

KIC 010158729

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})
010158729-01	OBS	2097.01	58.602637	137.665317	384.5	5.530	16.4	16.7	1.02	6250	2.14	15.82

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010158729-01	OBS	PC	0.92	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.

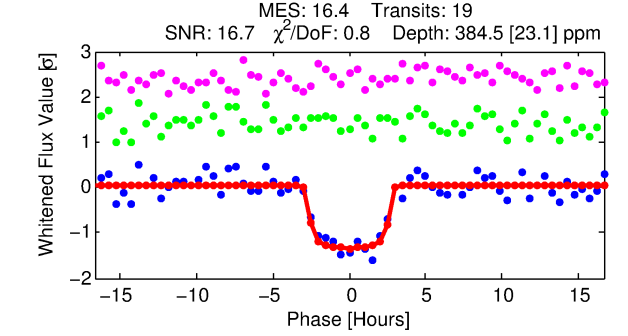
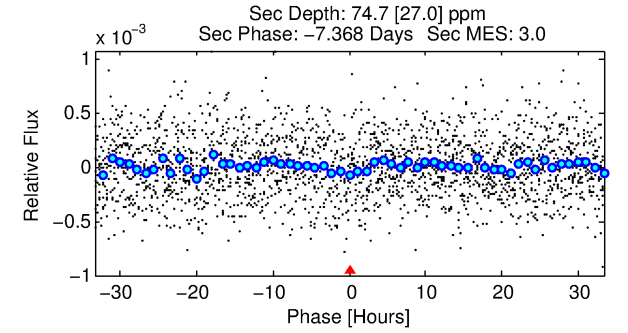
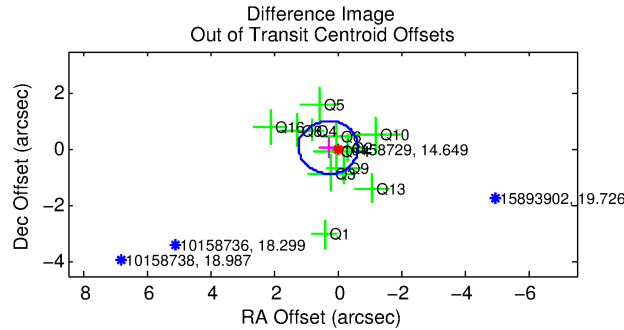
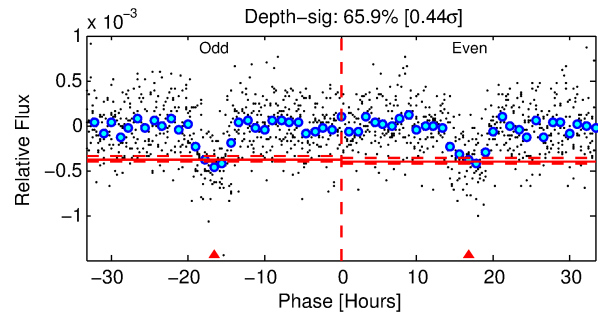
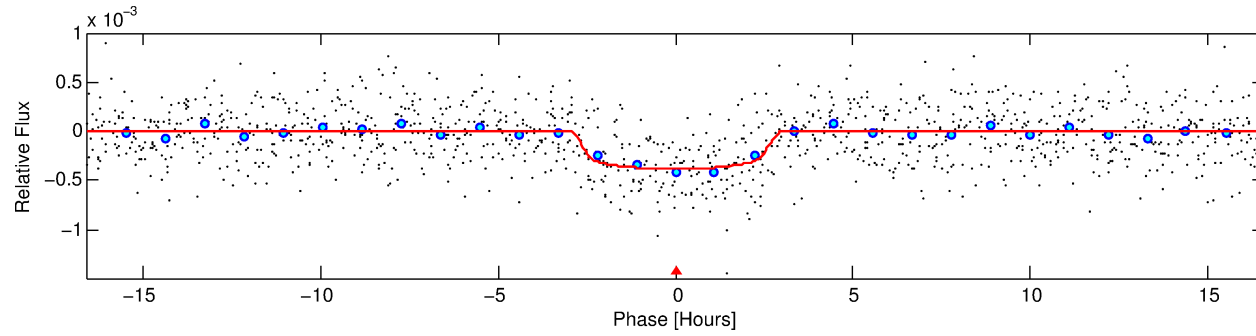
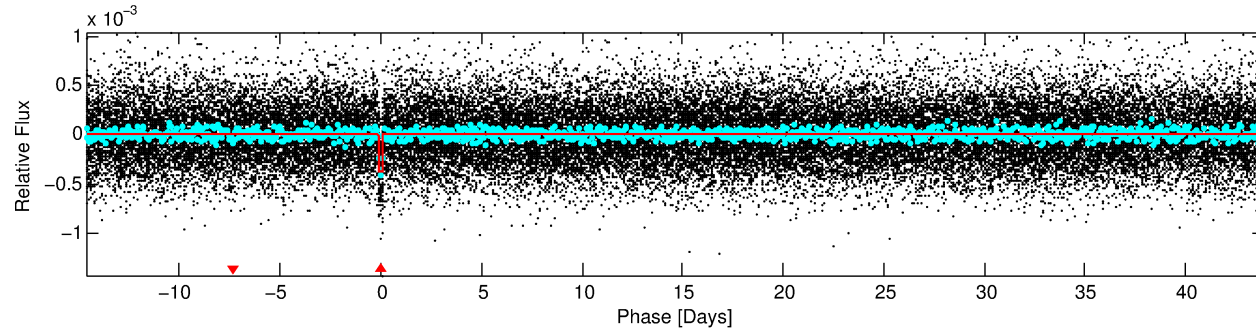
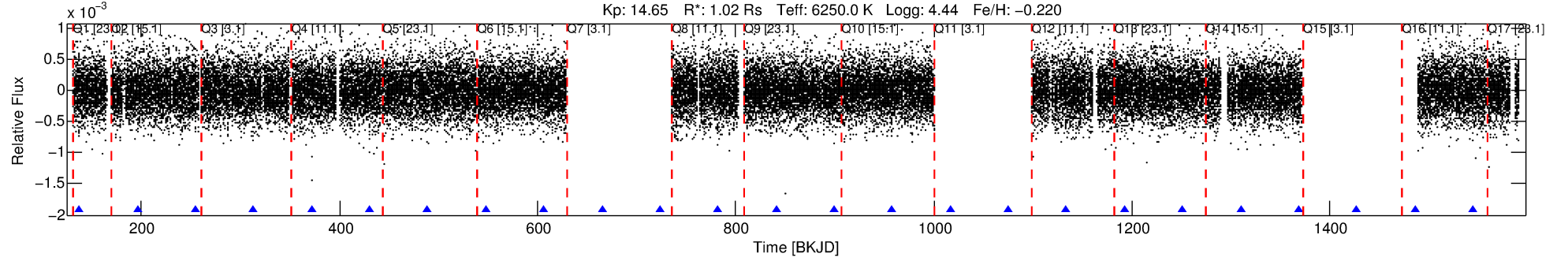
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010158729-01

No Significant Match Found

DV One-Page Summary

KIC: 10158729 Candidate: 1 of 1 Period: 58.603 d
KOI: K02097.01 Corr: 0.969



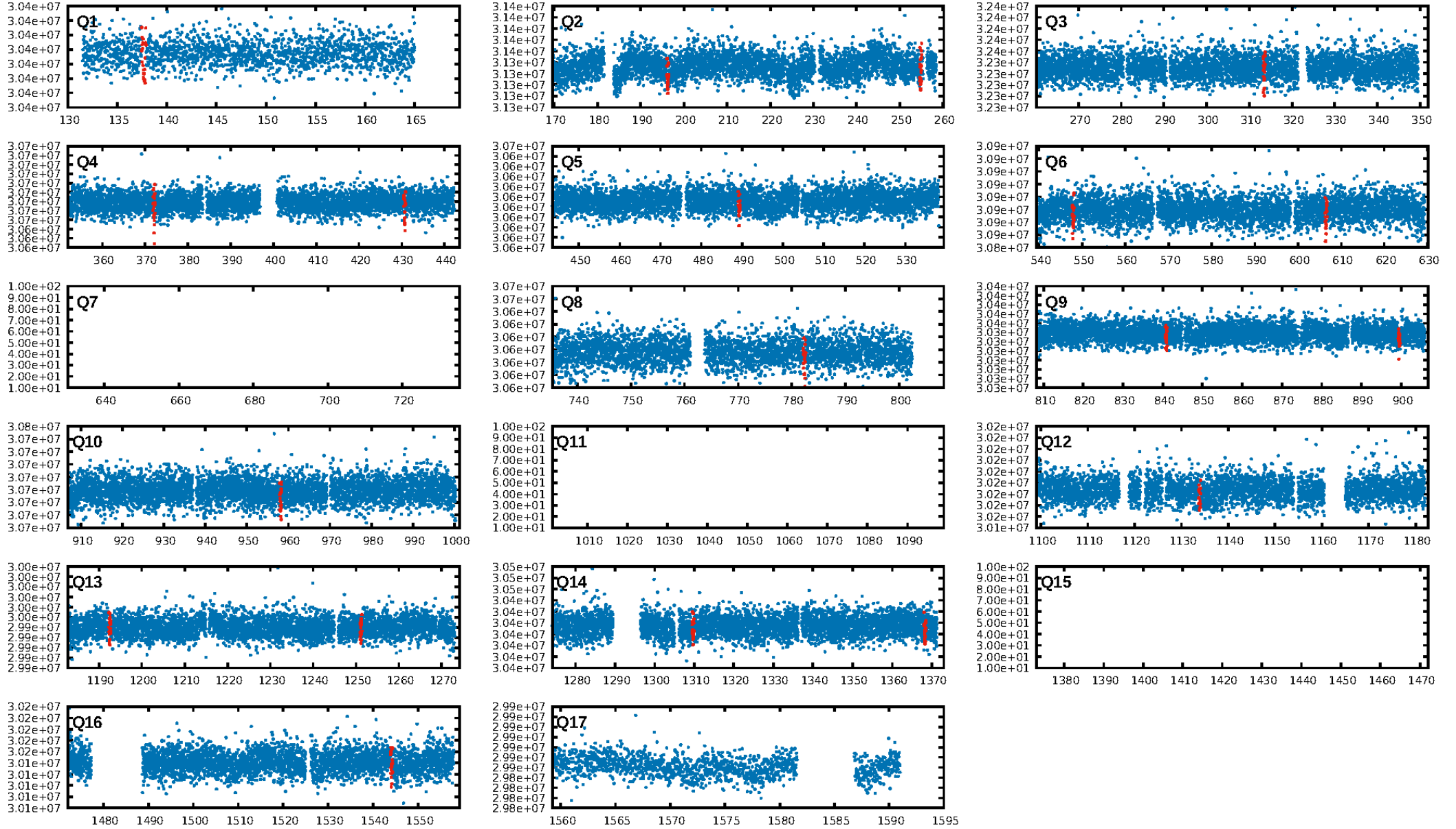
DV Fit Results:

Period = 58.60264 [0.00046] d
Epoch = 137.6653 [0.0063] BKJD
Rp/R* = 0.0192 [0.0078]
a/R* = 59.78 [125.15]
b = 0.70 [1.52]
Seff = 15.82 [6.84]
Teff = 509 [55] K
Rp = 2.14 [1.11] Re
a = 0.2995 [0.0834] AU
Ag = 806.32 [784.75] [1.03 σ]
Teffp = 4190 [938] K [3.92 σ]

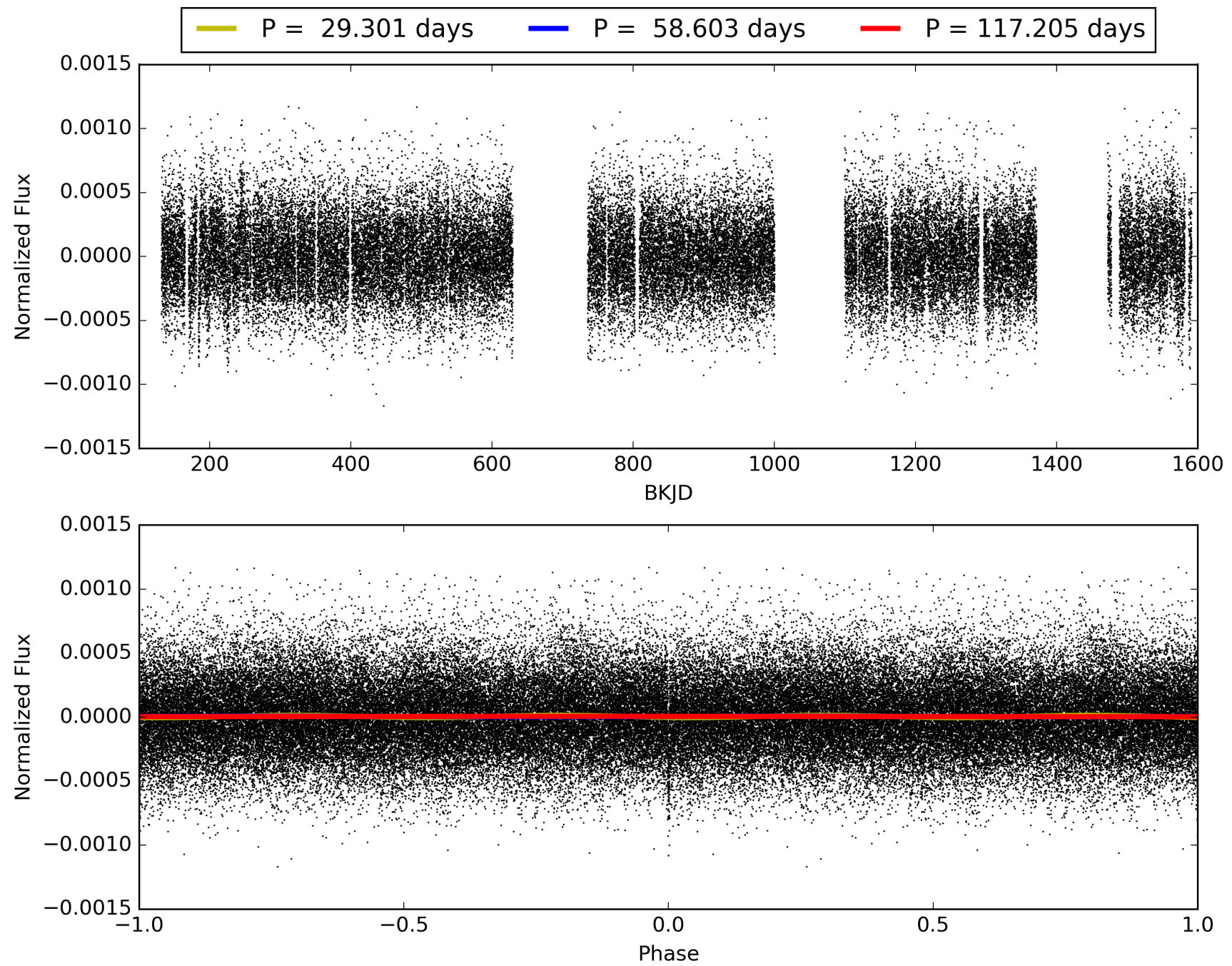
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 61.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.09e-59
RollingBand-fgt: 1.00 [18/18]
GhostDiagnostic-chr: 13.37
Centroid-sig: 2.0%
Centroid-so: 2.046 arcsec [2.56 σ]
OotOffset-rm: 0.325 arcsec [1.04 σ]
KicOffset-rm: 0.376 arcsec [1.29 σ]
OotOffset-st: 4/1/3/4 [12]
KicOffset-st: 4/1/3/4 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 1.00 [12/12]

TCE 010158729-01, PDC Light Curves

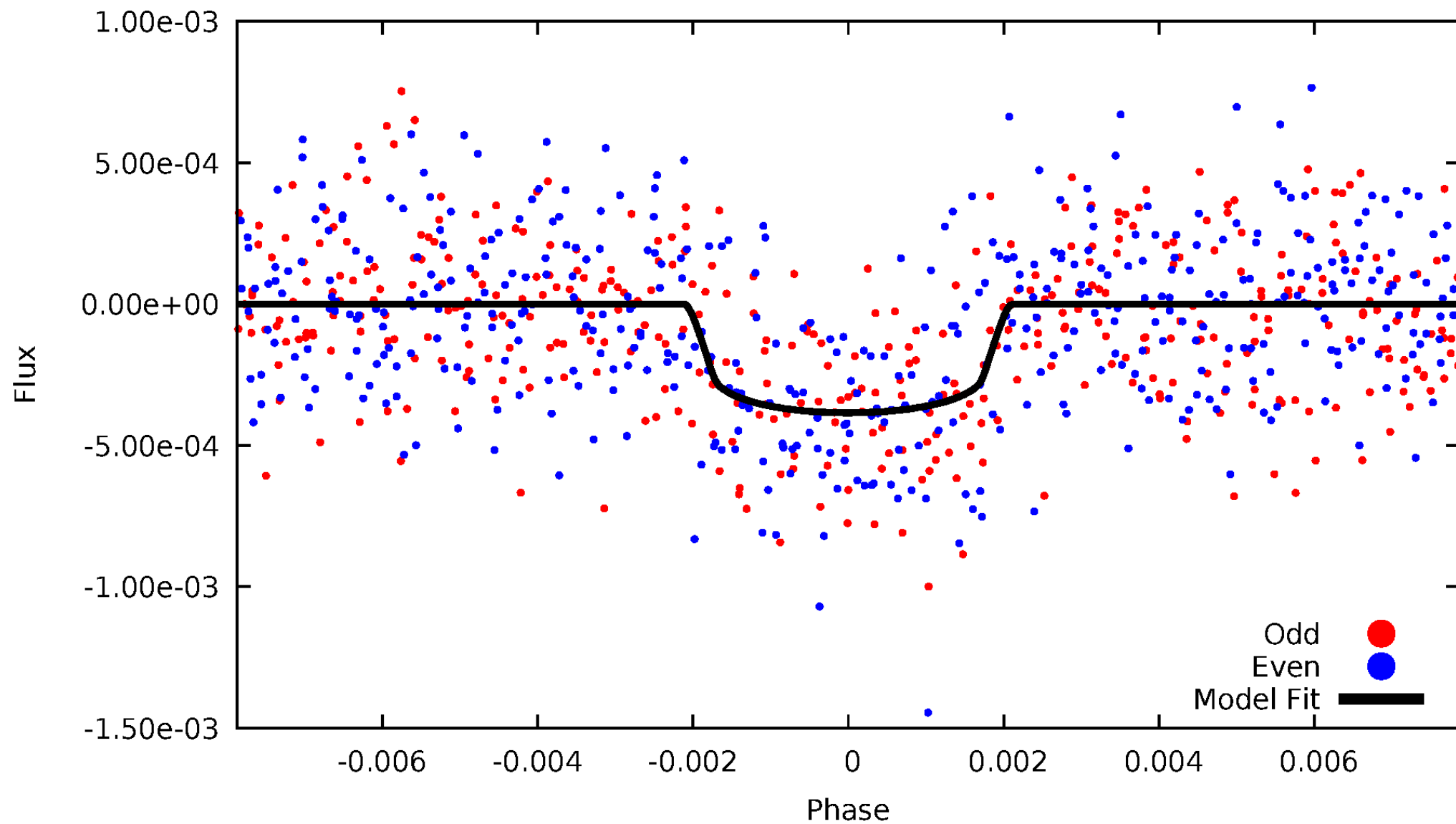


TCE 010158729-01



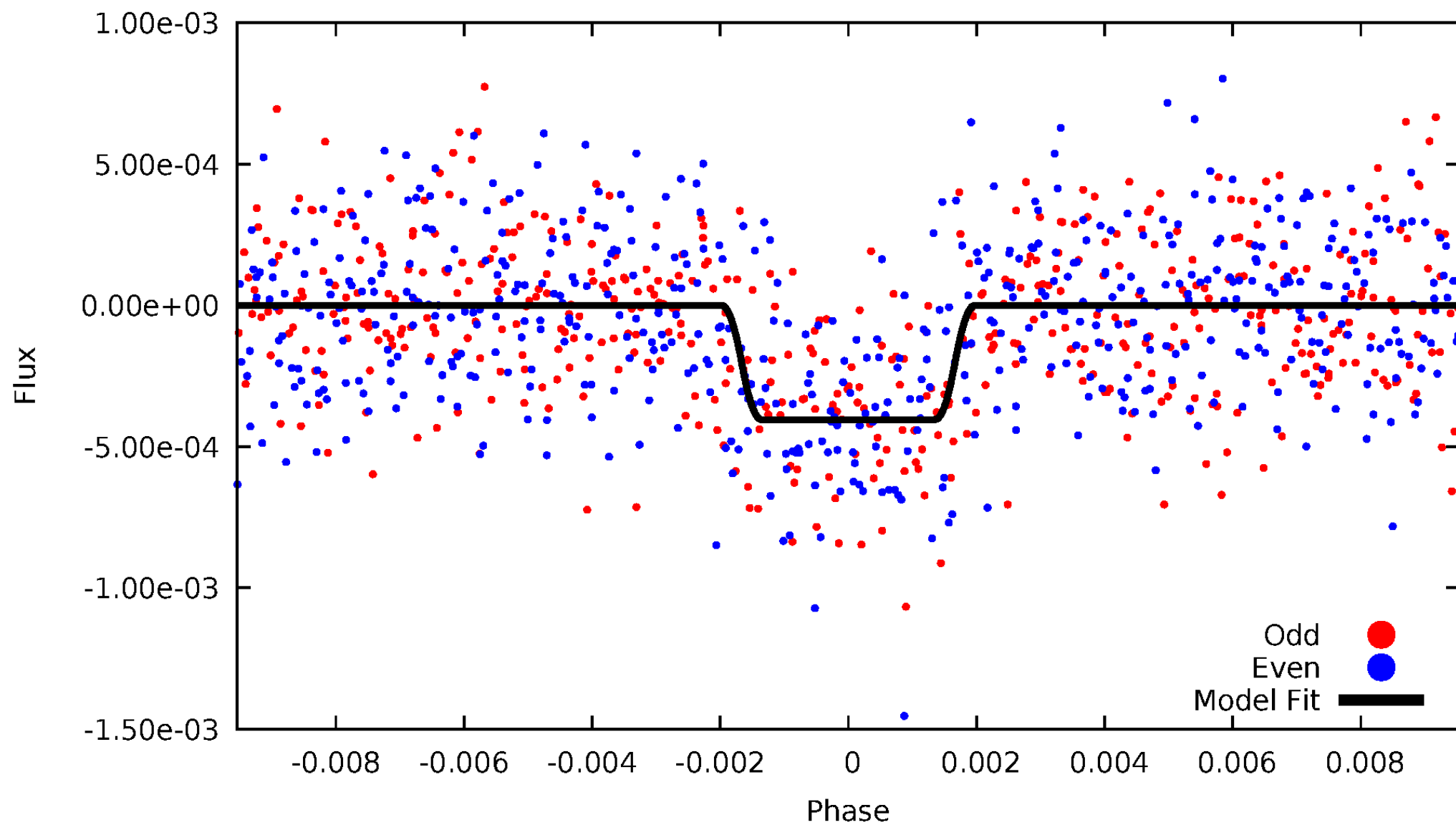
DV Odd/Even

TCE 010158729-01

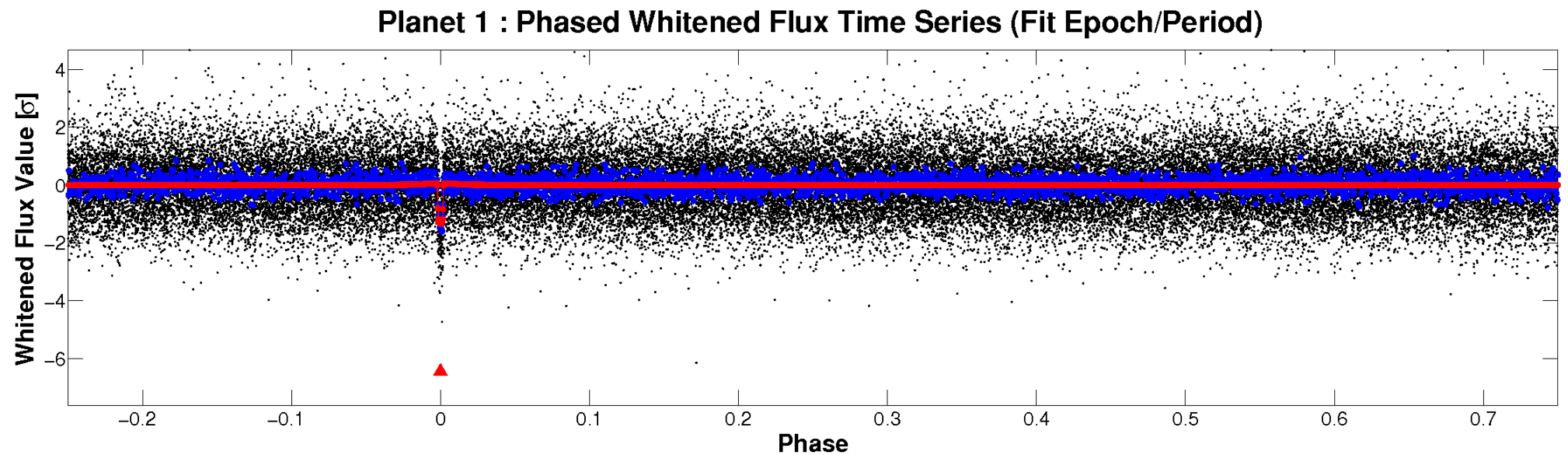
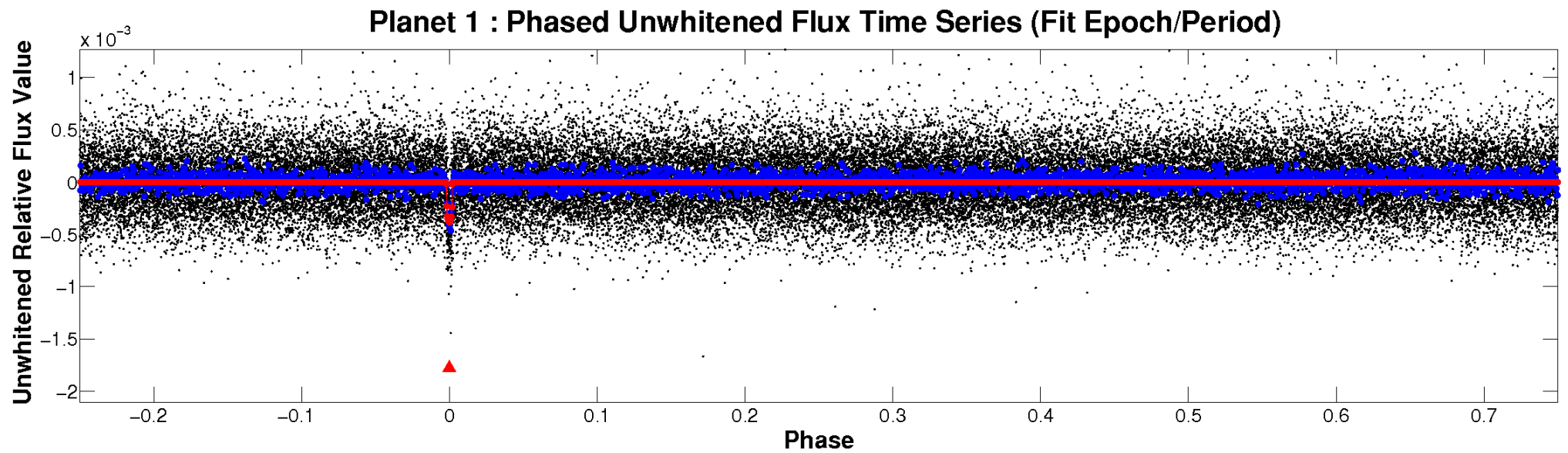


ALT Odd/Even

TCE 010158729-01

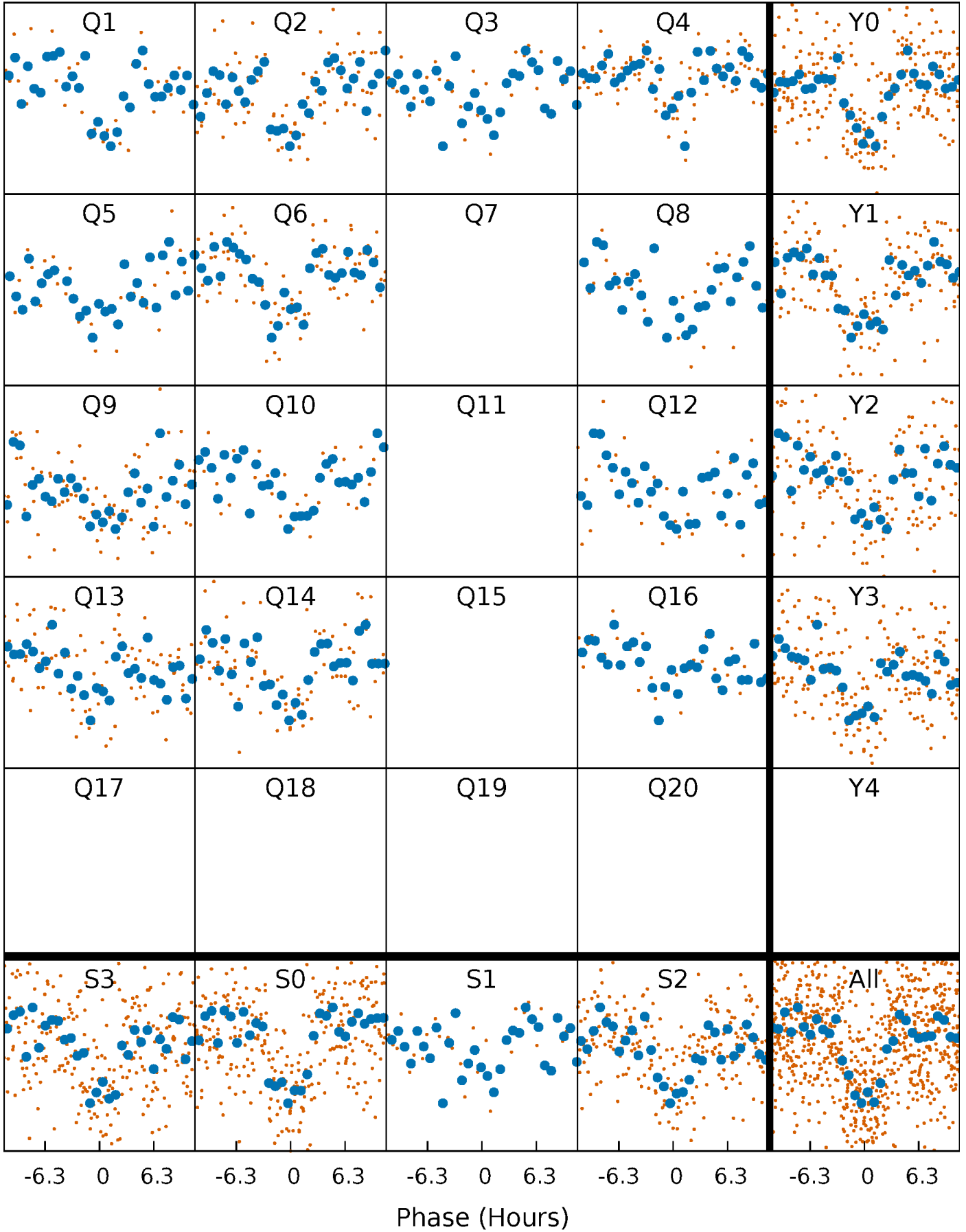


Non-Whitened Vs. Whitened Light Curve



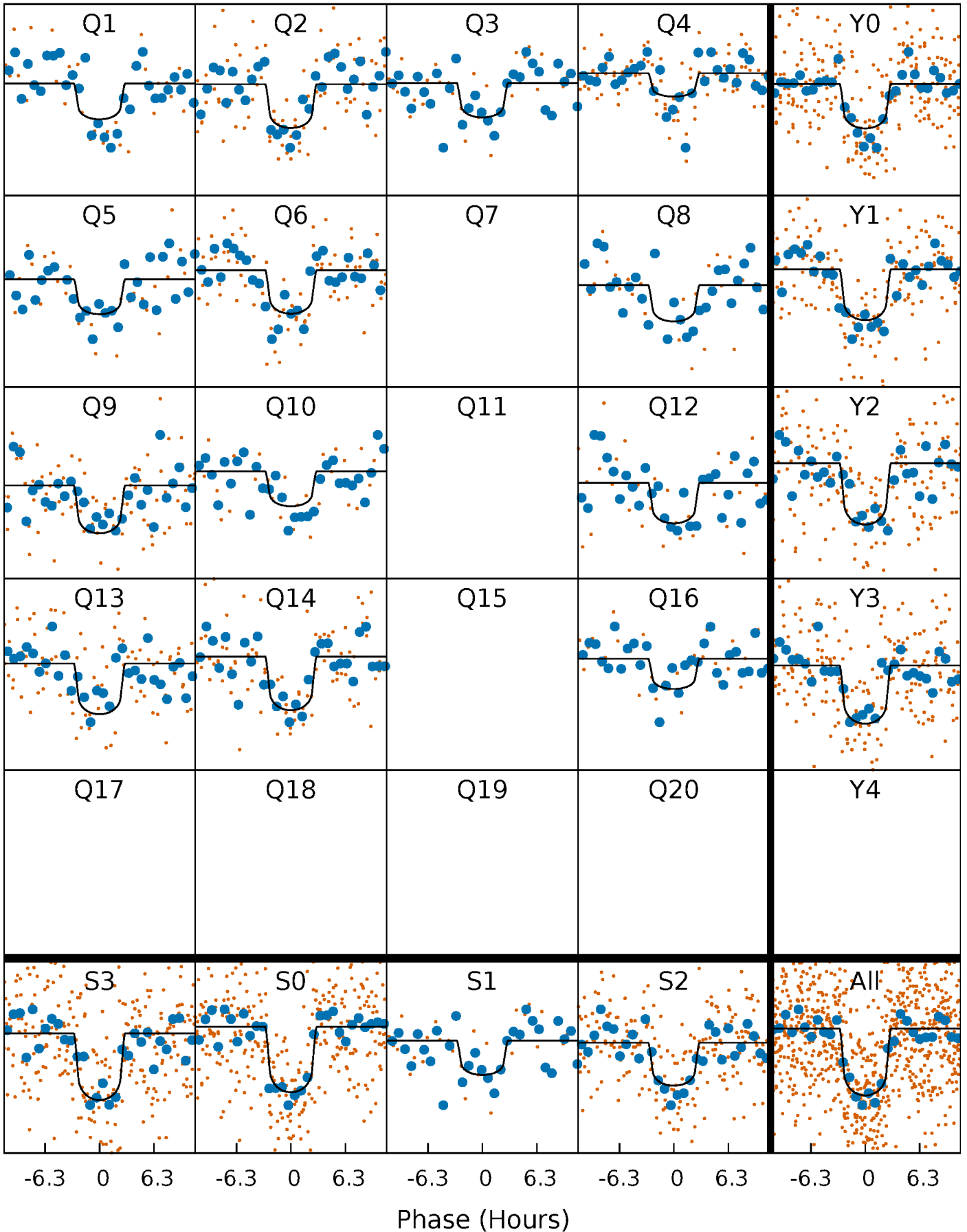
PDC Quarter-Phased Transit Curves

TCE 010158729-01 P= 58.602637 Days $T_0=137.665317$ (BKJD)



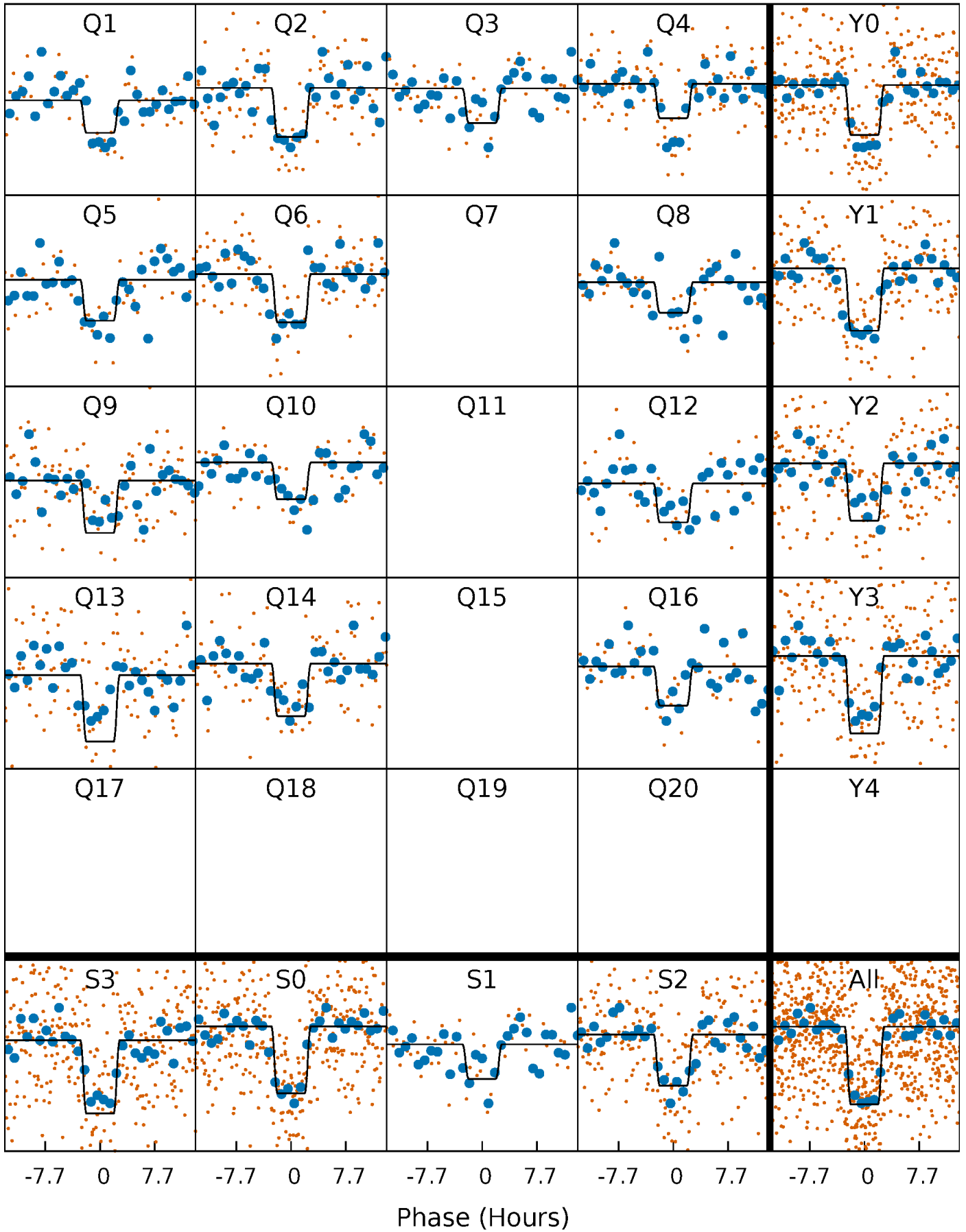
DV Quarter-Phased Transit Curves

TCE 010158729-01 P= 58.602637 Days $T_0=137.665317$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

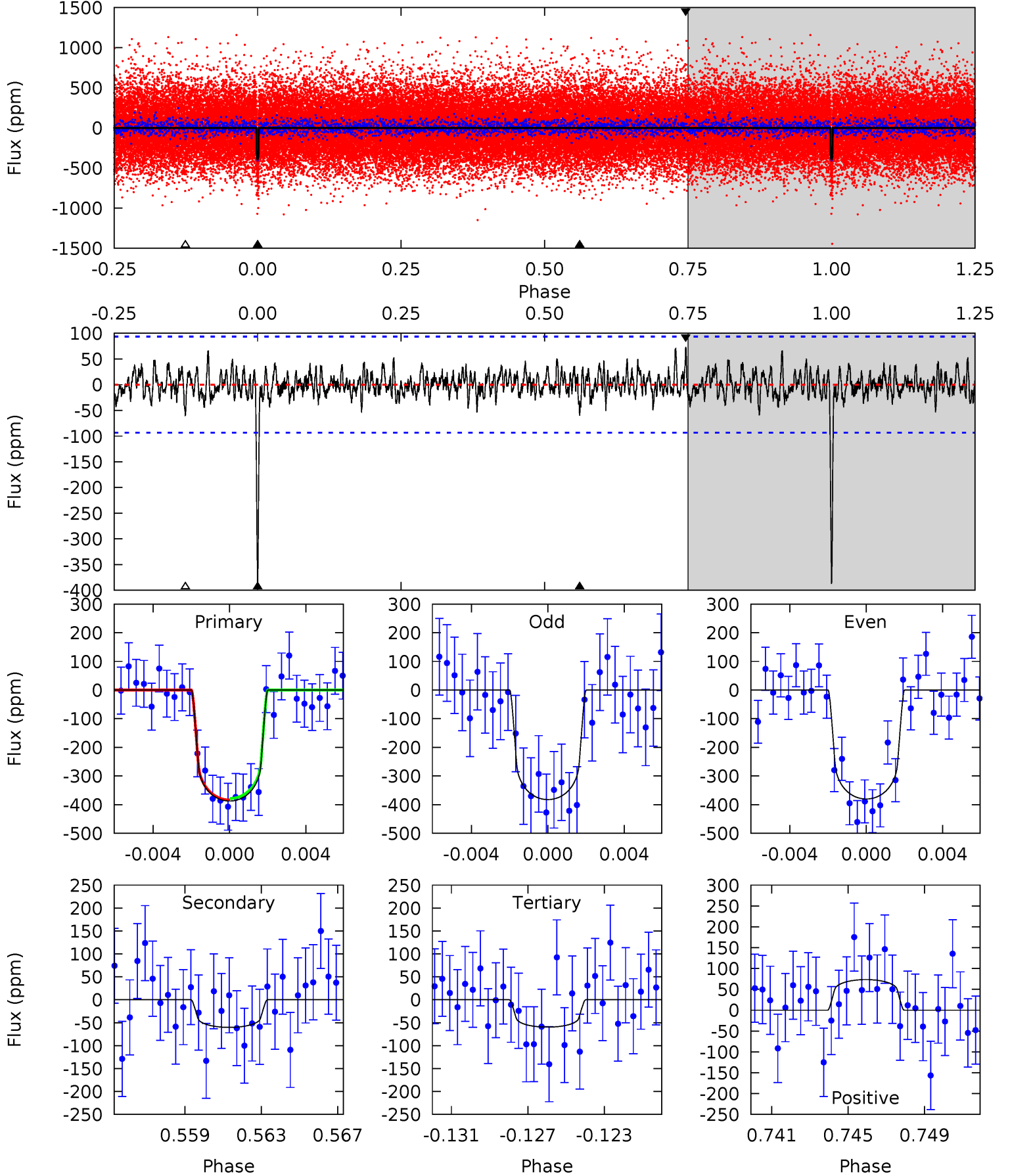
TCE 010158729-01 P= 58.601634 Days $T_0=137.678239$ (BKJD)



DV Model-Shift Uniqueness Test

010158729-01, P = 58.602637 Days, E = 79.062680 Days

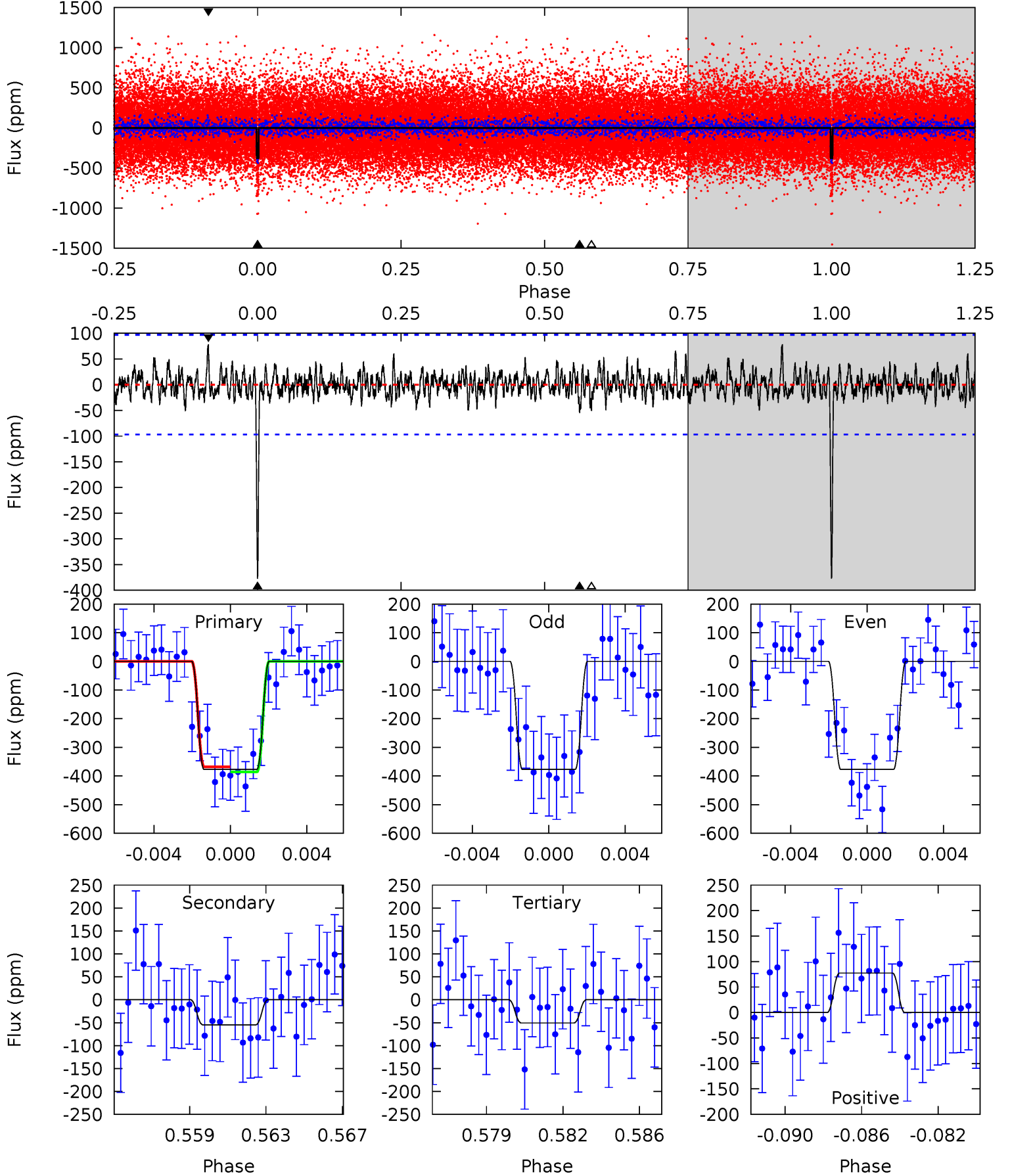
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.5	3.34	3.31	4.07	5.19	2.86	1.06	18.2	17.4	0.03	-0.73	0.06	0.99	0.16	0.15



Alt Model-Shift Uniqueness Test

010158729-01, P = 58.601634 Days, E = 79.076605 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.2	2.93	2.71	4.16	5.20	2.89	1.01	17.5	16.1	0.22	-1.22	0.00	1.02	0.17	0.47



Stellar Parameters For KIC 010158729

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6250^{+169}_{-225}	$4.440^{+0.070}_{-0.224}$	$-0.220^{+0.250}_{-0.300}$	$1.019^{+0.335}_{-0.112}$	$1.038^{+0.158}_{-0.129}$	$1.380^{+0.418}_{-0.764}$
	+3%/-4%	+2%/-5%	+114%/-136%	+33%/-11%	+15%/-12%	+30%/-55%
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 010158729-01 / KOI 2097.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-60 ± 18	$2.19^{+0.98}_{-0.91}$	723^{+56}_{-40}	4226^{+1070}_{-568}	587^{+1193}_{-324}
Alt.	-55 ± 19	$2.38^{+1.02}_{-0.92}$	723^{+54}_{-39}	4041^{+832}_{-509}	452^{+769}_{-248}

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 $A_{obs} \gg 1.0$

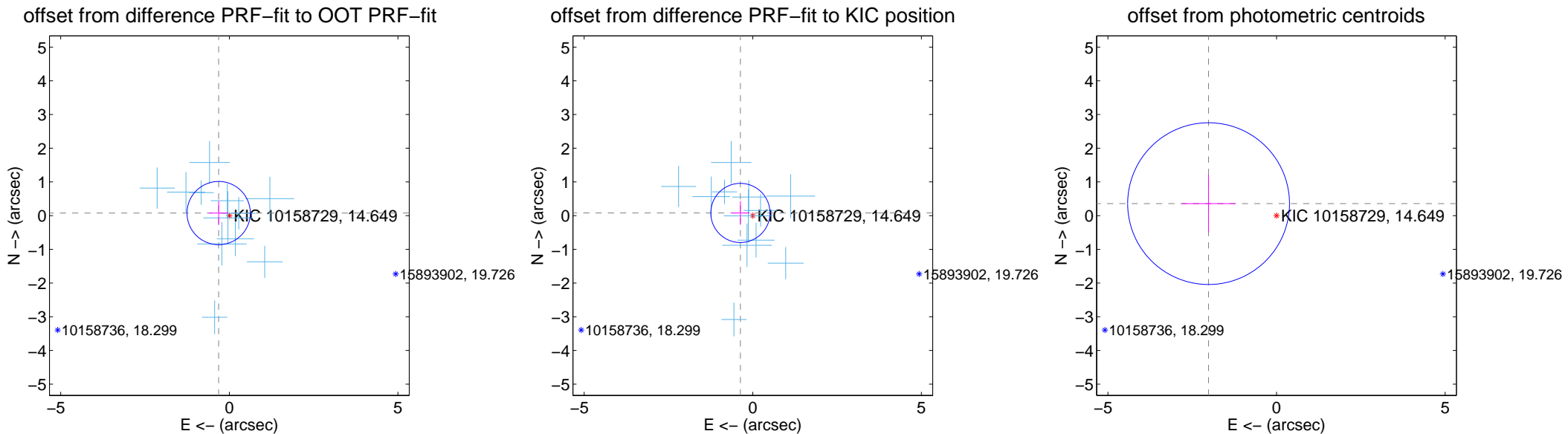
DV Centroid Data

Supplemental centroid analysis for 010158729-01. Kepler magnitude: 14.65. Transit SNR 16.71

There are 12 quarters with good PRF difference image offsets

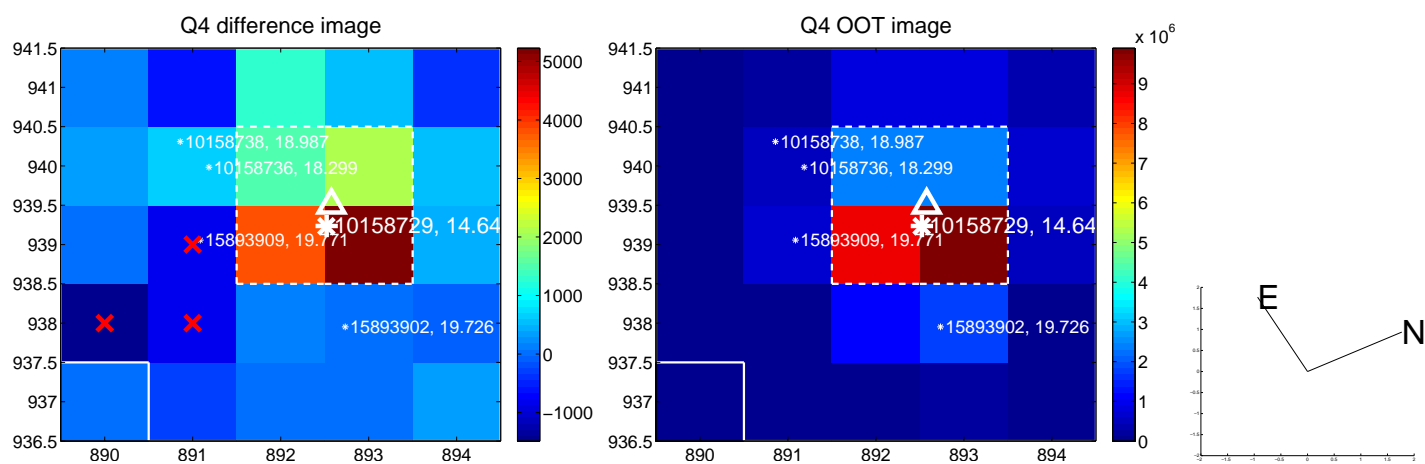
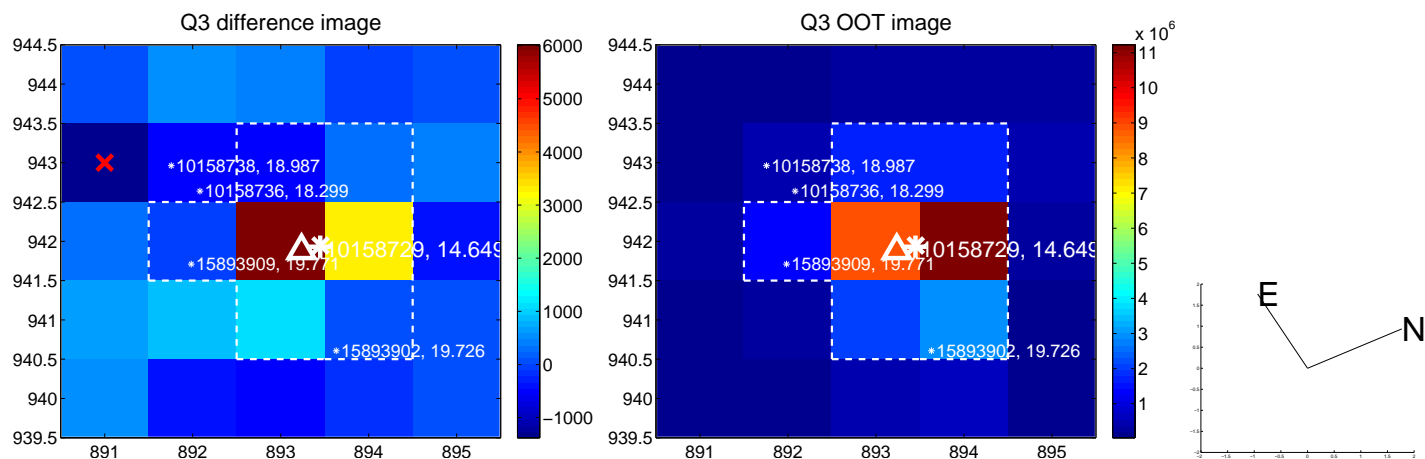
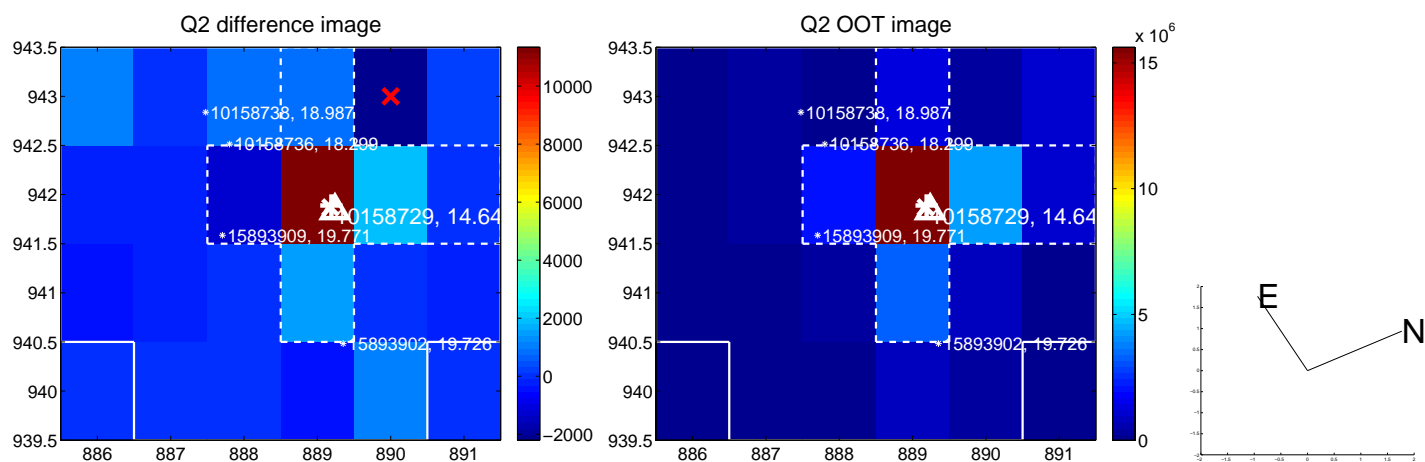
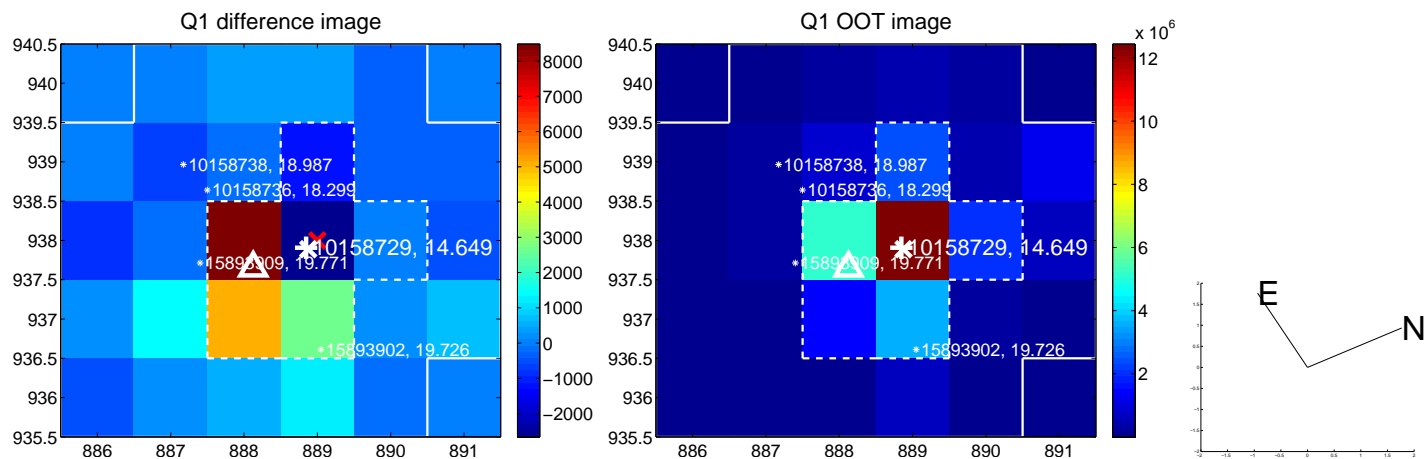
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.325 ± 0.313	1.04	0.316 ± 0.288	0.076 ± 0.355
PRF-fit source offset from KIC position	0.376 ± 0.293	1.29	0.368 ± 0.267	0.080 ± 0.351
photometric centroid source offset	2.05 ± 0.80	2.56	2.02 ± 0.80	0.36 ± 0.86

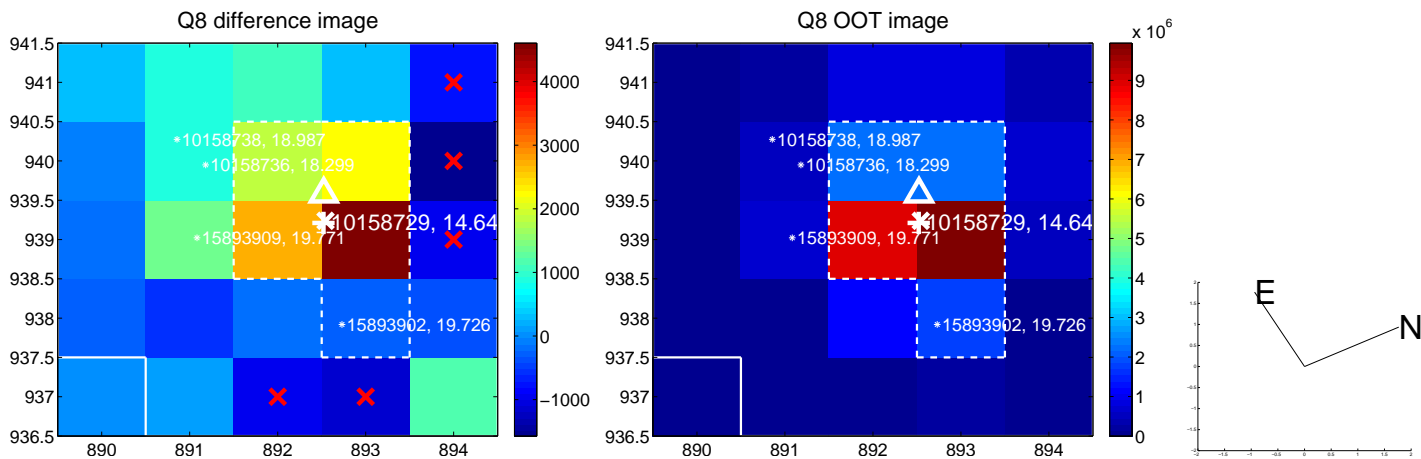
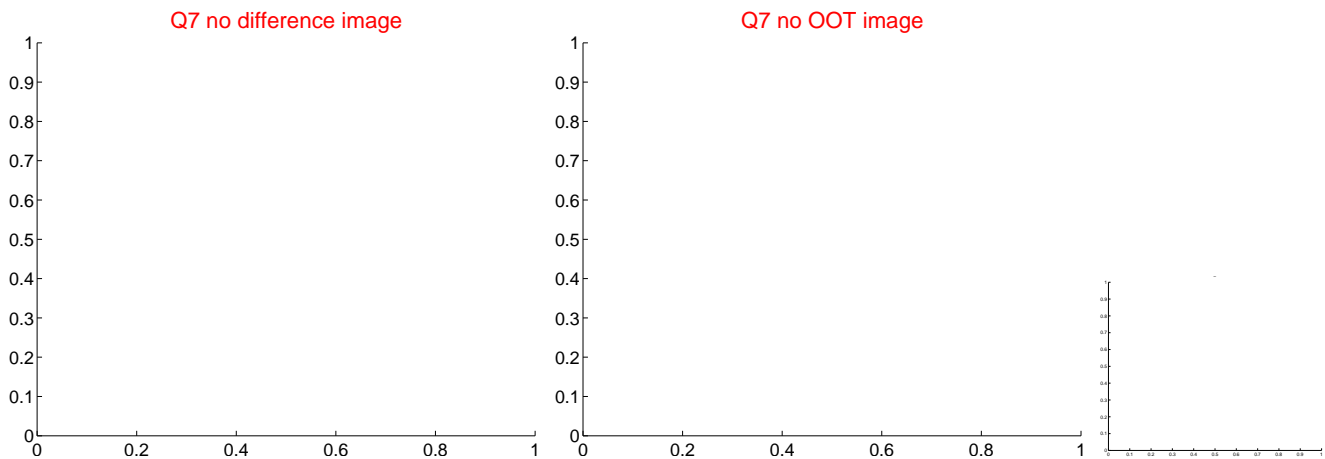
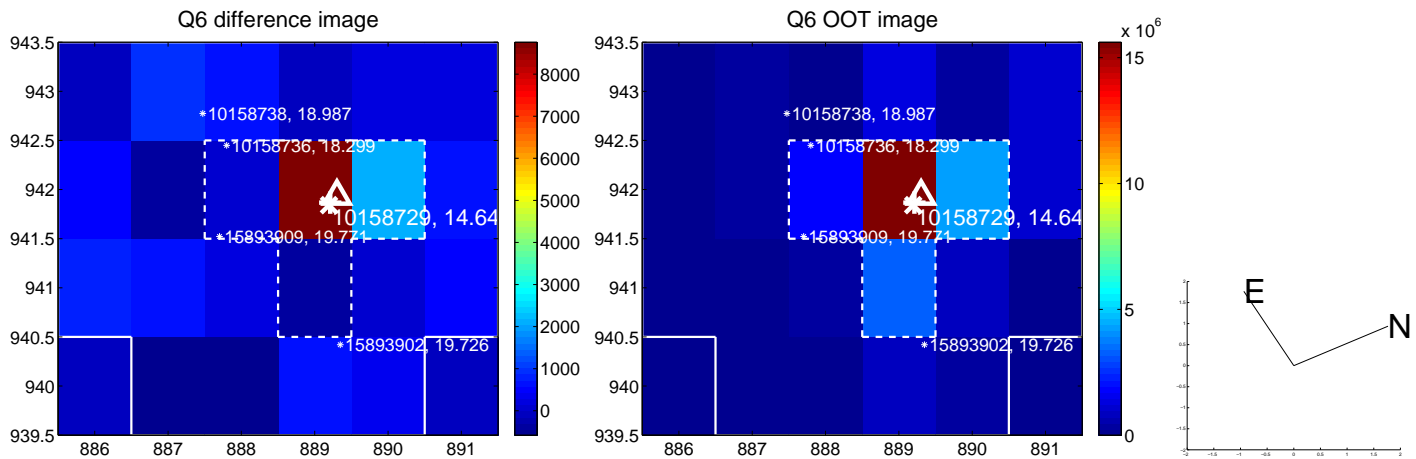
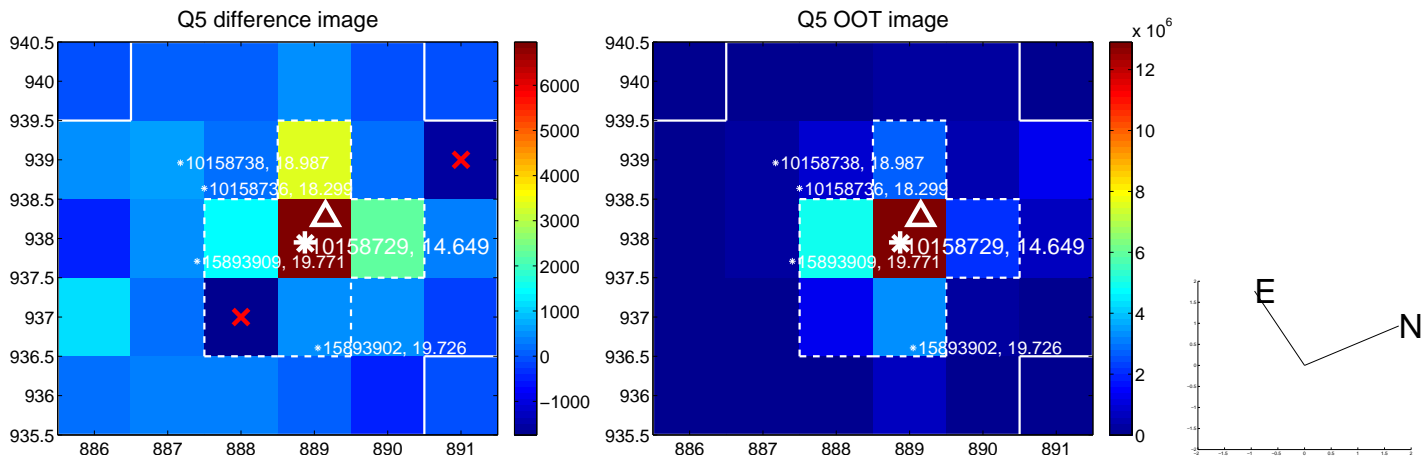


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

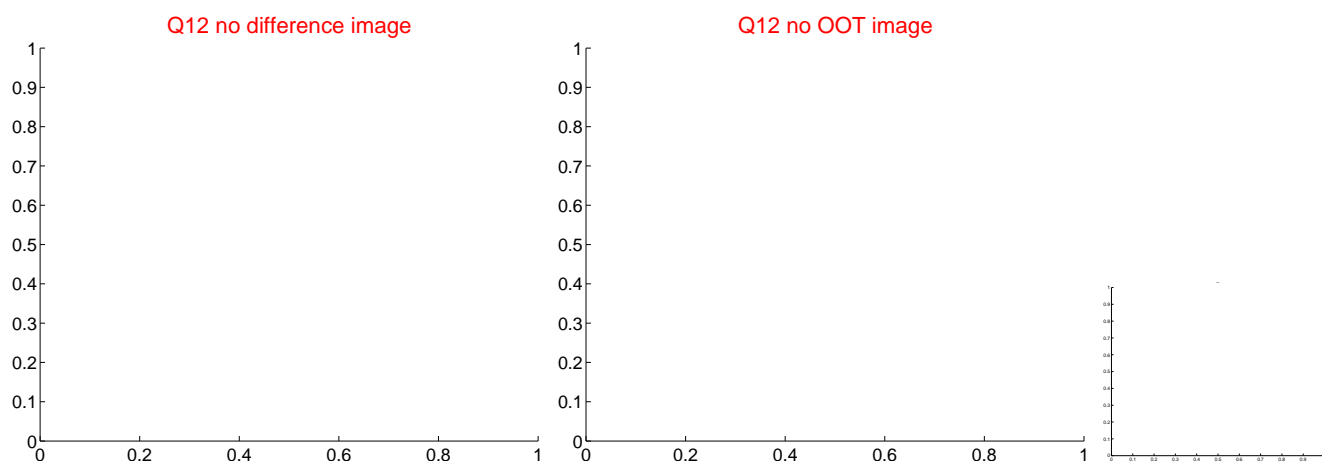
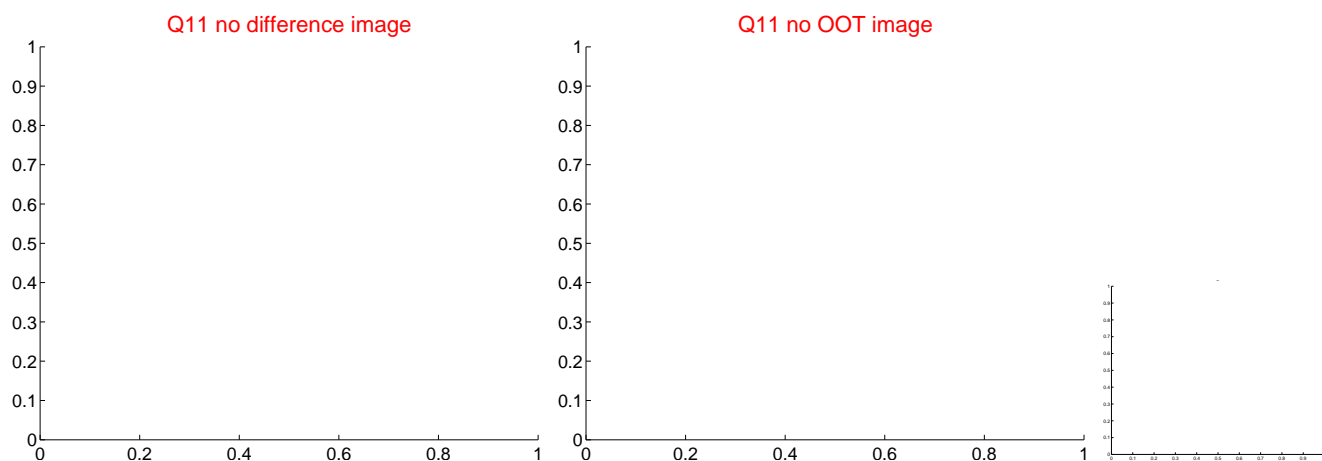
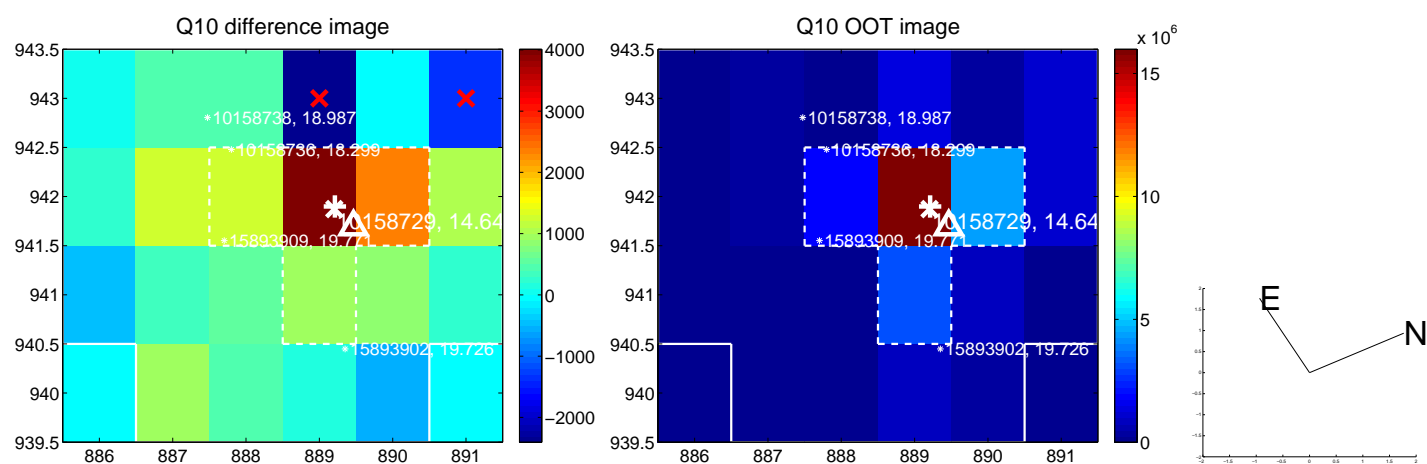
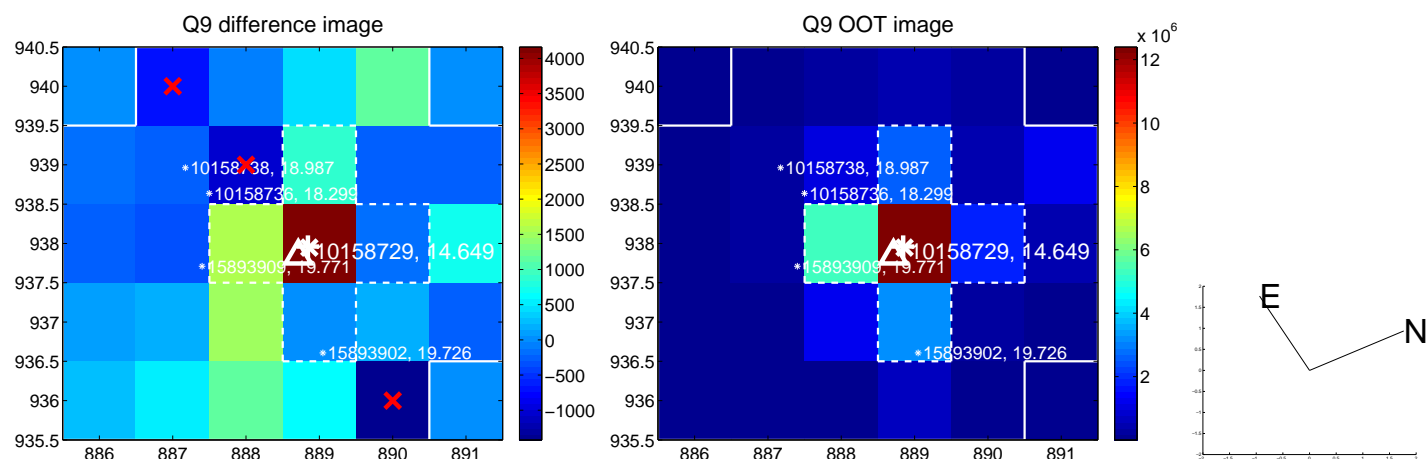
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



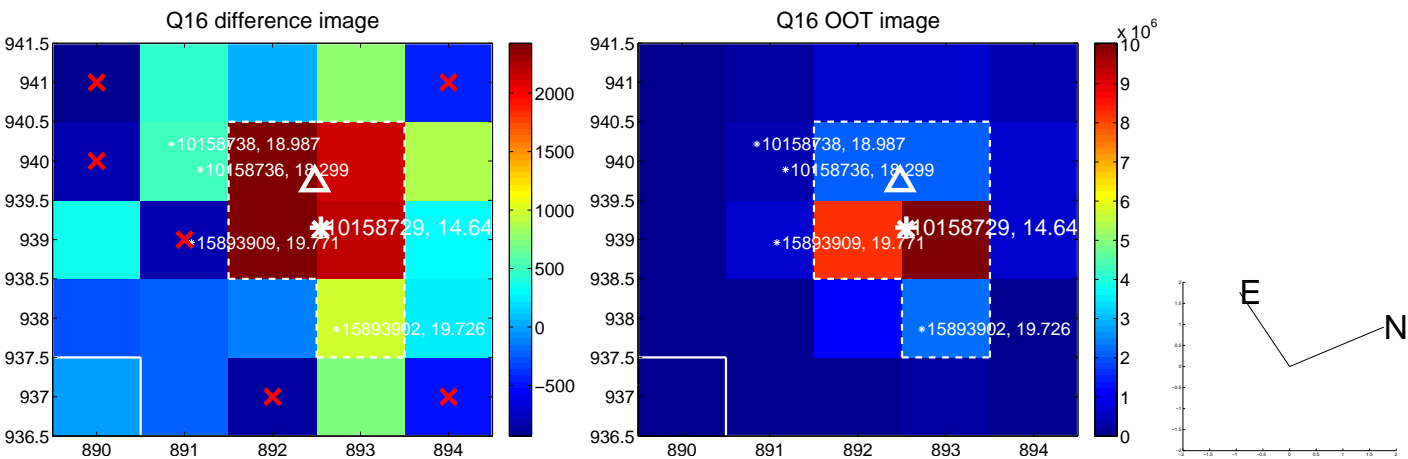
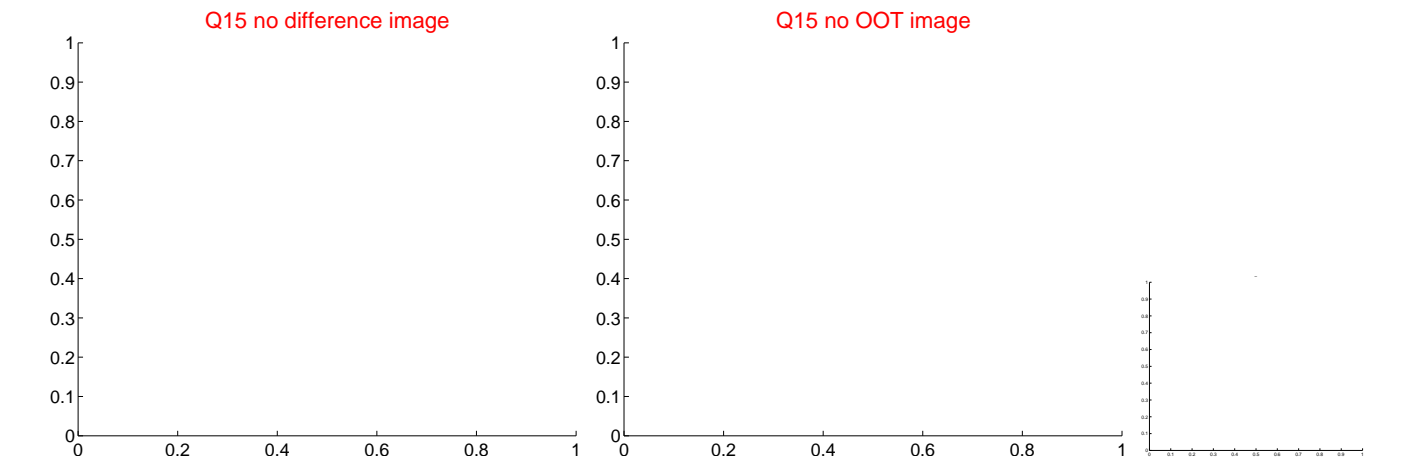
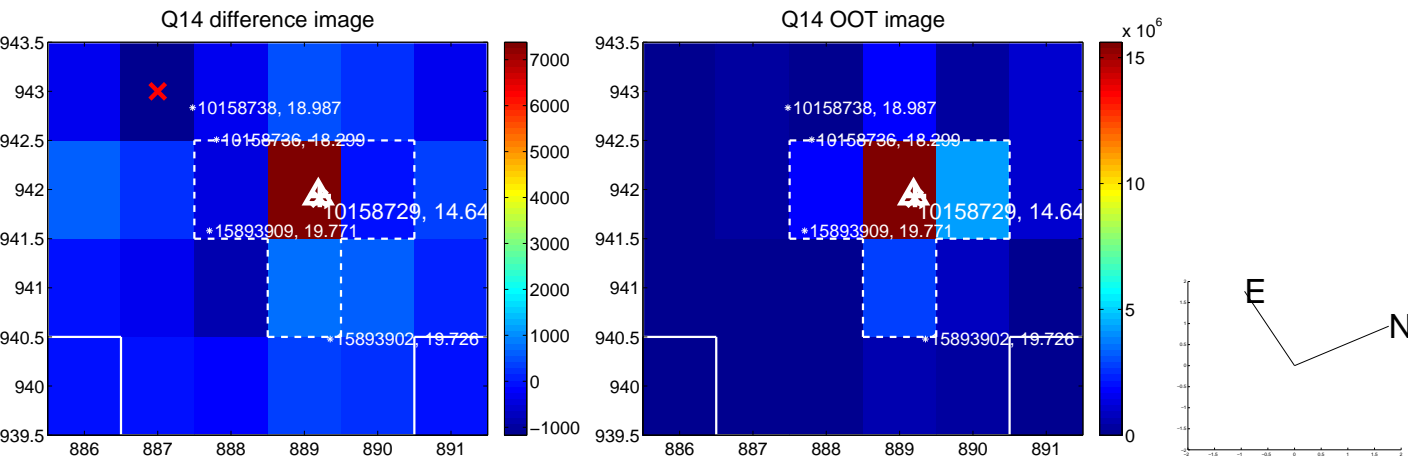
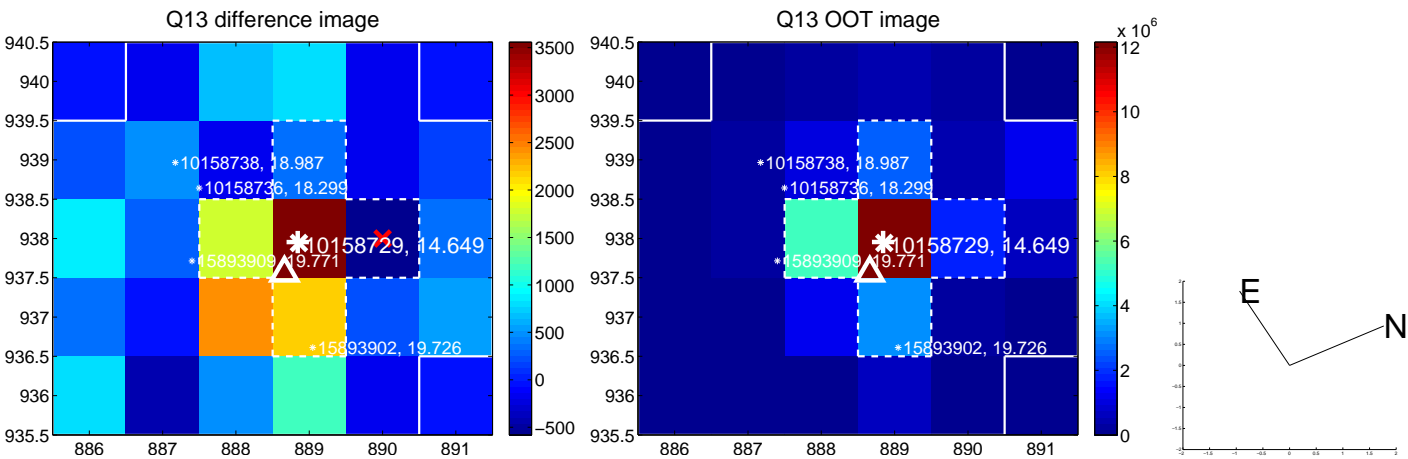
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



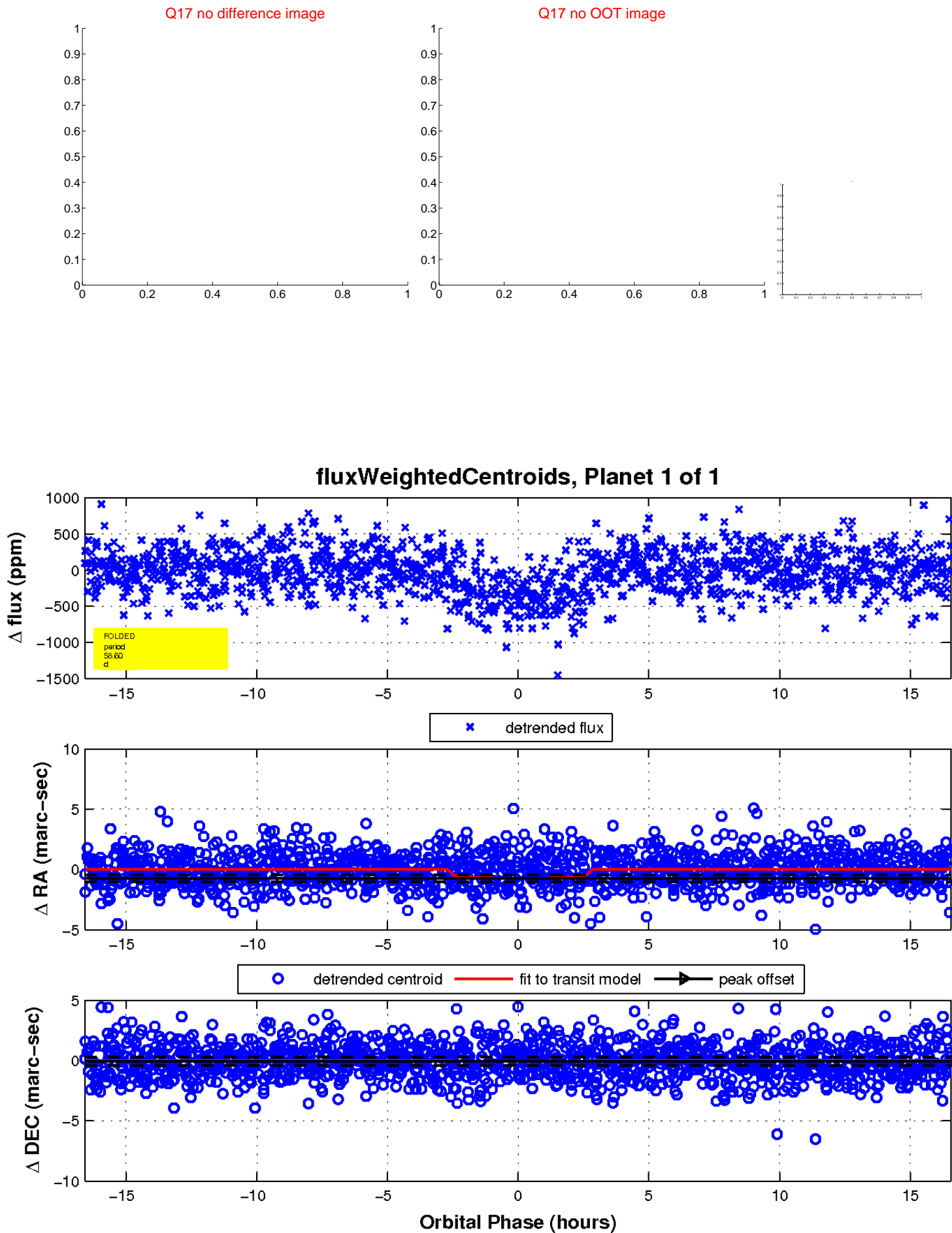
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

