

KIC 012069414

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})
012069414-01	OBS	4512.01	0.589462	131.814361	121.1	1.037	12.0	14.9	0.78	5286	1.03	2762.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012069414-01	OBS	FP	0.00	0	0	1	0	CENT_RESOLVED_OFFSET

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

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

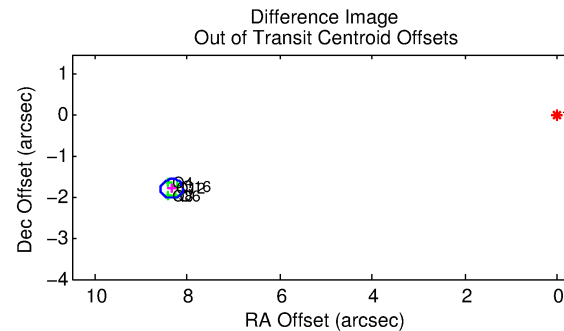
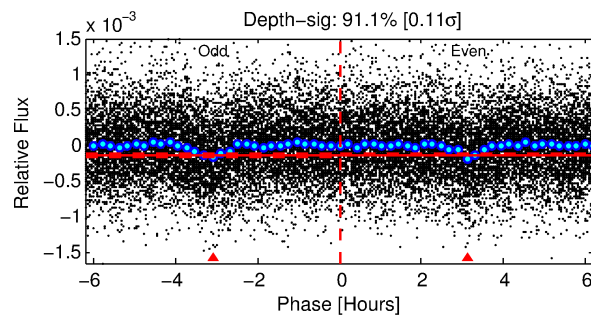
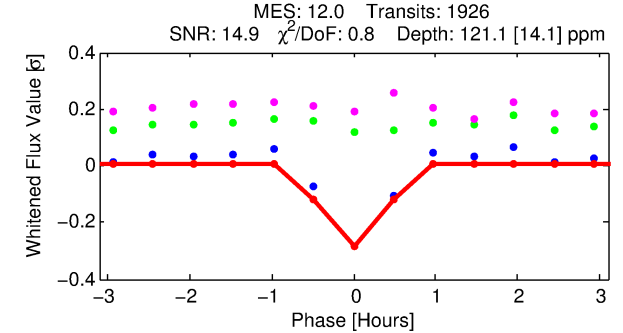
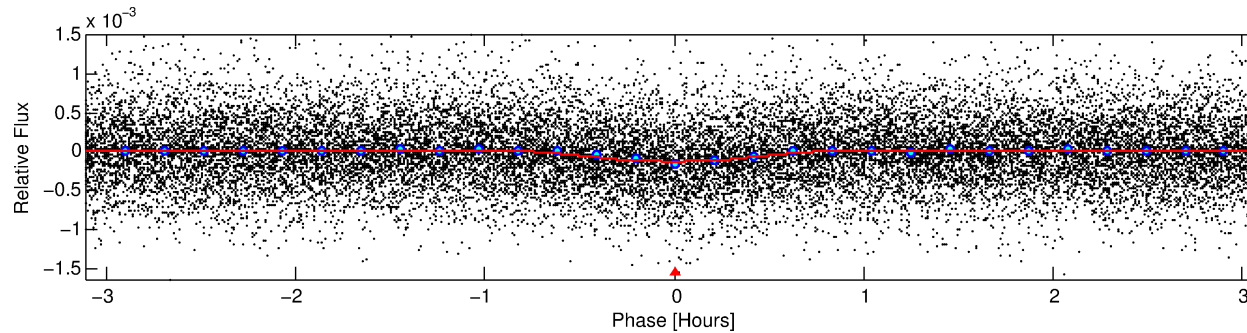
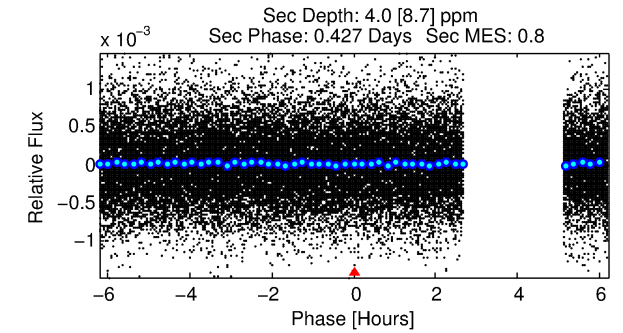
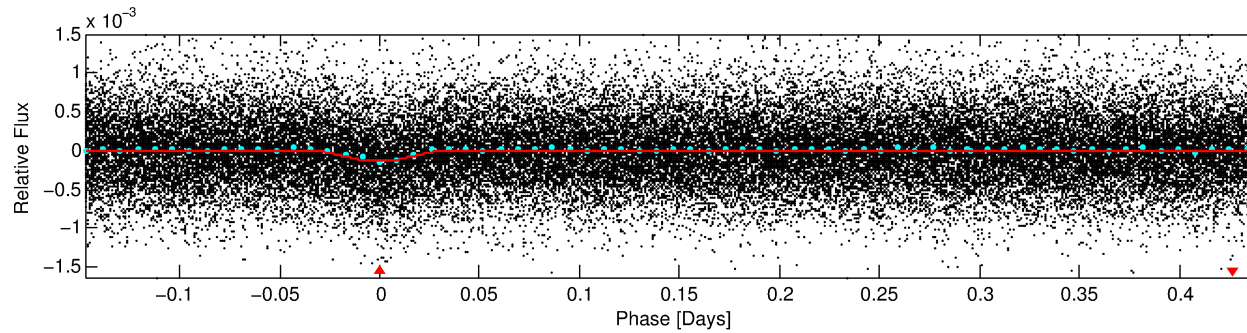
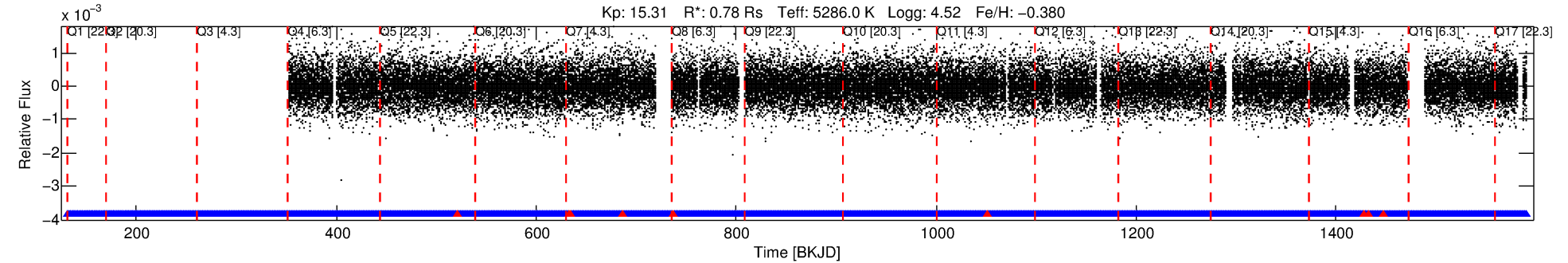
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012069414-01

No Significant Match Found

DV One-Page Summary

KIC: 12069414 Candidate: 1 of 1 Period: 0.589 d
KOI: K04512.01 Corr: 0.889



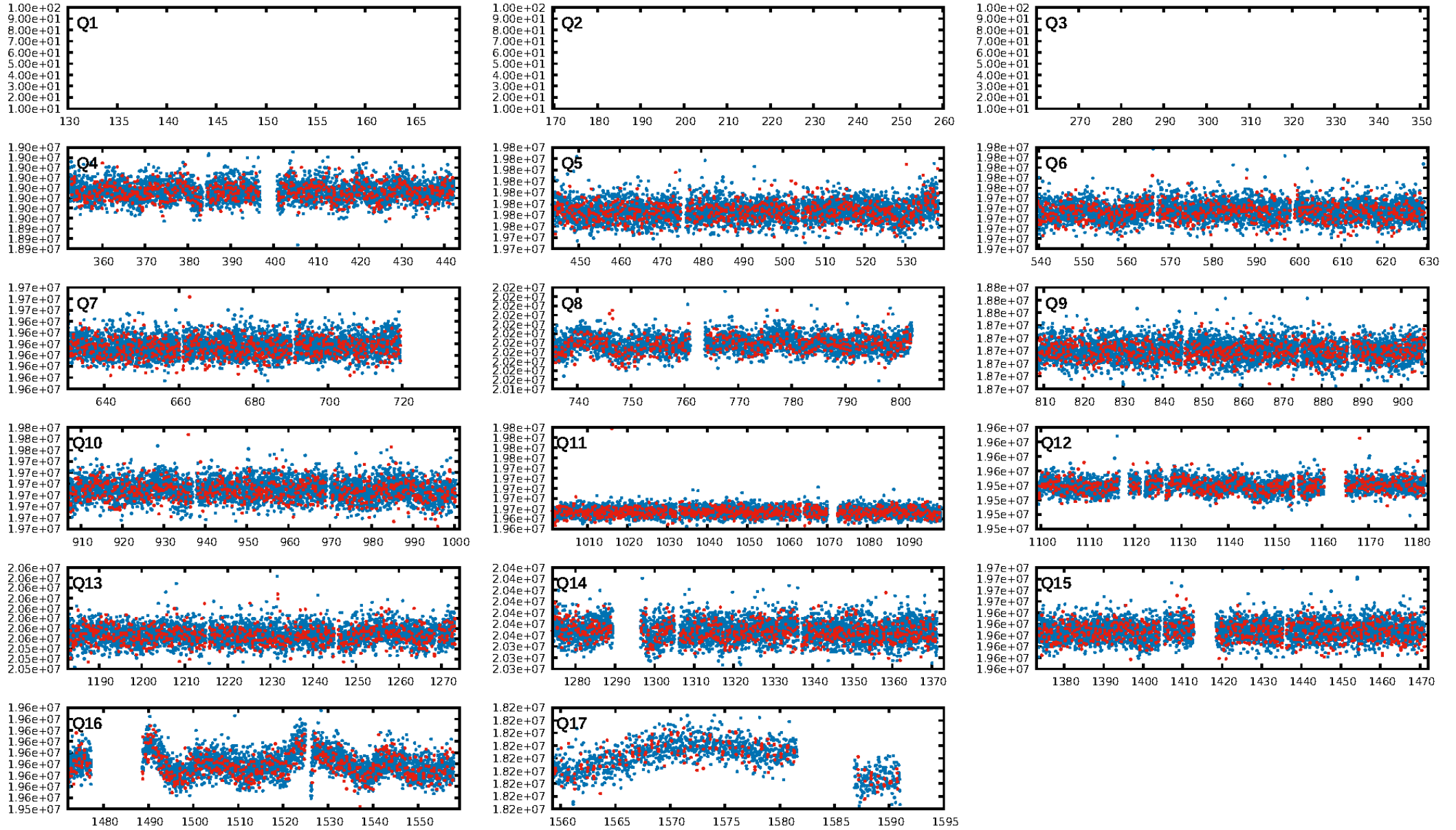
DV Fit Results:

Period = 0.58946 [0.00001] d
Epoch = 131.8144 [0.0012] BKJD
Rp/R* = 0.0122 [0.0080]
a/R* = 2.22 [5.06]
b = 0.90 [0.62]
Seff = 2762.93 [639.44]
Teq = 1849 [107] K
Rp = 1.03 [0.69] Re
a = 0.0123 [0.0015] AU
Ag = 0.31 [0.80] [-0.86σ]
Teffp = 2134 [1368] K [0.21σ]

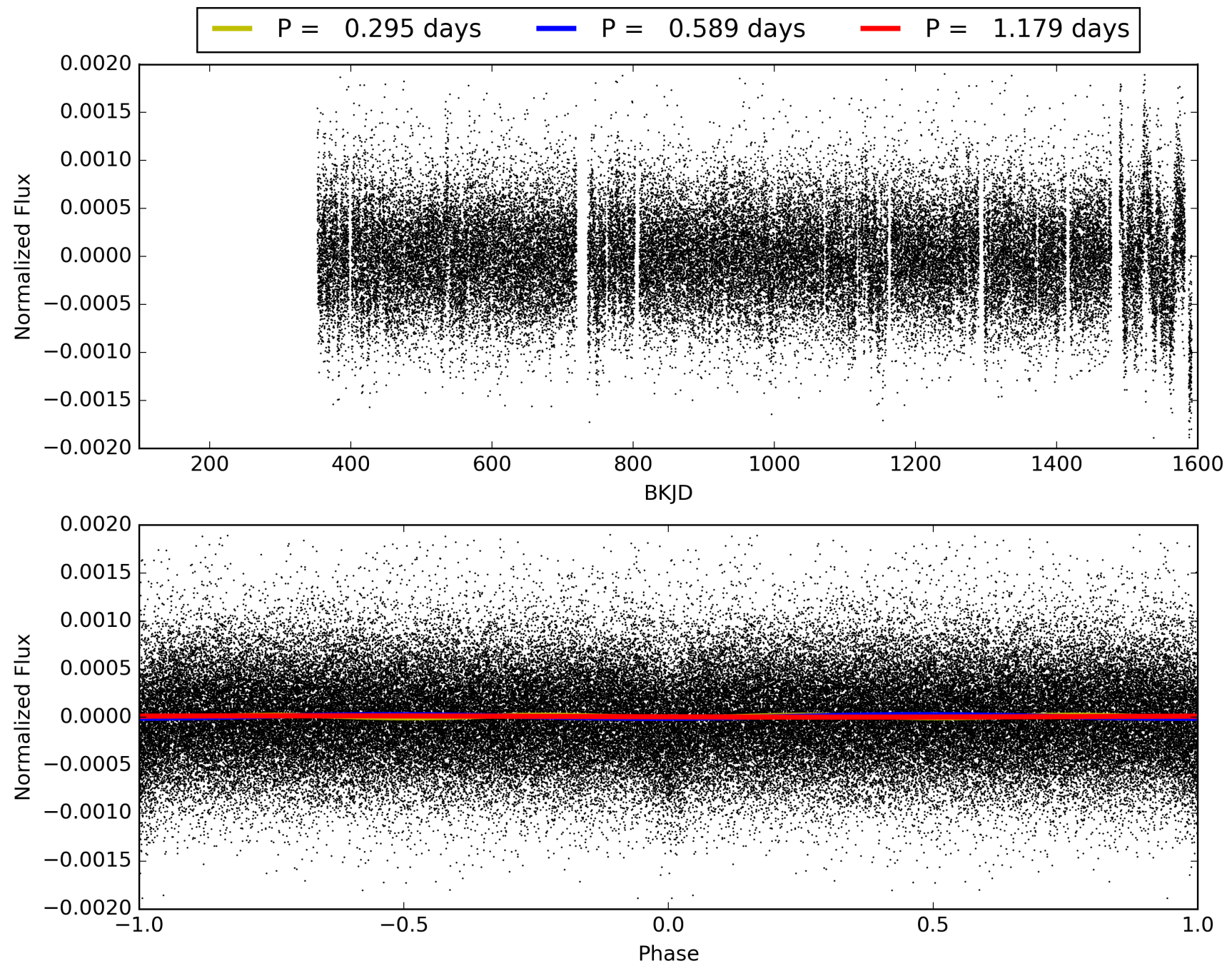
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.34e-34
RollingBand-fgt: 1.00 [1872/1881]
GhostDiagnostic-chr: -0.8079
Centroid-sig: 0.0%
Centroid-so: 12.012 arcsec [16.50σ]
OotOffset-rm: 8.533 arcsec [107.61σ]
KicOffset-rm: 8.401 arcsec [92.91σ]
OotOffset-st: 1/0/4/0 [5]
KicOffset-st: 1/0/4/0 [5]
DiffImageQuality-fgm: 1.00 [5/5]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 012069414-01, PDC Light Curves

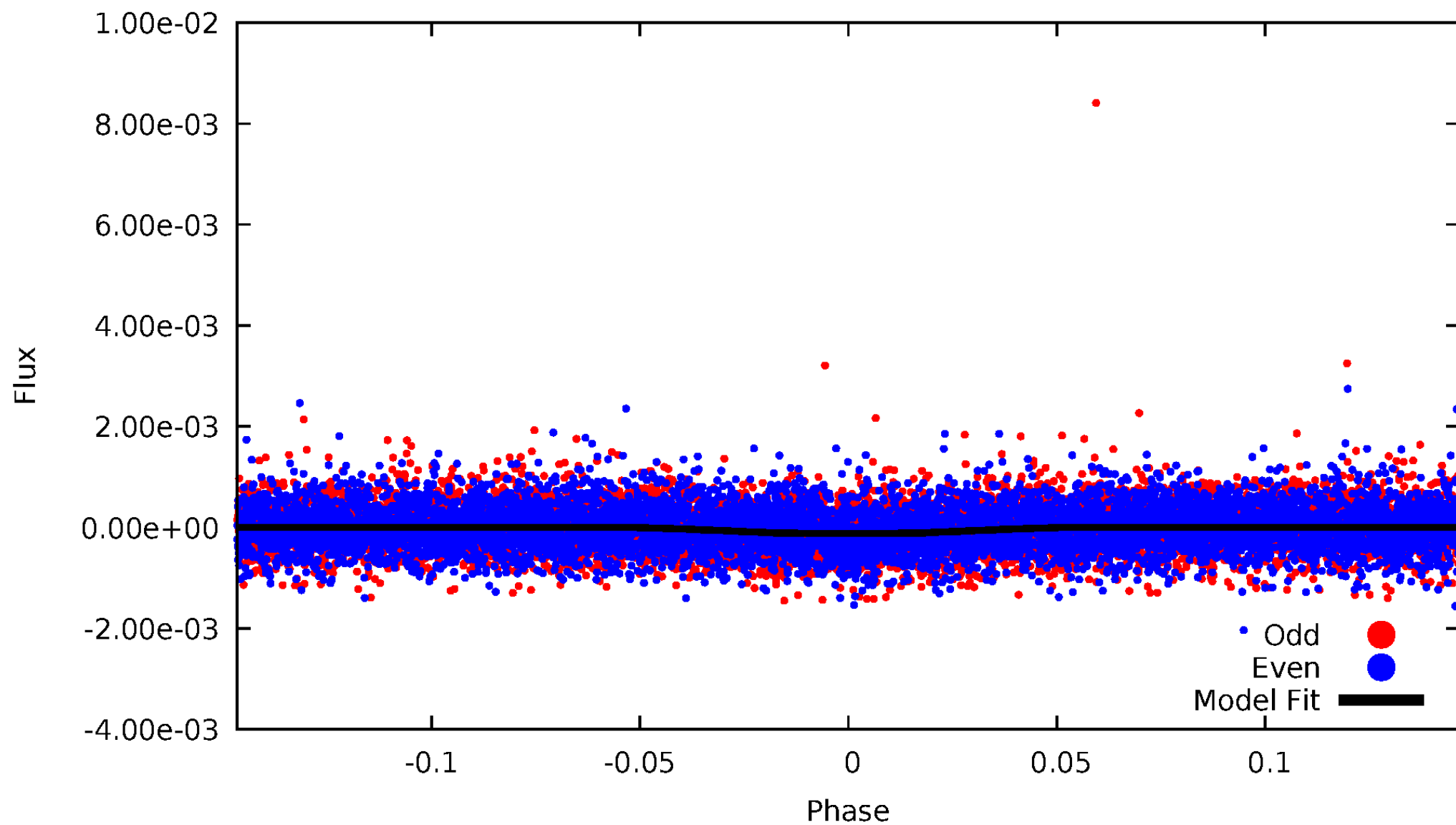


TCE 012069414-01



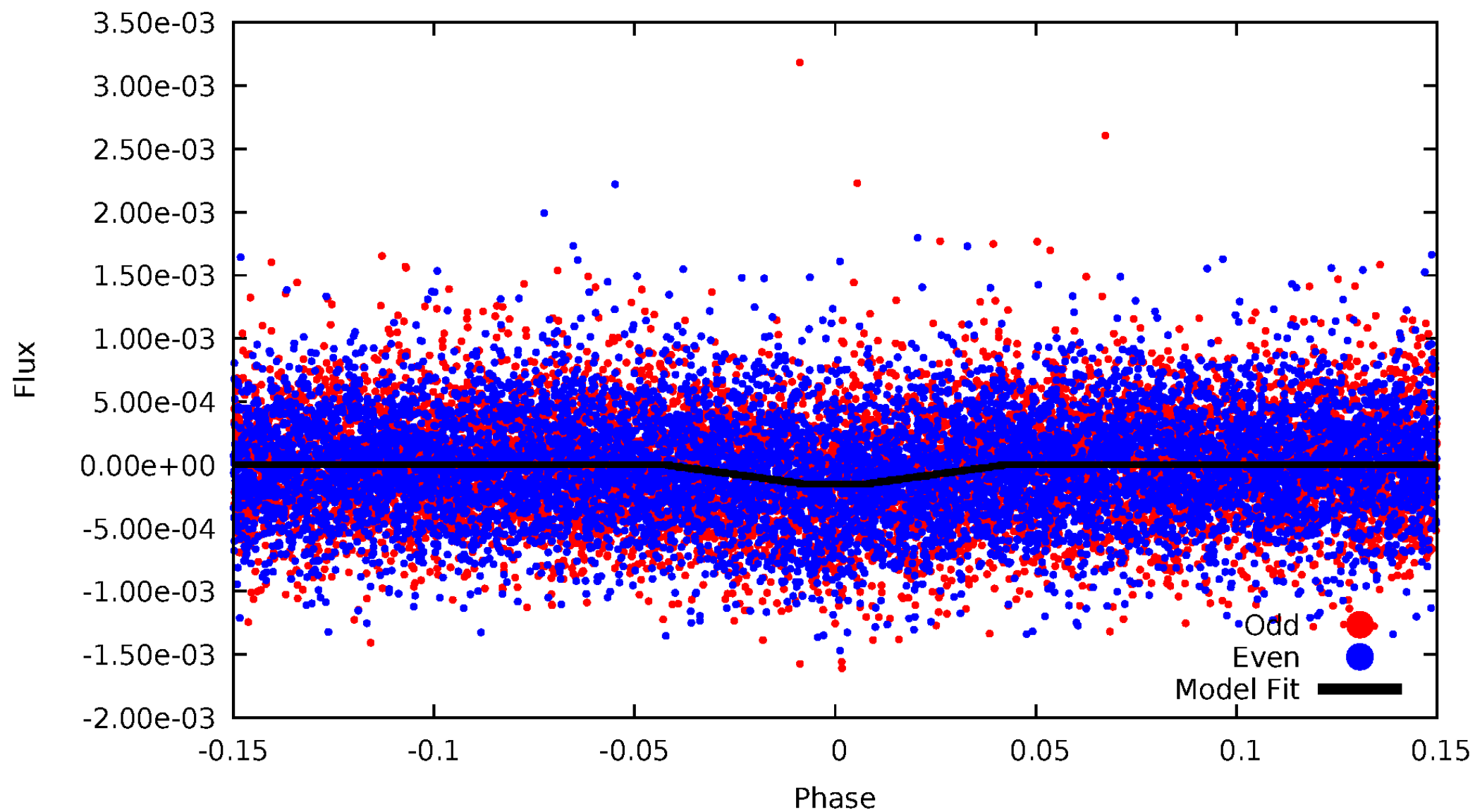
DV Odd/Even

TCE 012069414-01

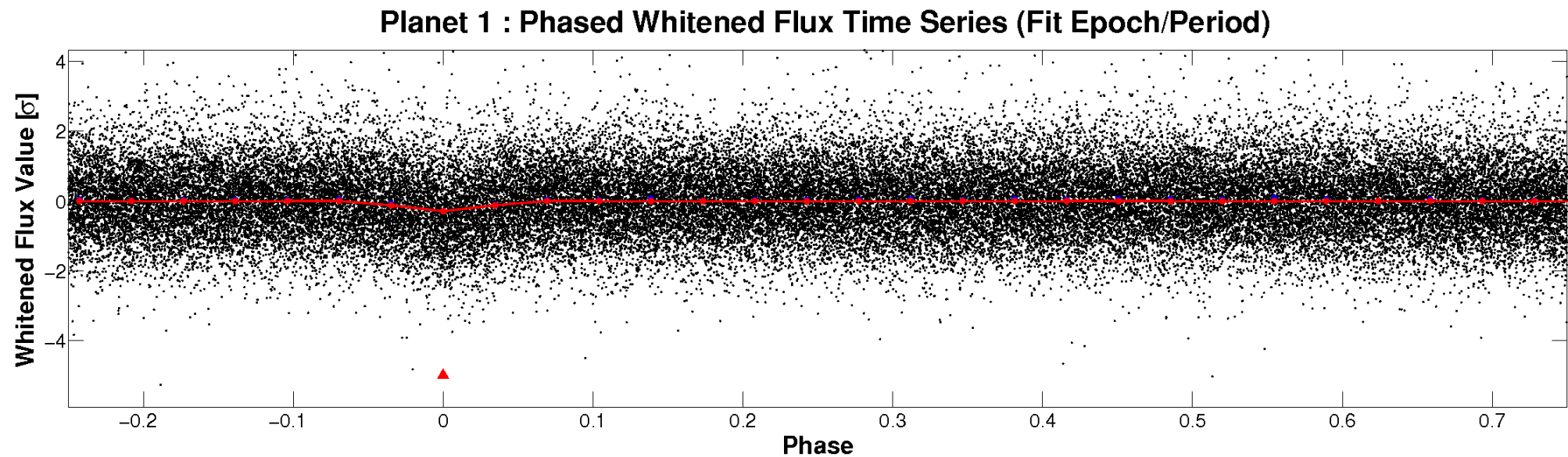
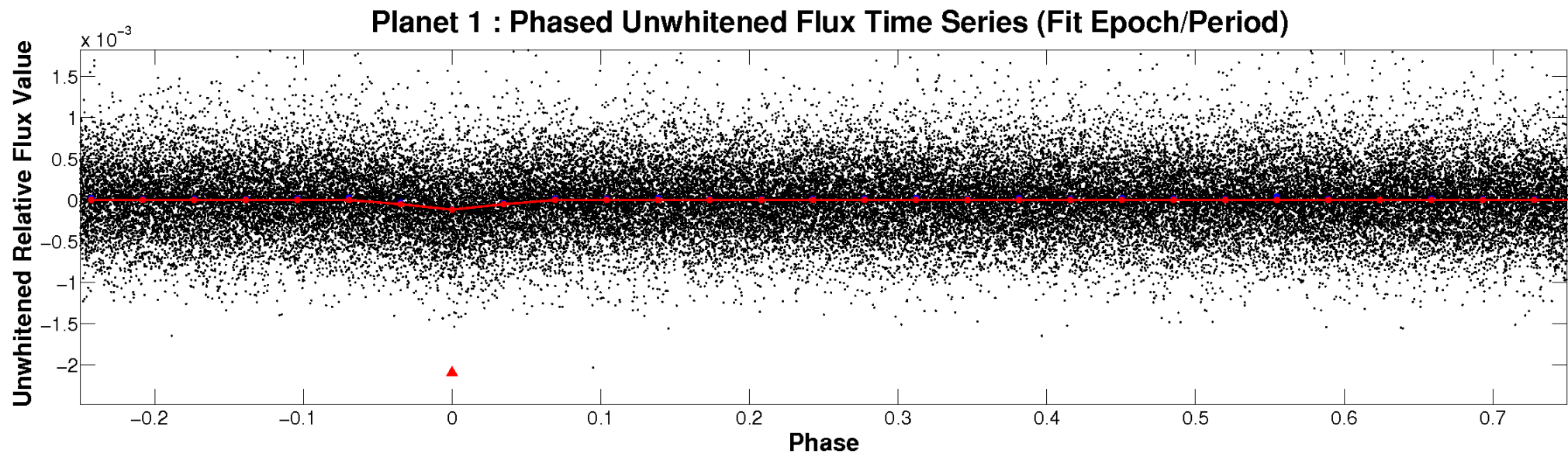


ALT Odd/Even

TCE 012069414-01

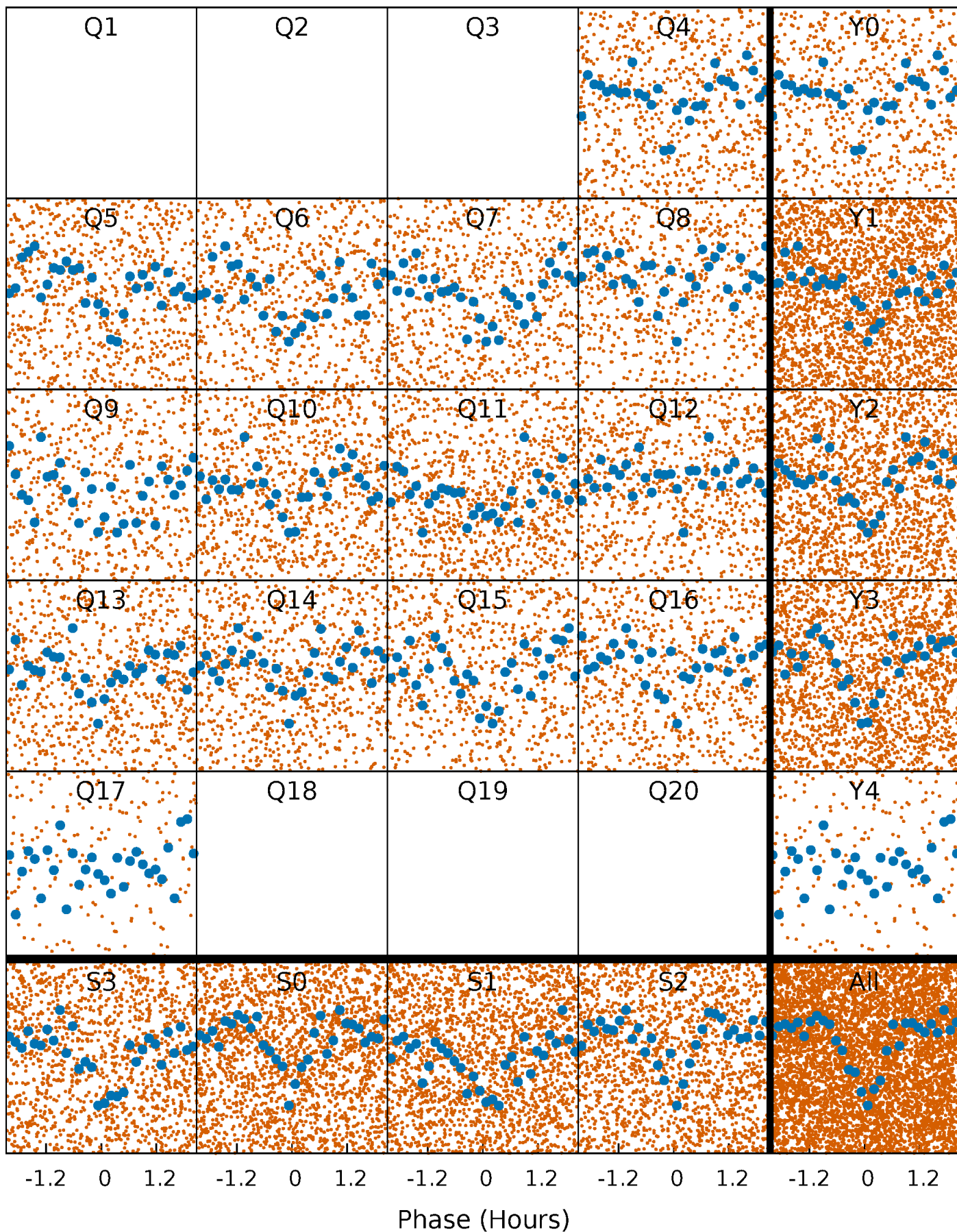


Non-Whitened Vs. Whitened Light Curve



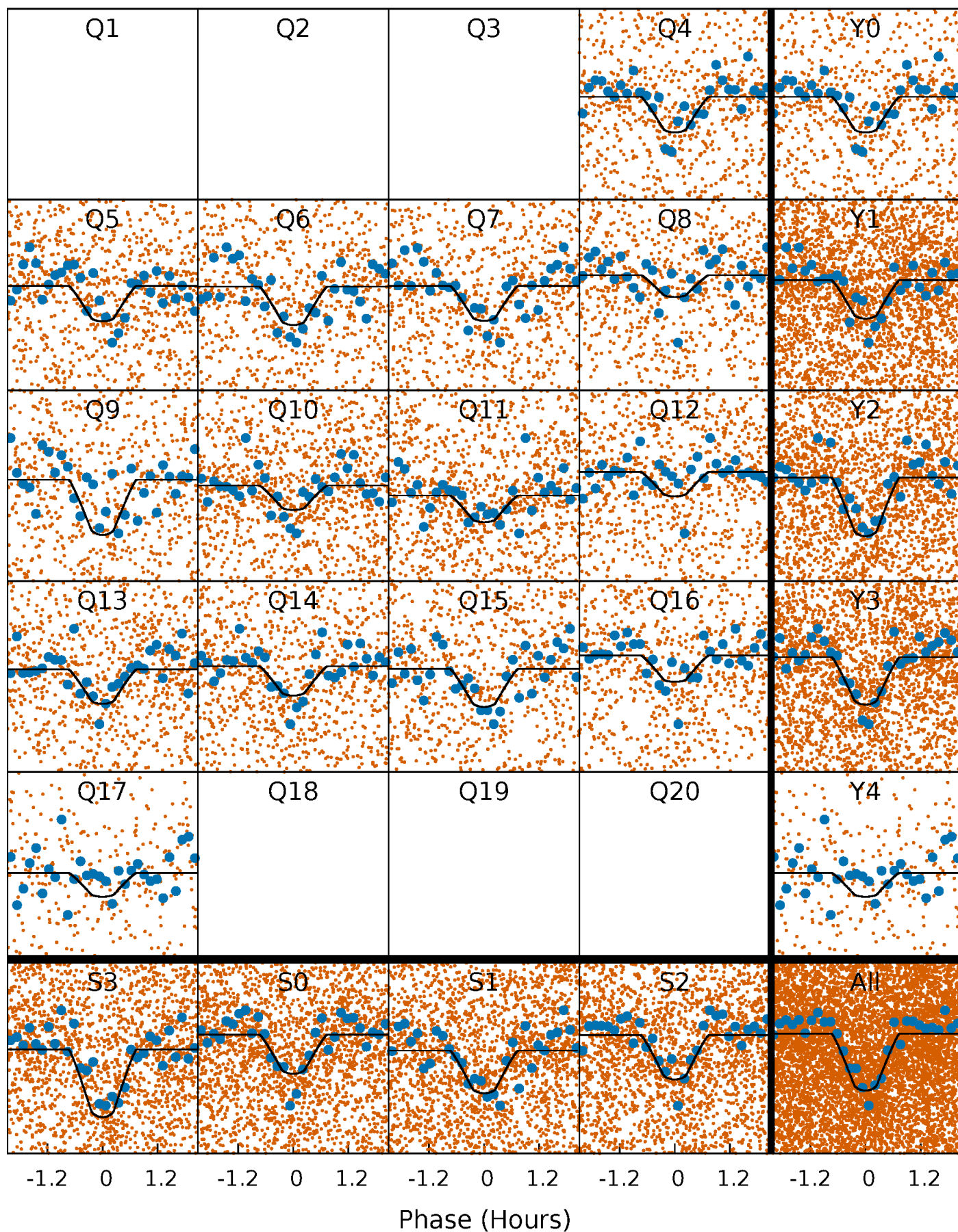
PDC Quarter-Phased Transit Curves

TCE 012069414-01 P= 0.589462 Days $T_0=131.814361$ (BKJD)



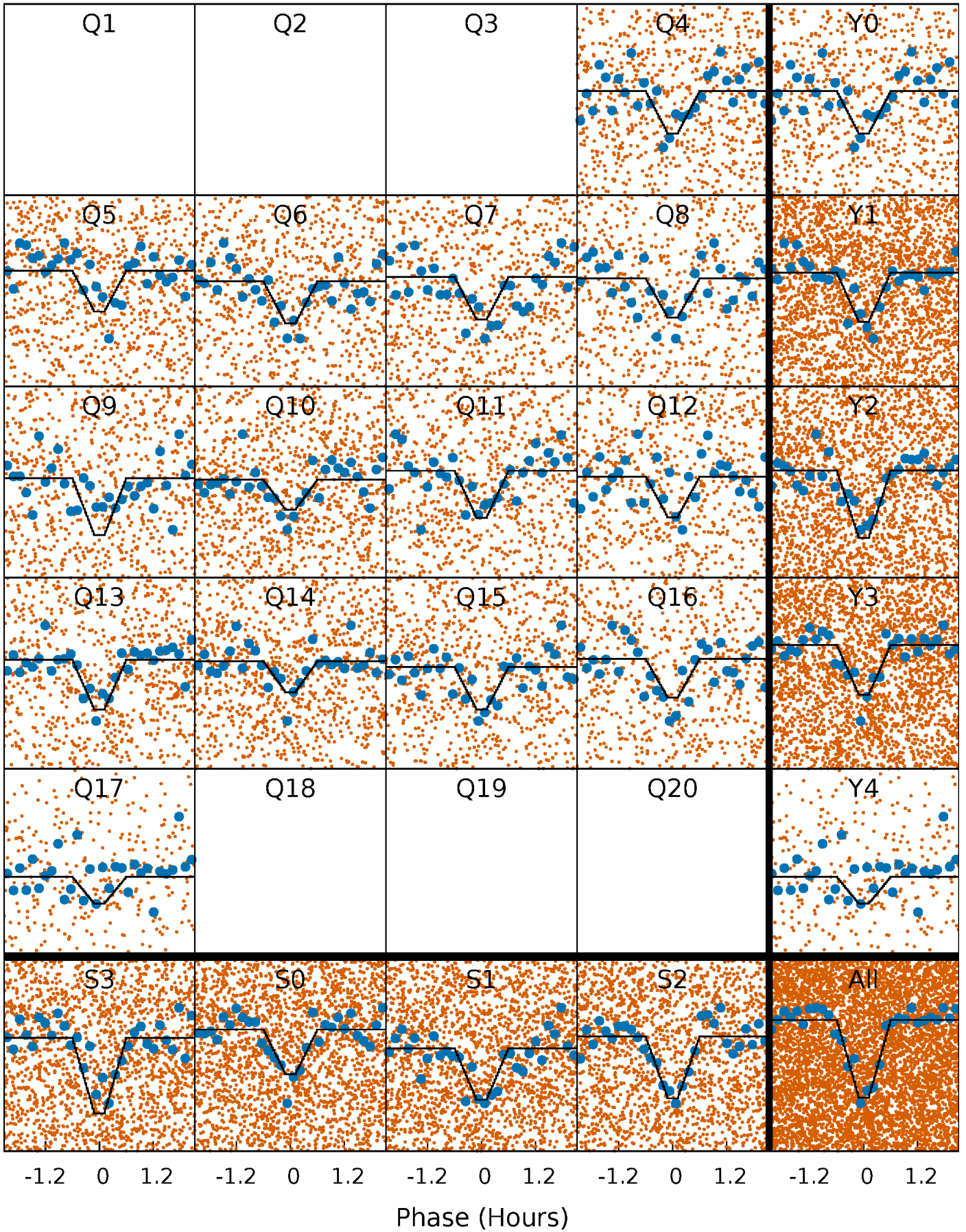
DV Quarter-Phased Transit Curves

TCE 012069414-01 P= 0.589462 Days $T_0=131.814361$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

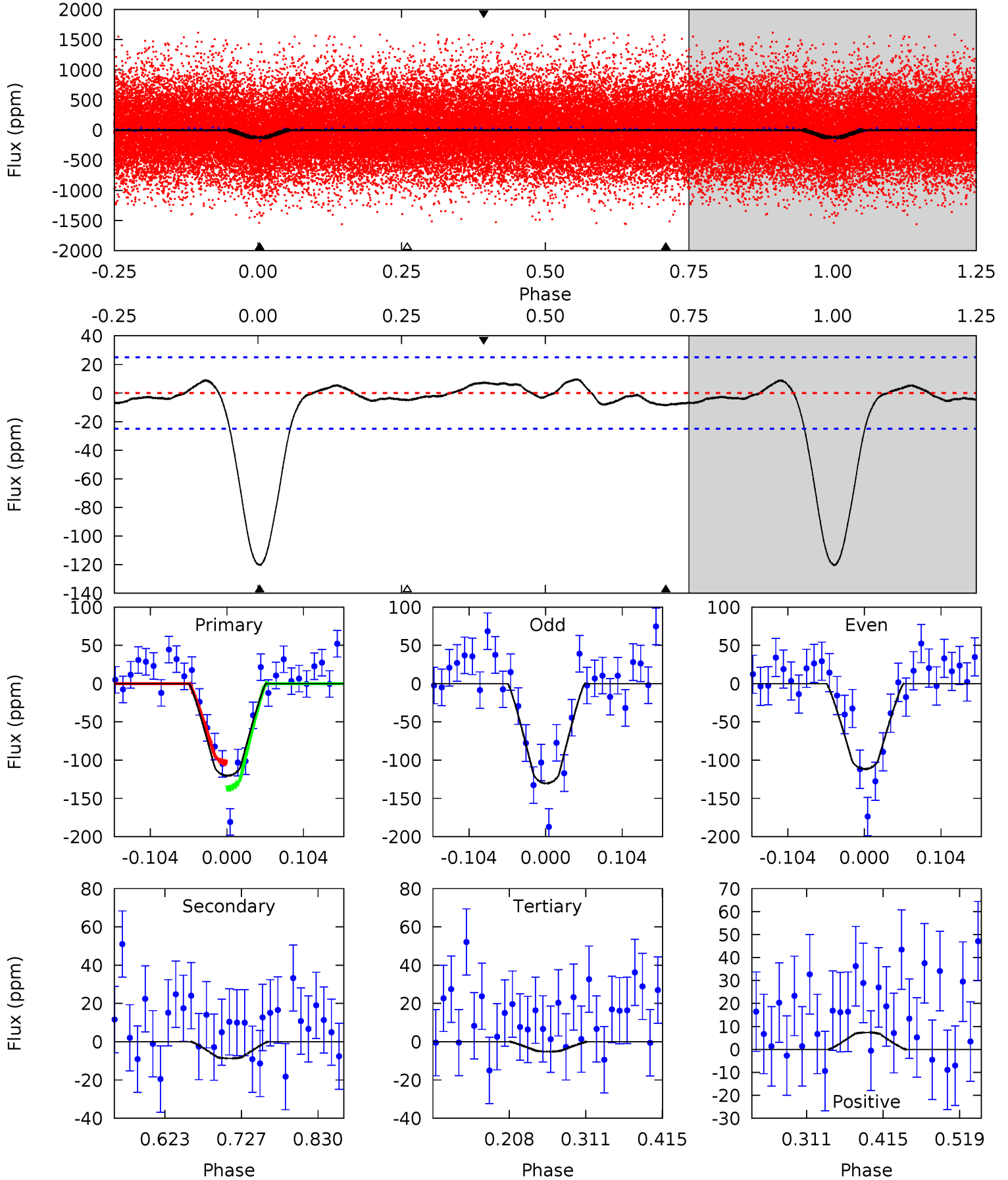
TCE 012069414-01 P= 0.589463 Days $T_0=131.814196$ (BKJD)



DV Model-Shift Uniqueness Test

012069414-01, P = 0.589462 Days, E = 131.814361 Days

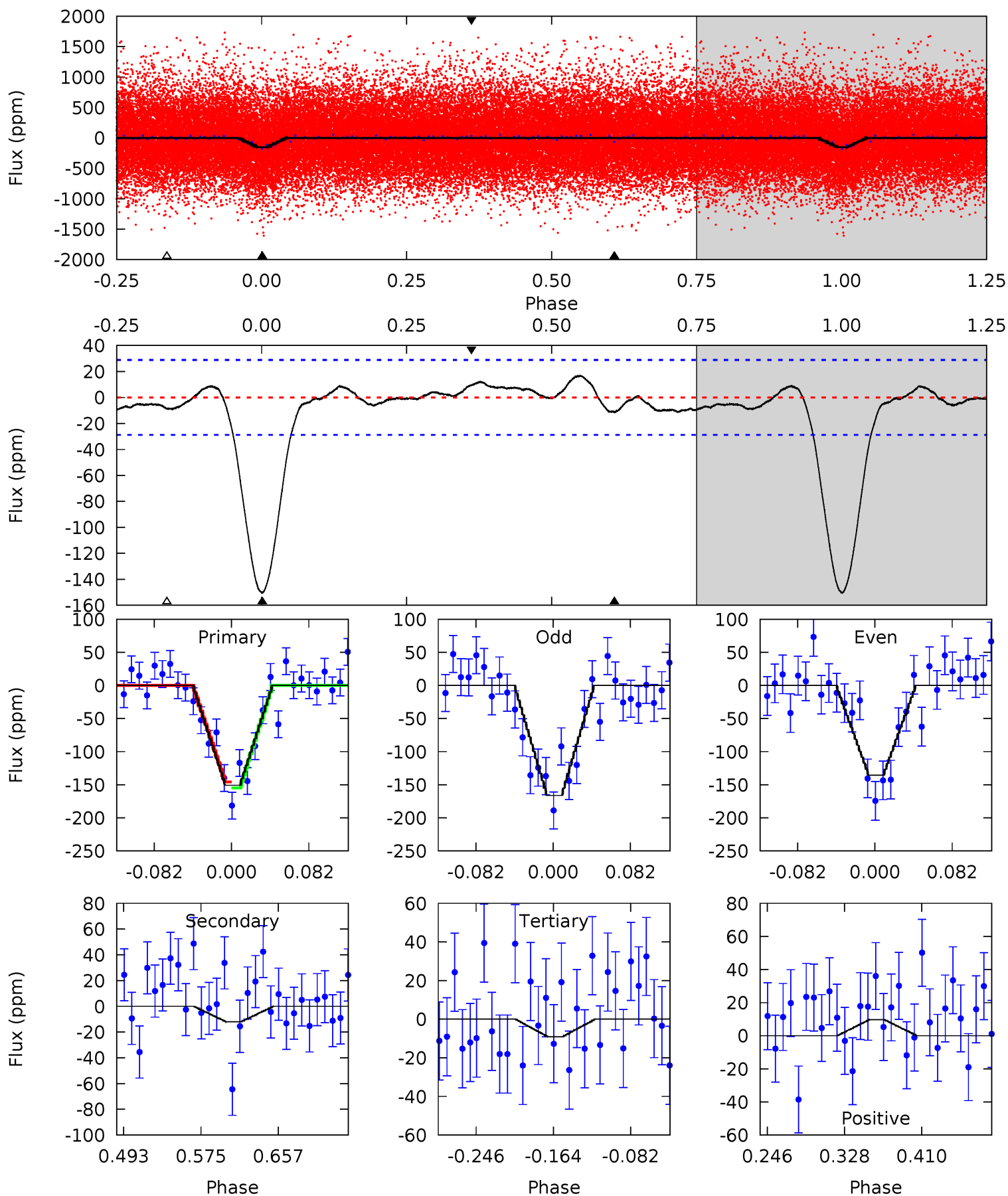
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.9	1.59	0.93	1.34	4.56	1.63	0.81	21.0	20.6	0.66	0.25	1.72	0.92	0.07	3.08



Alt Model-Shift Uniqueness Test

012069414-01, P = 0.589463 Days, E = 131.814196 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.1	1.93	1.45	1.56	4.61	1.74	0.98	22.6	22.5	0.47	0.37	2.45	0.95	0.10	0.72



Stellar Parameters For KIC 012069414

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5286^{+202}_{-184}	$4.517^{+0.095}_{-0.095}$	$-0.380^{+0.350}_{-0.300}$	$0.776^{+0.110}_{-0.099}$	$0.722^{+0.115}_{-0.046}$	$2.178^{+0.911}_{-0.645}$
	+4%/-3%	+2%/-2%	+92%/-79%	+14%/-13%	+16%/-6%	+42%/-30%
Source	KIC0	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 012069414-01 / KOI 4512.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-9 ± 5	$1.09^{+0.67}_{-0.57}$	2589^{+135}_{-135}	2781^{+1099}_{-5388}	$0.562^{+1.897}_{-0.416}$
Alt.	-12 ± 6	$1.06^{+0.72}_{-0.58}$	2596^{+144}_{-127}	3065^{+1251}_{-5389}	$0.814^{+3.781}_{-0.571}$

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 $A_{obs} \gg 1.0$

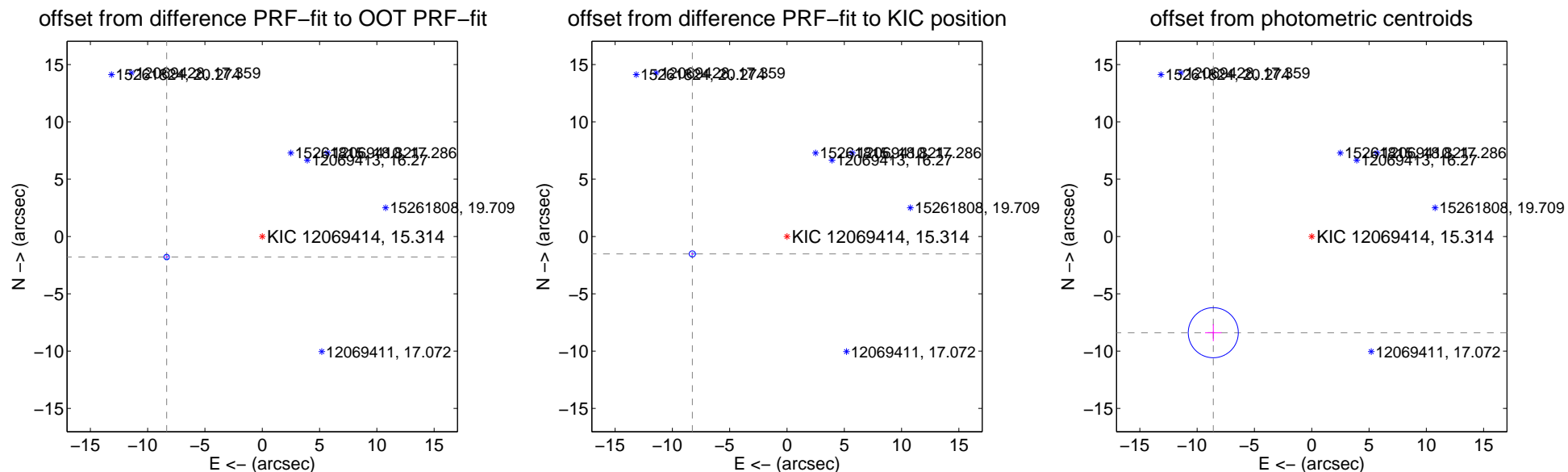
DV Centroid Data

Supplemental centroid analysis for 012069414-01. Kepler magnitude: 15.31. Transit SNR 14.90

There are 5 quarters with good PRF difference image offsets

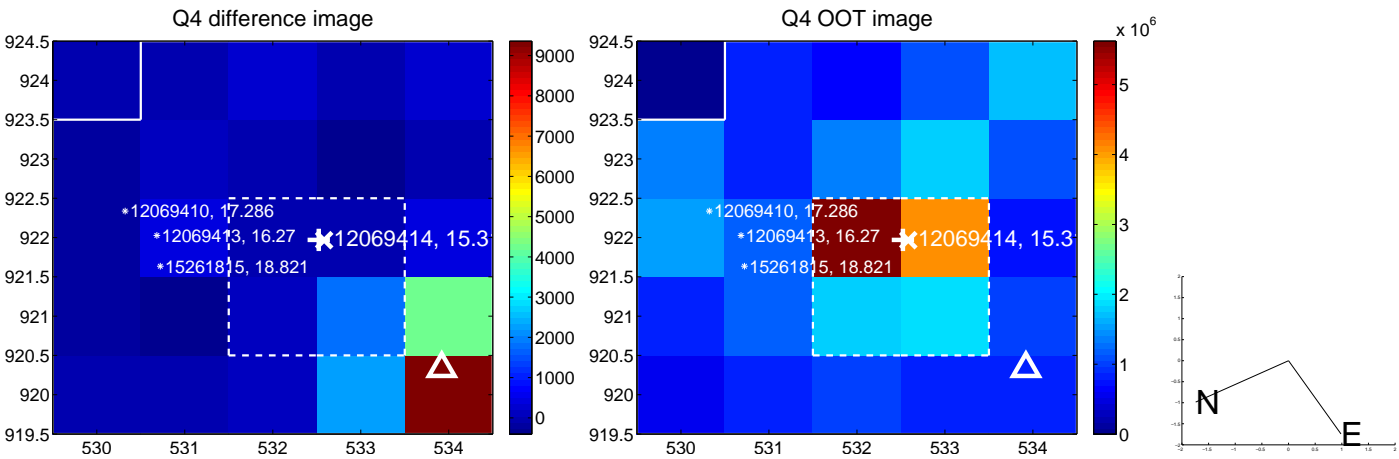
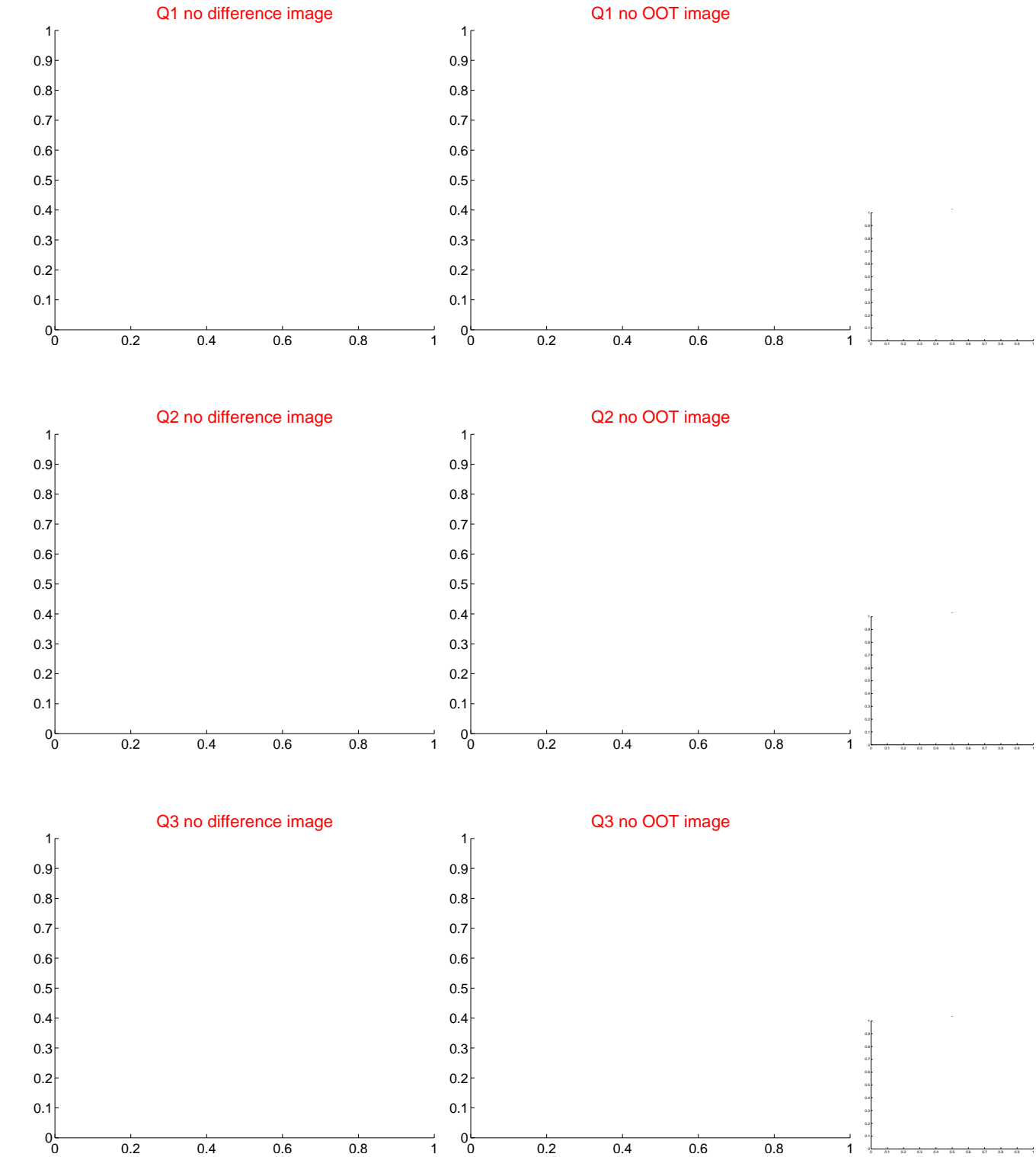
The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.533 \pm 0.079	107.61	8.343 \pm 0.078	-1.791 \pm 0.097
PRF-fit source offset from KIC position	8.401 \pm 0.090	92.91	8.262 \pm 0.088	-1.522 \pm 0.075
photometric centroid source offset	12.01 \pm 0.73	16.50	8.59 \pm 0.72	-8.40 \pm 0.74

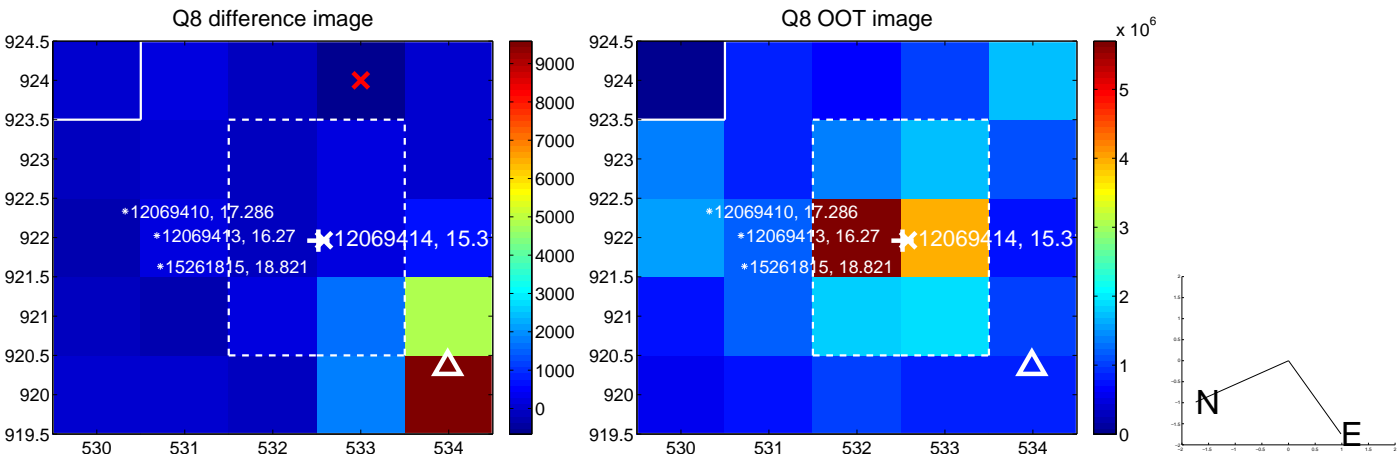
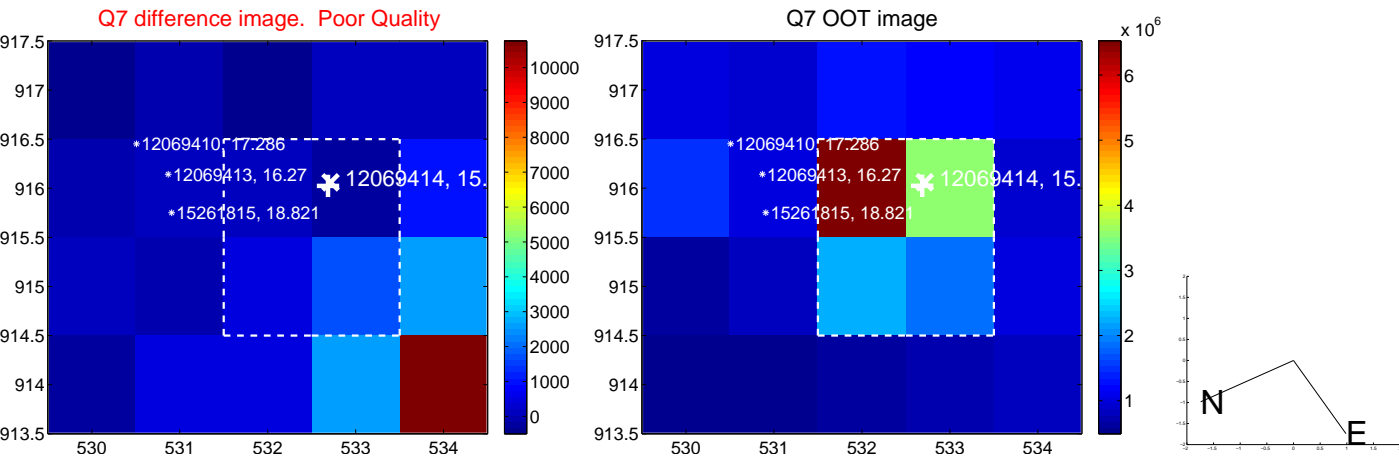
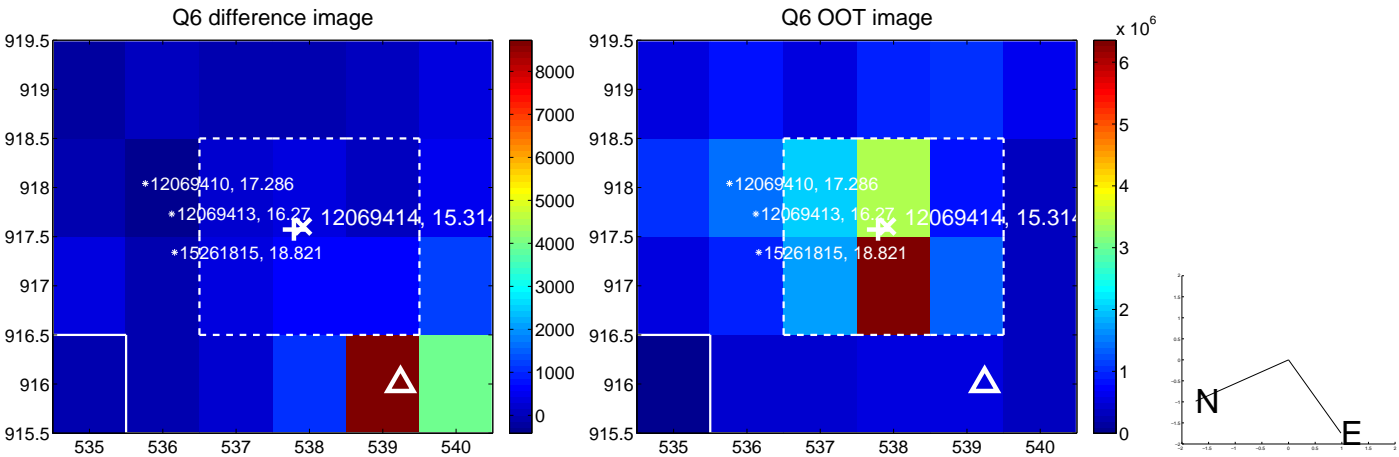
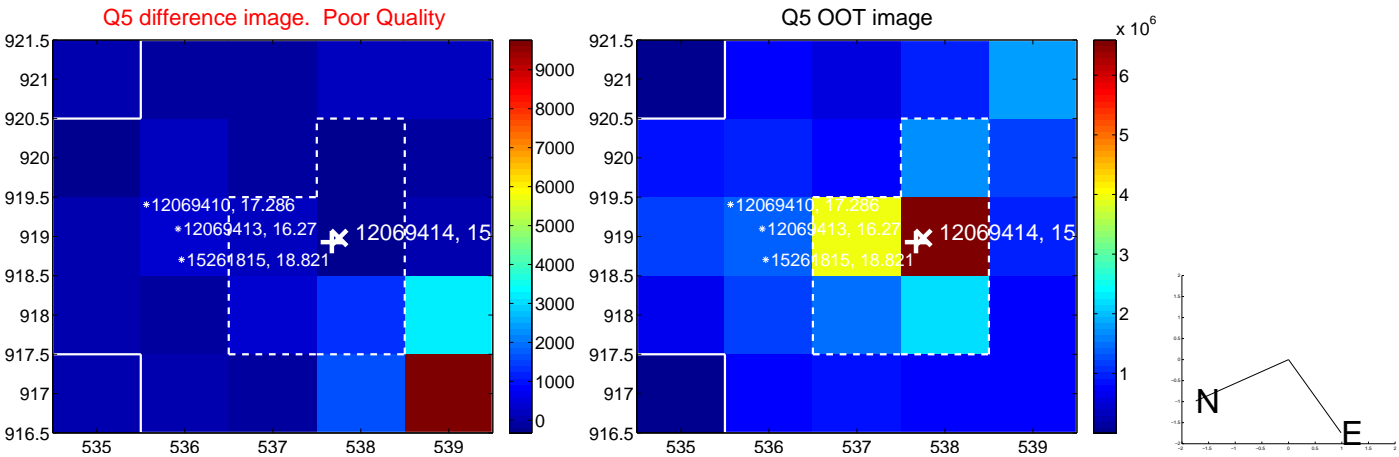


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

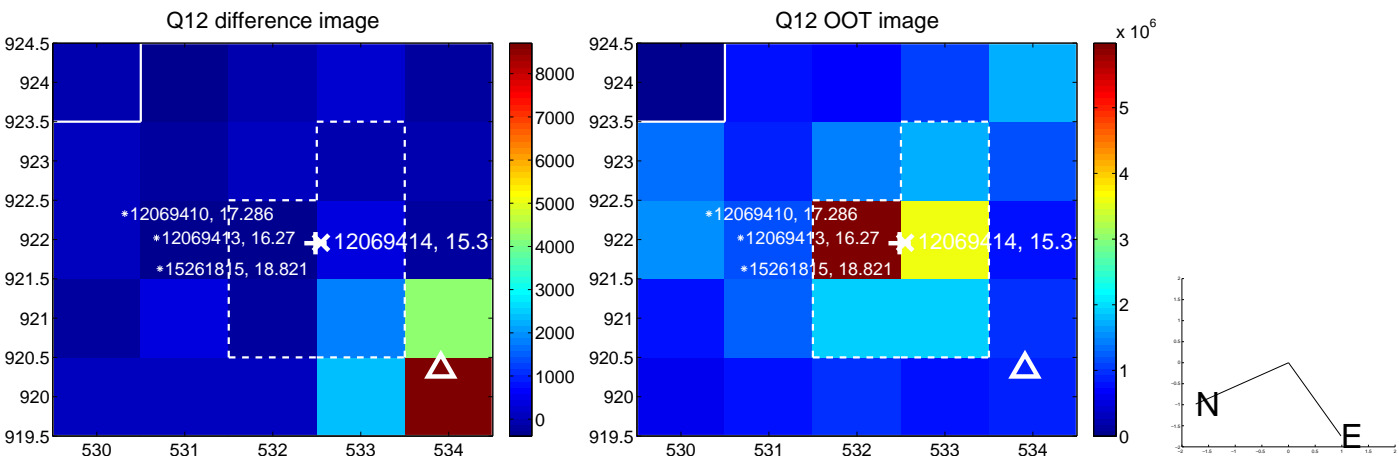
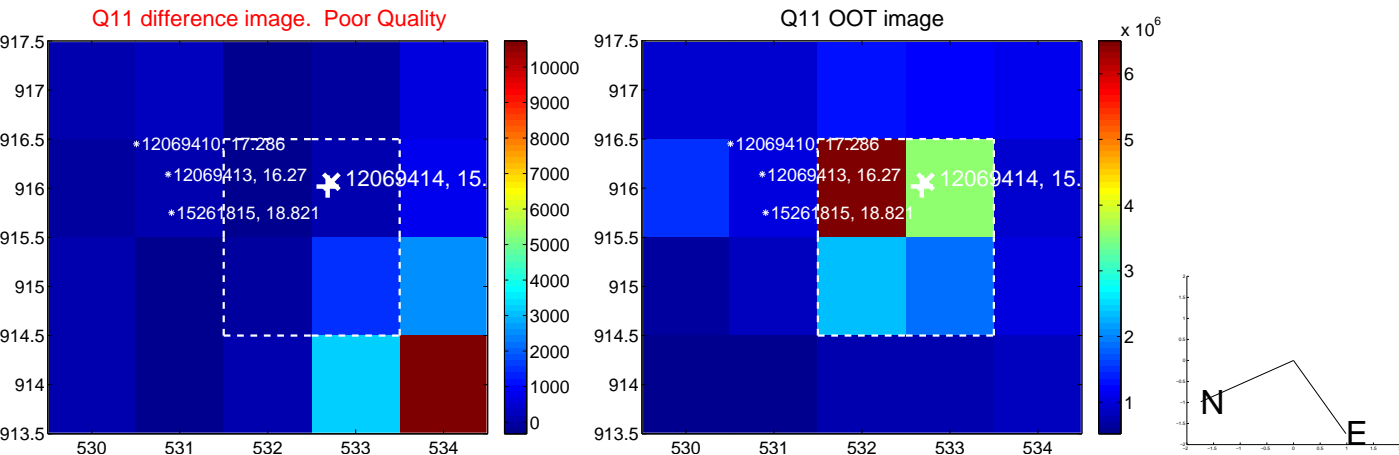
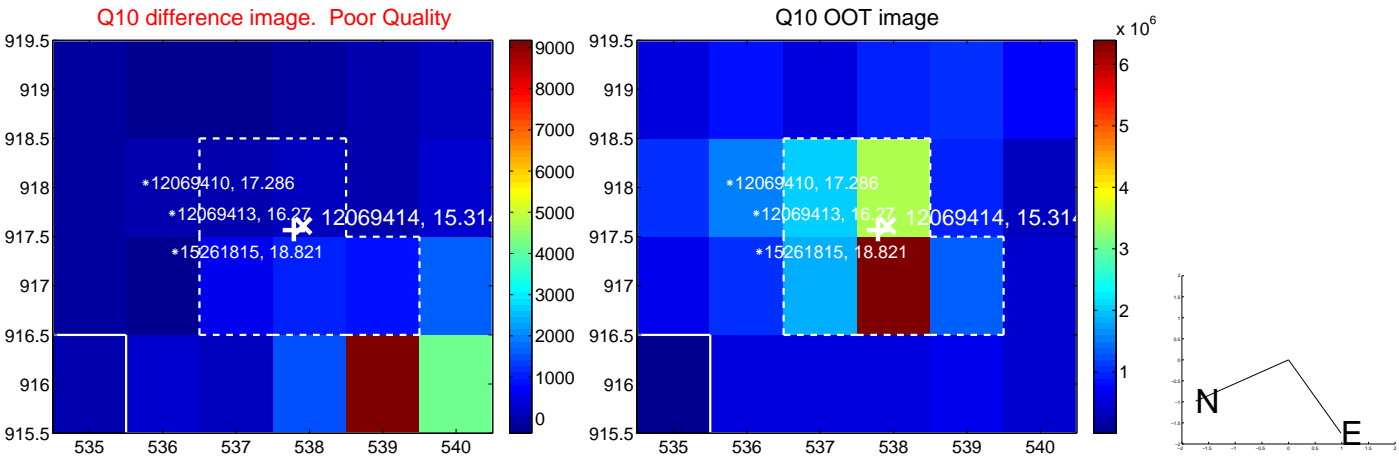
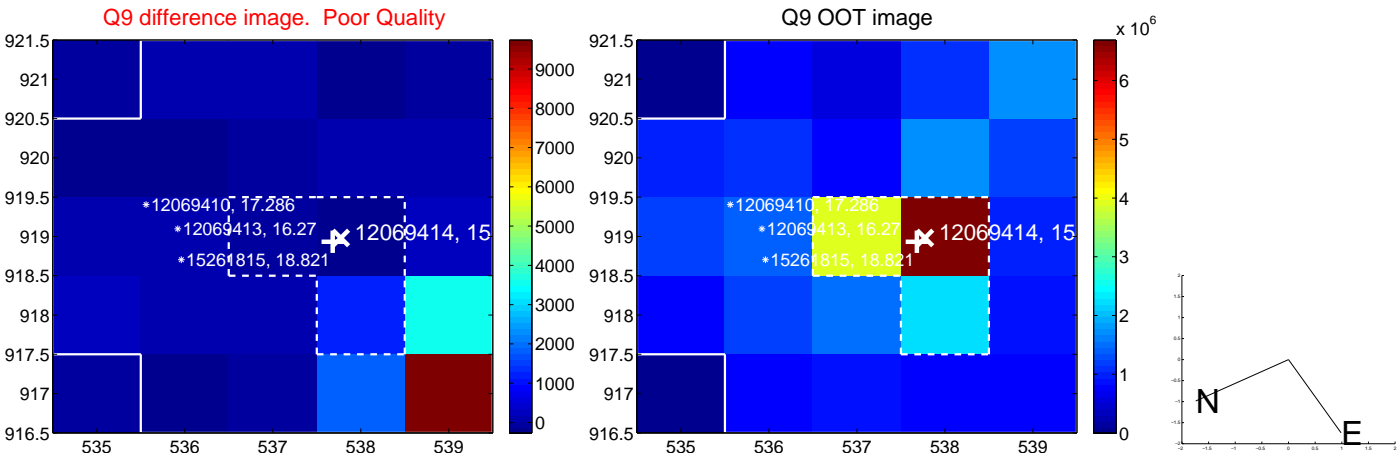
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



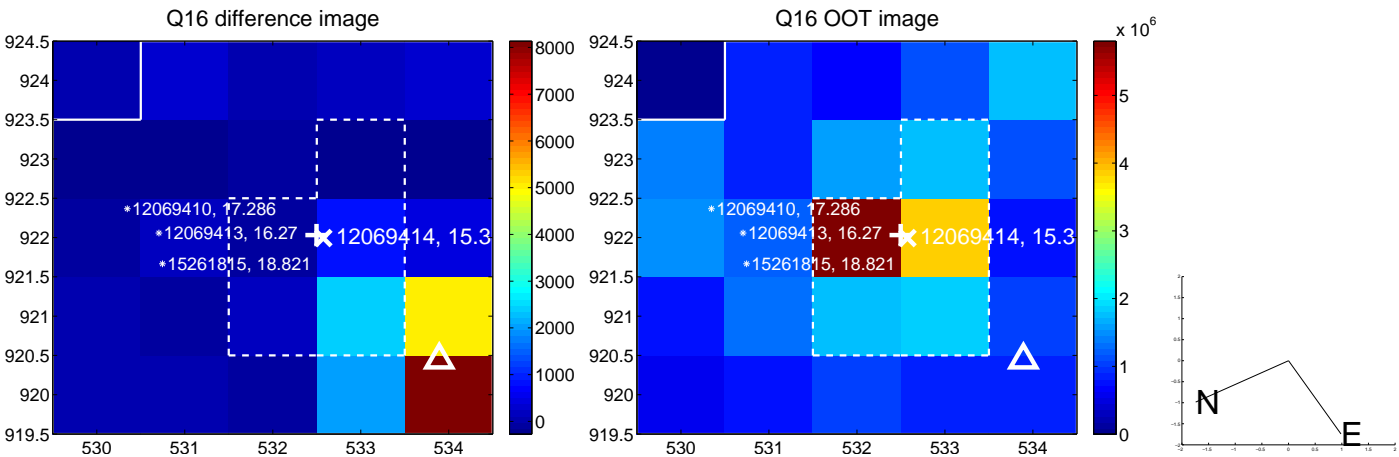
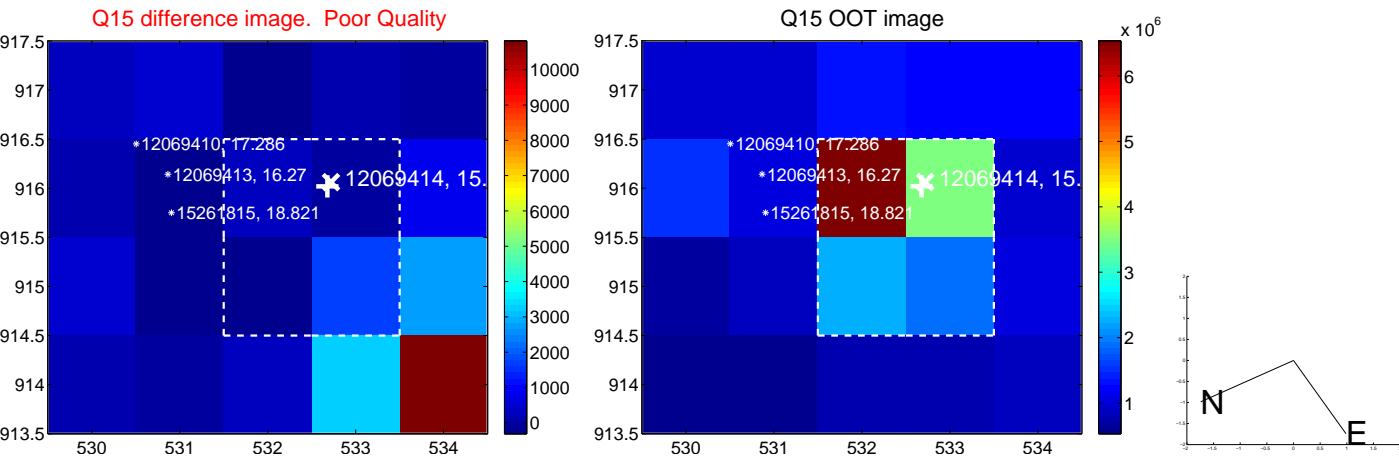
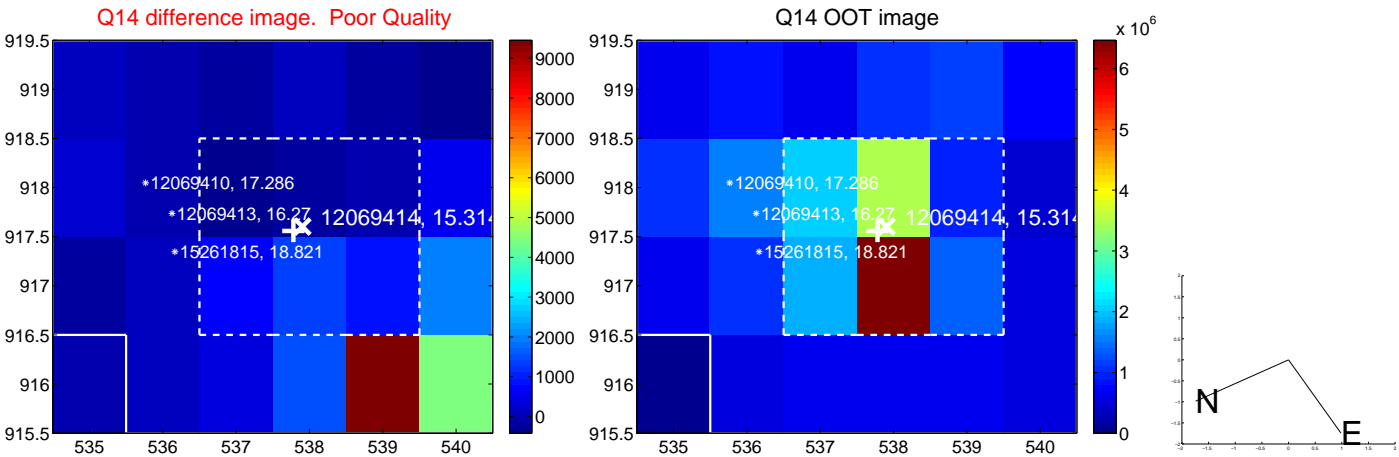
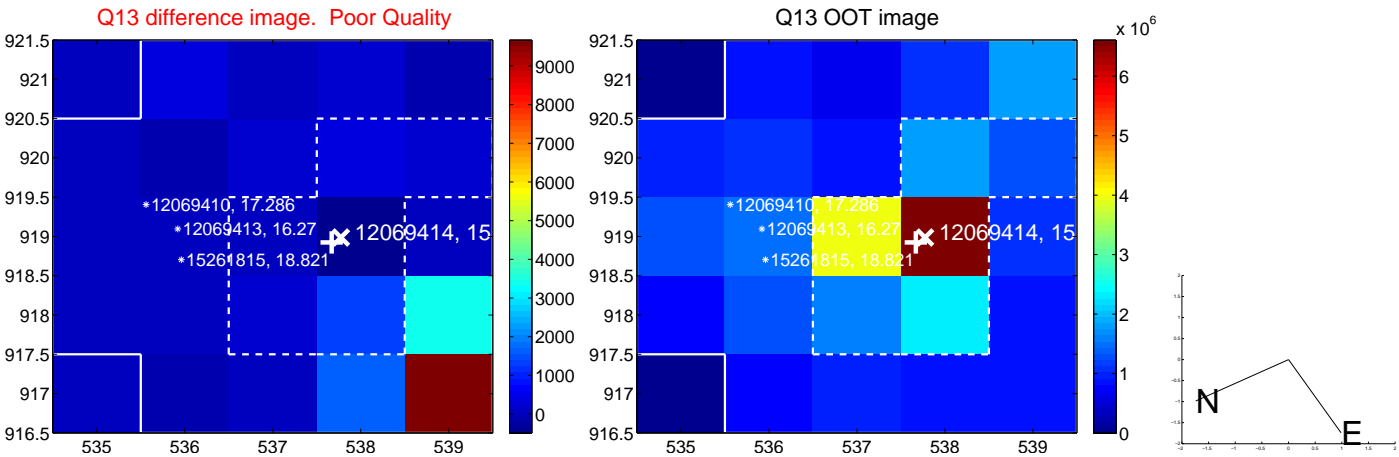
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



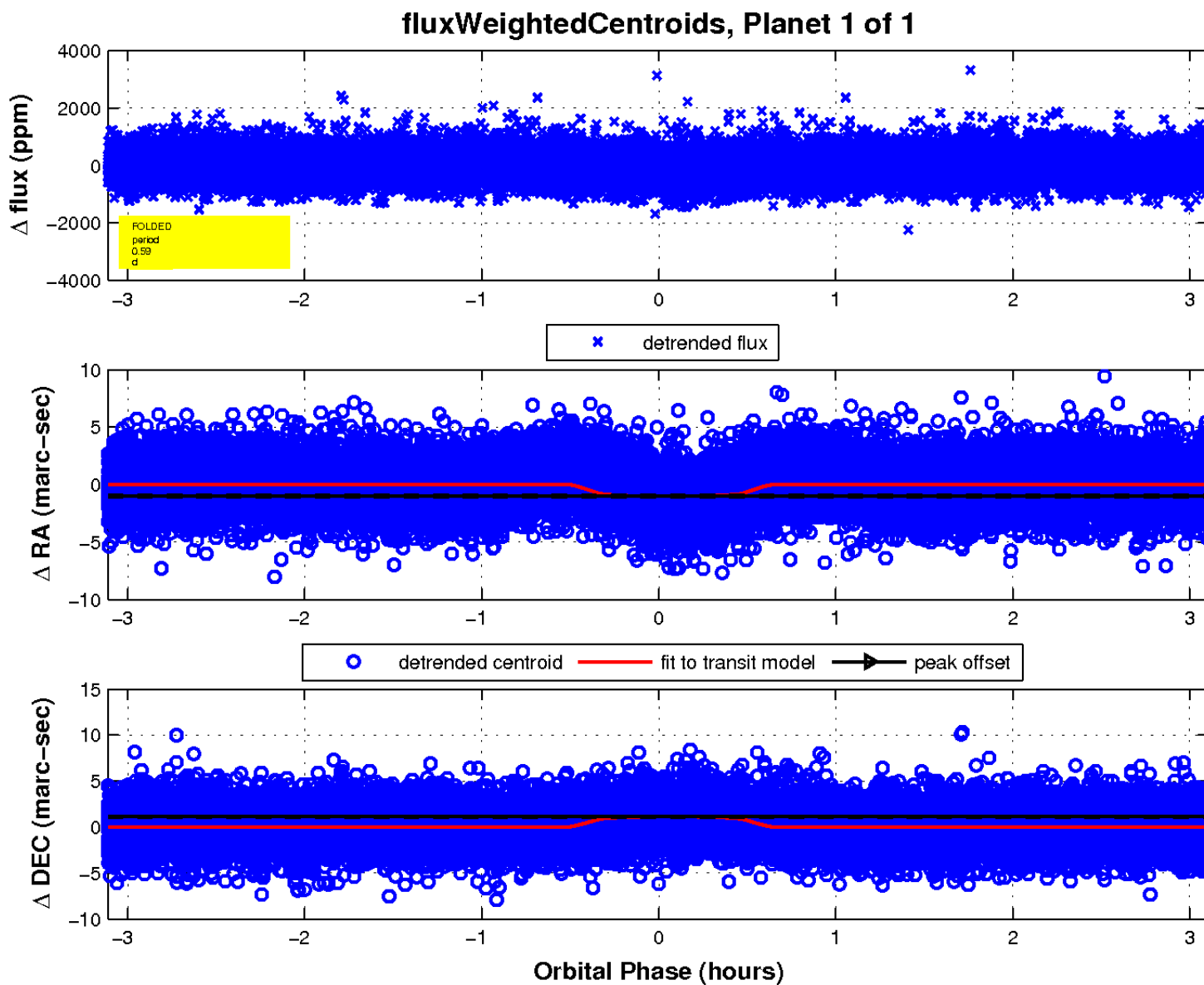
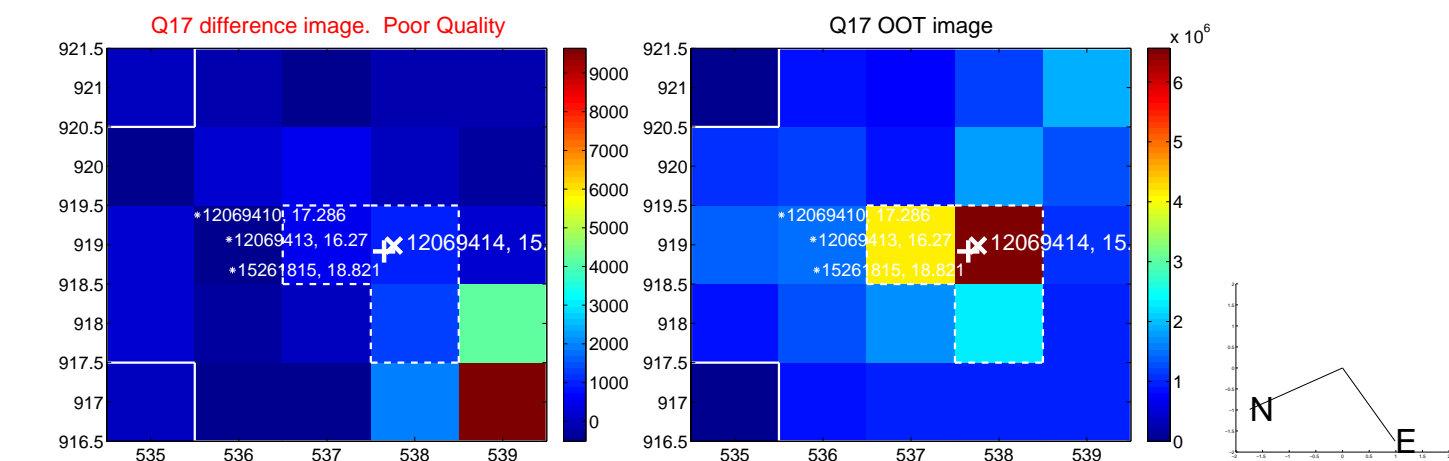
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UKIRT Image

Declination

