

KIC 005213230

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})
005213230-01	OBS	3474.01	52.609698	158.621250	202.9	8.363	12.5	13.0	1.29	5881	2.11	22.18

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005213230-01	OBS	PC	0.98	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 005213230-01

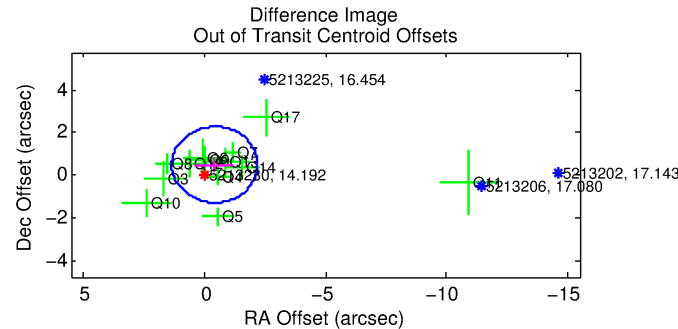
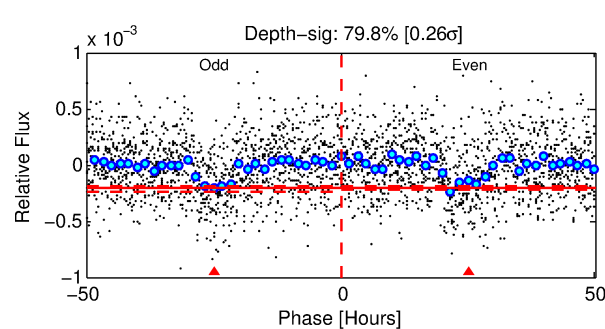
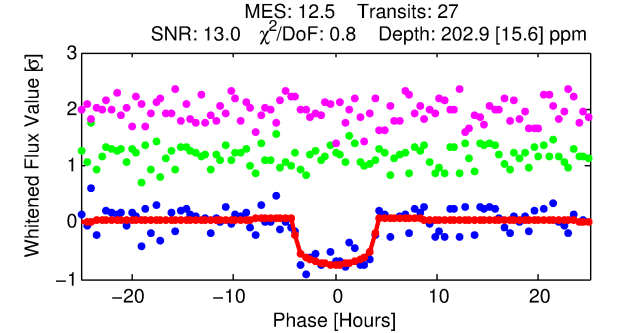
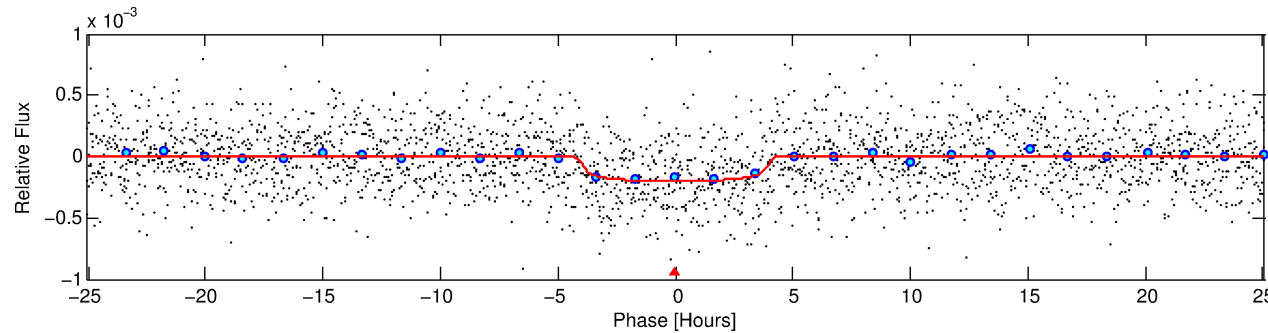
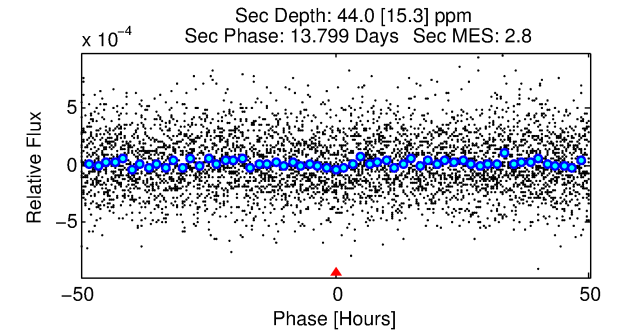
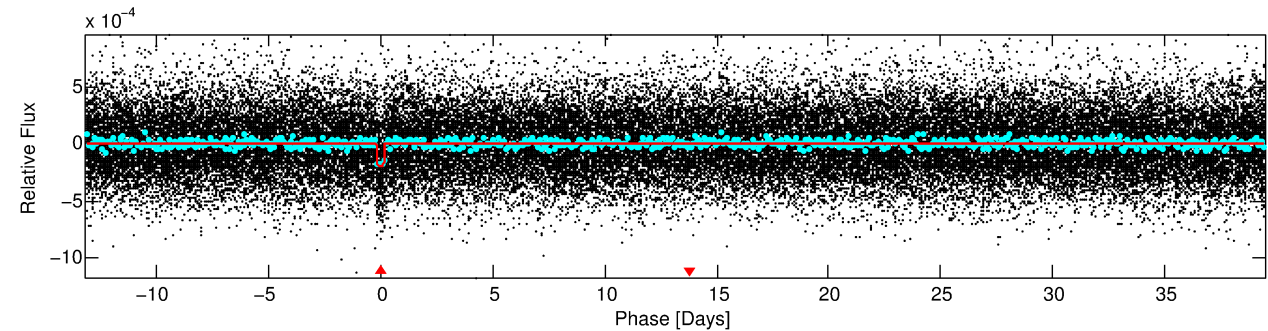
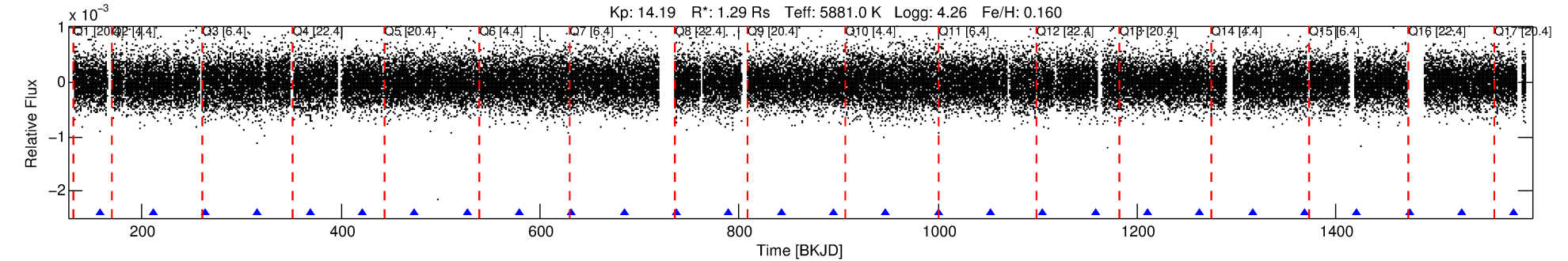
No Significant Match Found

DV One-Page Summary

KIC: 5213230 Candidate: 1 of 1 Period: 52.610 d

KOI: K03474.01 Corr: 0.944

Kp: 14.19 R*: 1.29 Rs Teff: 5881.0 K Logg: 4.26 Fe/H: 0.160



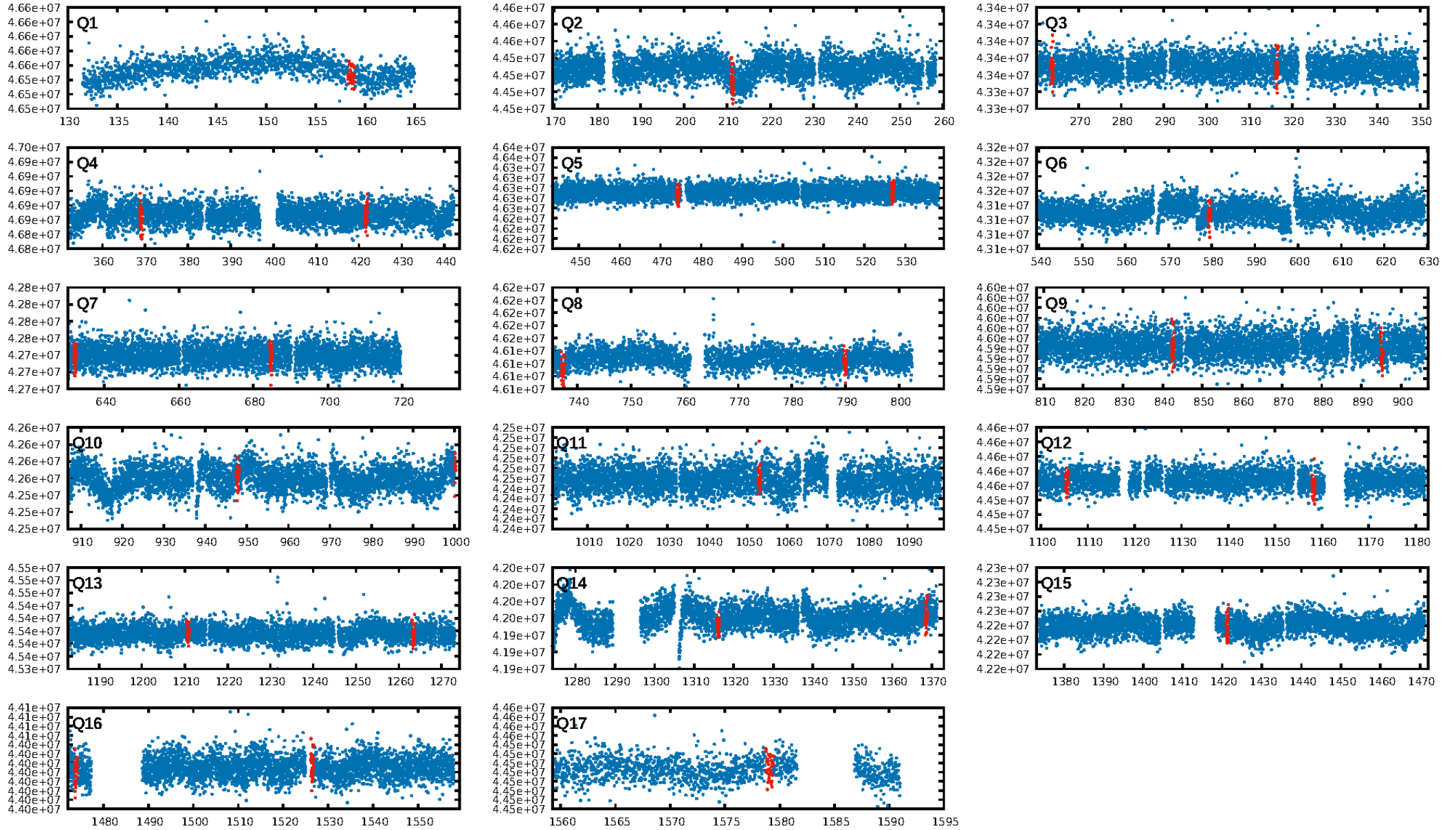
DV Fit Results:

Period = 52.60970 [0.00069] d
Epoch = 158.6212 [0.0112] BKJD
Rp/R* = 0.0150 [0.0039]
a/R* = 26.19 [31.68]
b = 0.86 [0.38]
Seff = 22.18 [5.47]
Teff = 553 [34] K
Rp = 2.11 [0.66] Re
a = 0.2845 [0.0448] AU
Ag = 438.85 [294.29] [1.49σ]
Teffp = 3916 [615] K [5.46σ]

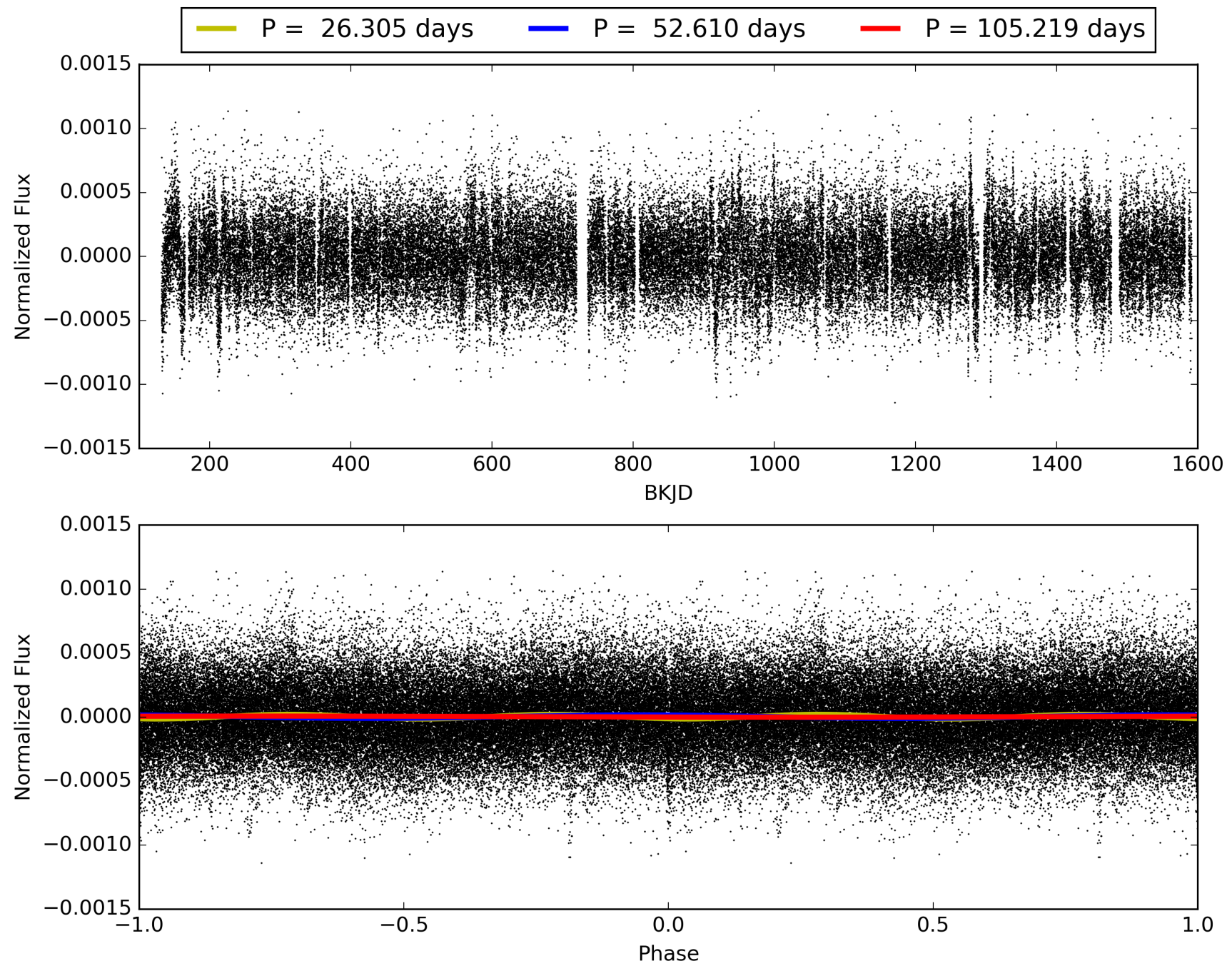
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 23.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.03e-32
RollingBand-fgt: 1.00 [25/25]
GhostDiagnostic-chr: 1.933
Centroid-sig: 7.9%
Centroid-so: 1.321 arcsec [1.34σ]
OotOffset-rm: 0.653 arcsec [1.11σ]
KicOffset-rm: 0.736 arcsec [1.38σ]
OotOffset-st: 3/3/3/4 [13]
KicOffset-st: 3/3/3/4 [13]
DiffImageQuality-fgm: 0.62 [8/13]
DiffImageOverlap-fno: 1.00 [16/16]

TCE 005213230-01, PDC Light Curves

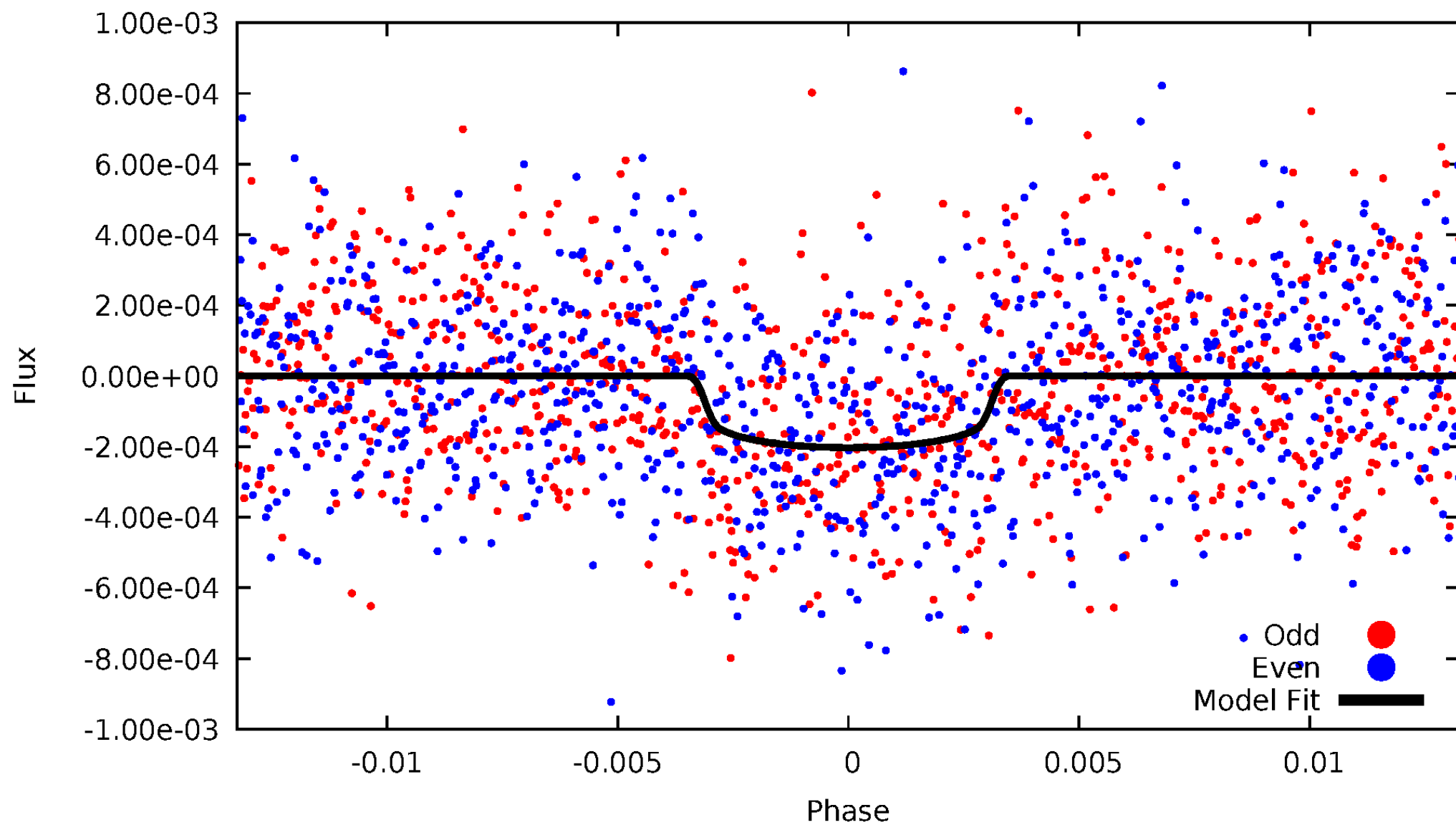


TCE 005213230-01



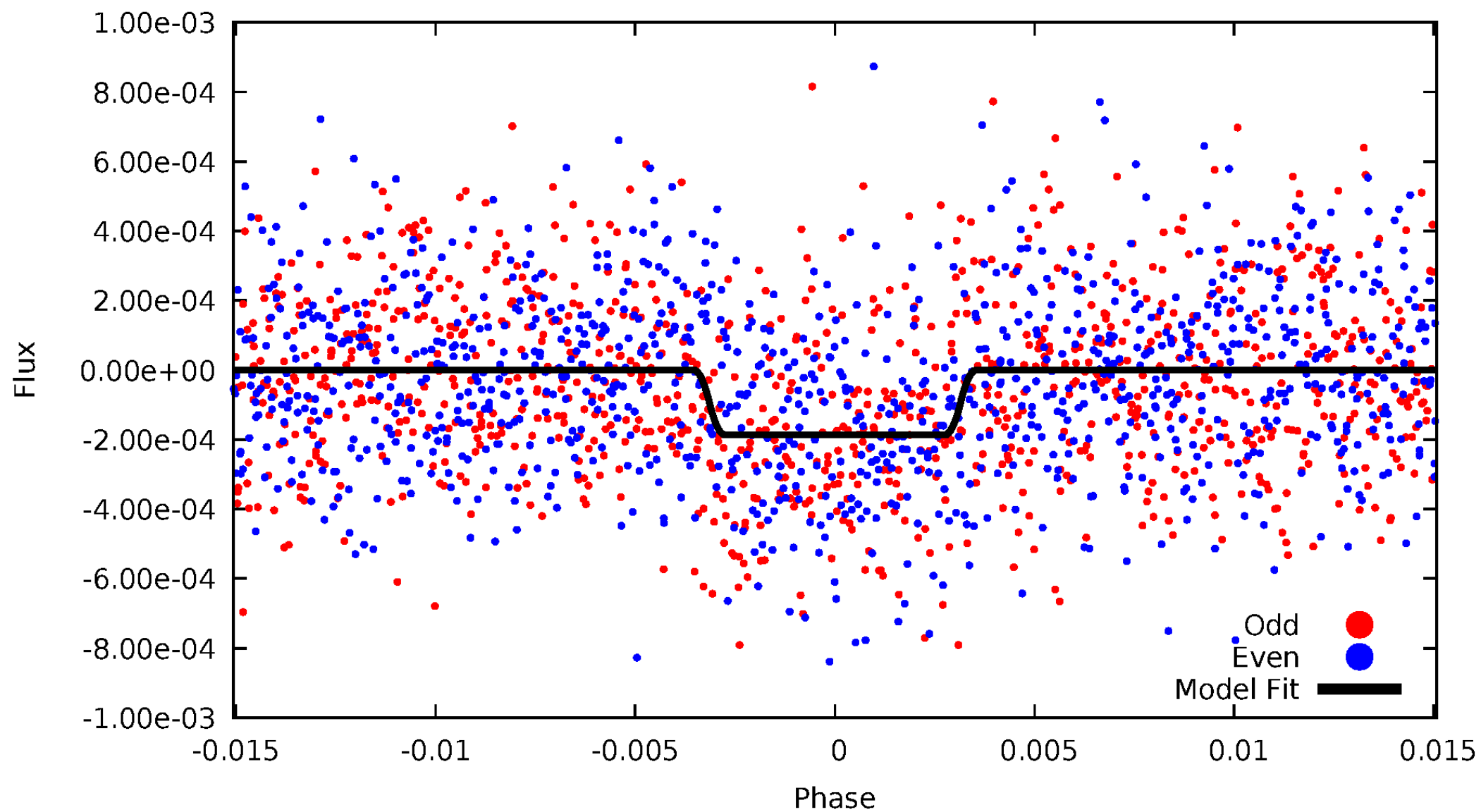
DV Odd/Even

TCE 005213230-01



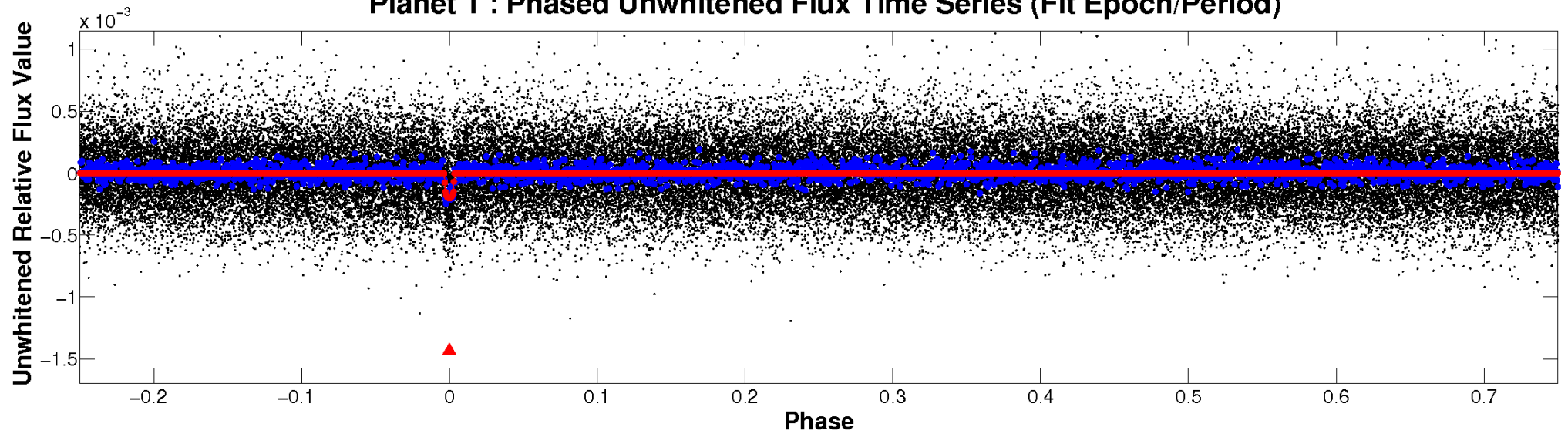
ALT Odd/Even

TCE 005213230-01

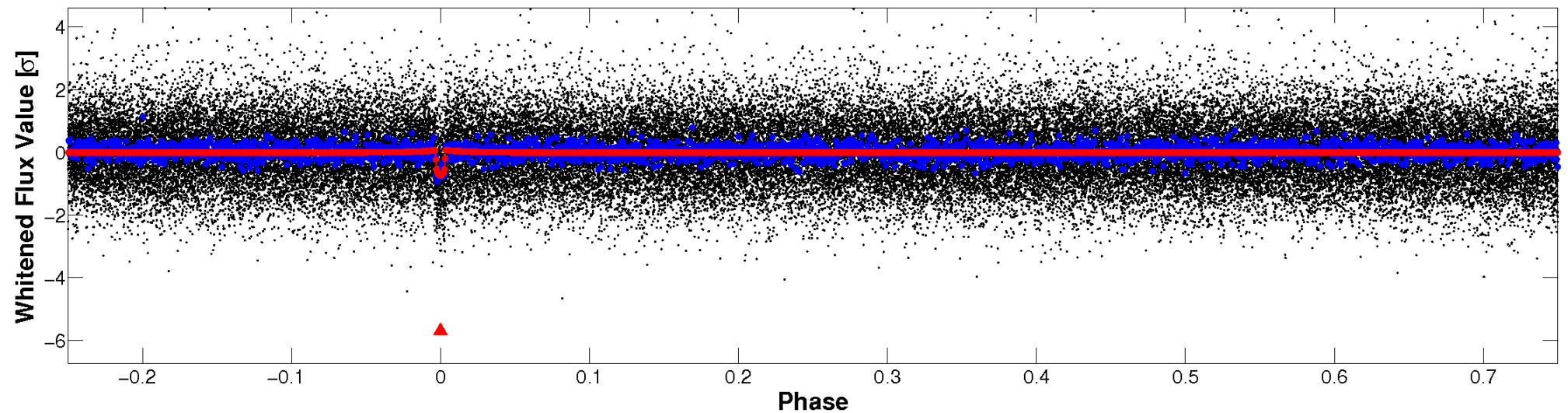


Non-Whitened Vs. Whitened Light Curve

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

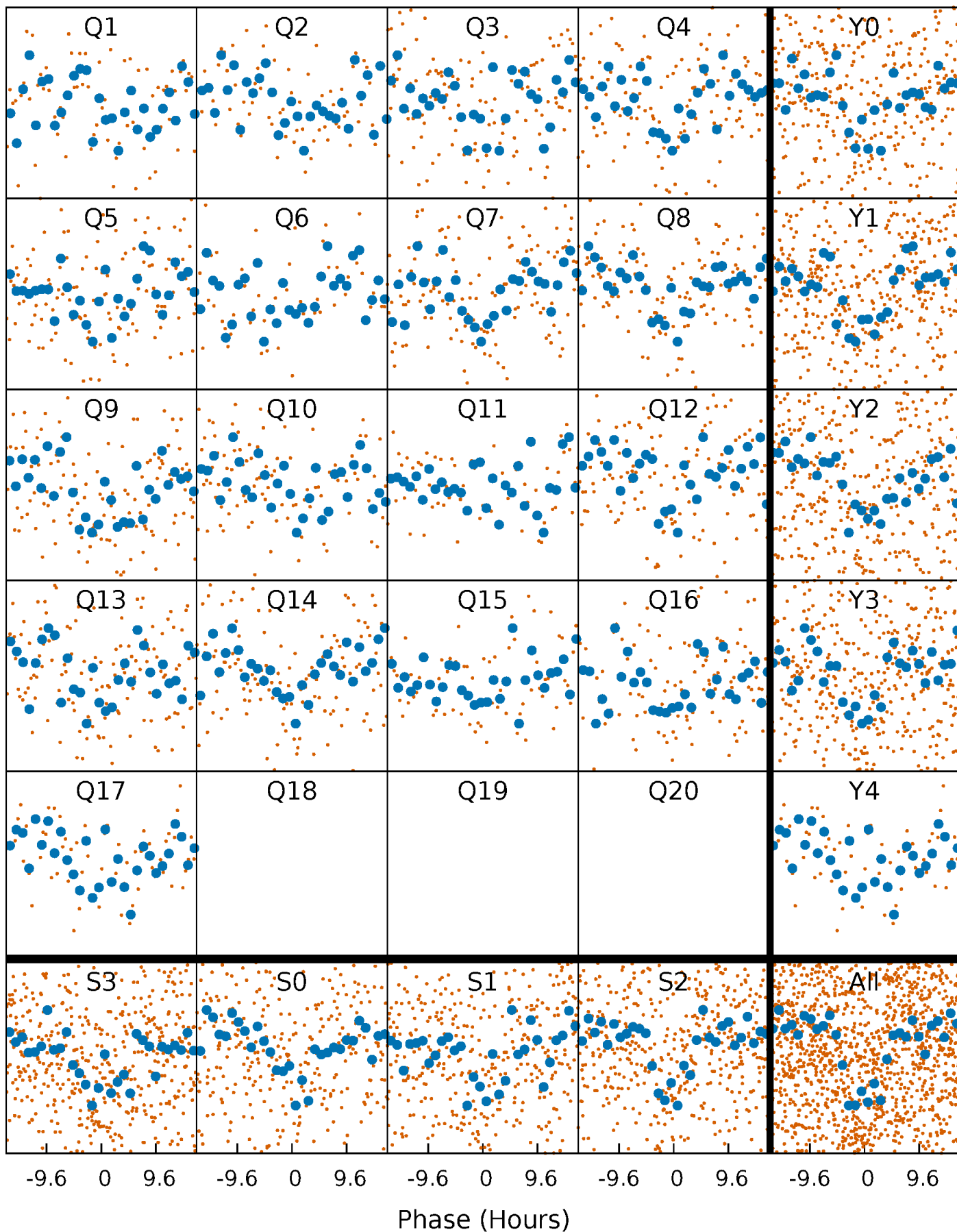


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



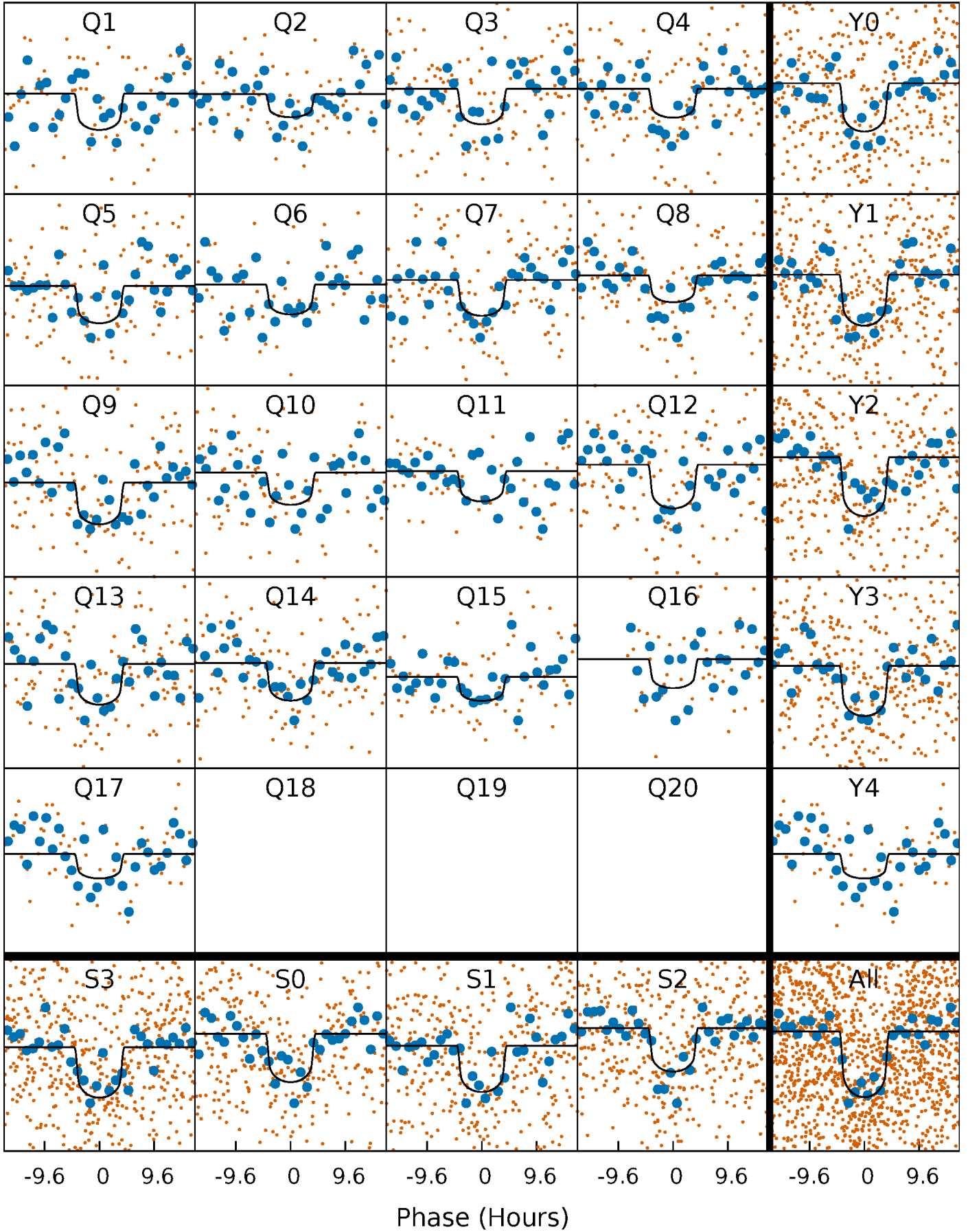
PDC Quarter-Phased Transit Curves

TCE 005213230-01 P= 52.609698 Days $T_0=158.621250$ (BKJD)



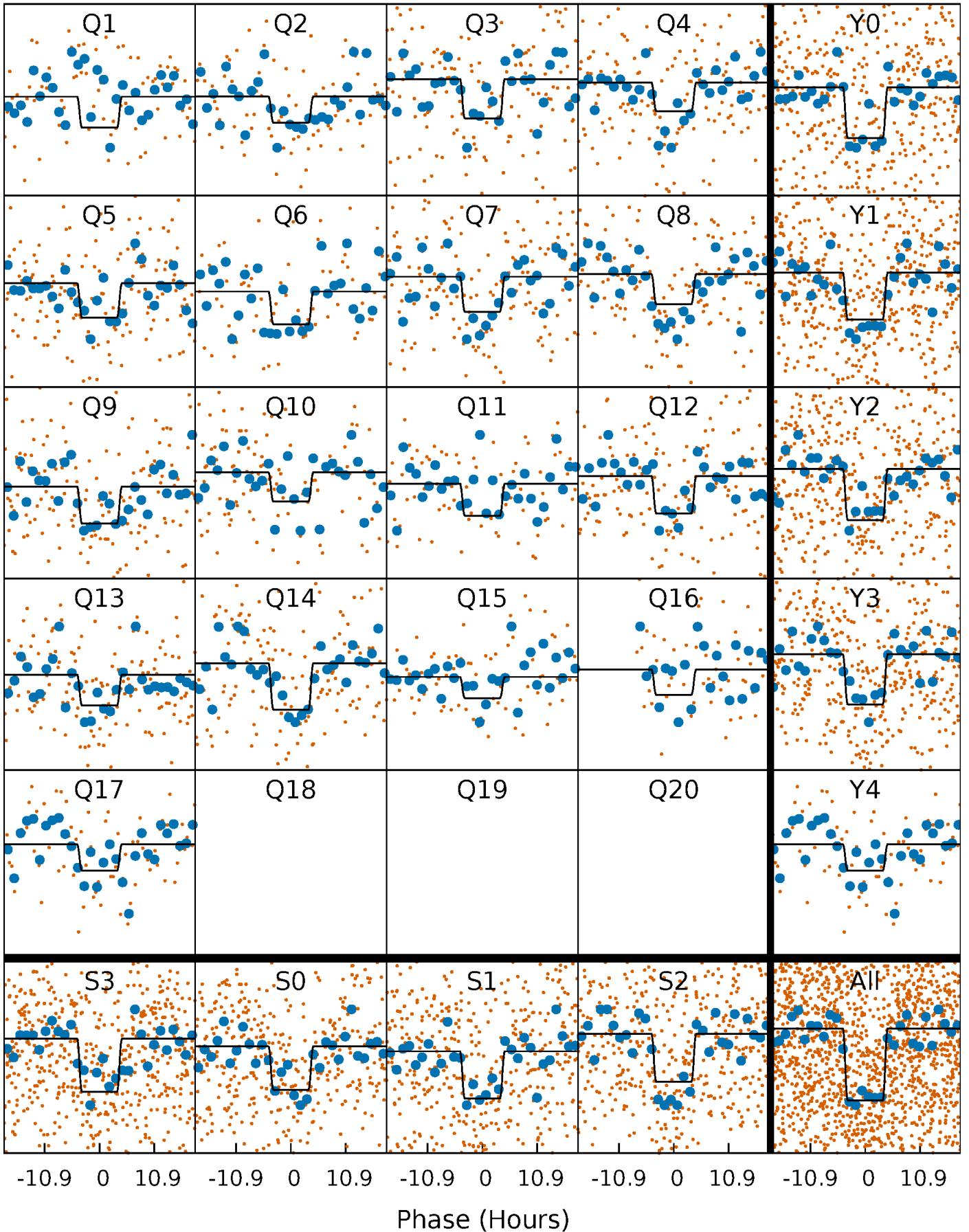
DV Quarter-Phased Transit Curves

TCE 005213230-01 P= 52.609698 Days $T_0=158.621250$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

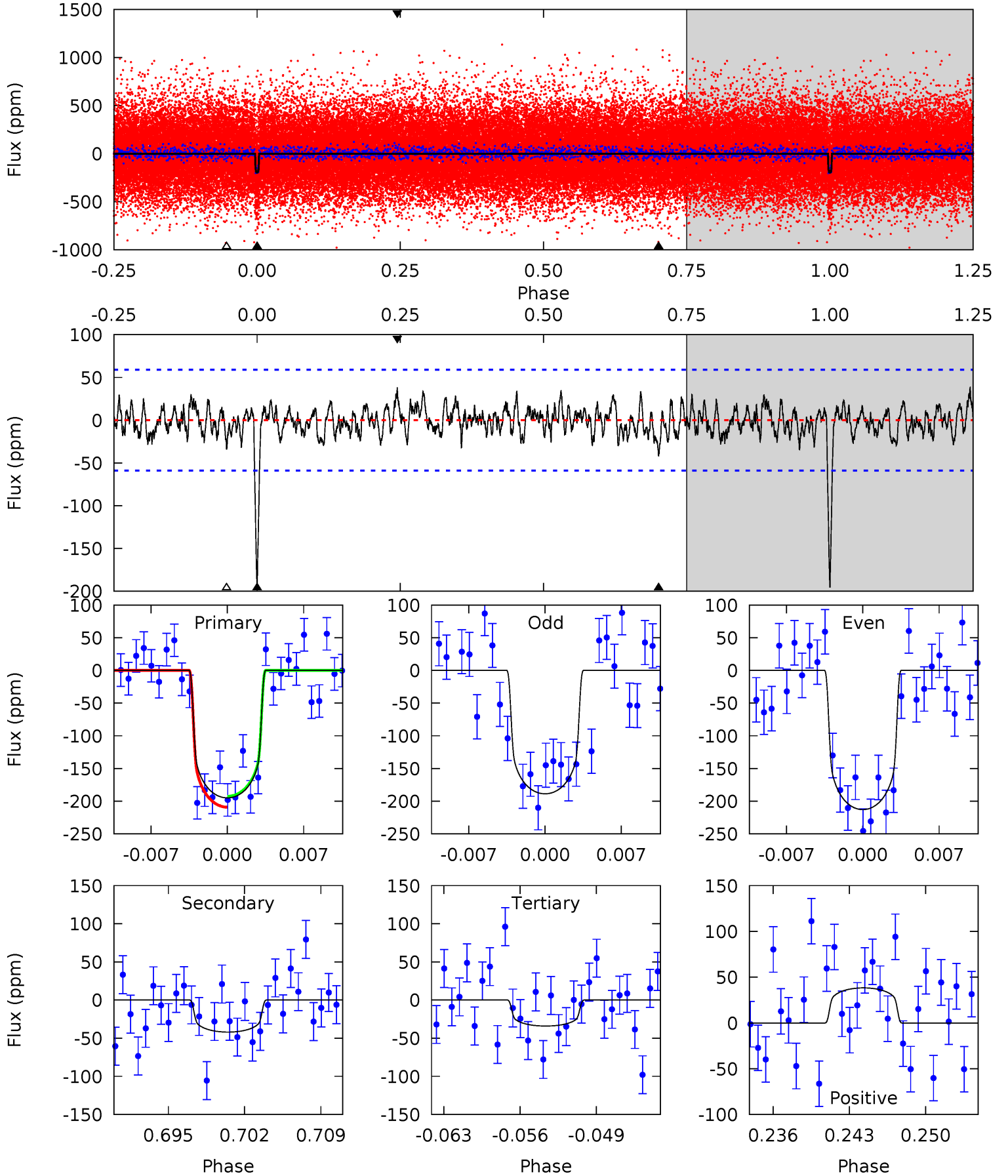
TCE 005213230-01 P= 52.608159 Days $T_0=158.636028$ (BKJD)



DV Model-Shift Uniqueness Test

005213230-01, P = 52.609698 Days, E = 106.011552 Days

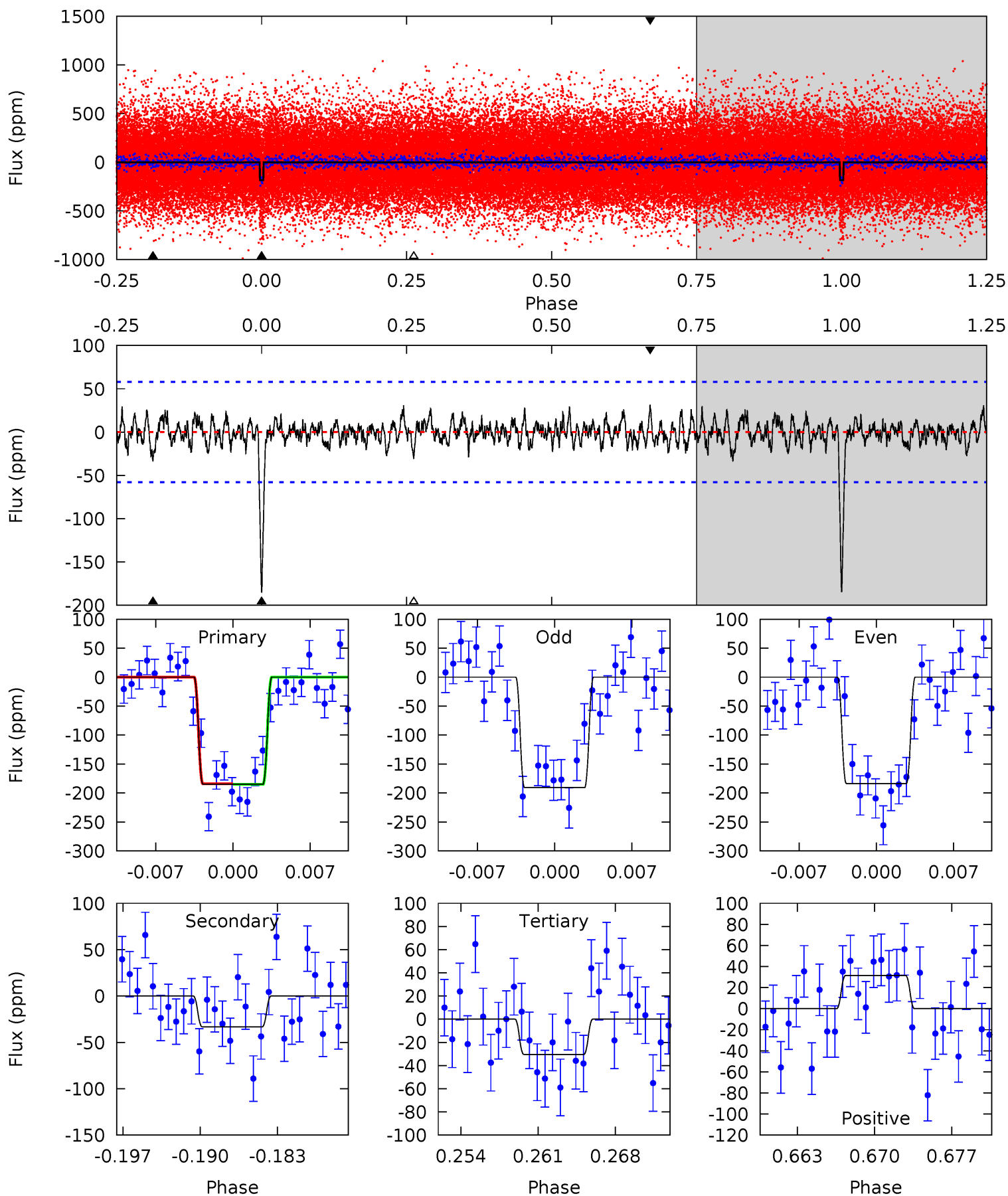
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.8	3.63	2.94	3.31	5.10	2.70	1.13	13.9	13.5	0.68	0.32	1.05	1.09	0.16	0.72



Alt Model-Shift Uniqueness Test

005213230-01, P = 52.608159 Days, E = 106.027869 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.3	2.92	2.67	2.77	5.09	2.69	0.91	13.6	13.5	0.25	0.15	0.31	1.06	0.15	0.04



Stellar Parameters For KIC 005213230

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5881^{+79}_{-79}	$4.259^{+0.137}_{-0.112}$	$0.160^{+0.150}_{-0.150}$	$1.294^{+0.207}_{-0.228}$	$1.109^{+0.070}_{-0.093}$	$0.722^{+0.463}_{-0.241}$
	+1%/-1%	+3%/-3%	+94%/-94%	+16%/-18%	+6%/-8%	+64%/-33%
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 005213230-01 / KOI 3474.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-42 ± 12	$2.11^{+0.59}_{-0.55}$	773^{+35}_{-35}	4122^{+535}_{-362}	409^{+366}_{-178}
Alt.	-33 ± 11	$1.94^{+0.58}_{-0.57}$	774^{+33}_{-37}	4052^{+675}_{-414}	379^{+475}_{-187}

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

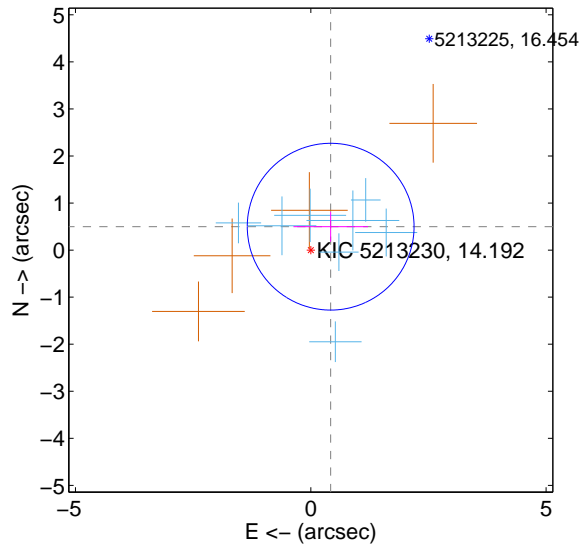
Supplemental centroid analysis for 005213230-01. Kepler magnitude: 14.19. Transit SNR 13.04

There are 8 quarters with good PRF difference image offsets

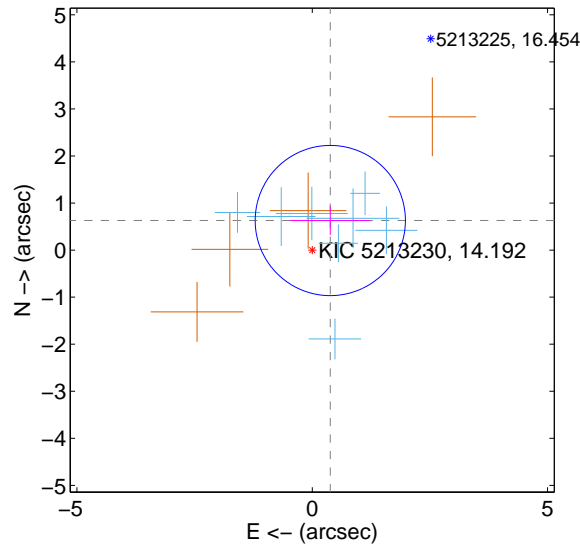
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.653 ± 0.591	1.11	-0.423 ± 0.793	0.497 ± 0.318
PRF-fit source offset from KIC position	0.736 ± 0.532	1.38	-0.384 ± 0.851	0.628 ± 0.305
photometric centroid source offset	1.32 ± 0.99	1.34	-1.29 ± 1.00	0.31 ± 0.86

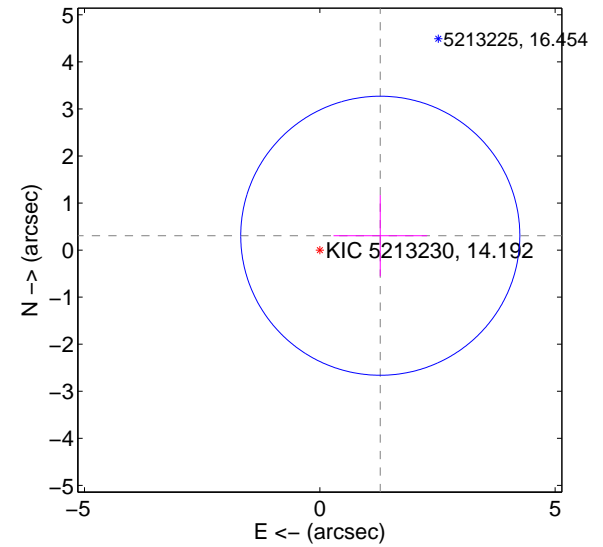
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

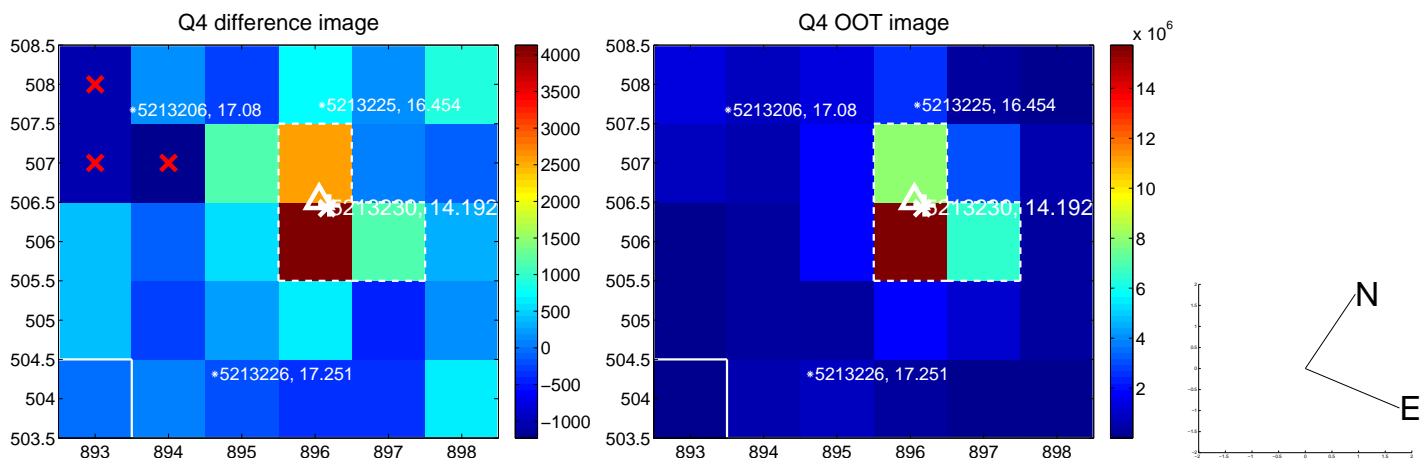
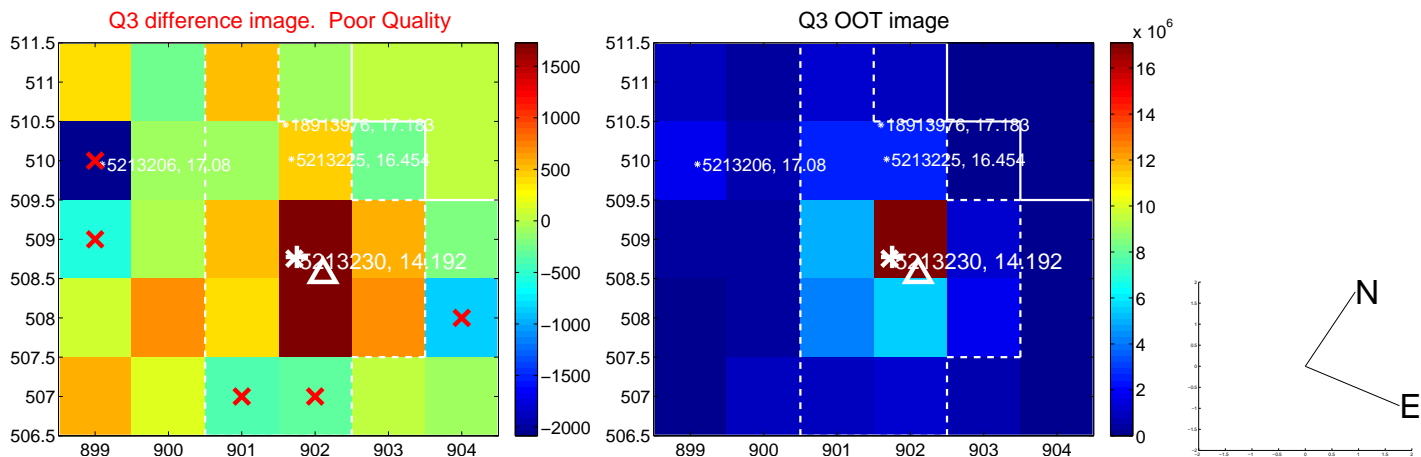
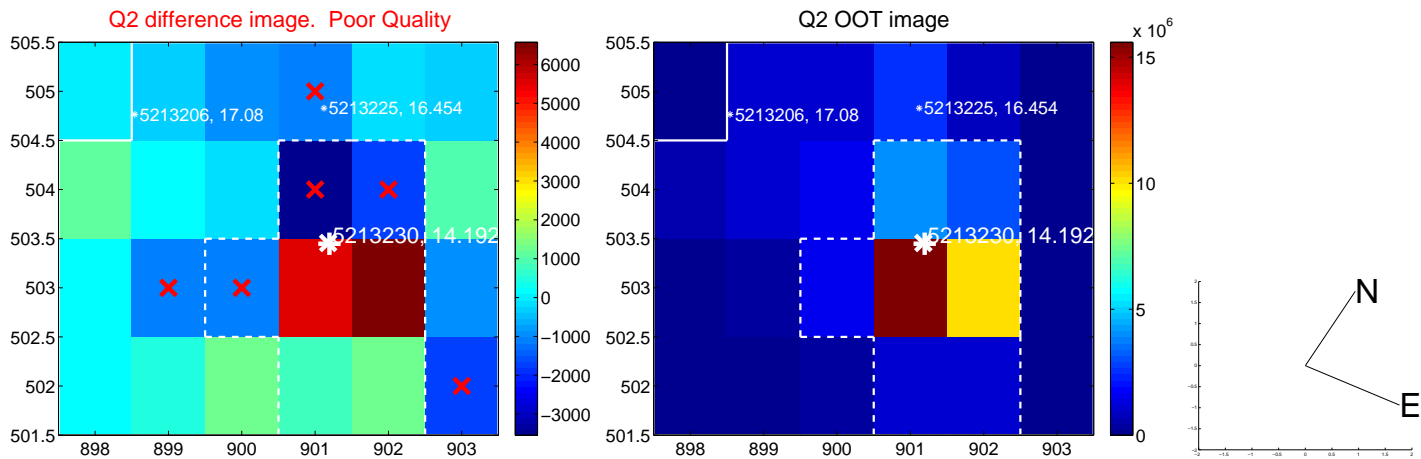
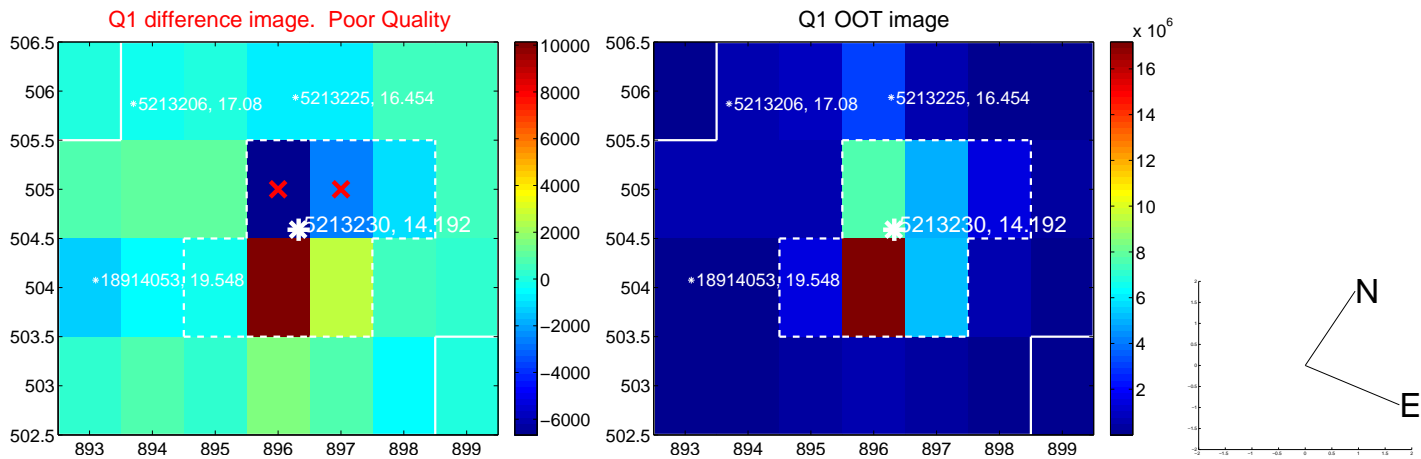


offset from photometric centroids

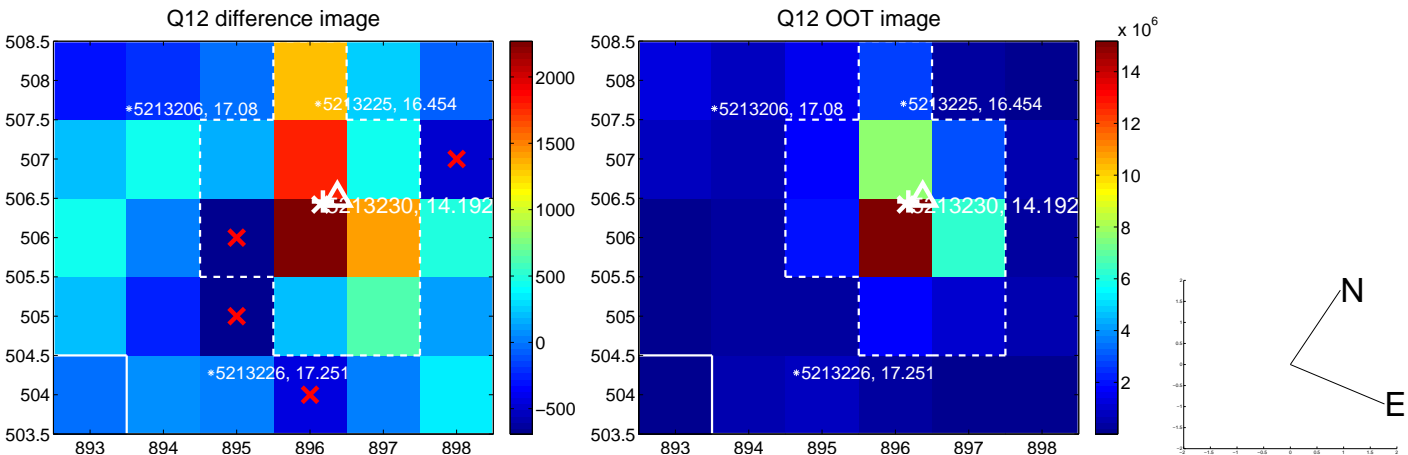
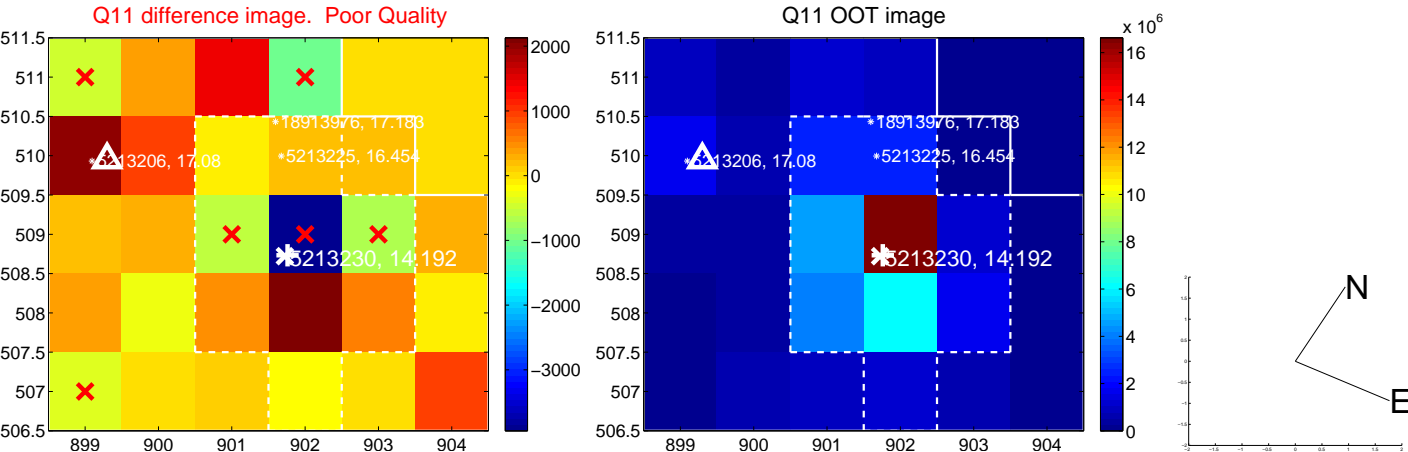
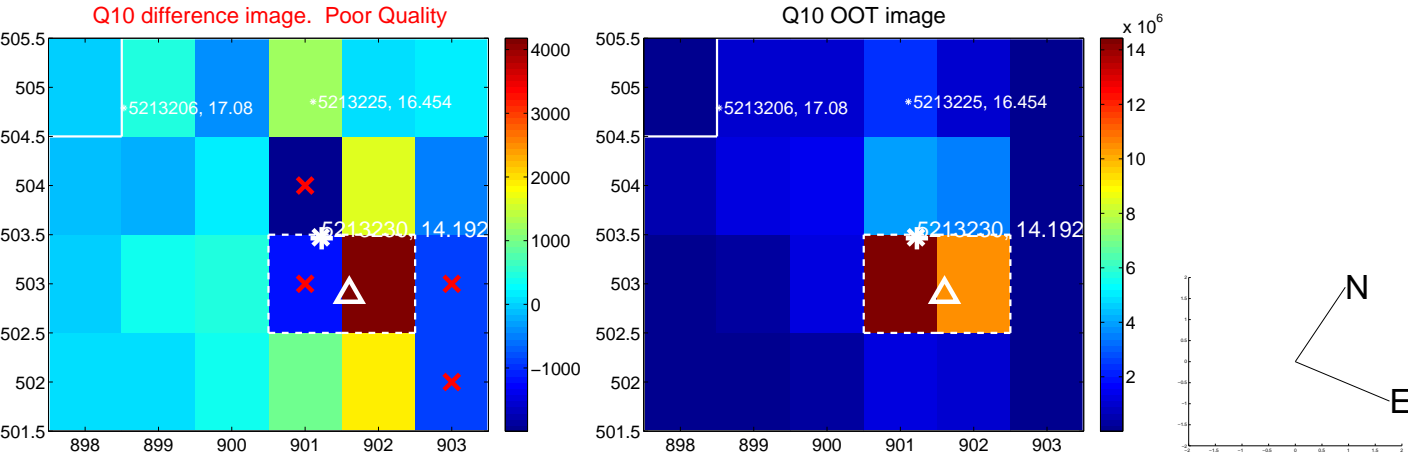
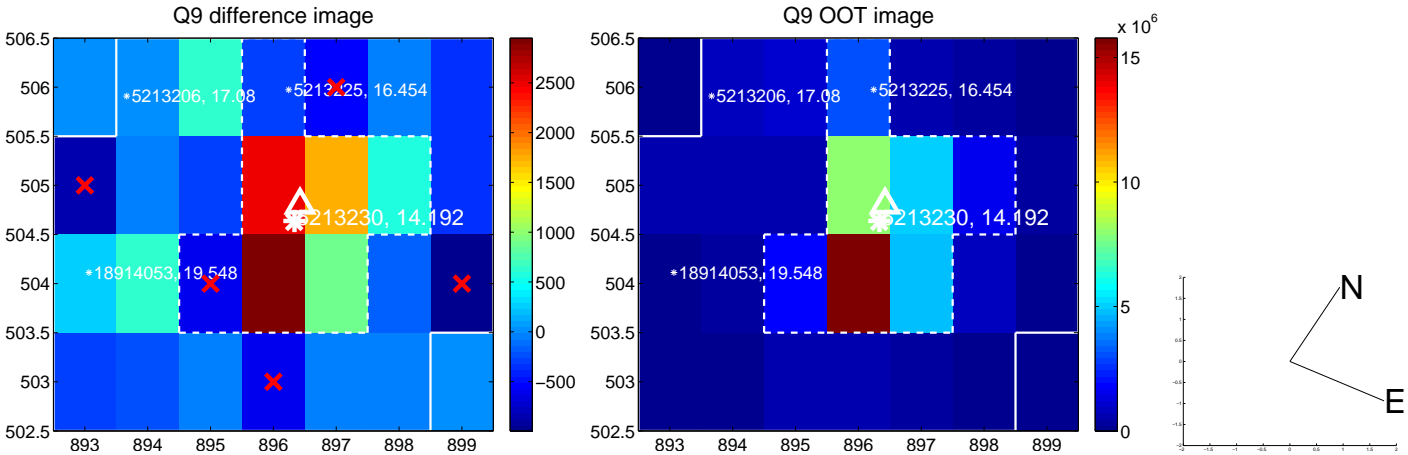


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

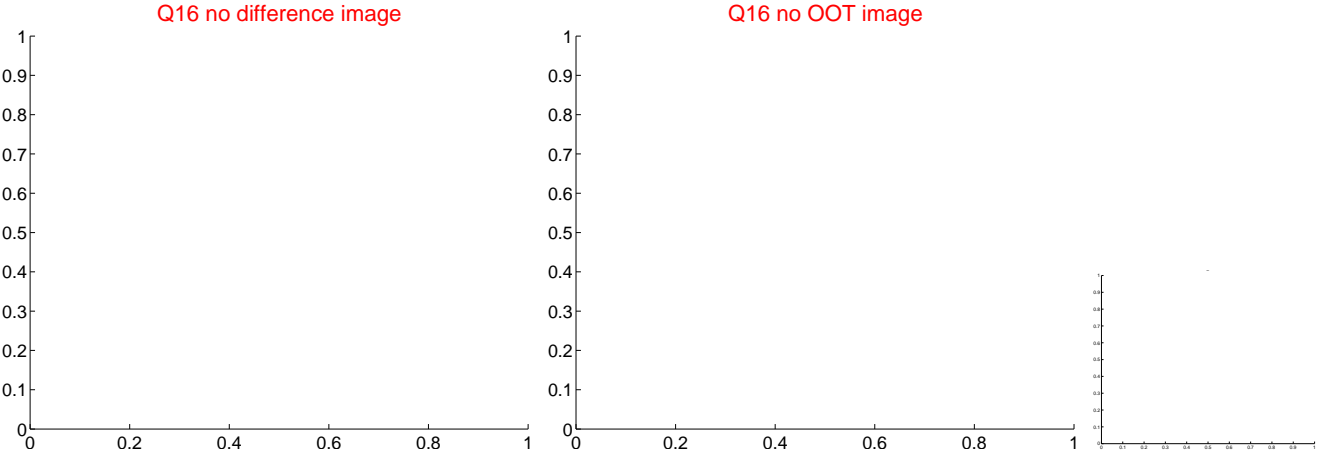
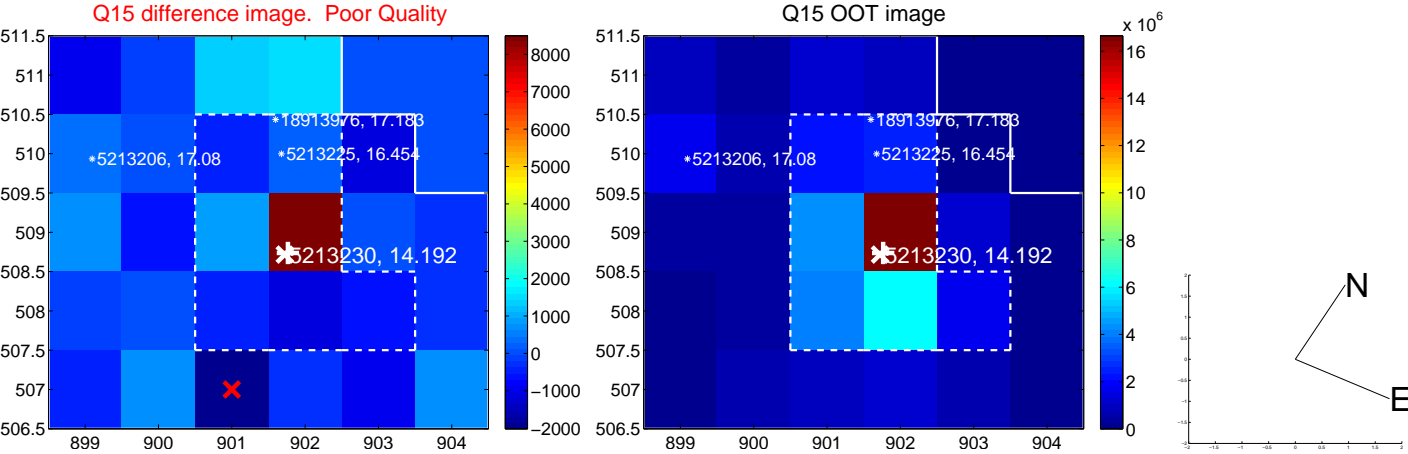
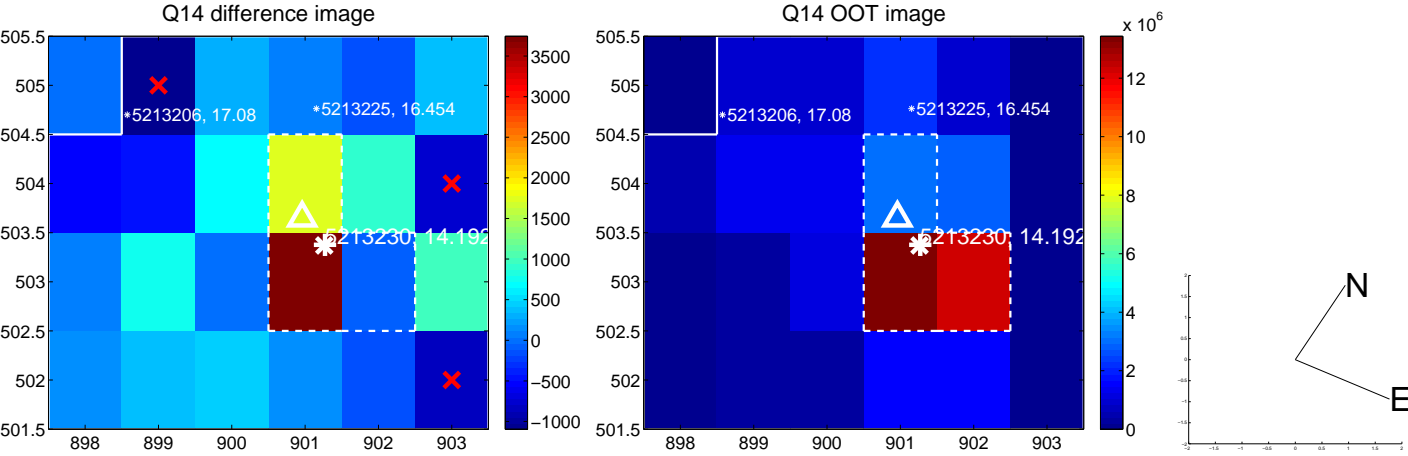
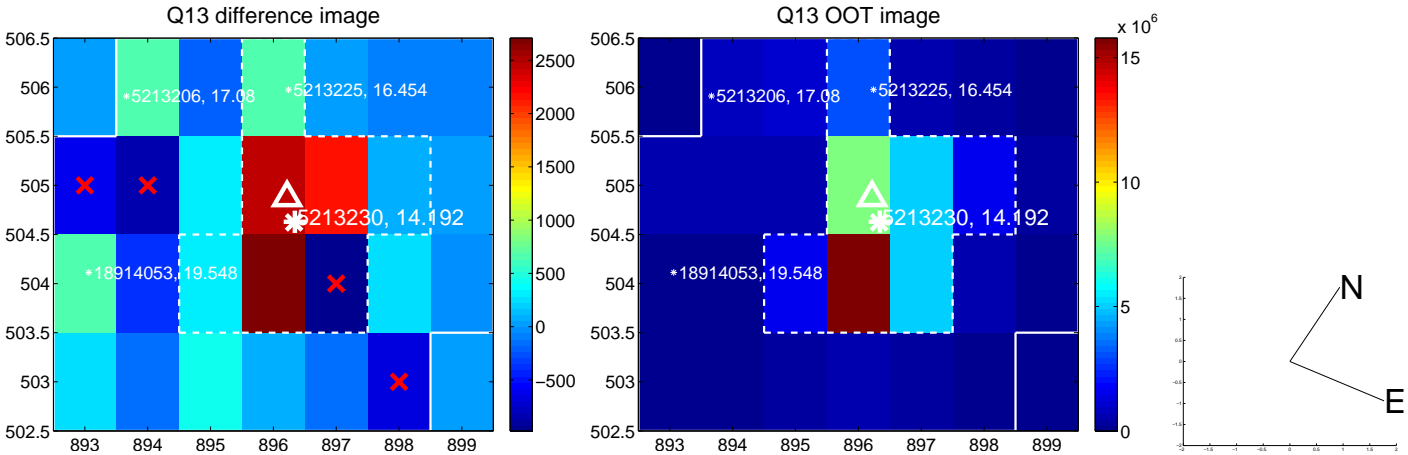
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



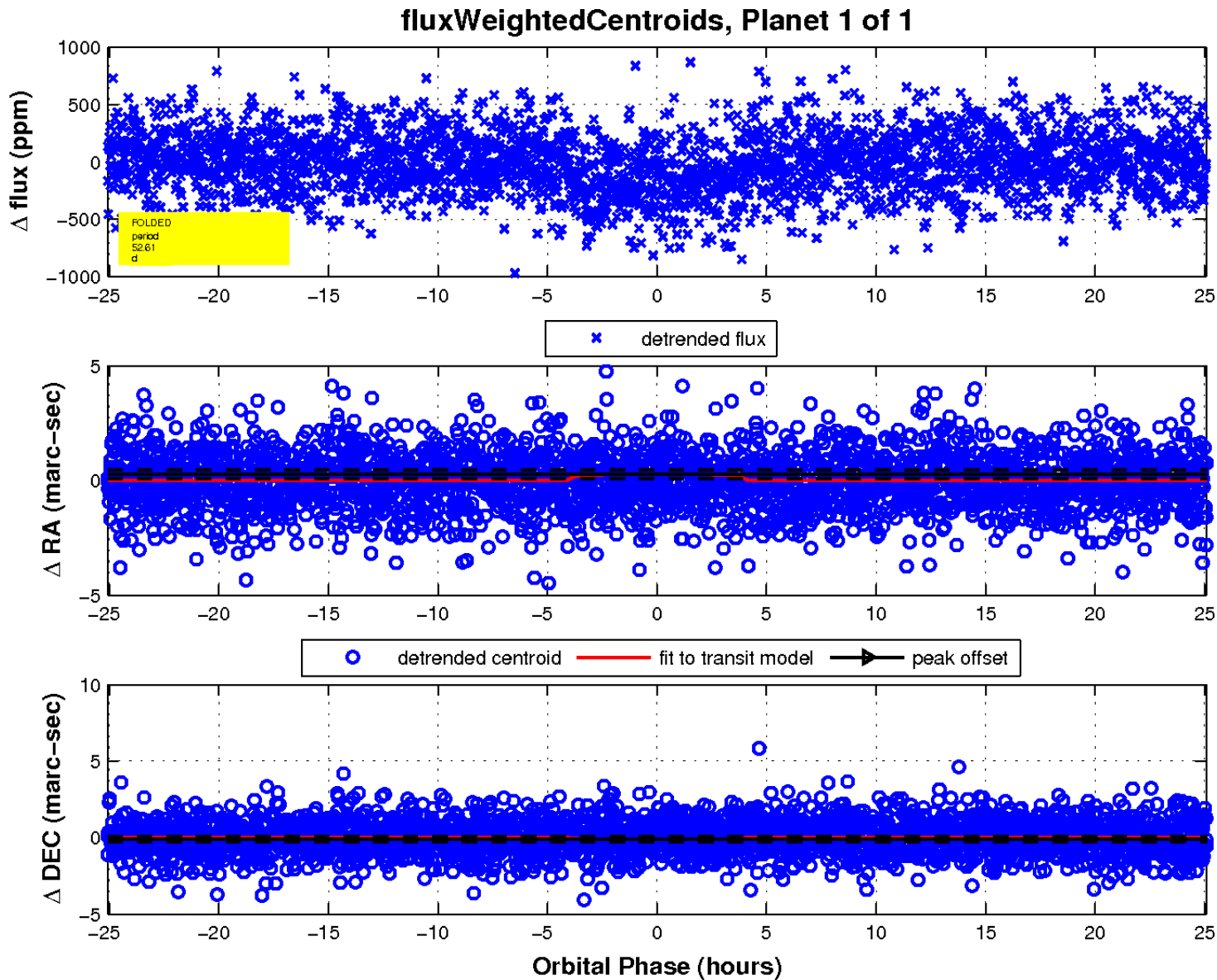
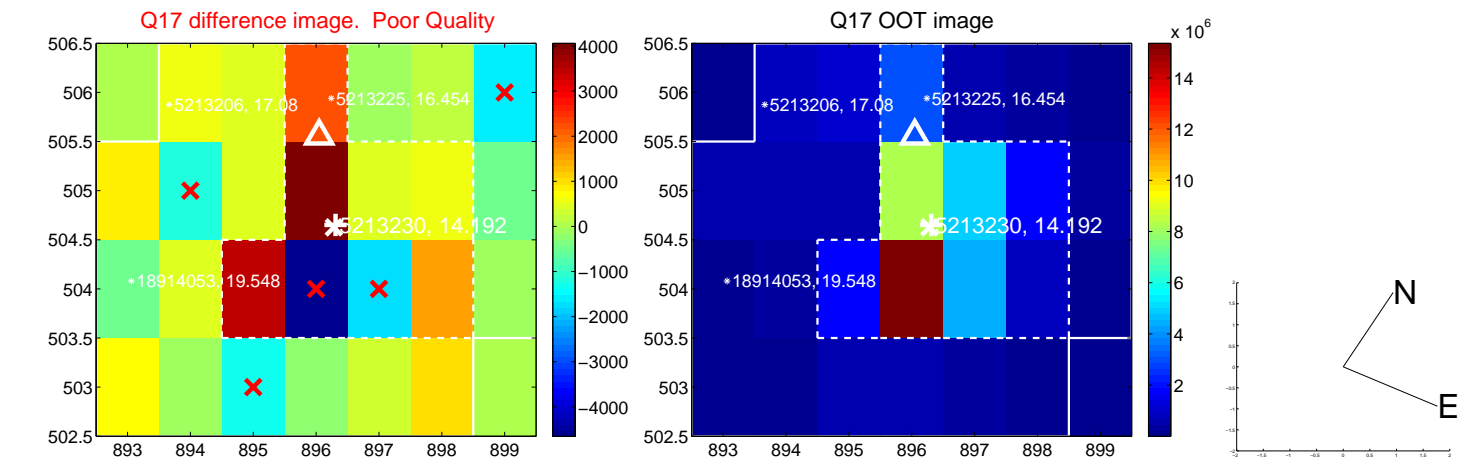
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

