

KIC 010140903

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})
010140903-01	OBS	No	581.534729	238.458809	524.3	14.603	8.2	9.3	0.91	5926	2.21	0.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010140903-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—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.

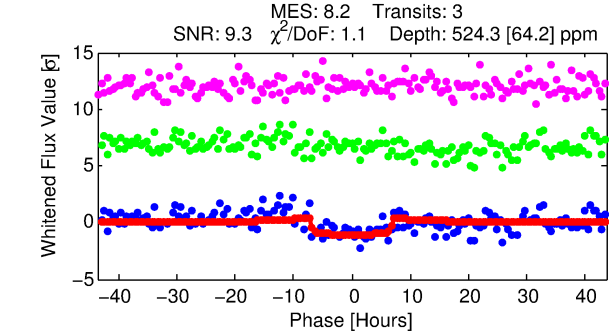
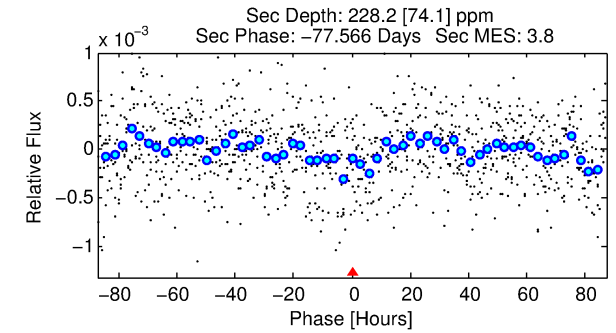
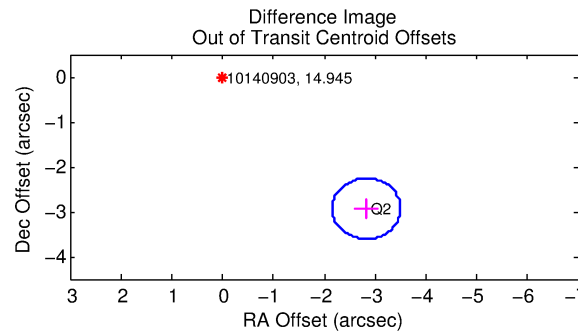
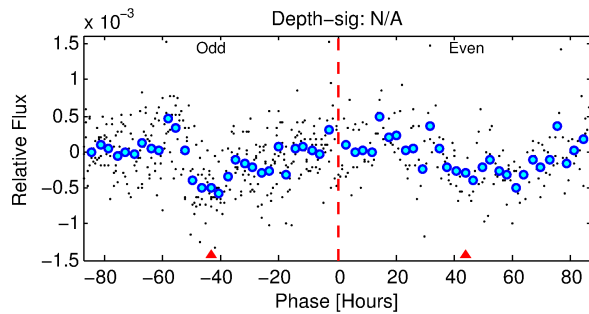
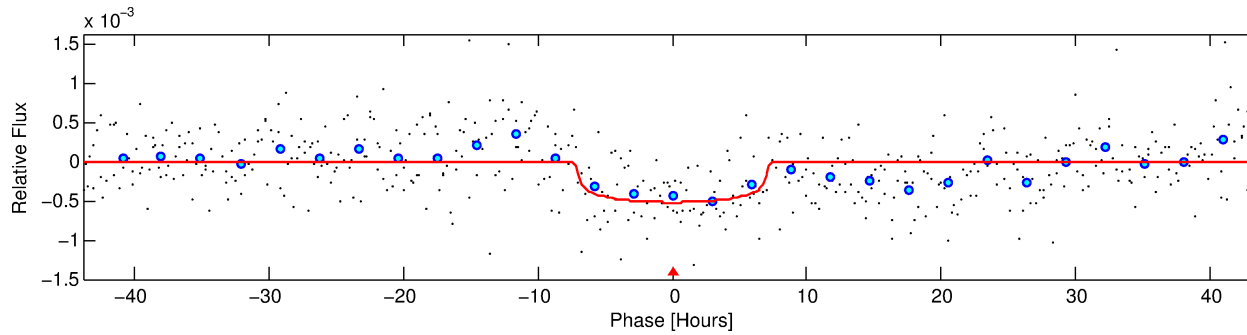
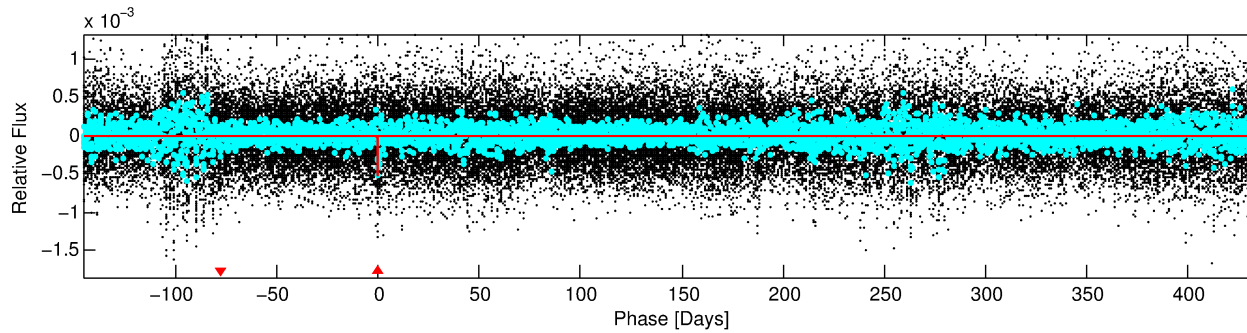
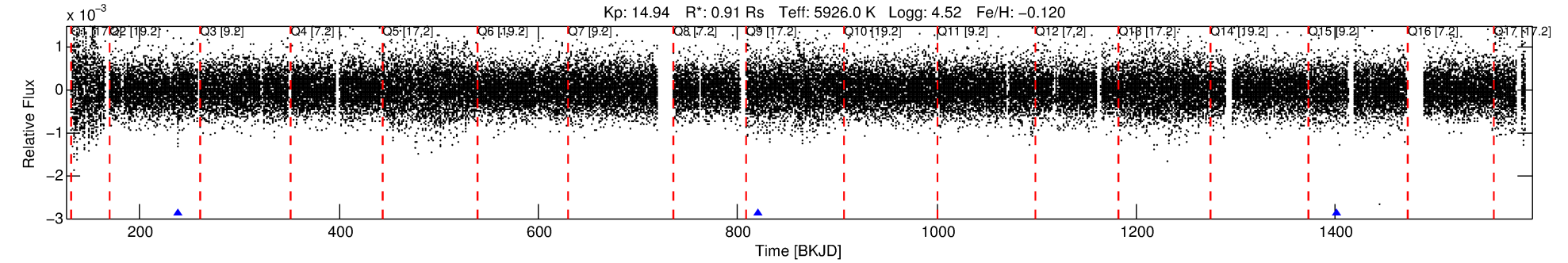
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010140903-01

No Significant Match Found

DV One-Page Summary

KIC: 10140903 Candidate: 1 of 1 Period: 581.535 d



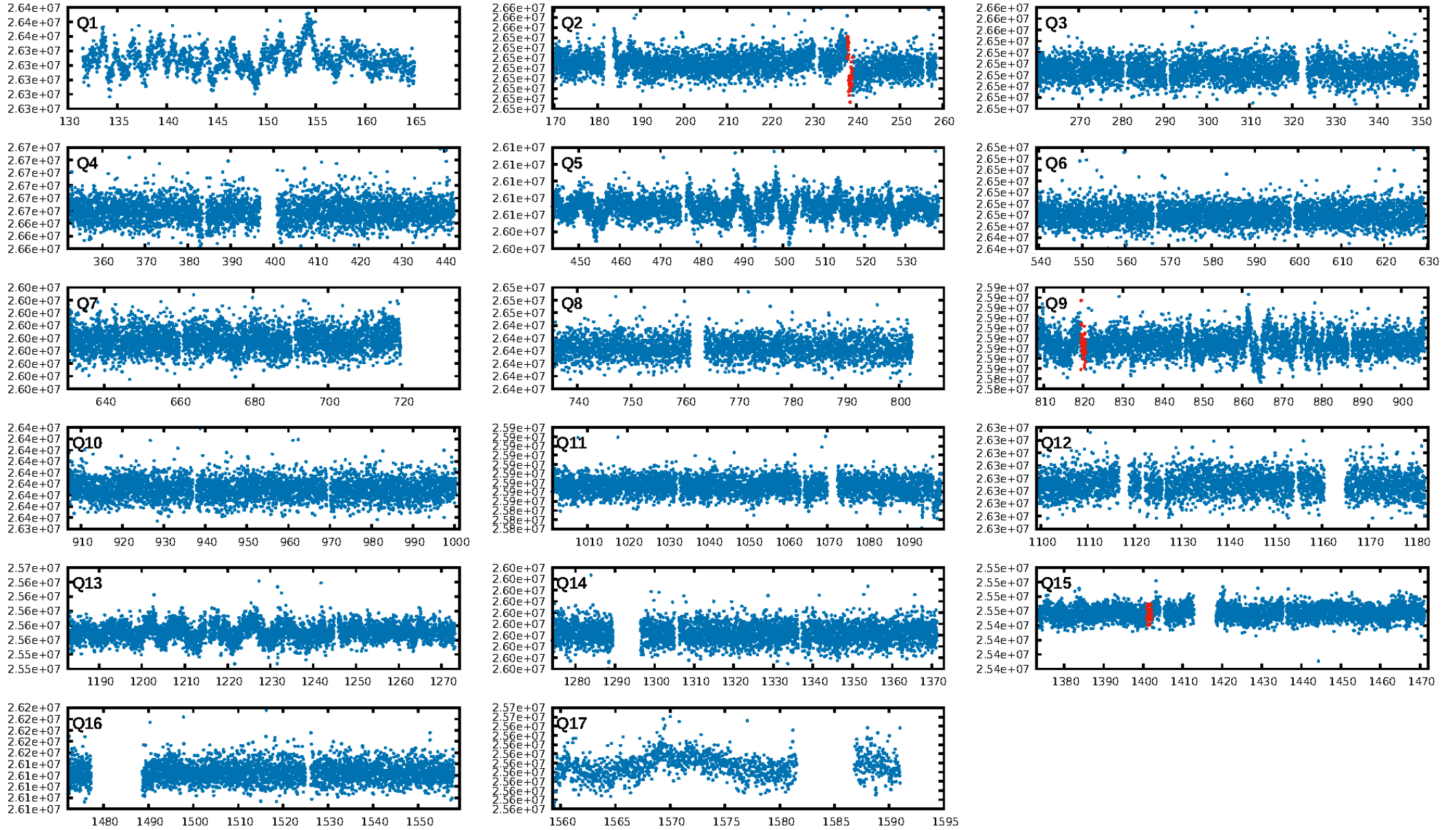
DV Fit Results:

Period = 581.53473 [0.01633] d
Epoch = 238.4588 [0.0236] BKJD
Rp/R* = 0.0222 [0.0077]
a/R* = 237.88 [379.37]
b = 0.66 [1.39]
Seff = 0.49 [0.20]
Teq = 214 [22] K
Rp = 2.21 [1.03] Re
a = 1.3658 [0.3636] AU
Ag = 48043.15 [41643.47] [1.15σ]
Teffp = 4893 [954] K [4.90σ]

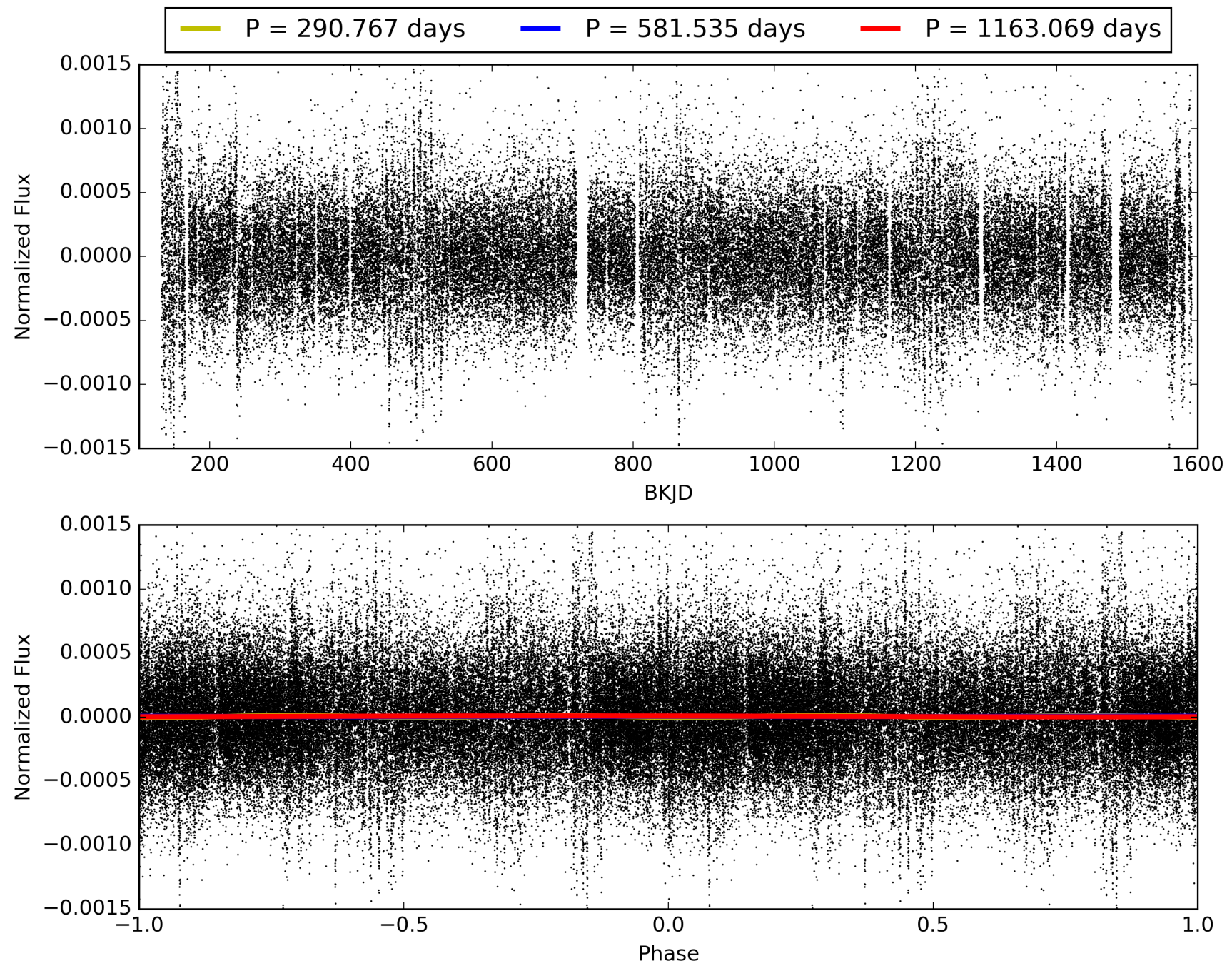
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 1.33e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.009
Centroid-sig: 14.2%
Centroid-so: 3.654 arcsec [1.65σ]
OotOffset-rm: 4.072 arcsec [18.10σ]
KicOffset-rm: 4.107 arcsec [18.25σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 010140903-01, PDC Light Curves

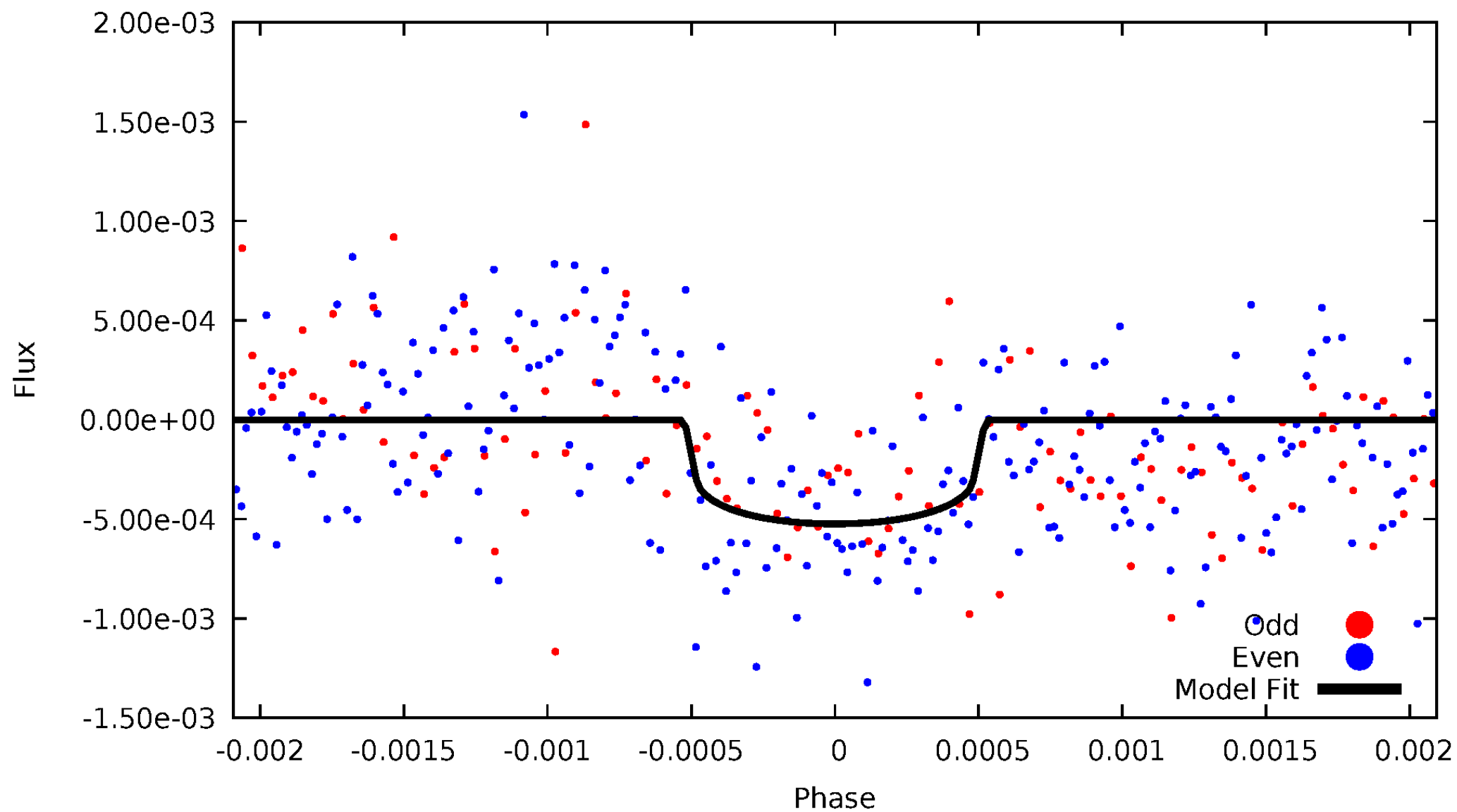


TCE 010140903-01



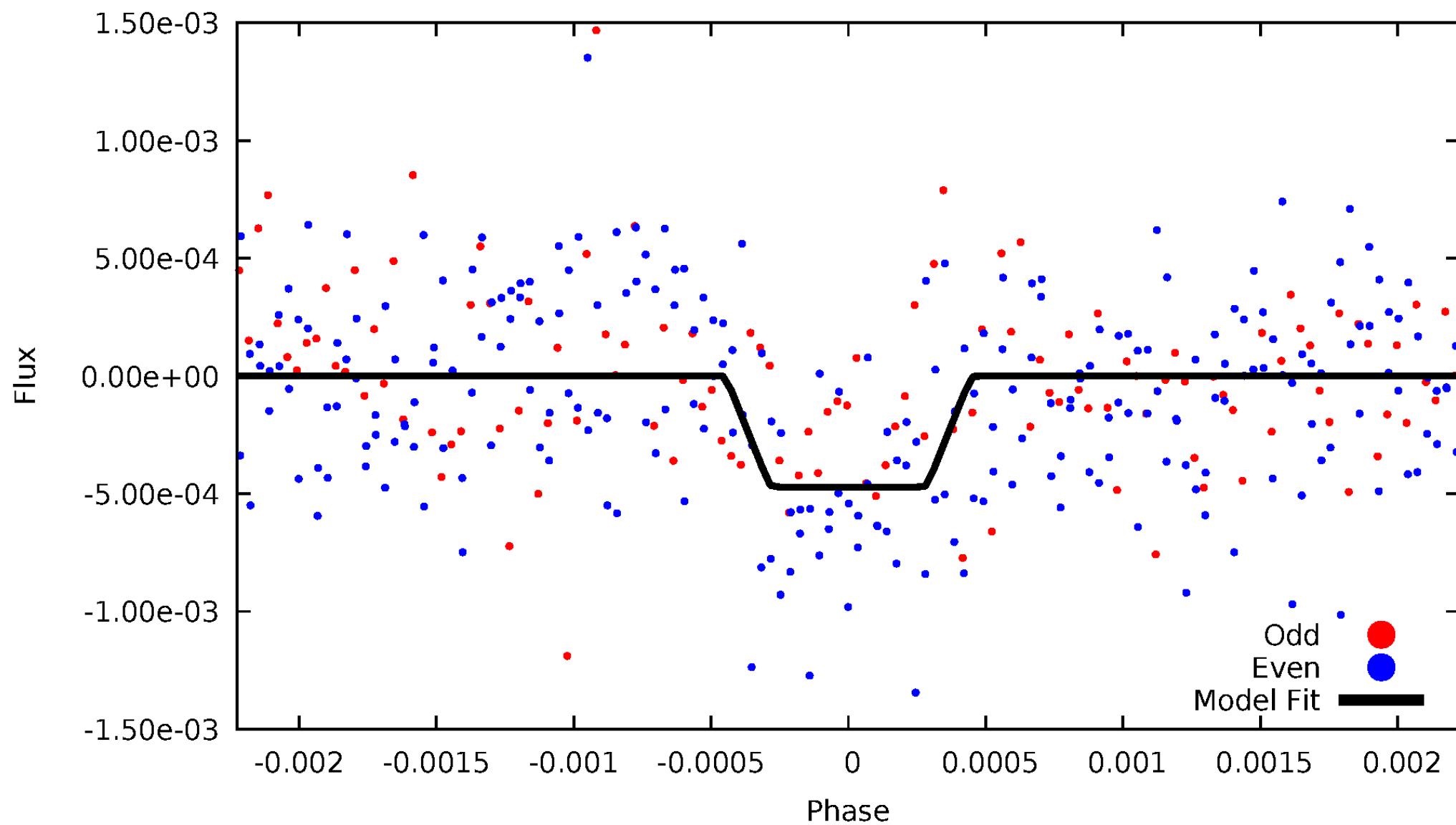
DV Odd/Even

TCE 010140903-01



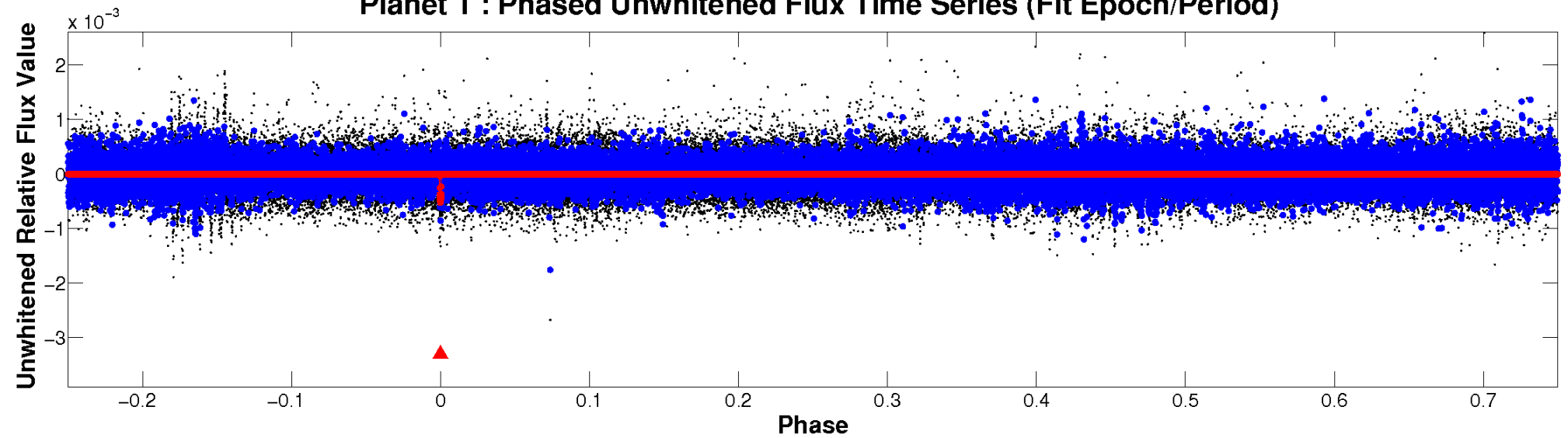
ALT Odd/Even

TCE 010140903-01

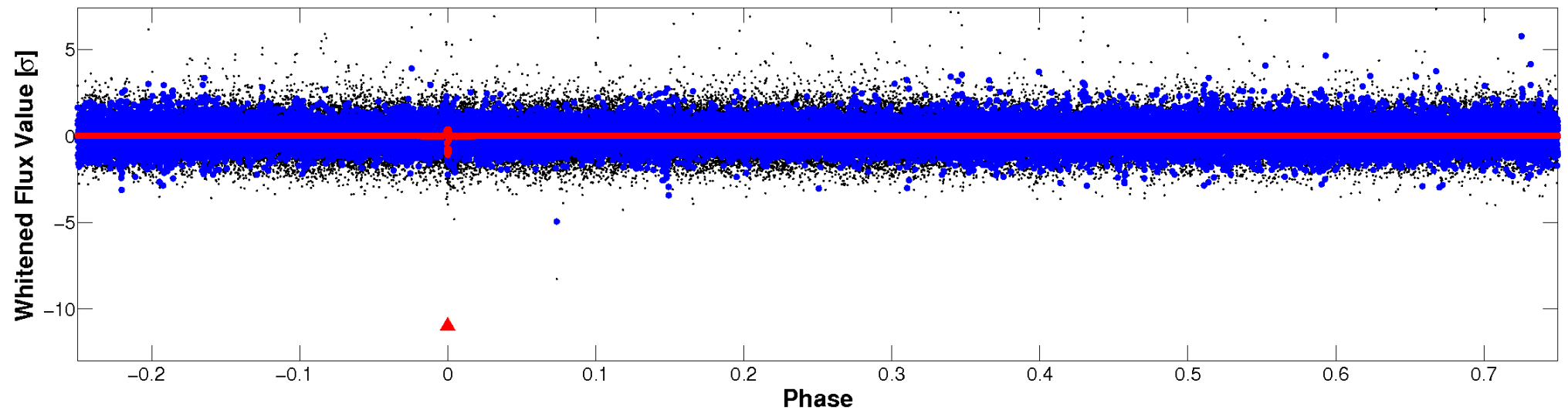


Non-Whitened Vs. Whitened Light Curve

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 010140903-01 P=581.534729 Days $T_0=238.458809$ (BKJD)



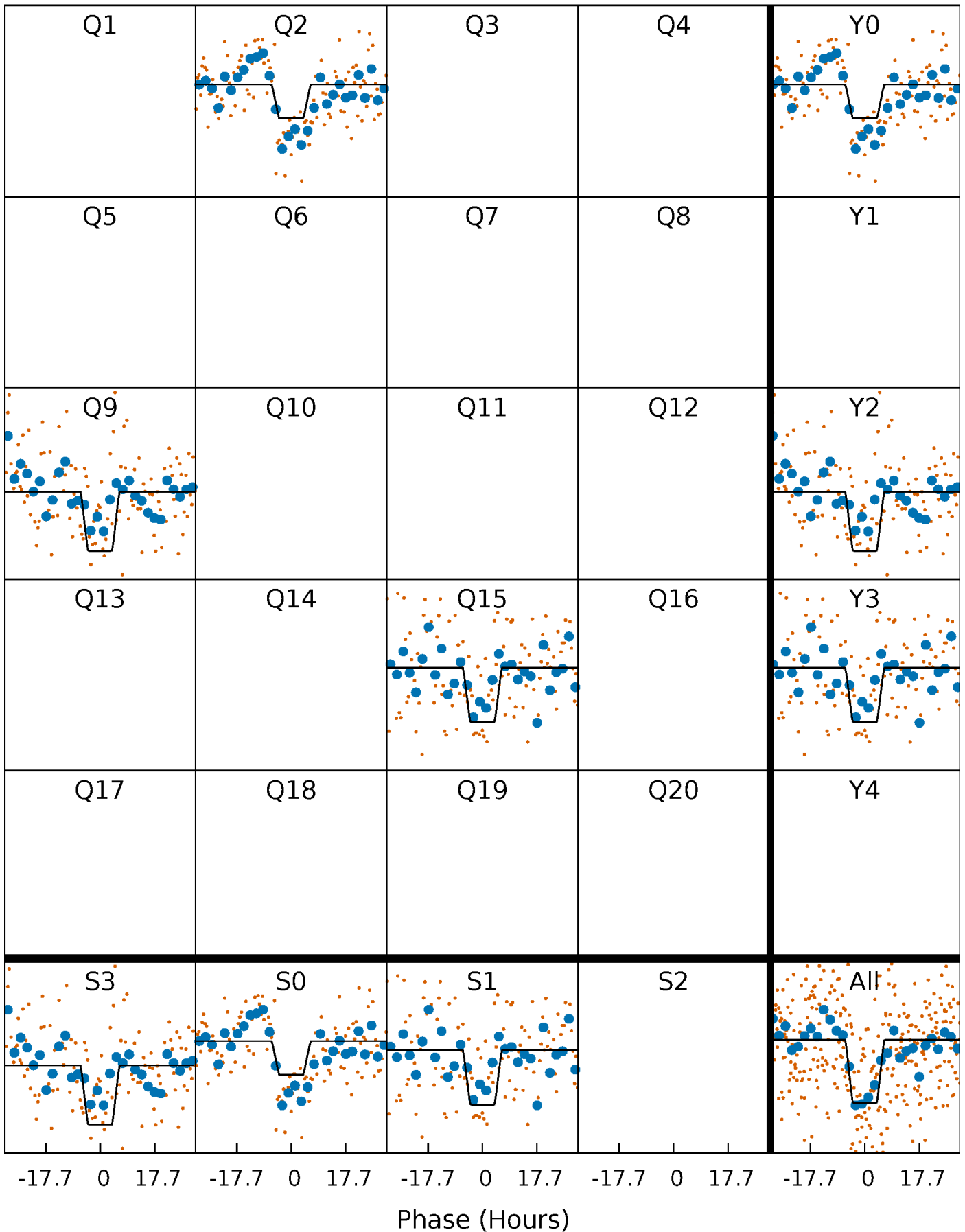
DV Quarter-Phased Transit Curves

TCE 010140903-01 P=581.534729 Days $T_0=238.458809$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

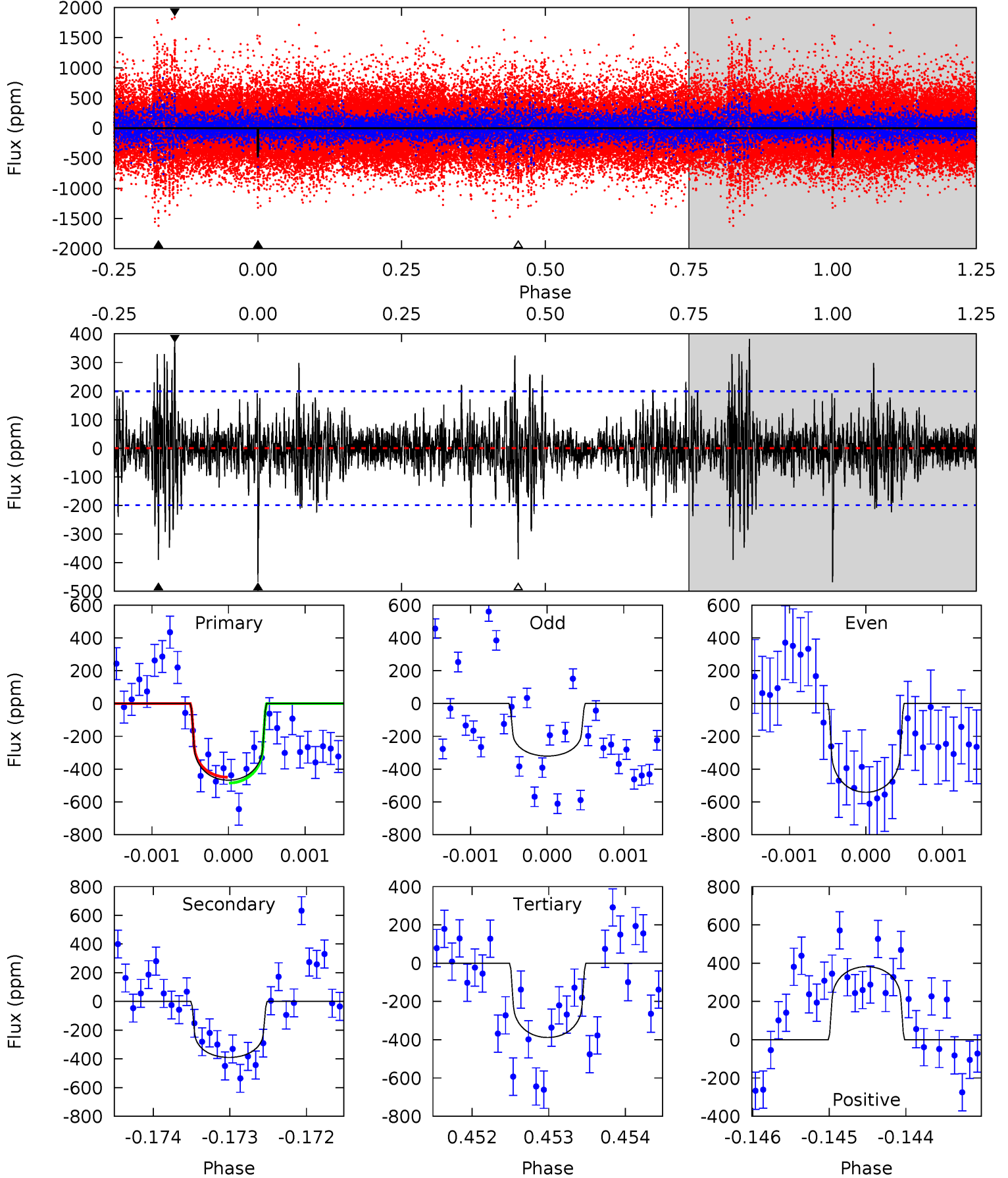
TCE 010140903-01 P=581.641285 Days $T_0=238.381928$ (BKJD)



DV Model-Shift Uniqueness Test

010140903-01, P = 581.534729 Days, E = 238.458809 Days

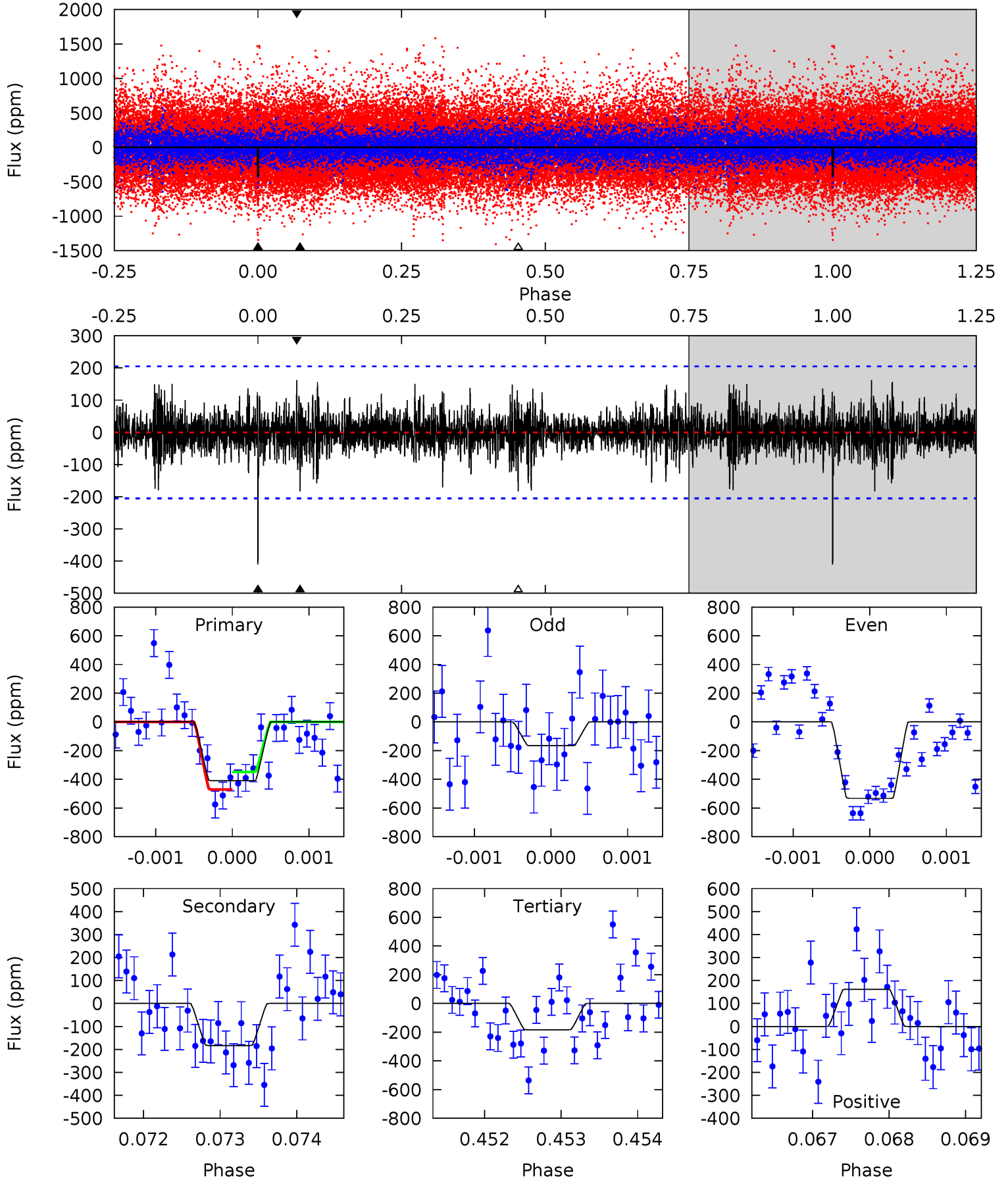
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.8	10.7	10.6	10.4	5.44	3.27	1.97	2.17	2.34	0.05	0.22	2.90	1.37	0.45	0.48



Alt Model-Shift Uniqueness Test

010140903-01, P = 581.641285 Days, E = 238.381928 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	4.89	4.88	4.31	5.47	3.32	1.13	6.07	6.63	0.01	0.57	4.68	1.56	0.28	1.65



Stellar Parameters For KIC 010140903

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5926^{+160}_{-178}	$4.519^{+0.039}_{-0.221}$	$-0.120^{+0.300}_{-0.300}$	$0.913^{+0.281}_{-0.094}$	$1.004^{+0.122}_{-0.135}$	$1.858^{+0.393}_{-0.993}$
	+3%/-3%	+1%/-5%	+250%/-250%	+31%/-10%	+12%/-13%	+21%/-53%
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 010140903-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-390 ± 37	$2.38^{+0.87}_{-0.93}$	307^{+23}_{-15}	5592^{+1396}_{-739}	$69004^{+108109}_{-32341}$
Alt.	-183 ± 38	$2.27^{+0.91}_{-0.85}$	307^{+23}_{-14}	4824^{+1104}_{-610}	35424^{+53568}_{-18187}

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

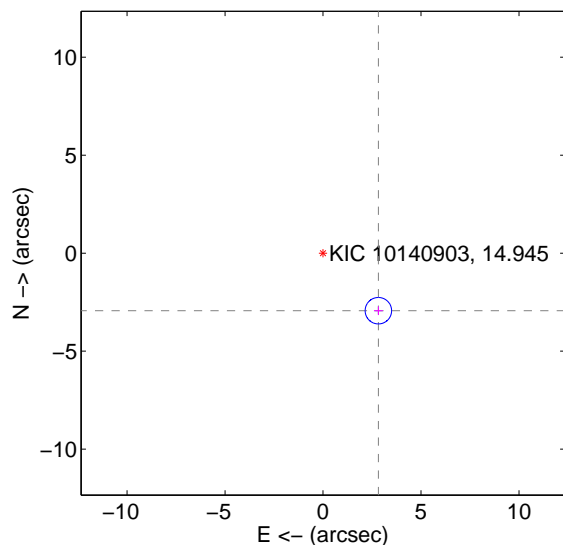
Supplemental centroid analysis for 010140903-01. Kepler magnitude: 14.95. Transit SNR 9.35

There are 1 quarters with good PRF difference image offsets

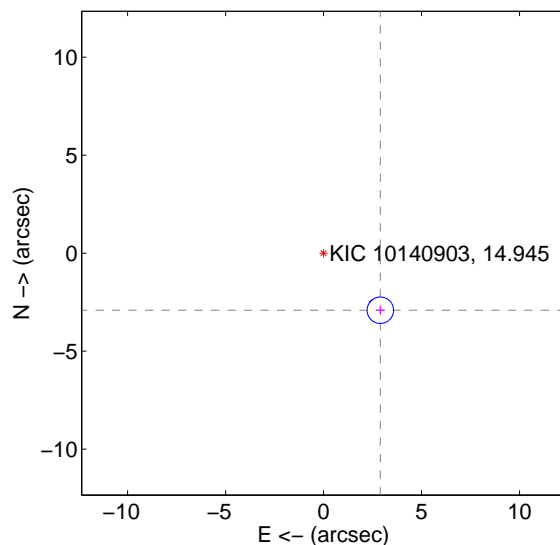
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.072 ± 0.225	18.10	-2.823 ± 0.227	-2.935 ± 0.223
PRF-fit source offset from KIC position	4.107 ± 0.225	18.25	-2.895 ± 0.227	-2.912 ± 0.223
photometric centroid source offset	3.65 ± 2.21	1.65	-3.65 ± 2.21	-0.25 ± 2.18

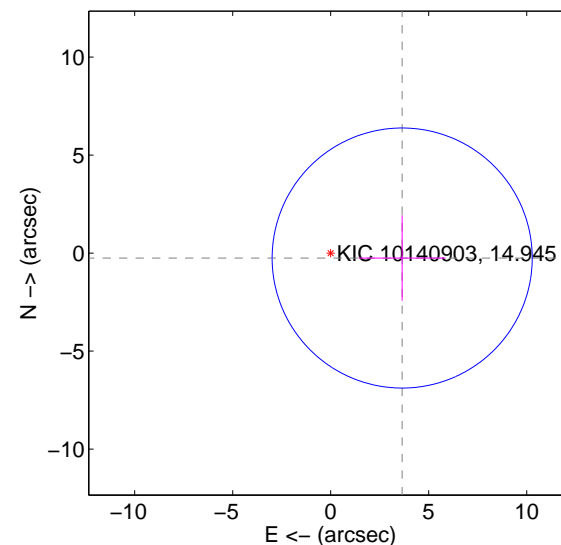
offset from difference PRF-fit to OOT PRF-fit



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.

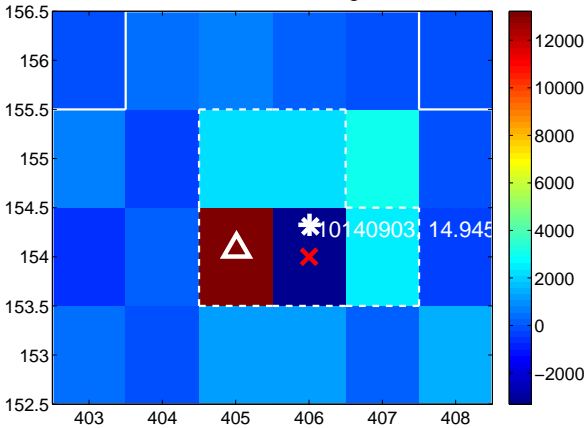
Q1 no difference image



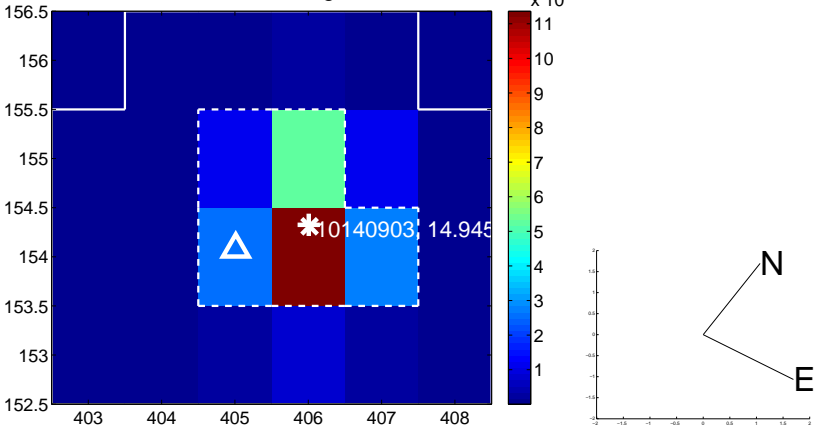
Q1 no OOT image



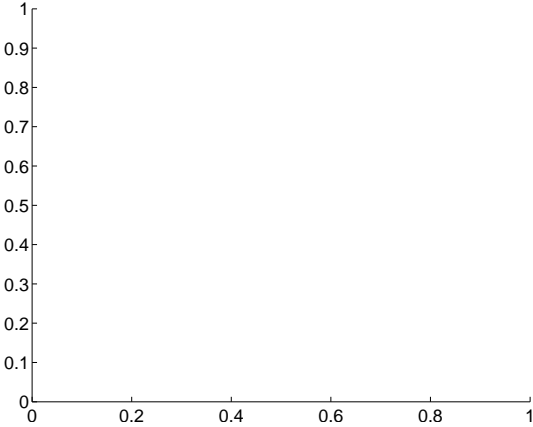
Q2 difference image



Q2 OOT image



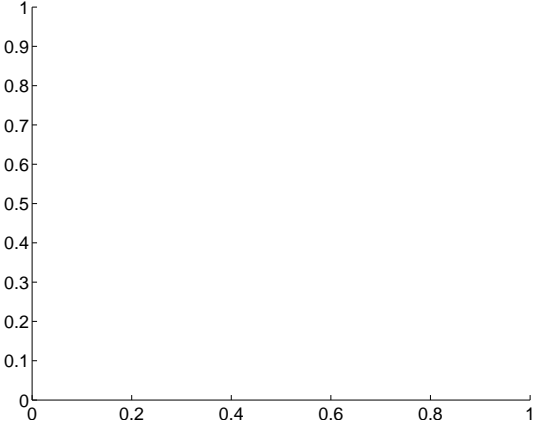
Q3 no difference image



Q3 no OOT image



Q4 no difference image



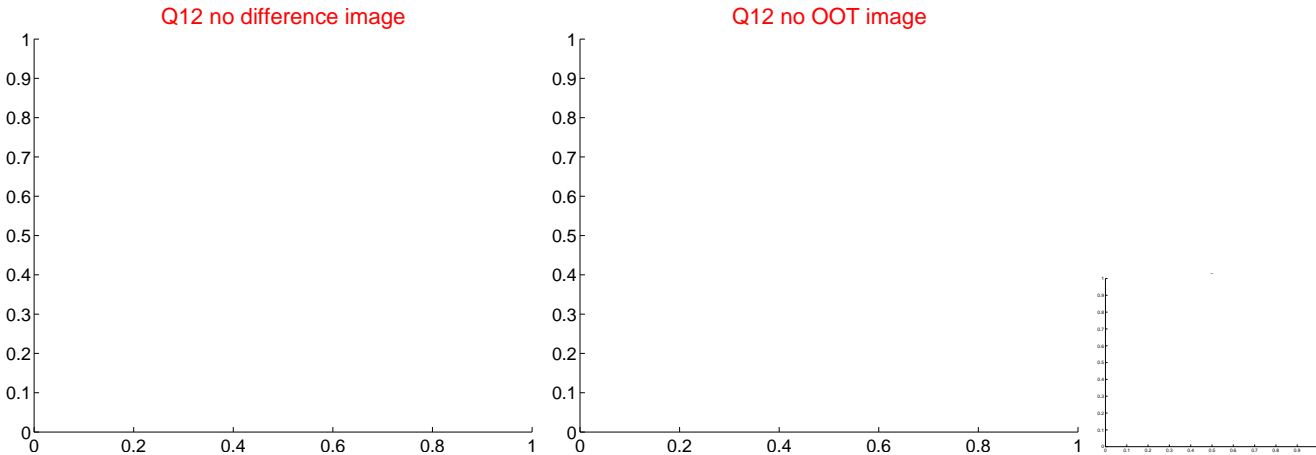
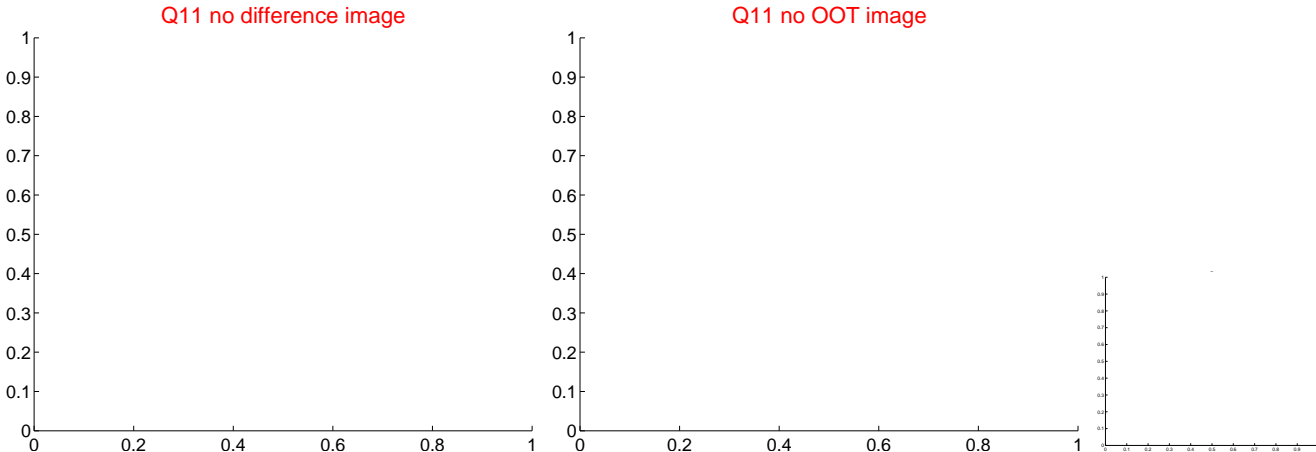
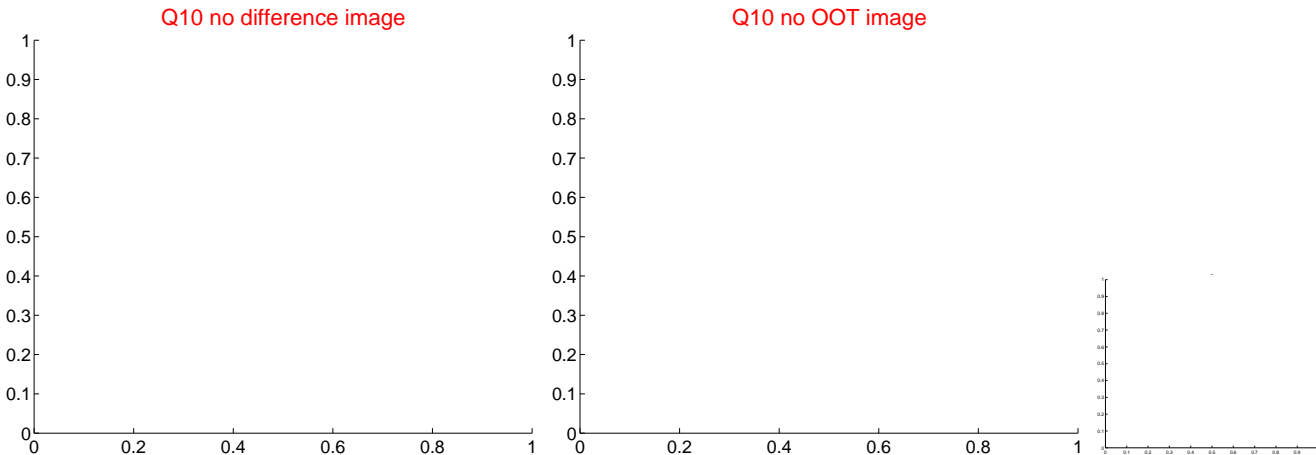
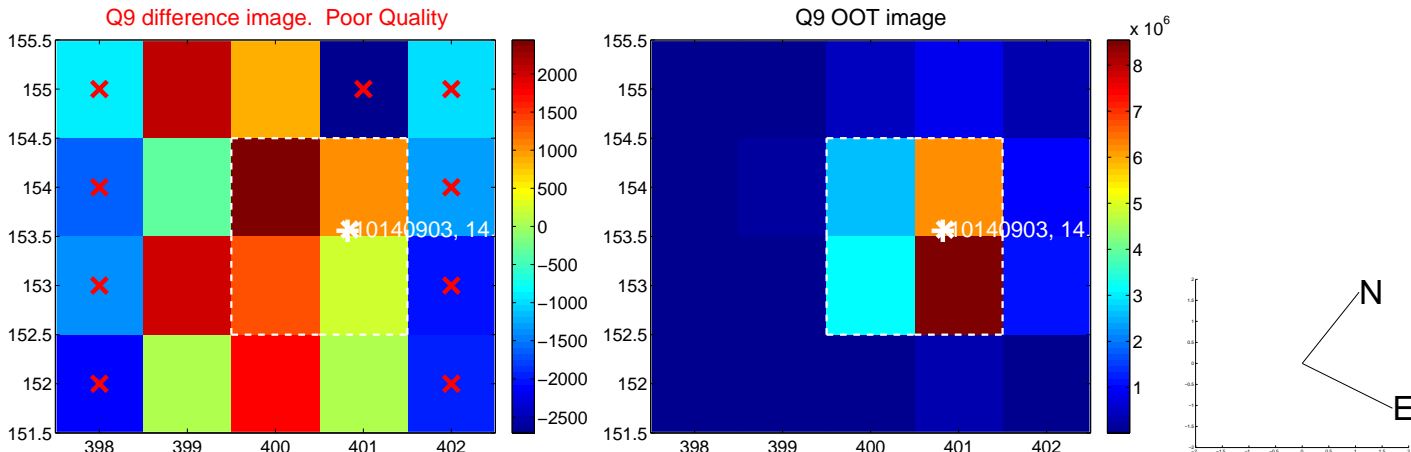
Q4 no OOT image



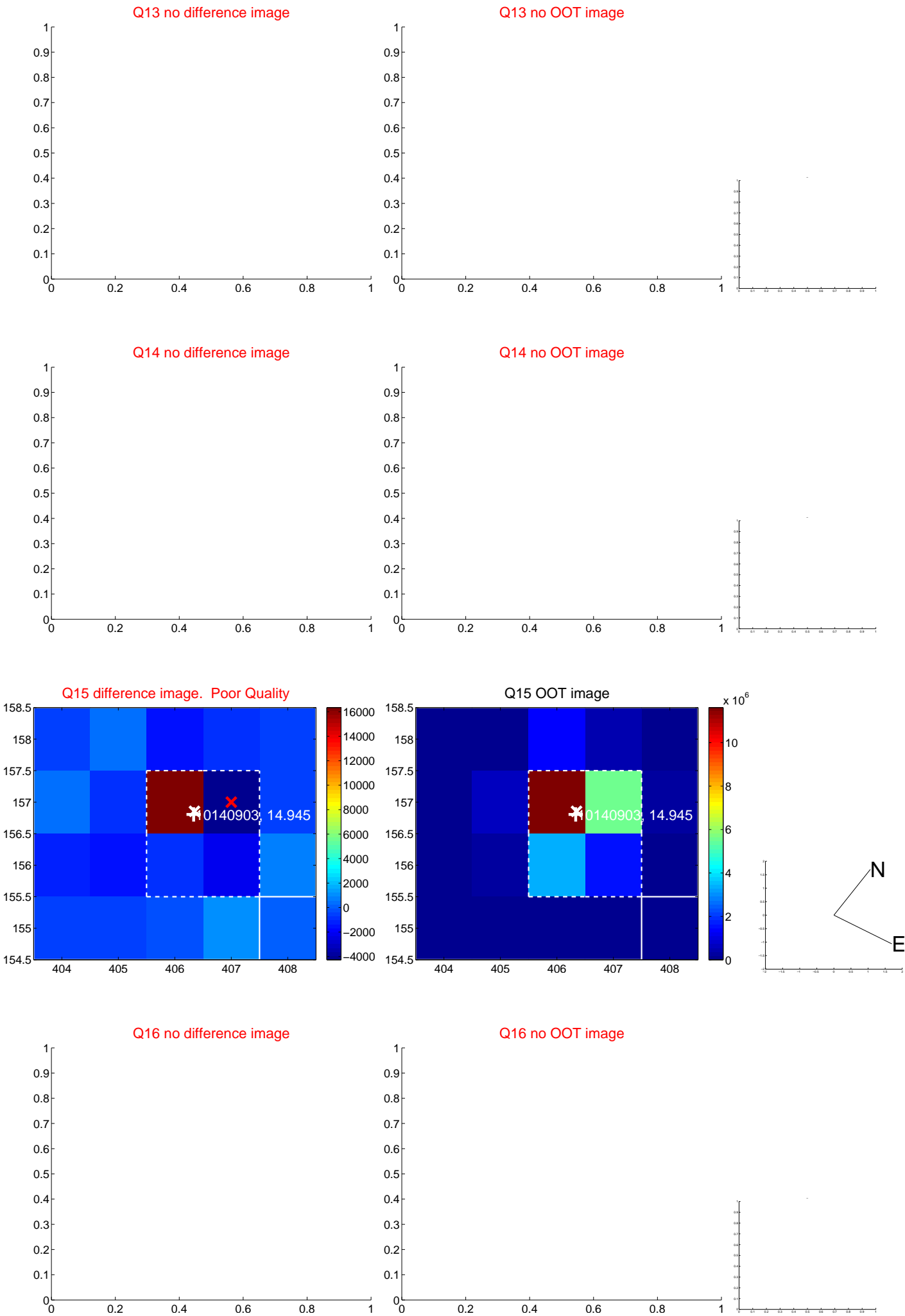
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



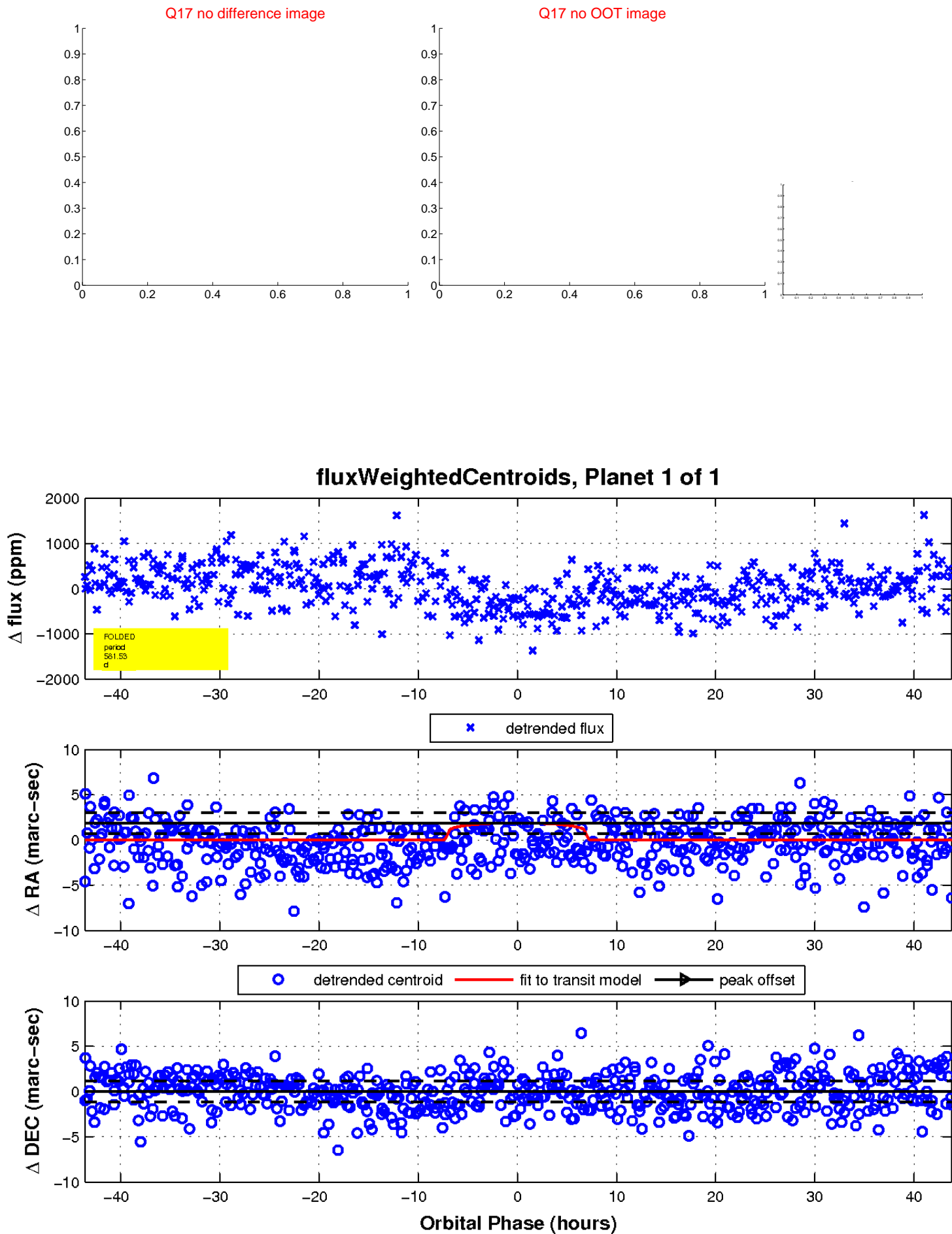
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



white ×: 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

