

KIC 010139053

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})
010139053-01	OBS	No	323.332353	406.528284	557.5	8.200	8.0	7.1	0.74	5662	1.96	0.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010139053-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—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.

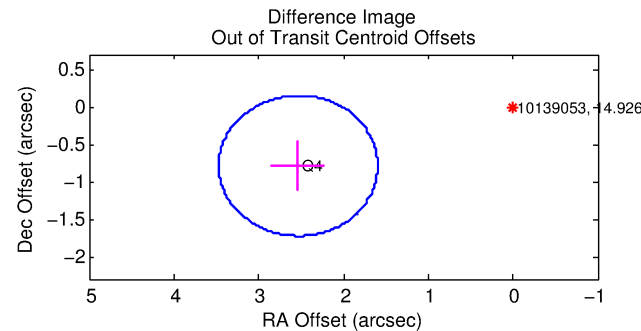
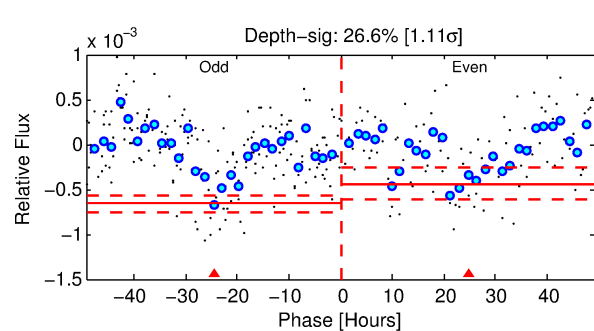
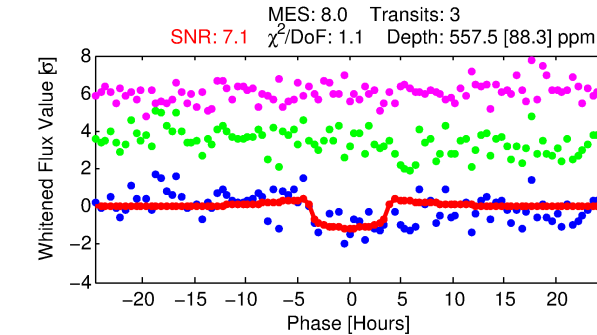
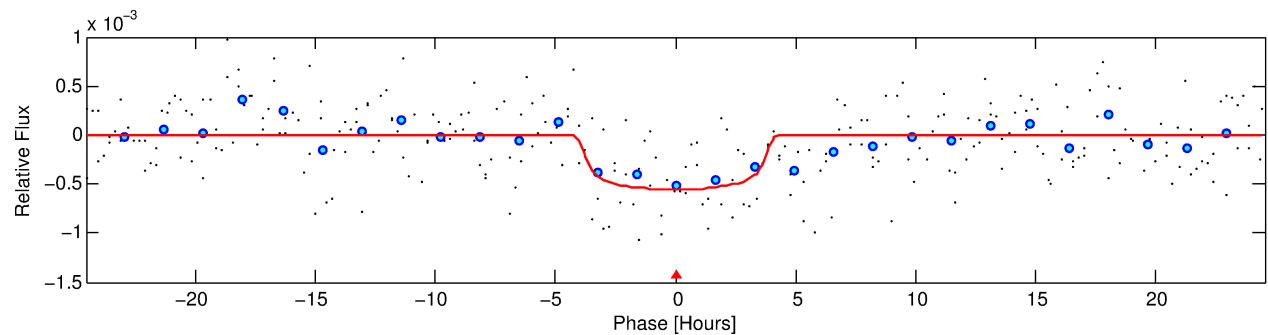
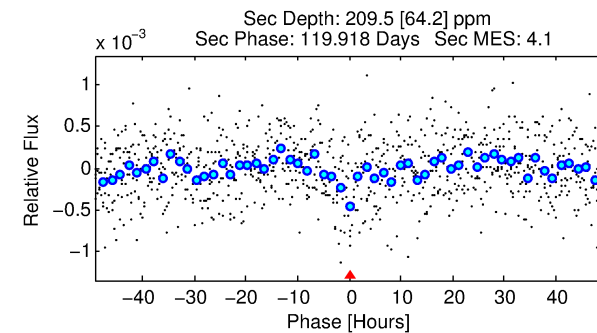
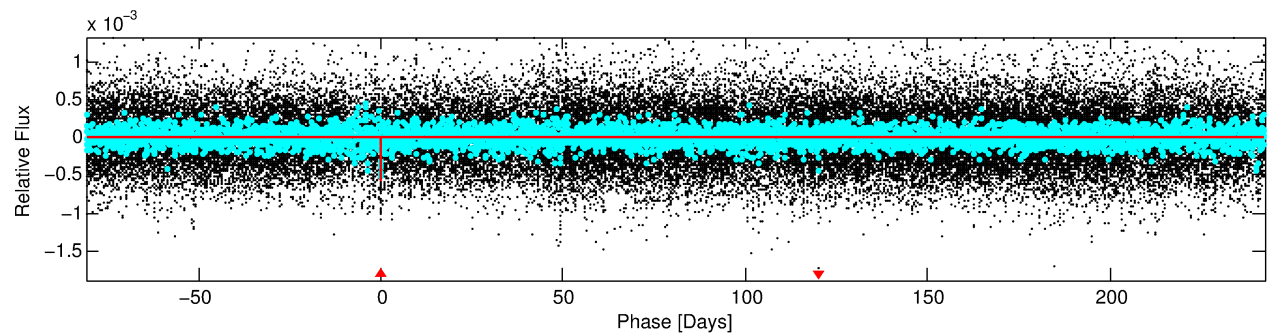
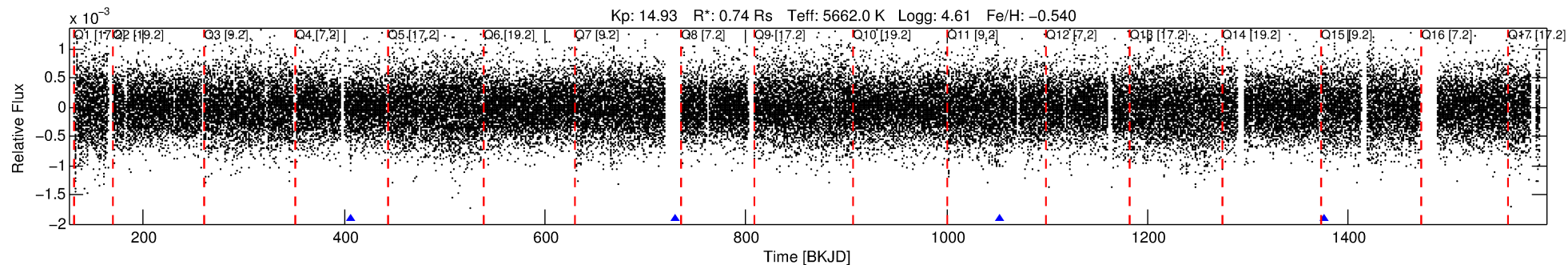
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010139053-01

No Significant Match Found

DV One-Page Summary

KIC: 10139053 Candidate: 1 of 1 Period: 323.332 d



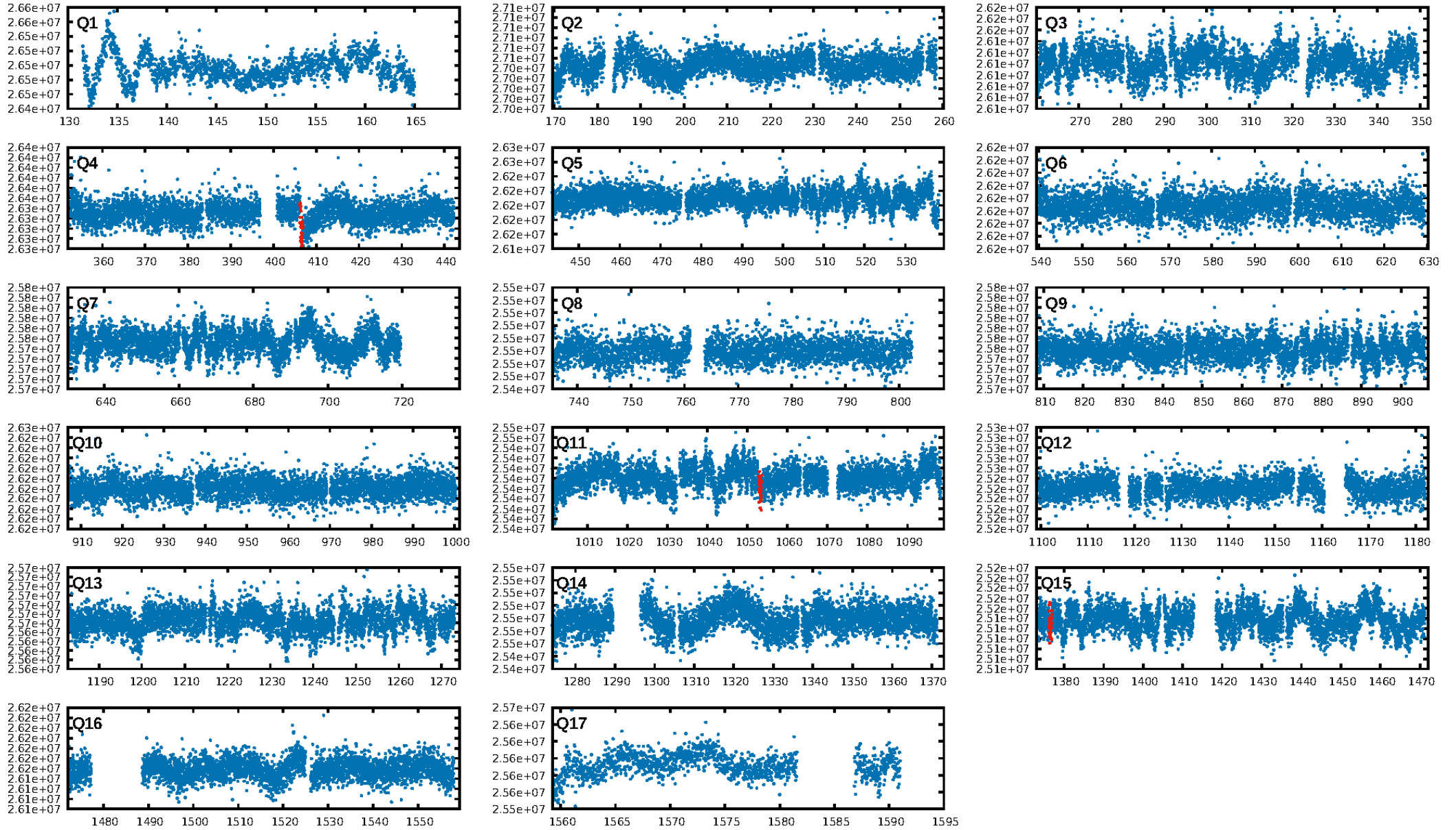
DV Fit Results:

Period = 323.33235 [0.00791] d
Epoch = 406.5283 [0.0161] BKJD
Rp/R* = 0.0244 [0.0076]
a/R* = 180.00 [252.61]
b = 0.83 [0.53]
Seff = 0.68 [0.17]
Teff = 231 [15] K
Rp = 1.96 [0.72] Re
a = 0.8593 [0.1370] AU
Ag = 22098.95 [16272.59] [1.36 σ]
Teffp = 4364 [771] K [5.36 σ]

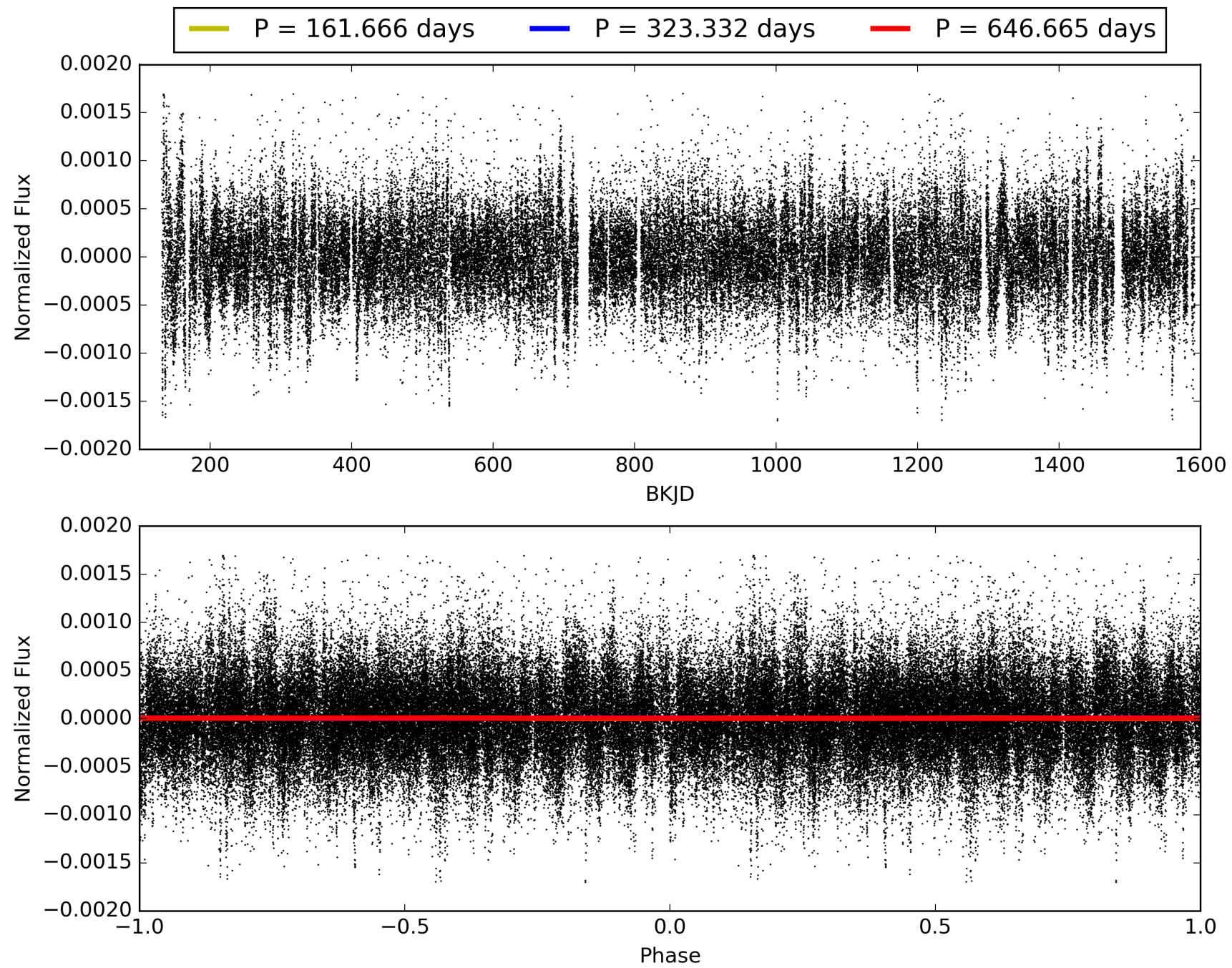
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 12.3%
ModelChiSquareGof-sig: 92.7%
Bootstrap-pfa: 3.06e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.4
Centroid-sig: 3.2%
Centroid-so: 2.154 arcsec [1.20 σ]
OotOffset-rm: 2.653 arcsec [8.49 σ]
KicOffset-rm: 2.542 arcsec [8.13 σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 010139053-01, PDC Light Curves

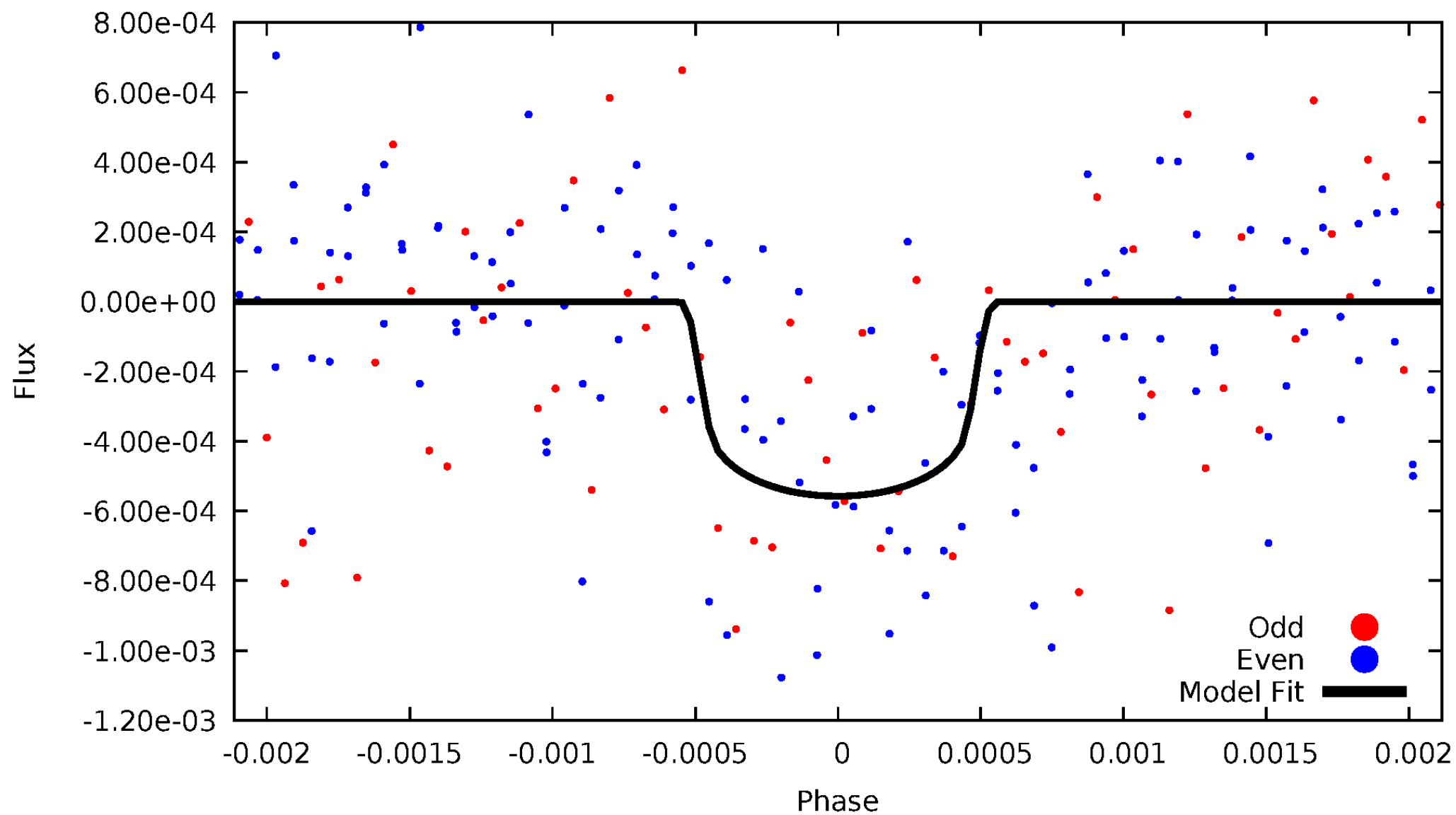


TCE 010139053-01



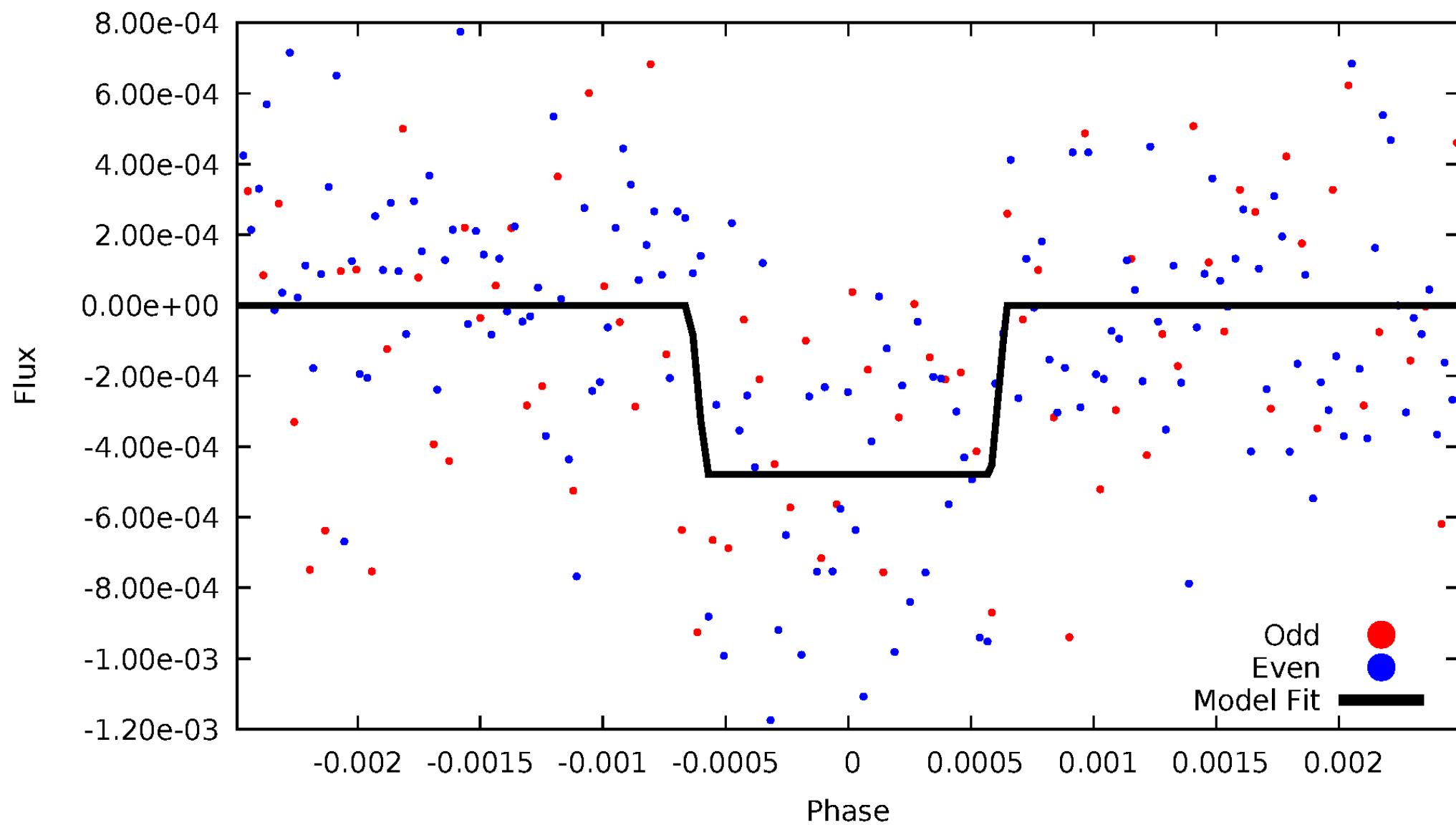
DV Odd/Even

TCE 010139053-01

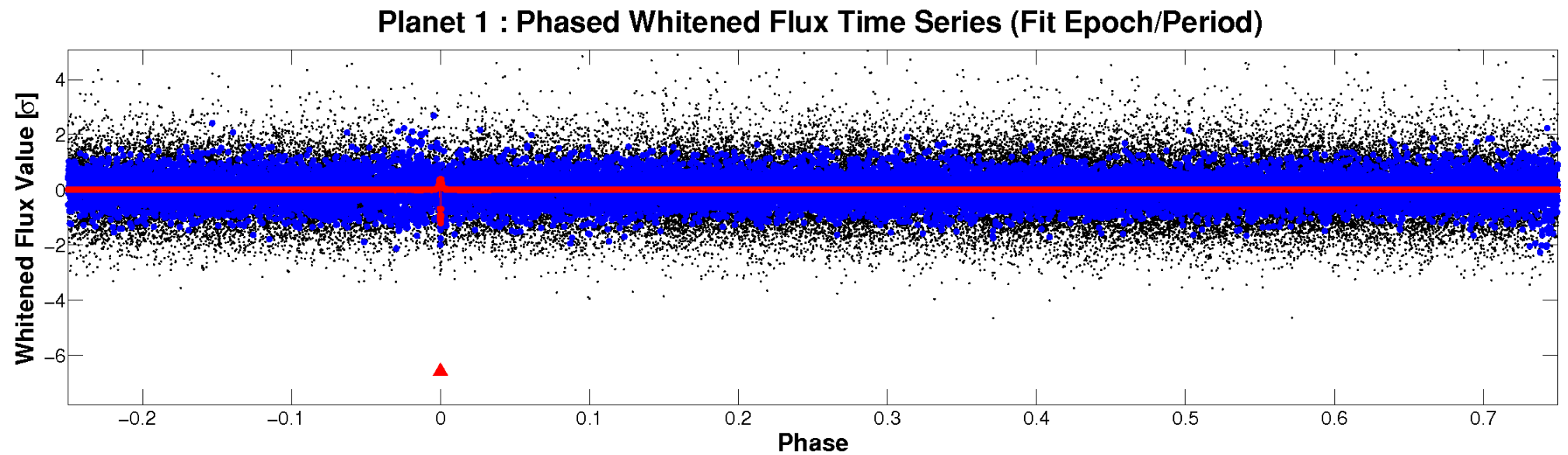
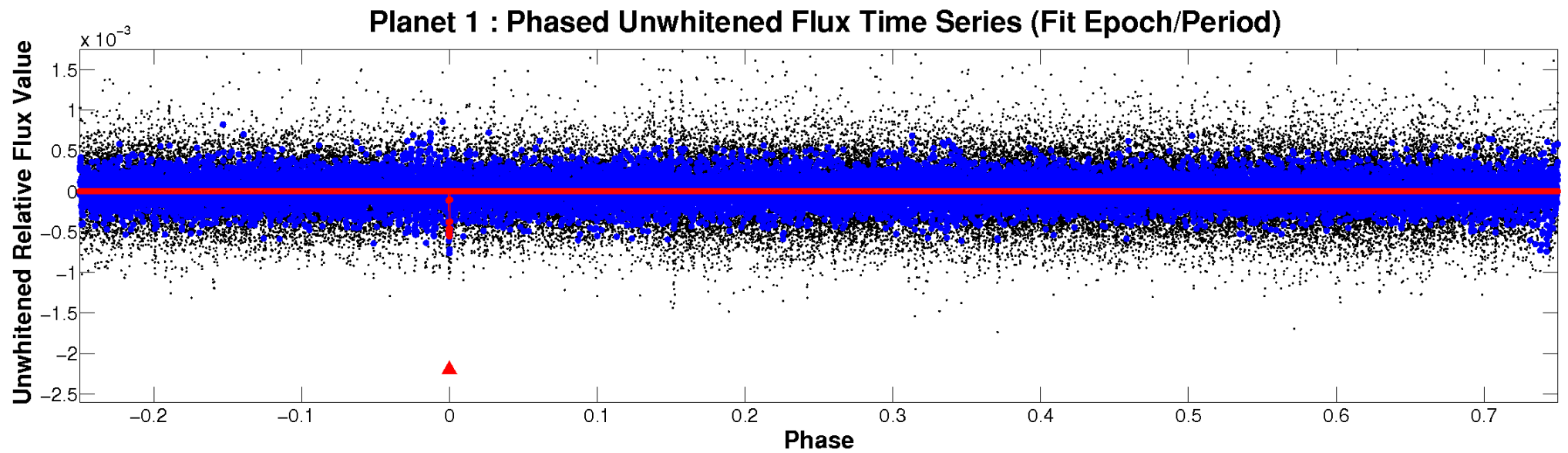


ALT Odd/Even

TCE 010139053-01



Non-Whitened Vs. Whitened Light Curve



PDC Quarter-Phased Transit Curves

TCE 010139053-01 P=323.332353 Days $T_0=406.528284$ (BKJD)



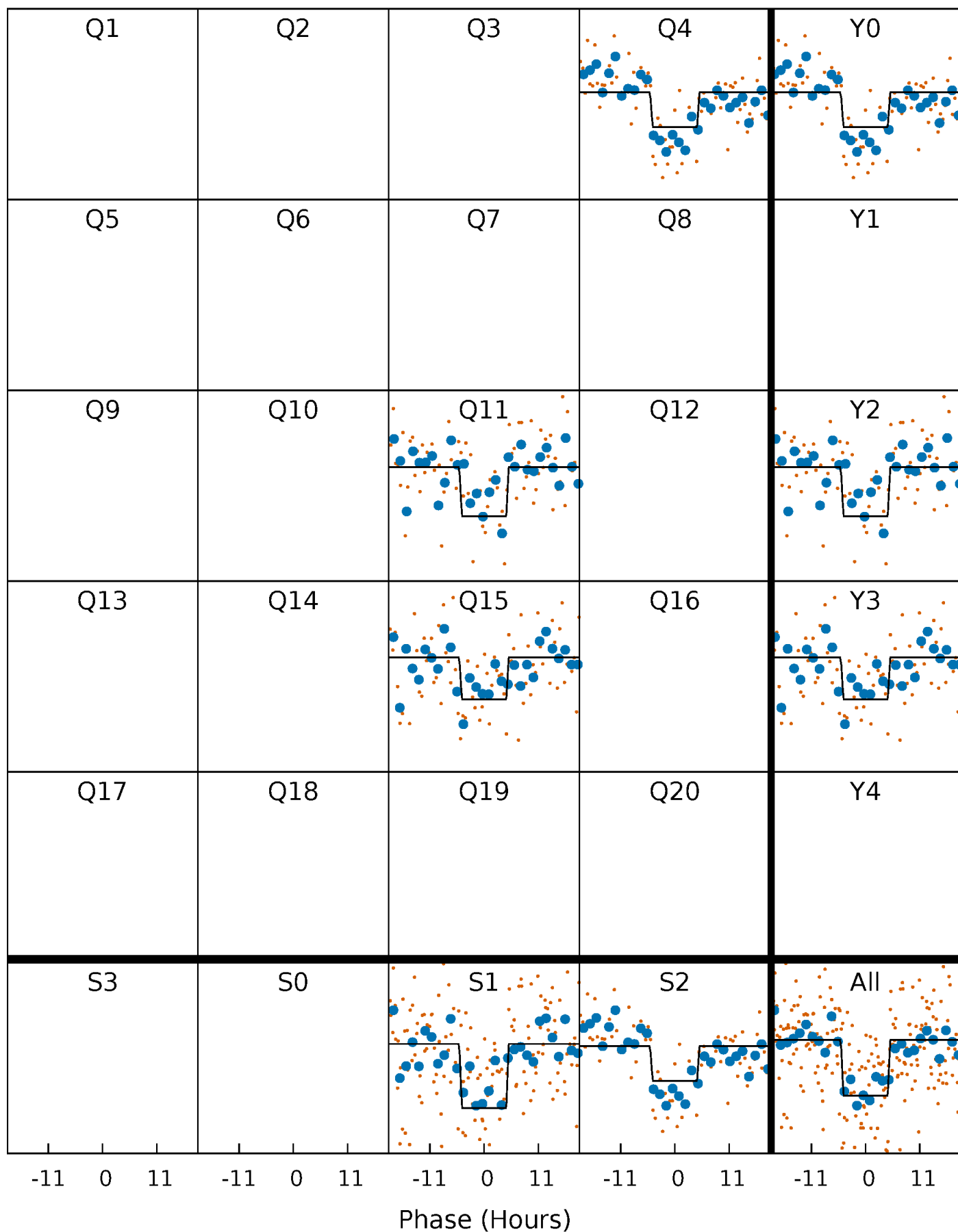
DV Quarter-Phased Transit Curves

TCE 010139053-01 P=323.332353 Days $T_0=406.528284$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

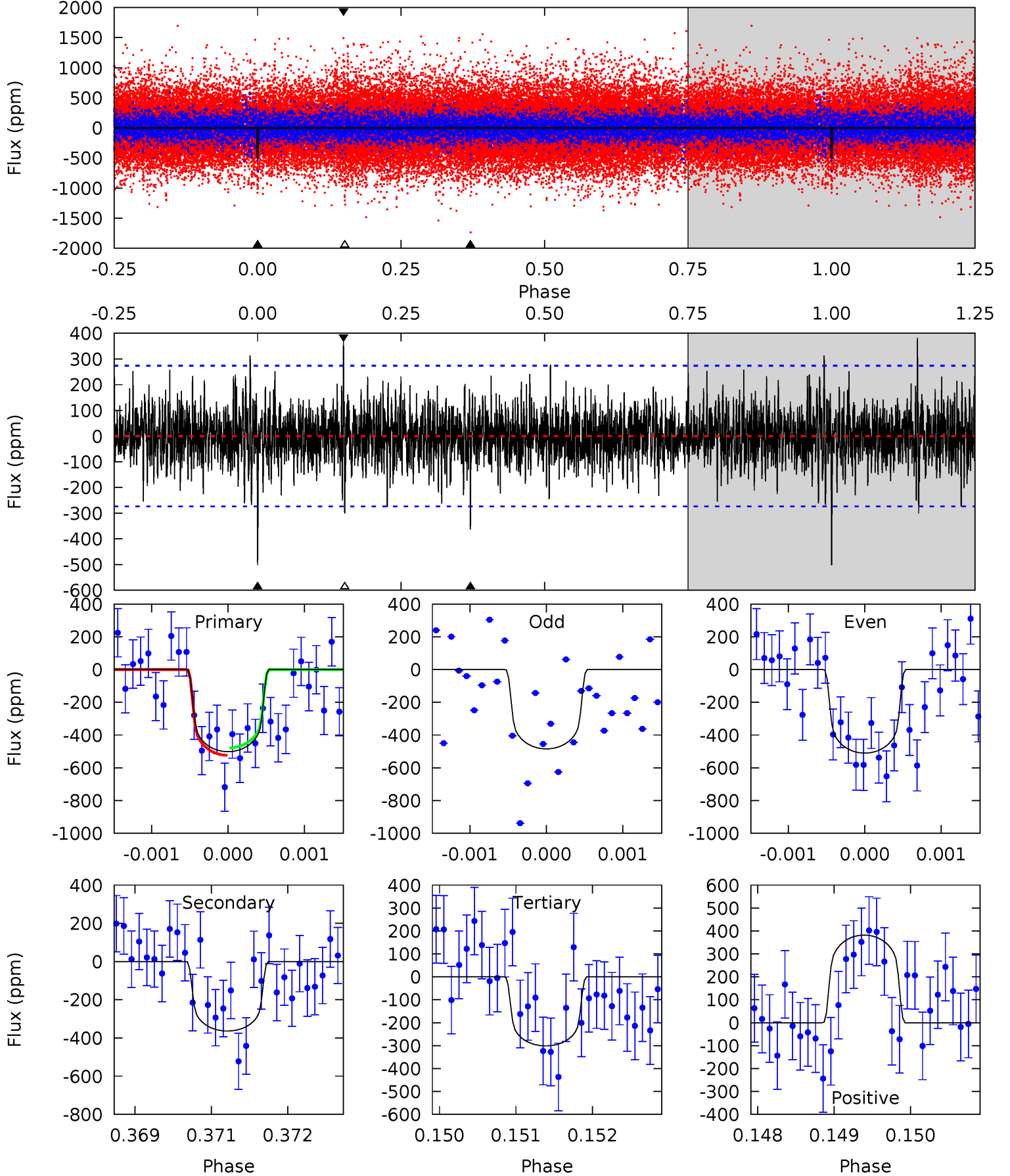
TCE 010139053-01 P=323.347465 Days $T_0=406.566697$ (BKJD)



DV Model-Shift Uniqueness Test

010139053-01, P = 323.332353 Days, E = 83.195931 Days

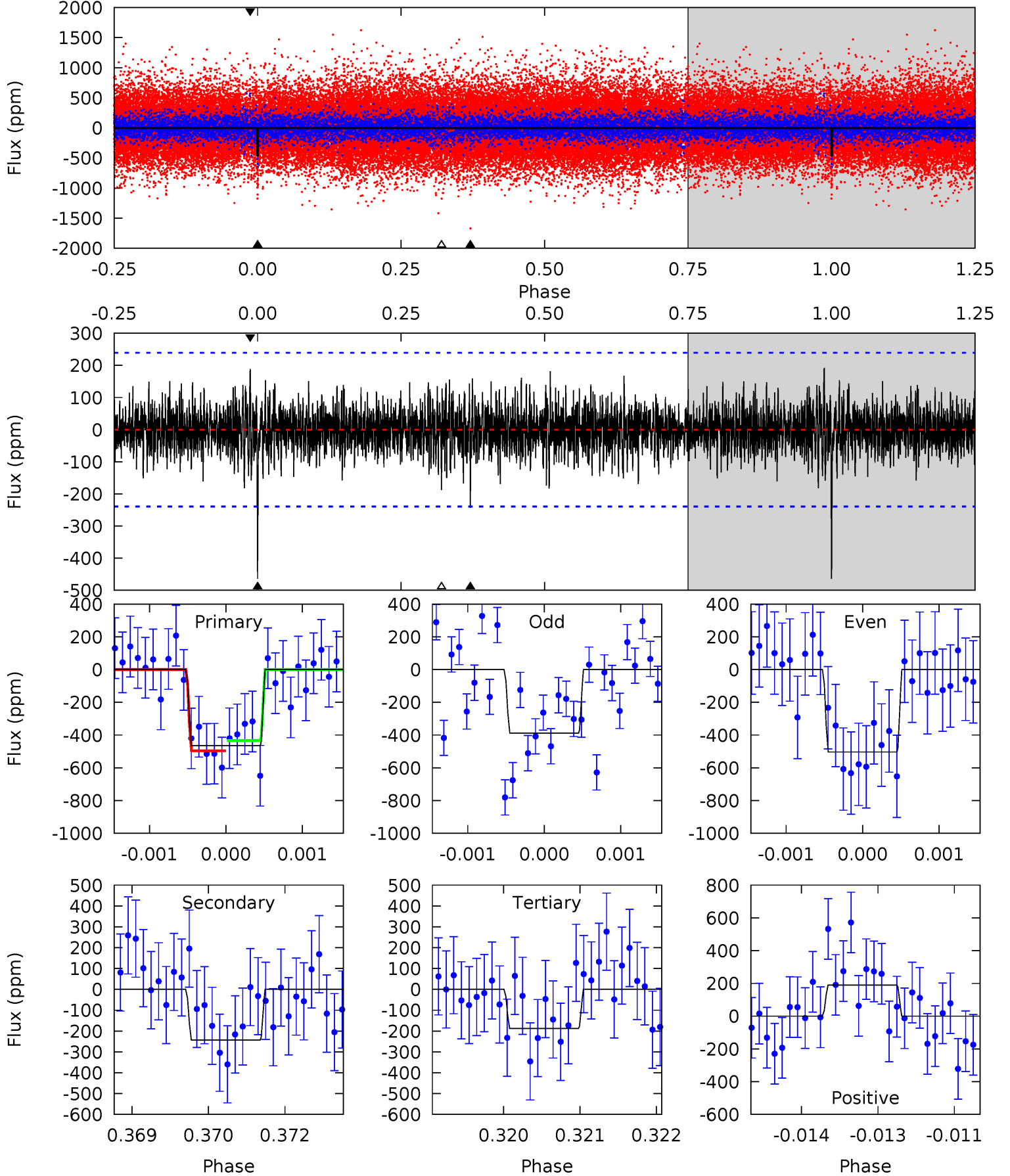
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.98	7.24	5.99	7.60	5.44	3.28	1.53	3.99	2.38	1.24	-0.37	0.24	1.03	0.43	0.45



Alt Model-Shift Uniqueness Test

010139053-01, $P = 323.347465$ Days, $E = 83.219232$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	5.50	4.24	4.28	5.41	3.22	1.17	6.26	6.22	1.26	1.22	1.22	1.19	0.29	0.70



Stellar Parameters For KIC 010139053

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5662^{+152}_{-152}	$4.610^{+0.032}_{-0.128}$	$-0.540^{+0.300}_{-0.300}$	$0.738^{+0.139}_{-0.056}$	$0.813^{+0.080}_{-0.080}$	$2.844^{+0.482}_{-1.068}$
	+3%/-3%	+1%/-3%	+56%/-56%	+19%/-8%	+10%/-10%	+17%/-38%
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 010139053-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-364 ± 50	$1.99^{+0.66}_{-0.63}$	329^{+17}_{-12}	5113^{+1016}_{-598}	36346^{+44725}_{-16050}
Alt.	-243 ± 44	$1.83^{+0.68}_{-0.65}$	329^{+15}_{-12}	4892^{+988}_{-646}	29159^{+40761}_{-14189}

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

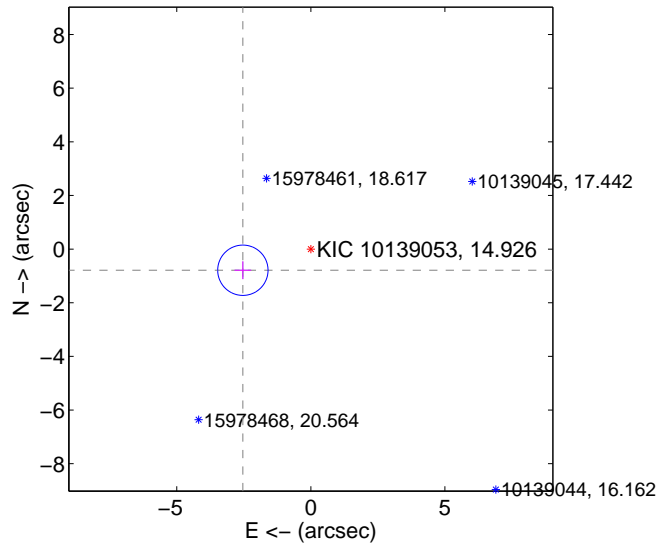
Supplemental centroid analysis for 010139053-01. Kepler magnitude: 14.93. Transit SNR 7.08

There are 1 quarters with good PRF difference image offsets

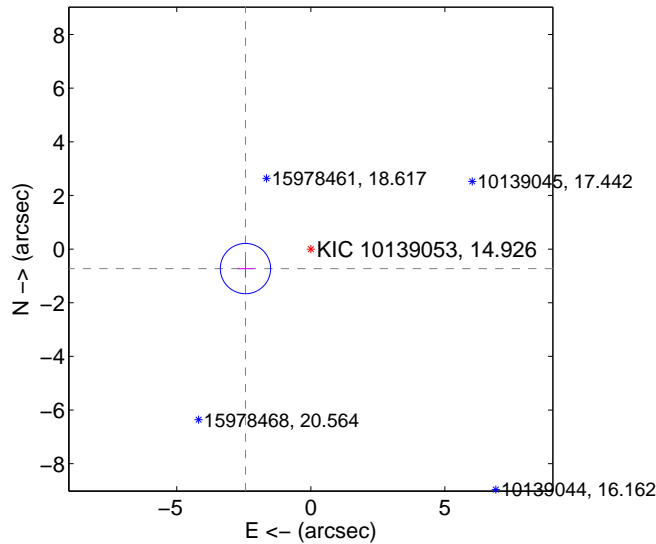
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.653 ± 0.313	8.49	2.533 ± 0.311	-0.788 ± 0.334
PRF-fit source offset from KIC position	2.542 ± 0.313	8.13	2.436 ± 0.311	-0.726 ± 0.334
photometric centroid source offset	2.15 ± 1.79	1.20	1.20 ± 2.22	-1.79 ± 1.56

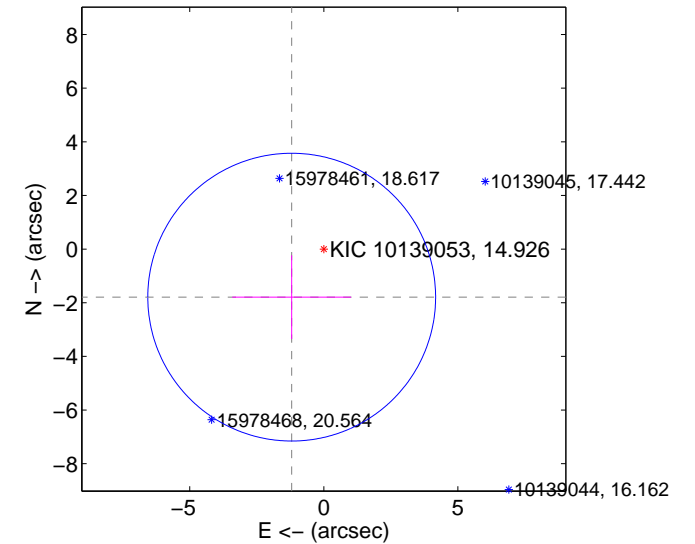
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

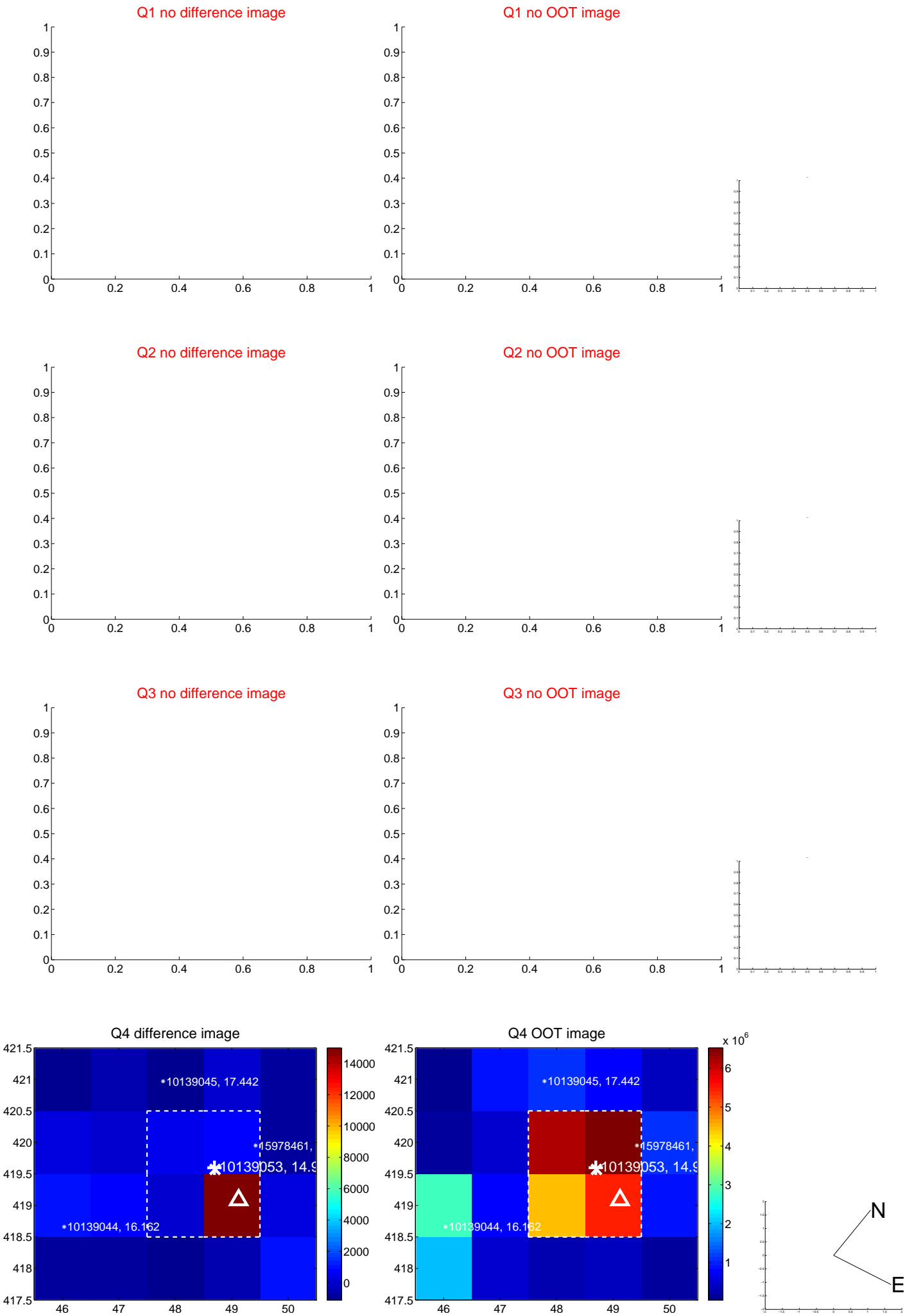


offset from photometric centroids



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 ×: 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.

Q9 no difference image



Q9 no OOT image



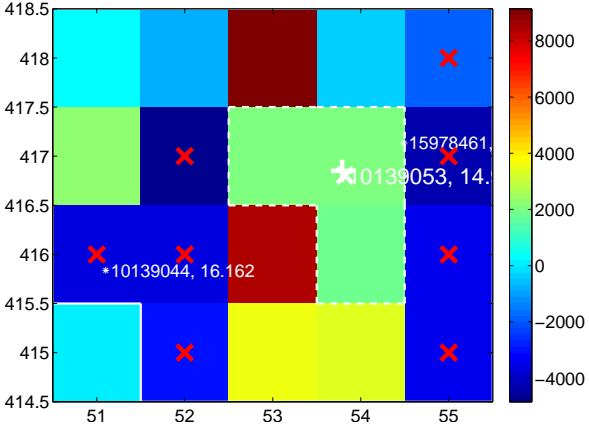
Q10 no difference image



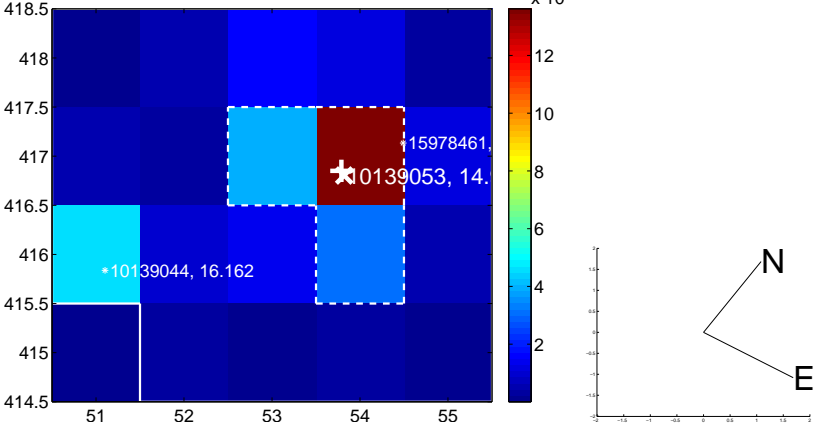
Q10 no OOT image



Q11 difference image. Poor Quality



Q11 OOT image



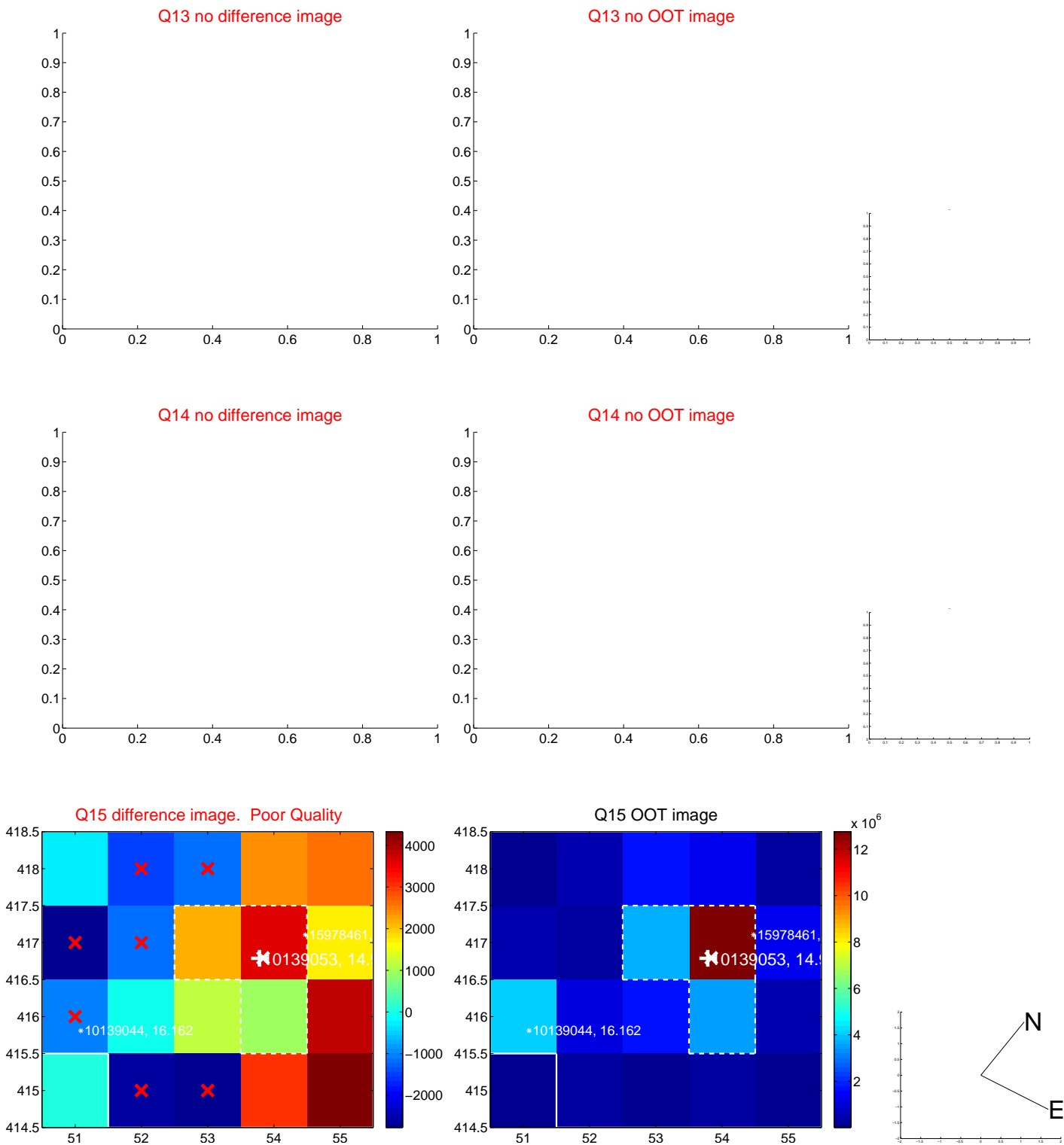
Q12 no difference image



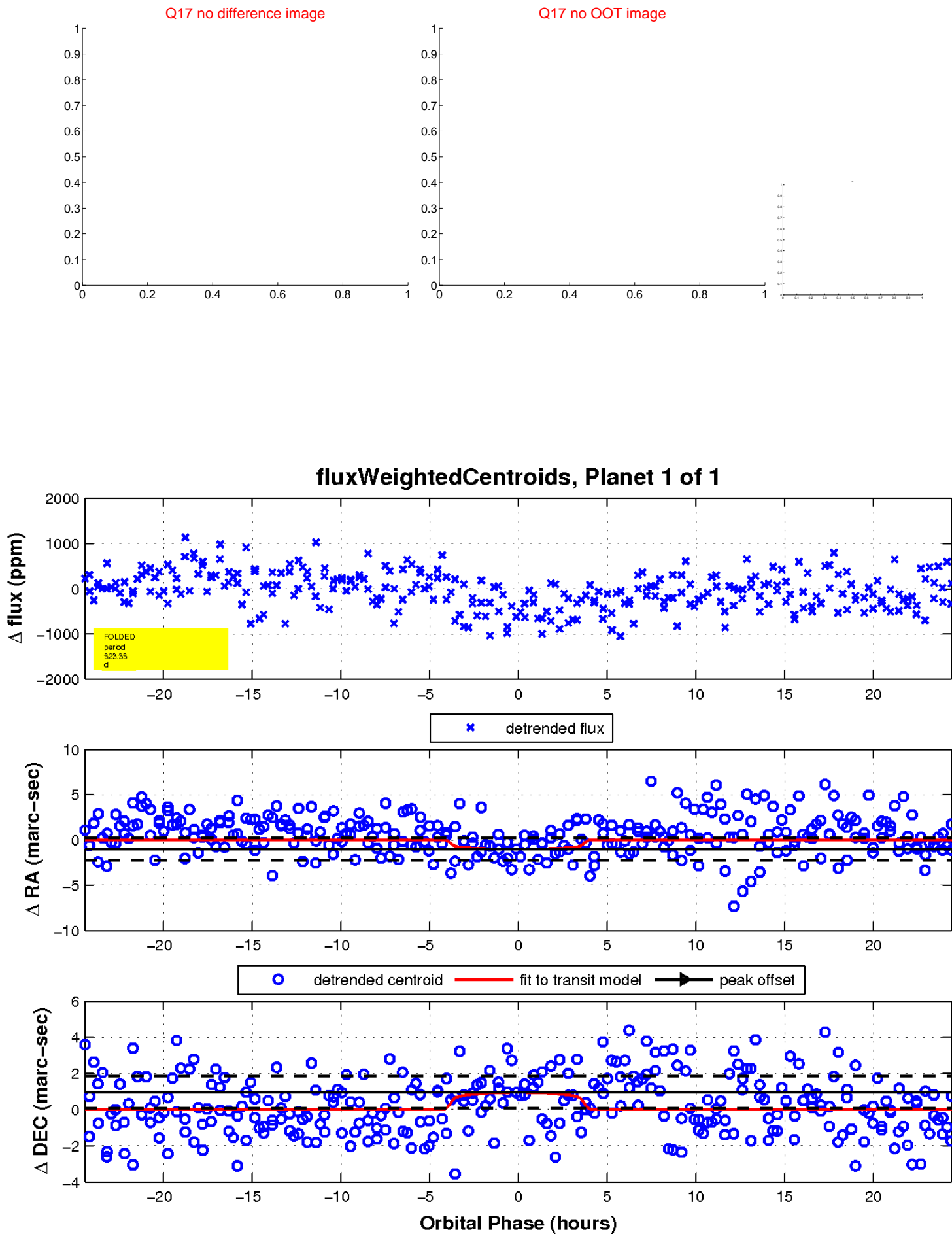
Q12 no OOT image



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.



UKIRT Image

Declination

