

KIC 009596620

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})
009596620-01	OBS	No	326.023194	254.080987	855.2	8.826	12.5	7.3	0.41	3823	1.23	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009596620-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—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.

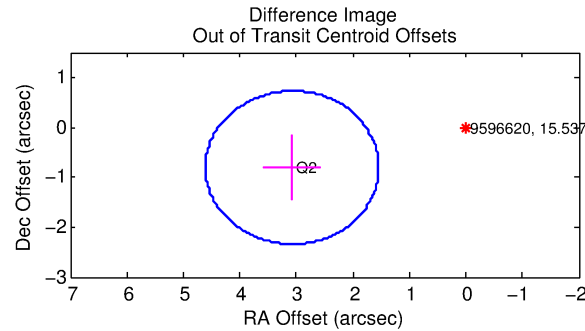
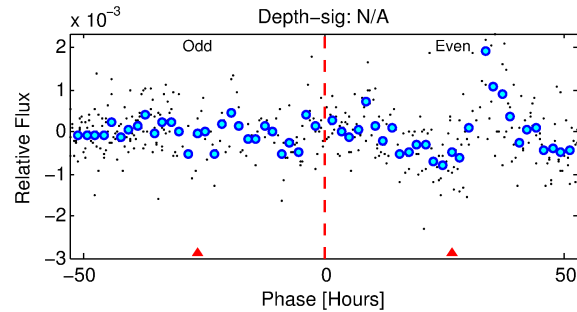
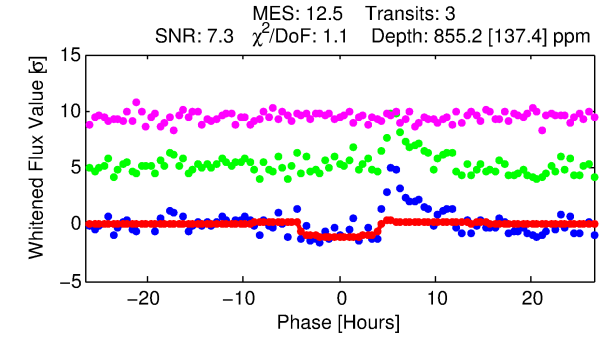
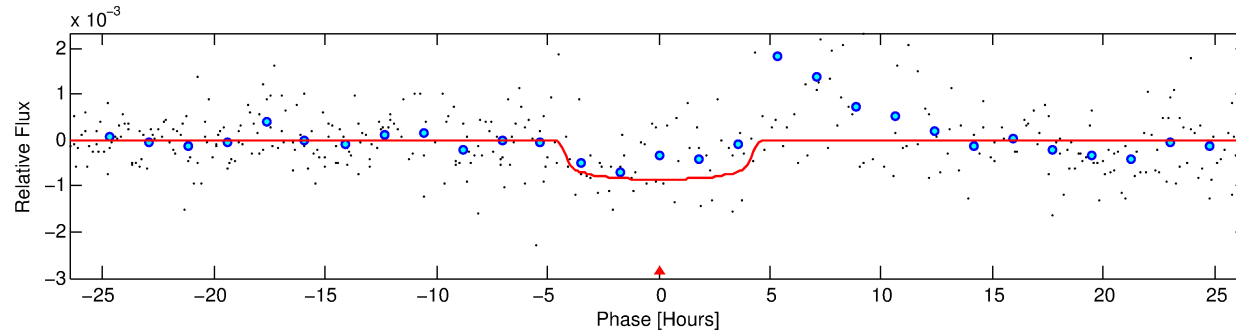
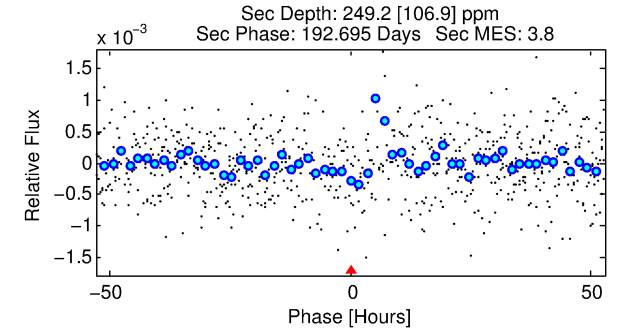
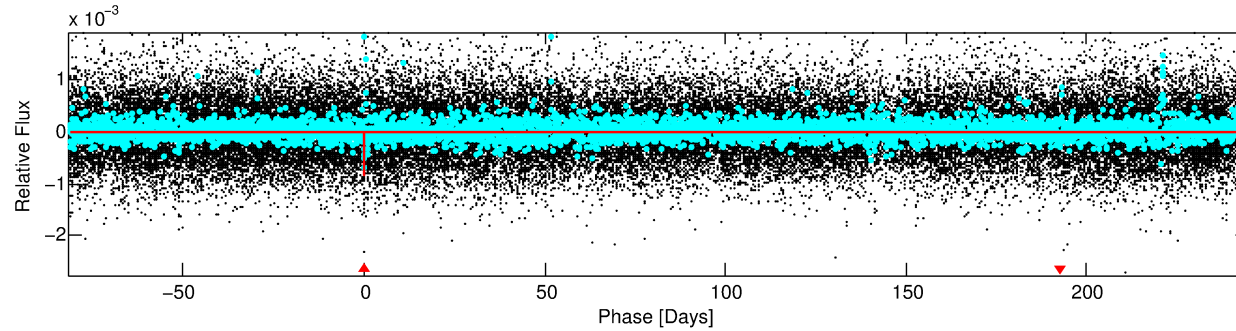
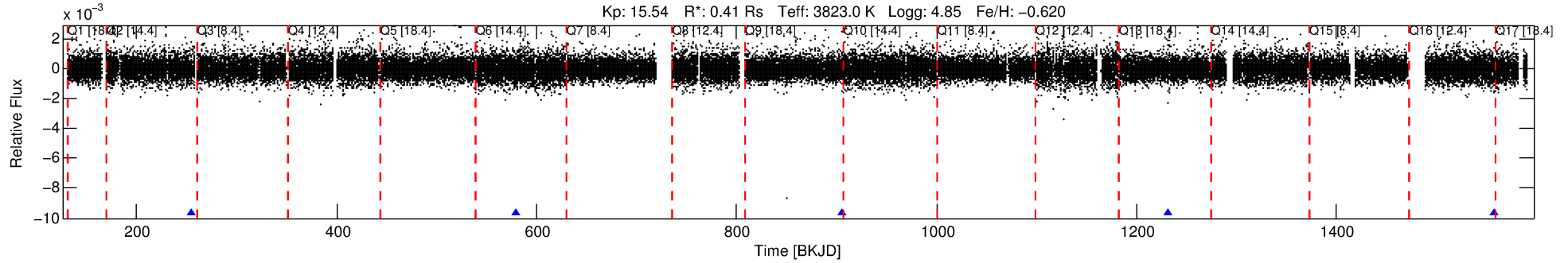
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009596620-01

No Significant Match Found

DV One-Page Summary

KIC: 9596620 Candidate: 1 of 1 Period: 326.023 d



DV Fit Results:

Period = 326.02319 [0.00741] d
Epoch = 254.0810 [0.0148] BKJD
Rp/R* = 0.0276 [0.0253]
a/R* = 254.61 [1275.44]
b = 0.49 [7.71]
Seff = 0.06 [0.01]
Teq = 129 [5] K
Rp = 1.23 [1.14] Re
a = 0.7031 [0.0752] AU
Ag = 44578.21 [84022.46] [0.53σ]
Teffp = 2890 [1359] K [2.03σ]

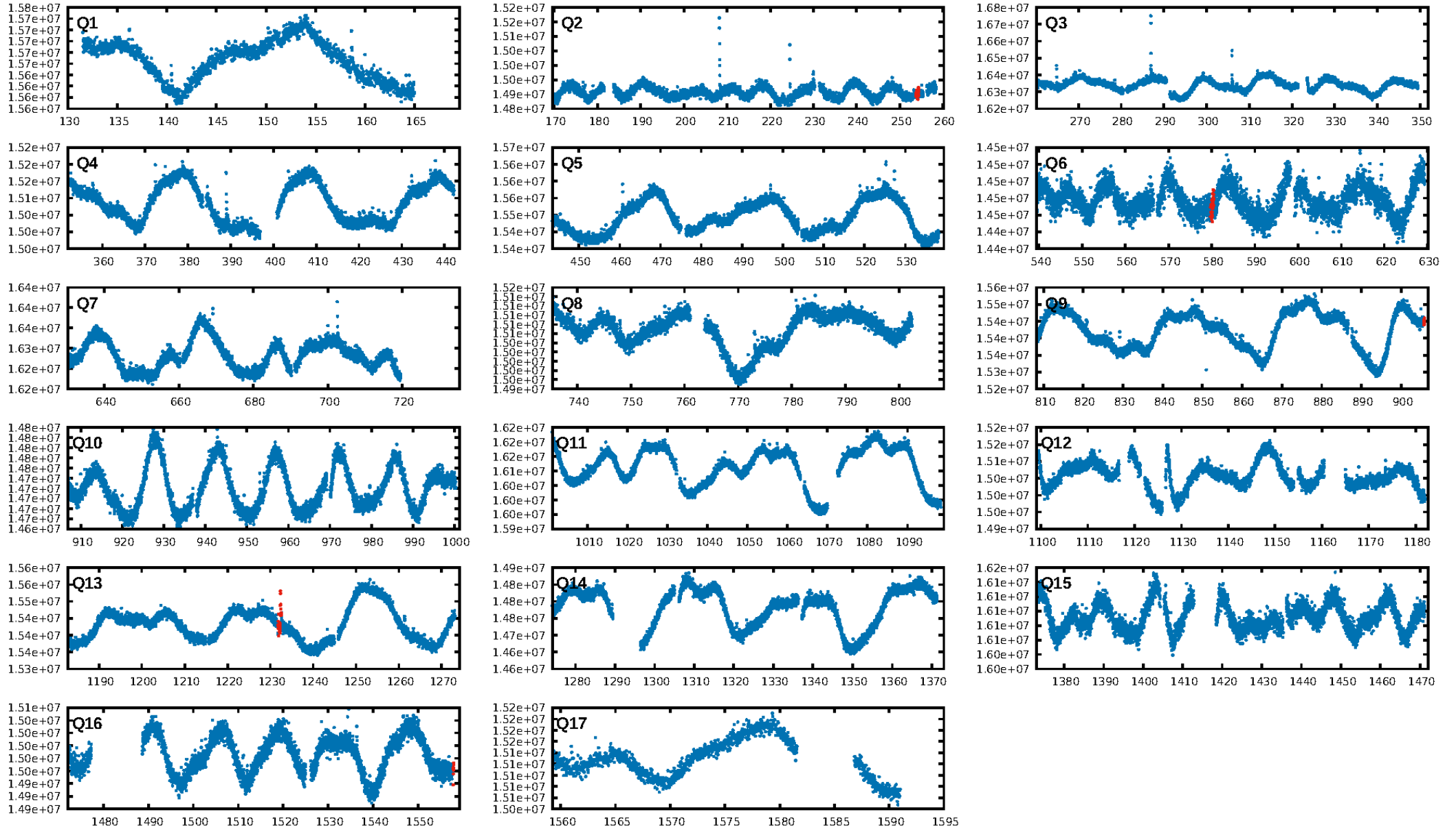
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.2%
ModelChiSquareGof-sig: 89.4%
Bootstrap-pfa: 5.76e-24
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.601
Centroid-sig: 0.3%
Centroid-so: 2.950 arcsec [2.13σ]
OotOffset-rm: 3.180 arcsec [6.22σ]
KicOffset-rm: 2.946 arcsec [5.78σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

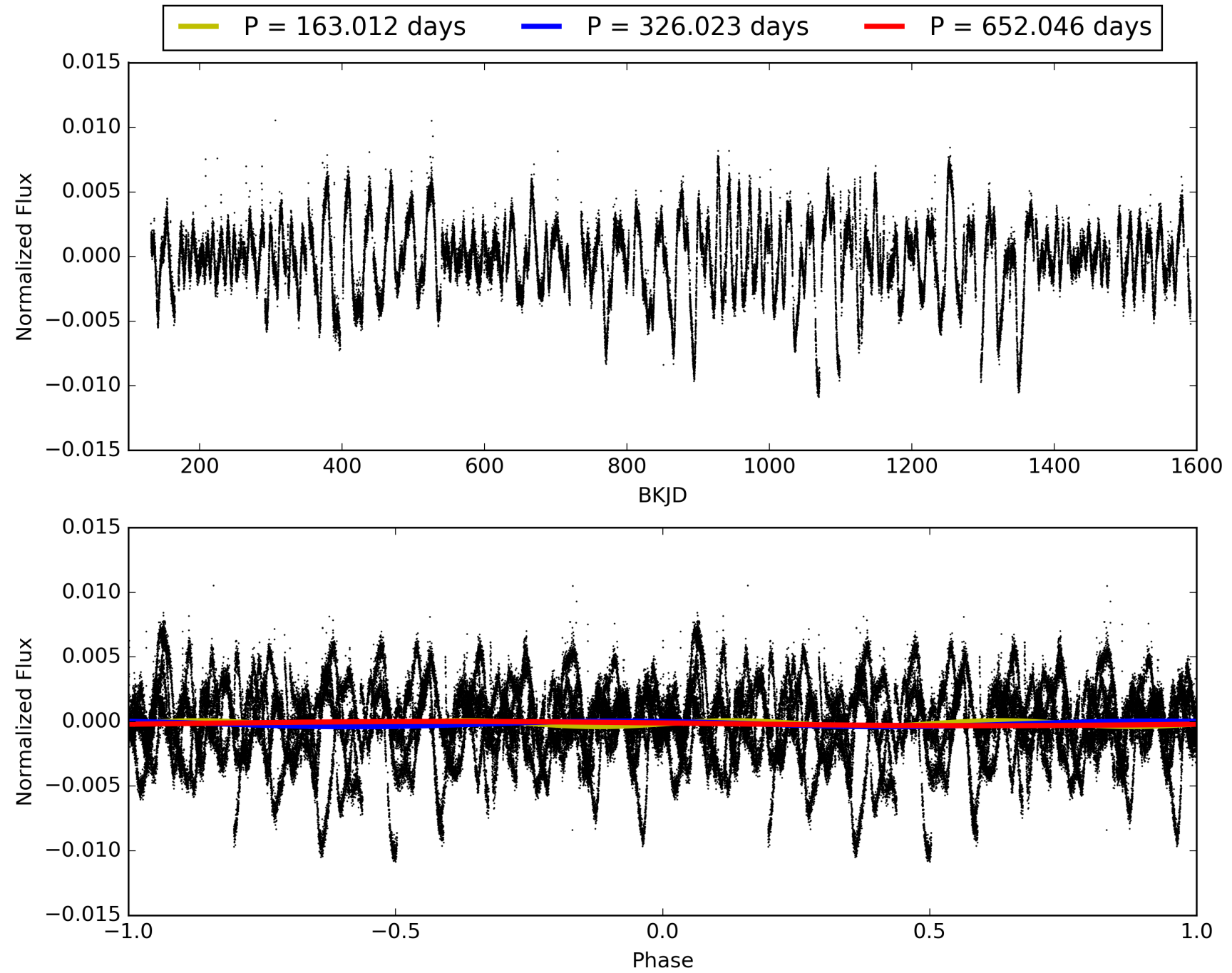
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:45:11 Z

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

TCE 009596620-01, PDC Light Curves

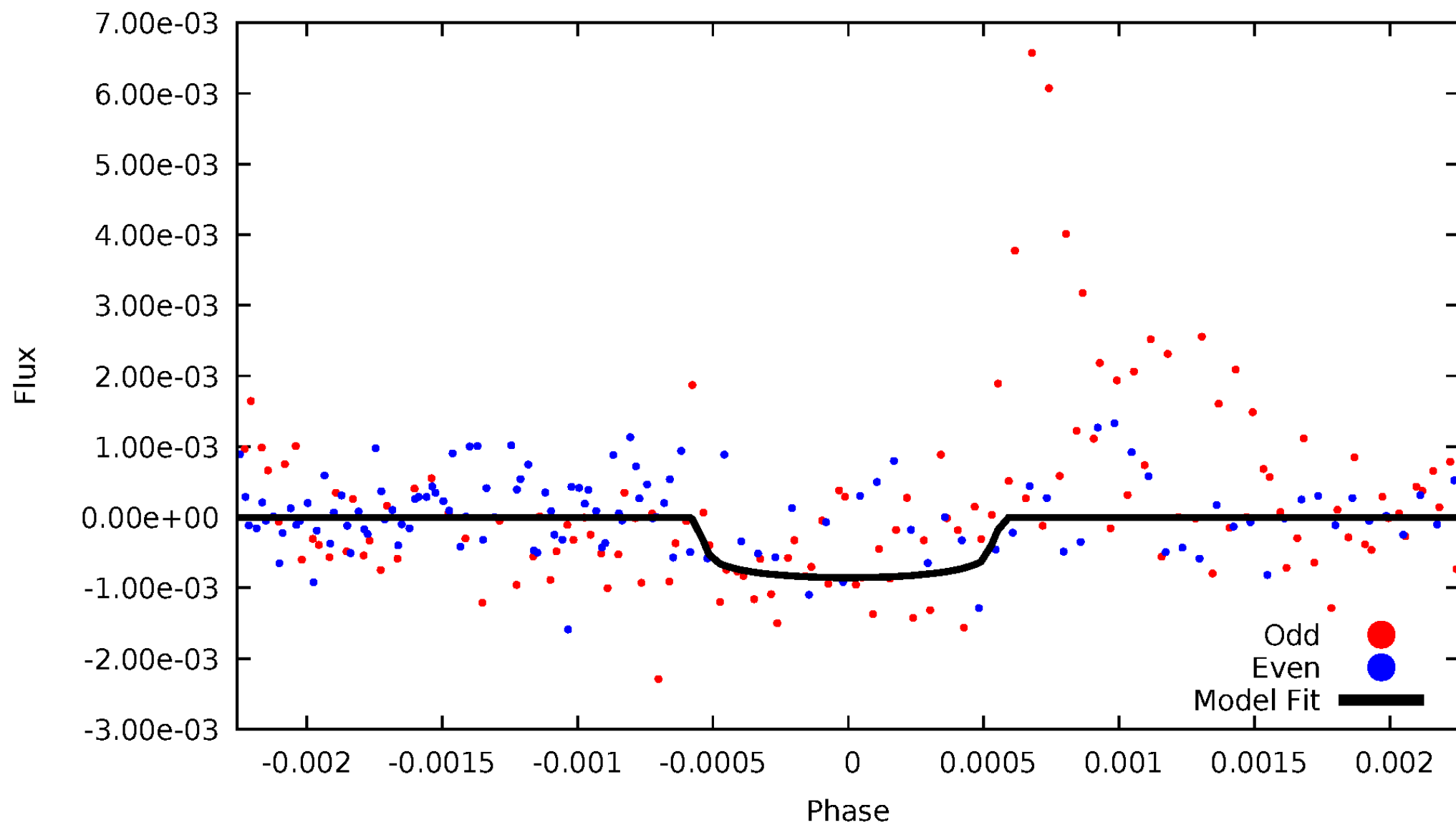


TCE 009596620-01



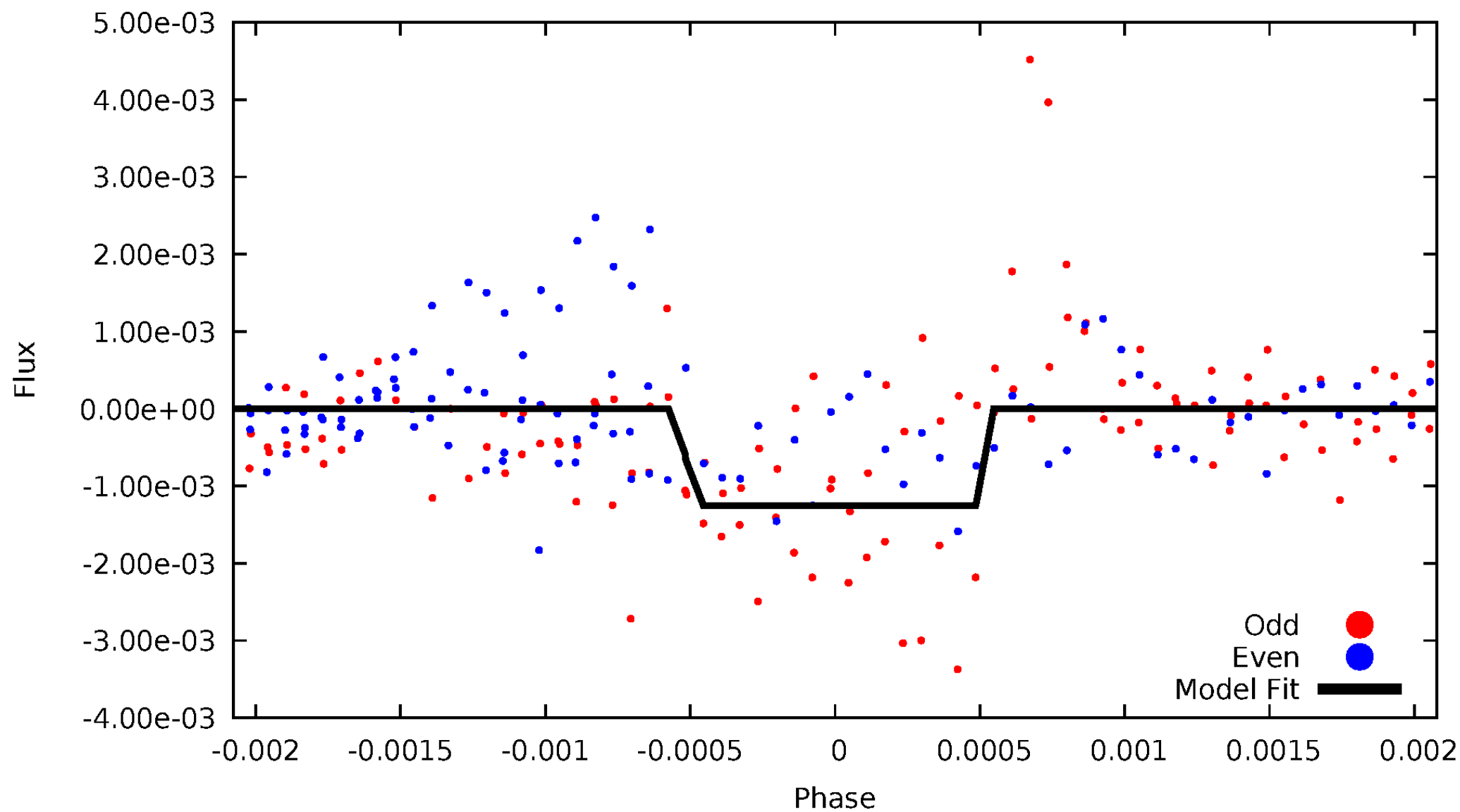
DV Odd/Even

TCE 009596620-01



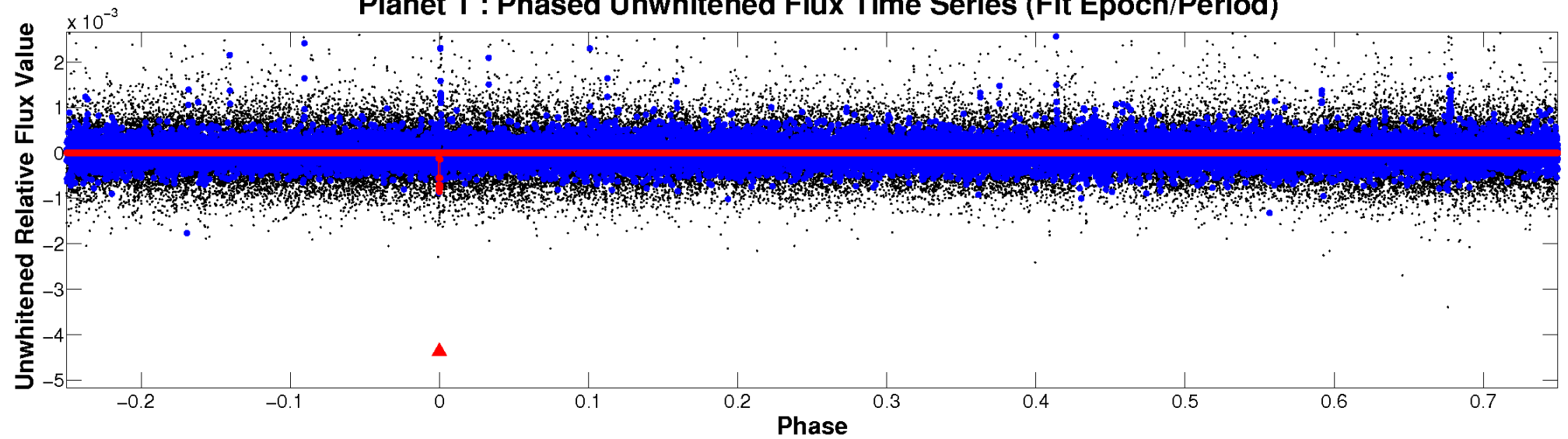
ALT Odd/Even

TCE 009596620-01

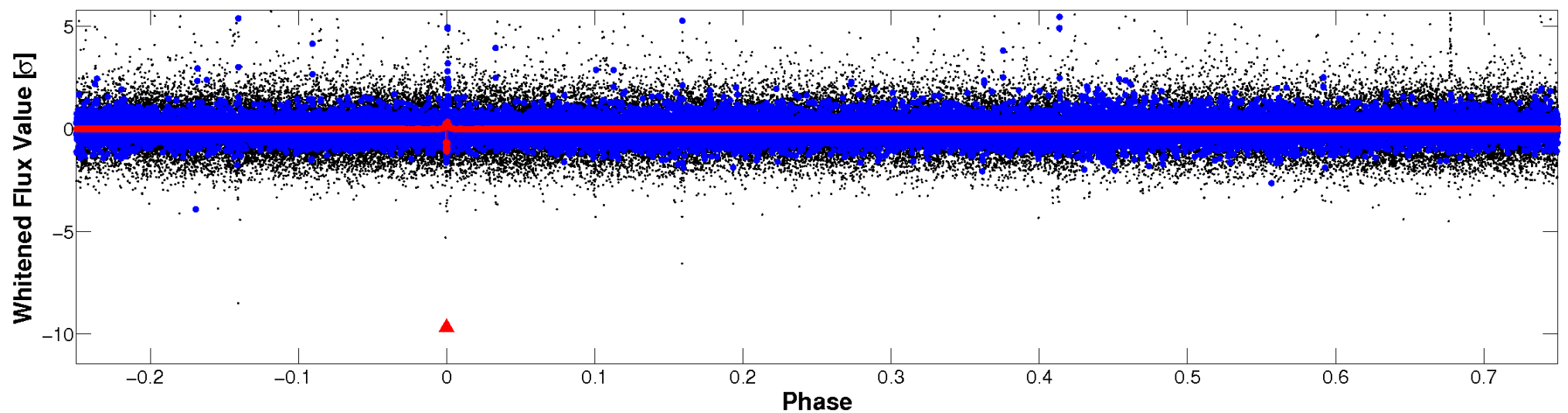


Non-Whitened Vs. Whitened Light Curve

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

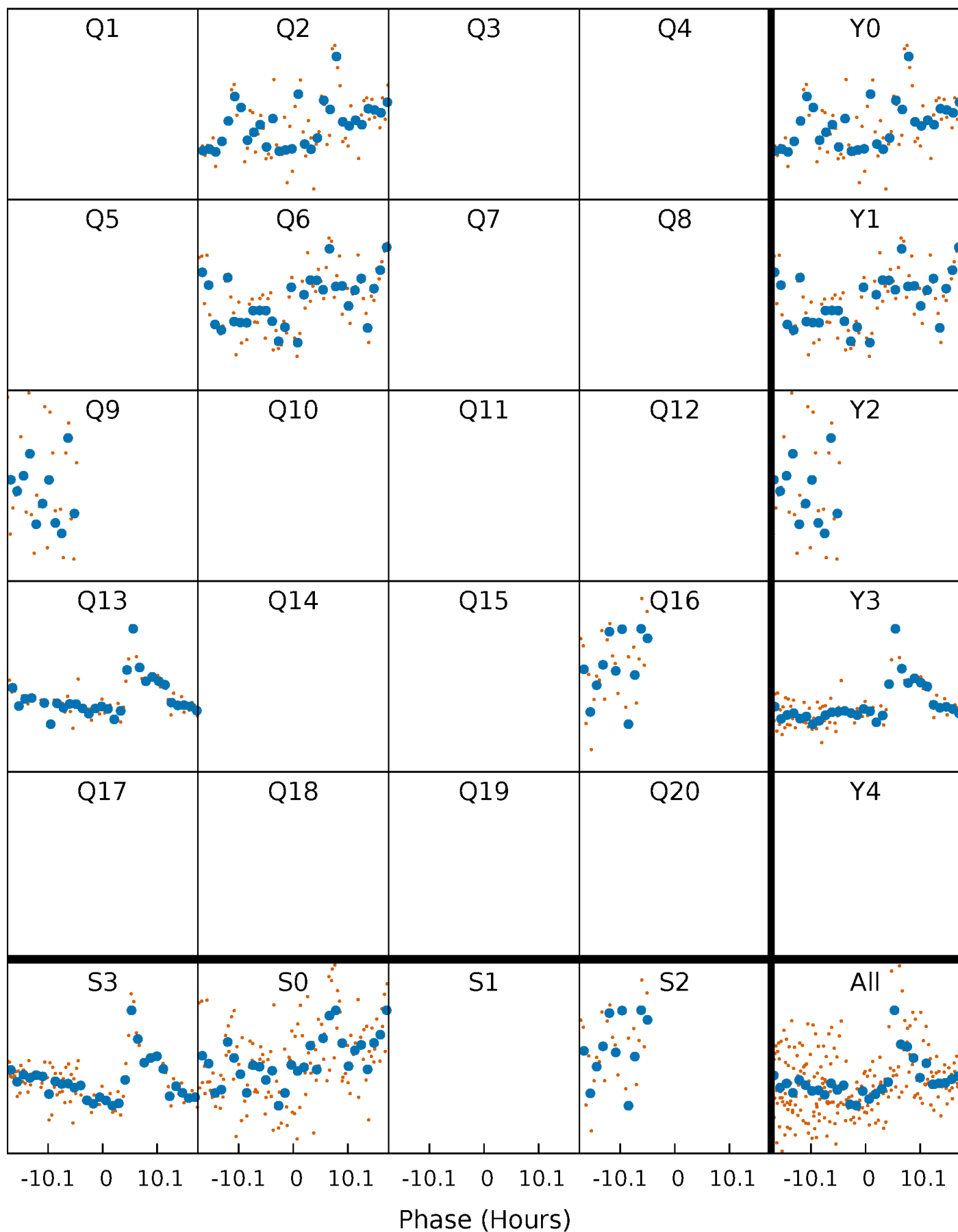


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



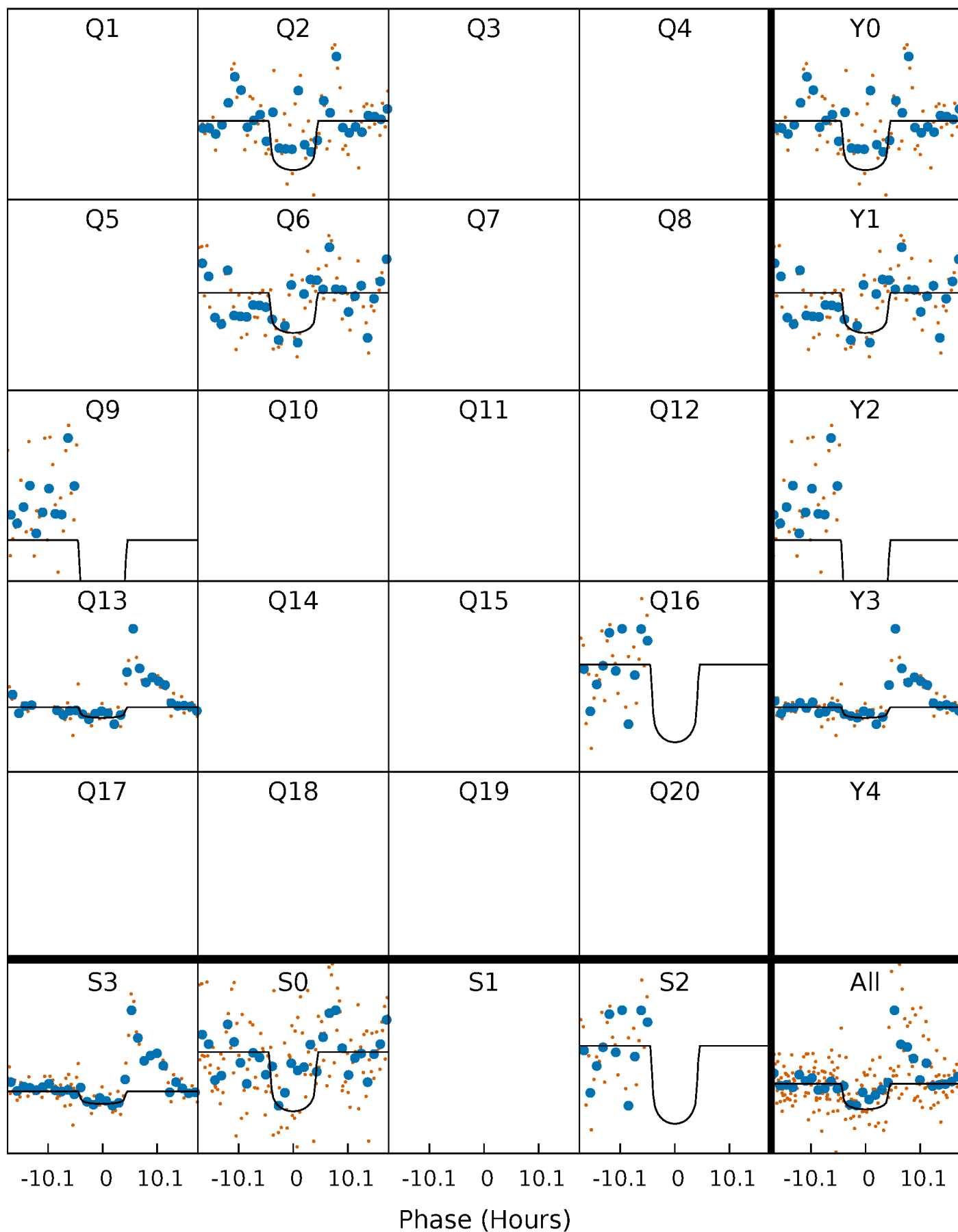
PDC Quarter-Phased Transit Curves

TCE 009596620-01 P=326.023194 Days $T_0=254.080987$ (BKJD)



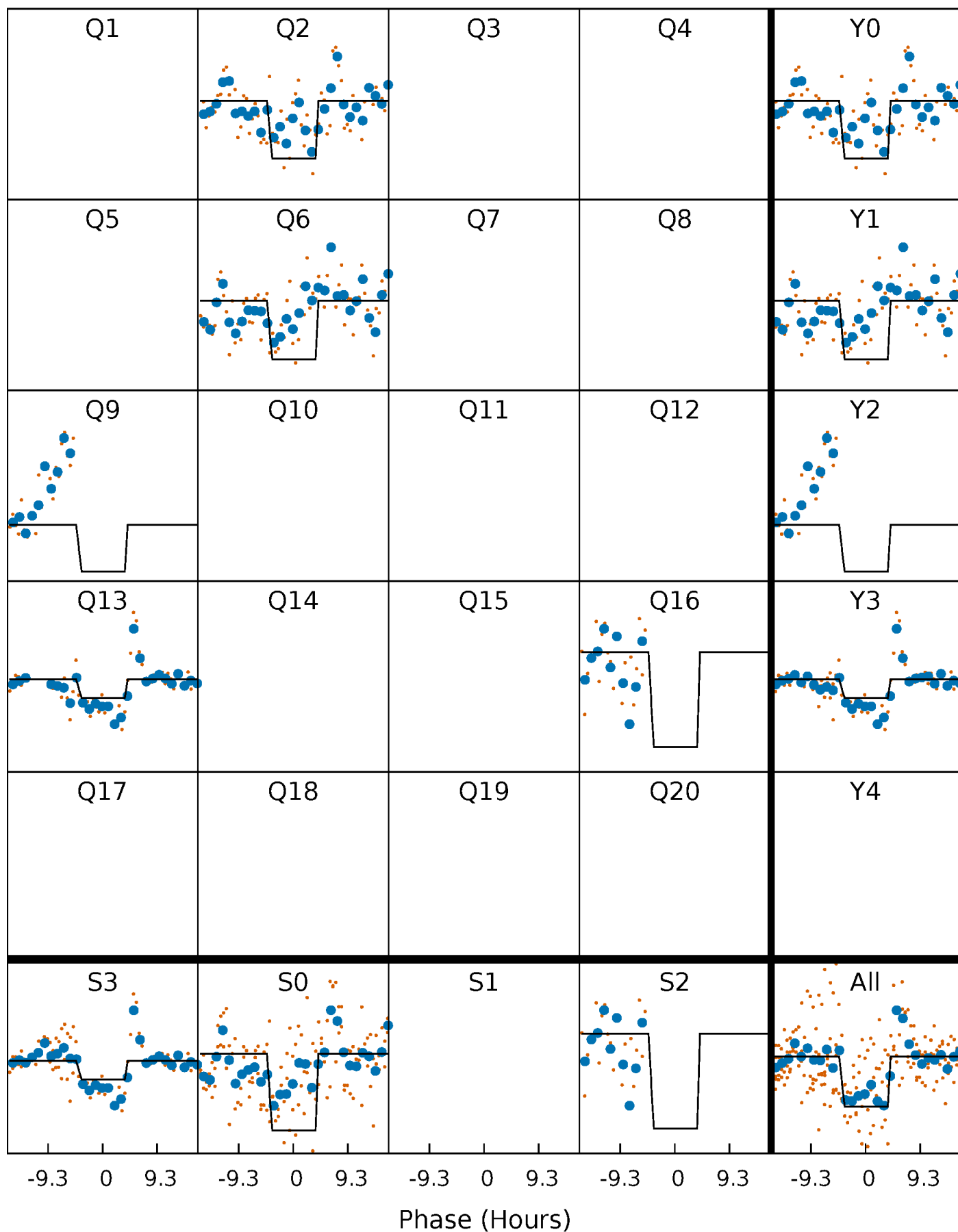
DV Quarter-Phased Transit Curves

TCE 009596620-01 P=326.023194 Days $T_0=254.080987$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

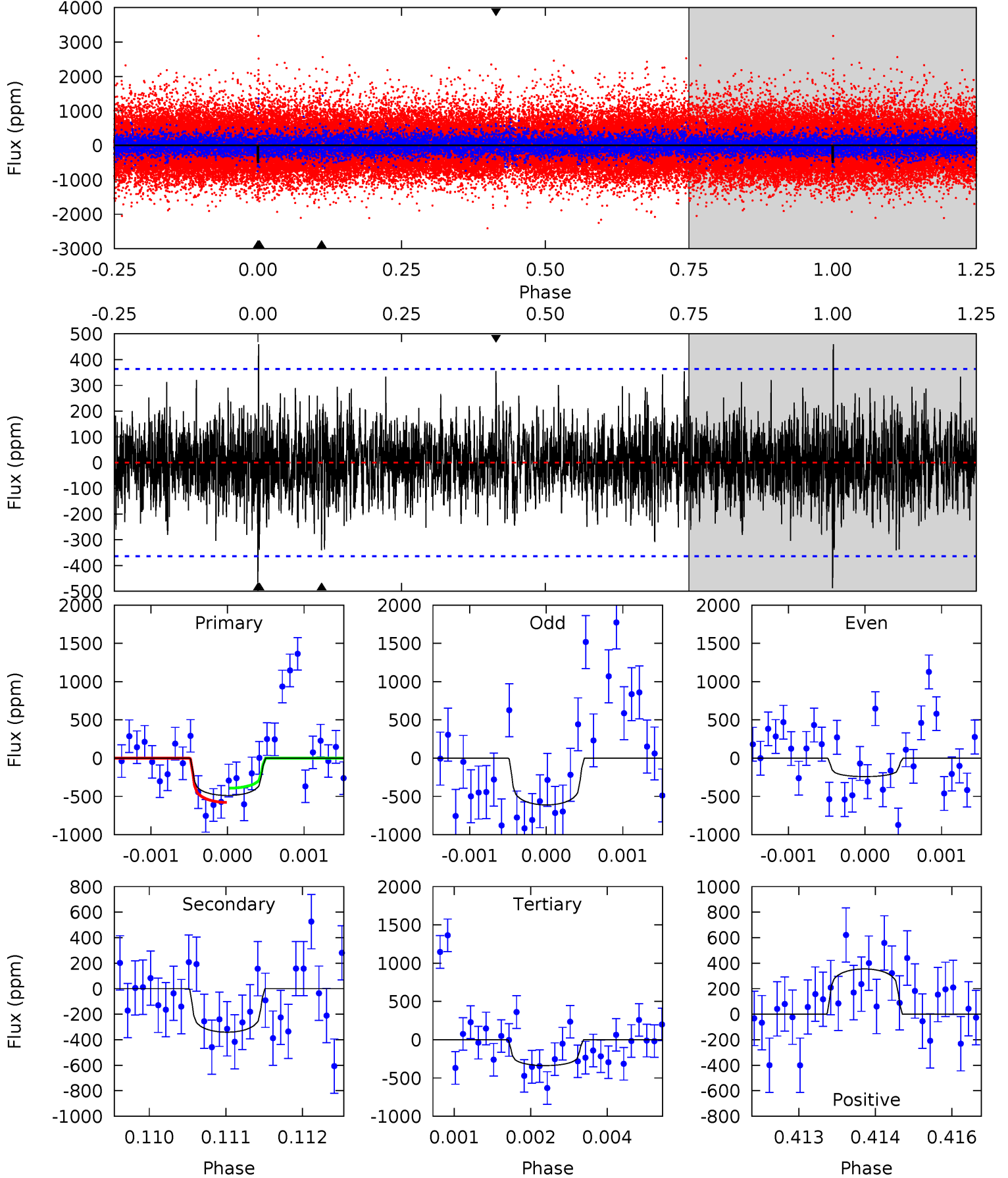
TCE 009596620-01 P=326.017450 Days $T_0=254.099633$ (BKJD)



DV Model-Shift Uniqueness Test

009596620-01, P = 326.023194 Days, E = 254.080987 Days

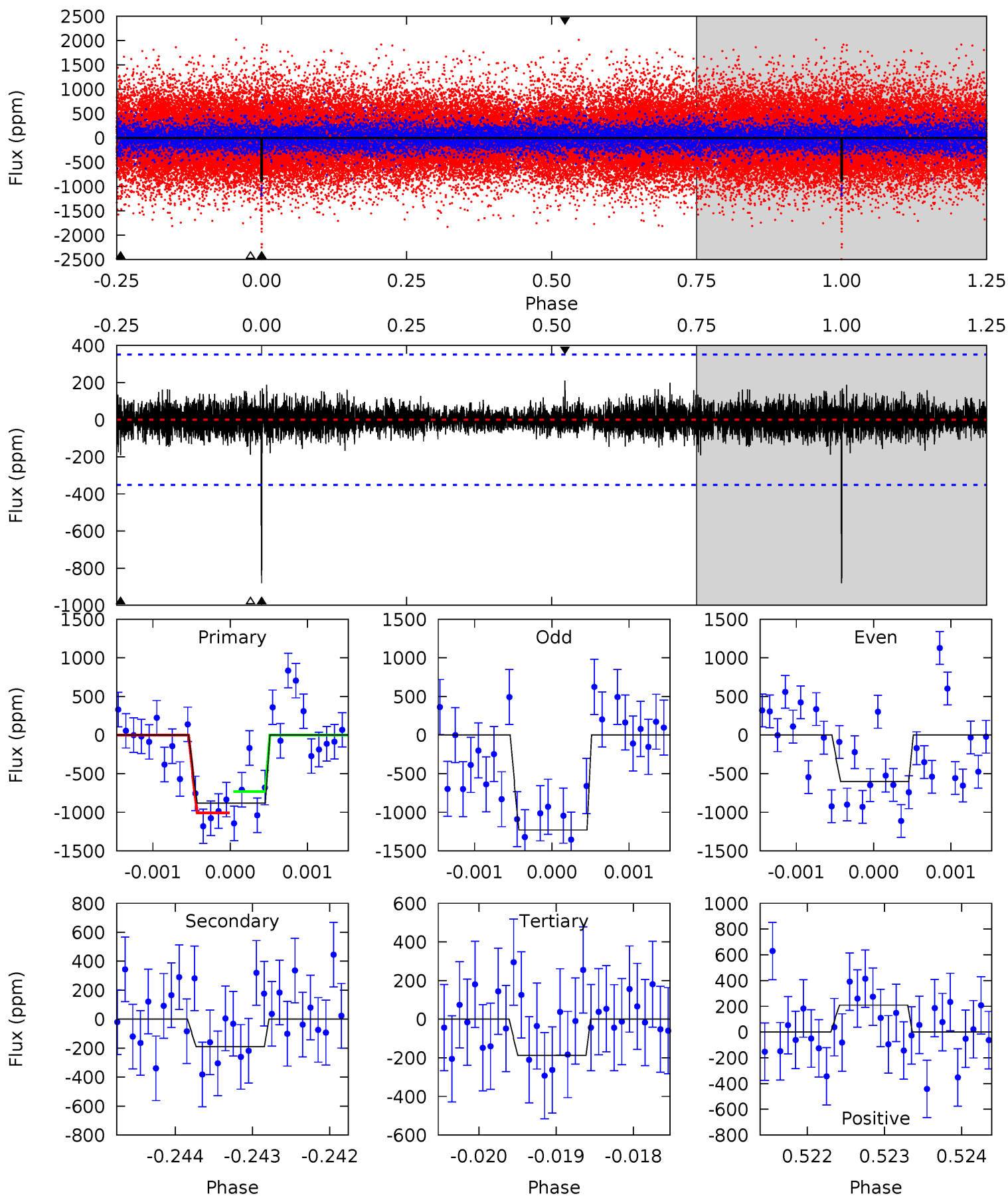
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.27	5.08	5.04	5.29	5.42	3.24	1.40	2.23	1.98	0.04	-0.21	2.52	0.98	0.49	1.39



Alt Model-Shift Uniqueness Test

009596620-01, P = 326.017450 Days, E = 254.099633 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	2.95	2.90	3.25	5.44	3.27	0.68	10.7	10.4	0.05	-0.30	4.75	1.69	0.19	2.13



Stellar Parameters For KIC 009596620

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3823^{+68}_{-76}	$4.854^{+0.065}_{-0.058}$	$-0.620^{+0.250}_{-0.250}$	$0.409^{+0.053}_{-0.058}$	$0.436^{+0.042}_{-0.063}$	$8.979^{+3.229}_{-2.002}$
	+2%/-2%	+1%/-1%	+40%/-40%	+13%/-14%	+10%/-14%	+36%/-22%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 009596620-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-341 ± 67	$1.35^{+1.06}_{-0.82}$	179^{+6}_{-6}	3258^{+1232}_{-502}	$51337^{+284795}_{-35789}$
Alt.	-190 ± 65	$1.64^{+1.07}_{-0.94}$	180^{+6}_{-6}	2827^{+812}_{-370}	18602^{+81334}_{-12460}

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

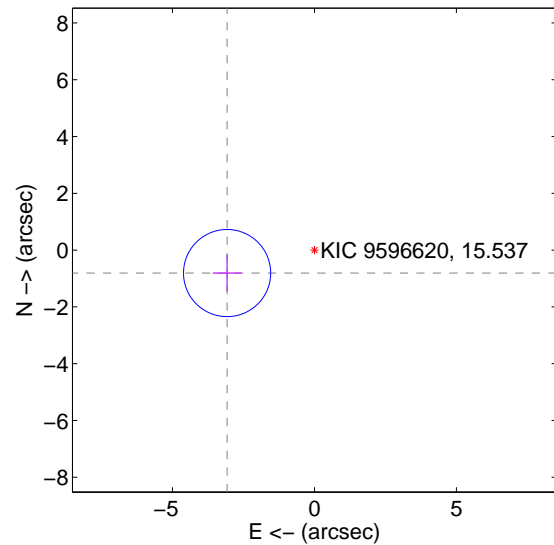
Supplemental centroid analysis for 009596620-01. Kepler magnitude: 15.54. Transit SNR 7.27

There are 1 quarters with good PRF difference image offsets

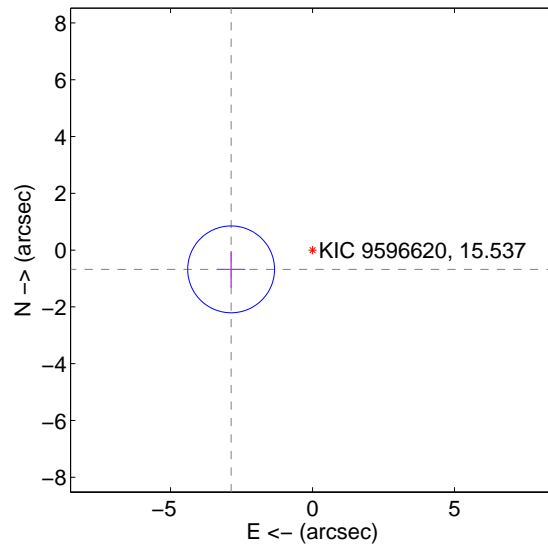
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.180 ± 0.511	6.22	3.076 ± 0.501	-0.809 ± 0.643
PRF-fit source offset from KIC position	2.946 ± 0.510	5.78	2.866 ± 0.501	-0.678 ± 0.643
photometric centroid source offset	2.95 ± 1.38	2.13	-1.63 ± 1.31	-2.46 ± 1.42

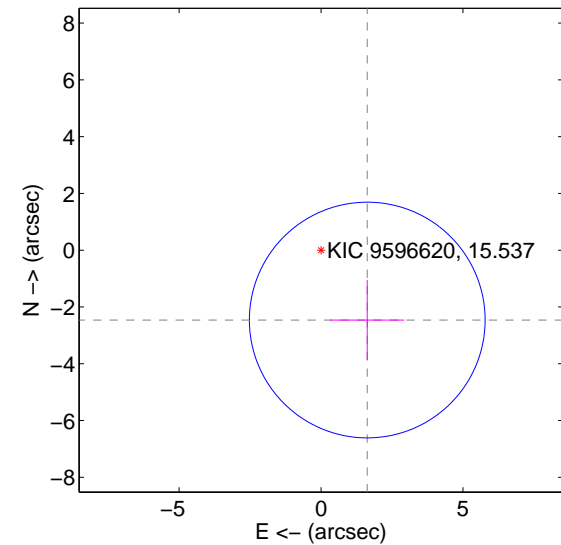
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



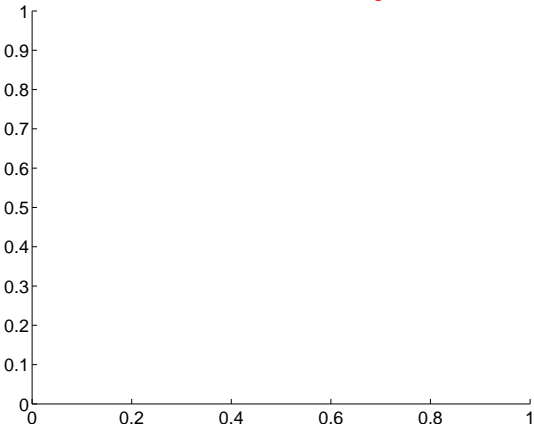
offset from photometric centroids



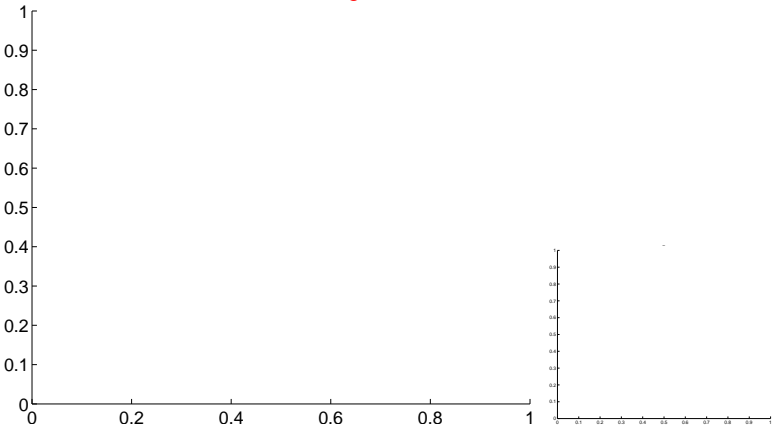
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

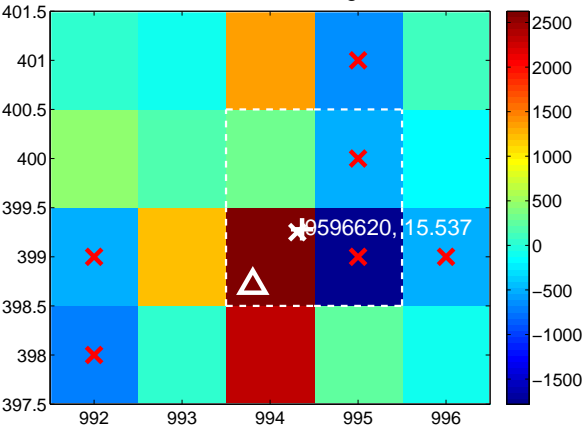
Q1 no difference image



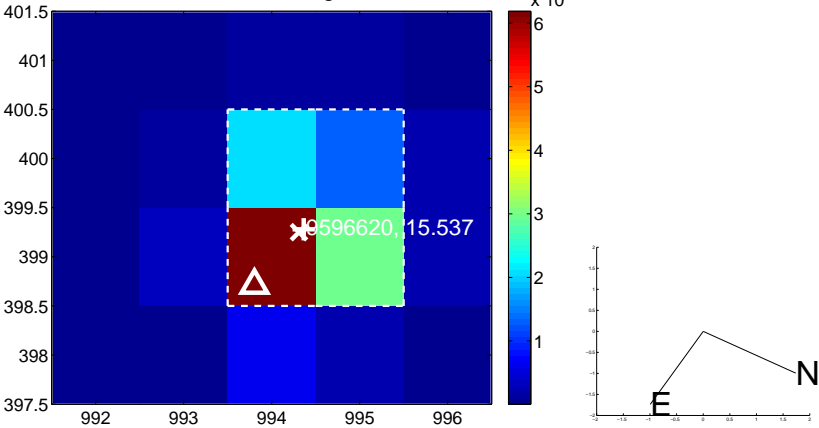
Q1 no OOT image



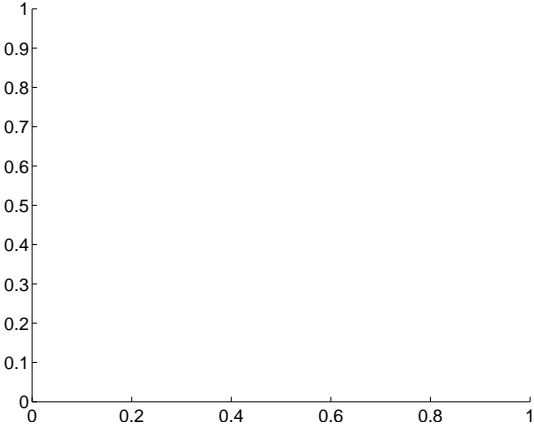
Q2 difference image



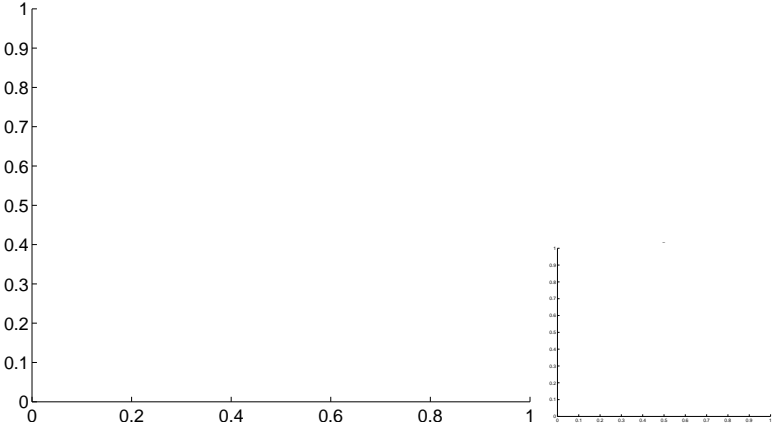
Q2 OOT image



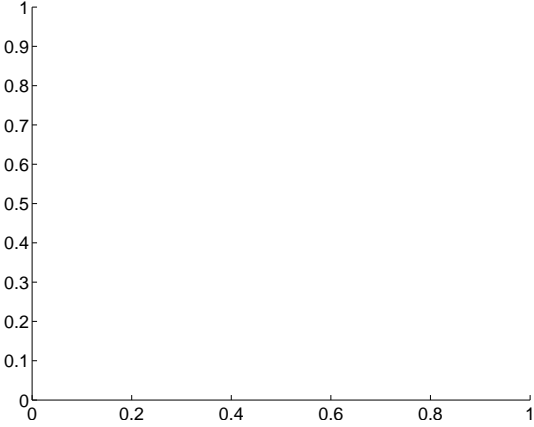
Q3 no difference image



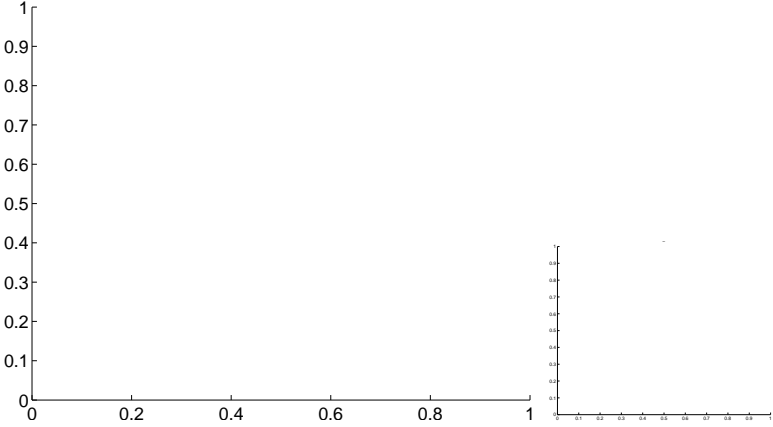
Q3 no OOT image



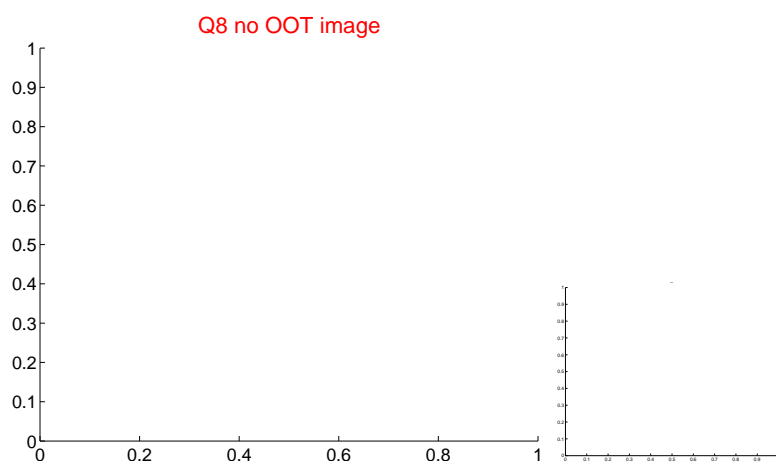
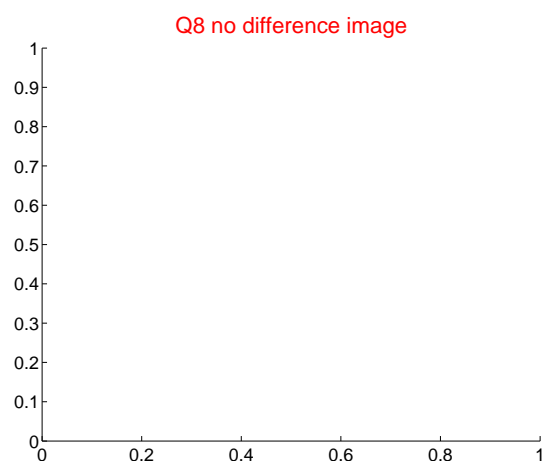
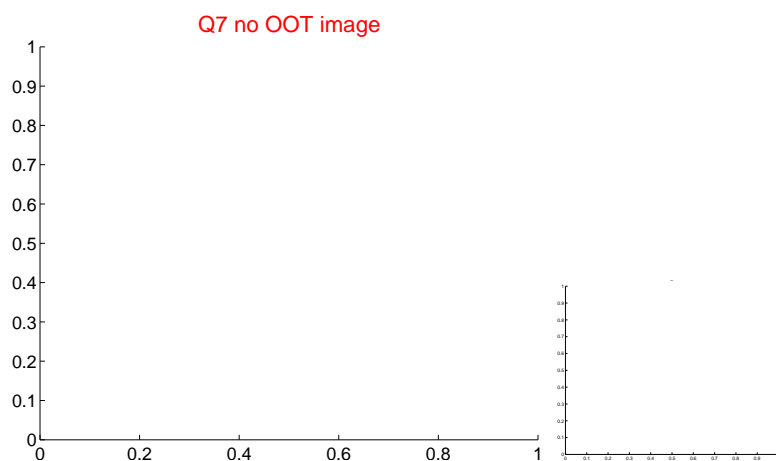
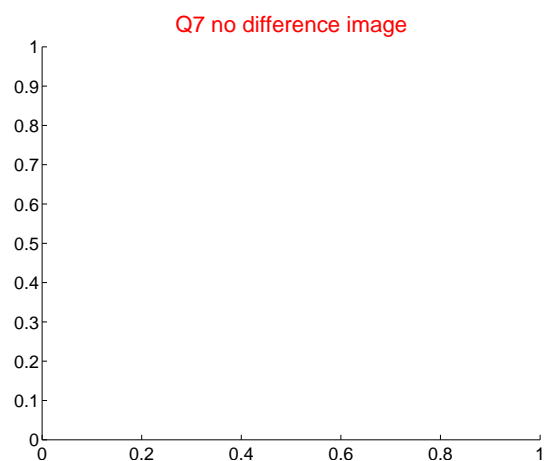
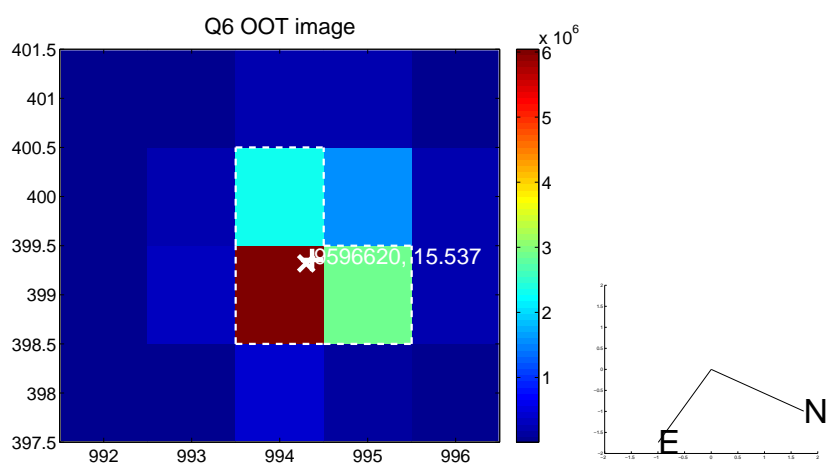
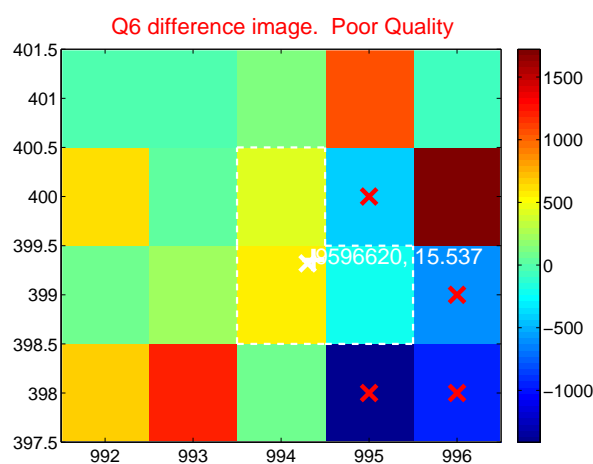
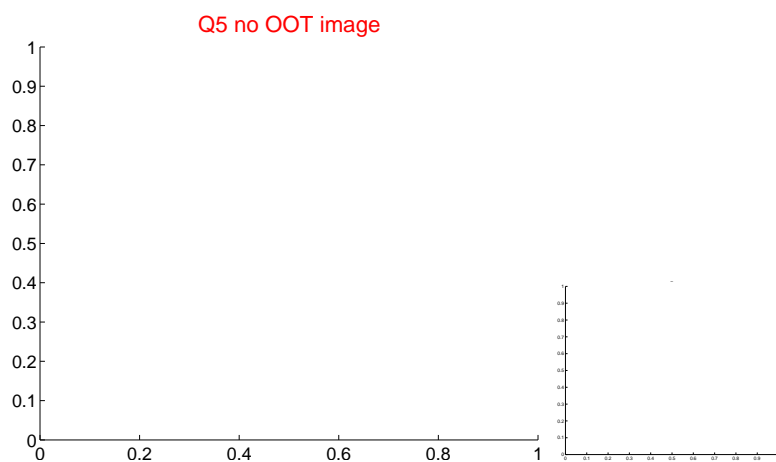
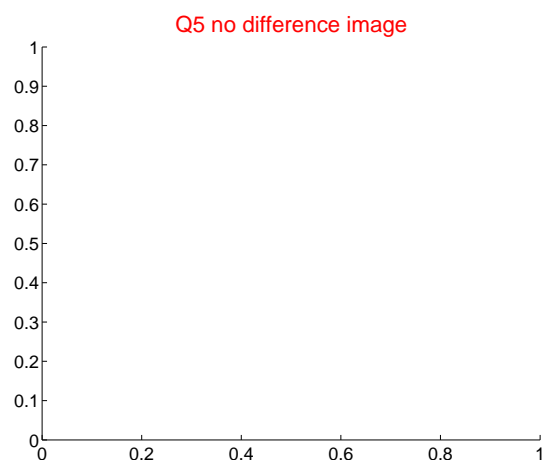
Q4 no difference image



Q4 no OOT image



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



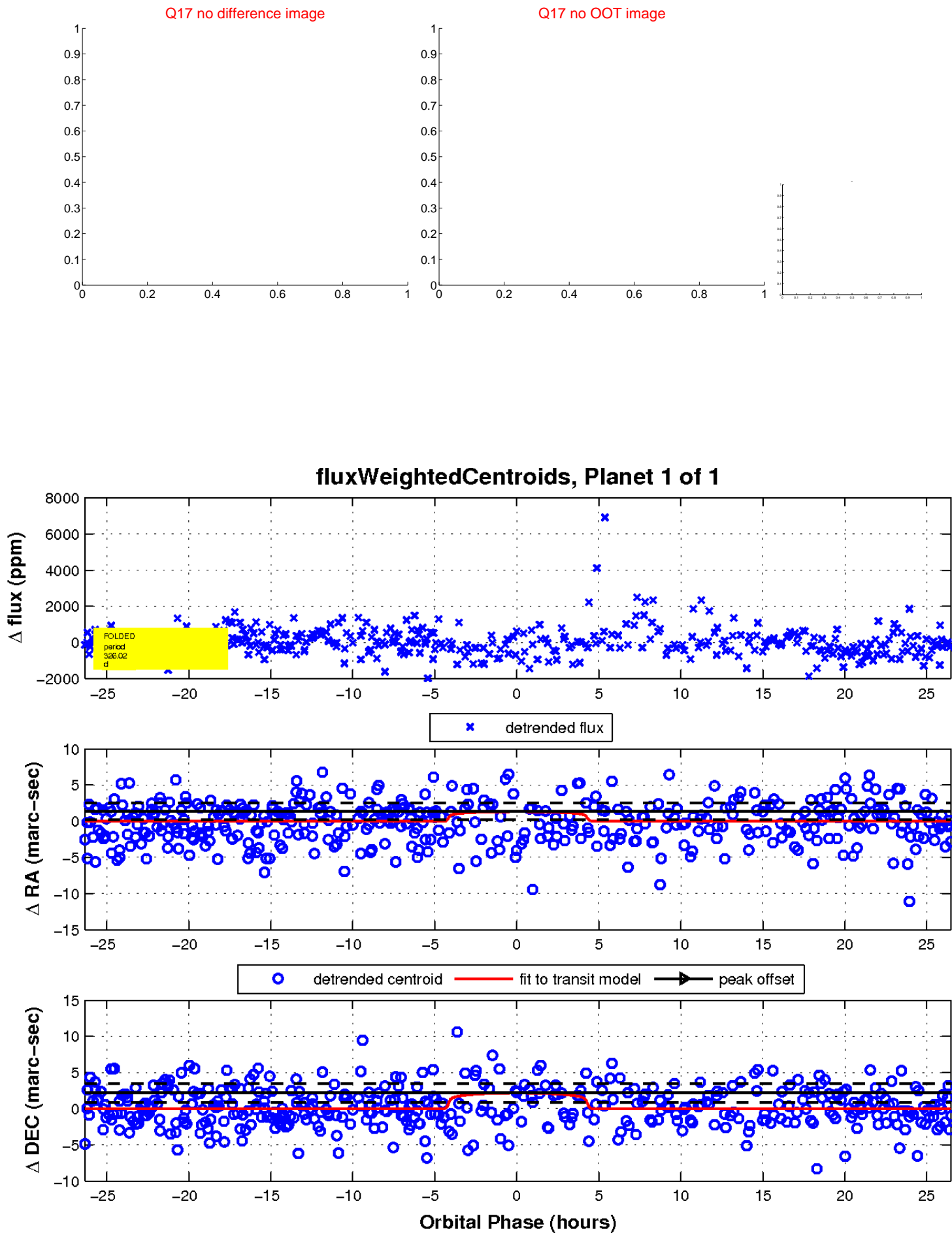
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

