

KIC 002853029

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})
002853029-01	OBS	3259.01	72.933240	198.112846	769.0	3.836	9.7	10.1	0.90	5316	2.79	5.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002853029-01	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.

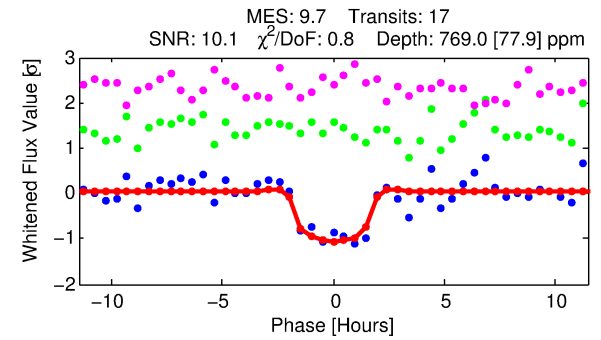
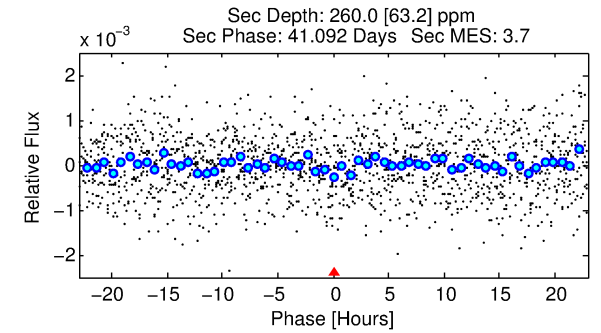
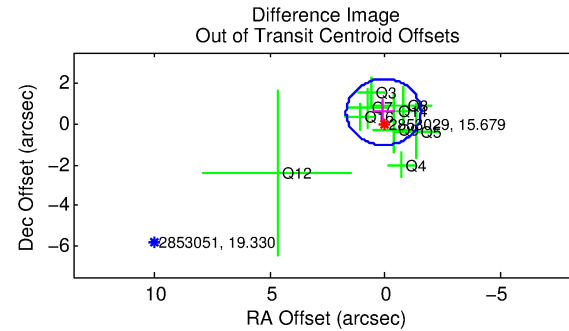
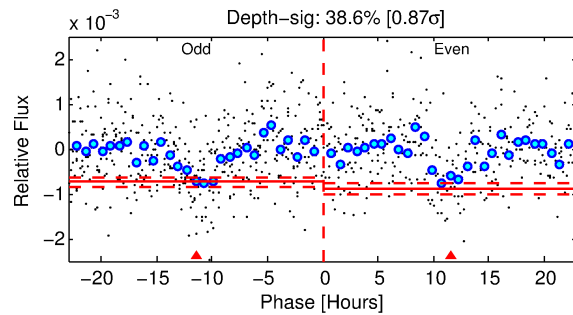
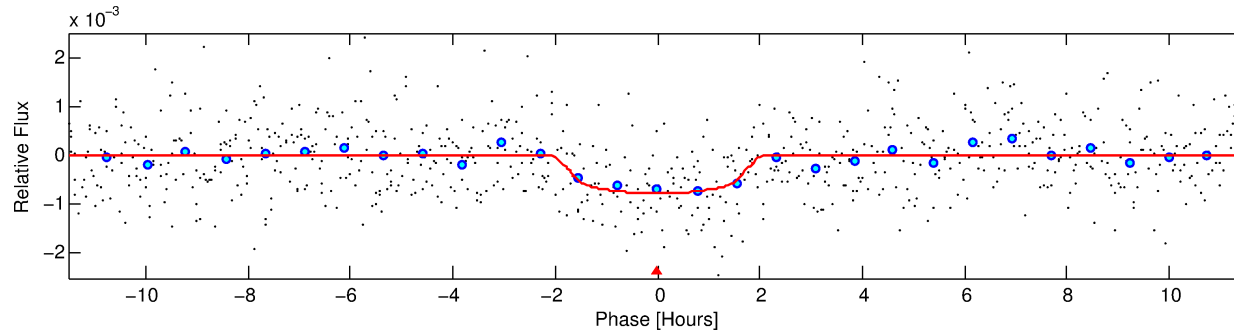
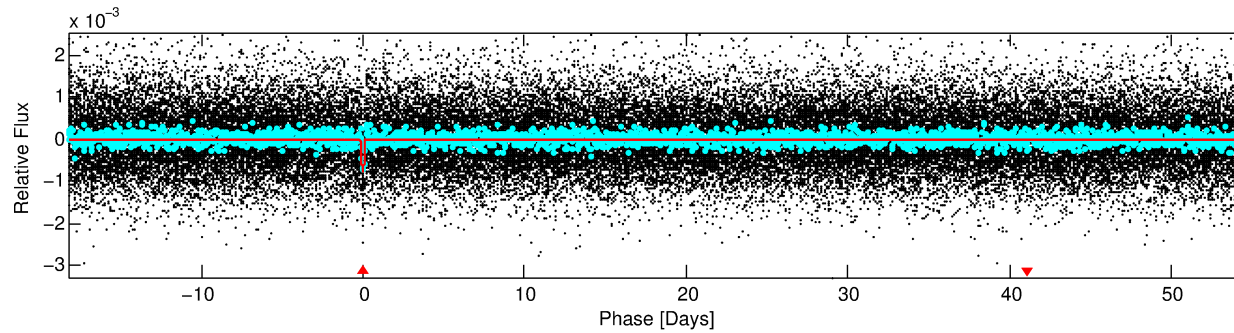
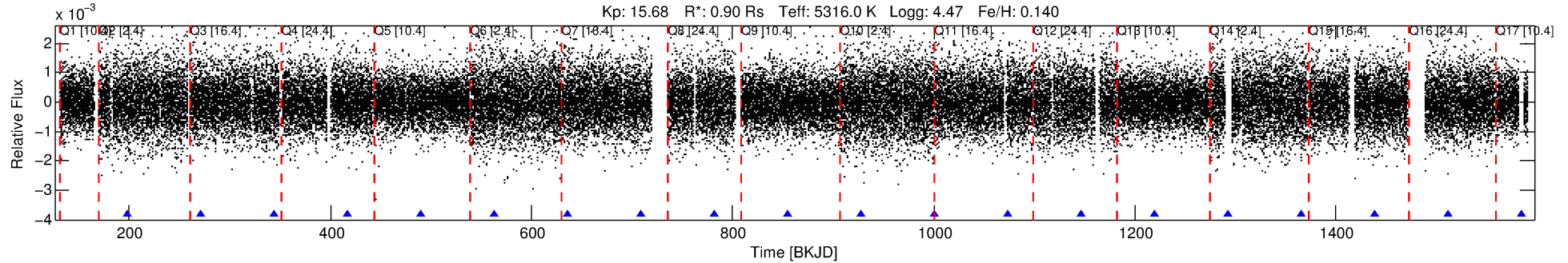
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002853029-01

No Significant Match Found

DV One-Page Summary

KIC: 2853029 Candidate: 1 of 1 Period: 72.933 d
KOI: K03259.01 Corr: 0.986



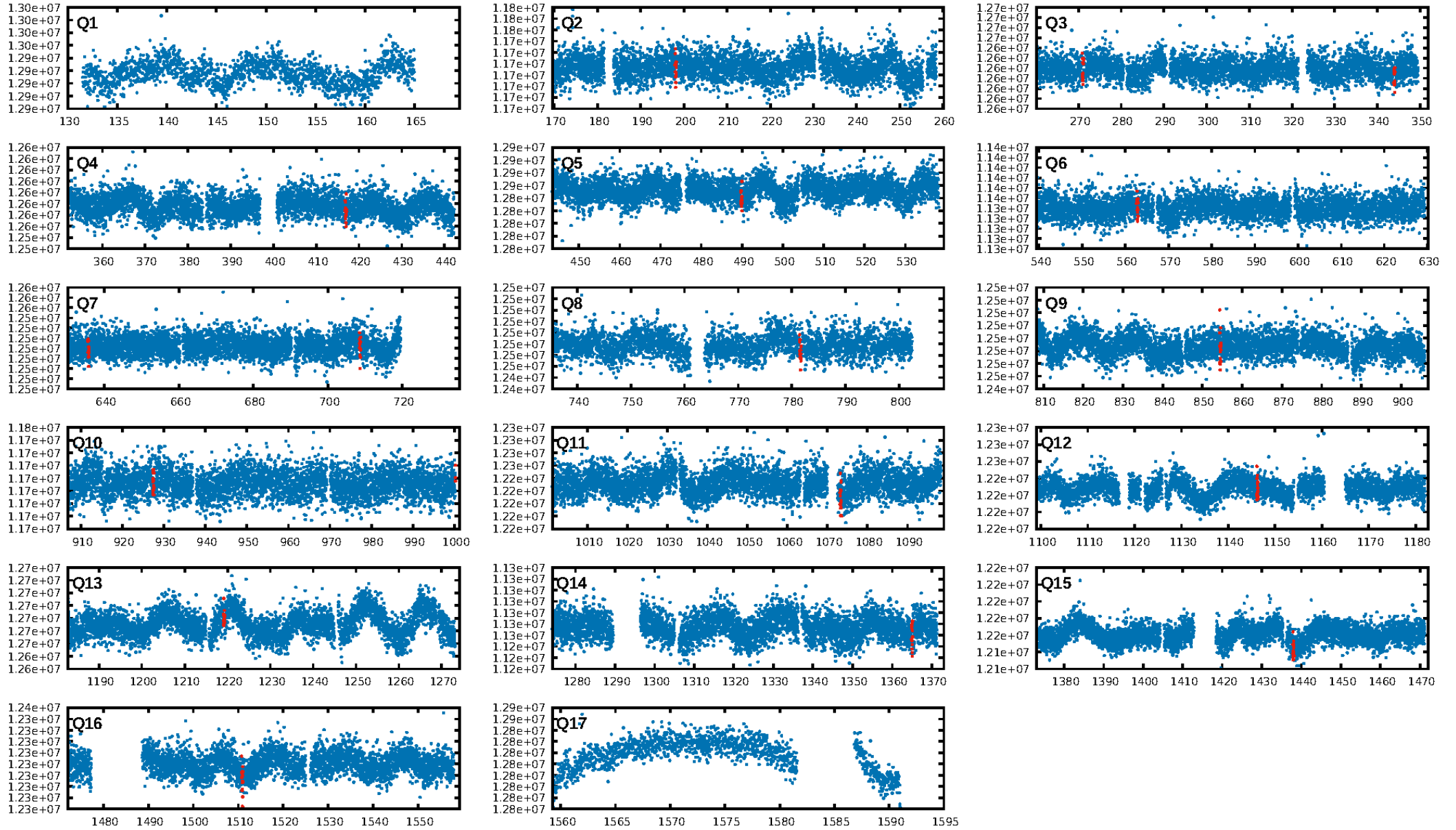
DV Fit Results:

Period = 72.93324 [0.00079] d
Epoch = 198.1128 [0.0081] BKJD
Rp/R* = 0.0283 [0.0213]
a/R* = 94.46 [272.78]
b = 0.80 [1.36]
Seff = 5.45 [0.76]
Teq = 390 [14] K
Rp = 2.79 [2.11] Re
a = 0.3269 [0.0263] AU
Ag = 1966.40 [3008.11] [0.65 σ]
Teff = 4011 [1530] K [2.37 σ]

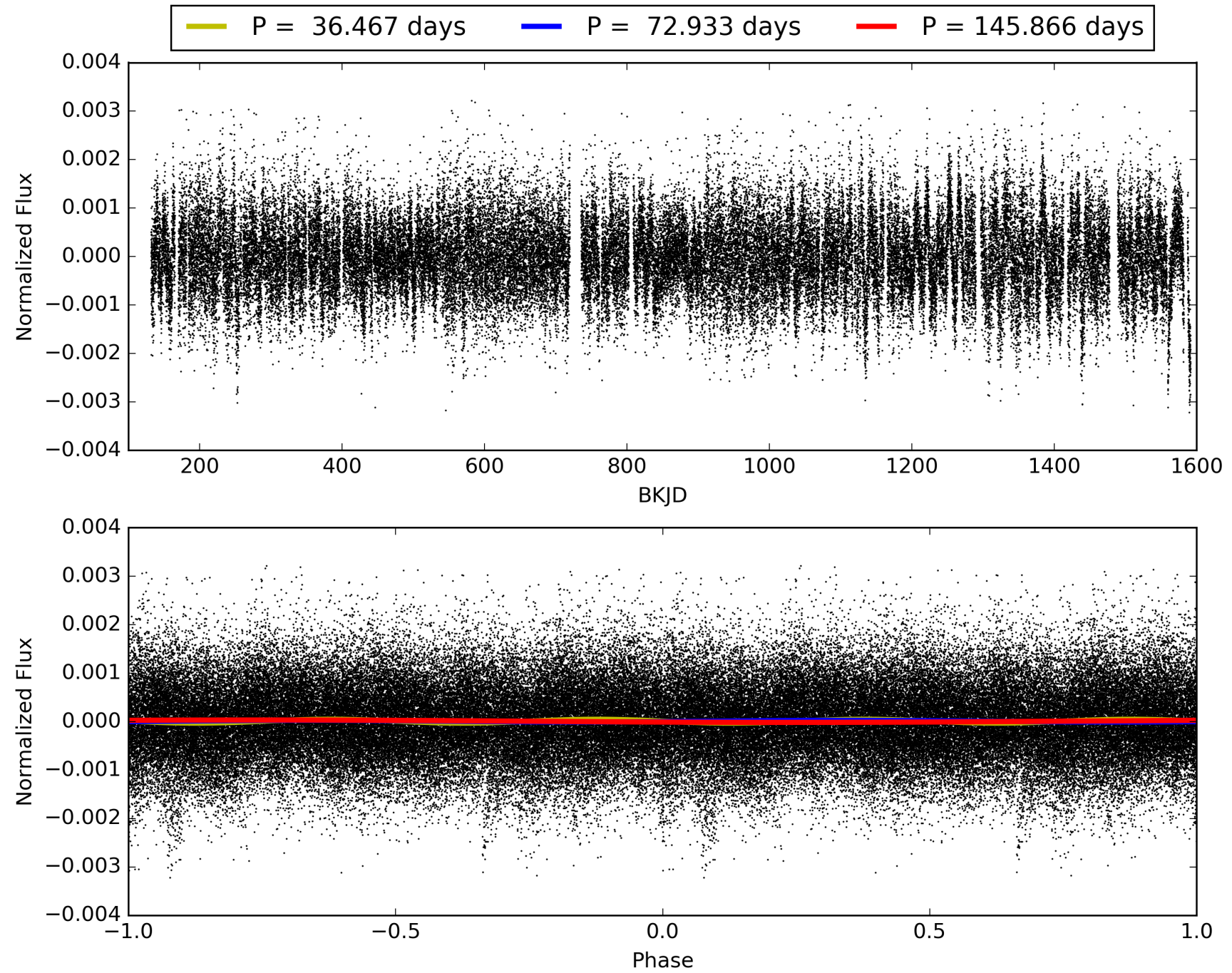
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 73.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.57e-22
RollingBand-fgt: 1.00 [17/17]
GhostDiagnostic-chr: 5.305
Centroid-sig: 0.1%
Centroid-so: 2.302 arcsec [1.68 σ]
OotOffset-rm: 0.584 arcsec [1.08 σ]
KicOffset-rm: 0.852 arcsec [1.58 σ]
OotOffset-st: 1/2/4/2 [9]
KicOffset-st: 1/2/4/2 [9]
DiffImageQuality-fgm: 0.67 [6/9]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 002853029-01, PDC Light Curves

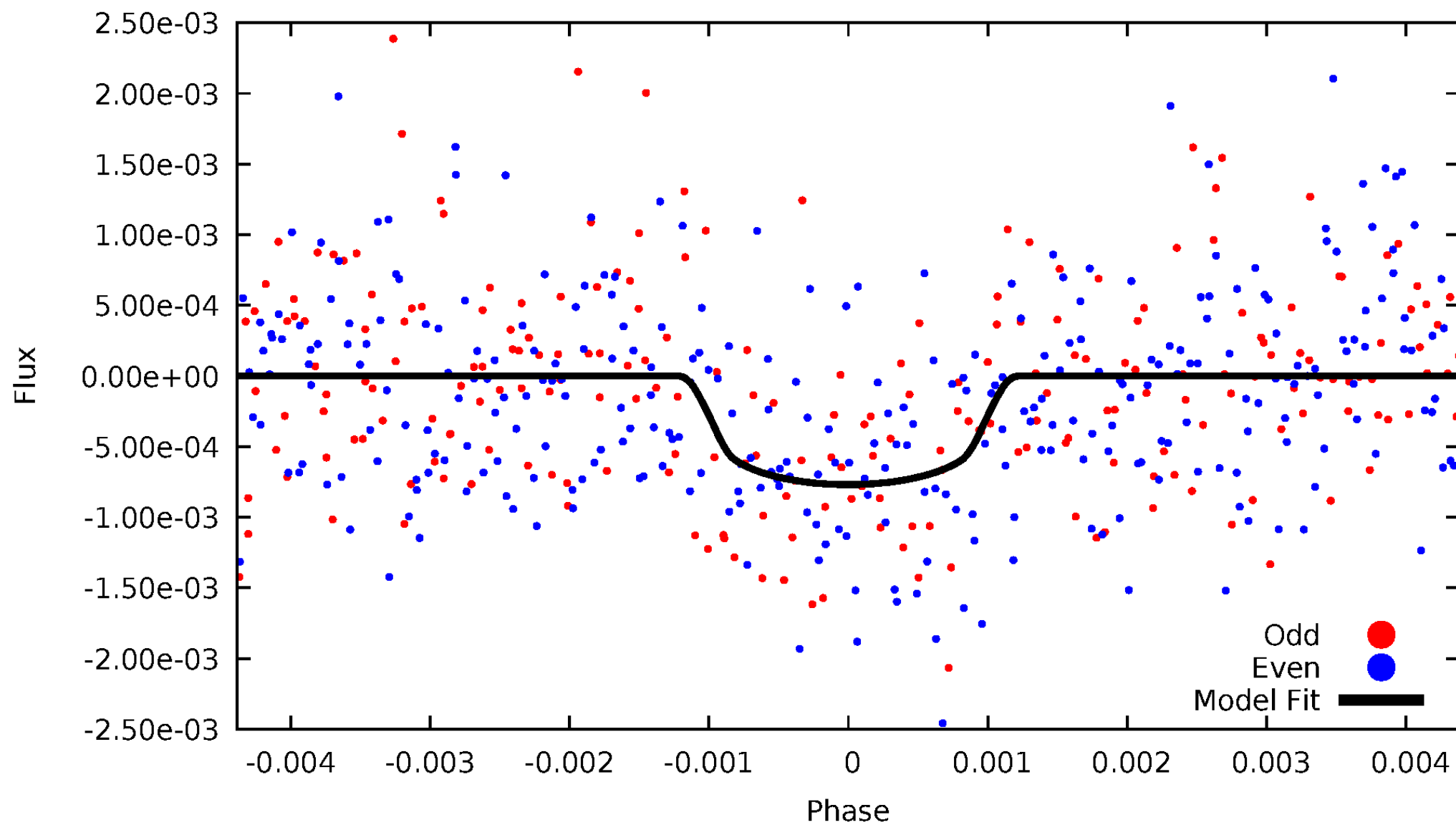


TCE 002853029-01



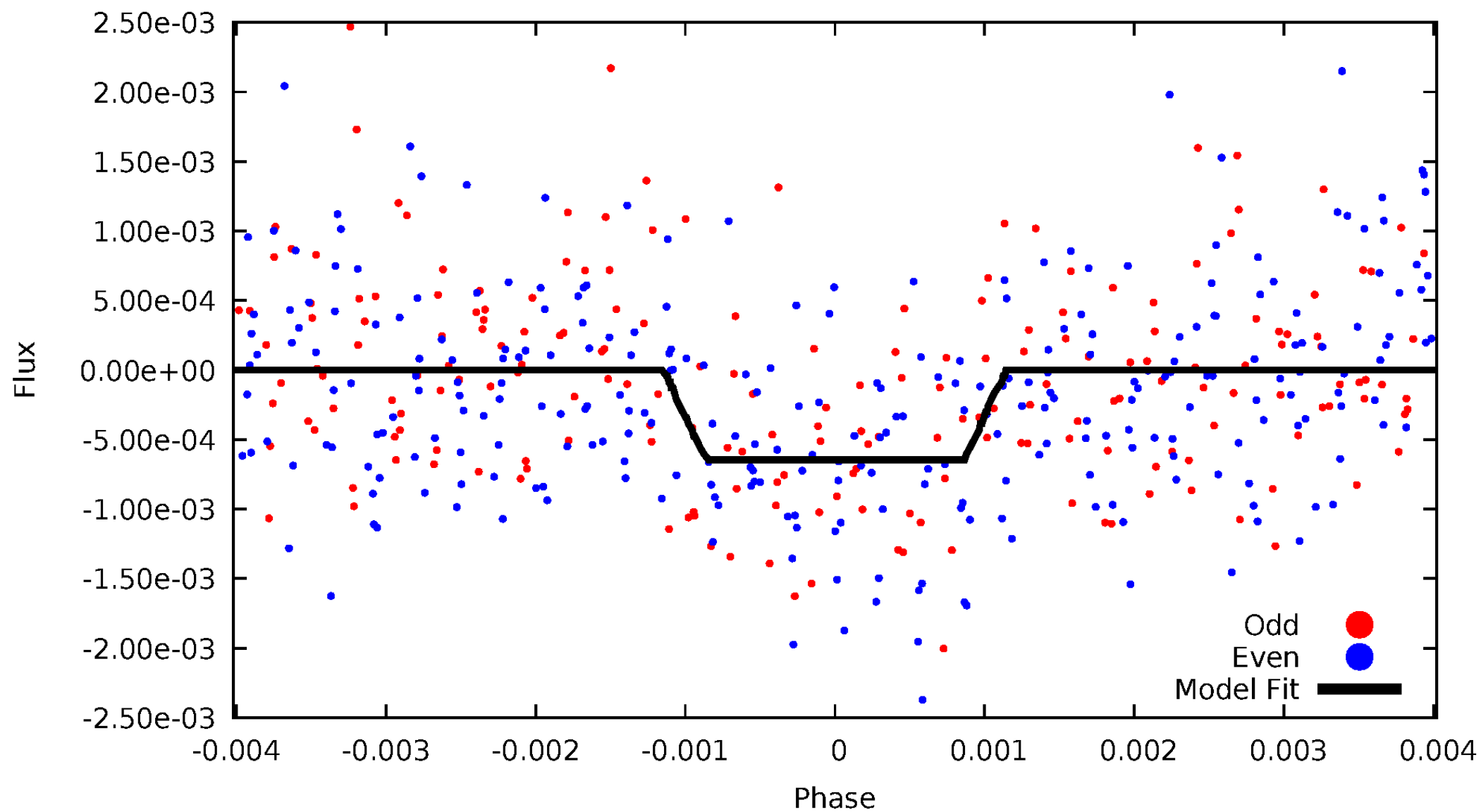
DV Odd/Even

TCE 002853029-01



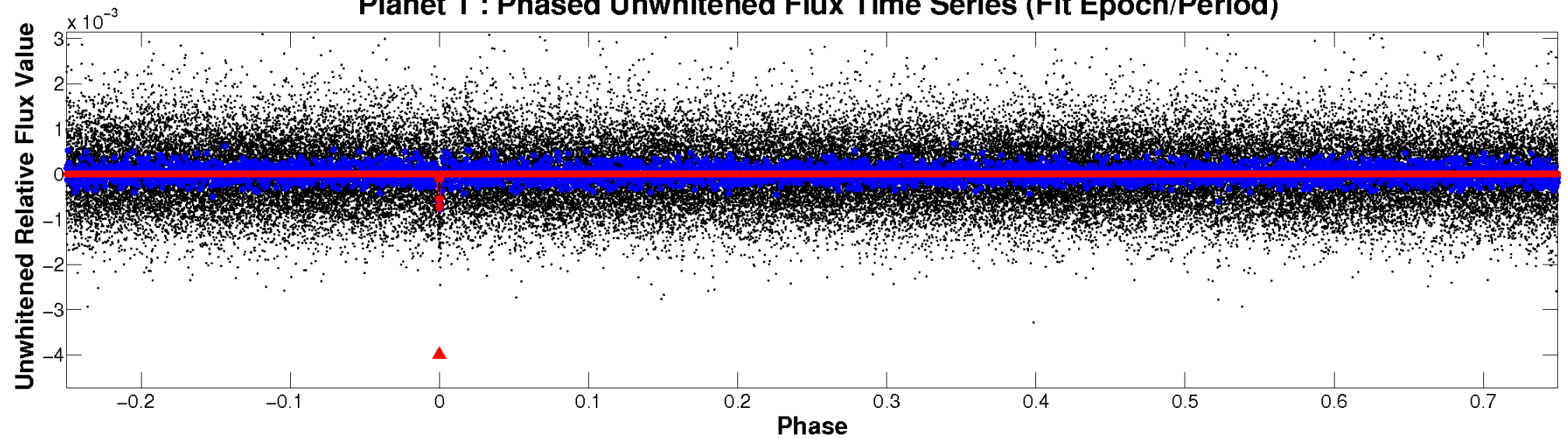
ALT Odd/Even

TCE 002853029-01

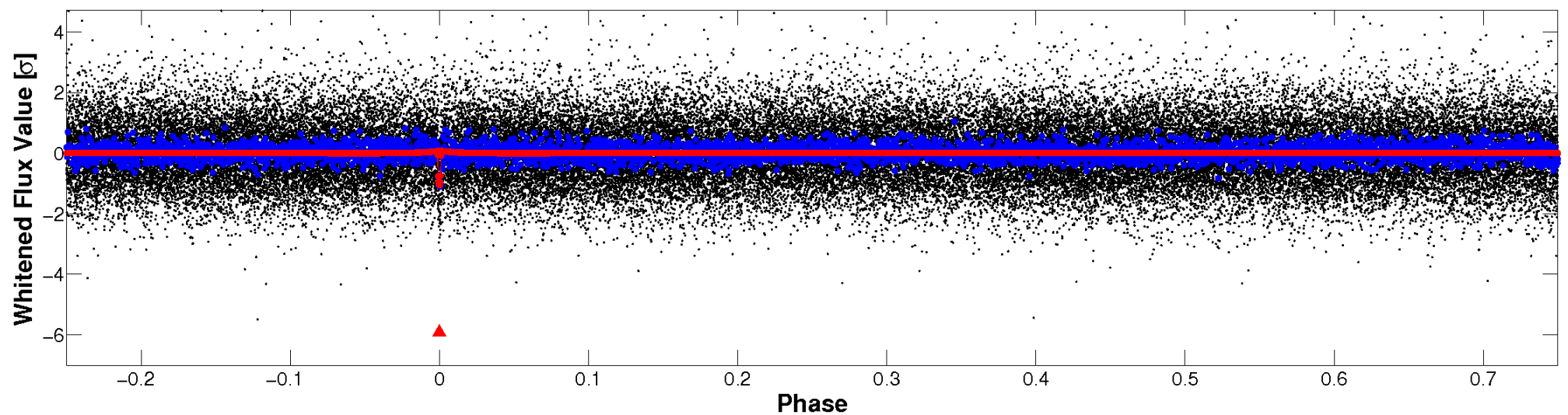


Non-Whitened Vs. Whitened Light Curve

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

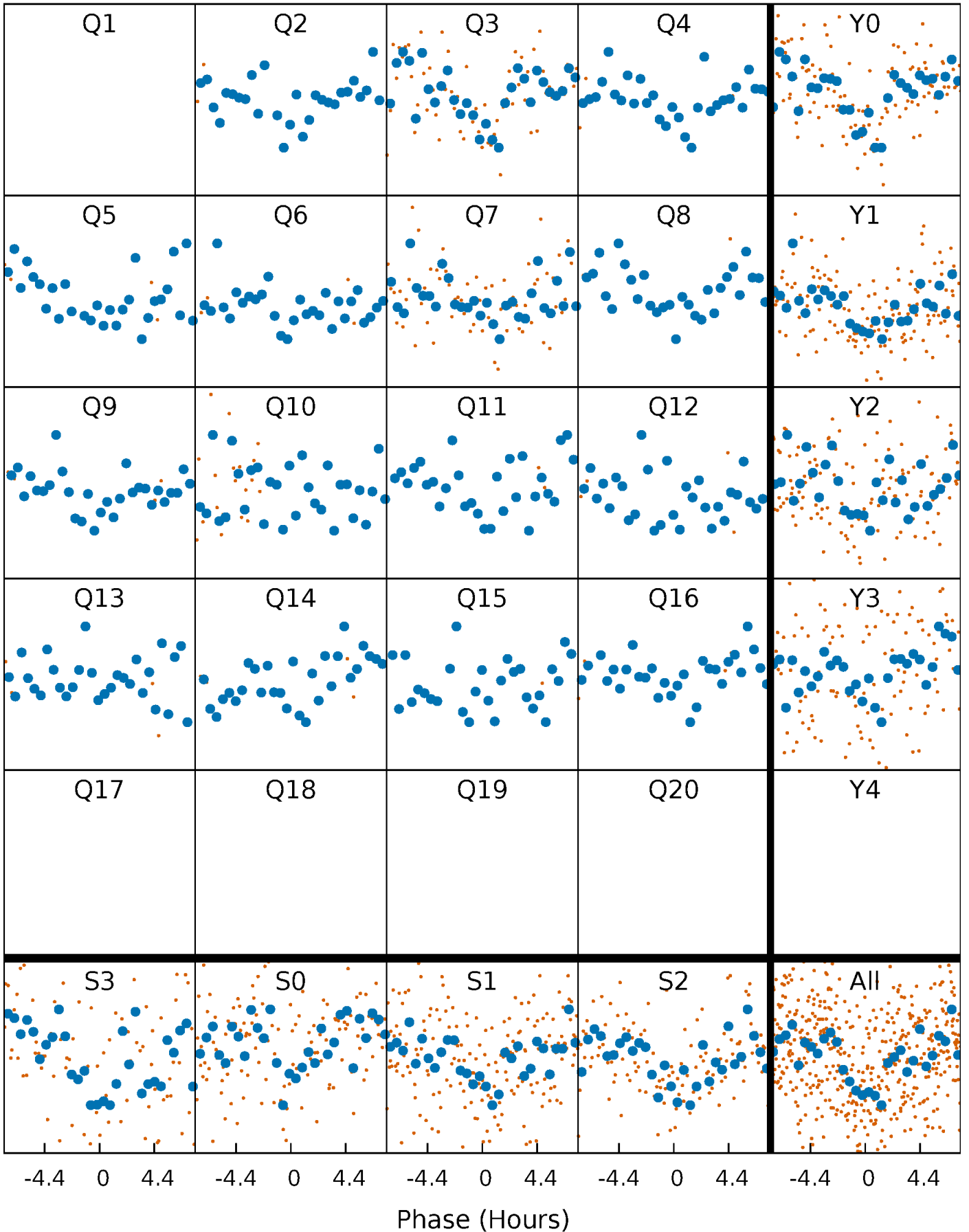


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



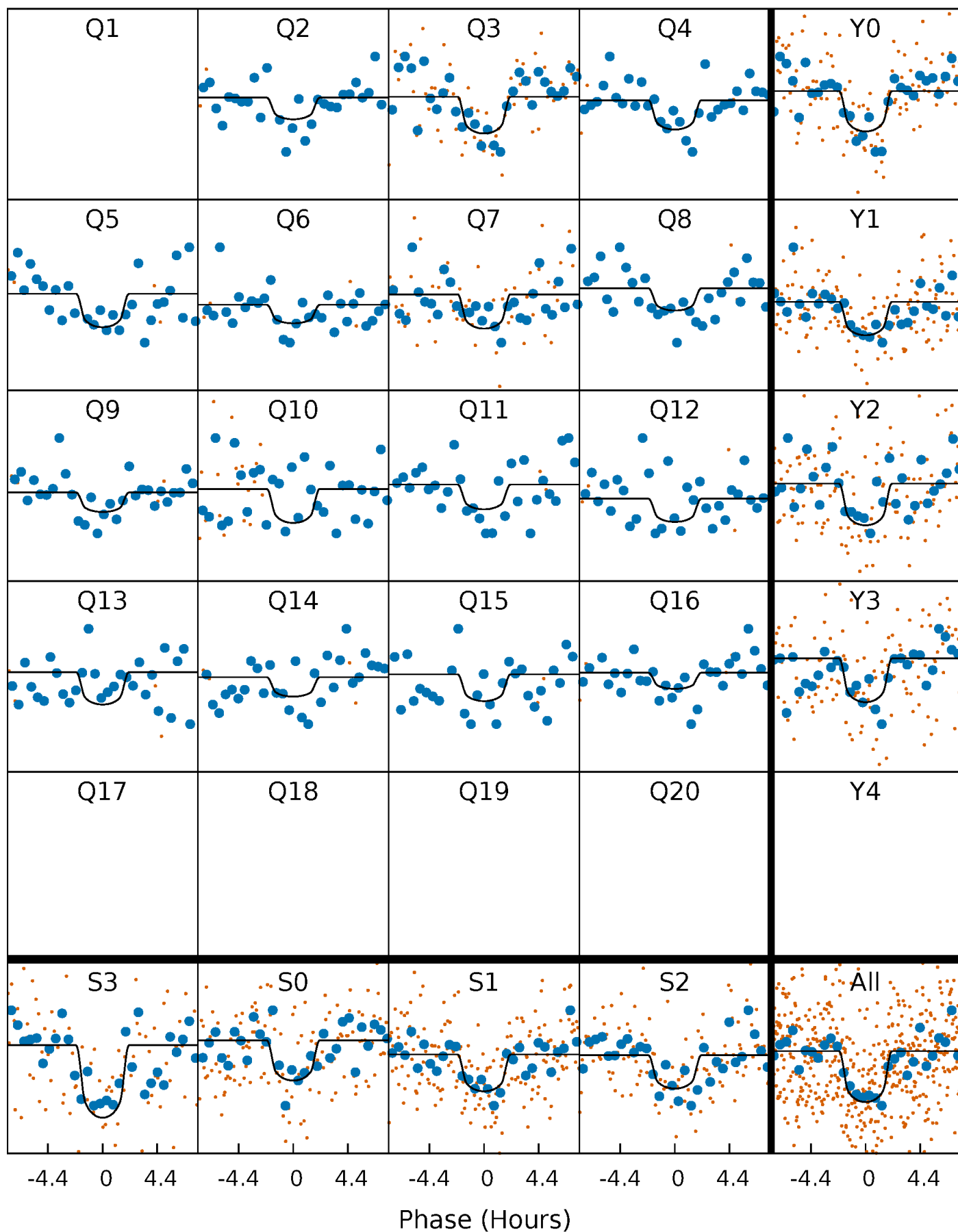
PDC Quarter-Phased Transit Curves

TCE 002853029-01 P= 72.933240 Days $T_0=198.112846$ (BKJD)



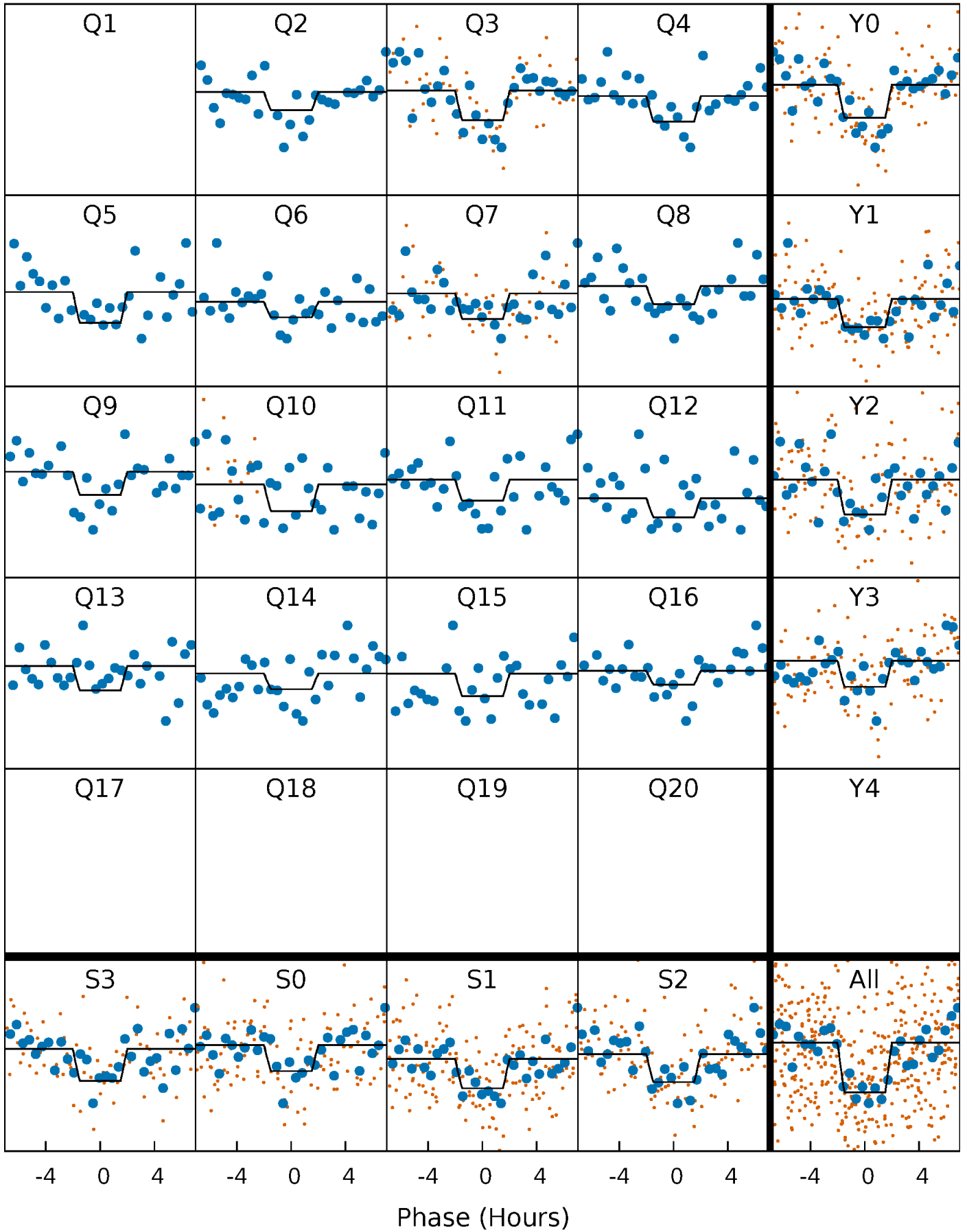
DV Quarter-Phased Transit Curves

TCE 002853029-01 P= 72.933240 Days $T_0=198.112846$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

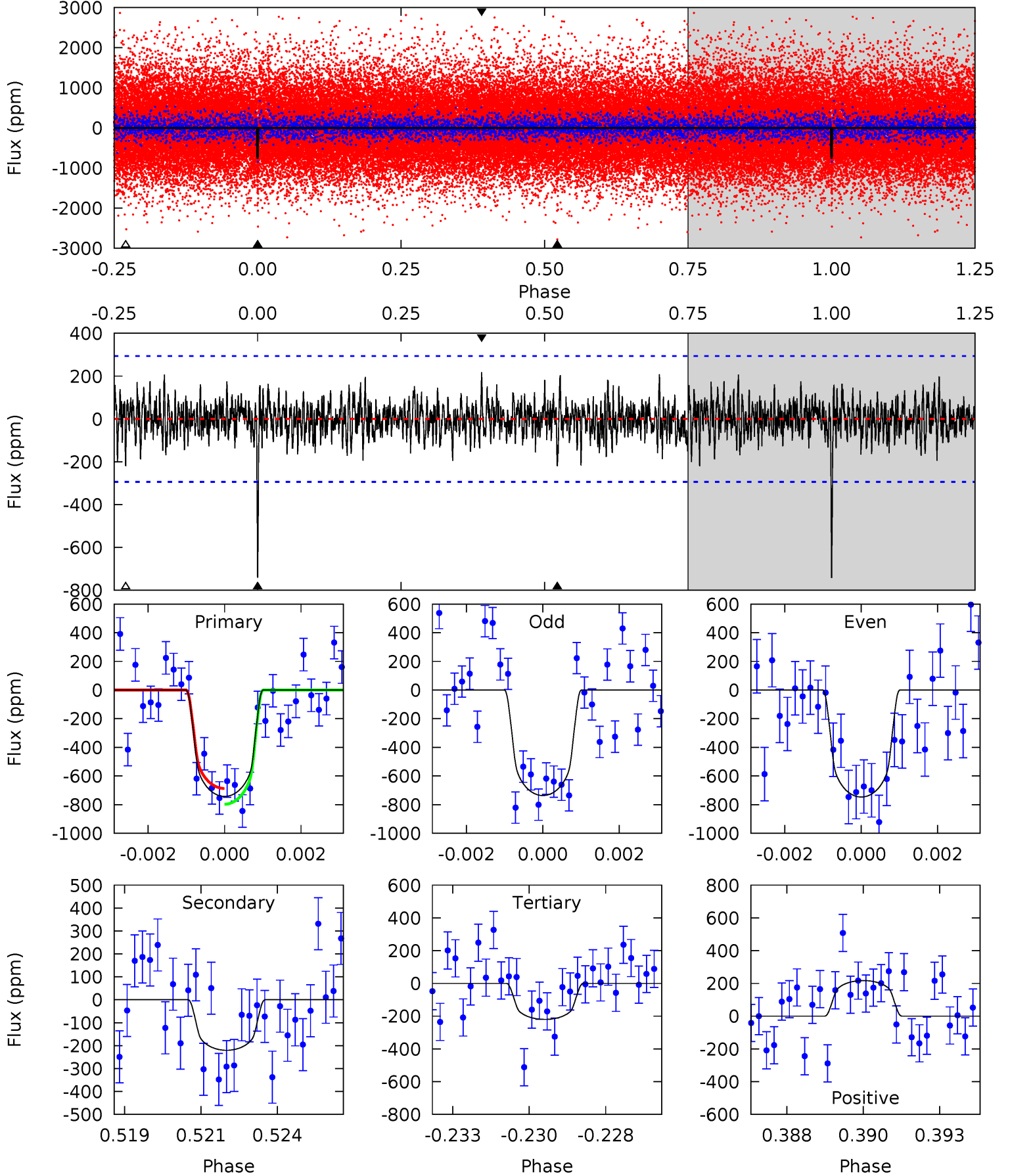
TCE 002853029-01 P= 72.933896 Days $T_0=198.107745$ (BKJD)



DV Model-Shift Uniqueness Test

002853029-01, P = 72.933240 Days, E = 125.179606 Days

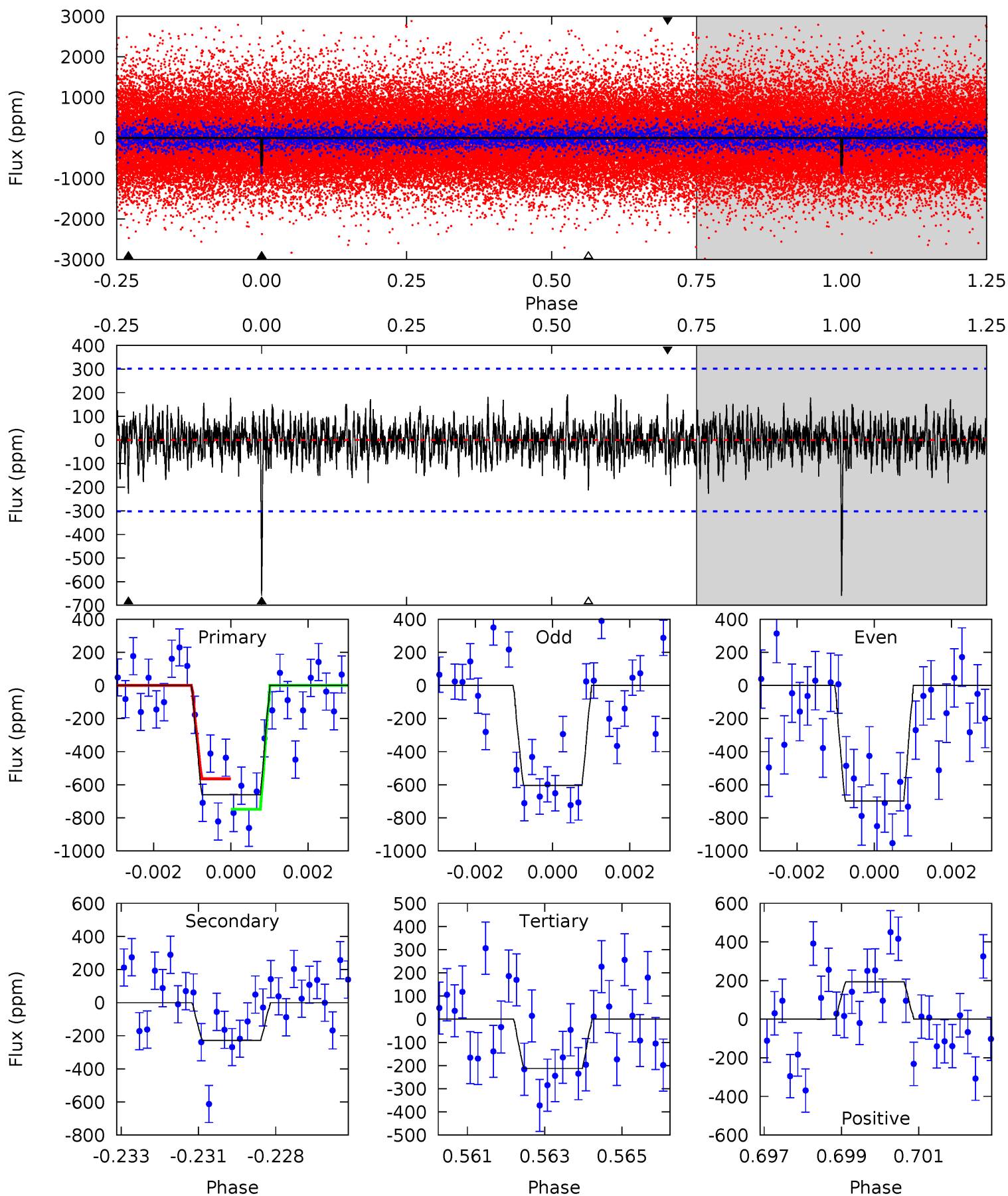
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.4	3.97	3.97	3.91	5.29	3.03	1.17	9.41	9.46	0.01	0.06	0.09	0.93	0.23	0.99



Alt Model-Shift Uniqueness Test

002853029-01, $P = 72.933896$ Days, $E = 125.173849$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.6	4.00	3.74	3.40	5.30	3.05	1.02	7.86	8.20	0.26	0.60	0.83	0.99	0.23	1.63



Stellar Parameters For KIC 002853029

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5316^{+85}_{-74}	$4.470^{+0.070}_{-0.070}$	$0.140^{+0.150}_{-0.150}$	$0.902^{+0.081}_{-0.066}$	$0.875^{+0.055}_{-0.037}$	$1.681^{+0.462}_{-0.363}$
	+2%/-1%	+2%/-2%	+107%/-107%	+9%/-7%	+6%/-4%	+27%/-22%
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 002853029-01 / KOI 3259.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-220 ± 56	$3.17^{+2.04}_{-1.80}$	545^{+15}_{-14}	3893^{+1584}_{-576}	1274^{+5616}_{-815}
Alt.	-228 ± 57	$2.76^{+1.91}_{-1.65}$	544^{+16}_{-15}	4160^{+2048}_{-715}	1792^{+9421}_{-1194}

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

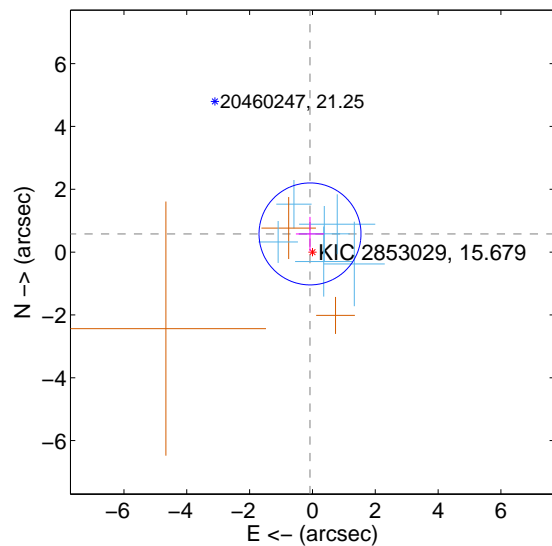
Supplemental centroid analysis for 002853029-01. Kepler magnitude: 15.68. Transit SNR 10.10

There are 6 quarters with good PRF difference image offsets

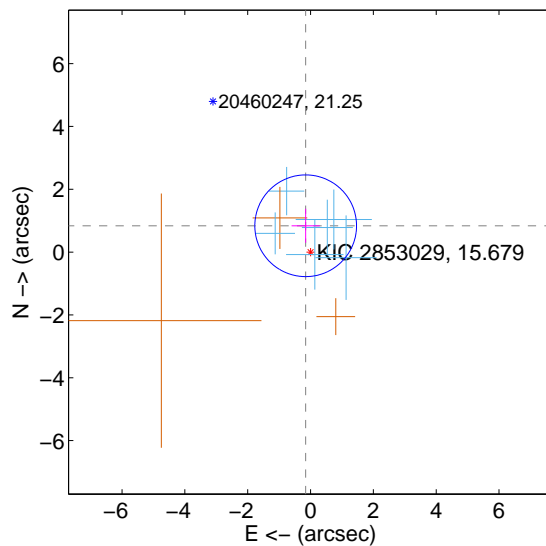
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.584 ± 0.541	1.08	0.077 ± 0.448	0.578 ± 0.542
PRF-fit source offset from KIC position	0.852 ± 0.540	1.58	0.154 ± 0.448	0.838 ± 0.542
photometric centroid source offset	2.30 ± 1.37	1.68	-0.58 ± 1.36	2.23 ± 1.37

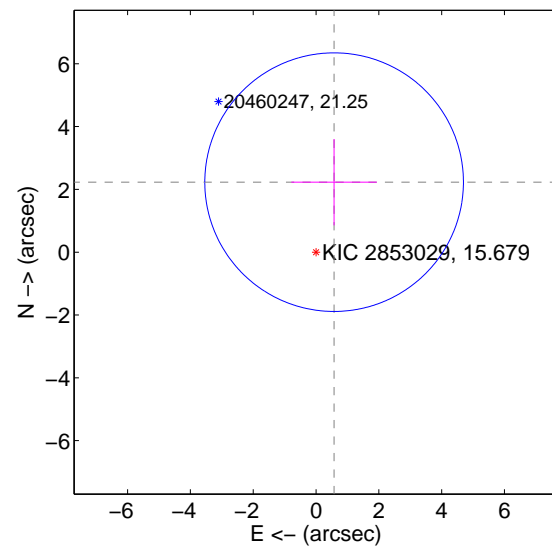
offset from difference PRF-fit to OOT PRF-fit



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.

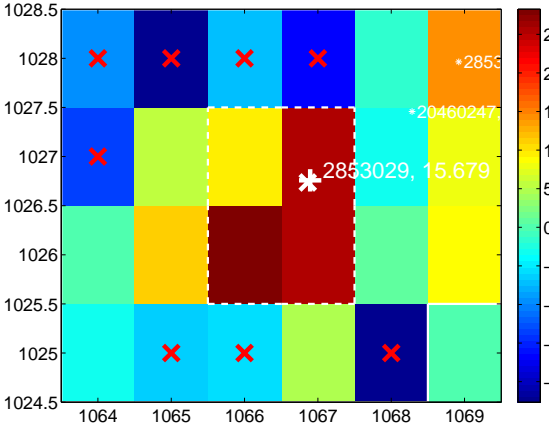
Q1 no difference image



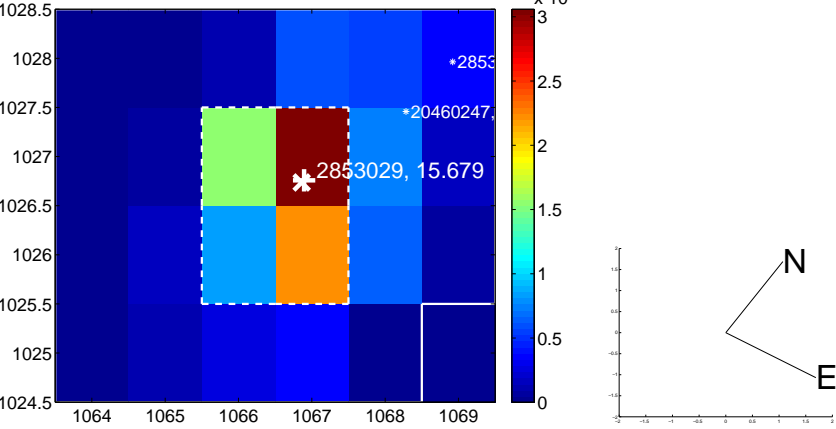
Q1 no OOT image



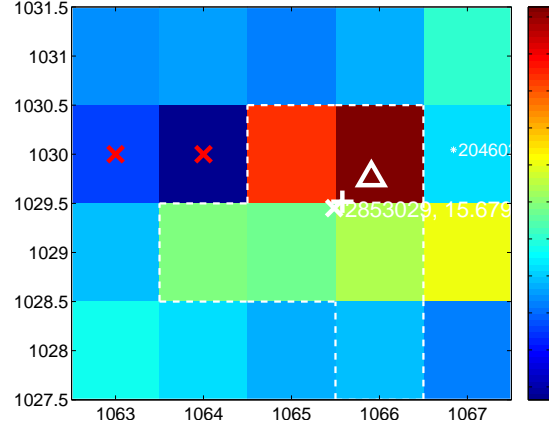
Q2 difference image. Poor Quality



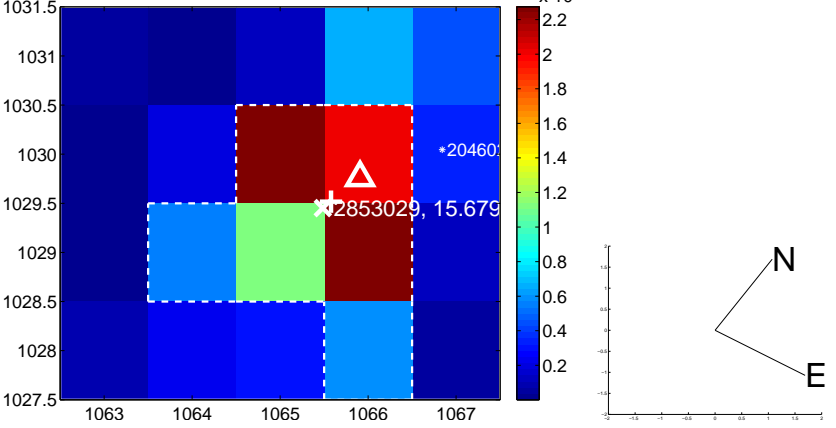
Q2 OOT image



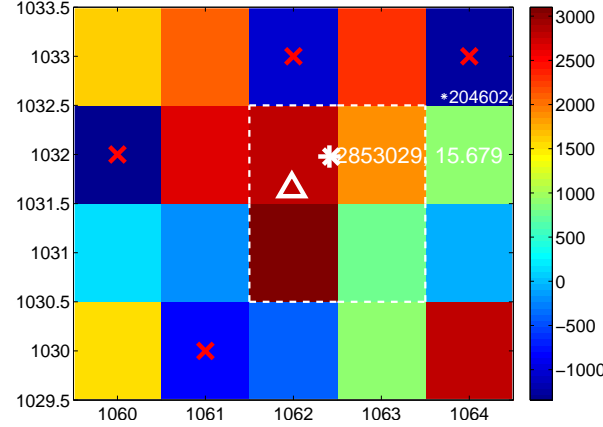
Q3 difference image



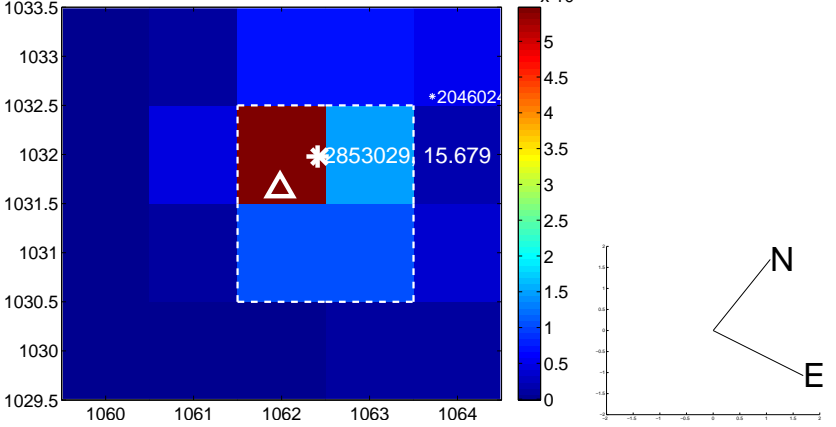
Q3 OOT image



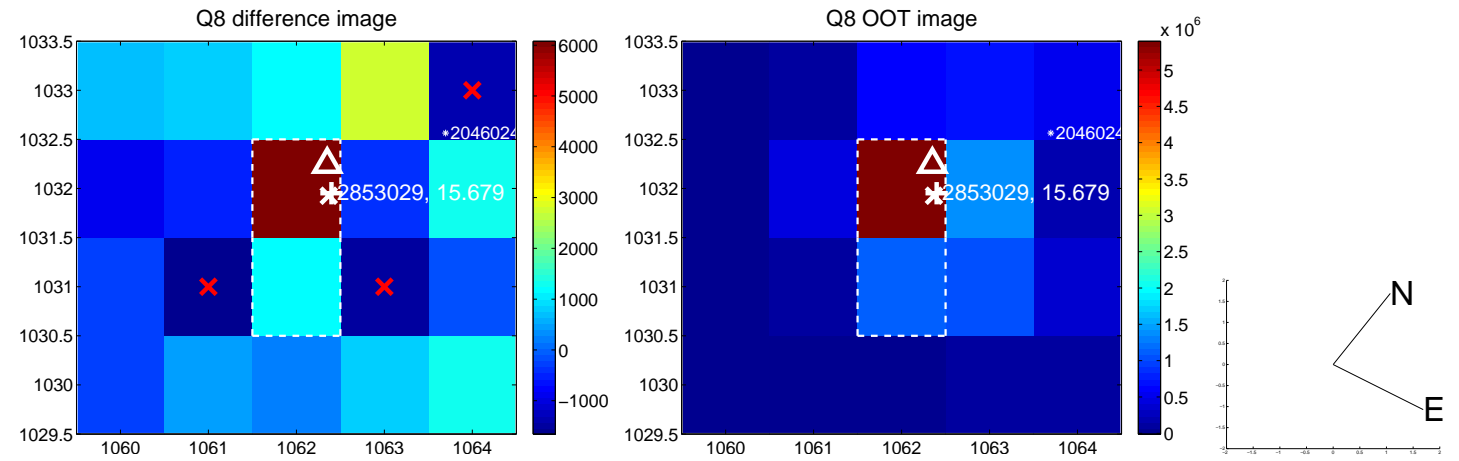
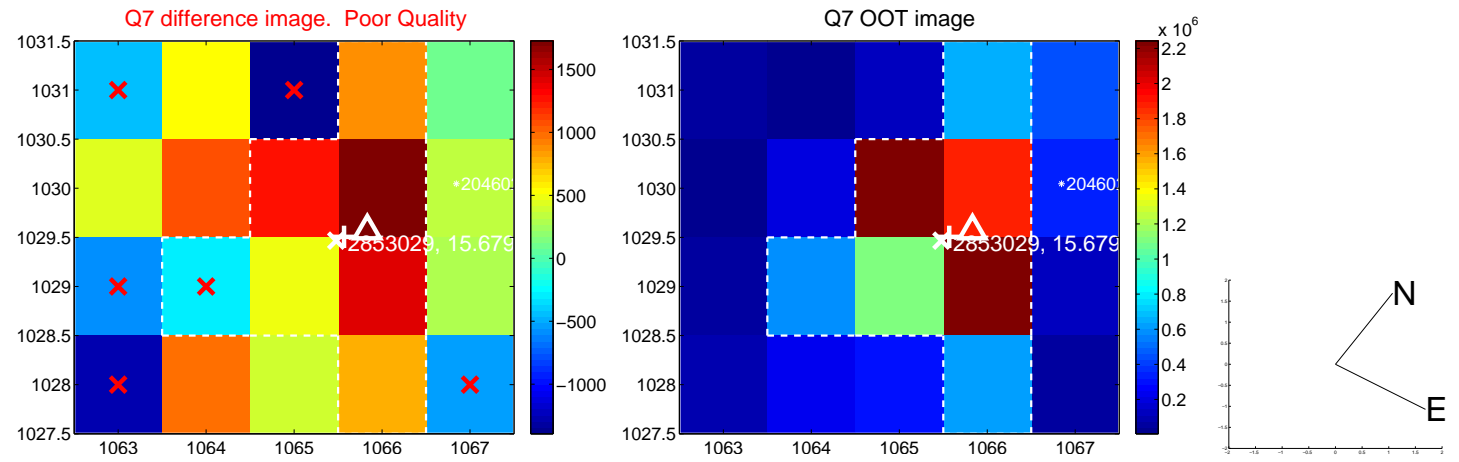
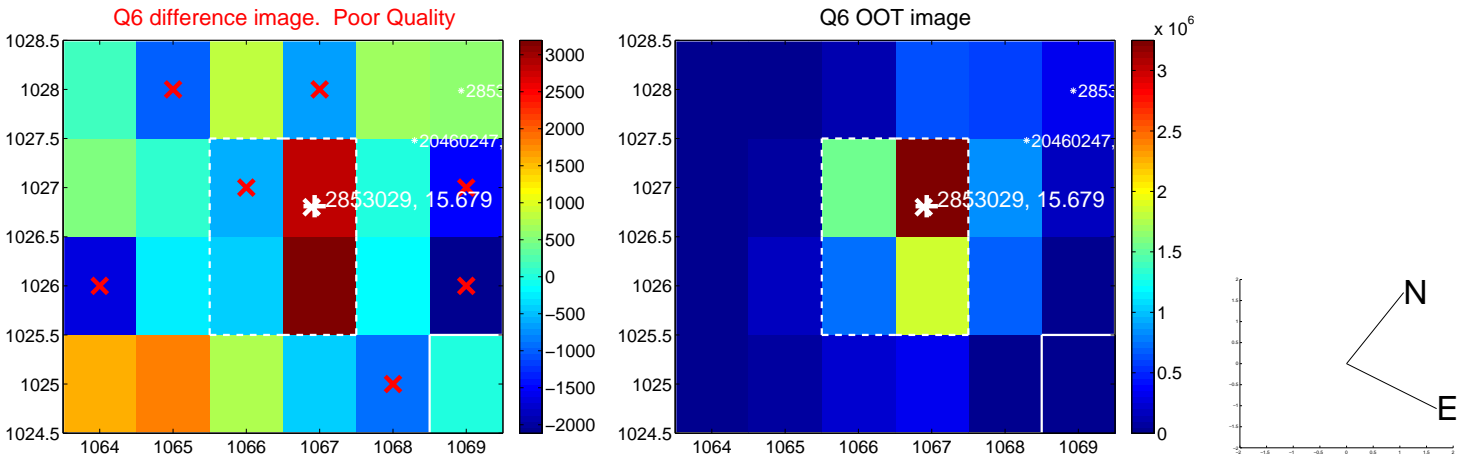
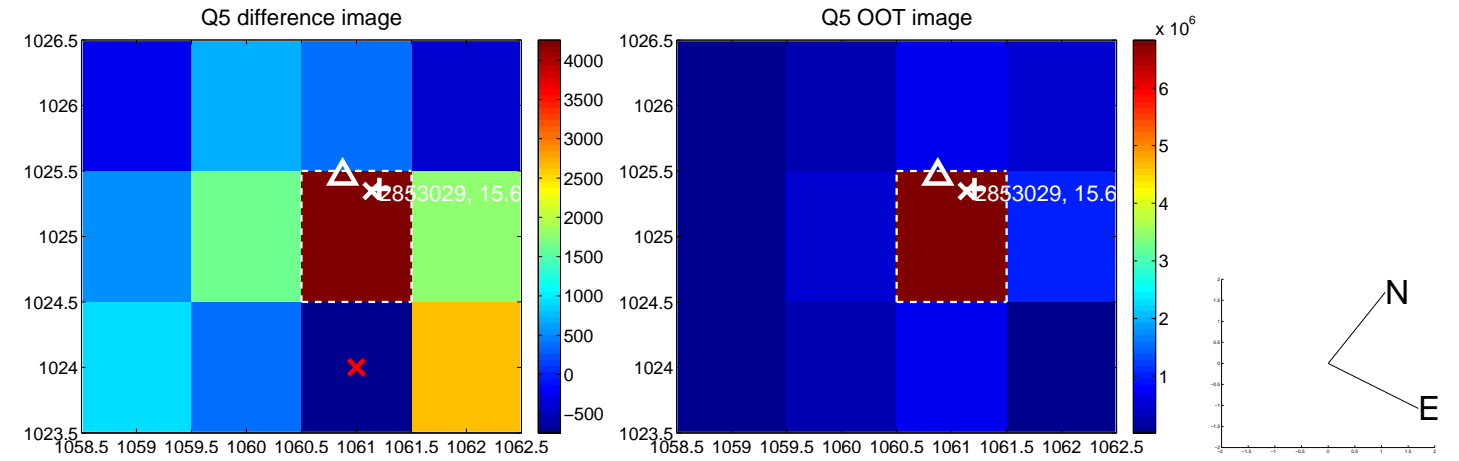
Q4 difference image. Poor Quality



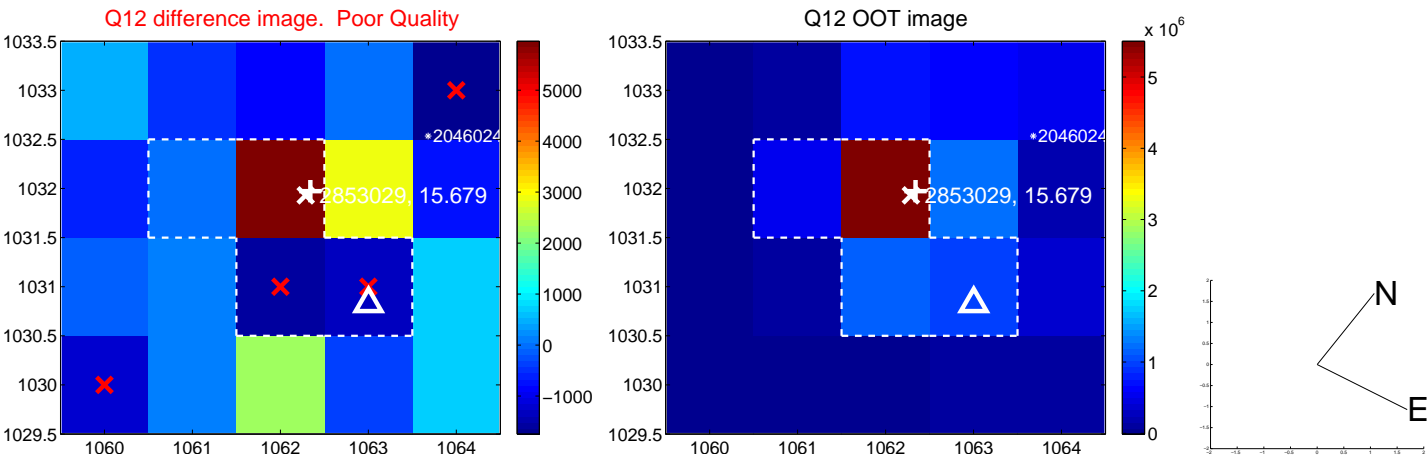
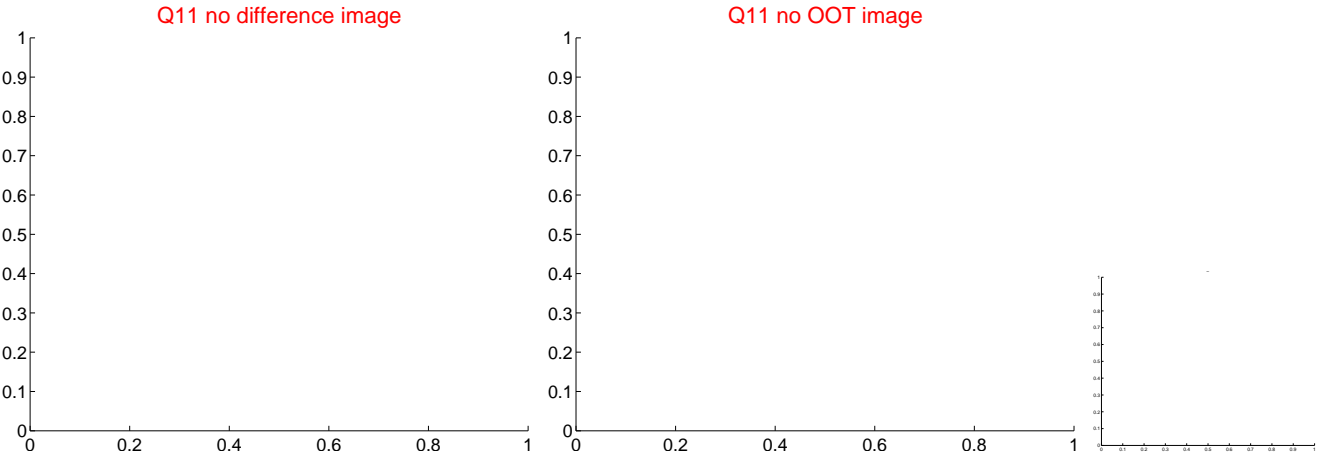
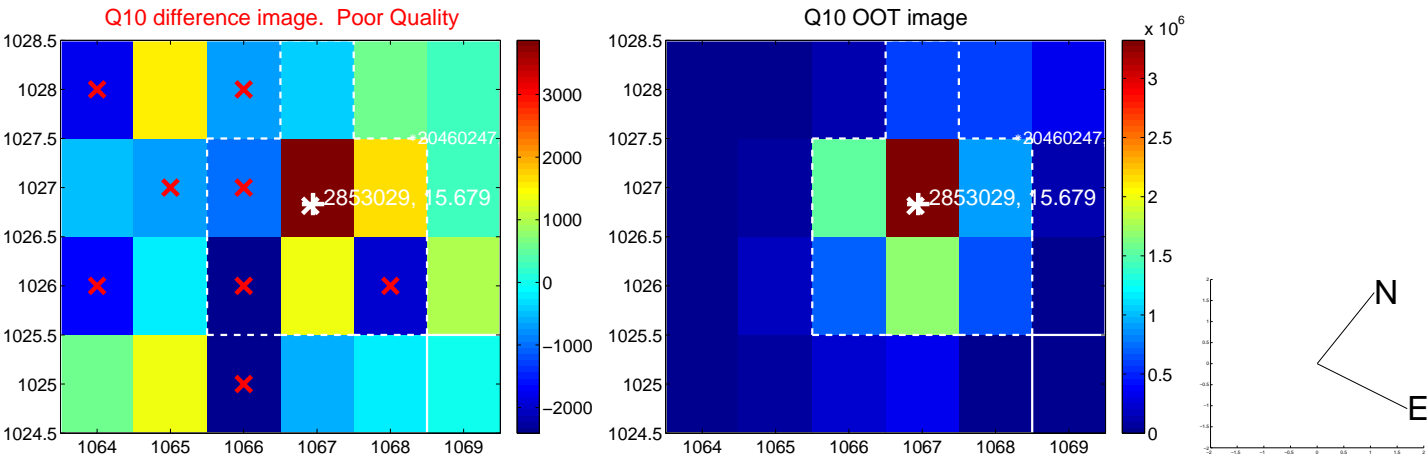
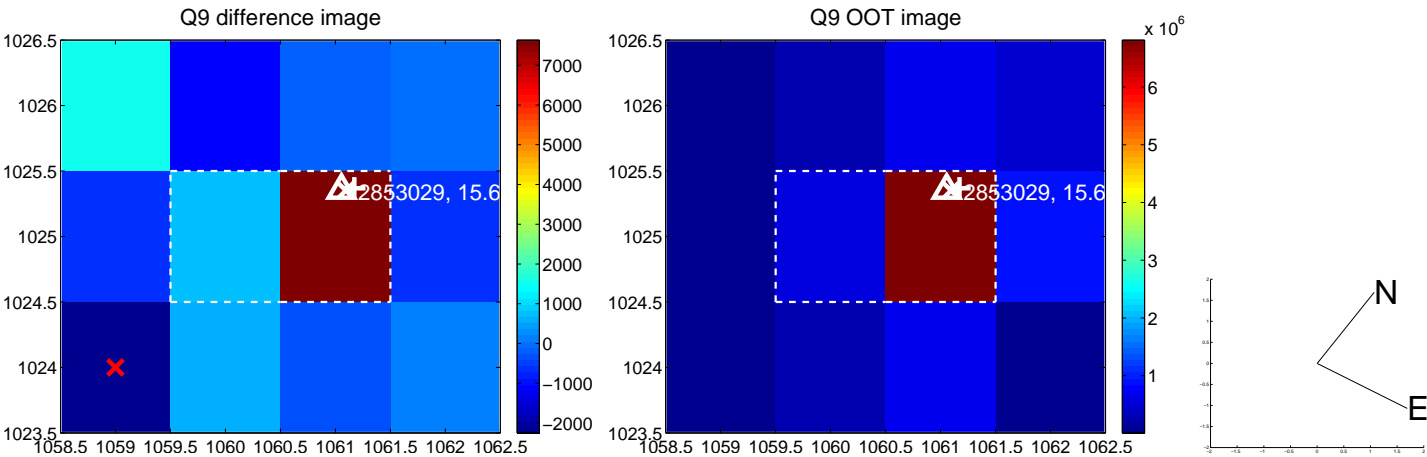
Q4 OOT image



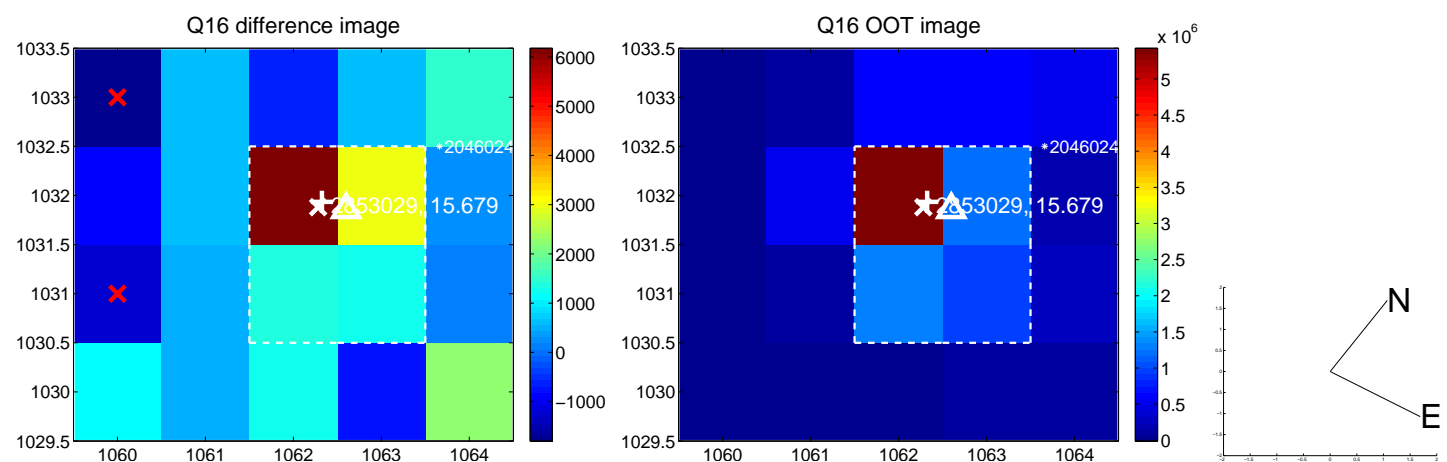
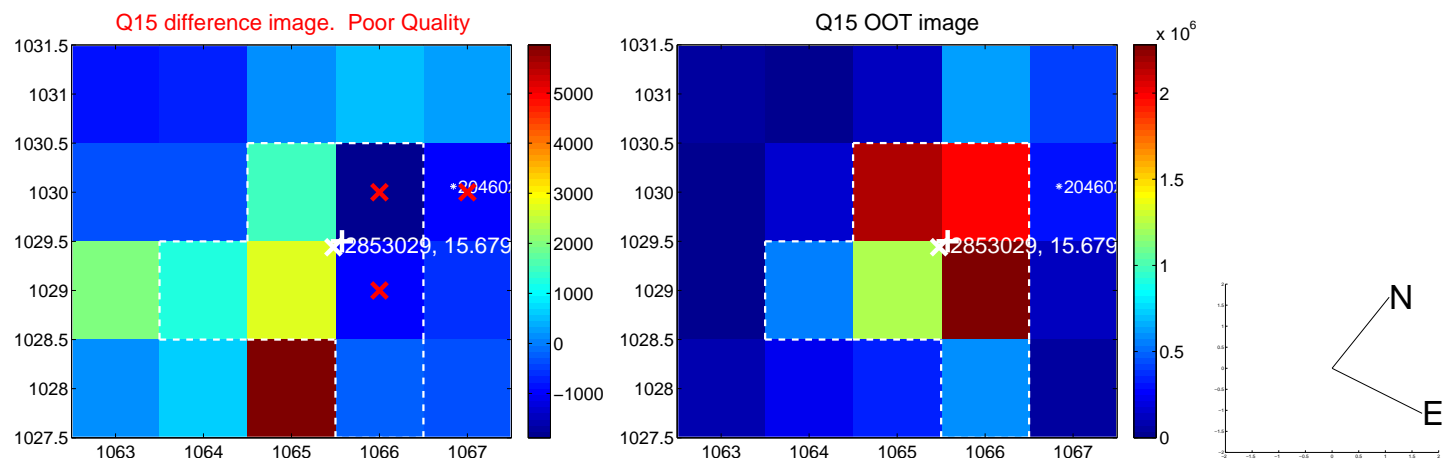
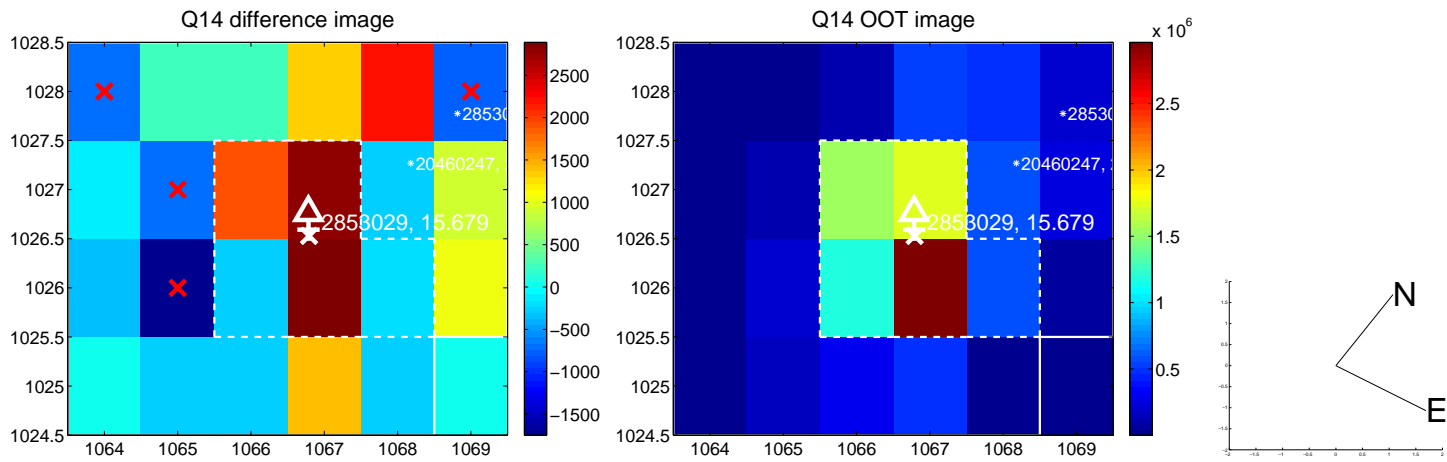
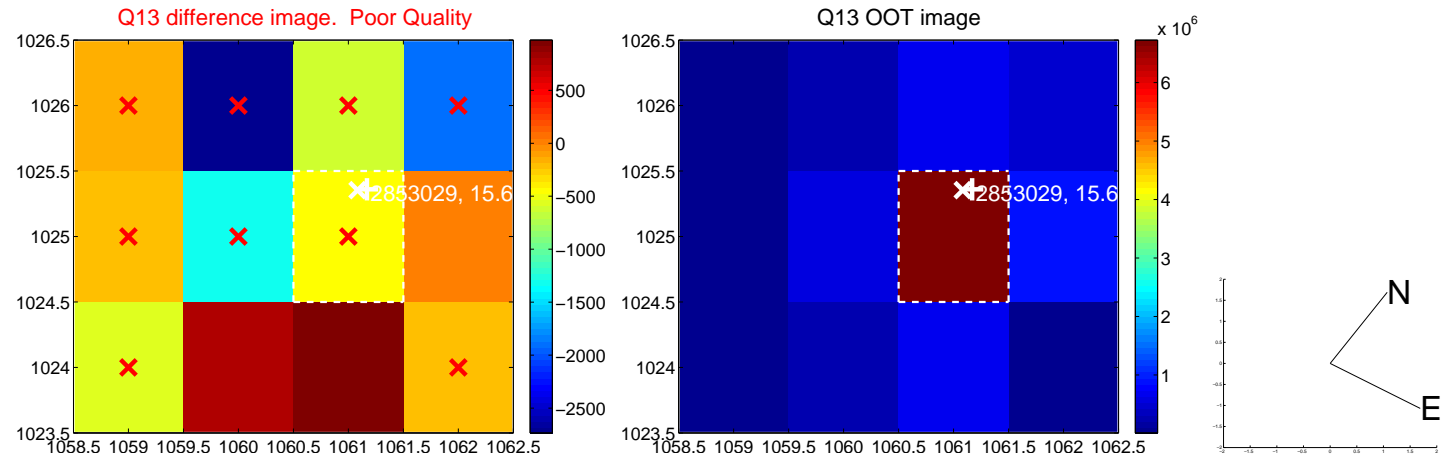
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



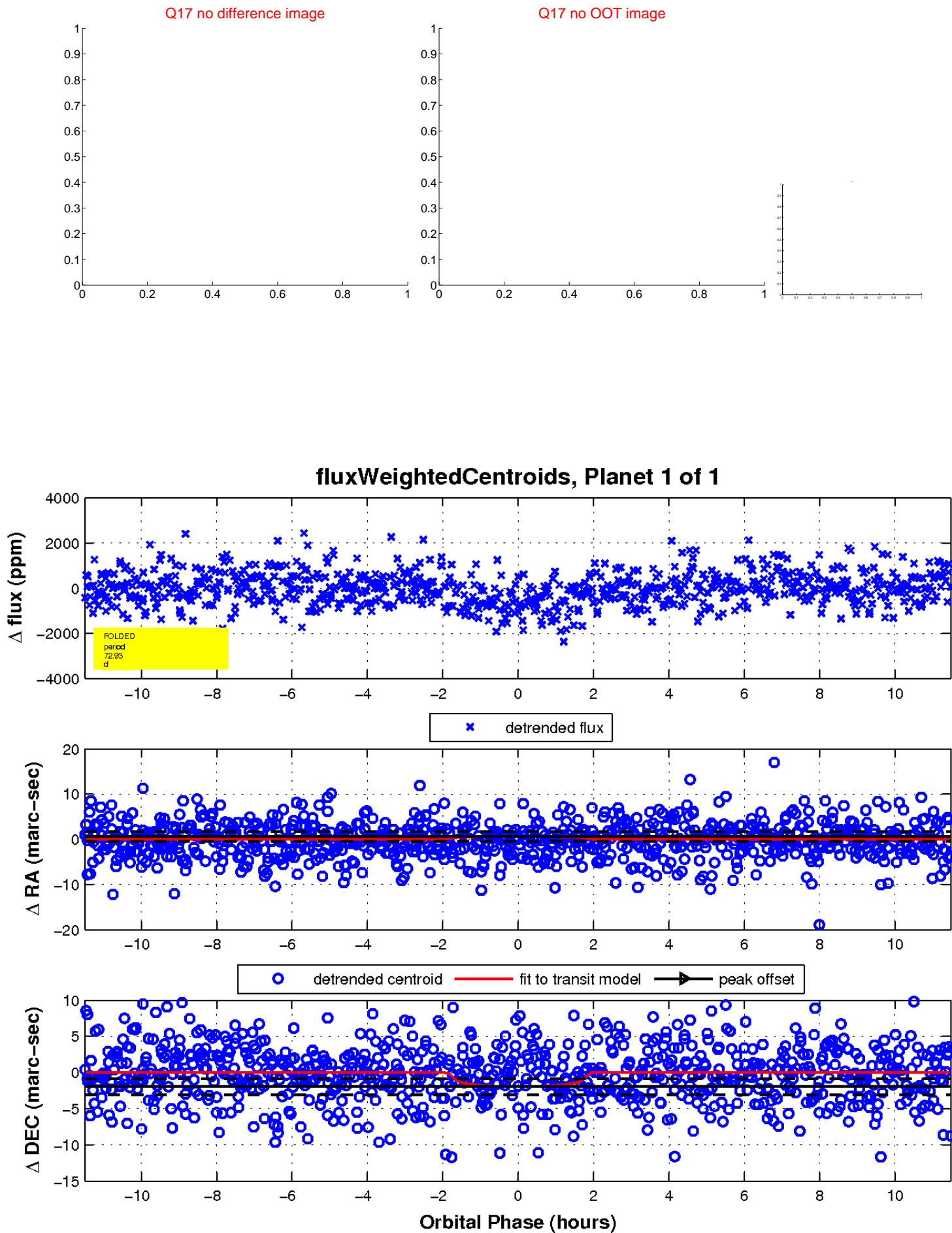
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

