

KIC 008821936

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})
008821936-01	OBS	8172.01	371.705450	317.170192	223.5	22.663	8.7	8.6	1.09	6227	1.93	1.53

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008821936-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE--INCONSISTENT_TRANS

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

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

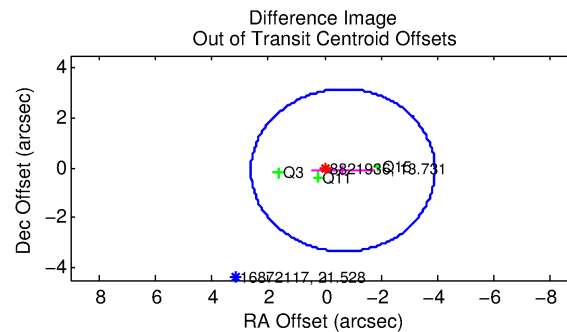
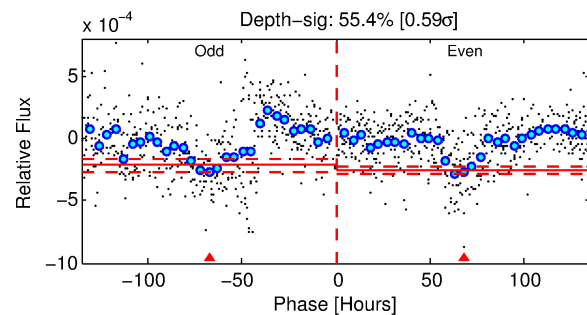
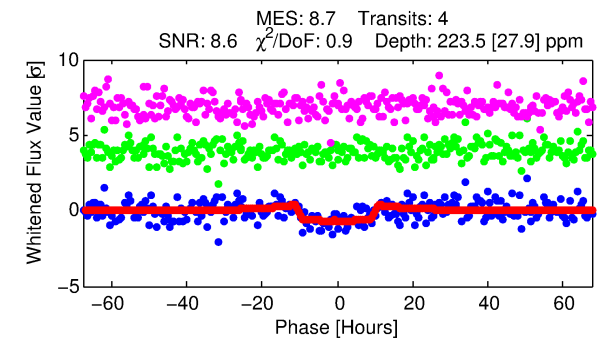
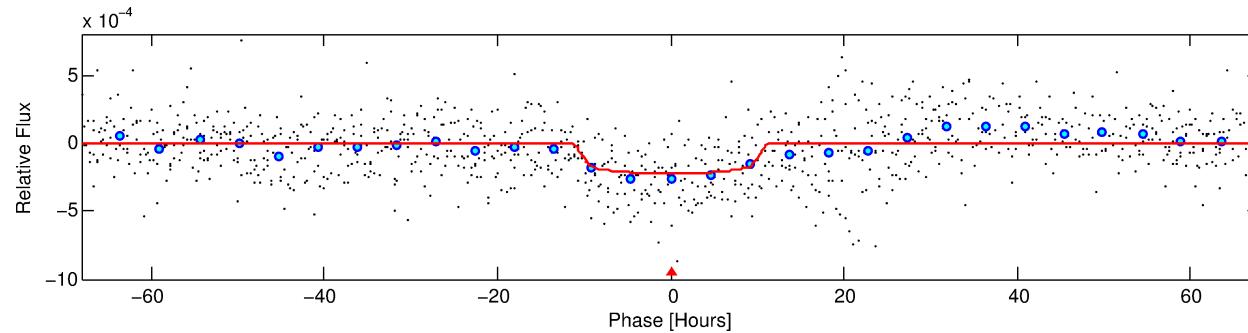
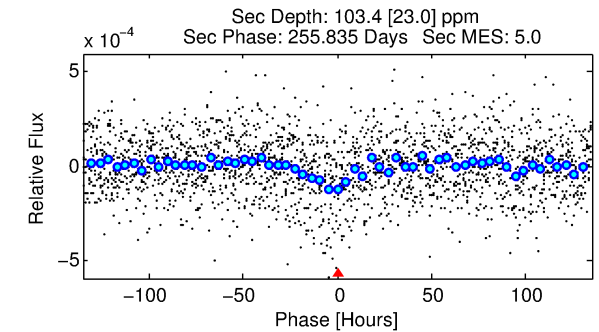
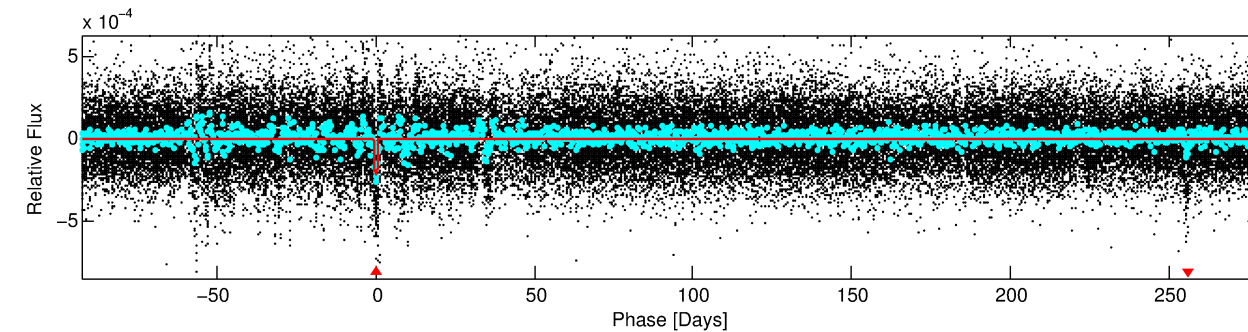
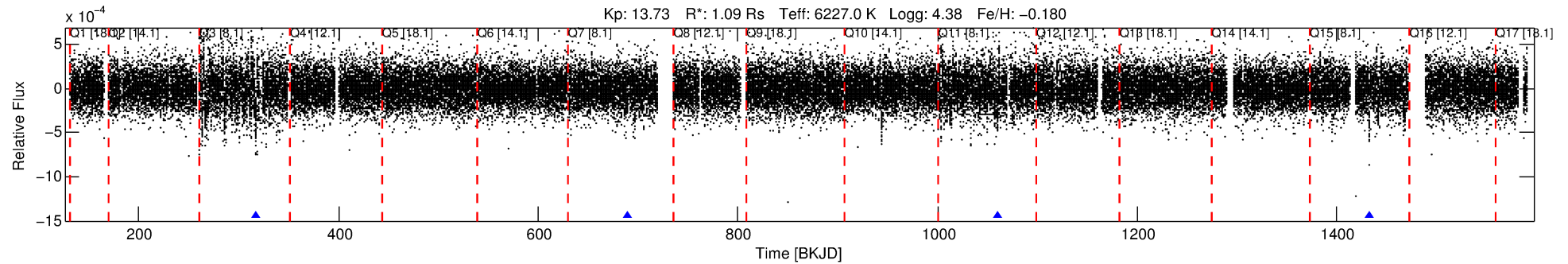
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008821936-01

No Significant Match Found

DV One-Page Summary

KIC: 8821936 Candidate: 1 of 1 Period: 371.705 d



DV Fit Results:

Period = 371.70545 [0.01577] d
Epoch = 317.1702 [0.0317] BKJD
Rp/R* = 0.0163 [0.0017]
a/R* = 55.71 [23.11]
b = 0.91 [0.08]
Seff = 1.53 [0.62]
Teq = 284 [29] K
Rp = 1.93 [0.68] Re
a = 1.0222 [0.2779] AU
Ag = 15893.70 [7764.15] [2.05σ]
Teffp = 4922 [407] K [11.37σ]

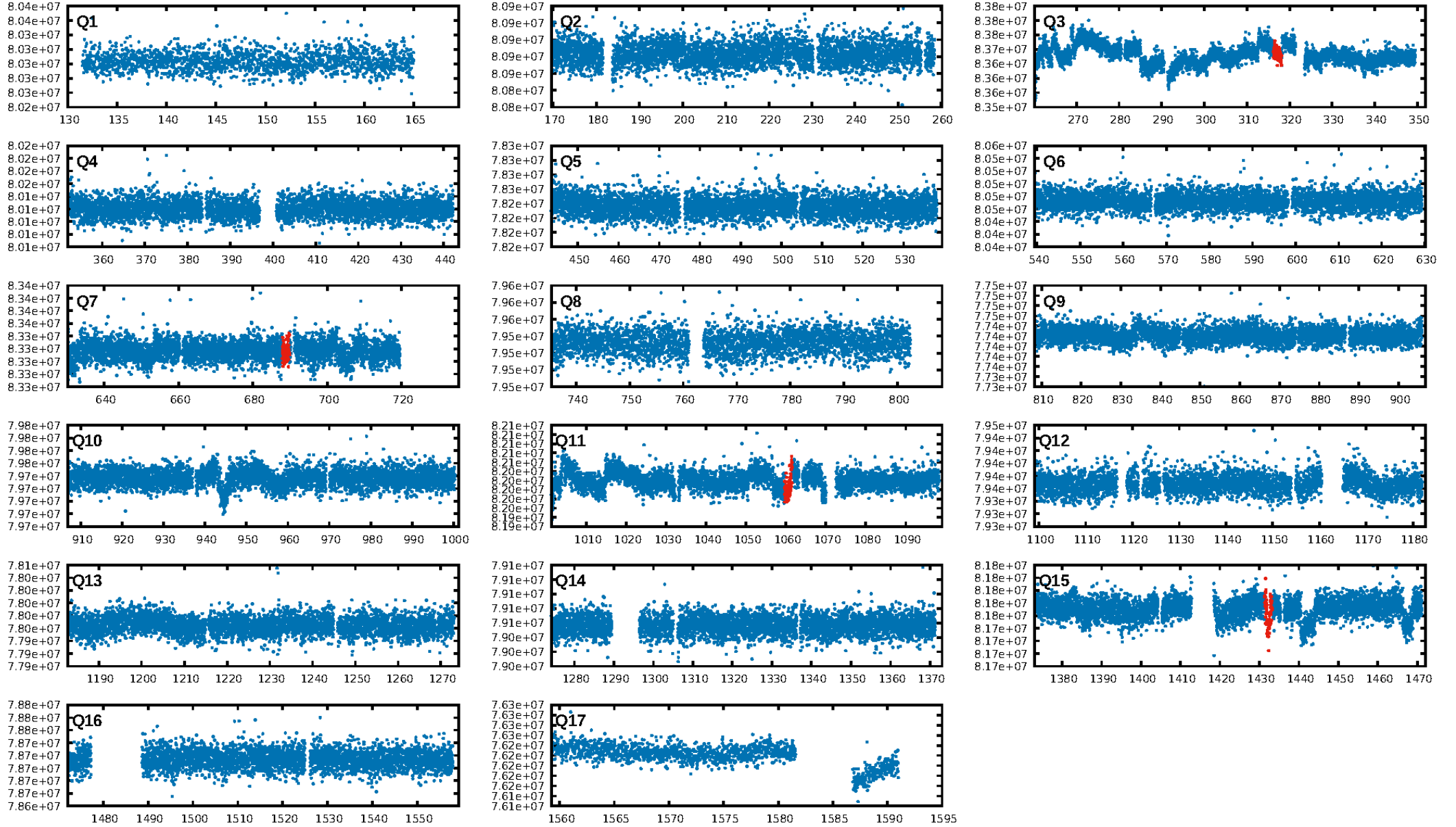
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.56e-11
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 2.265
Centroid-sig: 12.5%
Centroid-so: 1.029 arcsec [1.20σ]
OotOffset-rm: 0.662 arcsec [0.61σ]
KicOffset-rm: 0.805 arcsec [0.77σ]
OotOffset-st: 0/3/0/0 [3]
KicOffset-st: 0/3/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

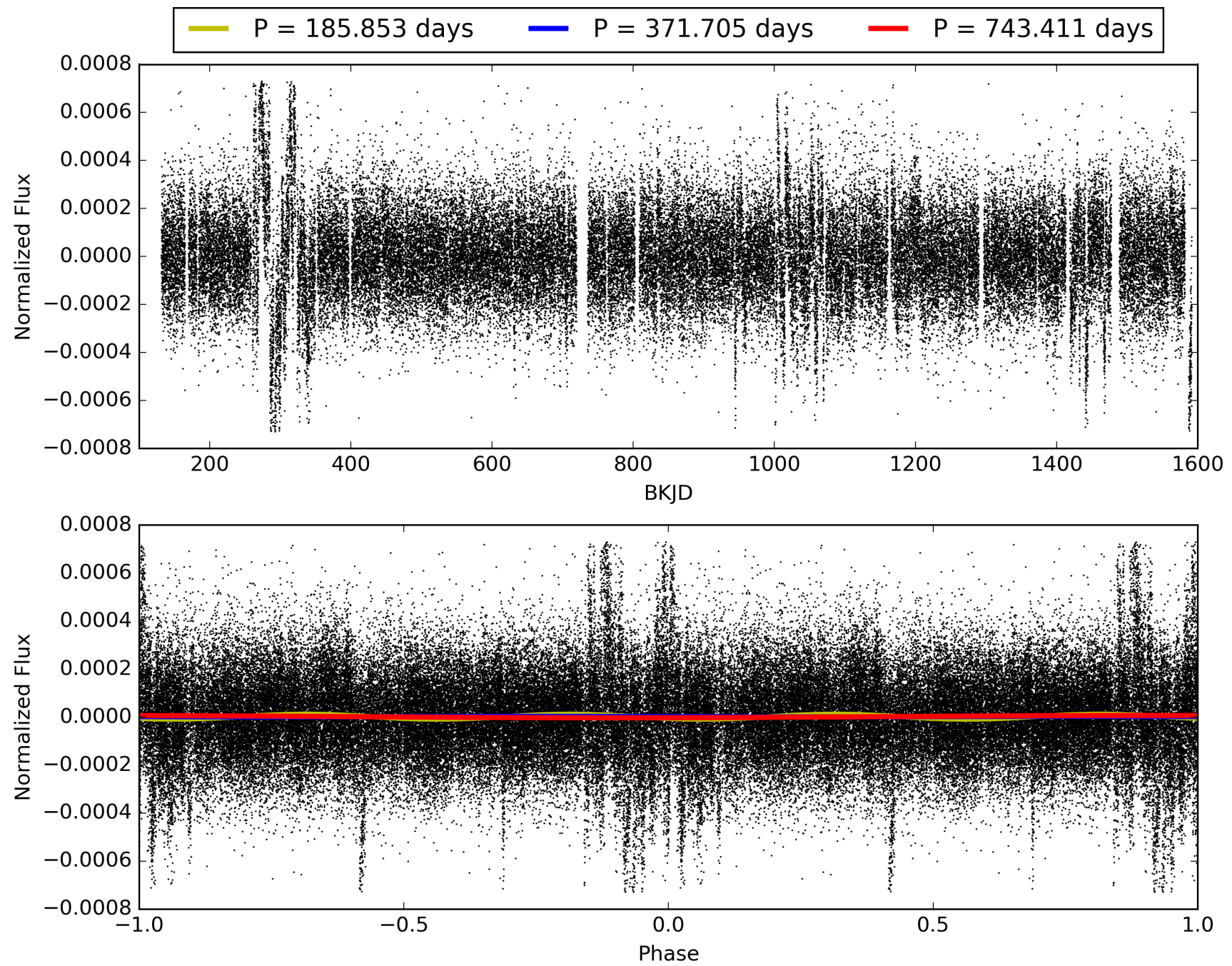
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:27:28 Z

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

TCE 008821936-01, PDC Light Curves

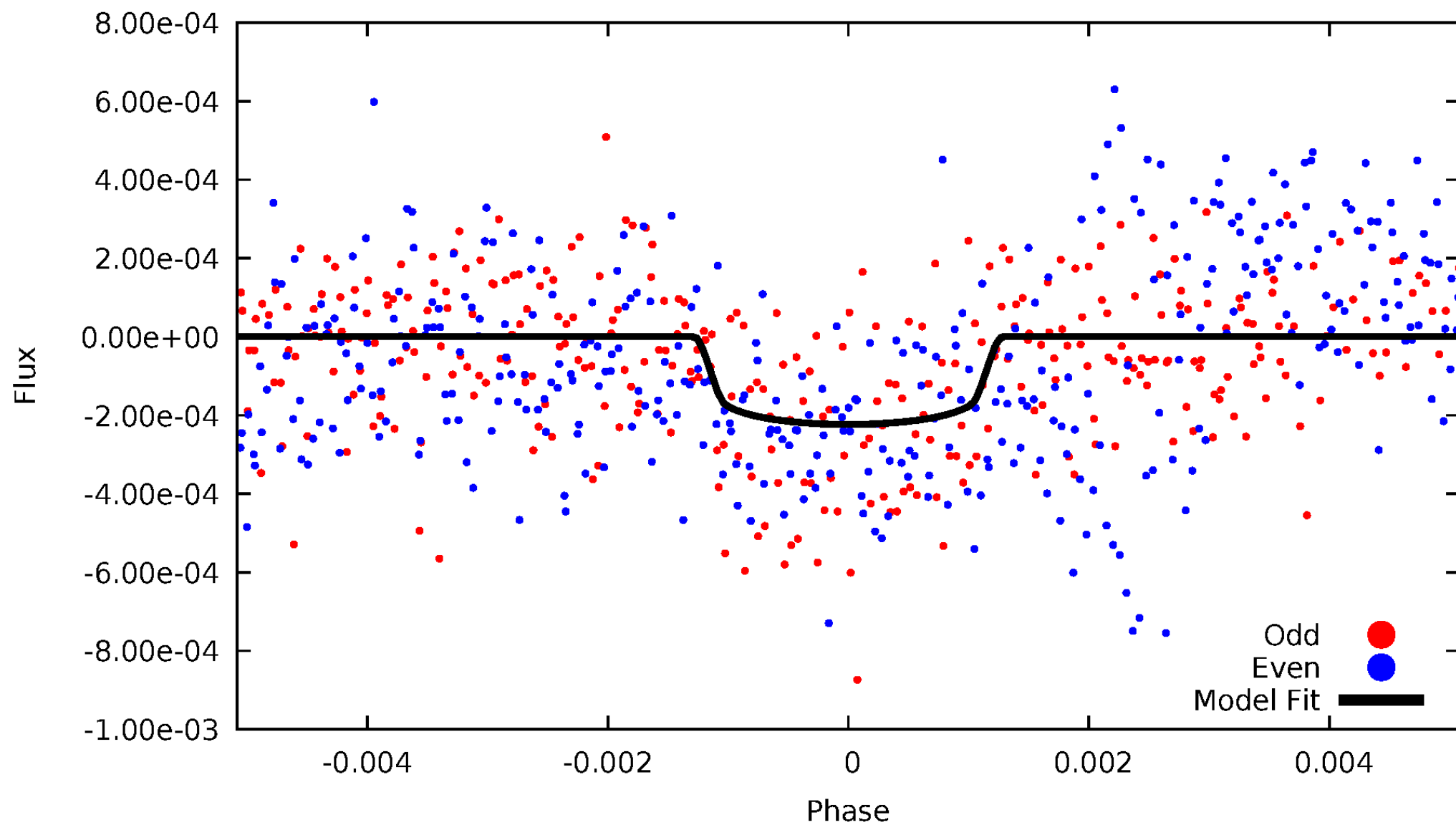


TCE 008821936-01



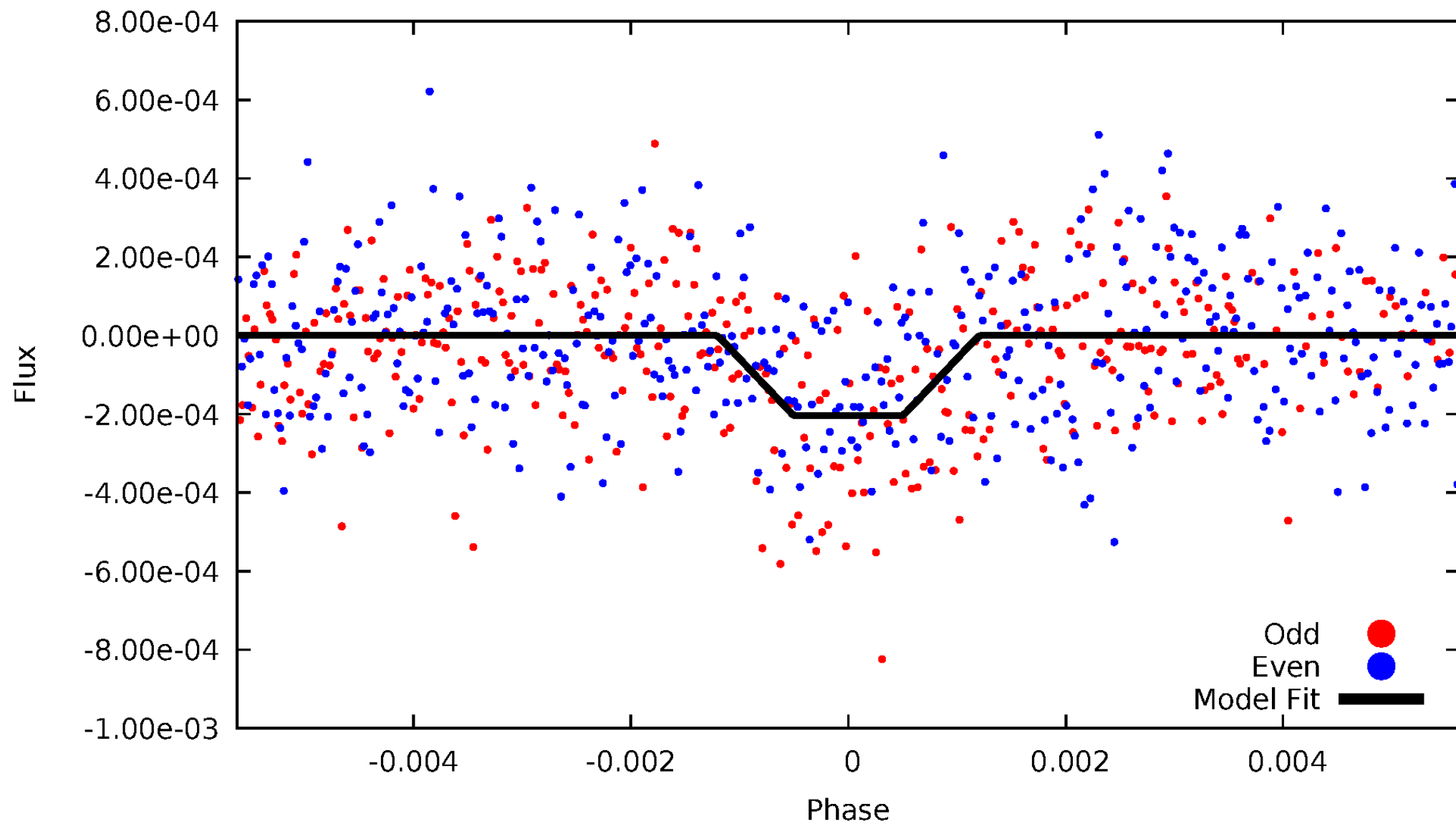
DV Odd/Even

TCE 008821936-01

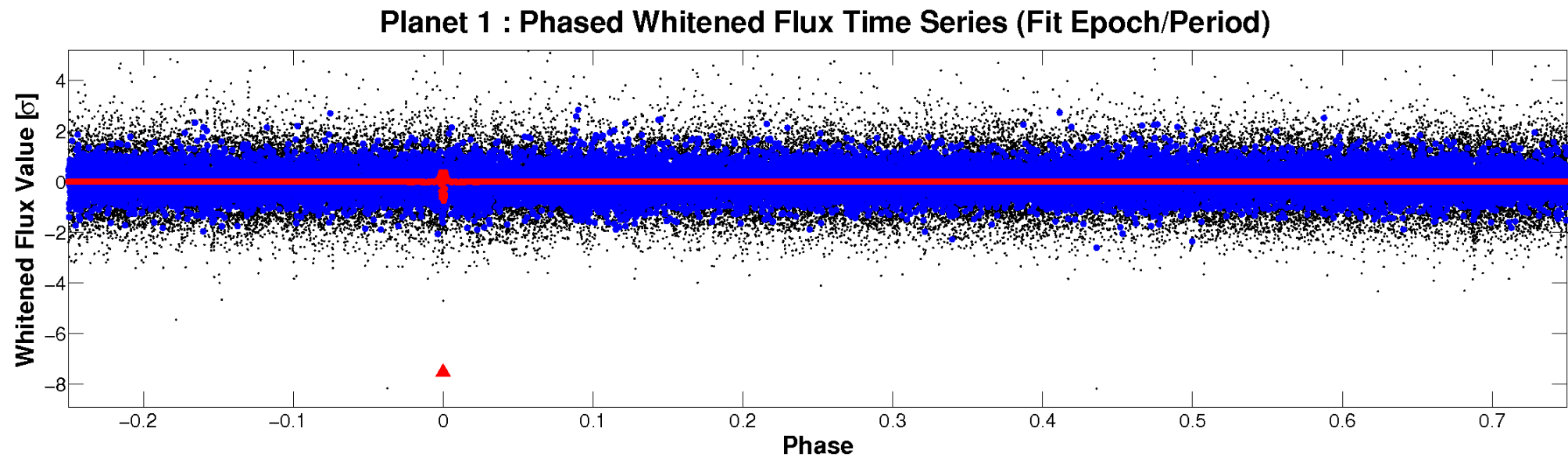
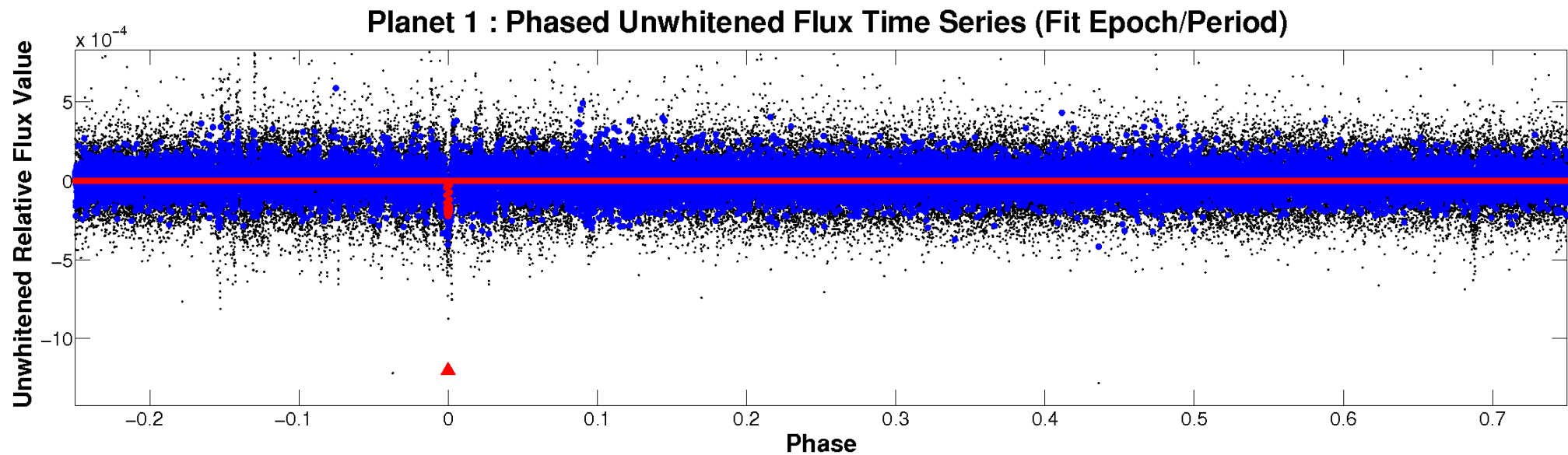


ALT Odd/Even

TCE 008821936-01

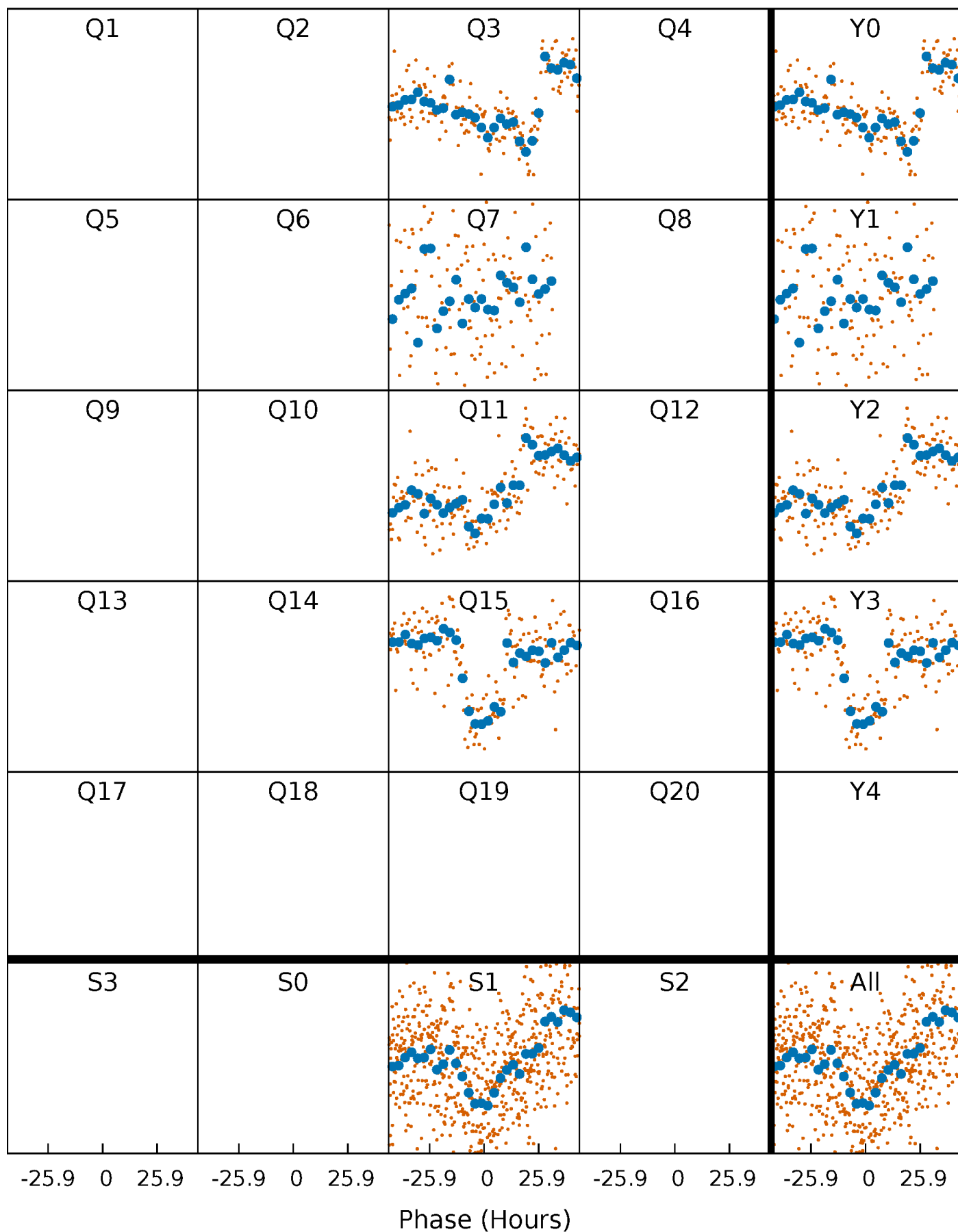


Non-Whitened Vs. Whitened Light Curve



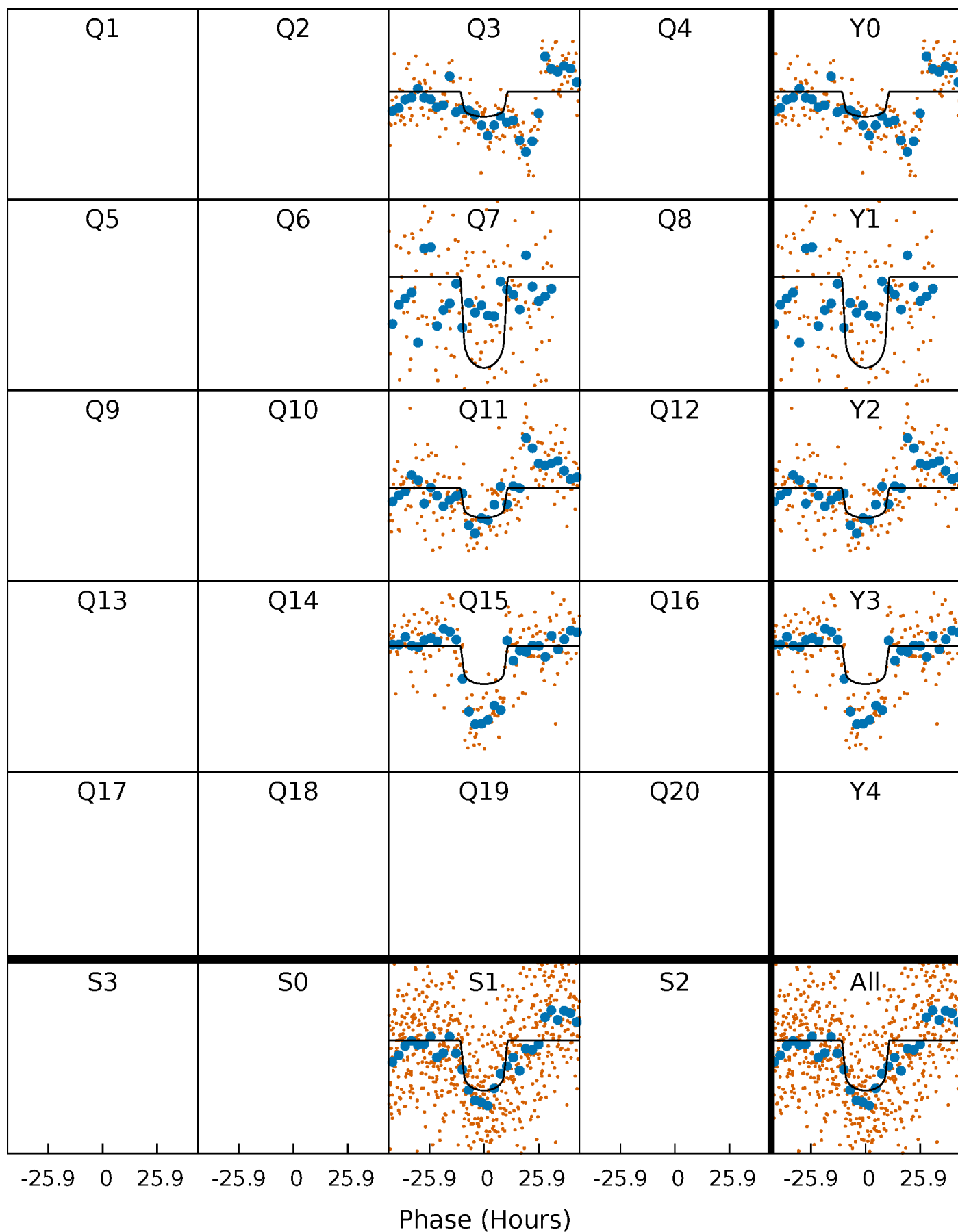
PDC Quarter-Phased Transit Curves

TCE 008821936-01 P=371.705450 Days $T_0=317.170192$ (BKJD)



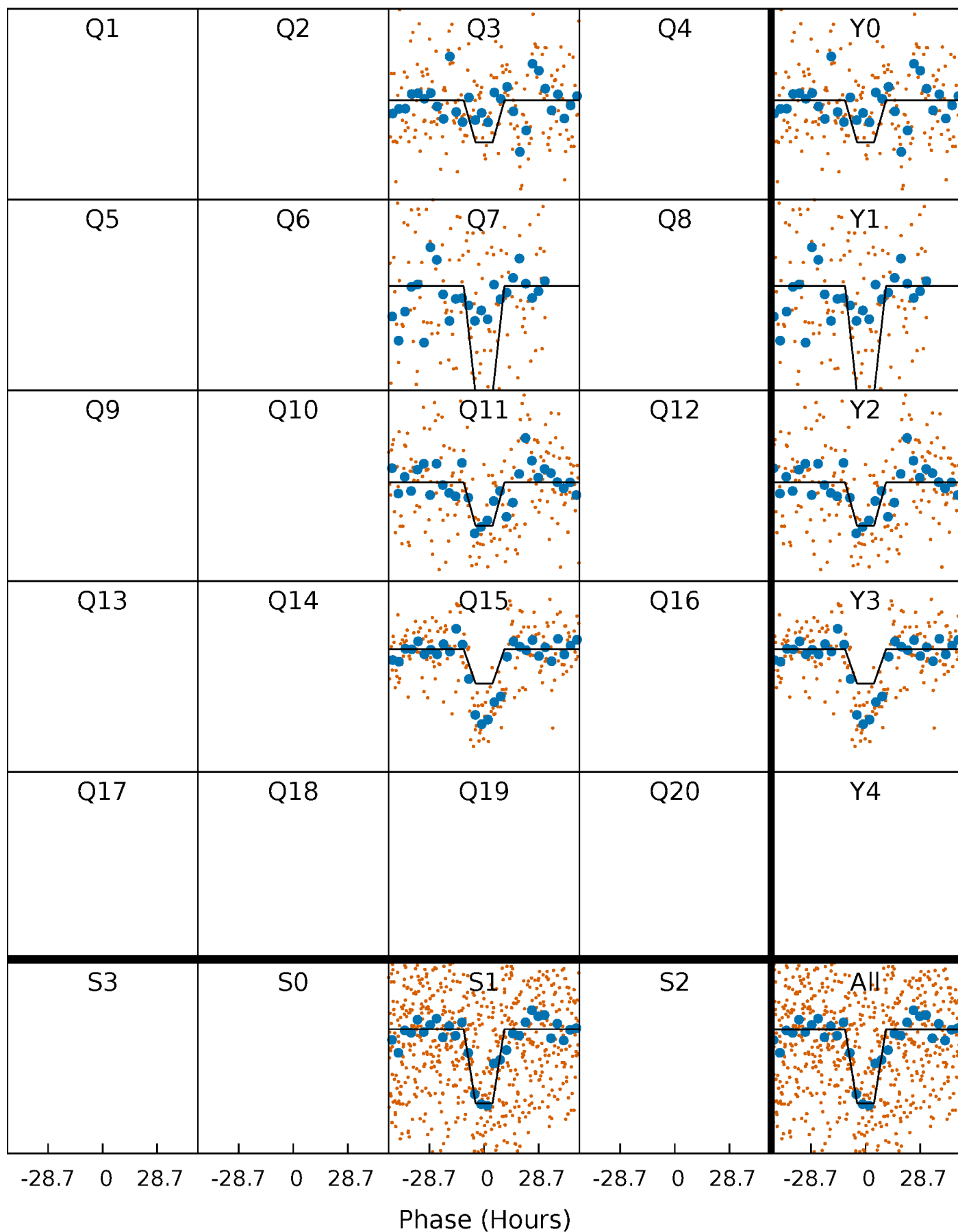
DV Quarter-Phased Transit Curves

TCE 008821936-01 $P=371.705450$ Days $T_0=317.170192$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

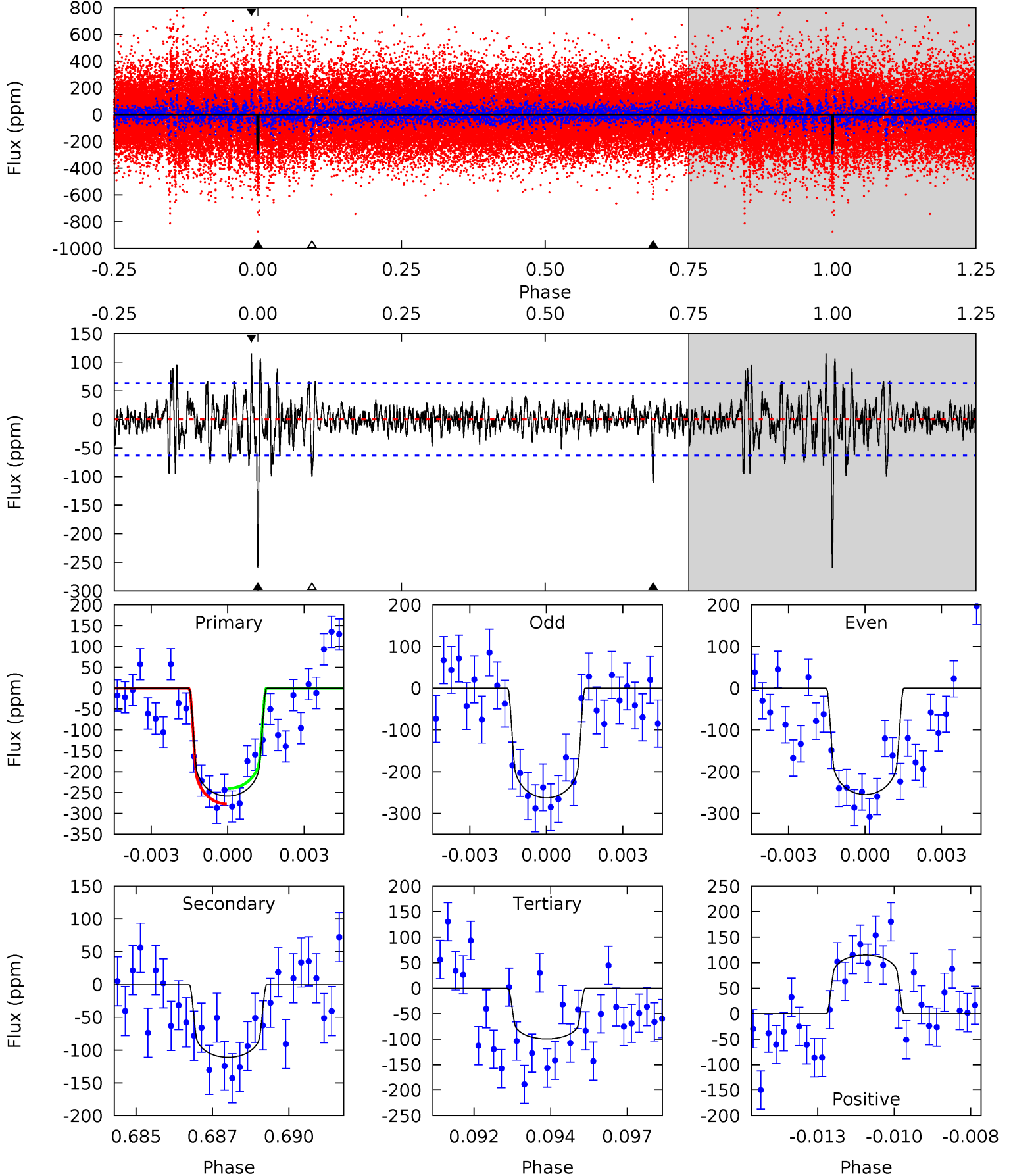
TCE 008821936-01 P=371.652400 Days $T_0=317.242411$ (BKJD)



DV Model-Shift Uniqueness Test

008821936-01, $P = 371.705450$ Days, $E = 317.170192$ Days

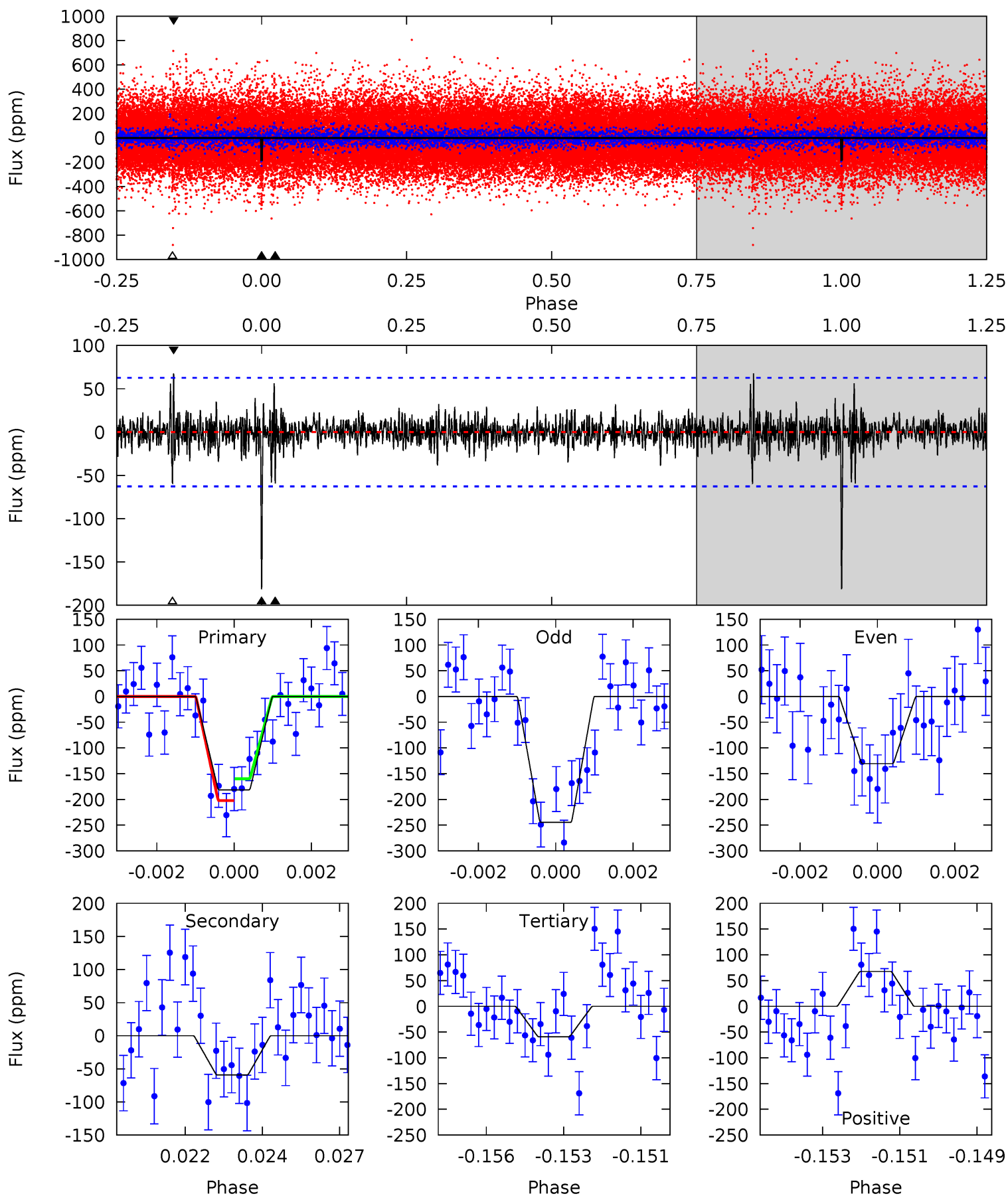
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.6	9.27	8.32	9.60	5.28	3.02	1.95	13.3	12.0	0.96	-0.33	0.33	1.01	0.31	1.56



Alt Model-Shift Uniqueness Test

008821936-01, P = 371.652400 Days, E = 317.242411 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.3	4.99	4.98	5.72	5.29	3.03	0.97	10.3	9.60	0.01	-0.72	4.84	1.43	0.27	1.78



Stellar Parameters For KIC 008821936

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6227^{+169}_{-206}	$4.377^{+0.101}_{-0.203}$	$-0.180^{+0.250}_{-0.300}$	$1.089^{+0.364}_{-0.145}$	$1.025^{+0.173}_{-0.115}$	$1.117^{+0.513}_{-0.592}$
	+3%/-3%	+2%/-5%	+139%/-167%	+33%/-13%	+17%/-11%	+46%/-53%
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 008821936-01 / KOI 8172.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-111 ± 12	$1.98^{+0.40}_{-0.29}$	401^{+28}_{-22}	5082^{+298}_{-269}	16186^{+5981}_{-4953}
Alt.	-59 ± 12	$1.72^{+0.34}_{-0.26}$	398^{+31}_{-20}	4704^{+365}_{-315}	11247^{+5134}_{-3846}

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

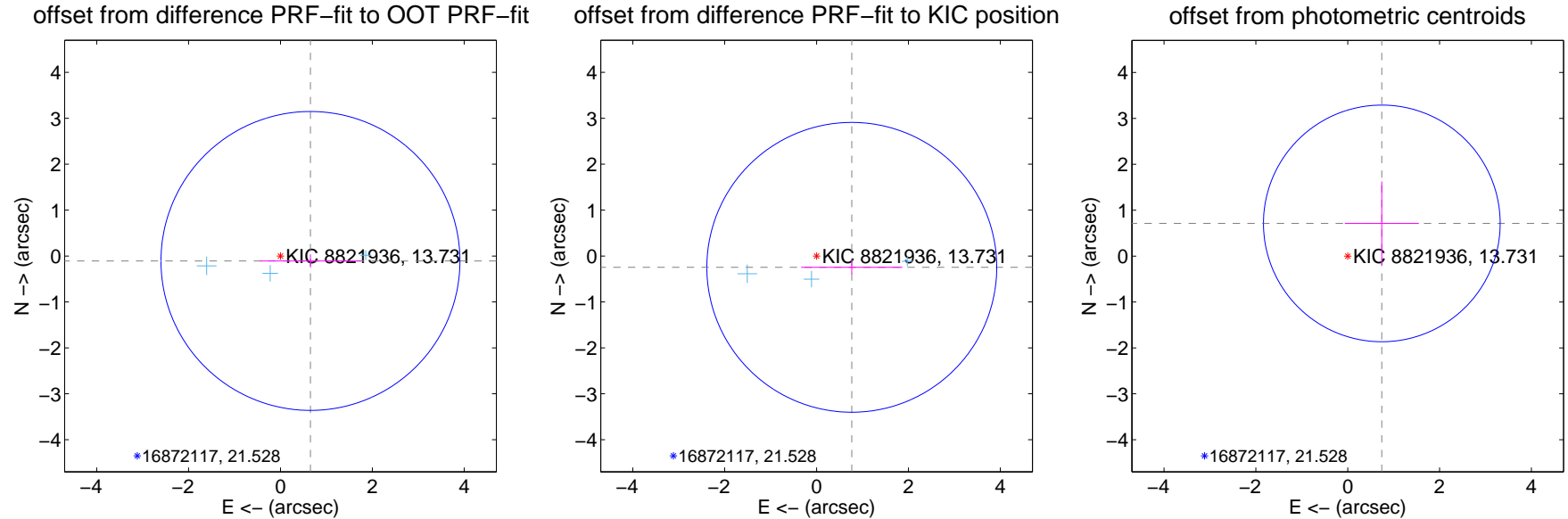
DV Centroid Data

Supplemental centroid analysis for 008821936-01. Kepler magnitude: 13.73. Transit SNR 8.62

There are 3 quarters with good PRF difference image offsets

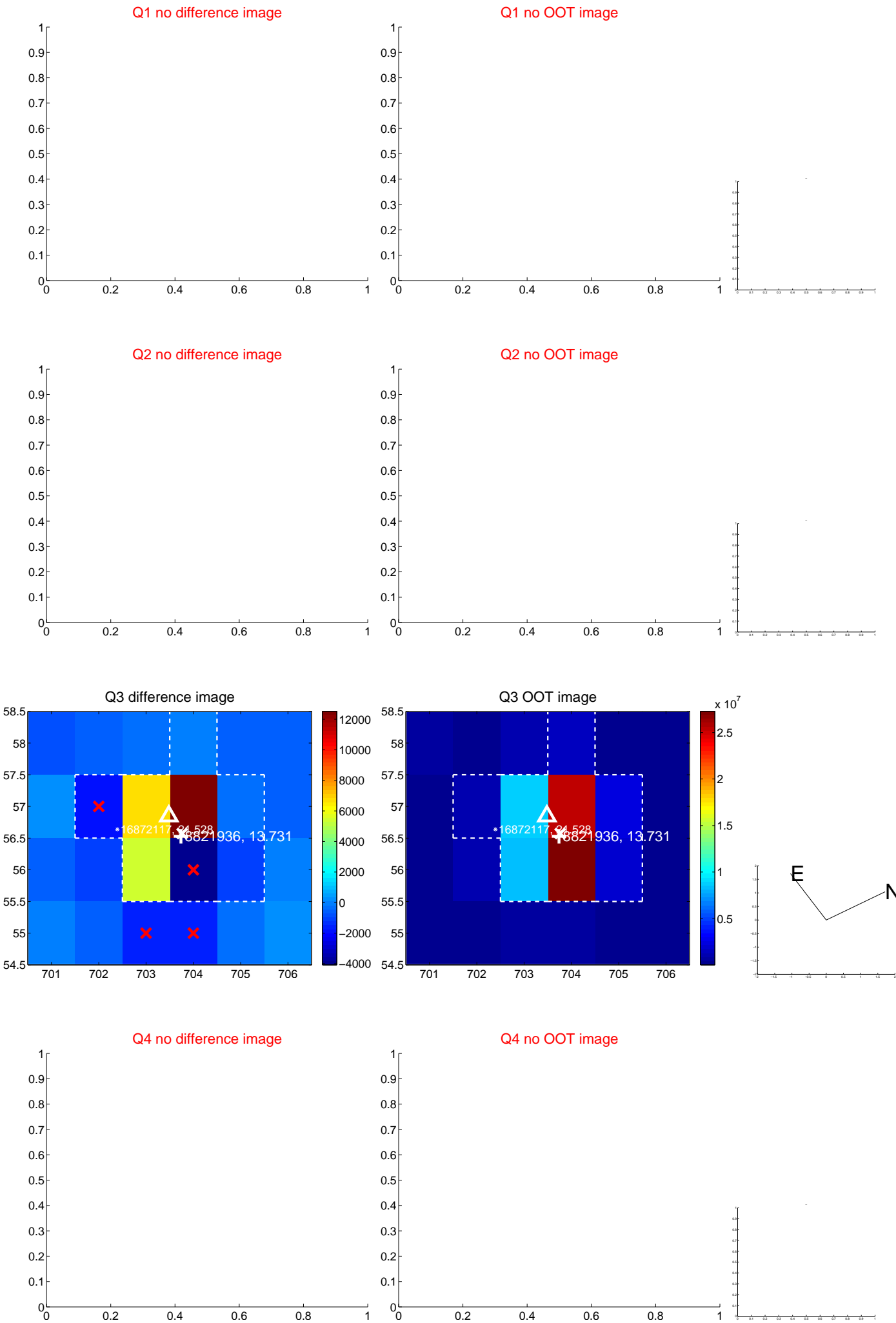
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.662 ± 1.085	0.61	-0.653 ± 1.099	-0.107 ± 0.144
PRF-fit source offset from KIC position	0.805 ± 1.052	0.77	-0.767 ± 1.104	-0.246 ± 0.148
photometric centroid source offset	1.03 ± 0.86	1.20	-0.74 ± 0.81	0.71 ± 0.91



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

Q9 no difference image



Q9 no OOT image



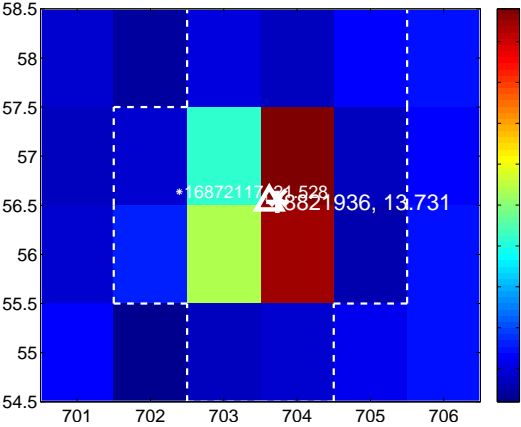
Q10 no difference image



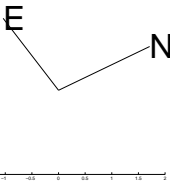
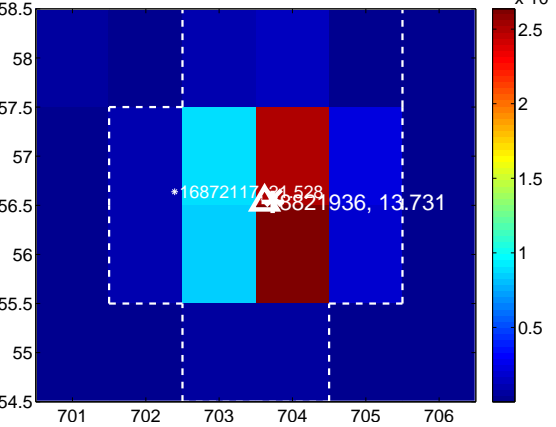
Q10 no OOT image



Q11 difference image



Q11 OOT image



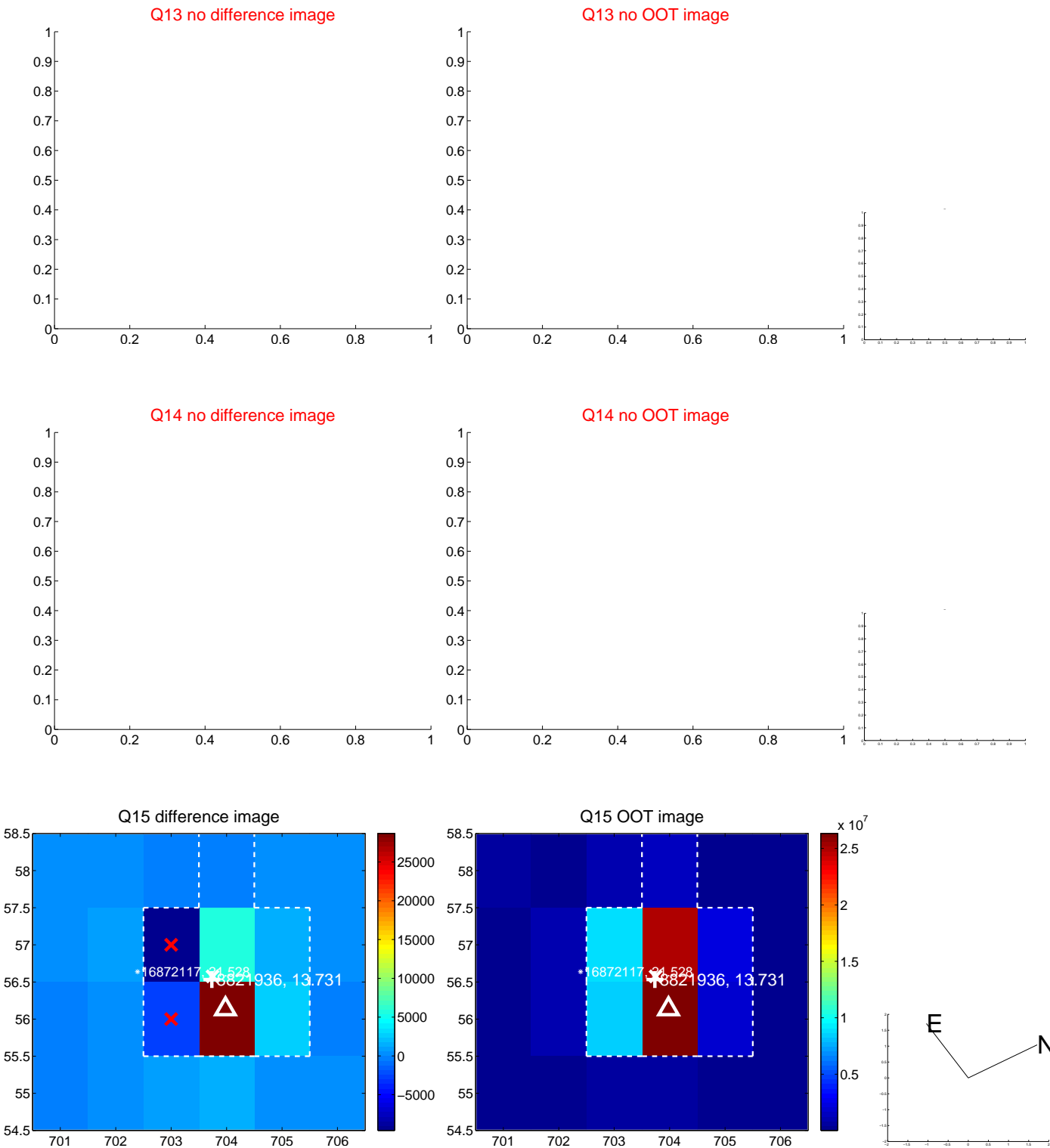
Q12 no difference image



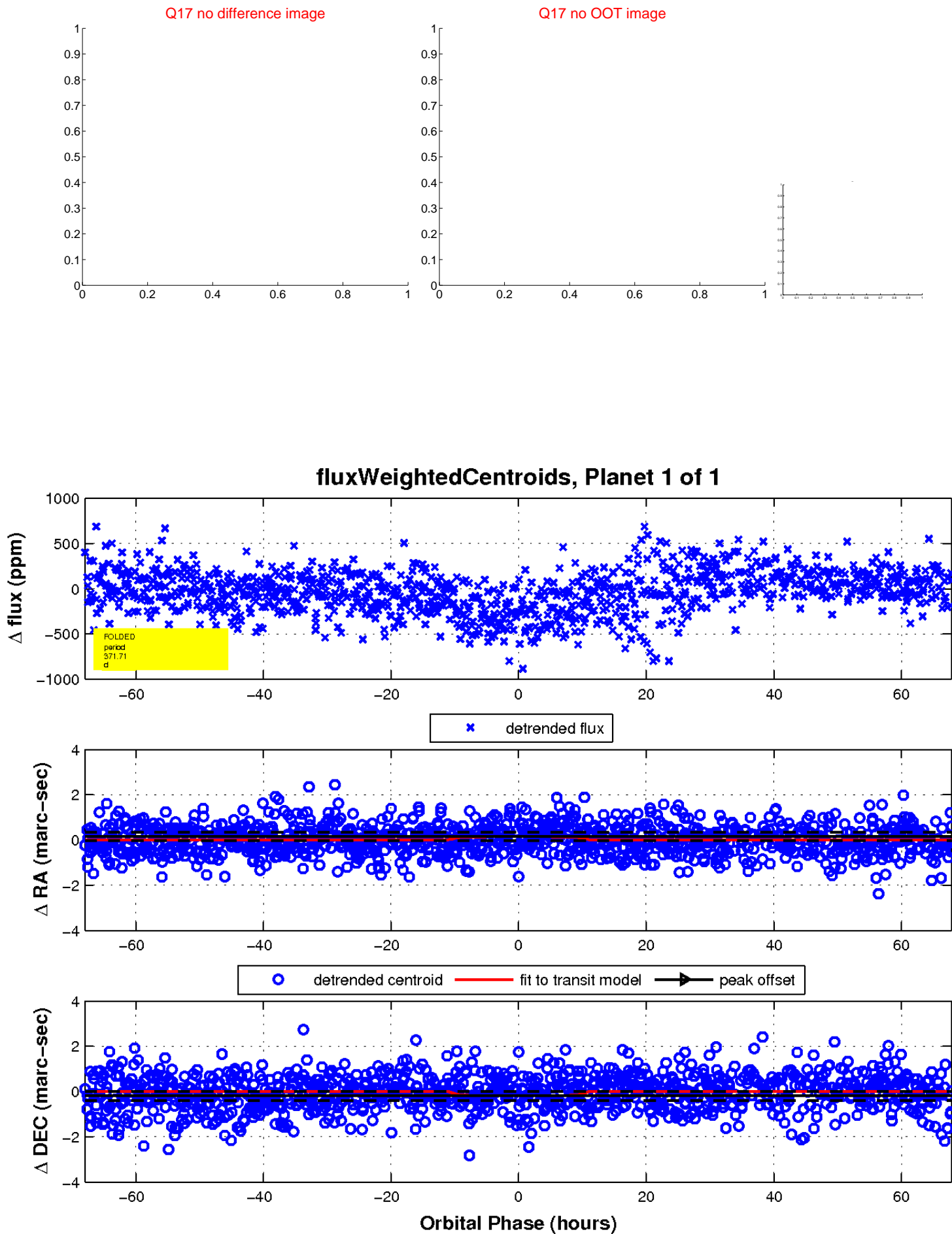
Q12 no OOT image



white ×: 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

