

KIC 008867609

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})
008867609-01	OBS	No	428.622654	223.809026	1212.1	13.406	13.4	6.0	0.56	3989	1.92	0.08

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008867609-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

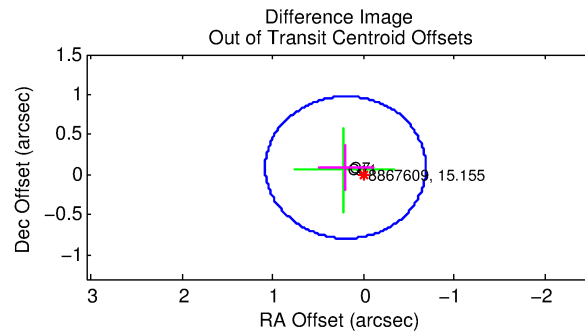
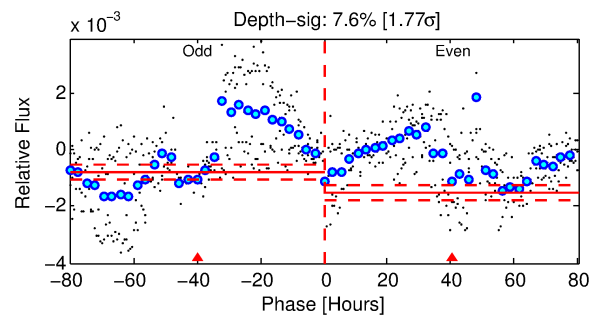
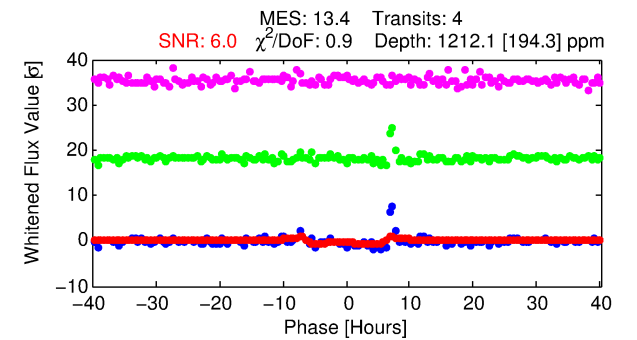
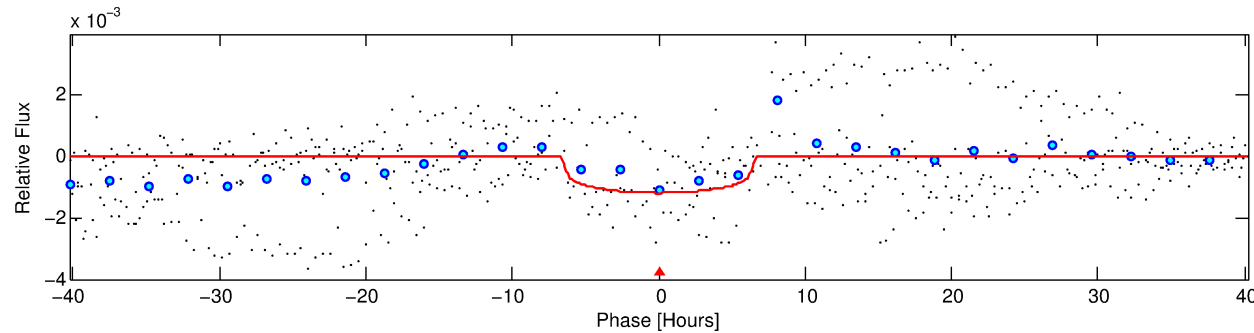
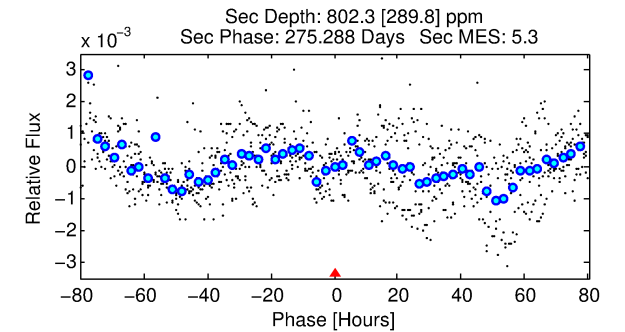
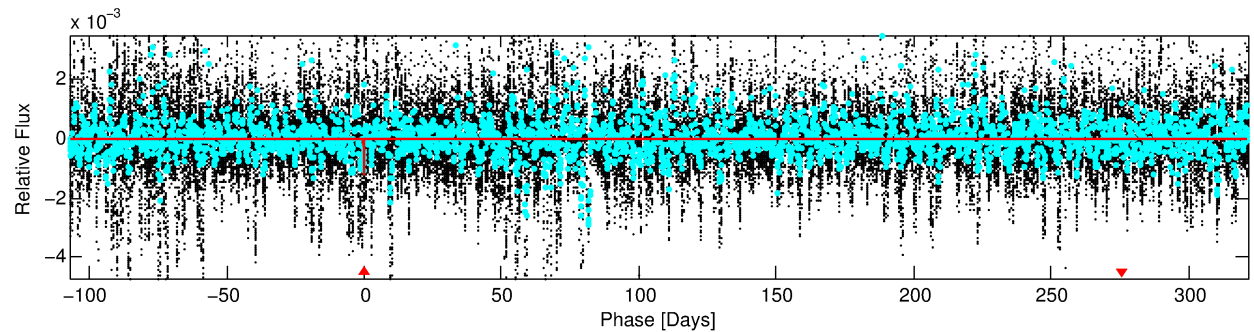
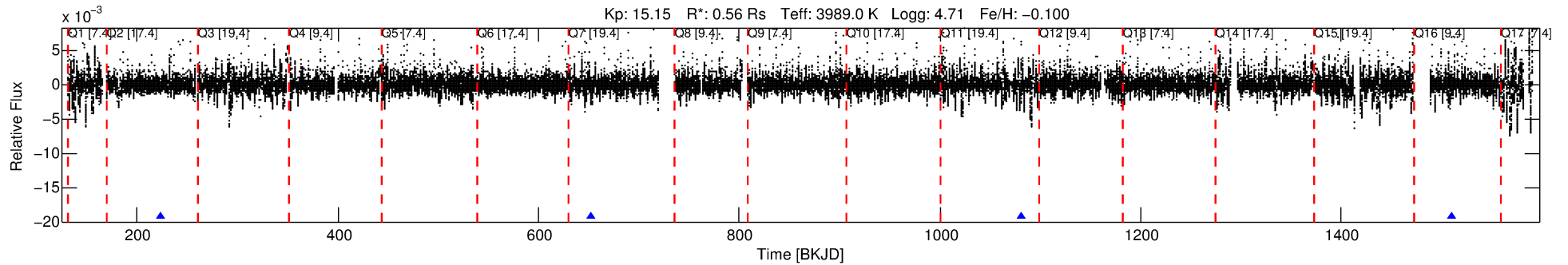
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008867609-01

No Significant Match Found

DV One-Page Summary

KIC: 8867609 Candidate: 1 of 1 Period: 428.623 d



DV Fit Results:

Period = 428.62265 [0.00656] d
Epoch = 223.8090 [0.0140] BKJD
Rp/R* = 0.0317 [0.0144]
a/R* = 240.18 [420.33]
b = 0.31 [5.08]
Seff = 0.08 [0.01]
Teq = 136 [4] K
Rp = 1.92 [0.88] Re
a = 0.9288 [0.0482] AU
Ag = 103495.71 [101314.58] [1.02 σ]
Teffp = 3772 [926] K [3.93 σ]

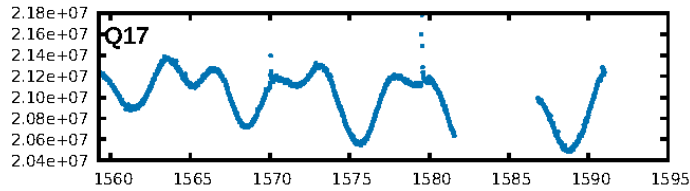
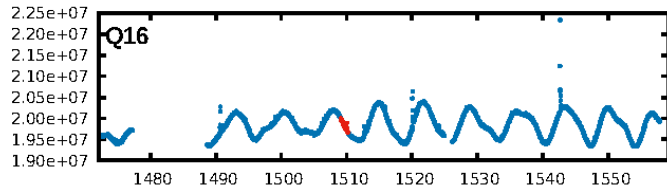
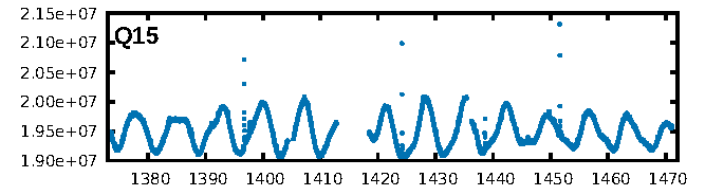
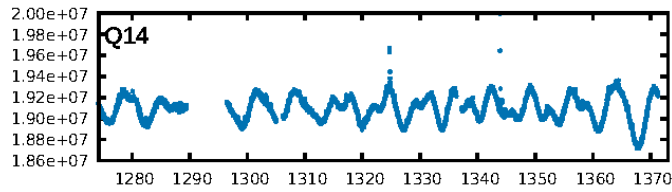
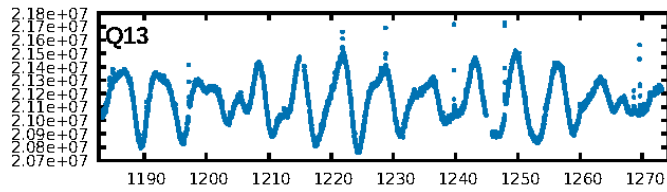
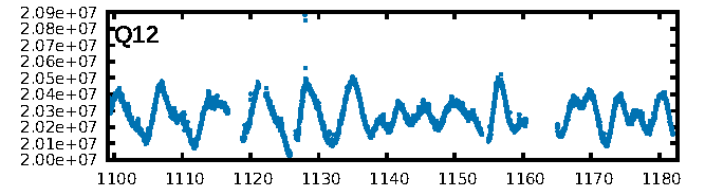
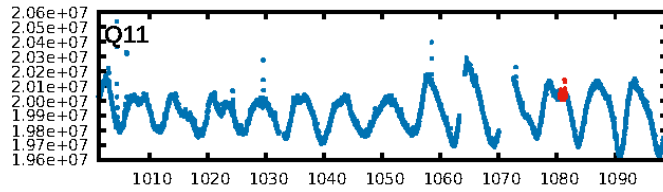
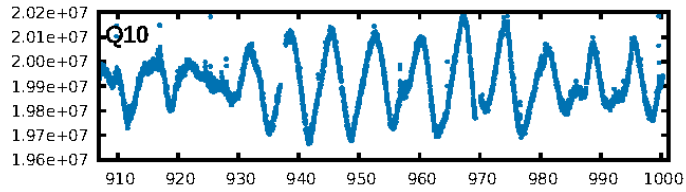
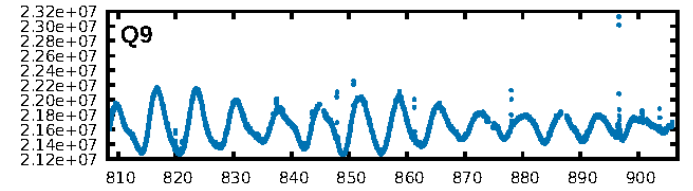
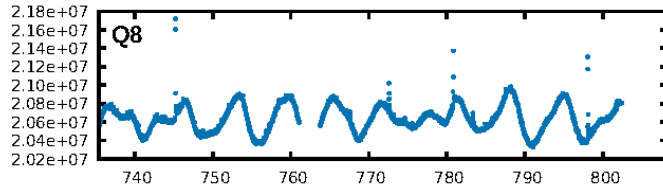
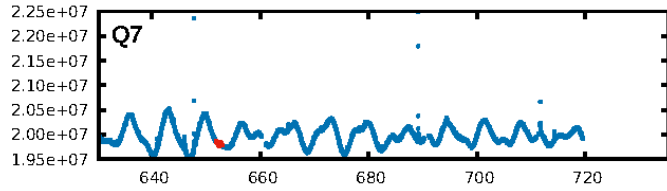
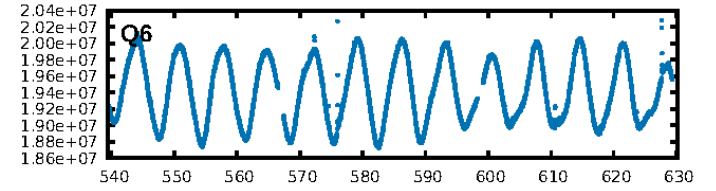
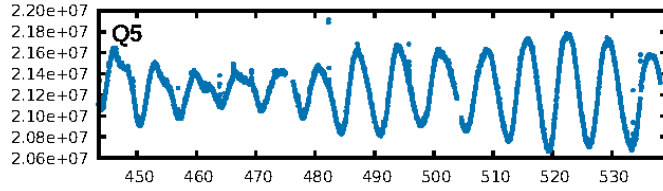
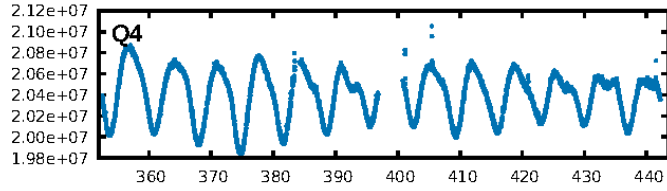
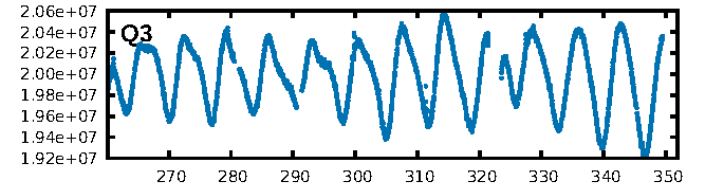
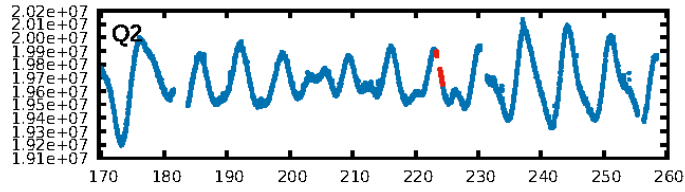
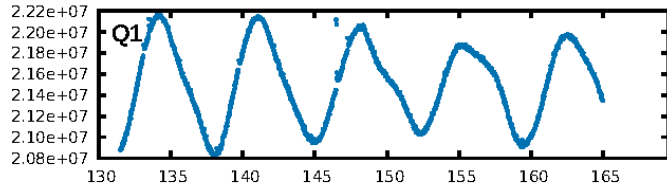
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 39.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.34e-13
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 6.543
Centroid-sig: 0.8%
Centroid-so: 1.414 arcsec [2.09 σ]
OotOffset-rm: 0.214 arcsec [0.73 σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-rm: 0.165 arcsec [0.56 σ]
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

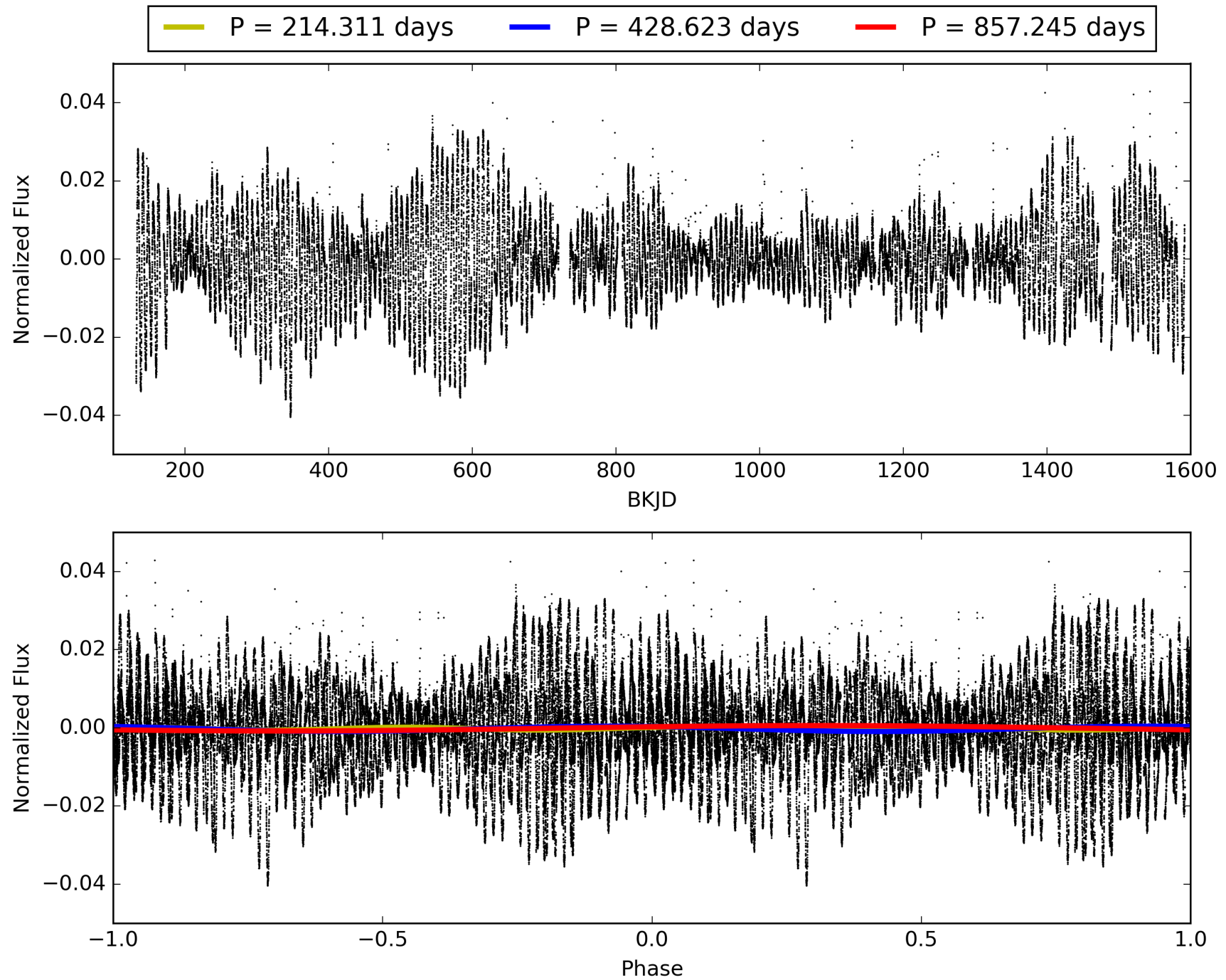
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 01:52:24 Z

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

TCE 008867609-01, PDC Light Curves

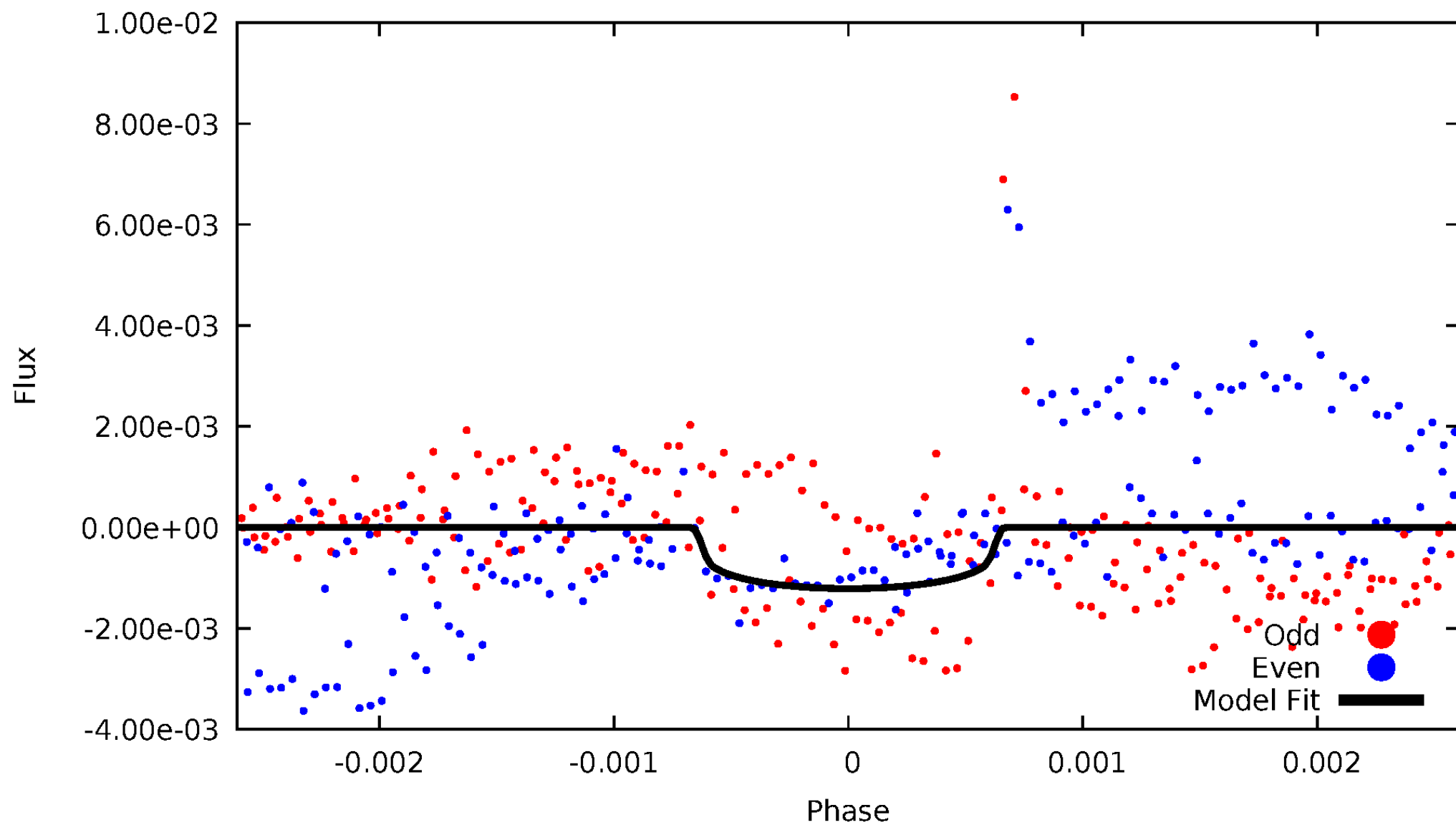


TCE 008867609-01



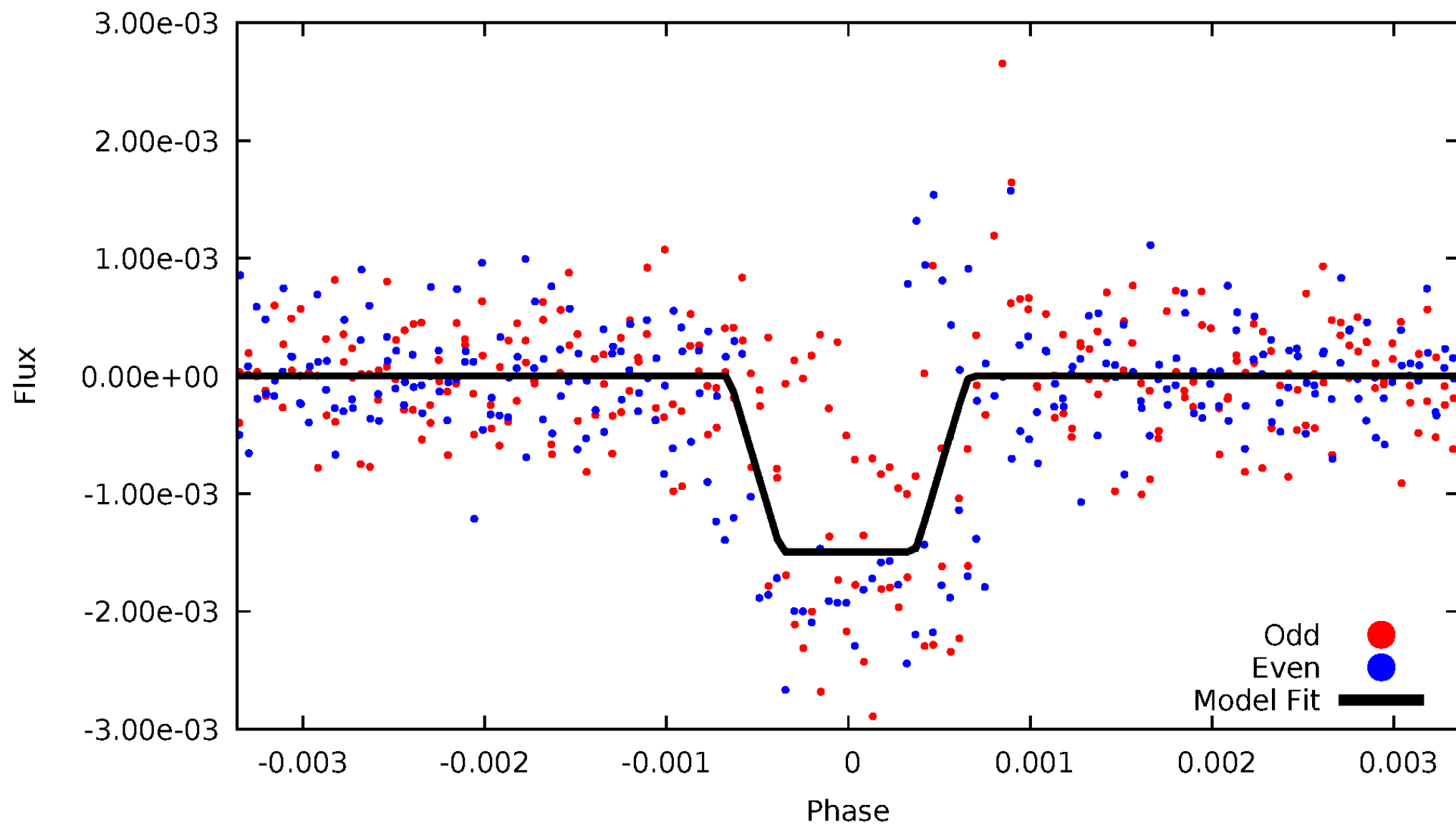
DV Odd/Even

TCE 008867609-01



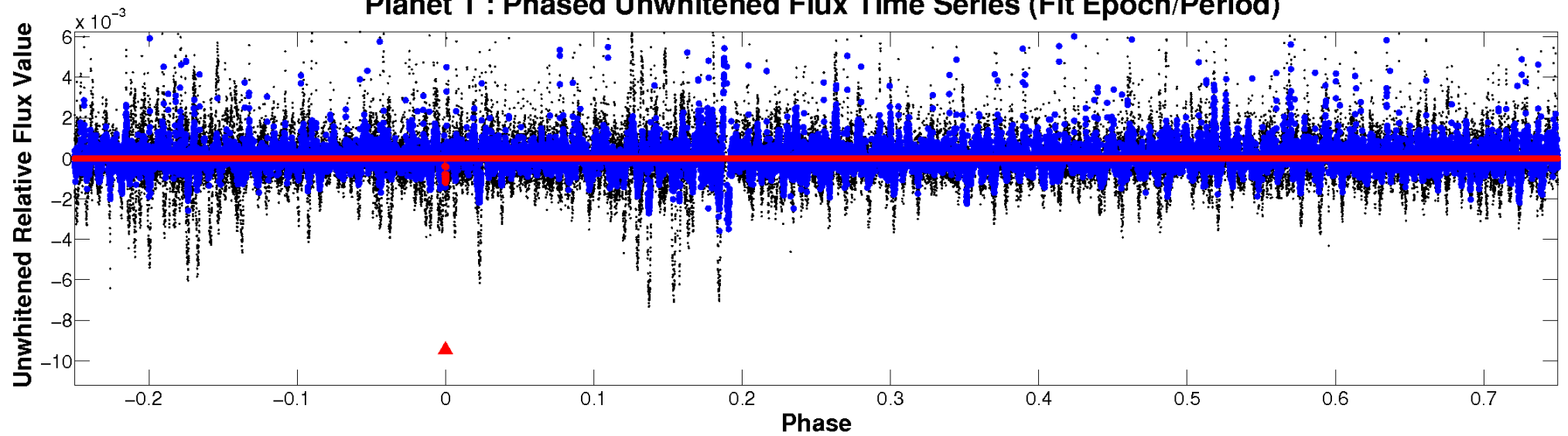
ALT Odd/Even

TCE 008867609-01

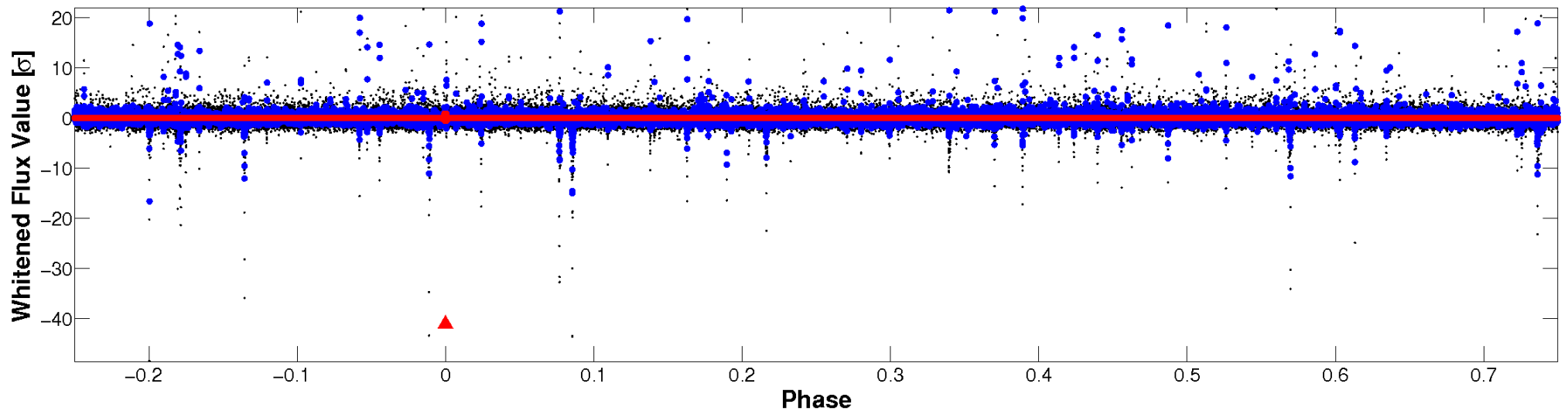


Non-Whitened Vs. Whitened Light Curve

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

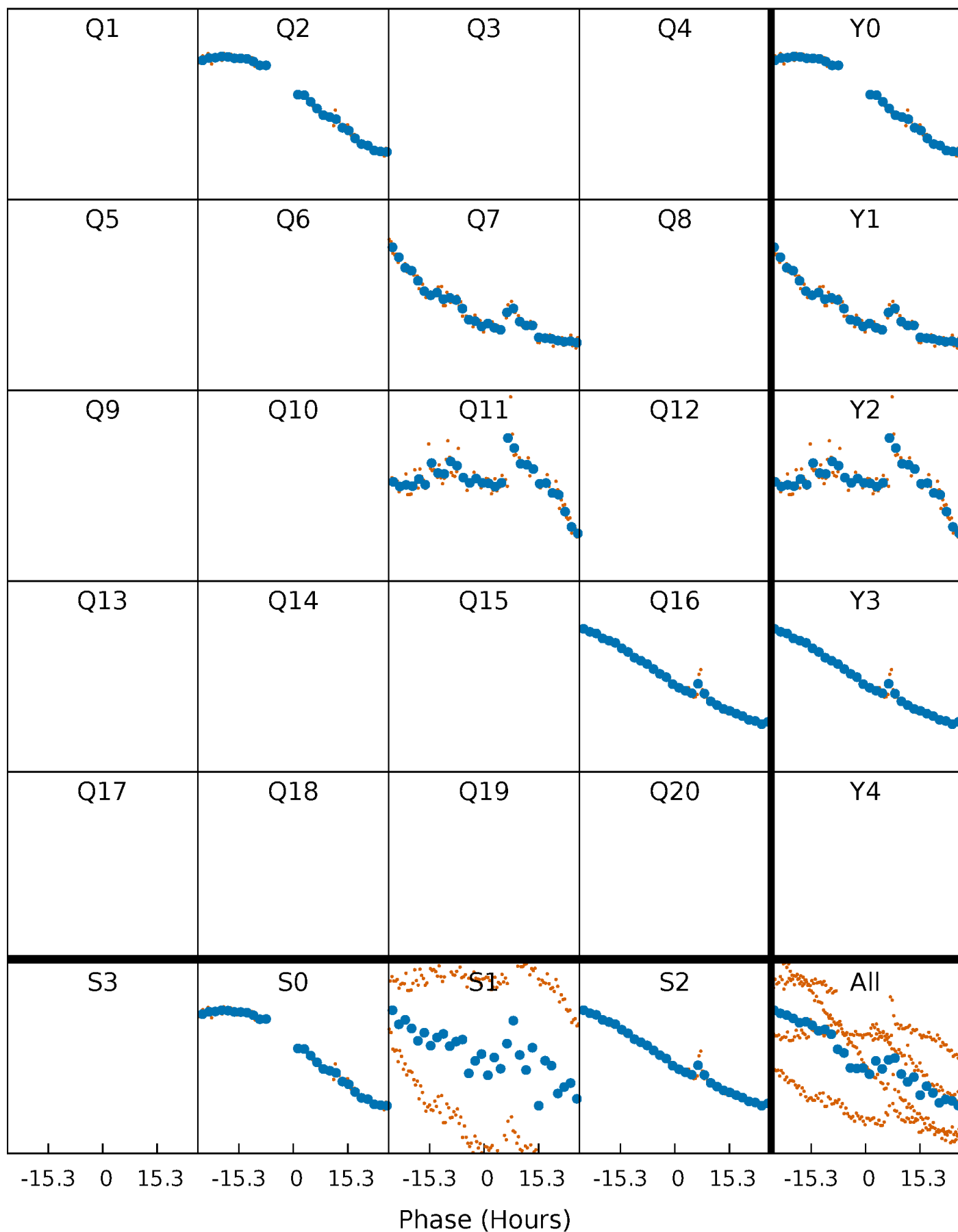


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



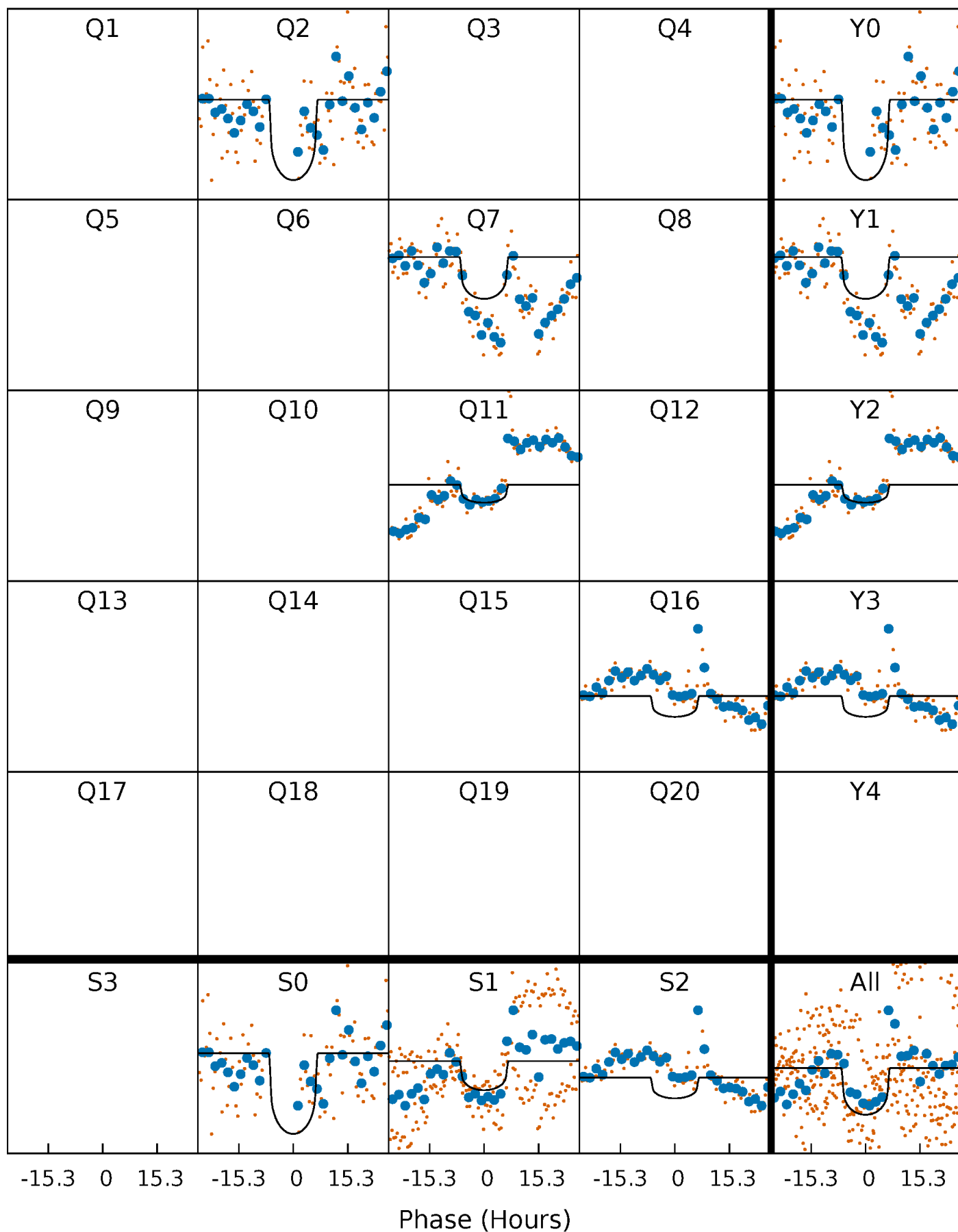
PDC Quarter-Phased Transit Curves

TCE 008867609-01 P=428.622654 Days $T_0=223.809026$ (BKJD)



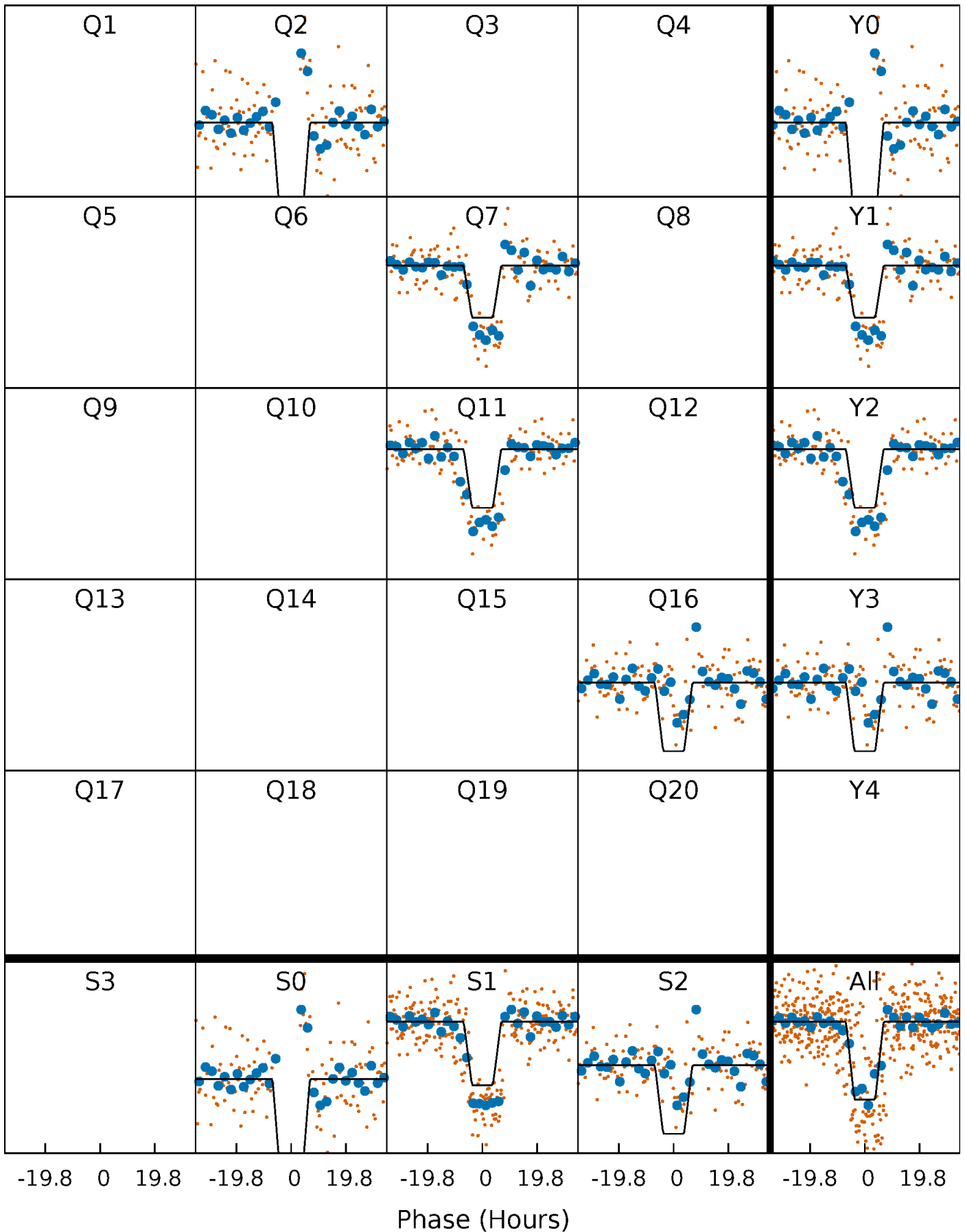
DV Quarter-Phased Transit Curves

TCE 008867609-01 P=428.622654 Days $T_0=223.809026$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

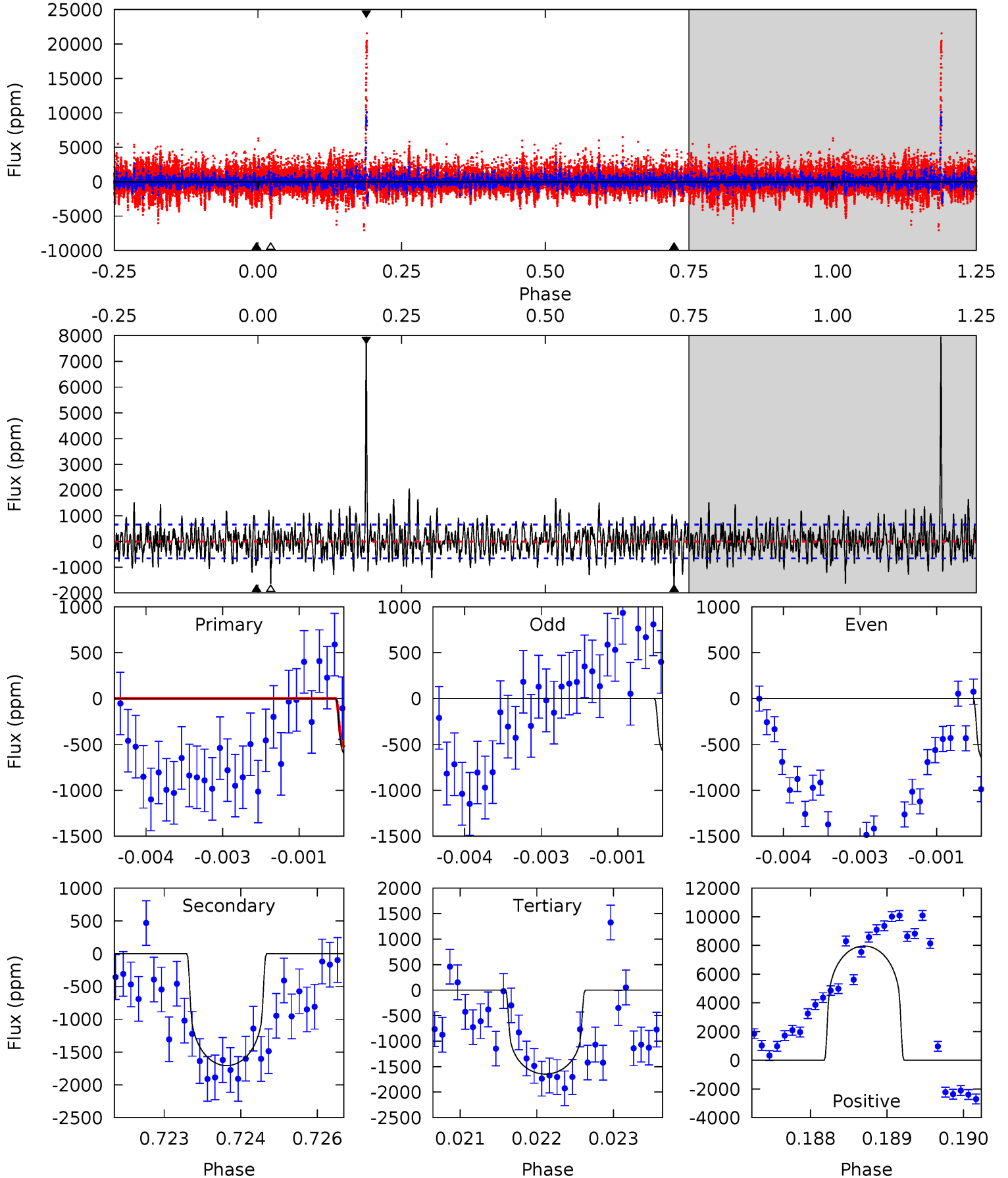
TCE 008867609-01 P=428.634788 Days $T_0=223.733795$ (BKJD)



DV Model-Shift Uniqueness Test

008867609-01, P = 428.622654 Days, E = 223.809026 Days

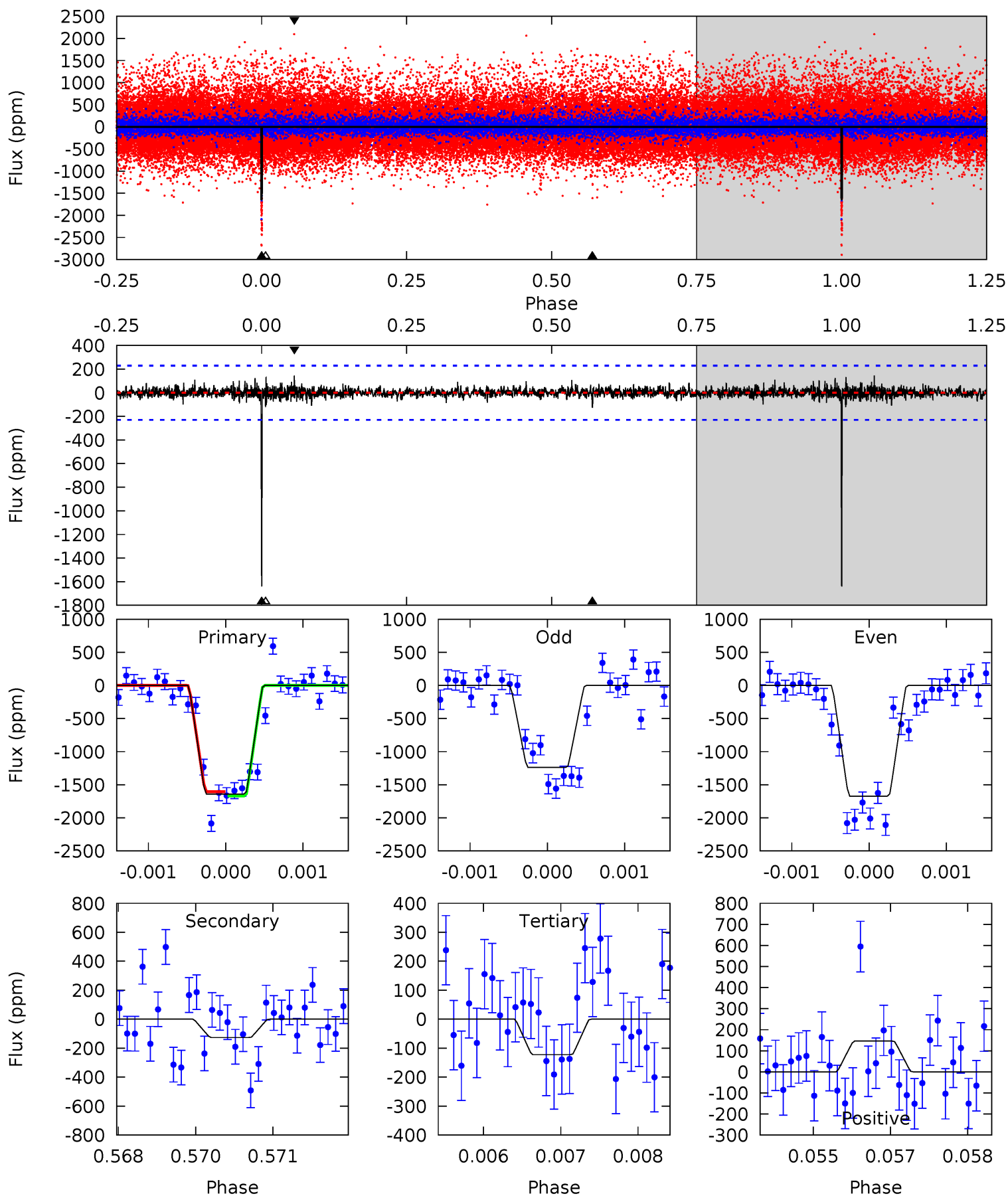
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.86	14.1	13.6	65.6	5.41	3.22	4.35	-6.70	-58.7	0.50	-51.5	0.36	1.01	0.82	0.82



Alt Model-Shift Uniqueness Test

008867609-01, P = 428.634788 Days, E = 223.733795 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.6	2.99	2.88	3.45	5.39	3.20	0.57	35.7	35.2	0.11	-0.46	5.17	0.66	0.08	0.76



Stellar Parameters For KIC 008867609

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3989^{+89}_{-1}	$4.714^{+0.028}_{-0.035}$	$-0.100^{+0.200}_{-0.200}$	$0.555^{+0.037}_{-0.037}$	$0.581^{+0.037}_{-0.046}$	$4.791^{+0.713}_{-0.678}$
	+2%/-0%	+1%/-1%	+200%/-200%	+7%/-7%	+6%/-8%	+15%/-14%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 008867609-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1707 ± 121	$1.97^{+0.86}_{-0.85}$	190^{+6}_{-9}	4316^{+1134}_{-574}	$212987^{+446422}_{-114326}$
Alt.	-127 ± 42	$2.38^{+0.91}_{-0.86}$	190^{+6}_{-9}	2710^{+367}_{-259}	10486^{+16440}_{-5639}

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 $A_{obs} \gg 1.0$

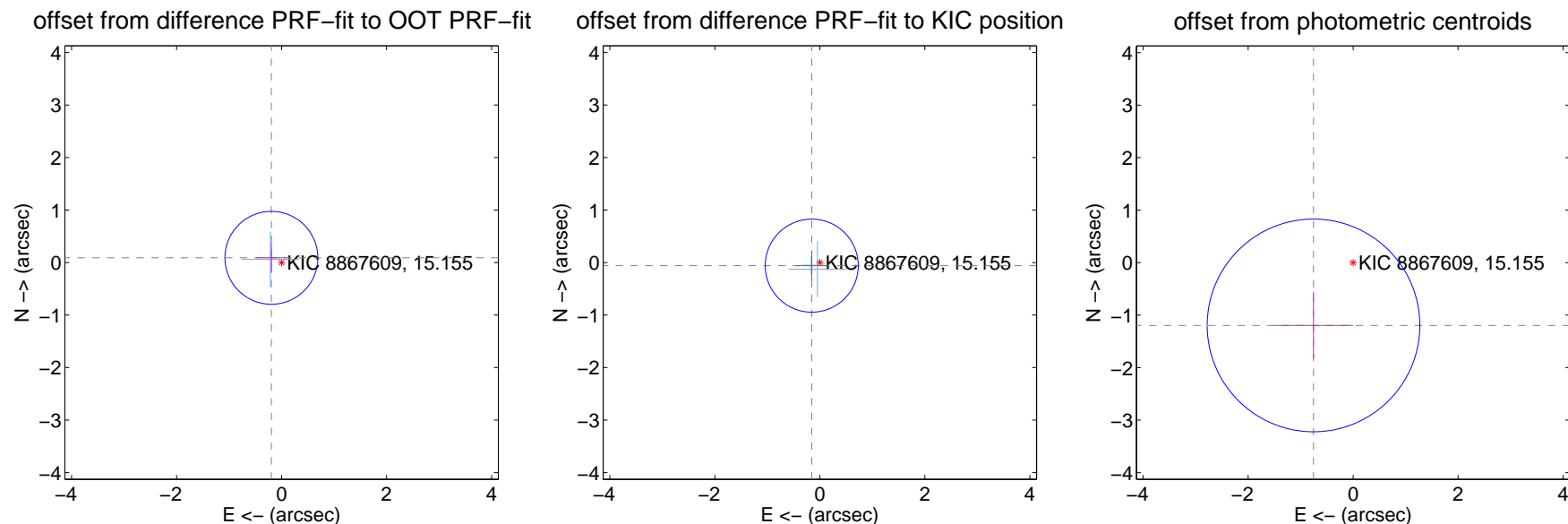
DV Centroid Data

Supplemental centroid analysis for 008867609-01. Kepler magnitude: 15.15. Transit SNR 5.96

There are 2 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	0.214 ± 0.295	0.73	0.195 ± 0.297	0.090 ± 0.286
PRF-fit source offset from KIC position	0.165 ± 0.295	0.56	0.154 ± 0.297	-0.059 ± 0.286
photometric centroid source offset	1.41 ± 0.68	2.09	0.75 ± 0.75	-1.20 ± 0.64

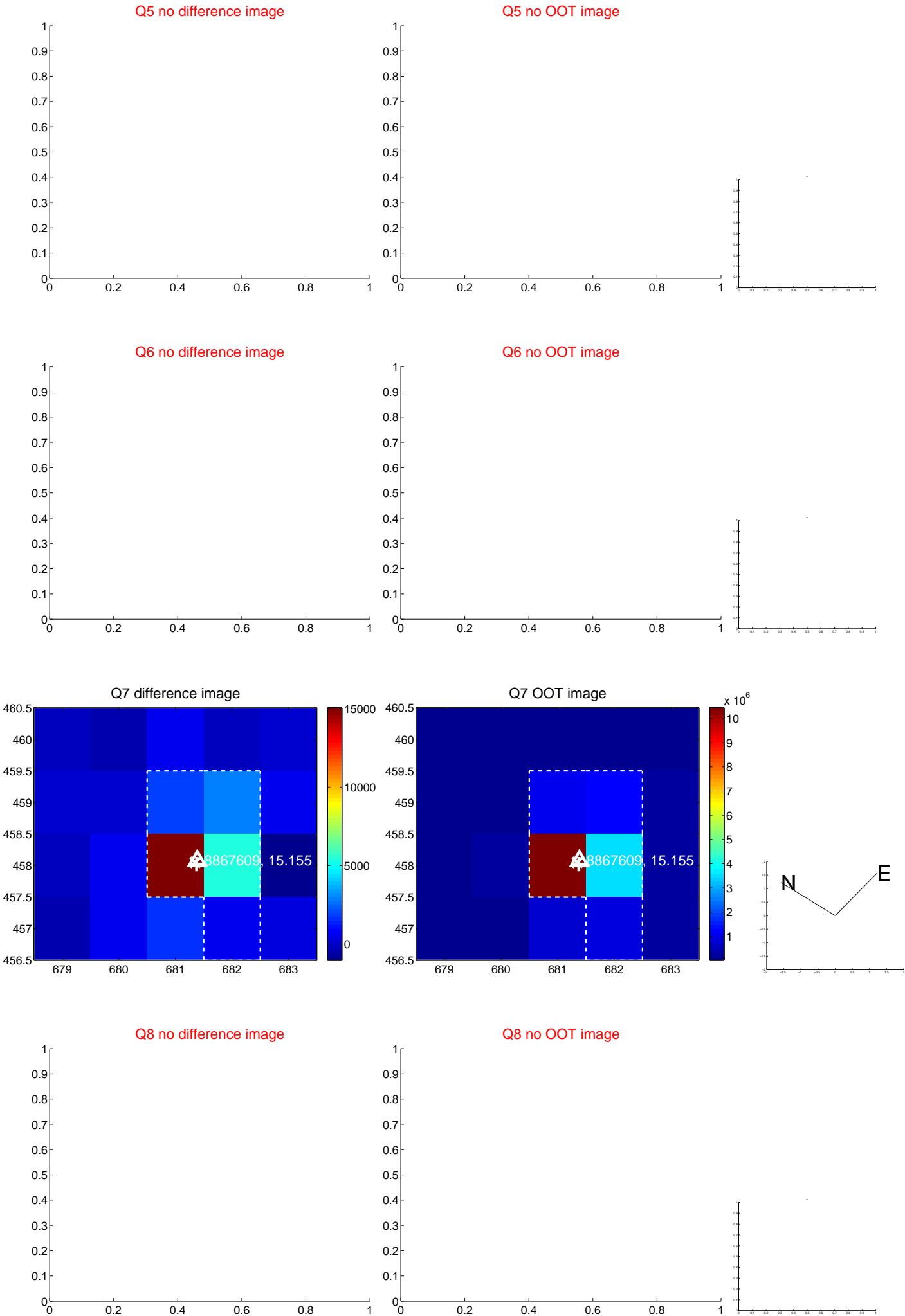


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

Q9 no difference image



Q9 no OOT image



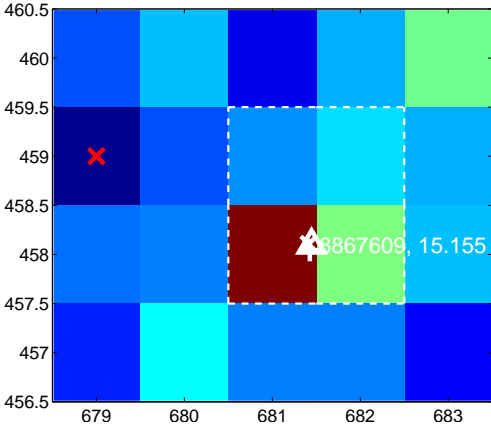
Q10 no difference image



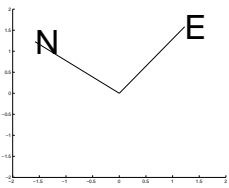
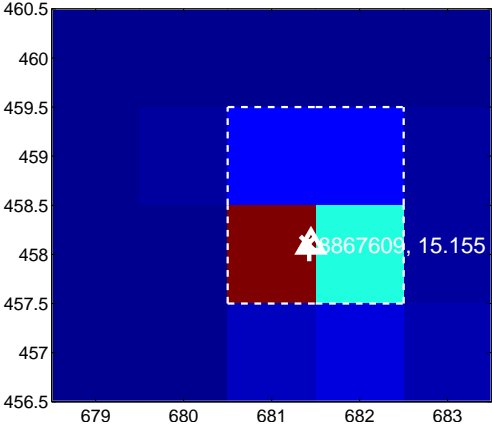
Q10 no OOT image



Q11 difference image



Q11 OOT image



Q12 no difference image



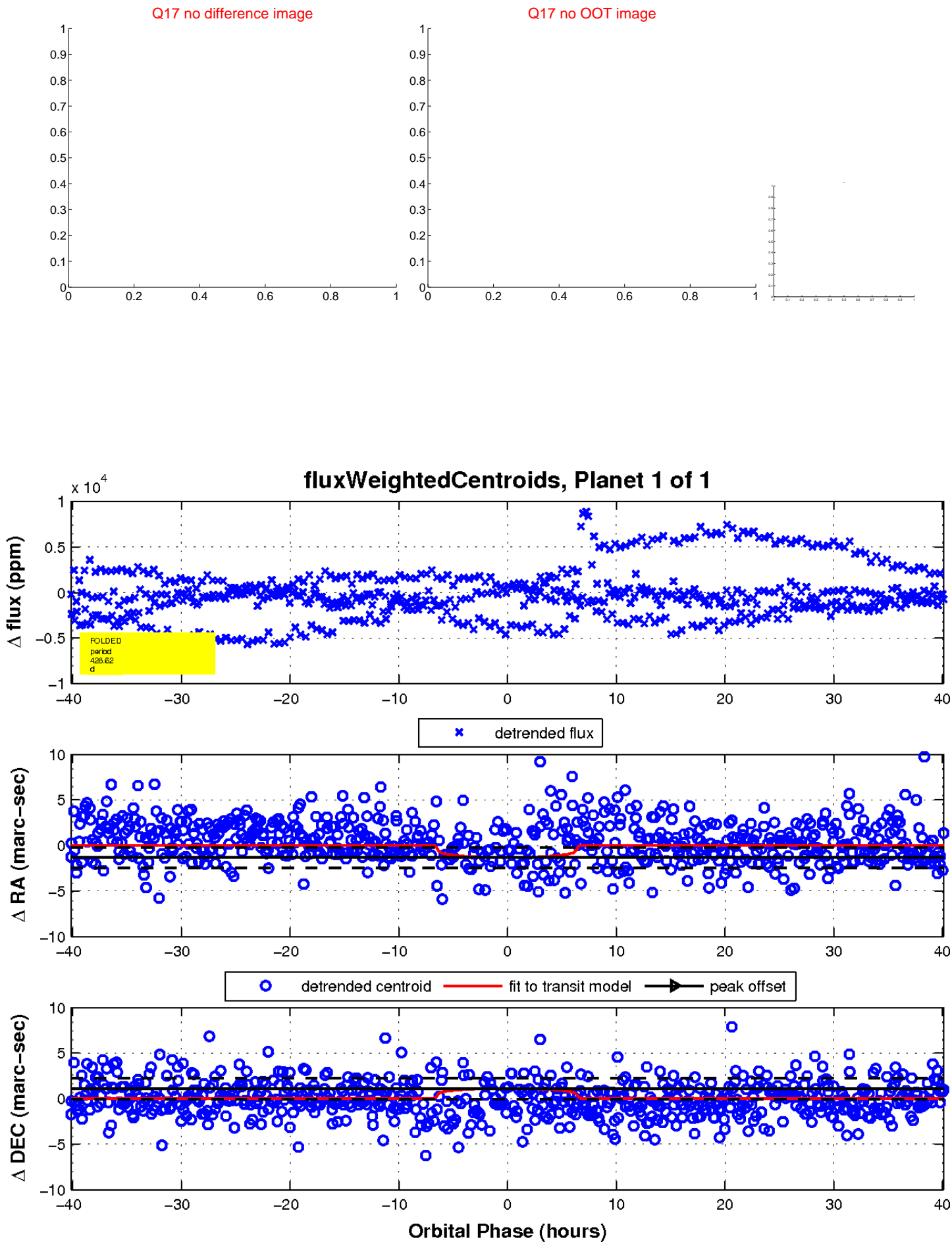
Q12 no OOT image



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.



UKIRT Image

Declination

