

KIC 008008206

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})
008008206-01	OBS	0569.01	20.728975	143.976095	568.5	3.082	25.3	27.1	0.80	4979	2.37	18.70
008008206-02	OBS	0569.02	1.632909	132.917188	187.9	1.656	24.9	27.2	0.80	4979	1.35	553.76

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008008206-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008008206-02	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.

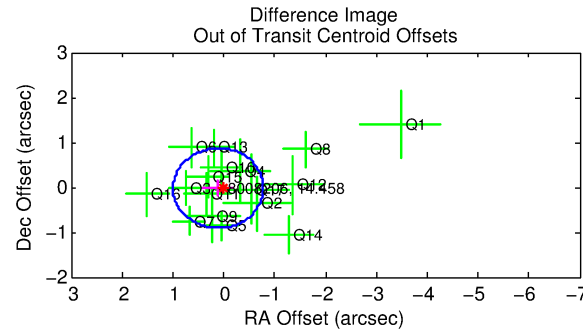
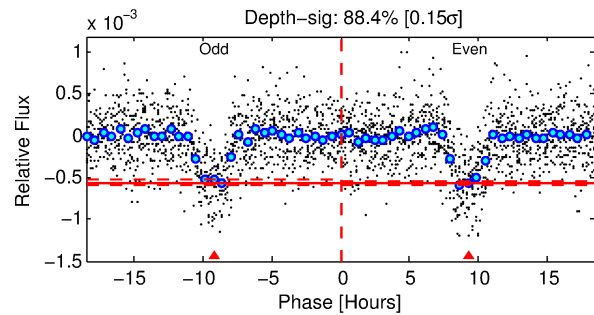
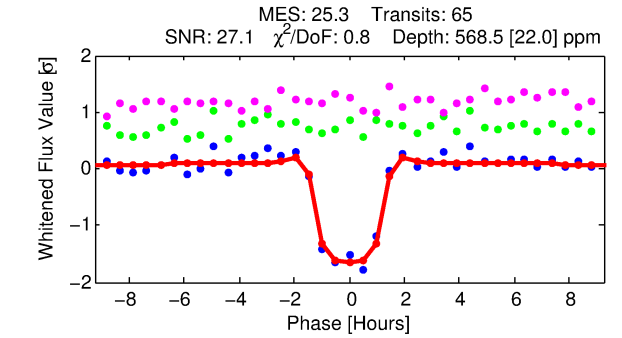
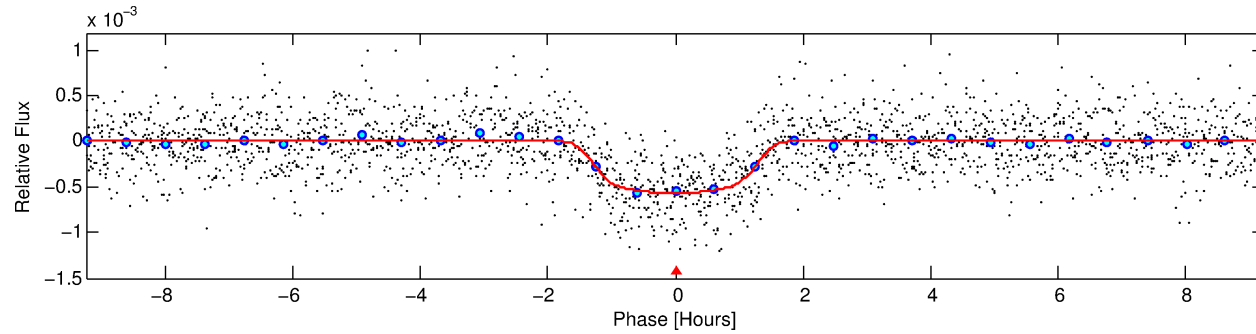
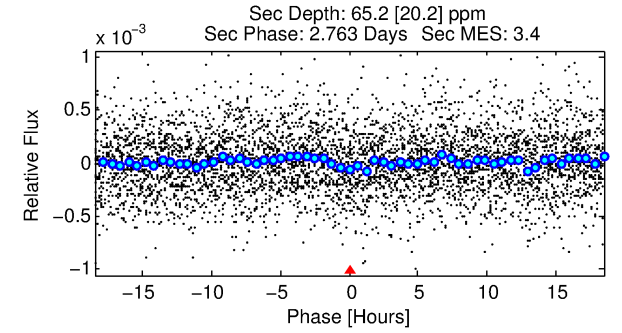
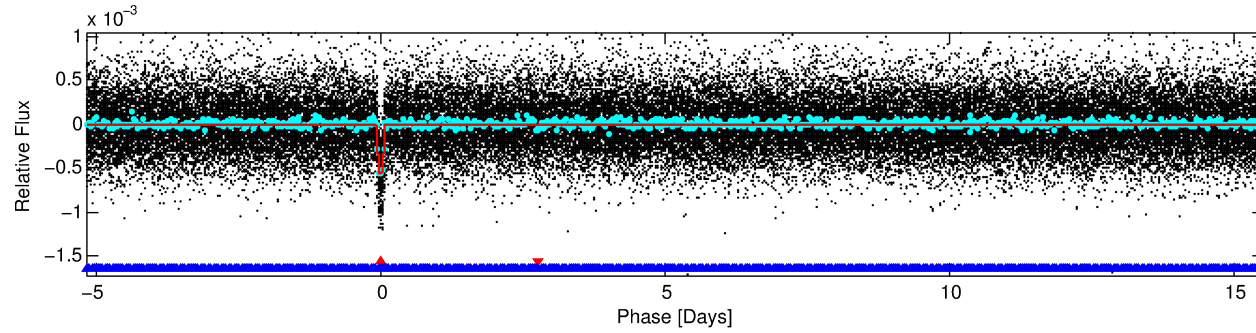
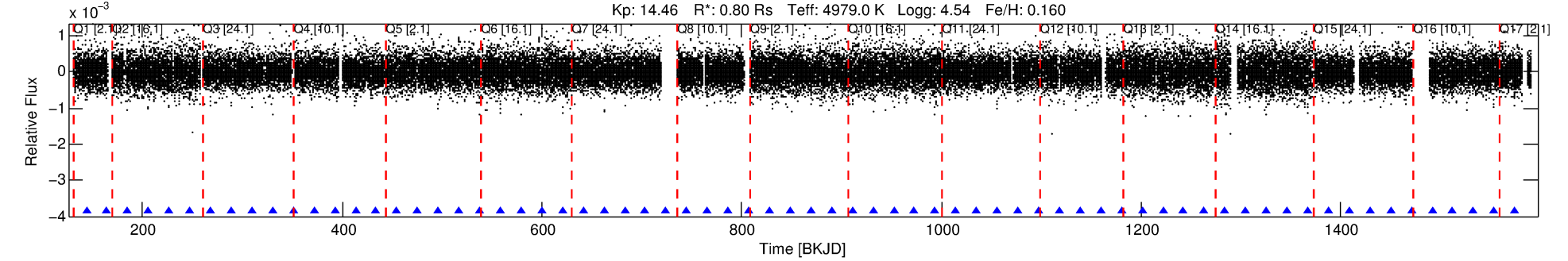
Ephemeris Match Information For 008008206-01

No Significant Match Found

DV One-Page Summary

KIC: 8008206 Candidate: 1 of 2 Period: 20.729 d
KOI: K00569.01 Name: Kepler-185c Corr: 0.948

Kp: 14.46 R*: 0.80 Rs Teff: 4979.0 K Logg: 4.54 Fe/H: 0.160



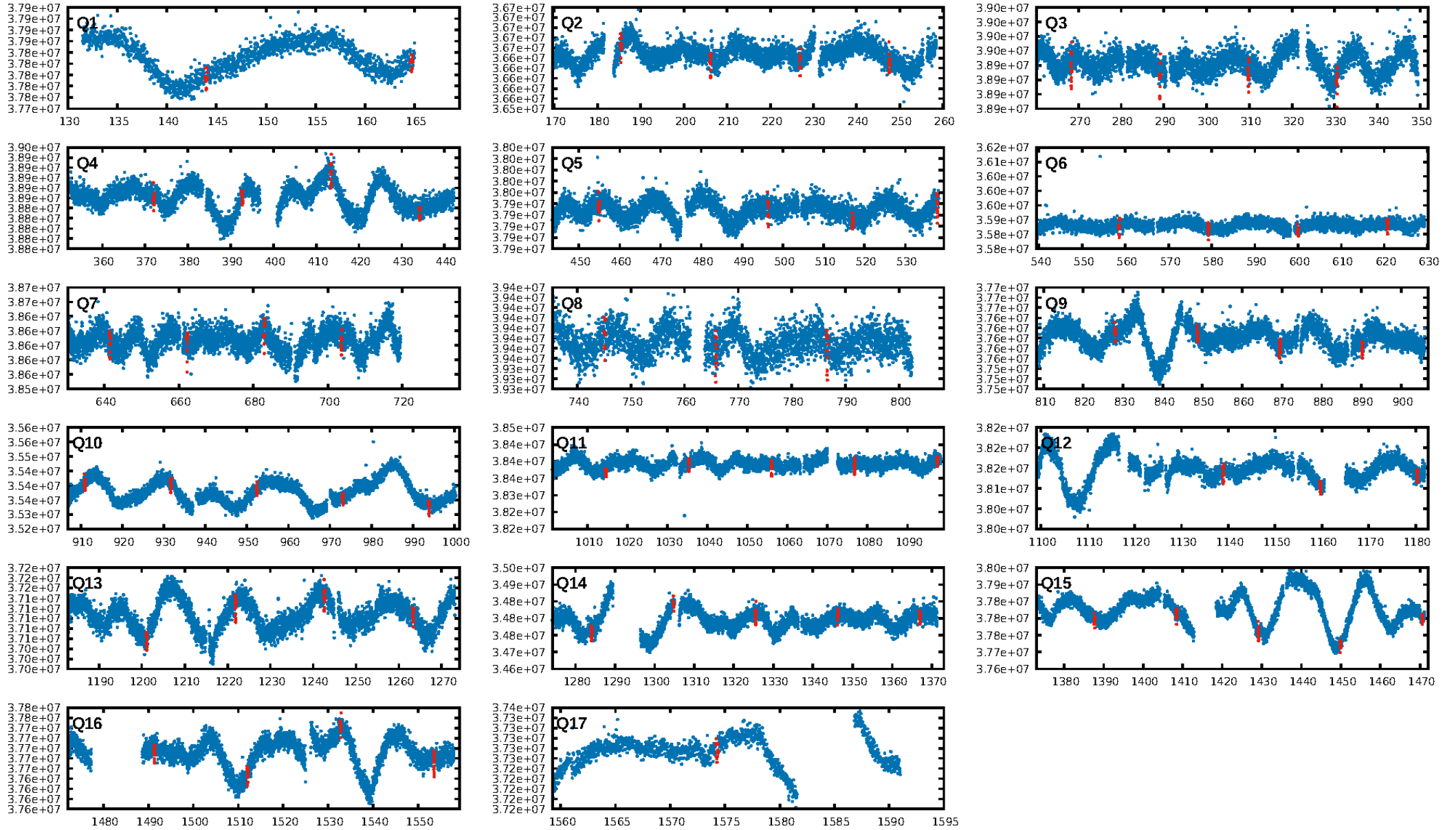
DV Fit Results:

Period = 20.72898 [0.00006] d
Epoch = 143.9761 [0.0024] BKJD
Rp/R* = 0.0271 [0.0025]
a/R* = 24.40 [8.32]
b = 0.91 [0.07]
Seff = 18.70 [1.98]
Teff = 530 [14] K
Rp = 2.37 [0.25] Re
a = 0.1378 [0.0070] AU
Ag = 121.05 [44.72] [2.68σ]
Teffp = 2719 [249] K [8.78σ]

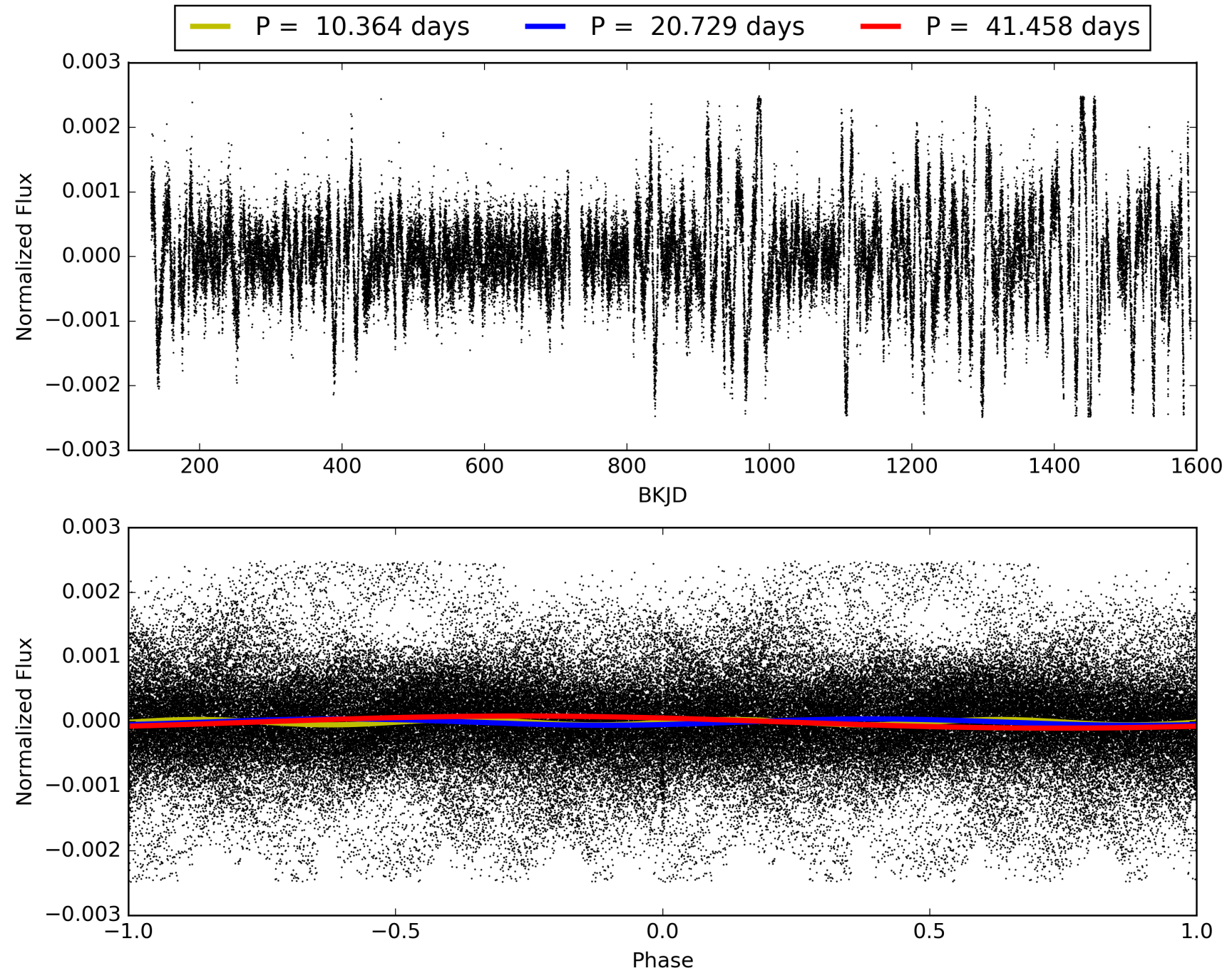
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [131.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 93.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.50e-133
RollingBand-fgt: 1.00 [62/62]
GhostDiagnostic-chr: 5.488
Centroid-sig: 0.2%
Centroid-so: 0.983 arcsec [2.44σ]
OotOffset-rm: 0.113 arcsec [0.38σ]
KicOffset-rm: 0.388 arcsec [1.59σ]
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 008008206-01, PDC Light Curves

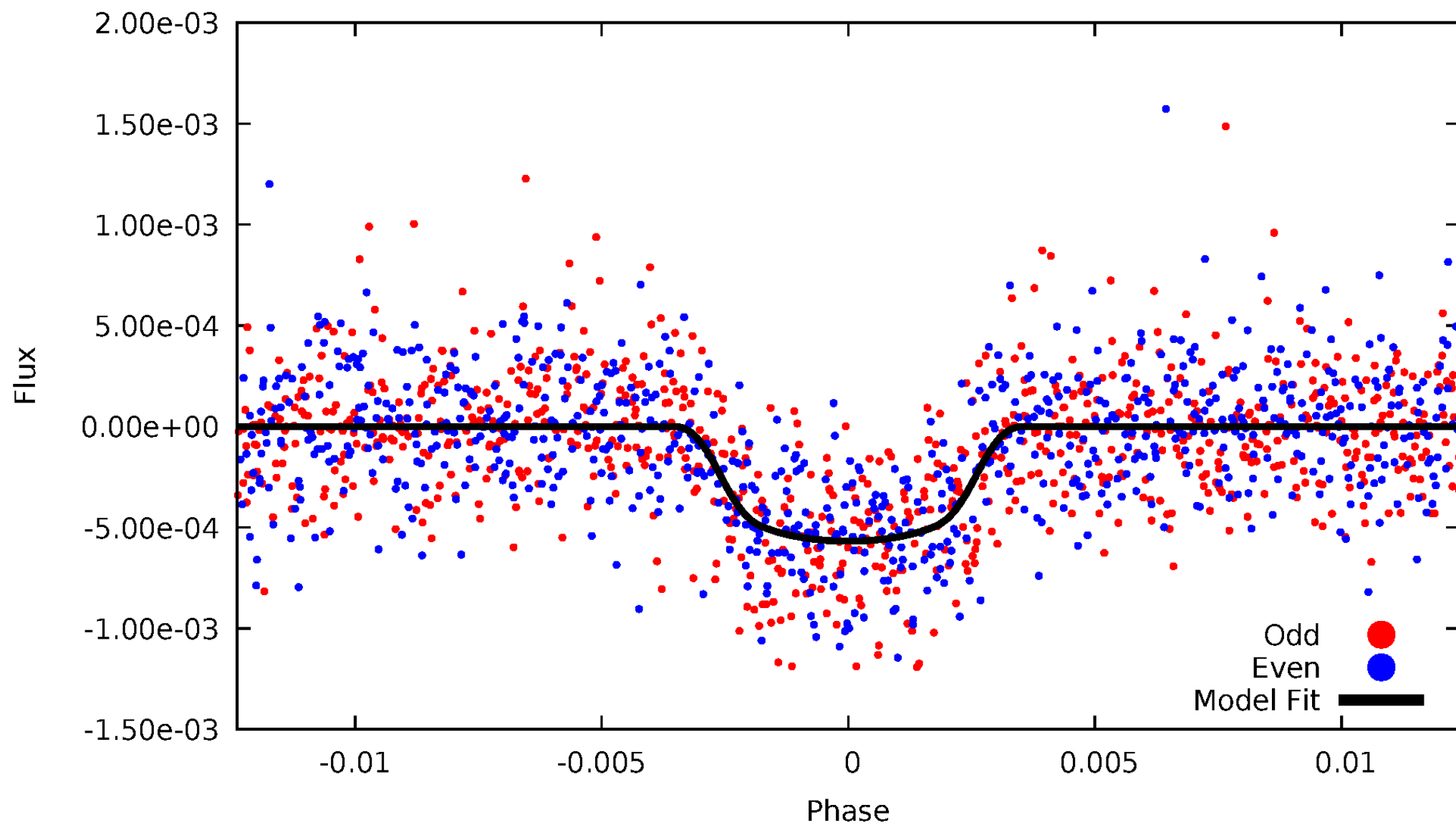


TCE 008008206-01



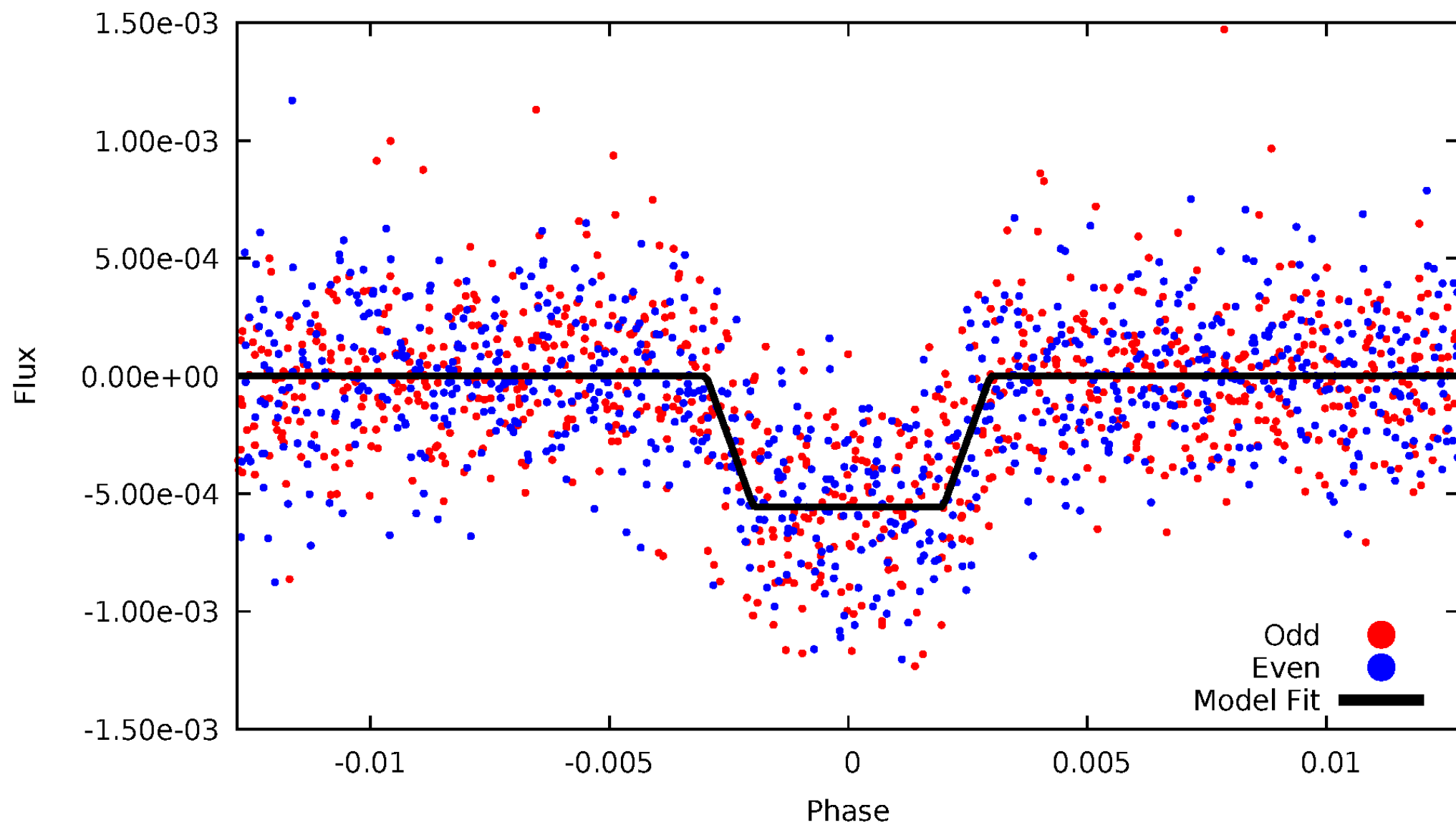
DV Odd/Even

TCE 008008206-01



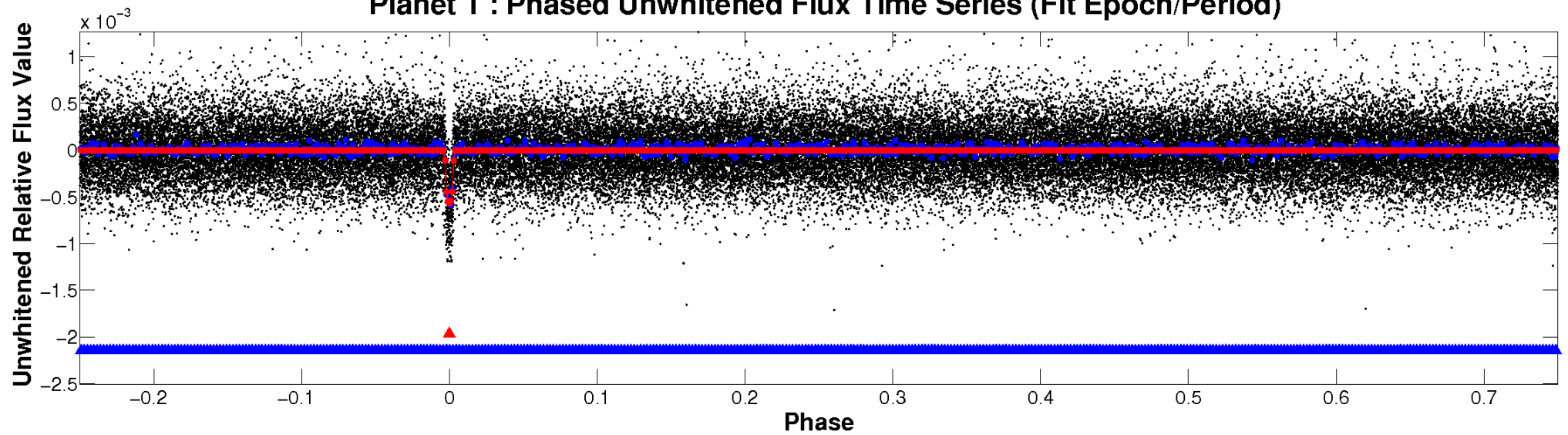
ALT Odd/Even

TCE 008008206-01

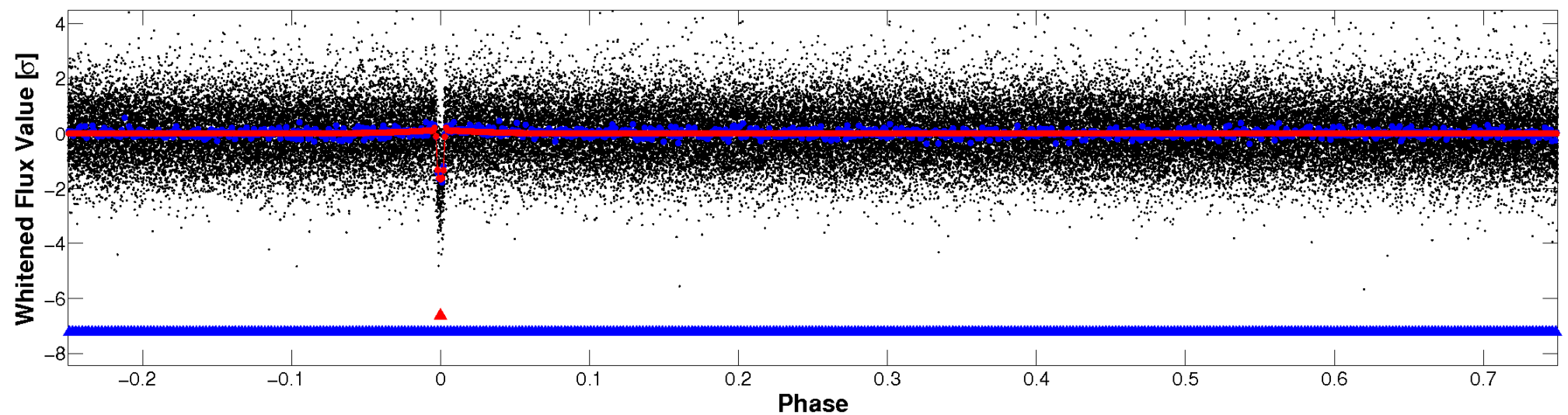


Non-Whitened Vs. Whitened Light Curve

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

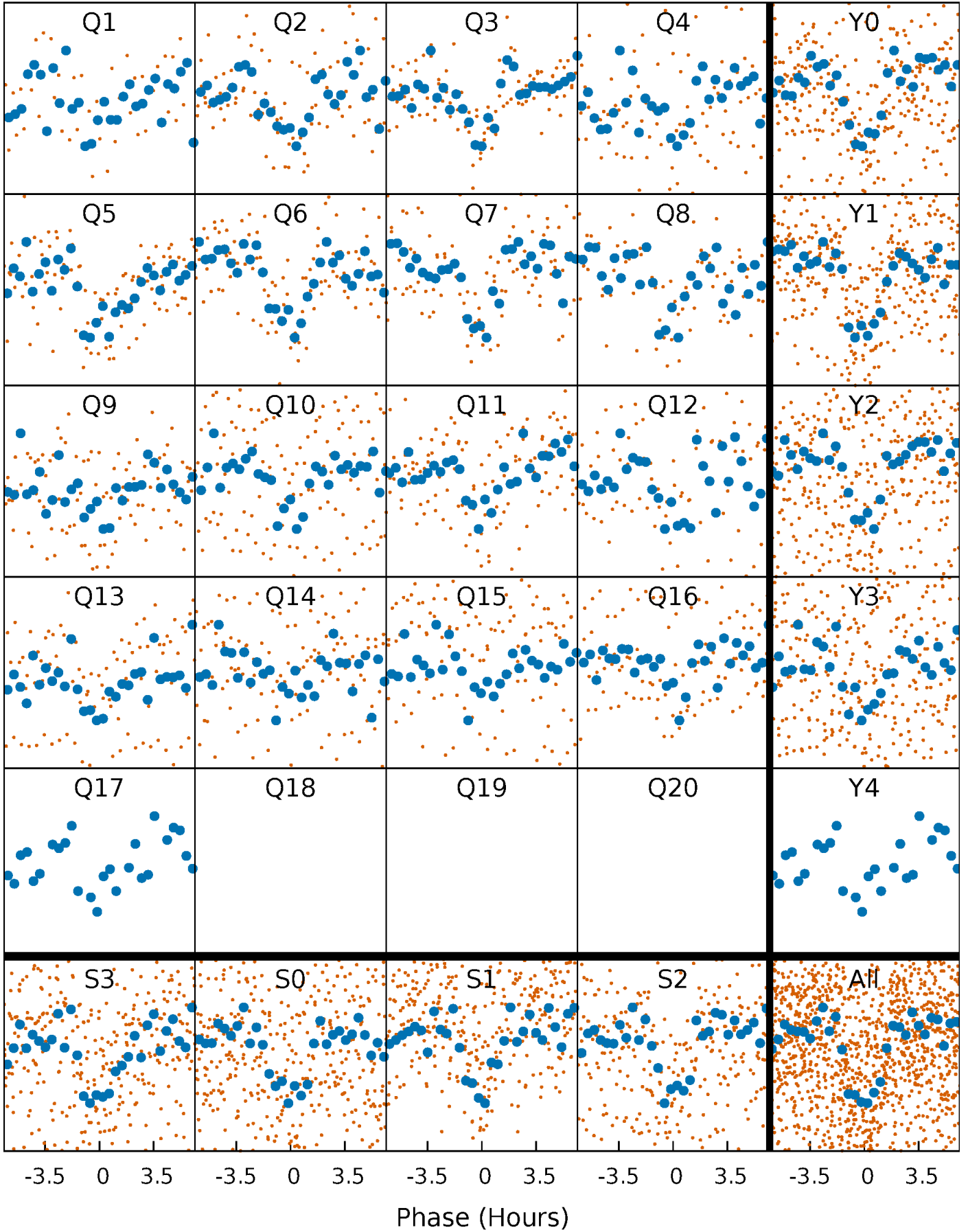


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



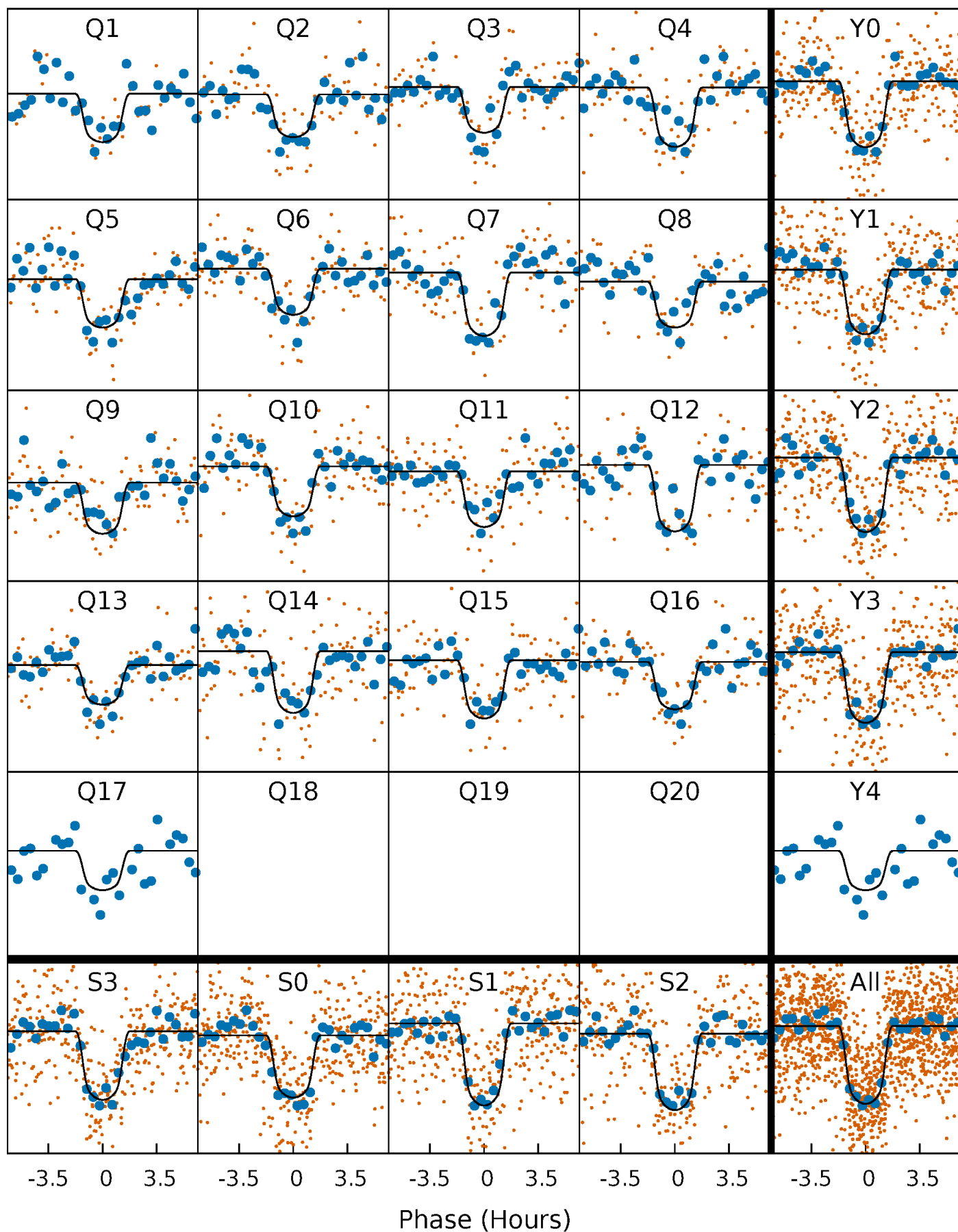
PDC Quarter-Phased Transit Curves

TCE 008008206-01 P= 20.728975 Days $T_0=143.976095$ (BKJD)



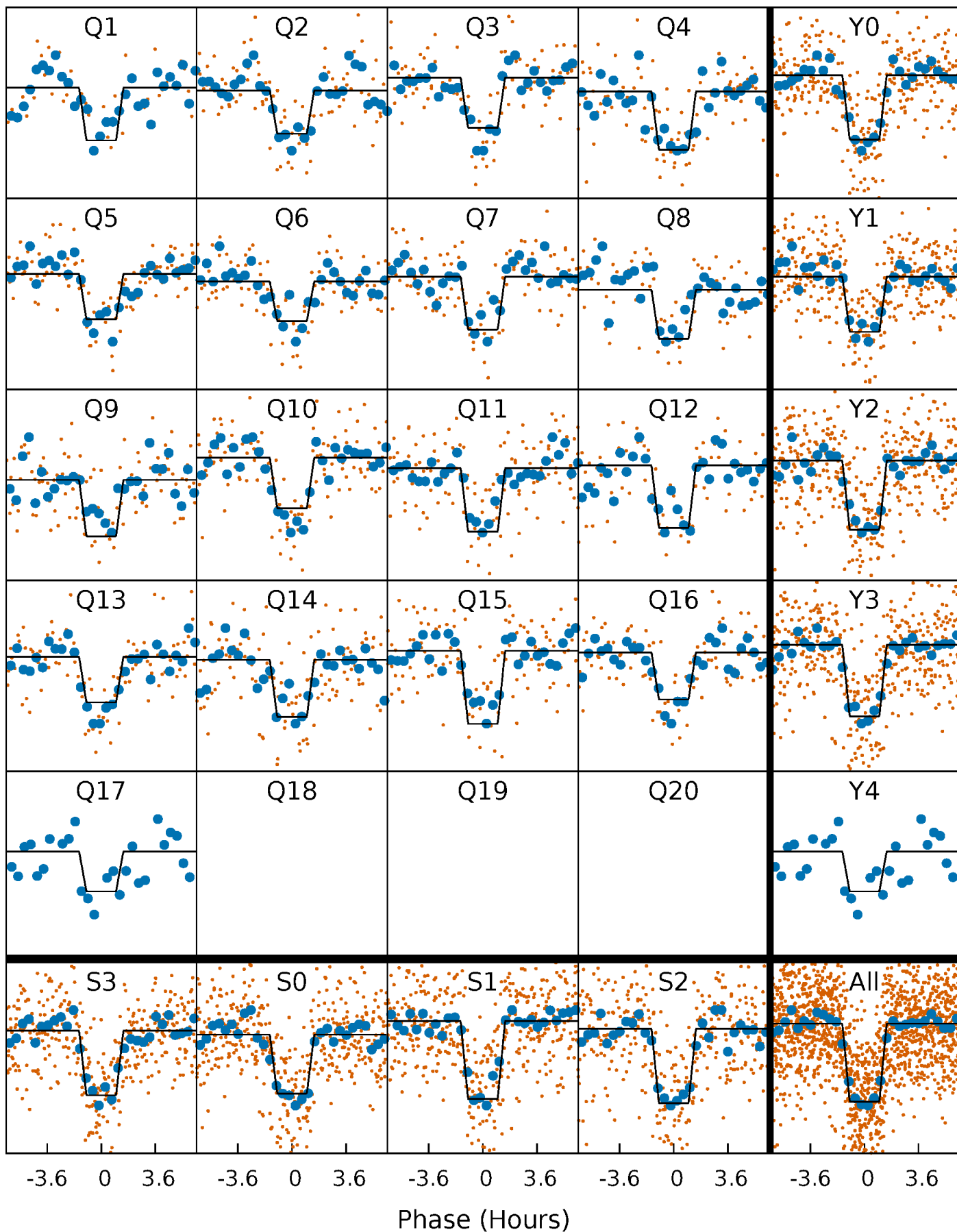
DV Quarter-Phased Transit Curves

TCE 008008206-01 P= 20.728975 Days $T_0=143.976095$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

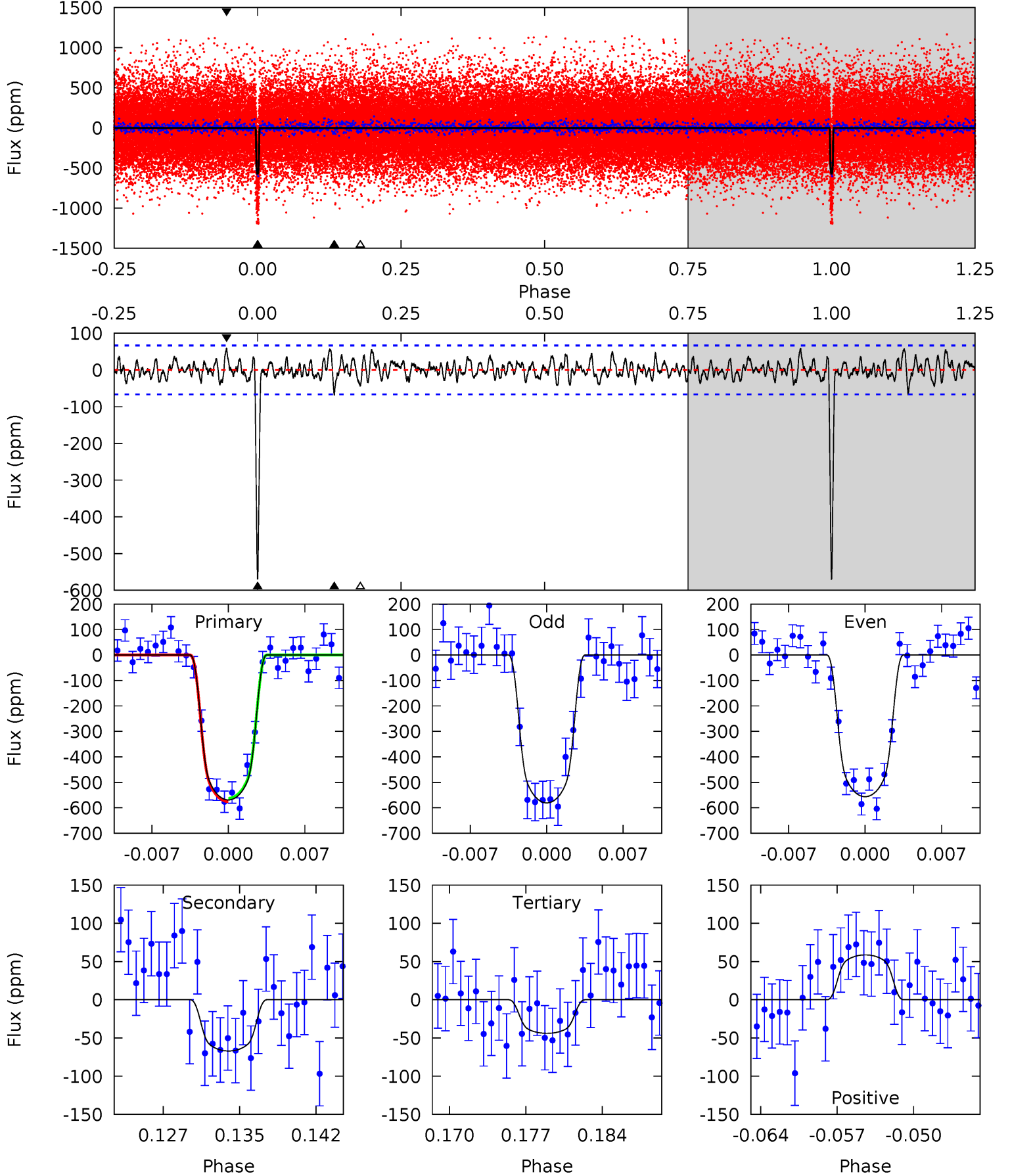
TCE 008008206-01 P= 20.729093 Days $T_0=143.971288$ (BKJD)



DV Model-Shift Uniqueness Test

008008206-01, P = 20.728975 Days, E = 123.247120 Days

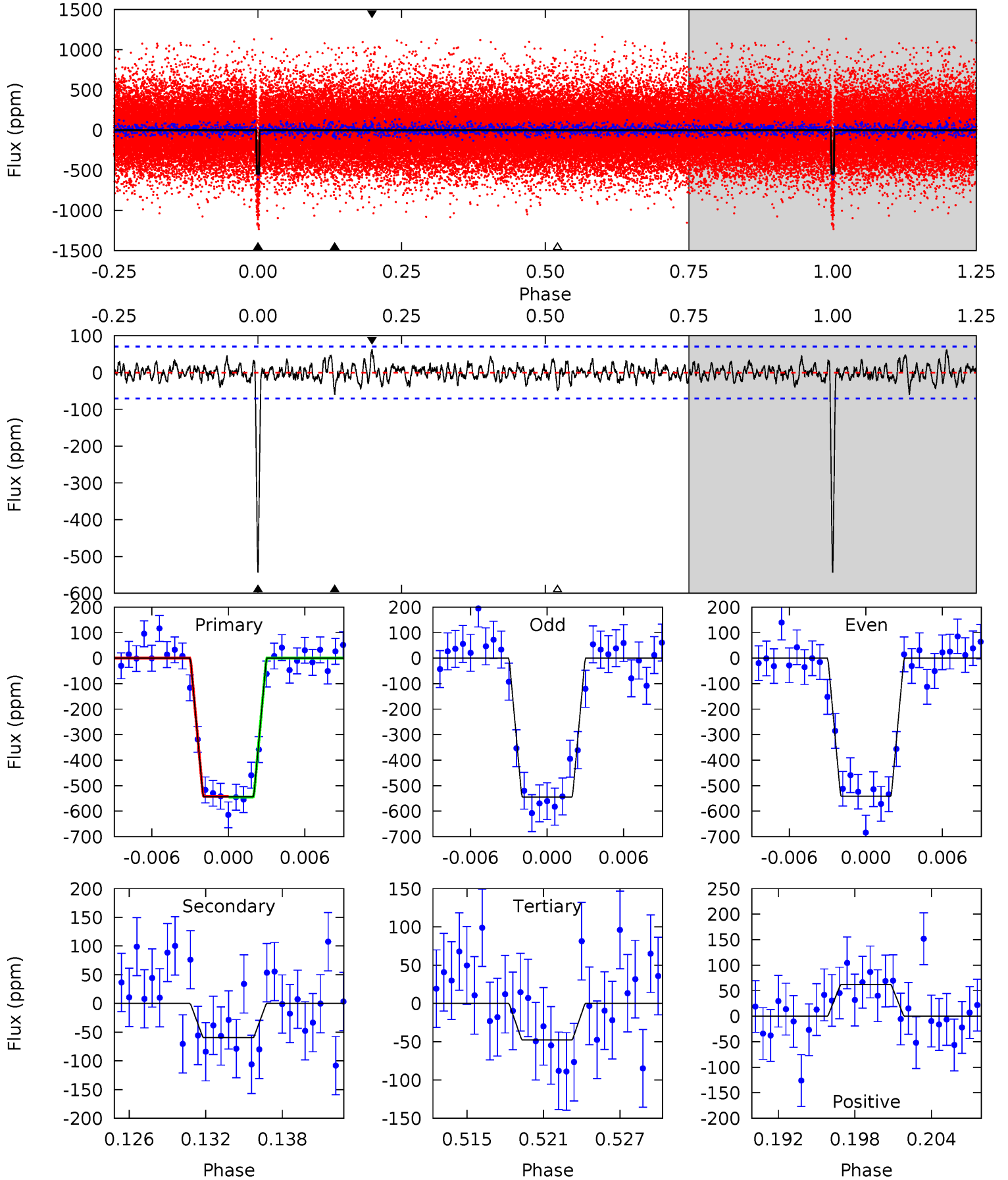
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
43.6	5.14	3.36	4.50	5.09	2.69	1.39	40.2	39.1	1.77	0.64	0.94	0.98	0.09	0.49



Alt Model-Shift Uniqueness Test

008008206-01, P = 20.729093 Days, E = 123.242195 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
39.4	4.32	3.45	4.49	5.12	2.75	1.17	35.9	34.9	0.86	-0.17	0.10	0.94	0.10	0.12



Stellar Parameters For KIC 008008206

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4979^{+82}_{-74}	$4.538^{+0.049}_{-0.036}$	$0.160^{+0.150}_{-0.150}$	$0.803^{+0.037}_{-0.041}$	$0.811^{+0.042}_{-0.033}$	$2.208^{+0.397}_{-0.258}$
	+2%/-1%	+1%/-1%	+94%/-94%	+5%/-5%	+5%/-4%	+18%/-12%
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 008008206-01 / KOI 0569.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-67 ± 13	$2.37^{+0.25}_{-0.24}$	740^{+16}_{-16}	3260^{+145}_{-141}	125^{+38}_{-32}
Alt.	-60 ± 14	$2.06^{+0.24}_{-0.23}$	740^{+15}_{-16}	3336^{+164}_{-173}	146^{+55}_{-44}

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

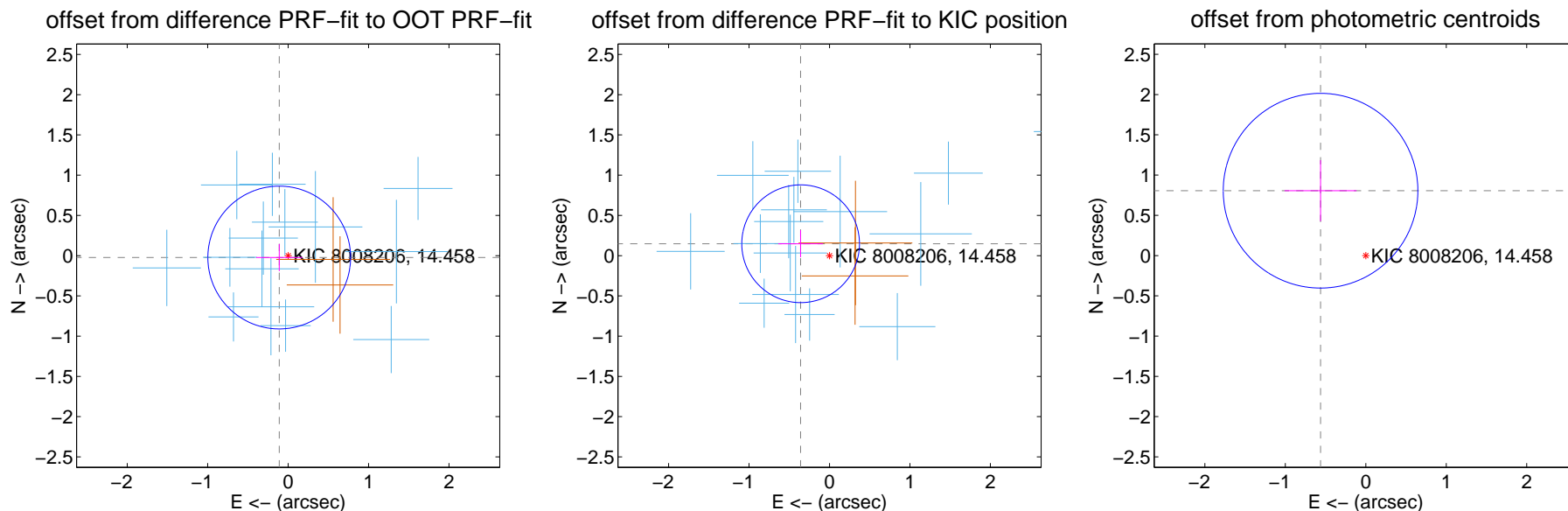
DV Centroid Data

Supplemental centroid analysis for 008008206-01. Kepler magnitude: 14.46. Transit SNR 27.08

There are 15 quarters with good PRF difference image offsets

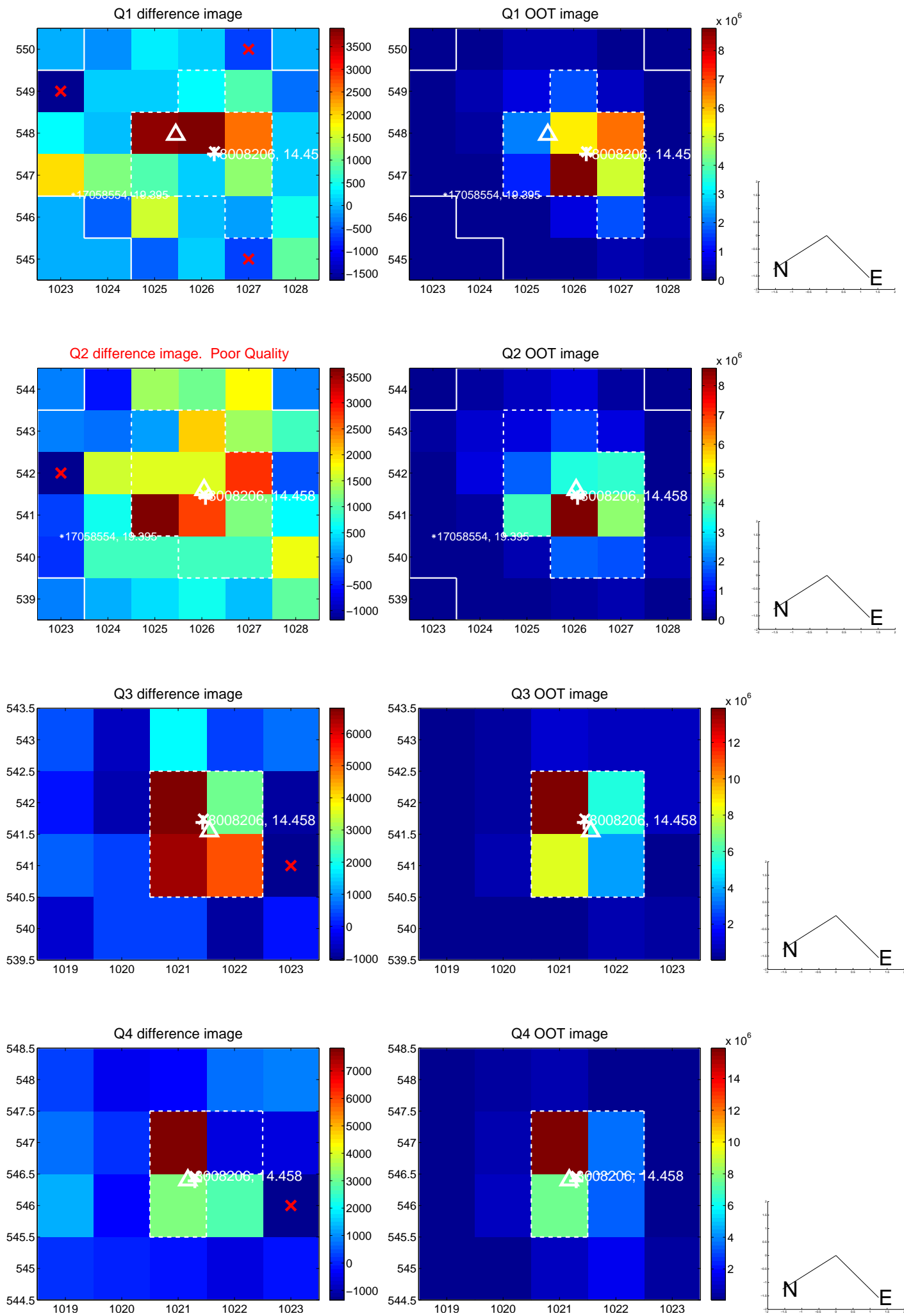
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.113 ± 0.296	0.38	0.111 ± 0.288	-0.023 ± 0.169
PRF-fit source offset from KIC position	0.388 ± 0.244	1.59	0.359 ± 0.277	0.148 ± 0.168
photometric centroid source offset	0.98 ± 0.40	2.44	0.56 ± 0.45	0.81 ± 0.38

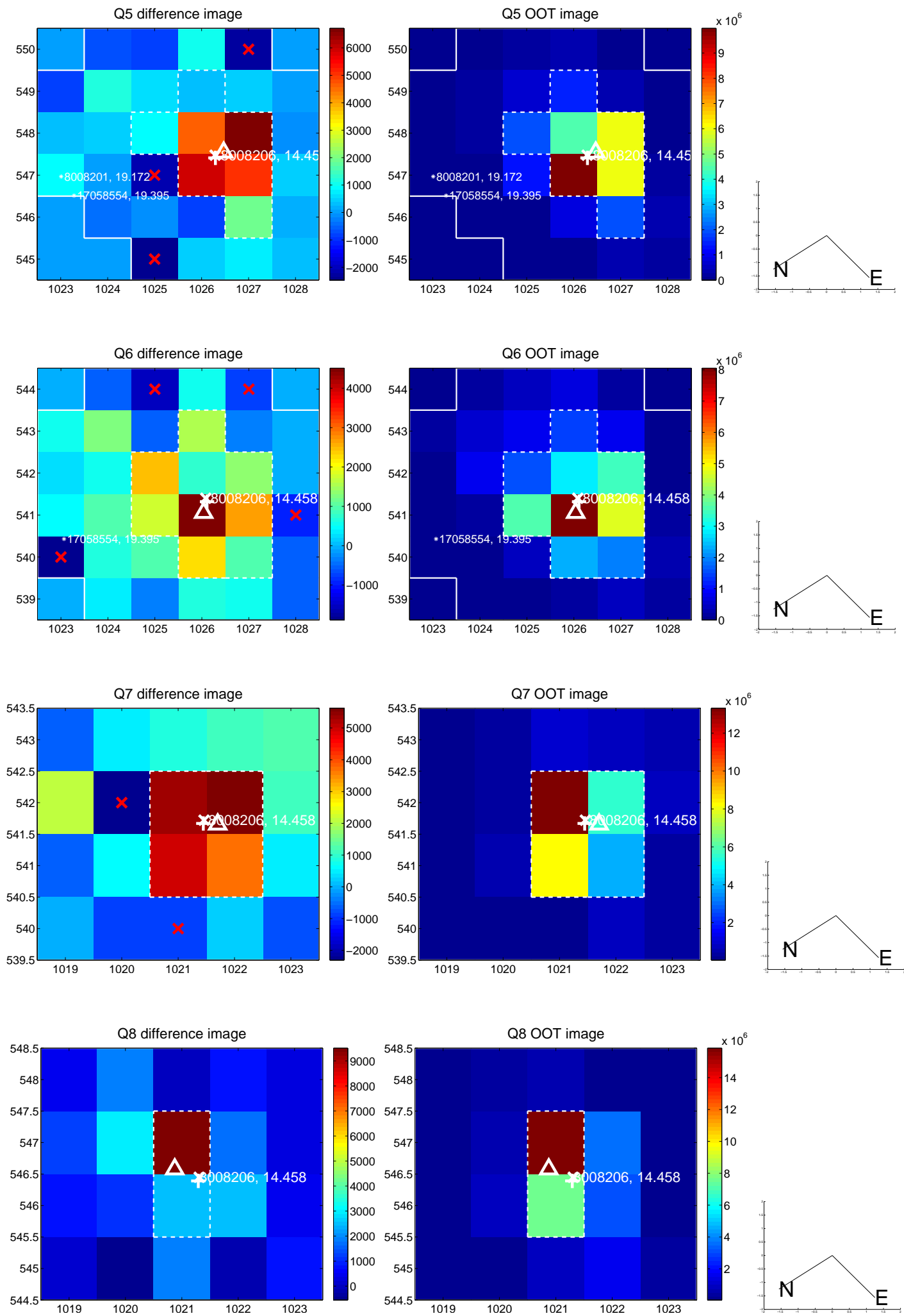


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

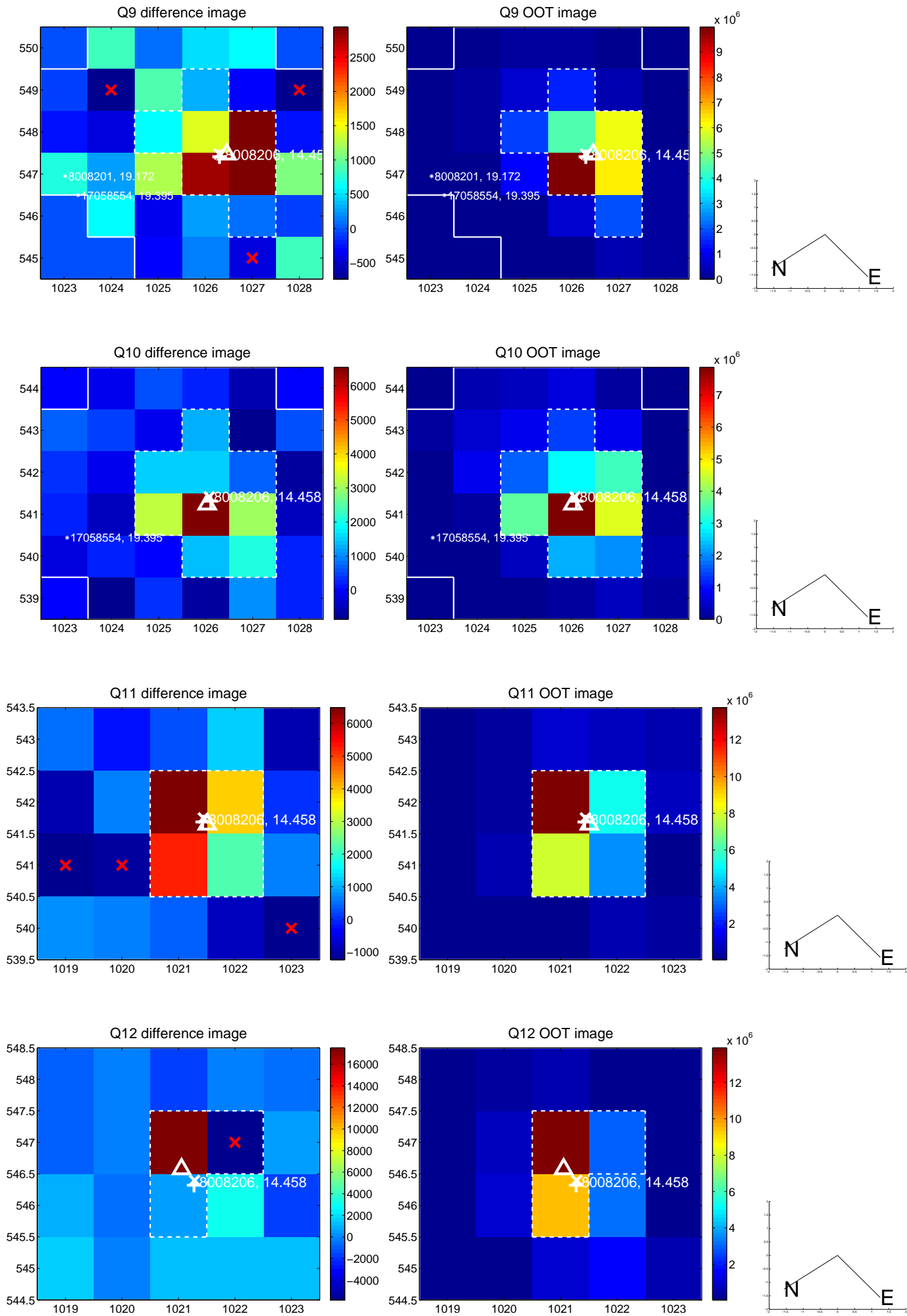
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



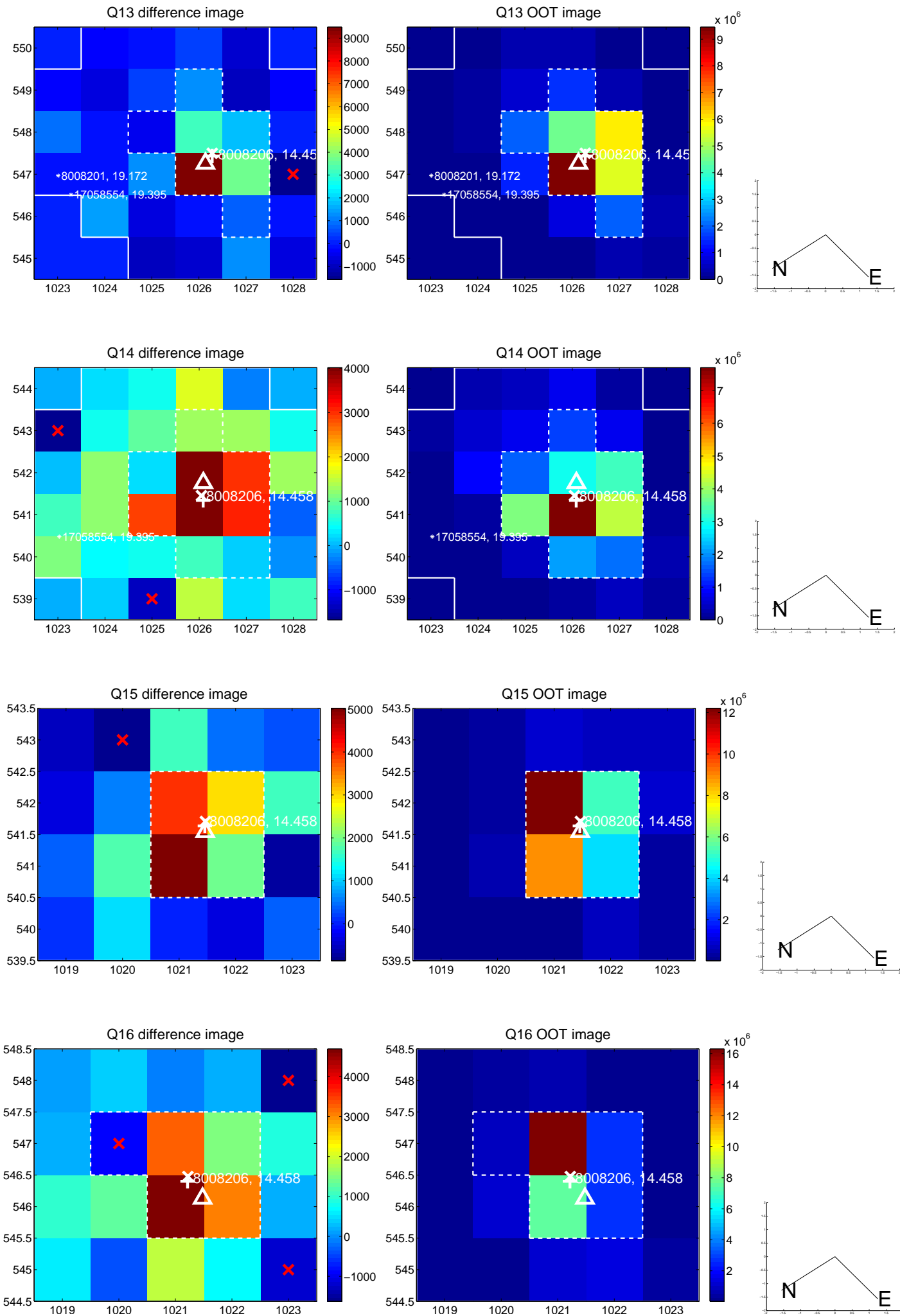
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



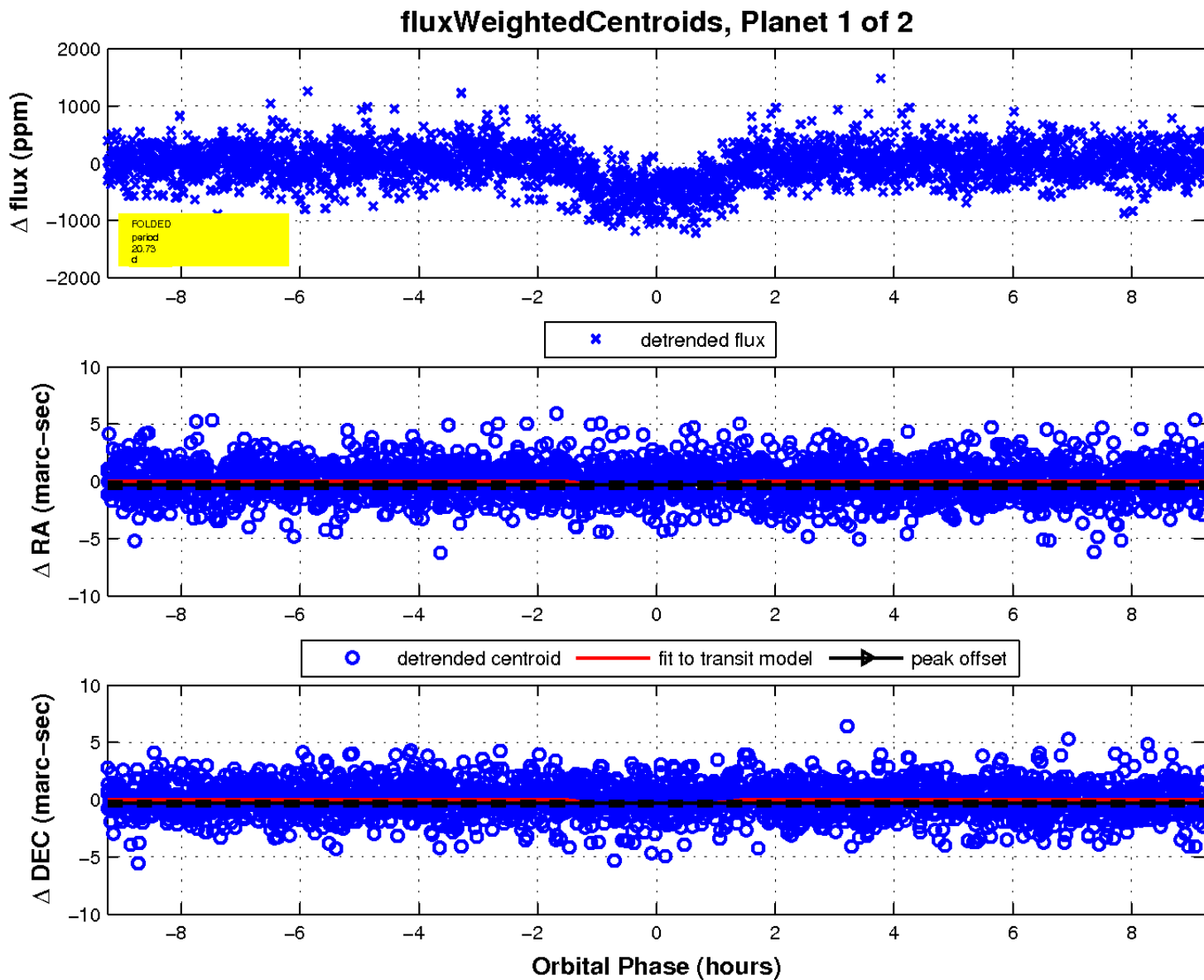
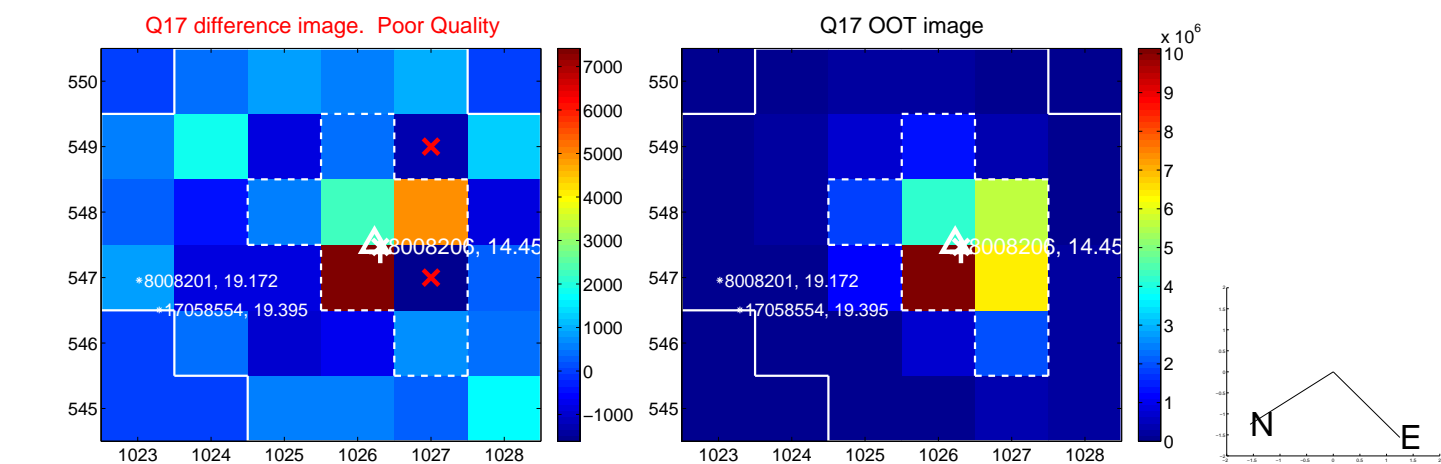
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

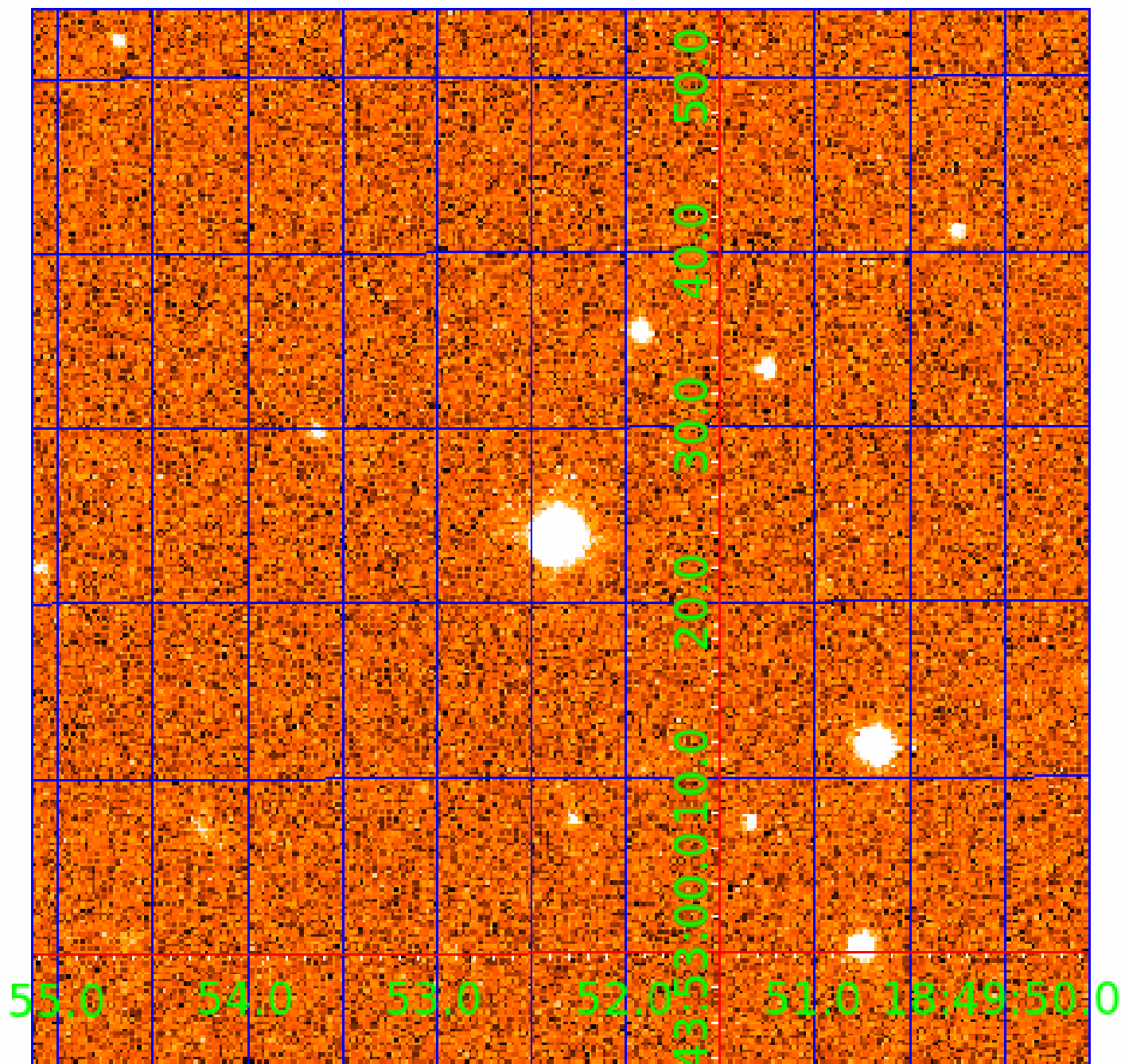


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008008206

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})
008008206-01	OBS	0569.01	20.728975	143.976095	568.5	3.082	25.3	27.1	0.80	4979	2.37	18.70
008008206-02	OBS	0569.02	1.632909	132.917188	187.9	1.656	24.9	27.2	0.80	4979	1.35	553.76

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008008206-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008008206-02	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.

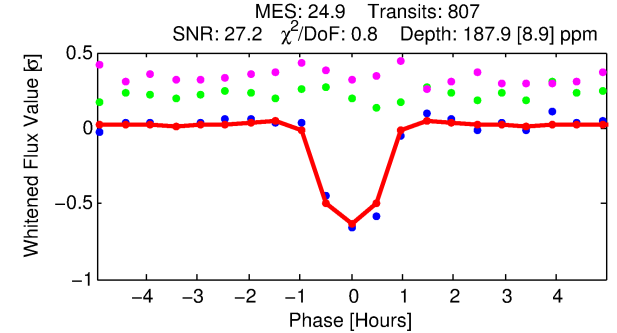
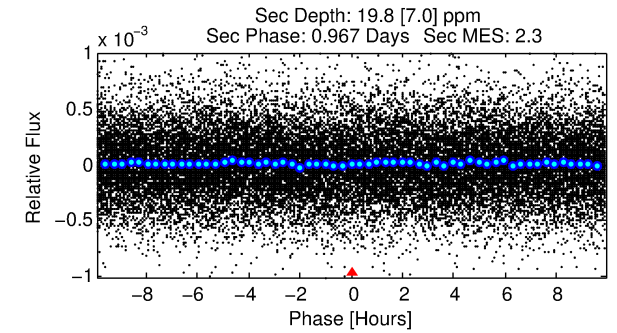
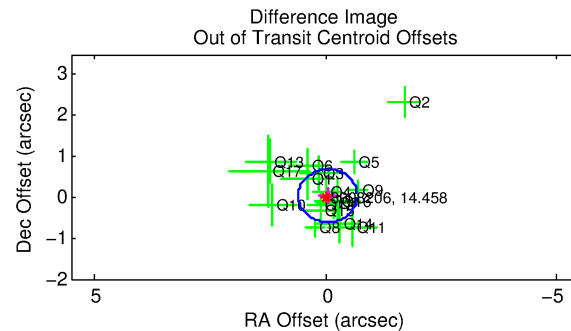
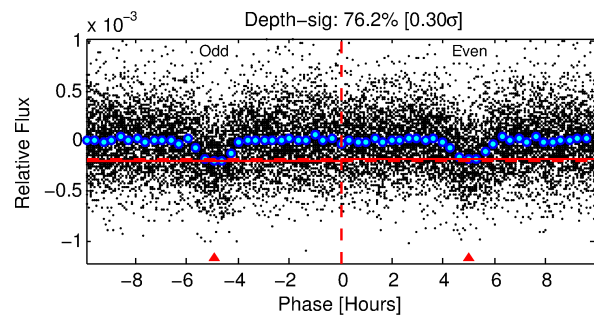
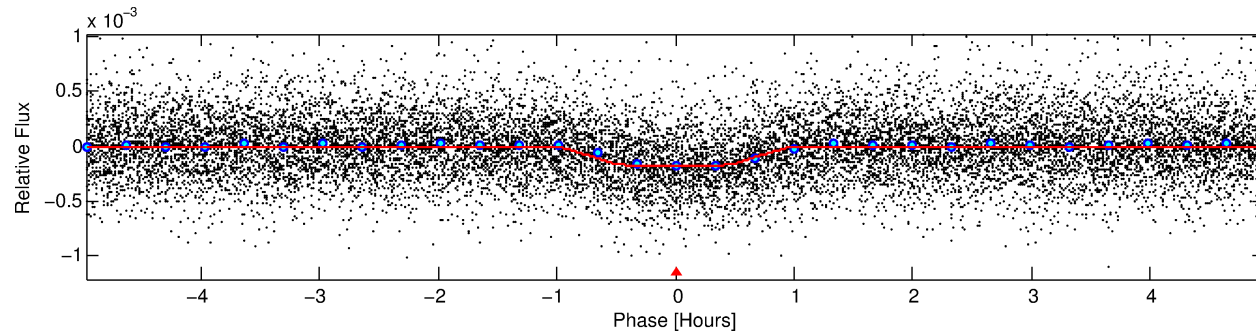
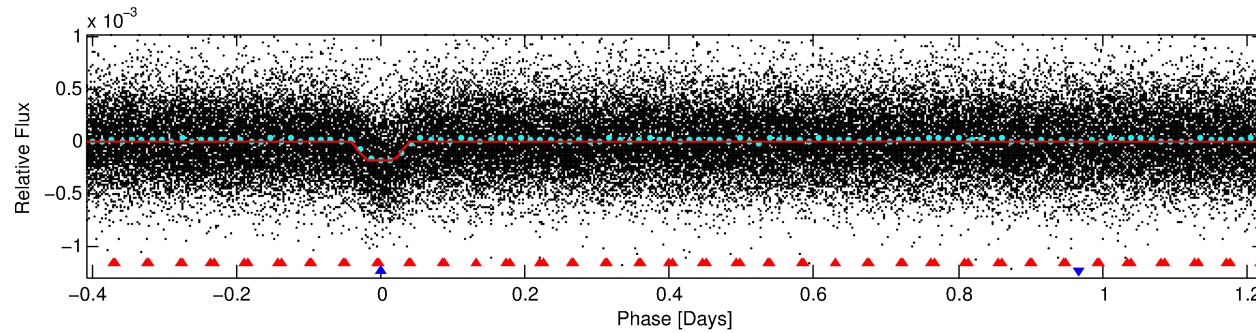
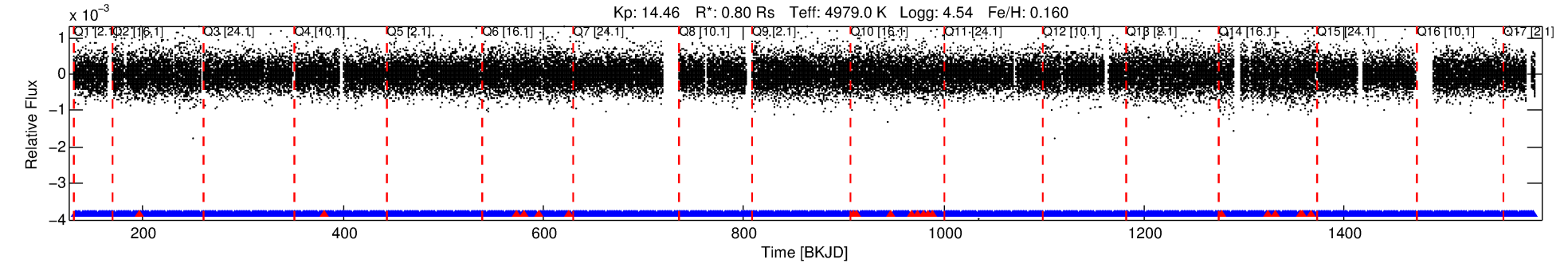
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008008206-02

No Significant Match Found

DV One-Page Summary

KIC: 8008206 Candidate: 2 of 2 Period: 1.633 d
KOI: K00569.02 Name: Kepler-185b Corr: 0.950



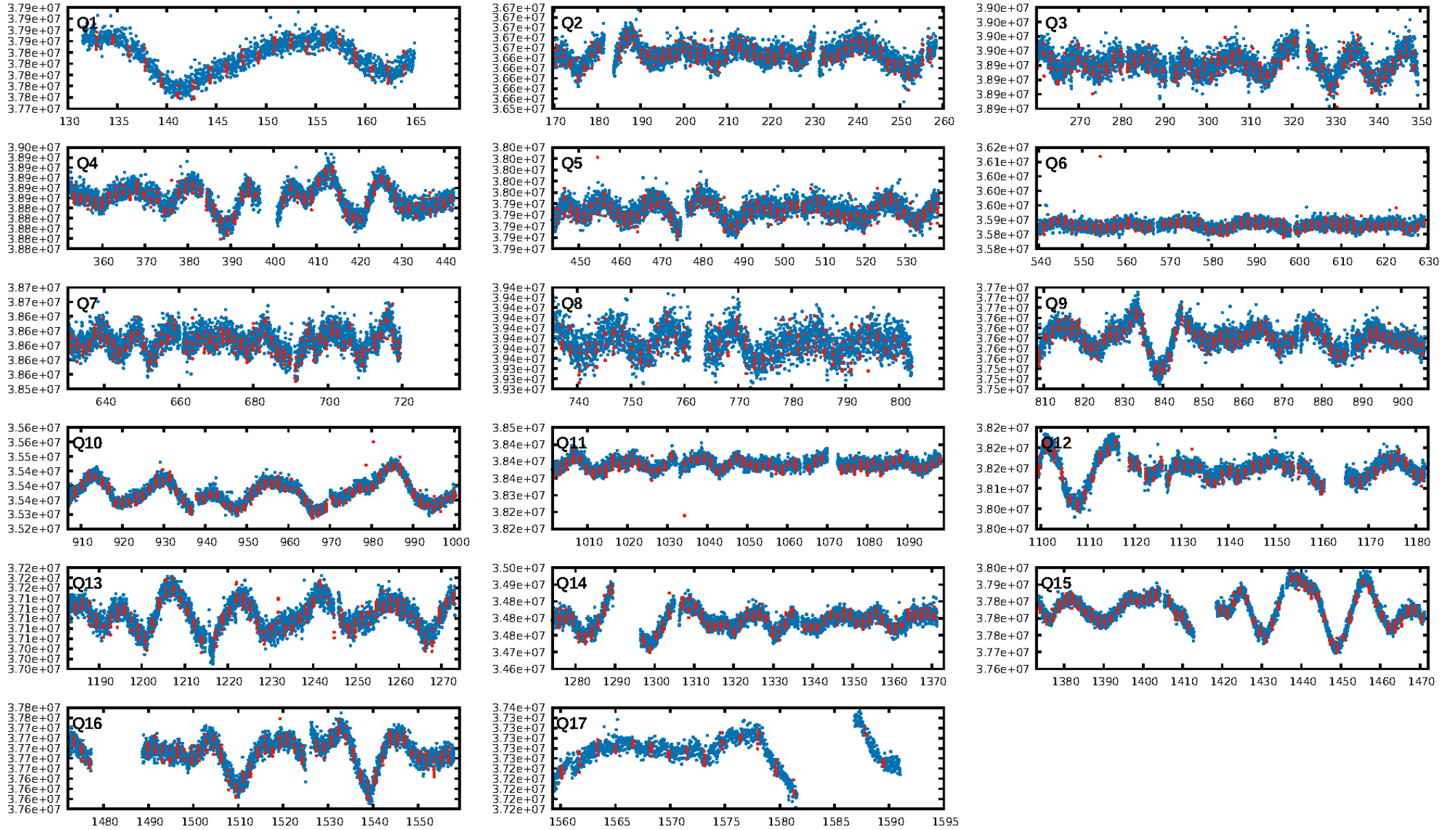
DV Fit Results:

Period = 1.63291 [0.00000] d
Epoch = 132.9172 [0.0009] BKJD
Rp/R* = 0.0154 [0.0055]
a/R* = 3.68 [4.81]
b = 0.90 [0.31]
Seff = 553.76 [58.49]
Teff = 1237 [33] K
Rp = 1.35 [0.49] Re
a = 0.0253 [0.0013] AU
Ag = 3.84 [3.10] [0.92 σ]
Teffp = 2677 [540] K [2.6 σ]

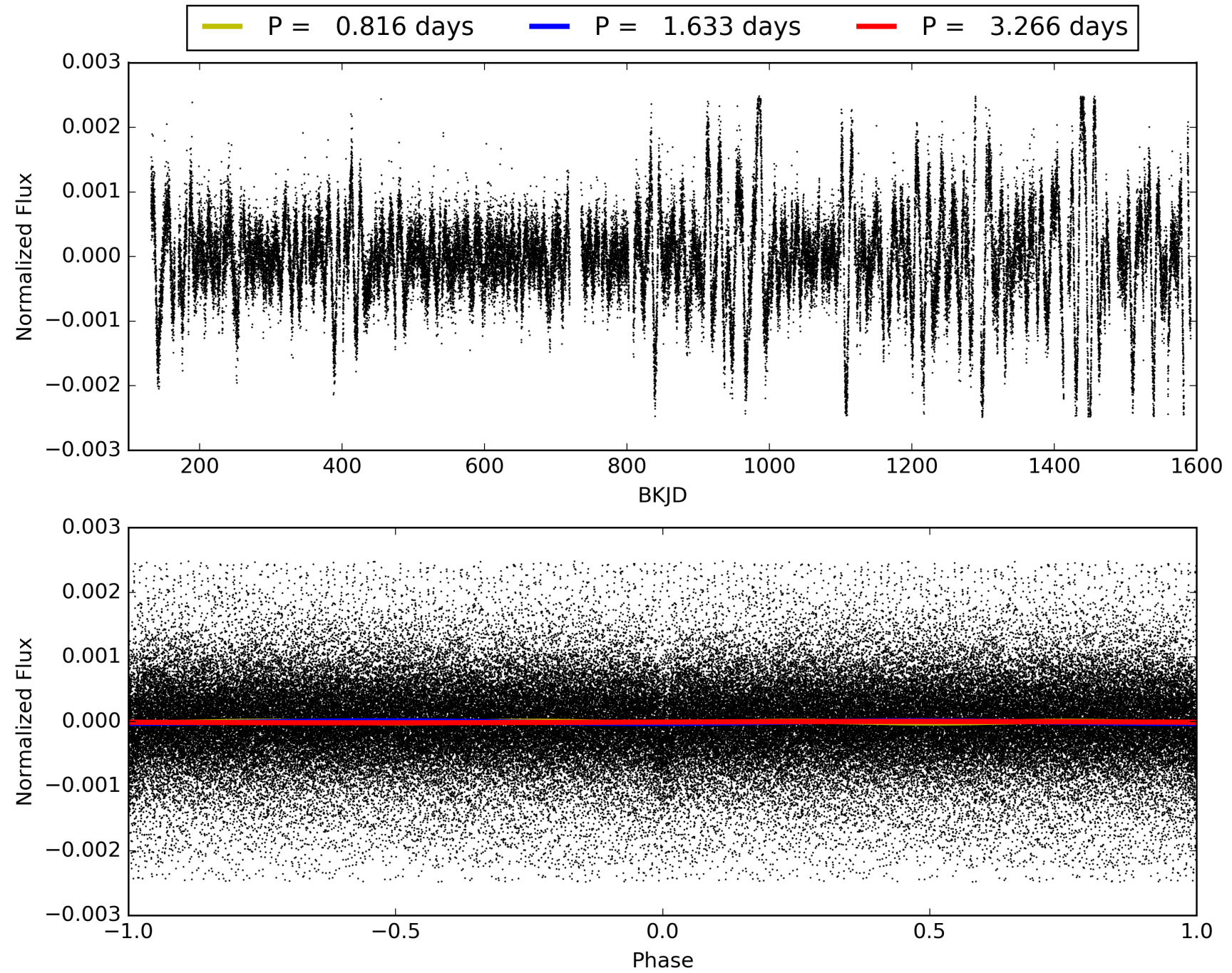
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [131.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.57e-128
RollingBand-fgt: 0.97 [751/771]
GhostDiagnostic-chr: 5.441
Centroid-sig: 0.0%
Centroid-so: 1.672 arcsec [4.01 σ]
OotOffset-rm: 0.061 arcsec [0.29 σ]
KicOffset-rm: 0.251 arcsec [1.37 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 008008206-02, PDC Light Curves

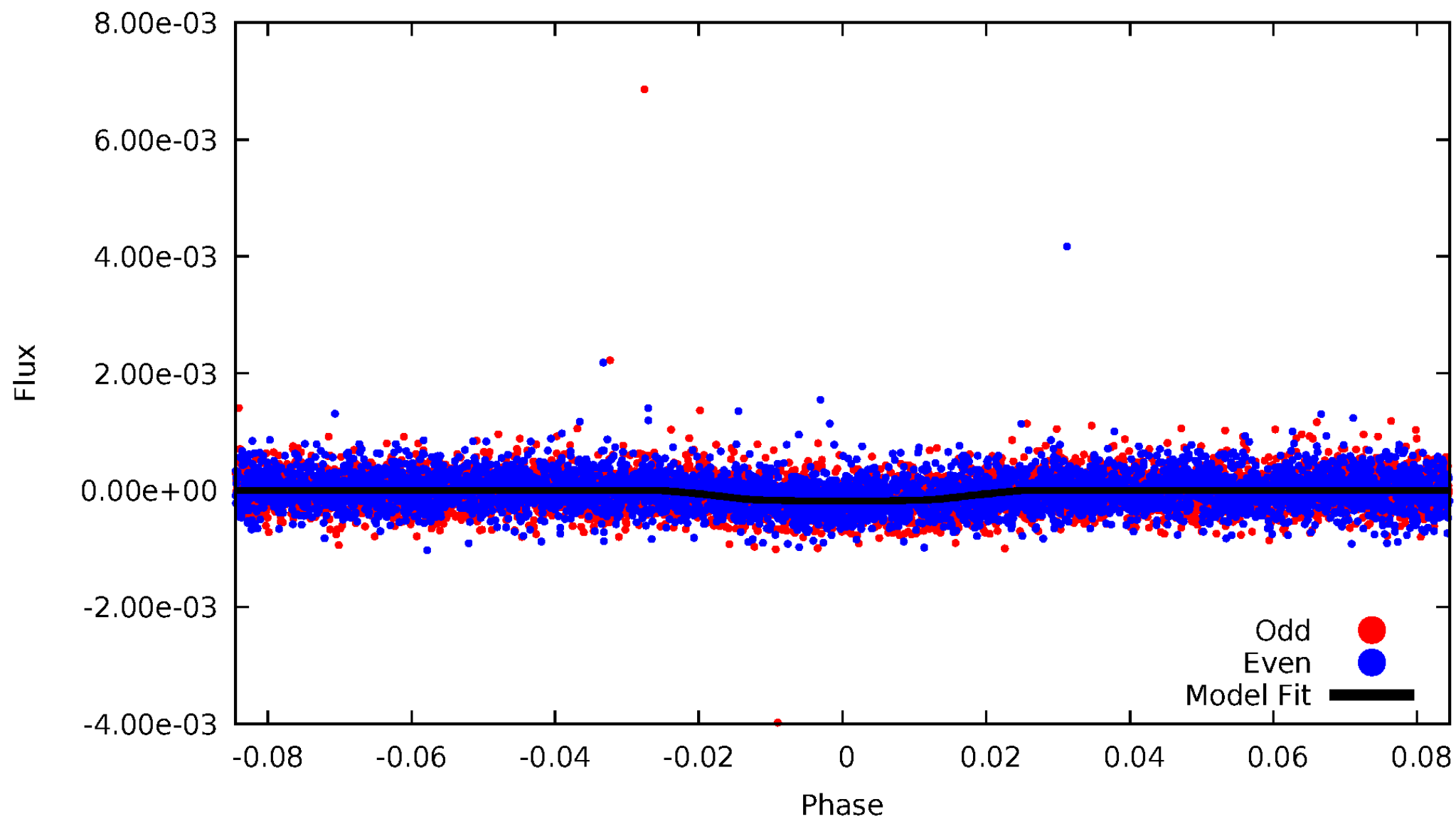


TCE 008008206-02



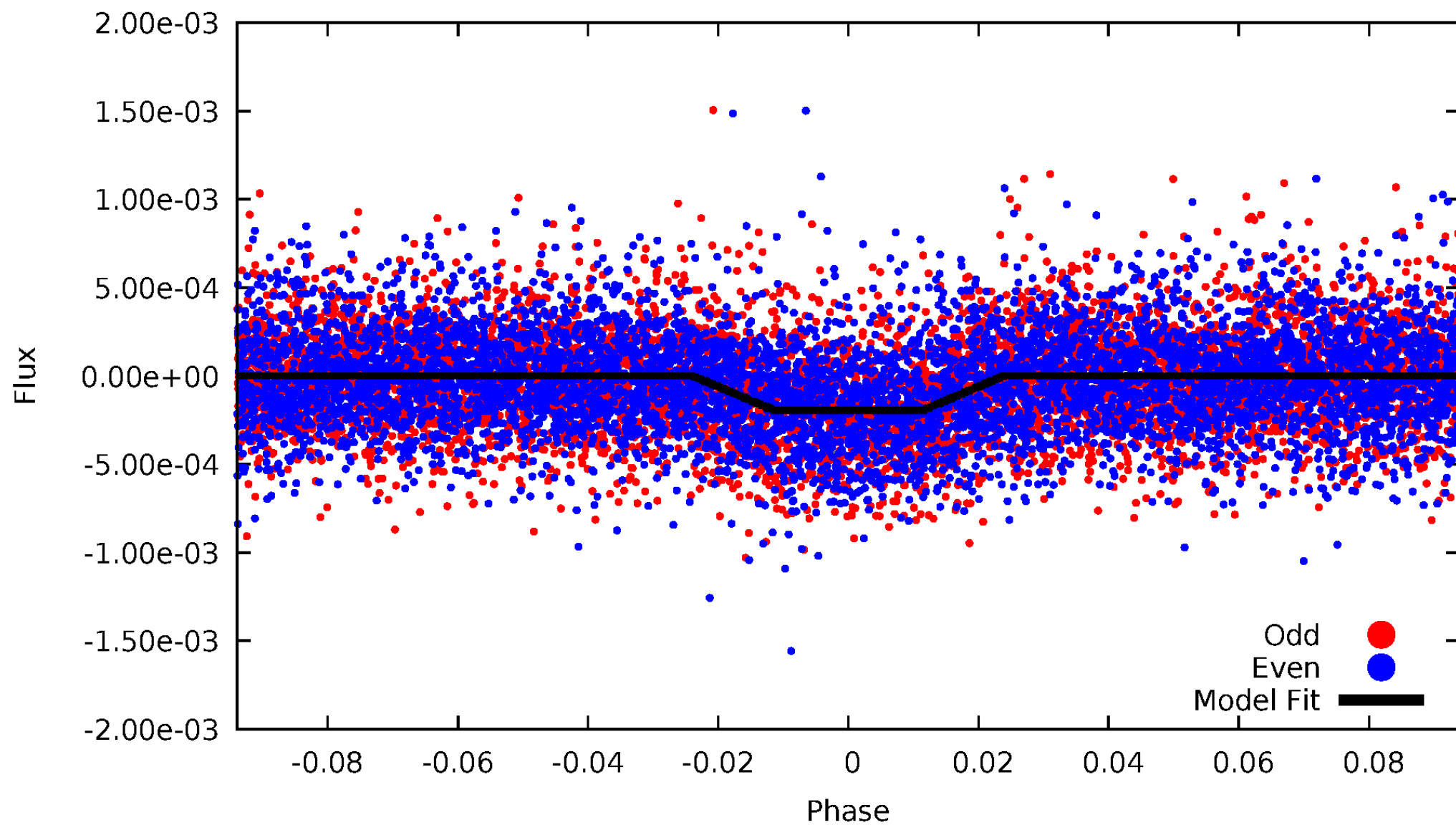
DV Odd/Even

TCE 008008206-02



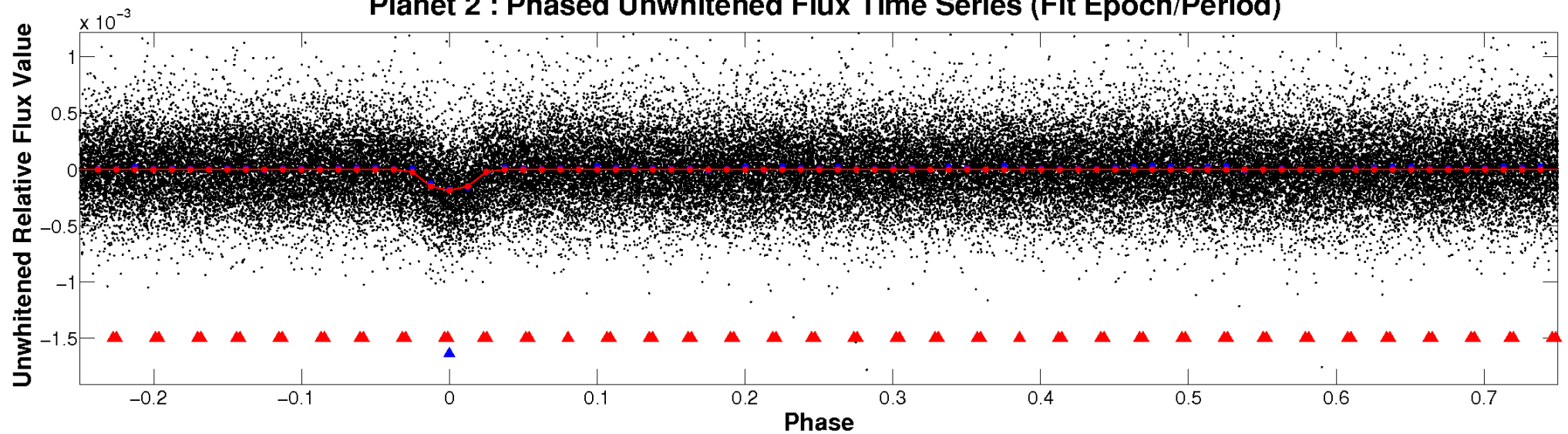
ALT Odd/Even

TCE 008008206-02

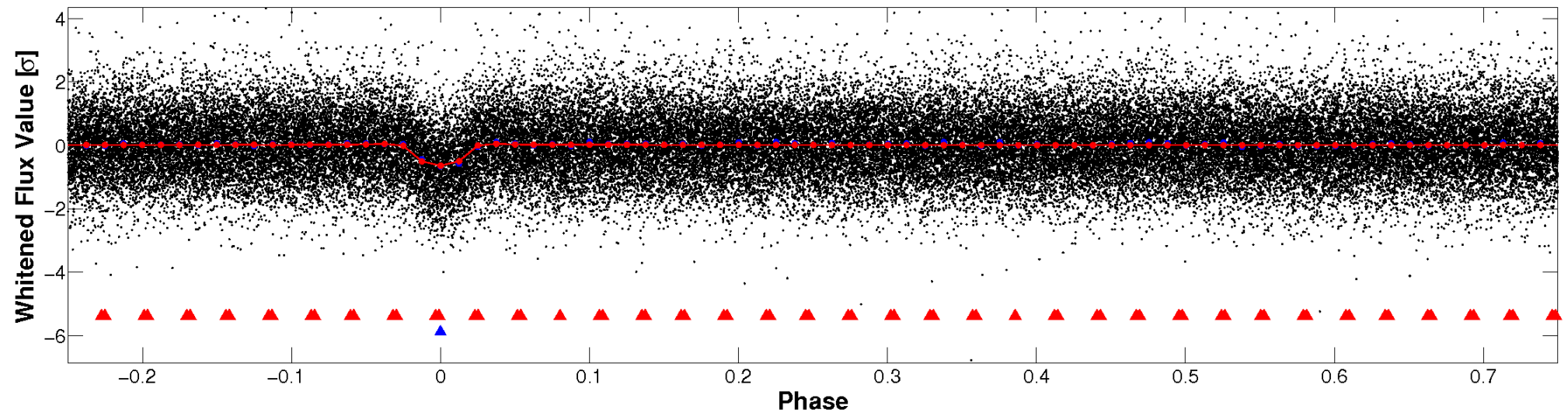


Non-Whitened Vs. Whitened Light Curve

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

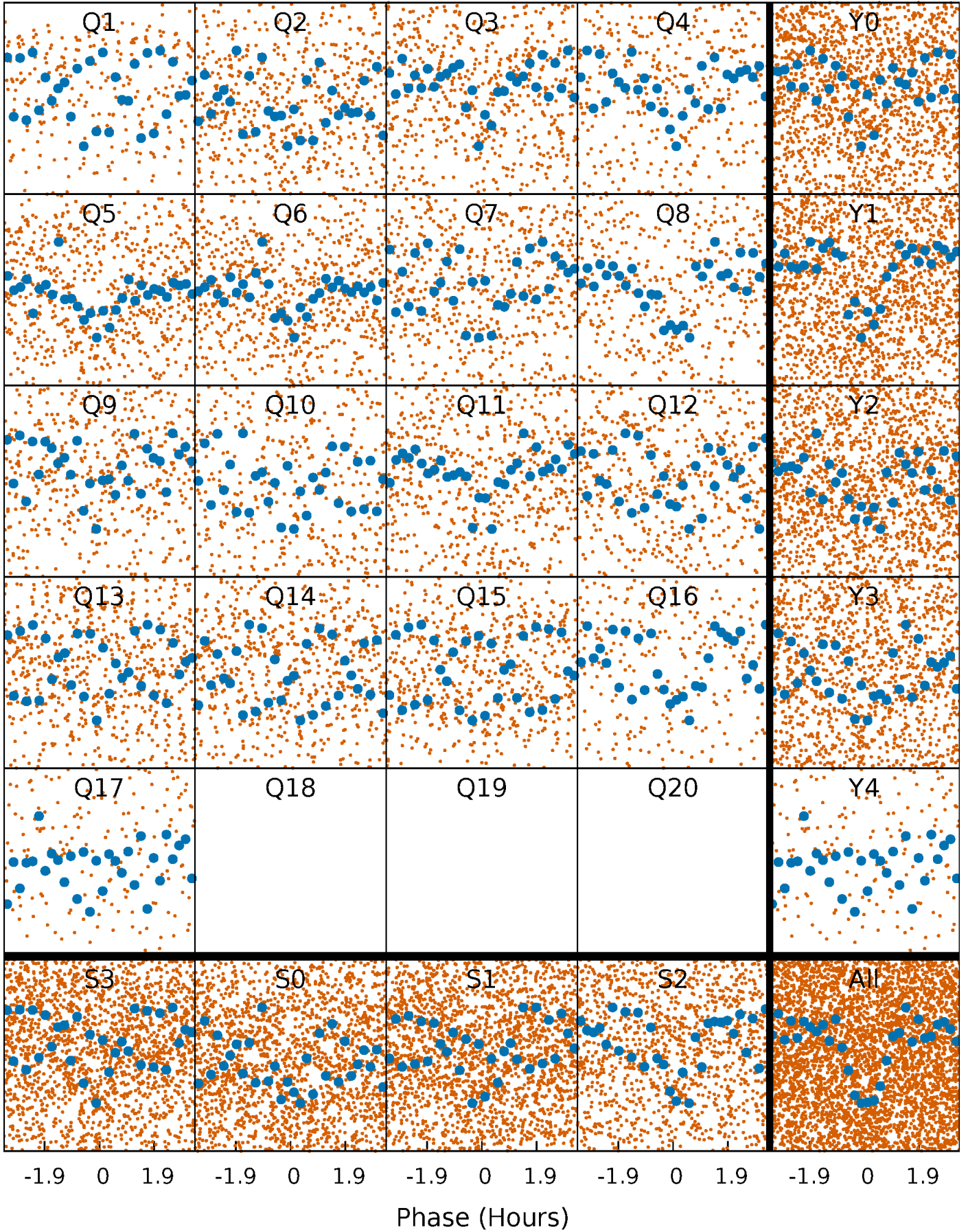


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



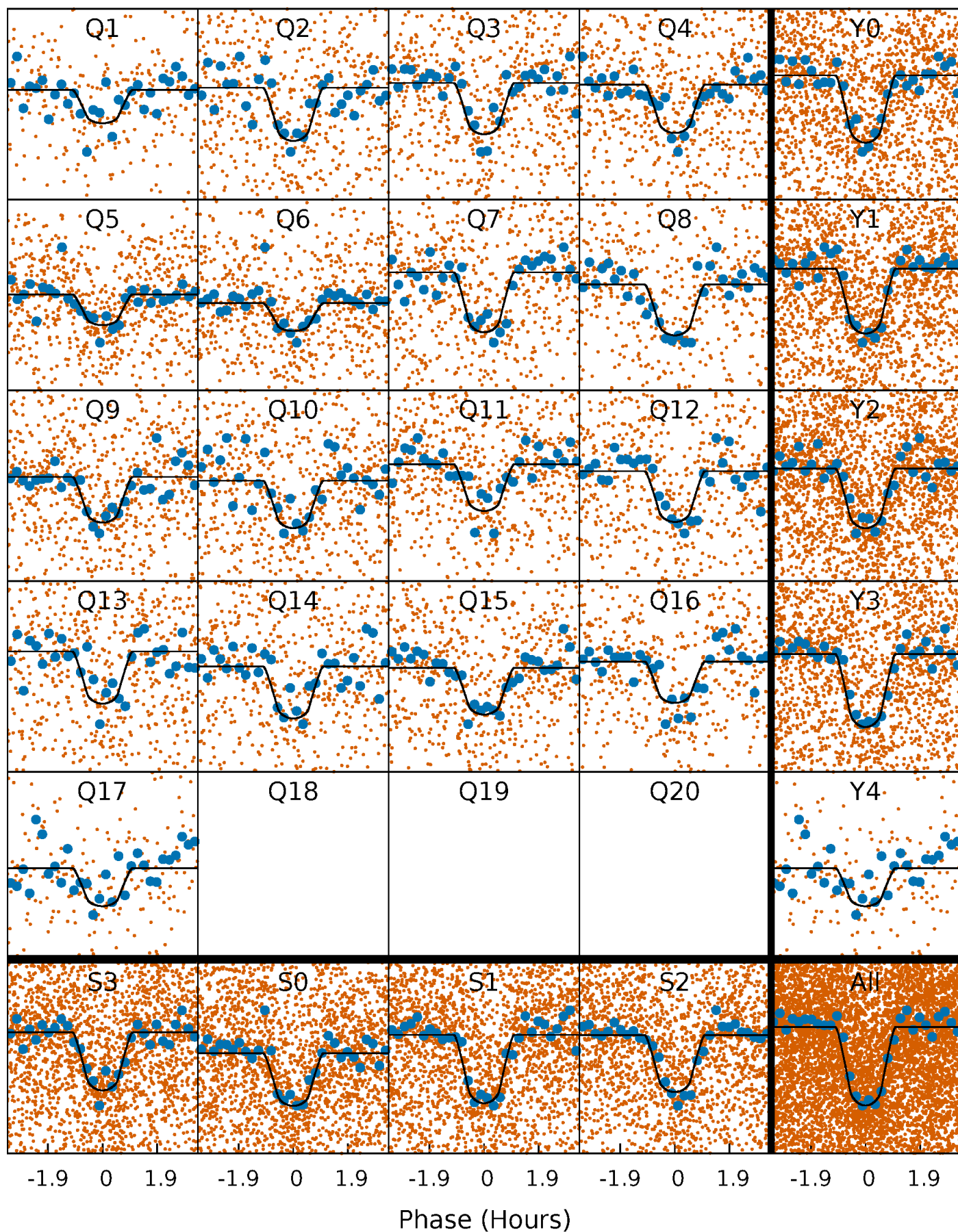
PDC Quarter-Phased Transit Curves

TCE 008008206-02 P= 1.632909 Days $T_0=132.917188$ (BKJD)



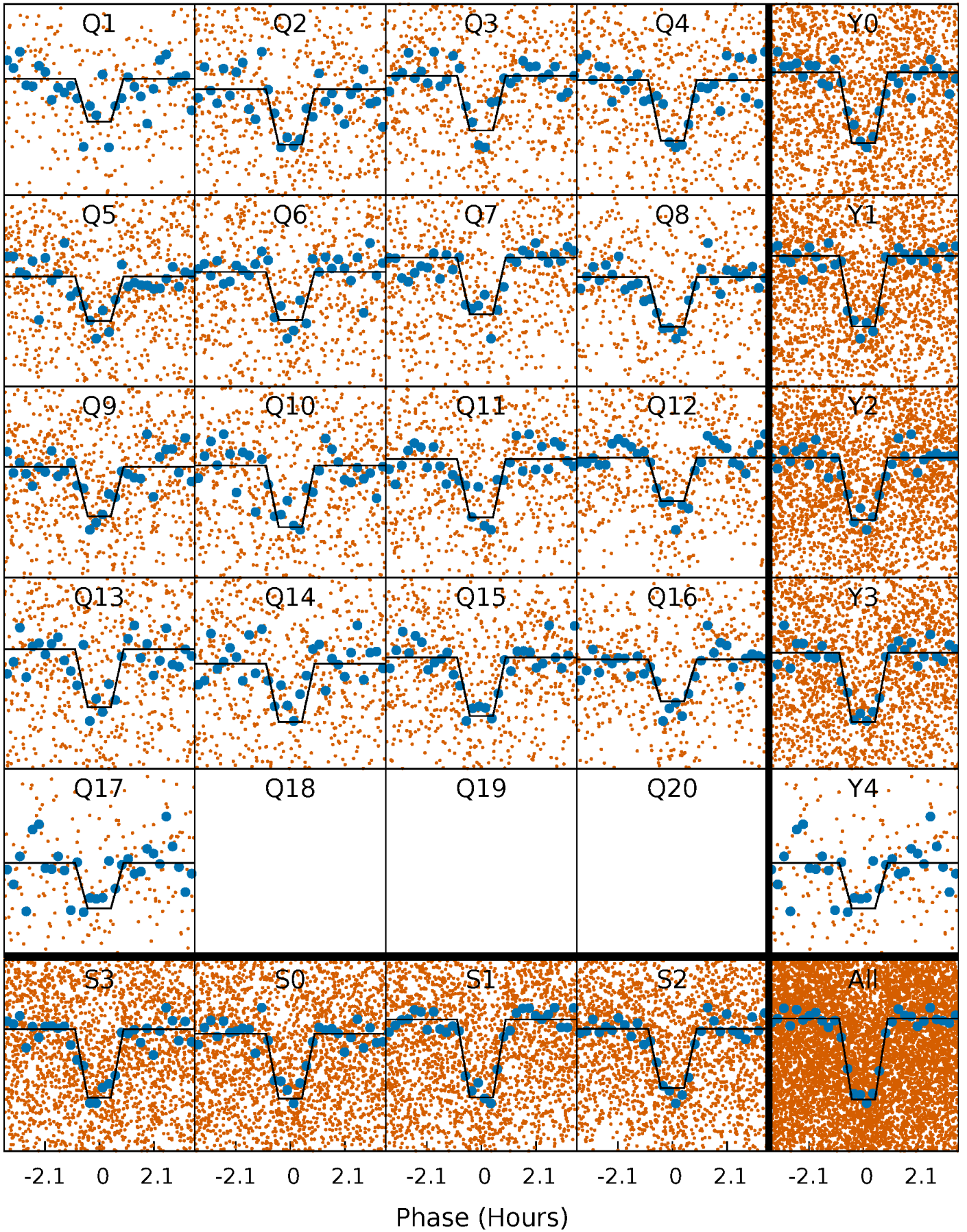
DV Quarter-Phased Transit Curves

TCE 008008206-02 P= 1.632909 Days $T_0=132.917188$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

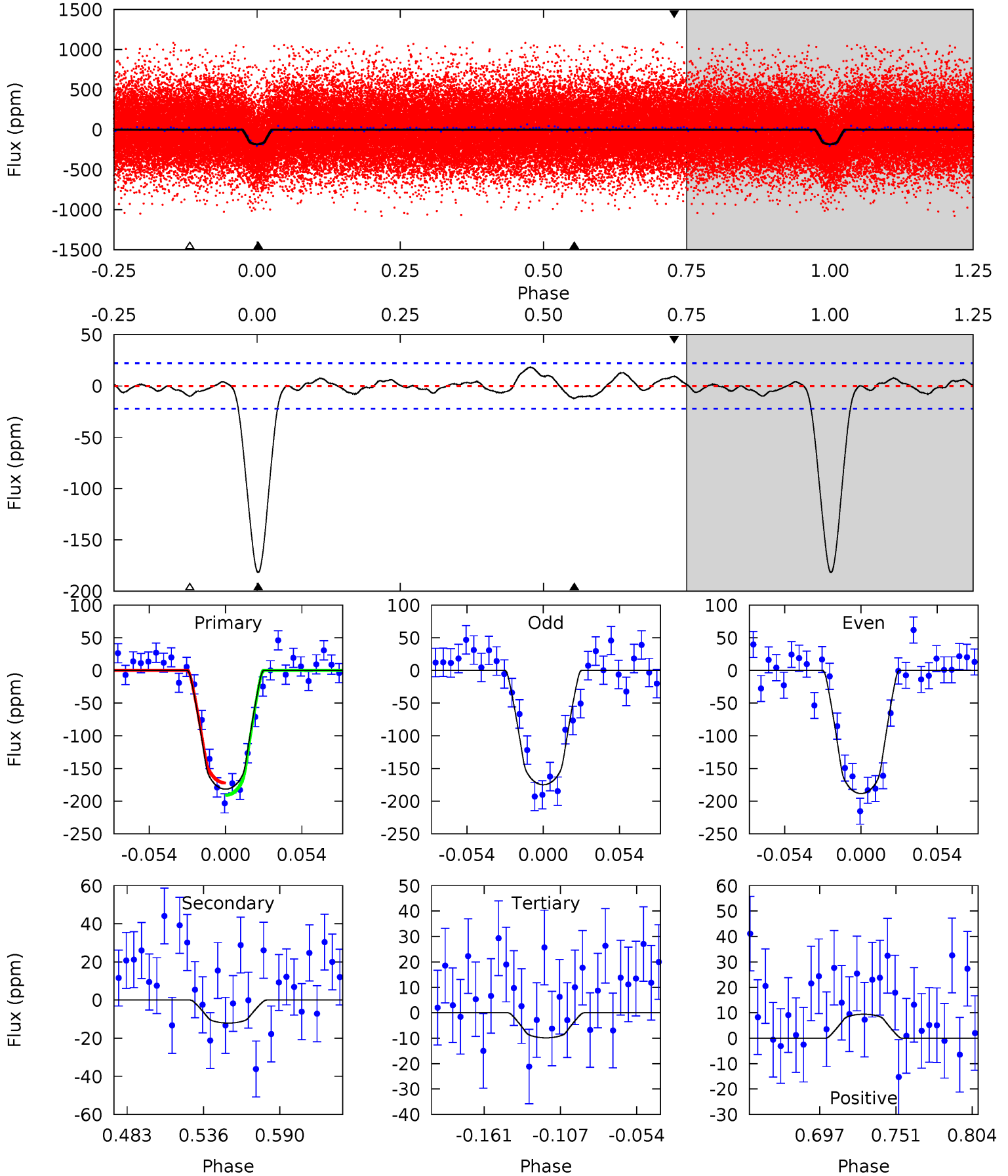
TCE 008008206-02 P= 1.632919 Days $T_0=132.915666$ (BKJD)



DV Model-Shift Uniqueness Test

008008206-02, P = 1.632909 Days, E = 131.284279 Days

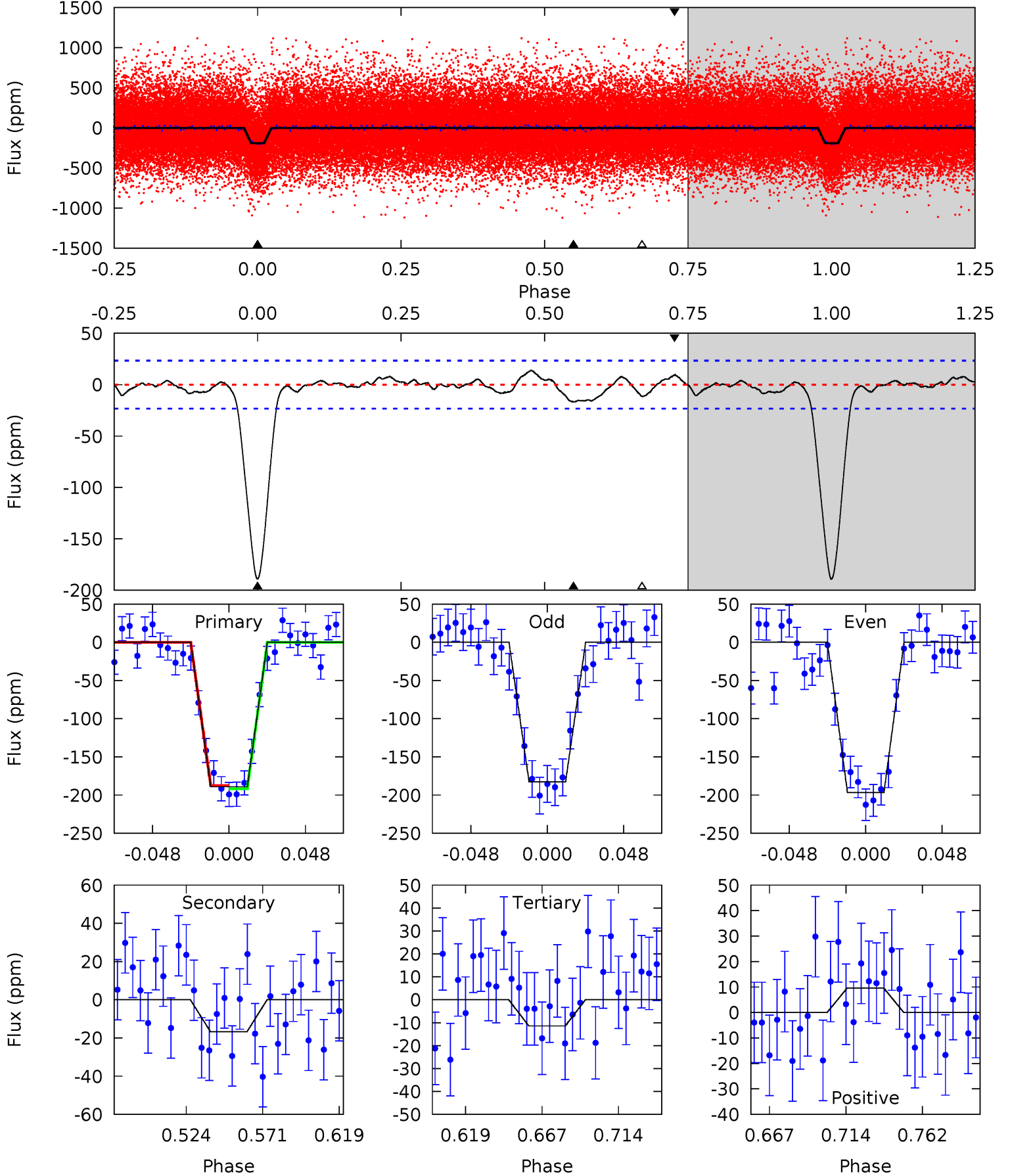
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.5	2.56	2.09	2.00	4.69	1.93	1.19	36.4	36.5	0.47	0.56	1.42	1.00	0.09	2.00



Alt Model-Shift Uniqueness Test

008008206-02, P = 1.632919 Days, E = 131.282747 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.2	3.39	2.31	1.95	4.72	1.98	1.00	35.9	36.3	1.08	1.44	1.40	1.01	0.07	0.42



Stellar Parameters For KIC 008008206

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4979^{+82}_{-74}	$4.538^{+0.049}_{-0.036}$	$0.160^{+0.150}_{-0.150}$	$0.803^{+0.037}_{-0.041}$	$0.811^{+0.042}_{-0.033}$	$2.208^{+0.397}_{-0.258}$
	+2%/-1%	+1%/-1%	+94%/-94%	+5%/-5%	+5%/-4%	+18%/-12%
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 008008206-02 / KOI 0569.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-12 ± 5	$1.31^{+0.51}_{-0.45}$	1726^{+40}_{-37}	2919^{+493}_{-382}	$2.240^{+3.730}_{-1.270}$
Alt.	-17 ± 5	$1.24^{+0.47}_{-0.48}$	1727^{+36}_{-36}	3174^{+561}_{-371}	$3.819^{+6.202}_{-2.034}$

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

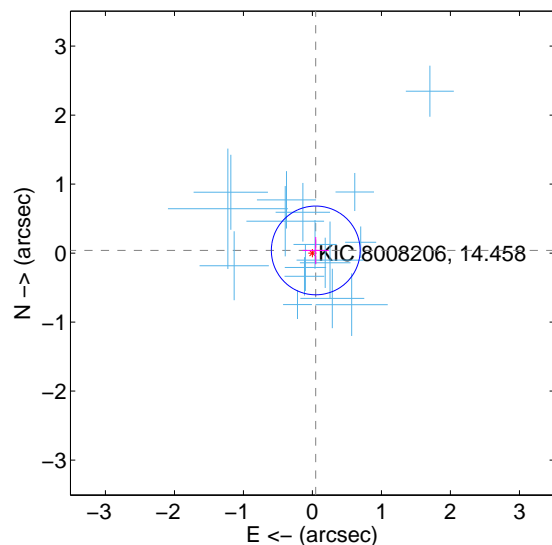
Supplemental centroid analysis for 008008206-02. Kepler magnitude: 14.46. Transit SNR 27.20

There are 17 quarters with good PRF difference image offsets

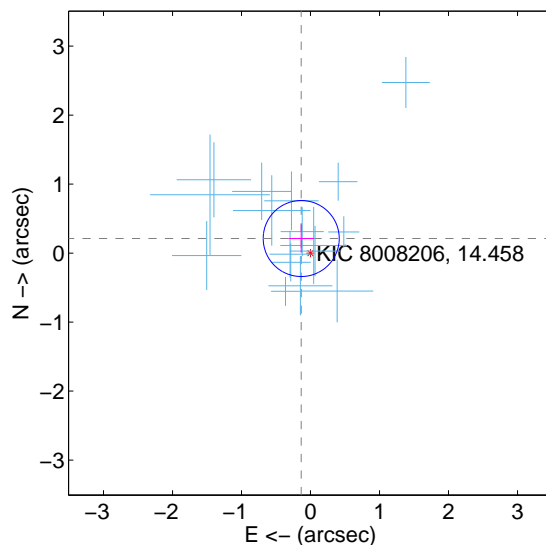
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.061 ± 0.214	0.29	-0.048 ± 0.190	0.039 ± 0.195
PRF-fit source offset from KIC position	0.251 ± 0.184	1.37	0.135 ± 0.184	0.211 ± 0.206
photometric centroid source offset	1.67 ± 0.42	4.01	-0.15 ± 0.49	1.67 ± 0.42

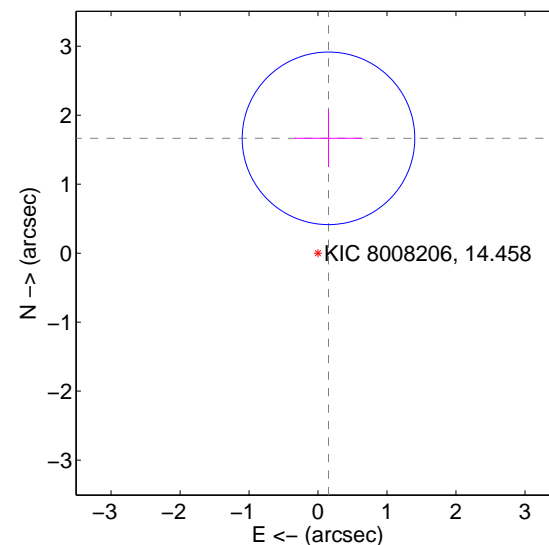
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

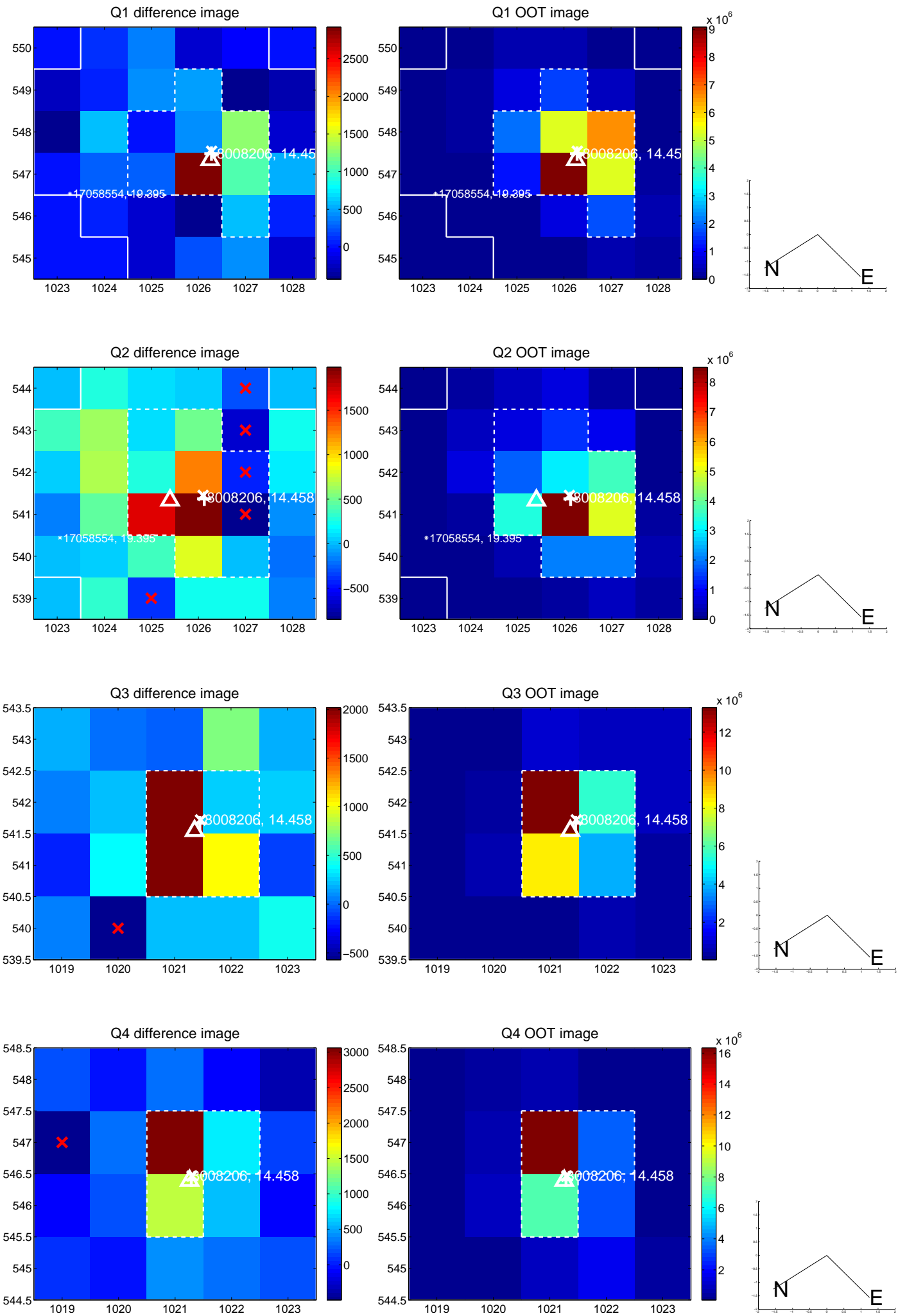


offset from photometric centroids

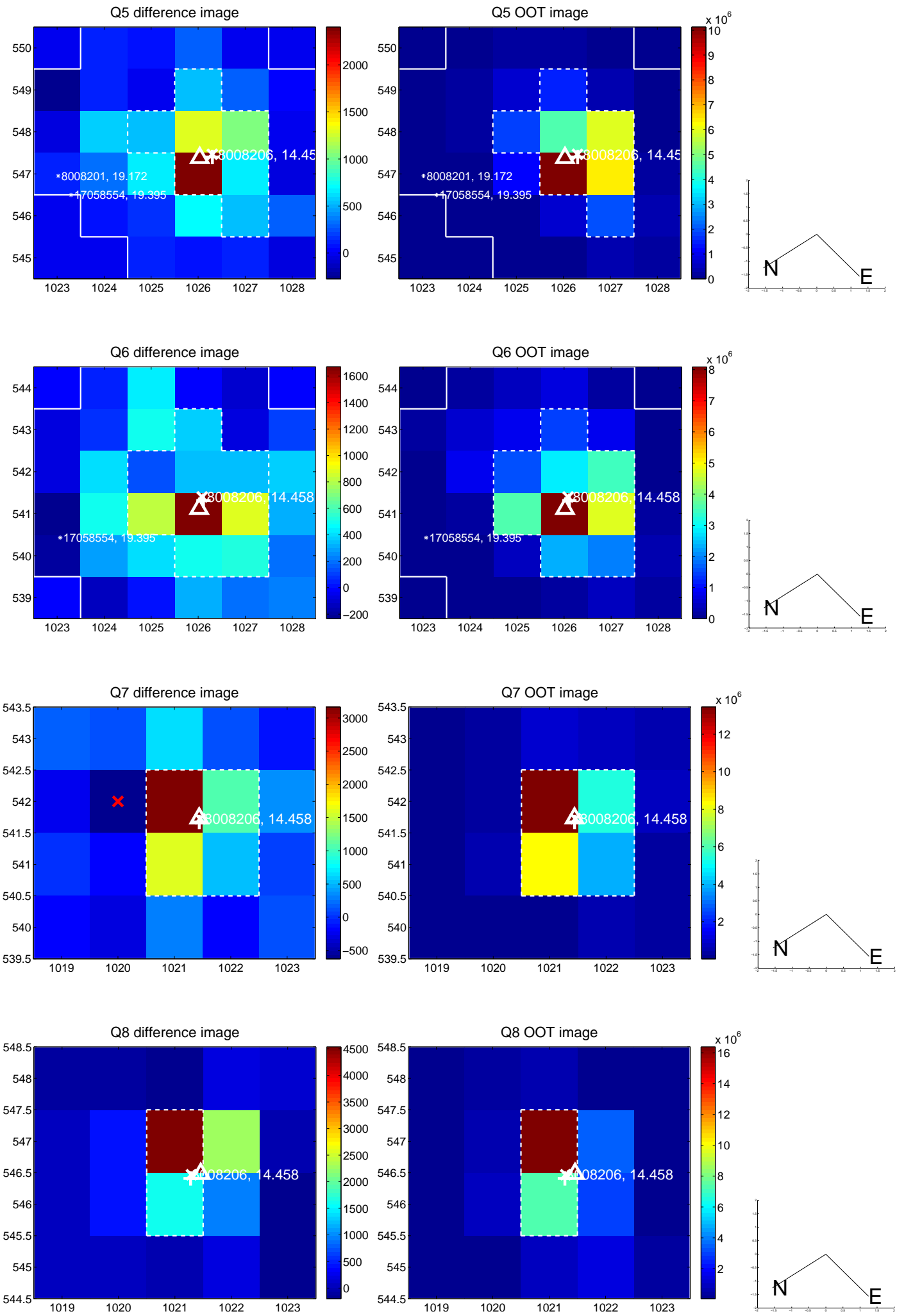


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

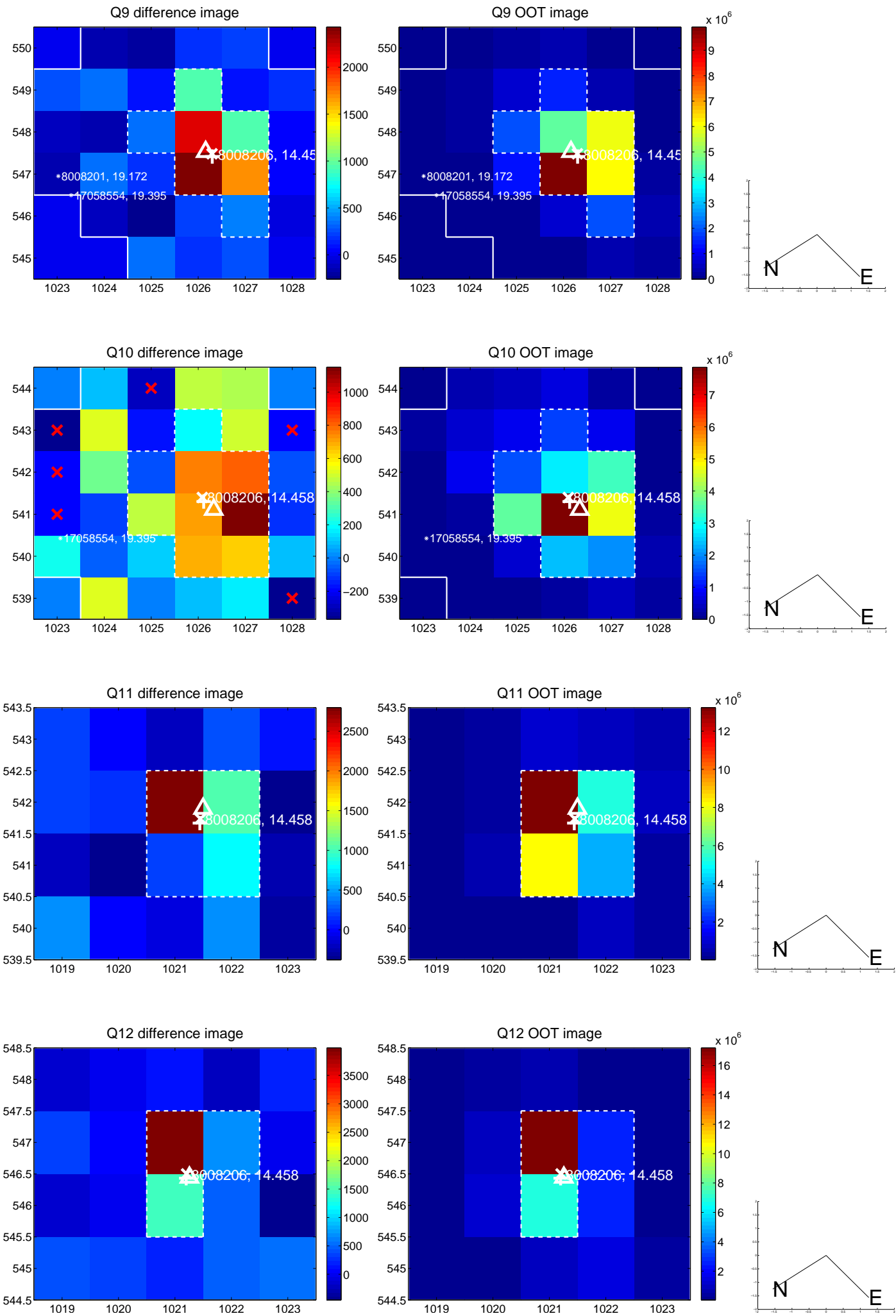
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



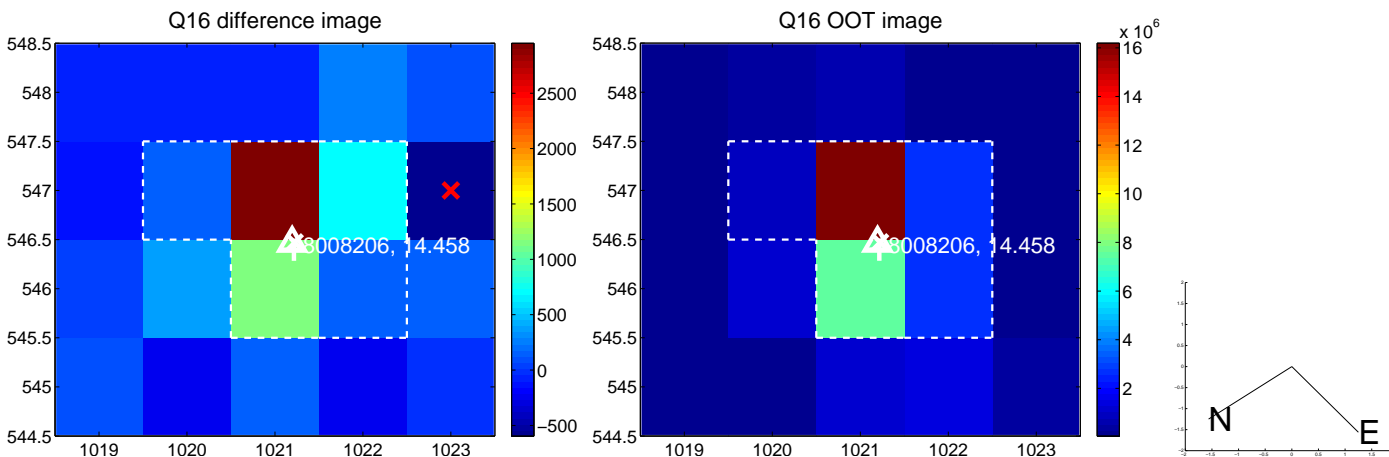
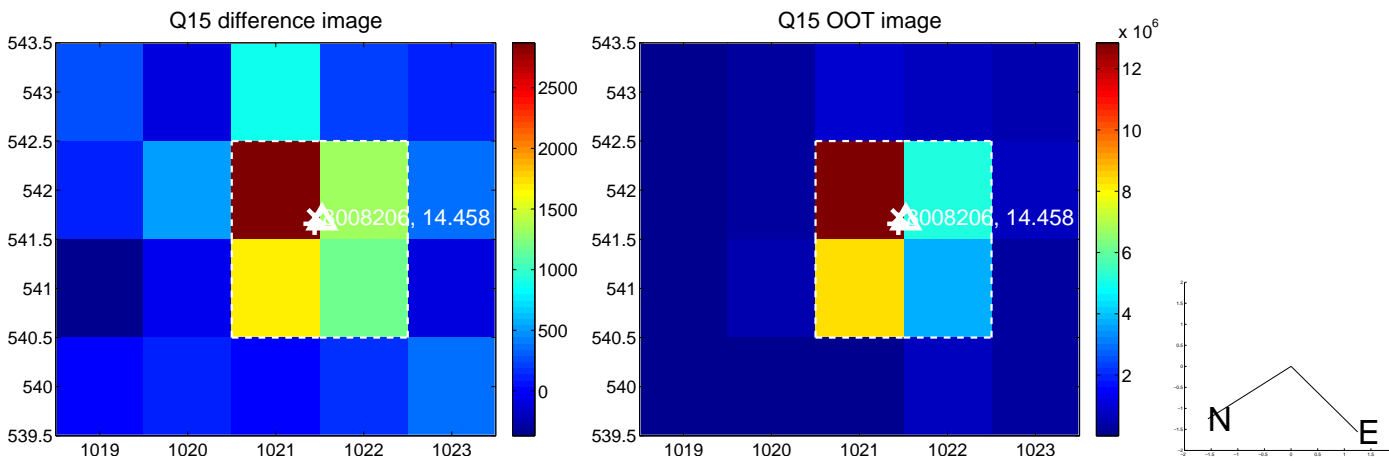
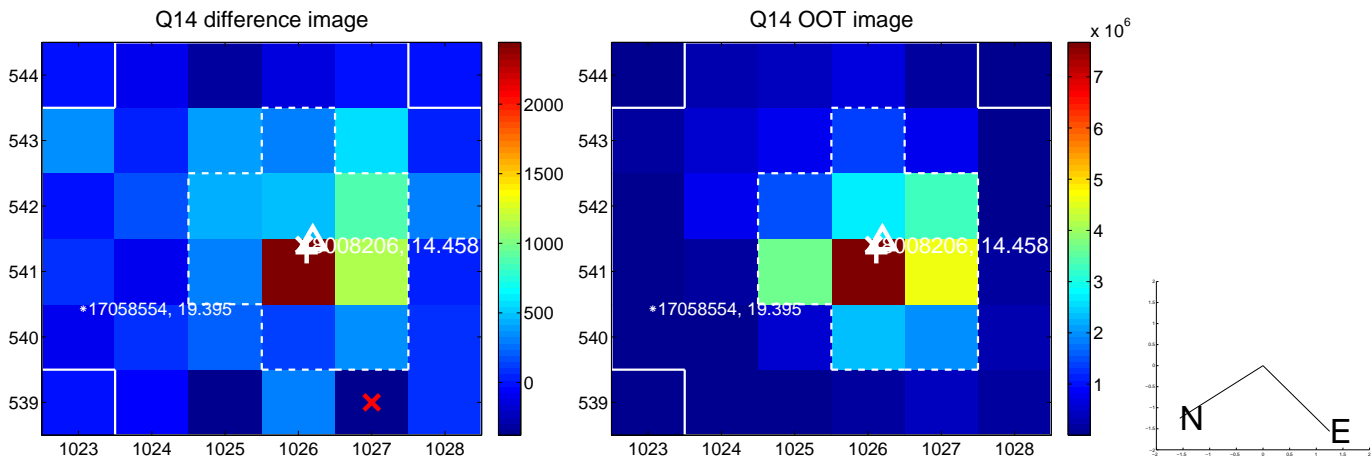
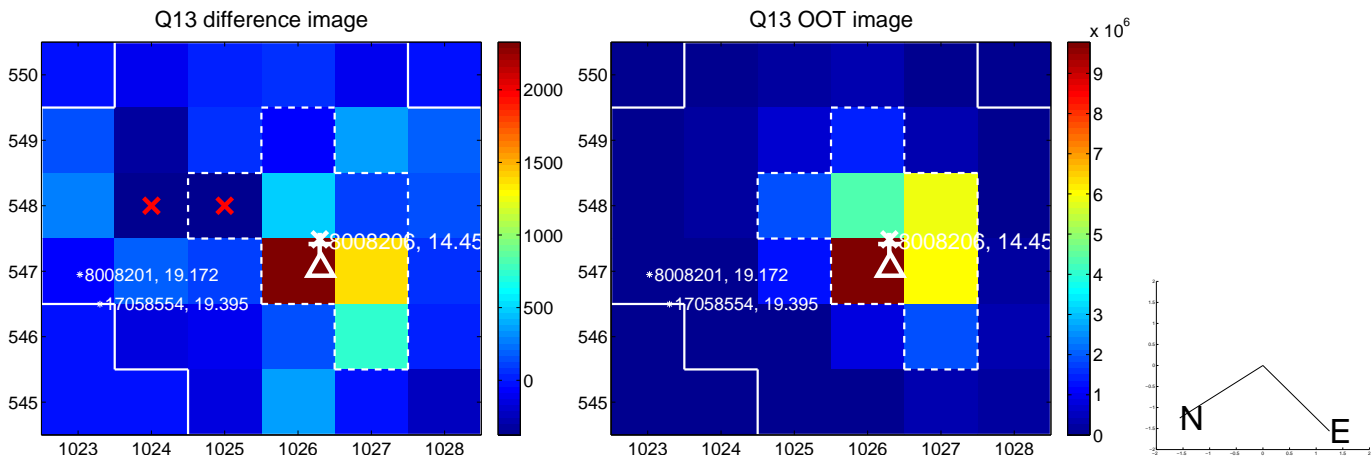
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



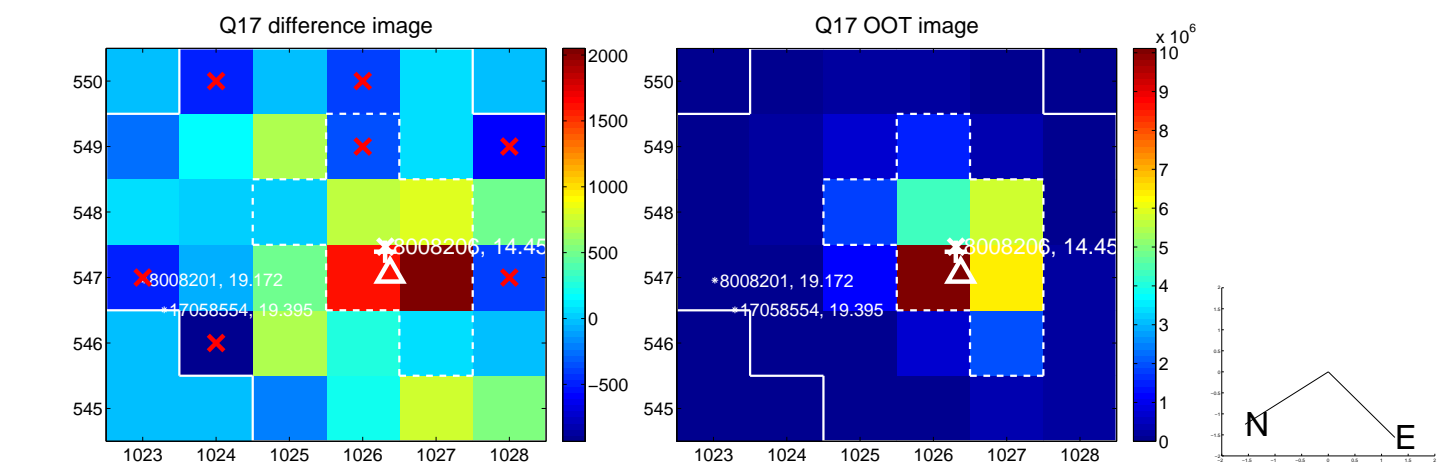
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



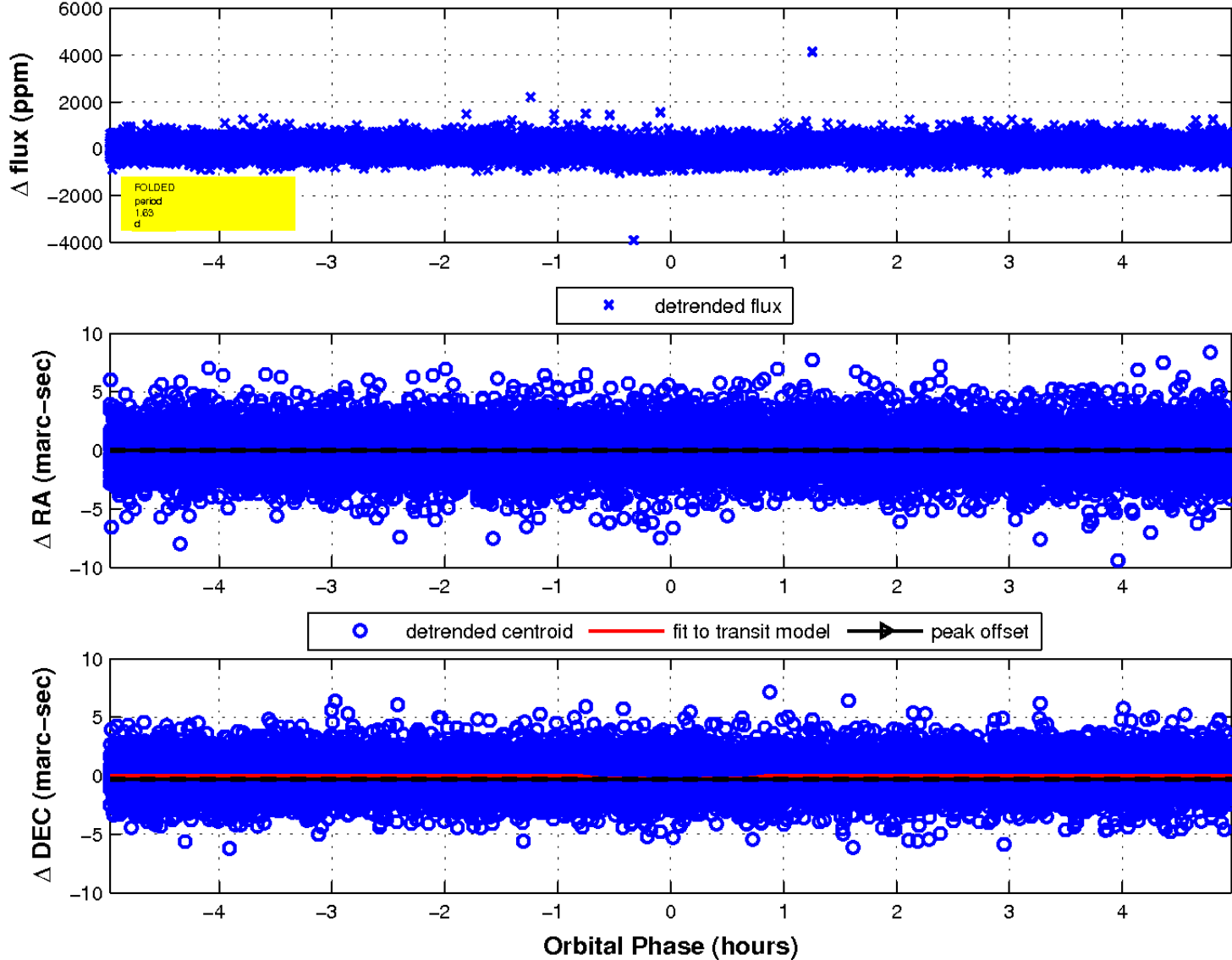
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

