

KIC 009815053

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})
009815053-01	OBS	2923.01	5.838955	136.900183	220.5	1.152	12.6	14.9	0.77	5279	1.14	115.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009815053-01	OBS	PC	0.99	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.

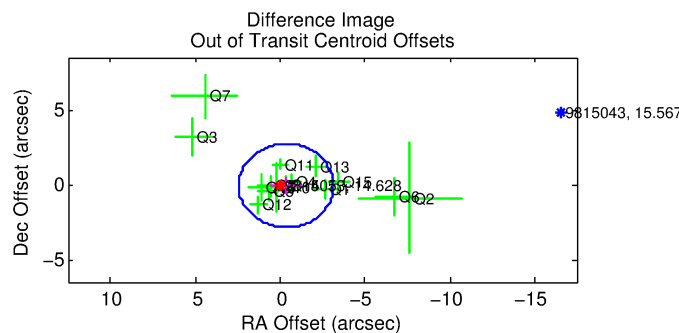
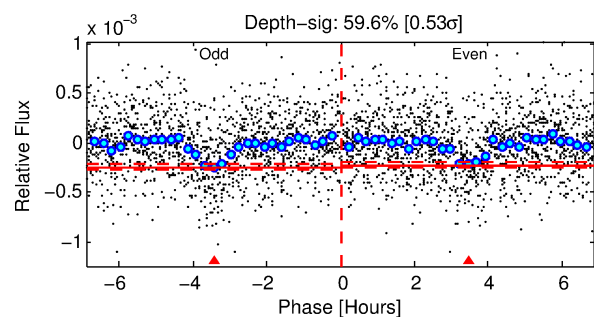
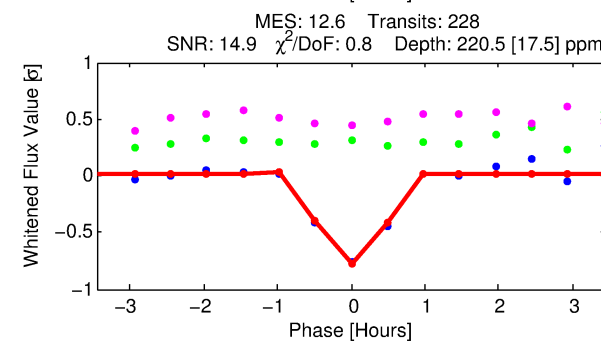
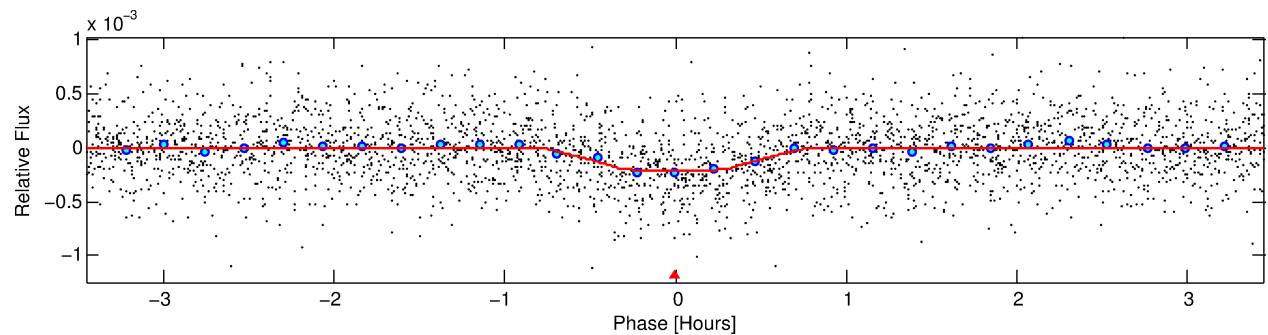
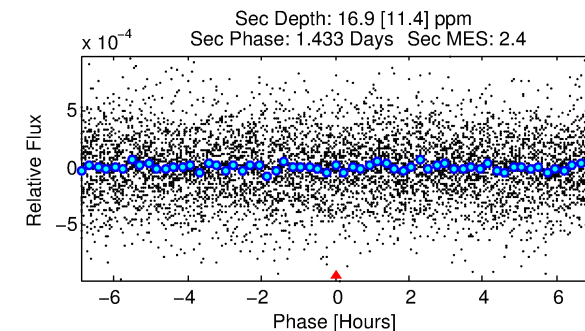
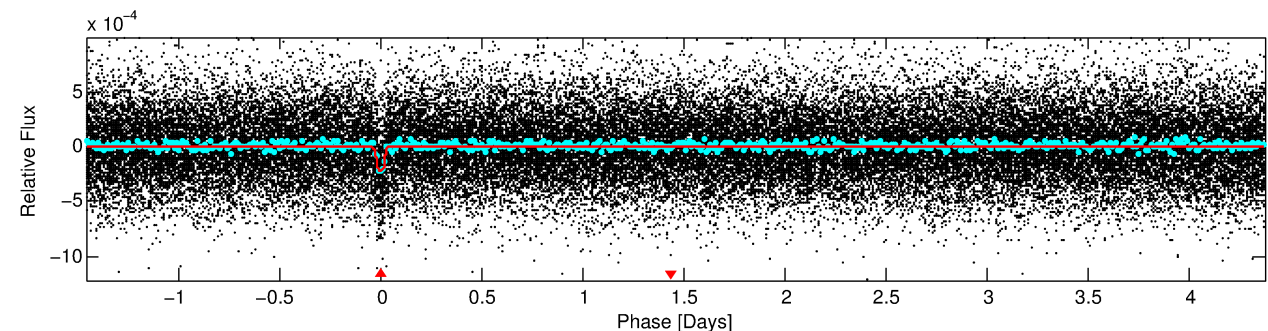
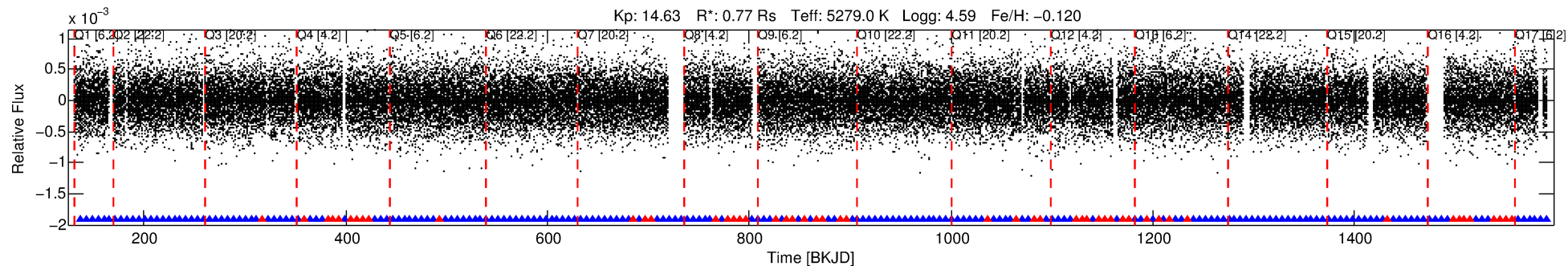
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009815053-01

No Significant Match Found

DV One-Page Summary

KIC: 9815053 Candidate: 1 of 1 Period: 5.839 d
KOI: K02923.01 Corr: 0.956



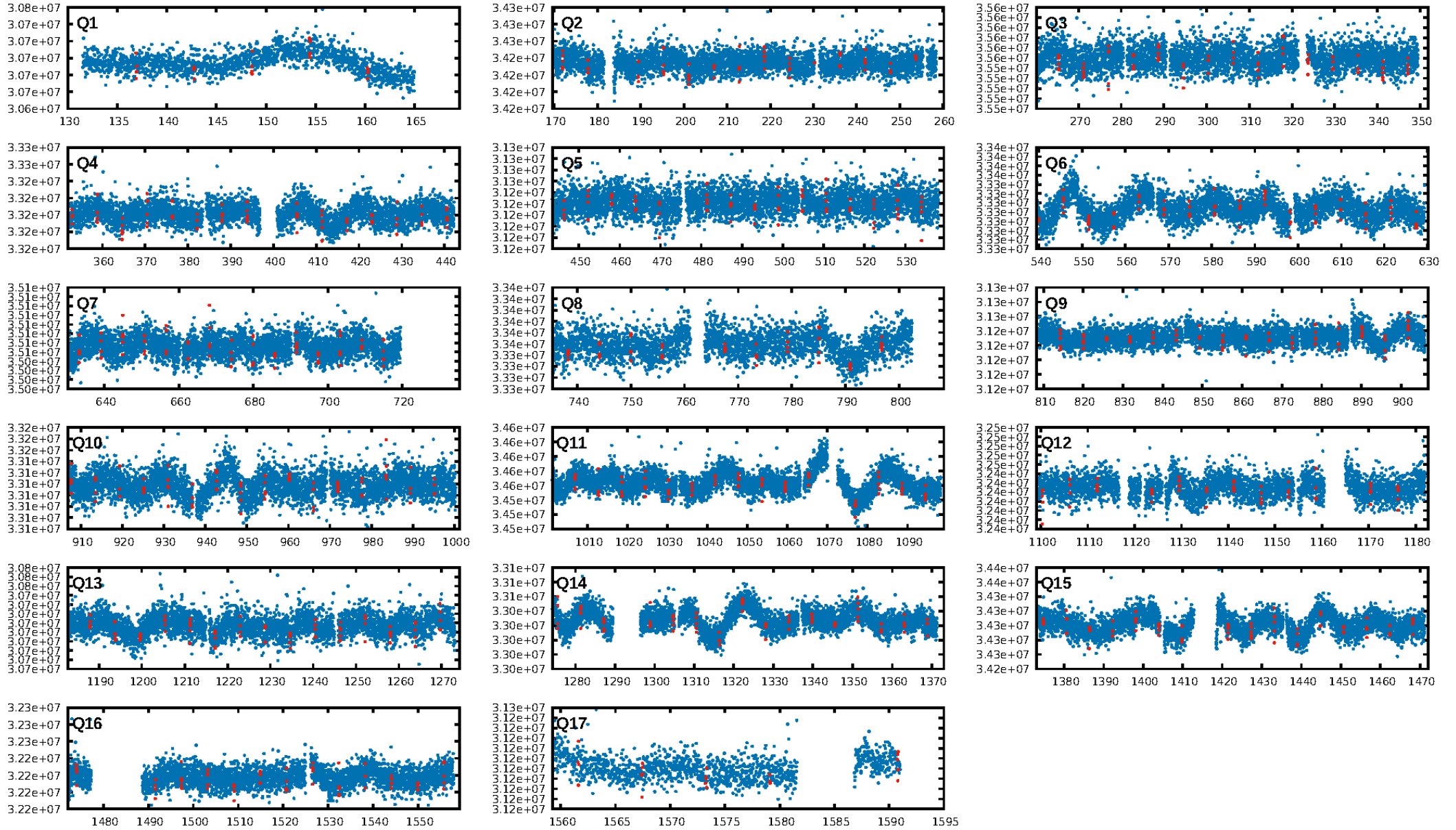
DV Fit Results:

Period = 5.83896 [0.00002] d
Epoch = 136.9002 [0.0020] BKJD
Rp/R* = 0.0136 [0.0129]
a/R* = 37.13 [134.39]
b = 0.33 [9.90]
Seff = 115.15 [25.15]
Teff = 835 [46] K
Rp = 1.14 [1.10] Re
a = 0.0598 [0.0077] AU
Ag = 25.54 [51.73] [0.47σ]
Teffp = 2903 [1467] K [1.41σ]

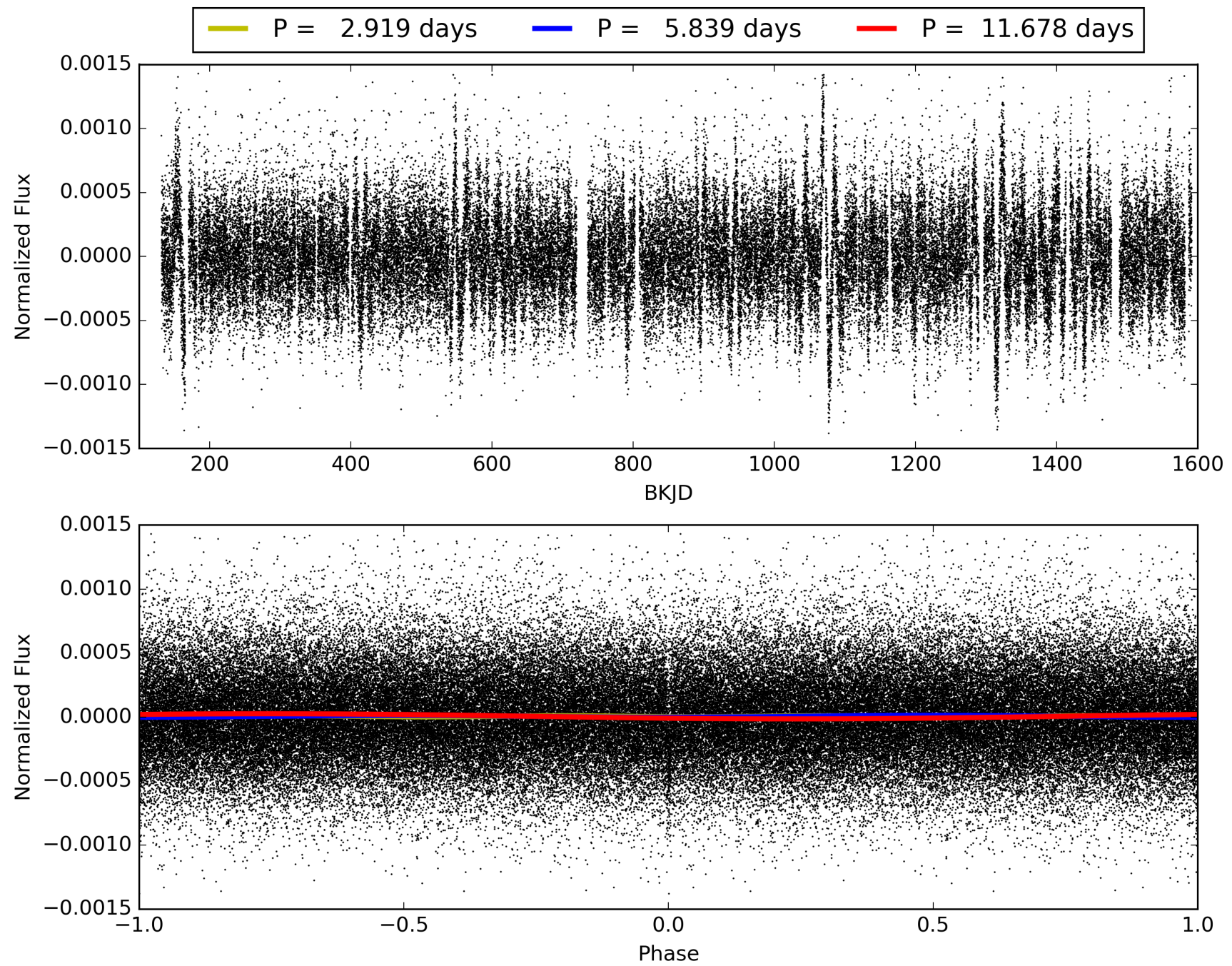
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.87e-35
RollingBand-fgt: 0.77 [167/218]
GhostDiagnostic-chr: 1.616
Centroid-sig: 1.1%
Centroid-so: 2.025 arcsec [2.12σ]
OotOffset-rm: 0.362 arcsec [0.39σ]
KicOffset-rm: 0.429 arcsec [0.75σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-st: 4/4/3/4 [15]
DiffImageQuality-fgm: 0.47 [7/15]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009815053-01, PDC Light Curves

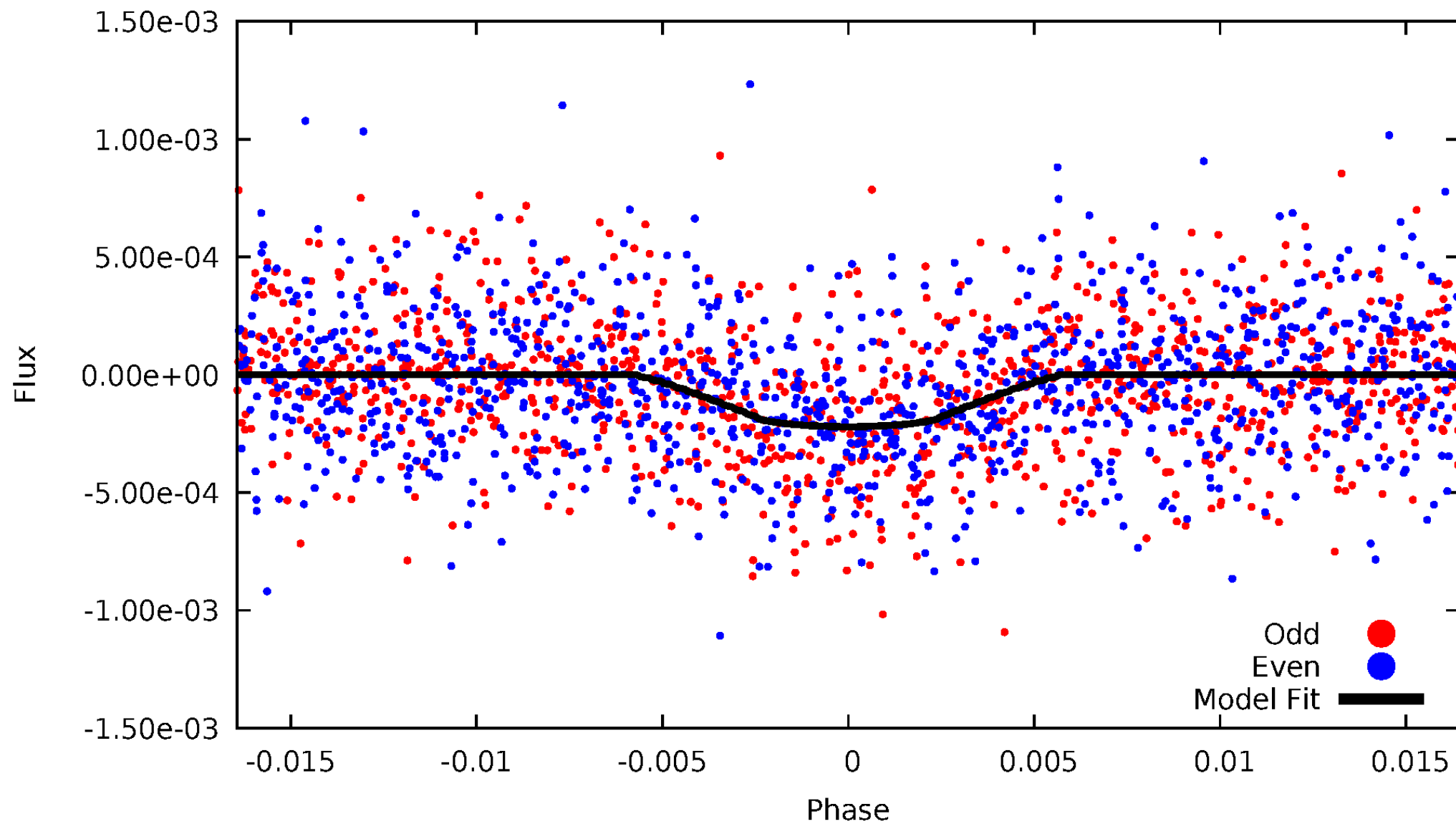


TCE 009815053-01



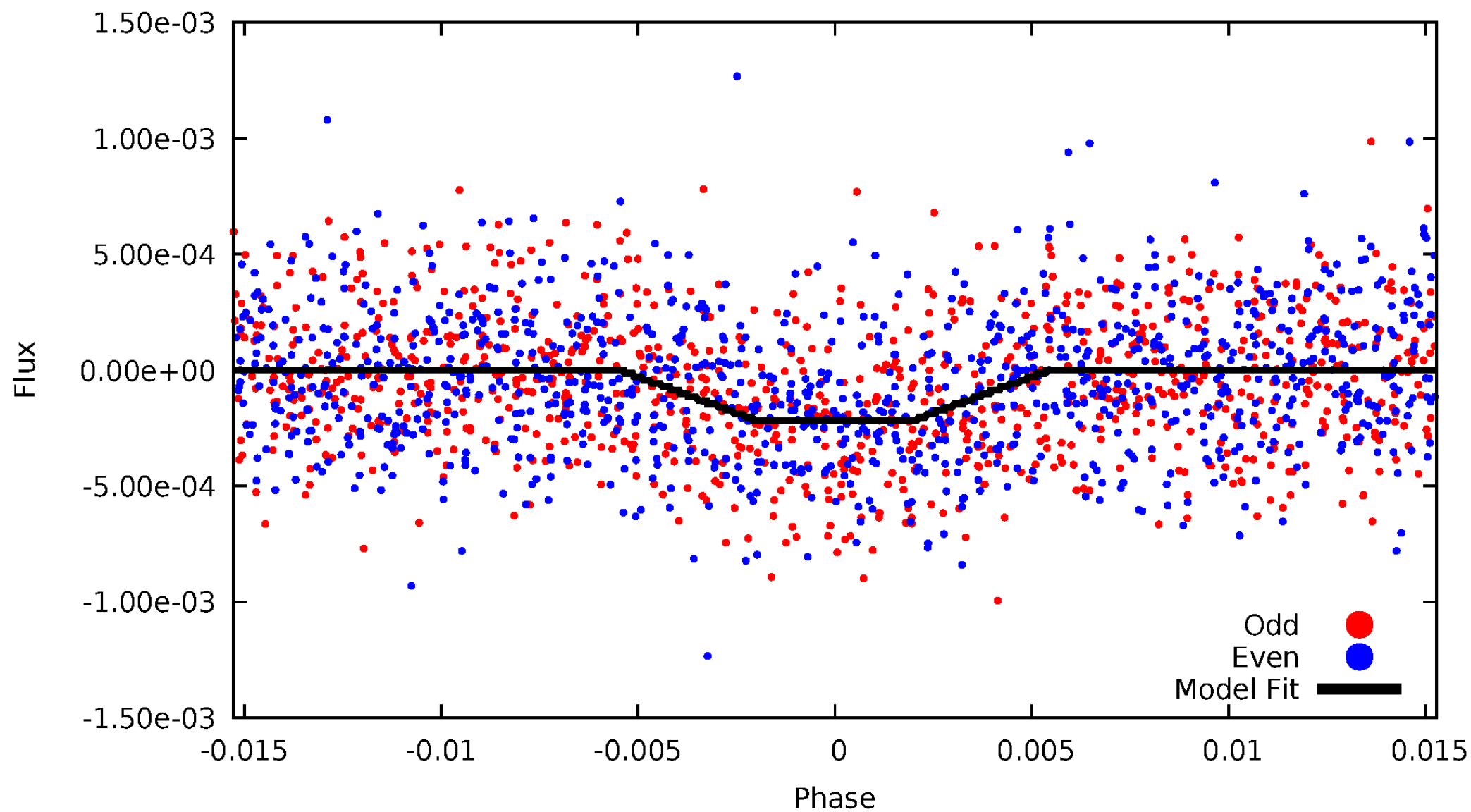
DV Odd/Even

TCE 009815053-01



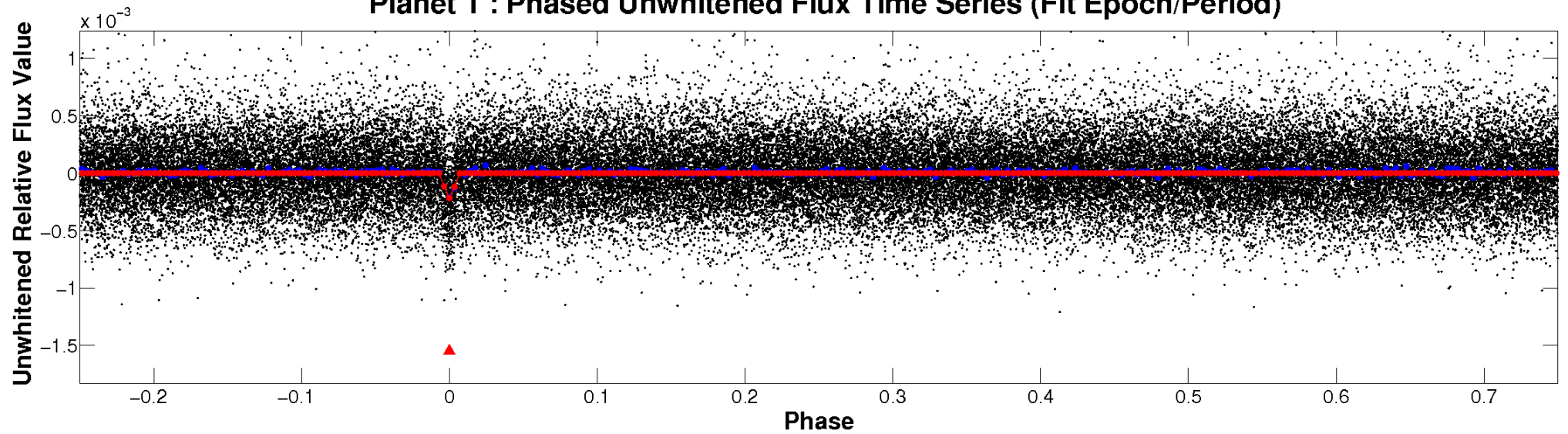
ALT Odd/Even

TCE 009815053-01

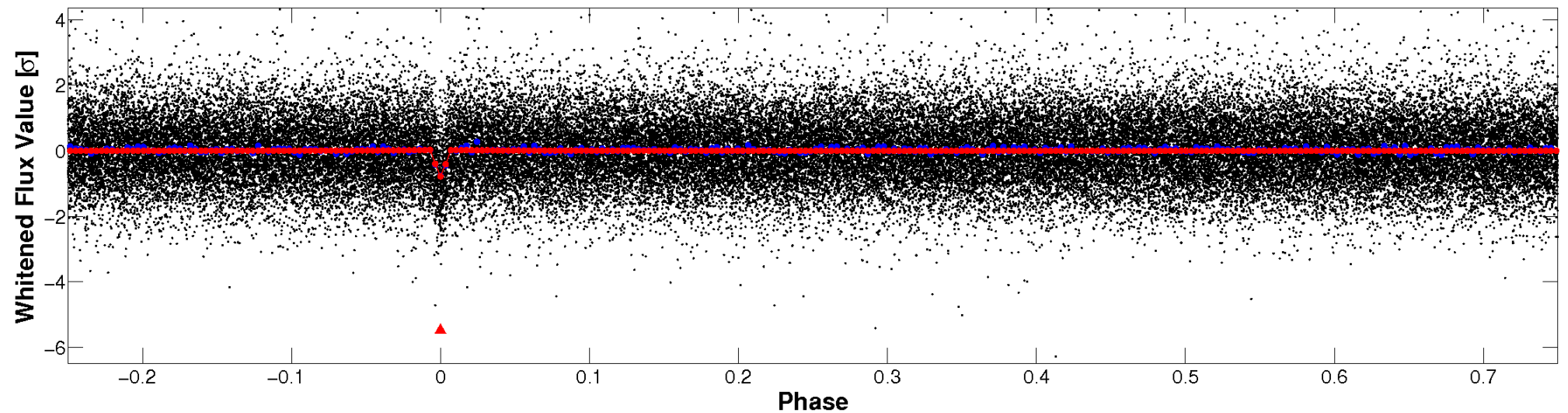


Non-Whitened Vs. Whitened Light Curve

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

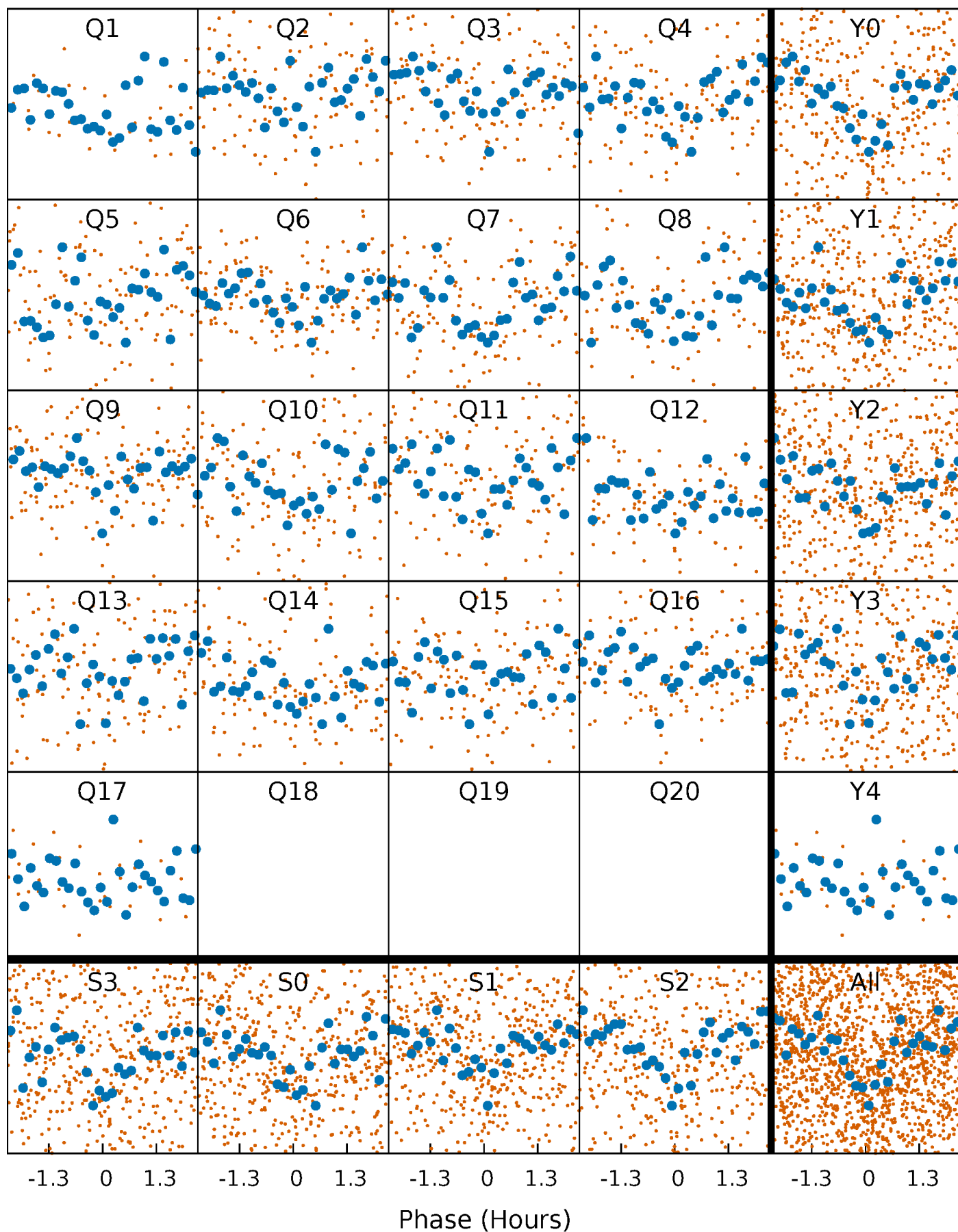


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



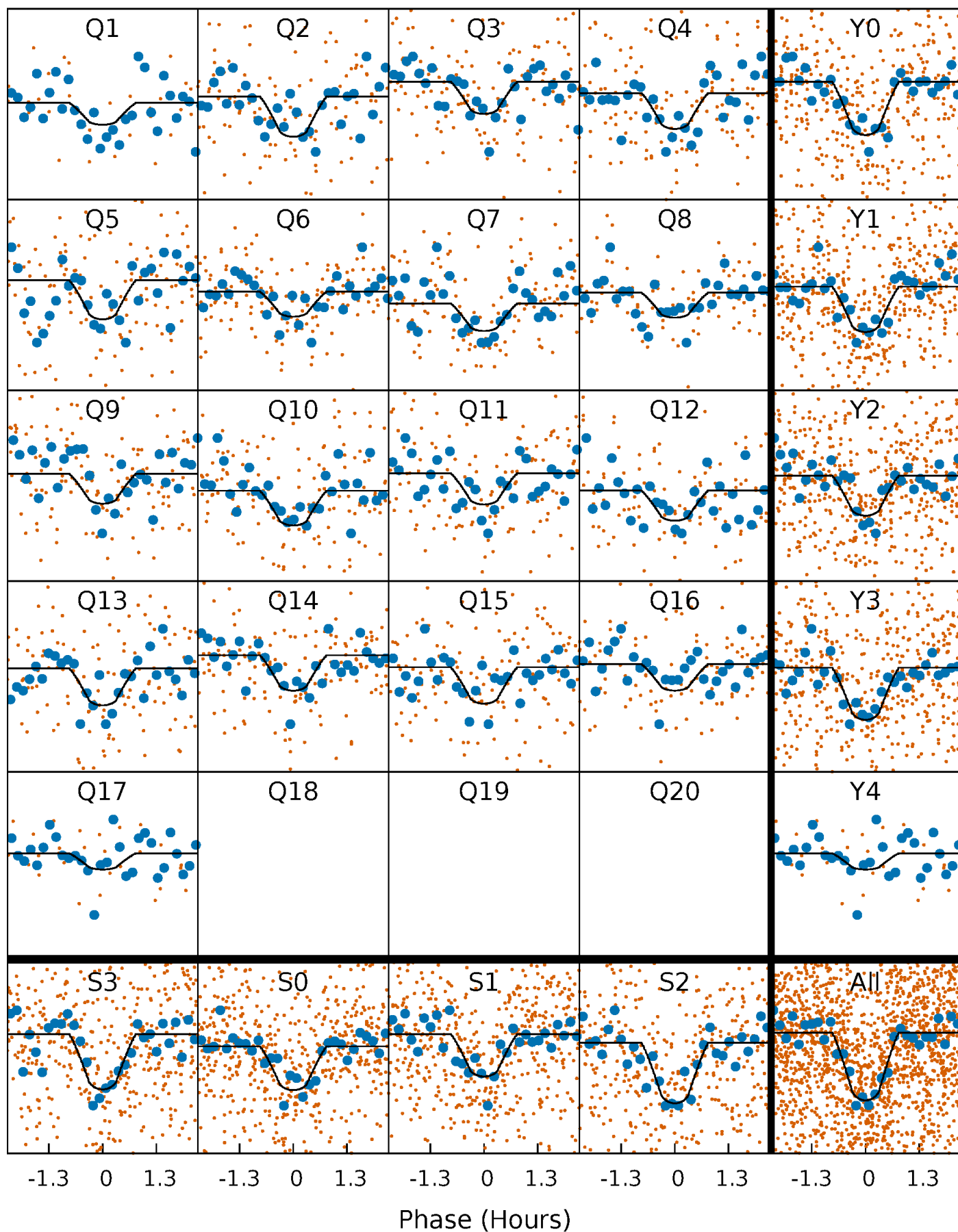
PDC Quarter-Phased Transit Curves

TCE 009815053-01 P= 5.838955 Days $T_0=136.900183$ (BKJD)



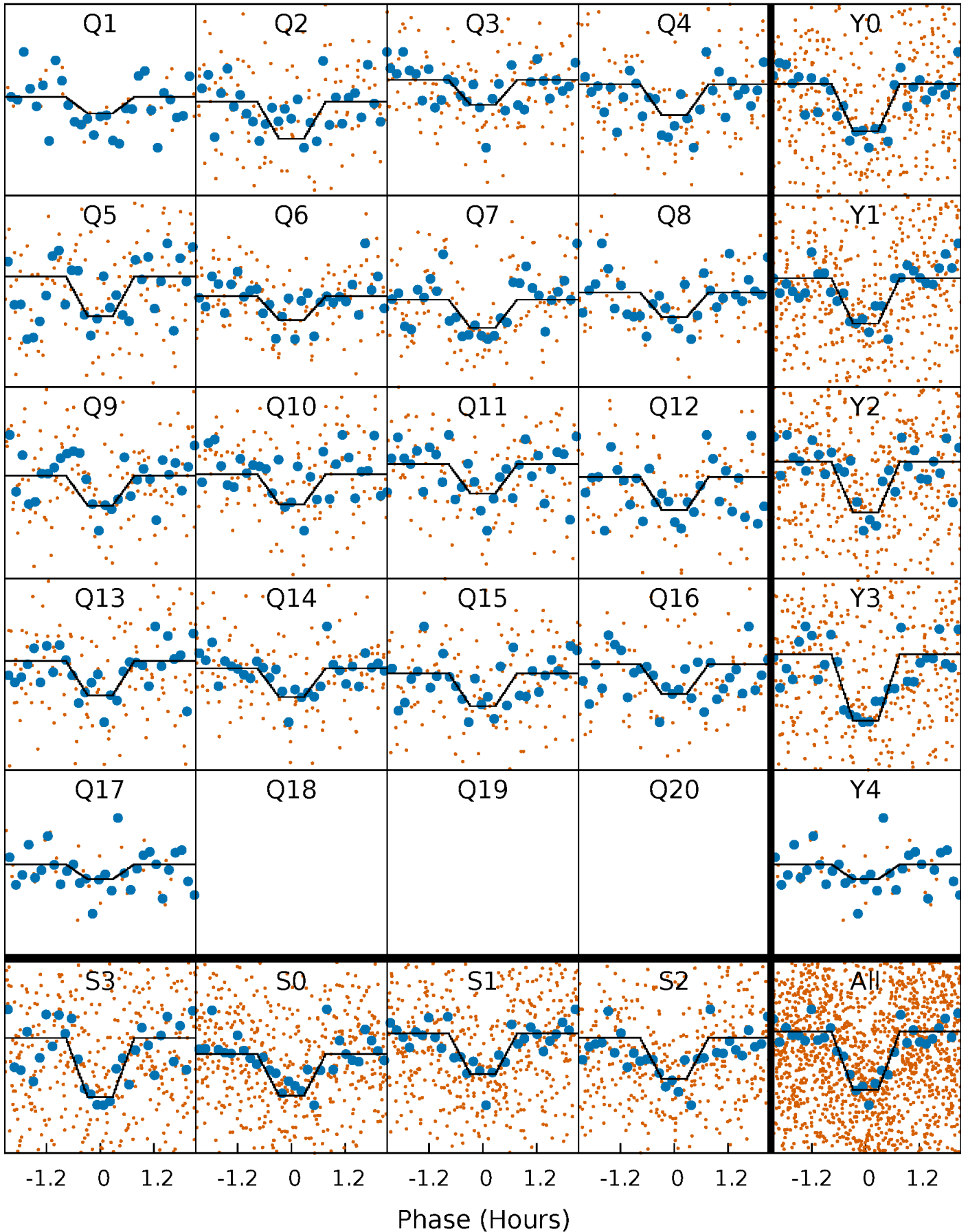
DV Quarter-Phased Transit Curves

TCE 009815053-01 P= 5.838955 Days $T_0=136.900183$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

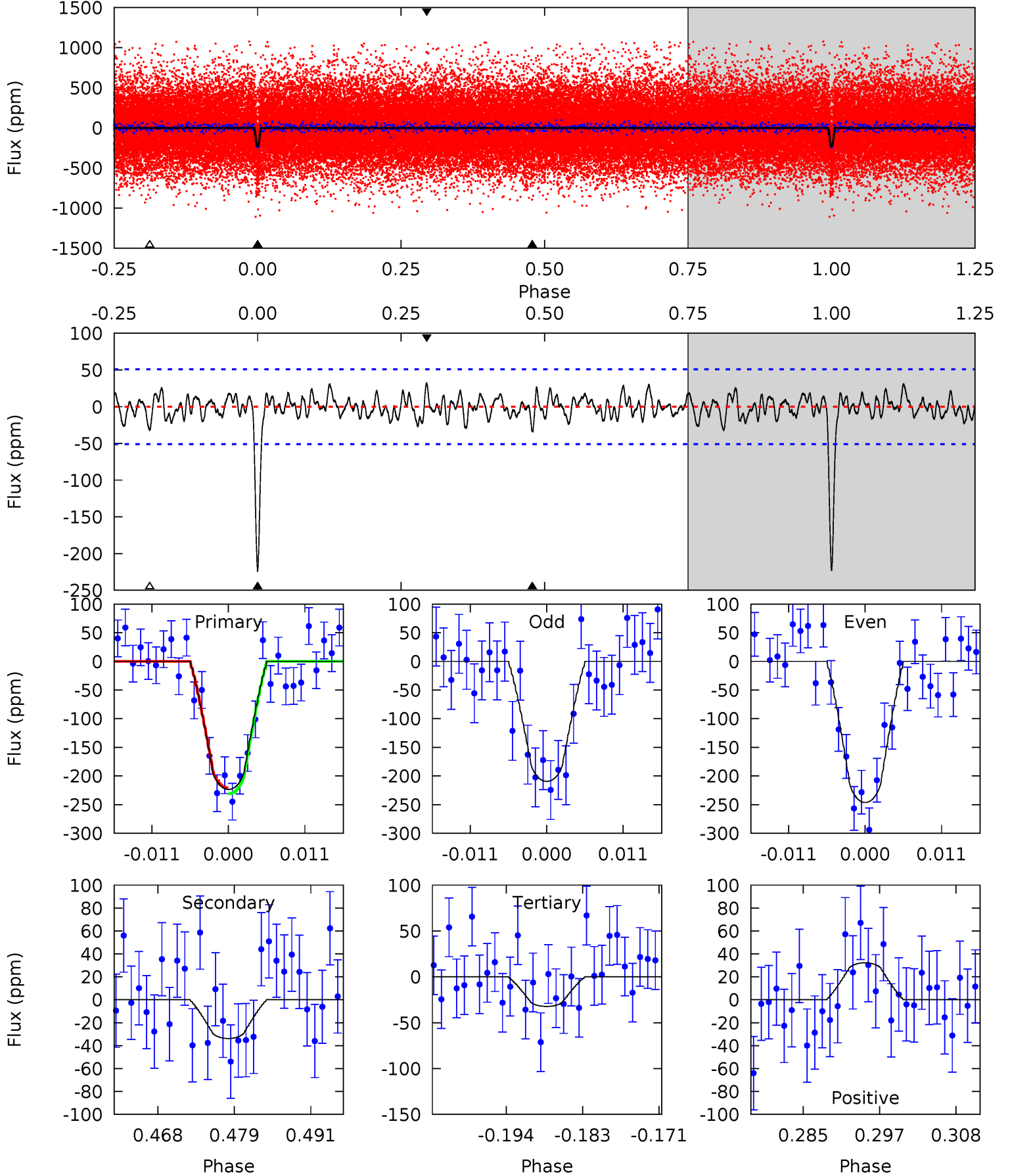
TCE 009815053-01 P= 5.838938 Days $T_0=136.901730$ (BKJD)



DV Model-Shift Uniqueness Test

009815053-01, P = 5.838955 Days, E = 131.061228 Days

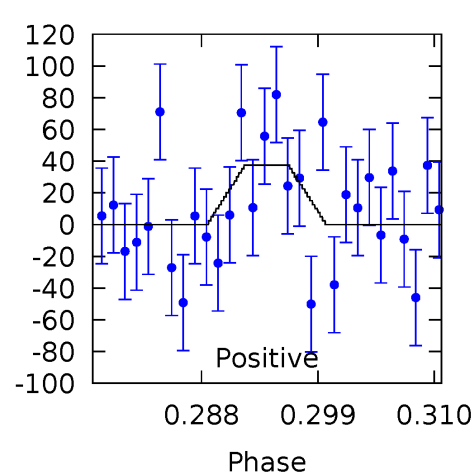
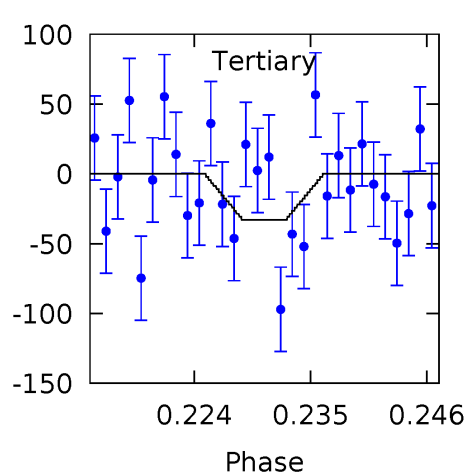
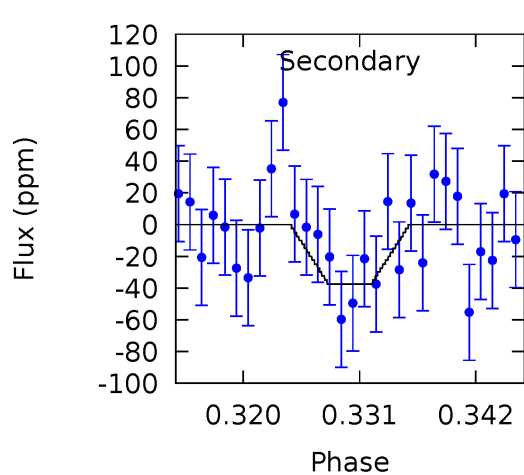
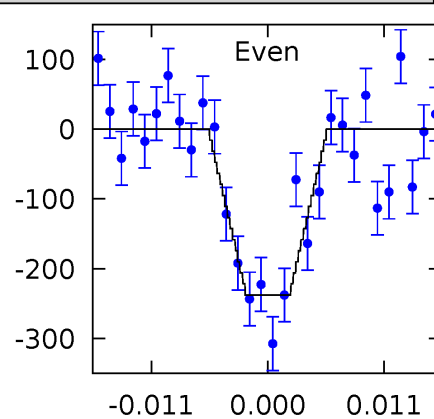
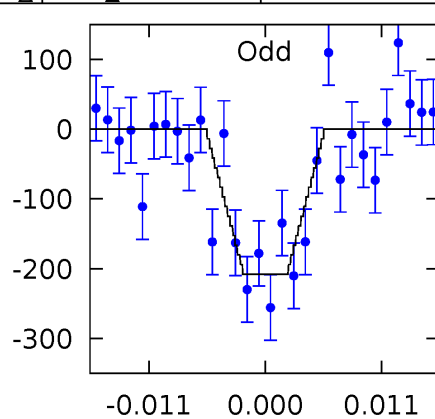
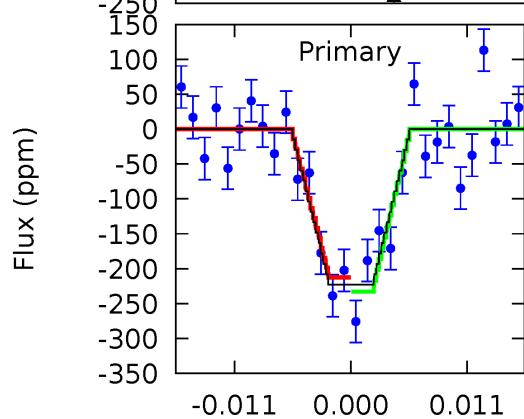
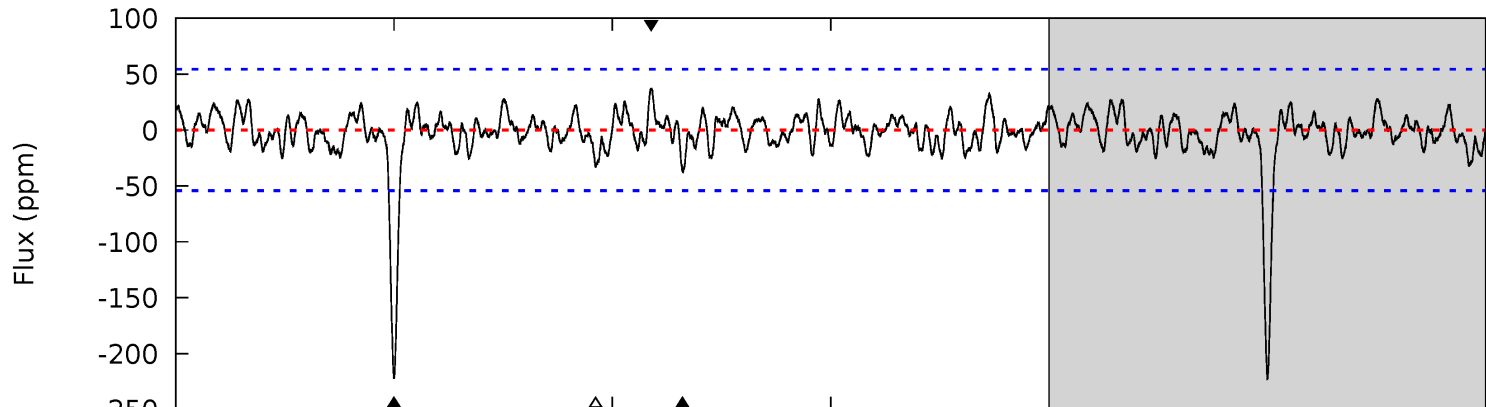
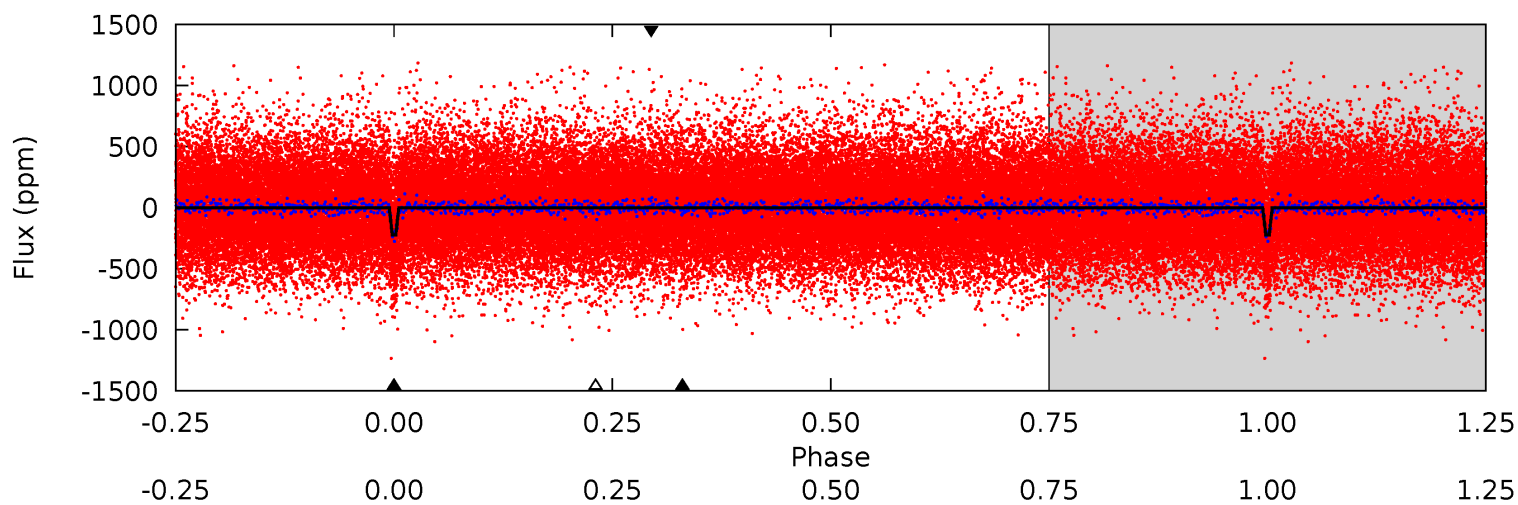
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.9	3.31	3.17	3.16	5.00	2.53	1.15	18.7	18.7	0.15	0.15	1.81	0.91	0.13	0.50



Alt Model-Shift Uniqueness Test

009815053-01, P = 5.838938 Days, E = 131.062792 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.6	3.45	3.05	3.47	5.01	2.55	1.13	17.5	17.1	0.41	-0.02	1.37	1.00	0.14	0.94



Stellar Parameters For KIC 009815053

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5279^{+158}_{-142}	$4.588^{+0.039}_{-0.097}$	$-0.120^{+0.300}_{-0.300}$	$0.769^{+0.122}_{-0.066}$	$0.839^{+0.078}_{-0.085}$	$2.594^{+0.443}_{-0.797}$
	+3%/-3%	+1%/-2%	+250%/-250%	+16%/-9%	+9%/-10%	+17%/-31%
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 009815053-01 / KOI 2923.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-34 ± 10	$1.41^{+1.02}_{-0.81}$	1184^{+51}_{-42}	3566^{+1371}_{-601}	32^{+156}_{-22}
Alt.	-37 ± 11	$1.49^{+0.98}_{-0.94}$	1180^{+53}_{-43}	3575^{+1541}_{-578}	34^{+201}_{-23}

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

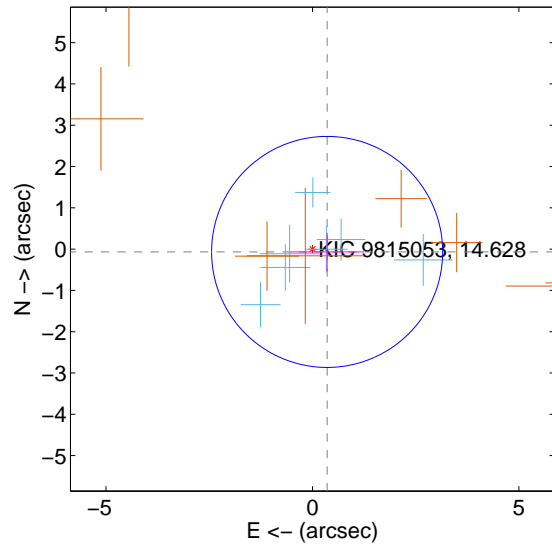
Supplemental centroid analysis for 009815053-01. Kepler magnitude: 14.63. Transit SNR 14.85

There are 7 quarters with good PRF difference image offsets

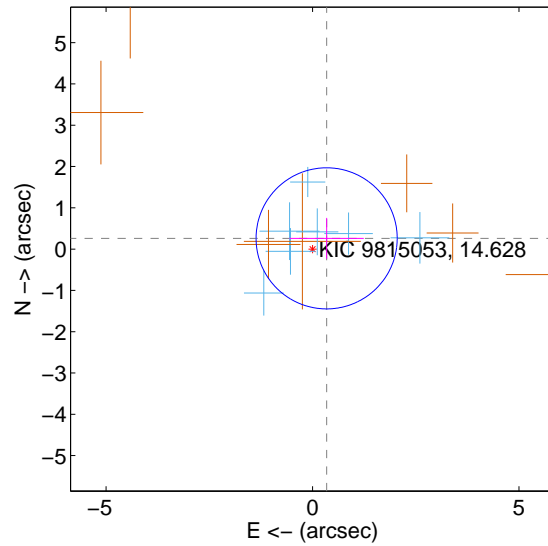
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.362 ± 0.933	0.39	-0.356 ± 0.893	-0.069 ± 0.463
PRF-fit source offset from KIC position	0.429 ± 0.570	0.75	-0.342 ± 0.901	0.260 ± 0.494
photometric centroid source offset	2.02 ± 0.95	2.12	-1.32 ± 0.98	1.53 ± 0.94

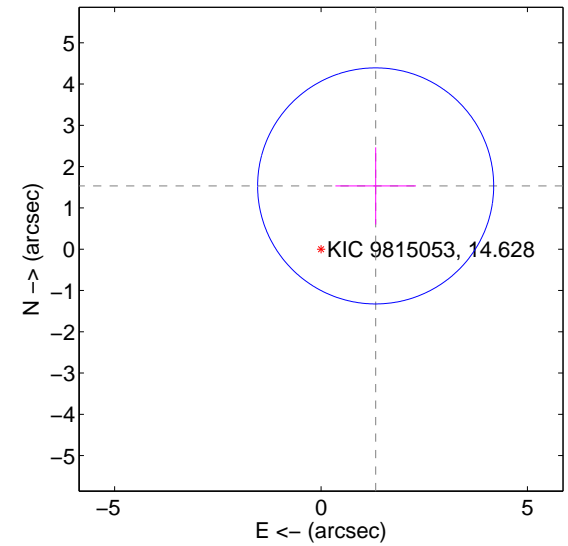
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

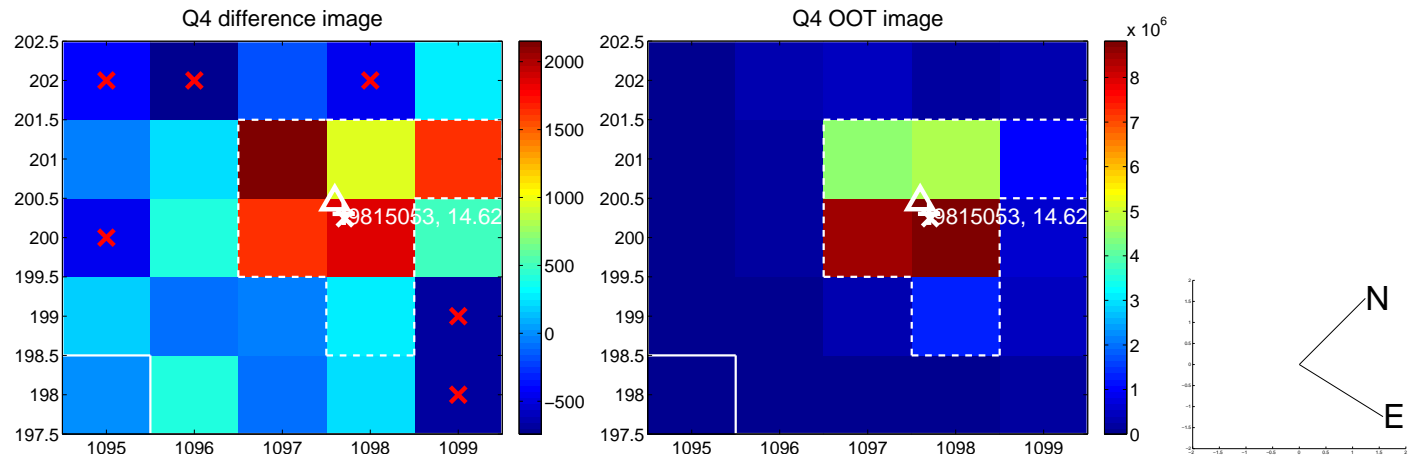
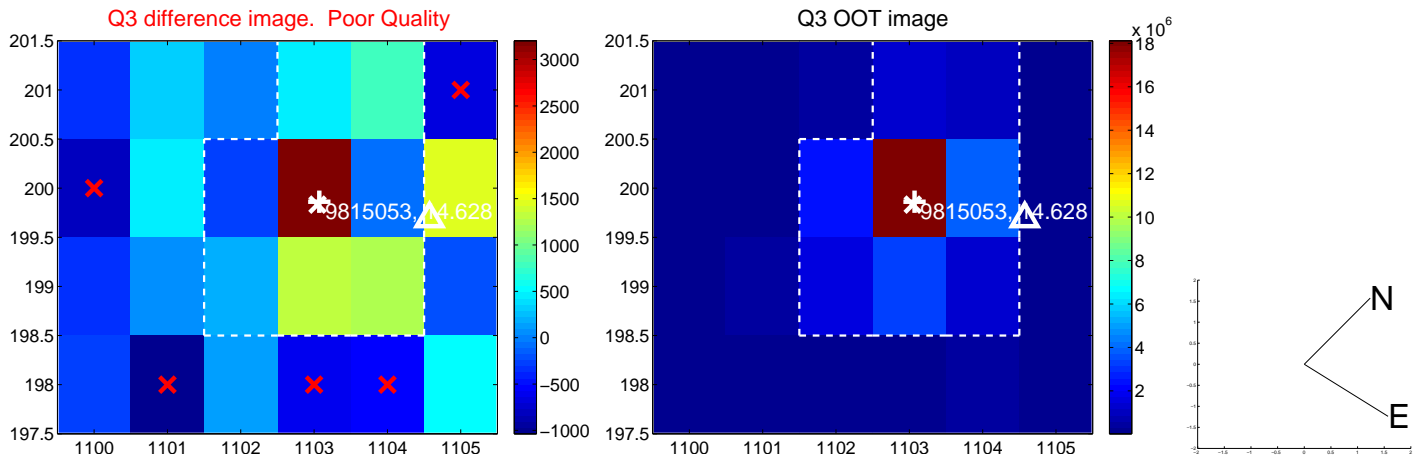
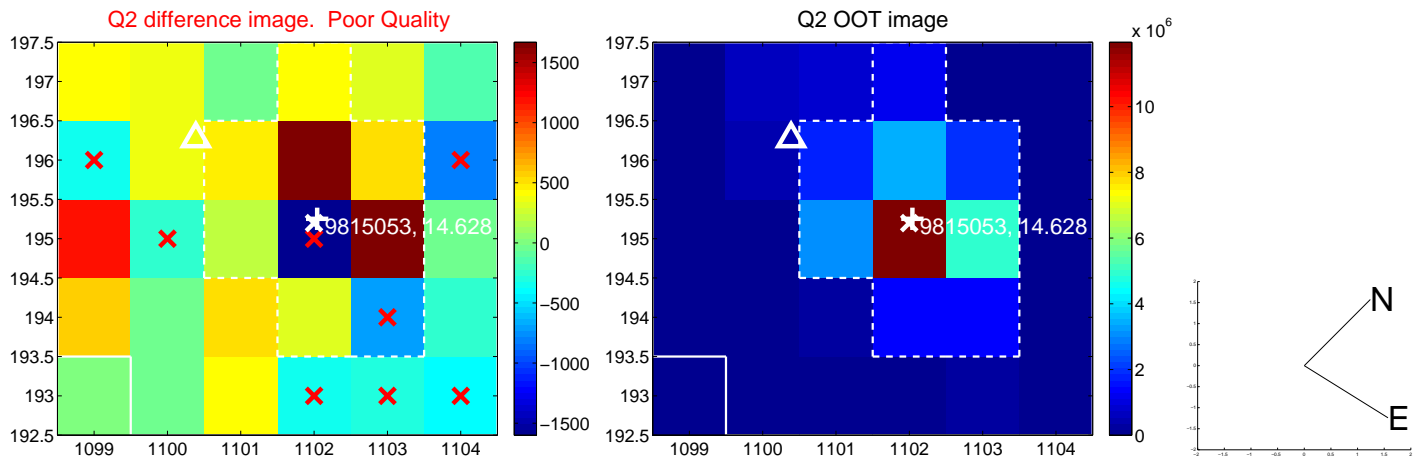
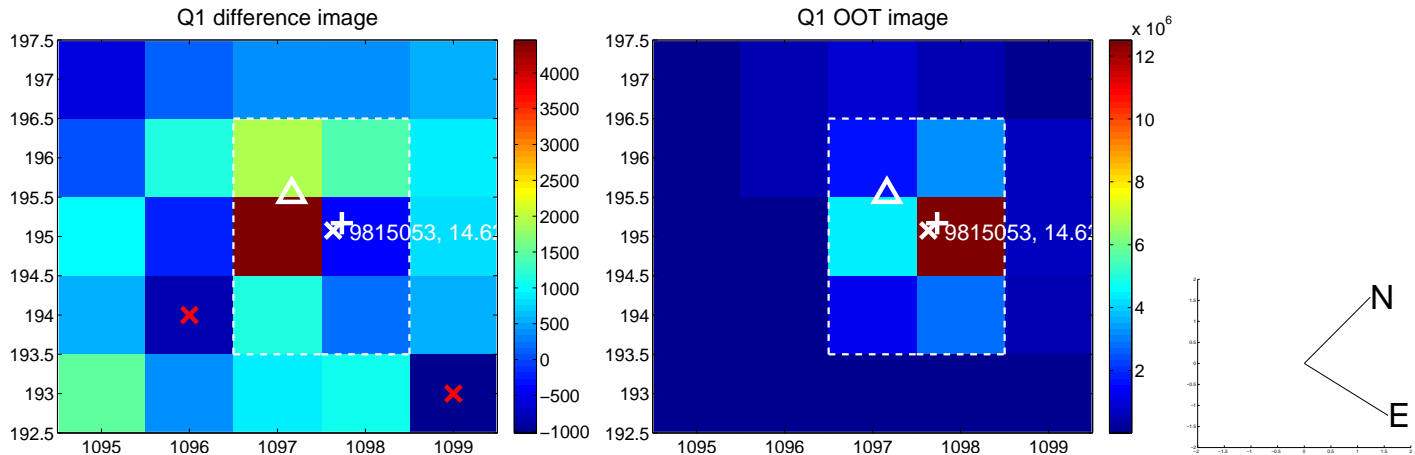


offset from photometric centroids

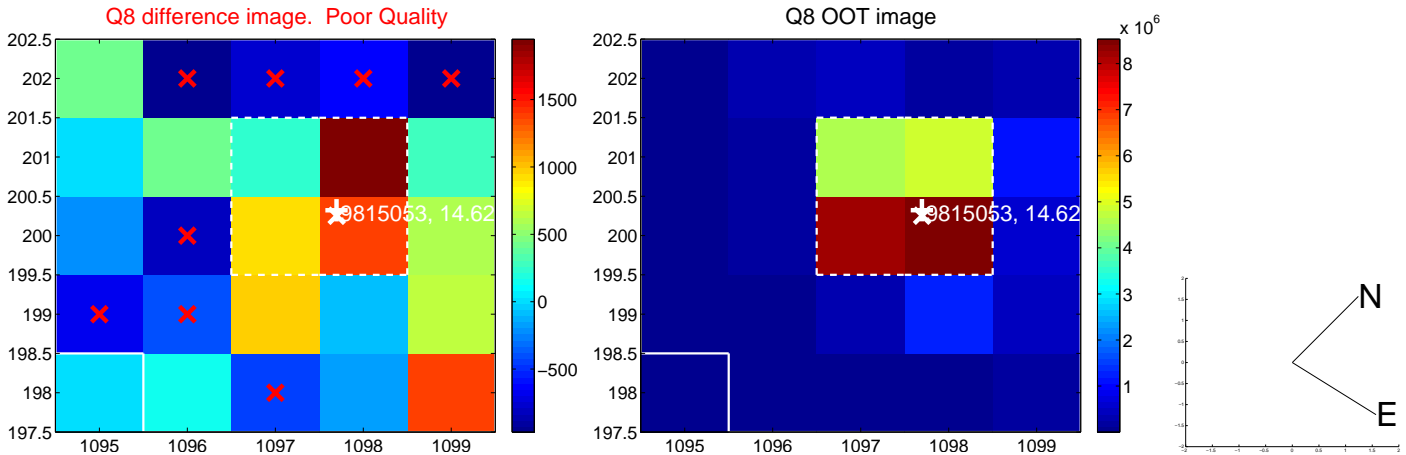
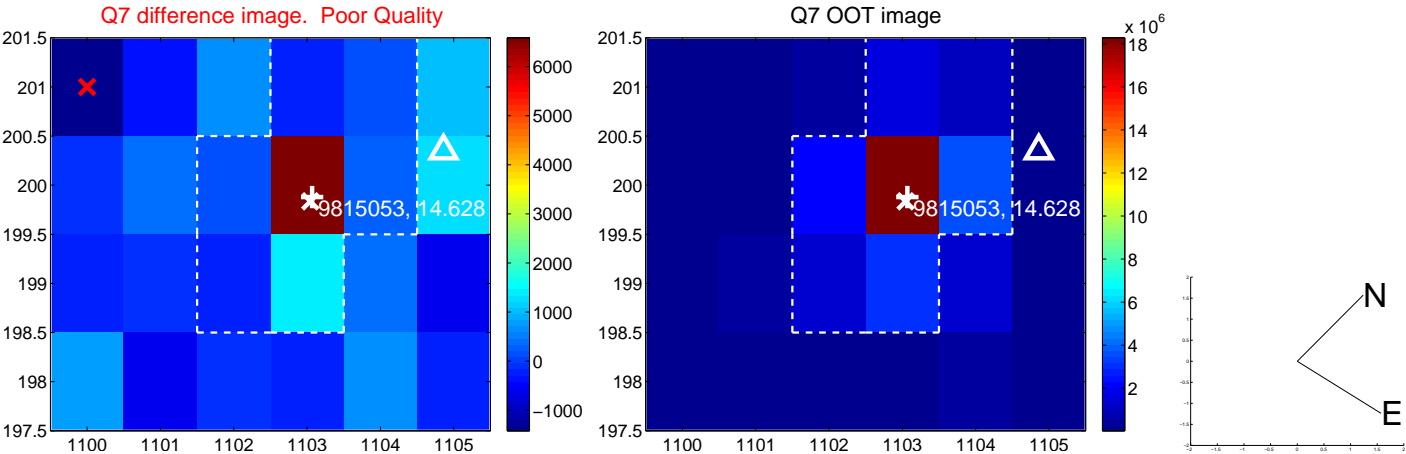
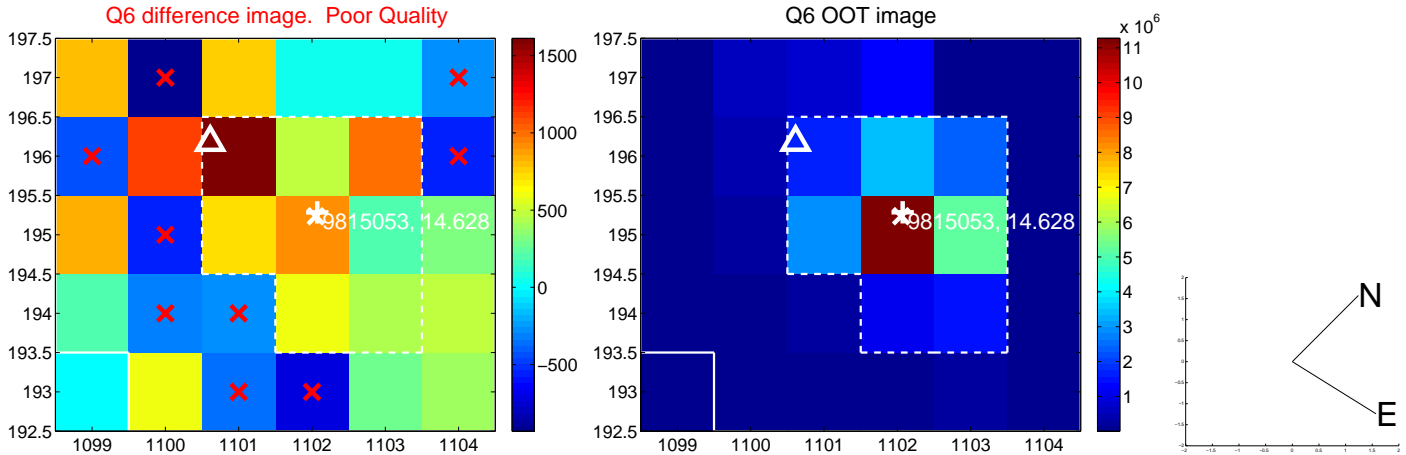
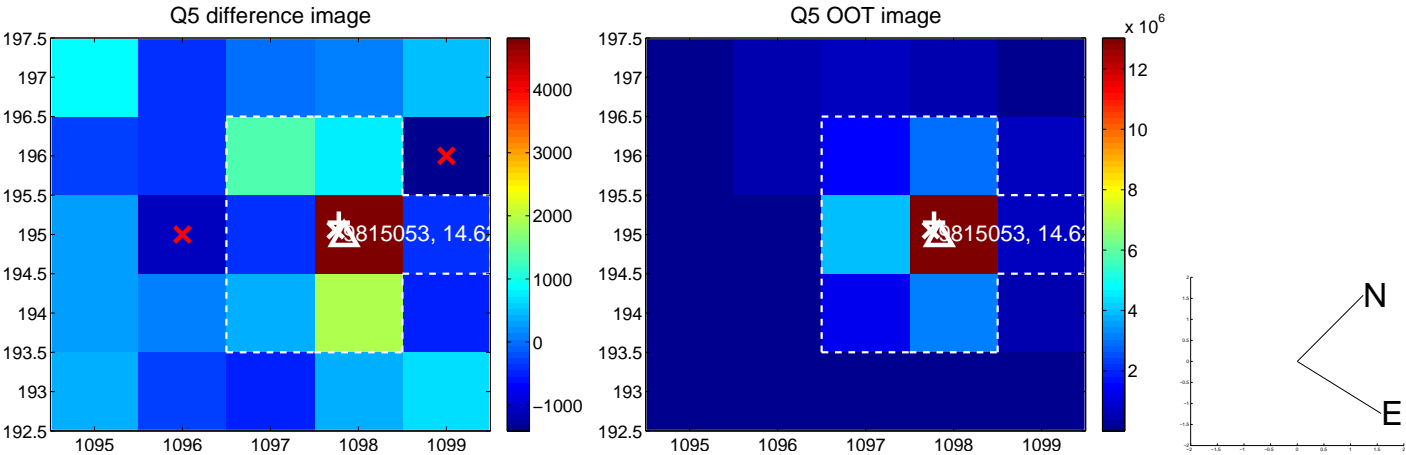


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

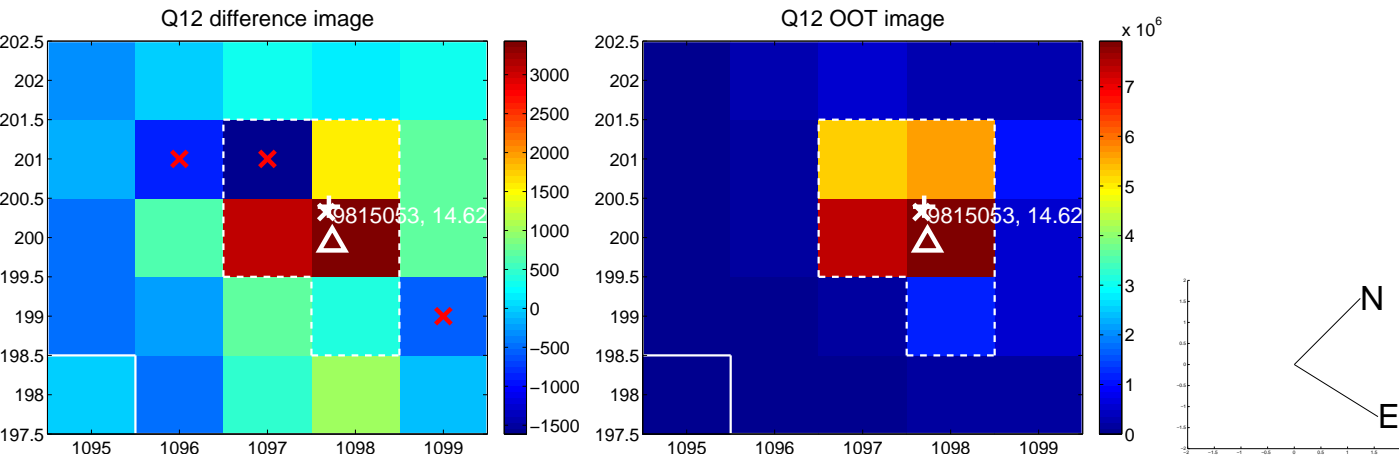
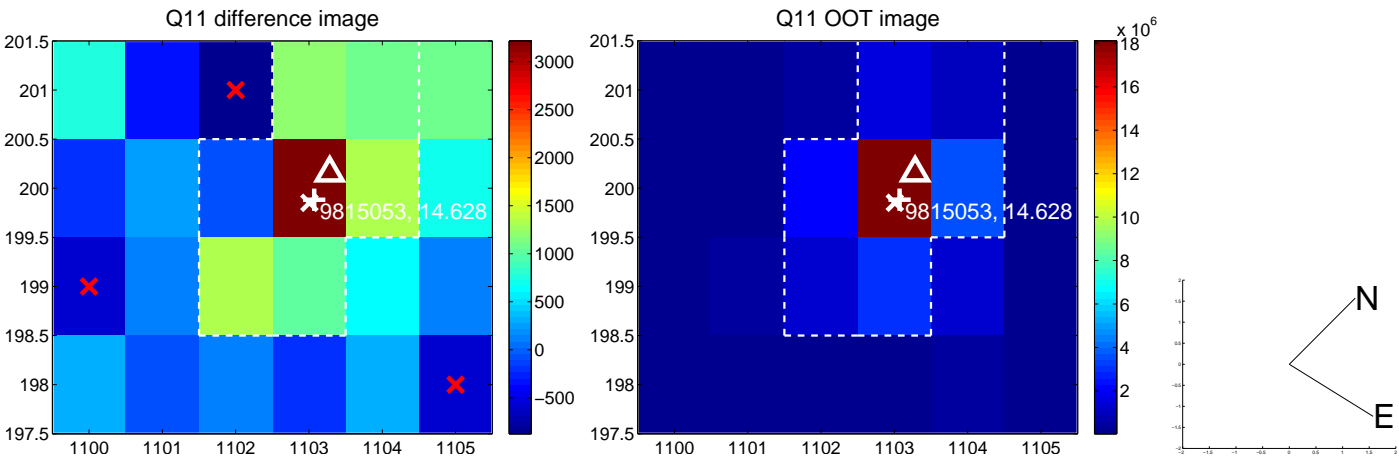
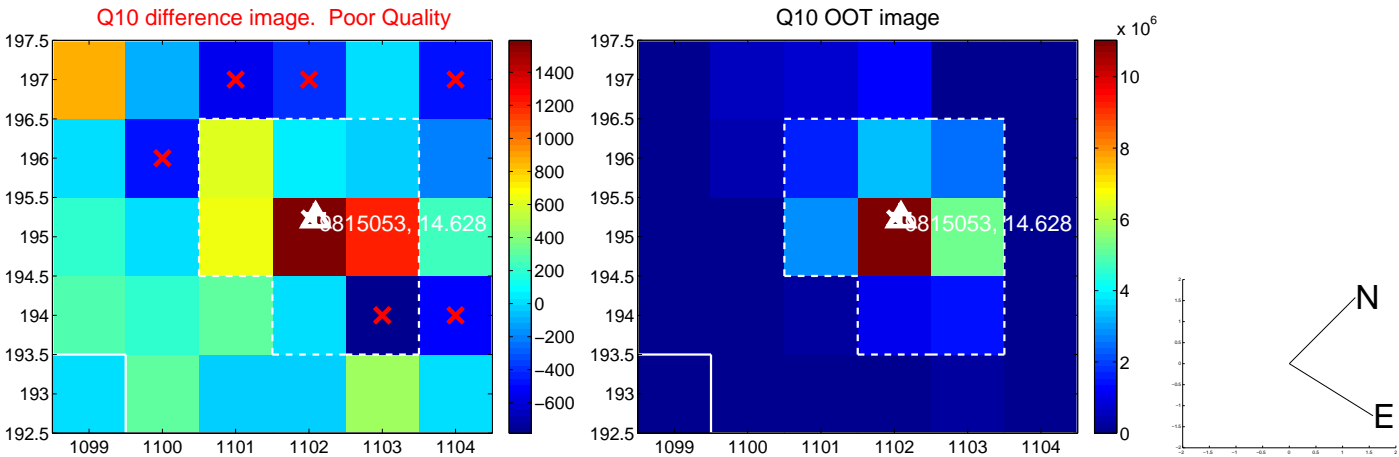
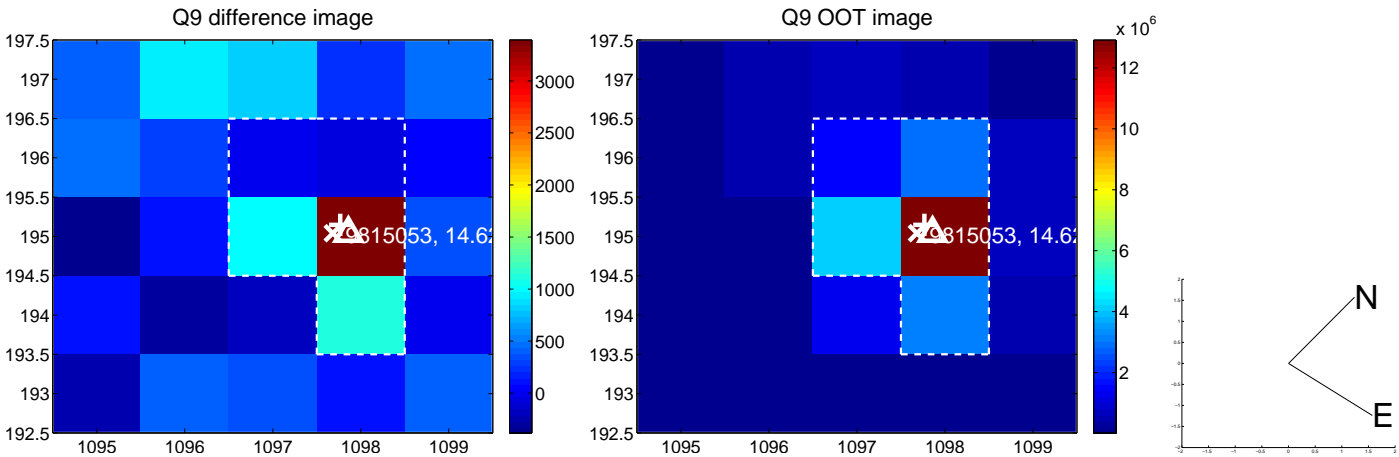
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



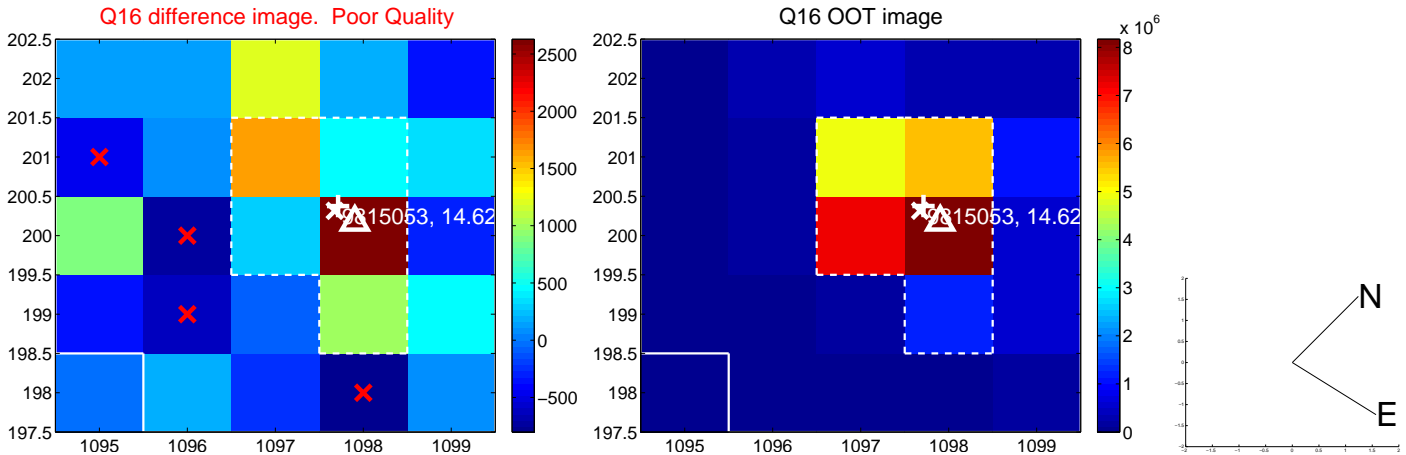
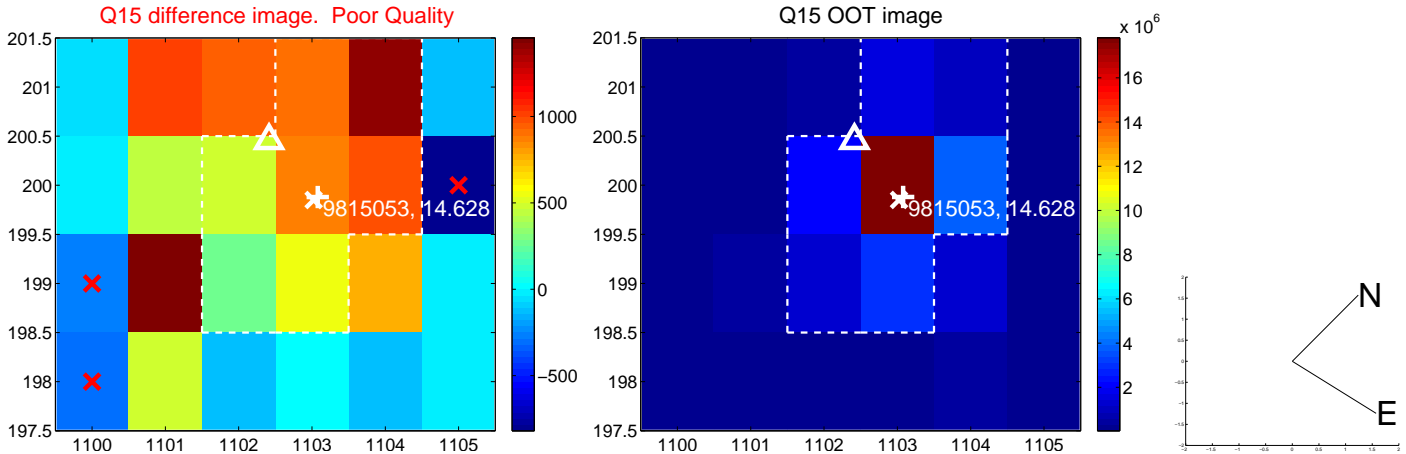
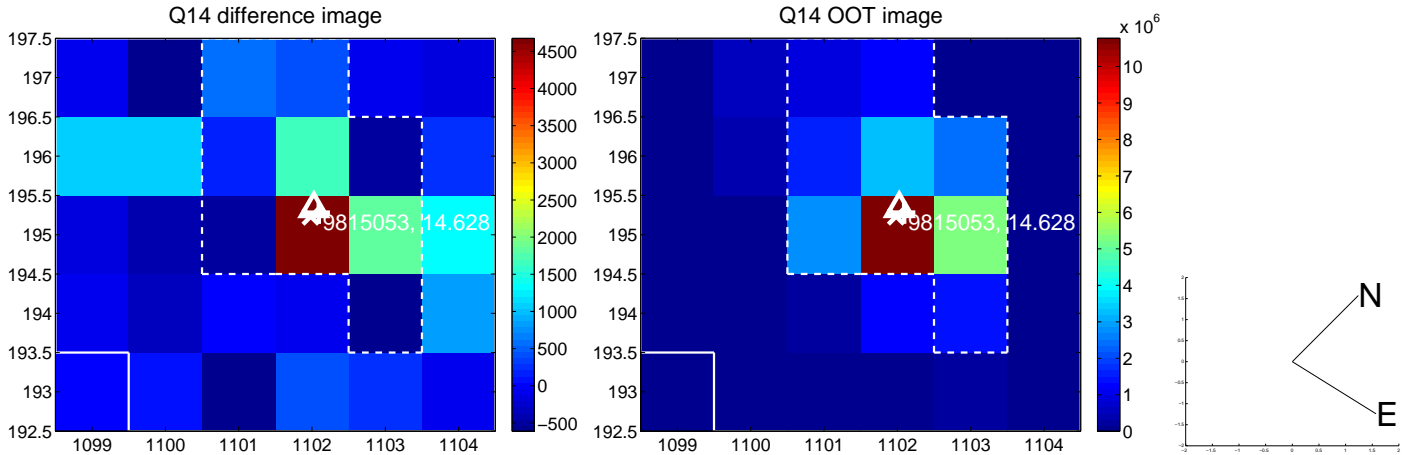
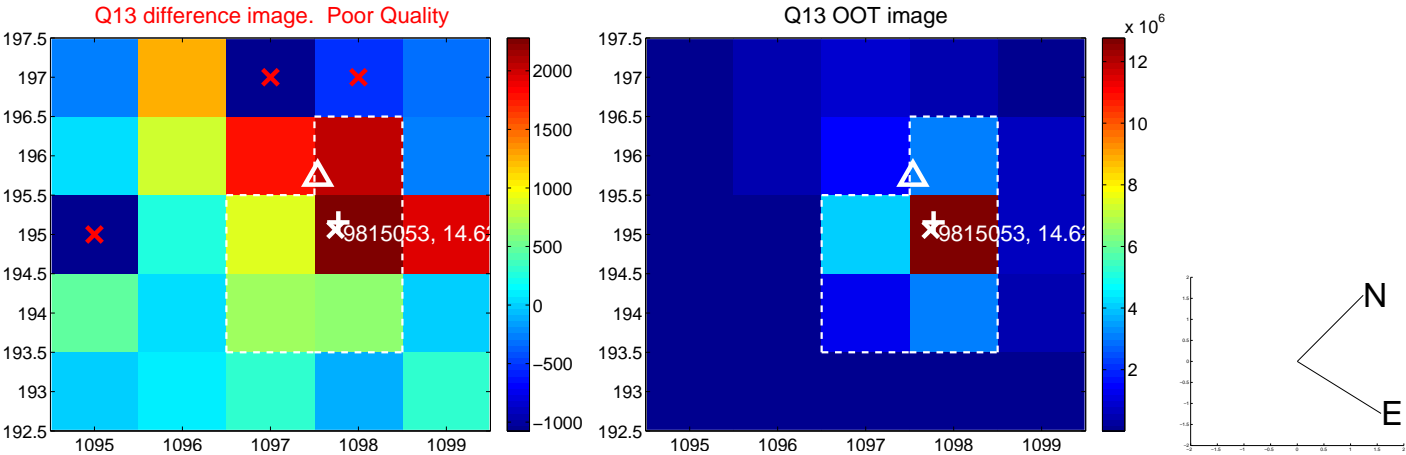
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



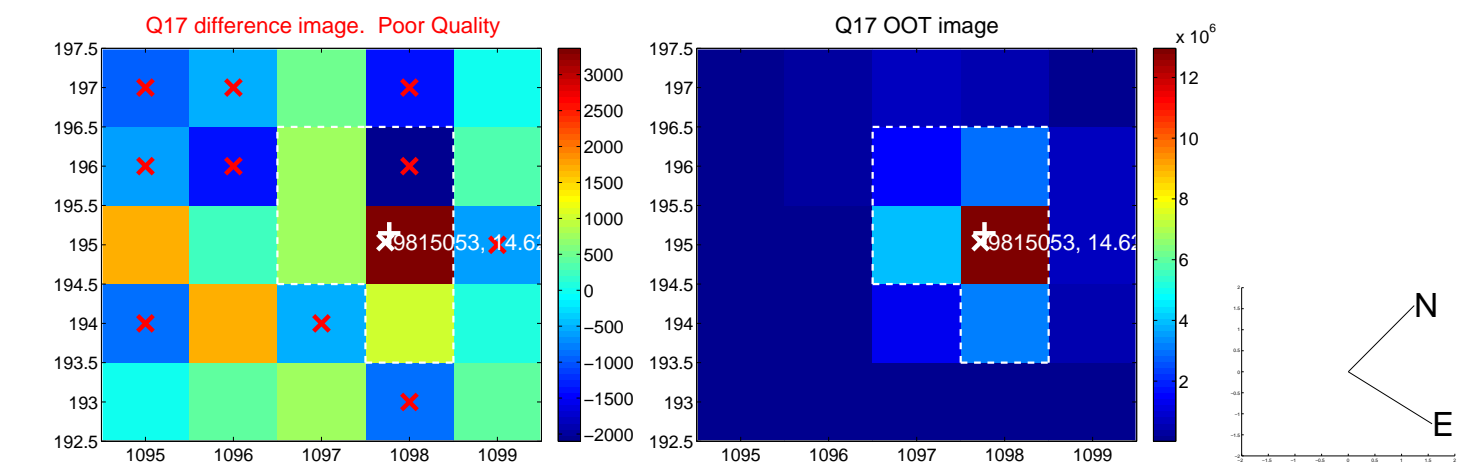
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



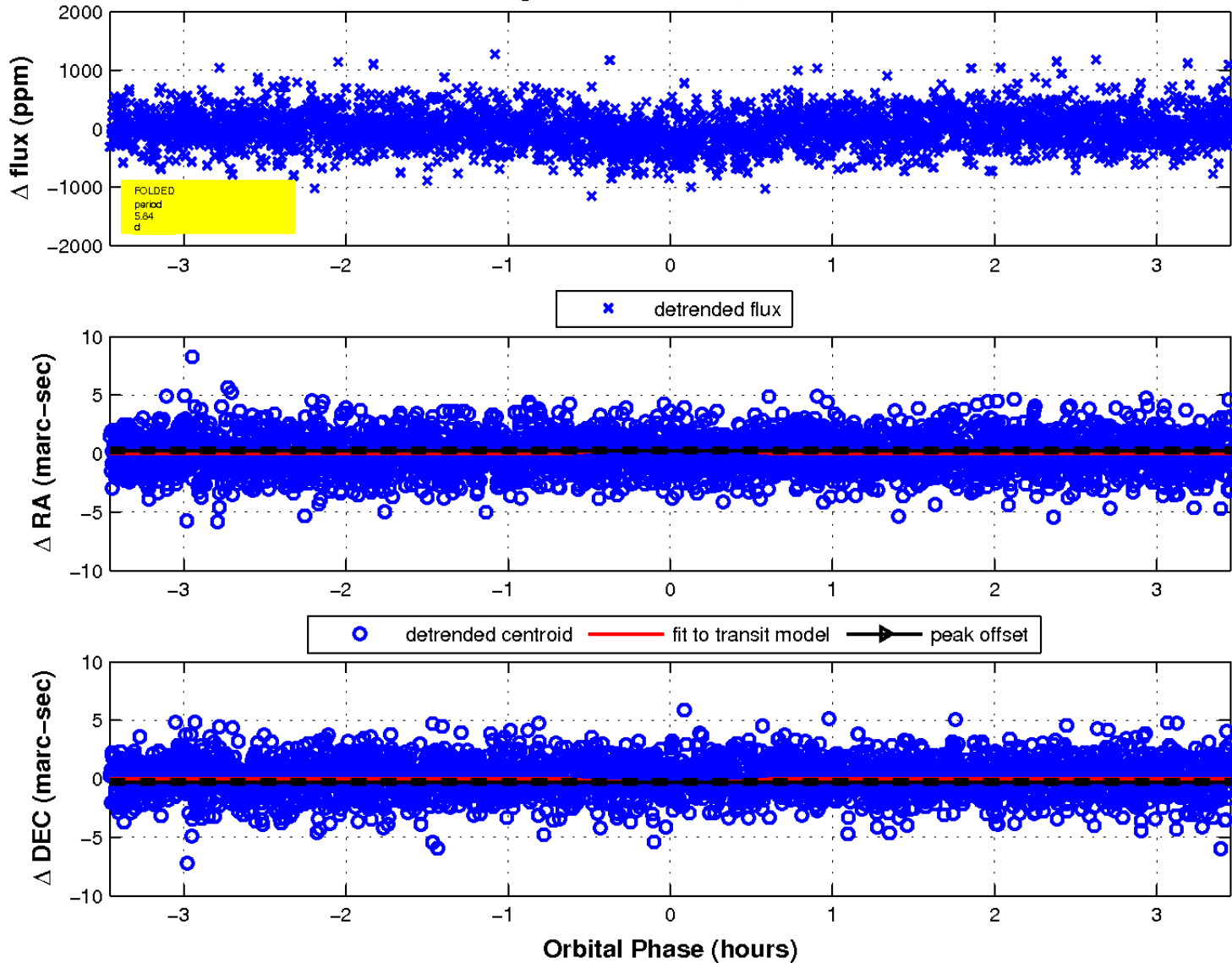
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

