

KIC 008815031

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})
008815031-01	OBS	8171.01	472.604000	515.575955	689.9	12.363	7.3	7.1	0.86	5764	2.41	0.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008815031-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—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.

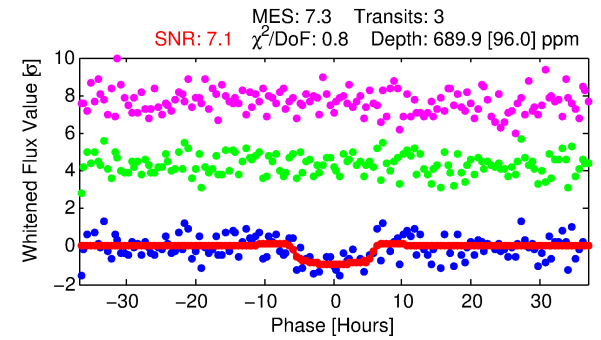
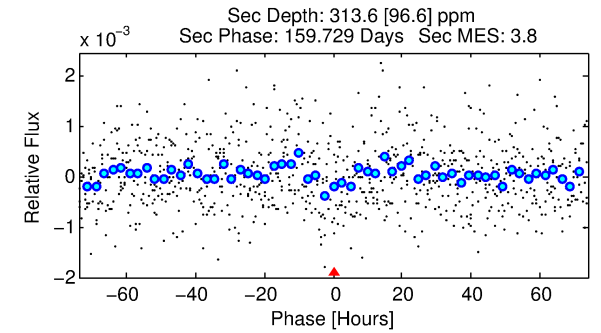
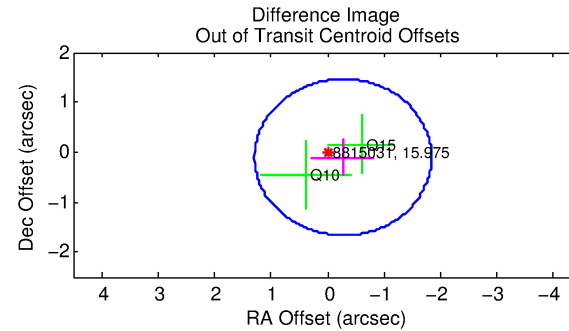
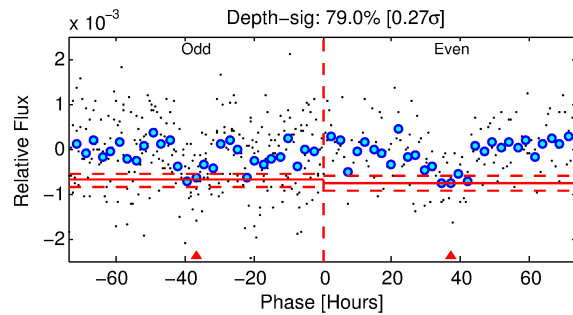
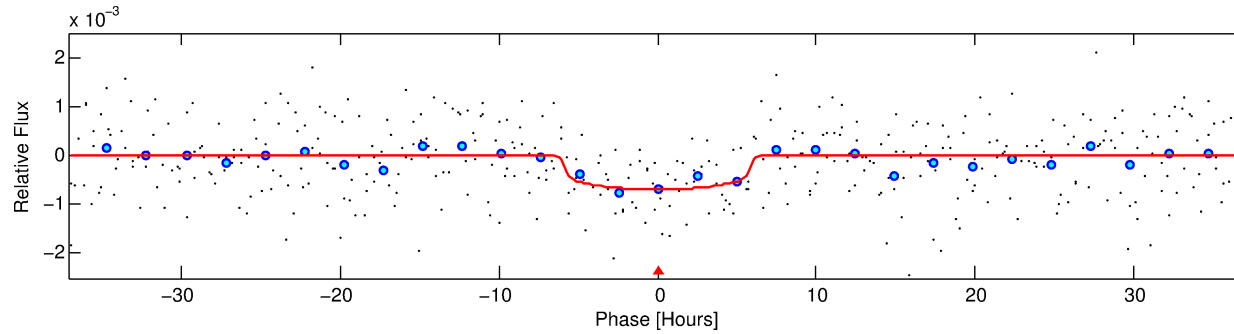
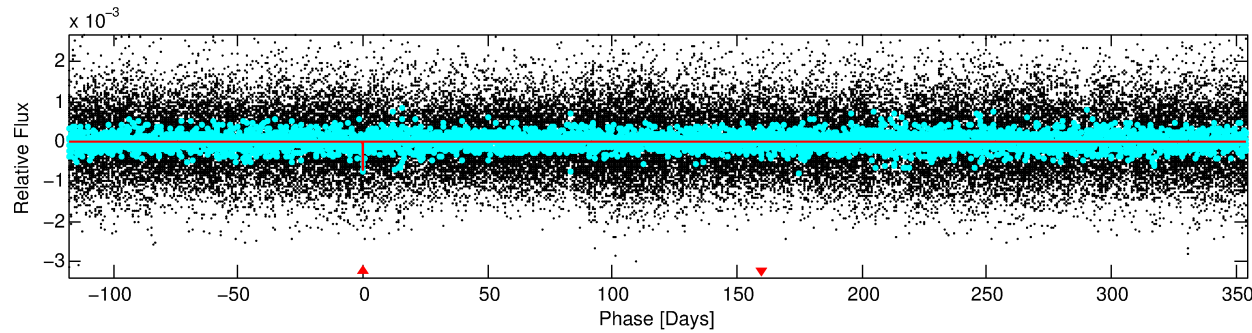
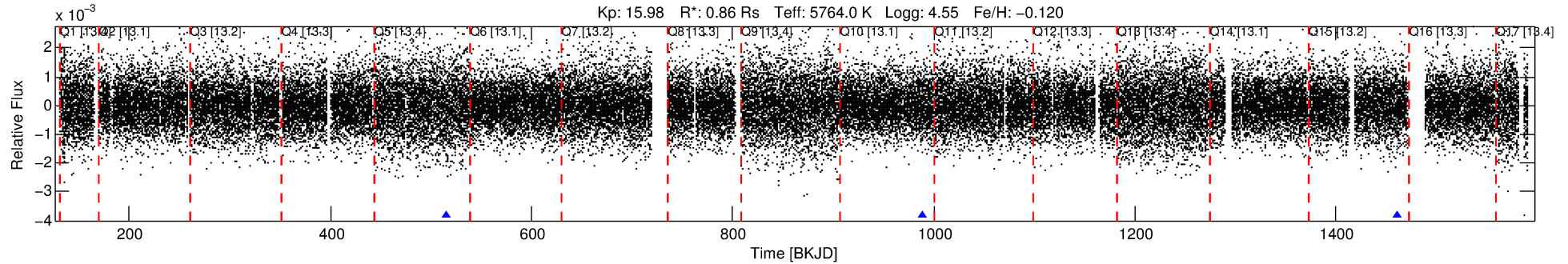
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008815031-01

No Significant Match Found

DV One-Page Summary

KIC: 8815031 Candidate: 1 of 1 Period: 472.604 d



DV Fit Results:

Period = 472.60400 [0.02005] d
Epoch = 515.5760 [0.0268] BKJD
Rp/R* = 0.0256 [0.0117]
a/R* = 221.20 [444.54]
b = 0.69 [1.53]
Seff = 0.54 [0.17]
Teq = 218 [17] K
Rp = 2.41 [1.23] Re
a = 1.1714 [0.2270] AU
Ag = 40626.78 [40801.63] [1.00 σ]
Teff = 4791 [1160] K [3.94 σ]

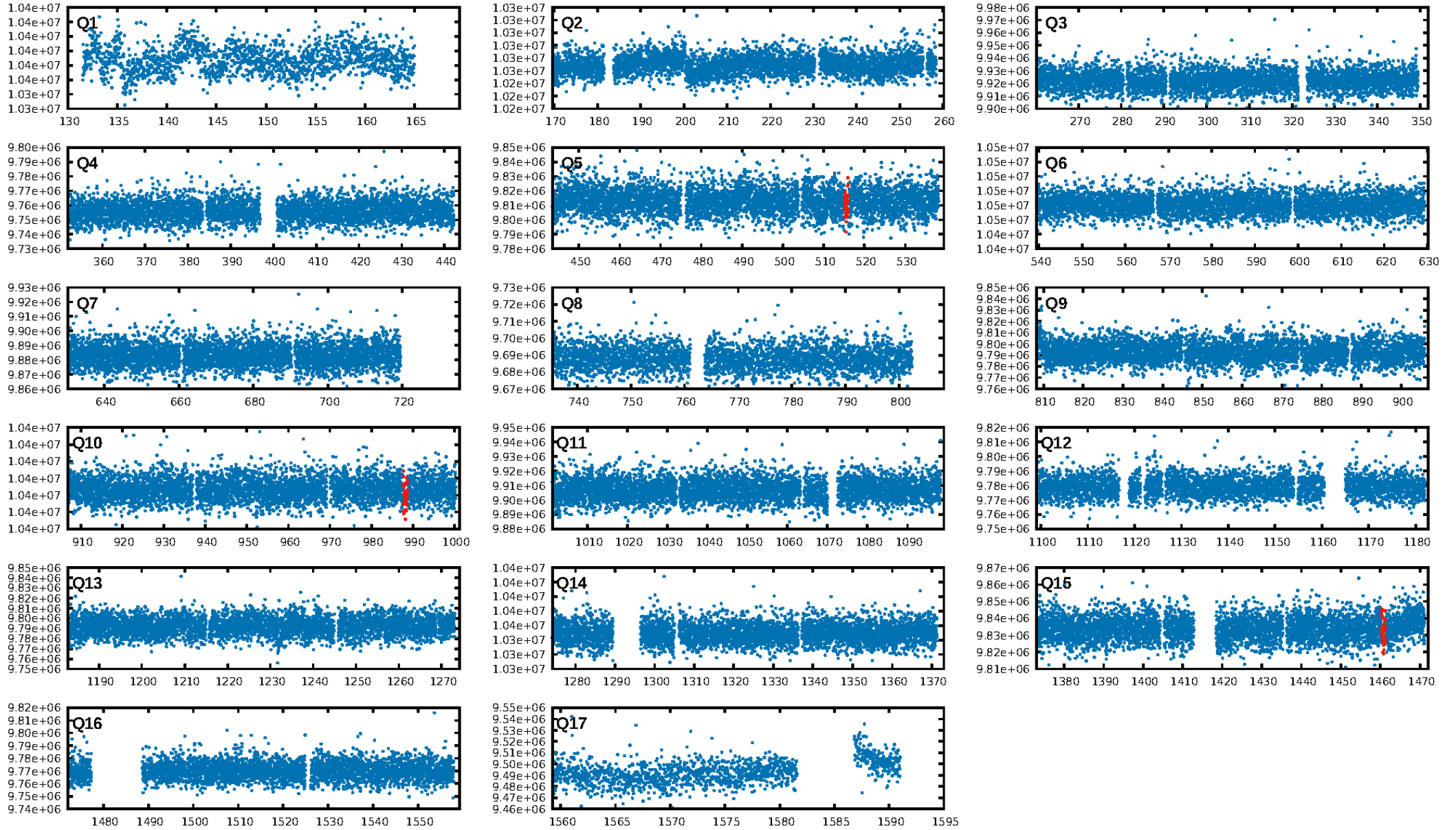
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 81.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.54e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -3.285
Centroid-sig: 50.5%
Centroid-so: 1.470 arcsec [0.68 σ]
OotOffset-rm: 0.291 arcsec [0.56 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-rm: 0.311 arcsec [0.66 σ]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [3/3]

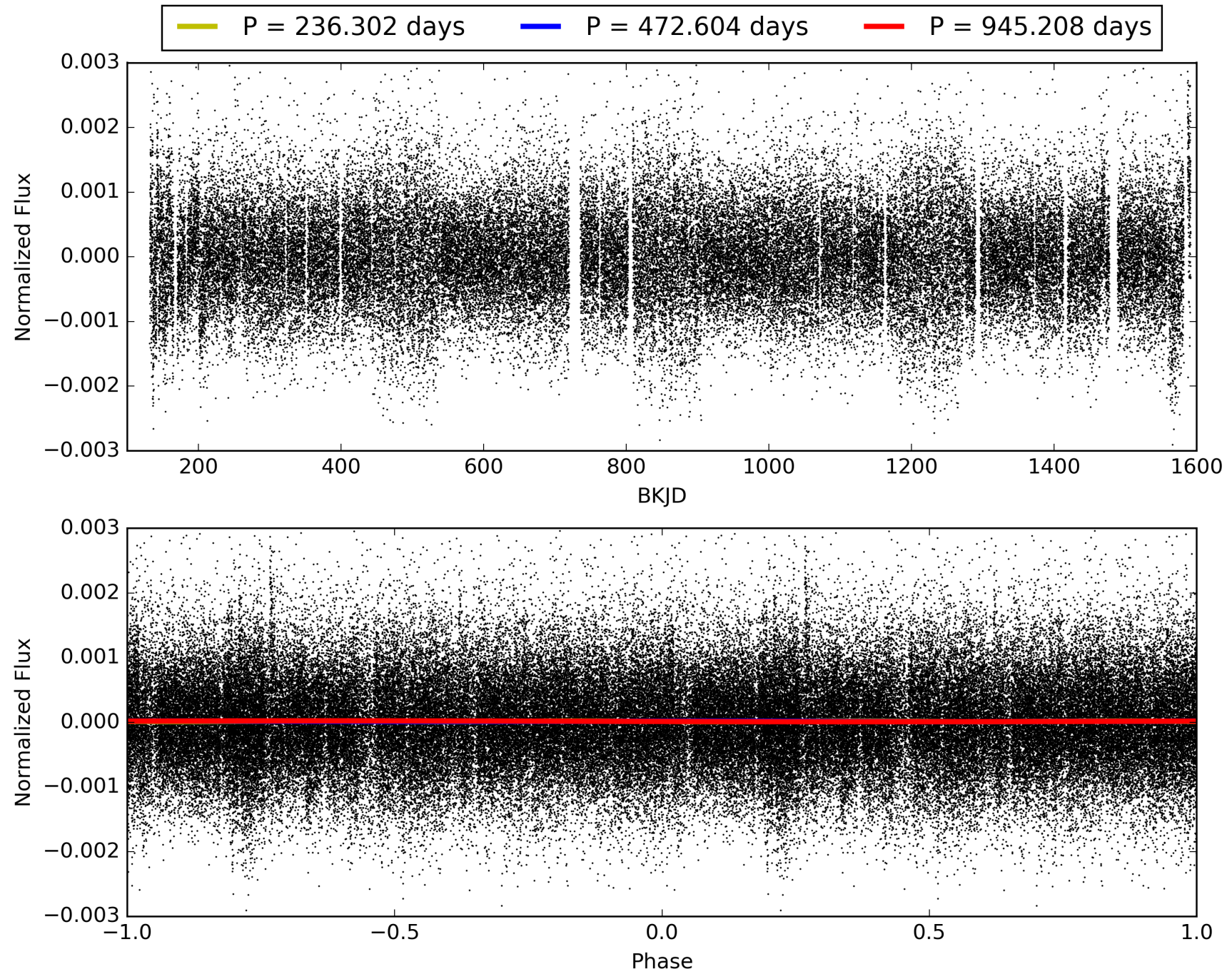
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:32:37 Z

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

TCE 008815031-01, PDC Light Curves

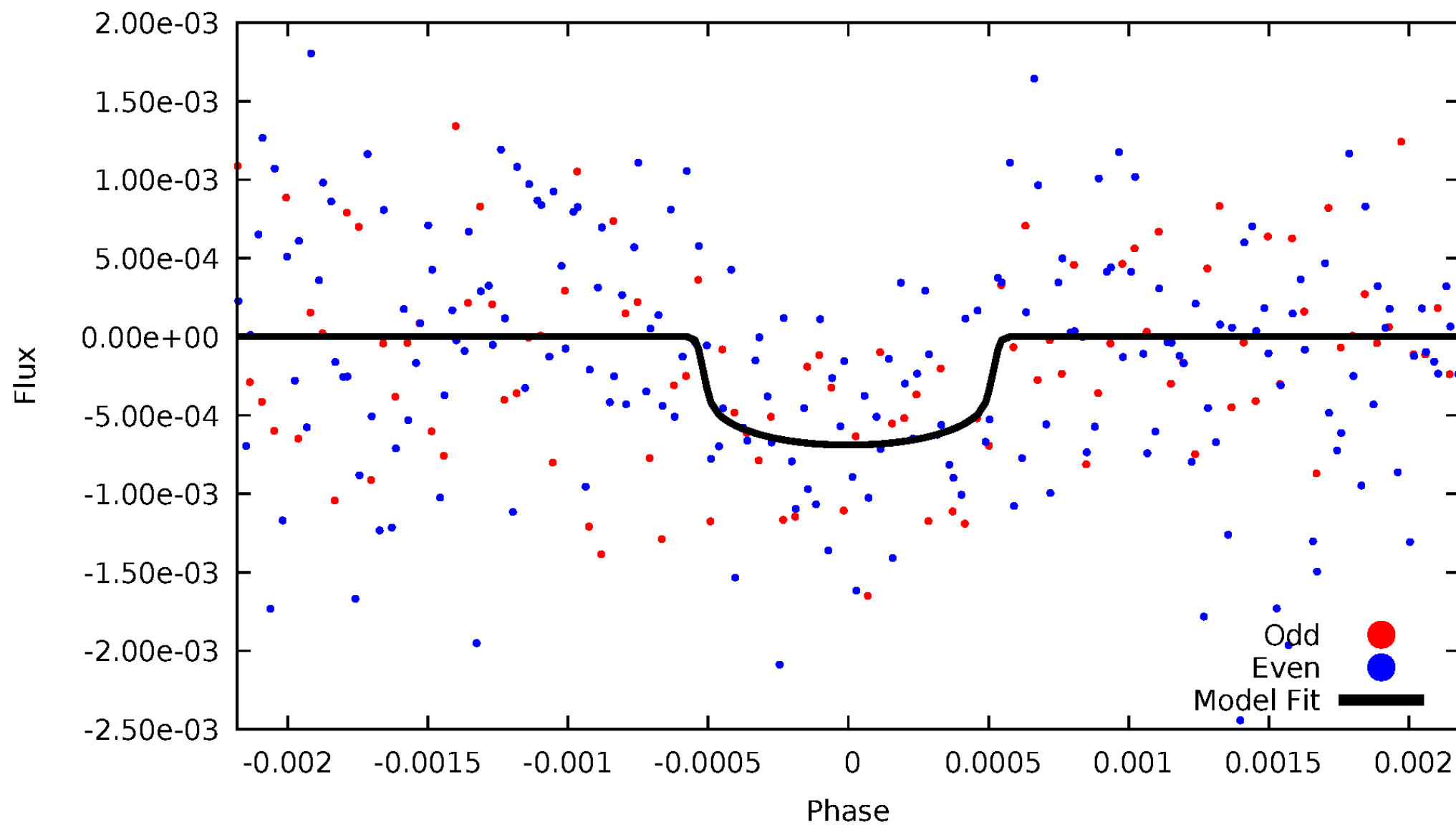


TCE 008815031-01



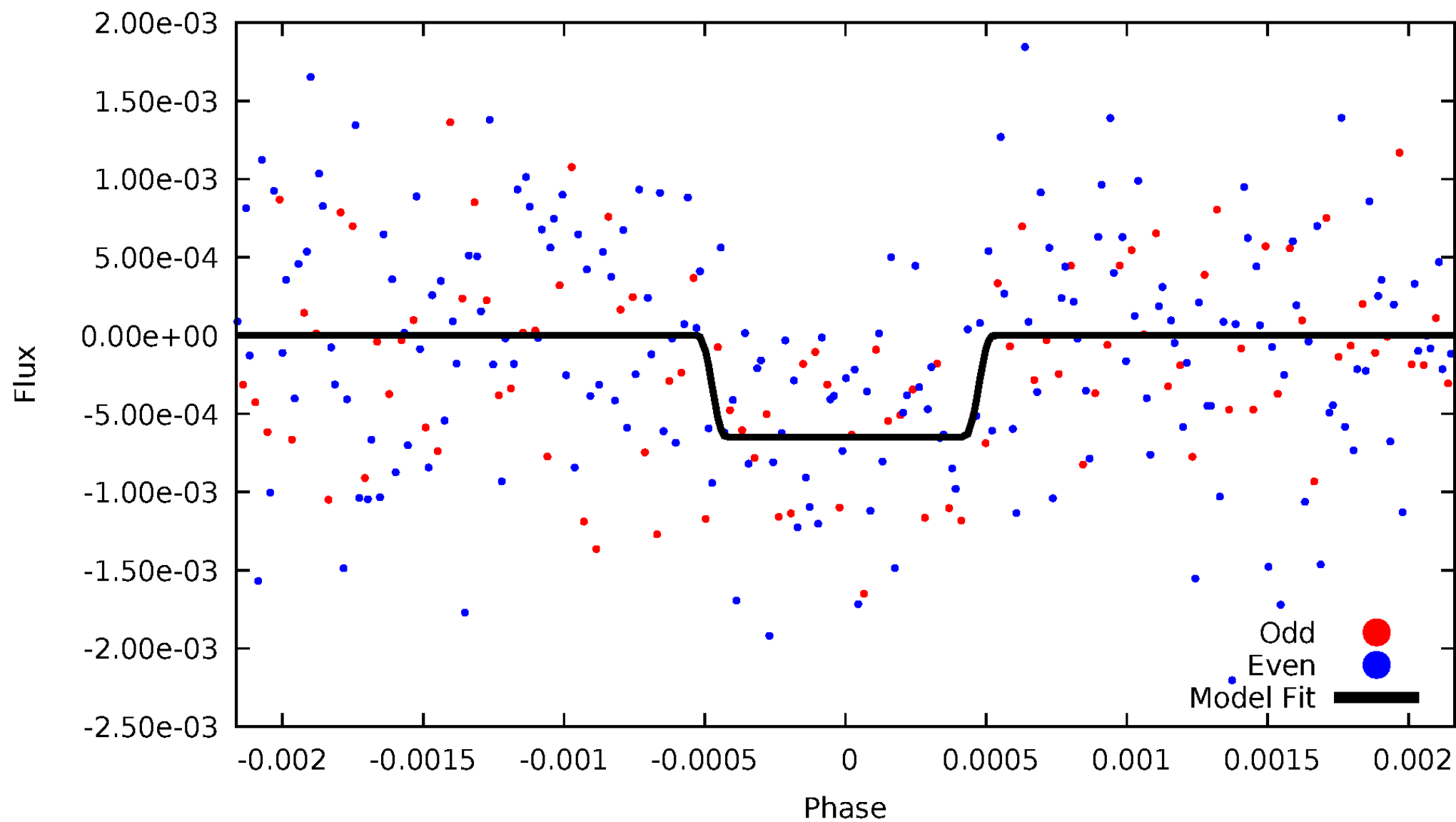
DV Odd/Even

TCE 008815031-01



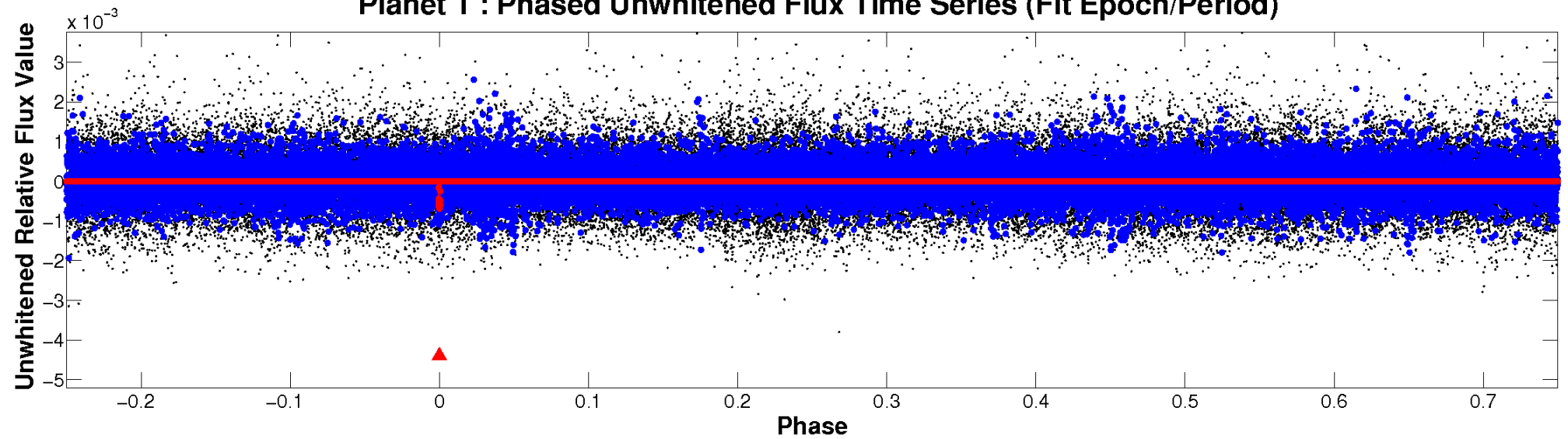
ALT Odd/Even

TCE 008815031-01

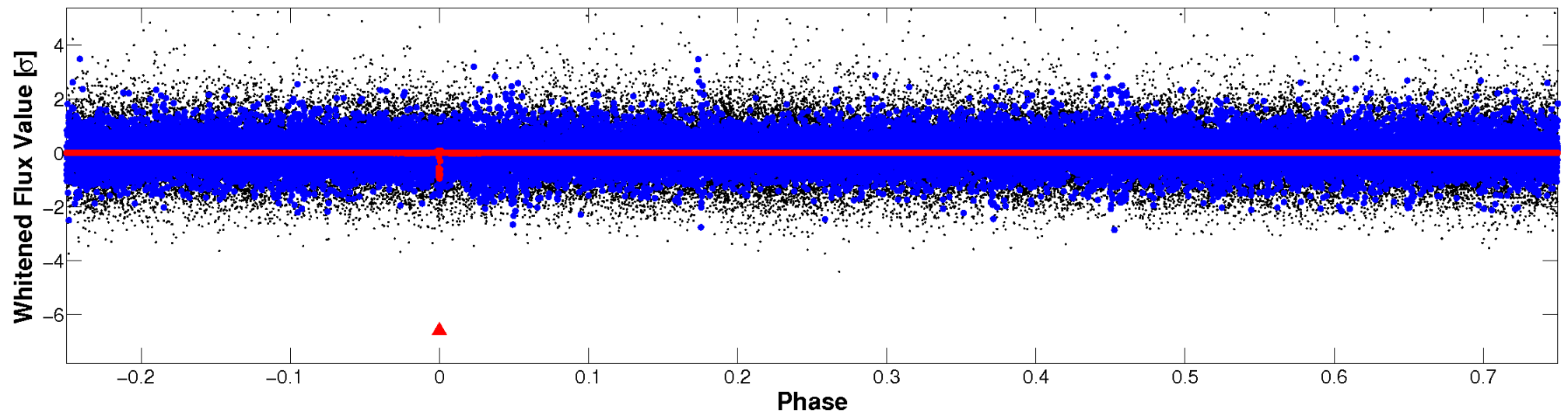


Non-Whitened Vs. Whitened Light Curve

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

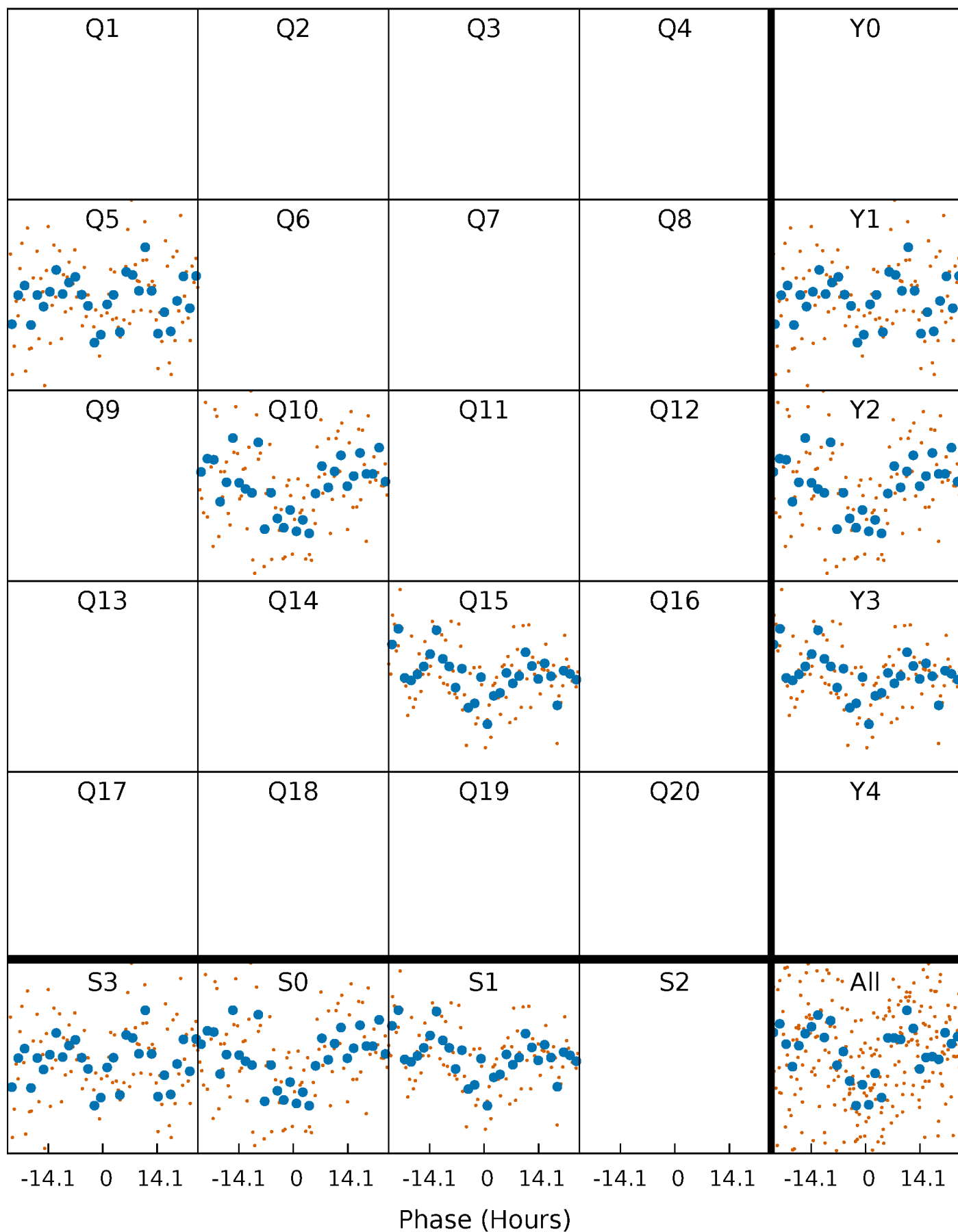


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



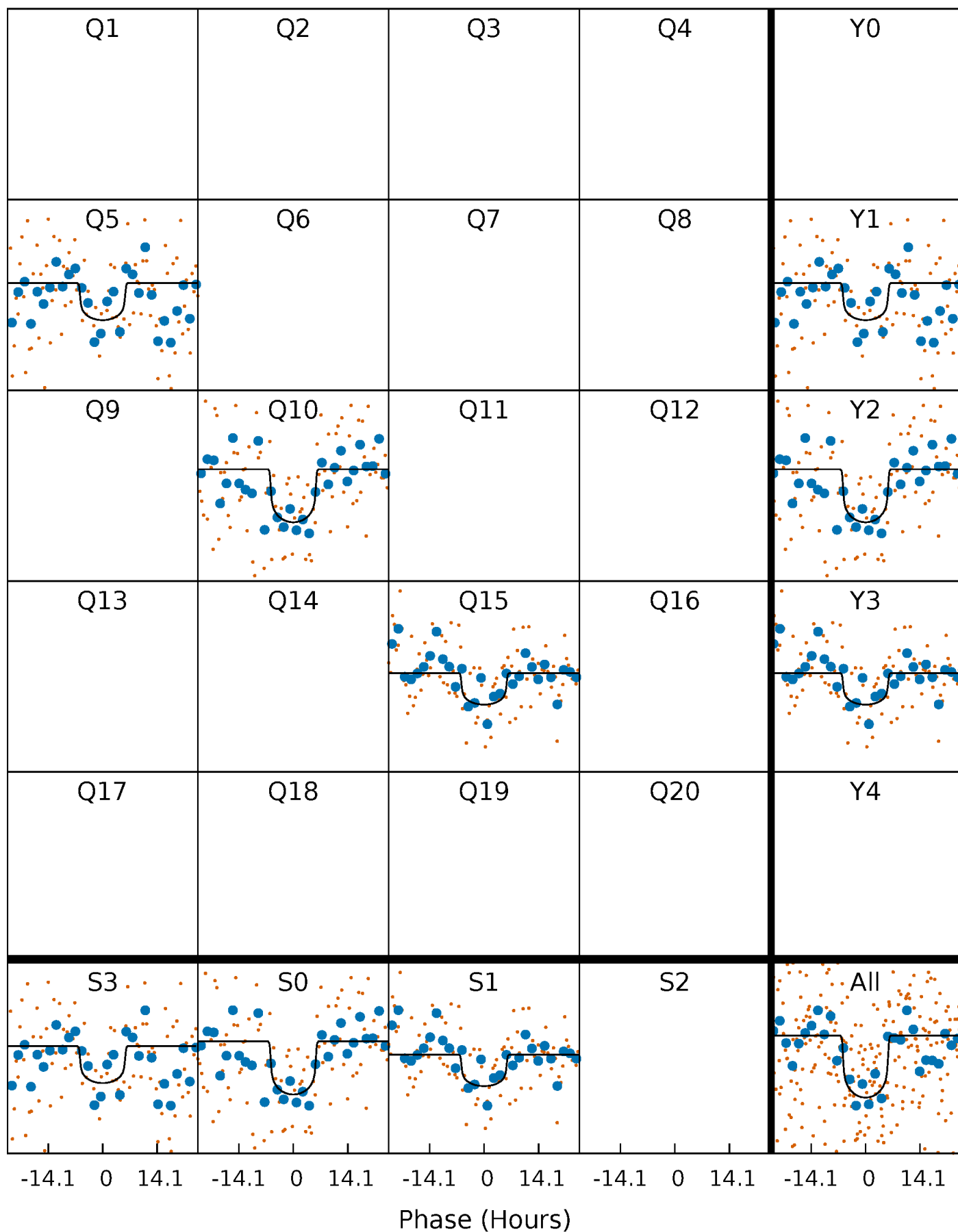
PDC Quarter-Phased Transit Curves

TCE 008815031-01 P=472.604000 Days $T_0=515.575955$ (BKJD)



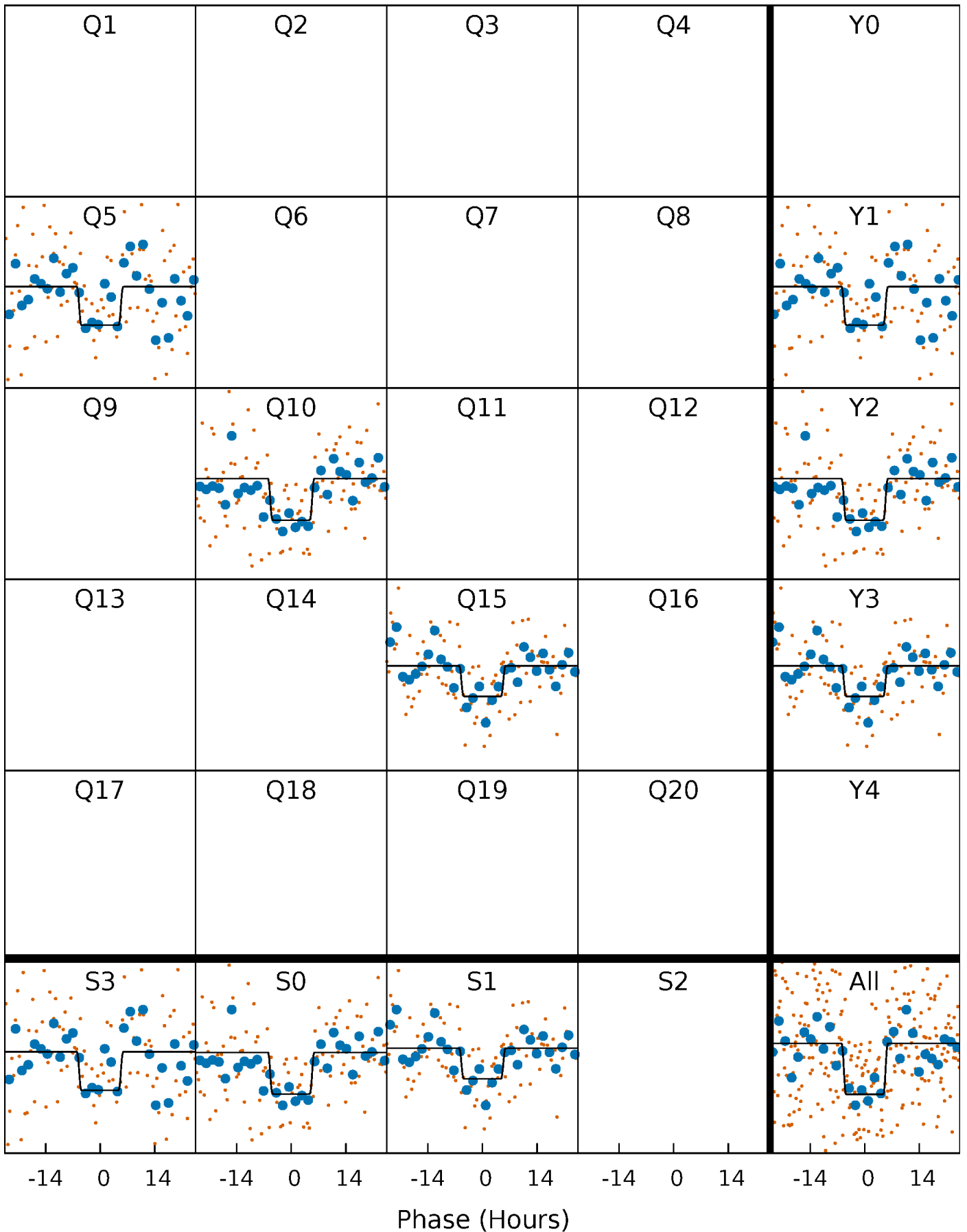
DV Quarter-Phased Transit Curves

TCE 008815031-01 P=472.604000 Days $T_0=515.575955$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

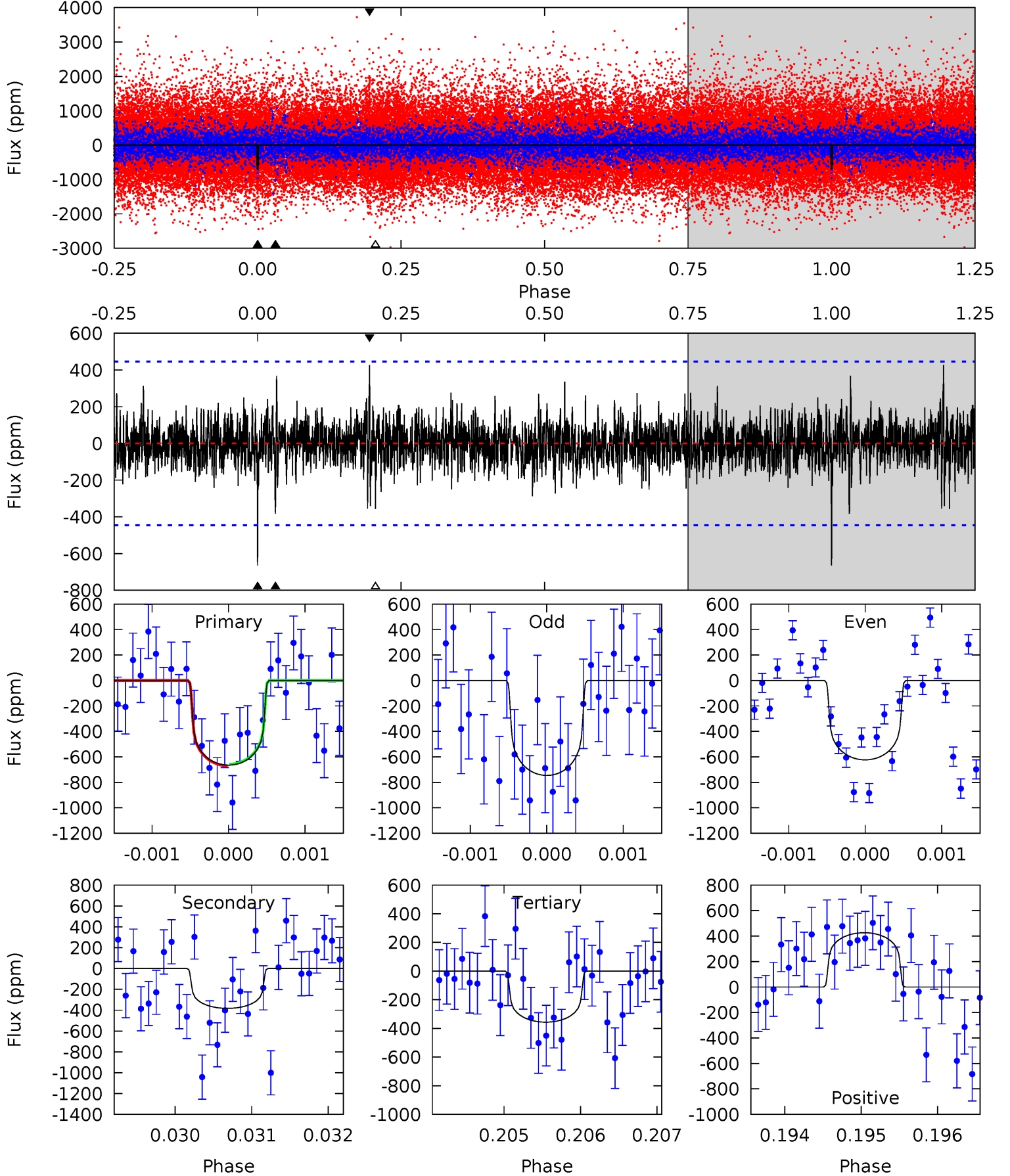
TCE 008815031-01 P=472.594187 Days $T_0=515.587698$ (BKJD)



DV Model-Shift Uniqueness Test

008815031-01, $P = 472.604000$ Days, $E = 42.971955$ Days

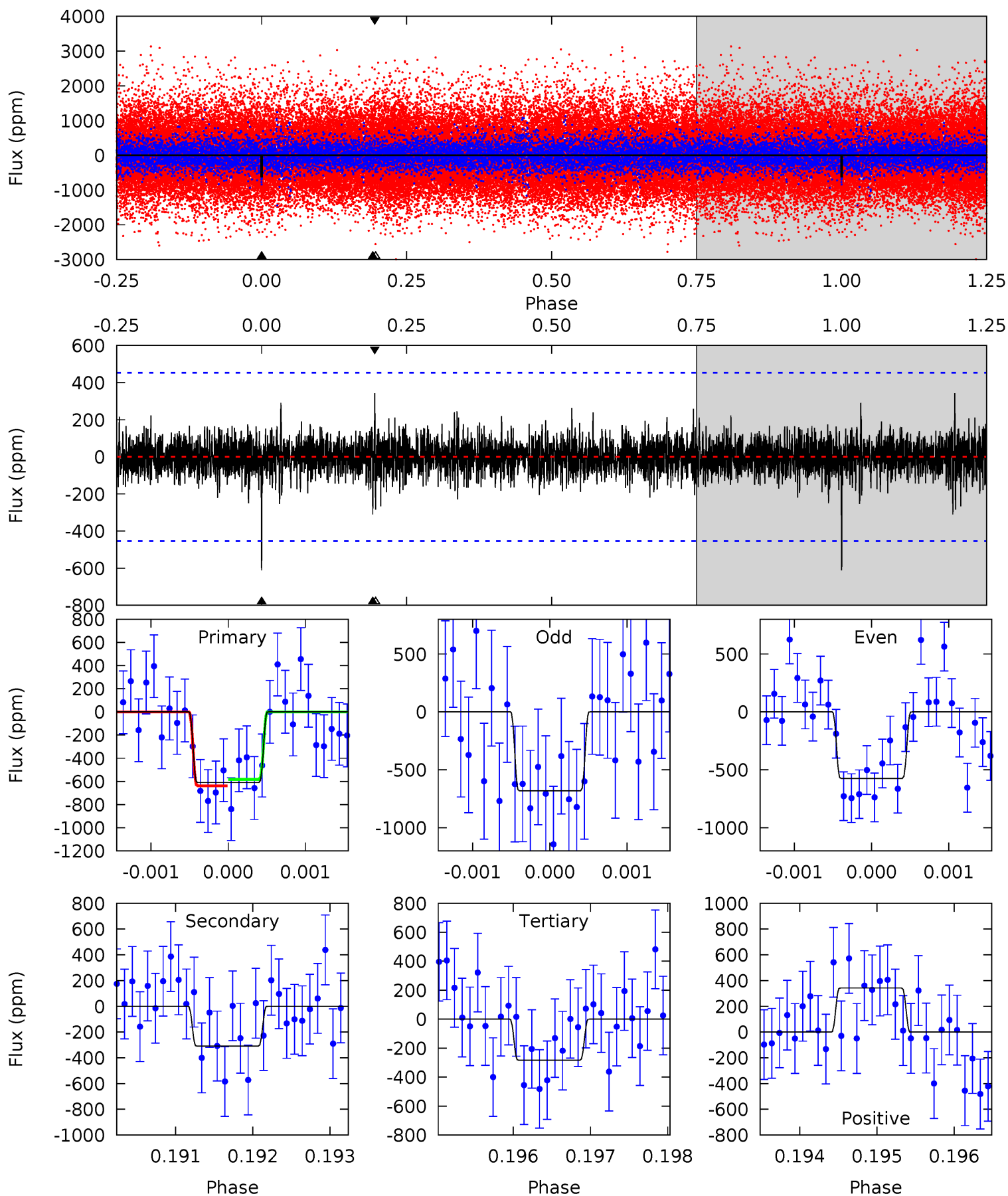
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.11	4.67	4.35	5.20	5.44	3.27	1.08	3.76	2.91	0.32	-0.53	0.71	1.06	0.39	0.07



Alt Model-Shift Uniqueness Test

008815031-01, $P = 472.594187$ Days, $E = 42.993511$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.33	3.72	3.41	4.11	5.44	3.28	0.82	3.93	3.22	0.31	-0.39	0.60	0.89	0.36	0.33



Stellar Parameters For KIC 008815031

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5764^{+156}_{-156}	$4.548^{+0.040}_{-0.160}$	$-0.120^{+0.300}_{-0.300}$	$0.863^{+0.194}_{-0.069}$	$0.959^{+0.100}_{-0.111}$	$2.100^{+0.423}_{-0.887}$
	+3%/-3%	+1%/-4%	+250%/-250%	+22%/-8%	+10%/-12%	+20%/-42%
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 008815031-01 / KOI 8171.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-383 ± 82	$2.45^{+1.19}_{-1.06}$	311^{+17}_{-12}	5100^{+1614}_{-730}	$45454^{+101074}_{-24313}$
Alt.	-310 ± 83	$2.55^{+1.15}_{-1.13}$	310^{+19}_{-12}	4847^{+1481}_{-729}	34516^{+79262}_{-19012}

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

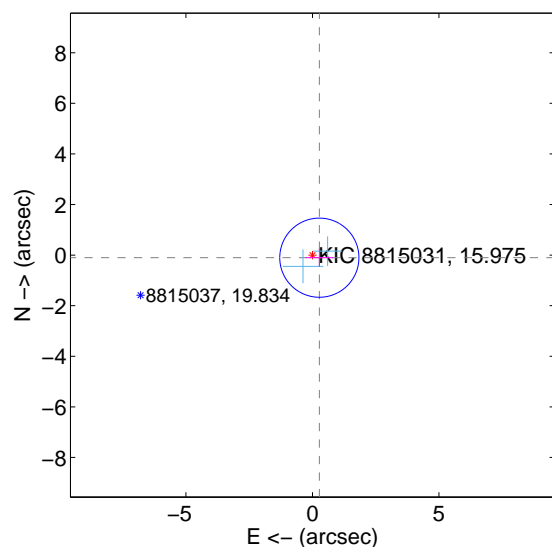
Supplemental centroid analysis for 008815031-01. Kepler magnitude: 15.97. Transit SNR 7.08

There are 2 quarters with good PRF difference image offsets

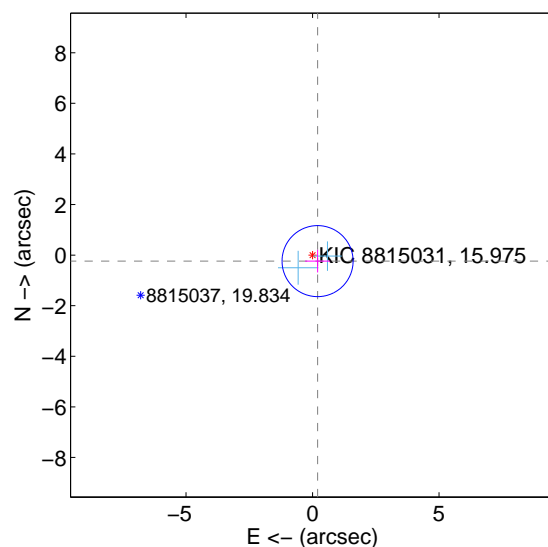
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.291 ± 0.522	0.56	-0.273 ± 0.541	-0.102 ± 0.353
PRF-fit source offset from KIC position	0.311 ± 0.468	0.66	-0.200 ± 0.494	-0.238 ± 0.449
photometric centroid source offset	1.47 ± 2.17	0.68	-0.50 ± 2.14	-1.38 ± 2.17

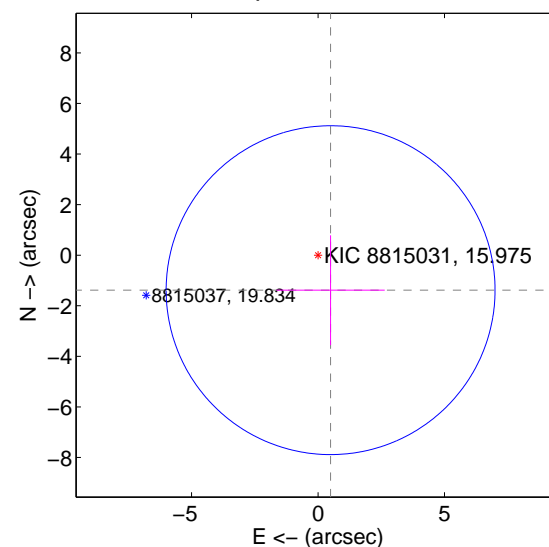
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

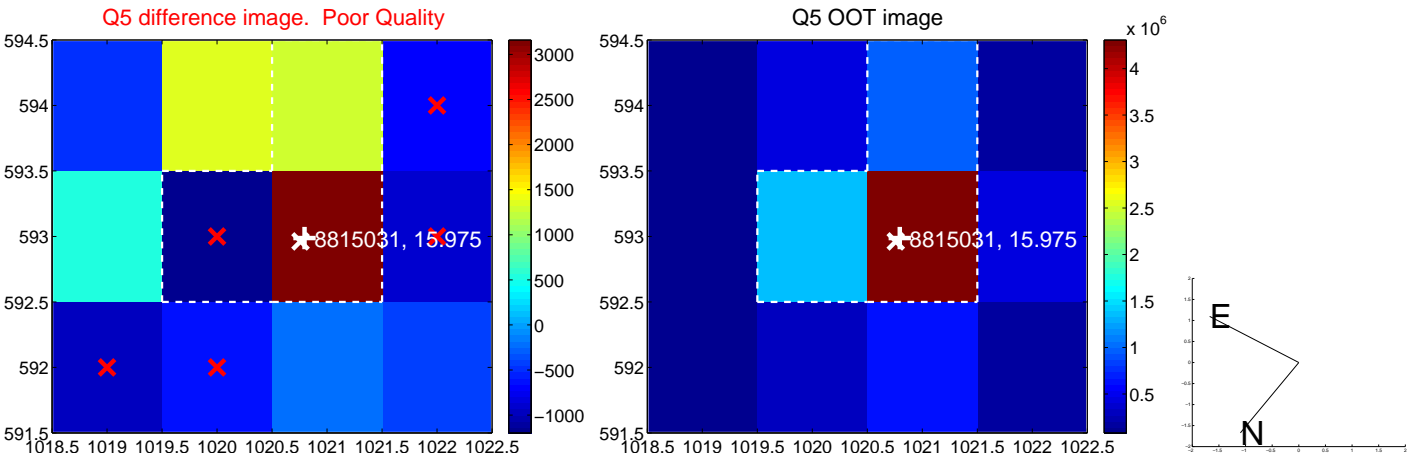


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

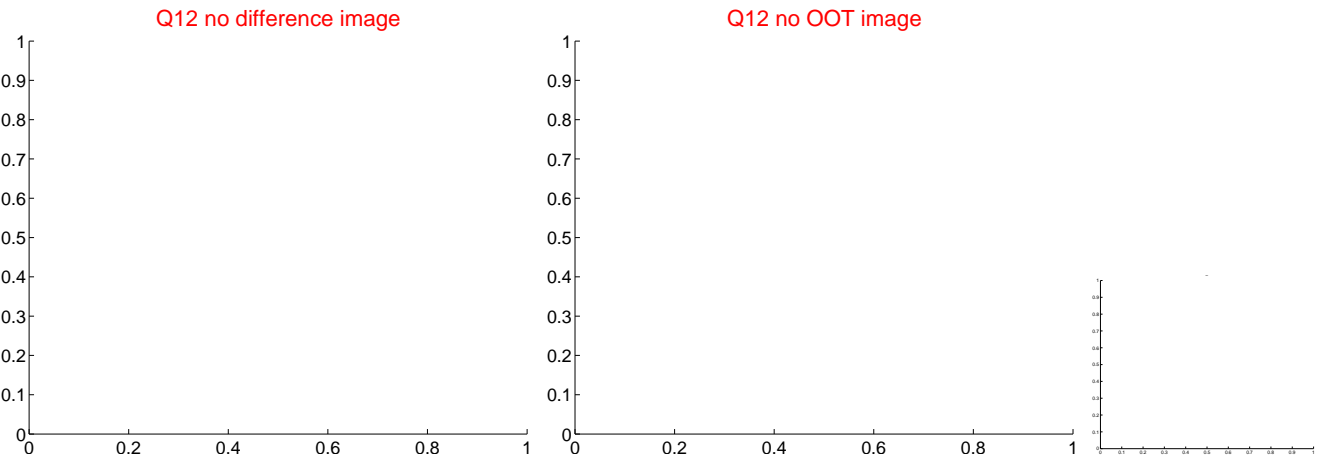
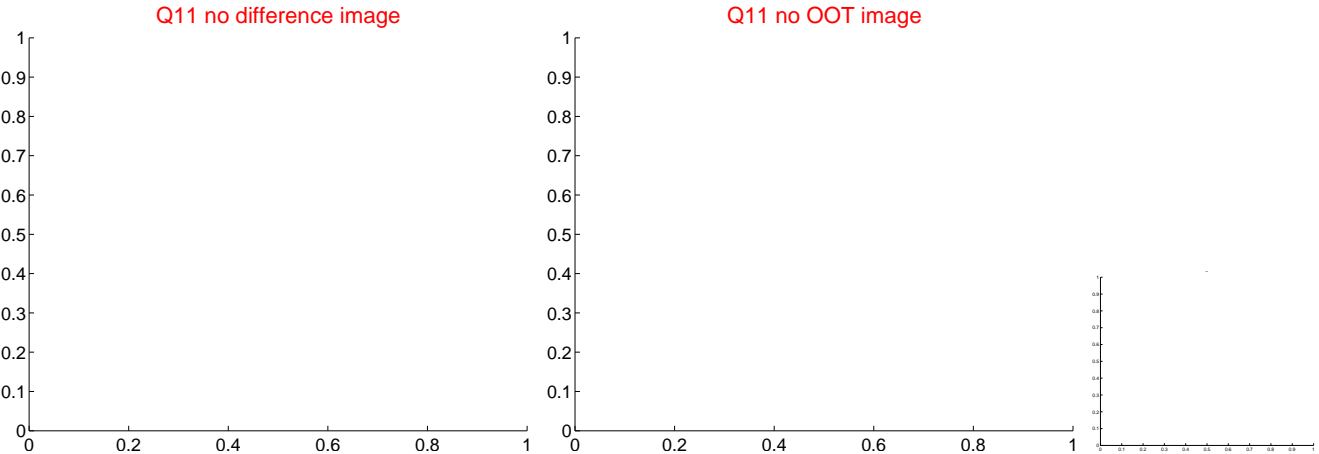
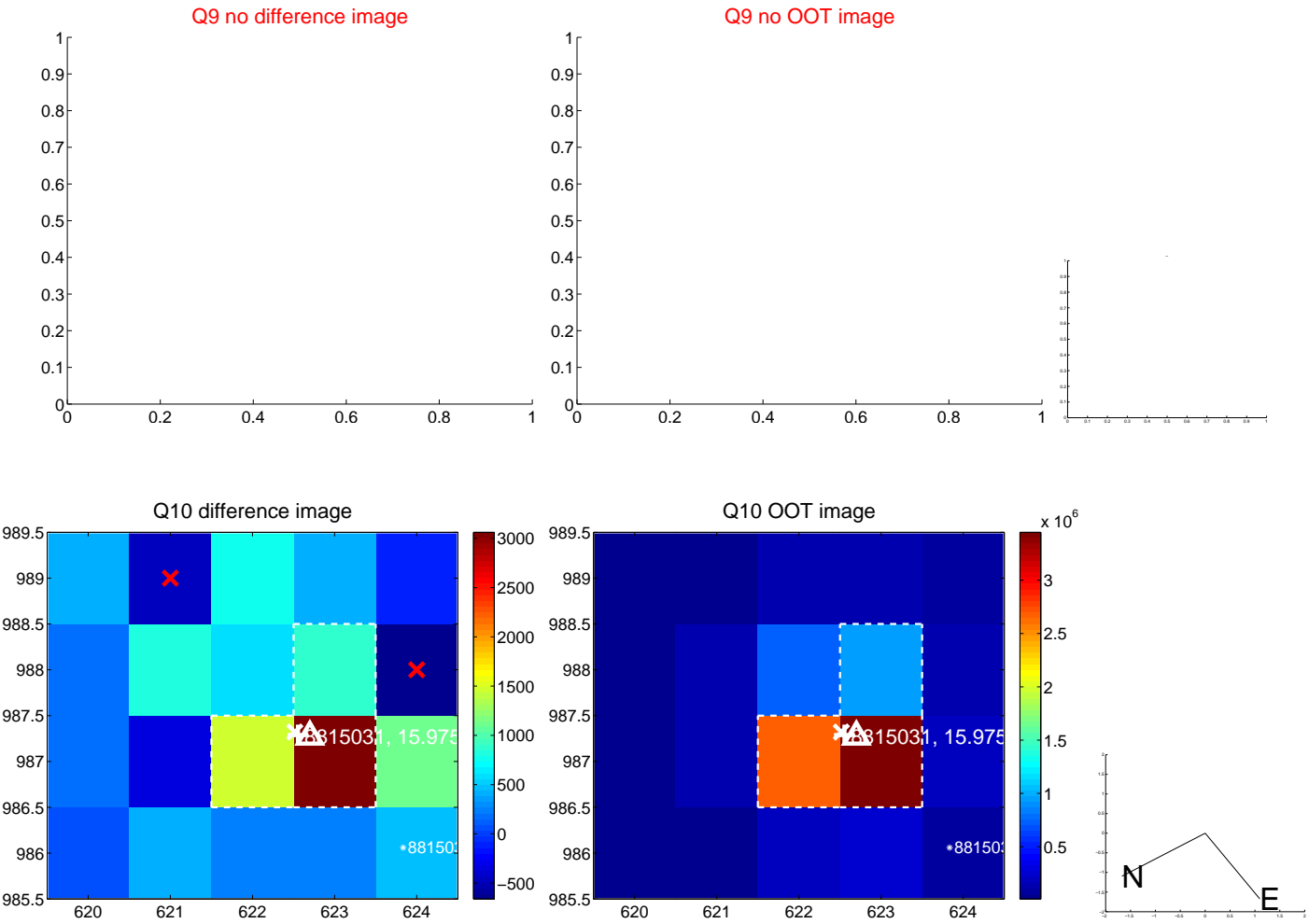
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



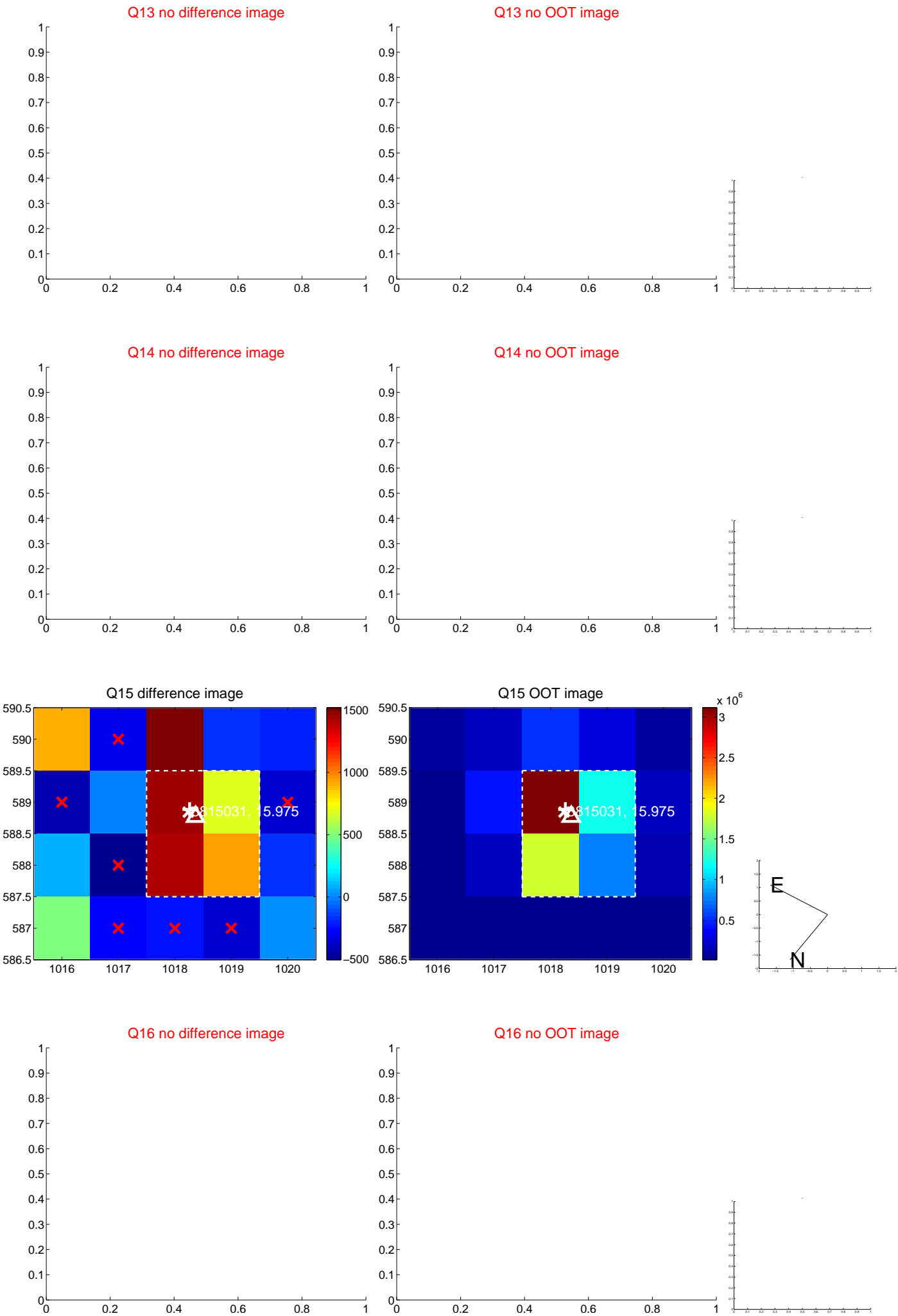
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



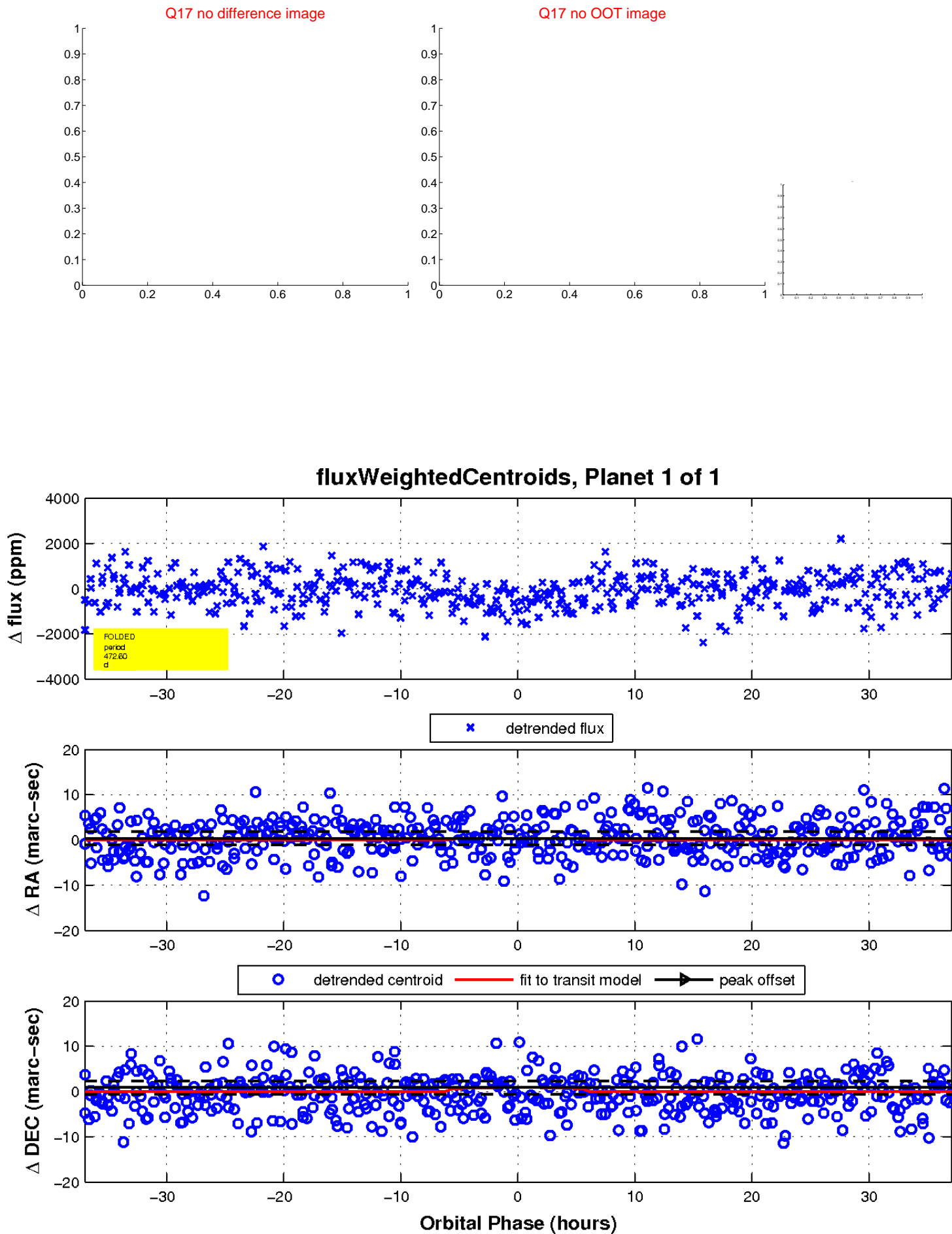
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



UKIRT Image

Declination

