

KIC 008612275

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})
008612275-01	OBS	2111.01	3.289821	131.736590	215.3	2.340	19.9	19.6	0.91	5463	1.60	367.92
008612275-02	OBS	2111.02	7.186393	136.629496	412.3	1.462	18.7	21.3	0.91	5463	2.23	129.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008612275-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008612275-02	OBS	PC	1.00	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.

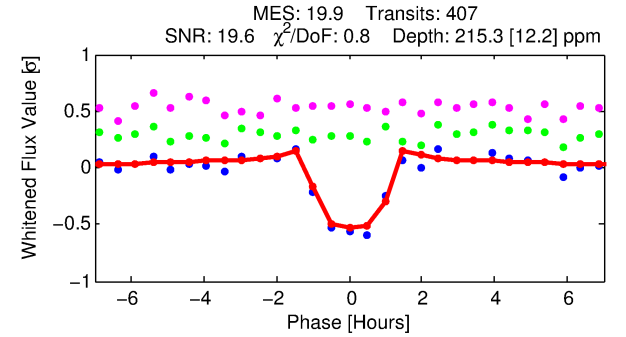
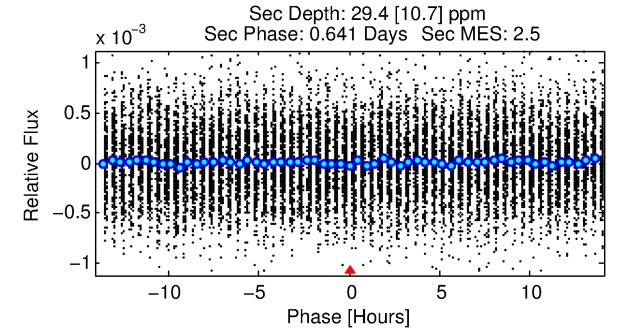
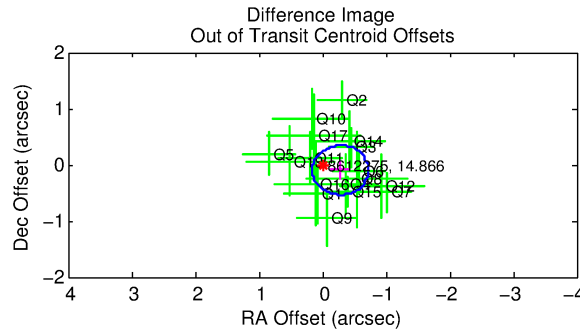
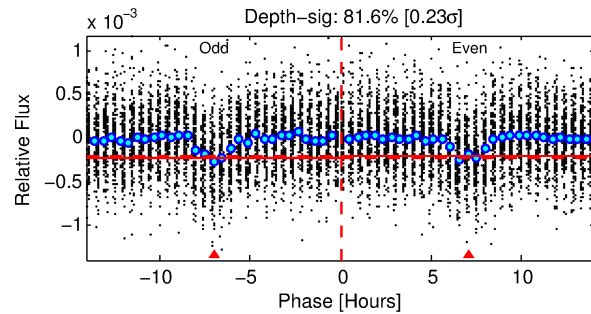
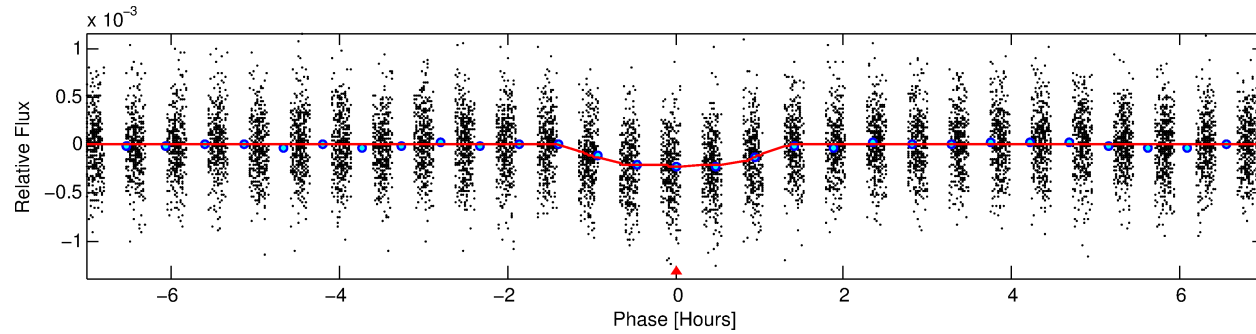
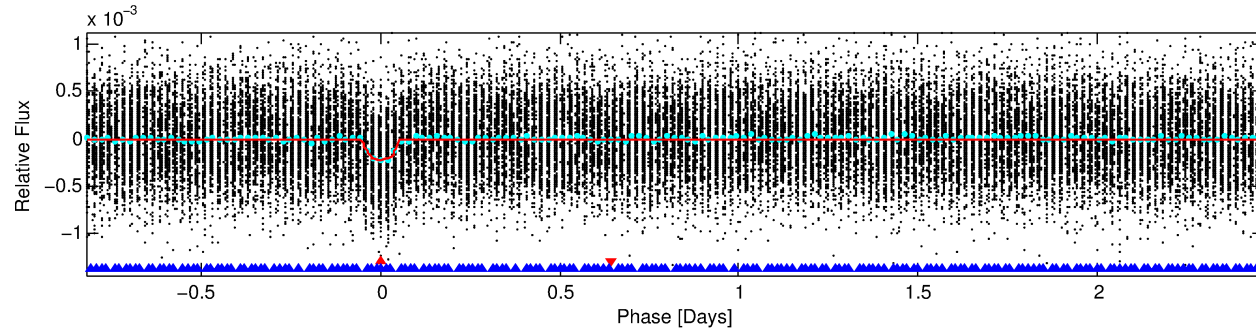
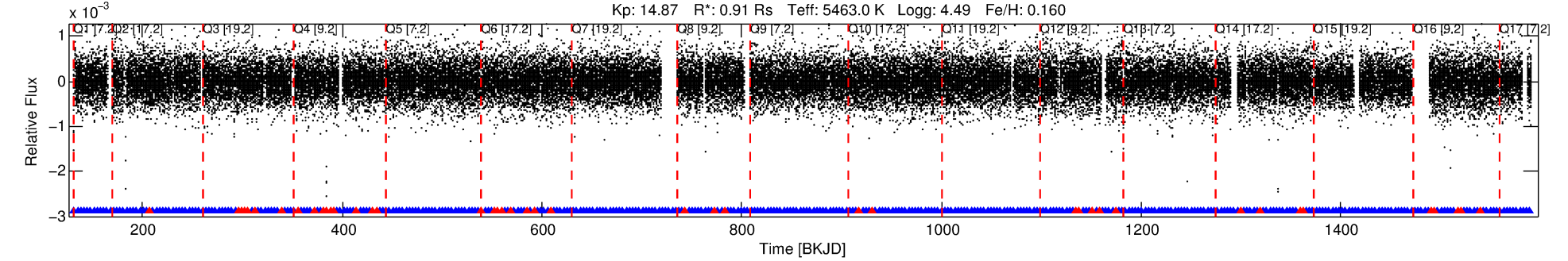
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008612275-01

No Significant Match Found

DV One-Page Summary

KIC: 8612275 Candidate: 1 of 2 Period: 3.290 d
KOI: K02111.01 Name: Kepler-360b Corr: 0.886



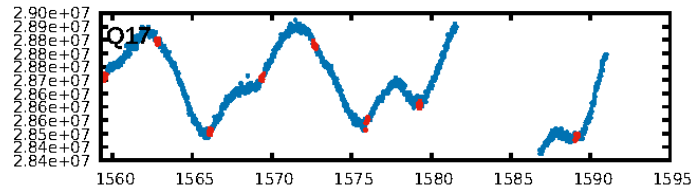
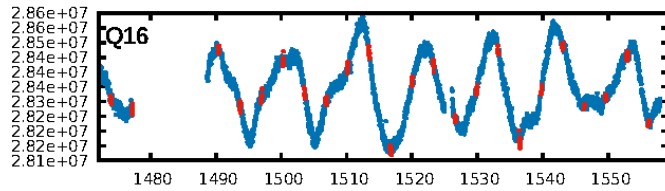
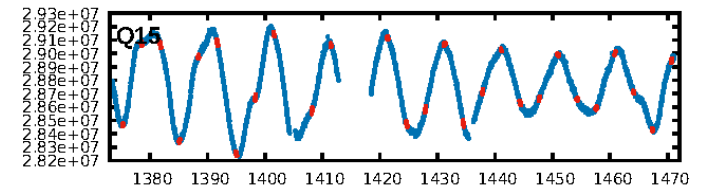
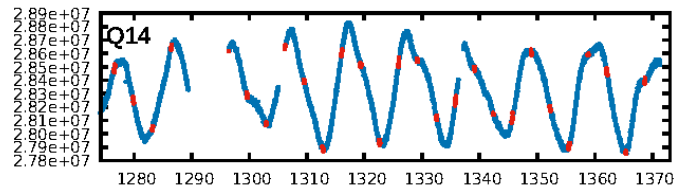
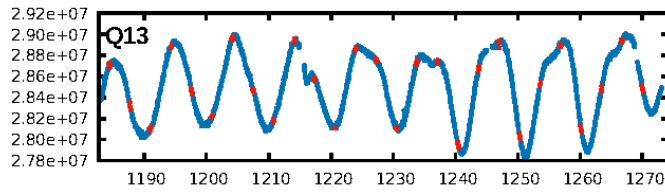
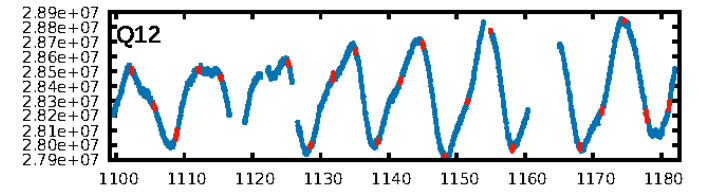
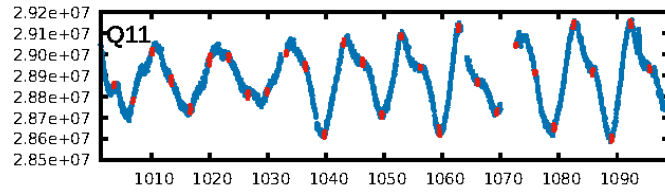
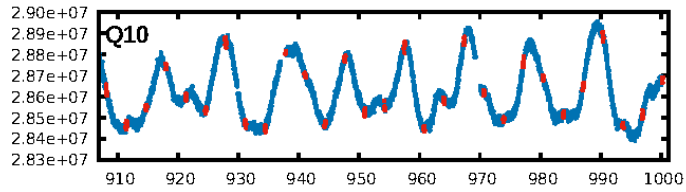
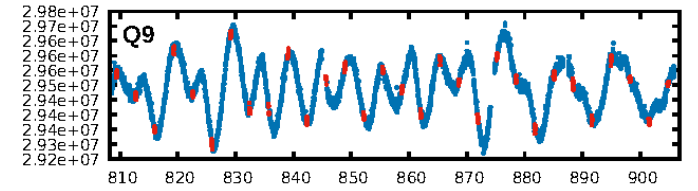
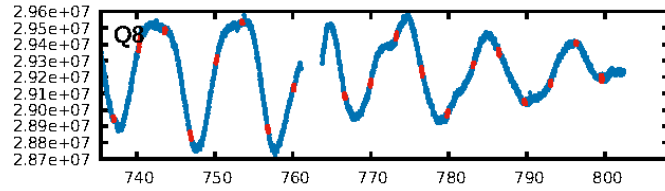
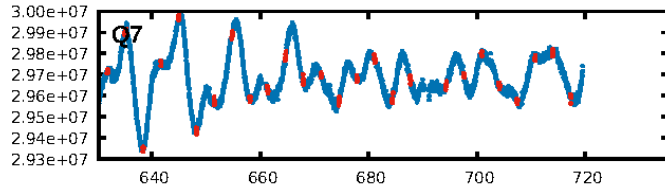
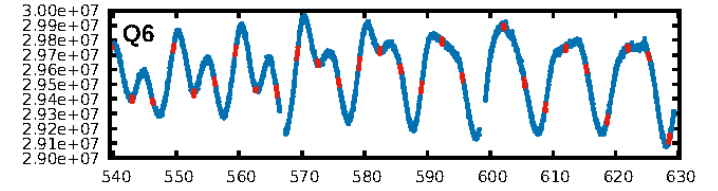
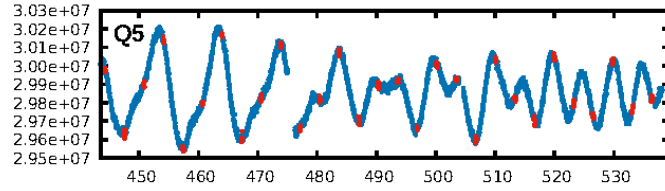
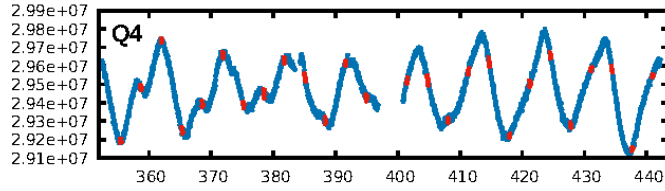
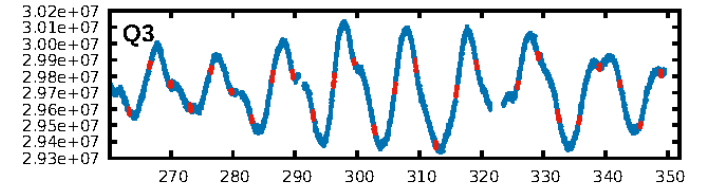
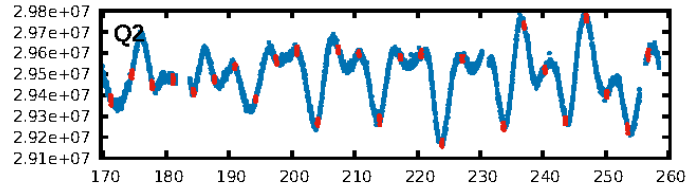
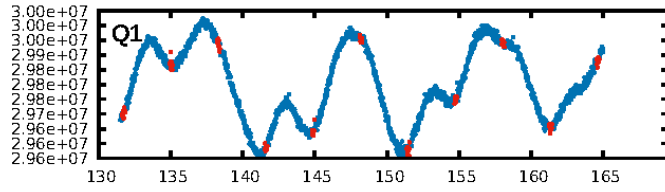
DV Fit Results:

Period = 3.28982 [0.00001] d
Epoch = 131.7366 [0.0015] BKJD
Rp/R* = 0.0161 [0.0058]
a/R* = 5.29 [7.96]
b = 0.89 [0.36]
Seff = 367.92 [66.56]
Teq = 1117 [51] K
Rp = 1.60 [0.61] Re
a = 0.0424 [0.0047] AU
Ag = 11.39 [9.42] [1.10 σ]
Teffp = 3172 [643] K [3.18 σ]

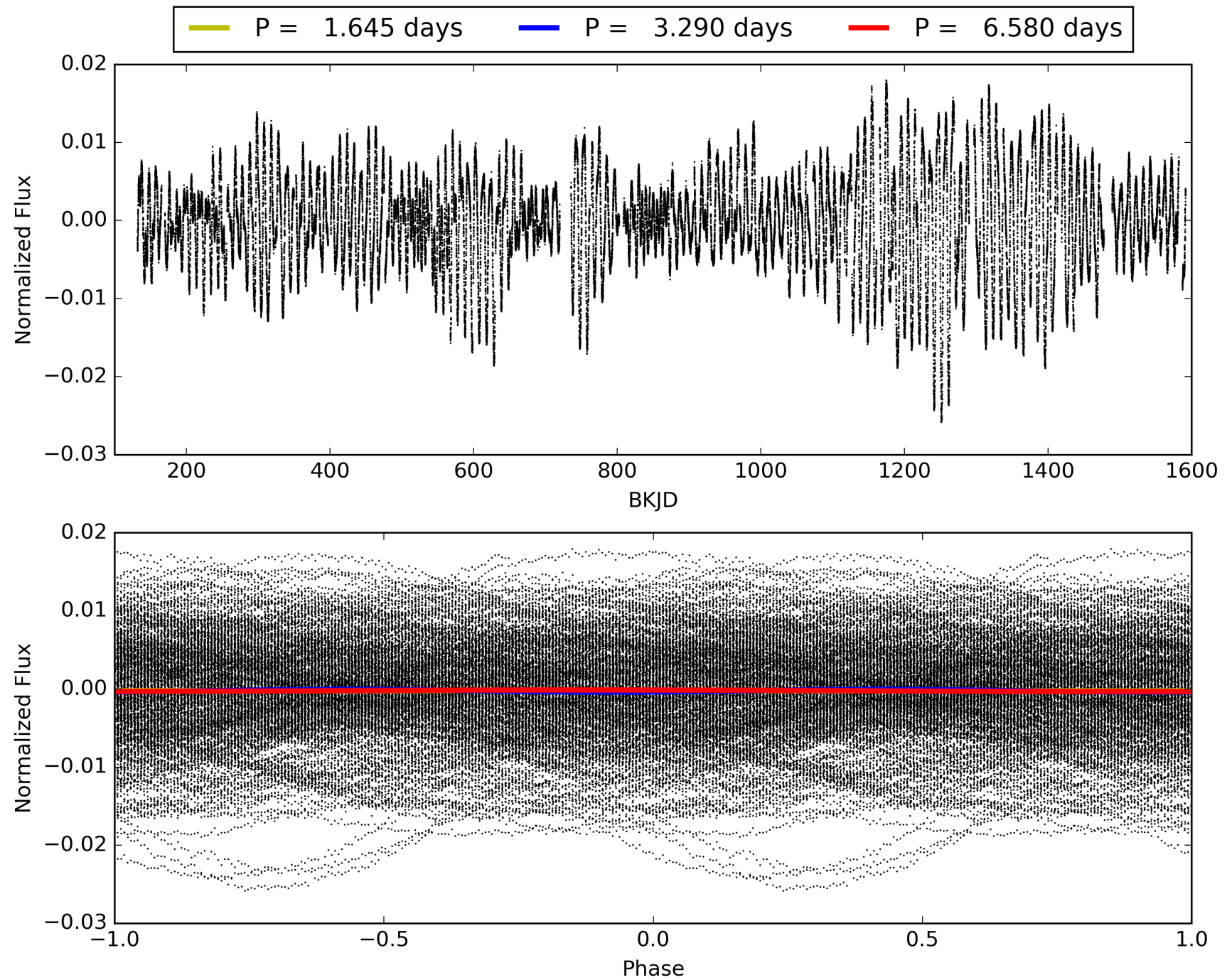
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [33.90 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.01e-82
RollingBand-fgt: 0.89 [345/388]
GhostDiagnostic-chr: 2.563
Centroid-sig: 0.1%
Centroid-so: 0.832 arcsec [1.51 σ]
OotOffset-rm: 0.298 arcsec [2.03 σ]
KicOffset-rm: 0.296 arcsec [2.01 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008612275-01, PDC Light Curves

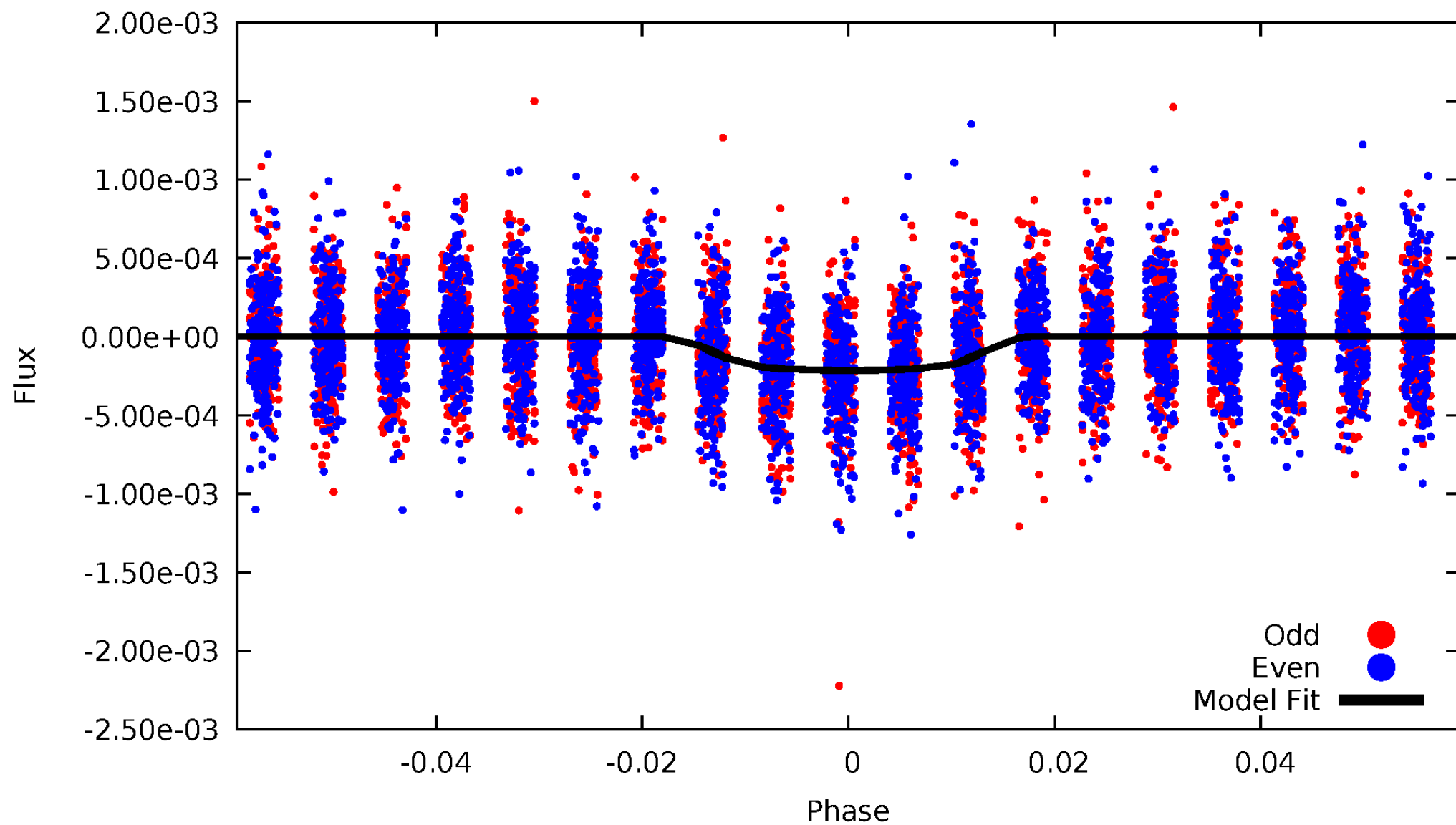


TCE 008612275-01



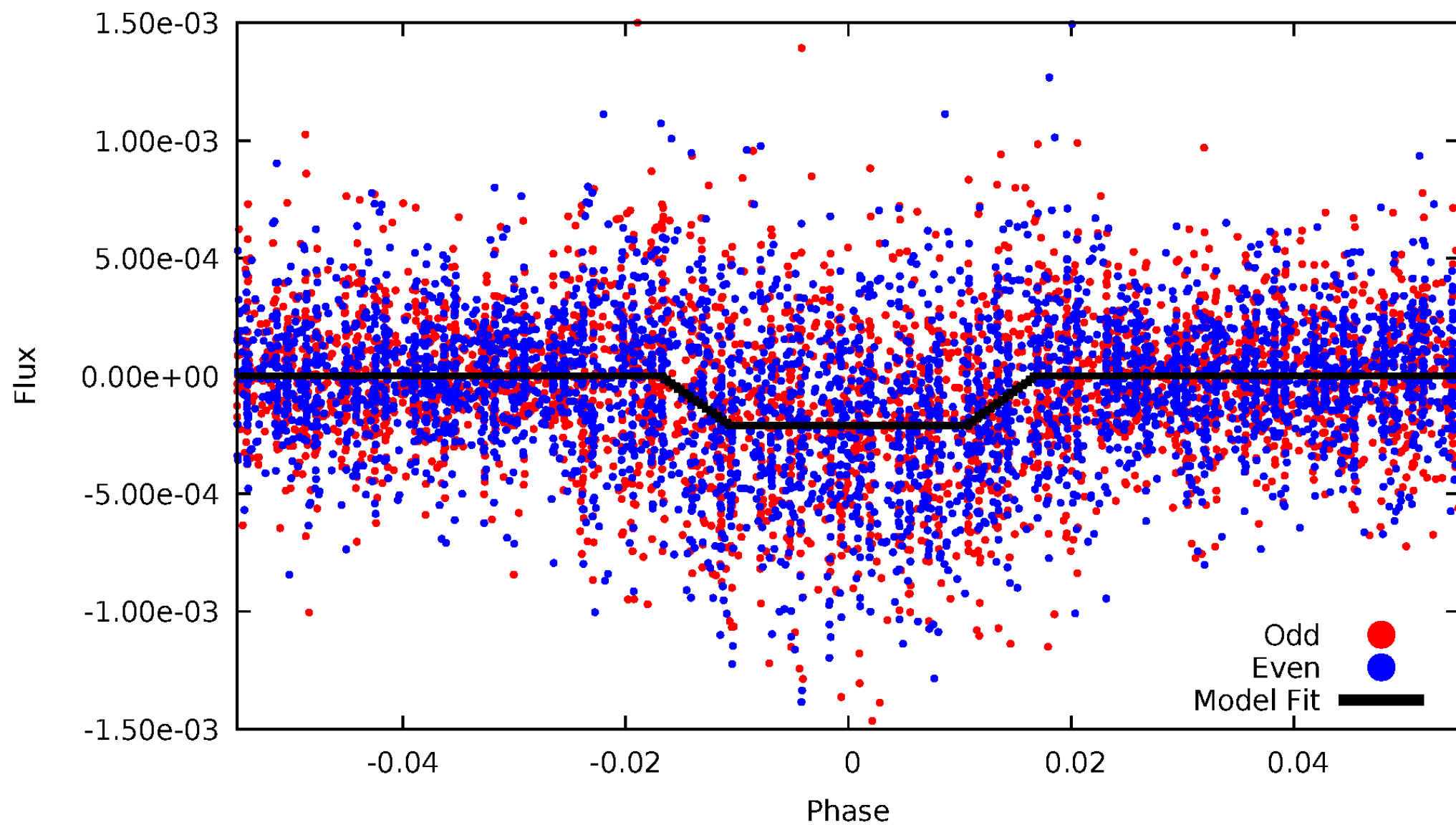
DV Odd/Even

TCE 008612275-01



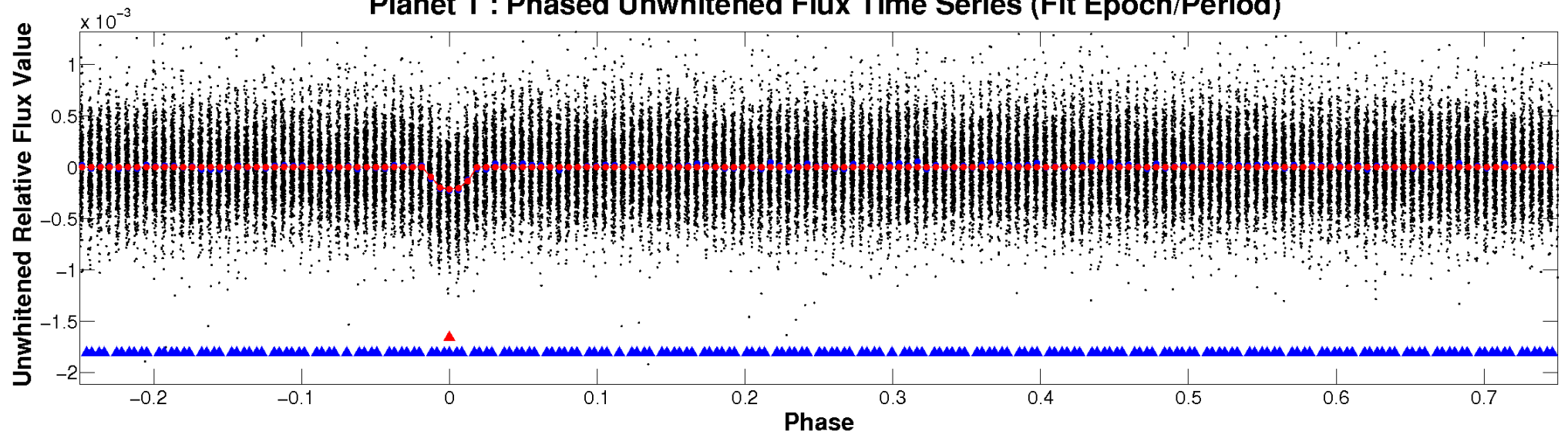
ALT Odd/Even

TCE 008612275-01

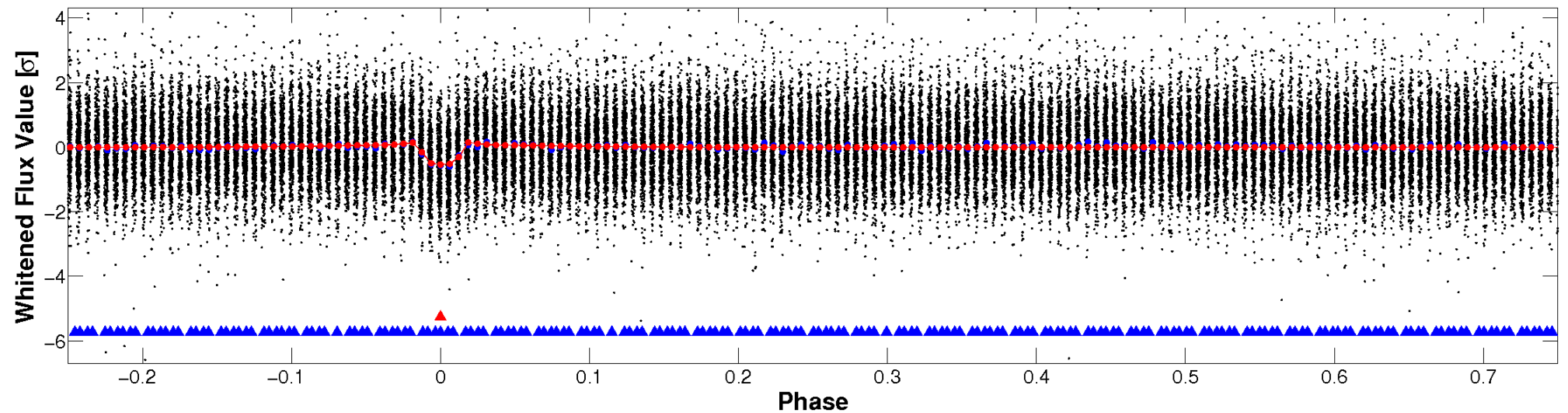


Non-Whitened Vs. Whitened Light Curve

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

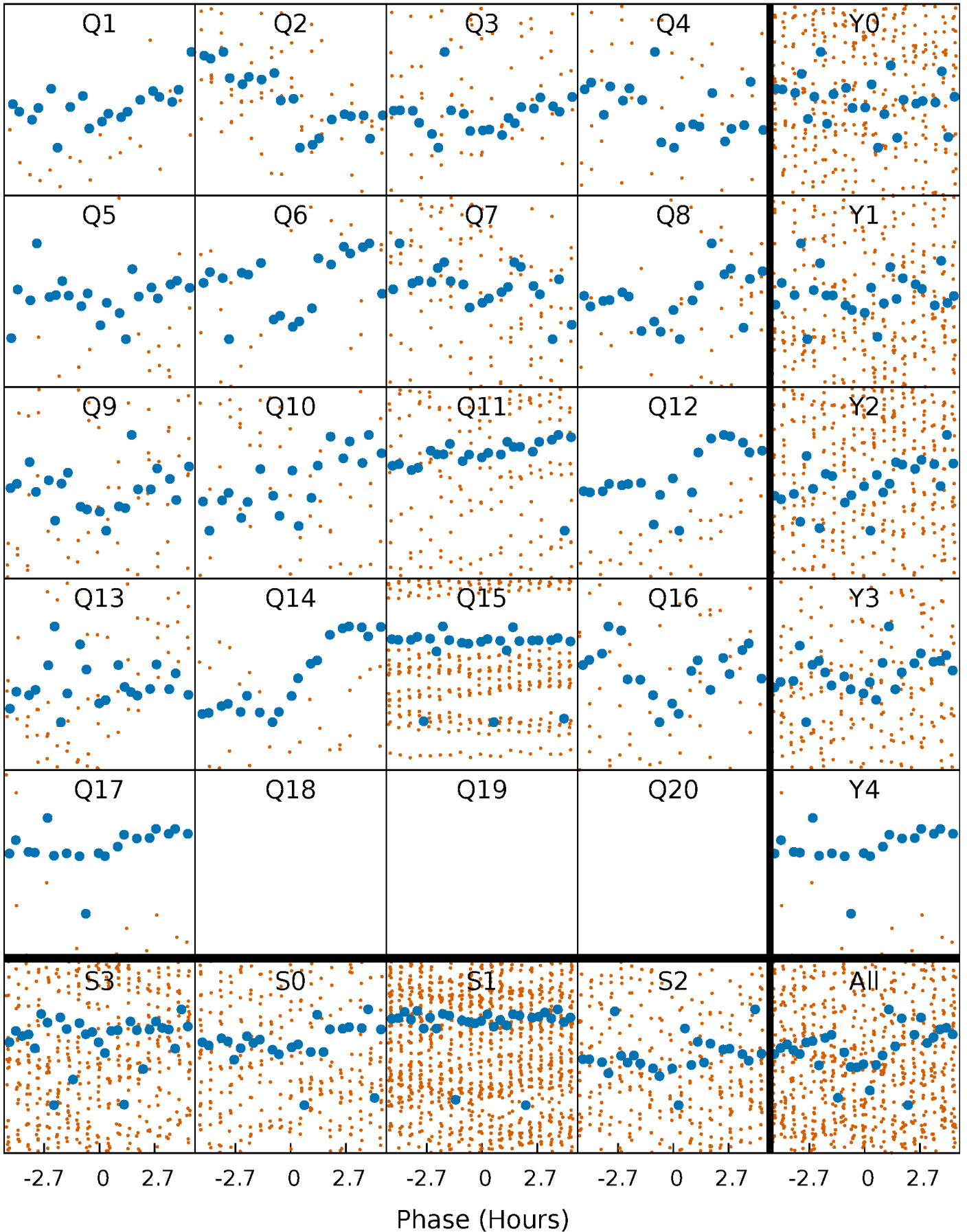


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



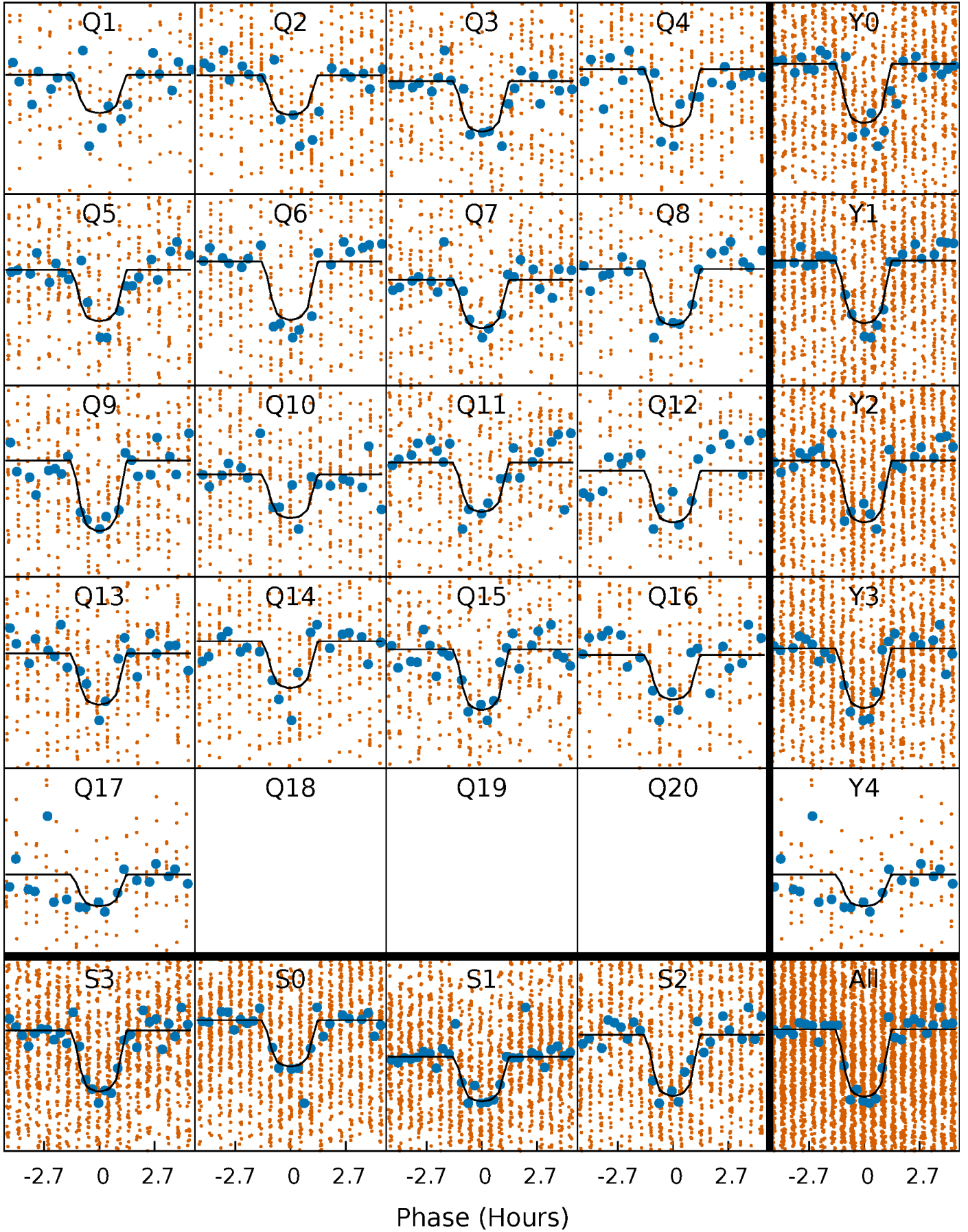
PDC Quarter-Phased Transit Curves

TCE 008612275-01 P= 3.289821 Days $T_0=131.736590$ (BKJD)



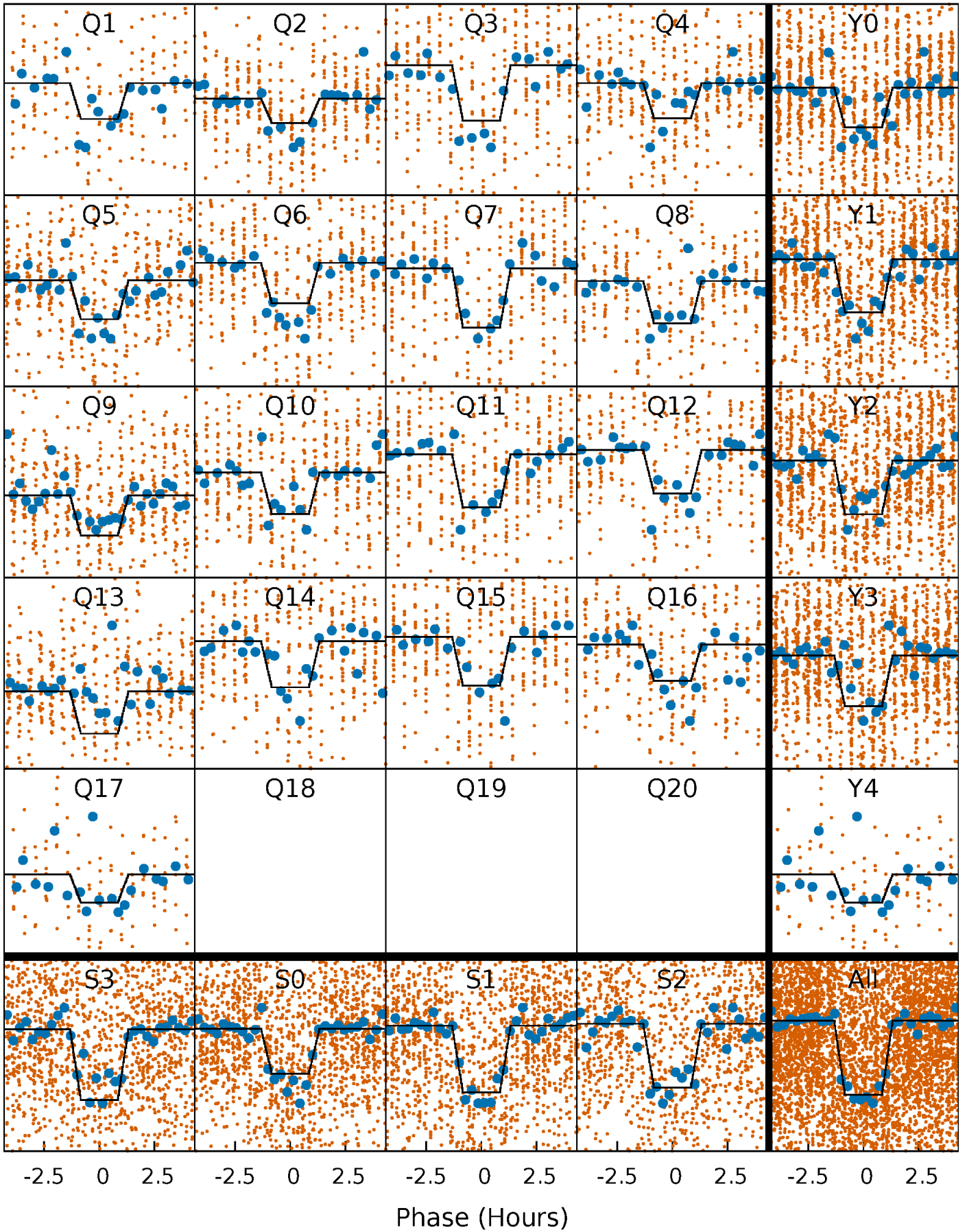
DV Quarter-Phased Transit Curves

TCE 008612275-01 P= 3.289821 Days $T_0=131.736590$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

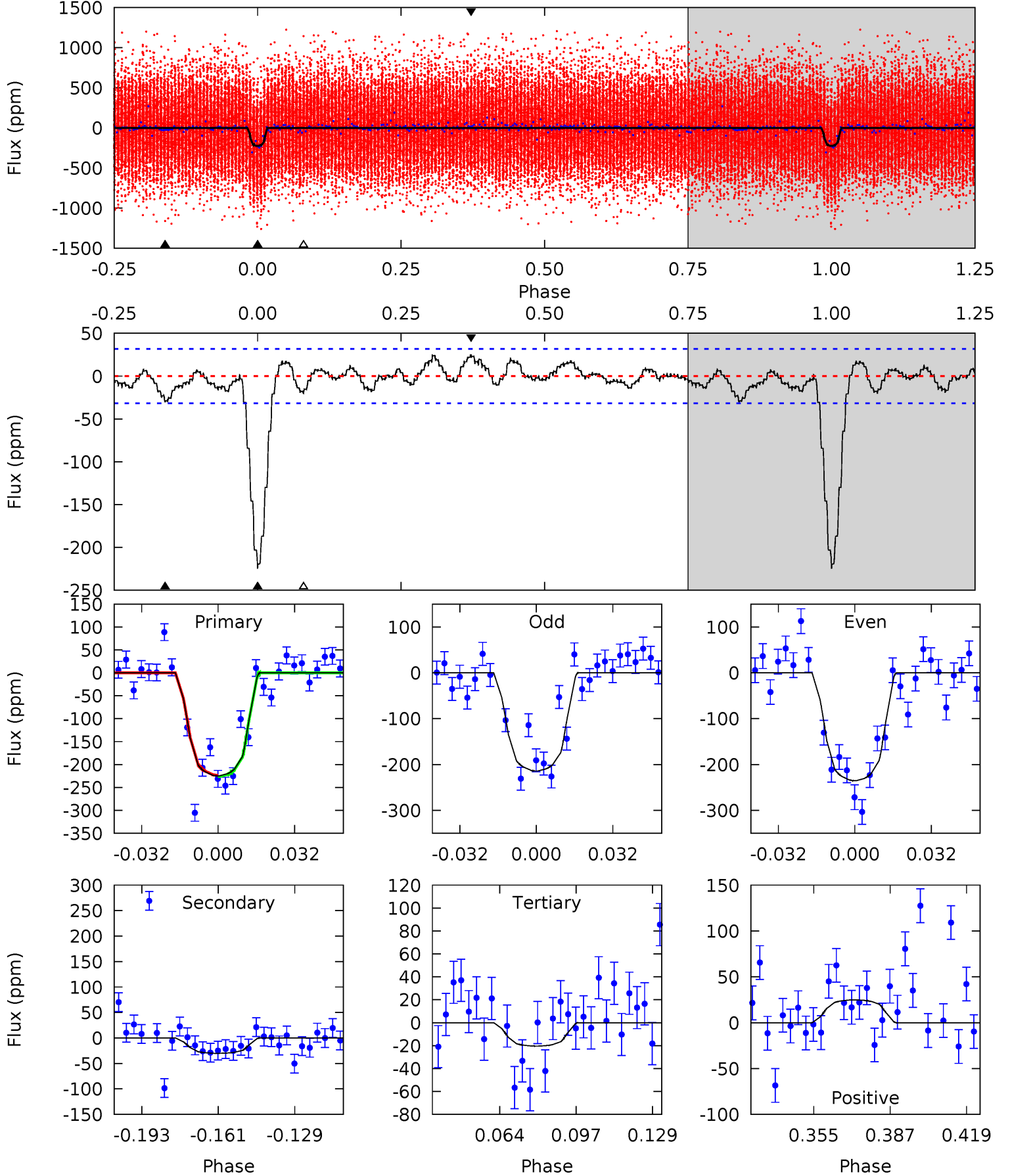
TCE 008612275-01 P= 3.289705 Days $T_0=131.758972$ (BKJD)



DV Model-Shift Uniqueness Test

008612275-01, P = 3.289821 Days, E = 128.446769 Days

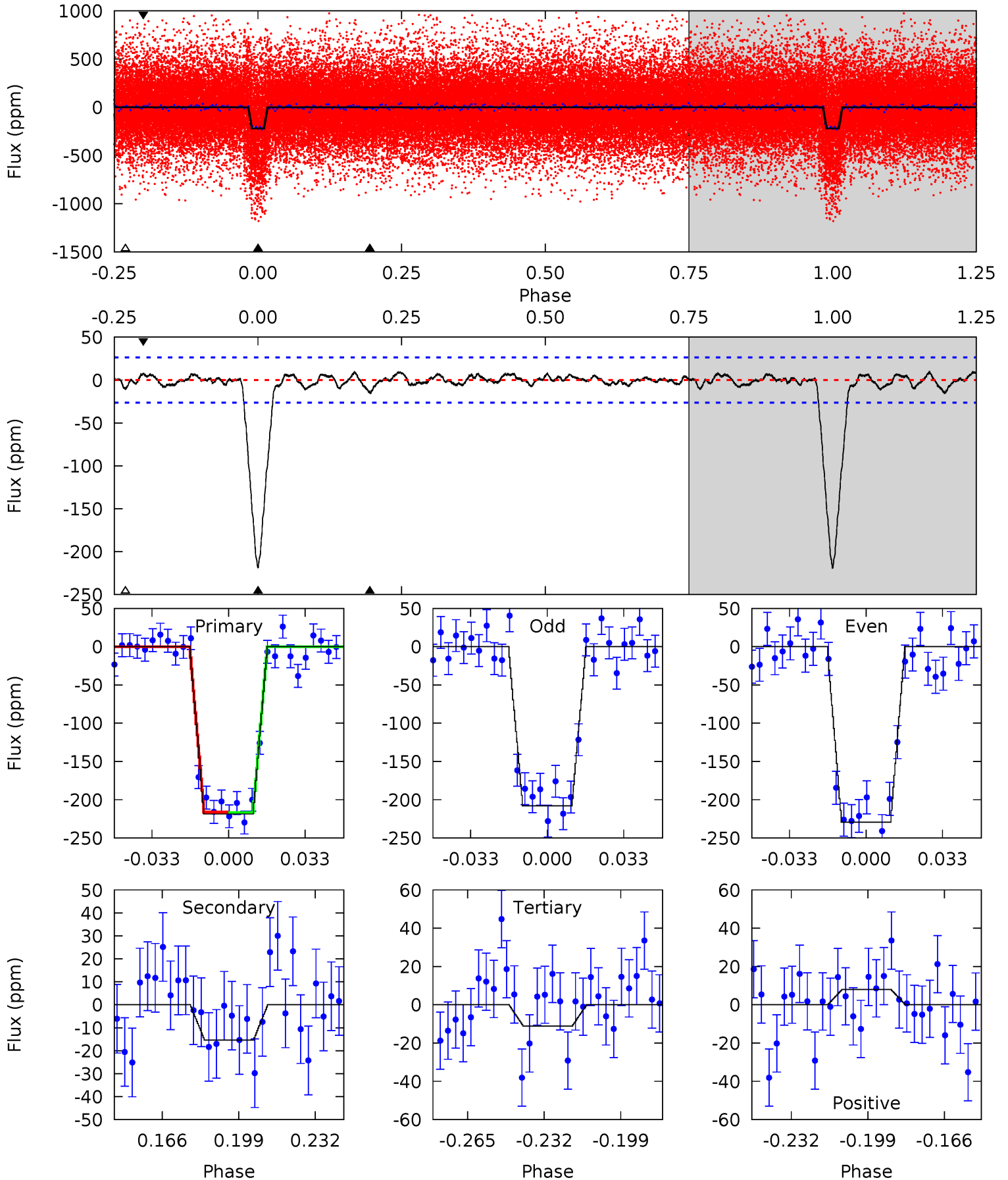
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.0	4.56	3.10	3.76	4.80	2.14	1.41	31.0	30.3	1.47	0.80	1.61	1.03	0.10	0.21



Alt Model-Shift Uniqueness Test

008612275-01, P = 3.289705 Days, E = 128.469267 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
39.8	2.79	2.03	1.45	4.79	2.13	0.75	37.8	38.4	0.77	1.34	1.94	1.06	0.04	0.05



Stellar Parameters For KIC 008612275

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5463^{+82}_{-73}	$4.492^{+0.045}_{-0.098}$	$0.160^{+0.150}_{-0.150}$	$0.910^{+0.110}_{-0.055}$	$0.937^{+0.044}_{-0.053}$	$1.751^{+0.288}_{-0.492}$
	+2%/-1%	+1%/-2%	+94%/-94%	+12%/-6%	+5%/-6%	+16%/-28%
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 008612275-01 / KOI 2111.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-30 ± 7	$1.63^{+0.56}_{-0.56}$	1567^{+50}_{-36}	3613^{+546}_{-379}	11^{+14}_{-6}
Alt.	-15 ± 5	$1.43^{+0.66}_{-0.58}$	1570^{+53}_{-40}	3318^{+719}_{-400}	$6.896^{+15.164}_{-3.838}$

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

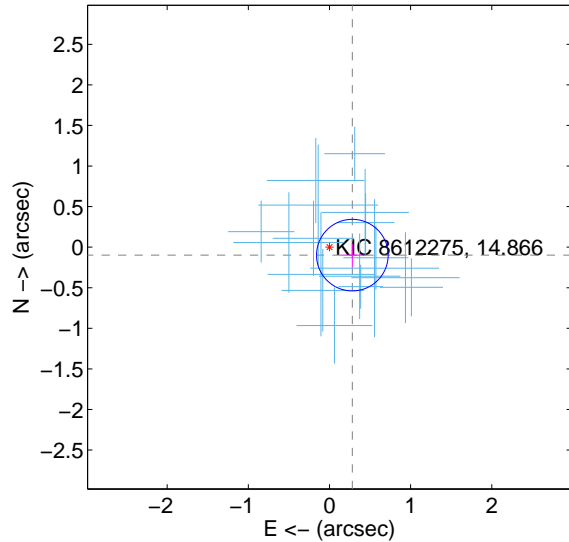
Supplemental centroid analysis for 008612275-01. Kepler magnitude: 14.87. Transit SNR 19.62

There are 17 quarters with good PRF difference image offsets

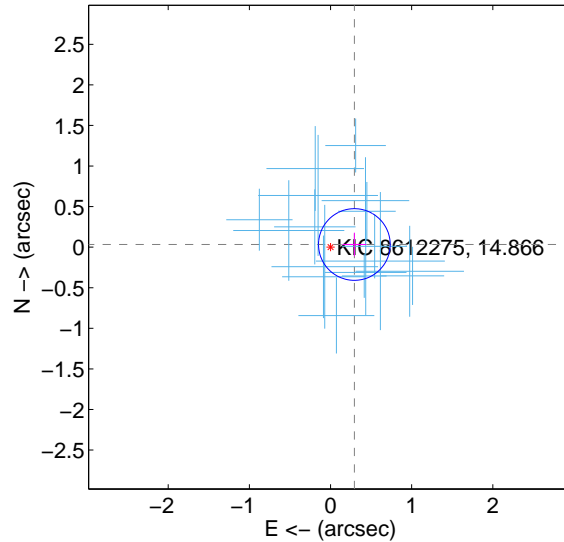
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.298 ± 0.147	2.03	-0.282 ± 0.147	-0.098 ± 0.146
PRF-fit source offset from KIC position	0.296 ± 0.147	2.01	-0.294 ± 0.147	0.033 ± 0.146
photometric centroid source offset	0.83 ± 0.55	1.51	0.06 ± 0.55	-0.83 ± 0.55

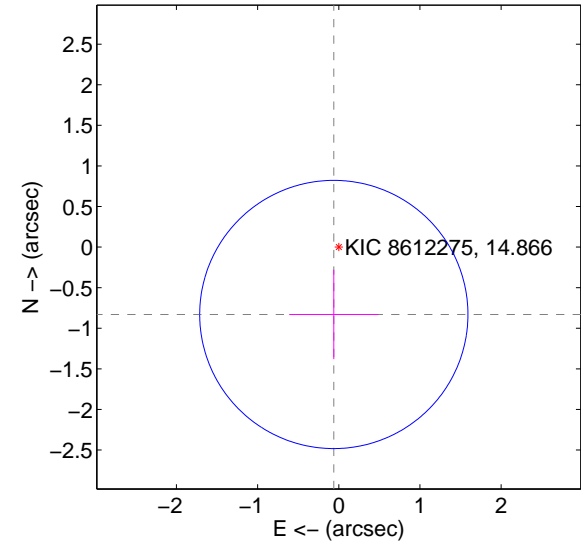
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

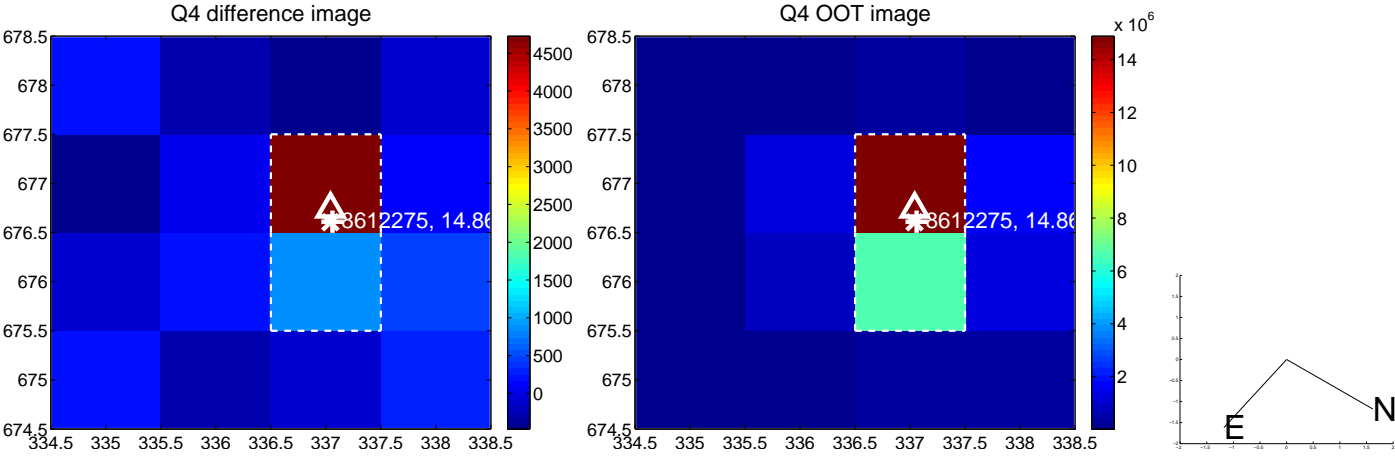
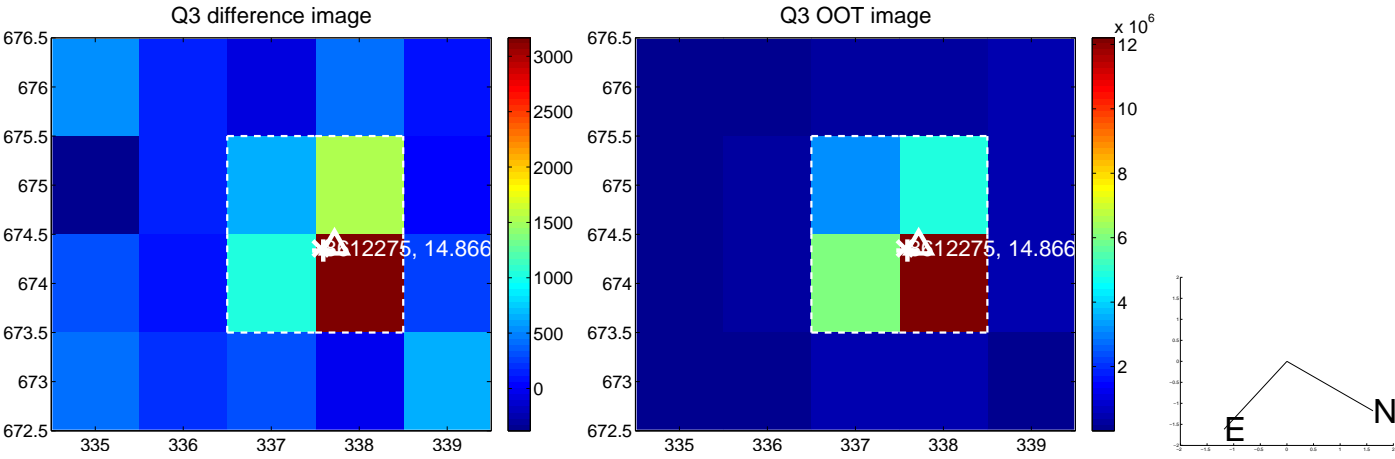
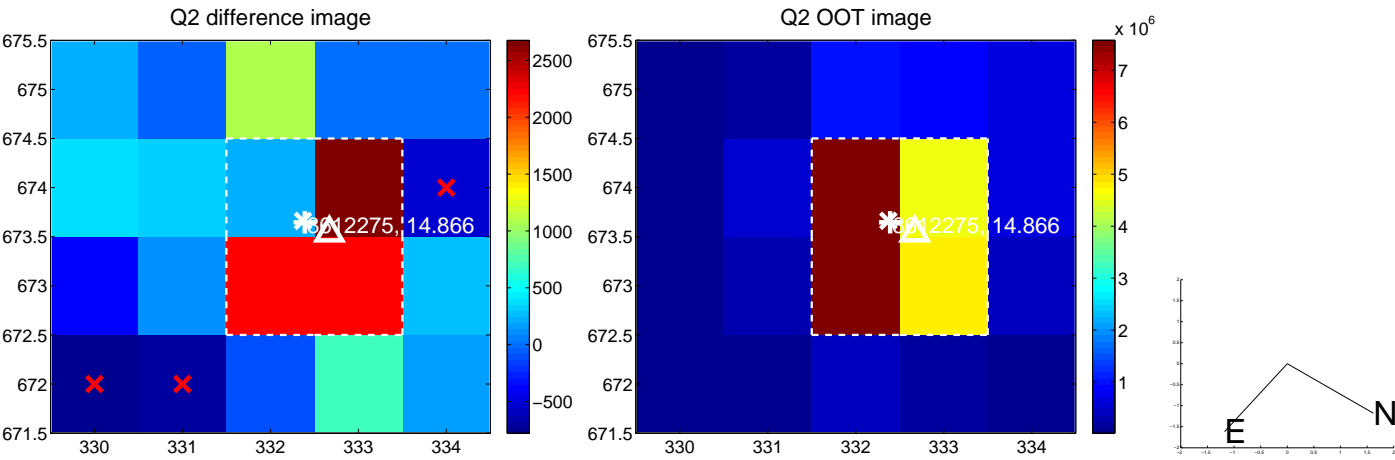
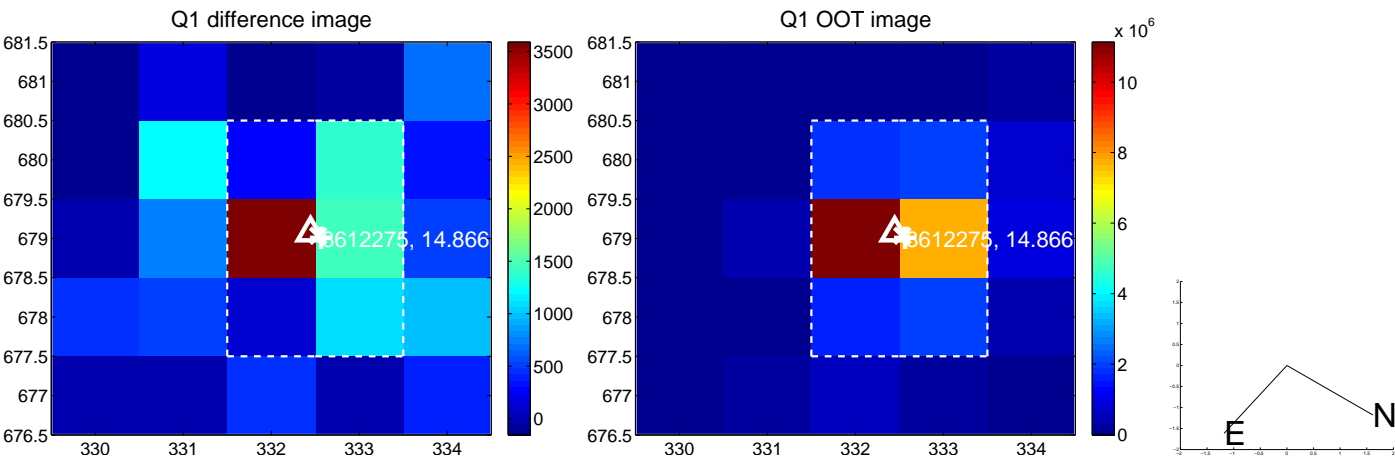


offset from photometric centroids

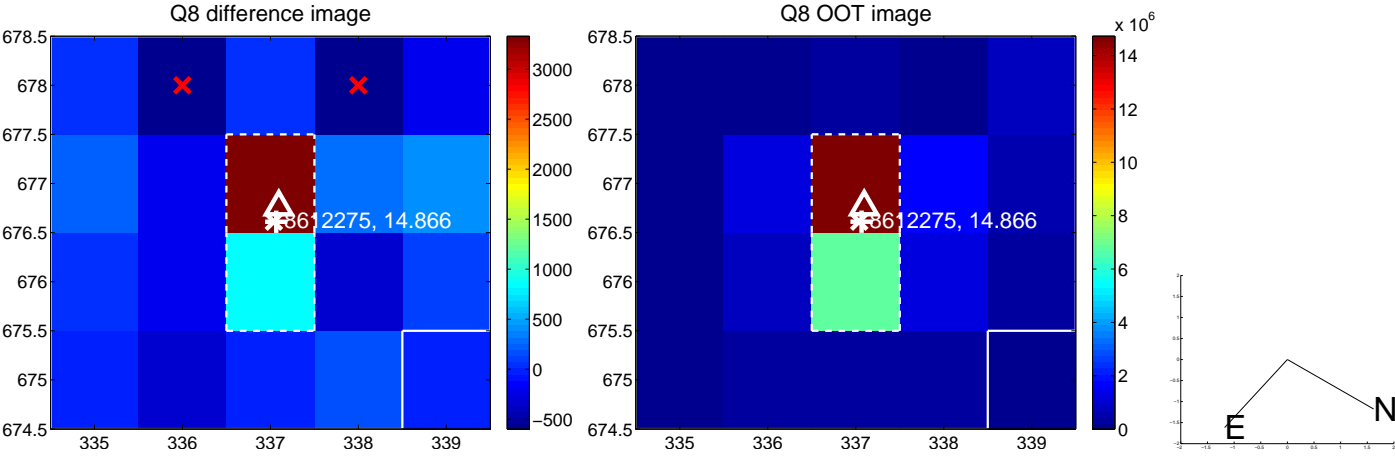
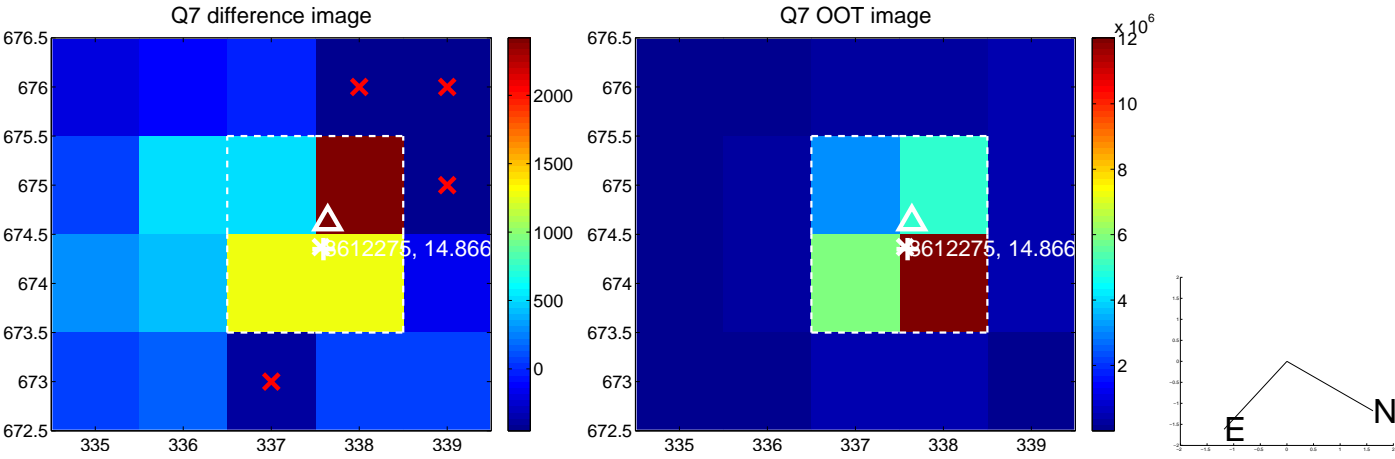
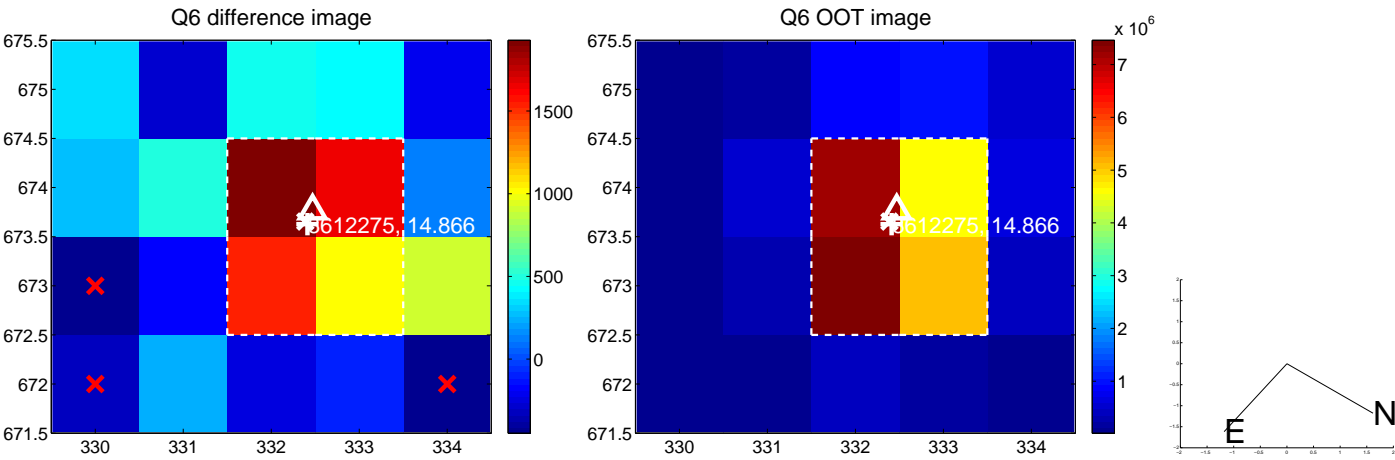
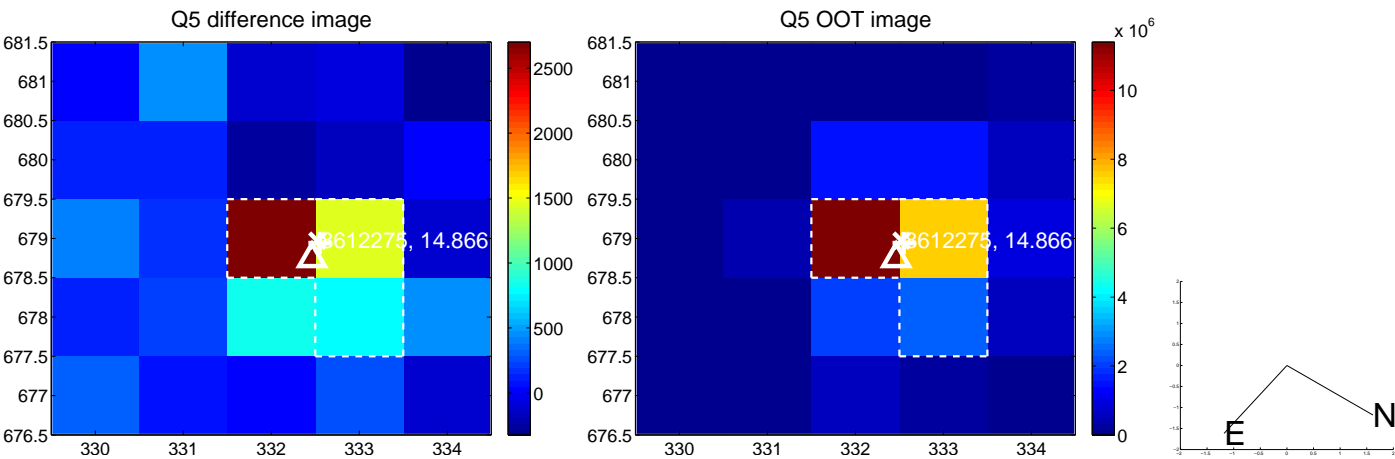


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

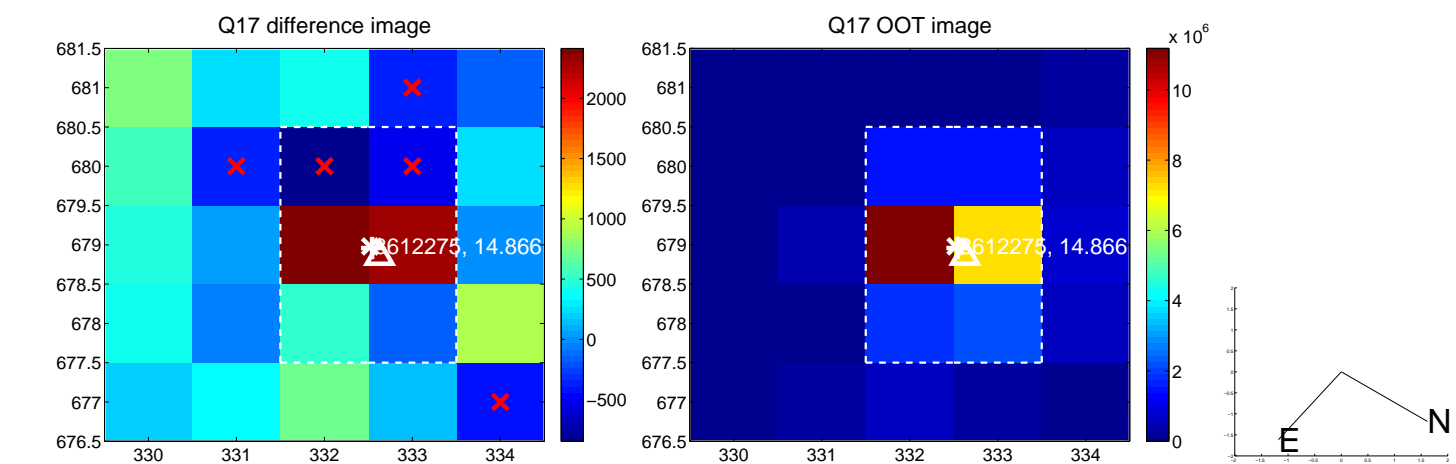
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



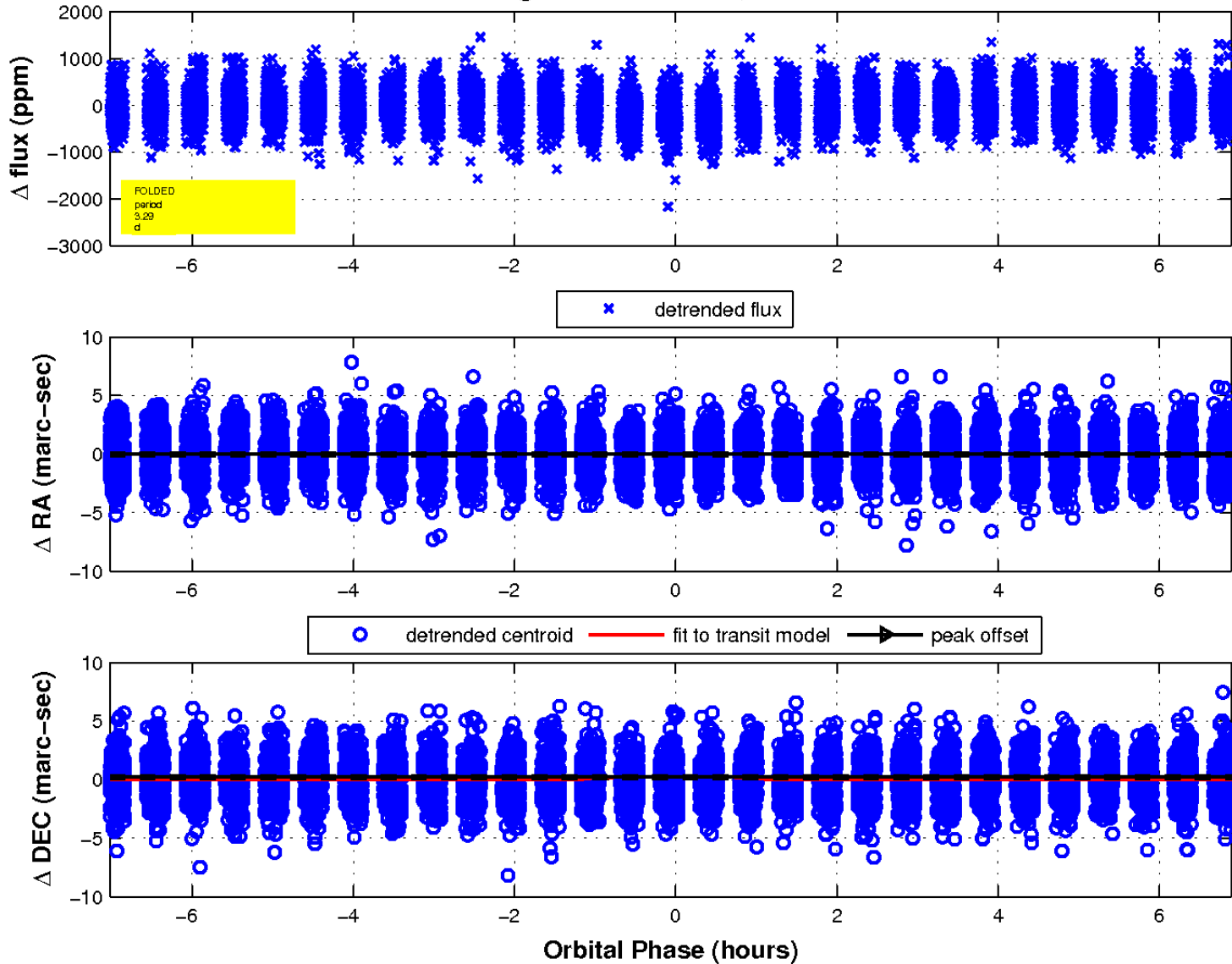
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

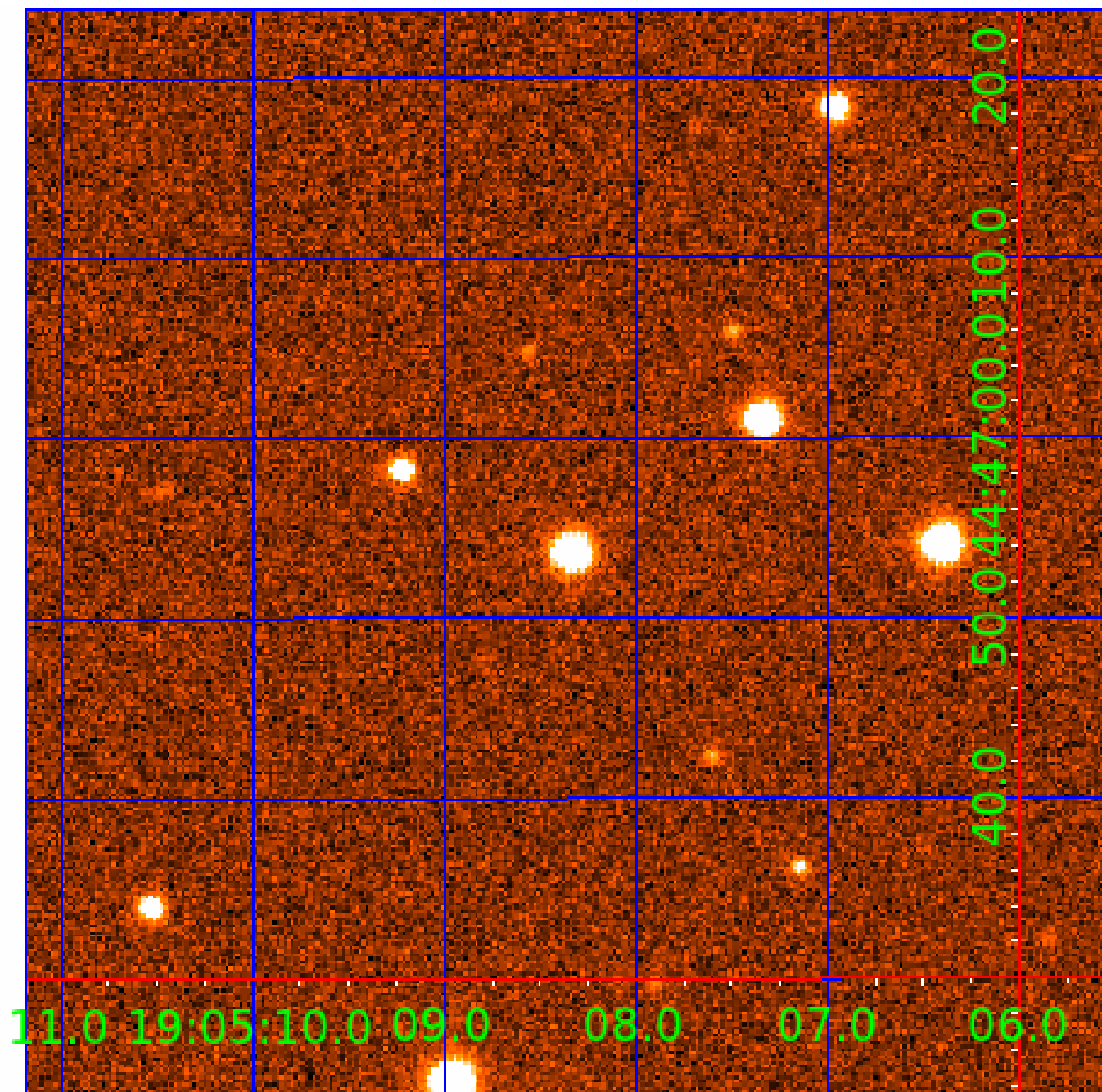


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 008612275

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})
008612275-01	OBS	2111.01	3.289821	131.736590	215.3	2.340	19.9	19.6	0.91	5463	1.60	367.92
008612275-02	OBS	2111.02	7.186393	136.629496	412.3	1.462	18.7	21.3	0.91	5463	2.23	129.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008612275-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008612275-02	OBS	PC	1.00	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.

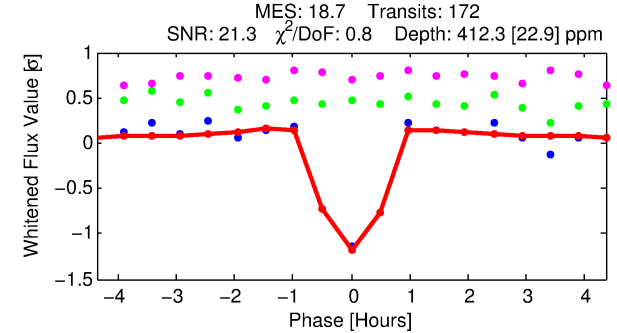
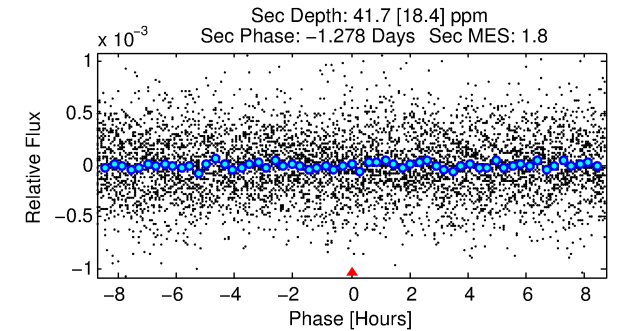
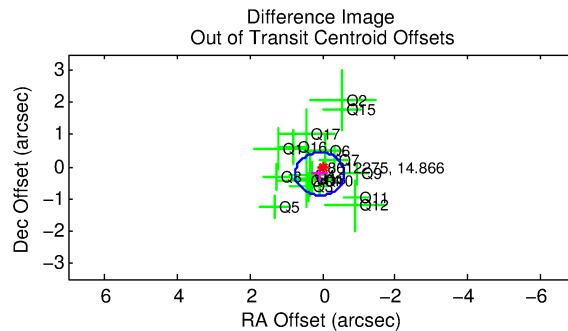
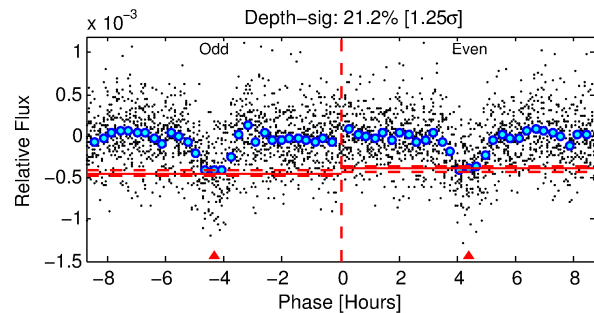
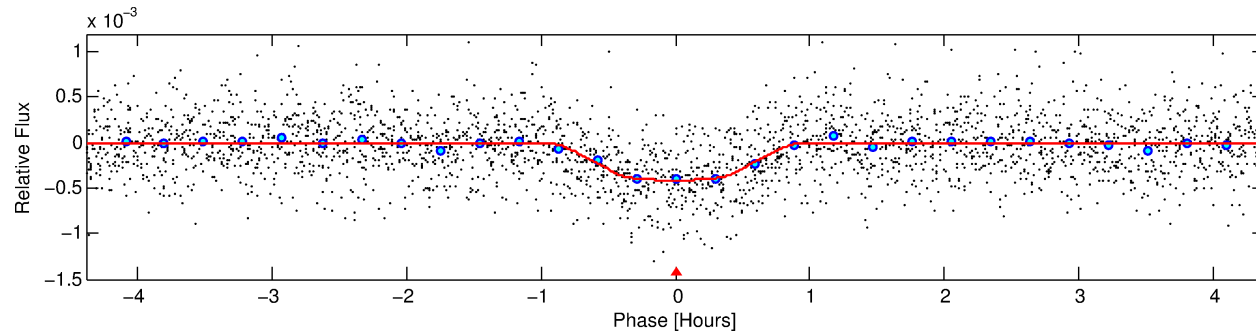
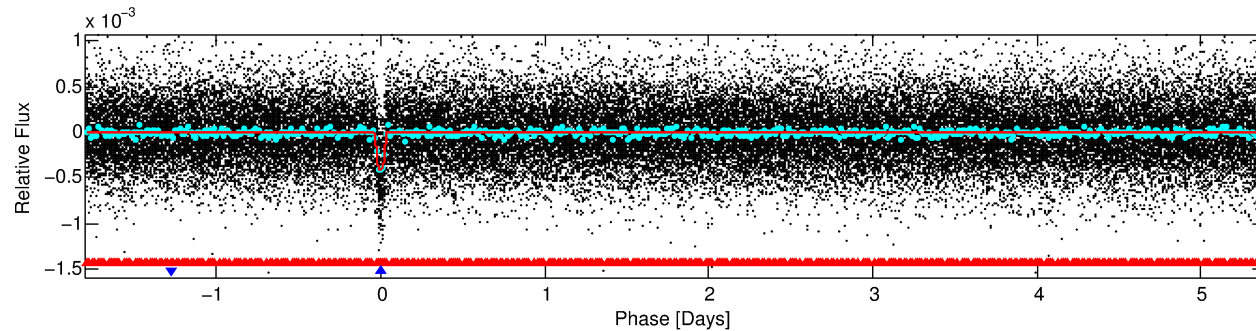
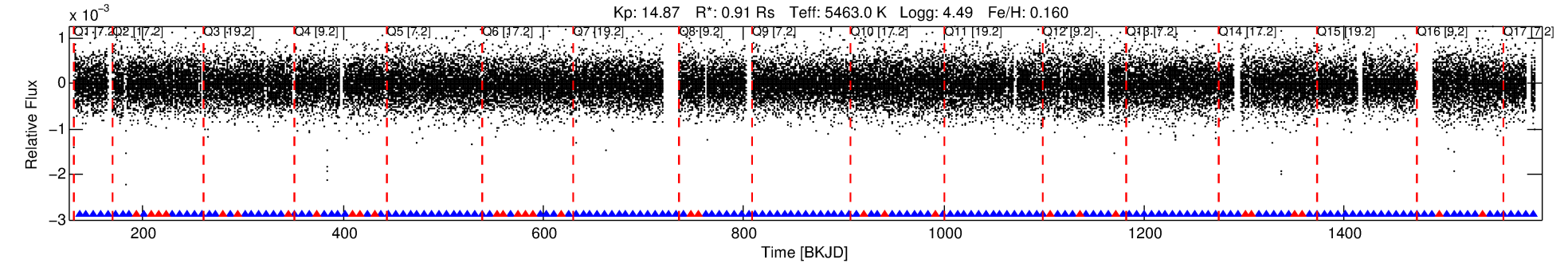
Ephemeris Match Information For 008612275-02

No Significant Match Found

DV One-Page Summary

KIC: 8612275 Candidate: 2 of 2 Period: 7.186 d
KOI: K02111.02 Name: Kepler-360c Corr: 0.950

Kp: 14.87 R*: 0.91 Rs Teff: 5463.0 K Logg: 4.49 Fe/H: 0.160



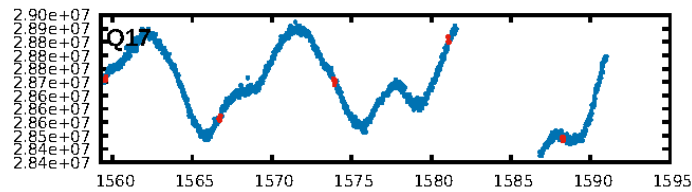
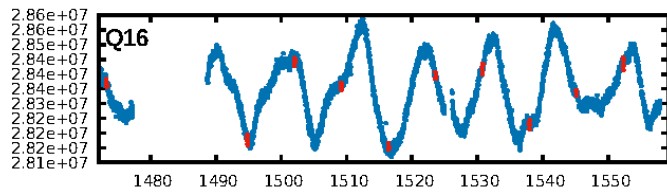
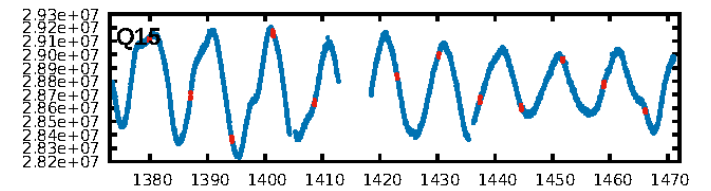
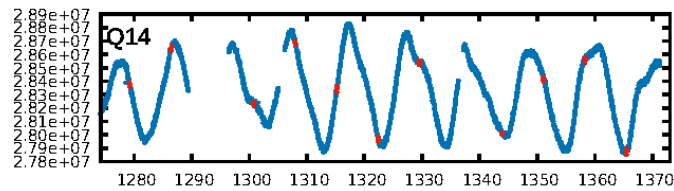
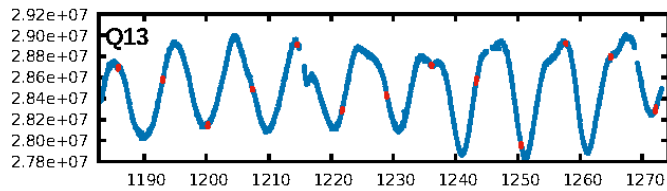
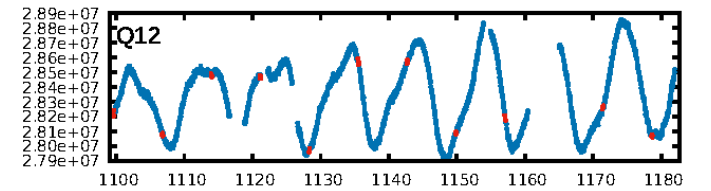
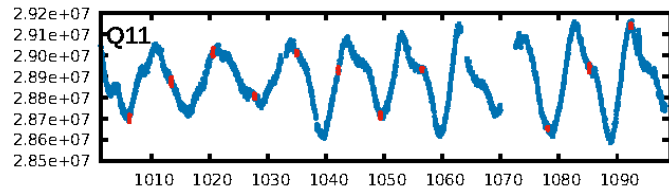
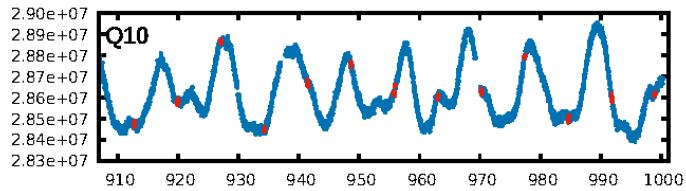
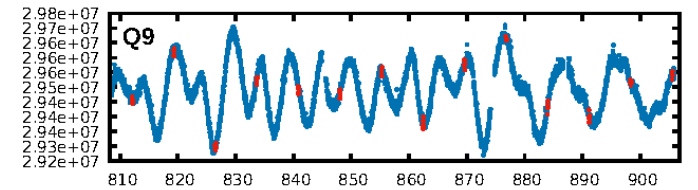
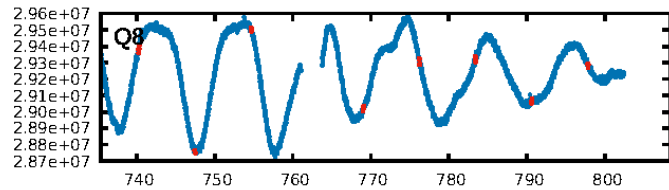
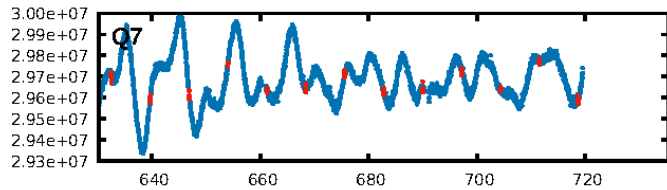
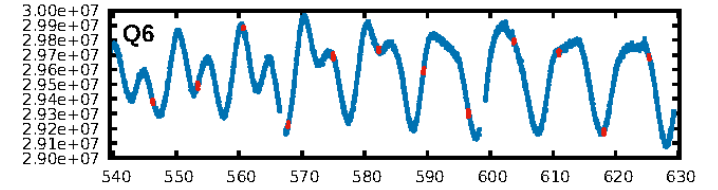
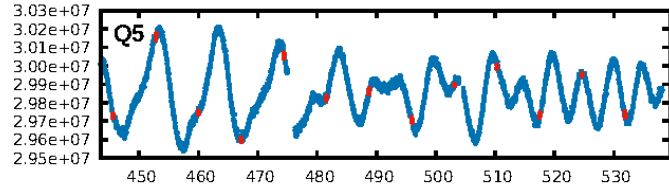
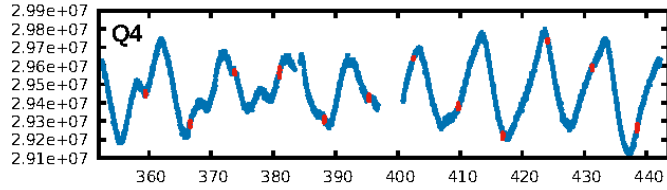
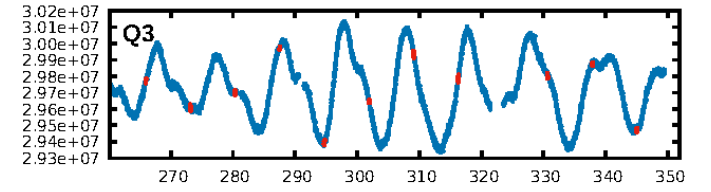
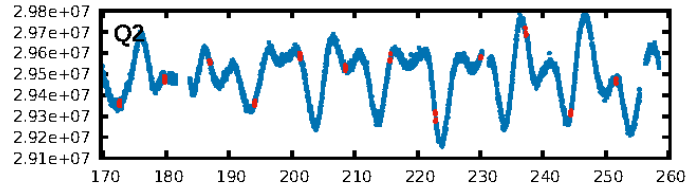
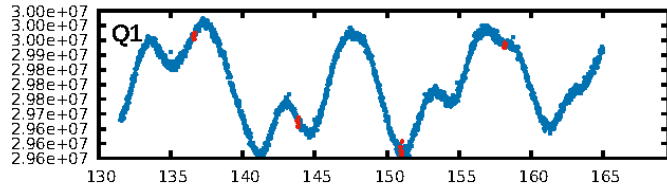
DV Fit Results:

Period = 7.18639 [0.00001] d
Epoch = 136.6295 [0.0014] BKJD
Rp/R* = 0.0225 [0.0077]
a/R* = 18.23 [26.34]
b = 0.90 [0.31]
Seff = 129.81 [23.48]
Teff = 861 [39] K
Rp = 2.23 [0.81] Re
a = 0.0714 [0.0079] AU
Ag = 23.41 [19.43] [1.15σ]
Teffp = 2927 [596] K [3.46σ]

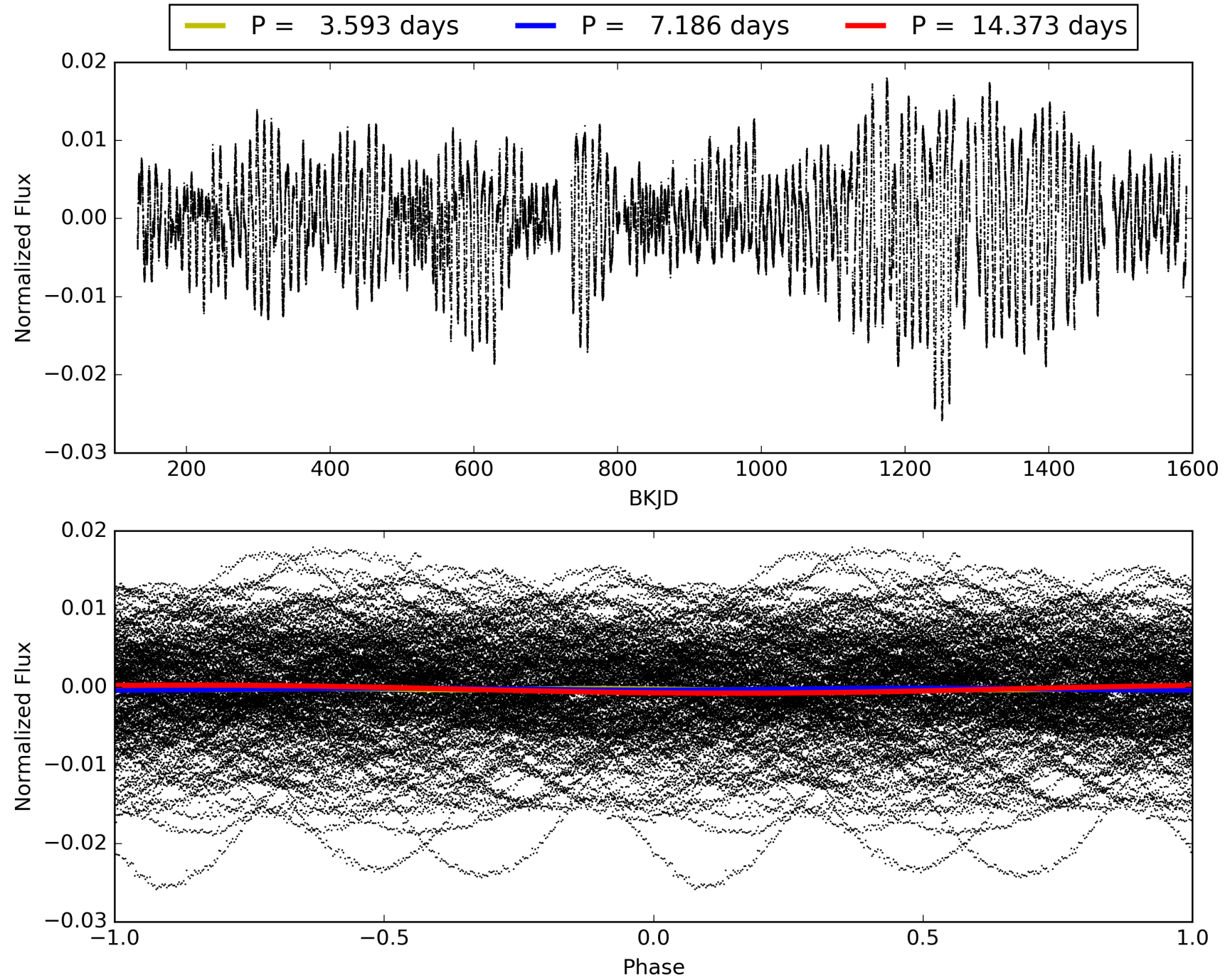
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [33.90σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.77e-74
RollingBand-fgt: 0.81 [133/164]
GhostDiagnostic-chr: 3.034
Centroid-sig: 0.0%
Centroid-so: 1.247 arcsec [2.30σ]
OotOffset-rm: 0.240 arcsec [1.07σ]
KicOffset-rm: 0.123 arcsec [0.55σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008612275-02, PDC Light Curves

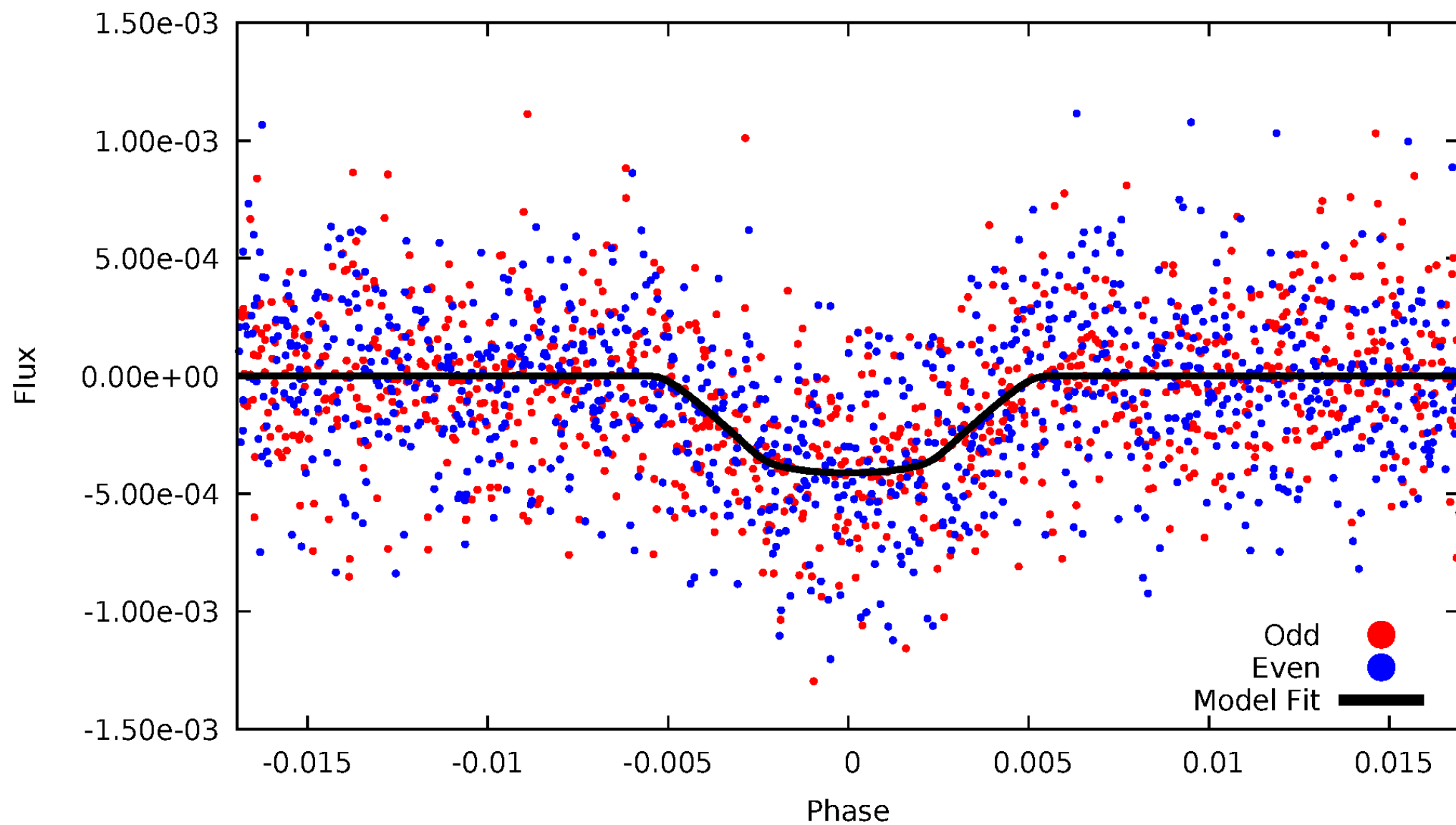


TCE 008612275-02



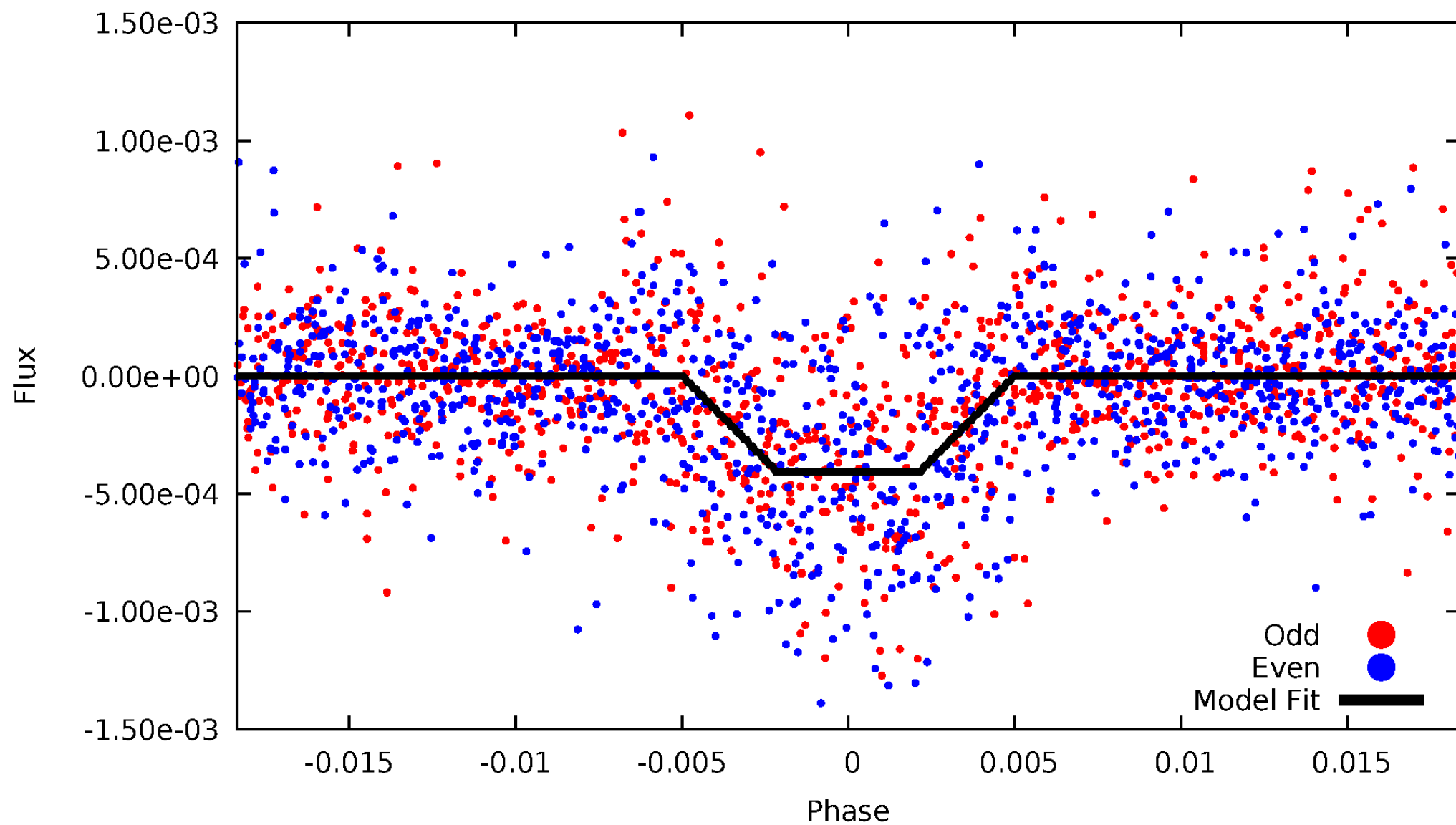
DV Odd/Even

TCE 008612275-02



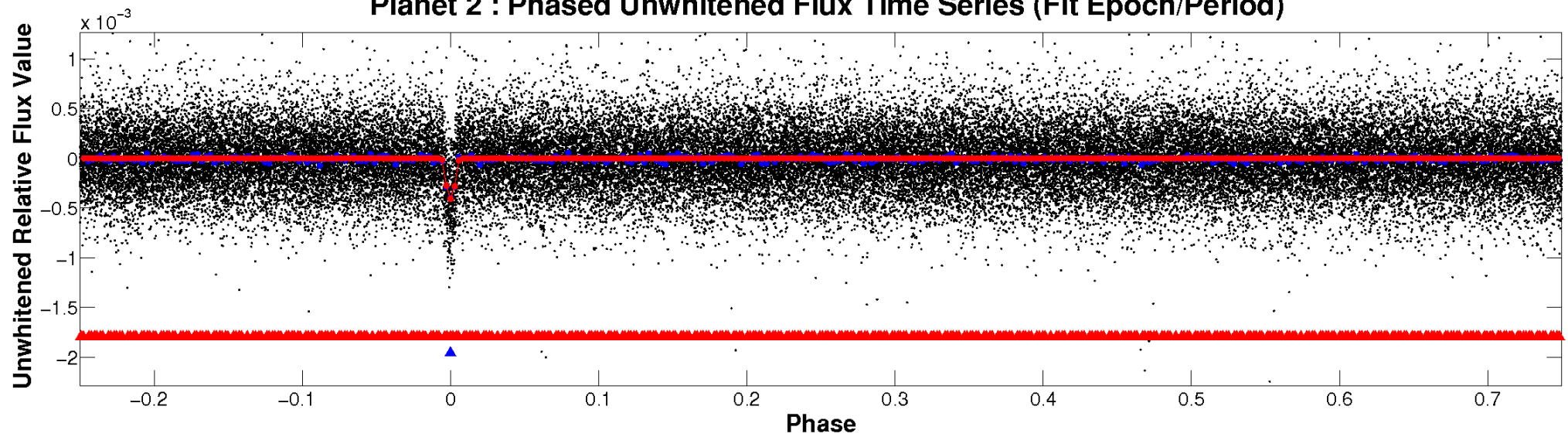
ALT Odd/Even

TCE 008612275-02

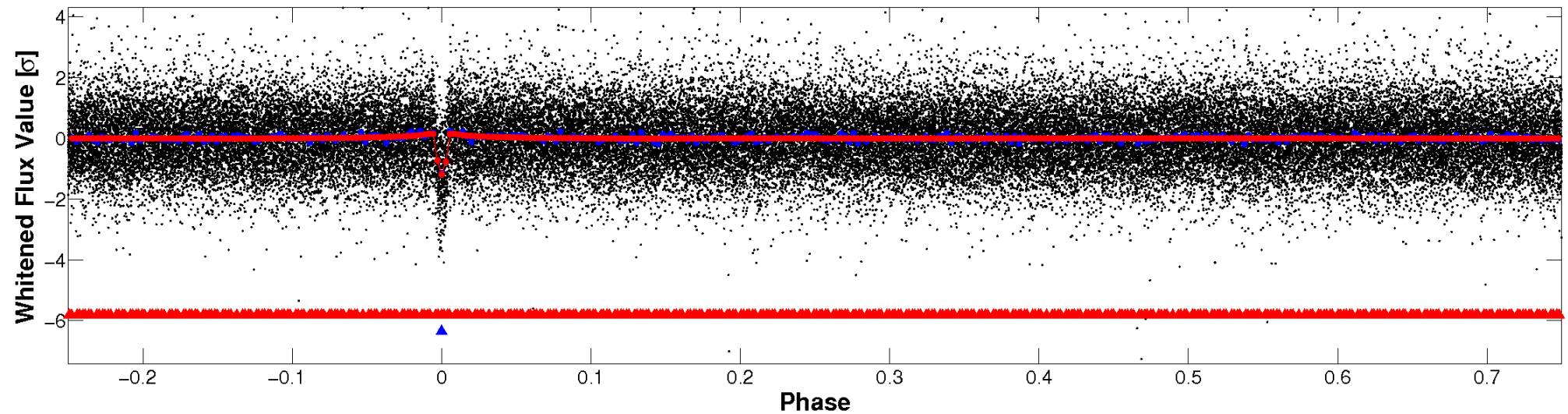


Non-Whitened Vs. Whitened Light Curve

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

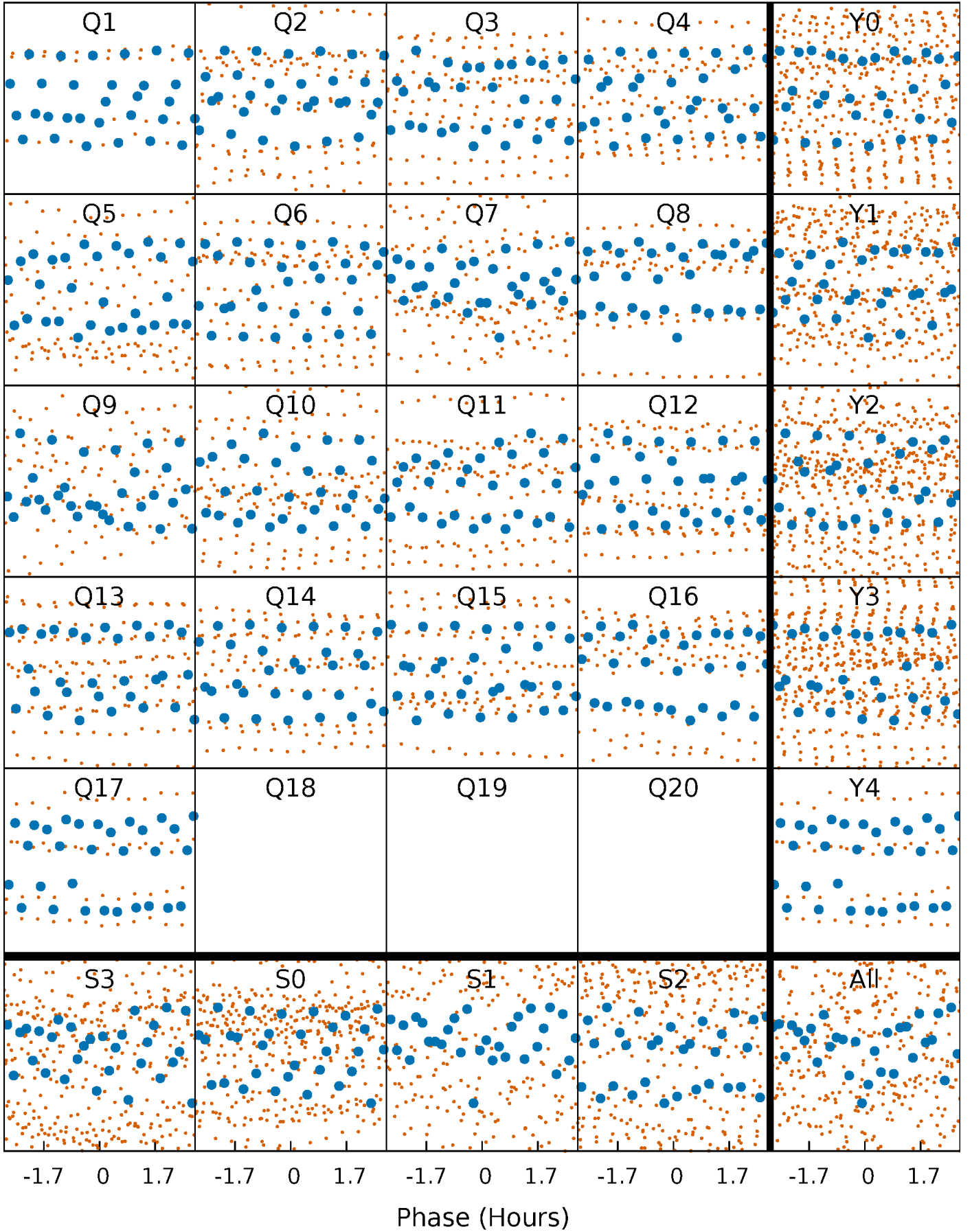


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



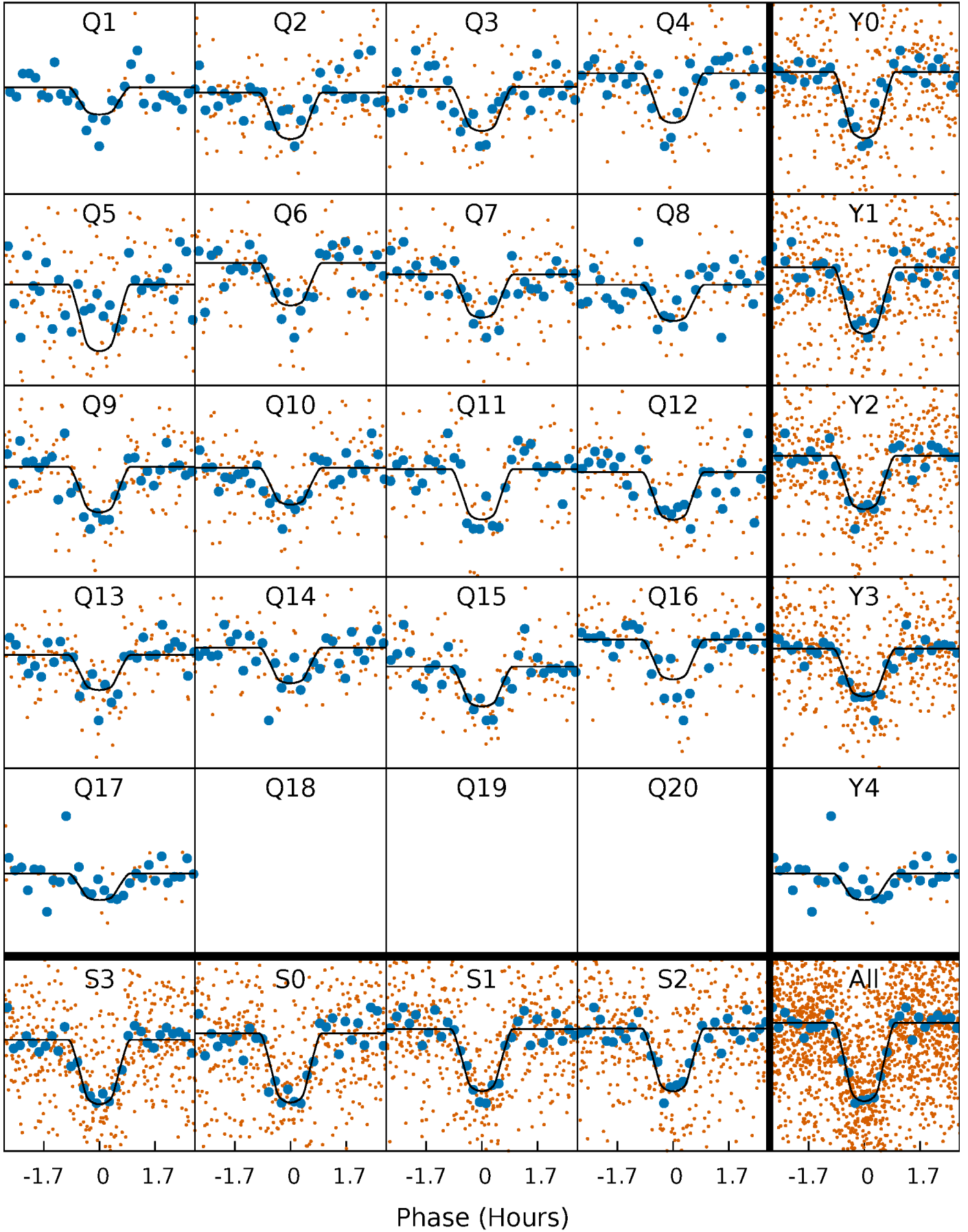
PDC Quarter-Phased Transit Curves

TCE 008612275-02 P= 7.186393 Days $T_0=136.629496$ (BKJD)



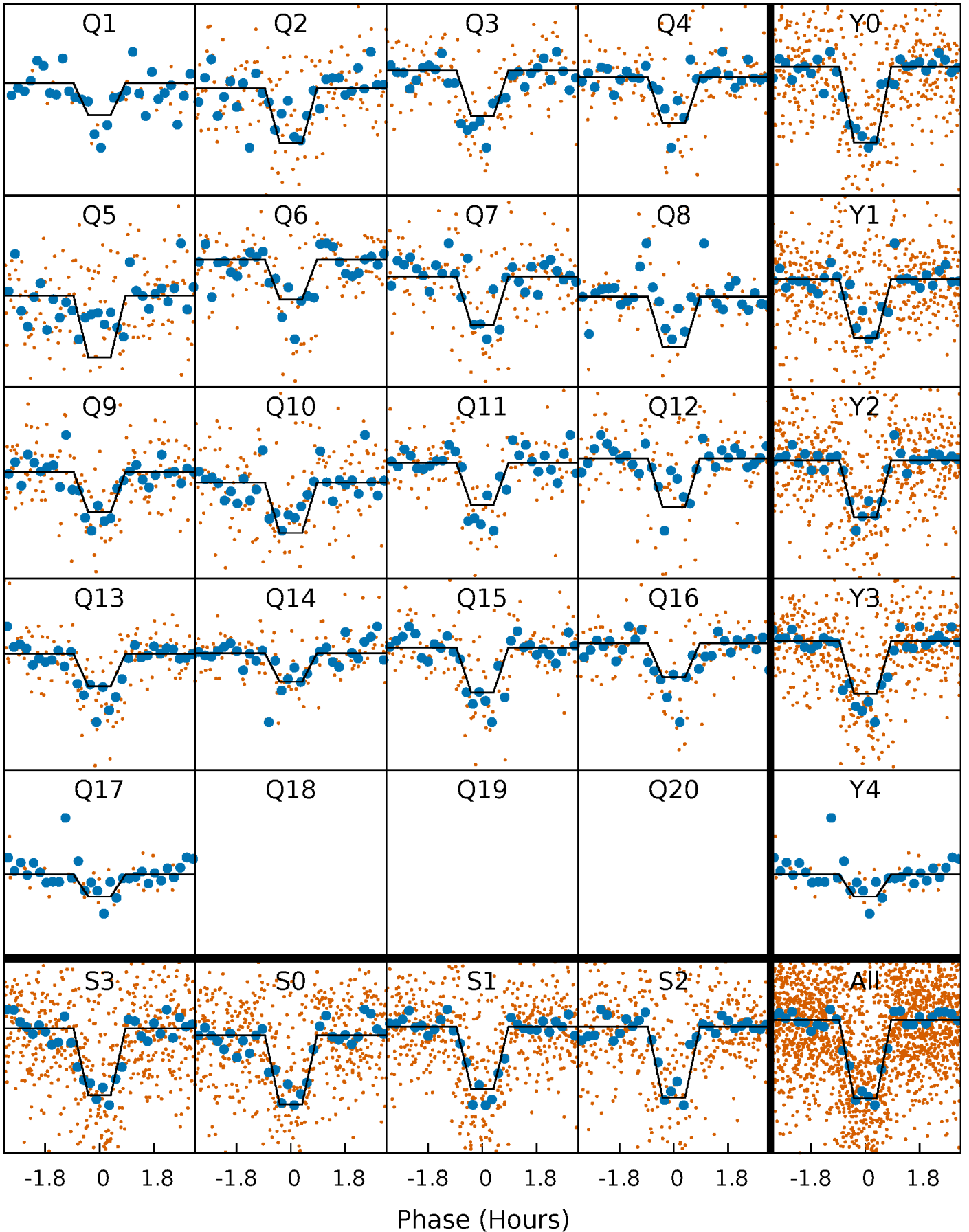
DV Quarter-Phased Transit Curves

TCE 008612275-02 P= 7.186393 Days $T_0=136.629496$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

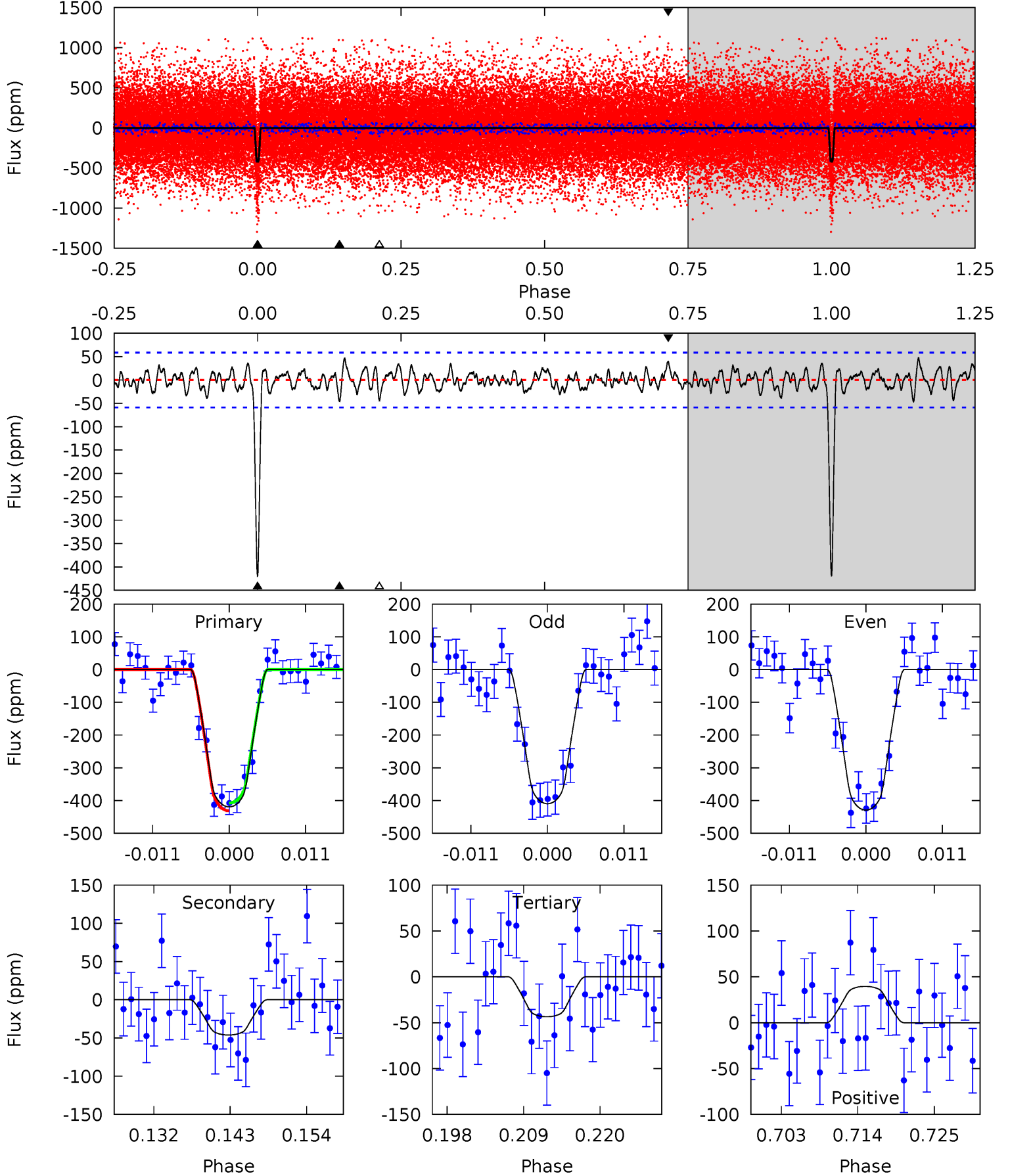
TCE 008612275-02 P= 7.186442 Days $T_0=136.624199$ (BKJD)



DV Model-Shift Uniqueness Test

008612275-02, P = 7.186393 Days, E = 129.443103 Days

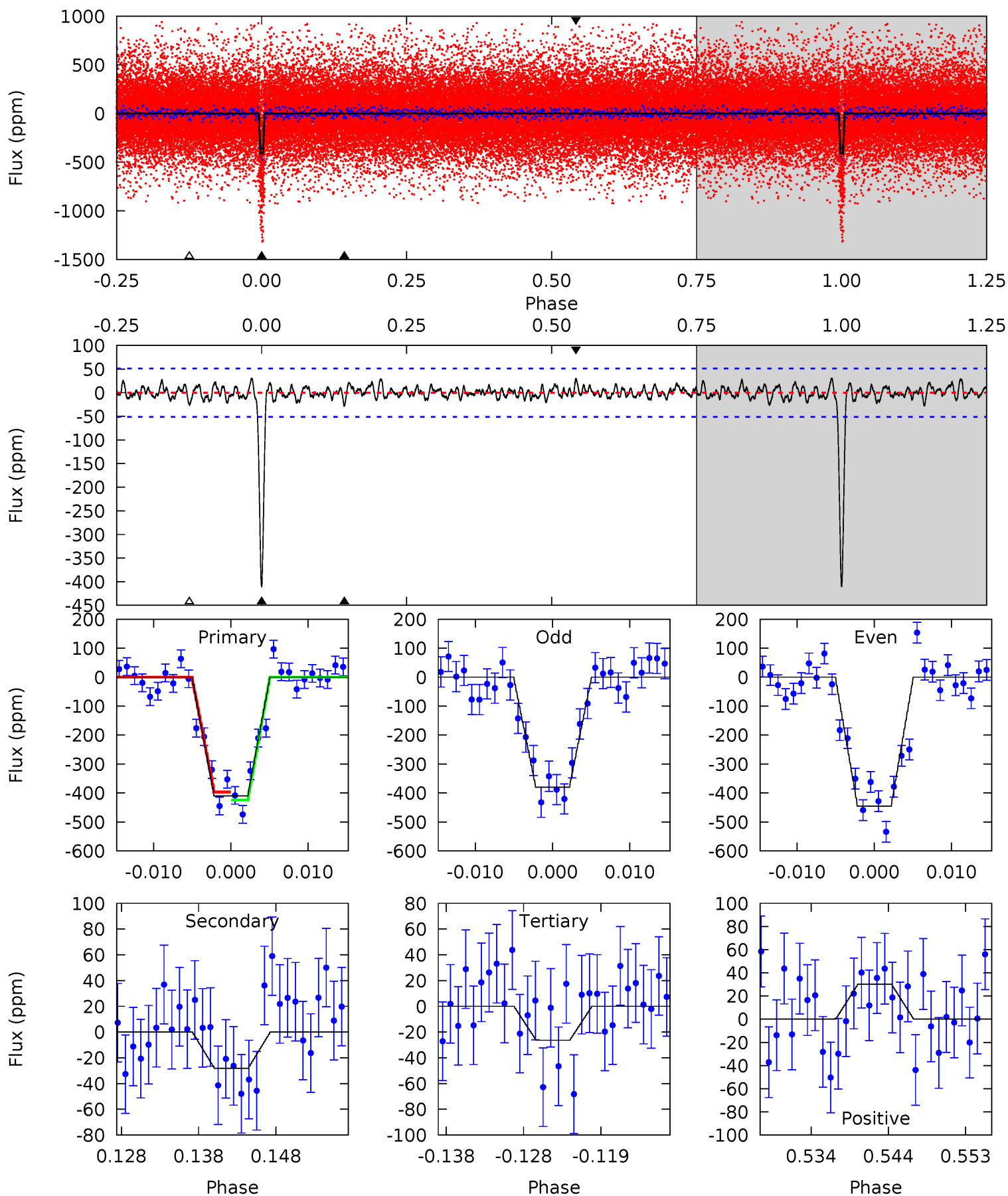
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.9	3.95	3.73	3.39	5.01	2.54	1.28	32.2	32.5	0.22	0.56	0.83	0.97	0.10	1.02



Alt Model-Shift Uniqueness Test

008612275-02, P = 7.186442 Days, E = 129.437757 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
40.3	2.76	2.59	2.96	5.03	2.58	0.95	37.7	37.4	0.18	-0.19	3.23	0.93	0.07	1.37



Stellar Parameters For KIC 008612275

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5463^{+82}_{-73}	$4.492^{+0.045}_{-0.098}$	$0.160^{+0.150}_{-0.150}$	$0.910^{+0.110}_{-0.055}$	$0.937^{+0.044}_{-0.053}$	$1.751^{+0.288}_{-0.492}$
	+2%/-1%	+1%/-2%	+94%/-94%	+12%/-6%	+5%/-6%	+16%/-28%
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 008612275-02 / KOI 2111.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-46 ± 12	$2.33^{+0.73}_{-0.85}$	1209^{+41}_{-28}	3446^{+558}_{-321}	24^{+35}_{-11}
Alt.	-28 ± 10	$2.04^{+0.78}_{-0.78}$	1212^{+40}_{-29}	3301^{+594}_{-367}	18^{+32}_{-10}

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

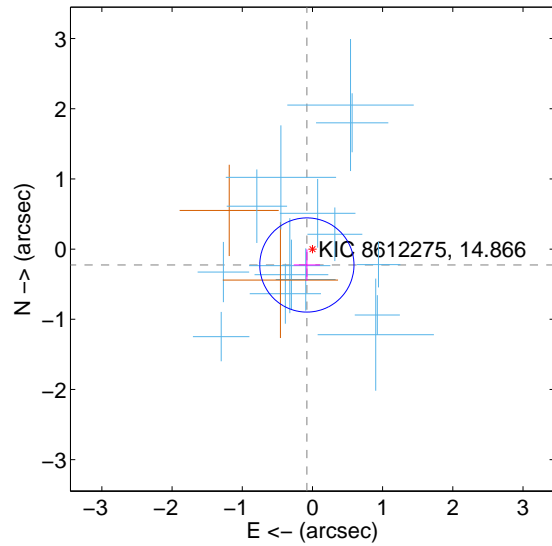
Supplemental centroid analysis for 008612275-02. Kepler magnitude: 14.87. Transit SNR 21.33

There are 15 quarters with good PRF difference image offsets

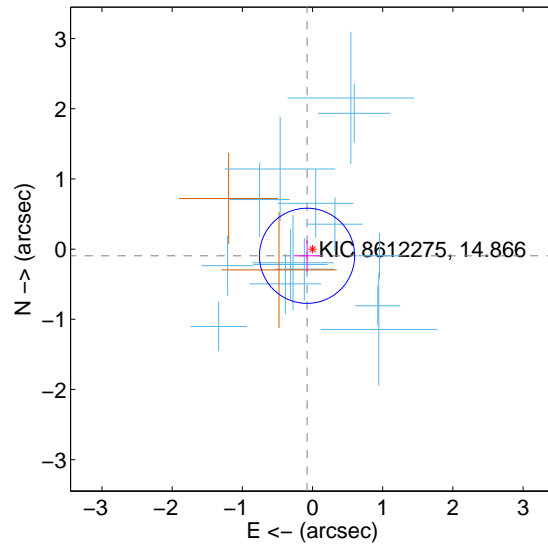
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.240 ± 0.224	1.07	0.079 ± 0.187	-0.226 ± 0.223
PRF-fit source offset from KIC position	0.123 ± 0.226	0.55	0.078 ± 0.187	-0.095 ± 0.227
photometric centroid source offset	1.25 ± 0.54	2.30	-0.08 ± 0.54	-1.24 ± 0.54

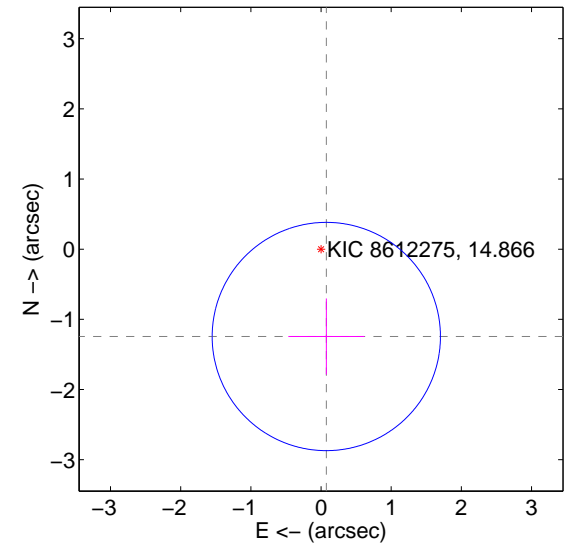
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

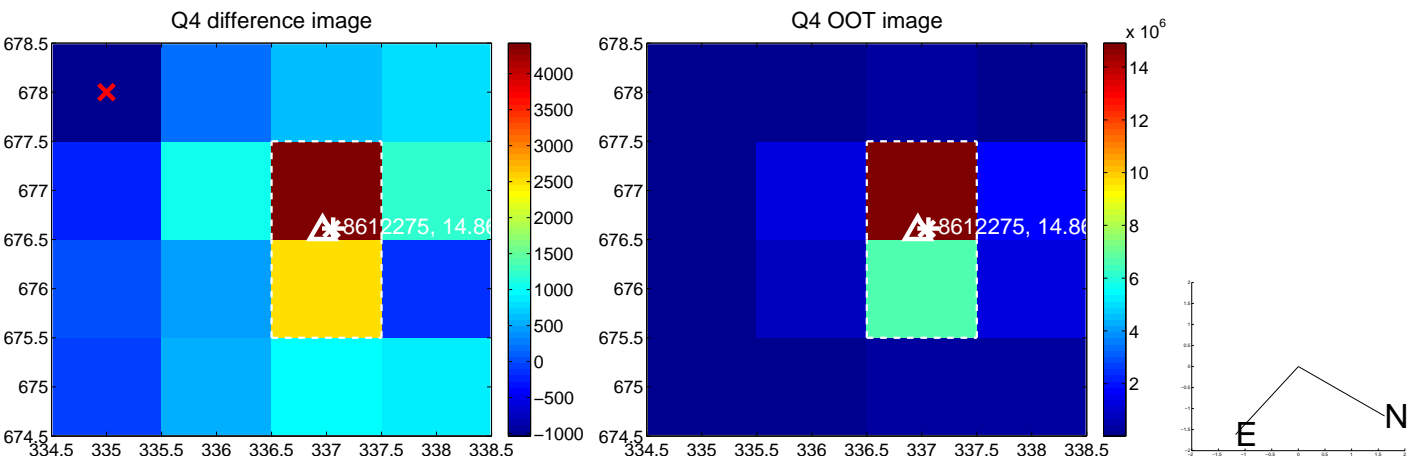
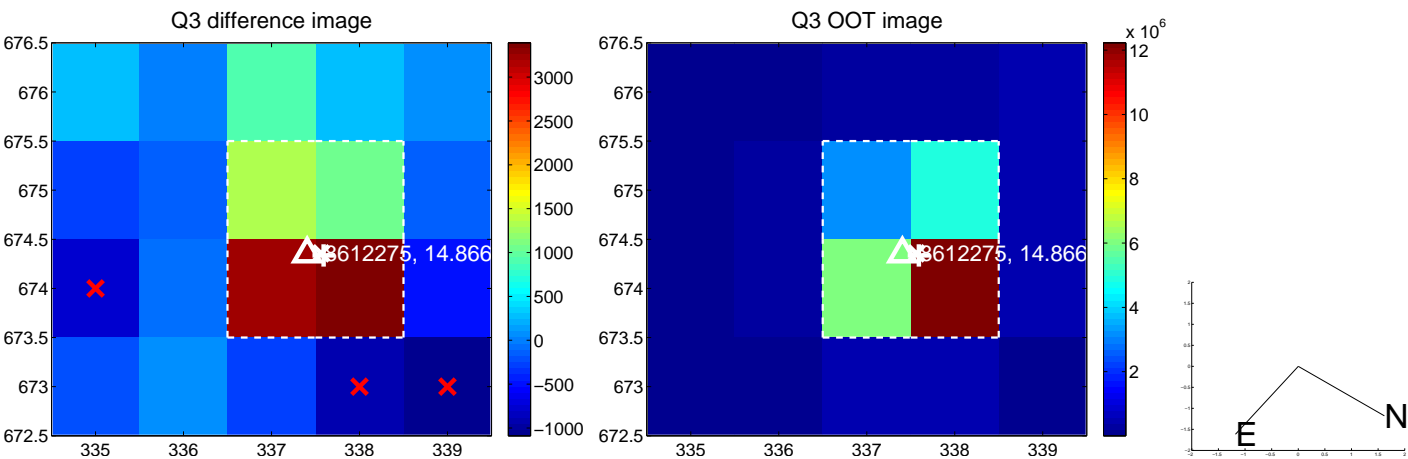
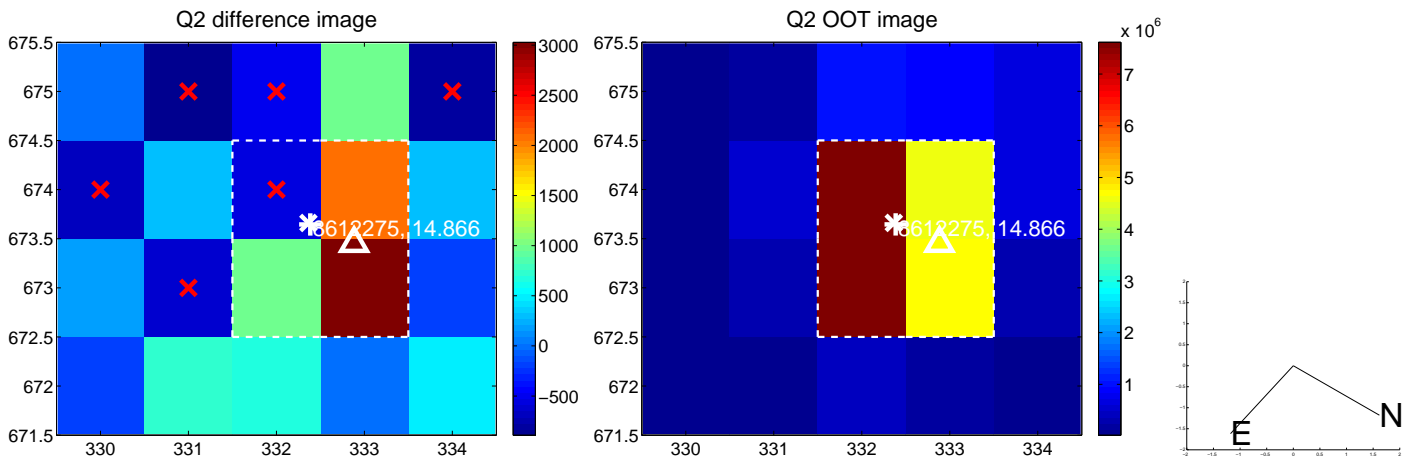
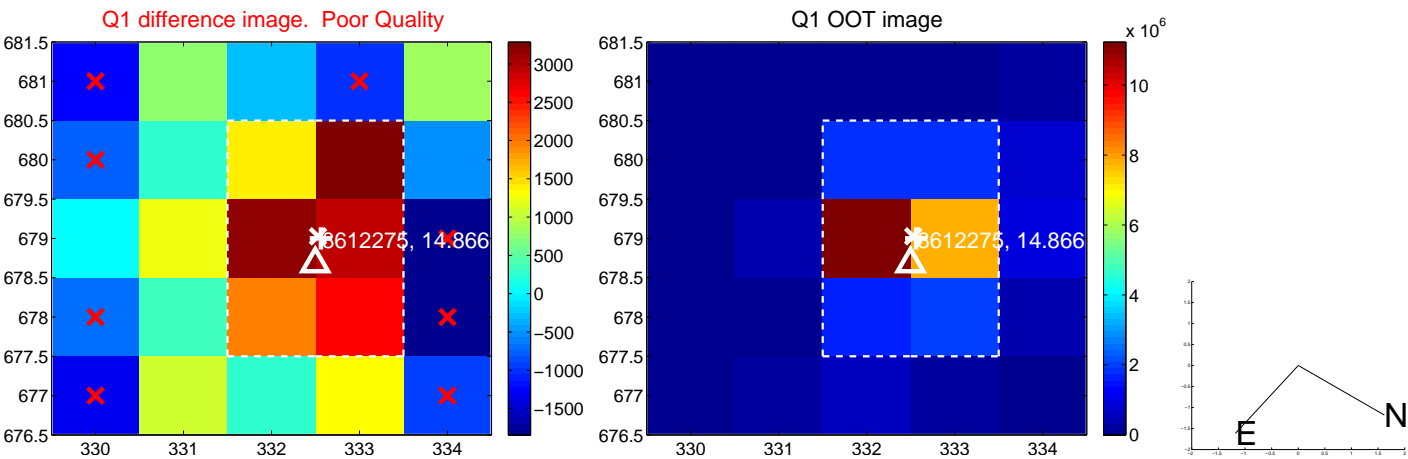


offset from photometric centroids

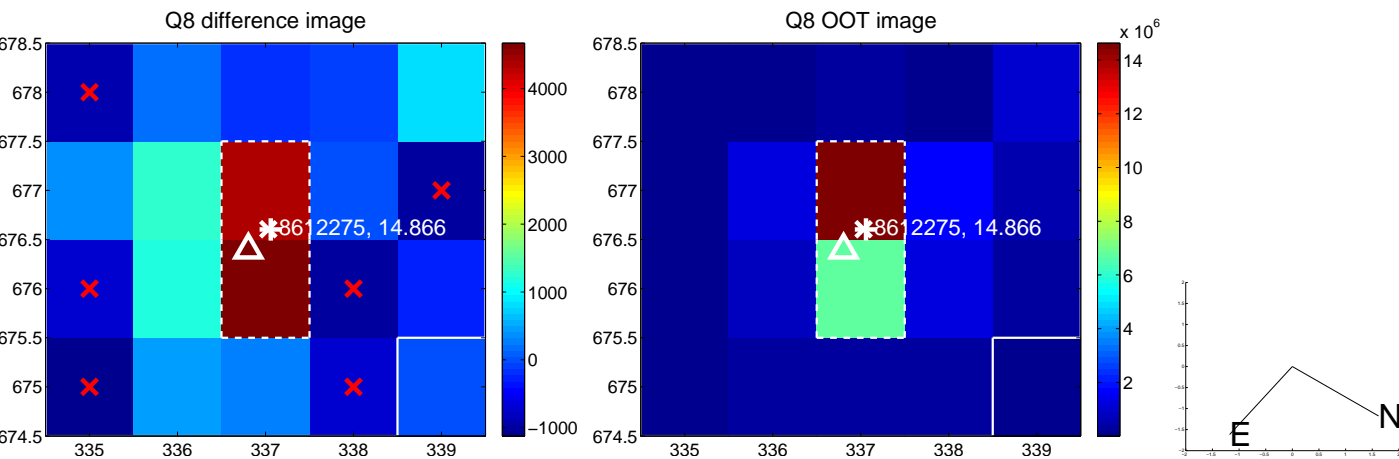
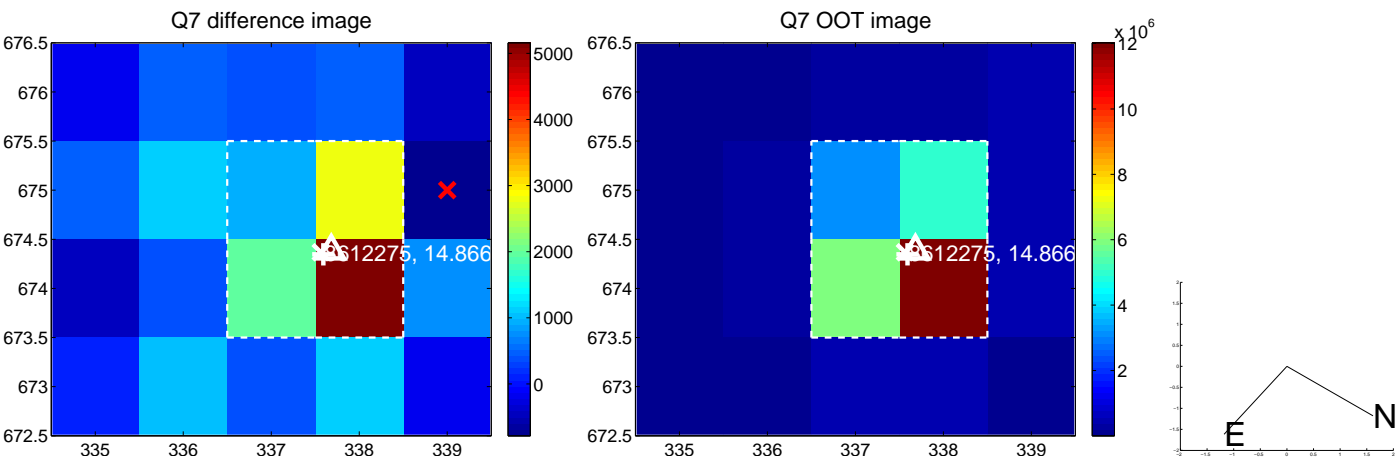
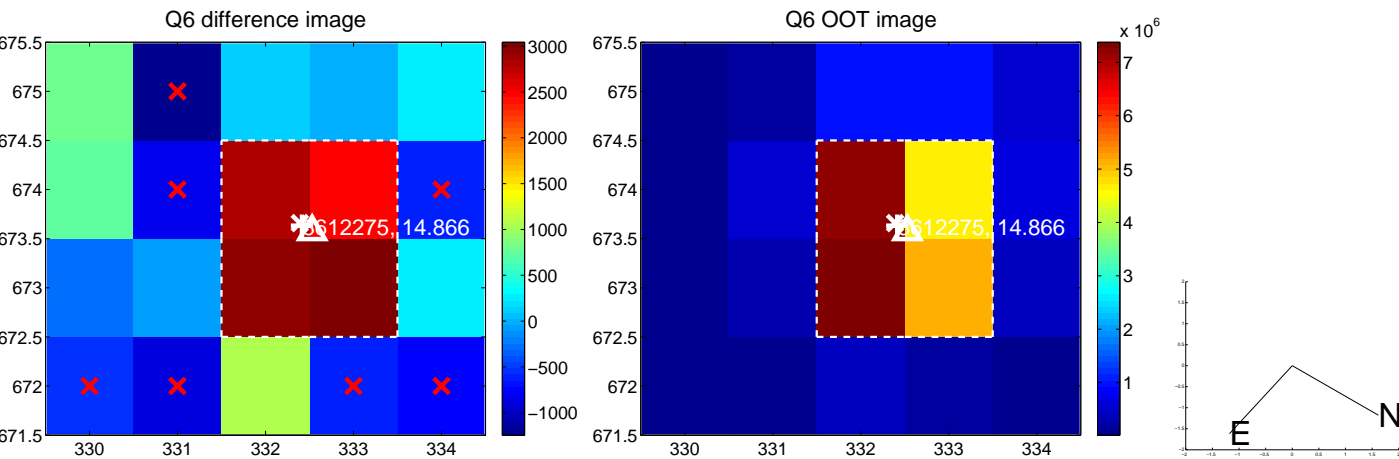
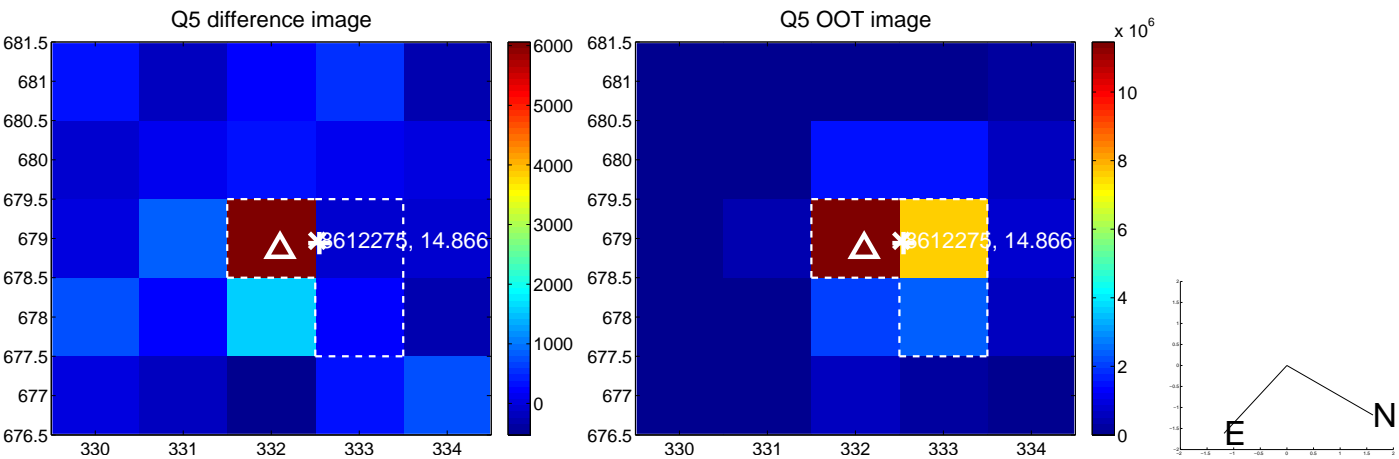


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

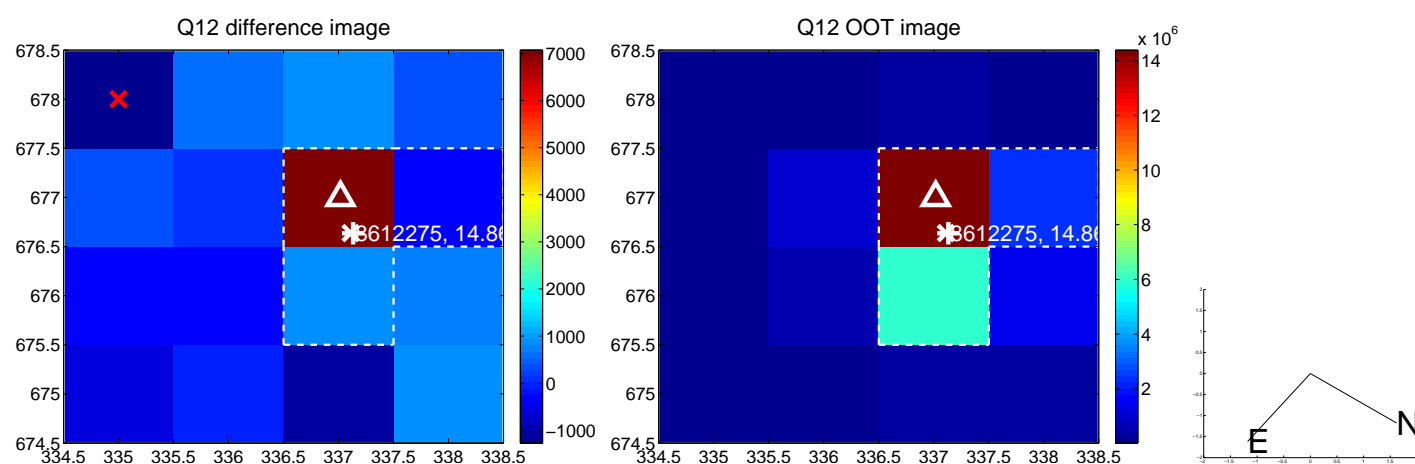
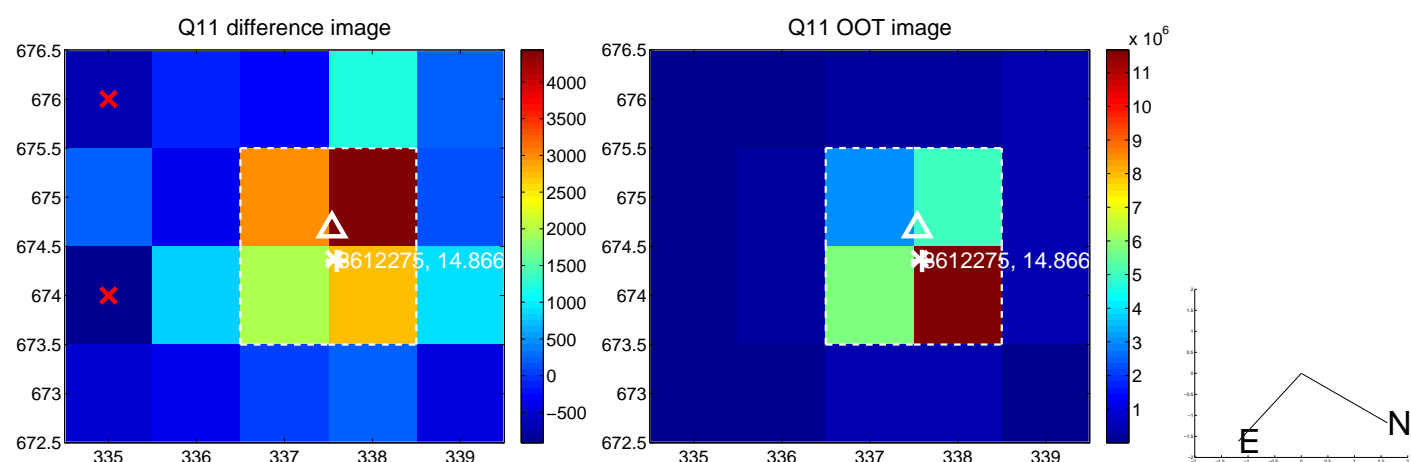
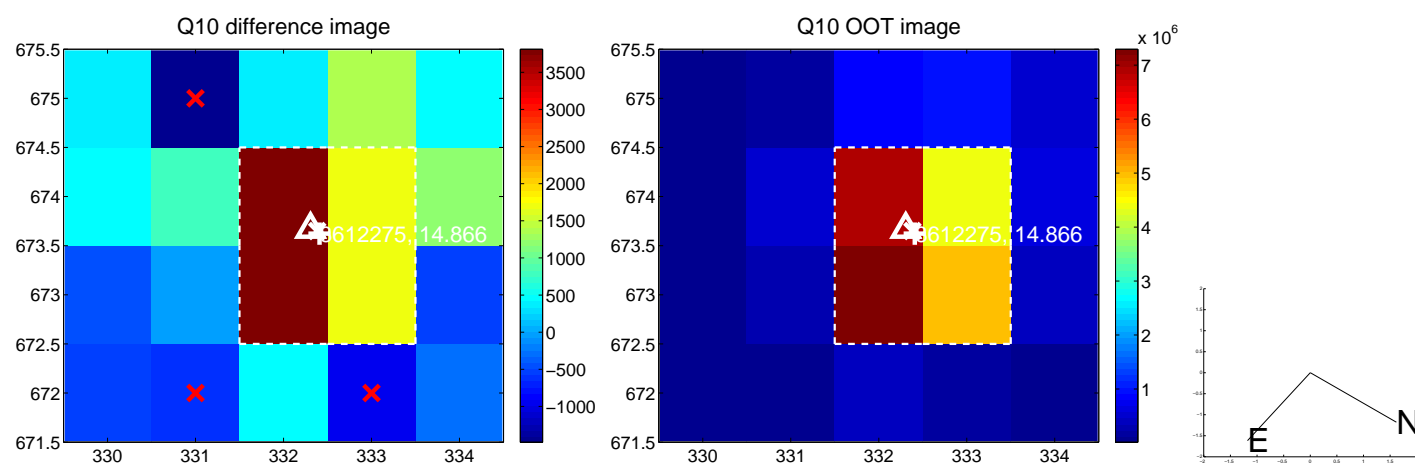
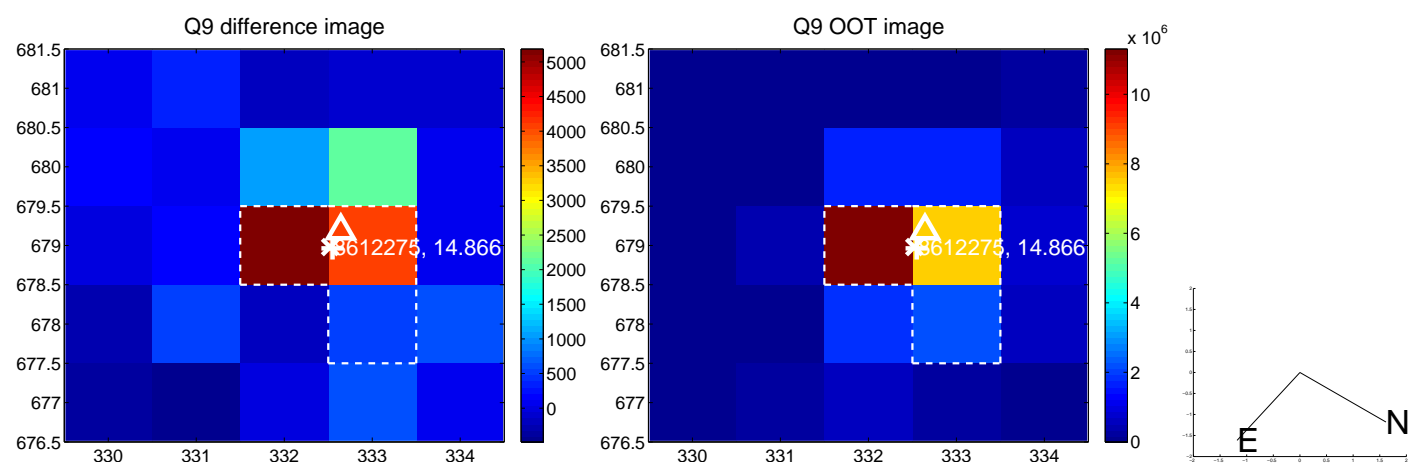
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



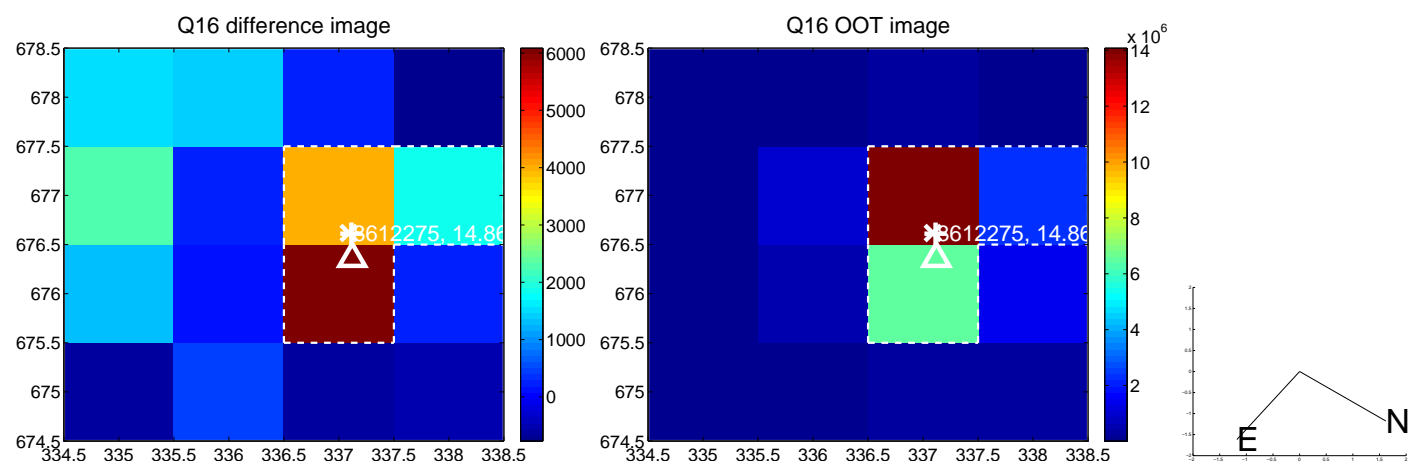
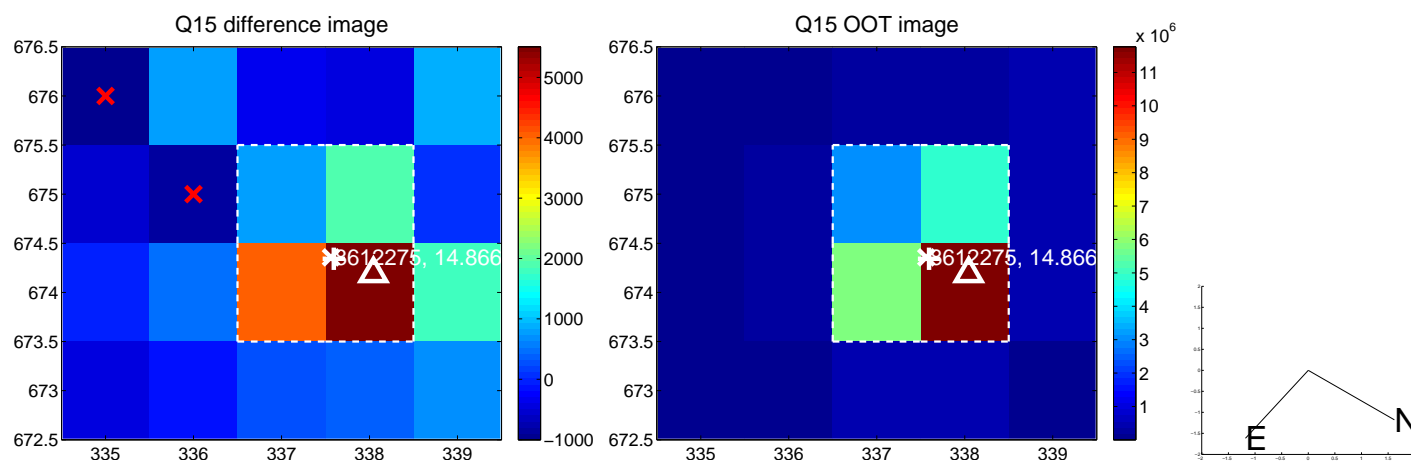
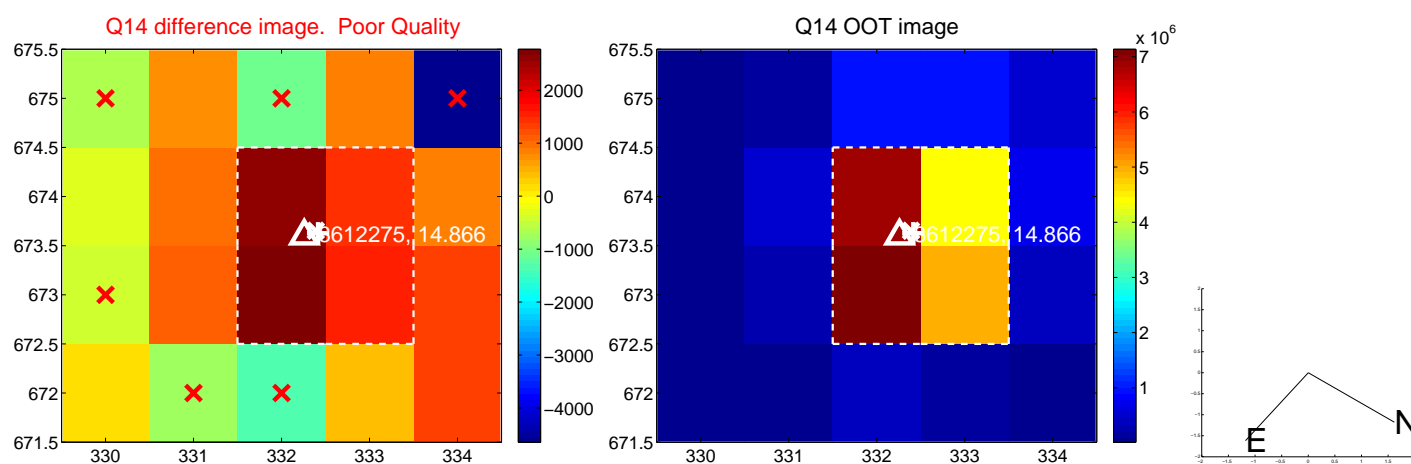
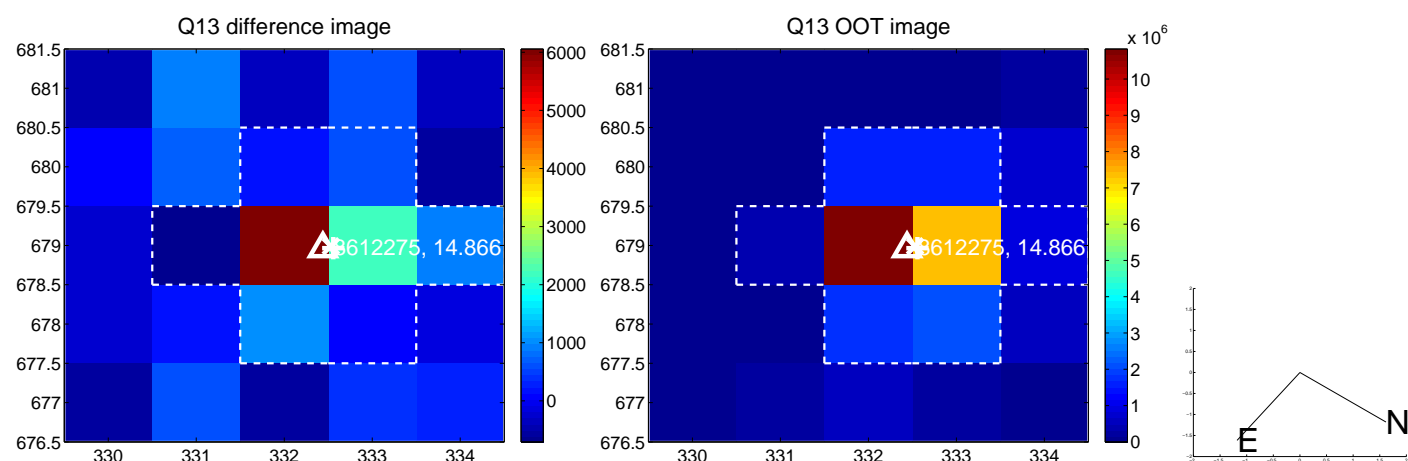
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



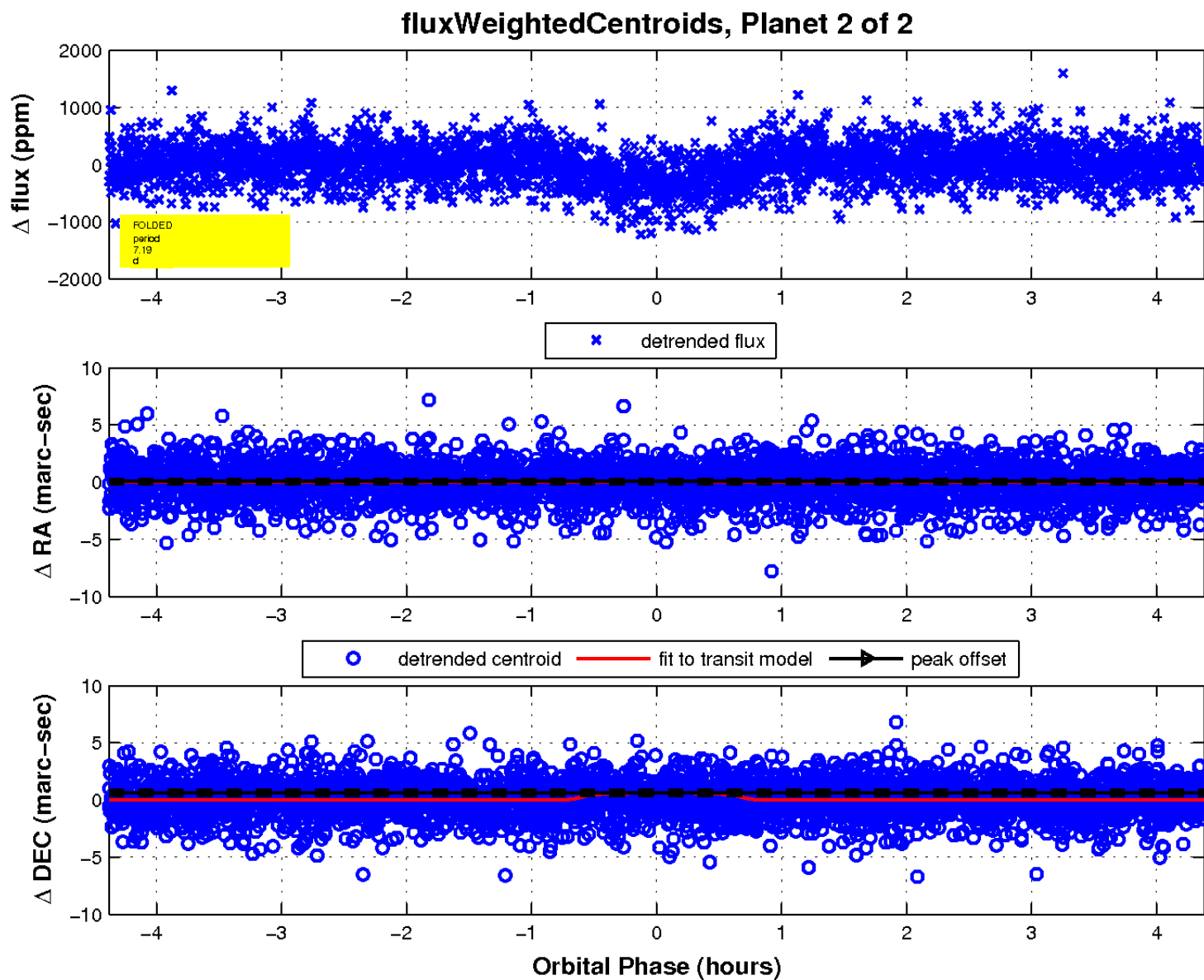
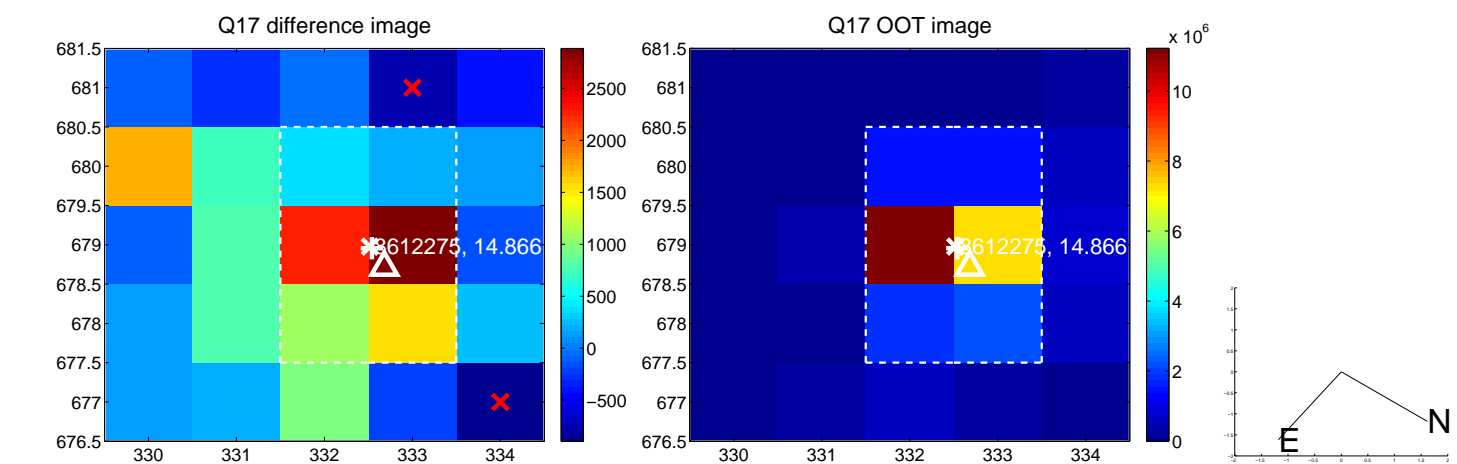
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

