

KIC 004929299

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})
004929299-01	OBS	4018.01	0.868720	132.082217	188.8	1.186	18.6	22.3	1.05	5761	1.53	3773.41
004929299-02	OBS	No	0.868727	131.646577	204.2	1.123	20.0	24.3	1.05	5761	1.51	3773.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004929299-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_KIC_POS
004929299-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_KIC_POS

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

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

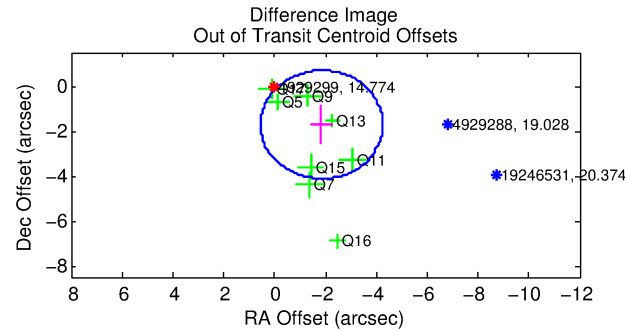
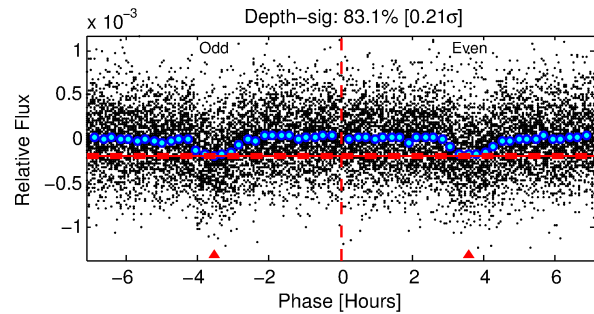
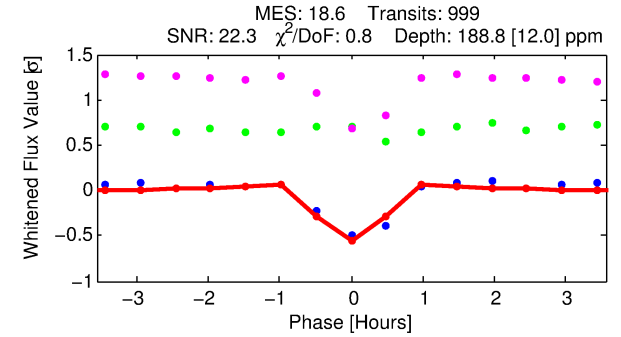
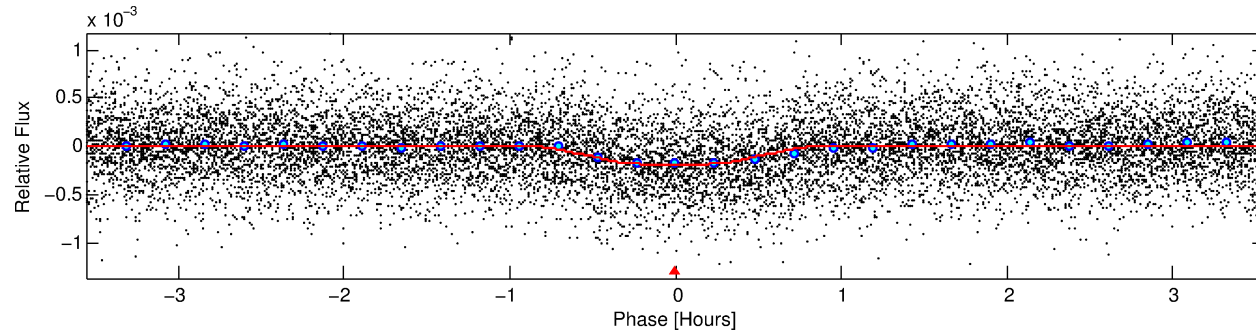
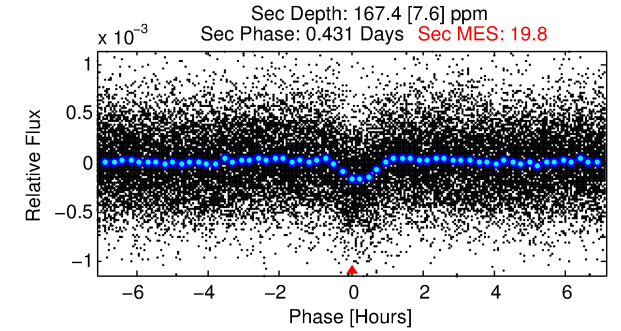
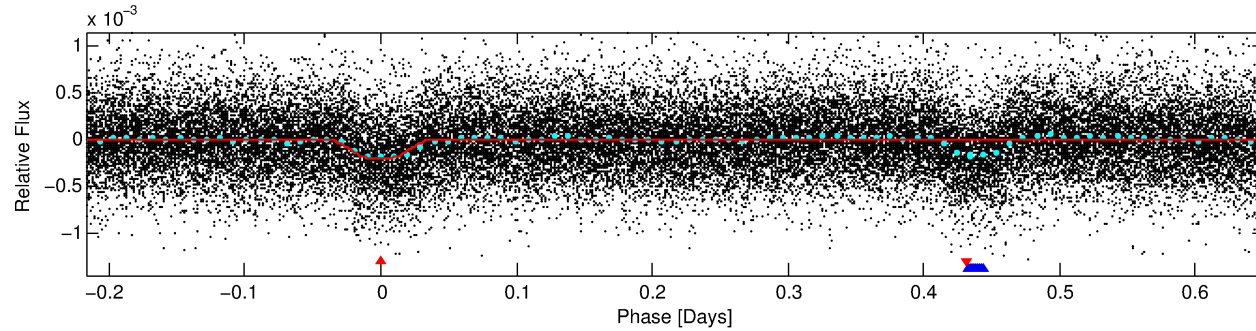
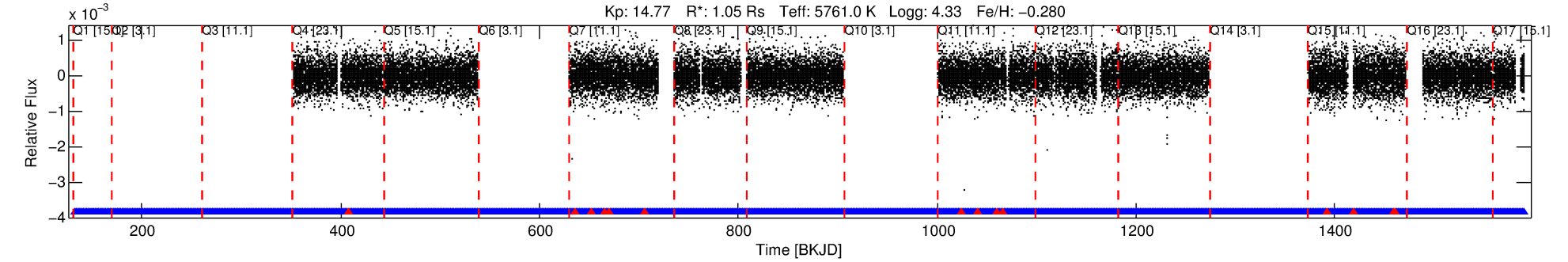
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004929299-01

No Significant Match Found

DV One-Page Summary

KIC: 4929299 Candidate: 1 of 2 Period: 0.869 d
KOI: K04018.01 Corr: 0.929



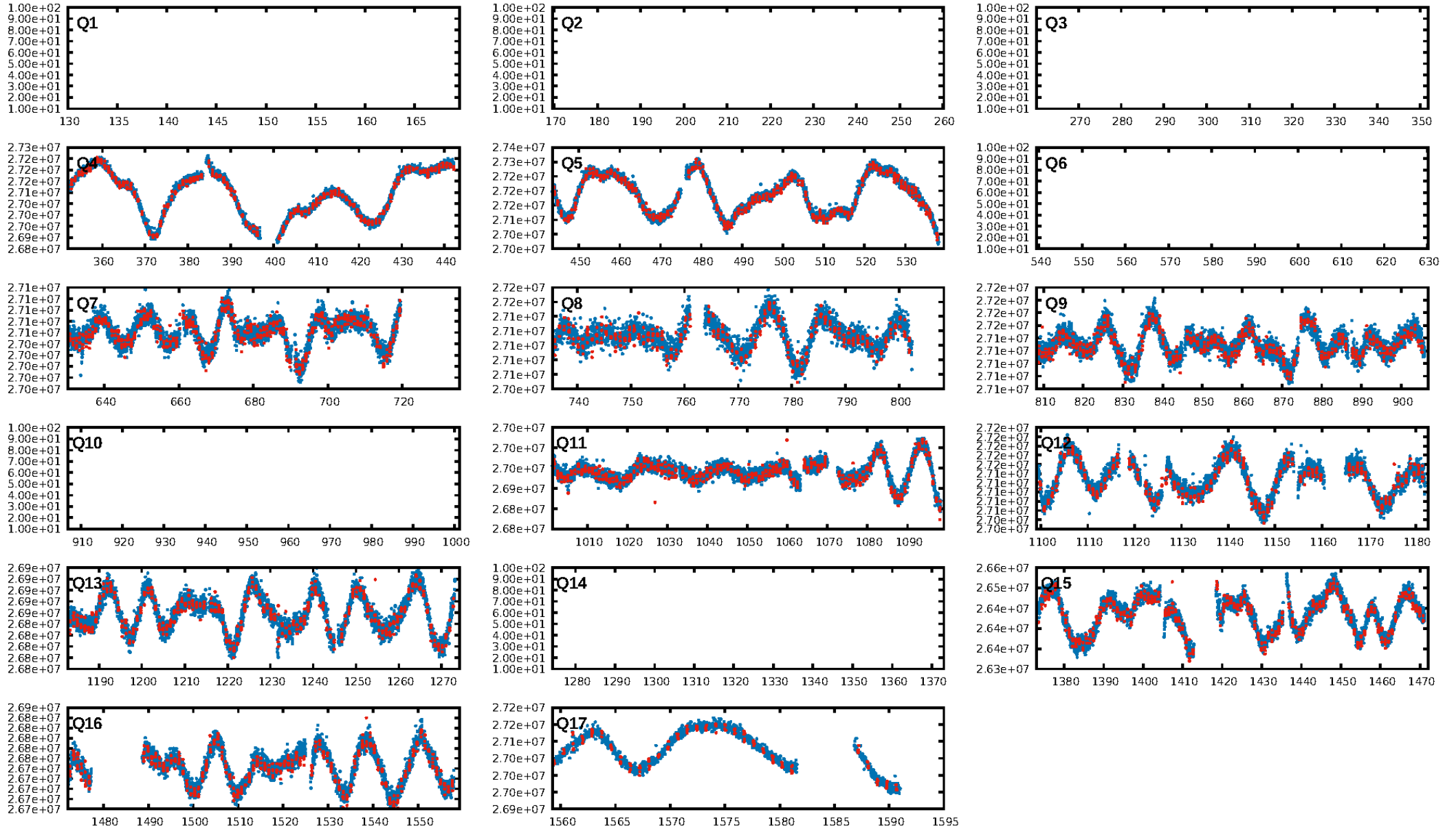
DV Fit Results:

Period = 0.86872 [0.00000] d
Epoch = 132.0822 [0.0008] BKJD
Rp/R* = 0.0134 [0.0032]
a/R* = 4.34 [4.55]
b = 0.67 [0.93]
Seff = 3773.41 [1417.28]
Teq = 1999 [188] K
Rp = 1.53 [0.58] Re
a = 0.0169 [0.0041] AU
Ag = 11.25 [6.75] [1.52σ]
Teffp = 5659 [713] K [4.96σ]

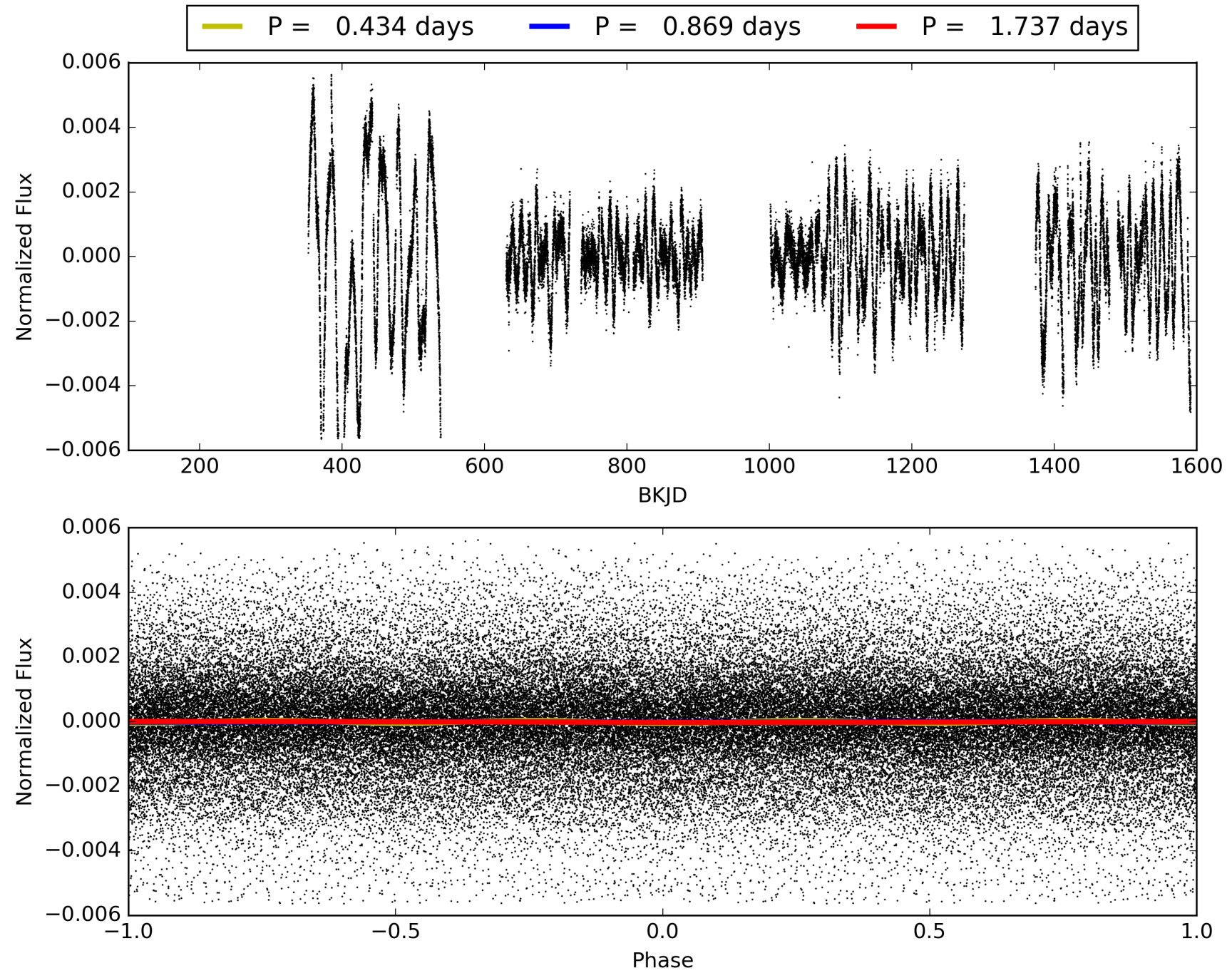
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.83e-78
RollingBand-fgt: 0.99 [954/968]
GhostDiagnostic-chr: 8.499
Centroid-sig: 0.0%
Centroid-so: 1.740 arcsec [4.05σ]
OotOffset-rm: 2.522 arcsec [3.14σ]
KicOffset-rm: 0.095 arcsec [0.37σ]
OotOffset-st: 0/3/1/4 [8]
KicOffset-st: 0/3/4/4 [11]
DiffImageQuality-fgm: 1.00 [11/11]
DiffImageOverlap-fno: 1.00 [11/11]

TCE 004929299-01, PDC Light Curves

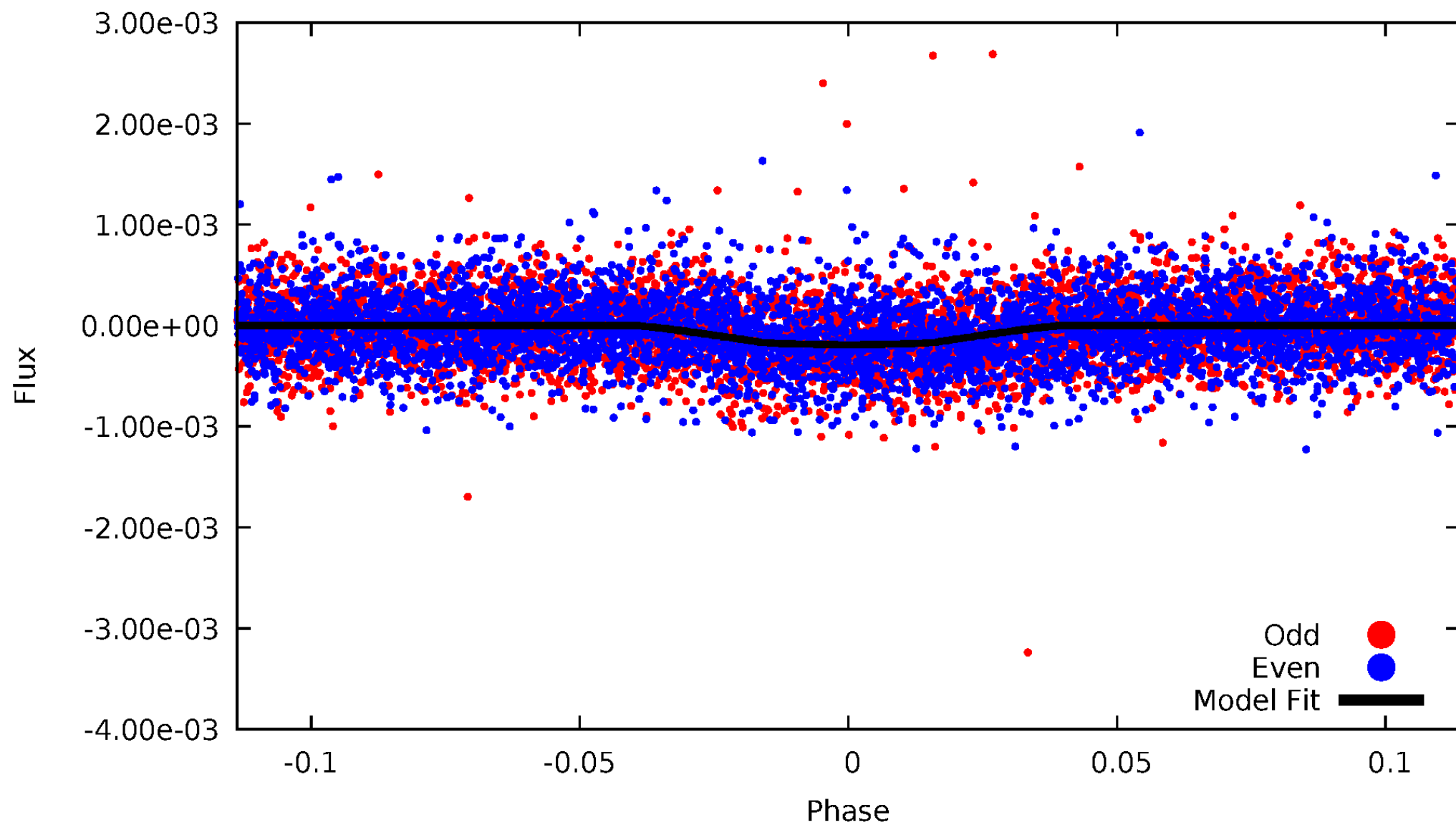


TCE 004929299-01



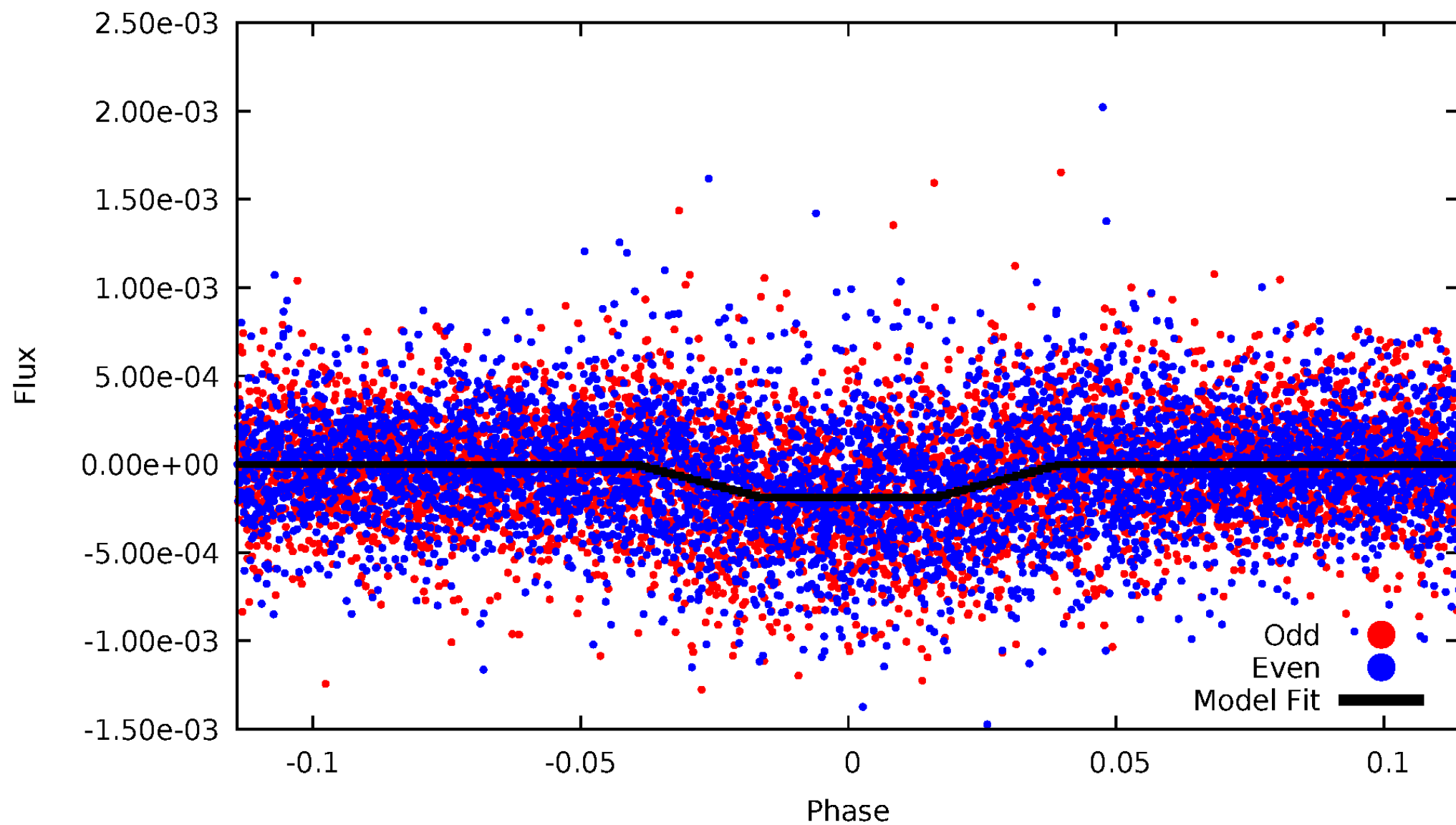
DV Odd/Even

TCE 004929299-01



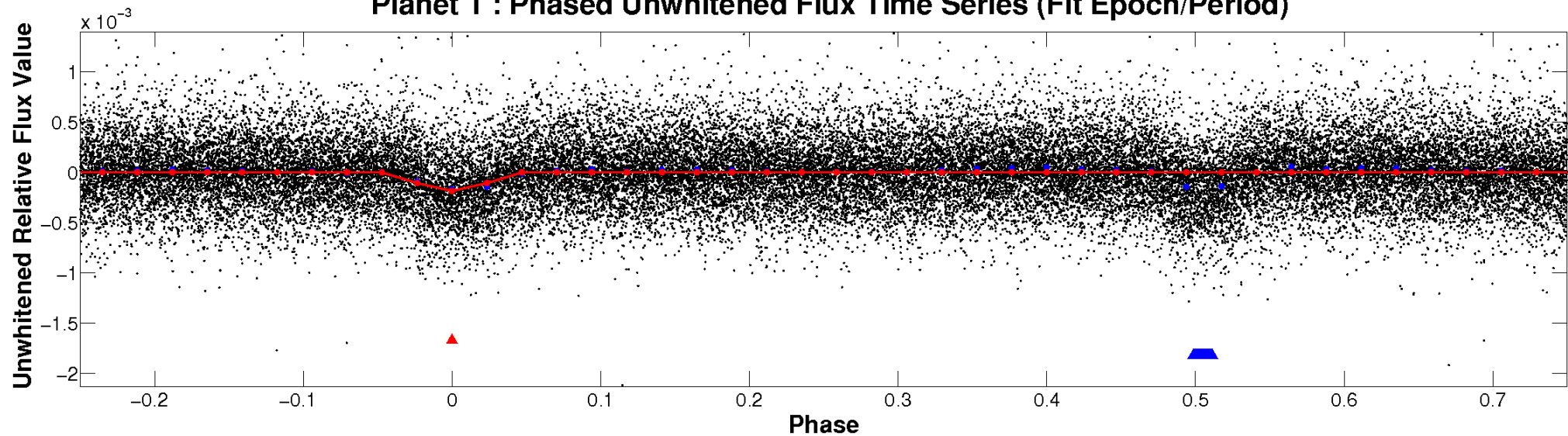
ALT Odd/Even

TCE 004929299-01

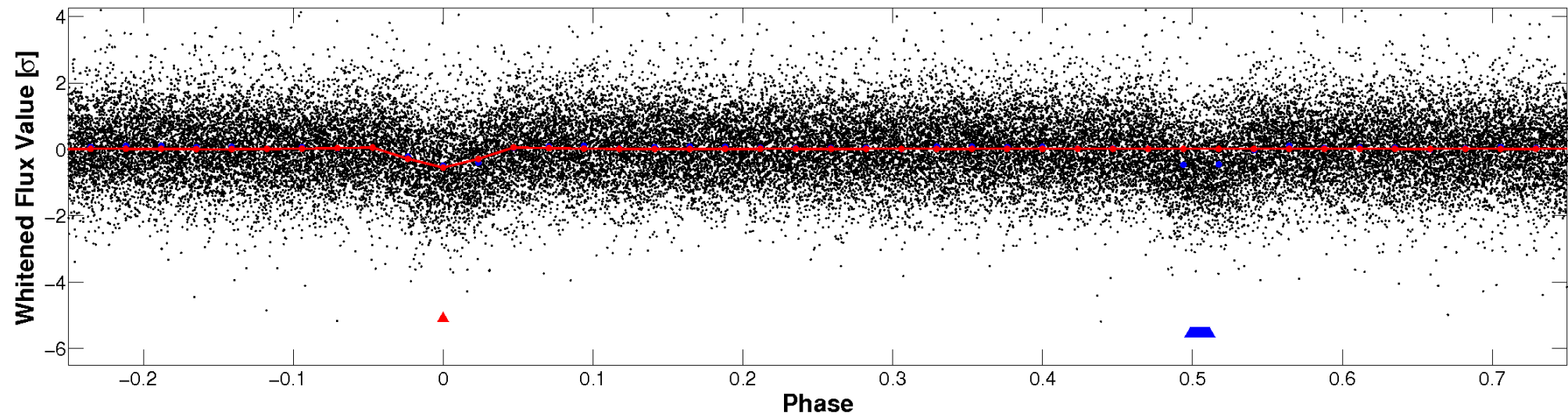


Non-Whitened Vs. Whitened Light Curve

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



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



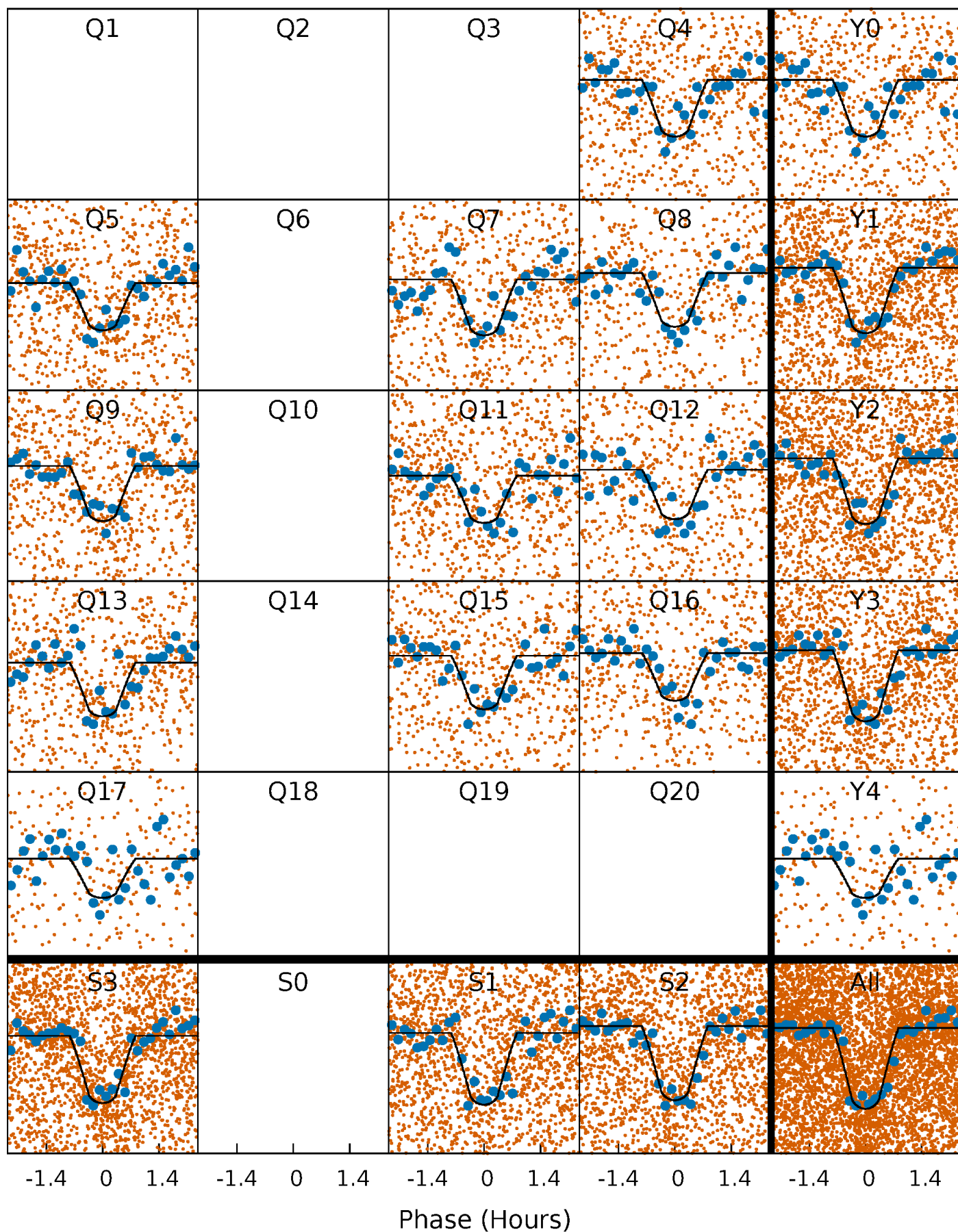
PDC Quarter-Phased Transit Curves

TCE 004929299-01 P= 0.868720 Days $T_0=132.082216$ (BKJD)



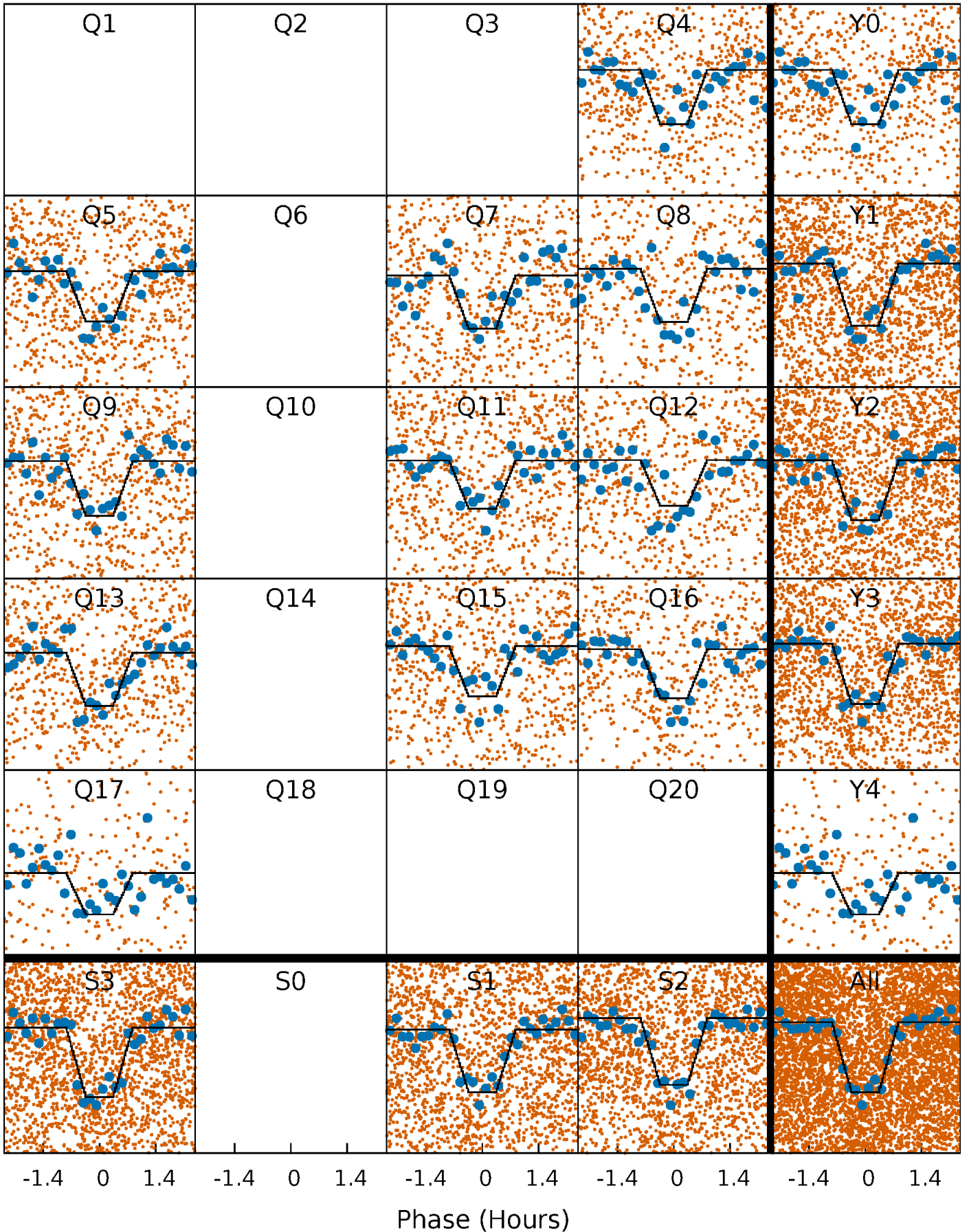
DV Quarter-Phased Transit Curves

TCE 004929299-01 P= 0.868720 Days $T_0=132.082216$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

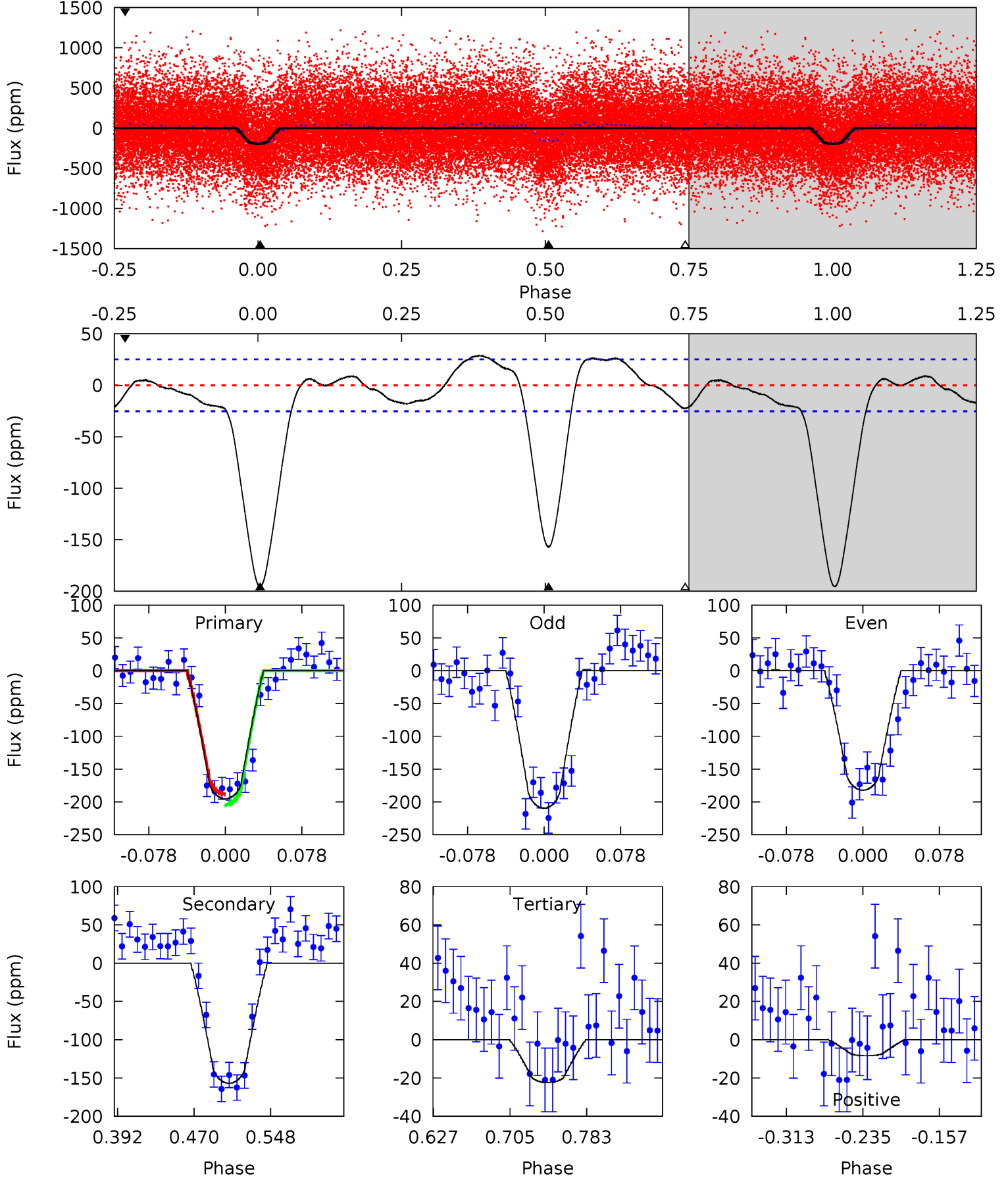
TCE 004929299-01 P= 0.868727 Days $T_0=132.079665$ (BKJD)



DV Model-Shift Uniqueness Test

004929299-01, P = 0.868720 Days, E = 132.082216 Days

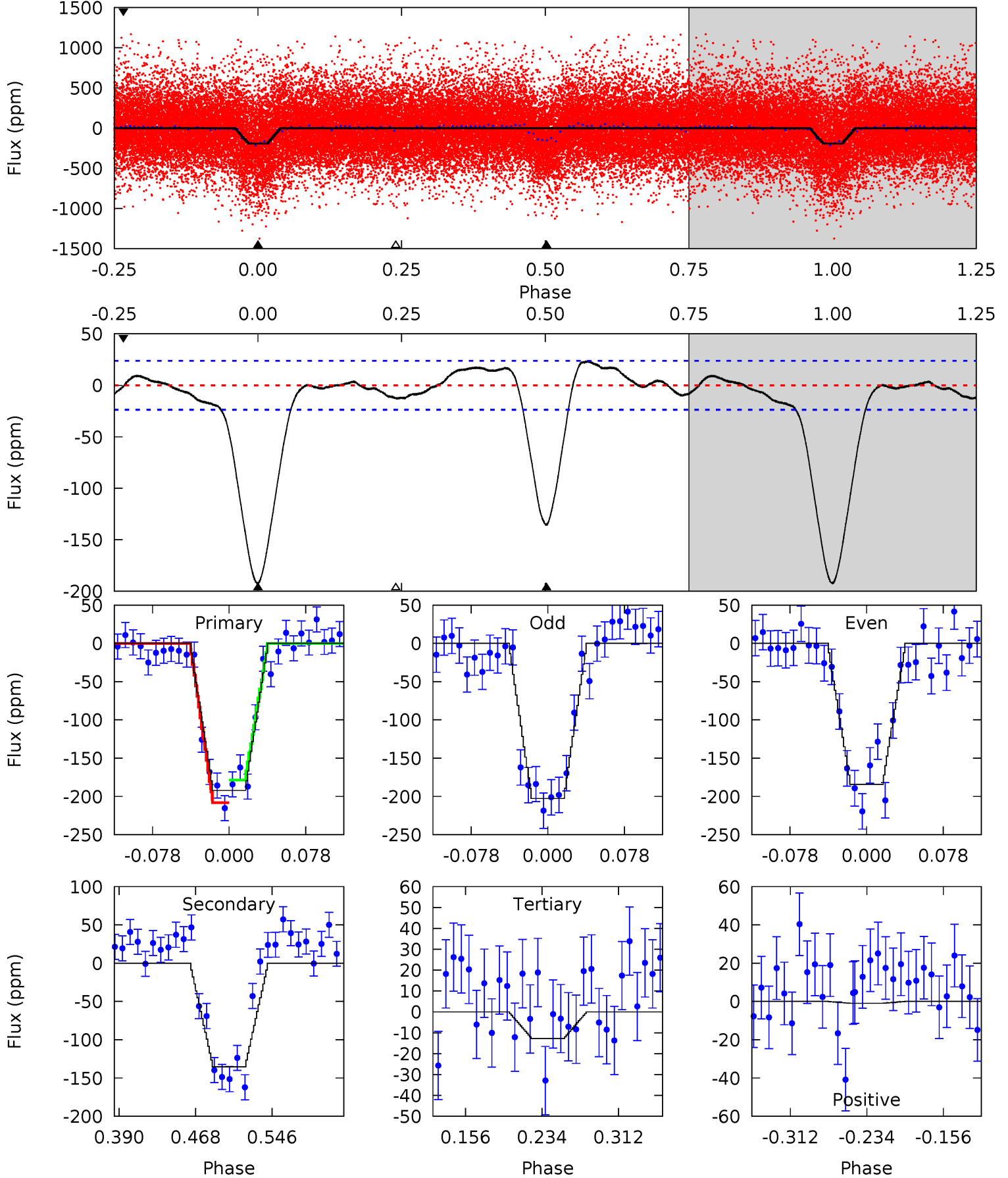
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.7	28.7	4.09	-1.52	4.62	1.76	2.66	31.6	37.2	24.6	30.2	2.52	0.92	0.13	1.48



Alt Model-Shift Uniqueness Test

004929299-01, P = 0.868727 Days, E = 132.079665 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.4	26.3	2.48	-0.19	4.62	1.76	1.84	34.9	37.6	23.9	26.5	1.79	0.96	0.11	2.87



Stellar Parameters For KIC 004929299

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5761^{+189}_{-172}	$4.331^{+0.190}_{-0.190}$	$-0.280^{+0.300}_{-0.300}$	$1.046^{+0.309}_{-0.206}$	$0.855^{+0.130}_{-0.070}$	$1.053^{+1.026}_{-0.526}$
	+3%/-3%	+4%/-4%	+107%/-107%	+30%/-20%	+15%/-8%	+97%/-50%
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 004929299-01 / KOI 4018.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-157 ± 5	$1.52^{+0.52}_{-0.41}$	2802^{+232}_{-202}	5571^{+900}_{-587}	11^{+10}_{-5}
Alt.	-135 ± 5	$1.56^{+0.48}_{-0.43}$	2801^{+217}_{-206}	5335^{+768}_{-540}	$8.870^{+7.683}_{-3.514}$

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 $A_{obs} \gg 1.0$

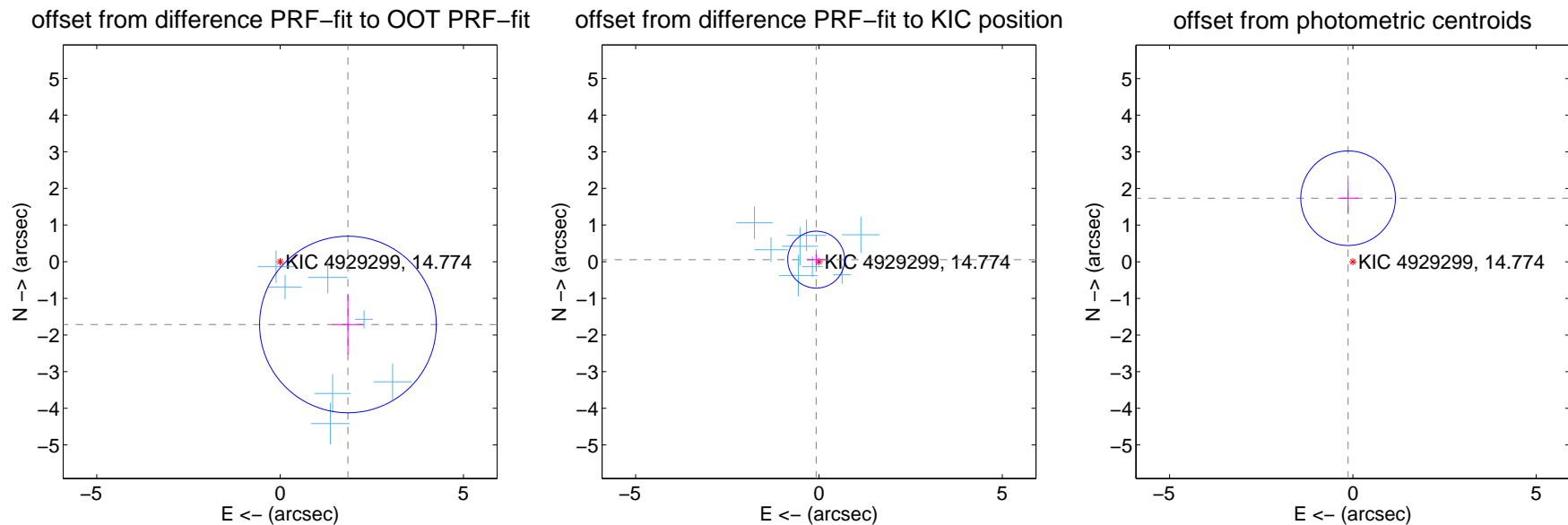
DV Centroid Data

Supplemental centroid analysis for 004929299-01. Kepler magnitude: 14.77. Transit SNR 22.35

There are 11 quarters with good PRF difference image offsets

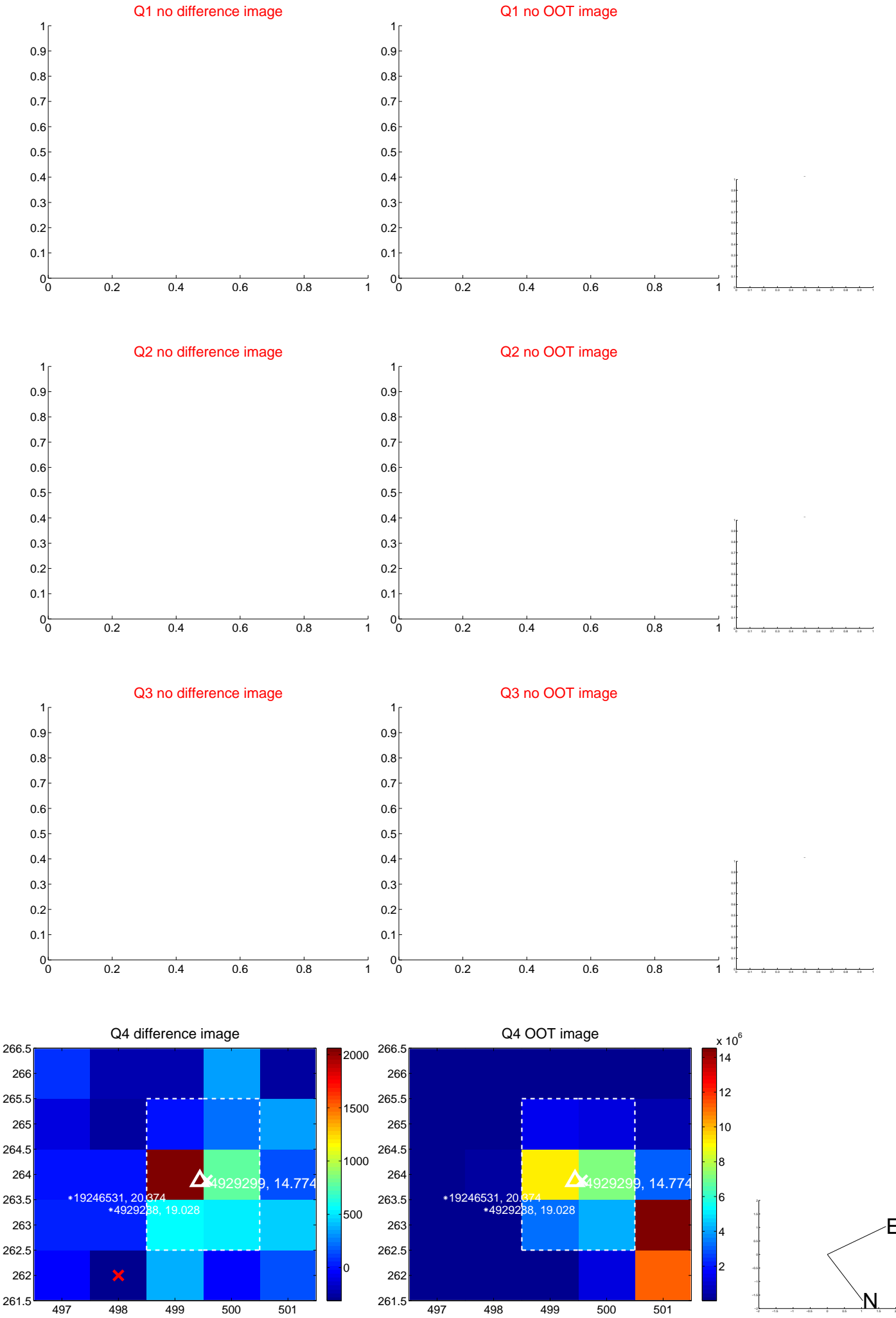
The OOT PRF centroid is offset from the target star catalog position by about 2.04 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.522 ± 0.803	3.14	-1.850 ± 0.423	-1.714 ± 0.812
PRF-fit source offset from KIC position	0.095 ± 0.259	0.37	0.077 ± 0.256	0.056 ± 0.152
photometric centroid source offset	1.74 ± 0.43	4.05	0.13 ± 0.28	1.74 ± 0.43

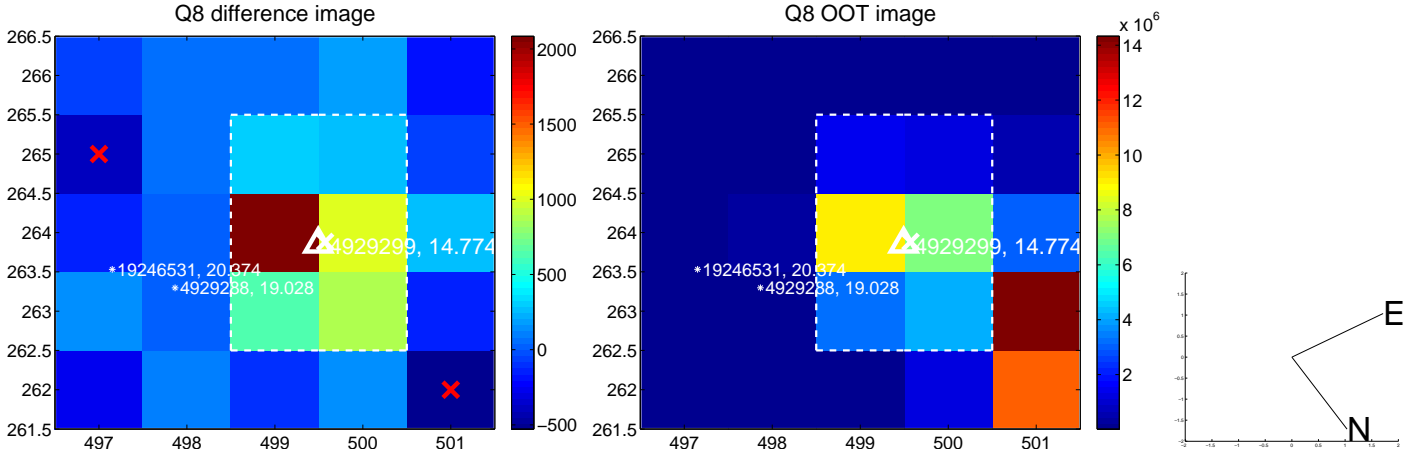
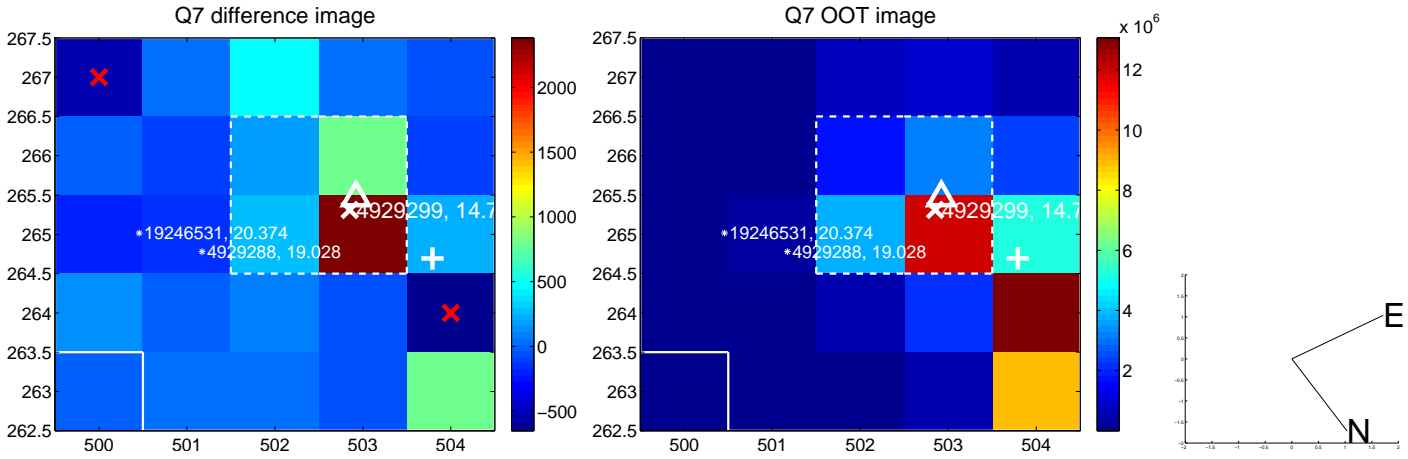
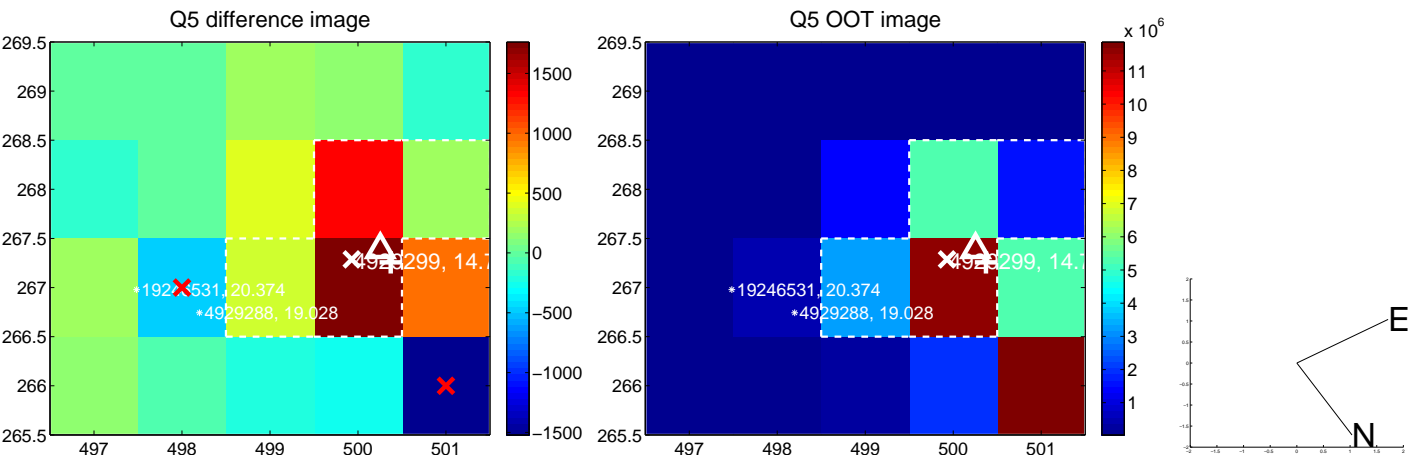


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

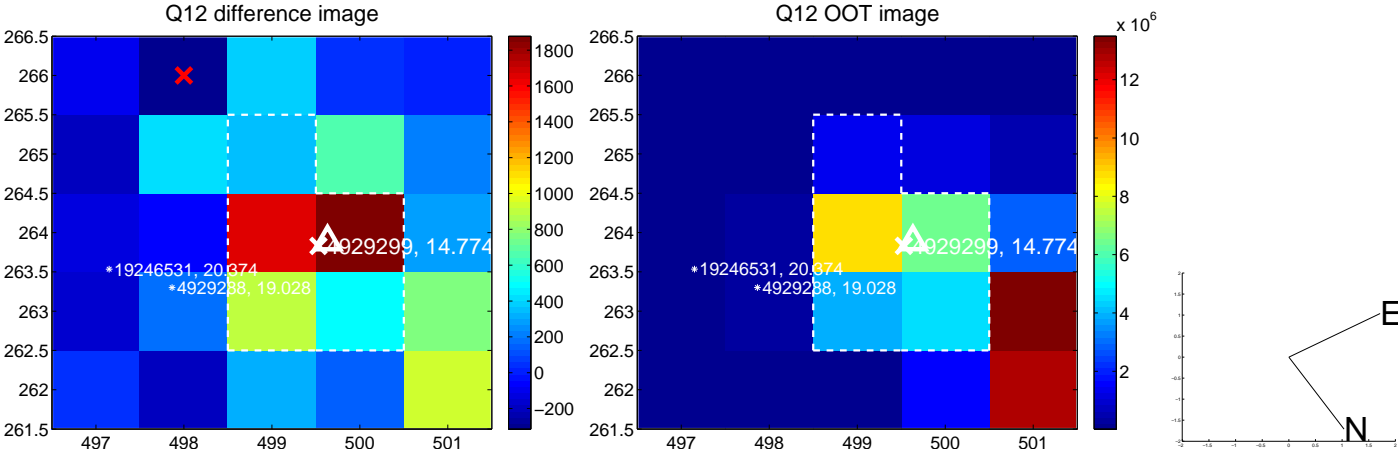
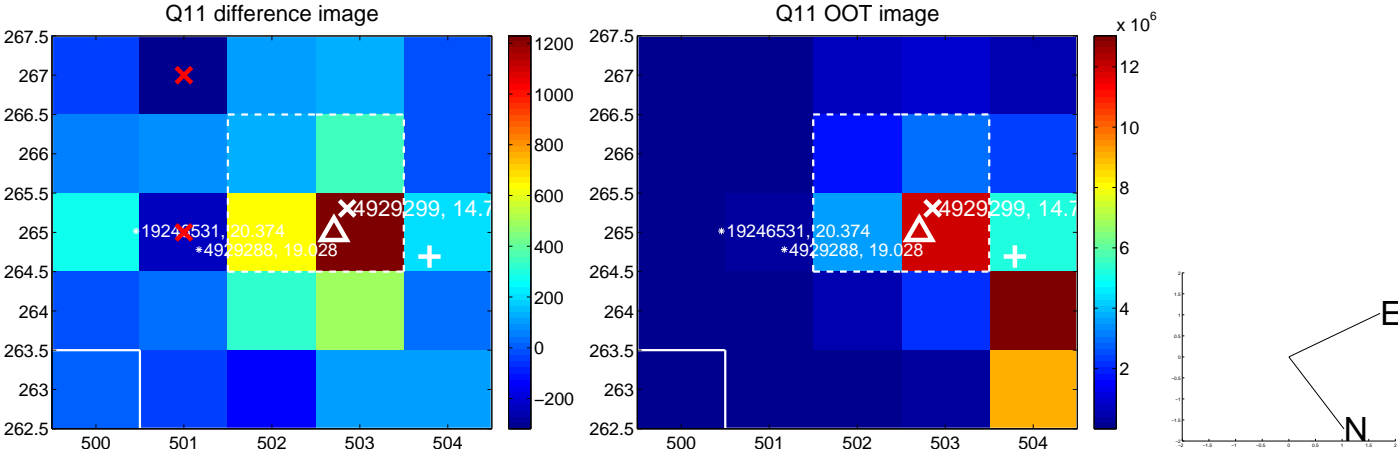
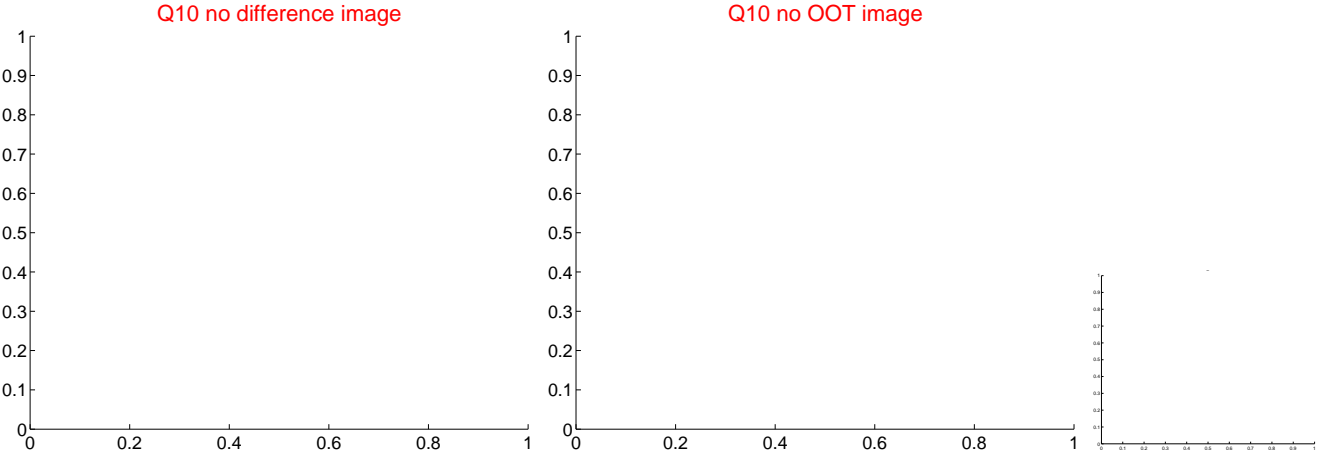
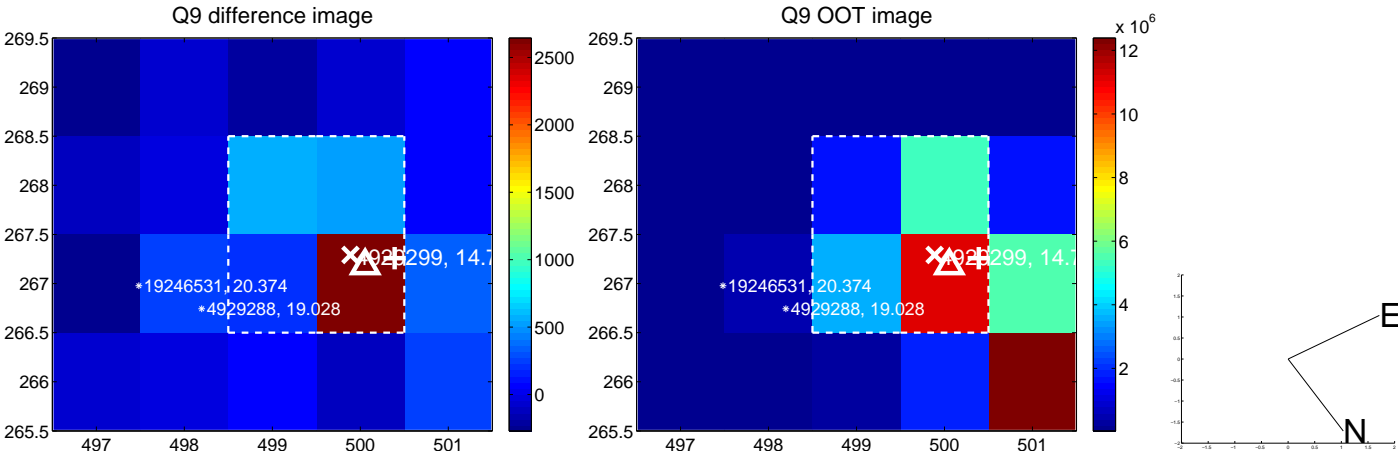
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



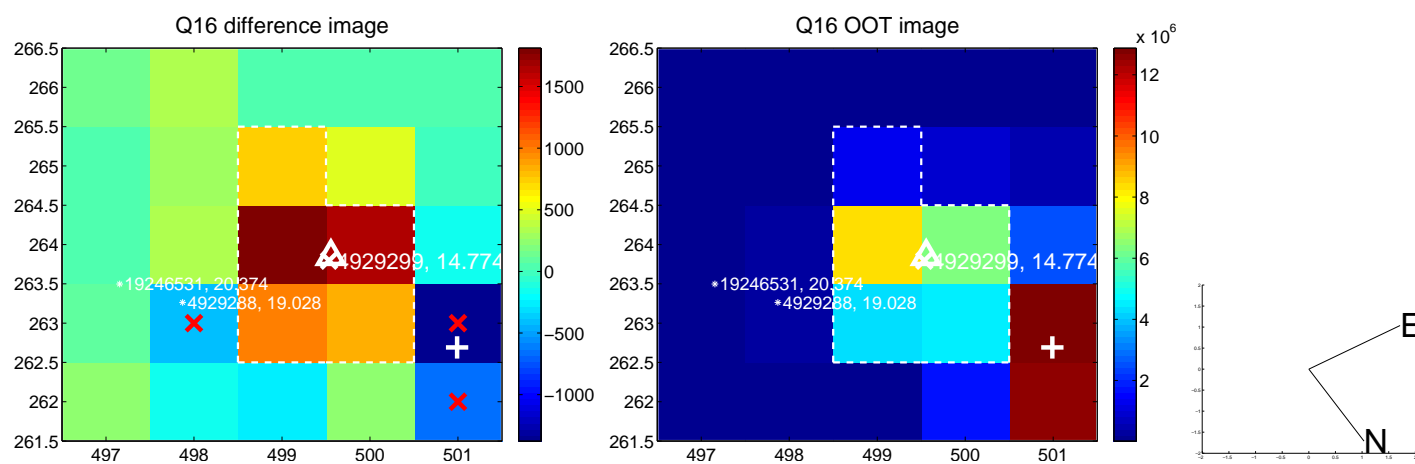
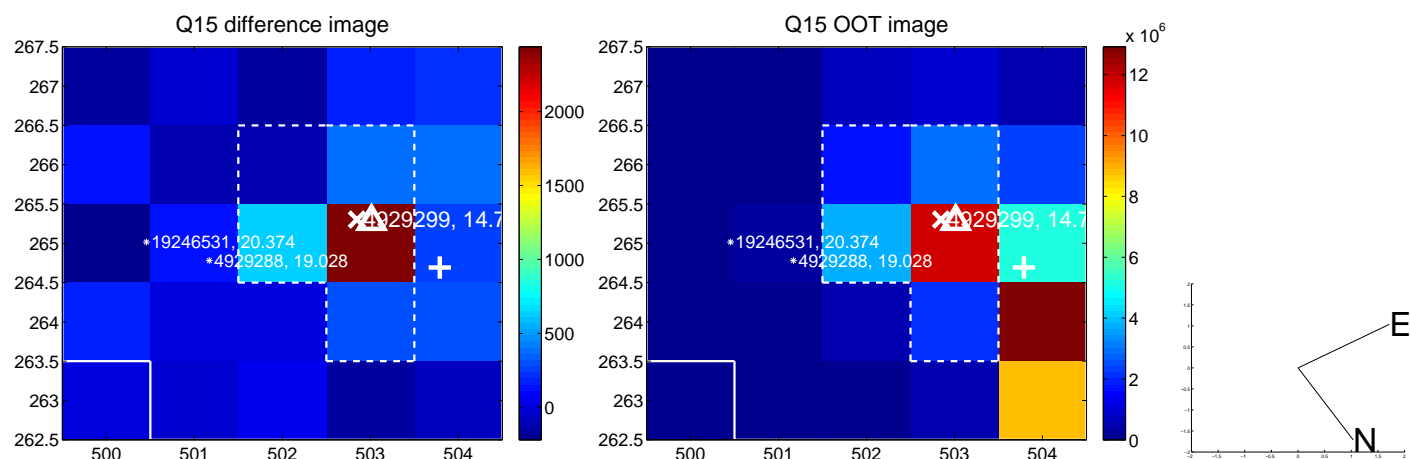
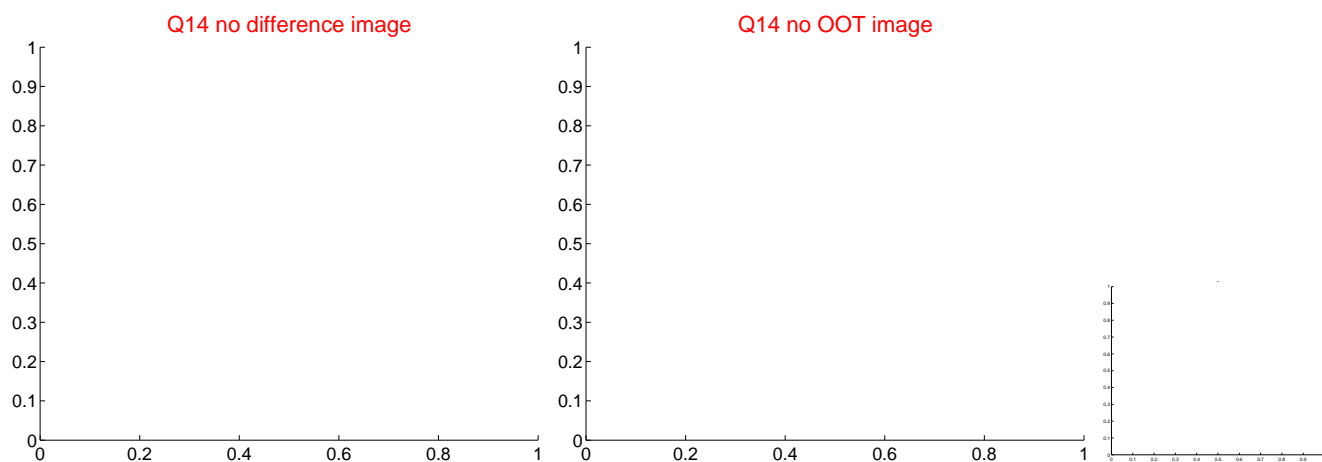
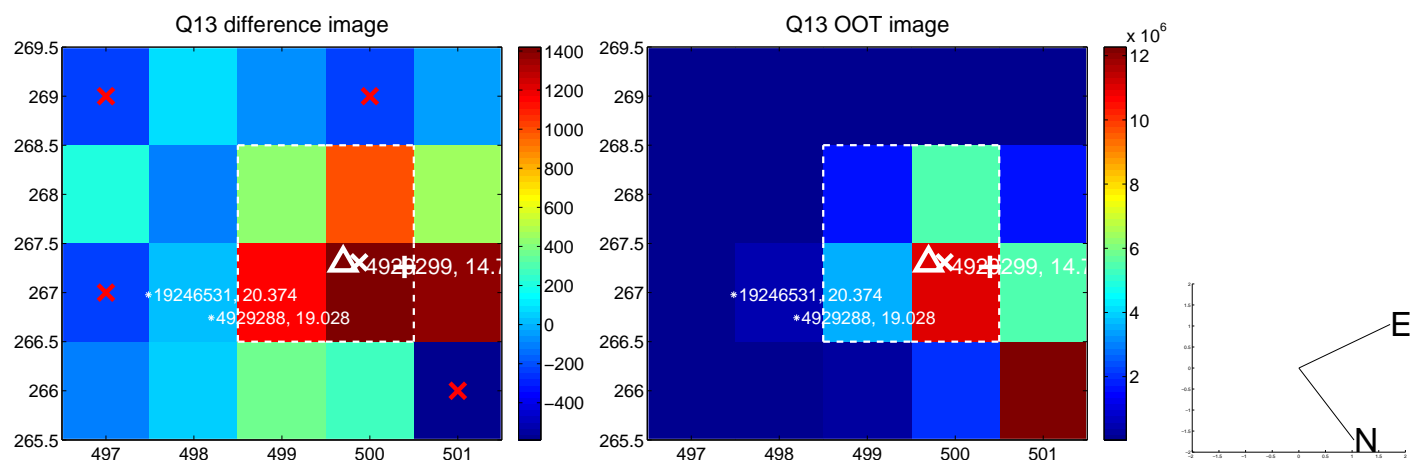
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



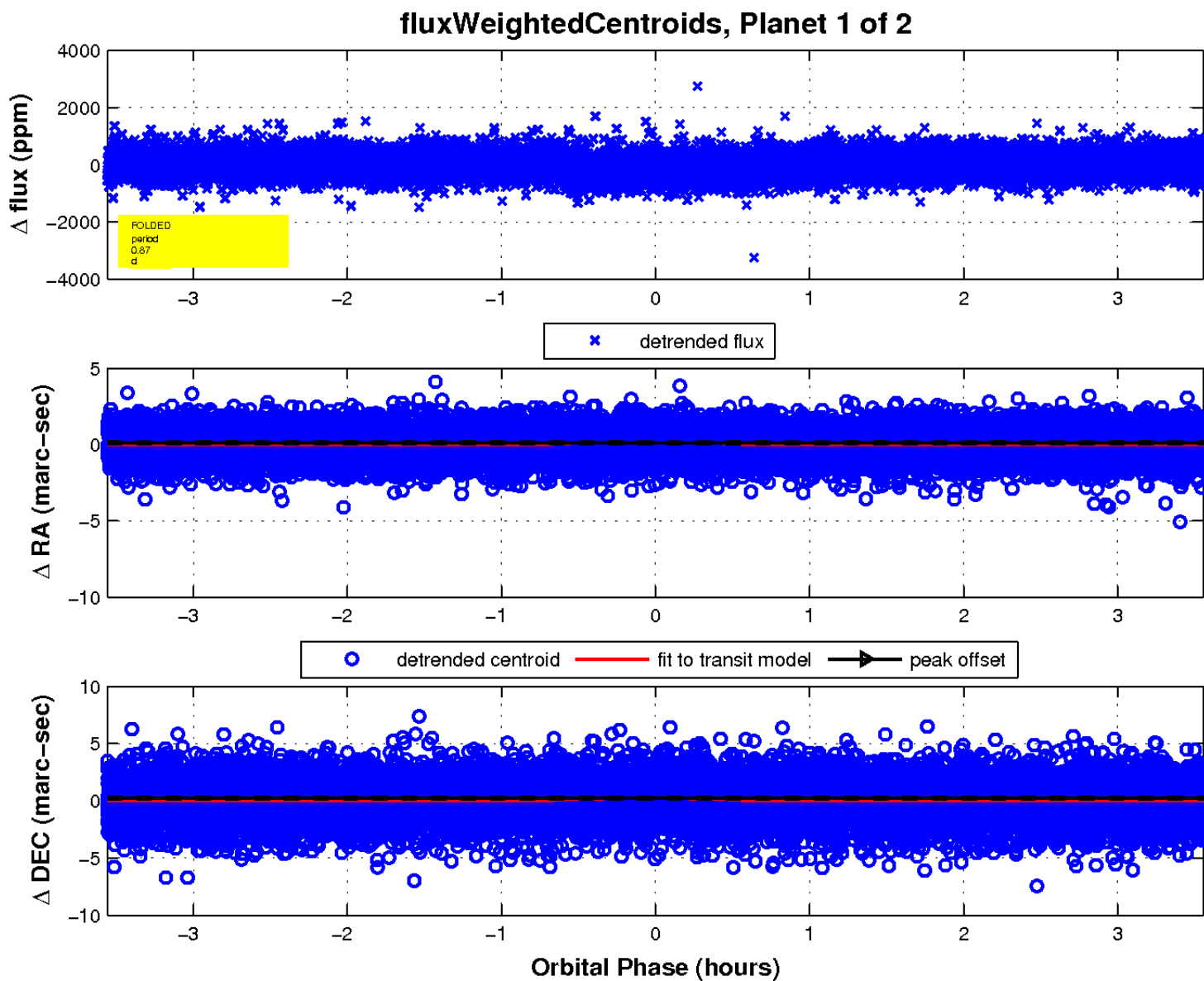
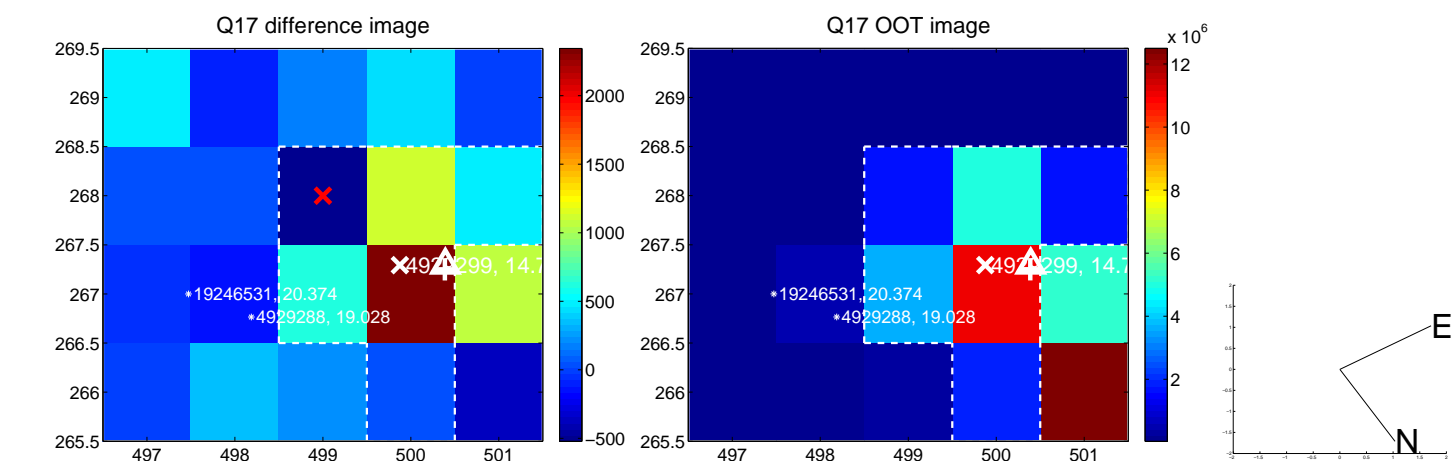
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

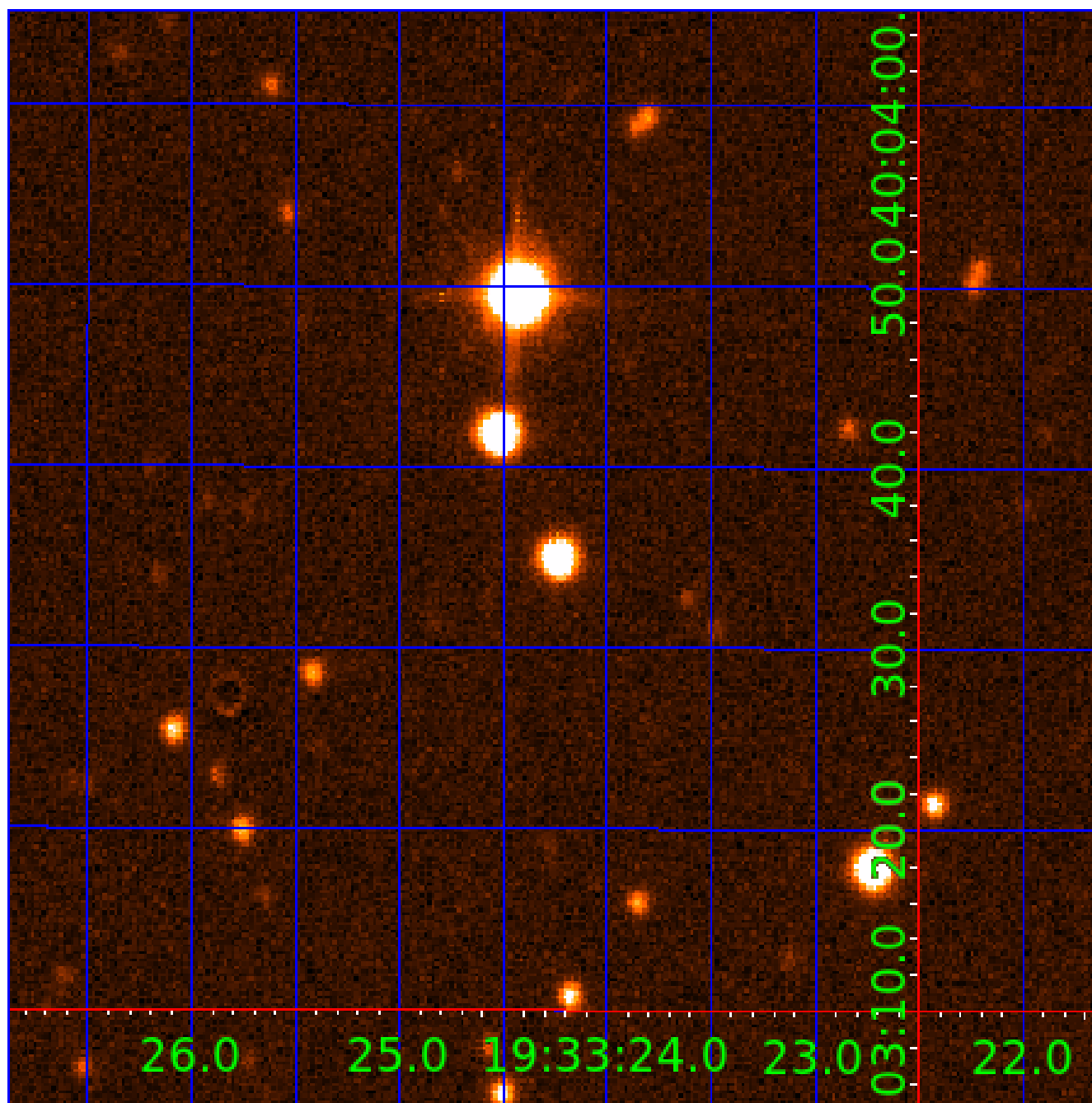


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004929299

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})
004929299-01	OBS	4018.01	0.868720	132.082217	188.8	1.186	18.6	22.3	1.05	5761	1.53	3773.41
004929299-02	OBS	No	0.868727	131.646577	204.2	1.123	20.0	24.3	1.05	5761	1.51	3773.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004929299-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_KIC_POS
004929299-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_KIC_POS

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 004929299-02

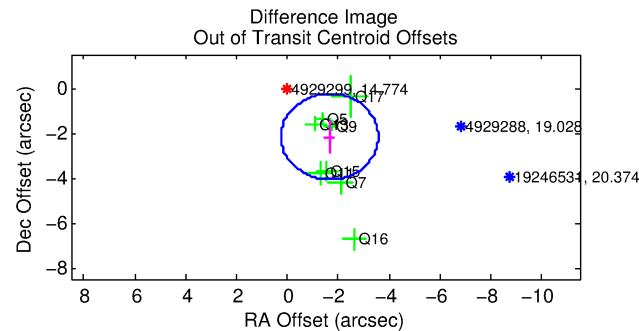
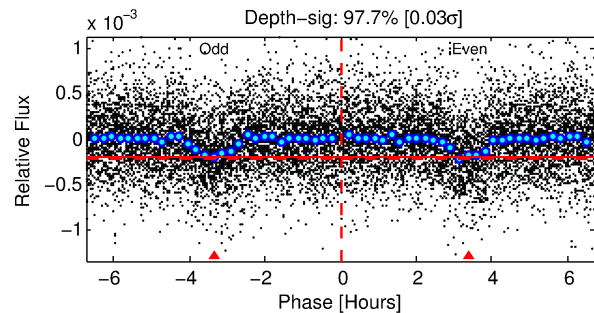
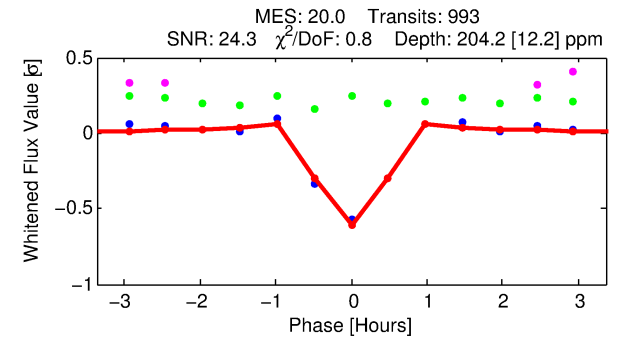
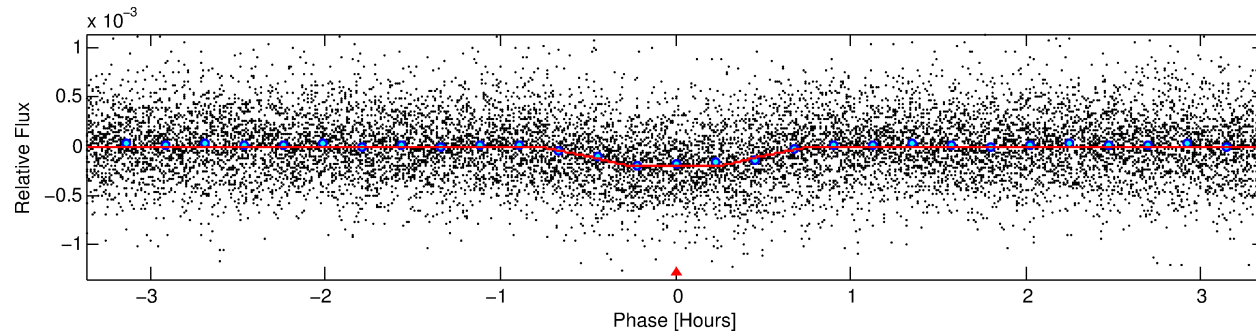
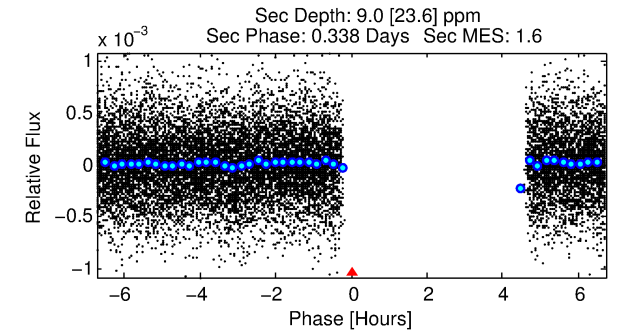
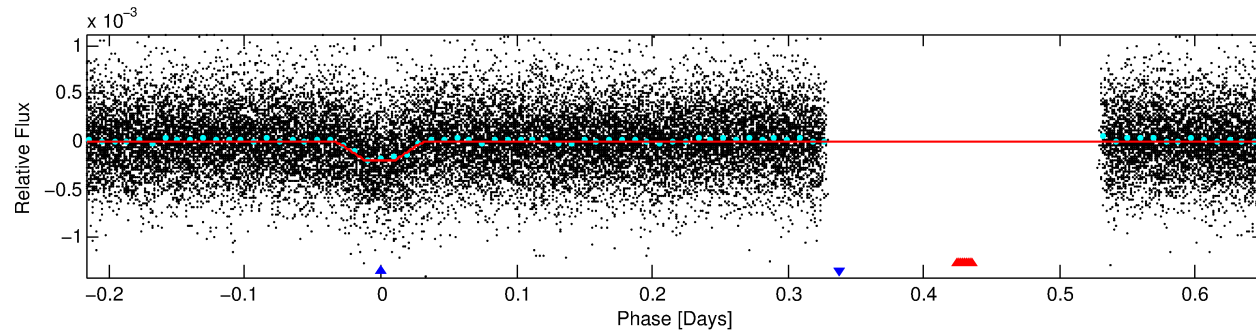
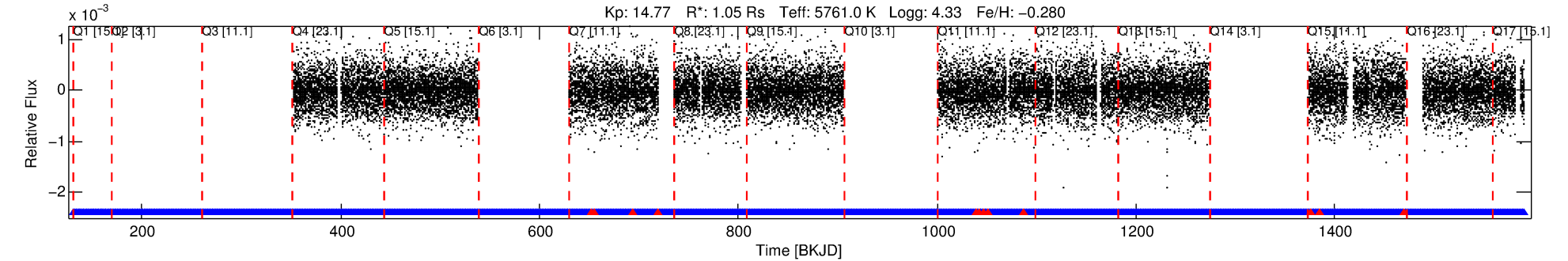
No Significant Match Found

DV One-Page Summary

KIC: 4929299 Candidate: 2 of 2 Period: 0.869 d

KOI: K04018 Corr: No Ephemeris Match

Kp: 14.77 R*: 1.05 Rs Teff: 5761.0 K Logg: 4.33 Fe/H: -0.280



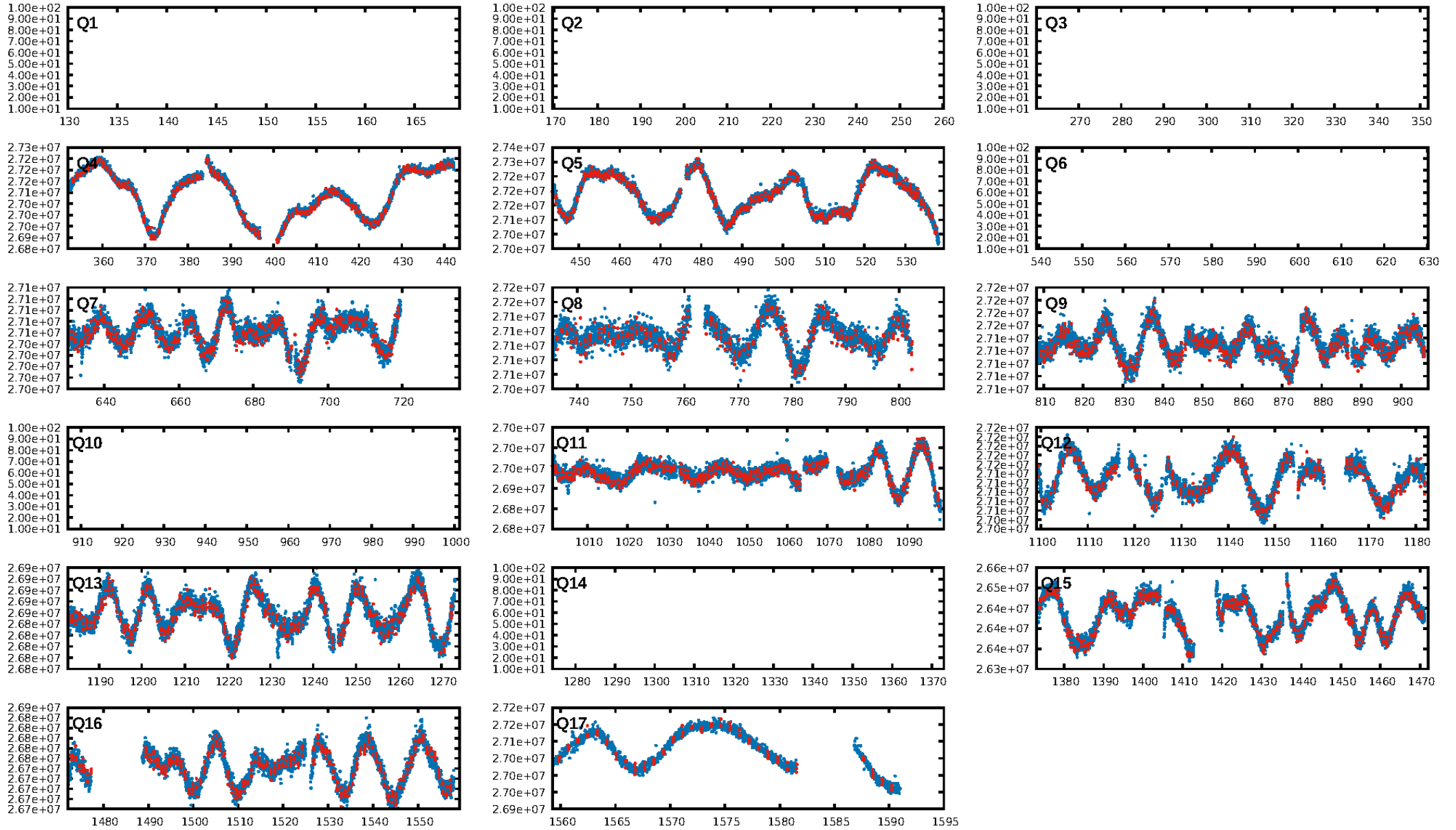
DV Fit Results:

Period = 0.86873 [0.00000] d
Epoch = 131.6466 [0.0007] BKJD
Rp/R* = 0.0132 [0.0064]
a/R* = 5.74 [12.28]
b = 0.31 [6.46]
Seff = 3773.37 [1417.26]
Teff = 1999 [188] K
Rp = 1.51 [0.85] Re
a = 0.0169 [0.0041] AU
Ag = 0.62 [1.75] [-0.22σ]
Teffp = 2743 [1918] K [0.39σ]

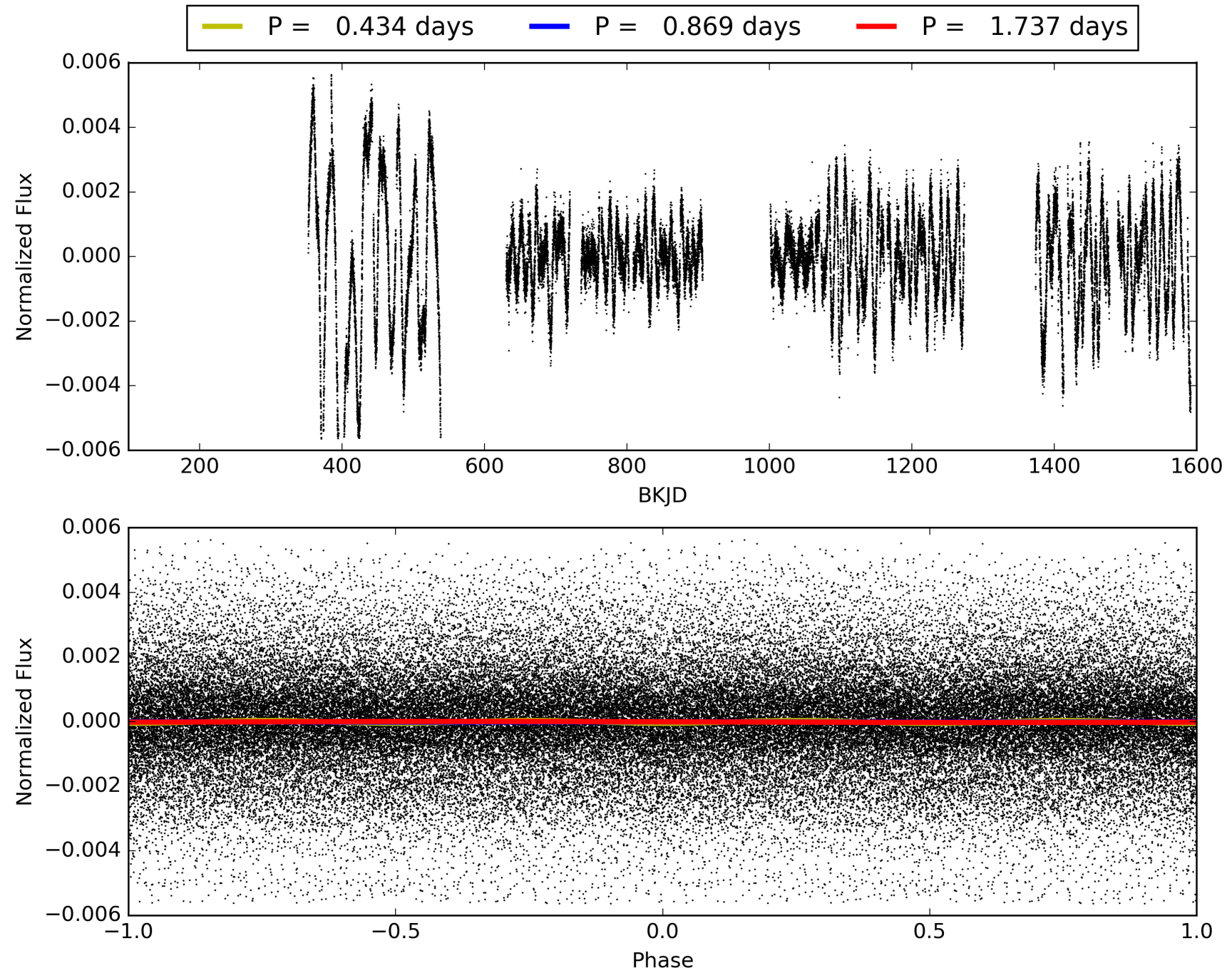
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.25e-89
RollingBand-fgt: 0.99 [951/963]
GhostDiagnostic-chr: 3.141
Centroid-sig: 0.0%
Centroid-so: 1.729 arcsec [4.27σ]
OotOffset-rm: 2.731 arcsec [4.29σ]
KicOffset-rm: 0.304 arcsec [1.68σ]
OotOffset-st: 0/3/1/4 [8]
KicOffset-st: 0/3/3/4 [10]
DiffImageQuality-fgm: 1.00 [10/10]
DiffImageOverlap-fno: 1.00 [11/11]

TCE 004929299-02, PDC Light Curves

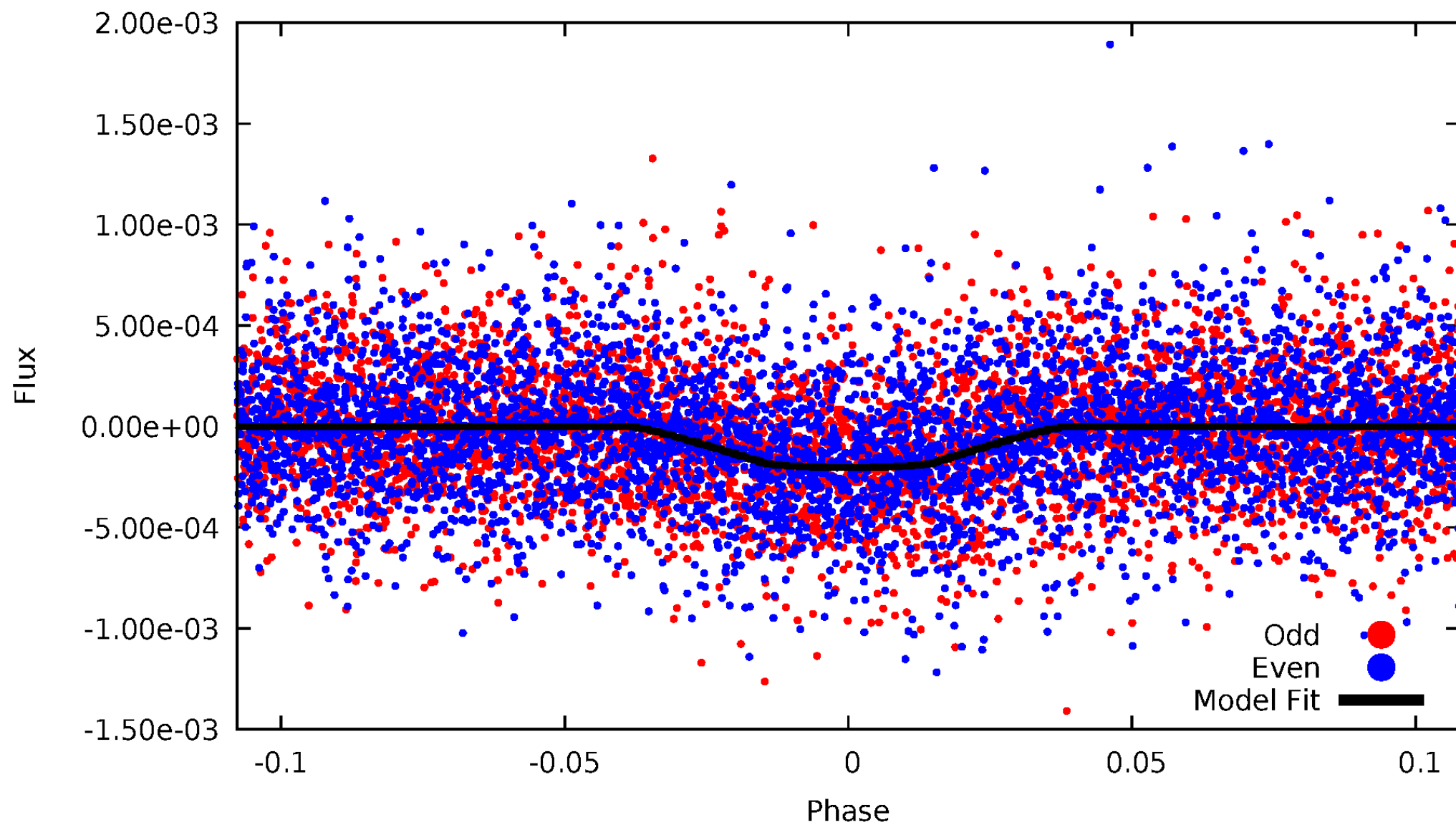


TCE 004929299-02



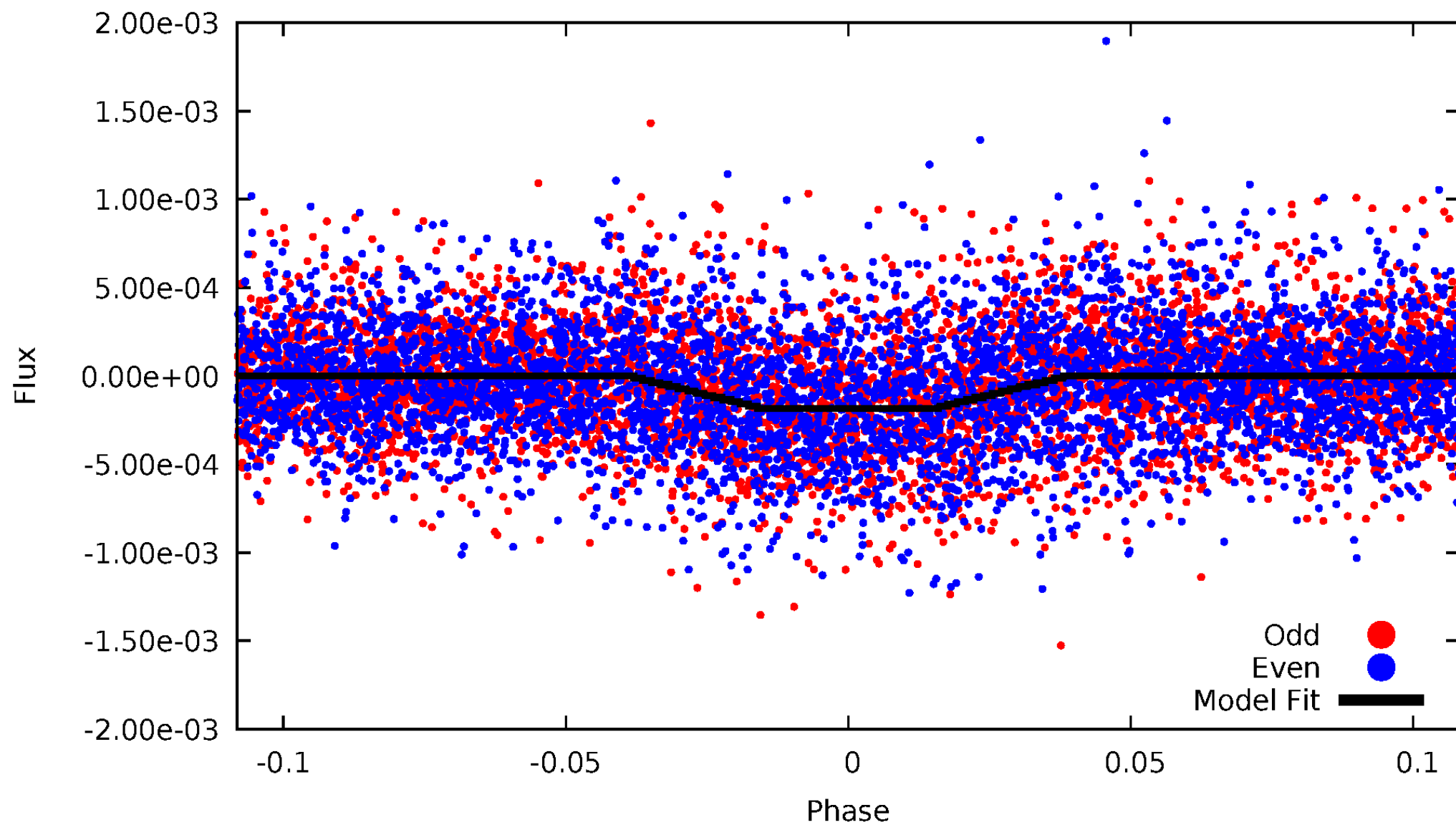
DV Odd/Even

TCE 004929299-02



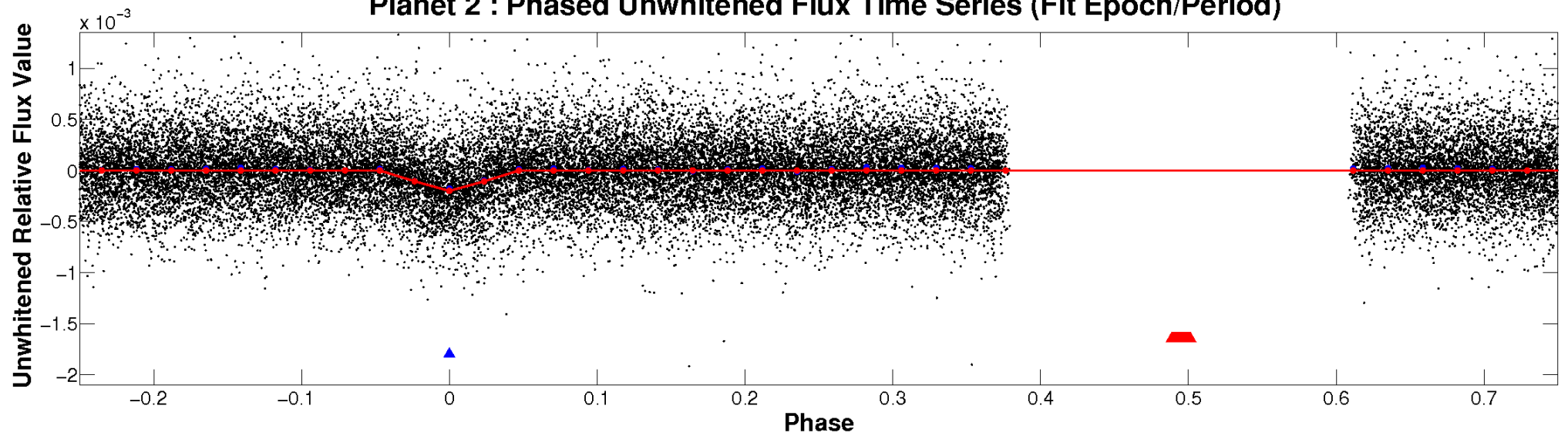
ALT Odd/Even

TCE 004929299-02

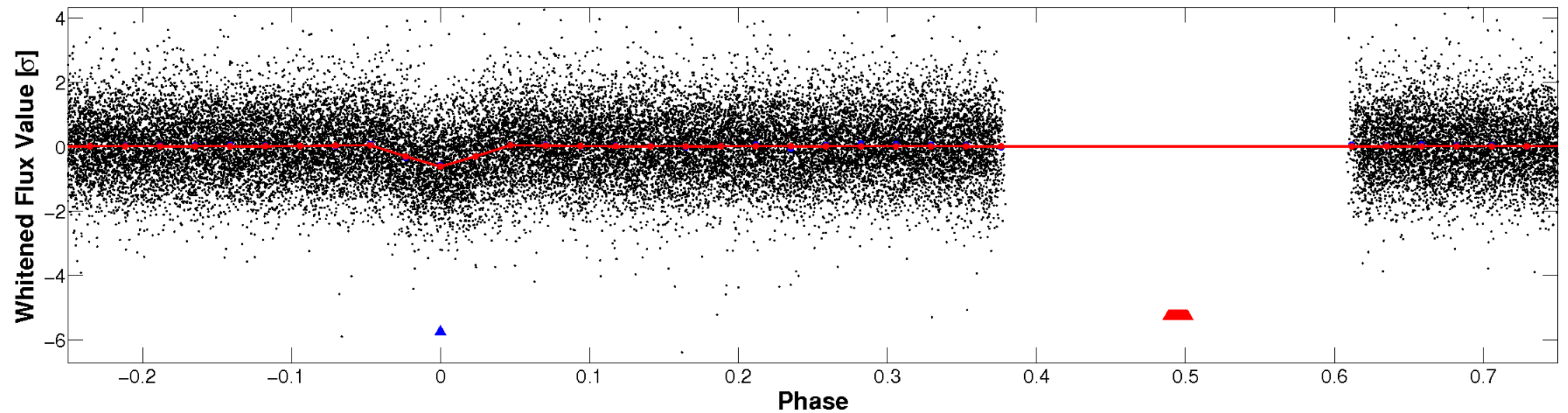


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

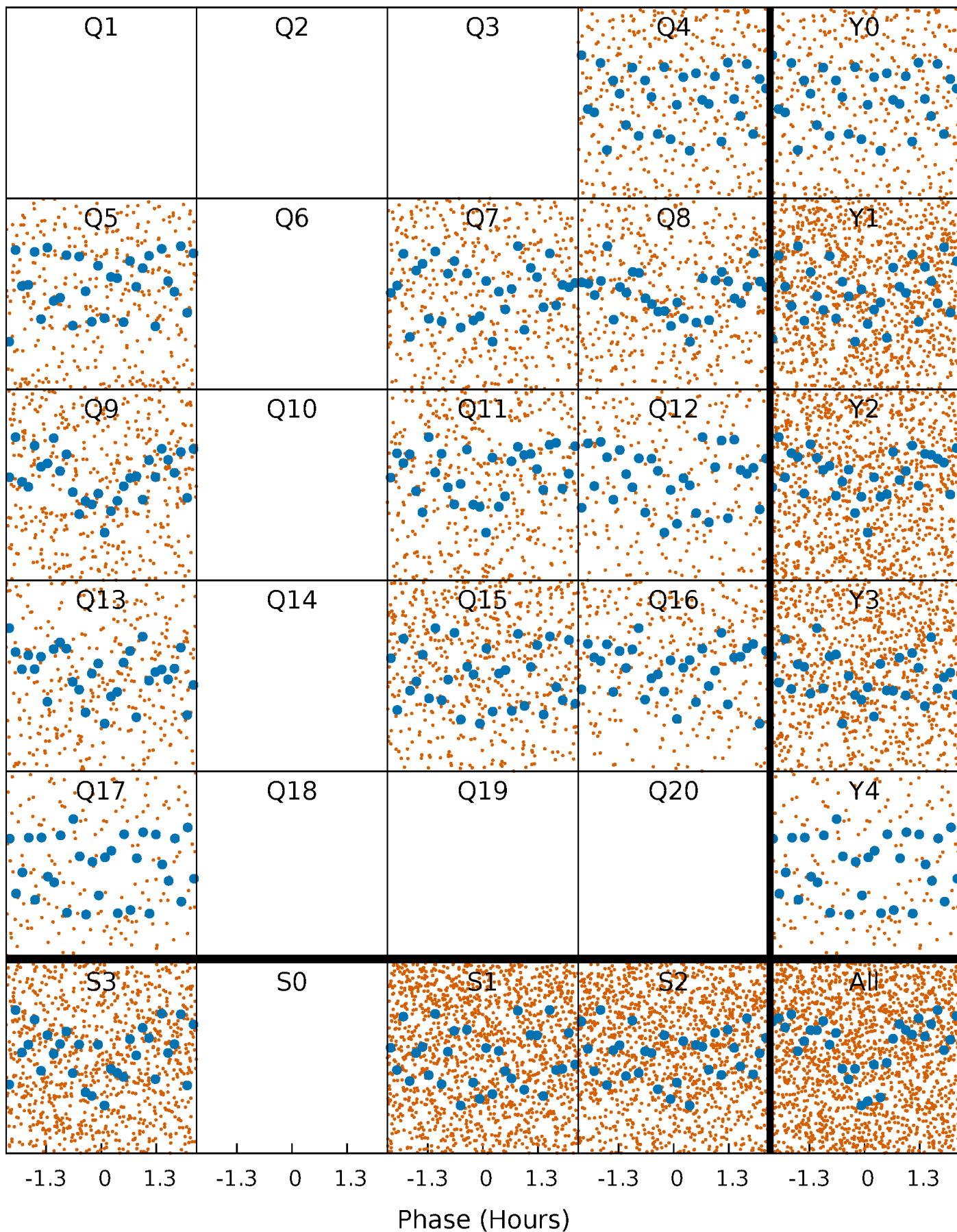


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



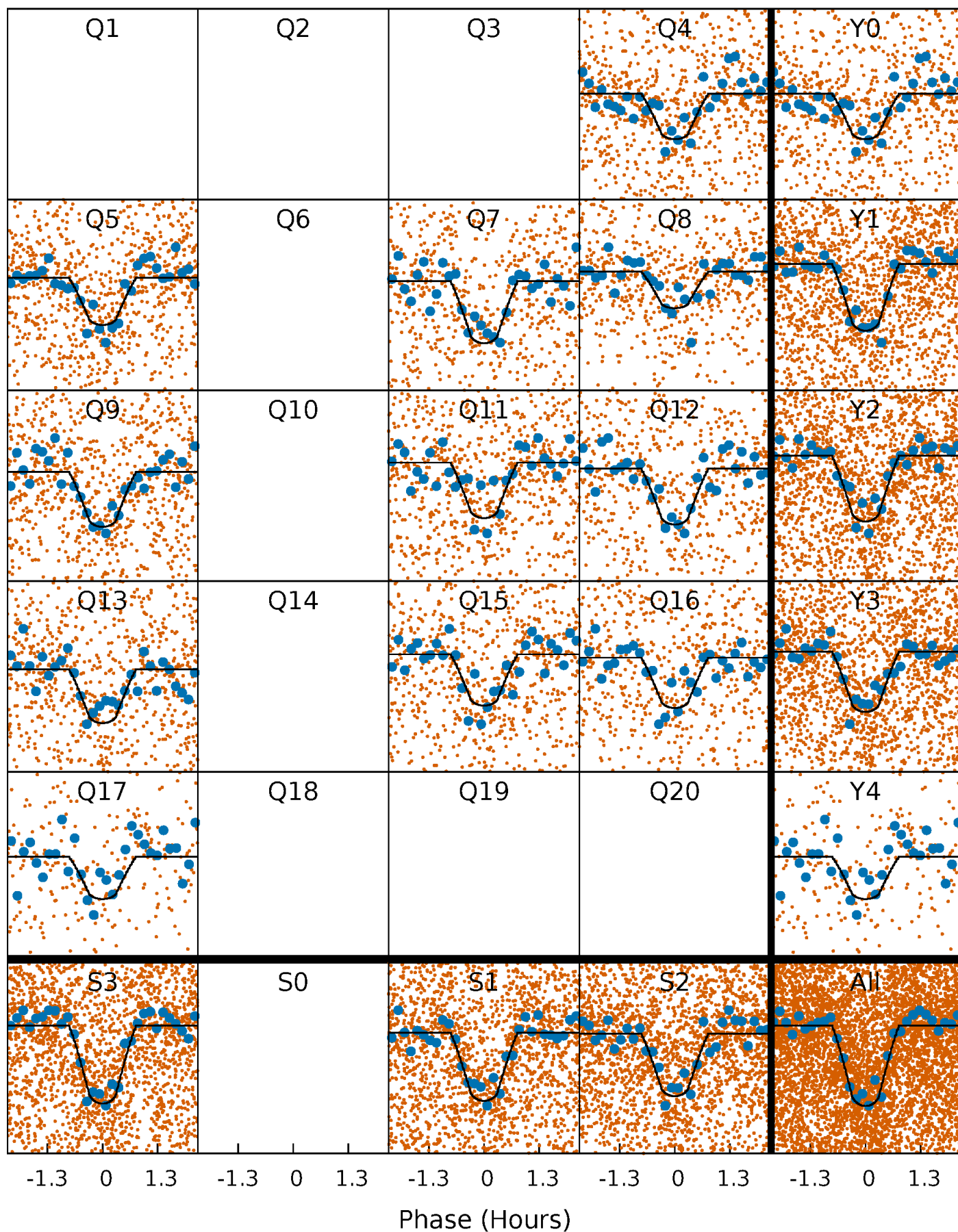
PDC Quarter-Phased Transit Curves

TCE 004929299-02 $P = 0.868727$ Days $T_0 = 131.646577$ (BKJD)



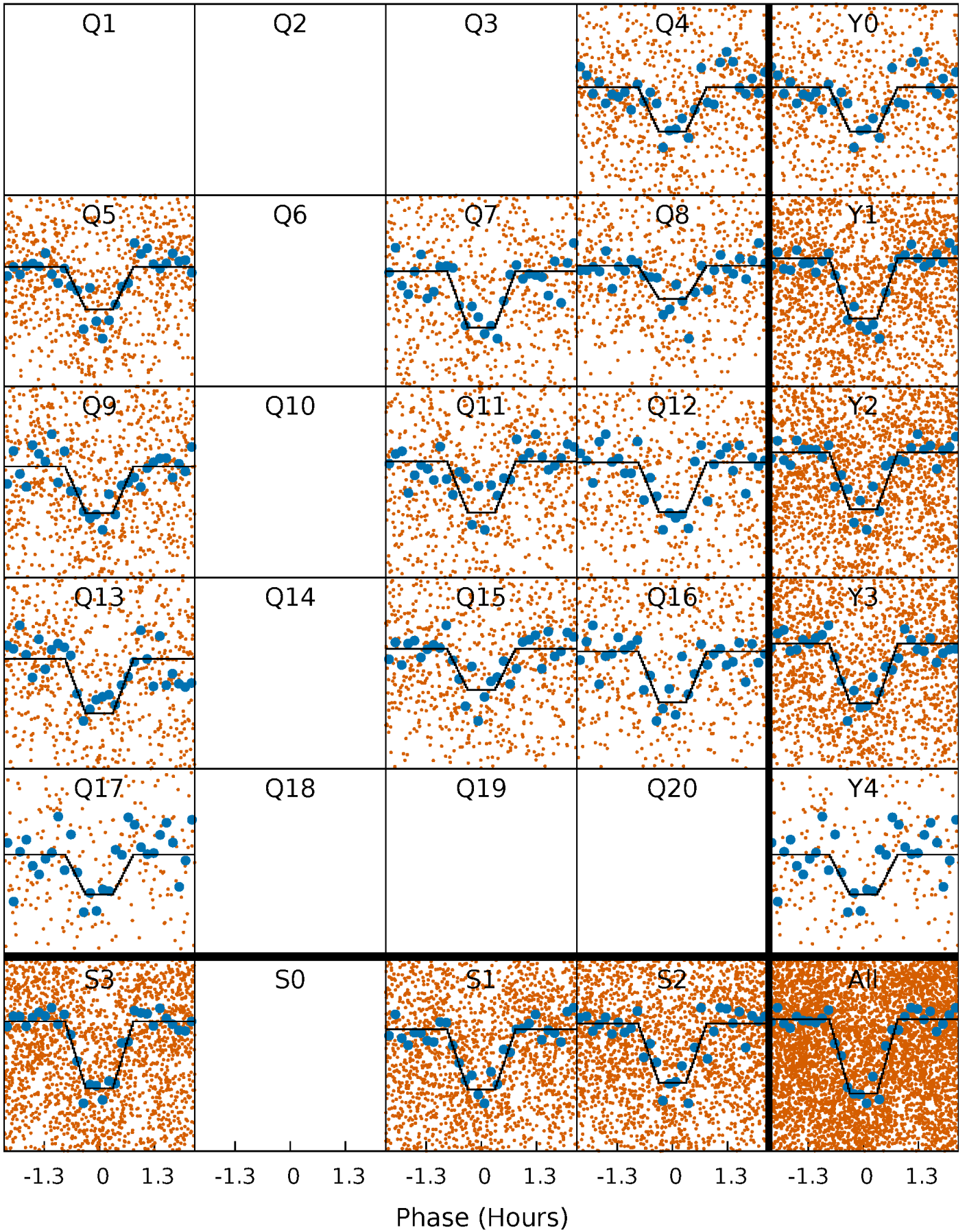
DV Quarter-Phased Transit Curves

TCE 004929299-02 $P = 0.868727$ Days $T_0 = 131.646577$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

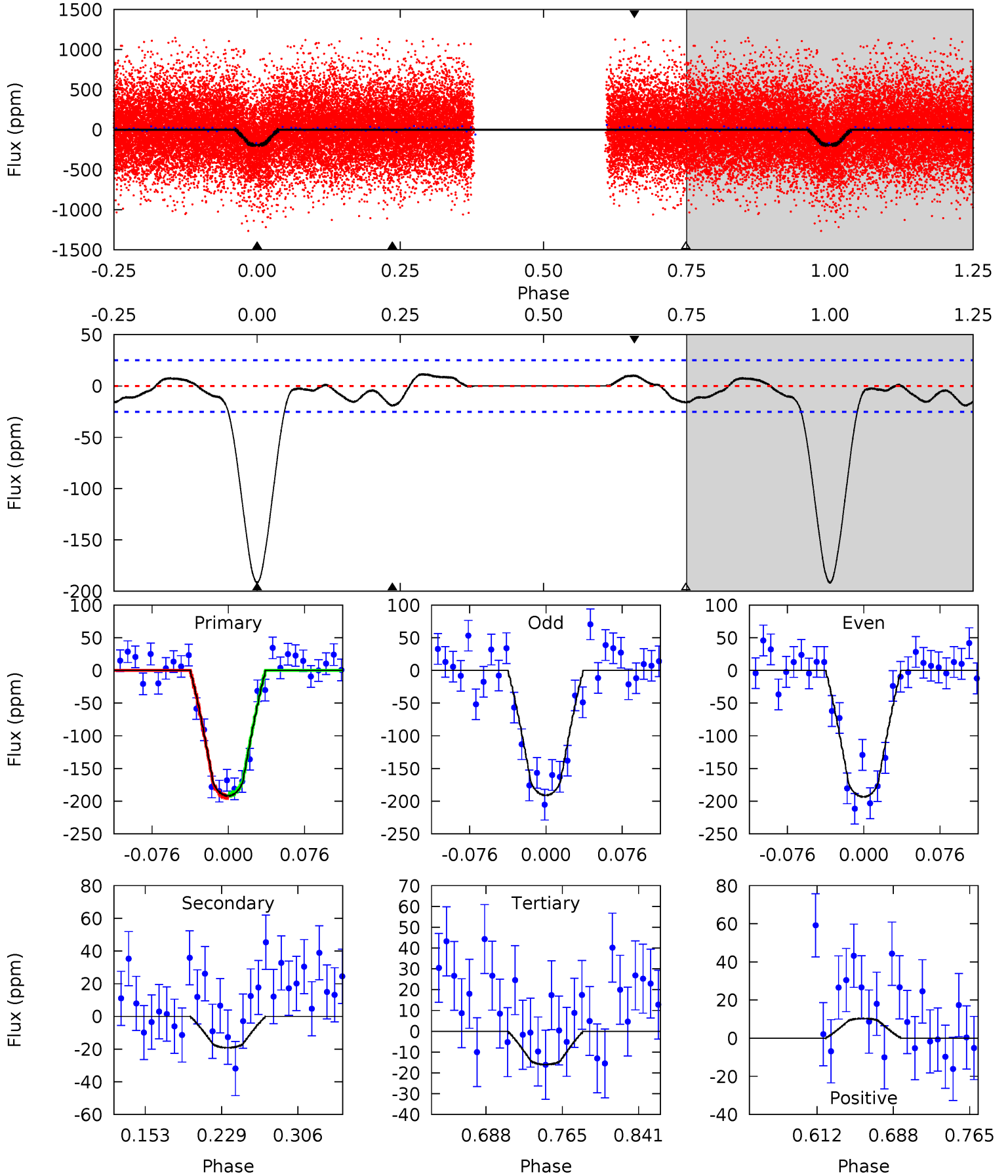
TCE 004929299-02 P= 0.868727 Days $T_0=131.646781$ (BKJD)



DV Model-Shift Uniqueness Test

004929299-02, P = 0.868727 Days, E = 131.646577 Days

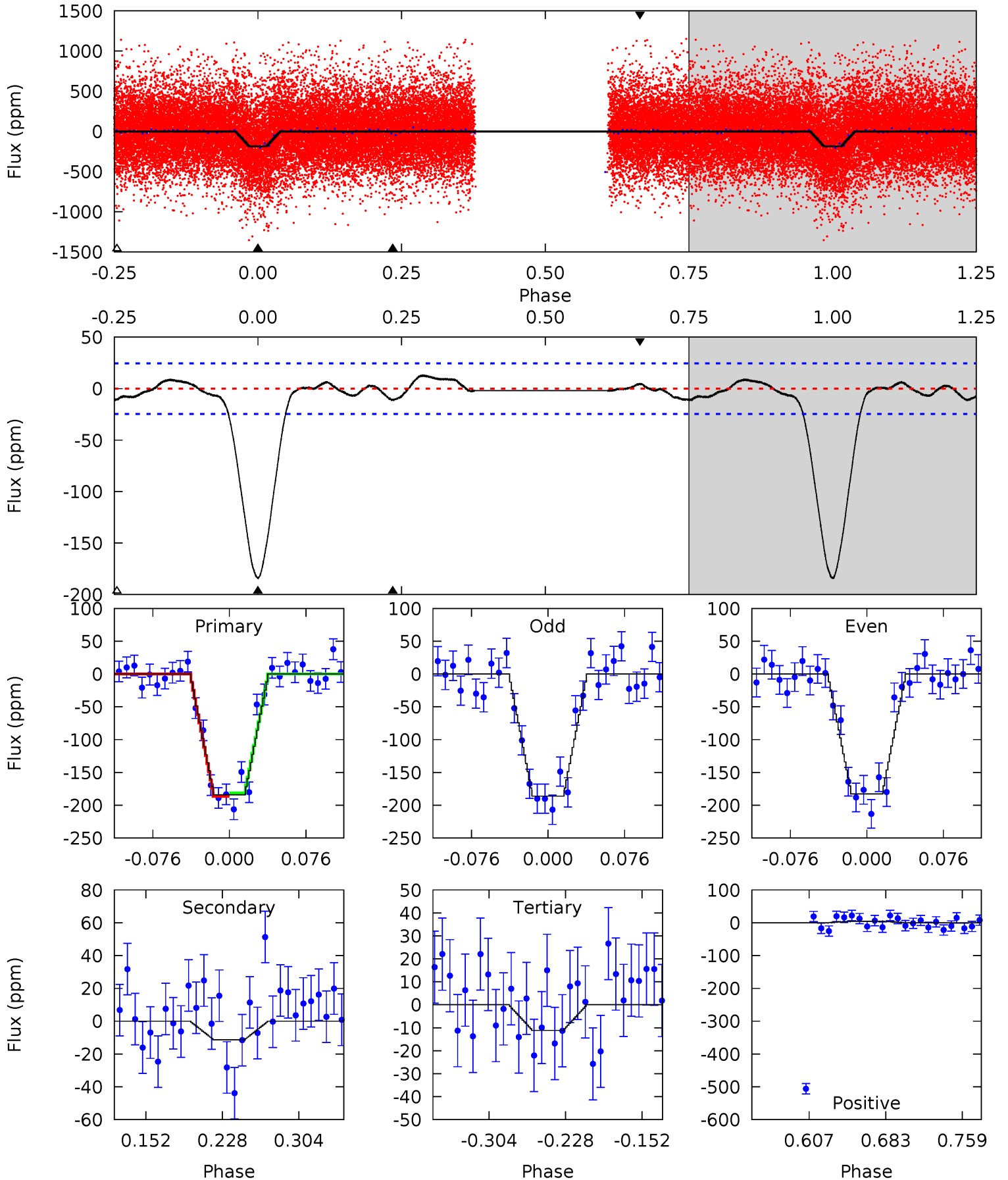
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.3	3.52	2.94	1.90	4.62	1.77	1.38	32.3	33.4	0.58	1.62	0.21	1.00	0.06	0.32



Alt Model-Shift Uniqueness Test

004929299-02, P = 0.868727 Days, E = 131.646781 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.6	2.12	2.10	0.86	4.62	1.77	1.05	32.5	33.8	0.02	1.27	0.33	0.93	0.07	0.49



Stellar Parameters For KIC 004929299

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5761^{+189}_{-172}	$4.331^{+0.190}_{-0.190}$	$-0.280^{+0.300}_{-0.300}$	$1.046^{+0.309}_{-0.206}$	$0.855^{+0.130}_{-0.070}$	$1.053^{+1.026}_{-0.526}$
	+3%/-3%	+4%/-4%	+107%/-107%	+30%/-20%	+15%/-8%	+97%/-50%
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 004929299-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-19 ± 5	$1.56^{+0.83}_{-0.73}$	2802^{+225}_{-190}	3525^{+1034}_{-690}	$1.213^{+3.166}_{-0.708}$
Alt.	-11 ± 5	$1.56^{+0.77}_{-0.69}$	2795^{+220}_{-184}	3058^{+930}_{-5450}	$0.673^{+1.624}_{-0.424}$

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 $A_{obs} \gg 1.0$

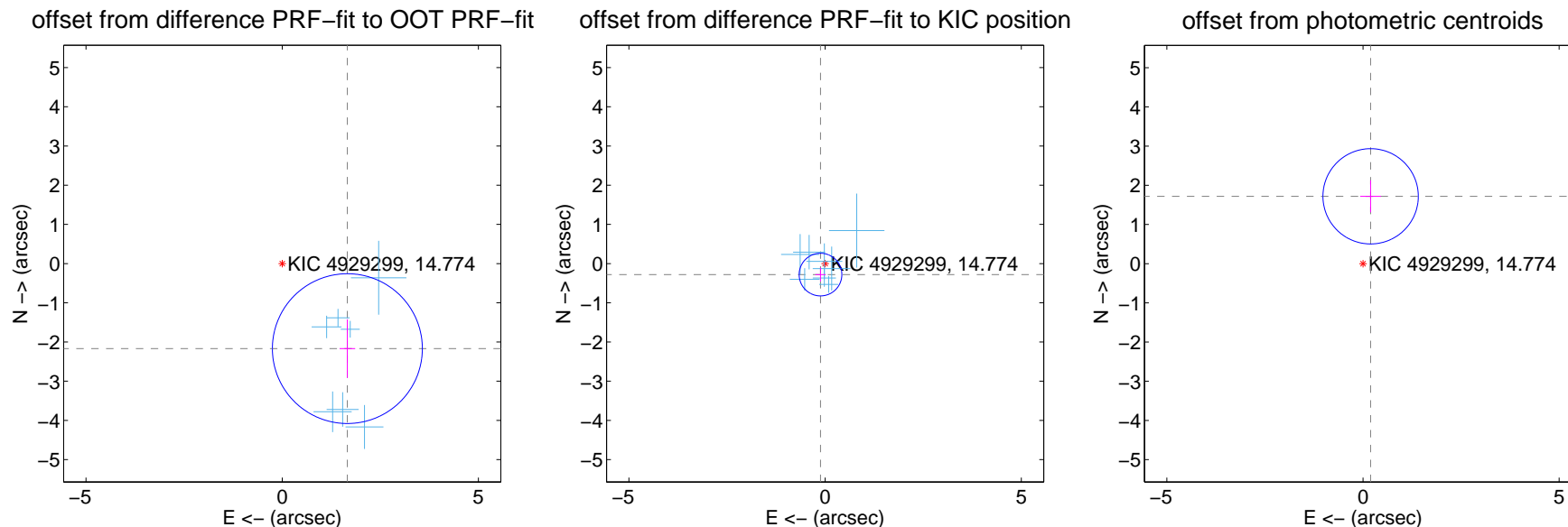
DV Centroid Data

Supplemental centroid analysis for 004929299-02. Kepler magnitude: 14.77. Transit SNR 24.29

There are 10 quarters with good PRF difference image offsets

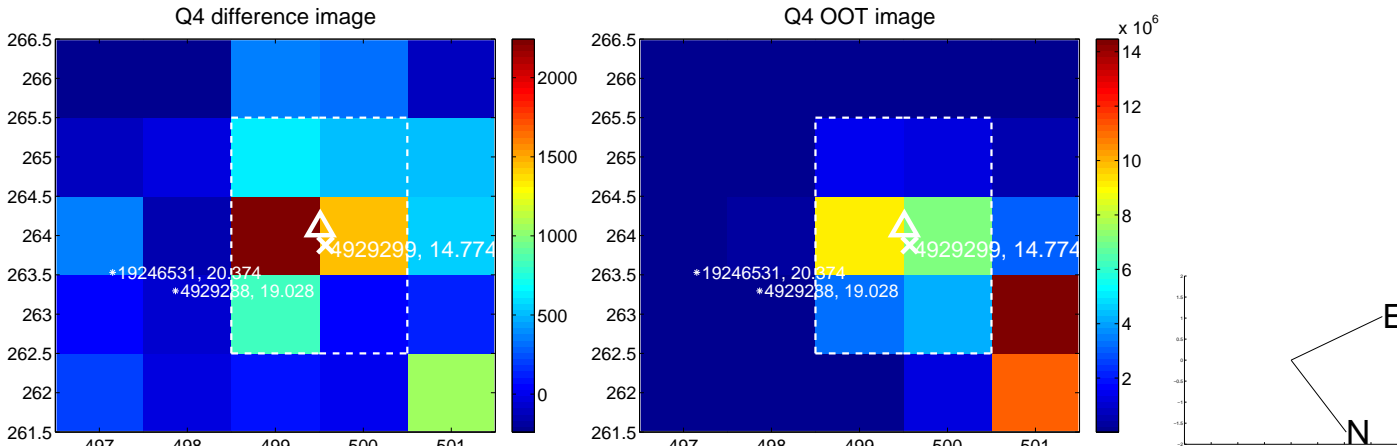
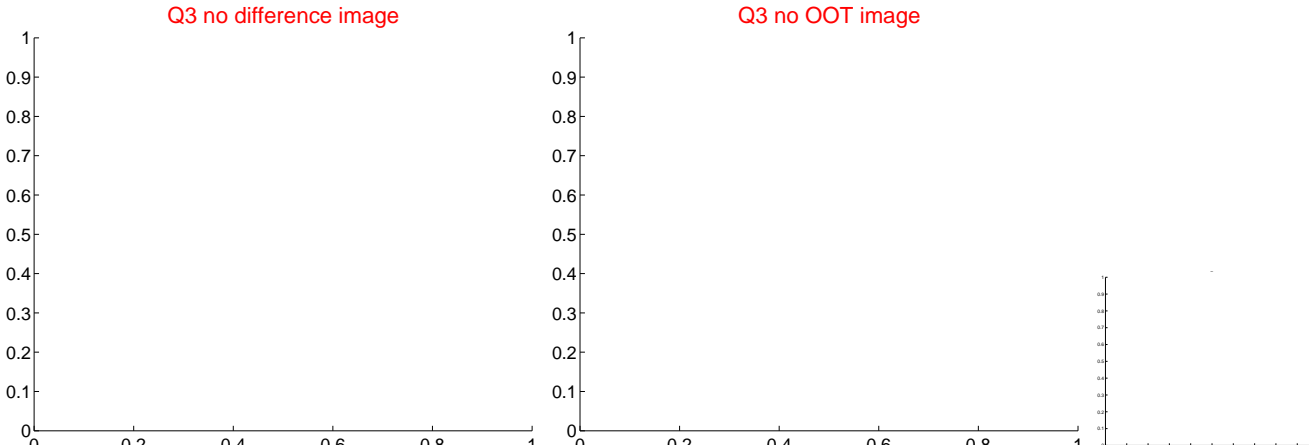
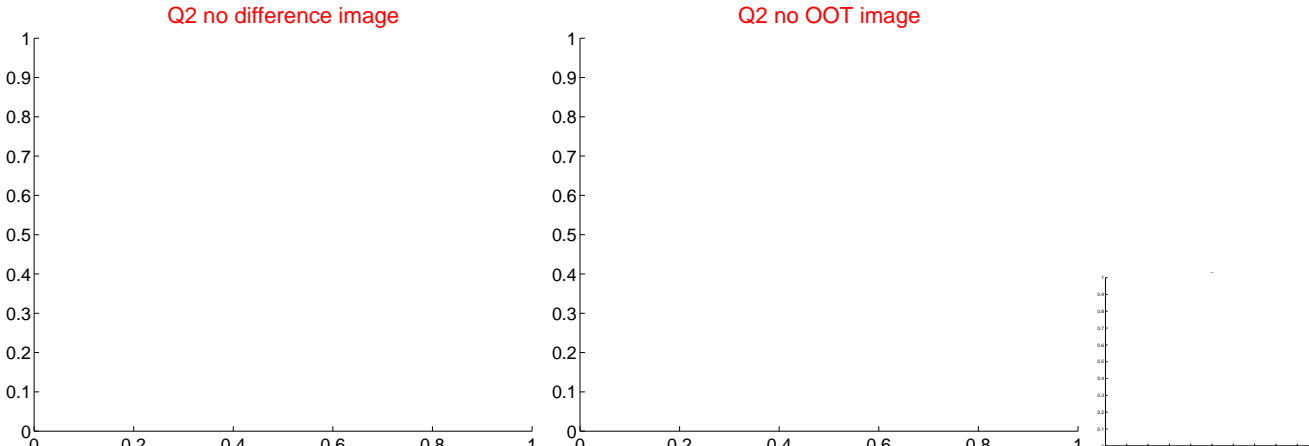
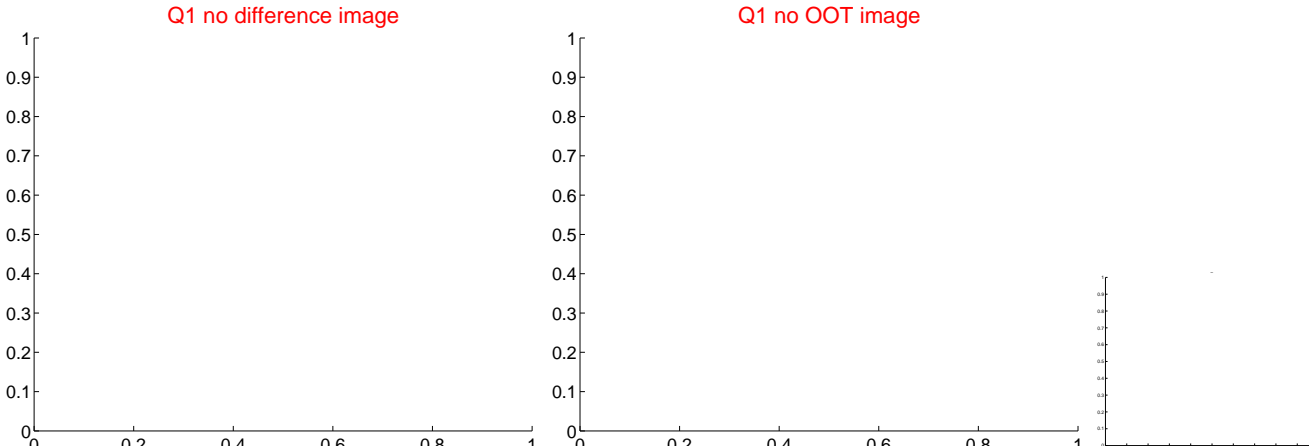
The OOT PRF centroid is offset from the target star catalog position by about 2.04 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.731 ± 0.637	4.29	-1.661 ± 0.198	-2.169 ± 0.746
PRF-fit source offset from KIC position	0.304 ± 0.181	1.68	0.118 ± 0.134	-0.280 ± 0.174
photometric centroid source offset	1.73 ± 0.41	4.27	-0.19 ± 0.27	1.72 ± 0.41

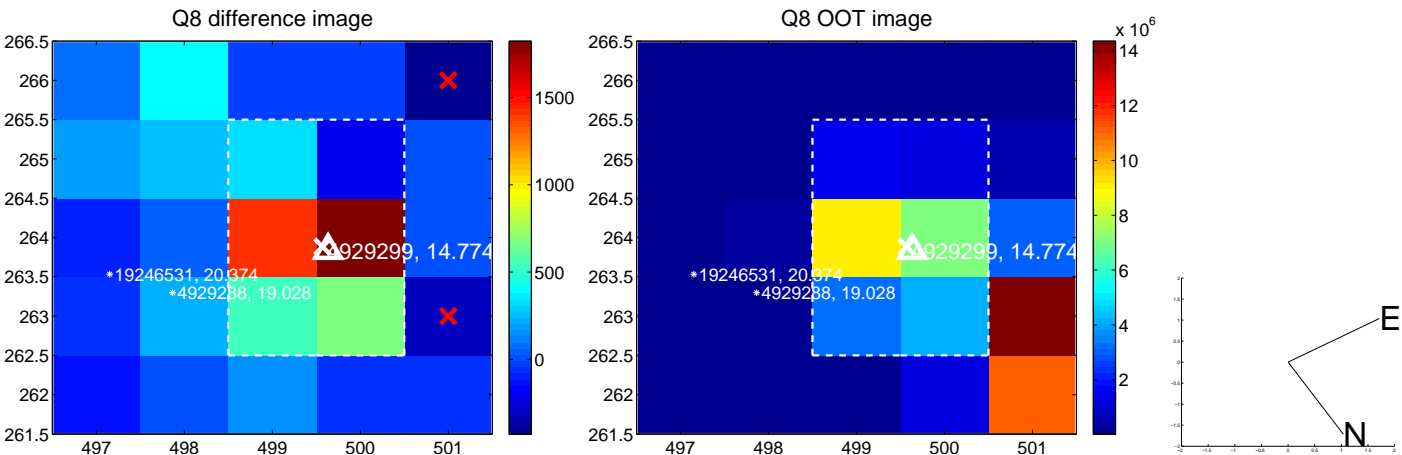
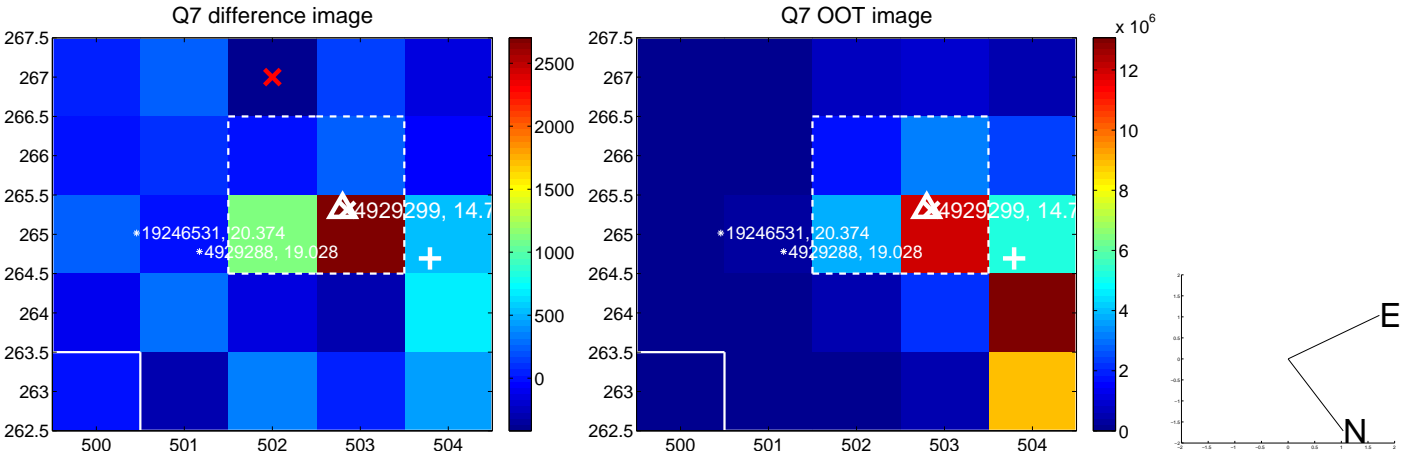
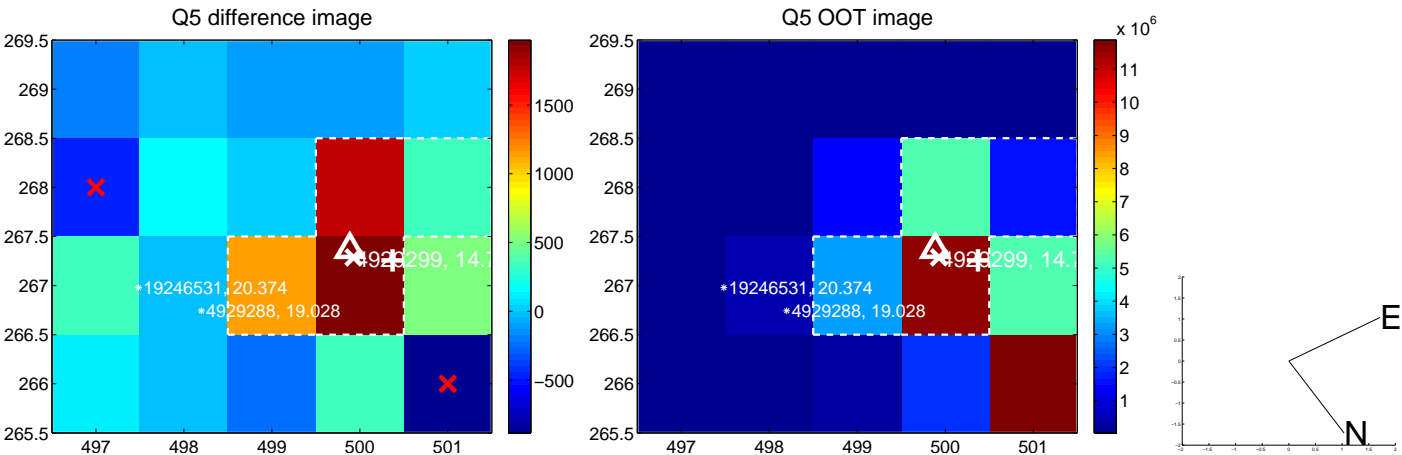


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

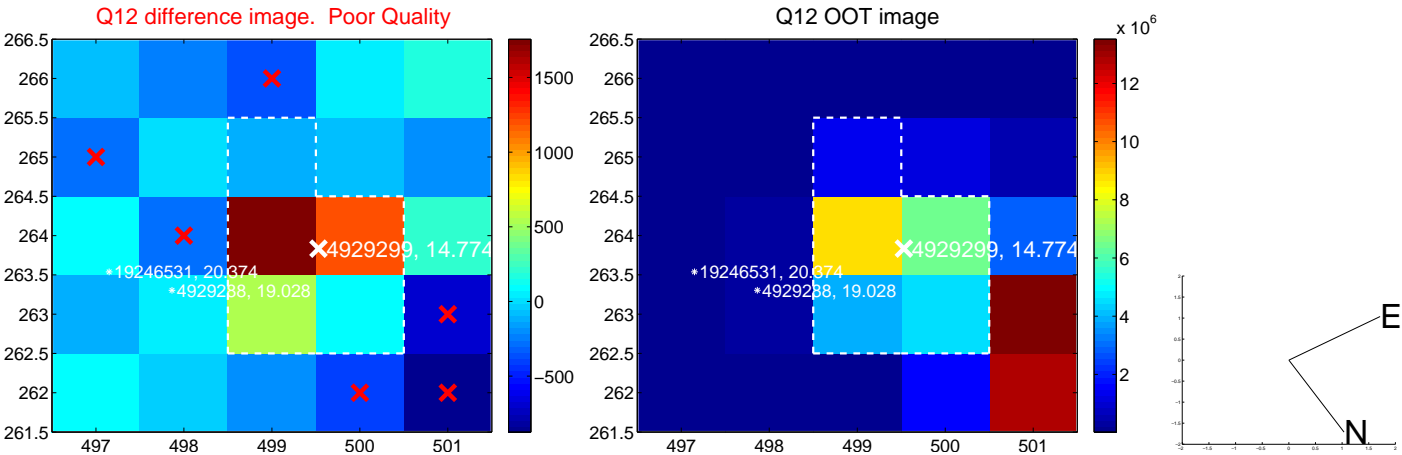
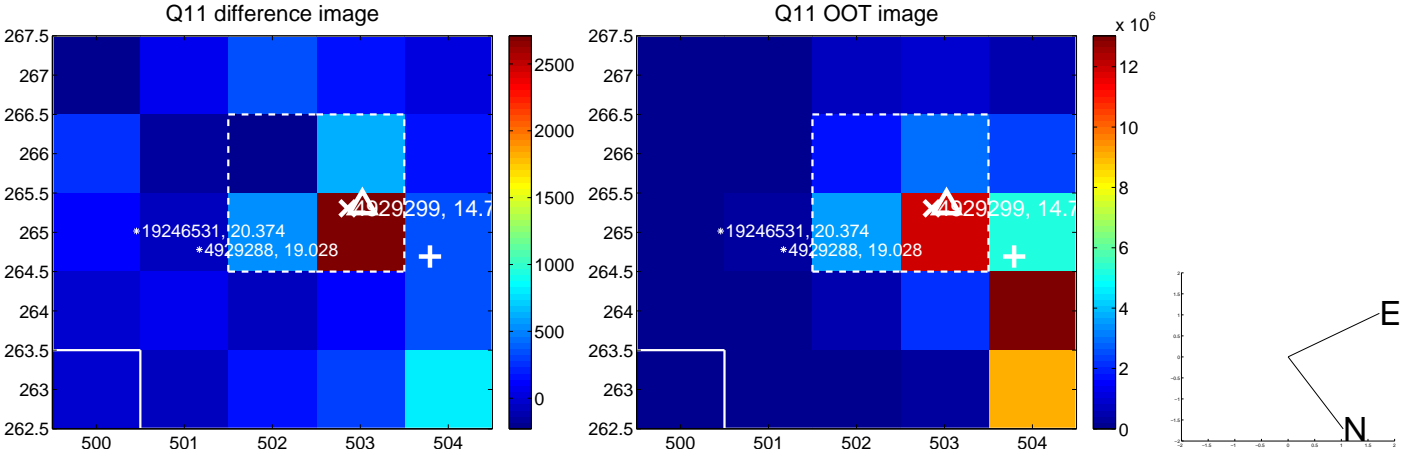
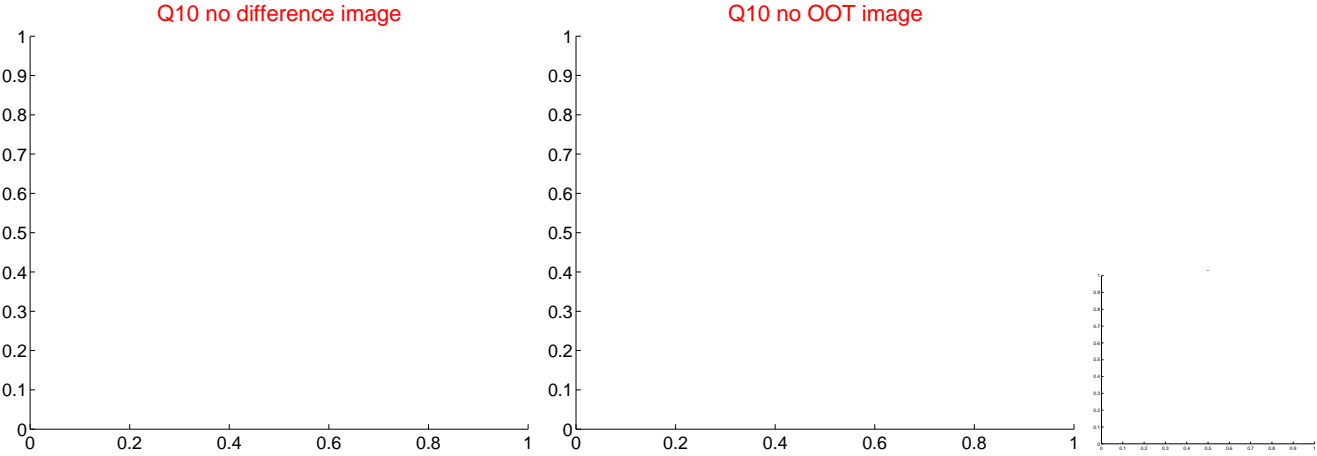
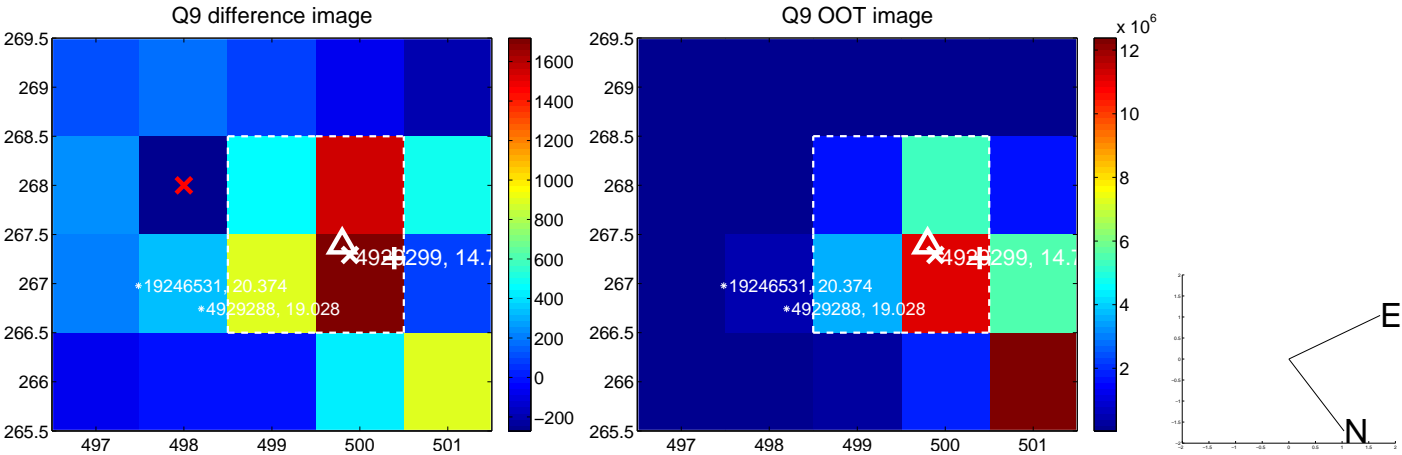
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



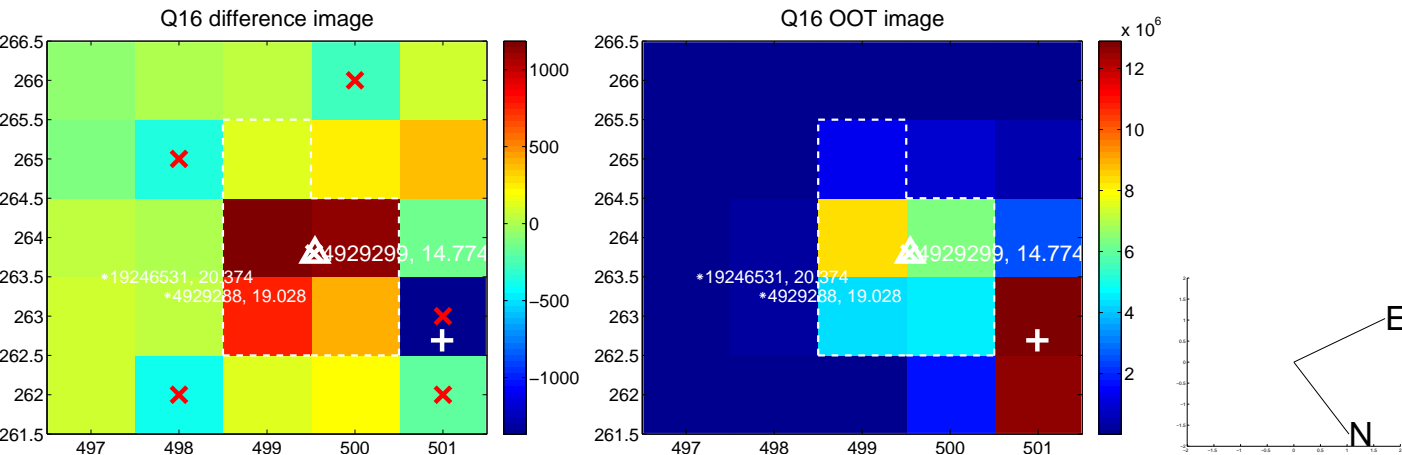
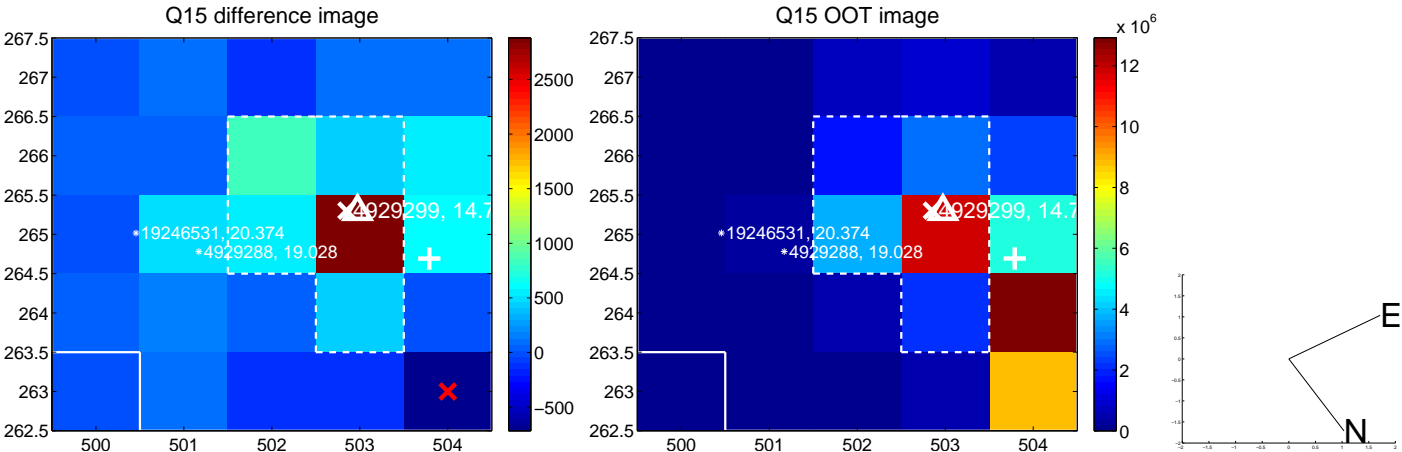
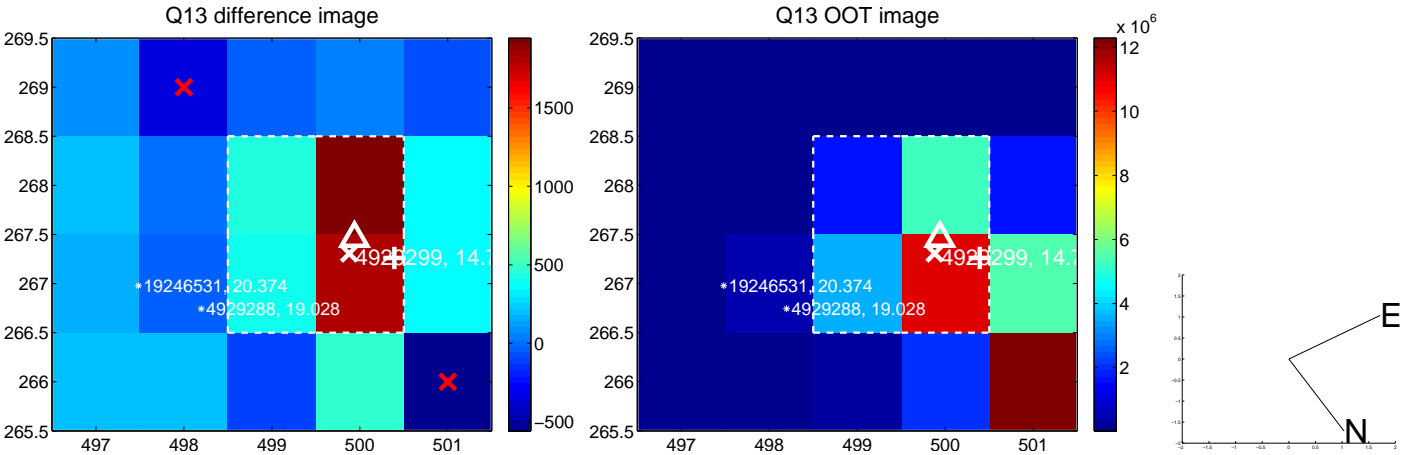
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

