

KIC 011553706

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})
011553706-01	OBS	0009.01	3.719807	135.068598	2232.8	3.577	579.9	401.5	2.35	6284	14.01	2917.05
011553706-02	OBS	No	3.719823	133.204655	221.3	2.803	54.2	59.5	2.35	6284	4.10	2917.03

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011553706-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—SEASONAL_DEPTH_DV—SEASONAL_DEPTH_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
011553706-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST

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.

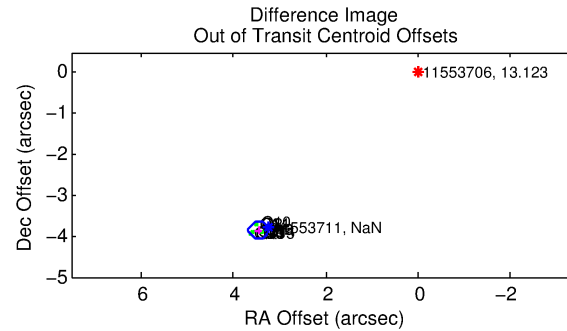
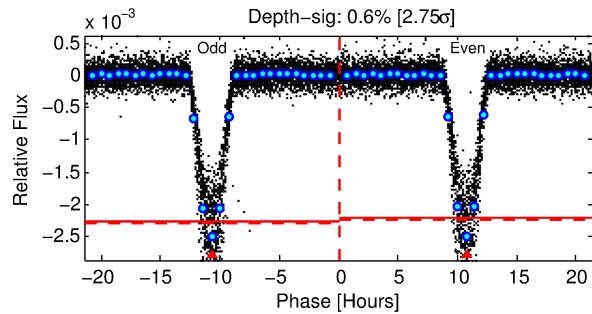
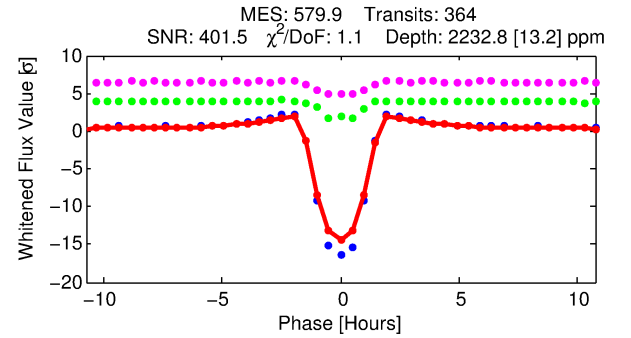
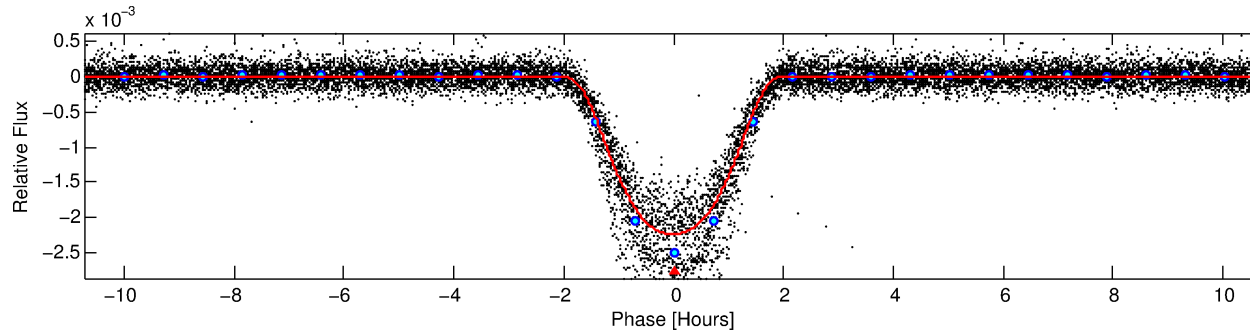
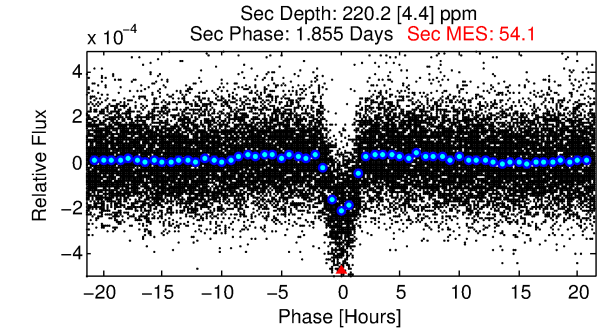
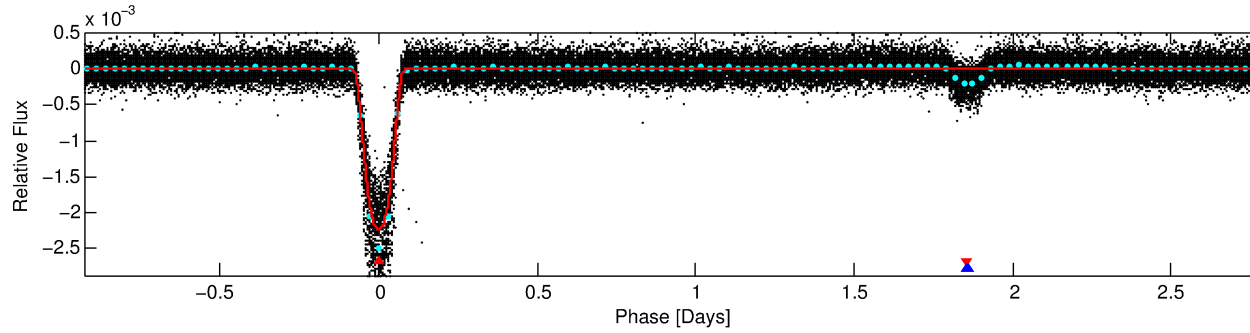
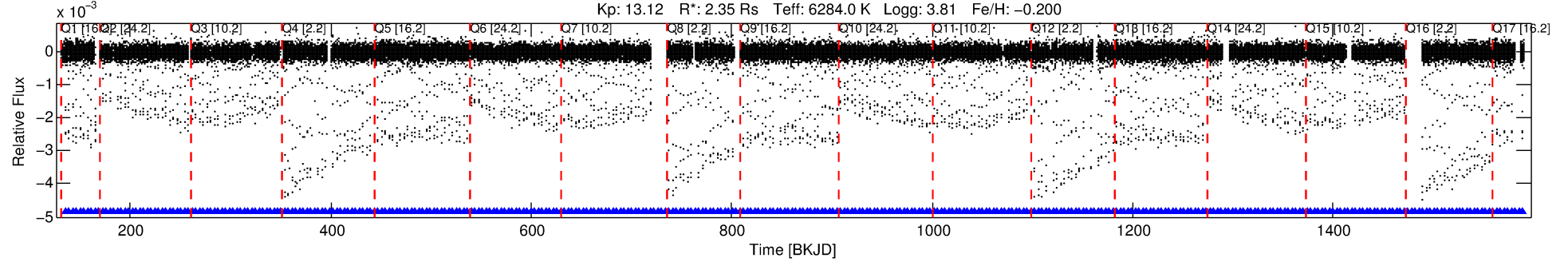
Ephemeris Match Information For 011553706-01

No Significant Match Found

DV One-Page Summary

KIC: 11553706 Candidate: 1 of 2 Period: 3.720 d
KOI: K00009.01 Corr: 0.993

Kp: 13.12 R*: 2.35 Rs Teff: 6284.0 K Logg: 3.81 Fe/H: -0.200



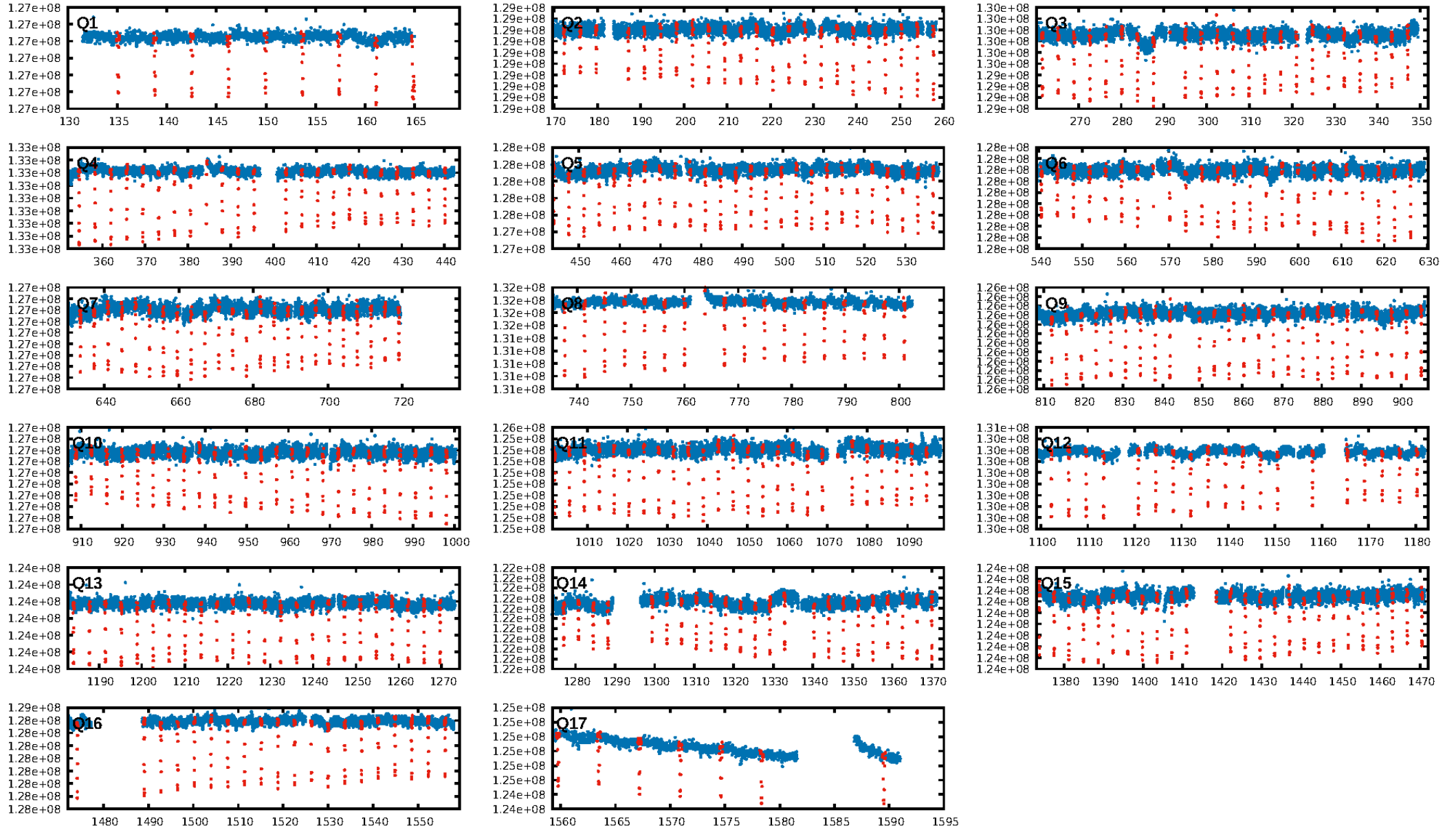
DV Fit Results:

Period = 3.71981 [0.00000] d
Epoch = 135.0686 [0.0002] BKJD
Rp/R* = 0.0547 [0.0004]
a/R* = 3.78 [0.02]
b = 0.95 [0.00]
Seff = 2917.05 [1483.37]
Teq = 1874 [238] K
Rp = 14.01 [4.57] Re
a = 0.0514 [0.0160] AU
Ag = 1.63 [0.81] [0.77σ]
Teffp = 3274 [86] K [5.53σ]

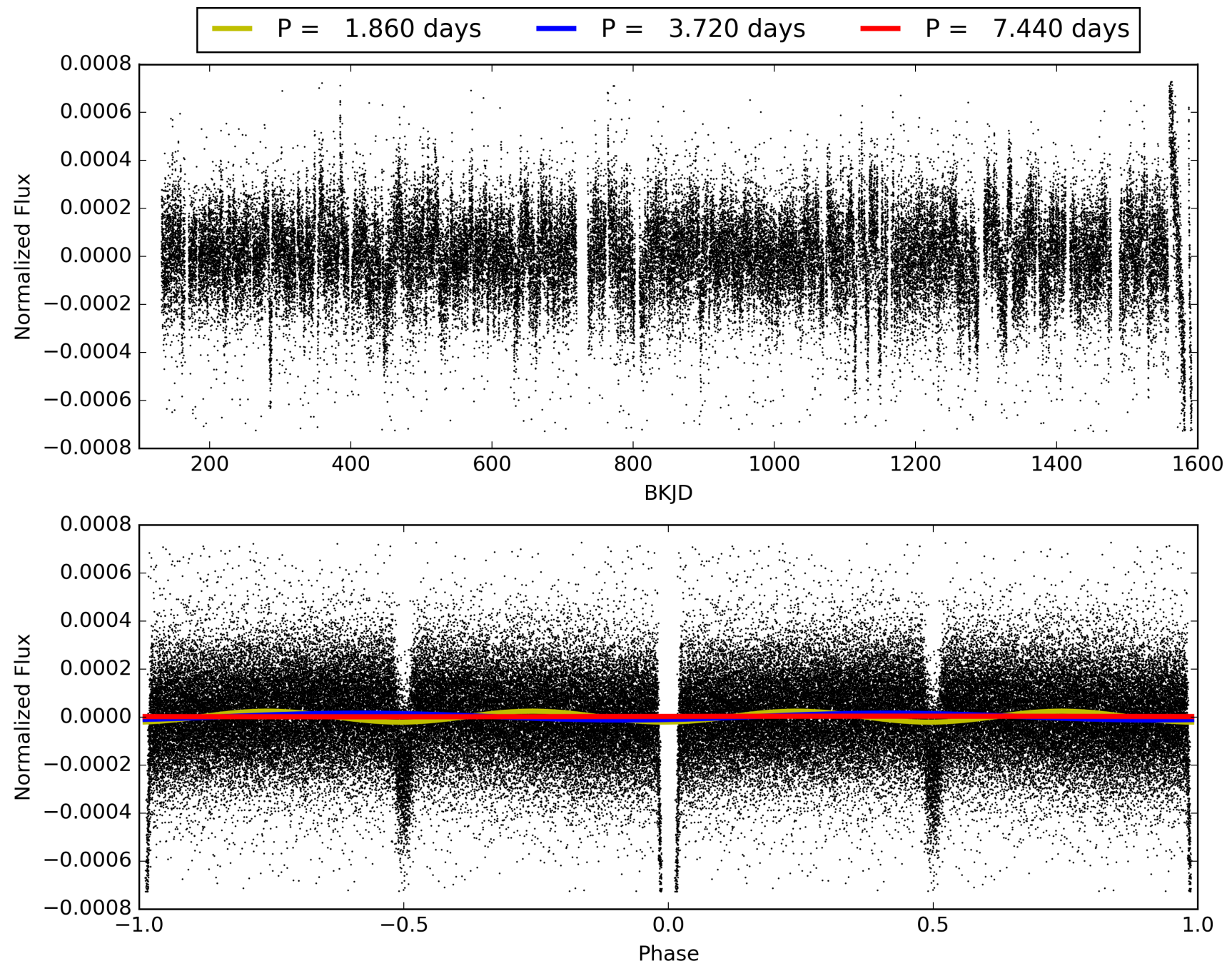
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [348/348]
GhostDiagnostic-chr: 0.0291
Centroid-sig: 0.0%
Centroid-so: 11.980 arcsec [514.42σ]
OotOffset-rm: 5.178 arcsec [74.02σ]
KicOffset-rm: 5.343 arcsec [77.14σ]
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 011553706-01, PDC Light Curves

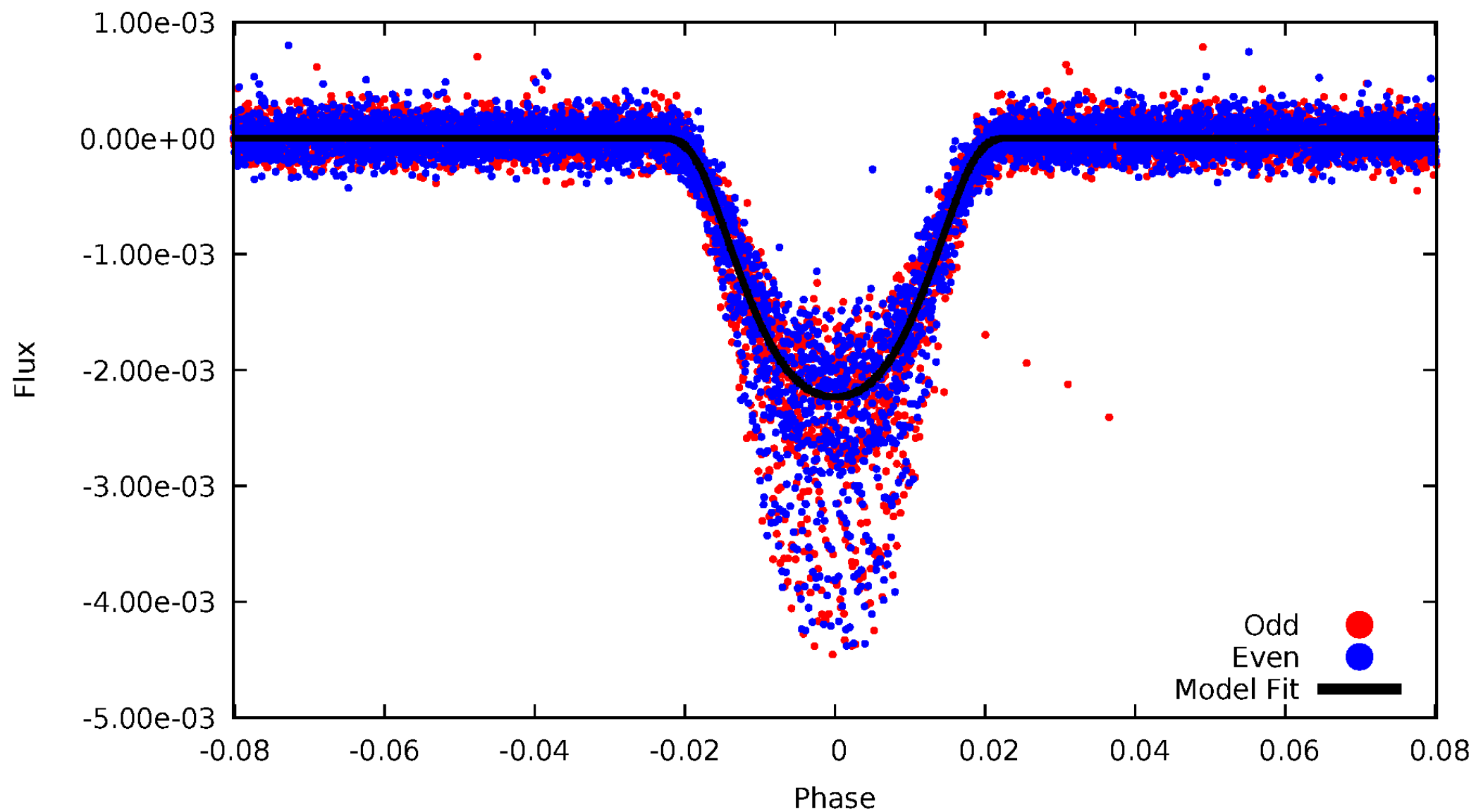


TCE 011553706-01



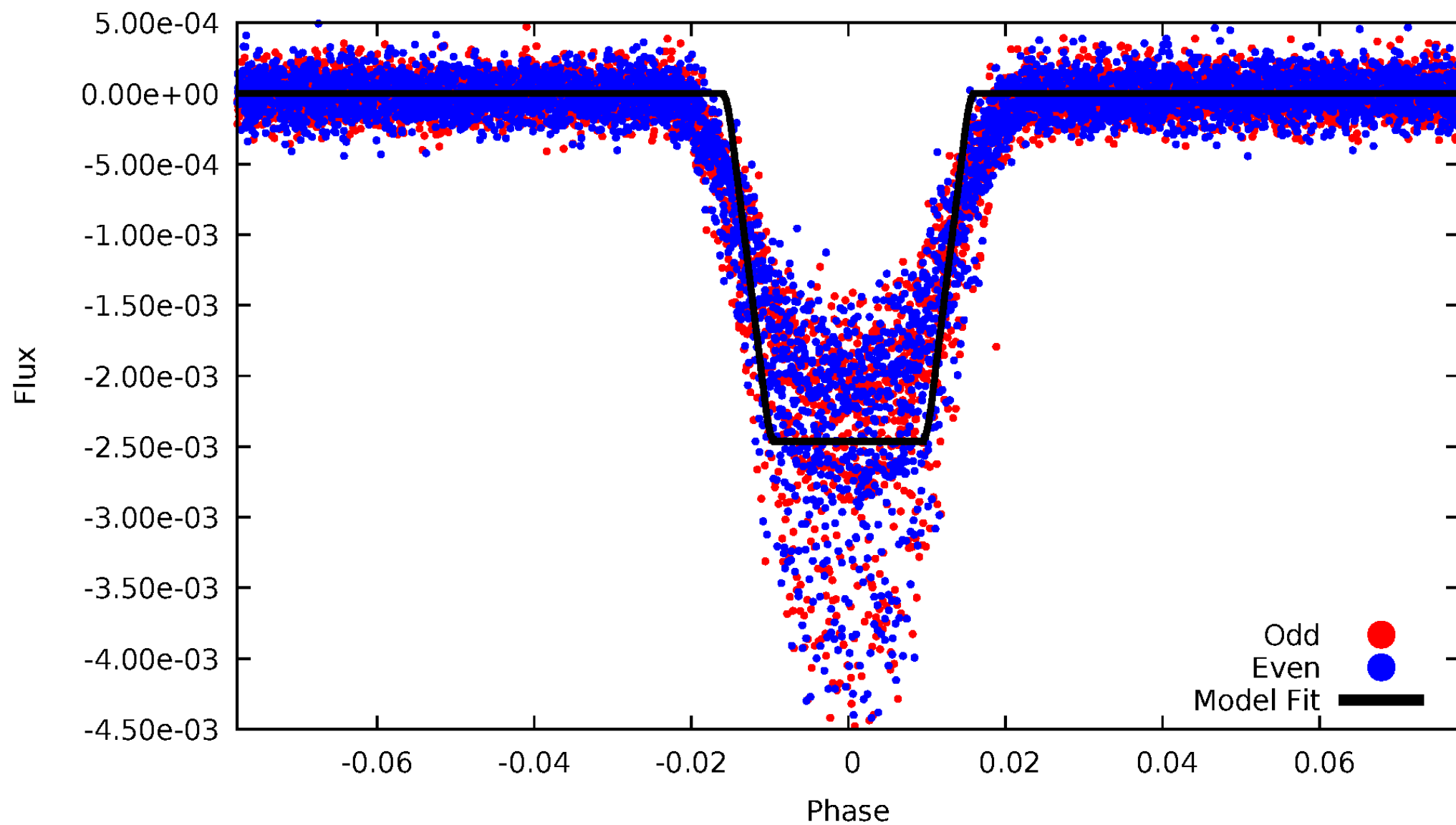
DV Odd/Even

TCE 011553706-01



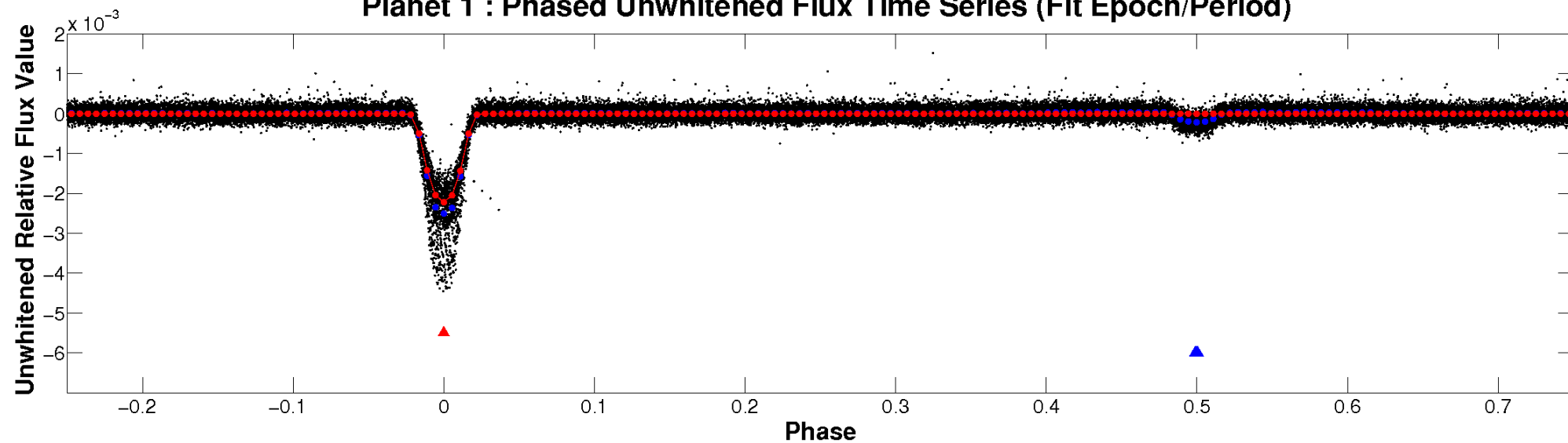
ALT Odd/Even

TCE 011553706-01

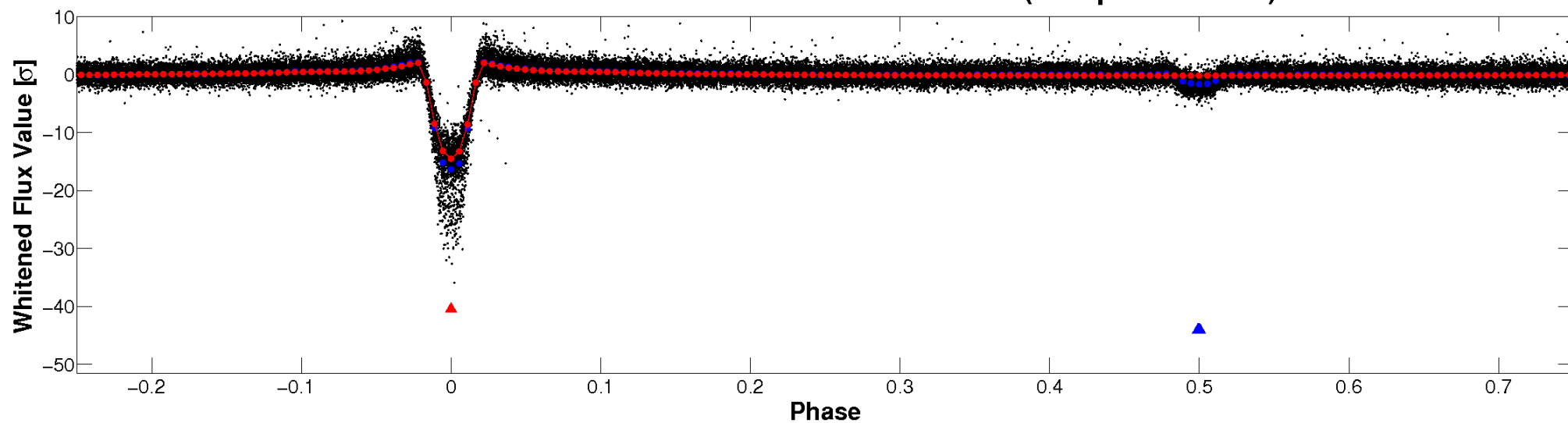


Non-Whitened Vs. Whitened Light Curve

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

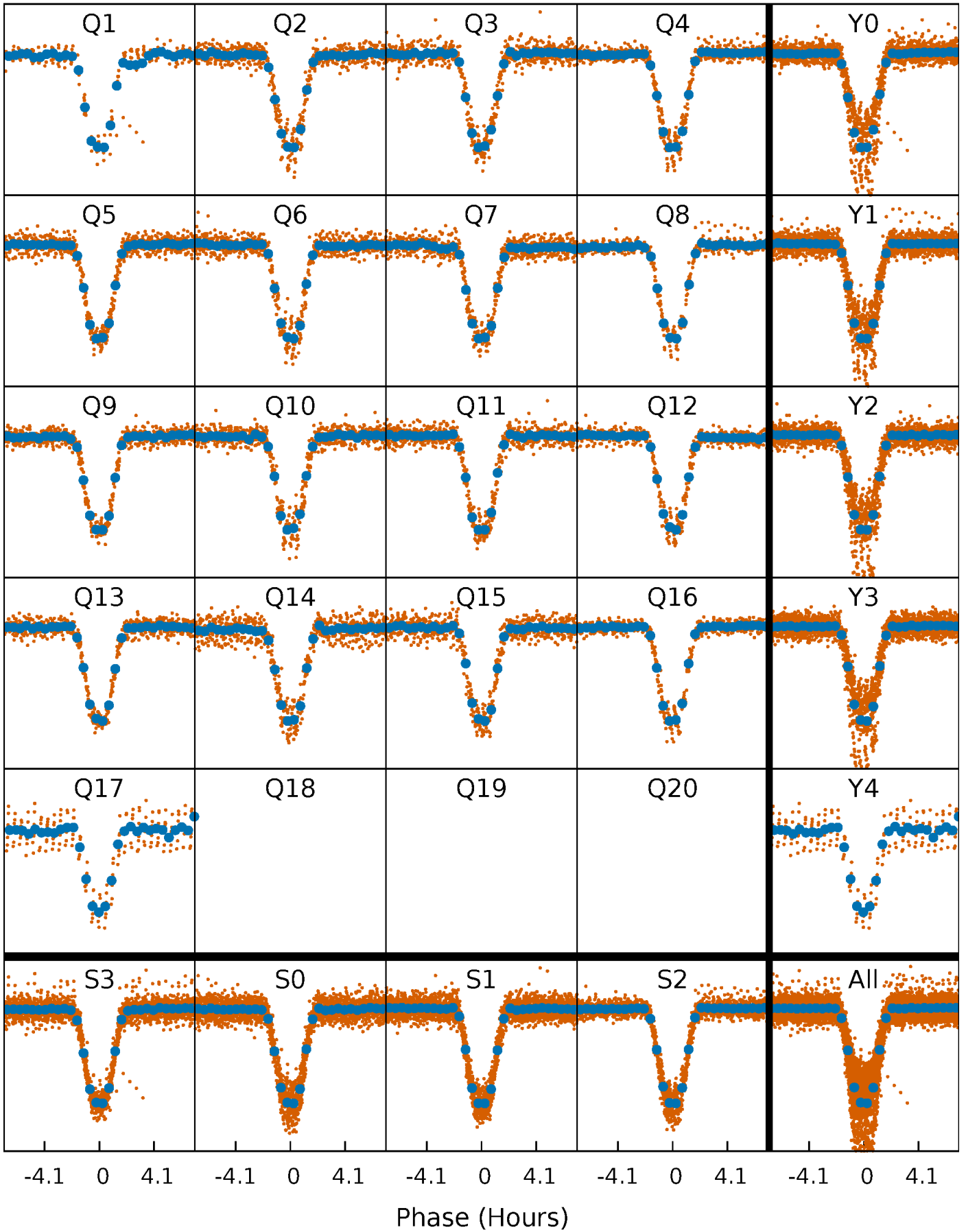


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



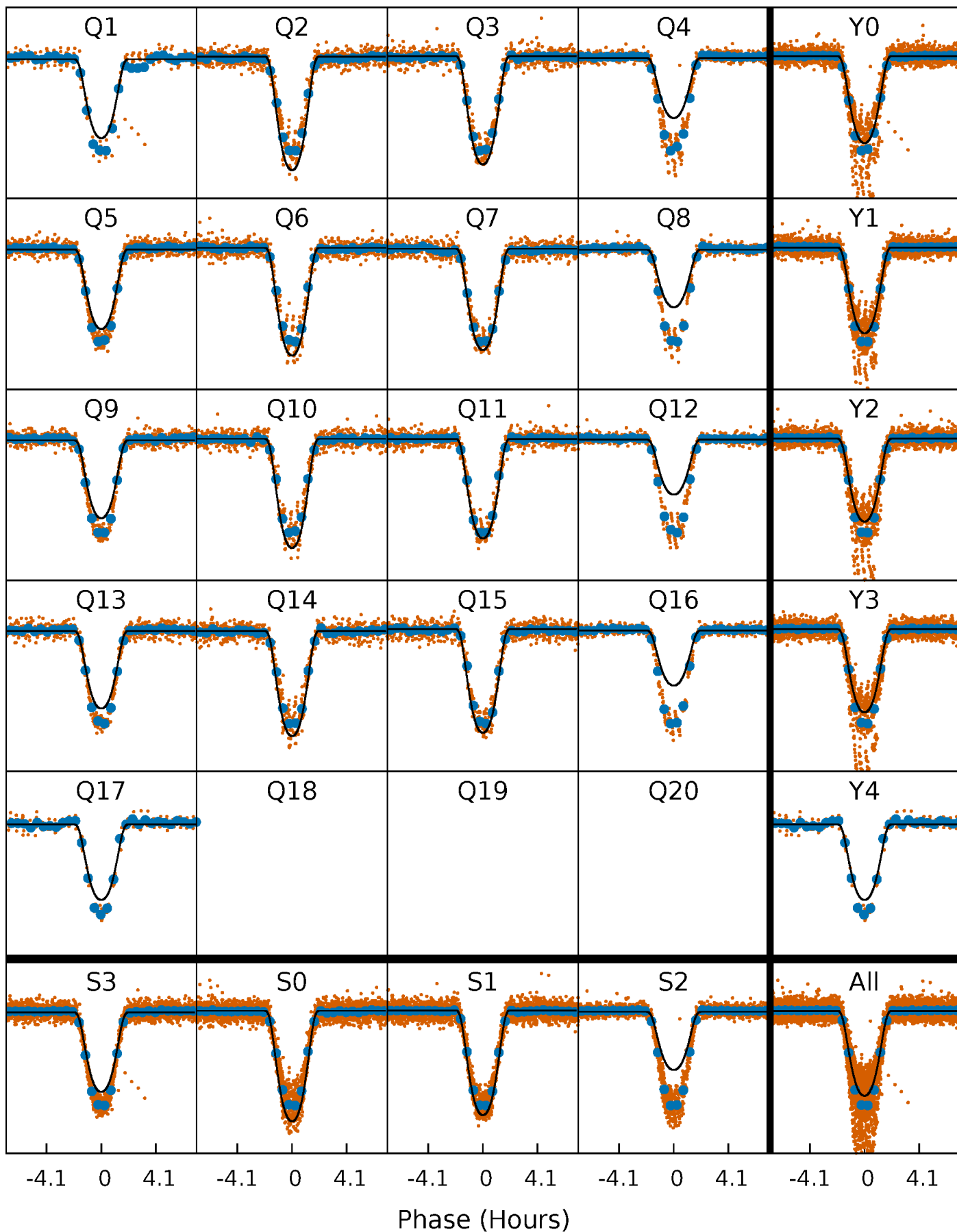
PDC Quarter-Phased Transit Curves

TCE 011553706-01 P= 3.719807 Days $T_0=135.068598$ (BKJD)



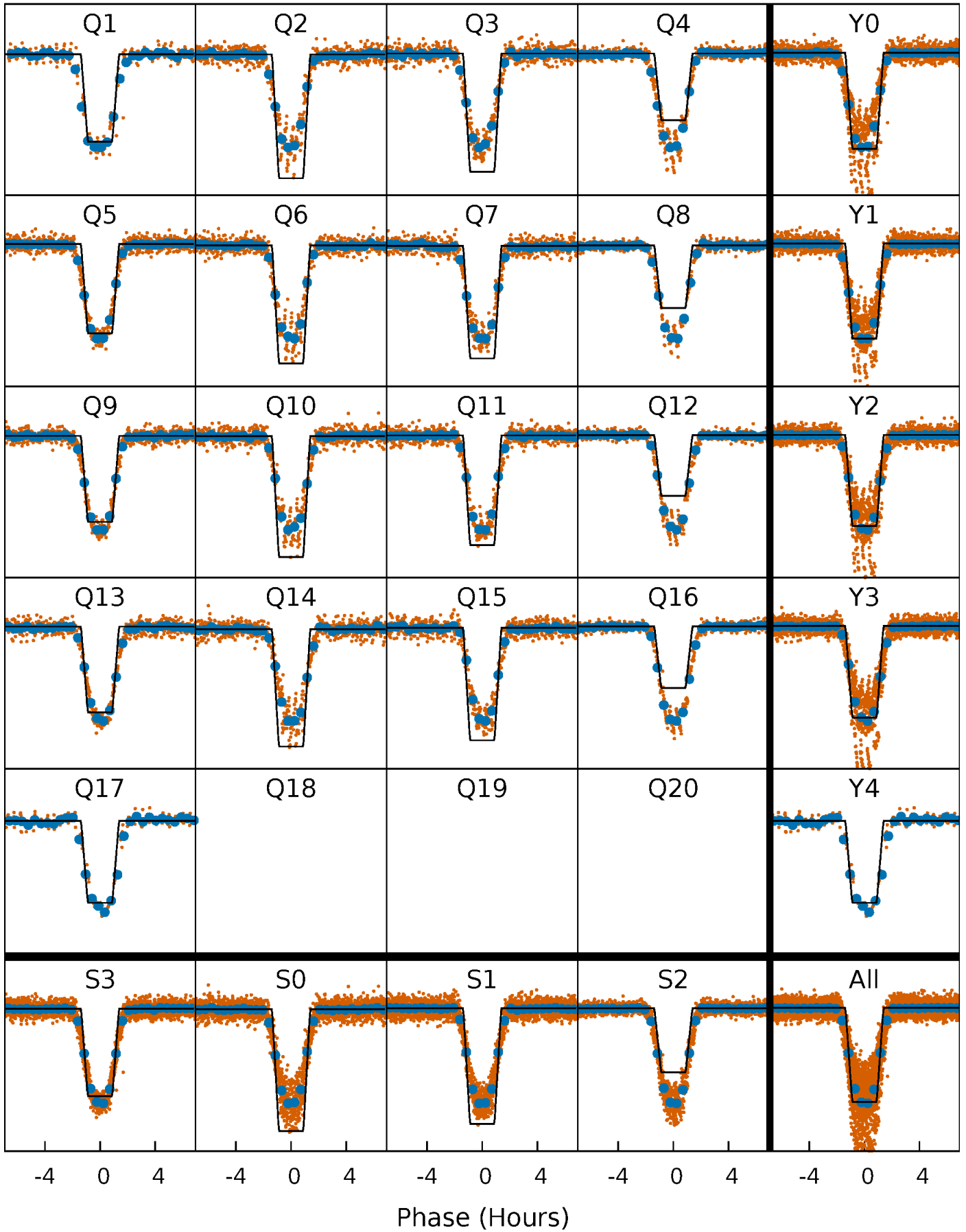
DV Quarter-Phased Transit Curves

TCE 011553706-01 P= 3.719807 Days $T_0=135.068598$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

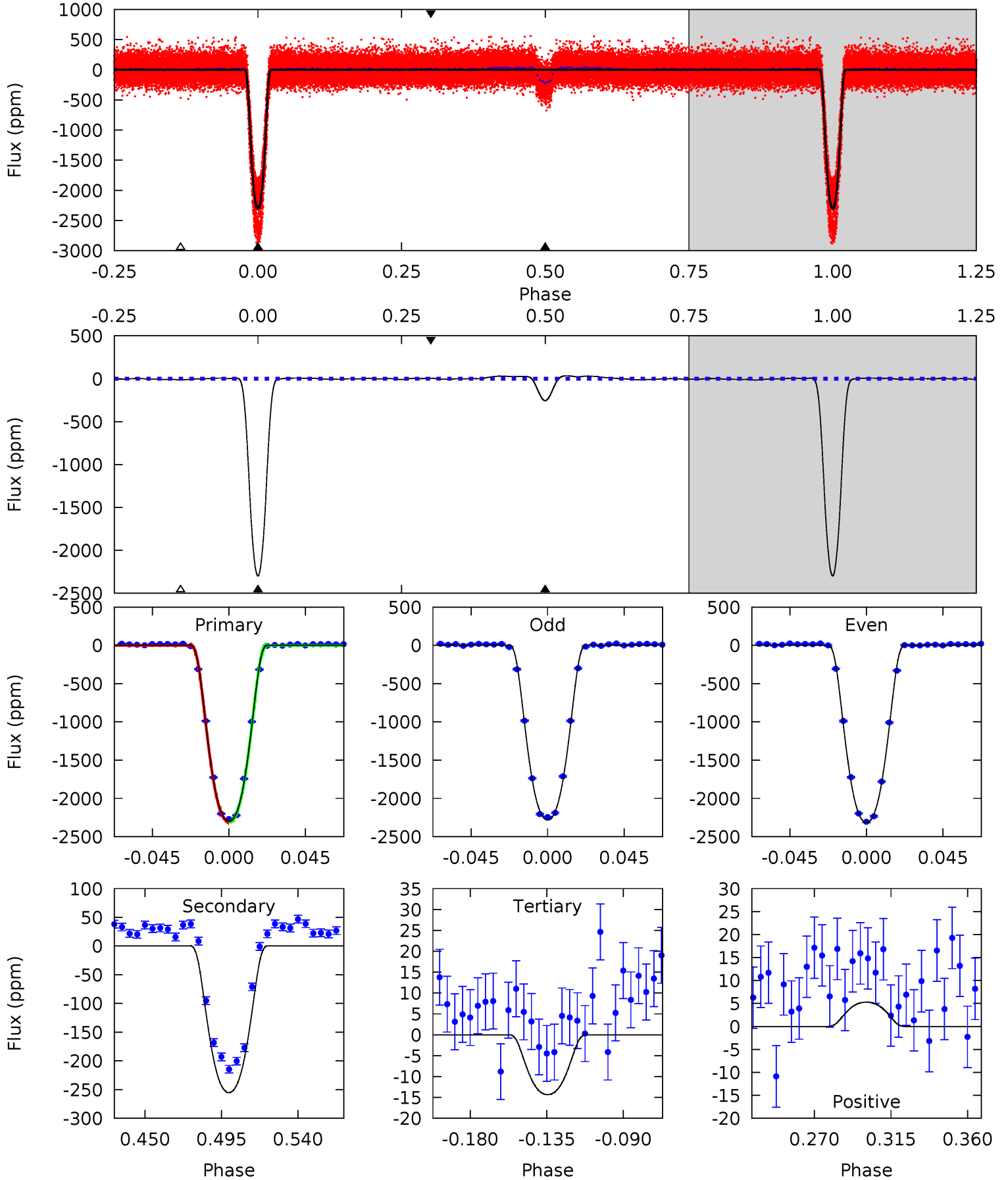
TCE 011553706-01 P= 3.719783 Days $T_0=135.073395$ (BKJD)



DV Model-Shift Uniqueness Test

011553706-01, P = 3.719807 Days, E = 131.348791 Days

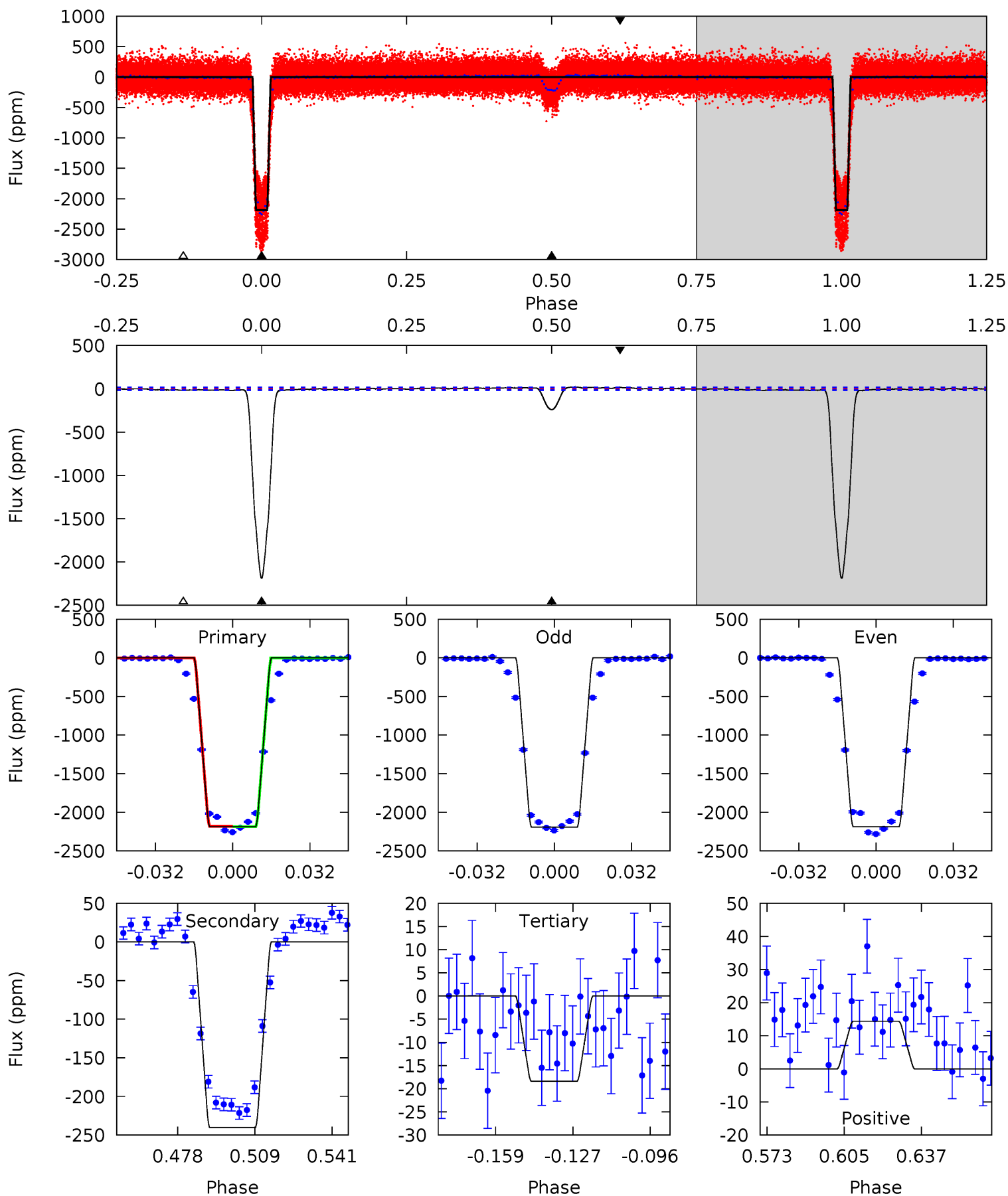
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
911.4	101.2	5.68	2.09	4.73	2.00	4.19	905.7	909.3	95.6	99.2	6.74	1.11	0.01	0.74



Alt Model-Shift Uniqueness Test

011553706-01, P = 3.719783 Days, E = 131.353612 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
655.4	71.9	5.51	4.30	4.80	2.15	2.72	649.9	651.1	66.4	67.6	0.81	1.10	0.01	0.77



Stellar Parameters For KIC 011553706

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6284^{+160}_{-160}	$3.813^{+0.292}_{-0.097}$	$-0.200^{+0.300}_{-0.250}$	$2.348^{+0.447}_{-0.766}$	$1.309^{+0.239}_{-0.239}$	$0.142^{+0.290}_{-0.044}$
	+3%/-3%	+8%/-3%	+150%/-125%	+19%/-33%	+18%/-18%	+204%/-31%
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 011553706-01 / KOI 0009.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-255 ± 3	$13.65^{+1.65}_{-2.32}$	2572^{+154}_{-220}	3693^{+67}_{-65}	$2.034^{+0.881}_{-0.377}$
Alt.	-240 ± 3	$12.45^{+1.46}_{-2.10}$	2572^{+141}_{-197}	3781^{+70}_{-71}	$2.286^{+0.890}_{-0.391}$

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

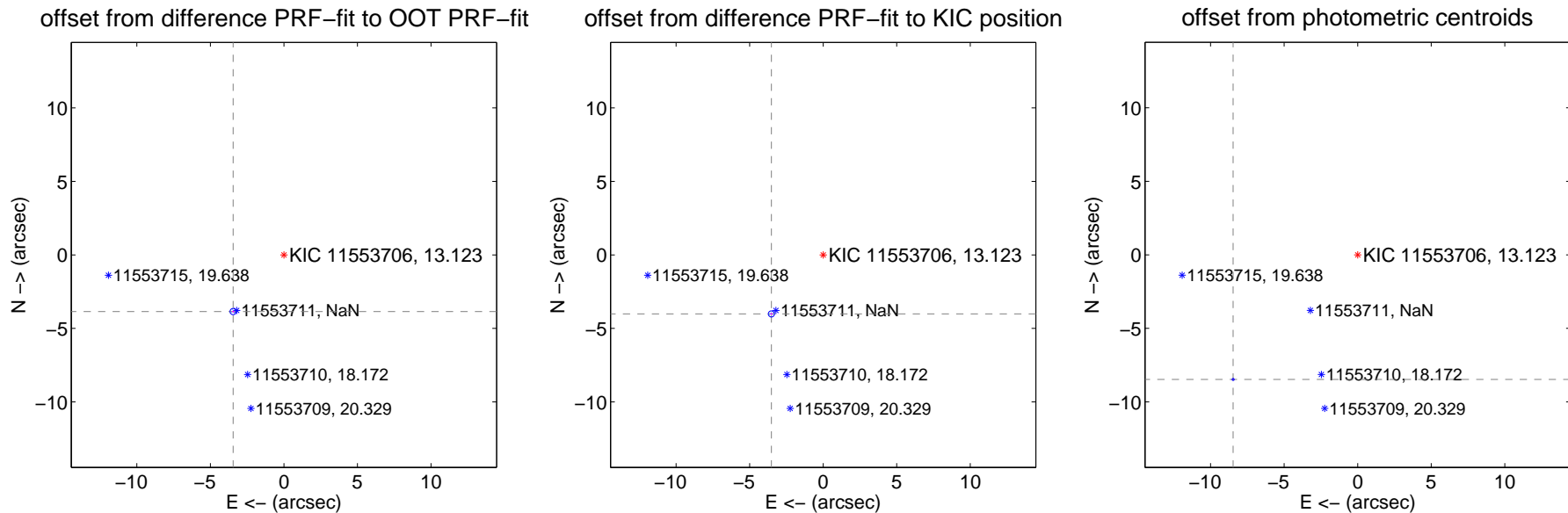
DV Centroid Data

Supplemental centroid analysis for 011553706-01. Kepler magnitude: 13.12. Transit SNR 401.48

There are 17 quarters with good PRF difference image offsets

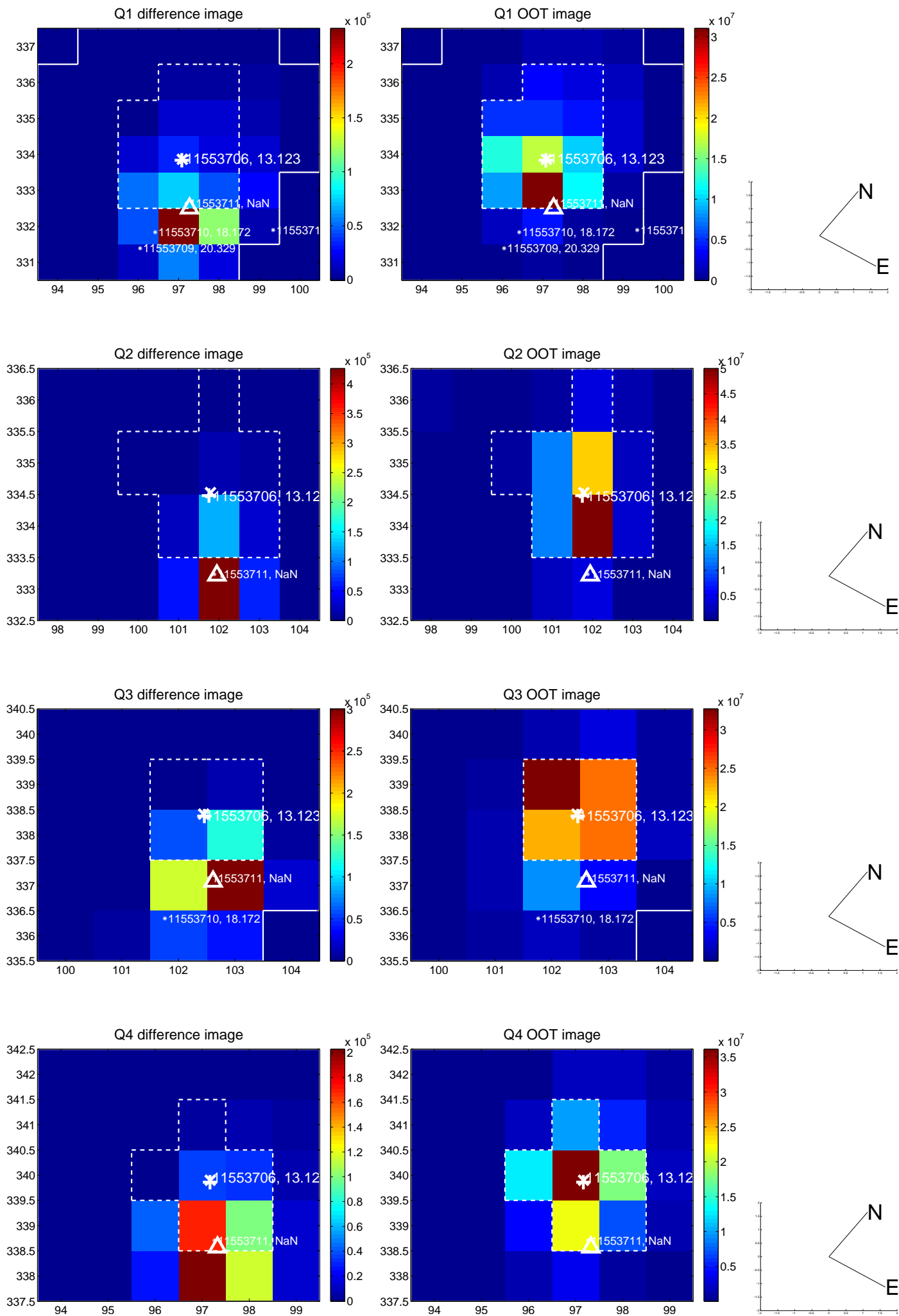
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.178 ± 0.070	74.02	3.455 ± 0.069	-3.856 ± 0.070
PRF-fit source offset from KIC position	5.343 ± 0.069	77.14	3.524 ± 0.069	-4.017 ± 0.069
photometric centroid source offset	11.98 ± 0.02	514.42	8.47 ± 0.02	-8.48 ± 0.02

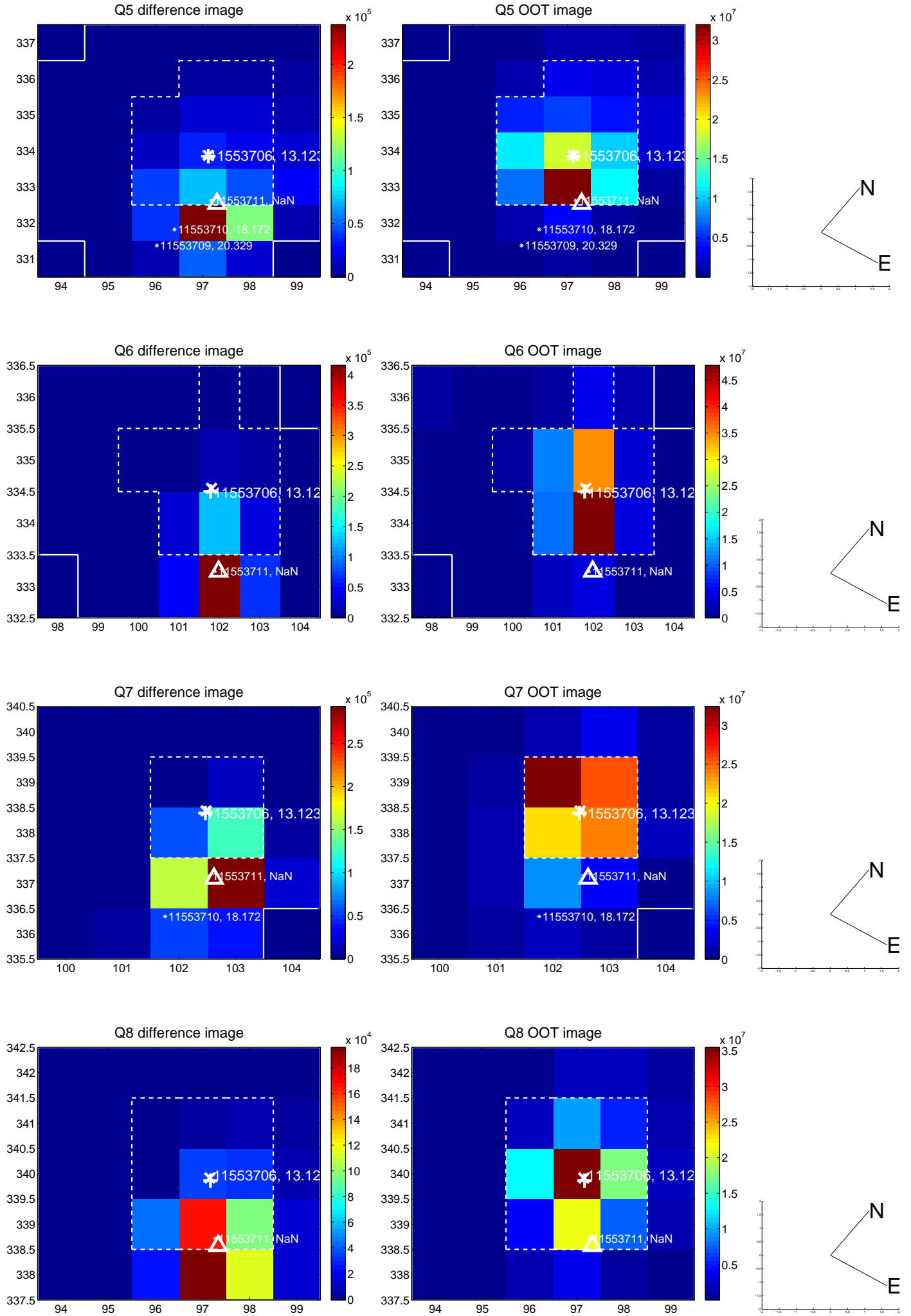


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

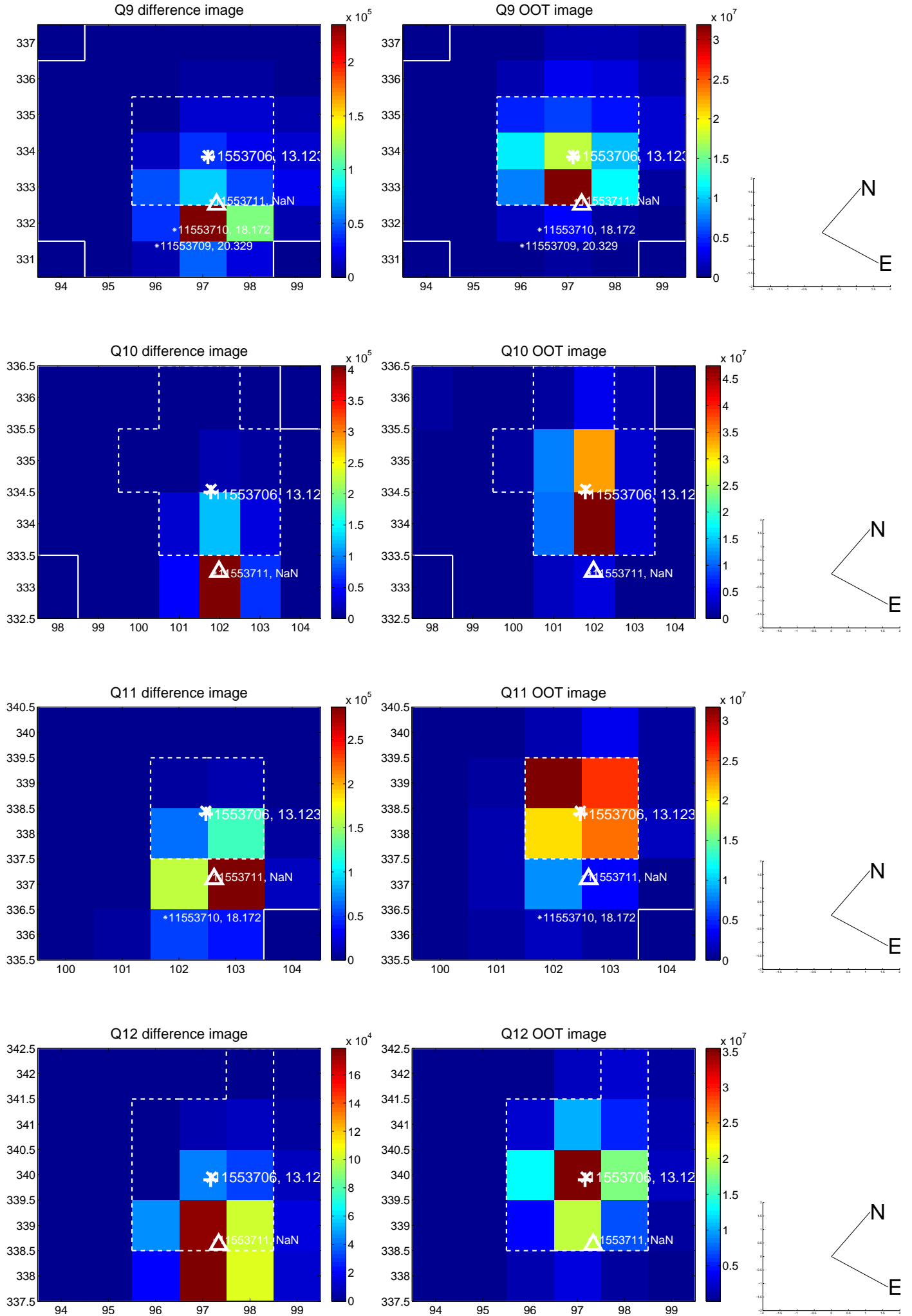
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



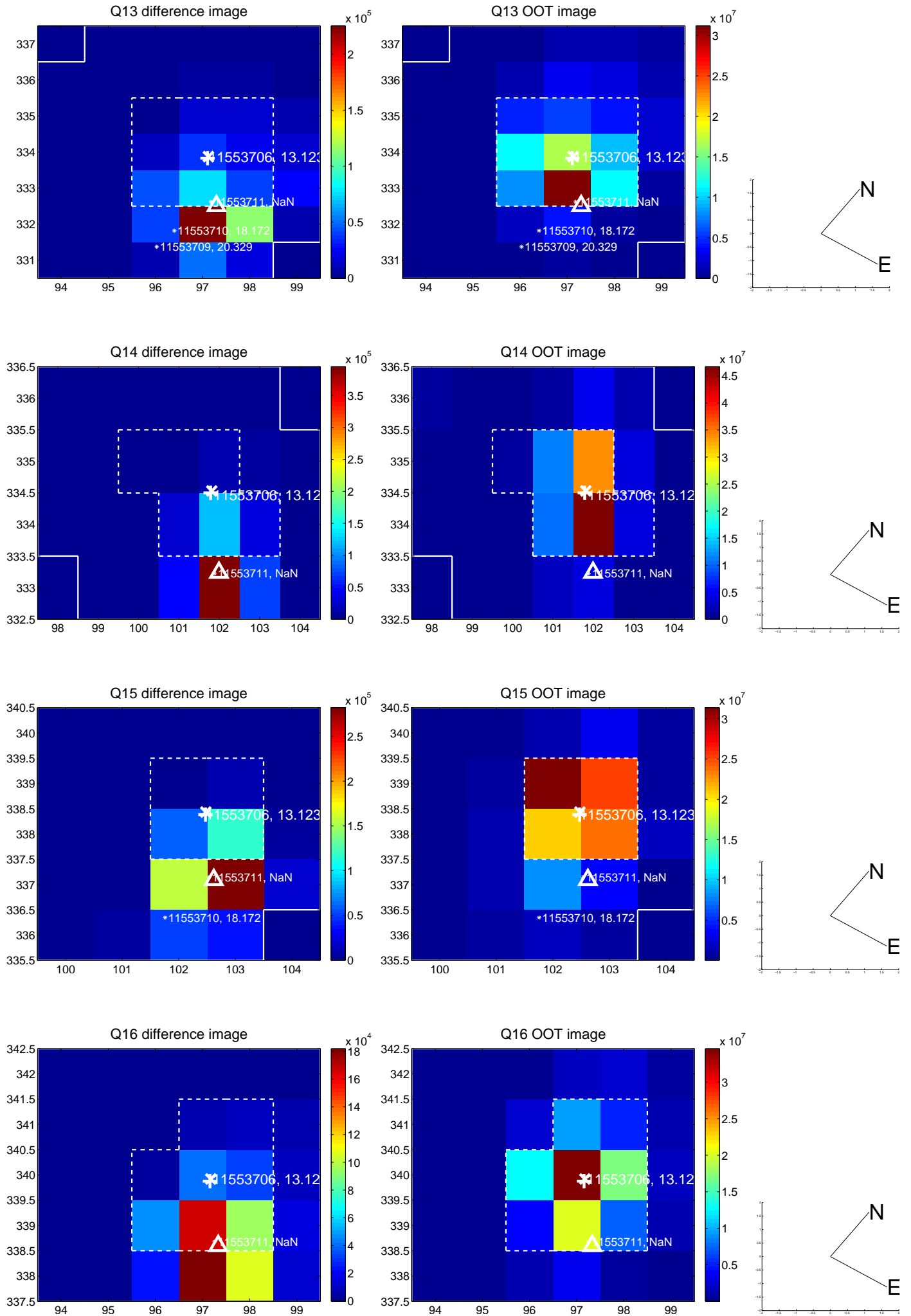
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



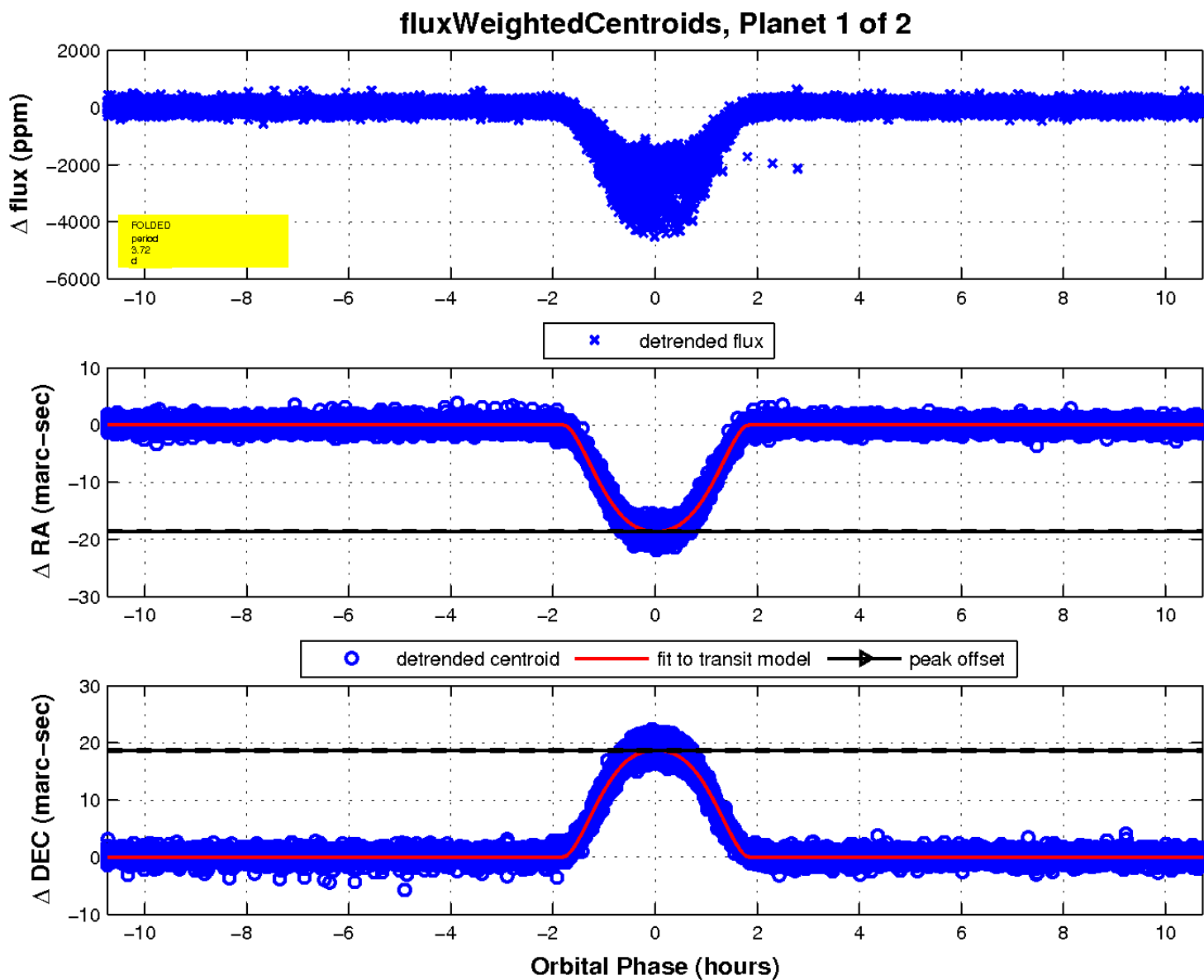
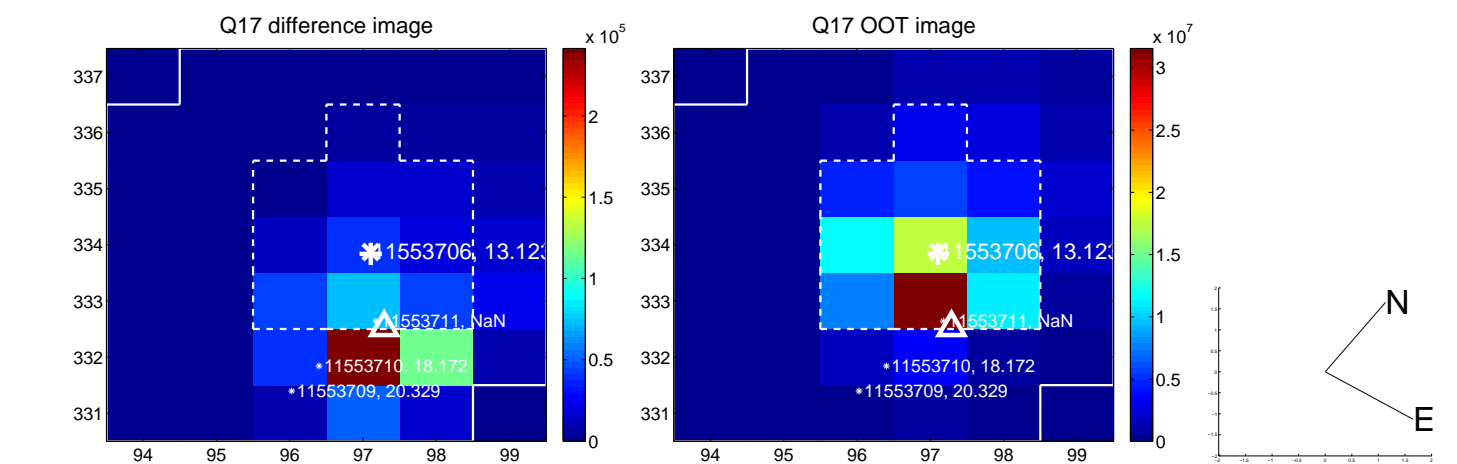
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



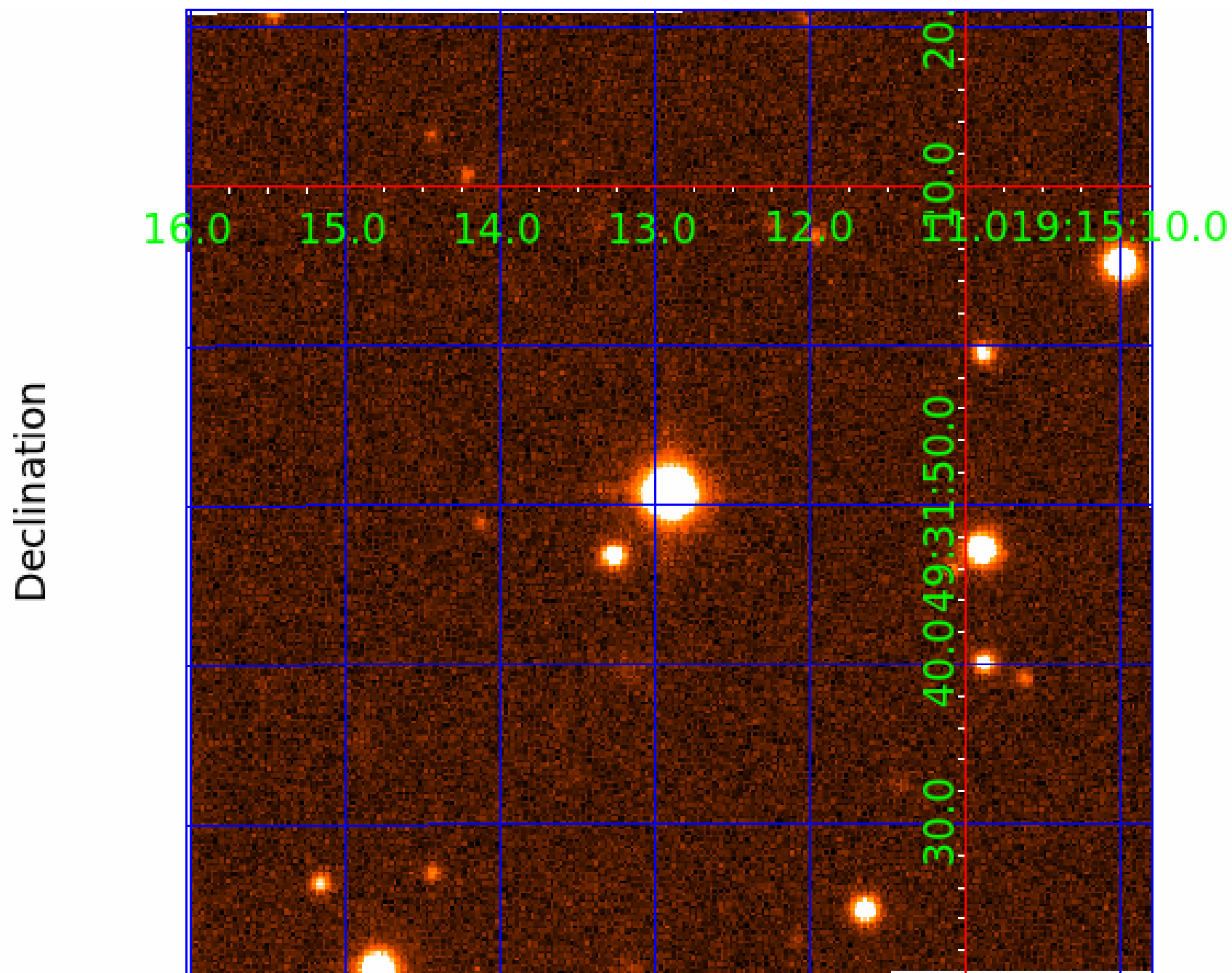
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 011553706

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})
011553706-01	OBS	0009.01	3.719807	135.068598	2232.8	3.577	579.9	401.5	2.35	6284	14.01	2917.05
011553706-02	OBS	No	3.719823	133.204655	221.3	2.803	54.2	59.5	2.35	6284	4.10	2917.03

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011553706-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—SEASONAL_DEPTH_DV—SEASONAL_DEPTH_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
011553706-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST

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.

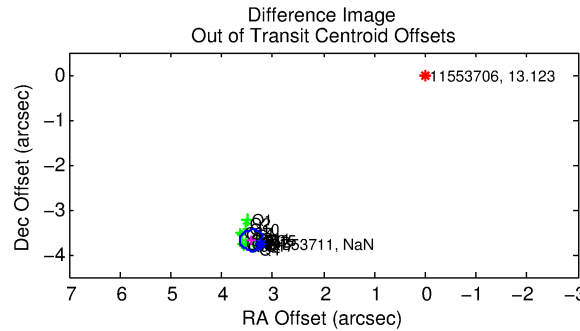
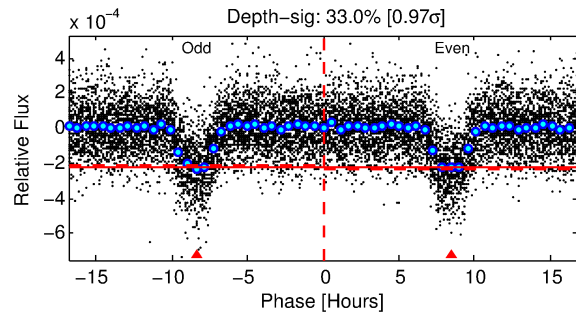
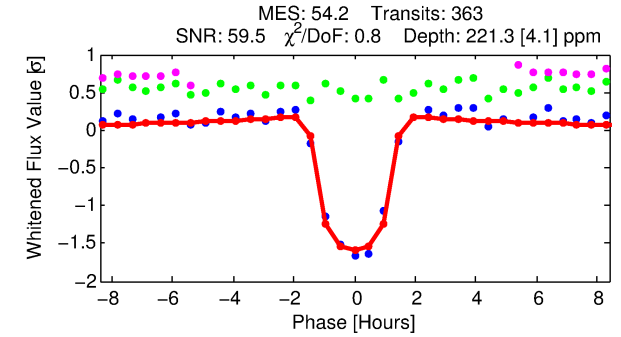
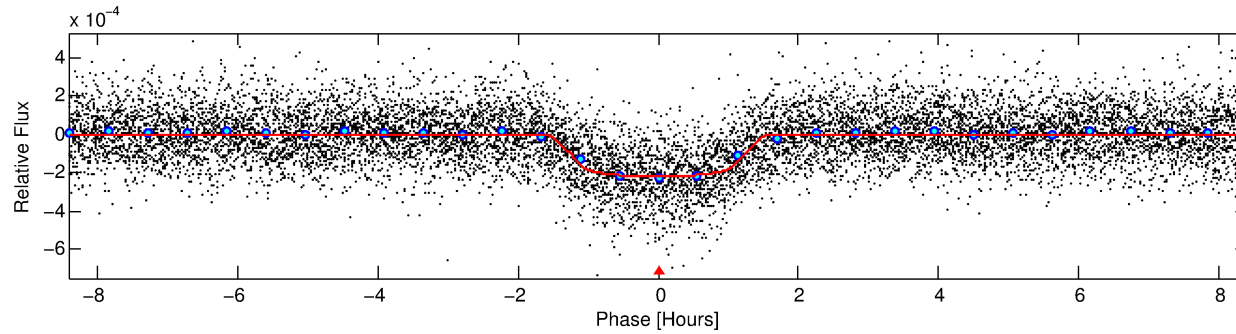
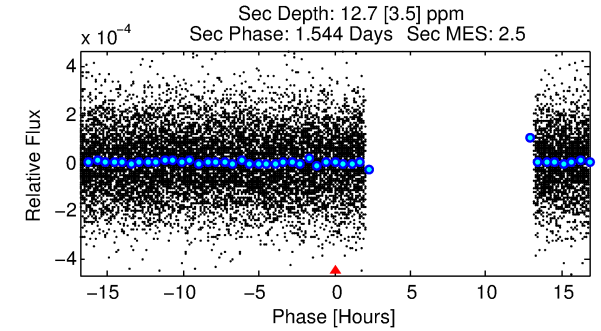
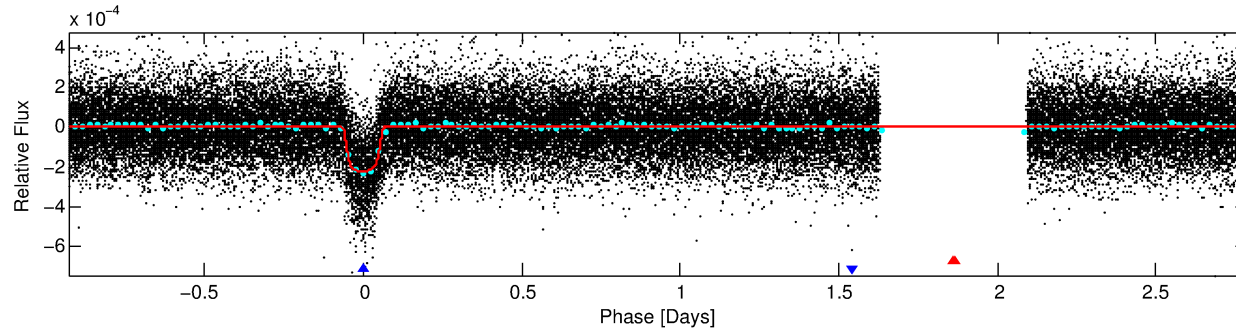
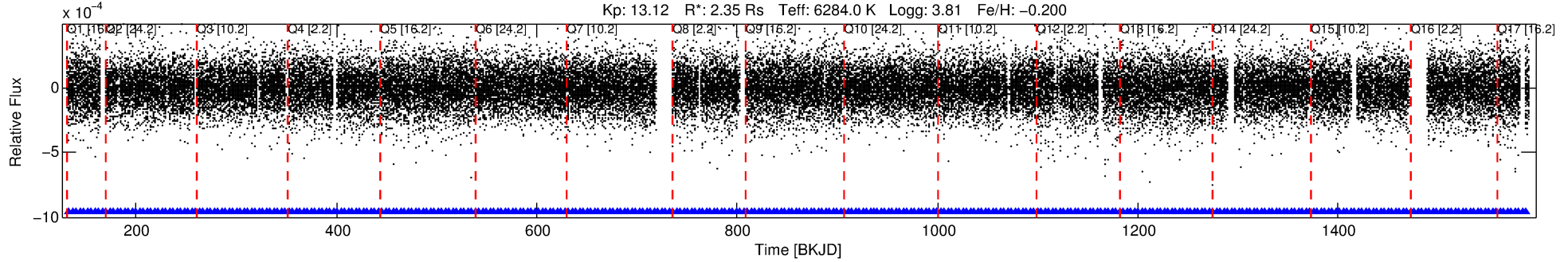
Ephemeris Match Information For 011553706-02

No Significant Match Found

DV One-Page Summary

KIC: 11553706 Candidate: 2 of 2 Period: 3.720 d
KOI: K00009 Corr: No Ephemeris Match

Kp: 13.12 R*: 2.35 Rs Teff: 6284.0 K Logg: 3.81 Fe/H: -0.200



DV Fit Results:

Period = 3.71982 [0.00000] d
Epoch = 133.2047 [0.0007] BKJD
Rp/R* = 0.0160 [0.0011]
a/R* = 4.86 [1.81]
b = 0.90 [0.08]
Seff = 2917.03 [1483.36]
Teff = 1874 [238] K
Rp = 4.10 [1.37] Re
a = 0.0514 [0.0160] AU
Ag = 1.10 [0.64] [0.15σ]
Teffp = 2966 [241] K [3.2σ]

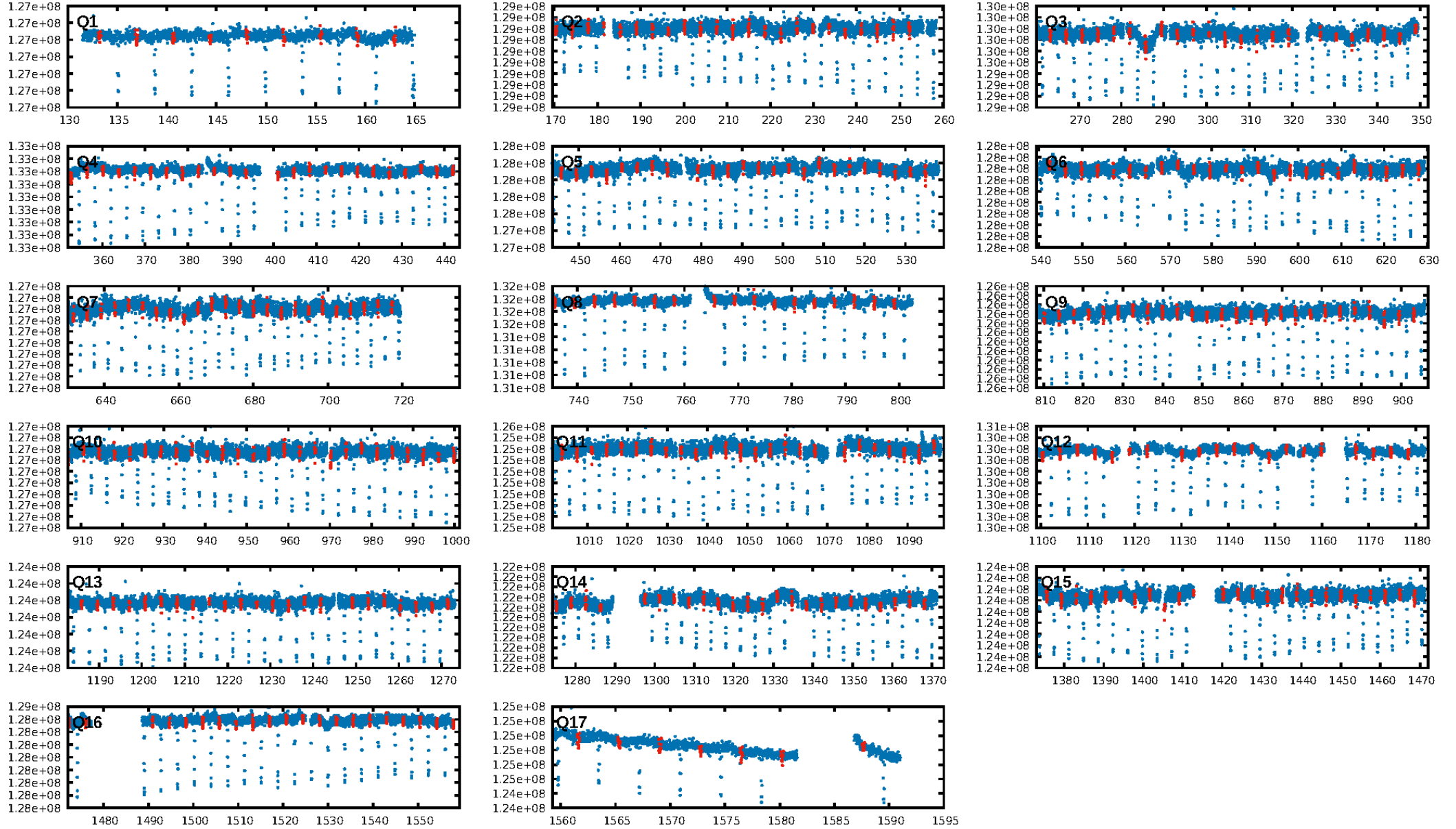
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [347/347]
GhostDiagnostic-chr: 0.08243
Centroid-sig: 0.0%
Centroid-so: 8.605 arcsec [40.40σ]
OotOffset-rm: 5.018 arcsec [64.44σ]
KicOffset-rm: 5.180 arcsec [67.68σ]
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]

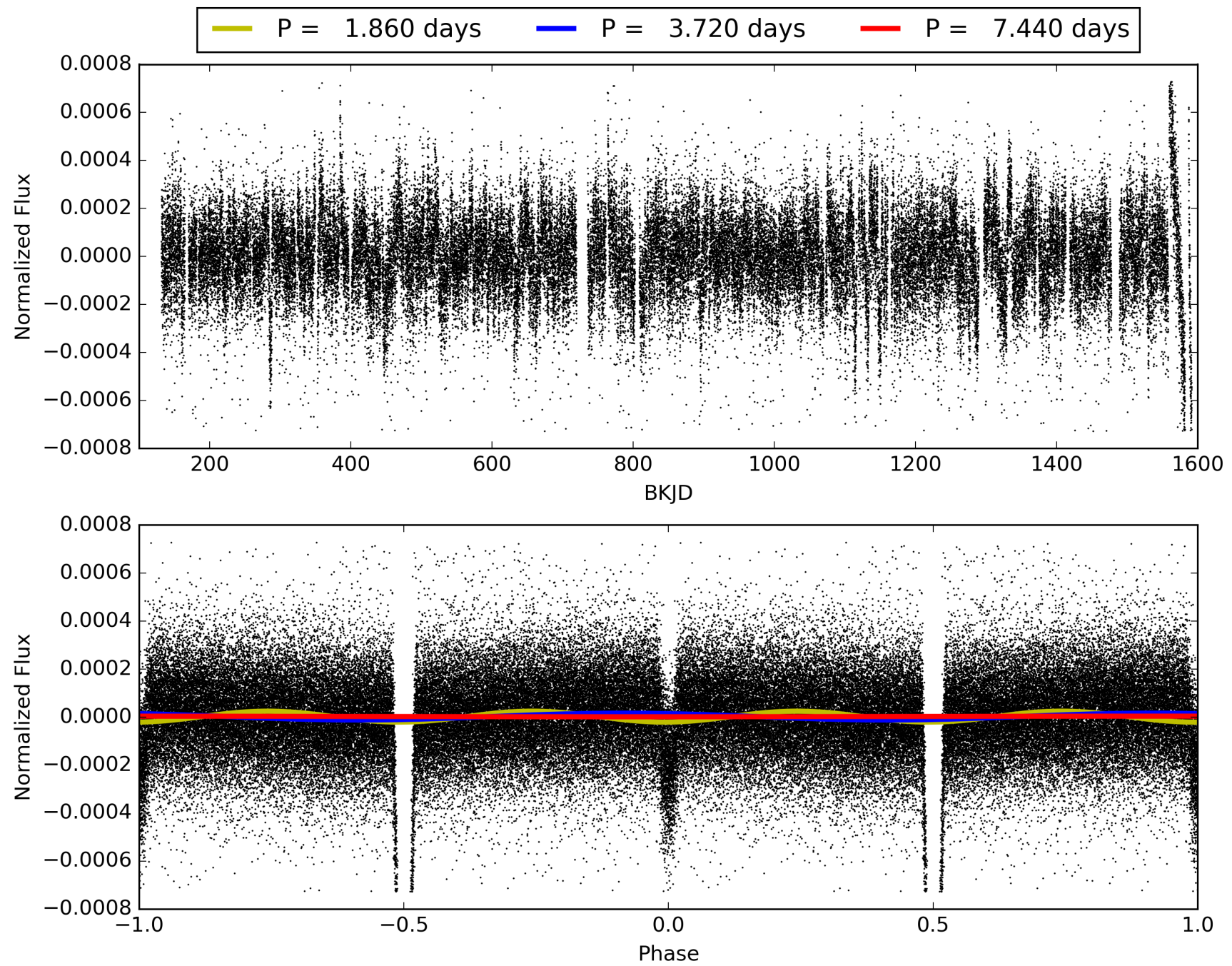
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 18:27:40 Z

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

TCE 011553706-02, PDC Light Curves

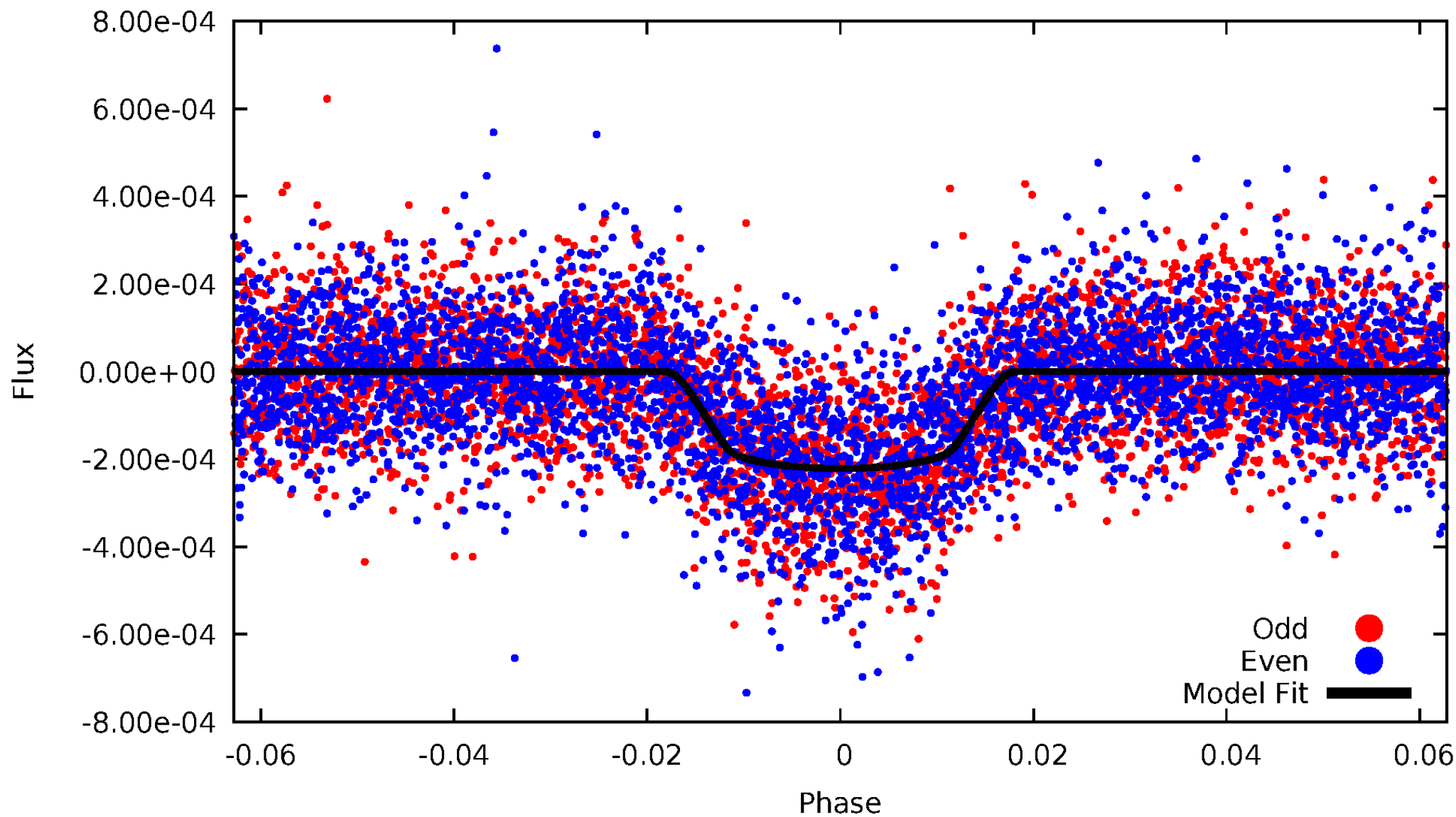


TCE 011553706-02



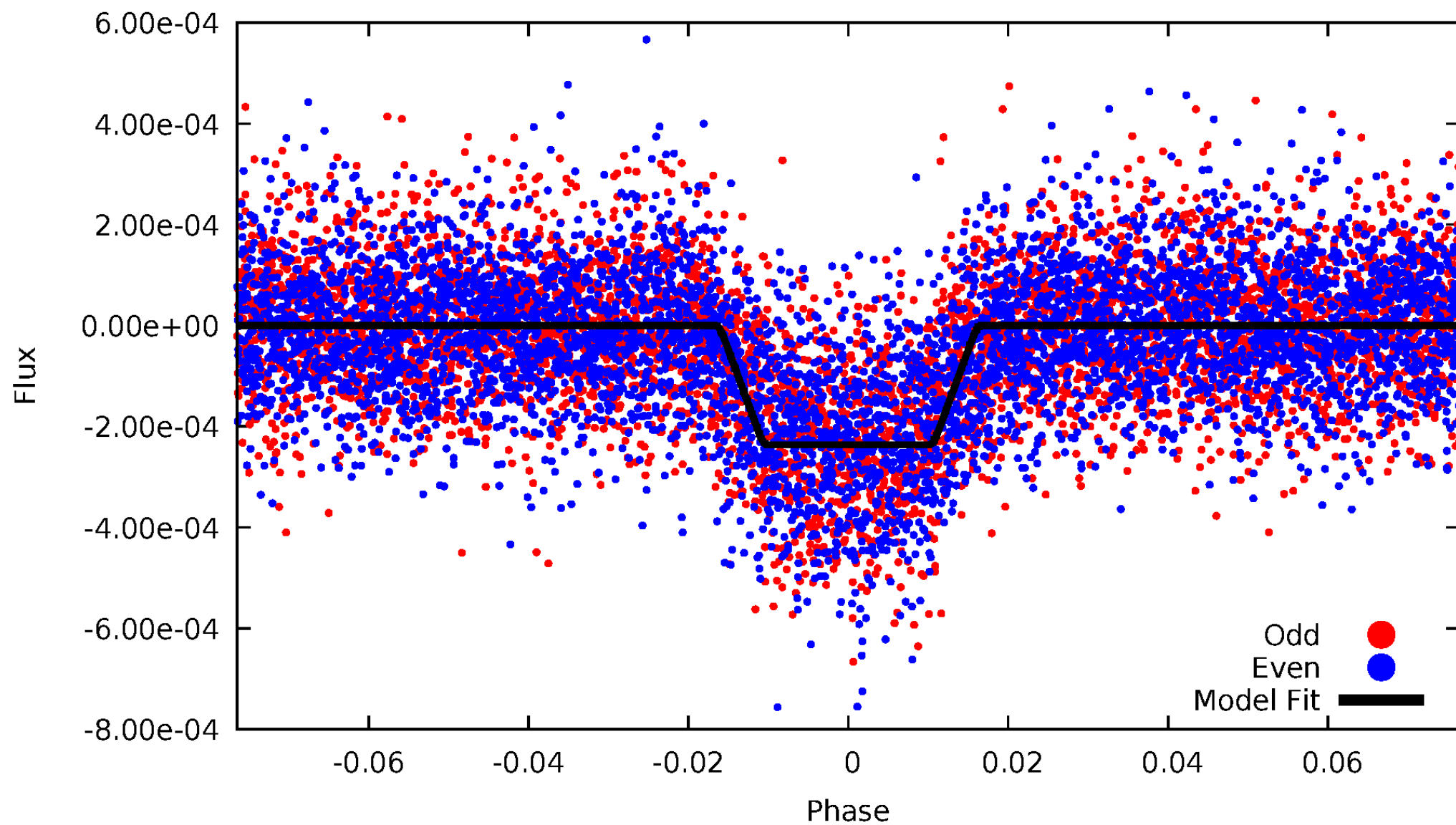
DV Odd/Even

TCE 011553706-02



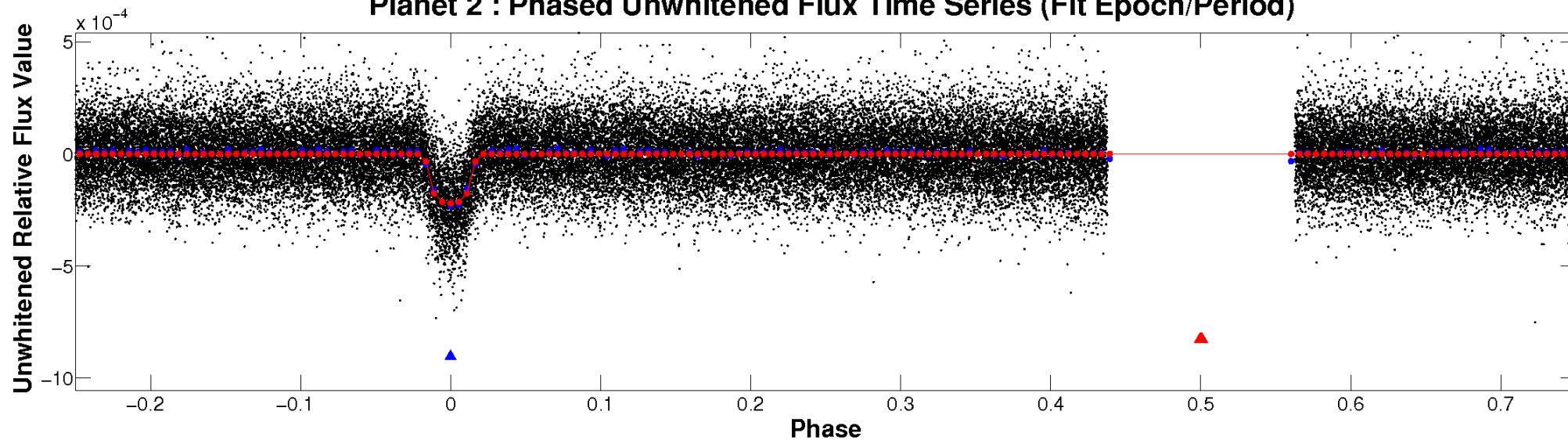
ALT Odd/Even

TCE 011553706-02

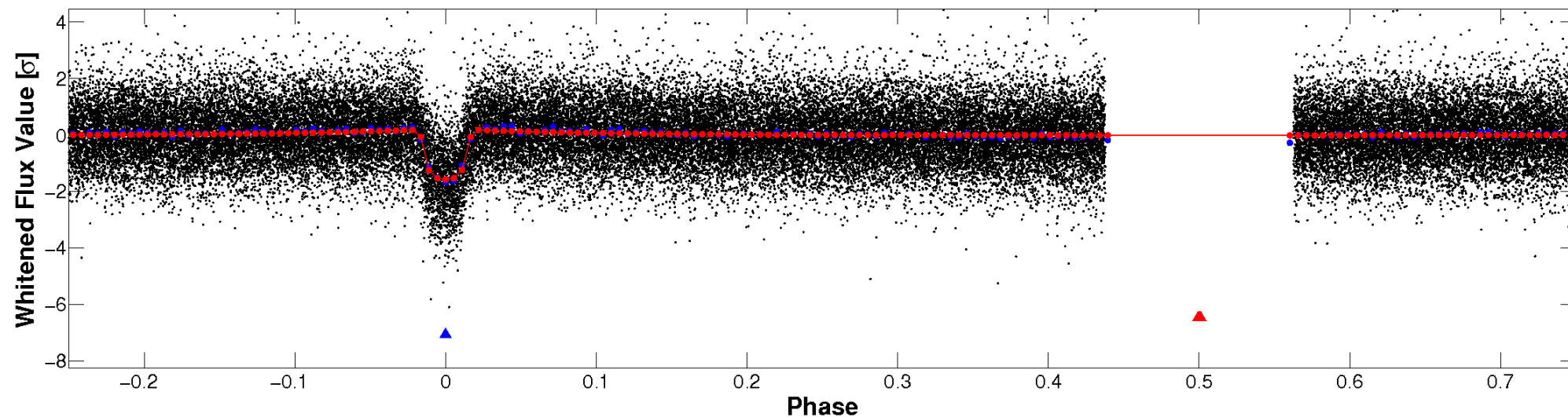


Non-Whitened Vs. Whitened Light Curve

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

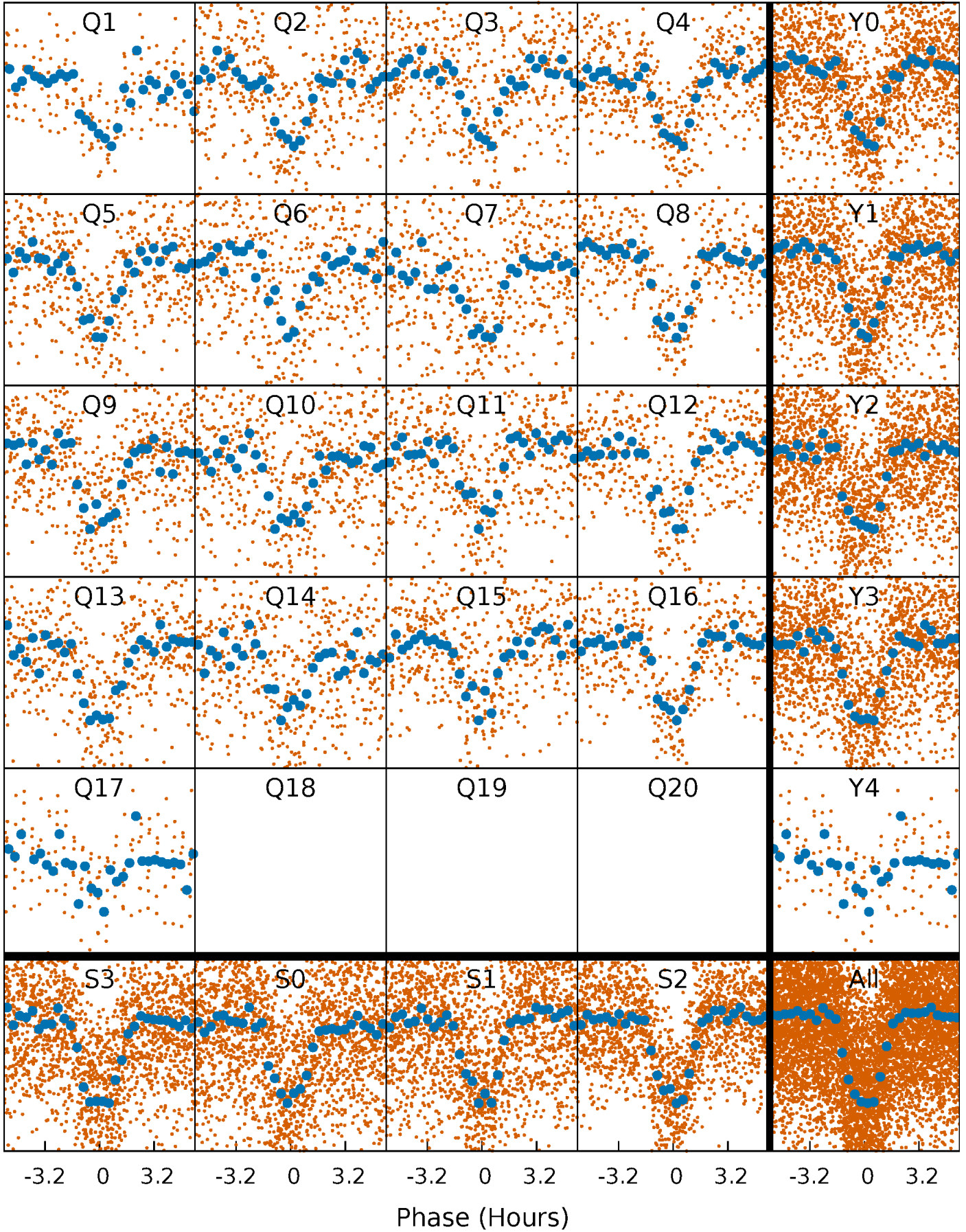


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



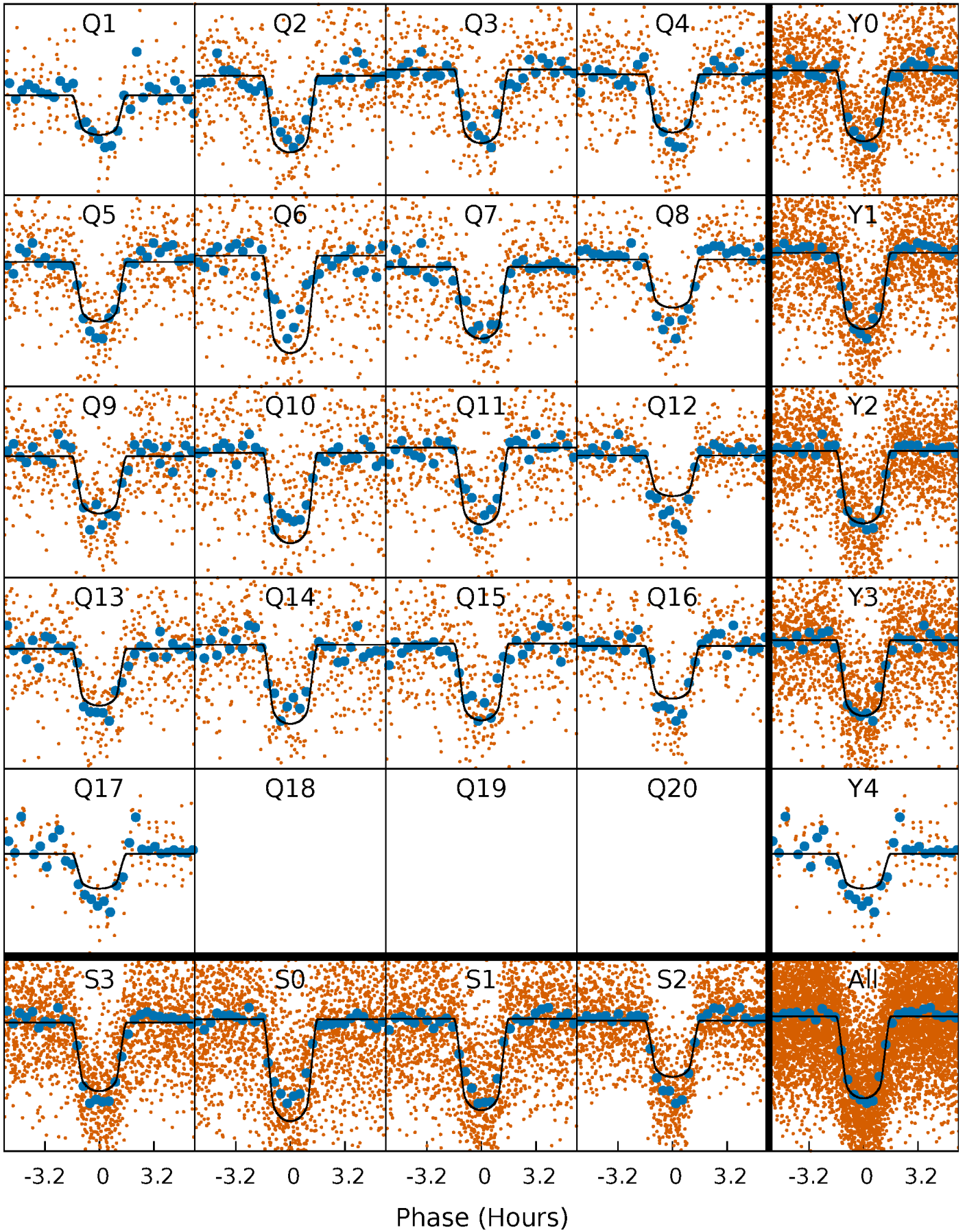
PDC Quarter-Phased Transit Curves

TCE 011553706-02 P= 3.719823 Days $T_0=133.204655$ (BKJD)



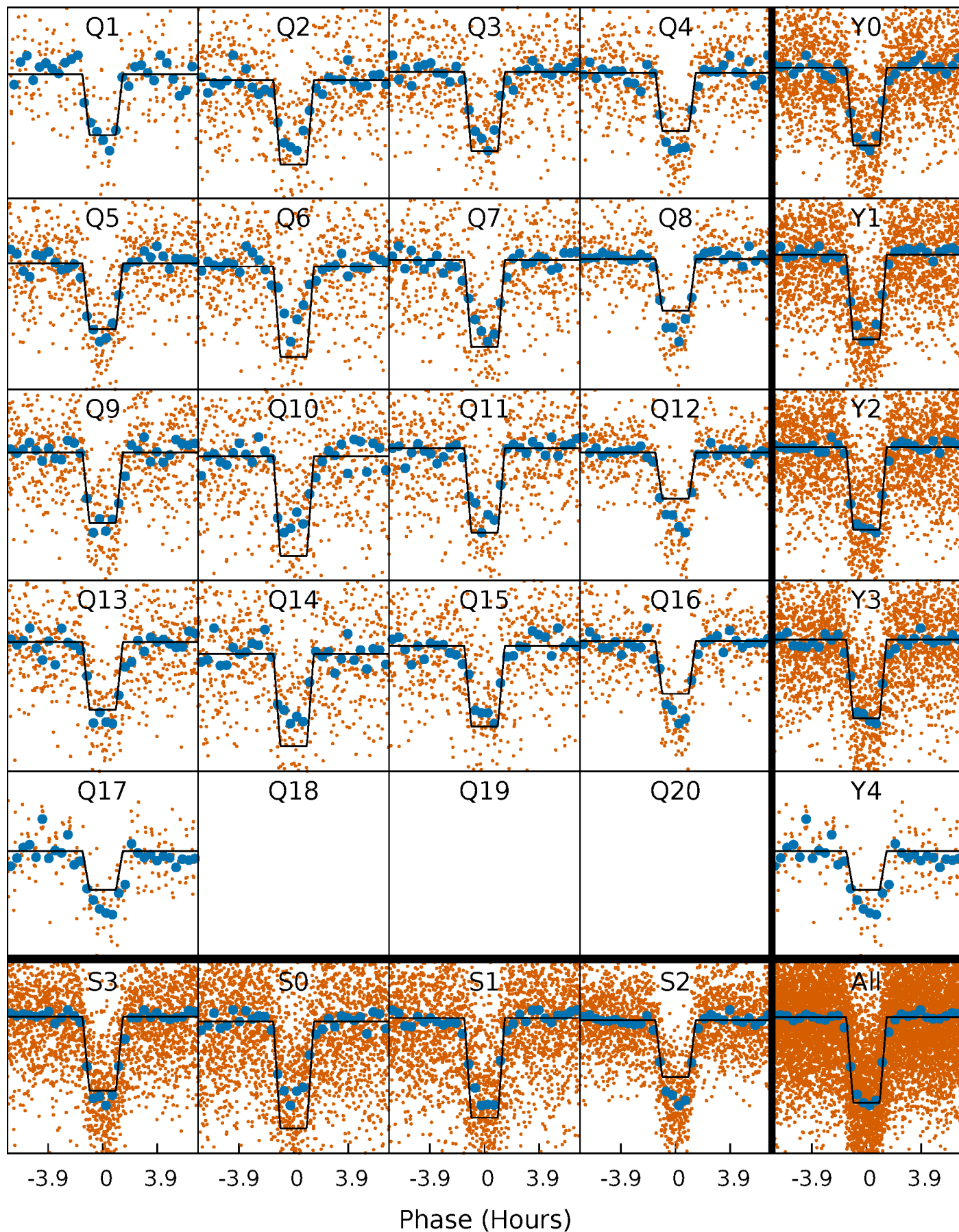
DV Quarter-Phased Transit Curves

TCE 011553706-02 P= 3.719823 Days $T_0=133.204655$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

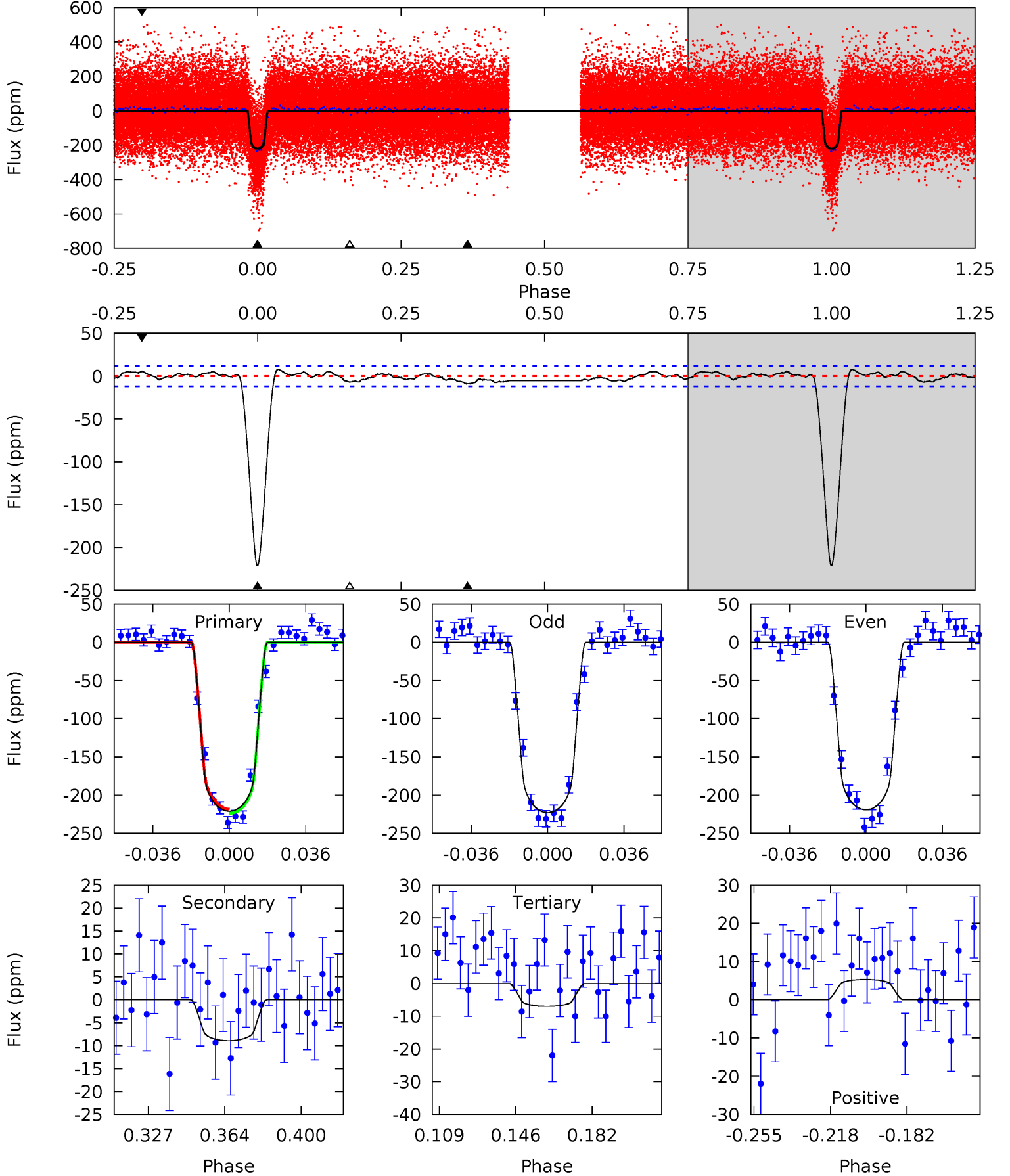
TCE 011553706-02 P= 3.719795 Days $T_0=133.209655$ (BKJD)



DV Model-Shift Uniqueness Test

011553706-02, P = 3.719823 Days, E = 129.484832 Days

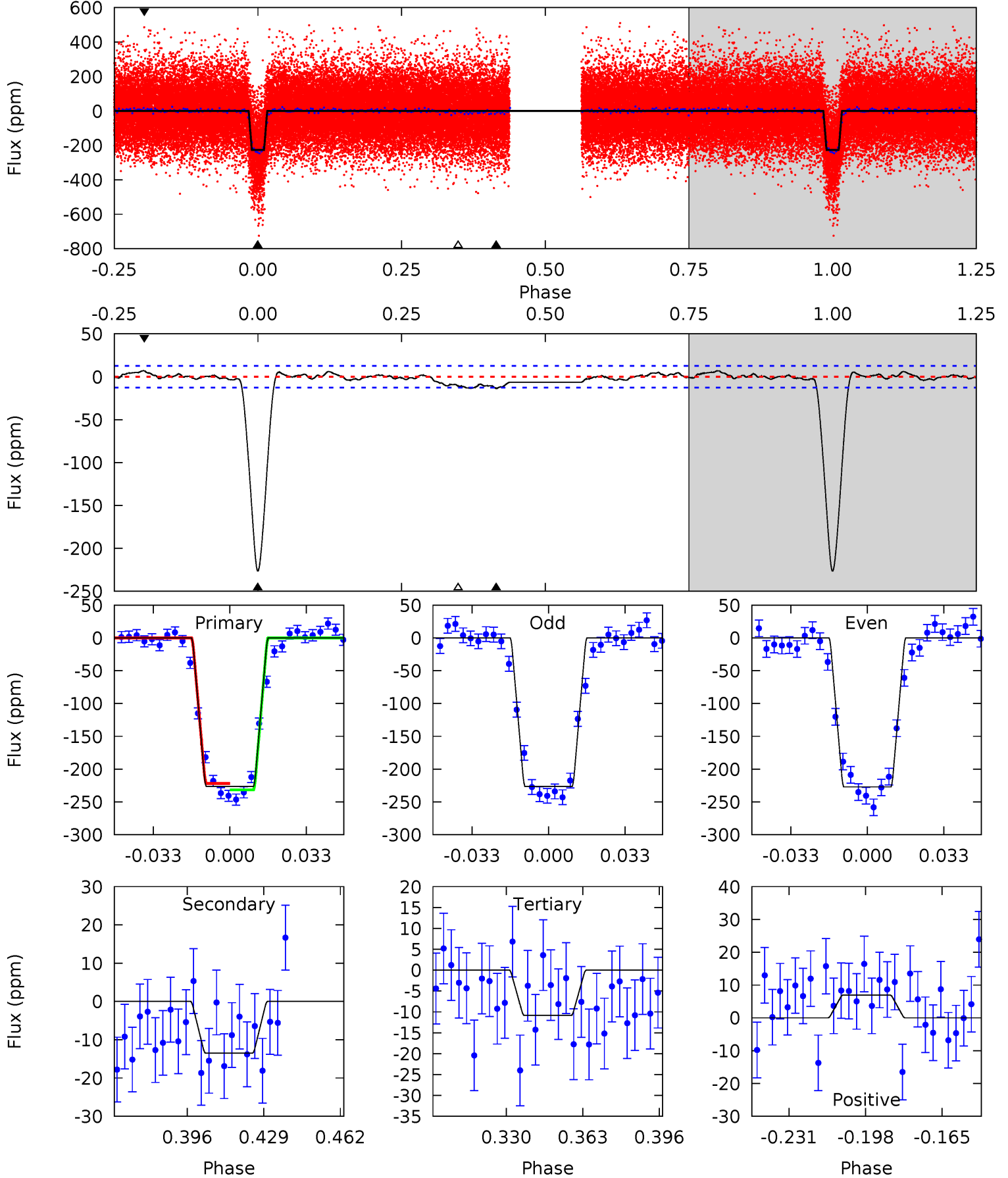
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
87.5	3.54	2.78	2.10	4.77	2.09	1.35	84.7	85.4	0.76	1.44	0.75	1.00	0.03	1.09



Alt Model-Shift Uniqueness Test

011553706-02, P = 3.719795 Days, E = 129.489860 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
85.1	5.07	4.08	2.61	4.79	2.13	1.51	81.0	82.5	0.99	2.45	0.17	1.01	0.03	1.81



Stellar Parameters For KIC 011553706

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6284^{+160}_{-160}	$3.813^{+0.292}_{-0.097}$	$-0.200^{+0.300}_{-0.250}$	$2.348^{+0.447}_{-0.766}$	$1.309^{+0.239}_{-0.239}$	$0.142^{+0.290}_{-0.044}$
	+3%/-3%	+8%/-3%	+150%/-125%	+19%/-33%	+18%/-18%	+204%/-31%
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 011553706-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-9 ± 3	$4.01^{+0.58}_{-0.75}$	2577^{+151}_{-213}	3092^{+196}_{-284}	$0.847^{+0.461}_{-0.291}$
Alt.	-13 ± 3	$3.81^{+0.55}_{-0.71}$	2570^{+156}_{-218}	3409^{+162}_{-194}	$1.357^{+0.701}_{-0.352}$

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

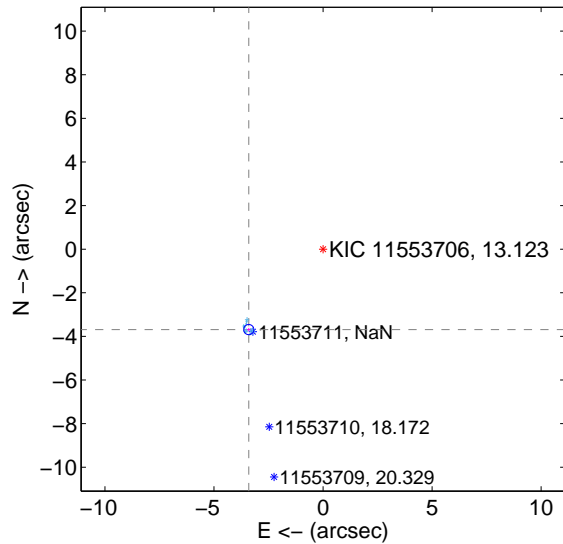
Supplemental centroid analysis for 011553706-02. Kepler magnitude: 13.12. Transit SNR 59.53

There are 17 quarters with good PRF difference image offsets

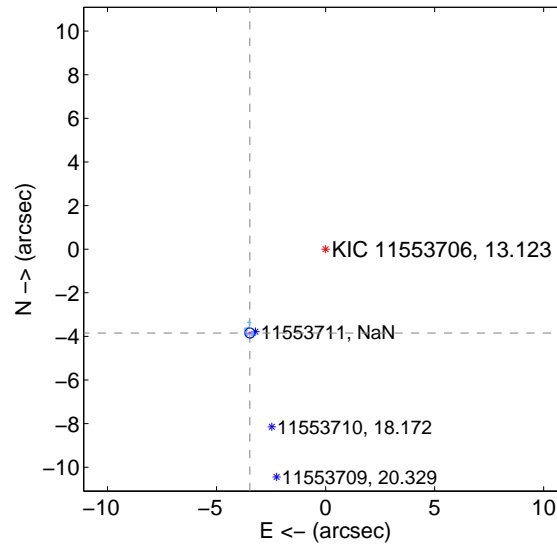
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.018 ± 0.078	64.44	3.405 ± 0.080	-3.687 ± 0.076
PRF-fit source offset from KIC position	5.180 ± 0.077	67.68	3.473 ± 0.077	-3.844 ± 0.076
photometric centroid source offset	8.61 ± 0.21	40.40	5.97 ± 0.21	-6.20 ± 0.22

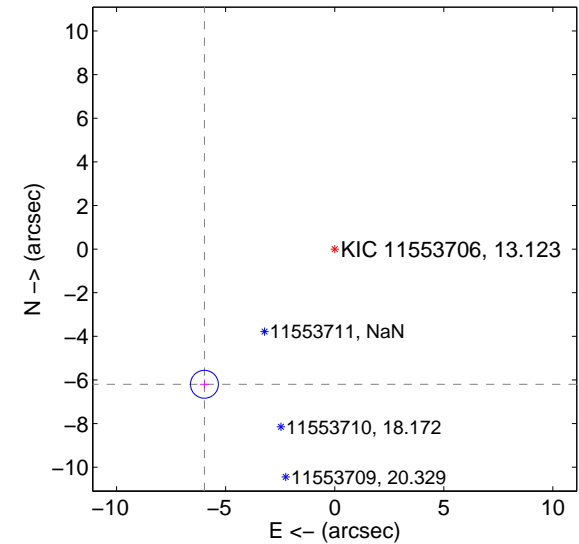
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

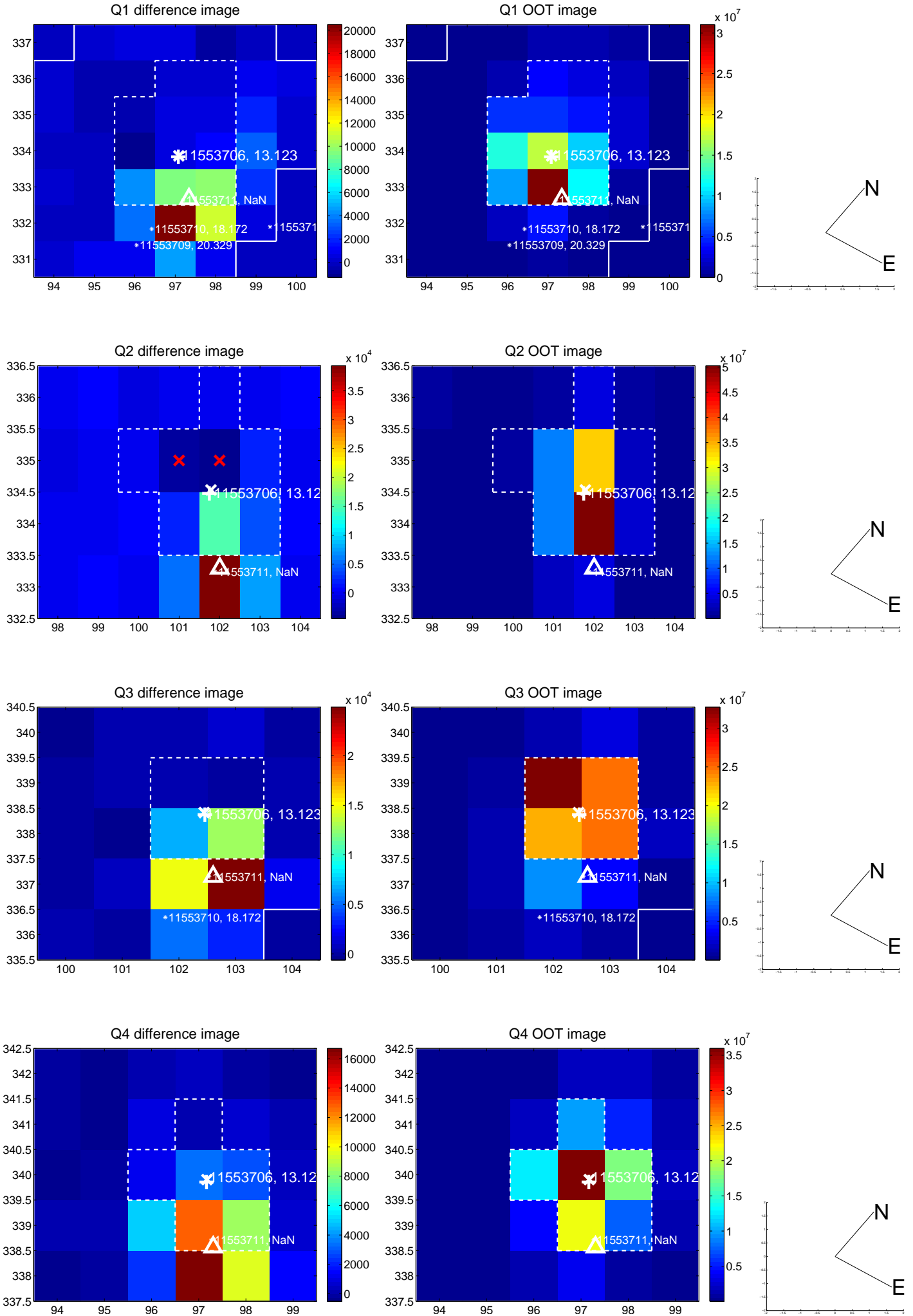


offset from photometric centroids

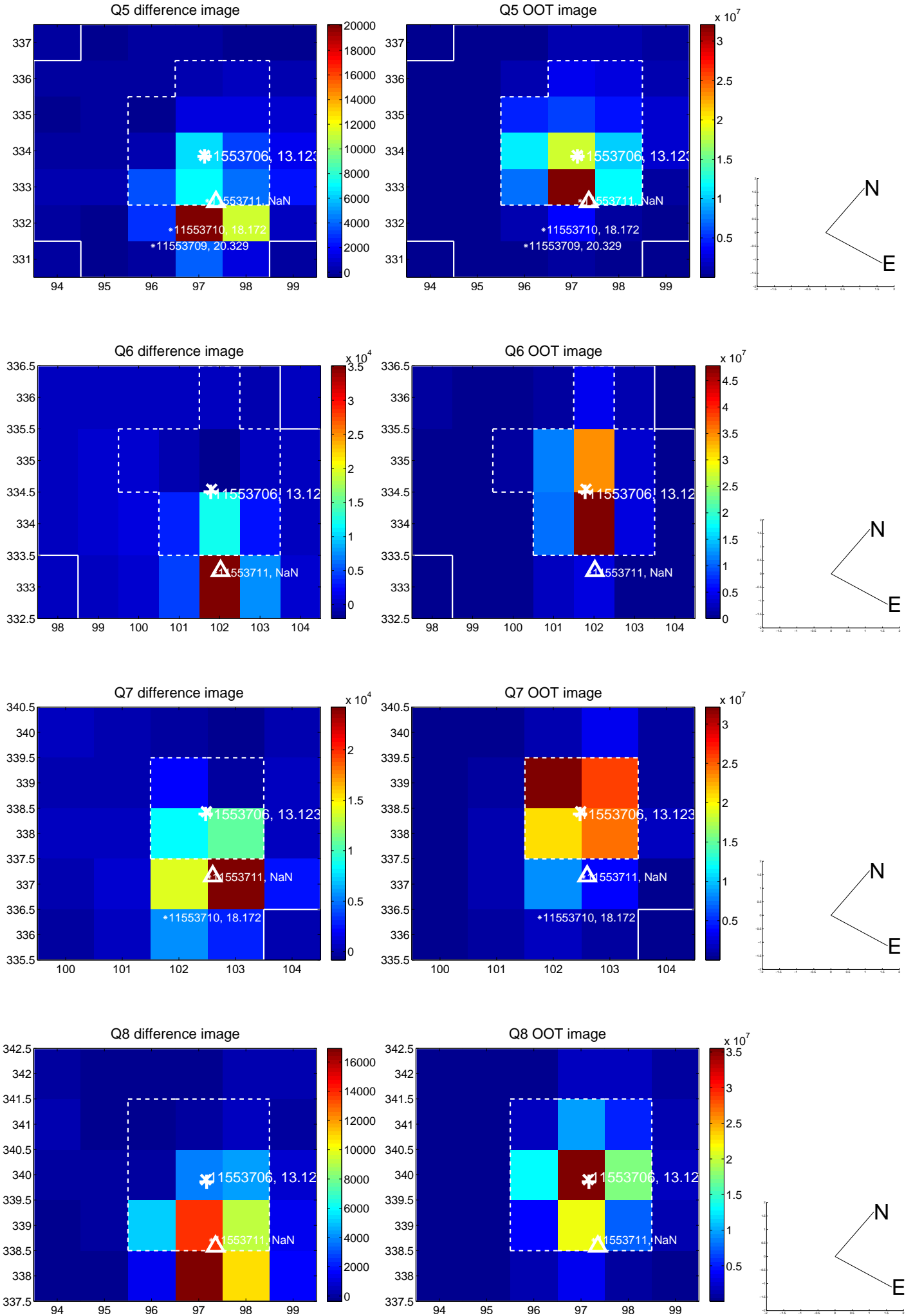


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

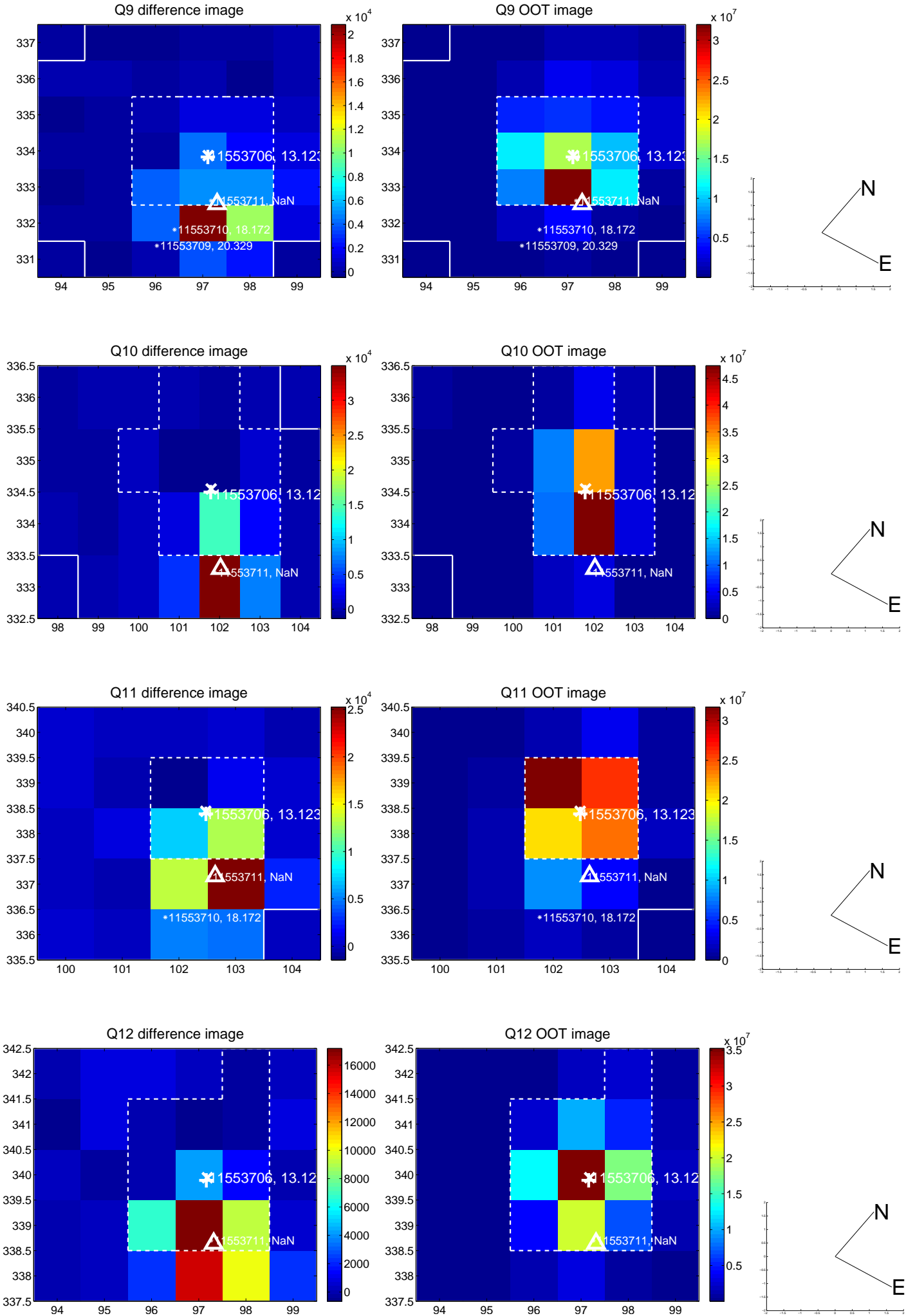
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



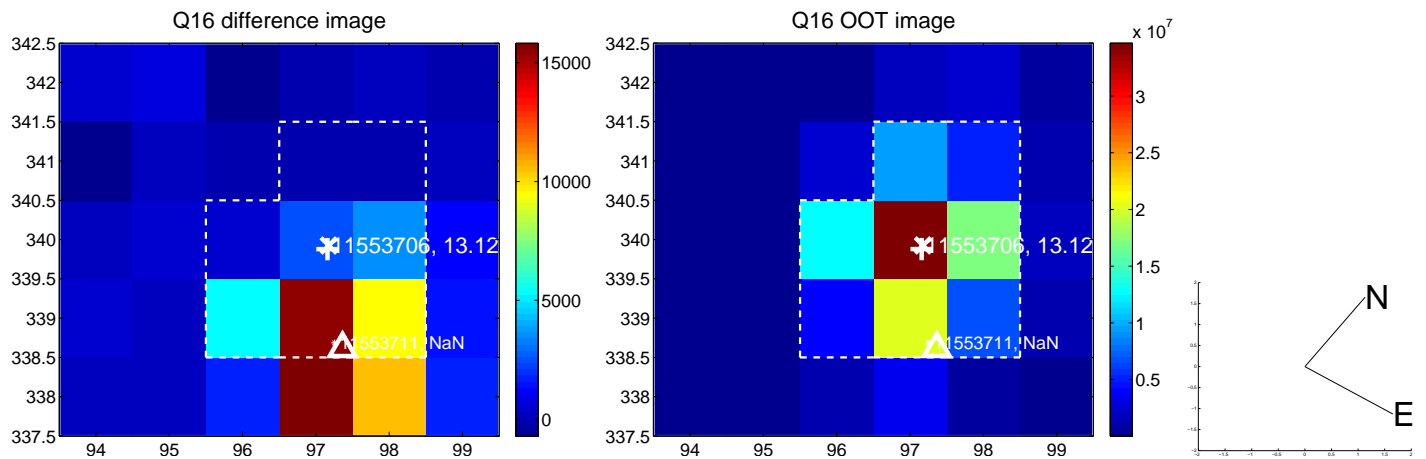
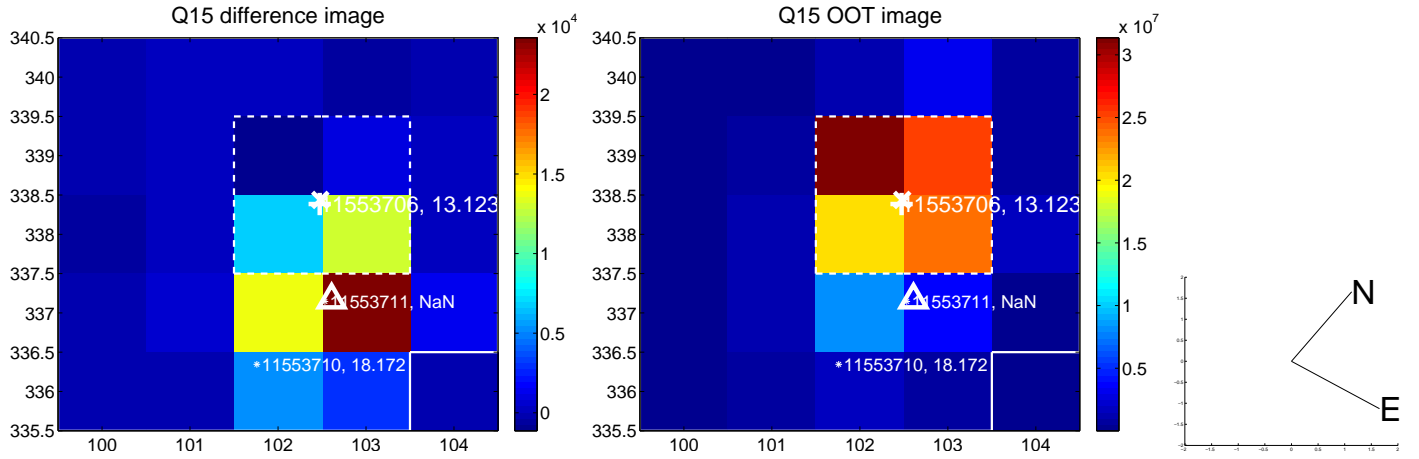
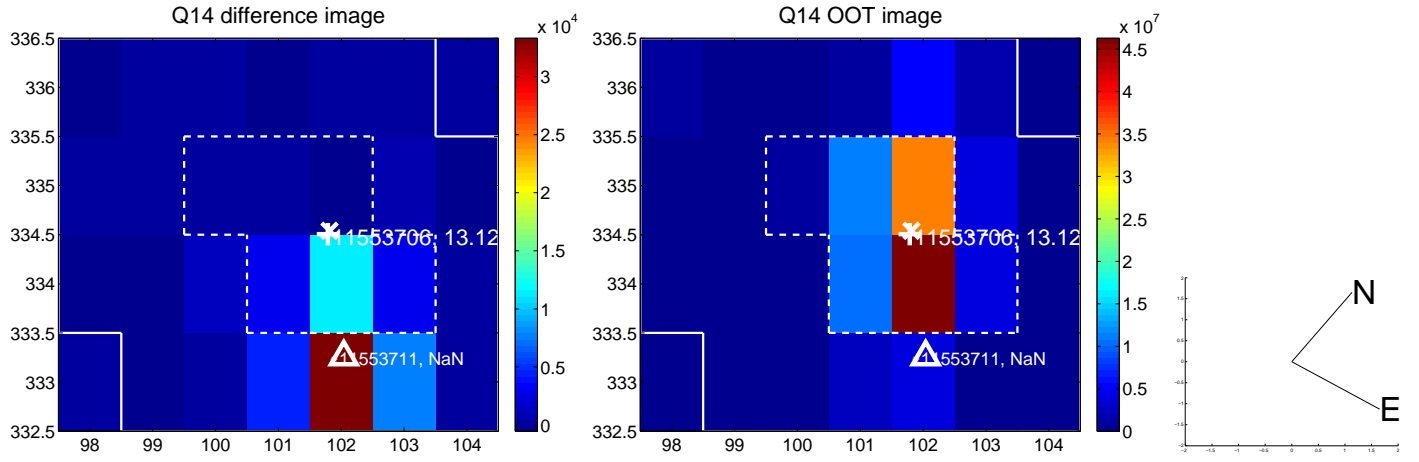
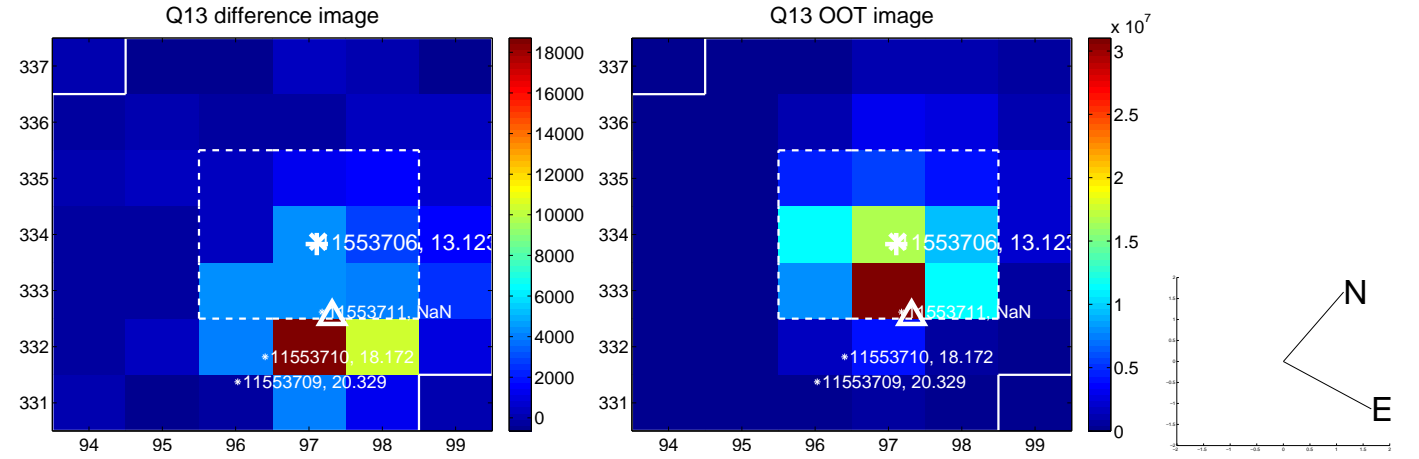
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



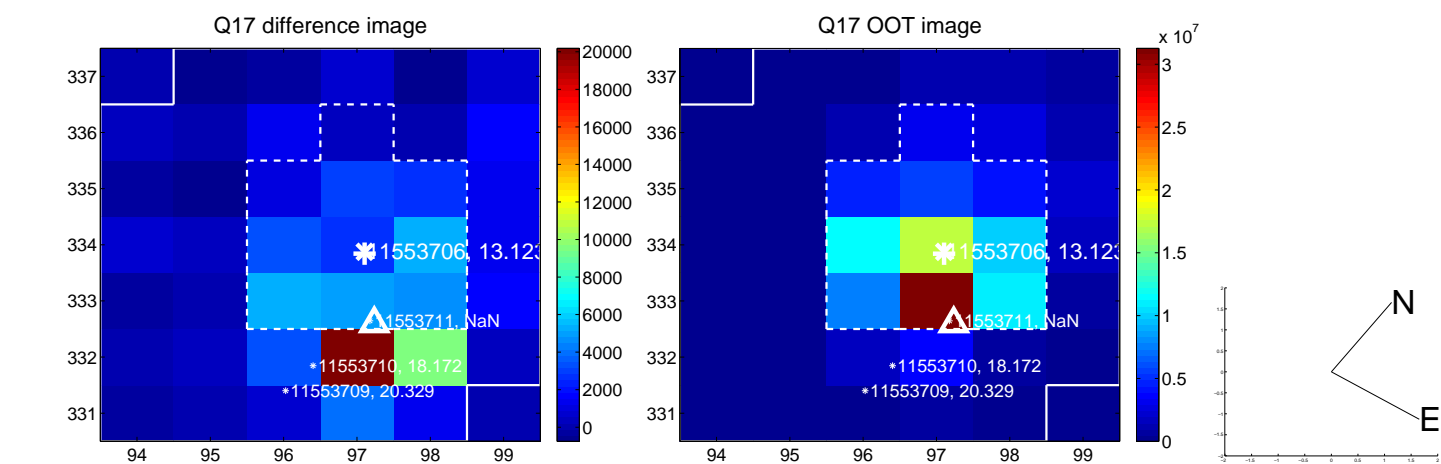
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



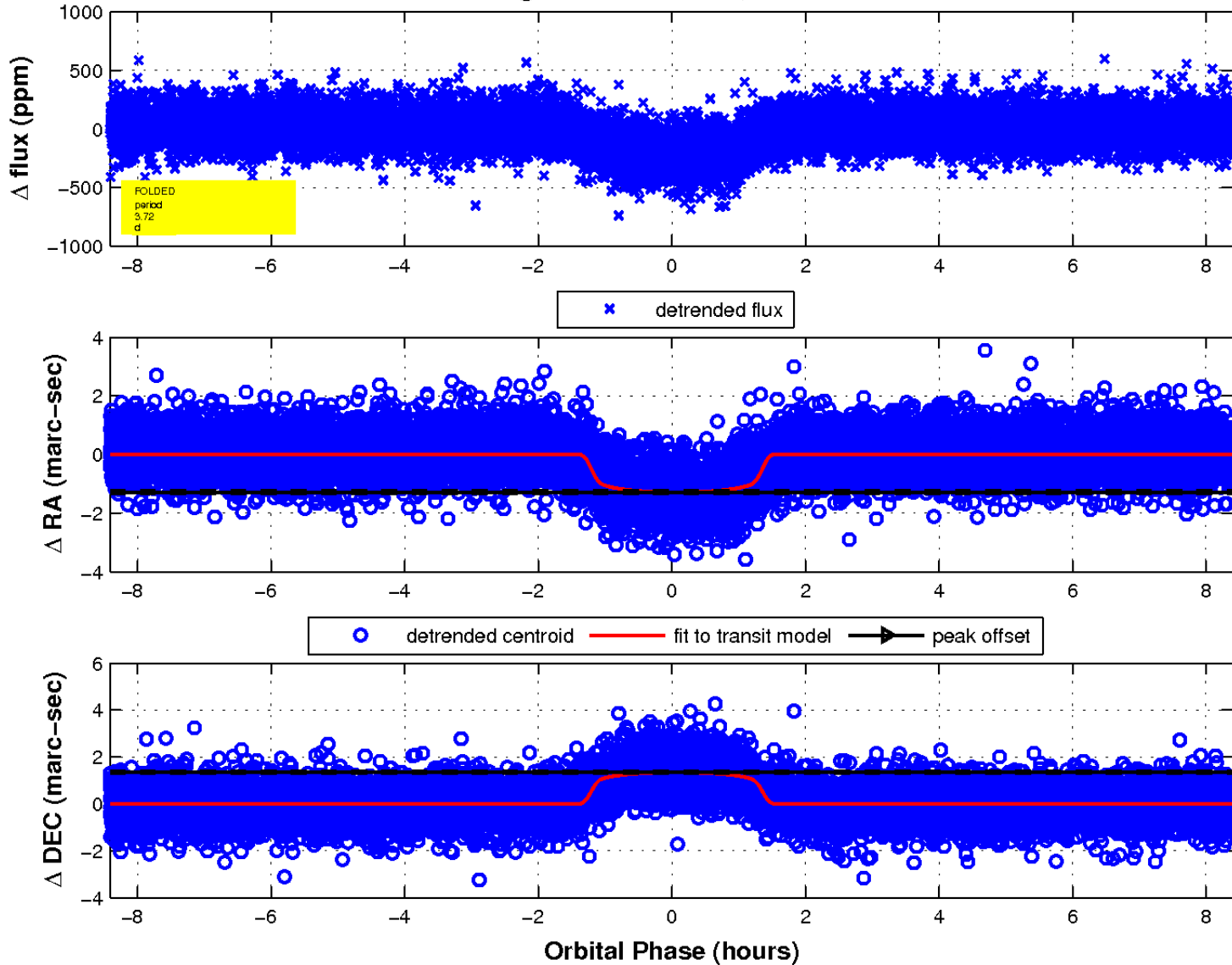
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

