

KIC 005021371

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})
005021371-01	OBS	No	420.950368	273.408820	1023.2	6.171	8.3	7.1	0.87	5730	2.90	0.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005021371-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST

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

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

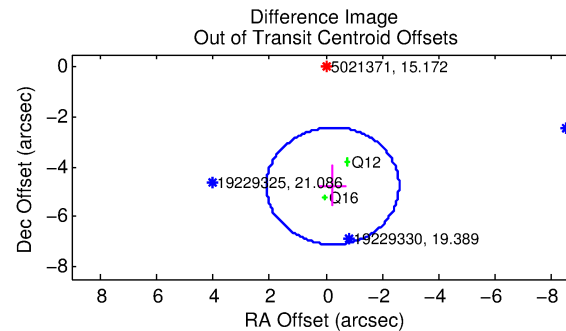
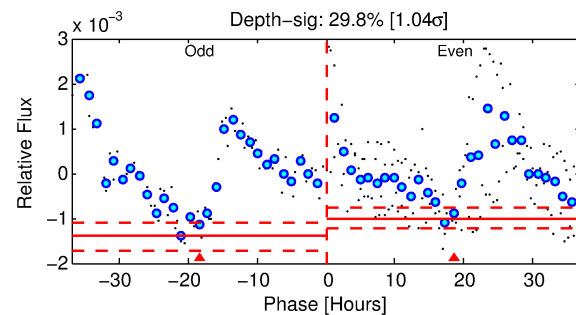
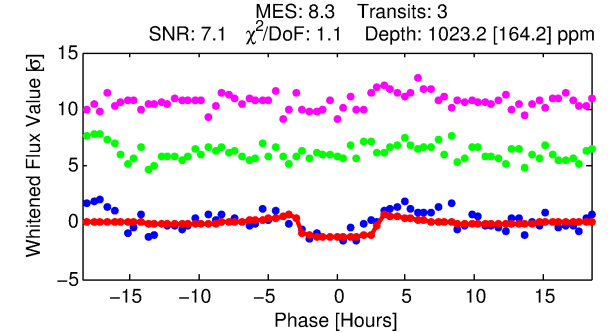
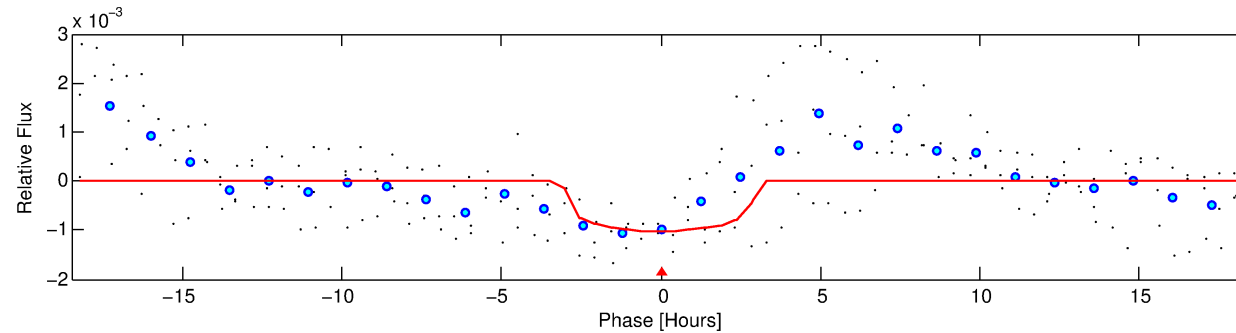
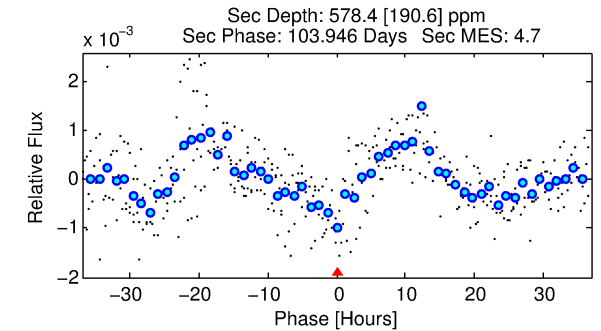
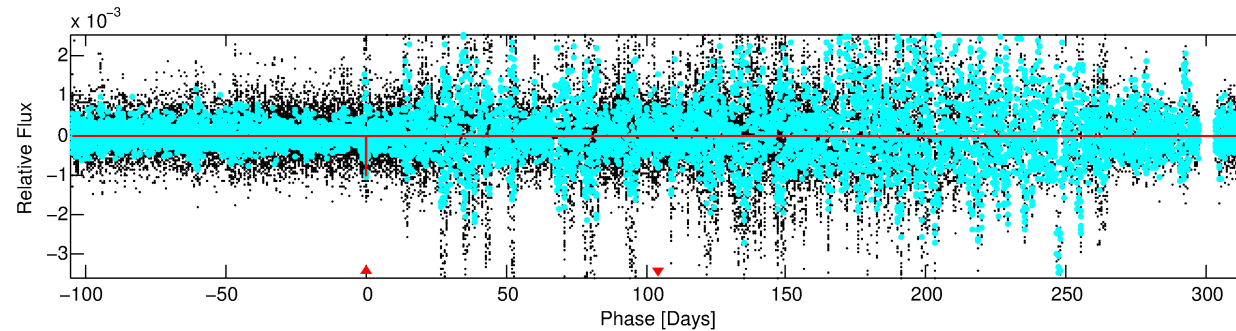
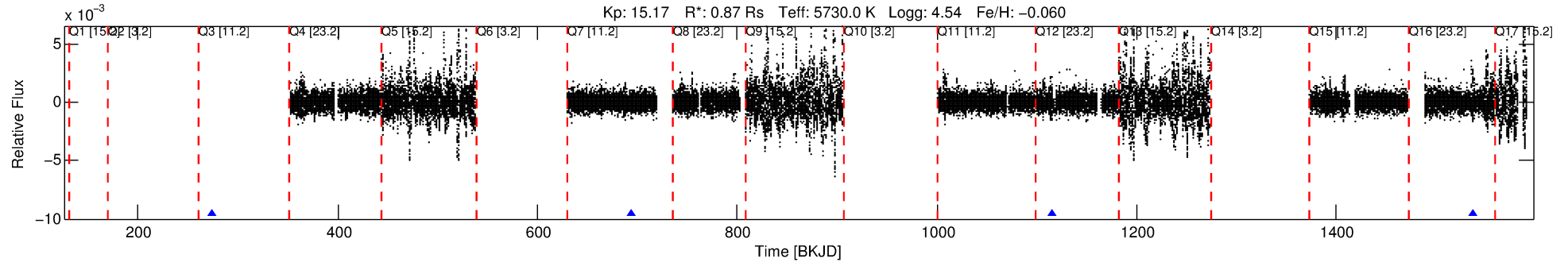
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005021371-01

No Significant Match Found

DV One-Page Summary

KIC: 5021371 Candidate: 1 of 1 Period: 420.950 d



DV Fit Results:

Period = 420.95037 [0.00764] d
Epoch = 273.4088 [0.0175] BKJD
Rp/R* = 0.0306 [0.0833]
a/R* = 432.65 [5137.53]
b = 0.61 [12.35]
Seff = 0.62 [0.25]
Teq = 226 [23] K
Rp = 2.90 [7.95] Re
a = 1.0878 [0.2811] AU
Ag = 44713.41 [244684.29] [0.18σ]
Teffp = 5083 [6938] K [0.70σ]

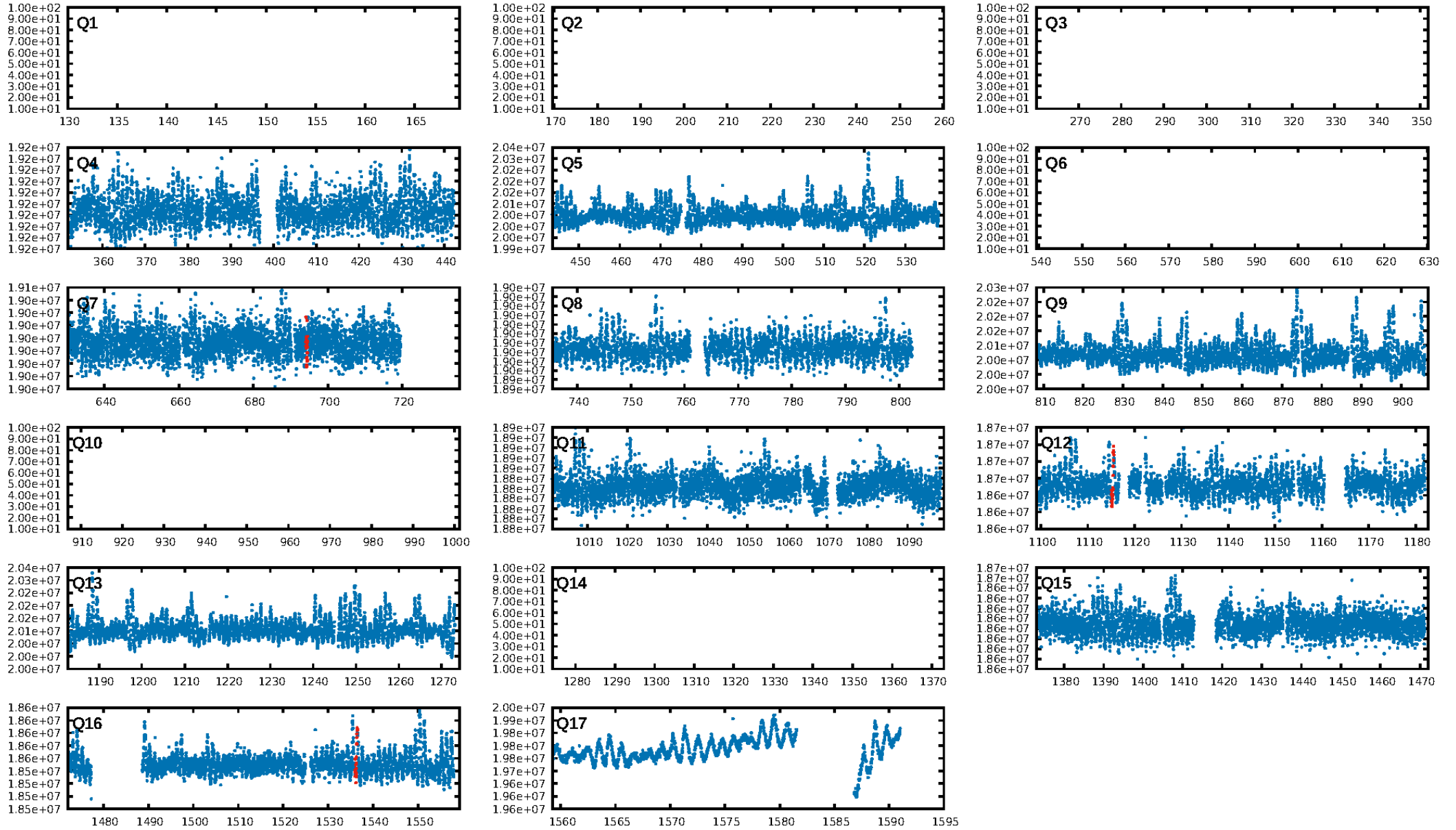
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 67.7%
ModelChiSquareGof-sig: 96.7%
Bootstrap-pfa: 1.94e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.2166
Centroid-sig: N/A
Centroid-so: 1.569 arcsec [0.49σ]
OotOffset-rm: 4.781 arcsec [6.12σ]
KicOffset-rm: 5.338 arcsec [17.02σ]
OotOffset-st: 0/0/2/0 [2]
KicOffset-st: 0/0/2/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [3/3]

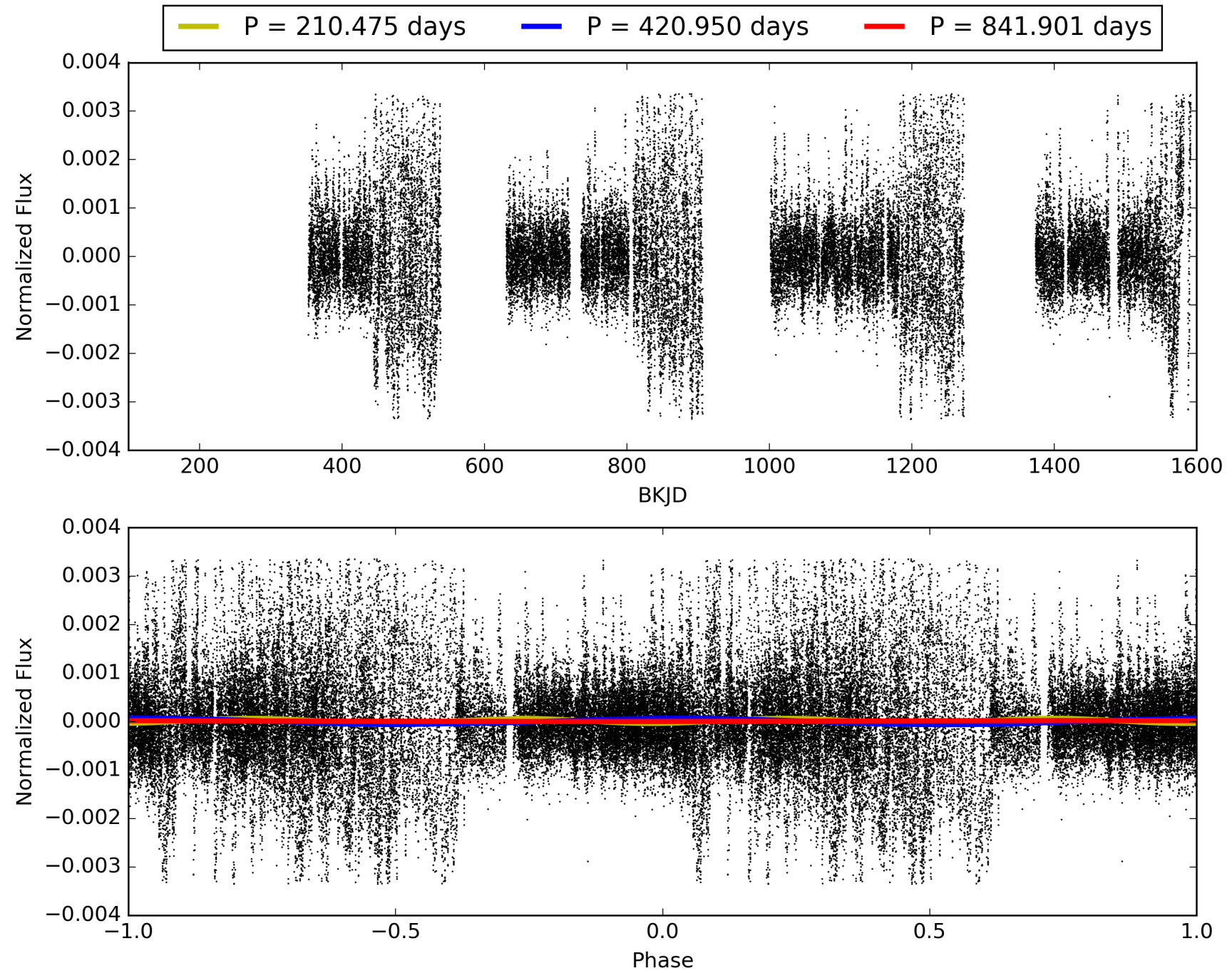
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:23:51 Z

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

TCE 005021371-01, PDC Light Curves

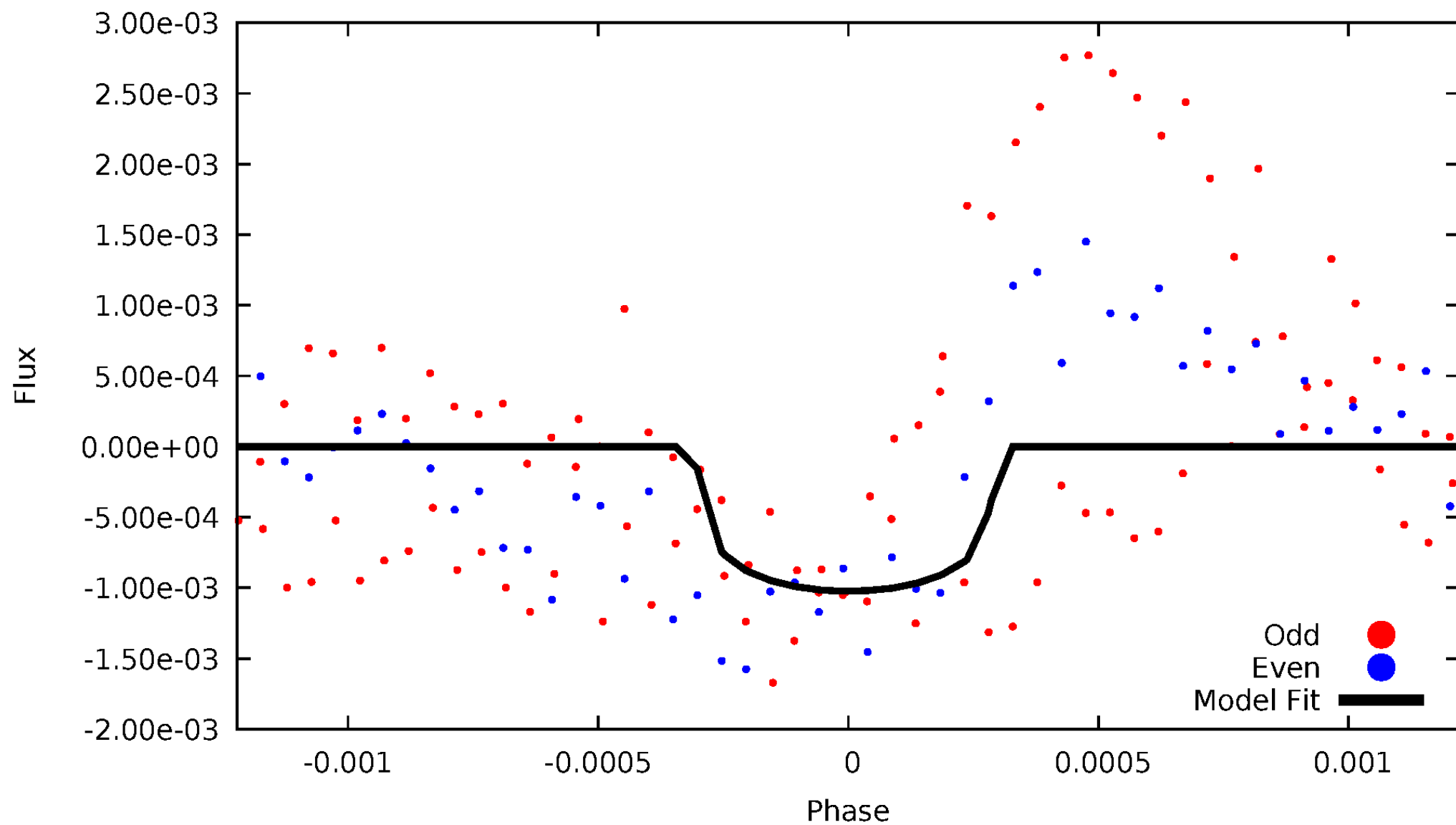


TCE 005021371-01



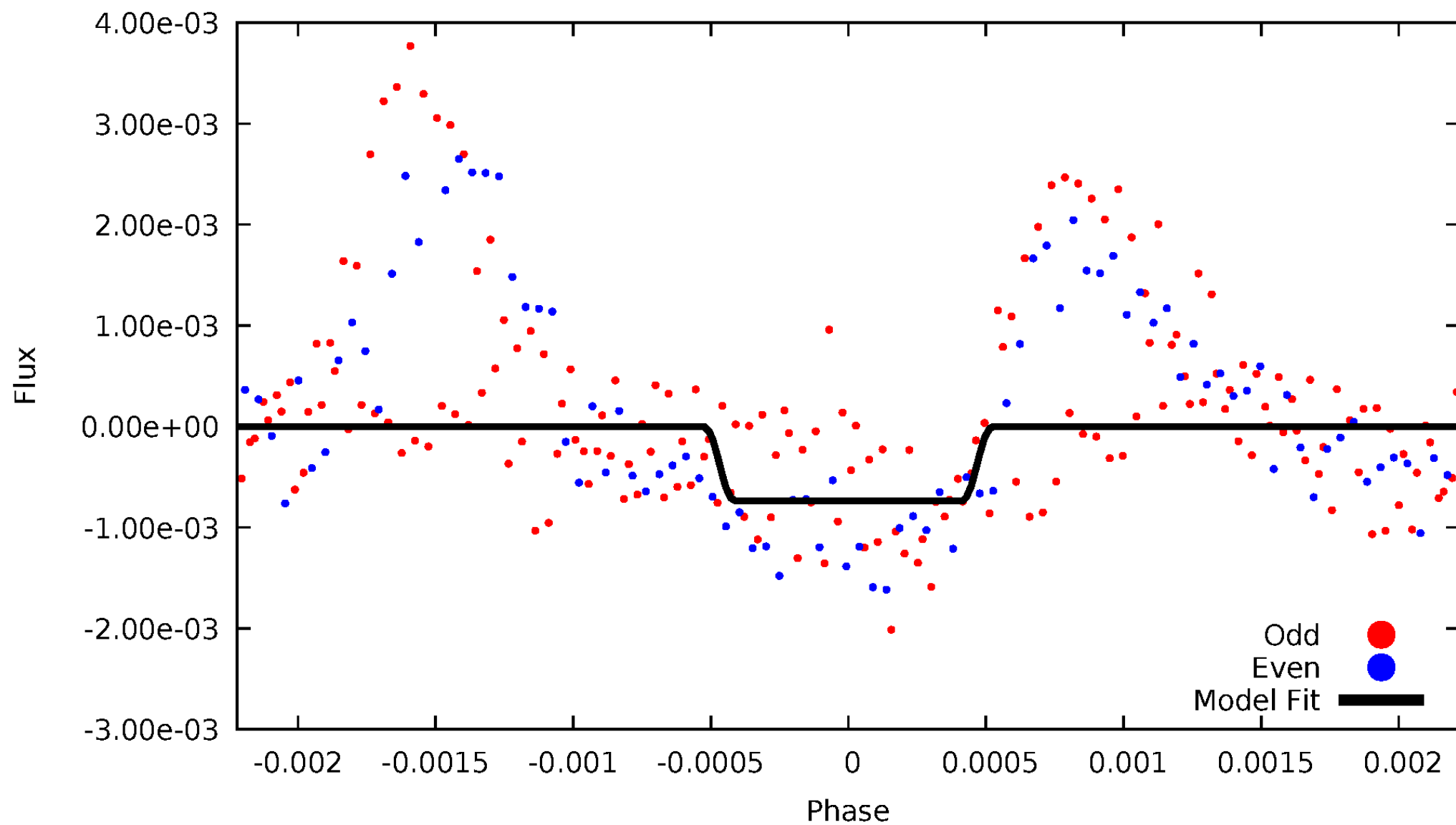
DV Odd/Even

TCE 005021371-01



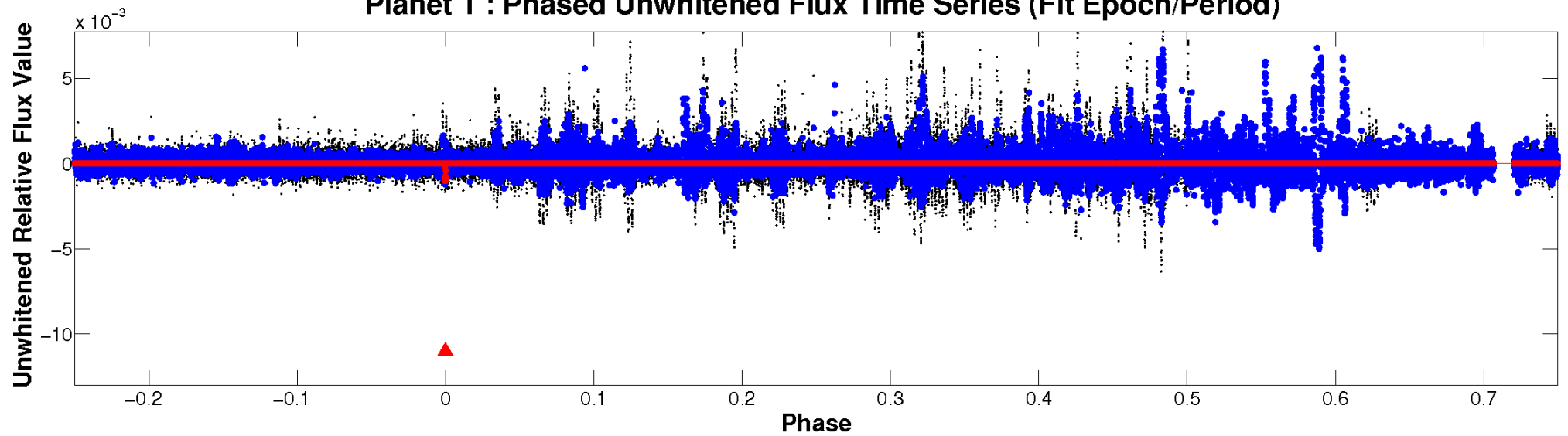
ALT Odd/Even

TCE 005021371-01

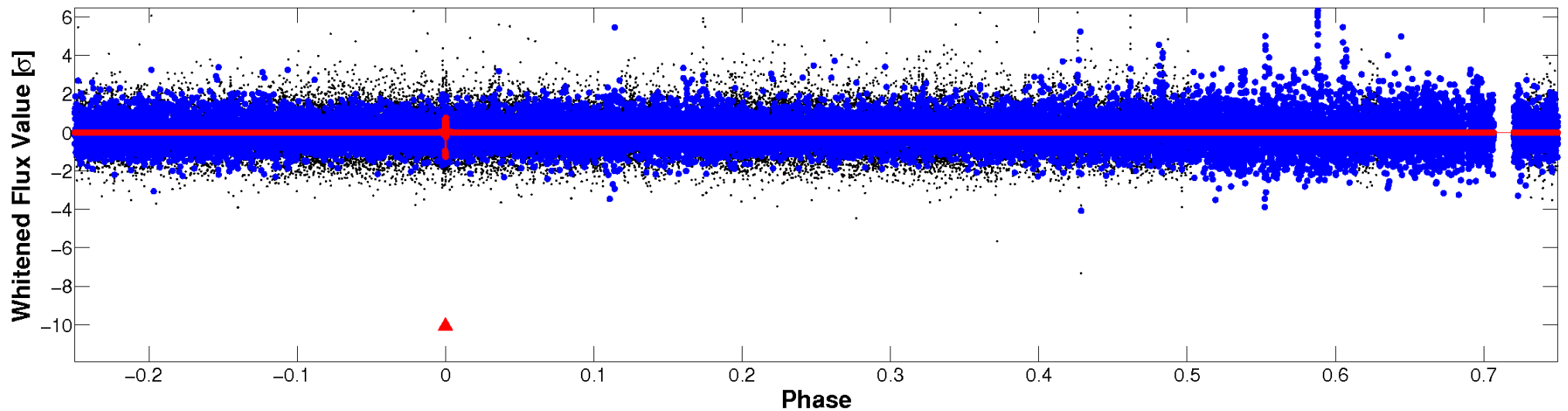


Non-Whitened Vs. Whitened Light Curve

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

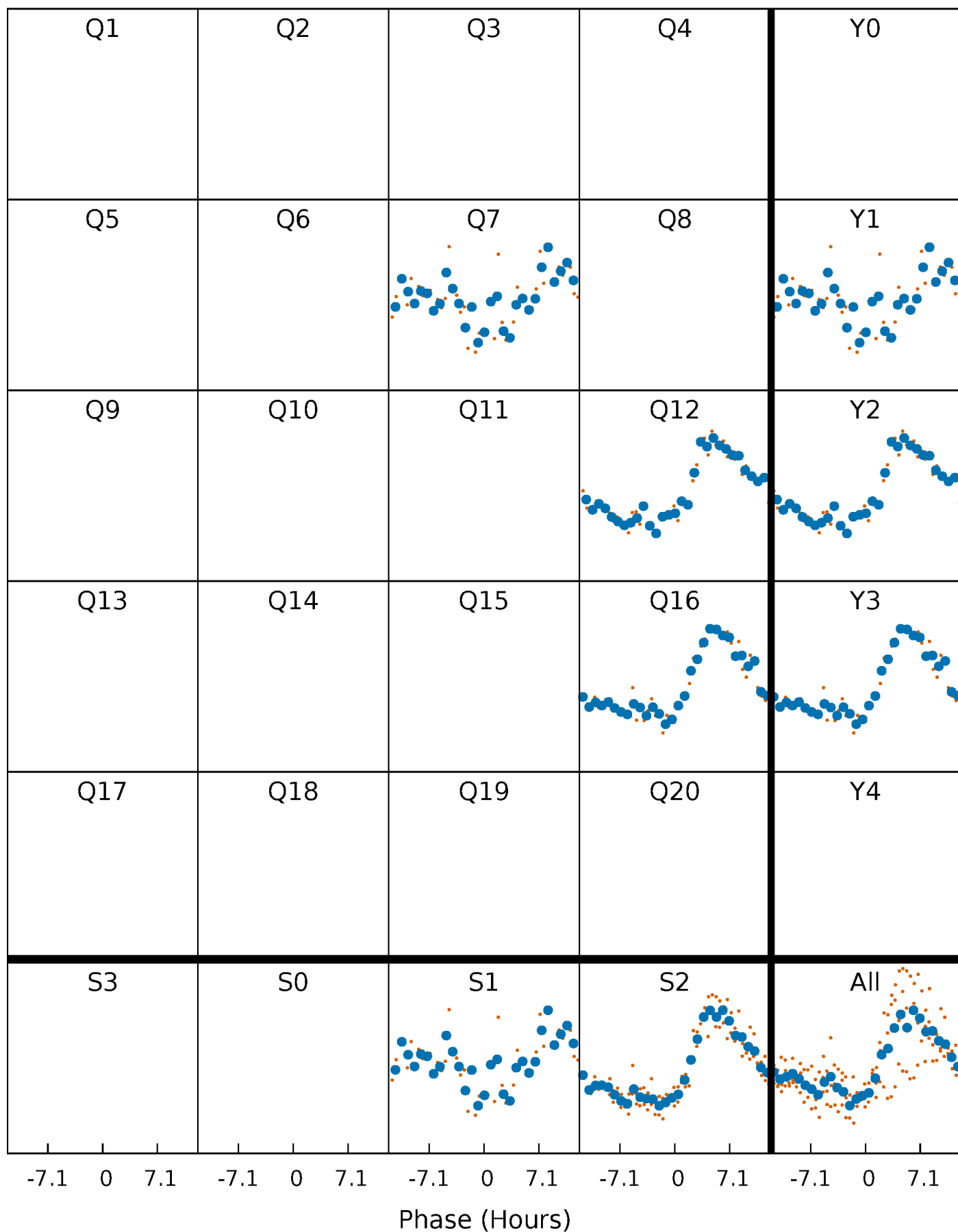


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



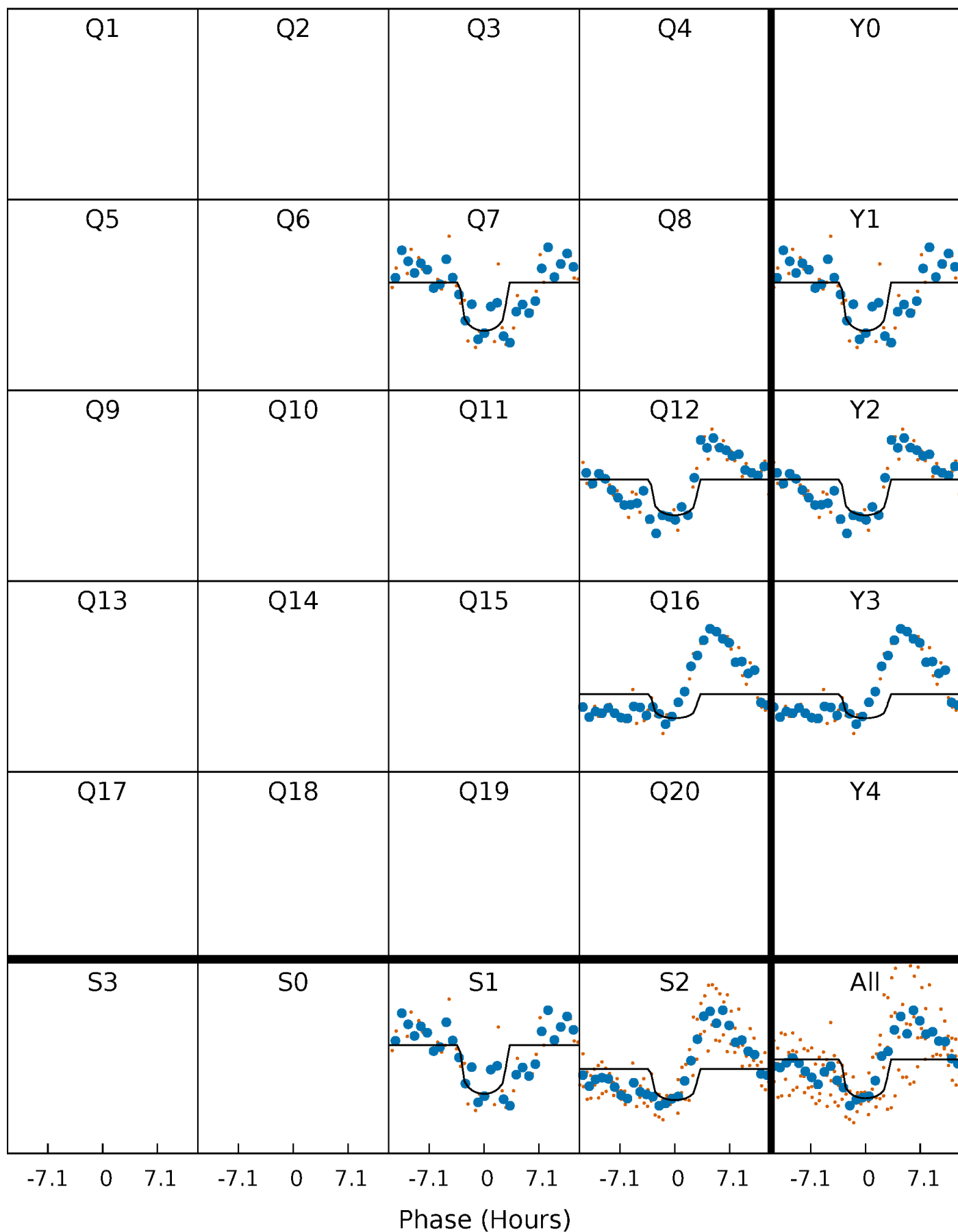
PDC Quarter-Phased Transit Curves

TCE 005021371-01 P=420.950368 Days $T_0=273.408820$ (BKJD)



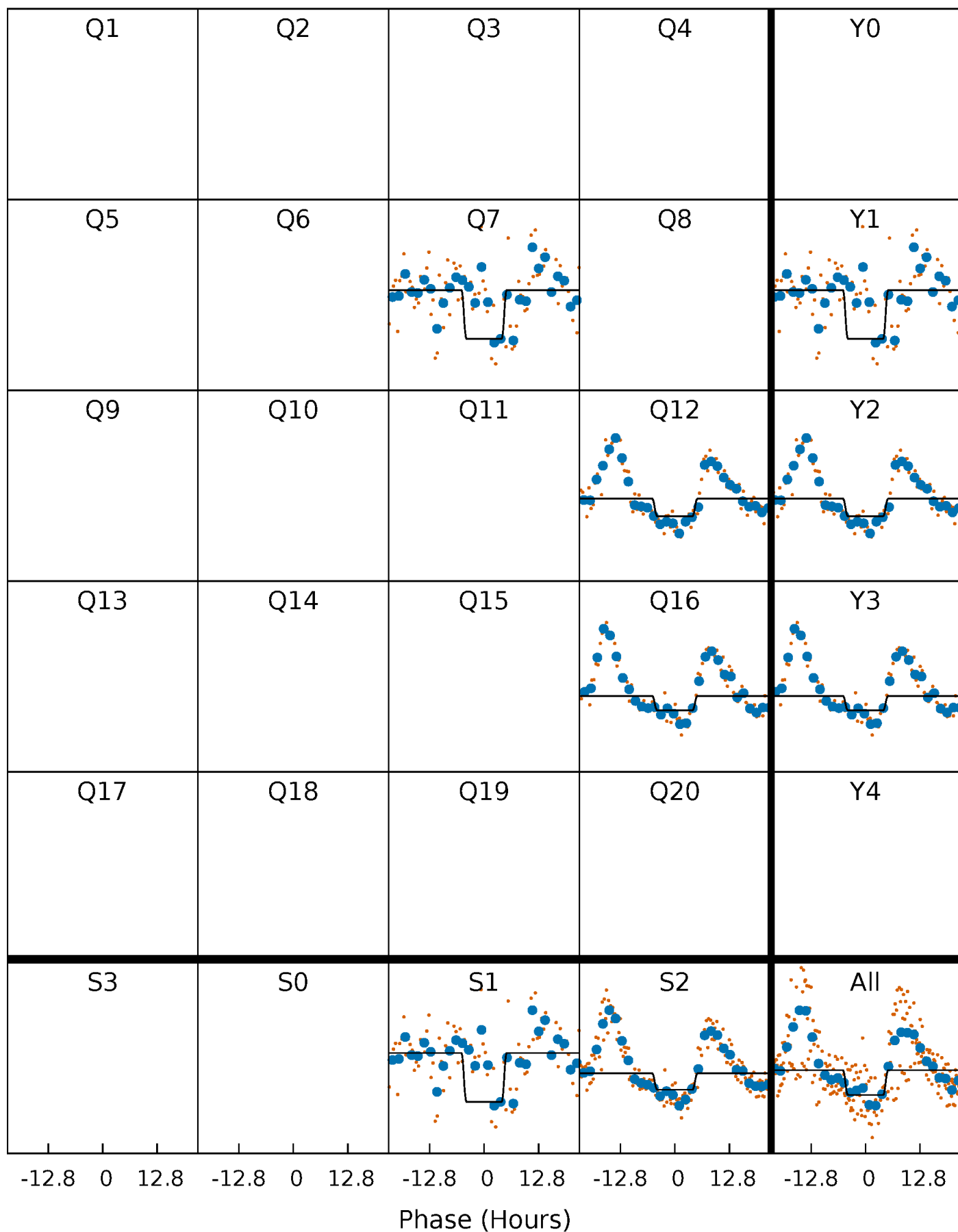
DV Quarter-Phased Transit Curves

TCE 005021371-01 P=420.950368 Days $T_0=273.408820$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

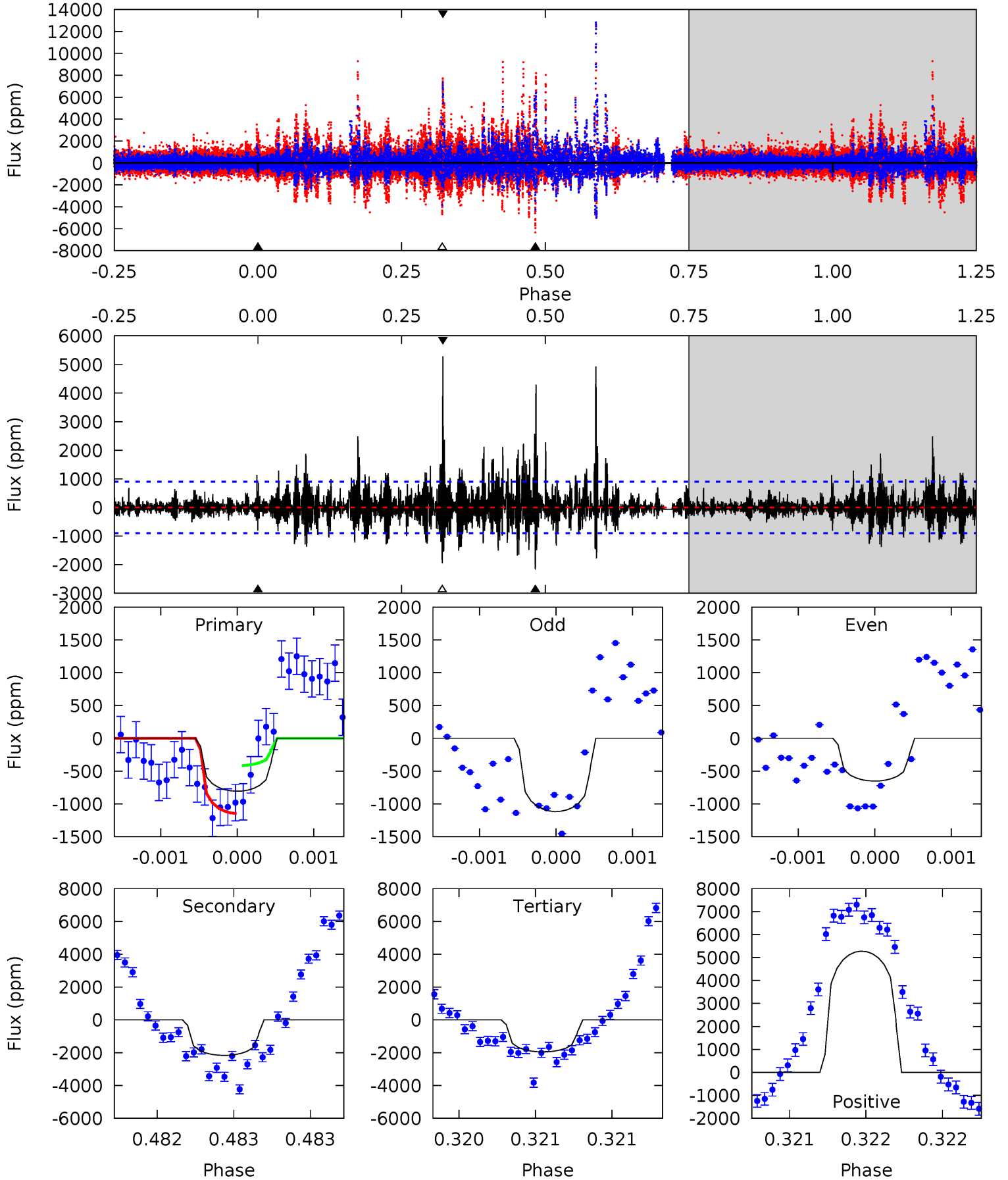
TCE 005021371-01 P=420.965392 Days $T_0=273.234662$ (BKJD)



DV Model-Shift Uniqueness Test

005021371-01, P = 420.950368 Days, E = 273.408820 Days

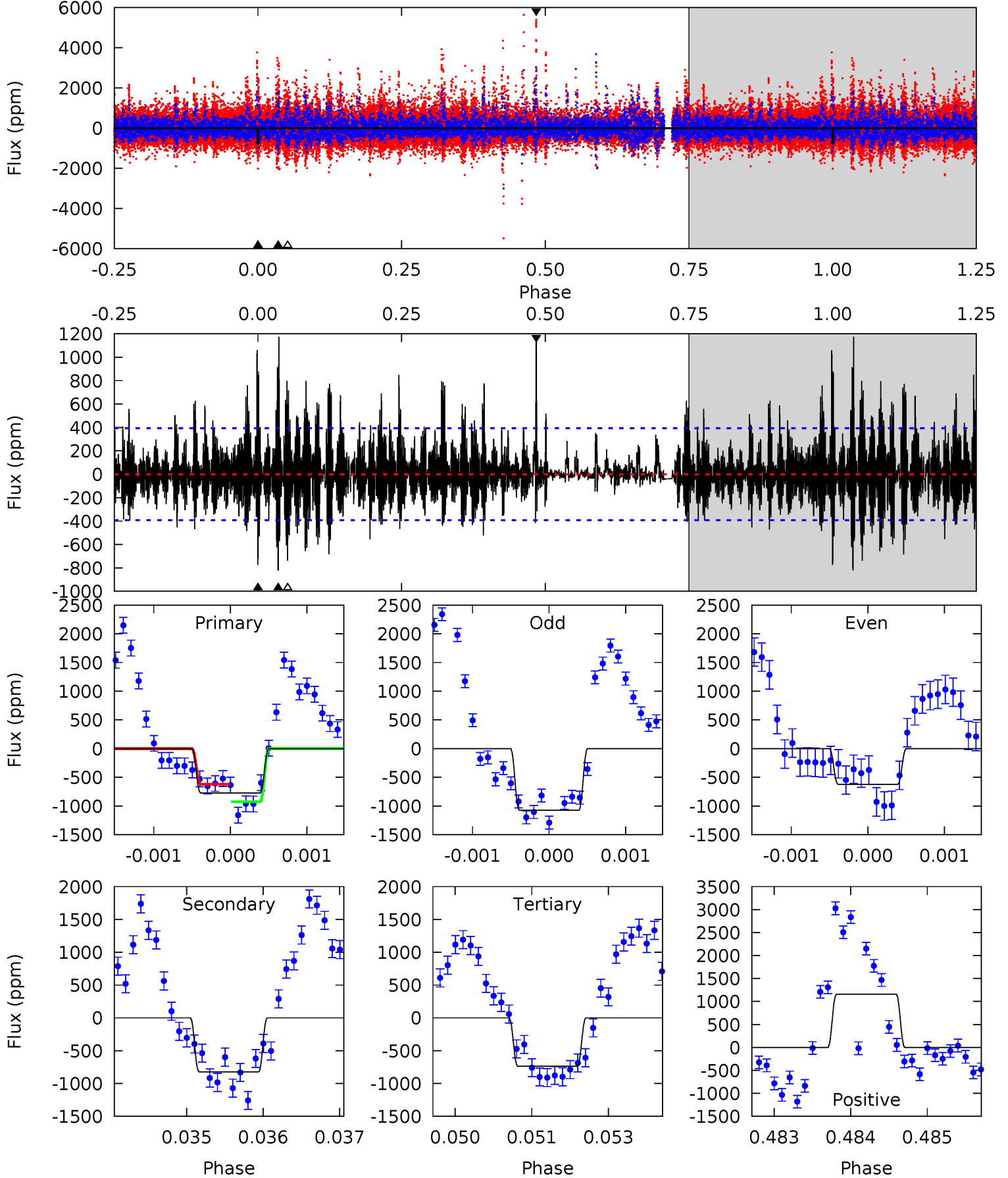
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.95	13.3	12.0	32.4	5.53	3.42	3.07	-7.03	-27.4	1.31	-19.1	1.30	0.85	0.71	2.26



Alt Model-Shift Uniqueness Test

005021371-01, P = 420.965392 Days, E = 273.234662 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	11.4	10.2	16.1	5.44	3.28	2.93	0.50	-5.36	1.20	-4.66	2.93	0.77	0.59	2.13



Stellar Parameters For KIC 005021371

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5730^{+169}_{-186}	$4.545^{+0.038}_{-0.212}$	$-0.060^{+0.300}_{-0.300}$	$0.870^{+0.262}_{-0.082}$	$0.968^{+0.102}_{-0.114}$	$2.069^{+0.424}_{-1.093}$
	+3%/-3%	+1%/-5%	+500%/-500%	+30%/-9%	+11%/-12%	+21%/-53%
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 005021371-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2167 ± 163	$6.88^{+7.46}_{-4.79}$	325^{+22}_{-17}	4808^{+4072}_{-1108}	$29421^{+279707}_{-22508}$
Alt.	-824 ± 72	$7.01^{+6.52}_{-4.91}$	323^{+24}_{-15}	4040^{+2730}_{-802}	$10980^{+107584}_{-8173}$

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

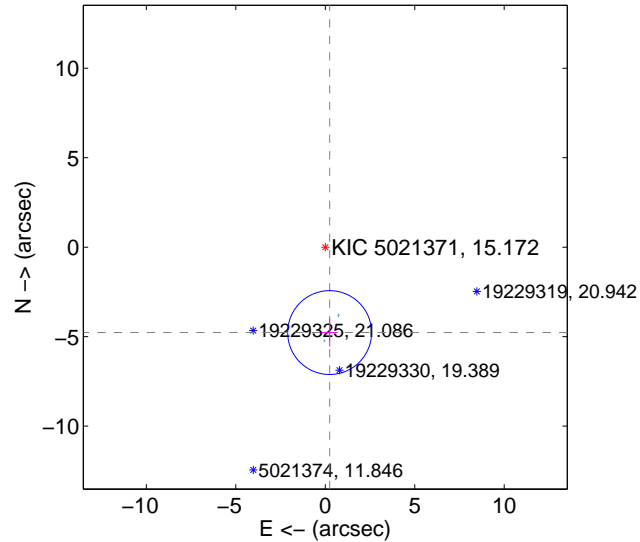
Supplemental centroid analysis for 005021371-01. Kepler magnitude: 15.17. Transit SNR 7.15

There are 2 quarters with good PRF difference image offsets

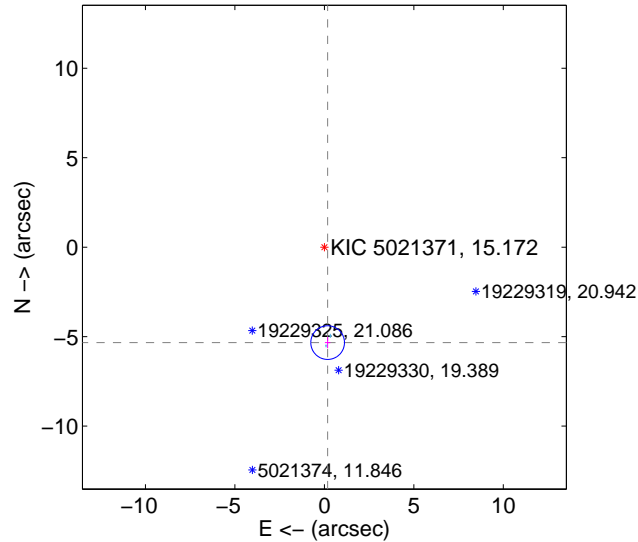
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.781 ± 0.781	6.12	-0.243 ± 0.448	-4.774 ± 0.782
PRF-fit source offset from KIC position	5.338 ± 0.314	17.02	-0.182 ± 0.153	-5.335 ± 0.314
photometric centroid source offset	1.57 ± 3.23	0.49	-0.25 ± 1.10	-1.55 ± 3.27

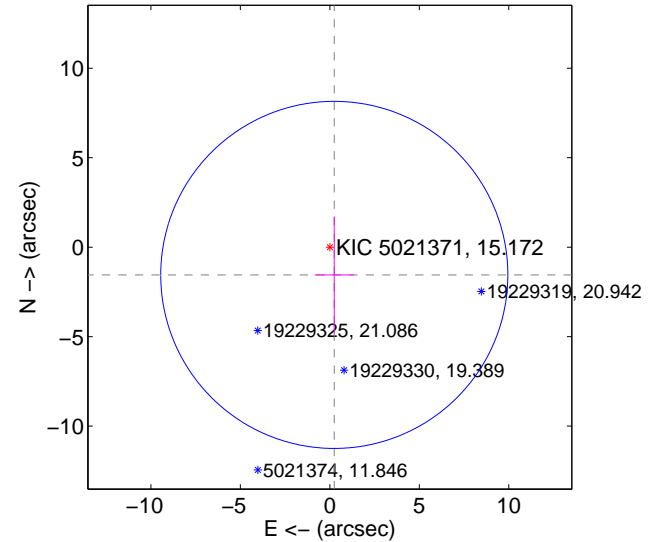
offset from difference PRF-fit to OOT PRF-fit



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.

Q5 no difference image



Q5 no OOT image



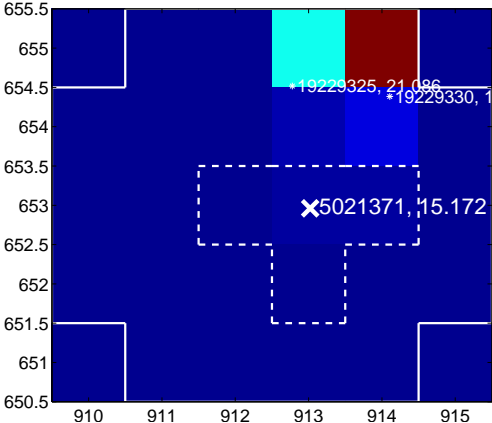
Q6 no difference image



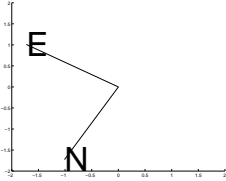
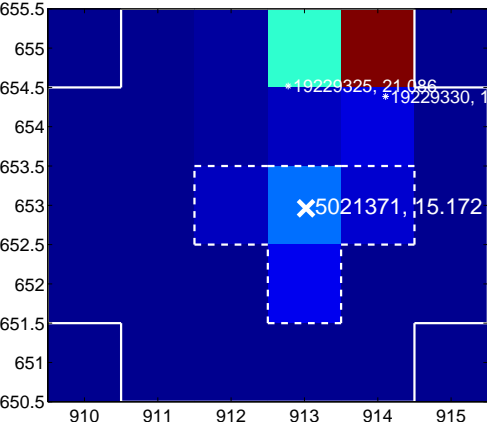
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



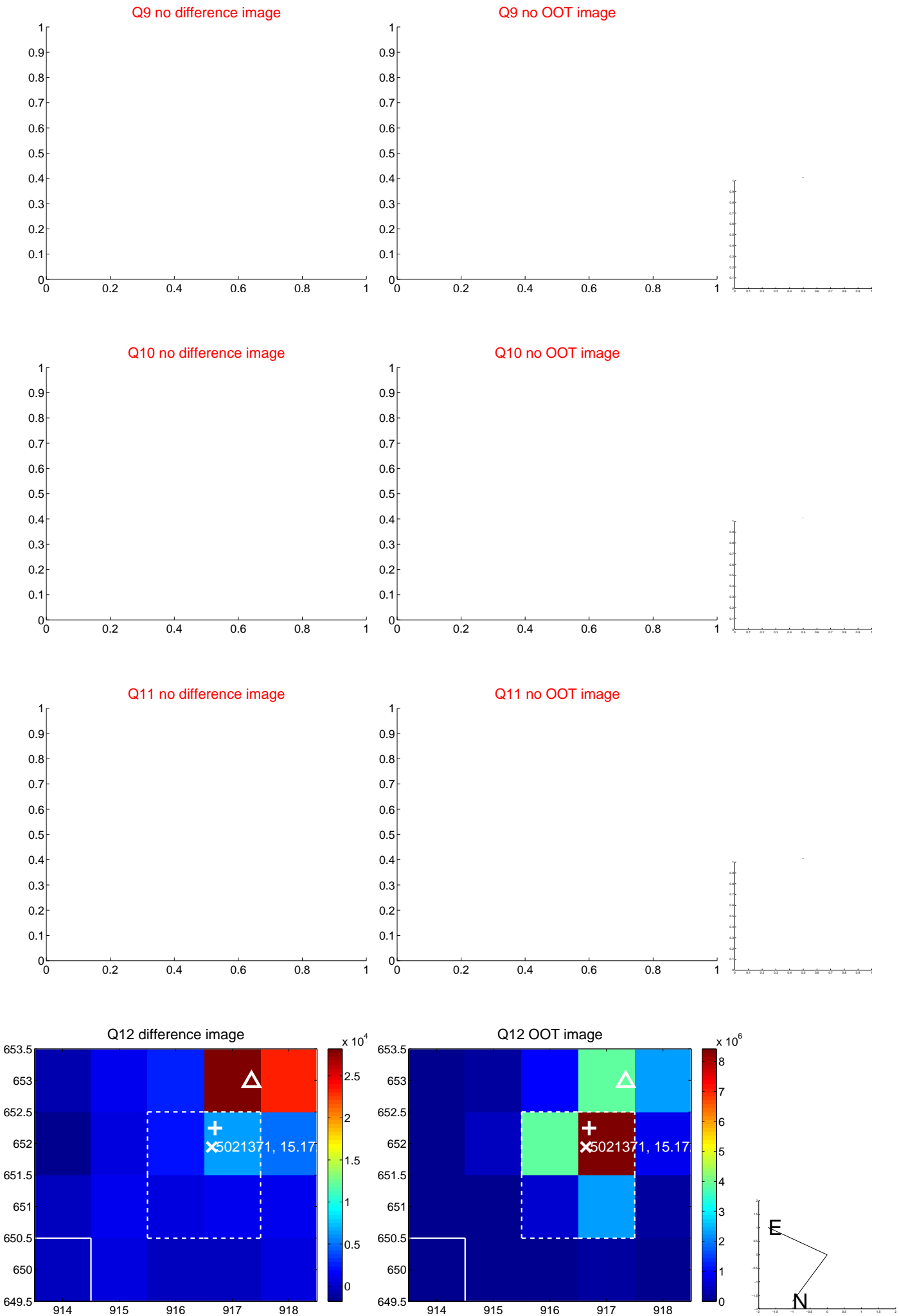
Q8 no difference image



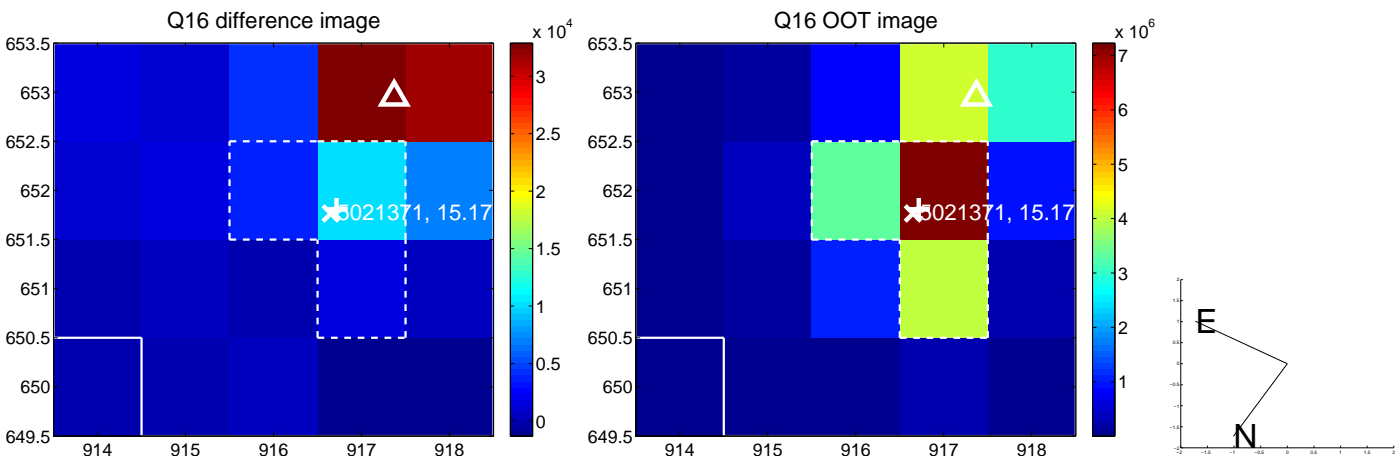
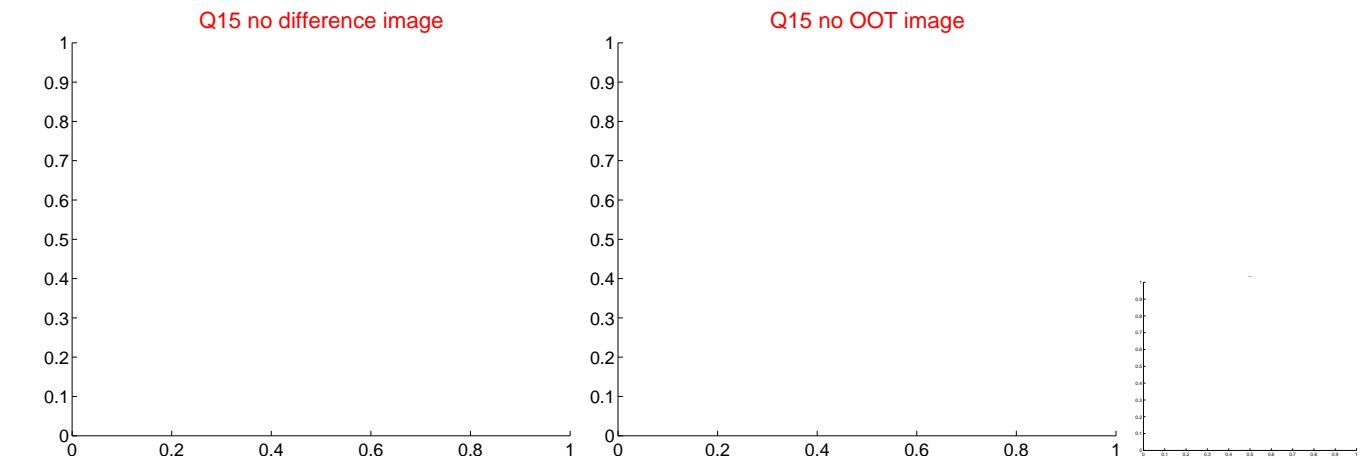
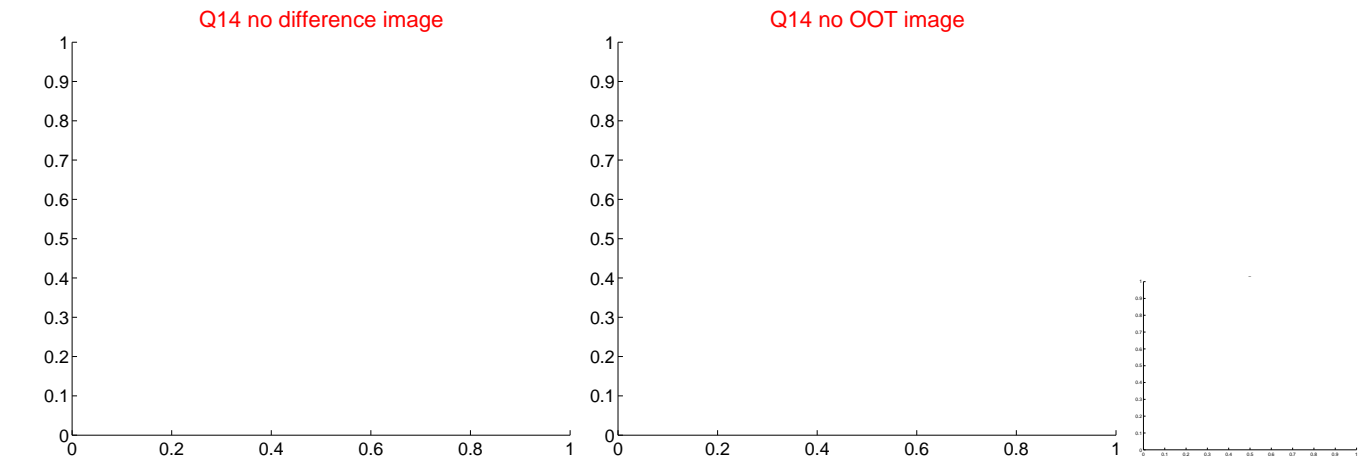
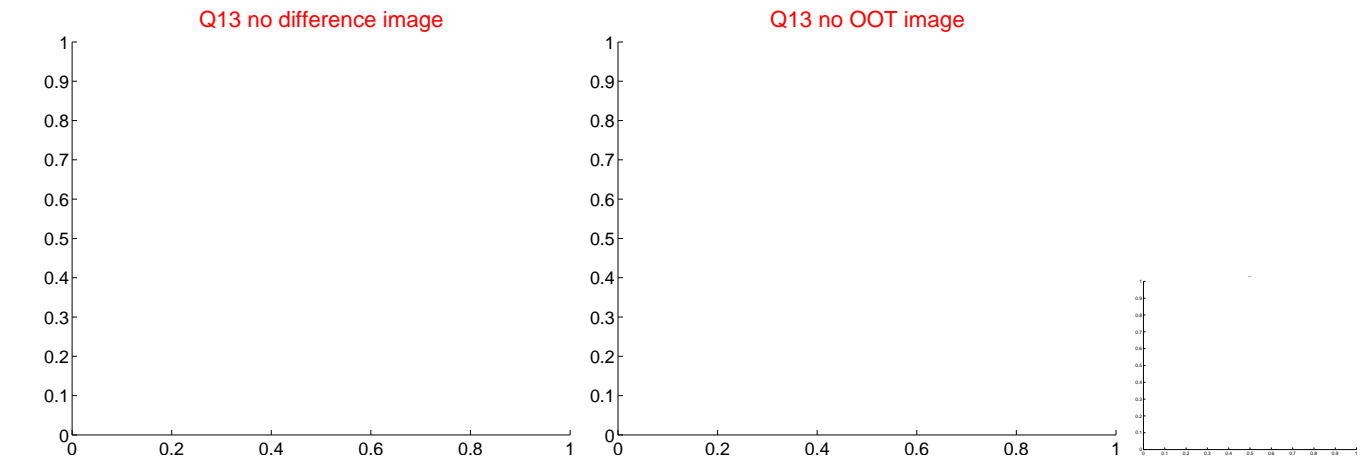
Q8 no OOT image



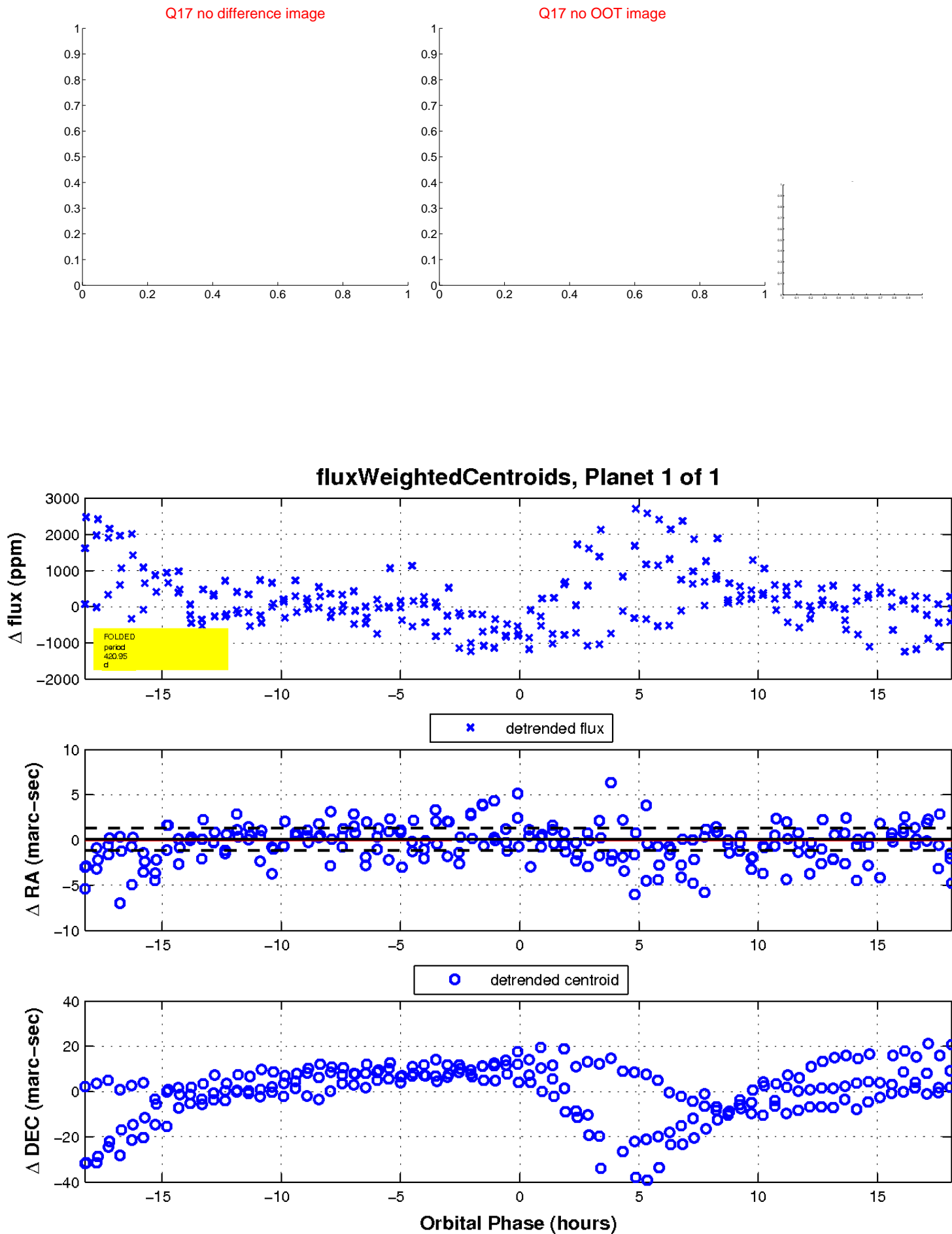
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UKIRT Image

Declination

