

KIC 009210820

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})
009210820-01	OBS	7930.01	377.673294	221.096219	555.6	16.261	8.0	7.9	0.61	5031	1.54	0.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009210820-01	OBS	PC	0.47	0	0	0	0	CENT_FEW_MEAS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

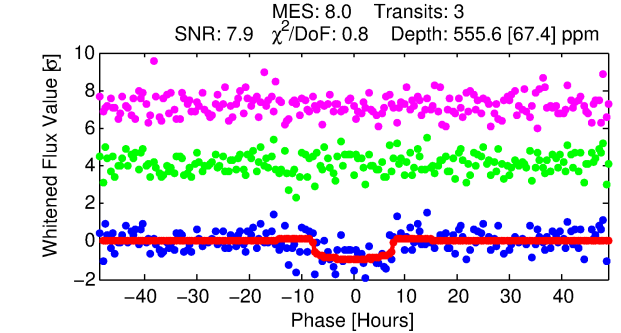
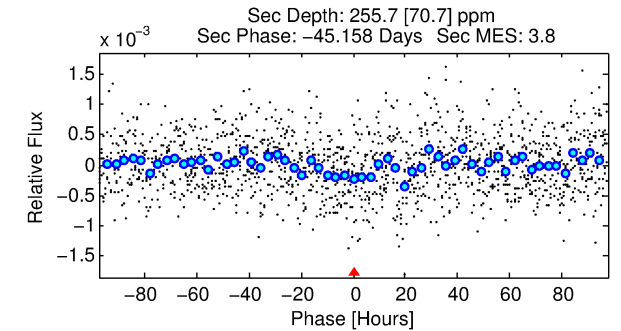
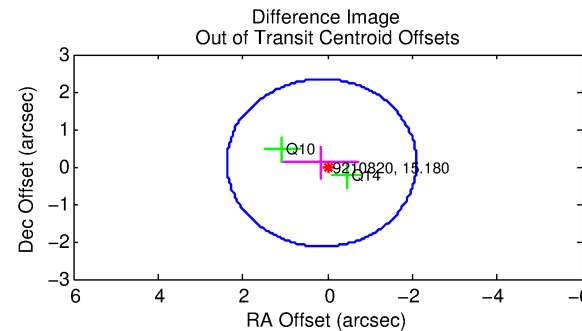
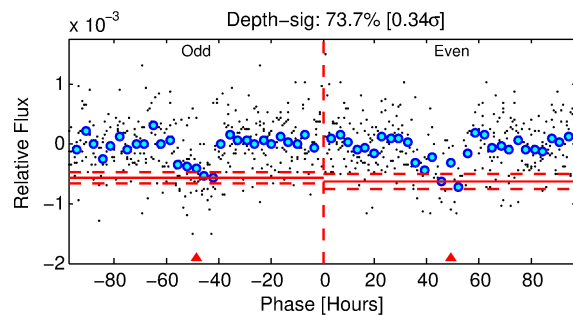
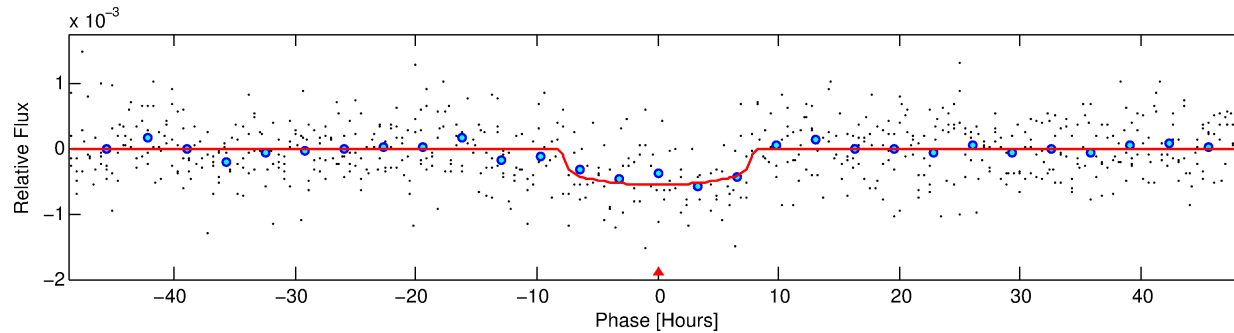
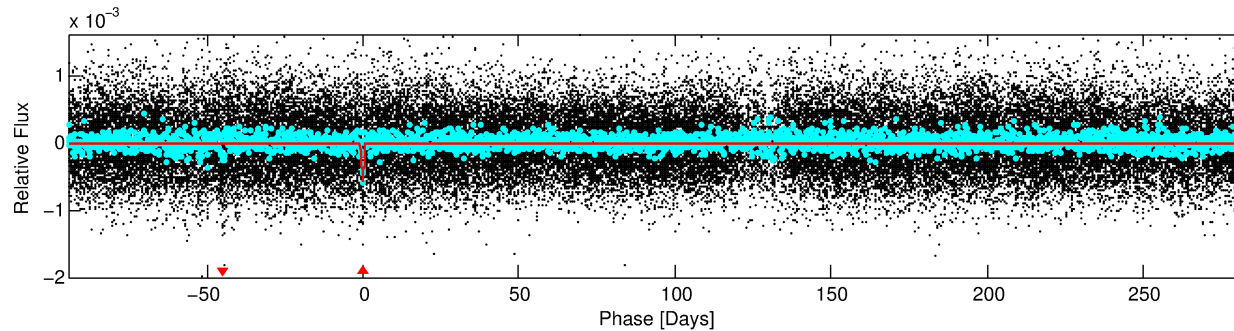
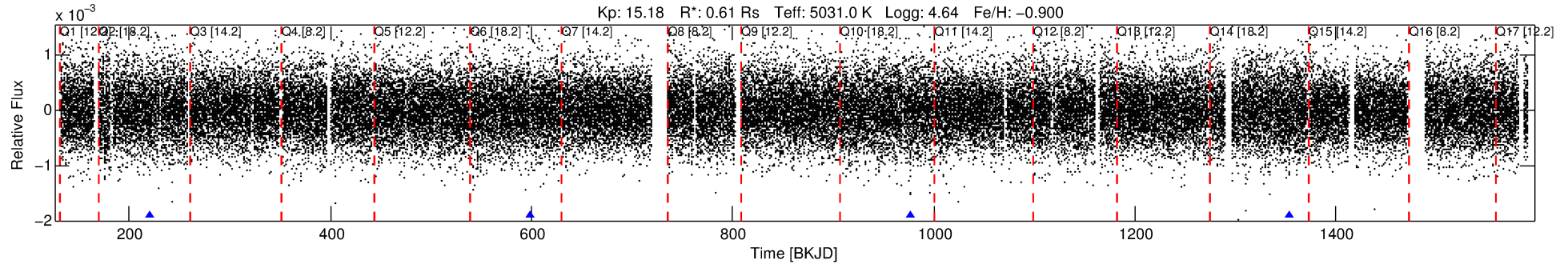
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009210820-01

No Significant Match Found

DV One-Page Summary

KIC: 9210820 Candidate: 1 of 1 Period: 377.673 d



DV Fit Results:

Period = 377.67329 [0.01099] d
Epoch = 221.0962 [0.0239] BKJD
Rp/R* = 0.0230 [0.0099]
a/R* = 132.42 [221.36]
b = 0.70 [1.24]
Seff = 0.29 [0.05]
Teq = 187 [7] K
Rp = 1.54 [0.68] Re
a = 0.8663 [0.0602] AU
Ag = 44253.94 [40253.79] [1.10 σ]
Teffp = 4193 [955] K [4.19 σ]

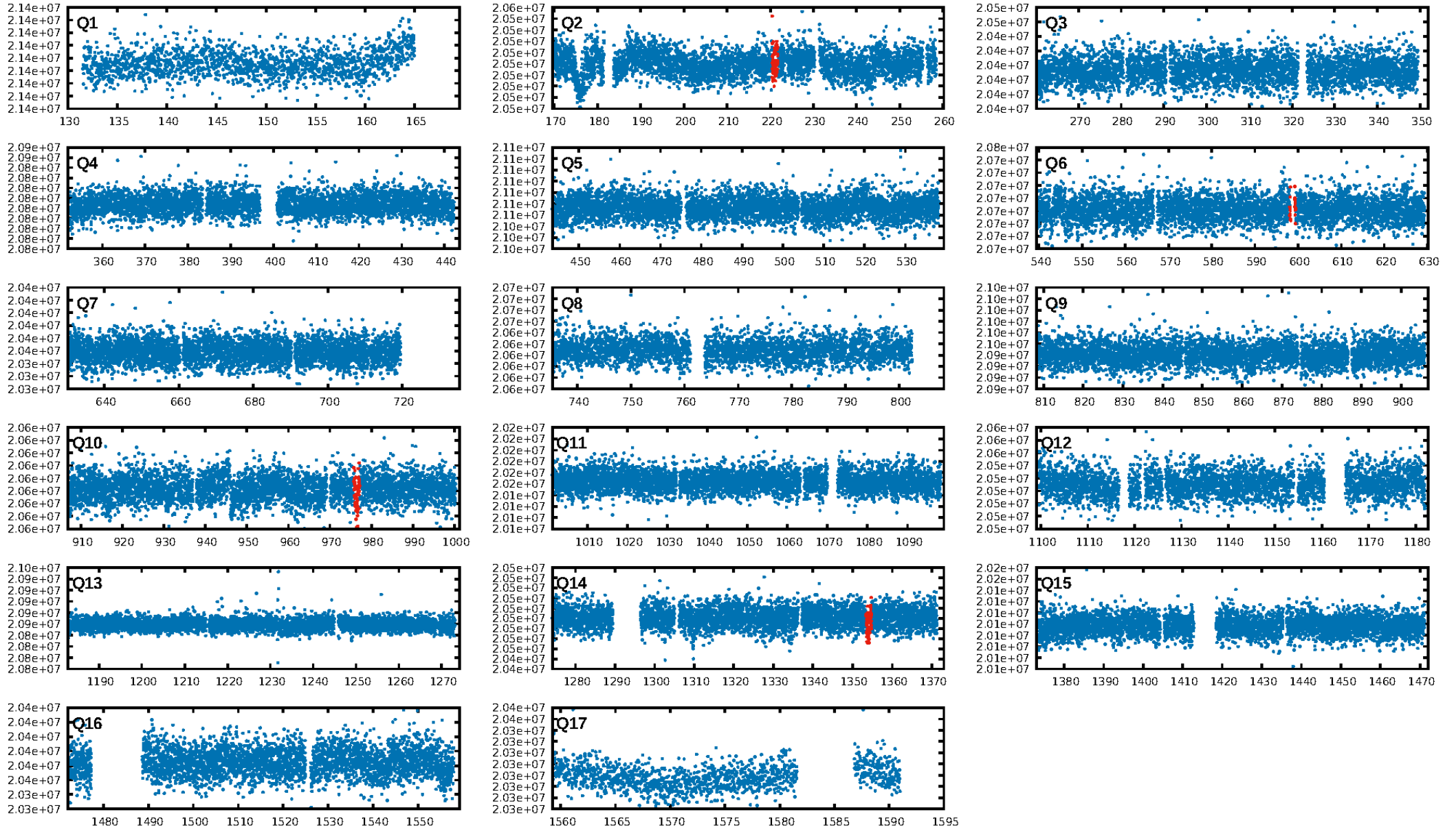
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 20.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.09e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.291
Centroid-sig: 70.5%
Centroid-so: 0.579 arcsec [0.39 σ]
OotOffset-rm: 0.170 arcsec [0.23 σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-rm: 0.113 arcsec [0.13 σ]
KicOffset-st: 2/0/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [3/3]

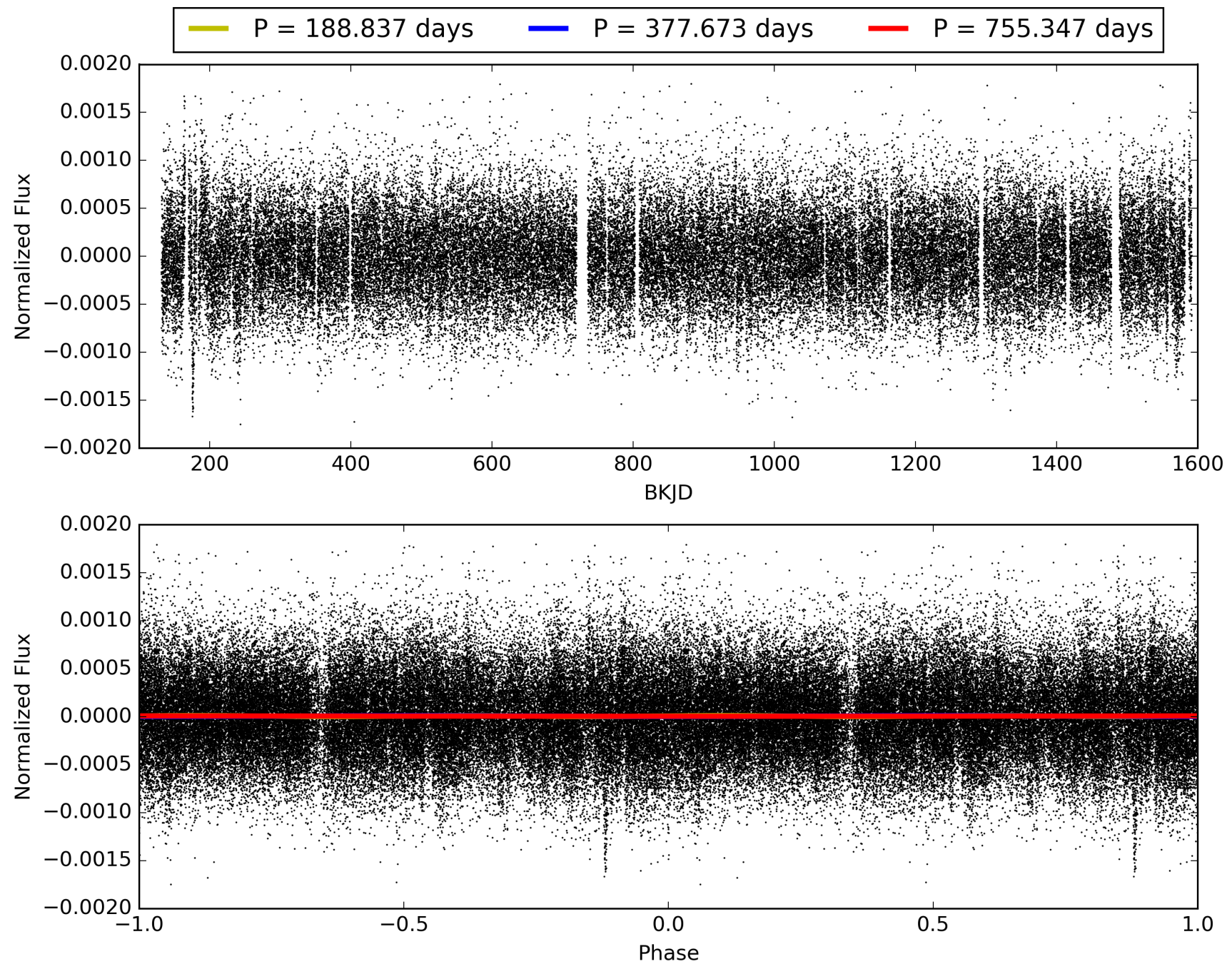
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:38:54 Z

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

TCE 009210820-01, PDC Light Curves

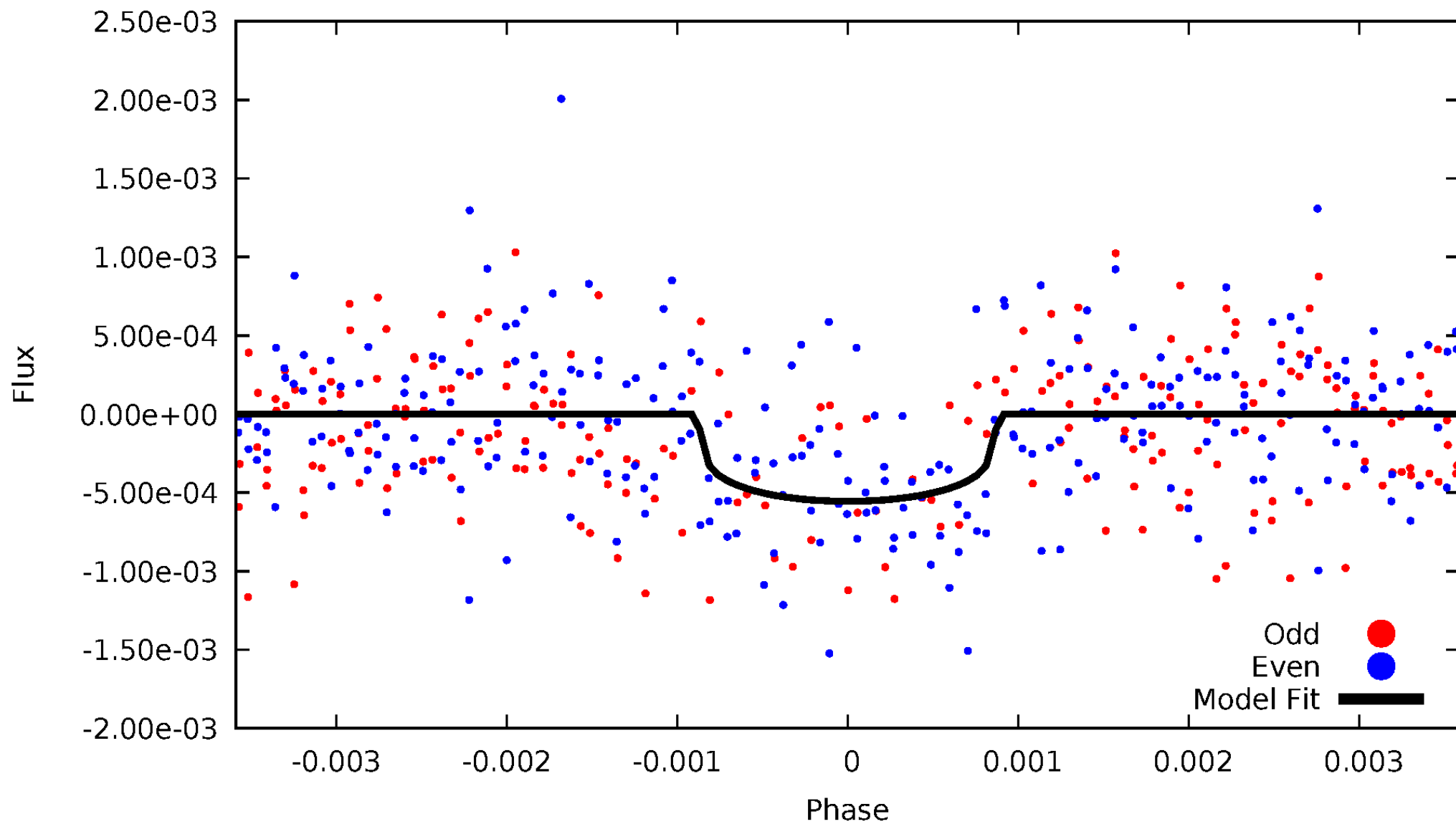


TCE 009210820-01



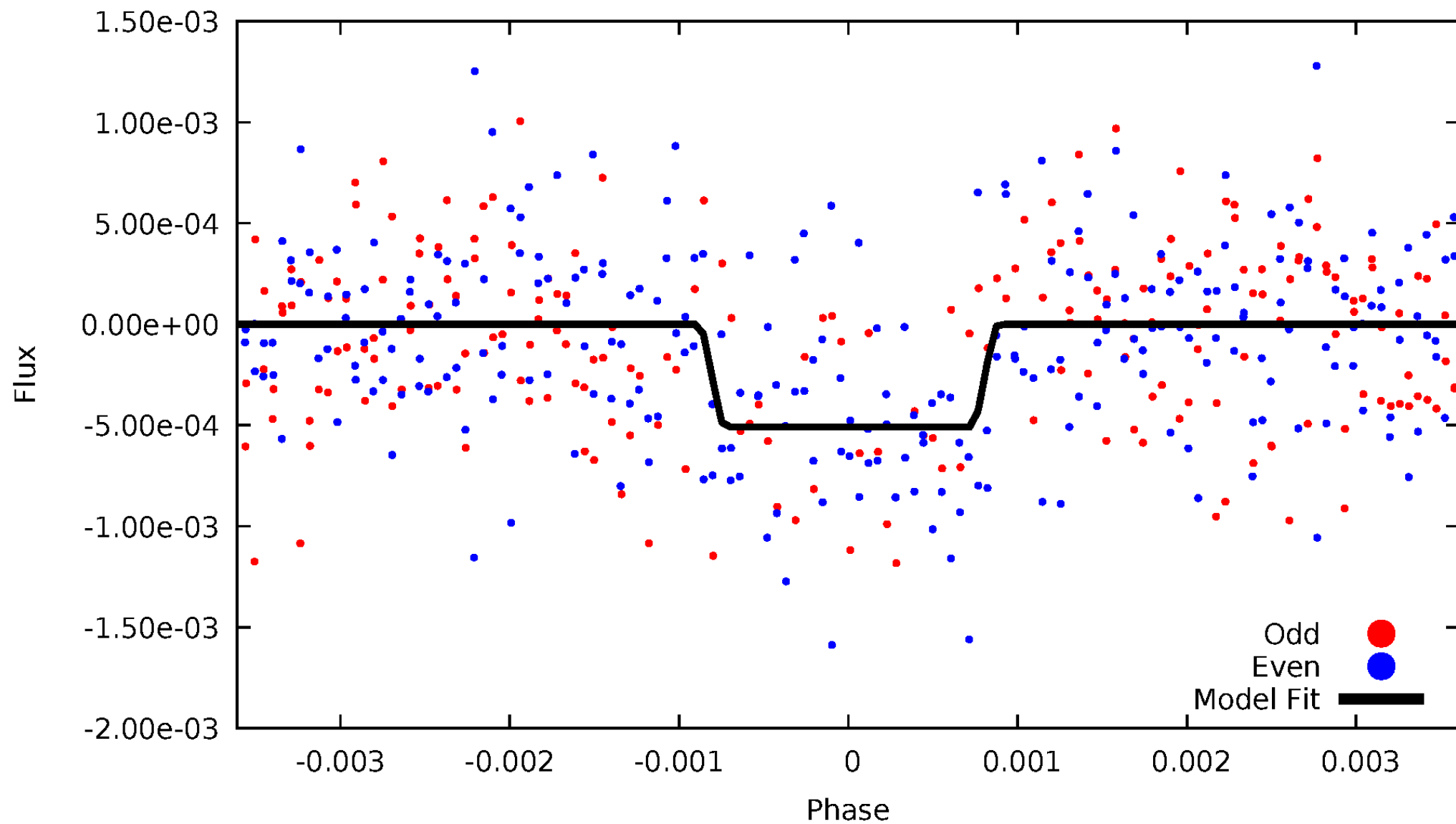
DV Odd/Even

TCE 009210820-01

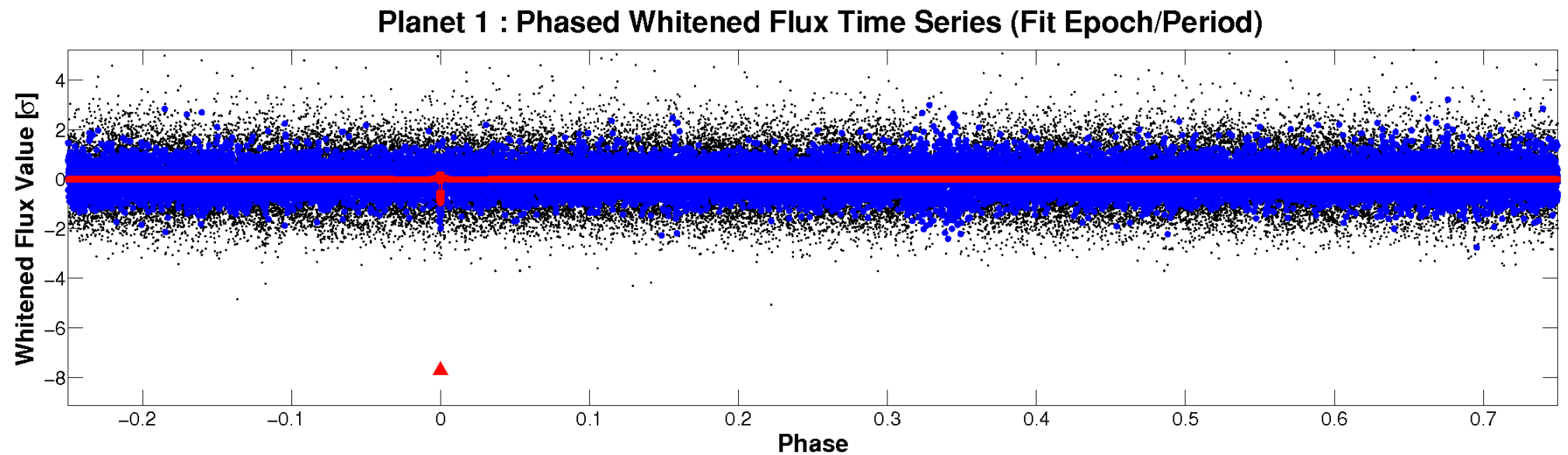
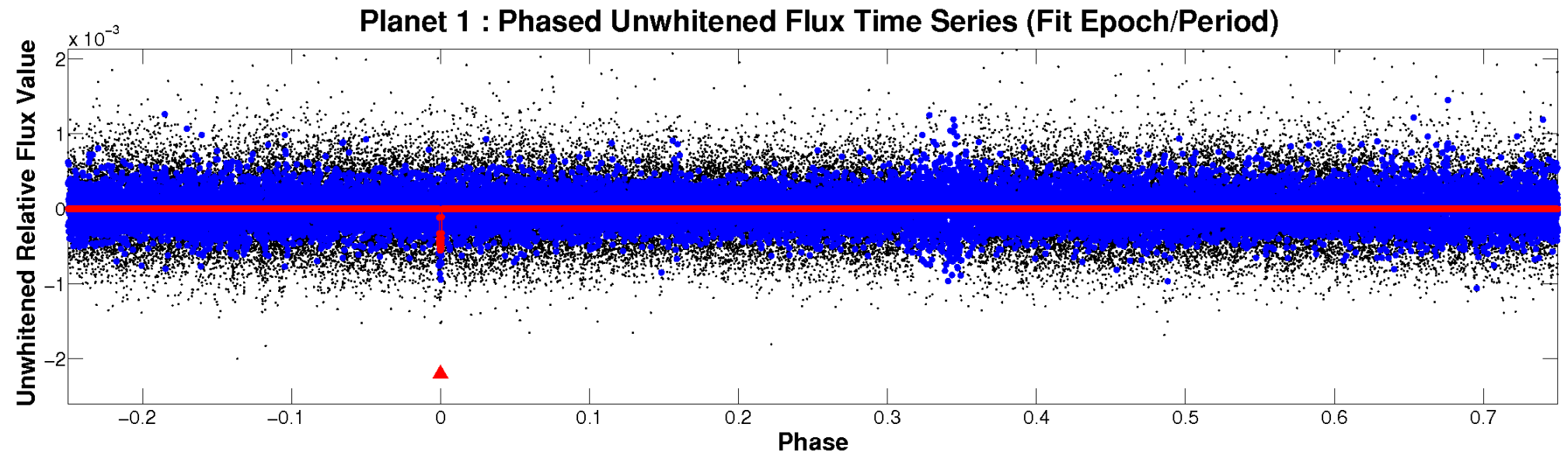


ALT Odd/Even

TCE 009210820-01

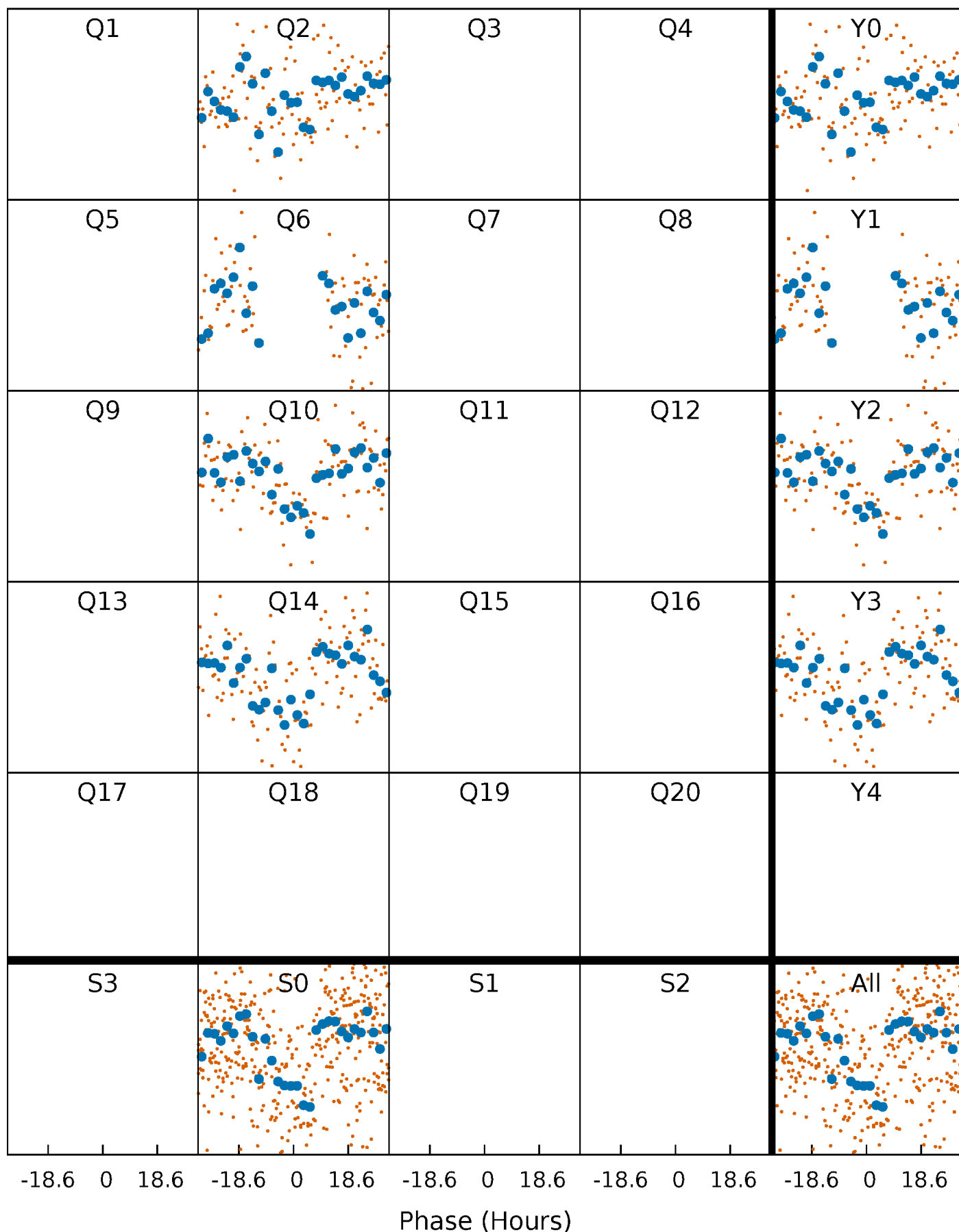


Non-Whitened Vs. Whitened Light Curve



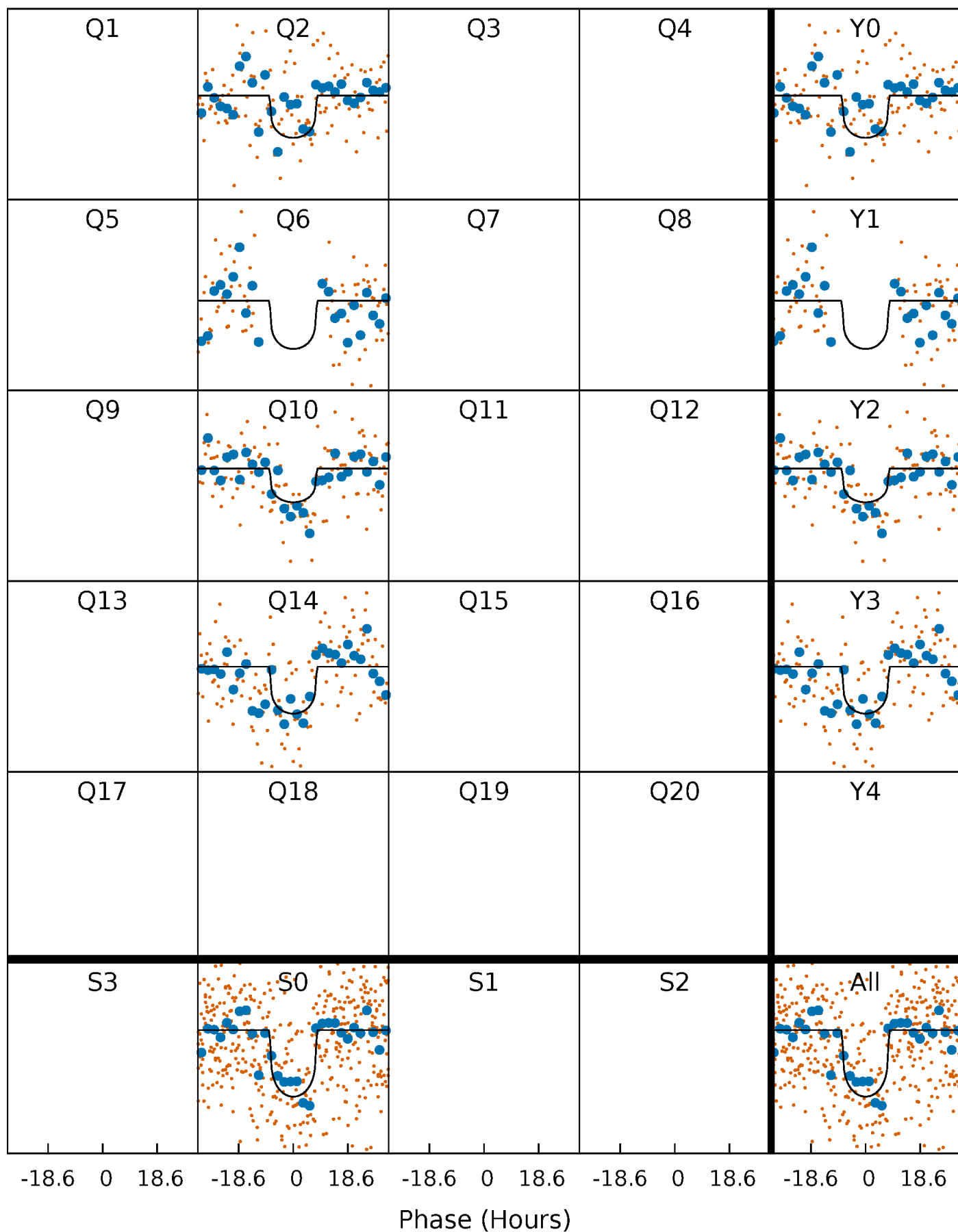
PDC Quarter-Phased Transit Curves

TCE 009210820-01 P=377.673294 Days $T_0=221.096219$ (BKJD)



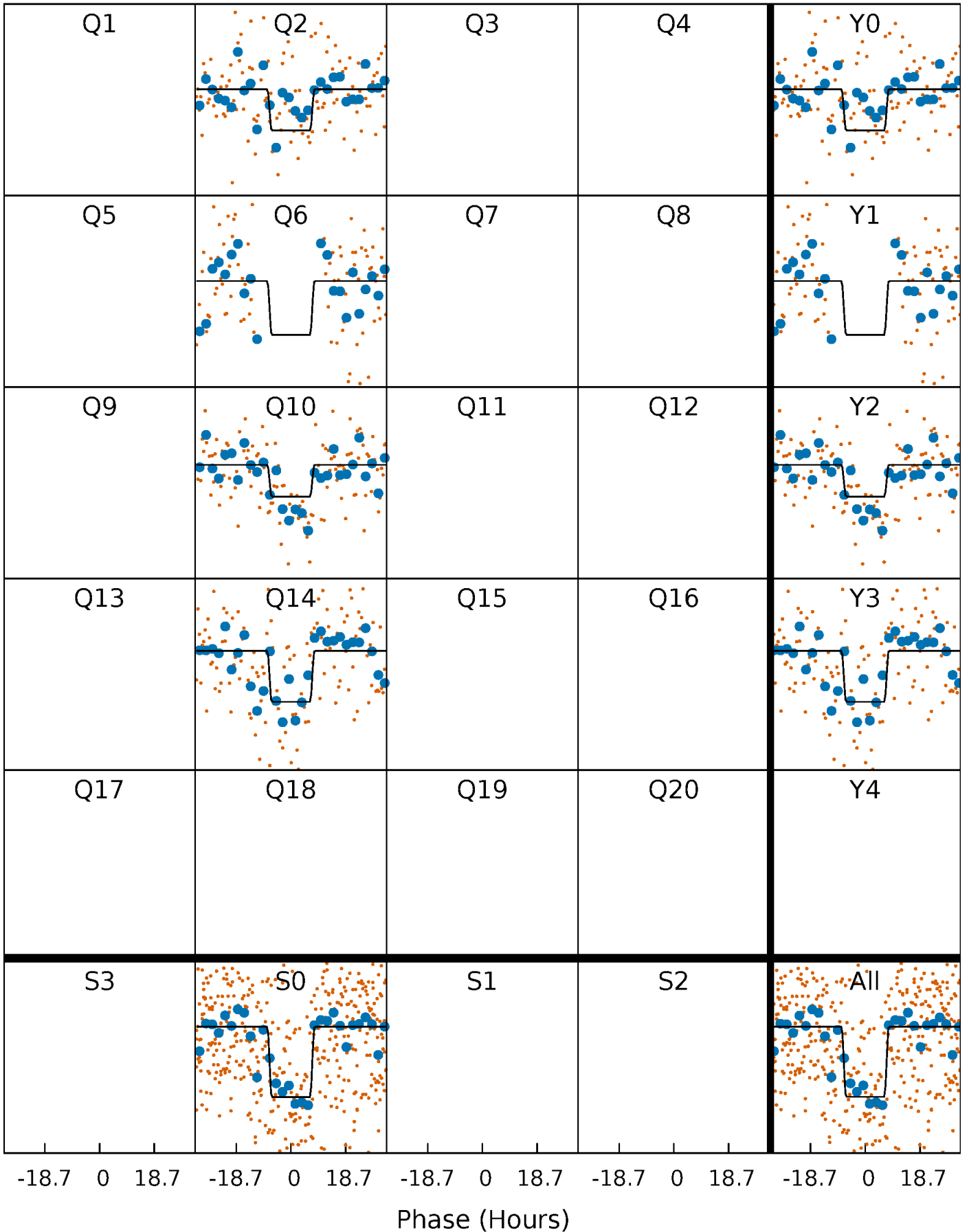
DV Quarter-Phased Transit Curves

TCE 009210820-01 P=377.673294 Days $T_0=221.096219$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

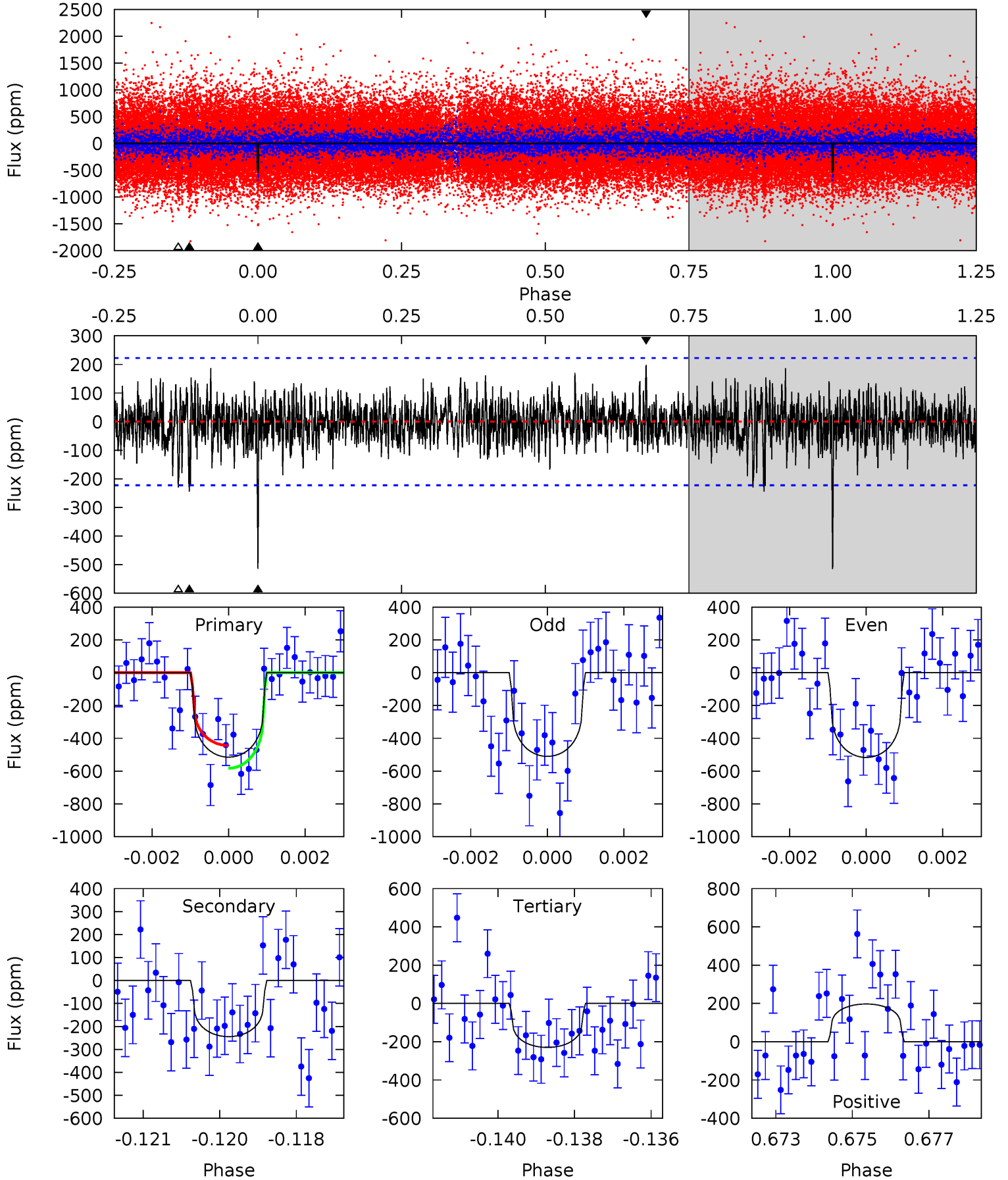
TCE 009210820-01 P=377.673490 Days $T_0=221.092209$ (BKJD)



DV Model-Shift Uniqueness Test

009210820-01, $P = 377.673294$ Days, $E = 221.096219$ Days

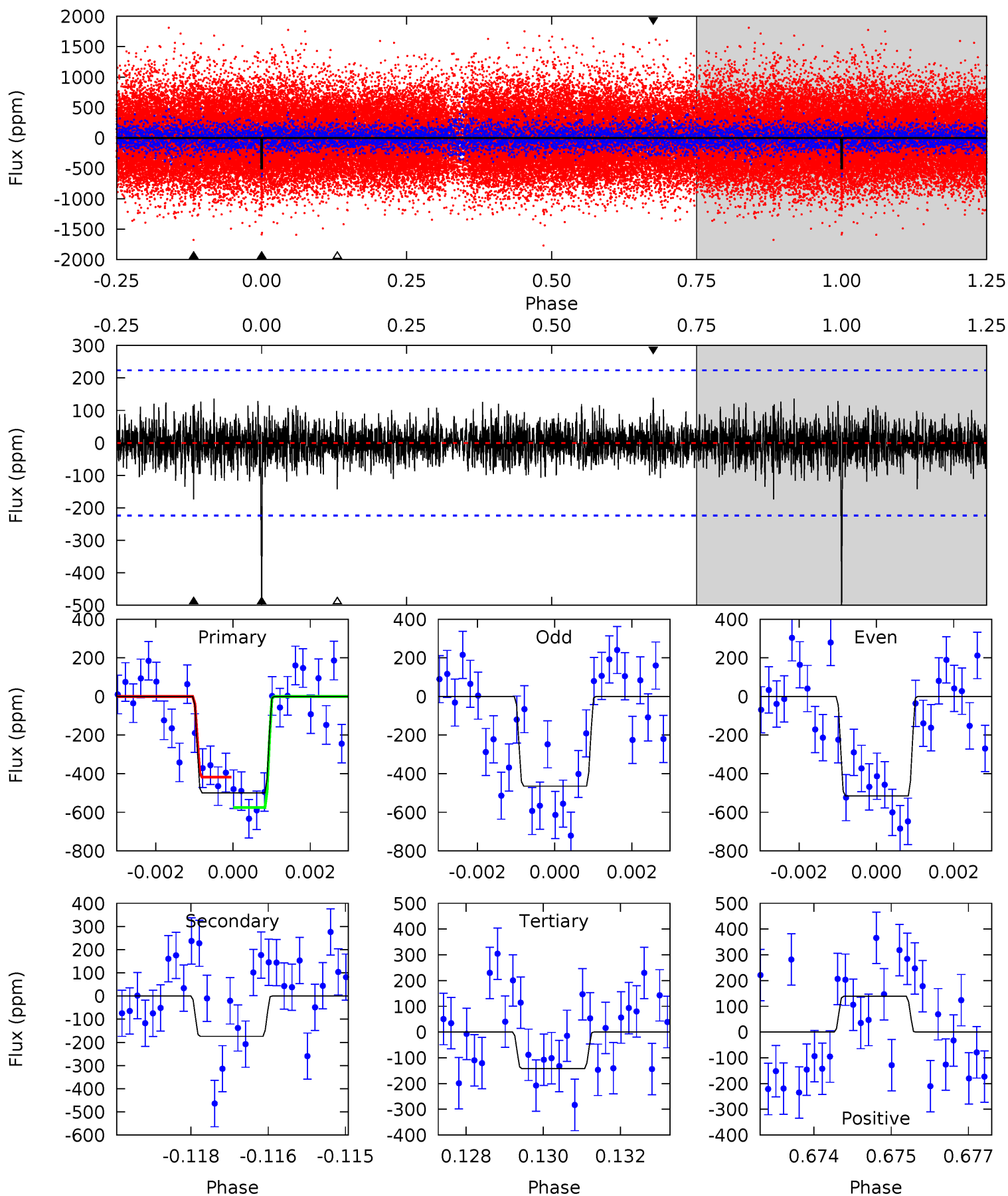
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.4	5.87	5.52	4.74	5.34	3.11	1.31	6.85	7.63	0.35	1.13	0.08	1.00	0.28	1.67



Alt Model-Shift Uniqueness Test

009210820-01, $P = 377.673490$ Days, $E = 221.092209$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	4.17	3.41	3.33	5.35	3.13	0.91	8.54	8.63	0.76	0.84	0.57	1.07	0.22	1.89



Stellar Parameters For KIC 009210820

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5031^{+135}_{-150}	$4.644^{+0.060}_{-0.035}$	$-0.900^{+0.300}_{-0.300}$	$0.615^{+0.048}_{-0.048}$	$0.608^{+0.056}_{-0.026}$	$3.683^{+0.882}_{-0.532}$
	+3%/-3%	+1%/-1%	+33%/-33%	+8%/-8%	+9%/-4%	+24%/-14%
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 009210820-01 / KOI 7930.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-244 ± 42	$1.58^{+0.70}_{-0.69}$	260^{+9}_{-10}	4261^{+1085}_{-543}	41389^{+82808}_{-22127}
Alt.	-174 ± 42	$1.51^{+0.62}_{-0.70}$	260^{+8}_{-9}	4064^{+1147}_{-477}	30956^{+77853}_{-15494}

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 $A_{\text{obs}} \gg 1.0$

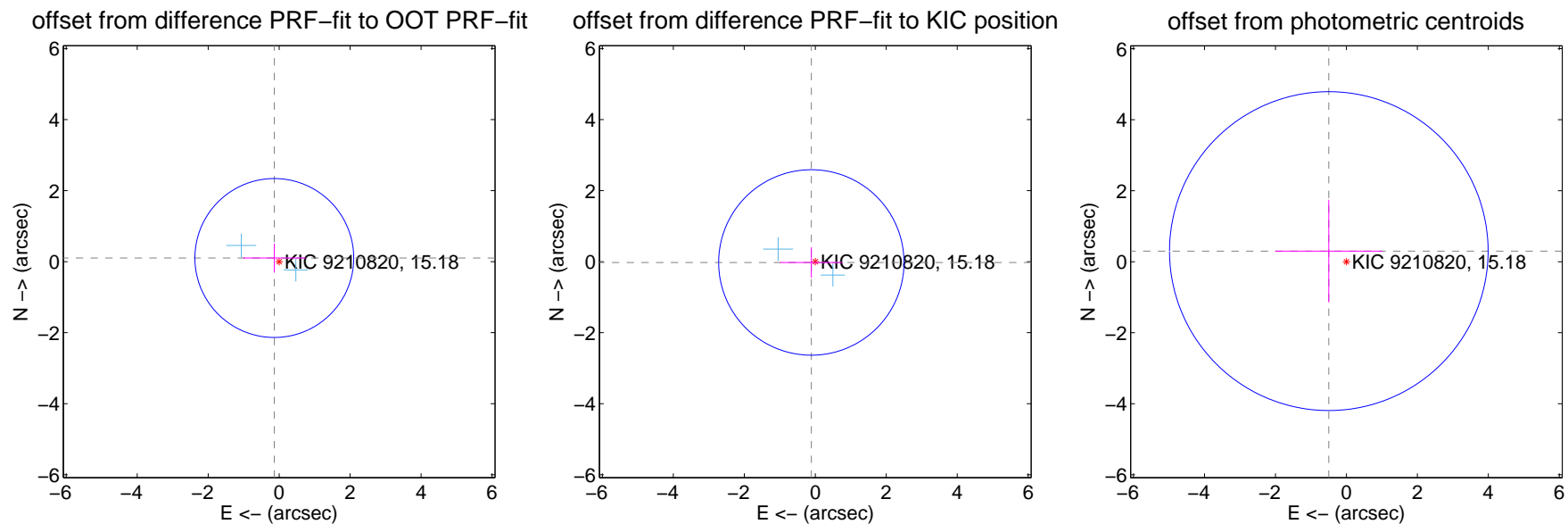
DV Centroid Data

Supplemental centroid analysis for 009210820-01. Kepler magnitude: 15.18. Transit SNR 7.94

There are 2 quarters with good PRF difference image offsets

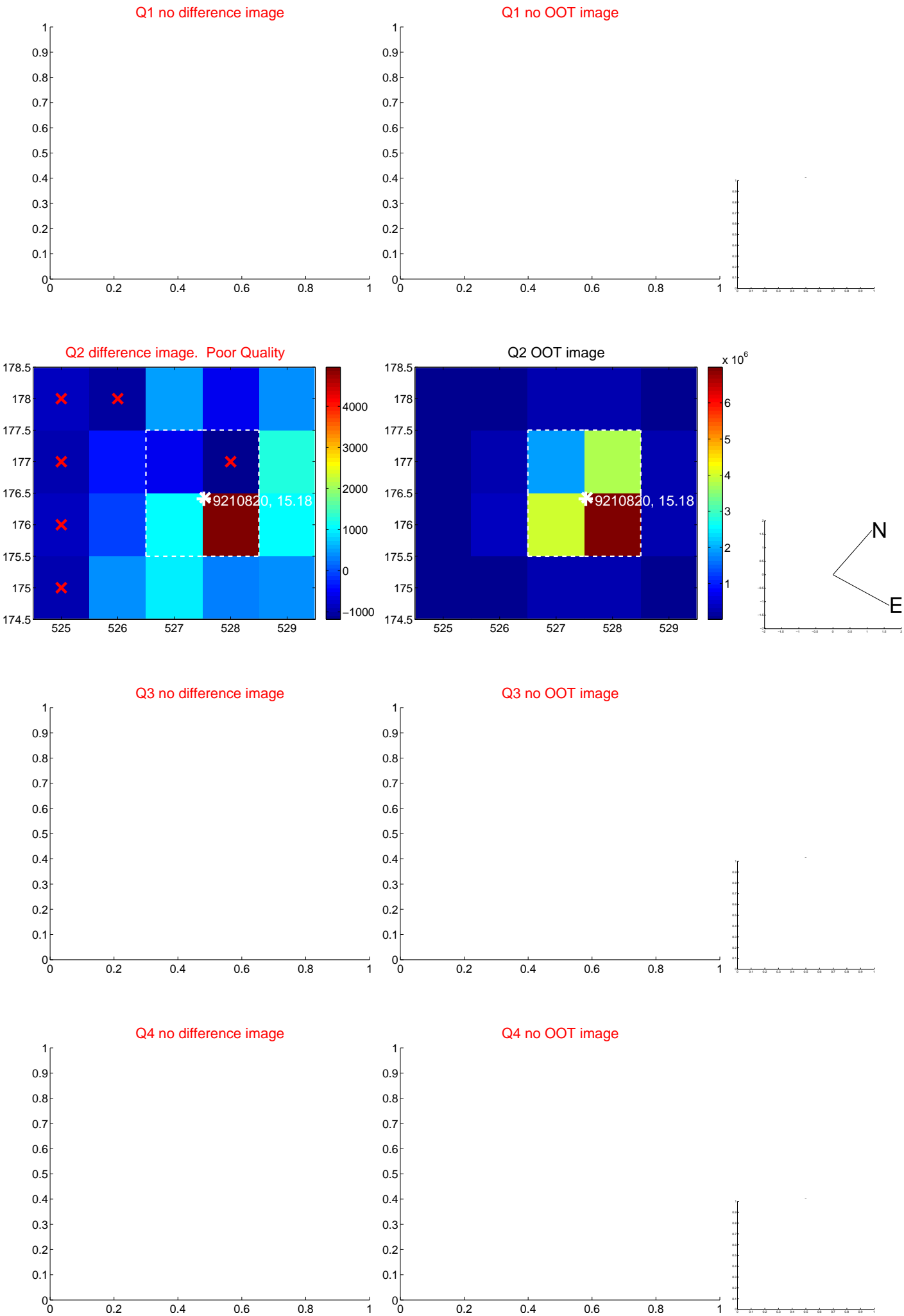
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.170 ± 0.746	0.23	0.136 ± 0.880	0.102 ± 0.408
PRF-fit source offset from KIC position	0.113 ± 0.870	0.13	0.111 ± 0.884	-0.023 ± 0.431
photometric centroid source offset	0.58 ± 1.50	0.39	0.50 ± 1.51	0.30 ± 1.45

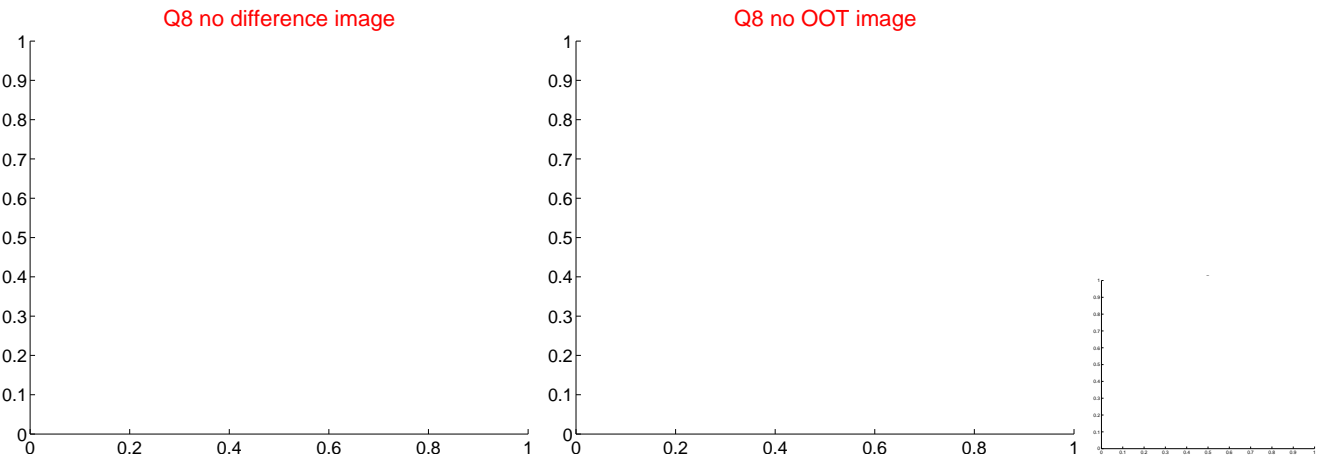


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

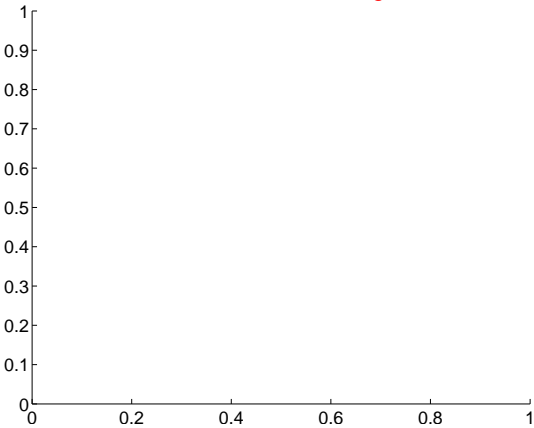


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

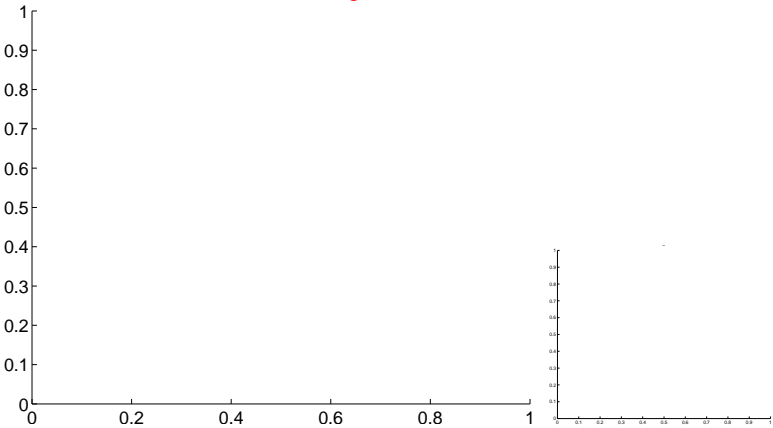


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

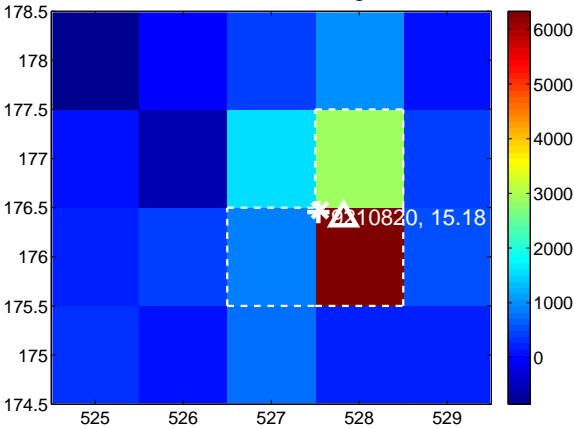
Q9 no difference image



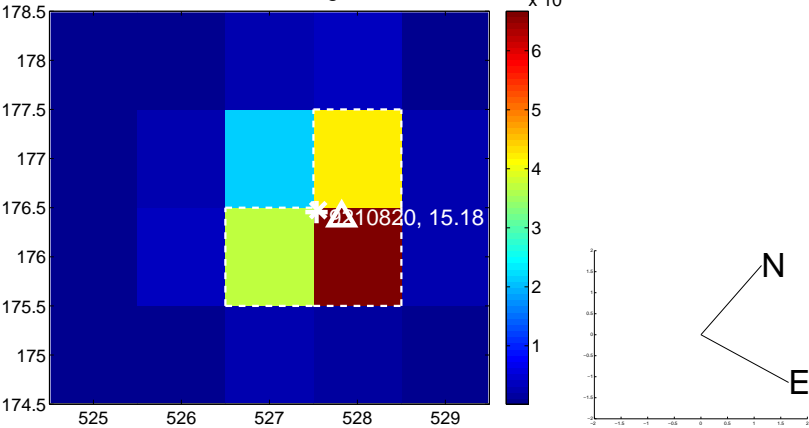
Q9 no OOT image



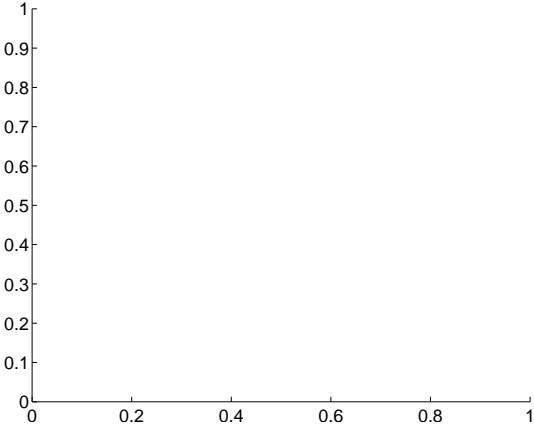
Q10 difference image



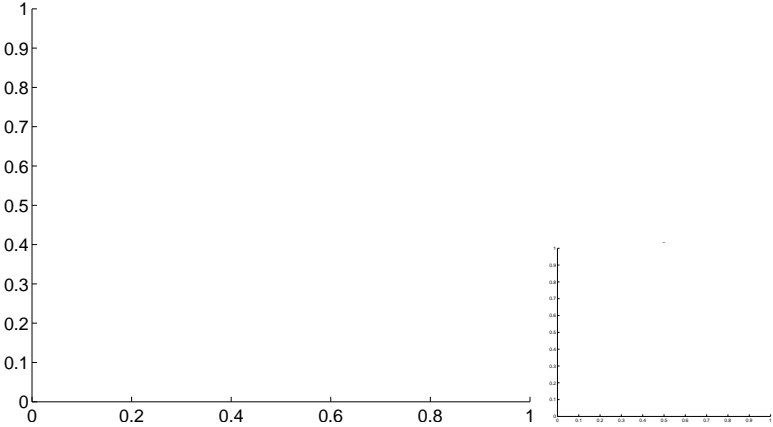
Q10 OOT image



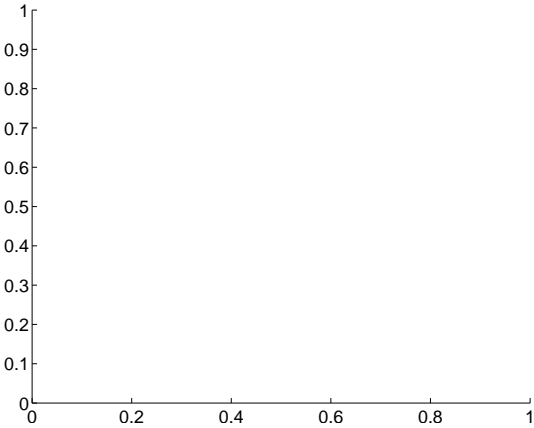
Q11 no difference image



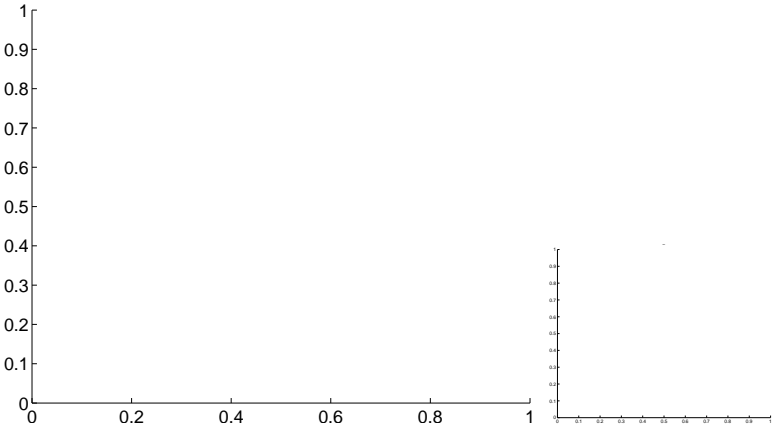
Q11 no OOT image



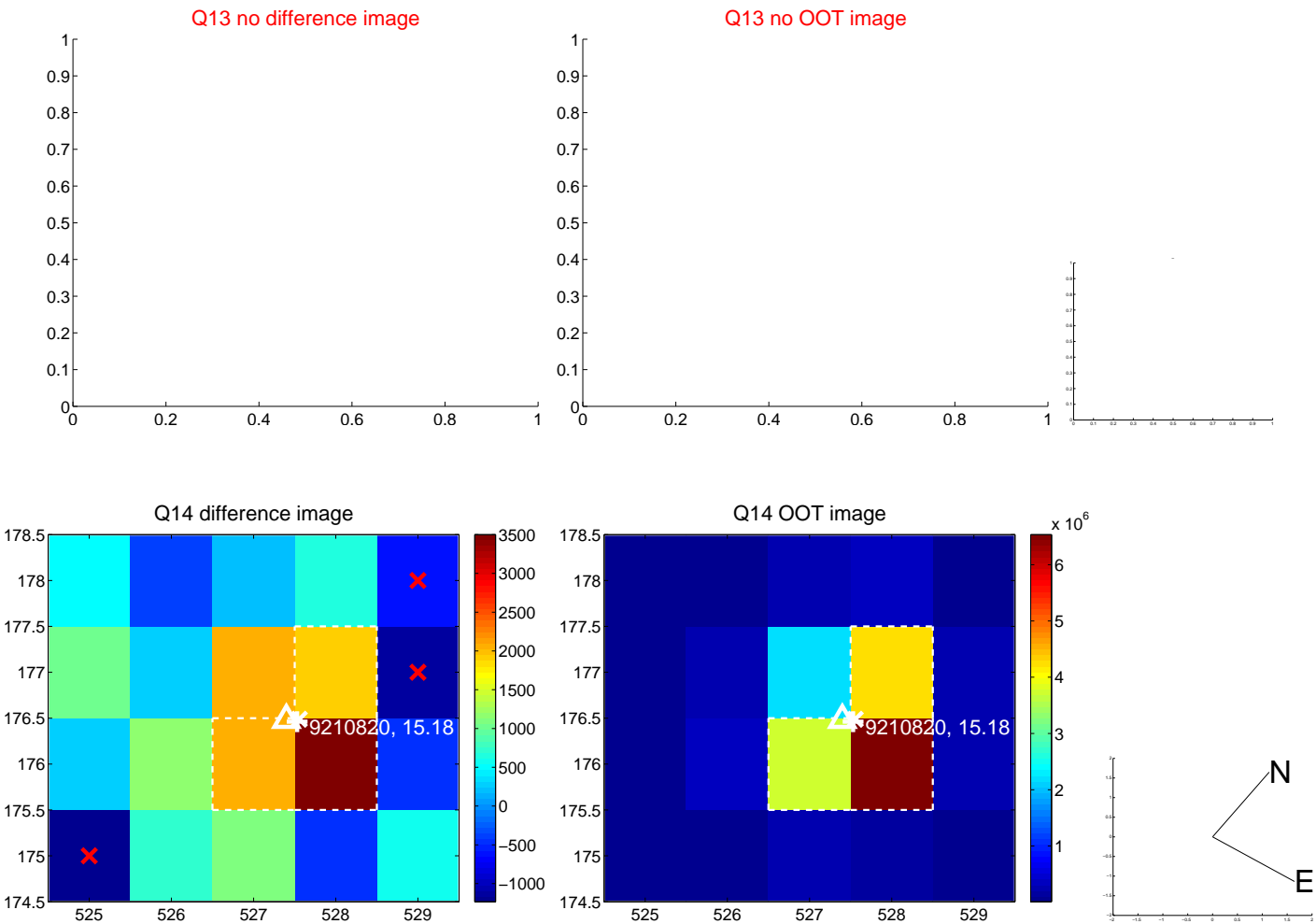
Q12 no difference image



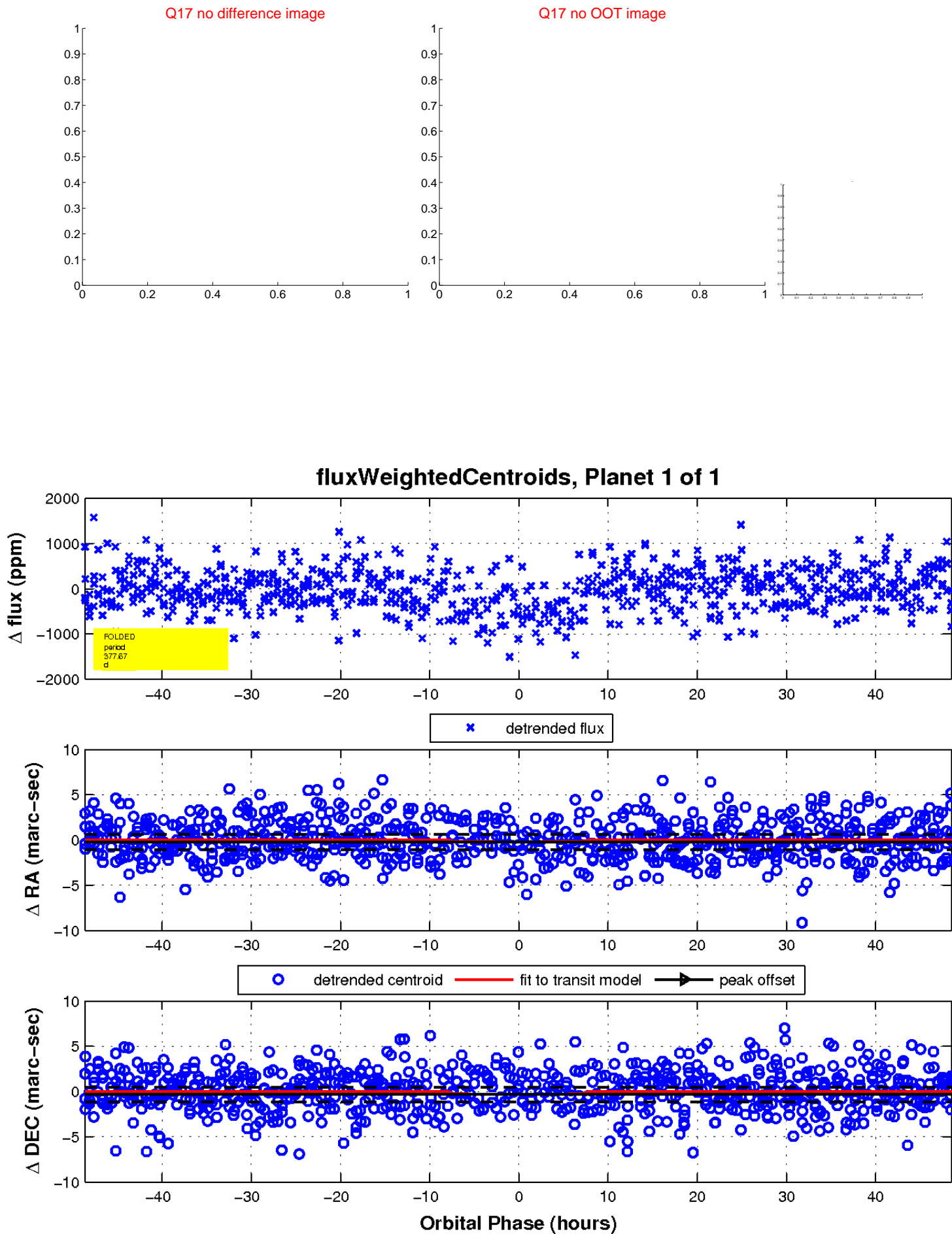
Q12 no OOT image



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

