

KIC 008490993

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})
008490993-01	OBS	0911.01	4.093608	134.163266	535.8	2.573	31.4	34.6	1.00	6077	2.77	462.62
008490993-02	OBS	0911.02	105.146756	178.363741	687.0	8.393	10.9	11.3	1.00	6077	3.42	6.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008490993-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008490993-02	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 008490993-01

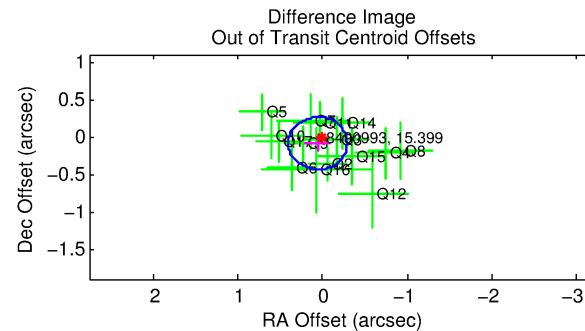
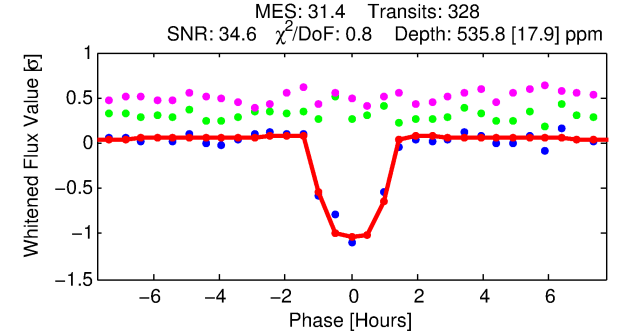
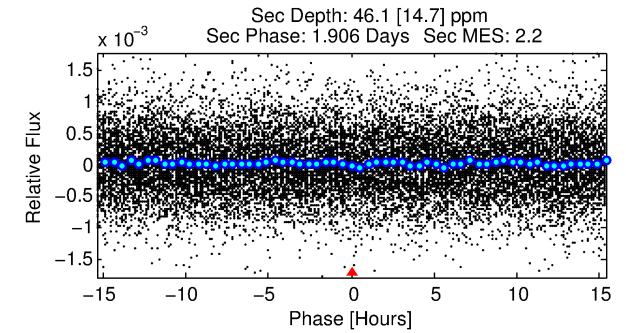
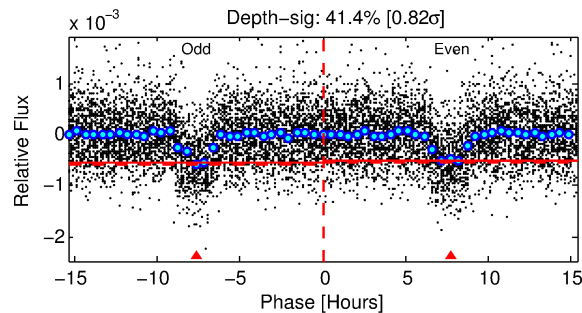
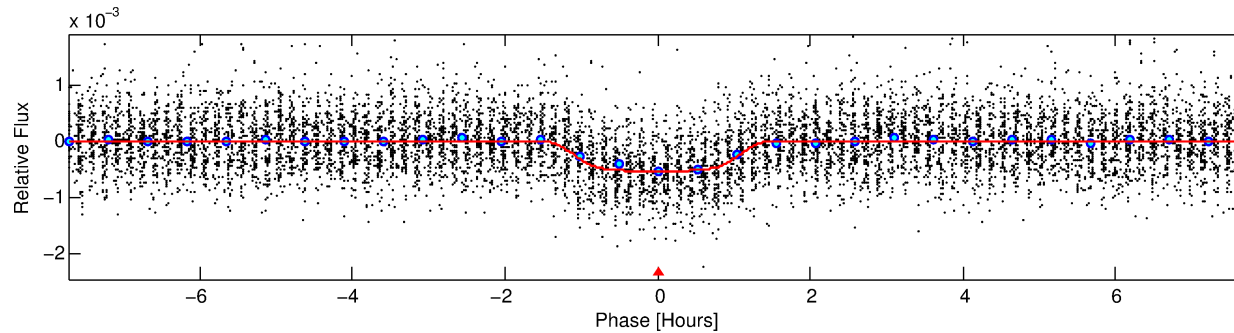
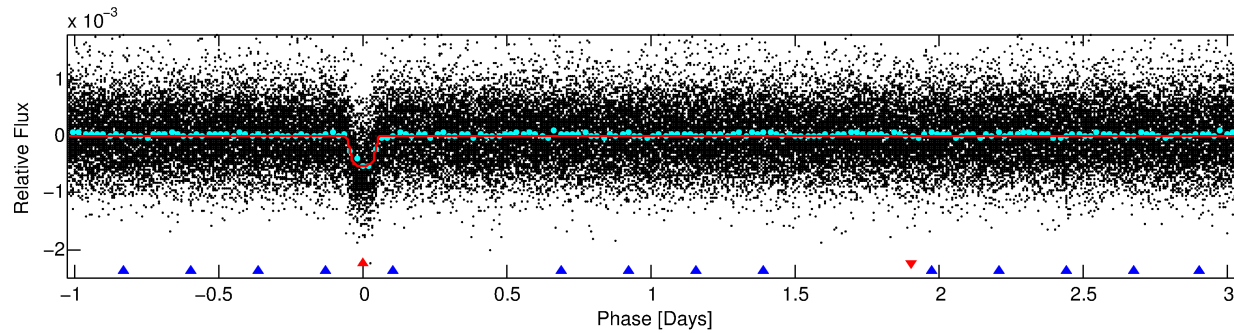
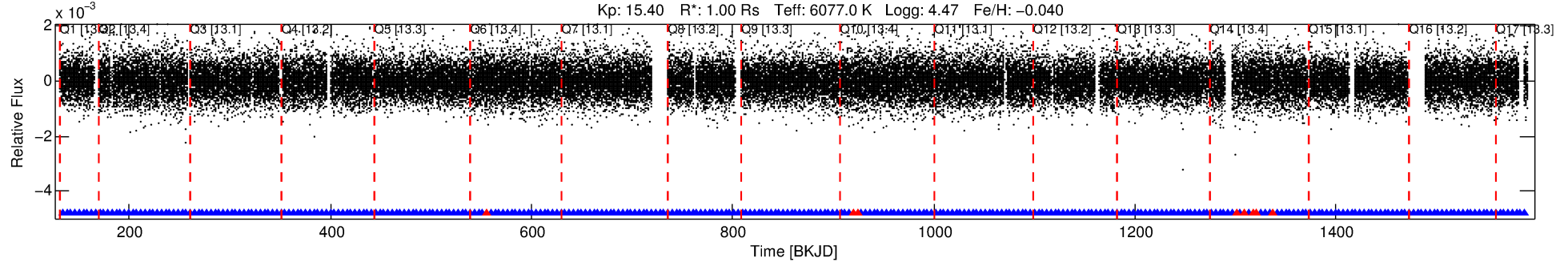
No Significant Match Found

DV One-Page Summary

KIC: 8490993 Candidate: 1 of 2 Period: 4.094 d

KOI: K00911.01 Corr: 0.941

Kp: 15.40 R*: 1.00 Rs Teff: 6077.0 K Logg: 4.47 Fe/H: -0.040



DV Fit Results:

Period = 4.09361 [0.00001] d
Epoch = 134.1633 [0.0012] BKJD
Rp/R* = 0.0254 [0.0019]
a/R* = 5.71 [1.99]
b = 0.92 [0.07]
Seff = 462.62 [167.86]
Teq = 1183 [107] K
Rp = 2.77 [0.80] Re
a = 0.0513 [0.0119] AU
Ag = 8.71 [4.21] [1.83σ]
Teffp = 3141 [297] K [6.20σ]

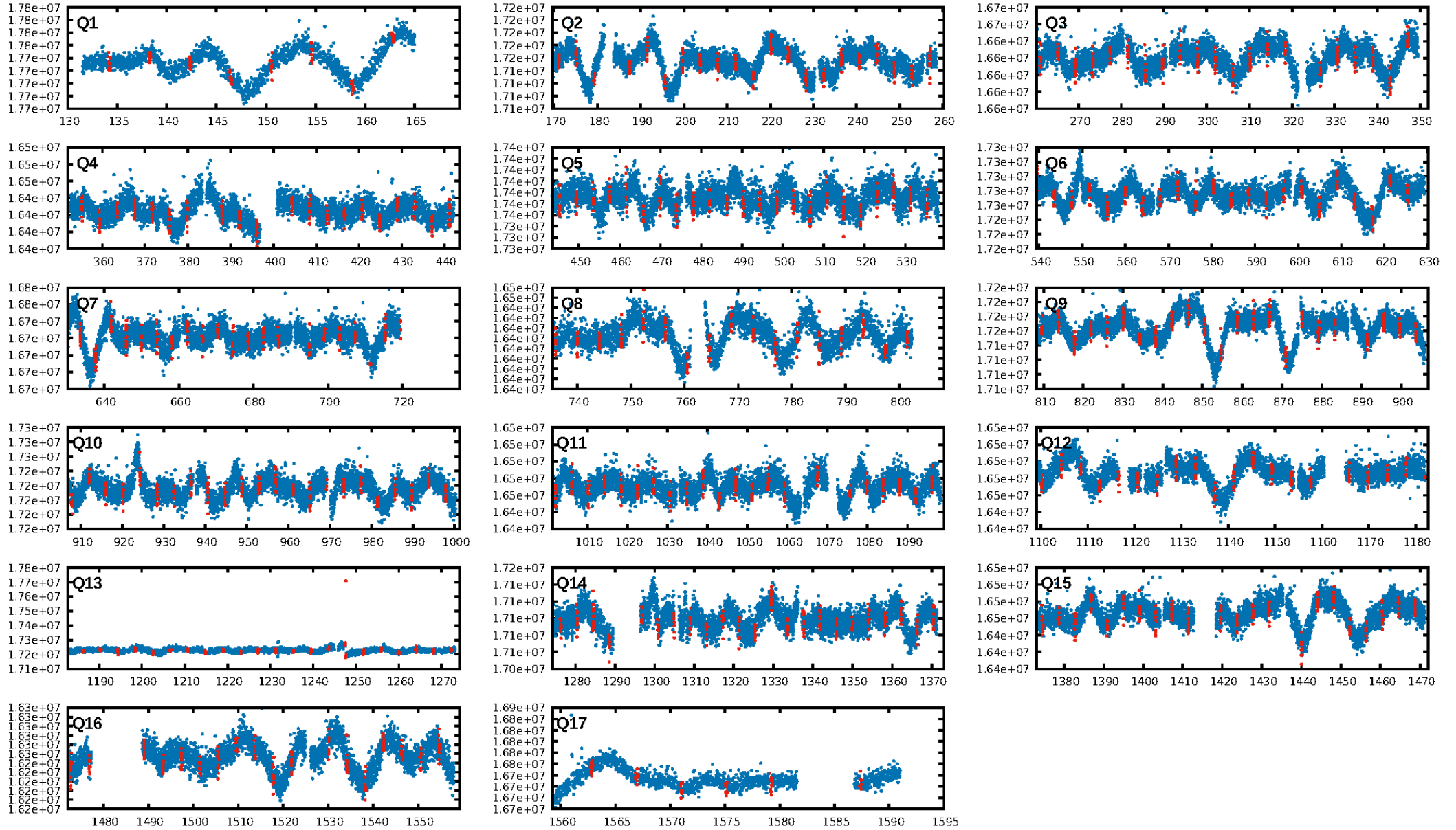
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [276.28σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.23e-209
RollingBand-fgt: 0.97 [306/314]
GhostDiagnostic-chr: 37.74
Centroid-sig: 30.0%
Centroid-so: 0.468 arcsec [1.14σ]
OotOffset-rm: 0.102 arcsec [0.88σ]
KicOffset-rm: 0.178 arcsec [1.61σ]
OotOffset-st: 4/4/4/3 [15]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 1.00 [15/15]
DiffImageOverlap-fno: 1.00 [17/17]

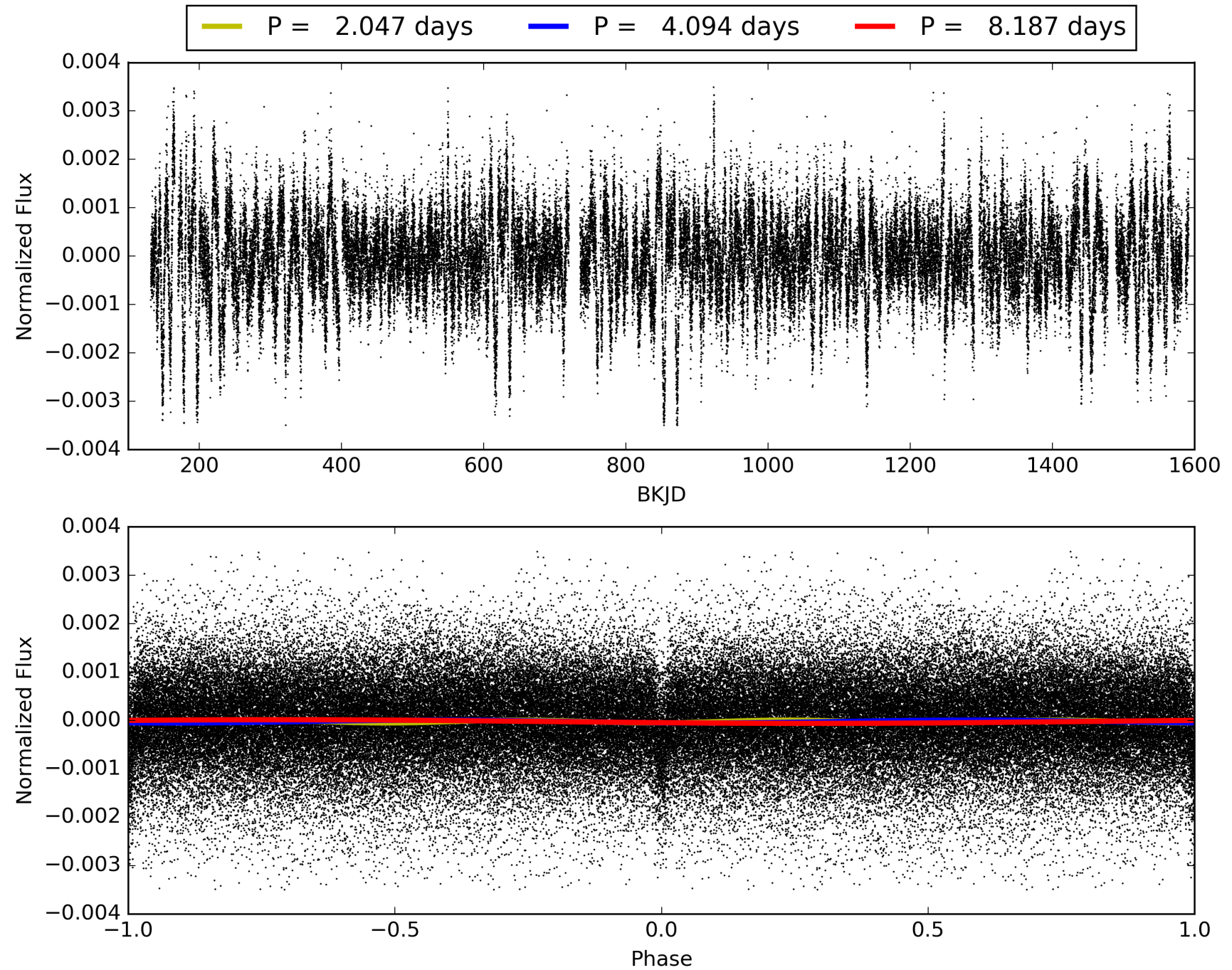
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:24:58 Z

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

TCE 008490993-01, PDC Light Curves

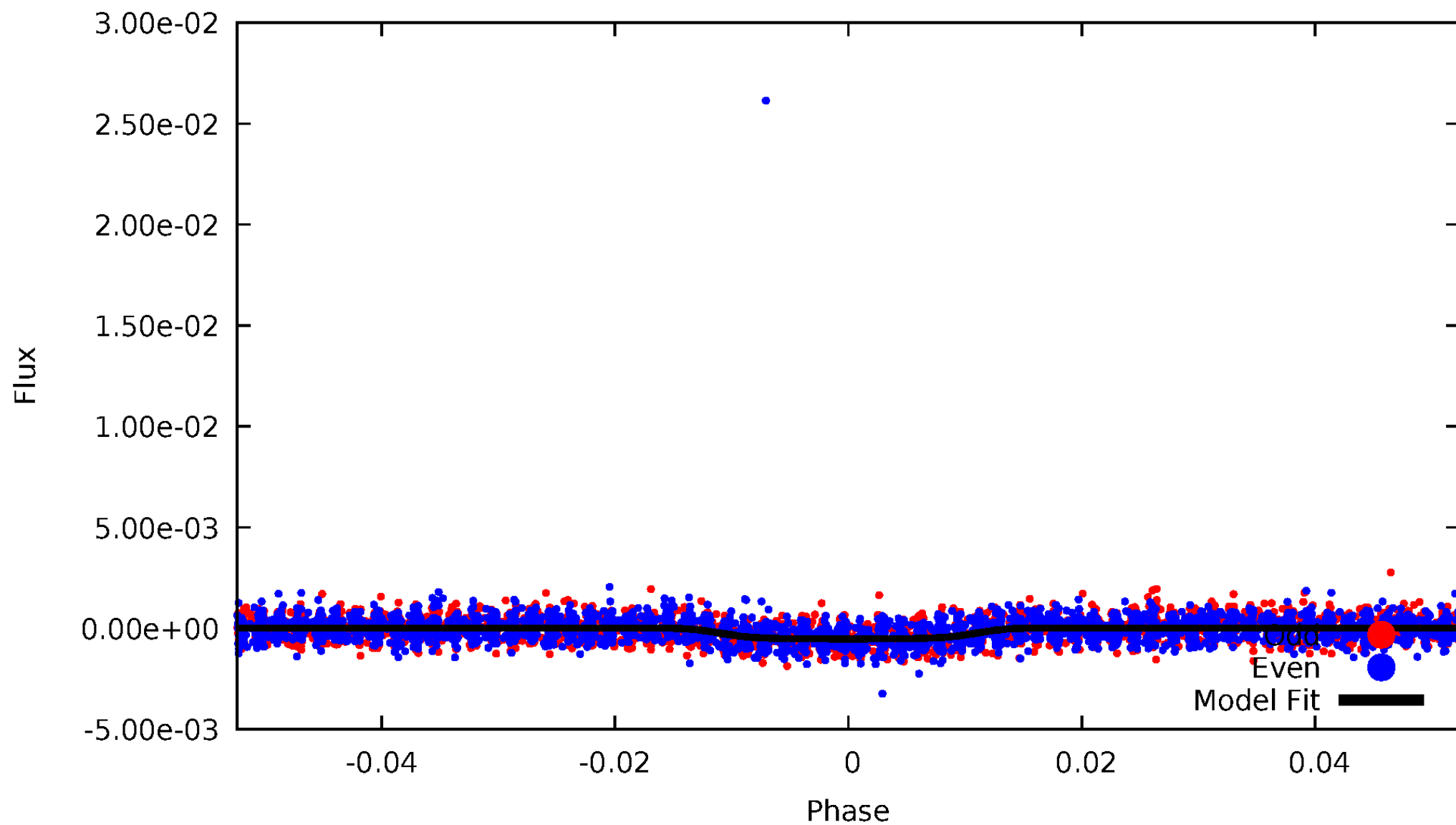


TCE 008490993-01



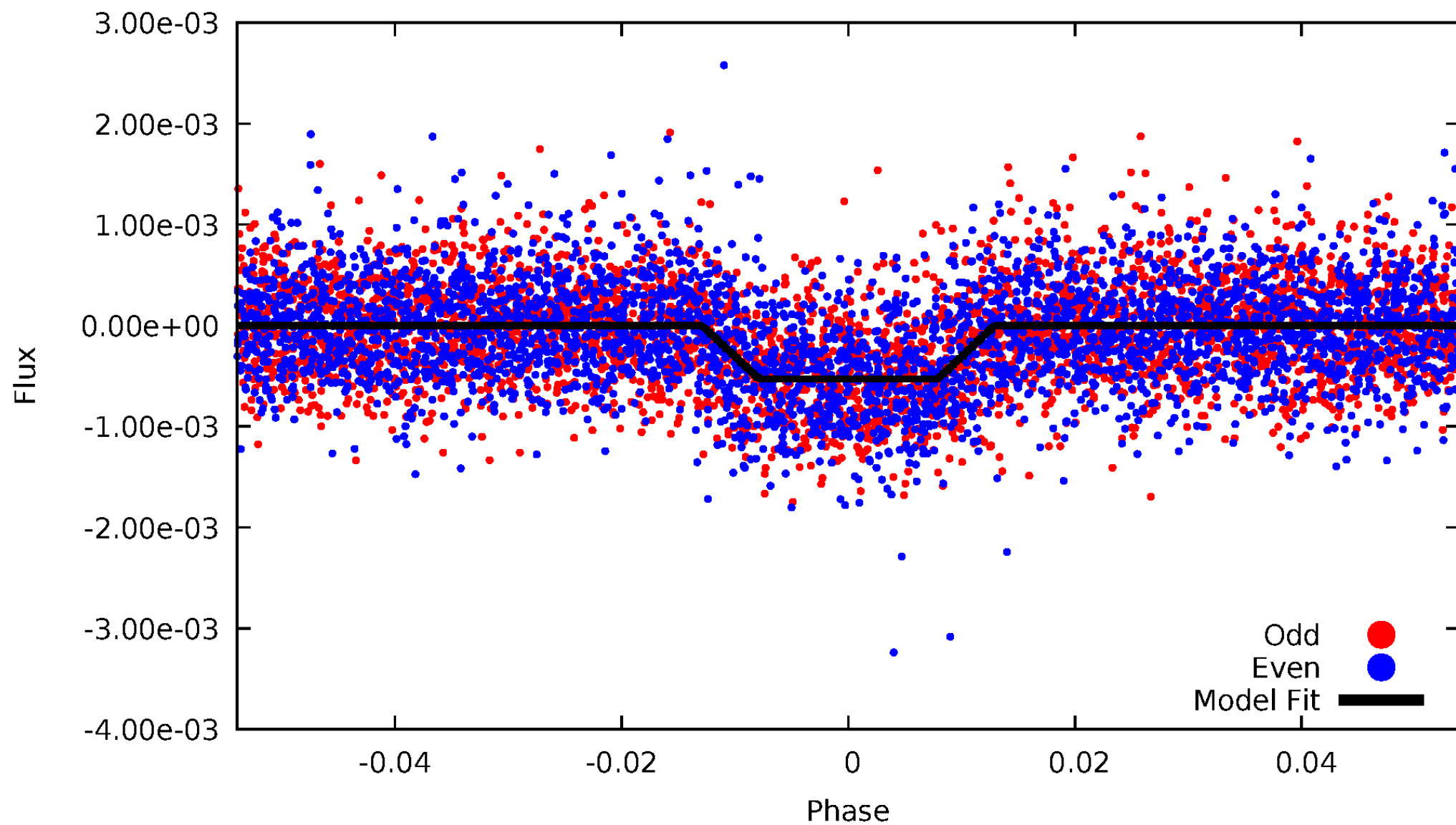
DV Odd/Even

TCE 008490993-01



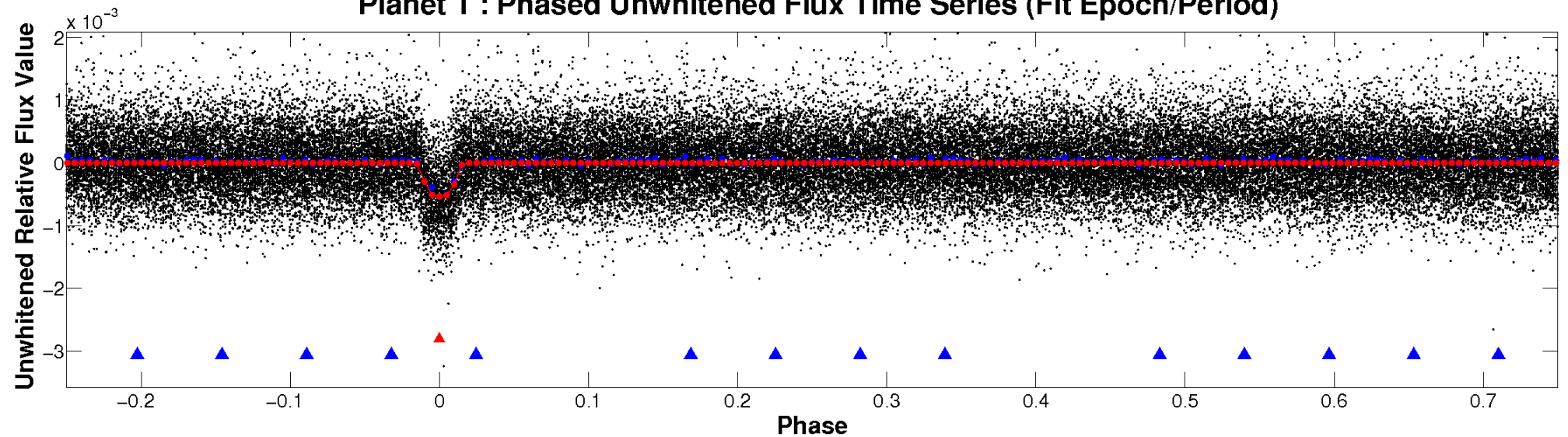
ALT Odd/Even

TCE 008490993-01

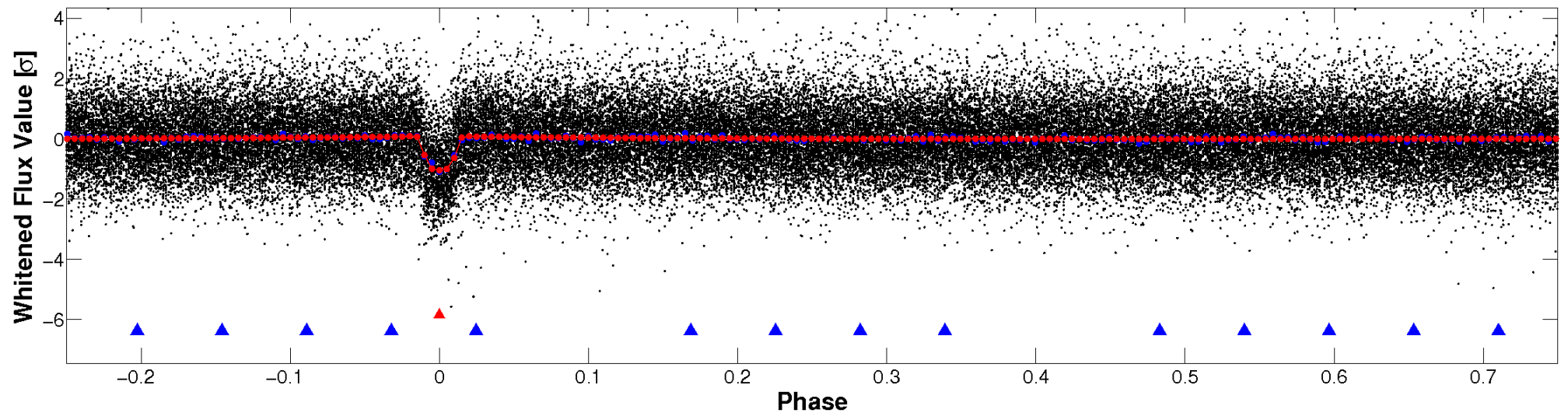


Non-Whitened Vs. Whitened Light Curve

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

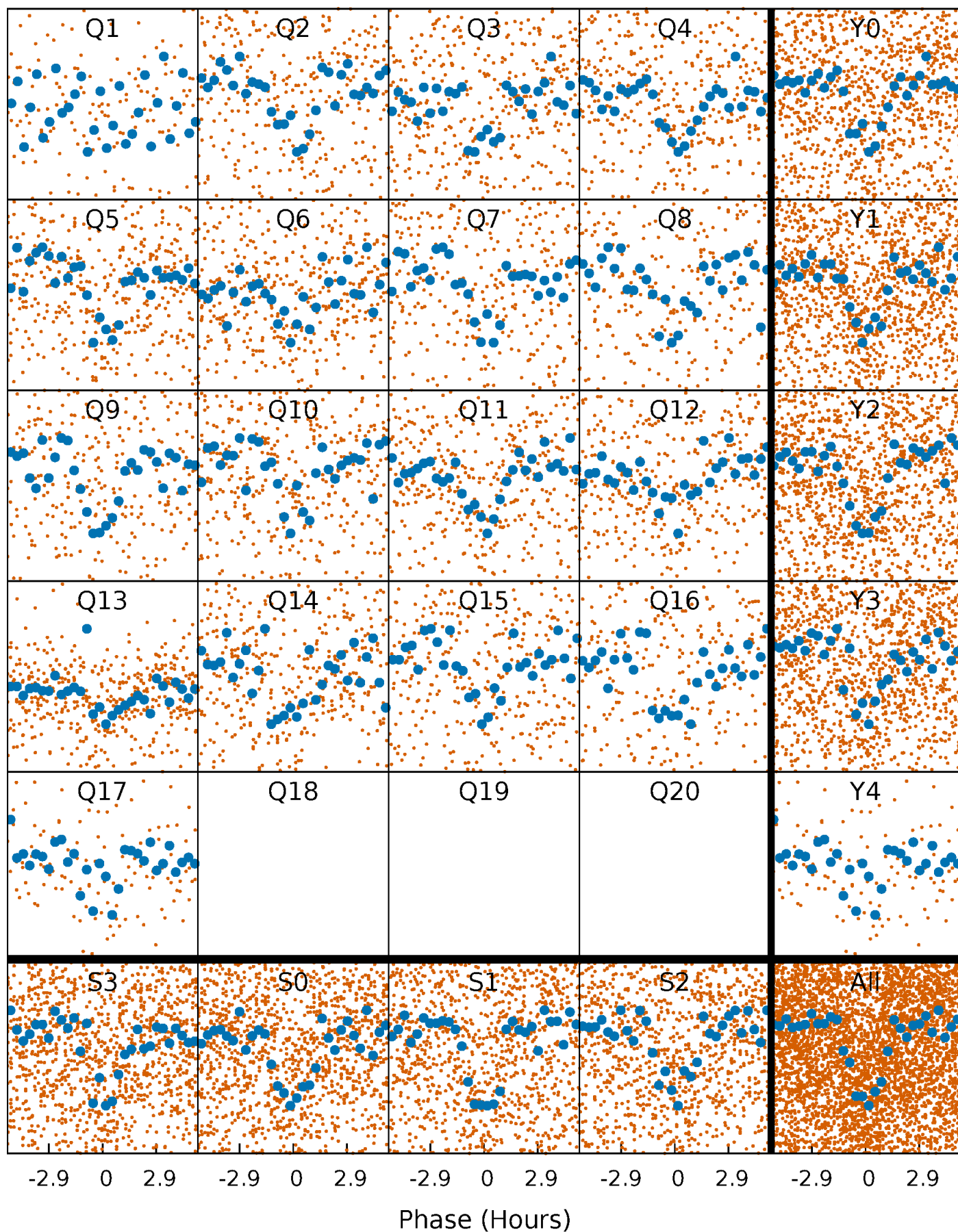


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



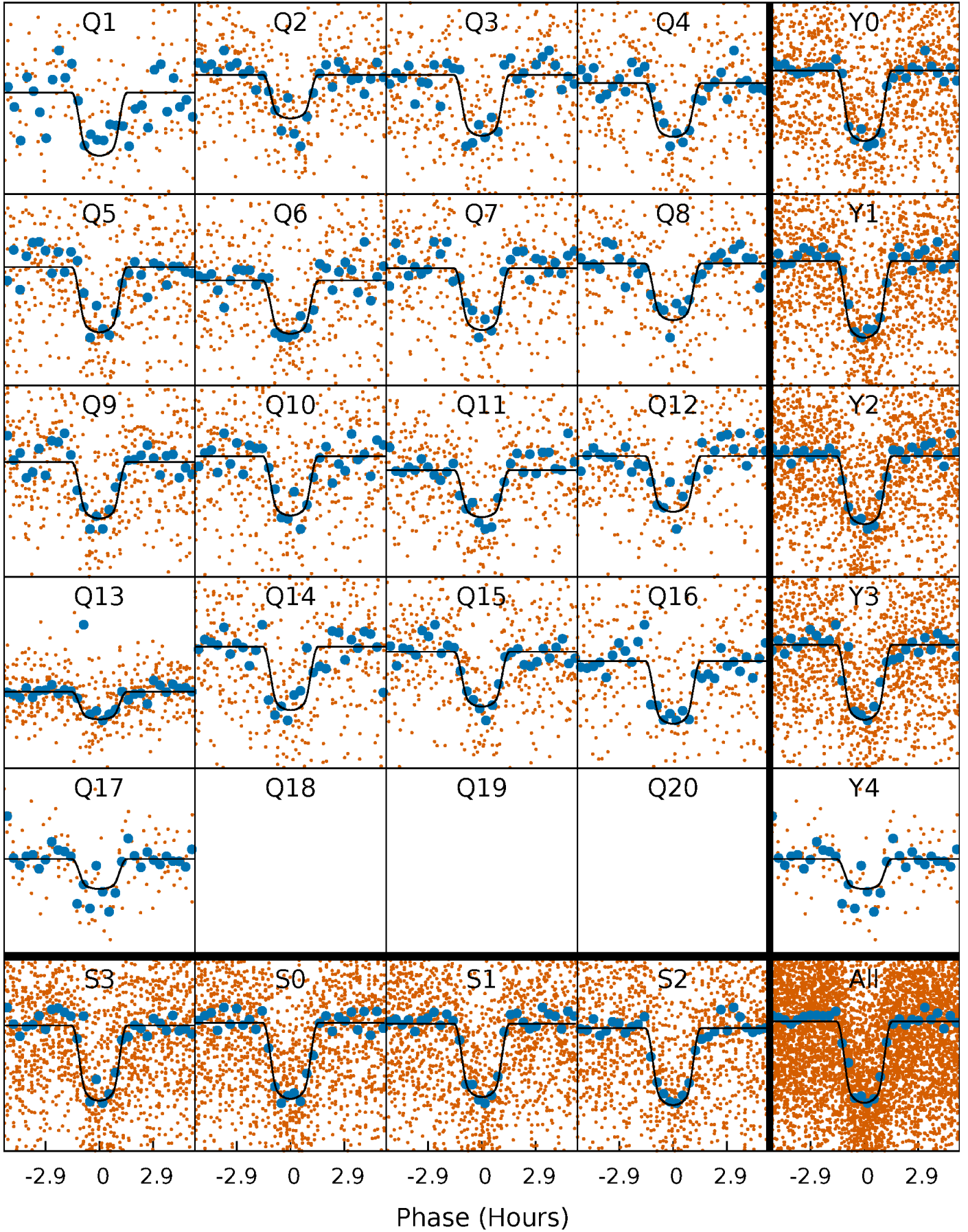
PDC Quarter-Phased Transit Curves

TCE 008490993-01 P= 4.093608 Days $T_0=134.163266$ (BKJD)



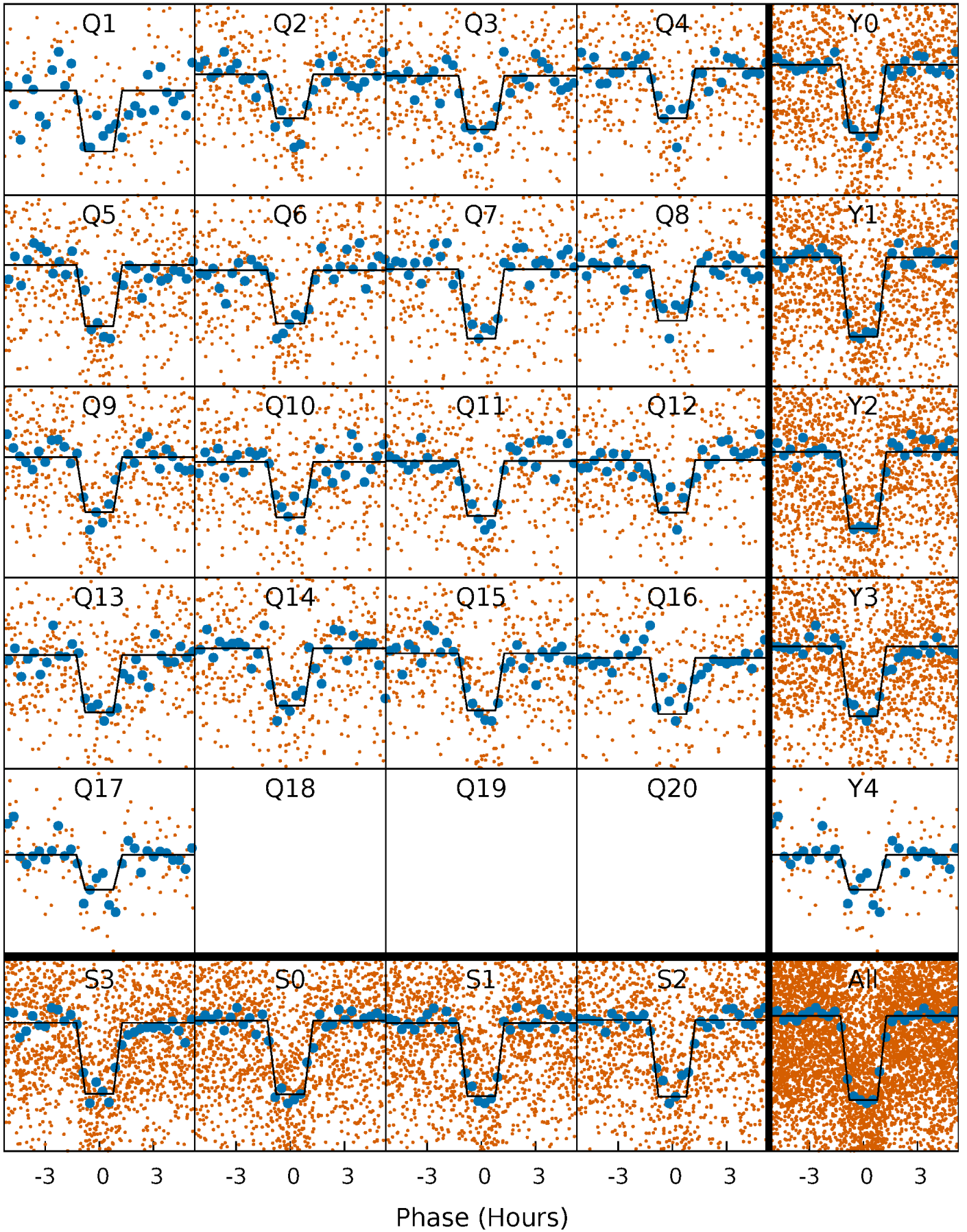
DV Quarter-Phased Transit Curves

TCE 008490993-01 P= 4.093608 Days $T_0=134.163266$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

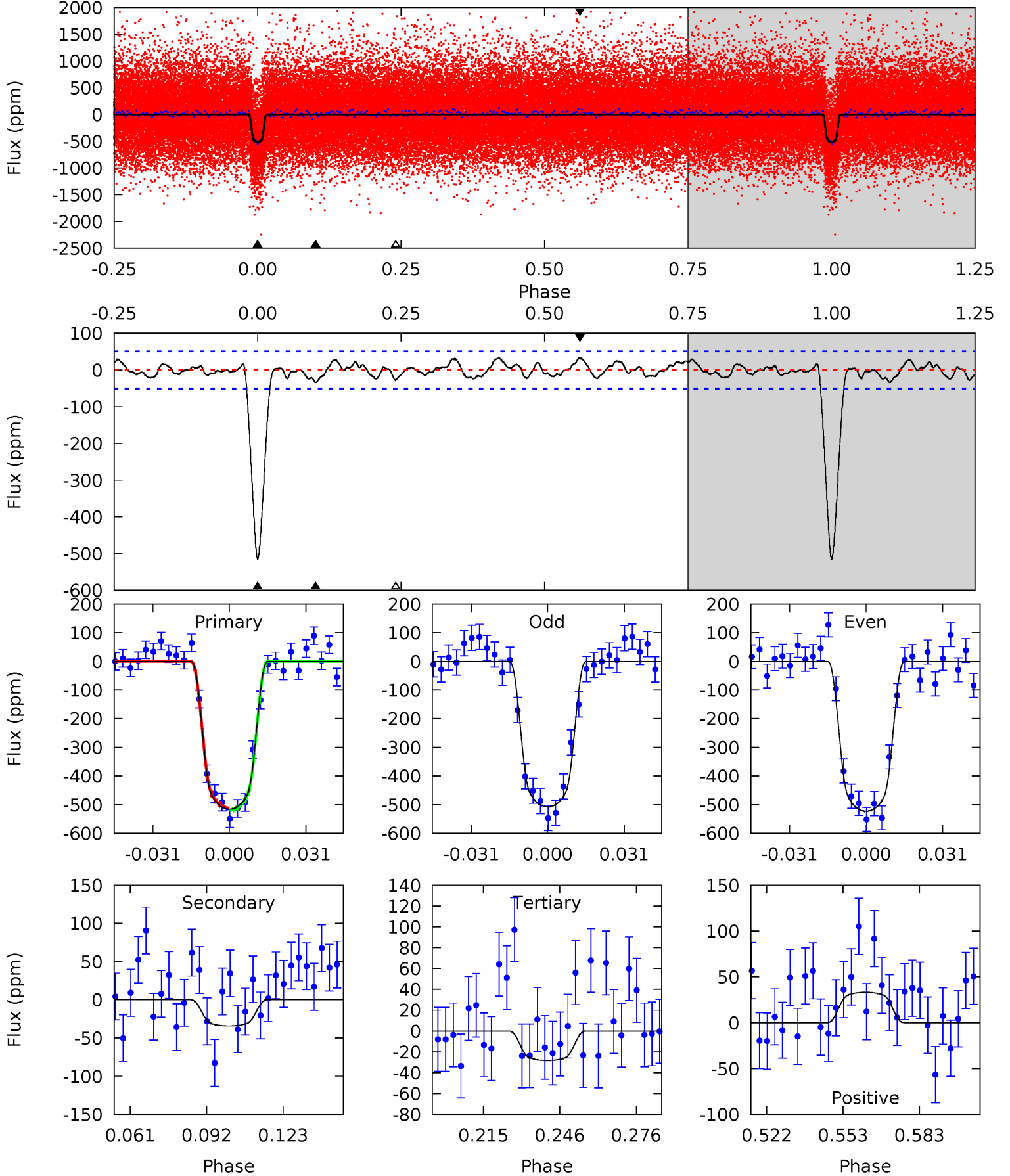
TCE 008490993-01 P= 4.093566 Days $T_0=134.170054$ (BKJD)



DV Model-Shift Uniqueness Test

008490993-01, P = 4.093608 Days, E = 130.069658 Days

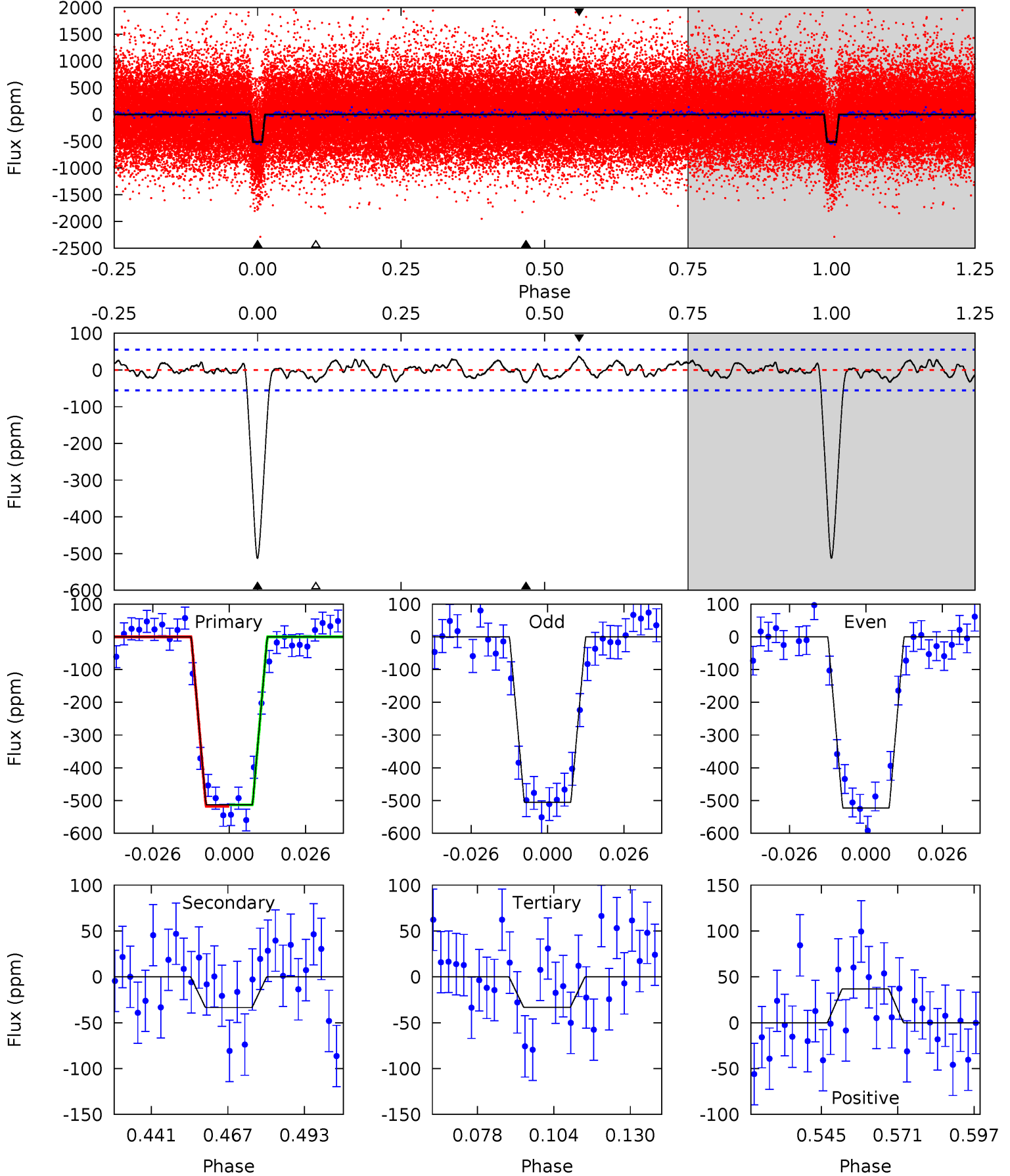
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
48.8	3.24	2.68	3.14	4.81	2.16	1.33	46.1	45.6	0.56	0.10	0.75	0.93	0.06	0.38



Alt Model-Shift Uniqueness Test

008490993-01, P = 4.093566 Days, E = 130.076488 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.8	2.92	2.91	3.22	4.84	2.23	1.25	41.8	41.5	0.02	-0.30	0.74	1.00	0.07	0.21



Stellar Parameters For KIC 008490993

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6077^{+162}_{-217}	$4.471^{+0.060}_{-0.180}$	$-0.040^{+0.250}_{-0.350}$	$0.999^{+0.280}_{-0.120}$	$1.077^{+0.126}_{-0.153}$	$1.519^{+0.384}_{-0.747}$
	+3%/-4%	+1%/-4%	+625%/-875%	+28%/-12%	+12%/-14%	+25%/-49%
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 008490993-01 / KOI 0911.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-34 ± 11	$2.83^{+0.46}_{-0.32}$	1681^{+108}_{-81}	3391^{+195}_{-218}	$5.930^{+2.543}_{-2.207}$
Alt.	-33 ± 11	$2.58^{+0.40}_{-0.32}$	1680^{+97}_{-82}	3487^{+217}_{-272}	$6.813^{+3.440}_{-2.721}$

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

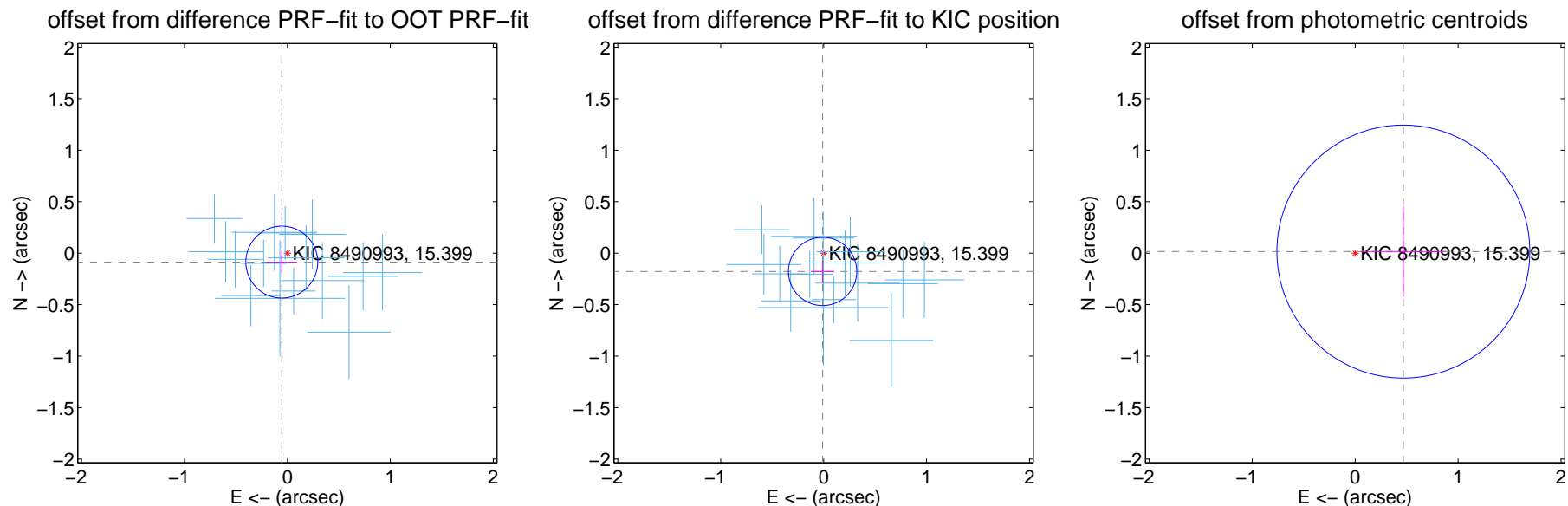
DV Centroid Data

Supplemental centroid analysis for 008490993-01. Kepler magnitude: 15.40. Transit SNR 34.55

There are 15 quarters with good PRF difference image offsets

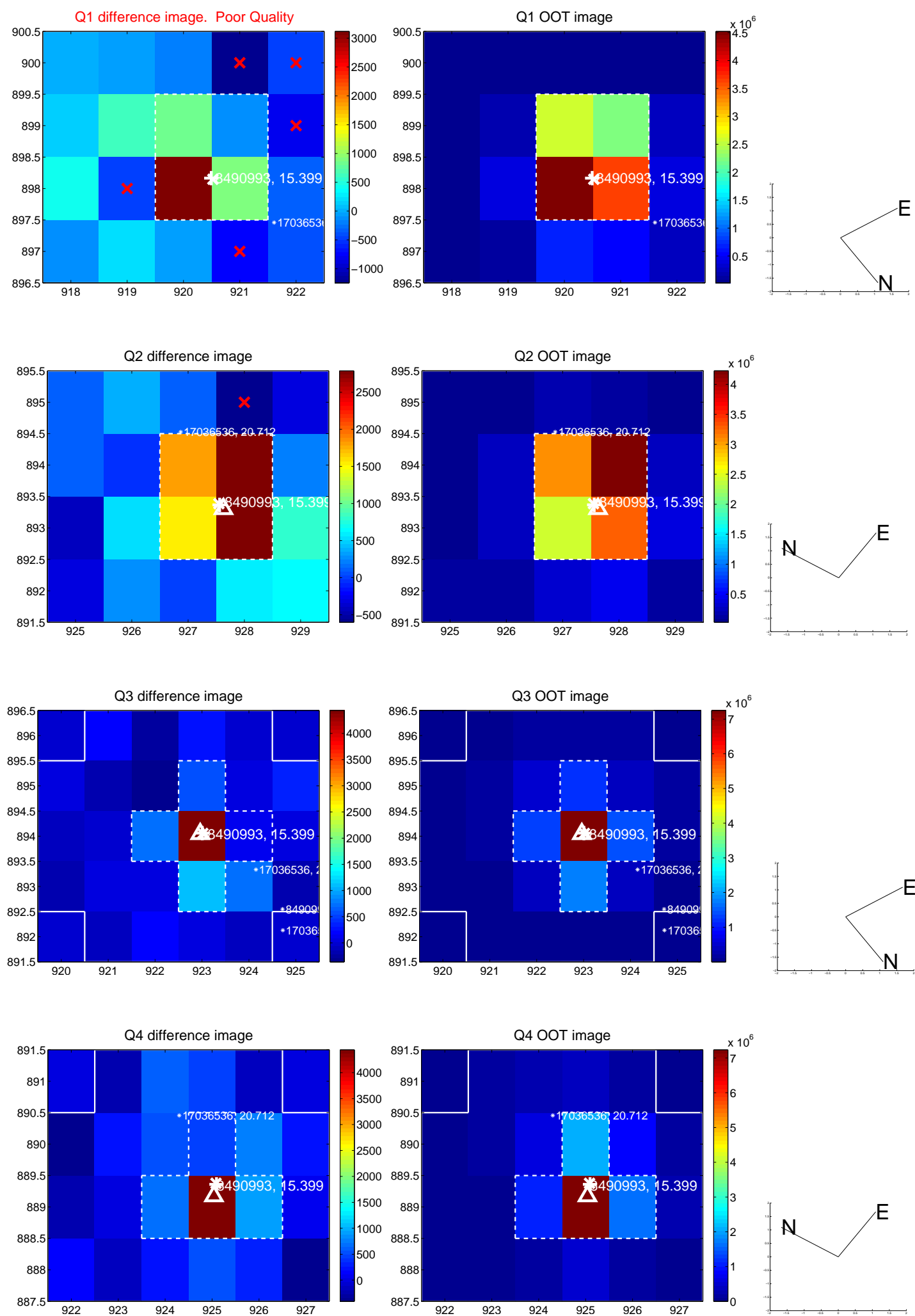
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.102 ± 0.116	0.88	0.054 ± 0.147	-0.087 ± 0.102
PRF-fit source offset from KIC position	0.178 ± 0.111	1.61	0.010 ± 0.115	-0.177 ± 0.111
photometric centroid source offset	0.47 ± 0.41	1.14	-0.47 ± 0.41	0.02 ± 0.44

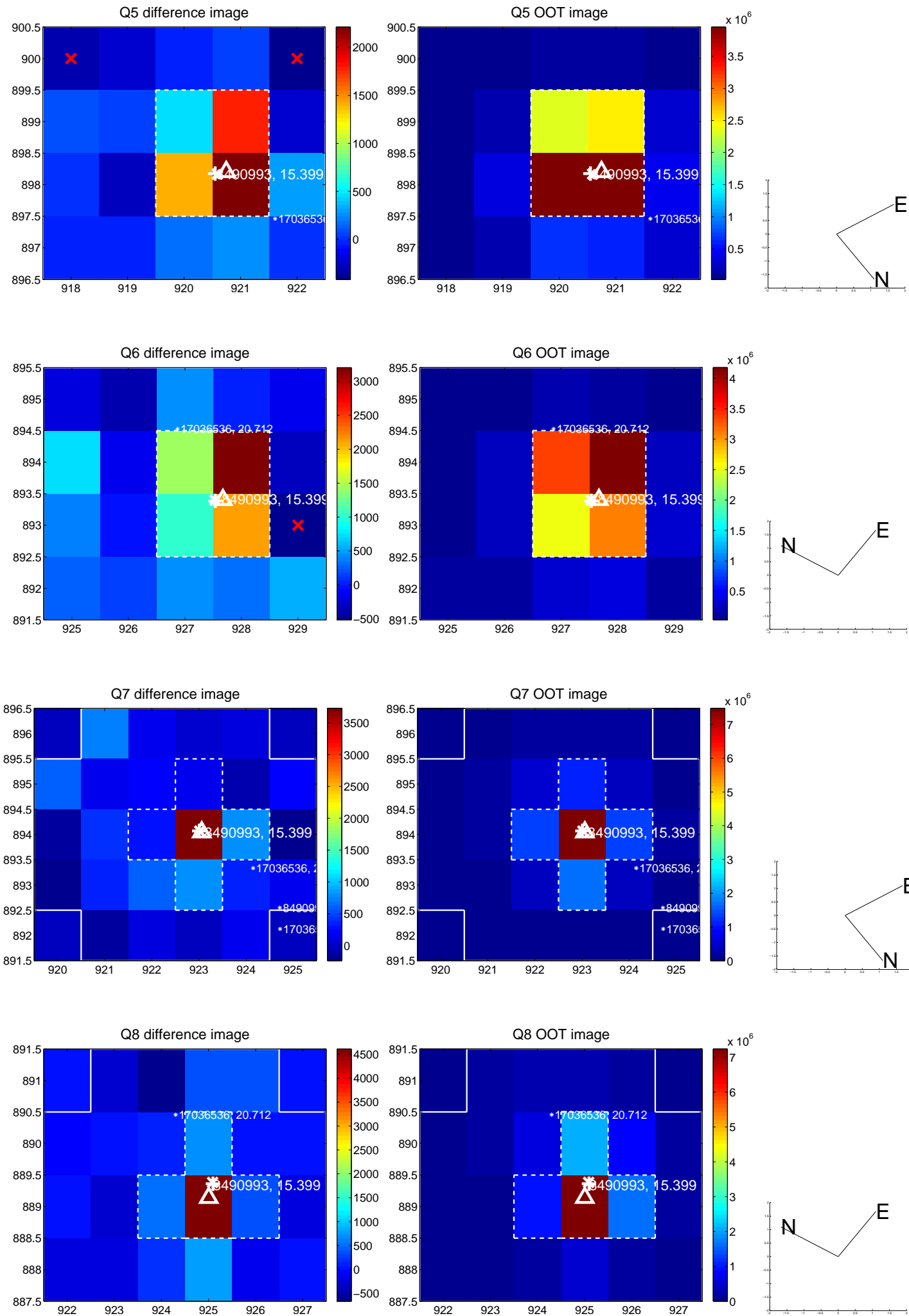


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

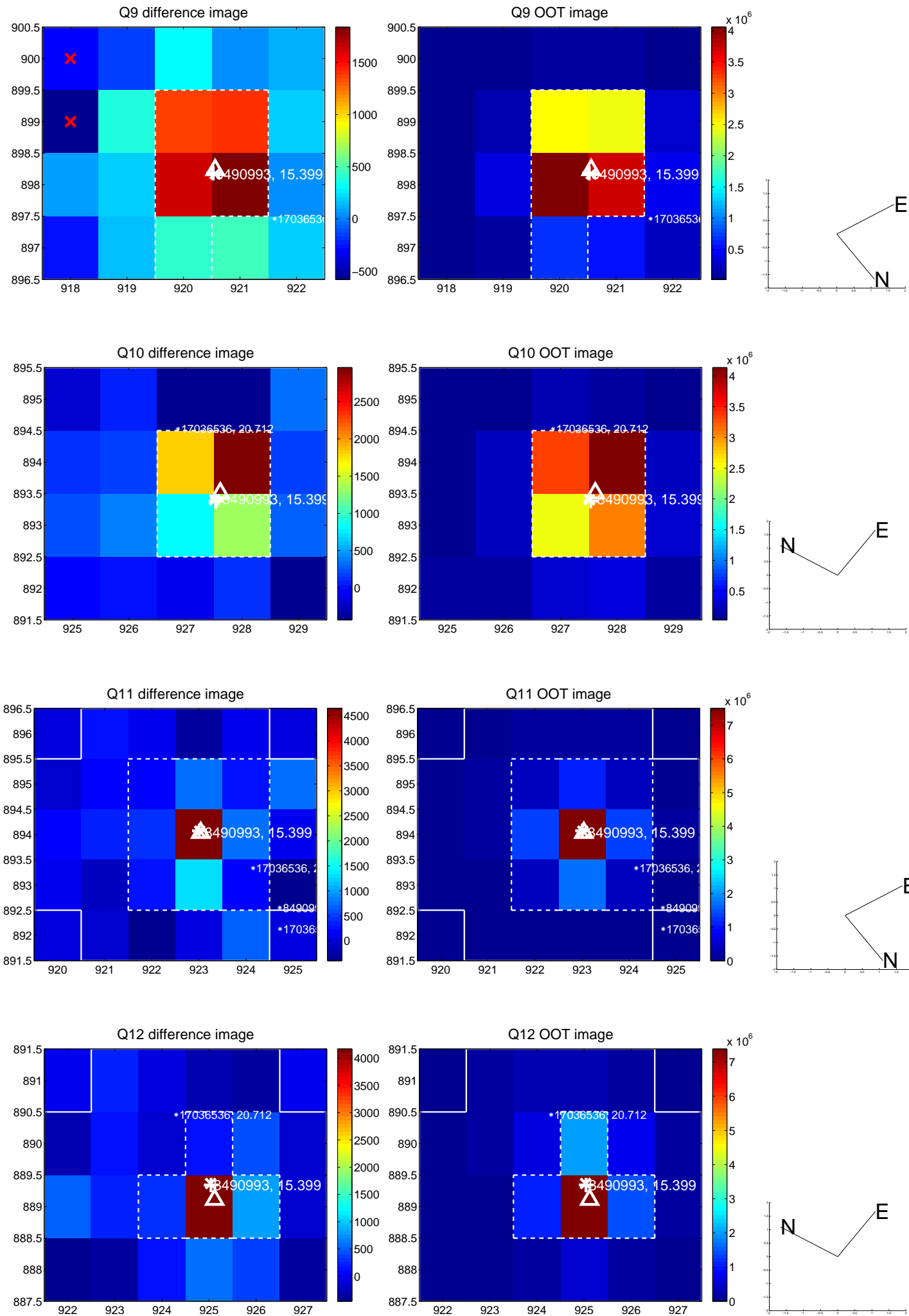
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



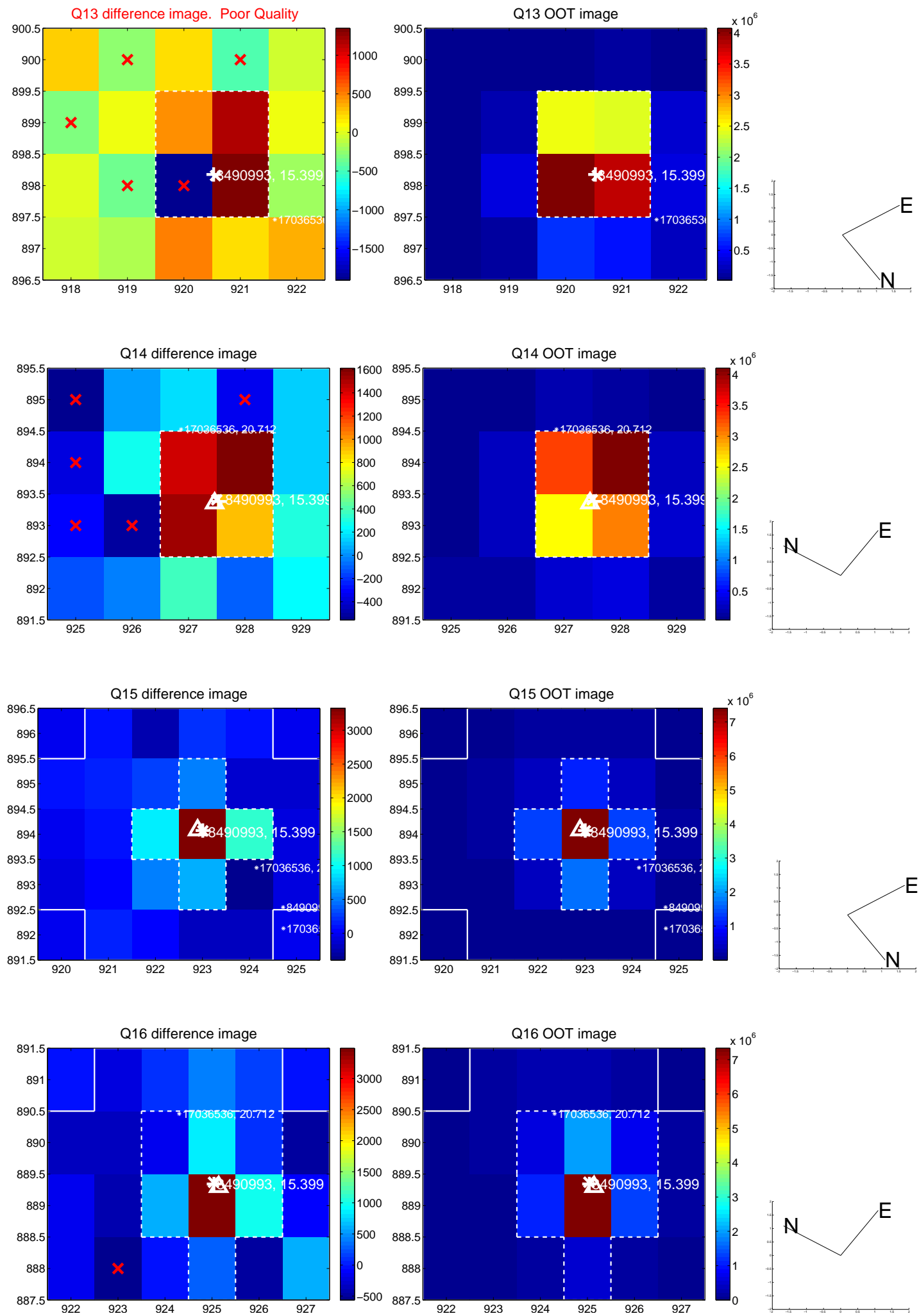
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



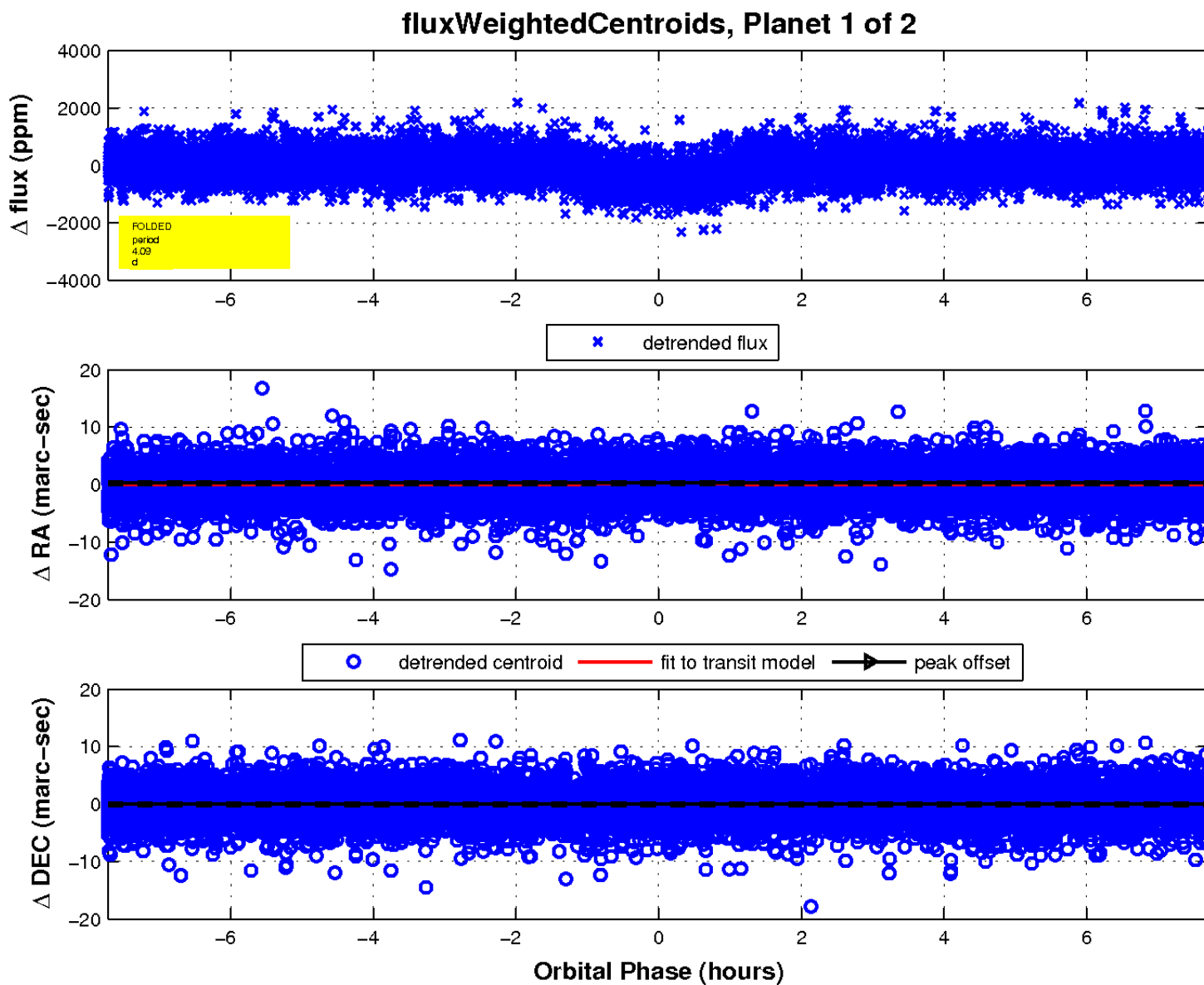
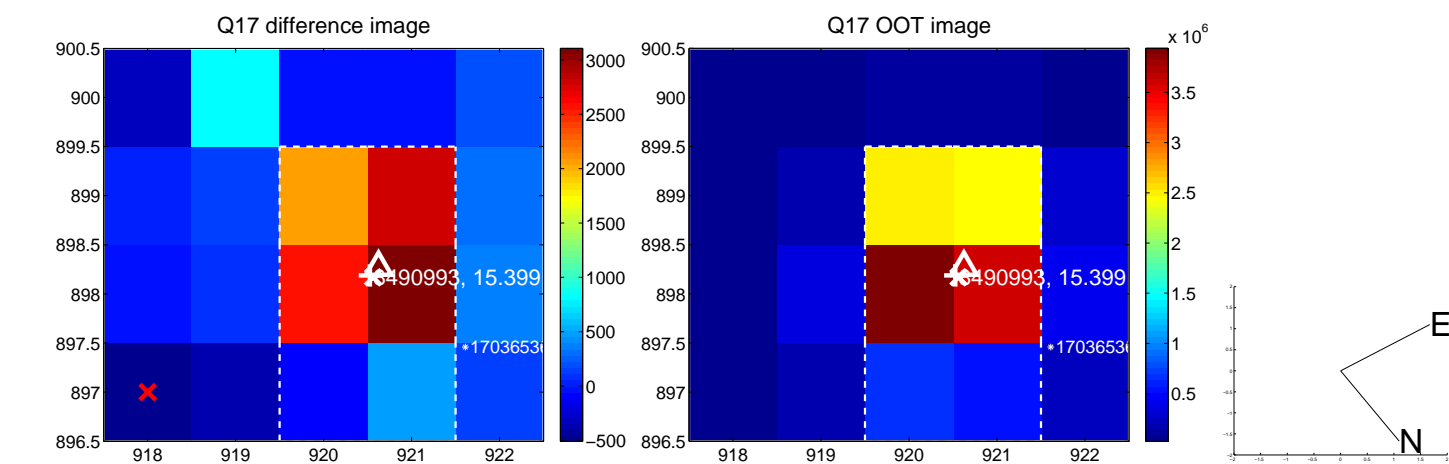
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

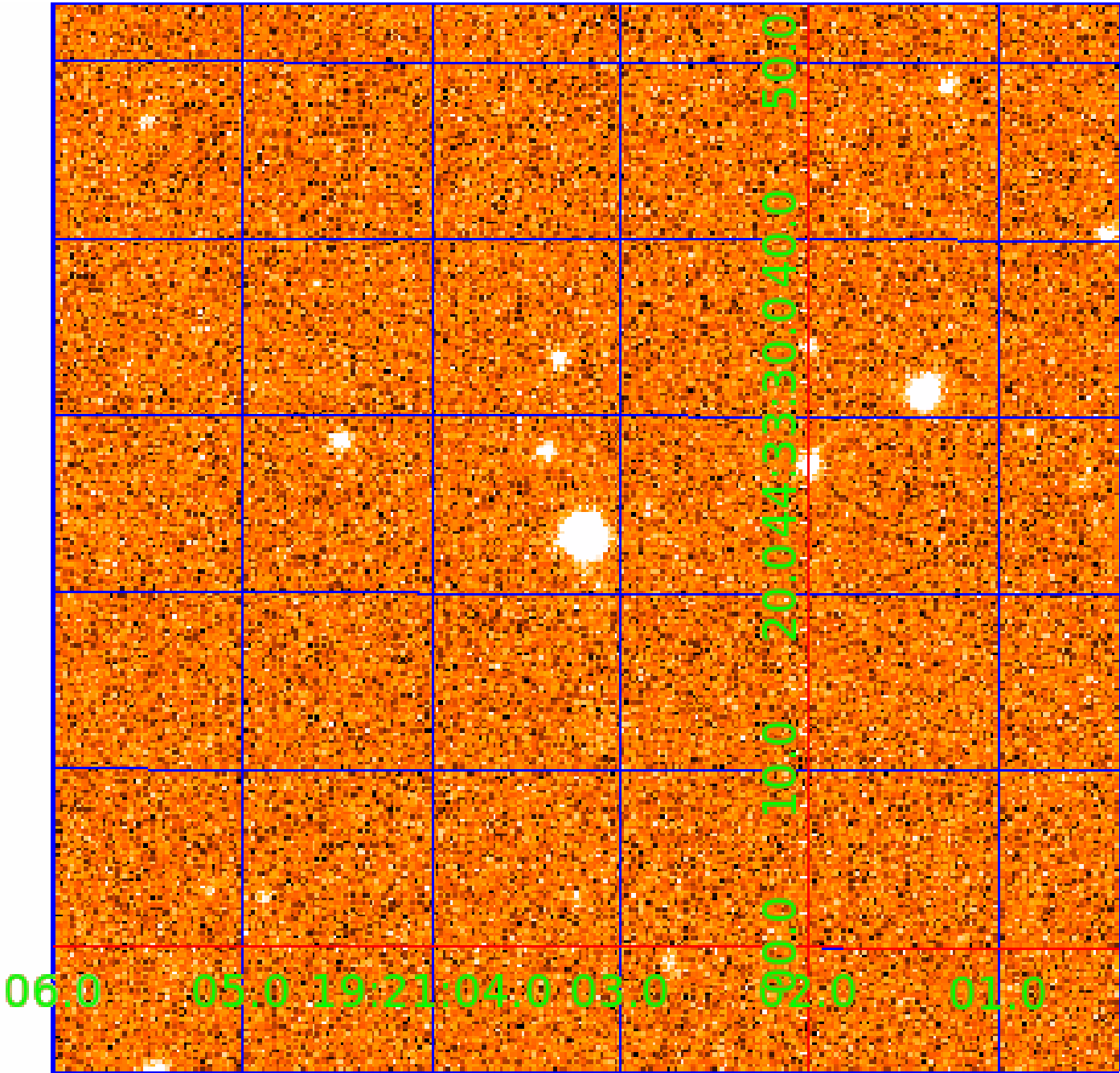


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008490993

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})
008490993-01	OBS	0911.01	4.093608	134.163266	535.8	2.573	31.4	34.6	1.00	6077	2.77	462.62
008490993-02	OBS	0911.02	105.146756	178.363741	687.0	8.393	10.9	11.3	1.00	6077	3.42	6.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008490993-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008490993-02	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 008490993-02

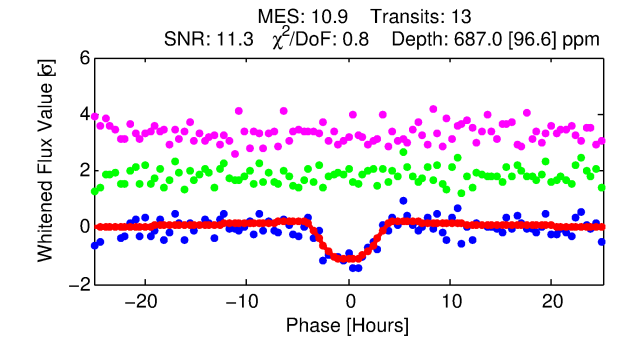
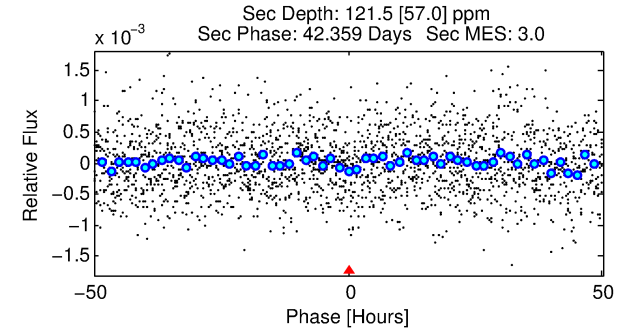
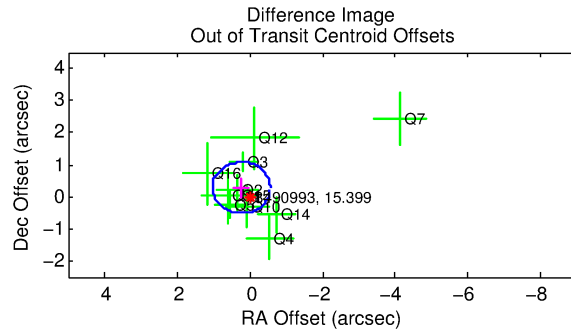
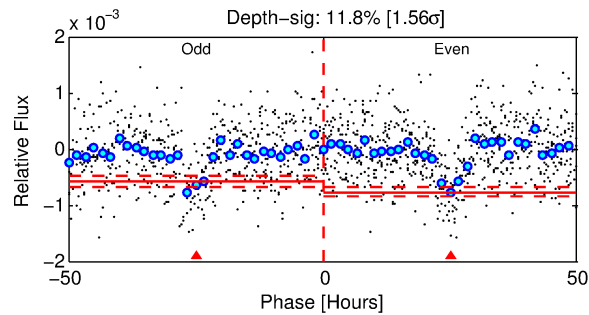
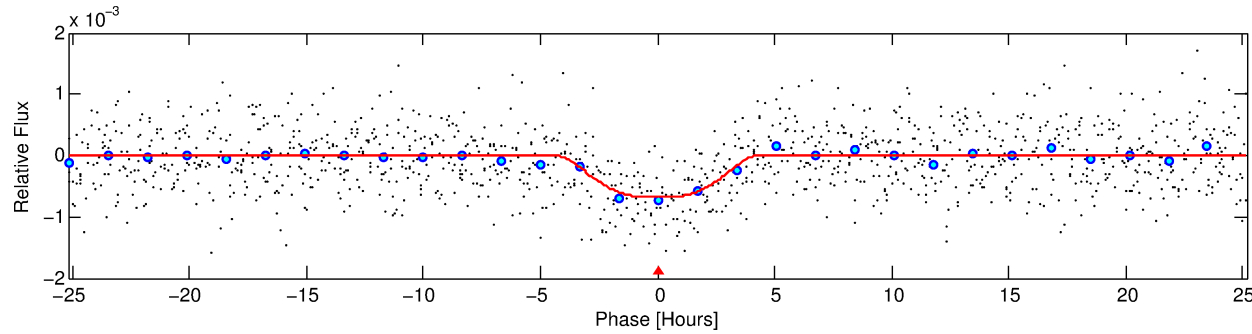
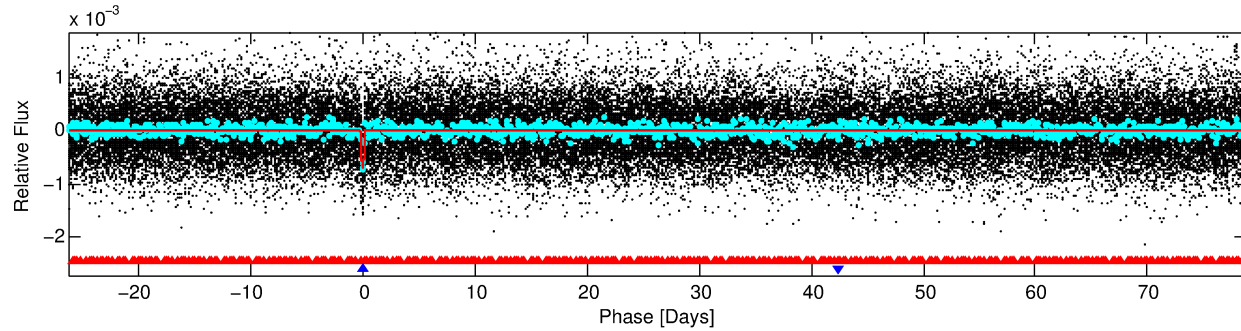
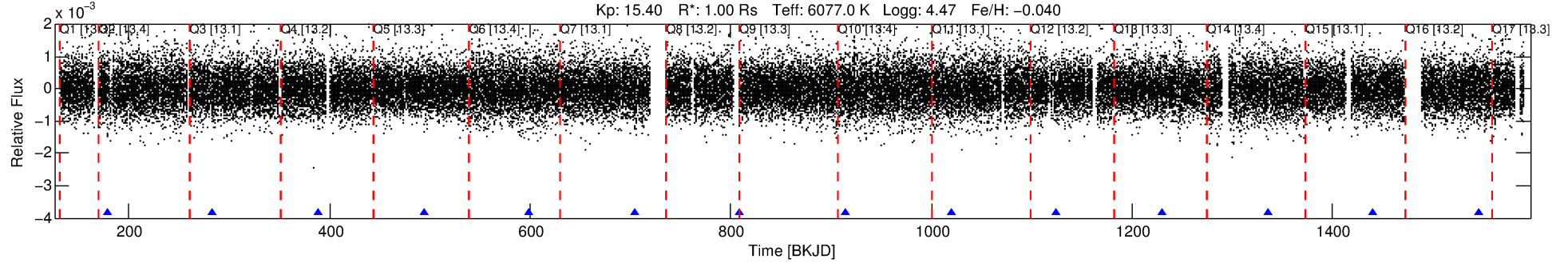
No Significant Match Found

DV One-Page Summary

KIC: 8490993 Candidate: 2 of 2 Period: 105.147 d

KOI: K00911.02 Corr: 0.929

Kp: 15.40 R*: 1.00 Rs Teff: 6077.0 K Logg: 4.47 Fe/H: -0.040



DV Fit Results:

Period = 105.14676 [0.00197] d
Epoch = 178.3637 [0.0145] BKJD
Rp/R* = 0.0314 [0.0033]
a/R* = 34.36 [5.69]
b = 0.97 [0.01]
Seff = 6.10 [2.21]
Teq = 401 [36] K
Rp = 3.42 [1.02] Re
a = 0.4470 [0.1039] AU
Ag = 1140.47 [698.64] [1.63σ]
Teffp = 3601 [480] K [6.65σ]

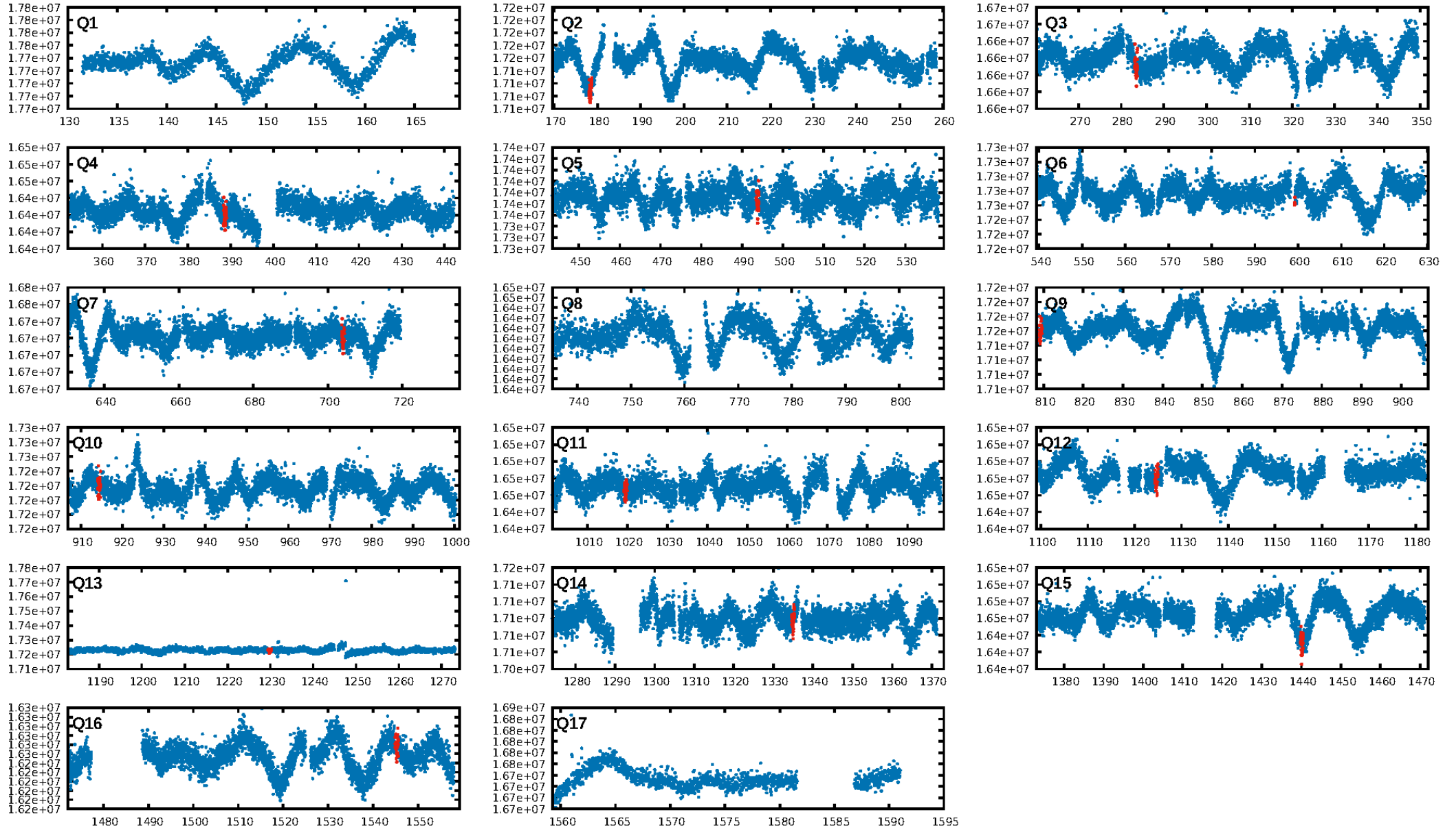
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [276.28σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 68.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 9.78e-23
RollingBand-fgt: 1.00 [13/13]
GhostDiagnostic-chr: 1.319
Centroid-sig: 0.9%
Centroid-so: 2.031 arcsec [1.90σ]
OotOffset-rm: 0.367 arcsec [1.38σ]
KicOffset-rm: 0.285 arcsec [1.08σ]
OotOffset-st: 3/4/3/1 [11]
KicOffset-st: 3/4/3/1 [11]
DiffImageQuality-fgm: 0.73 [8/11]
DiffImageOverlap-fno: 0.67 [8/12]

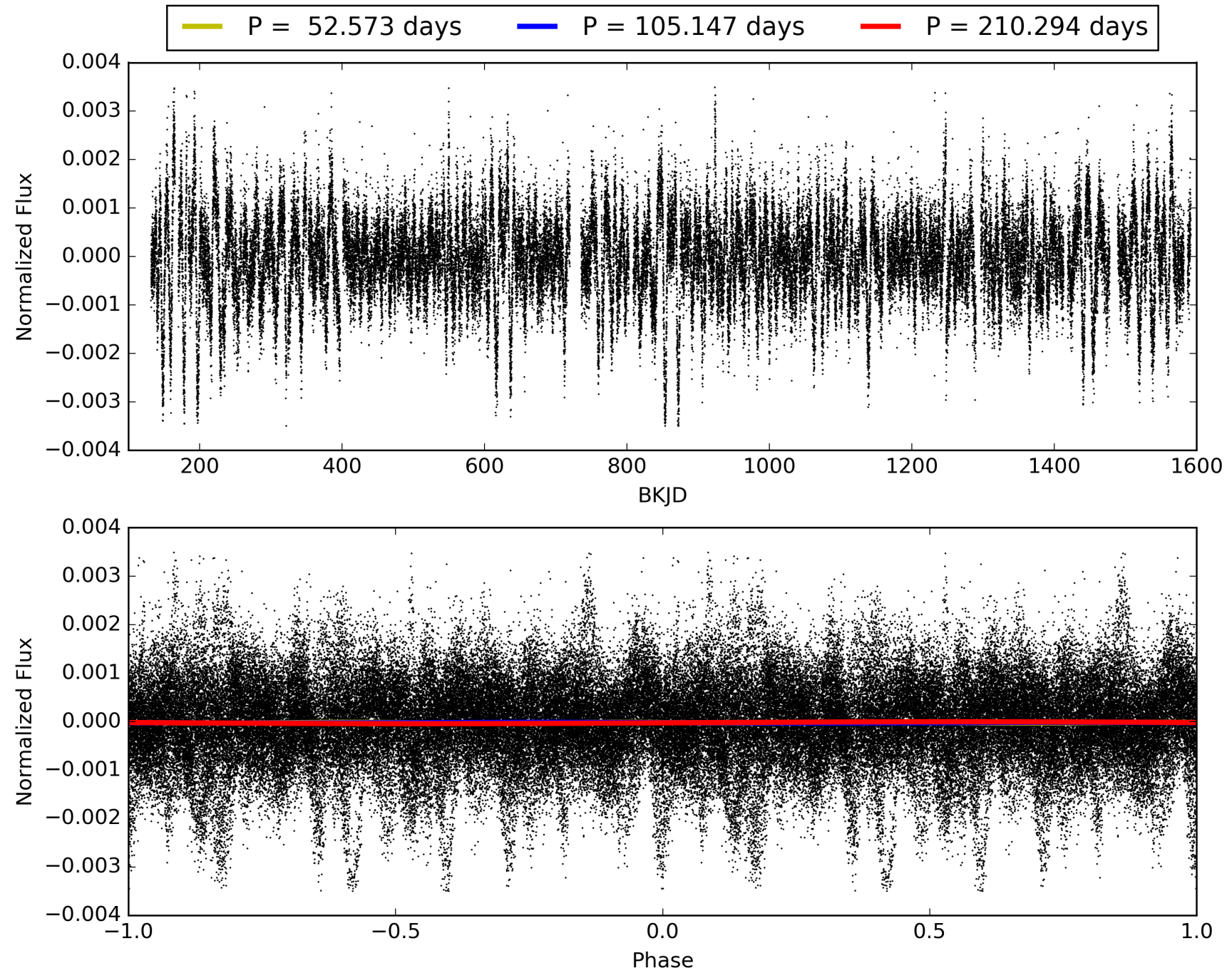
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:25:06 Z

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

TCE 008490993-02, PDC Light Curves

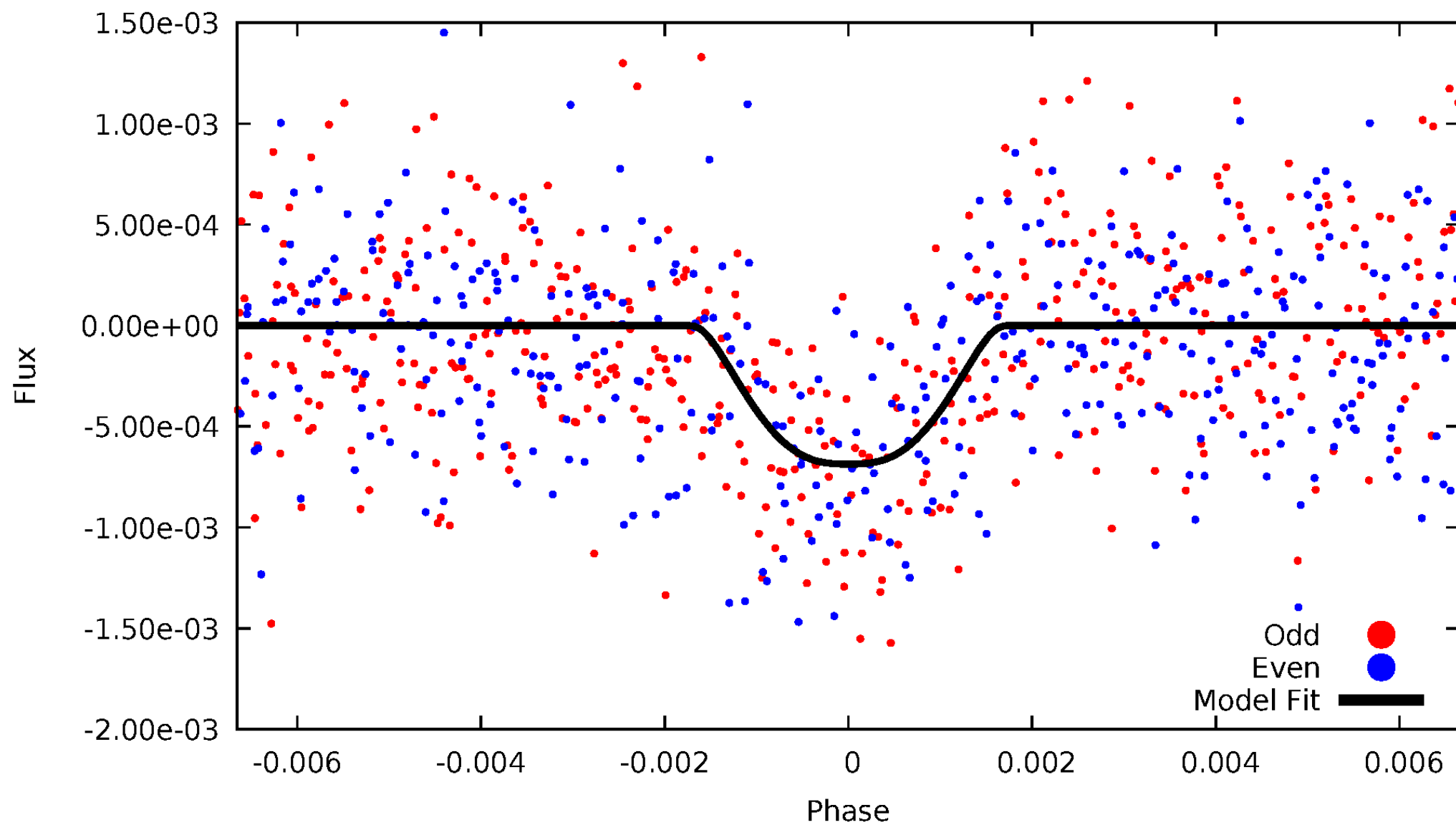


TCE 008490993-02



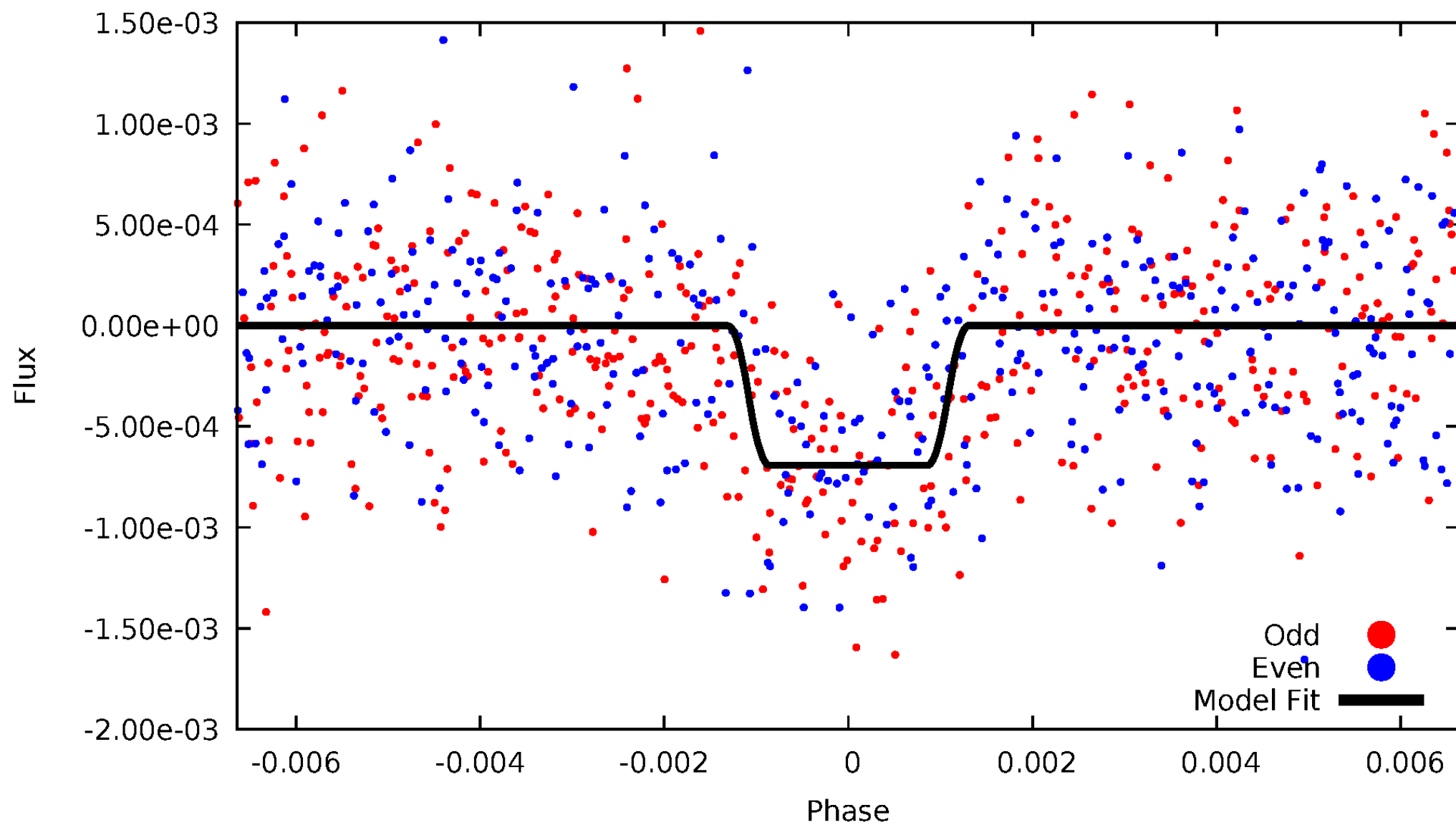
DV Odd/Even

TCE 008490993-02



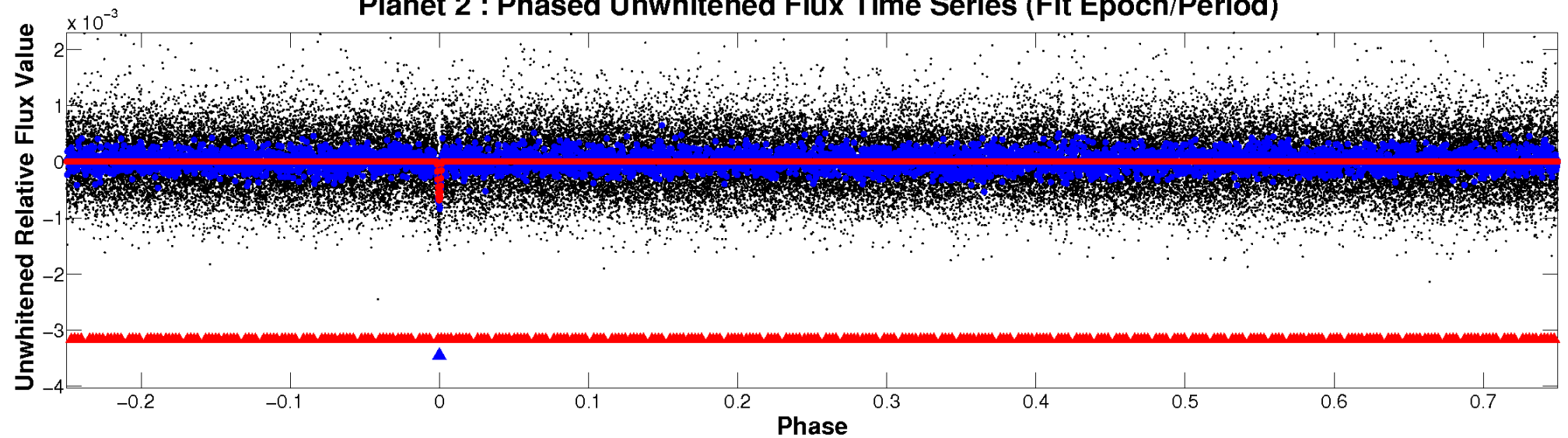
ALT Odd/Even

TCE 008490993-02

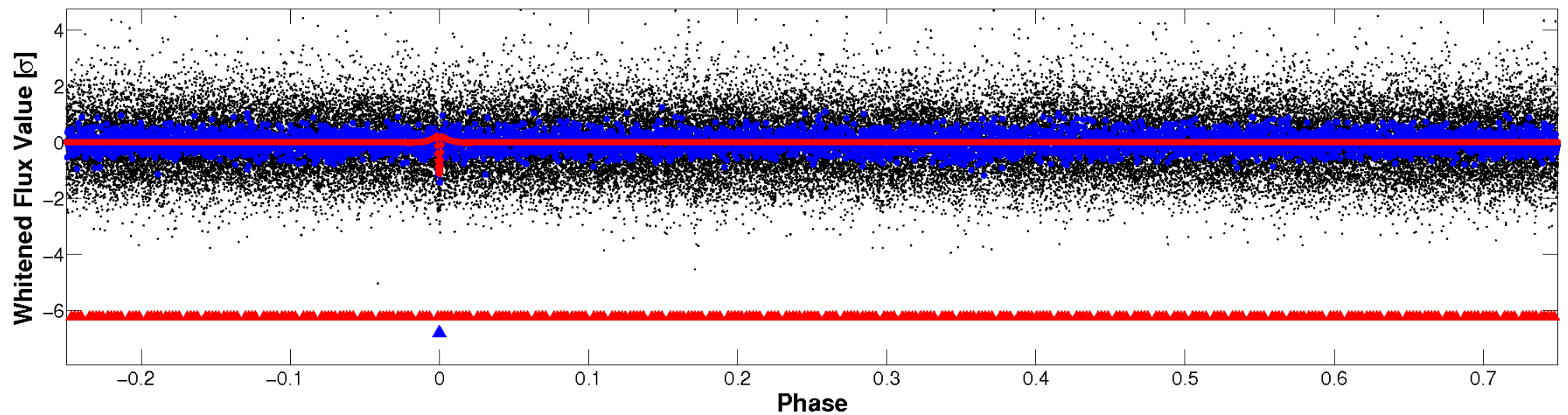


Non-Whitened Vs. Whitened Light Curve

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

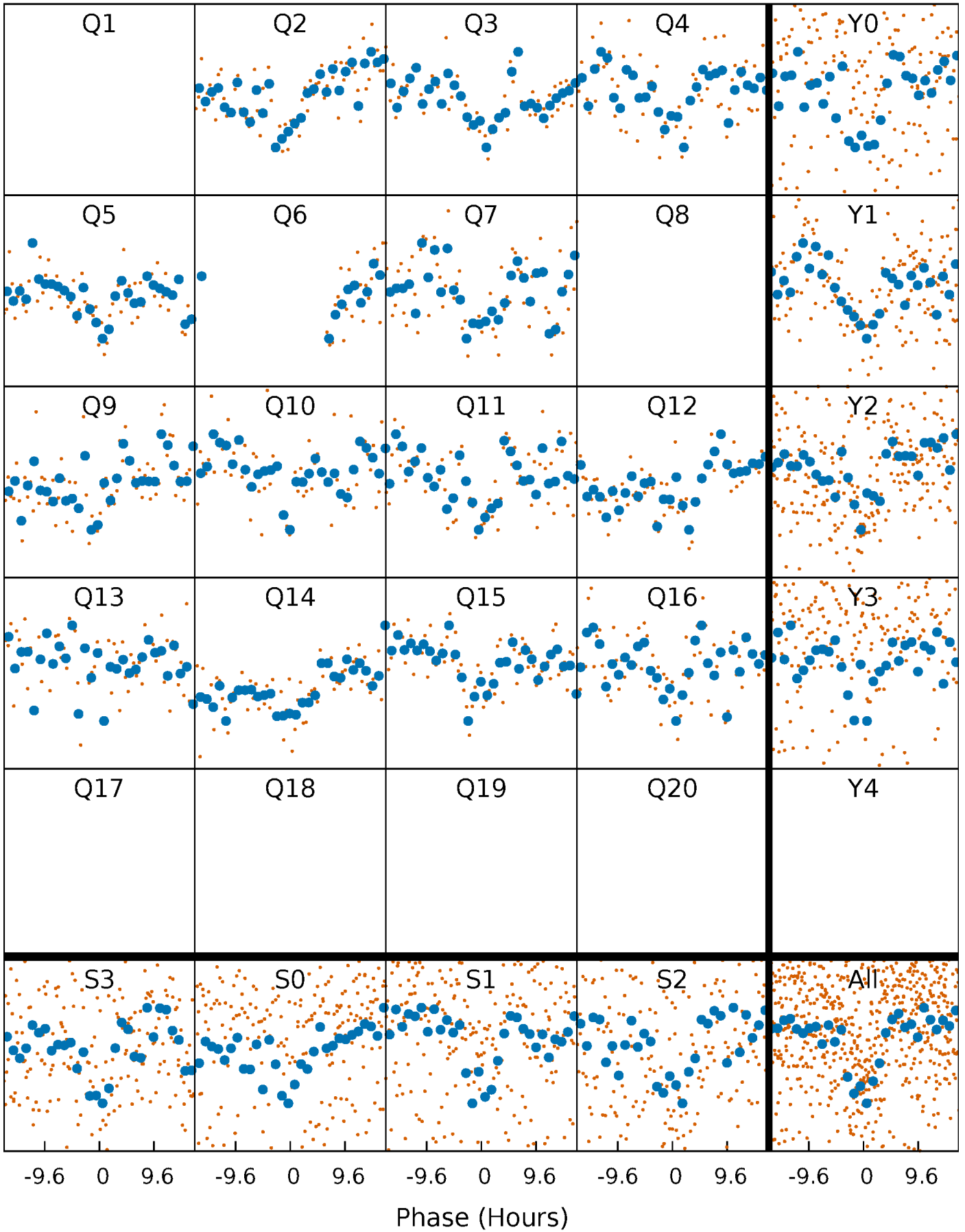


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



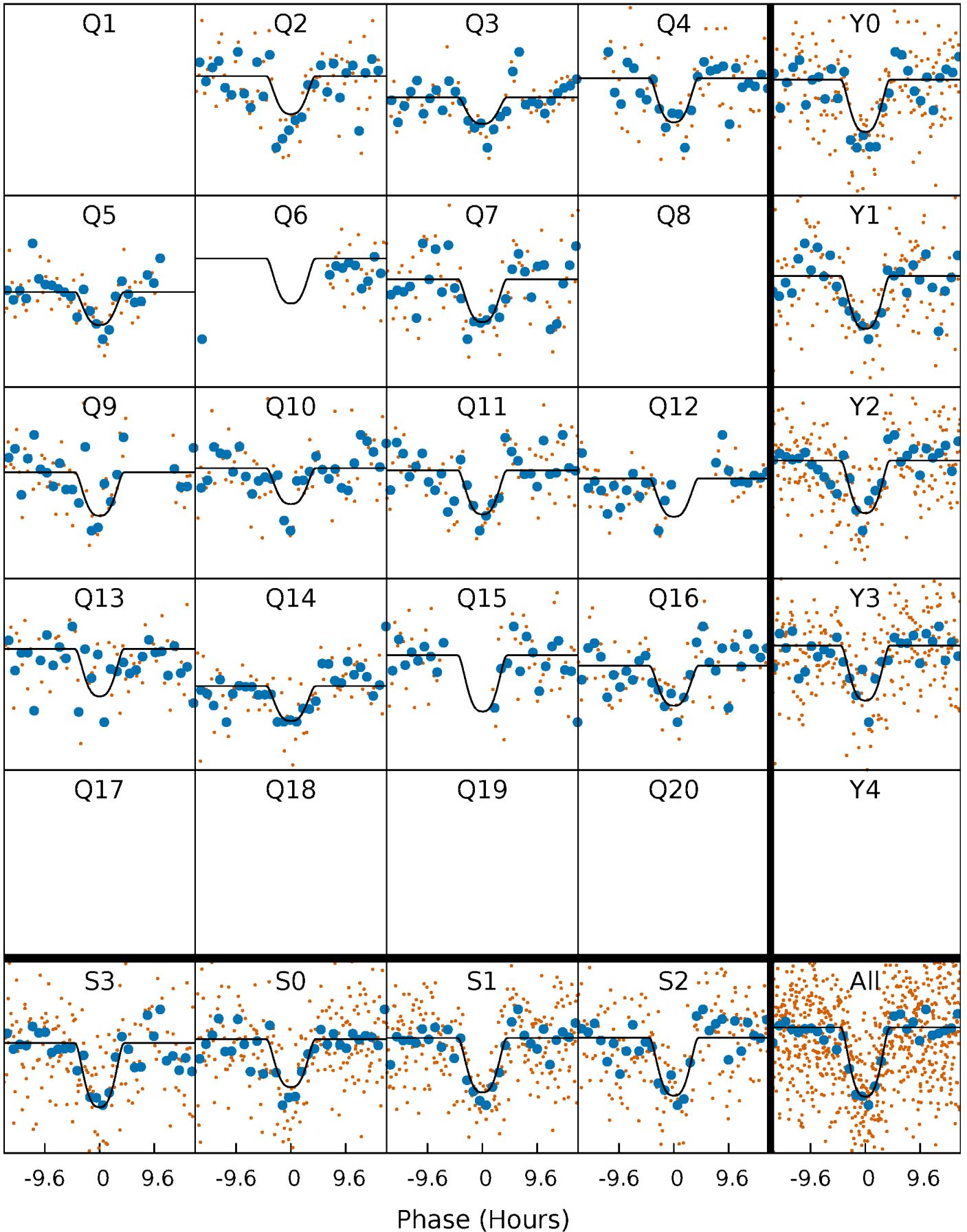
PDC Quarter-Phased Transit Curves

TCE 008490993-02 $P=105.146756$ Days $T_0=178.363741$ (BKJD)



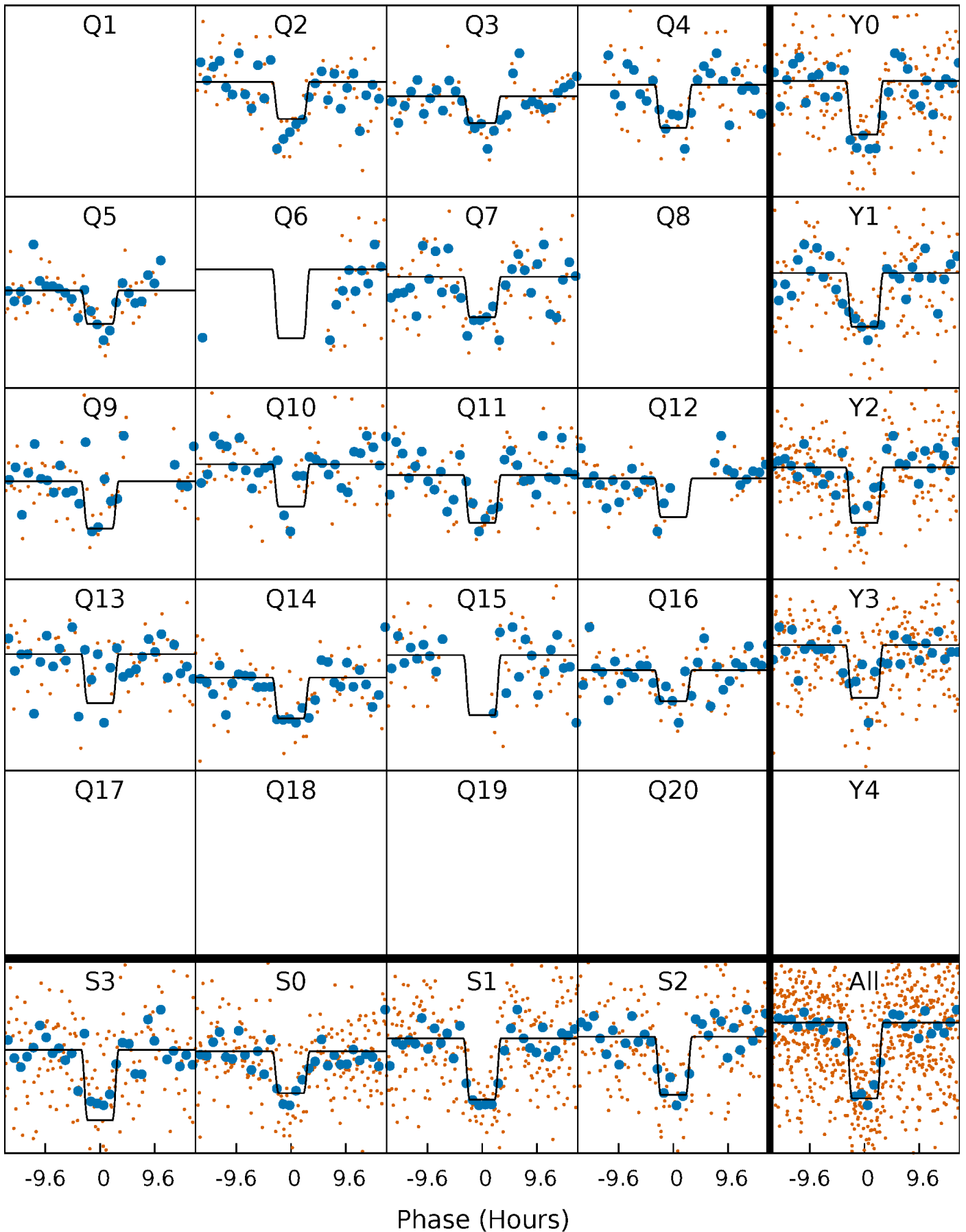
DV Quarter-Phased Transit Curves

TCE 008490993-02 P=105.146756 Days $T_0=178.363741$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

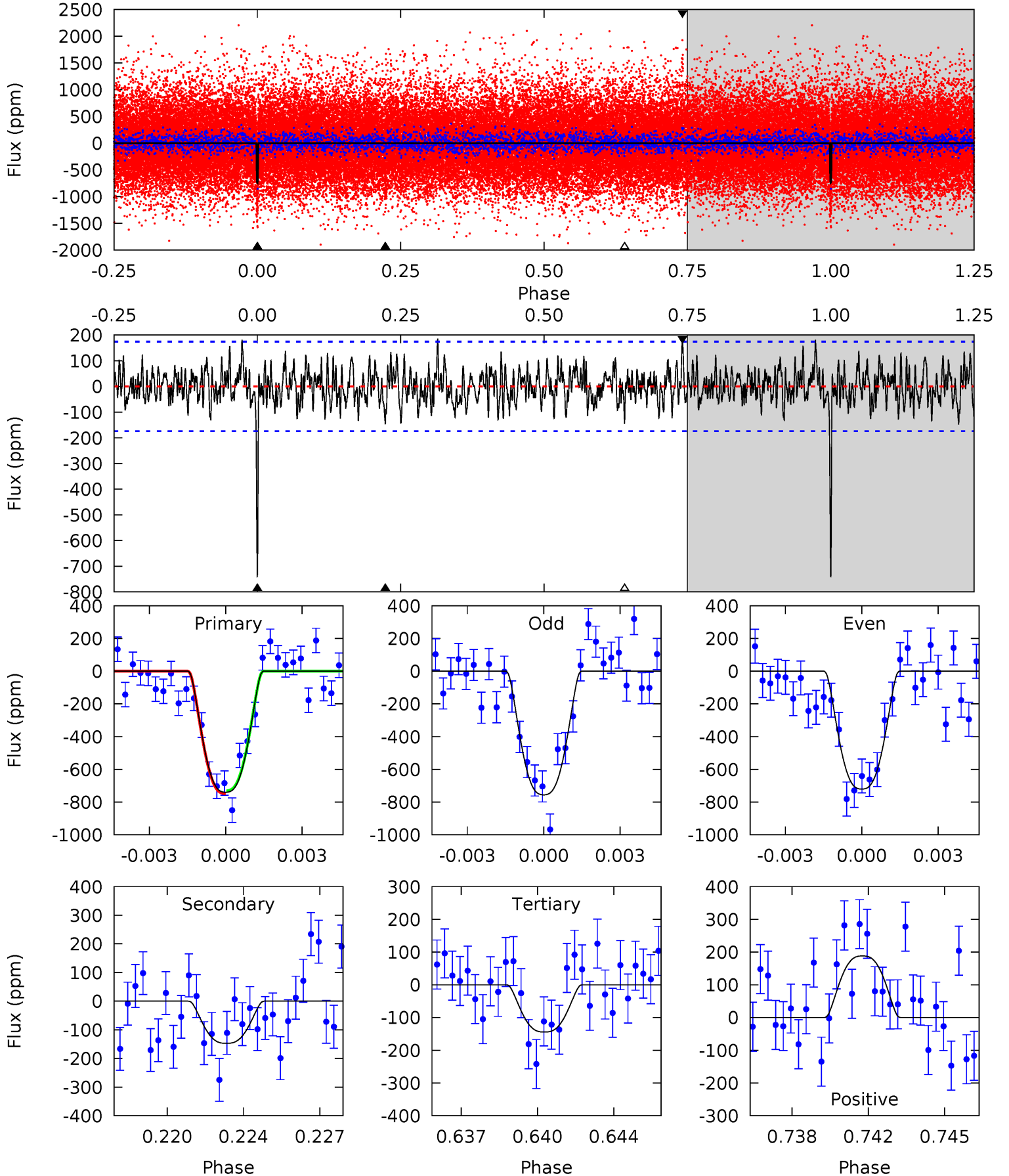
TCE 008490993-02 P=105.147715 Days $T_0=178.357816$ (BKJD)



DV Model-Shift Uniqueness Test

008490993-02, P = 105.146756 Days, E = 73.216985 Days

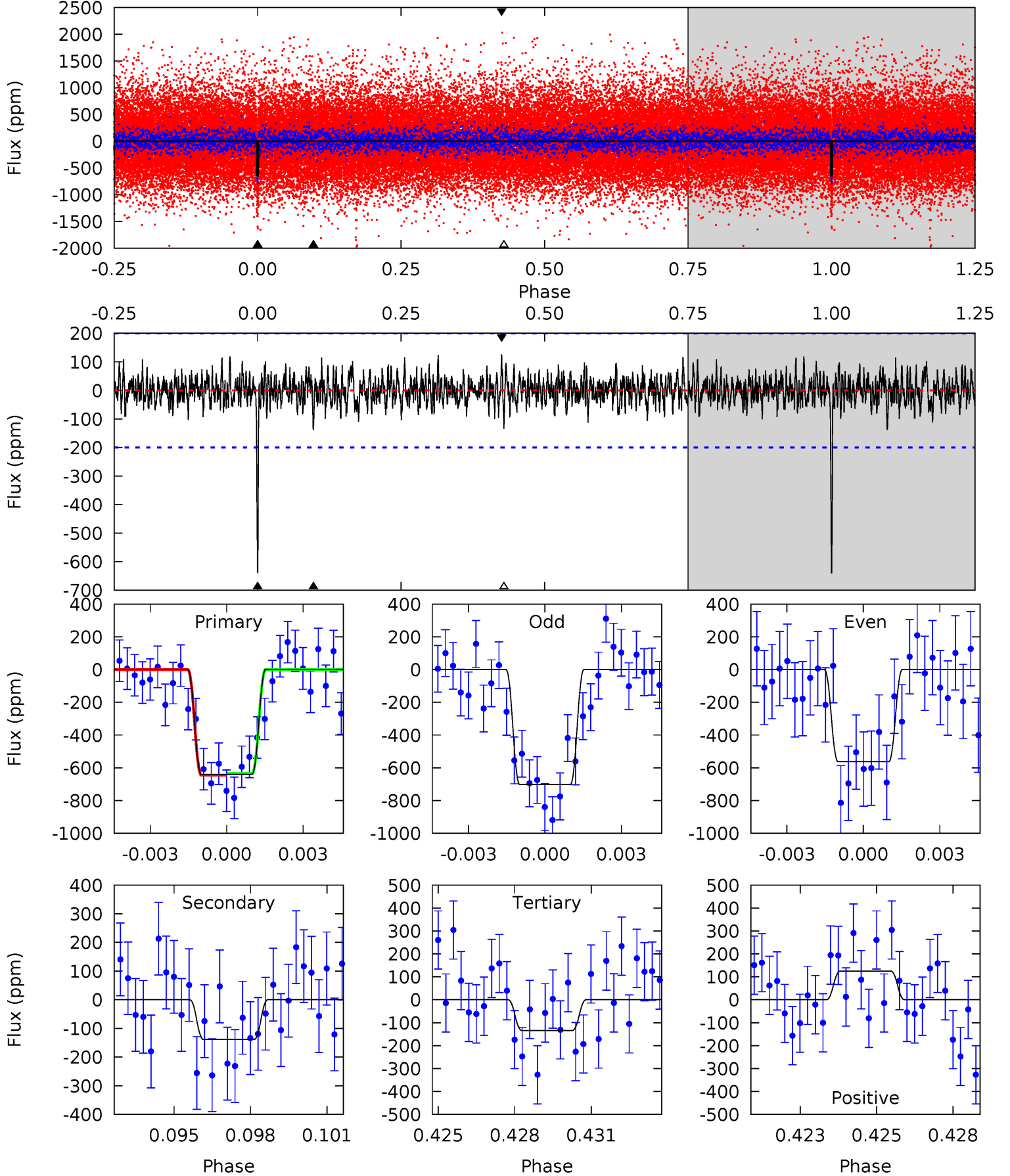
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.2	4.41	4.33	5.64	5.22	2.92	1.63	17.9	16.6	0.09	-1.23	0.53	1.02	0.20	0.25



Alt Model-Shift Uniqueness Test

008490993-02, $P = 105.147715$ Days, $E = 73.210101$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.9	3.67	3.55	3.31	5.28	3.01	1.02	13.4	13.6	0.12	0.36	1.83	1.00	0.16	0.15



Stellar Parameters For KIC 008490993

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6077^{+162}_{-217}	$4.471^{+0.060}_{-0.180}$	$-0.040^{+0.250}_{-0.350}$	$0.999^{+0.280}_{-0.120}$	$1.077^{+0.126}_{-0.153}$	$1.519^{+0.384}_{-0.747}$
	+3%/-4%	+1%/-4%	+625%/-875%	+28%/-12%	+12%/-14%	+25%/-49%
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 008490993-02 / KOI 0911.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-147 ± 33	$3.56^{+0.60}_{-0.49}$	570^{+40}_{-30}	4052^{+255}_{-240}	1228^{+523}_{-391}
Alt.	-139 ± 38	$2.94^{+0.54}_{-0.43}$	568^{+37}_{-26}	4278^{+335}_{-284}	1687^{+801}_{-610}

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 $A_{obs} \gg 1.0$

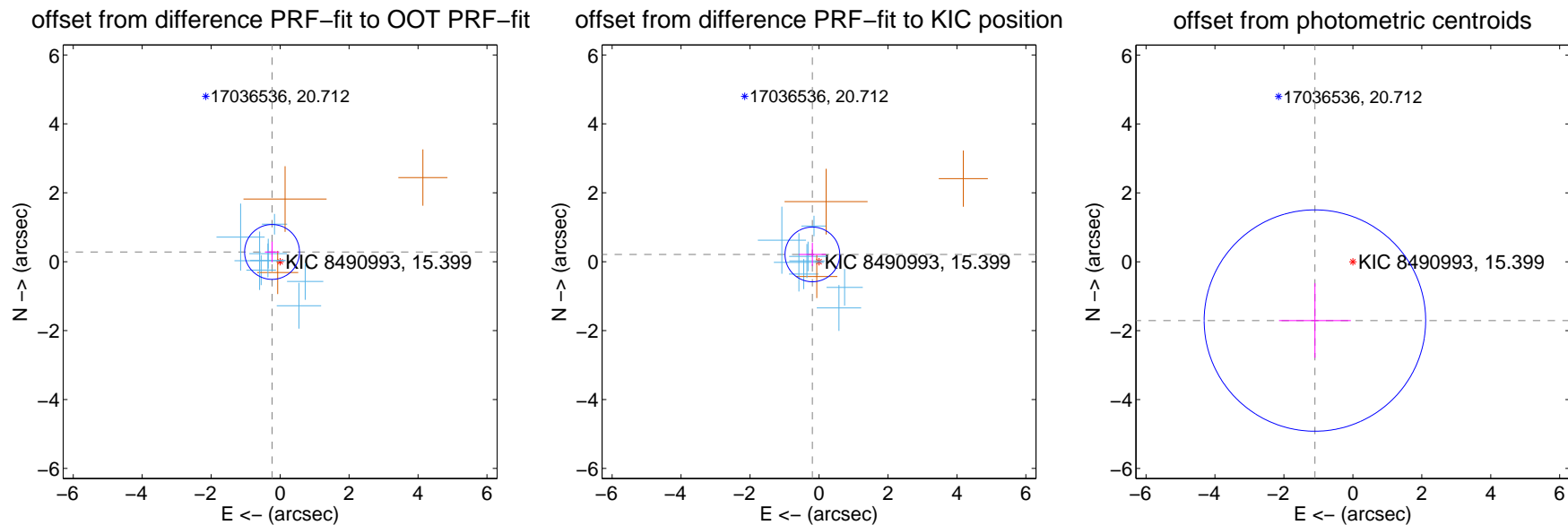
DV Centroid Data

Supplemental centroid analysis for 008490993-02. Kepler magnitude: 15.40. Transit SNR 11.30

There are 8 quarters with good PRF difference image offsets

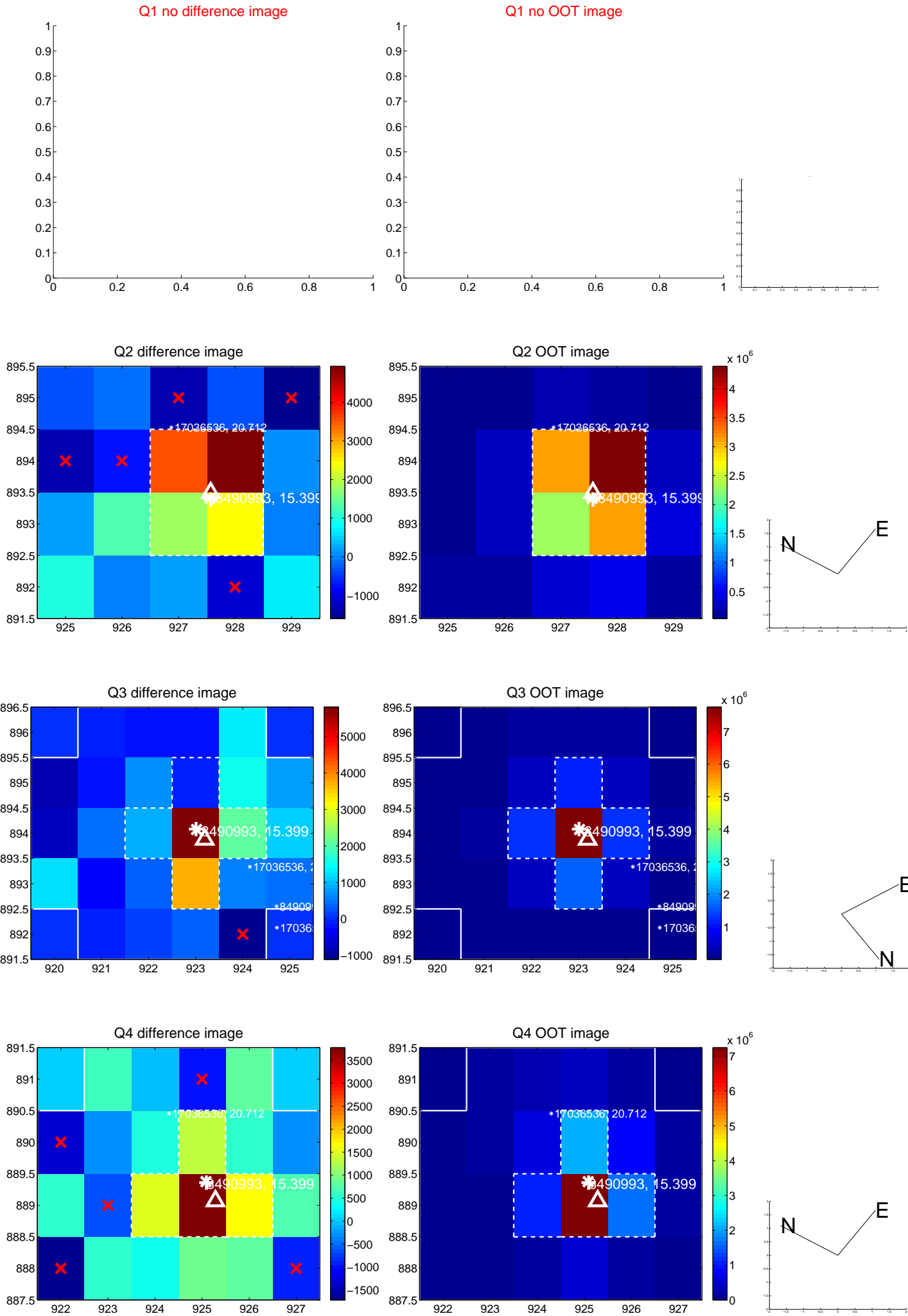
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.367 ± 0.265	1.38	0.233 ± 0.207	0.283 ± 0.299
PRF-fit source offset from KIC position	0.285 ± 0.265	1.08	0.192 ± 0.390	0.211 ± 0.335
photometric centroid source offset	2.03 ± 1.07	1.90	1.10 ± 1.04	-1.71 ± 1.08

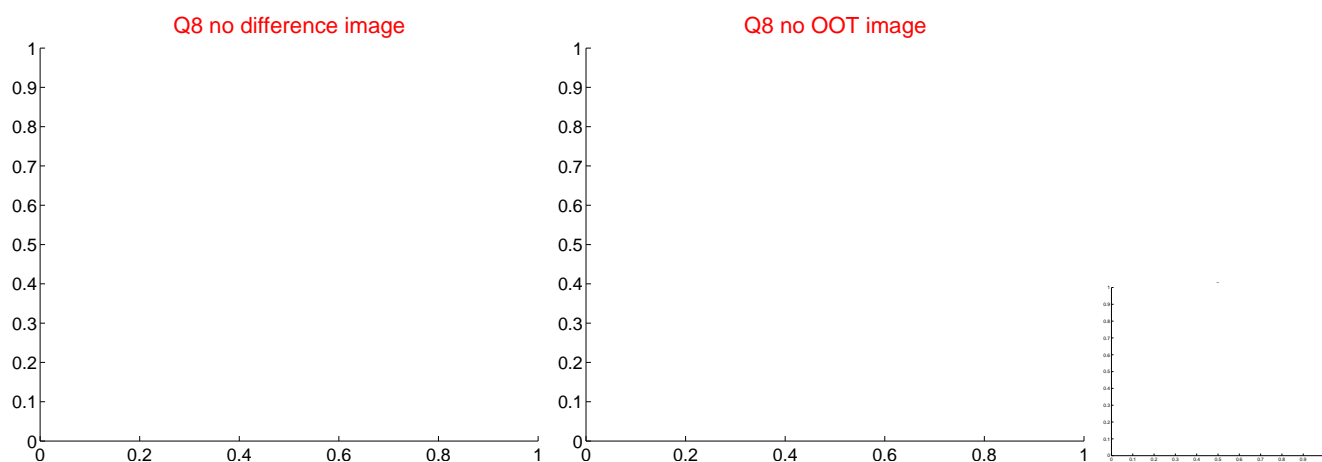
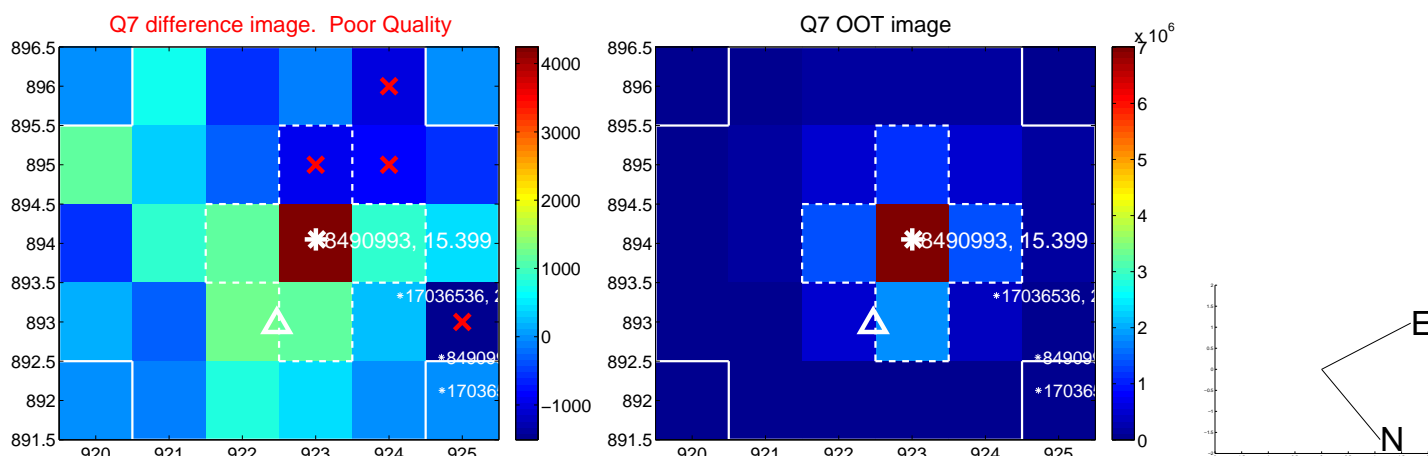
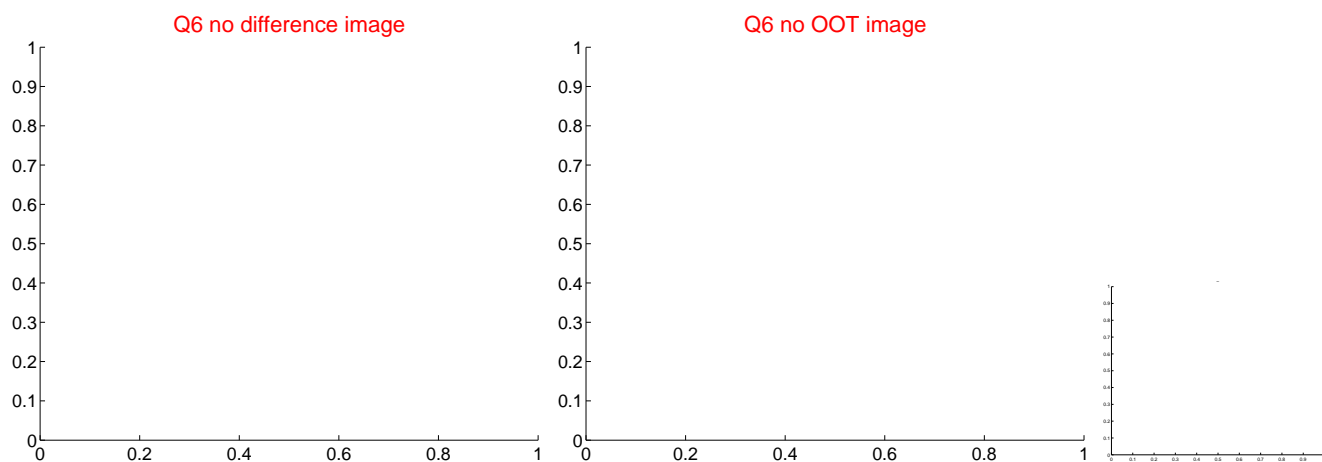
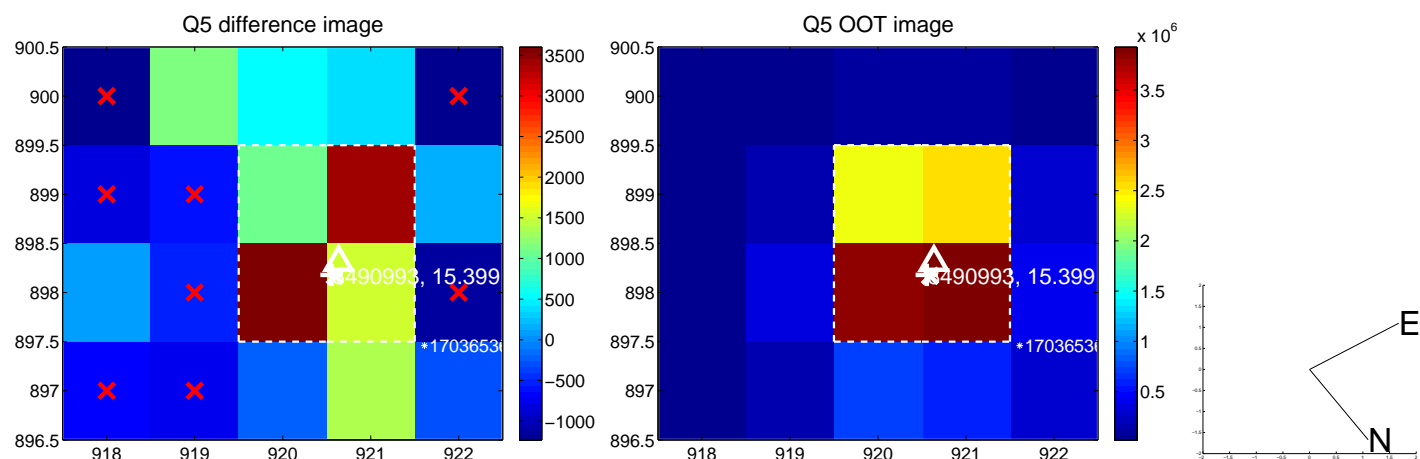


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

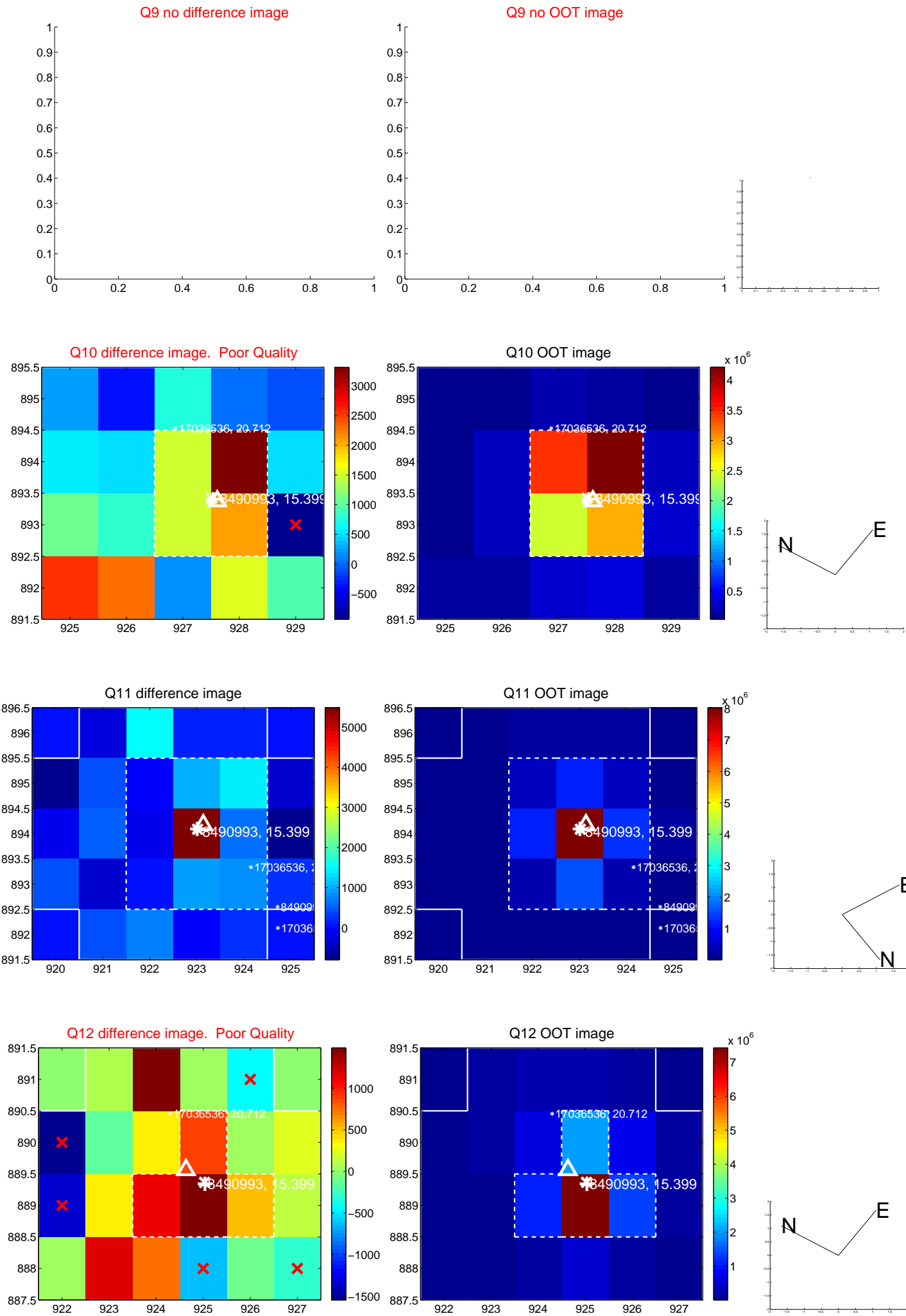
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



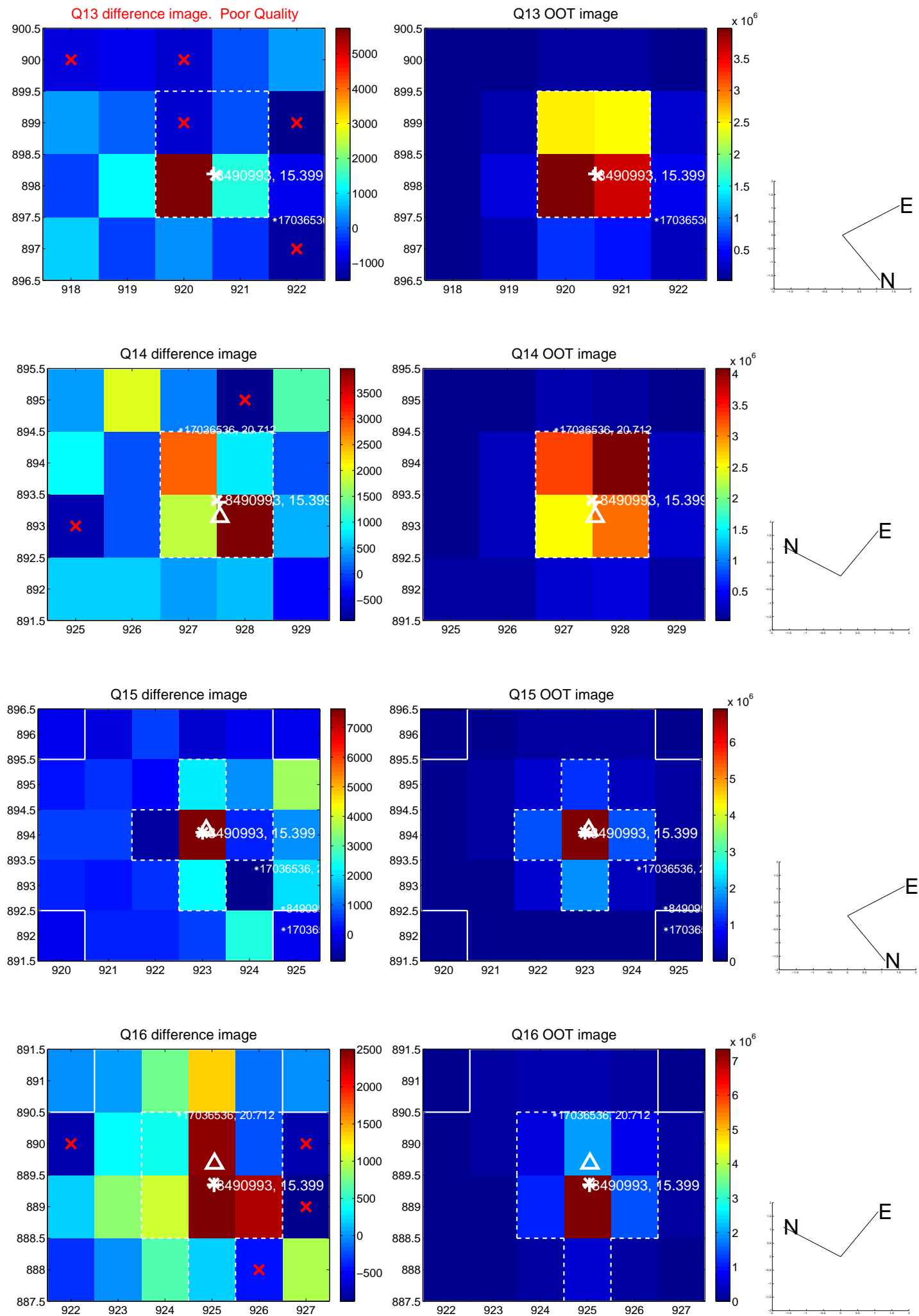
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



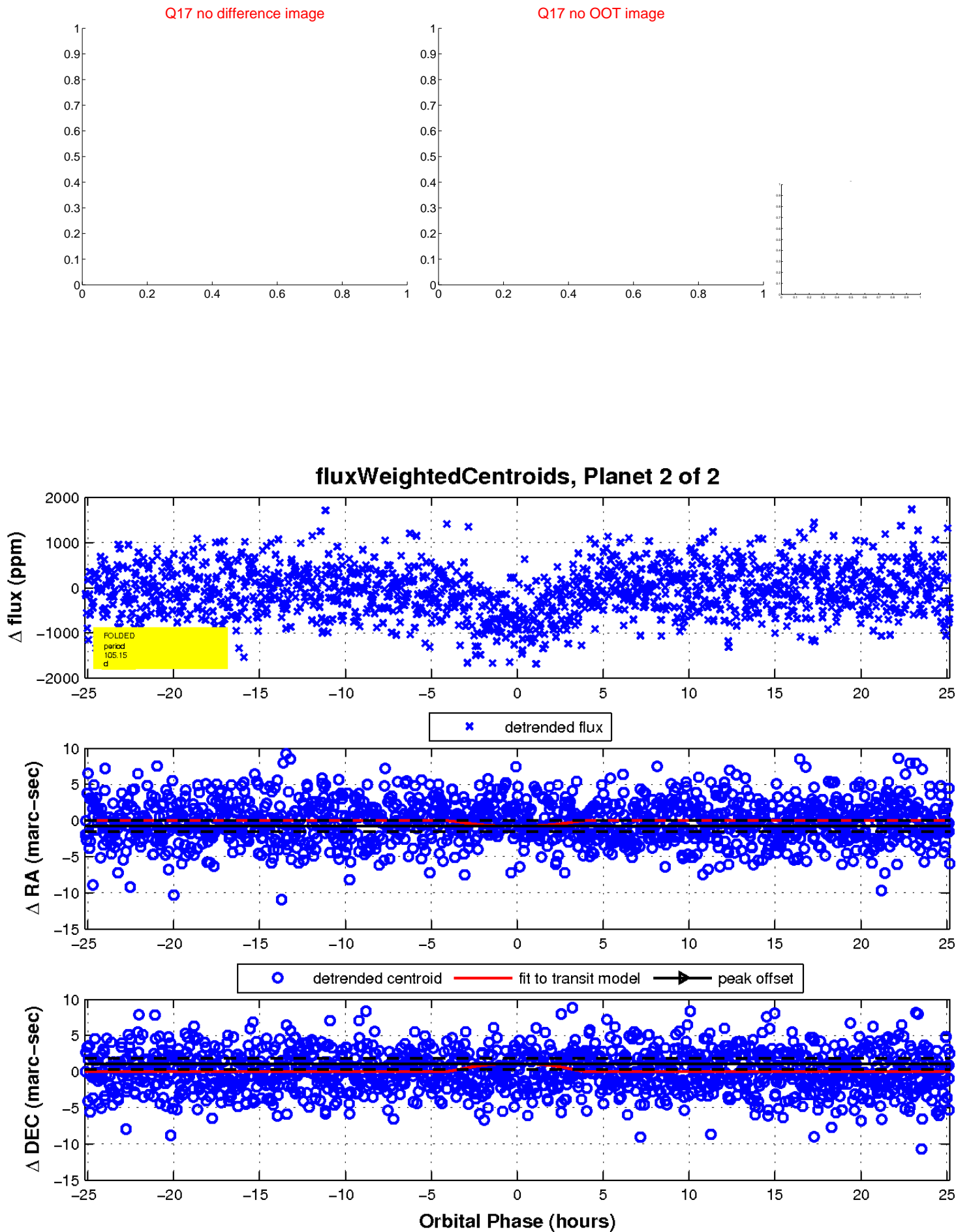
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

