

KIC 002831101

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})
002831101-01	OBS	No	301.175914	281.162924	268.1	22.058	10.2	6.5	0.87	5692	1.85	0.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002831101-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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

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

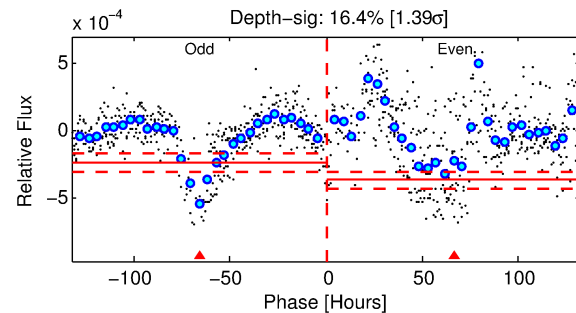
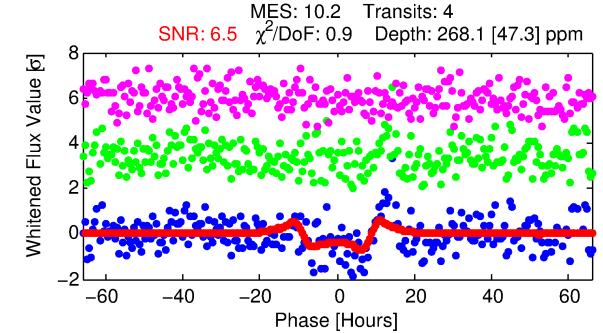
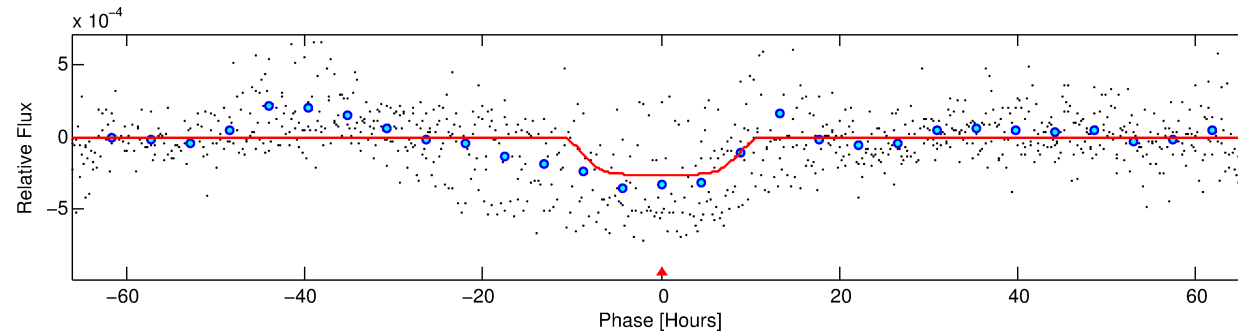
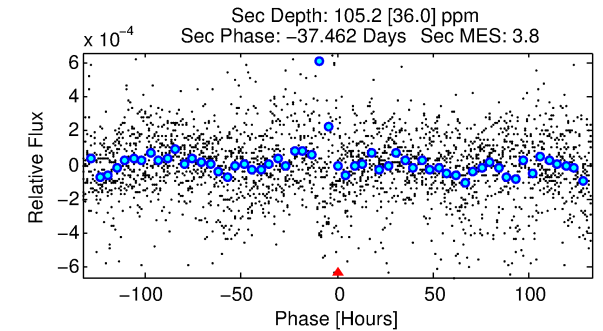
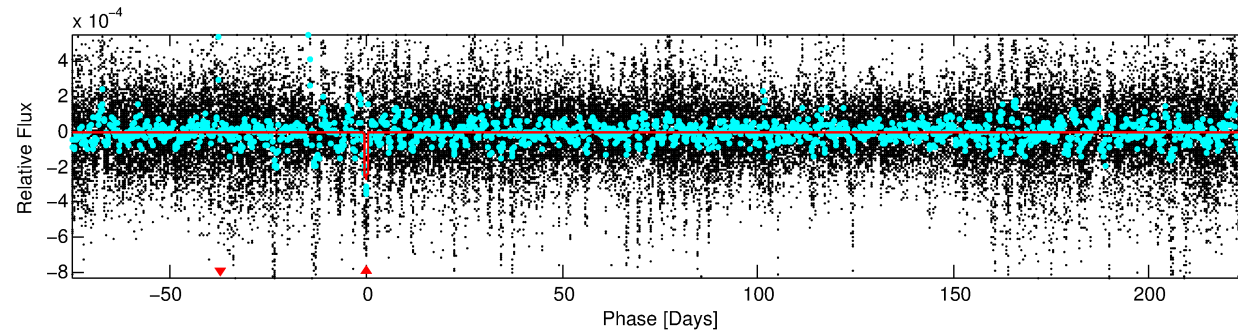
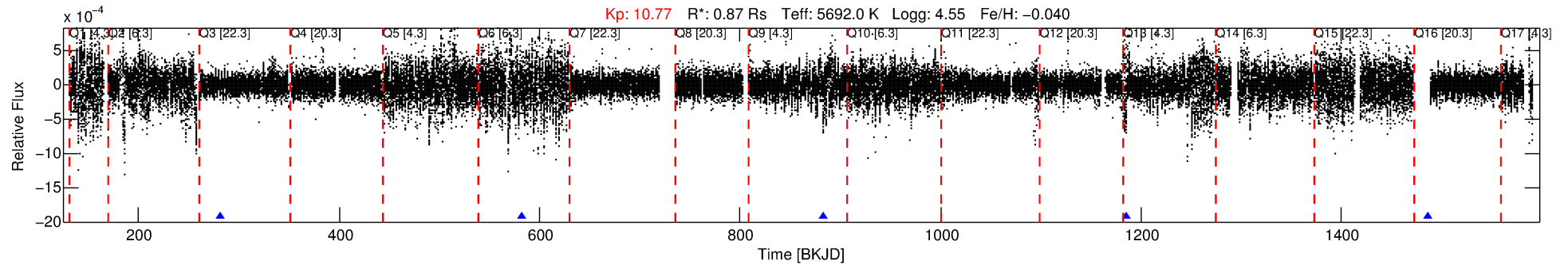
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002831101-01

No Significant Match Found

DV One-Page Summary

KIC: 2831101 Candidate: 1 of 1 Period: 301.176 d



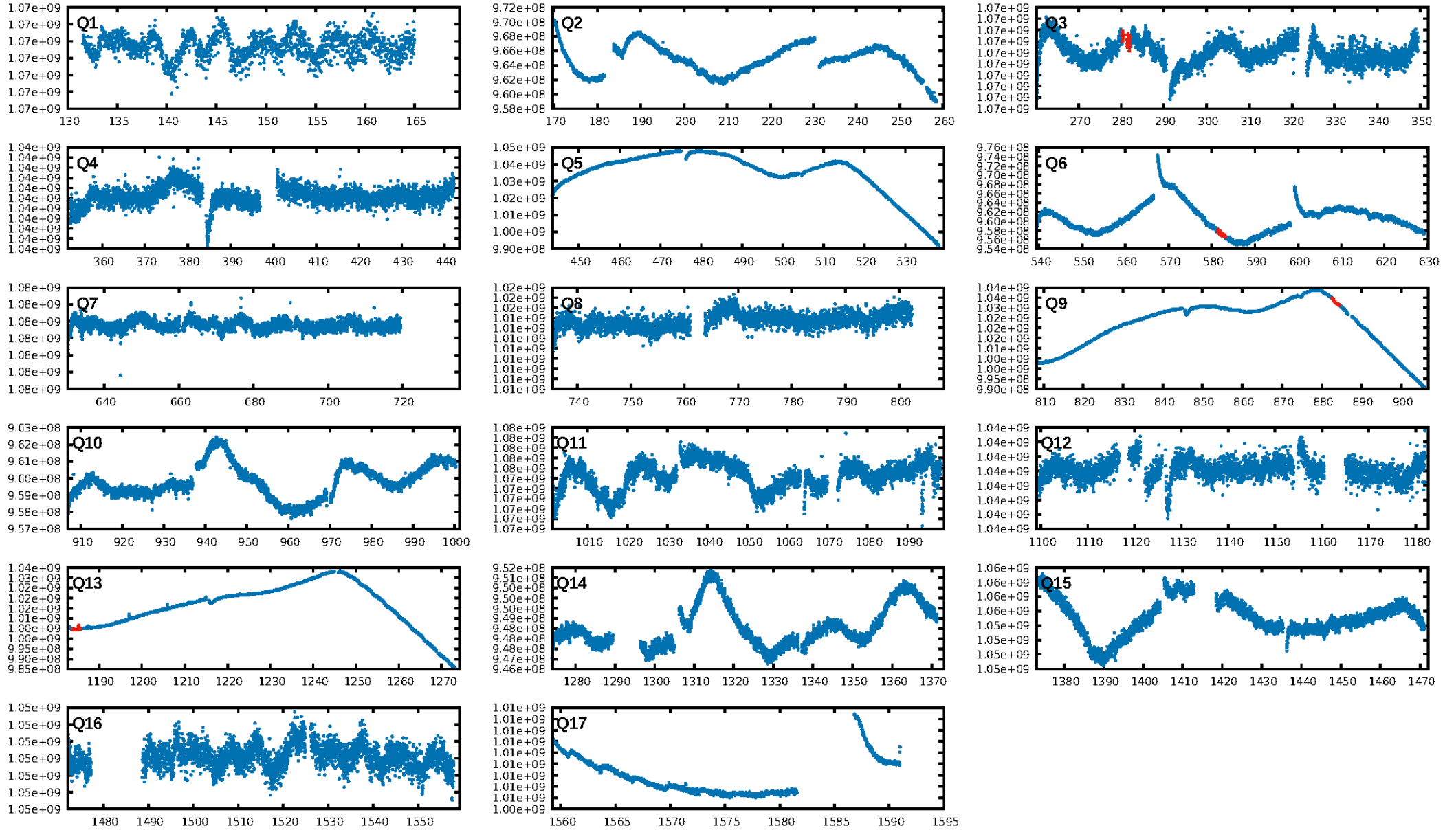
DV Fit Results:

Period = 301.17591 [0.01675] d
Epoch = 281.1629 [0.0347] BKJD
Rp/R* = 0.0195 [0.0020]
a/R* = 35.67 [5.91]
b = 0.96 [0.01]
Seff = 0.93 [0.32]
Teq = 251 [22] K
Rp = 1.85 [0.53] Re
a = 0.8688 [0.1970] AU
Ag = 12813.74 [6594.62] [1.94σ]
Teffp = 4124 [424] K [9.13σ]

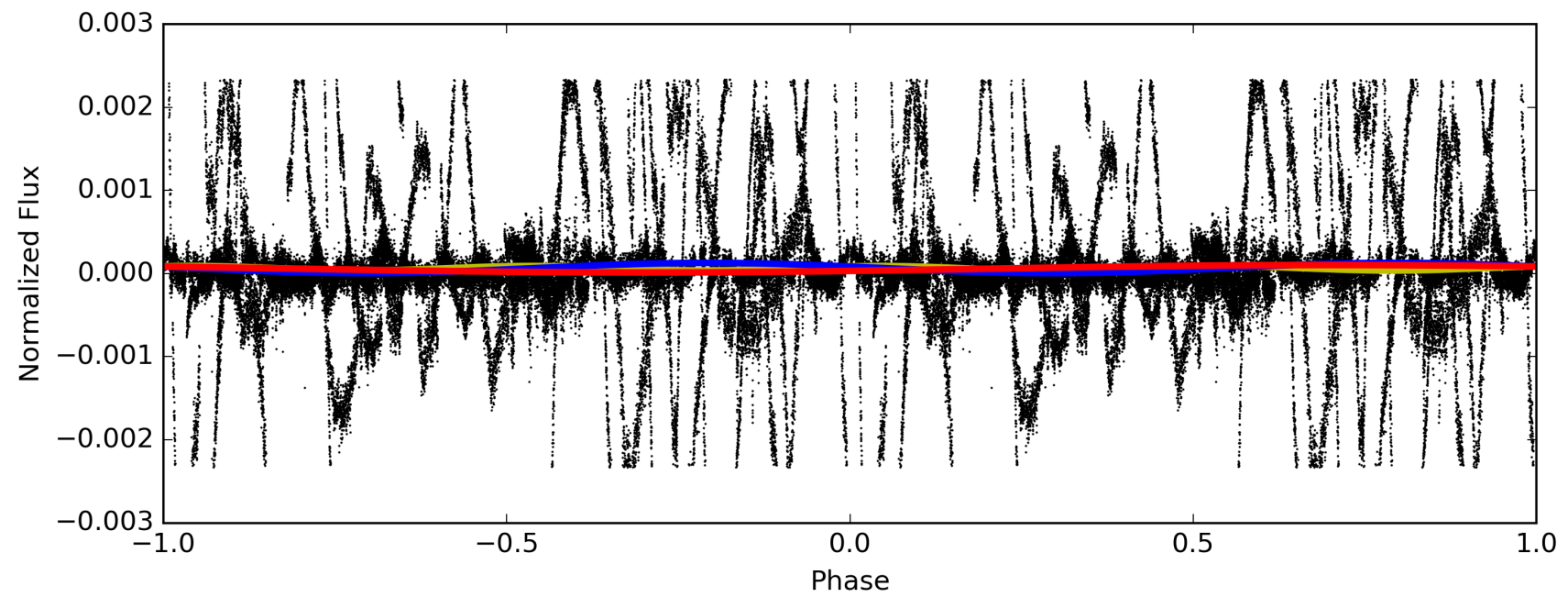
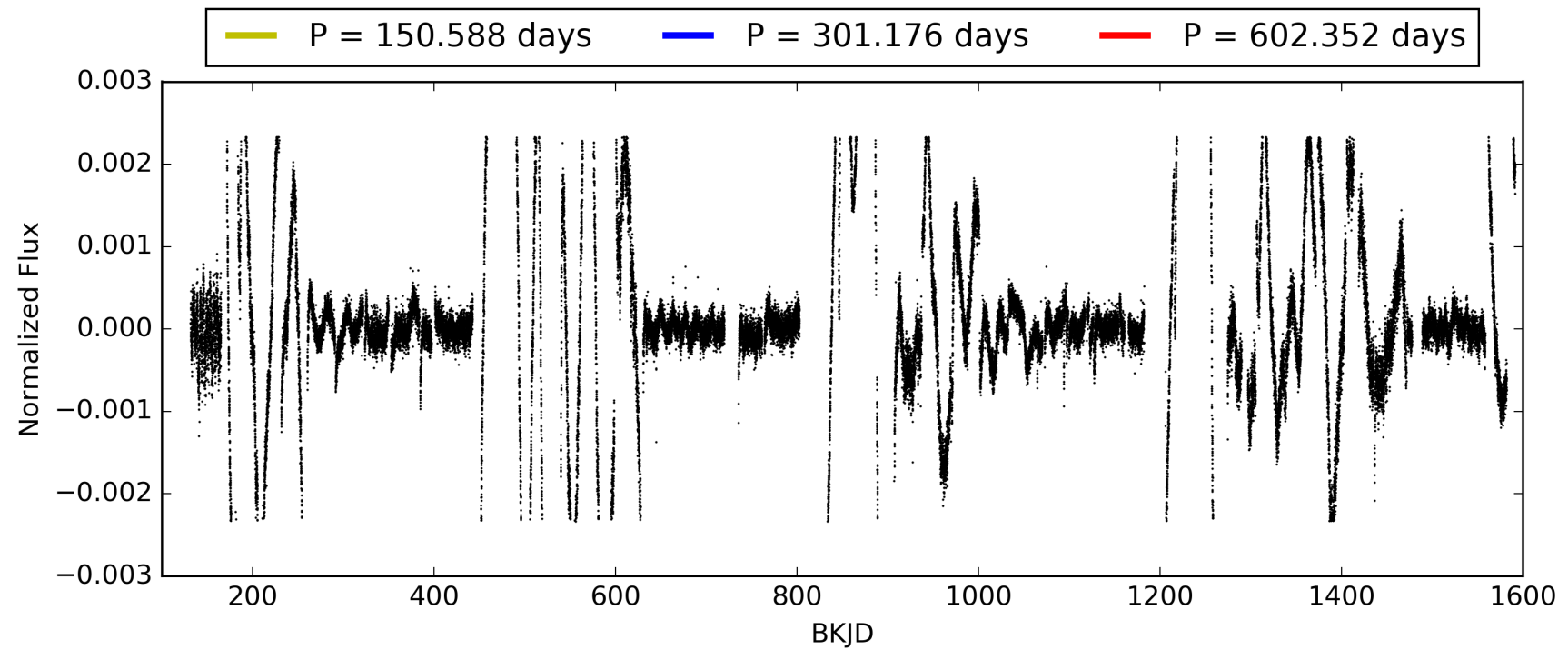
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 3.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.38e-12
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.5927
Centroid-sig: 4.5%
Centroid-so: 1.981 arcsec [1.65σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [2/2]

TCE 002831101-01, PDC Light Curves

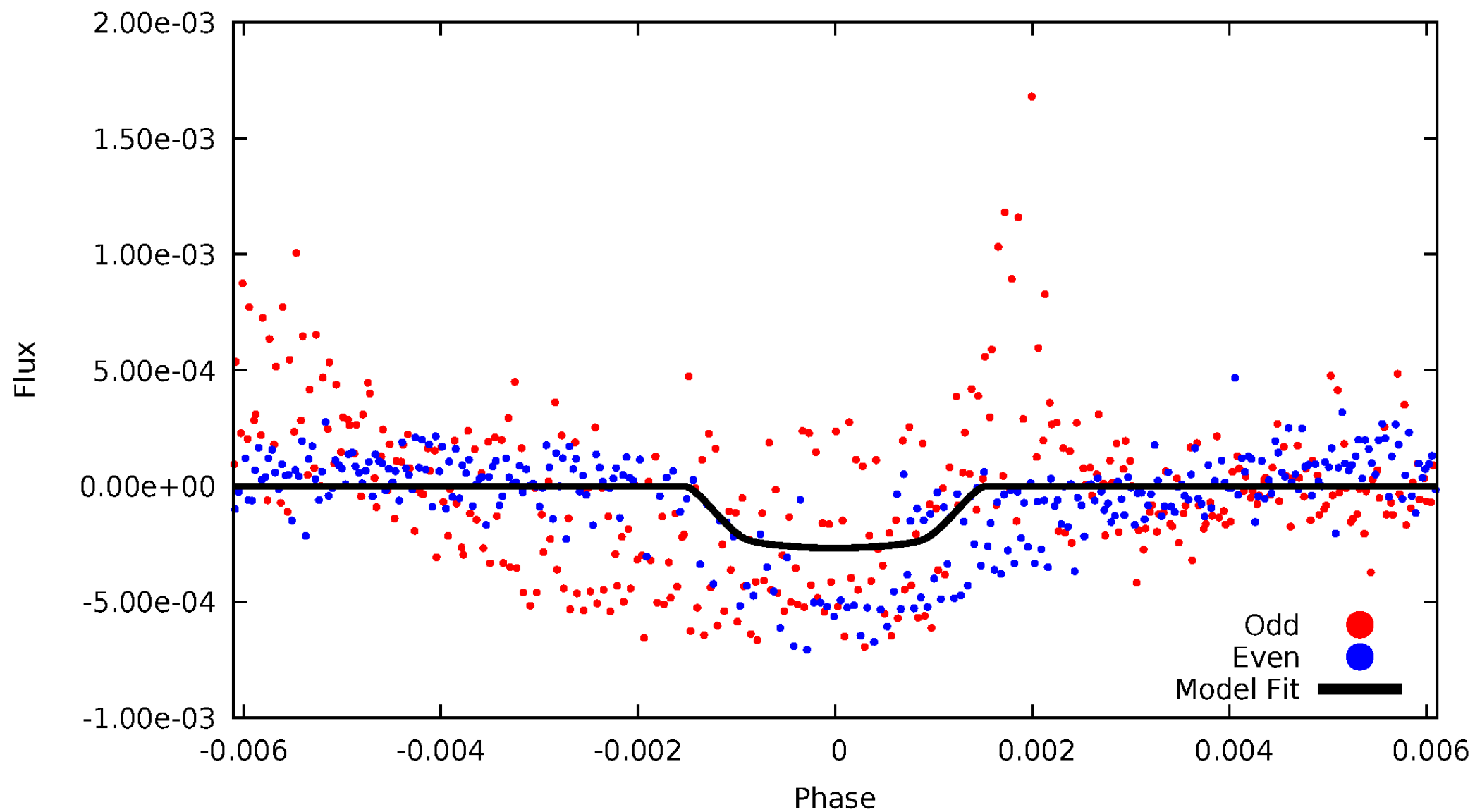


TCE 002831101-01



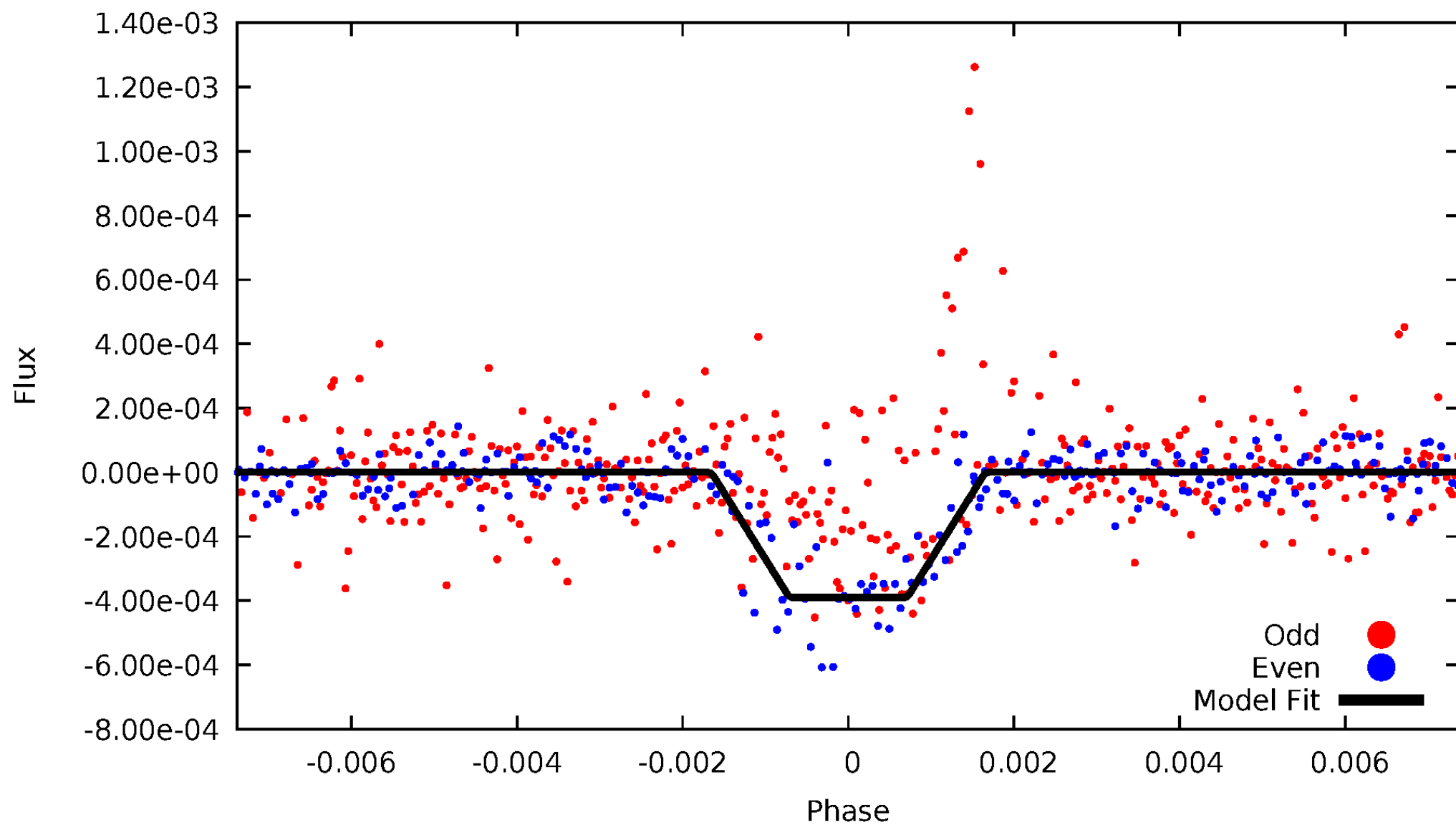
DV Odd/Even

TCE 002831101-01



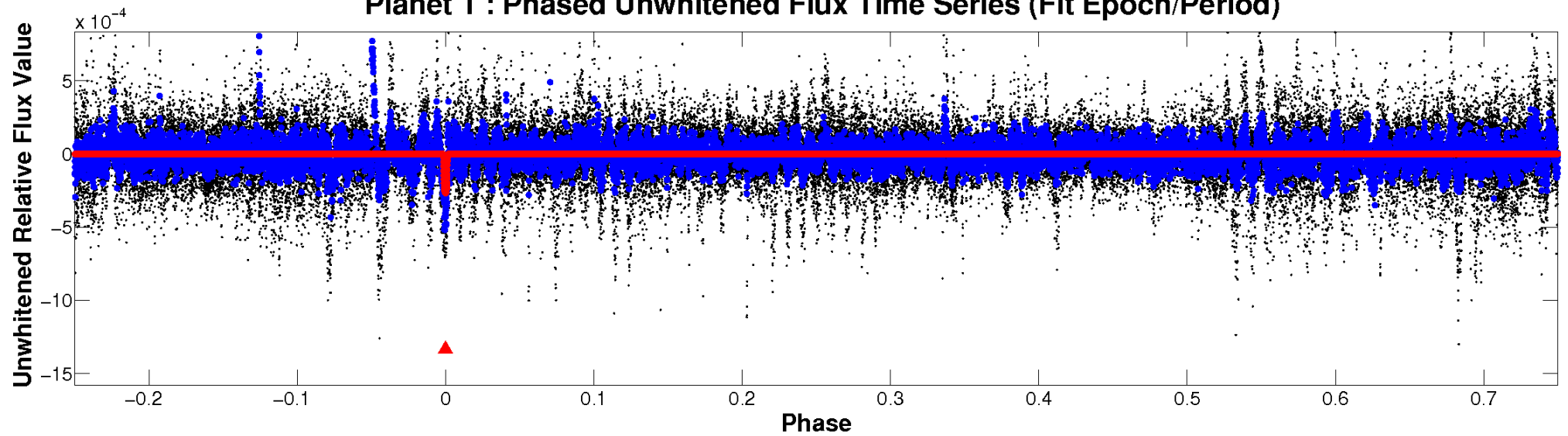
ALT Odd/Even

TCE 002831101-01

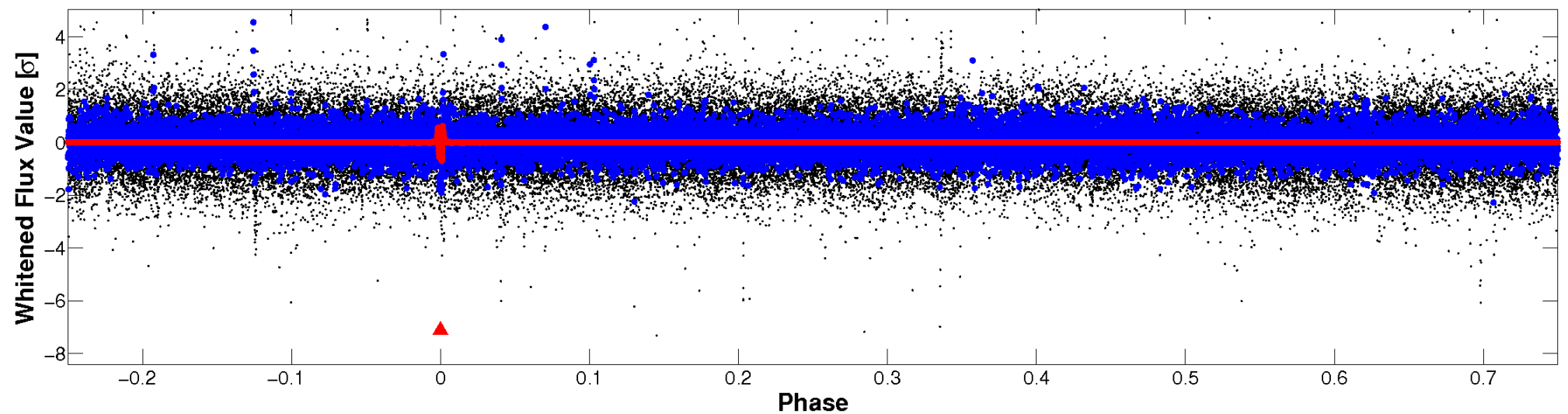


Non-Whitened Vs. Whitened Light Curve

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

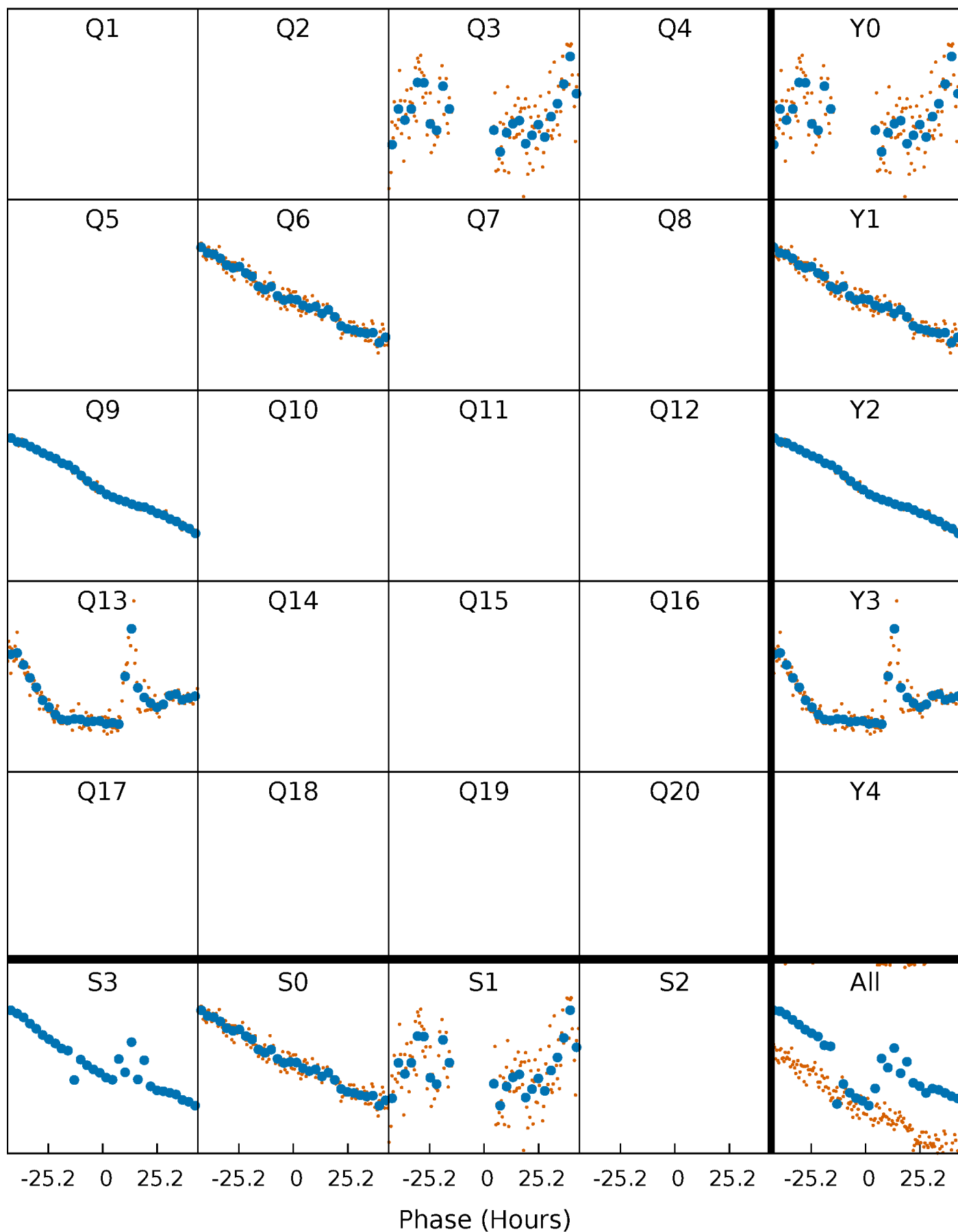


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



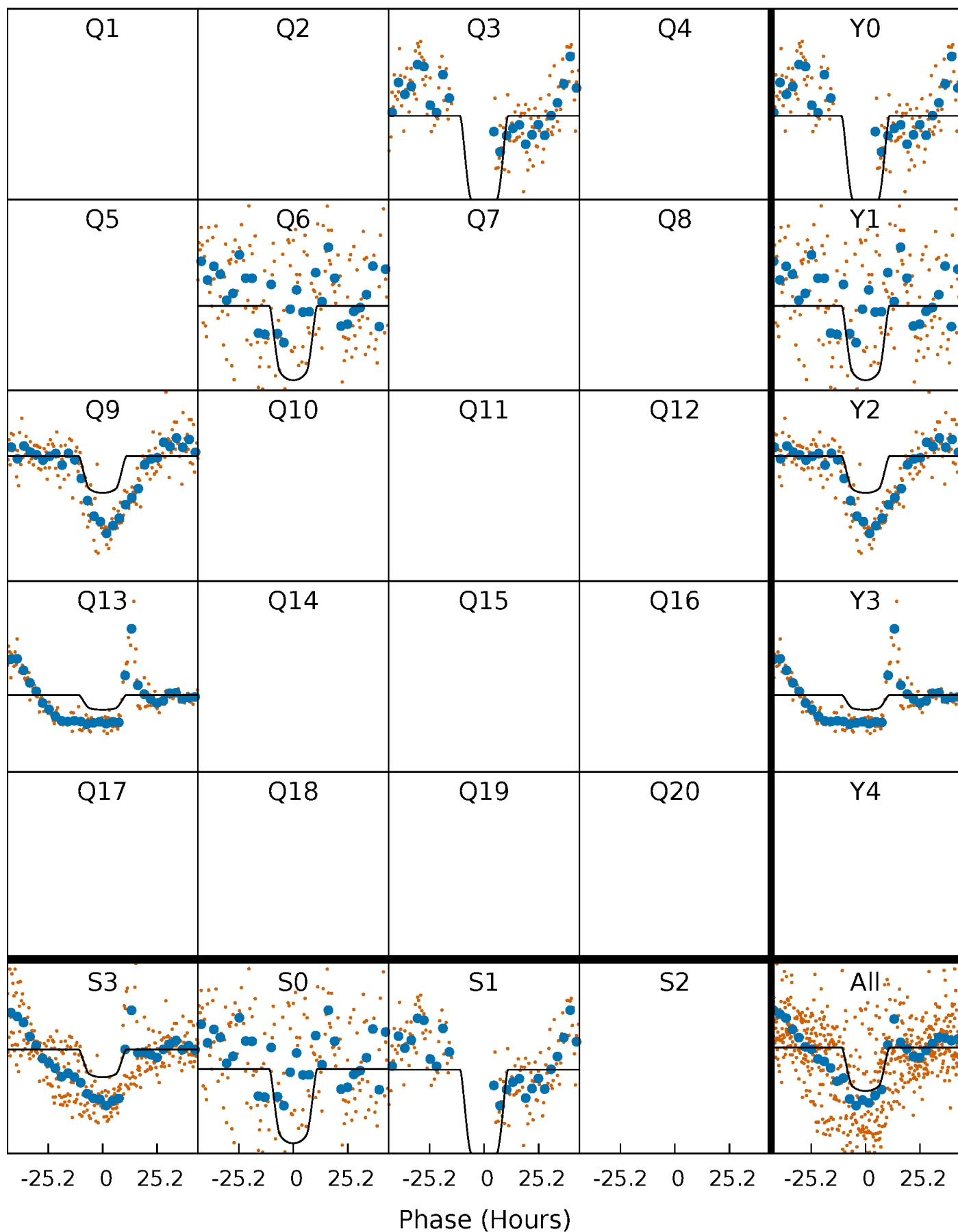
PDC Quarter-Phased Transit Curves

TCE 002831101-01 P=301.175914 Days $T_0=281.162924$ (BKJD)



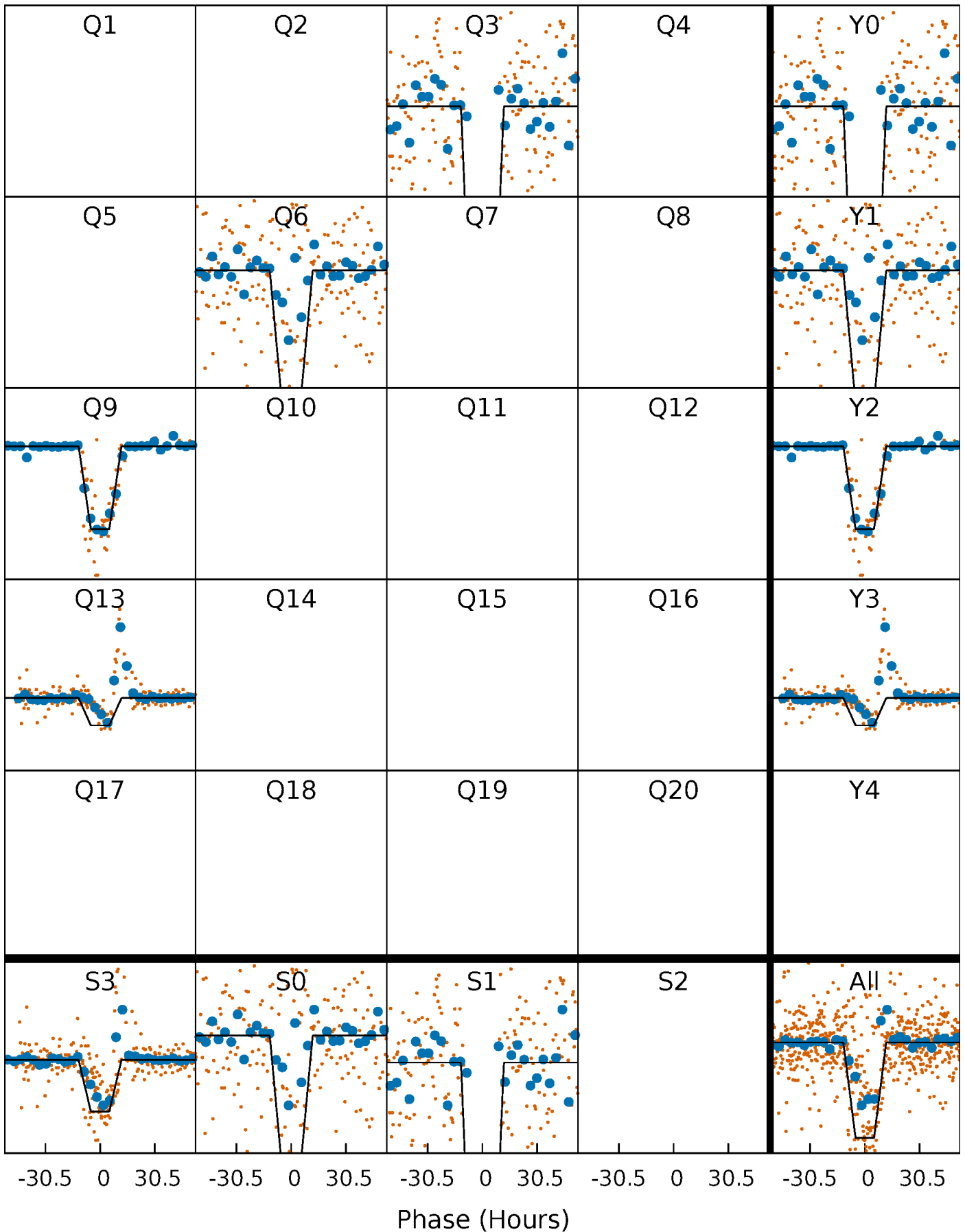
DV Quarter-Phased Transit Curves

TCE 002831101-01 P=301.175914 Days $T_0=281.162924$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

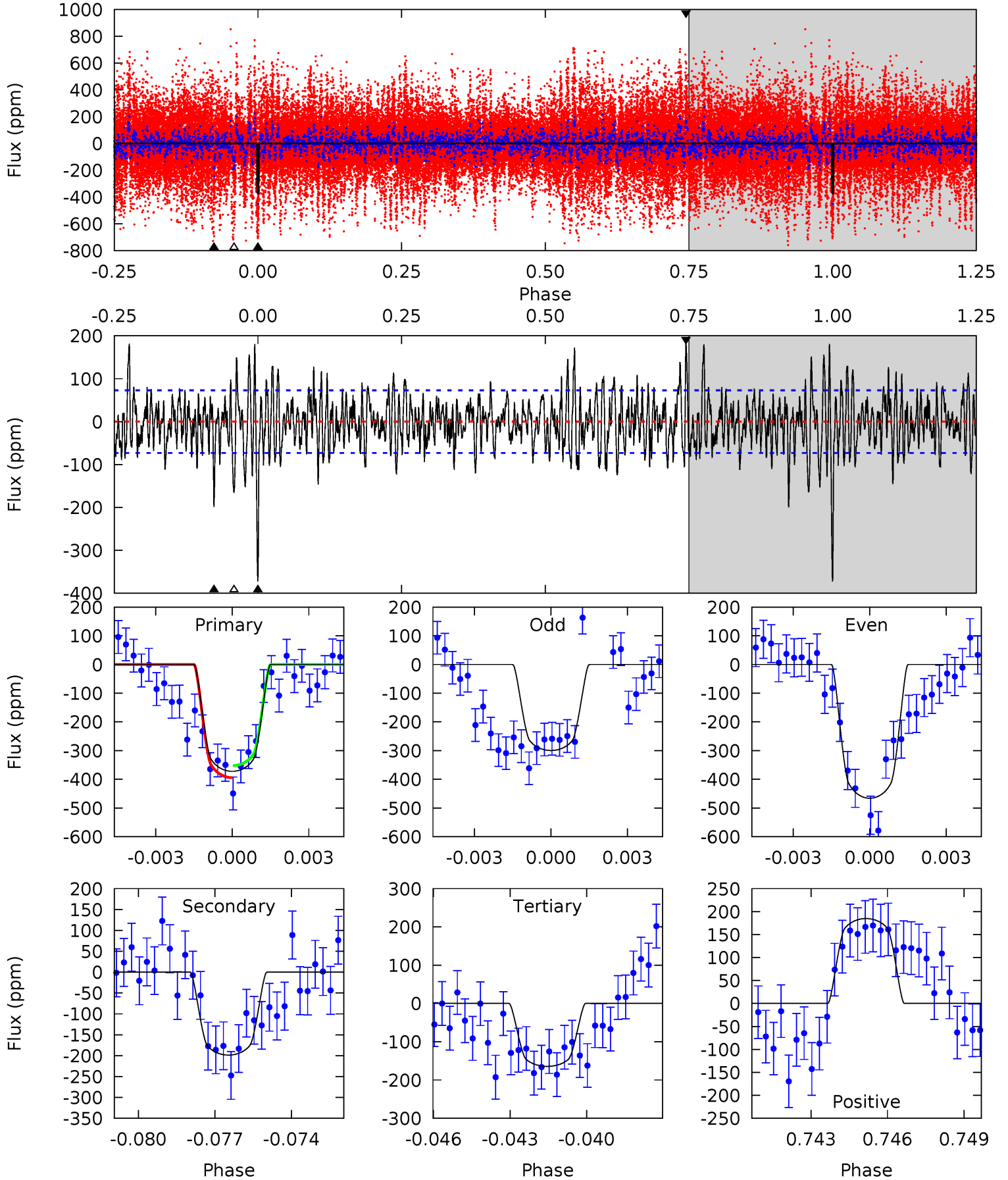
TCE 002831101-01 P=301.265597 Days $T_0=280.953100$ (BKJD)



DV Model-Shift Uniqueness Test

002831101-01, P = 301.175914 Days, E = 281.162924 Days

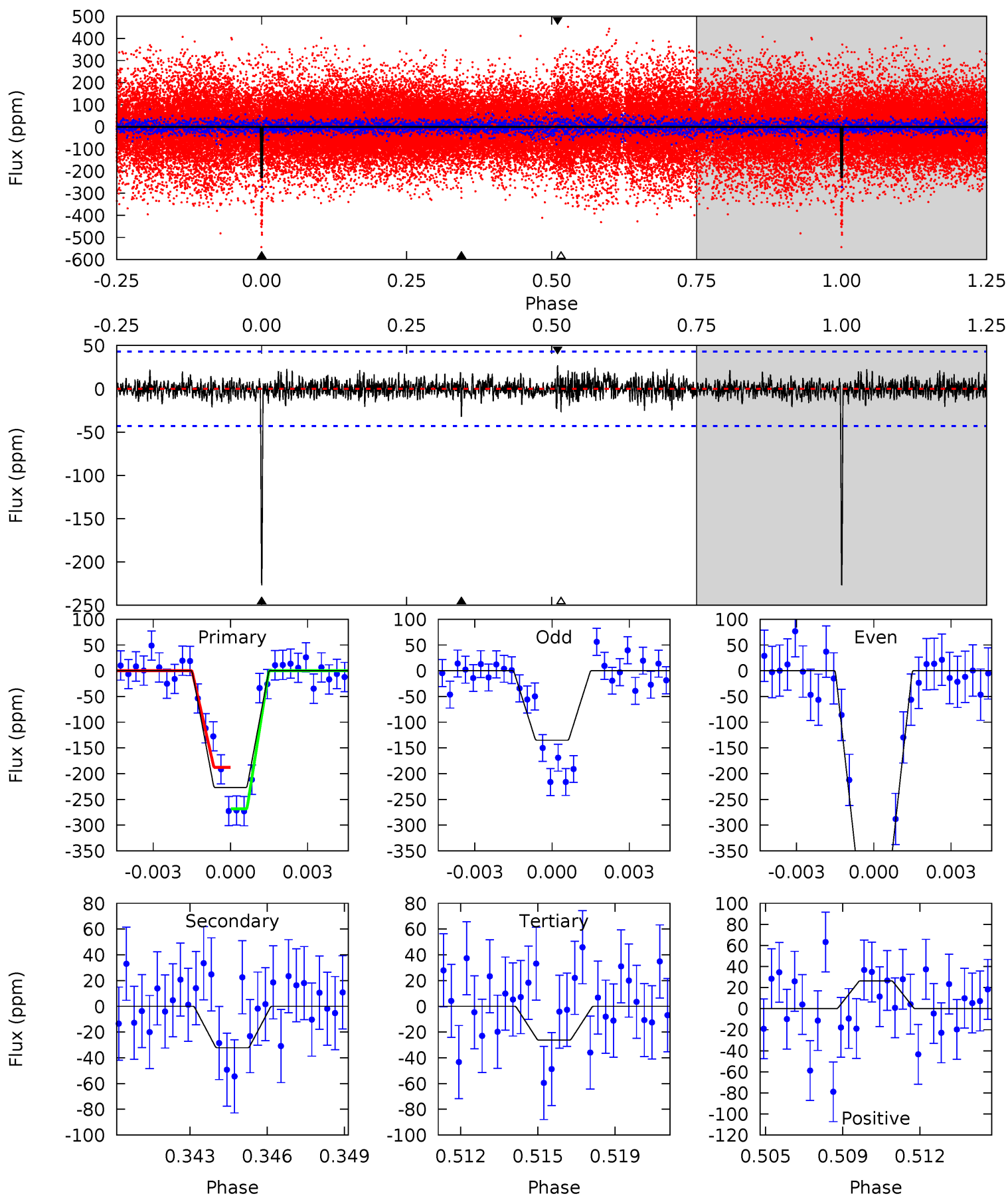
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.8	14.3	11.8	13.3	5.25	2.96	3.74	14.9	13.5	2.46	0.99	5.47	0.96	0.33	1.49



Alt Model-Shift Uniqueness Test

002831101-01, P = 301.265597 Days, E = 280.953100 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.6	3.92	3.19	3.22	5.23	2.94	0.85	24.5	24.4	0.72	0.70	15.1	1.33	0.10	4.98



Stellar Parameters For KIC 002831101

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5692^{+135}_{-152}	$4.547^{+0.031}_{-0.178}$	$-0.040^{+0.300}_{-0.300}$	$0.866^{+0.235}_{-0.073}$	$0.965^{+0.094}_{-0.104}$	$2.090^{+0.361}_{-0.981}$
	+2%/-3%	+1%/-4%	+750%/-750%	+27%/-8%	+10%/-11%	+17%/-47%
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 002831101-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-199 ± 14	$1.93^{+0.31}_{-0.25}$	357^{+22}_{-12}	4922^{+279}_{-236}	21836^{+6583}_{-5617}
Alt.	-32 ± 8	$1.95^{+0.31}_{-0.24}$	358^{+24}_{-14}	3530^{+191}_{-198}	3462^{+1397}_{-1154}

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

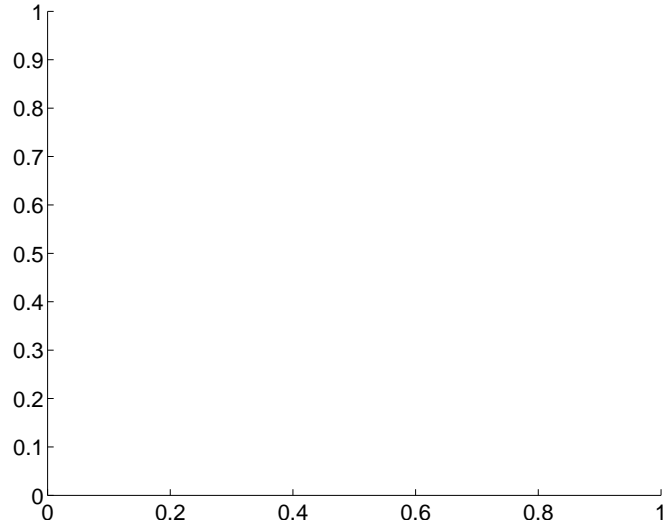
Supplemental centroid analysis for 002831101-01. **Kepler magnitude: 10.78.** Transit SNR 6.50

There are 0 quarters with good PRF difference image offsets

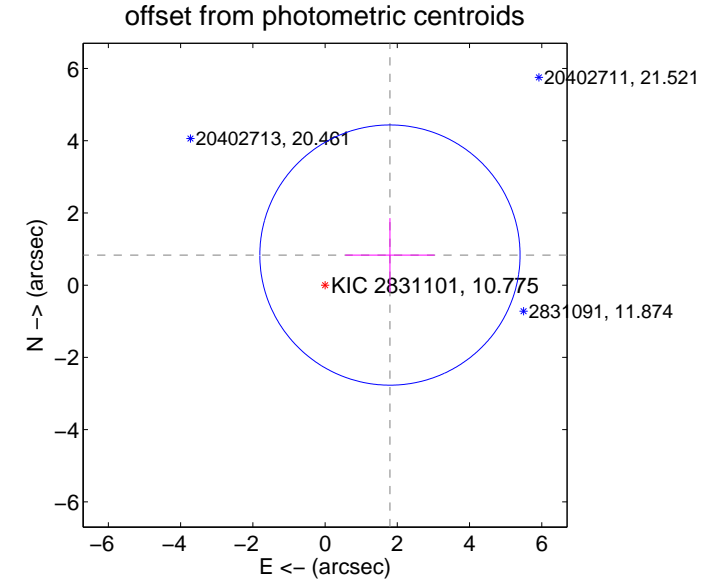
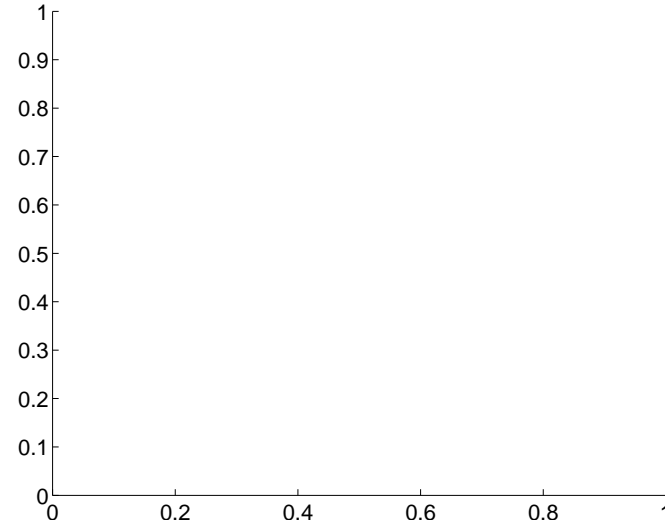
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	1.98 ± 1.20	1.65	-1.80 ± 1.24	0.83 ± 1.02

There is no PRF-fit offset from OOT-fit



There is no PRF-fit offset from KIC

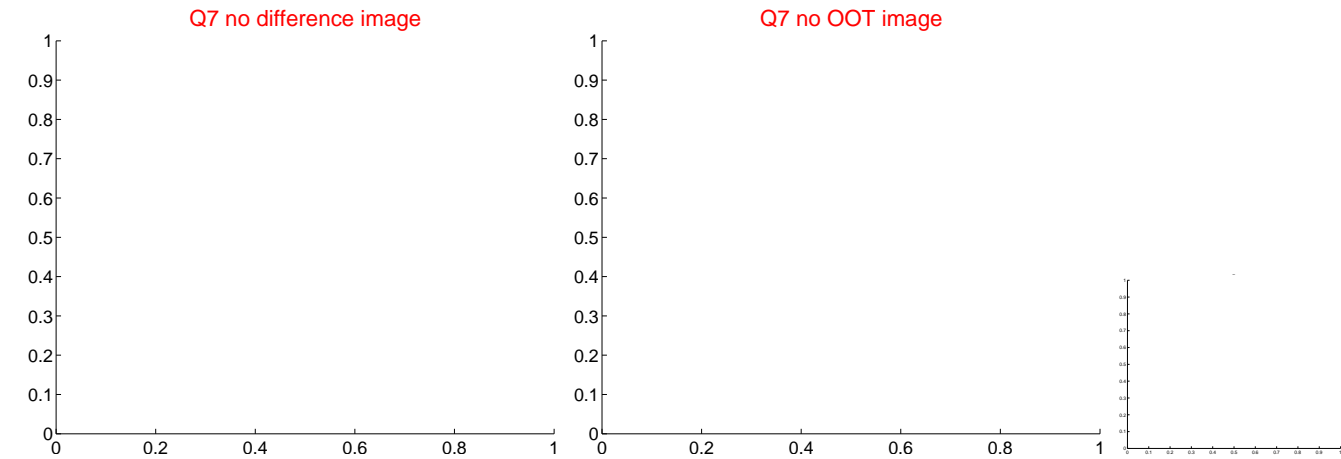
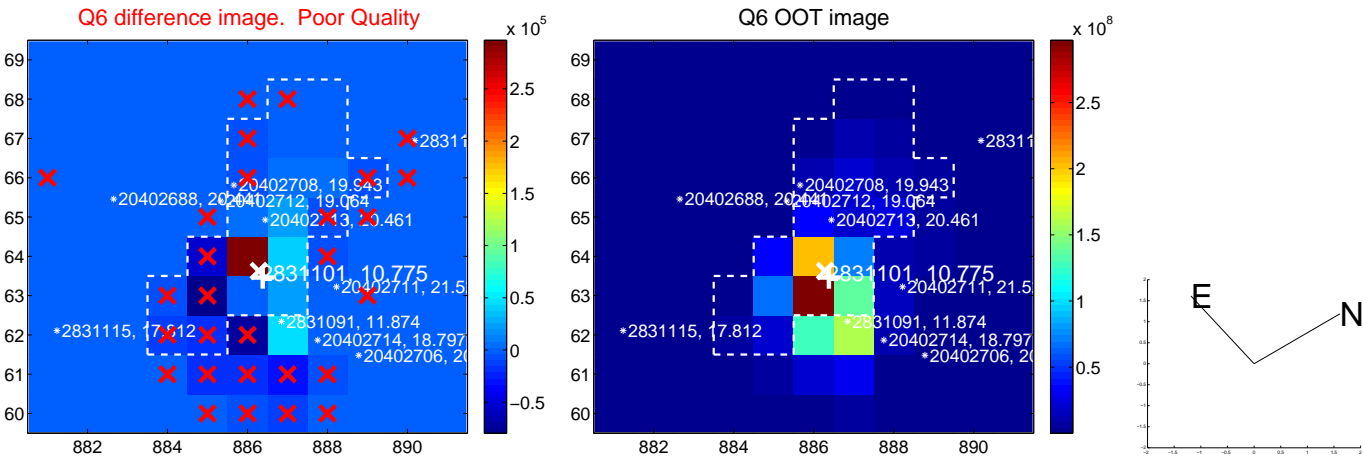


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

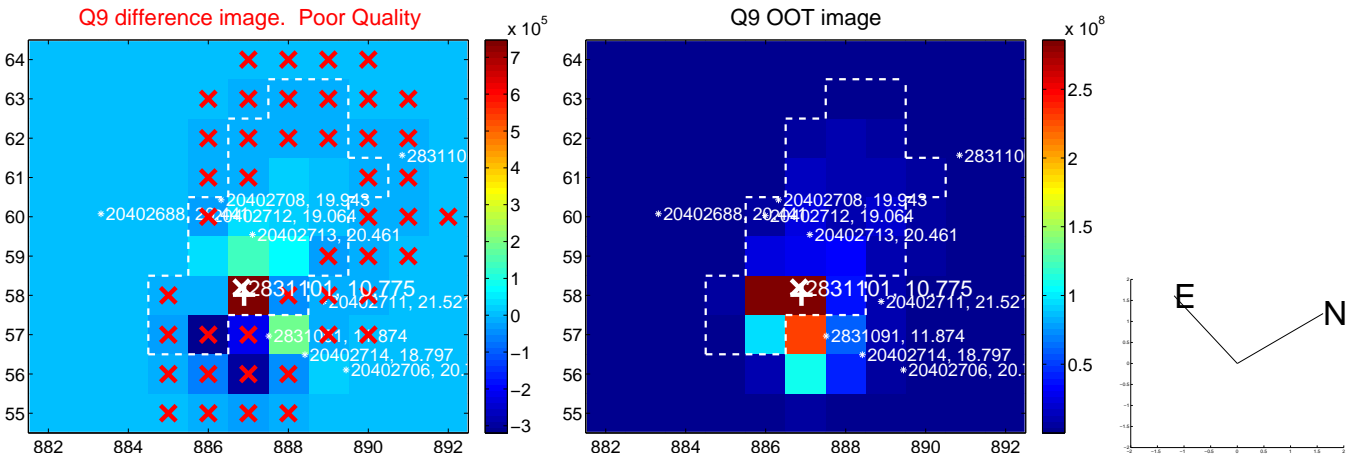
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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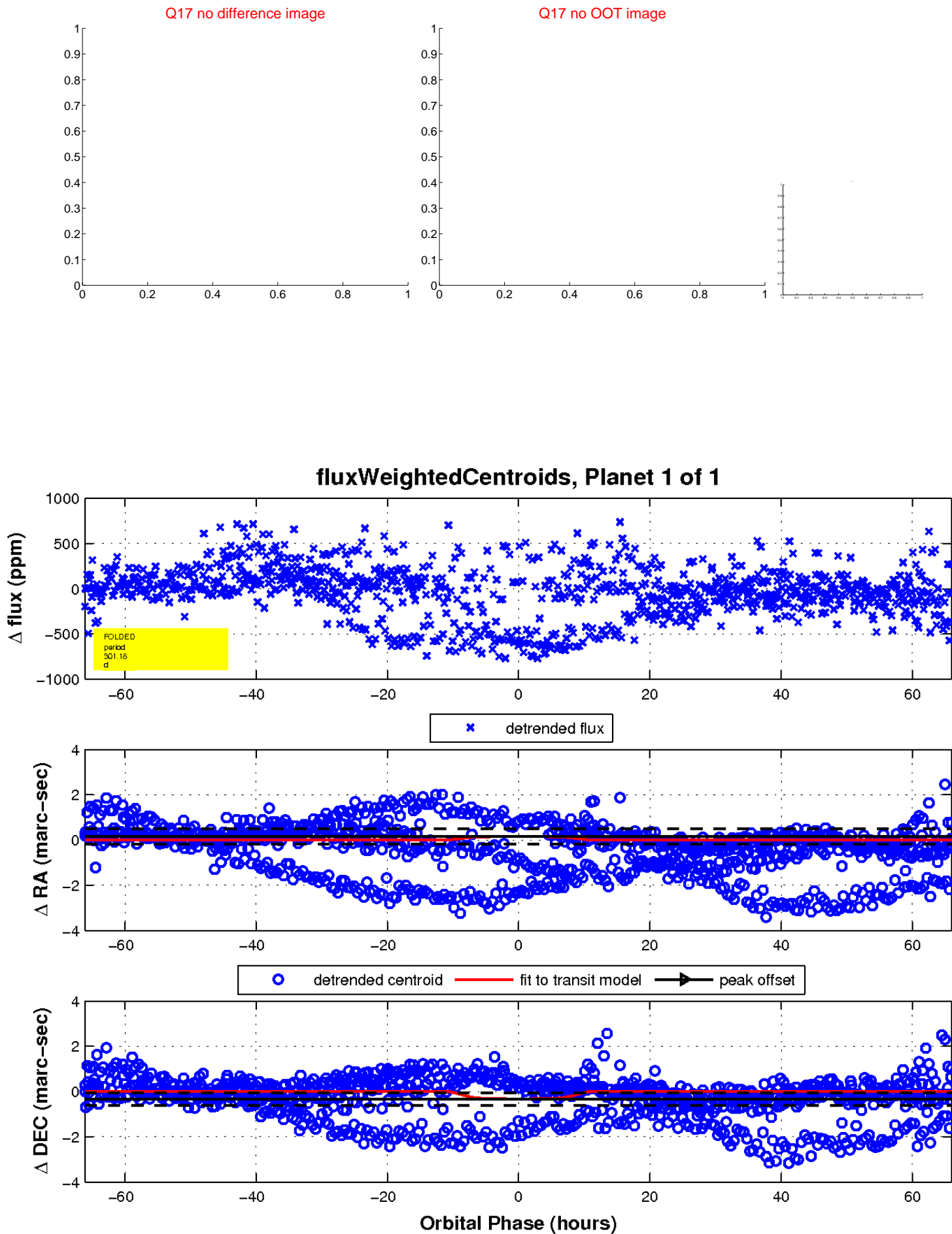
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UKIRT Image

Declination

