

KIC 010163021

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})
010163021-01	OBS	No	277.815126	172.042833	519.4	4.208	7.8	6.9	1.15	6030	2.88	2.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010163021-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

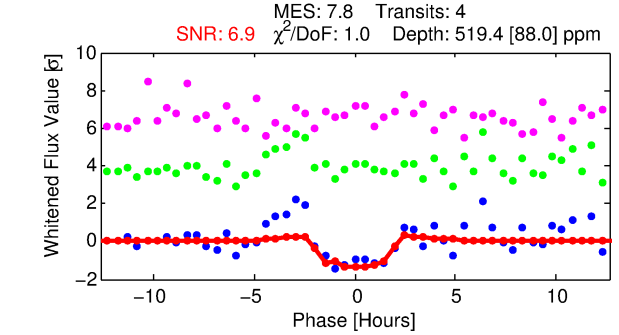
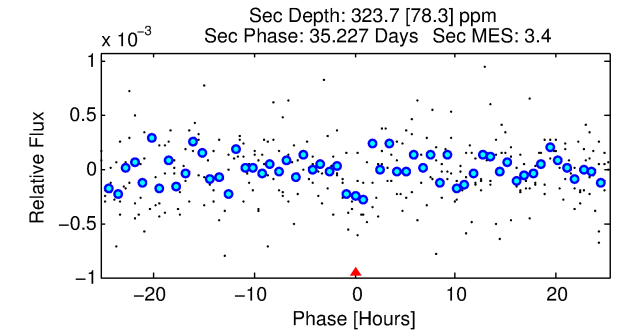
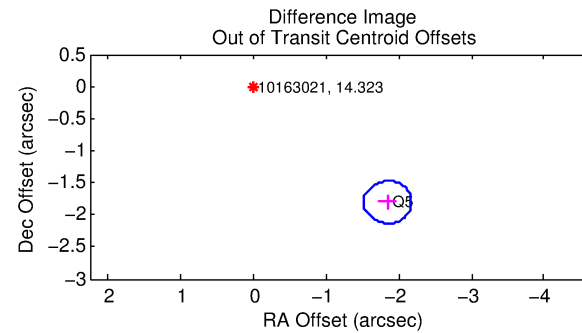
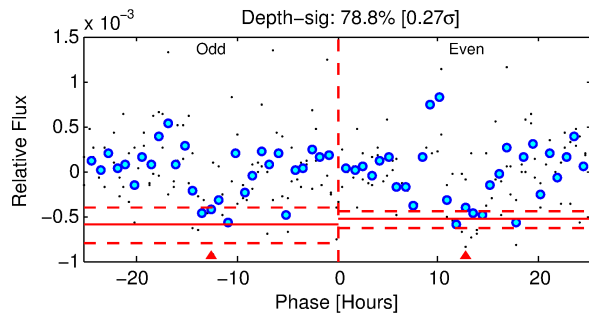
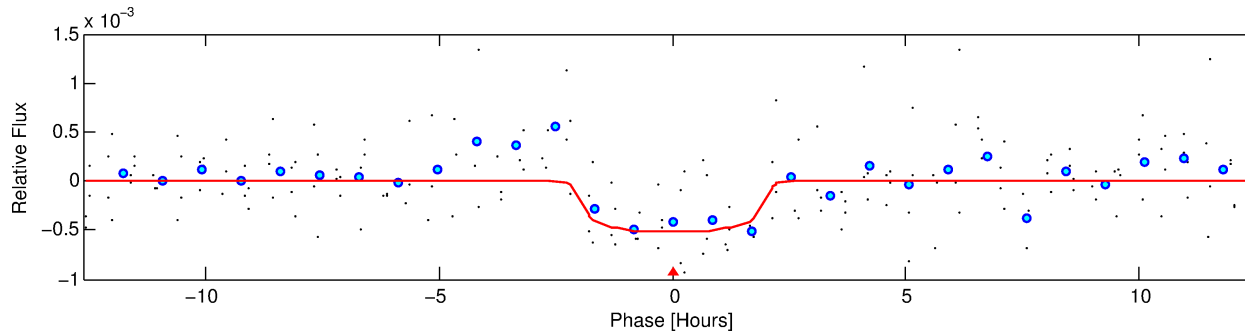
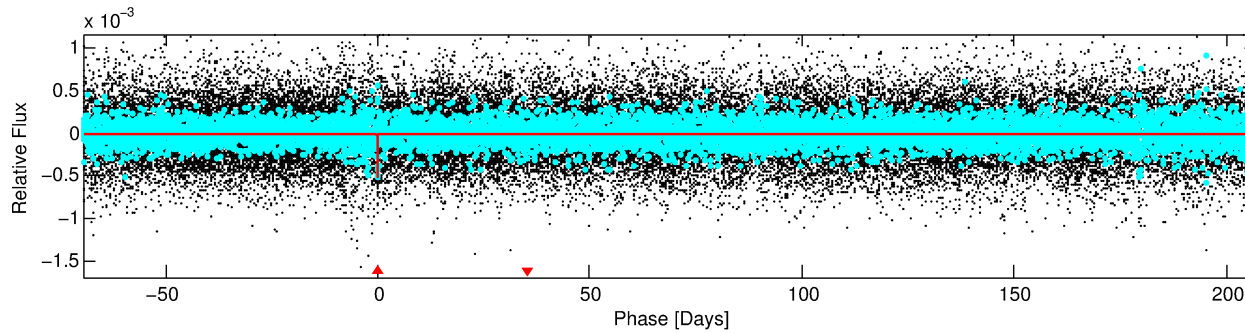
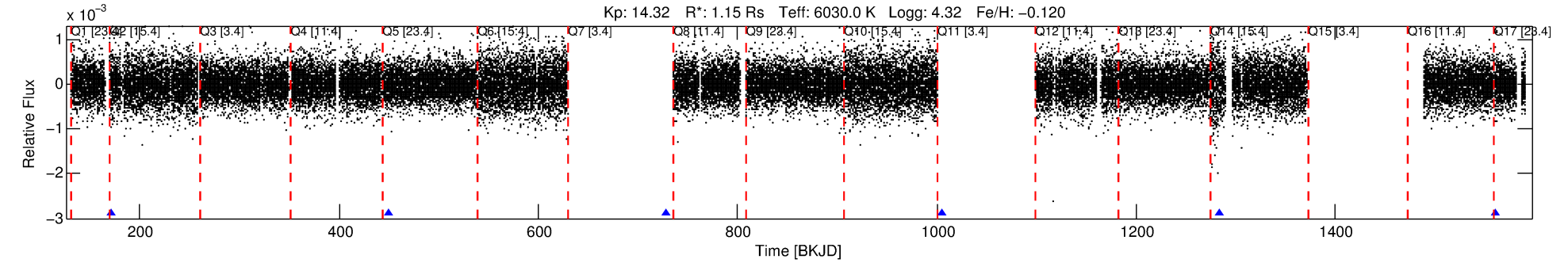
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010163021-01

No Significant Match Found

DV One-Page Summary

KIC: 10163021 Candidate: 1 of 1 Period: 277.815 d



DV Fit Results:

Period = 277.81513 [0.00388] d
Epoch = 172.0428 [0.0126] BKJD
Rp/R* = 0.0229 [0.0178]
a/R* = 336.57 [1254.41]
b = 0.78 [1.94]
Seff = 2.26 [0.84]
Teq = 313 [29] K
Rp = 2.88 [2.40] Re
a = 0.8340 [0.2016] AU
Ag = 14932.15 [24107.07] [0.62 σ]
Teffp = 5344 [2114] K [2.38 σ]

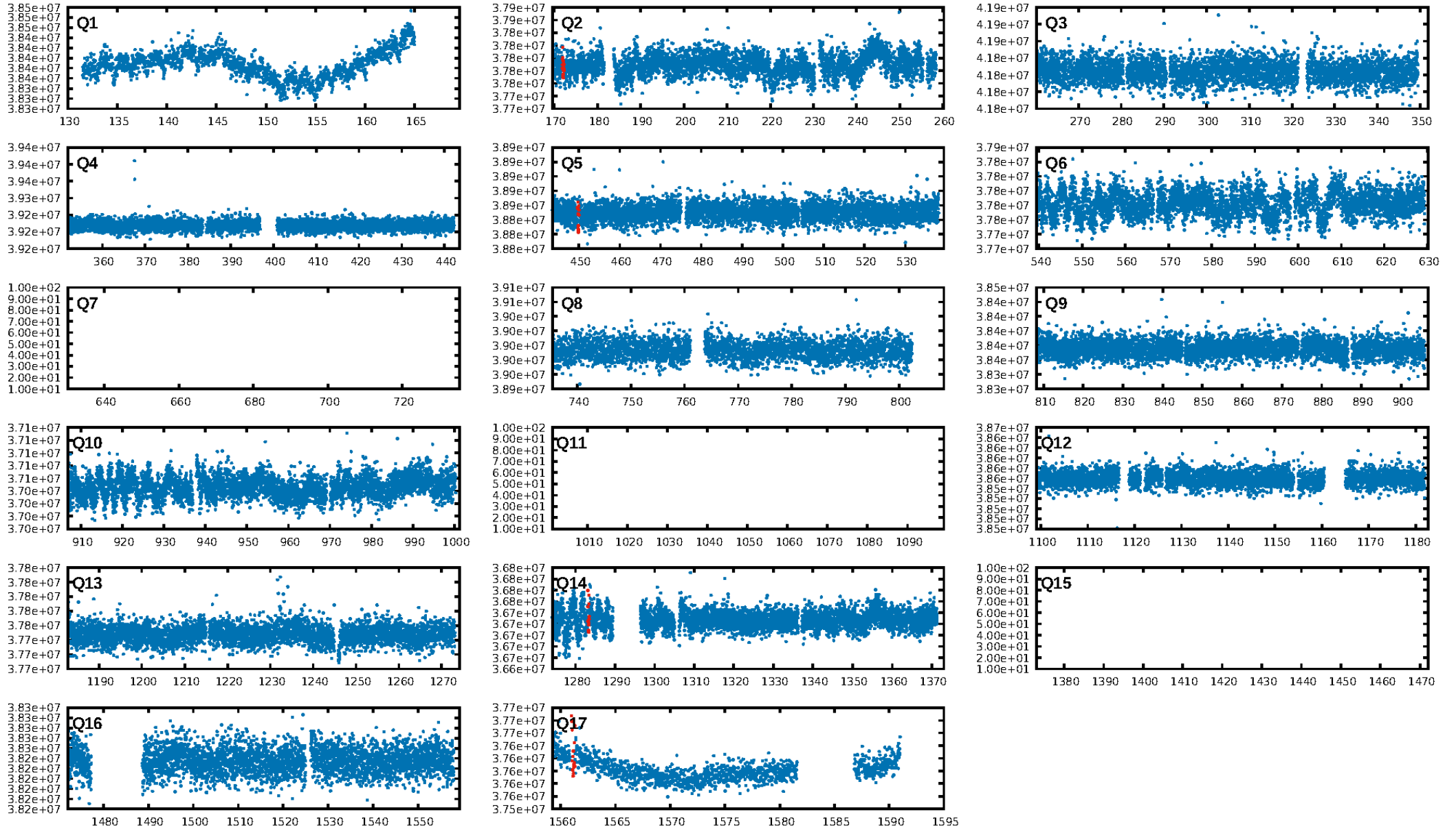
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 70.3%
ModelChiSquareGof-sig: 95.8%
Bootstrap-pfa: 6.70e-15
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.504
Centroid-sig: 11.9%
Centroid-so: 0.453 arcsec [0.33 σ]
OotOffset-rm: 2.581 arcsec [23.48 σ]
KicOffset-rm: 4.072 arcsec [38.74 σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [2/2]

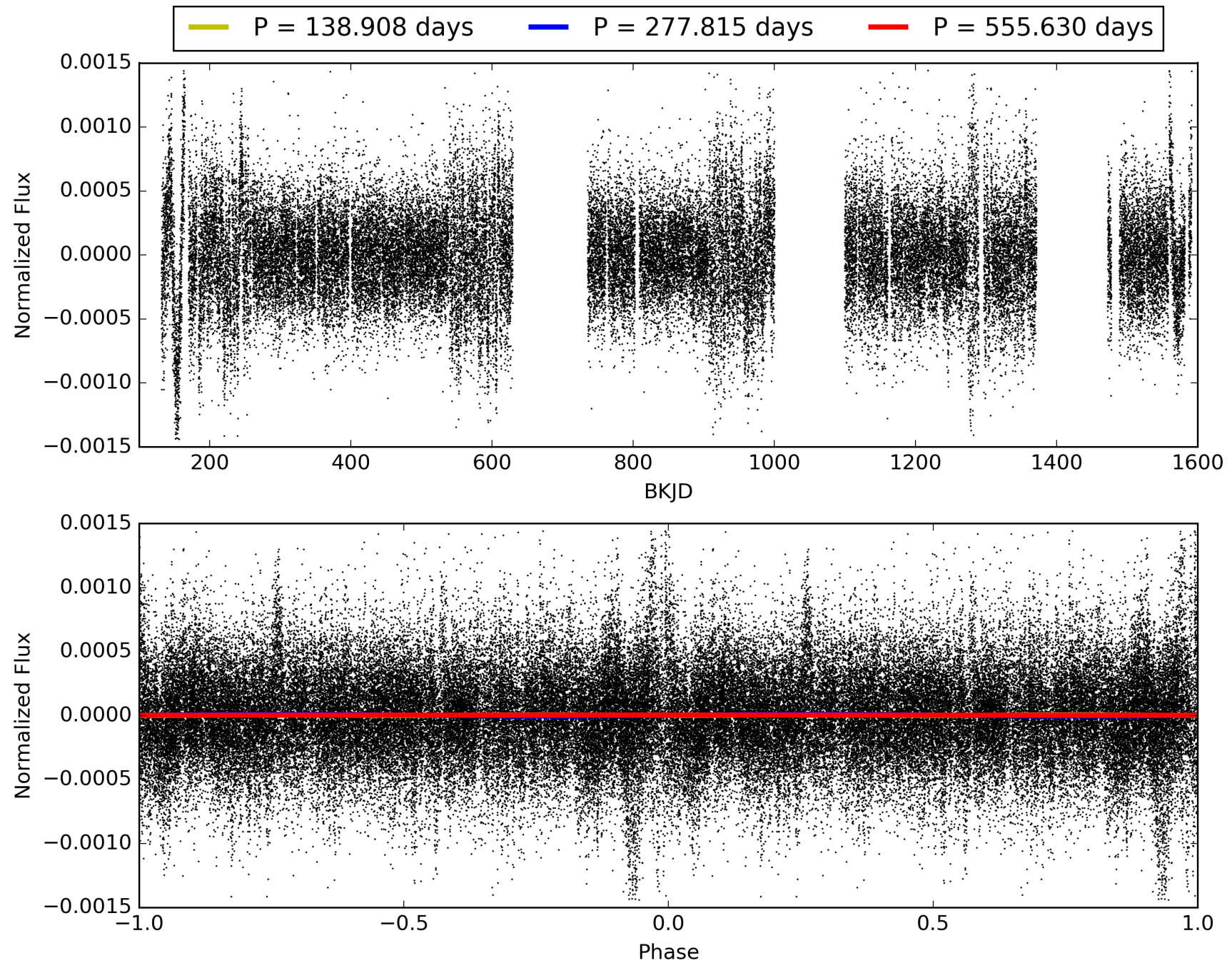
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 10:56:32 Z

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

TCE 010163021-01, PDC Light Curves

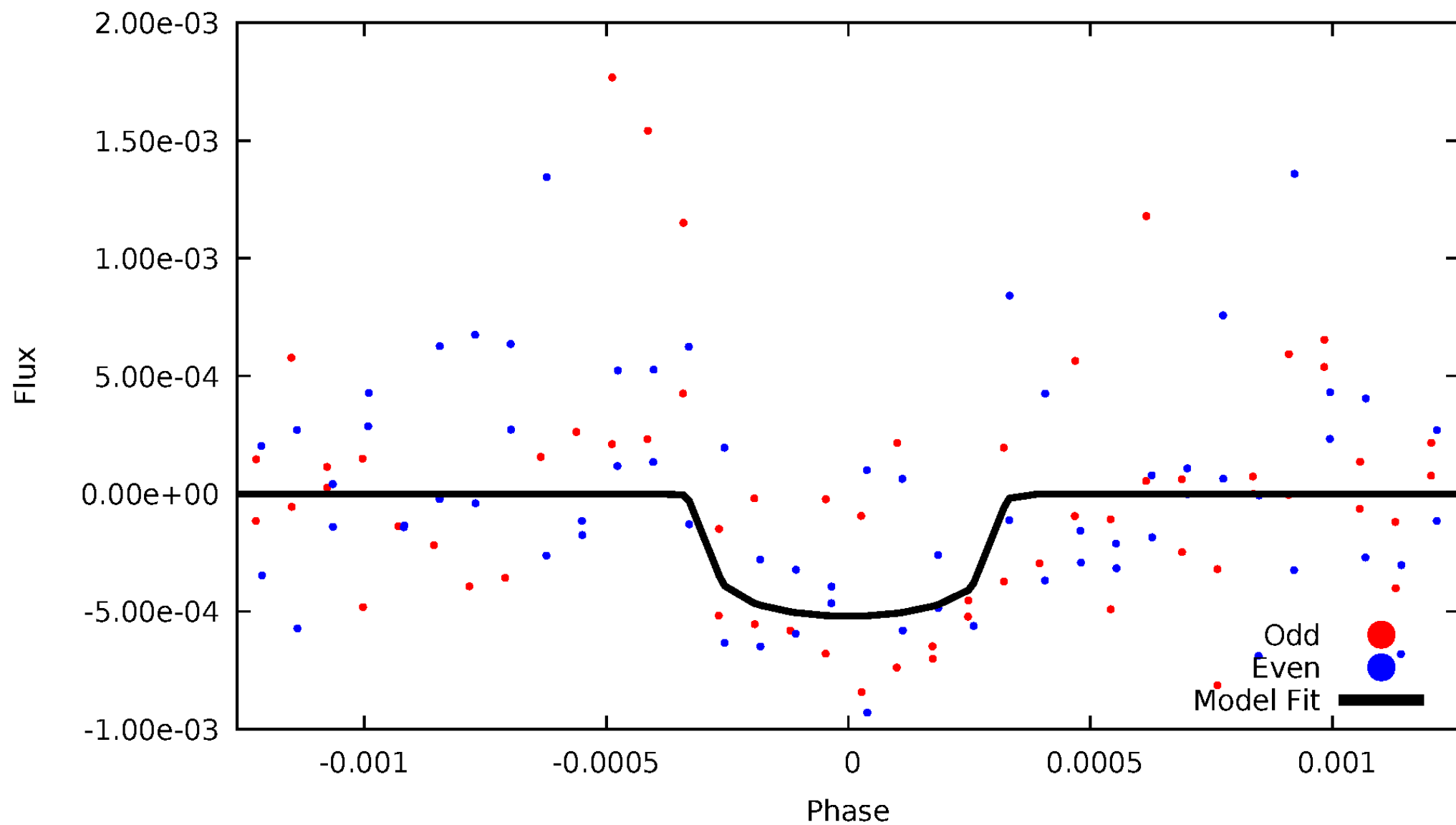


TCE 010163021-01



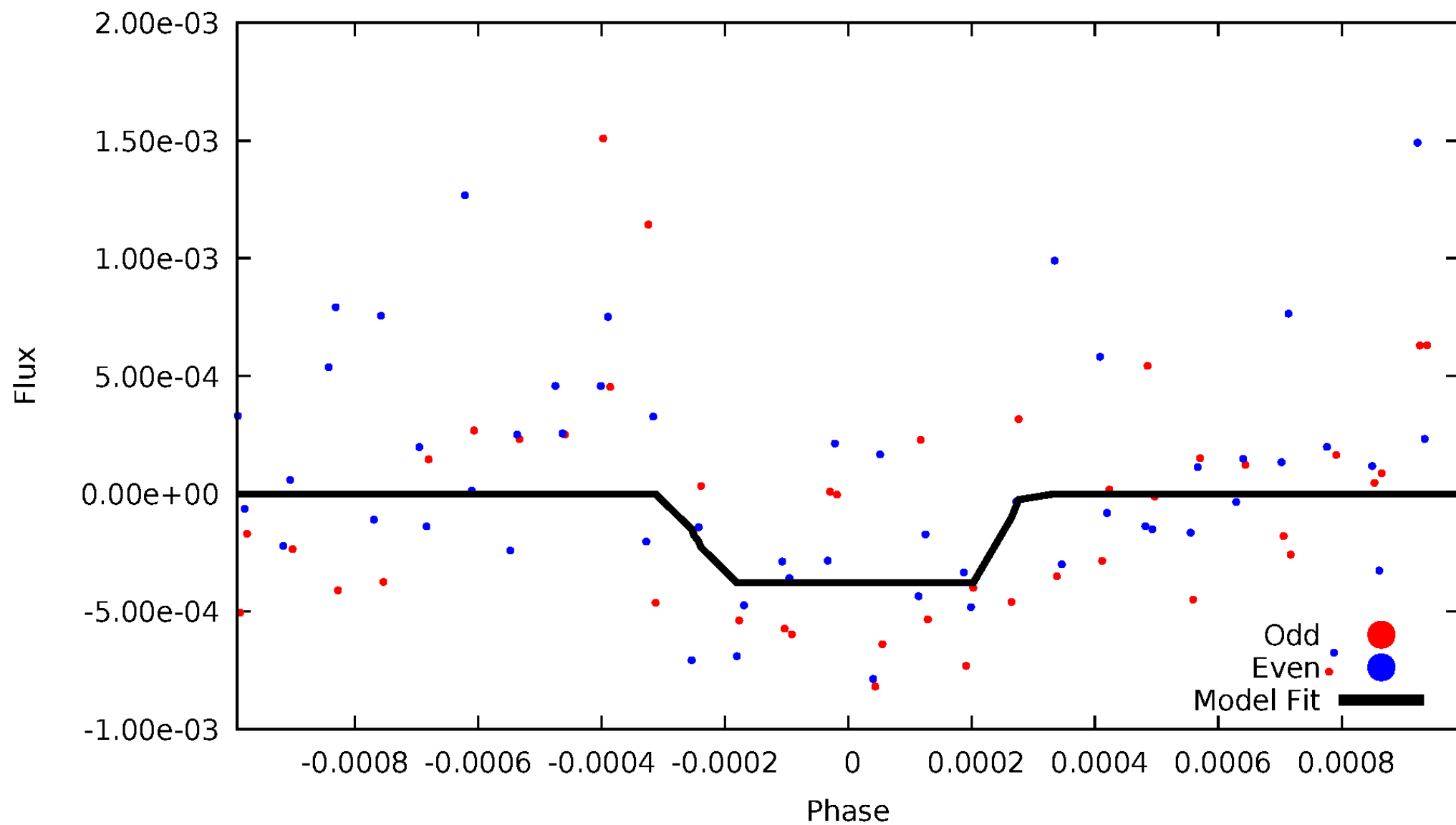
DV Odd/Even

TCE 010163021-01



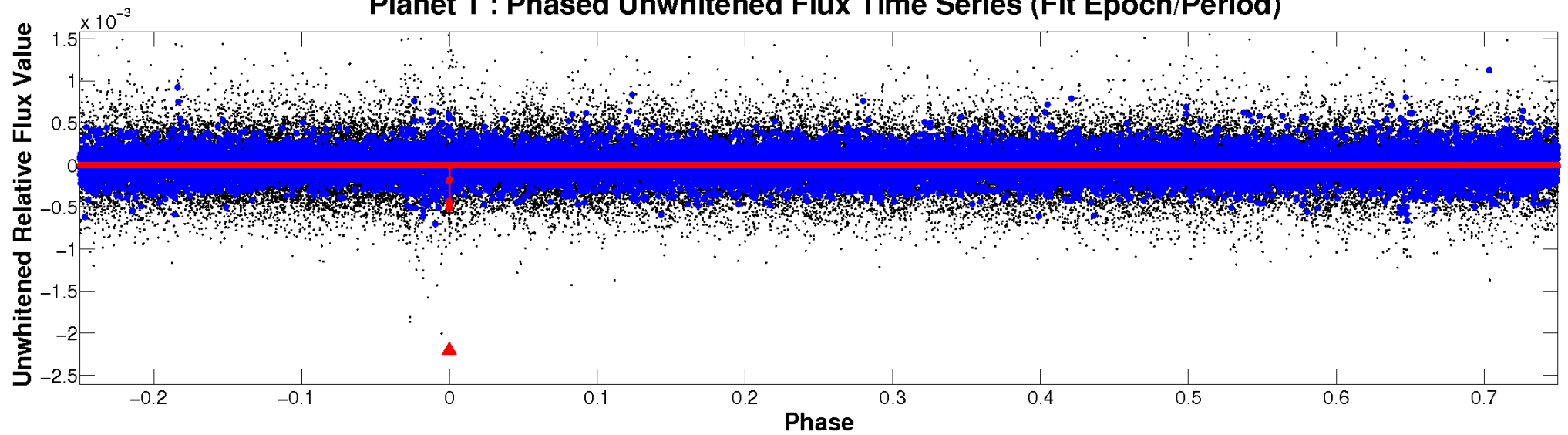
ALT Odd/Even

TCE 010163021-01

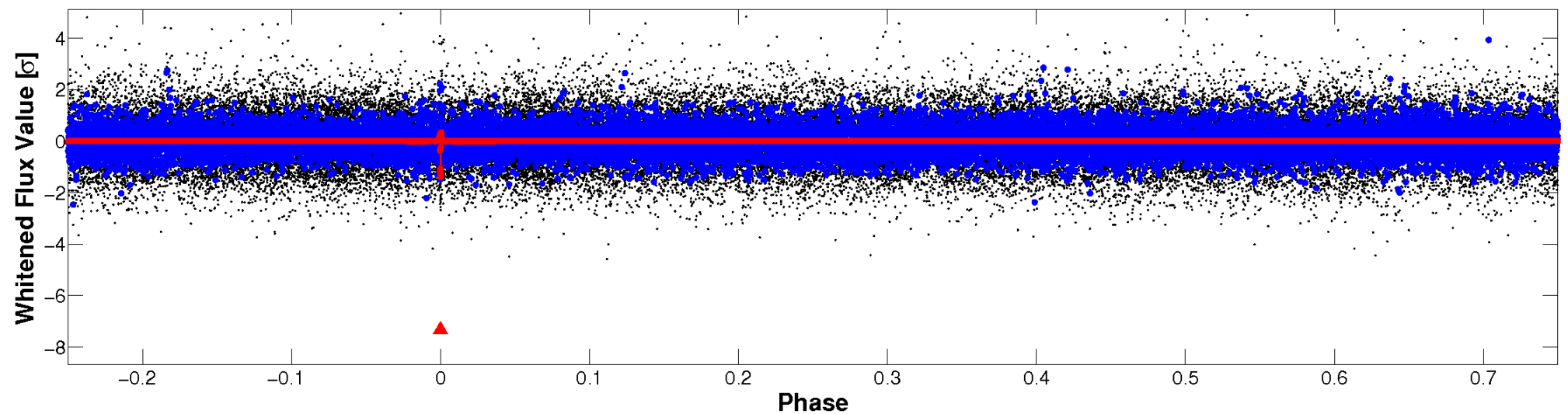


Non-Whitened Vs. Whitened Light Curve

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

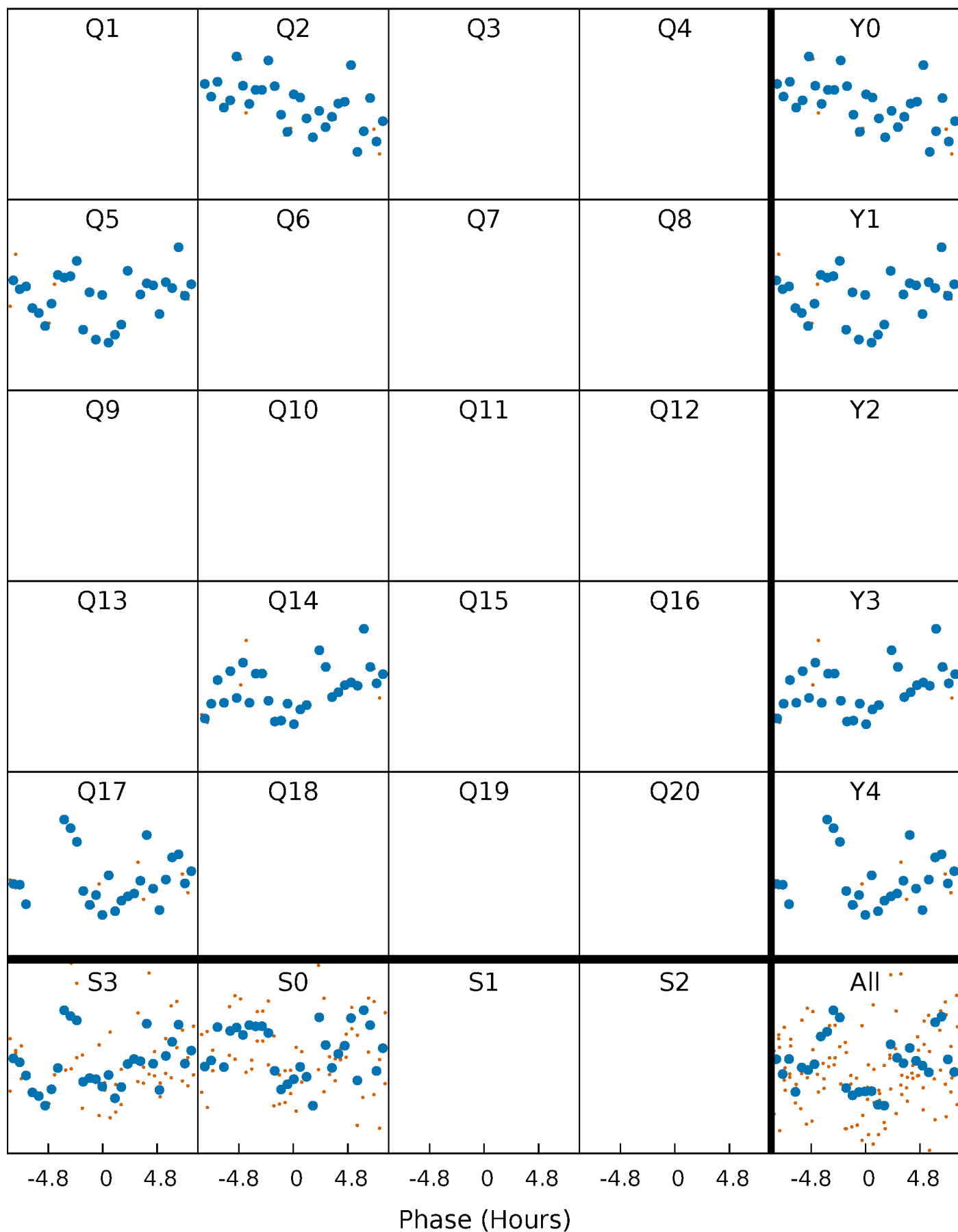


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 010163021-01 P=277.815126 Days $T_0=172.042833$ (BKJD)



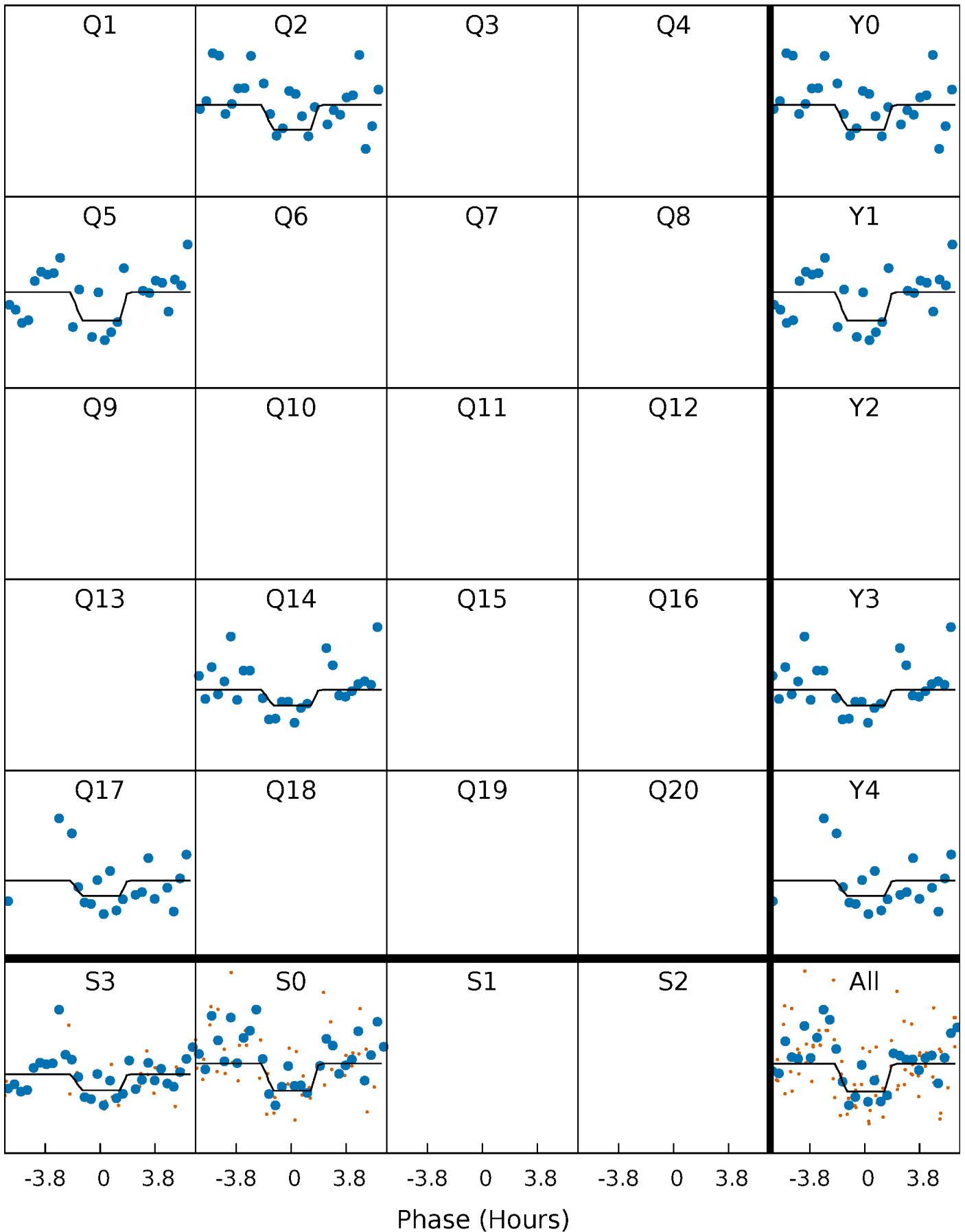
DV Quarter-Phased Transit Curves

TCE 010163021-01 P=277.815126 Days $T_0=172.042833$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

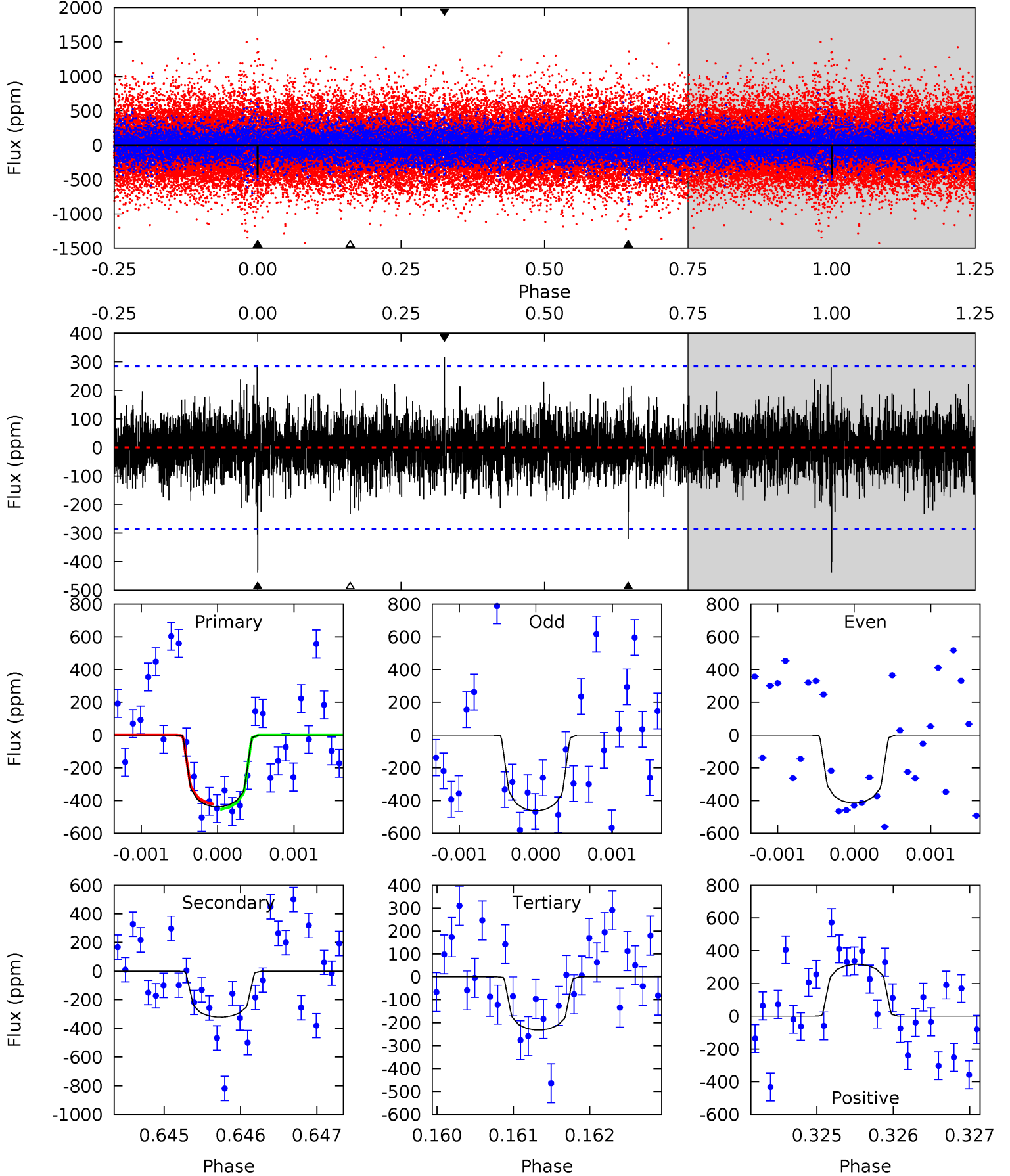
TCE 010163021-01 P=277.810865 Days $T_0=172.059542$ (BKJD)



DV Model-Shift Uniqueness Test

010163021-01, P = 277.815126 Days, E = 172.042833 Days

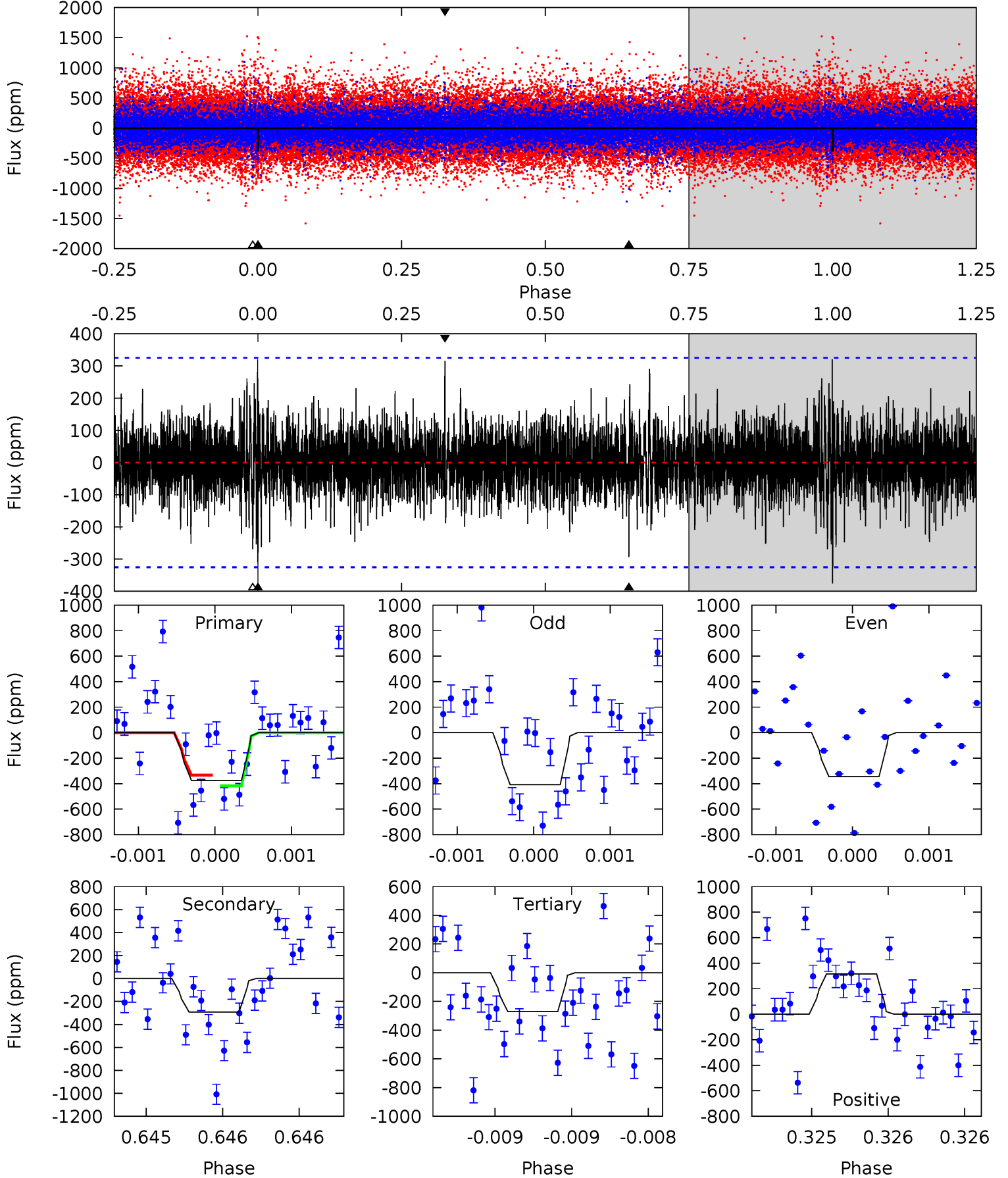
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.48	6.21	4.49	6.12	5.51	3.38	1.23	3.99	2.37	1.72	0.09	0.46	0.95	0.42	0.31



Alt Model-Shift Uniqueness Test

010163021-01, P = 277.810865 Days, E = 172.059542 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.39	4.96	4.59	5.38	5.55	3.44	1.15	1.80	1.00	0.37	-0.42	0.54	0.92	0.46	0.72



Stellar Parameters For KIC 010163021

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6030^{+180}_{-198}	$4.316^{+0.153}_{-0.187}$	$-0.120^{+0.300}_{-0.300}$	$1.152^{+0.336}_{-0.224}$	$1.000^{+0.155}_{-0.116}$	$0.922^{+0.677}_{-0.452}$
	+3%/-3%	+4%/-4%	+250%/-250%	+29%/-19%	+16%/-12%	+73%/-49%
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 010163021-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-321 ± 52	$3.20^{+2.08}_{-1.91}$	439^{+31}_{-29}	5133^{+2985}_{-922}	12171^{+61365}_{-7884}
Alt.	-291 ± 59	$3.02^{+2.24}_{-1.81}$	438^{+34}_{-28}	5174^{+3109}_{-1036}	12269^{+63009}_{-8432}

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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

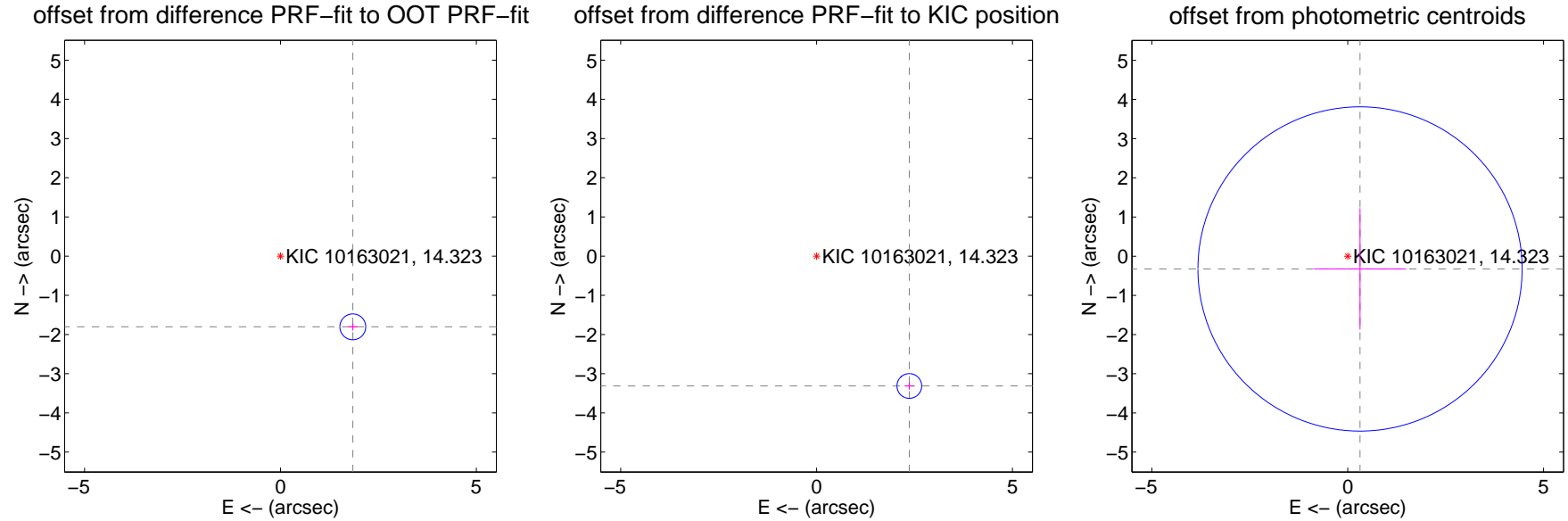
DV Centroid Data

Supplemental centroid analysis for 010163021-01. Kepler magnitude: 14.32. Transit SNR 6.90

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 1.60 arcsec

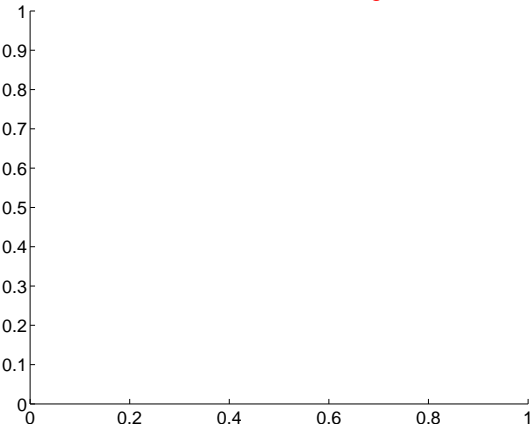
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.581 ± 0.110	23.48	-1.846 ± 0.122	-1.803 ± 0.095
PRF-fit source offset from KIC position	4.072 ± 0.105	38.74	-2.367 ± 0.122	-3.313 ± 0.095
photometric centroid source offset	0.45 ± 1.38	0.33	-0.31 ± 1.17	-0.33 ± 1.55



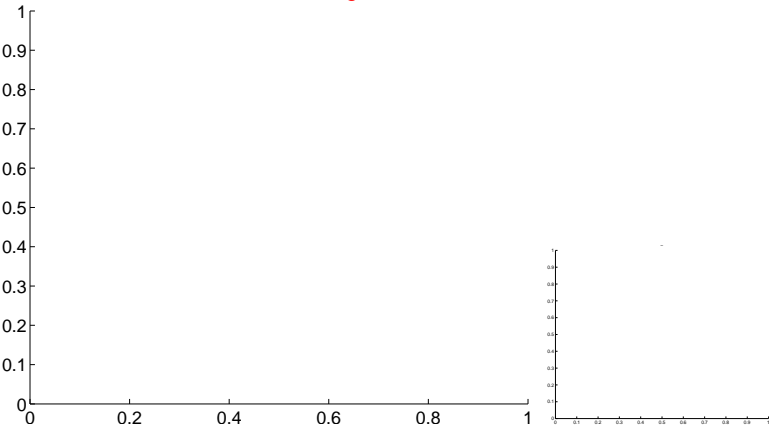
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

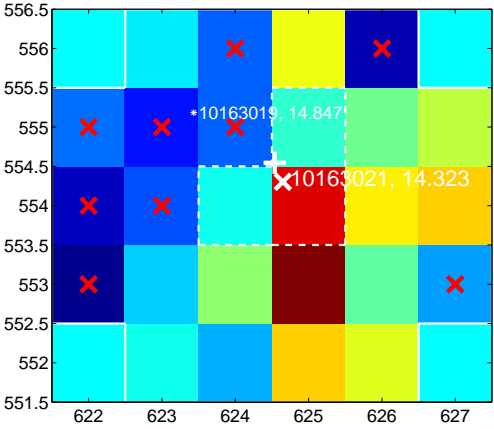
Q1 no difference image



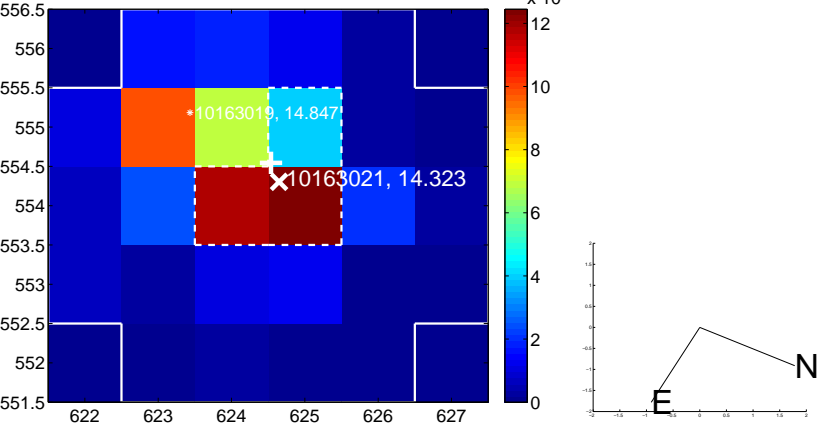
Q1 no OOT image



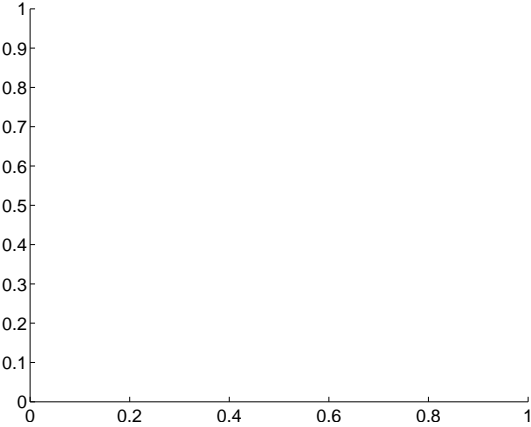
Q2 difference image. Poor Quality



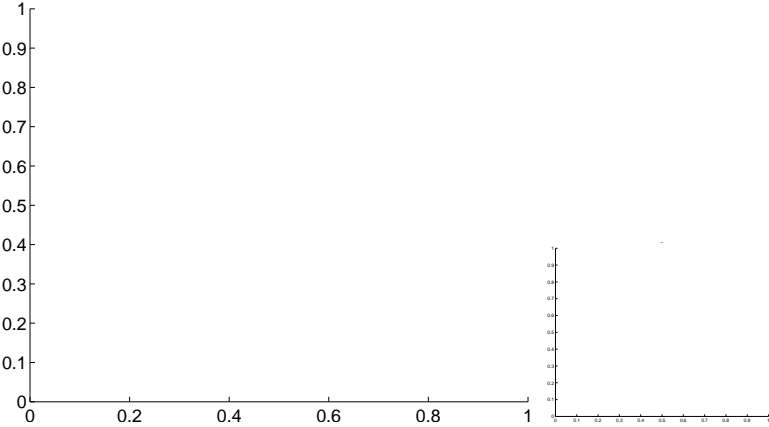
Q2 OOT image



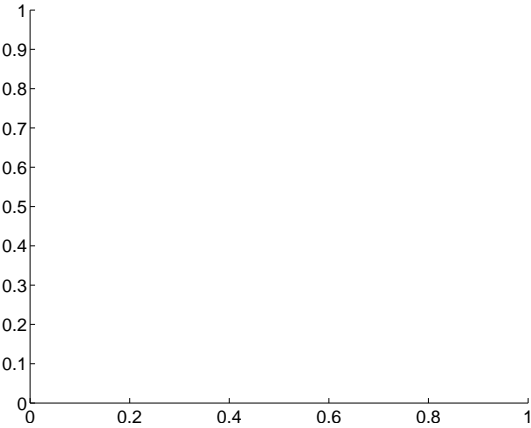
Q3 no difference image



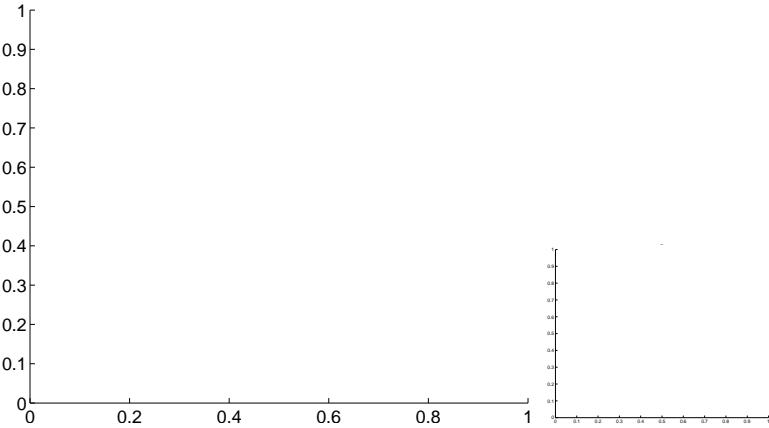
Q3 no OOT image



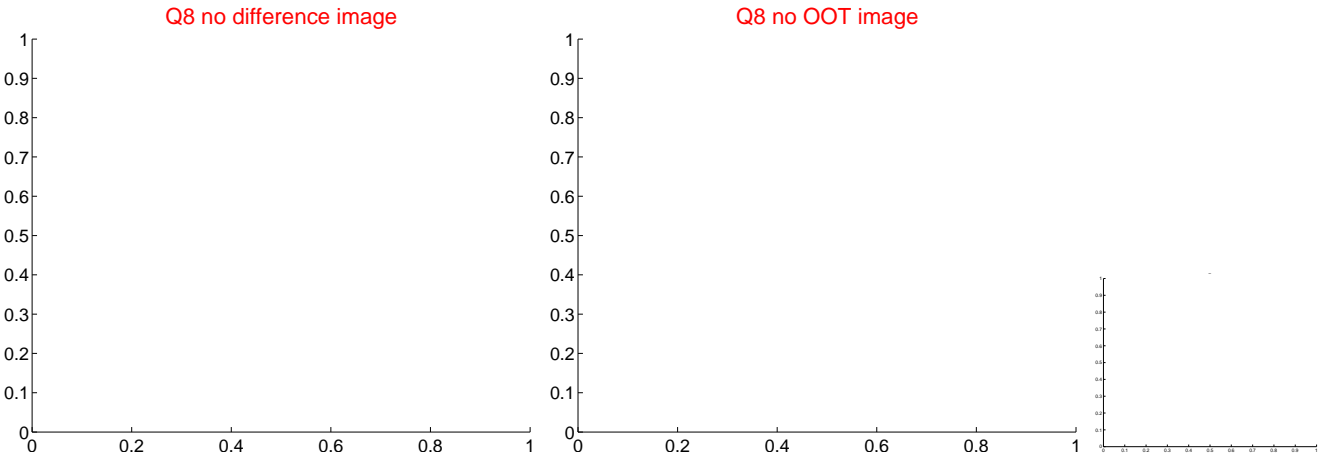
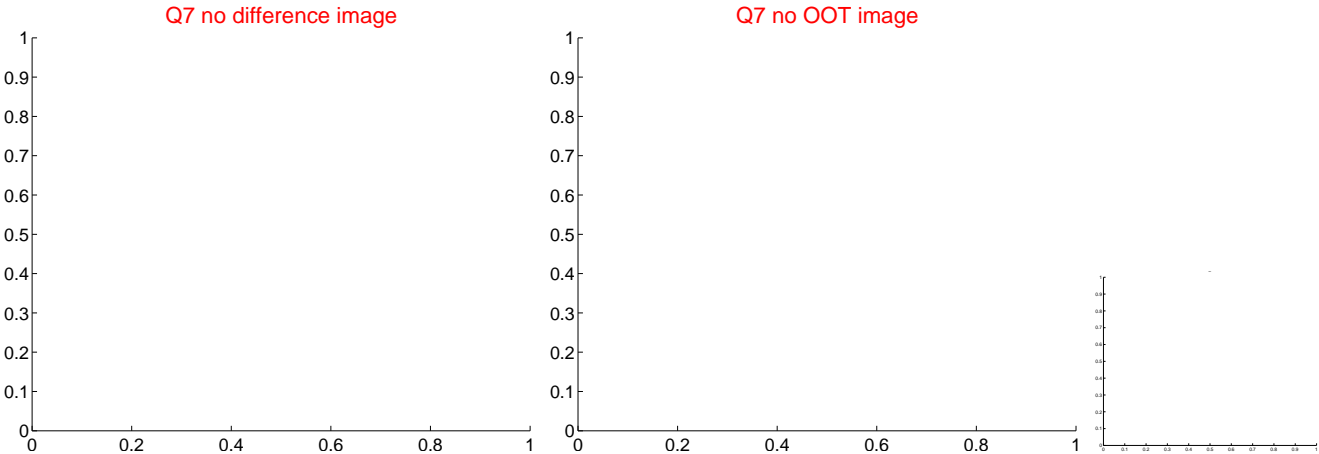
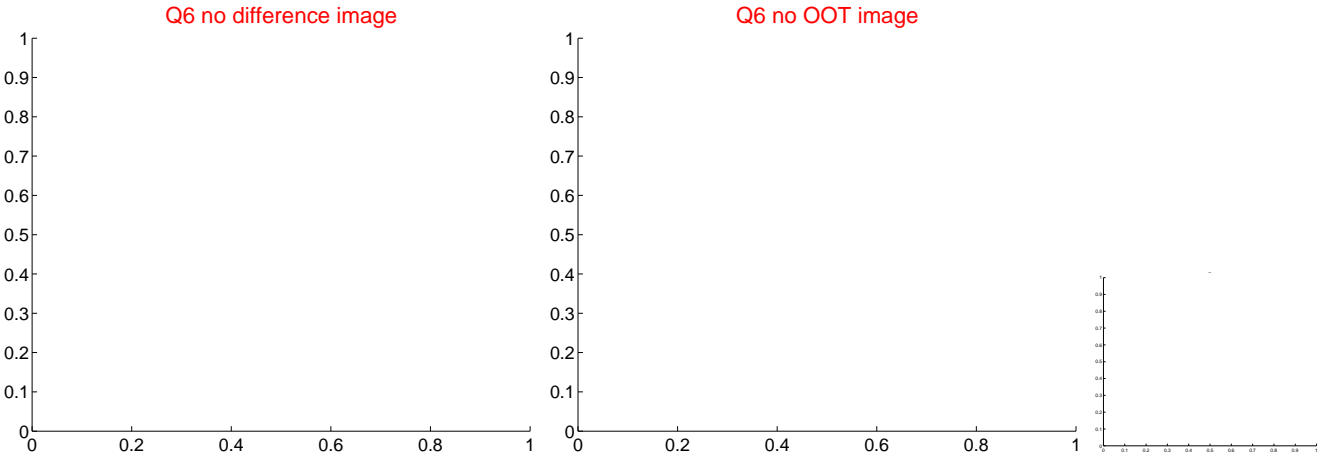
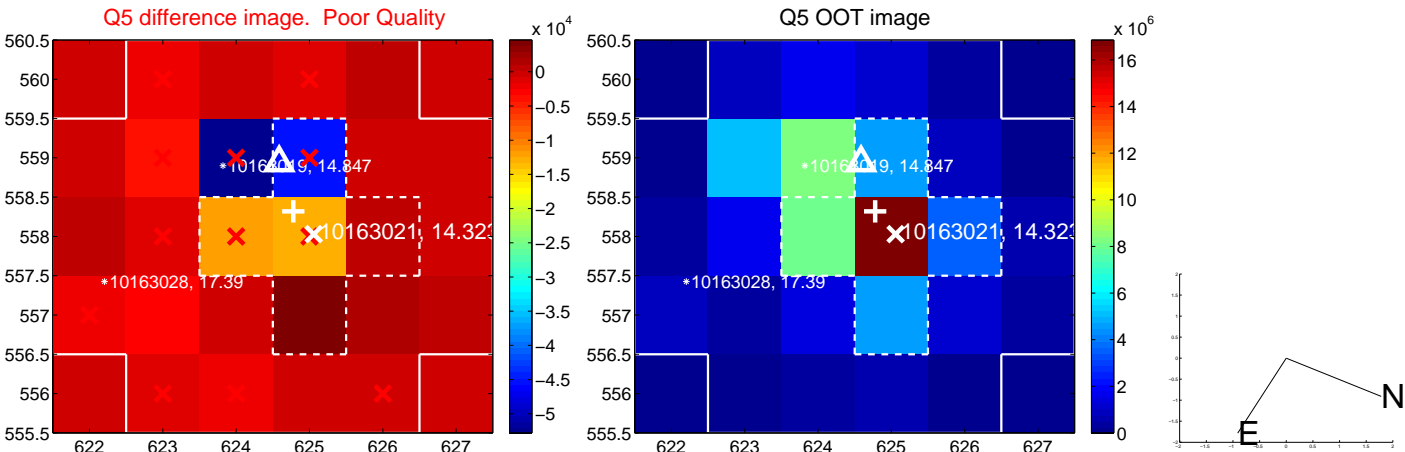
Q4 no difference image



Q4 no OOT image



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



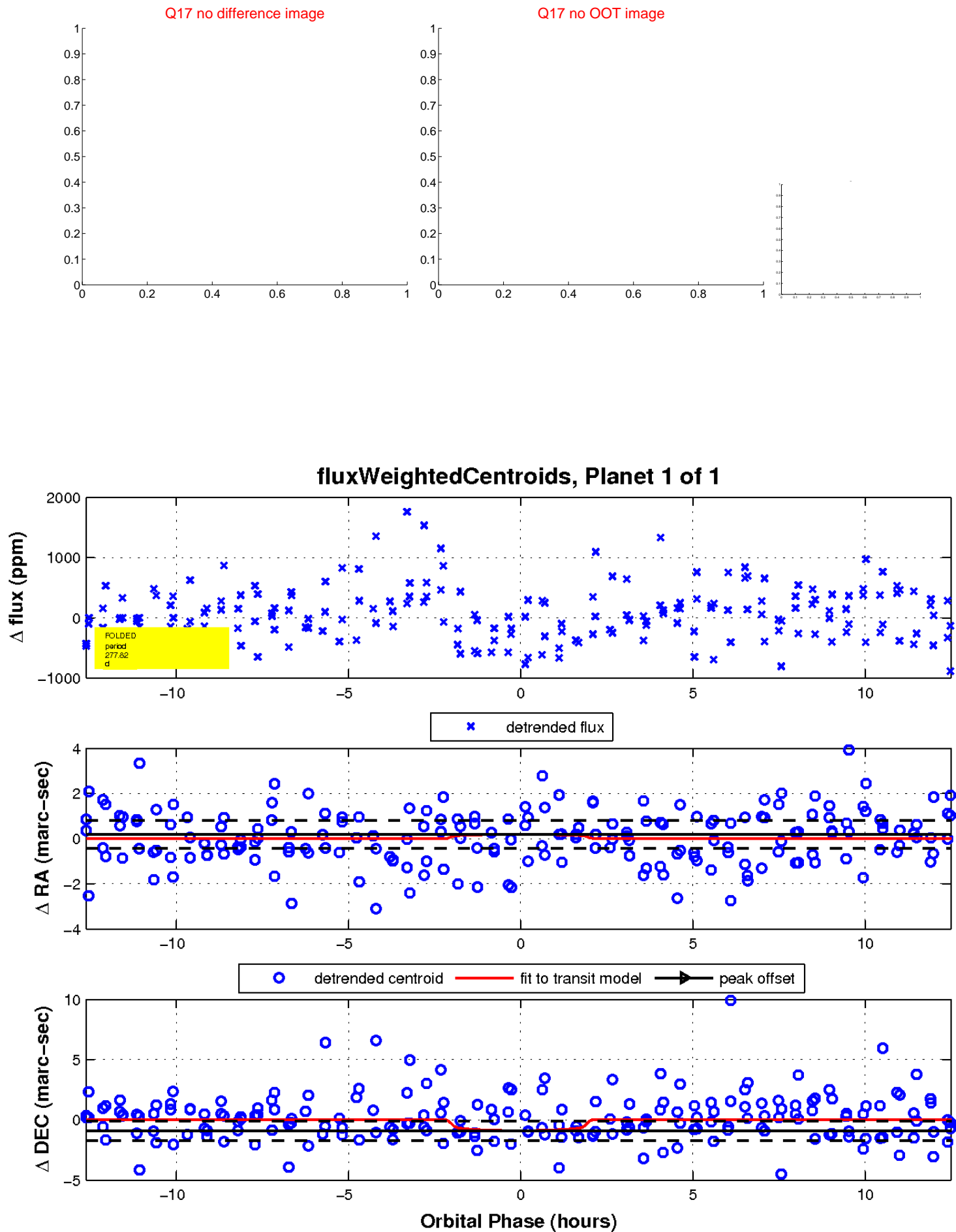
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

