

KIC 009959093

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})
009959093-01	OBS	7264.01	19.164471	141.305058	62.0	3.946	7.5	7.7	2.23	5877	2.08	225.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009959093-01	OBS	FP	0.27	1	0	0	0	MOD_NONUNIQ_ALT

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

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

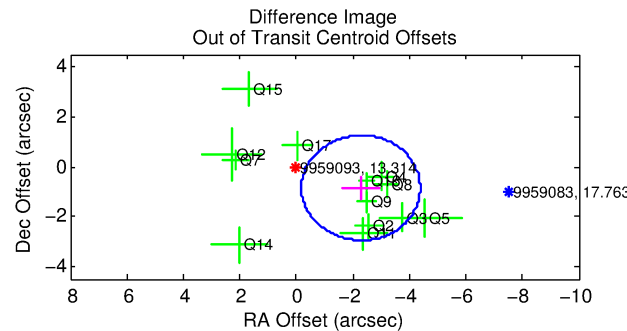
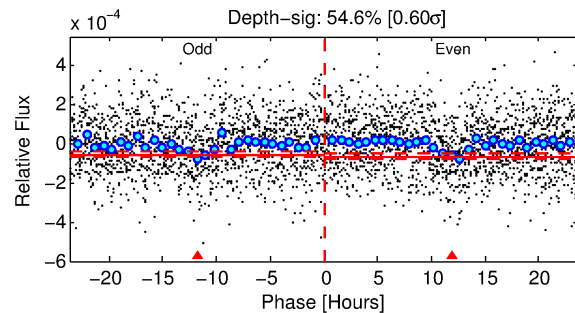
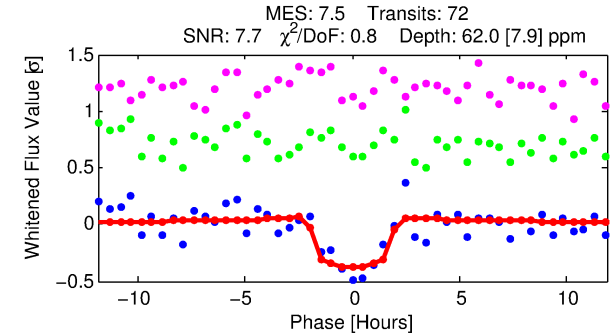
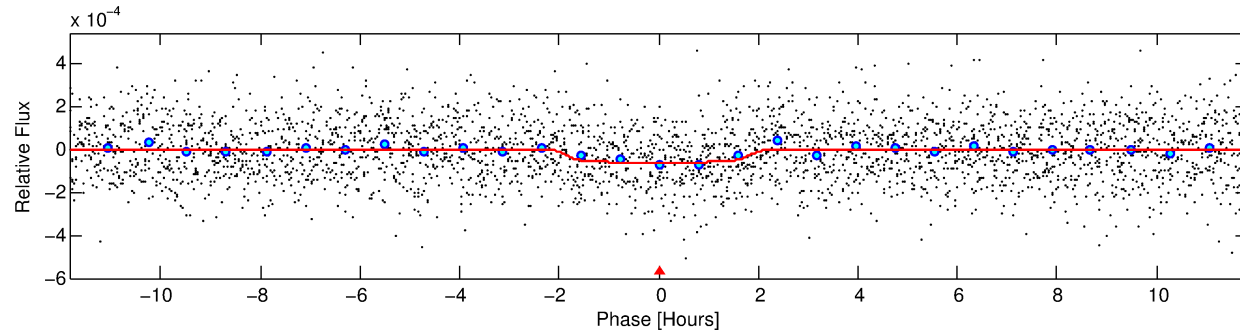
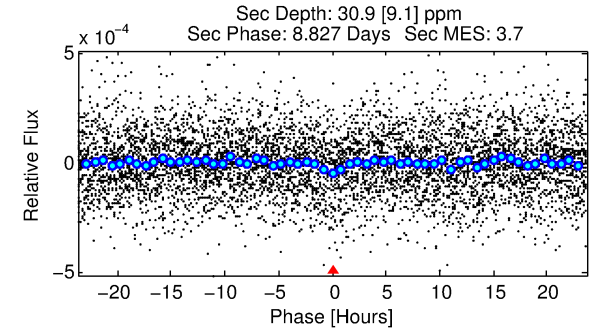
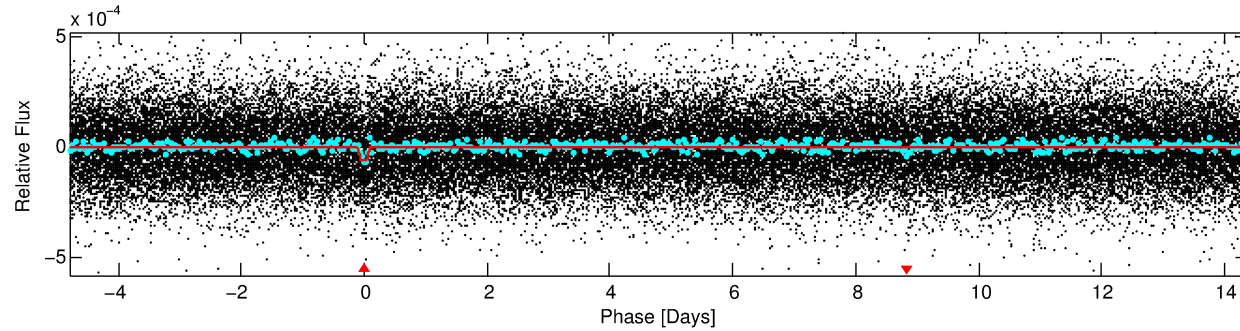
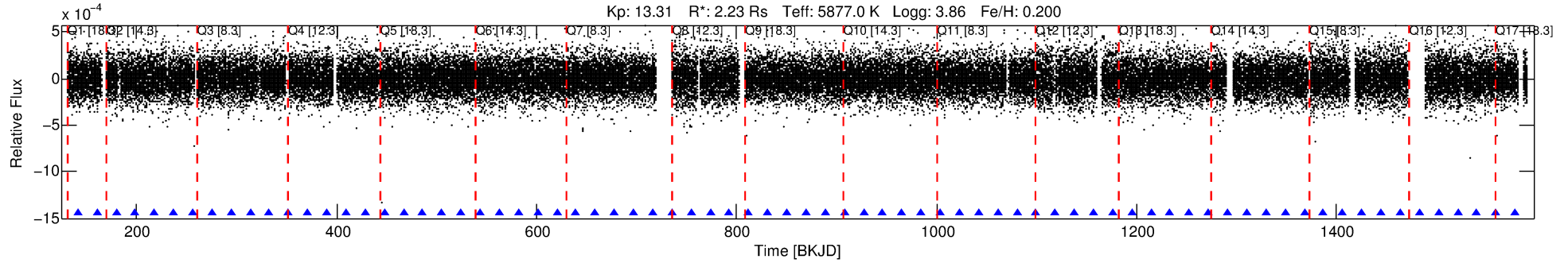
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009959093-01

No Significant Match Found

DV One-Page Summary

KIC: 9959093 Candidate: 1 of 1 Period: 19.164 d
KOI: K07264.01 Corr: 0.911



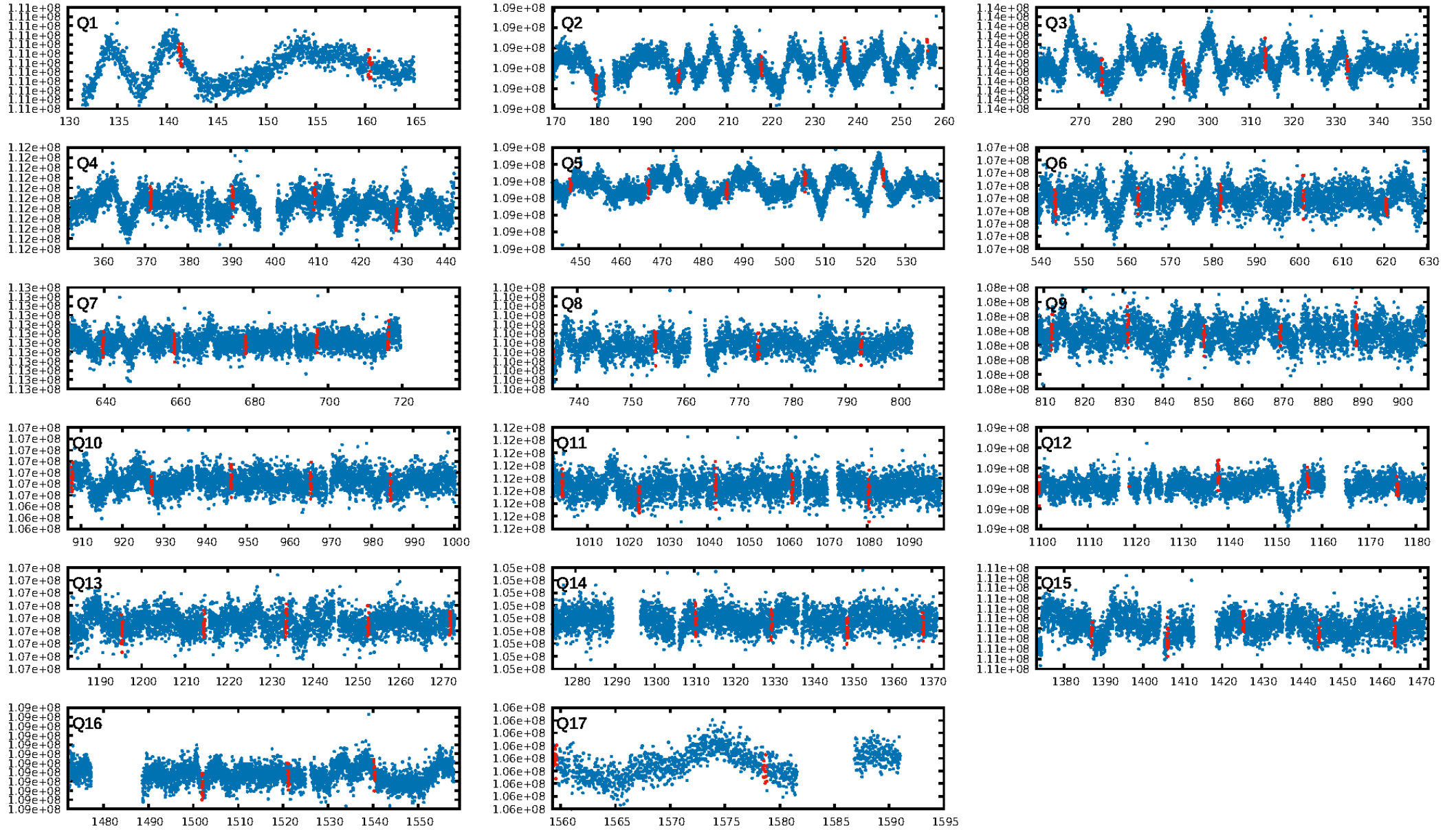
DV Fit Results:

Period = 19.16447 [0.00023] d
Epoch = 141.3051 [0.0099] BKJD
Rp/R* = 0.0085 [0.0056]
a/R* = 17.07 [54.53]
b = 0.90 [0.70]
Seff = 225.72 [115.70]
Teq = 988 [127] K
Rp = 2.08 [1.53] Re
a = 0.1537 [0.0488] AU
Ag = 92.67 [133.09] [0.69σ]
Teffp = 4741 [1593] K [2.35σ]

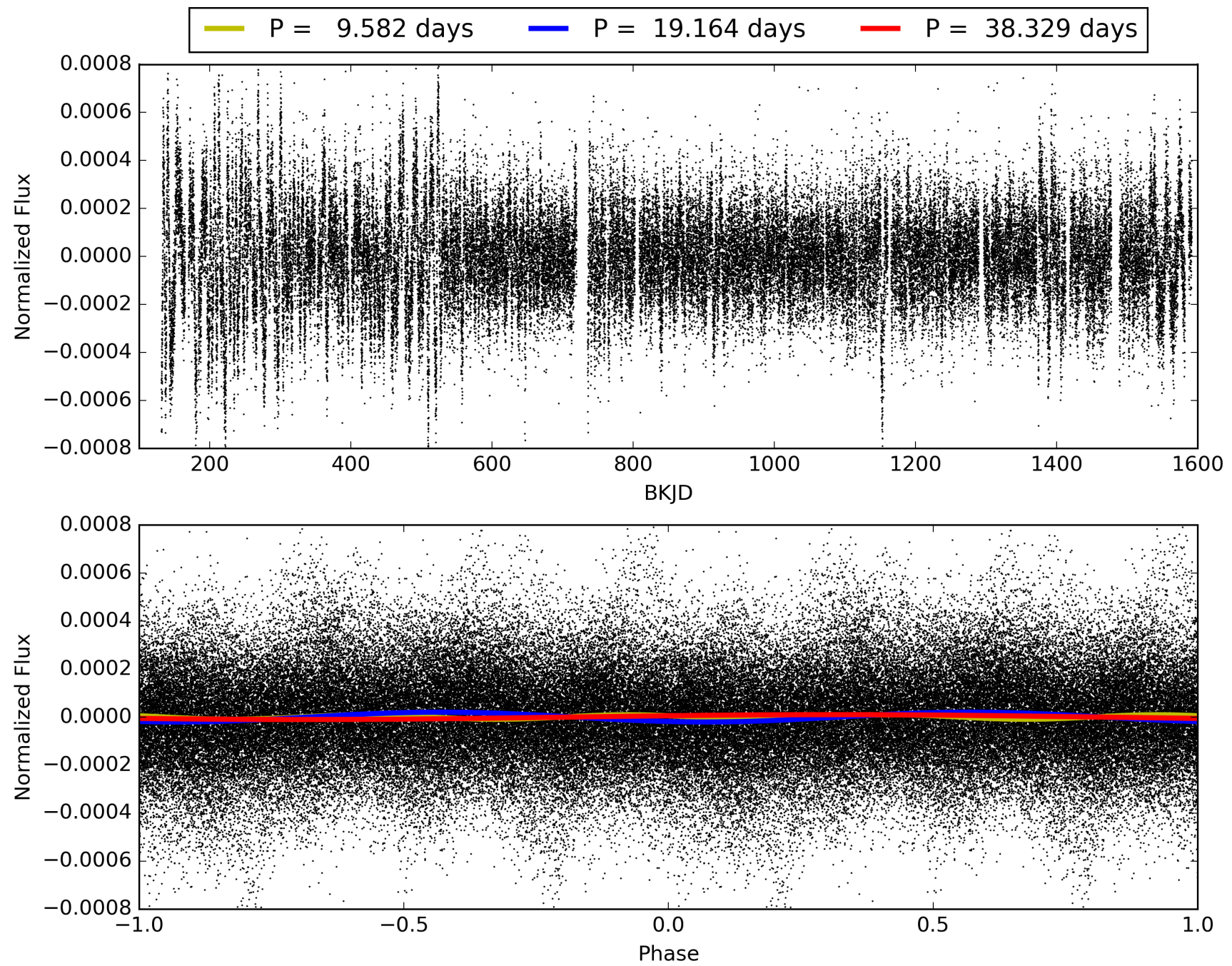
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.63e-14
RollingBand-fgt: 1.00 [68/68]
GhostDiagnostic-chr: 1.617
Centroid-sig: 0.0%
Centroid-so: 4.077 arcsec [3.29σ]
OotOffset-rm: 2.438 arcsec [3.48σ]
KicOffset-rm: 2.445 arcsec [3.47σ]
OotOffset-st: 2/4/4/3 [13]
KicOffset-st: 2/4/4/3 [13]
DiffImageQuality-fgm: 0.46 [6/13]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009959093-01, PDC Light Curves

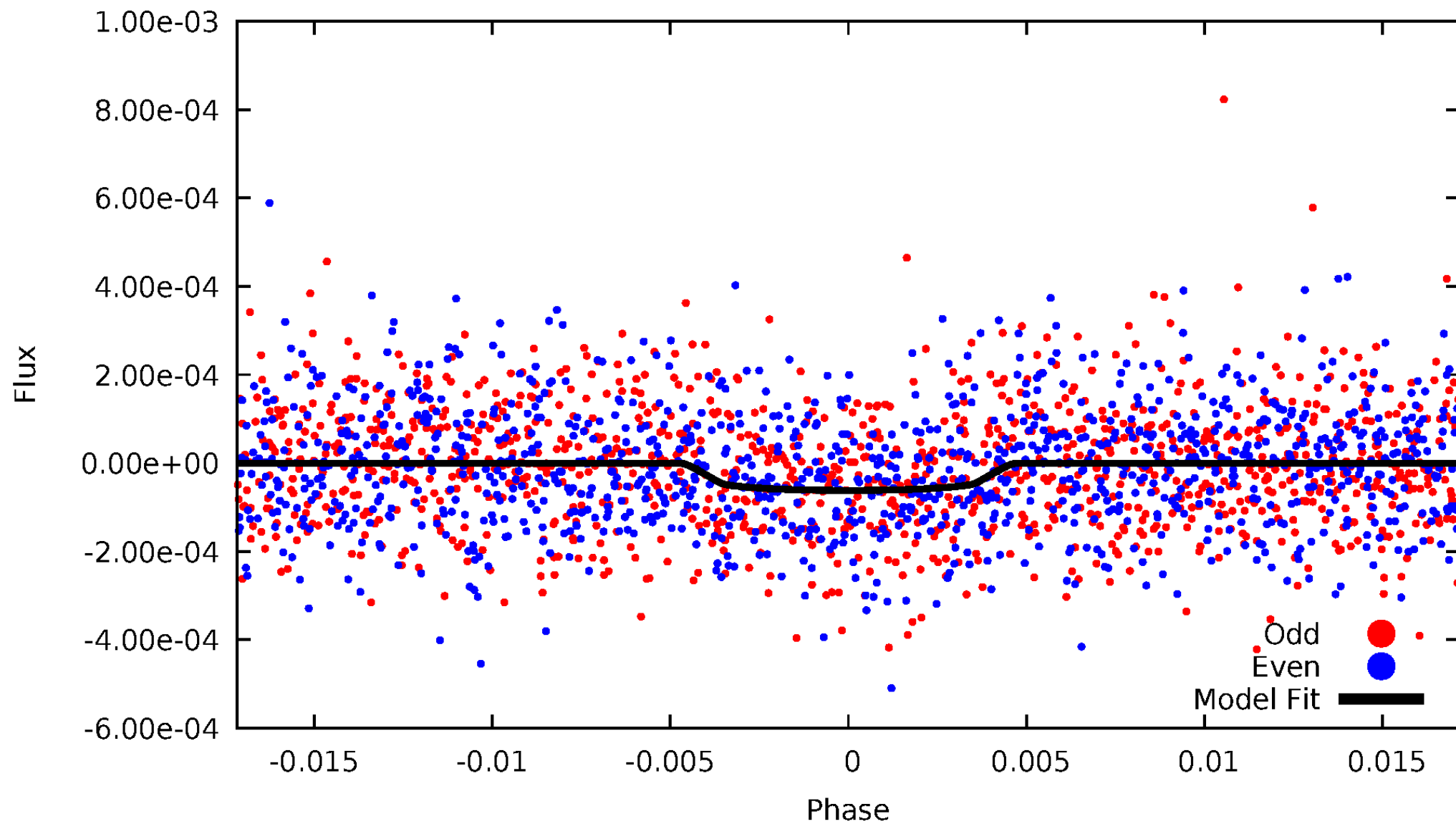


TCE 009959093-01



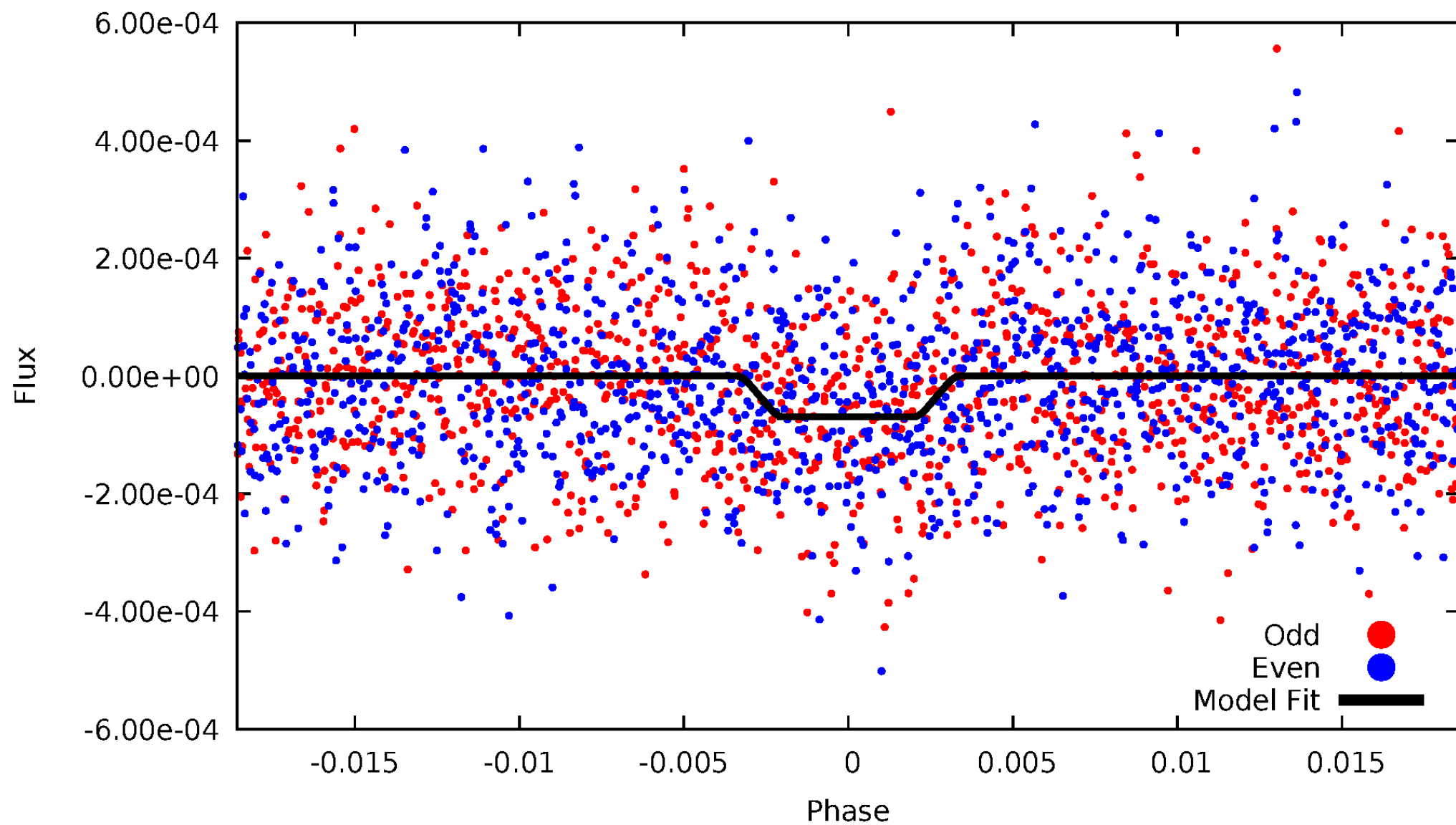
DV Odd/Even

TCE 009959093-01



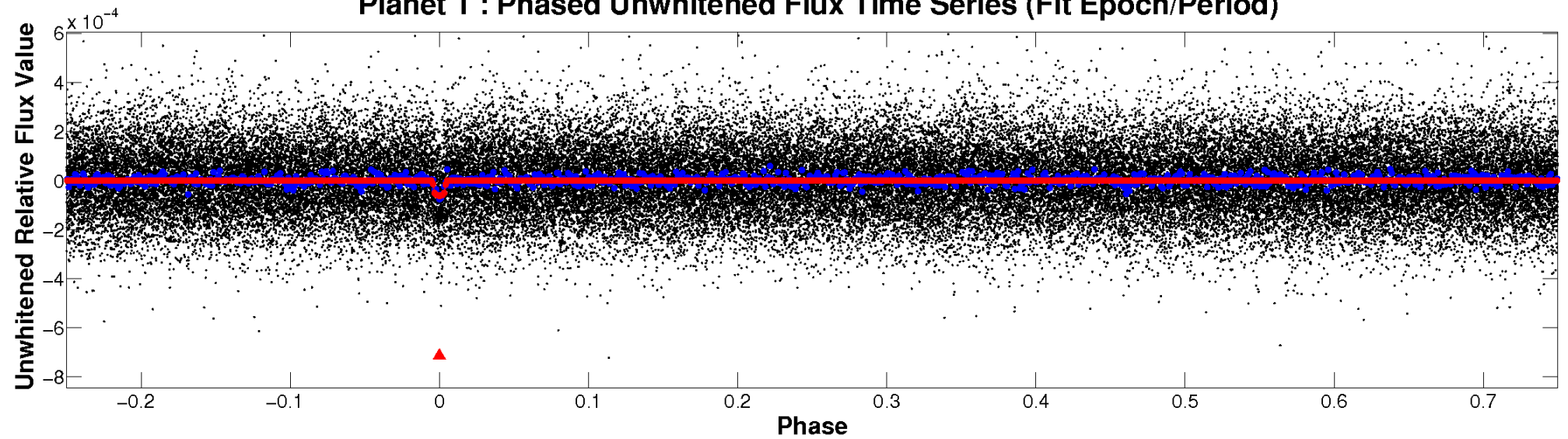
ALT Odd/Even

TCE 009959093-01

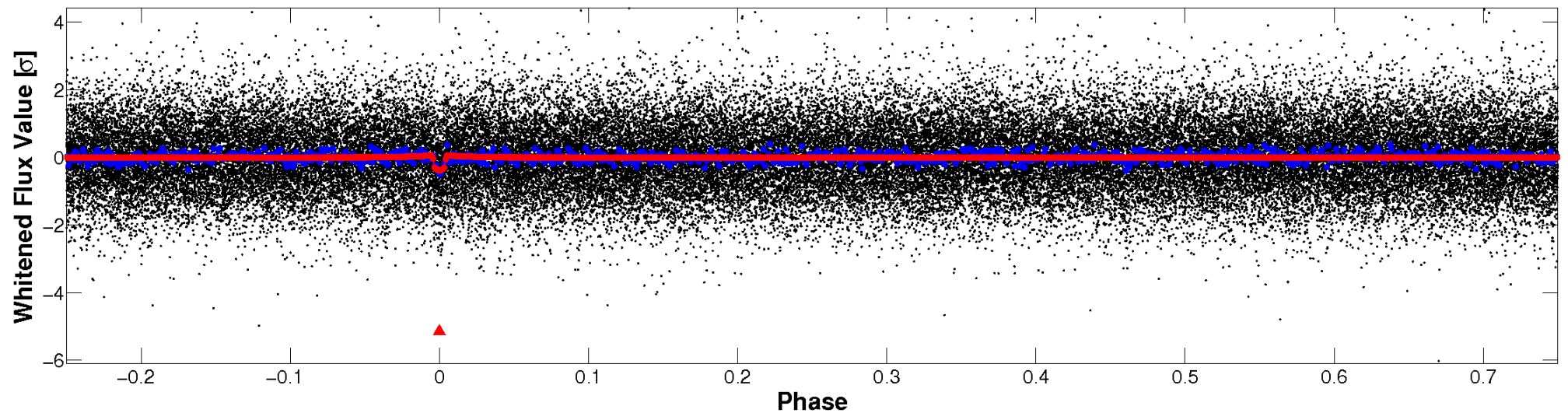


Non-Whitened Vs. Whitened Light Curve

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

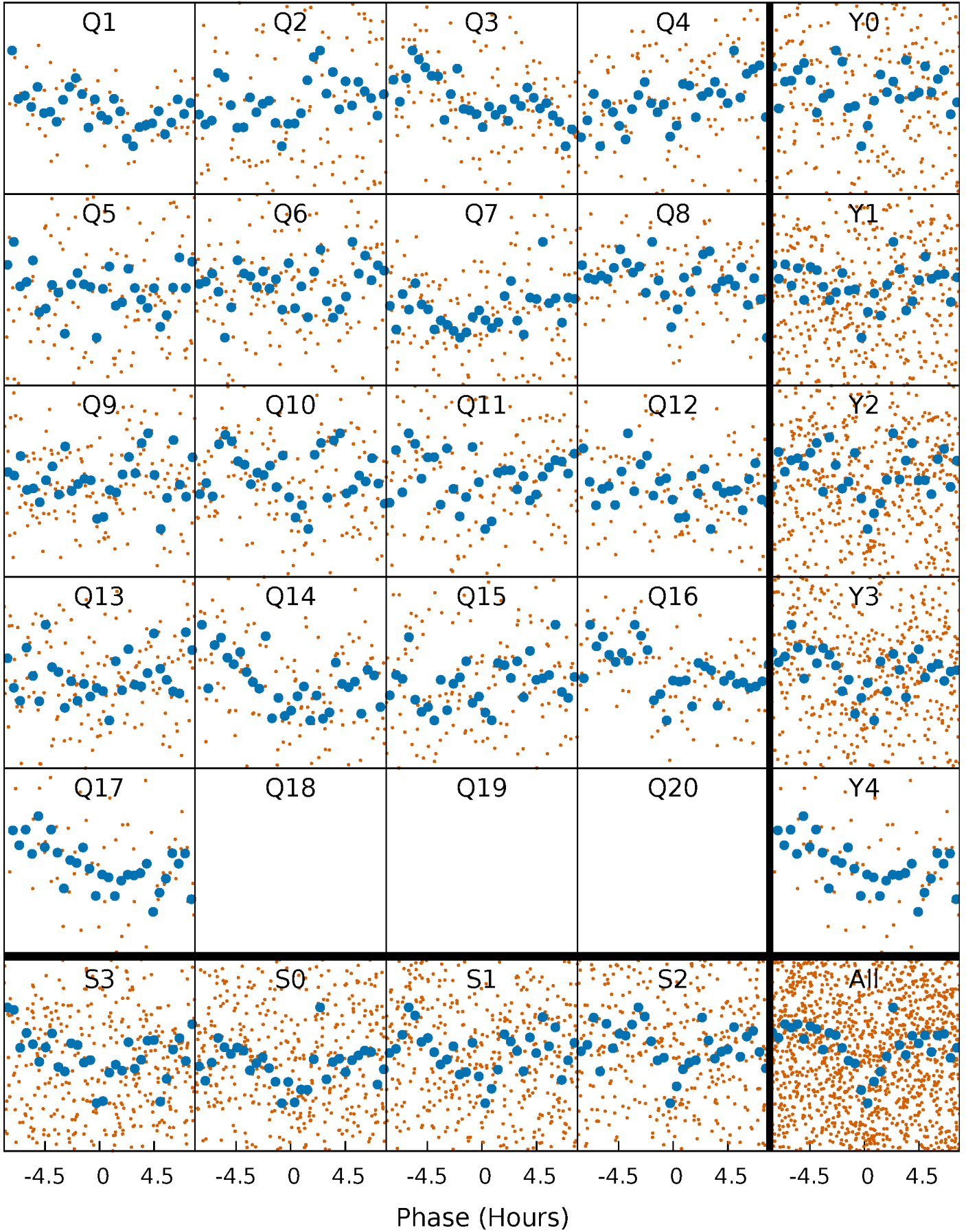


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



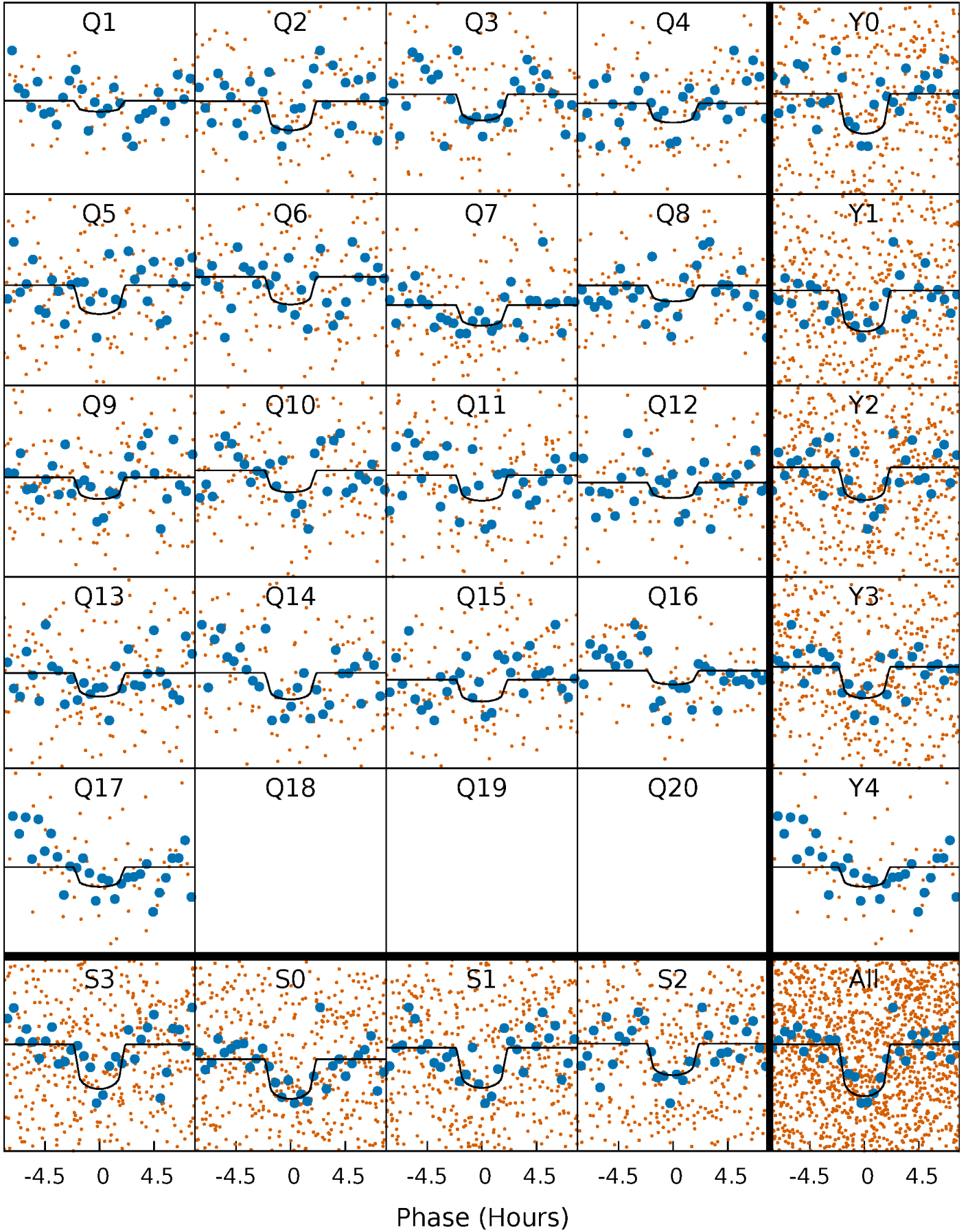
PDC Quarter-Phased Transit Curves

TCE 009959093-01 P= 19.164471 Days $T_0=141.305058$ (BKJD)



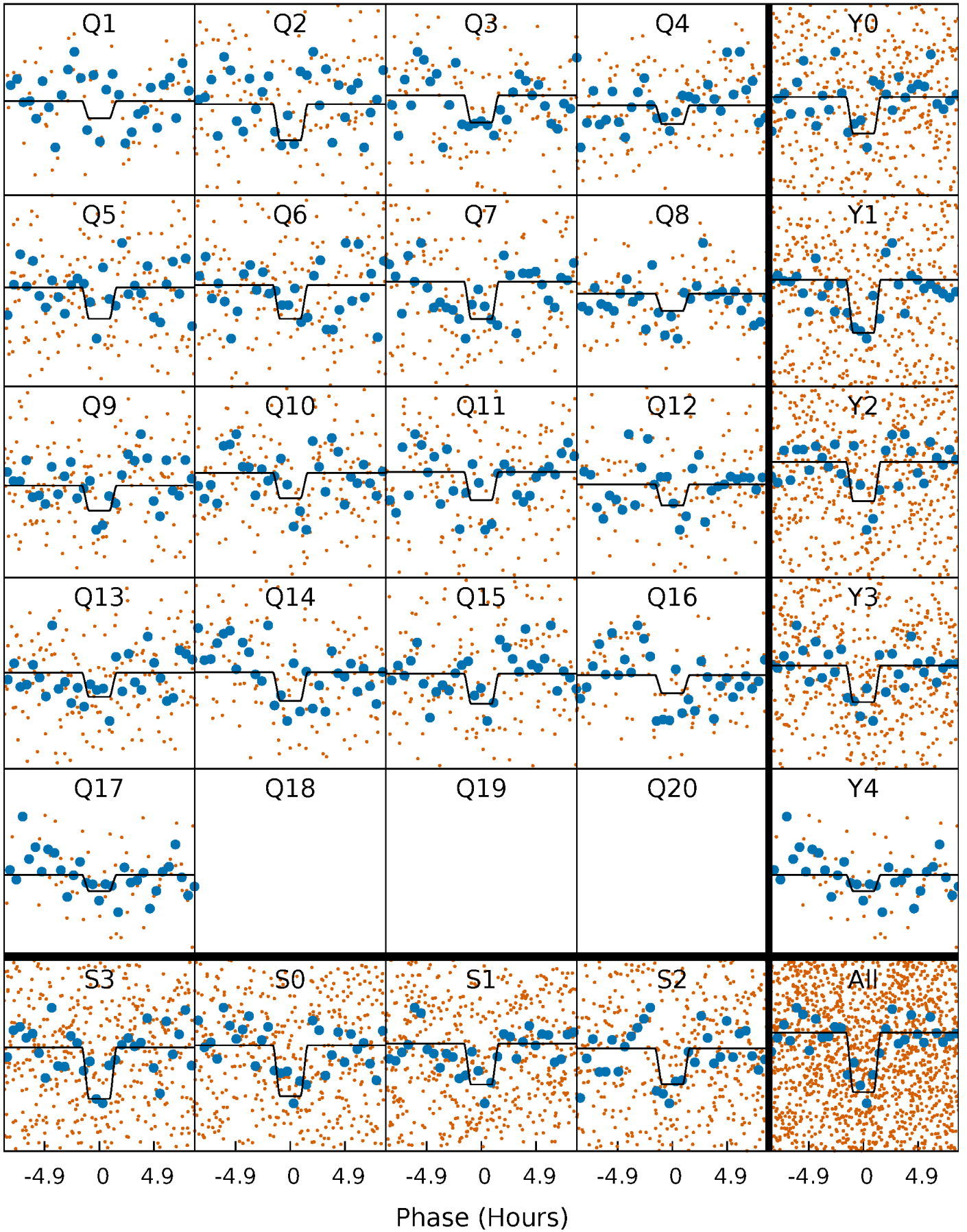
DV Quarter-Phased Transit Curves

TCE 009959093-01 $P = 19.164471$ Days $T_0 = 141.305058$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

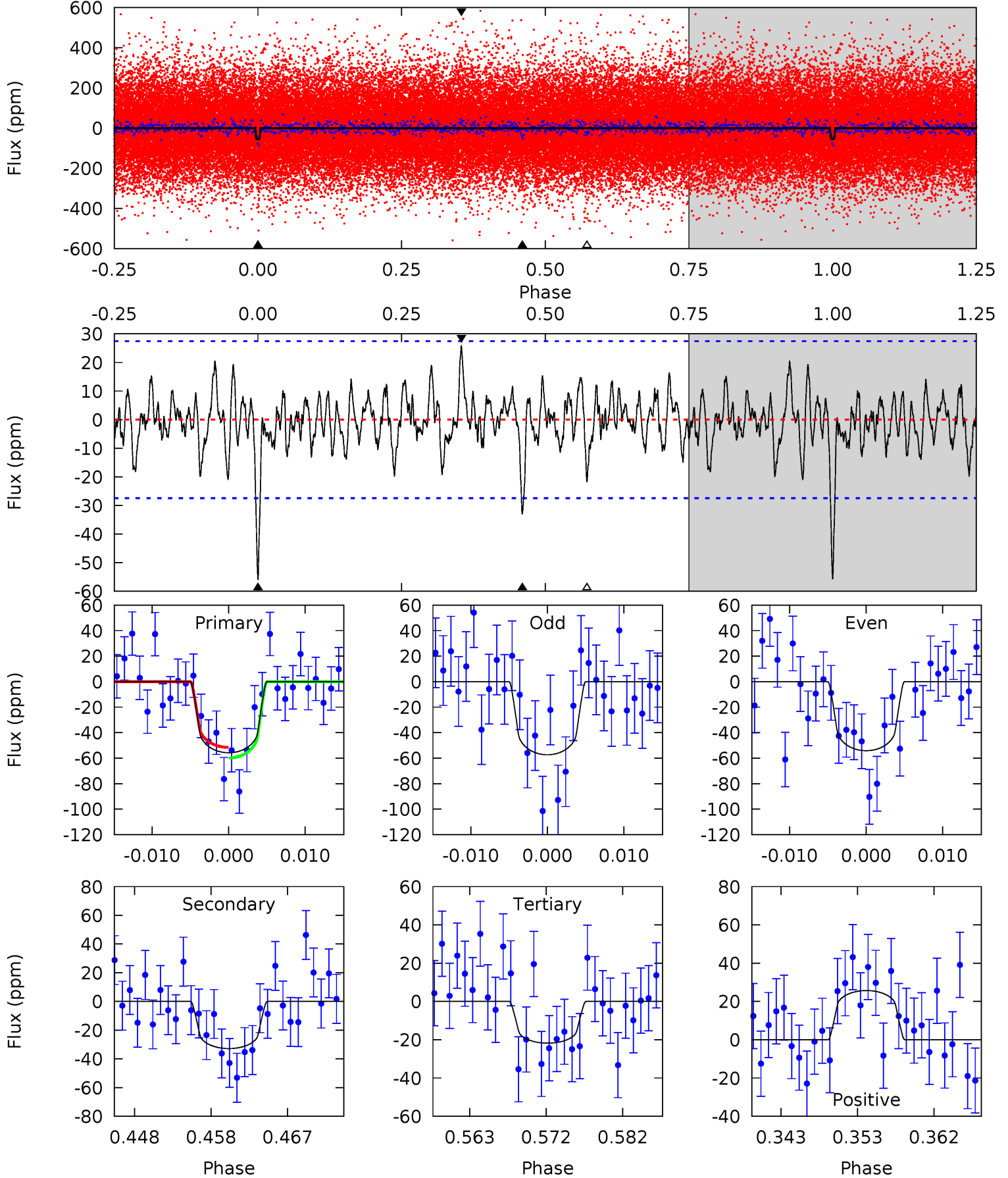
TCE 009959093-01 P= 19.164280 Days $T_0=141.315039$ (BKJD)



DV Model-Shift Uniqueness Test

009959093-01, P = 19.164471 Days, E = 122.140587 Days

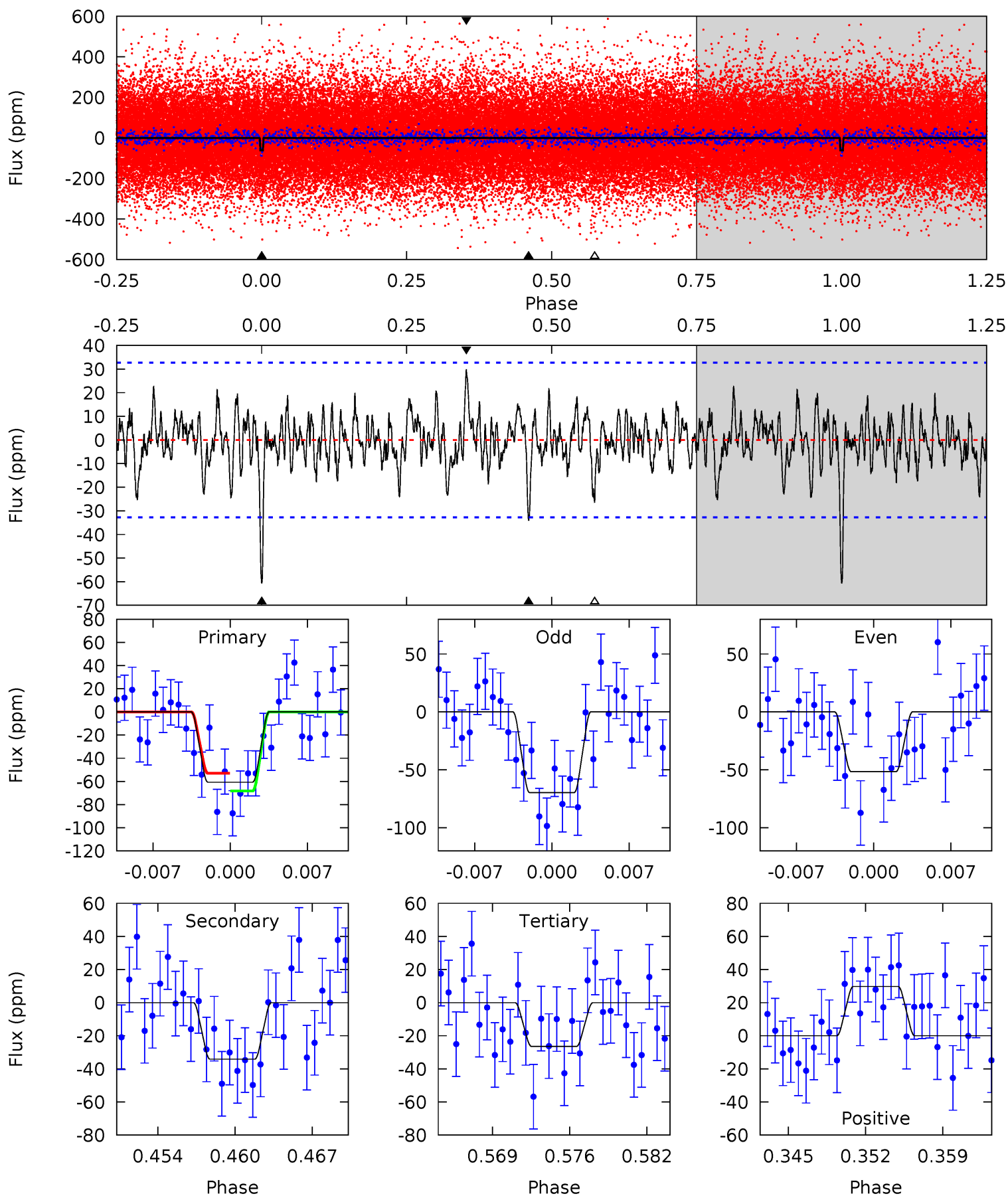
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	6.02	4.00	4.71	5.04	2.59	1.34	6.23	5.52	2.03	1.31	0.29	1.01	0.32	0.77



Alt Model-Shift Uniqueness Test

009959093-01, P = 19.164280 Days, E = 122.150759 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.46	5.32	4.13	4.63	5.10	2.71	1.33	5.33	4.82	1.19	0.69	1.41	1.04	0.33	1.20



Stellar Parameters For KIC 009959093

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5877^{+78}_{-78}	$3.860^{+0.300}_{-0.100}$	$0.200^{+0.150}_{-0.150}$	$2.234^{+0.314}_{-0.733}$	$1.319^{+0.129}_{-0.210}$	$0.167^{+0.333}_{-0.051}$
	+1%/-1%	+8%/-3%	+75%/-75%	+14%/-33%	+10%/-16%	+200%/-31%
Source	SPE90	FLK73	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 009959093-01 / KOI 7264.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-33 ± 5	$1.94^{+1.52}_{-1.08}$	1365^{+66}_{-121}	4863^{+2523}_{-911}	113^{+470}_{-78}
Alt.	-34 ± 6	$2.10^{+1.29}_{-1.22}$	1363^{+68}_{-107}	4841^{+2405}_{-808}	101^{+474}_{-64}

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

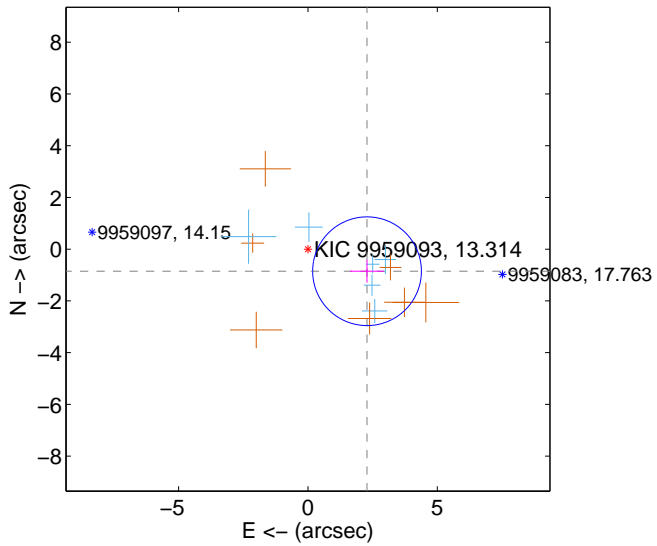
Supplemental centroid analysis for 009959093-01. Kepler magnitude: 13.31. Transit SNR 7.71

There are 6 quarters with good PRF difference image offsets

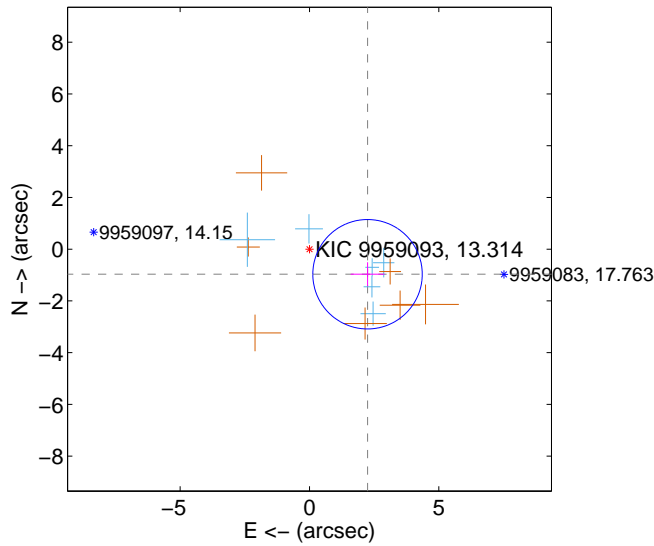
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.438 ± 0.700	3.48	-2.284 ± 0.653	-0.853 ± 0.442
PRF-fit source offset from KIC position	2.445 ± 0.705	3.47	-2.244 ± 0.652	-0.969 ± 0.463
photometric centroid source offset	4.08 ± 1.24	3.29	-2.27 ± 1.36	-3.39 ± 1.18

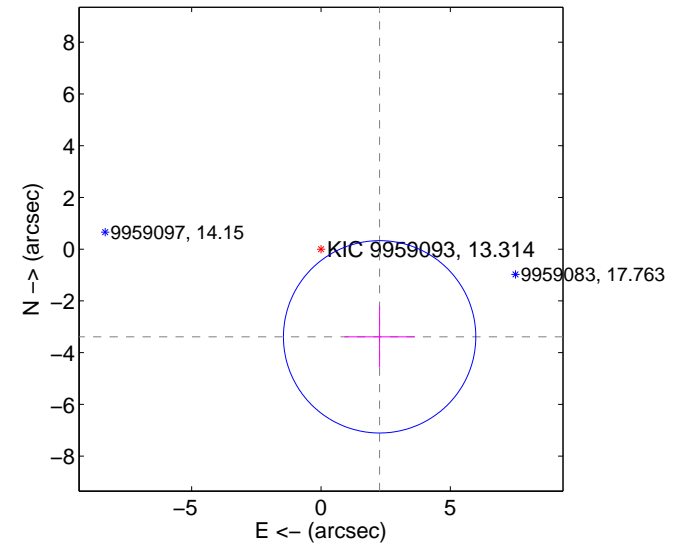
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

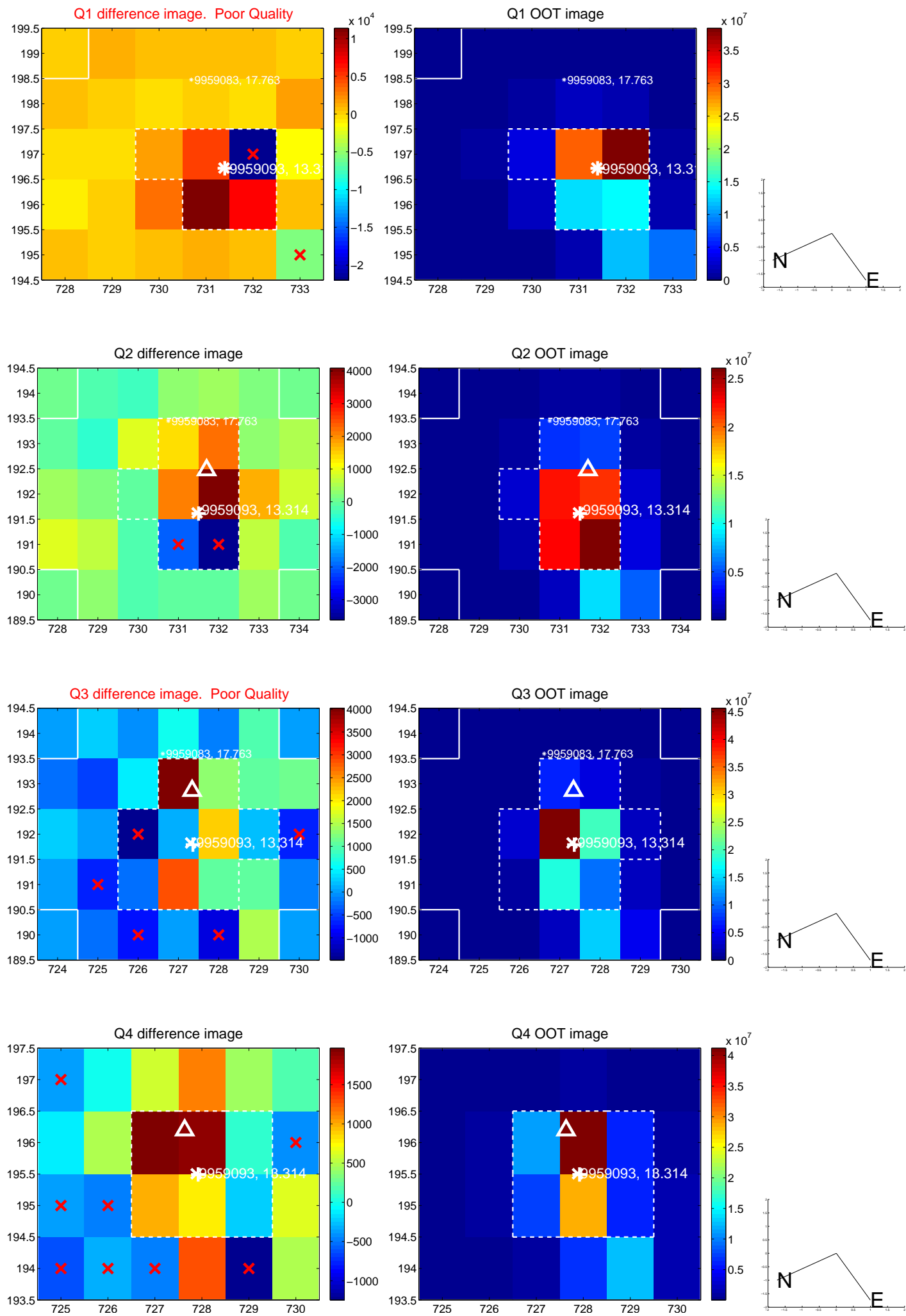


offset from photometric centroids

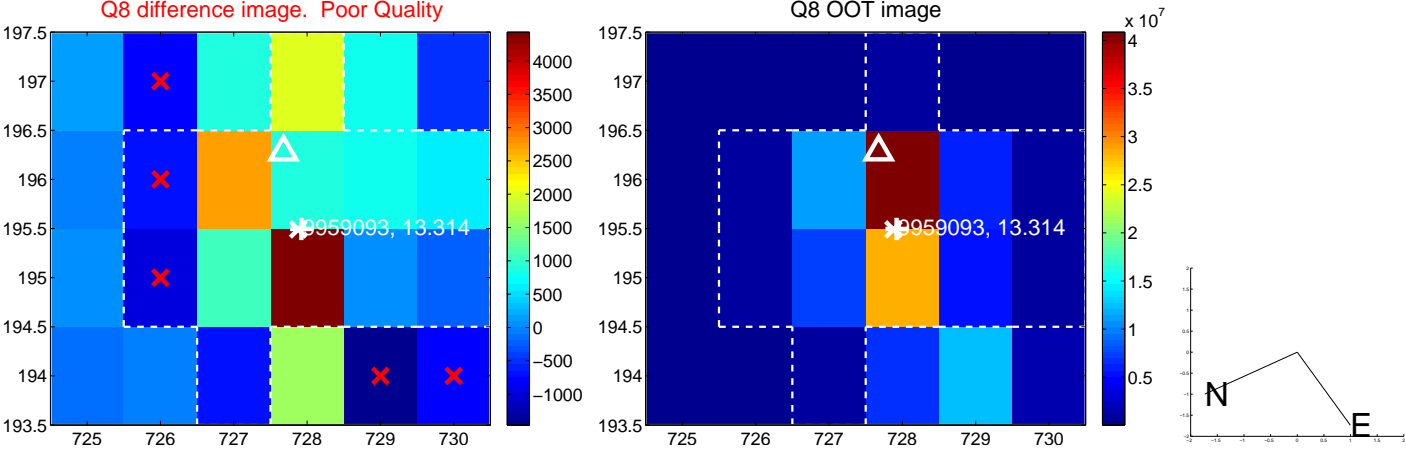
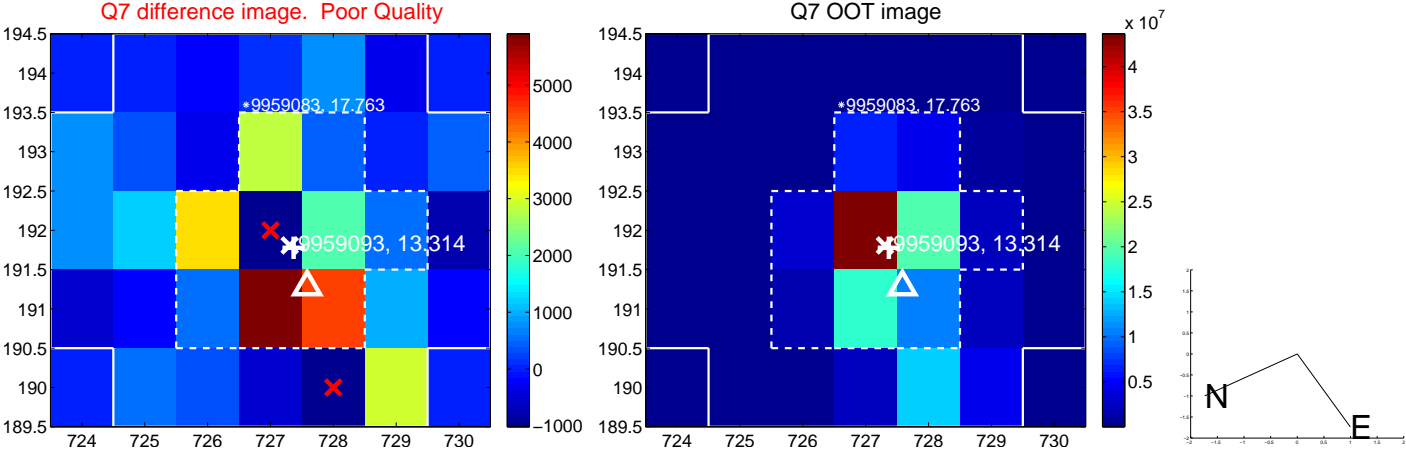
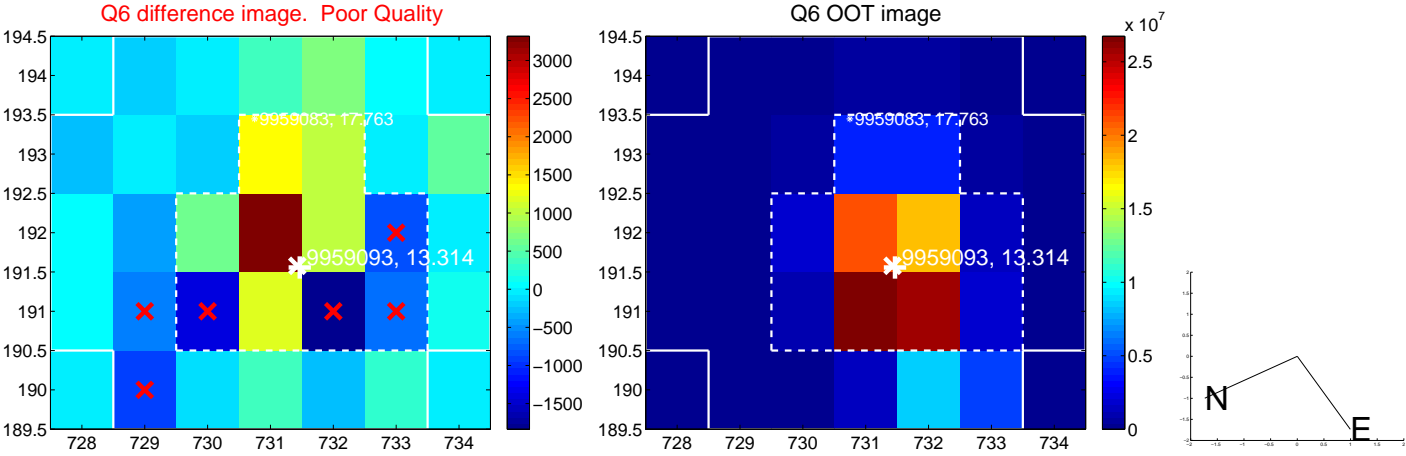
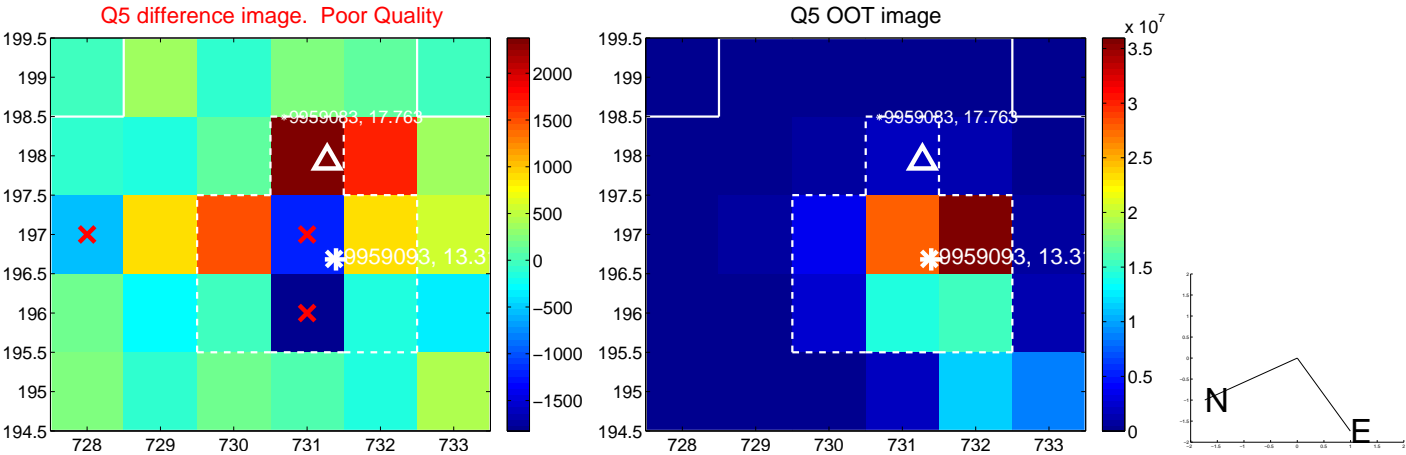


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

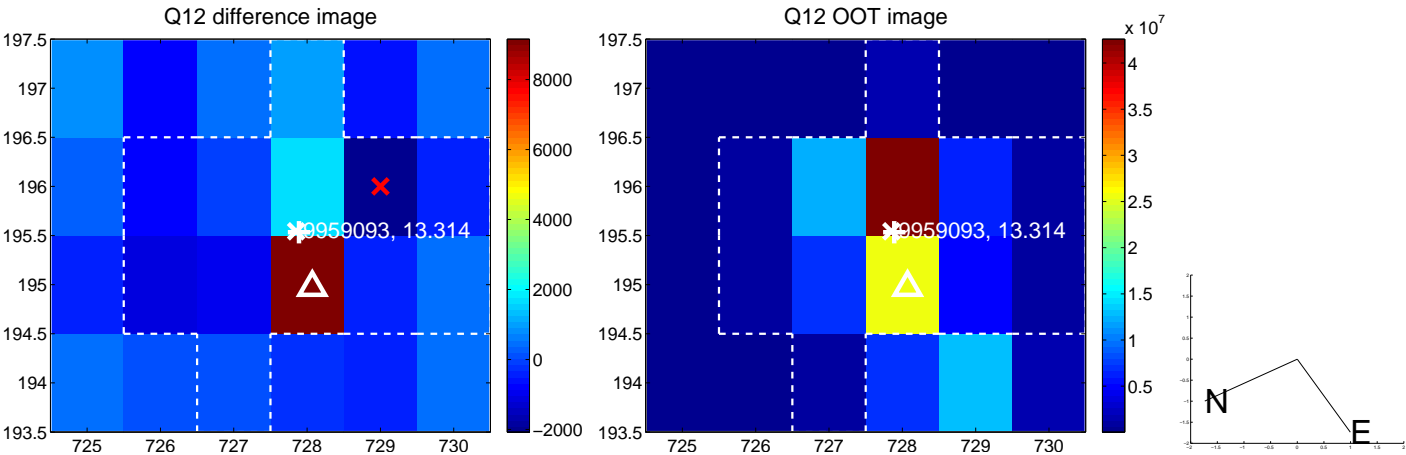
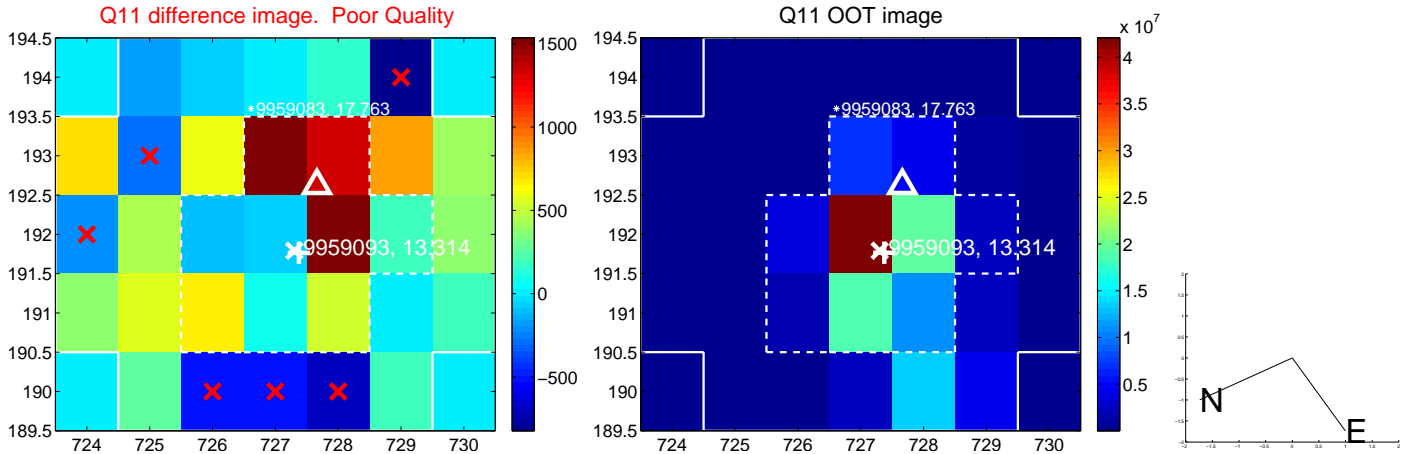
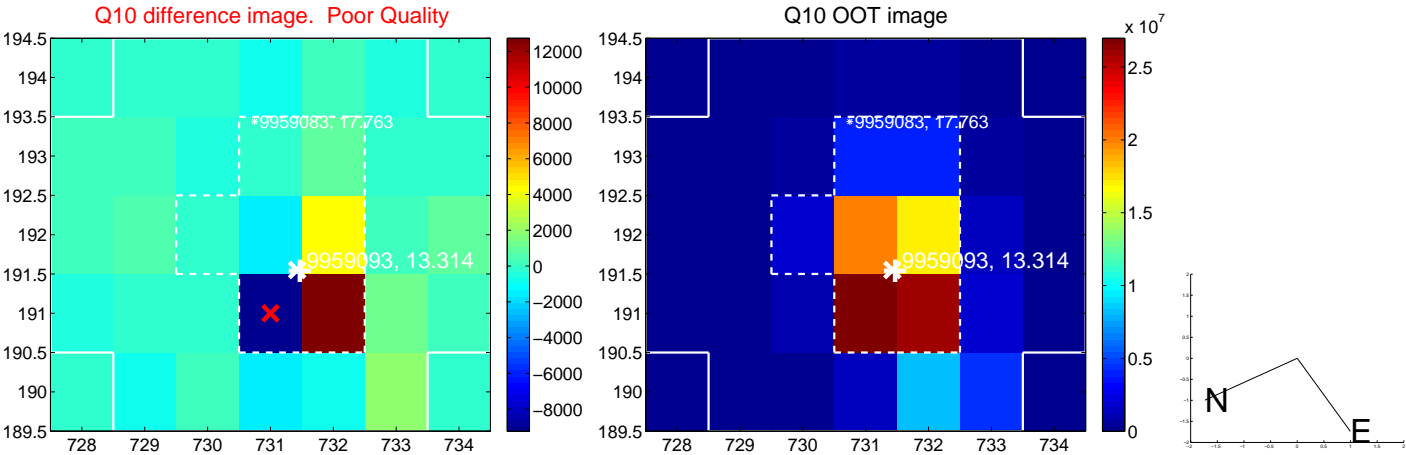
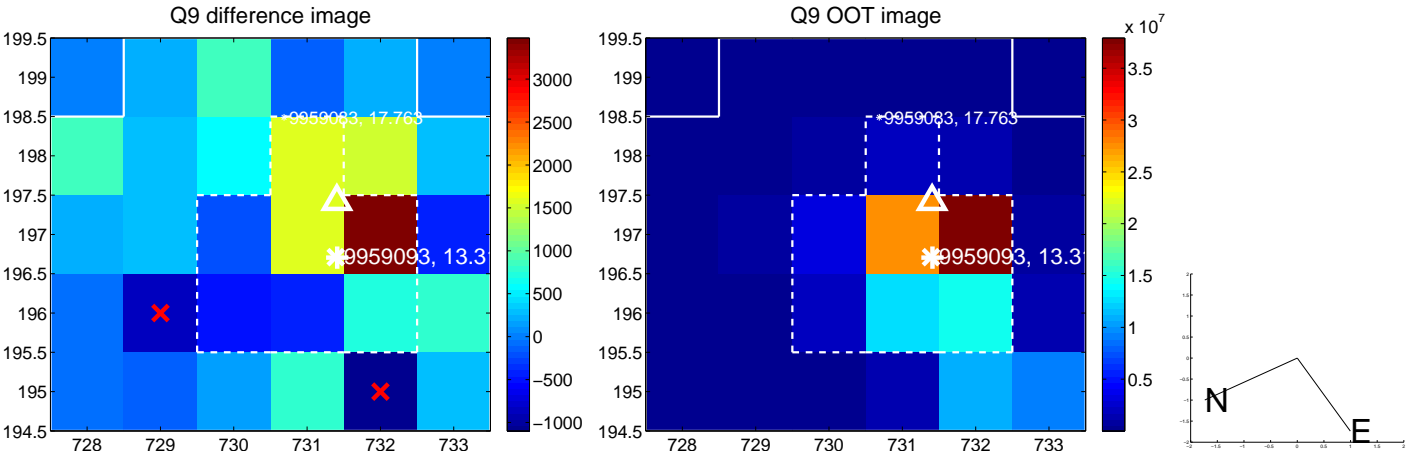
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



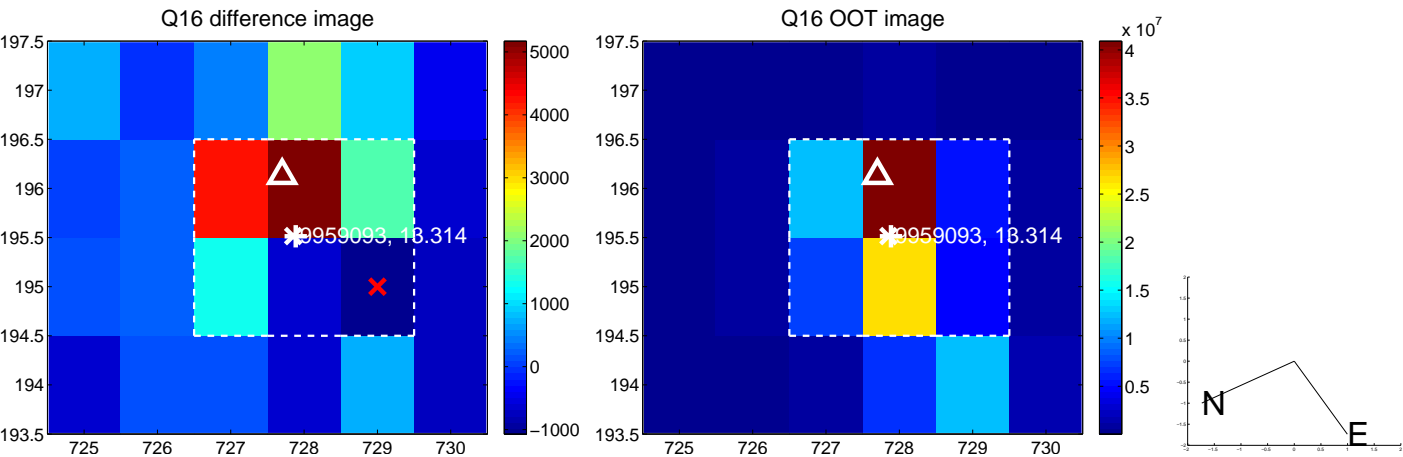
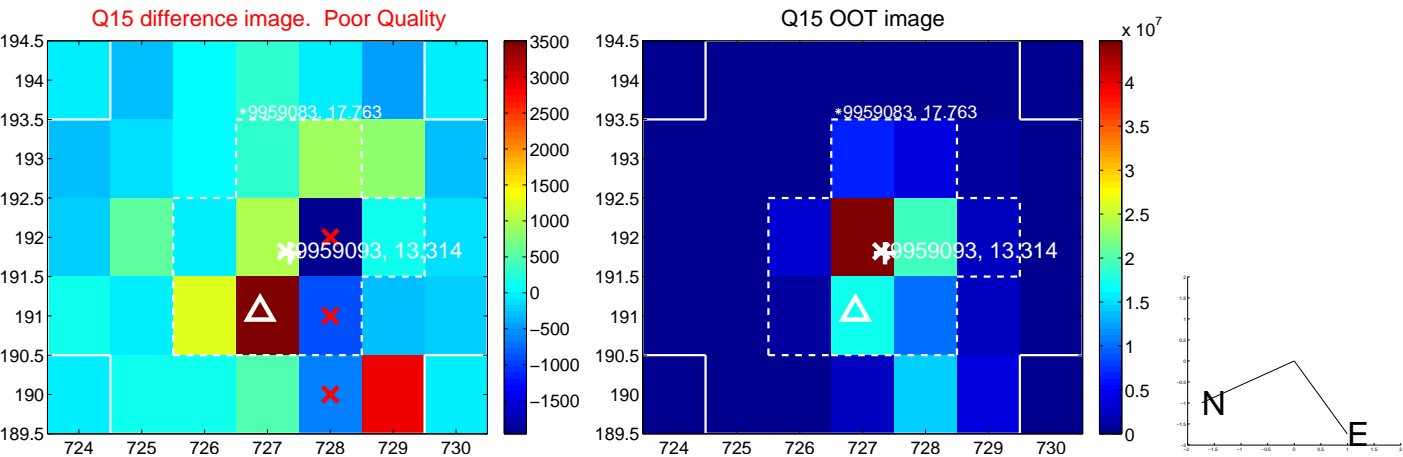
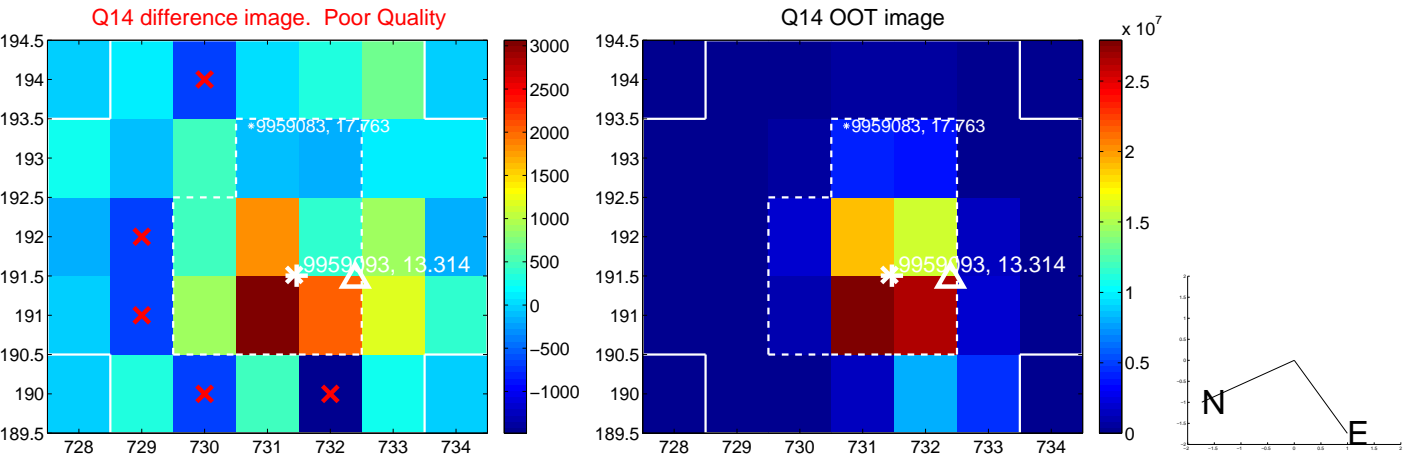
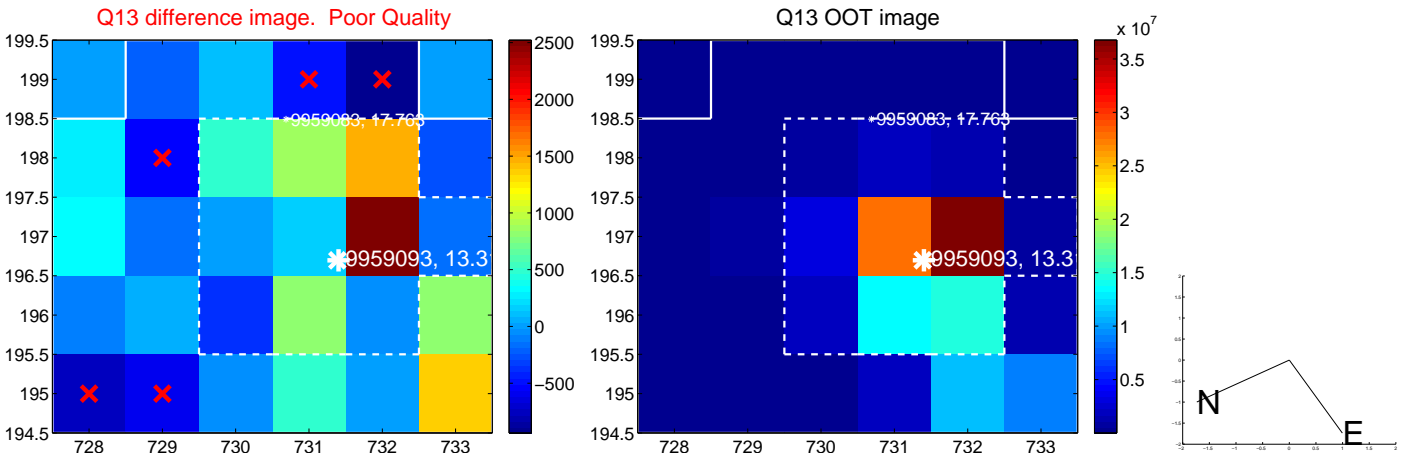
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



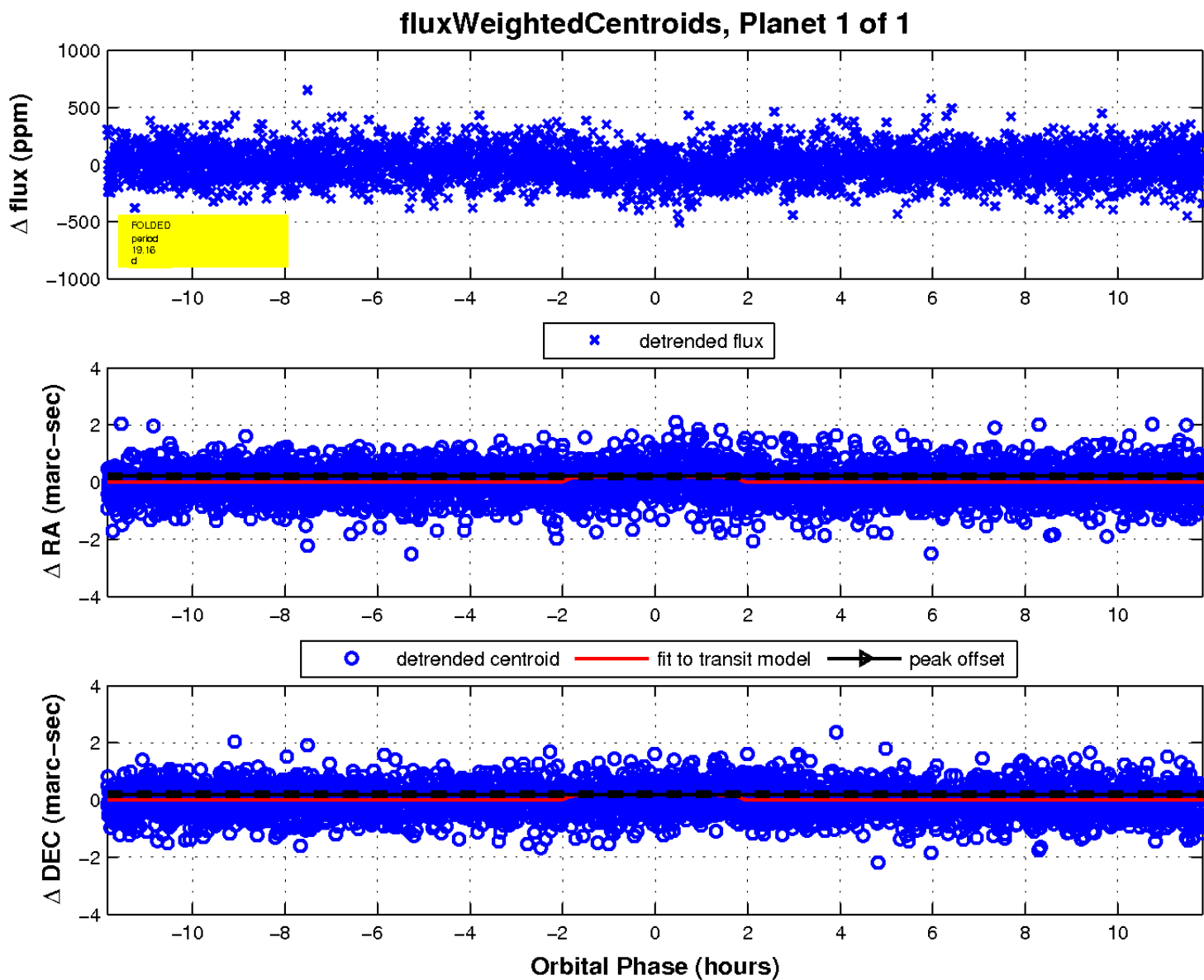
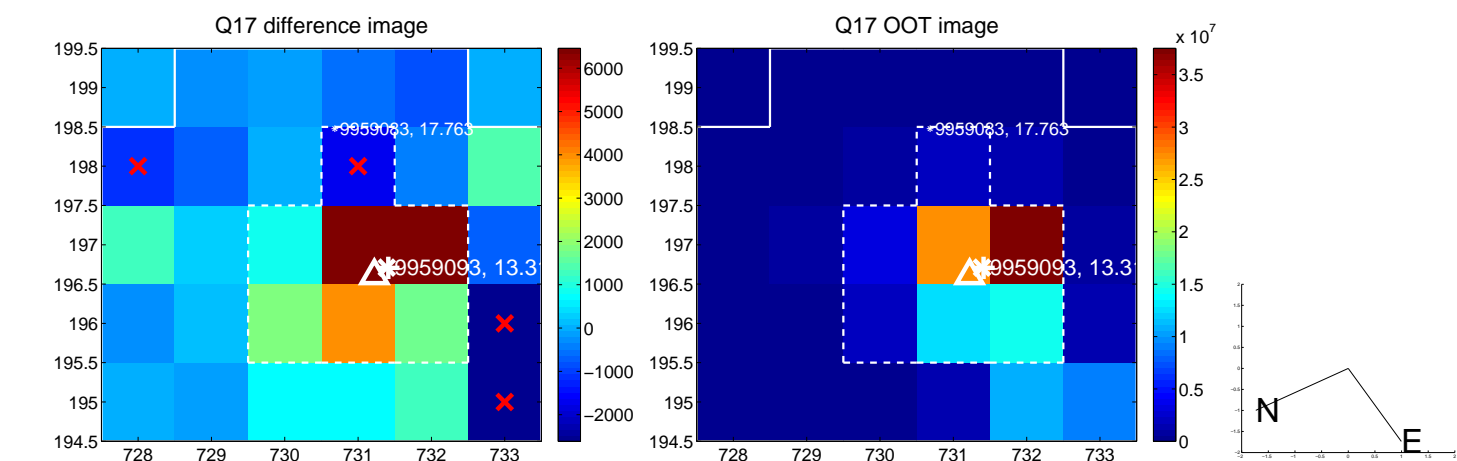
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UKIRT Image

Declination

