

KIC 006500206

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})
006500206-01	OBS	2451.01	13.374989	142.379700	438.7	1.698	13.8	14.9	0.96	5263	2.36	57.98
006500206-02	OBS	No	13.374919	132.305157	514.1	1.416	13.9	16.0	0.96	5263	2.77	57.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006500206-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
006500206-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

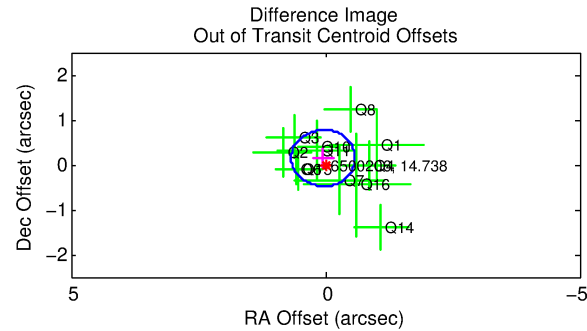
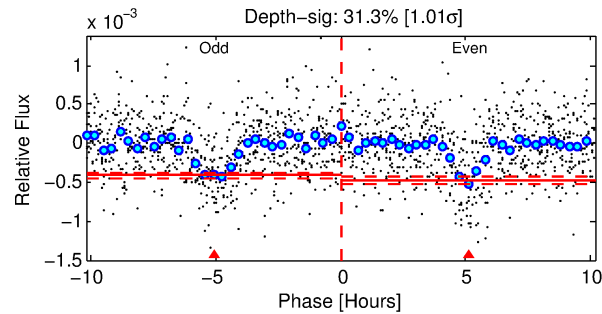
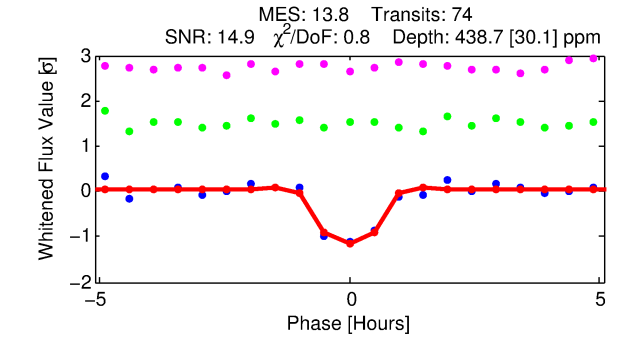
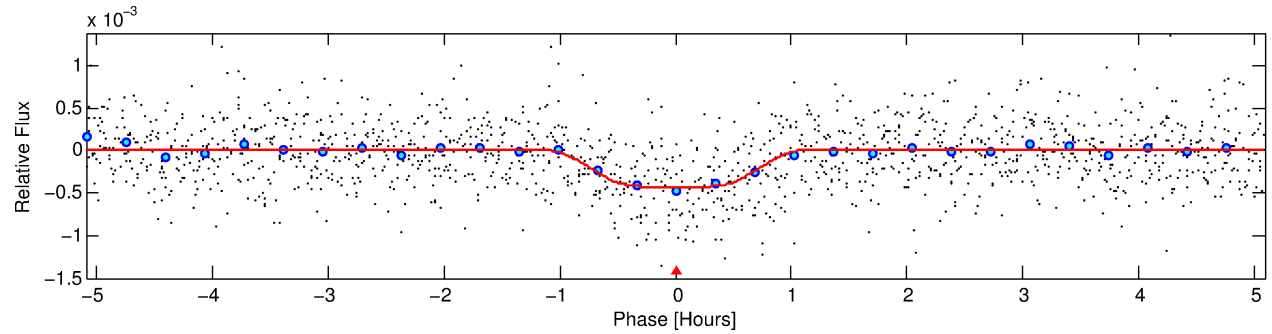
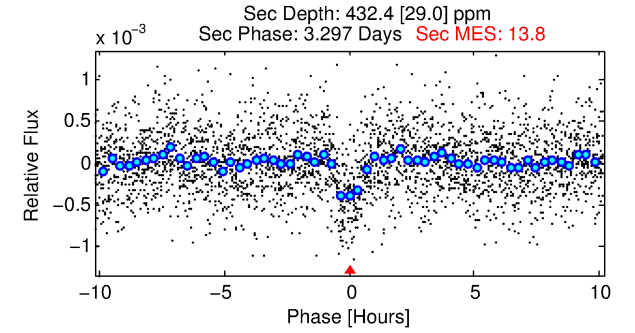
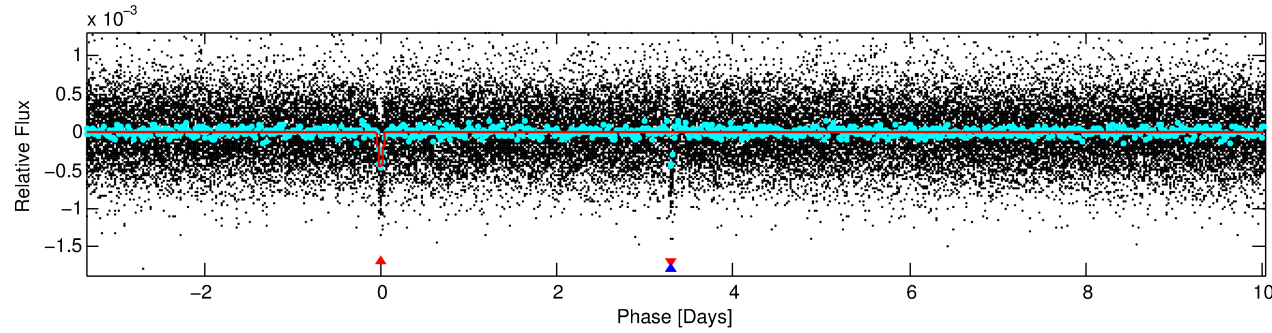
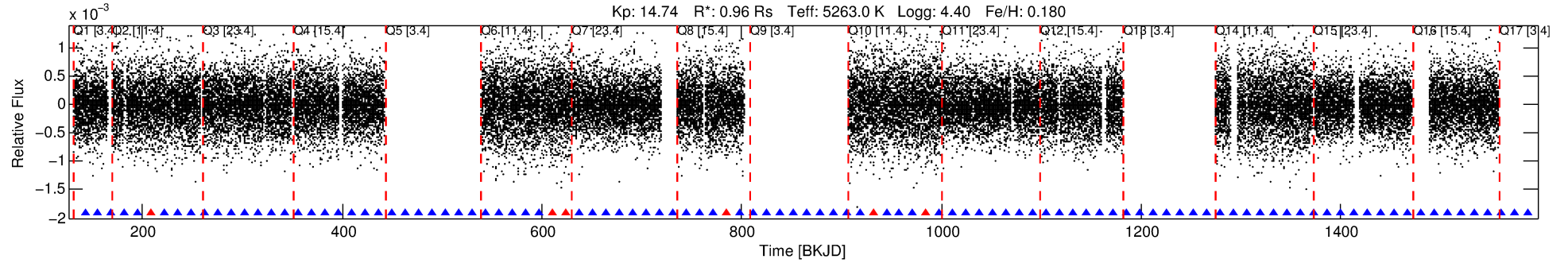
Ephemeris Match Information For 006500206-01

No Significant Match Found

DV One-Page Summary

KIC: 6500206 Candidate: 1 of 2 Period: 13.375 d

KOI: K02451.01 Corr: 0.961



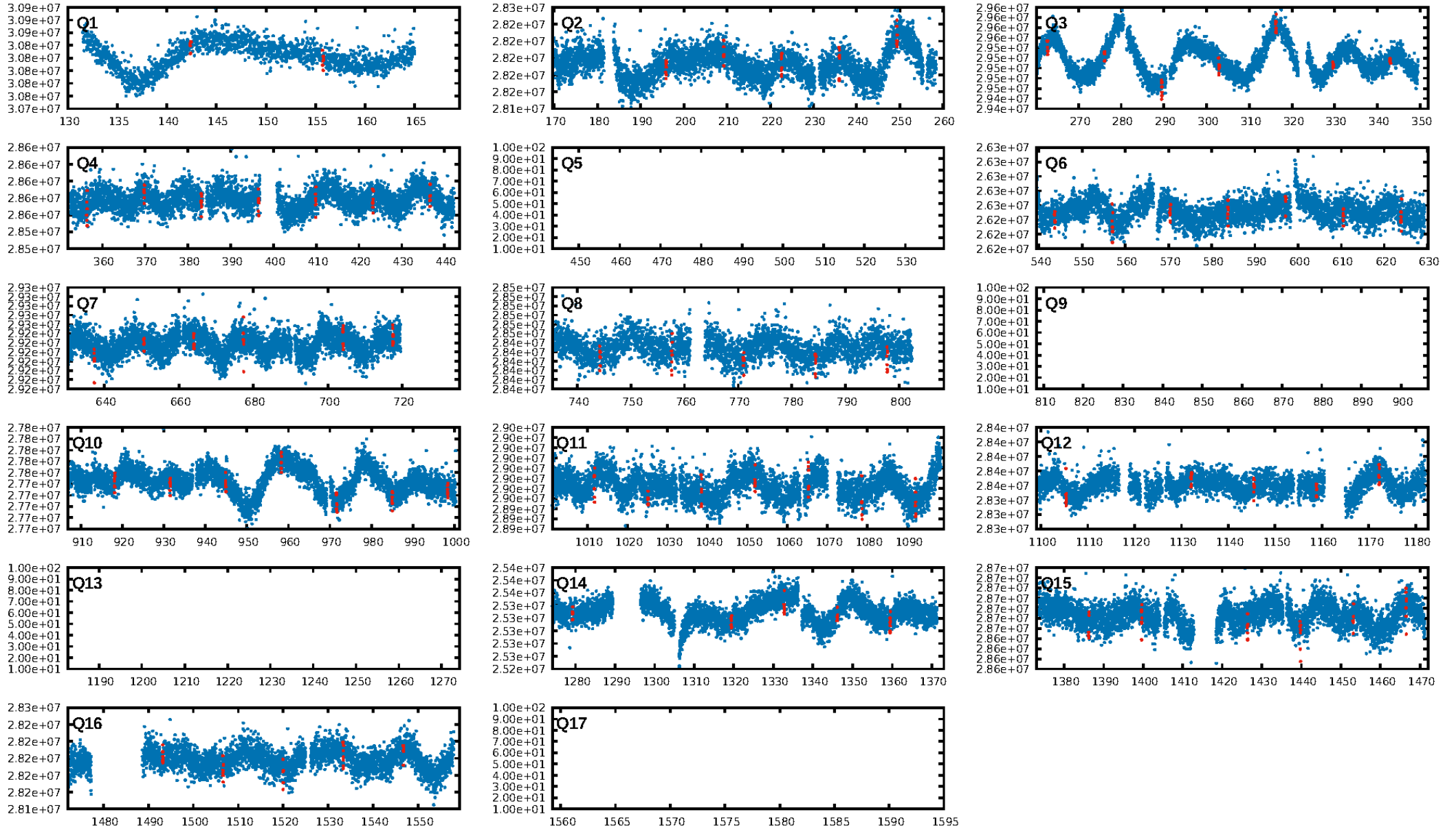
DV Fit Results:

Period = 13.37499 [0.00004] d
Epoch = 142.3797 [0.0027] BKJD
Rp/R* = 0.0225 [0.0144]
a/R* = 33.04 [82.97]
b = 0.86 [0.77]
Seff = 57.98 [11.70]
Teff = 704 [35] K
Rp = 2.36 [1.54] Re
a = 0.1046 [0.0125] AU
Ag = 468.44 [609.27] [0.77 σ]
Teffp = 5061 [1629] K [2.67 σ]

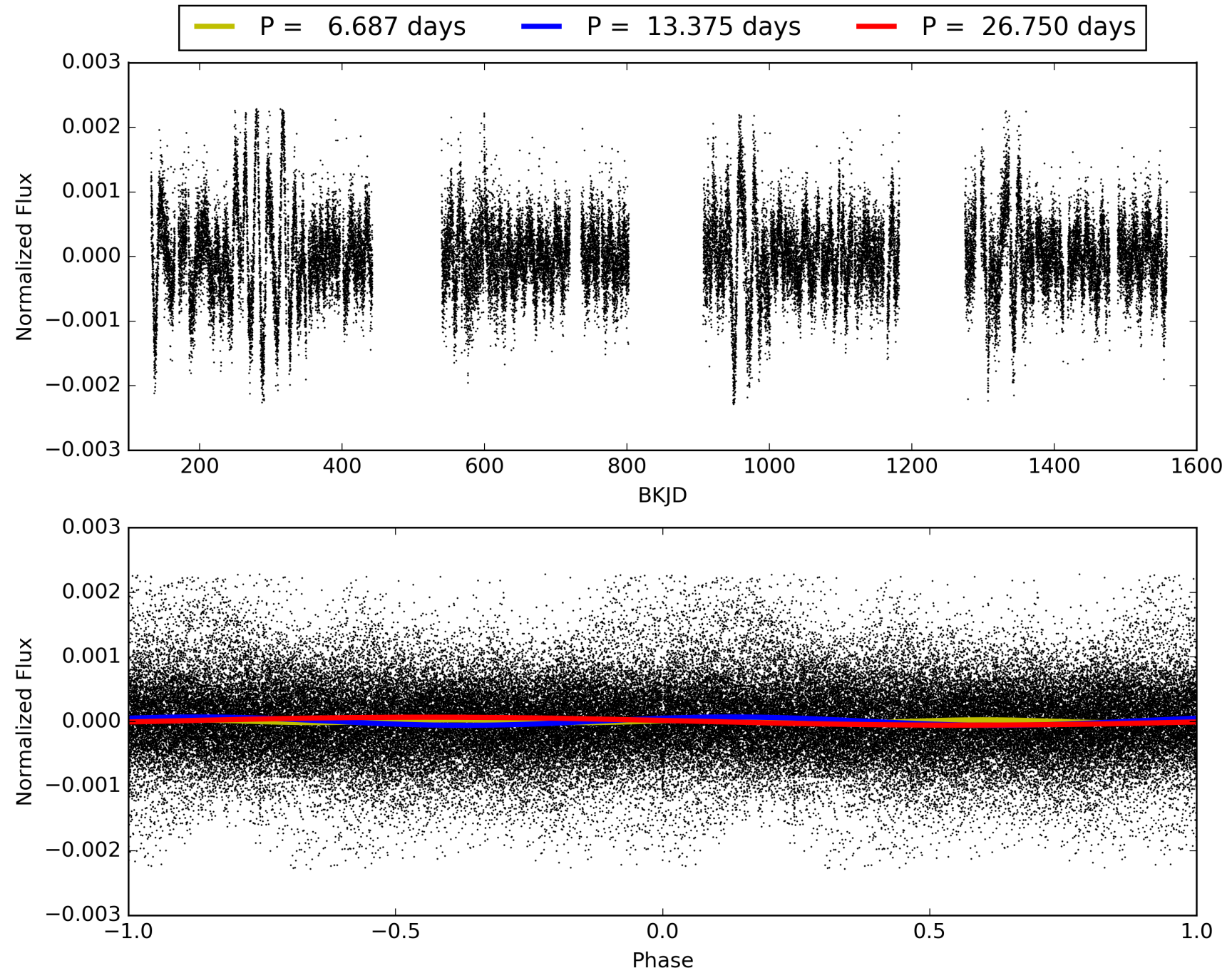
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 97.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.42e-41
RollingBand-fgt: 0.92 [66/72]
GhostDiagnostic-chr: 1.287
Centroid-sig: 47.7%
Centroid-so: 0.543 arcsec [0.66 σ]
OotOffset-rm: 0.154 arcsec [0.74 σ]
KicOffset-rm: 0.216 arcsec [0.90 σ]
OotOffset-st: 4/4/3/1 [12]
KicOffset-st: 4/4/3/1 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 1.00 [13/13]

TCE 006500206-01, PDC Light Curves

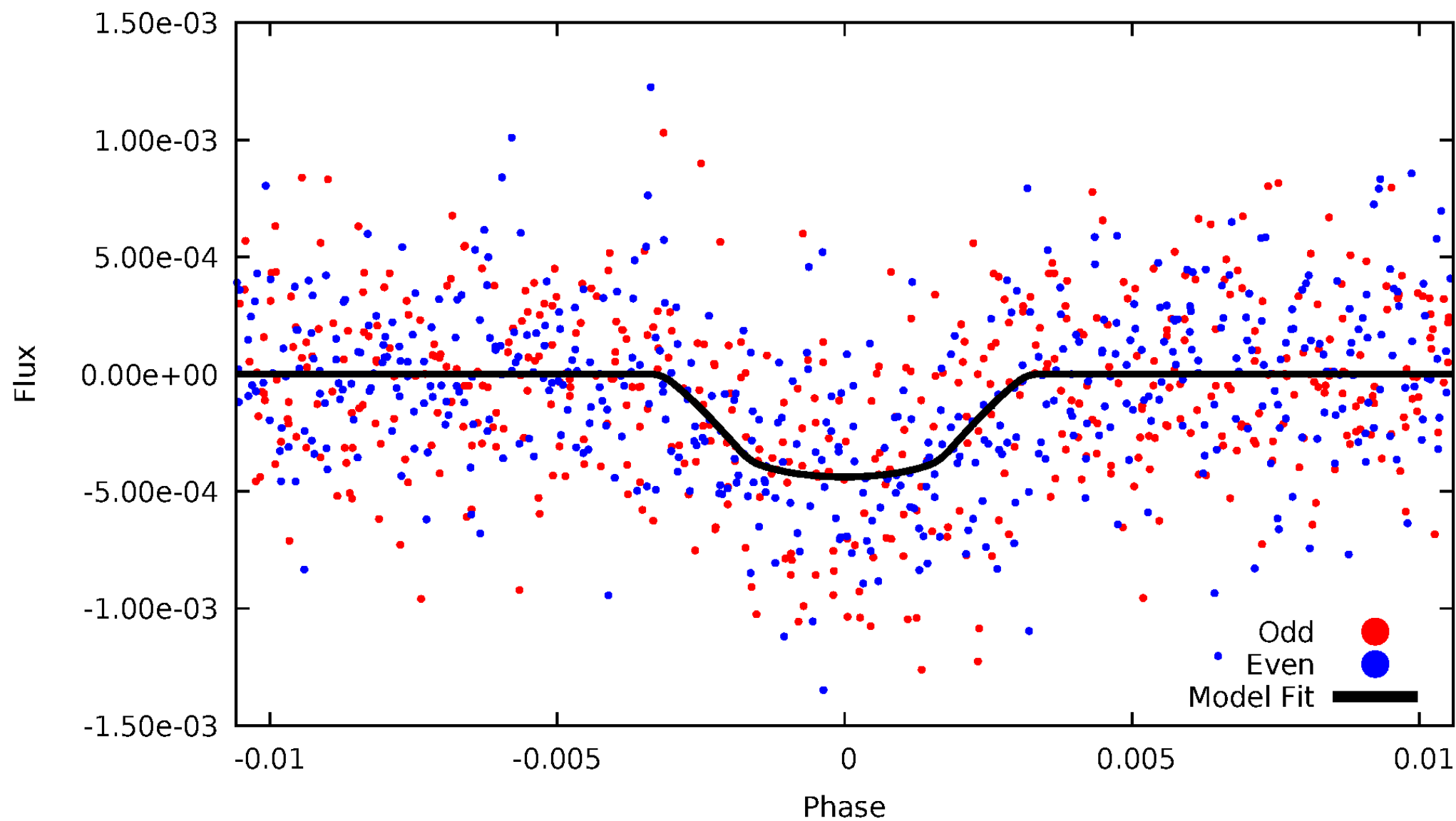


TCE 006500206-01



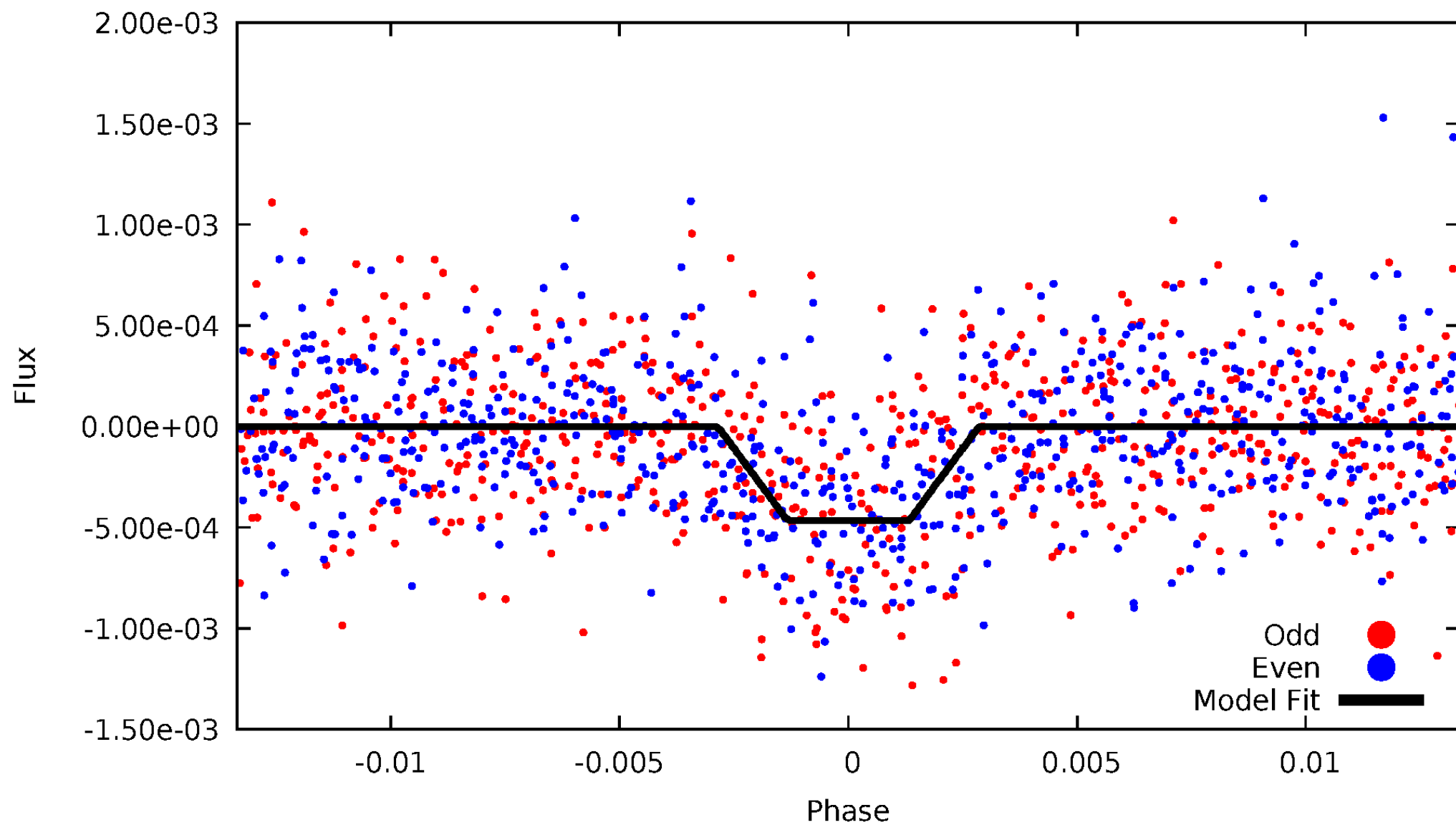
DV Odd/Even

TCE 006500206-01



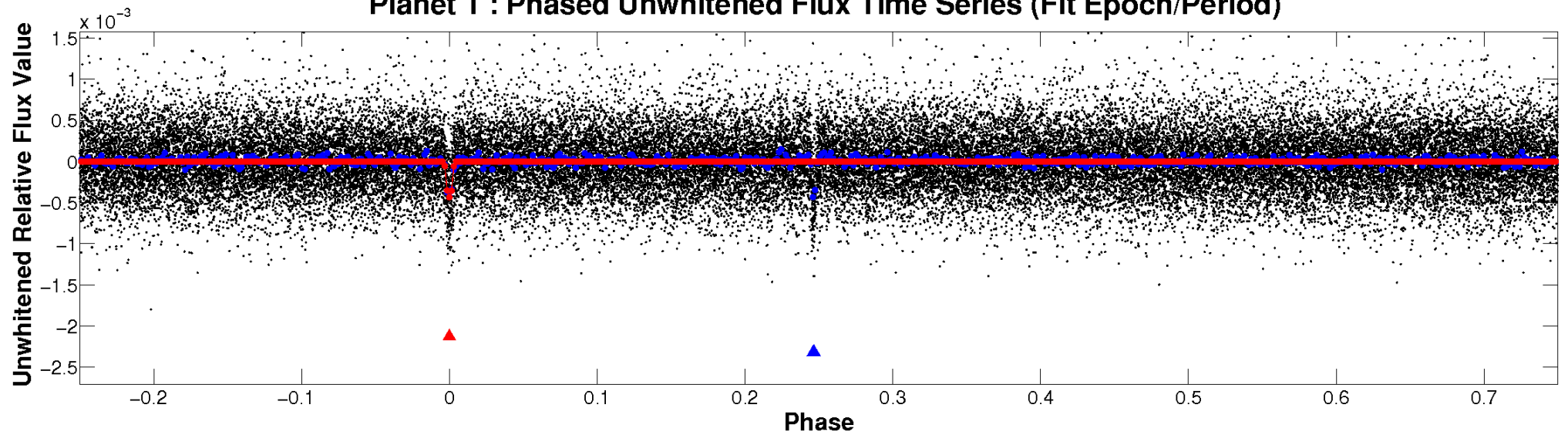
ALT Odd/Even

TCE 006500206-01

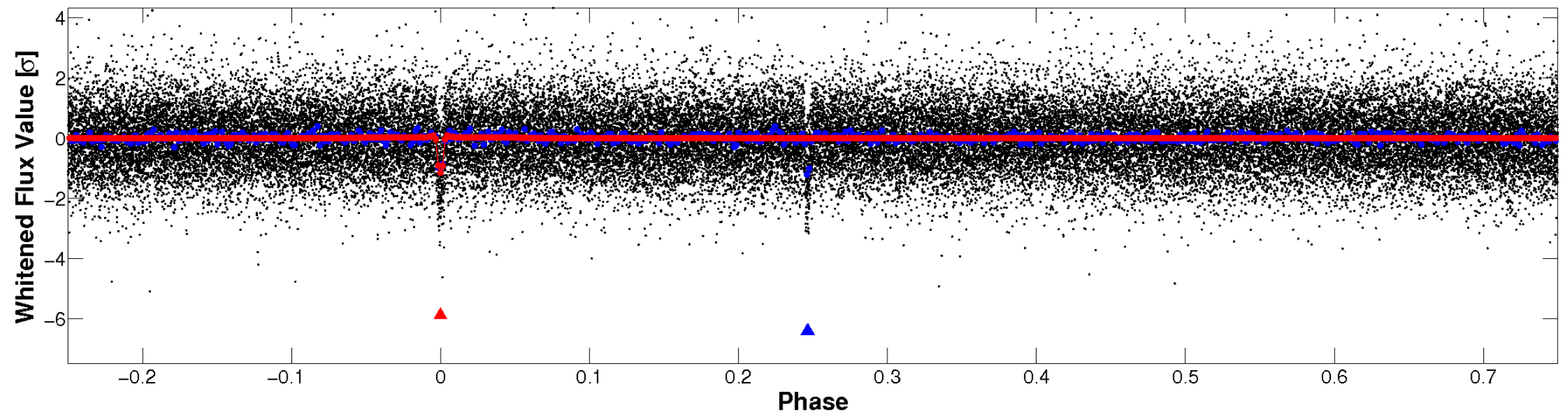


Non-Whitened Vs. Whitened Light Curve

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

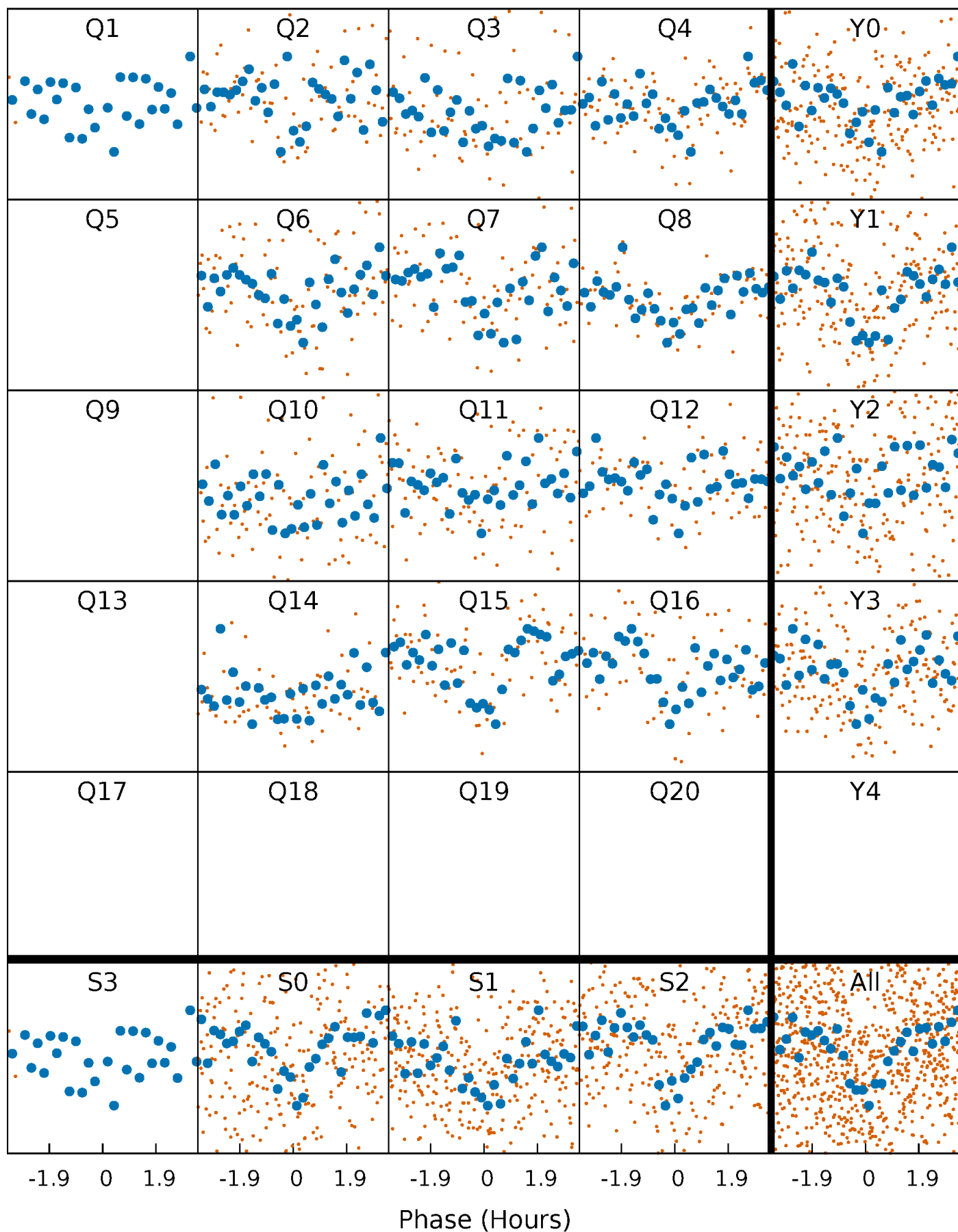


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



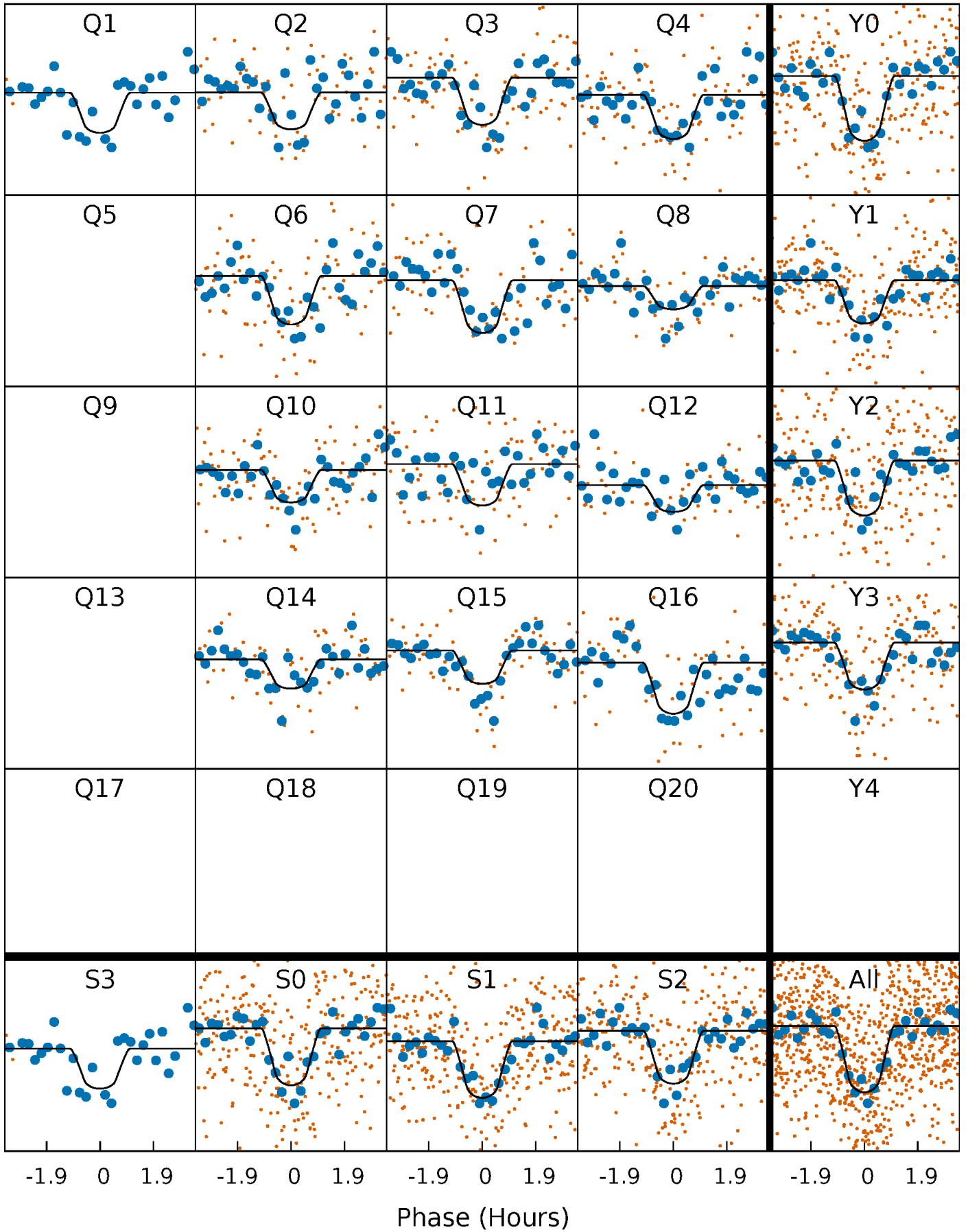
PDC Quarter-Phased Transit Curves

TCE 006500206-01 P= 13.374989 Days $T_0=142.379700$ (BKJD)



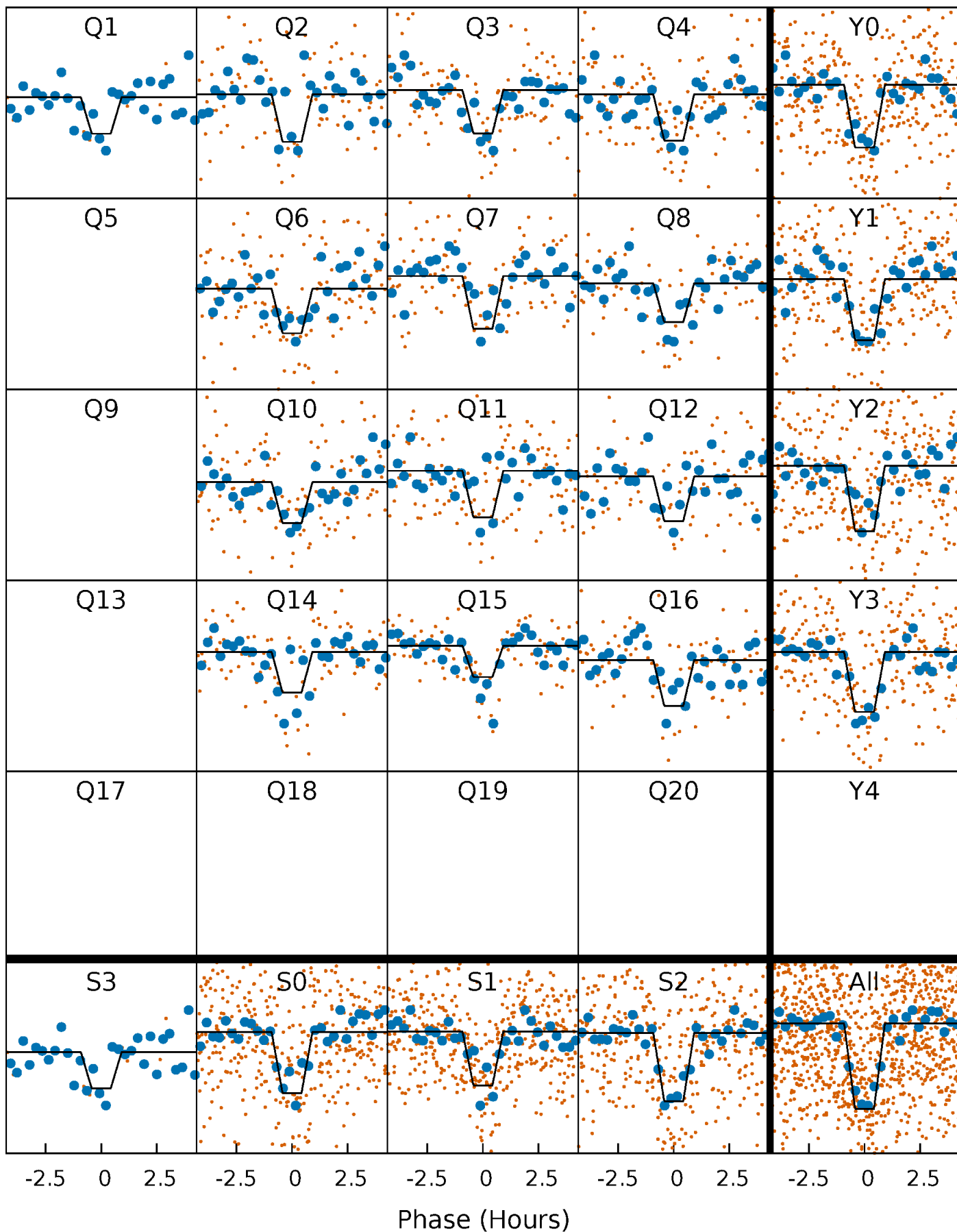
DV Quarter-Phased Transit Curves

TCE 006500206-01 P= 13.374989 Days $T_0=142.379700$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

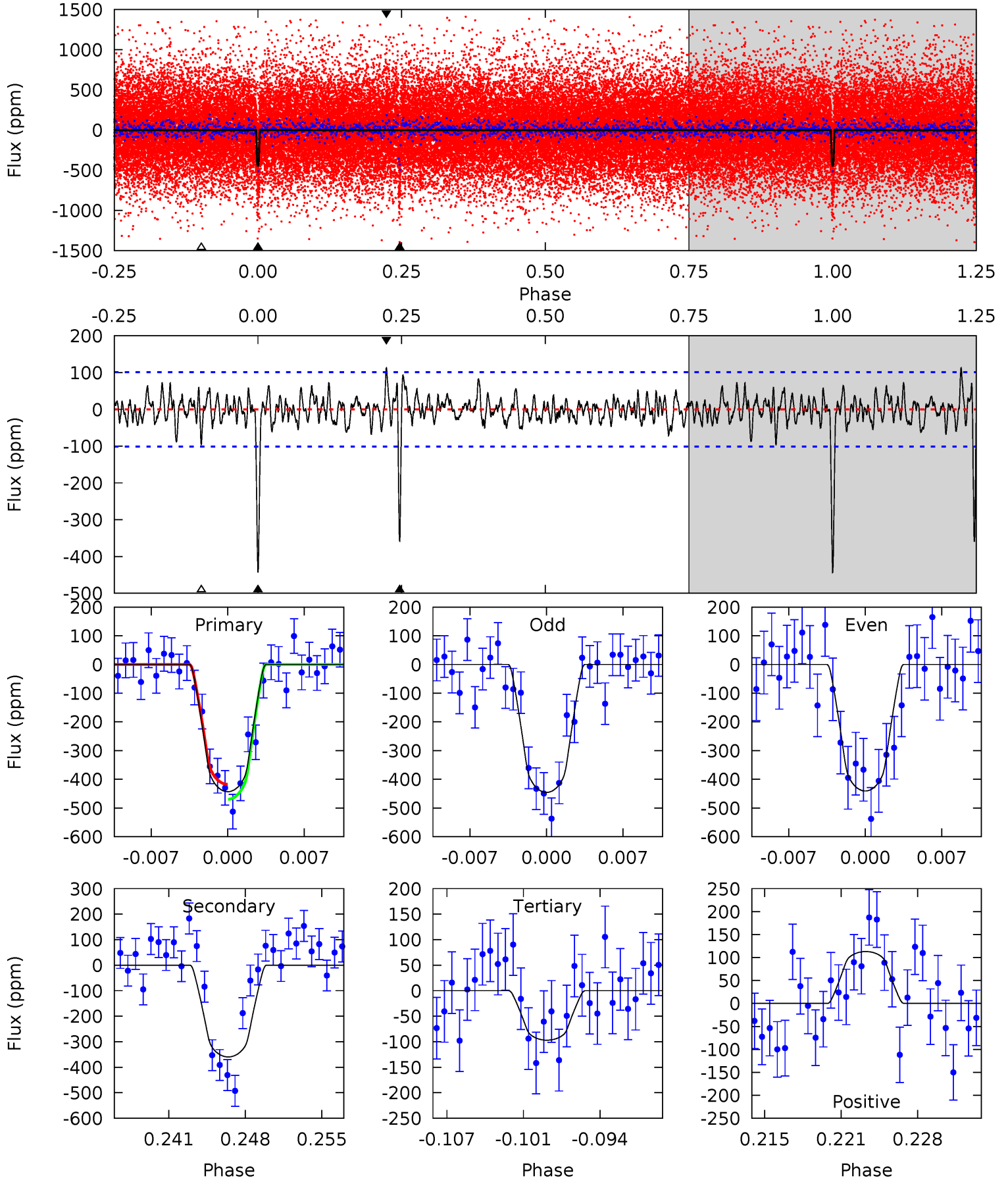
TCE 006500206-01 P= 13.374923 Days $T_0=142.385393$ (BKJD)



DV Model-Shift Uniqueness Test

006500206-01, P = 13.374989 Days, E = 129.004711 Days

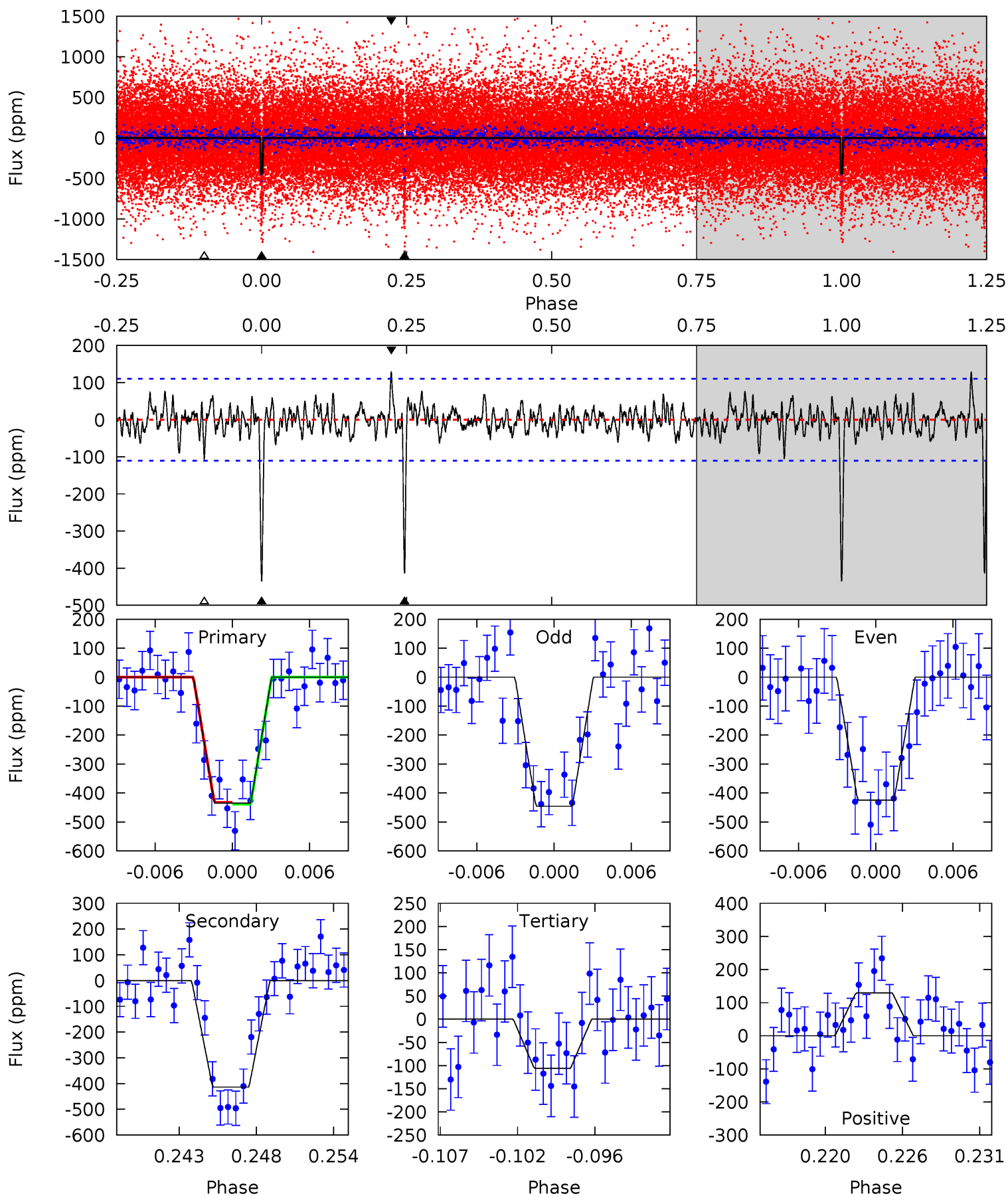
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.4	18.2	4.90	5.71	5.10	2.71	1.41	17.5	16.7	13.3	12.5	0.13	1.01	0.20	1.32



Alt Model-Shift Uniqueness Test

006500206-01, P = 13.374923 Days, E = 129.010470 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.2	19.2	4.92	6.01	5.14	2.77	1.29	15.3	14.2	14.3	13.2	0.49	1.06	0.23	0.13



Stellar Parameters For KIC 006500206

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5263^{+78}_{-78}	$4.404^{+0.114}_{-0.066}$	$0.180^{+0.150}_{-0.150}$	$0.961^{+0.096}_{-0.117}$	$0.852^{+0.060}_{-0.033}$	$1.354^{+0.638}_{-0.307}$
	+1%/-1%	+3%/-1%	+83%/-83%	+10%/-12%	+7%/-4%	+47%/-23%
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 006500206-01 / KOI 2451.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-360 ± 20	$2.46^{+1.48}_{-1.38}$	980^{+29}_{-35}	4816^{+2231}_{-809}	366^{+1504}_{-224}
Alt.	-414 ± 22	$2.36^{+1.45}_{-1.30}$	980^{+31}_{-37}	5001^{+2536}_{-839}	454^{+1790}_{-281}

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 $A_{obs} \gg 1.0$

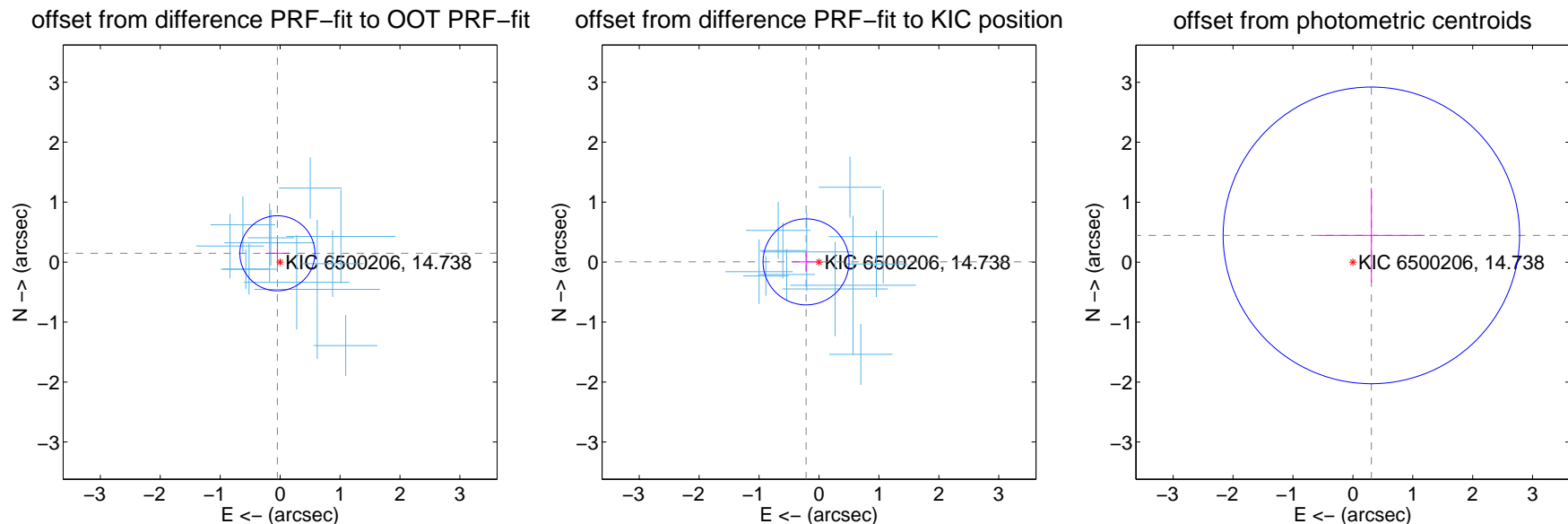
DV Centroid Data

Supplemental centroid analysis for 006500206-01. Kepler magnitude: 14.74. Transit SNR 14.90

There are 12 quarters with good PRF difference image offsets

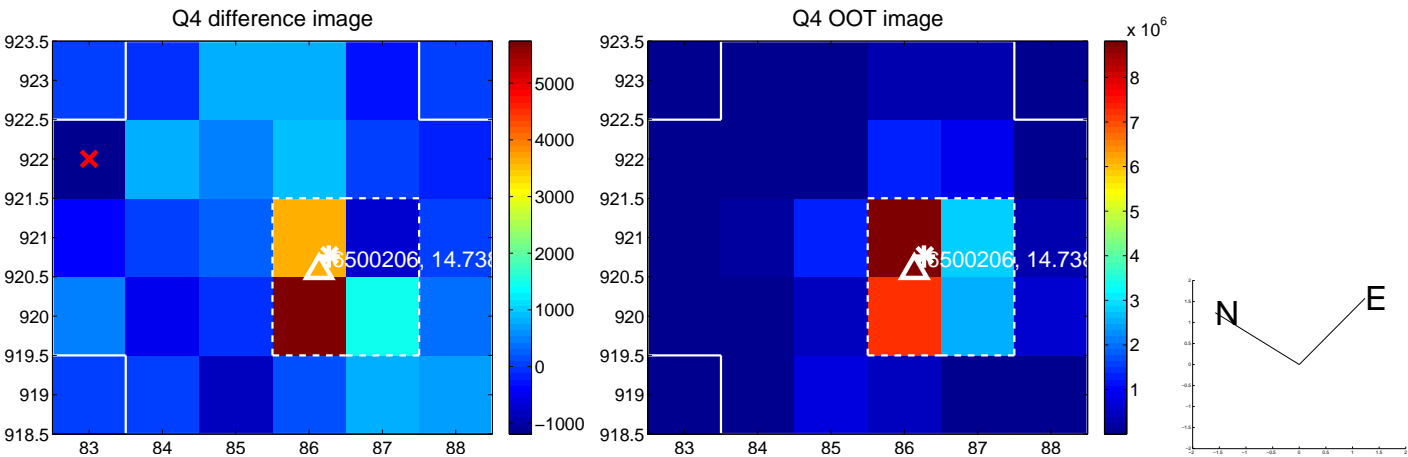
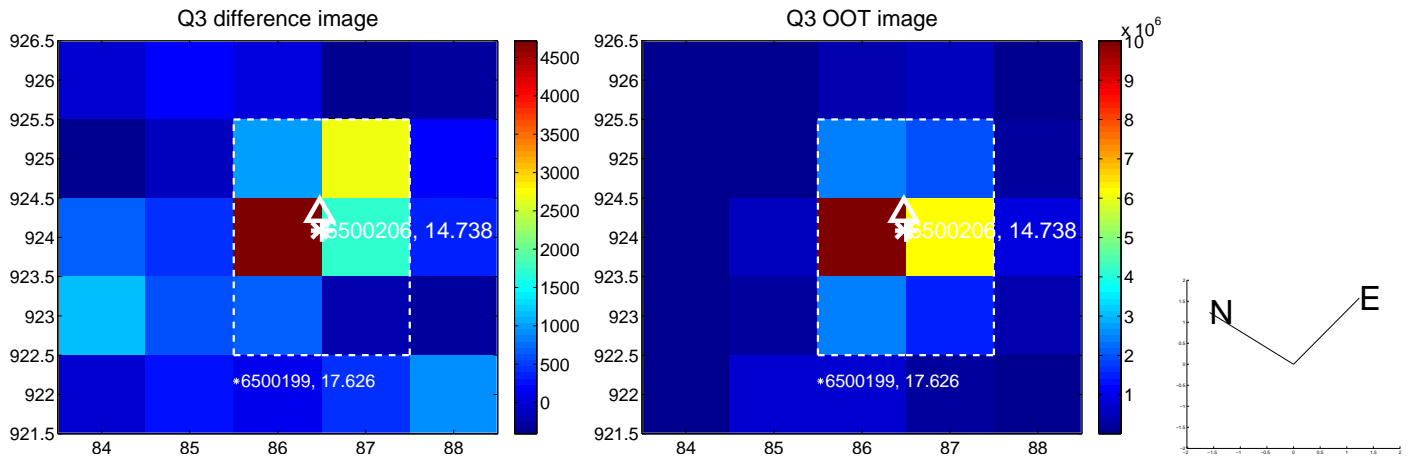
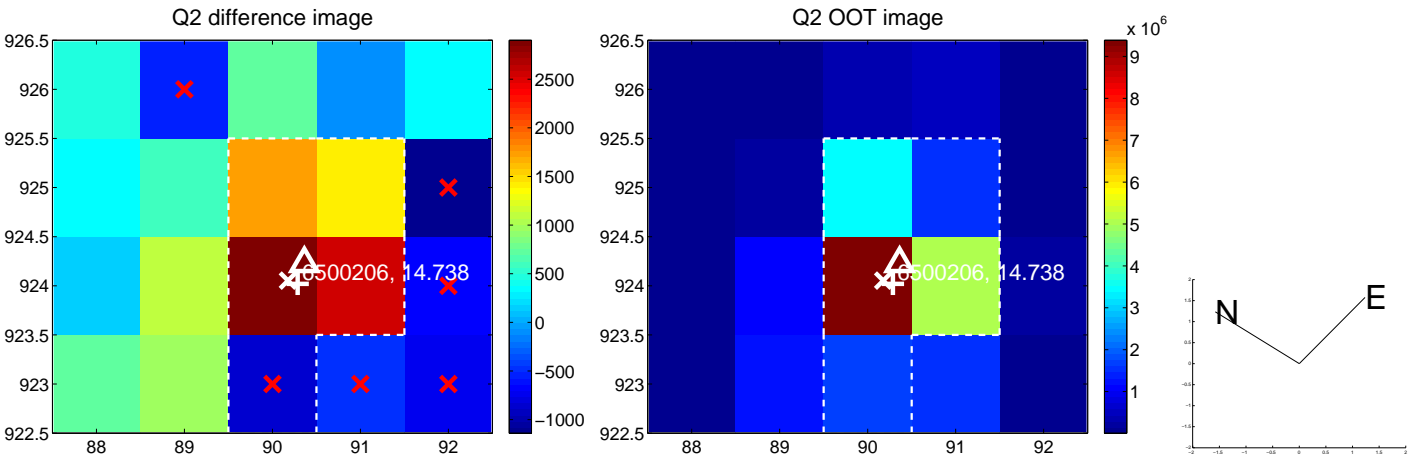
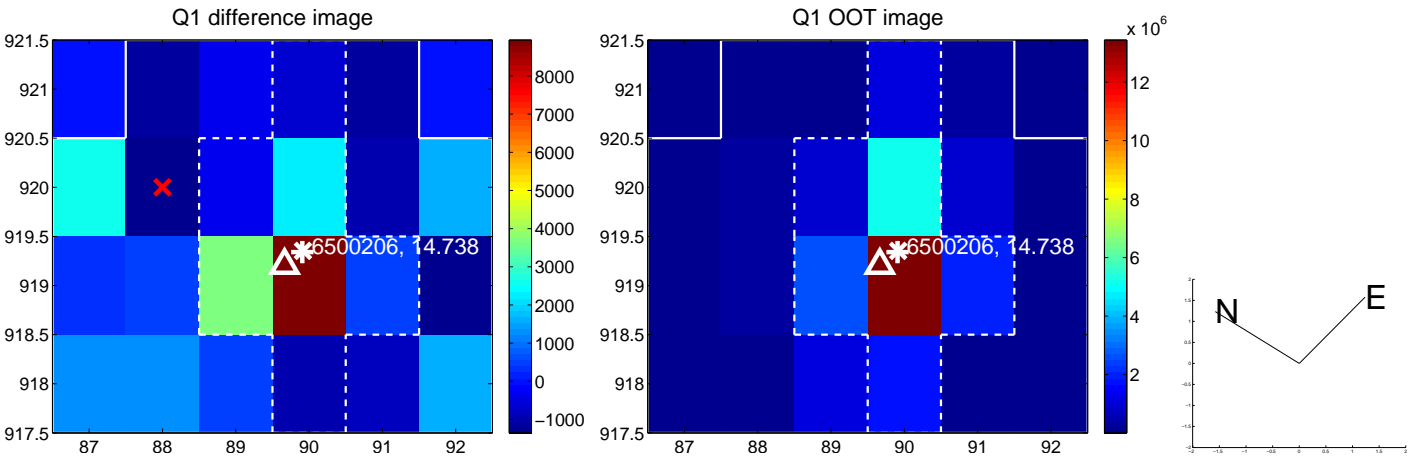
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.154 ± 0.209	0.74	0.046 ± 0.206	0.147 ± 0.190
PRF-fit source offset from KIC position	0.216 ± 0.239	0.90	0.216 ± 0.239	0.004 ± 0.158
photometric centroid source offset	0.54 ± 0.82	0.66	-0.31 ± 0.89	0.45 ± 0.79

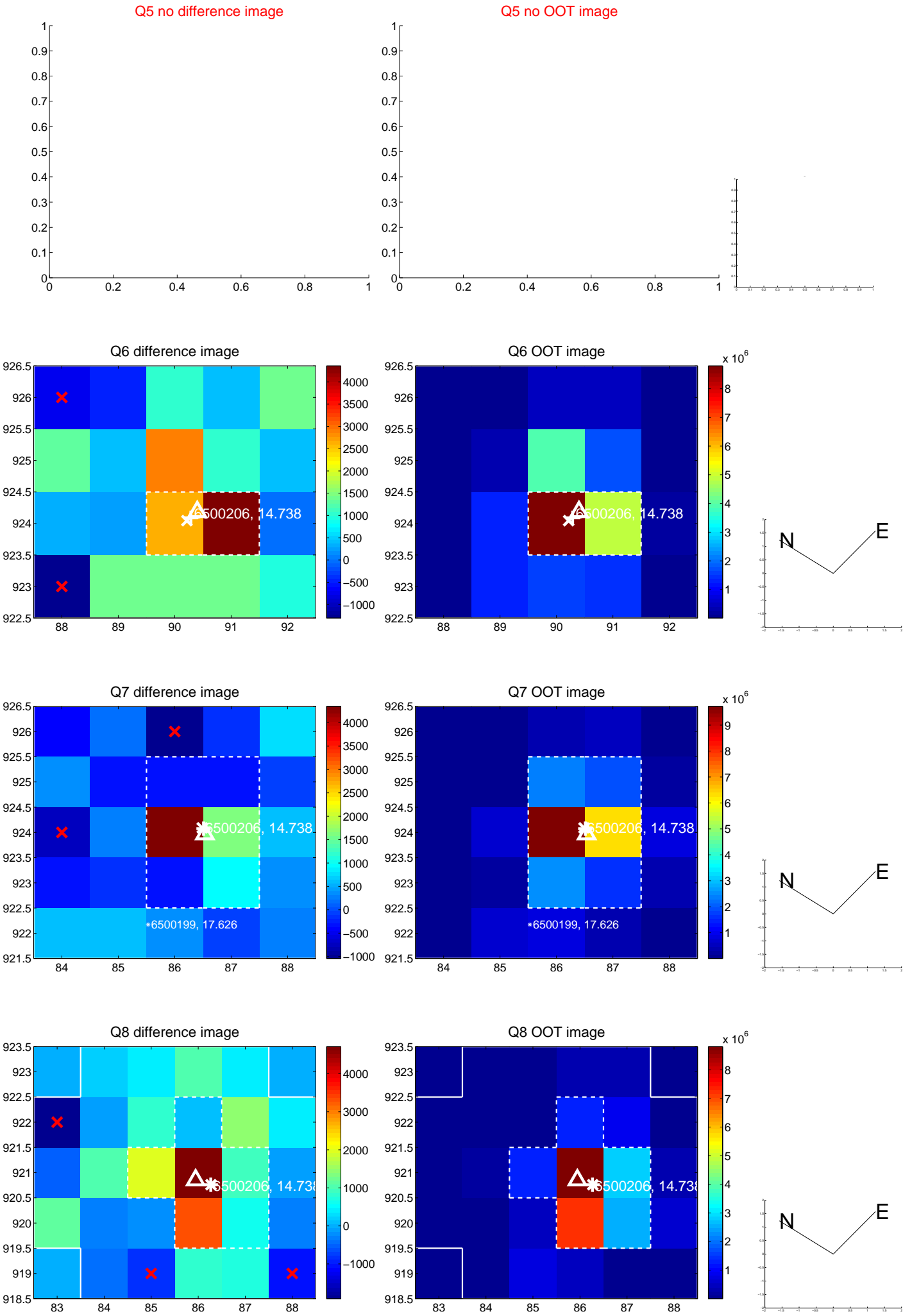


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

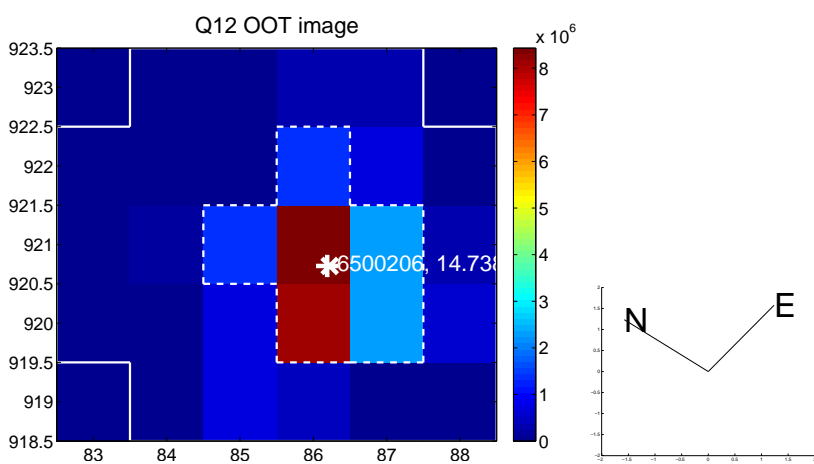
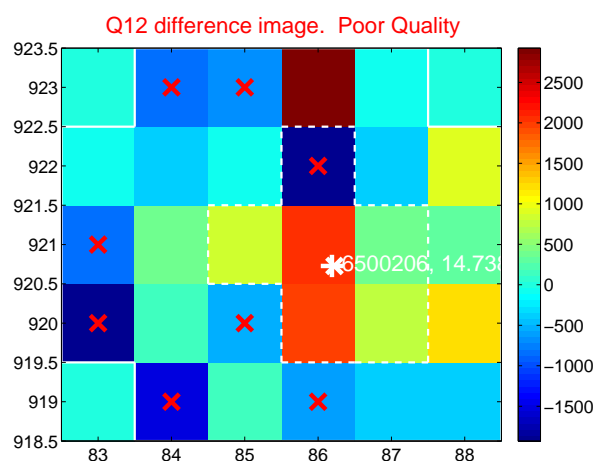
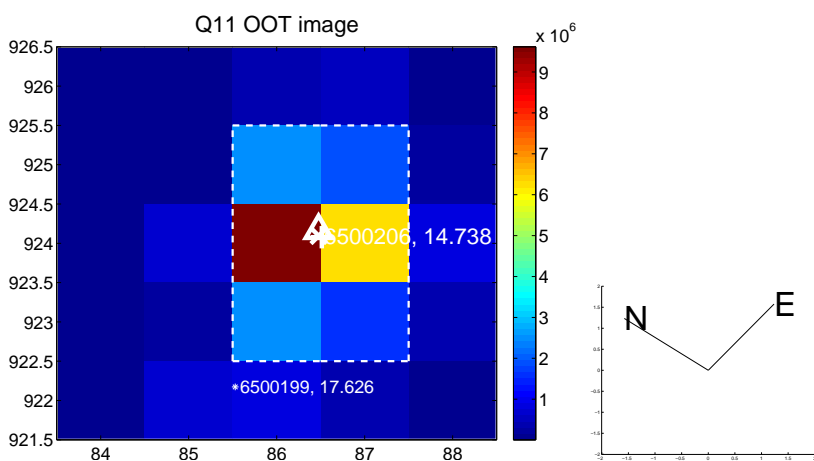
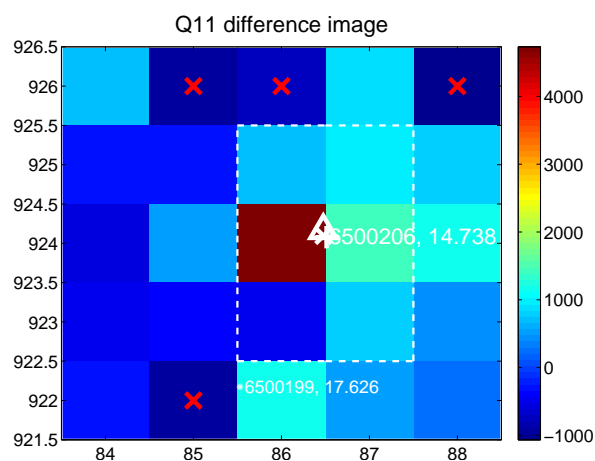
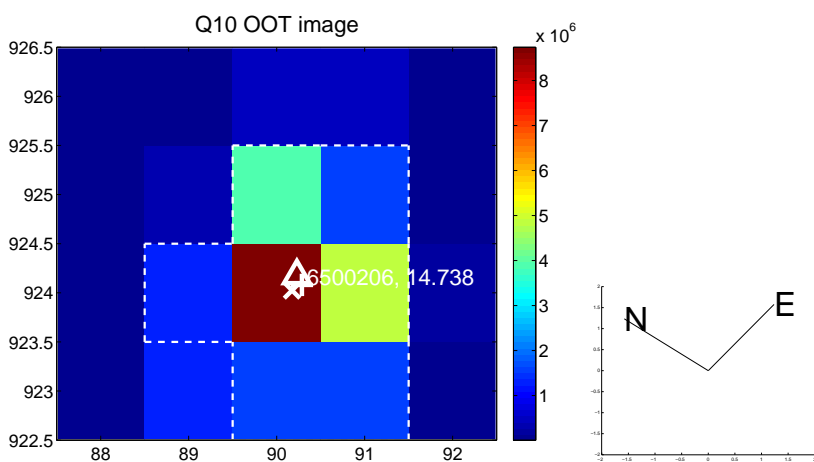
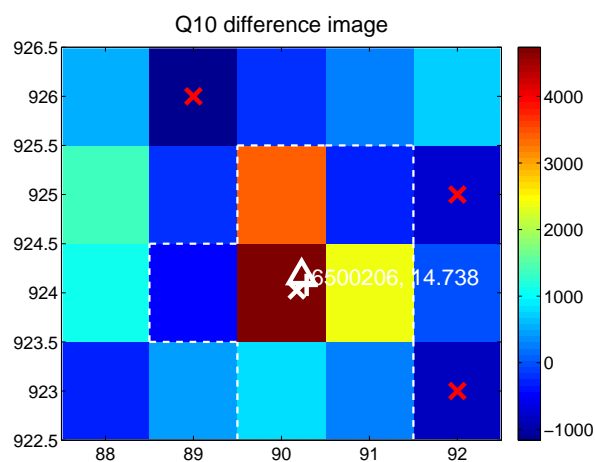
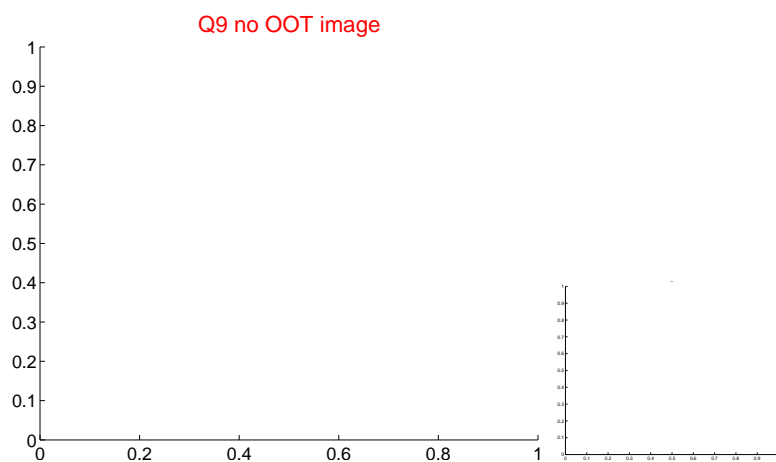
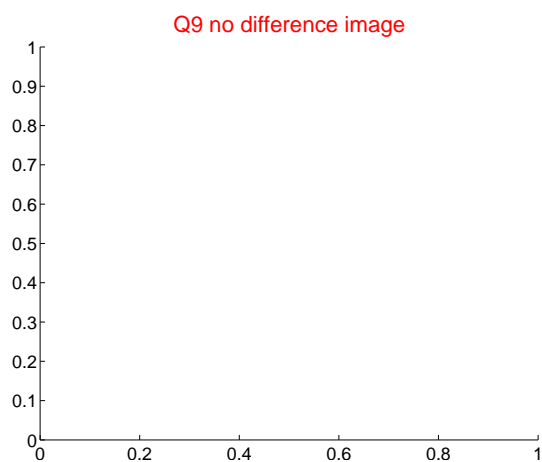
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



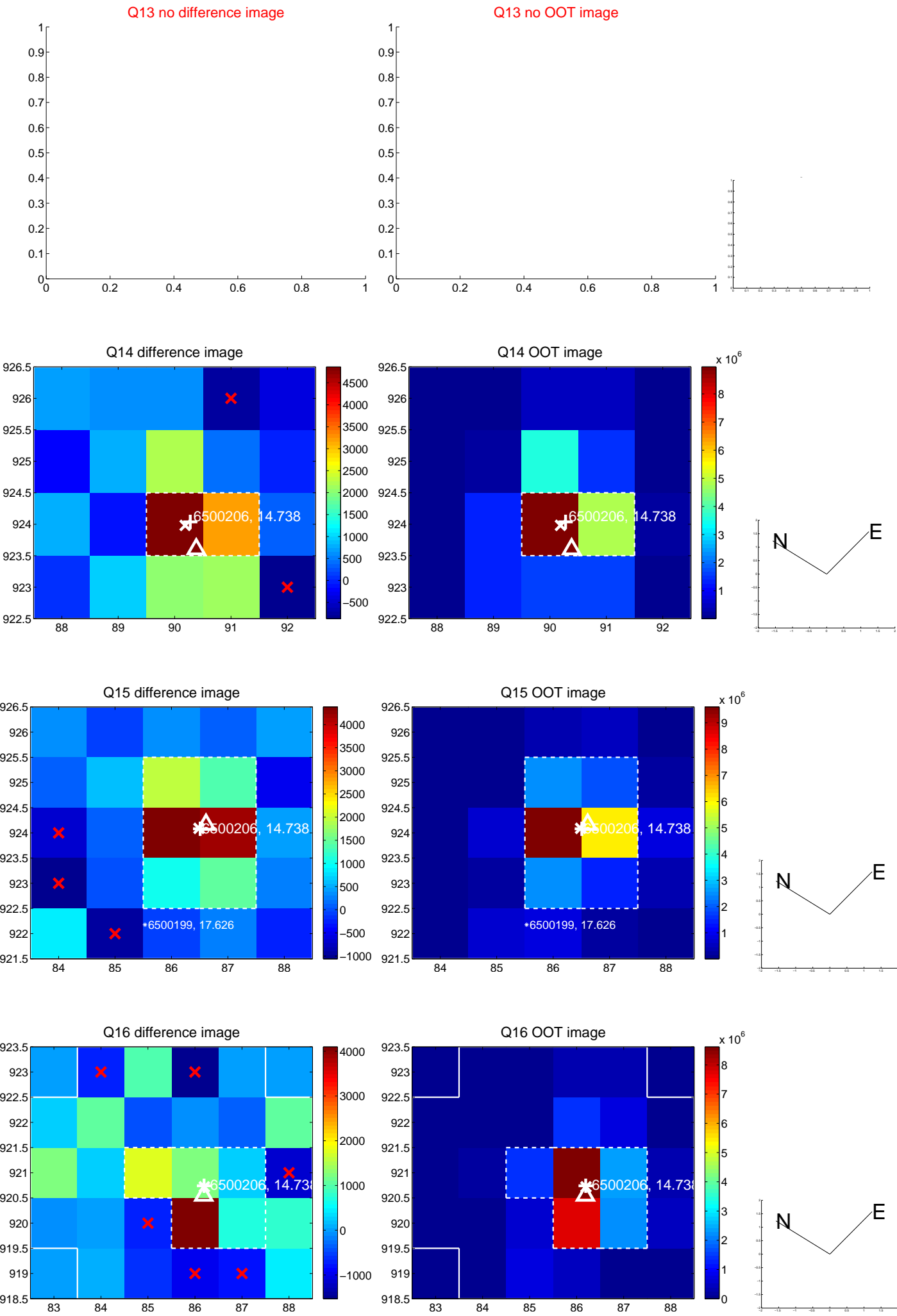
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



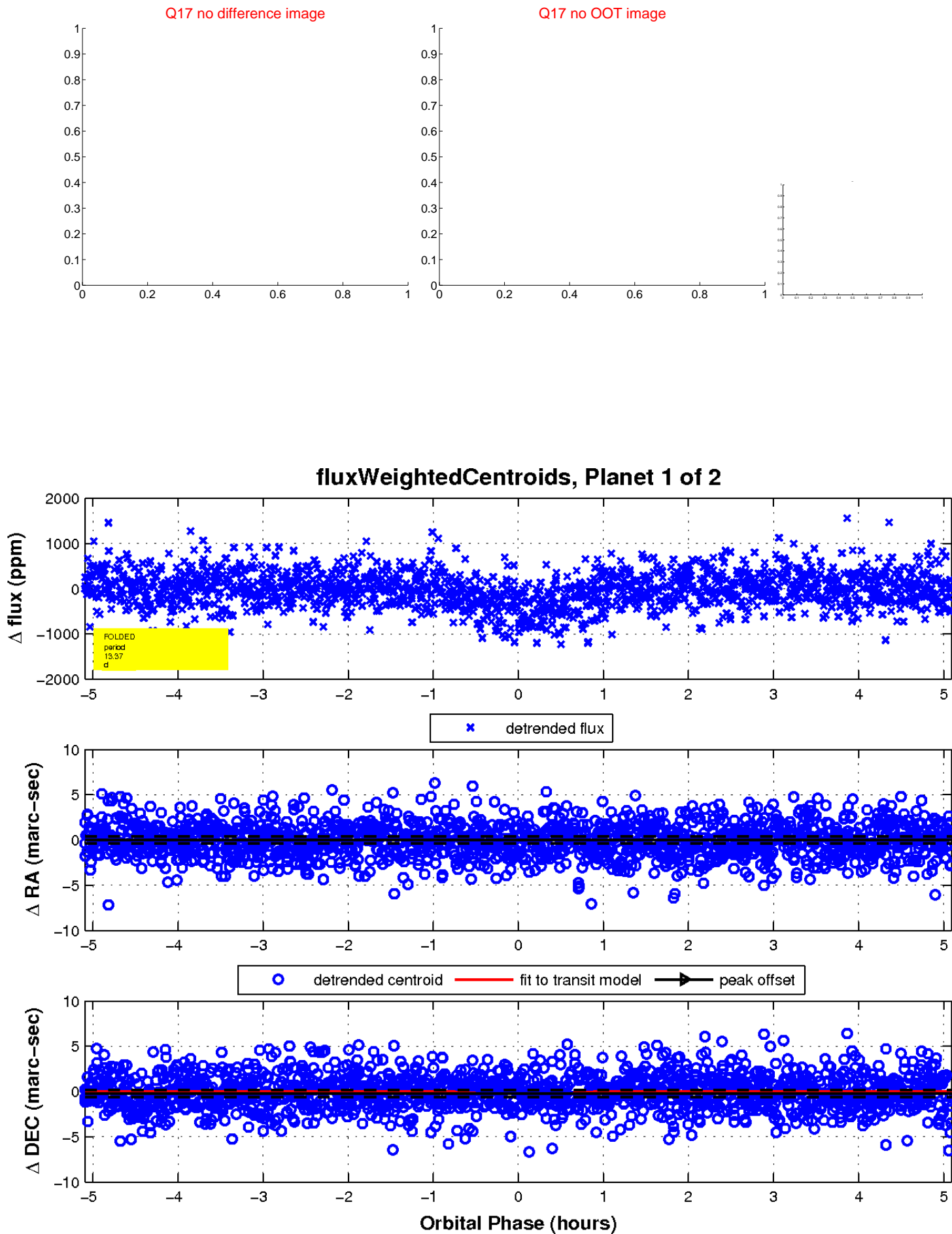
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

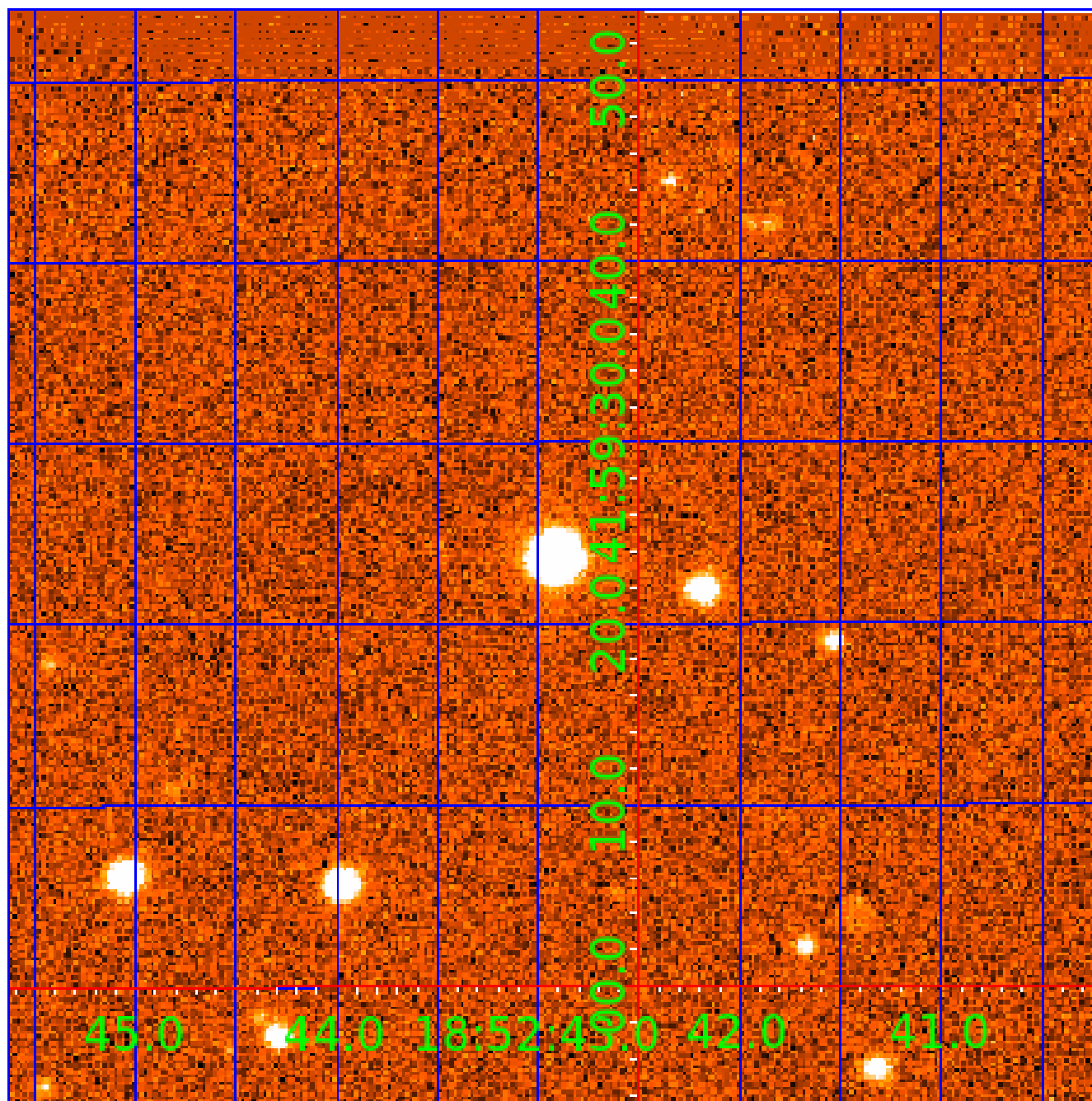


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006500206

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})
006500206-01	OBS	2451.01	13.374989	142.379700	438.7	1.698	13.8	14.9	0.96	5263	2.36	57.98
006500206-02	OBS	No	13.374919	132.305157	514.1	1.416	13.9	16.0	0.96	5263	2.77	57.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006500206-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
006500206-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

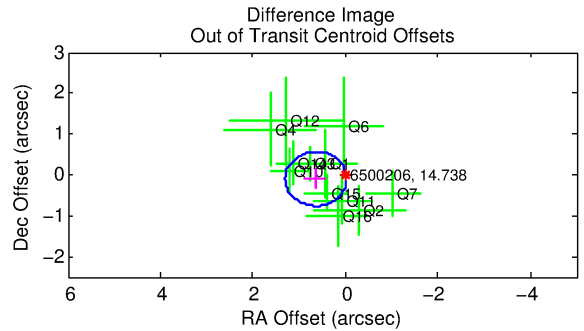
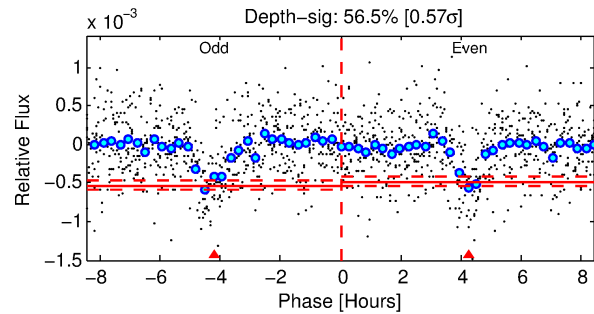
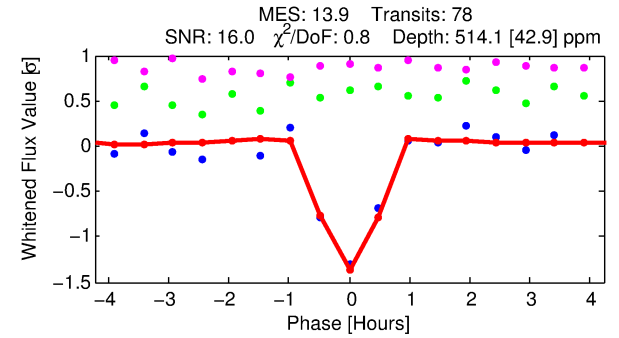
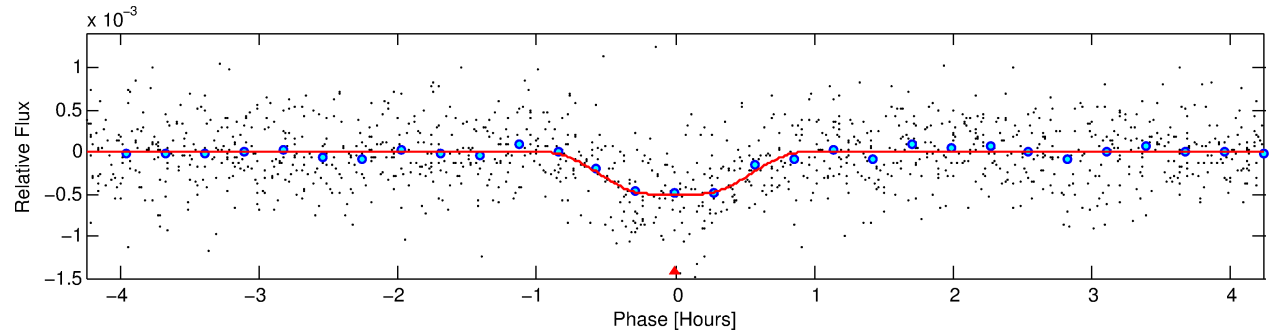
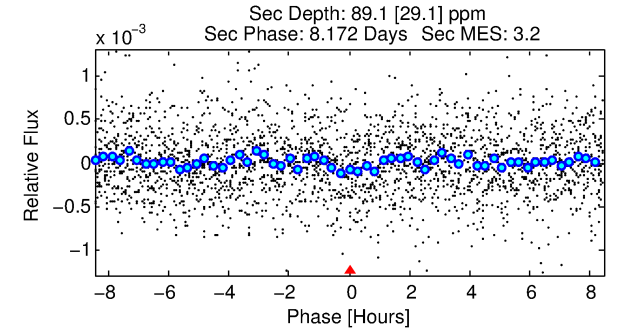
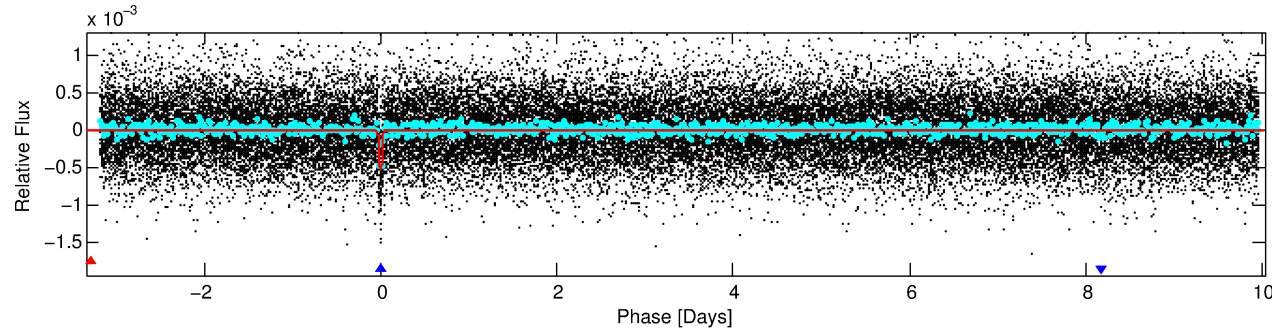
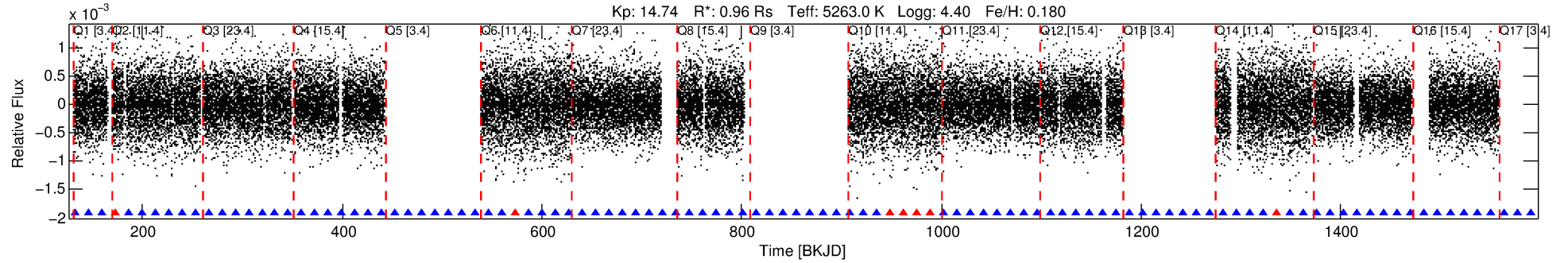
Ephemeris Match Information For 006500206-02

No Significant Match Found

DV One-Page Summary

KIC: 6500206 Candidate: 2 of 2 Period: 13.375 d

KOI: K02451 Corr: No Ephemeris Match



DV Fit Results:

Period = 13.37492 [0.00004] d
Epoch = 132.3052 [0.0022] BKJD
Rp/R* = 0.0264 [0.0067]
a/R* = 31.10 [31.50]
b = 0.93 [0.15]
Seff = 57.98 [11.70]
Teff = 704 [35] K
Rp = 2.77 [0.78] Re
a = 0.1046 [0.0125] AU
Ag = 70.02 [44.53] [1.55σ]
Teffp = 3147 [479] K [5.09σ]

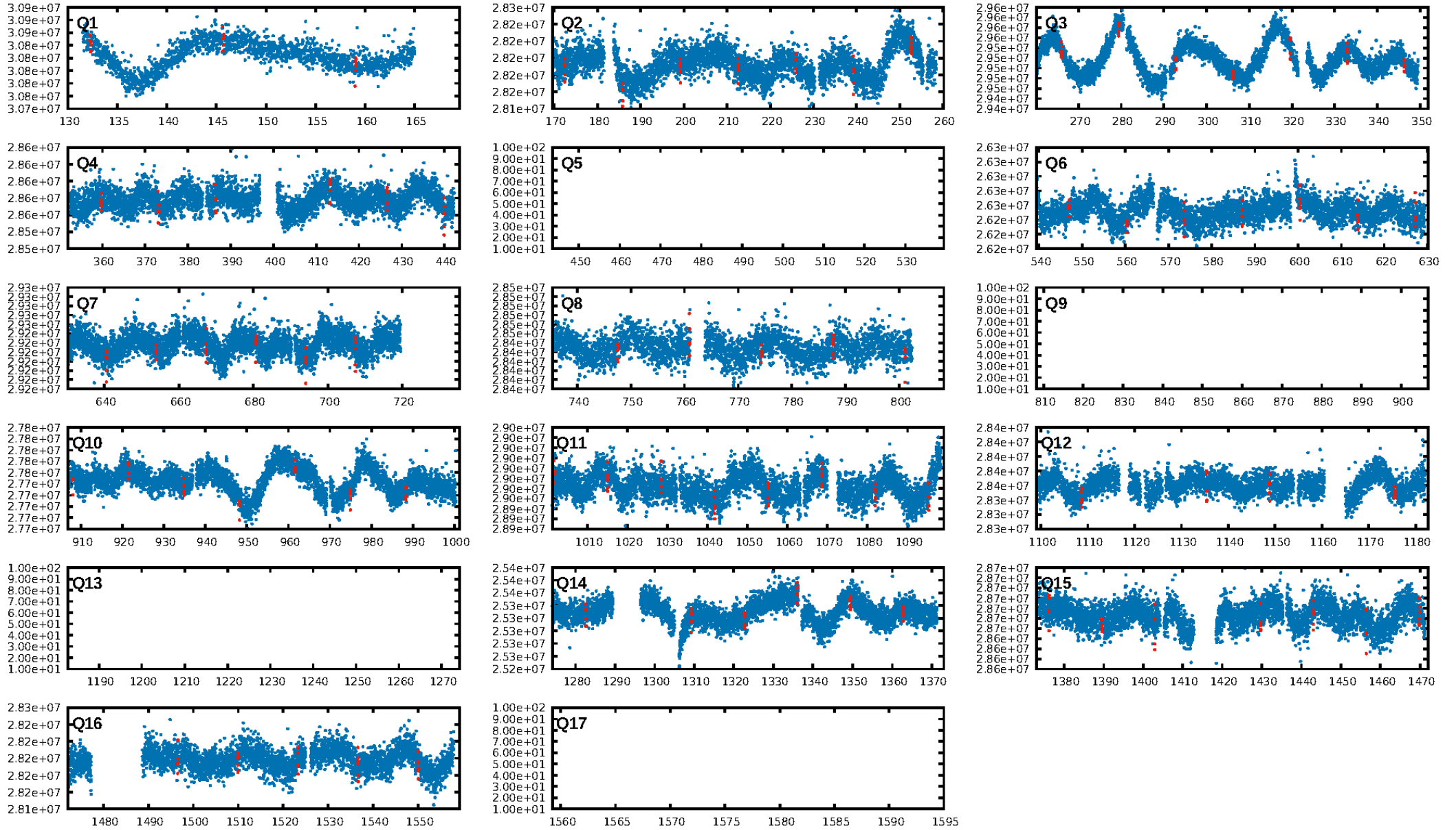
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: 99.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.10e-41
RollingBand-fgt: 0.91 [68/75]
GhostDiagnostic-chr: 6.098
Centroid-sig: 9.4%
Centroid-so: 1.452 arcsec [1.74σ]
OotOffset-rm: 0.653 arcsec [2.95σ]
KicOffset-rm: 0.801 arcsec [3.06σ]
OotOffset-st: 4/4/3/1 [12]
KicOffset-st: 4/4/3/1 [12]
DiffImageQuality-fgm: 0.75 [9/12]
DiffImageOverlap-fno: 1.00 [13/13]

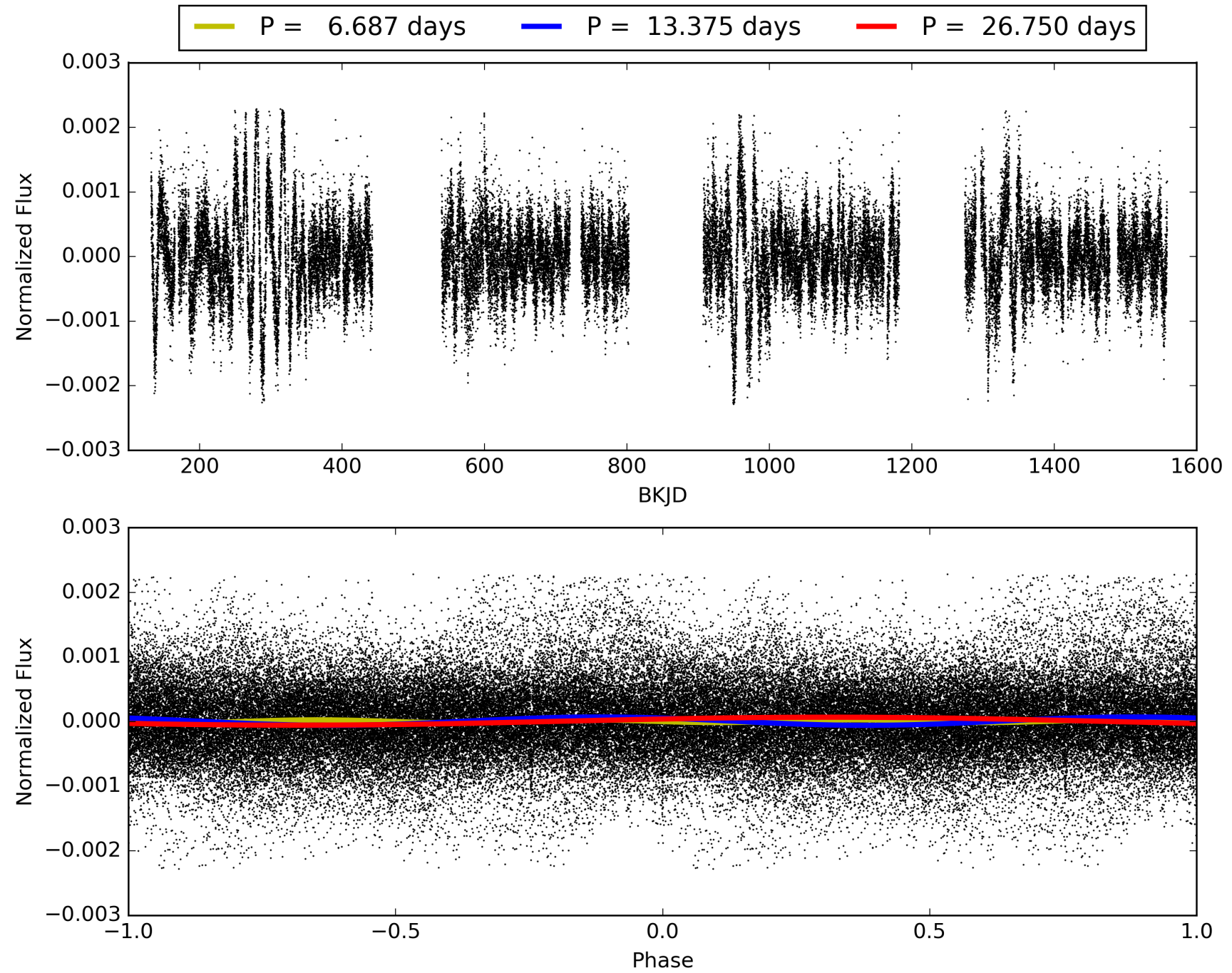
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 01:48:00 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006500206-02, PDC Light Curves

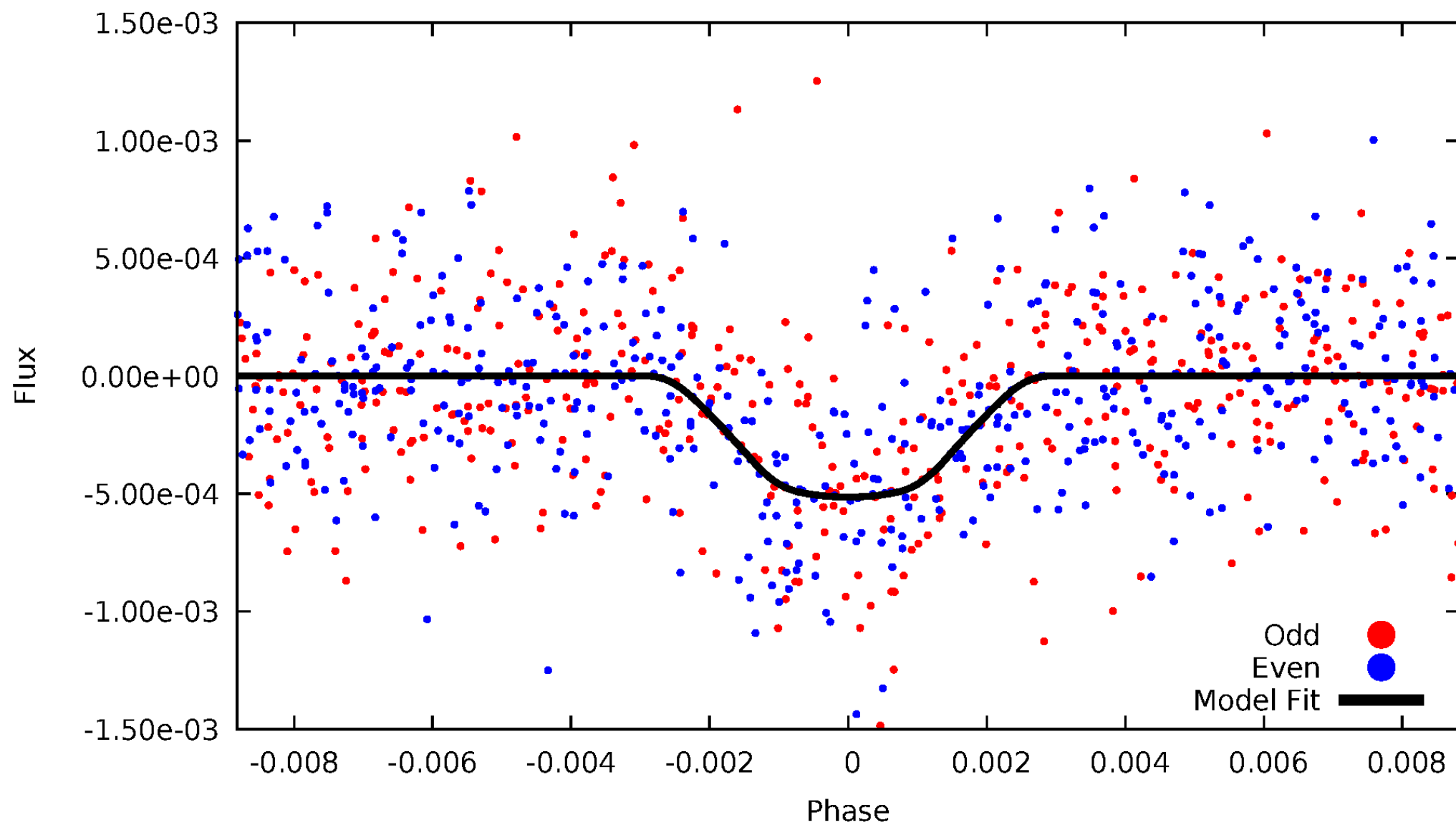


TCE 006500206-02



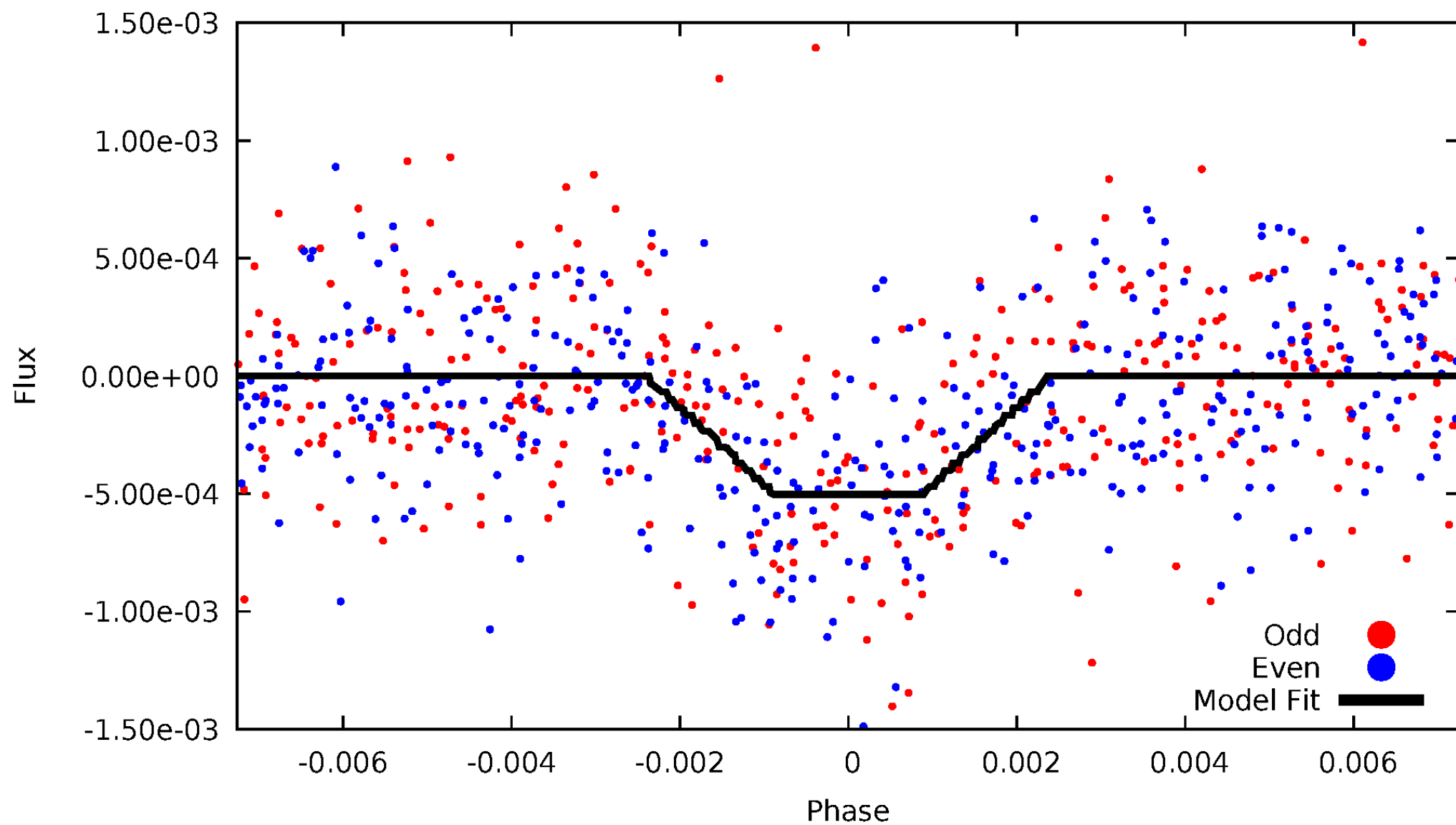
DV Odd/Even

TCE 006500206-02



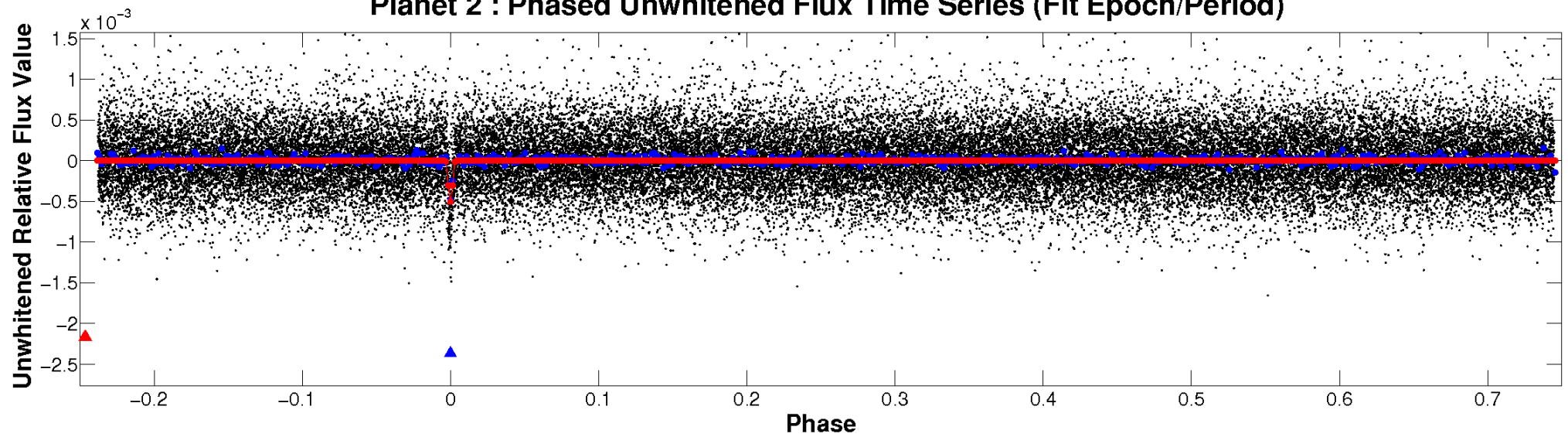
ALT Odd/Even

TCE 006500206-02

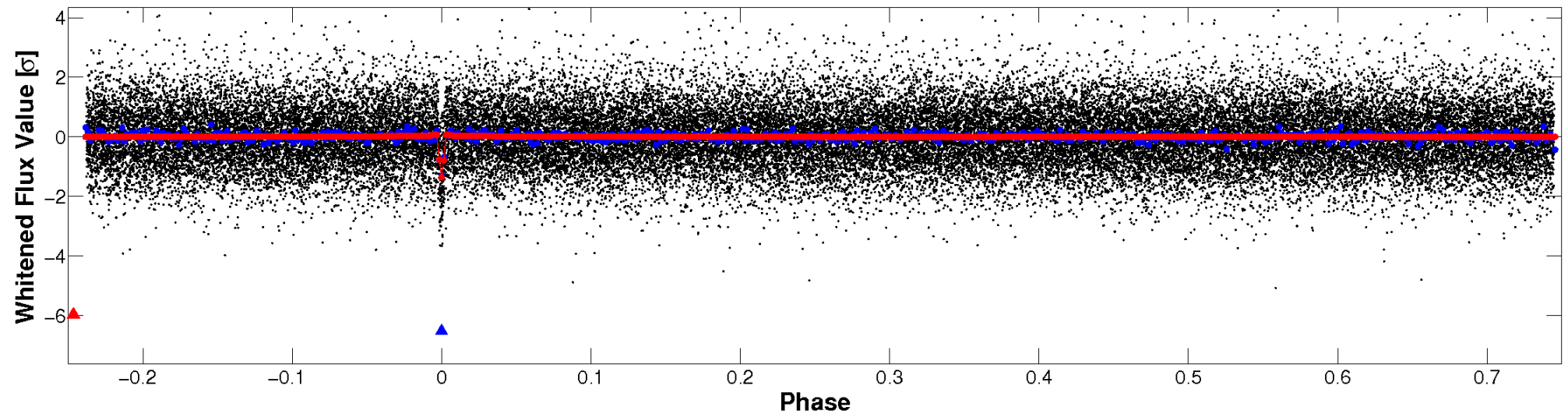


Non-Whitened Vs. Whitened Light Curve

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

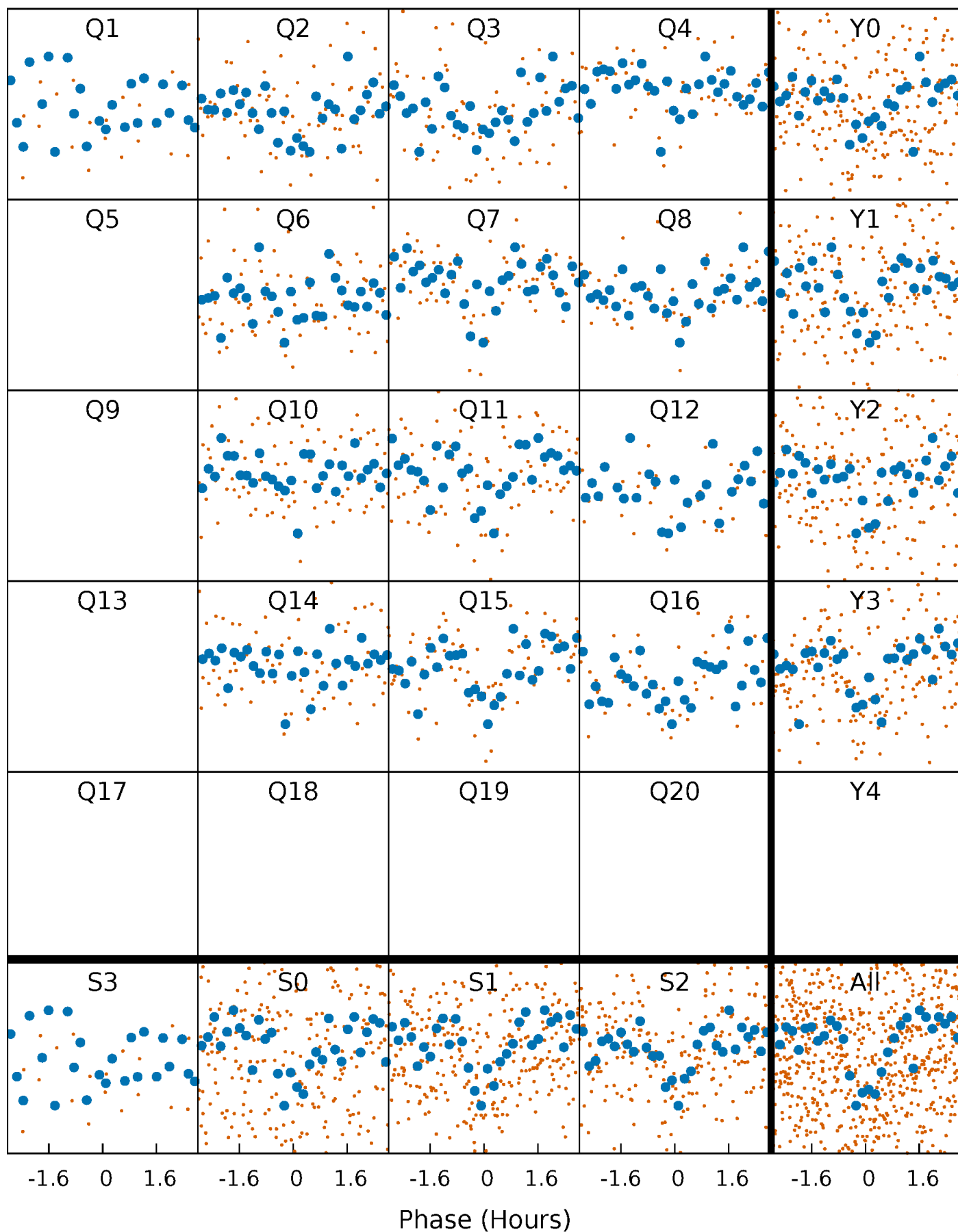


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



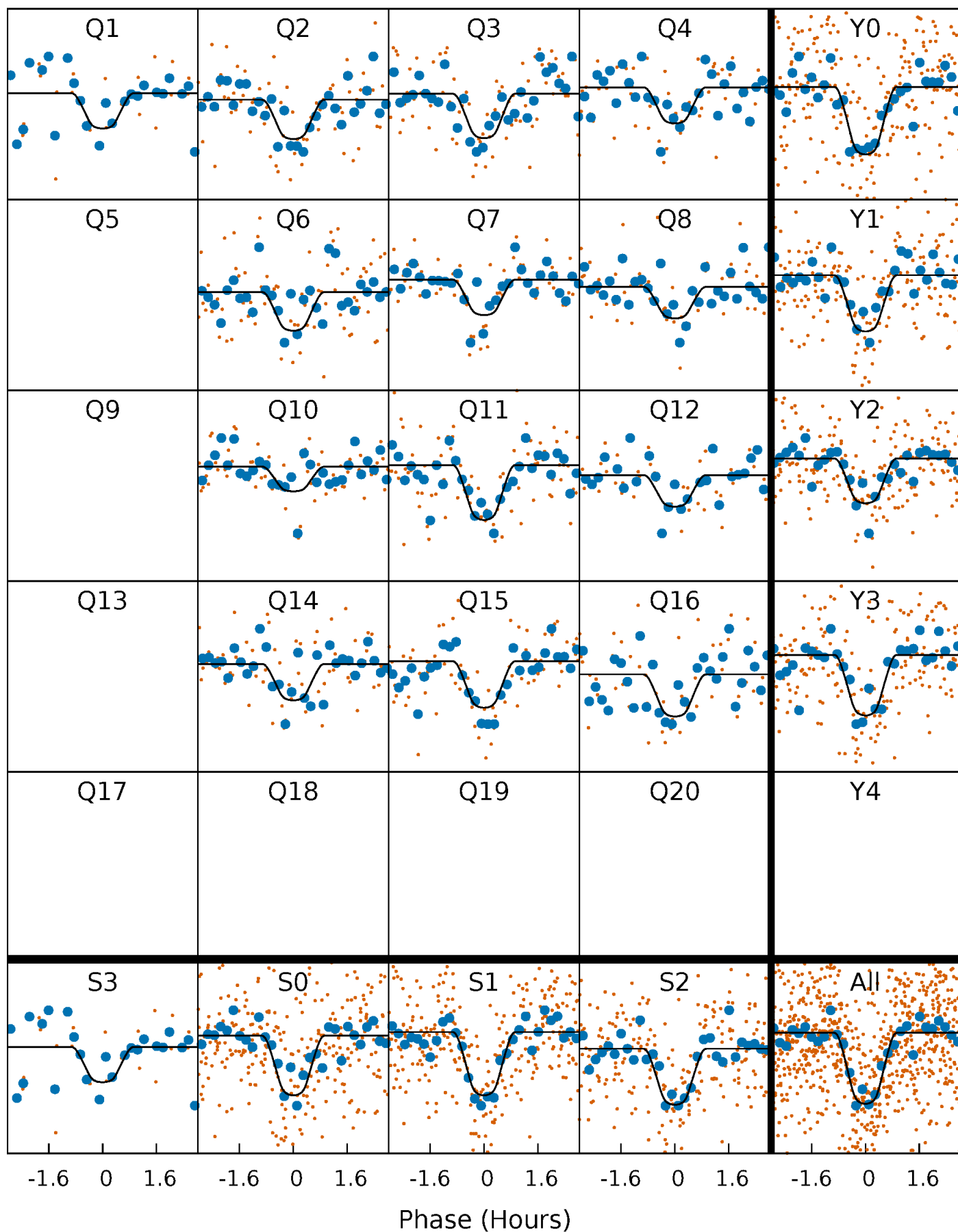
PDC Quarter-Phased Transit Curves

TCE 006500206-02 P= 13.374919 Days $T_0=132.305157$ (BKJD)



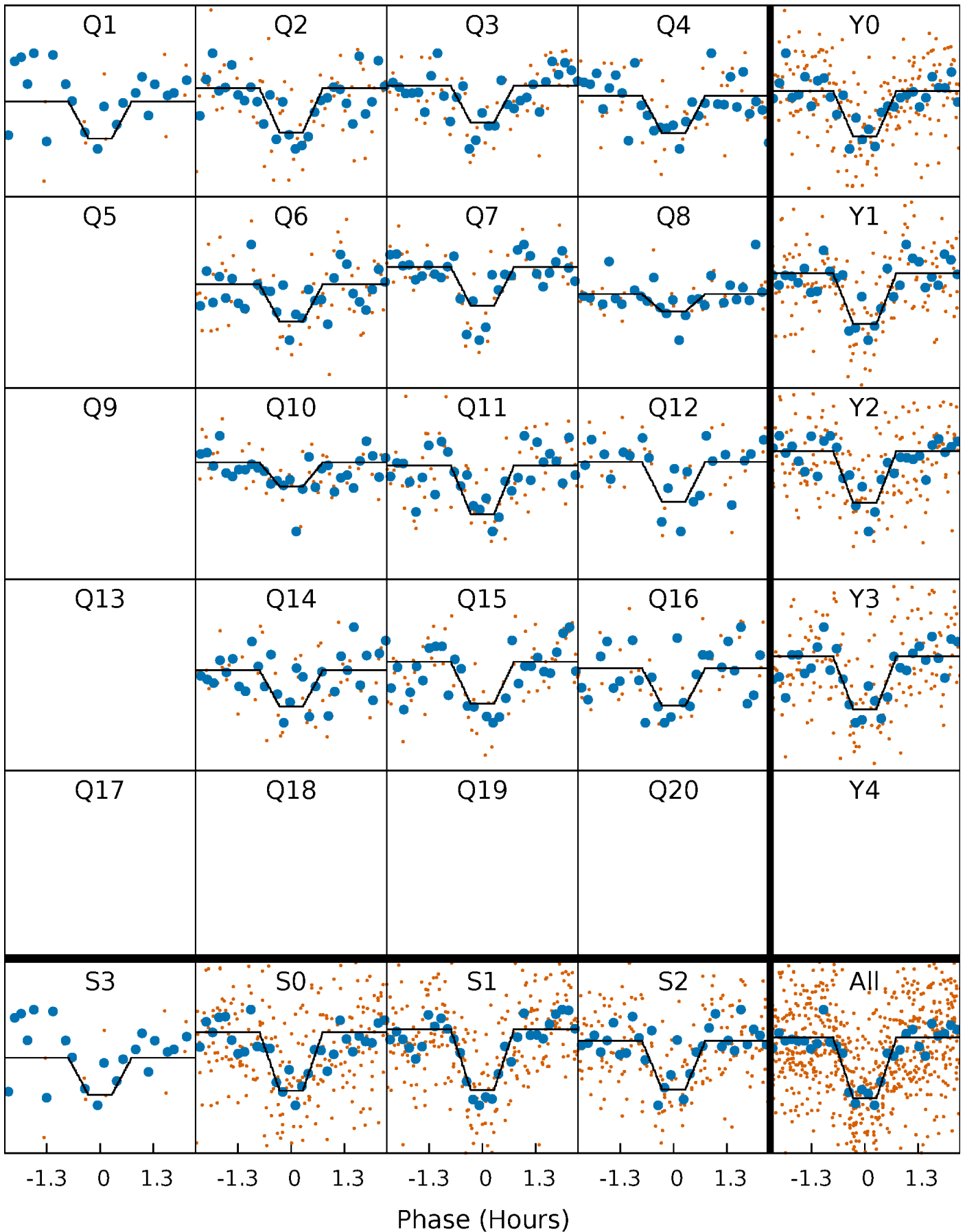
DV Quarter-Phased Transit Curves

TCE 006500206-02 P= 13.374919 Days $T_0=132.305157$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

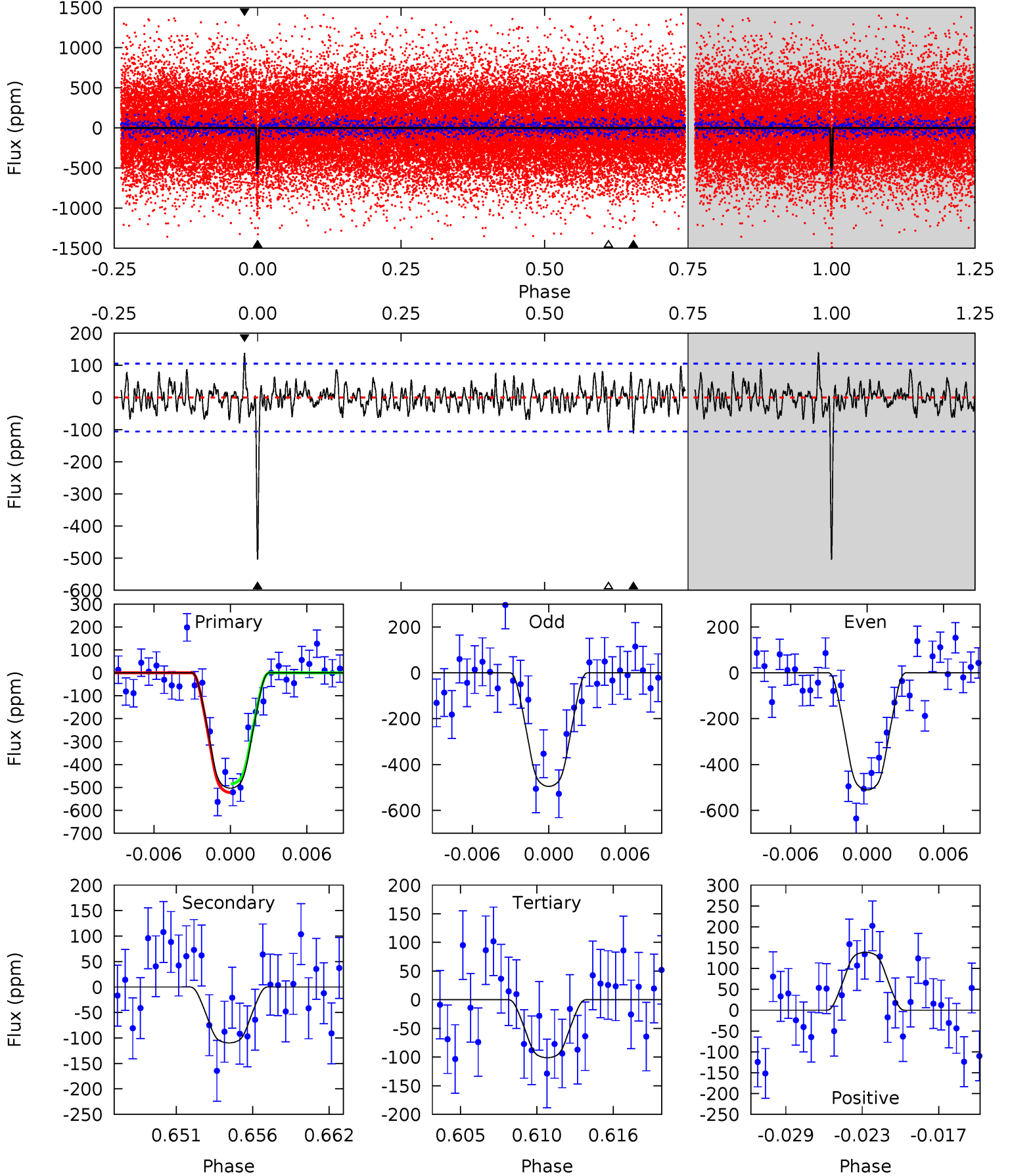
TCE 006500206-02 P= 13.374923 Days $T_0=132.304074$ (BKJD)



DV Model-Shift Uniqueness Test

006500206-02, P = 13.374919 Days, E = 118.930238 Days

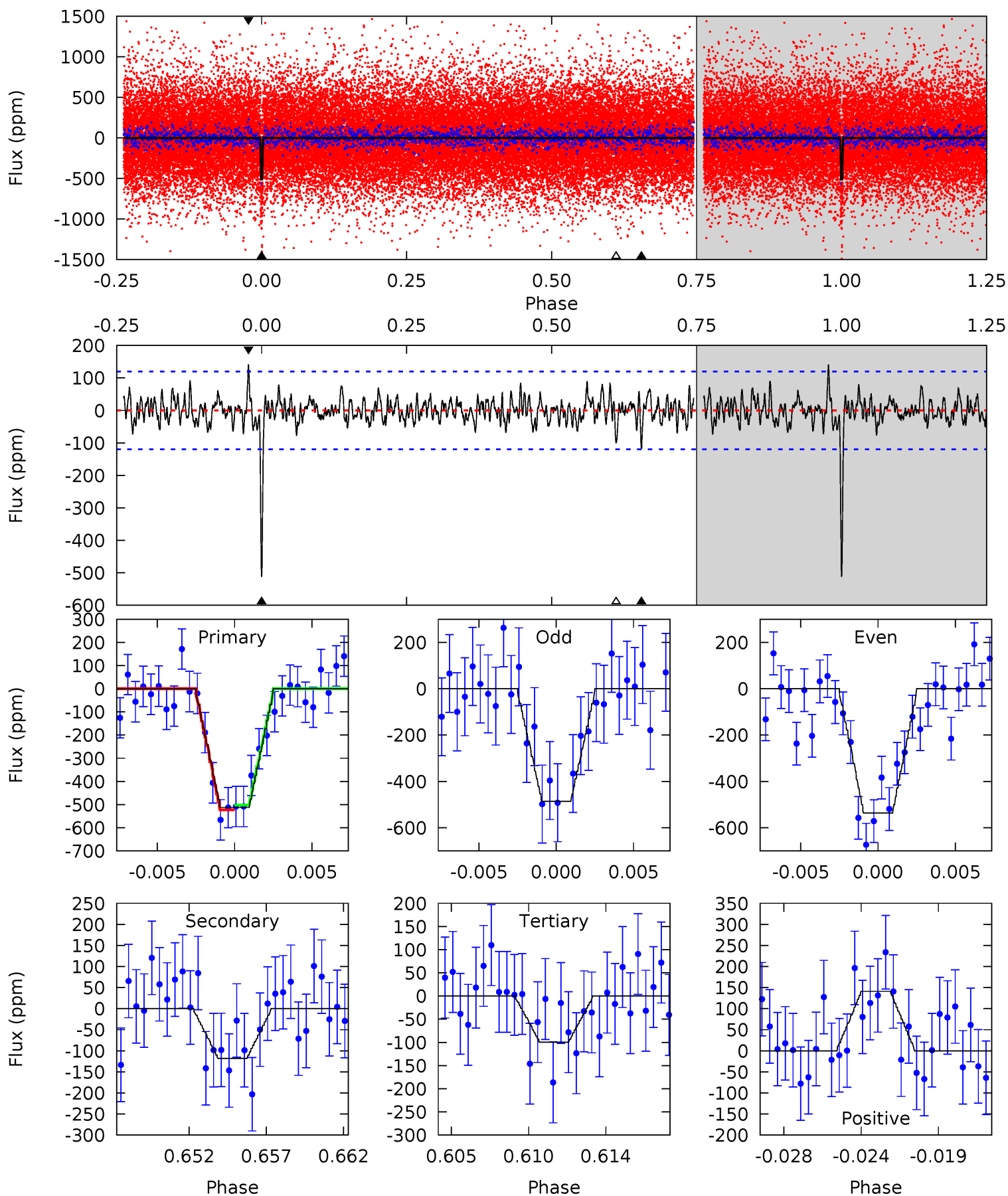
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.4	5.32	4.90	6.74	5.13	2.76	1.47	19.5	17.7	0.42	-1.42	0.37	0.97	0.22	0.92



Alt Model-Shift Uniqueness Test

006500206-02, P = 13.374923 Days, E = 118.929151 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.1	5.08	4.29	6.08	5.17	2.83	1.31	17.8	16.0	0.79	-1.00	1.07	1.02	0.22	0.45



Stellar Parameters For KIC 006500206

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5263^{+78}_{-78}	$4.404^{+0.114}_{-0.066}$	$0.180^{+0.150}_{-0.150}$	$0.961^{+0.096}_{-0.117}$	$0.852^{+0.060}_{-0.033}$	$1.354^{+0.638}_{-0.307}$
	+1%/-1%	+3%/-1%	+83%/-83%	+10%/-12%	+7%/-4%	+47%/-23%
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 006500206-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-110 ± 21	$2.75^{+0.74}_{-0.73}$	979^{+31}_{-39}	3684^{+422}_{-292}	88^{+77}_{-35}
Alt.	-118 ± 23	$2.34^{+0.71}_{-0.79}$	978^{+32}_{-36}	3930^{+663}_{-354}	128^{+184}_{-56}

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

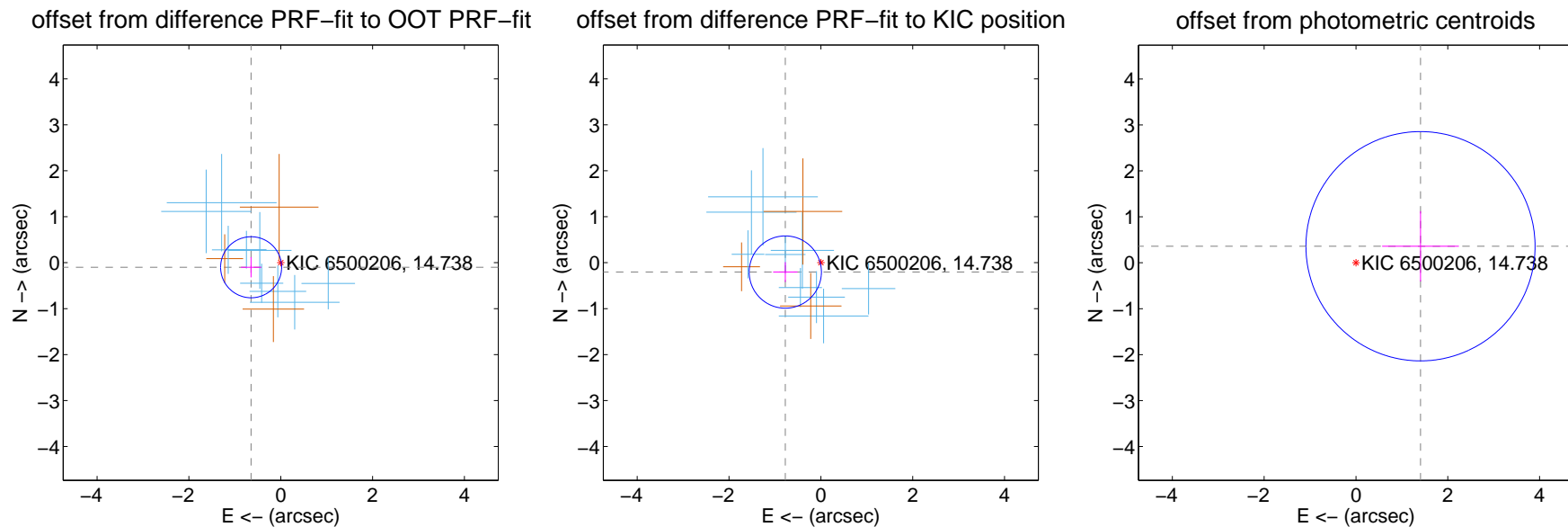
DV Centroid Data

Supplemental centroid analysis for 006500206-02. Kepler magnitude: 14.74. Transit SNR 15.99

There are 9 quarters with good PRF difference image offsets

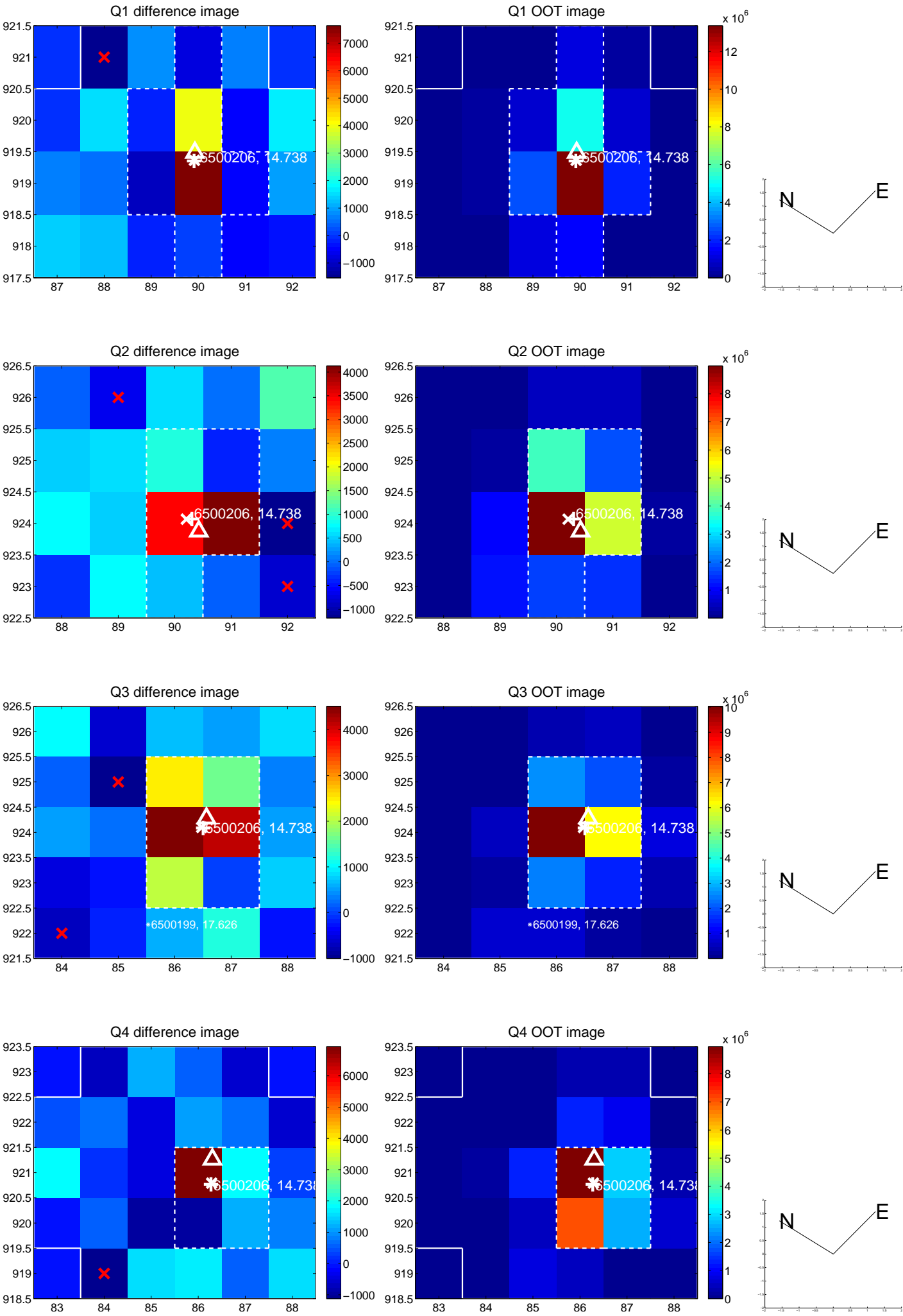
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.653 ± 0.221	2.95	0.646 ± 0.222	-0.099 ± 0.221
PRF-fit source offset from KIC position	0.801 ± 0.262	3.06	0.775 ± 0.265	-0.204 ± 0.215
photometric centroid source offset	1.45 ± 0.83	1.74	-1.41 ± 0.84	0.36 ± 0.77

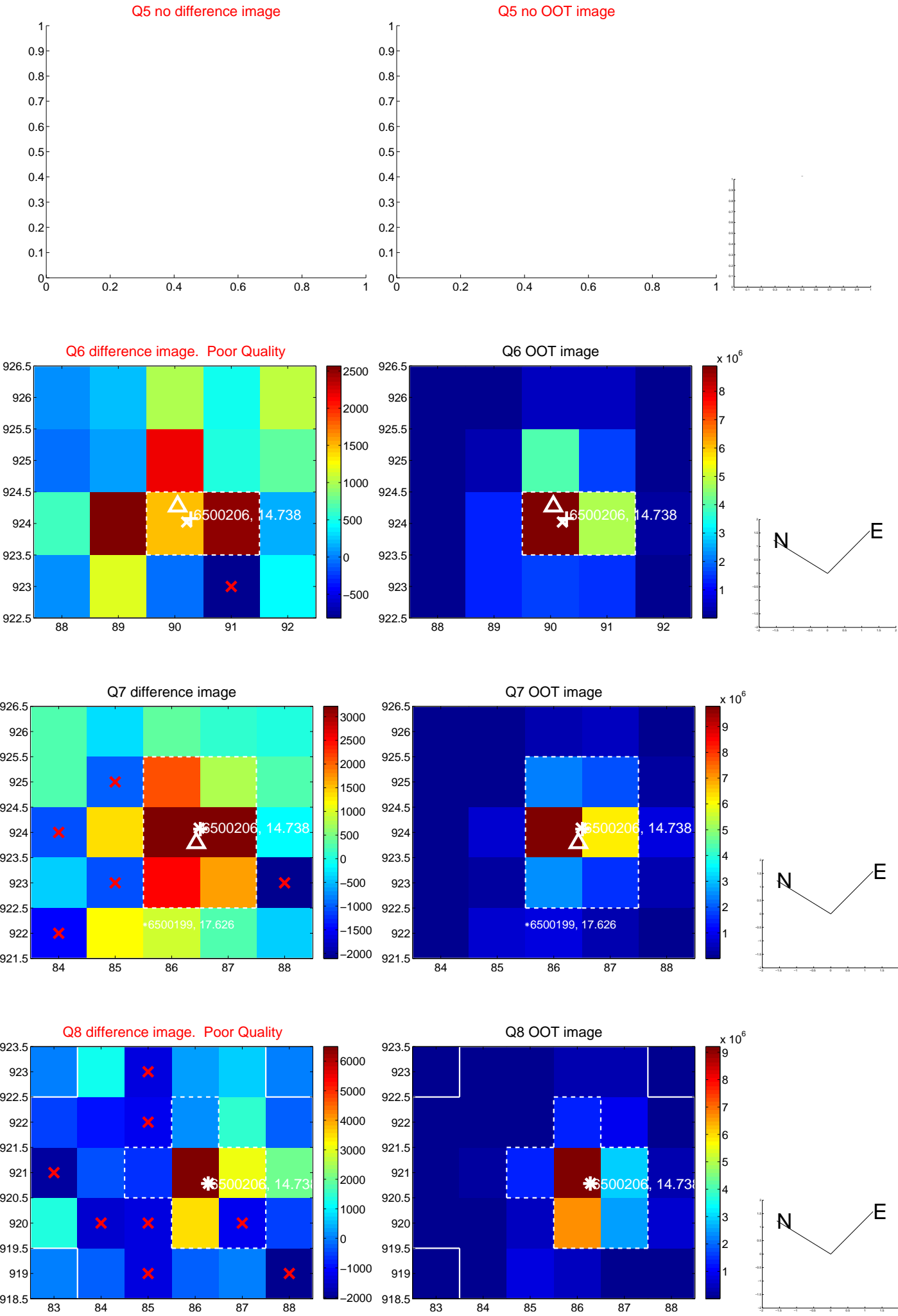


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

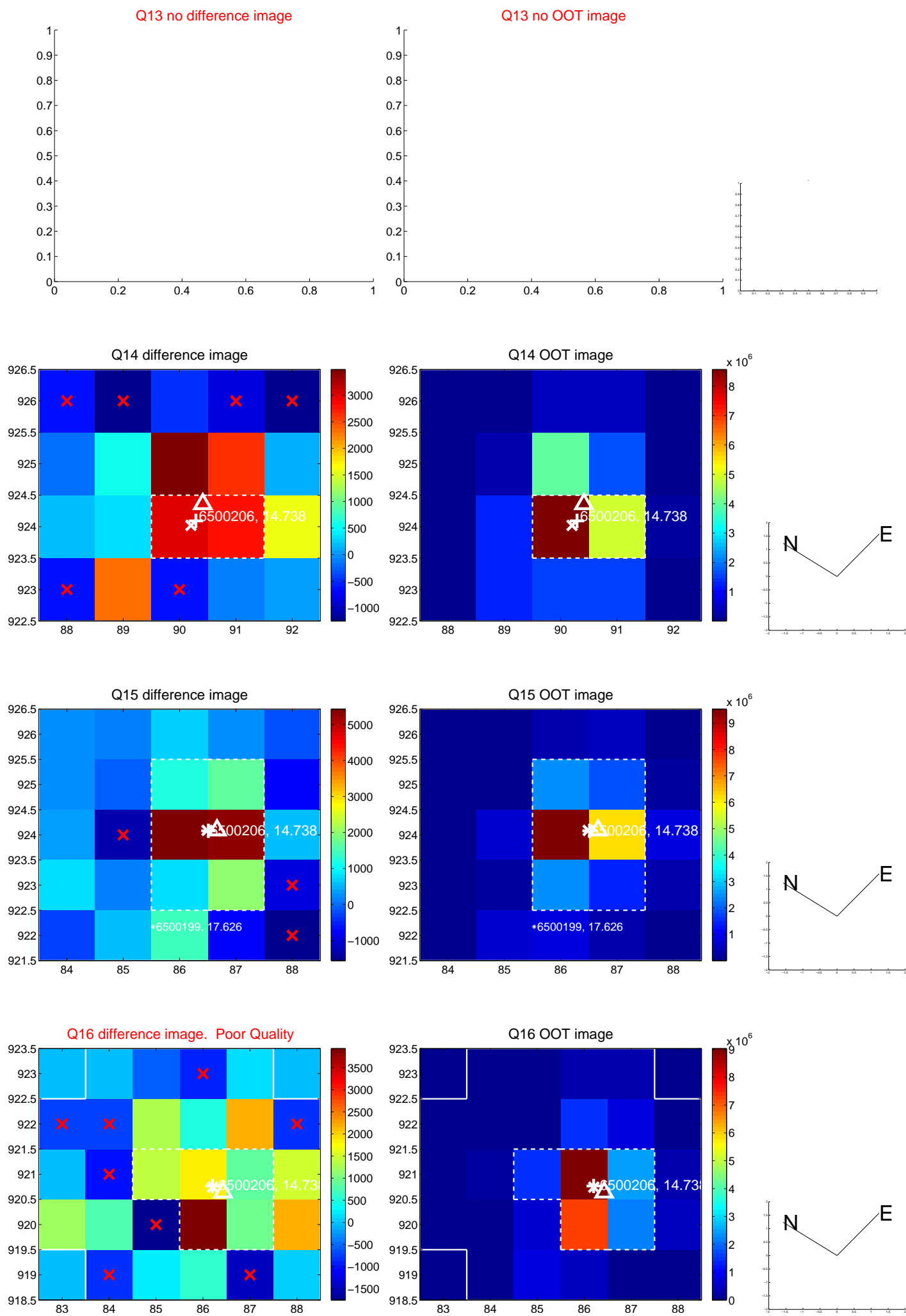
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



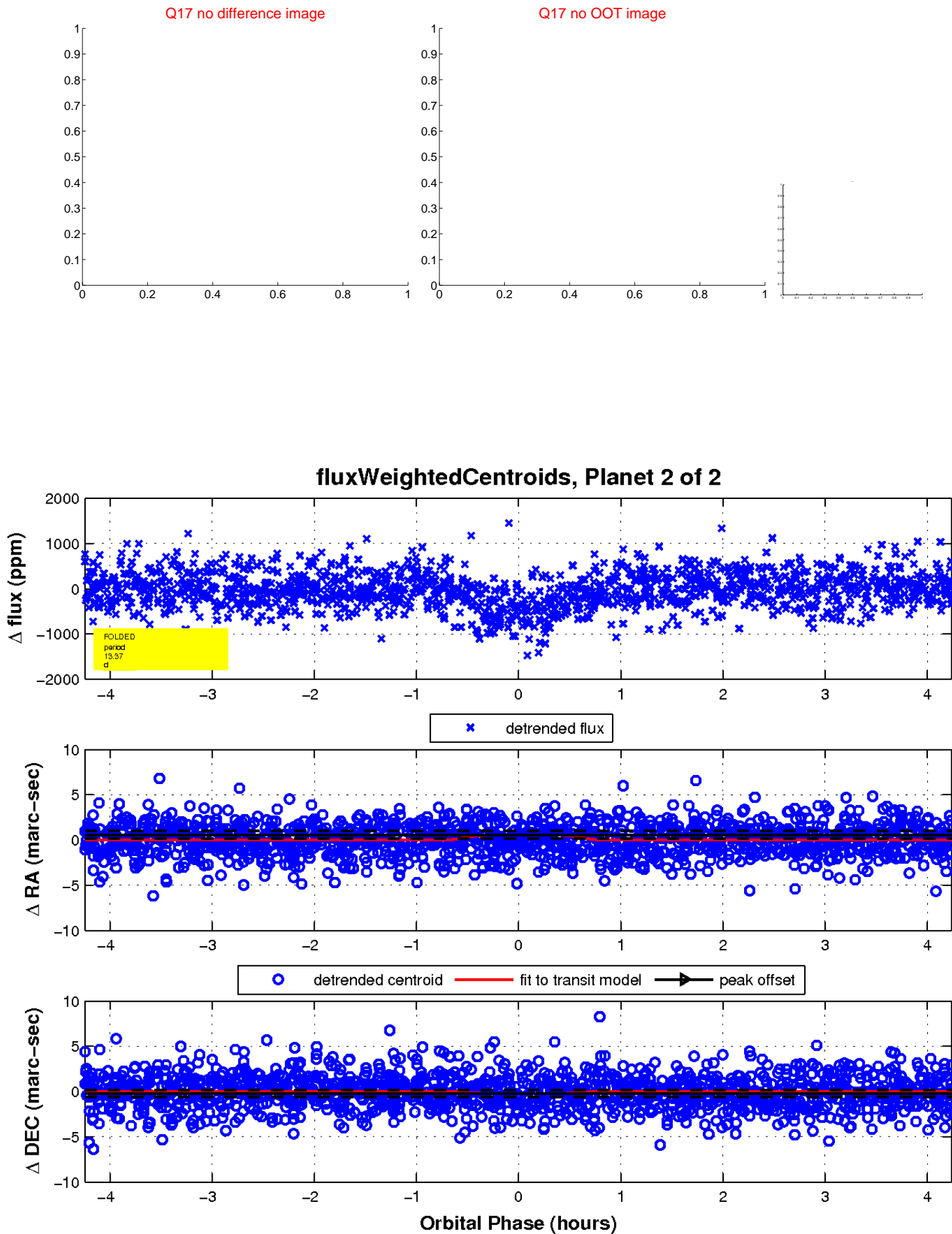
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

