

KIC 007890271

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})
007890271-01	OBS	No	8.851469	136.960974	27.1	18.893	7.6	6.5	1.19	6387	0.66	260.94
007890271-02	OBS	No	8.851730	134.973016	23.5	12.256	13.0	6.6	1.19	6387	0.64	260.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007890271-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
007890271-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_POS_ALT—SAME_NTL_PERIOD

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

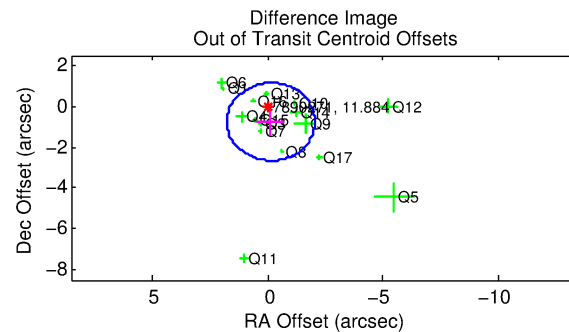
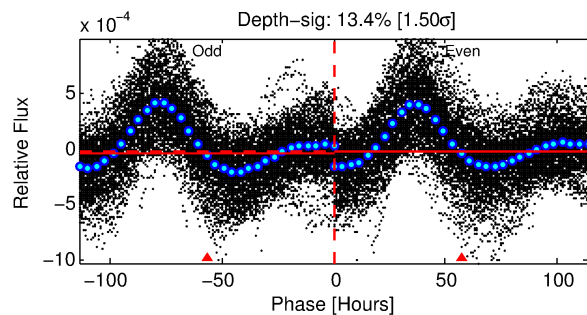
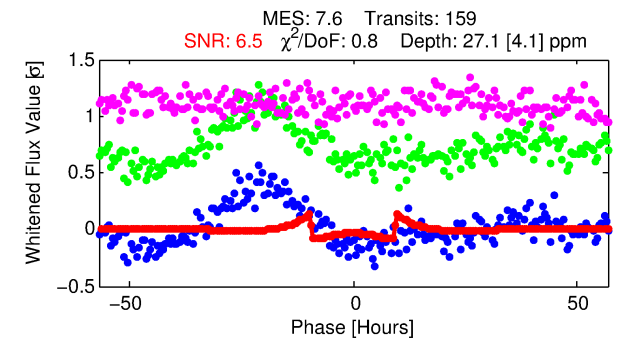
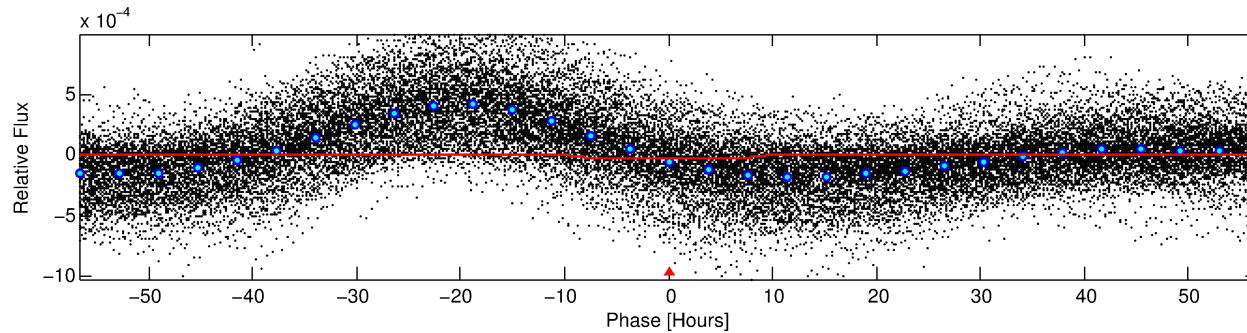
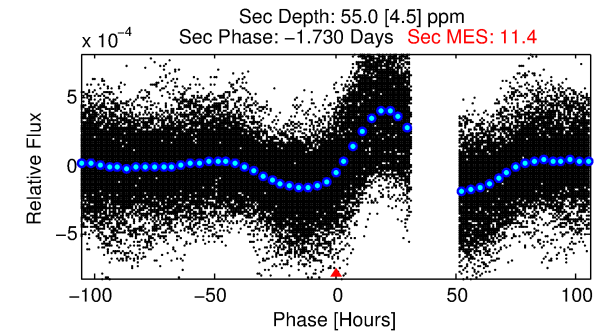
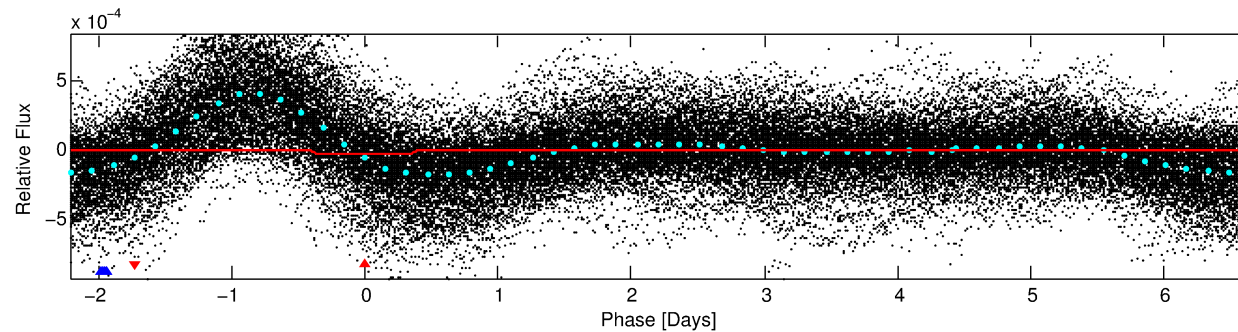
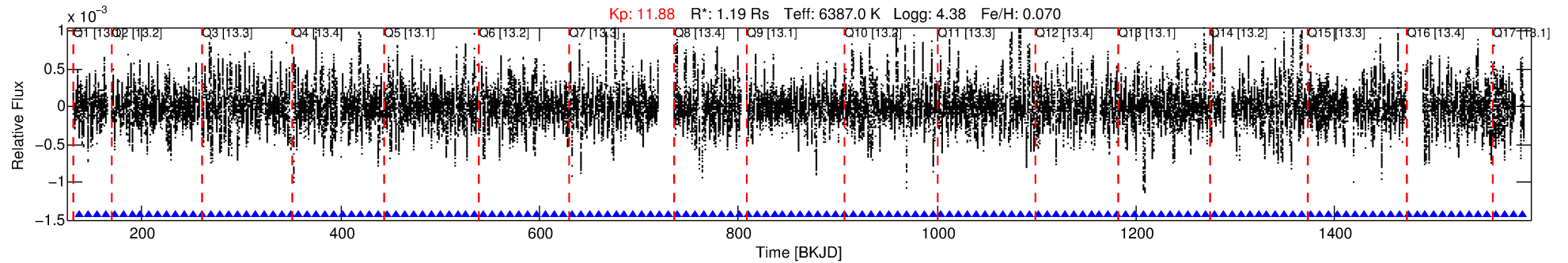
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007890271-01

No Significant Match Found

DV One-Page Summary

KIC: 7890271 Candidate: 1 of 2 Period: 8.851 d



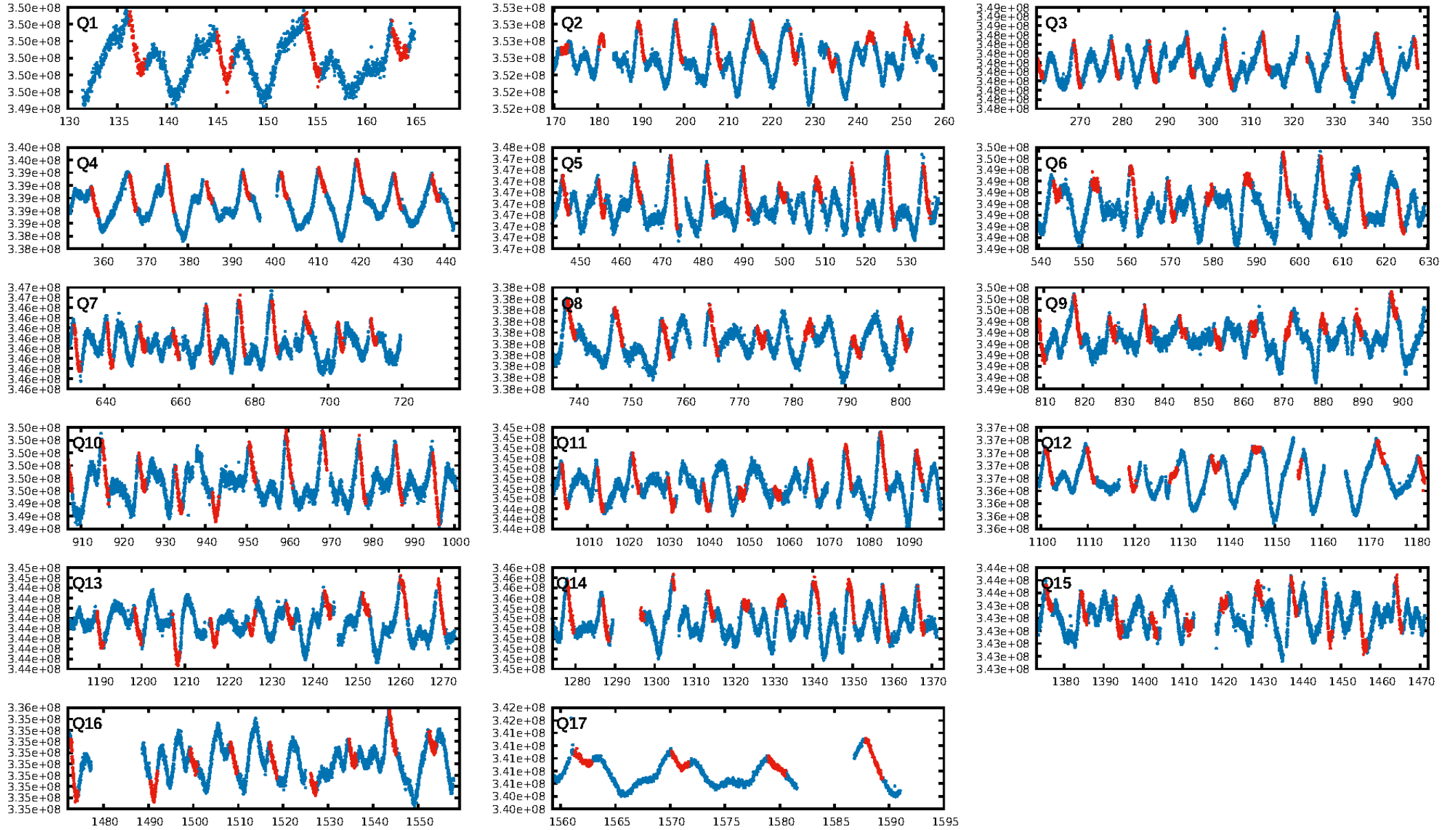
DV Fit Results:

Period = 8.85147 [0.00011] d
Epoch = 136.9610 [0.0101] BKJD
 $R_p/R^* = 0.0051$ [0.0008]
 $a/R^* = 2.67$ [1.70]
 $b = 0.71$ [0.51]
 $\text{Seff} = 260.94$ [118.32]
 $\text{Teq} = 1025$ [116] K
 $R_p = 0.66$ [0.26] R_e
 $a = 0.0896$ [0.0264] AU
 $\text{Ag} = 554.75$ [301.27] [1.84σ]
Teffp = 7690 [711] K [9.25σ]

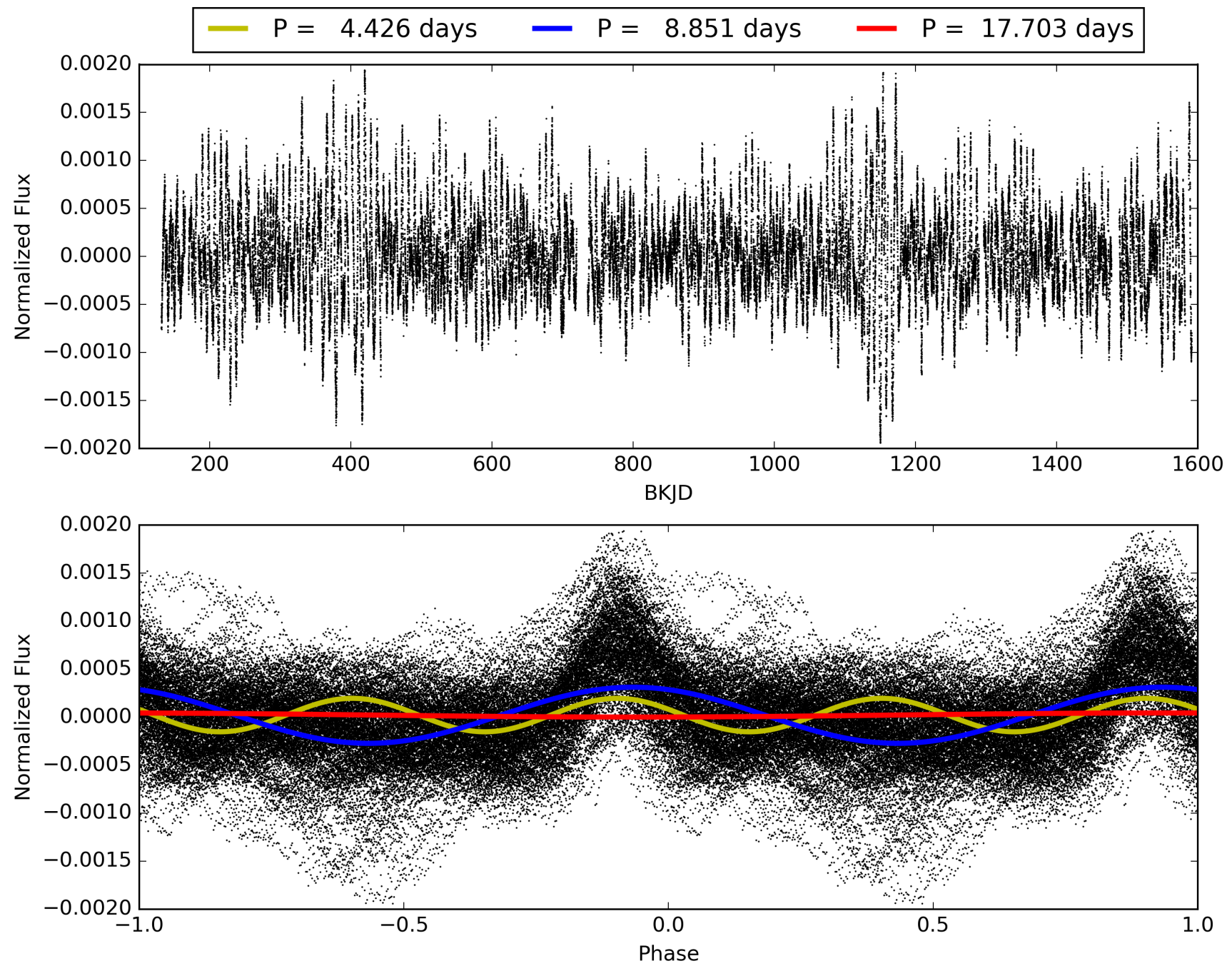
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.68e-12
RollingBand-fgt: 1.00 [151/151]
GhostDiagnostic-chr: 6.338
Centroid-sig: 31.2%
Centroid-so: 0.803 arcsec [1.11σ]
OotOffset-rm: 0.766 arcsec [1.21σ]
KicOffset-rm: 0.862 arcsec [1.61σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.69 [11/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 007890271-01, PDC Light Curves

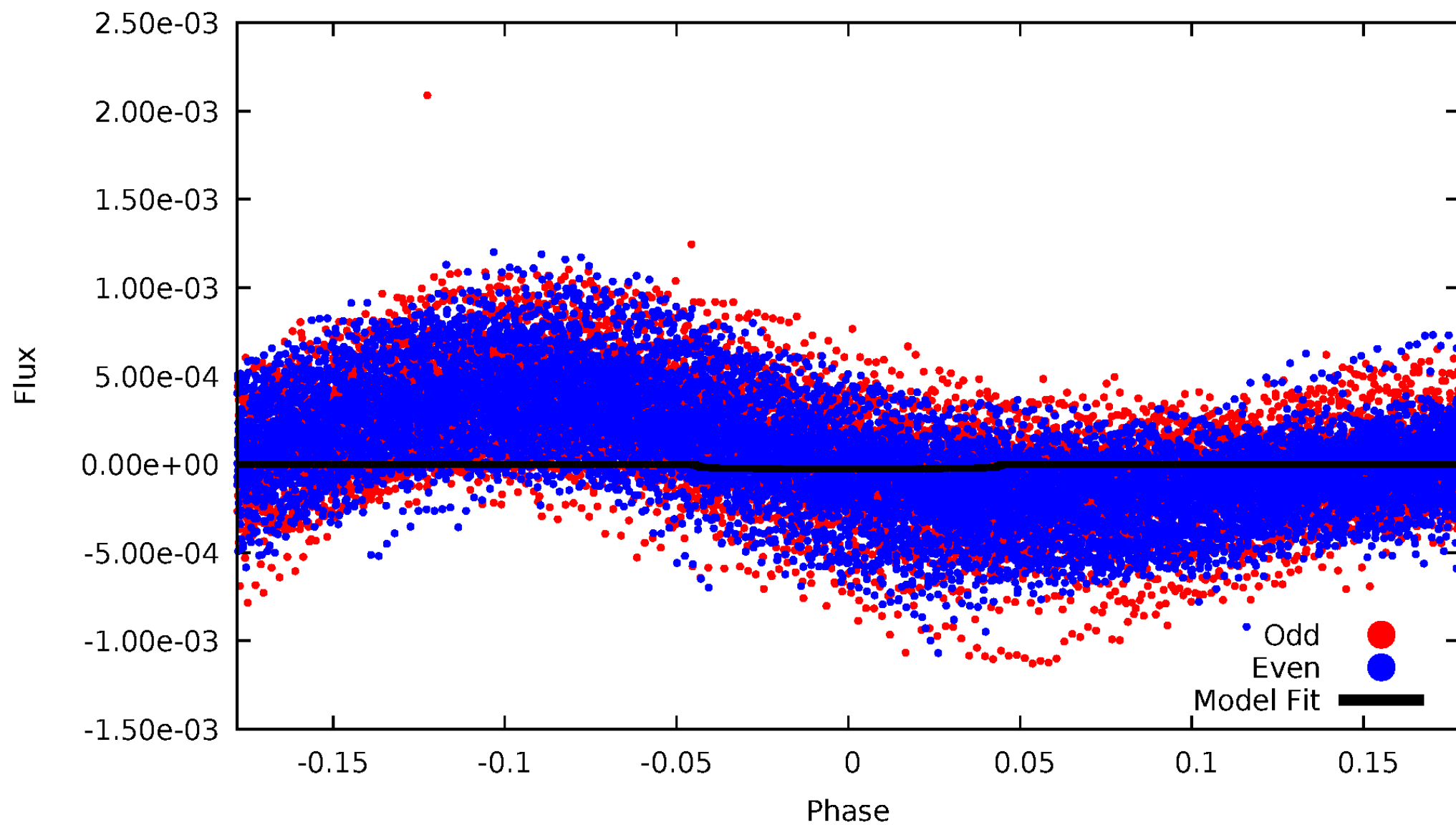


TCE 007890271-01



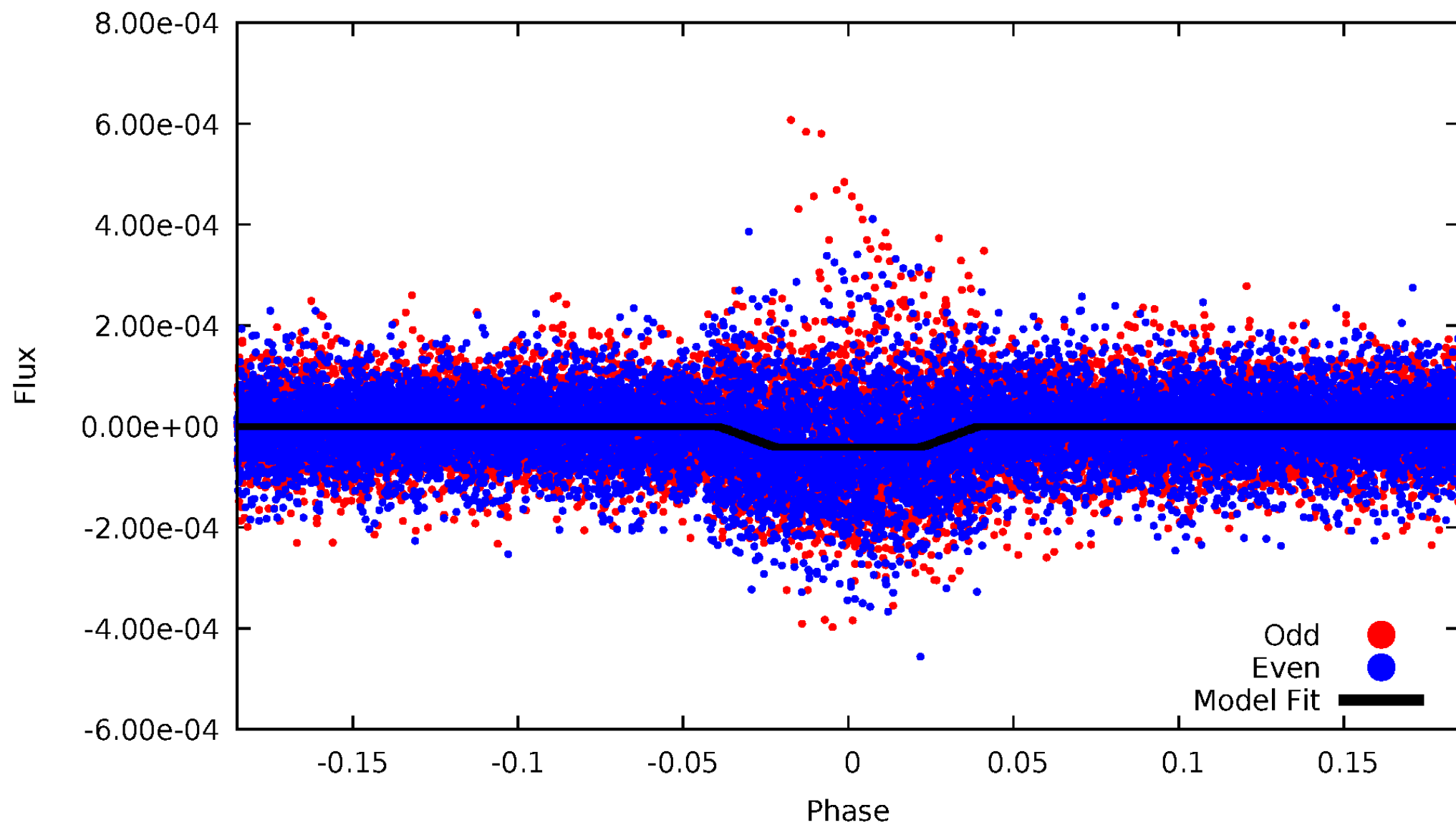
DV Odd/Even

TCE 007890271-01



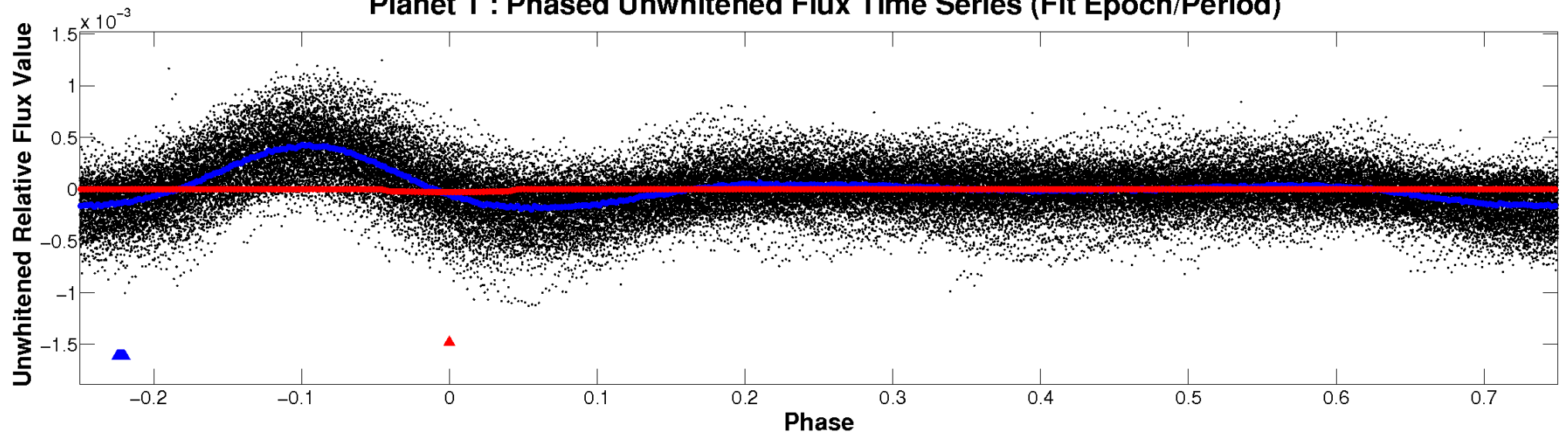
ALT Odd/Even

TCE 007890271-01

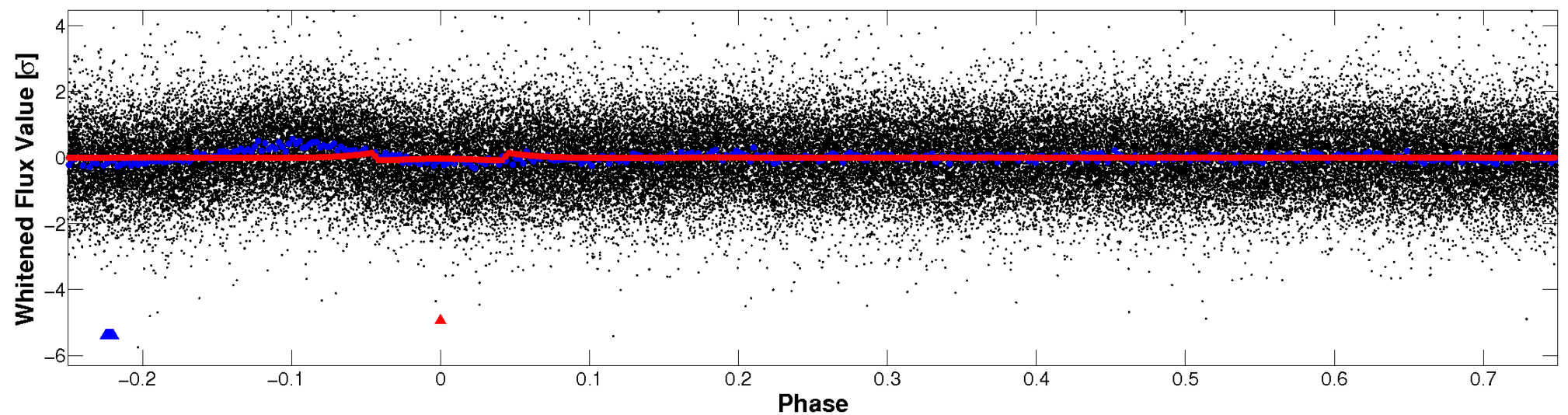


Non-Whitened Vs. Whitened Light Curve

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

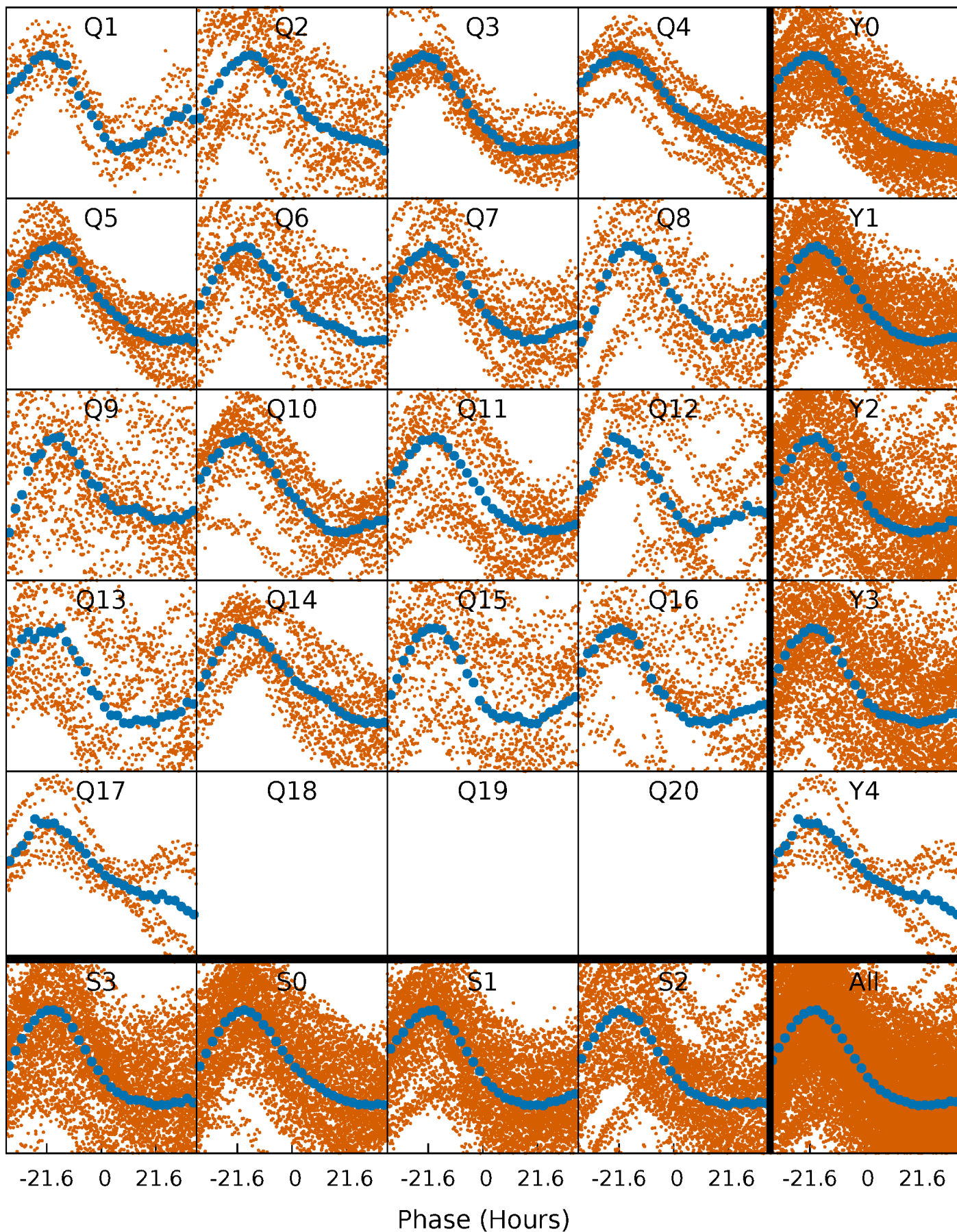


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



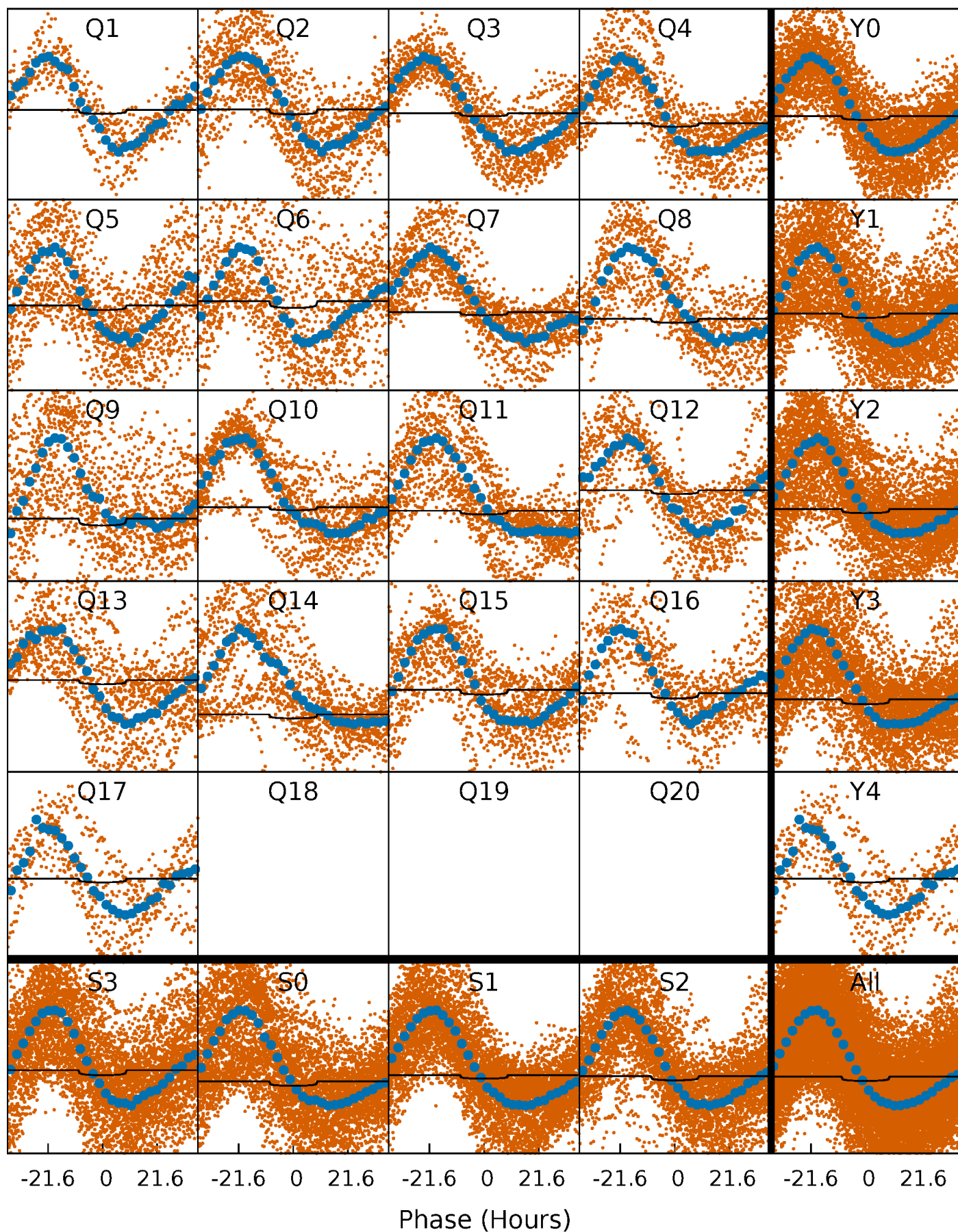
PDC Quarter-Phased Transit Curves

TCE 007890271-01 P= 8.851469 Days $T_0=136.960974$ (BKJD)



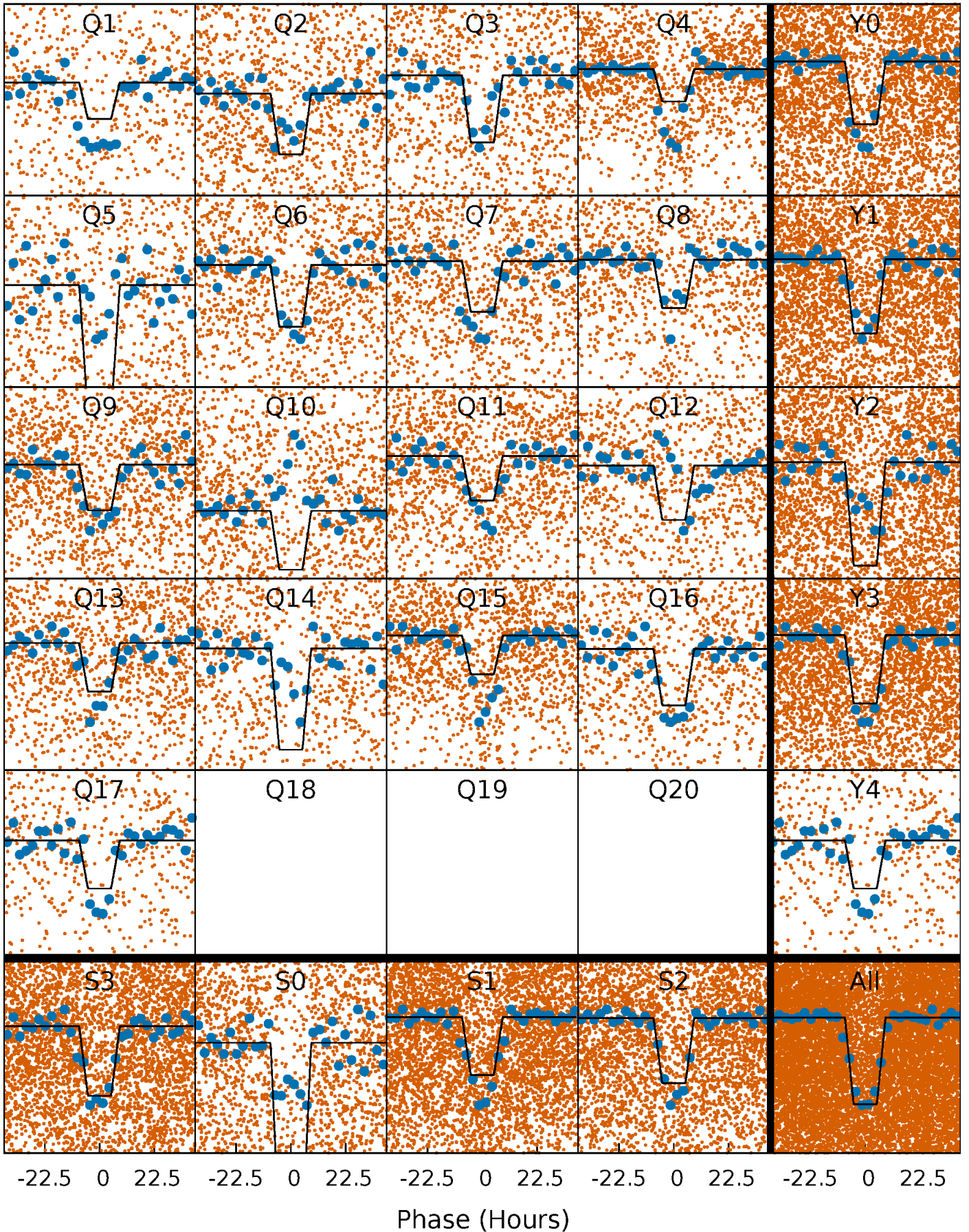
DV Quarter-Phased Transit Curves

TCE 007890271-01 P= 8.851469 Days $T_0=136.960974$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

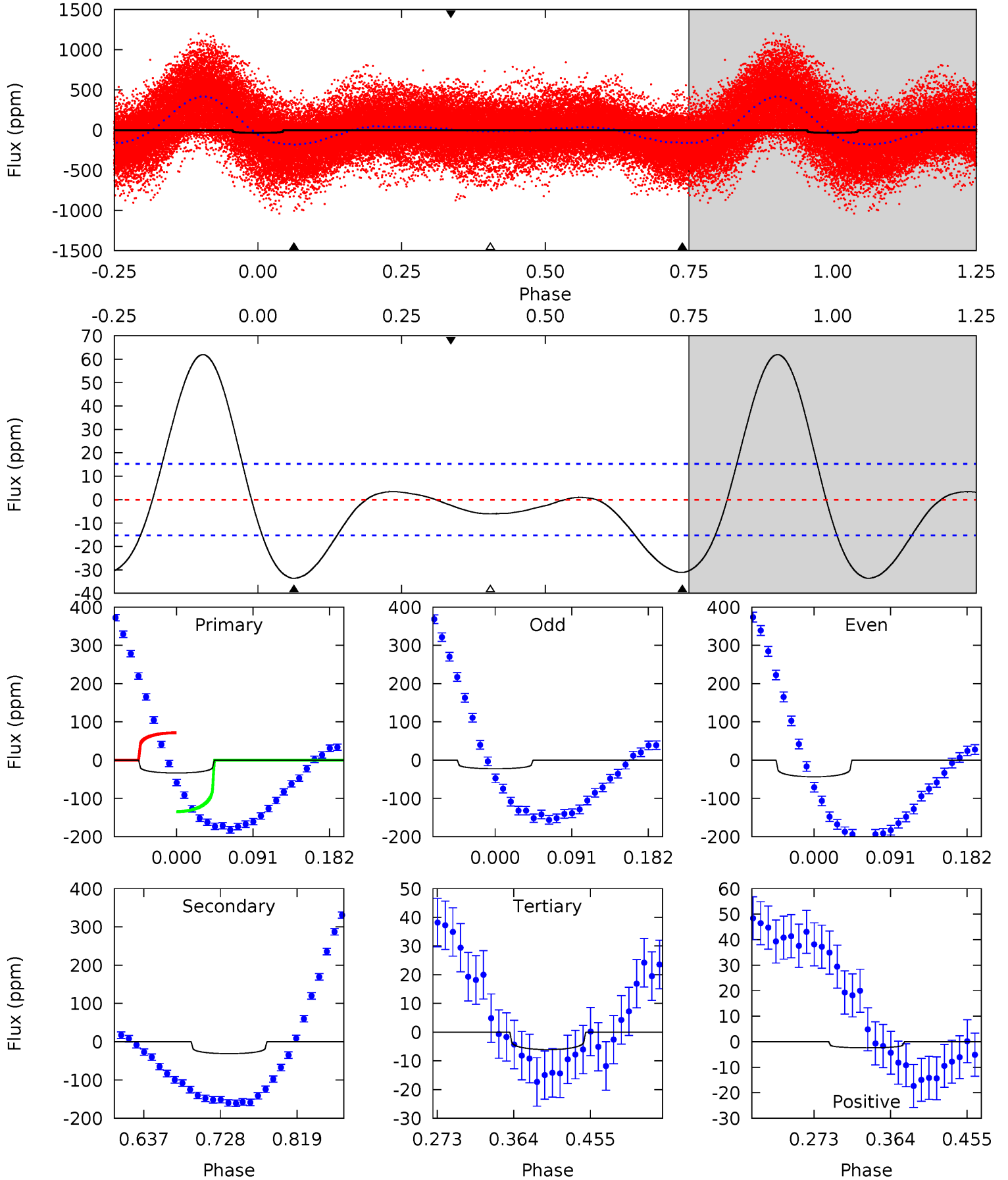
TCE 007890271-01 P= 8.851584 Days $T_0=136.952976$ (BKJD)



DV Model-Shift Uniqueness Test

007890271-01, P = 8.851469 Days, E = 128.109505 Days

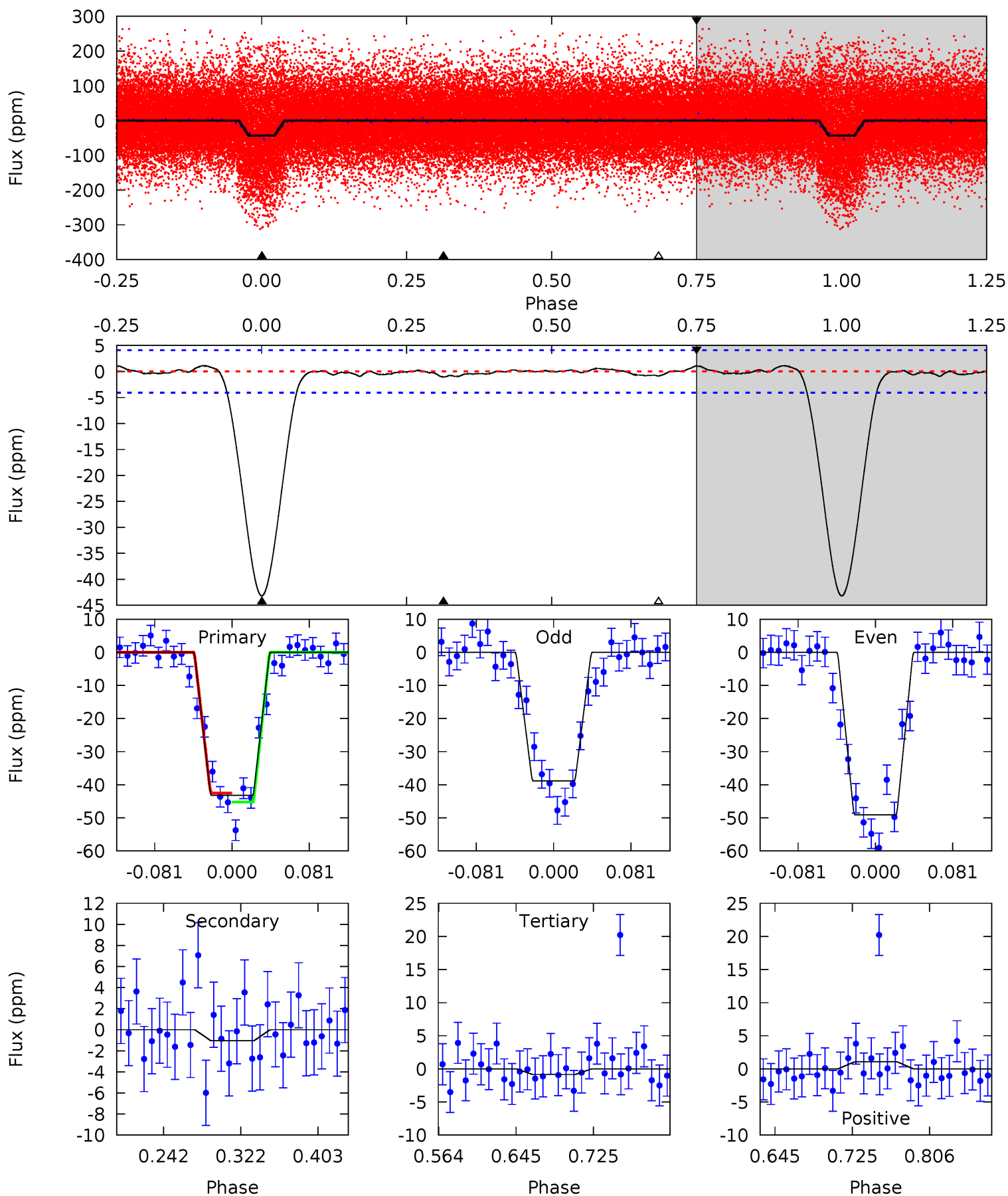
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	9.33	1.82	-0.71	4.58	1.69	6.25	8.27	10.8	7.51	10.0	3.19	1.69	0.65	11.4



Alt Model-Shift Uniqueness Test

007890271-01, P = 8.851584 Days, E = 128.101392 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
48.7	1.19	0.96	1.19	4.61	1.75	0.49	47.7	47.5	0.23	-0.01	5.77	0.76	0.02	1.54



Stellar Parameters For KIC 007890271

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6387^{+179}_{-246}	$4.378^{+0.058}_{-0.232}$	$0.070^{+0.250}_{-0.300}$	$1.185^{+0.417}_{-0.139}$	$1.225^{+0.180}_{-0.180}$	$1.036^{+0.337}_{-0.596}$
	+3%/-4%	+1%/-5%	+357%/-429%	+35%/-12%	+15%/-15%	+33%/-58%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007890271-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-31 ± 3	$0.69^{+0.18}_{-0.14}$	1465^{+117}_{-80}	6657^{+786}_{-597}	280^{+153}_{-102}
Alt.	-1 ± 1	$0.87^{+0.18}_{-0.14}$	1467^{+111}_{-80}	3143^{+353}_{-675}	$5.854^{+6.279}_{-4.632}$

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 $A_{obs} \gg 1.0$

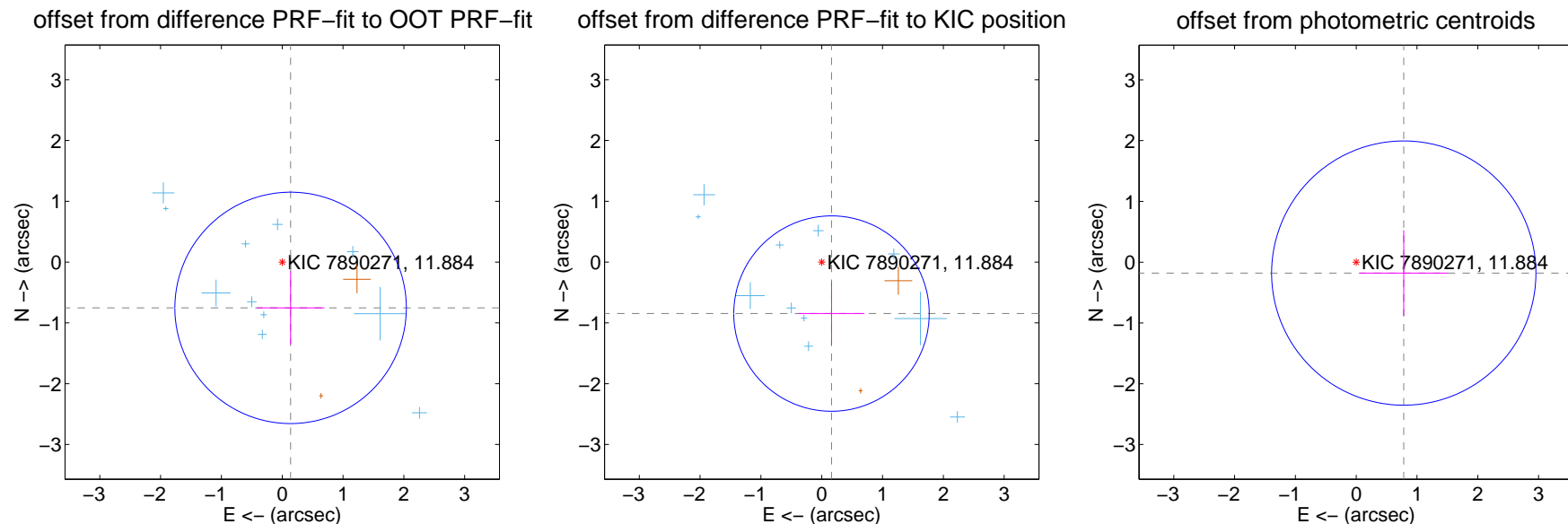
DV Centroid Data

Supplemental centroid analysis for 007890271-01. **Kepler magnitude: 11.88.** Transit SNR 6.52

There are 11 quarters with good PRF difference image offsets

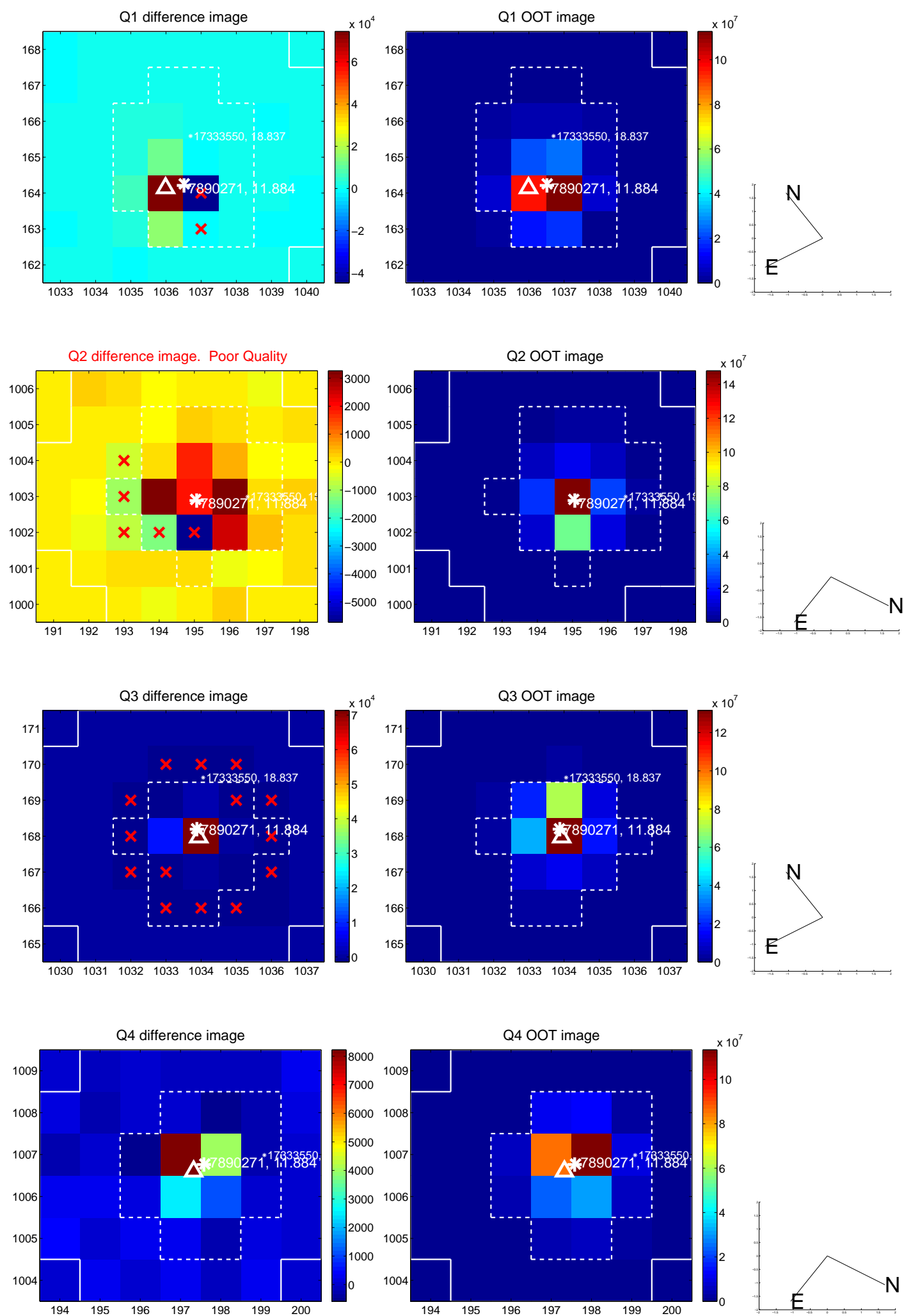
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.766 ± 0.634	1.21	-0.138 ± 0.556	-0.753 ± 0.604
PRF-fit source offset from KIC position	0.862 ± 0.536	1.61	-0.161 ± 0.542	-0.847 ± 0.521
photometric centroid source offset	0.80 ± 0.72	1.11	-0.78 ± 0.73	-0.18 ± 0.70

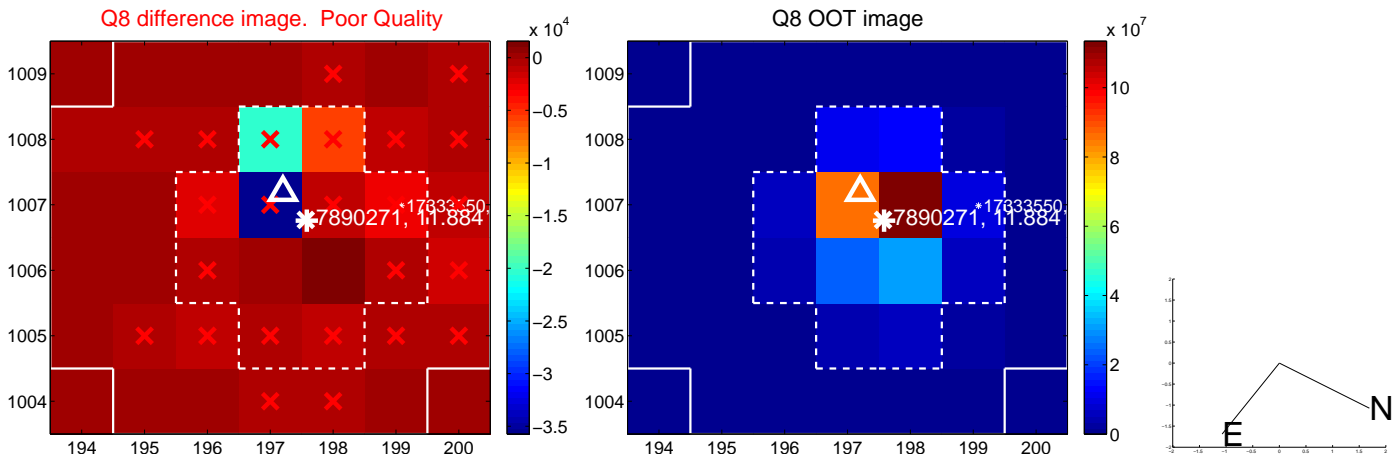
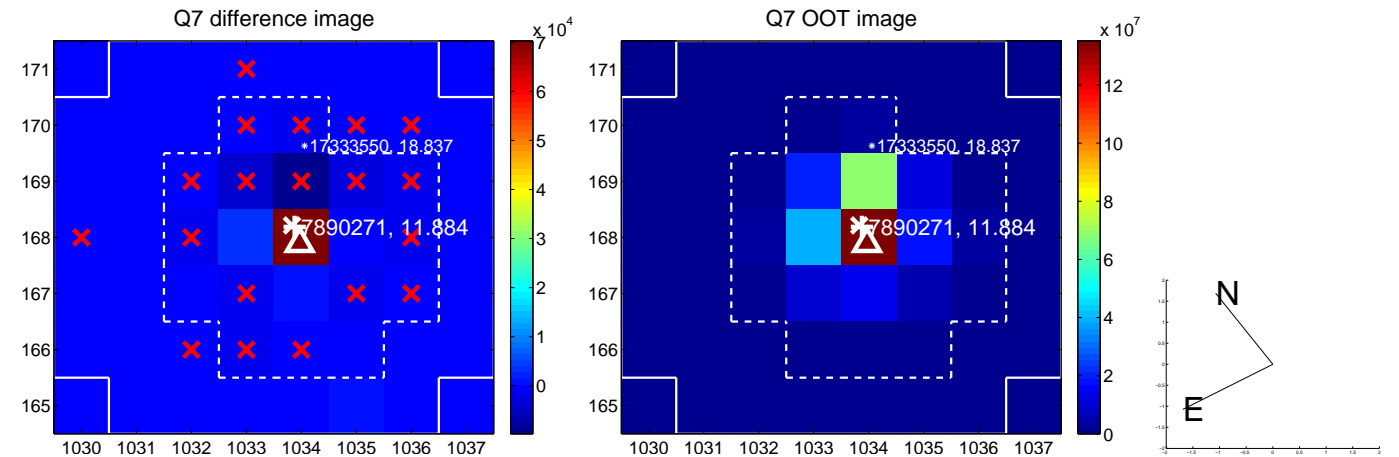
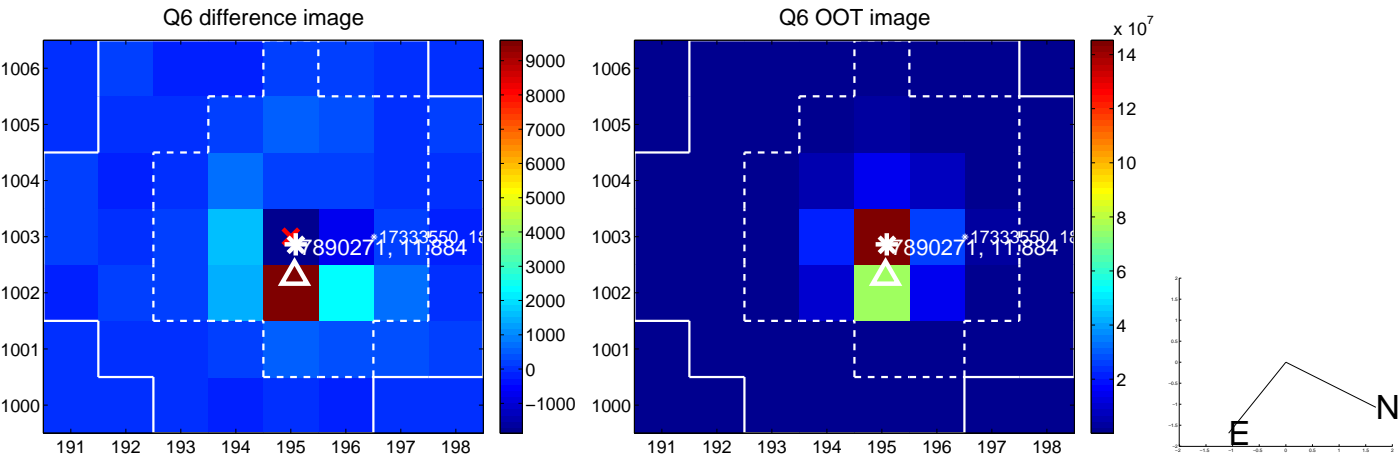
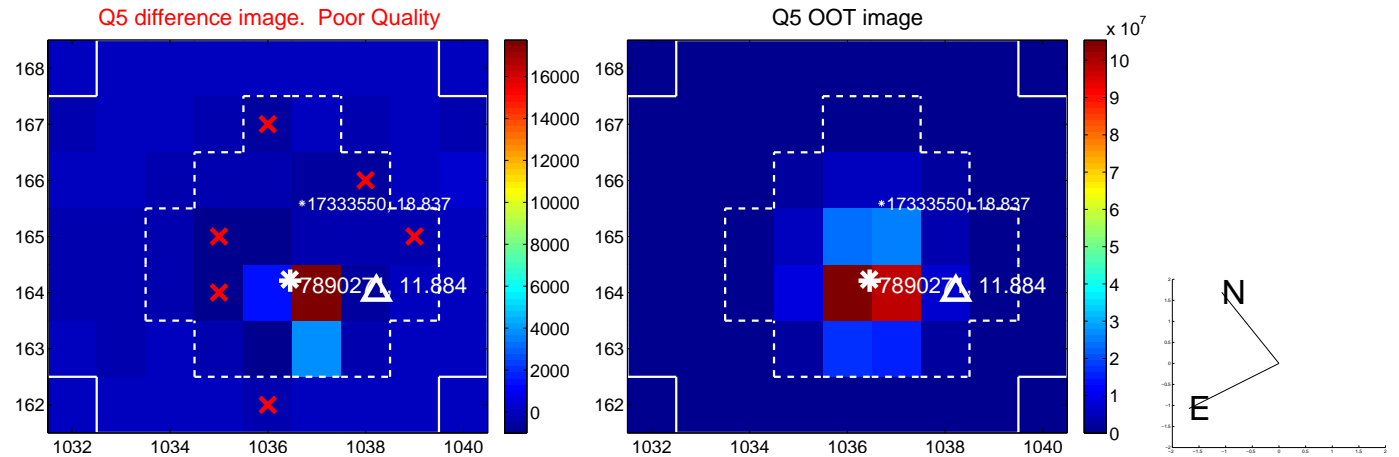


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

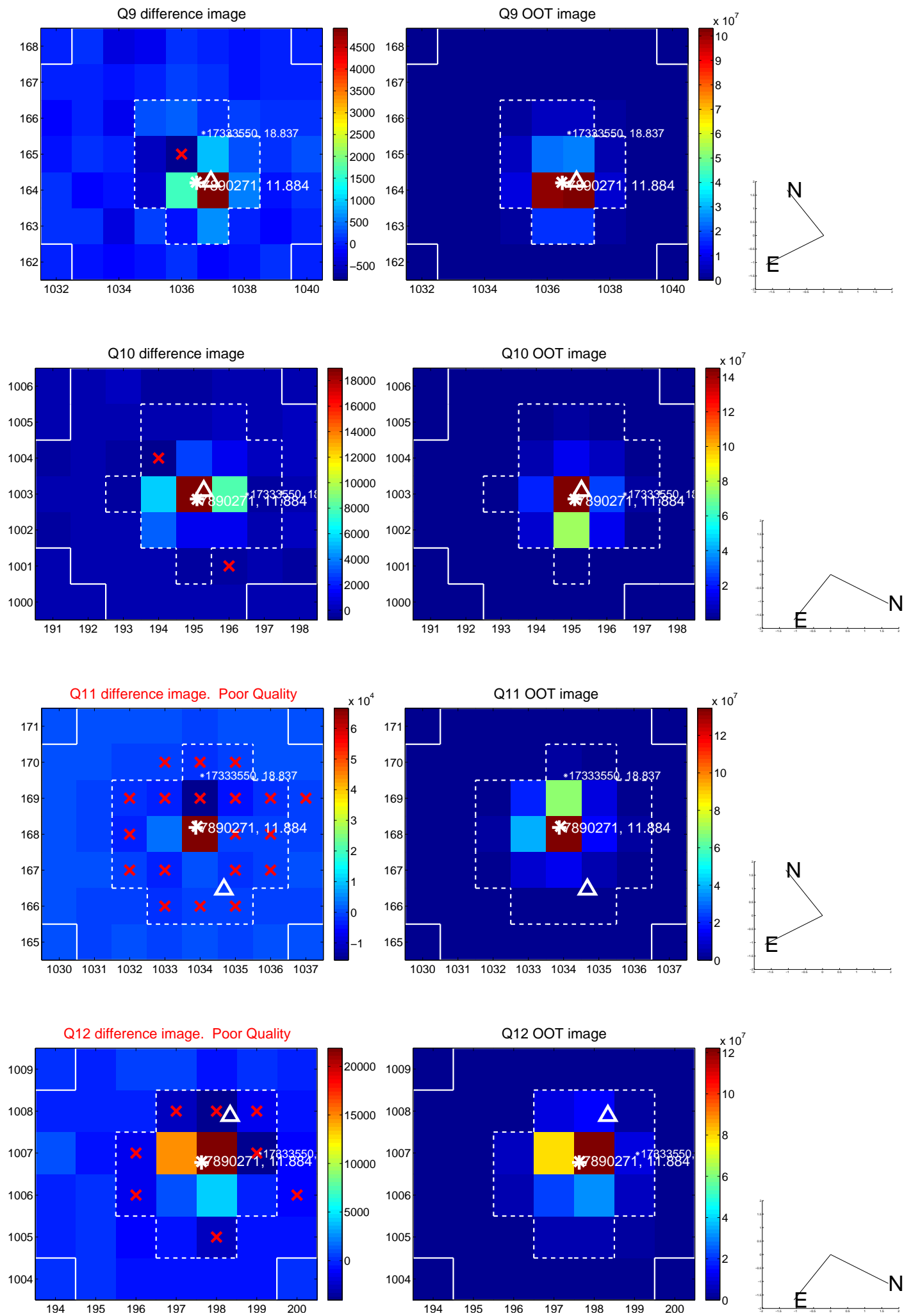
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



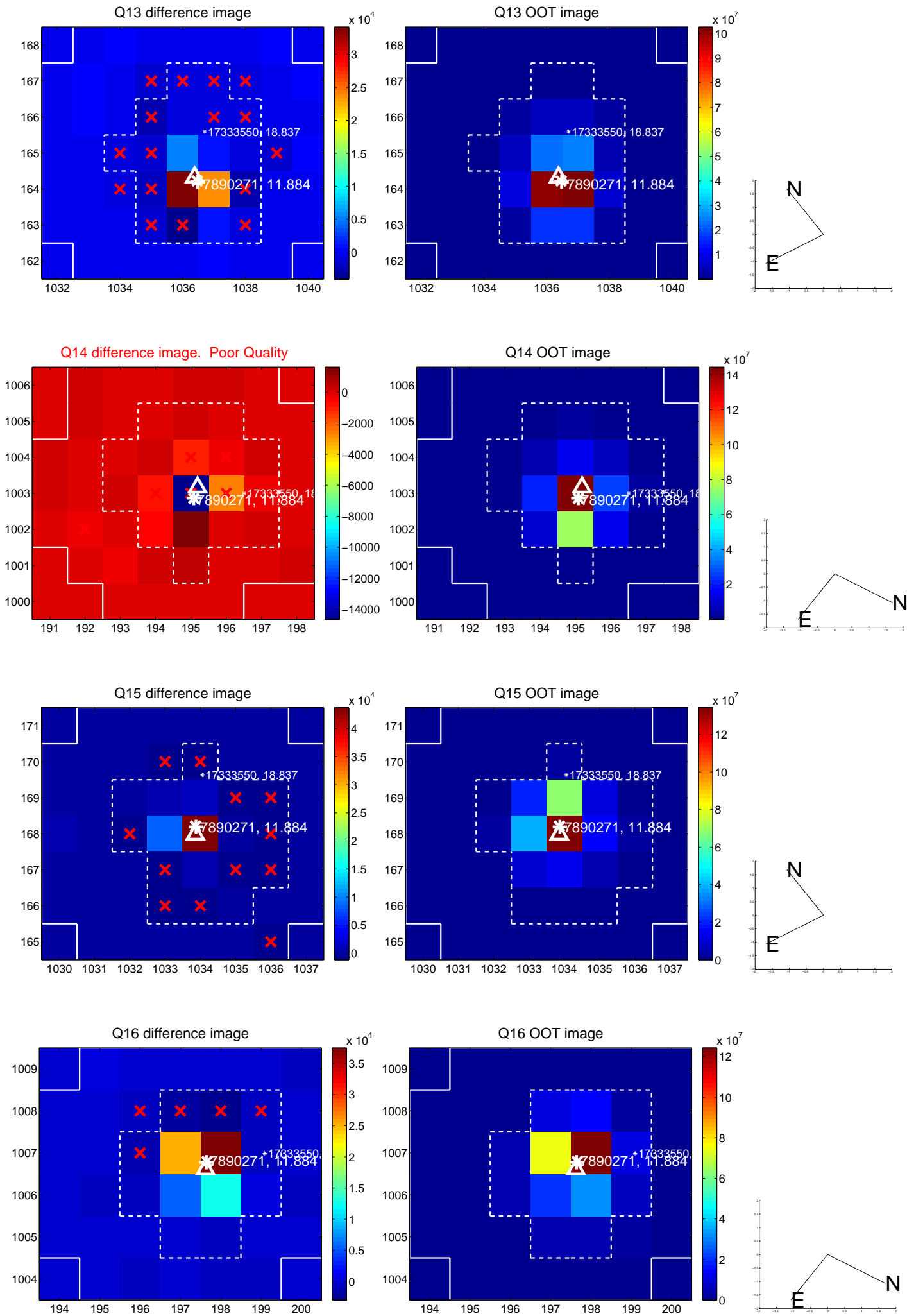
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



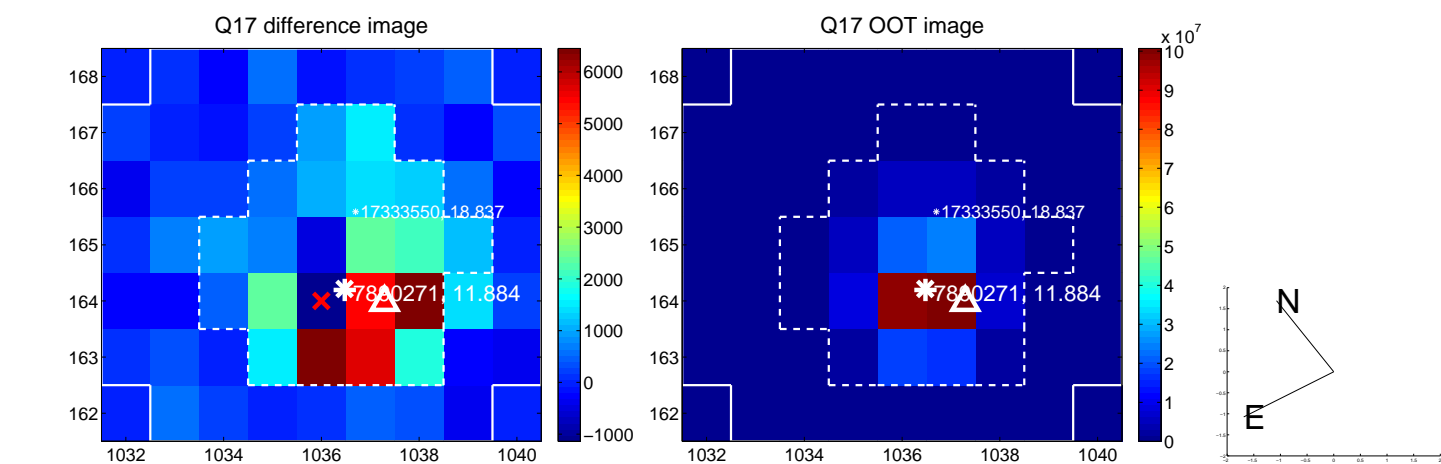
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



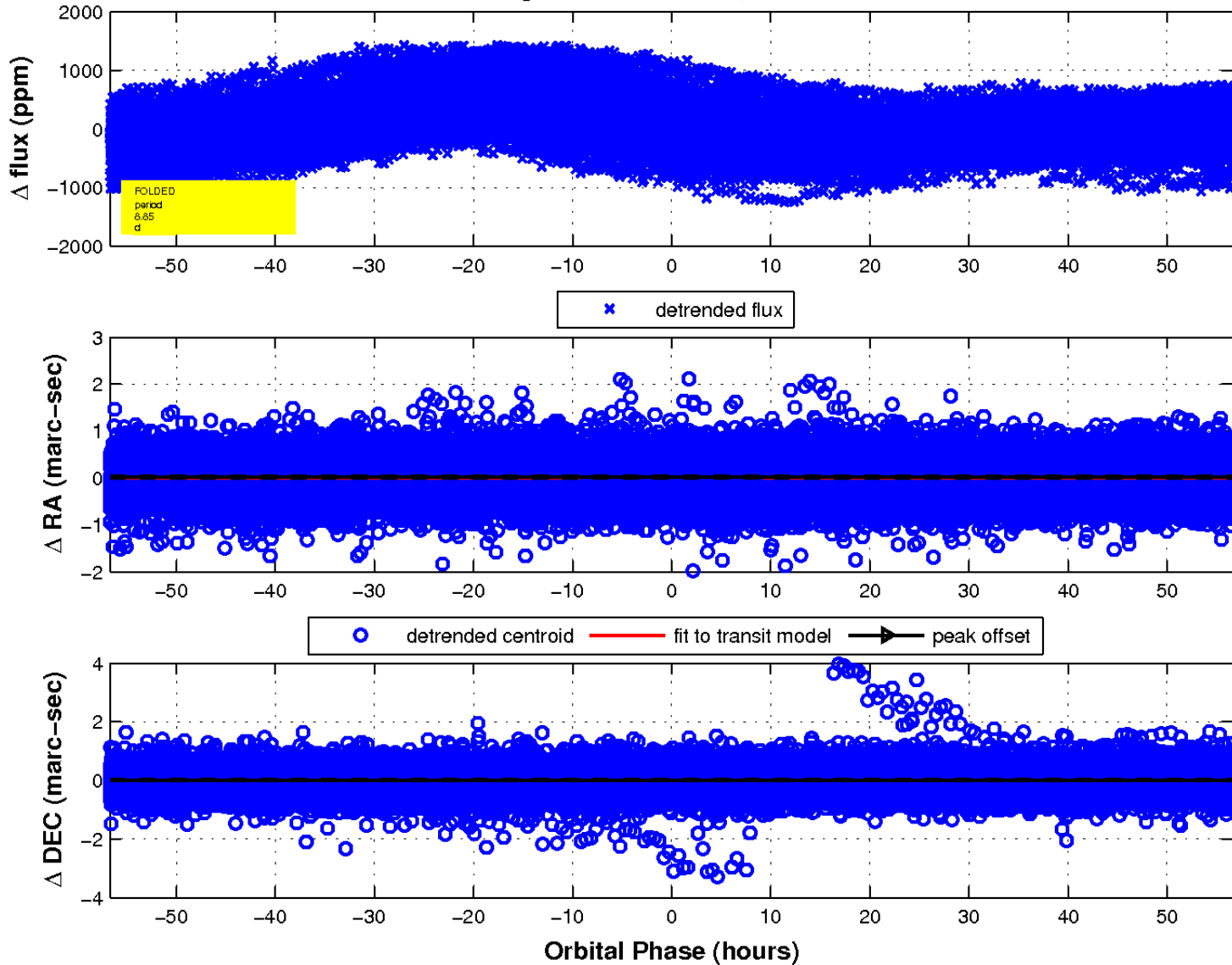
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

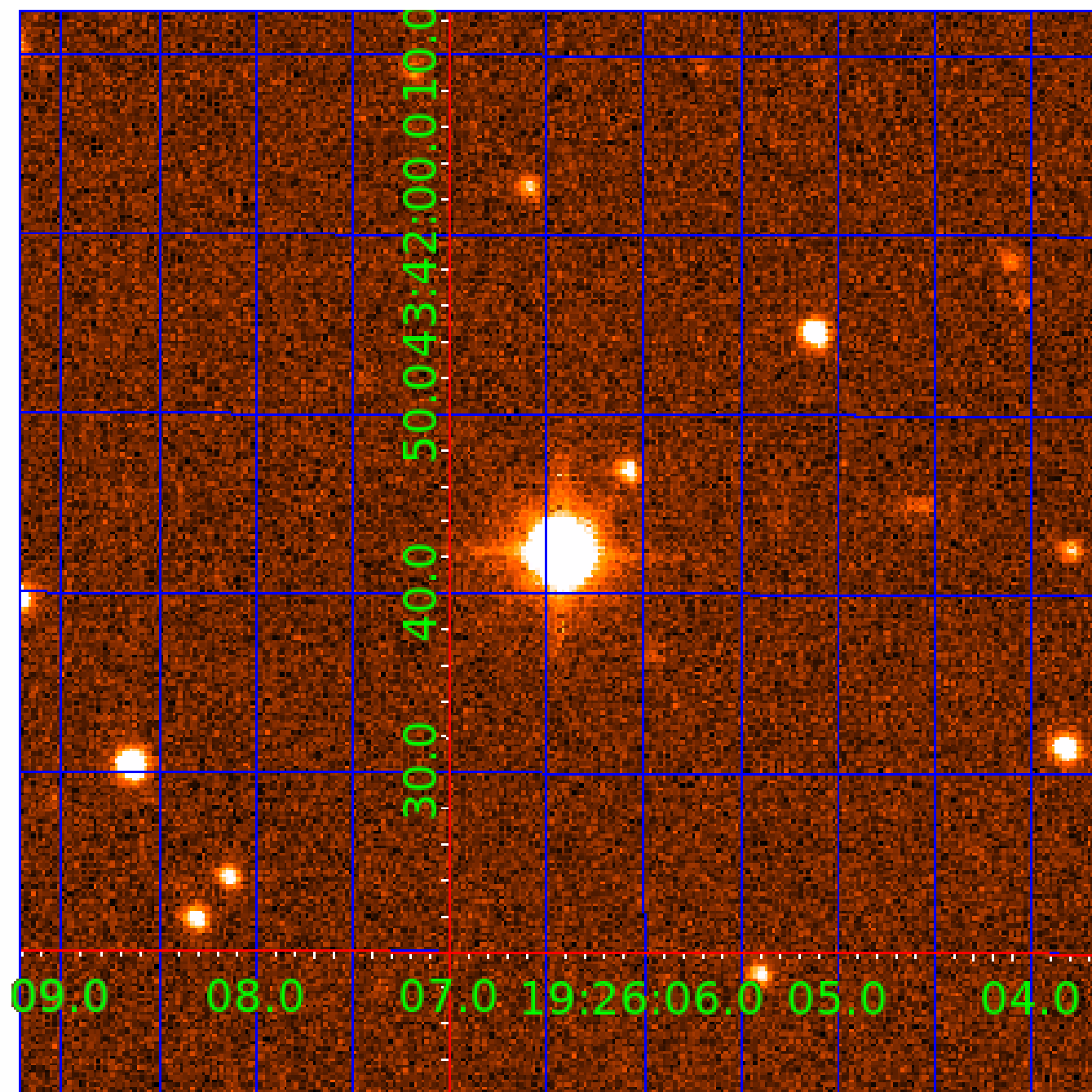


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 007890271

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})
007890271-01	OBS	No	8.851469	136.960974	27.1	18.893	7.6	6.5	1.19	6387	0.66	260.94
007890271-02	OBS	No	8.851730	134.973016	23.5	12.256	13.0	6.6	1.19	6387	0.64	260.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007890271-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
007890271-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_POS_ALT—SAME_NTL_PERIOD

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

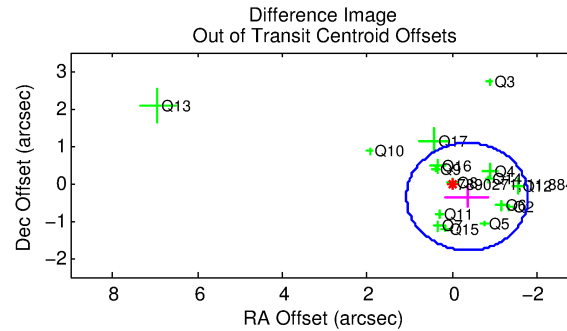
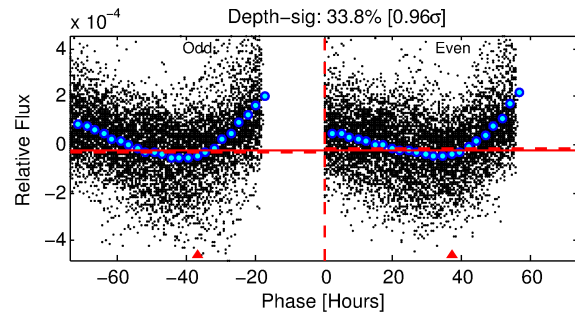
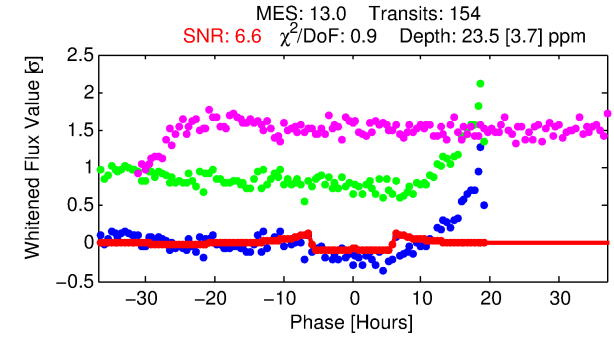
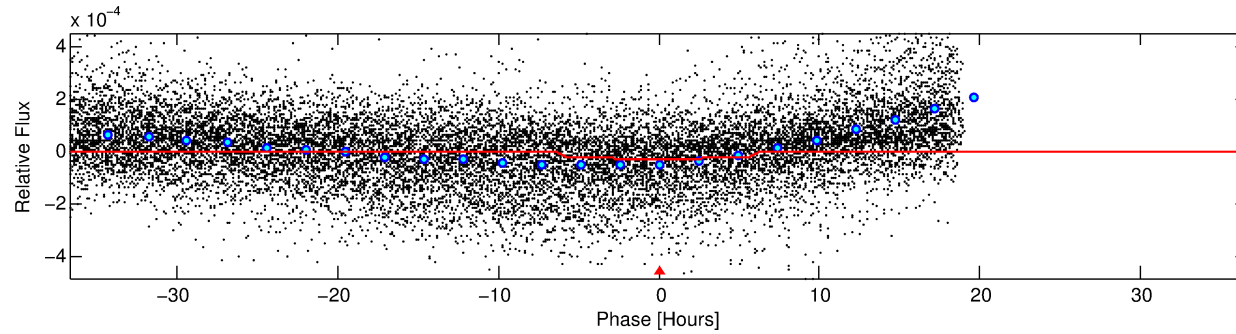
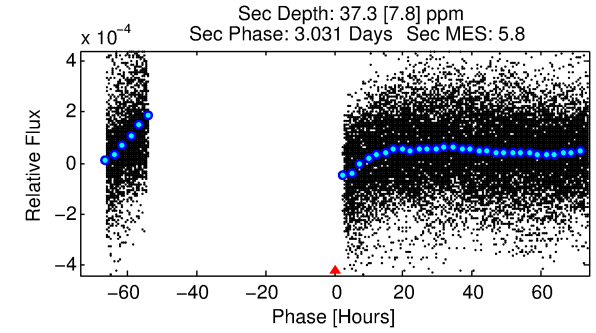
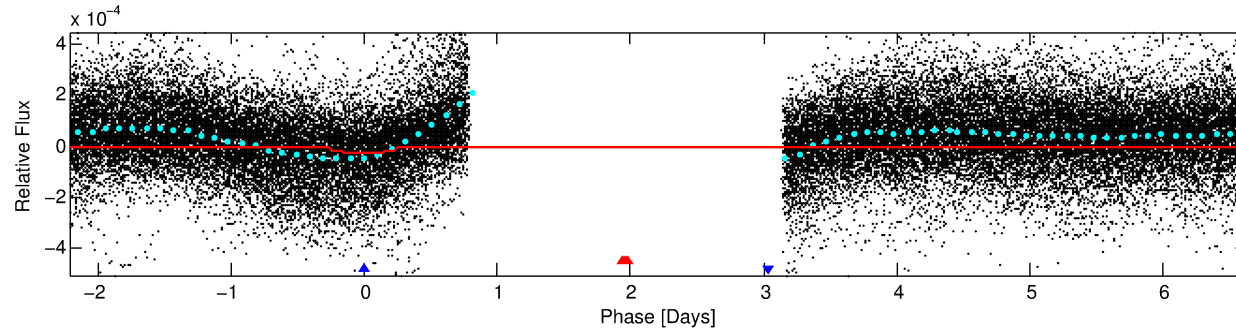
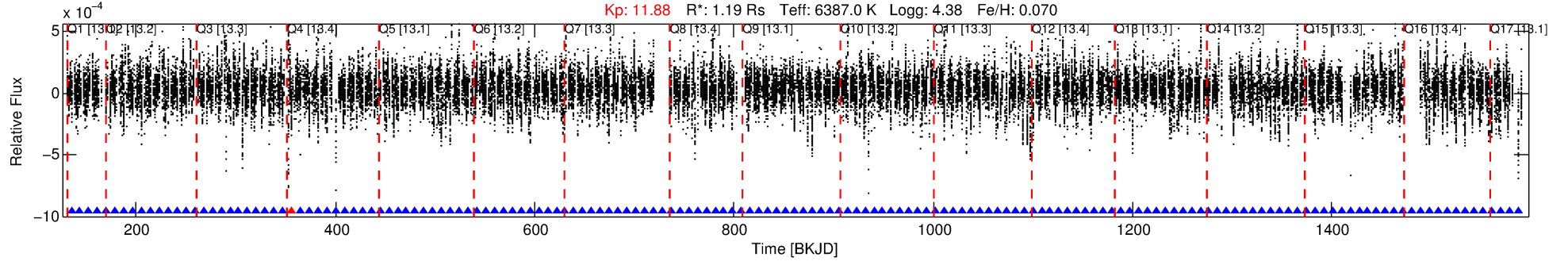
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007890271-02

No Significant Match Found

DV One-Page Summary

KIC: 7890271 Candidate: 2 of 2 Period: 8.852 d



DV Fit Results:

Period = 8.85173 [0.00012] d
Epoch = 134.9730 [0.0110] BKJD
 $R_p/R^* = 0.0049$ [0.0011]
 $a/R^* = 3.34$ [3.17]
 $b = 0.82$ [0.42]
 $S_{\text{eff}} = 260.93$ [118.31]
 $T_{\text{eq}} = 1025$ [116] K
 $R_p = 0.64$ [0.26] R_e
 $a = 0.0896$ [0.0264] AU
 $A_g = 403.02$ [257.96] [1.56σ]
 $T_{\text{eff}} = 7100$ [890] K [6.77σ]

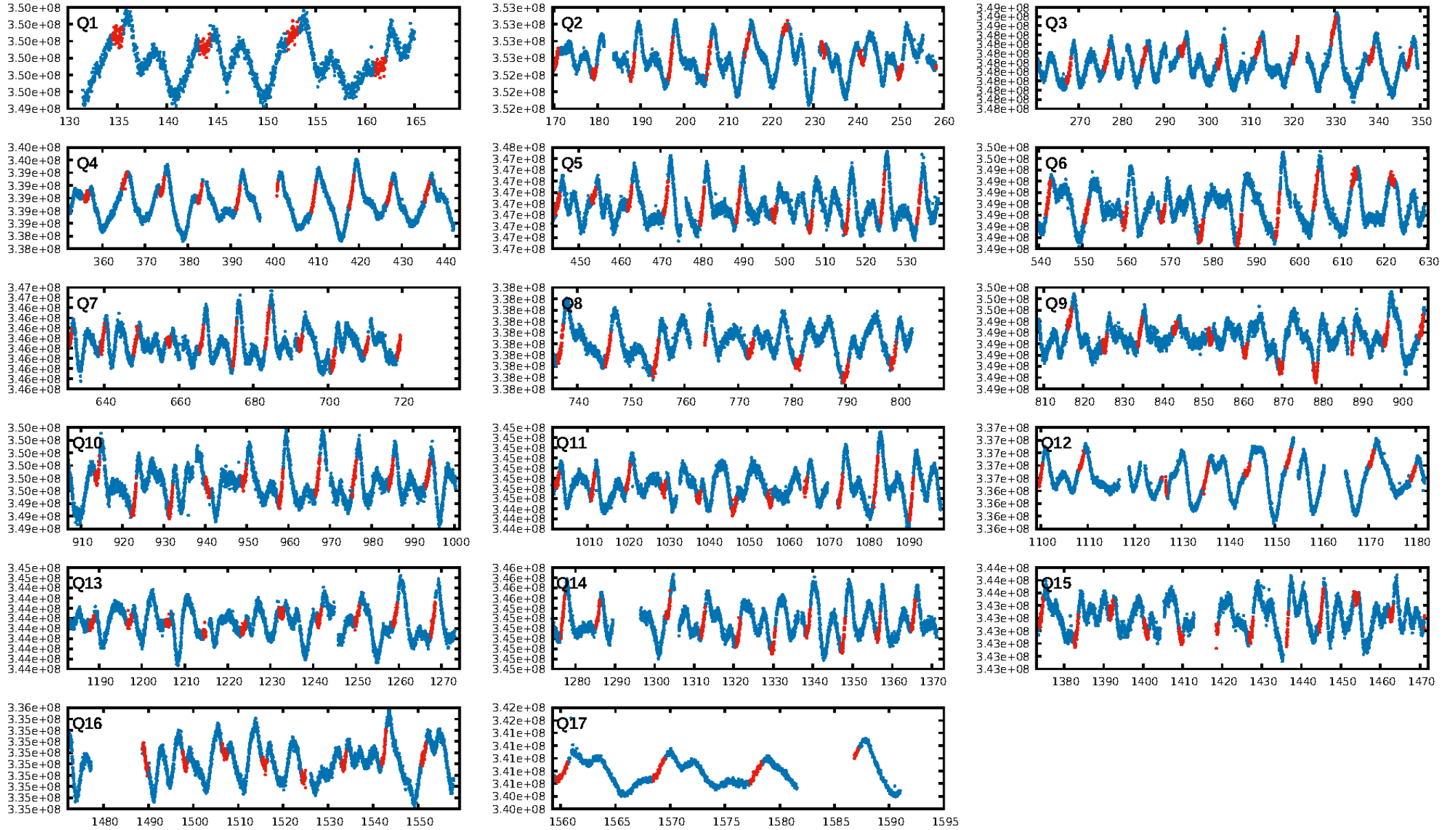
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 98.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 9.31e-30
RollingBand-fgt: 0.99 [145/146]
GhostDiagnostic-chr: -0.4122
Centroid-sig: 24.3%
Centroid-so: 1.152 arcsec [1.17σ]
OotOffset-rm: 0.510 arcsec [1.07σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-rm: 0.494 arcsec [1.06σ]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.88 [14/16]
DiffImageOverlap-fno: 1.00 [17/17]

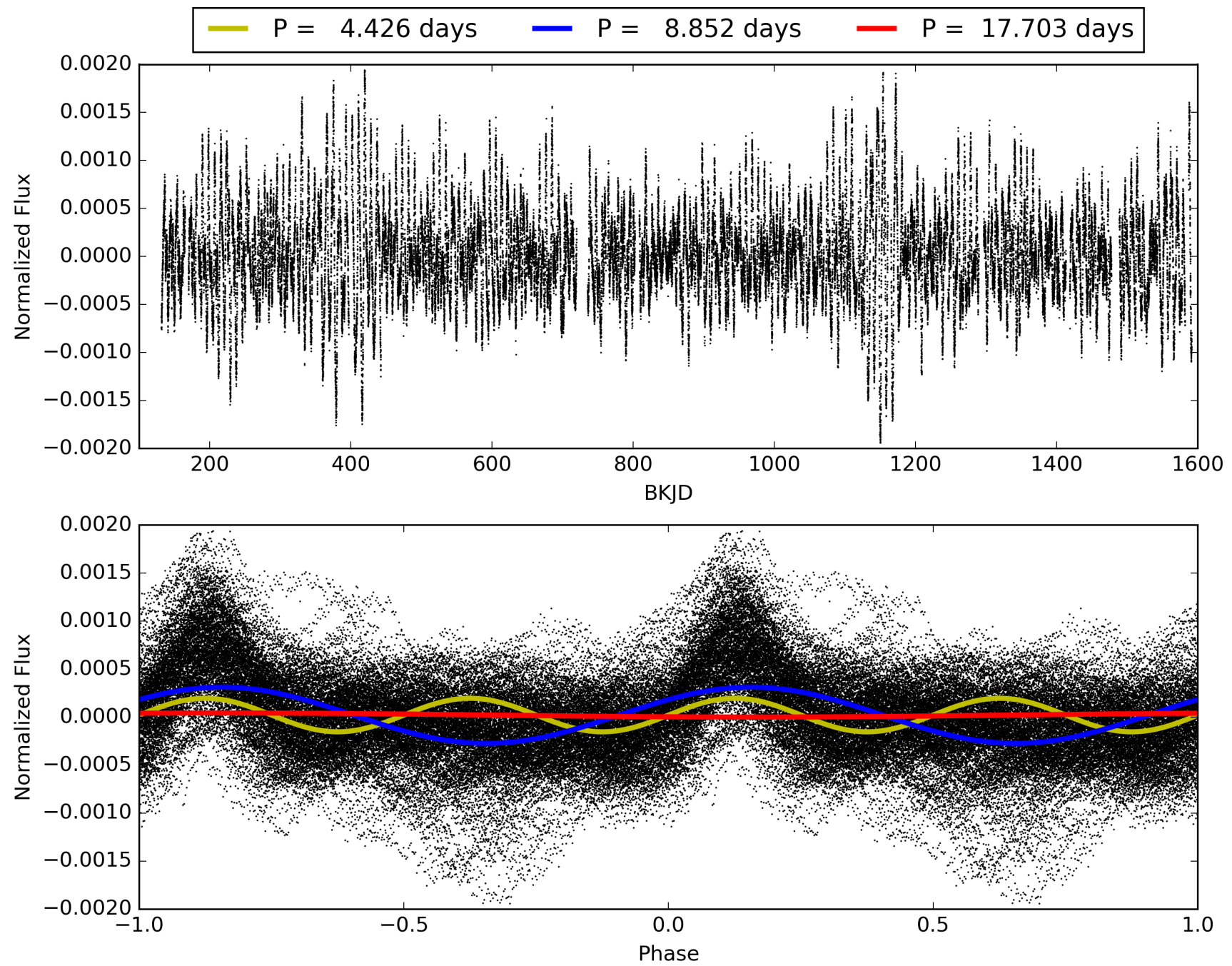
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 13:36:32 Z

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

TCE 007890271-02, PDC Light Curves

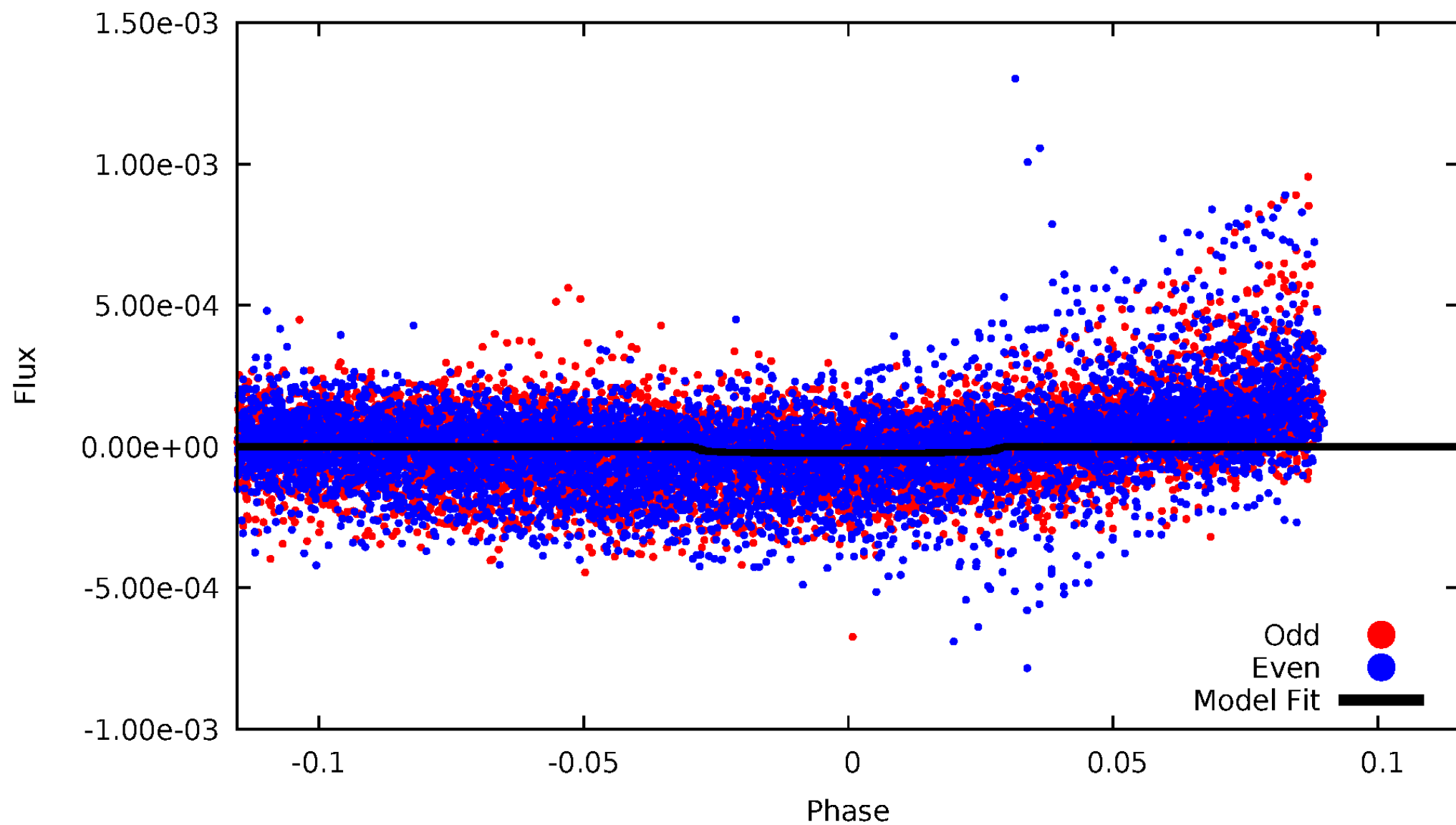


TCE 007890271-02



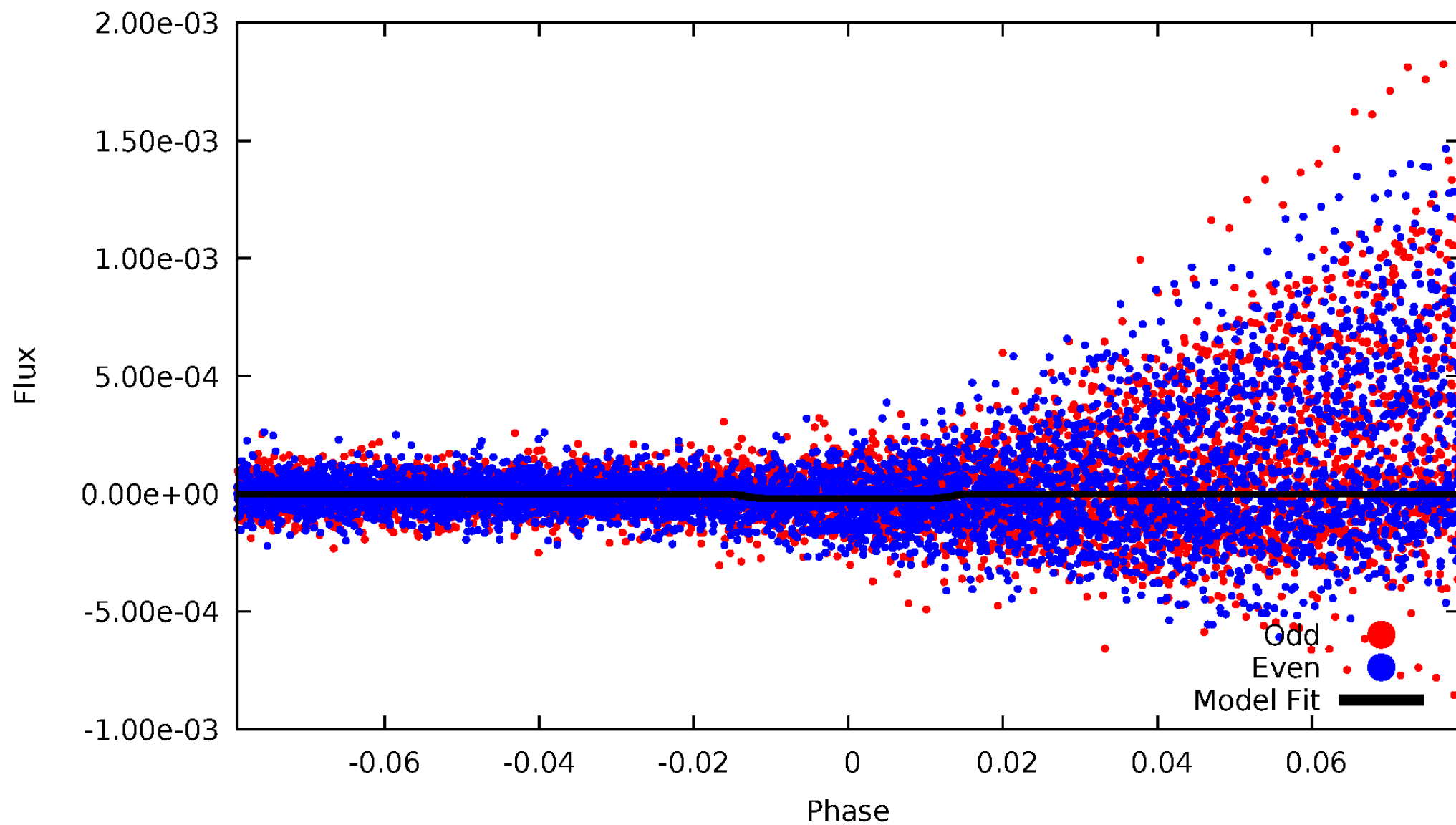
DV Odd/Even

TCE 007890271-02



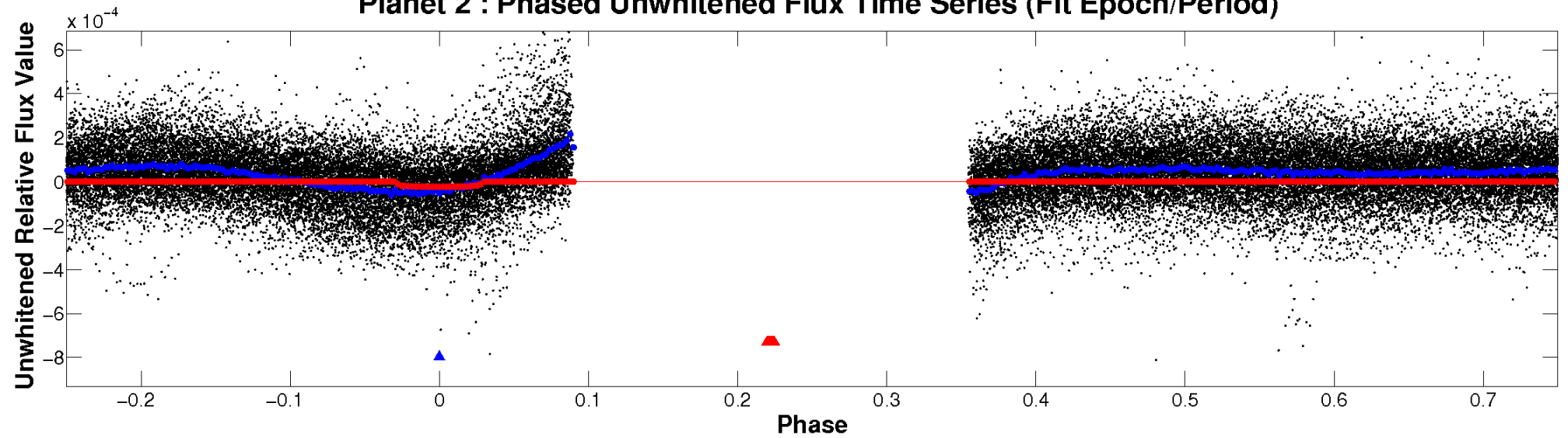
ALT Odd/Even

TCE 007890271-02

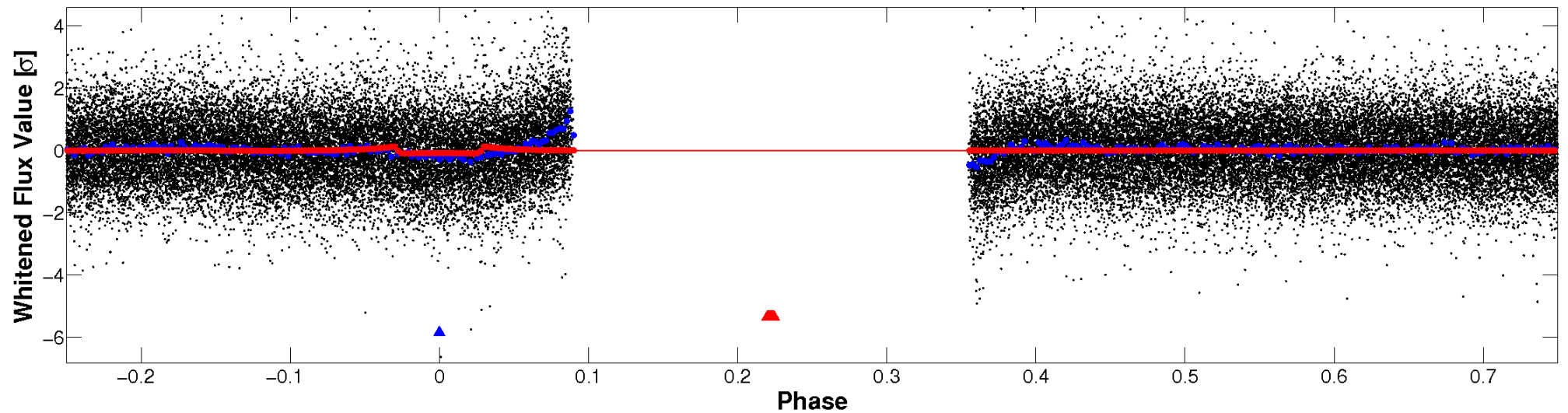


Non-Whitened Vs. Whitened Light Curve

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

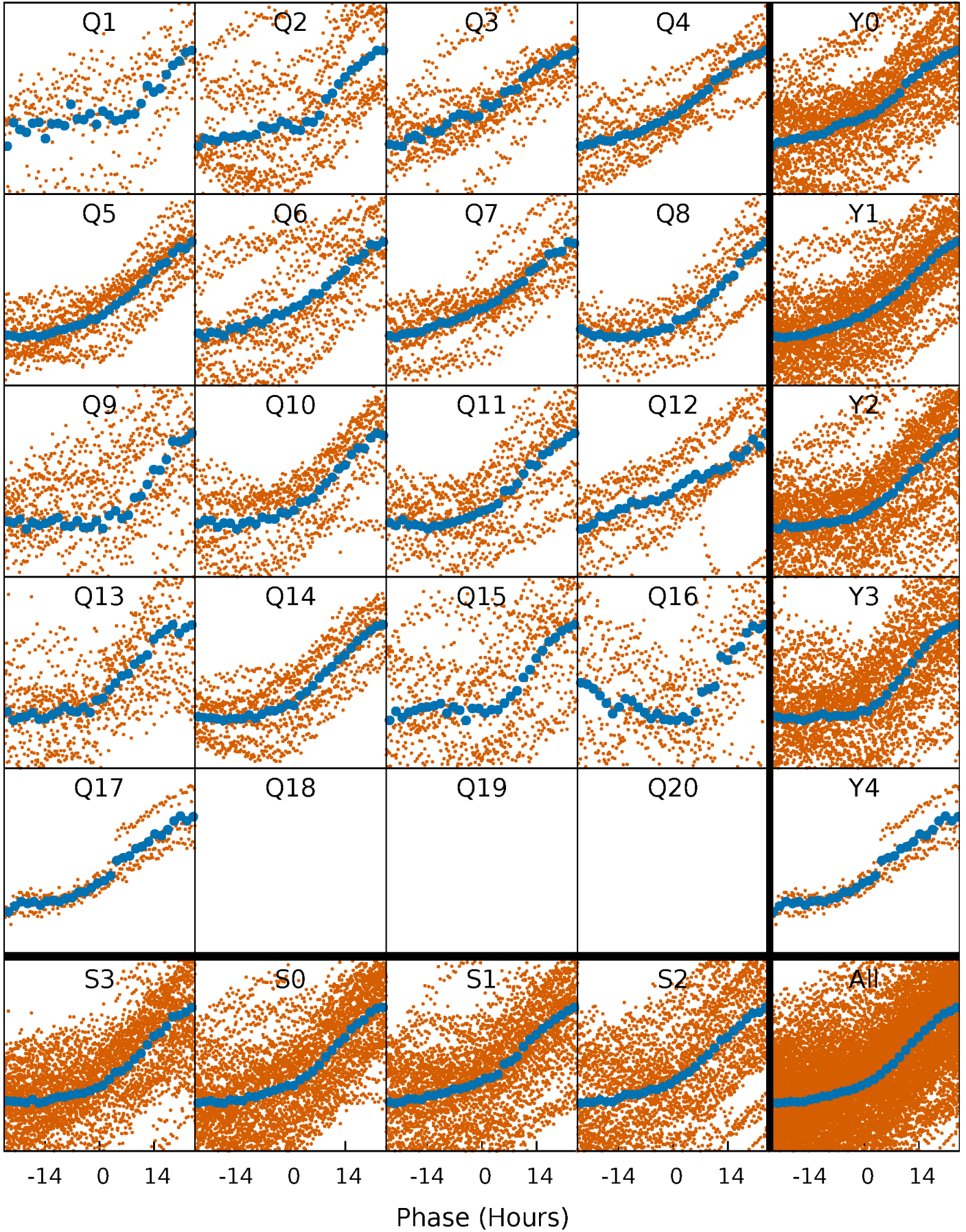


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



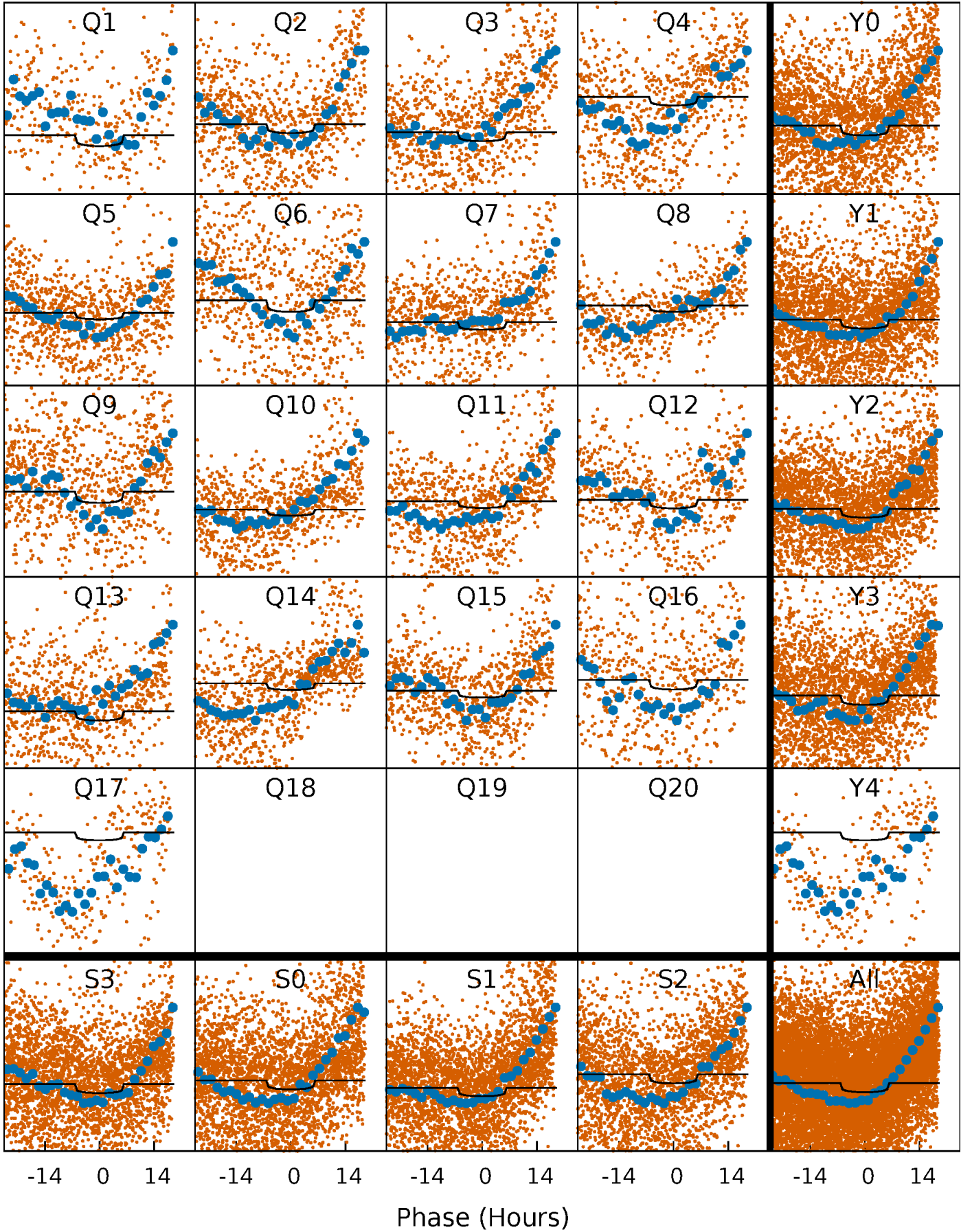
PDC Quarter-Phased Transit Curves

TCE 007890271-02 P= 8.851730 Days $T_0=134.973016$ (BKJD)



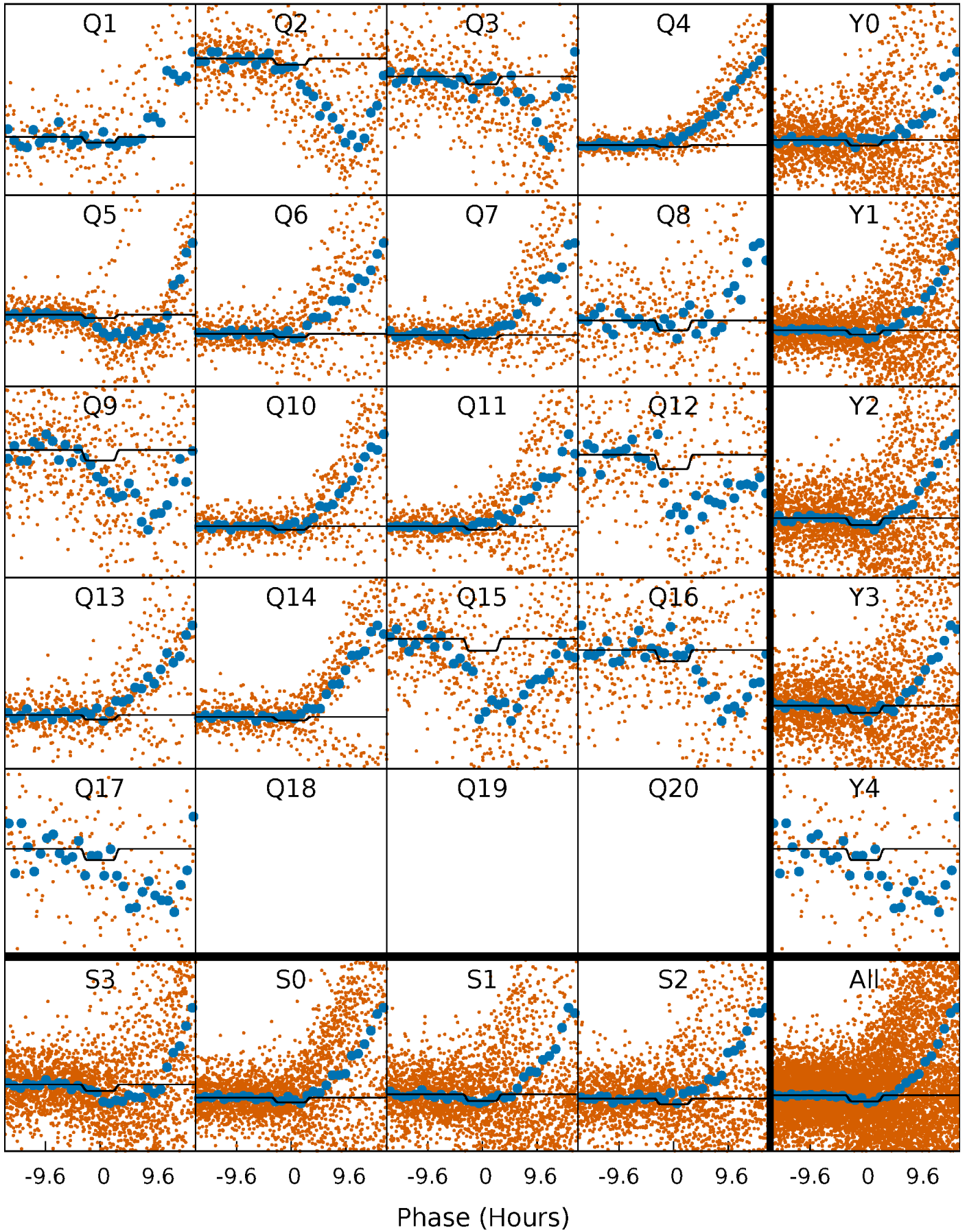
DV Quarter-Phased Transit Curves

TCE 007890271-02 P= 8.851730 Days $T_0=134.973016$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

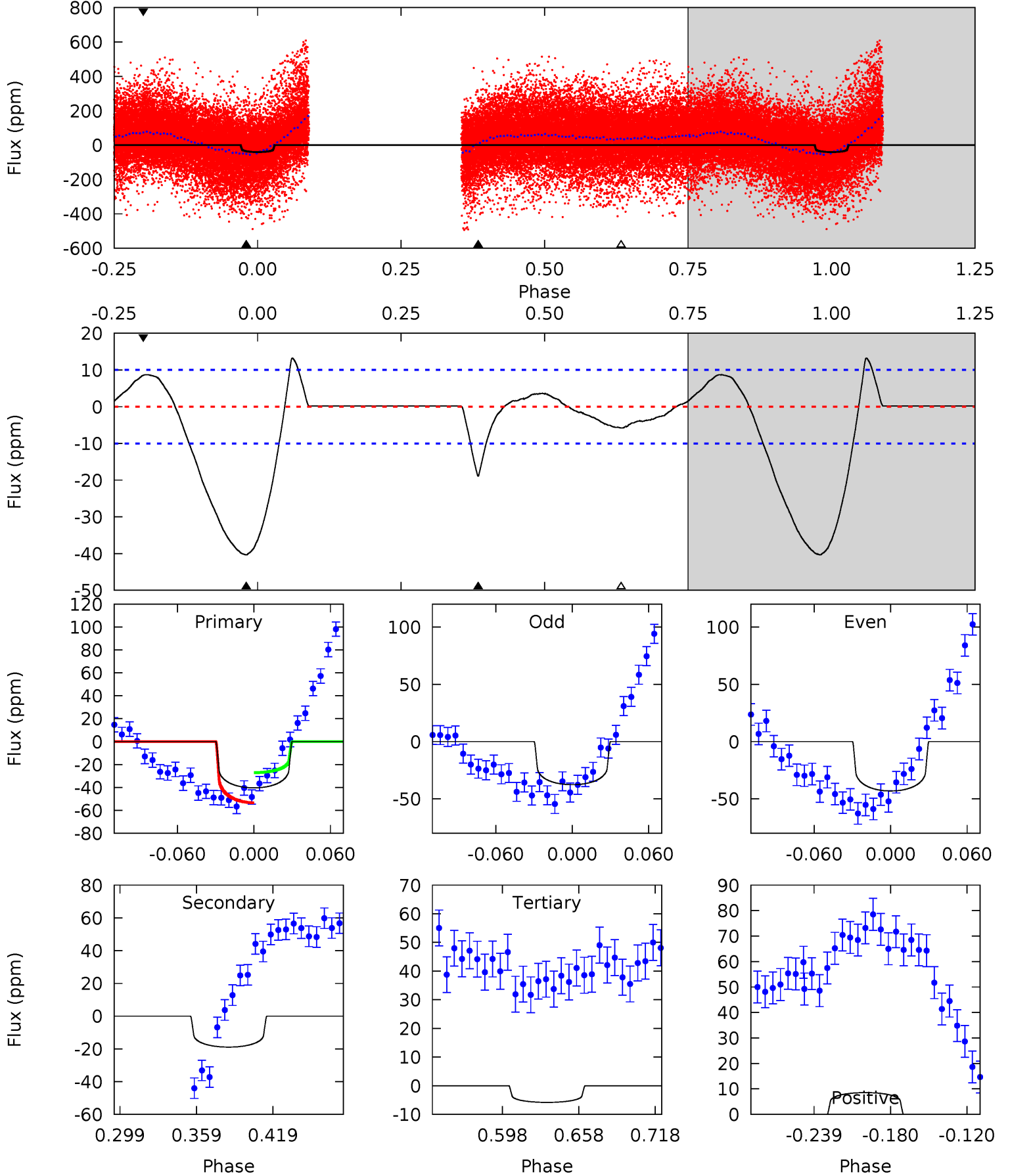
TCE 007890271-02 P= 8.850498 Days $T_0=134.983257$ (BKJD)



DV Model-Shift Uniqueness Test

007890271-02, P = 8.851730 Days, E = 126.121286 Days

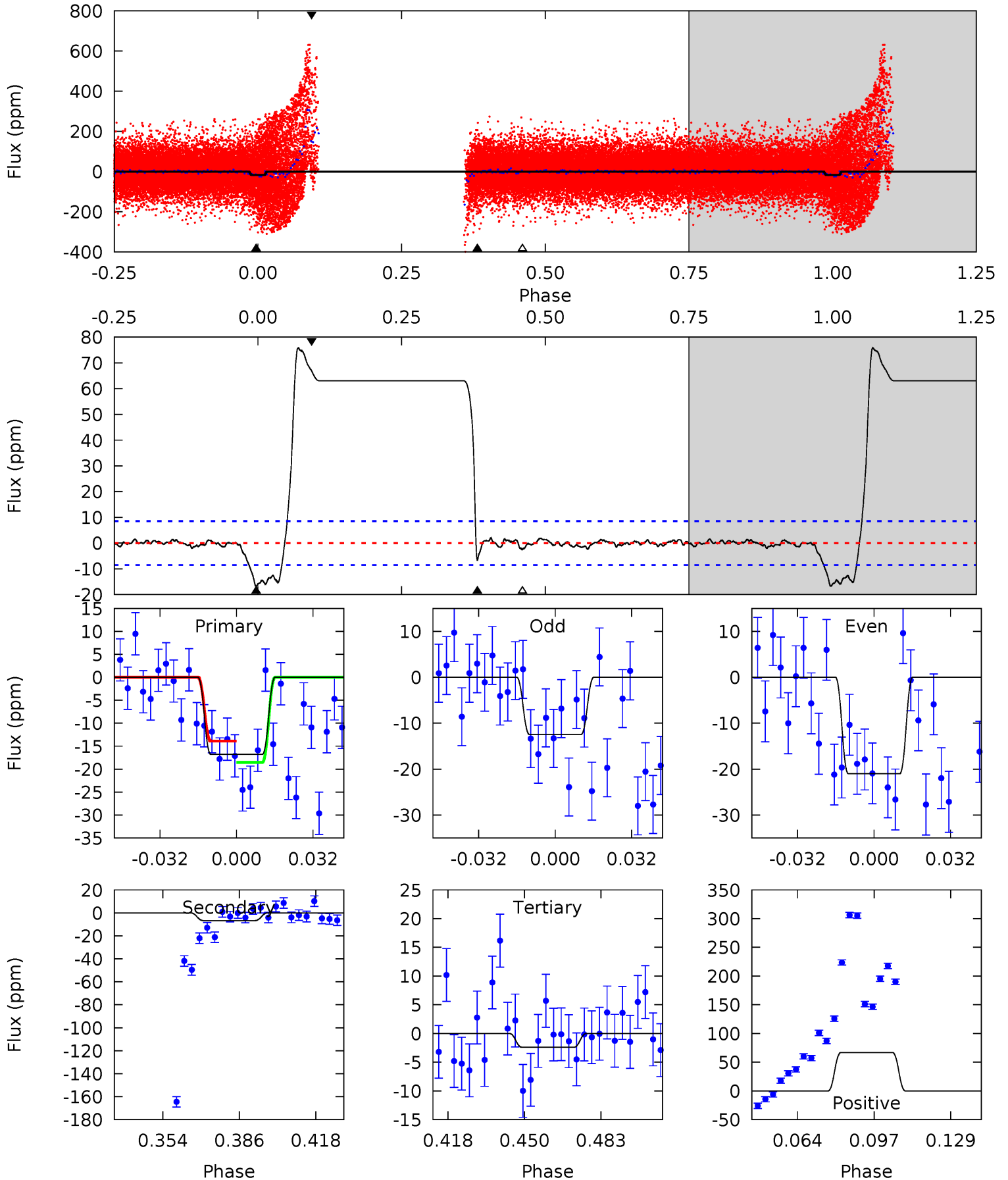
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.8	8.82	2.71	3.99	4.67	1.88	3.25	16.1	14.8	6.11	4.83	1.29	2.57	0.25	6.10



Alt Model-Shift Uniqueness Test

007890271-02, P = 8.850498 Days, E = 126.132759 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.43	3.78	1.35	37.6	4.80	2.14	6.91	8.08	-28.2	2.42	-33.8	2.49	6.25	0.82	1.01



Stellar Parameters For KIC 007890271

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6387^{+179}_{-246}	$4.378^{+0.058}_{-0.232}$	$0.070^{+0.250}_{-0.300}$	$1.185^{+0.417}_{-0.139}$	$1.225^{+0.180}_{-0.180}$	$1.036^{+0.337}_{-0.596}$
	+3%/-4%	+1%/-5%	+357%/-429%	+35%/-12%	+15%/-15%	+33%/-58%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007890271-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-19 ± 2	$0.67^{+0.18}_{-0.16}$	1460^{+105}_{-76}	5910^{+831}_{-554}	178^{+128}_{-68}
Alt.	-7 ± 2	$0.60^{+0.18}_{-0.14}$	1462^{+117}_{-79}	4929^{+732}_{-484}	78^{+68}_{-33}

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

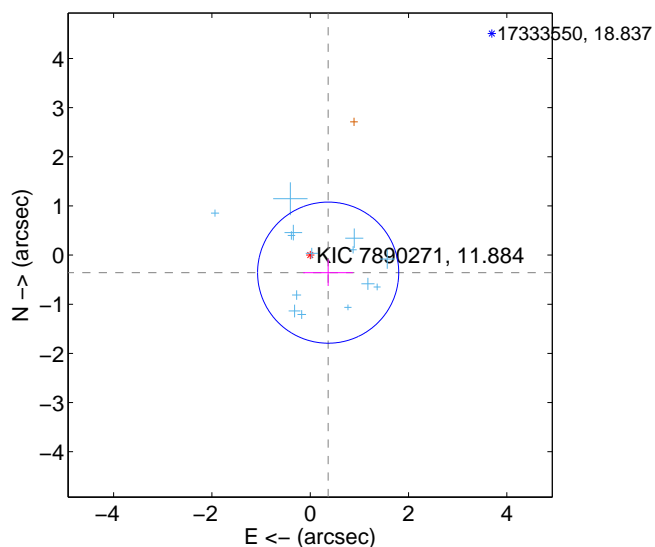
Supplemental centroid analysis for 007890271-02. **Kepler magnitude: 11.88.** Transit SNR 6.61

There are 14 quarters with good PRF difference image offsets

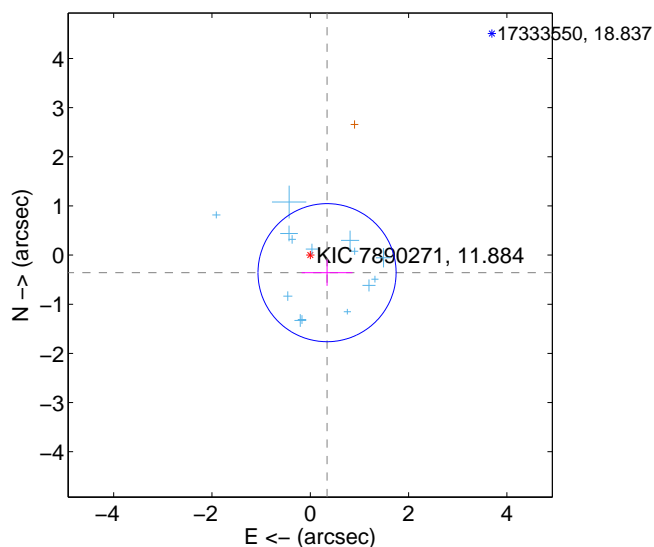
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.510 ± 0.478	1.07	-0.365 ± 0.508	-0.357 ± 0.272
PRF-fit source offset from KIC position	0.494 ± 0.468	1.06	-0.341 ± 0.516	-0.357 ± 0.268
photometric centroid source offset	1.15 ± 0.98	1.17	-1.03 ± 0.99	-0.51 ± 0.97

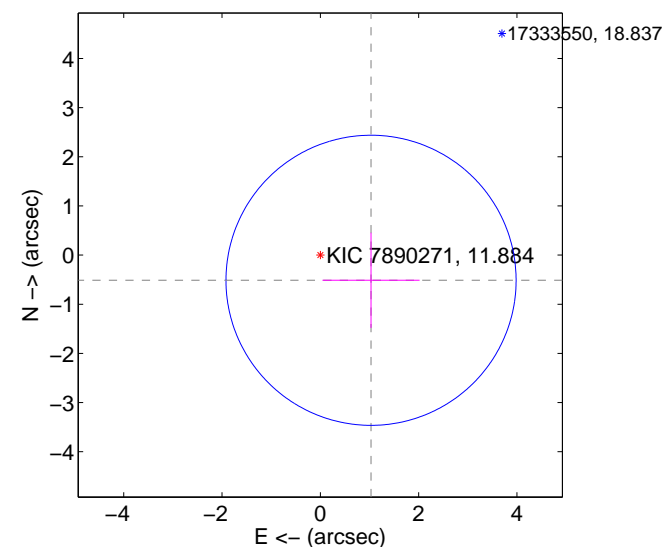
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

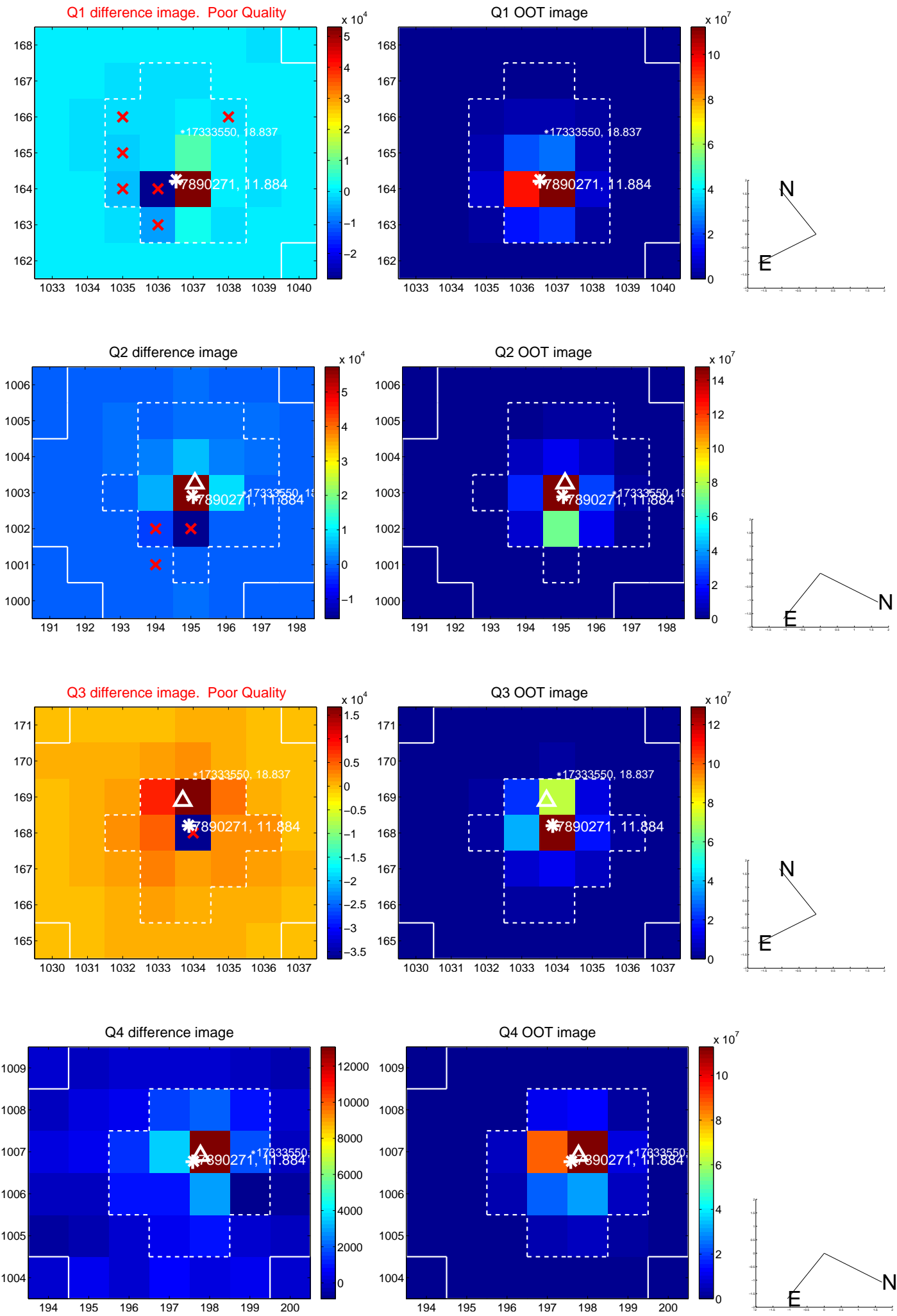


offset from photometric centroids

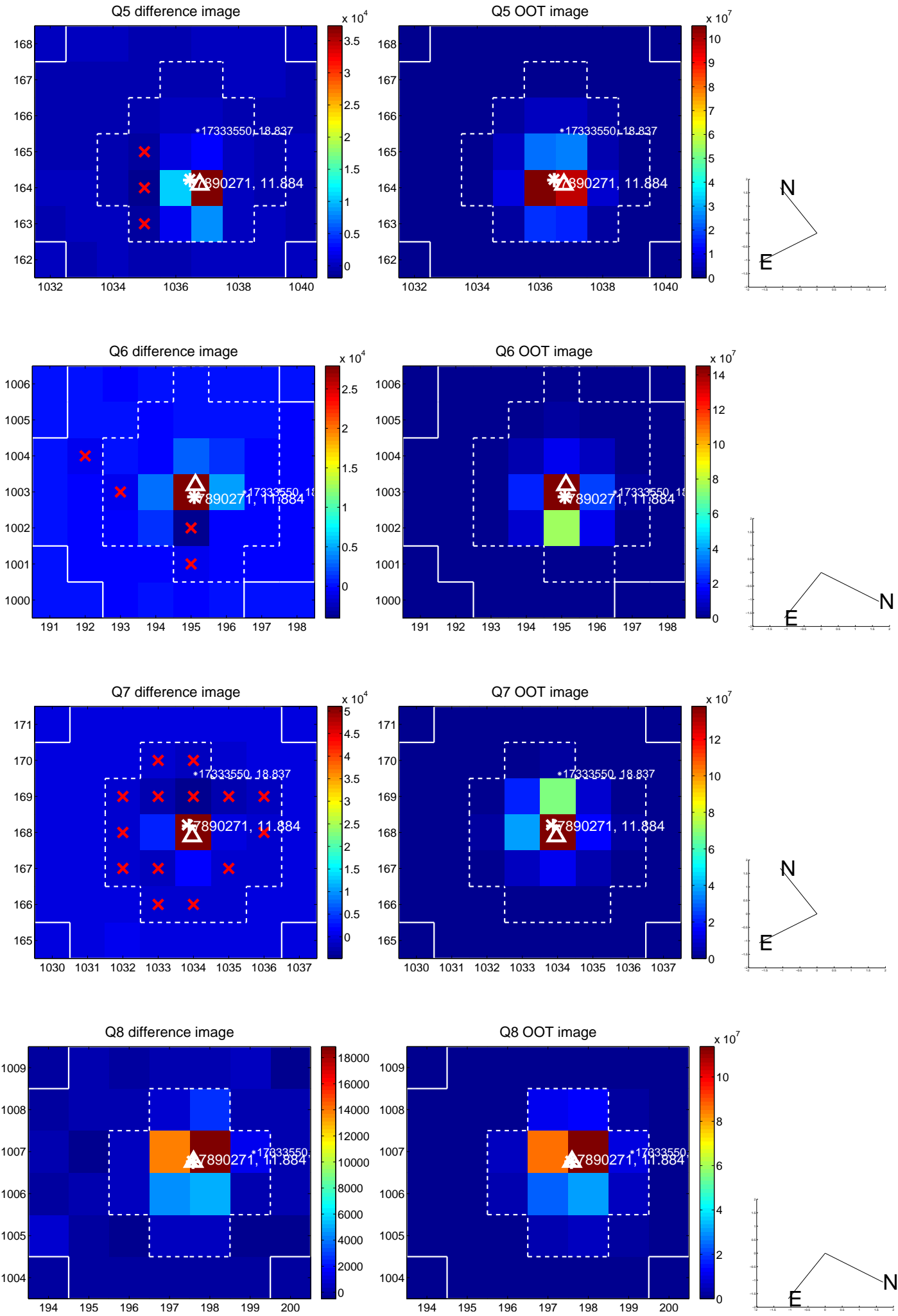


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

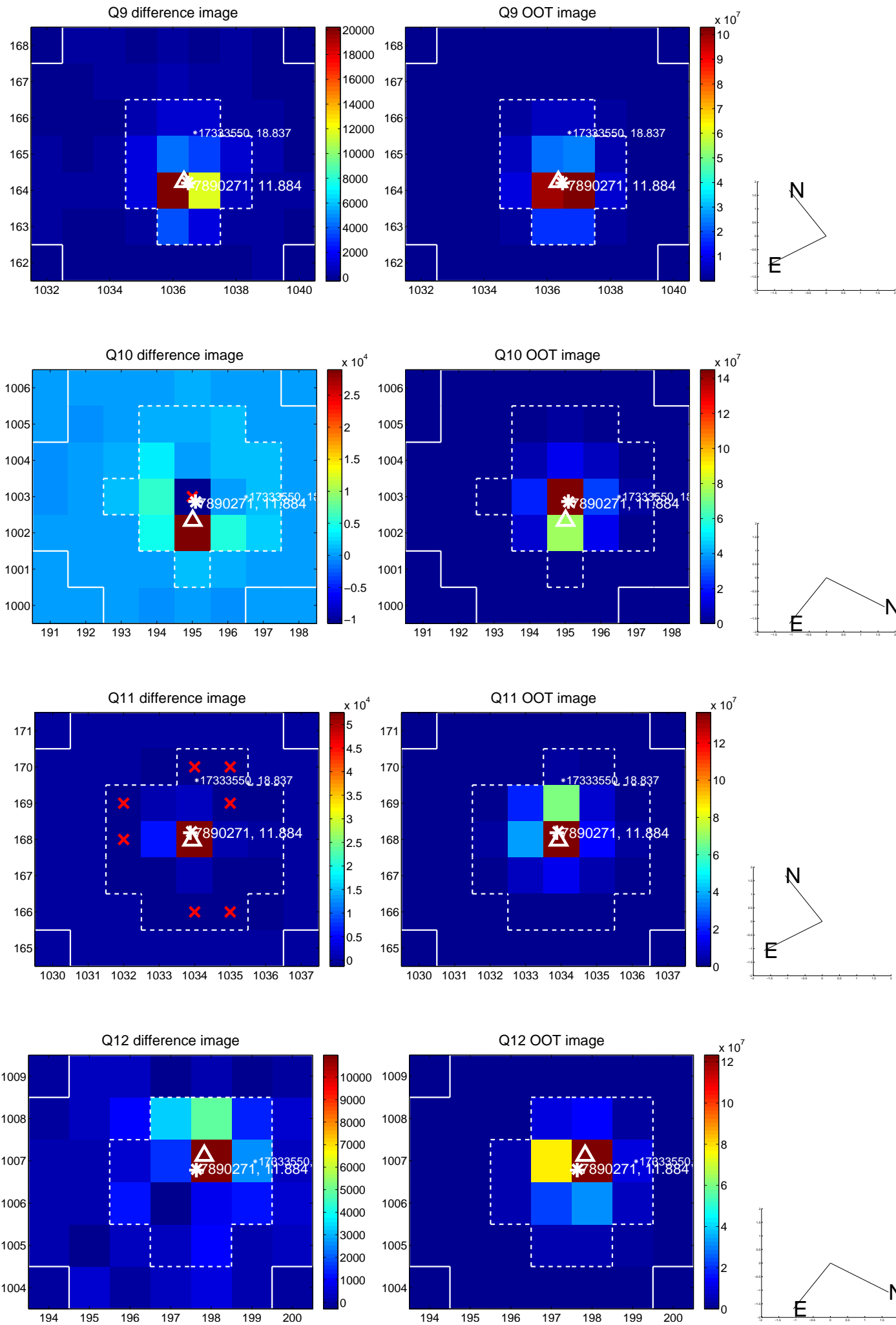
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



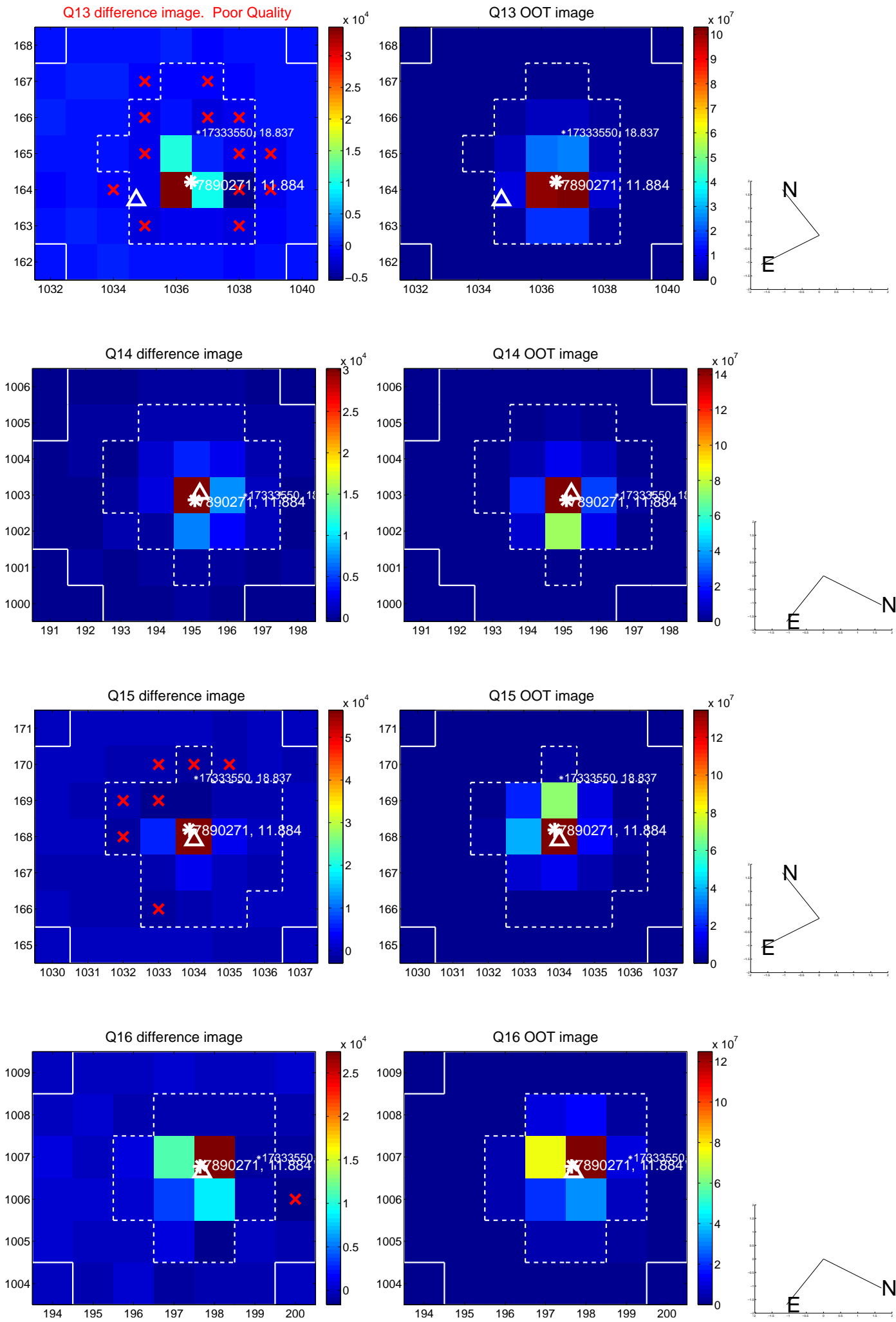
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



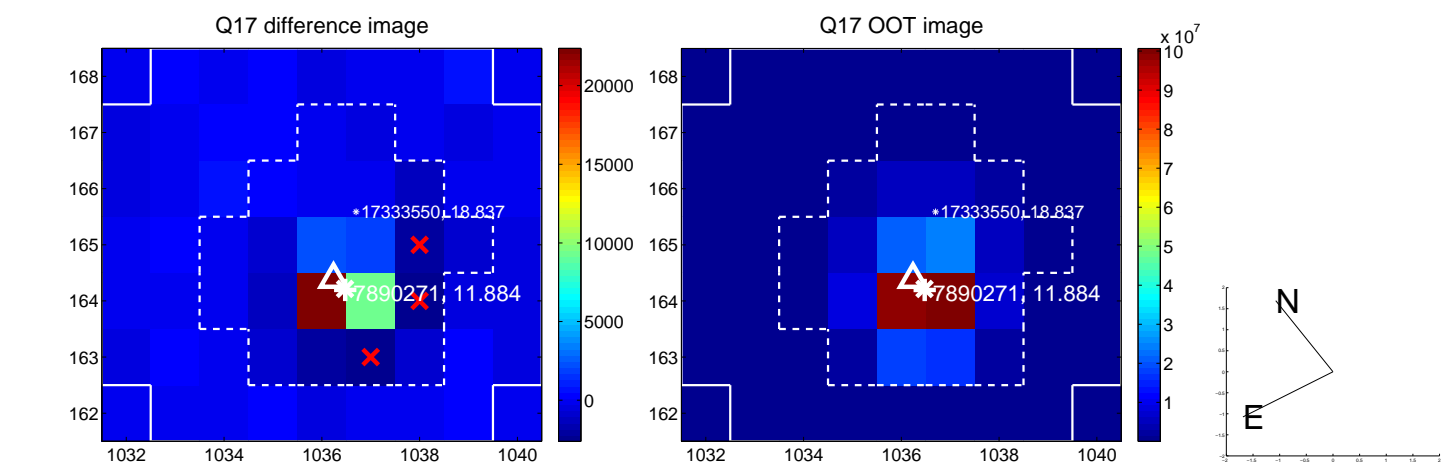
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



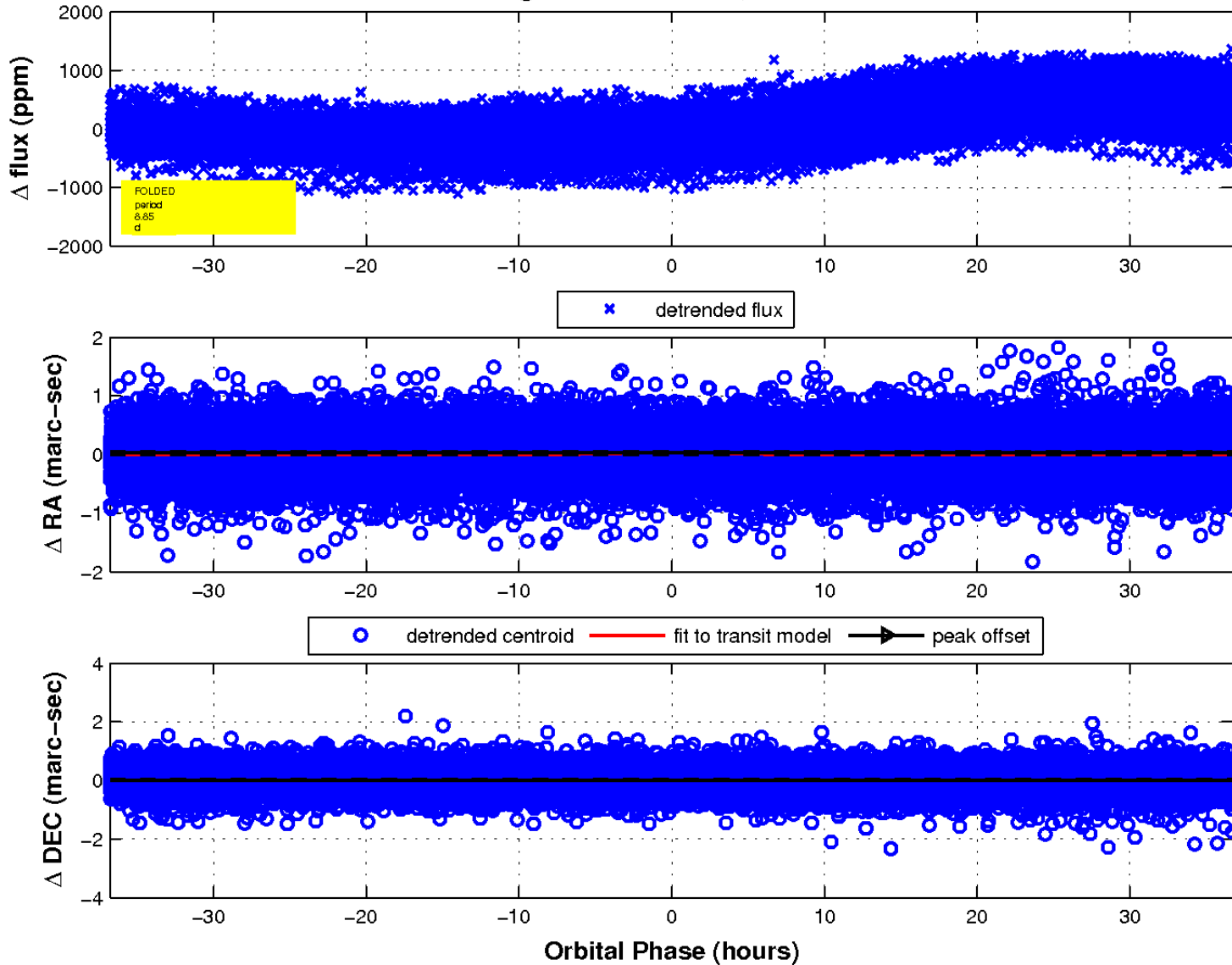
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

