

KIC 002852961

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})
002852961-02	OBS	No	529.725634	332.556752	1114.8	7.183	12.8	7.9	5.50	4722	23.70	8.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002852961-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED

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

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

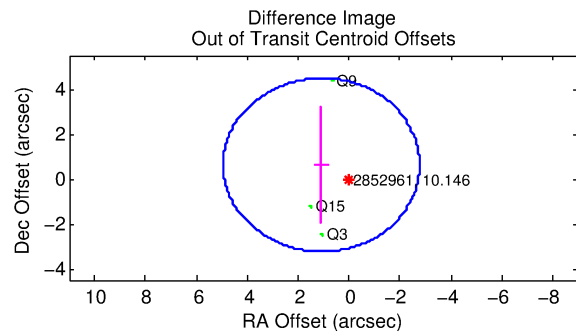
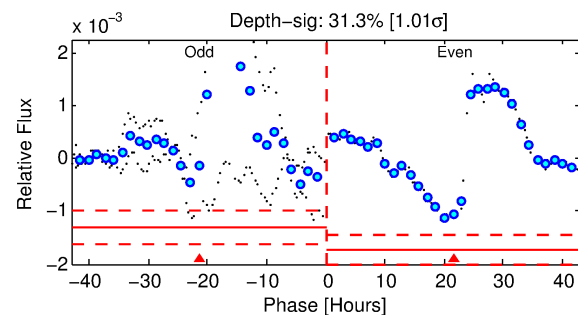
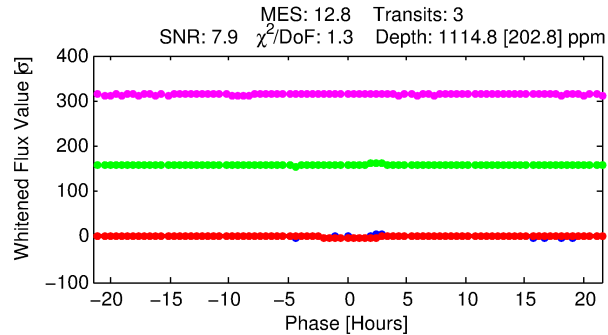
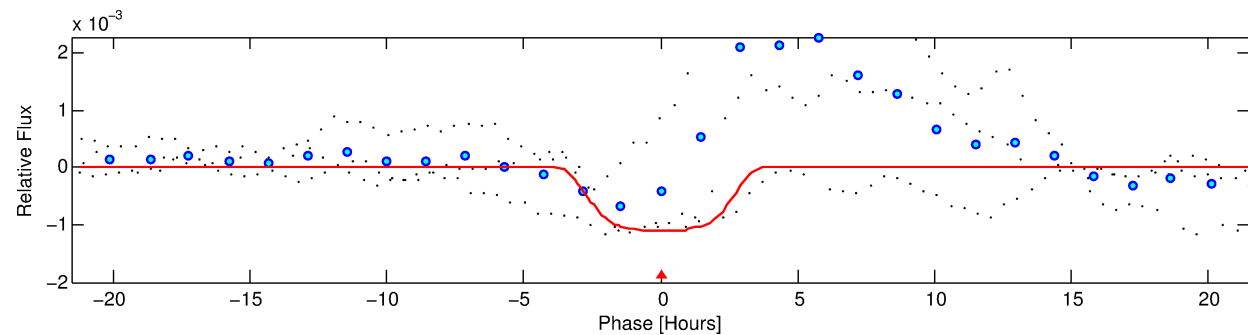
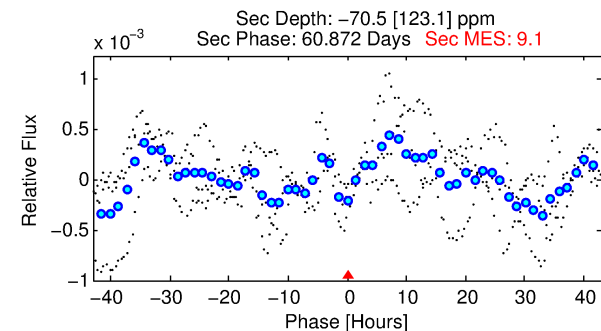
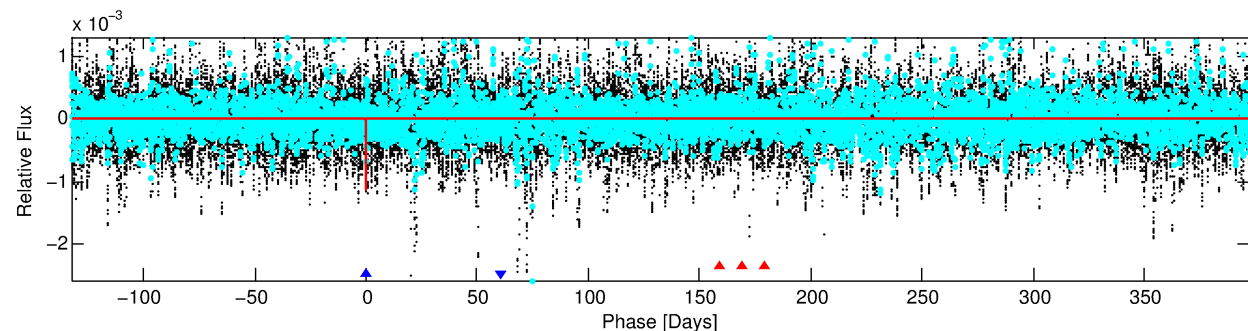
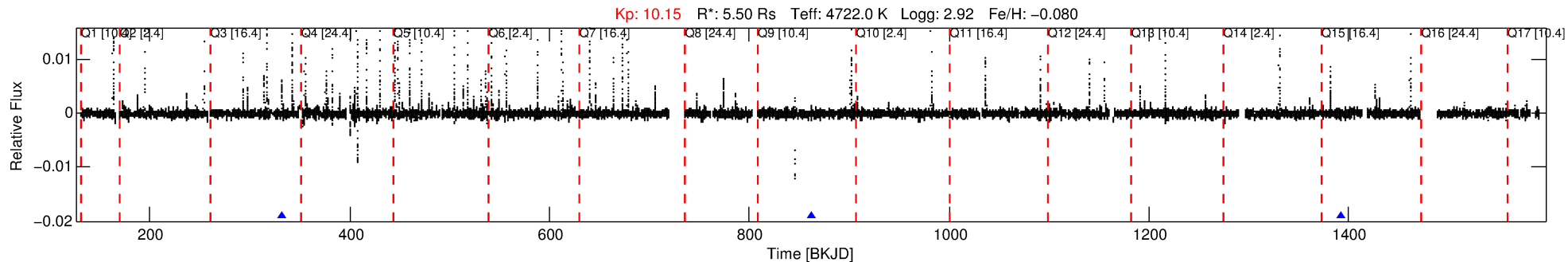
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002852961-02

No Significant Match Found

DV One-Page Summary

KIC: 2852961 Candidate: 2 of 2 Period: 529.726 d



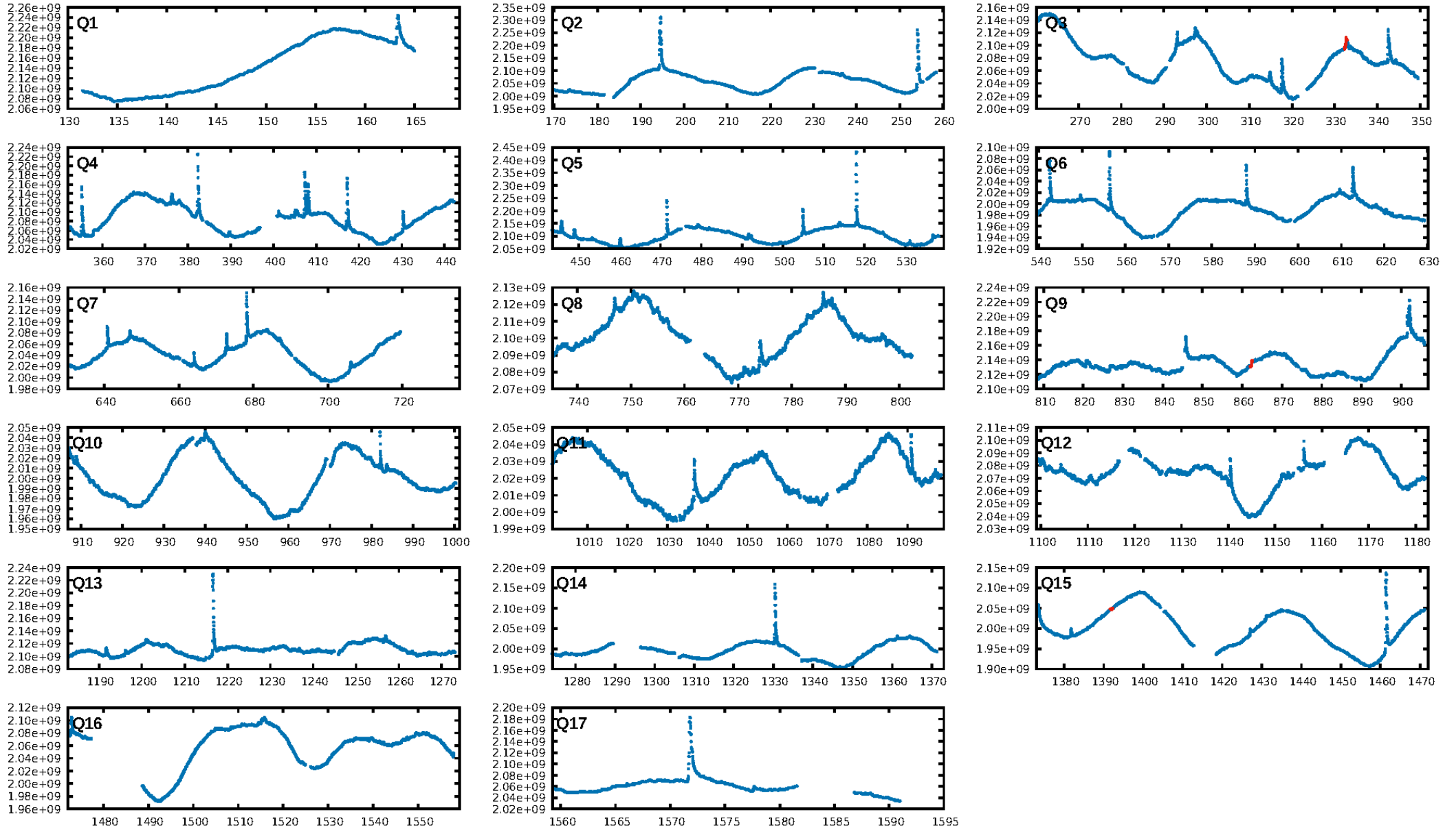
DV Fit Results:

Period = 529.72563 [0.00697] d
Epoch = 332.5568 [0.0096] BKJD
Rp/R* = 0.0395 [0.0038]
a/R* = 257.85 [23.47]
b = 0.93 [0.01]
Seff = 8.70 [2.64]
Teq = 438 [33] K
Rp = 23.70 [7.35] Re
a = 1.2443 [0.2809] AU
Ag = N/A
Teffp = N/A

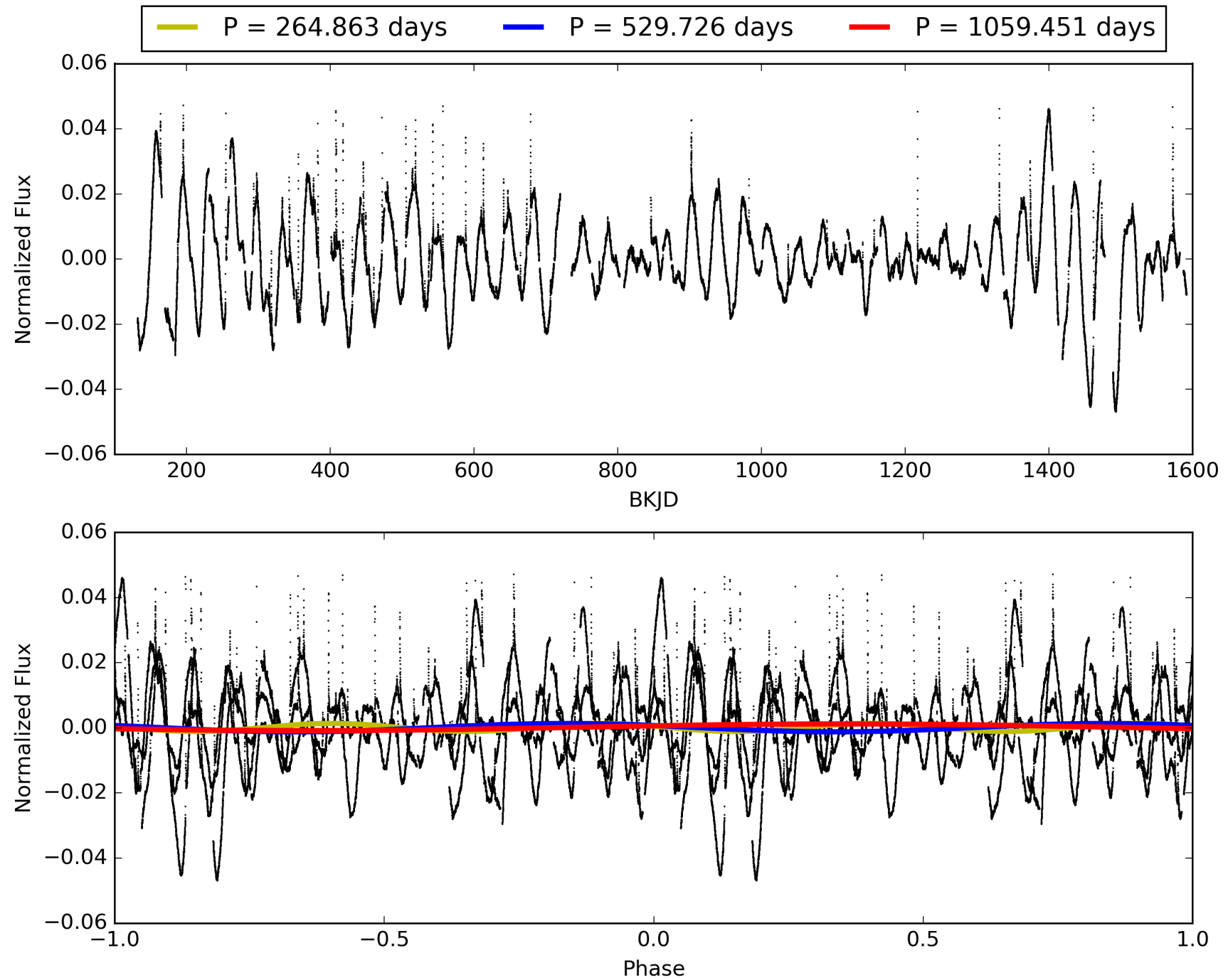
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [13.26 σ]
ModelChiSquare2-sig: 50.8%
ModelChiSquareGof-sig: 91.4%
Bootstrap-pfa: 5.80e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: N/A
Centroid-sig: 79.1%
Centroid-so: 0.487 arcsec [1.68 σ]
OotOffset-rm: 1.249 arcsec [0.97 σ]
KicOffset-rm: 1.492 arcsec [1.95 σ]
OotOffset-st: 0/2/0/1 [3]
KicOffset-st: 0/2/0/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 002852961-02, PDC Light Curves

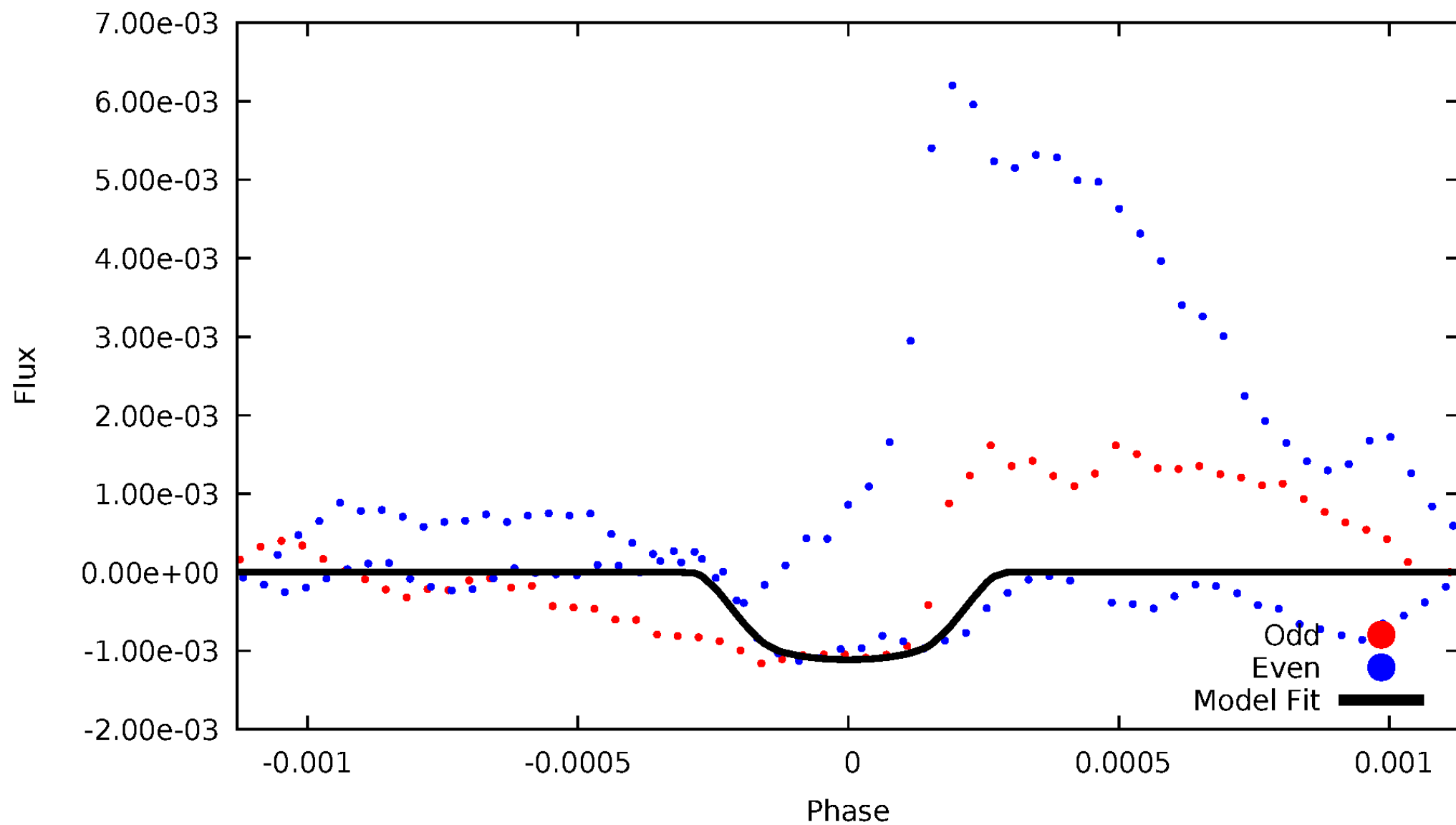


TCE 002852961-02



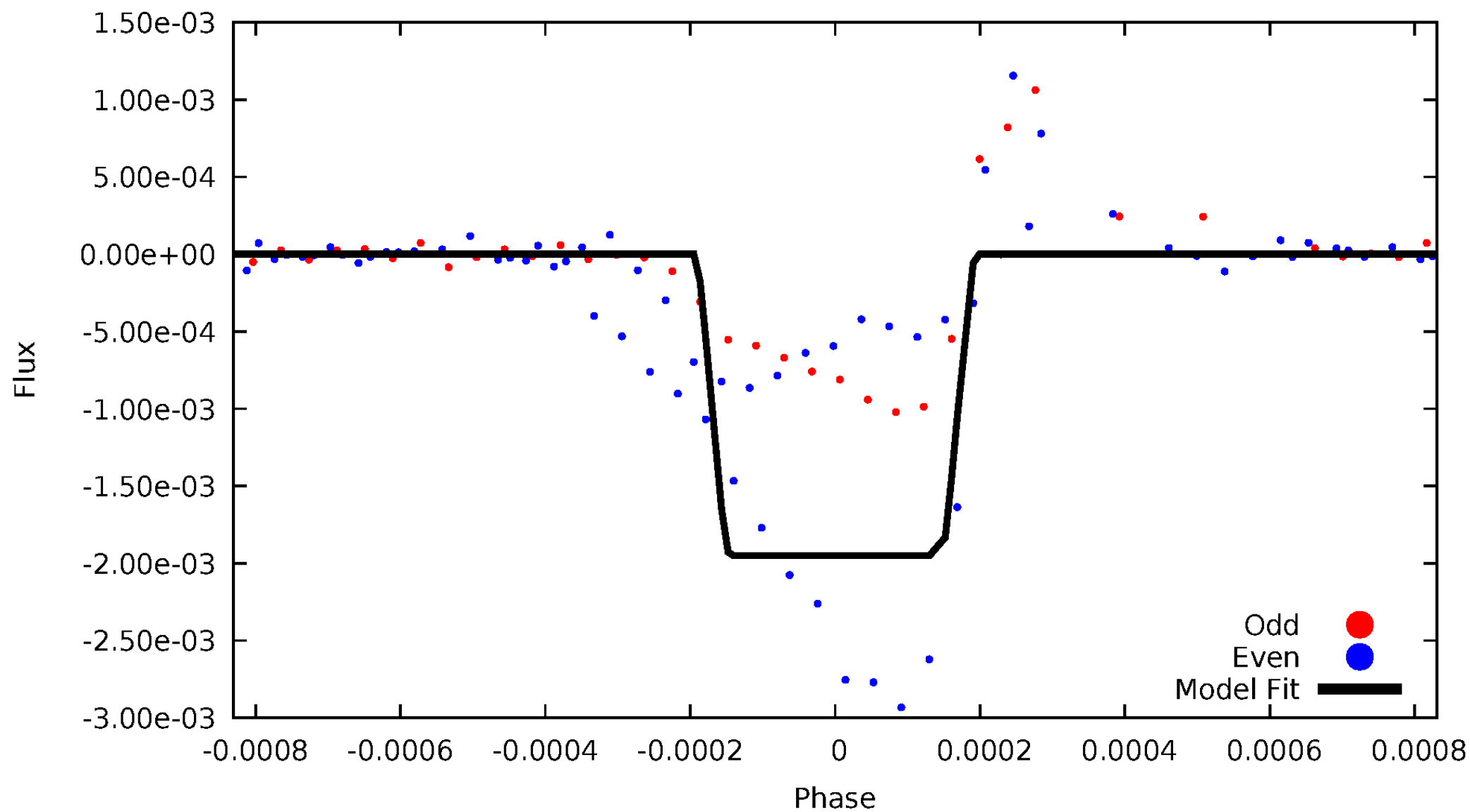
DV Odd/Even

TCE 002852961-02



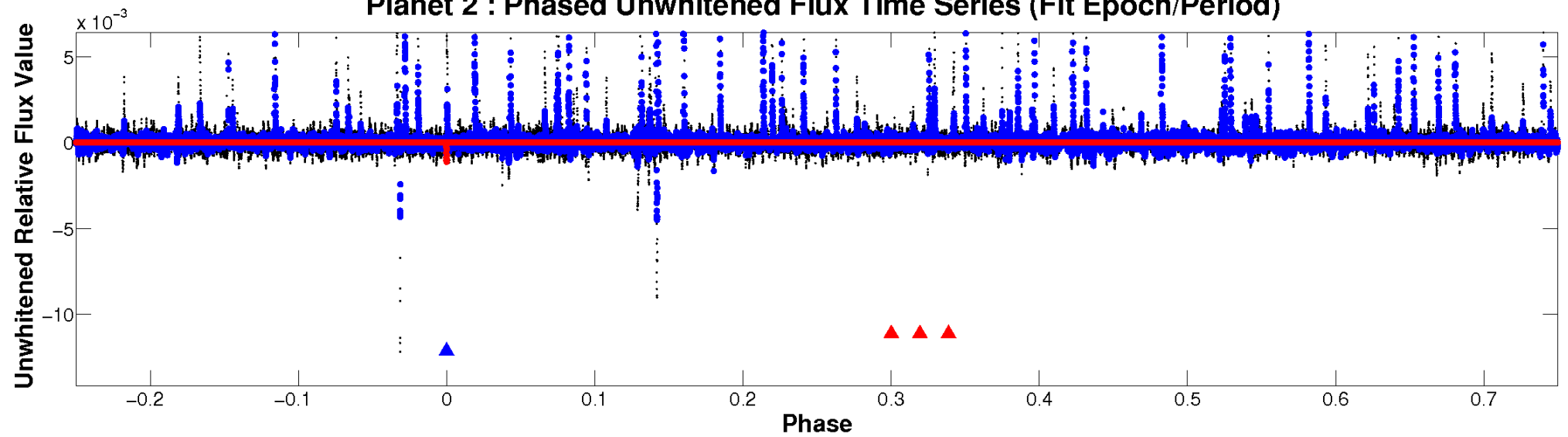
ALT Odd/Even

TCE 002852961-02

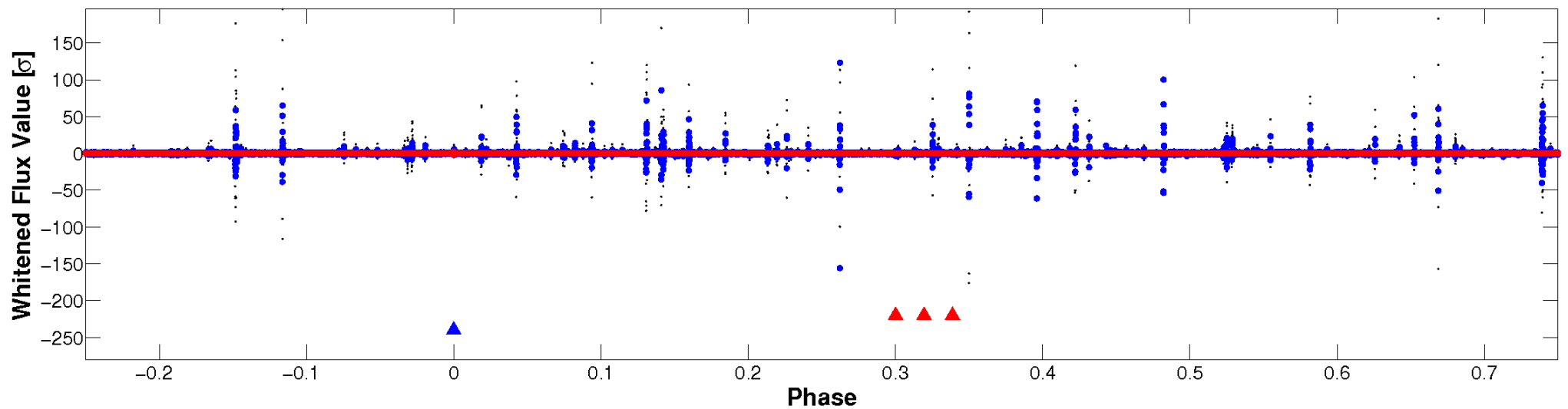


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

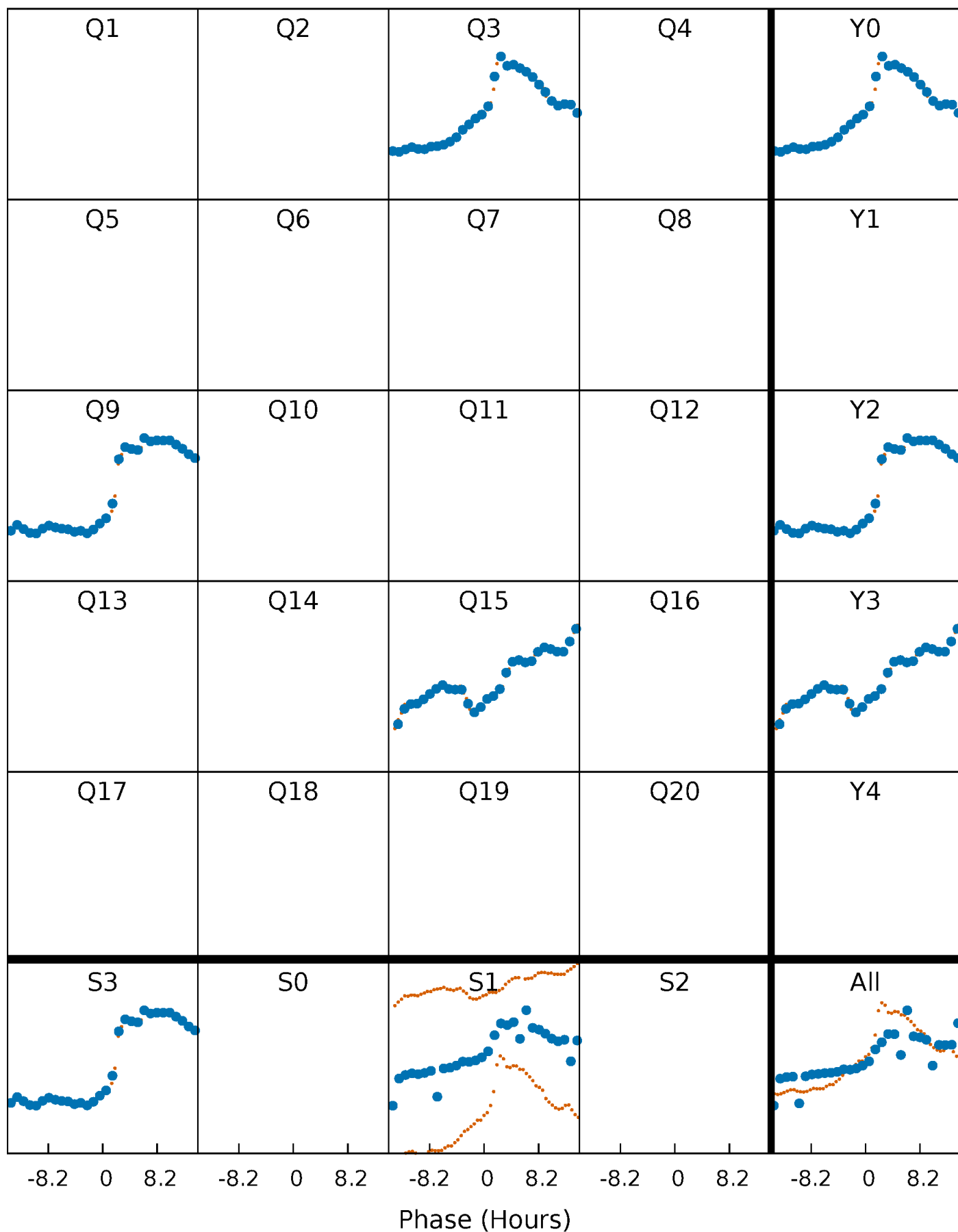


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



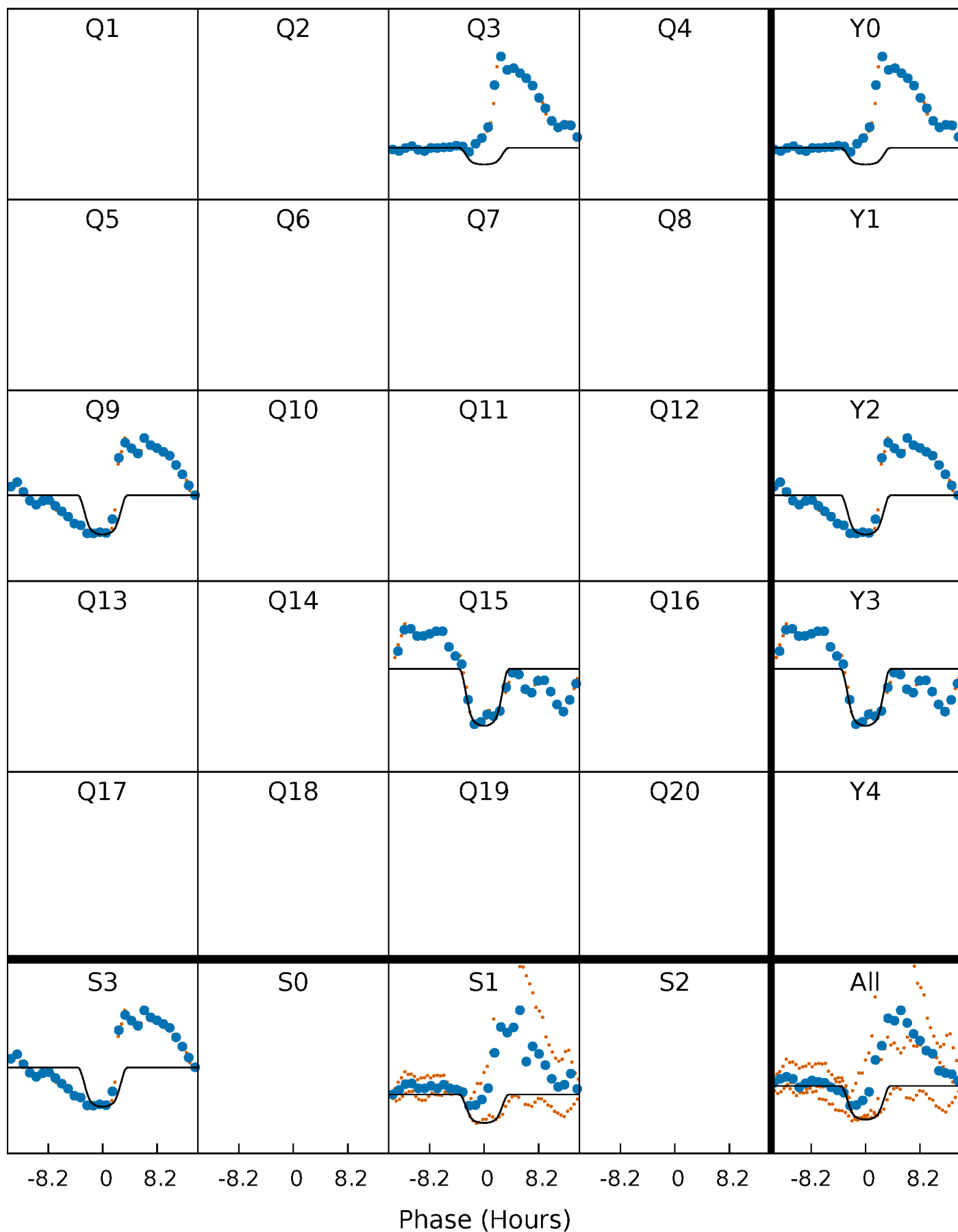
PDC Quarter-Phased Transit Curves

TCE 002852961-02 $P=529.725634$ Days $T_0=332.556752$ (BKJD)



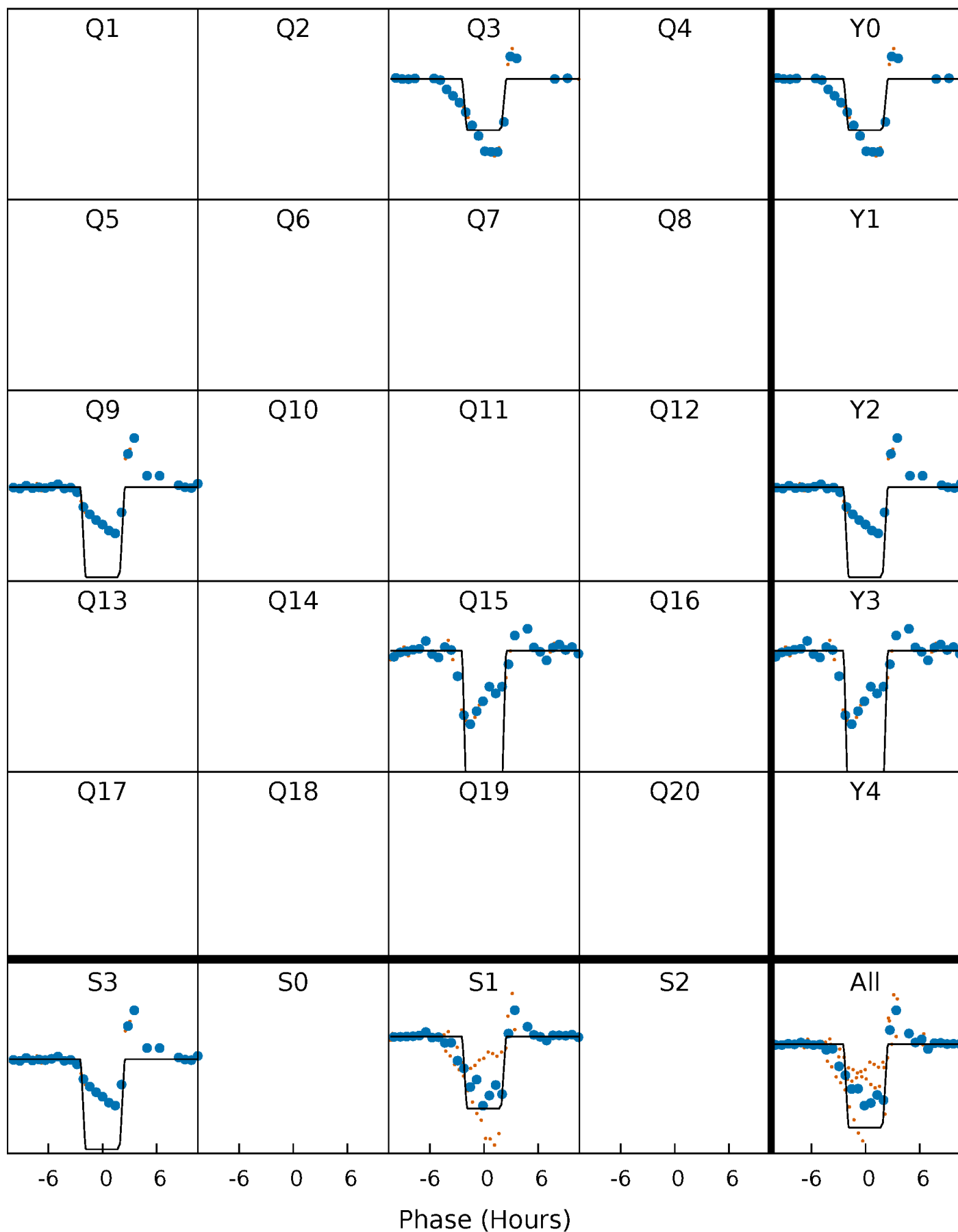
DV Quarter-Phased Transit Curves

TCE 002852961-02 $P=529.725634$ Days $T_0=332.556752$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

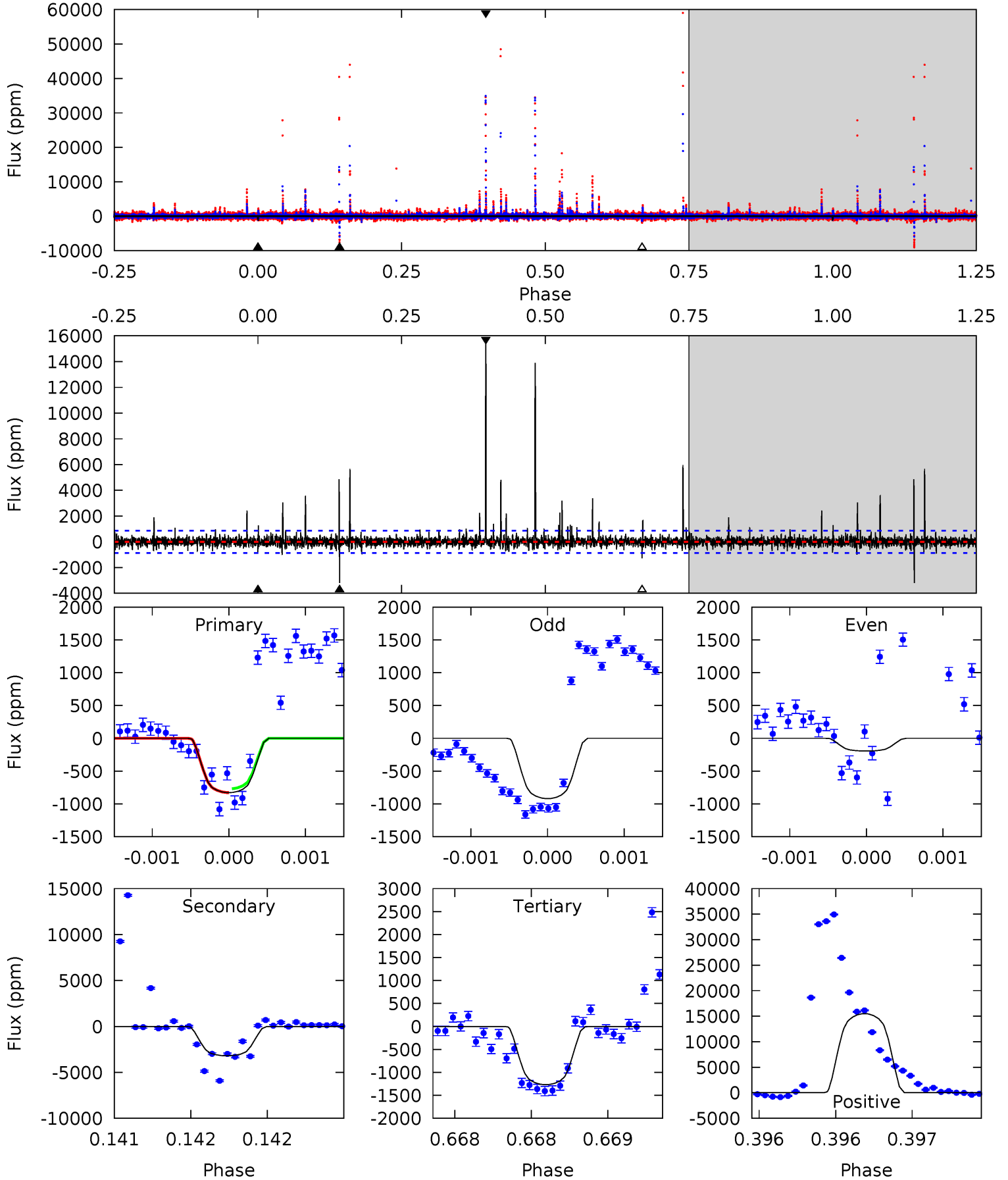
TCE 002852961-02 $P=529.746854$ Days $T_0=332.528516$ (BKJD)



DV Model-Shift Uniqueness Test

002852961-02, P = 529.725634 Days, E = 332.556752 Days

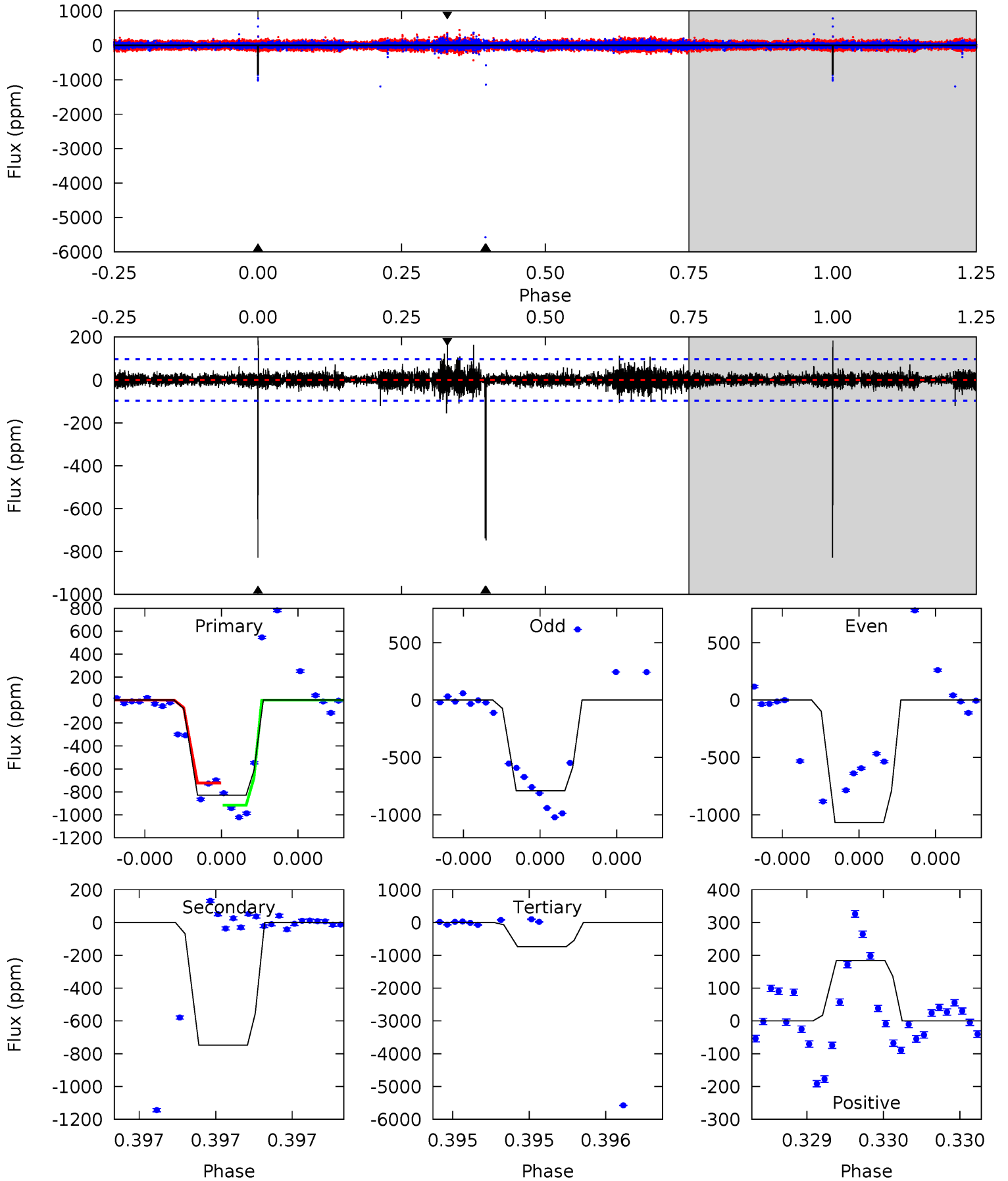
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.27	20.4	8.07	98.7	5.55	3.44	3.19	-2.80	-93.4	12.3	-78.3	1.76	0.01	0.83	0.17



Alt Model-Shift Uniqueness Test

002852961-02, P = 529.746854 Days, E = 332.528516 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
48.0	43.3	42.7	10.6	5.62	3.55	1.07	5.21	37.3	0.54	32.6	9.66	1.59	0.18	6.54



Stellar Parameters For KIC 002852961

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4722^{+77}_{-56}	$2.919^{+0.145}_{-0.145}$	$-0.080^{+0.150}_{-0.100}$	$5.499^{+1.620}_{-0.694}$	$0.915^{+0.246}_{-0.013}$	$0.008^{+0.005}_{-0.003}$
	+2%/-1%	+5%/-5%	+188%/-125%	+29%/-13%	+27%/-1%	+59%/-43%
Source	SPE74	SPE74	SPE74	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 002852961-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-3190 ± 157	$23.83^{+4.33}_{-3.08}$	608^{+39}_{-29}	5511^{+285}_{-238}	4921^{+1661}_{-1217}
Alt.	-748 ± 17	$26.97^{+4.29}_{-3.61}$	610^{+38}_{-28}	3947^{+152}_{-122}	912^{+305}_{-207}

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

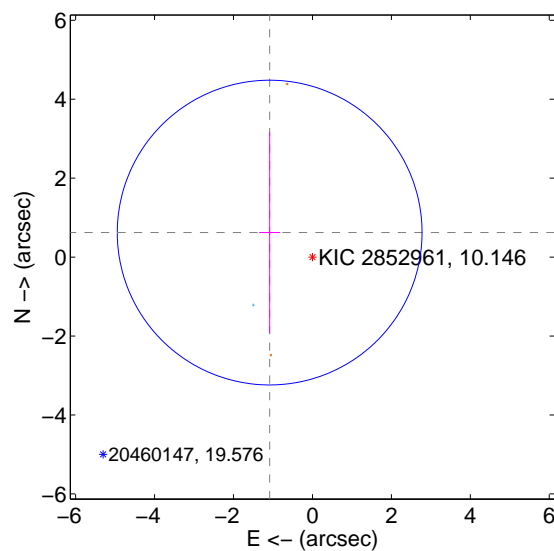
Supplemental centroid analysis for 002852961-02. **Kepler magnitude: 10.15.** Transit SNR 7.94

There are 1 quarters with good PRF difference image offsets

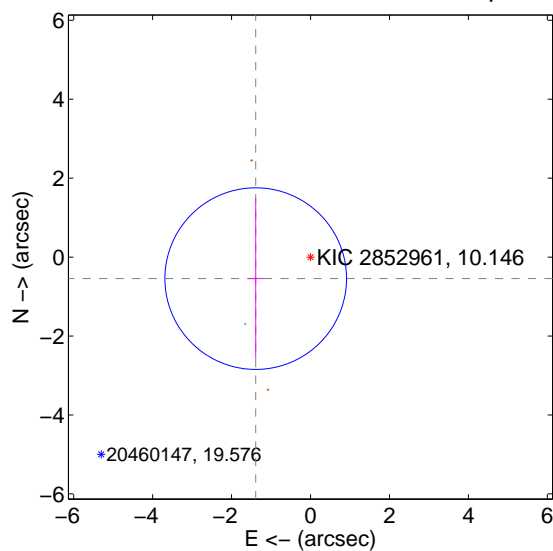
The direct PRF centroid is offset from the target star catalog position by about 0.51 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.249 ± 1.287	0.97	1.084 ± 0.263	0.621 ± 2.546
PRF-fit source offset from KIC position	1.492 ± 0.767	1.95	1.388 ± 0.211	-0.545 ± 2.028
photometric centroid source offset	0.49 ± 0.29	1.68	0.32 ± 0.15	-0.36 ± 0.36

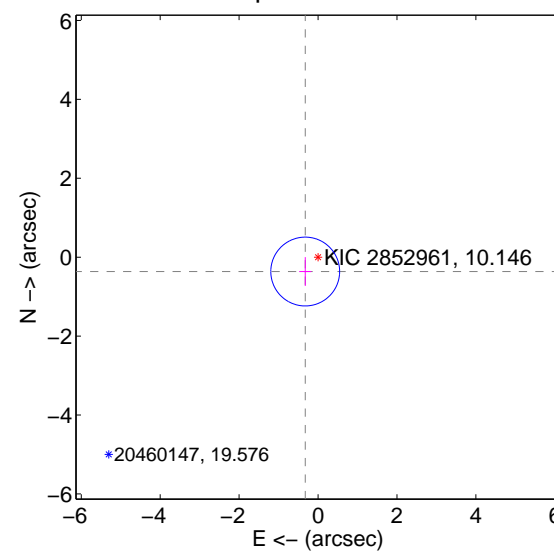
offset from difference PRF-fit to OOT PRF-fit



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.

Q1 no difference image



Q1 no OOT image



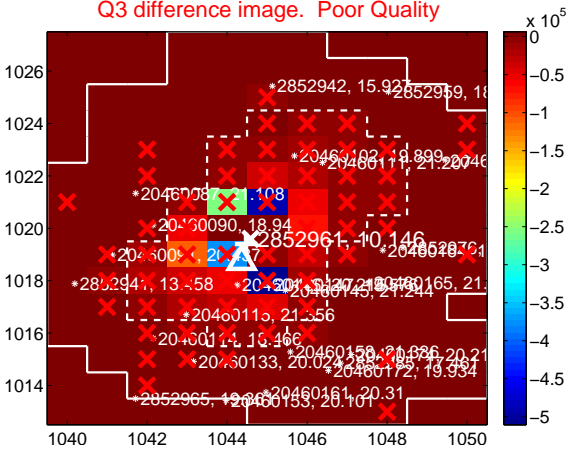
Q2 no difference image



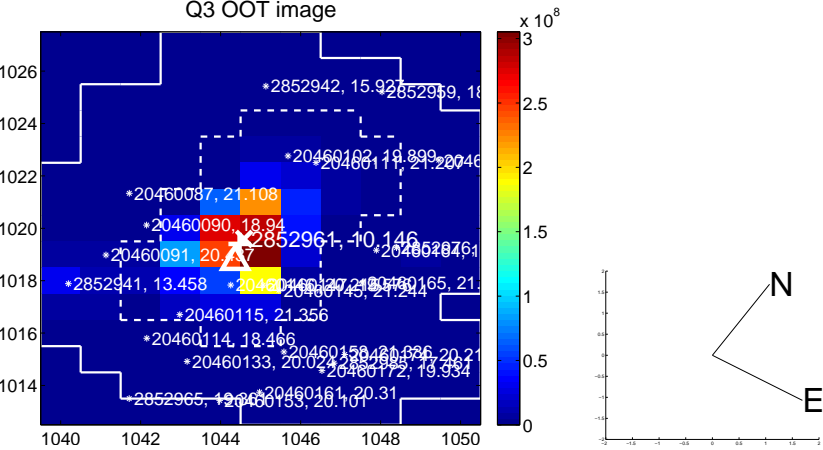
Q2 no OOT image



Q3 difference image. Poor Quality



Q3 OOT image



Q4 no difference image



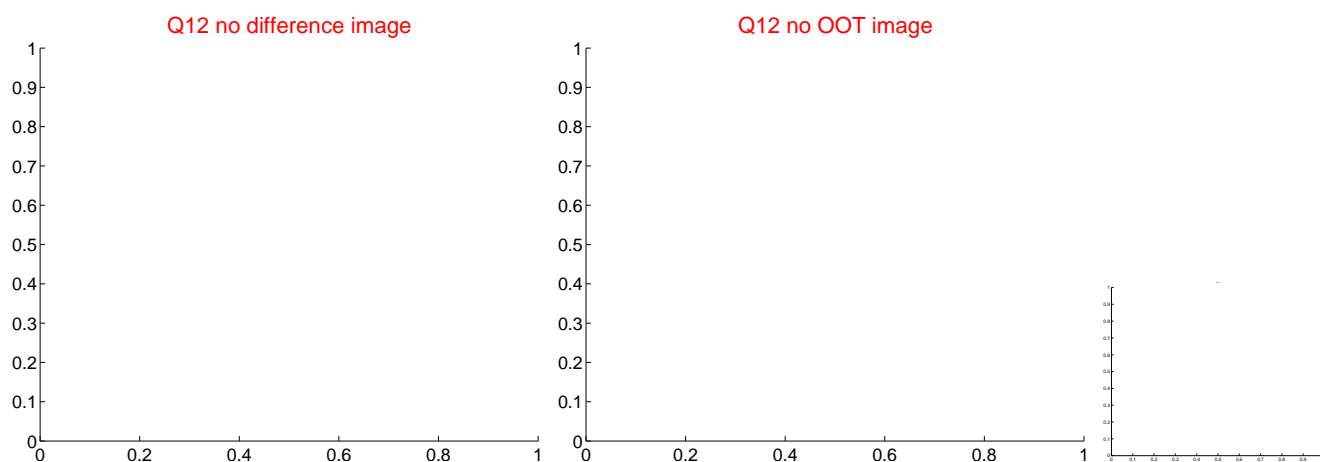
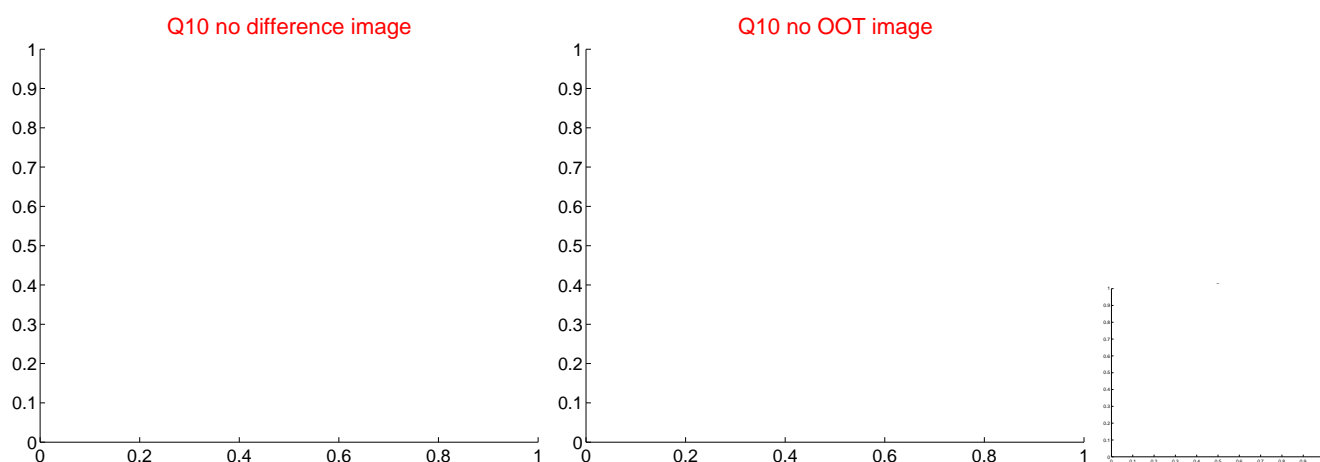
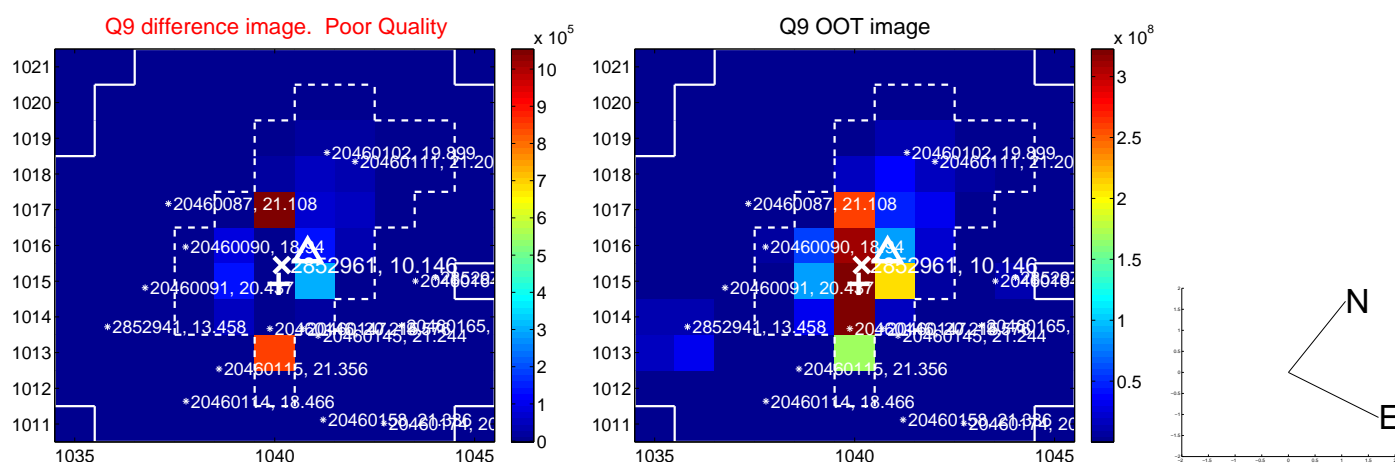
Q4 no OOT image



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



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

Q13 no difference image



Q13 no OOT image



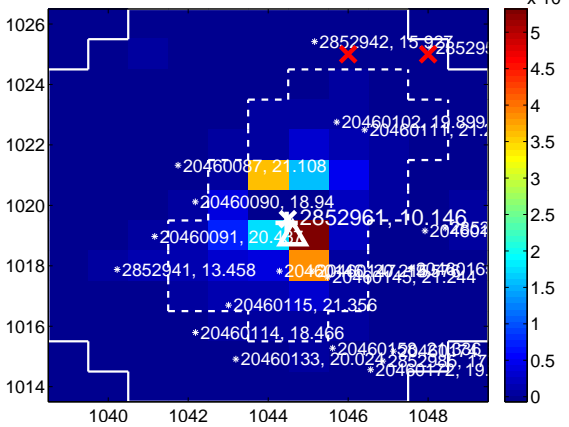
Q14 no difference image



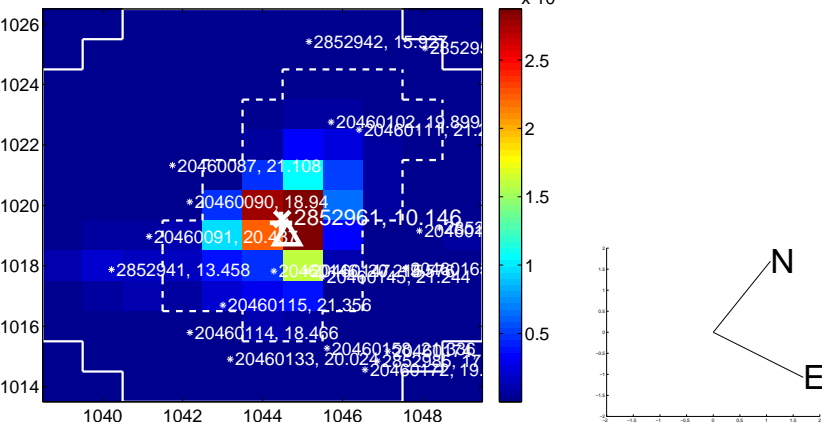
Q14 no OOT image



Q15 difference image



Q15 OOT image



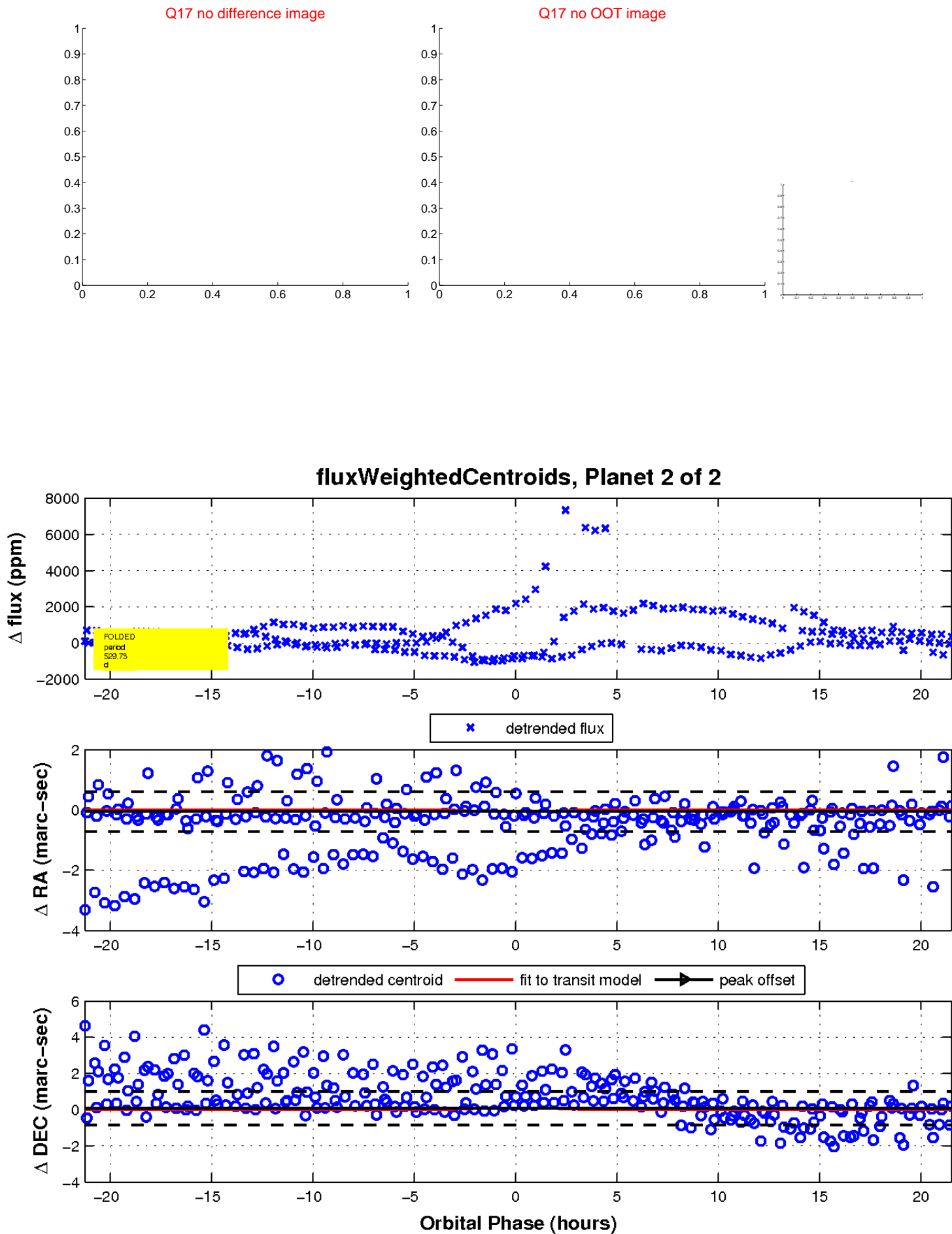
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

