

KIC 004566999

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})
004566999-01	OBS	8247.01	527.684307	176.615690	536.7	4.847	7.8	7.2	0.82	5657	2.09	0.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004566999-01	OBS	FP	0.13	1	0	0	0	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.

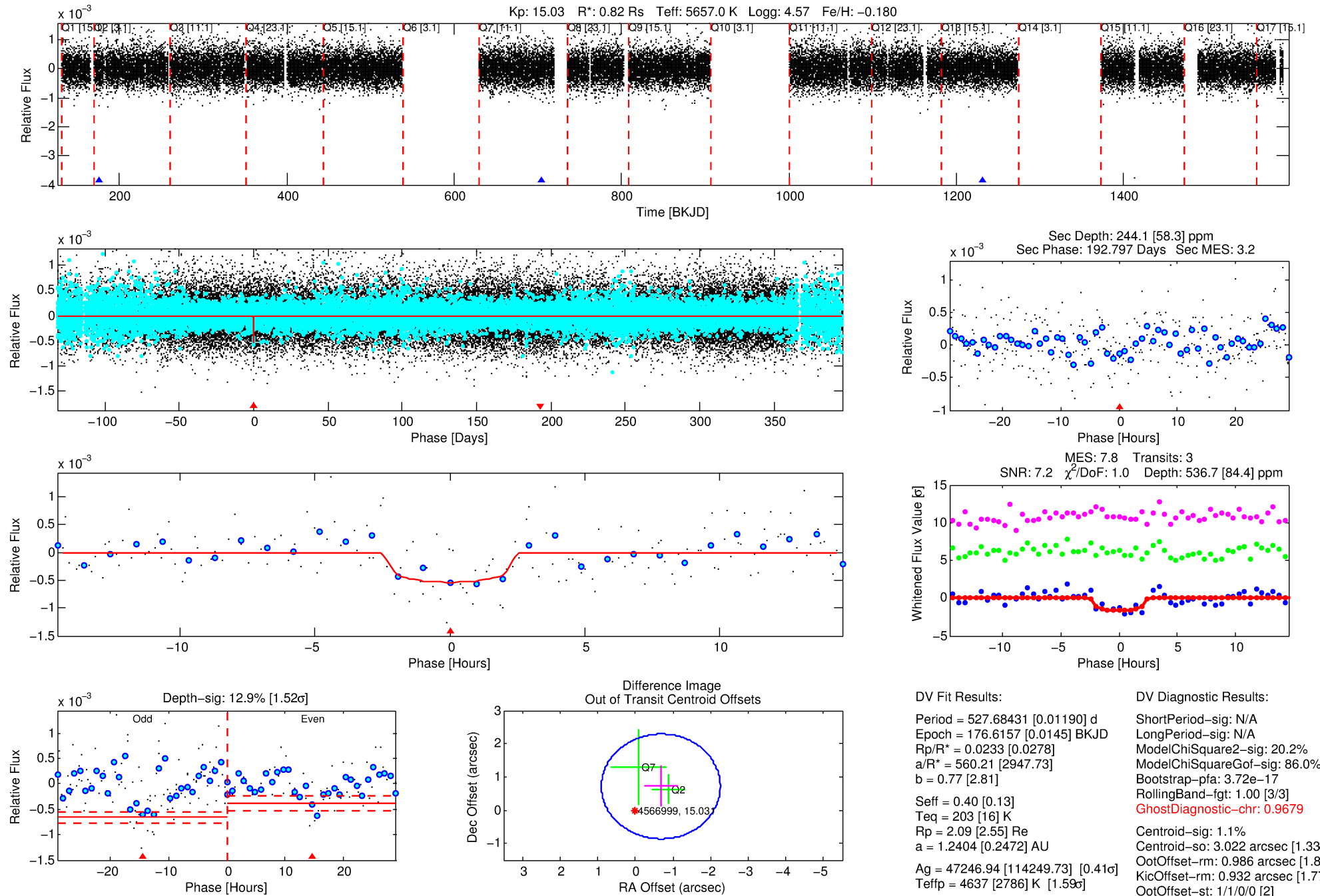
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004566999-01

No Significant Match Found

DV One-Page Summary

KIC: 4566999 Candidate: 1 of 1 Period: 527.684 d



DV Fit Results:

Period = 527.68431 [0.01190] d
Epoch = 176.6157 [0.0145] BKJD
Rp/R* = 0.0233 [0.0278]
a/R* = 560.21 [2947.73]
b = 0.77 [2.81]
Seff = 0.40 [0.13]
Teq = 203 [16] K
Rp = 2.09 [2.55] Re
a = 1.2404 [0.2472] AU
Ag = 47246.94 [114249.73] [0.41 σ]
Teffp = 4637 [2786] K [1.59 σ]

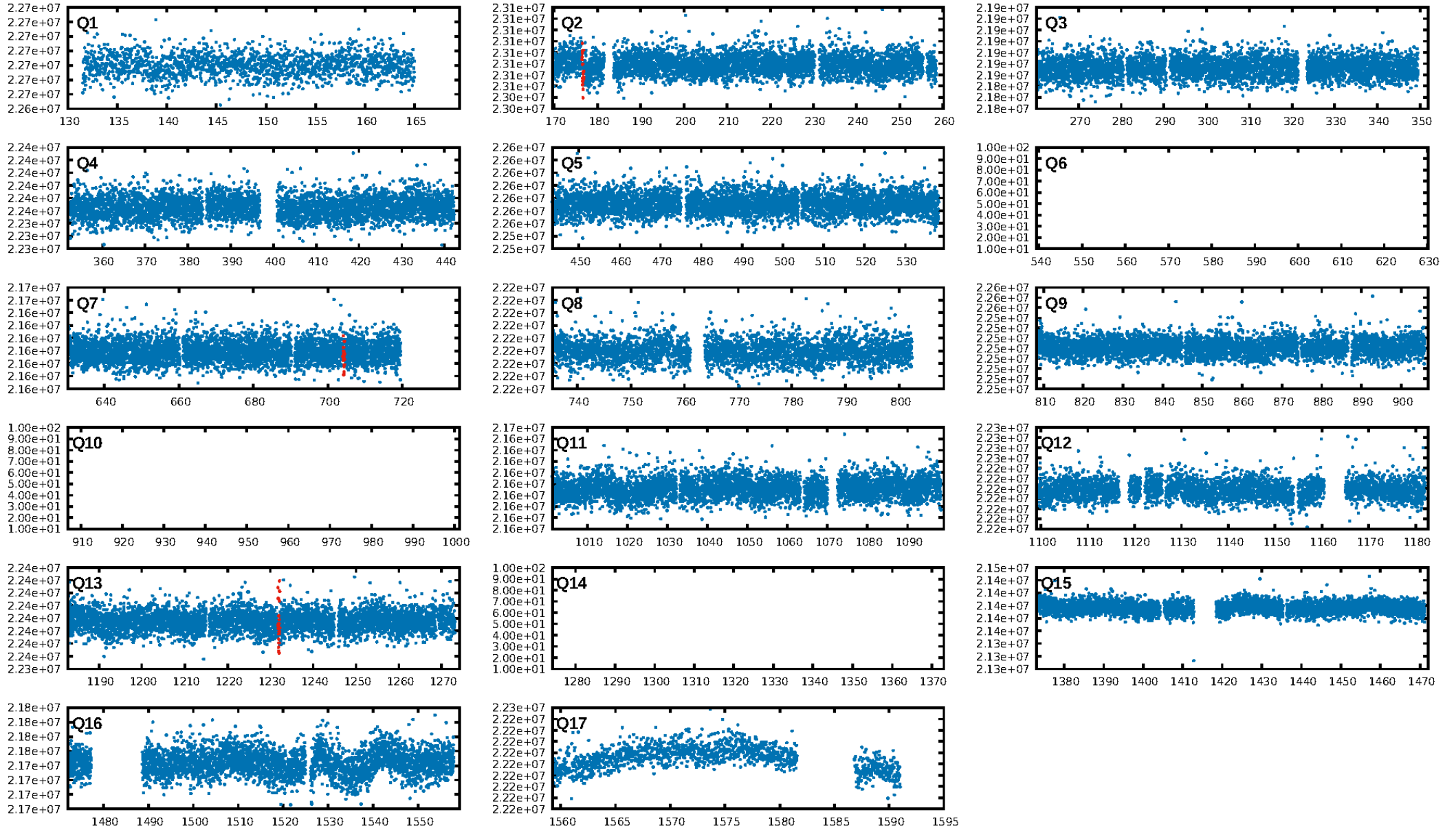
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 20.2%
ModelChiSquareGof-sig: 86.0%
Bootstrap-pfa: 3.72e-17
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.9679
Centroid-sig: 1.1%
Centroid-so: 3.022 arcsec [1.33 σ]
OotOffset-rm: 0.986 arcsec [1.87 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-rm: 0.932 arcsec [1.77 σ]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

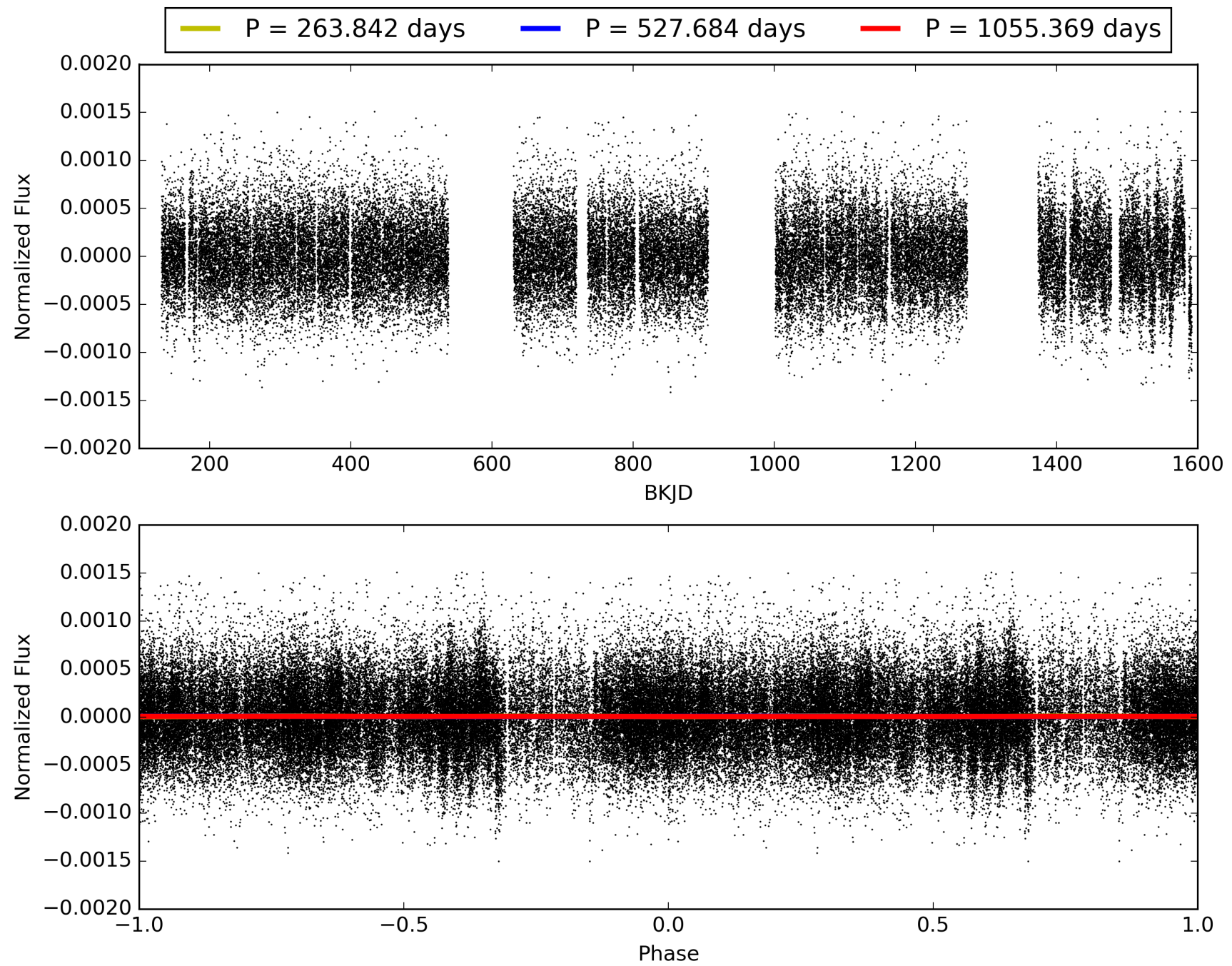
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:57:09 Z

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

TCE 004566999-01, PDC Light Curves

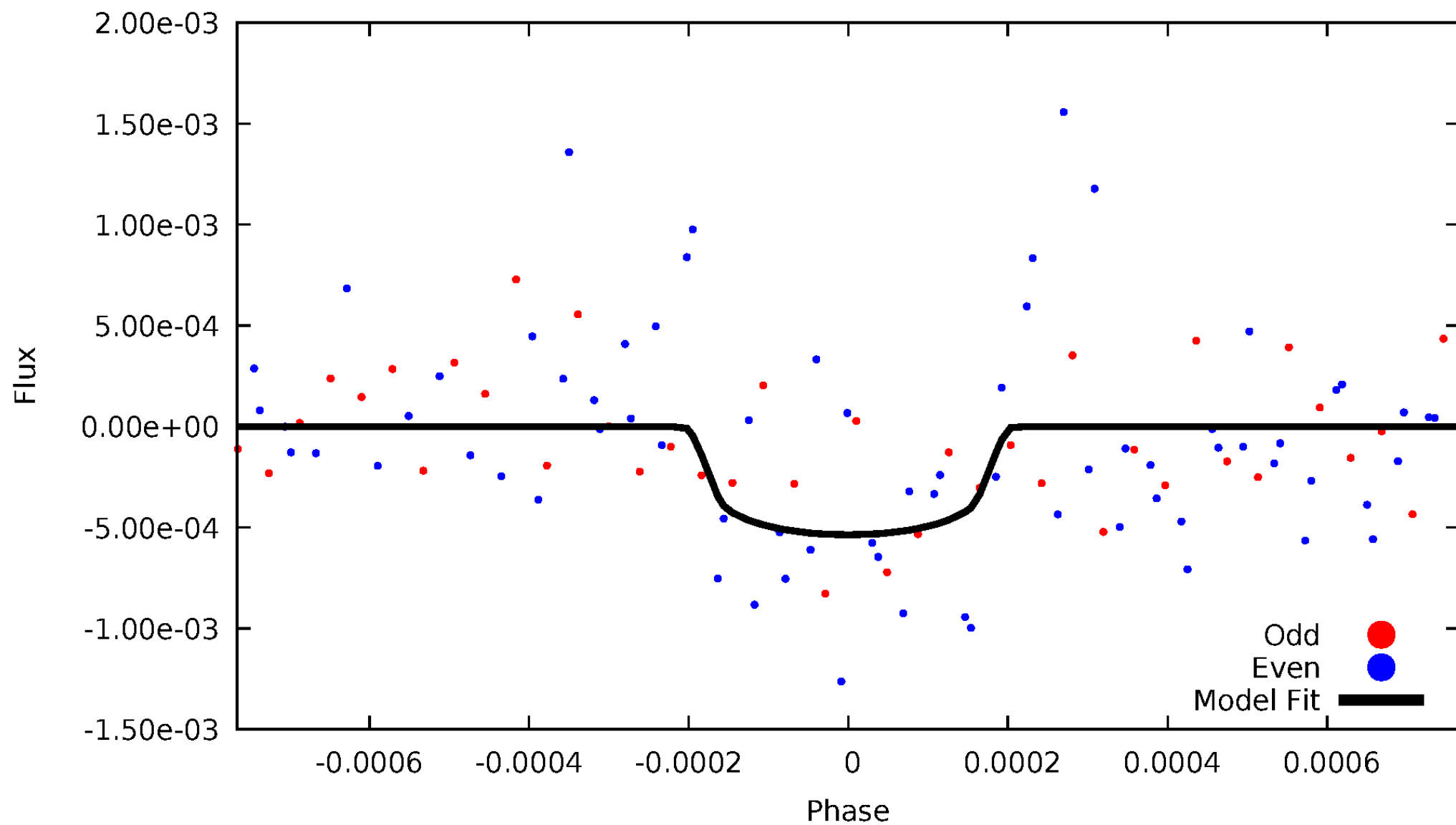


TCE 004566999-01



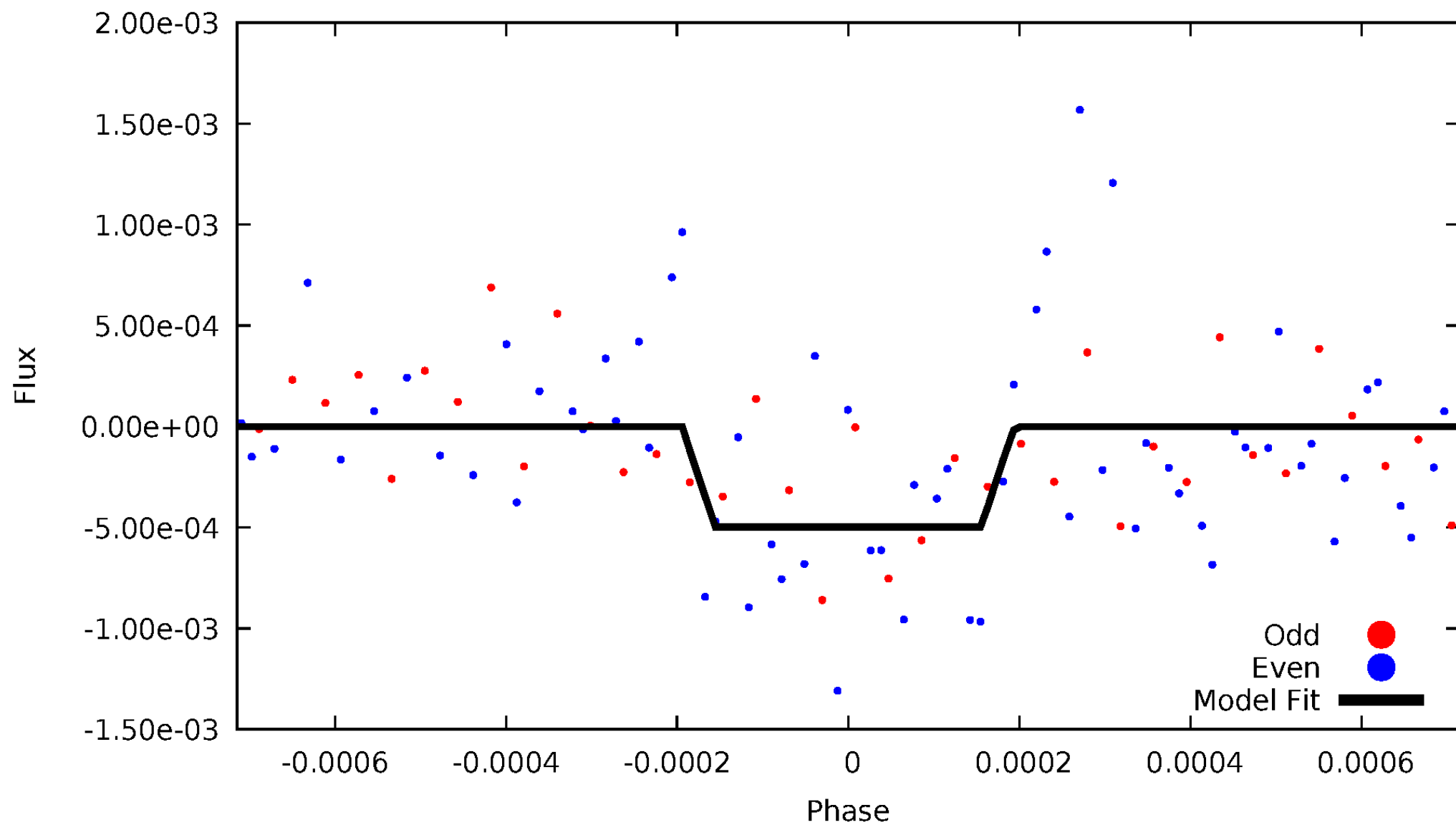
DV Odd/Even

TCE 004566999-01



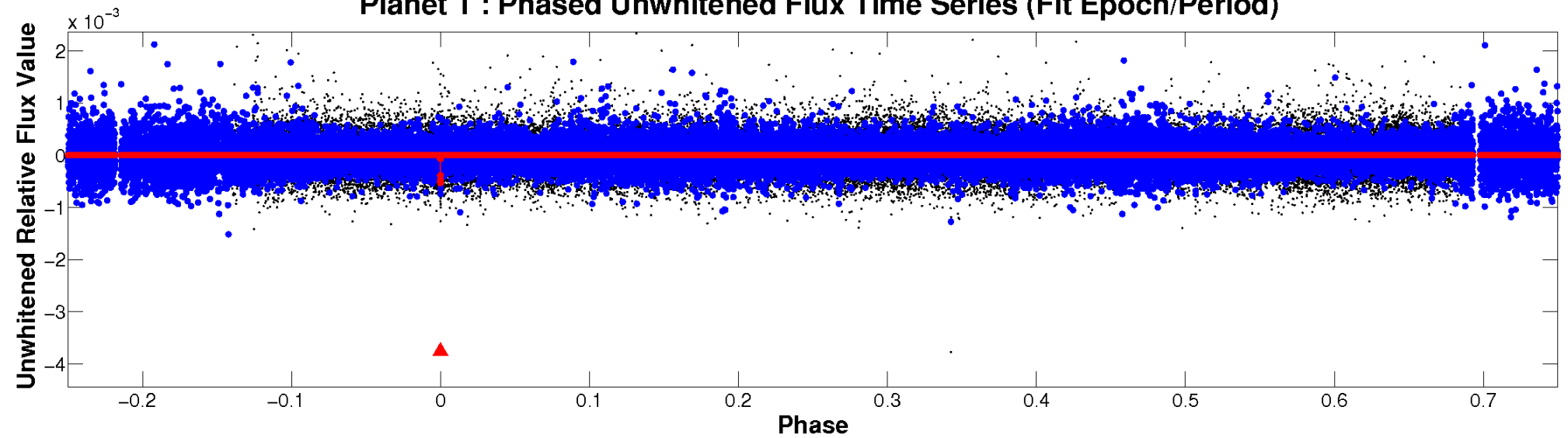
ALT Odd/Even

TCE 004566999-01

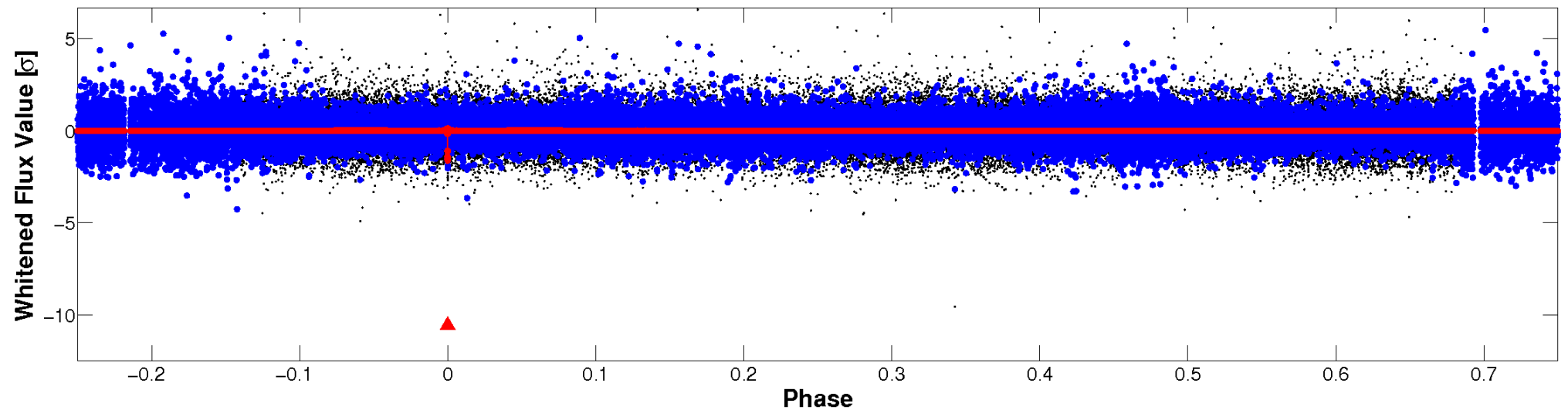


Non-Whitened Vs. Whitened Light Curve

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

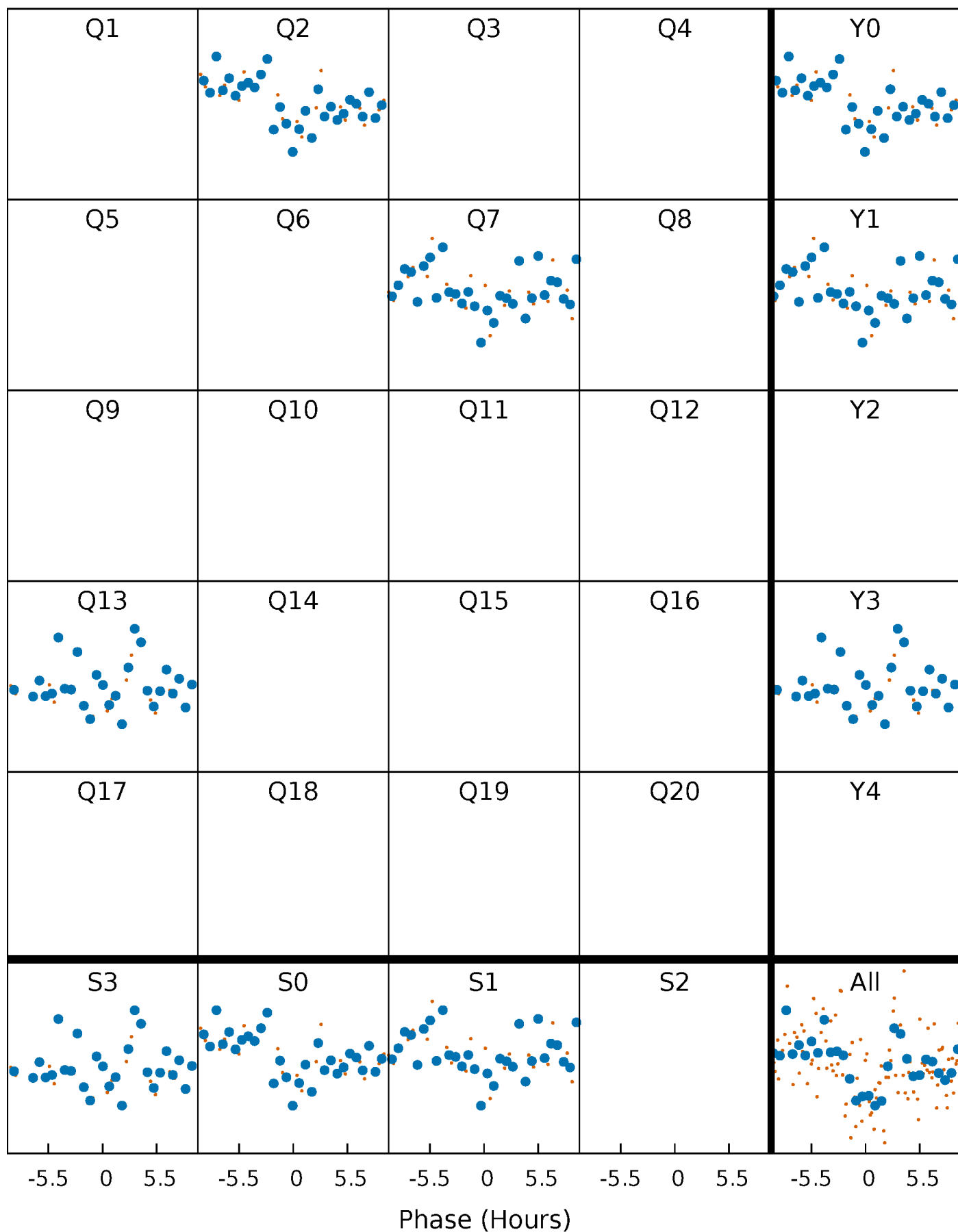


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



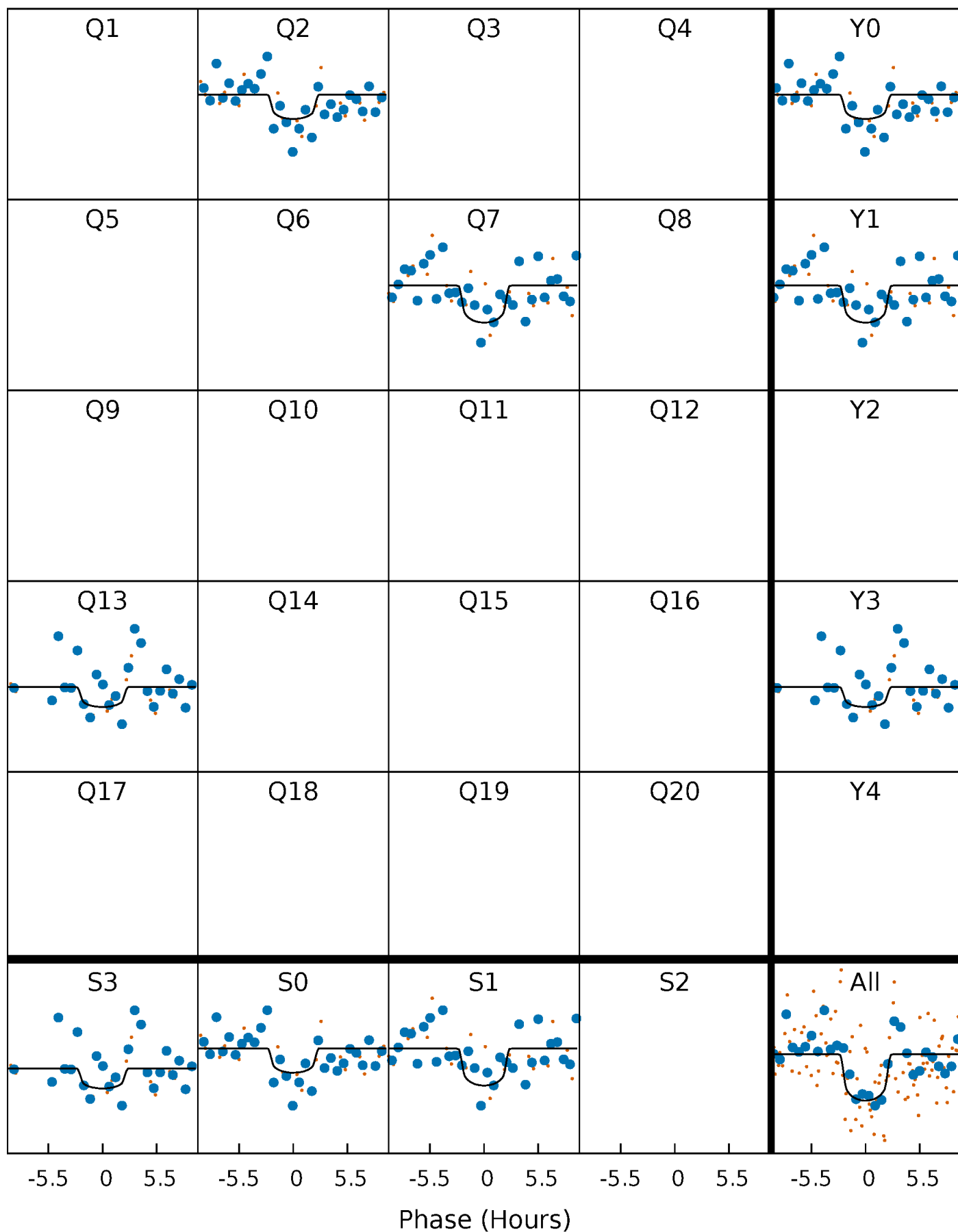
PDC Quarter-Phased Transit Curves

TCE 004566999-01 P=527.684307 Days $T_0=176.615690$ (BKJD)



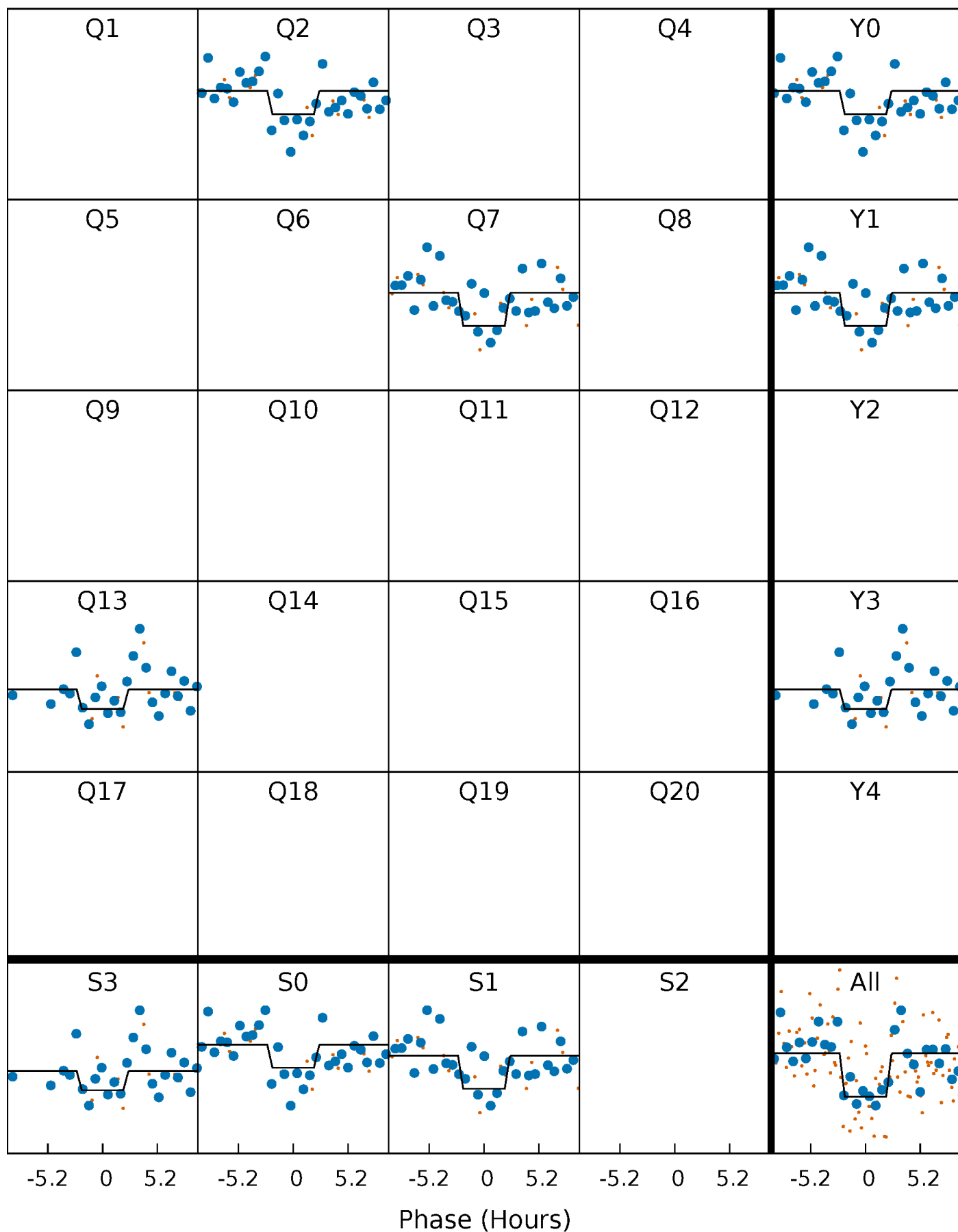
DV Quarter-Phased Transit Curves

TCE 004566999-01 P=527.684307 Days $T_0=176.615690$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

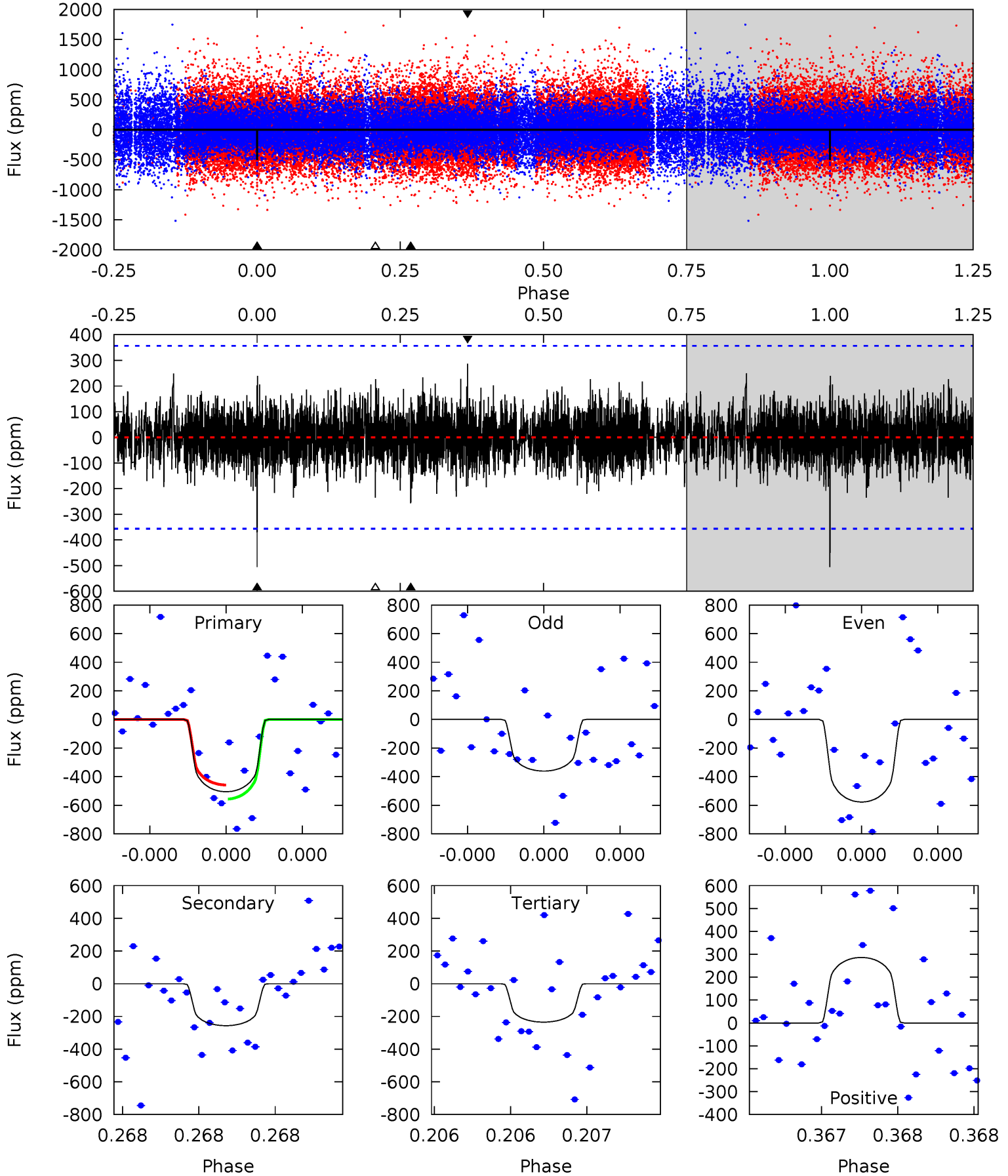
TCE 004566999-01 P=527.683065 Days $T_0=176.617754$ (BKJD)



DV Model-Shift Uniqueness Test

004566999-01, P = 527.684307 Days, E = 176.615690 Days

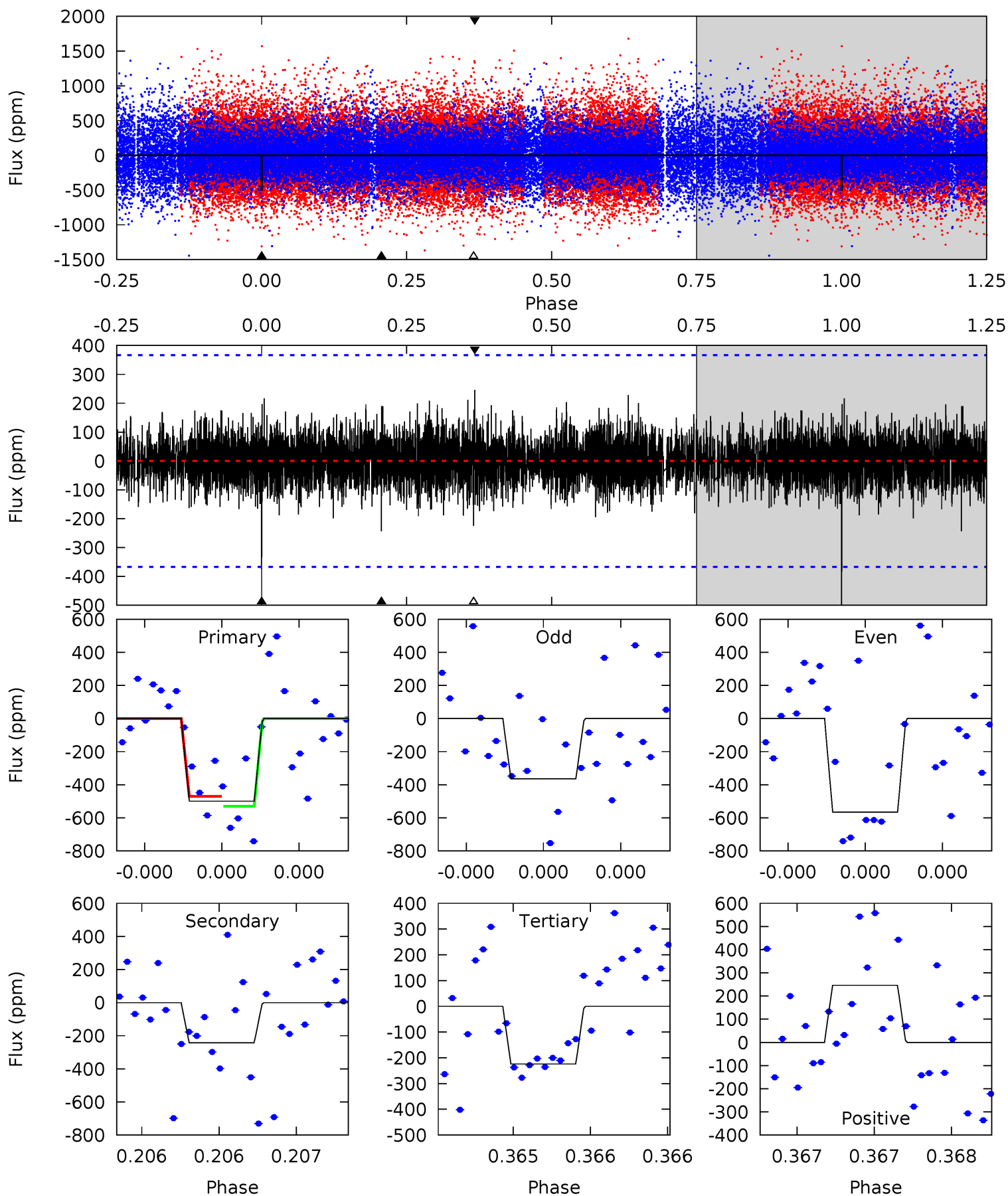
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.97	4.05	3.70	4.51	5.61	3.54	1.06	4.26	3.46	0.34	-0.46	1.62	1.17	0.36	0.78



Alt Model-Shift Uniqueness Test

004566999-01, P = 527.683065 Days, E = 176.617754 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.66	3.73	3.44	3.78	5.63	3.56	0.90	4.22	3.88	0.29	-0.05	1.46	1.20	0.33	0.46



Stellar Parameters For KIC 004566999

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5657^{+152}_{-169}	$4.567^{+0.040}_{-0.160}$	$-0.180^{+0.300}_{-0.300}$	$0.824^{+0.194}_{-0.078}$	$0.919^{+0.094}_{-0.104}$	$2.319^{+0.480}_{-0.998}$
	+3%/-3%	+1%/-4%	+167%/-167%	+24%/-9%	+10%/-11%	+21%/-43%
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 004566999-01 / KOI 8247.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-257 ± 63	$2.84^{+2.35}_{-1.86}$	290^{+17}_{-12}	4291^{+2833}_{-824}	$25803^{+182772}_{-18489}$
Alt.	-243 ± 65	$2.79^{+2.32}_{-1.80}$	290^{+16}_{-12}	4331^{+2468}_{-869}	$25742^{+174866}_{-18592}$

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 $A_{obs} \gg 1.0$

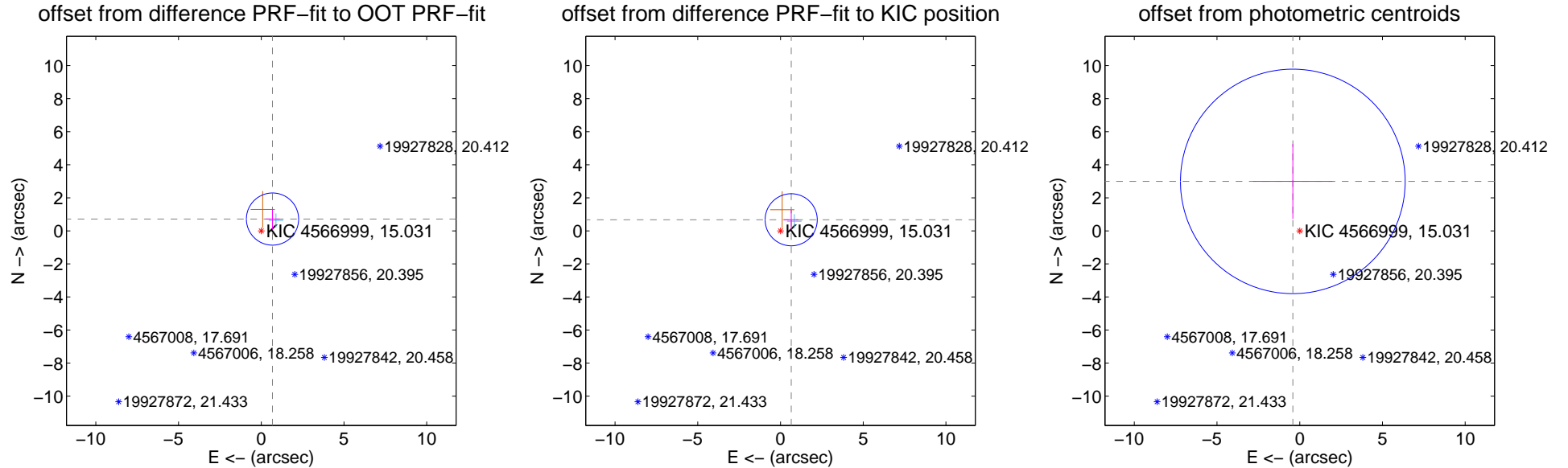
DV Centroid Data

Supplemental centroid analysis for 004566999-01. Kepler magnitude: 15.03. Transit SNR 7.24

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

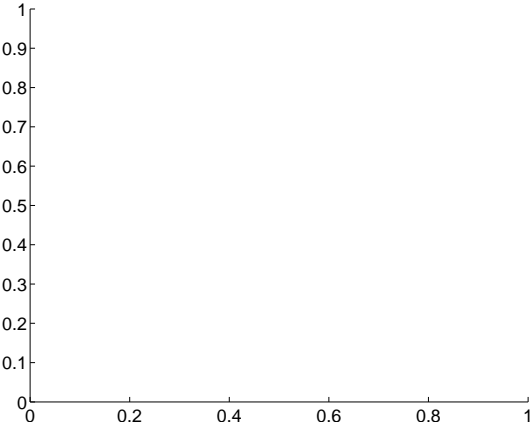
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.986 ± 0.526	1.87	-0.680 ± 0.431	0.714 ± 0.599
PRF-fit source offset from KIC position	0.932 ± 0.525	1.77	-0.647 ± 0.431	0.671 ± 0.599
photometric centroid source offset	3.02 ± 2.26	1.33	0.42 ± 2.40	2.99 ± 2.26



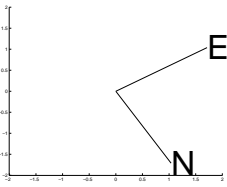
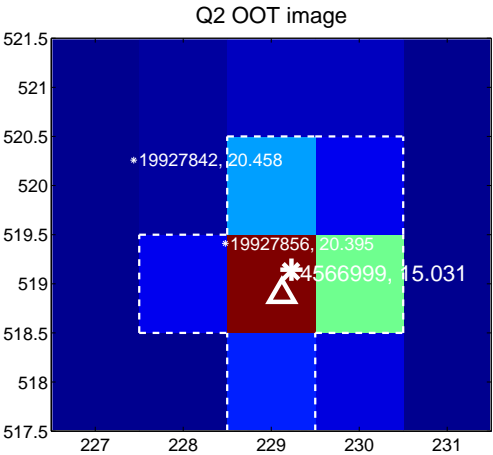
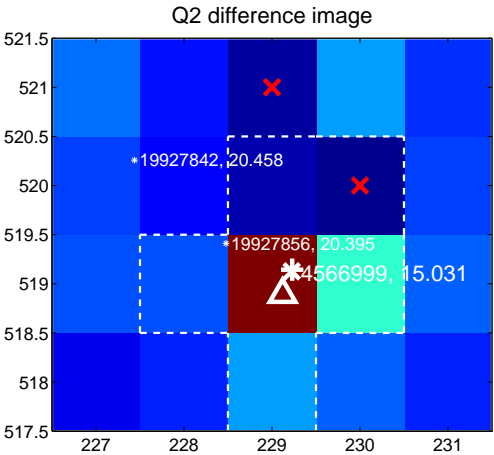
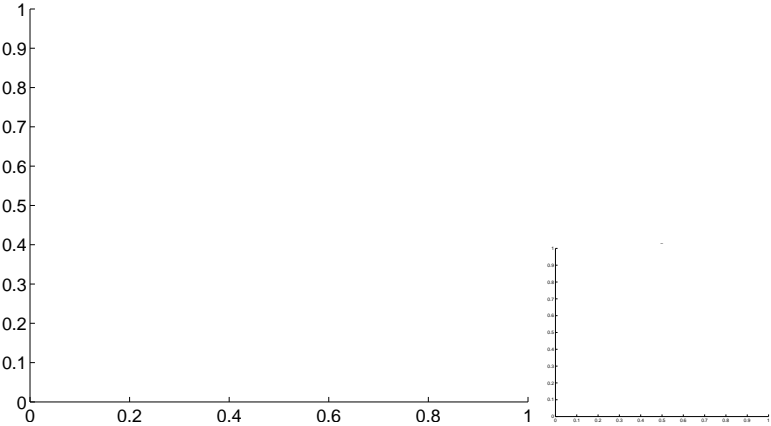
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

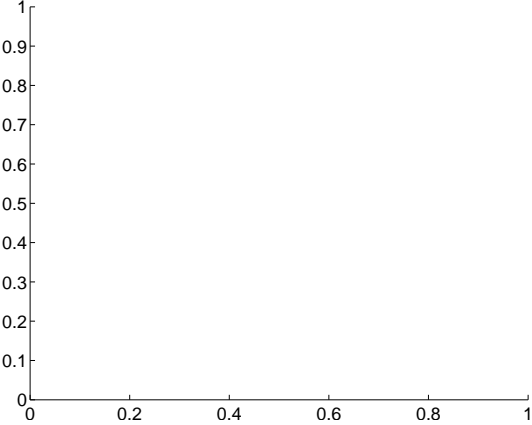
Q1 no difference image



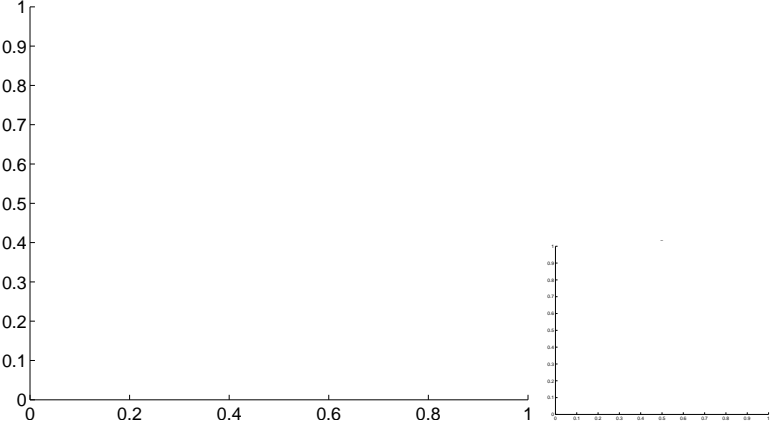
Q1 no OOT image



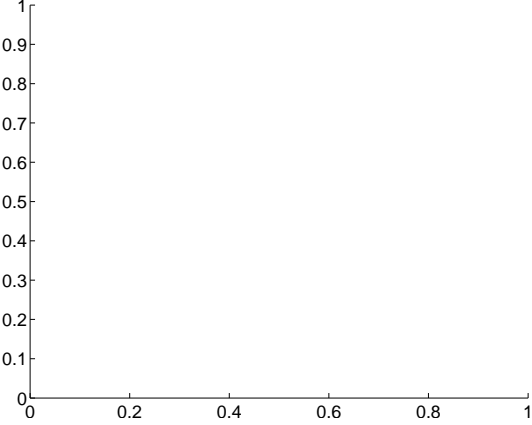
Q3 no difference image



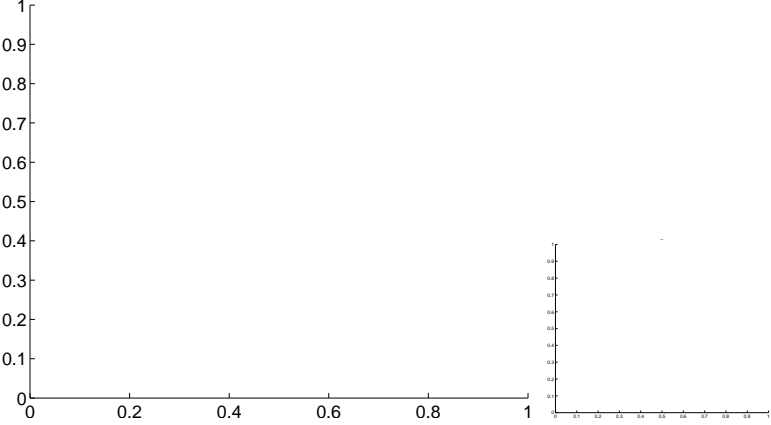
Q3 no OOT image



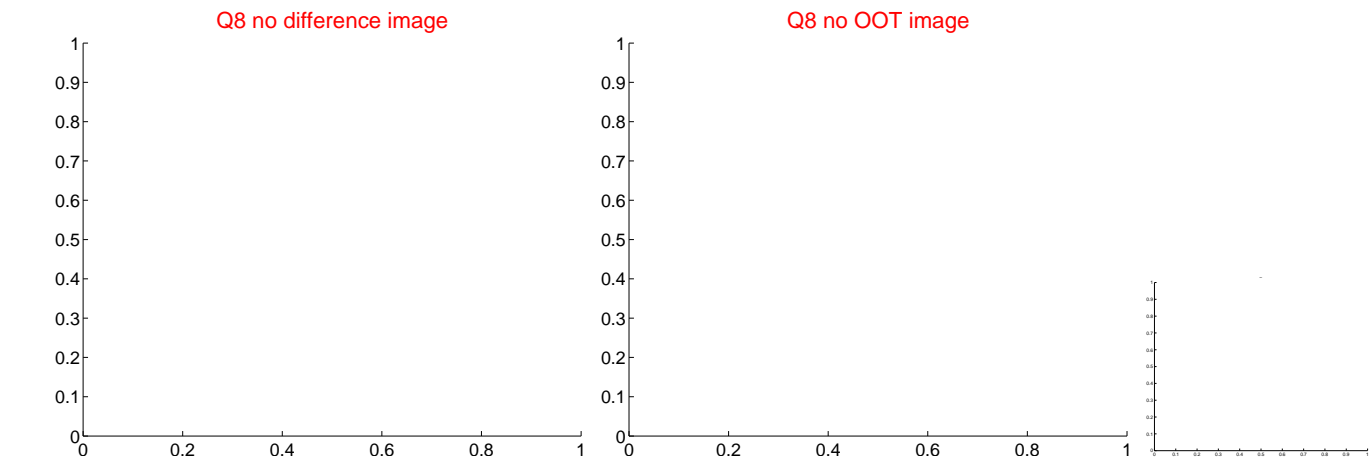
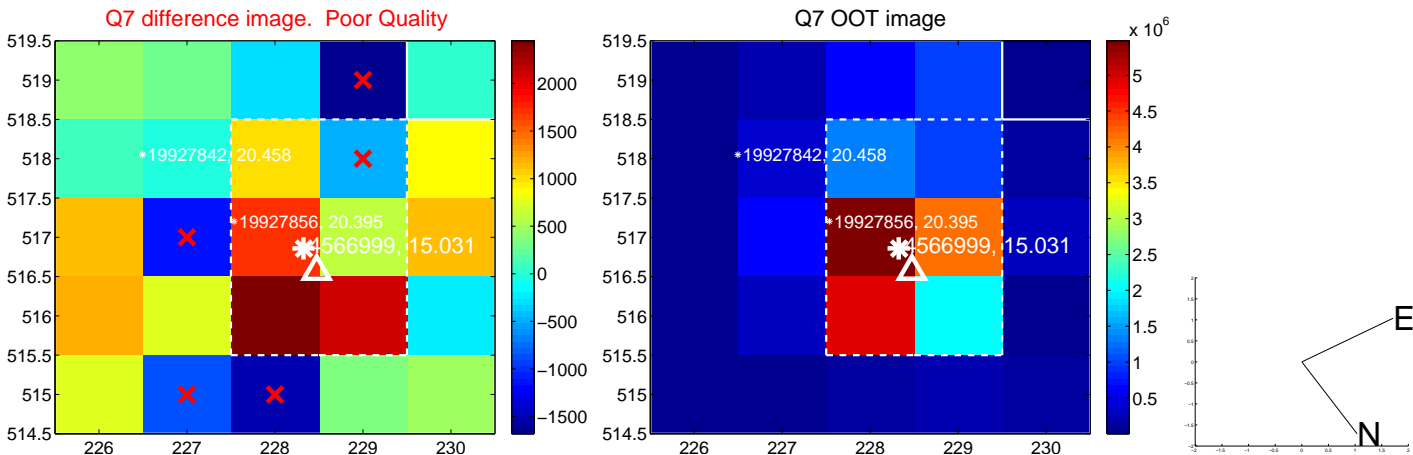
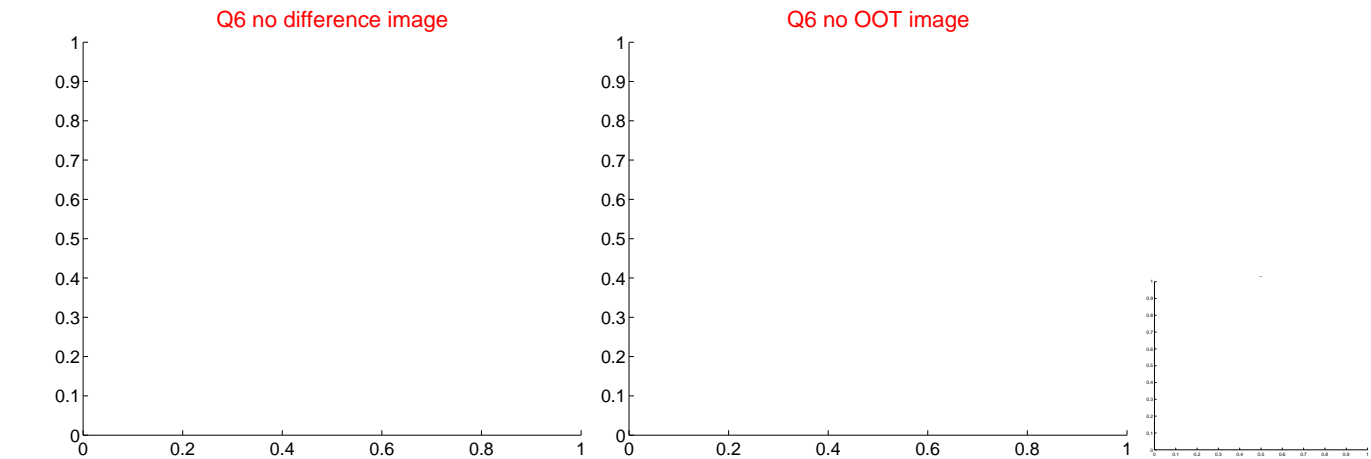
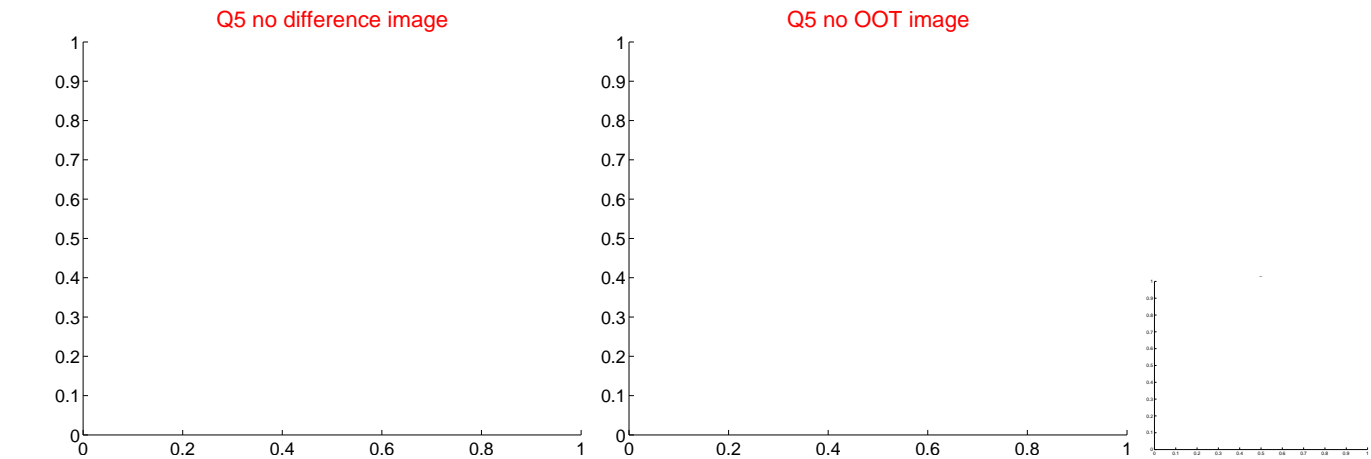
Q4 no difference image



Q4 no OOT image



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



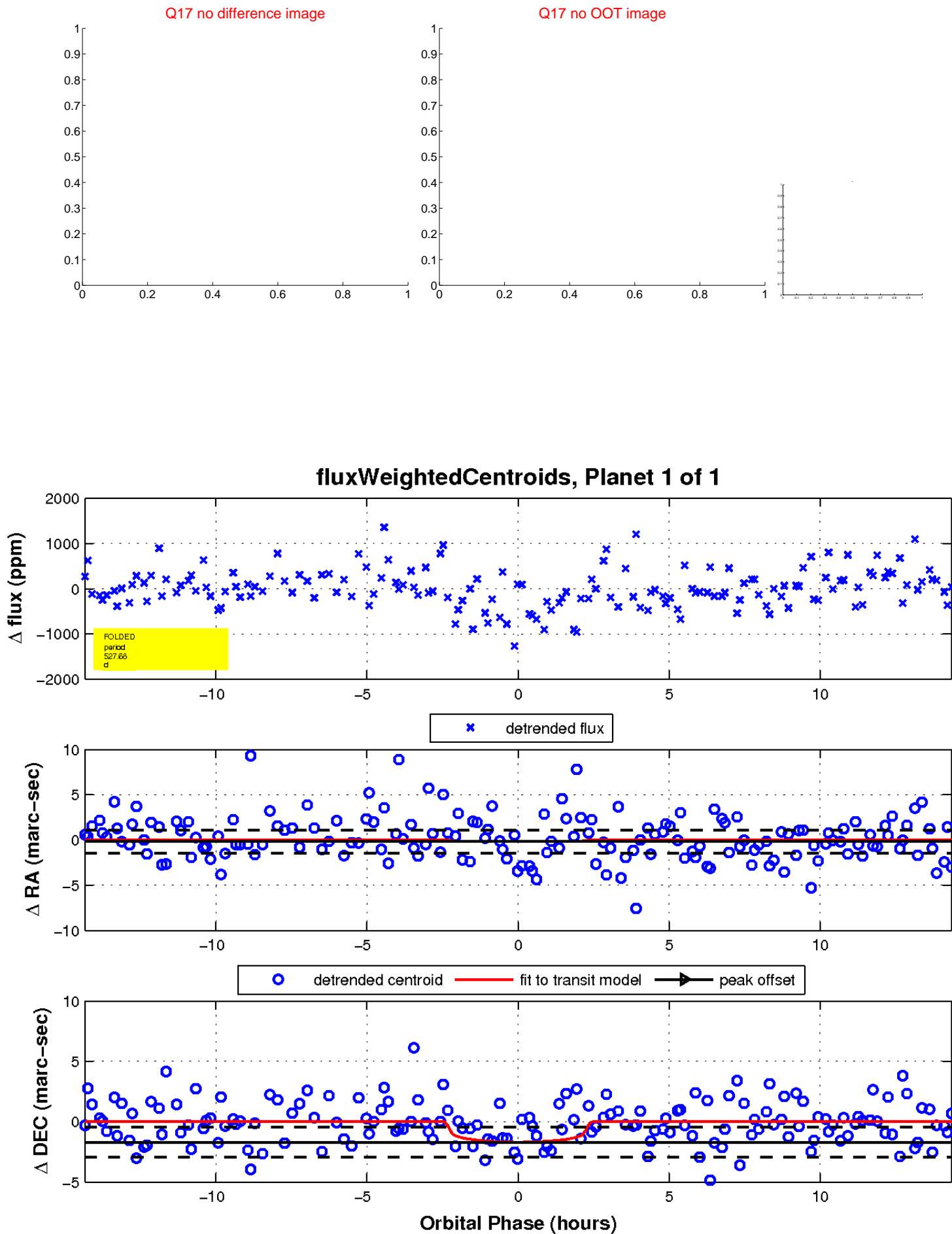
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

