

KIC 012736892

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})
012736892-01	OBS	No	326.734554	406.384544	947.8	2.955	11.4	7.3	0.67	5188	2.11	0.42
012736892-02	OBS	No	583.446238	195.909046	827.6	6.485	13.1	5.9	0.67	5188	1.94	0.20

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012736892-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012736892-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

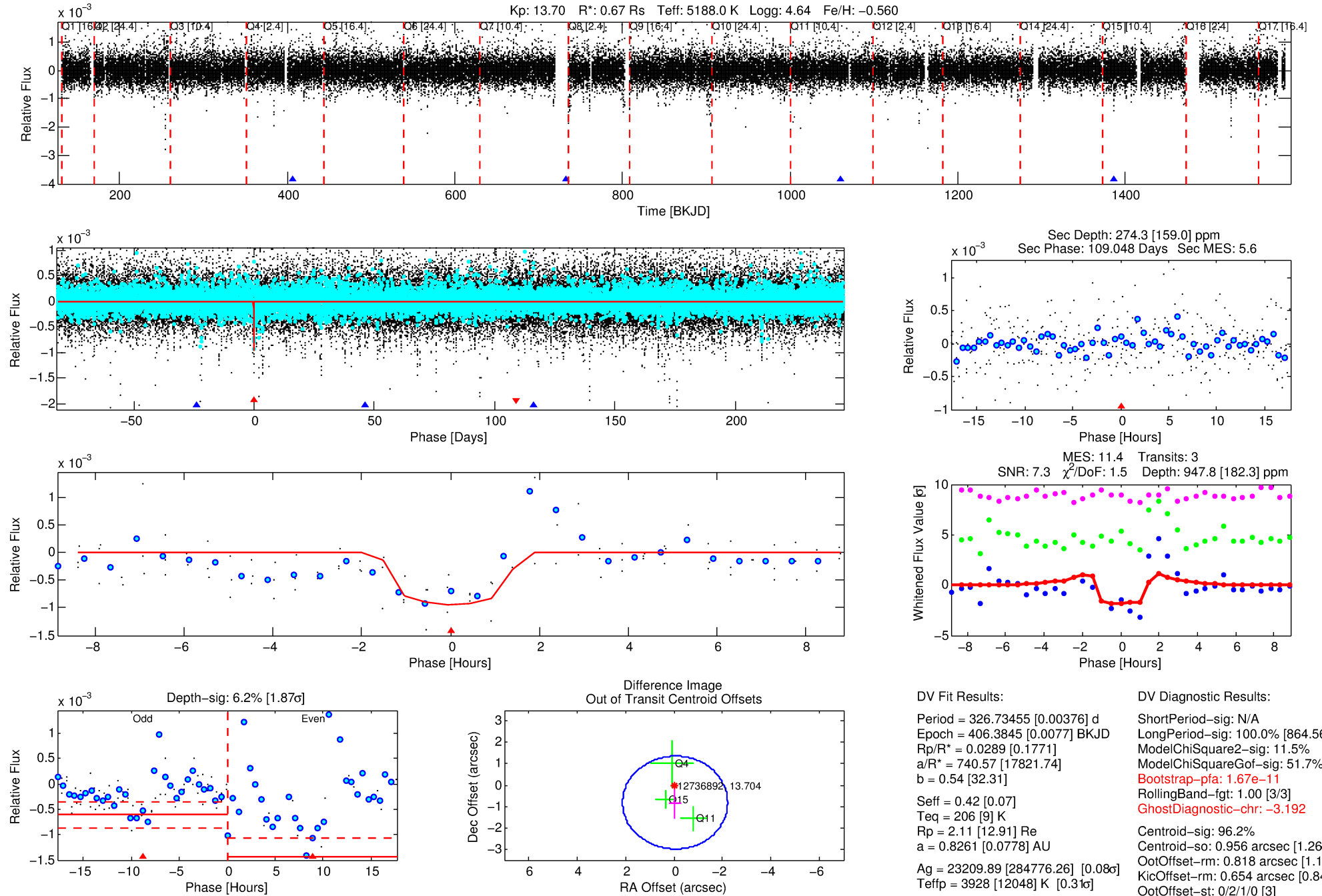
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012736892-01

No Significant Match Found

DV One-Page Summary

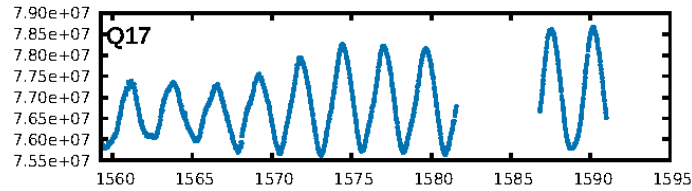
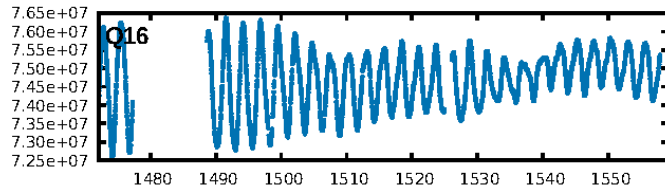
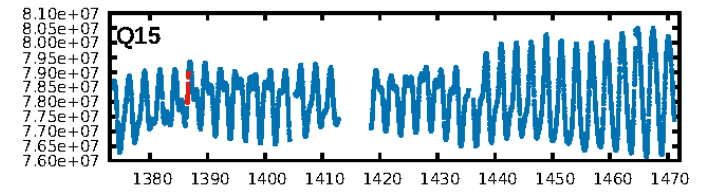
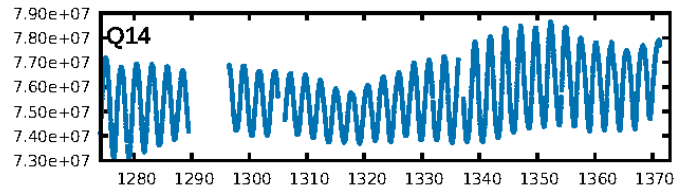
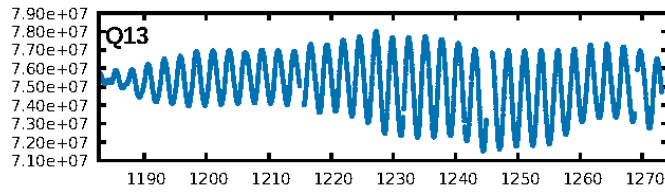
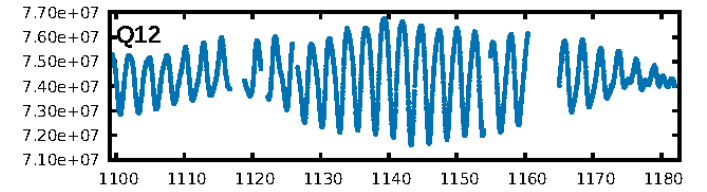
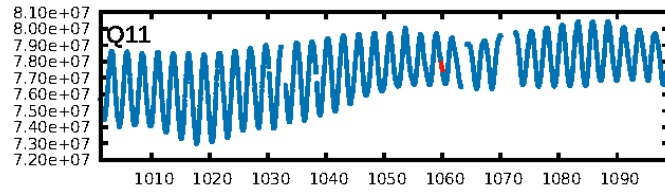
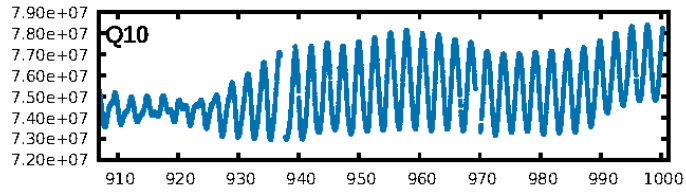
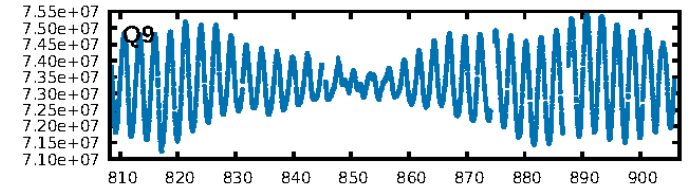
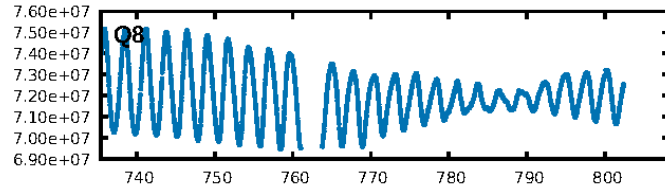
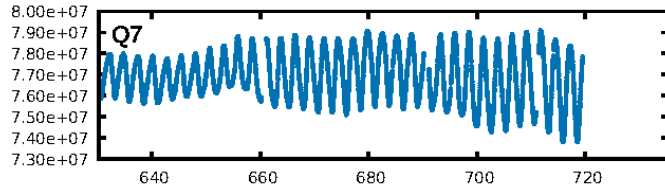
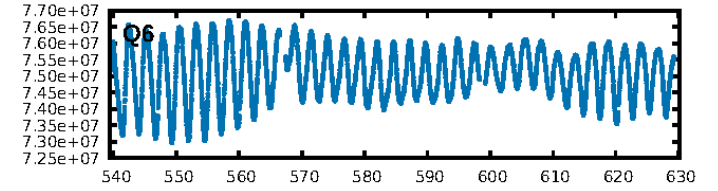
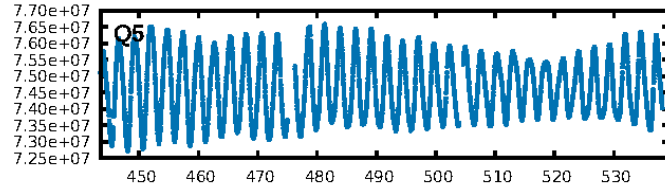
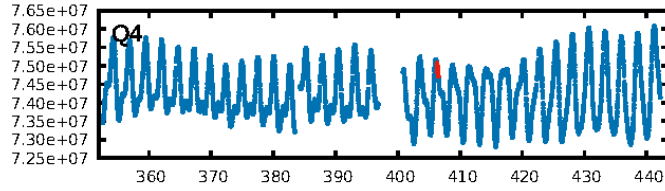
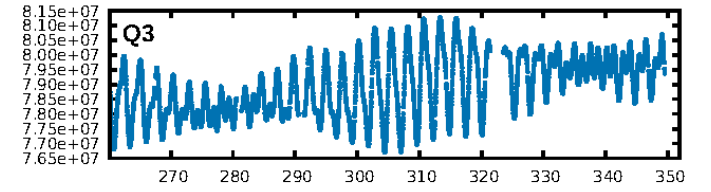
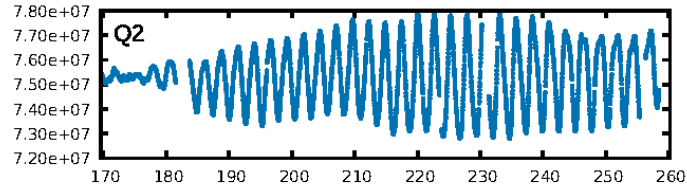
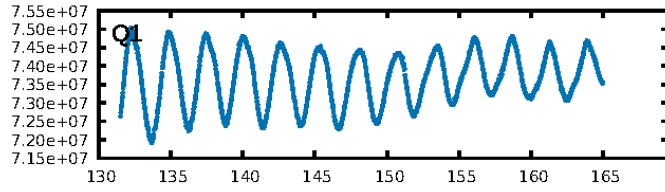
KIC: 12736892 Candidate: 1 of 2 Period: 326.735 d



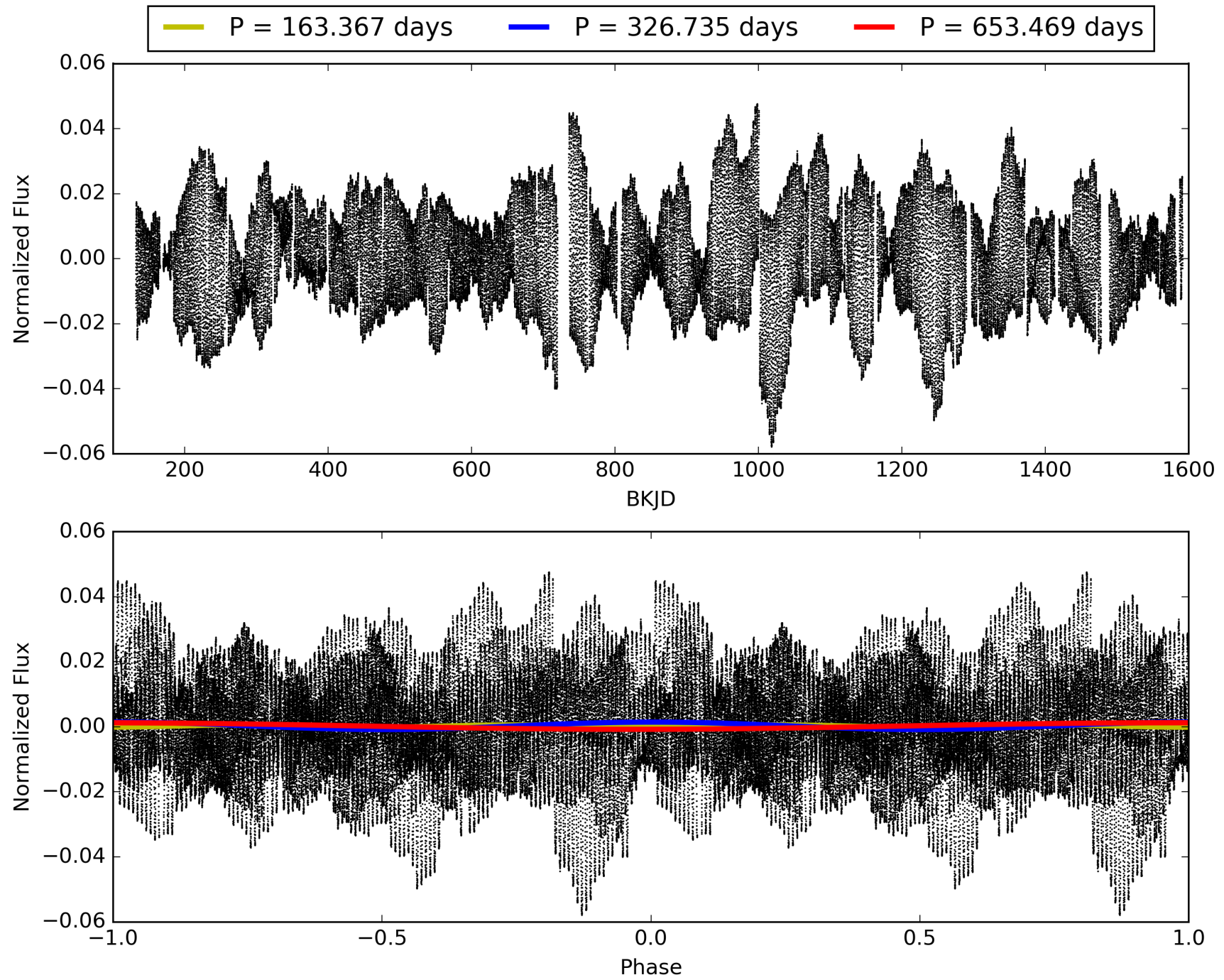
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 05:19:15 Z

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

TCE 012736892-01, PDC Light Curves

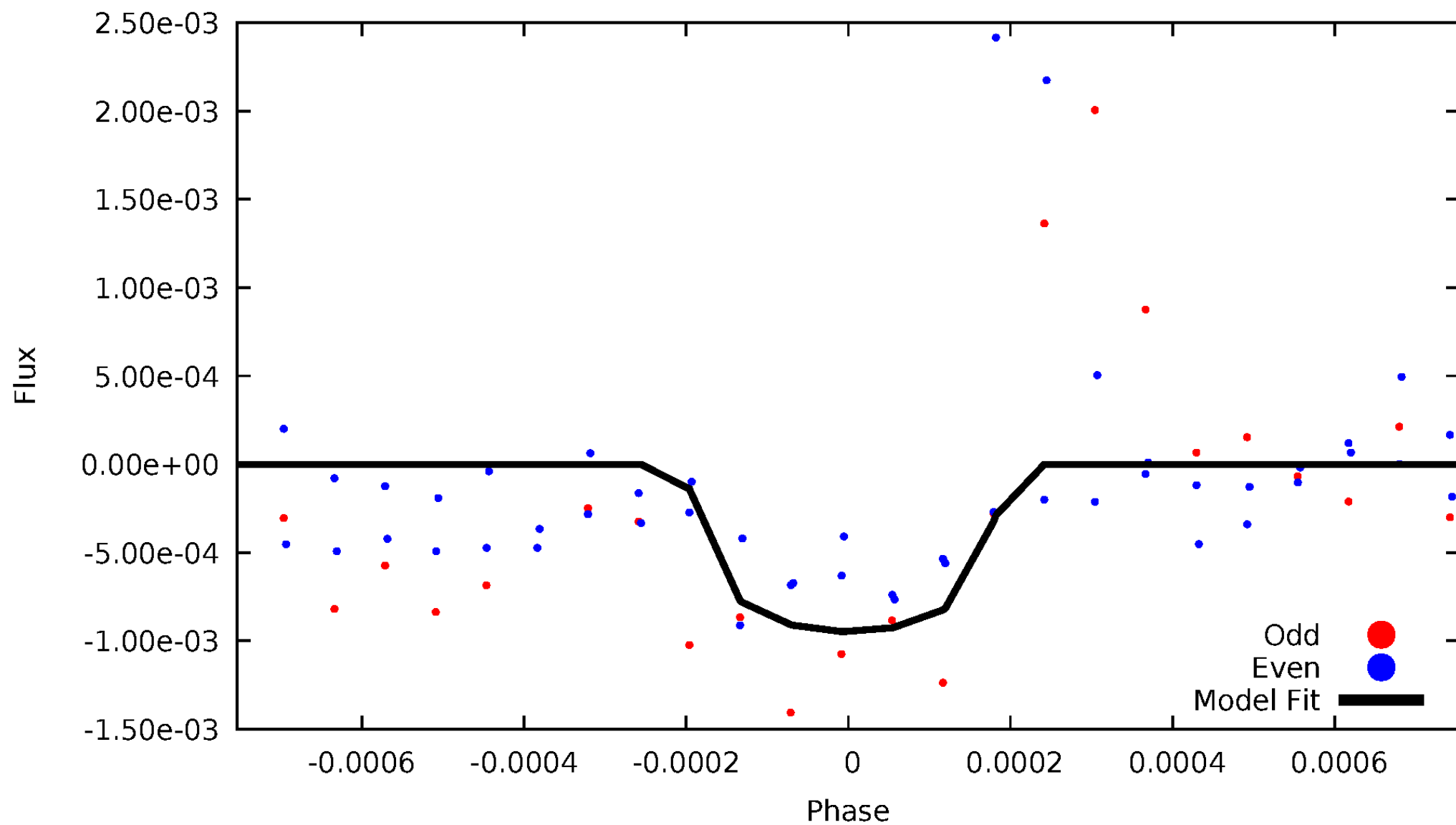


TCE 012736892-01



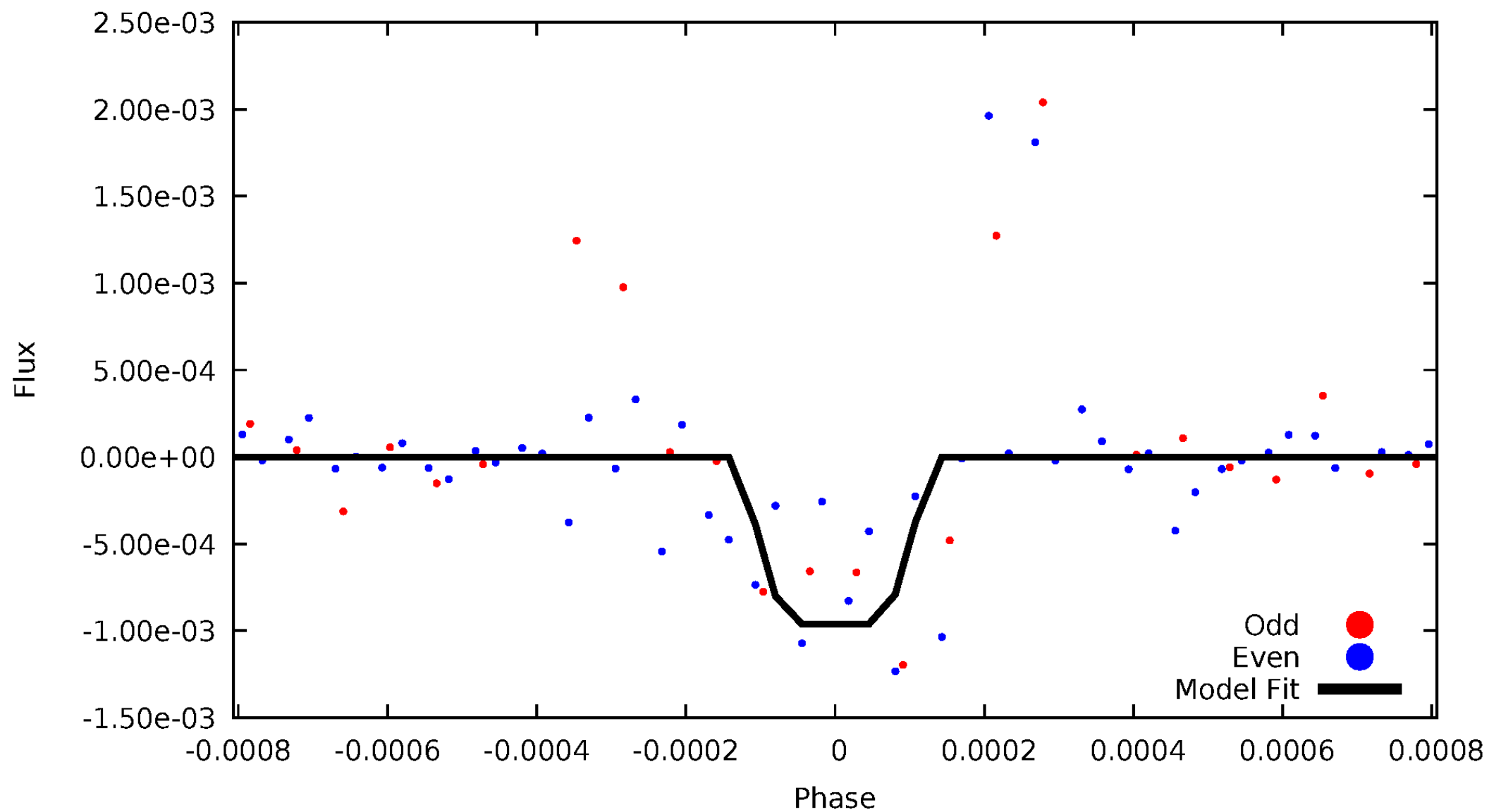
DV Odd/Even

TCE 012736892-01



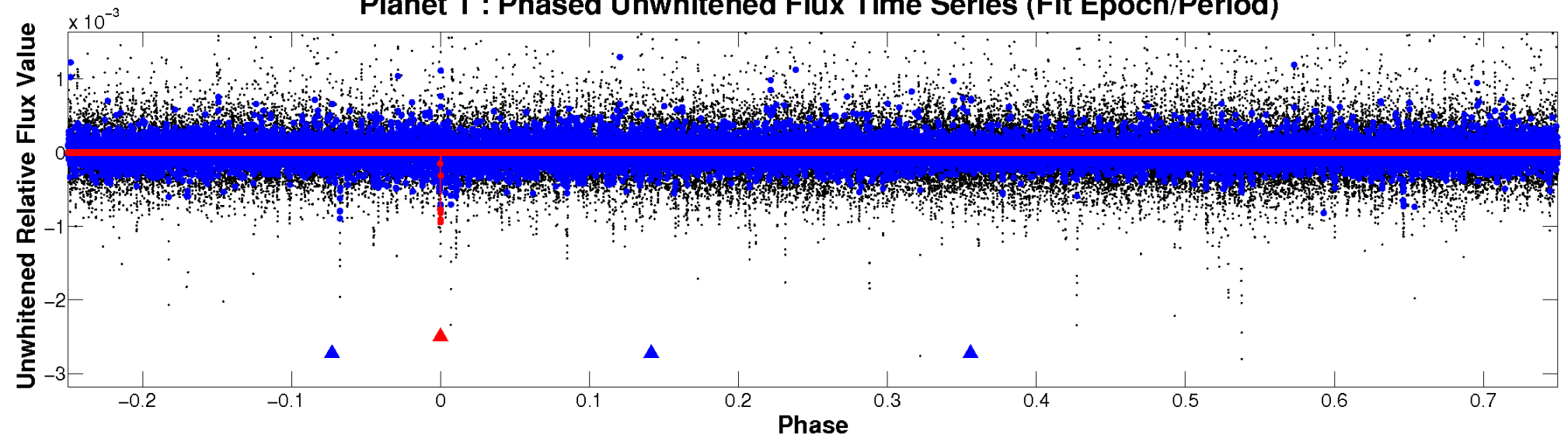
ALT Odd/Even

TCE 012736892-01

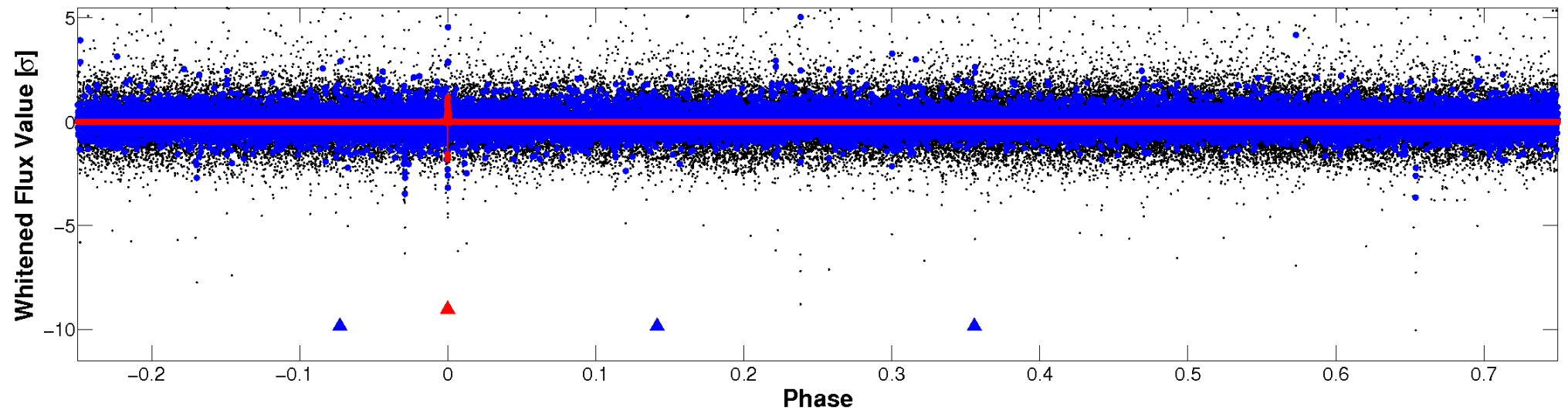


Non-Whitened Vs. Whitened Light Curve

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

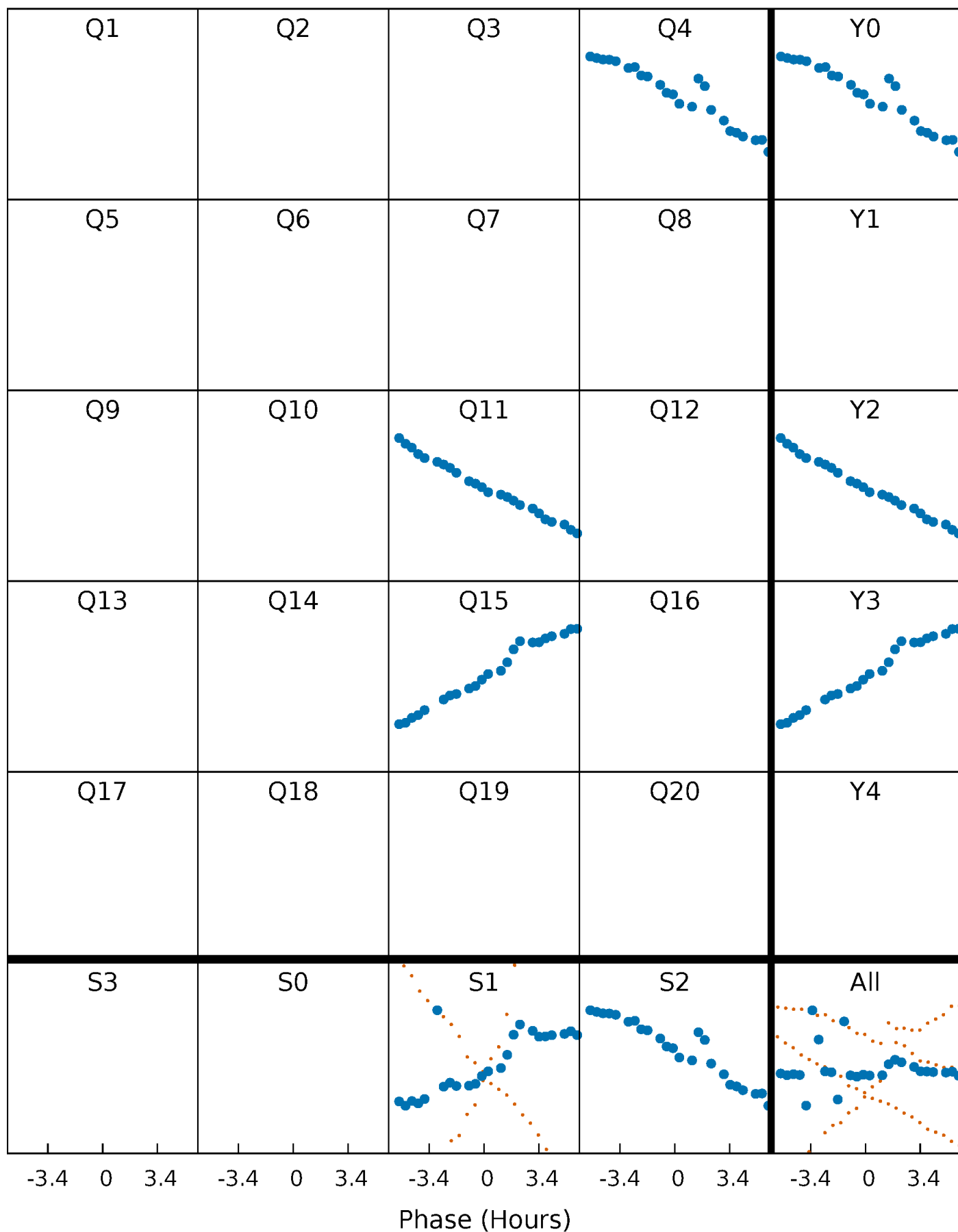


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



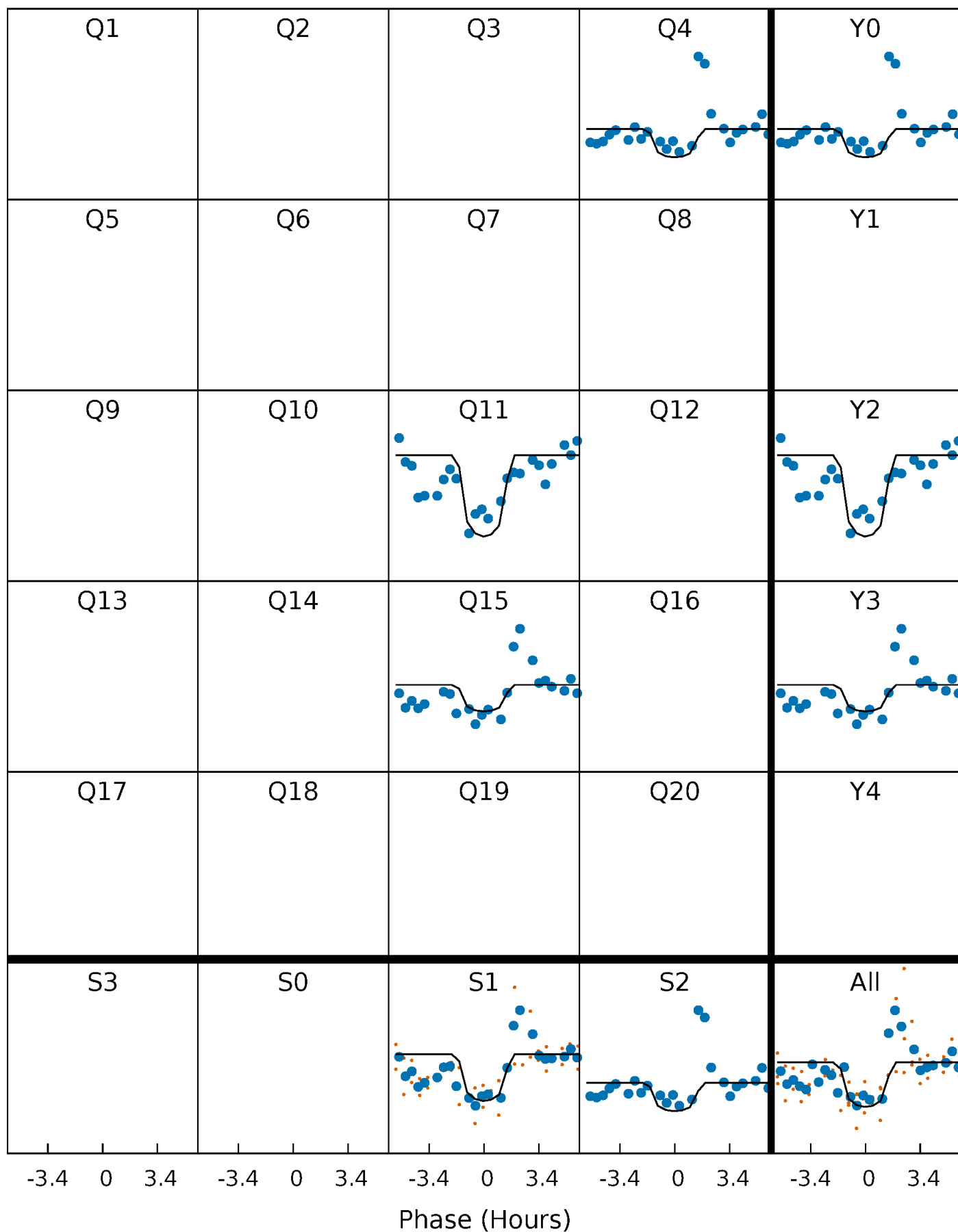
PDC Quarter-Phased Transit Curves

TCE 012736892-01 P=326.734554 Days $T_0=406.384544$ (BKJD)



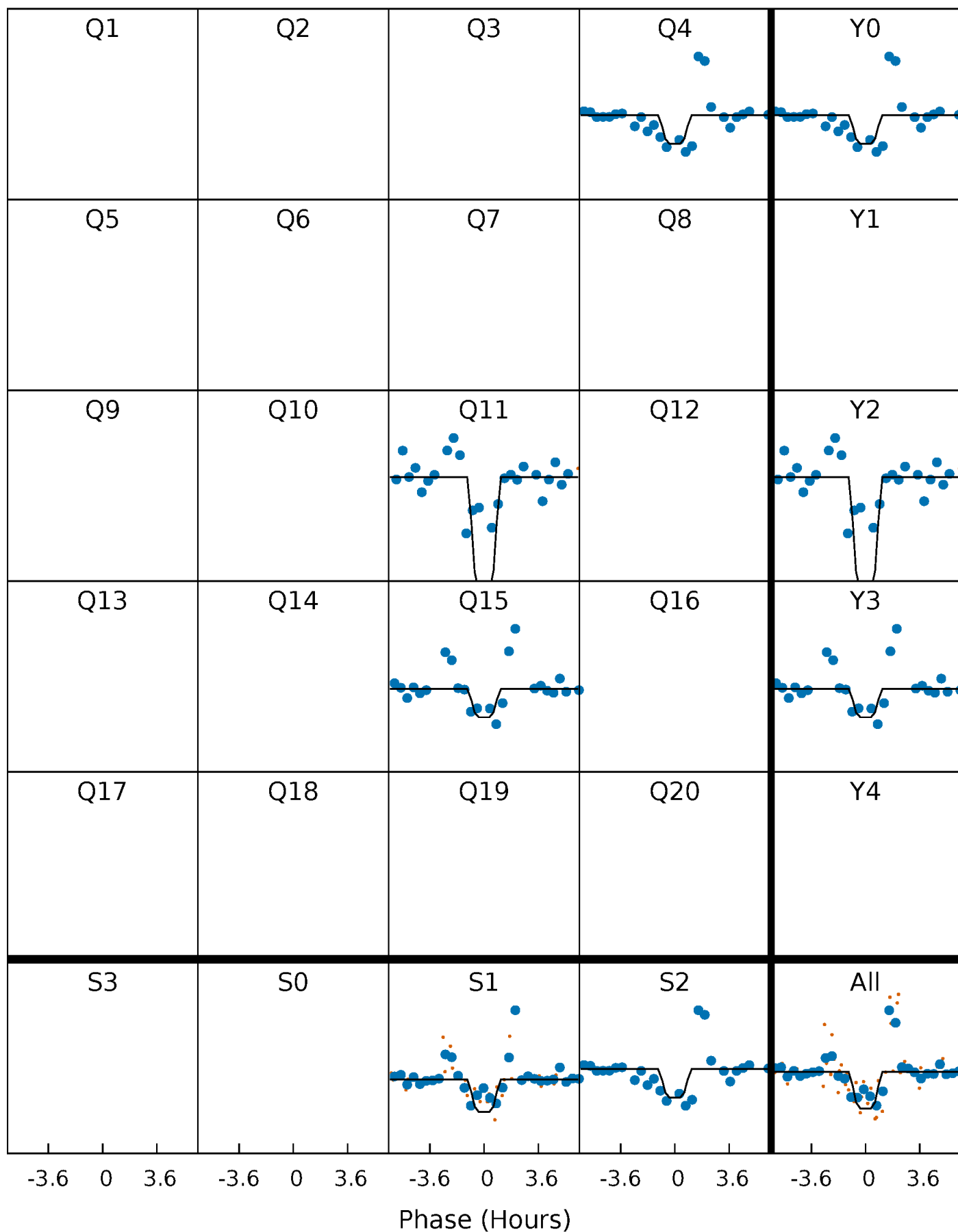
DV Quarter-Phased Transit Curves

TCE 012736892-01 P=326.734554 Days $T_0=406.384544$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

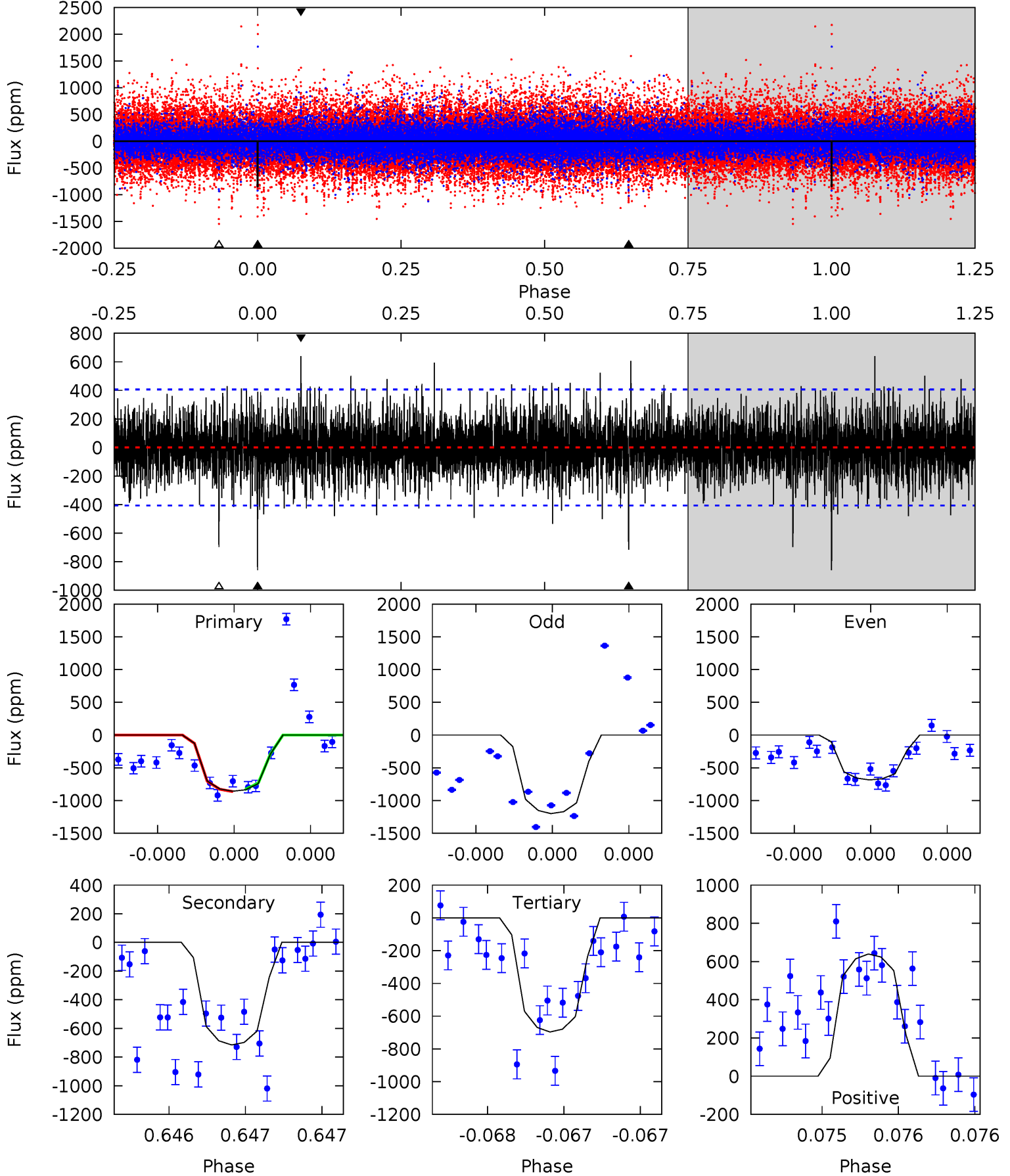
TCE 012736892-01 P=326.739904 Days $T_0=406.376804$ (BKJD)



DV Model-Shift Uniqueness Test

012736892-01, $P = 326.734554$ Days, $E = 79.649990$ Days

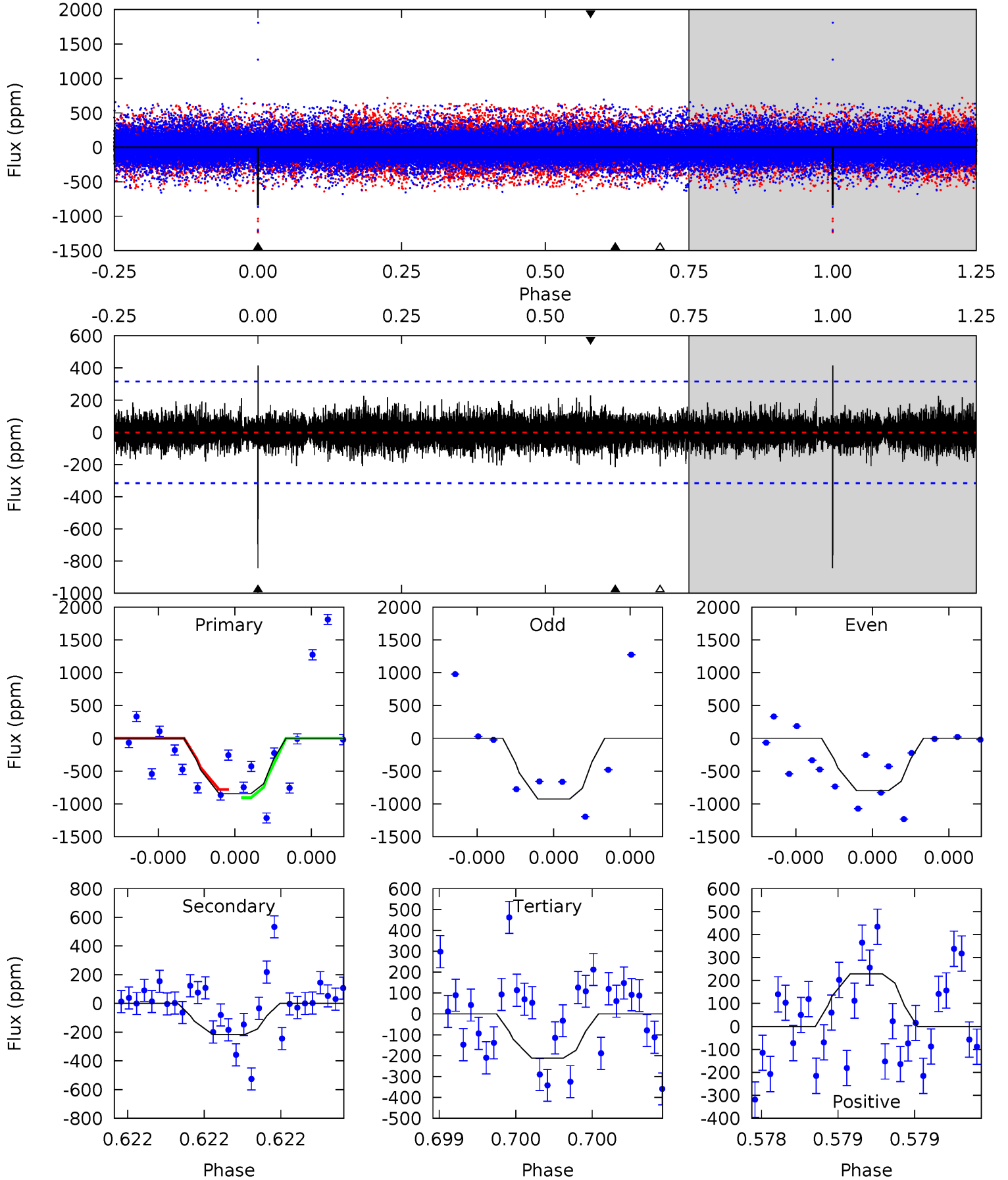
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	9.89	9.63	8.84	5.62	3.55	1.83	2.23	3.02	0.26	1.05	3.28	1.05	0.43	0.23



Alt Model-Shift Uniqueness Test

012736892-01, P = 326.739904 Days, E = 79.636900 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.3	3.92	3.82	4.15	5.72	3.70	0.92	11.4	11.1	0.10	-0.23	1.19	0.87	0.33	1.12



Stellar Parameters For KIC 012736892

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5188^{+156}_{-140}	$4.636^{+0.040}_{-0.065}$	$-0.560^{+0.300}_{-0.300}$	$0.668^{+0.080}_{-0.049}$	$0.705^{+0.077}_{-0.051}$	$3.329^{+0.554}_{-0.773}$
	+3%/-3%	+1%/-1%	+54%/-54%	+12%/-7%	+11%/-7%	+17%/-23%
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 012736892-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-715 ± 72	$9.89^{+10.69}_{-7.29}$	289^{+11}_{-10}	2972^{+1647}_{-513}	2855^{+35021}_{-2213}
Alt.	-217 ± 55	$9.27^{+10.00}_{-6.49}$	289^{+12}_{-10}	2568^{+1095}_{-403}	930^{+10800}_{-724}

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 $A_{obs} \gg 1.0$

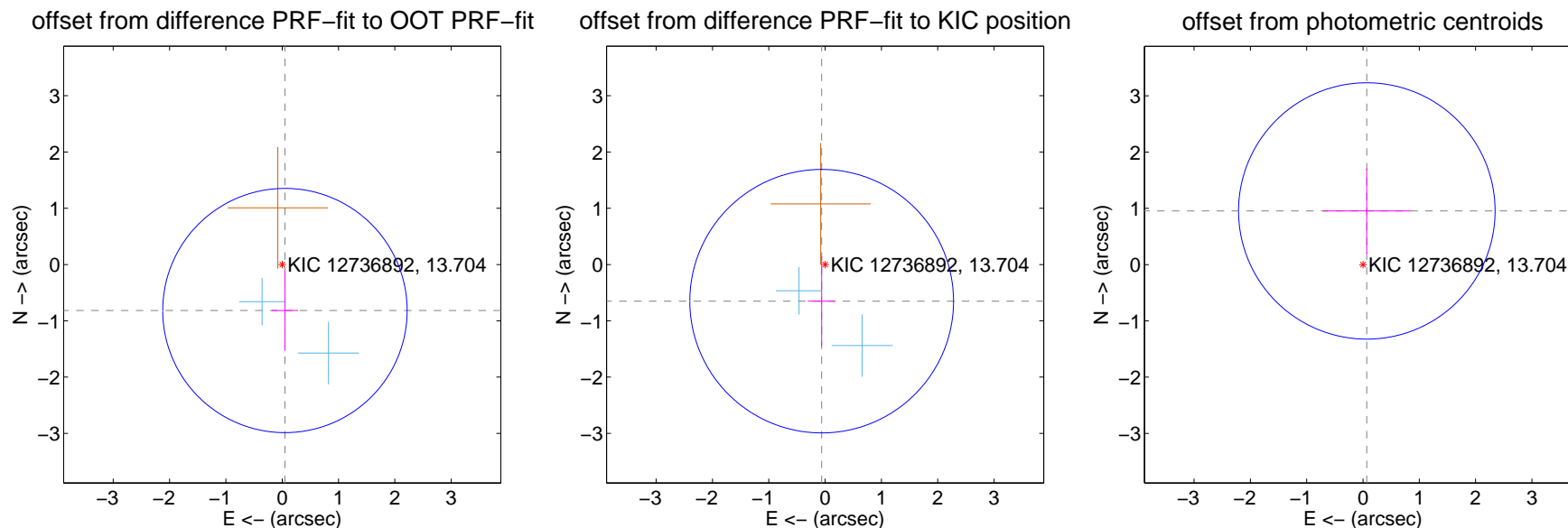
DV Centroid Data

Supplemental centroid analysis for 012736892-01. Kepler magnitude: 13.70. Transit SNR 7.25

There are 2 quarters with good PRF difference image offsets

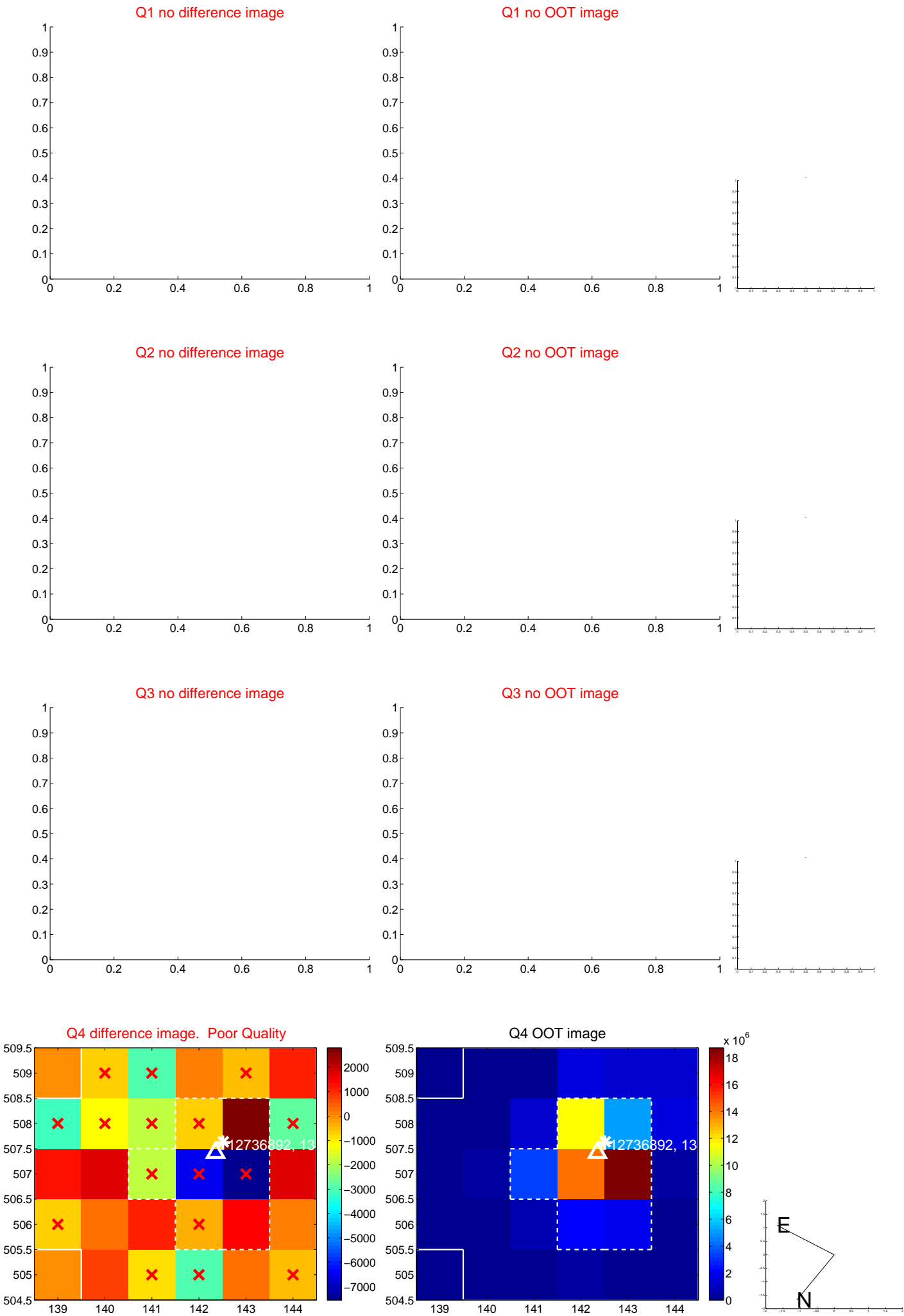
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.818 ± 0.723	1.13	-0.049 ± 0.231	-0.817 ± 0.716
PRF-fit source offset from KIC position	0.654 ± 0.780	0.84	0.061 ± 0.247	-0.651 ± 0.797
photometric centroid source offset	0.96 ± 0.76	1.26	-0.07 ± 0.78	0.95 ± 0.76



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.

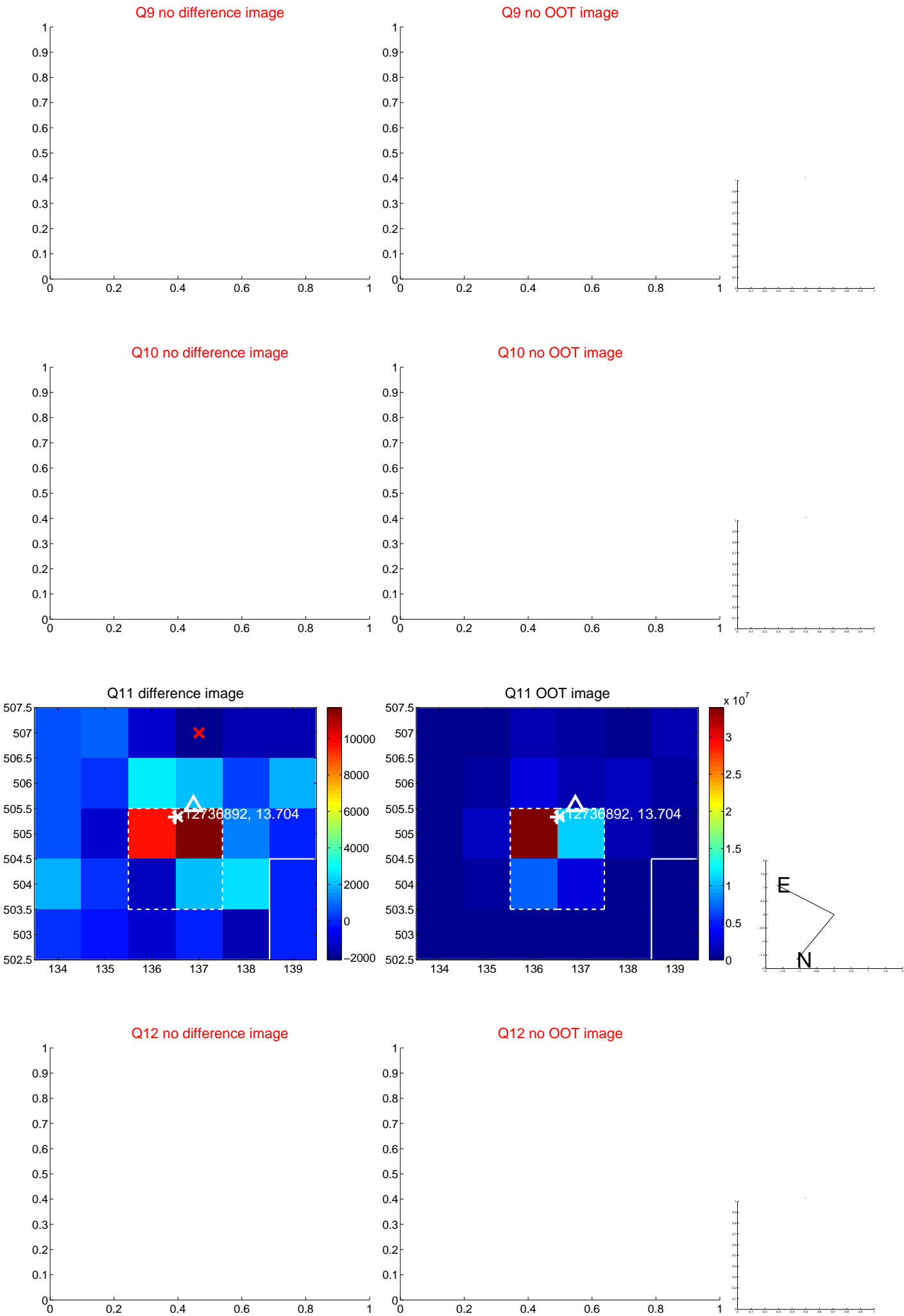
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



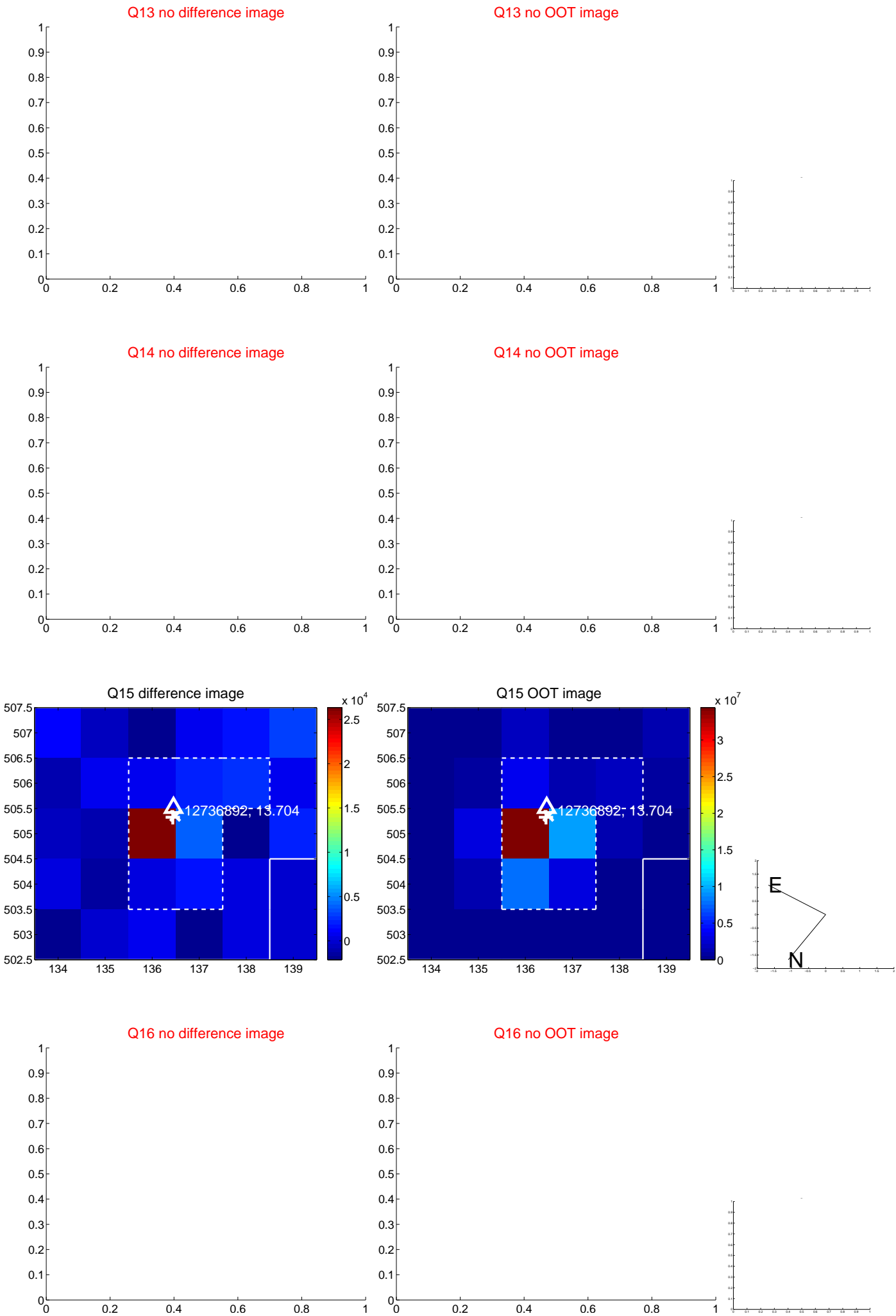
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



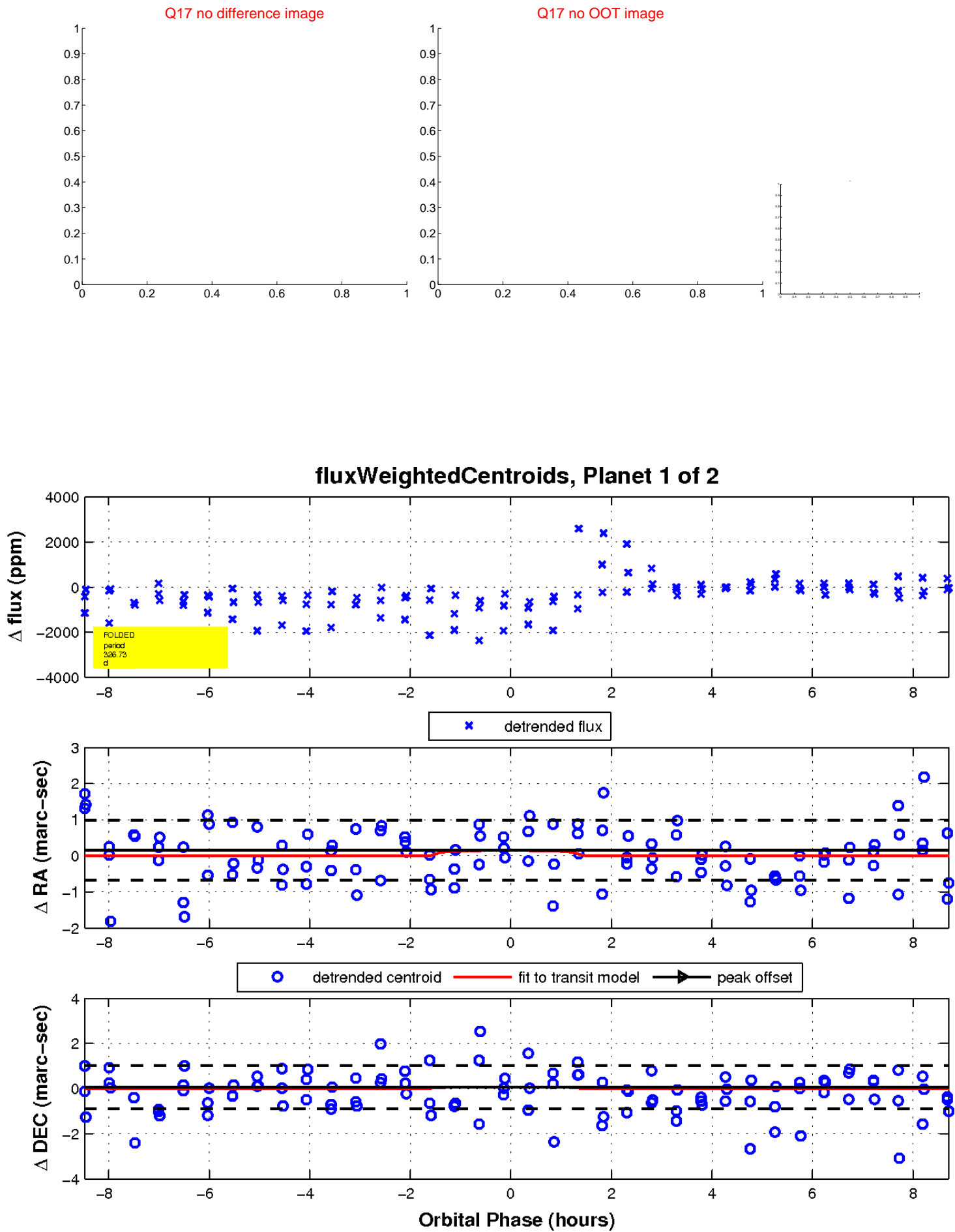
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



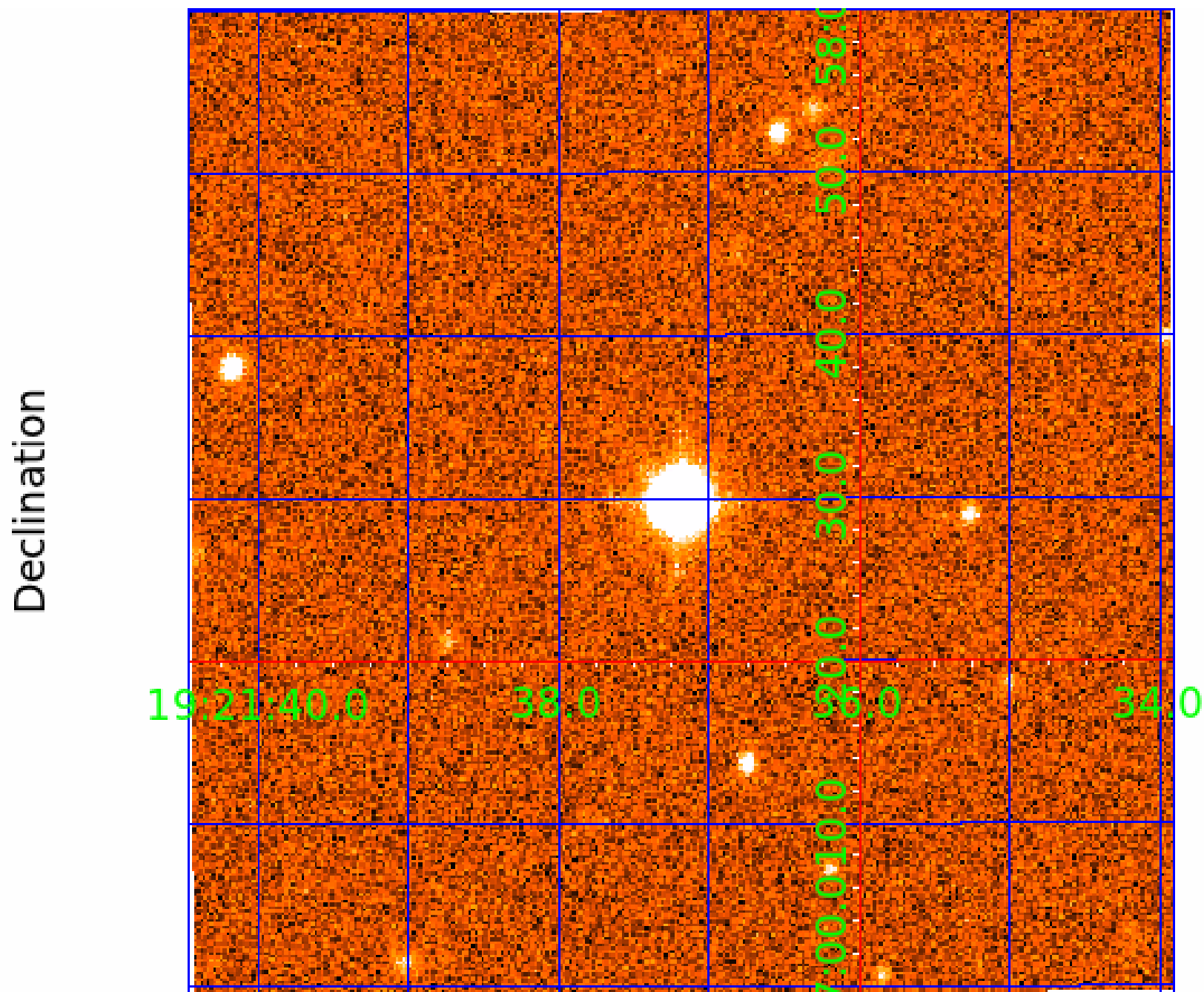
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 012736892

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})
012736892-01	OBS	No	326.734554	406.384544	947.8	2.955	11.4	7.3	0.67	5188	2.11	0.42
012736892-02	OBS	No	583.446238	195.909046	827.6	6.485	13.1	5.9	0.67	5188	1.94	0.20

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012736892-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012736892-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

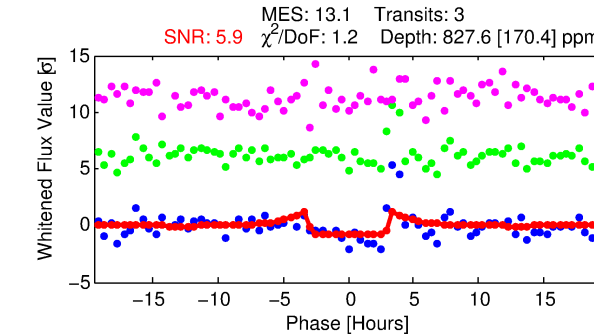
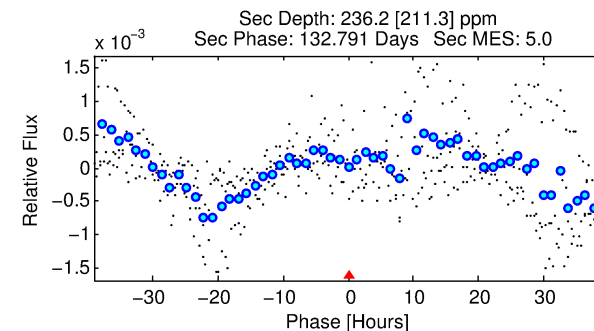
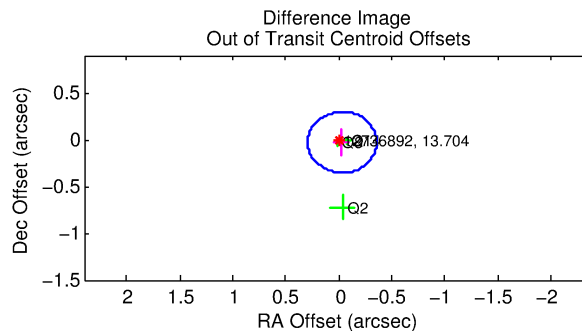
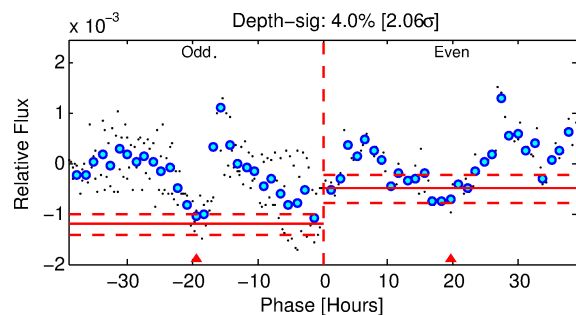
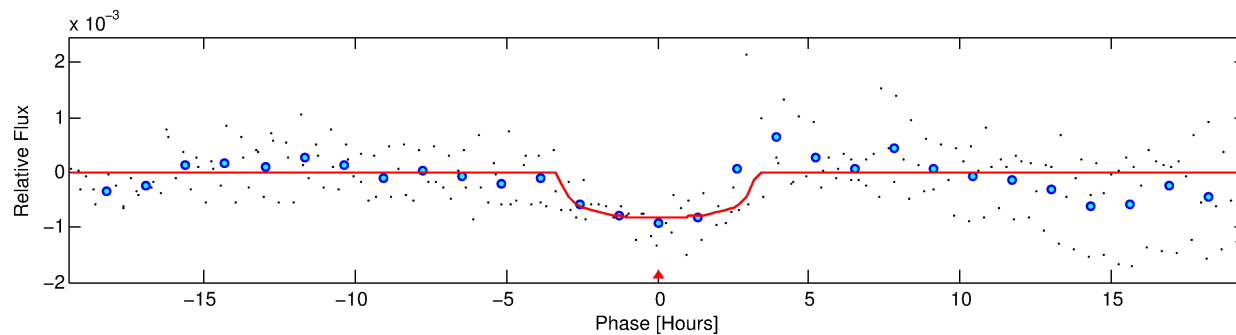
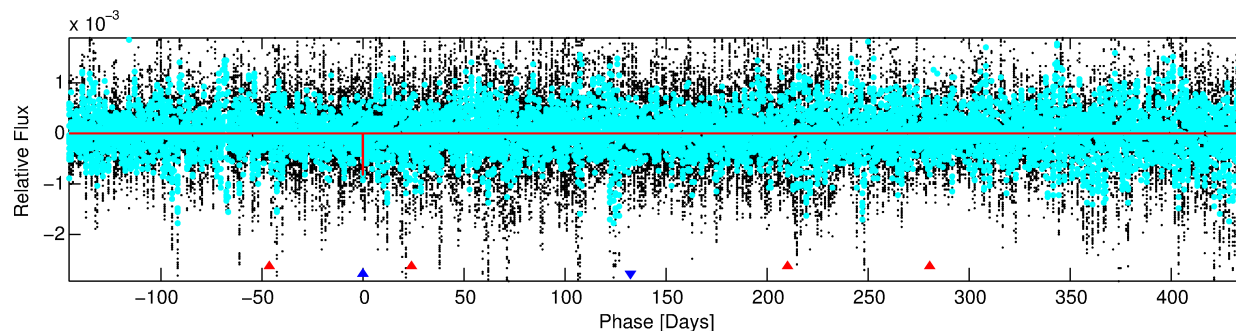
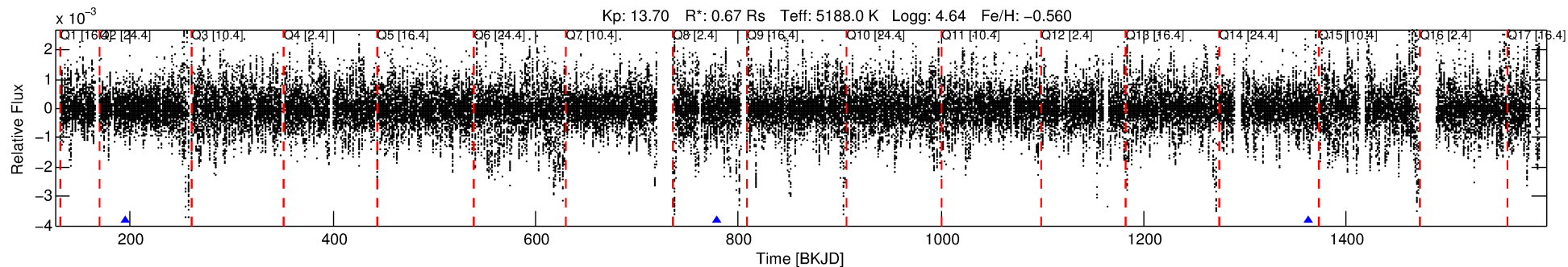
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012736892-02

No Significant Match Found

DV One-Page Summary

KIC: 12736892 Candidate: 2 of 2 Period: 583.446 d



DV Fit Results:

Period = 583.44624 [0.00557] d
Epoch = 195.9090 [0.0081] BKJD
Rp/R* = 0.0267 [0.0322]
a/R* = 626.86 [2958.31]
b = 0.47 [7.83]
Seff = 0.20 [0.03]
Teq = 170 [7] K
Rp = 1.94 [2.36] Re
a = 1.2159 [0.1145] AU
Ag = 50834.44 [131119.55] [0.39 σ]
Teffp = 3938 [2539] K [1.48 σ]

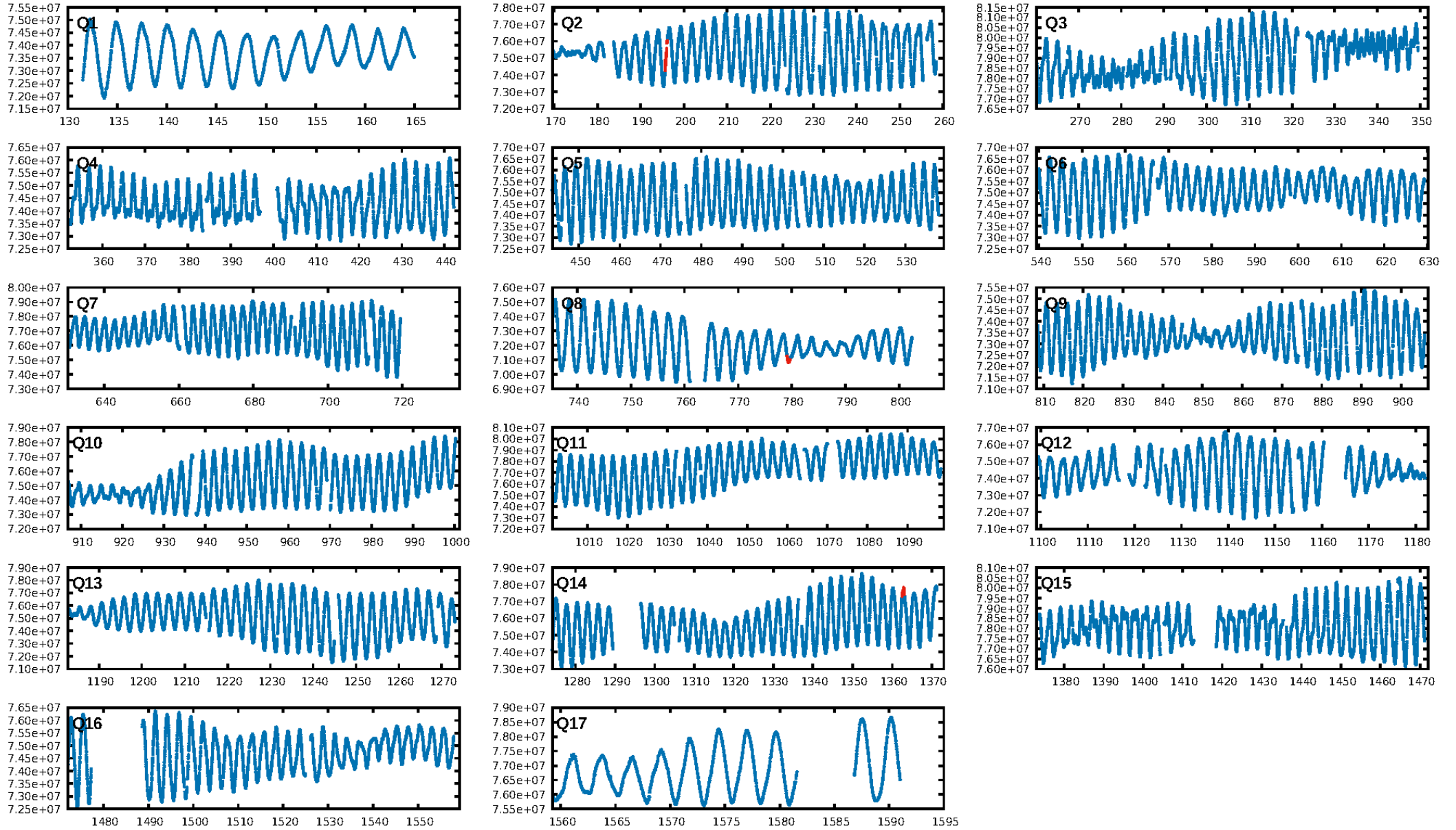
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [864.56 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 14.5%
ModelChiSquareGof-sig: 77.3%
Bootstrap-pfa: 5.51e-14
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -2.495
Centroid-sig: 28.8%
Centroid-so: 1.797 arcsec [2.21 σ]
OotOffset-rm: 0.043 arcsec [0.40 σ]
KicOffset-rm: 0.093 arcsec [0.82 σ]
OotOffset-st: 2/0/1/0 [3]
KicOffset-st: 2/0/1/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

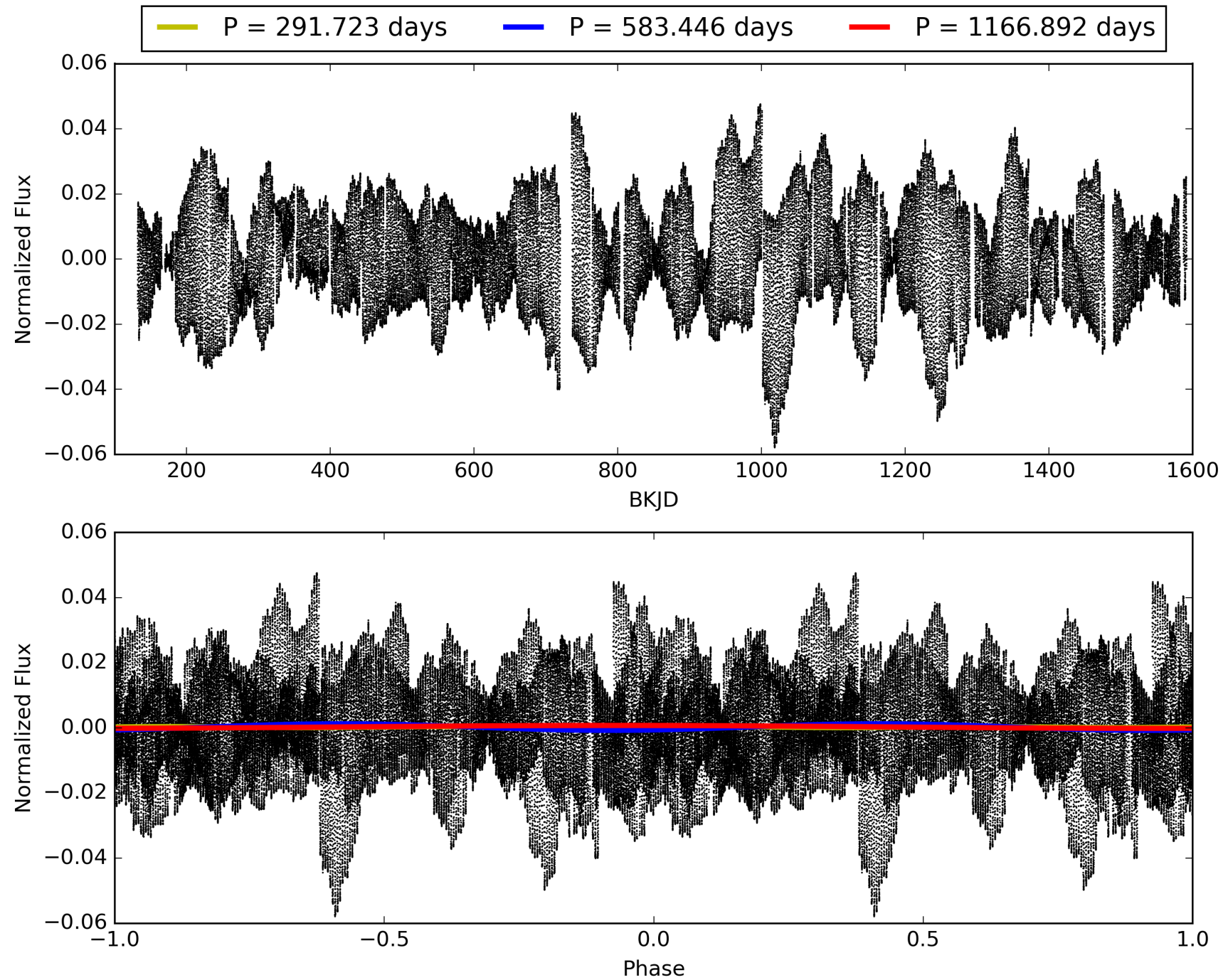
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 05:19:30 Z

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

TCE 012736892-02, PDC Light Curves

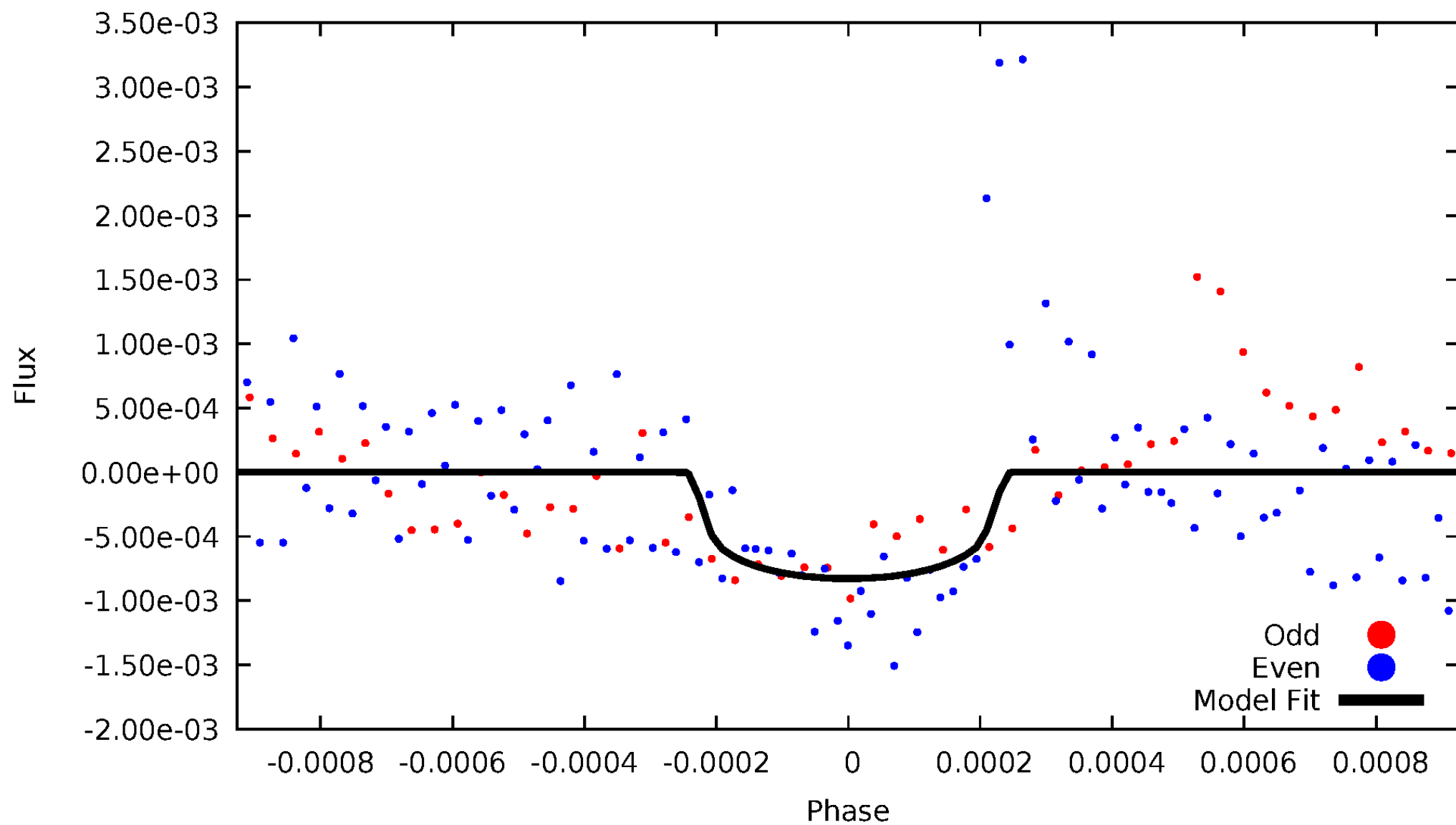


TCE 012736892-02



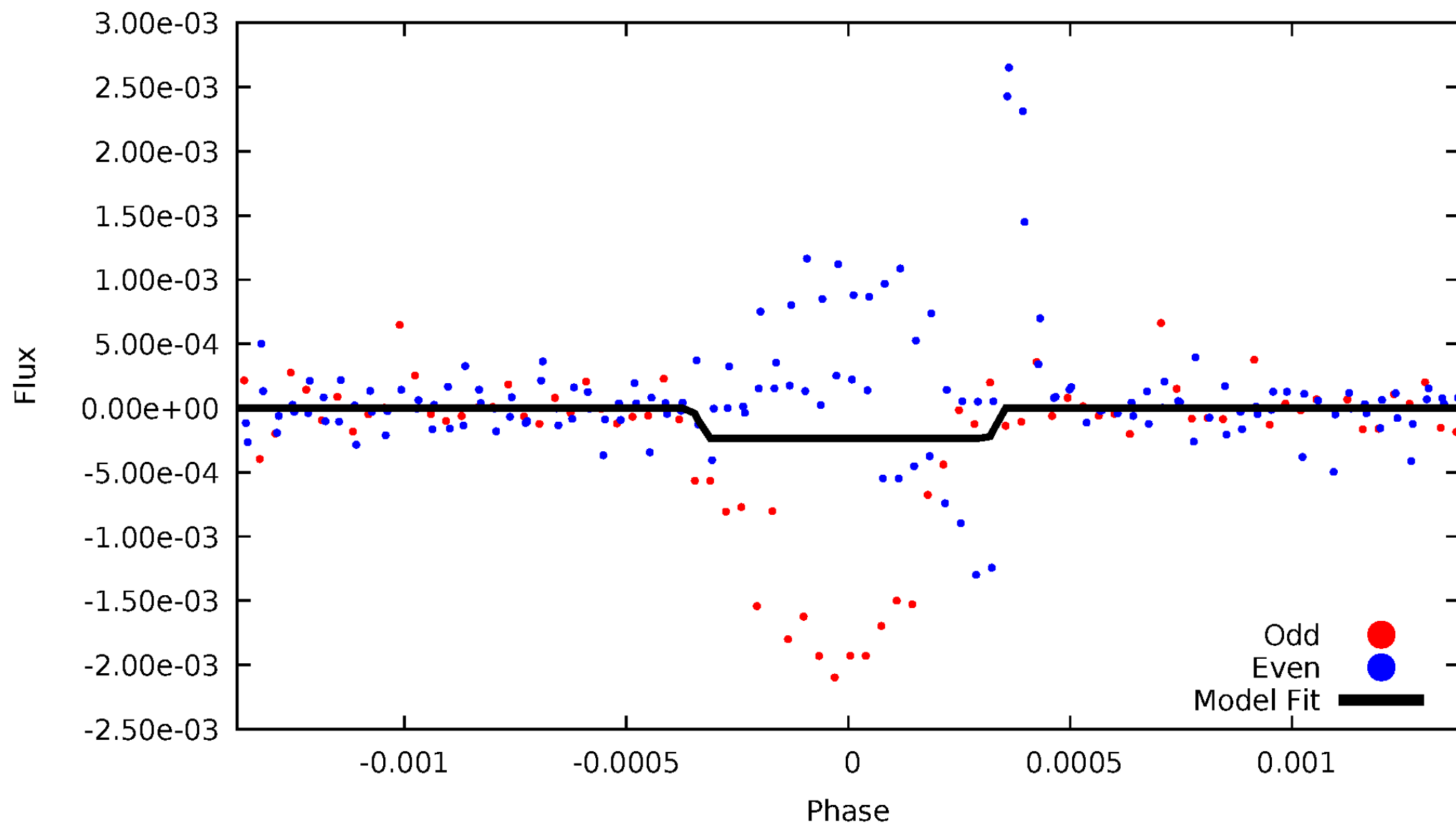
DV Odd/Even

TCE 012736892-02



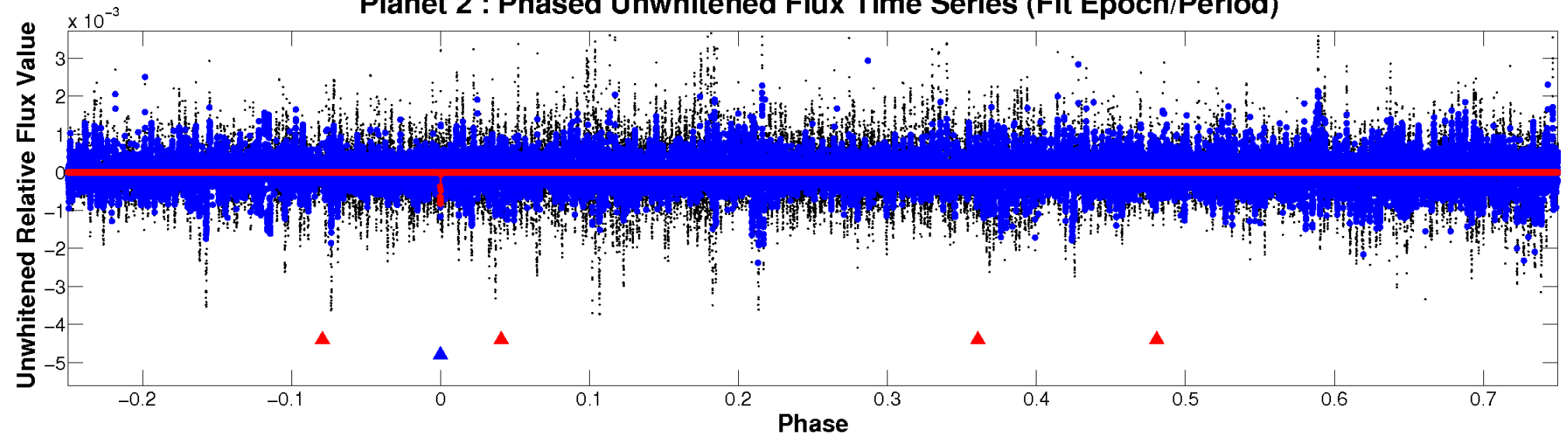
ALT Odd/Even

TCE 012736892-02

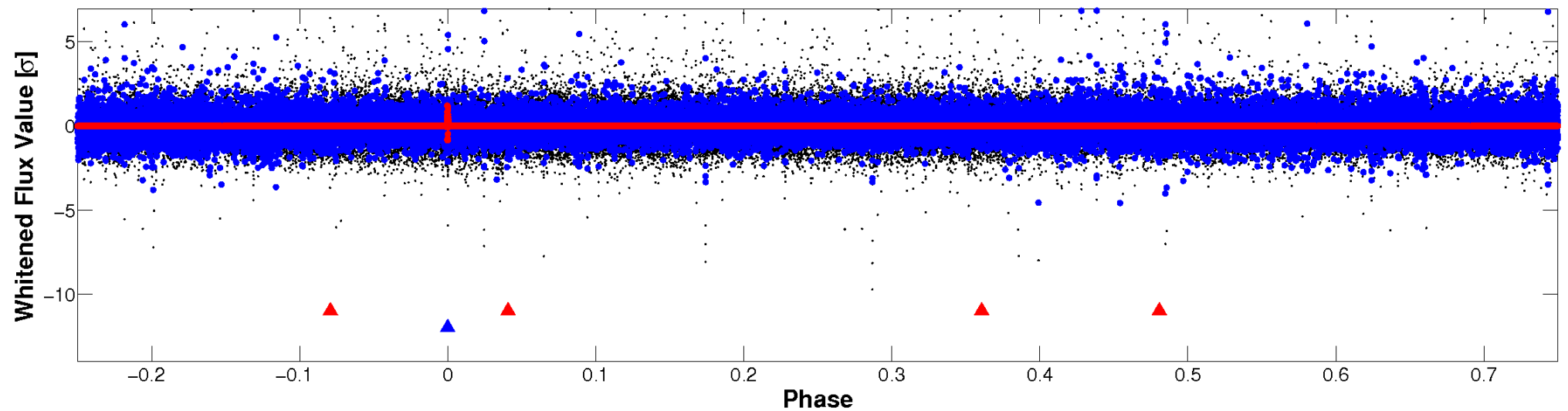


Non-Whitened Vs. Whitened Light Curve

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

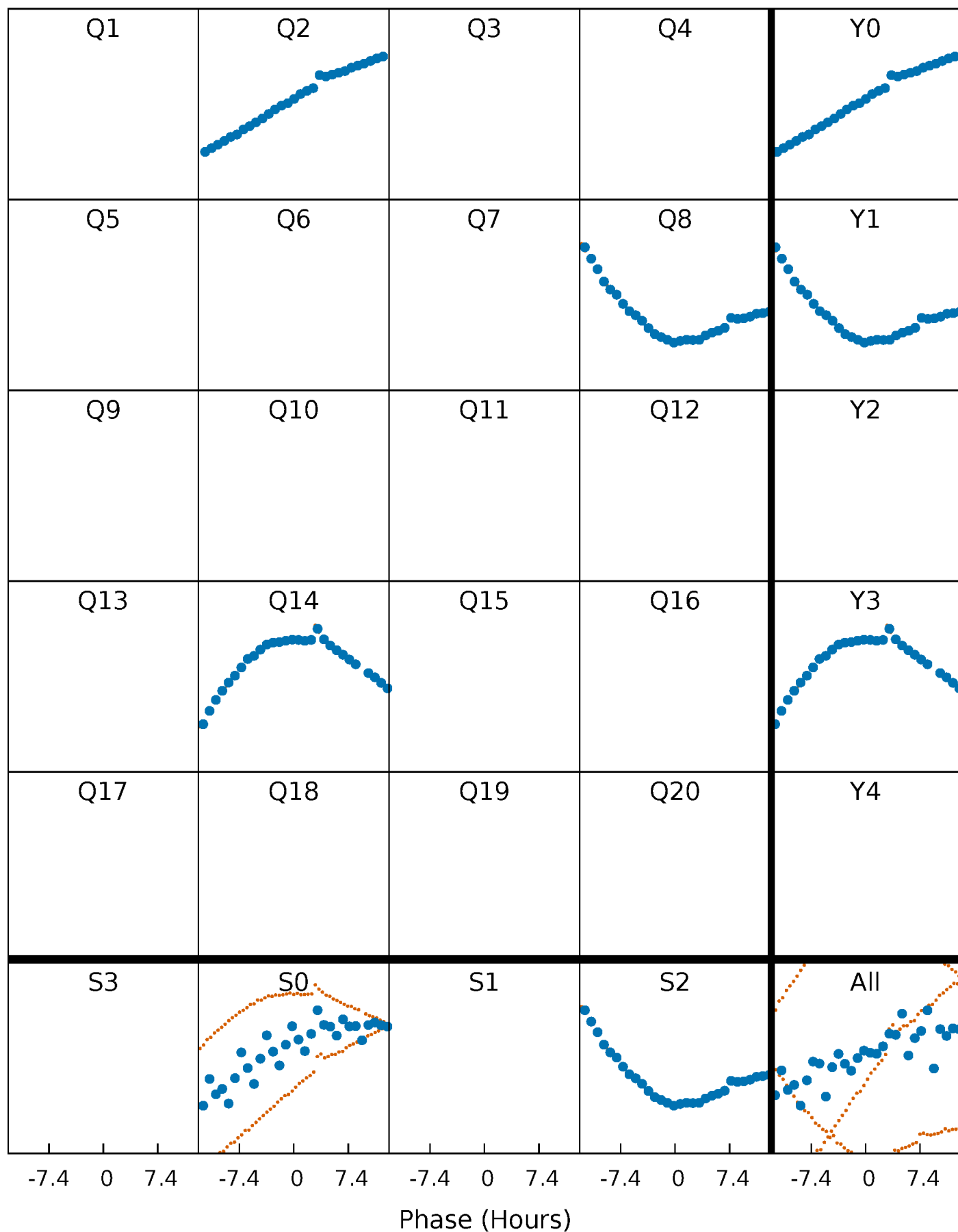


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



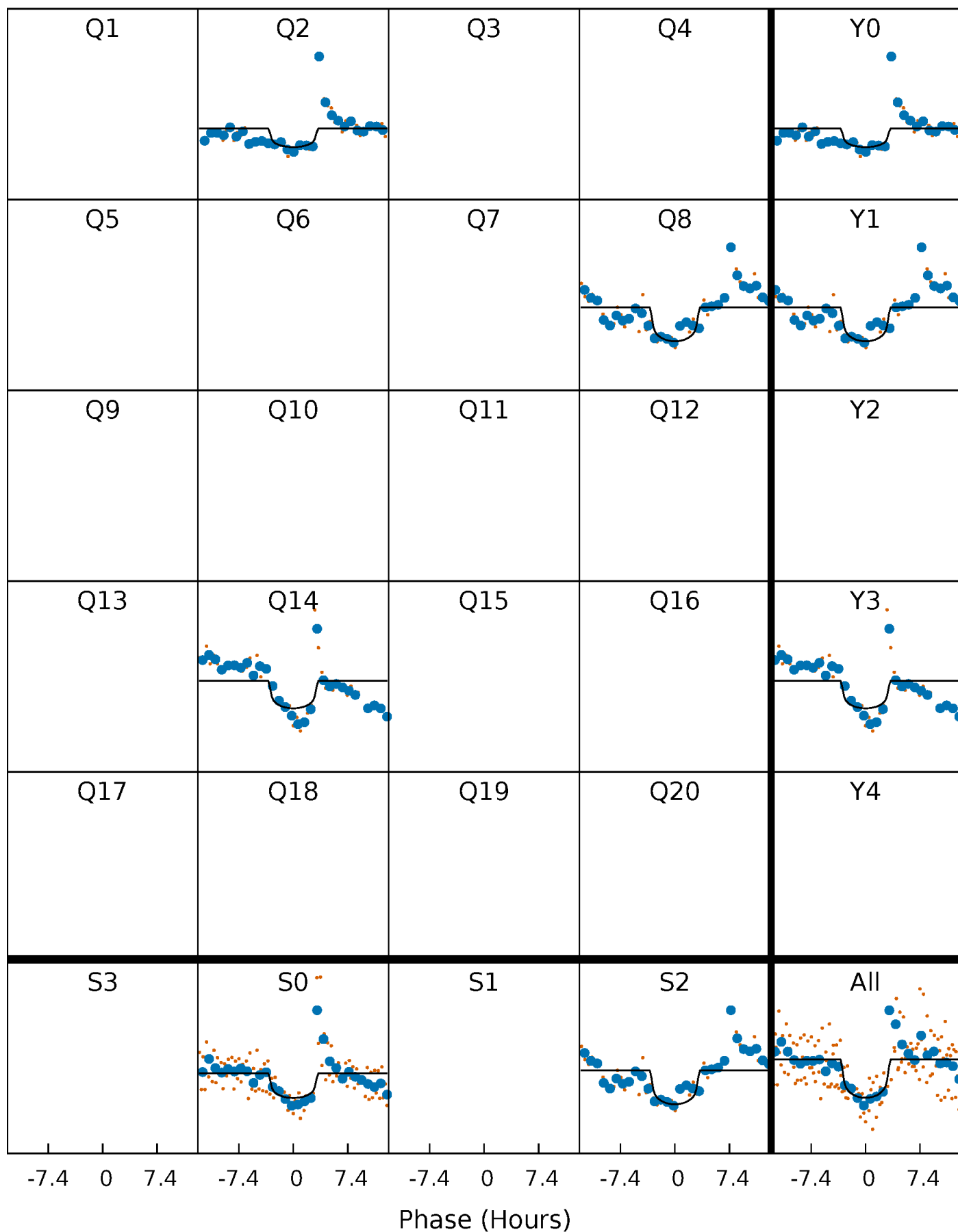
PDC Quarter-Phased Transit Curves

TCE 012736892-02 P=583.446238 Days $T_0=195.909046$ (BKJD)



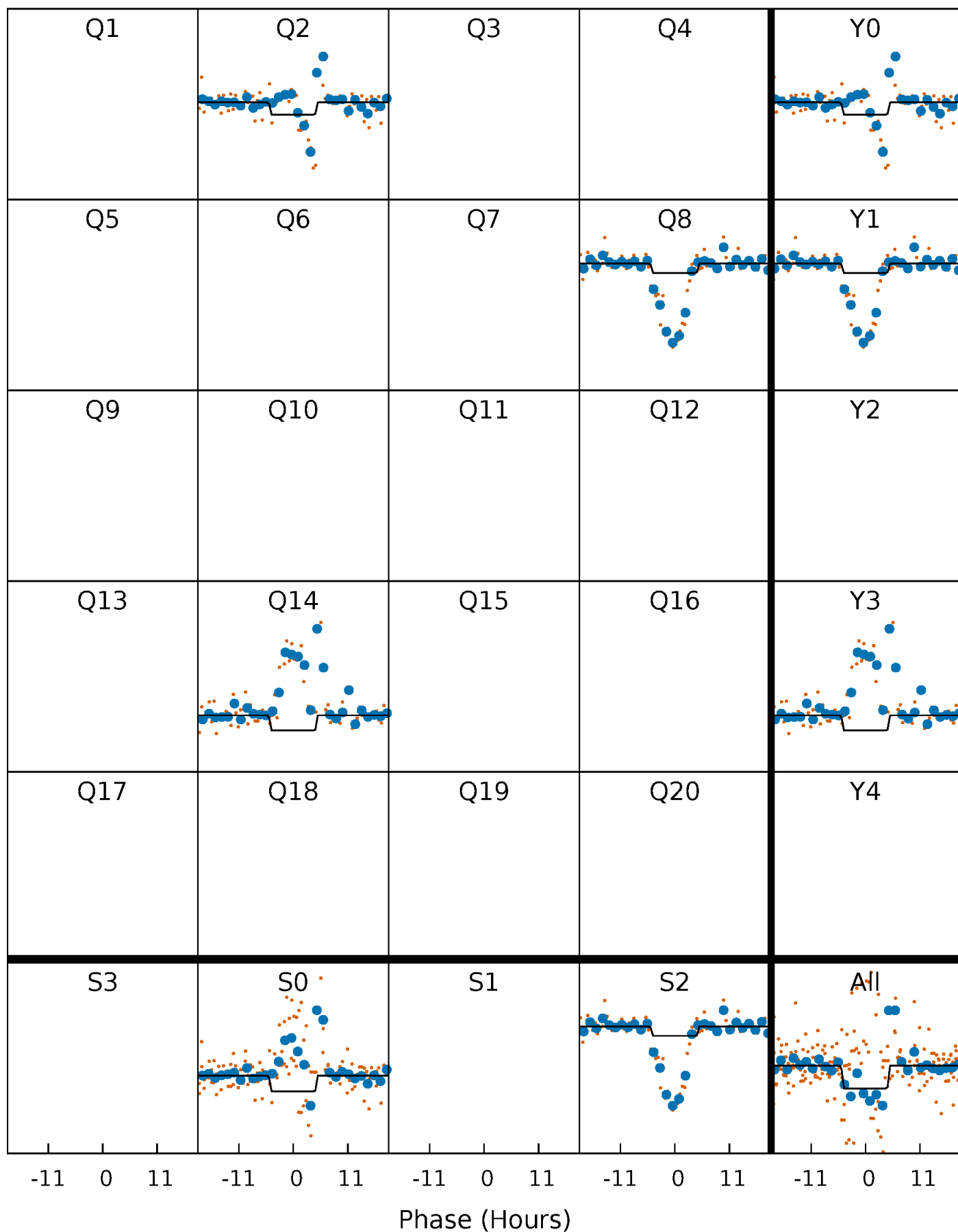
DV Quarter-Phased Transit Curves

TCE 012736892-02 $P=583.446238$ Days $T_0=195.909046$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

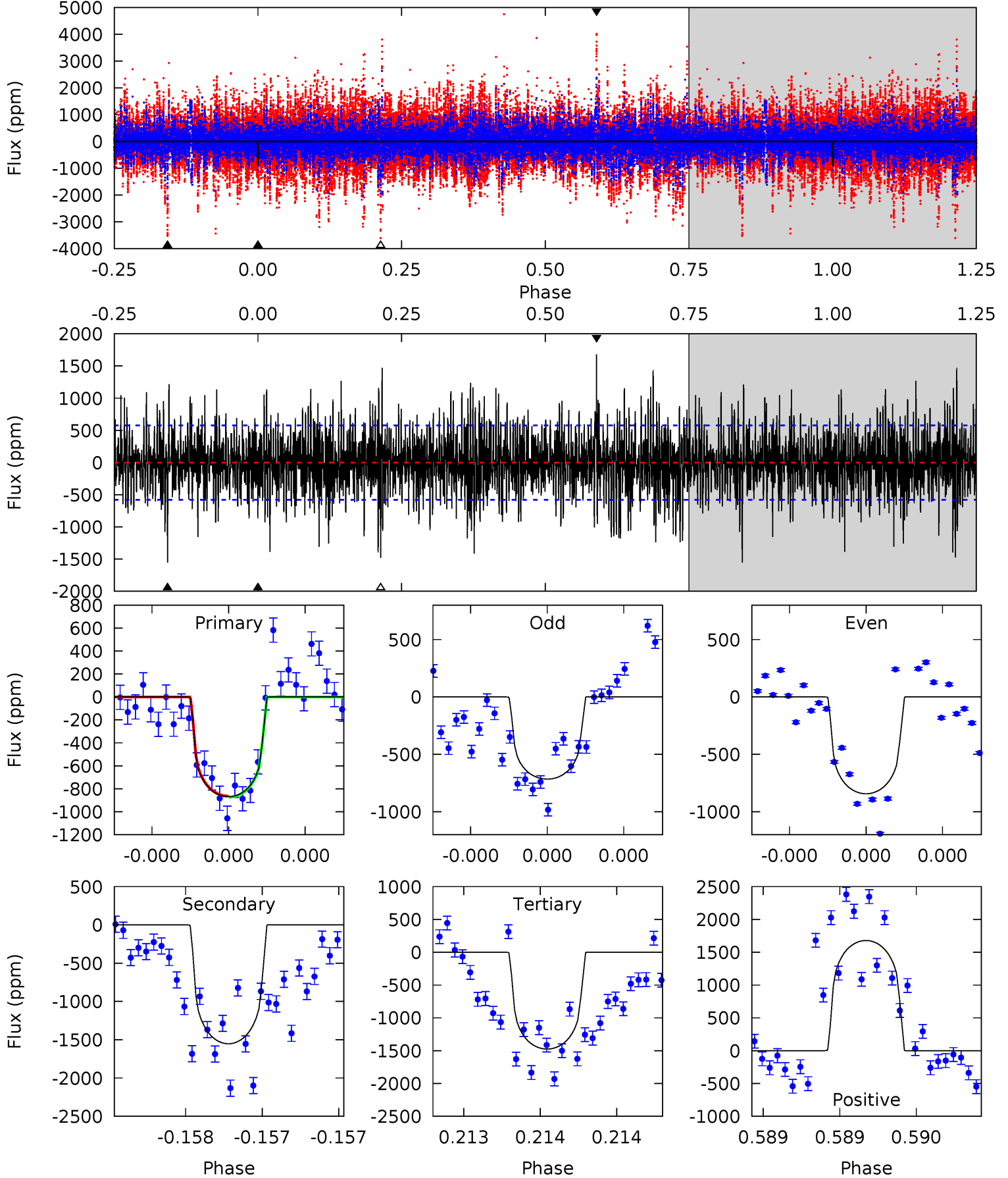
TCE 012736892-02 P=583.439439 Days $T_0=195.833638$ (BKJD)



DV Model-Shift Uniqueness Test

012736892-02, P = 583.446238 Days, E = 195.909046 Days

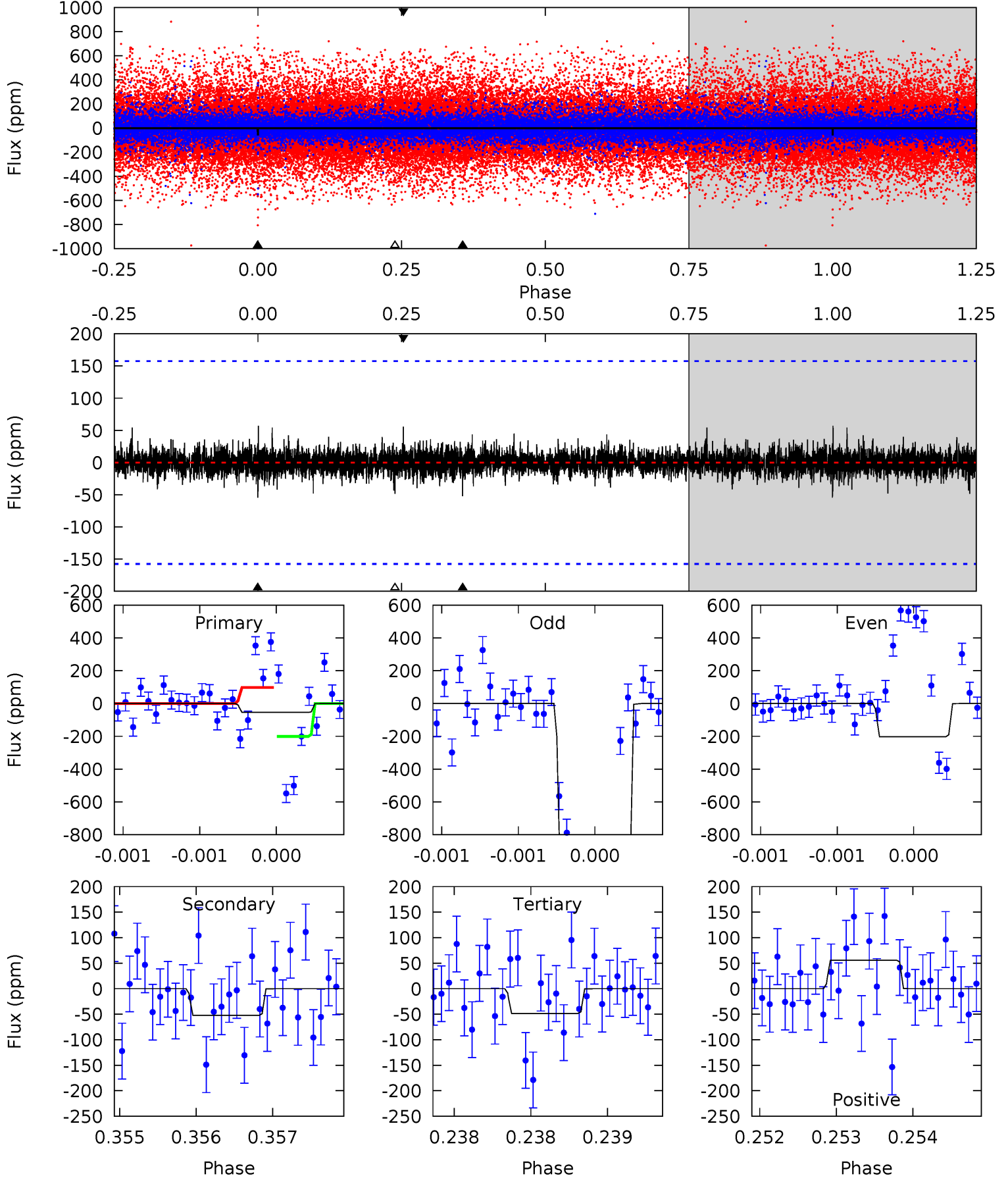
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.39	15.0	14.3	16.2	5.58	3.49	3.71	-5.86	-7.82	0.74	-1.22	0.58	0.96	0.52	0.05



Alt Model-Shift Uniqueness Test

012736892-02, P = 583.439439 Days, E = 195.833638 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.90	1.83	1.69	1.95	5.52	3.39	0.37	0.21	-0.05	0.13	-0.13	19.2	1.07	0.51	1.81



Stellar Parameters For KIC 012736892

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5188^{+156}_{-140}	$4.636^{+0.040}_{-0.065}$	$-0.560^{+0.300}_{-0.300}$	$0.668^{+0.080}_{-0.049}$	$0.705^{+0.077}_{-0.051}$	$3.329^{+0.554}_{-0.773}$
	+3%/-3%	+1%/-1%	+54%/-54%	+12%/-7%	+11%/-7%	+17%/-23%
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 012736892-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1553 ± 104	$2.59^{+2.07}_{-1.64}$	239^{+9}_{-8}	5530^{+4095}_{-1224}	$190151^{+1165957}_{-131109}$
Alt.	-52 ± 29	$2.06^{+1.98}_{-1.41}$	239^{+8}_{-8}	3155^{+1521}_{-619}	8860^{+79087}_{-7111}

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

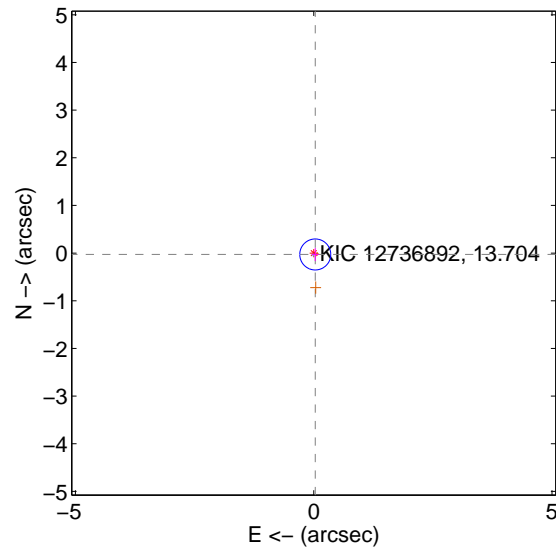
Supplemental centroid analysis for 012736892-02. Kepler magnitude: 13.70. Transit SNR 5.87

There are 1 quarters with good PRF difference image offsets

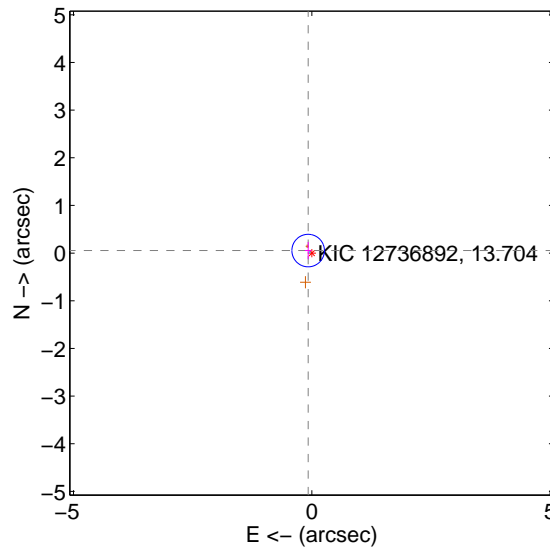
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.043 ± 0.108	0.40	-0.033 ± 0.073	-0.029 ± 0.139
PRF-fit source offset from KIC position	0.093 ± 0.114	0.82	0.076 ± 0.068	0.053 ± 0.182
photometric centroid source offset	1.80 ± 0.81	2.21	1.13 ± 0.89	1.39 ± 0.76

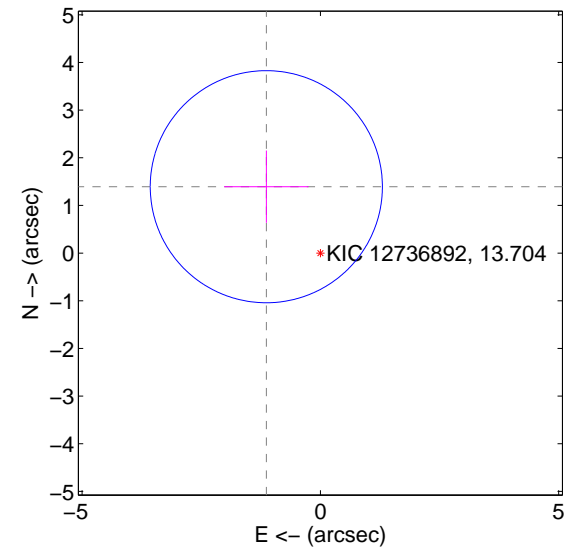
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

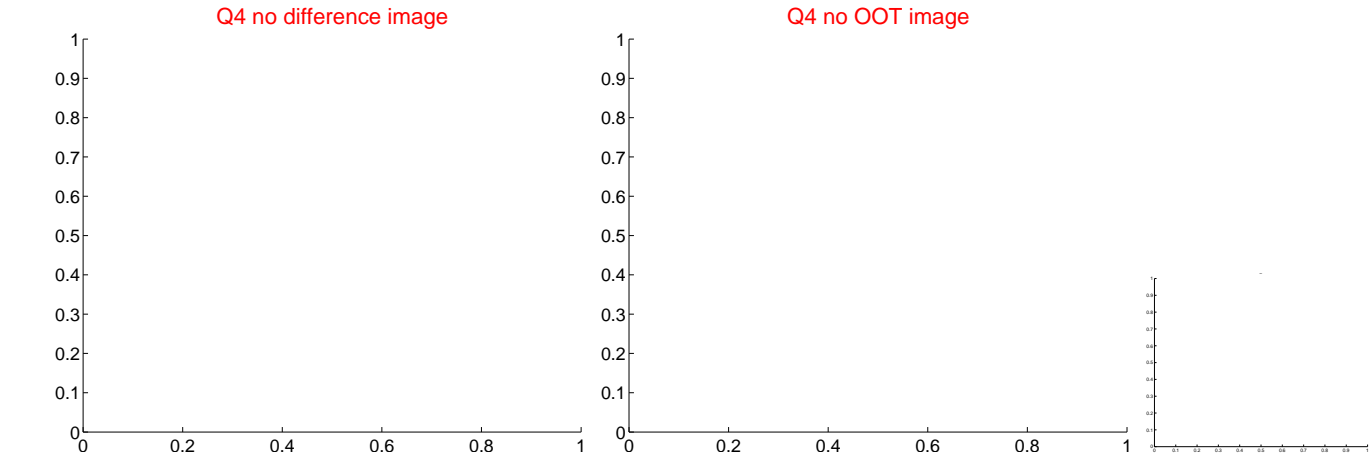
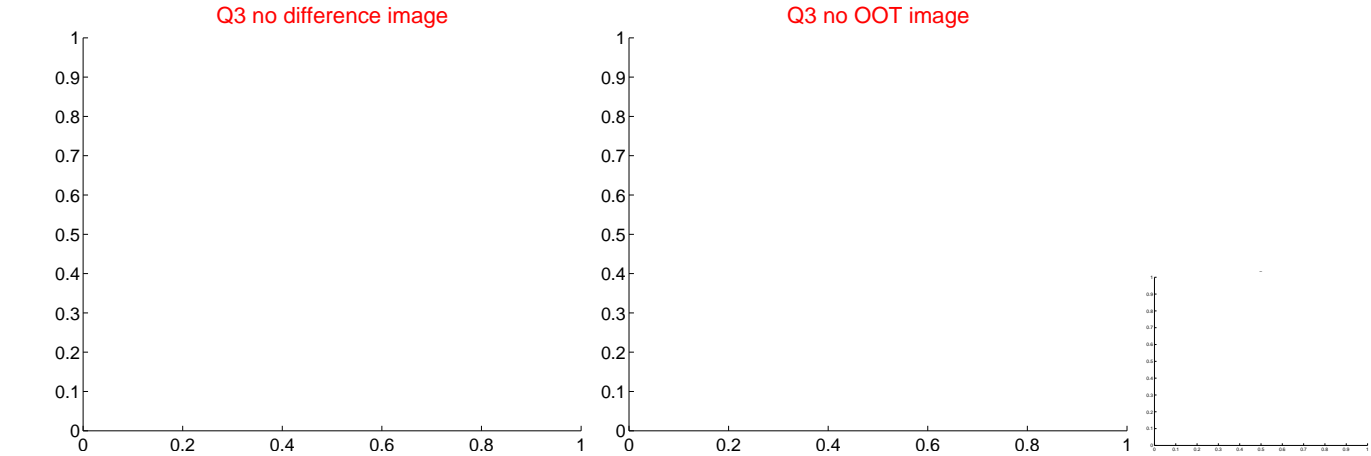
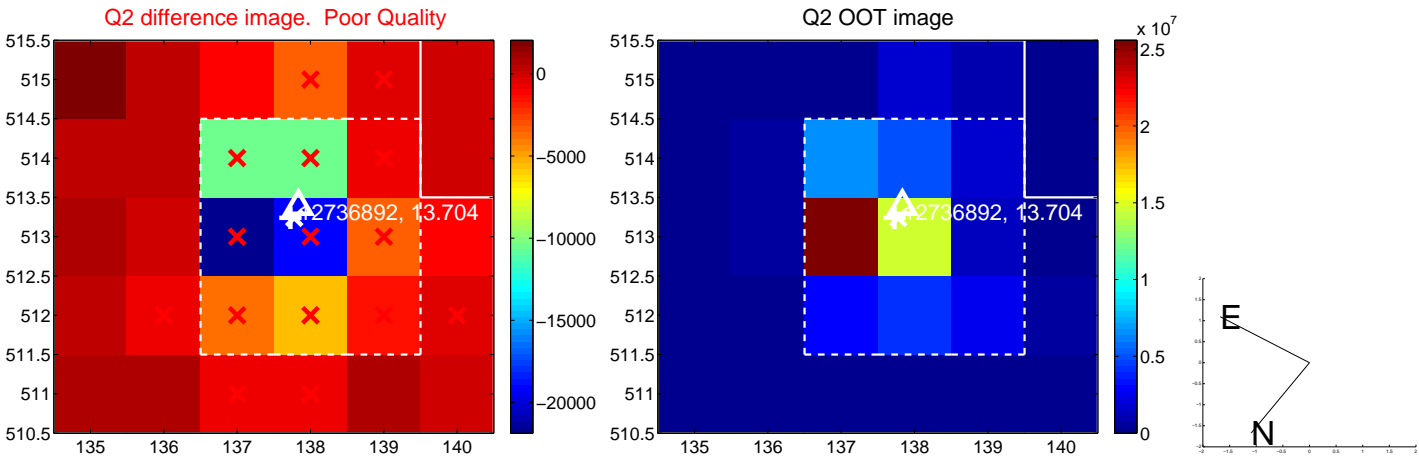
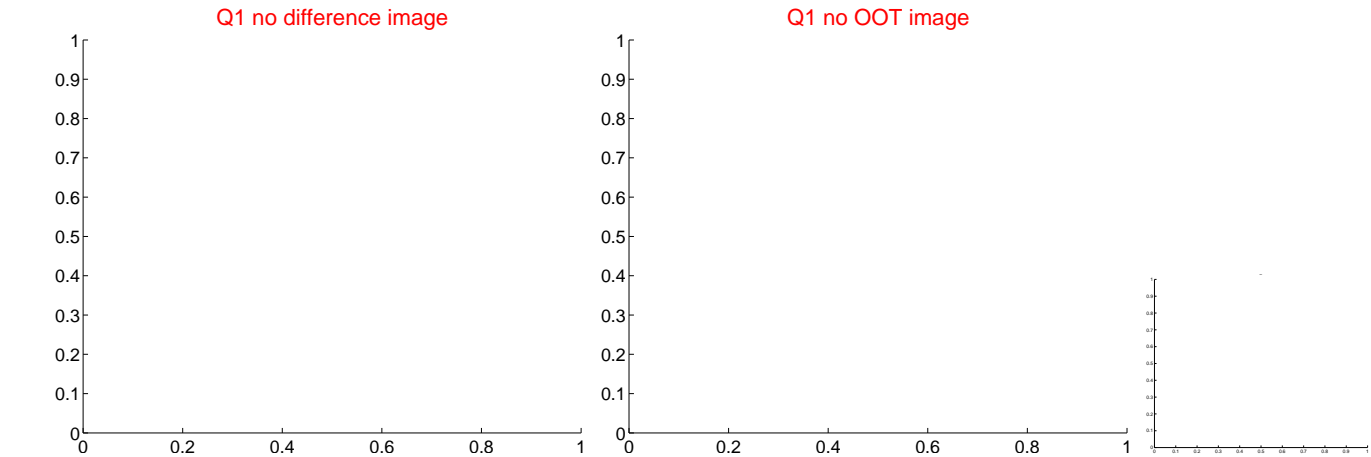


offset from photometric centroids

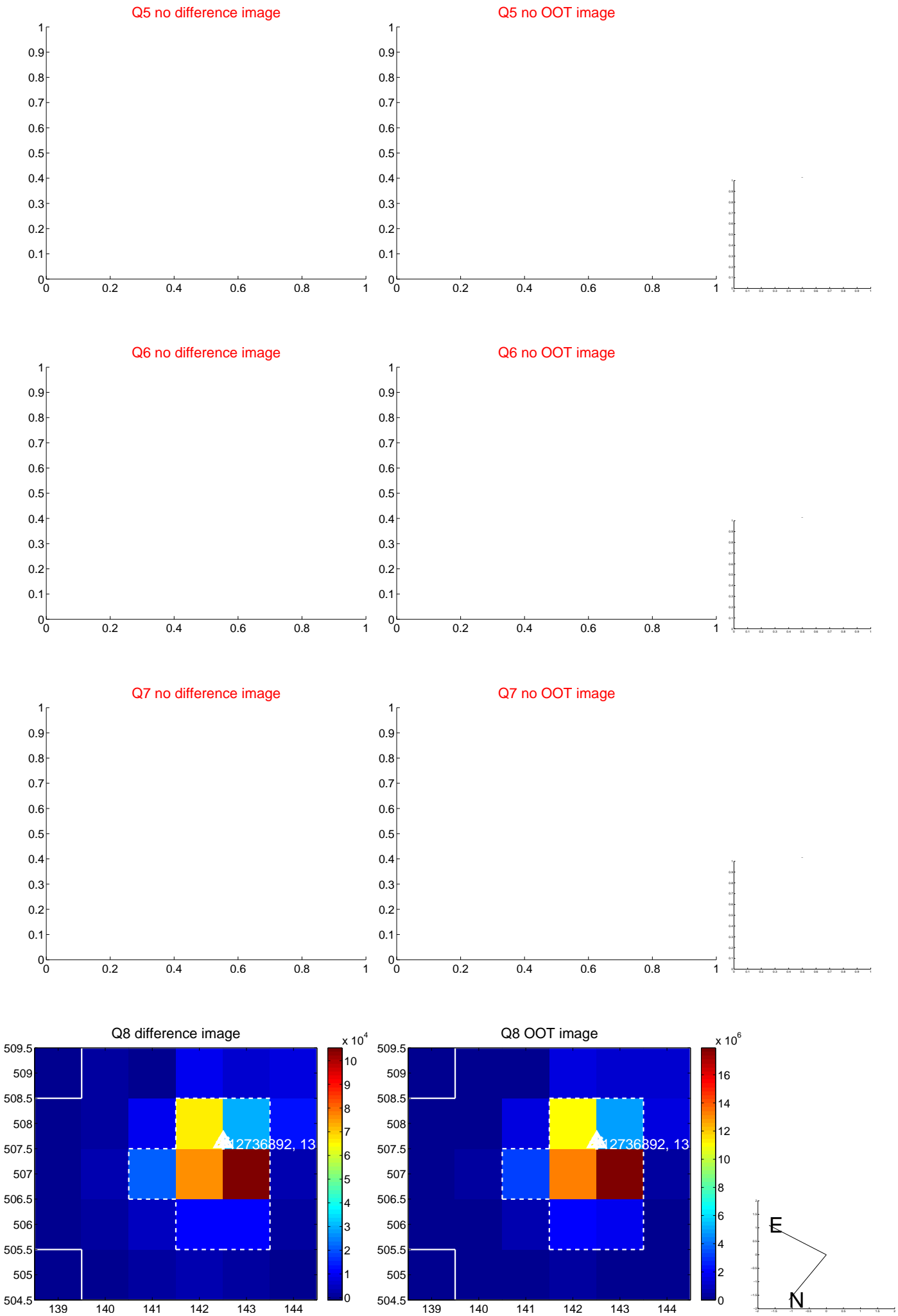


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



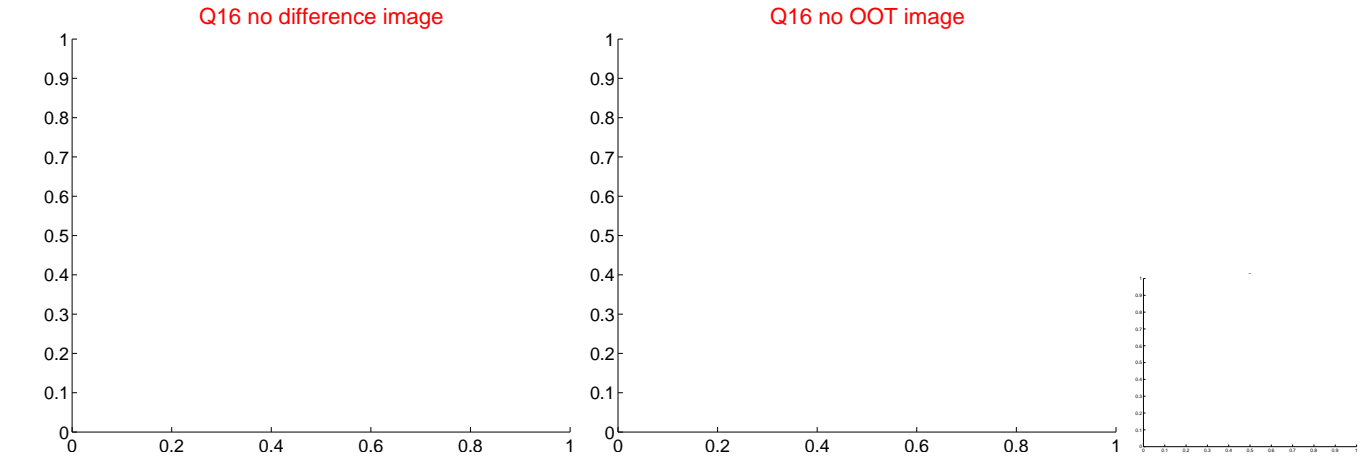
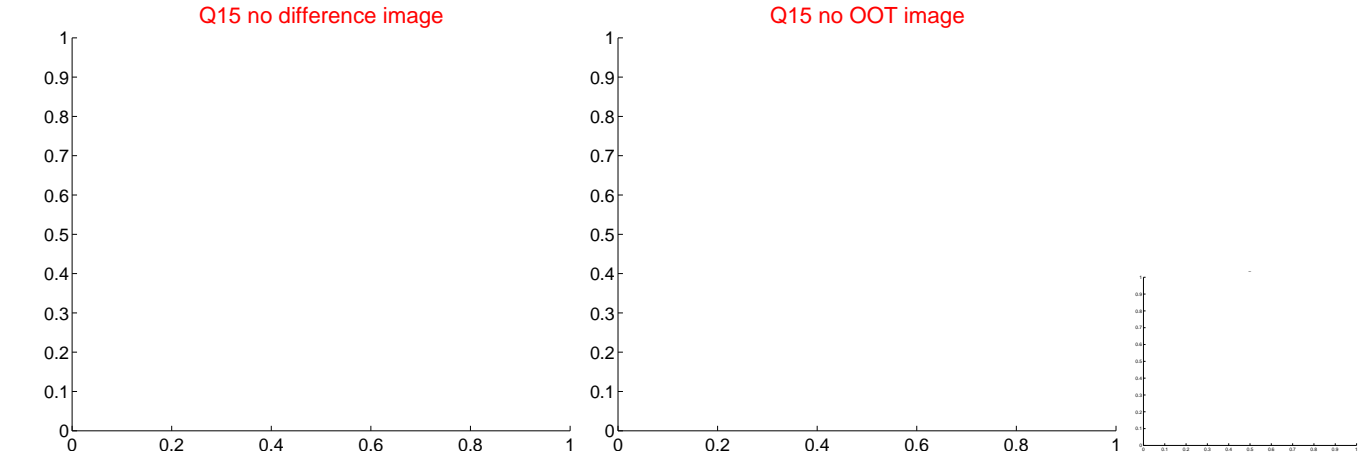
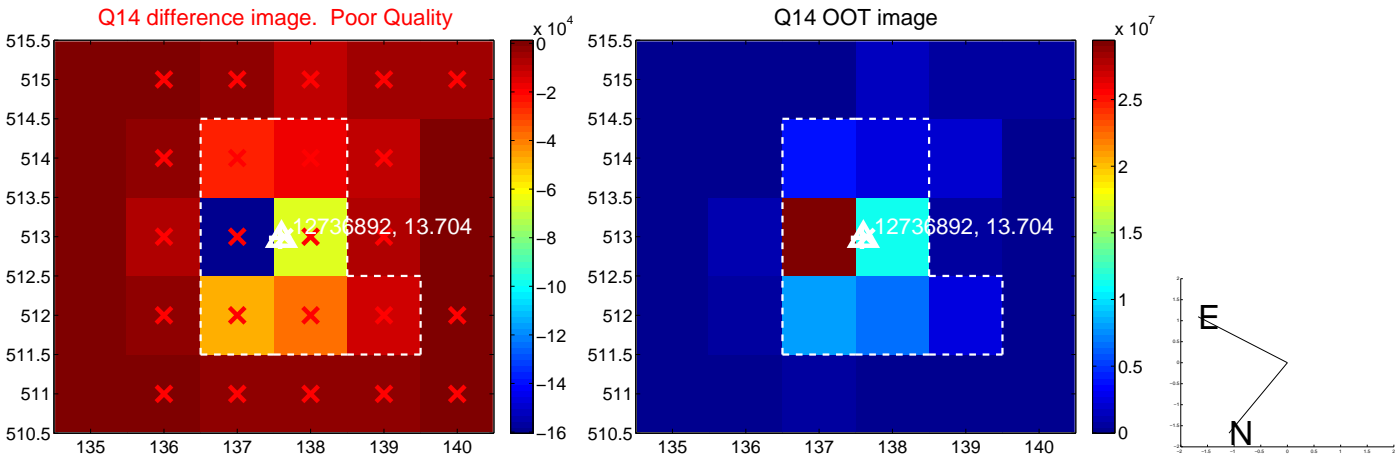
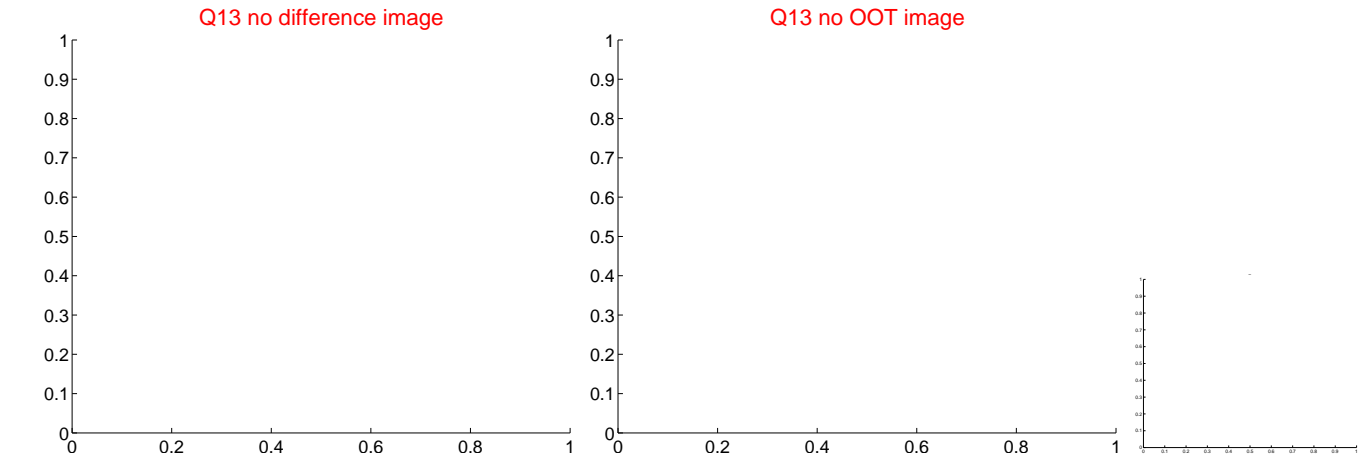
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



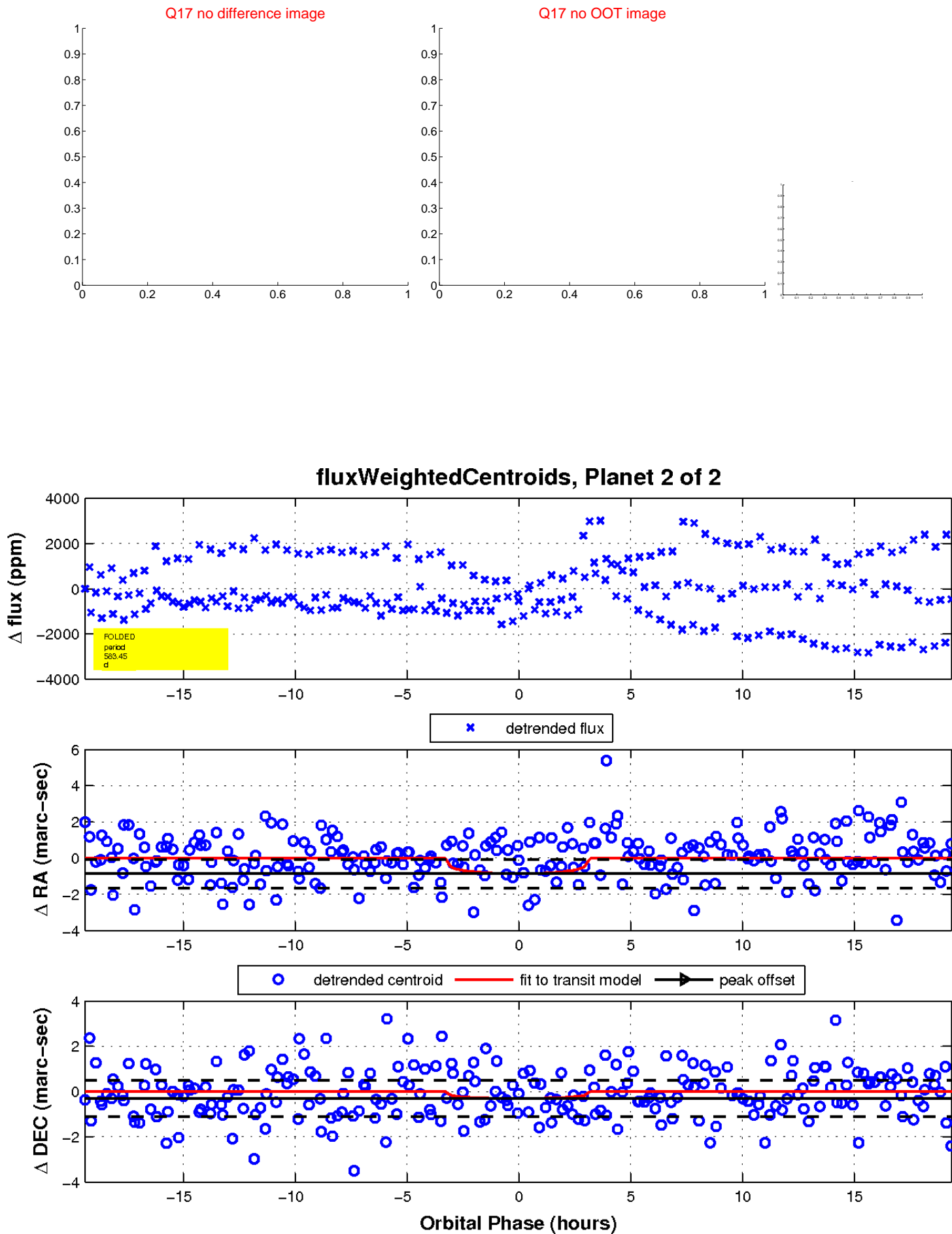
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

