

KIC 012266636

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})
012266636-01	OBS	1522.01	33.385712	148.925543	542.1	5.066	32.2	33.6	1.02	5833	2.54	26.79
012266636-02	OBS	1522.02	12.654832	134.683707	88.2	4.511	8.5	8.4	1.02	5833	1.14	97.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012266636-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
012266636-02	OBS	PC	0.96	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.

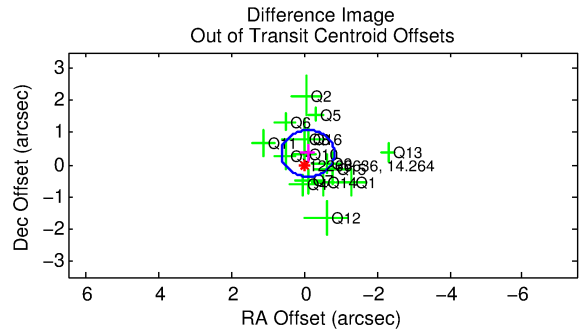
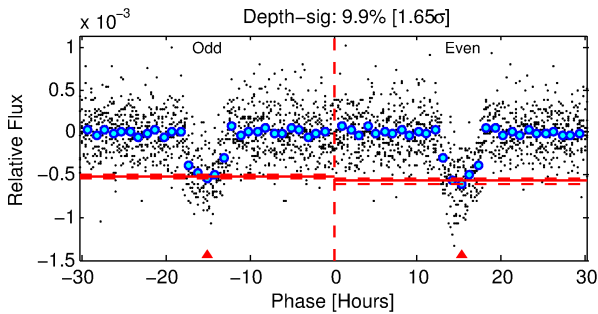
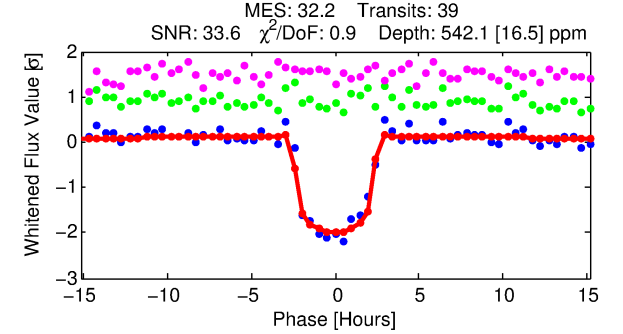
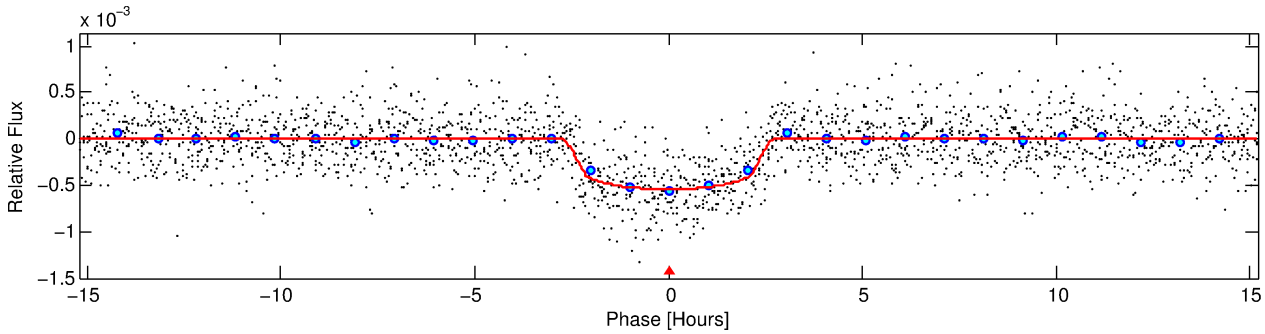
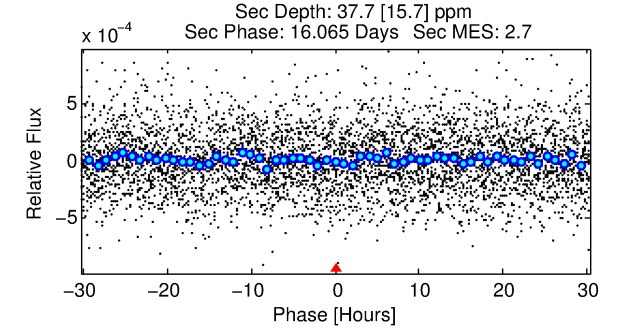
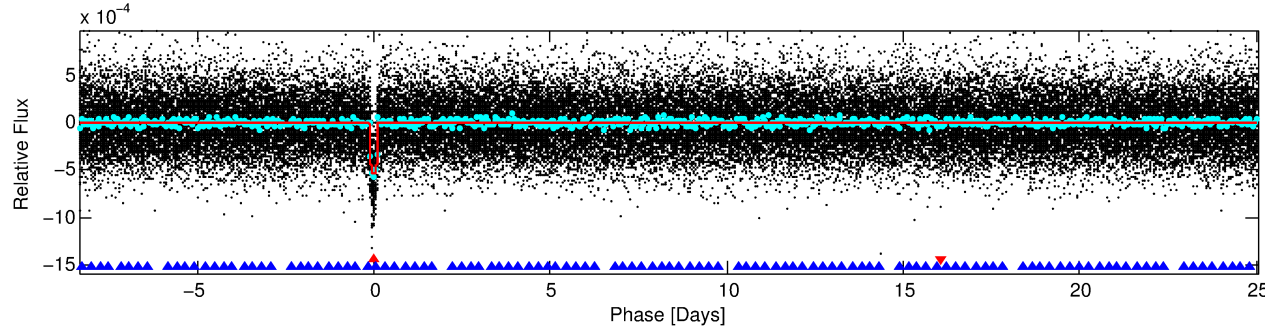
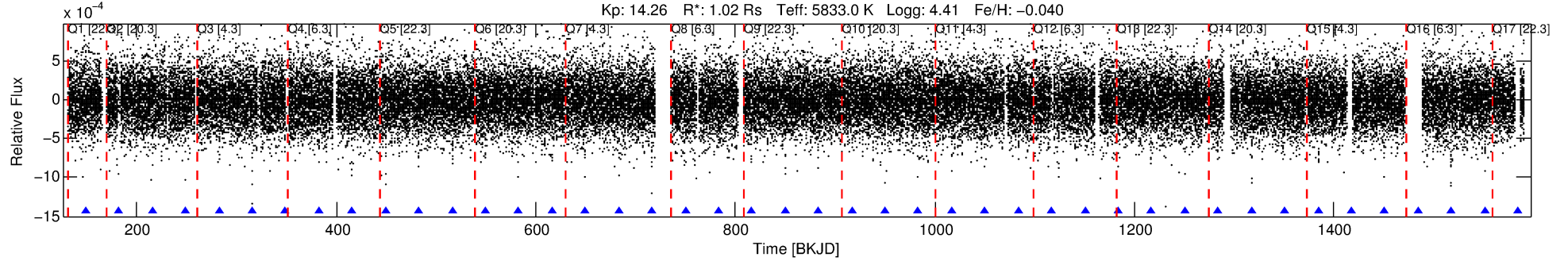
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012266636-01

No Significant Match Found

DV One-Page Summary

KIC: 12266636 Candidate: 1 of 2 Period: 33.386 d
KOI: K01522.01 Corr: 0.994



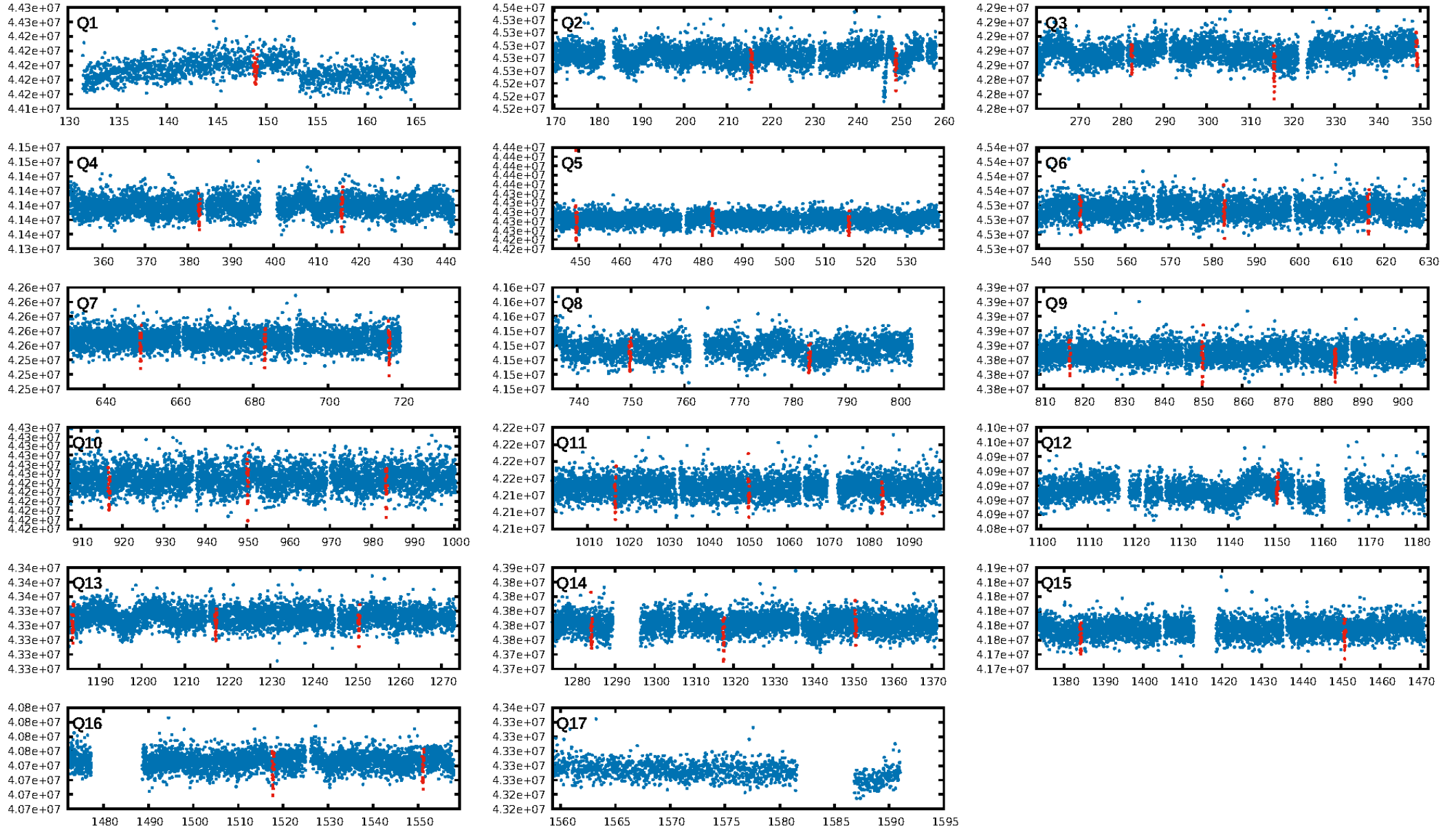
DV Fit Results:

Period = 33.38571 [0.00013] d
Epoch = 148.9255 [0.0031] BKJD
Rp/R* = 0.0228 [0.0060]
a/R* = 37.68 [44.93]
b = 0.70 [0.89]
Seff = 26.79 [9.77]
Teff = 580 [53] K
Rp = 2.54 [0.98] Re
a = 0.2011 [0.0476] AU
Ag = 130.13 [98.47] [1.31 σ]
Teffp = 3029 [518] K [4.70 σ]

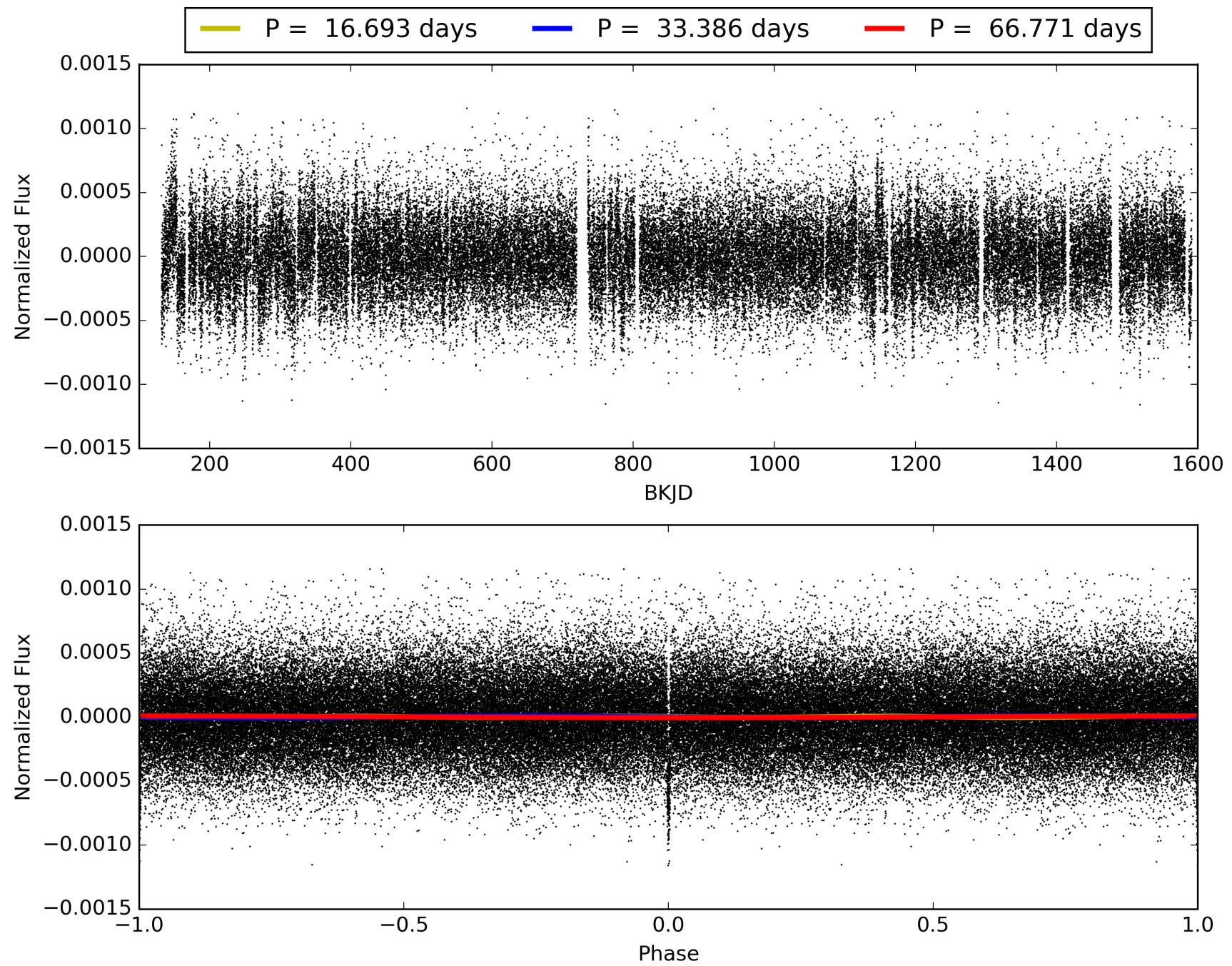
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [73.35 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 69.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.21e-209
RollingBand-fgt: 1.00 [38/38]
GhostDiagnostic-chr: 3.62
Centroid-sig: 80.1%
Centroid-so: 0.596 arcsec [1.45 σ]
OotOffset-rm: 0.364 arcsec [1.51 σ]
KicOffset-rm: 0.331 arcsec [1.41 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [16/16]

TCE 012266636-01, PDC Light Curves

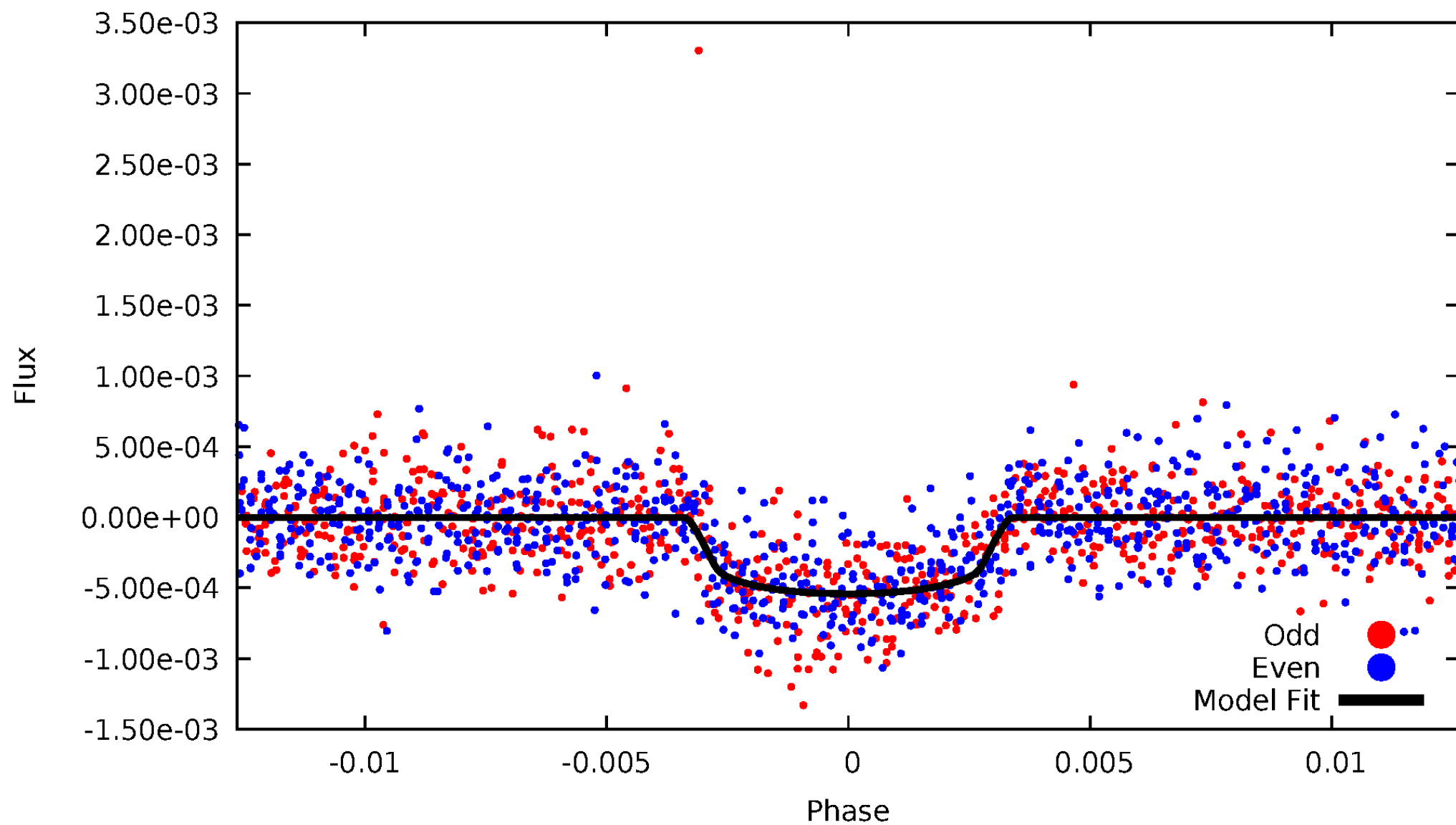


TCE 012266636-01



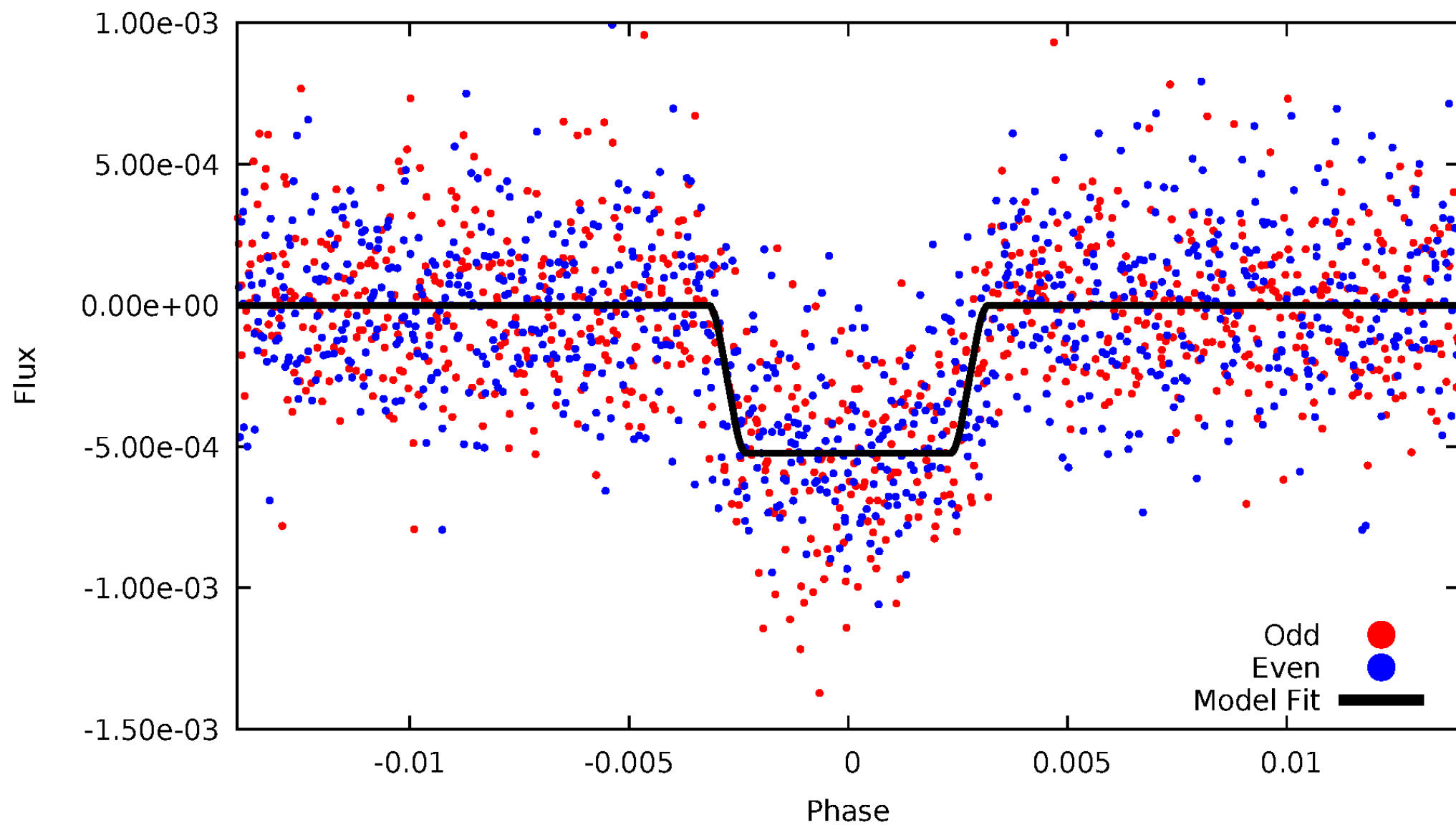
DV Odd/Even

TCE 012266636-01



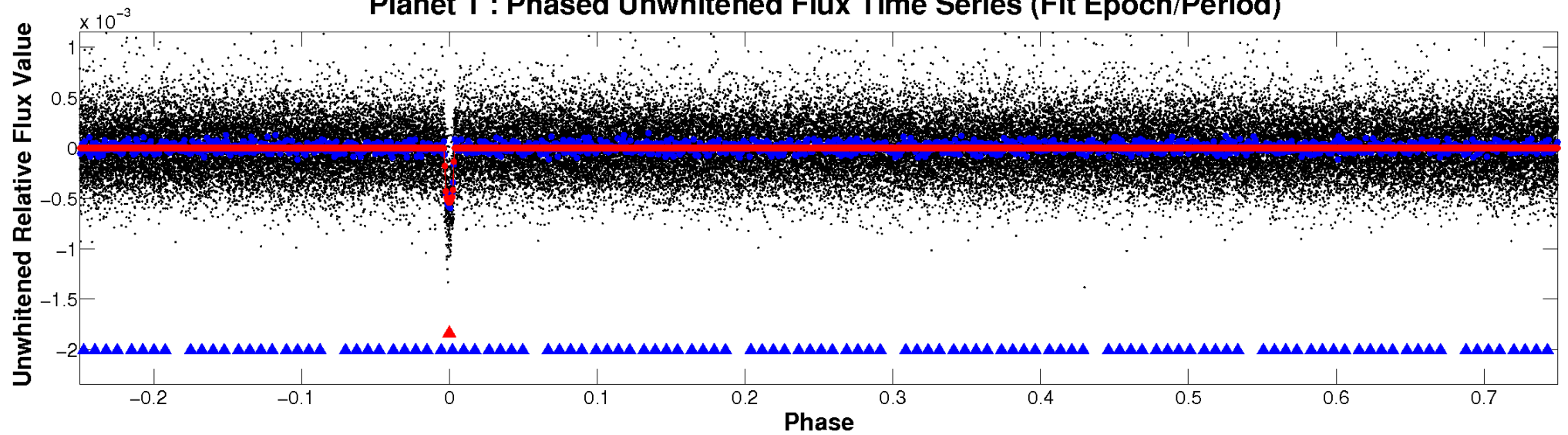
ALT Odd/Even

TCE 012266636-01

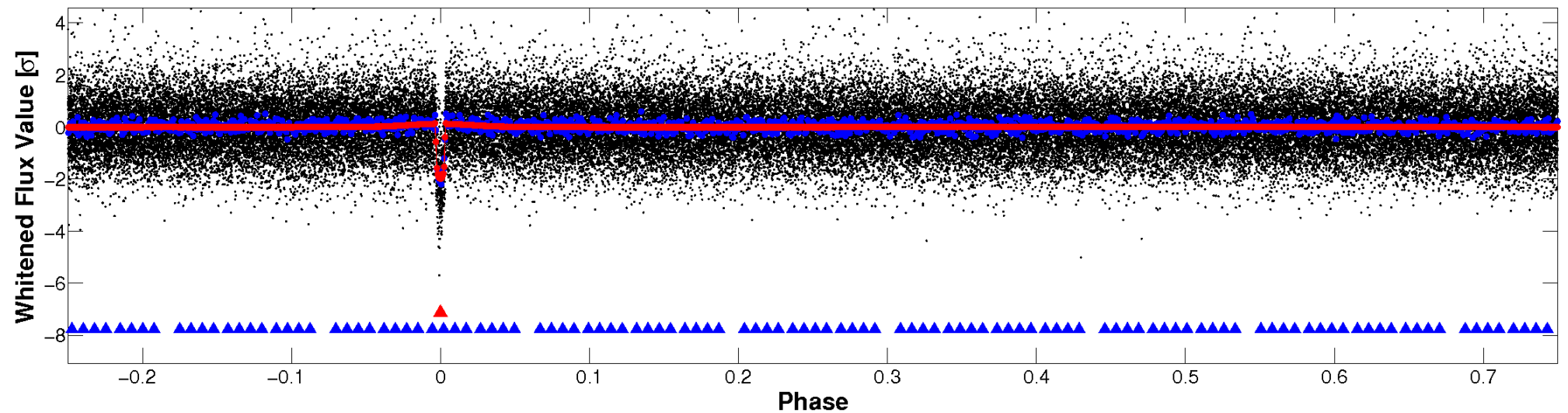


Non-Whitened Vs. Whitened Light Curve

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

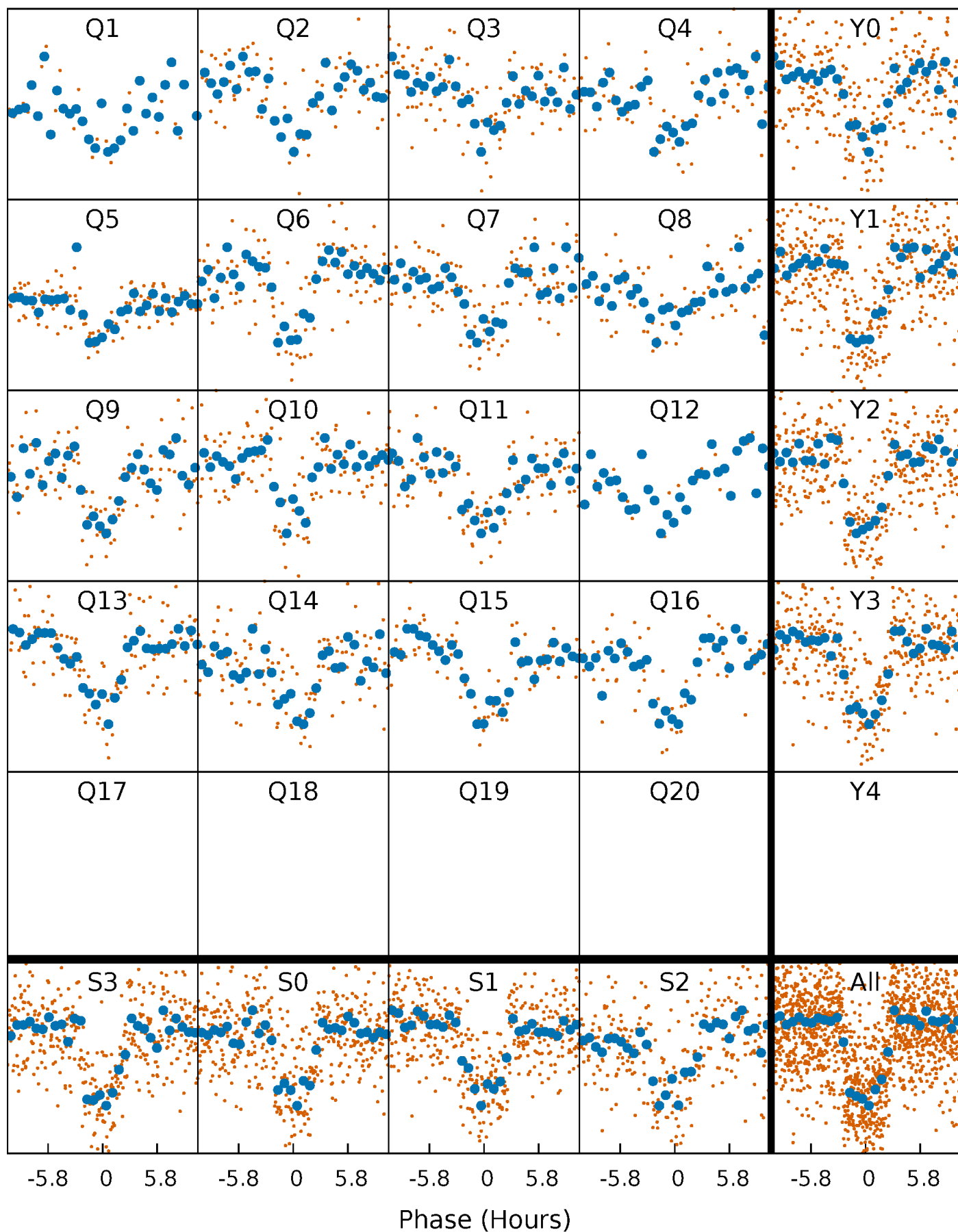


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



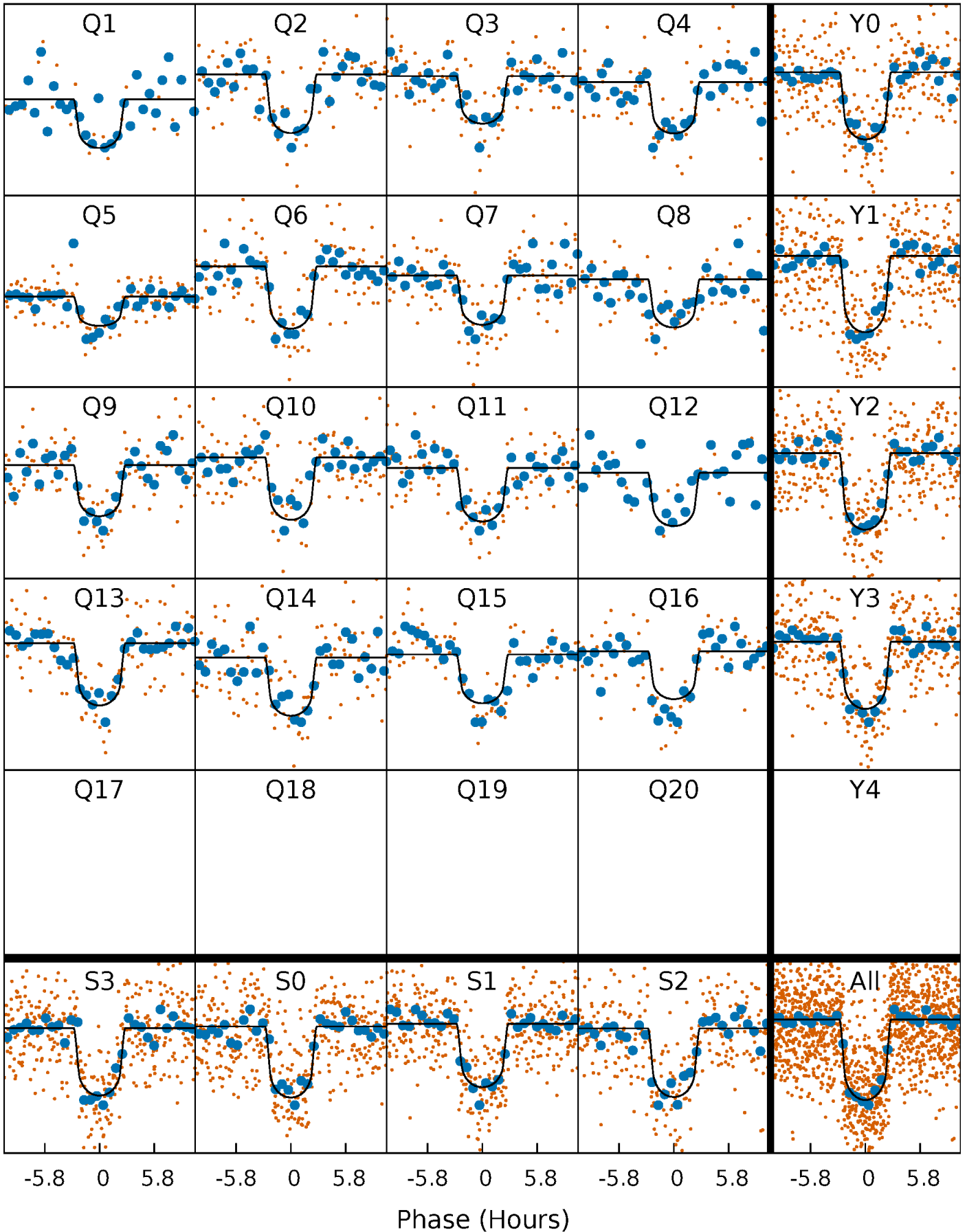
PDC Quarter-Phased Transit Curves

TCE 012266636-01 P= 33.385712 Days $T_0=148.925543$ (BKJD)



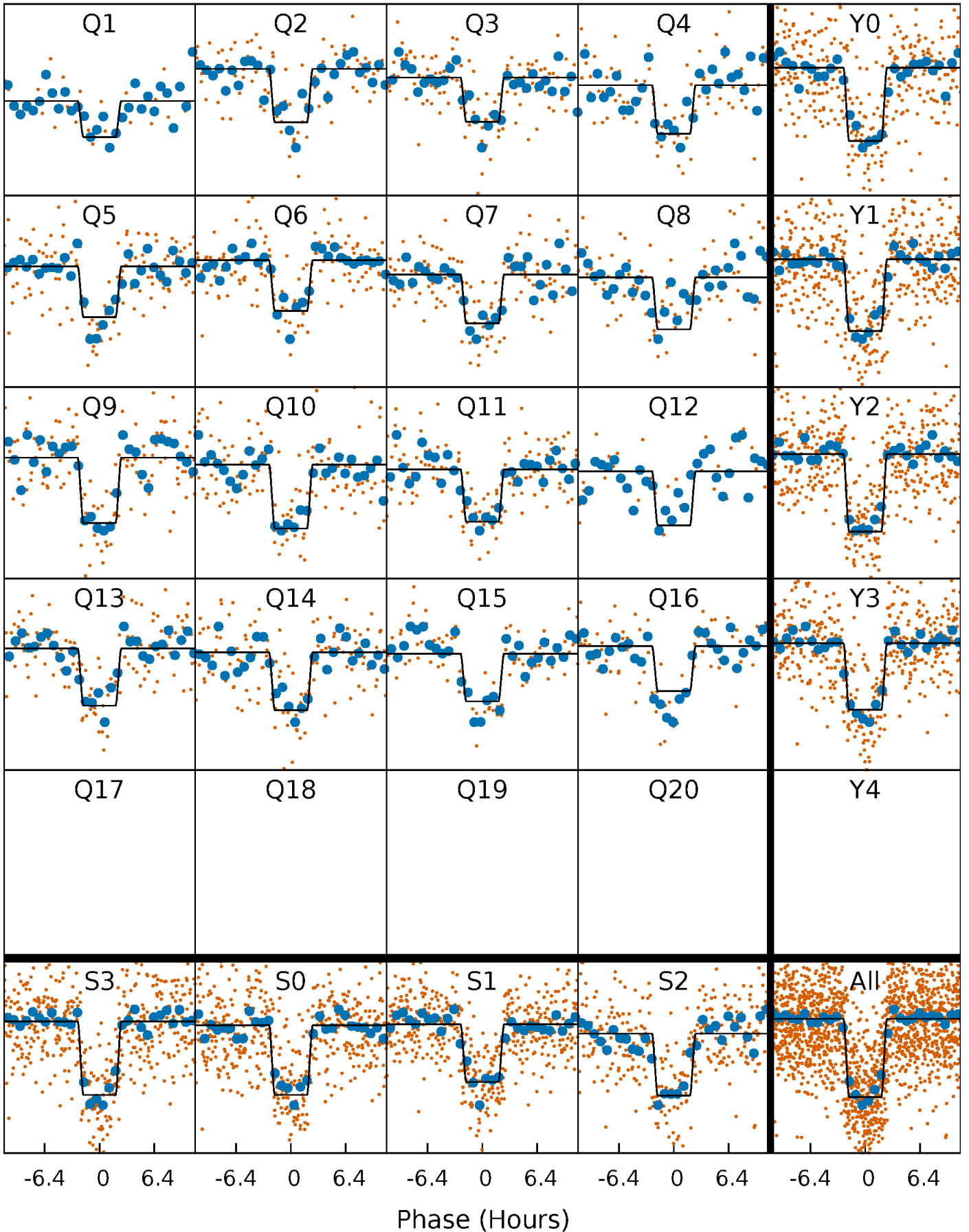
DV Quarter-Phased Transit Curves

TCE 012266636-01 P= 33.385712 Days $T_0=148.925543$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

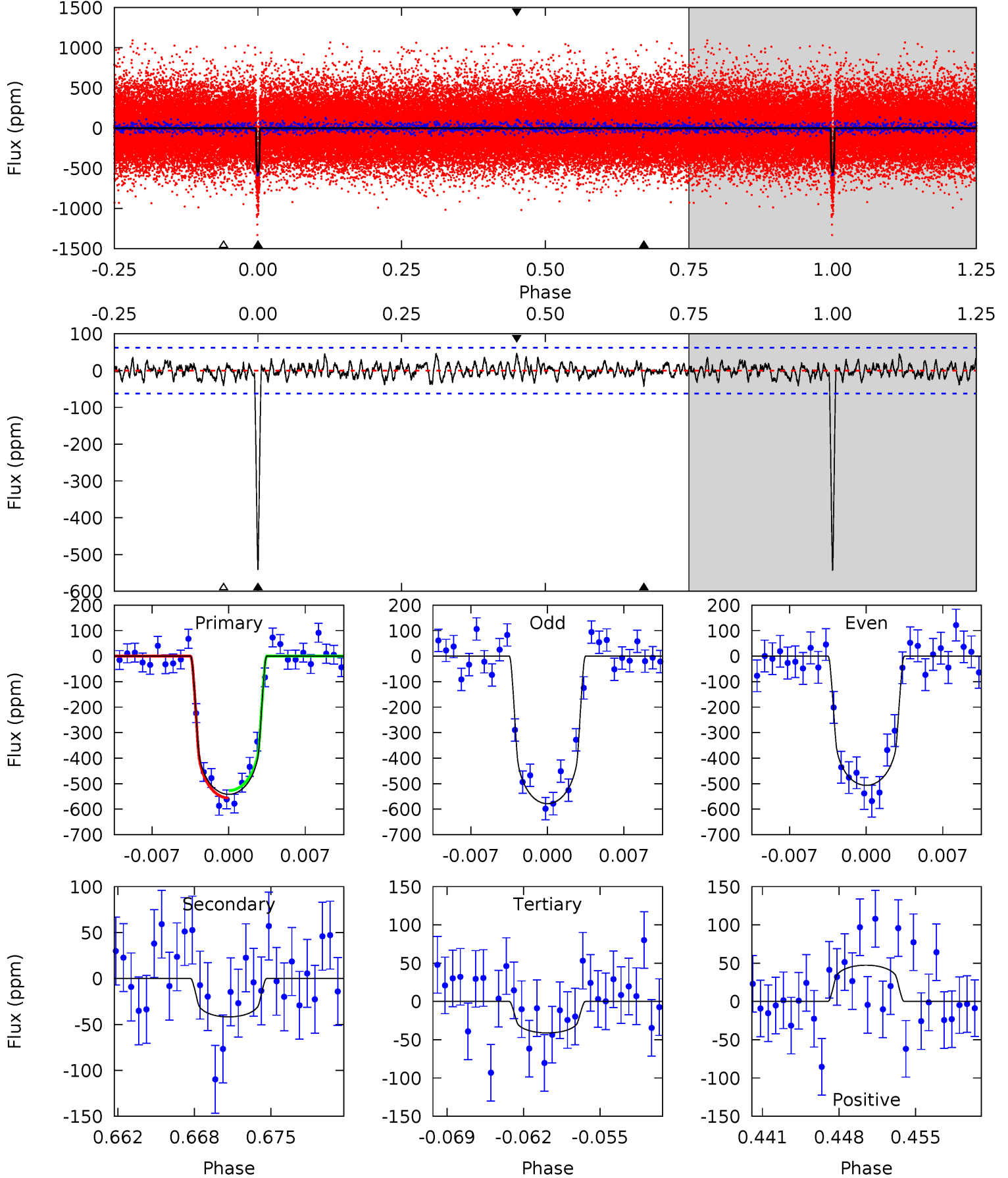
TCE 012266636-01 P= 33.386223 Days $T_0=148.913833$ (BKJD)



DV Model-Shift Uniqueness Test

012266636-01, P = 33.385712 Days, E = 115.539831 Days

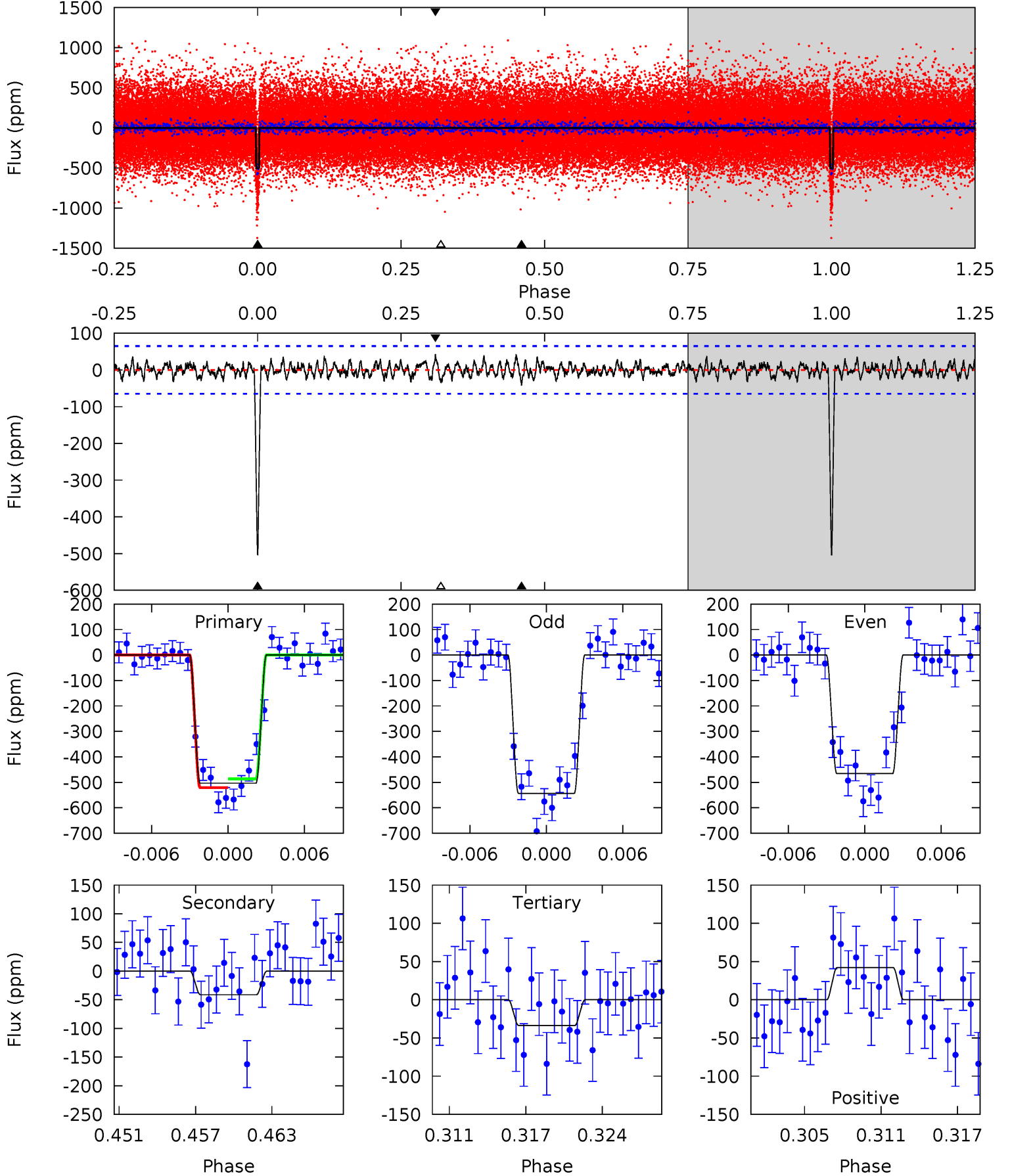
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.3	3.42	3.36	3.88	5.10	2.70	1.17	41.0	40.4	0.06	-0.46	2.94	1.02	0.08	1.19



Alt Model-Shift Uniqueness Test

012266636-01, P = 33.386223 Days, E = 115.527610 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
39.7	3.25	2.66	3.32	5.11	2.73	1.05	37.0	36.4	0.60	-0.06	3.06	1.02	0.08	1.34



Stellar Parameters For KIC 012266636

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5833^{+157}_{-175}	$4.407^{+0.101}_{-0.188}$	$-0.040^{+0.250}_{-0.300}$	$1.022^{+0.288}_{-0.155}$	$0.974^{+0.127}_{-0.104}$	$1.283^{+0.589}_{-0.653}$
	+3%/-3%	+2%/-4%	+625%/-750%	+28%/-15%	+13%/-11%	+46%/-51%
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 012266636-01 / KOI 1522.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-42 ± 12	$2.55^{+0.86}_{-0.70}$	820^{+61}_{-45}	3557^{+481}_{-307}	134^{+153}_{-65}
Alt.	-41 ± 13	$2.57^{+0.81}_{-0.76}$	817^{+60}_{-42}	3558^{+451}_{-320}	134^{+144}_{-63}

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 $A_{obs} \gg 1.0$

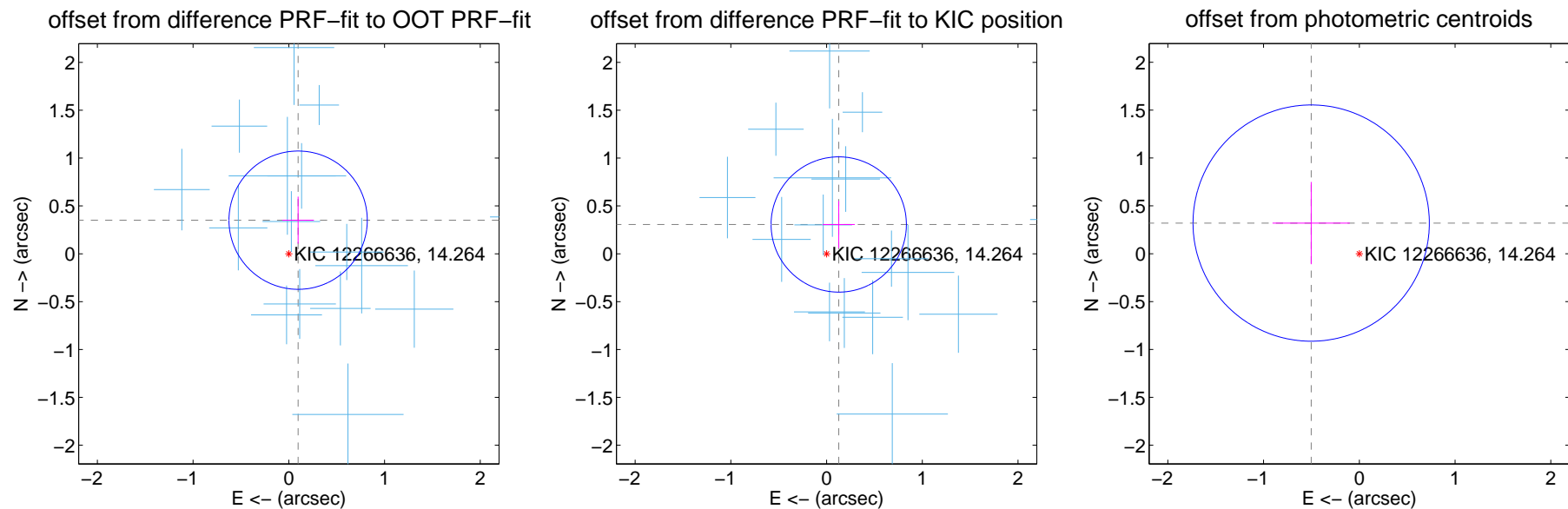
DV Centroid Data

Supplemental centroid analysis for 012266636-01. Kepler magnitude: 14.26. Transit SNR 33.59

There are 16 quarters with good PRF difference image offsets

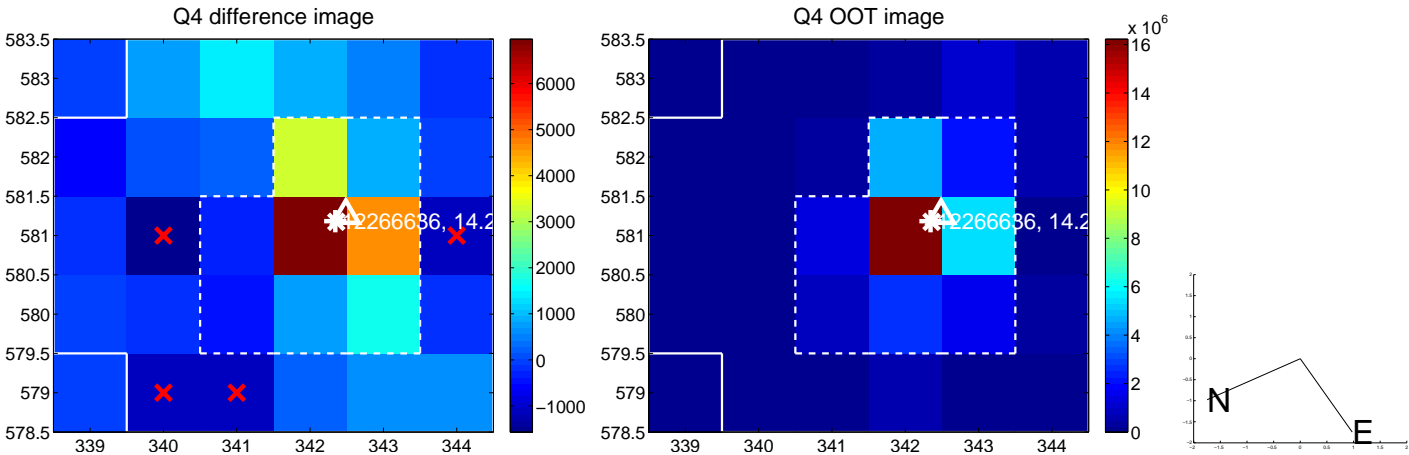
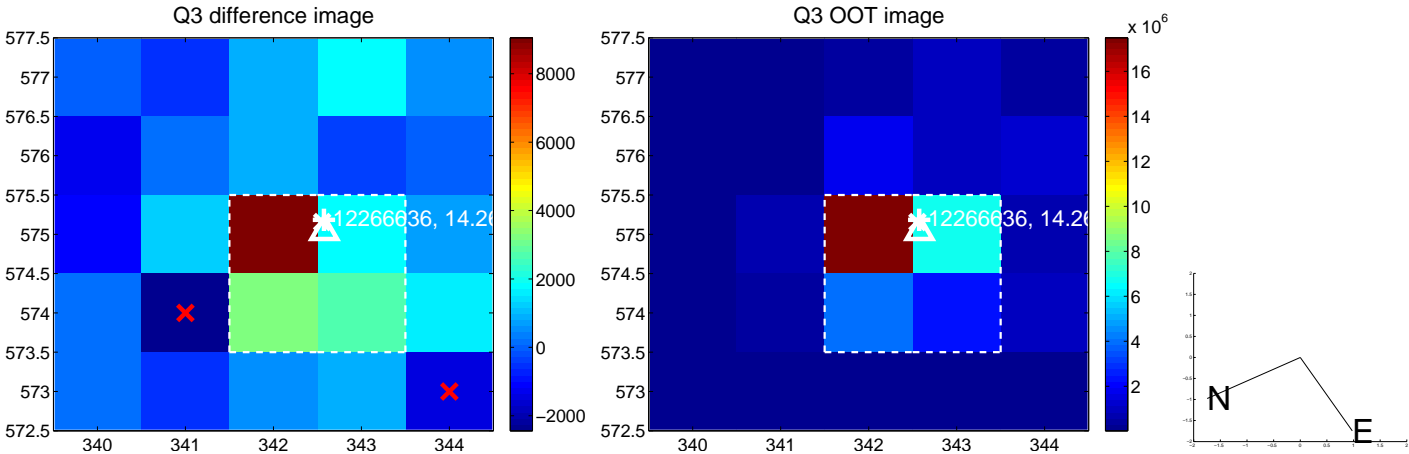
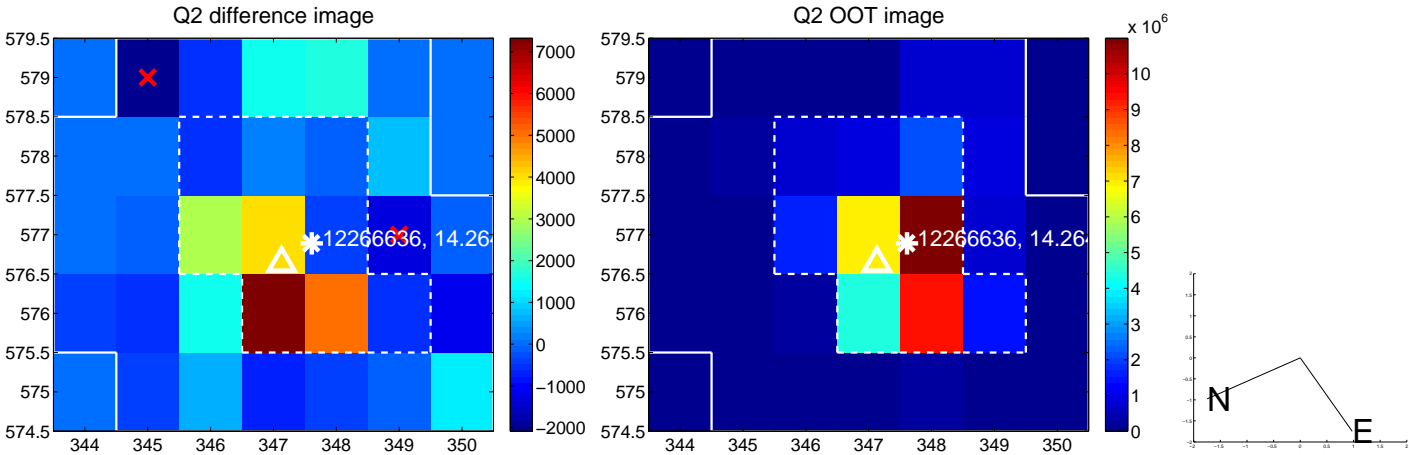
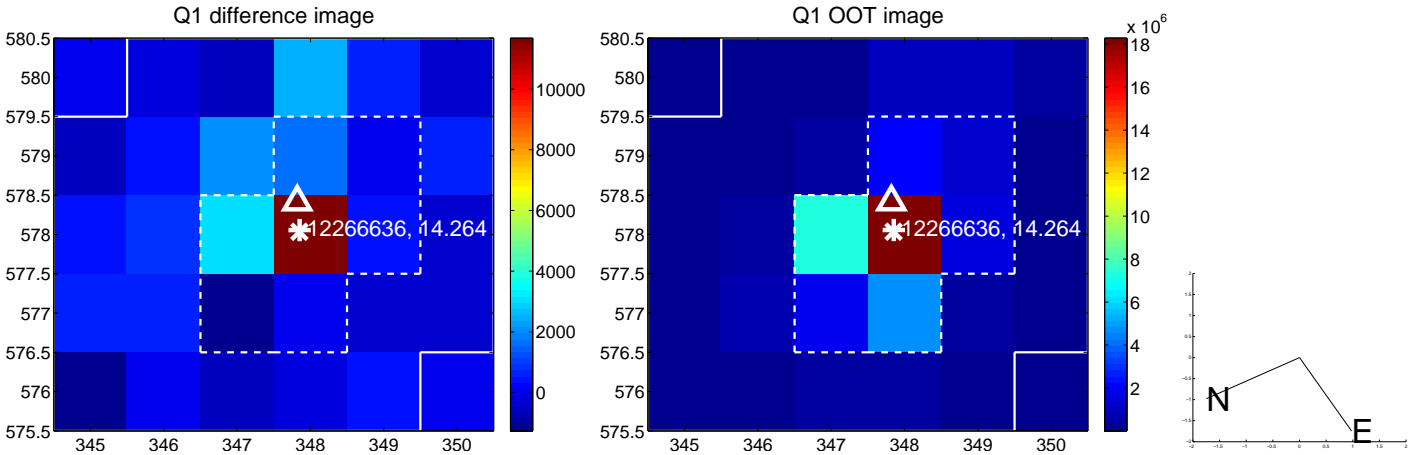
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.364 ± 0.241	1.51	-0.097 ± 0.165	0.351 ± 0.246
PRF-fit source offset from KIC position	0.331 ± 0.236	1.41	-0.127 ± 0.168	0.306 ± 0.245
photometric centroid source offset	0.60 ± 0.41	1.45	0.50 ± 0.40	0.32 ± 0.43

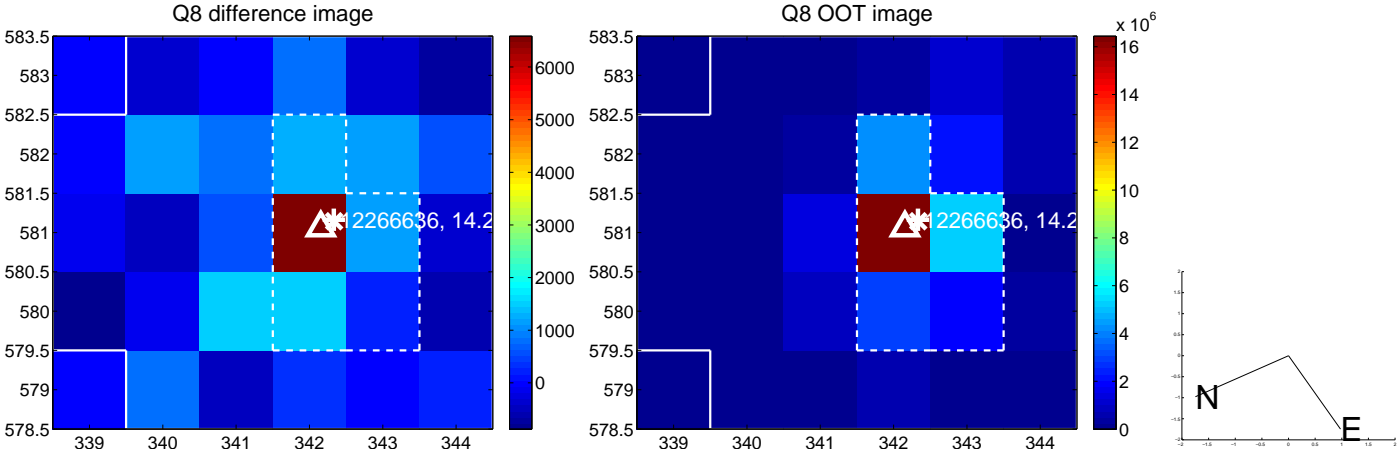
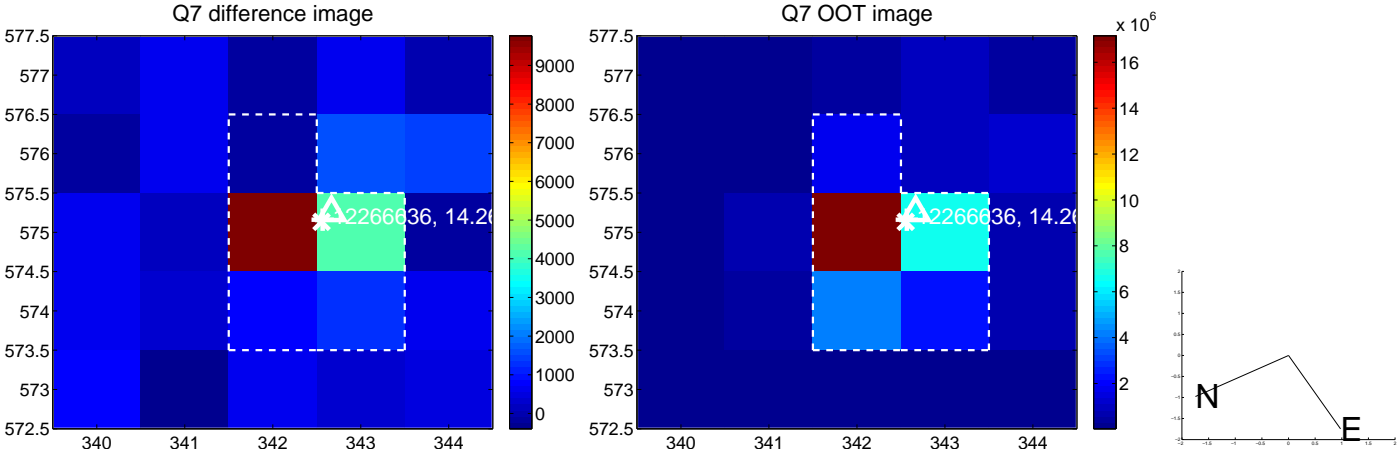
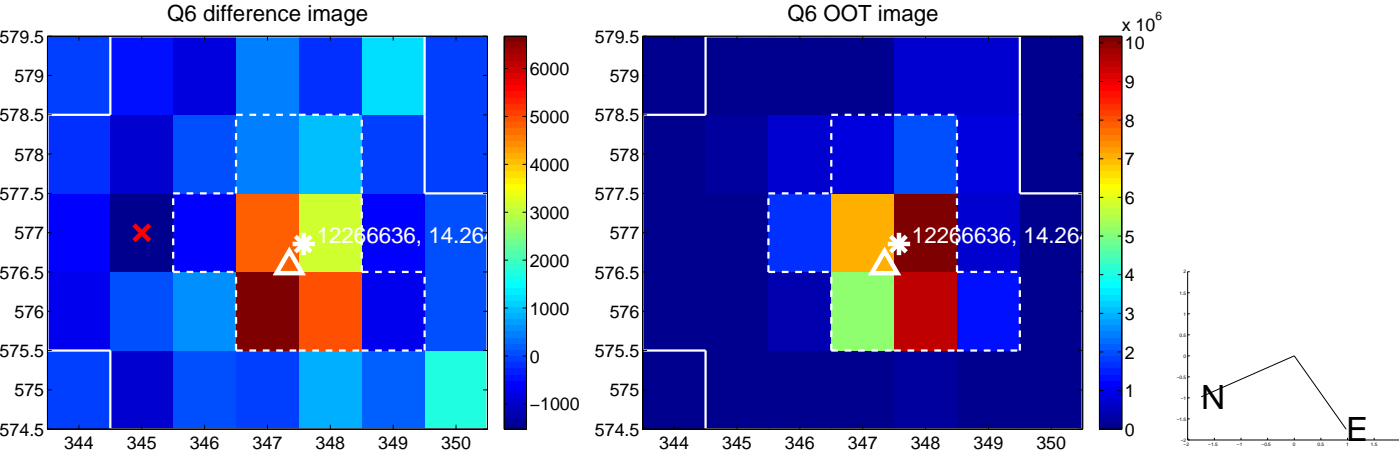
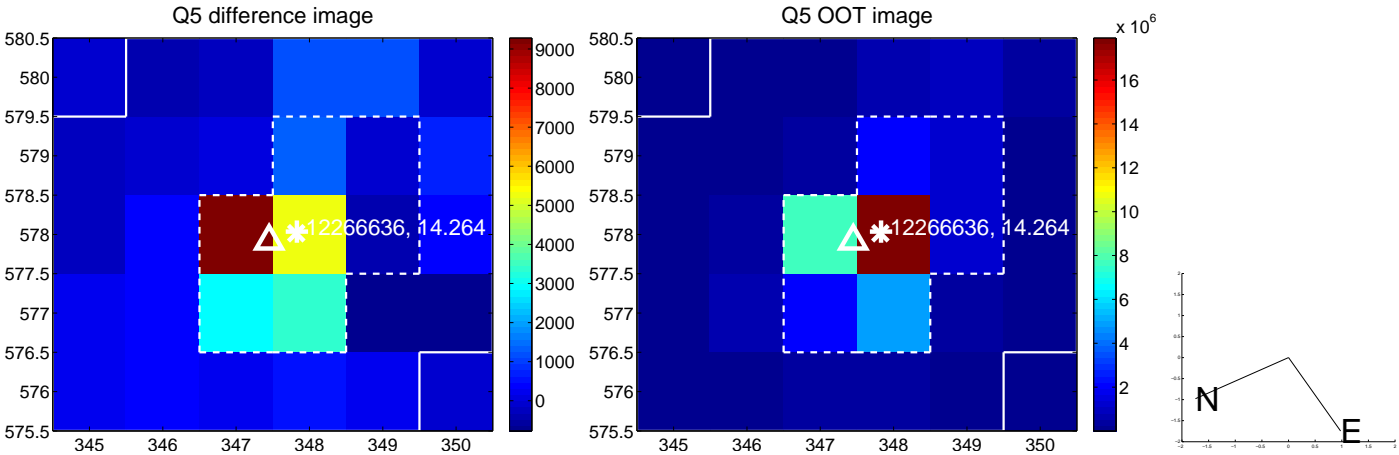


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

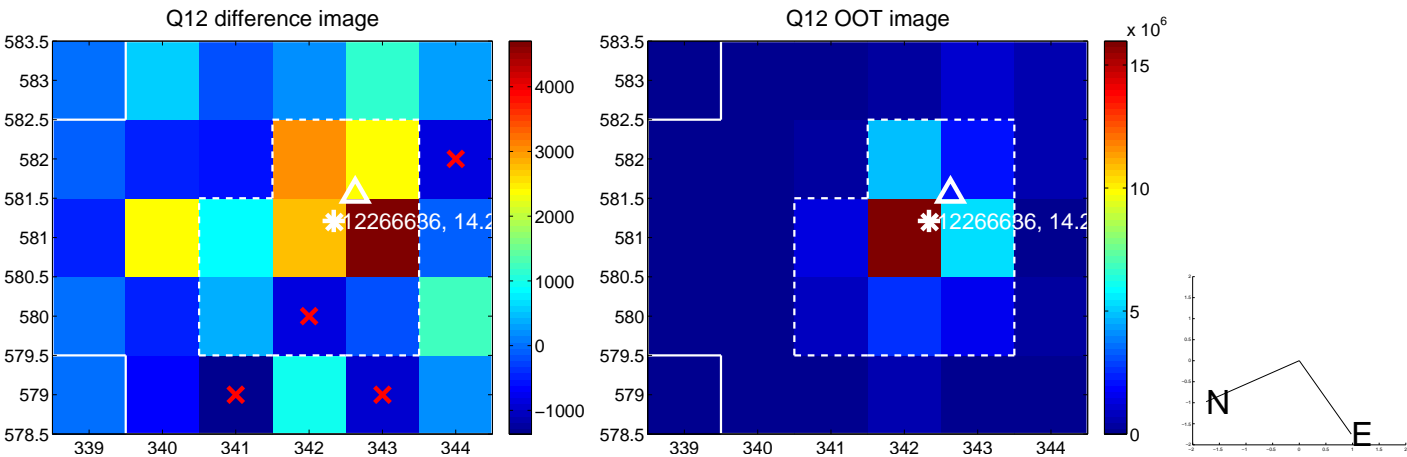
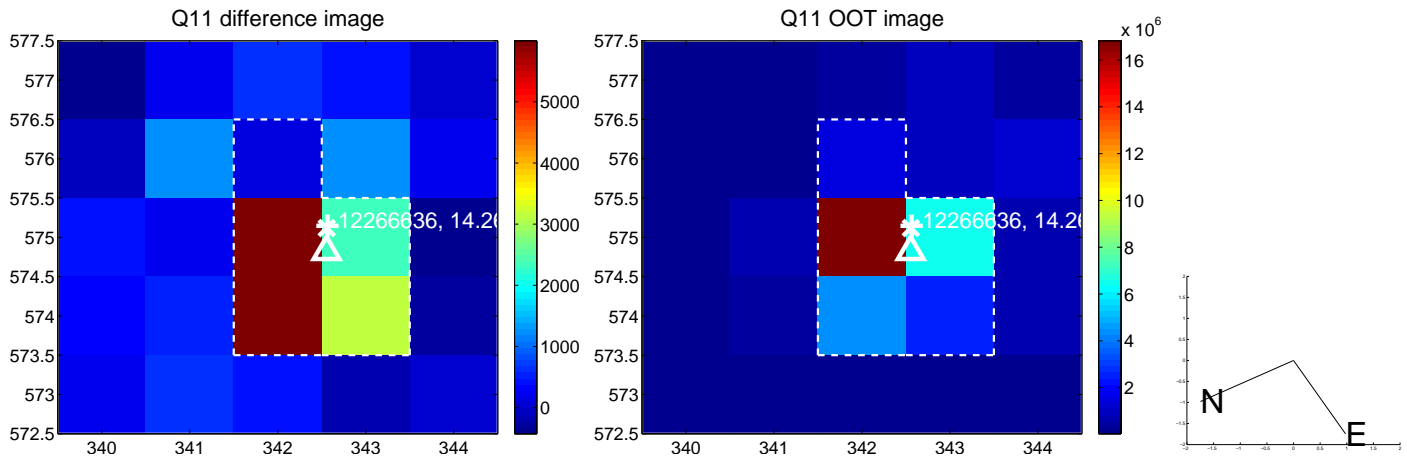
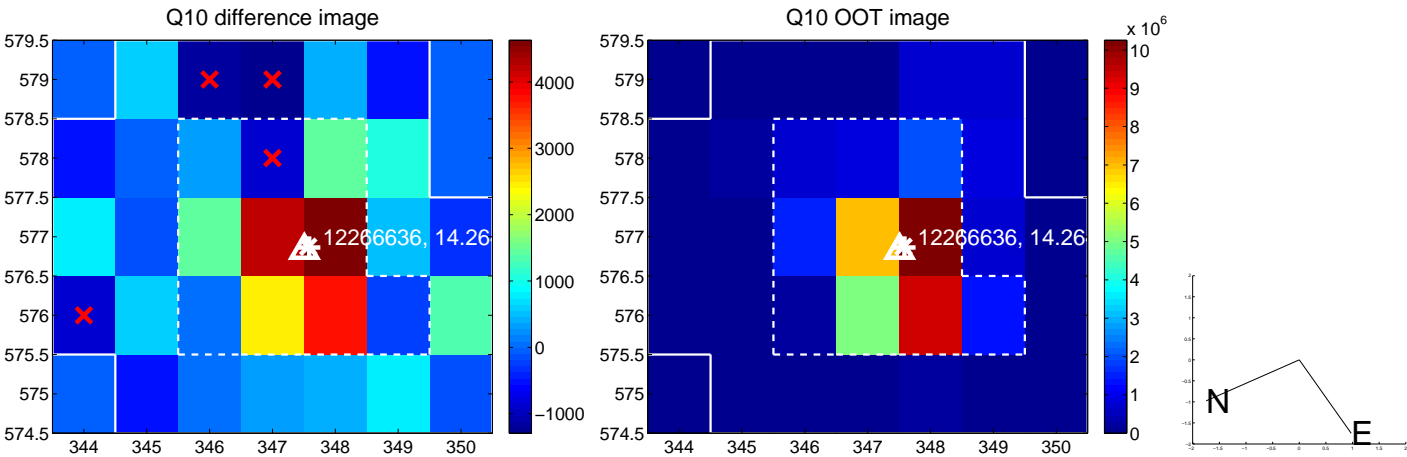
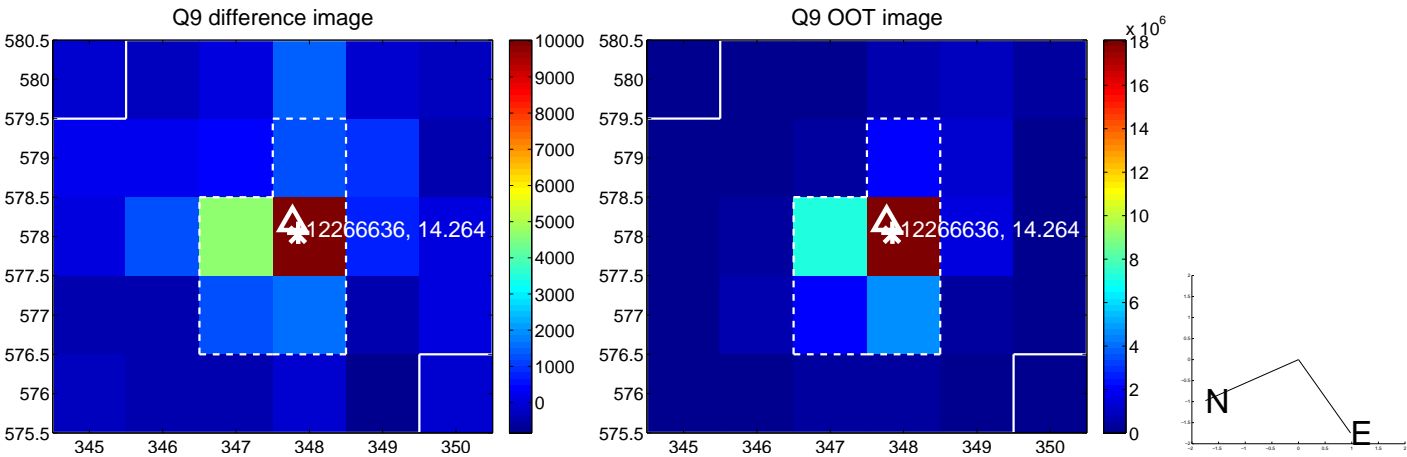
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



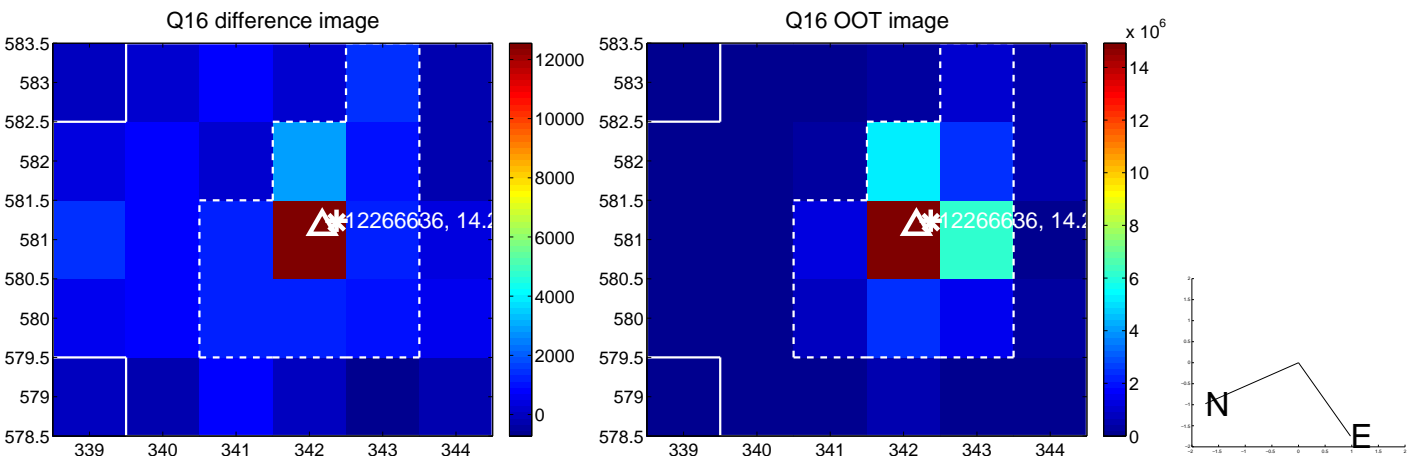
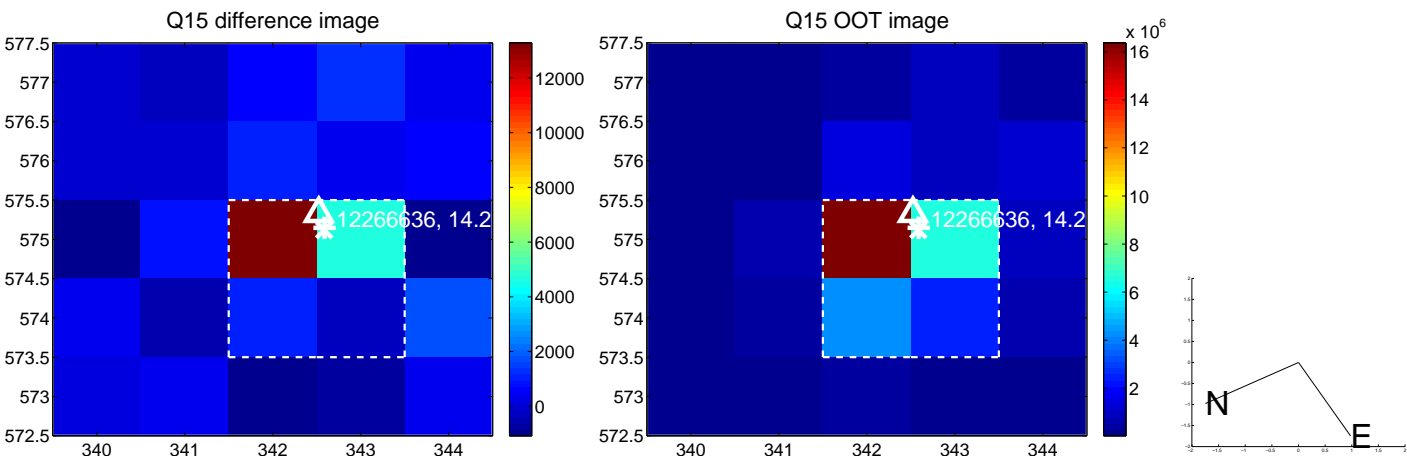
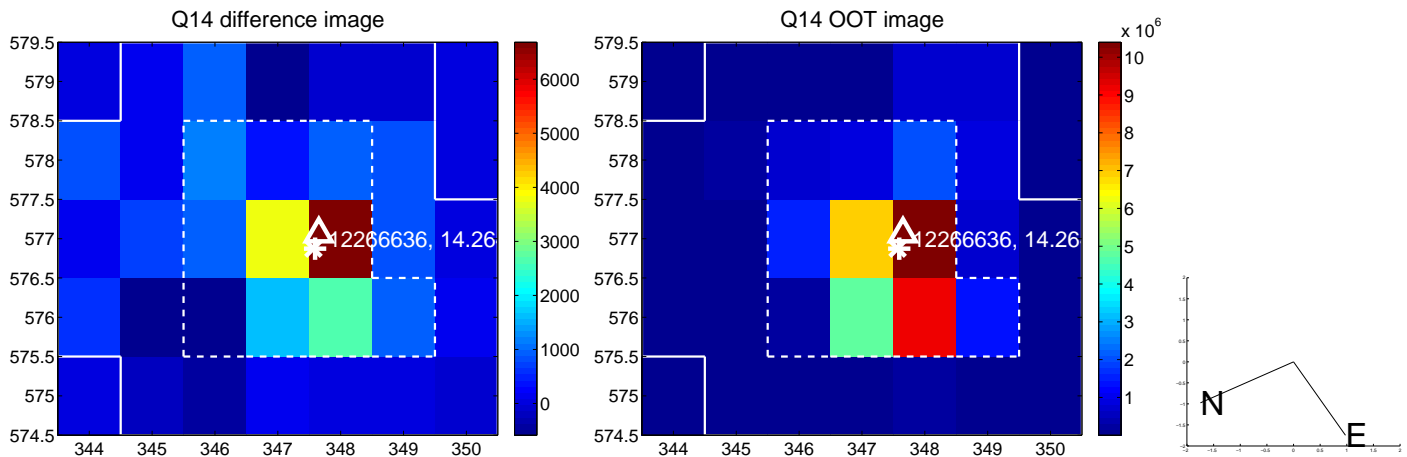
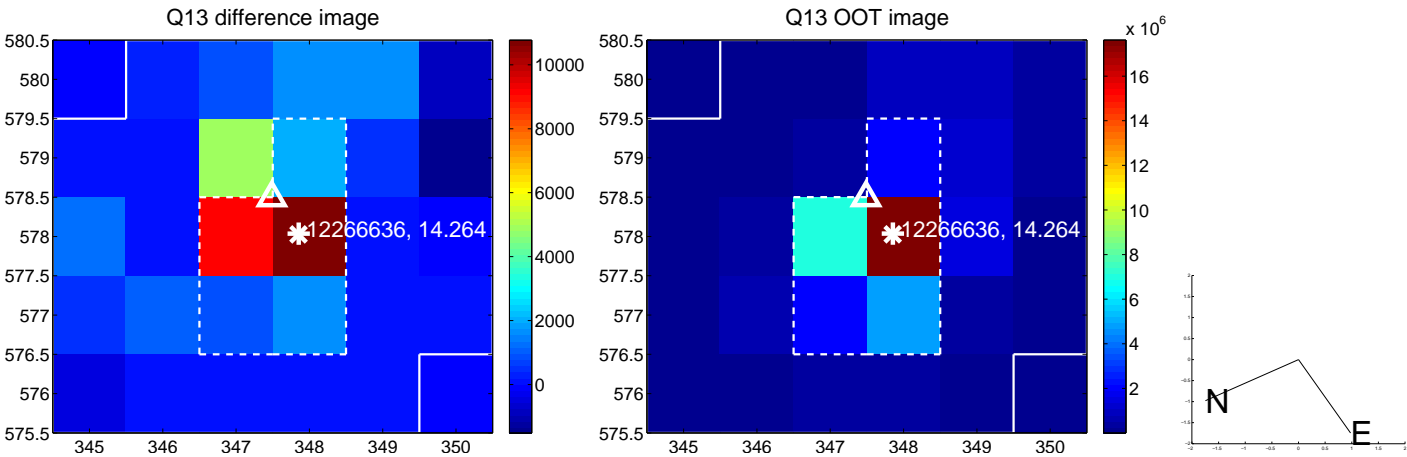
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



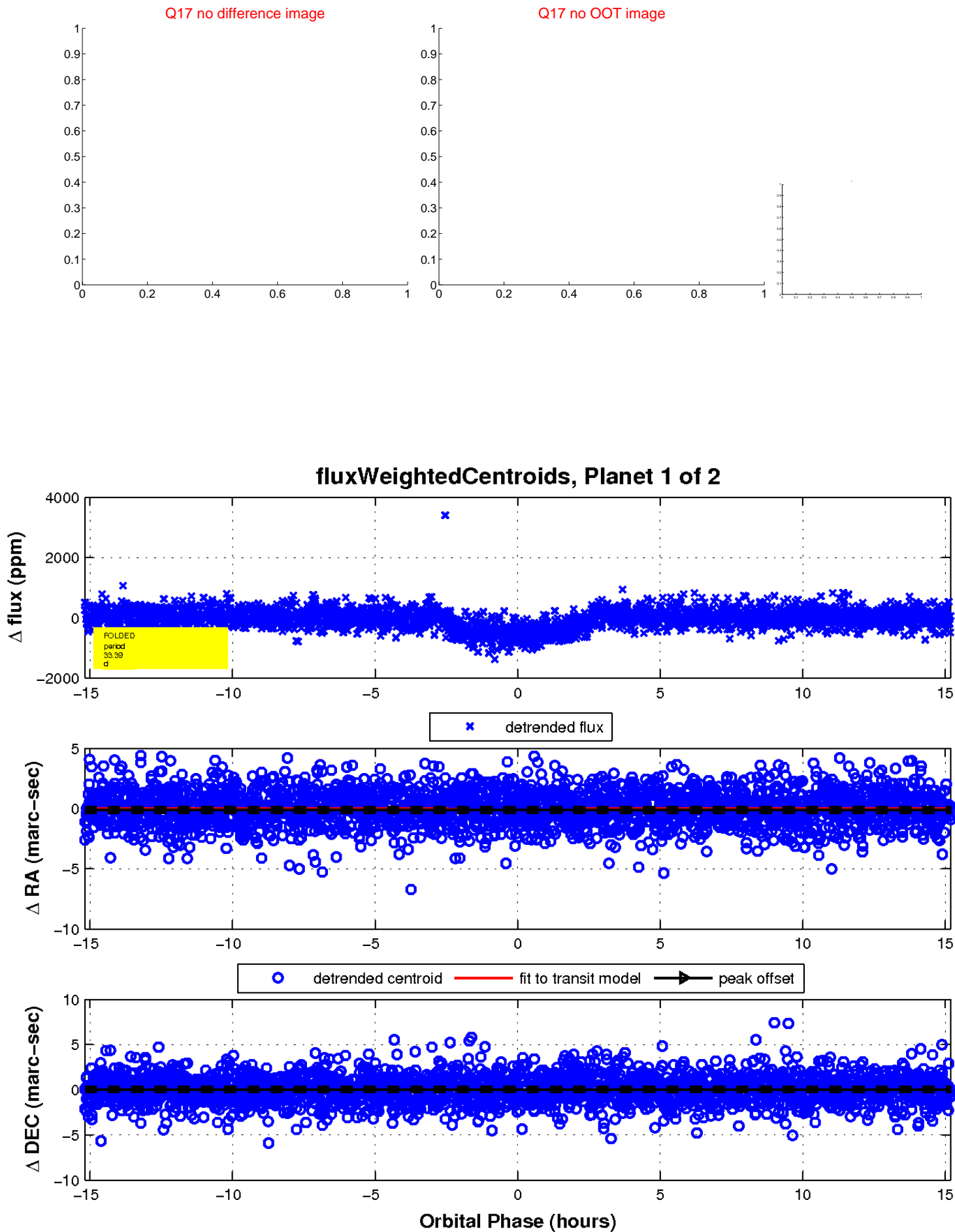
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

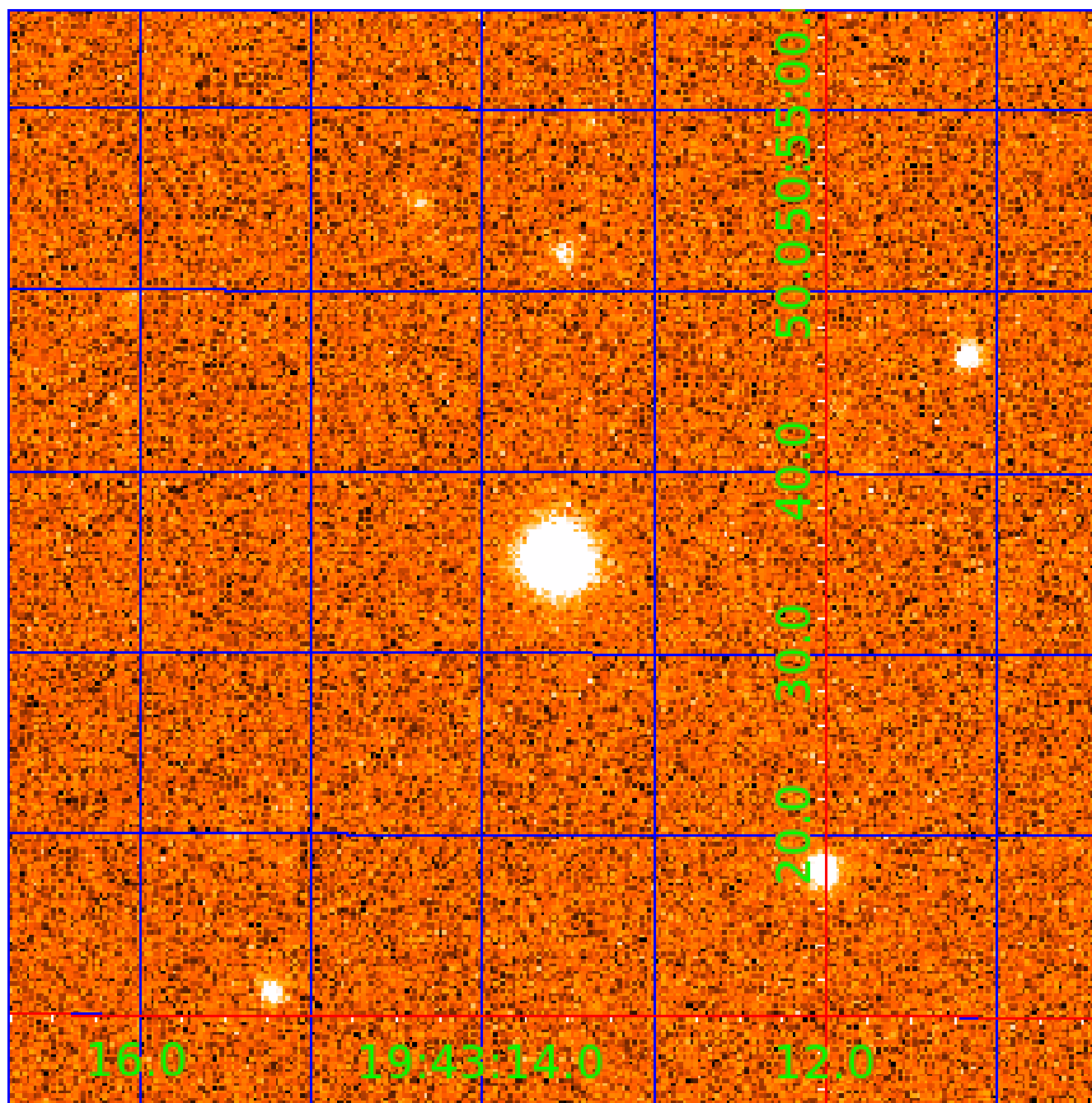


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 012266636

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})
012266636-01	OBS	1522.01	33.385712	148.925543	542.1	5.066	32.2	33.6	1.02	5833	2.54	26.79
012266636-02	OBS	1522.02	12.654832	134.683707	88.2	4.511	8.5	8.4	1.02	5833	1.14	97.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012266636-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
012266636-02	OBS	PC	0.96	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.

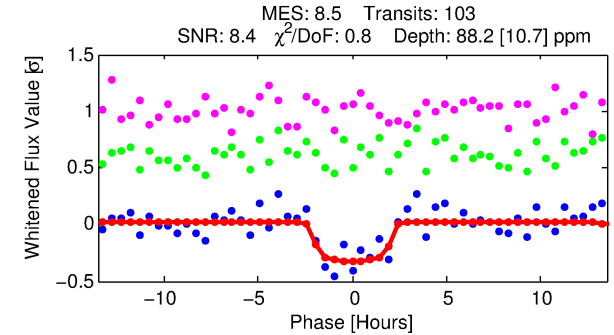
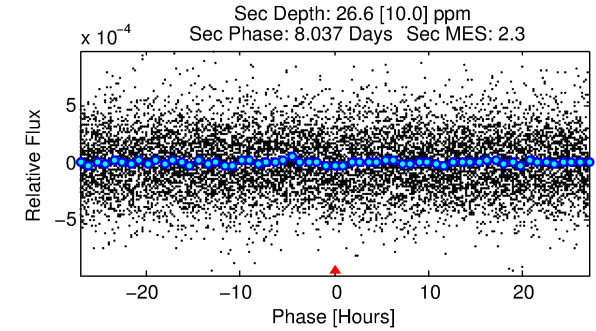
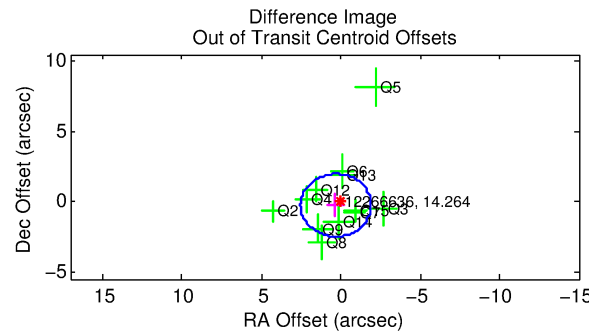
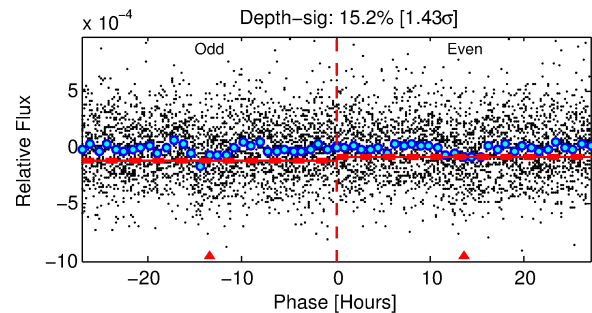
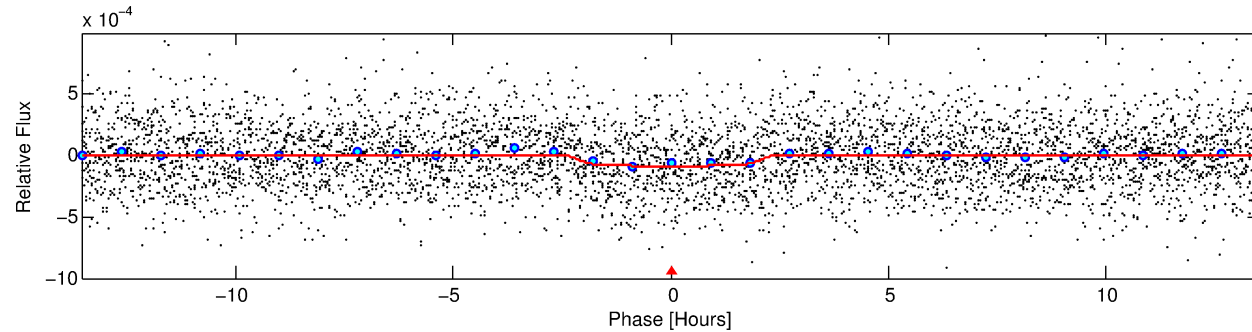
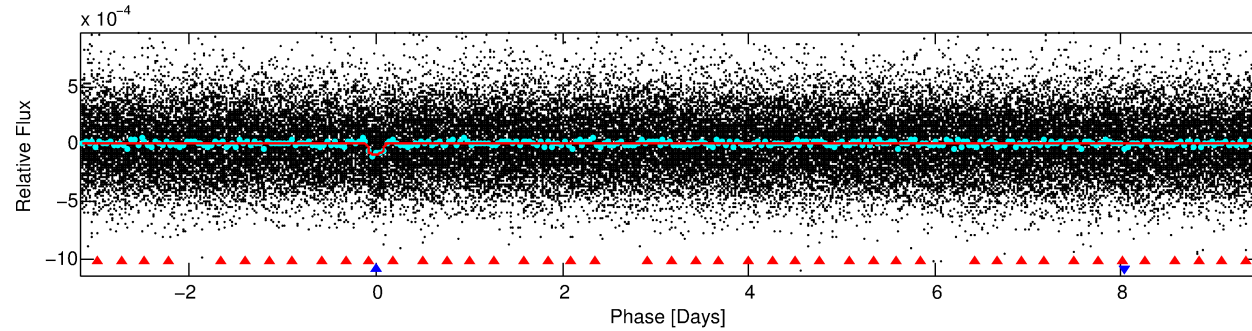
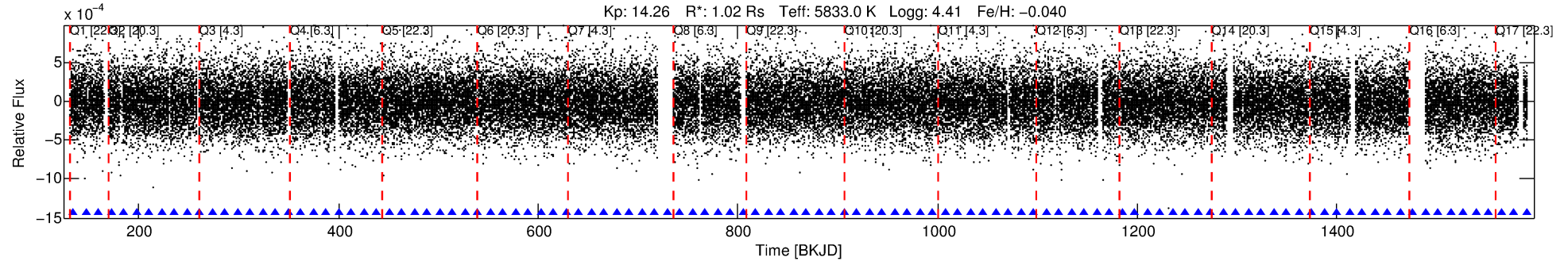
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012266636-02

No Significant Match Found

DV One-Page Summary

KIC: 12266636 Candidate: 2 of 2 Period: 12.655 d
KOI: K01522.02 Corr: 0.962



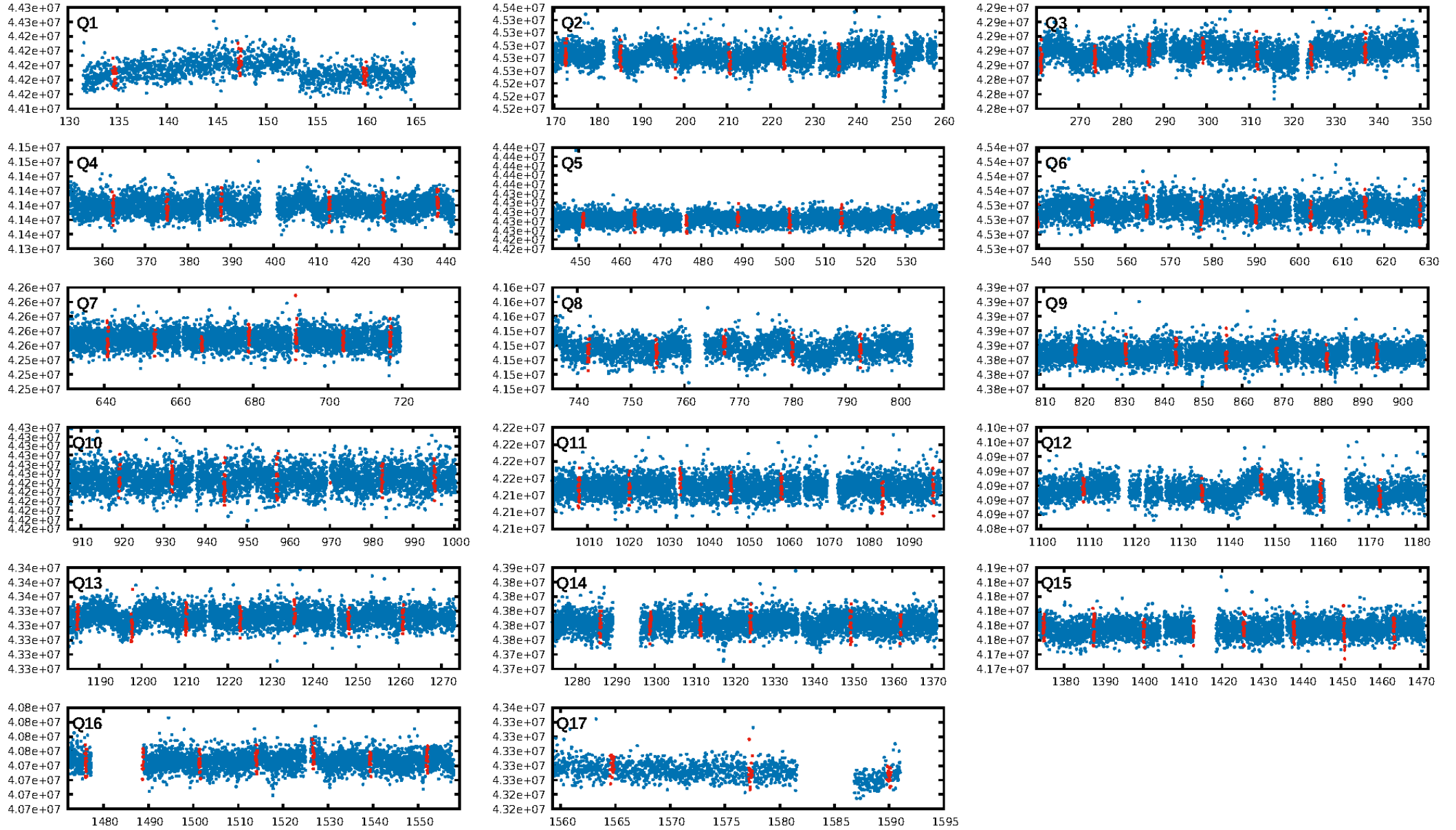
DV Fit Results:

Period = 12.65483 [0.00017] d
Epoch = 134.6837 [0.0107] BKJD
Rp/R* = 0.0102 [0.0064]
a/R* = 9.89 [30.32]
b = 0.90 [0.67]
Seff = 97.67 [35.62]
Teq = 802 [73] K
Rp = 1.14 [0.78] Re
a = 0.1053 [0.0249] AU
Ag = 125.25 [169.48] [0.73 σ]
Teffp = 4146 [1362] K [2.45 σ]

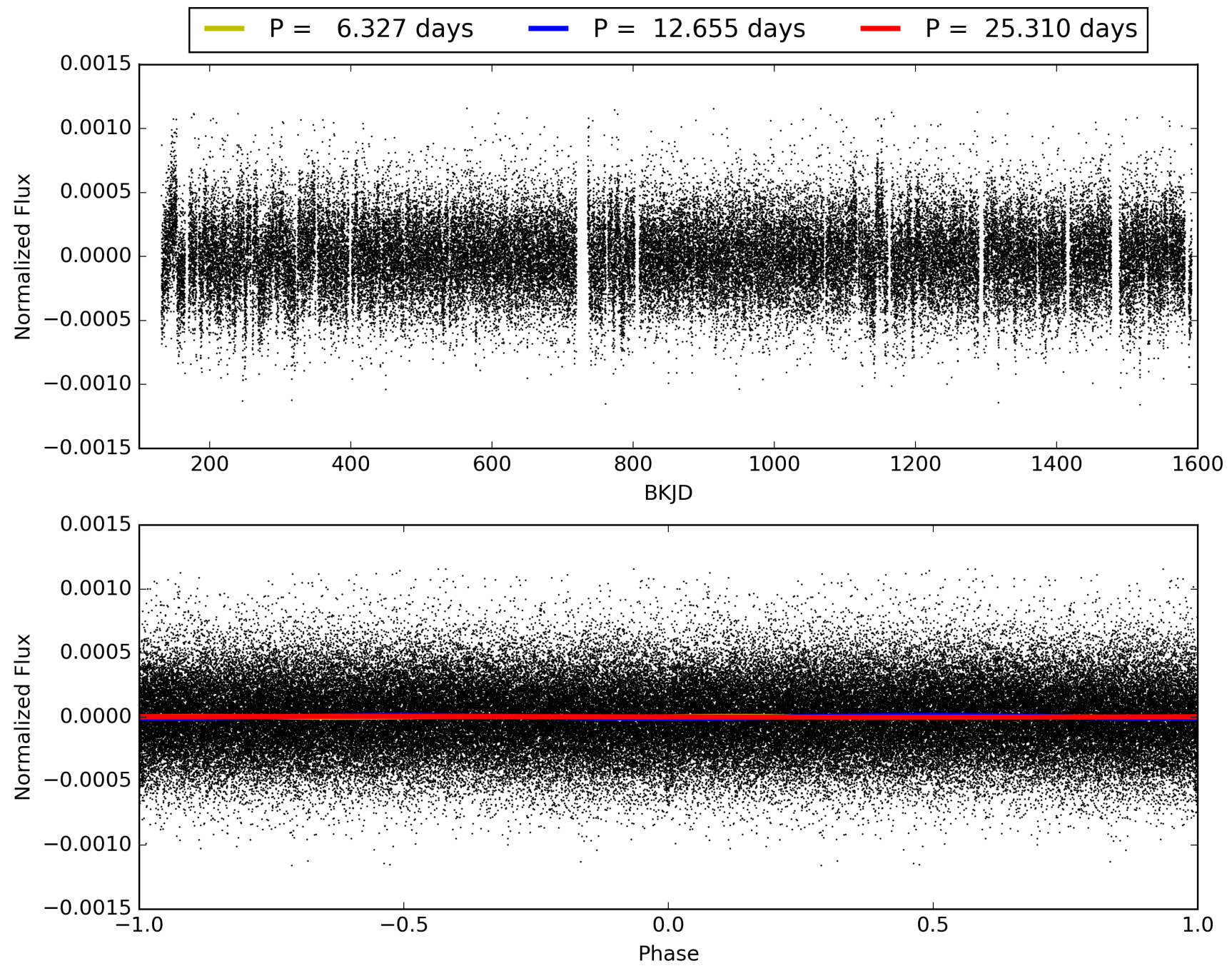
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [73.35 σ]
ModelChiSquare2-sig: 97.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.26e-18
RollingBand-fgt: 1.00 [97/97]
GhostDiagnostic-chr: -1.67
Centroid-sig: 4.2%
Centroid-so: 3.379 arcsec [2.12 σ]
OotOffset-rm: 0.394 arcsec [0.53 σ]
KicOffset-rm: 0.401 arcsec [0.52 σ]
OotOffset-st: 3/3/3/3 [12]
KicOffset-st: 3/3/3/3 [12]
DiffImageQuality-fgm: 0.33 [4/12]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 012266636-02, PDC Light Curves

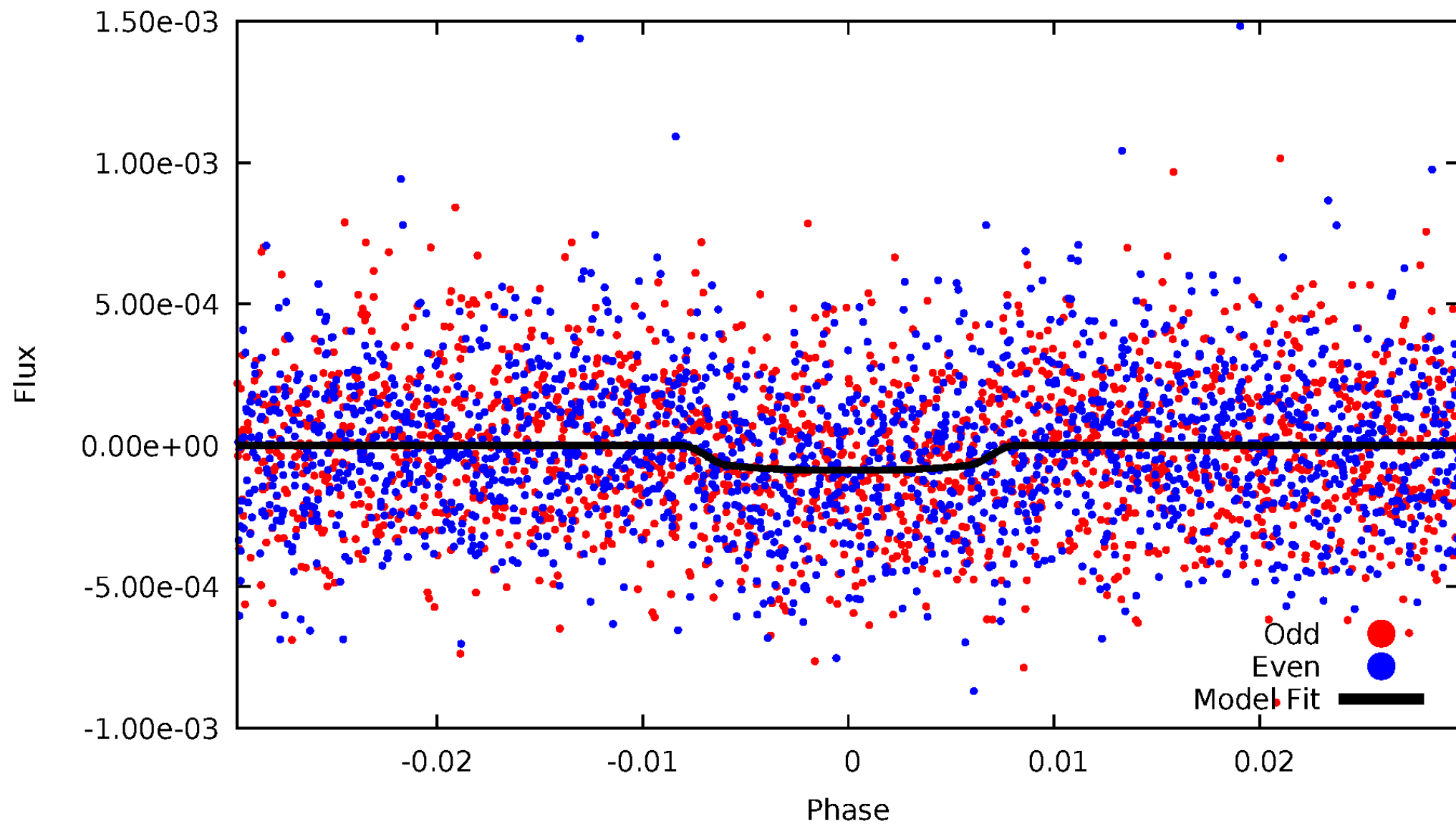


TCE 012266636-02



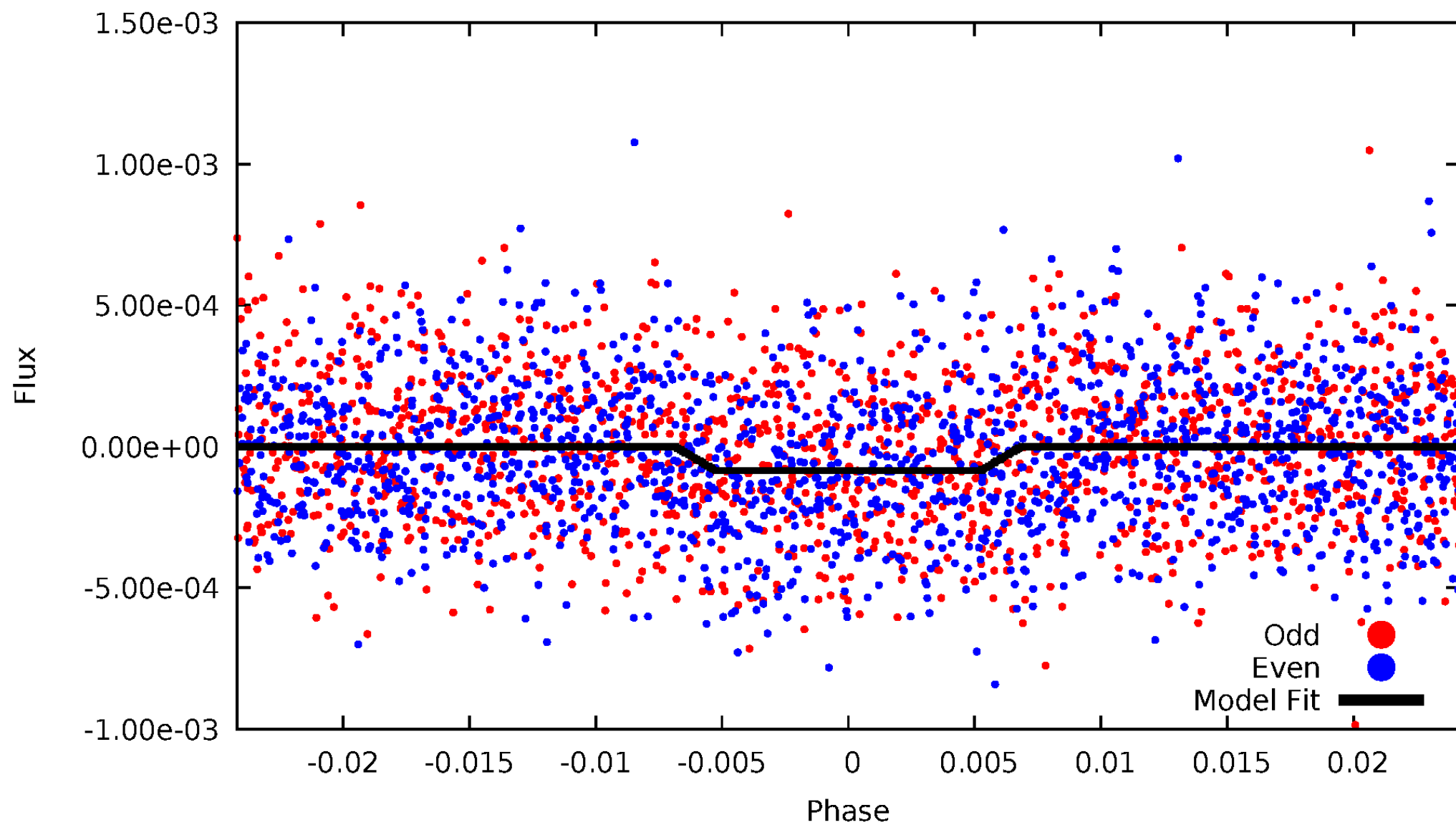
DV Odd/Even

TCE 012266636-02



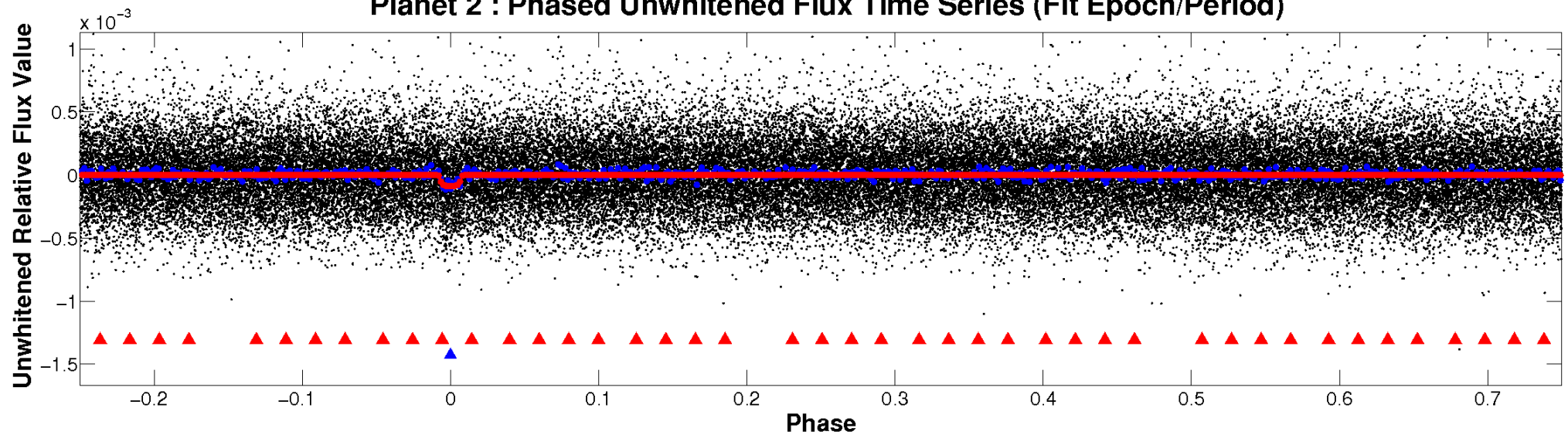
ALT Odd/Even

TCE 012266636-02

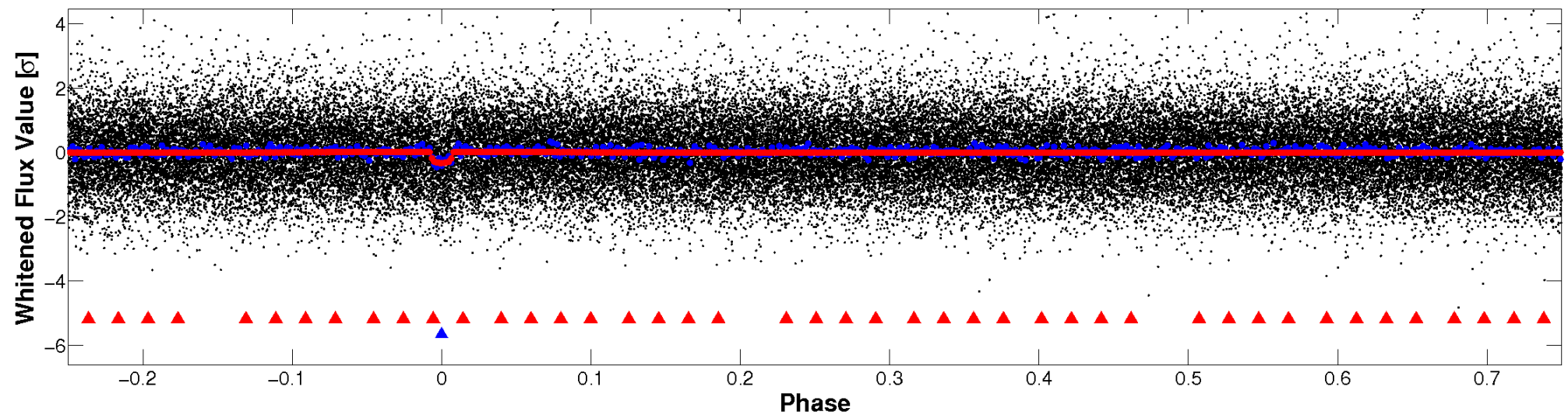


Non-Whitened Vs. Whitened Light Curve

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

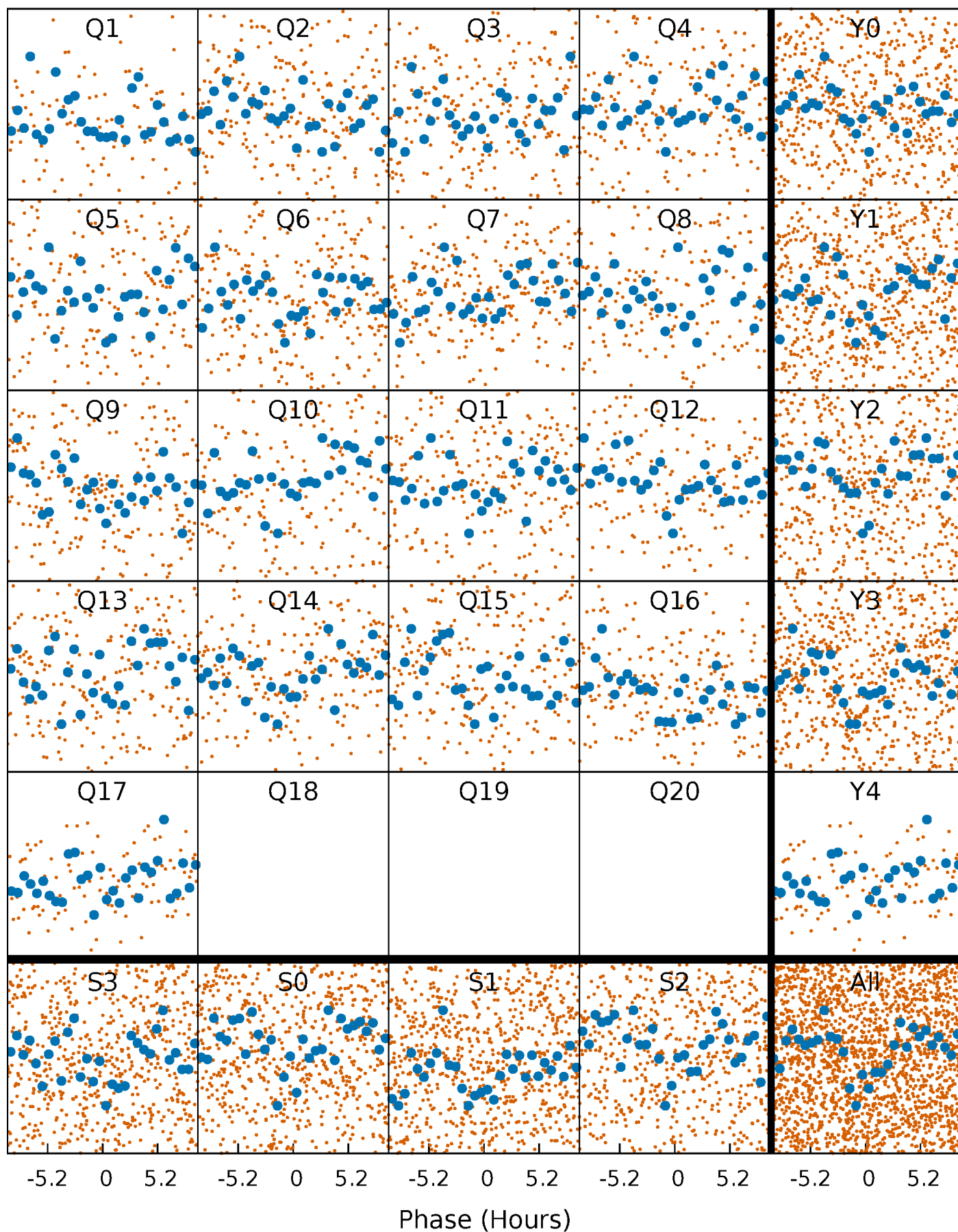


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



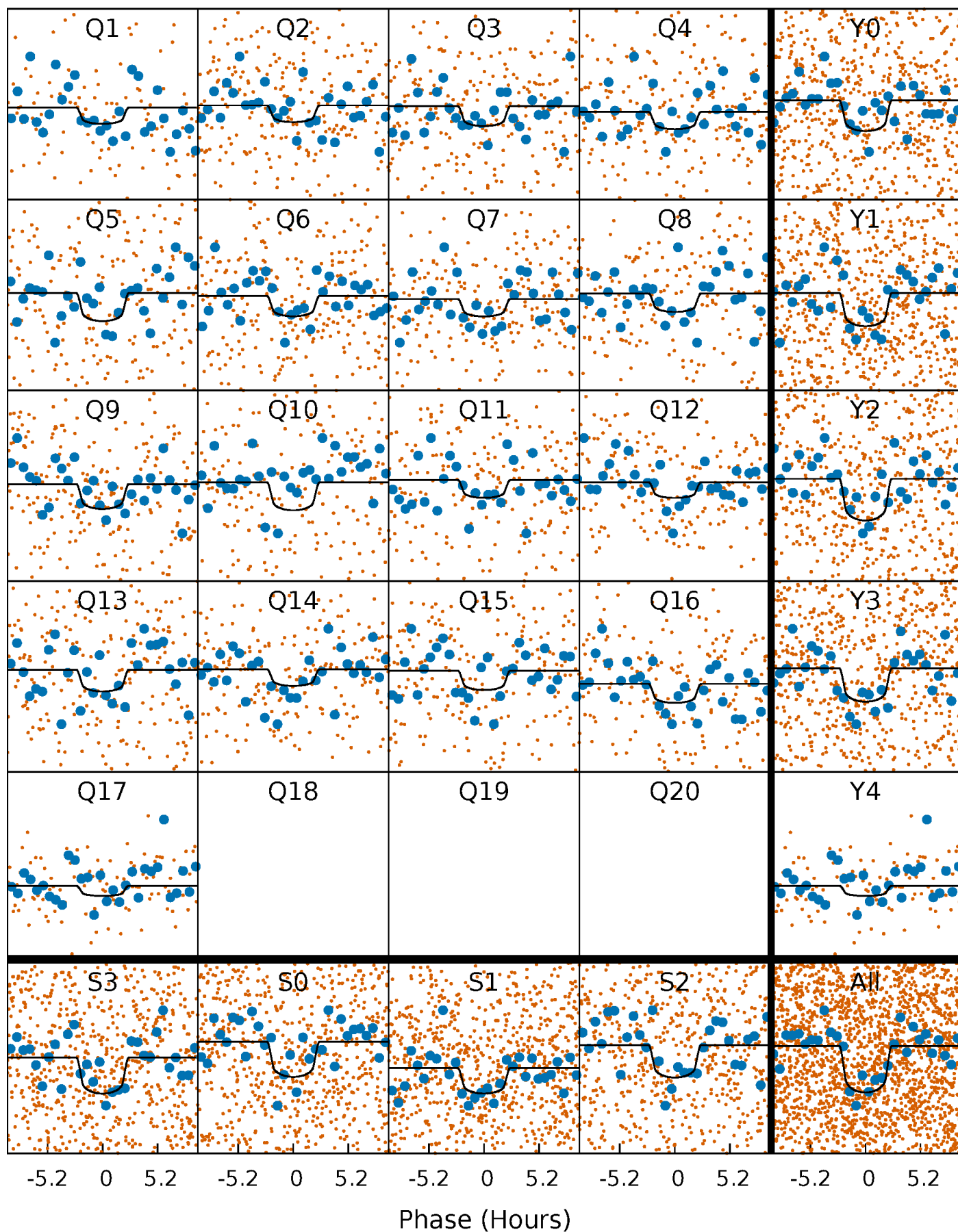
PDC Quarter-Phased Transit Curves

TCE 012266636-02 P= 12.654832 Days $T_0=134.683707$ (BKJD)



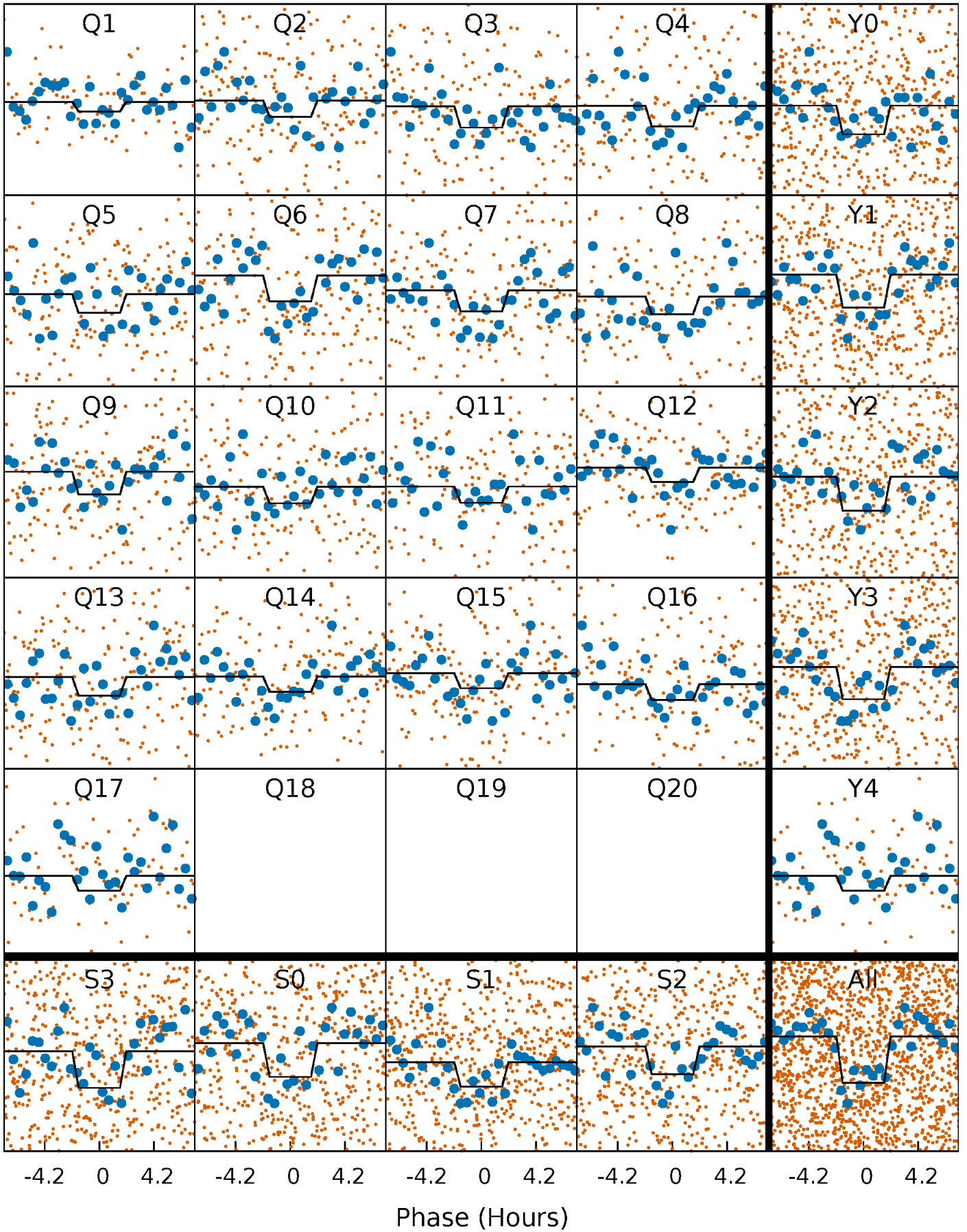
DV Quarter-Phased Transit Curves

TCE 012266636-02 P= 12.654832 Days $T_0=134.683707$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

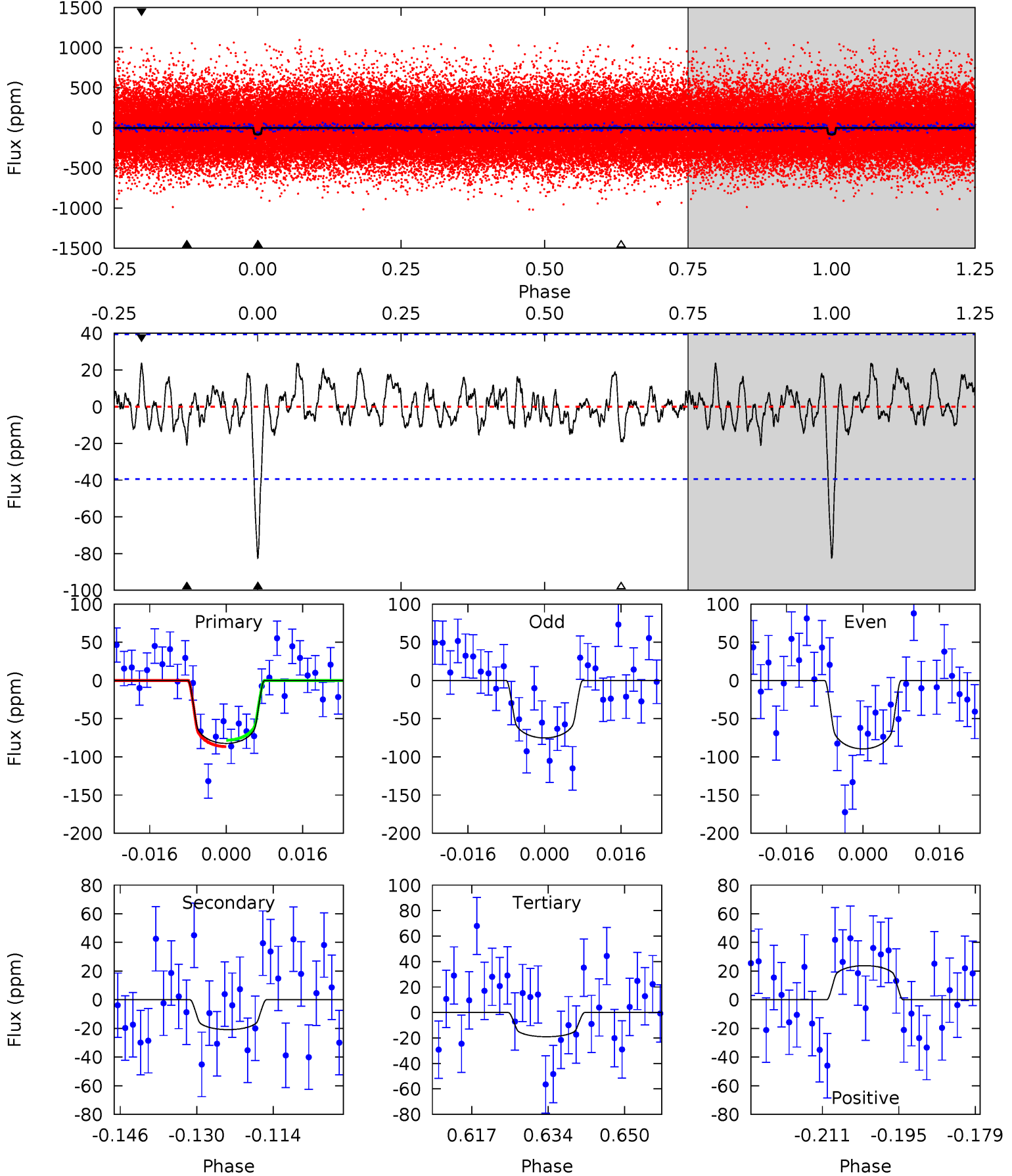
TCE 012266636-02 P= 12.654758 Days $T_0=134.693136$ (BKJD)



DV Model-Shift Uniqueness Test

012266636-02, P = 12.654832 Days, E = 122.028875 Days

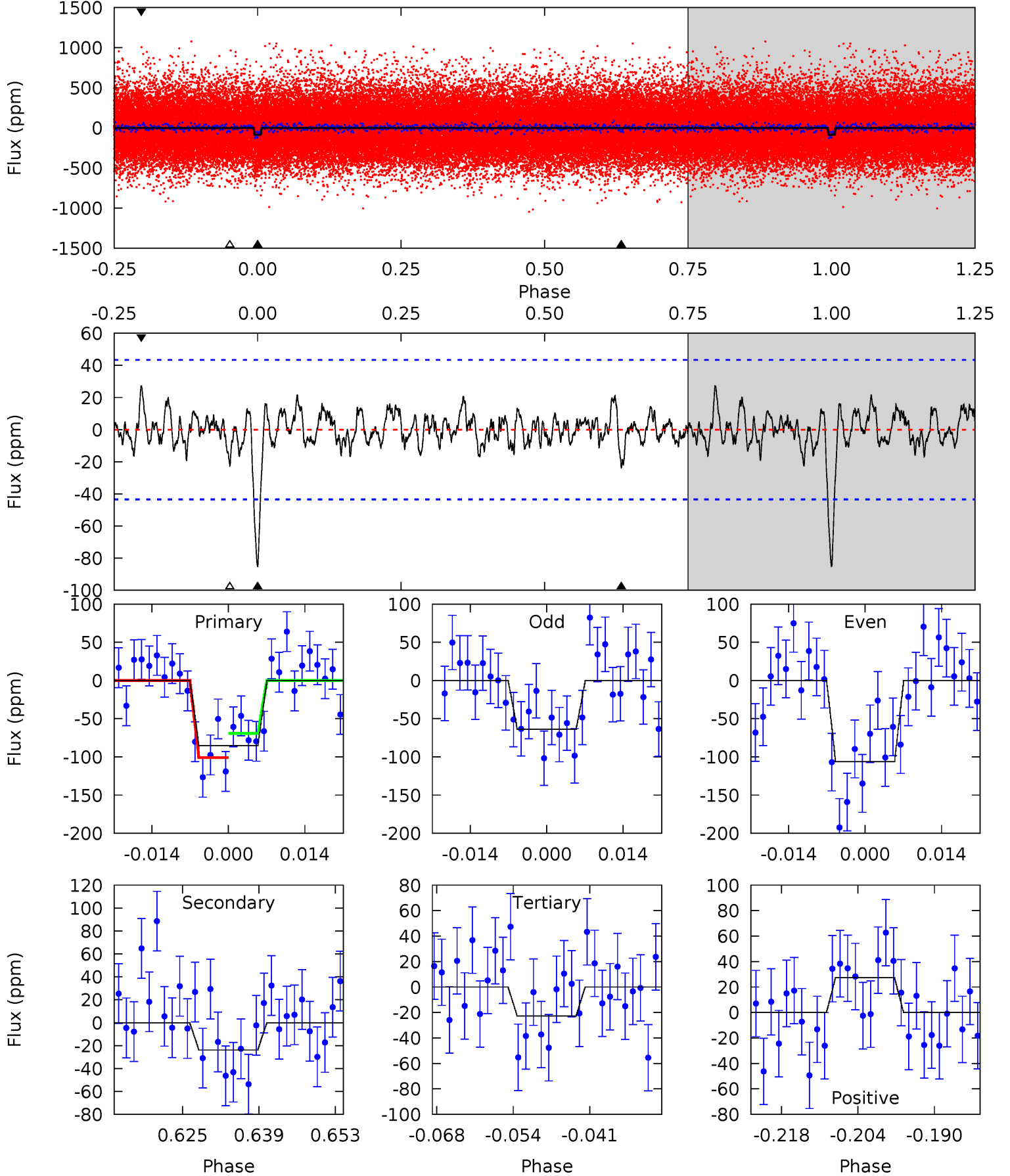
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	2.61	2.38	2.97	4.93	2.40	1.01	7.92	7.33	0.23	-0.37	0.89	0.87	0.22	0.52



Alt Model-Shift Uniqueness Test

012266636-02, P = 12.654758 Days, E = 122.038378 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.76	2.73	2.60	3.14	4.97	2.47	0.90	7.16	6.61	0.13	-0.42	2.43	1.01	0.24	1.81



Stellar Parameters For KIC 012266636

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5833^{+157}_{-175}	$4.407^{+0.101}_{-0.188}$	$-0.040^{+0.250}_{-0.300}$	$1.022^{+0.288}_{-0.155}$	$0.974^{+0.127}_{-0.104}$	$1.283^{+0.589}_{-0.653}$
	+3%/-3%	+2%/-4%	+625%/-750%	+28%/-15%	+13%/-11%	+46%/-51%
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 012266636-02 / KOI 1522.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-21 ± 8	$1.22^{+0.66}_{-0.64}$	1129^{+79}_{-54}	4105^{+1399}_{-671}	85^{+272}_{-55}
Alt.	-24 ± 9	$1.11^{+0.74}_{-0.61}$	1126^{+84}_{-53}	4280^{+1867}_{-715}	110^{+457}_{-73}

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 $A_{\text{obs}} \gg 1.0$

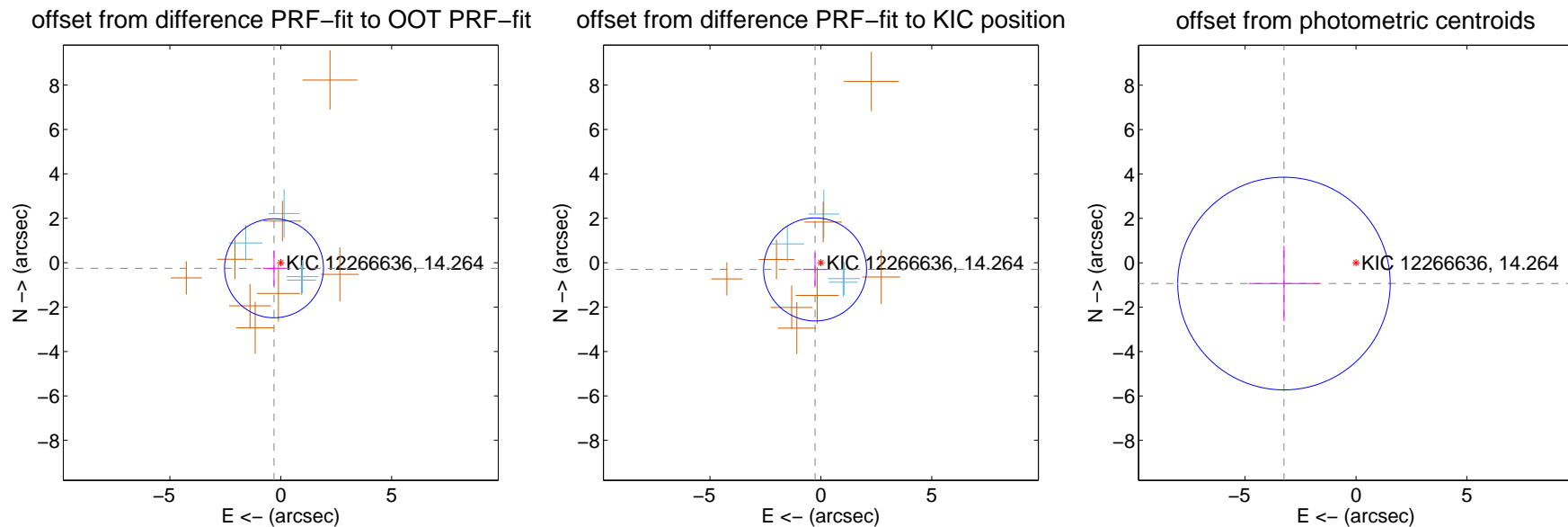
DV Centroid Data

Supplemental centroid analysis for 012266636-02. Kepler magnitude: 14.26. Transit SNR 8.42

There are 4 quarters with good PRF difference image offsets

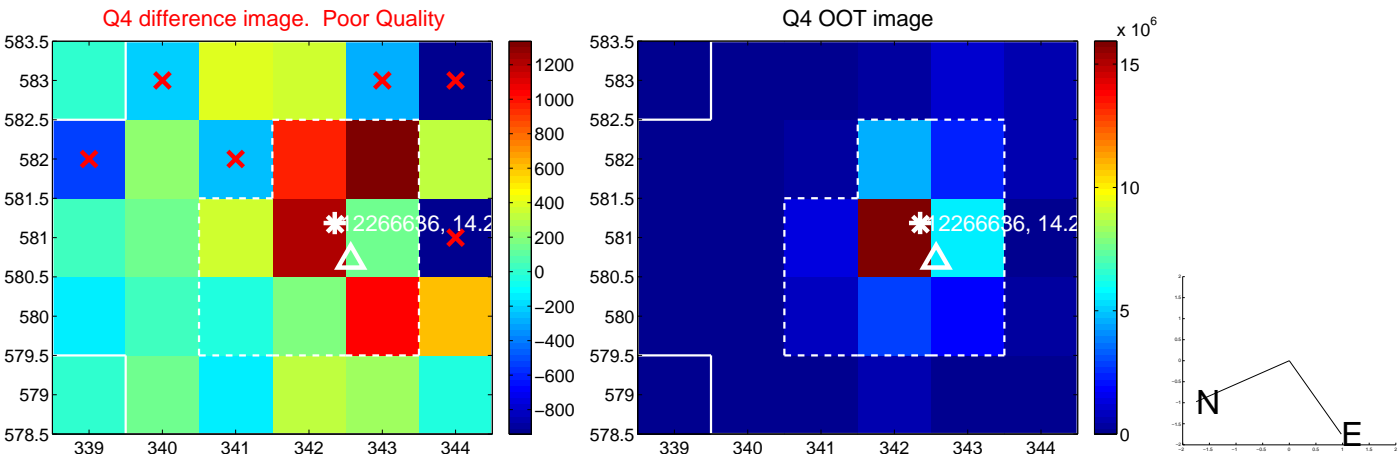
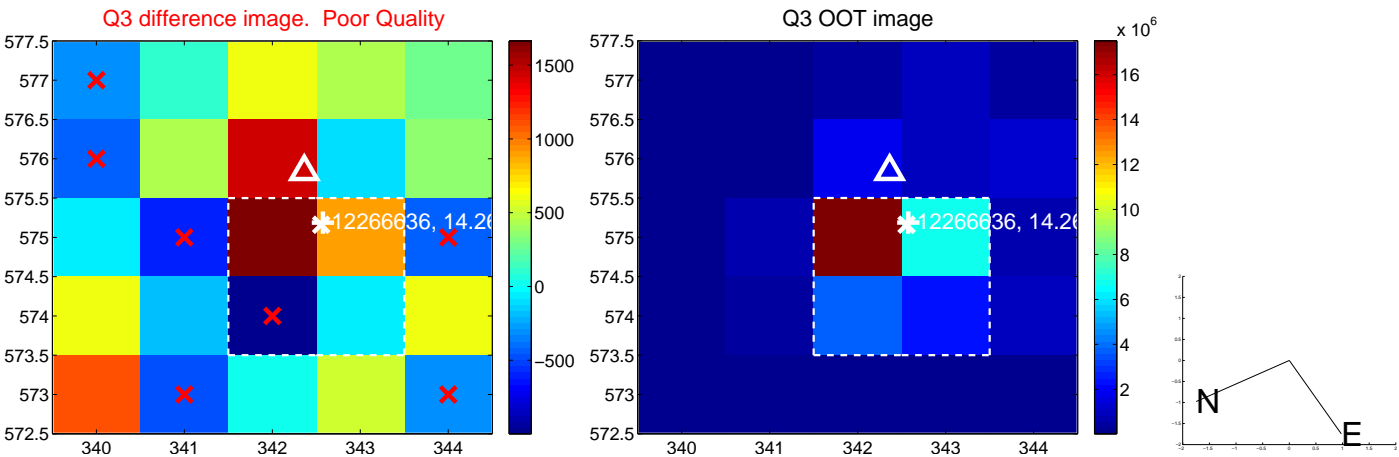
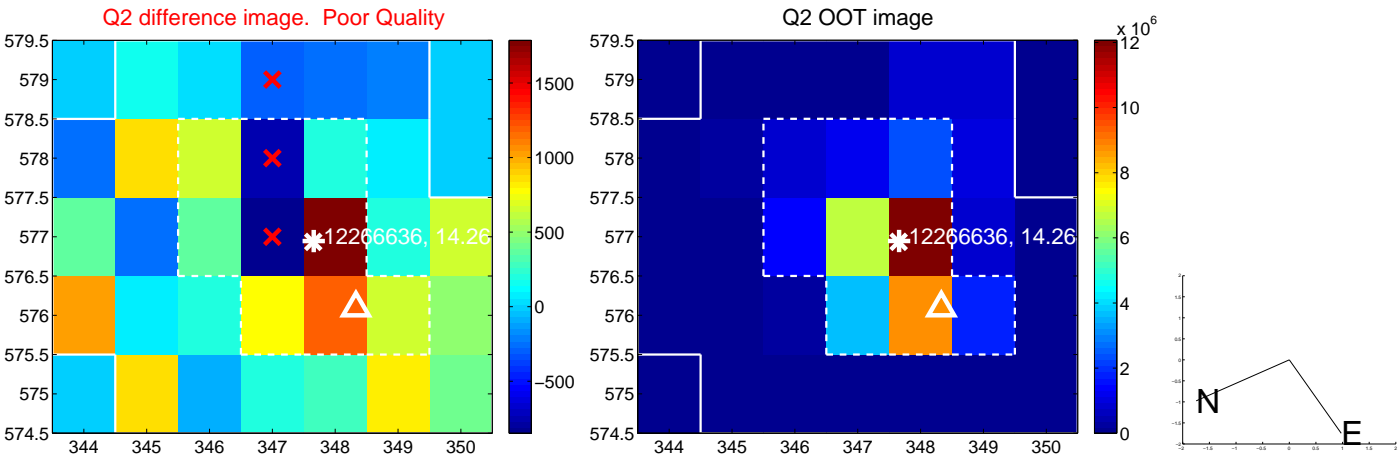
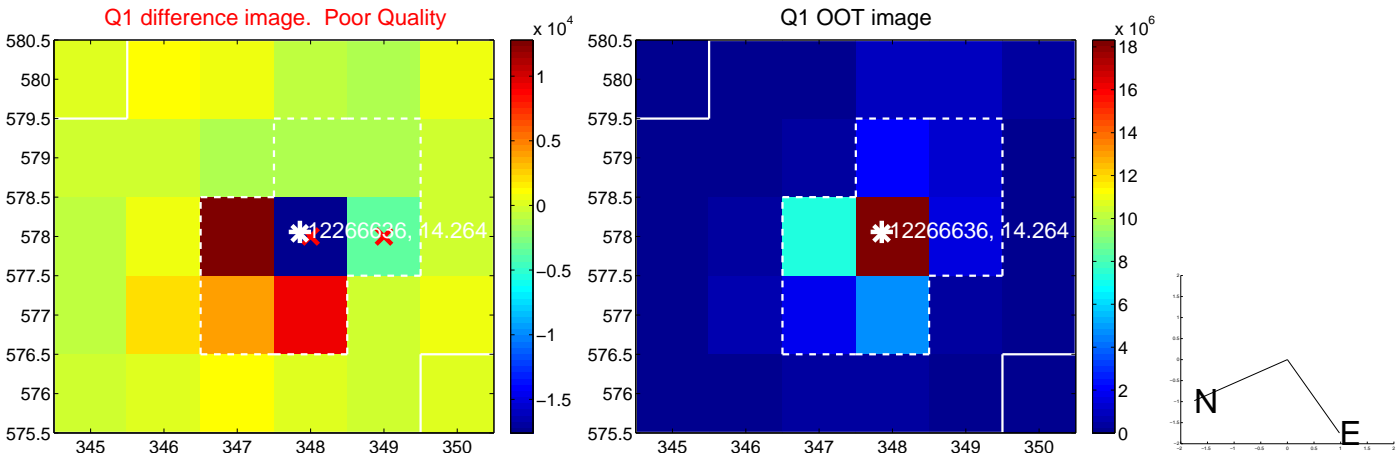
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.394 ± 0.743	0.53	0.304 ± 0.508	-0.251 ± 0.789
PRF-fit source offset from KIC position	0.401 ± 0.774	0.52	0.262 ± 0.539	-0.304 ± 0.745
photometric centroid source offset	3.38 ± 1.60	2.12	3.25 ± 1.59	-0.94 ± 1.69

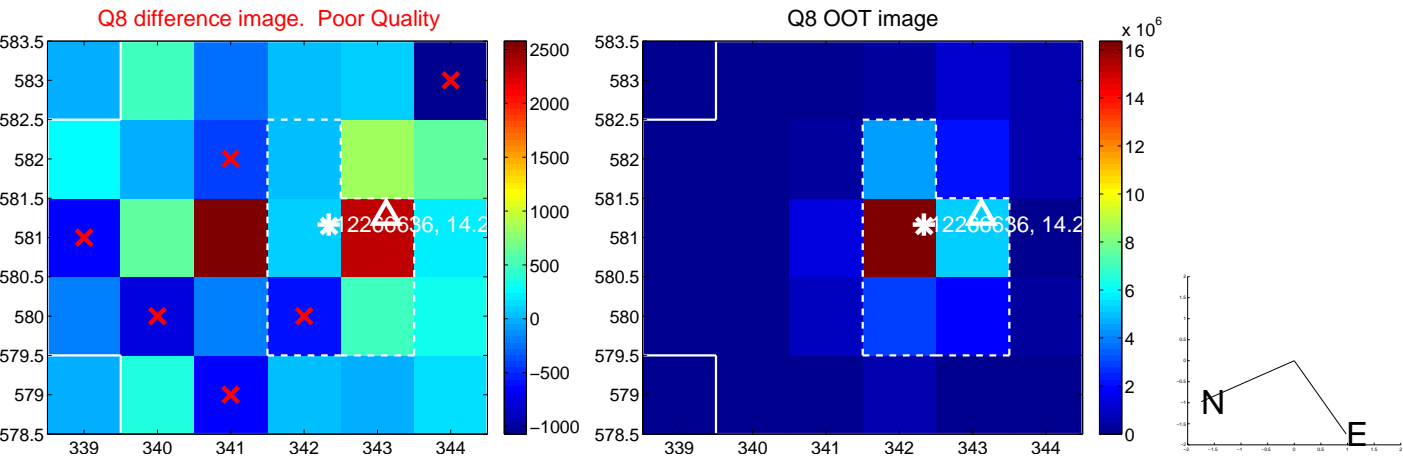
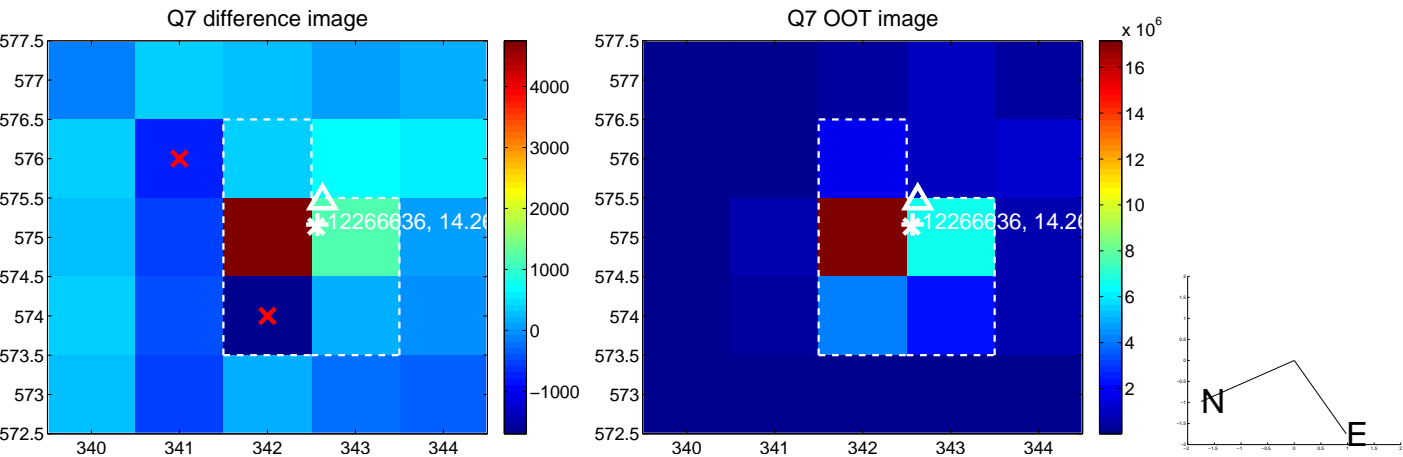
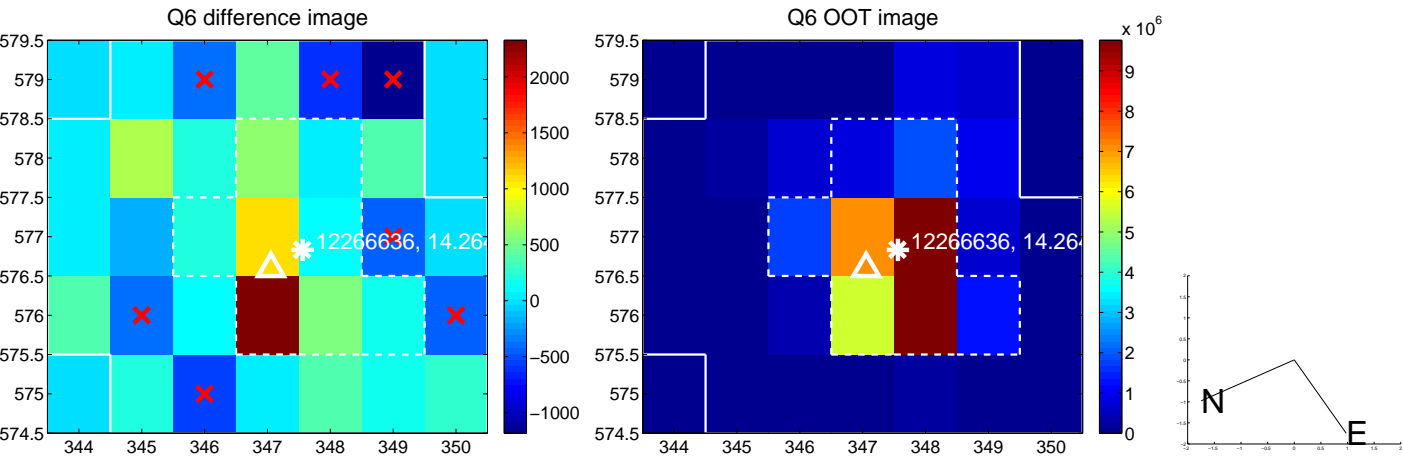
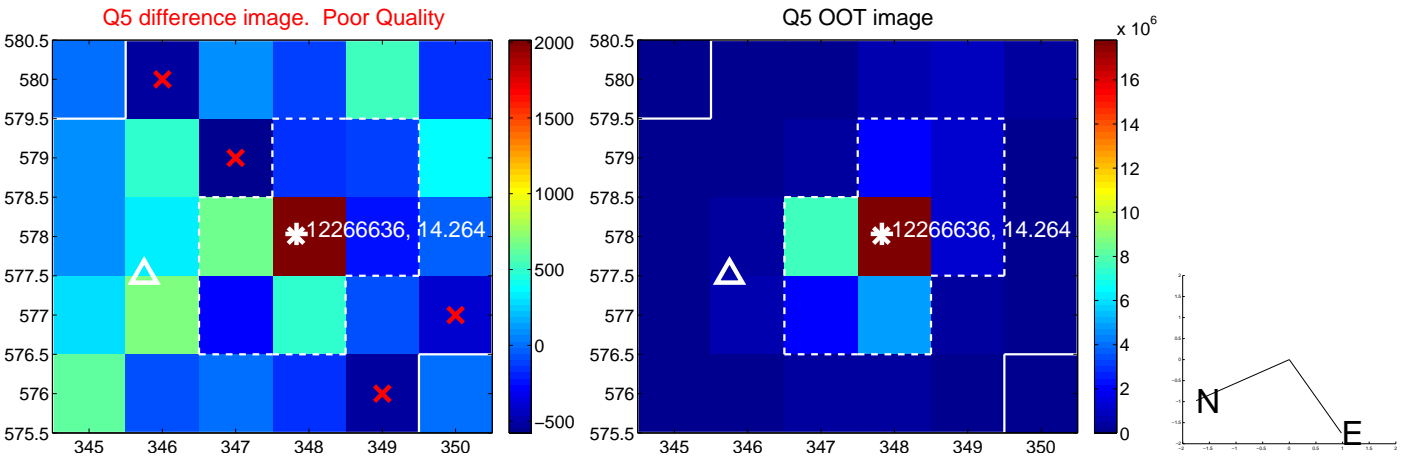


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

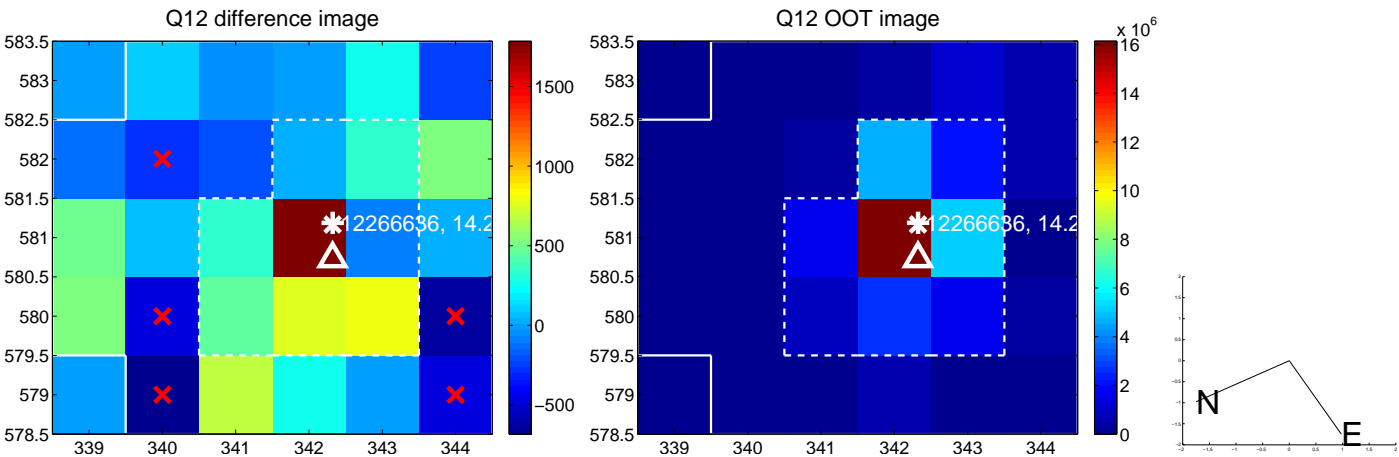
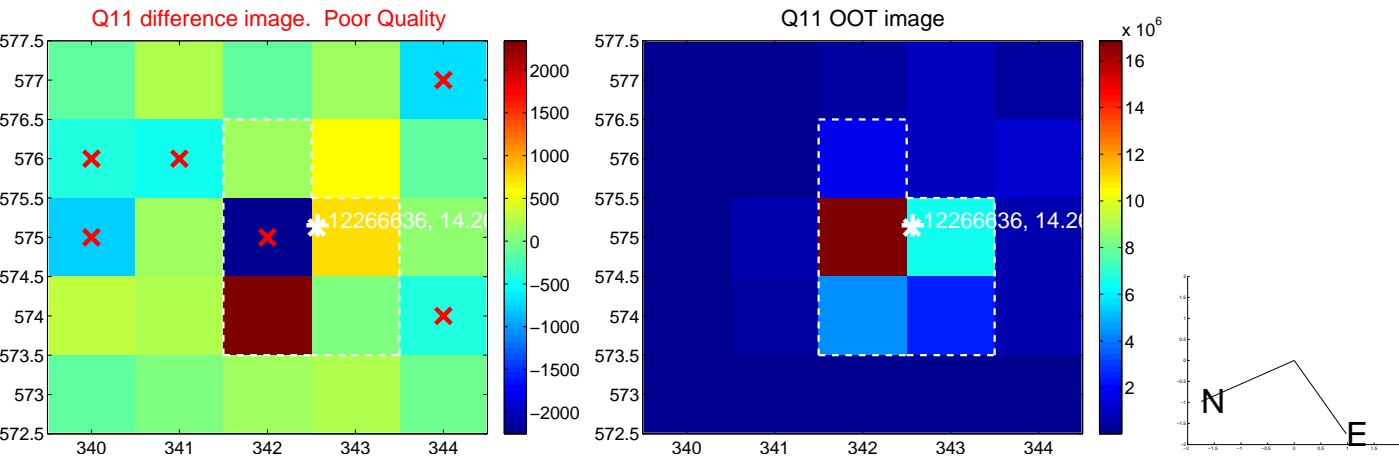
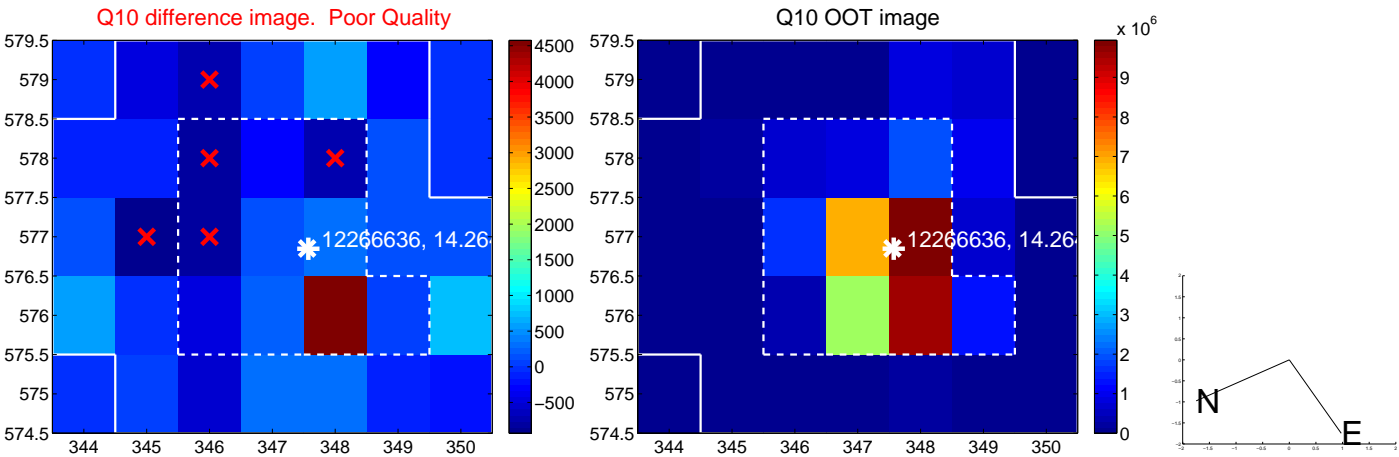
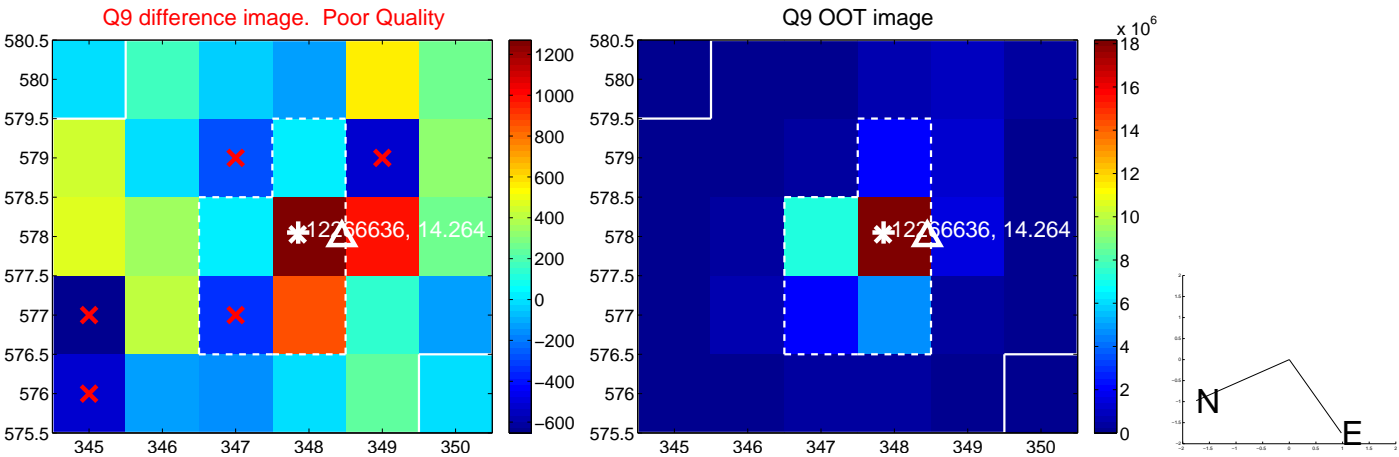
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



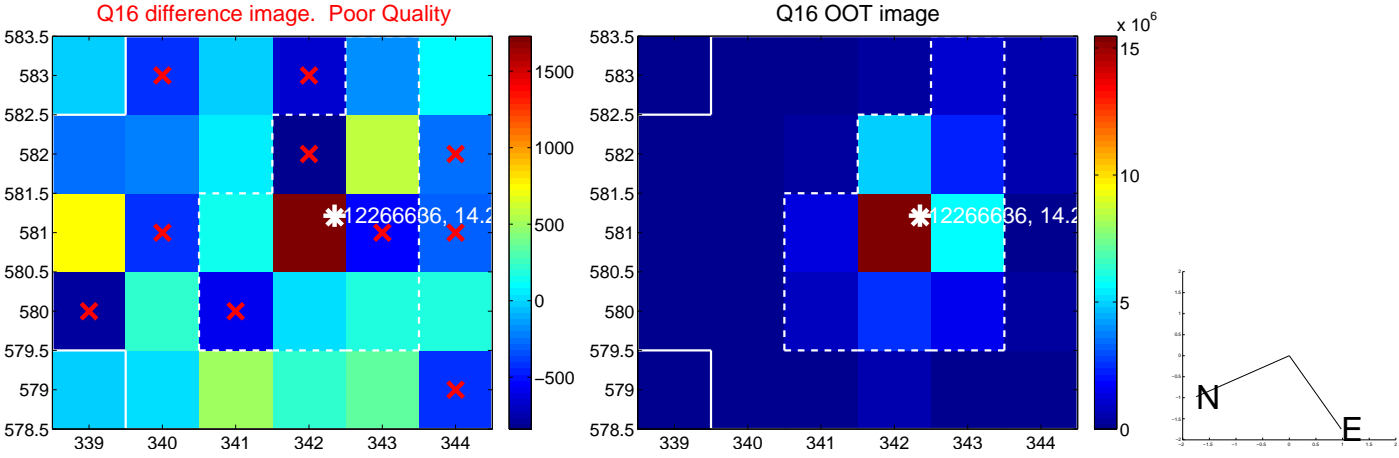
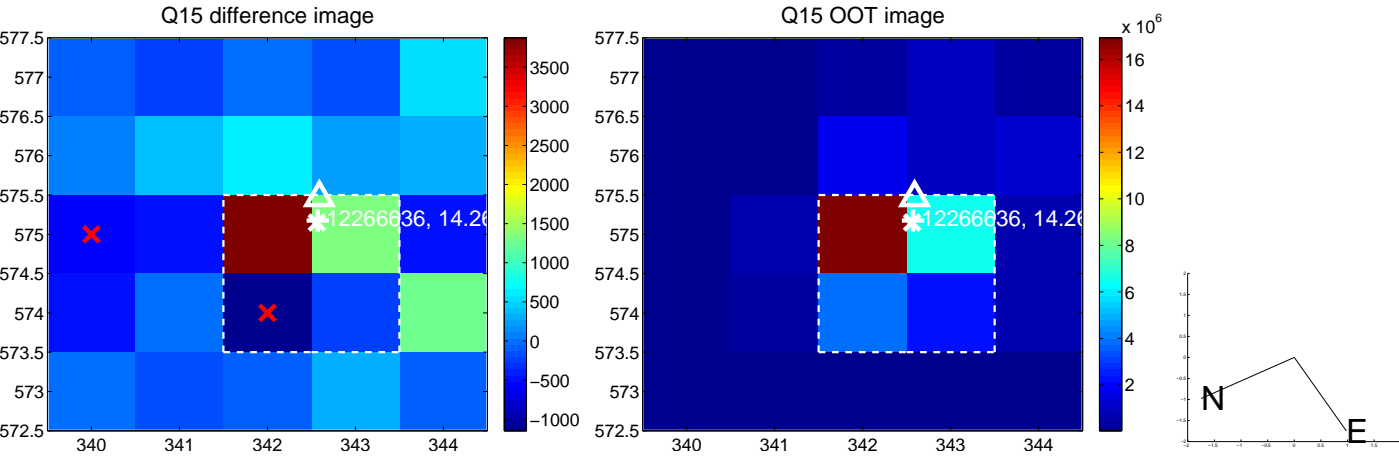
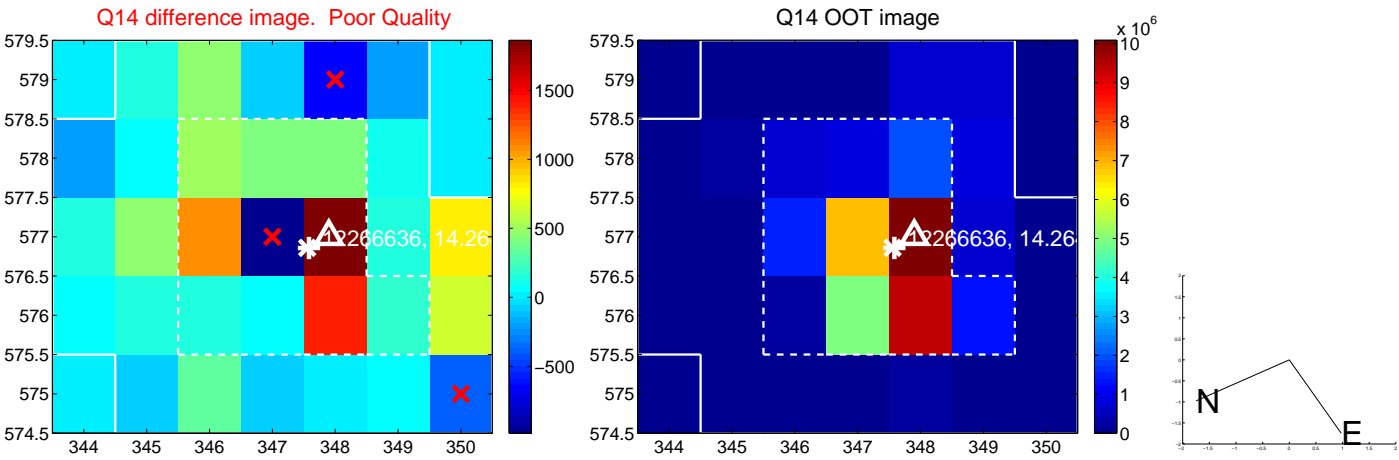
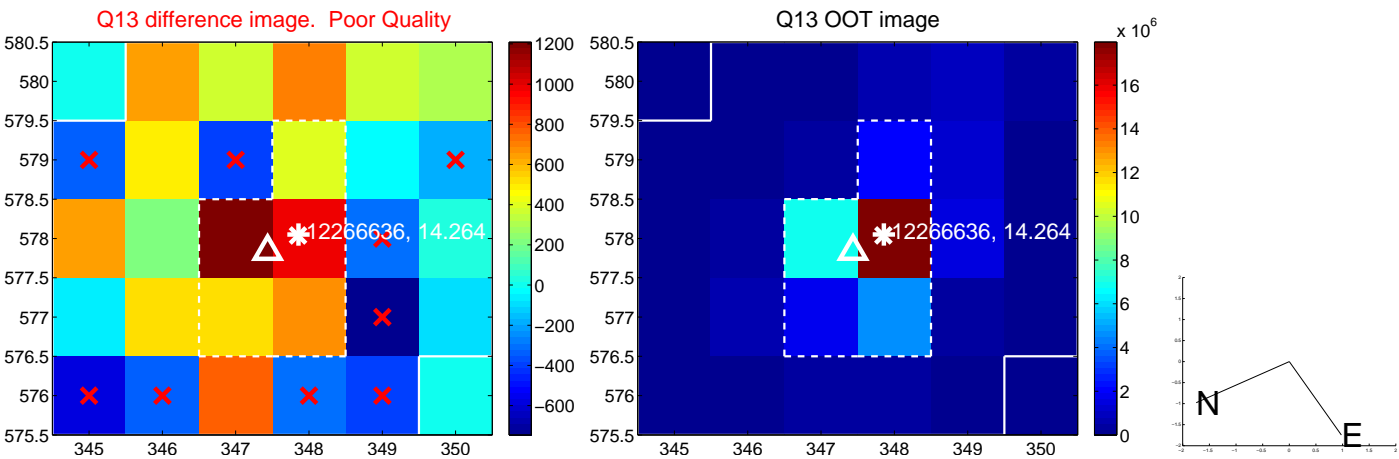
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



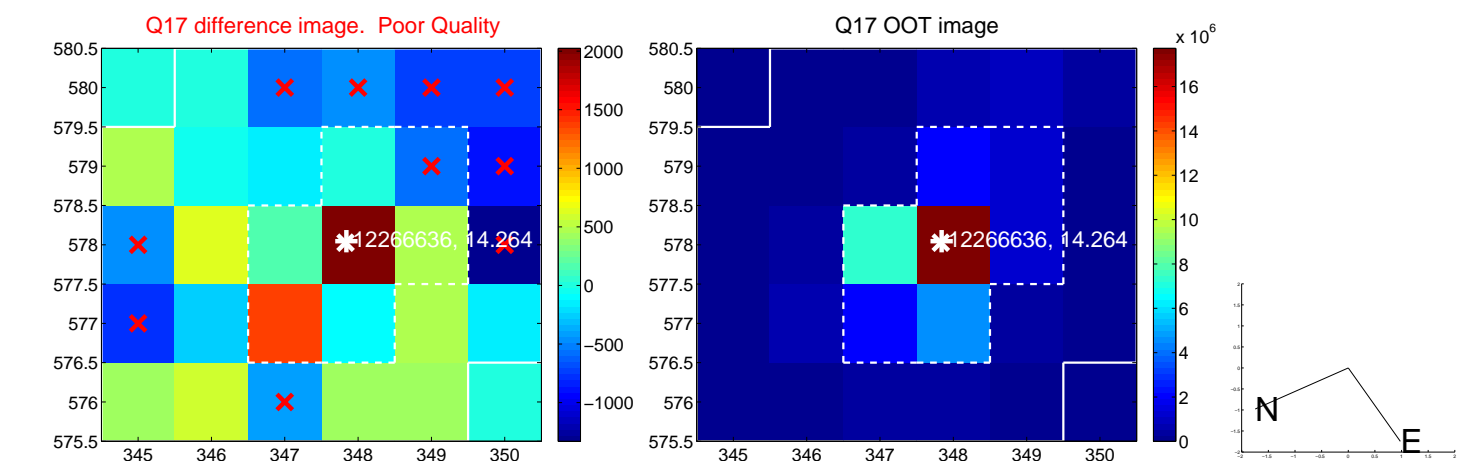
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



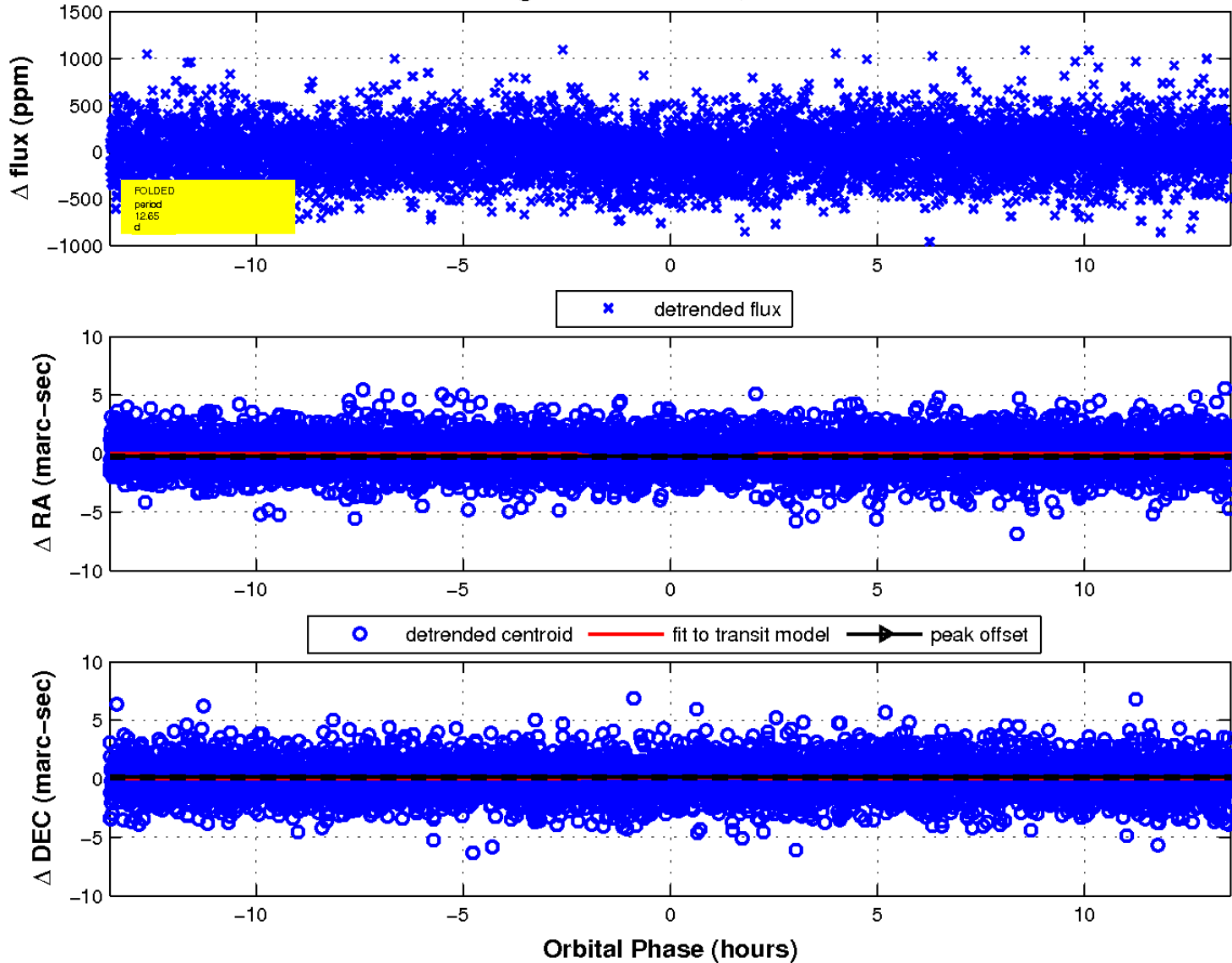
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

