

KIC 010491031

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})
010491031-01	OBS	7336.01	2.199070	133.063161	222077.3	6.303	26073.7	15677.8	1.93	6613	113.92	4639.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010491031-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED

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.

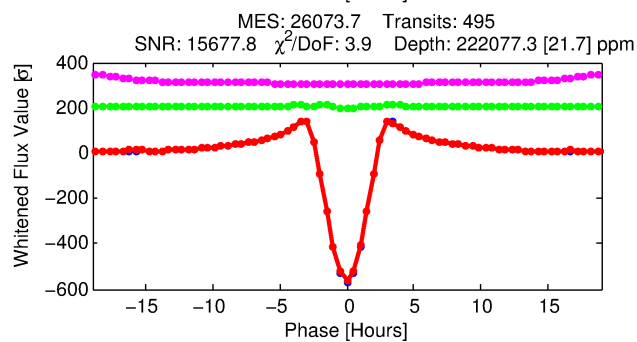
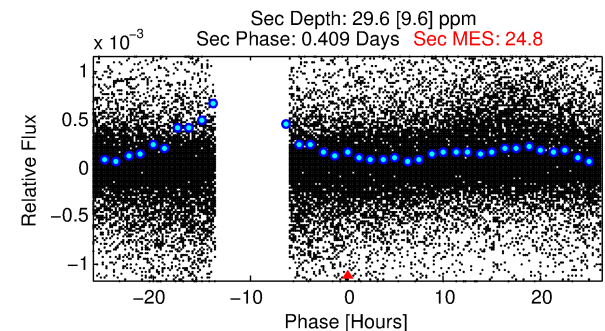
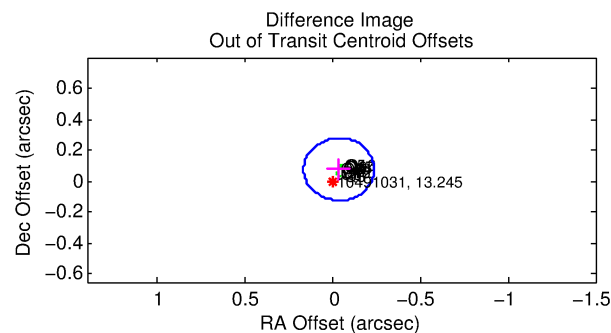
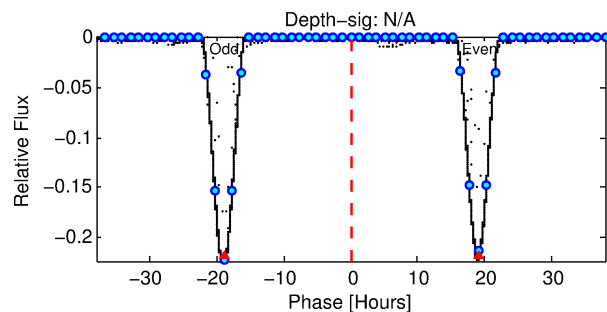
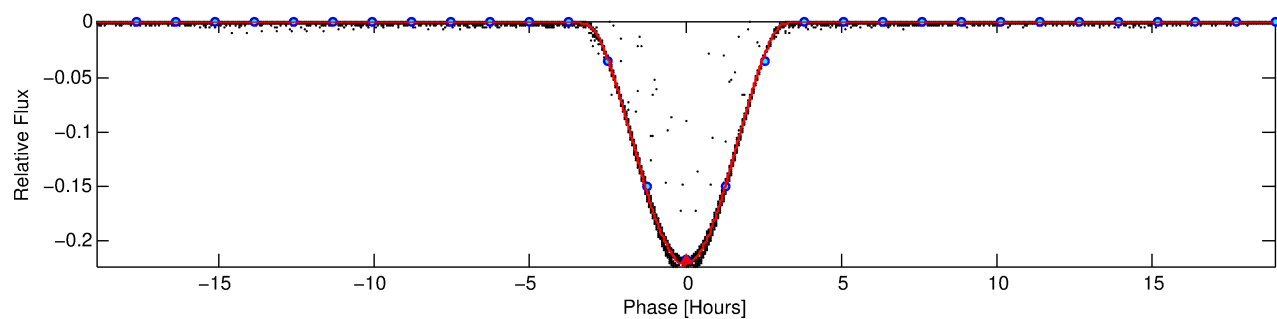
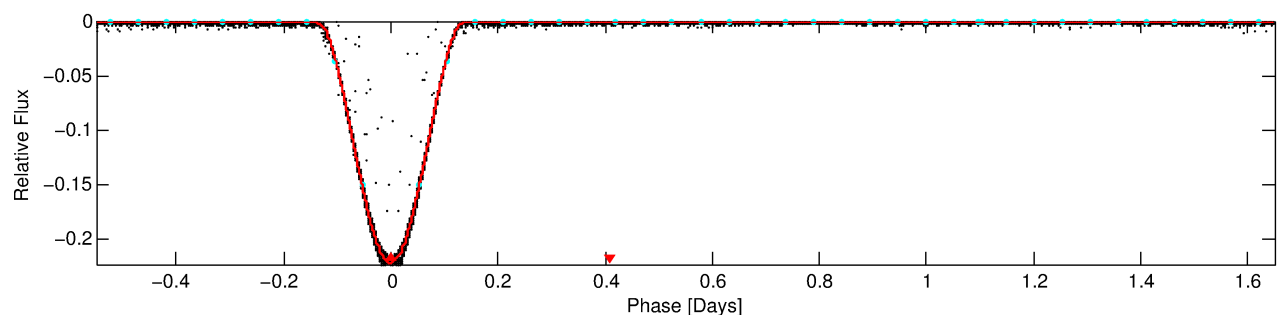
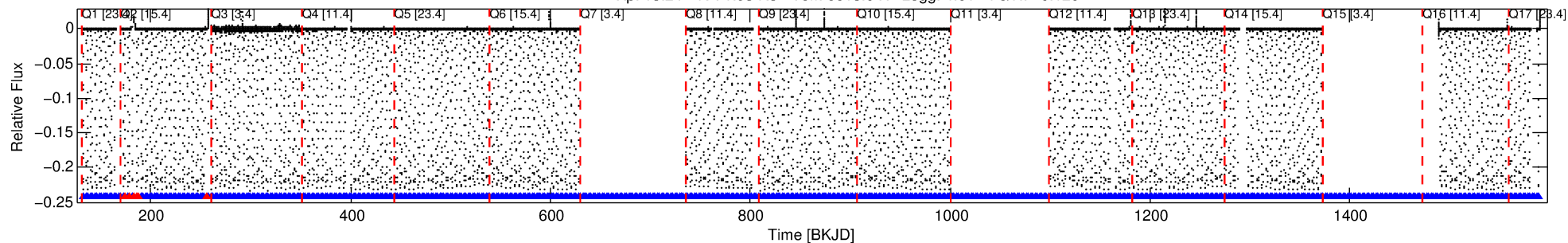
Ephemeris Match Information For 010491031-01

No Significant Match Found

DV One-Page Summary

KIC: 10491031 Candidate: 1 of 1 Period: 2.199 d
KOI: K07336.01 Corr: 0.999

Kp: 13.24 R*: 1.93 Rs Teff: 6613.0 K Logg: 4.01 Fe/H: -0.120



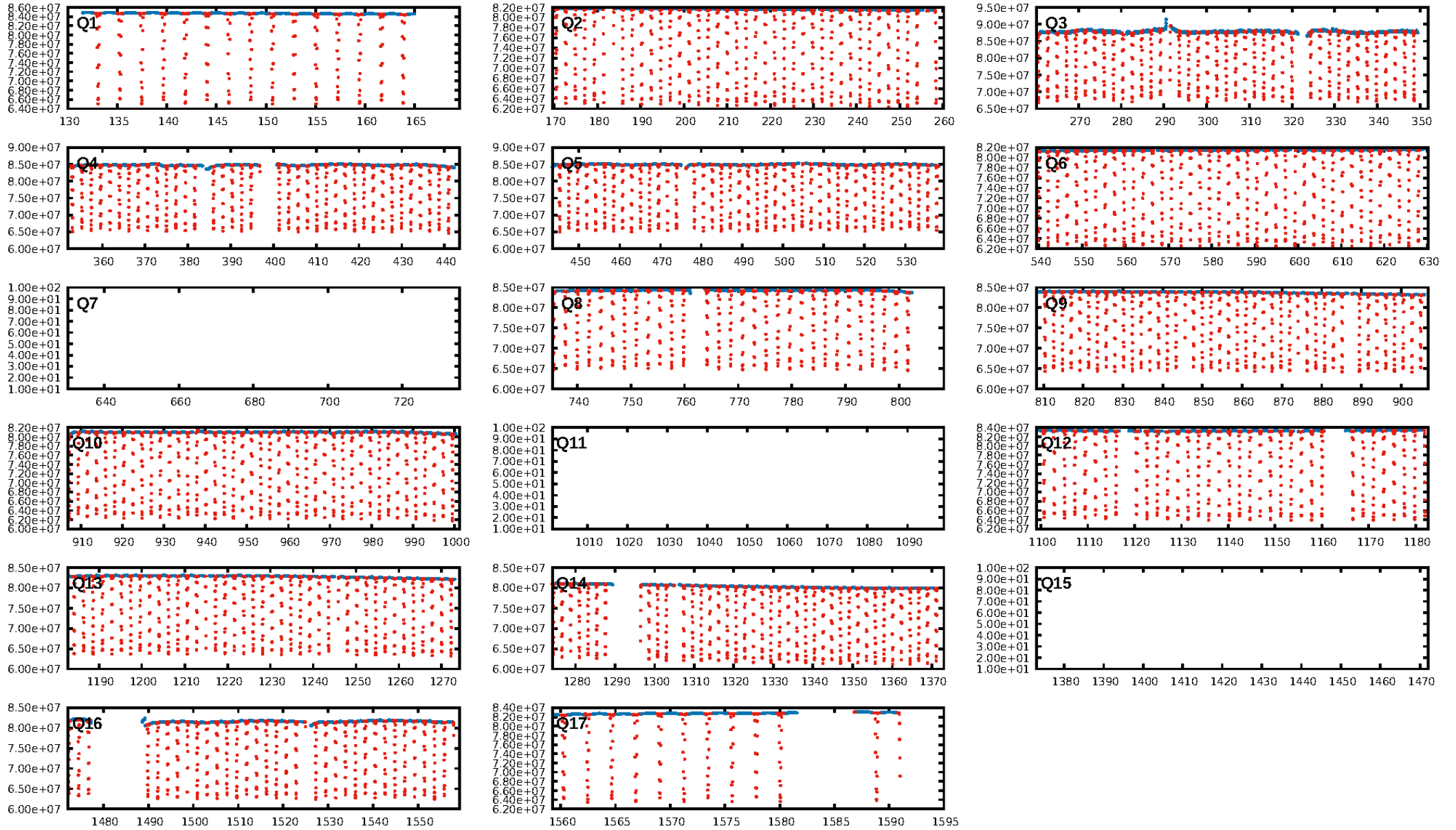
DV Fit Results:

Period = 2.19907 [0.00000] d
Epoch = 133.0632 [0.0000] BKJD
Rp/R* = 0.5423 [0.0033]
a/R* = 3.78 [0.00]
b = 0.73 [0.01]
Seff = 4639.35 [2446.31]
Teq = 2104 [277] K
Rp = 113.92 [39.30] Re
a = 0.0370 [0.0119] AU
Ag = 0.00 [0.00] [-967.97σ]
Teffp = 663 [59] K [-5.0σ]

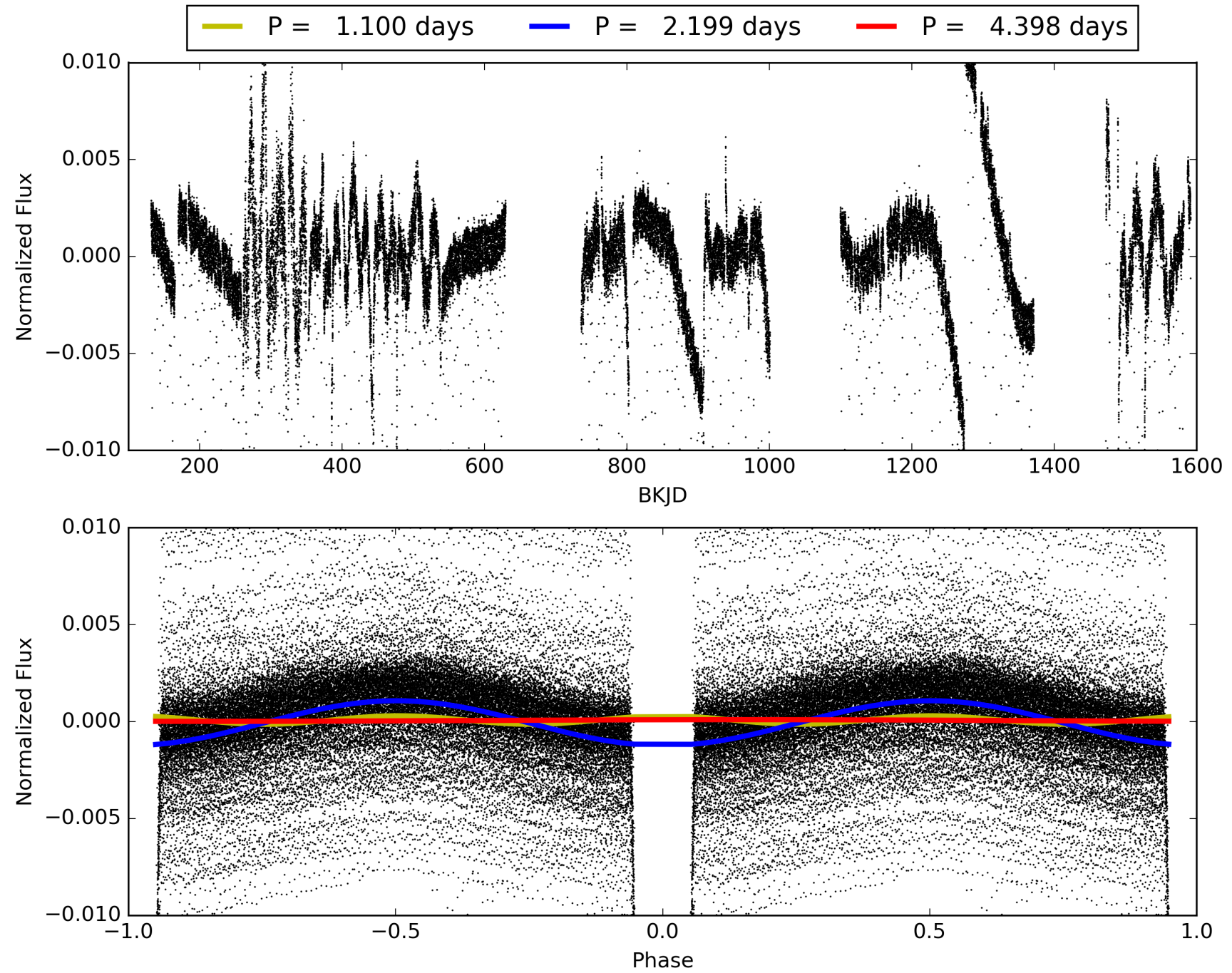
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [462/468]
GhostDiagnostic-chr: 2.135
Centroid-sig: 0.0%
Centroid-so: 0.061 arcsec [134.91σ]
OotOffset-rm: 0.084 arcsec [1.26σ]
KicOffset-rm: 0.059 arcsec [0.85σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 010491031-01, PDC Light Curves

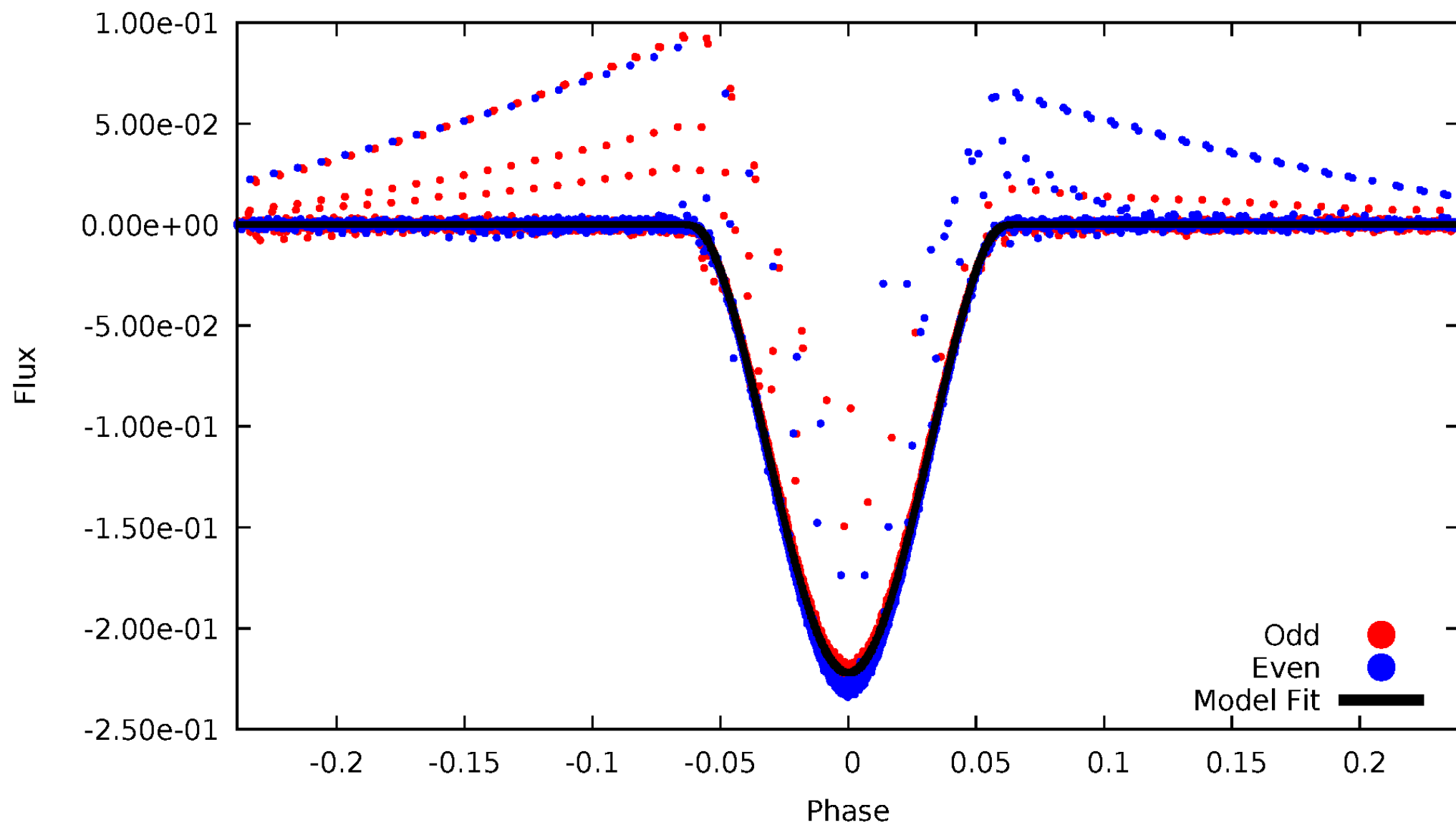


TCE 010491031-01



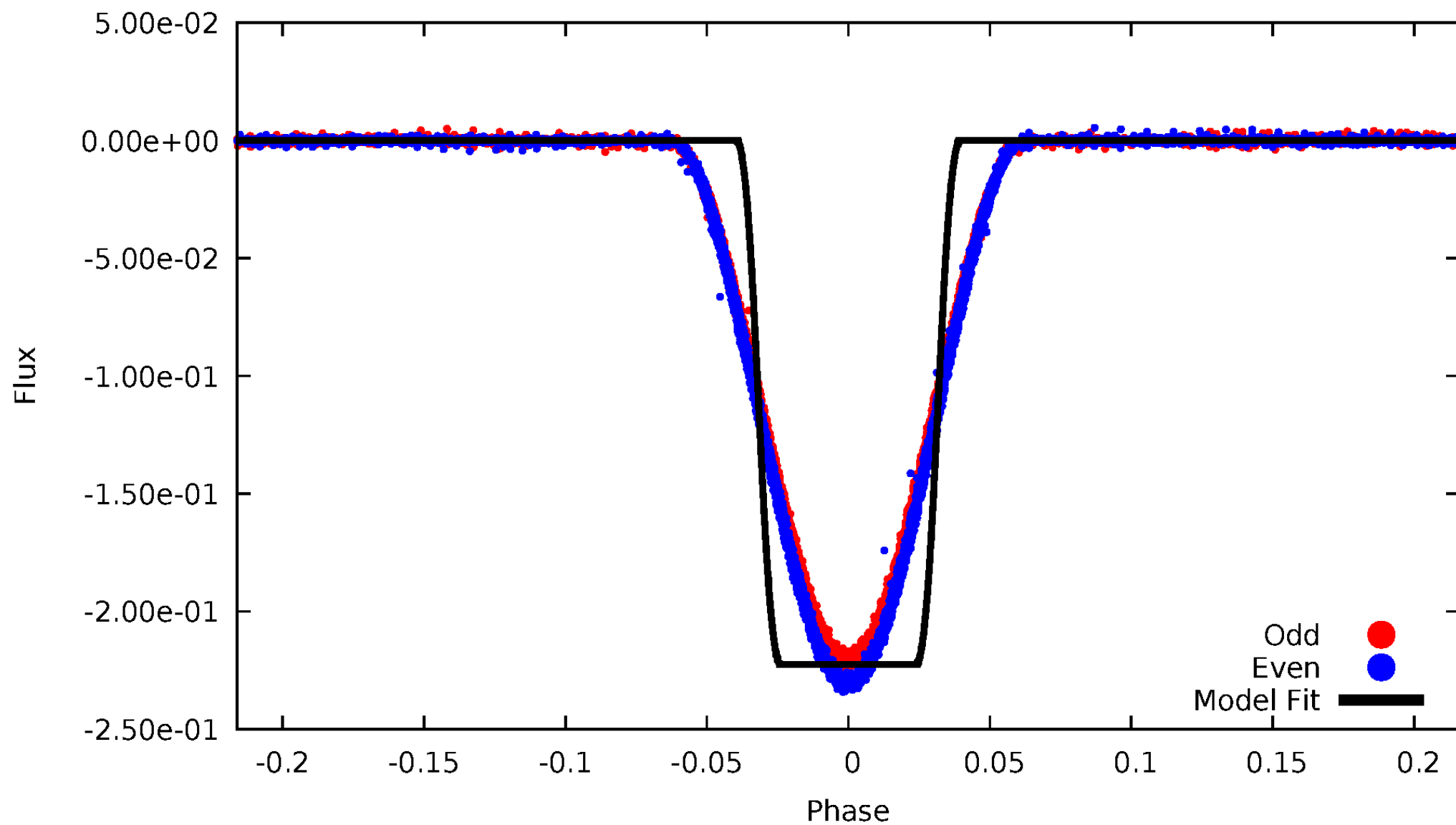
DV Odd/Even

TCE 010491031-01



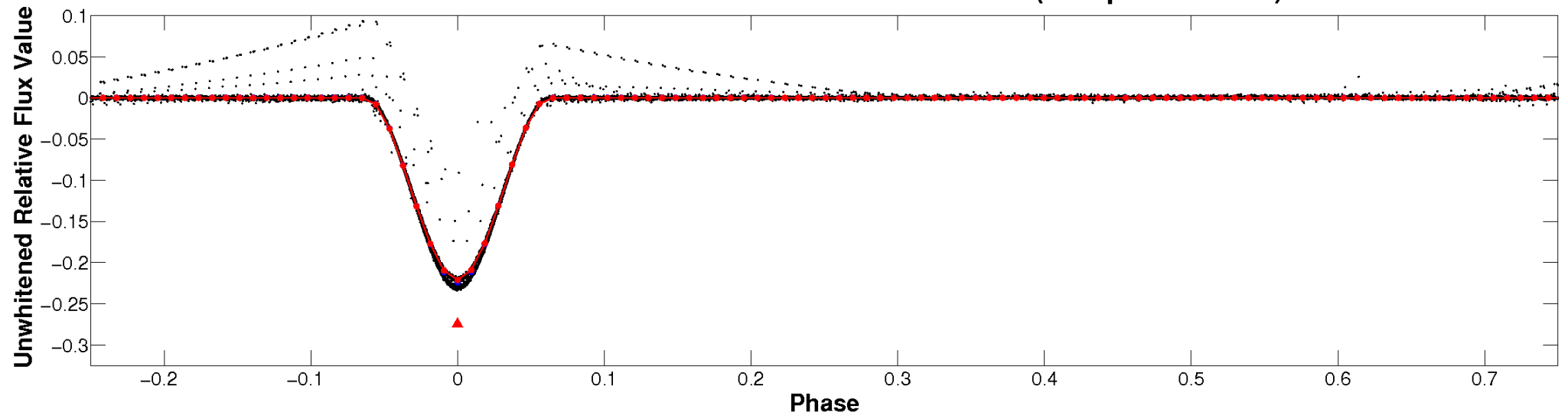
ALT Odd/Even

TCE 010491031-01

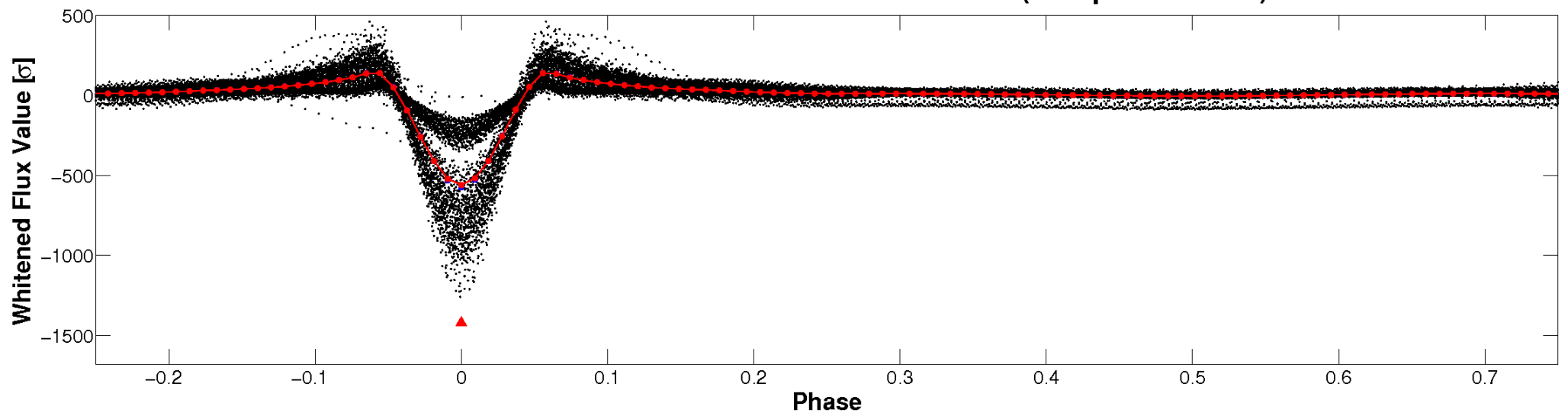


Non-Whitened Vs. Whitened Light Curve

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

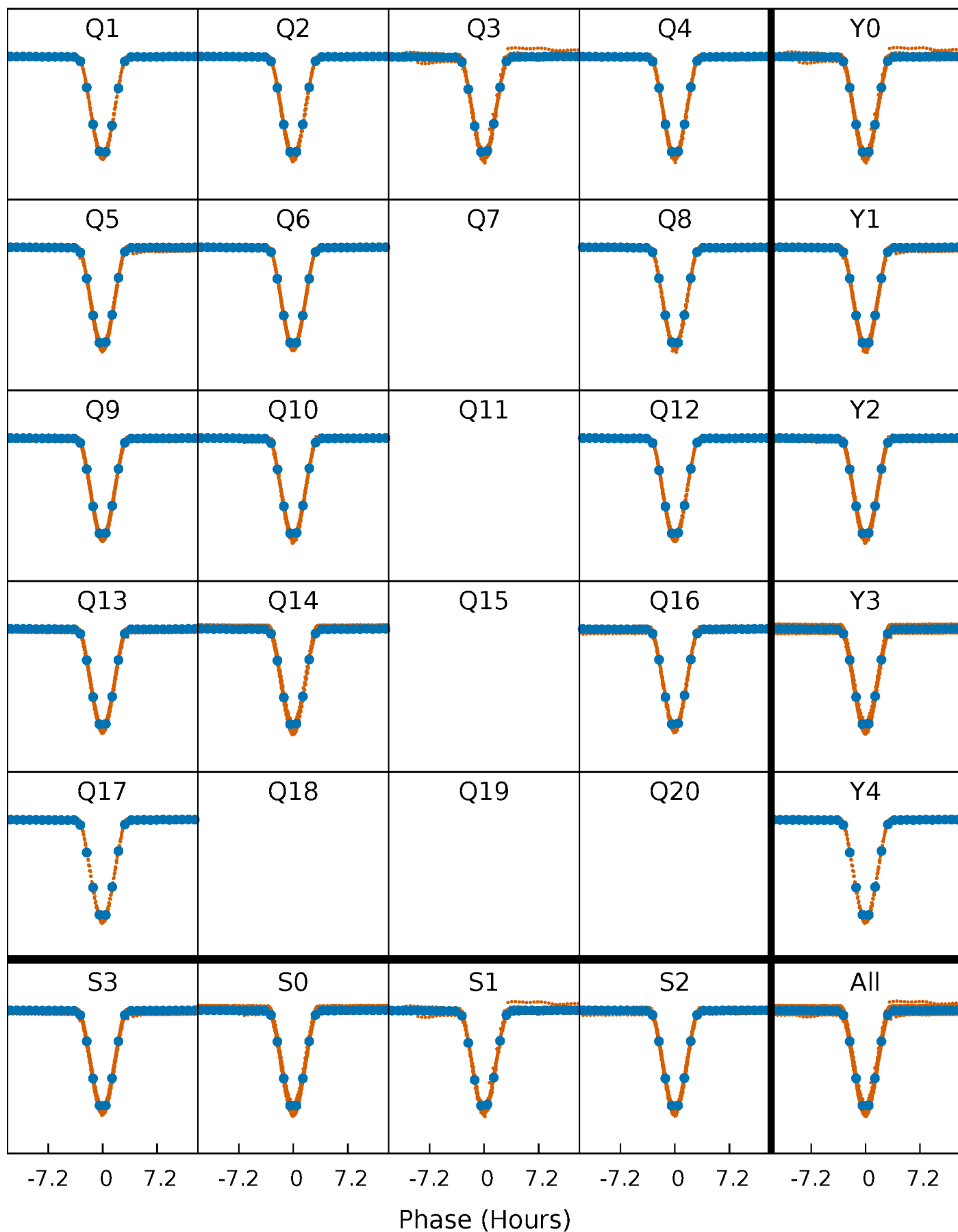


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



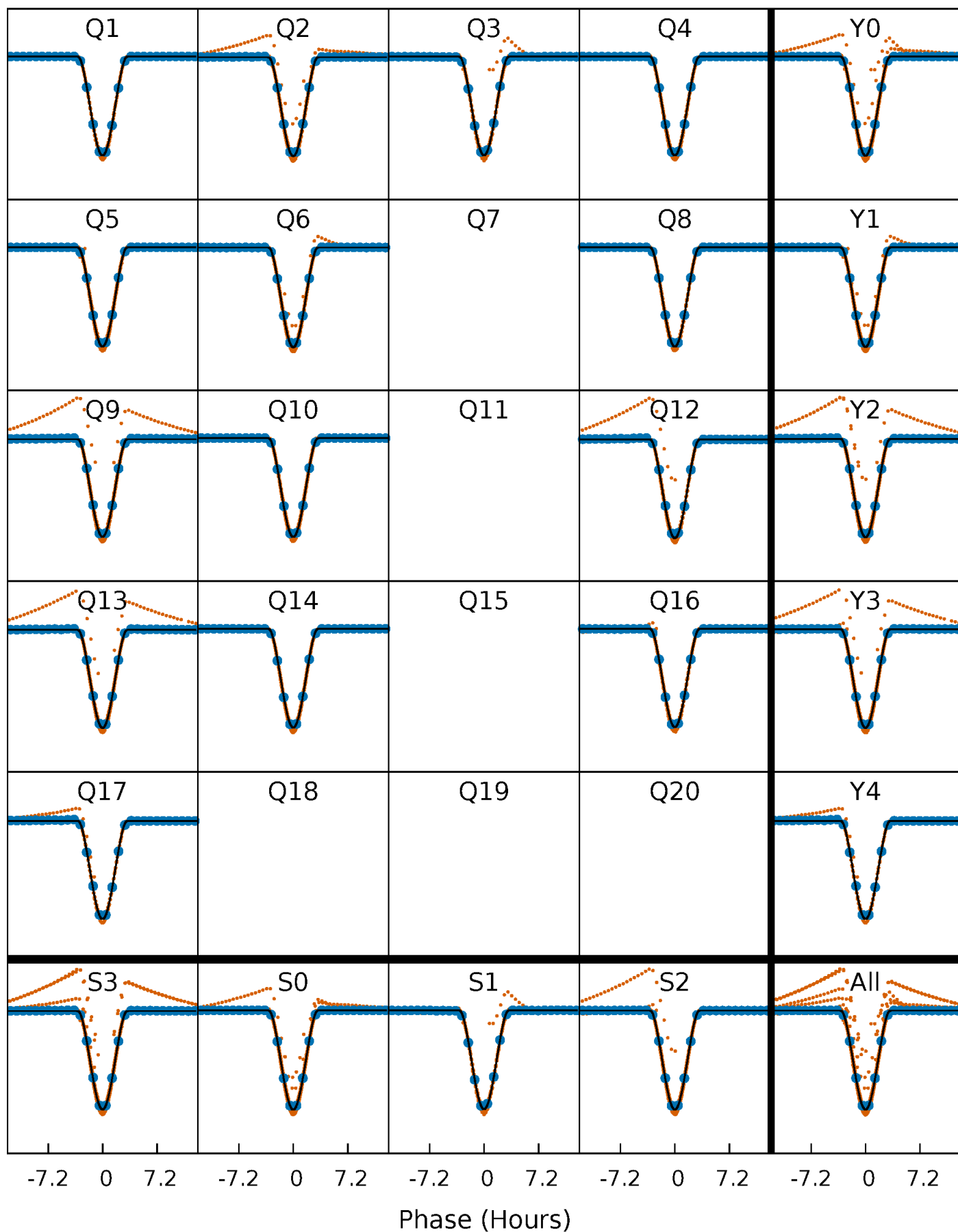
PDC Quarter-Phased Transit Curves

TCE 010491031-01 P= 2.199070 Days $T_0=133.063161$ (BKJD)



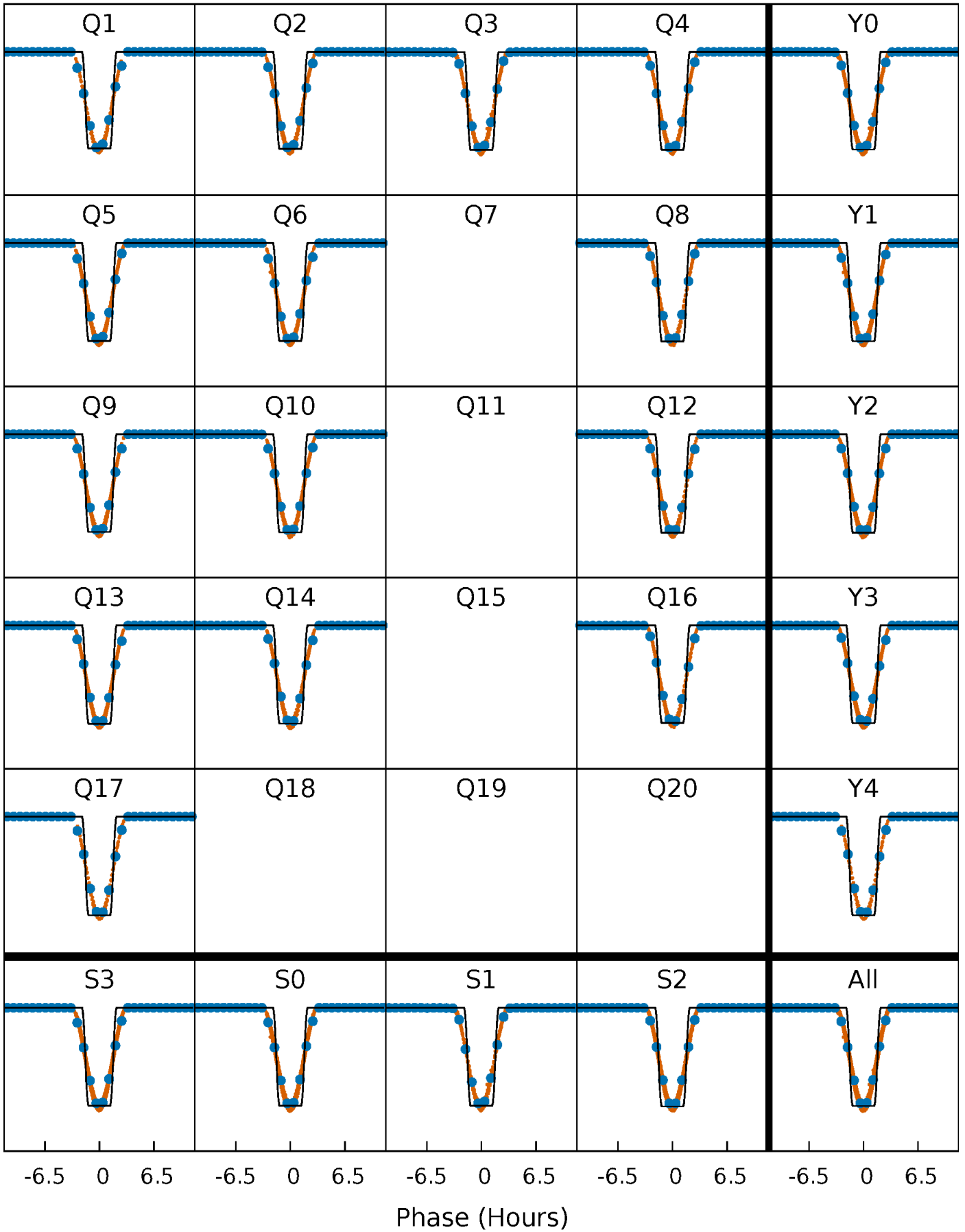
DV Quarter-Phased Transit Curves

TCE 010491031-01 P= 2.199070 Days $T_0=133.063161$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

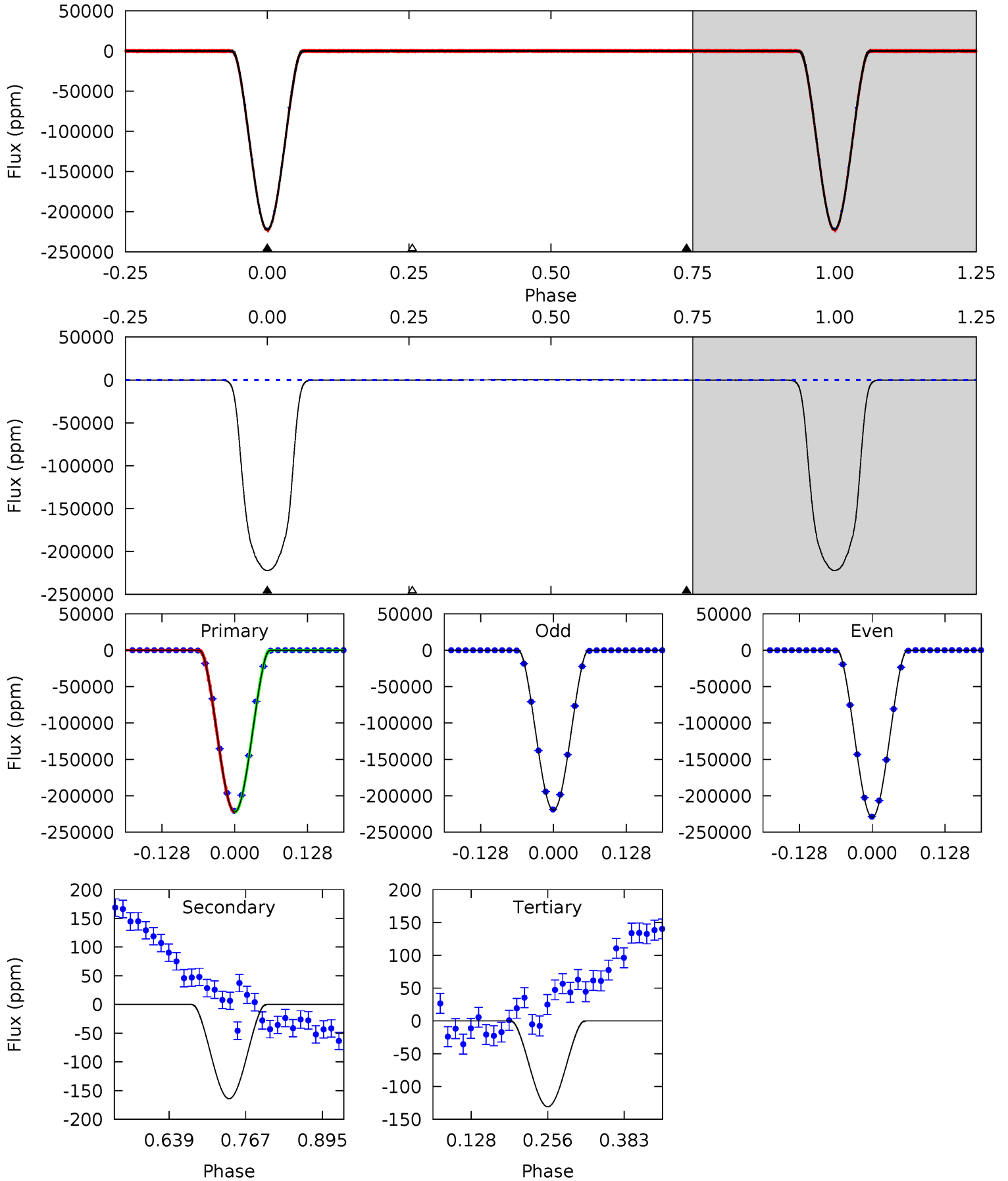
TCE 010491031-01 P= 2.199062 Days $T_0=133.065783$ (BKJD)



DV Model-Shift Uniqueness Test

010491031-01, P = 2.199070 Days, E = 130.864091 Days

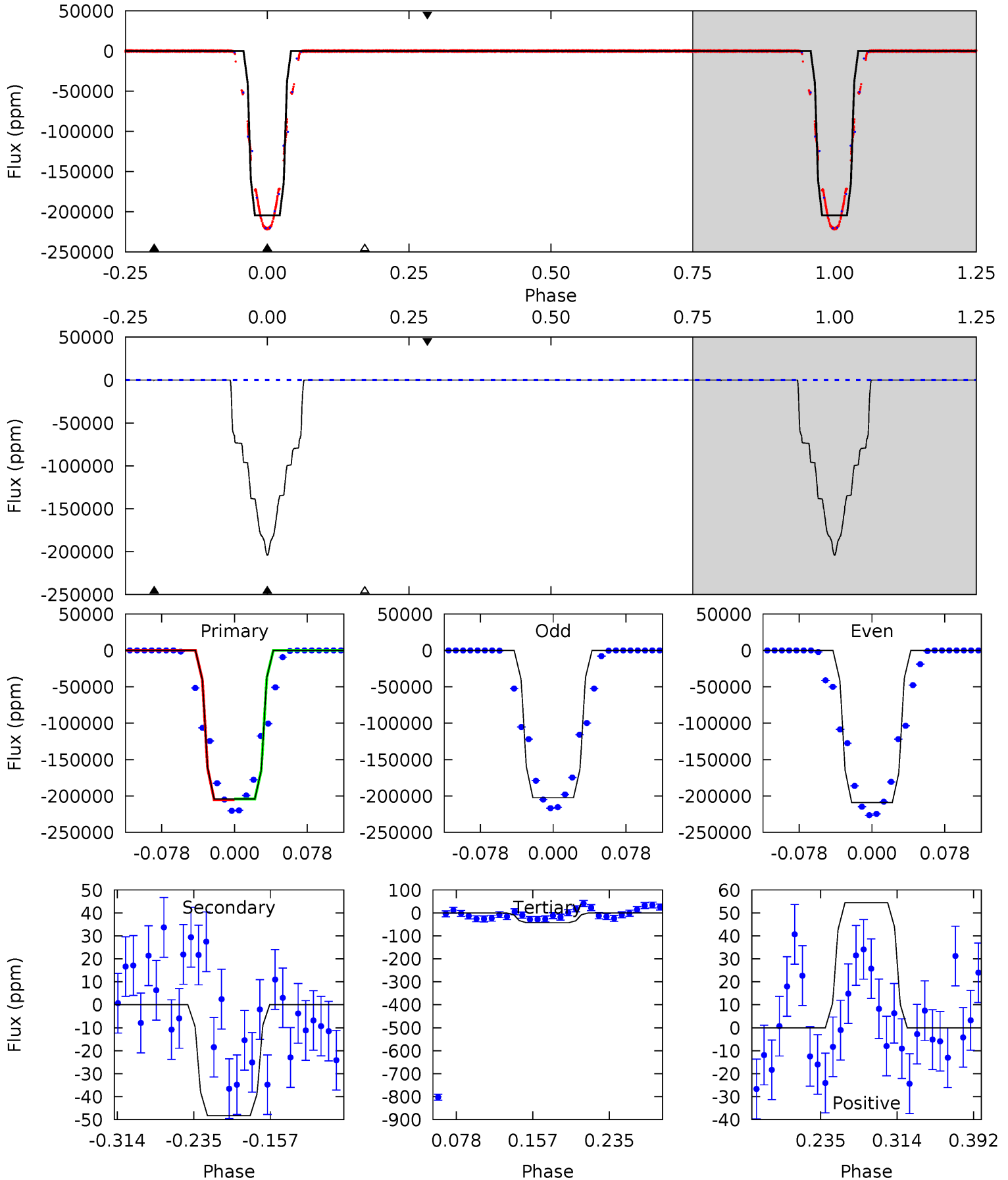
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28999	21.4	17.1	0	4.51	1.52	15.6	28982	28999	4.34	21.4	895.5	1.00	0.00	3.24



Alt Model-Shift Uniqueness Test

010491031-01, P = 2.199062 Days, E = 130.866721 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15312	3.62	3.20	4.08	4.62	1.76	1.37	15309	15308	0.42	-0.46	321.9	1.00	0.00	0



Stellar Parameters For KIC 010491031

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6613^{+181}_{-250}	$4.014^{+0.293}_{-0.158}$	$-0.120^{+0.300}_{-0.300}$	$1.925^{+0.543}_{-0.664}$	$1.400^{+0.193}_{-0.289}$	$0.276^{+0.506}_{-0.128}$
	+3%/-4%	+7%/-4%	+250%/-250%	+28%/-34%	+14%/-21%	+183%/-46%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 010491031-01 / KOI 7336.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-164 ± 8	$111.62^{+18.57}_{-20.61}$	2887^{+238}_{-273}	-3010^{+167}_{-140}	$0.010^{+0.005}_{-0.003}$
Alt.	-48 ± 13	$98.52^{+14.18}_{-18.63}$	2920^{+223}_{-273}	-3037^{+161}_{-131}	$0.004^{+0.002}_{-0.001}$

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 $A_{\text{obs}} \gg 1.0$

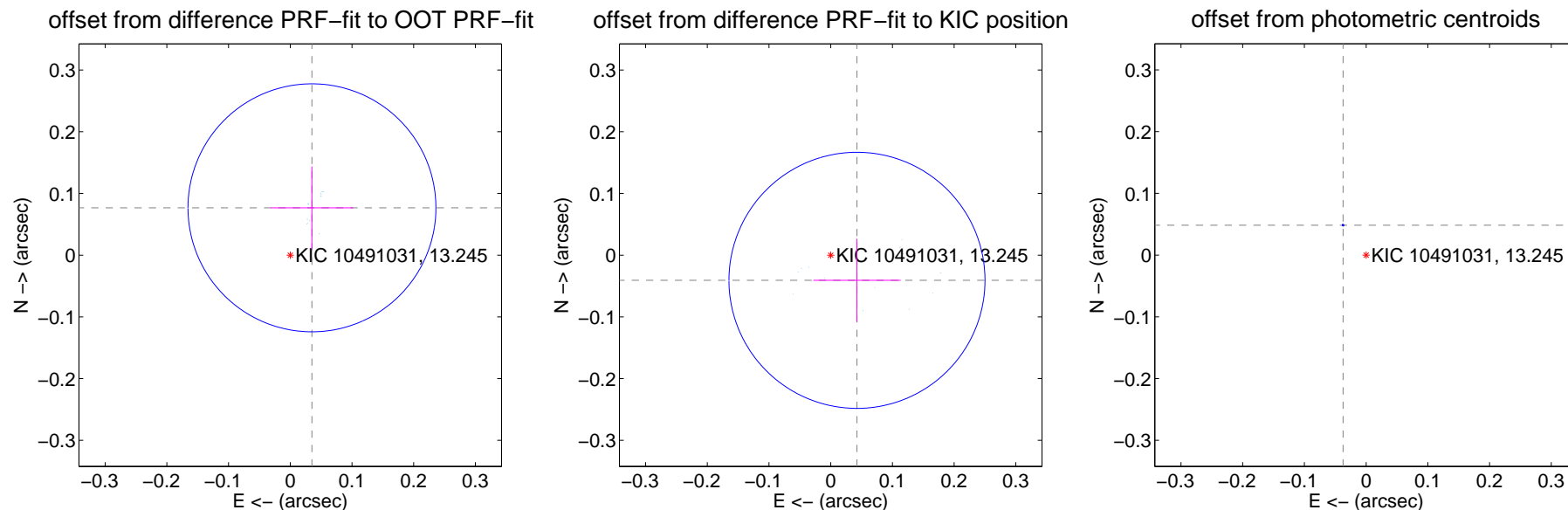
DV Centroid Data

Supplemental centroid analysis for 010491031-01. Kepler magnitude: 13.24. Transit SNR 15677.82

There are 14 quarters with good PRF difference image offsets

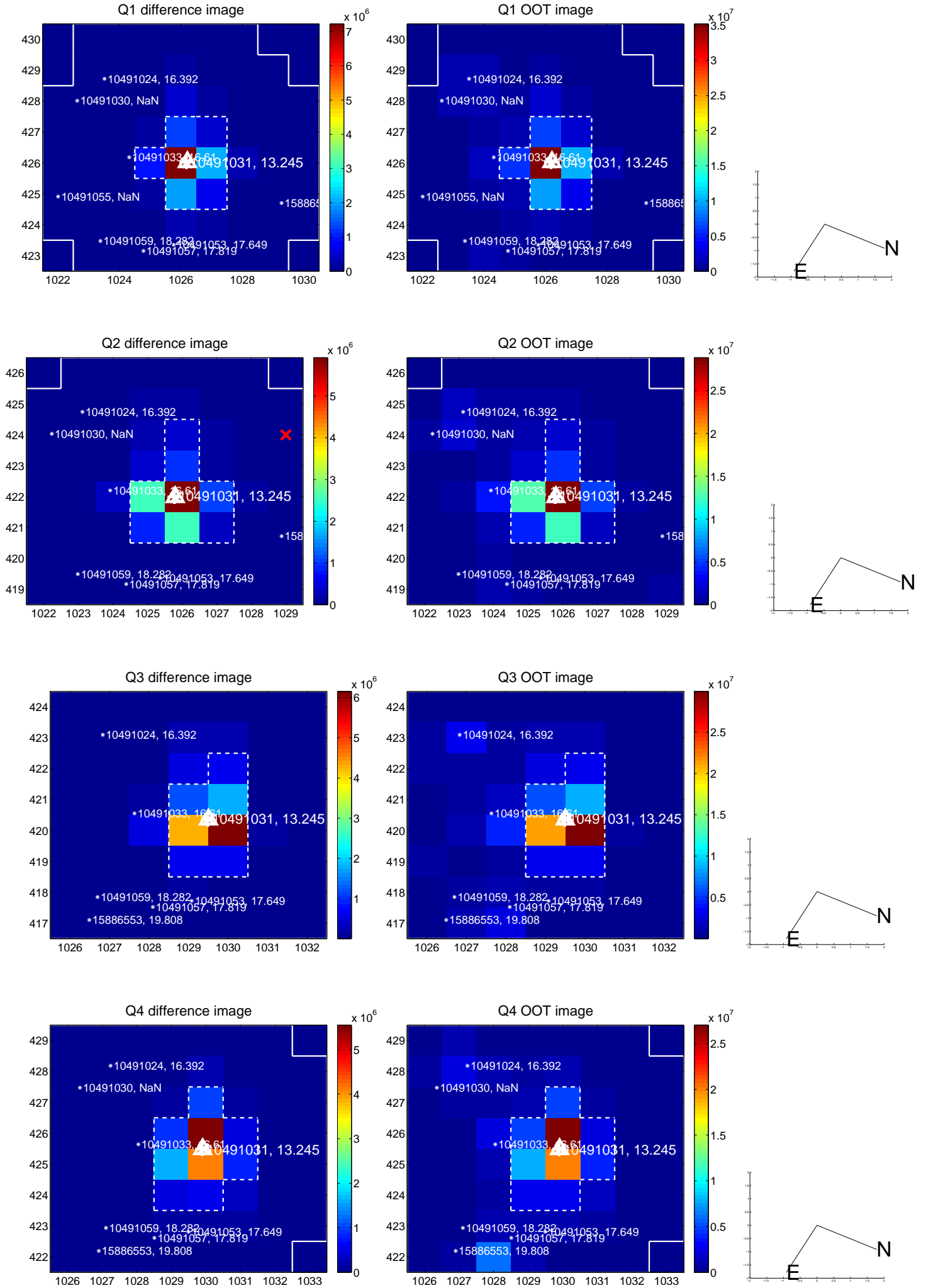
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.084 ± 0.067	1.26	-0.035 ± 0.067	0.077 ± 0.067
PRF-fit source offset from KIC position	0.059 ± 0.069	0.85	-0.043 ± 0.071	-0.041 ± 0.067
photometric centroid source offset	0.06 ± 0.00	134.91	0.04 ± 0.00	0.05 ± 0.00

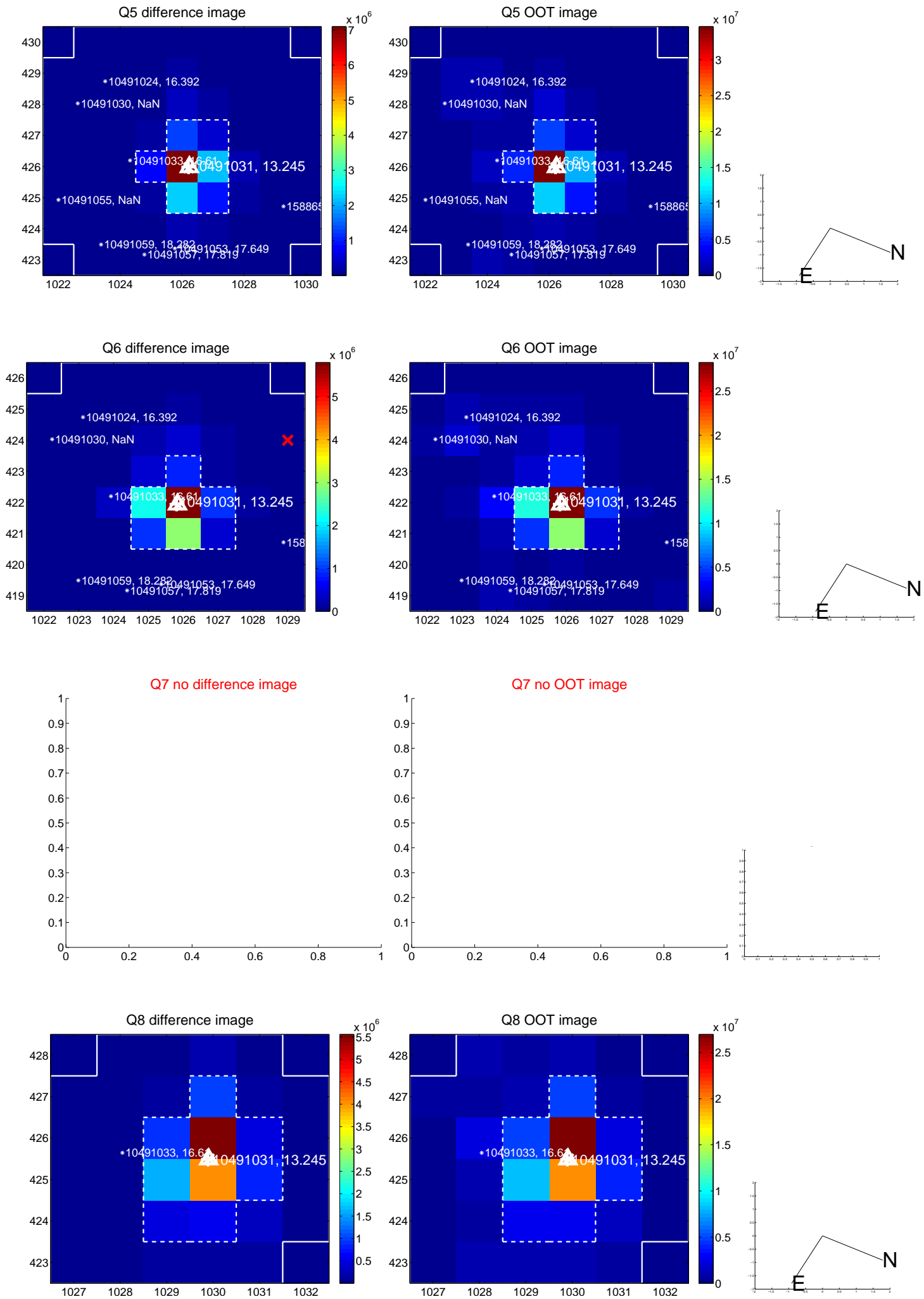


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

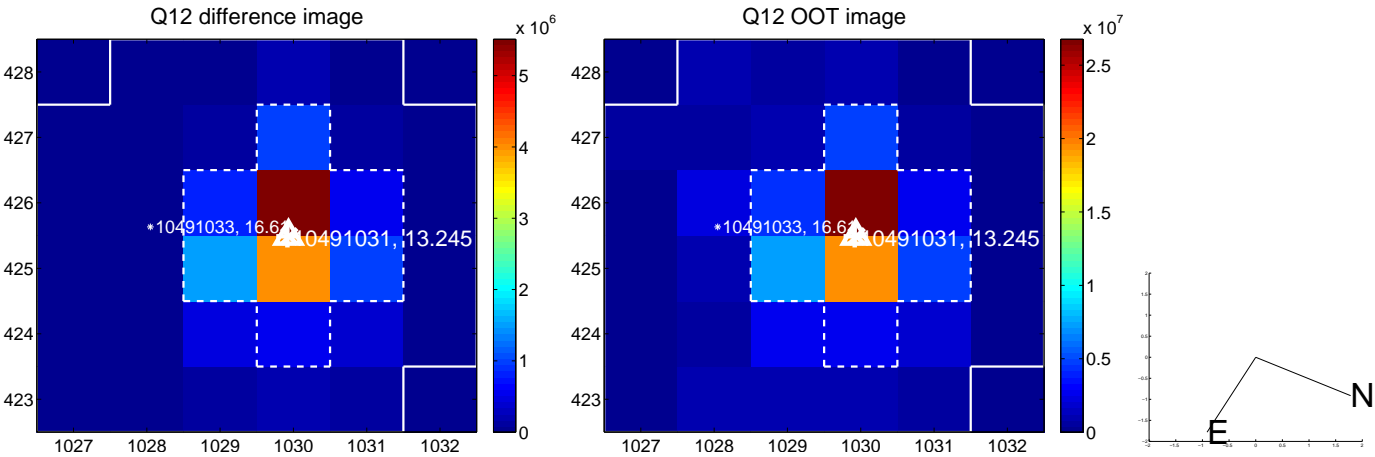
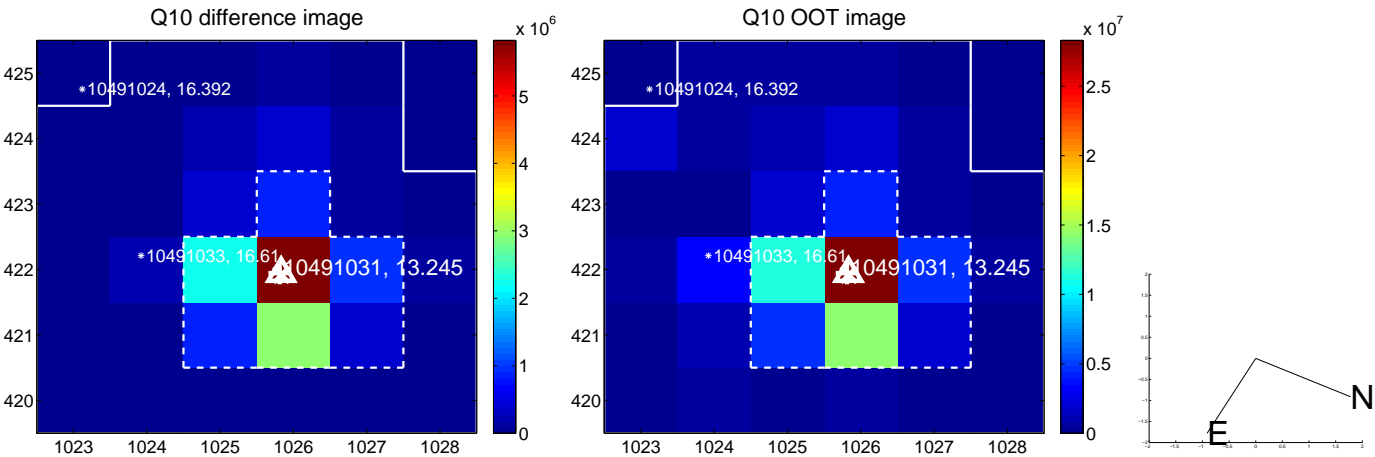
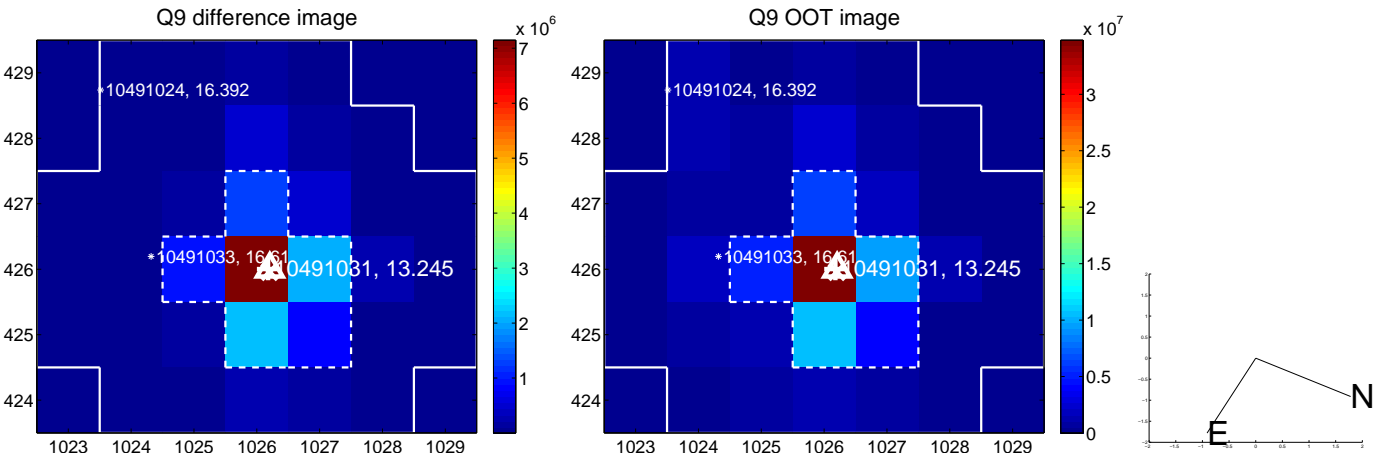
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



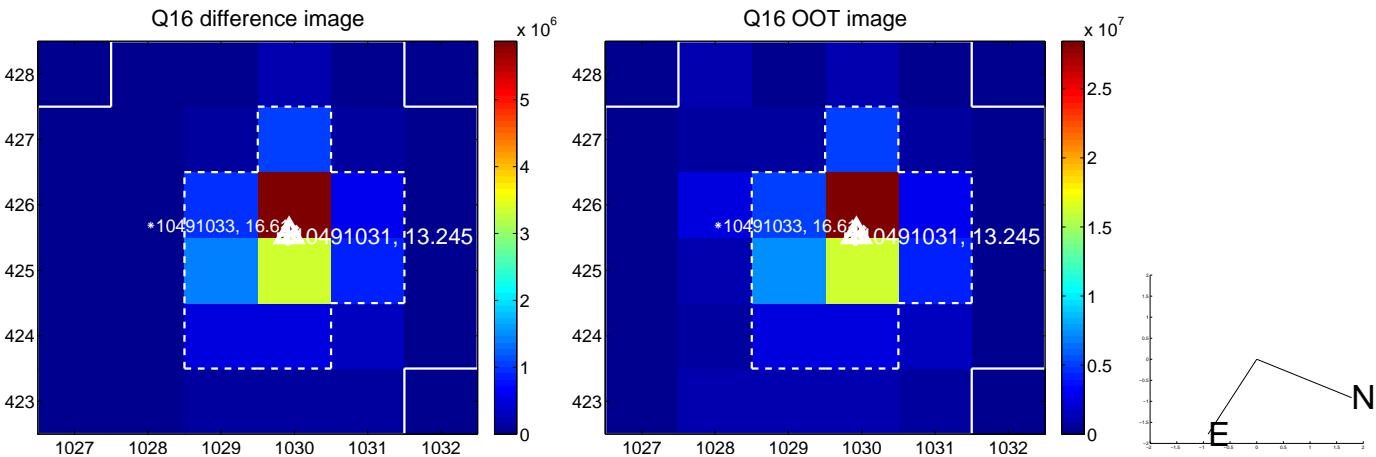
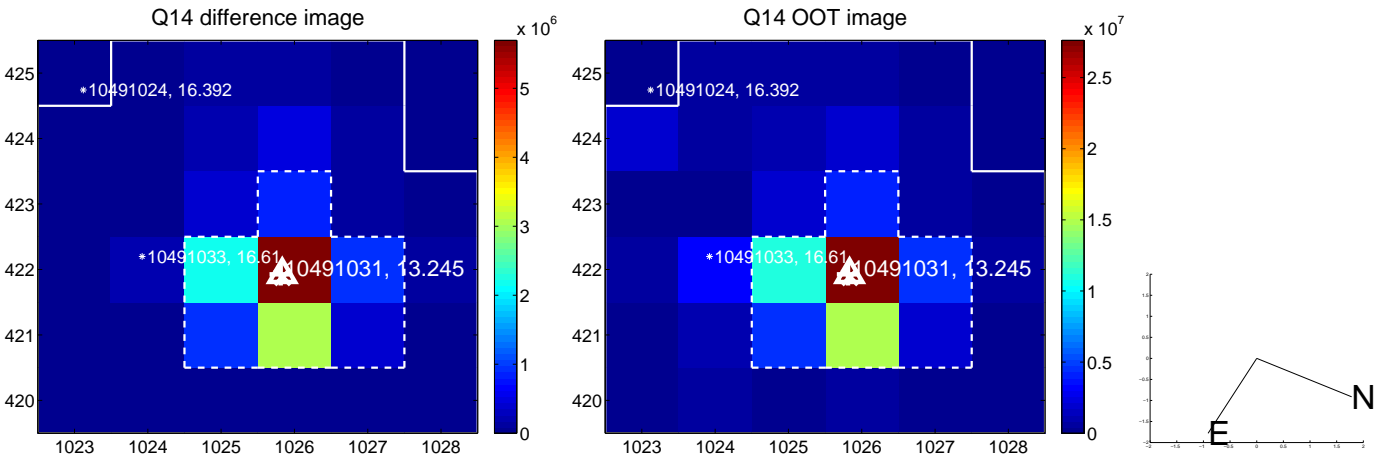
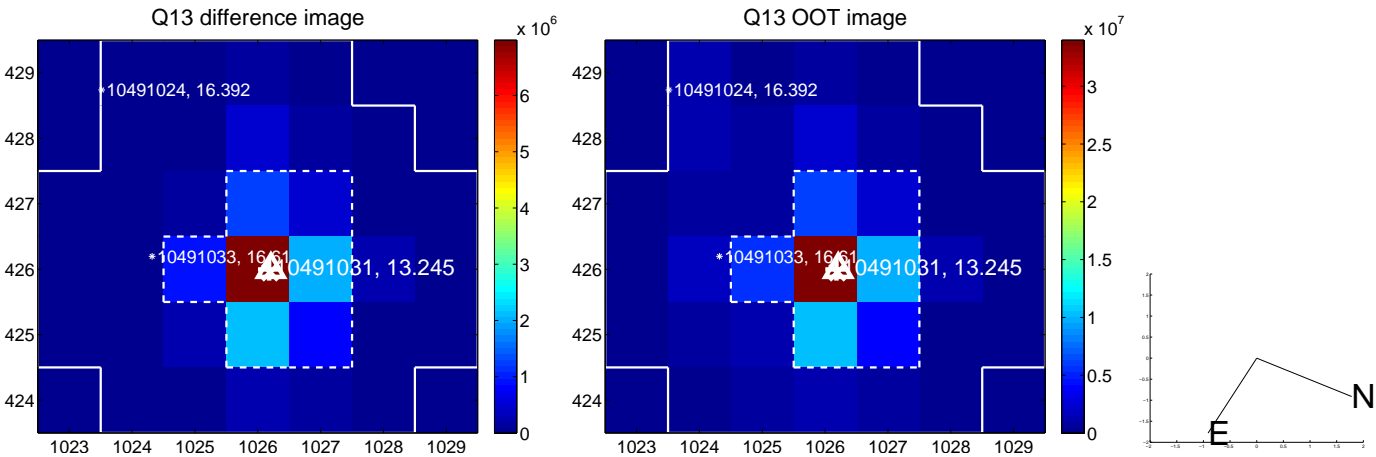
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



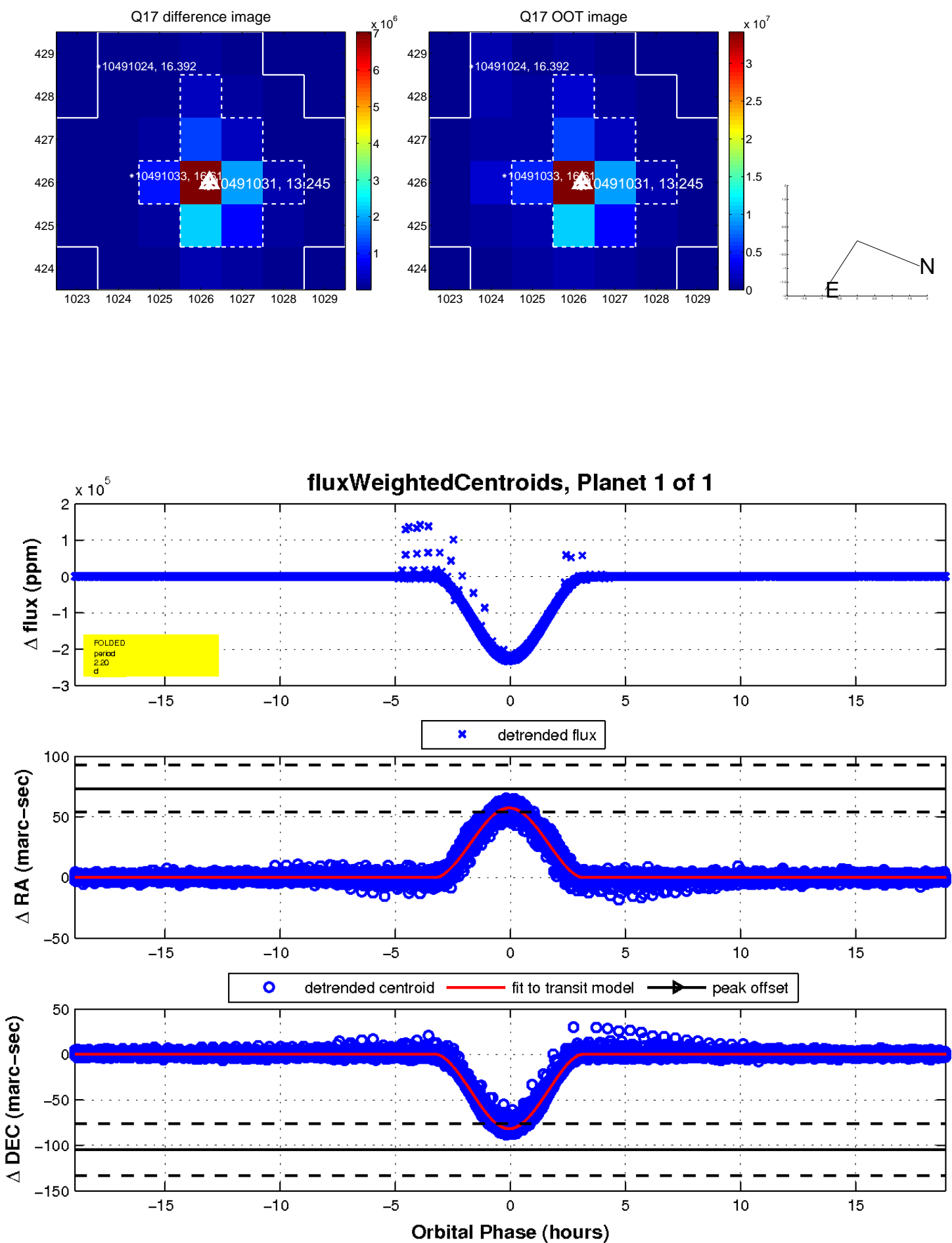
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UKIRT Image

Declination

