

KIC 006233890

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})
006233890-01	OBS	1624.01	2.995449	132.769906	141.9	5.188	31.9	33.1	3.09	6106	7.10	5494.71
006233890-02	OBS	No	7.365937	135.160921	55.9	24.849	7.3	7.7	3.09	6106	2.43	1655.48

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006233890-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—EPHEM_MATCH
006233890-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV

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 006233890-01

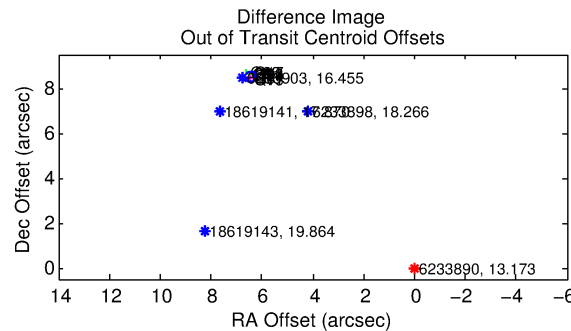
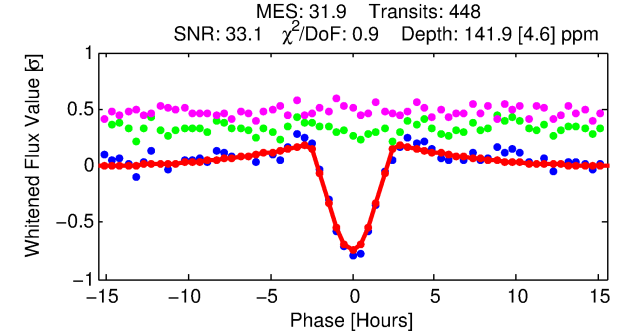
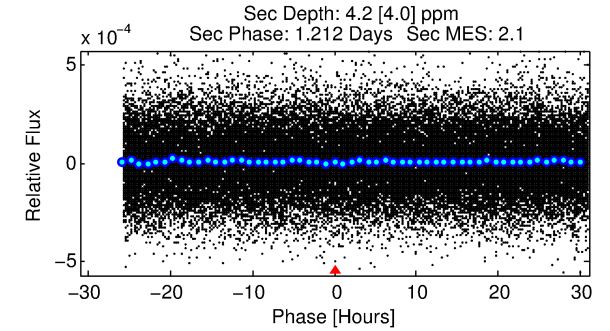
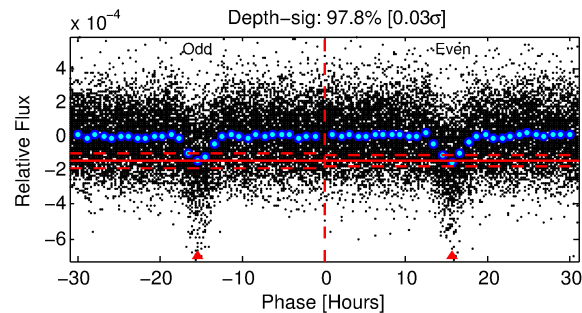
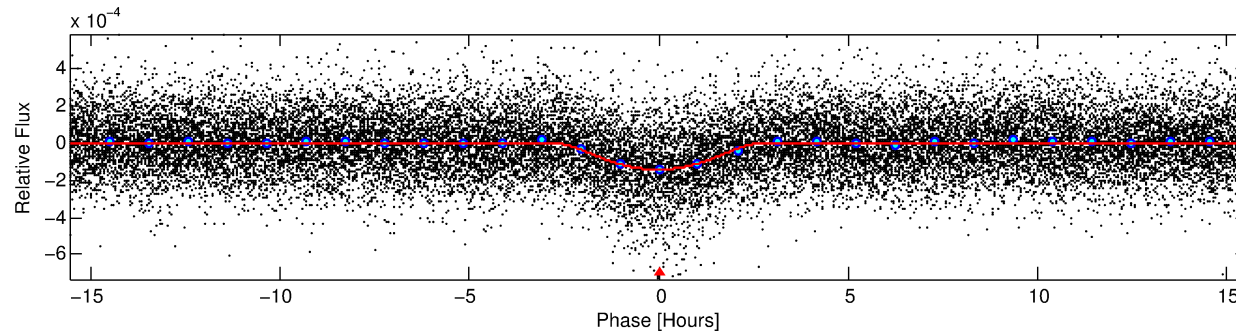
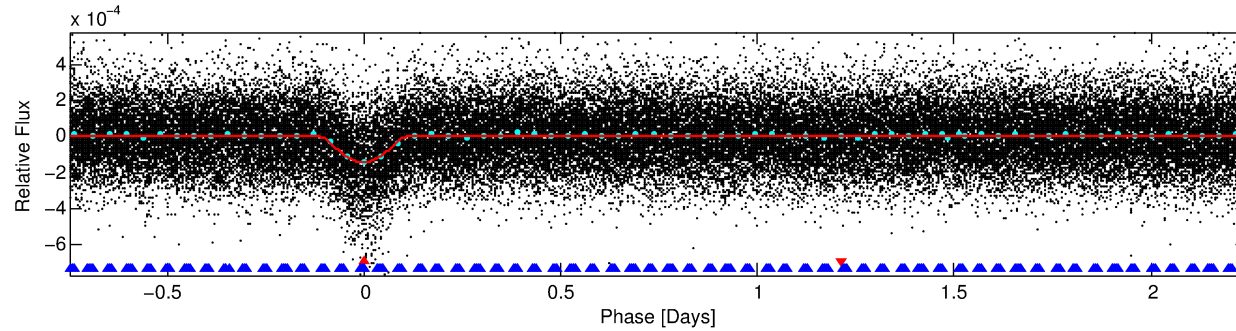
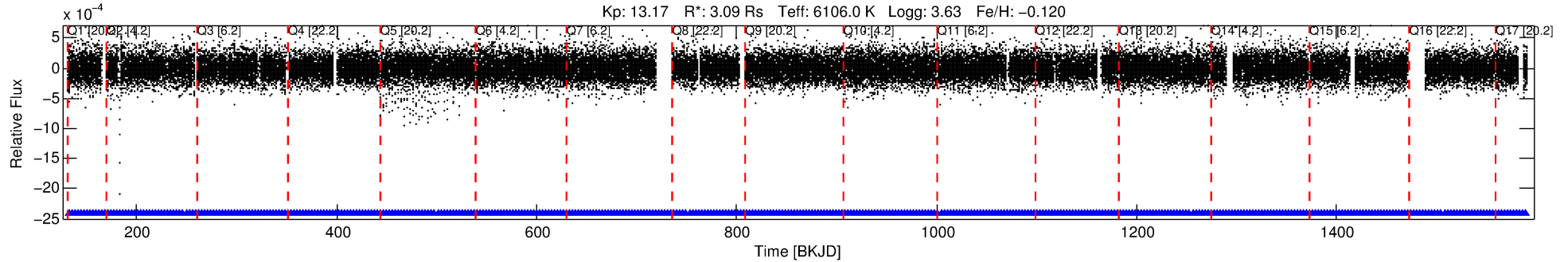
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
006233890-01	6233890	3609.01	6233903	1:1	10.9	1	2	16.45	13.17	1443.30	Direct-PRF	0	1.86	1.31

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 6233890 Candidate: 1 of 2 Period: 2.995 d
KOI: K01624.01 Corr: 0.930

Kp: 13.17 R*: 3.09 Rs Teff: 6106.0 K Logg: 3.63 Fe/H: -0.120



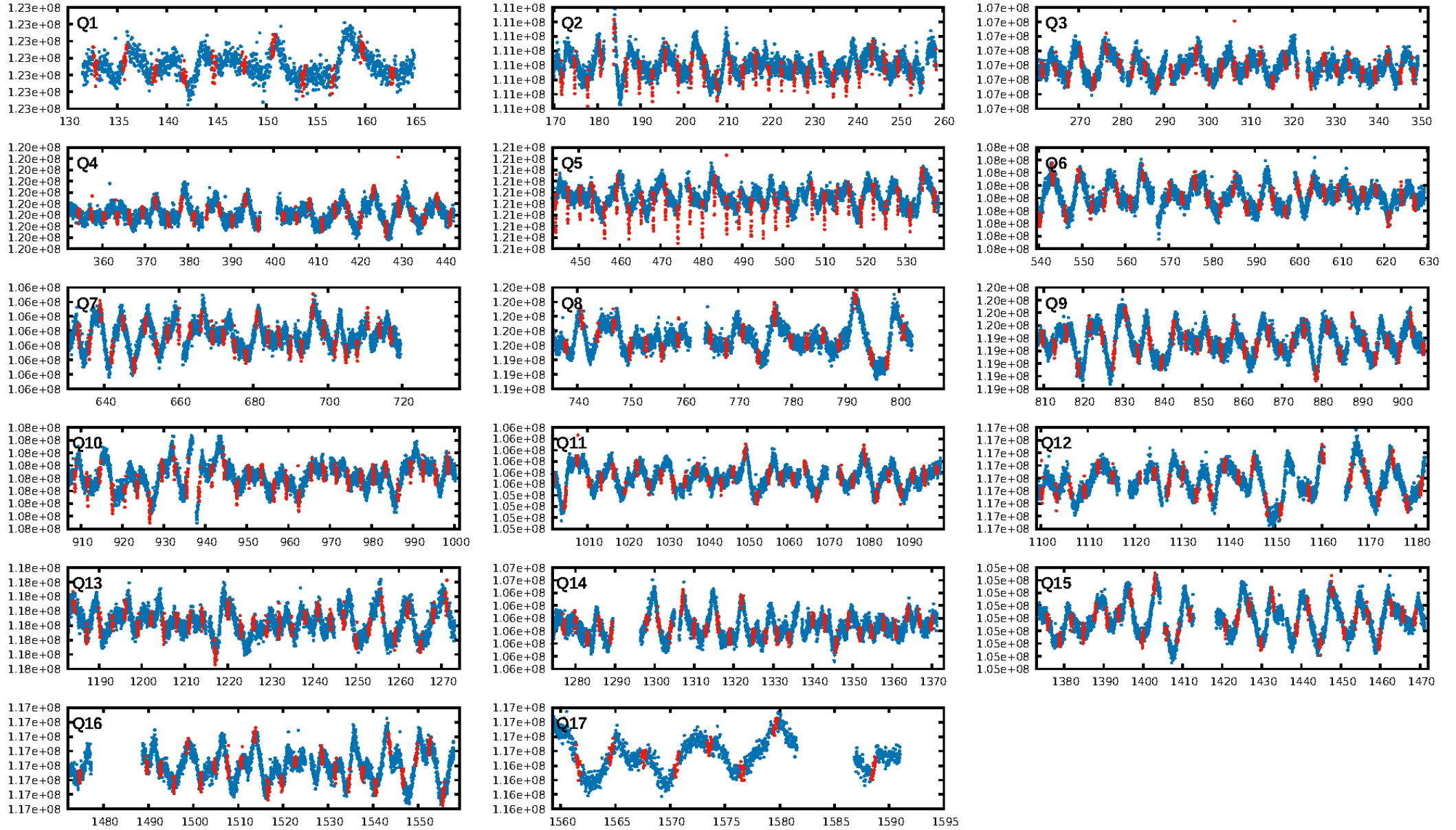
DV Fit Results:

Period = 2.99545 [0.00001] d
Epoch = 132.7699 [0.0028] BKJD
Rp/R* = 0.0211 [0.0157]
a/R* = 1.38 [0.13]
b = 1.00 [0.02]
Seff = 5494.71 [3342.96]
Teq = 2195 [334] K
Rp = 7.10 [5.98] Re
a = 0.0465 [0.0174] AU
Ag = 0.10 [0.18] [-4.92σ]
Teff = 1901 [842] K [-0.32σ]

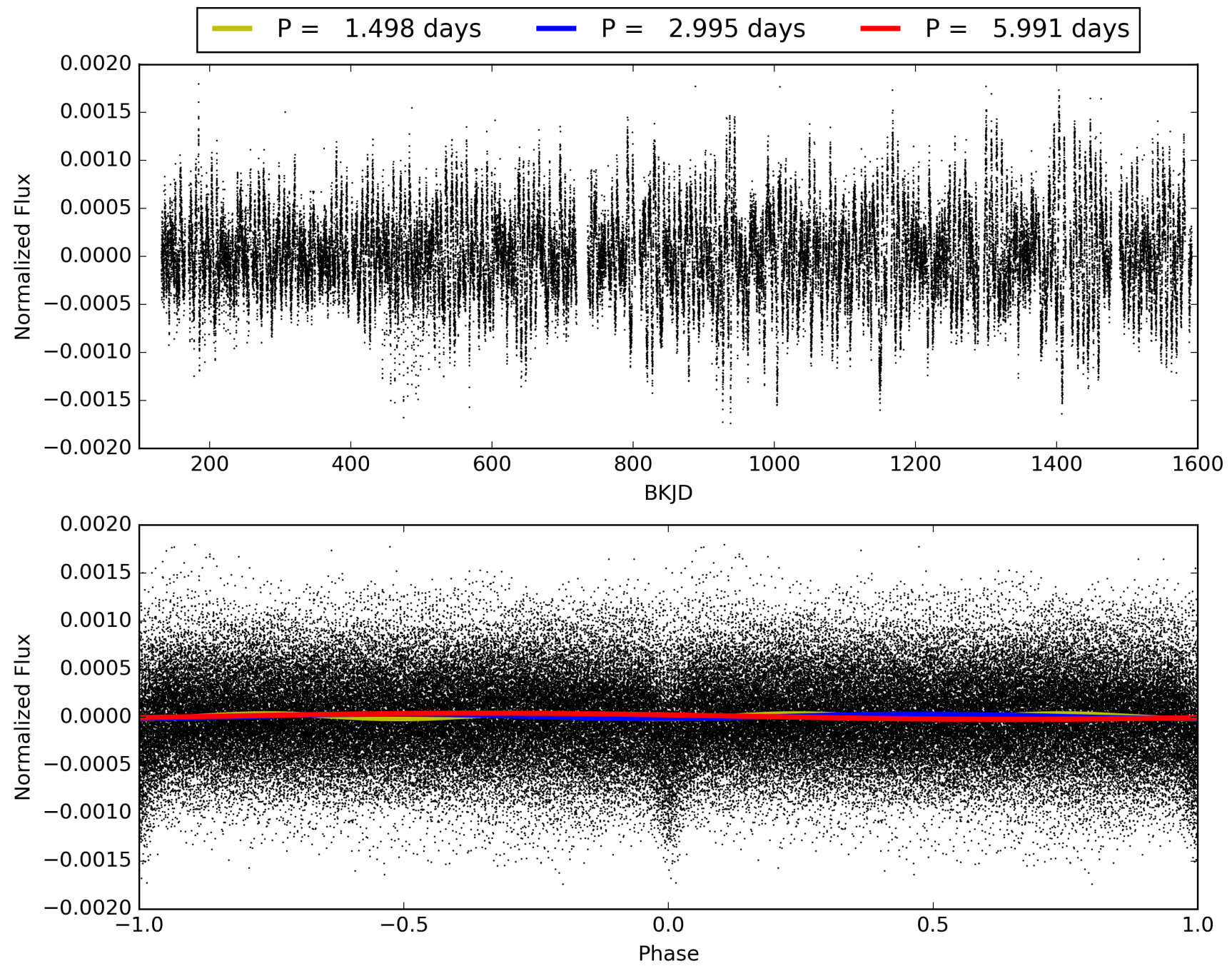
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [4.13σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.40e-237
RollingBand-fgt: 1.00 [429/429]
GhostDiagnostic-chr: -0.6646
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 10.667 arcsec [147.01σ]
KicOffset-rm: 10.787 arcsec [134.57σ]
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 006233890-01, PDC Light Curves

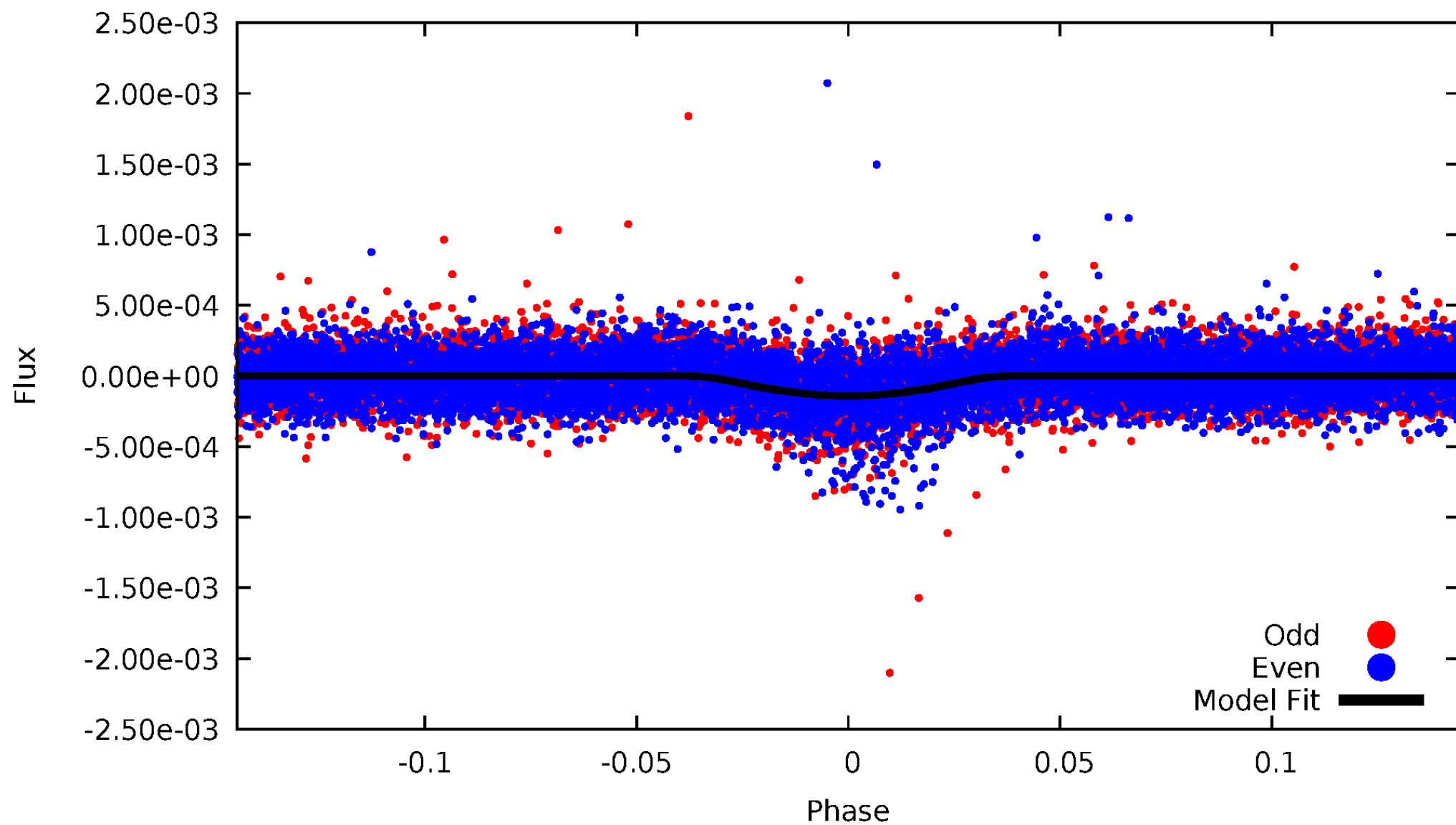


TCE 006233890-01



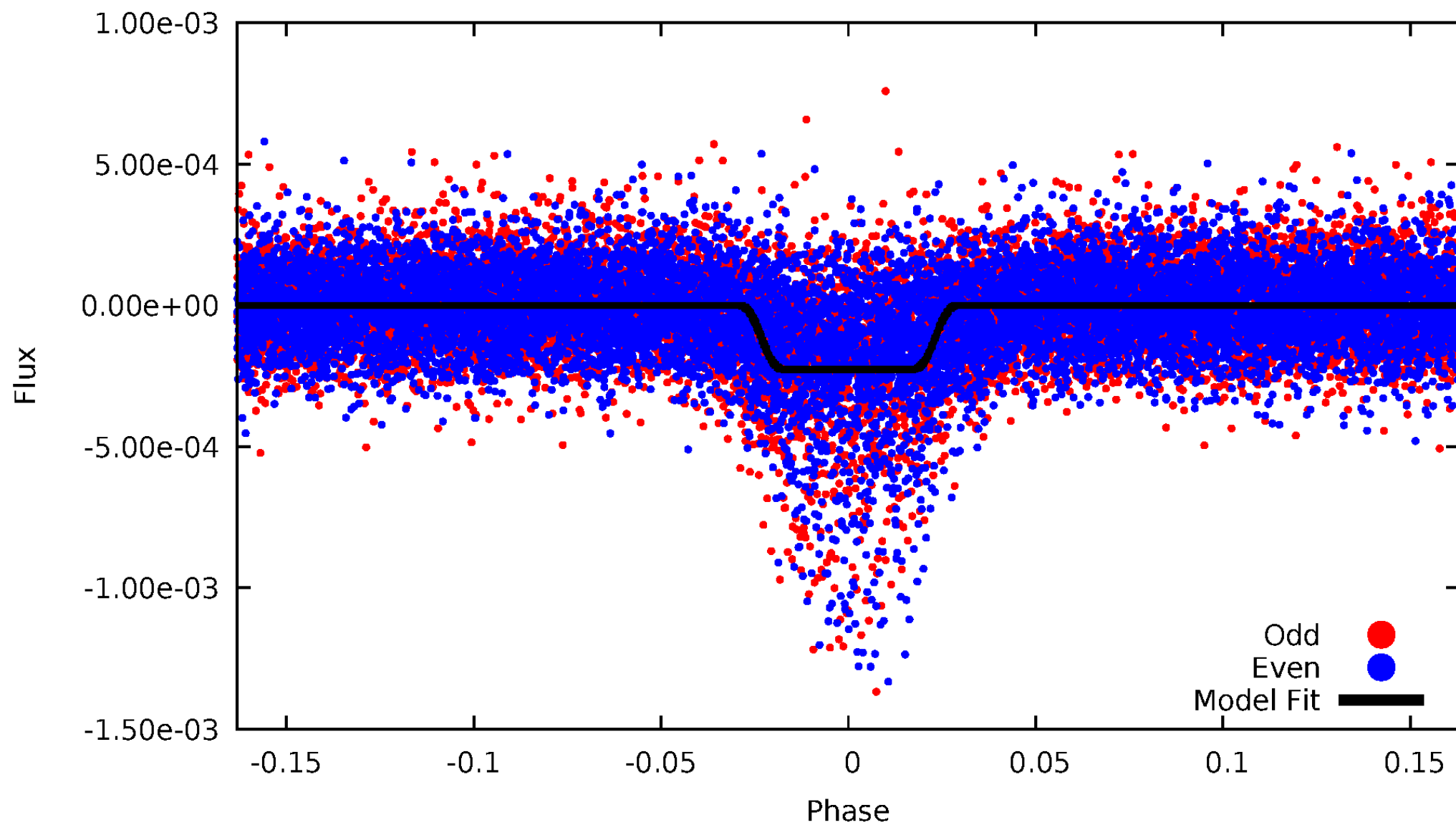
DV Odd/Even

TCE 006233890-01

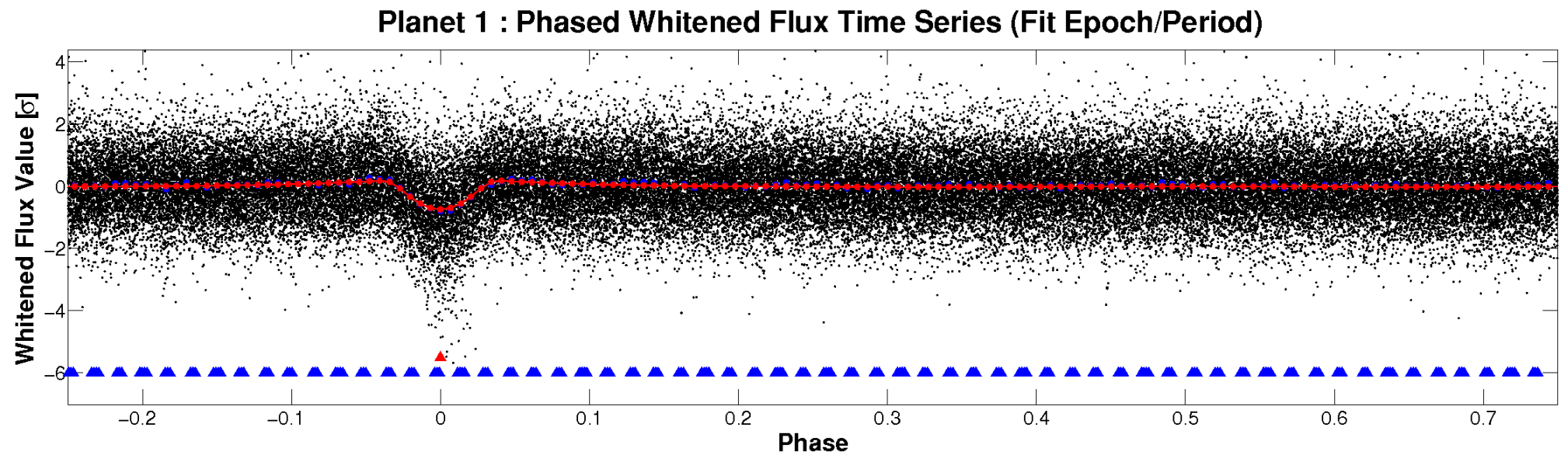
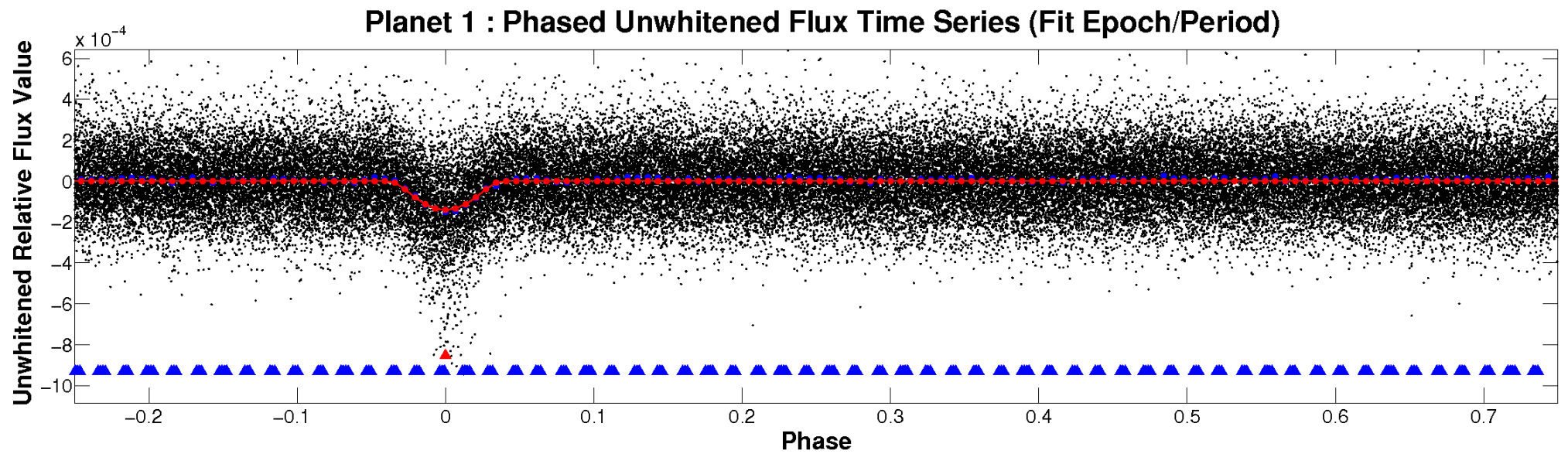


ALT Odd/Even

TCE 006233890-01

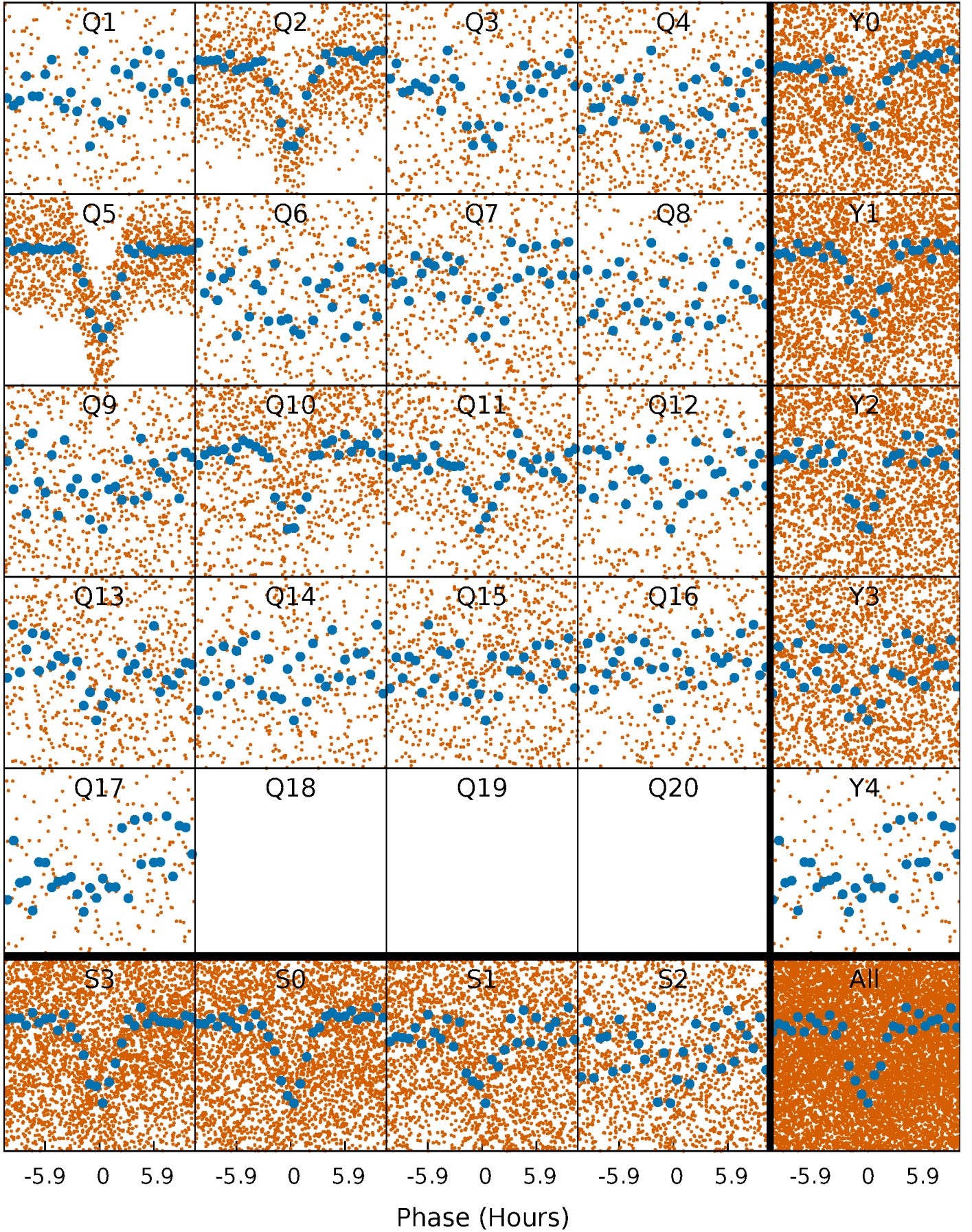


Non-Whitened Vs. Whitened Light Curve



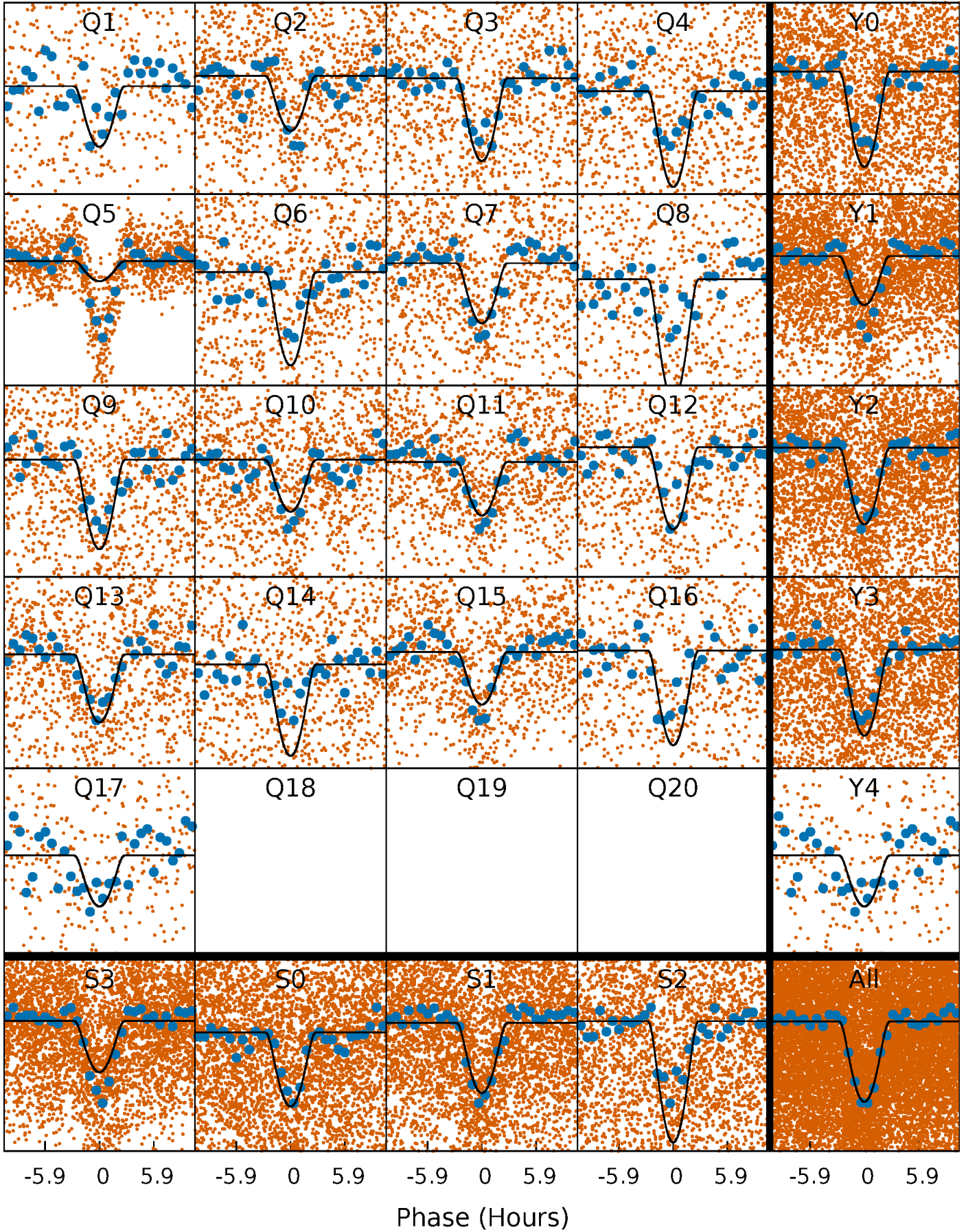
PDC Quarter-Phased Transit Curves

TCE 006233890-01 P= 2.995449 Days $T_0=132.769906$ (BKJD)



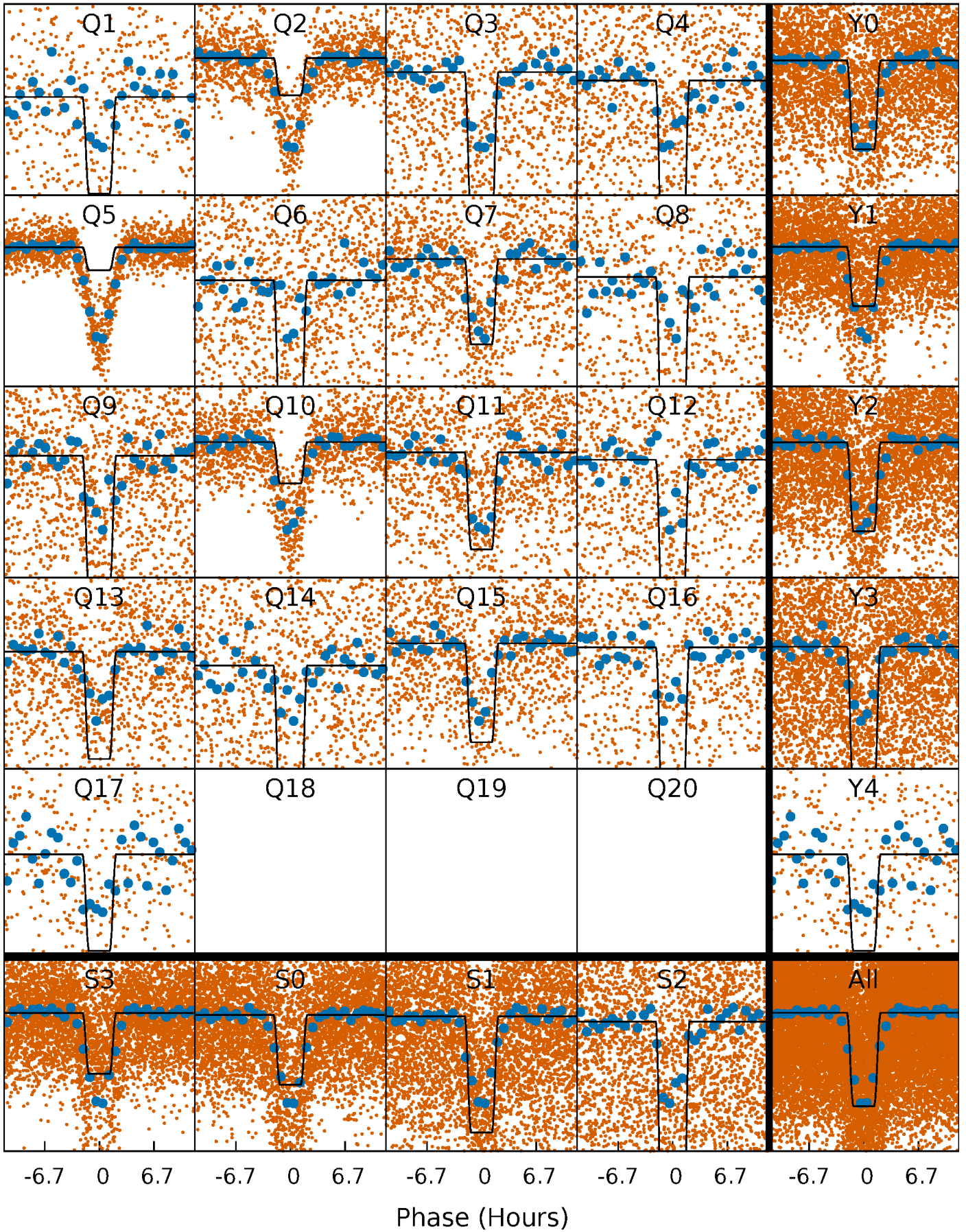
DV Quarter-Phased Transit Curves

TCE 006233890-01 P= 2.995449 Days $T_0=132.769906$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

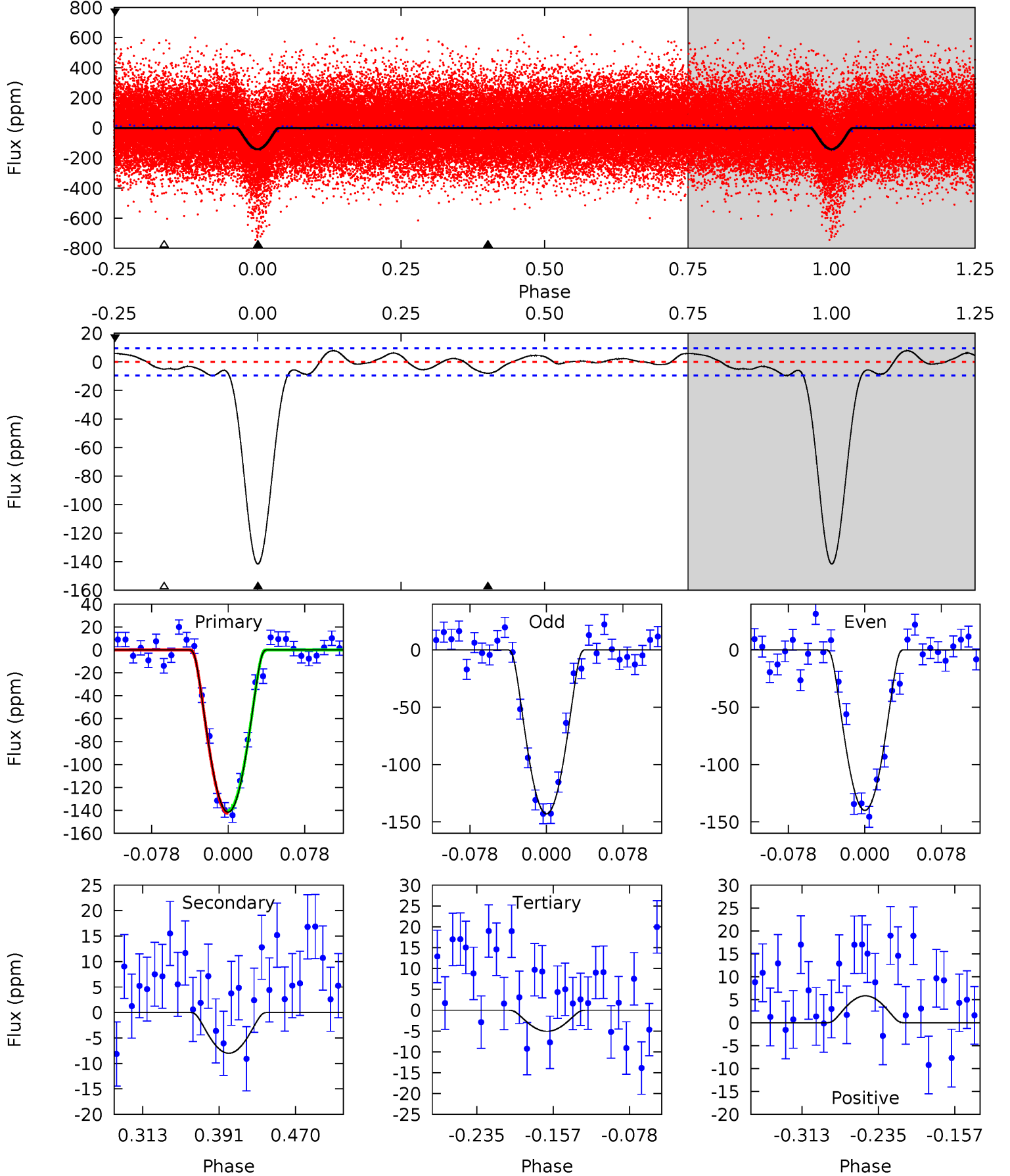
TCE 006233890-01 P= 2.995425 Days $T_0=132.777327$ (BKJD)



DV Model-Shift Uniqueness Test

006233890-01, P = 2.995449 Days, E = 129.774457 Days

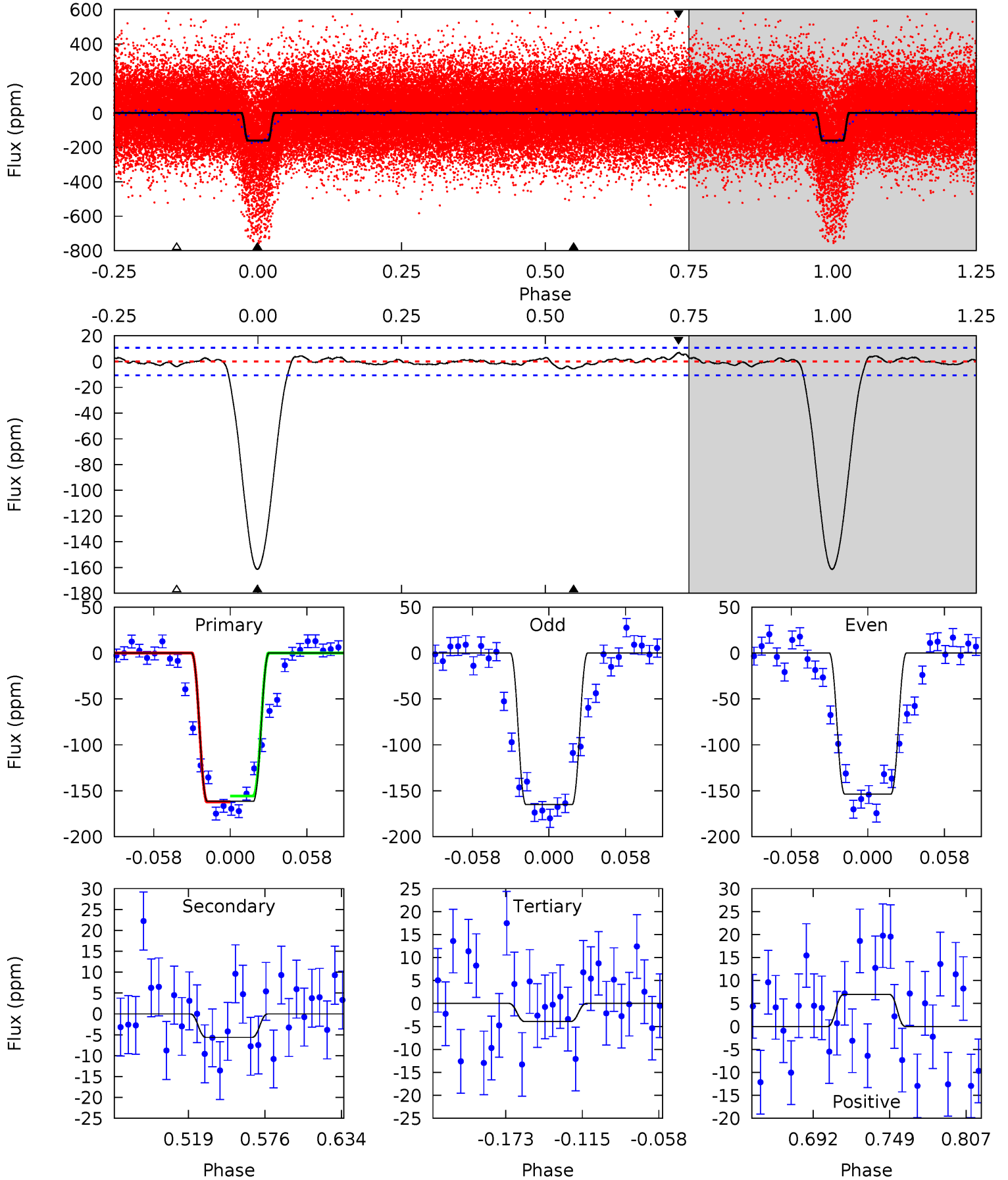
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
68.2	3.85	2.44	2.82	4.62	1.76	1.87	65.7	65.3	1.41	1.03	0.72	1.22	0.05	0.47



Alt Model-Shift Uniqueness Test

006233890-01, P = 2.995425 Days, E = 129.781902 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
70.4	2.46	1.72	3.04	4.68	1.90	0.87	68.7	67.4	0.75	-0.58	2.48	1.55	0.04	1.38



Stellar Parameters For KIC 006233890

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6106^{+218}_{-218}	$3.633^{+0.345}_{-0.115}$	$-0.120^{+0.350}_{-0.300}$	$3.090^{+0.523}_{-1.220}$	$1.495^{+0.210}_{-0.360}$	$0.071^{+0.197}_{-0.024}$
	+4%/-4%	+9%/-3%	+292%/-250%	+17%/-39%	+14%/-24%	+277%/-34%
Source	PHO1	FLK73	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 006233890-01 / KOI 1624.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-8 ± 2	$6.92^{+4.66}_{-3.96}$	3014^{+226}_{-325}	-2640^{+6157}_{-389}	$0.193^{+0.838}_{-0.132}$
Alt.	-6 ± 2	$5.87^{+4.85}_{-3.54}$	3017^{+220}_{-303}	-2629^{+6279}_{-420}	$0.177^{+1.111}_{-0.127}$

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

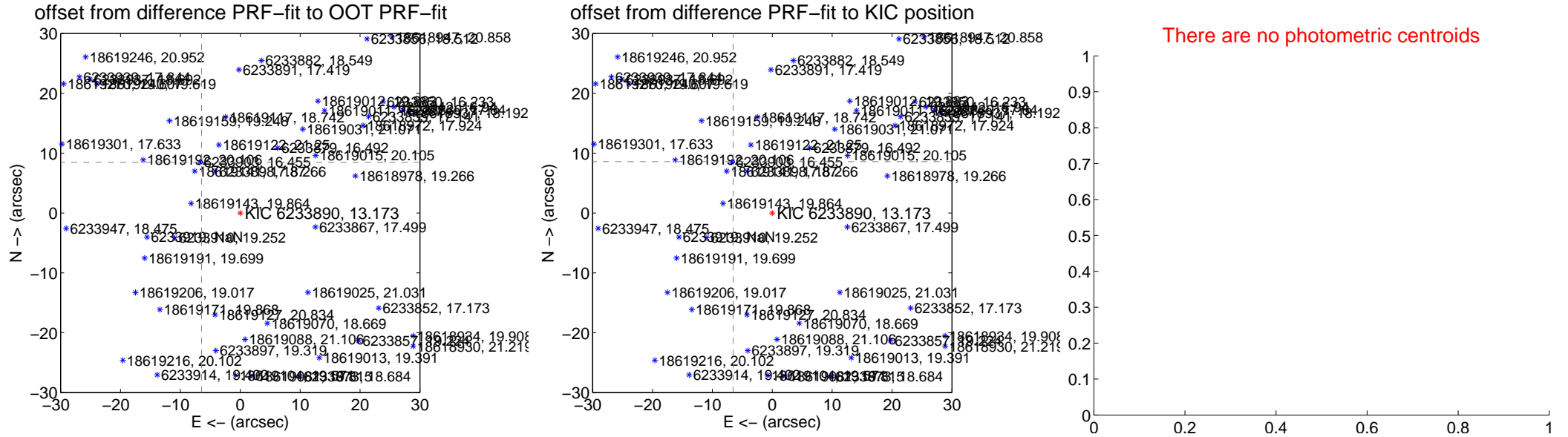
DV Centroid Data

Supplemental centroid analysis for 006233890-01. Kepler magnitude: 13.17. Transit SNR 33.14

There are 17 quarters with good PRF difference image offsets

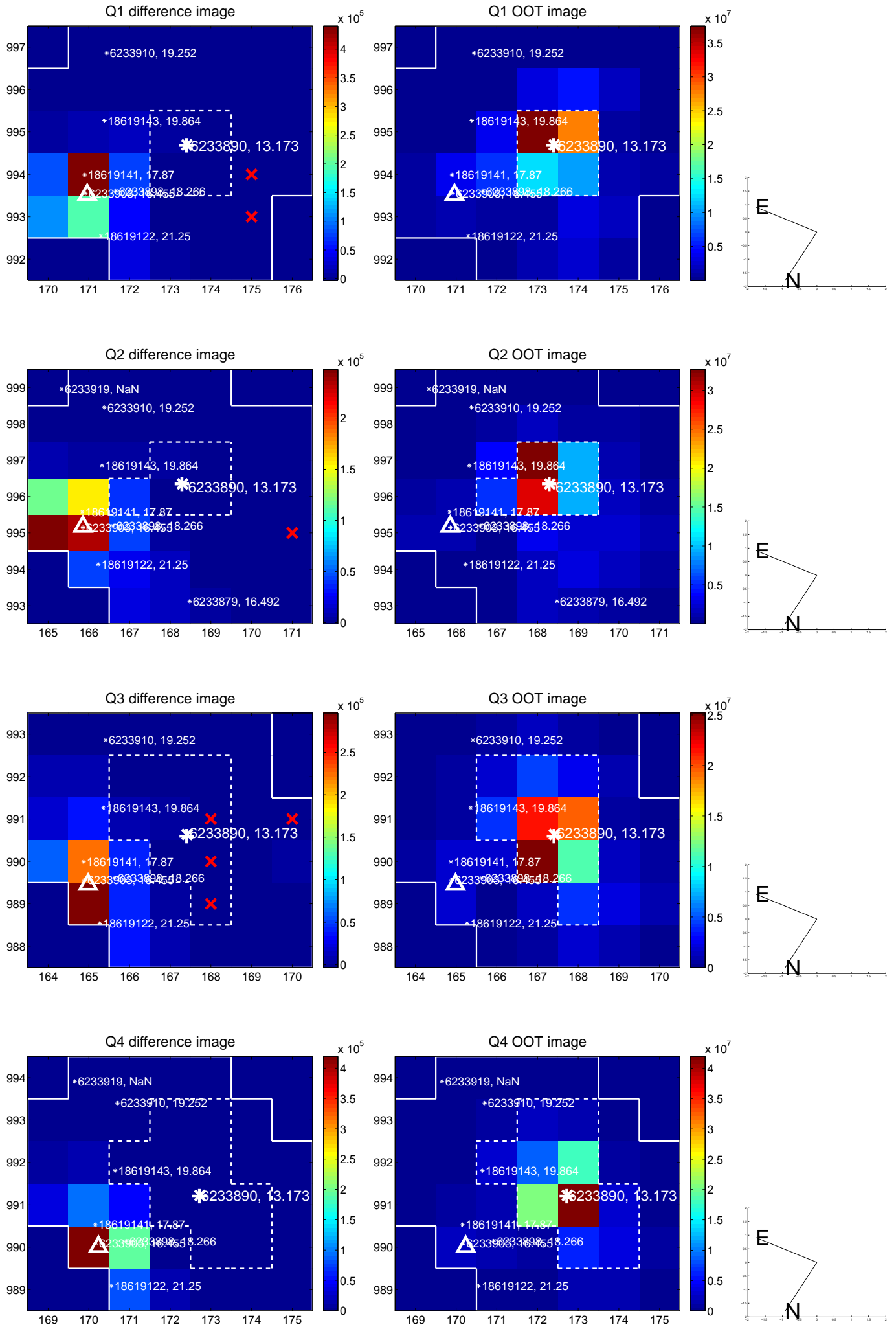
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	10.667 \pm 0.073	147.01	6.460 \pm 0.068	8.488 \pm 0.072
PRF-fit source offset from KIC position	10.787 \pm 0.080	134.57	6.544 \pm 0.073	8.576 \pm 0.076
photometric centroid source offset	—	—	—	—

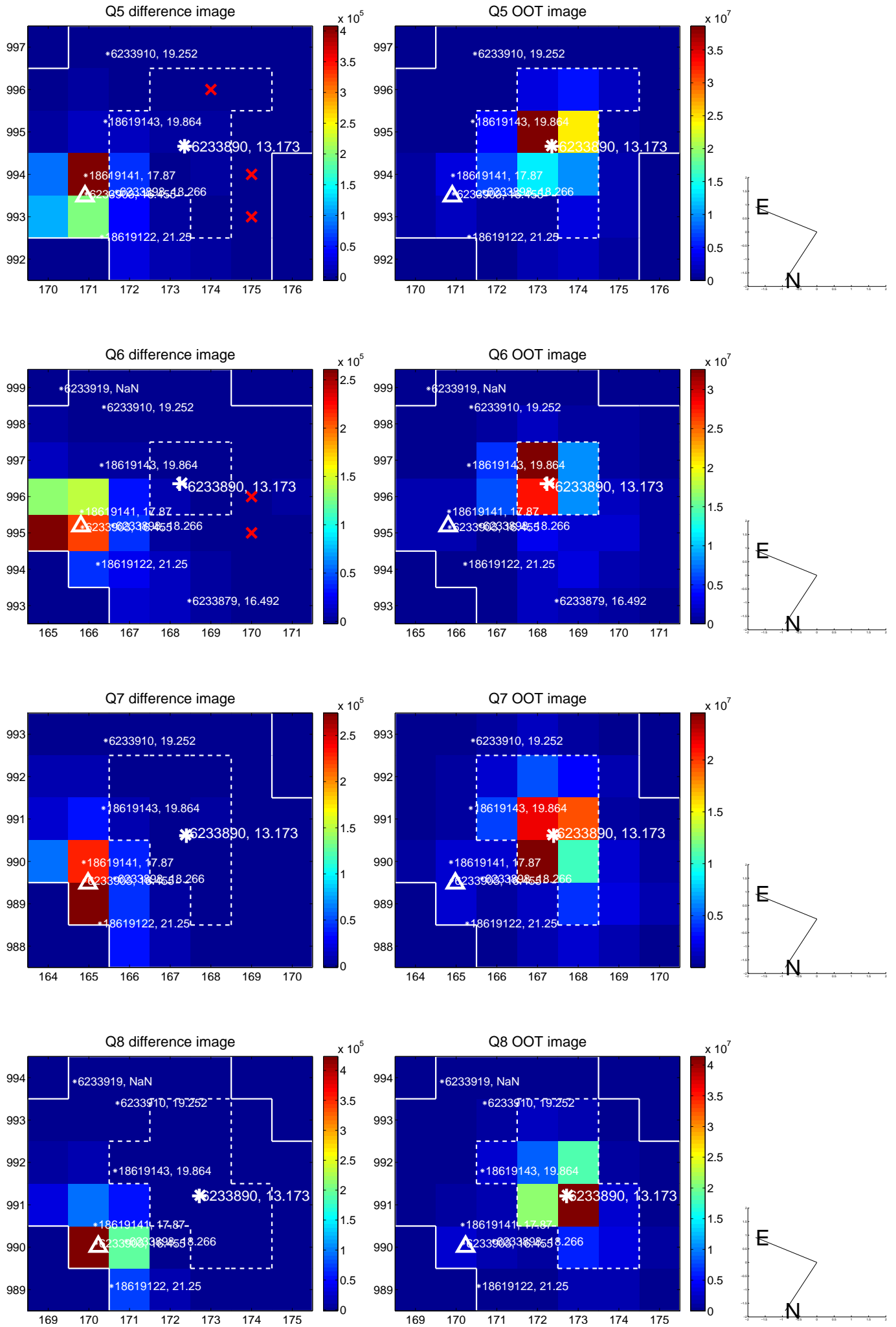


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

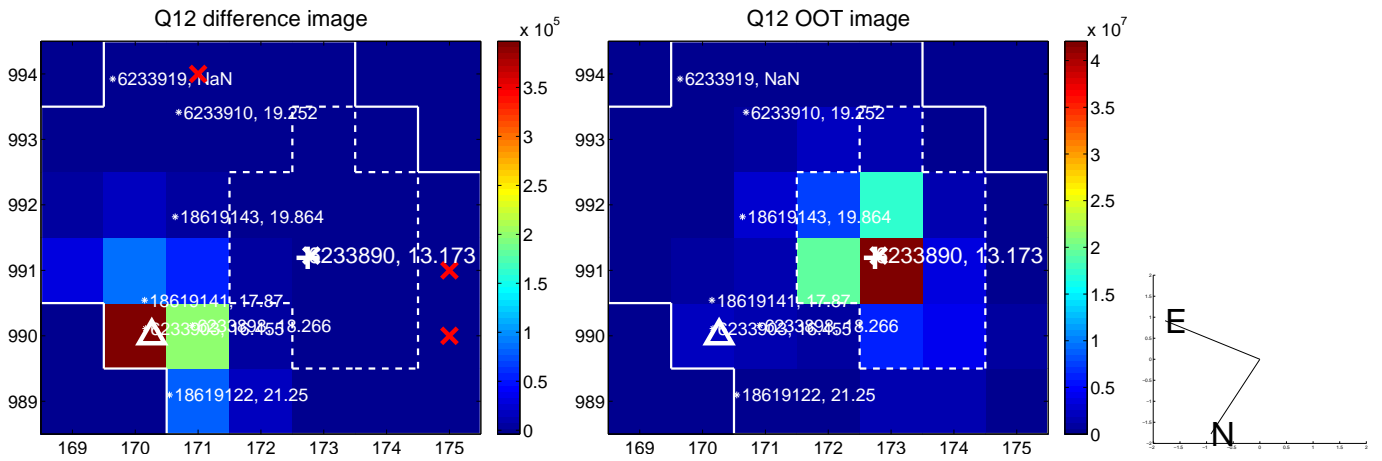
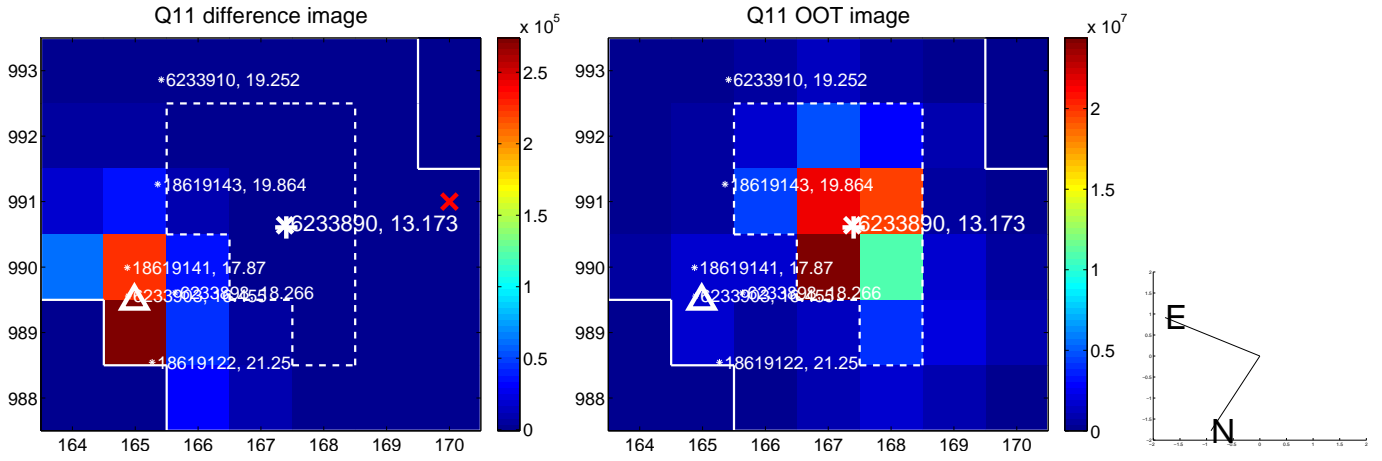
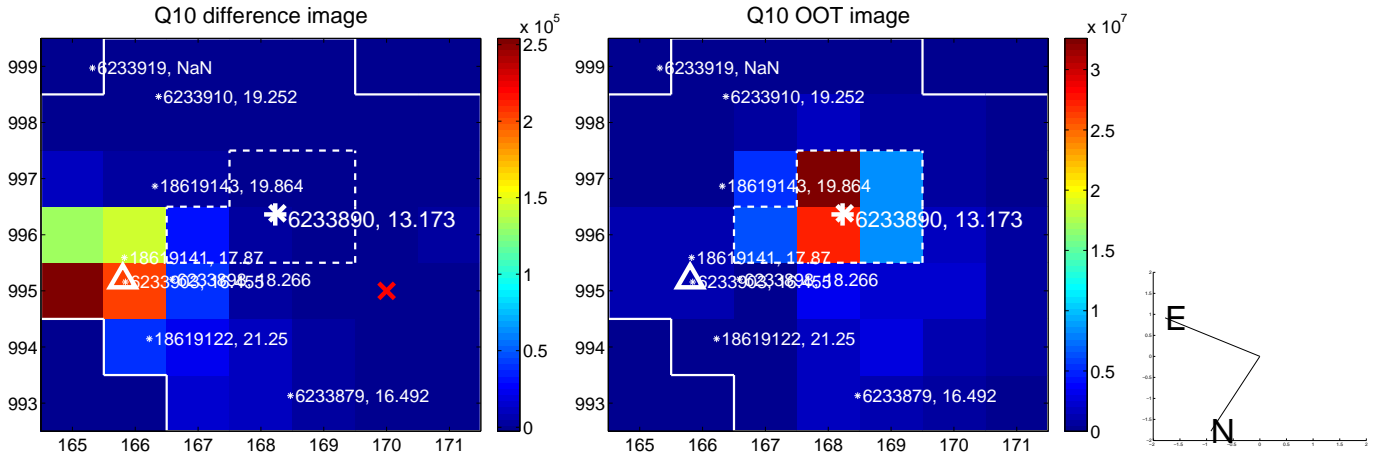
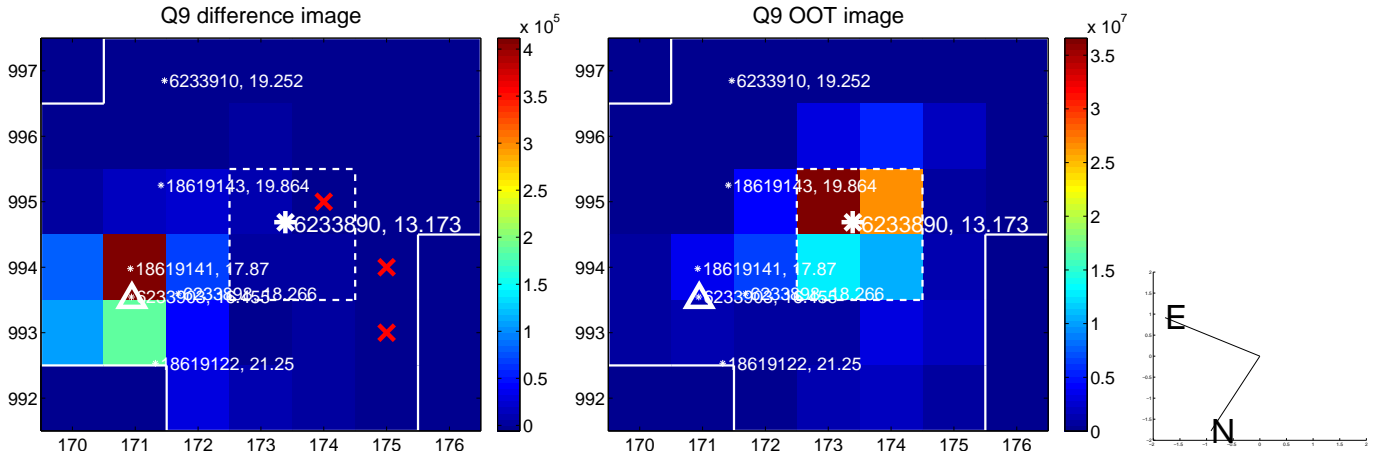
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



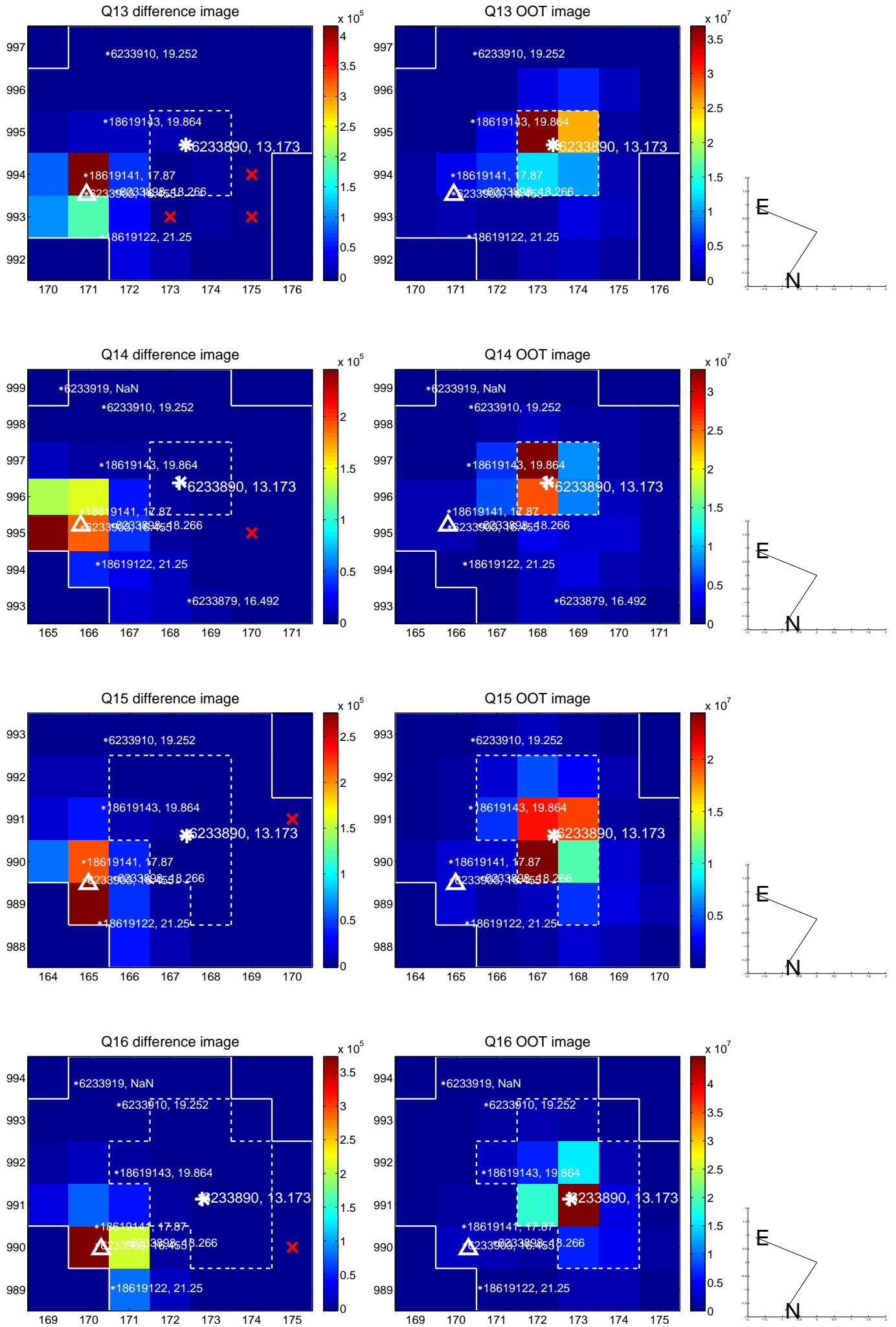
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



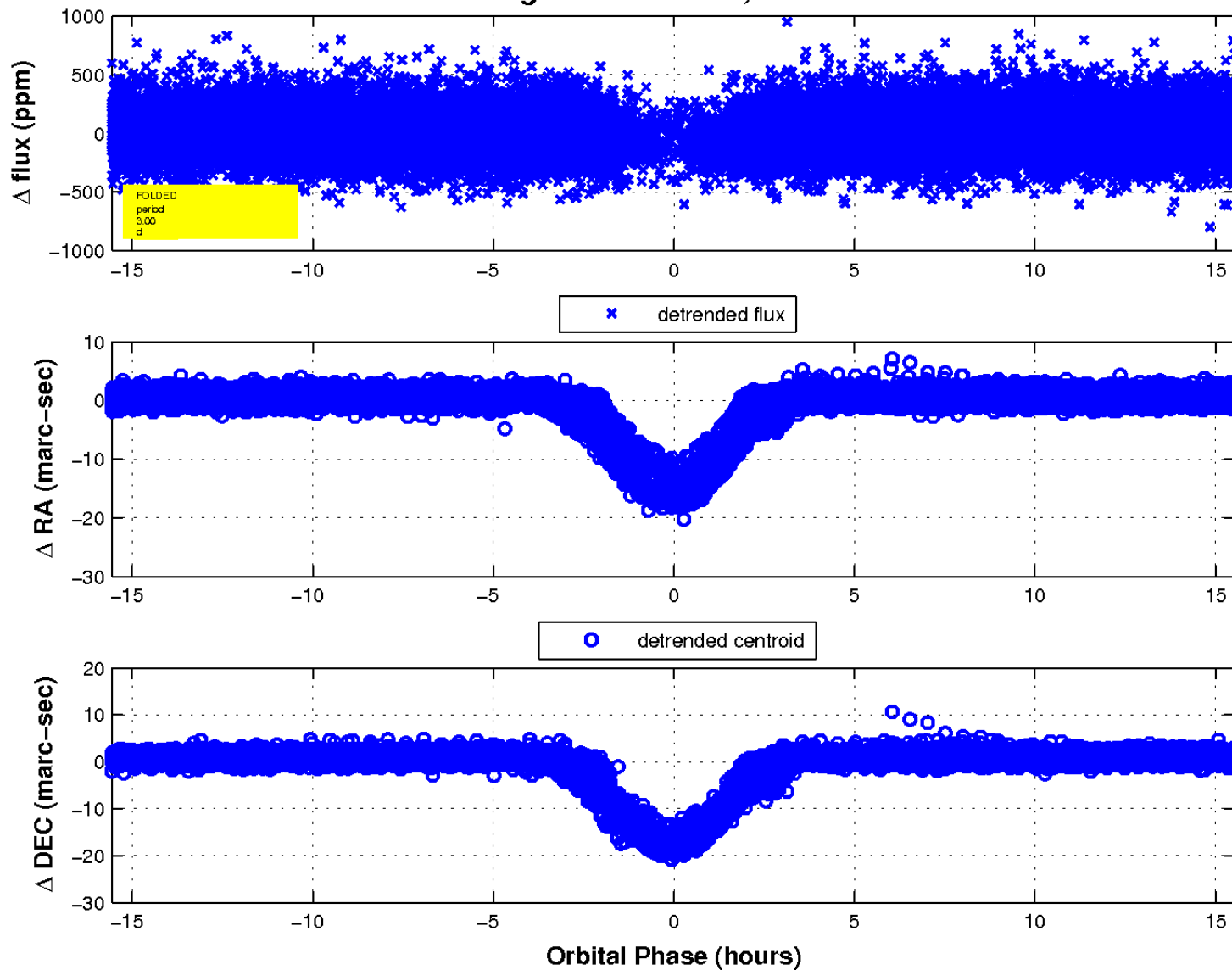
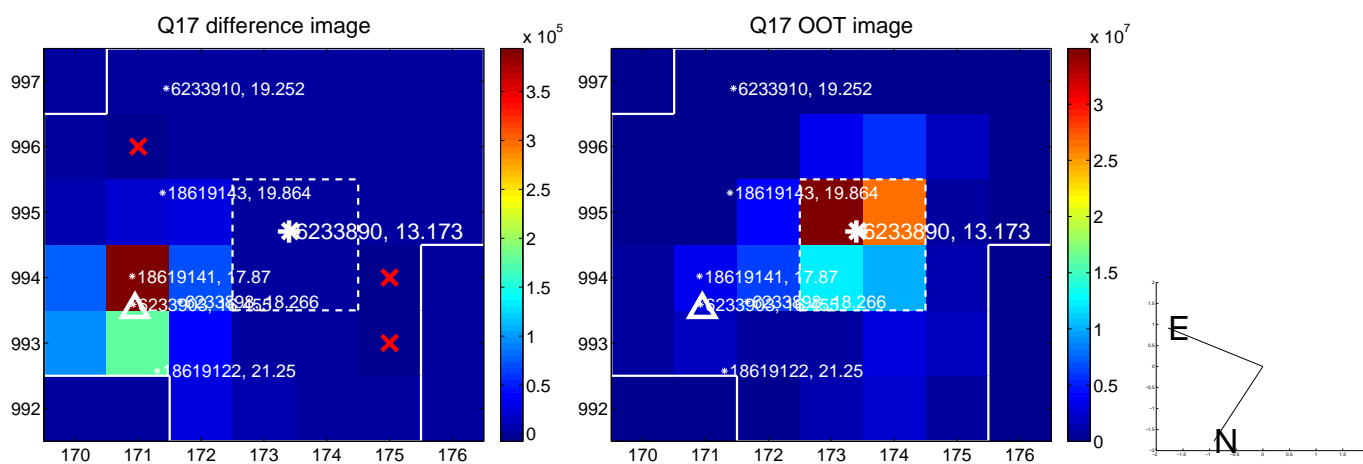
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

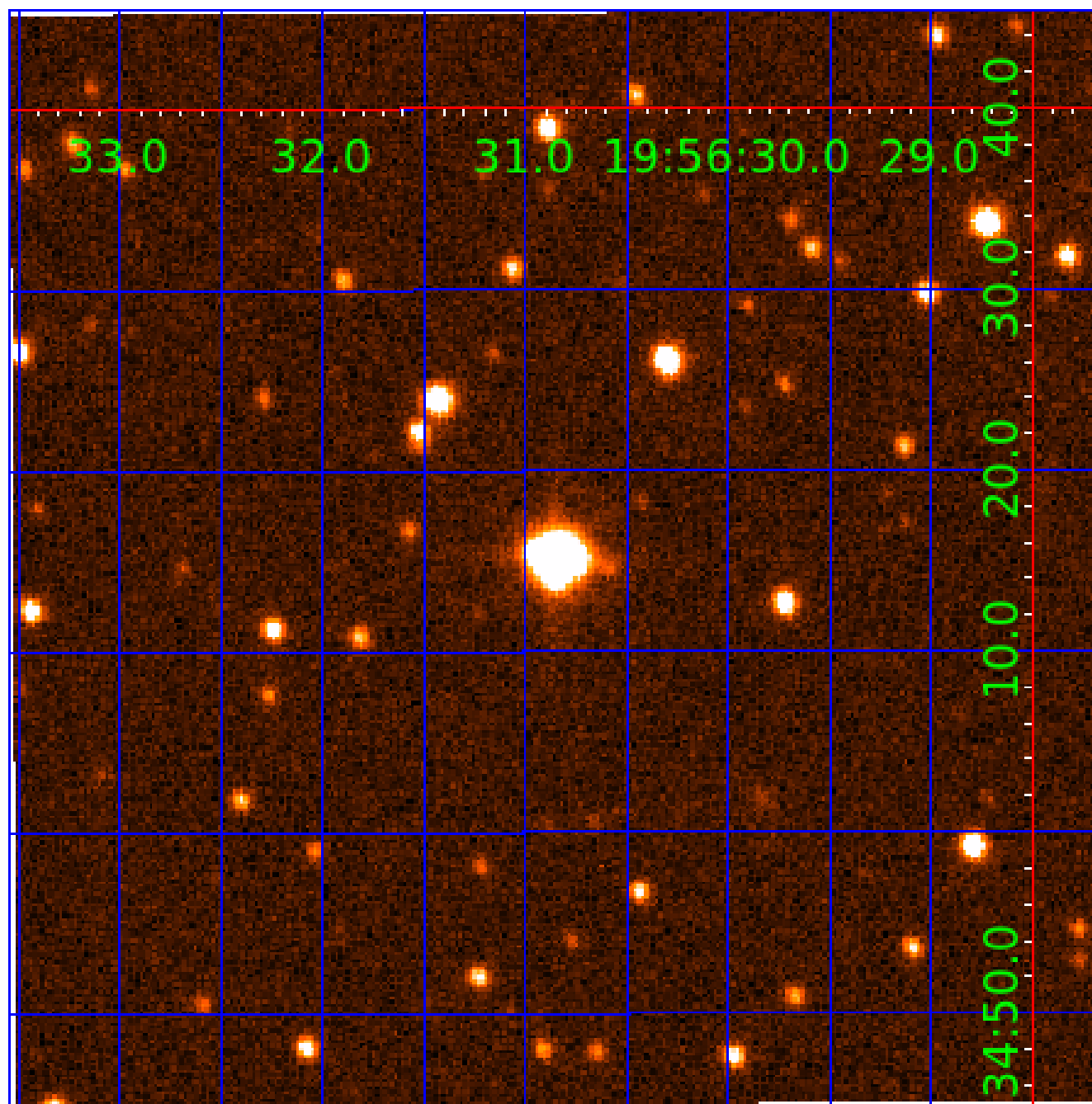


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006233890

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})
006233890-01	OBS	1624.01	2.995449	132.769906	141.9	5.188	31.9	33.1	3.09	6106	7.10	5494.71
006233890-02	OBS	No	7.365937	135.160921	55.9	24.849	7.3	7.7	3.09	6106	2.43	1655.48

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006233890-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—EPHEM_MATCH
006233890-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV

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.

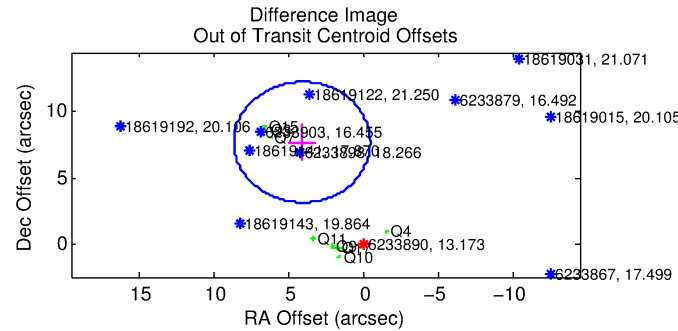
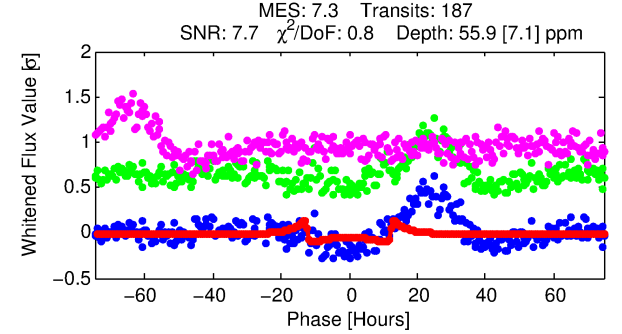
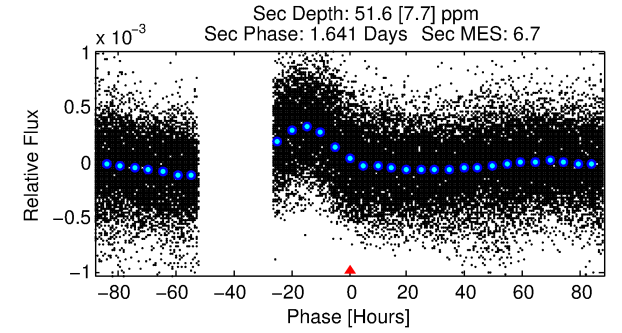
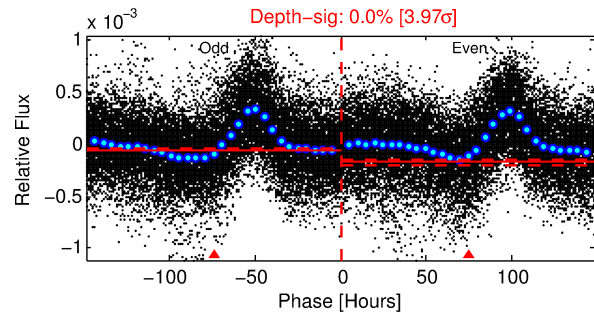
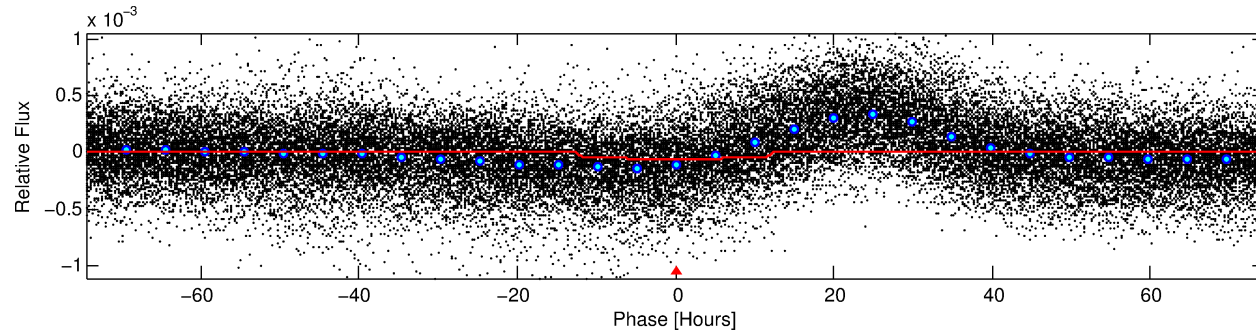
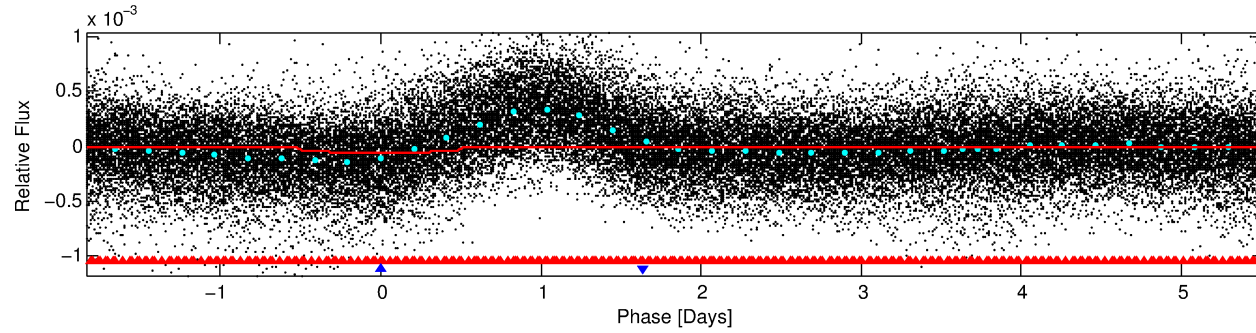
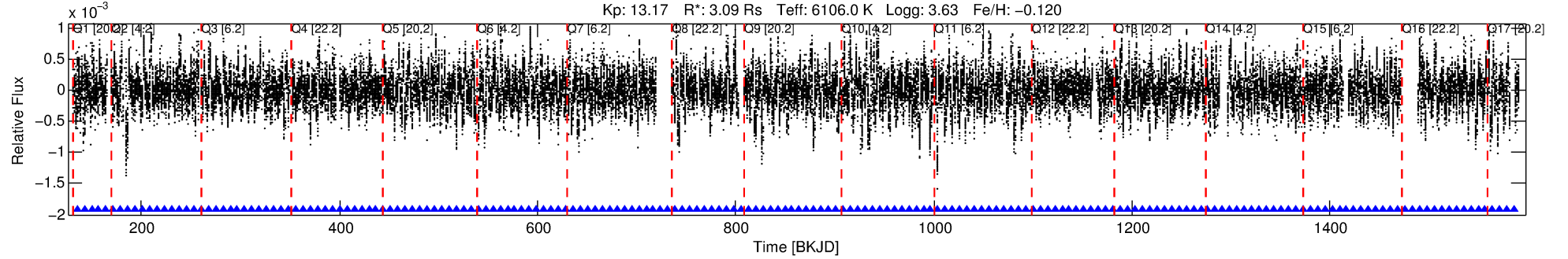
Ephemeris Match Information For 006233890-02

No Significant Match Found

DV One-Page Summary

KIC: 6233890 Candidate: 2 of 2 Period: 7.366 d
KOI: K01624 Corr: No Ephemeris Match

Kp: 13.17 R*: 3.09 Rs Teff: 6106.0 K Logg: 3.63 Fe/H: -0.120



DV Fit Results:

Period = 7.36594 [0.00011] d
Epoch = 135.1609 [0.0108] BKJD
Rp/R* = 0.0072 [0.0014]
a/R* = 1.94 [1.27]
b = 0.63 [0.84]
Seff = 1655.48 [1007.19]
Teq = 1627 [247] K
Rp = 2.43 [1.06] Re
a = 0.0848 [0.0316] AU
Ag = 34.48 [24.69] [1.36σ]
Teffp = 6094 [652] K [6.40σ]

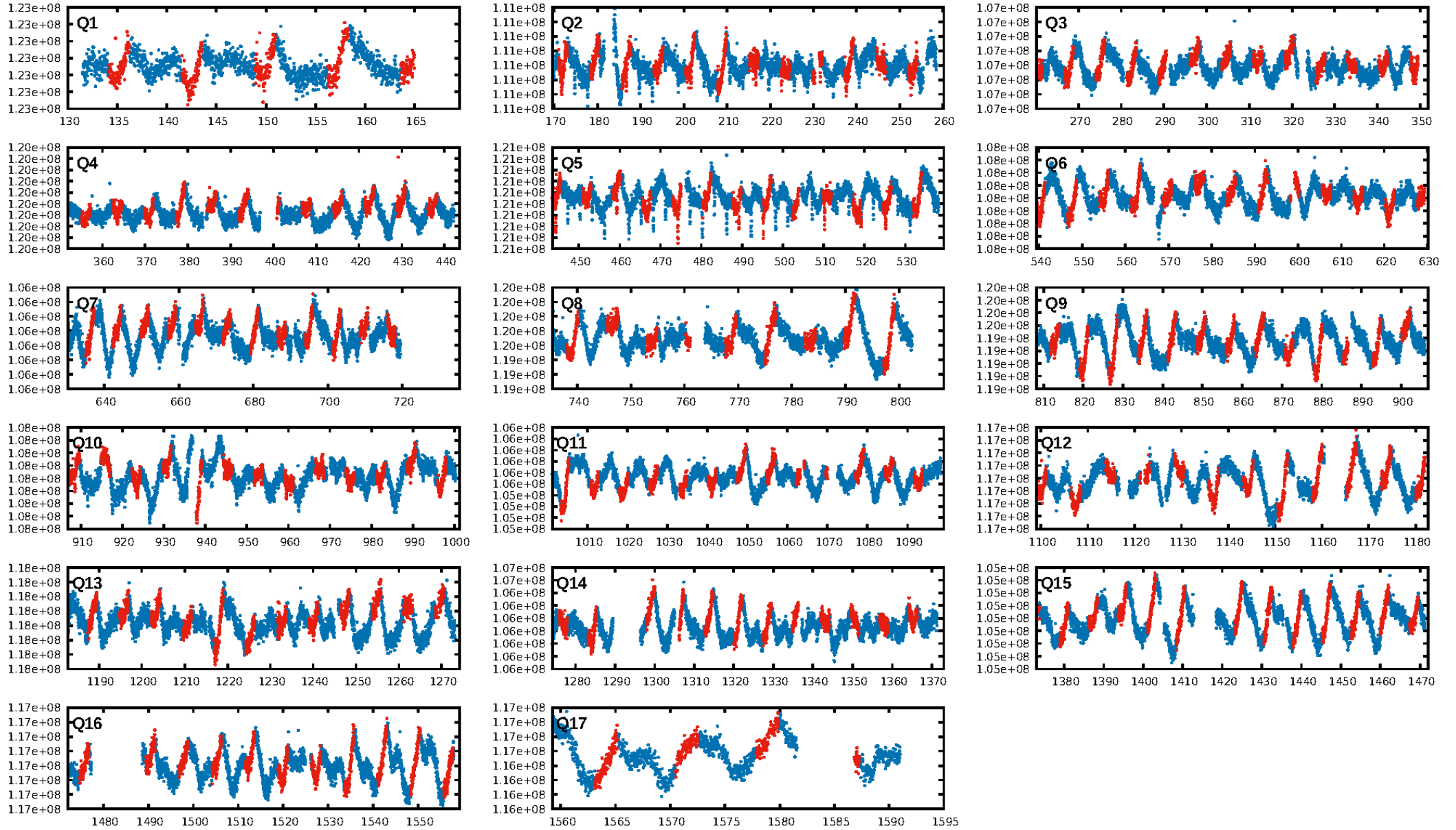
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.13σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 9.54e-15
RollingBand-fgt: 1.00 [179/179]
GhostDiagnostic-chr: -8.608
Centroid-sig: N/A
Centroid-so: 1.552 arcsec [2.35σ]
OotOffset-rm: 8.700 arcsec [5.72σ]
KicOffset-rm: 8.783 arcsec [6.21σ]
OotOffset-st: 1/4/1/2 [8]
KicOffset-st: 1/4/1/2 [8]
DiffImageQuality-fgm: 0.62 [5/8]
DiffImageOverlap-fno: 0.00 [0/17]

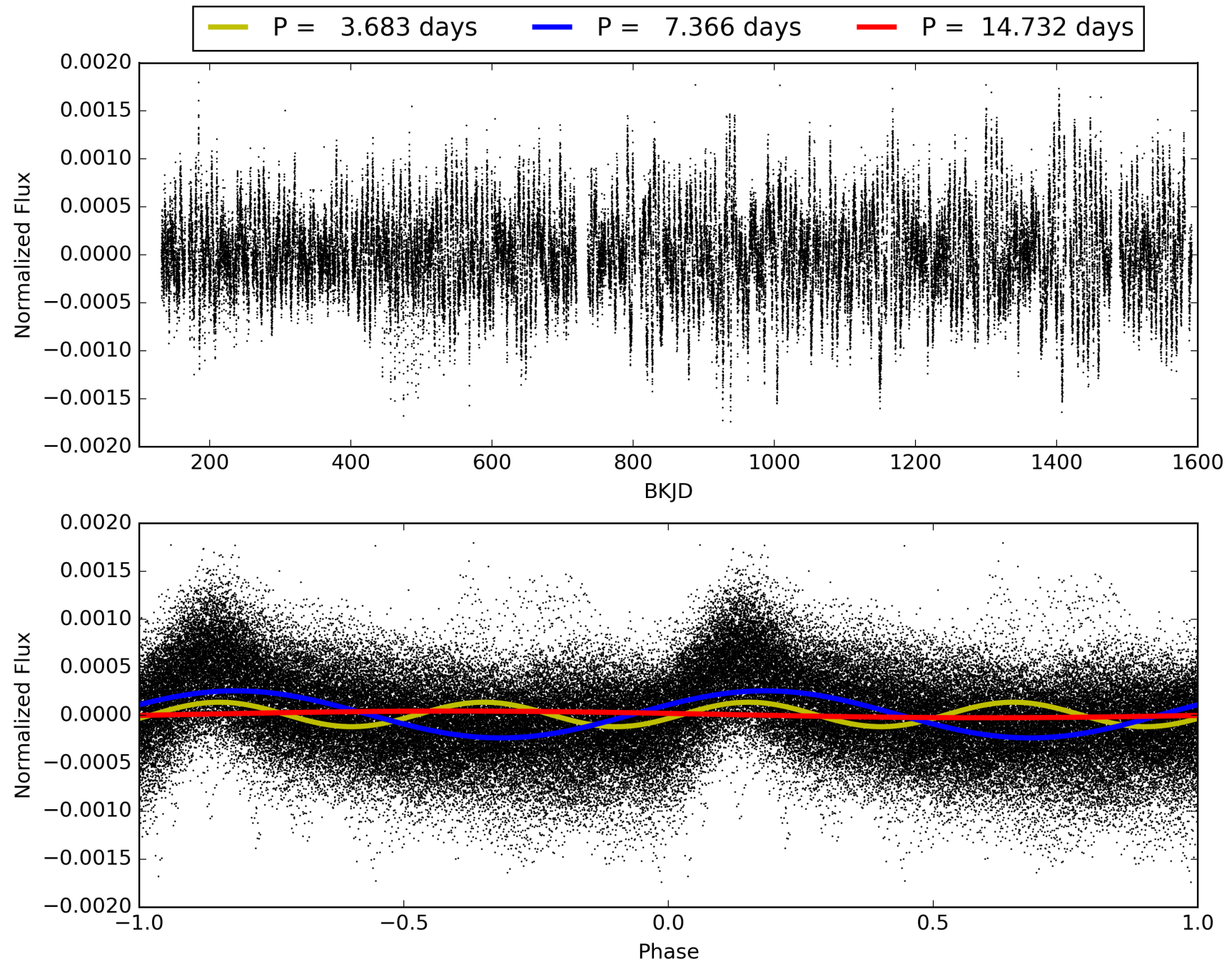
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 11:03:35 Z

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

TCE 006233890-02, PDC Light Curves

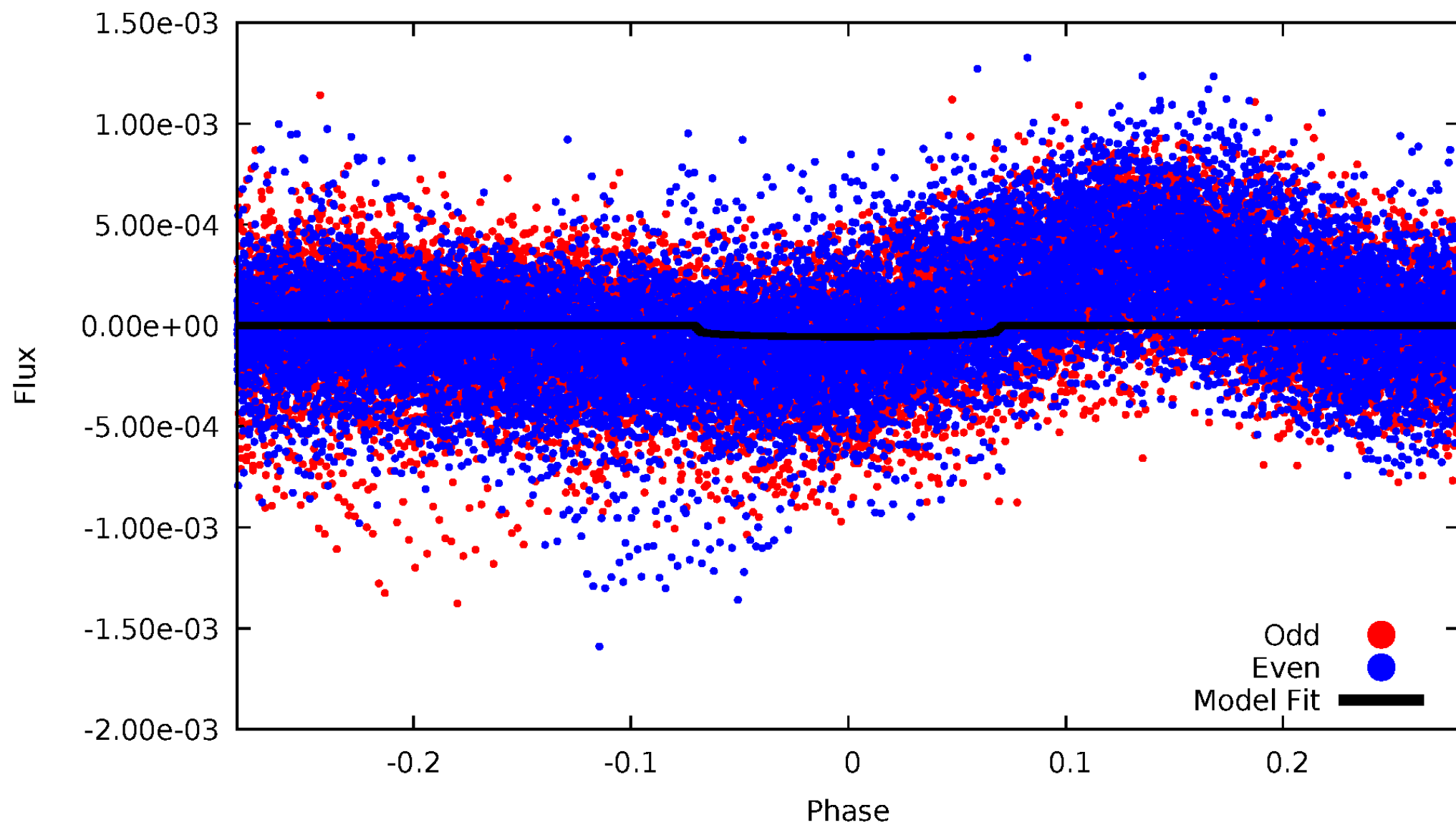


TCE 006233890-02



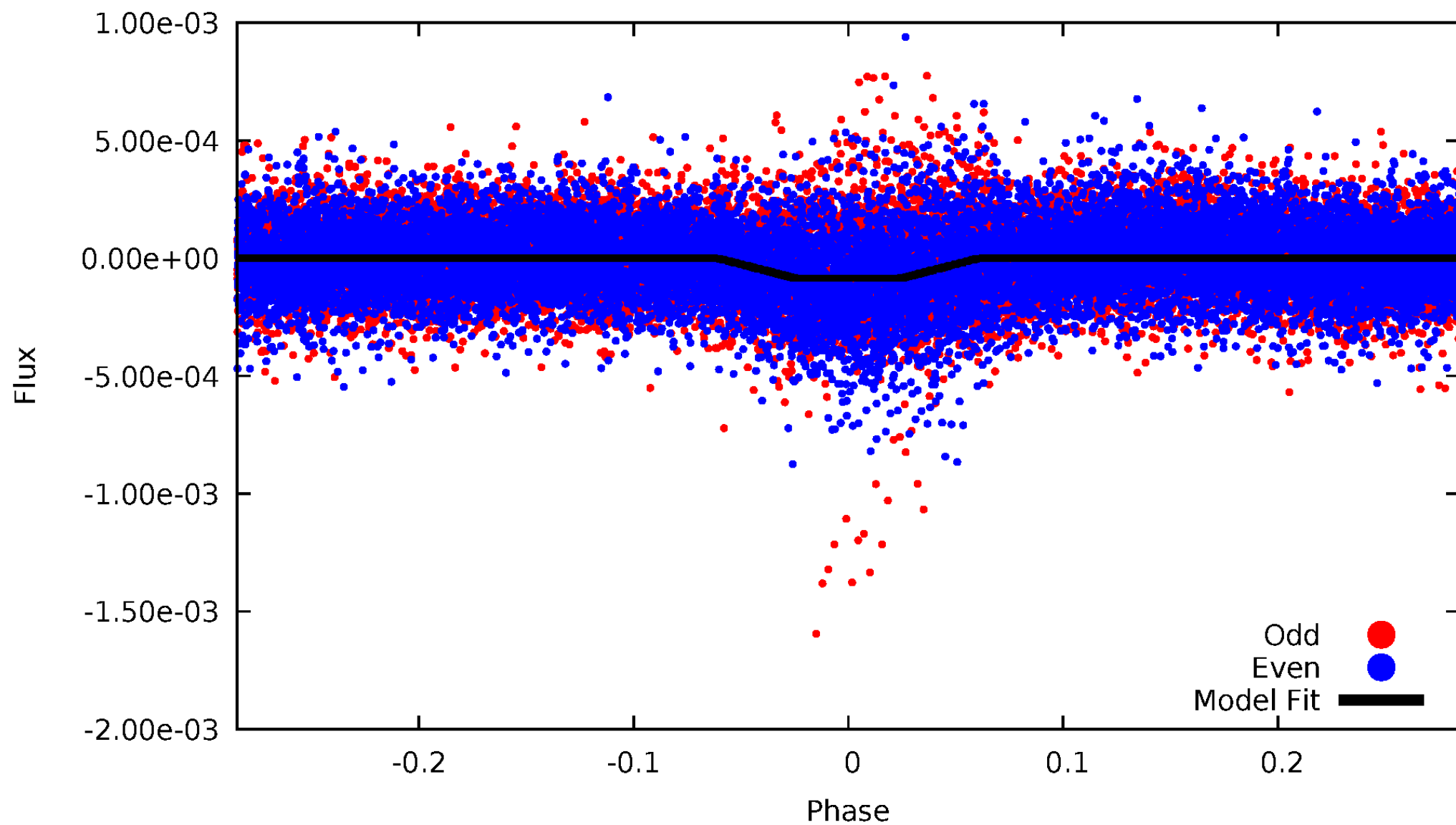
DV Odd/Even

TCE 006233890-02



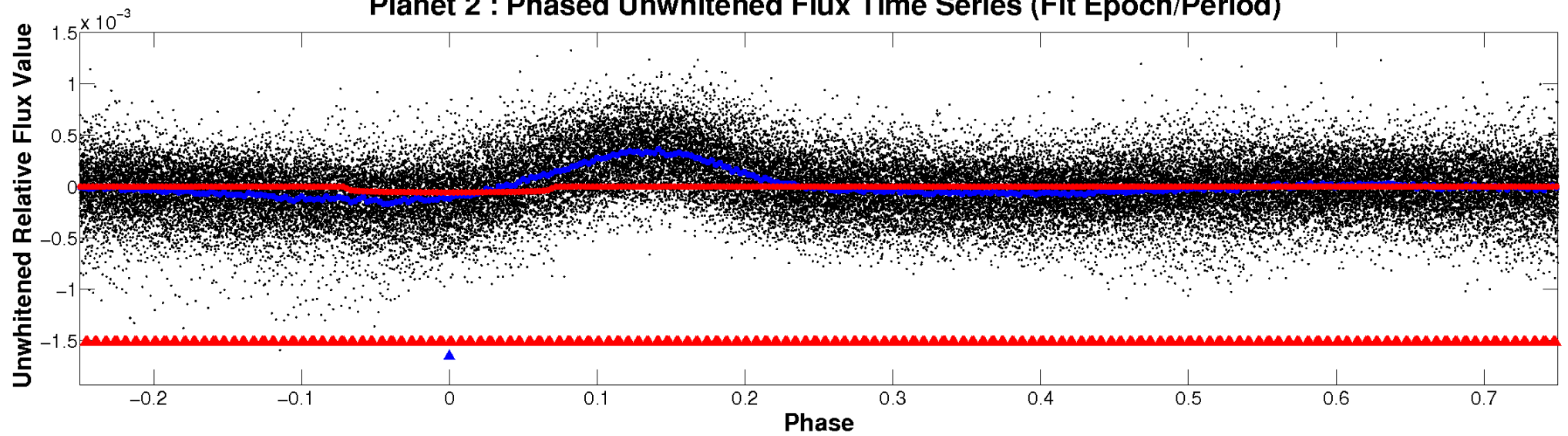
ALT Odd/Even

TCE 006233890-02

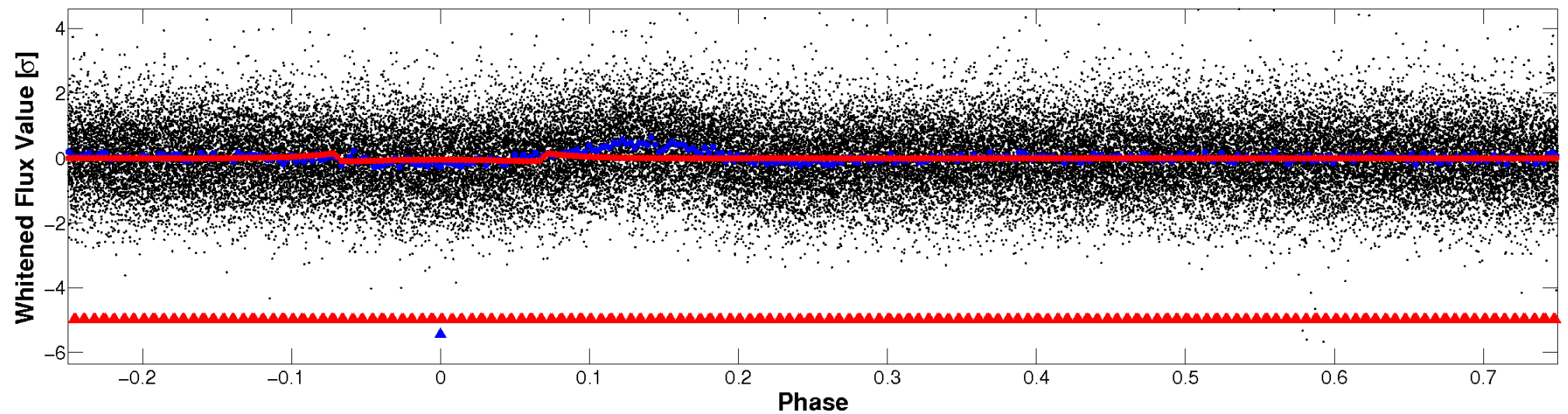


Non-Whitened Vs. Whitened Light Curve

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

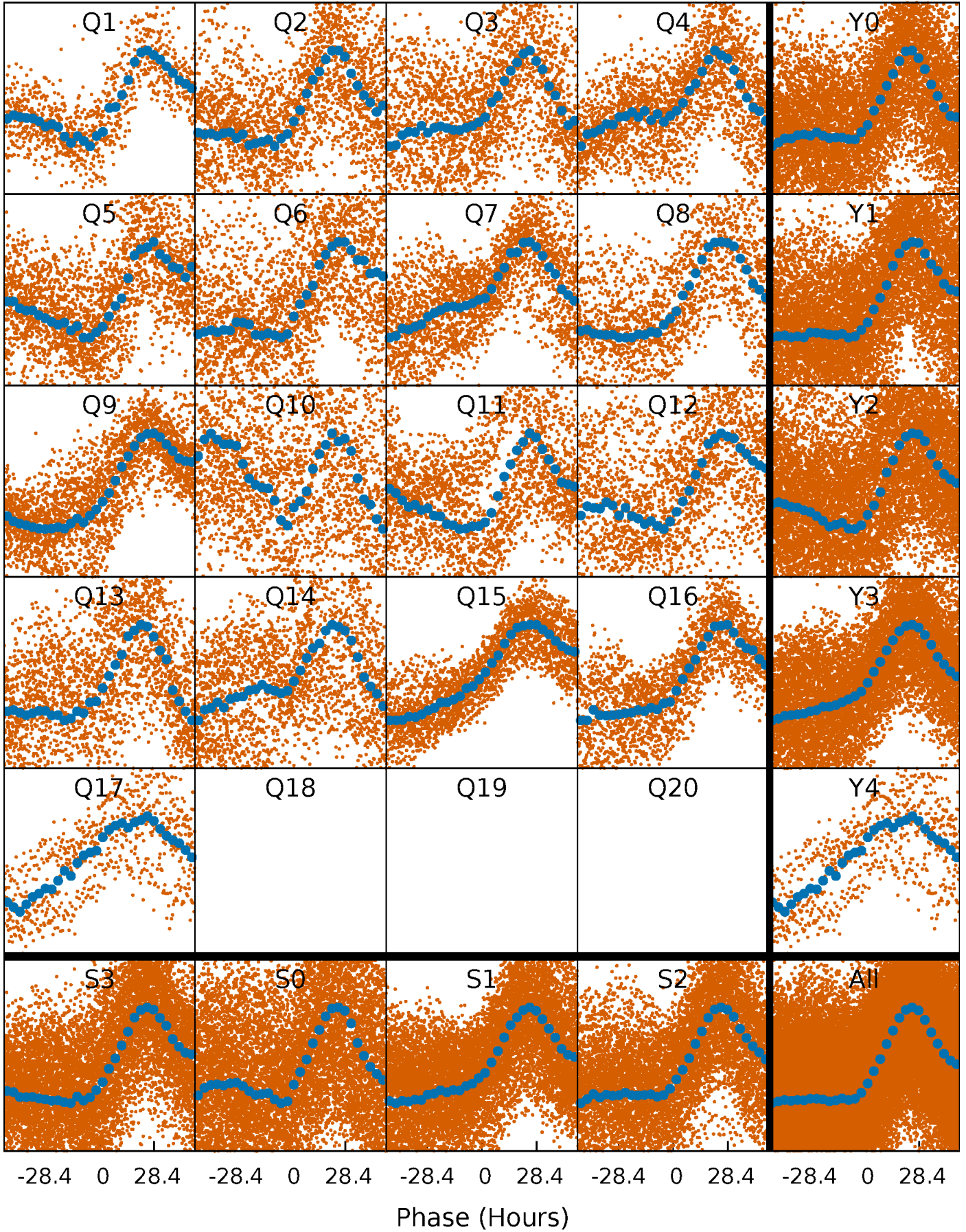


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



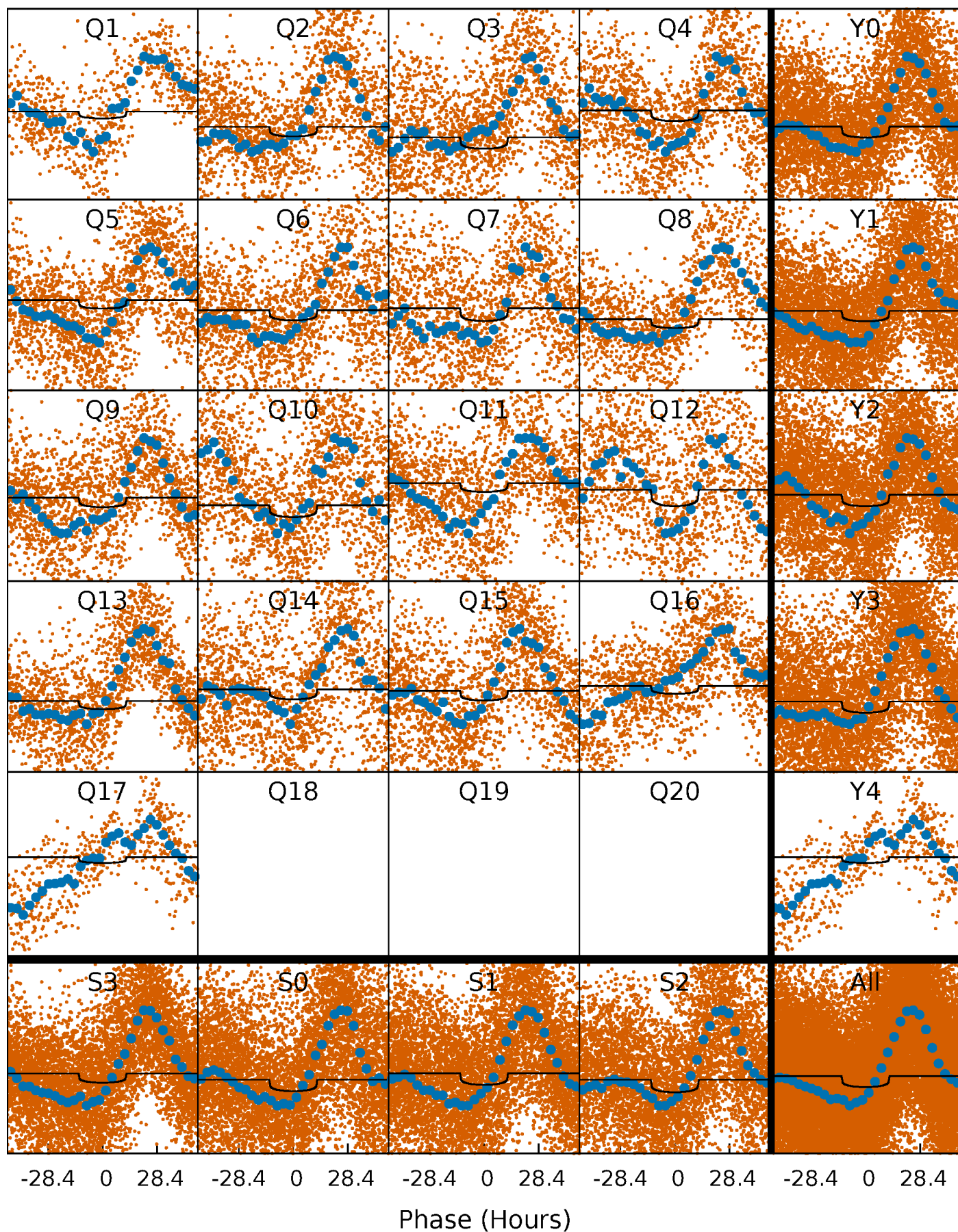
PDC Quarter-Phased Transit Curves

TCE 006233890-02 P= 7.365937 Days $T_0=135.160921$ (BKJD)



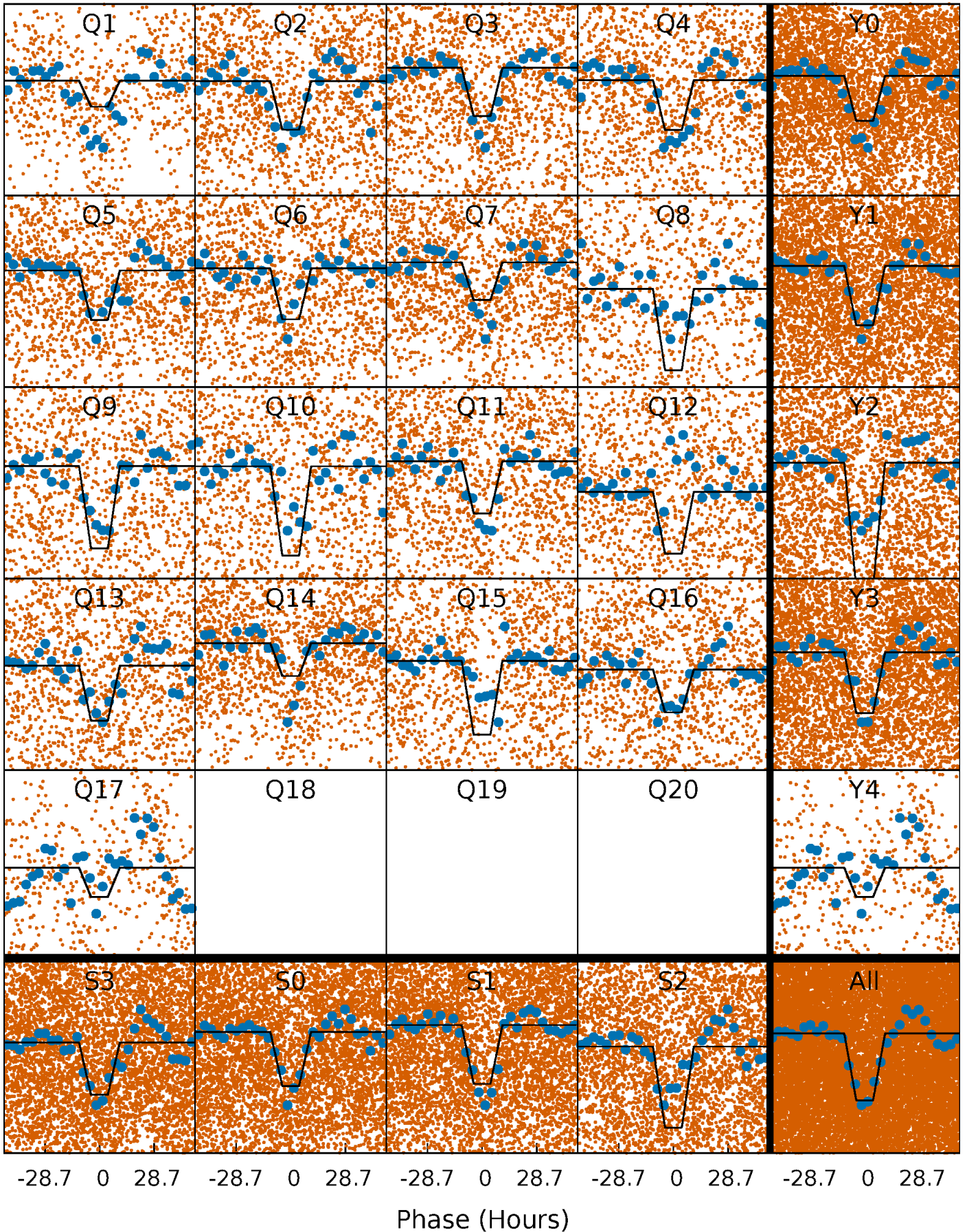
DV Quarter-Phased Transit Curves

TCE 006233890-02 P= 7.365937 Days $T_0=135.160921$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

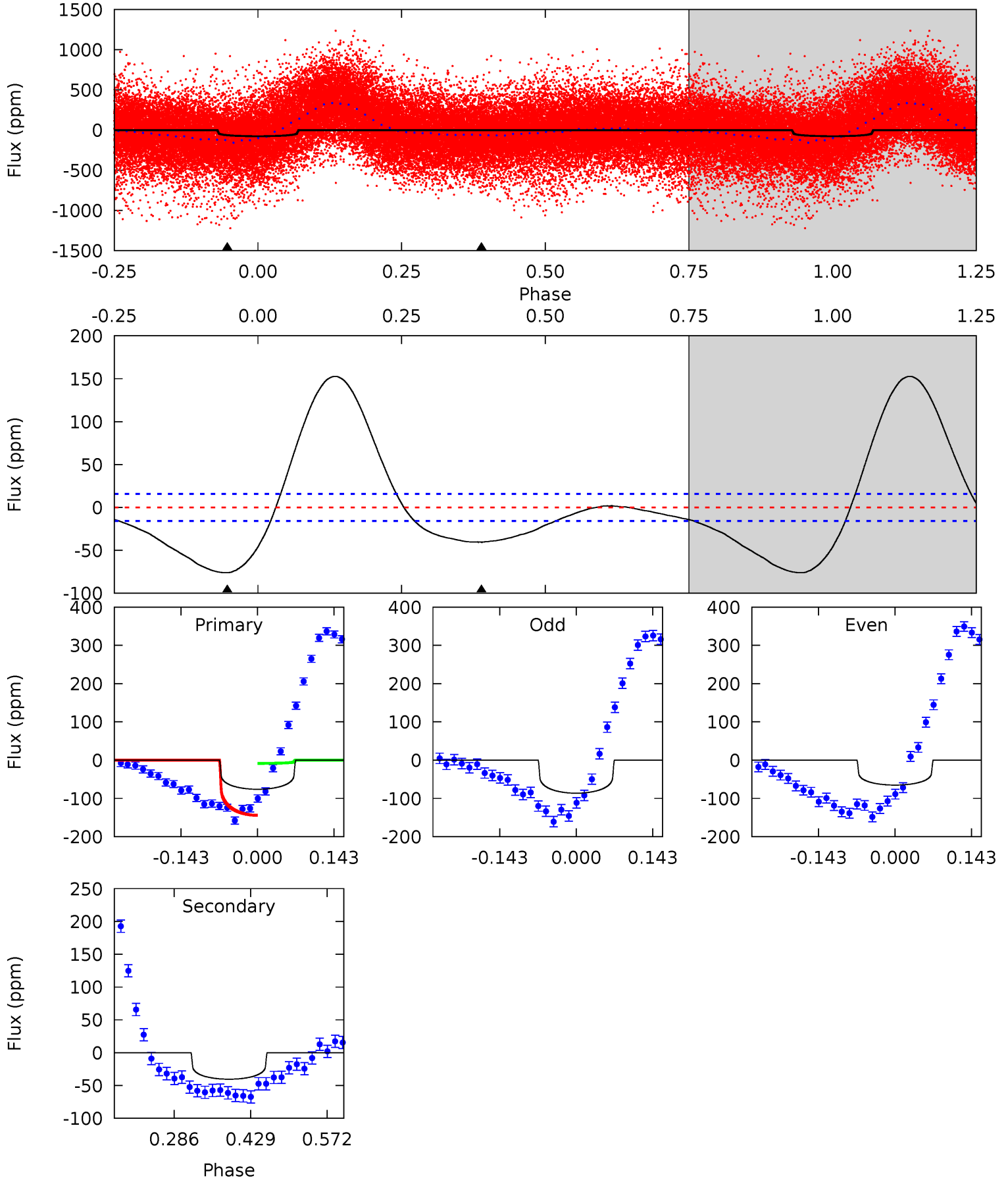
TCE 006233890-02 P= 7.365999 Days $T_0=135.157468$ (BKJD)



DV Model-Shift Uniqueness Test

006233890-02, P = 7.365937 Days, E = 127.794984 Days

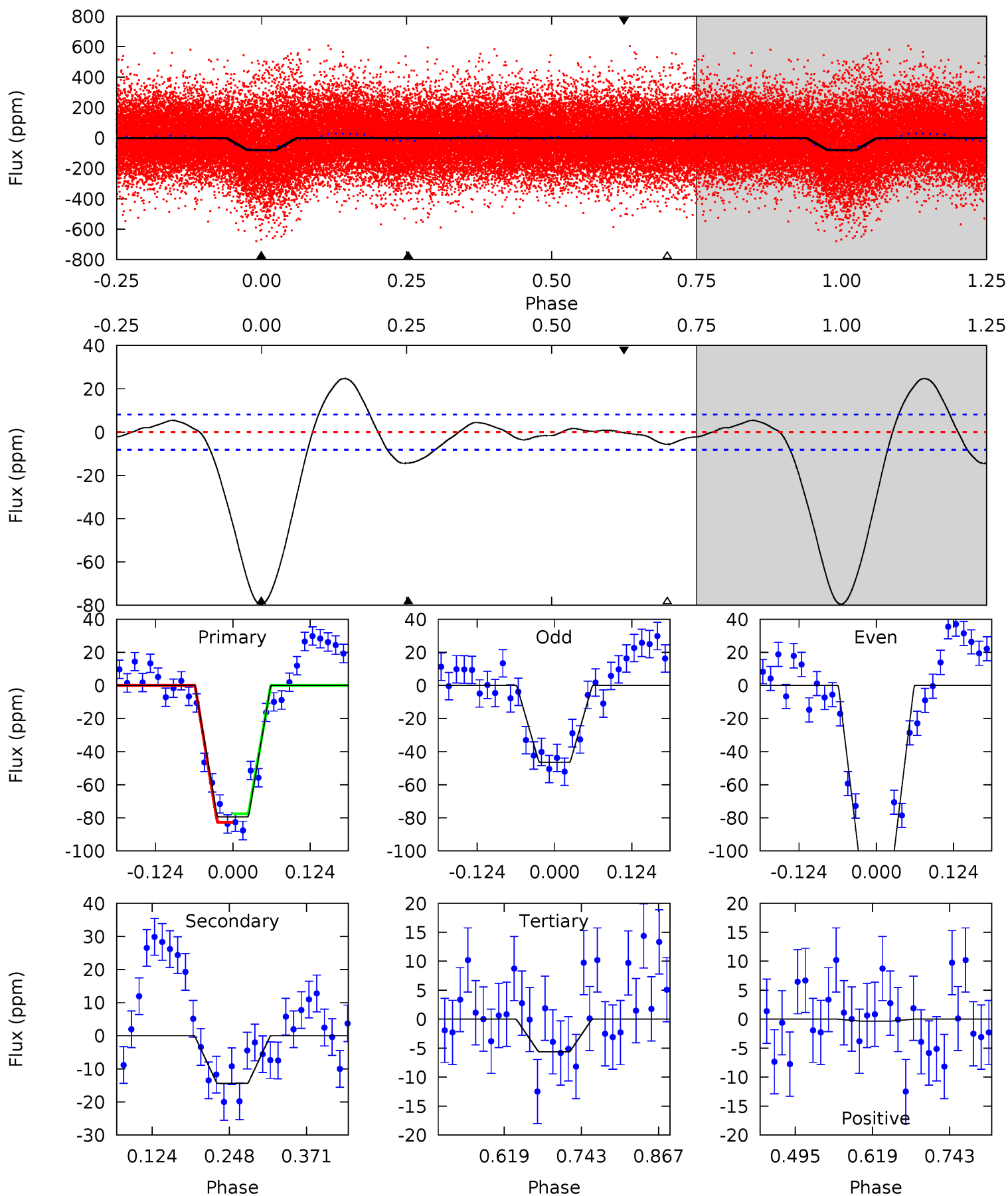
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.7	11.5	0	0	4.49	1.46	17.5	21.7	21.7	11.5	11.5	2.99	1.32	0.67	19.0



Alt Model-Shift Uniqueness Test

006233890-02, P = 7.365999 Days, E = 127.791469 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.2	8.00	3.13	-0.18	4.52	1.54	1.96	41.0	44.4	4.86	8.18	18.2	0.94	0.24	1.42



Stellar Parameters For KIC 006233890

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6106^{+218}_{-218}	$3.633^{+0.345}_{-0.115}$	$-0.120^{+0.350}_{-0.300}$	$3.090^{+0.523}_{-1.220}$	$1.495^{+0.210}_{-0.360}$	$0.071^{+0.197}_{-0.024}$
	+4%/-4%	+9%/-3%	+292%/-250%	+17%/-39%	+14%/-24%	+277%/-34%
Source	PHO1	FLK73	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 006233890-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-40 ± 4	$2.29^{+0.65}_{-0.59}$	2234^{+173}_{-223}	5717^{+627}_{-448}	30^{+23}_{-11}
Alt.	-14 ± 2	$2.92^{+0.65}_{-0.69}$	2225^{+162}_{-223}	4168^{+314}_{-256}	$6.866^{+4.226}_{-2.286}$

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

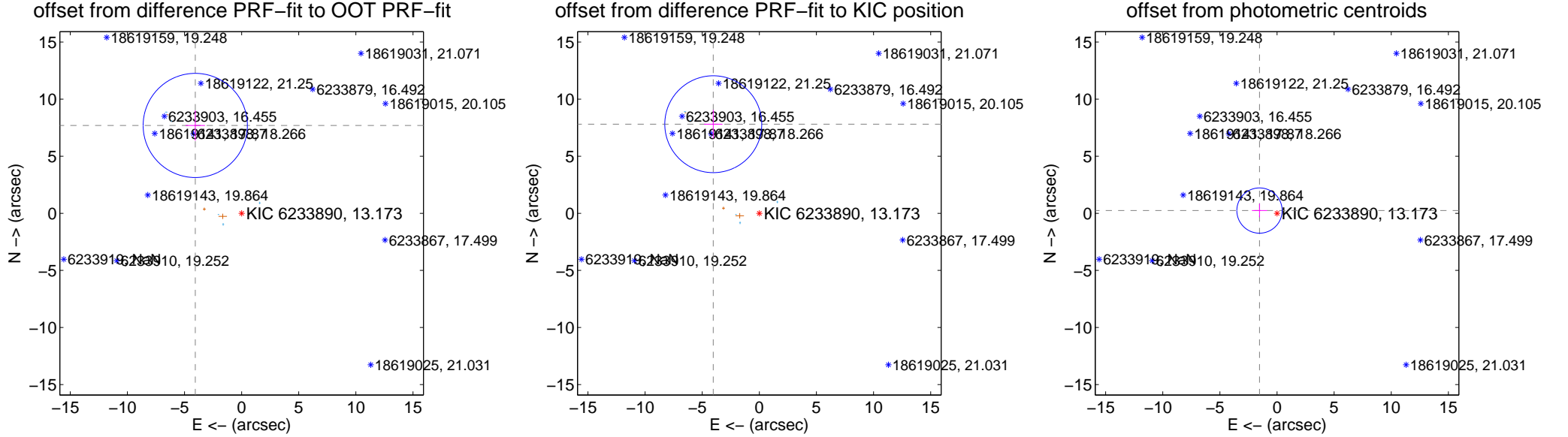
DV Centroid Data

Supplemental centroid analysis for 006233890-02. Kepler magnitude: 13.17. Transit SNR 7.71

There are 5 quarters with good PRF difference image offsets

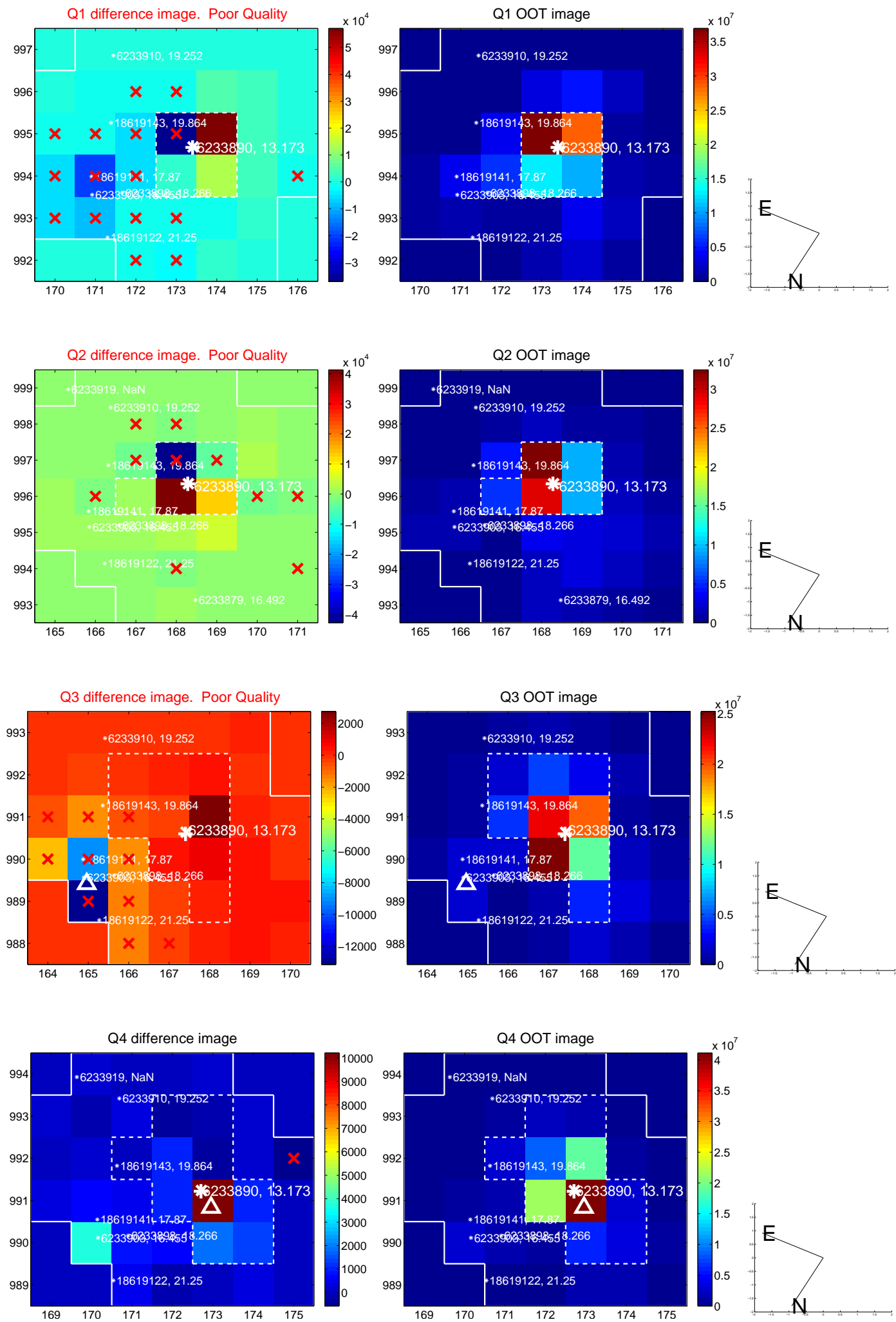
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.700 \pm 1.520	5.72	4.057 \pm 0.852	7.696 \pm 1.326
PRF-fit source offset from KIC position	8.783 \pm 1.414	6.21	4.030 \pm 0.807	7.804 \pm 1.249
photometric centroid source offset	1.55 \pm 0.66	2.35	1.53 \pm 0.66	0.24 \pm 0.60

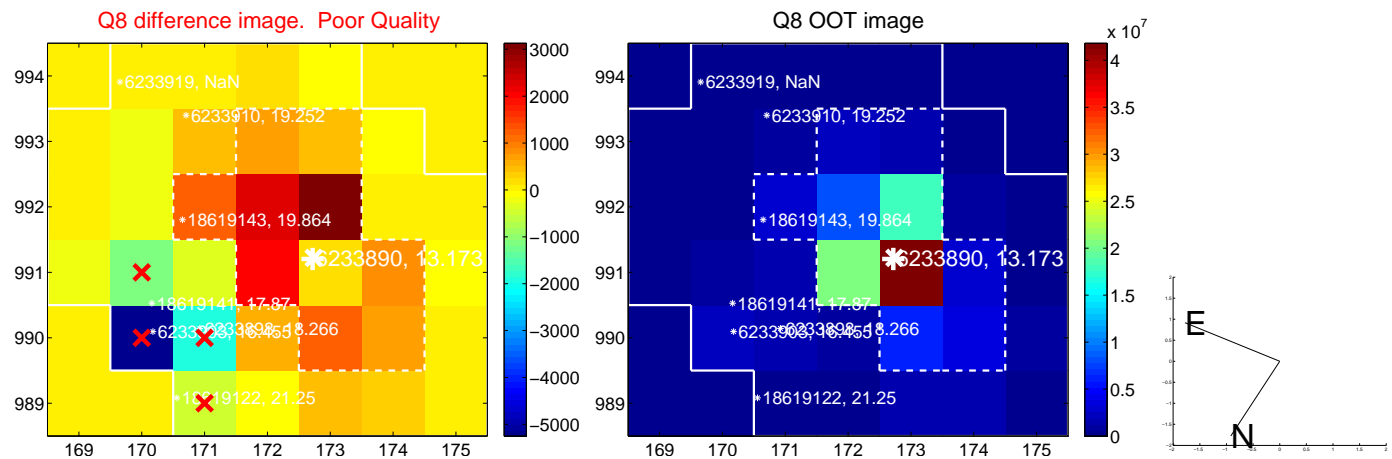
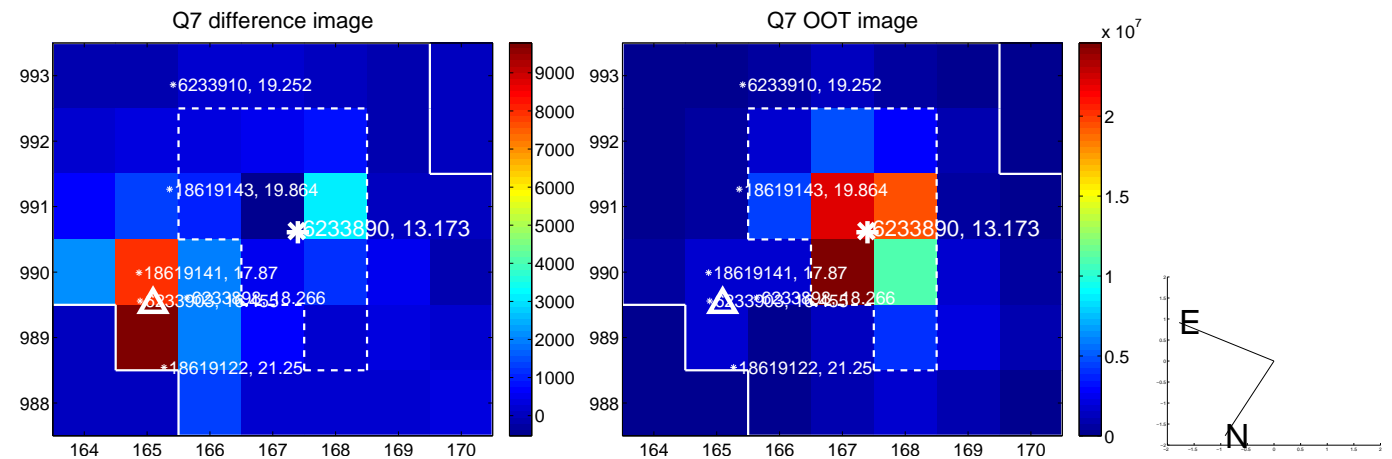
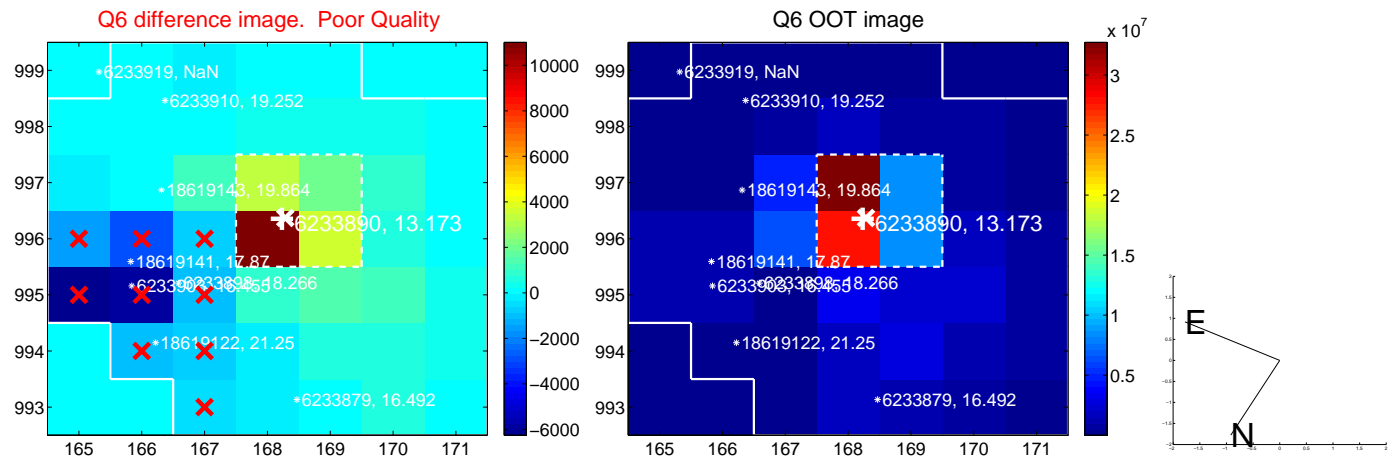
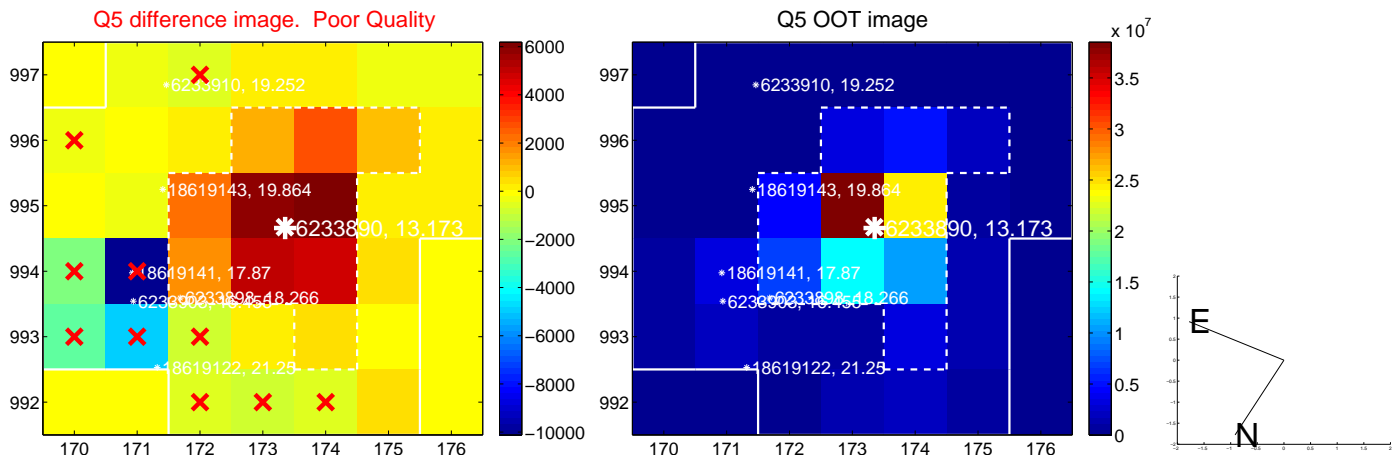


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

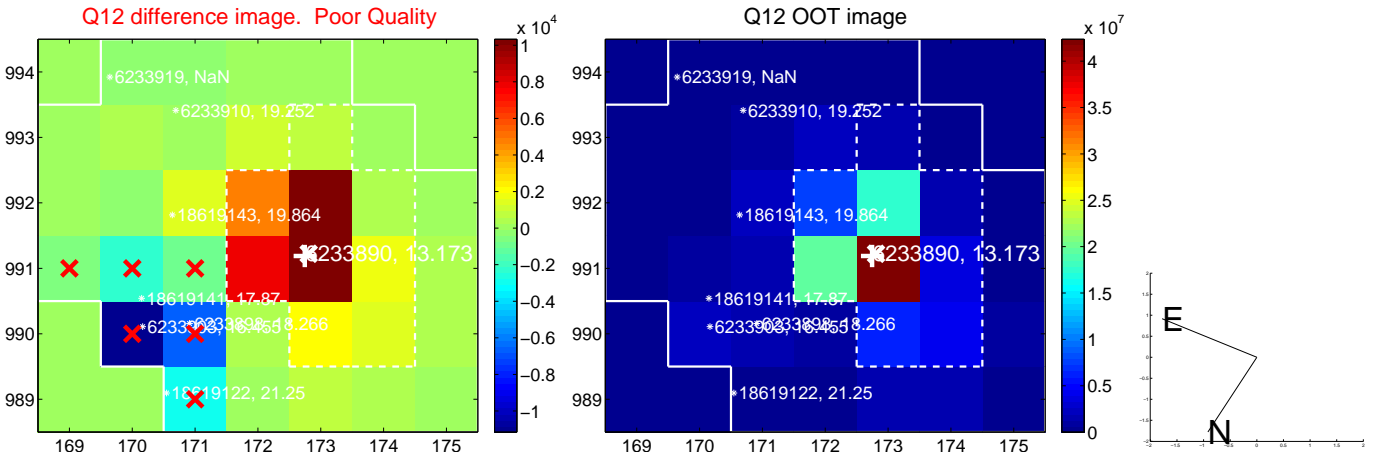
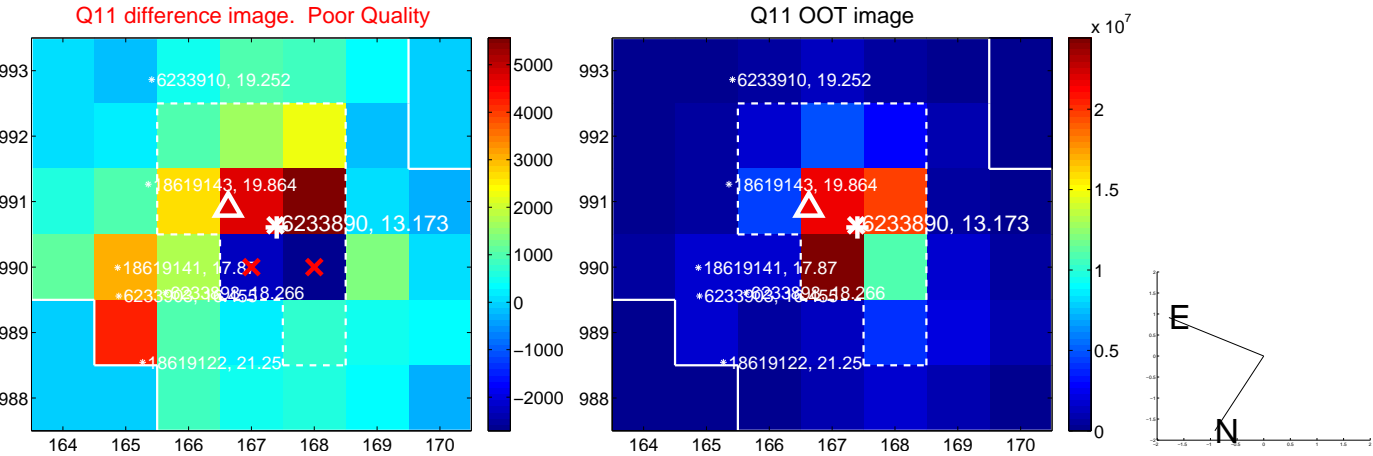
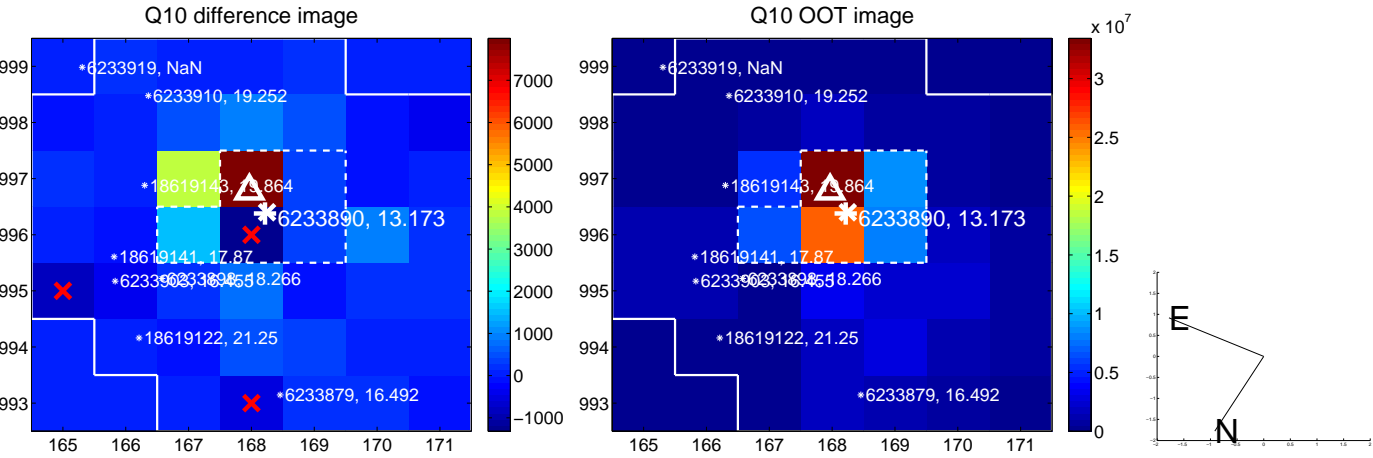
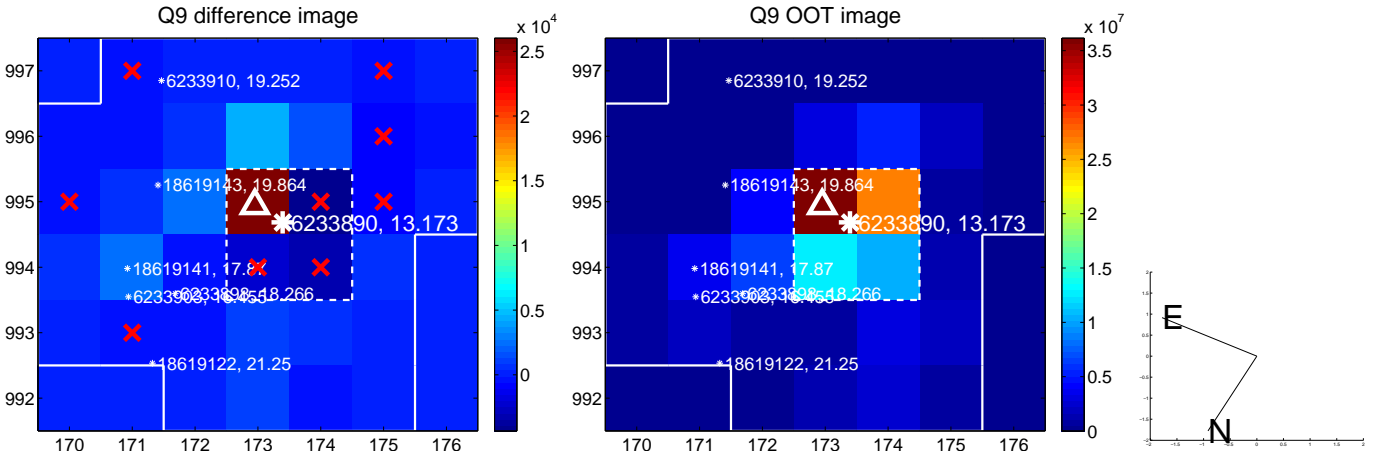
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



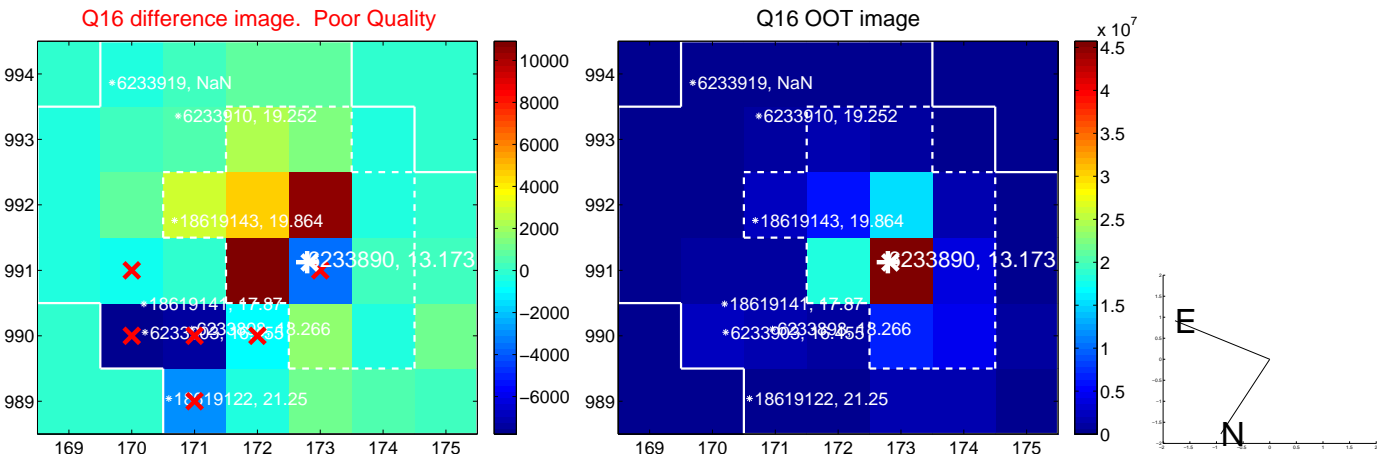
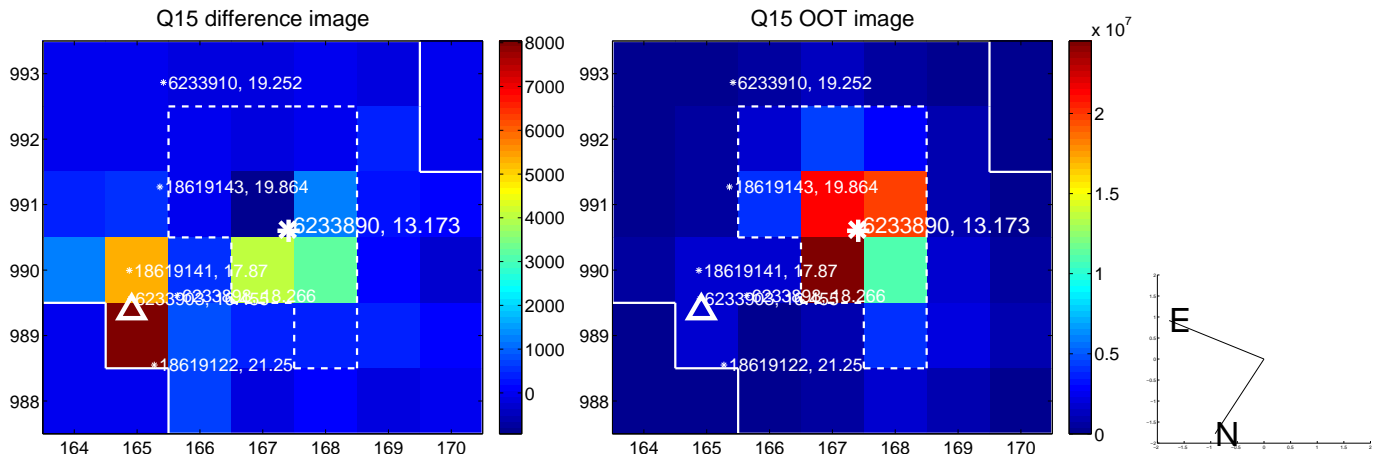
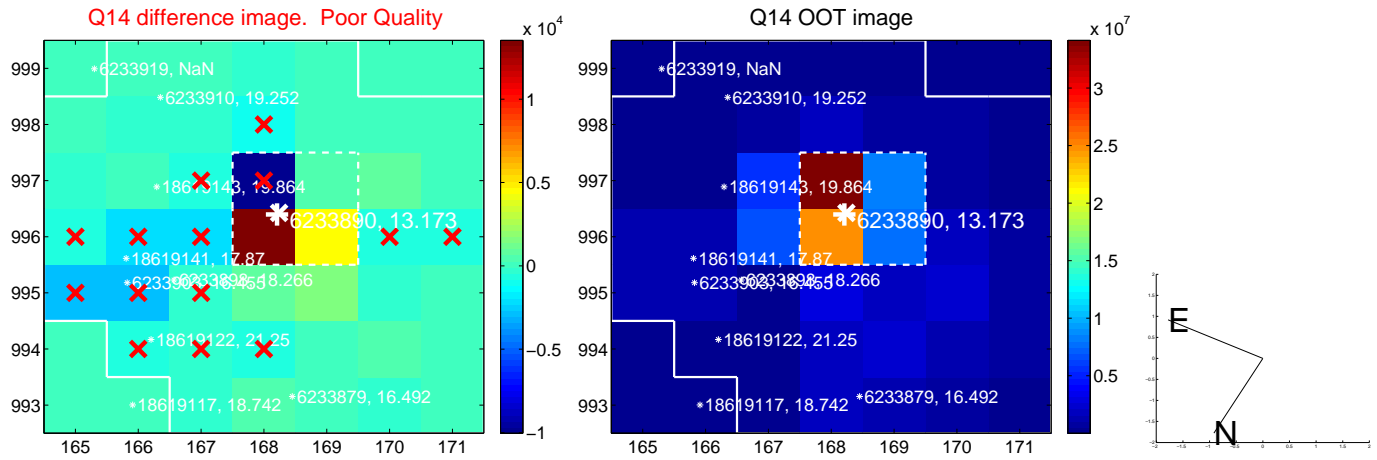
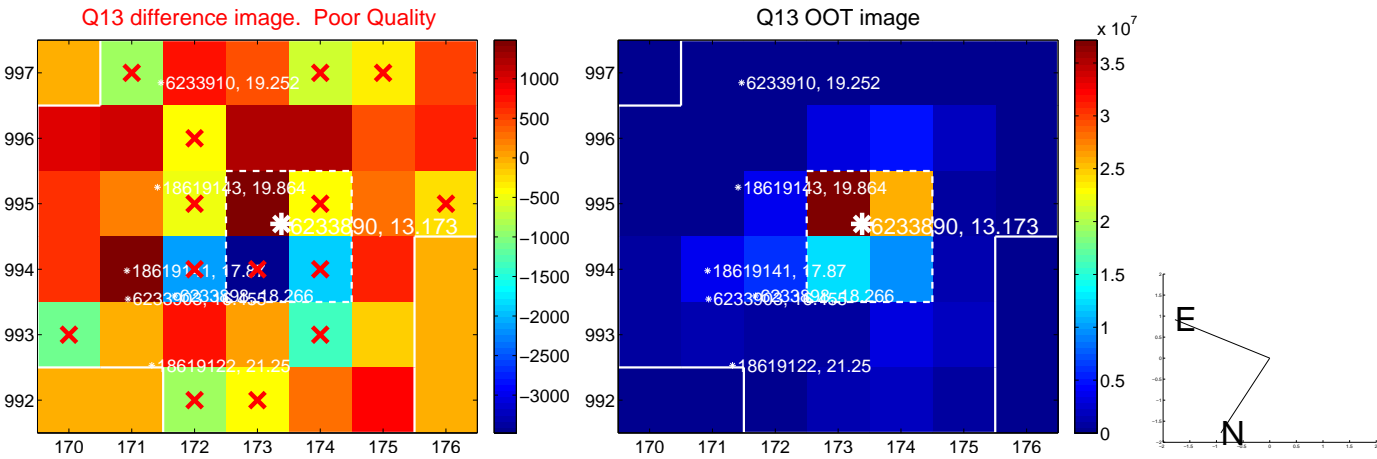
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



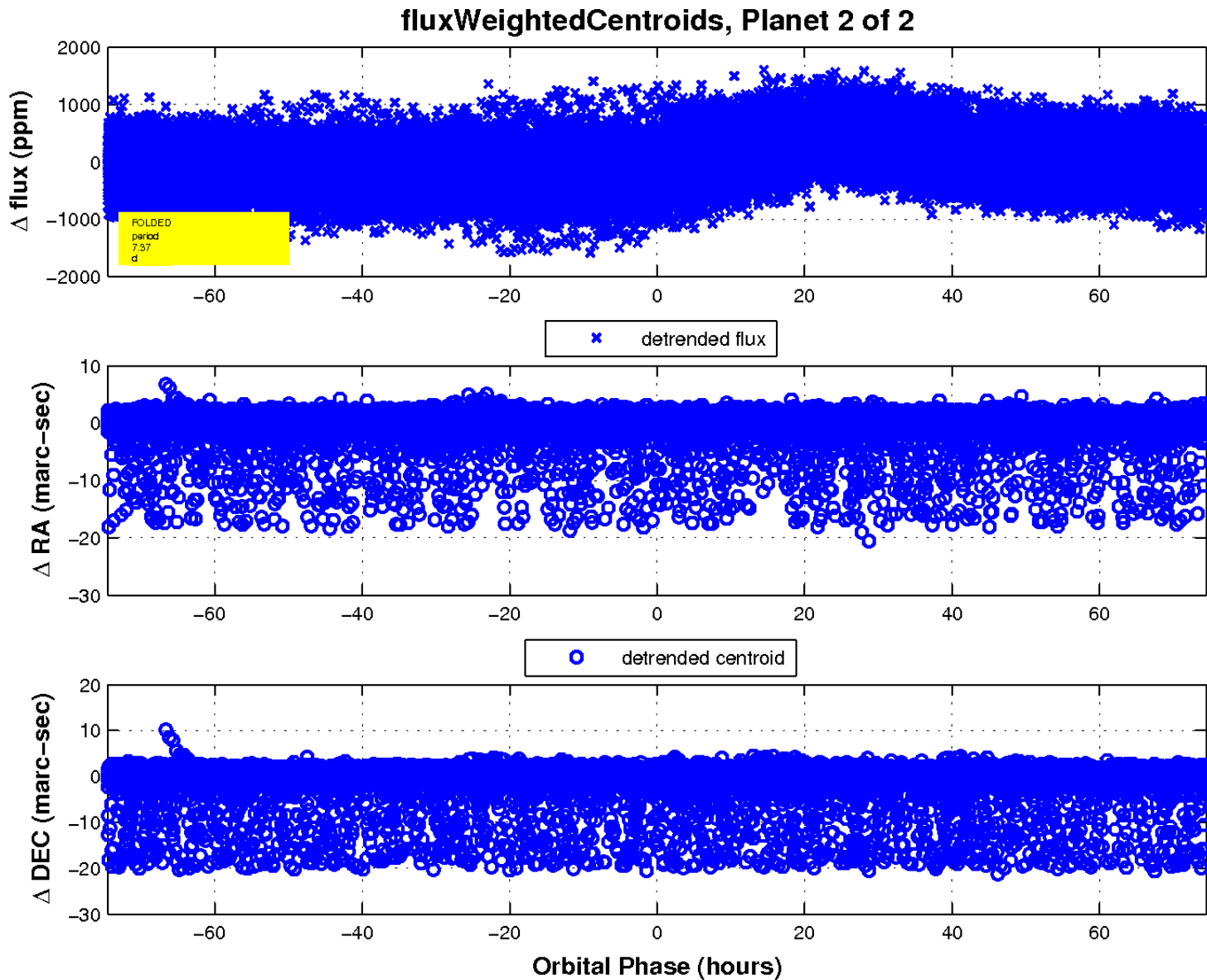
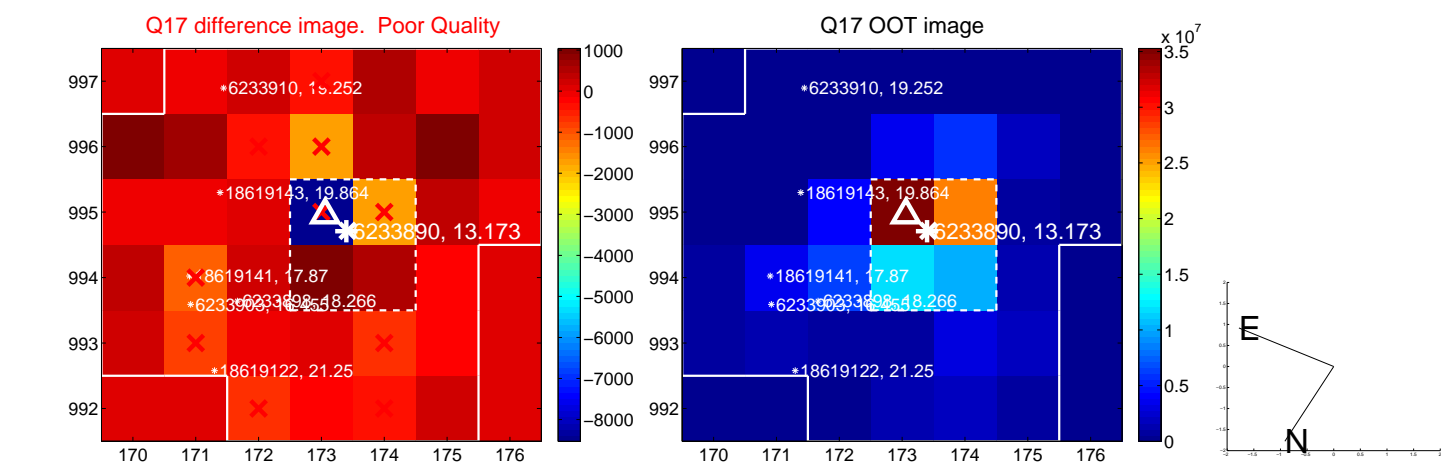
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

