

KIC 008227274

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})
008227274-01	OBS	No	416.810909	174.591503	969.6	25.172	11.7	9.3	0.90	5631	5.44	0.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008227274-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—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.

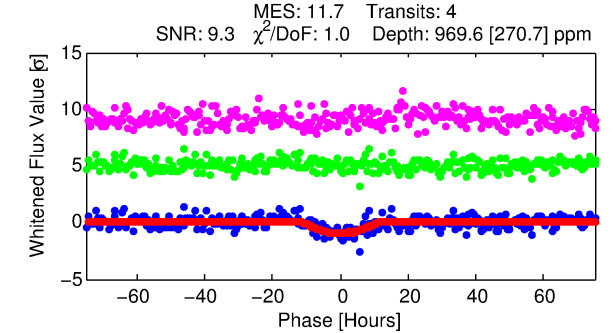
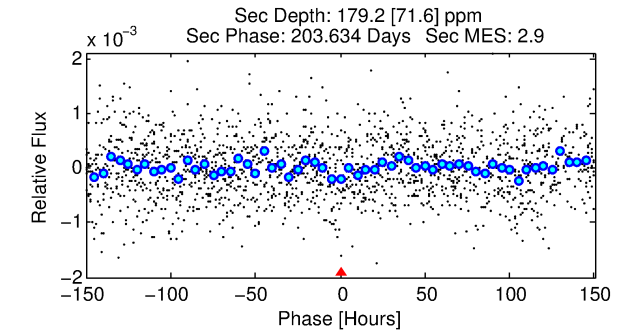
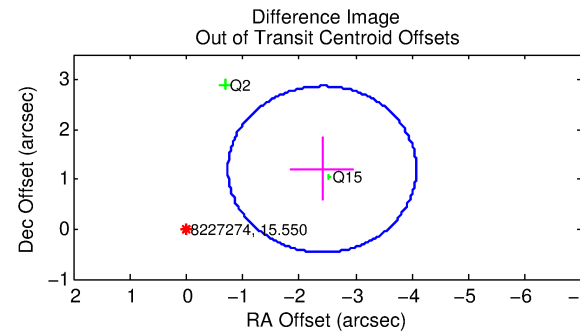
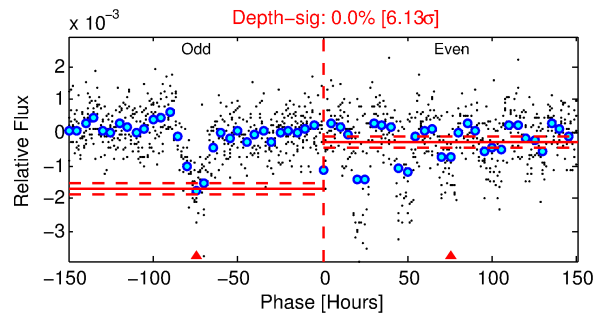
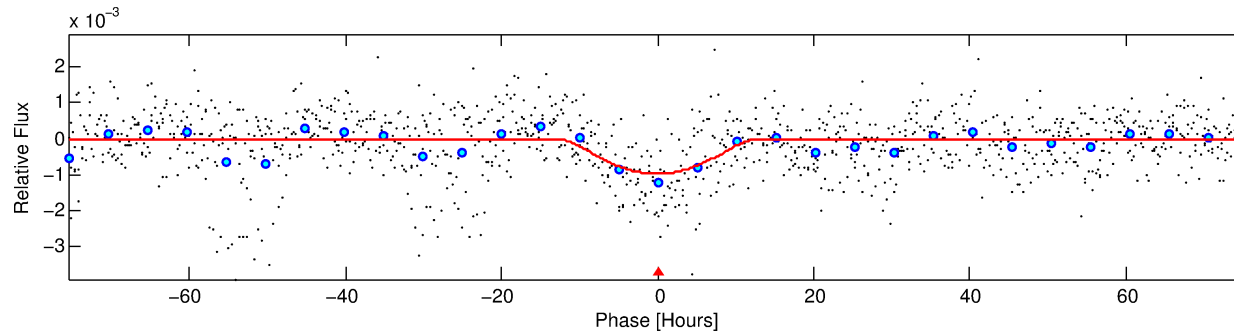
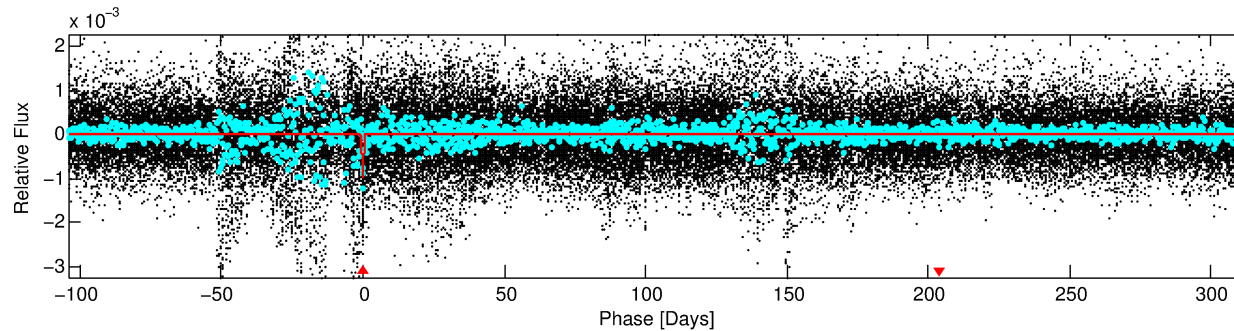
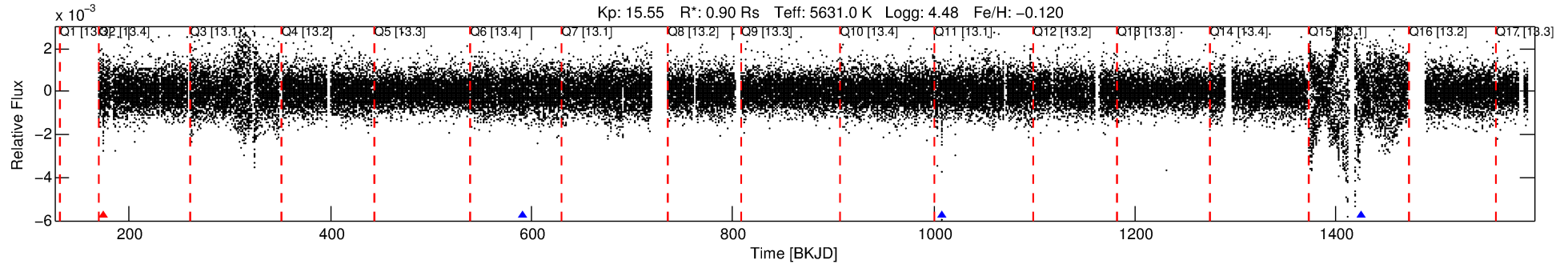
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008227274-01

No Significant Match Found

DV One-Page Summary

KIC: 8227274 Candidate: 1 of 1 Period: 416.811 d



DV Fit Results:

Period = 416.81091 [0.03970] d
Epoch = 174.5915 [0.0497] BKJD
Rp/R* = 0.0554 [0.2079]
a/R* = 43.03 [38.10]
b = 1.00 [0.31]
Seff = 0.66 [0.23]
Teq = 230 [20] K
Rp = 5.44 [20.50] Re
a = 1.0507 [0.2386] AU
Ag = 3674.03 [27669.17] [0.13 σ]
Teffp = 2769 [5209] K [0.49 σ]

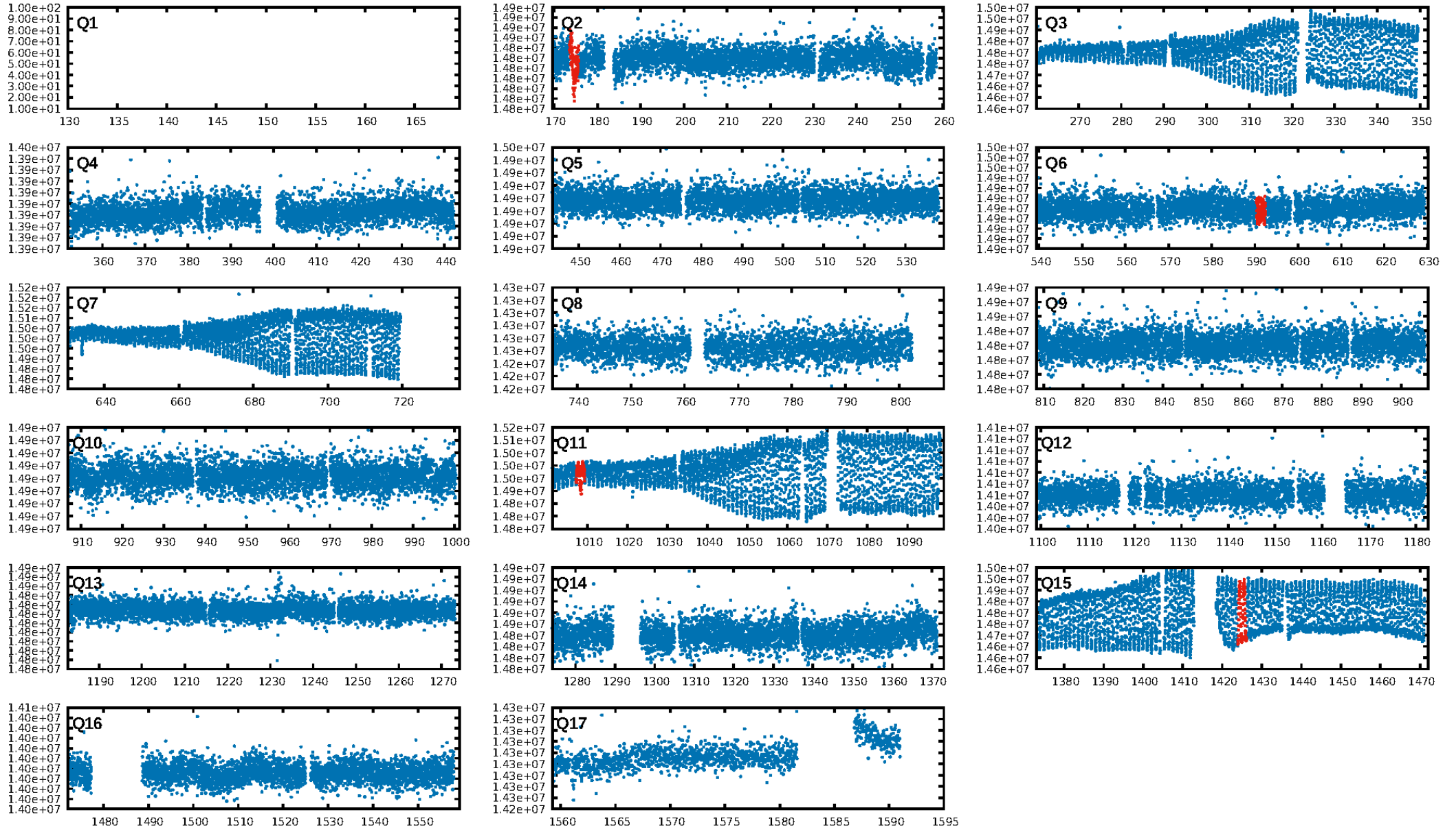
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.31e-22
RollingBand-fgt: 0.75 [3/4]
GhostDiagnostic-chr: 8.12
Centroid-sig: 36.8%
Centroid-so: 0.878 arcsec [0.78 σ]
OotOffset-rm: 2.687 arcsec [4.84 σ]
KicOffset-rm: 2.630 arcsec [4.67 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

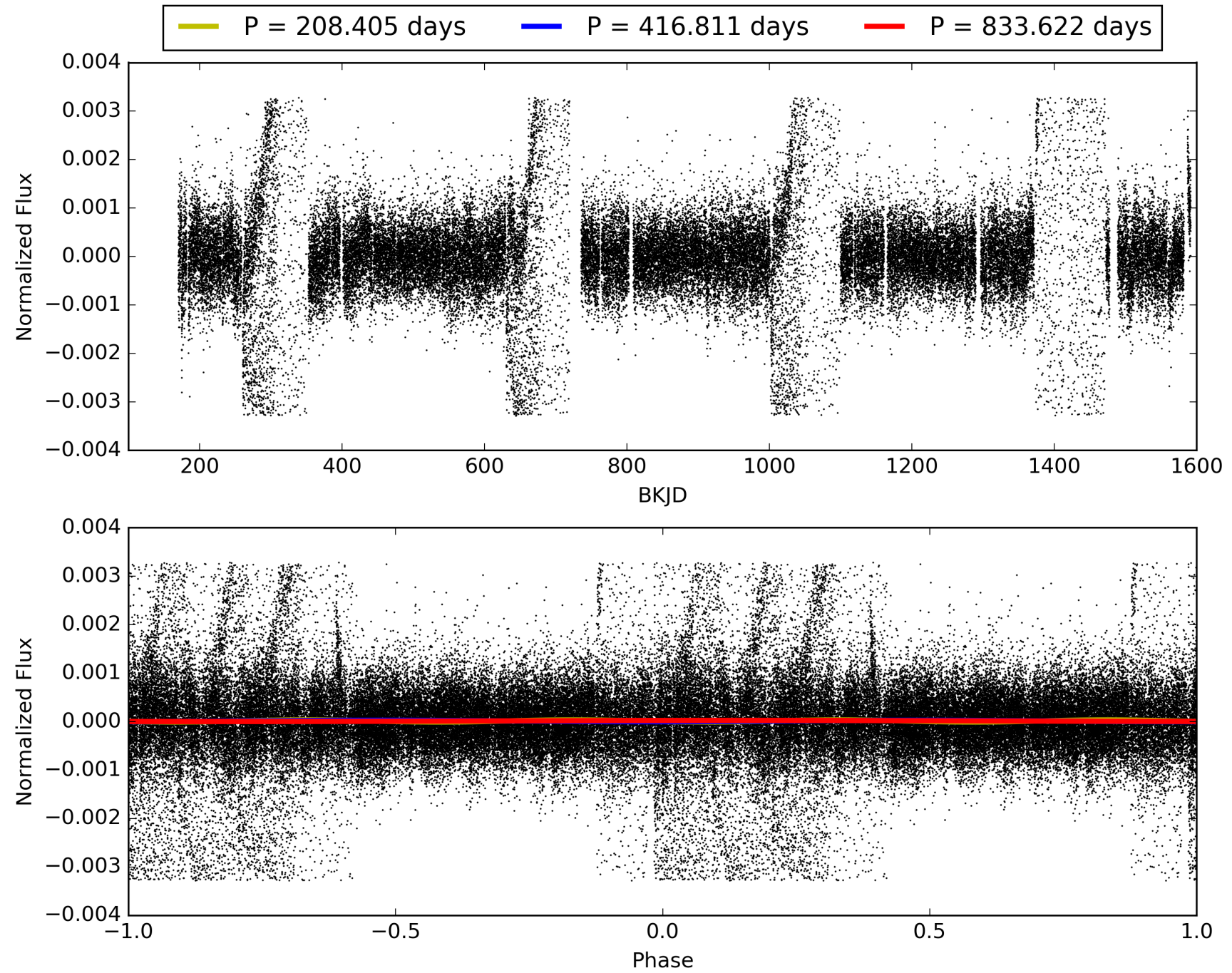
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:26:09 Z

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

TCE 008227274-01, PDC Light Curves

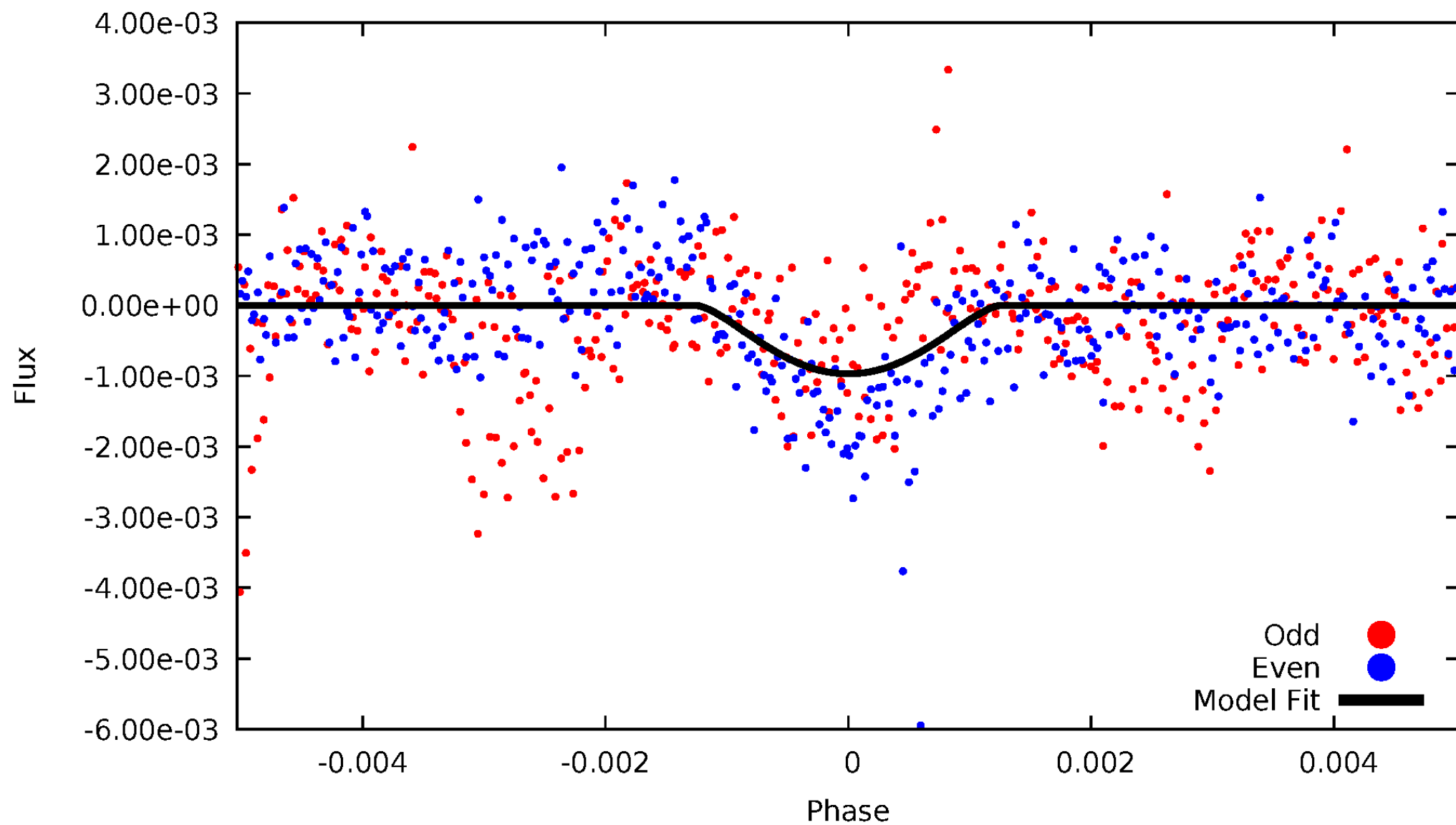


TCE 008227274-01



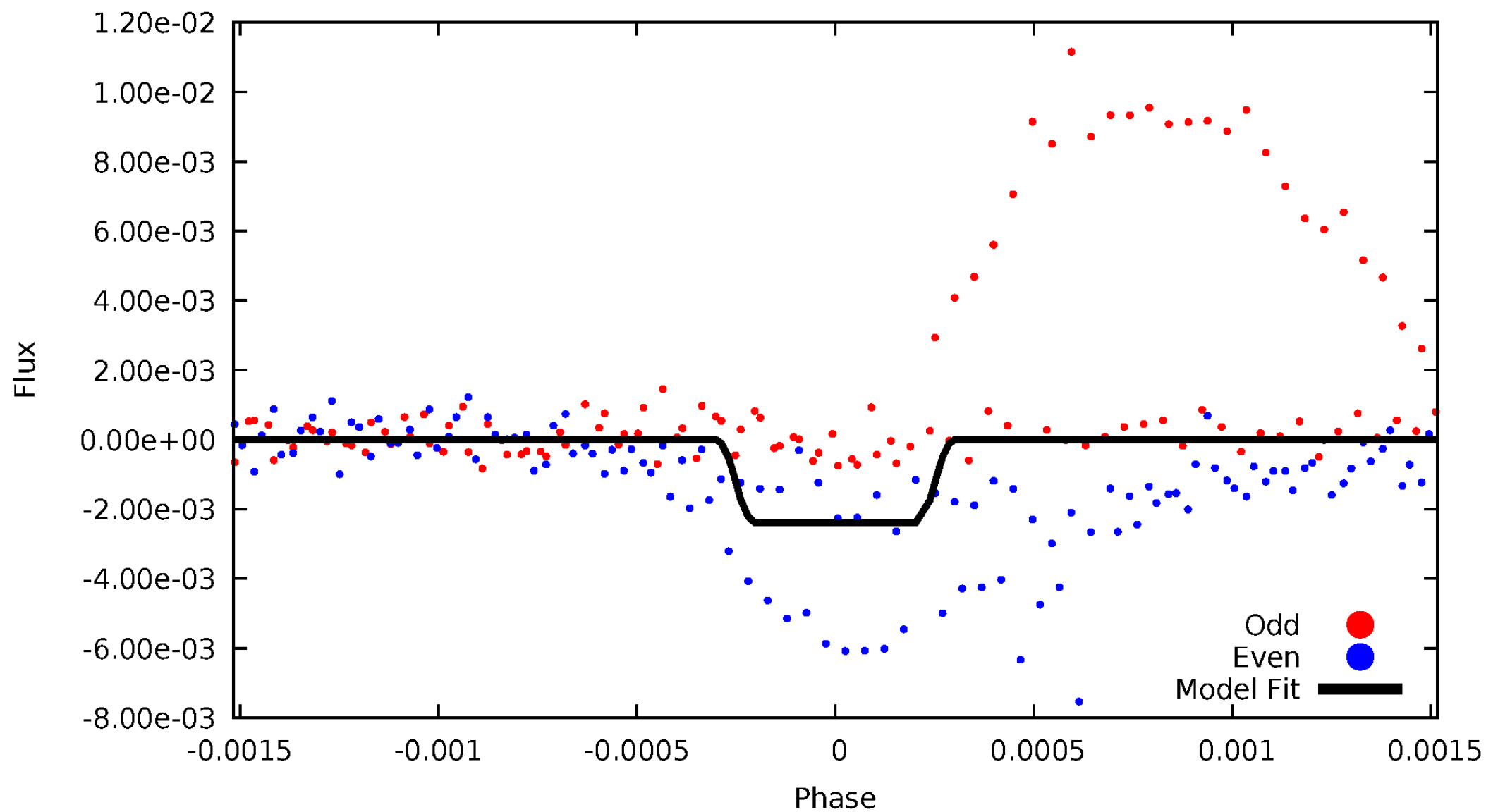
DV Odd/Even

TCE 008227274-01



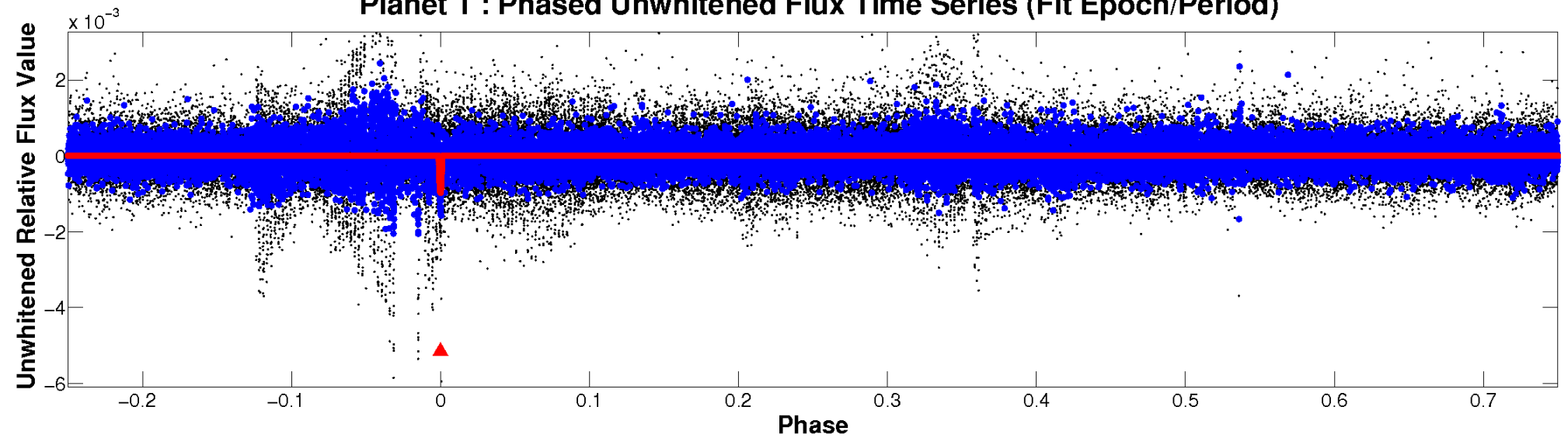
ALT Odd/Even

TCE 008227274-01

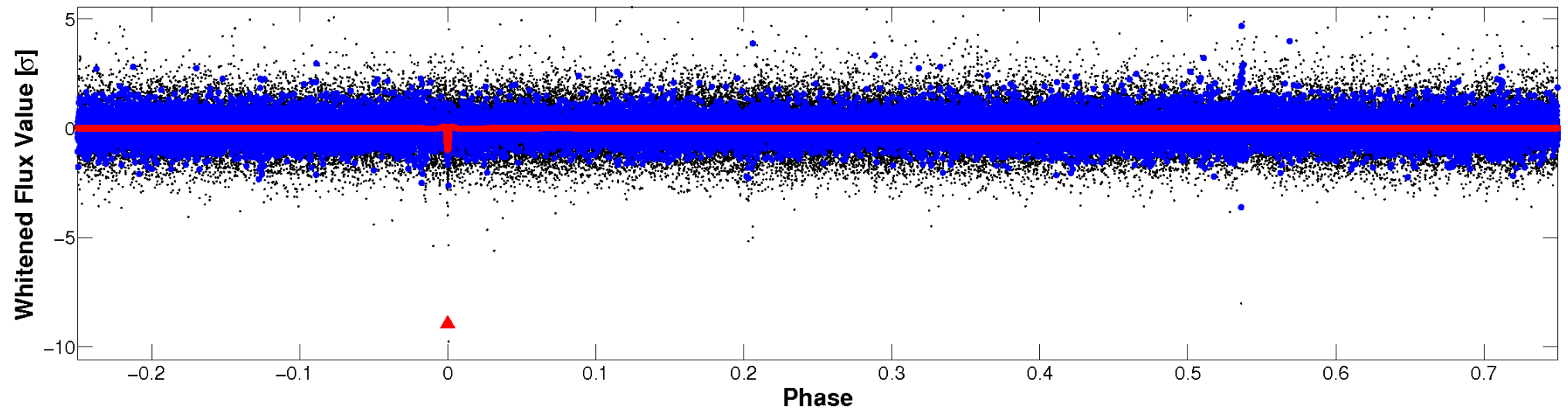


Non-Whitened Vs. Whitened Light Curve

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

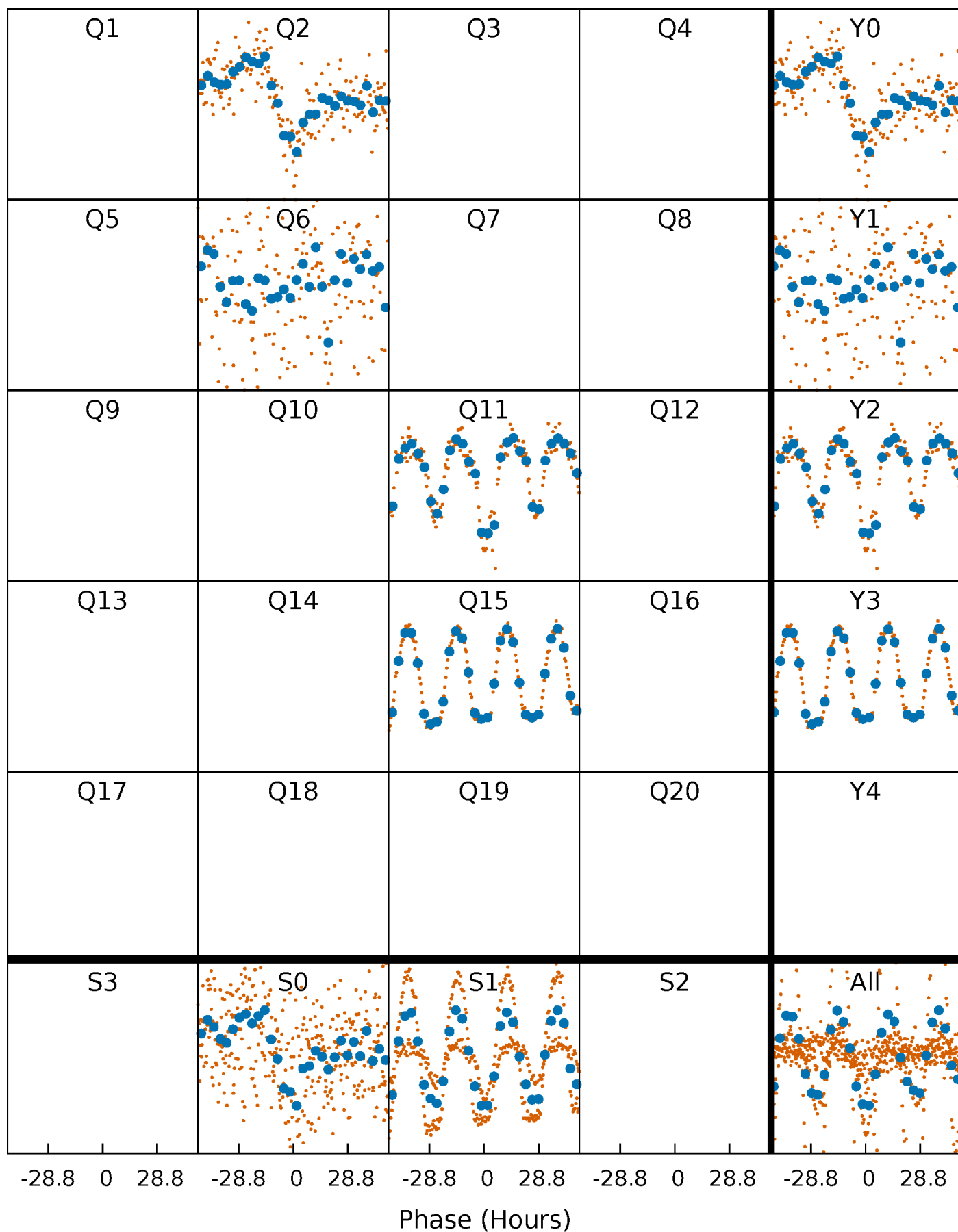


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



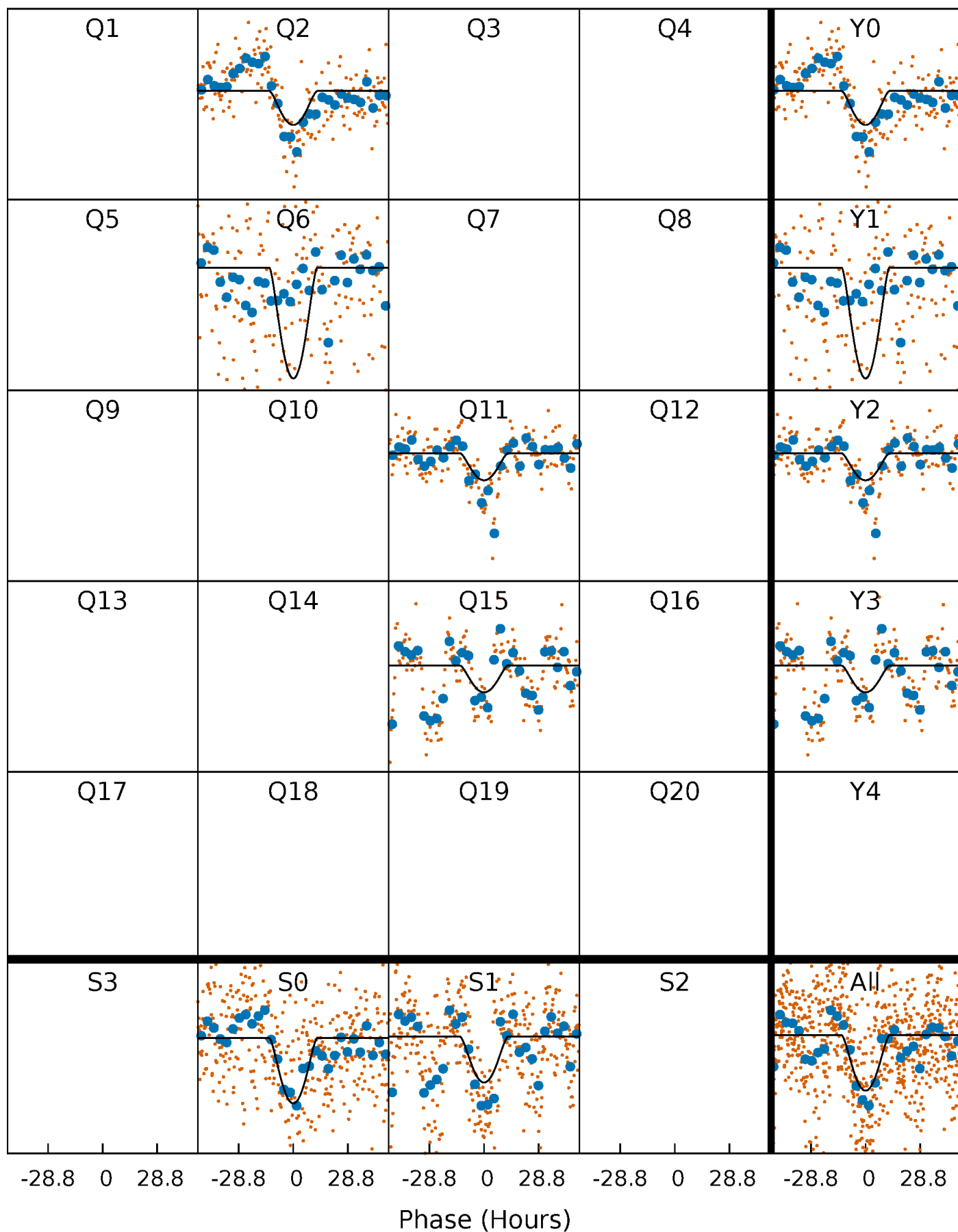
PDC Quarter-Phased Transit Curves

TCE 008227274-01 P=416.810909 Days $T_0=174.591503$ (BKJD)



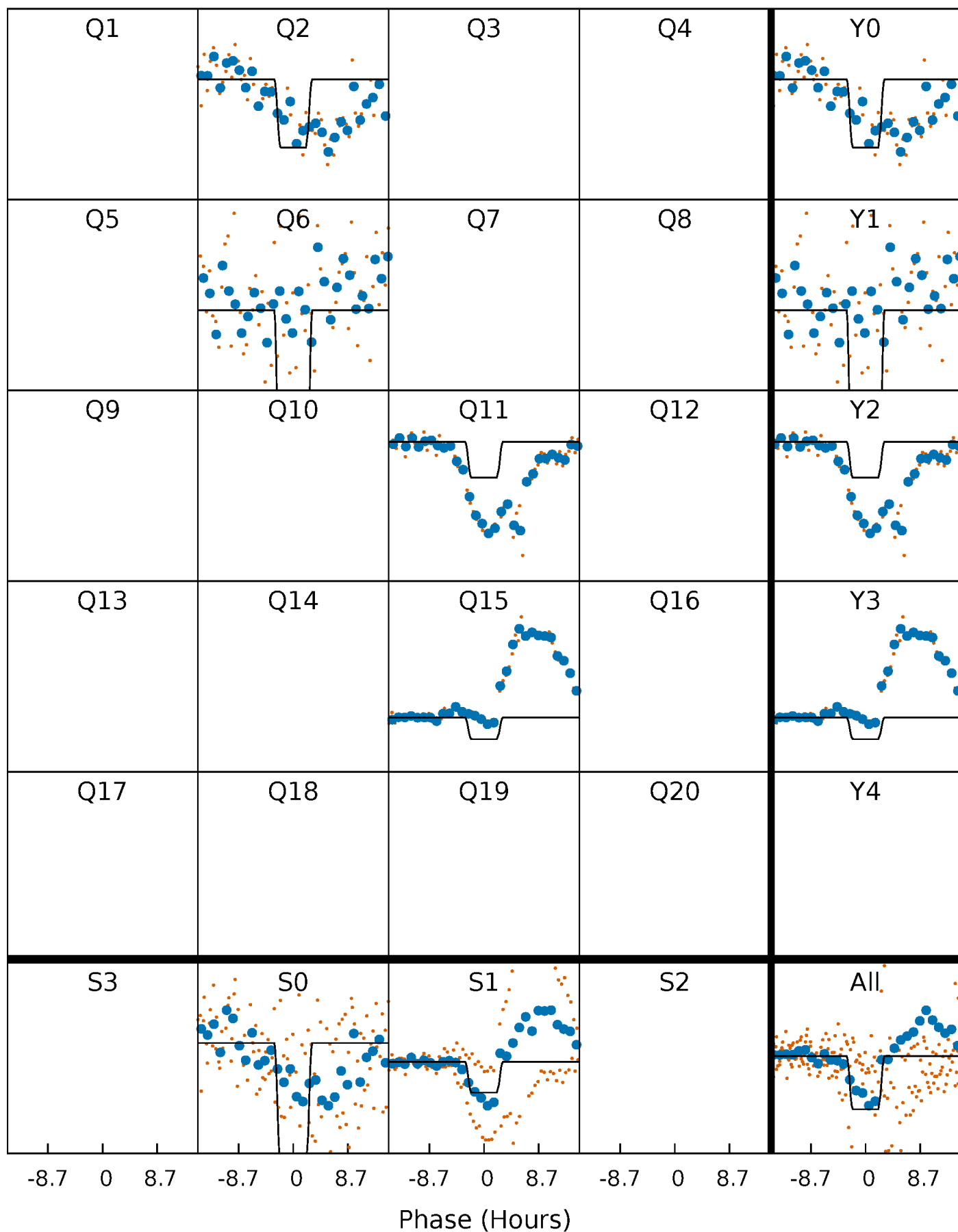
DV Quarter-Phased Transit Curves

TCE 008227274-01 P=416.810909 Days $T_0=174.591503$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

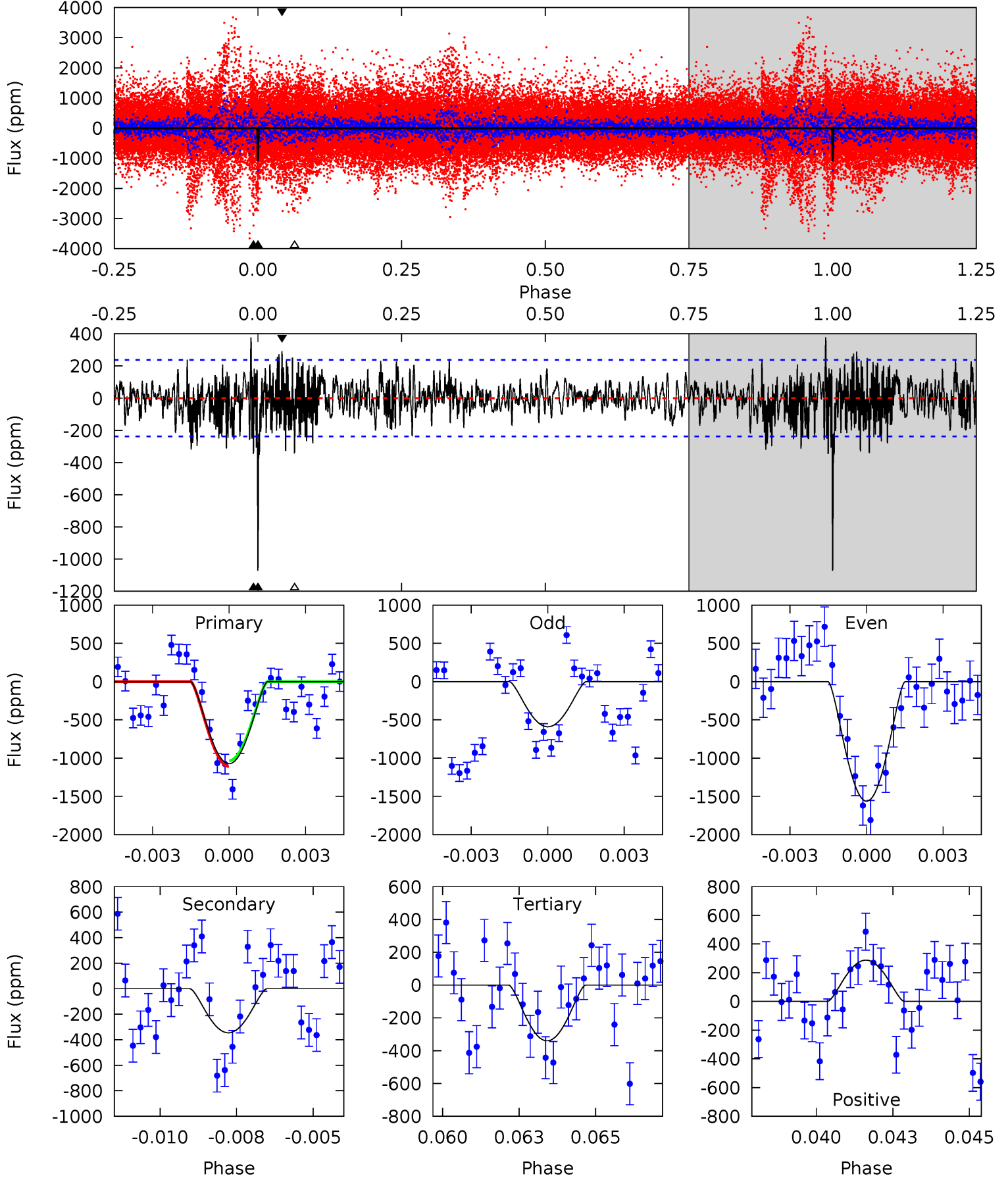
TCE 008227274-01 P=416.912736 Days $T_0=174.380889$ (BKJD)



DV Model-Shift Uniqueness Test

008227274-01, P = 416.810909 Days, E = 174.591503 Days

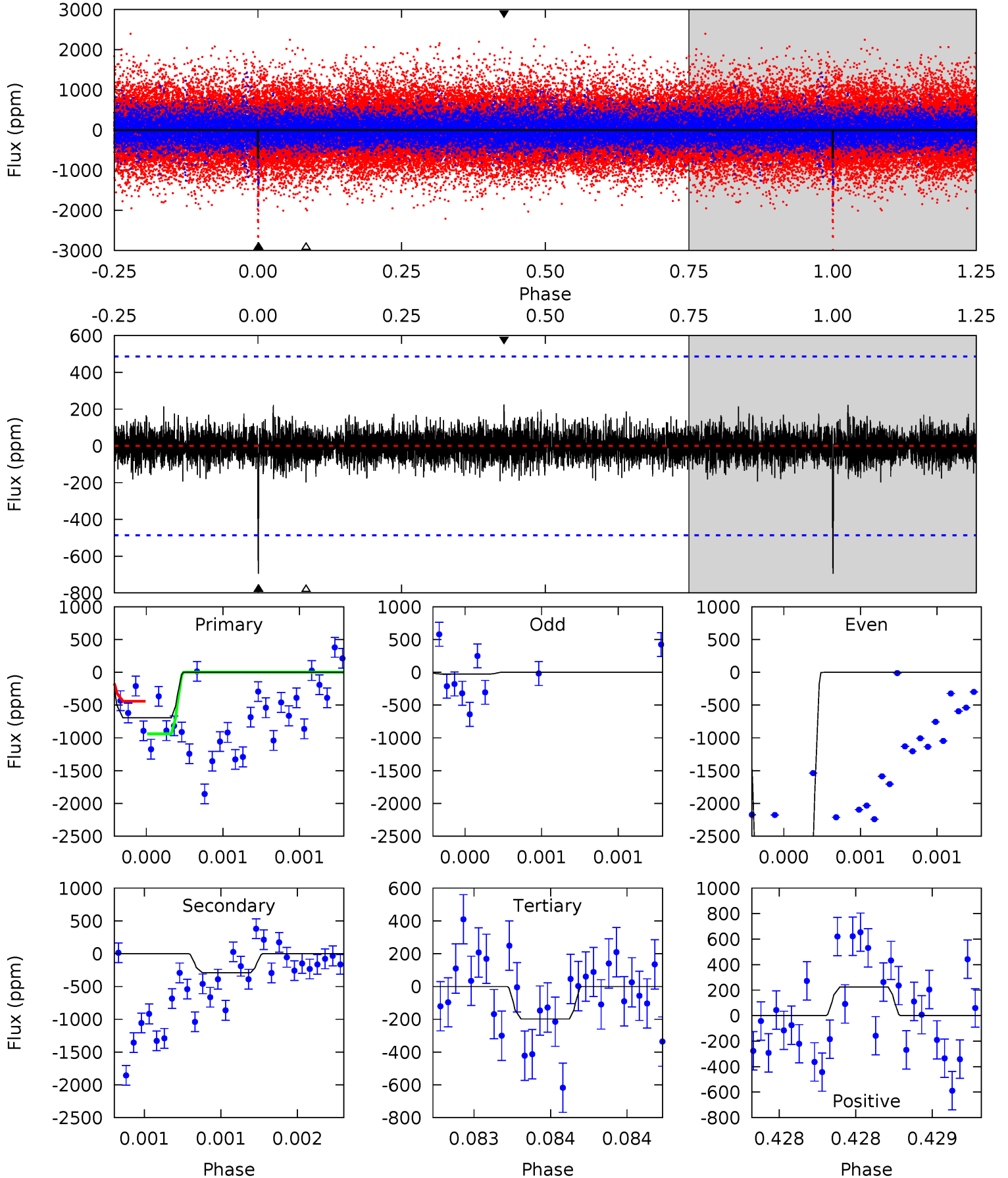
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.8	7.68	7.55	6.39	5.29	3.02	1.94	16.3	17.4	0.12	1.28	10.4	0.94	0.26	0.84



Alt Model-Shift Uniqueness Test

008227274-01, P = 416.912736 Days, E = 174.380889 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.91	3.31	2.26	2.55	5.54	3.42	0.63	5.65	5.36	1.05	0.76	23.1	2.10	0.24	2.84



Stellar Parameters For KIC 008227274

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5631^{+169}_{-169}	$4.478^{+0.078}_{-0.182}$	$-0.120^{+0.300}_{-0.300}$	$0.901^{+0.242}_{-0.104}$	$0.890^{+0.115}_{-0.083}$	$1.713^{+0.662}_{-0.775}$
	+3%/-3%	+2%/-4%	+250%/-250%	+27%/-12%	+13%/-9%	+39%/-45%
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 008227274-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-346 ± 45	$16.87^{+17.41}_{-11.61}$	325^{+21}_{-16}	2668^{+1030}_{-409}	736^{+6511}_{-559}
Alt.	-291 ± 88	$17.09^{+16.46}_{-11.54}$	325^{+22}_{-17}	2610^{+985}_{-401}	599^{+4914}_{-456}

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

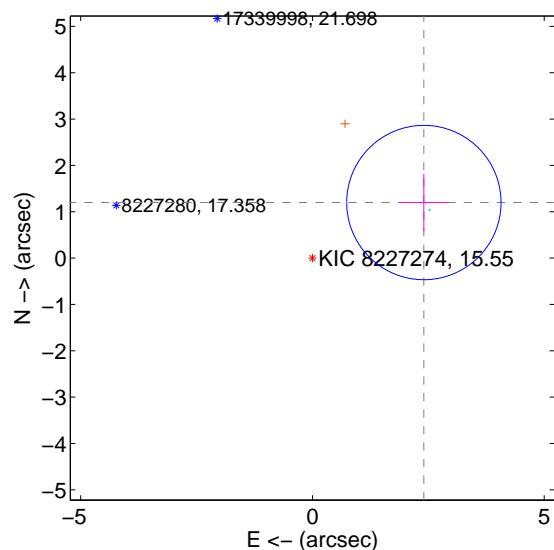
Supplemental centroid analysis for 008227274-01. Kepler magnitude: 15.55. Transit SNR 9.25

There are 1 quarters with good PRF difference image offsets

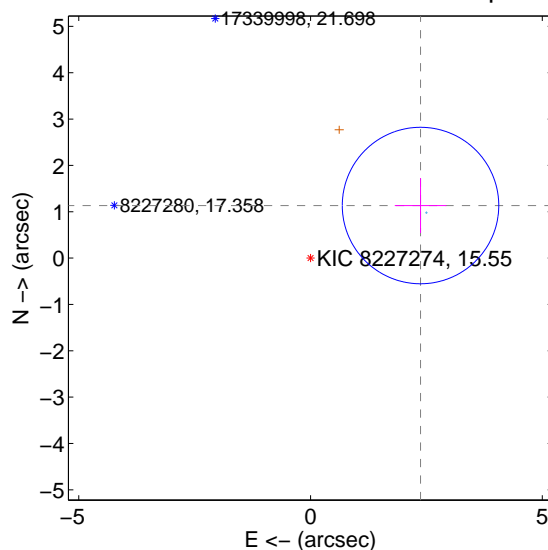
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.687 ± 0.555	4.84	-2.404 ± 0.539	1.199 ± 0.616
PRF-fit source offset from KIC position	2.630 ± 0.563	4.67	-2.373 ± 0.556	1.134 ± 0.592
photometric centroid source offset	0.88 ± 1.13	0.78	-0.84 ± 1.10	-0.25 ± 1.41

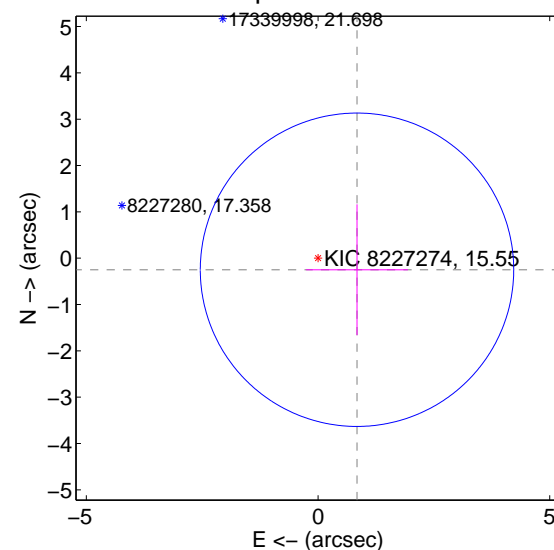
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

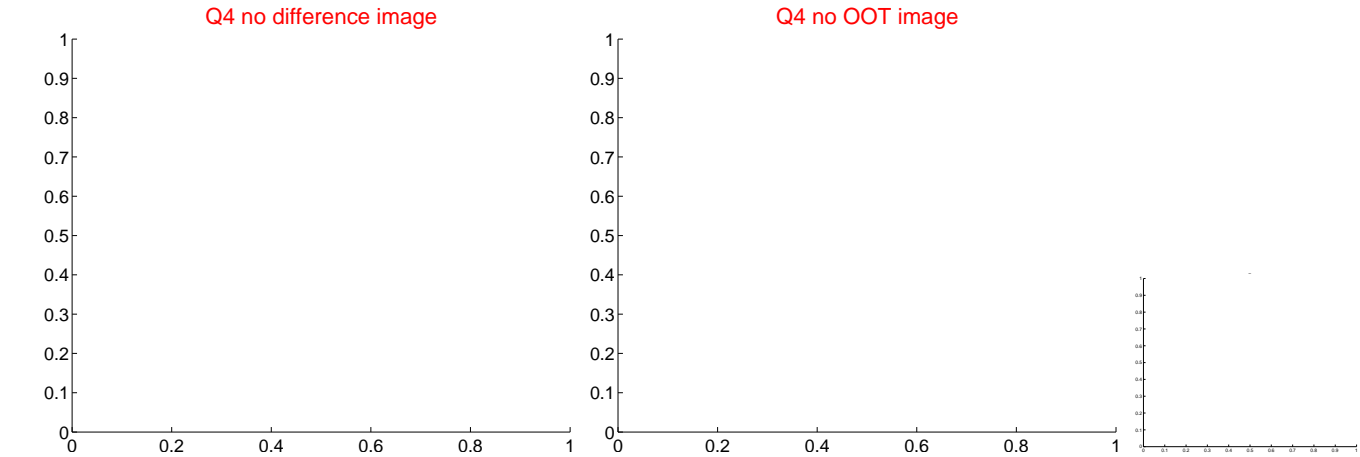
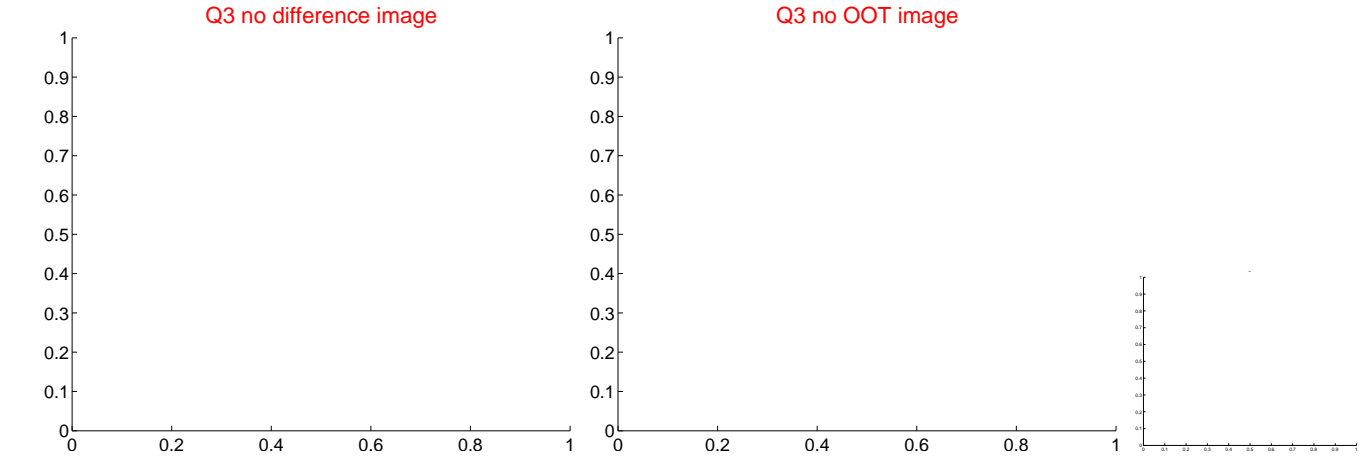
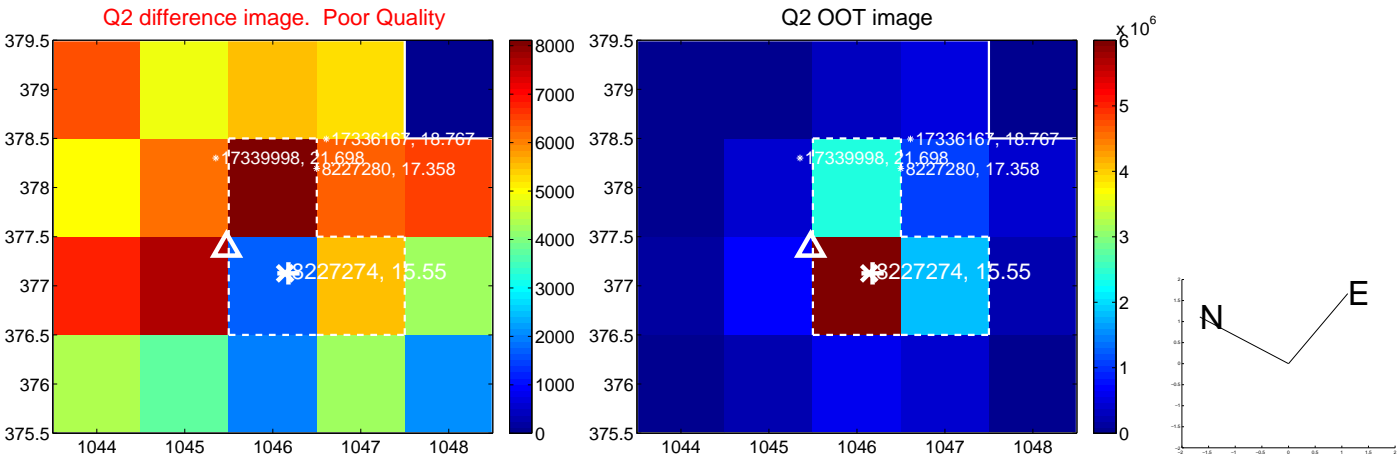
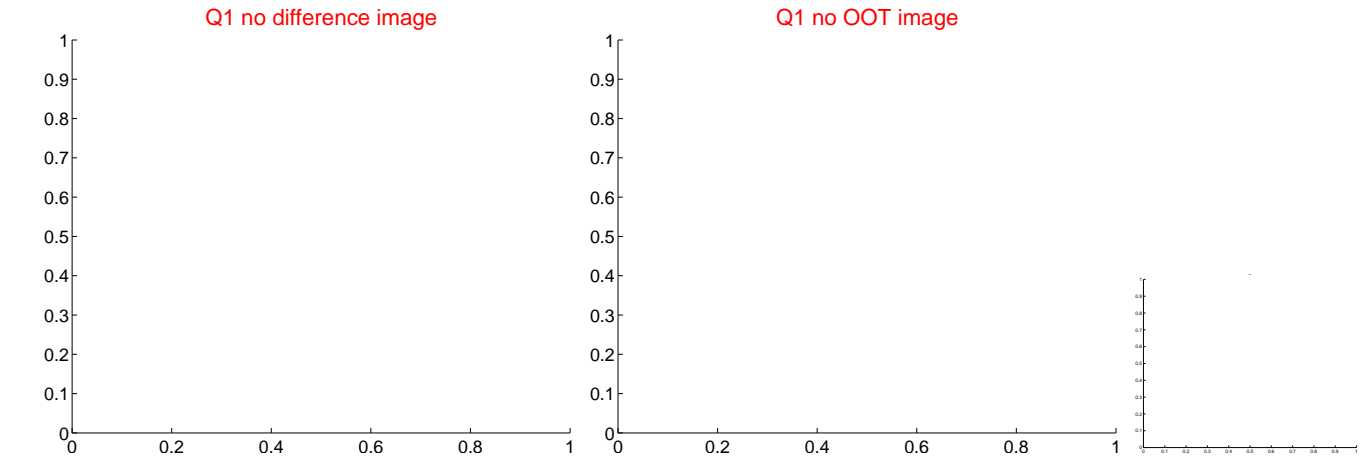


offset from photometric centroids

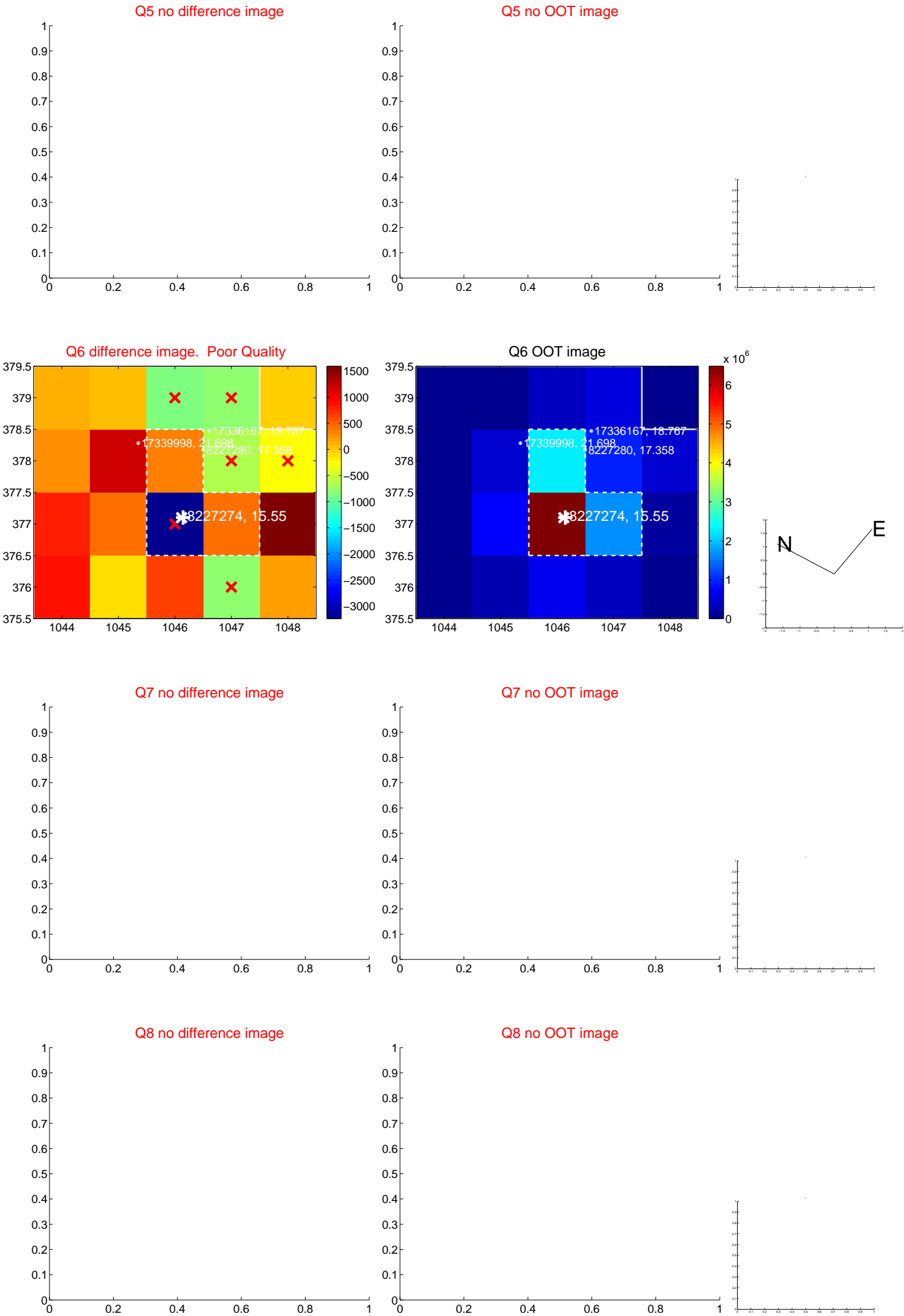


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



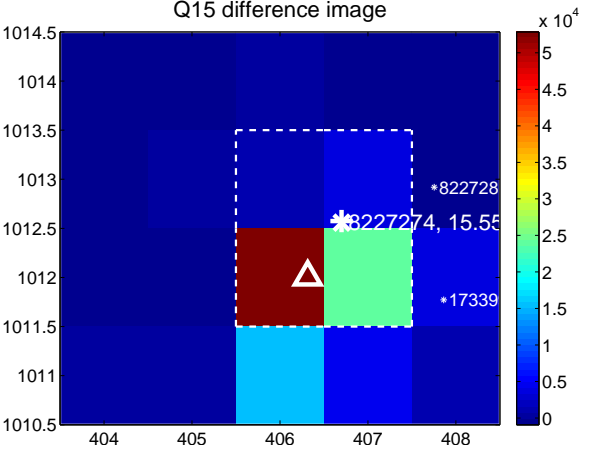
Q14 no difference image



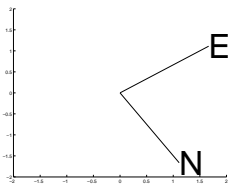
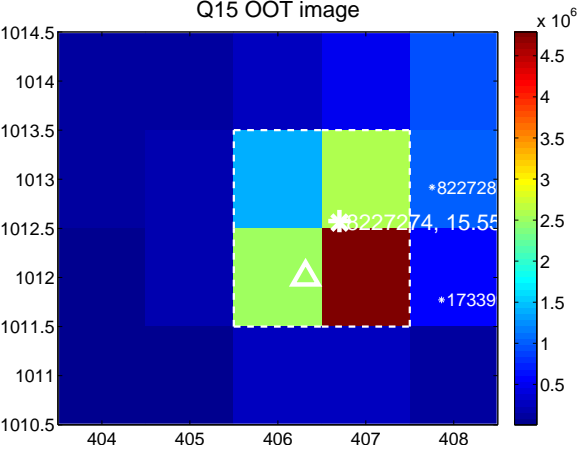
Q14 no OOT image



Q15 difference image



Q15 OOT image



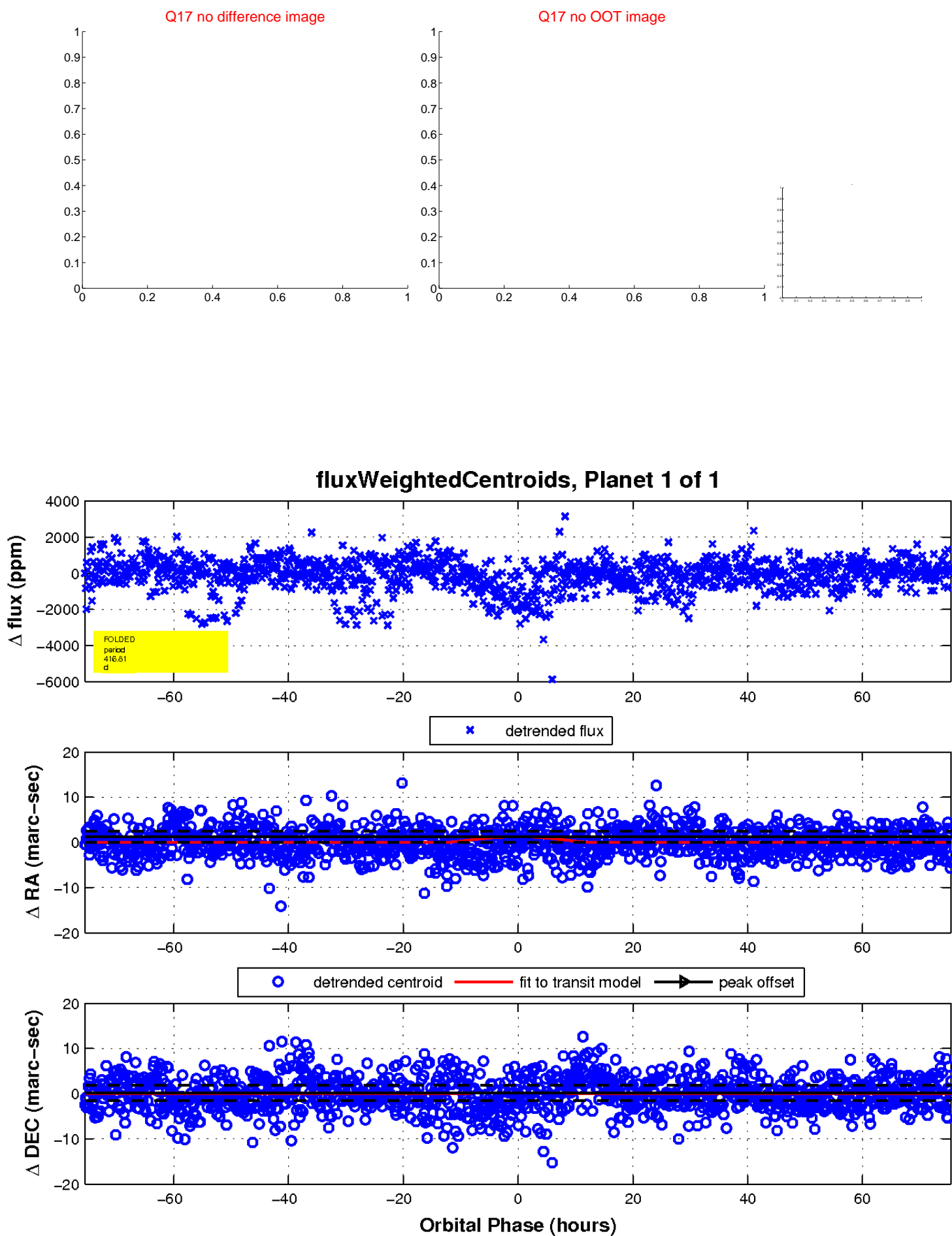
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

