

KIC 010002049

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})
010002049-01	OBS	7270.01	19.252296	144.888378	200.1	2.571	7.6	8.4	0.95	6060	1.57	54.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010002049-01	OBS	PC	1.00	0	0	0	0	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.

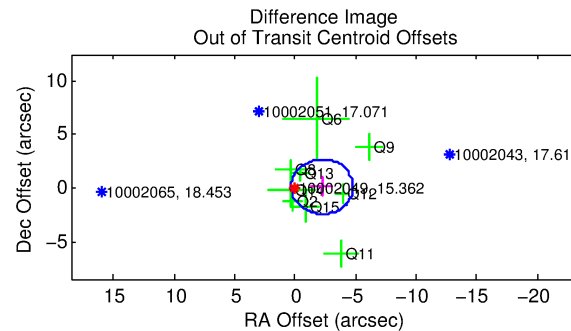
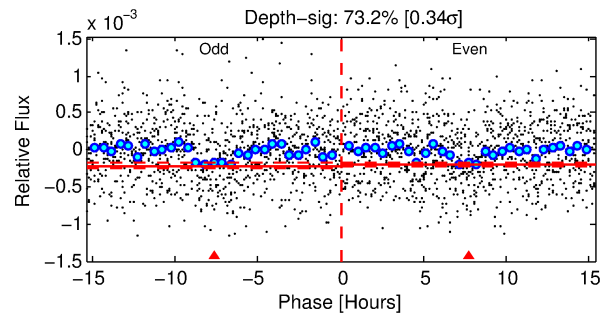
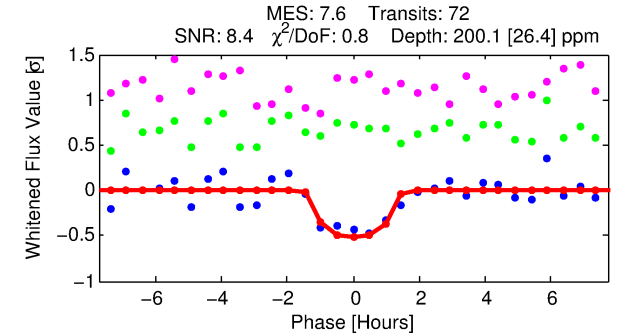
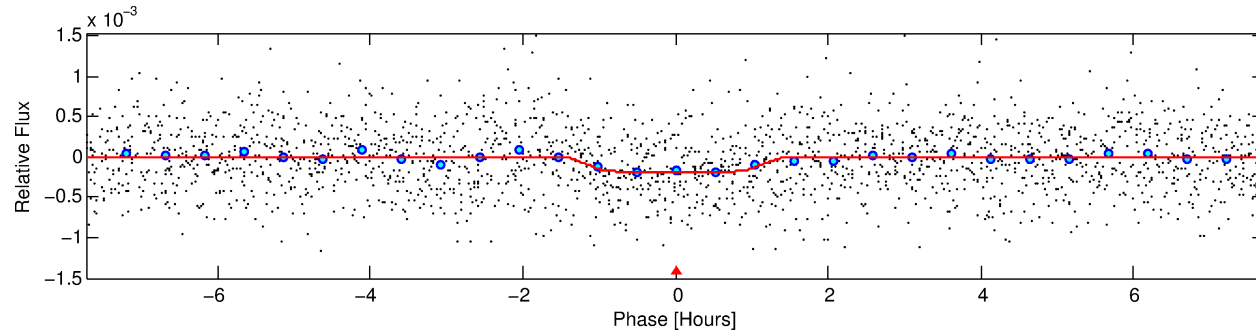
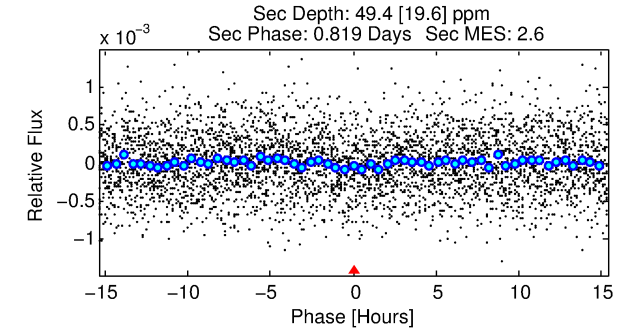
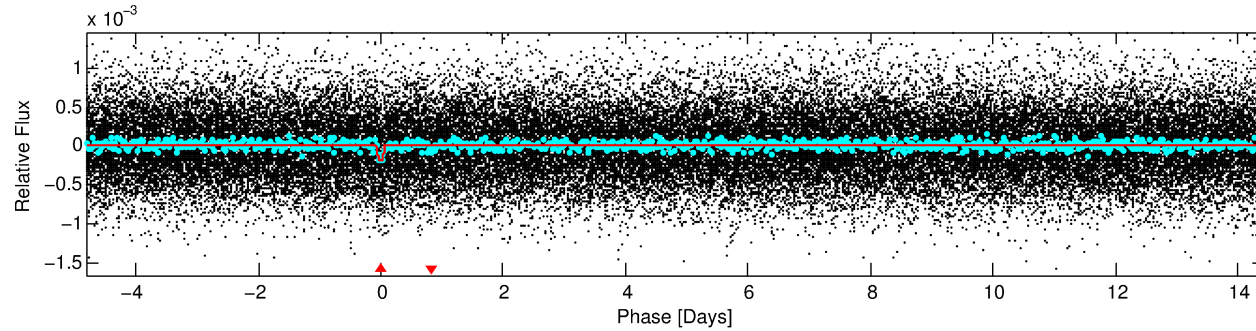
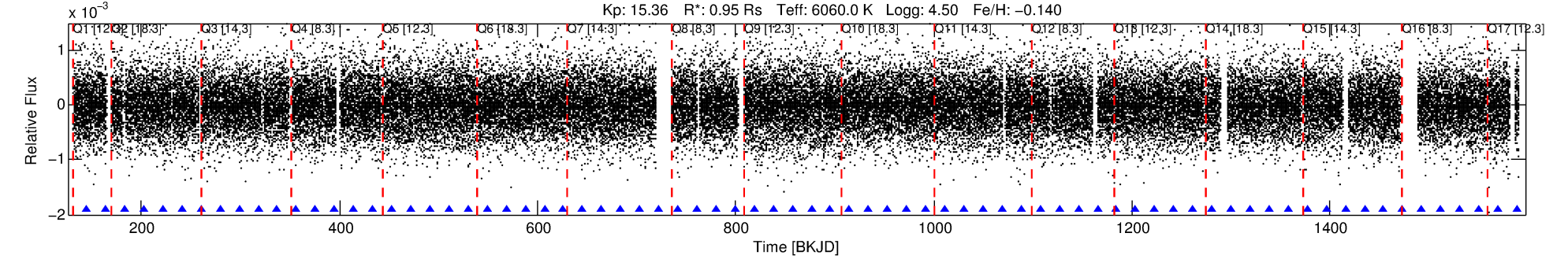
Ephemeris Match Information For 010002049-01

No Significant Match Found

DV One-Page Summary

KIC: 10002049 Candidate: 1 of 1 Period: 19.252 d

KOI: K07270.01 Corr: 0.751



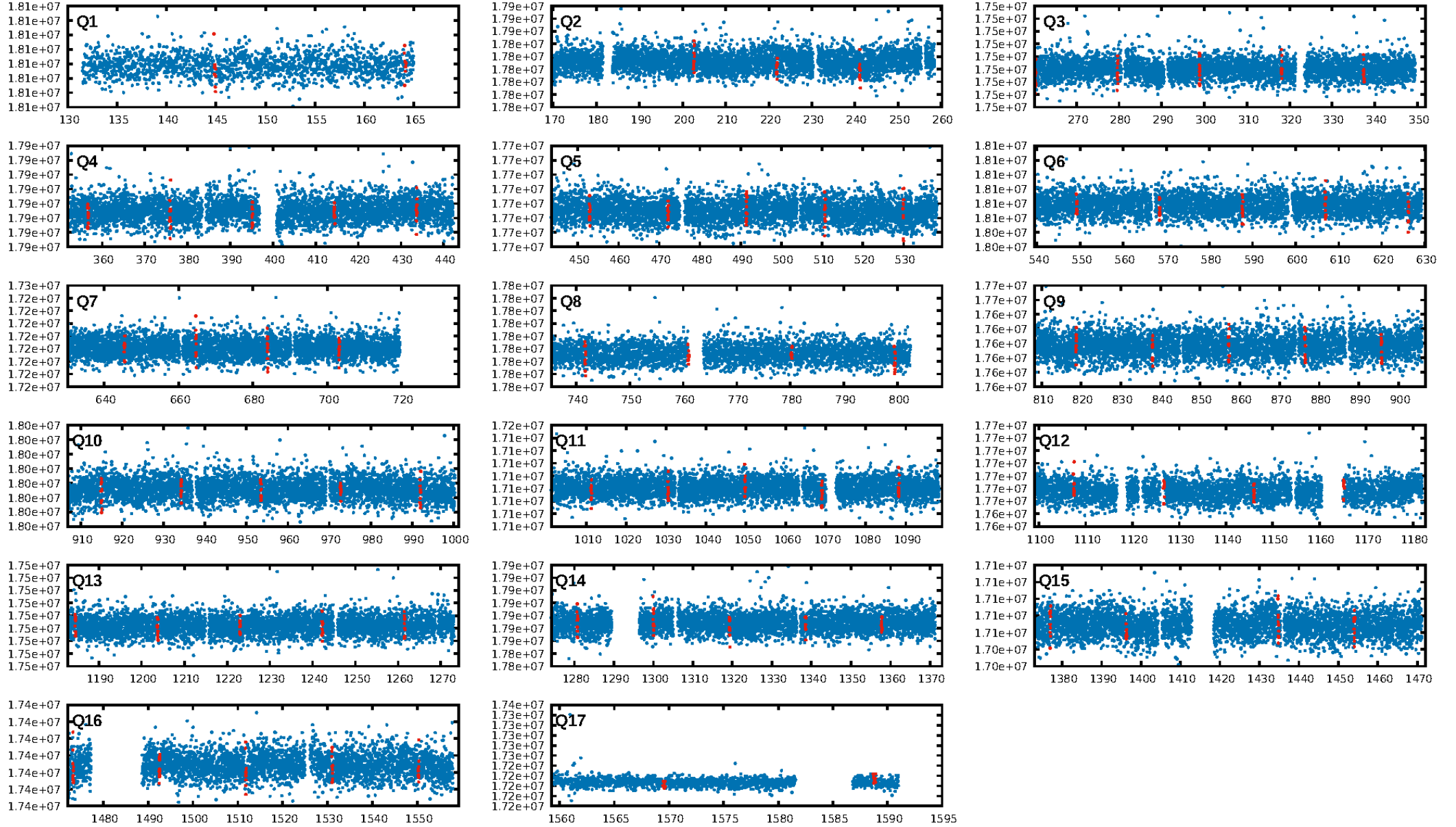
DV Fit Results:

Period = 19.25230 [0.00019] d
Epoch = 144.8884 [0.0081] BKJD
Rp/R* = 0.0151 [0.0129]
a/R* = 28.32 [123.91]
b = 0.89 [1.08]
Seff = 54.23 [20.92]
Teff = 692 [67] K
Rp = 1.57 [1.41] Re
a = 0.1423 [0.0352] AU
Ag = 222.53 [397.27] [0.56σ]
Teffp = 4132 [1811] K [1.90σ]

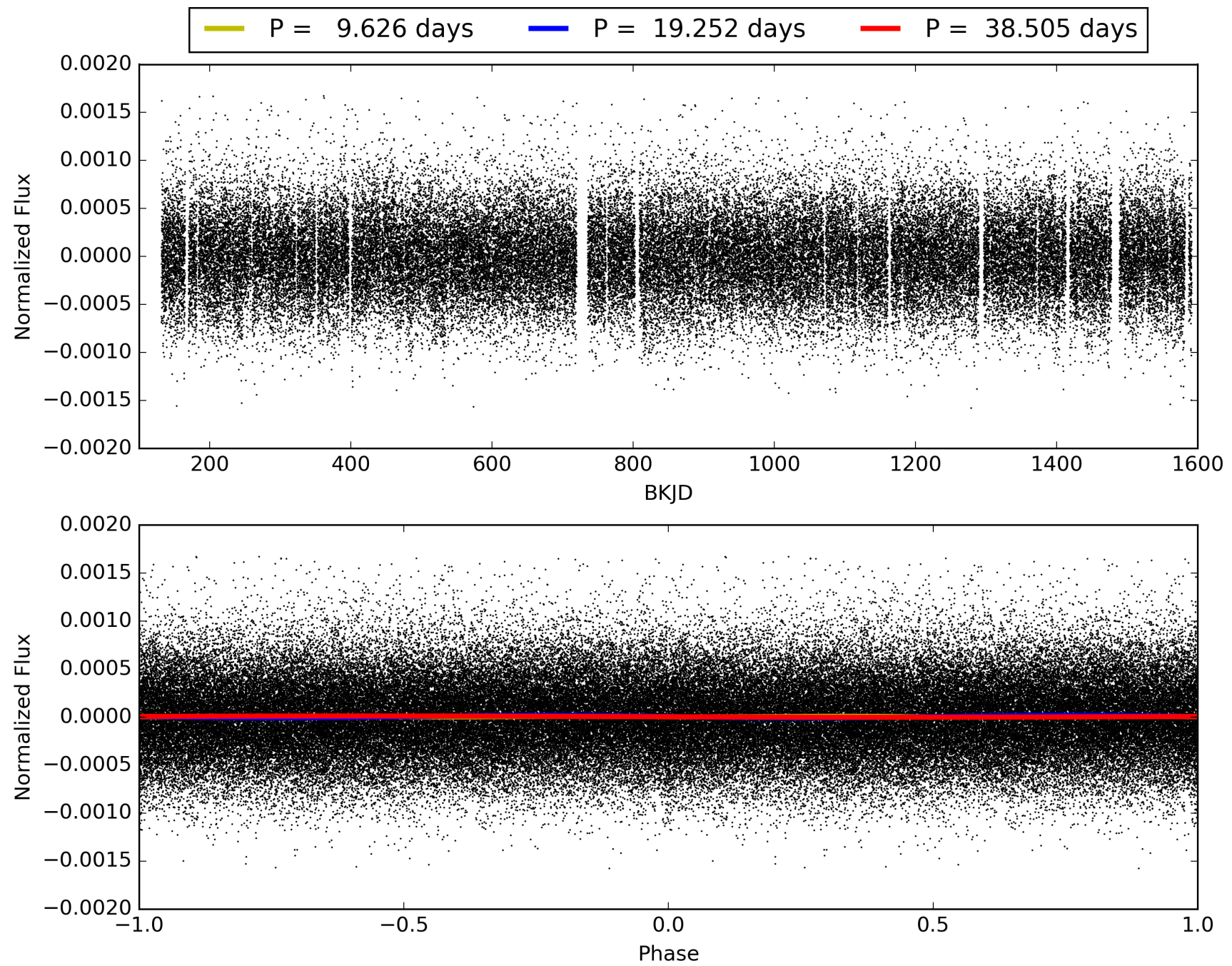
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.18e-14
RollingBand-fgt: 1.00 [68/68]
GhostDiagnostic-chr: 14.39
Centroid-sig: 0.7%
Centroid-so: 3.018 arcsec [1.89σ]
OotOffset-rm: 2.228 arcsec [2.61σ]
KicOffset-rm: 2.168 arcsec [2.47σ]
OotOffset-st: 3/2/2/2 [9]
KicOffset-st: 3/2/2/2 [9]
DiffImageQuality-fgm: 0.33 [3/9]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 010002049-01, PDC Light Curves

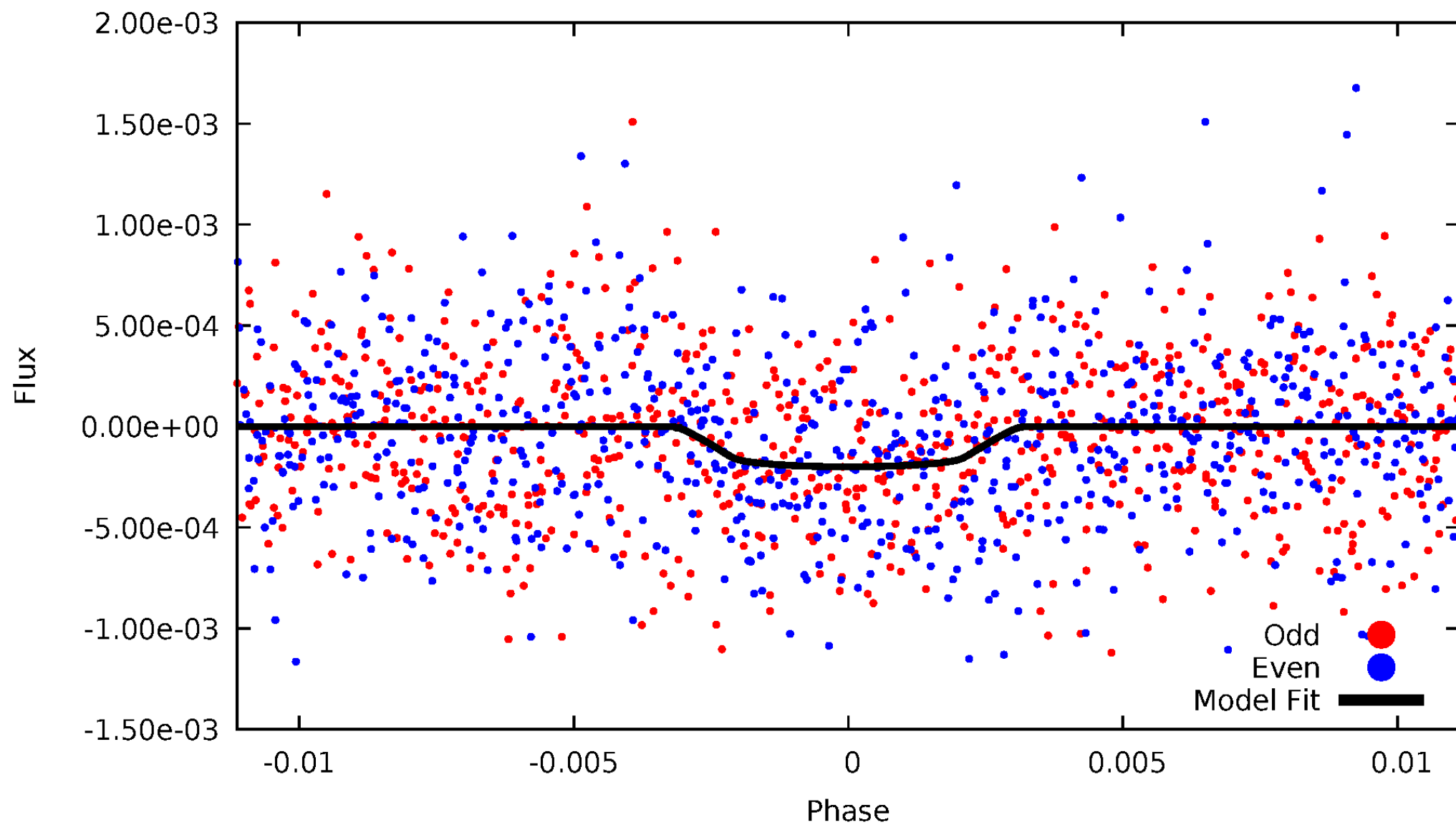


TCE 010002049-01



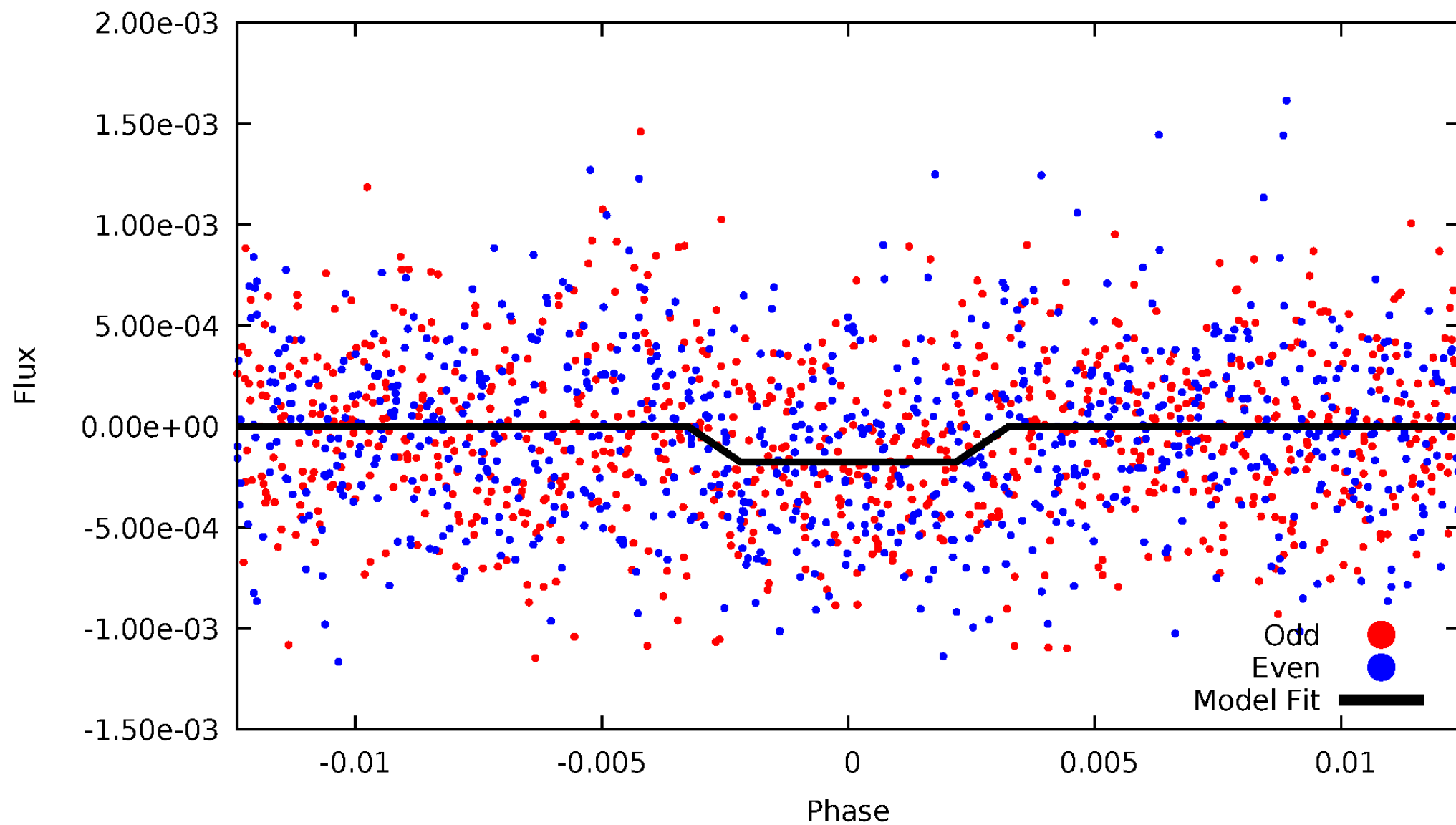
DV Odd/Even

TCE 010002049-01



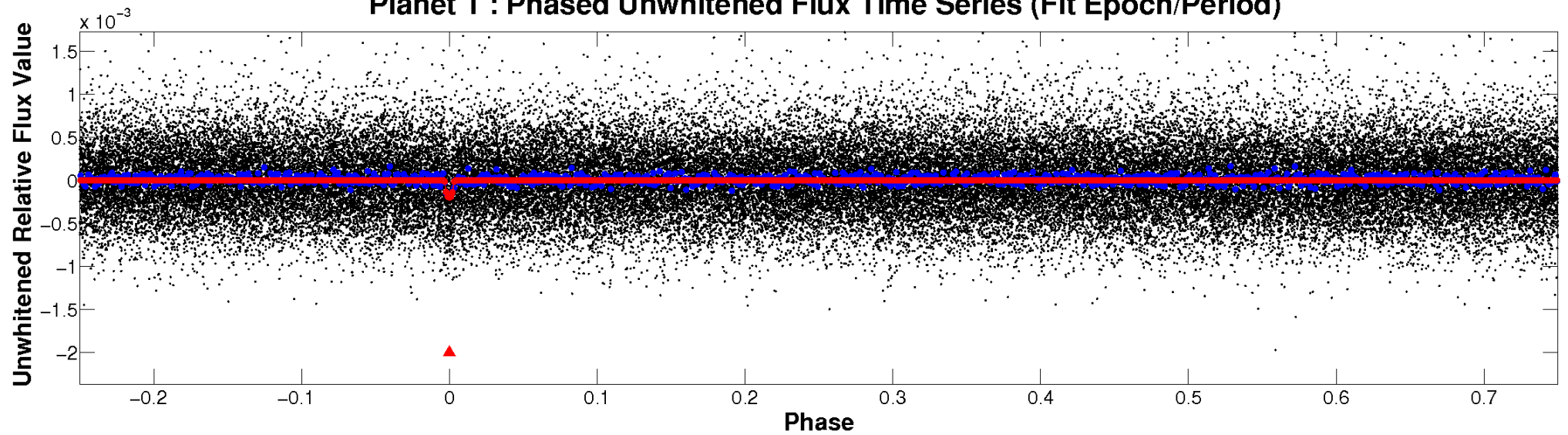
ALT Odd/Even

TCE 010002049-01

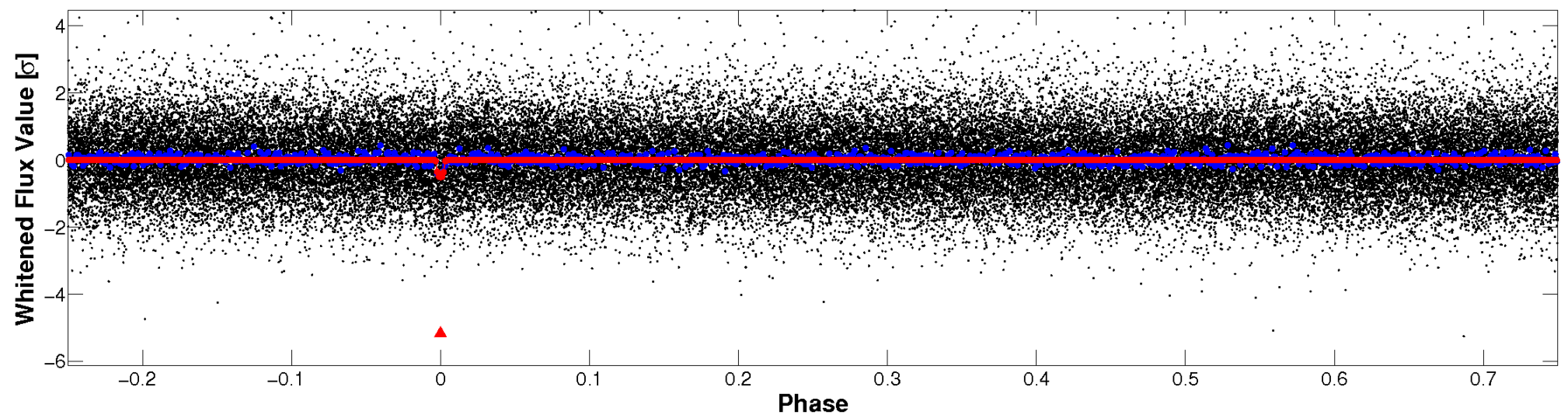


Non-Whitened Vs. Whitened Light Curve

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

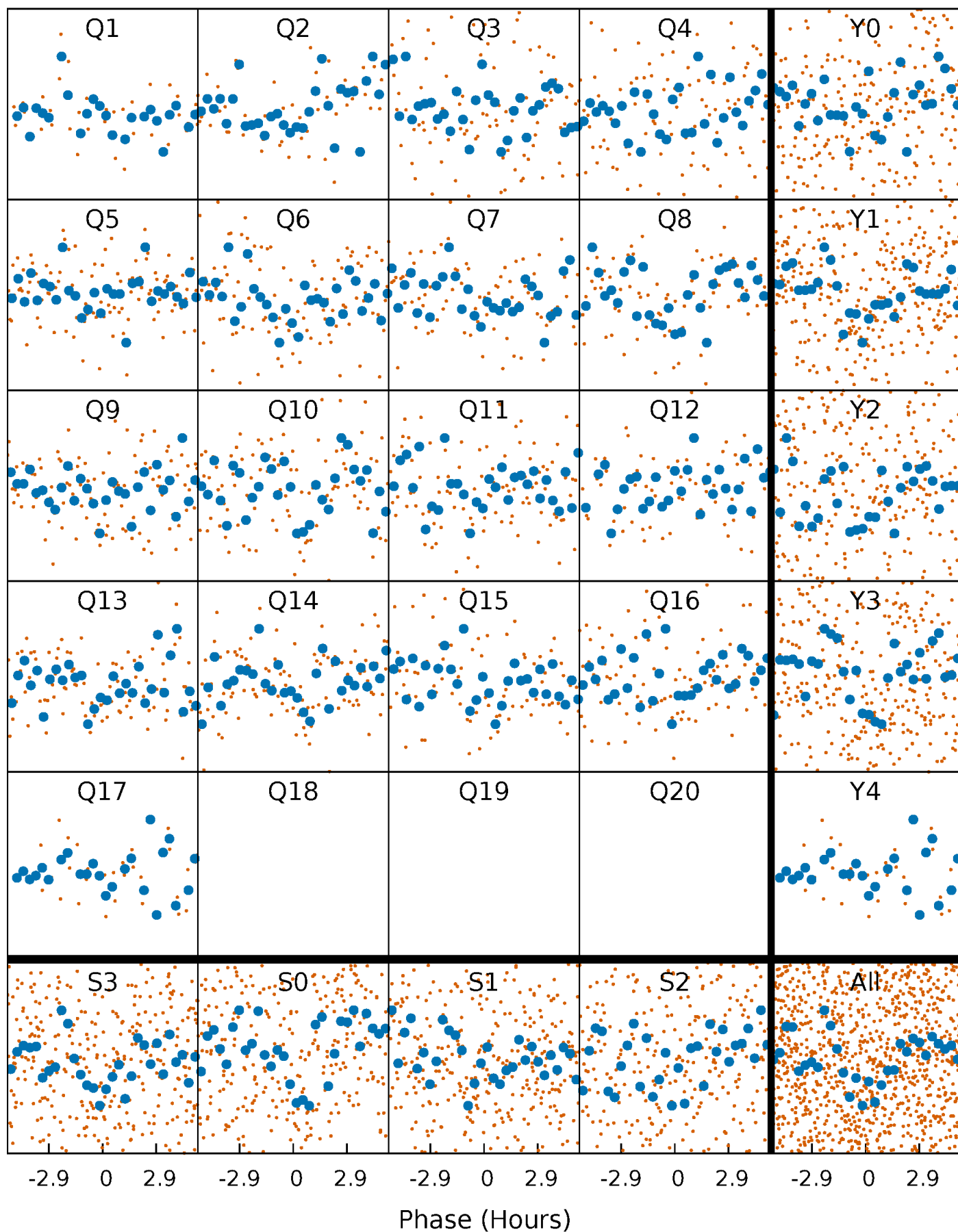


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



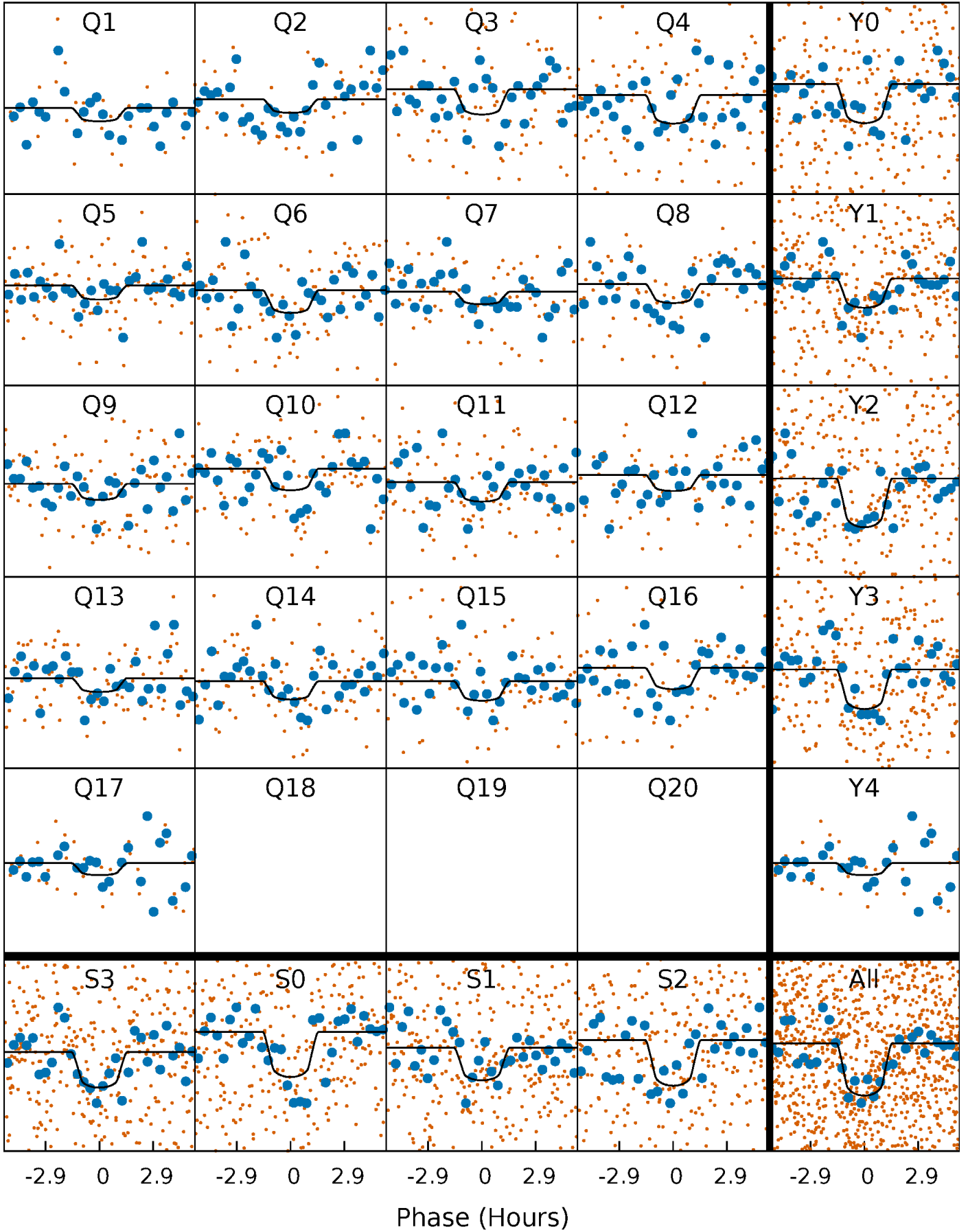
PDC Quarter-Phased Transit Curves

TCE 010002049-01 P= 19.252296 Days $T_0=144.888378$ (BKJD)



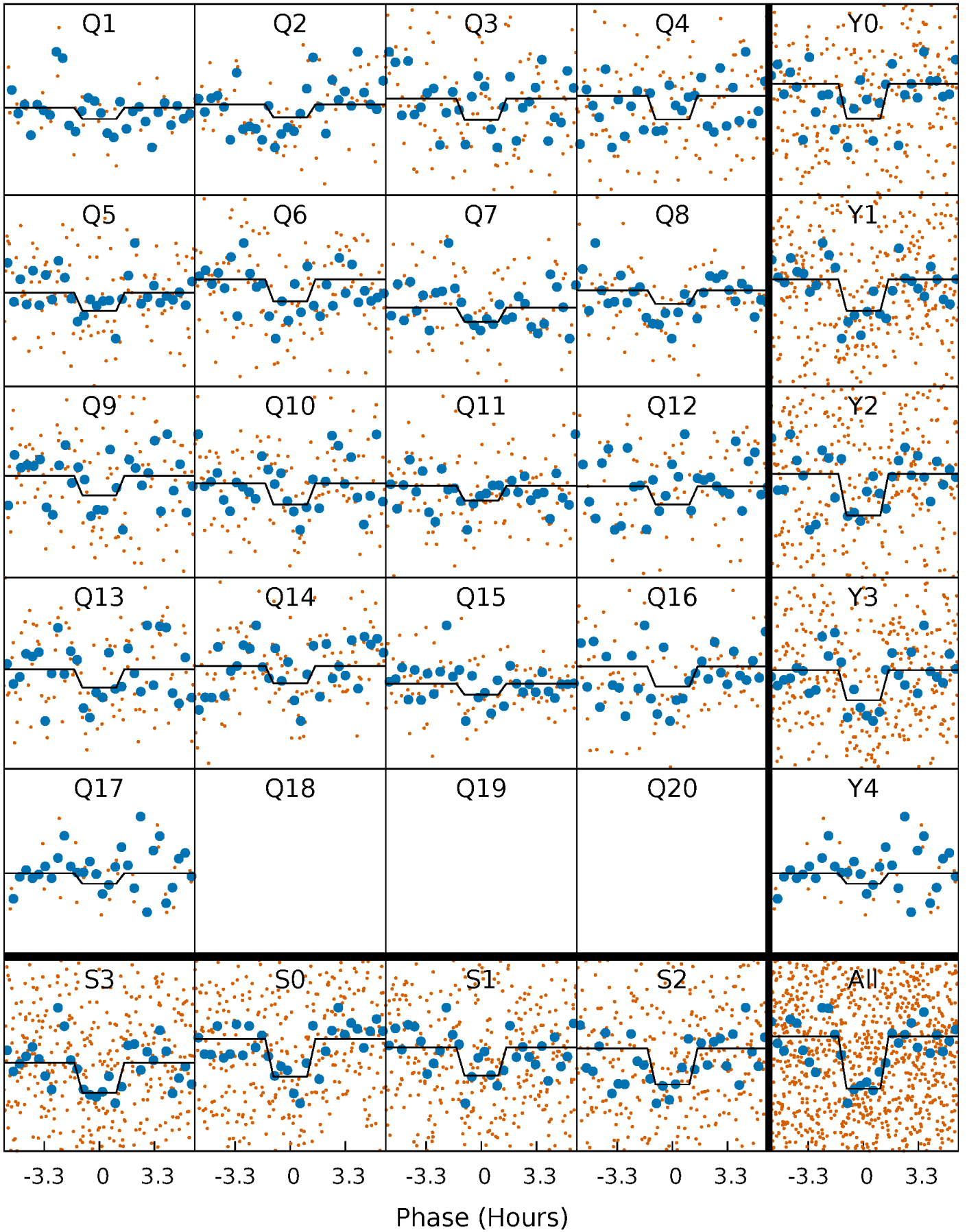
DV Quarter-Phased Transit Curves

TCE 010002049-01 P= 19.252296 Days $T_0=144.888378$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

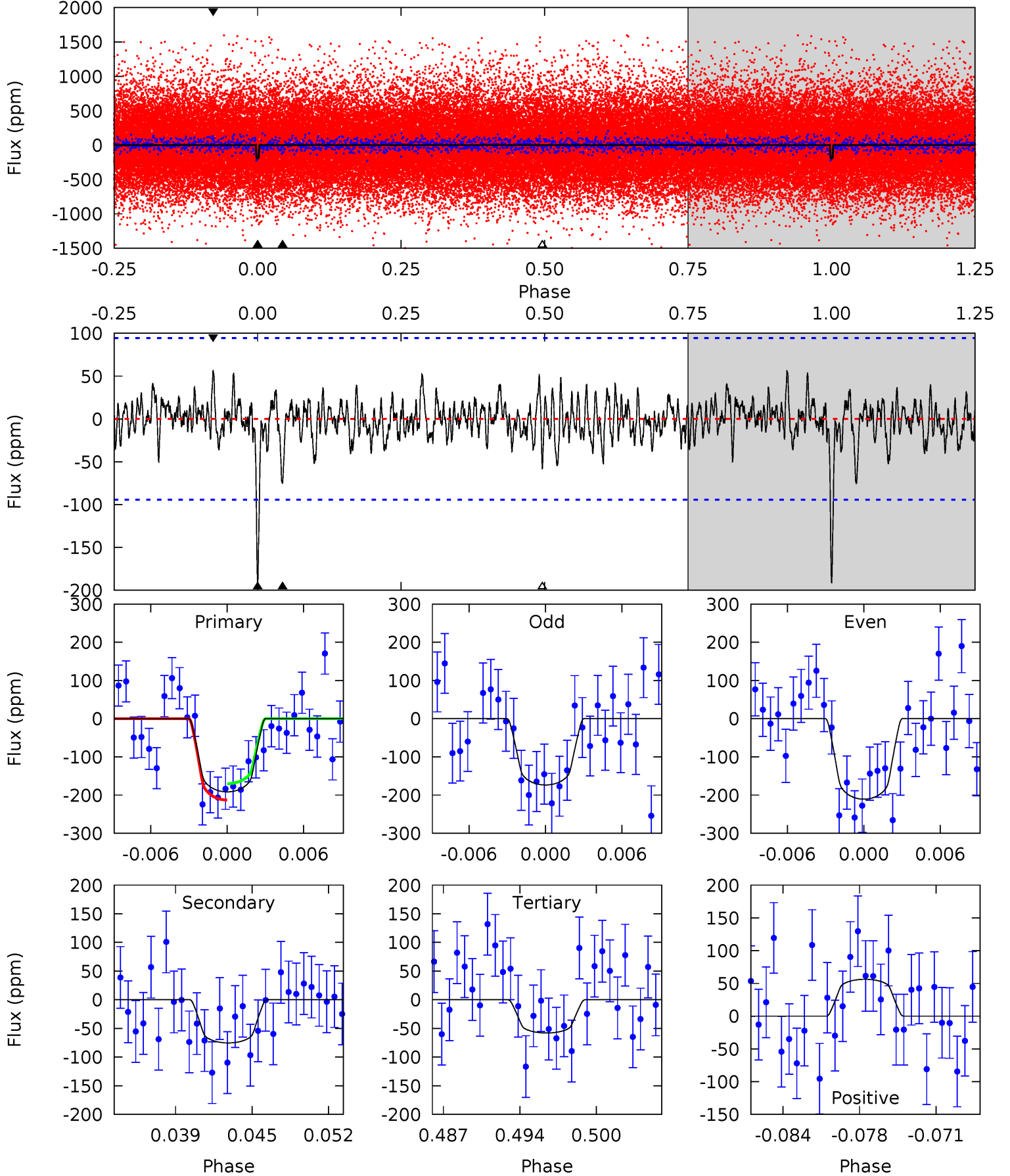
TCE 010002049-01 P= 19.252236 Days $T_0=144.895450$ (BKJD)



DV Model-Shift Uniqueness Test

010002049-01, P = 19.252296 Days, E = 125.636082 Days

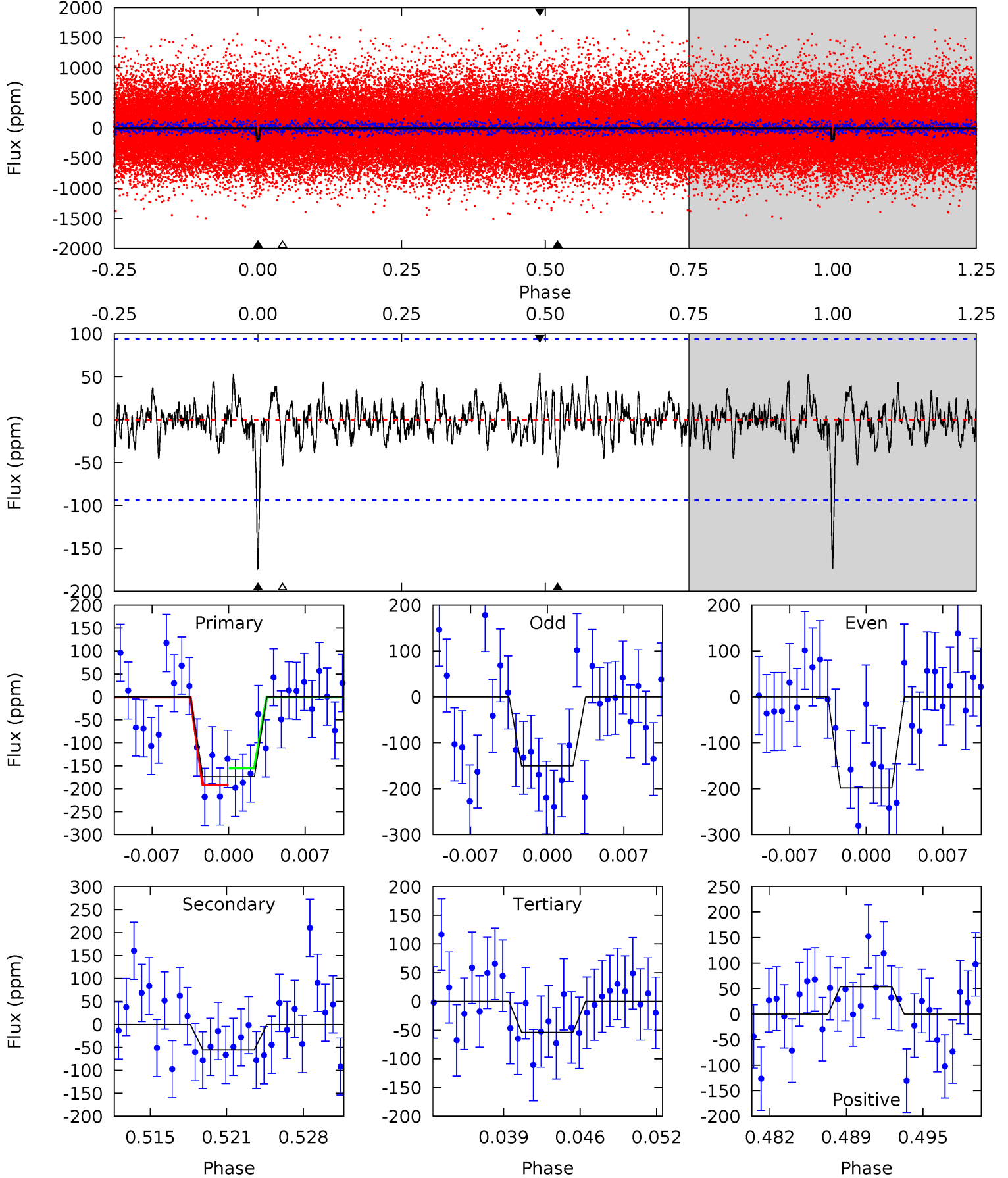
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	4.08	3.14	3.05	5.11	2.72	0.99	7.24	7.33	0.94	1.03	1.01	1.09	0.23	1.16



Alt Model-Shift Uniqueness Test

010002049-01, P = 19.252236 Days, E = 125.643214 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.44	3.02	2.90	2.92	5.11	2.72	0.93	6.54	6.52	0.12	0.10	1.30	0.98	0.24	1.01



Stellar Parameters For KIC 010002049

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6060^{+162}_{-198}	$4.495^{+0.050}_{-0.200}$	$-0.140^{+0.250}_{-0.350}$	$0.953^{+0.277}_{-0.092}$	$1.036^{+0.130}_{-0.143}$	$1.684^{+0.437}_{-0.842}$
	+3%/-3%	+1%/-4%	+179%/-250%	+29%/-10%	+13%/-14%	+26%/-50%
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 010002049-01 / KOI 7270.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-75 ± 18	$1.80^{+1.42}_{-1.11}$	988^{+64}_{-50}	4518^{+2494}_{-852}	250^{+1486}_{-175}
Alt.	-56 ± 18	$1.68^{+1.35}_{-1.03}$	983^{+72}_{-43}	4371^{+2474}_{-826}	210^{+1287}_{-149}

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 $A_{obs} \gg 1.0$

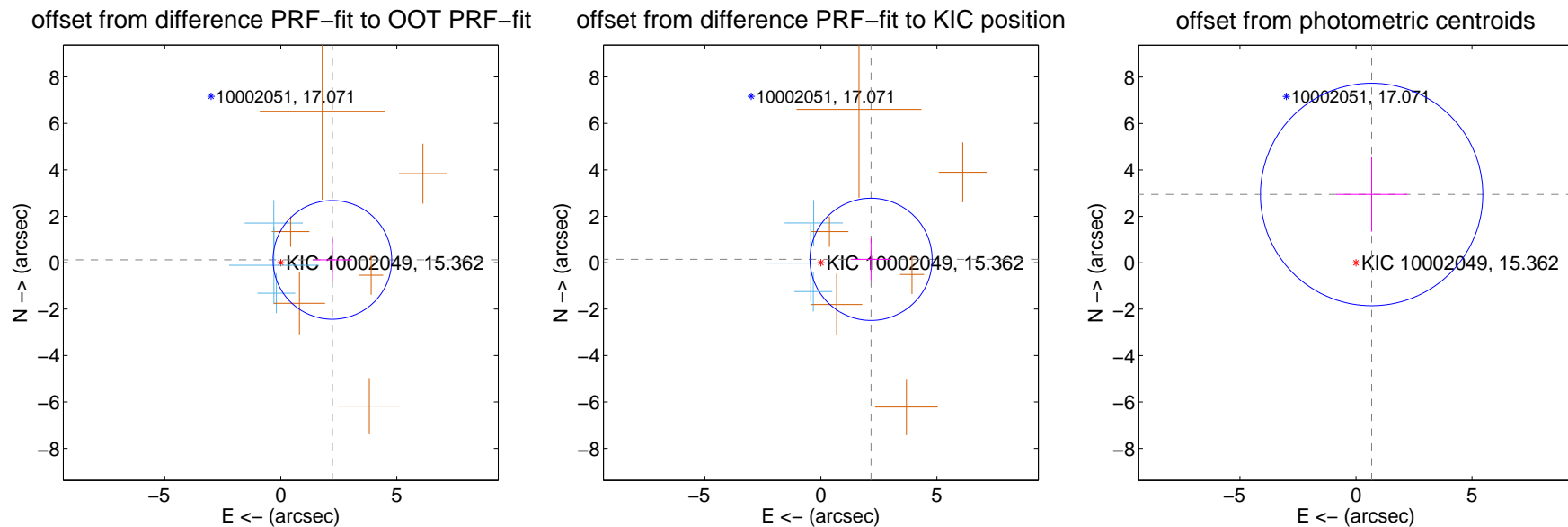
DV Centroid Data

Supplemental centroid analysis for 010002049-01. Kepler magnitude: 15.36. Transit SNR 8.36

There are 3 quarters with good PRF difference image offsets

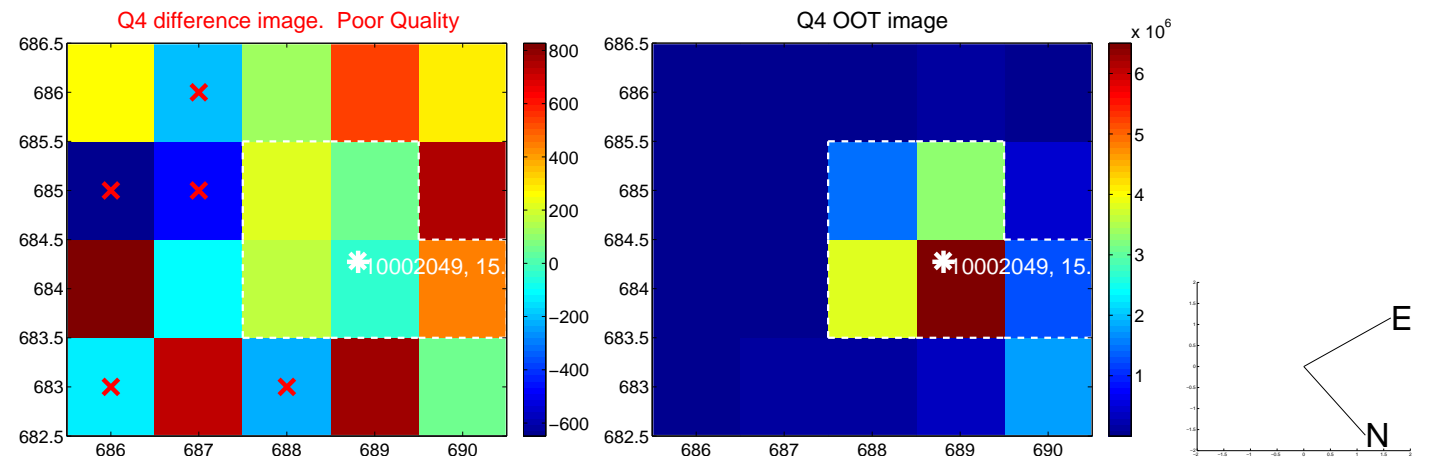
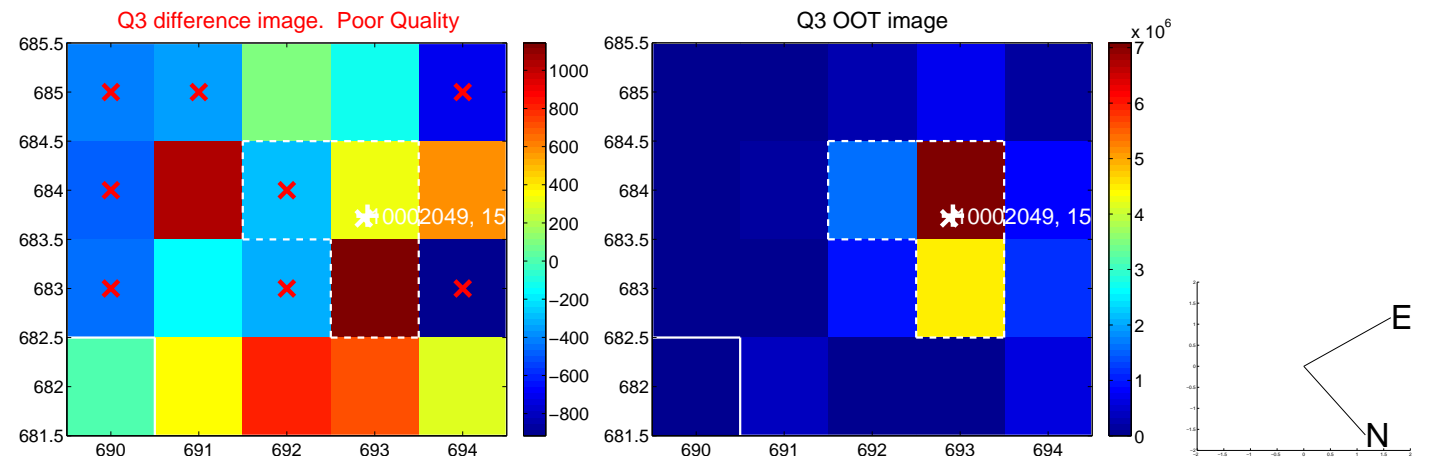
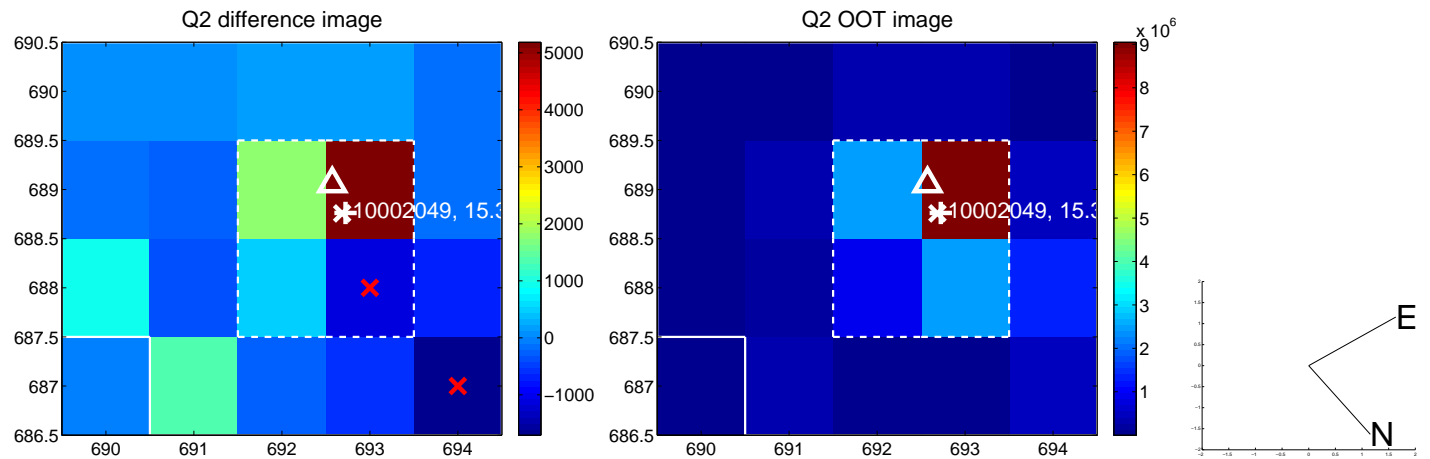
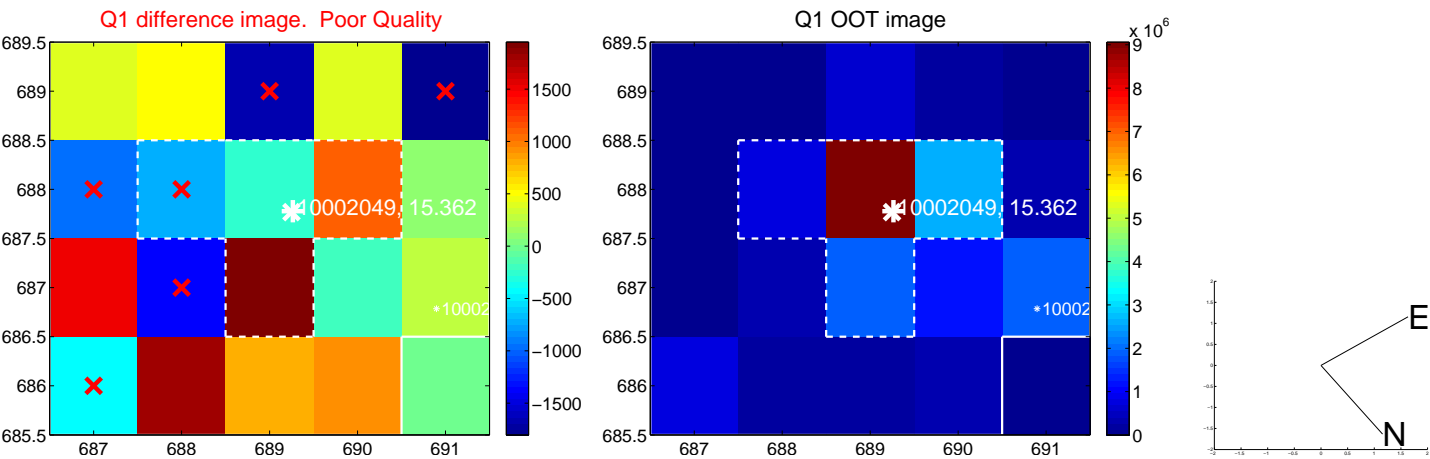
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.228 ± 0.852	2.61	-2.224 ± 0.852	0.121 ± 0.904
PRF-fit source offset from KIC position	2.168 ± 0.877	2.47	-2.163 ± 0.877	0.144 ± 0.904
photometric centroid source offset	3.02 ± 1.60	1.89	-0.68 ± 1.53	2.94 ± 1.60

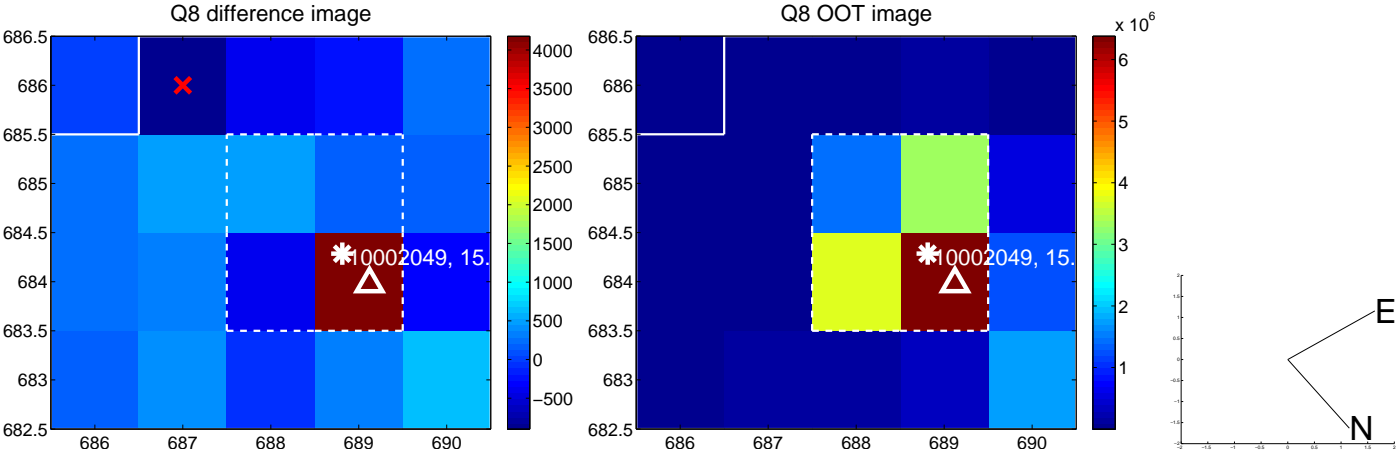
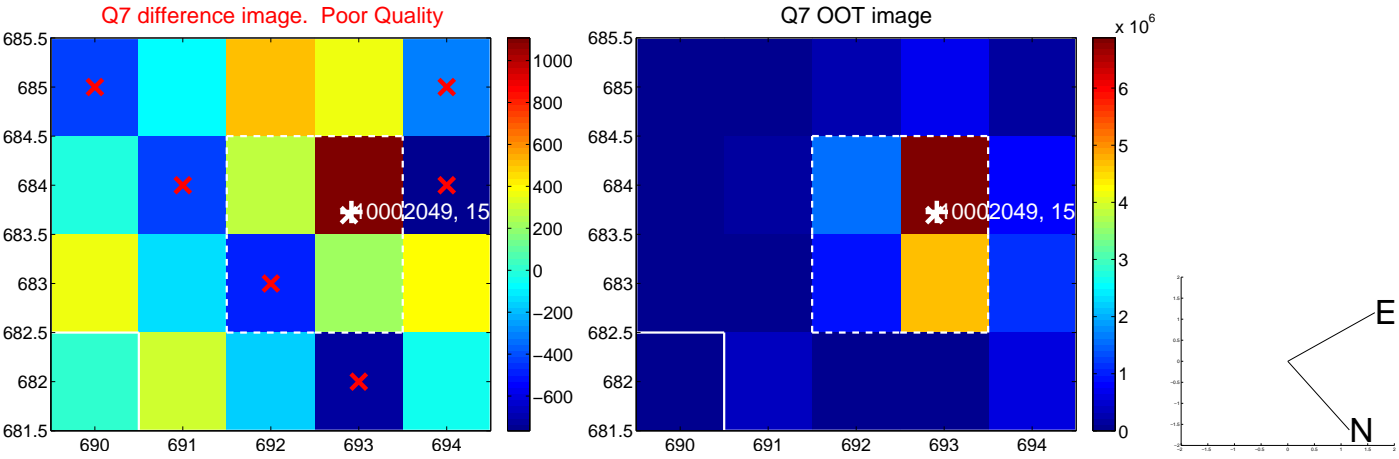
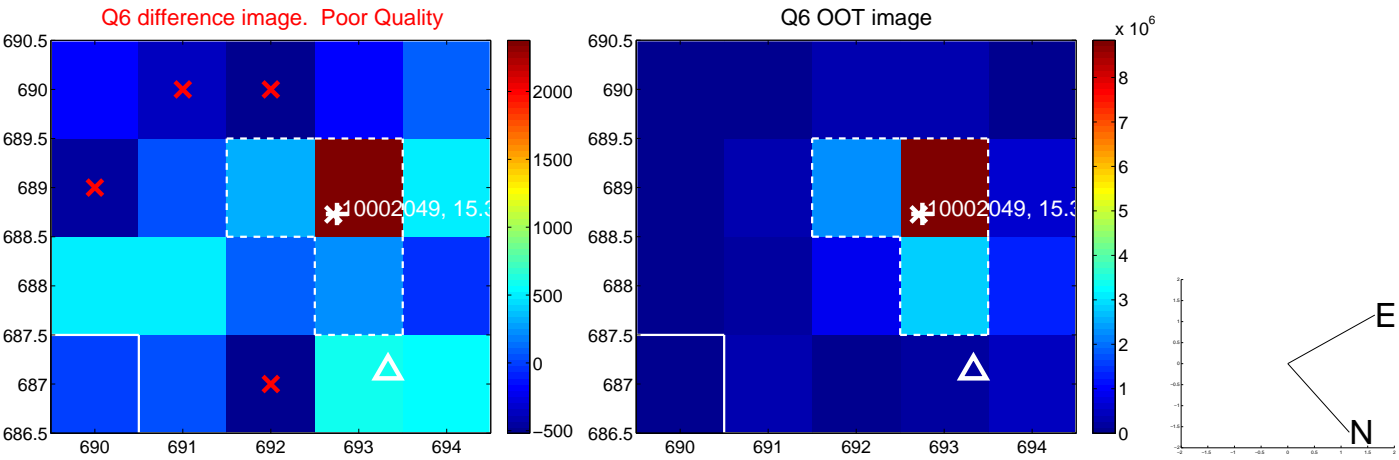
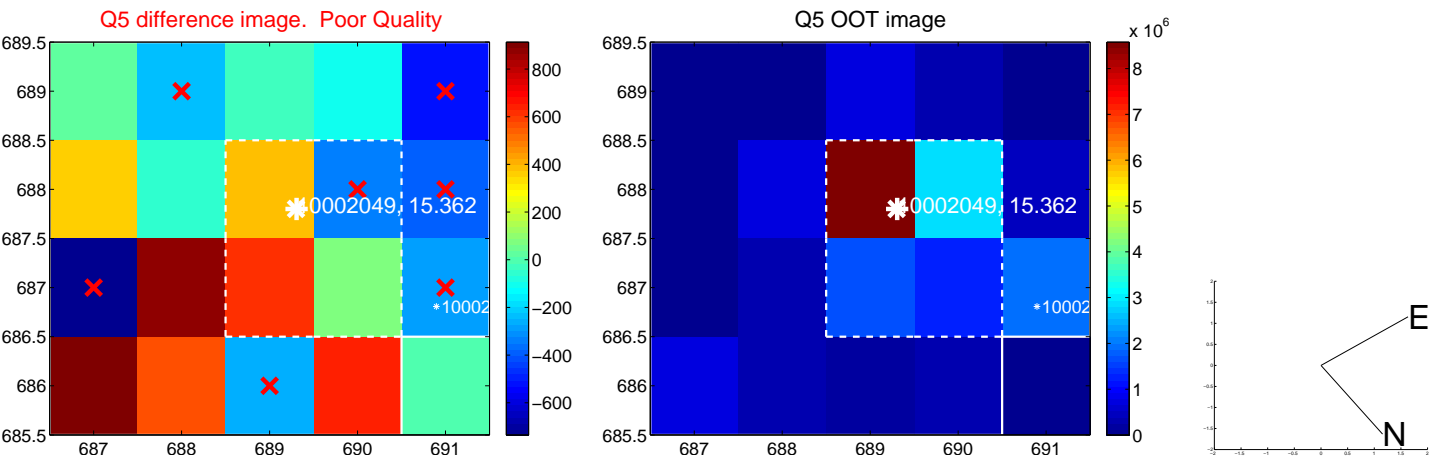


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

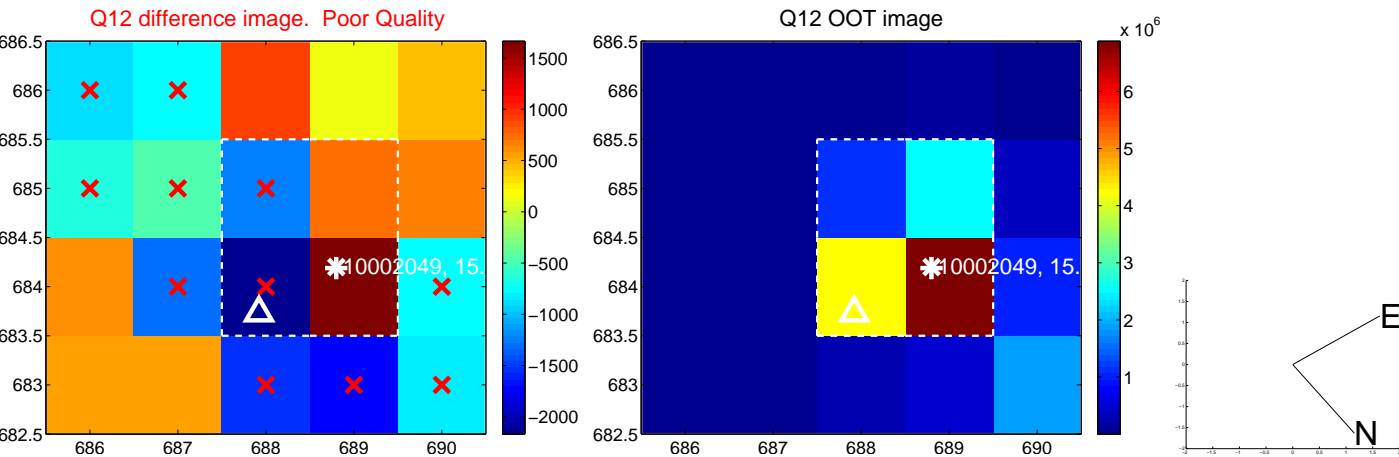
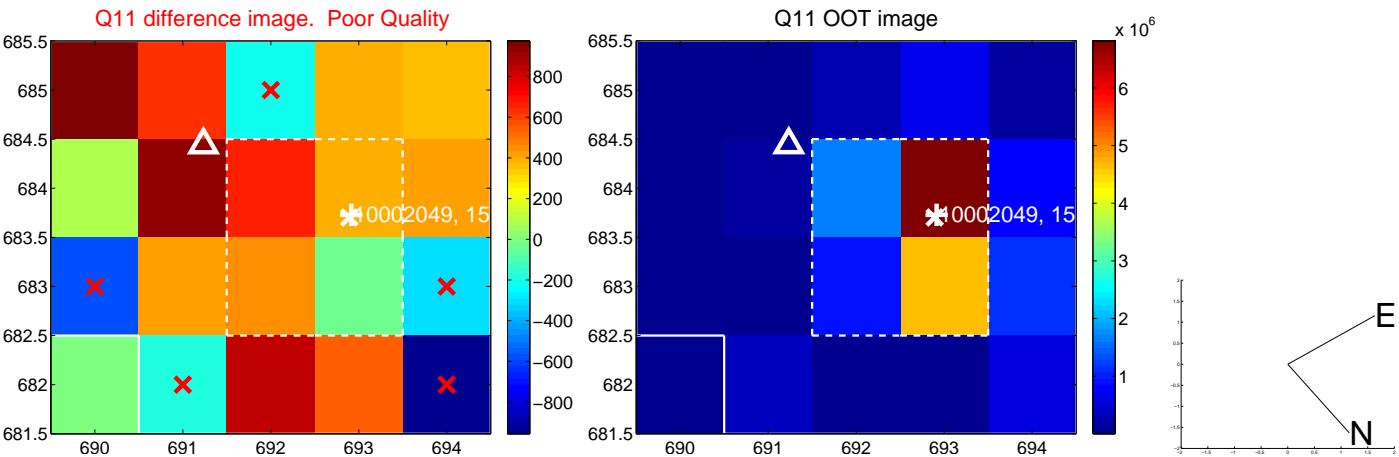
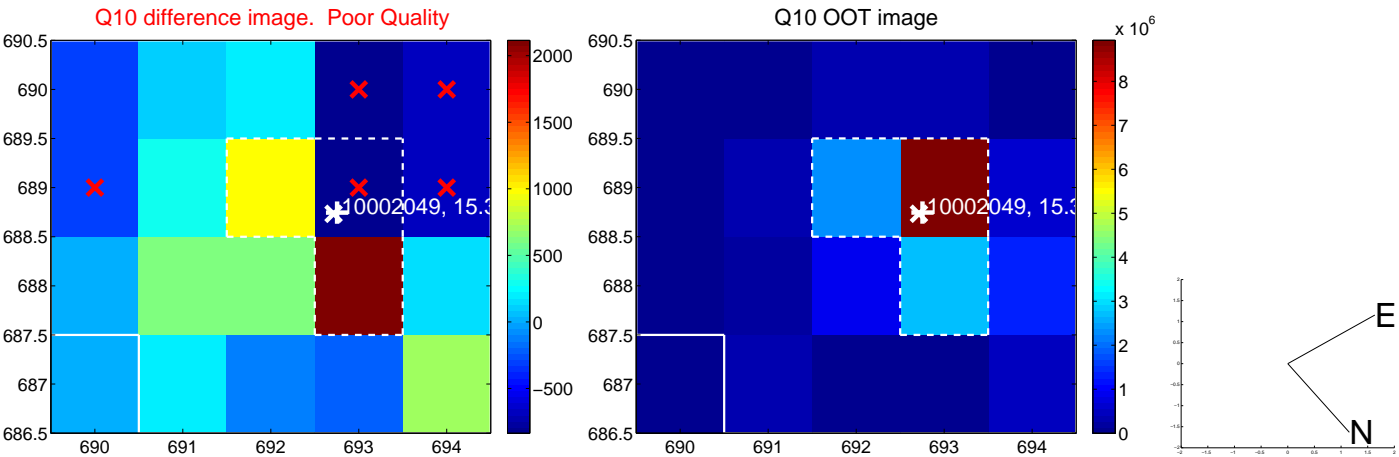
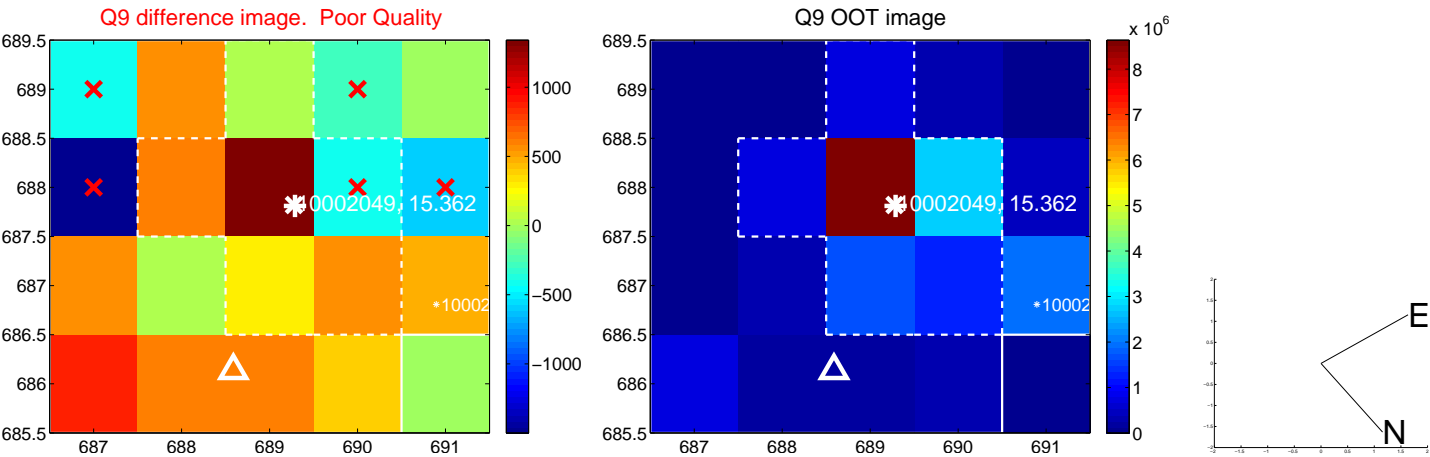
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



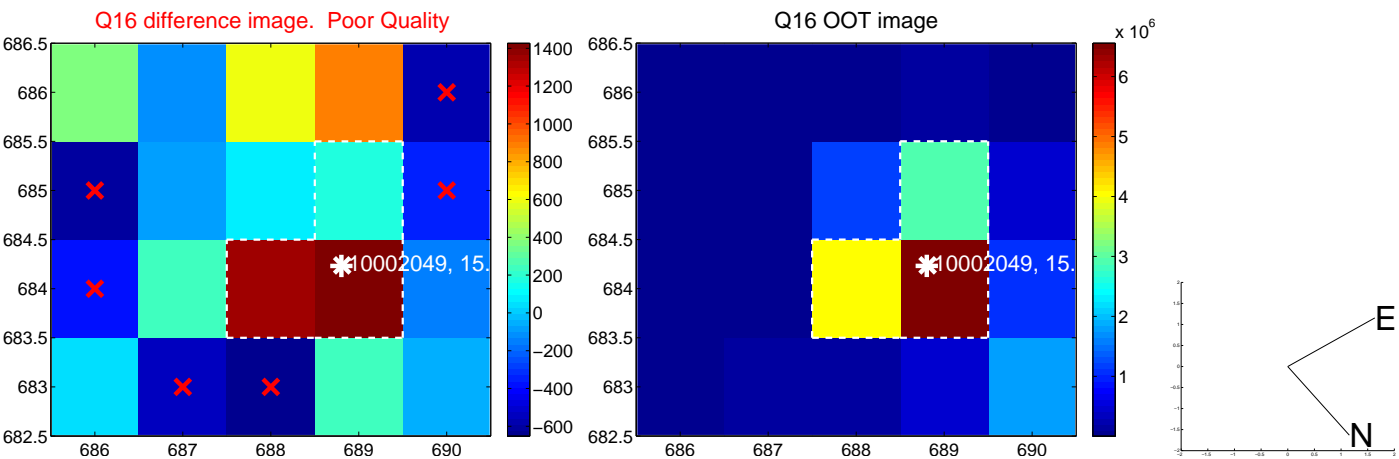
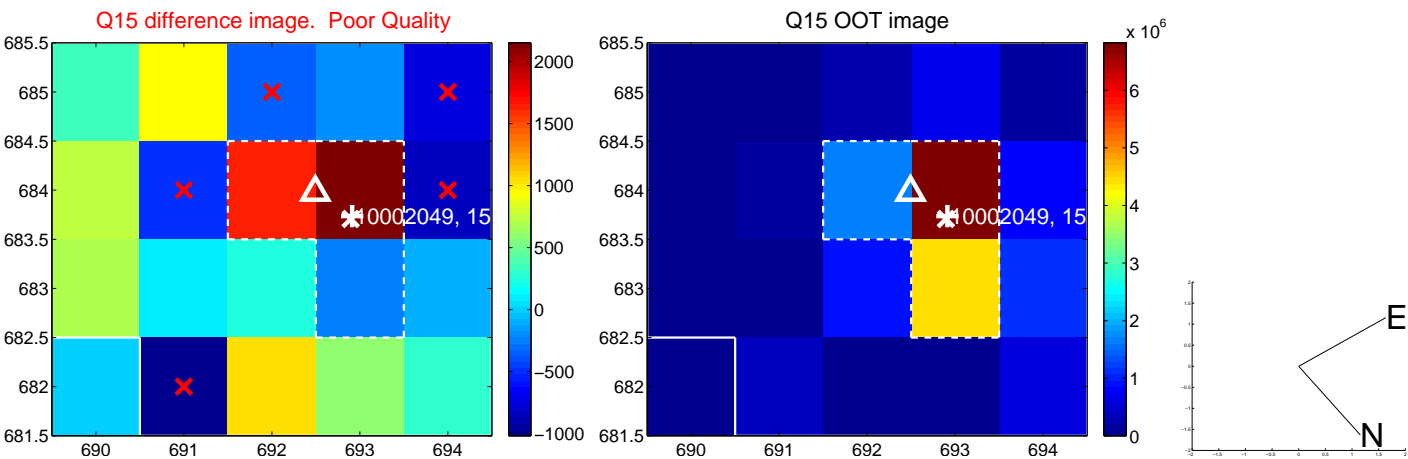
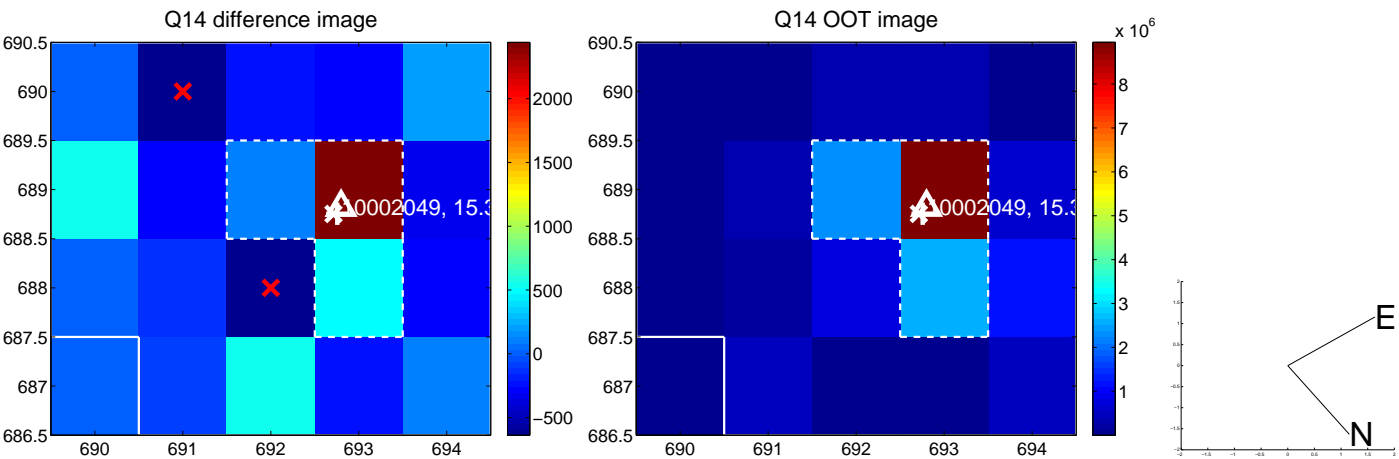
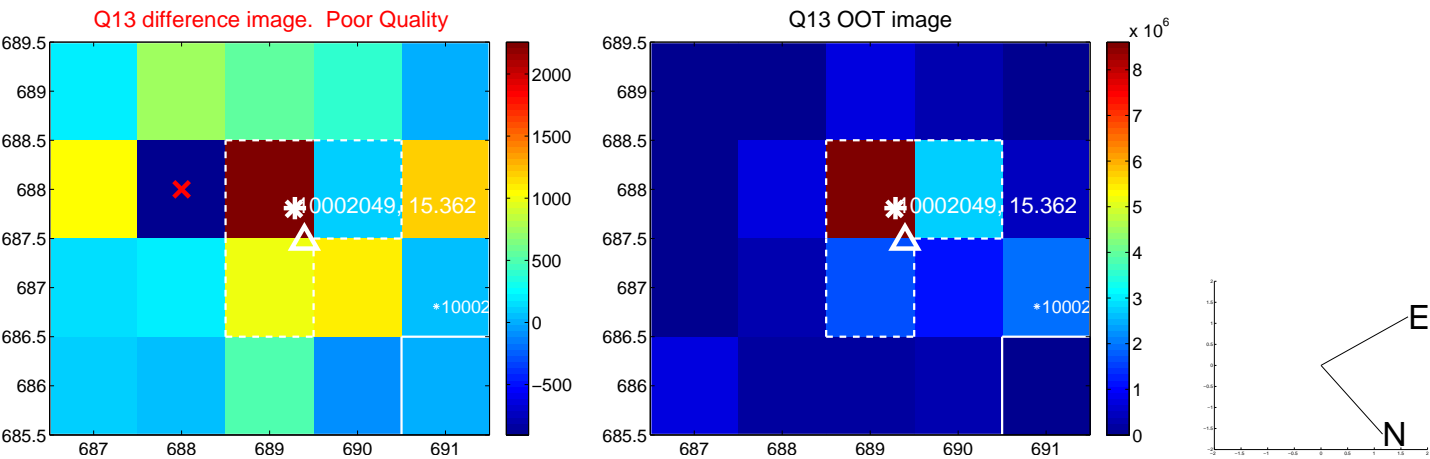
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



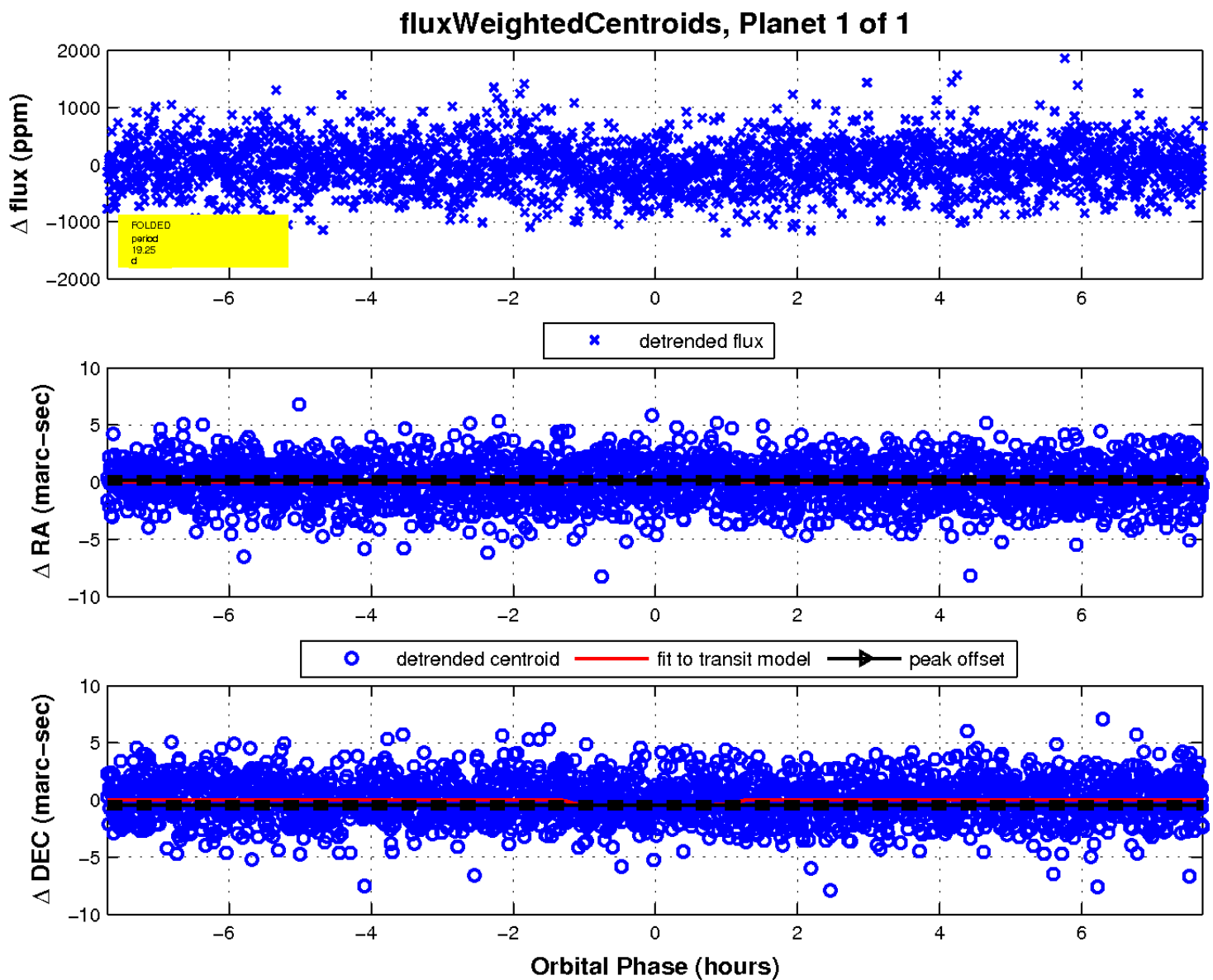
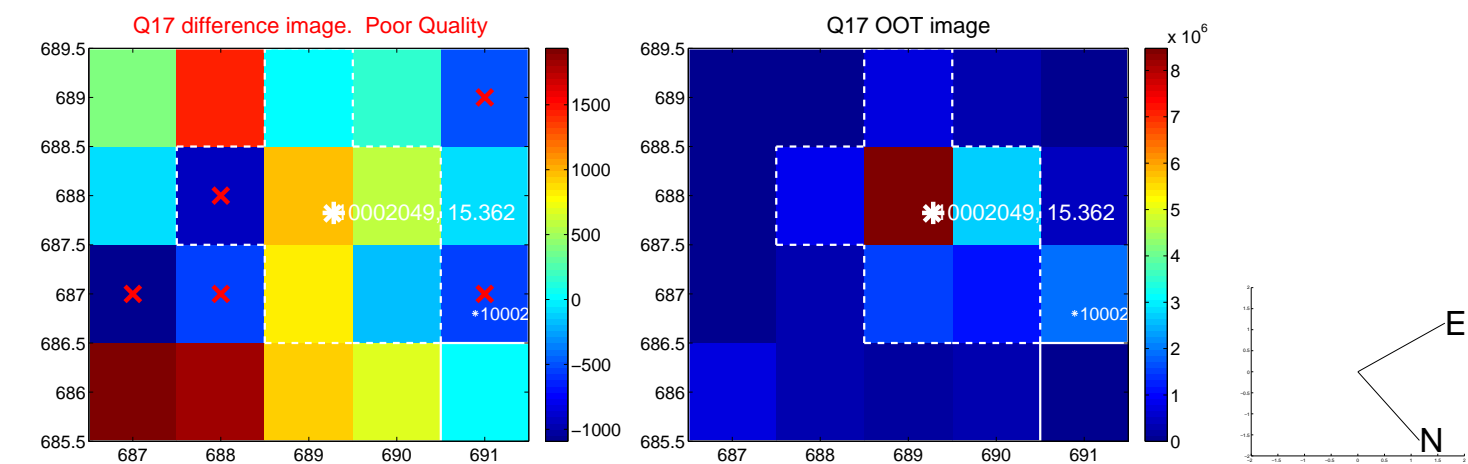
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UKIRT Image

