

KIC 007816316

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})
007816316-01	OBS	No	580.305069	307.928471	929.8	17.241	10.6	9.7	0.93	5988	3.18	0.53

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007816316-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—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.

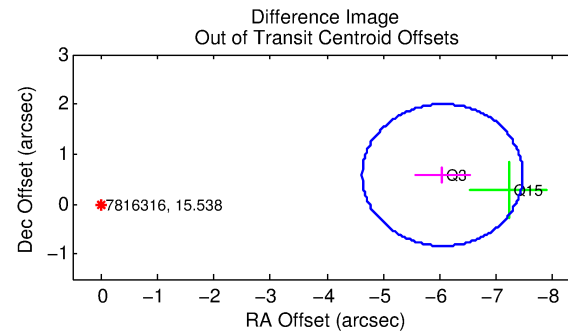
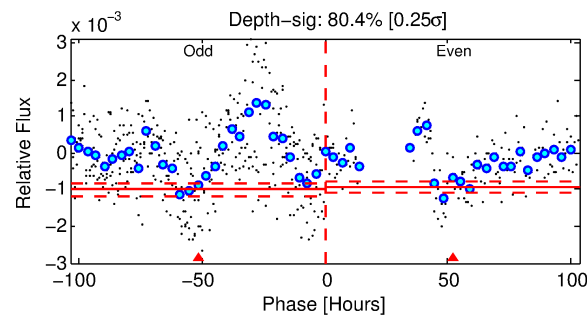
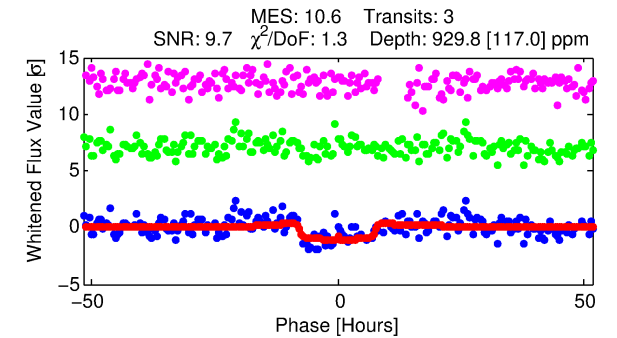
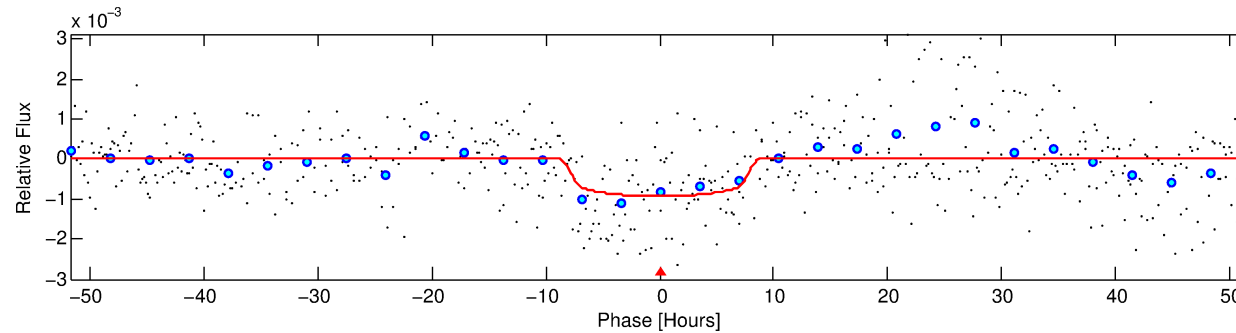
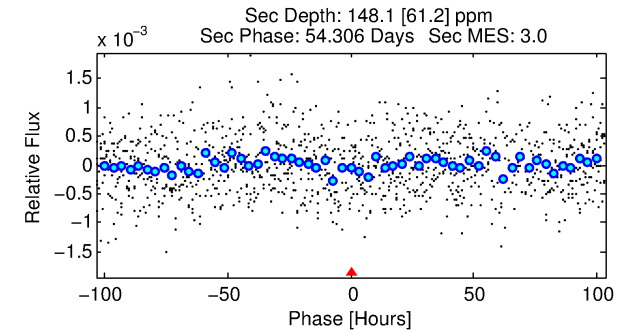
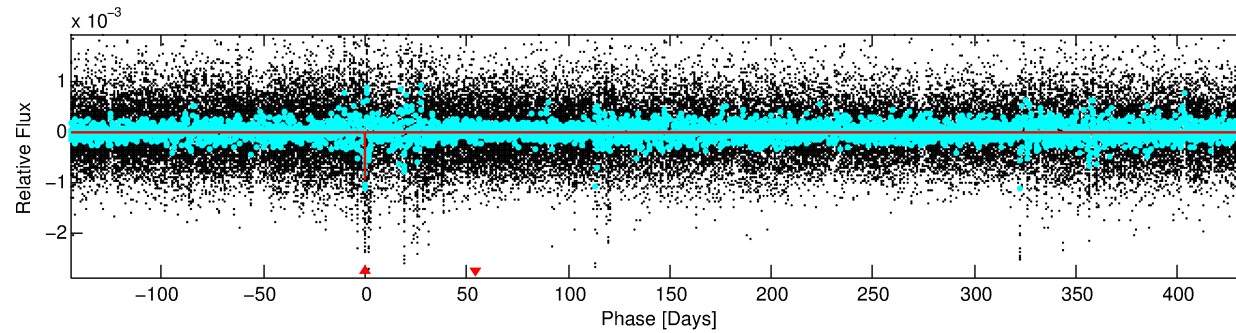
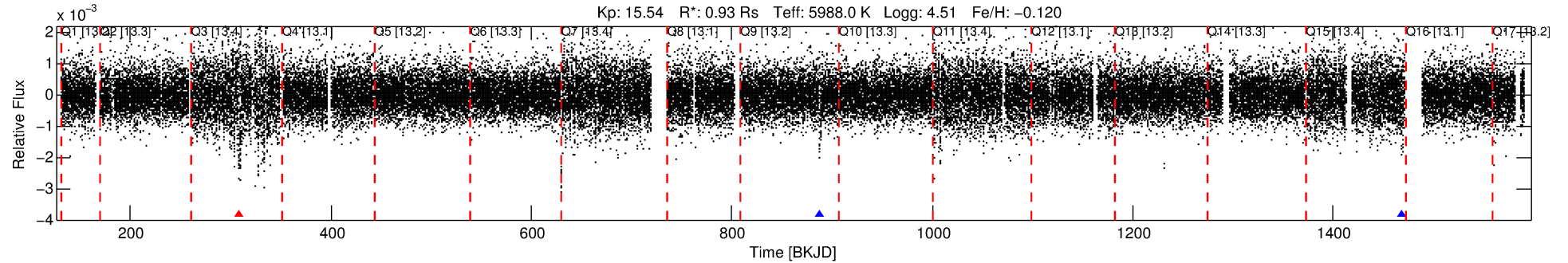
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007816316-01

No Significant Match Found

DV One-Page Summary

KIC: 7816316 Candidate: 1 of 1 Period: 580.305 d



DV Fit Results:

Period = 580.30507 [0.02132] d
Epoch = 307.9285 [0.0268] BKJD
Rp/R* = 0.0312 [0.0046]
a/R* = 160.84 [99.12]
b = 0.82 [0.25]
Seff = 0.53 [0.22]
Teq = 218 [22] K
Rp = 3.18 [1.10] Re
a = 1.3720 [0.3610] AU
Ag = 15127.57 [9595.07] [1.58σ]
Teff = 3737 [489] K [7.19σ]

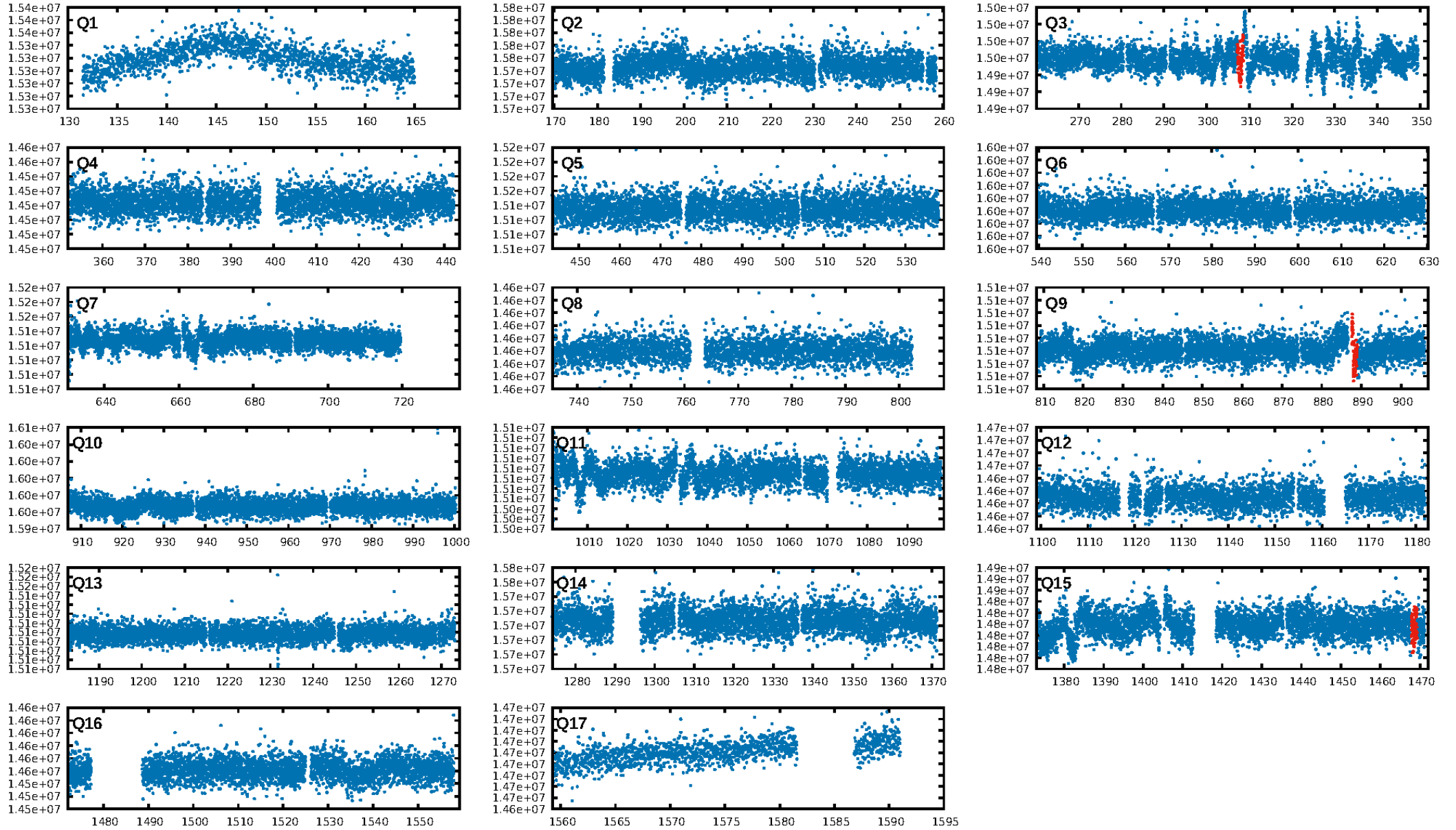
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.1%
ModelChiSquareGoF-sig: 72.6%
Bootstrap-pfa: 7.05e-13
RollingBand-fgt: 0.67 [2/3]
GhostDiagnostic-chr: 1.9
Centroid-sig: 20.0%
Centroid-so: 1.367 arcsec [1.09σ]
OotOffset-rm: 6.073 arcsec [12.83σ]
KicOffset-rm: 6.108 arcsec [17.64σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [2/2]

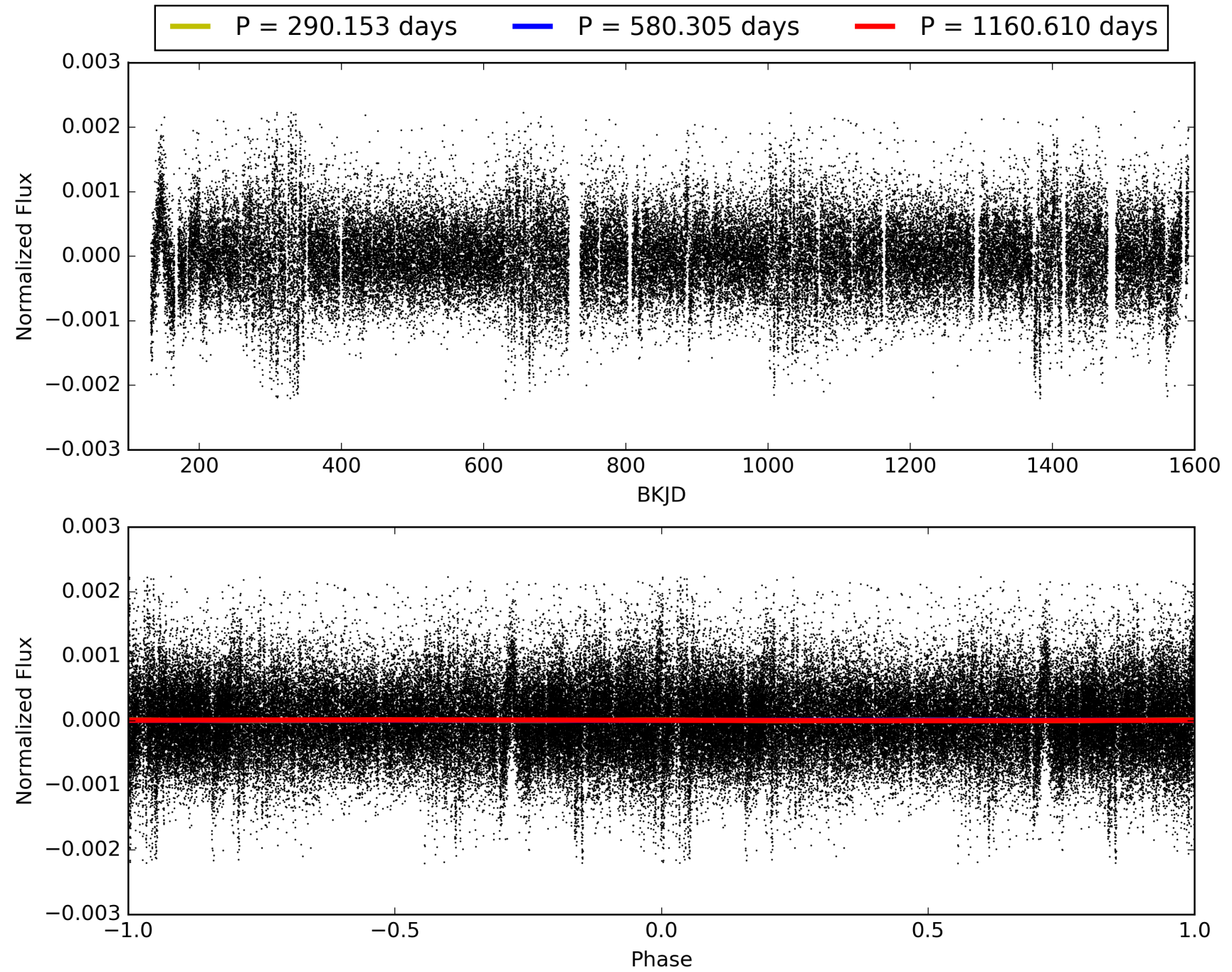
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:07:27 Z

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

TCE 007816316-01, PDC Light Curves

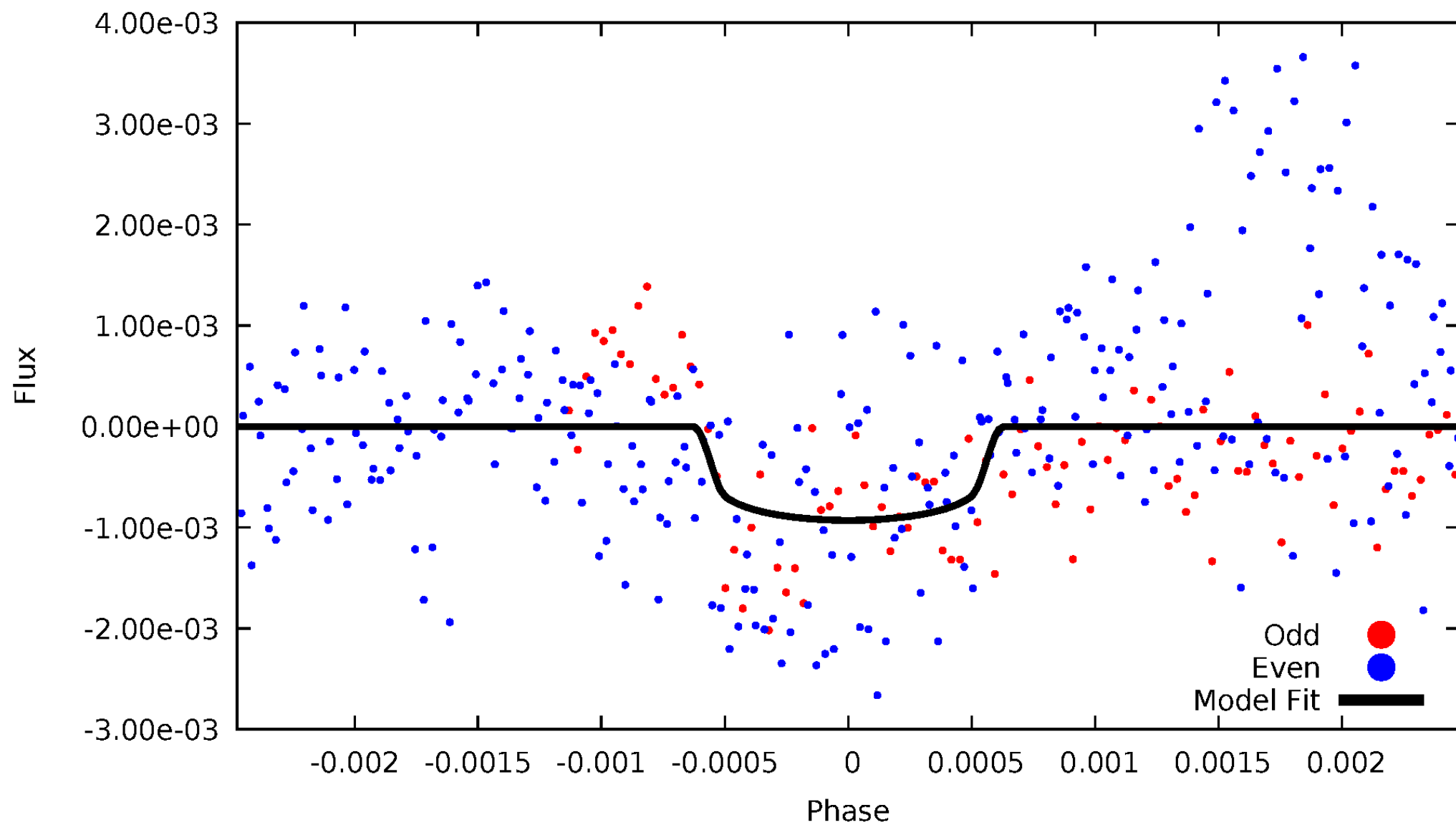


TCE 007816316-01



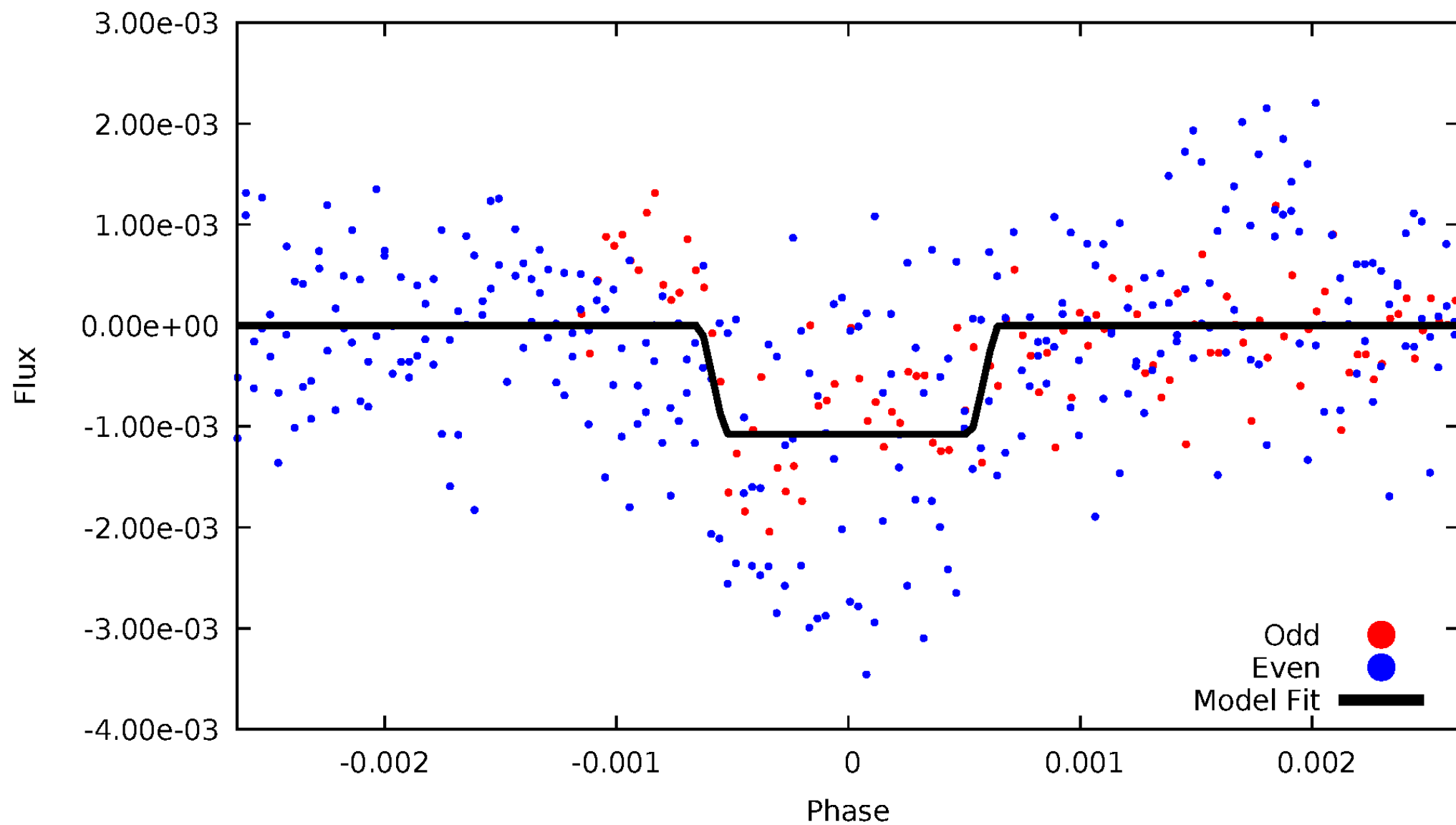
DV Odd/Even

TCE 007816316-01



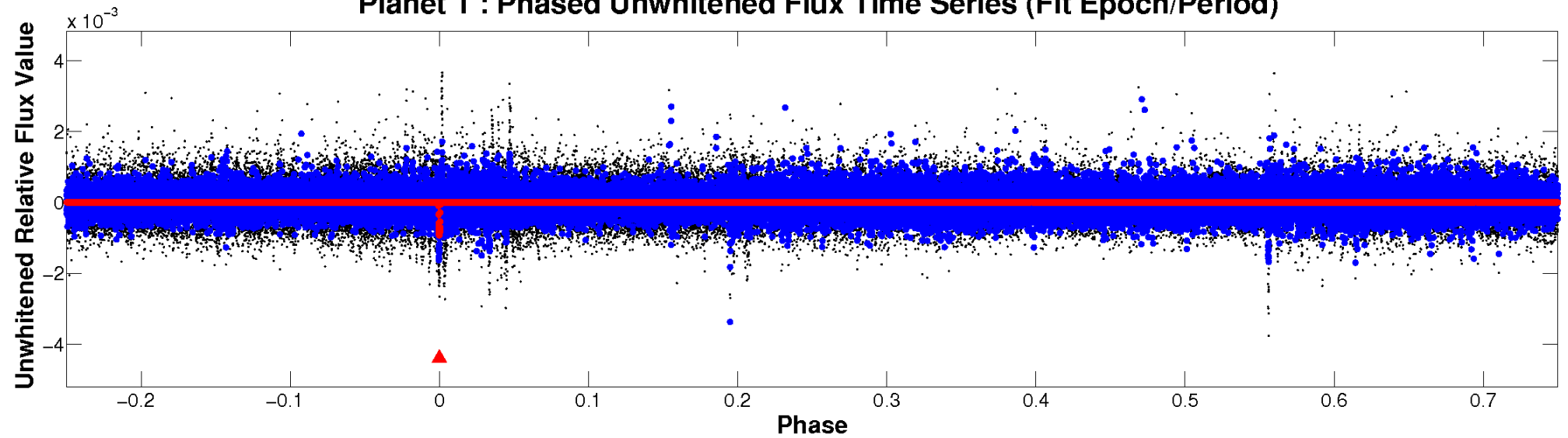
ALT Odd/Even

TCE 007816316-01

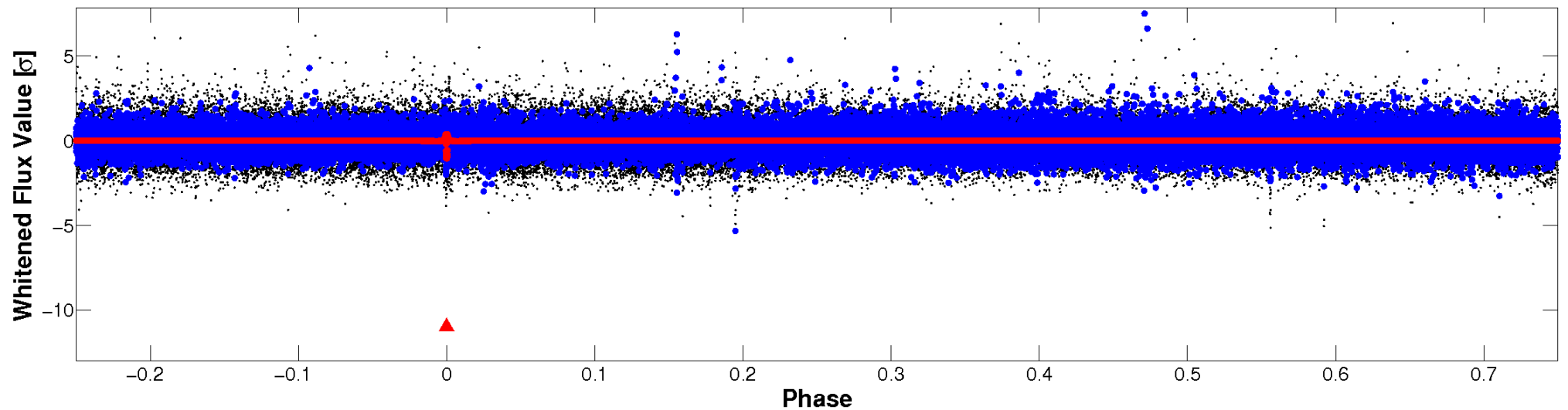


Non-Whitened Vs. Whitened Light Curve

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

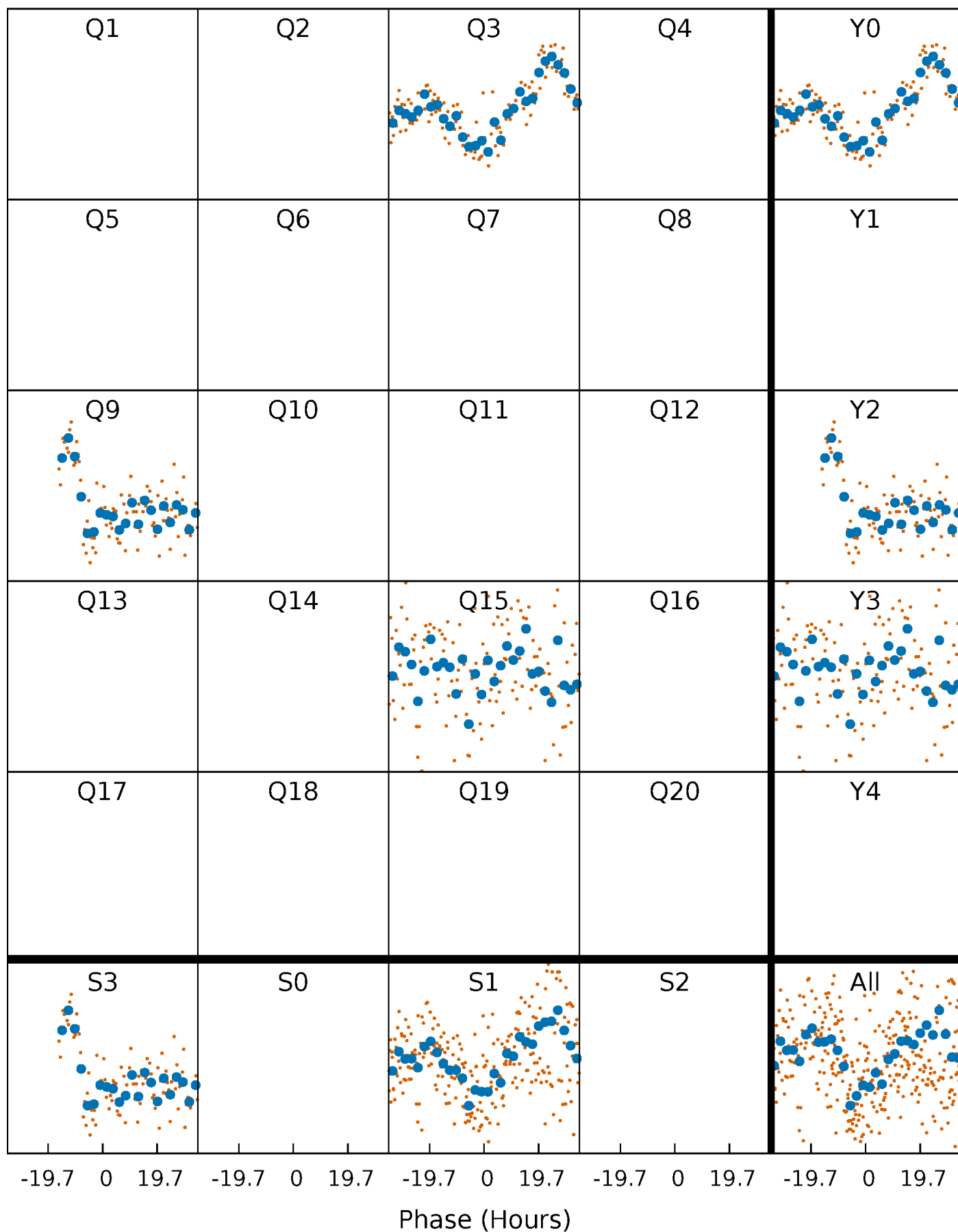


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



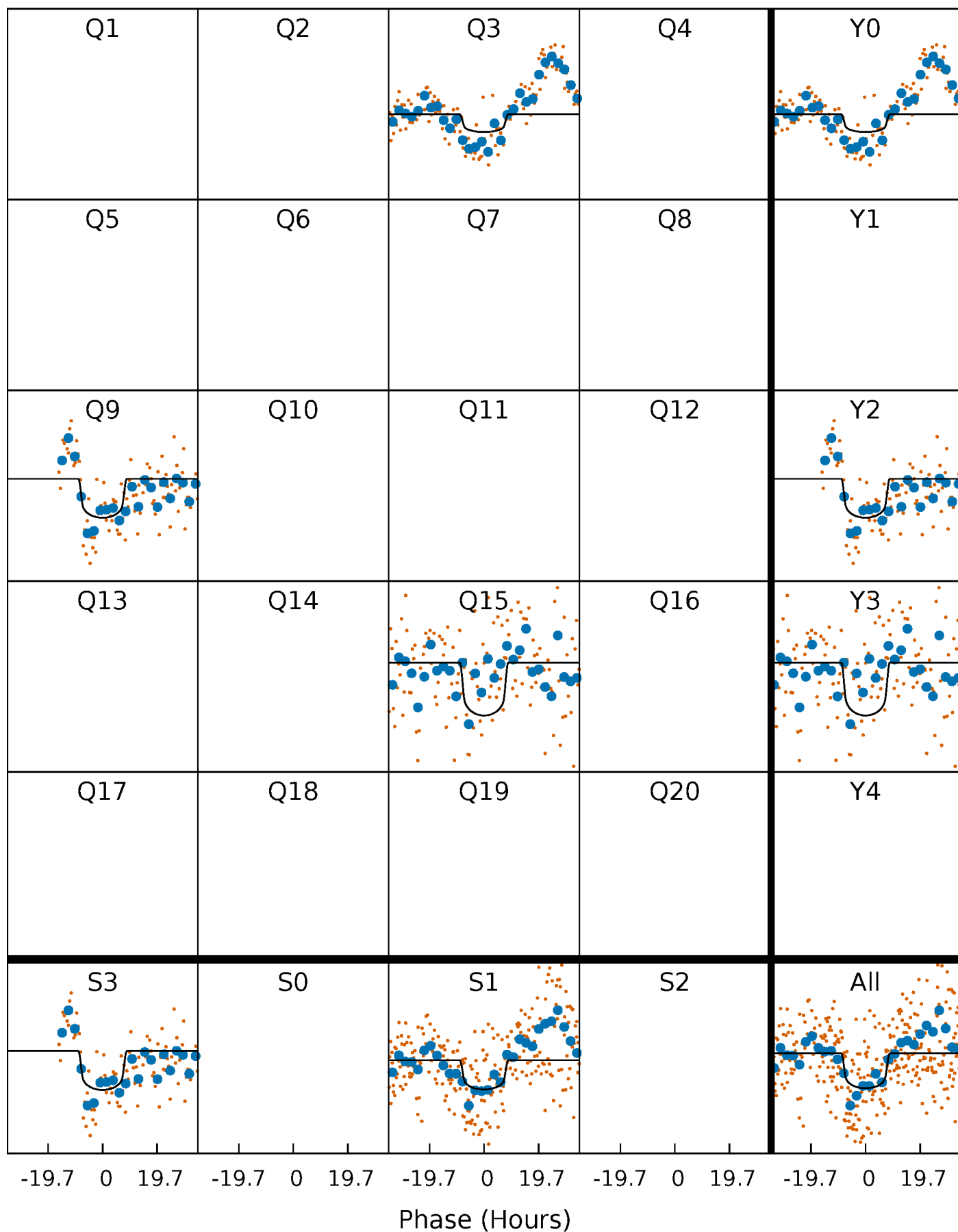
PDC Quarter-Phased Transit Curves

TCE 007816316-01 P=580.305069 Days $T_0=307.928471$ (BKJD)



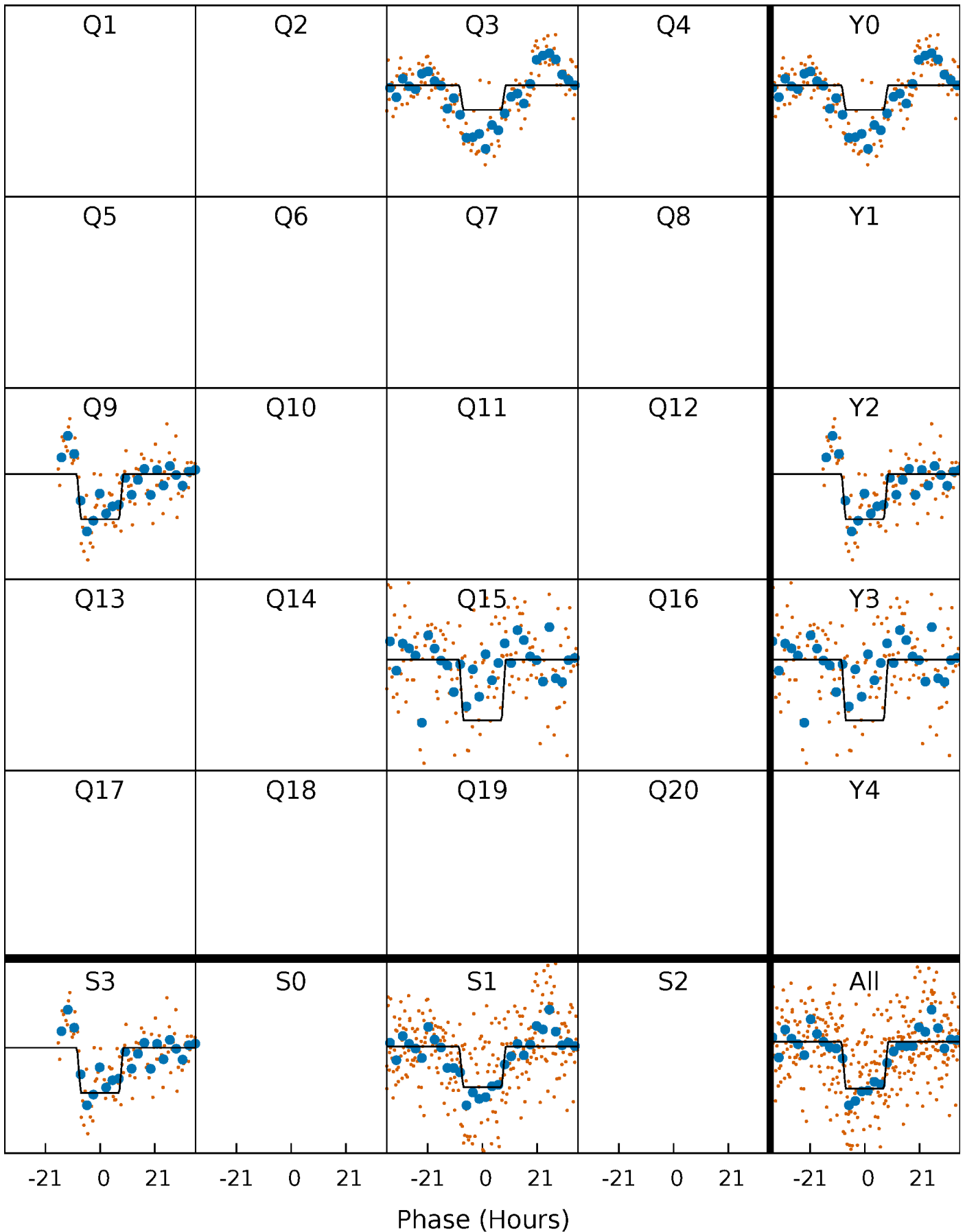
DV Quarter-Phased Transit Curves

TCE 007816316-01 P=580.305069 Days $T_0=307.928471$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

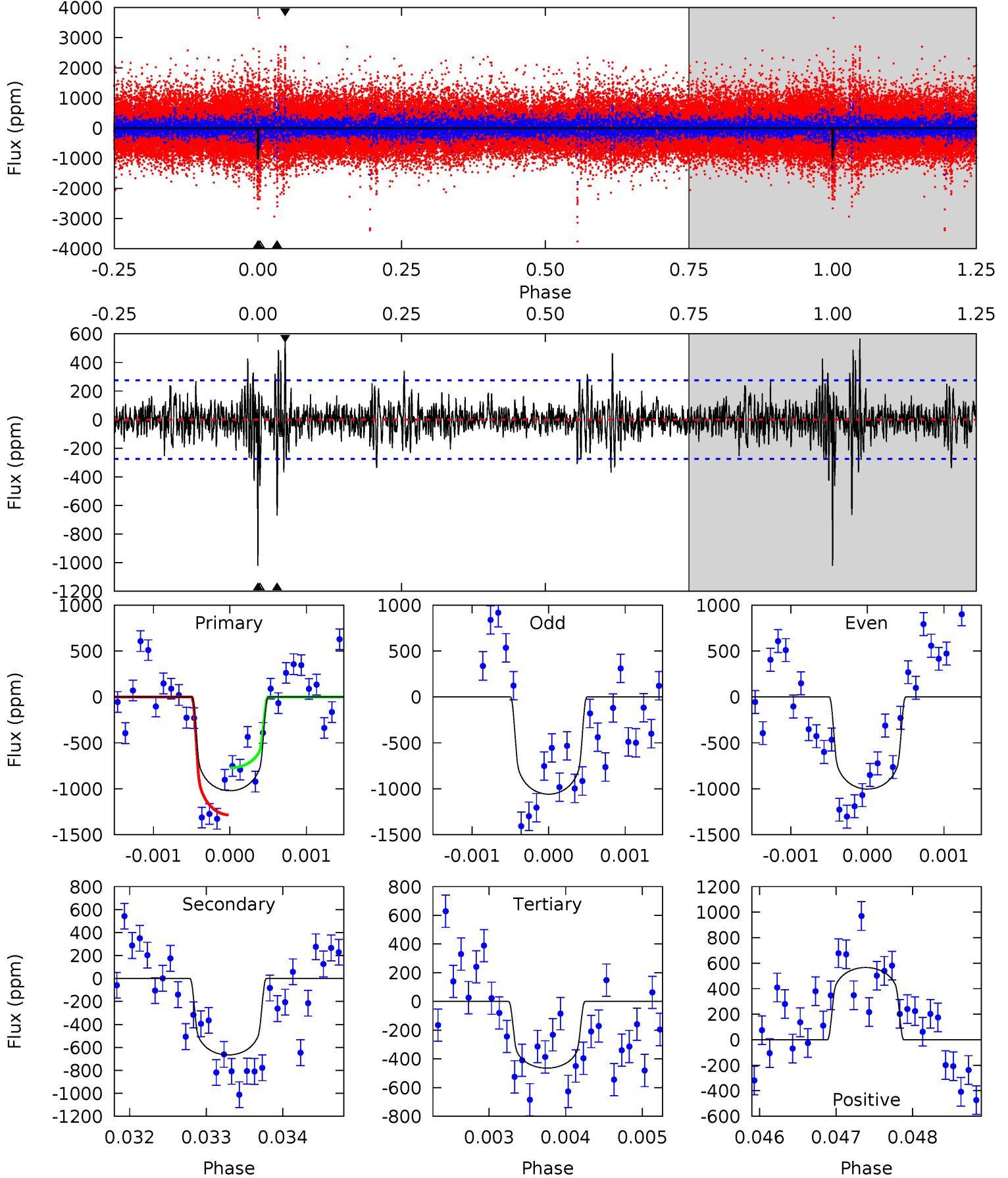
TCE 007816316-01 P=580.292670 Days $T_0=307.951338$ (BKJD)



DV Model-Shift Uniqueness Test

007816316-01, P = 580.305069 Days, E = 307.928471 Days

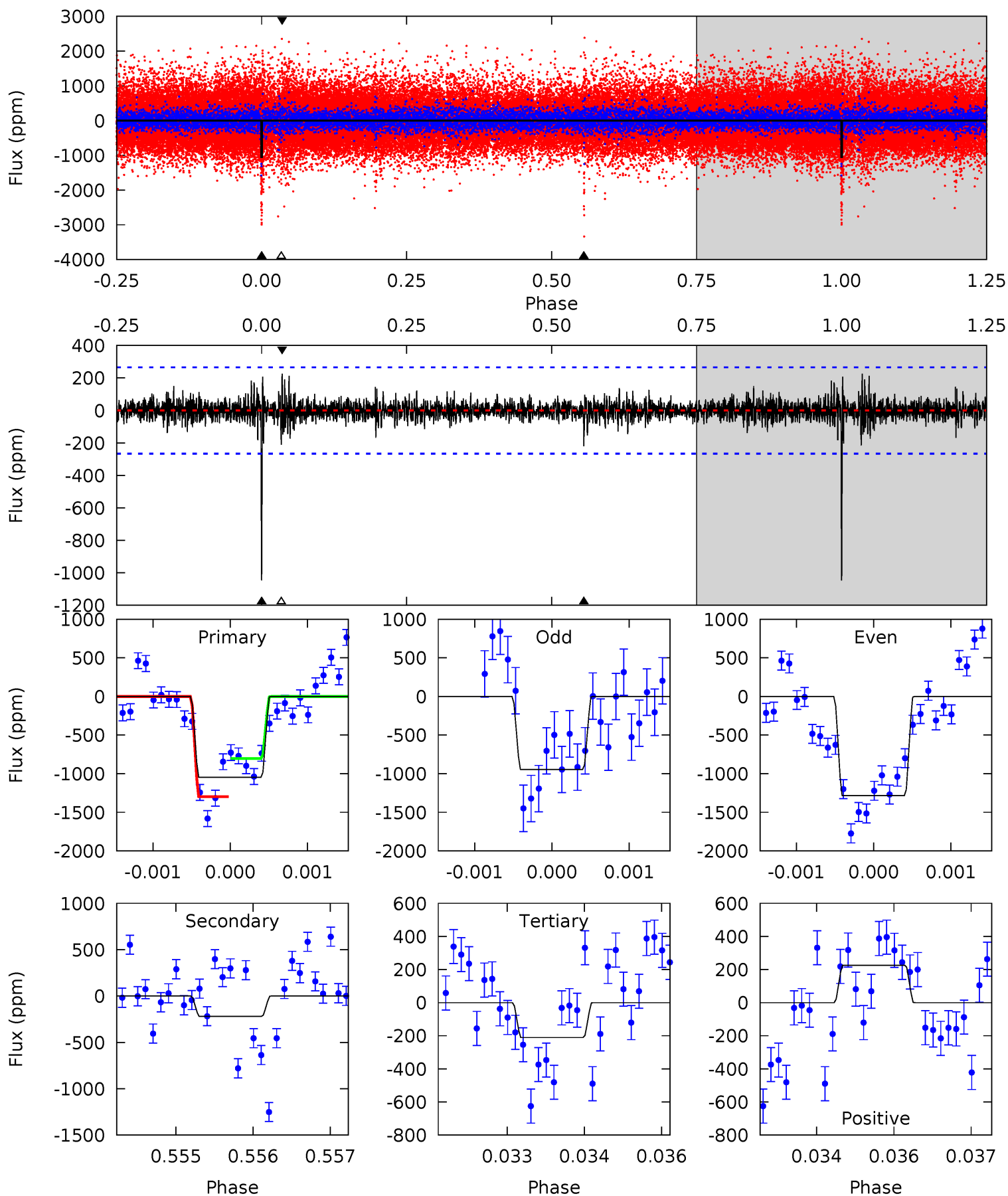
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.1	13.1	9.15	11.2	5.41	3.22	1.82	11.0	8.98	3.97	1.97	0.51	0.94	0.36	5.07



Alt Model-Shift Uniqueness Test

007816316-01, P = 580.292670 Days, E = 307.951338 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.3	4.46	4.29	4.59	5.41	3.22	0.84	17.0	16.7	0.17	-0.14	3.29	1.22	0.18	4.98



Stellar Parameters For KIC 007816316

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5988^{+179}_{-197}	$4.507^{+0.039}_{-0.208}$	$-0.120^{+0.250}_{-0.300}$	$0.934^{+0.293}_{-0.098}$	$1.021^{+0.131}_{-0.131}$	$1.767^{+0.381}_{-0.961}$
	+3%/-3%	+1%/-5%	+208%/-250%	+31%/-10%	+13%/-13%	+22%/-54%
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 007816316-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-666 ± 51	$3.34^{+0.69}_{-0.55}$	314^{+22}_{-17}	5461^{+457}_{-359}	60146^{+24287}_{-18533}
Alt.	-219 ± 49	$3.52^{+0.69}_{-0.57}$	313^{+23}_{-15}	4264^{+317}_{-295}	17357^{+9472}_{-5856}

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 $A_{obs} \gg 1.0$

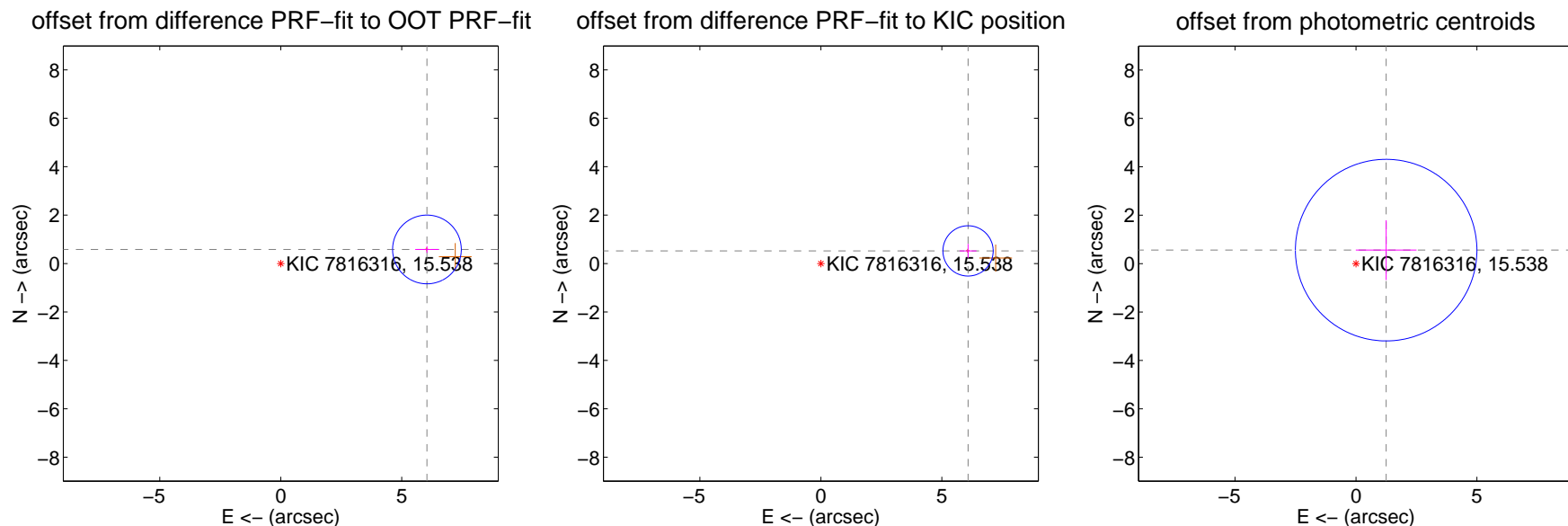
DV Centroid Data

Supplemental centroid analysis for 007816316-01. Kepler magnitude: 15.54. Transit SNR 9.73

There are 0 quarters with good PRF difference image offsets

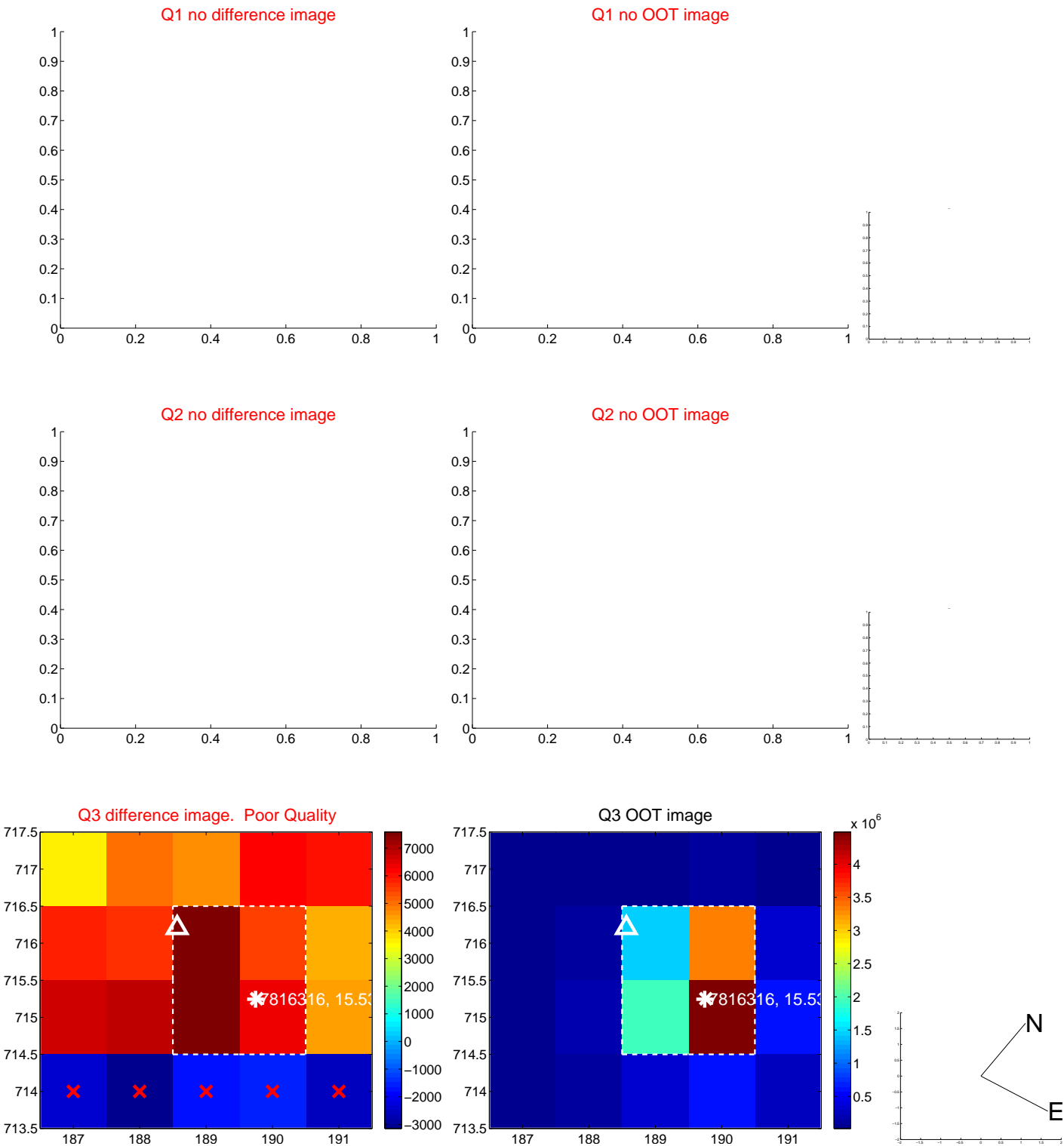
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.073 ± 0.473	12.83	-6.045 ± 0.487	0.582 ± 0.141
PRF-fit source offset from KIC position	6.108 ± 0.346	17.64	-6.086 ± 0.347	0.522 ± 0.290
photometric centroid source offset	1.37 ± 1.25	1.09	-1.25 ± 1.25	0.56 ± 1.24



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.



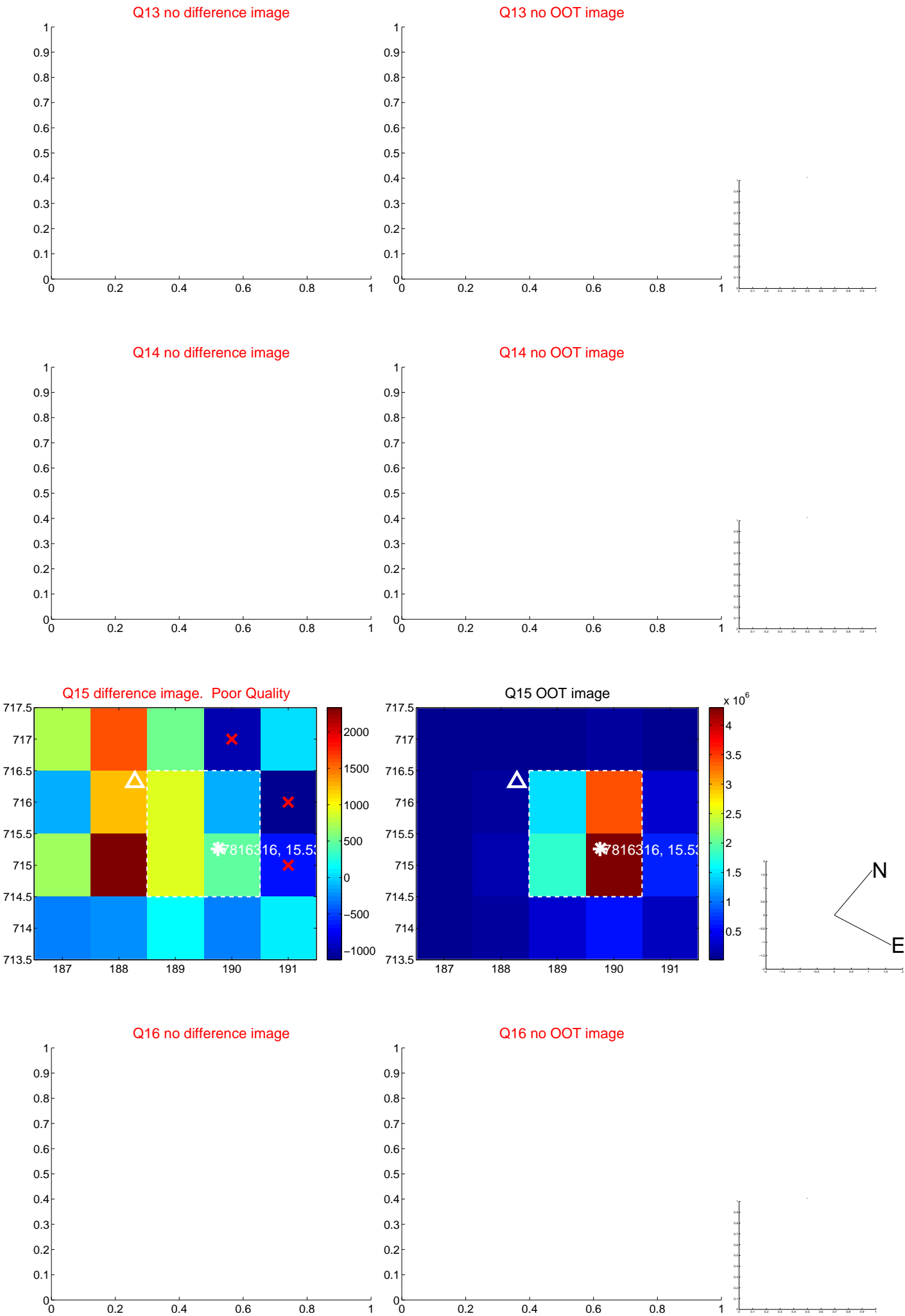
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



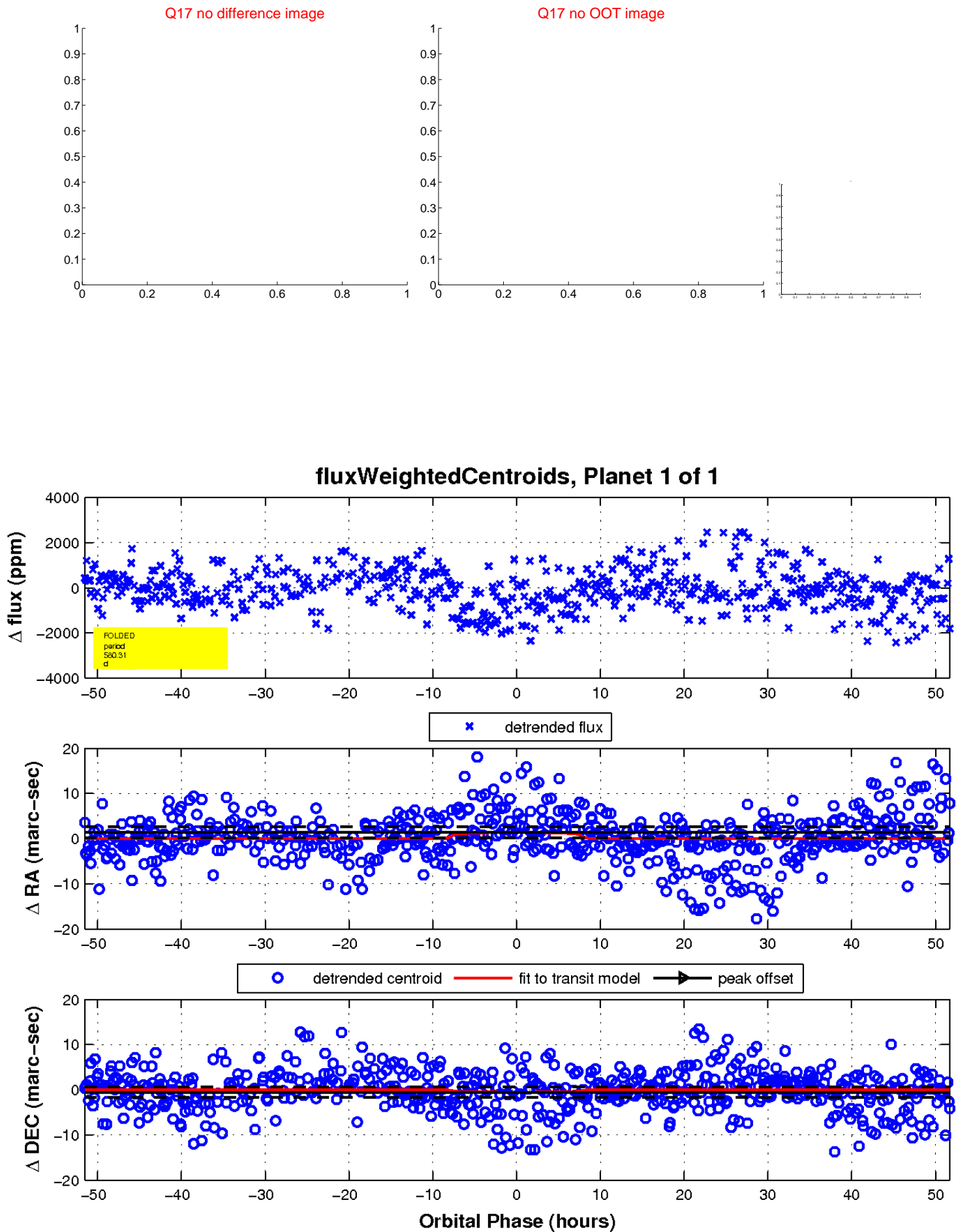
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

