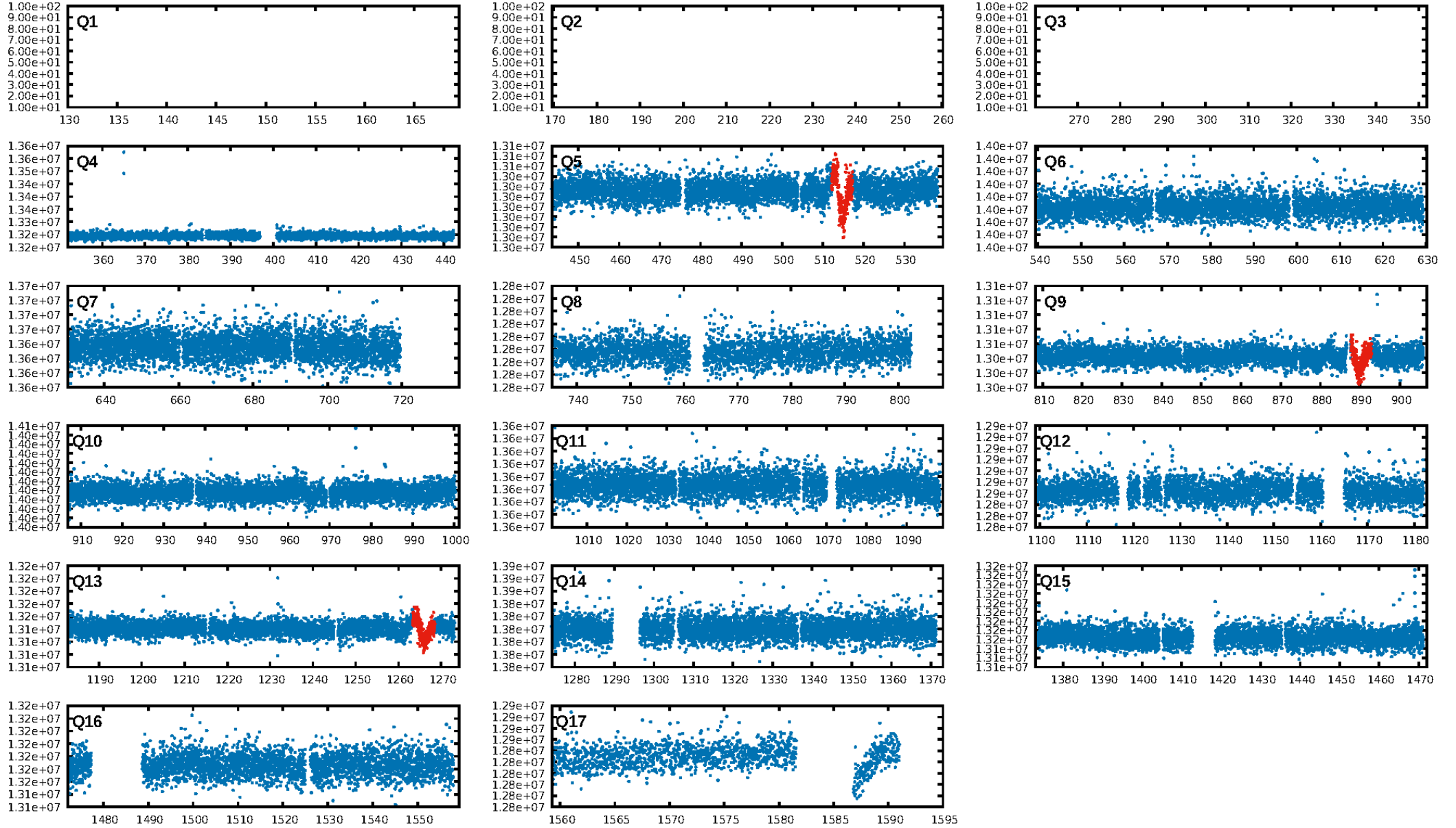
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 94.1%
Bootstrap-pfa: 6.08e-34
RollingBand-fgt: 0.00 [0/3]
GhostDiagnostic-chr: 0.4151
Centroid-sig: 0.0%
Centroid-so: 3.982 arcsec [4.56σ]
OotOffset-rm: 1.406 arcsec [18.75σ]
KicOffset-rm: 1.677 arcsec [22.37σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [1/1]

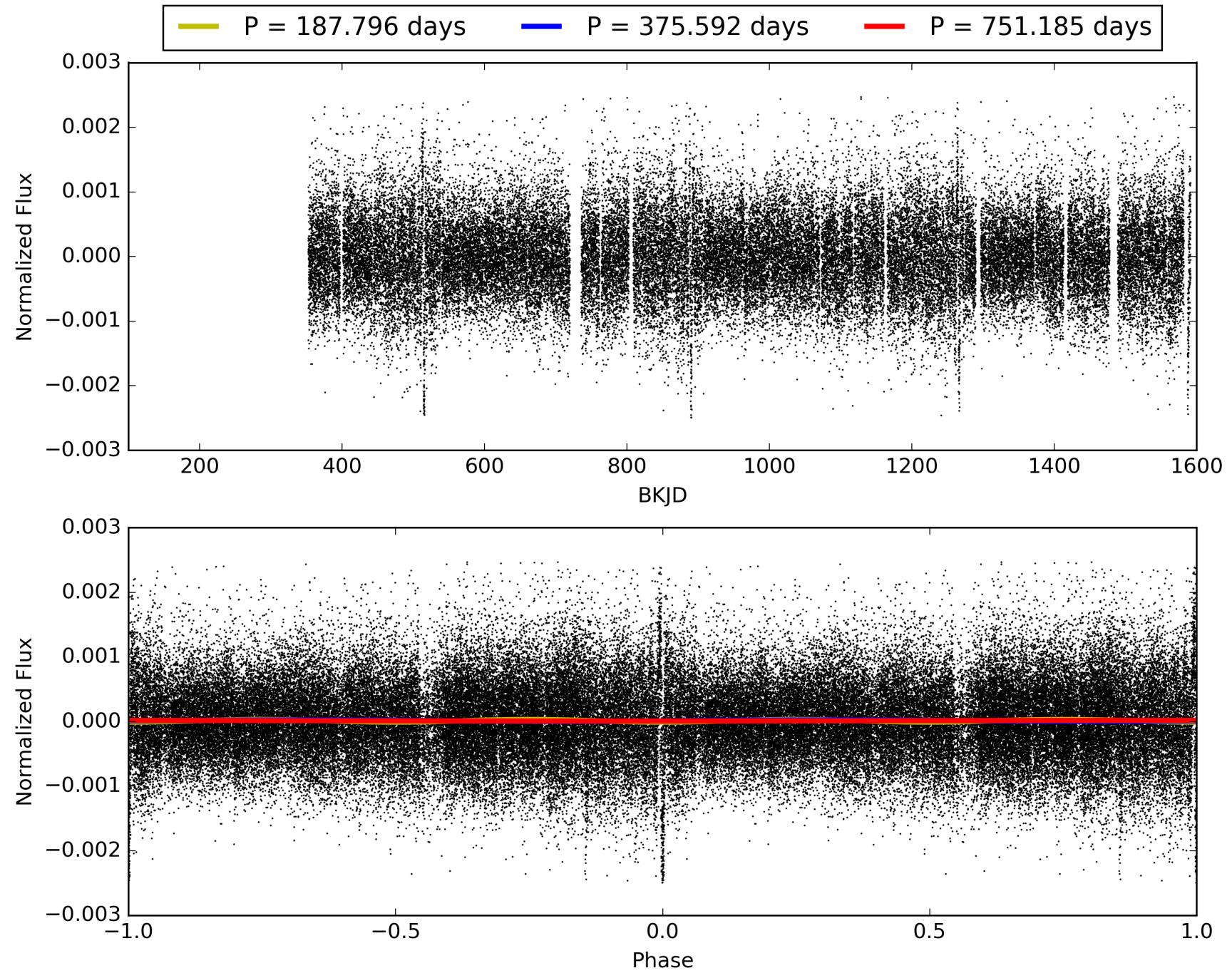
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:39:41 Z

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

TCE 008687209-01, PDC Light Curves

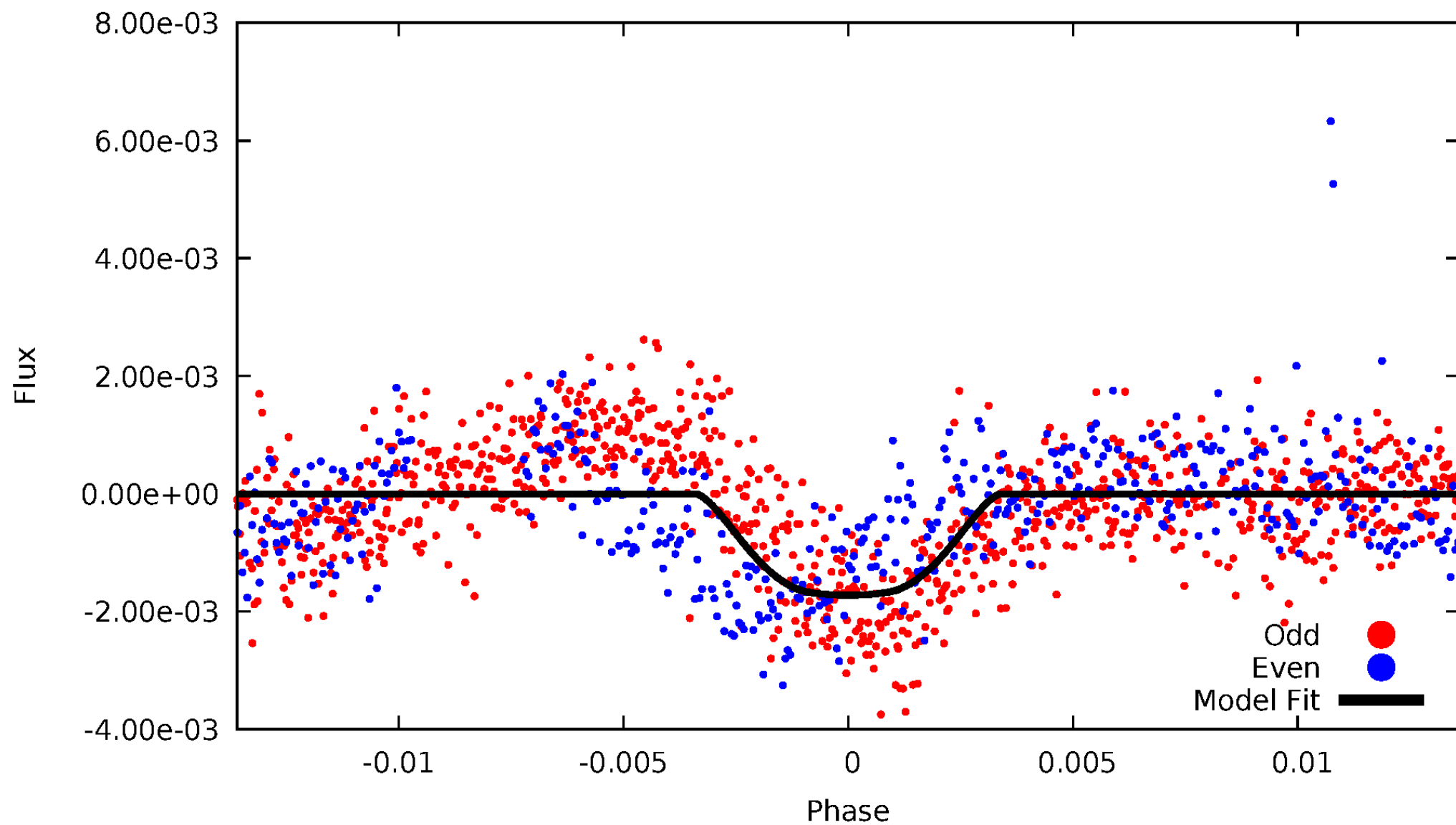


TCE 008687209-01



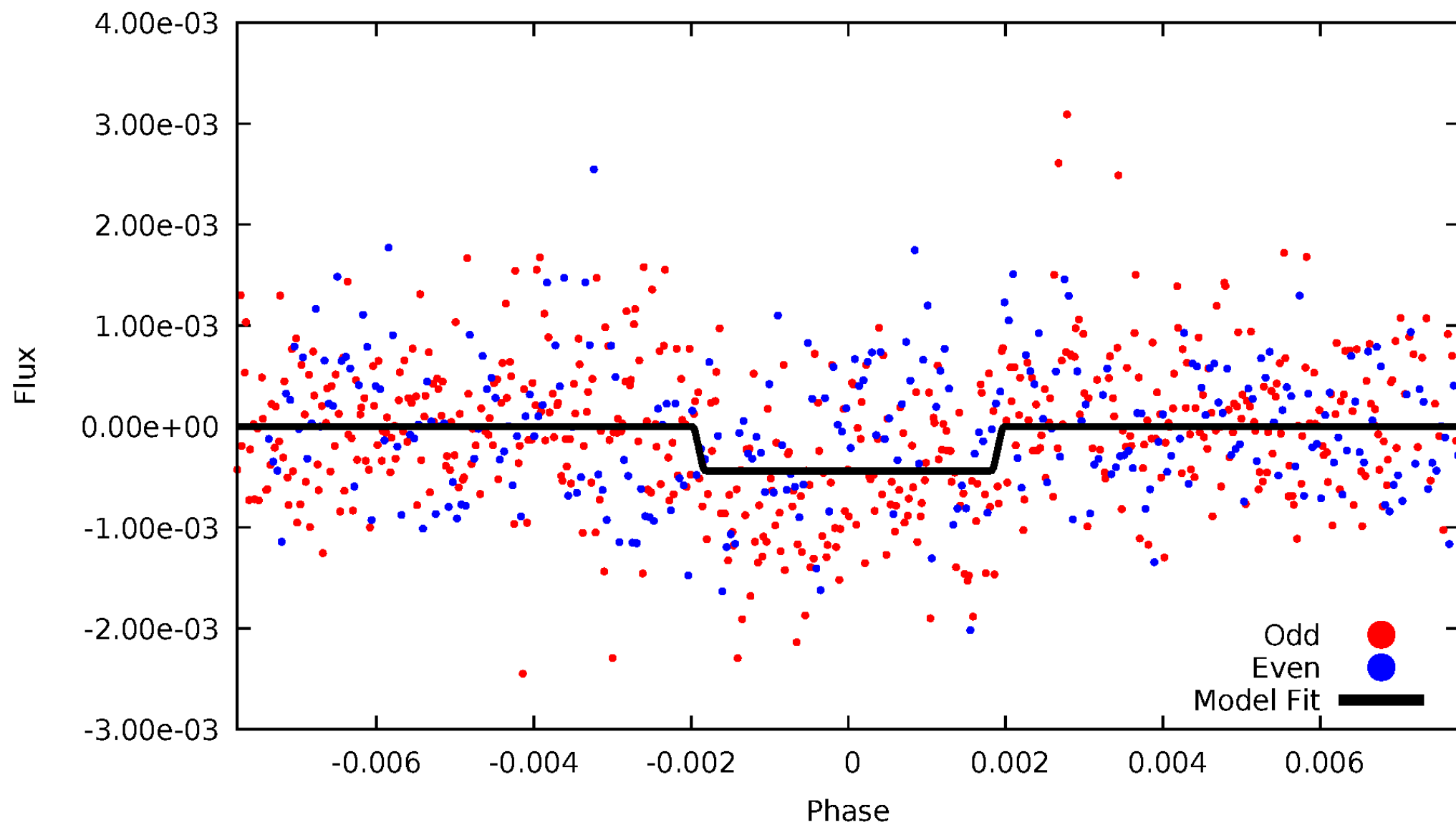
DV Odd/Even

TCE 008687209-01

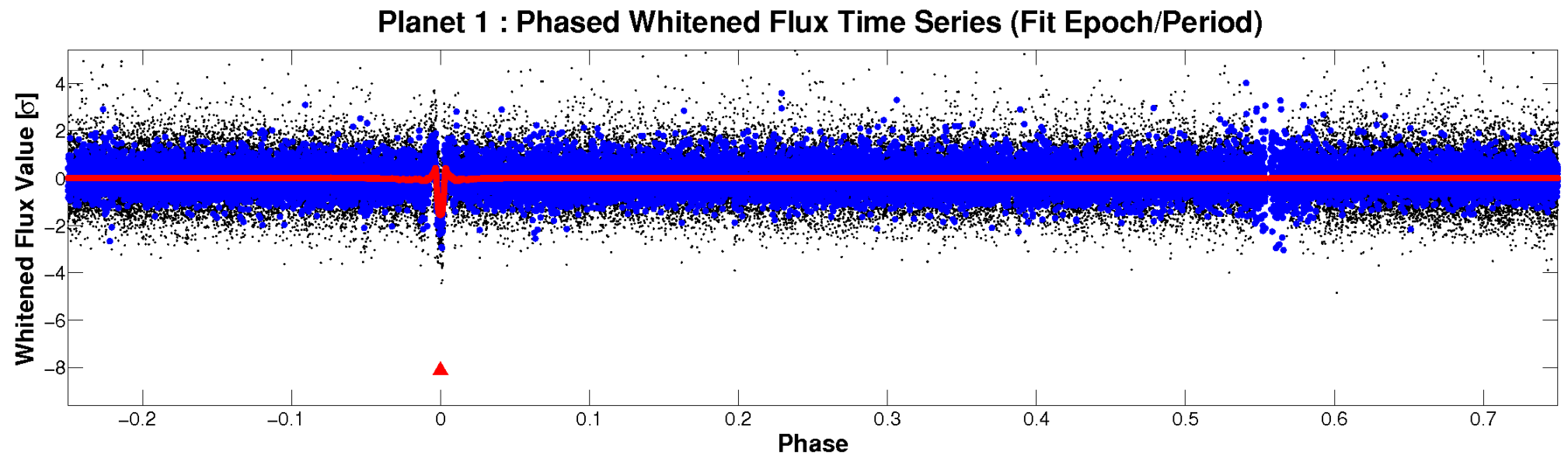
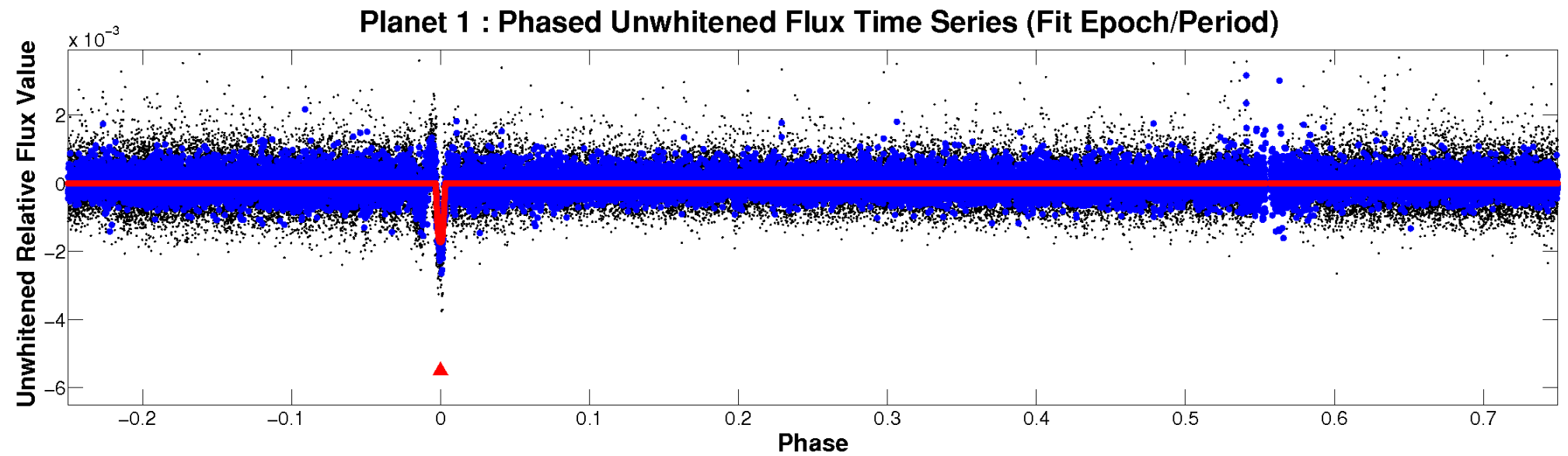


ALT Odd/Even

TCE 008687209-01

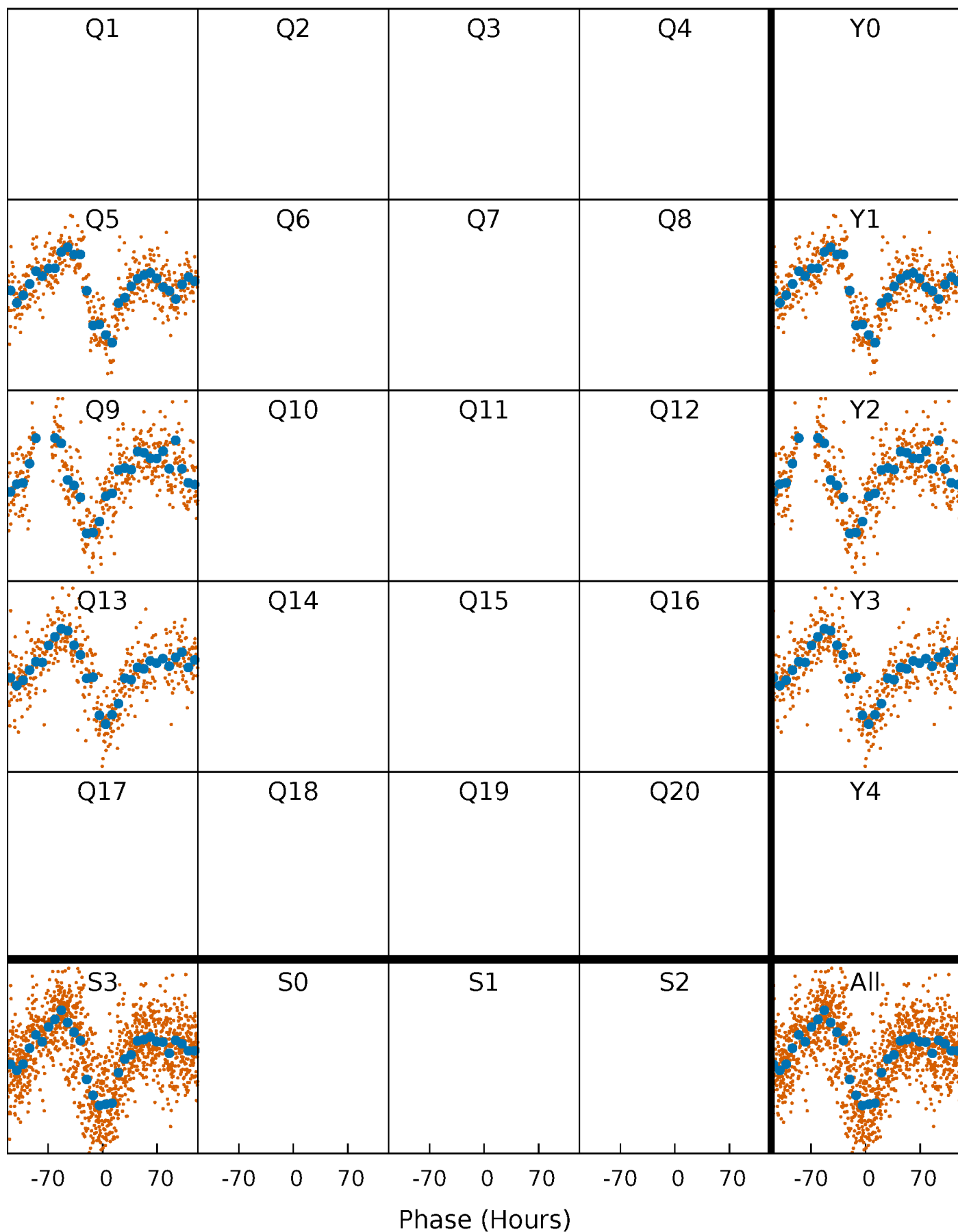


Non-Whitened Vs. Whitened Light Curve



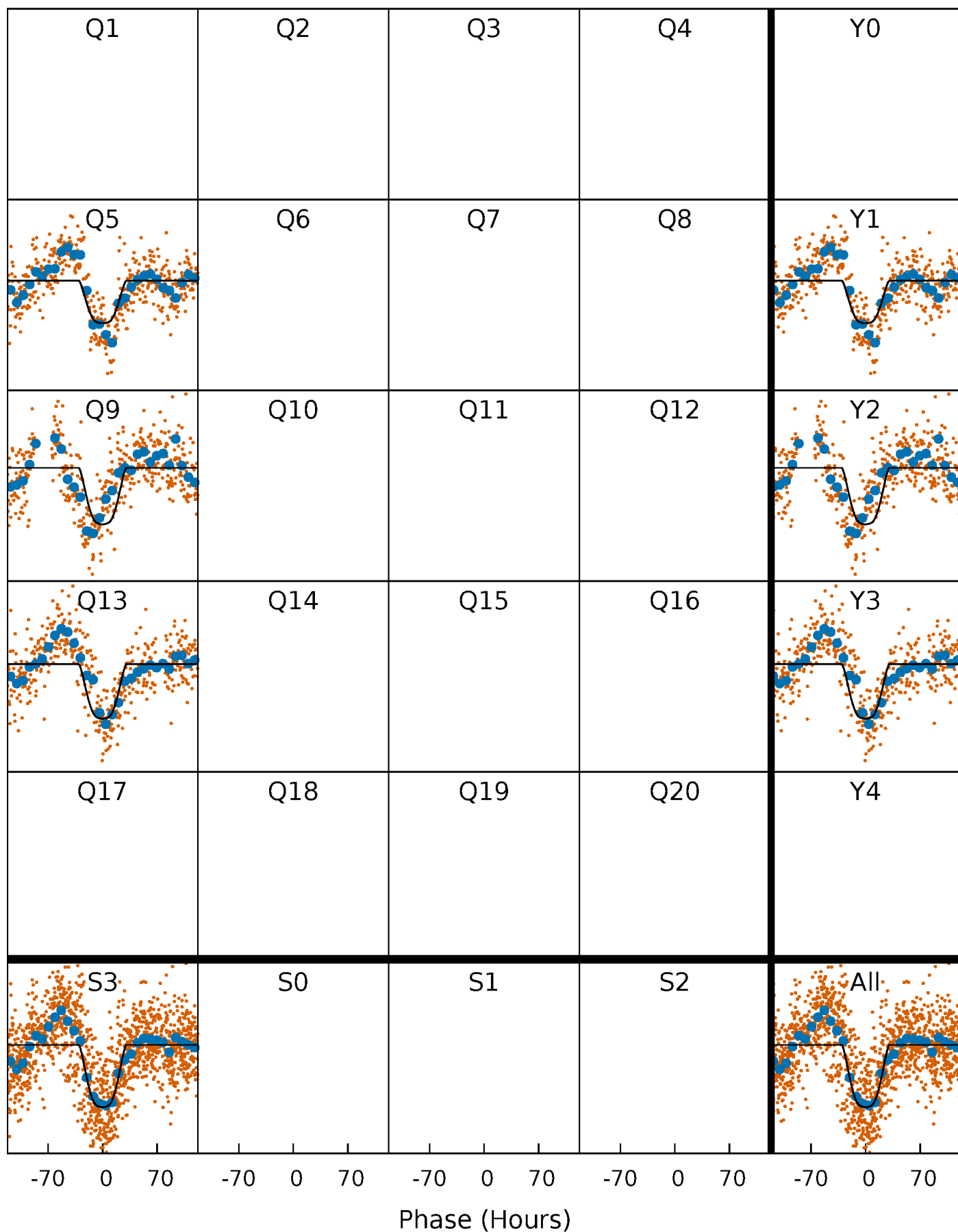
PDC Quarter-Phased Transit Curves

TCE 008687209-01 P=375.592397 Days $T_0=139.104257$ (BKJD)



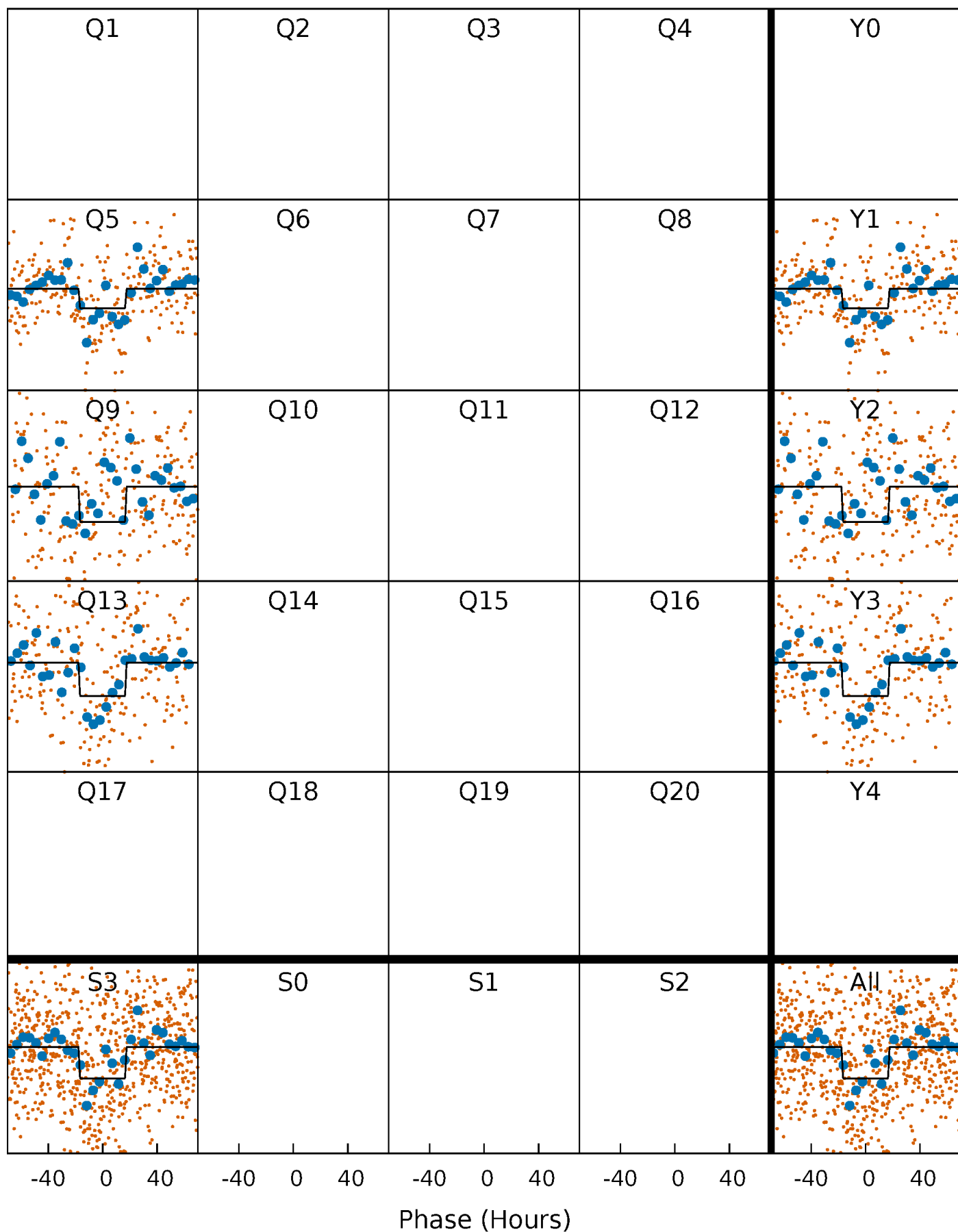
DV Quarter-Phased Transit Curves

TCE 008687209-01 P=375.592397 Days $T_0=139.104257$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

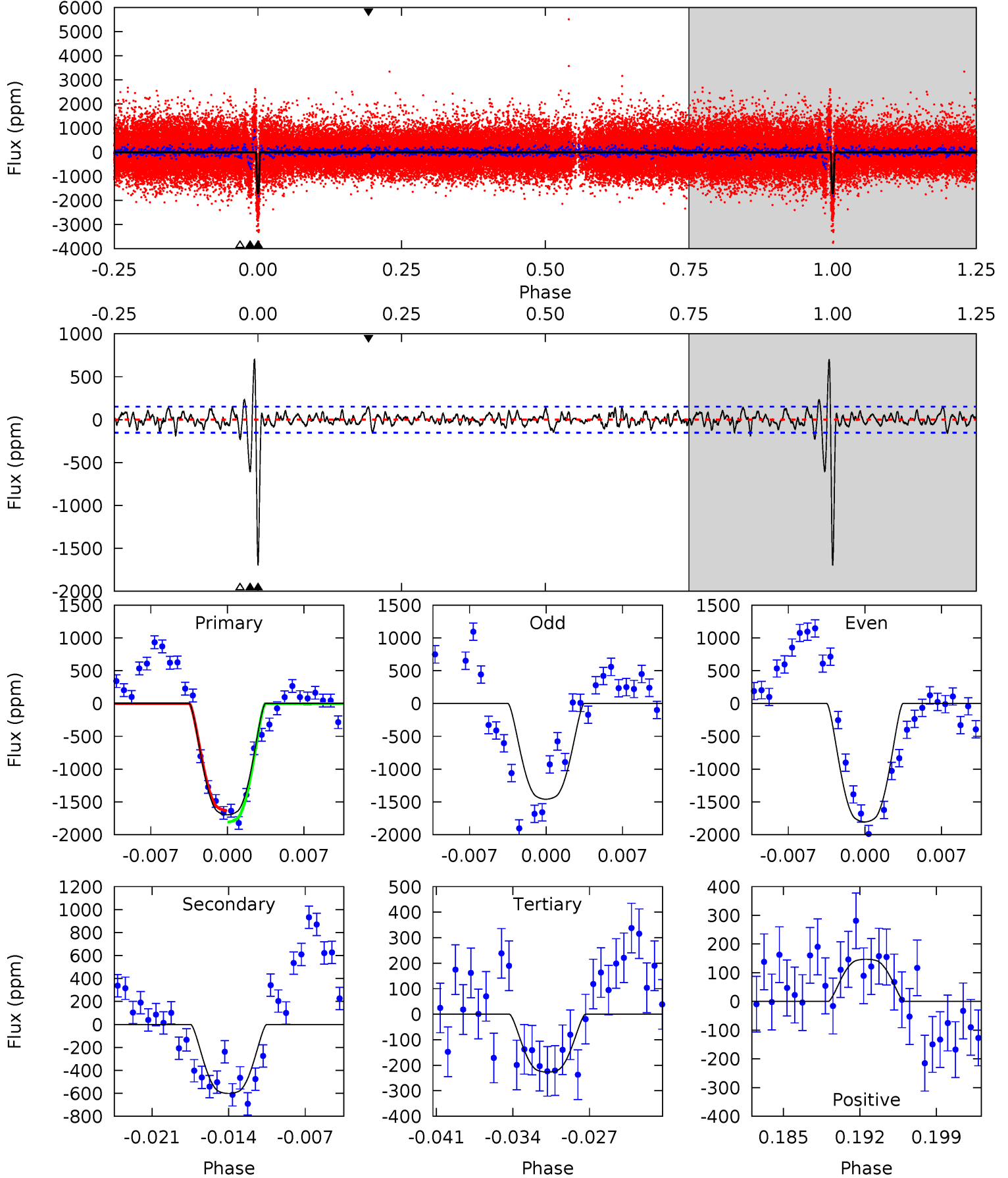
TCE 008687209-01 P=375.766357 Days $T_0=138.812029$ (BKJD)



DV Model-Shift Uniqueness Test

008687209-01, P = 375.592397 Days, E = 139.104257 Days

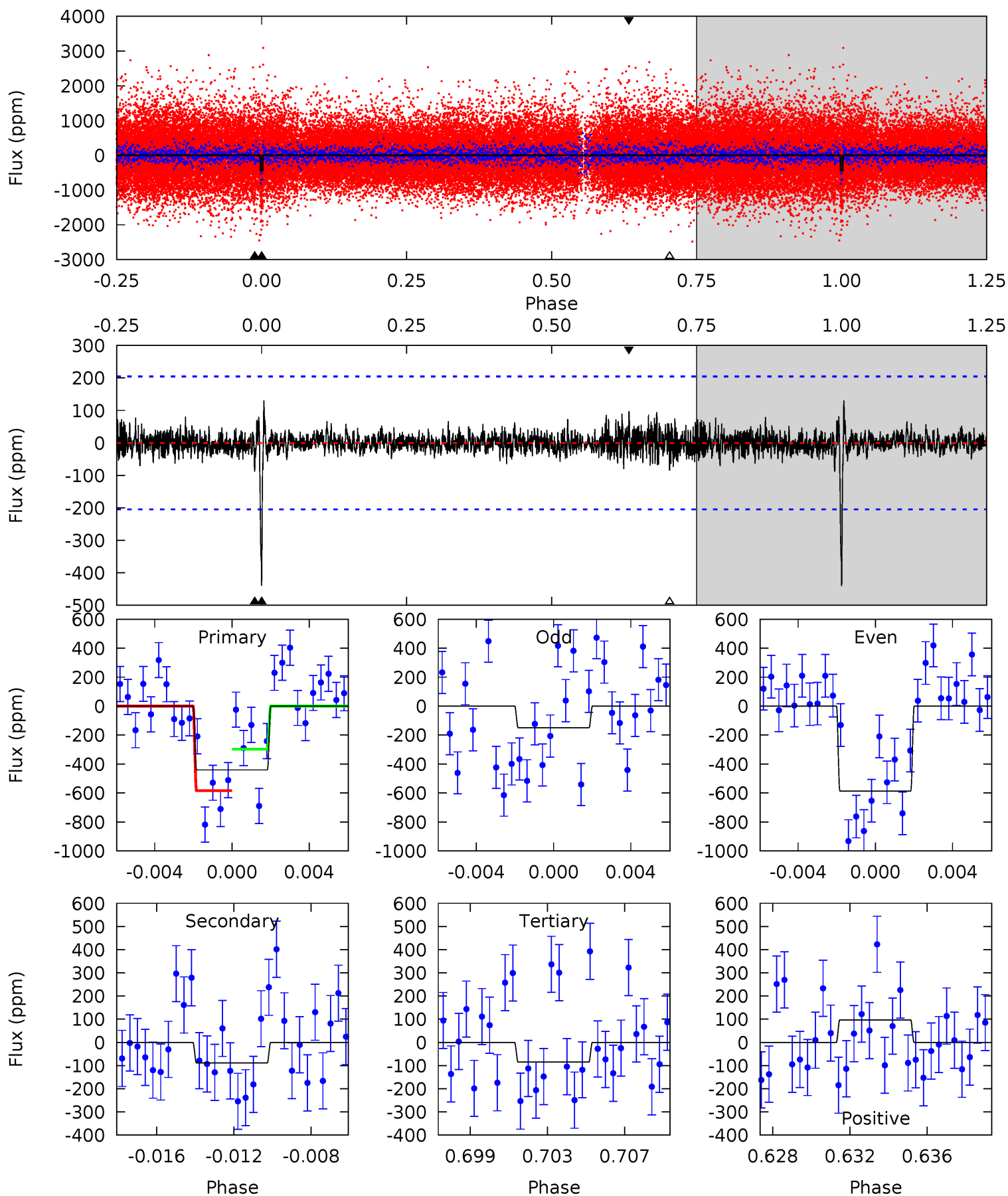
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
57.4	20.3	7.67	4.97	5.10	2.70	1.92	49.7	52.4	12.7	15.4	5.46	1.11	0.29	2.98



Alt Model-Shift Uniqueness Test

008687209-01, P = 375.766357 Days, E = 138.812029 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	2.25	2.16	2.47	5.20	2.88	0.61	9.04	8.72	0.09	-0.22	5.22	0.84	0.23	3.65



Stellar Parameters For KIC 008687209

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5654^{+186}_{-186}	$4.480^{+0.104}_{-0.156}$	$-0.440^{+0.300}_{-0.300}$	$0.847^{+0.199}_{-0.107}$	$0.790^{+0.112}_{-0.064}$	$1.833^{+0.853}_{-0.795}$
	+3%/-3%	+2%/-3%	+68%/-68%	+23%/-13%	+14%/-8%	+47%/-43%
Source	KIC0	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 008687209-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-601 ± 30	$4.45^{+0.54}_{-0.43}$	331^{+22}_{-18}	4279^{+135}_{-133}	15002^{+3085}_{-3142}
Alt.	-89 ± 39	$1.94^{+0.32}_{-0.24}$	331^{+19}_{-19}	4078^{+346}_{-404}	11465^{+6924}_{-5190}

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 $A_{obs} \gg 1.0$

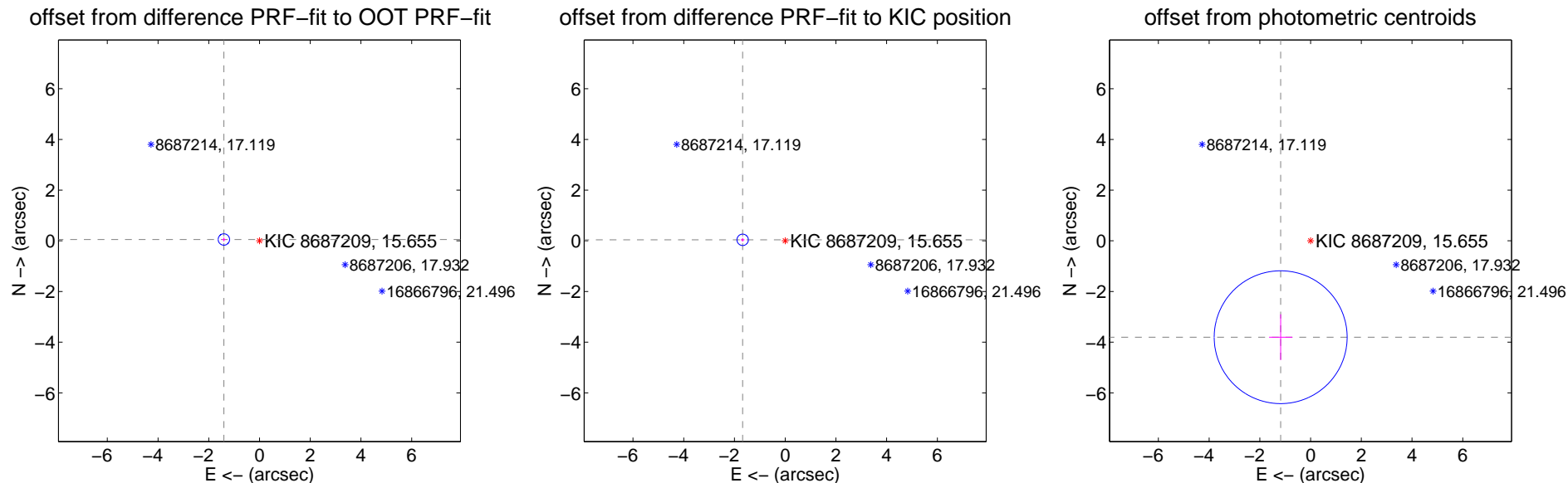
DV Centroid Data

Supplemental centroid analysis for 008687209-01. Kepler magnitude: 15.65. Transit SNR 21.27

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.406 ± 0.075	18.75	1.405 ± 0.075	0.052 ± 0.076
PRF-fit source offset from KIC position	1.677 ± 0.075	22.37	1.676 ± 0.075	0.039 ± 0.076
photometric centroid source offset	3.98 ± 0.87	4.56	1.18 ± 0.46	-3.80 ± 0.90

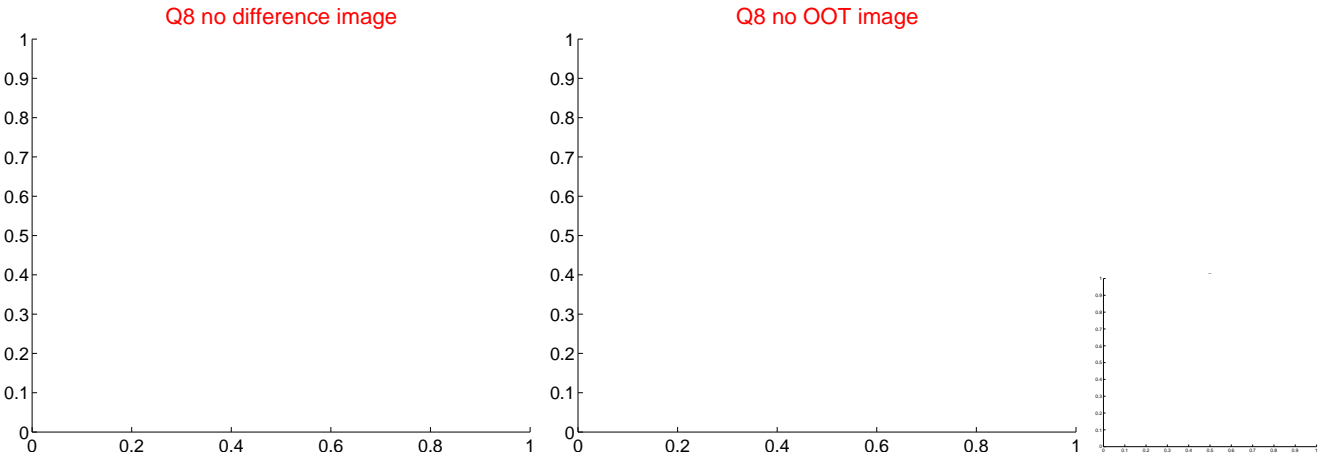
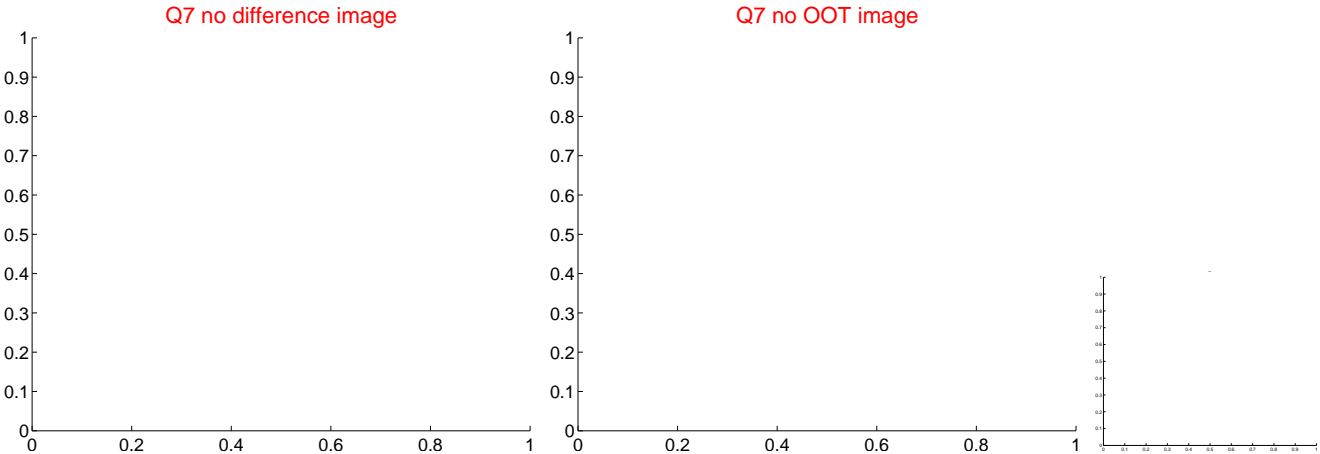
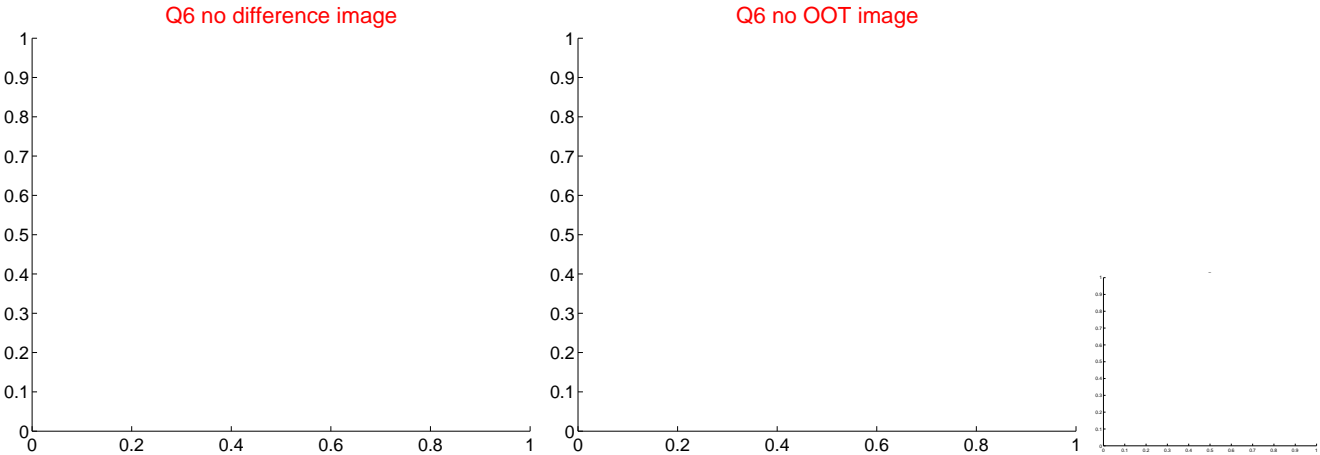
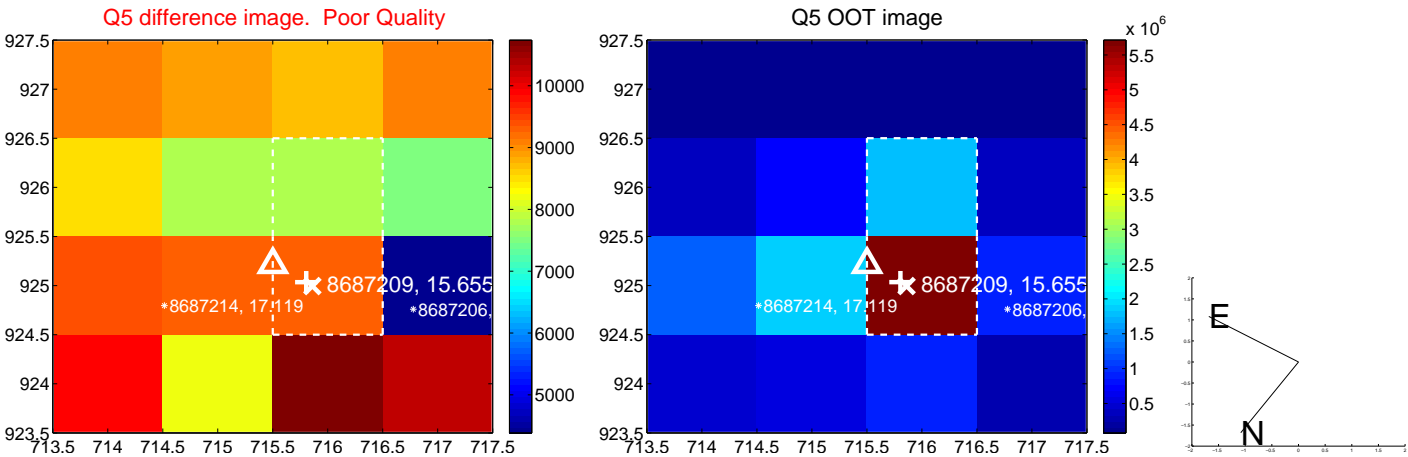


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



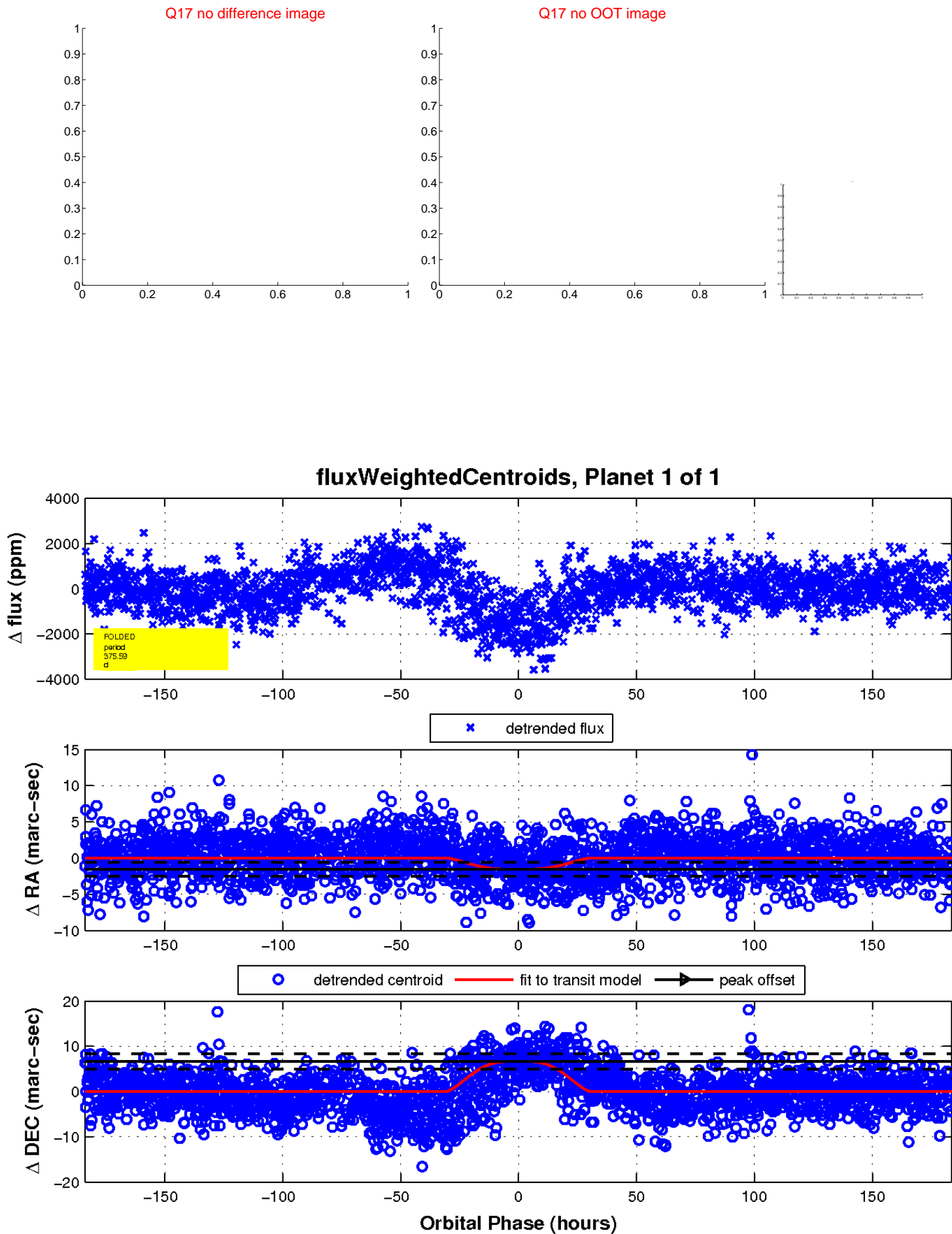
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \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

