

KIC 009724993

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})
009724993-01	OBS	5708.01	7.863361	131.685533	18191.0	3.434	2128.4	1972.8	1.40	5615	23.04	295.73

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009724993-01	OBS	PC	0.97	0	0	0	0	NO_COMMENT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

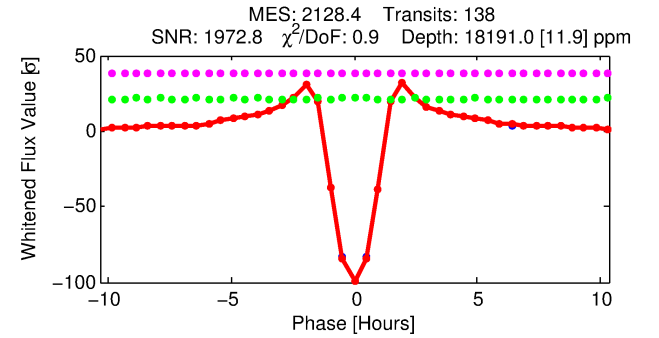
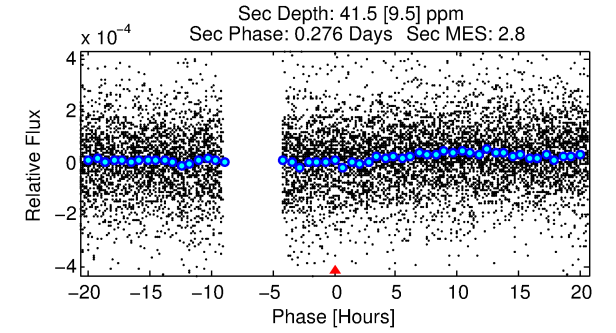
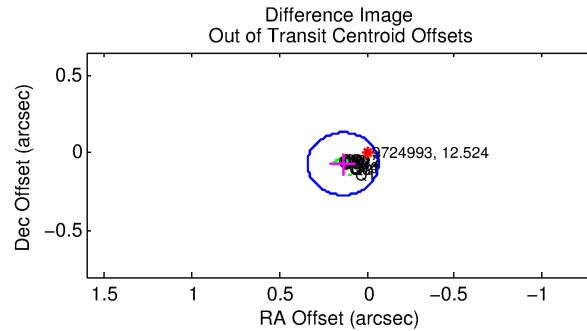
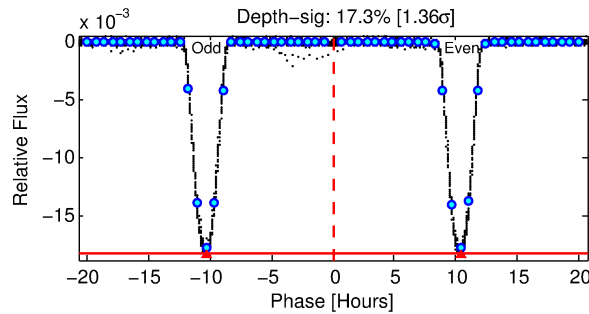
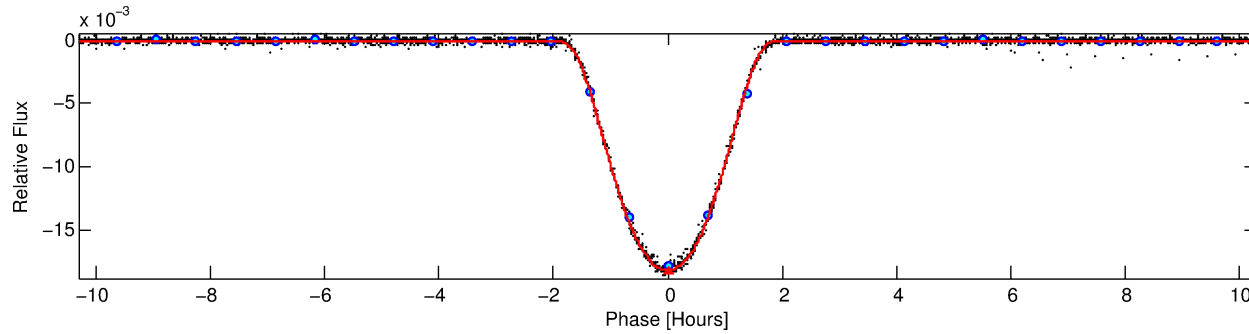
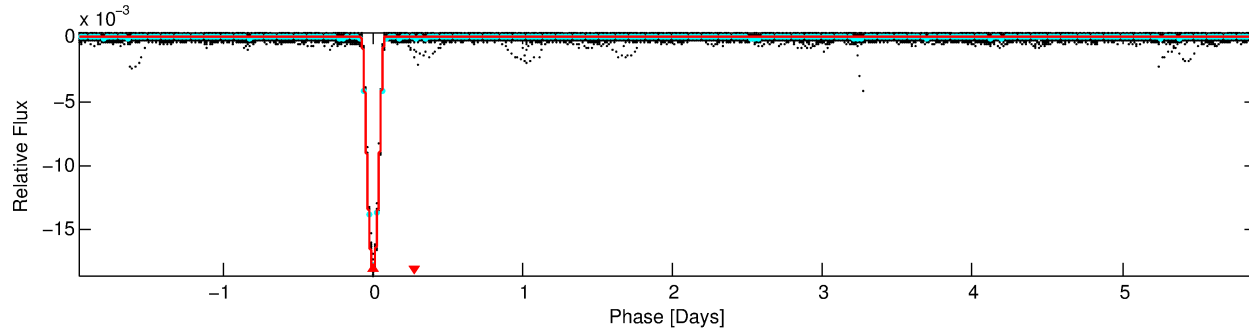
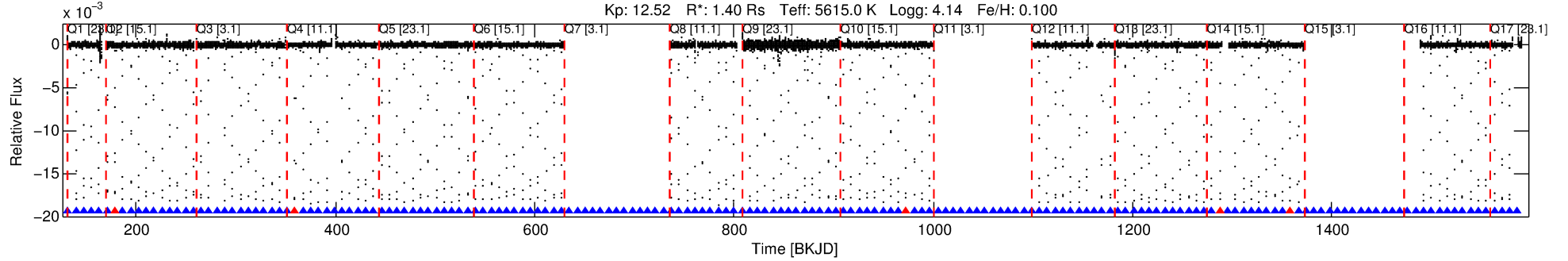
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009724993-01

No Significant Match Found

DV One-Page Summary

KIC: 9724993 Candidate: 1 of 1 Period: 7.863 d
KOI: K05708.01 Corr: 0.998



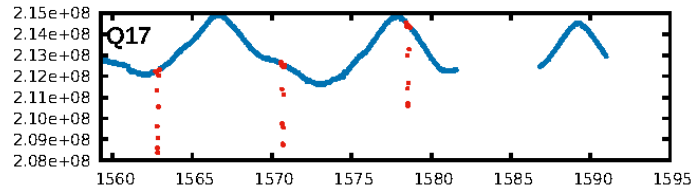
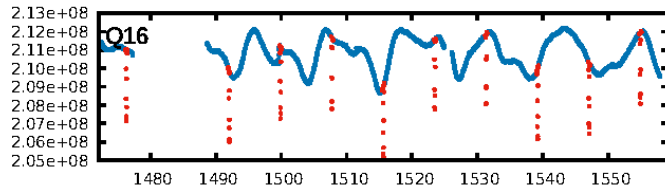
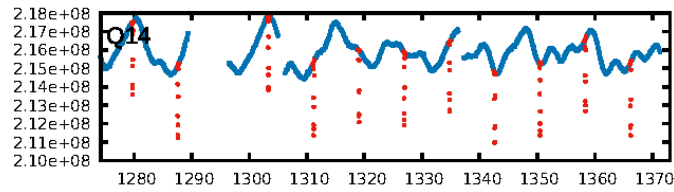
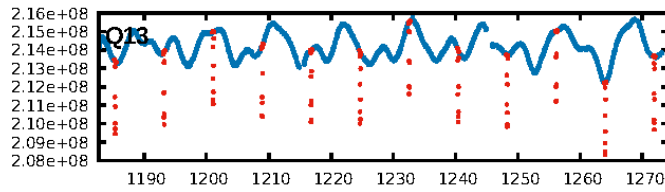
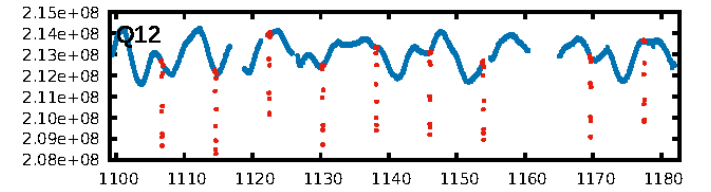
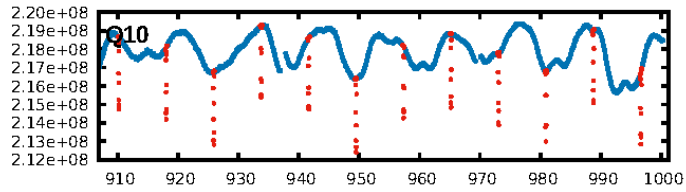
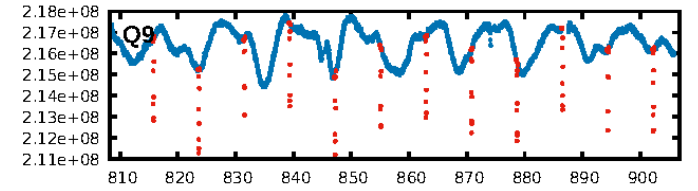
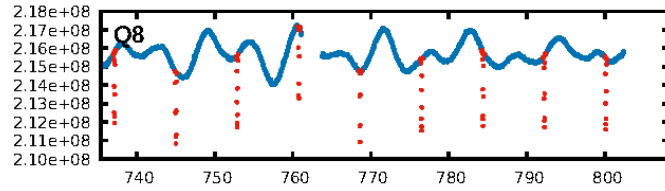
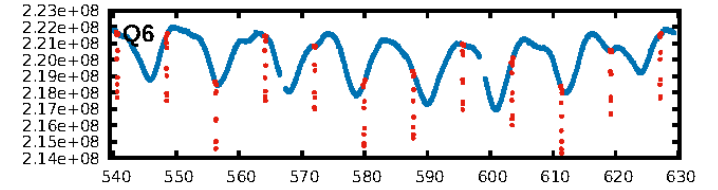
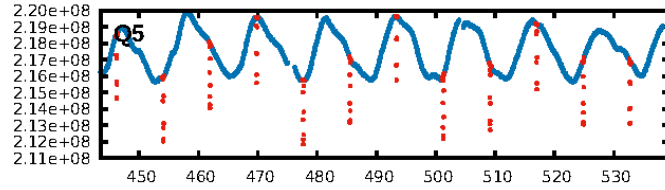
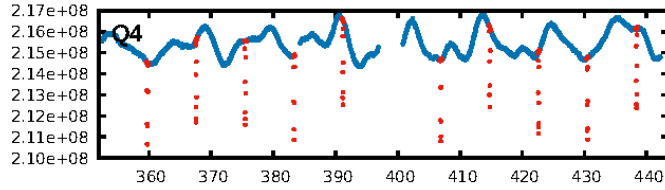
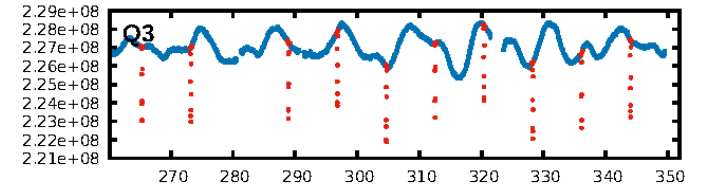
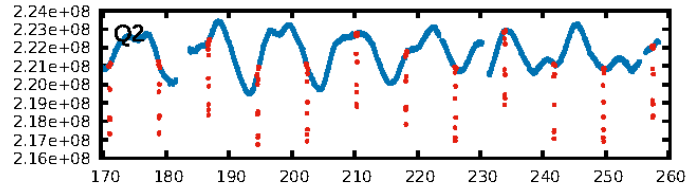
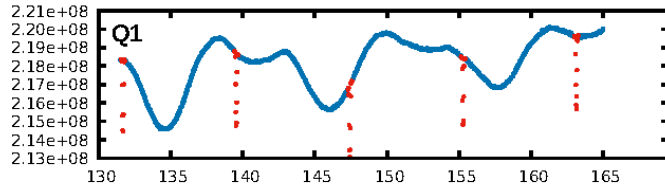
DV Fit Results:

Period = 7.86336 [0.00000] d
Epoch = 131.6855 [0.0000] BKJD
Rp/R* = 0.1508 [0.0003]
a/R* = 13.08 [0.01]
b = 0.88 [0.00]
Seff = 295.73 [97.67]
Teff = 1057 [87] K
Rp = 23.04 [5.15] Re
a = 0.0768 [0.0159] AU
Ag = 0.25 [0.10] [-7.40 σ]
Teffp = 1160 [69] K [0.93 σ]

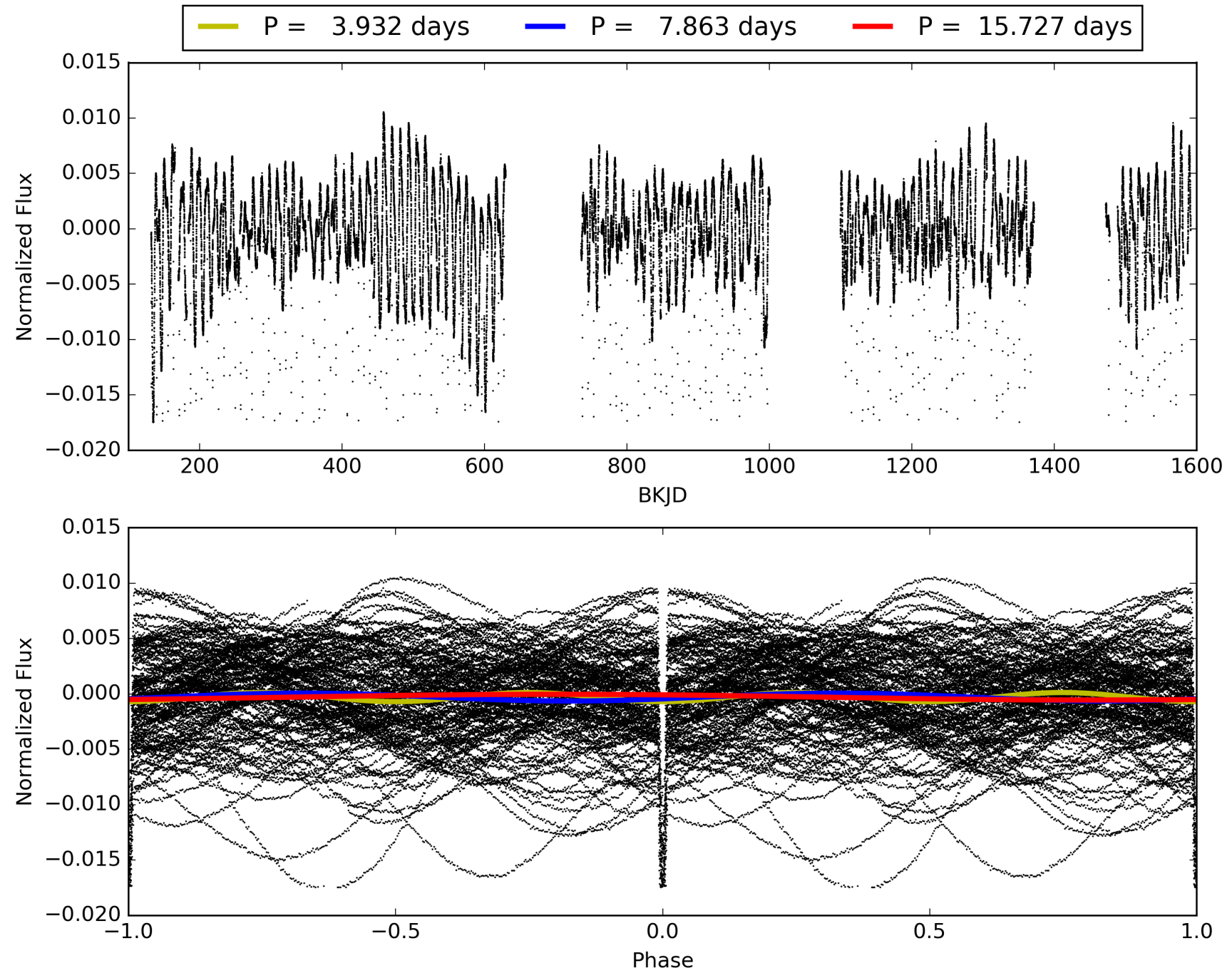
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.96 [125/130]
GhostDiagnostic-chr: 3.724
Centroid-sig: 0.0%
Centroid-so: 0.334 arcsec [69.16 σ]
OotOffset-rm: 0.154 arcsec [2.29 σ]
KicOffset-rm: 0.144 arcsec [2.11 σ]
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 009724993-01, PDC Light Curves

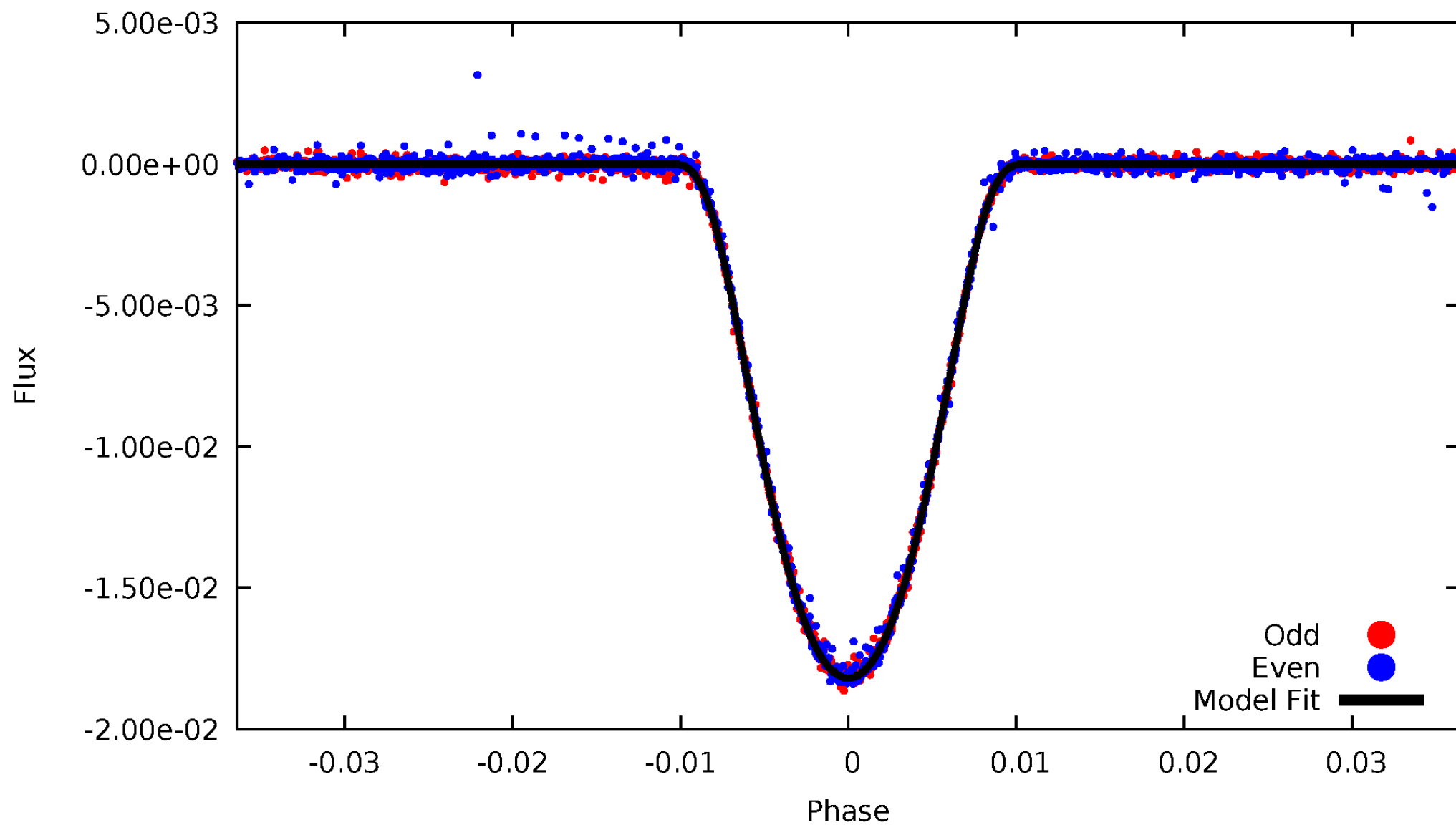


TCE 009724993-01



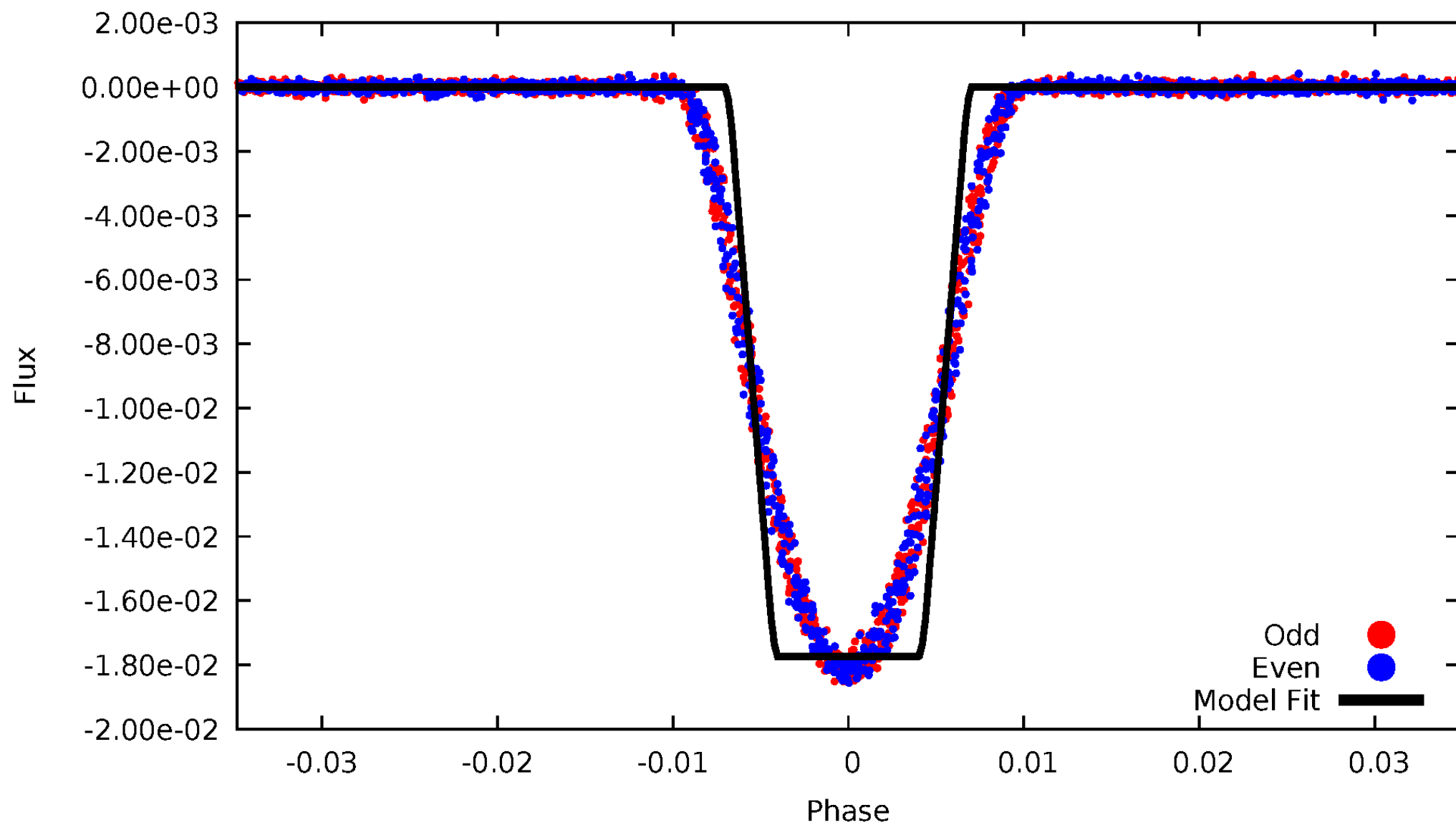
DV Odd/Even

TCE 009724993-01



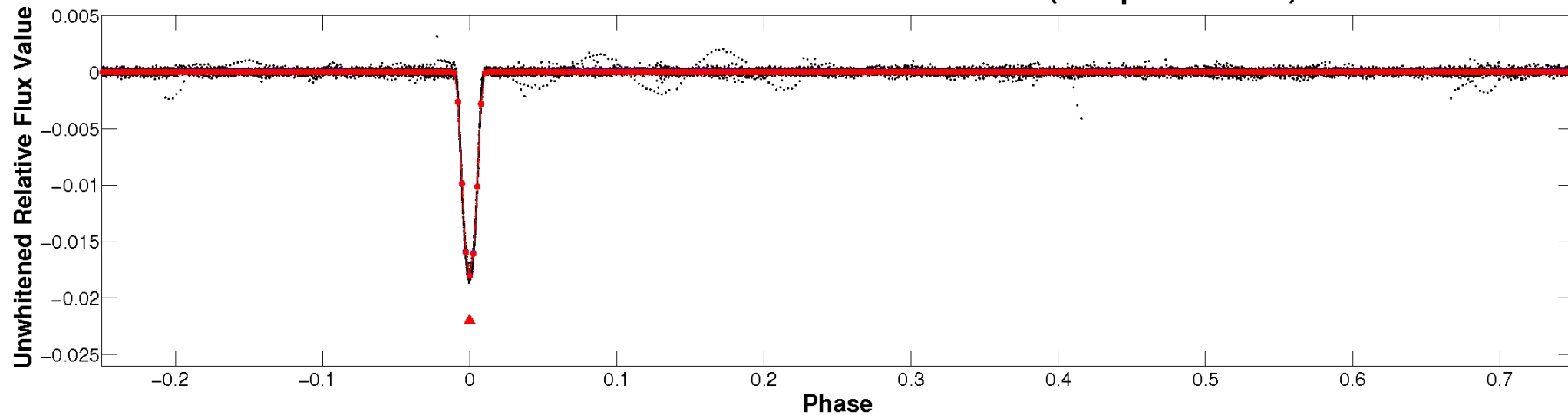
ALT Odd/Even

TCE 009724993-01

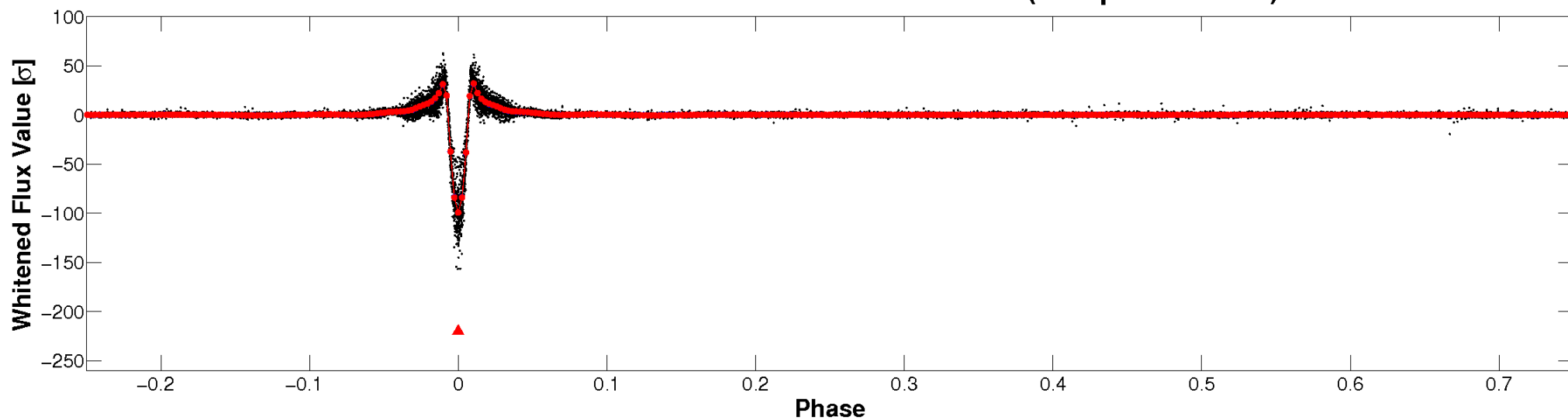


Non-Whitened Vs. Whitened Light Curve

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

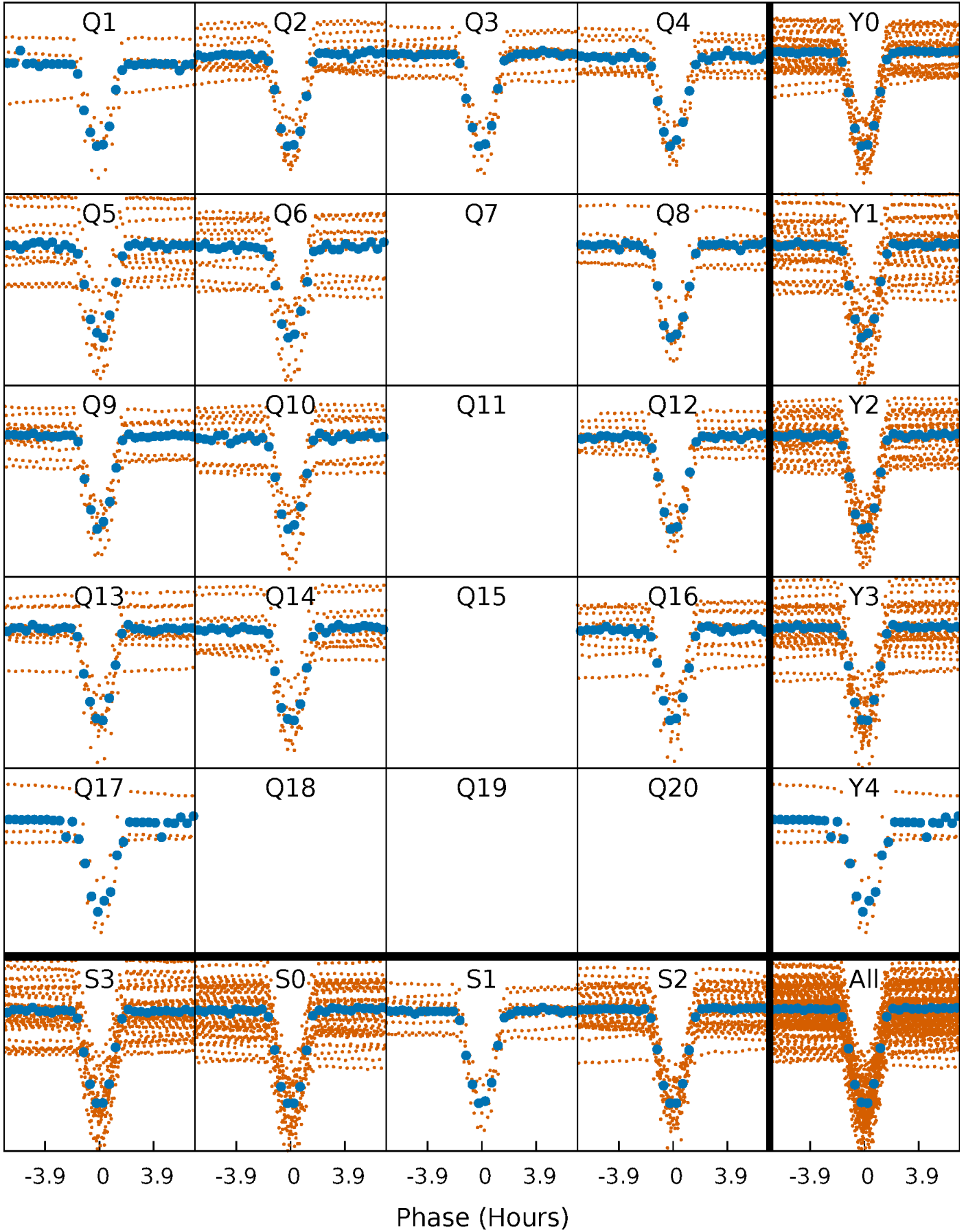


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



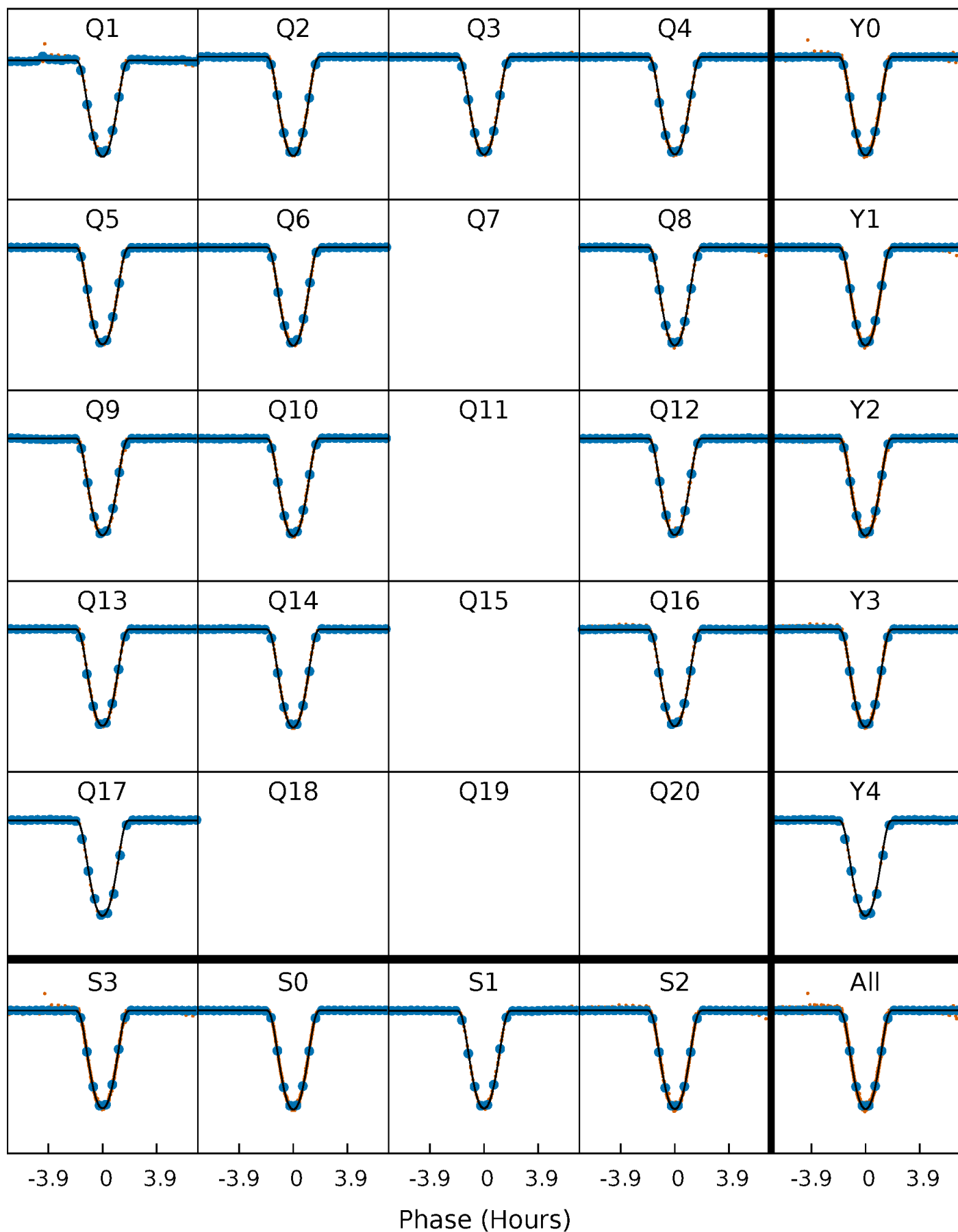
PDC Quarter-Phased Transit Curves

TCE 009724993-01 P= 7.863361 Days $T_0=131.685533$ (BKJD)



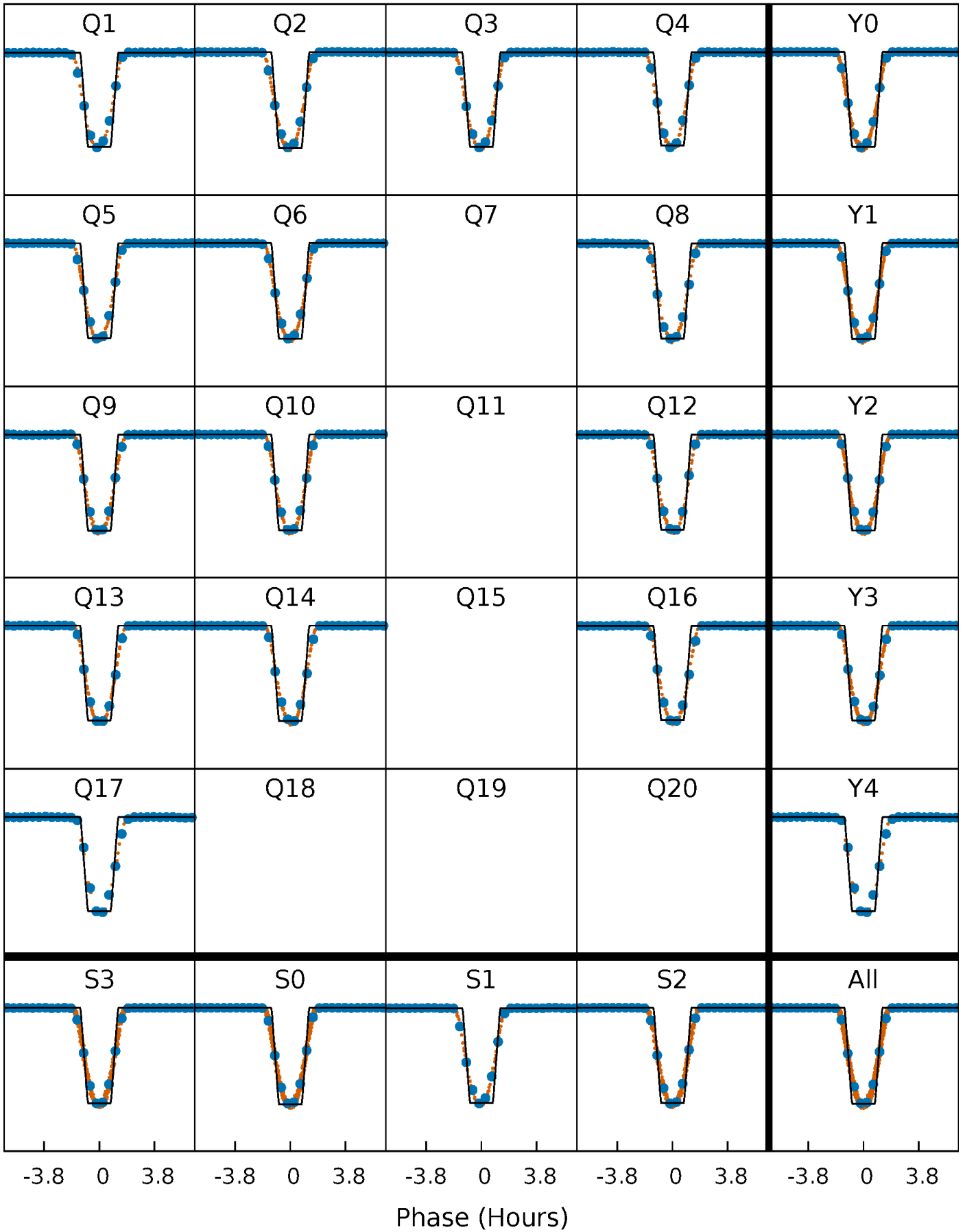
DV Quarter-Phased Transit Curves

TCE 009724993-01 P= 7.863361 Days $T_0=131.685533$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

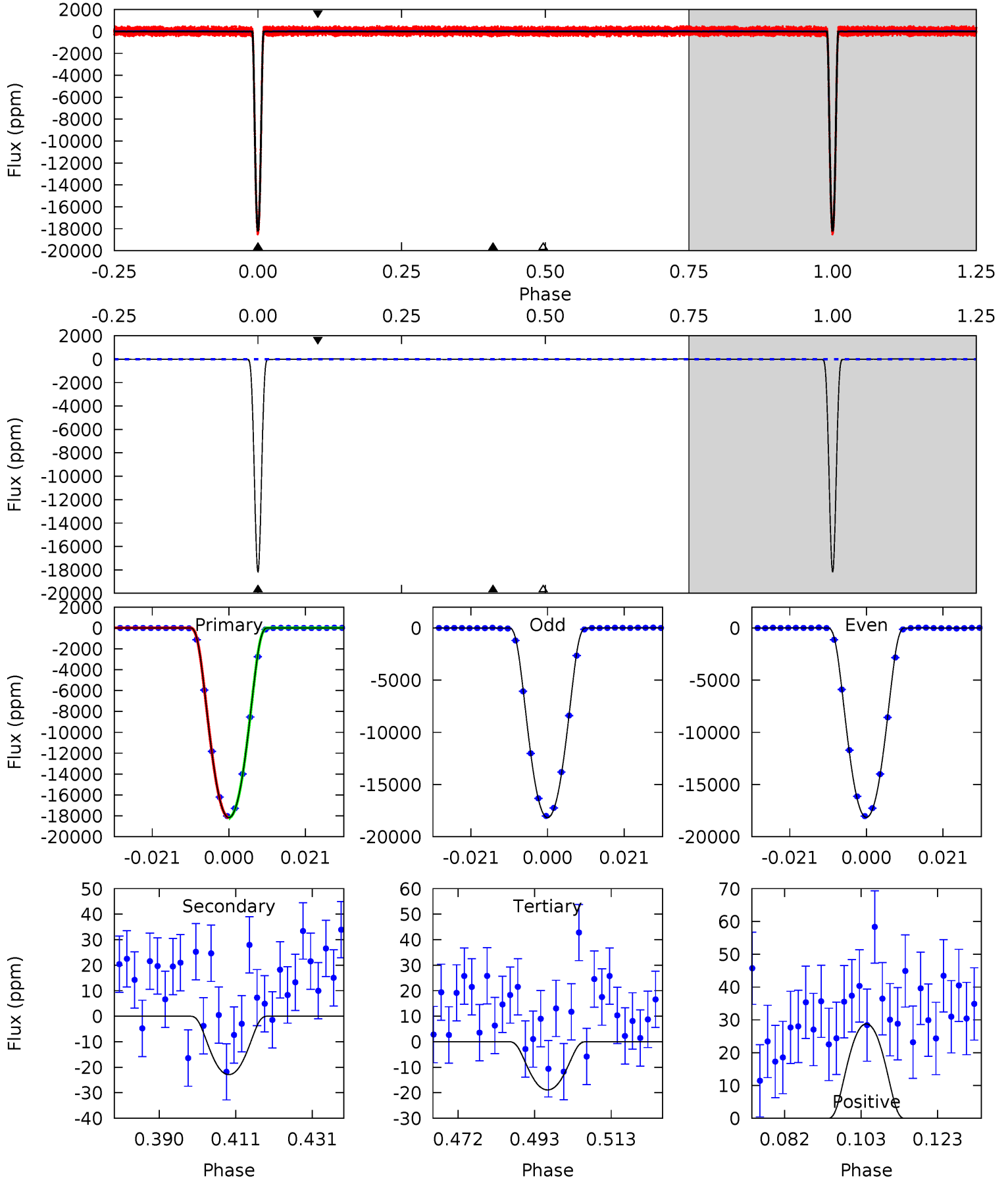
TCE 009724993-01 P= 7.863317 Days $T_0=131.689271$ (BKJD)



DV Model-Shift Uniqueness Test

009724993-01, P = 7.863361 Days, E = 123.822172 Days

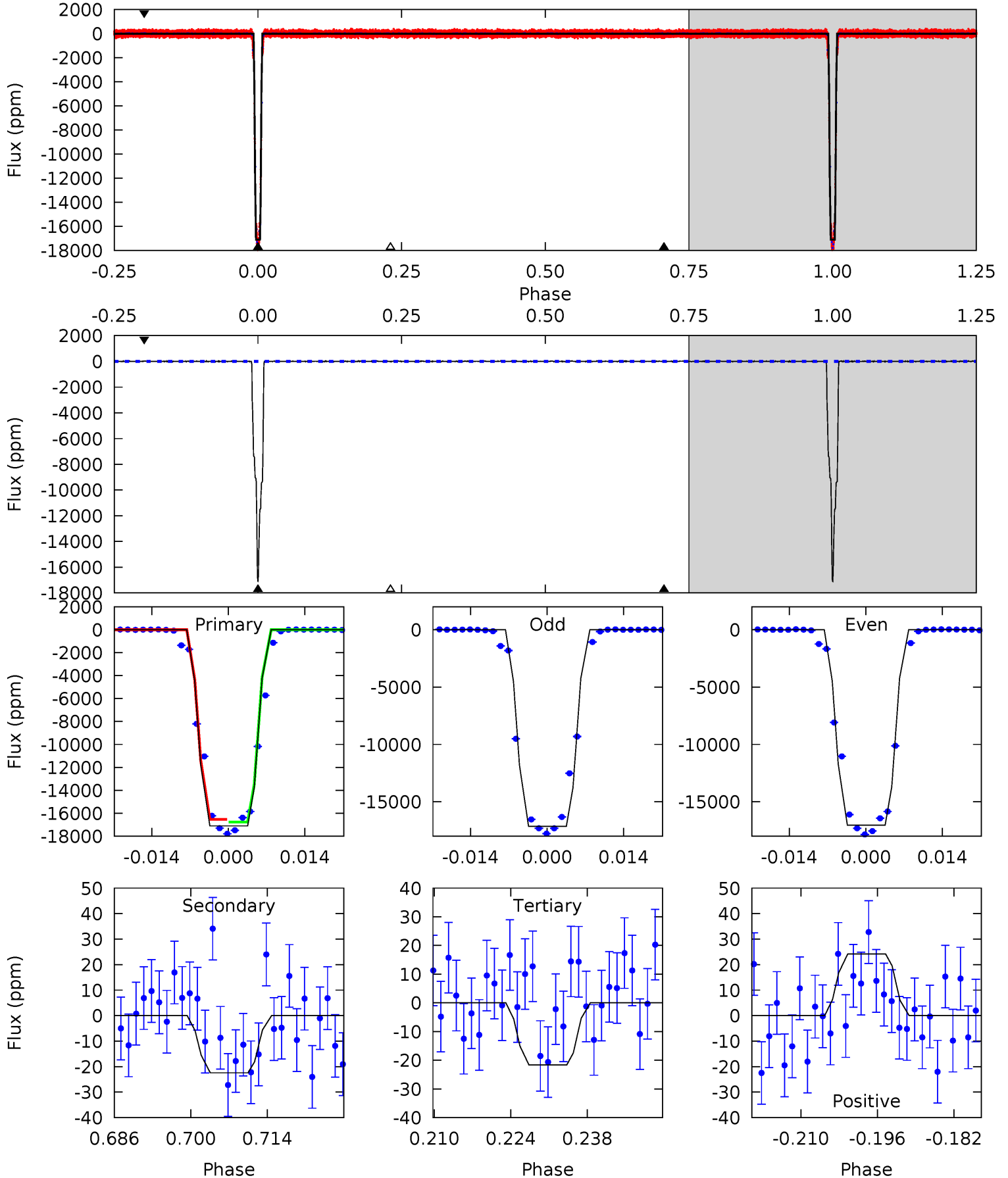
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4695	5.91	4.88	7.44	4.89	2.32	2.82	4690	4688	1.03	-1.53	3.16	1.00	0.00	1.69



Alt Model-Shift Uniqueness Test

009724993-01, P = 7.863317 Days, E = 123.825954 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2413	3.16	3.06	3.42	4.96	2.46	1.05	2410	2409	0.11	-0.25	7.50	1.00	0.00	0



Stellar Parameters For KIC 009724993

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5615^{+84}_{-76}	$4.136^{+0.188}_{-0.101}$	$0.100^{+0.150}_{-0.100}$	$1.400^{+0.208}_{-0.313}$	$0.976^{+0.079}_{-0.065}$	$0.501^{+0.486}_{-0.152}$
	+1%/-1%	+5%/-2%	+150%/-100%	+15%/-22%	+8%/-7%	+97%/-30%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 009724993-01 / KOI 5708.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-23 ± 4	$23.14^{+1.87}_{-2.91}$	1472^{+66}_{-85}	-2022^{+106}_{-72}	$0.143^{+0.043}_{-0.031}$
Alt.	-22 ± 7	$20.46^{+1.57}_{-2.29}$	1478^{+58}_{-86}	-1980^{+197}_{-96}	$0.174^{+0.075}_{-0.060}$

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

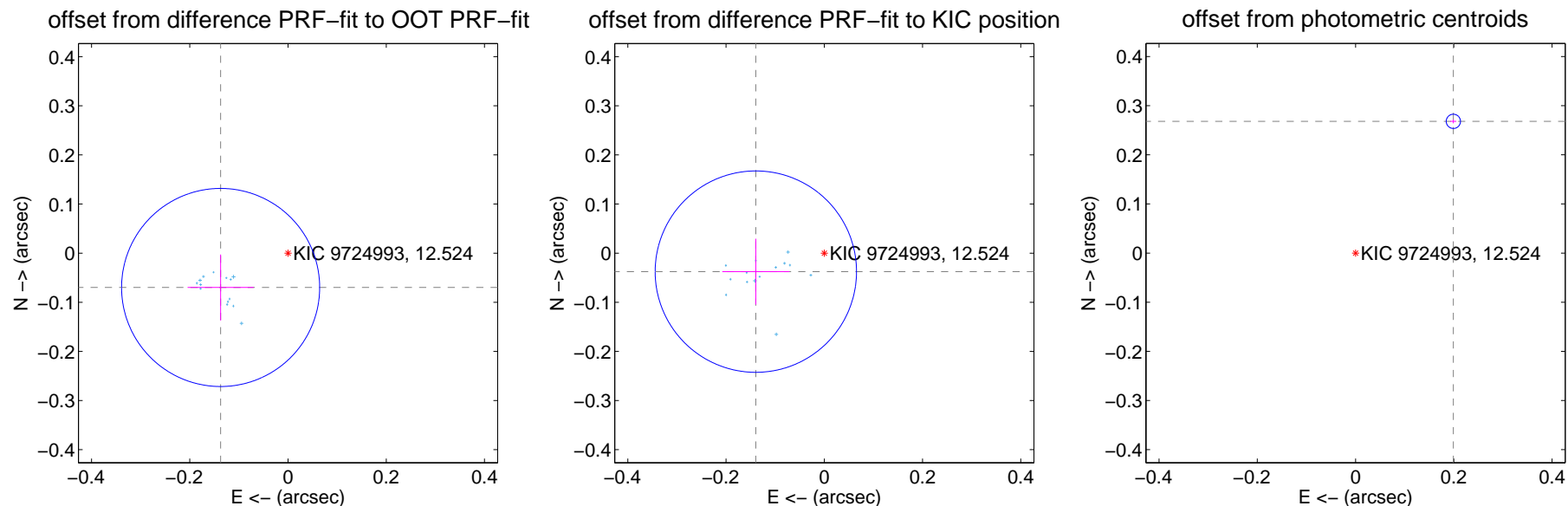
DV Centroid Data

Supplemental centroid analysis for 009724993-01. Kepler magnitude: 12.52. Transit SNR 1972.78

There are 14 quarters with good PRF difference image offsets

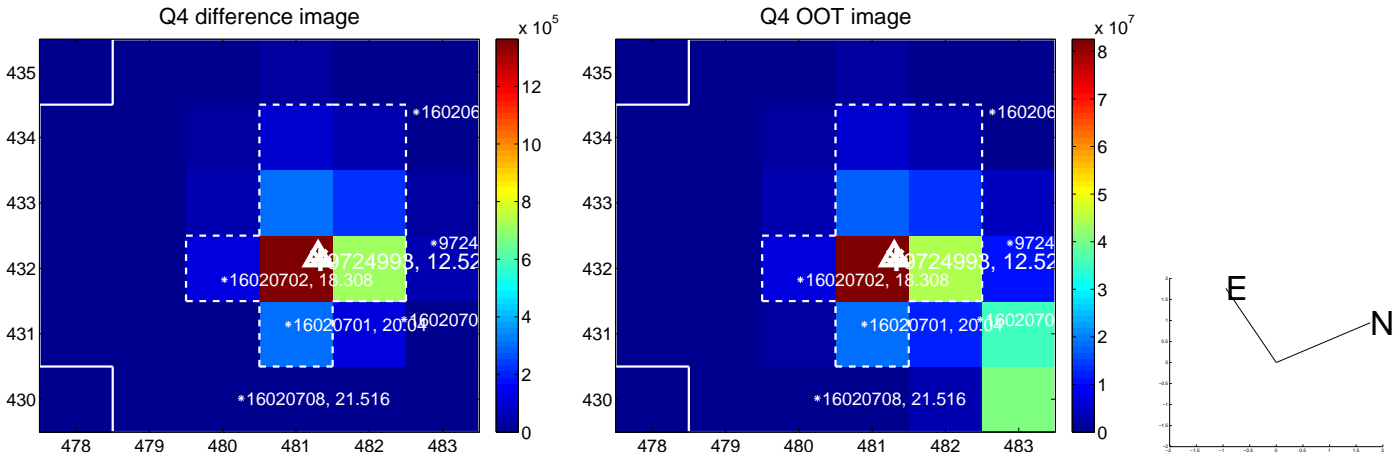
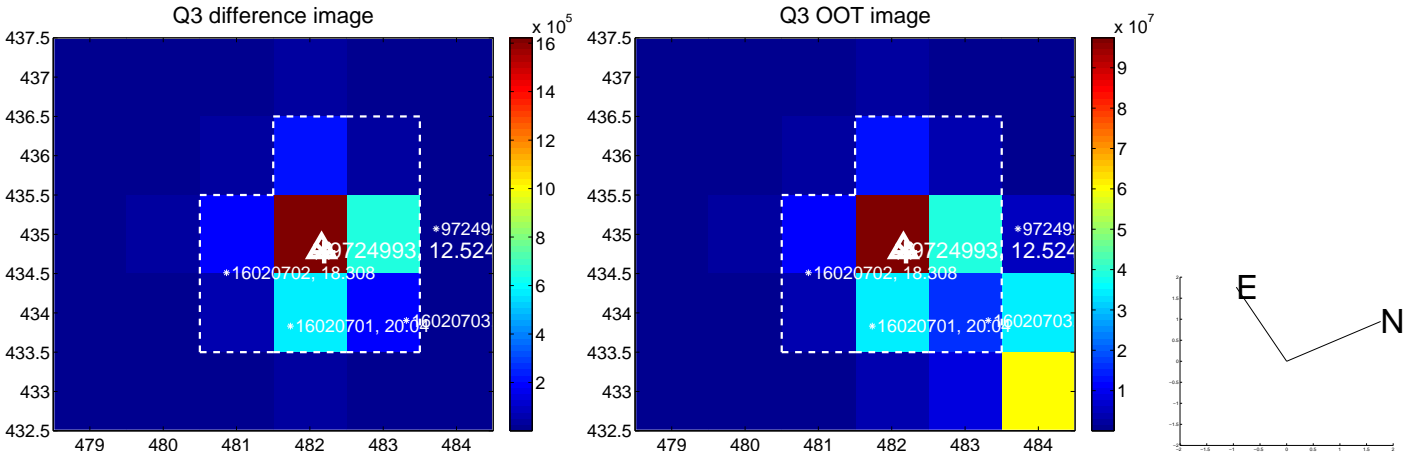
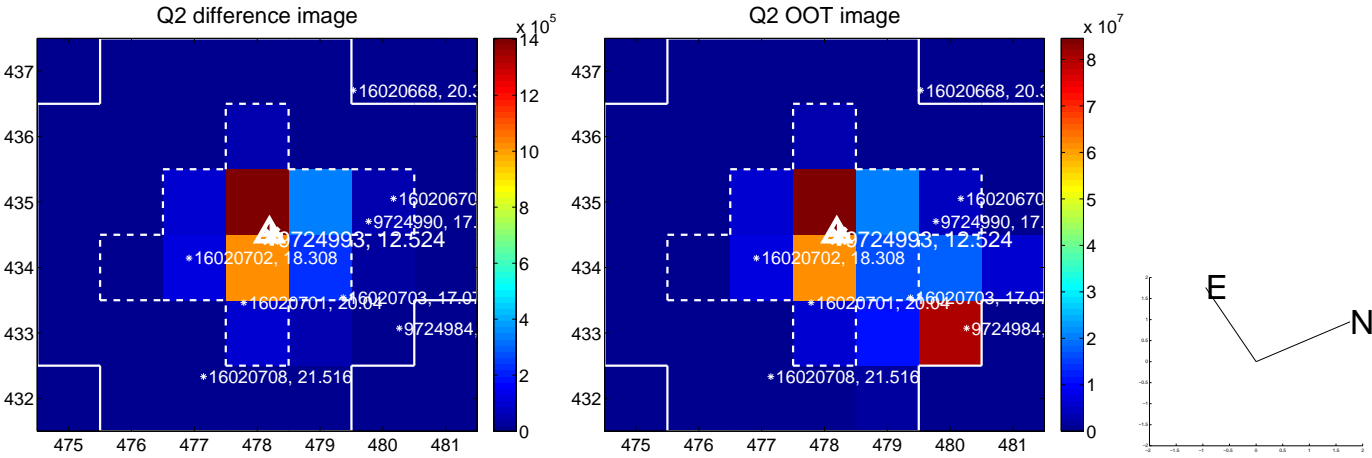
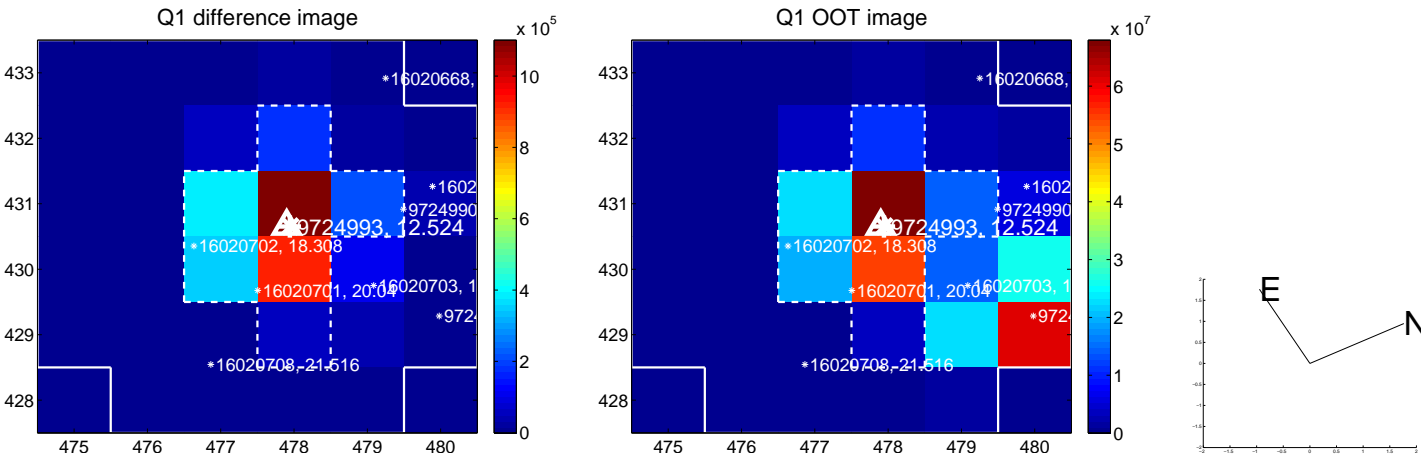
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.154 ± 0.067	2.29	0.137 ± 0.067	-0.070 ± 0.067
PRF-fit source offset from KIC position	0.144 ± 0.068	2.11	0.139 ± 0.068	-0.038 ± 0.067
photometric centroid source offset	0.33 ± 0.00	69.16	-0.20 ± 0.01	0.27 ± 0.00

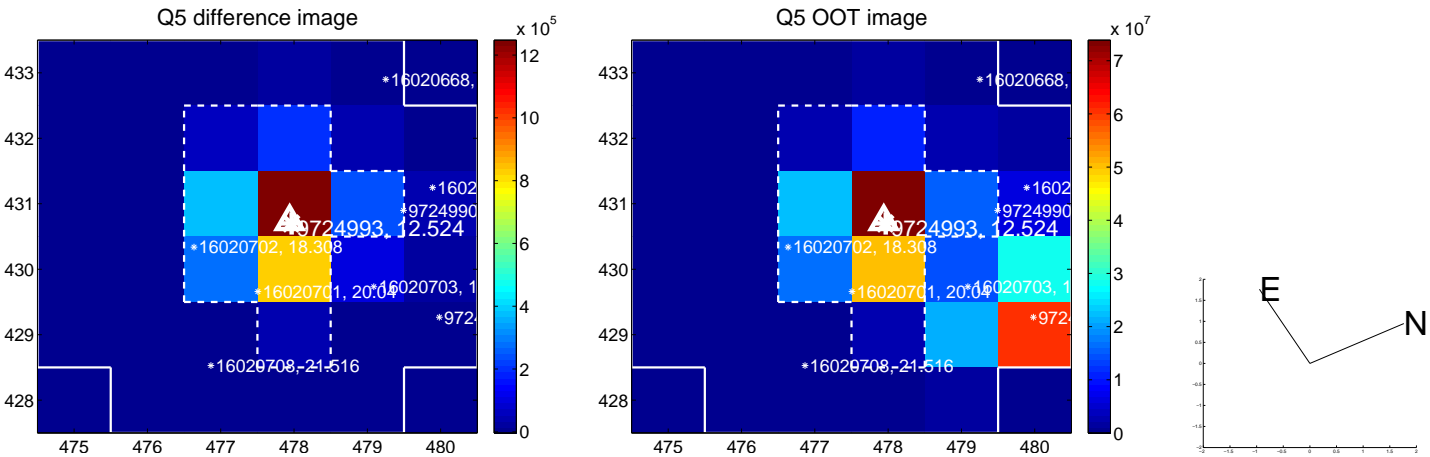


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

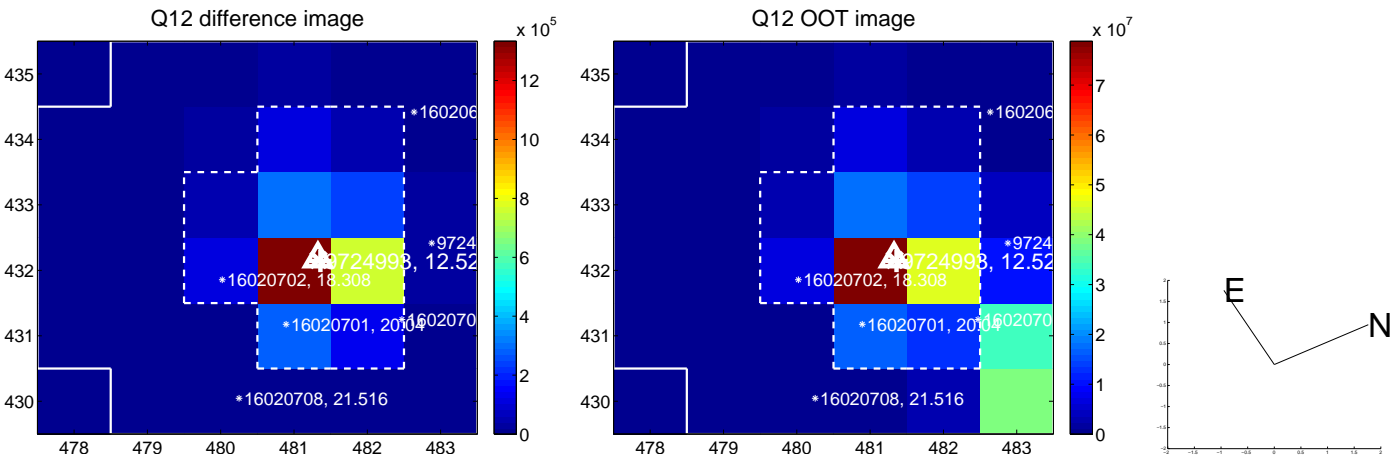
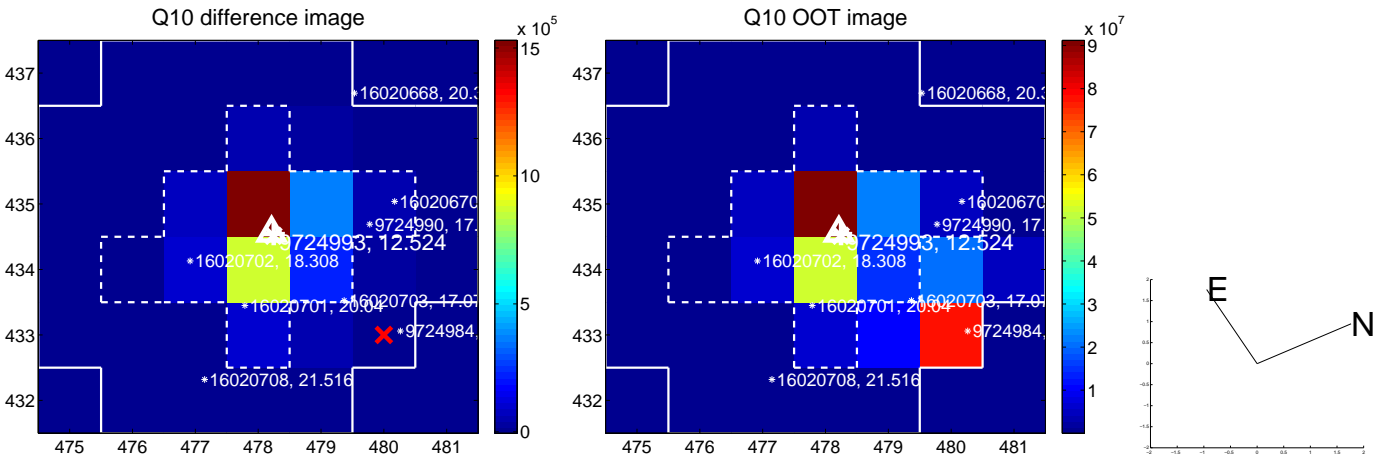
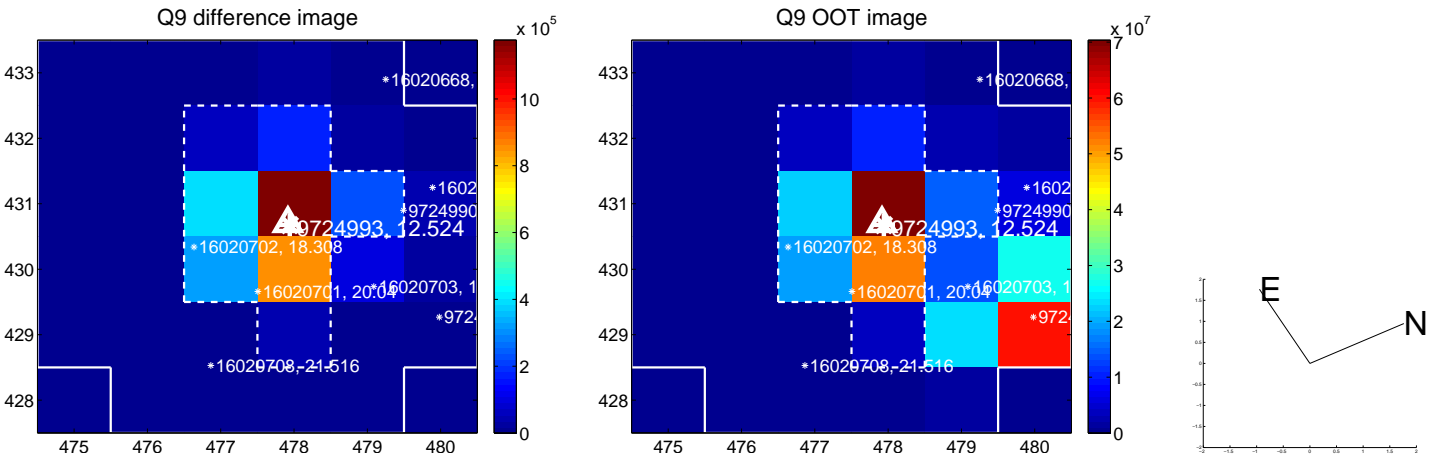
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



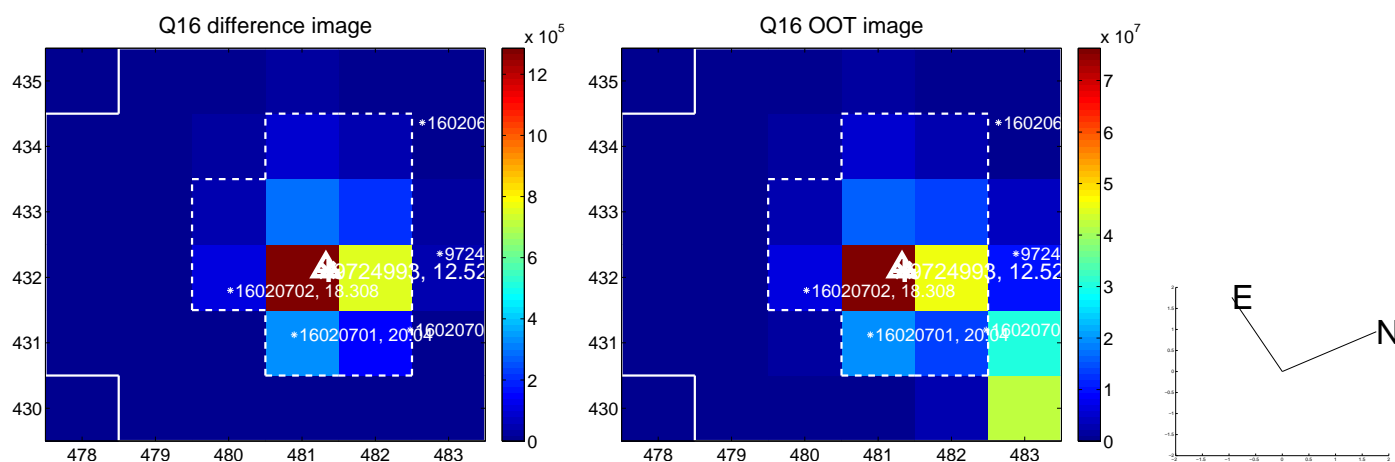
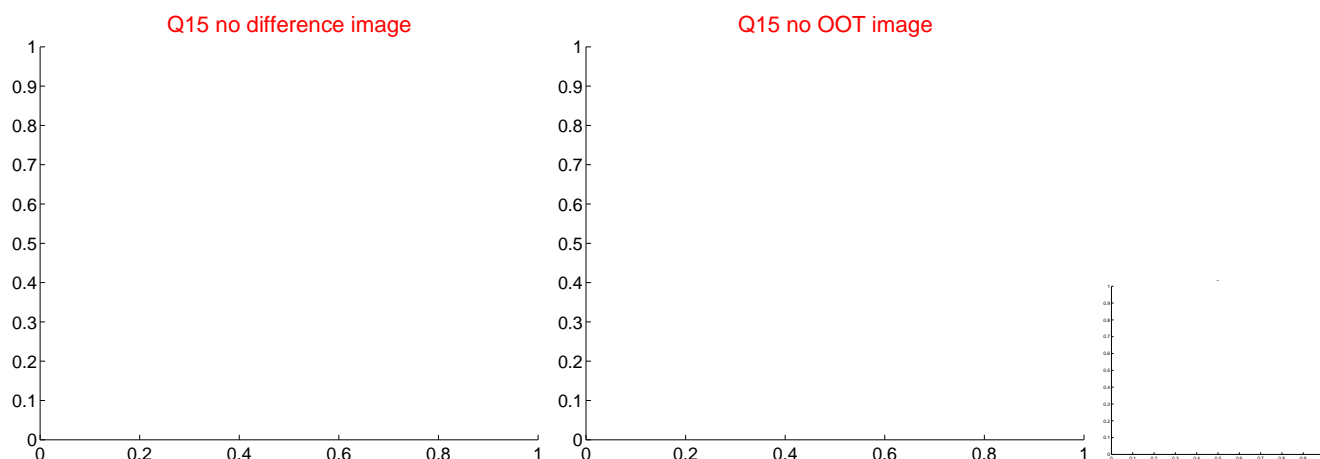
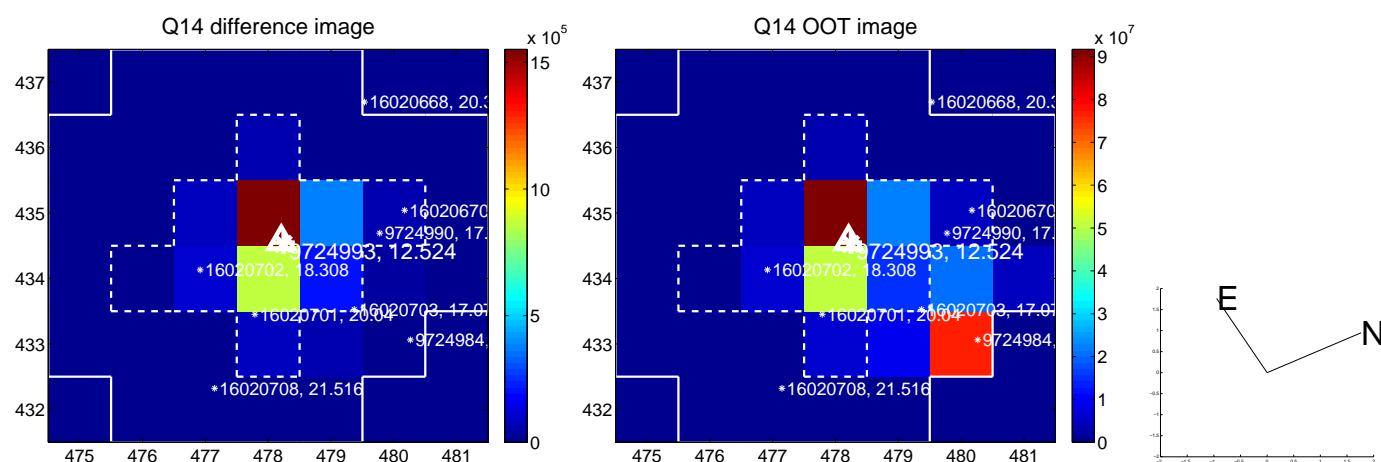
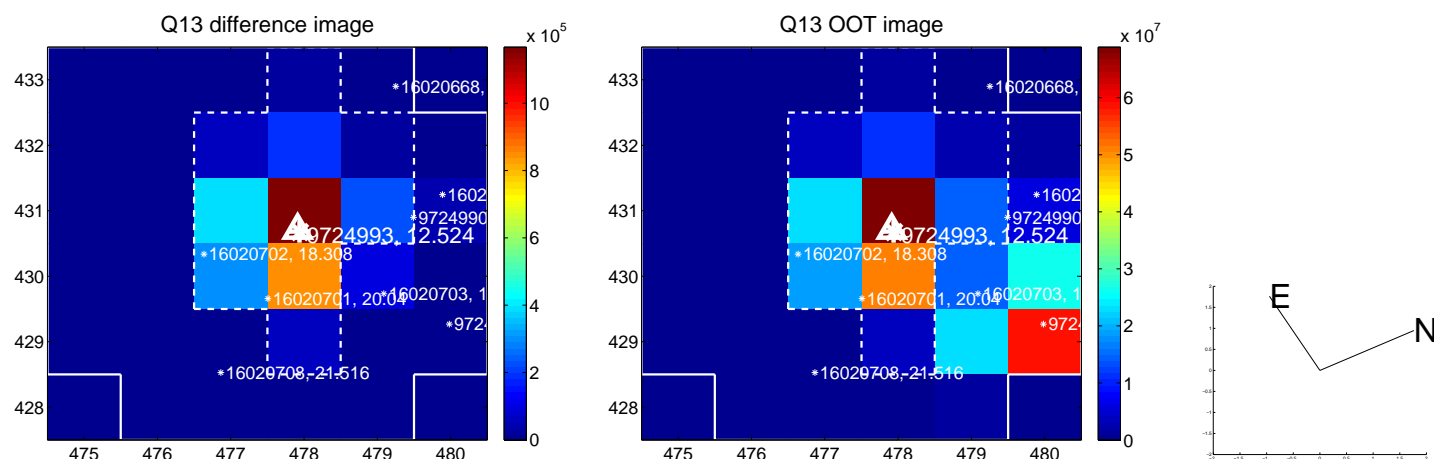
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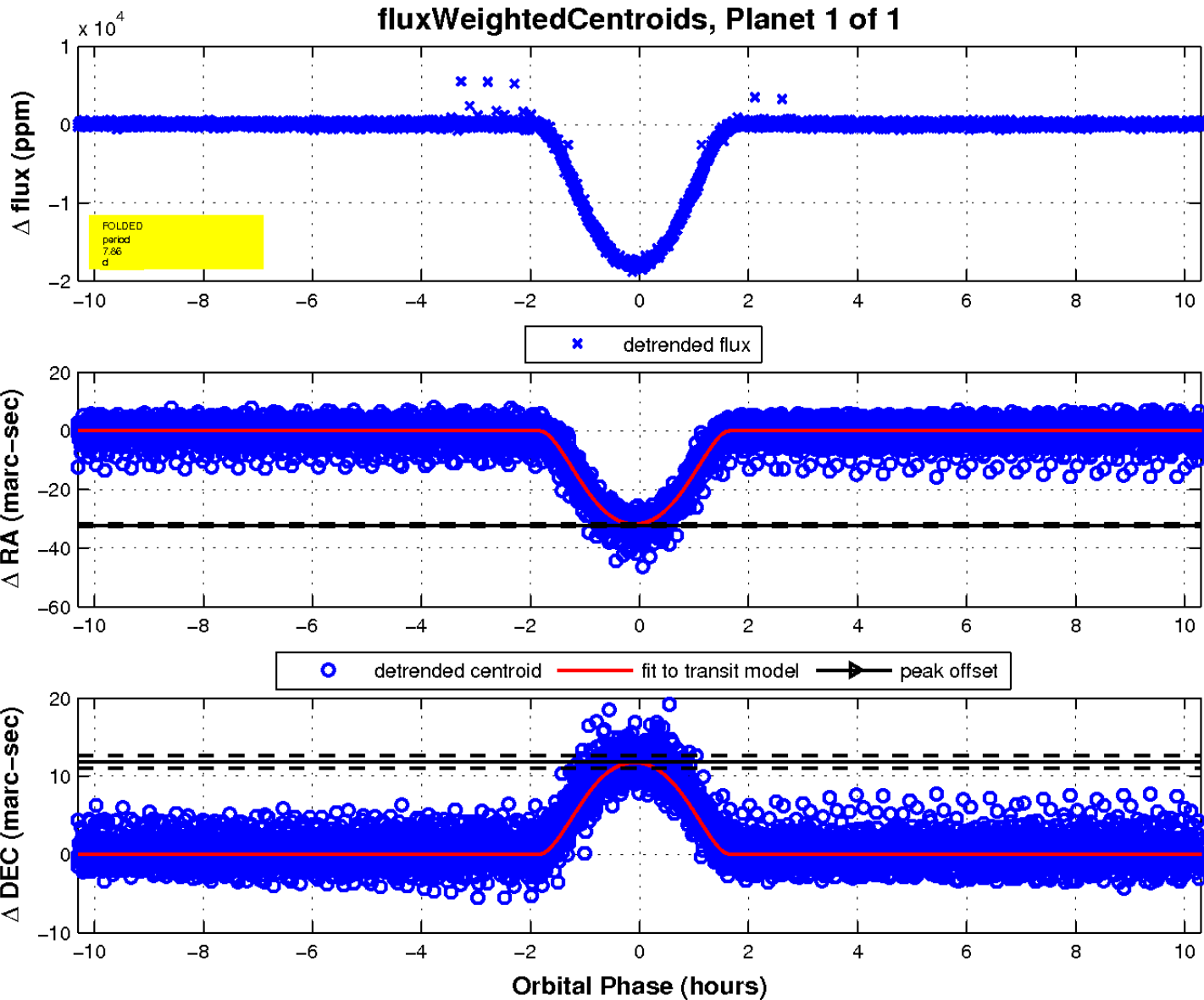
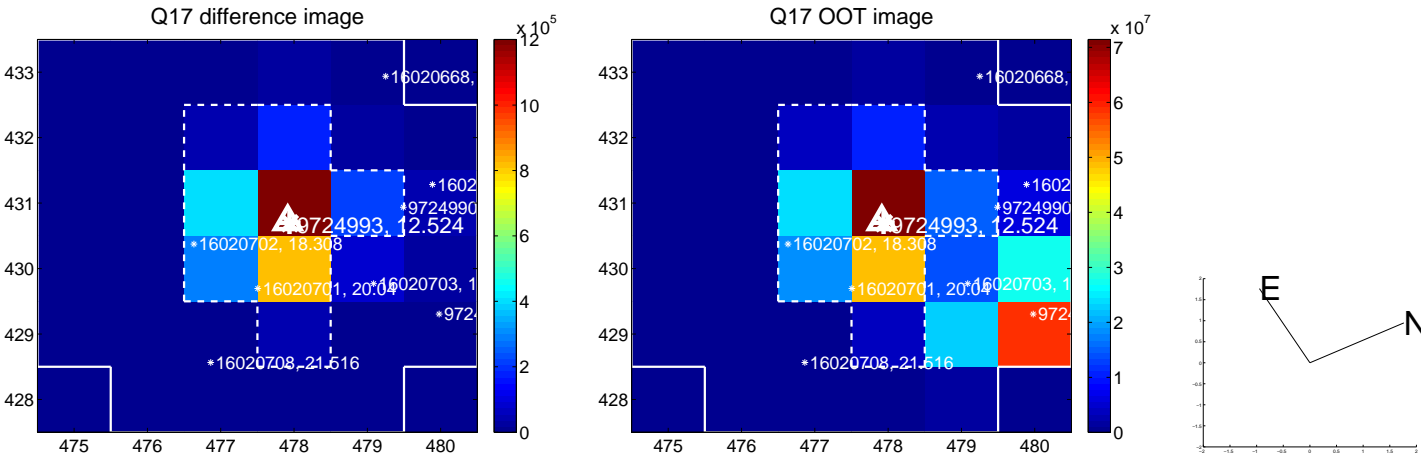
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UKIRT Image

Declination

