

KIC 004249611

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})
004249611-01	OBS	2821.01	79.245077	161.569983	1388.6	5.421	12.4	14.9	0.92	5648	3.57	6.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004249611-01	OBS	PC	0.98	0	0	0	0	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 004249611-01

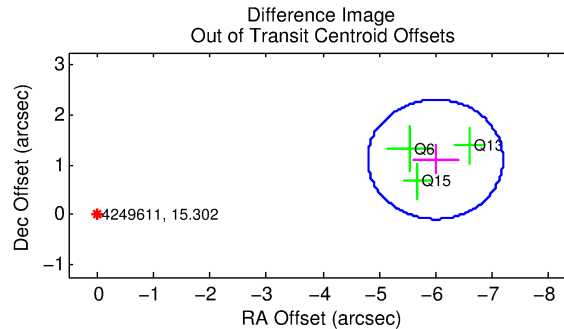
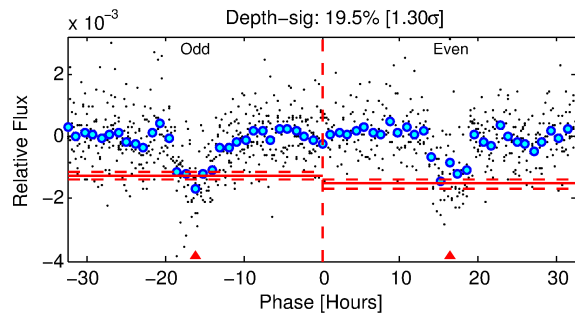
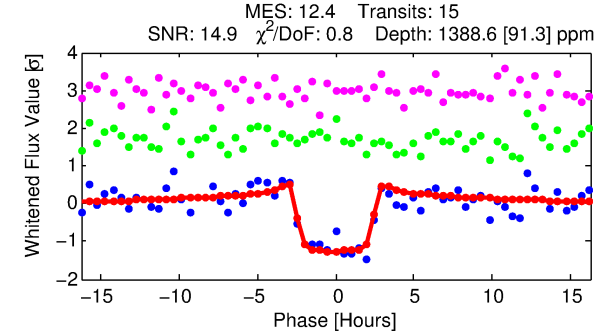
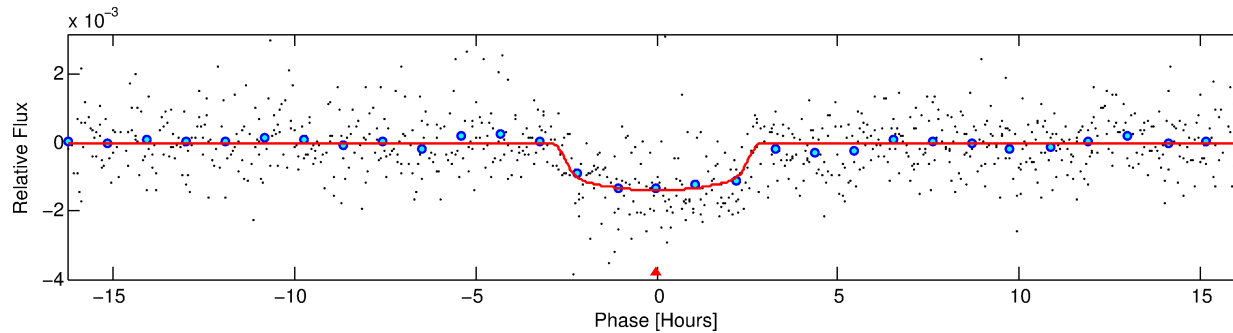
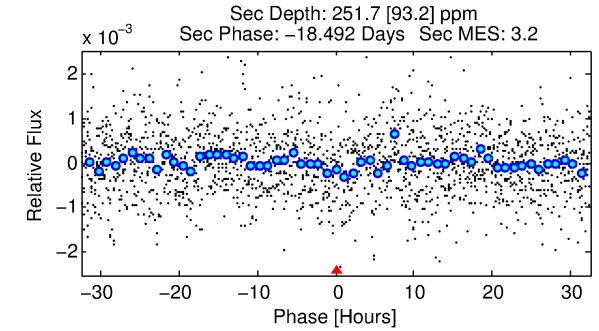
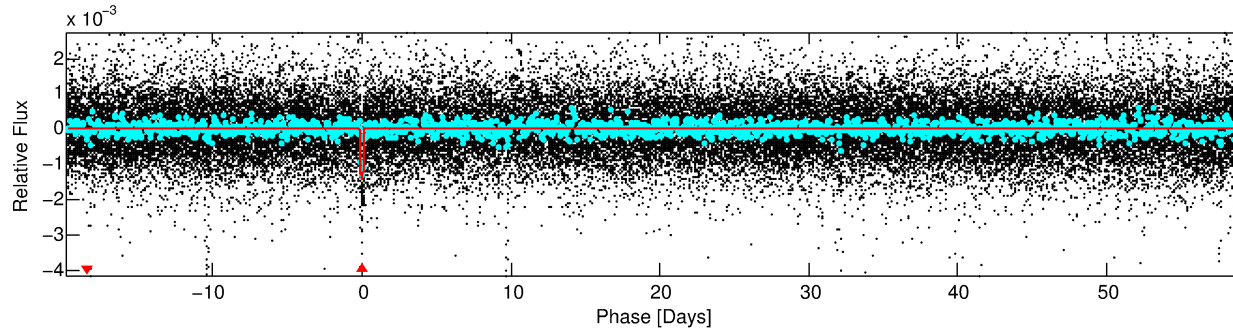
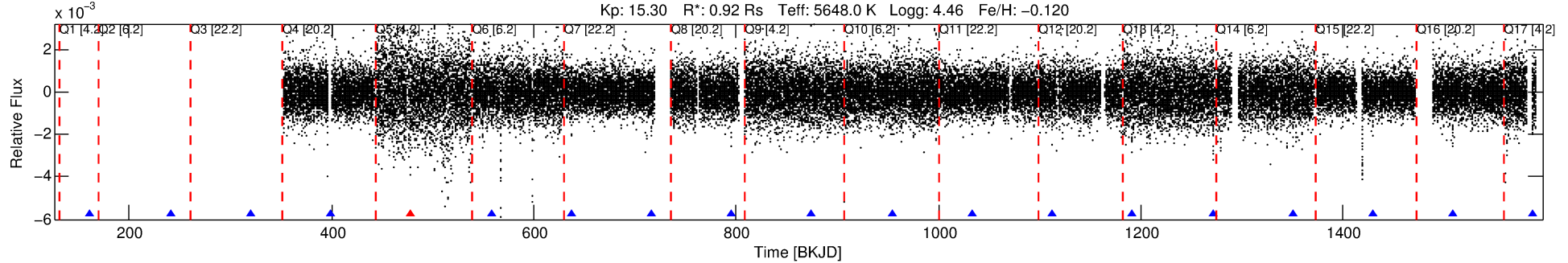
No Significant Match Found

DV One-Page Summary

KIC: 4249611 Candidate: 1 of 1 Period: 79.245 d

KOI: K02821.01 Corr: 0.986

Kp: 15.30 R*: 0.92 Rs Teff: 5648.0 K Logg: 4.46 Fe/H: -0.120



DV Fit Results:

Period = 79.24508 [0.00065] d
Epoch = 161.5700 [0.0078] BKJD
Rp/R* = 0.0357 [0.0140]
a/R* = 92.24 [151.85]
b = 0.62 [1.63]
Seff = 6.34 [2.23]
Teq = 405 [36] K
Rp = 3.57 [1.71] Re
a = 0.3477 [0.0794] AU
Ag = 1311.24 [1212.16] [1.08σ]
Teff = 3765 [824] K [4.08σ]

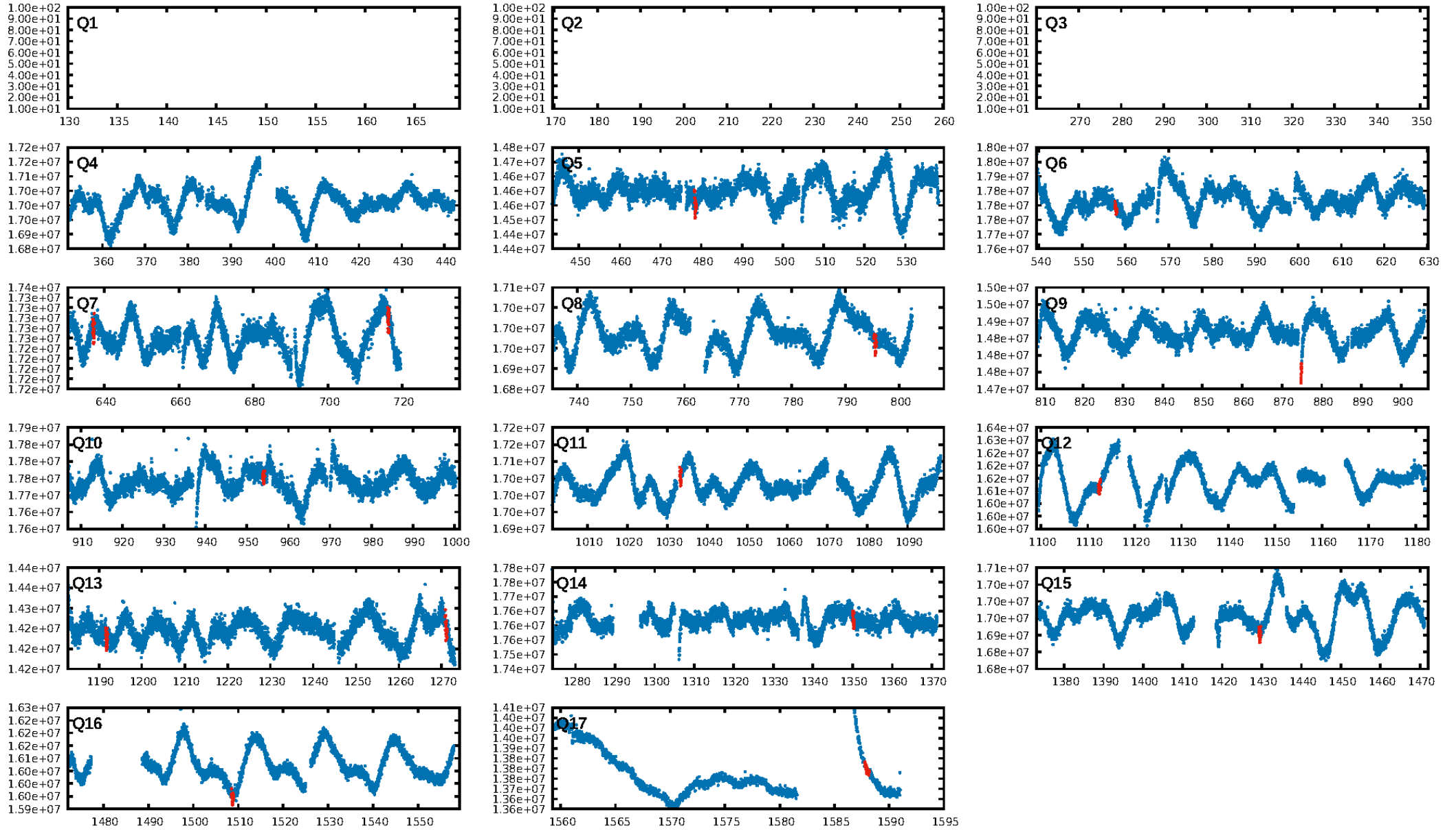
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 11.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.43e-33
RollingBand-fgt: 0.93 [13/14]
GhostDiagnostic-chr: 3.108
Centroid-sig: 0.0%
Centroid-so: 3.838 arcsec [33.09σ]
OotOffset-rm: 6.092 arcsec [15.27σ]
KicOffset-rm: 0.211 arcsec [0.70σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/3/1 [6]
DiffImageQuality-fgm: 0.50 [3/6]
DiffImageOverlap-fno: 1.00 [10/10]

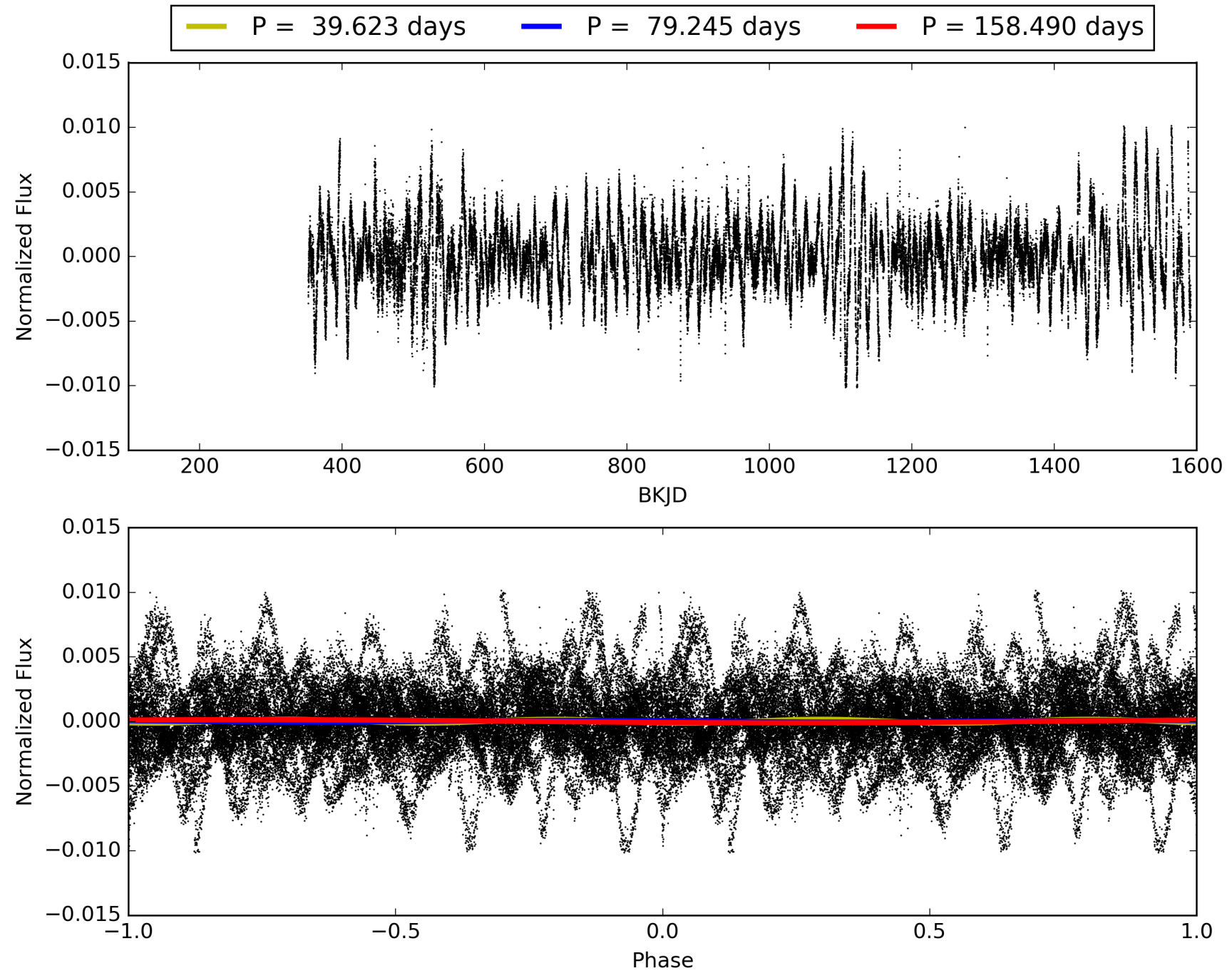
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:25:32 Z

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

TCE 004249611-01, PDC Light Curves

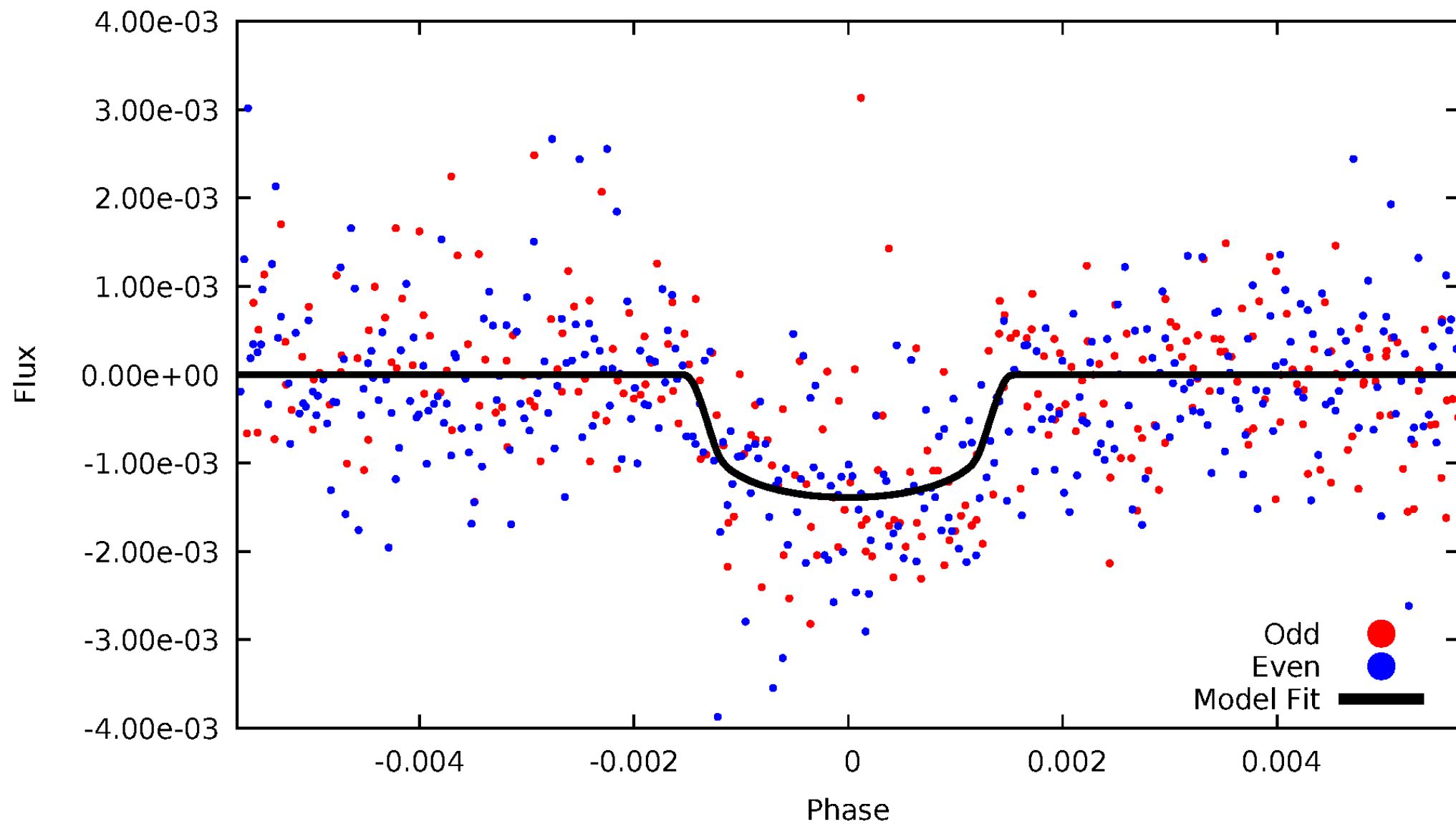


TCE 004249611-01



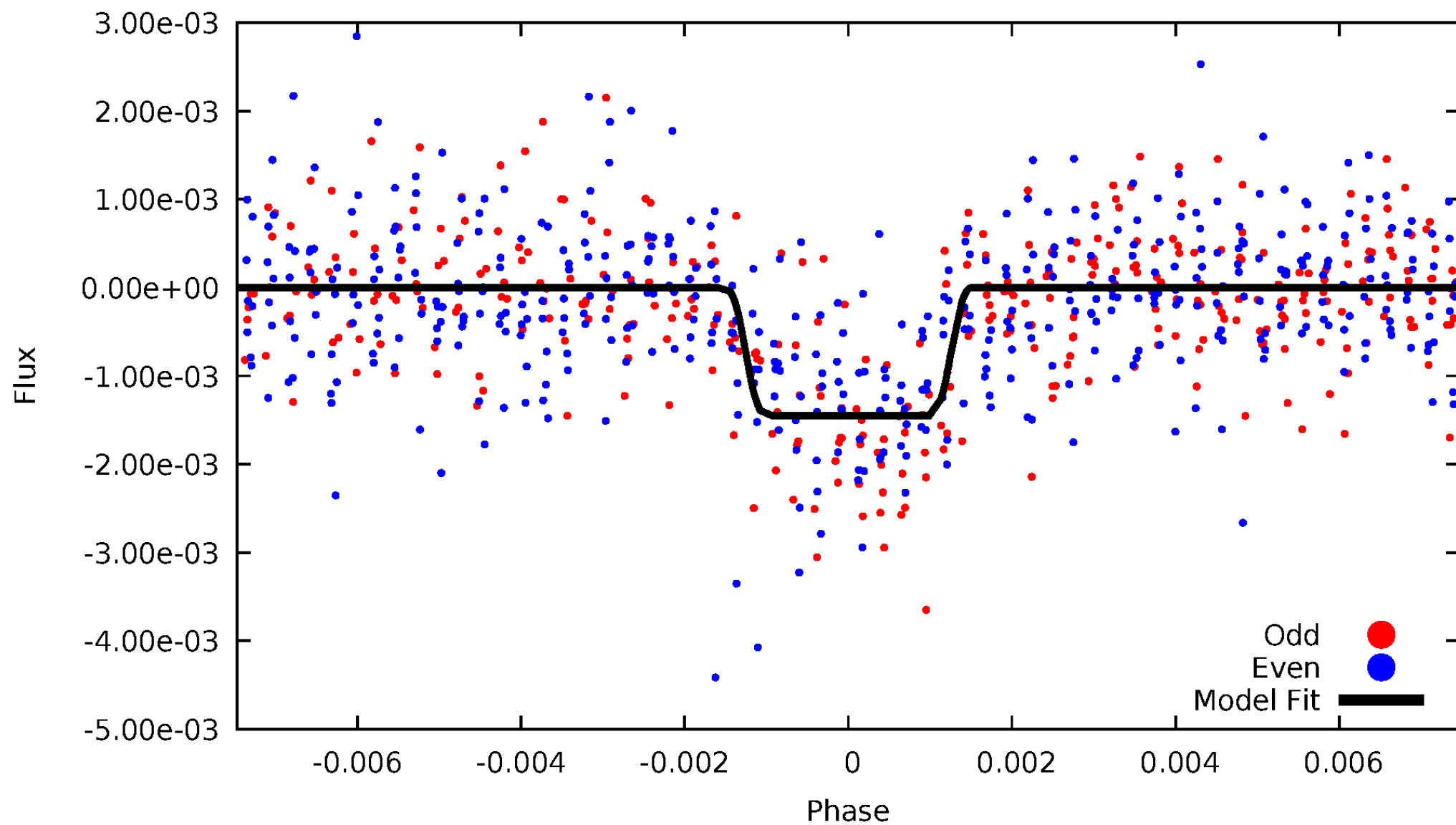
DV Odd/Even

TCE 004249611-01



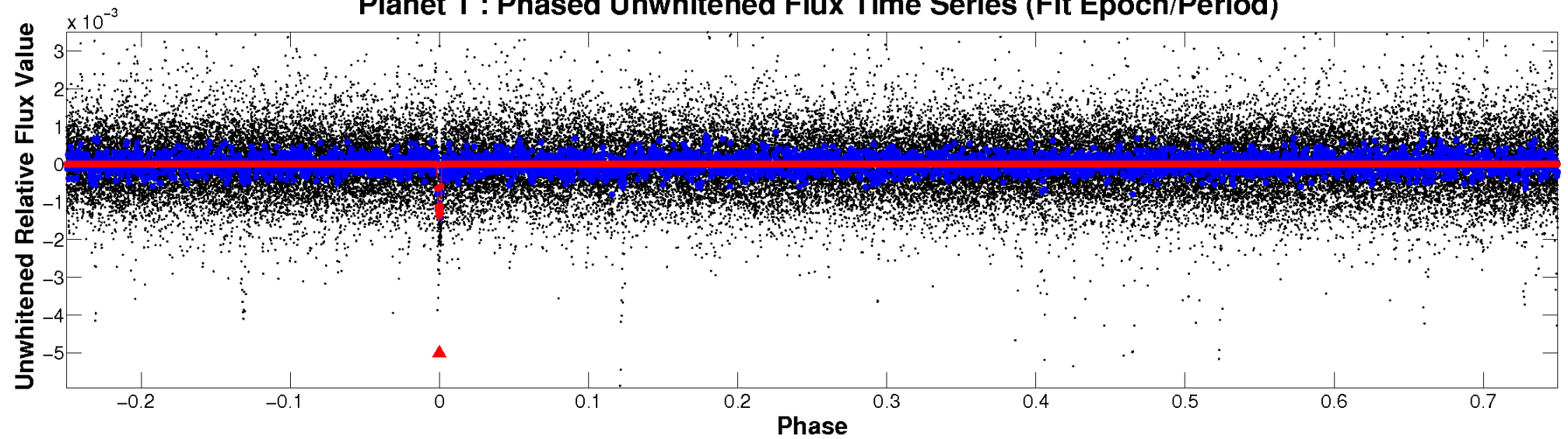
ALT Odd/Even

TCE 004249611-01

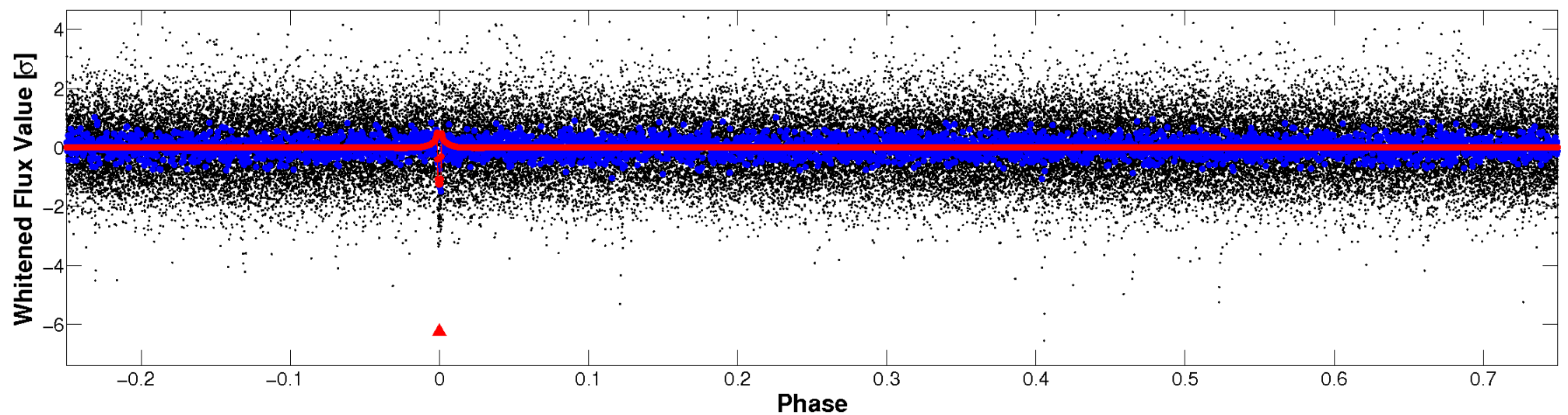


Non-Whitened Vs. Whitened Light Curve

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

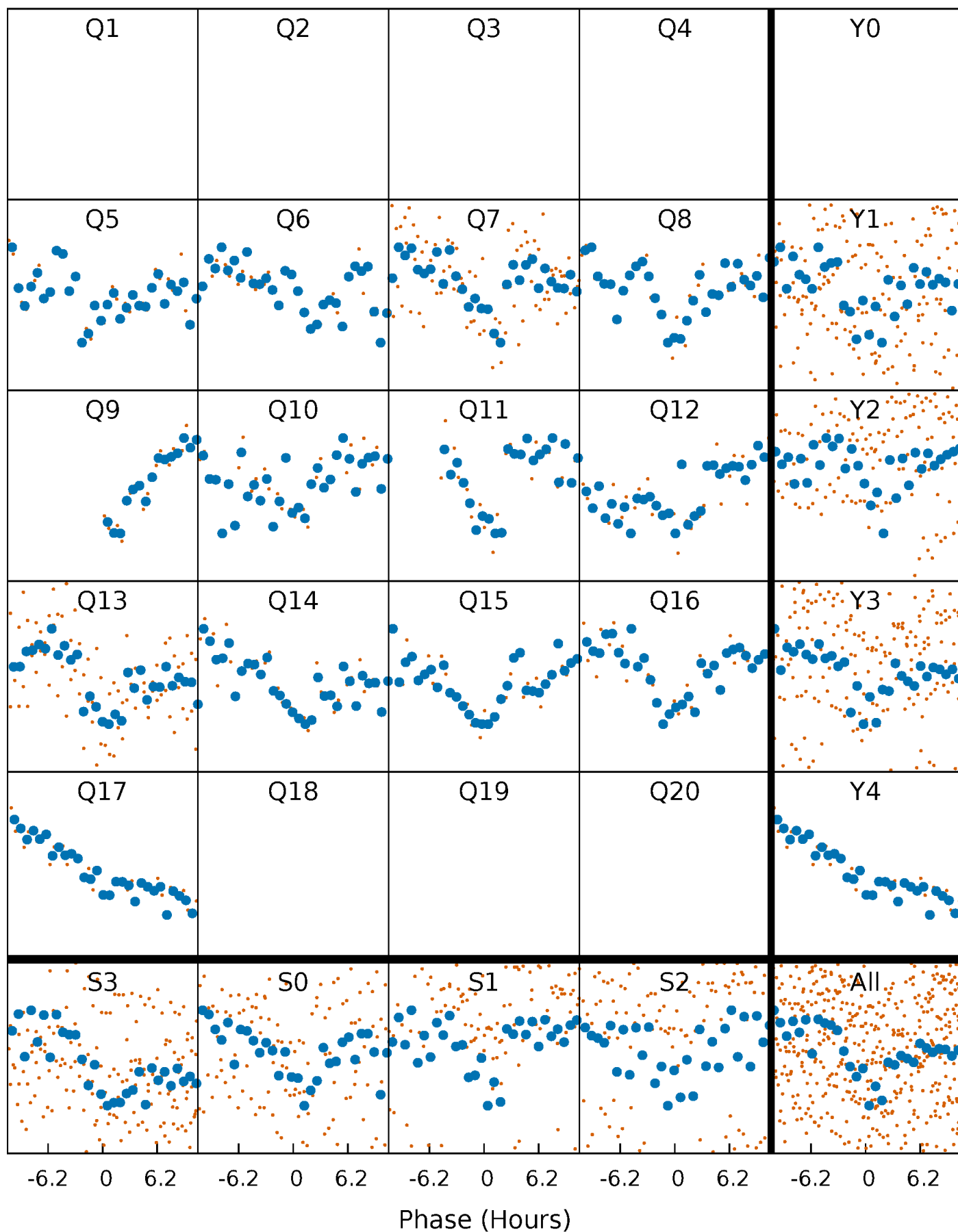


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



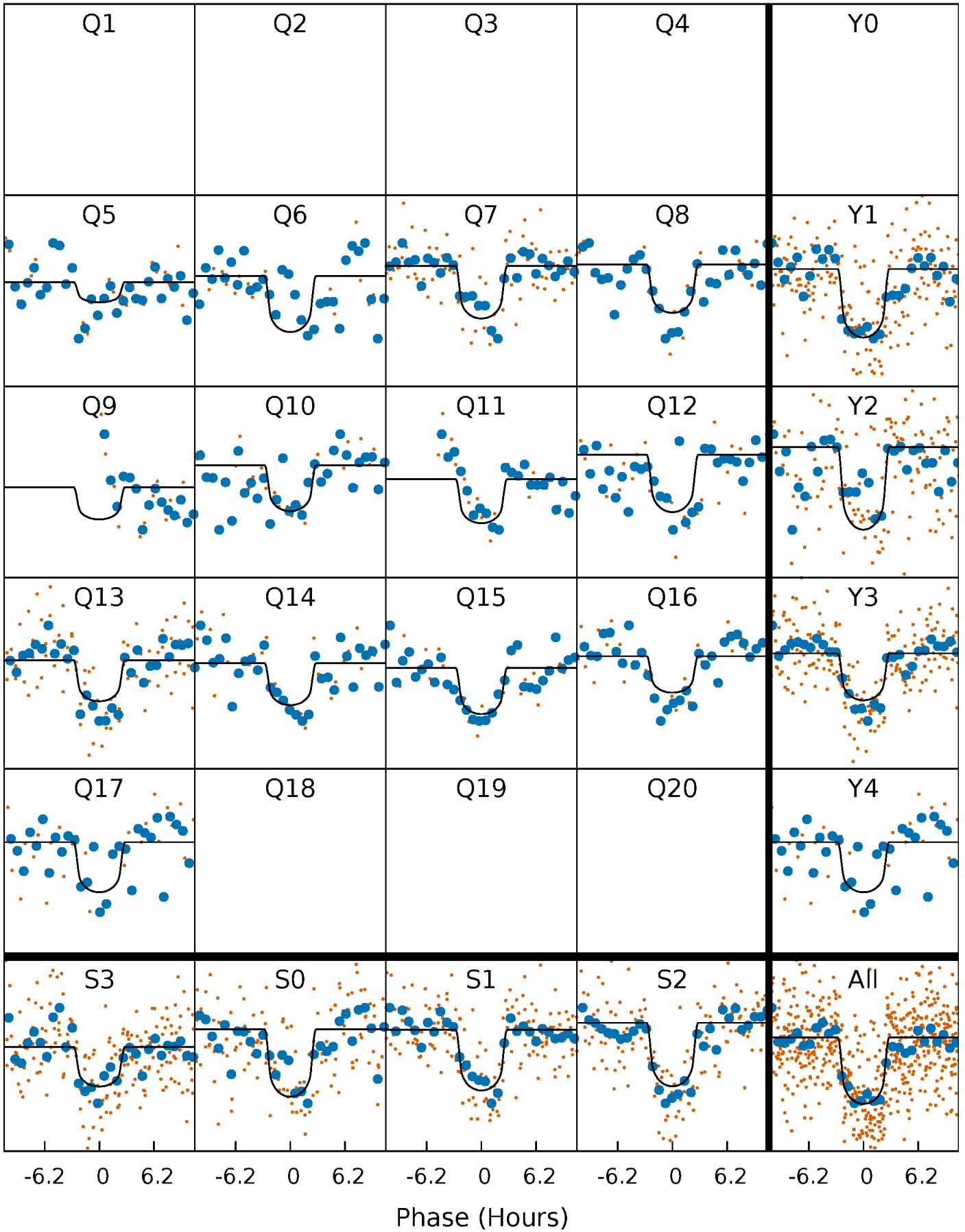
PDC Quarter-Phased Transit Curves

TCE 004249611-01 P= 79.245077 Days $T_0=161.569983$ (BKJD)



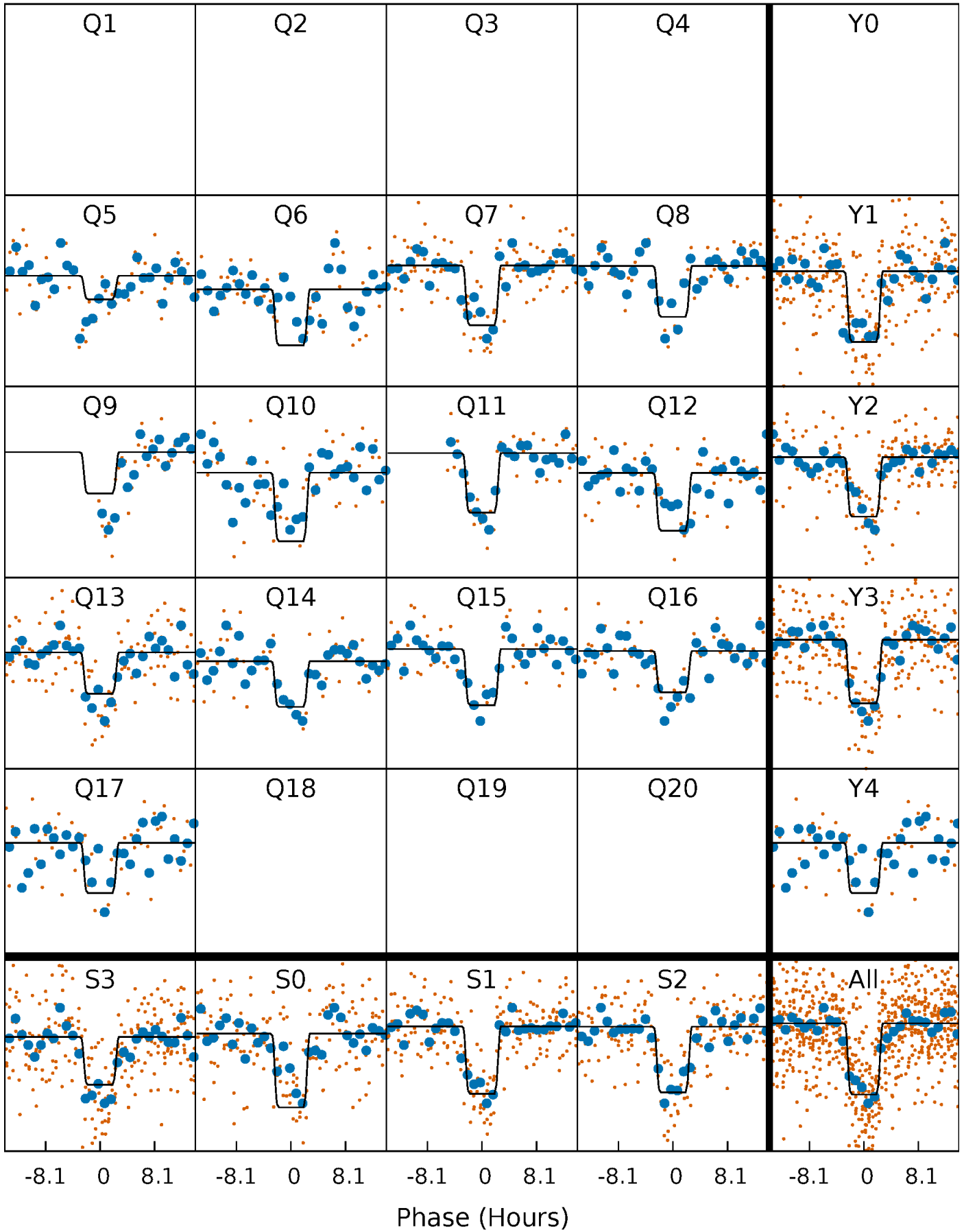
DV Quarter-Phased Transit Curves

TCE 004249611-01 $P = 79.245077$ Days $T_0 = 161.569983$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

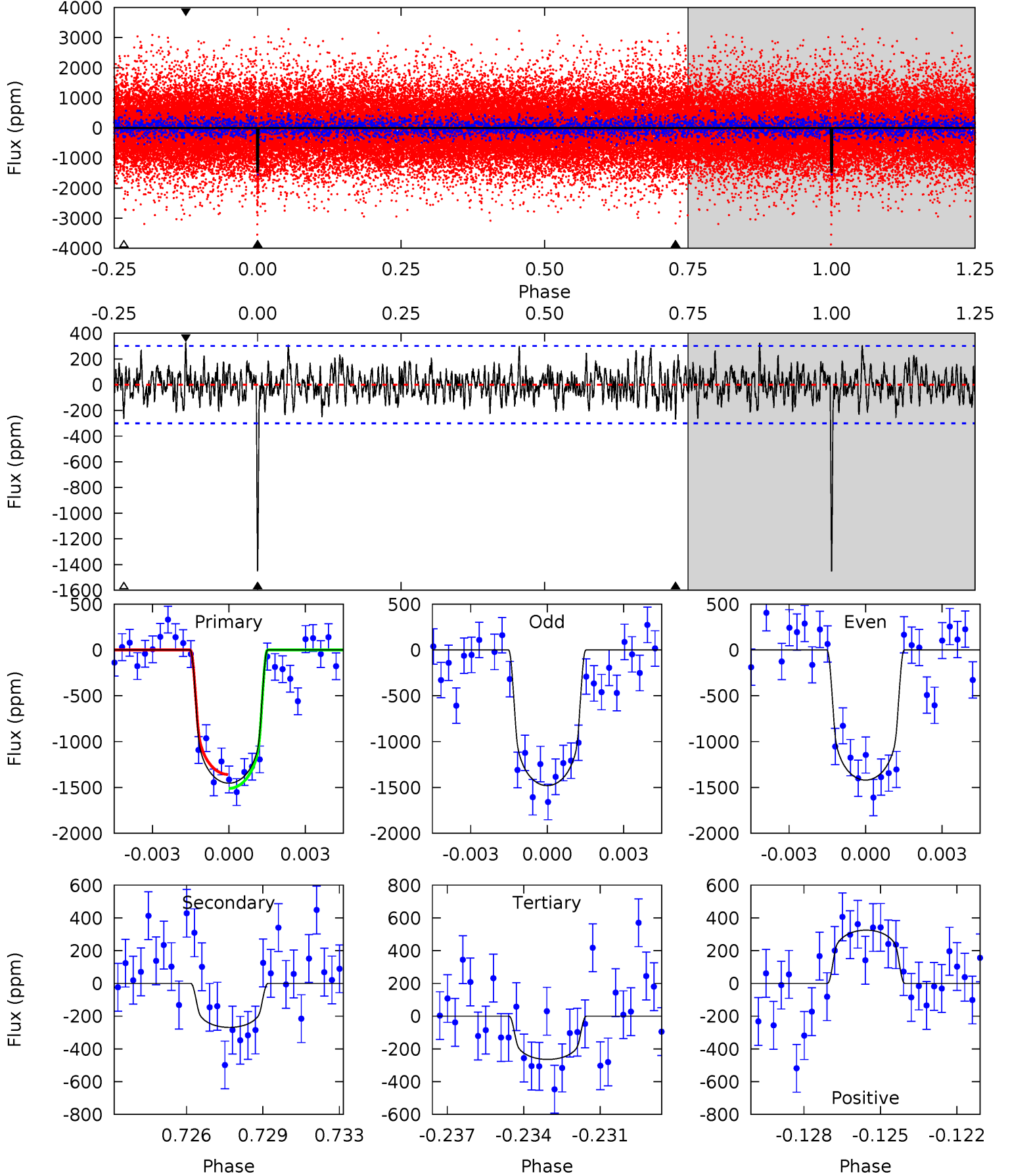
TCE 004249611-01 P= 79.241765 Days $T_0=161.615470$ (BKJD)



DV Model-Shift Uniqueness Test

004249611-01, P = 79.245077 Days, E = 161.569983 Days

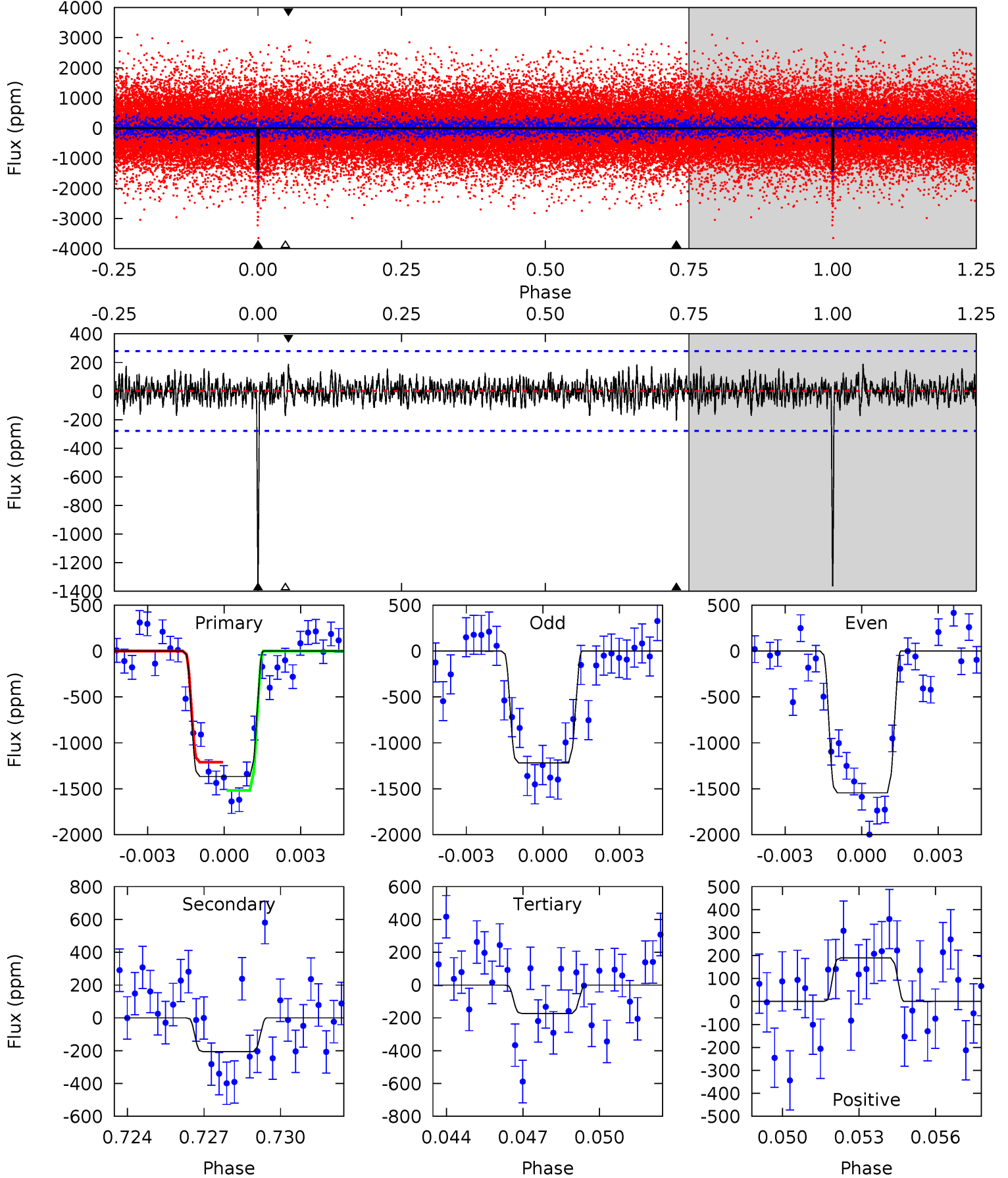
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.3	4.68	4.60	5.66	5.25	2.96	1.58	20.7	19.6	0.07	-0.98	0.53	0.87	0.18	1.31



Alt Model-Shift Uniqueness Test

004249611-01, $P = 79.241765$ Days, $E = 161.615470$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.8	3.89	3.27	3.58	5.26	2.97	1.05	22.5	22.2	0.62	0.31	3.09	0.99	0.12	2.90



Stellar Parameters For KIC 004249611

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5648^{+169}_{-186}	$4.464^{+0.094}_{-0.175}$	$-0.120^{+0.300}_{-0.300}$	$0.917^{+0.254}_{-0.127}$	$0.892^{+0.115}_{-0.083}$	$1.631^{+0.668}_{-0.774}$
	+3%/-3%	+2%/-4%	+250%/-250%	+28%/-14%	+13%/-9%	+41%/-47%
Source	KIC0	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 004249611-01 / KOI 2821.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-269 ± 57	$3.68^{+1.59}_{-1.39}$	570^{+40}_{-30}	4084^{+892}_{-489}	1315^{+2102}_{-701}
Alt.	-206 ± 53	$3.87^{+1.66}_{-1.48}$	572^{+37}_{-31}	3827^{+709}_{-440}	888^{+1460}_{-483}

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

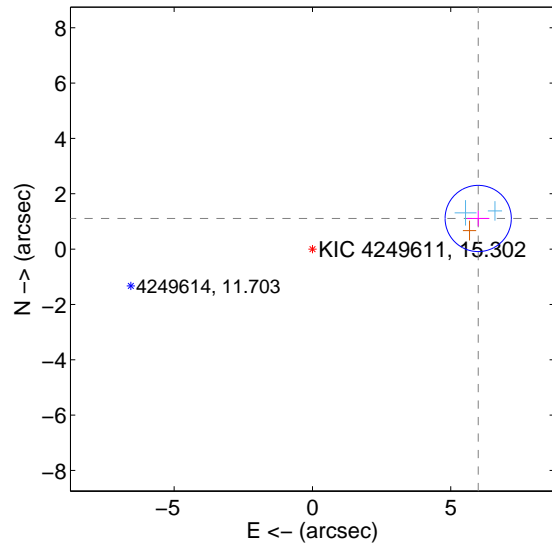
Supplemental centroid analysis for 004249611-01. Kepler magnitude: 15.30. Transit SNR 14.92

There are 3 quarters with good PRF difference image offsets

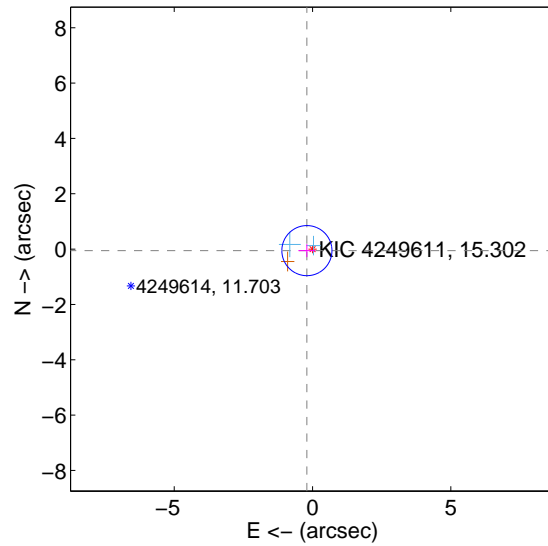
The OOT PRF centroid is offset from the target star catalog position by about 6.67 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.092 ± 0.399	15.27	-5.991 ± 0.402	1.107 ± 0.279
PRF-fit source offset from KIC position	0.211 ± 0.302	0.70	0.203 ± 0.306	-0.055 ± 0.234
photometric centroid source offset	3.84 ± 0.12	33.09	3.77 ± 0.12	-0.72 ± 0.08

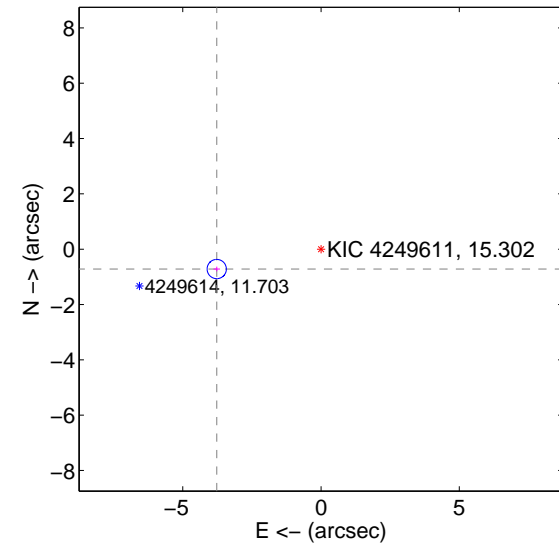
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

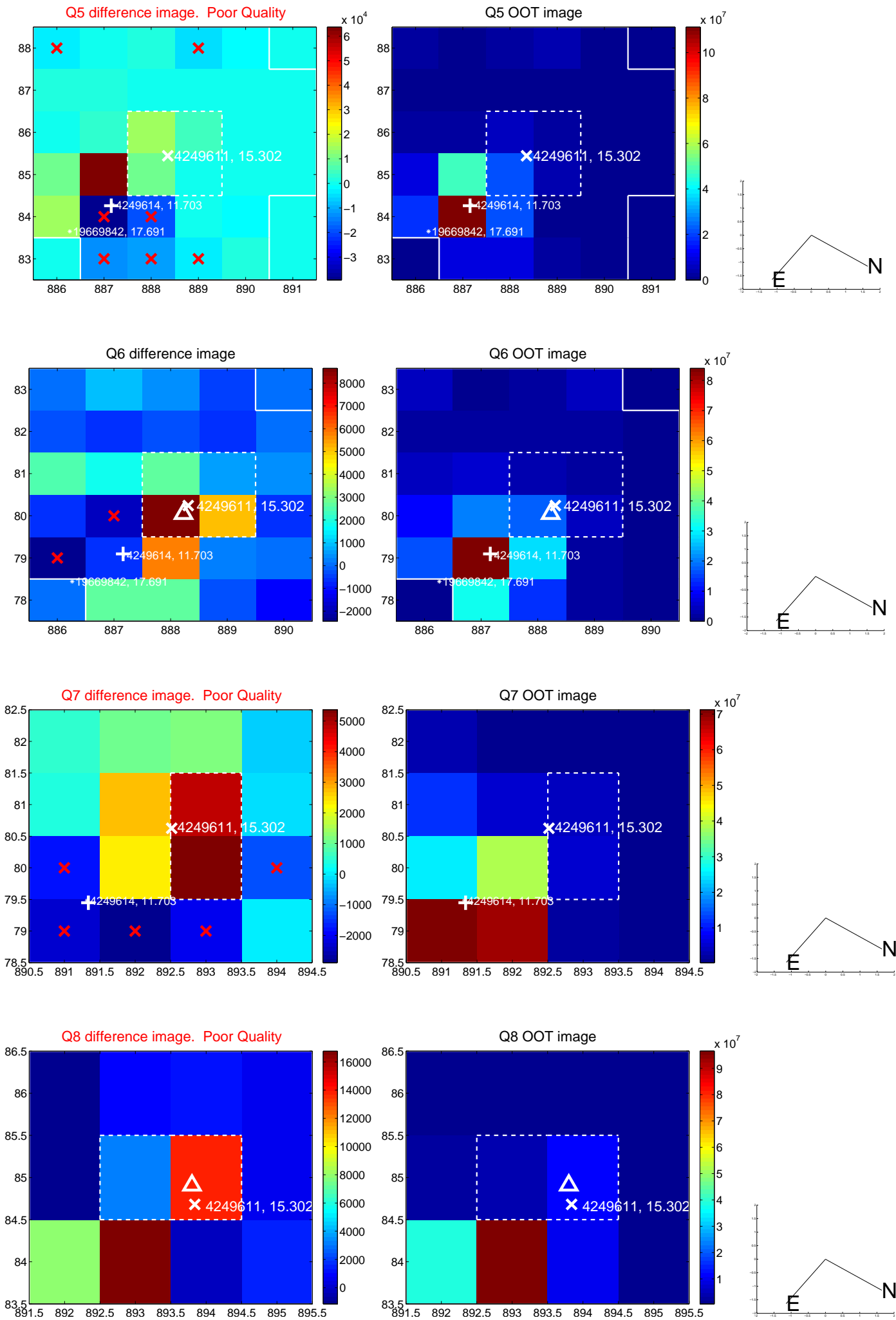


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

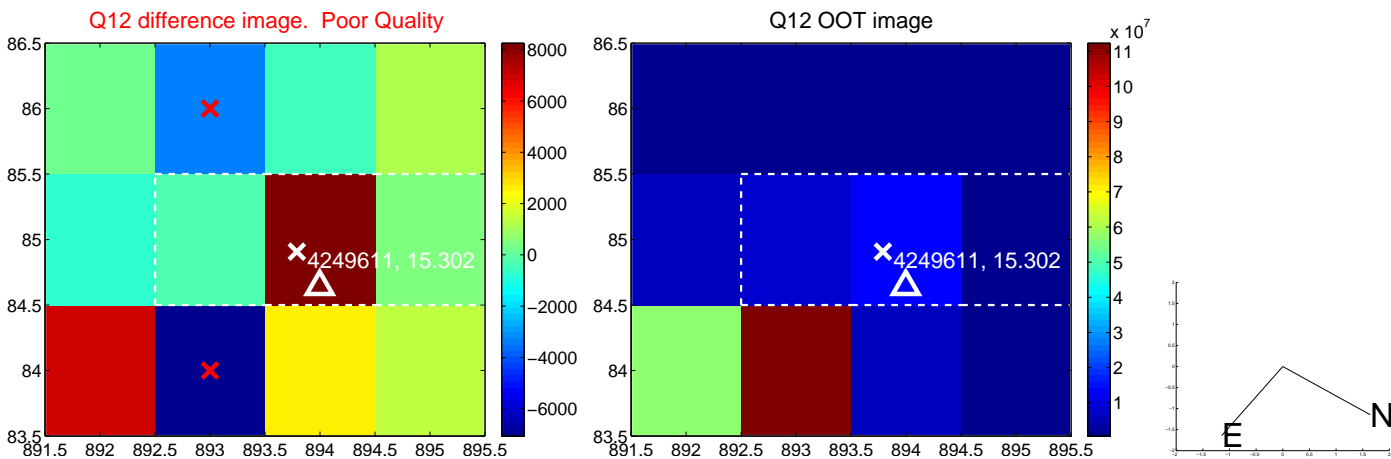
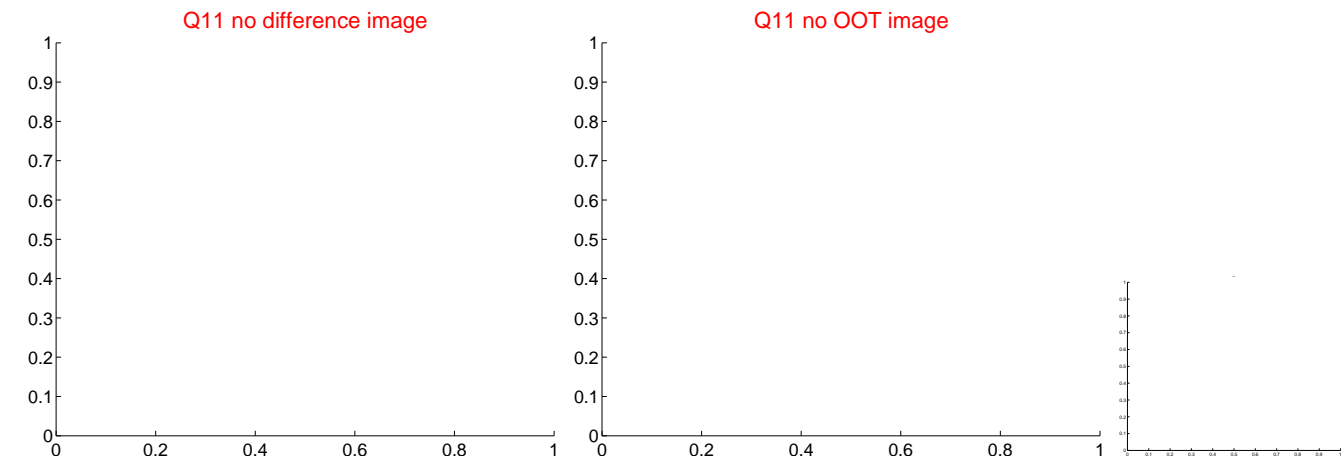
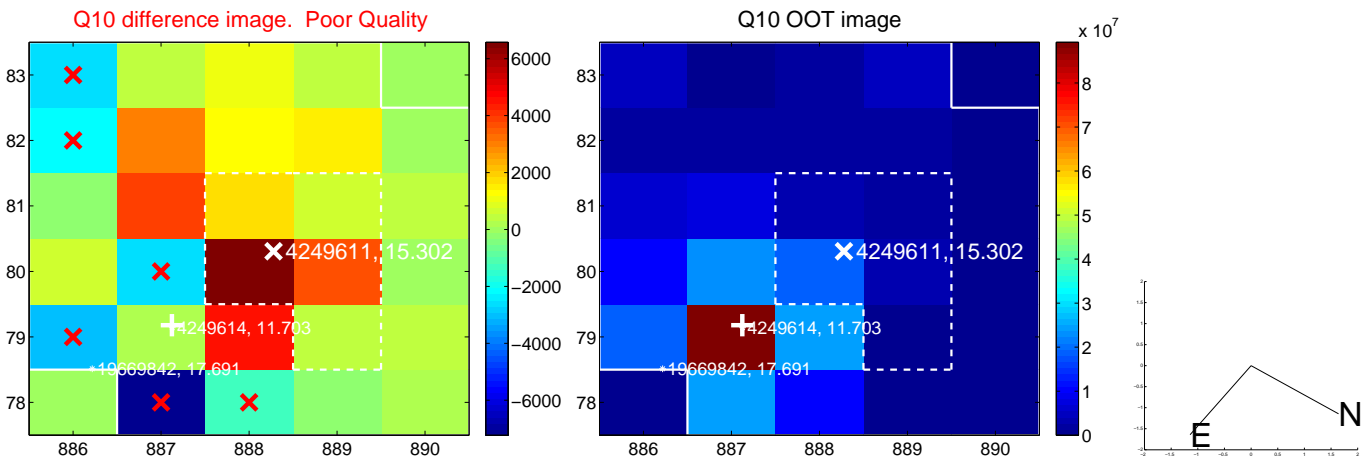
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



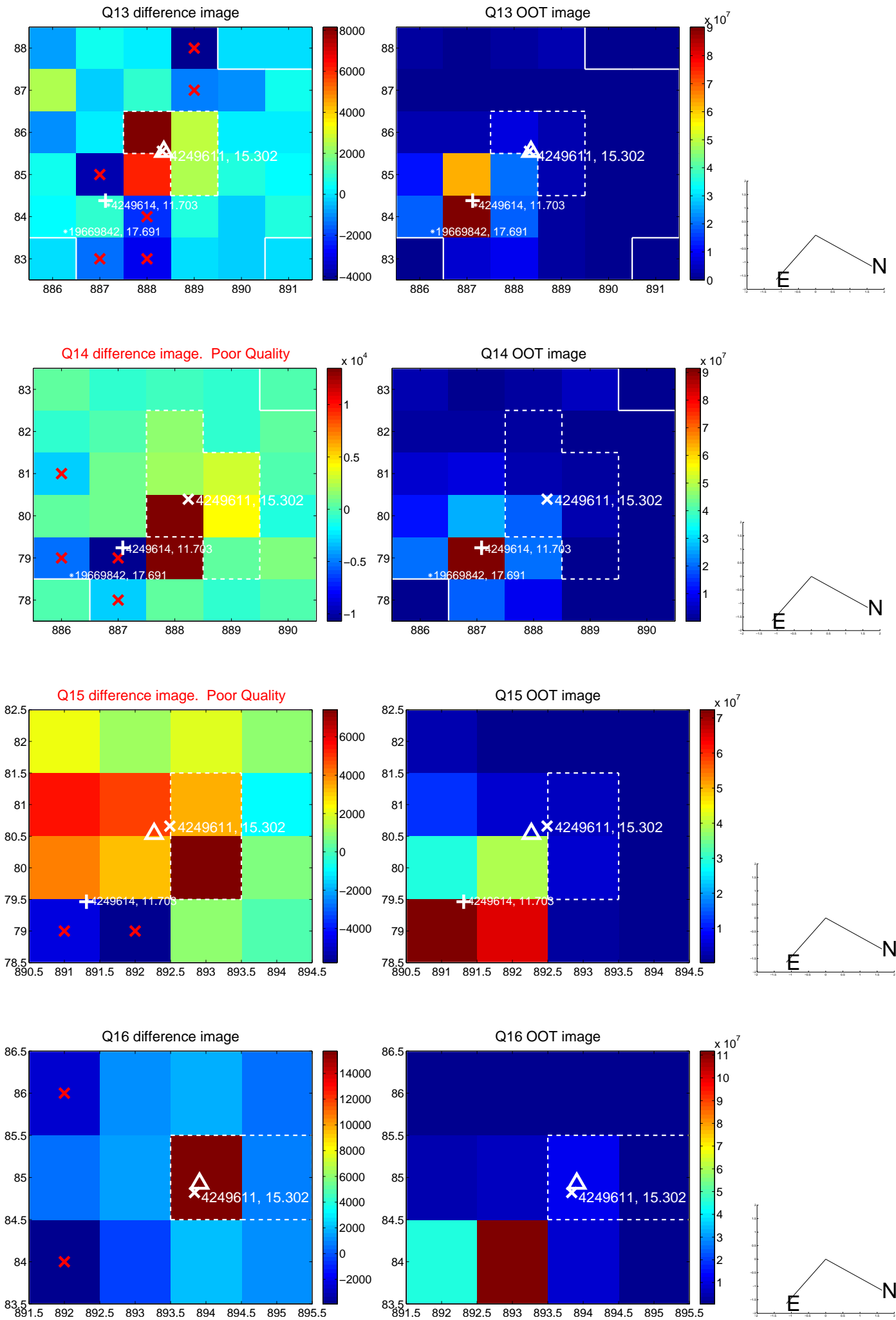
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



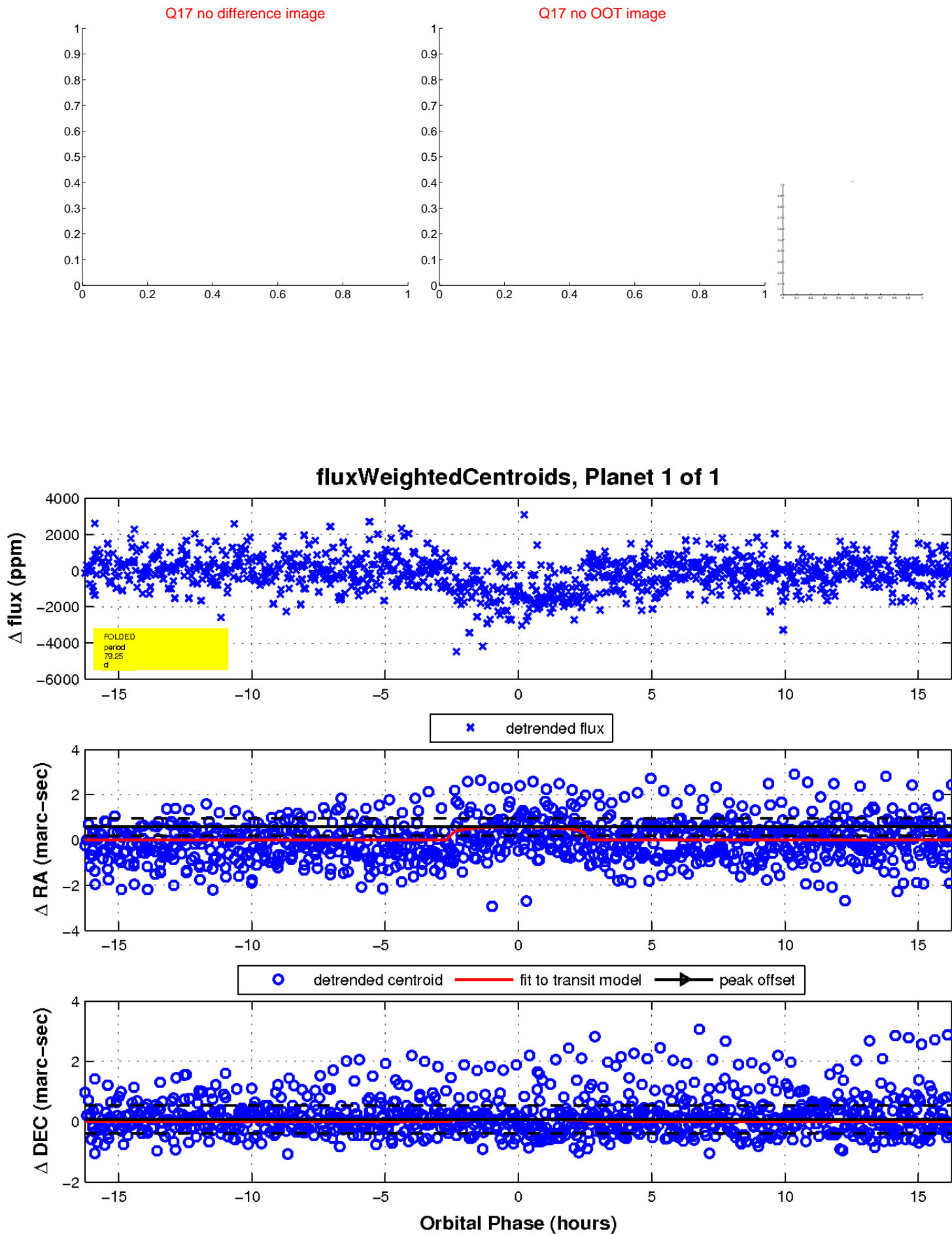
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

