

KIC 002692704

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})
002692704-01	OBS	No	552.861883	466.636047	861.8	6.317	13.3	5.4	0.59	3792	1.95	0.05
002692704-02	OBS	No	438.338978	313.768366	970.0	10.803	11.0	6.1	0.59	3792	1.94	0.07
002692704-03	OBS	No	335.191770	266.118443	892.4	4.478	11.9	6.0	0.59	3792	1.70	0.10
002692704-04	OBS	No	78.428844	197.709041	230.3	1.771	9.0	2.8	0.59	3792	1.32	0.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002692704-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
002692704-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
002692704-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
002692704-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

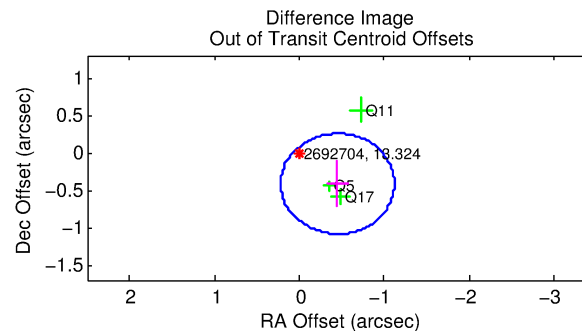
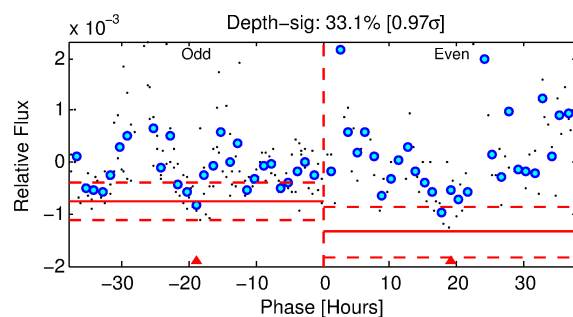
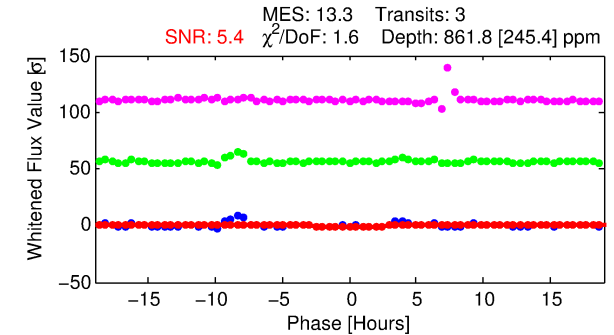
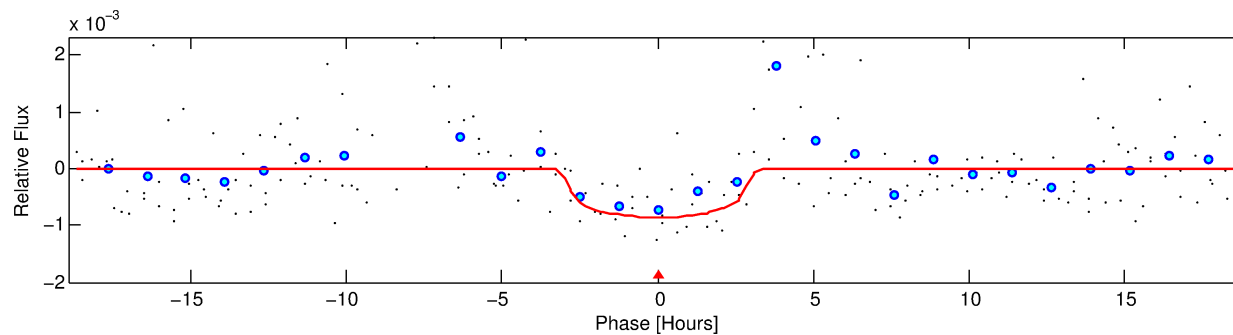
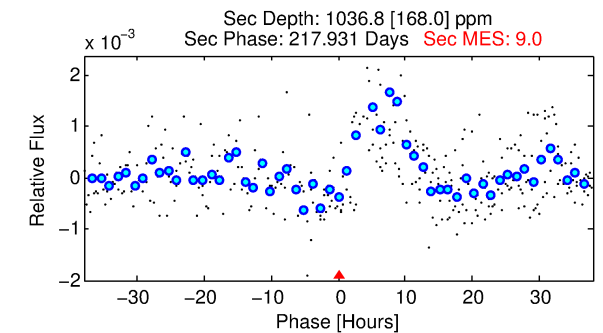
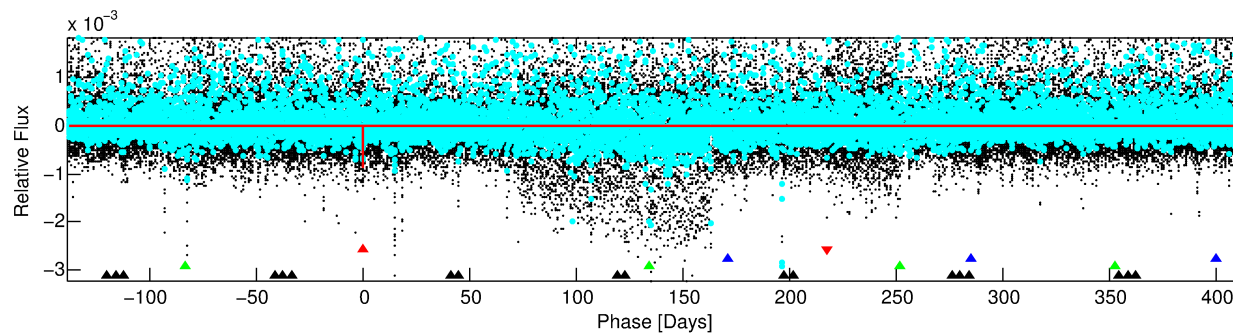
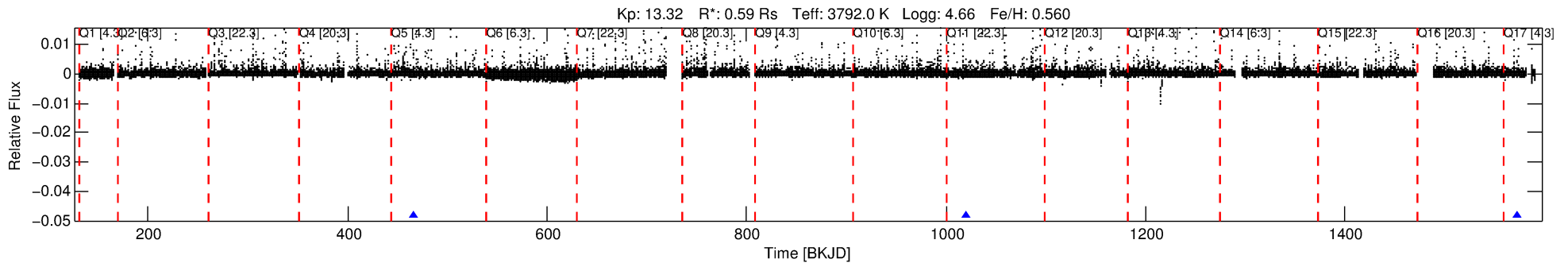
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002692704-01

No Significant Match Found

DV One-Page Summary

KIC: 2692704 Candidate: 1 of 4 Period: 552.862 d



DV Fit Results:

Period = 552.86188 [0.01349] d
Epoch = 466.6360 [0.0184] BKJD
Rp/R* = 0.0301 [0.0231]
a/R* = 442.04 [1113.86]
b = 0.79 [1.23]
Seff = 0.05 [0.01]
Teq = 122 [6] K
Rp = 1.95 [1.52] Re
a = 1.1082 [0.1116] AU
Ag = 184347.47 [285648.61] [0.65σ]
Teffp = 3924 [1521] K [2.50σ]

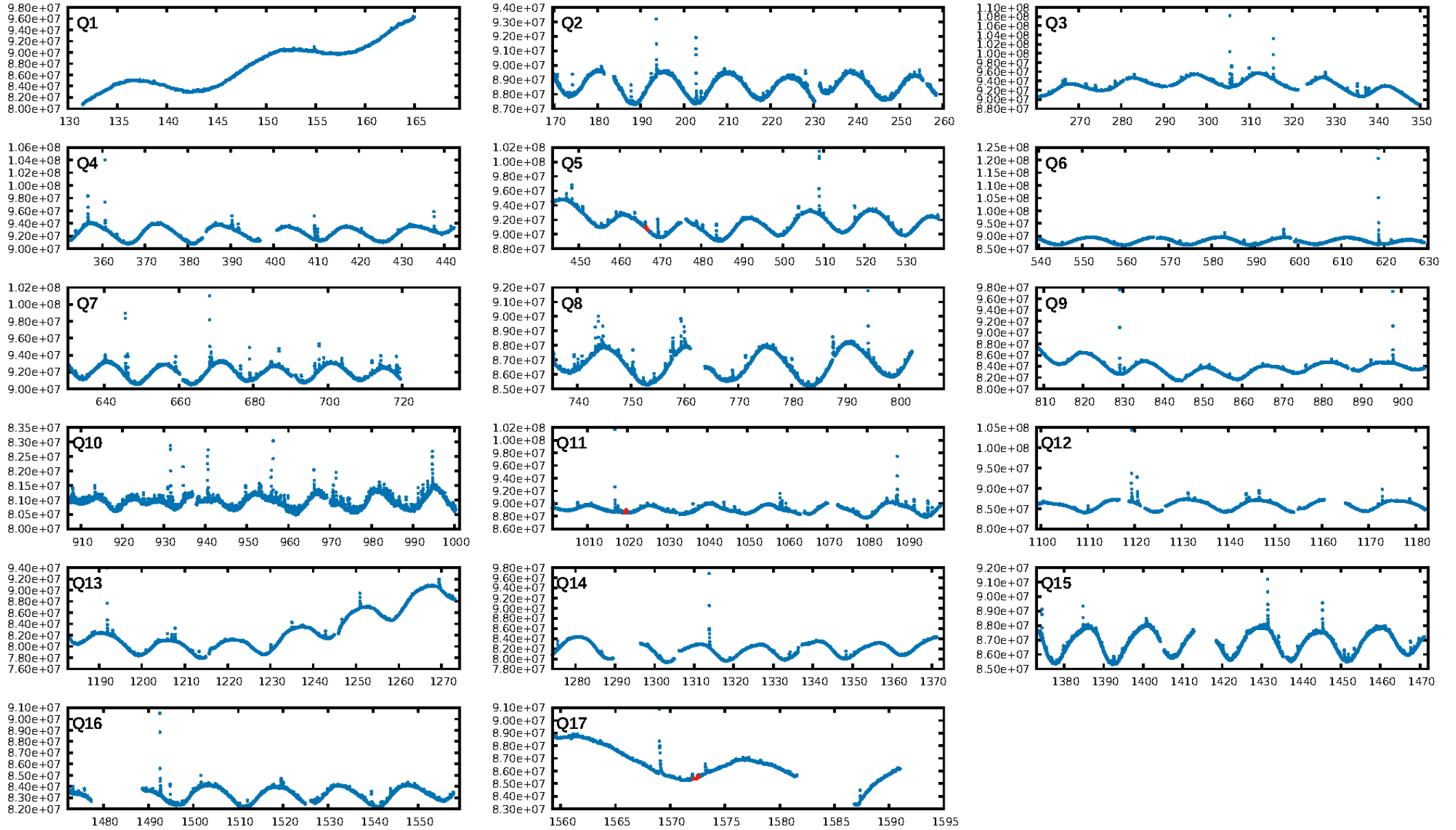
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [219.64σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.2%
ModelChiSquareGof-sig: 74.3%
Bootstrap-pfa: 6.66e-11
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 1.584
Centroid-sig: 71.6%
Centroid-so: 0.810 arcsec [0.78σ]
OotOffset-rm: 0.614 arcsec [2.75σ]
OotOffset-st: 0/1/0/2 [3]
KicOffset-rm: 0.264 arcsec [2.73σ]
KicOffset-st: 0/1/0/2 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

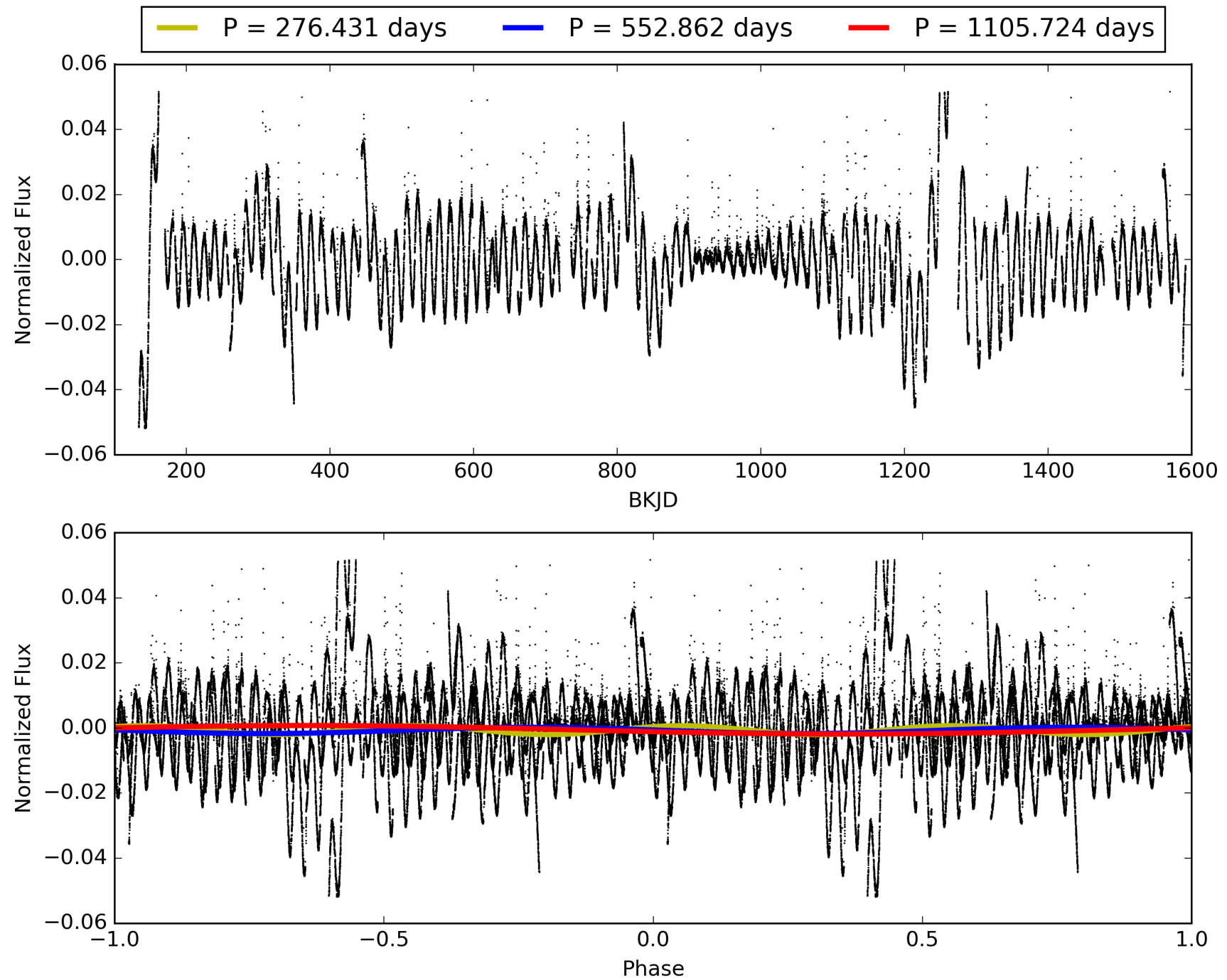
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:43:51 Z

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

TCE 002692704-01, PDC Light Curves

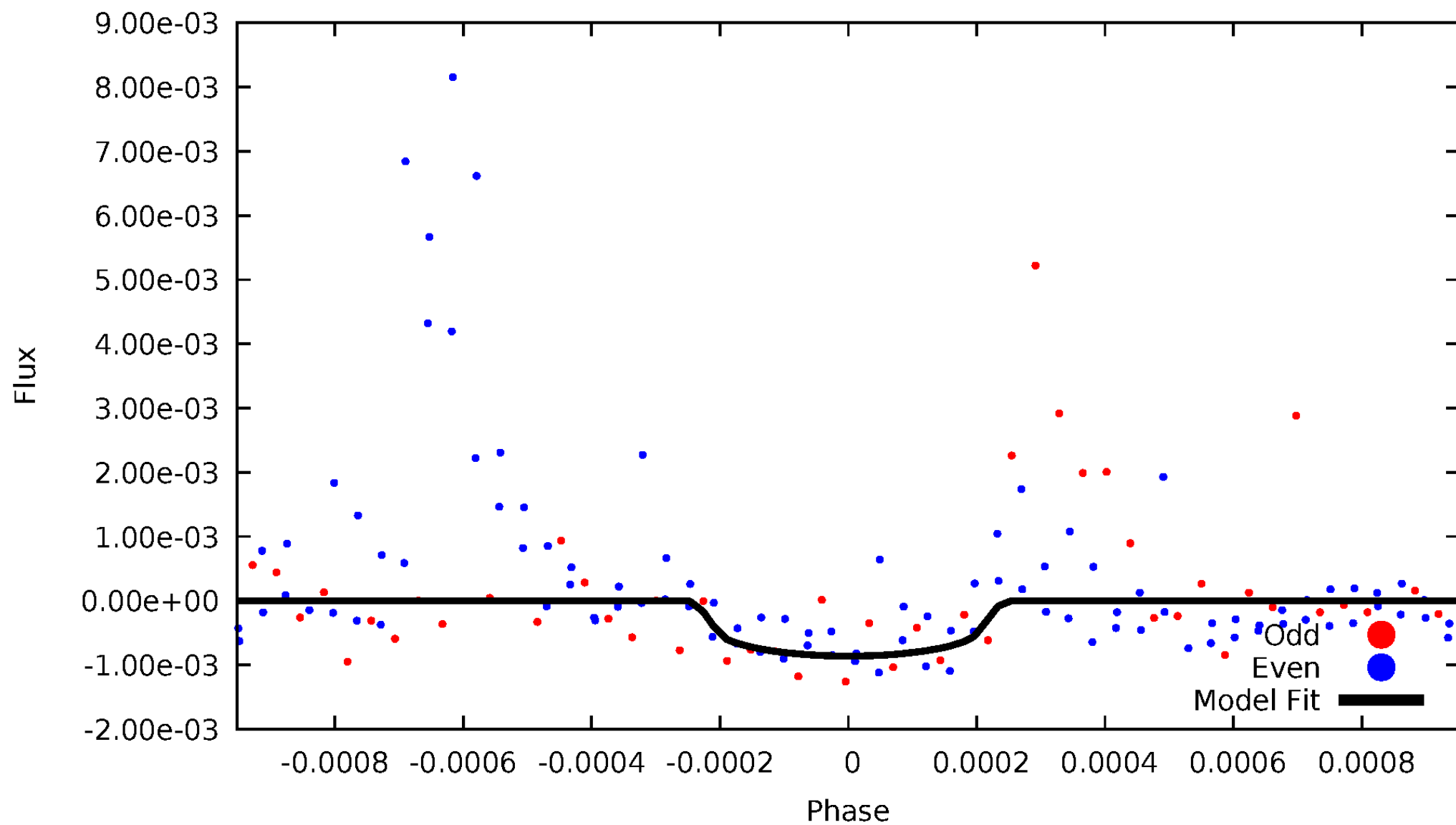


TCE 002692704-01



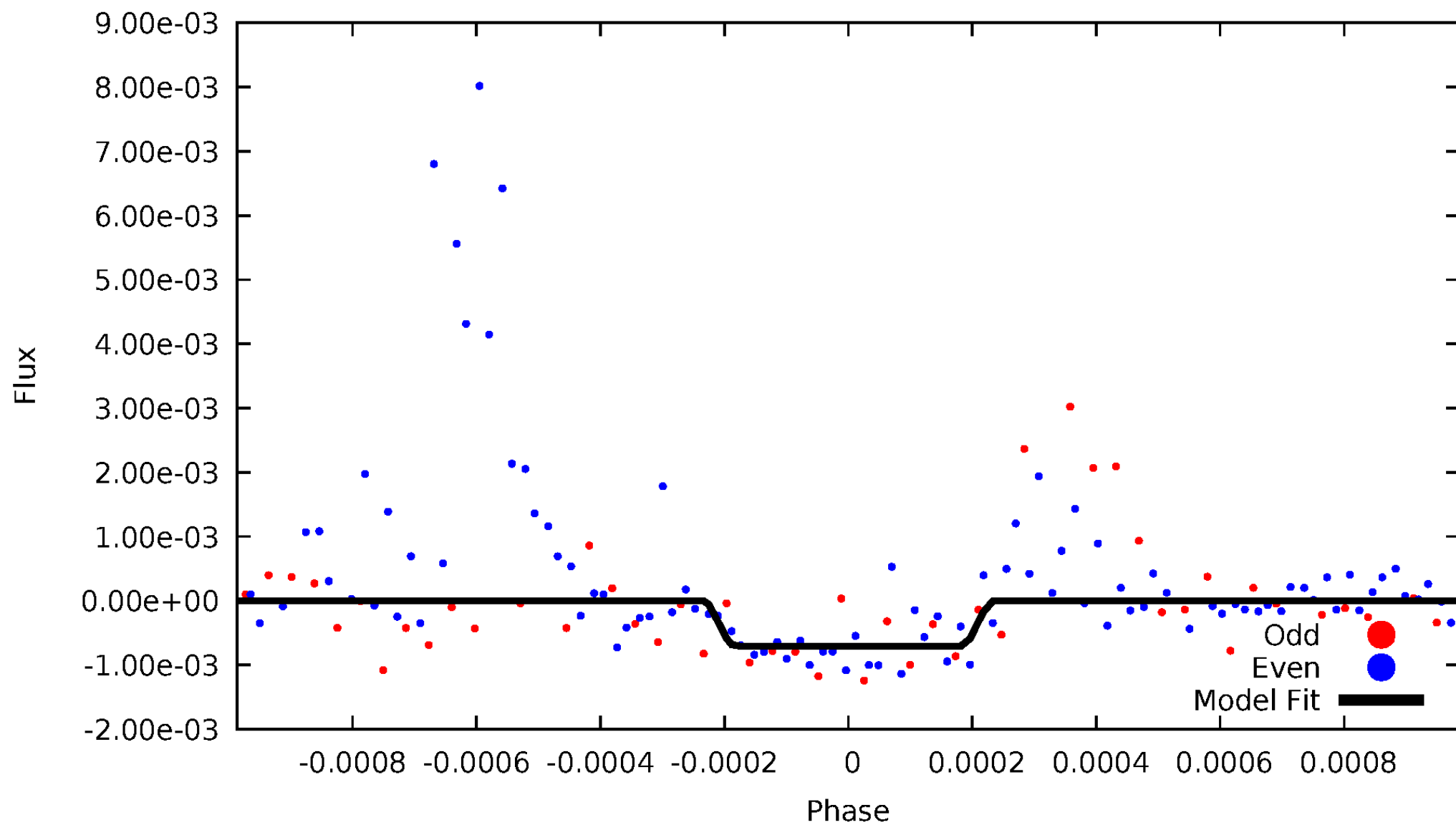
DV Odd/Even

TCE 002692704-01



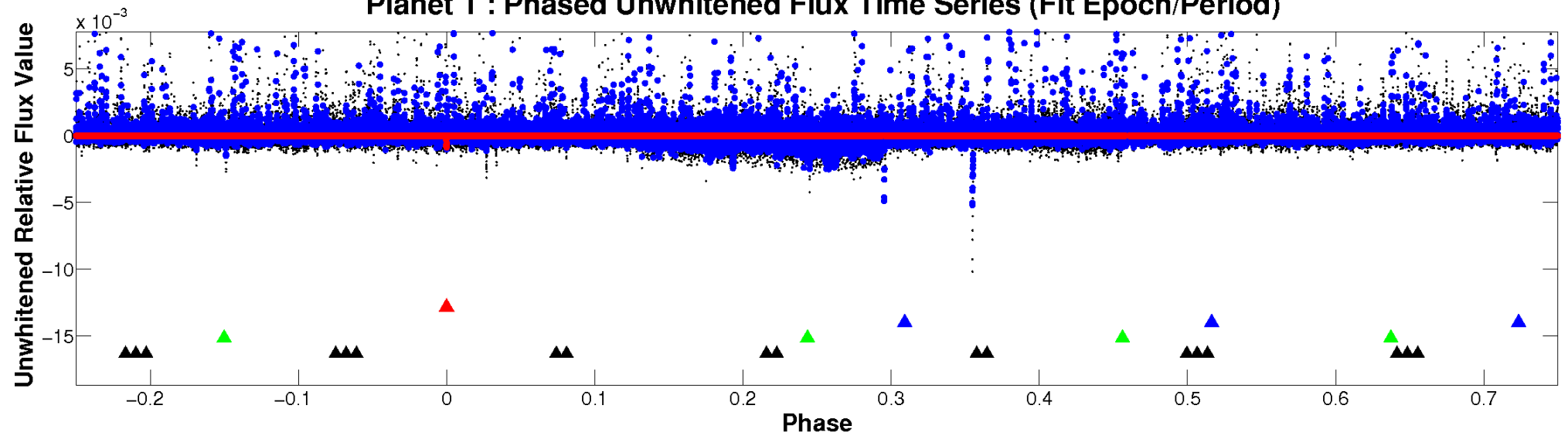
ALT Odd/Even

TCE 002692704-01

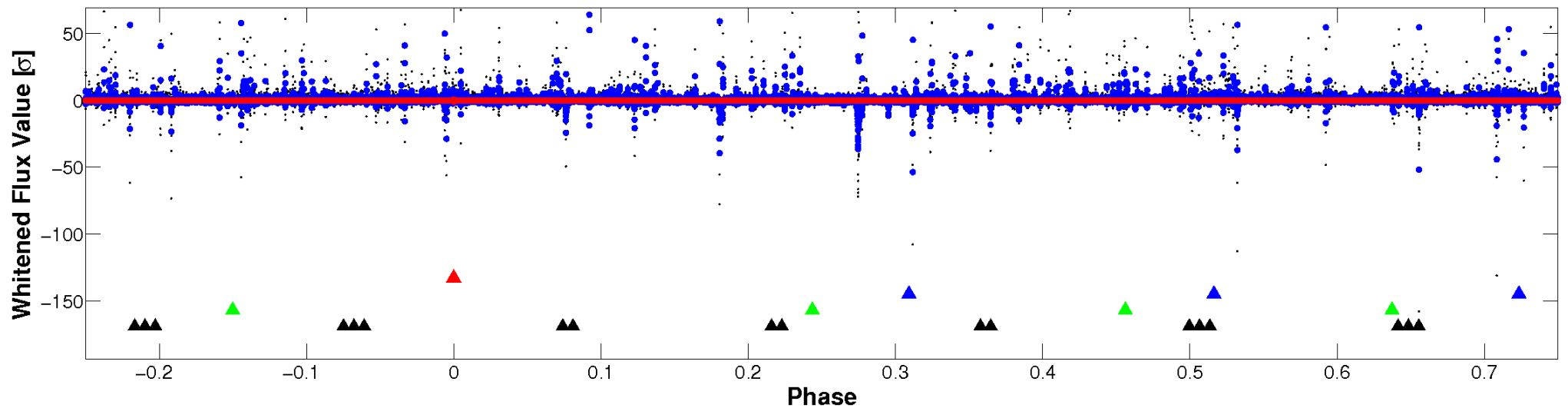


Non-Whitened Vs. Whitened Light Curve

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

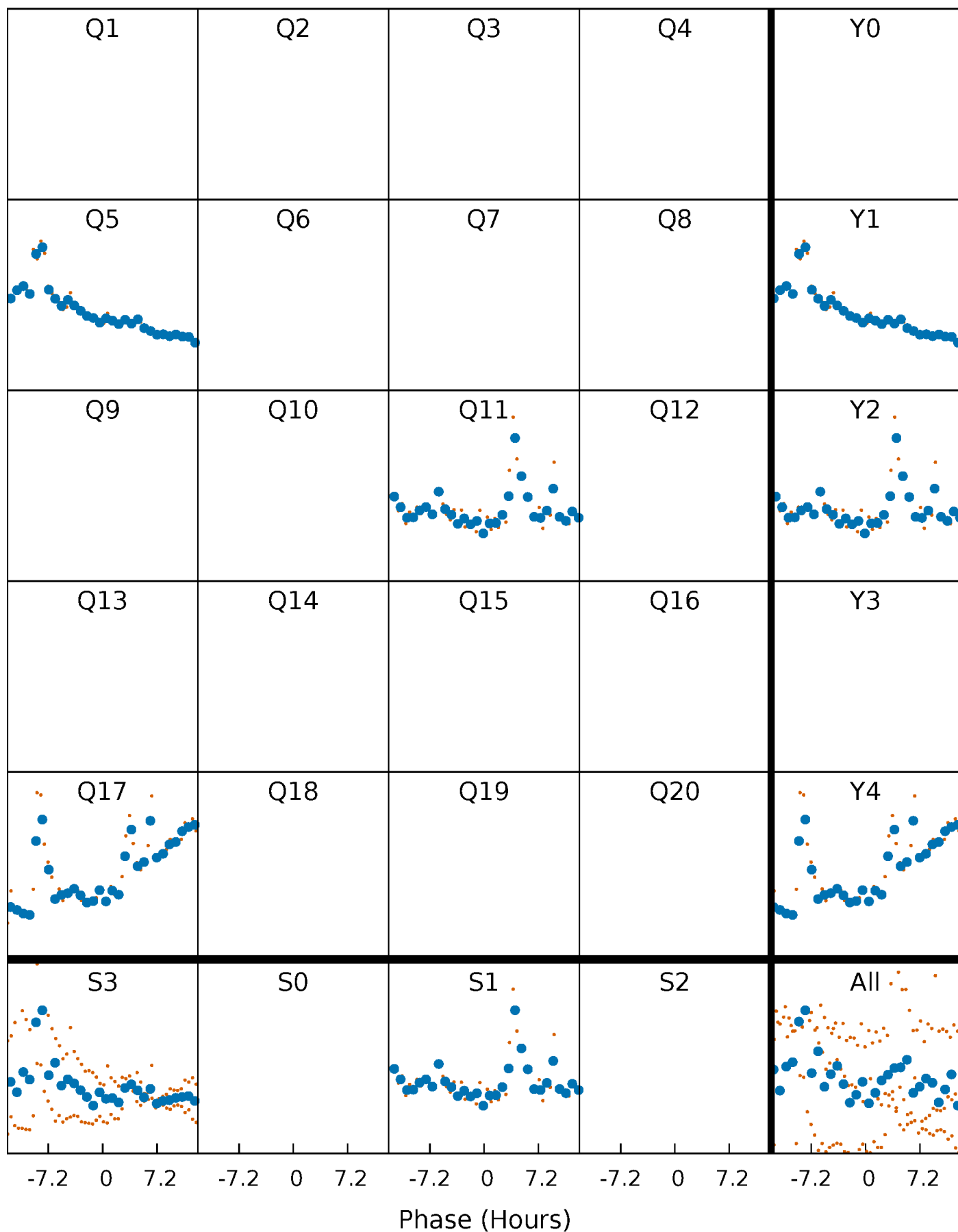


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



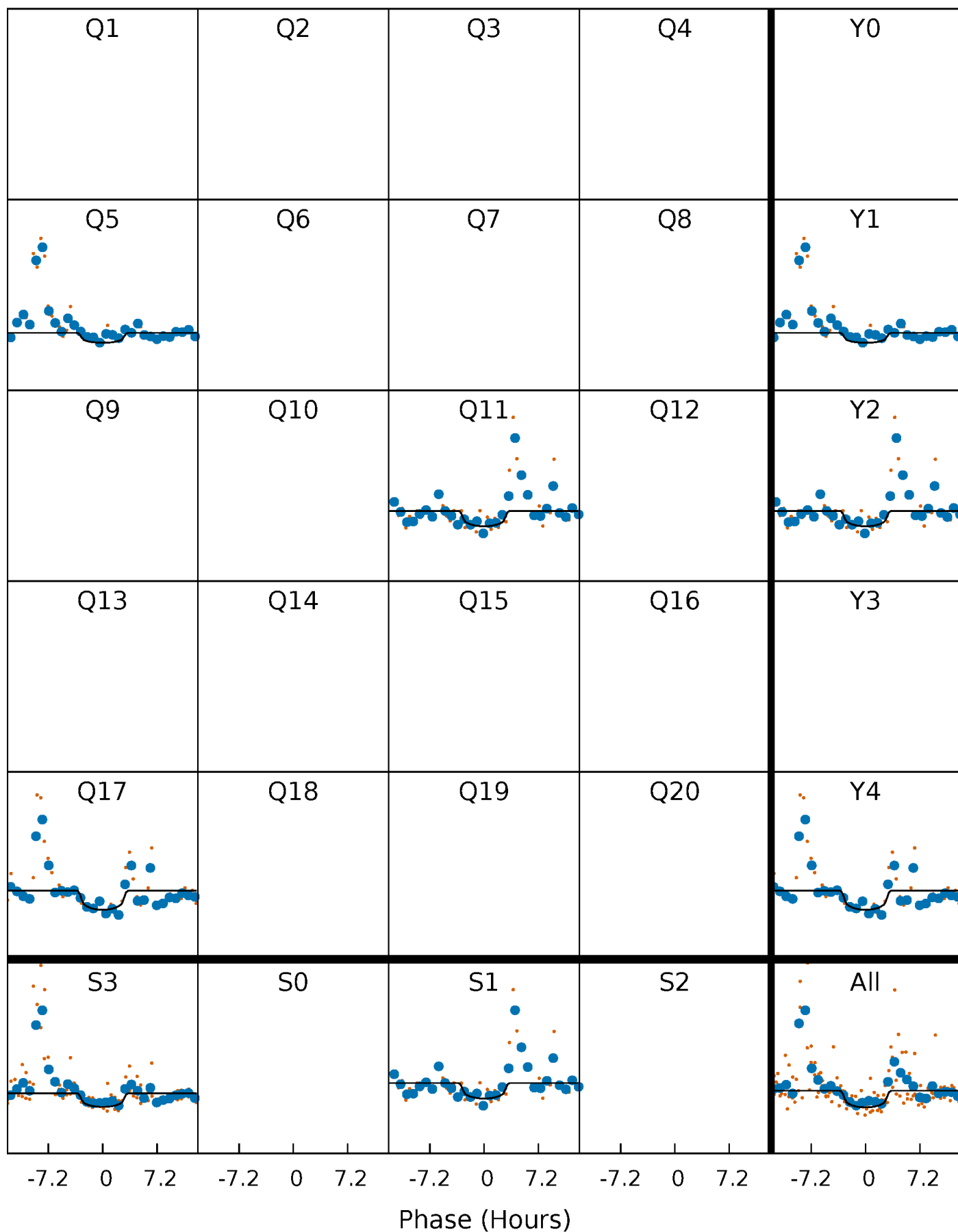
PDC Quarter-Phased Transit Curves

TCE 002692704-01 P=552.861883 Days $T_0=466.636047$ (BKJD)



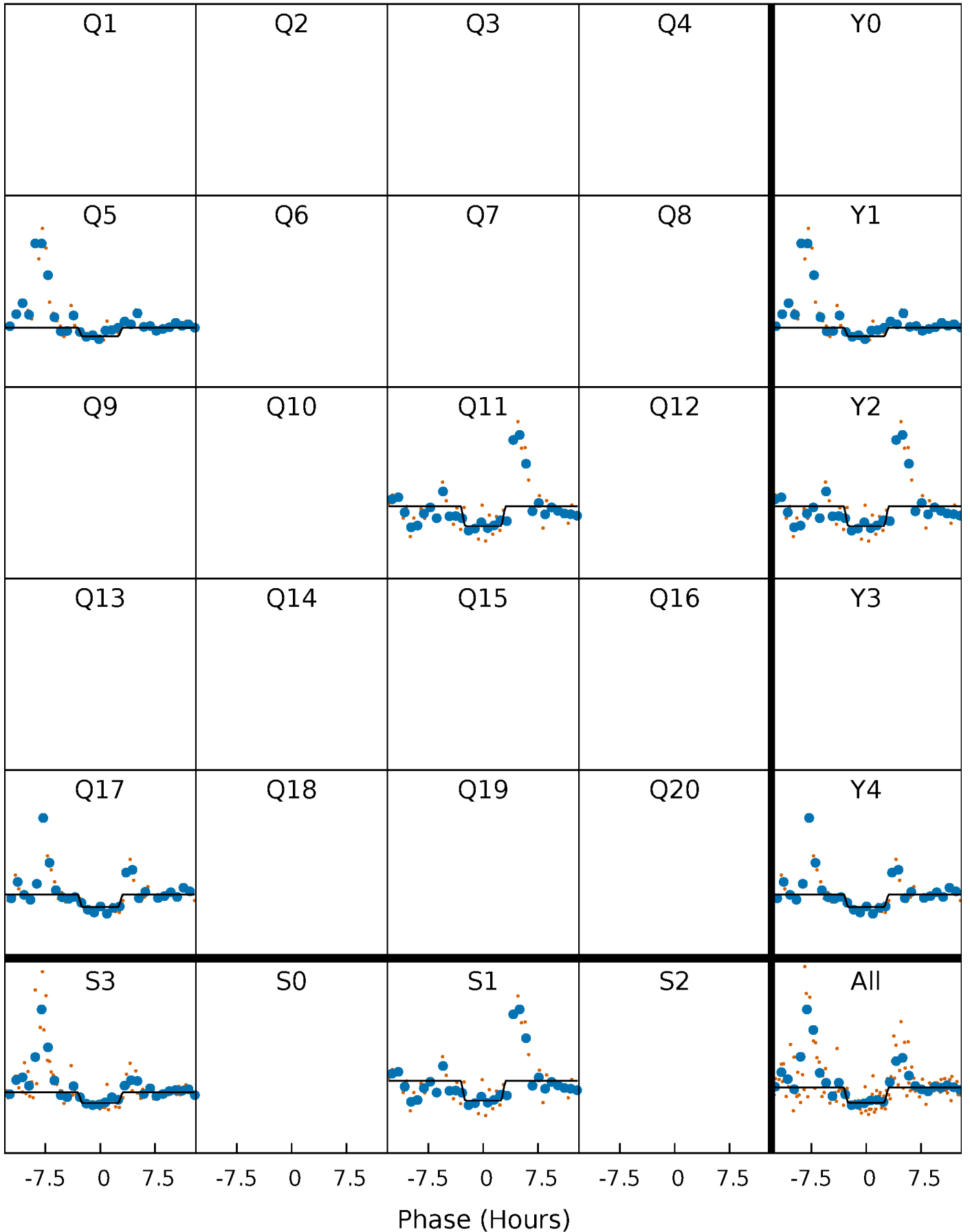
DV Quarter-Phased Transit Curves

TCE 002692704-01 P=552.861883 Days $T_0=466.636047$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

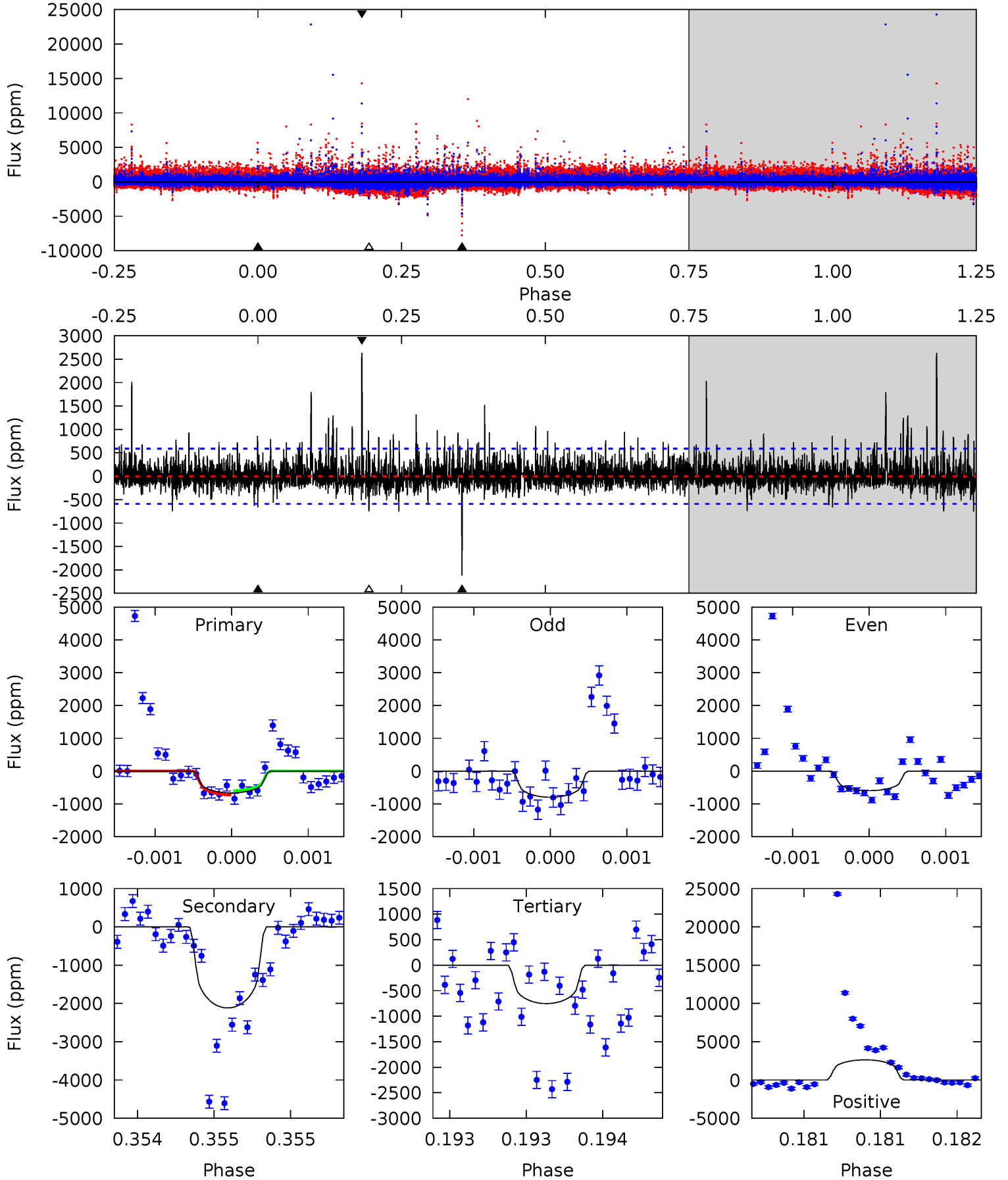
TCE 002692704-01 P=552.857210 Days $T_0=466.624380$ (BKJD)



DV Model-Shift Uniqueness Test

002692704-01, P = 552.861883 Days, E = 466.636047 Days

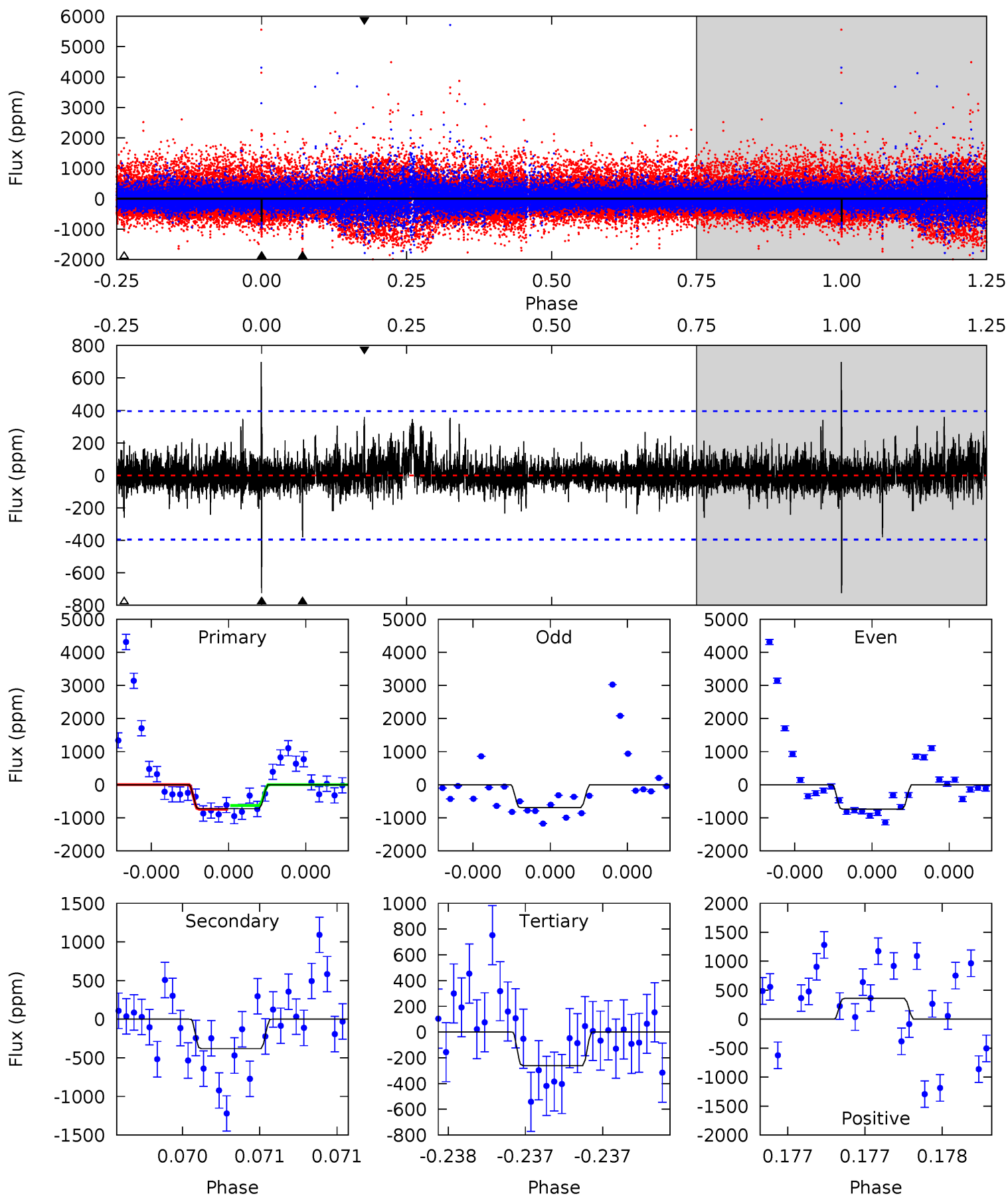
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.28	20.0	7.11	24.9	5.57	3.48	2.13	-0.84	-18.6	12.9	-4.89	0.29	0.83	0.55	0.61



Alt Model-Shift Uniqueness Test

002692704-01, P = 552.857210 Days, E = 466.624380 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	5.38	3.67	5.07	5.59	3.50	0.89	6.56	5.16	1.71	0.31	0.26	0.99	0.49	0.78



Stellar Parameters For KIC 002692704

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3792^{+120}_{-147}	$4.664^{+0.072}_{-0.018}$	$0.560^{+0.050}_{-0.300}$	$0.594^{+0.028}_{-0.075}$	$0.594^{+0.040}_{-0.060}$	$3.990^{+1.358}_{-0.371}$
	+3%/-4%	+2%/-0%	+9%/-54%	+5%/-13%	+7%/-10%	+34%/-9%
Source	KIC0	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 002692704-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2117 ± 106	$2.05^{+1.51}_{-1.15}$	169^{+7}_{-7}	4301^{+1777}_{-749}	$346220^{+1469557}_{-231883}$
Alt.	-381 ± 71	$1.92^{+1.39}_{-1.08}$	169^{+7}_{-8}	3272^{+1051}_{-476}	$70189^{+305068}_{-46096}$

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

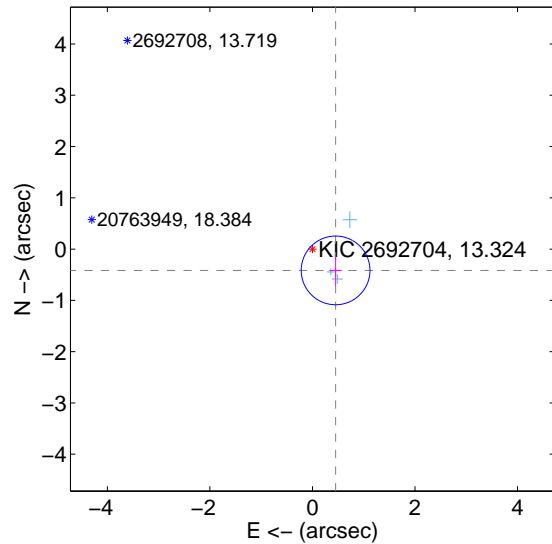
Supplemental centroid analysis for 002692704-01. Kepler magnitude: 13.32. Transit SNR 5.38

There are 3 quarters with good PRF difference image offsets

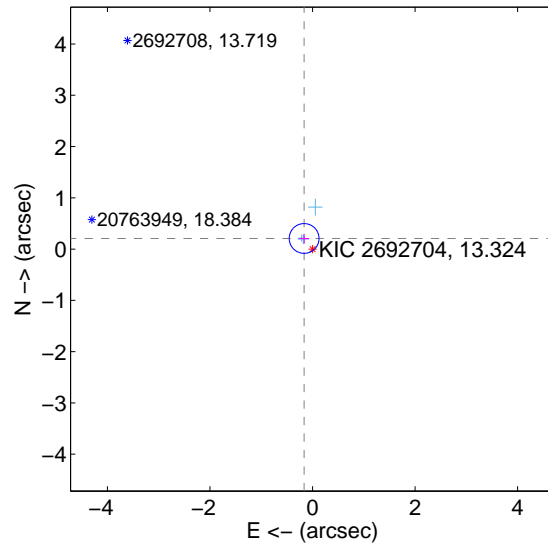
The direct PRF centroid is offset from the target star catalog position by about 1.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.614 ± 0.223	2.75	-0.451 ± 0.122	-0.416 ± 0.302
PRF-fit source offset from KIC position	0.264 ± 0.097	2.73	0.164 ± 0.101	0.207 ± 0.094
photometric centroid source offset	0.81 ± 1.04	0.78	0.78 ± 1.04	0.21 ± 1.08

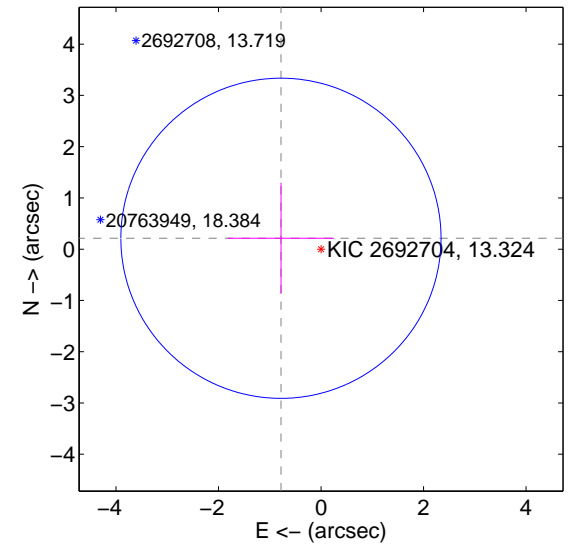
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

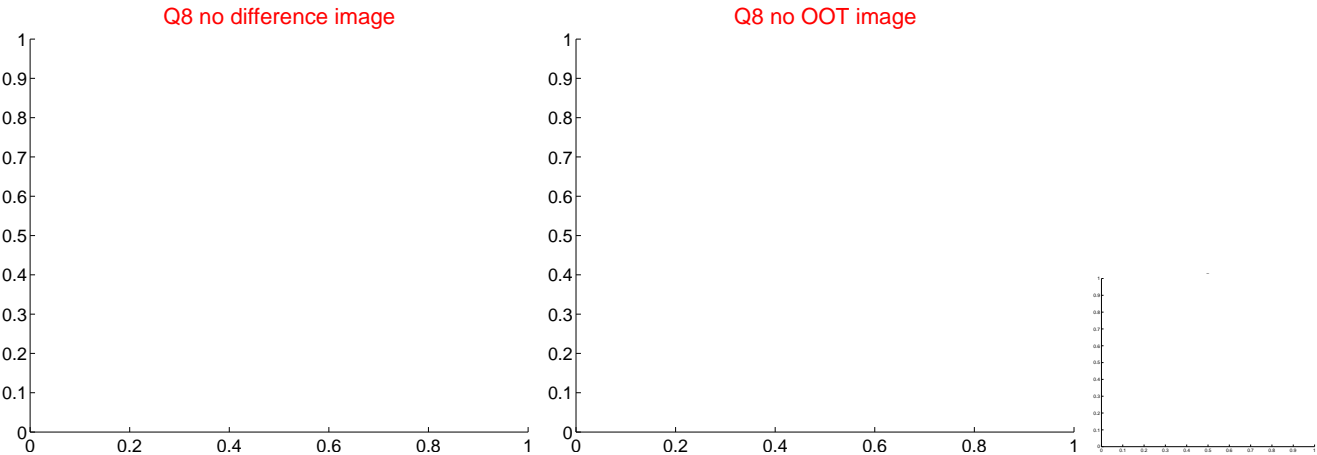
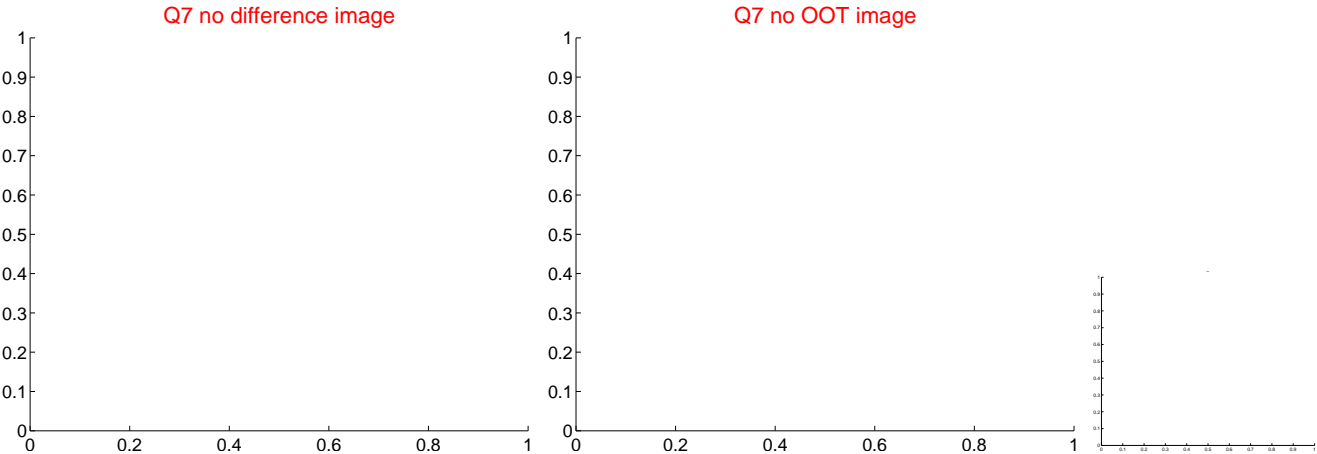
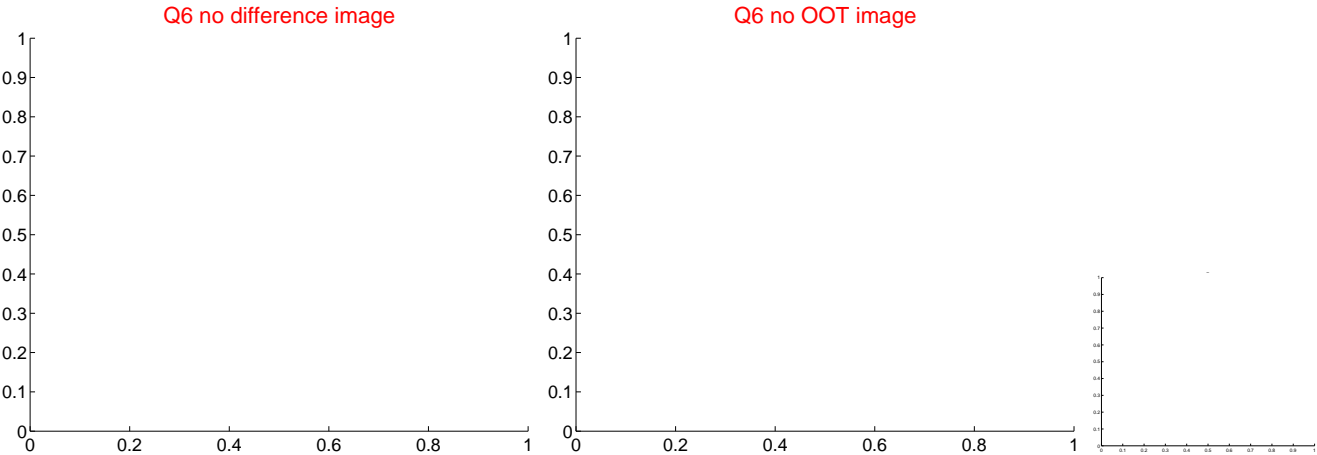
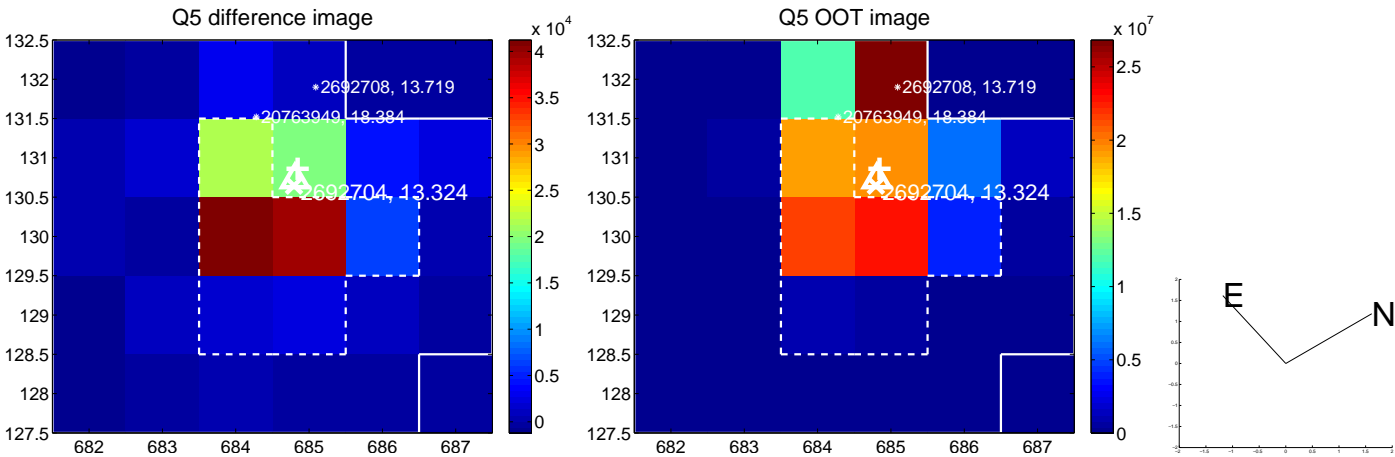


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

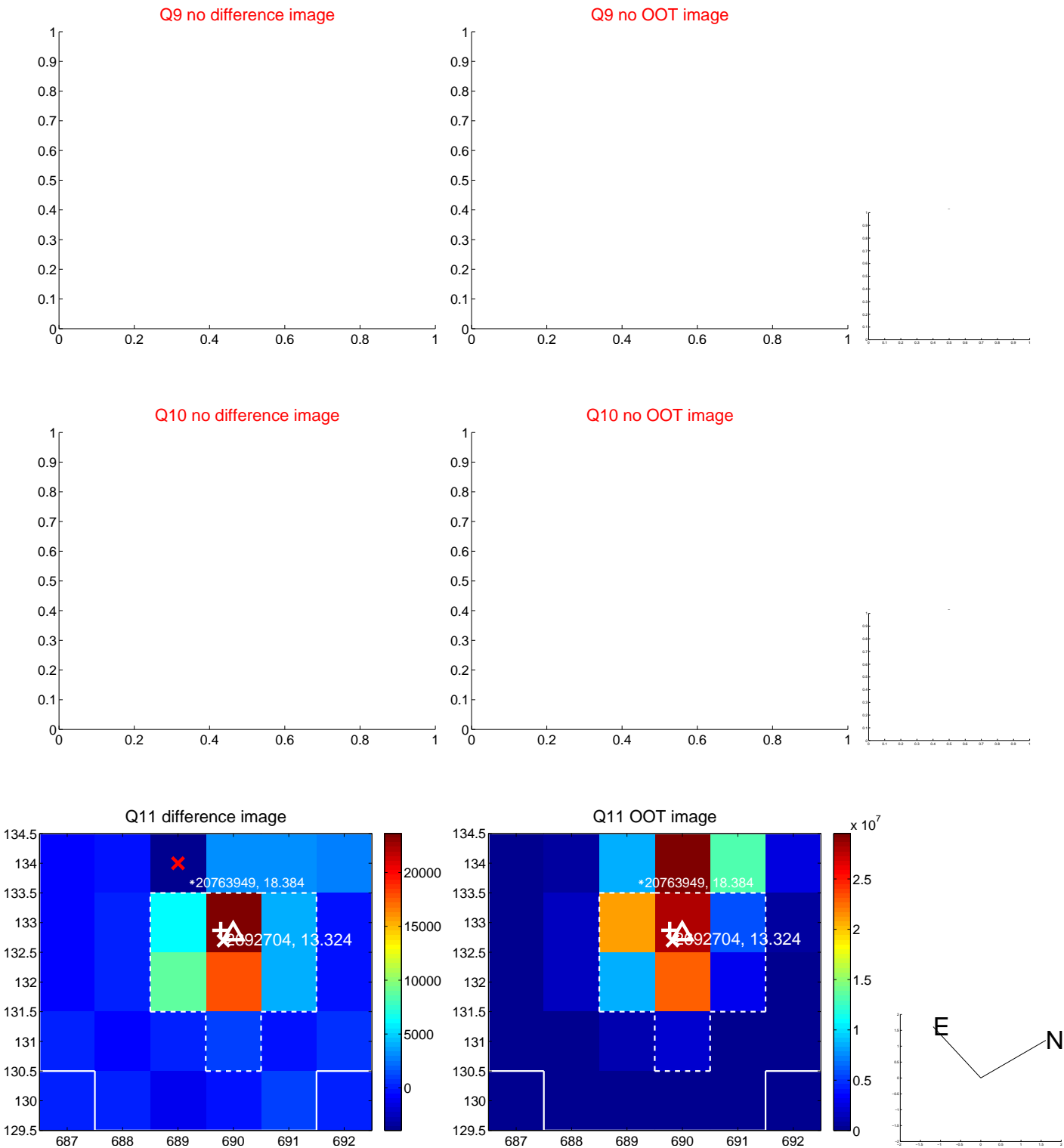
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



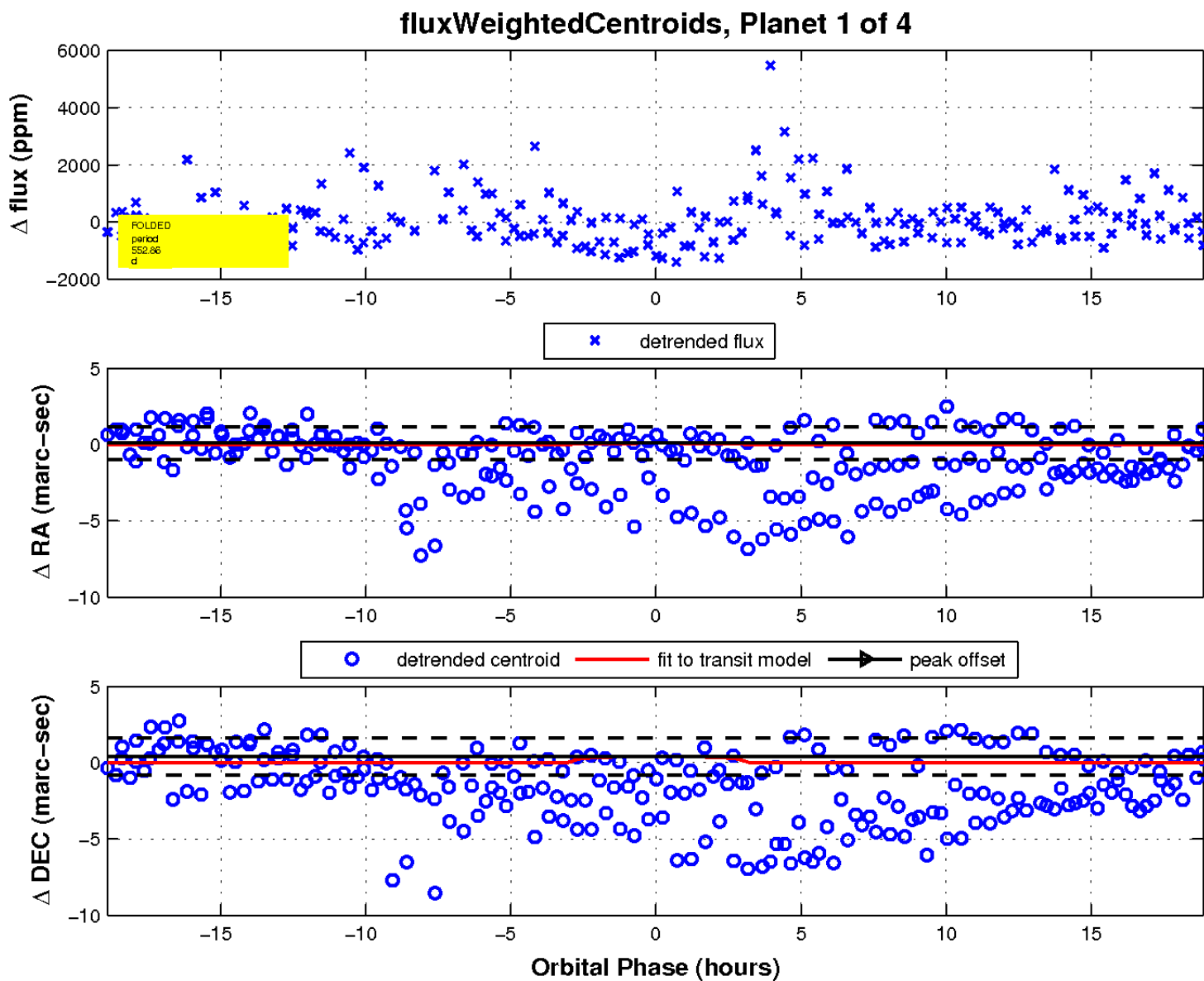
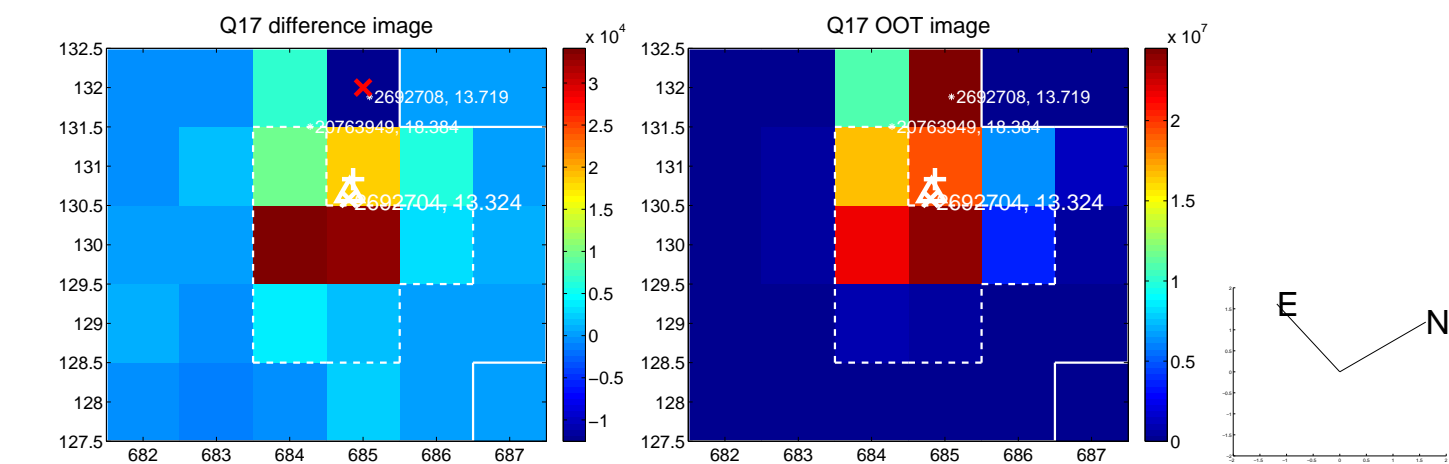
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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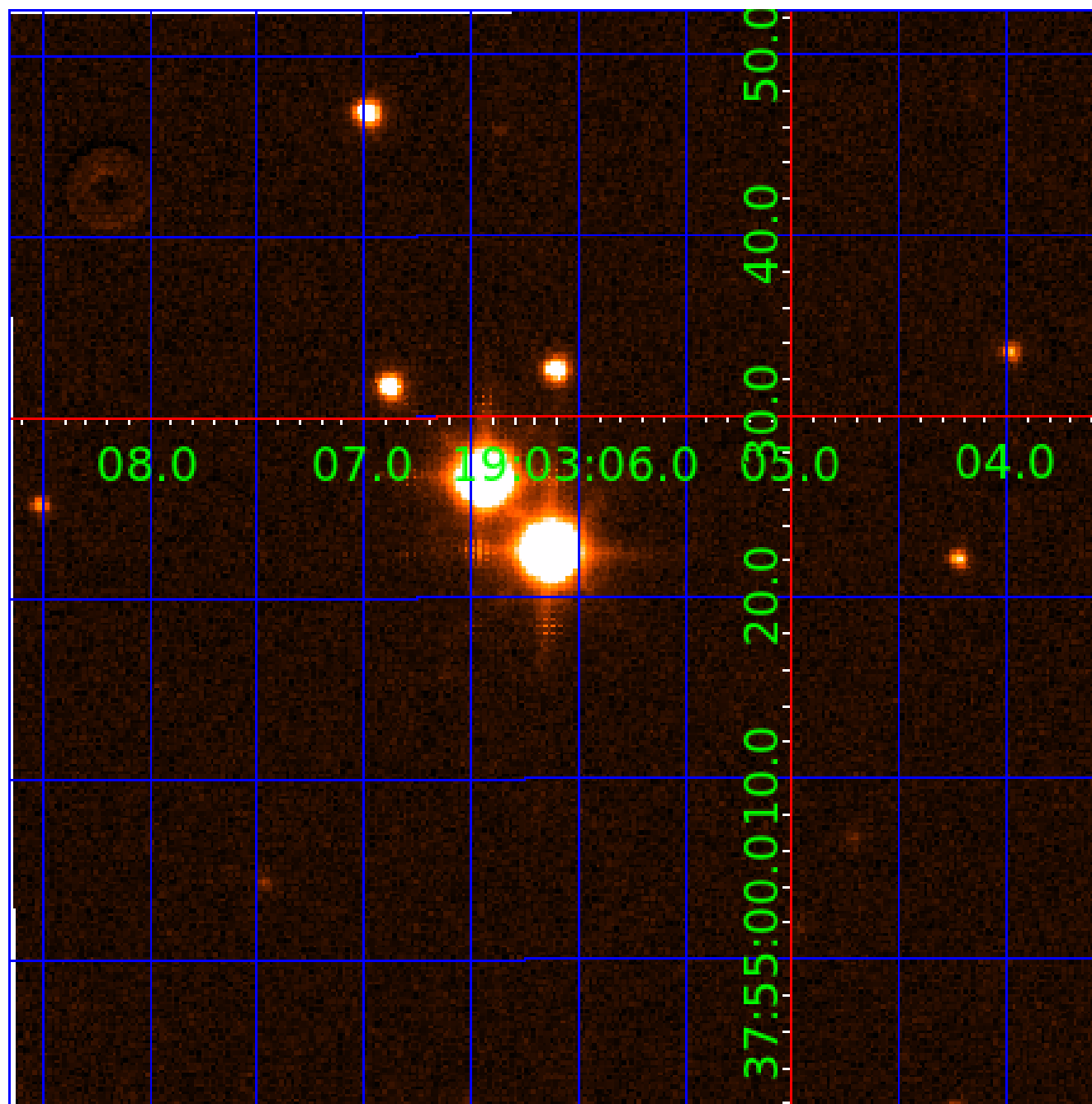


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002692704

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})
002692704-01	OBS	No	552.861883	466.636047	861.8	6.317	13.3	5.4	0.59	3792	1.95	0.05
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002692704-03	OBS	No	335.191770	266.118443	892.4	4.478	11.9	6.0	0.59	3792	1.70	0.10
002692704-04	OBS	No	78.428844	197.709041	230.3	1.771	9.0	2.8	0.59	3792	1.32	0.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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002692704-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
002692704-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
002692704-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

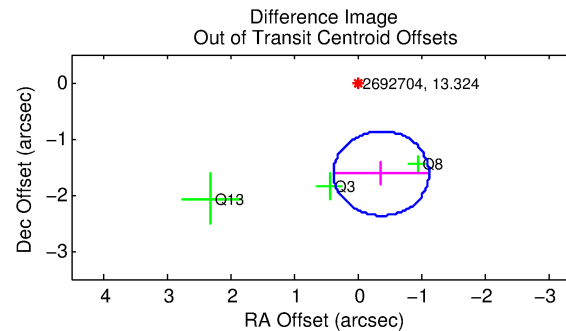
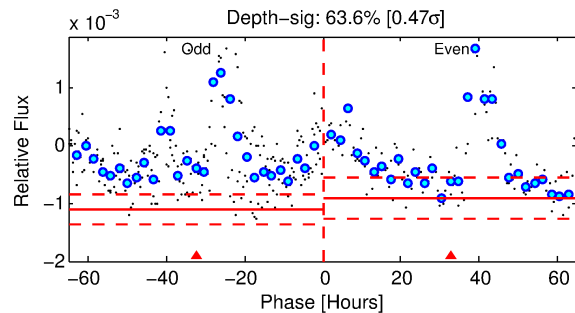
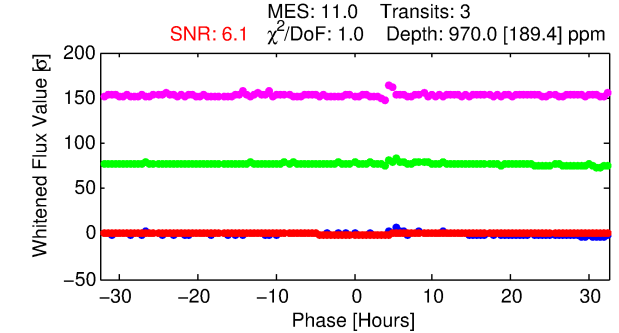
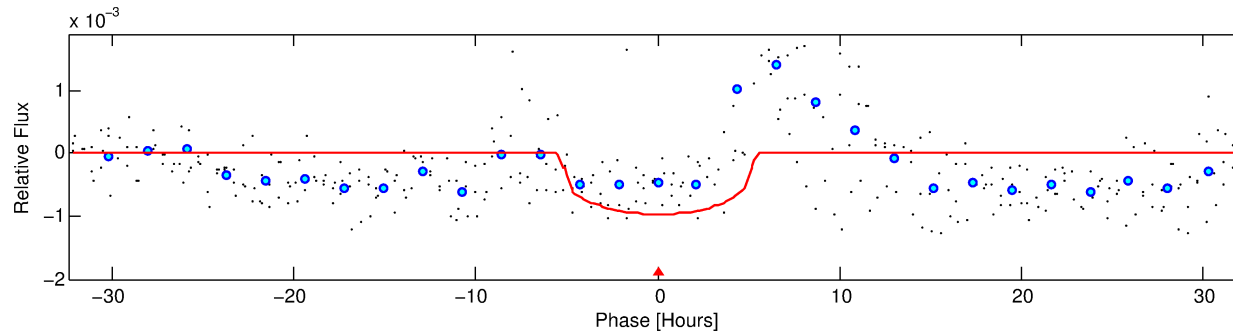
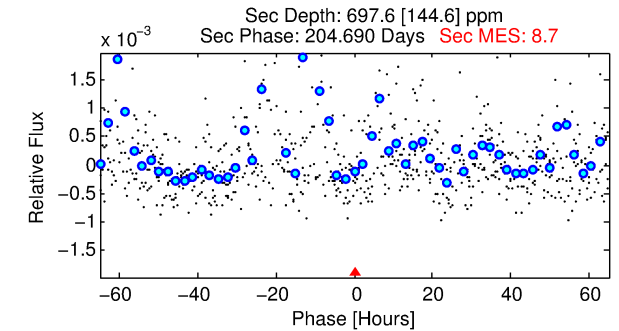
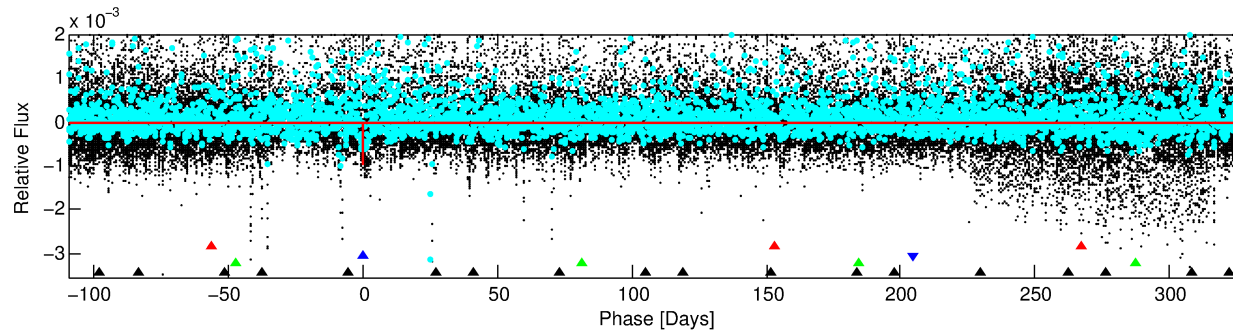
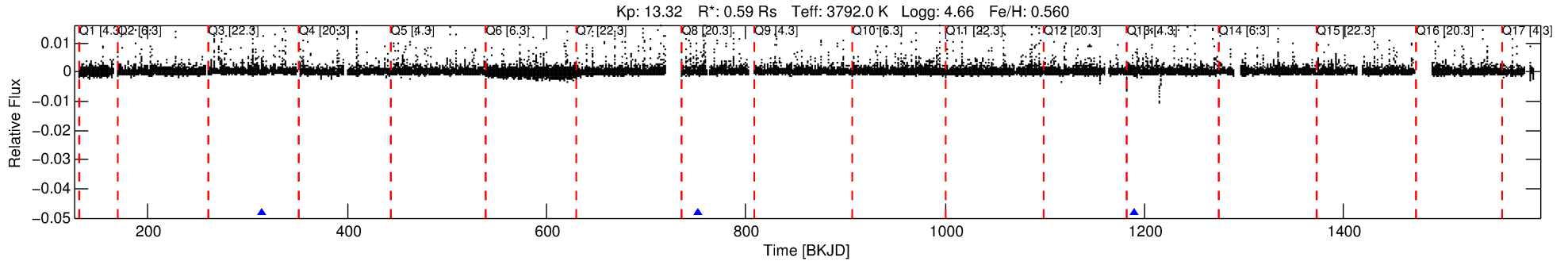
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002692704-02

No Significant Match Found

DV One-Page Summary

KIC: 2692704 Candidate: 2 of 4 Period: 438.339 d



DV Fit Results:

Period = 438.33898 [0.01003] d
Epoch = 313.7684 [0.0109] BKJD
Rp/R* = 0.0299 [0.0201]
a/R* = 247.09 [529.19]
b = 0.65 [1.93]
Seff = 0.07 [0.02]
Teq = 132 [7] K
Rp = 1.94 [1.33] Re
a = 0.9494 [0.0956] AU
Ag = 92115.07 [126194.16] [0.73σ]
Teffp = 3564 [1222] K [2.81σ]

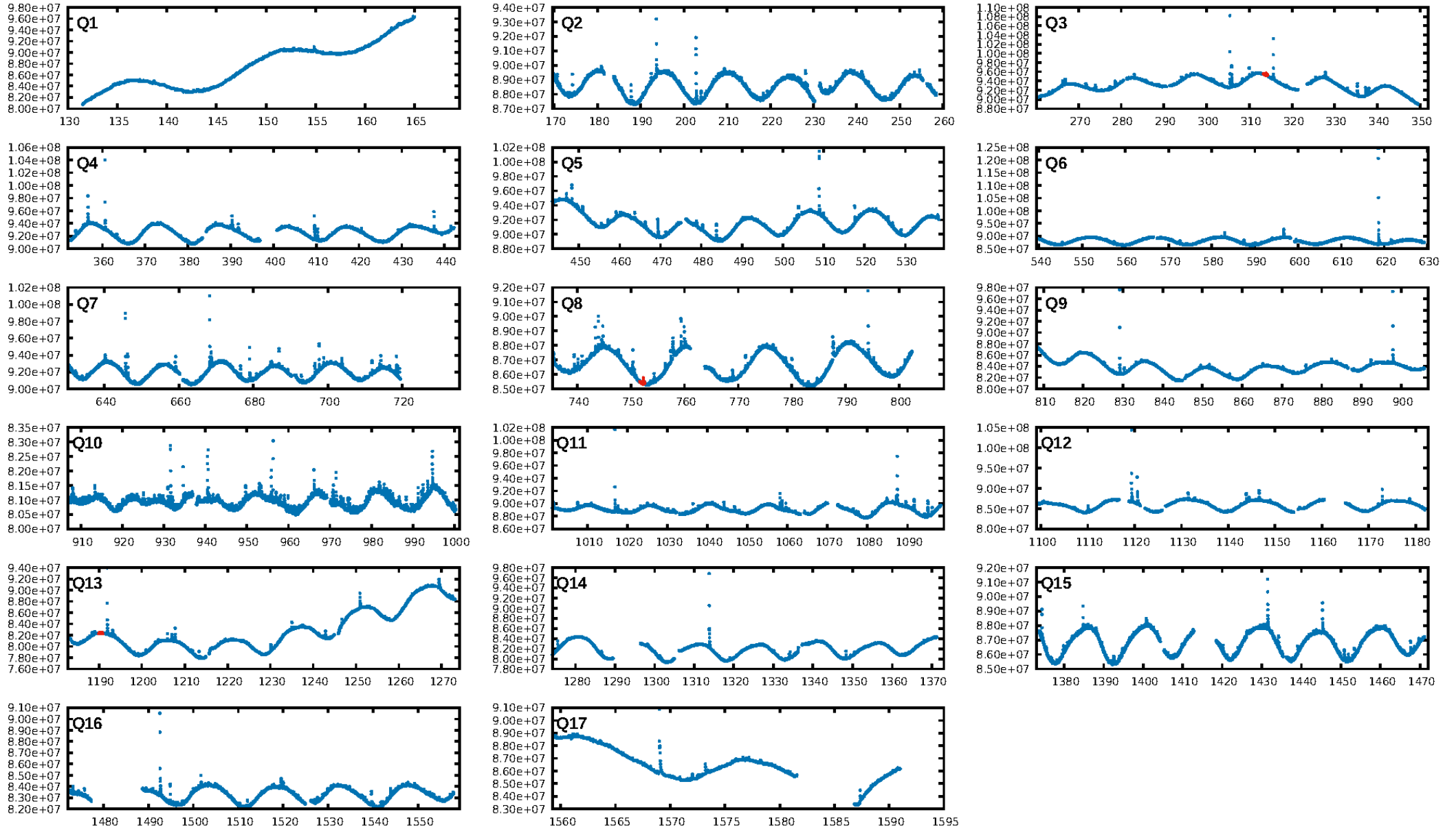
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [211.69σ]
LongPeriod-sig: 100.0% [219.64σ]
ModelChiSquare2-sig: 29.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.55e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.4326
Centroid-sig: 14.7%
Centroid-so: 0.953 arcsec [0.72σ]
OotOffset-rm: 1.663 arcsec [6.64σ]
KicOffset-rm: 0.886 arcsec [1.24σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

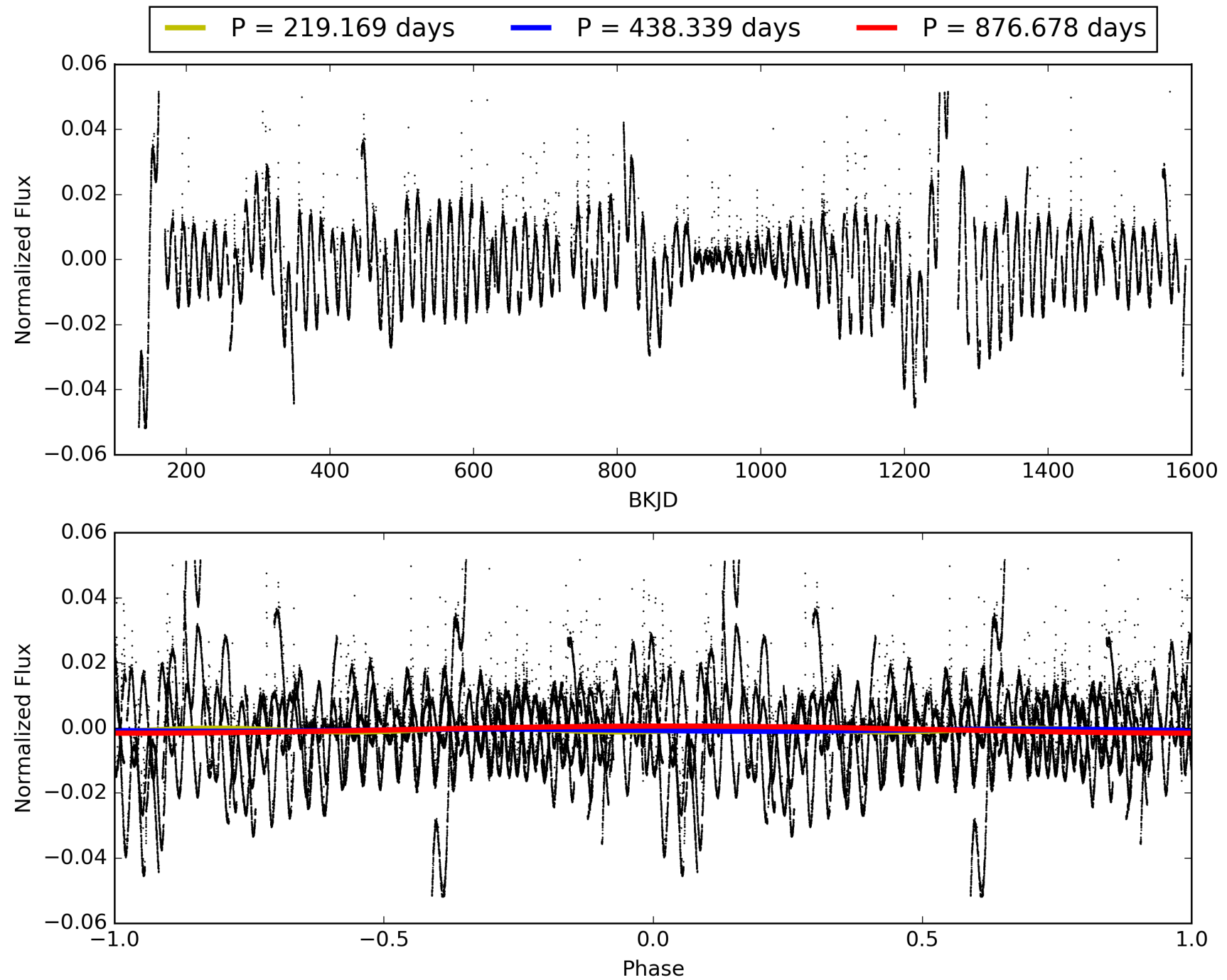
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:44:01 Z

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

TCE 002692704-02, PDC Light Curves

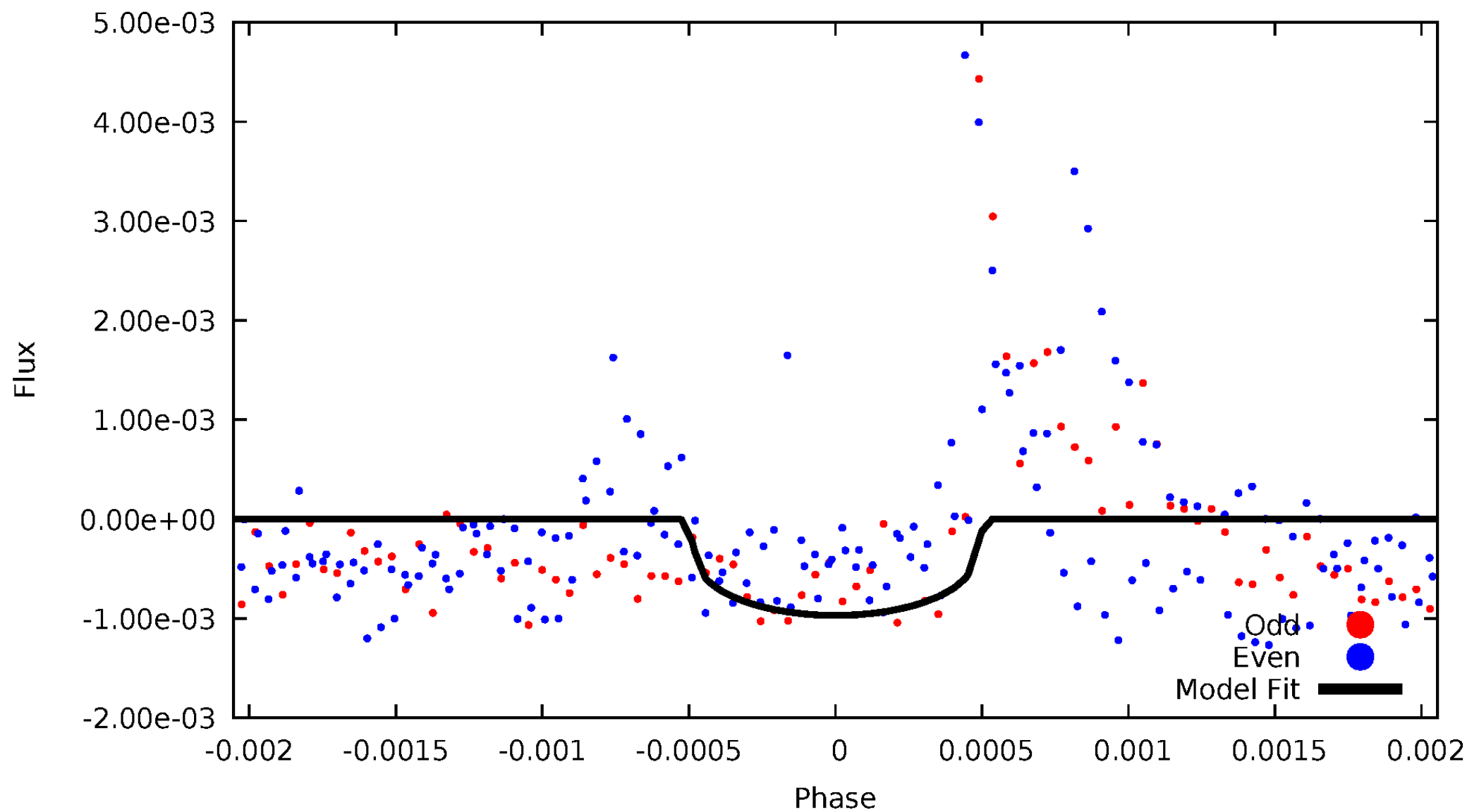


TCE 002692704-02



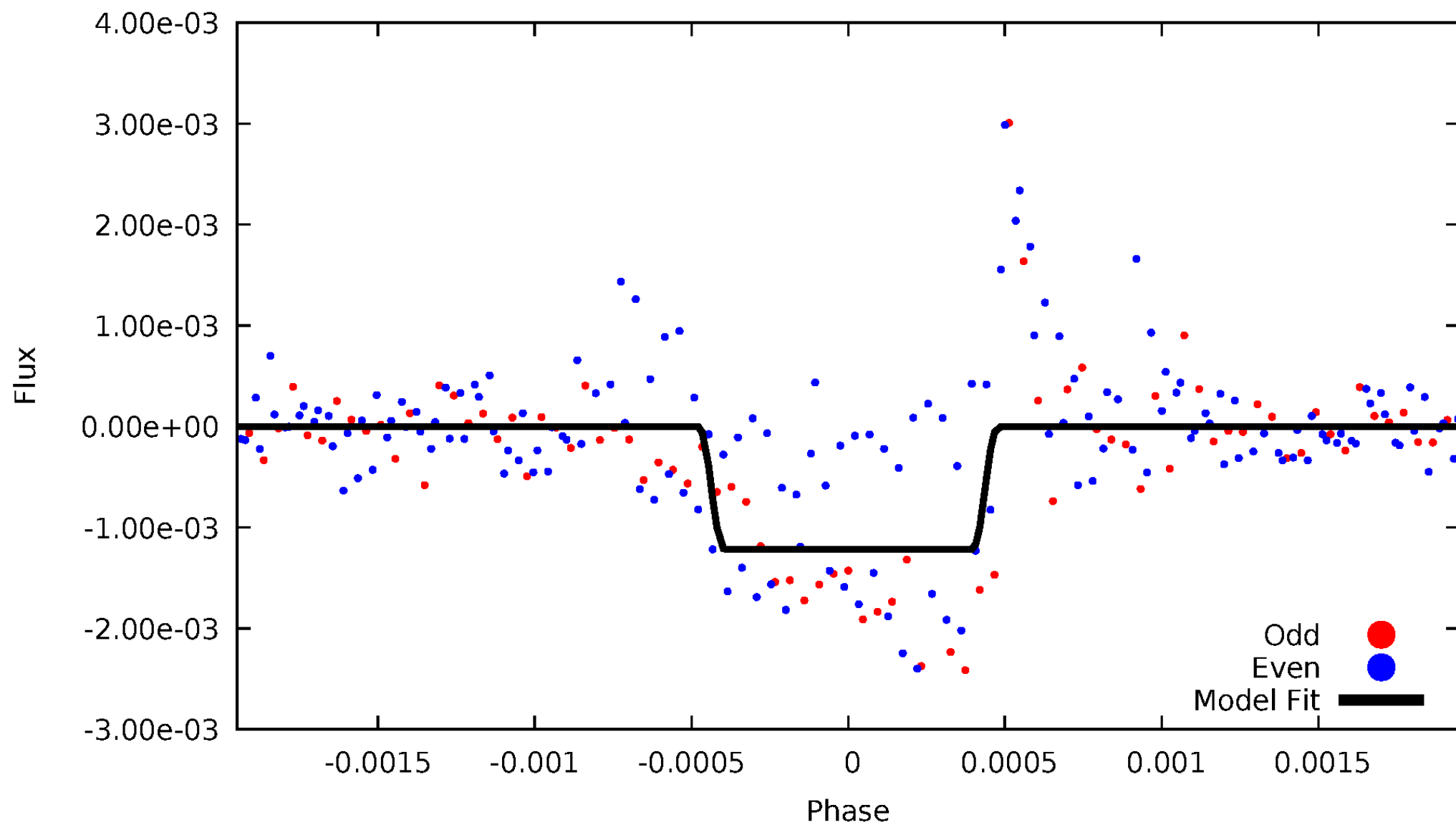
DV Odd/Even

TCE 002692704-02



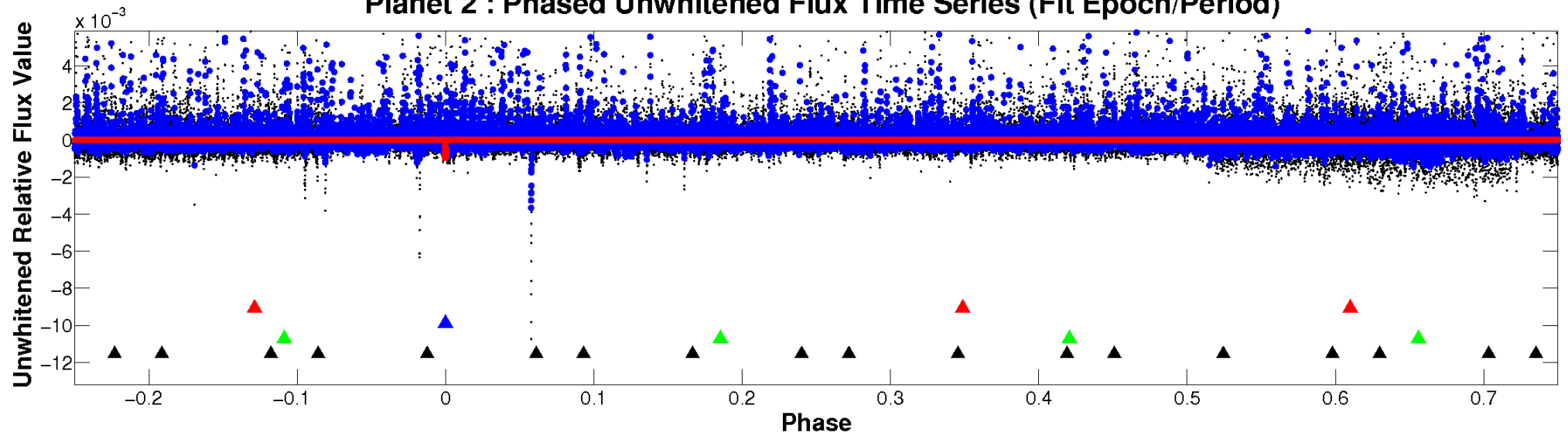
ALT Odd/Even

TCE 002692704-02

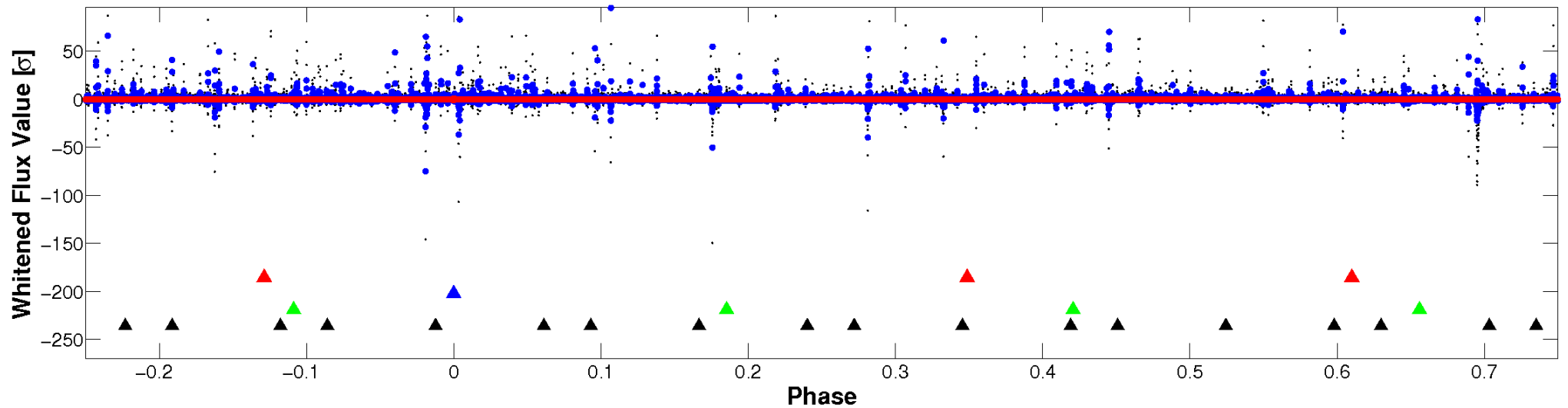


Non-Whitened Vs. Whitened Light Curve

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

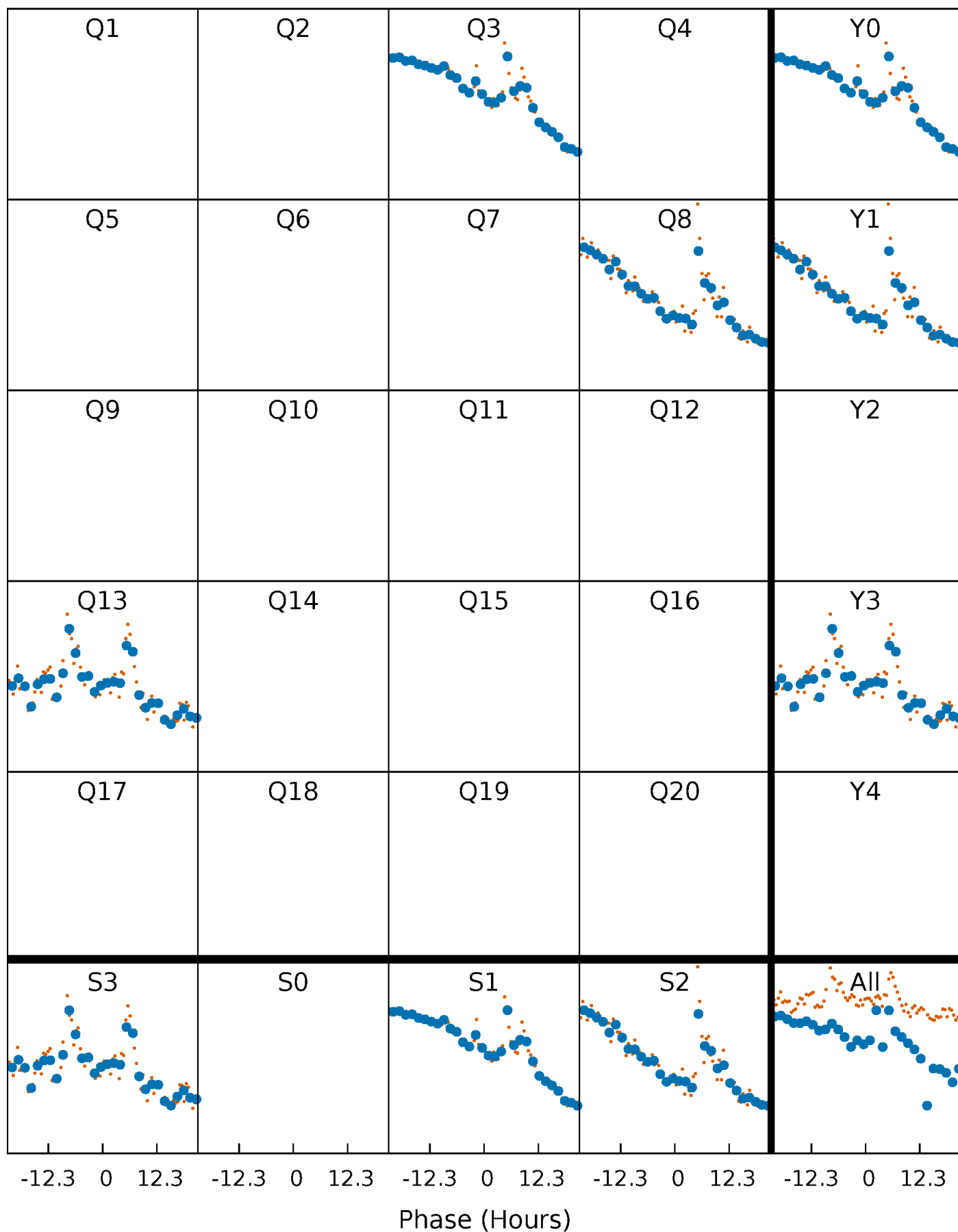


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



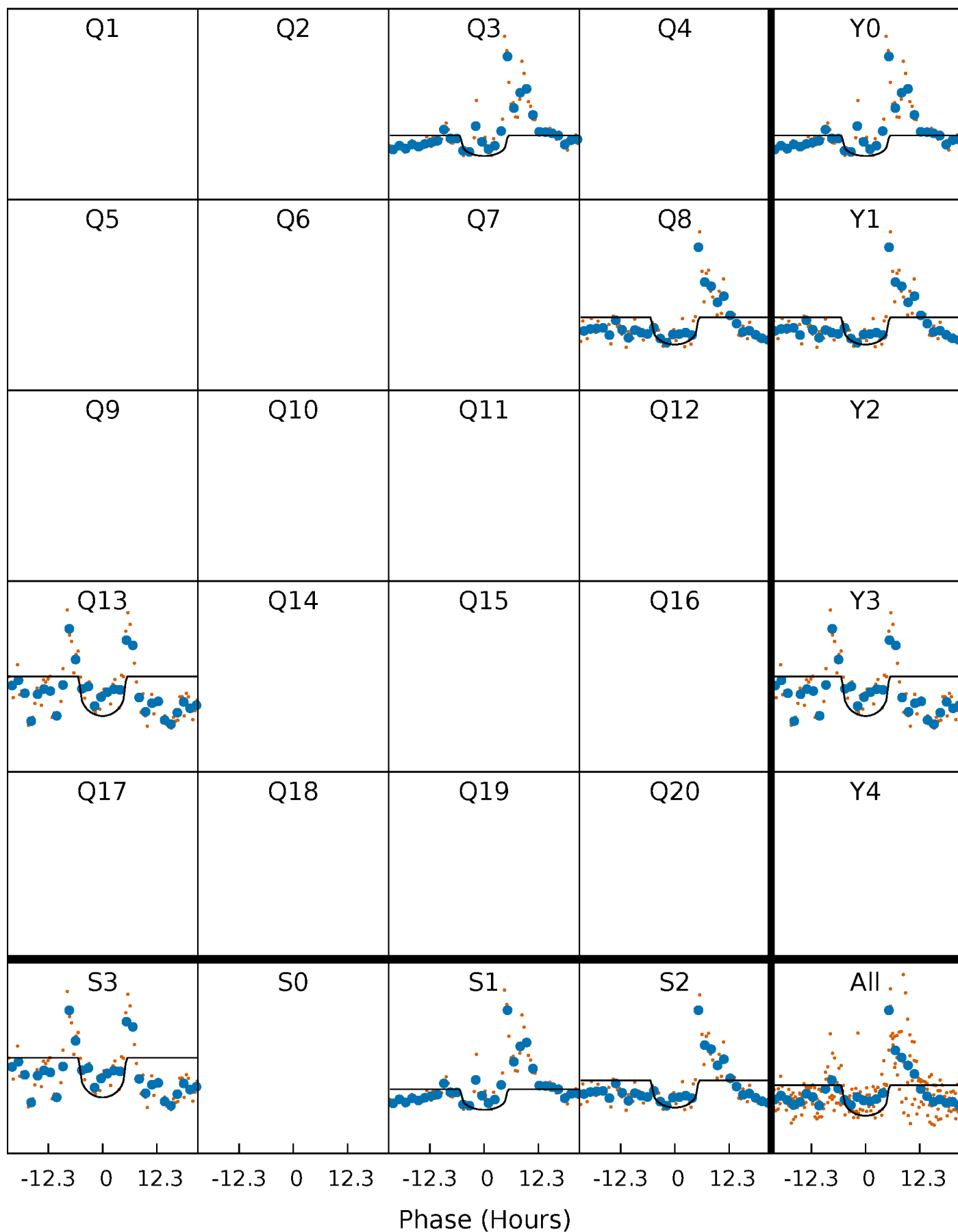
PDC Quarter-Phased Transit Curves

TCE 002692704-02 $P=438.338978$ Days $T_0=313.768366$ (BKJD)



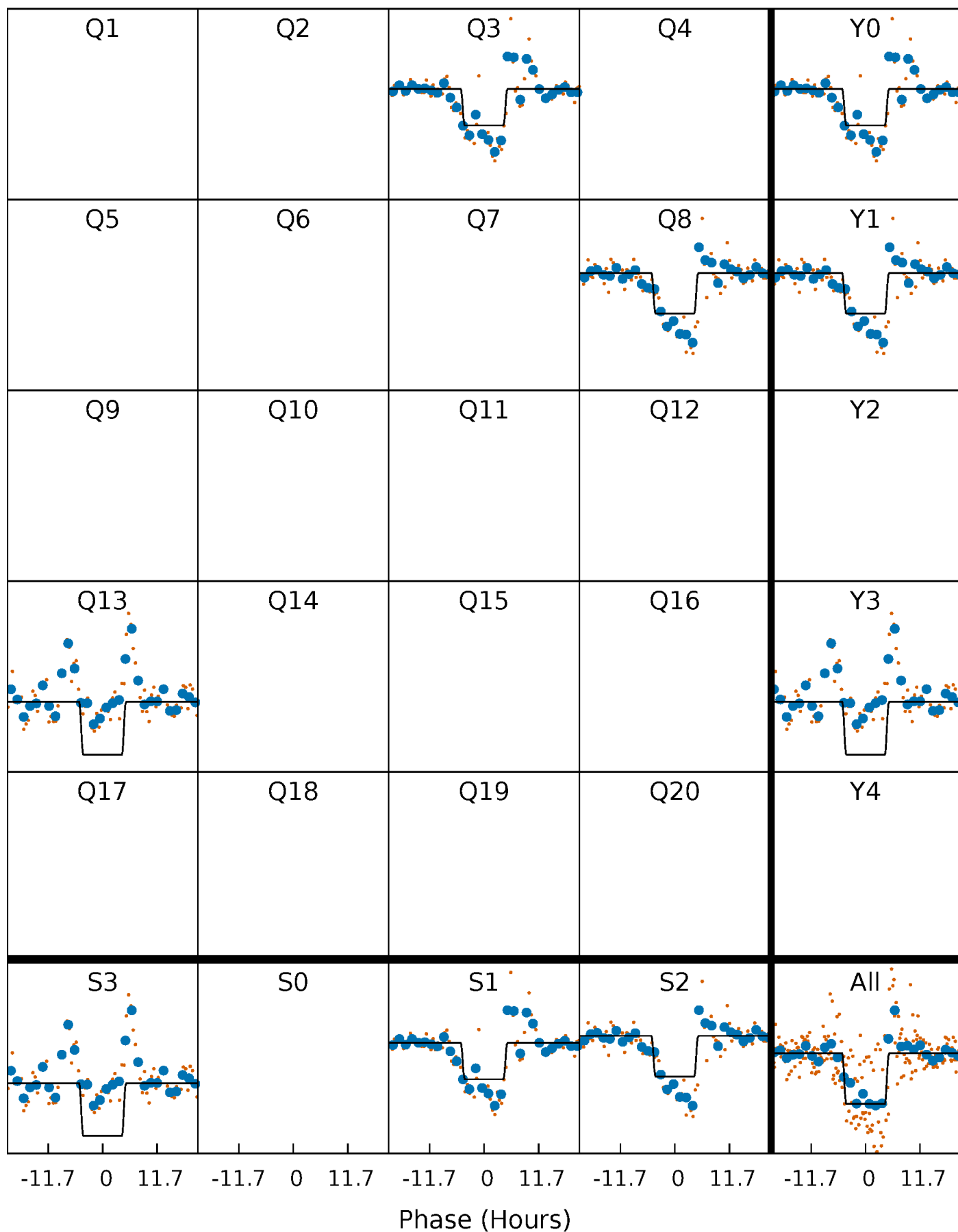
DV Quarter-Phased Transit Curves

TCE 002692704-02 $P=438.338978$ Days $T_0=313.768366$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

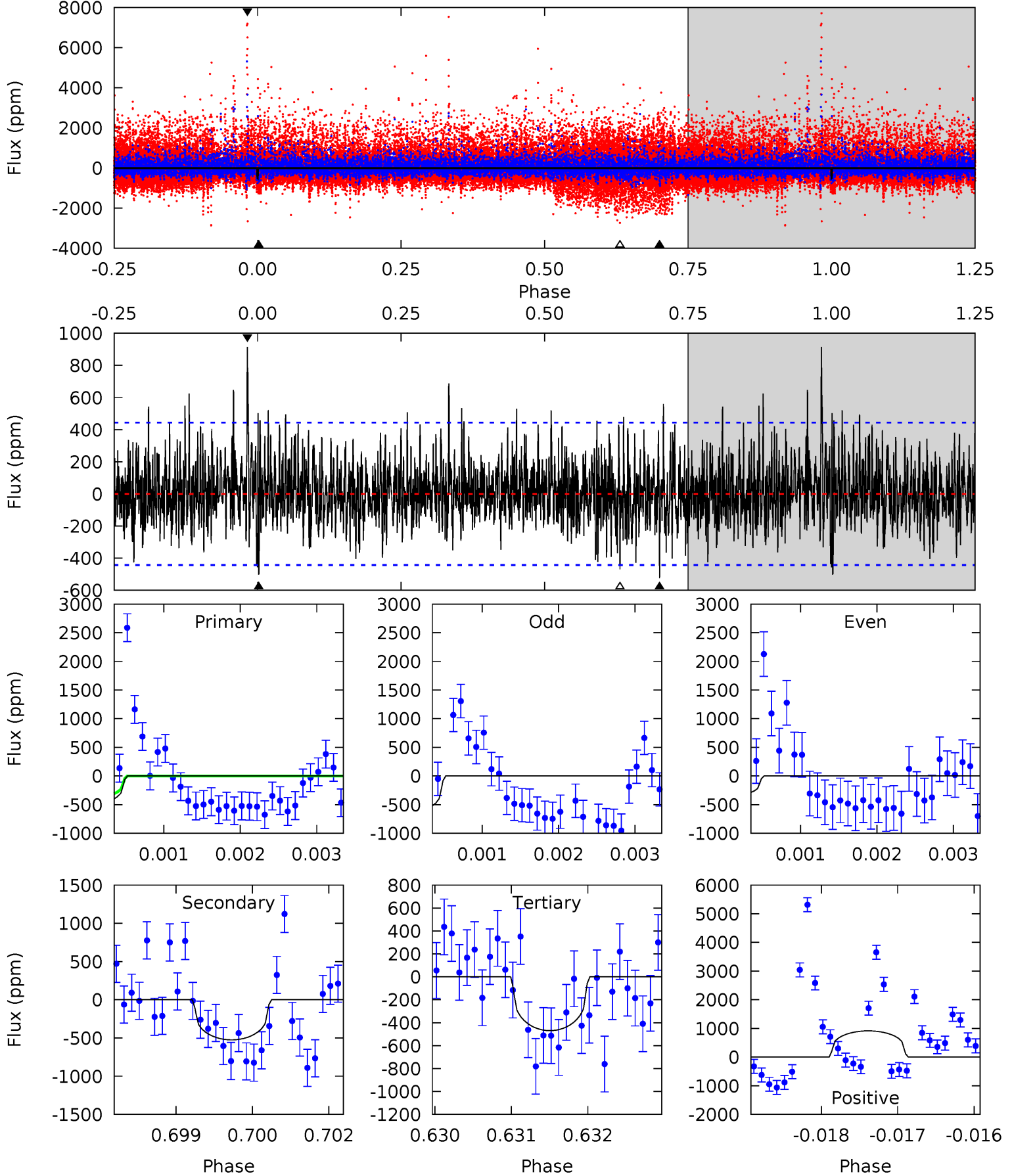
TCE 002692704-02 $P=438.354352$ Days $T_0=313.743362$ (BKJD)



DV Model-Shift Uniqueness Test

002692704-02, P = 438.338978 Days, E = 313.768366 Days

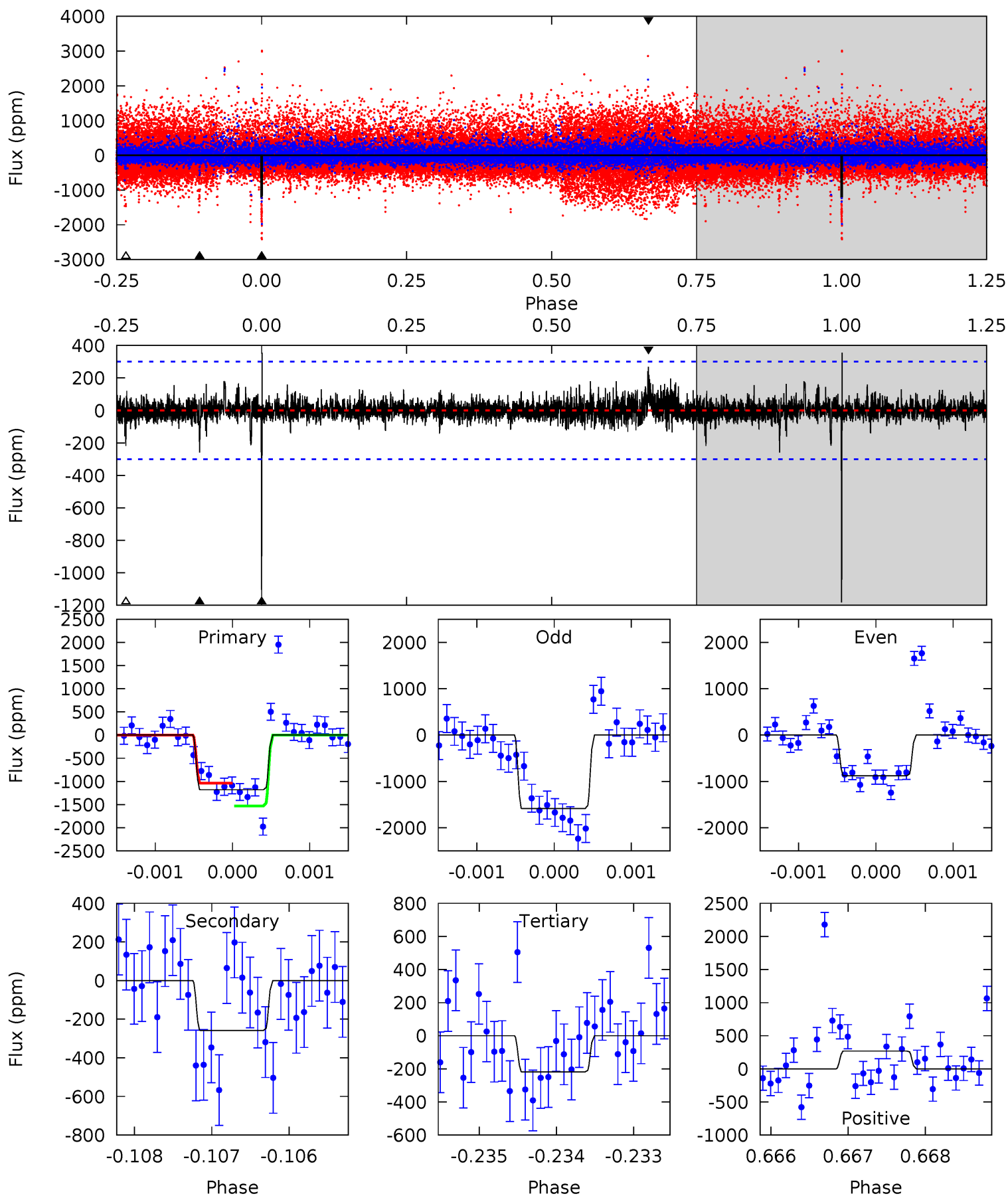
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.17	6.45	5.77	11.2	5.45	3.28	1.96	0.40	-5.06	0.68	-4.78	0.88	0.87	0.64	1.65



Alt Model-Shift Uniqueness Test

002692704-02, P = 438.354352 Days, E = 313.743362 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.5	4.69	3.97	4.88	5.46	3.31	0.76	17.5	16.6	0.72	-0.18	5.33	0.70	0.23	4.43



Stellar Parameters For KIC 002692704

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3792^{+120}_{-147}	$4.664^{+0.072}_{-0.018}$	$0.560^{+0.050}_{-0.300}$	$0.594^{+0.028}_{-0.075}$	$0.594^{+0.040}_{-0.060}$	$3.990^{+1.358}_{-0.371}$
	+3%/-4%	+2%/-0%	+9%/-54%	+5%/-13%	+7%/-10%	+34%/-9%
Source	KIC0	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 002692704-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-525 ± 81	$1.94^{+1.25}_{-1.12}$	183^{+7}_{-8}	3424^{+1295}_{-482}	$66192^{+319683}_{-41539}$
Alt.	-258 ± 55	$2.35^{+1.16}_{-1.26}$	182^{+7}_{-8}	2940^{+777}_{-334}	23466^{+79350}_{-13436}

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

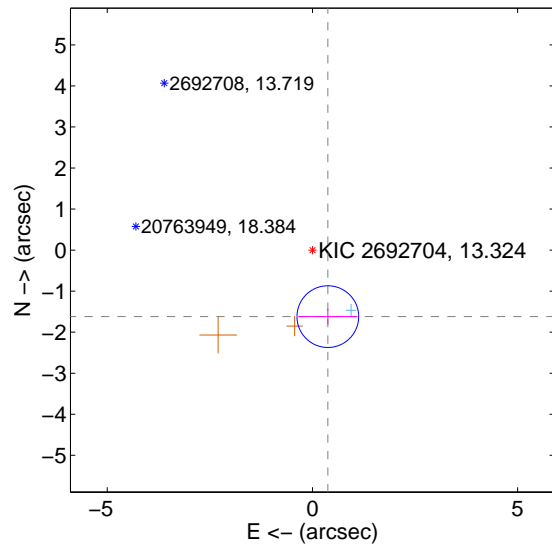
Supplemental centroid analysis for 002692704-02. Kepler magnitude: 13.32. Transit SNR 6.10

There are 1 quarters with good PRF difference image offsets

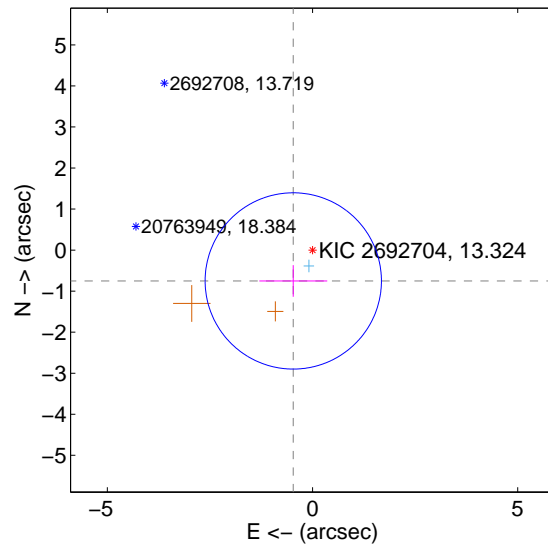
The direct PRF centroid is offset from the target star catalog position by about 1.00 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.663 ± 0.251	6.64	-0.375 ± 0.723	-1.621 ± 0.195
PRF-fit source offset from KIC position	0.886 ± 0.716	1.24	0.469 ± 0.828	-0.751 ± 0.385
photometric centroid source offset	0.95 ± 1.32	0.72	0.60 ± 1.21	-0.74 ± 1.39

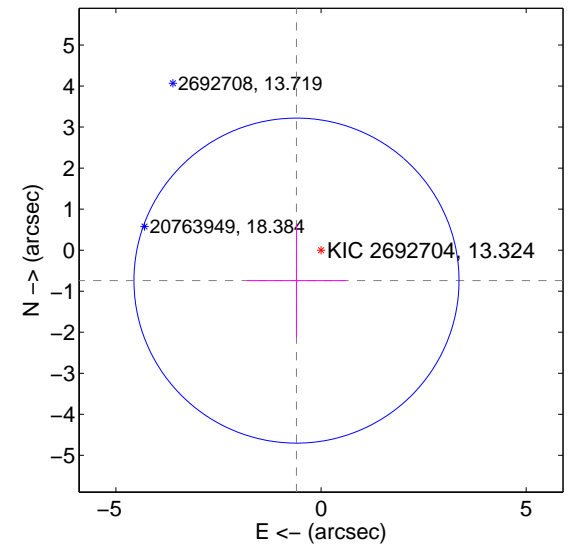
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

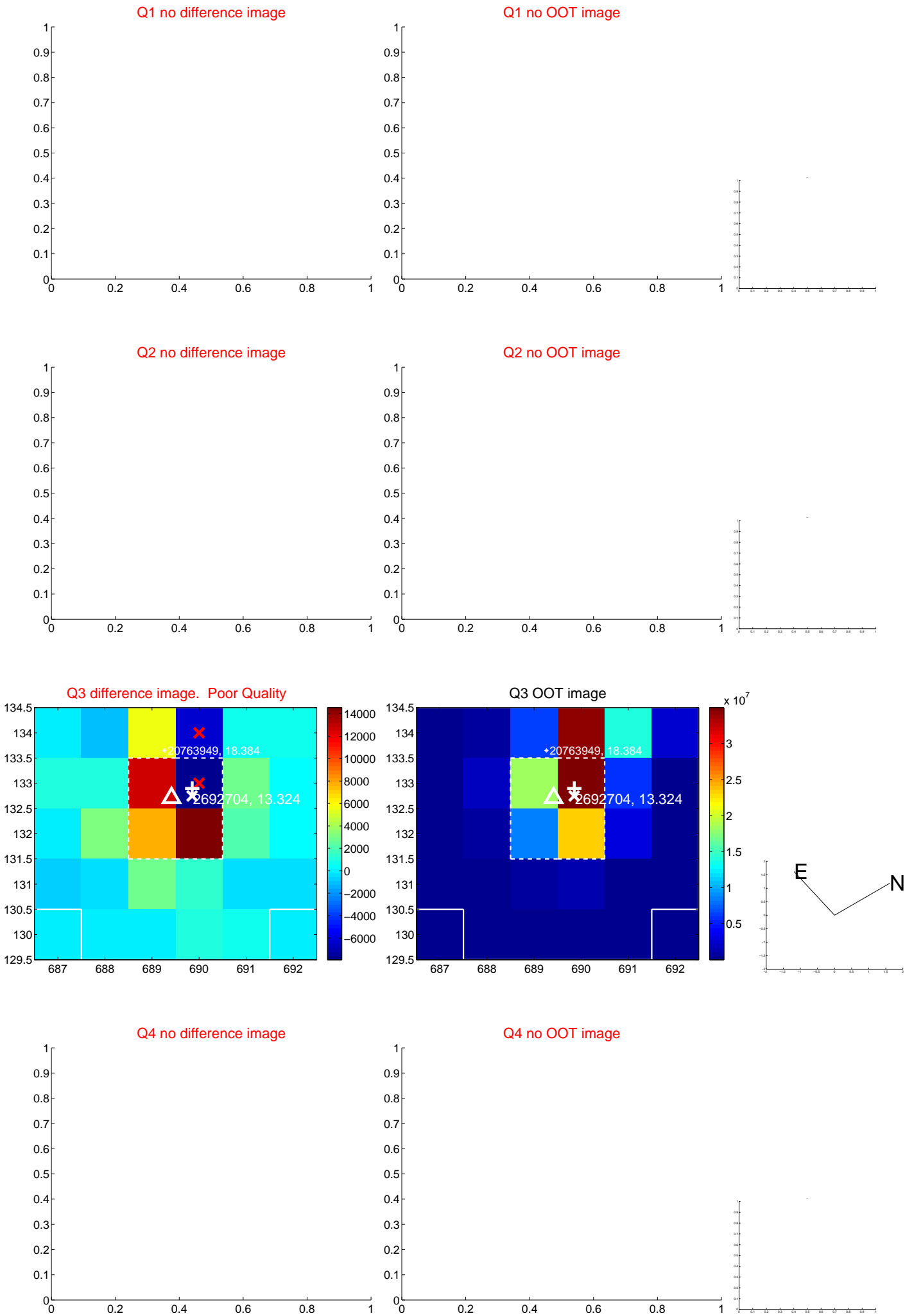


offset from photometric centroids

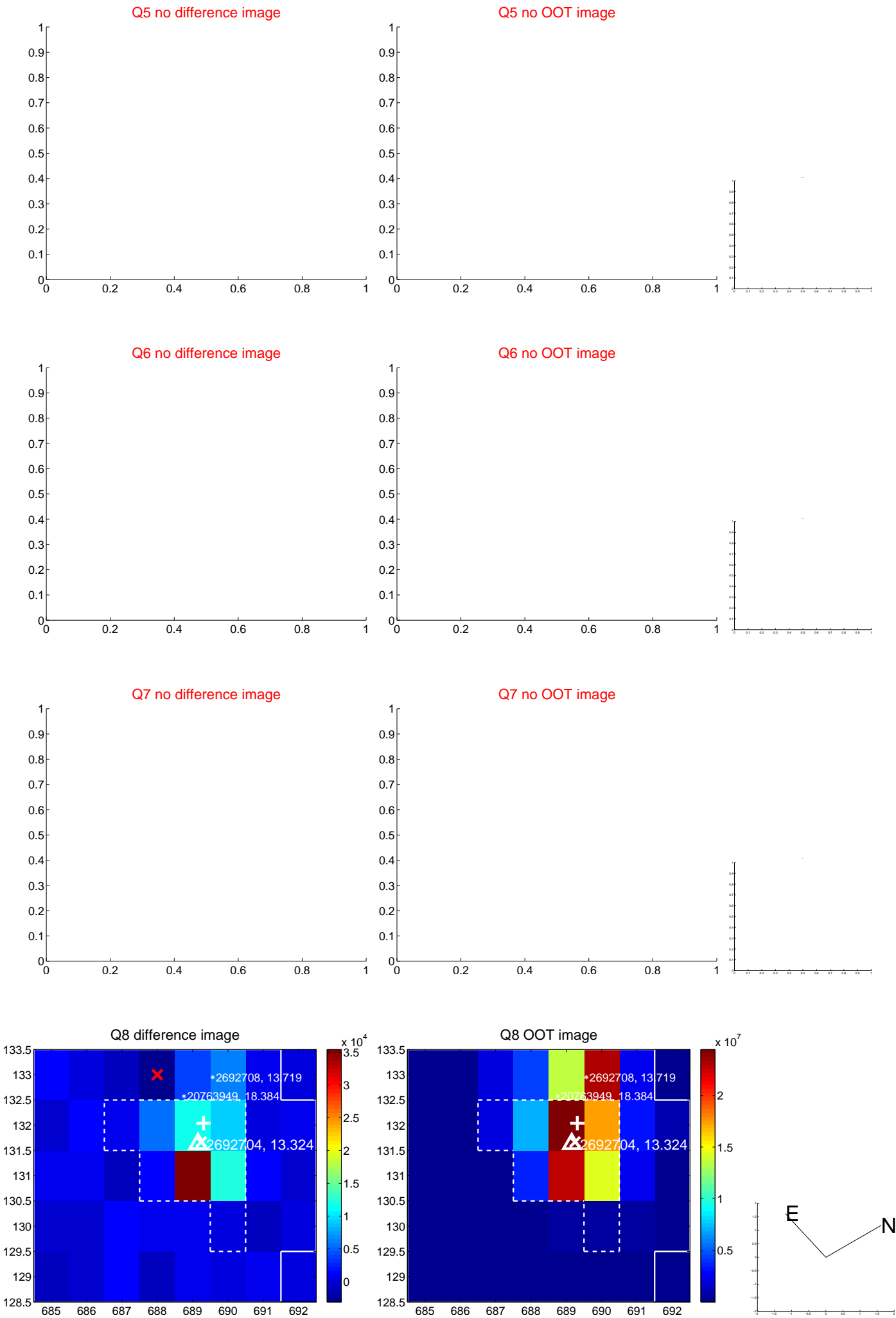


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

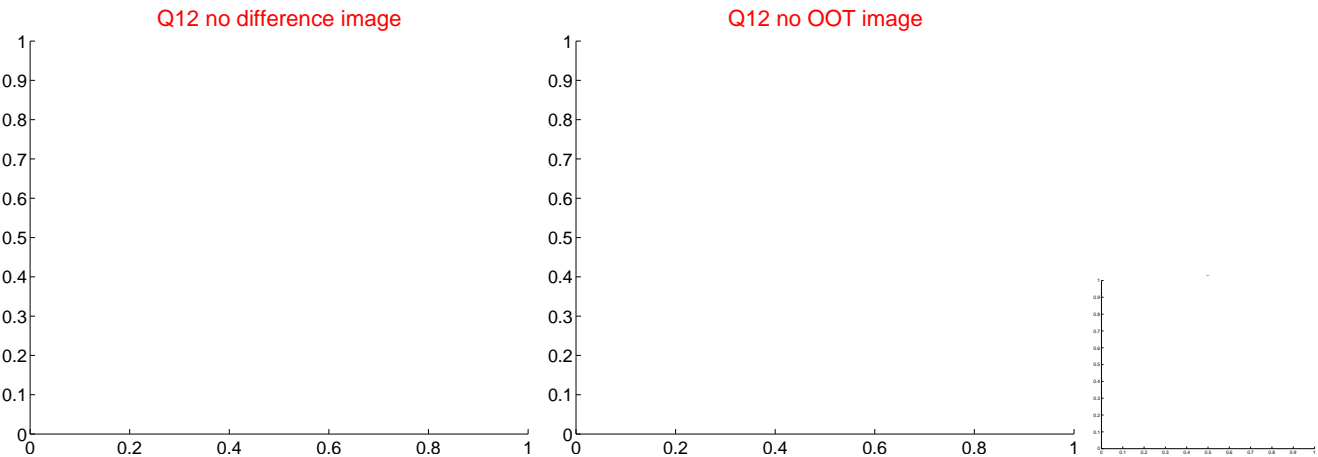
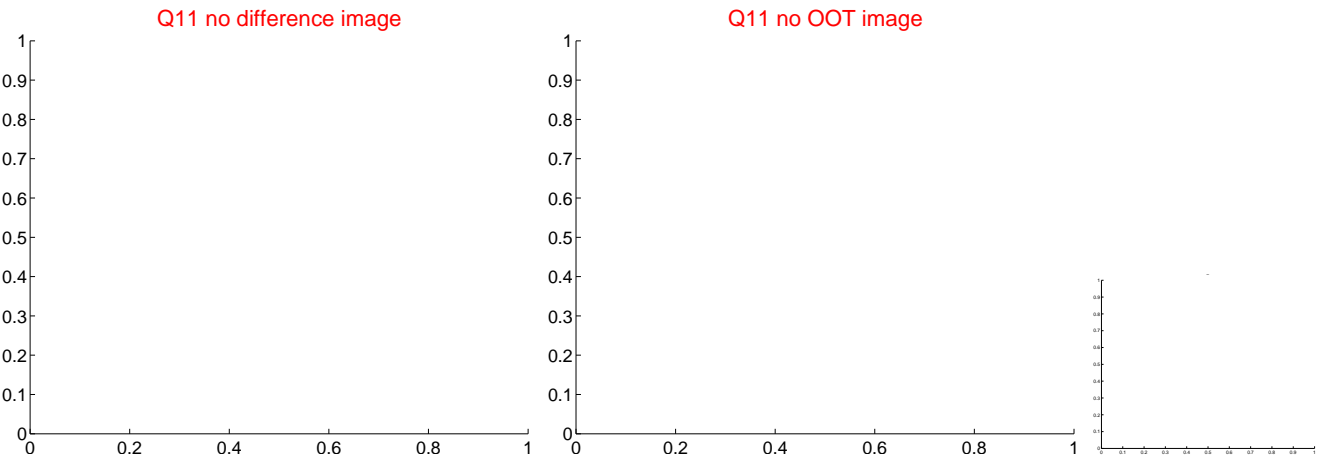
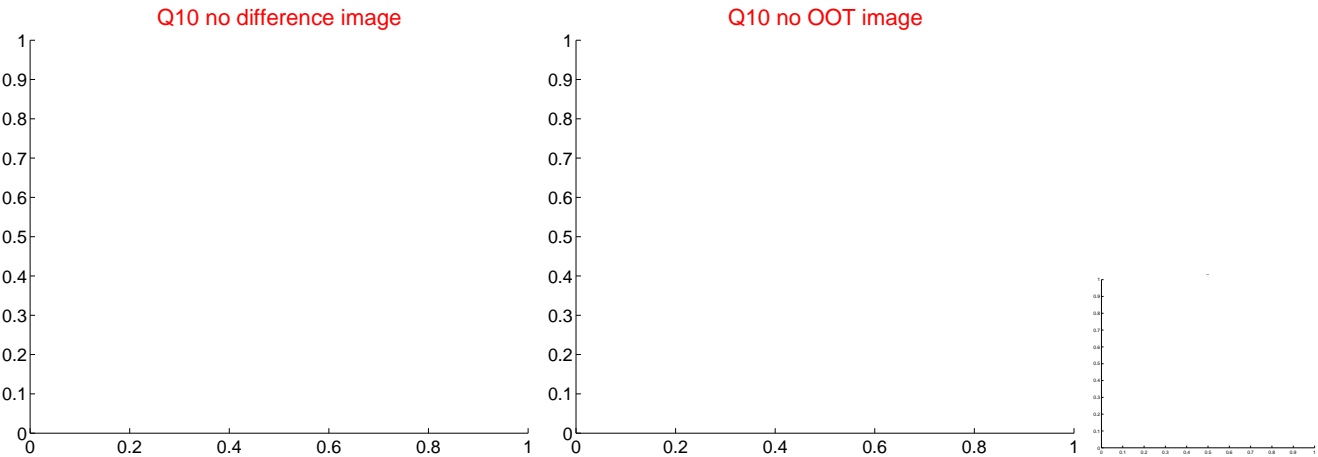
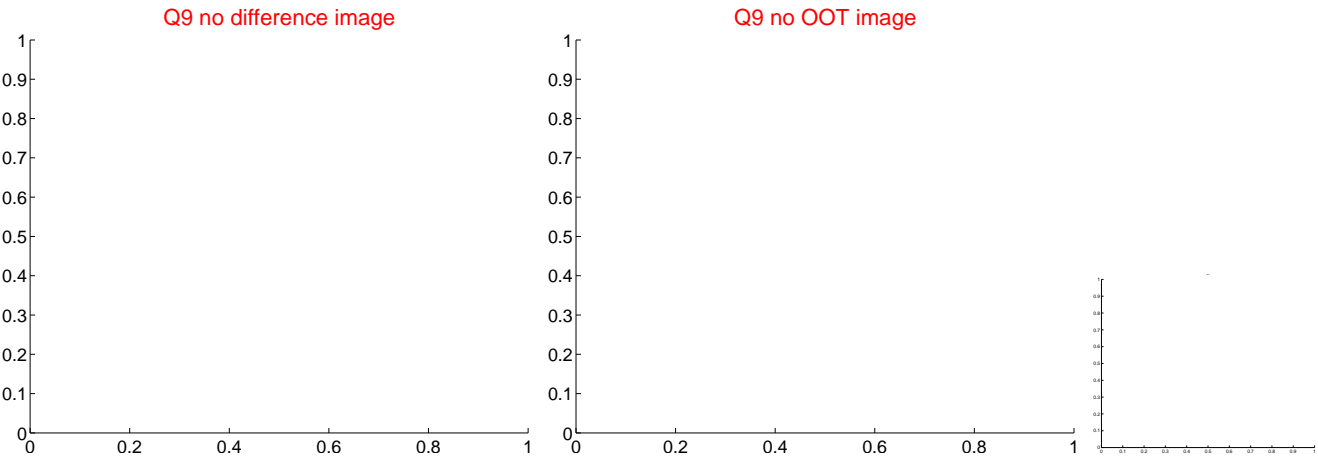
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



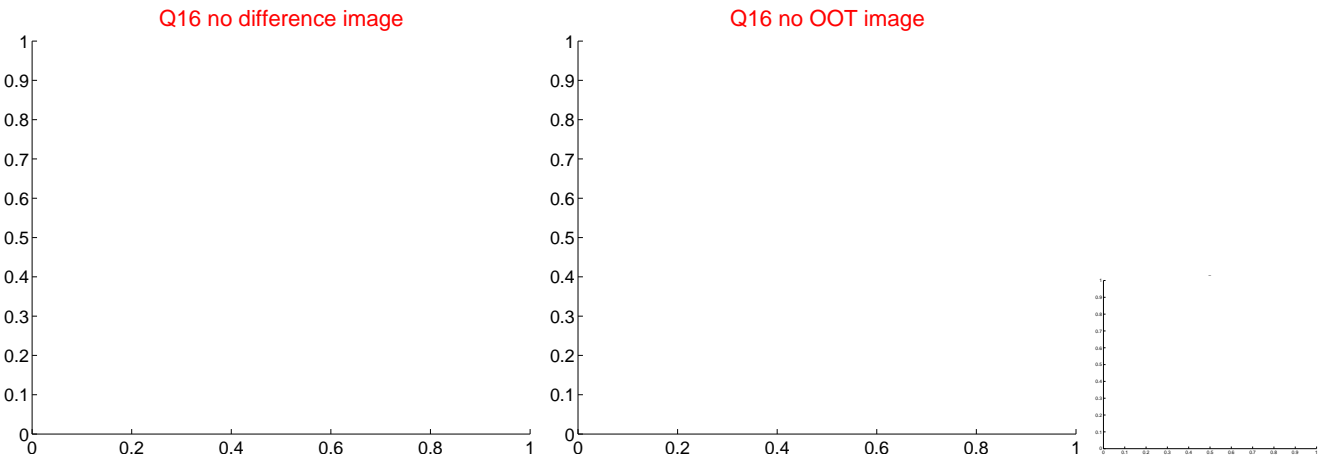
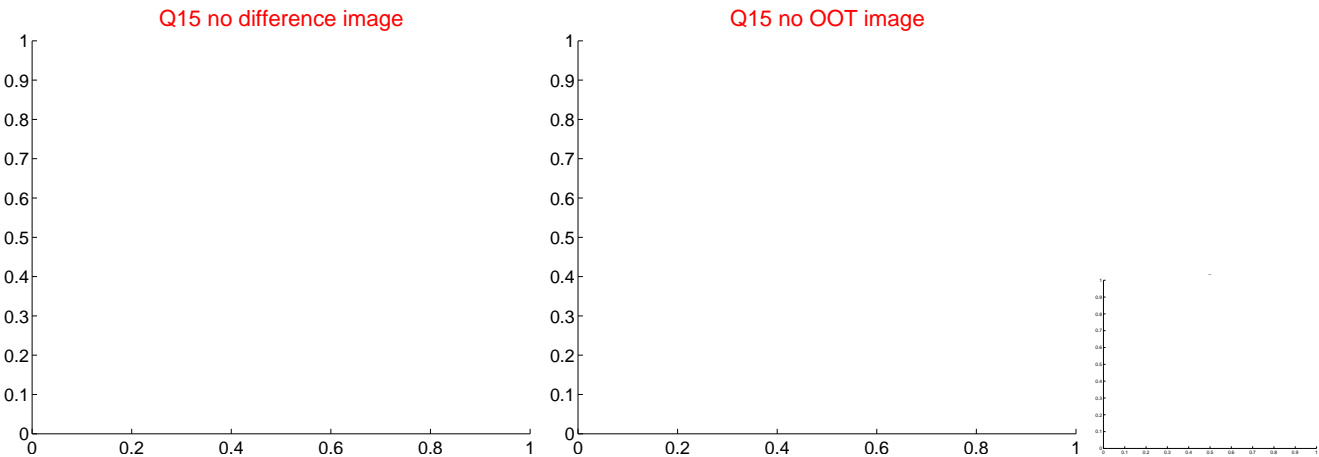
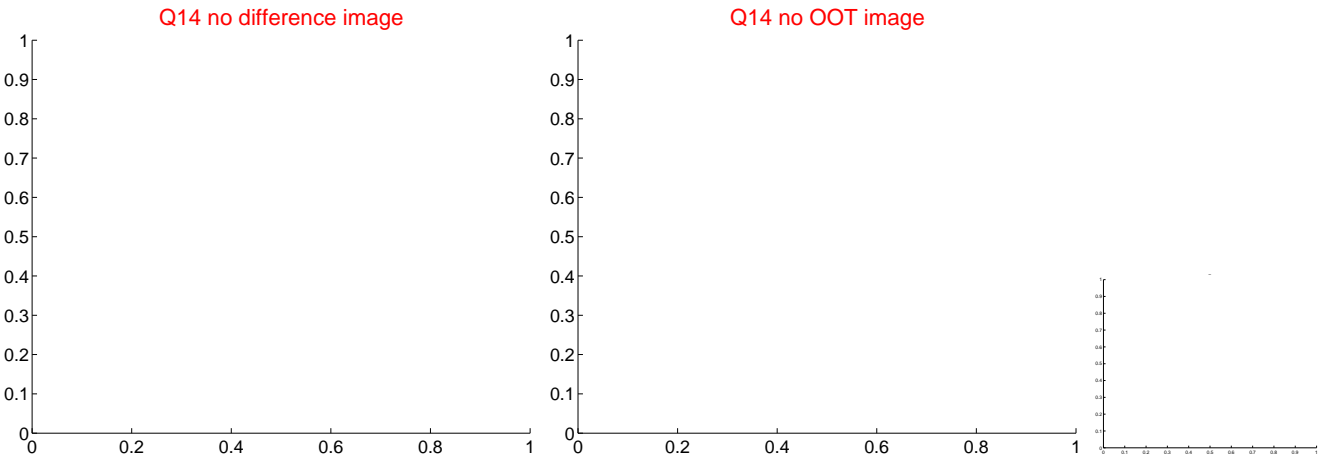
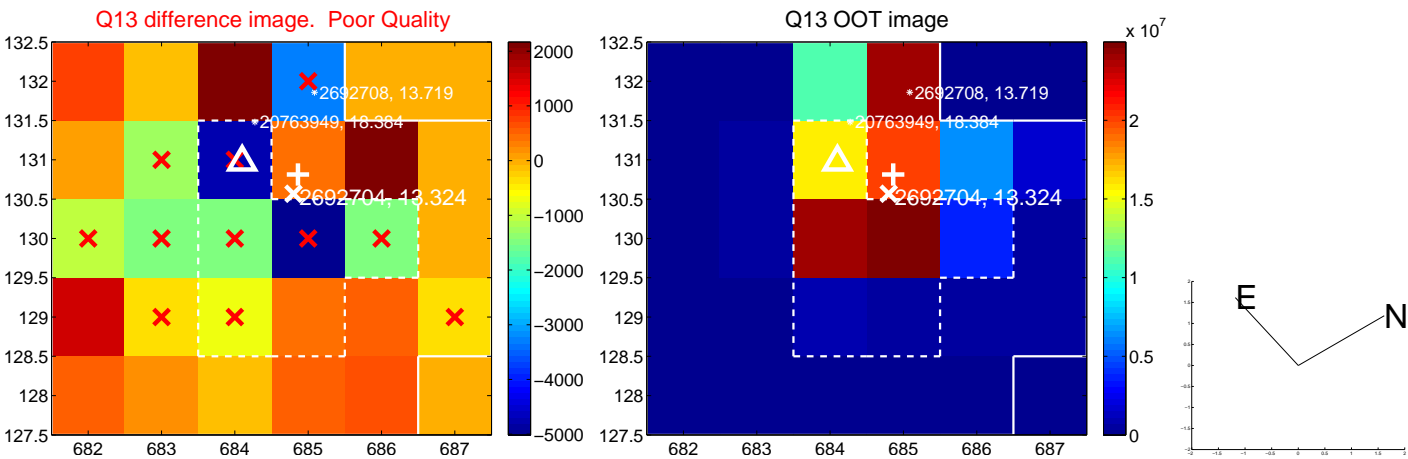
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



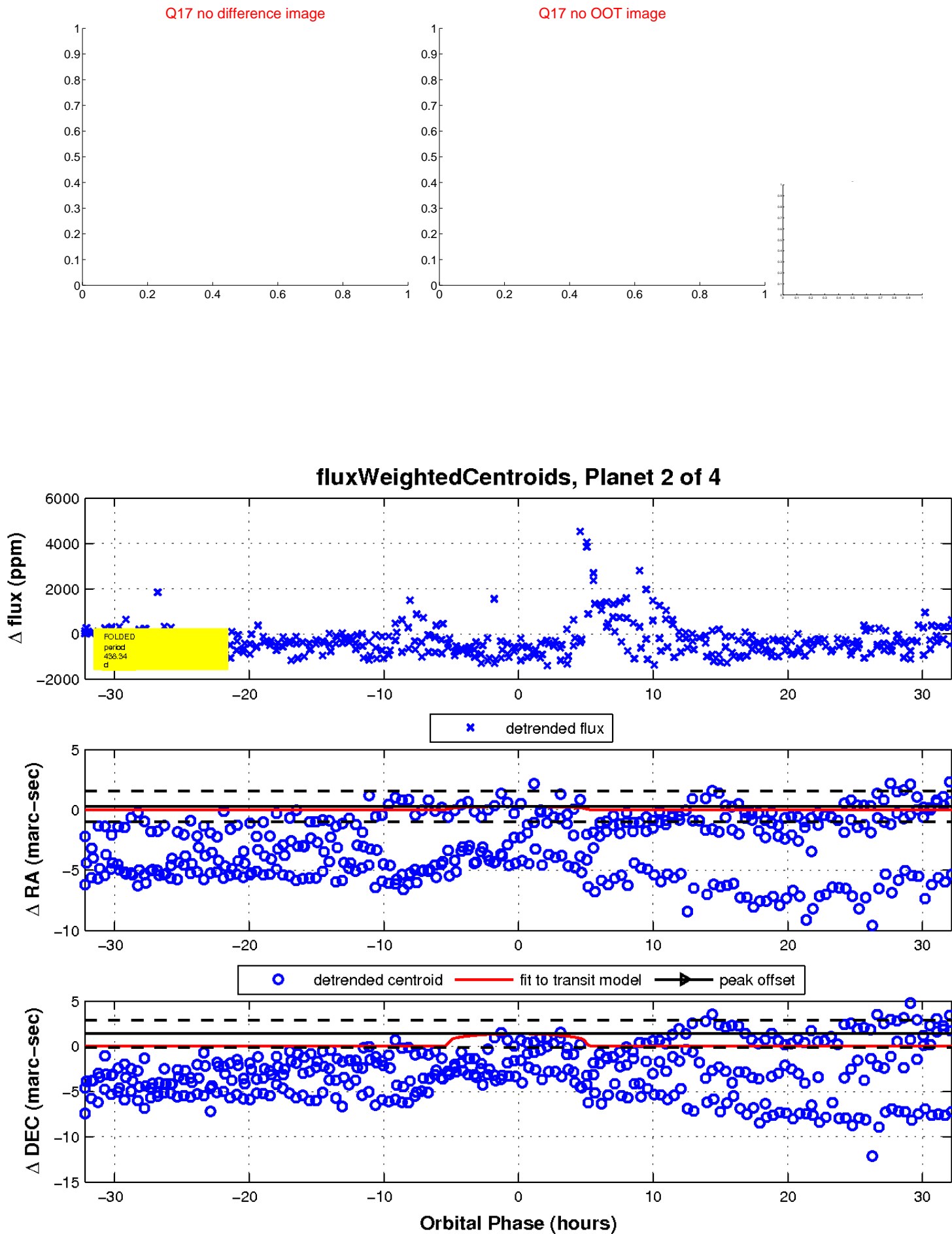
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

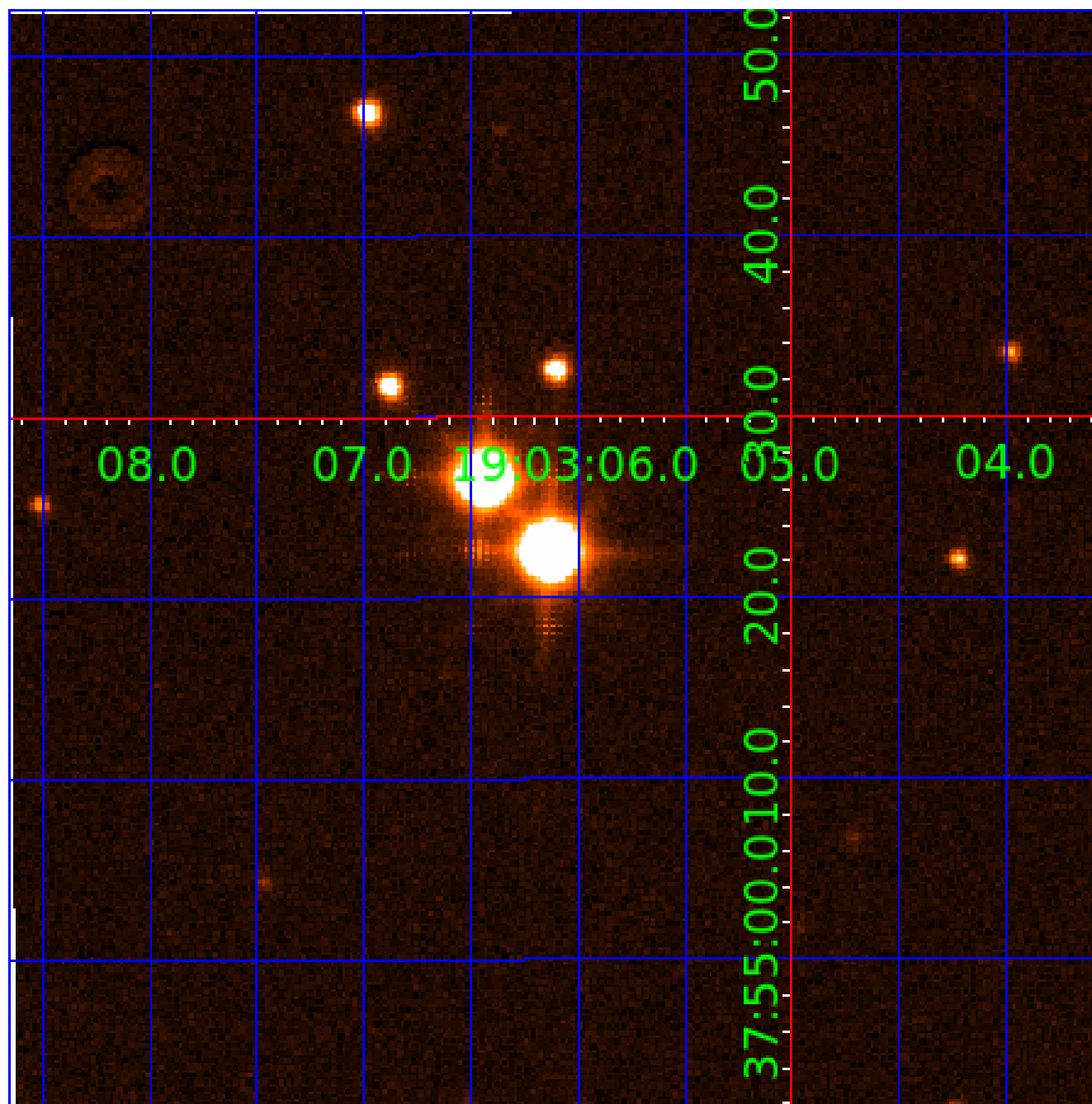


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002692704

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})
002692704-01	OBS	No	552.861883	466.636047	861.8	6.317	13.3	5.4	0.59	3792	1.95	0.05
002692704-02	OBS	No	438.338978	313.768366	970.0	10.803	11.0	6.1	0.59	3792	1.94	0.07
002692704-03	OBS	No	335.191770	266.118443	892.4	4.478	11.9	6.0	0.59	3792	1.70	0.10
002692704-04	OBS	No	78.428844	197.709041	230.3	1.771	9.0	2.8	0.59	3792	1.32	0.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002692704-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
002692704-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
002692704-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
002692704-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

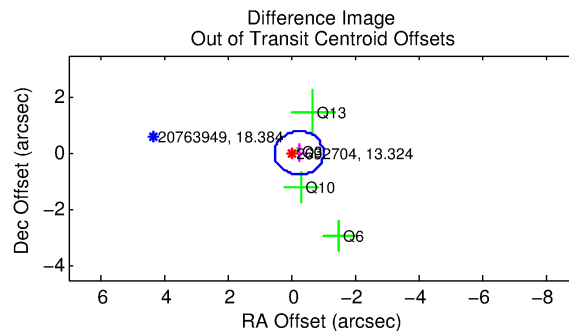
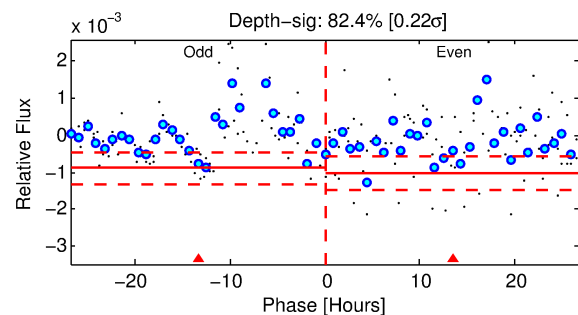
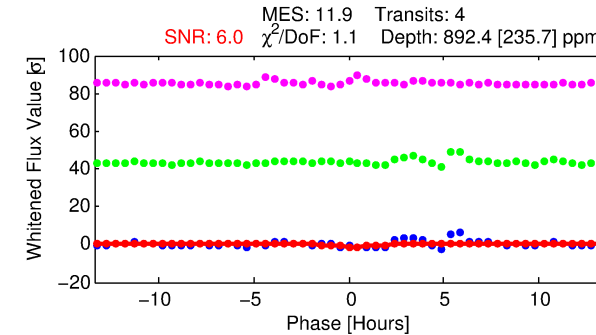
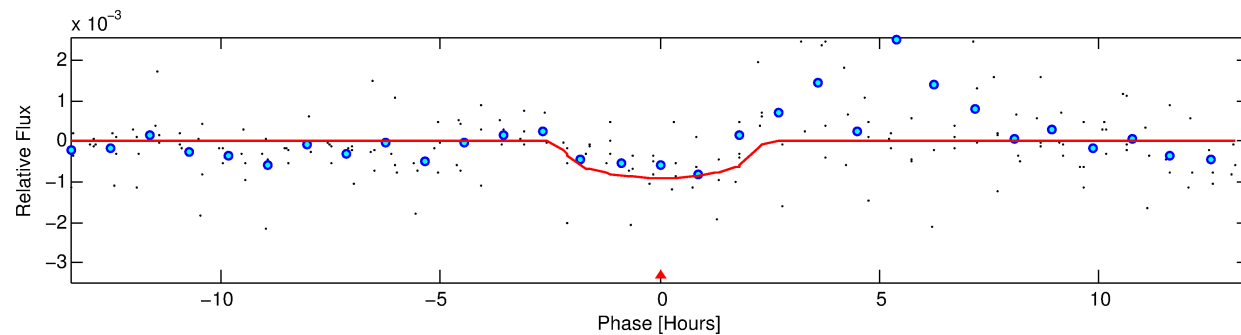
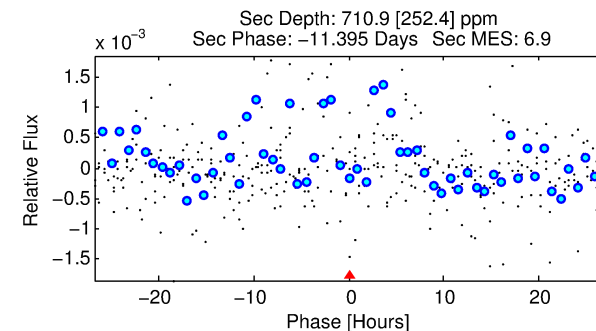
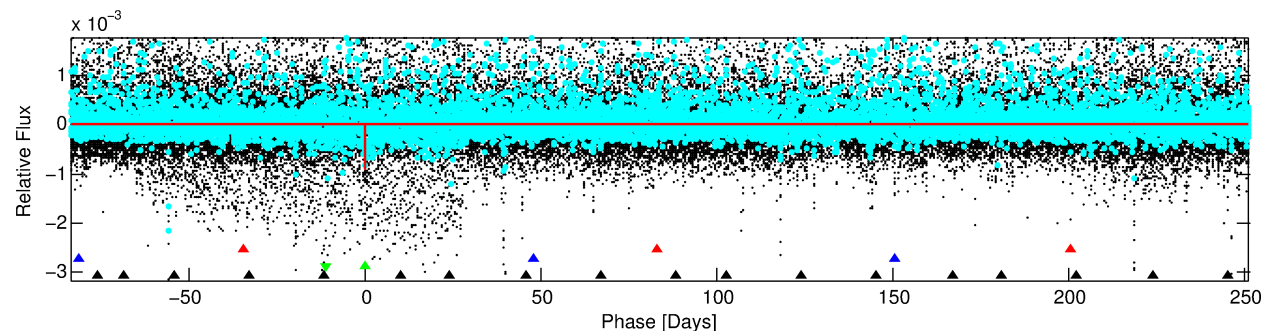
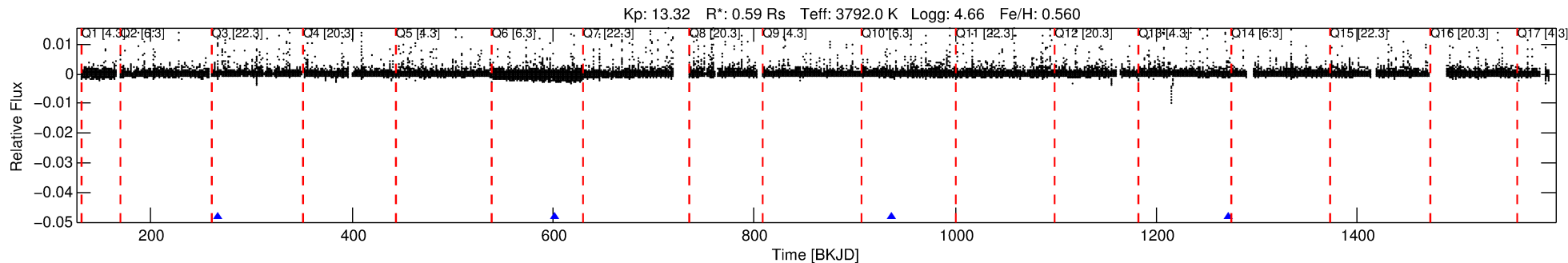
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002692704-03

No Significant Match Found

DV One-Page Summary

KIC: 2692704 Candidate: 3 of 4 Period: 335.192 d



DV Fit Results:

Period = 335.19177 [0.00532] d
Epoch = 266.1184 [0.0097] BKJD
Rp/R* = 0.0263 [0.0388]
a/R* = 583.41 [2564.02]
b = 0.11 [39.85]
Seff = 0.10 [0.02]
Teq = 145 [8] K
Rp = 1.70 [2.52] Re
a = 0.7939 [0.0799] AU
Ag = 85111.48 [253363.51] [0.34σ]
Teffp = 3821 [2845] K [1.29σ]

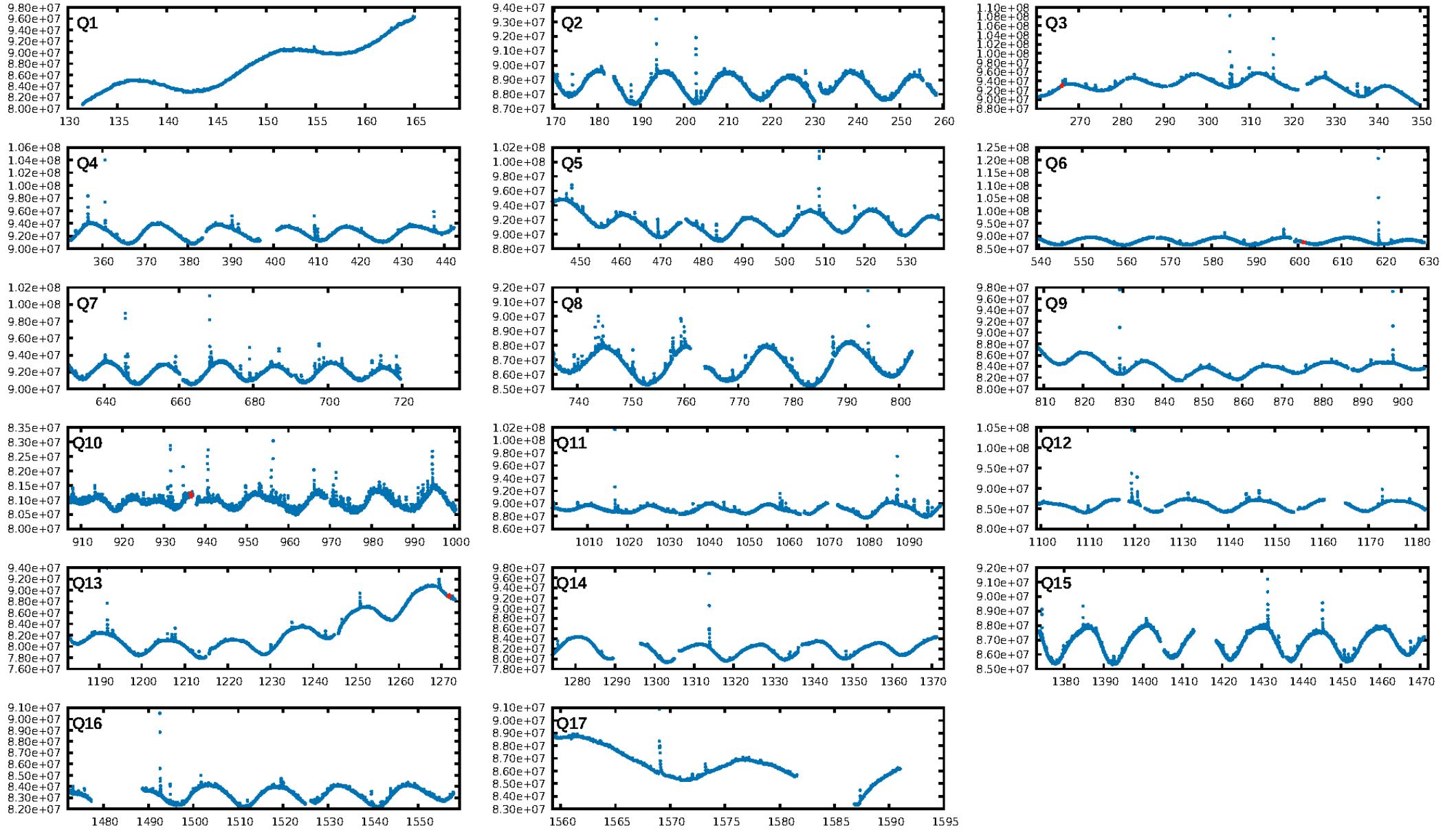
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1279.65σ]
LongPeriod-sig: 100.0% [211.69σ]
ModelChiSquare2-sig: 7.2%
ModelChiSquareGof-sig: 84.8%
Bootstrap-pfa: 3.20e-09
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 2.609
Centroid-sig: 45.9%
Centroid-so: 1.311 arcsec [1.39σ]
OotOffset-rm: 0.246 arcsec [0.95σ]
KicOffset-rm: 0.467 arcsec [1.12σ]
OotOffset-st: 2/1/0/1 [4]
KicOffset-st: 2/1/0/1 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [4/4]

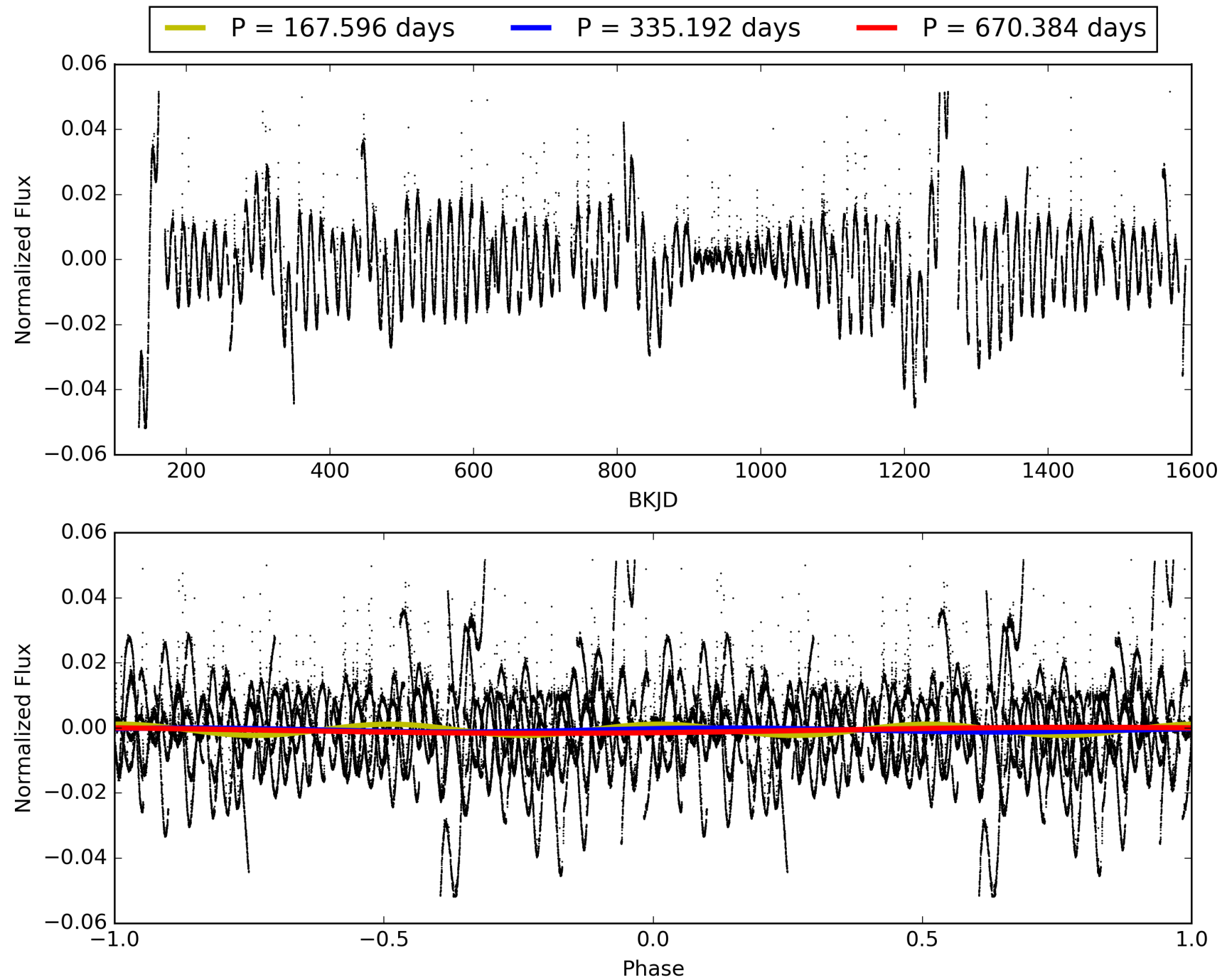
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:44:13 Z

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

TCE 002692704-03, PDC Light Curves

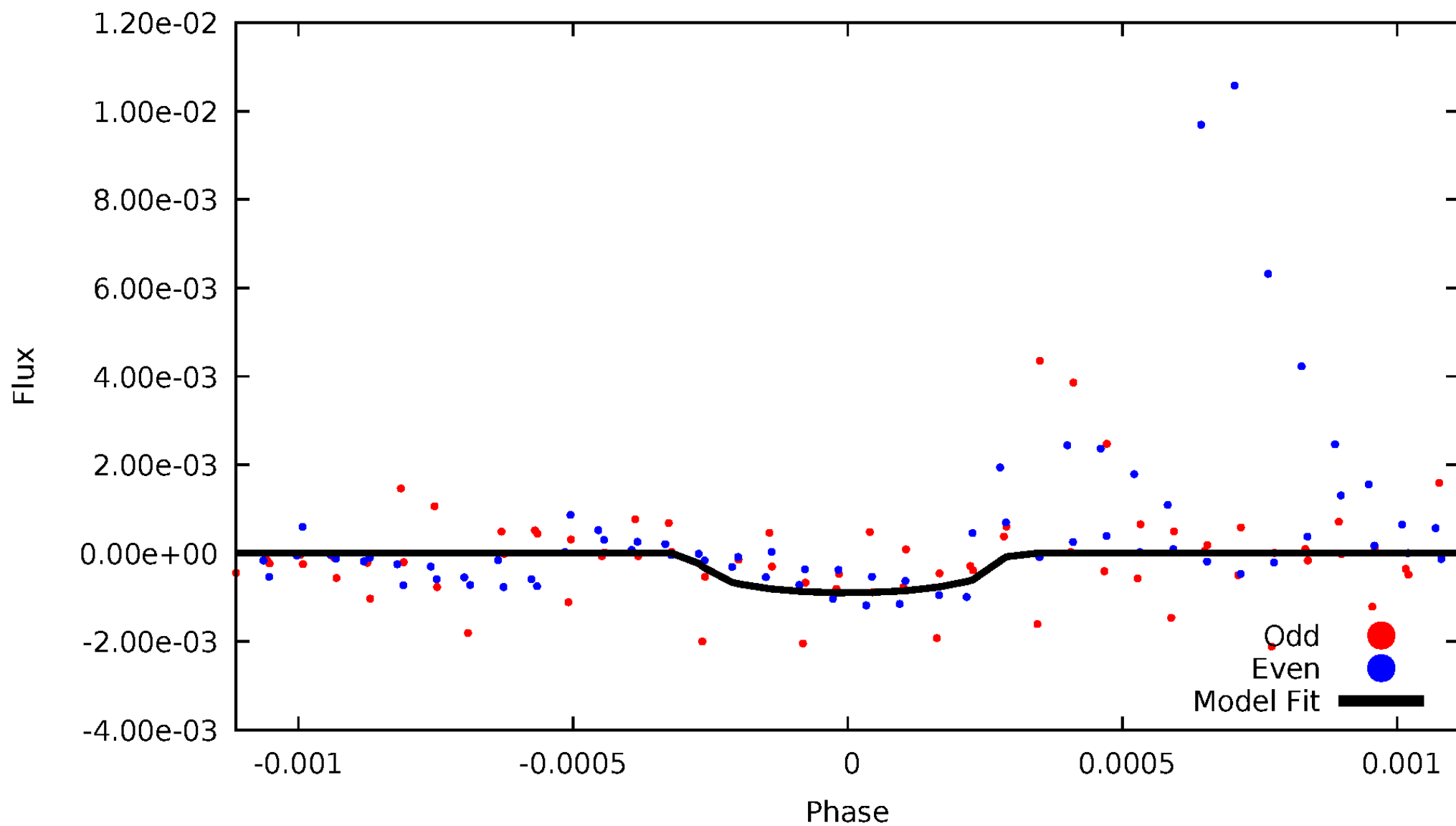


TCE 002692704-03



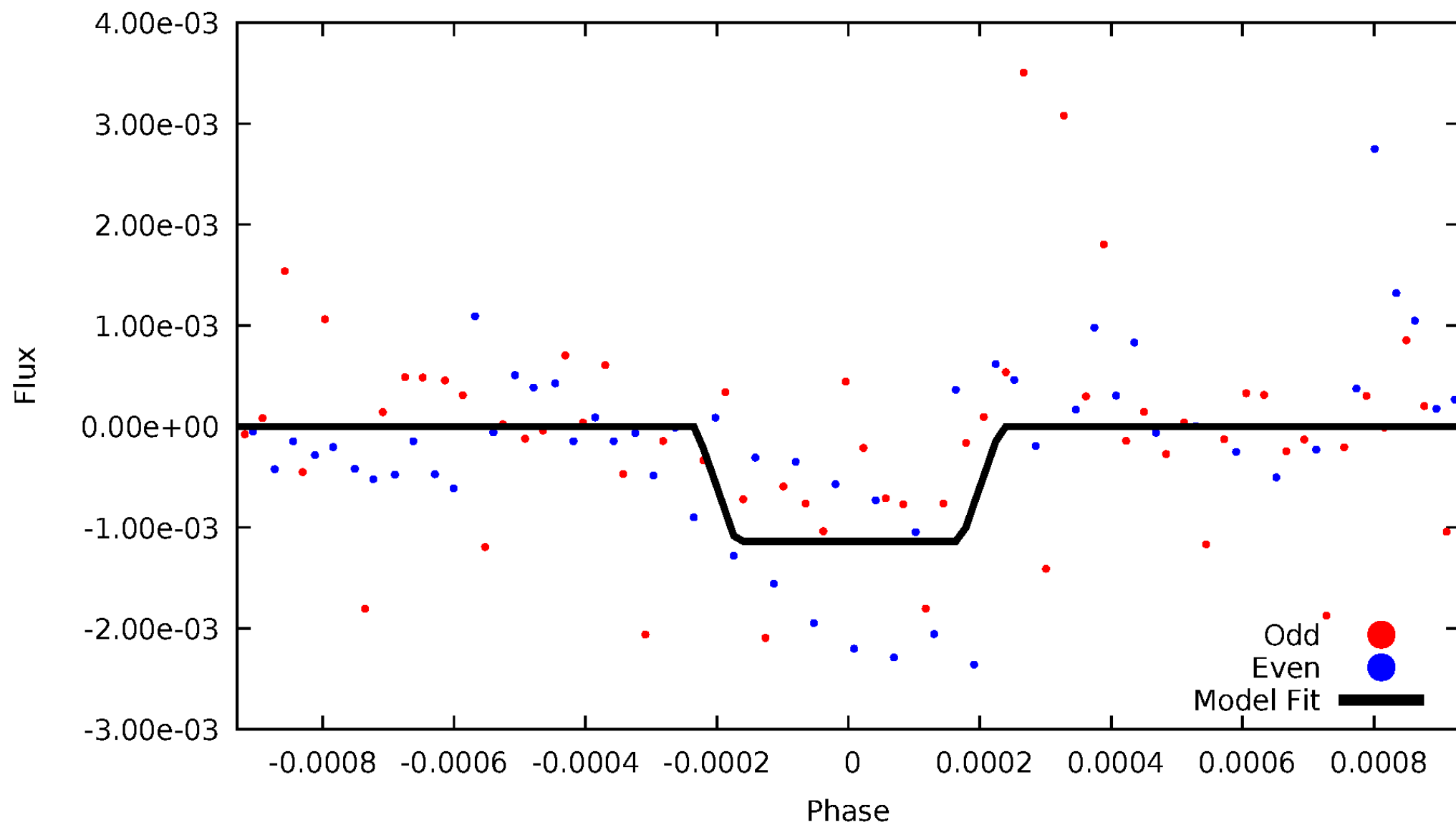
DV Odd/Even

TCE 002692704-03



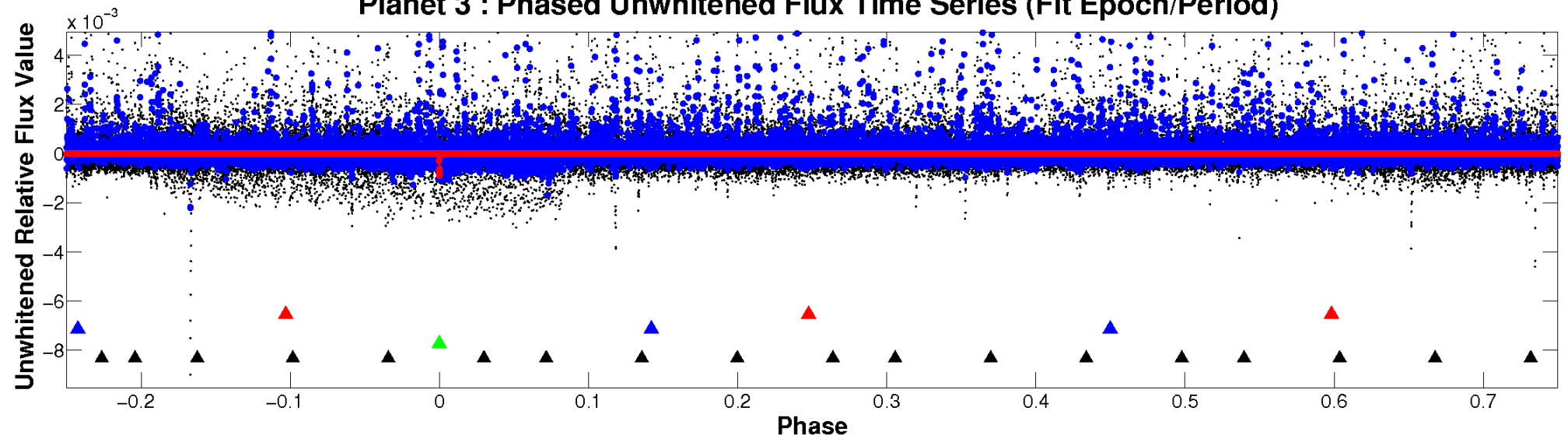
ALT Odd/Even

TCE 002692704-03

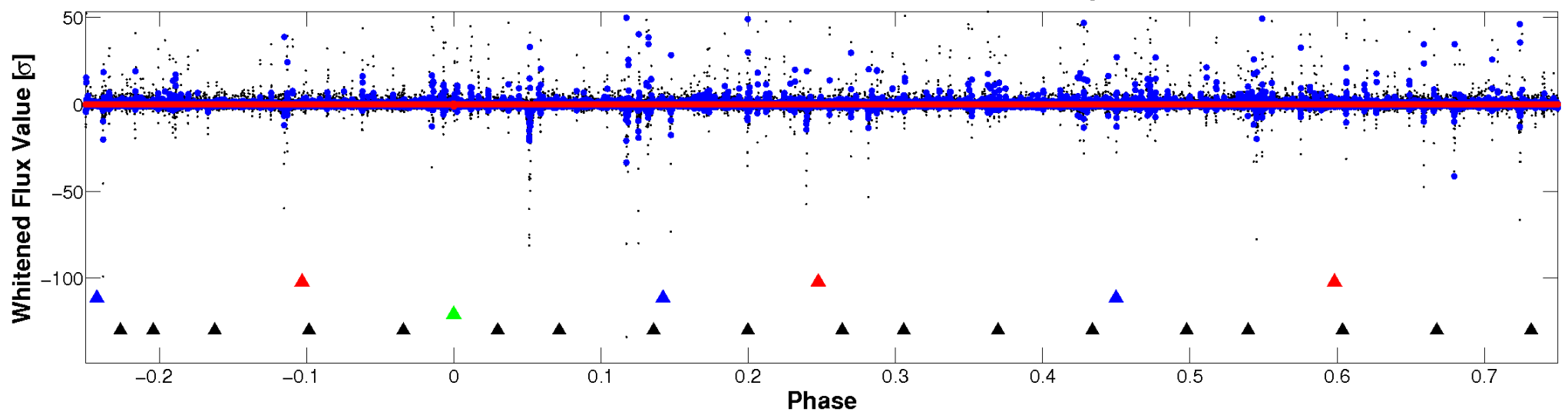


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

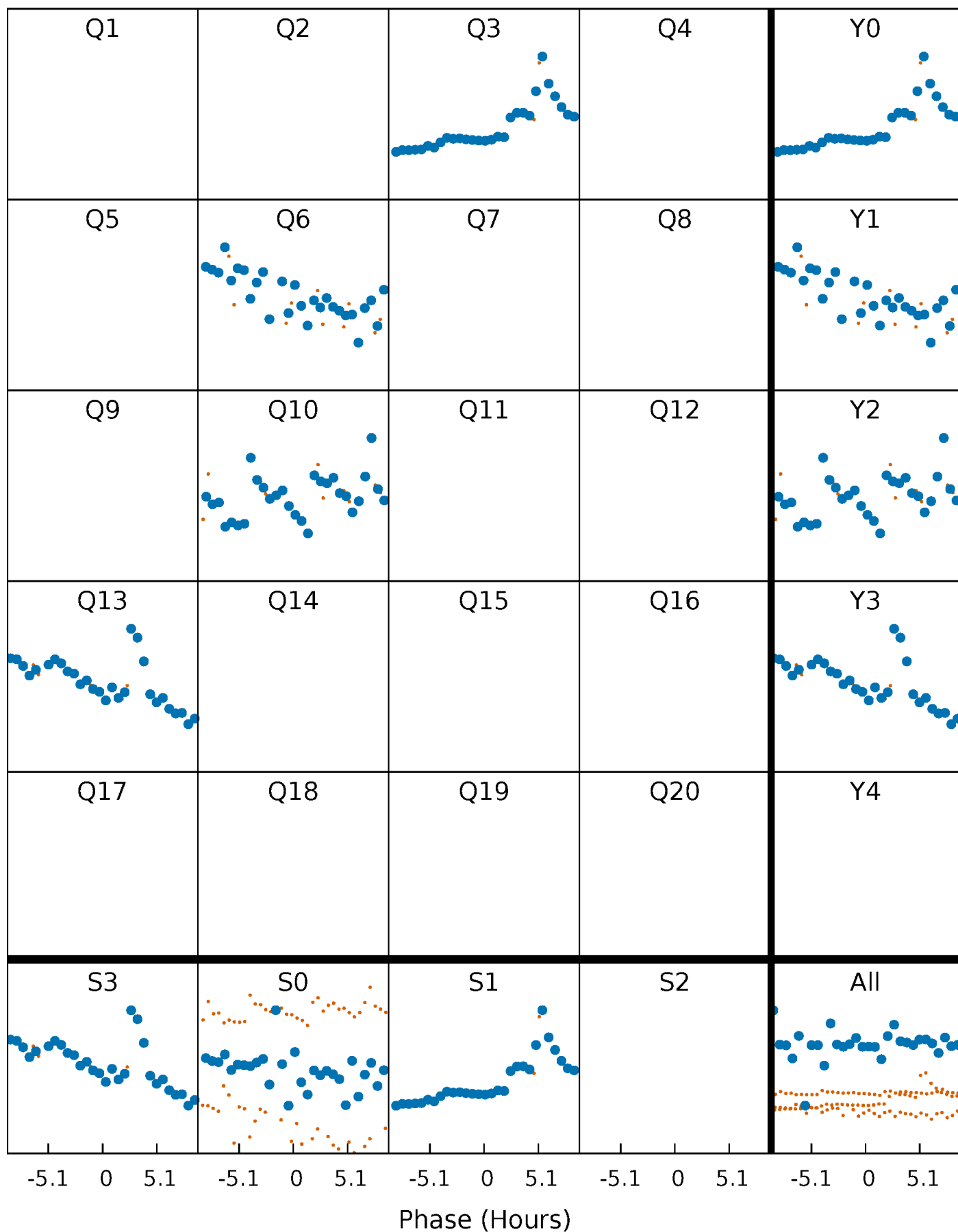


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



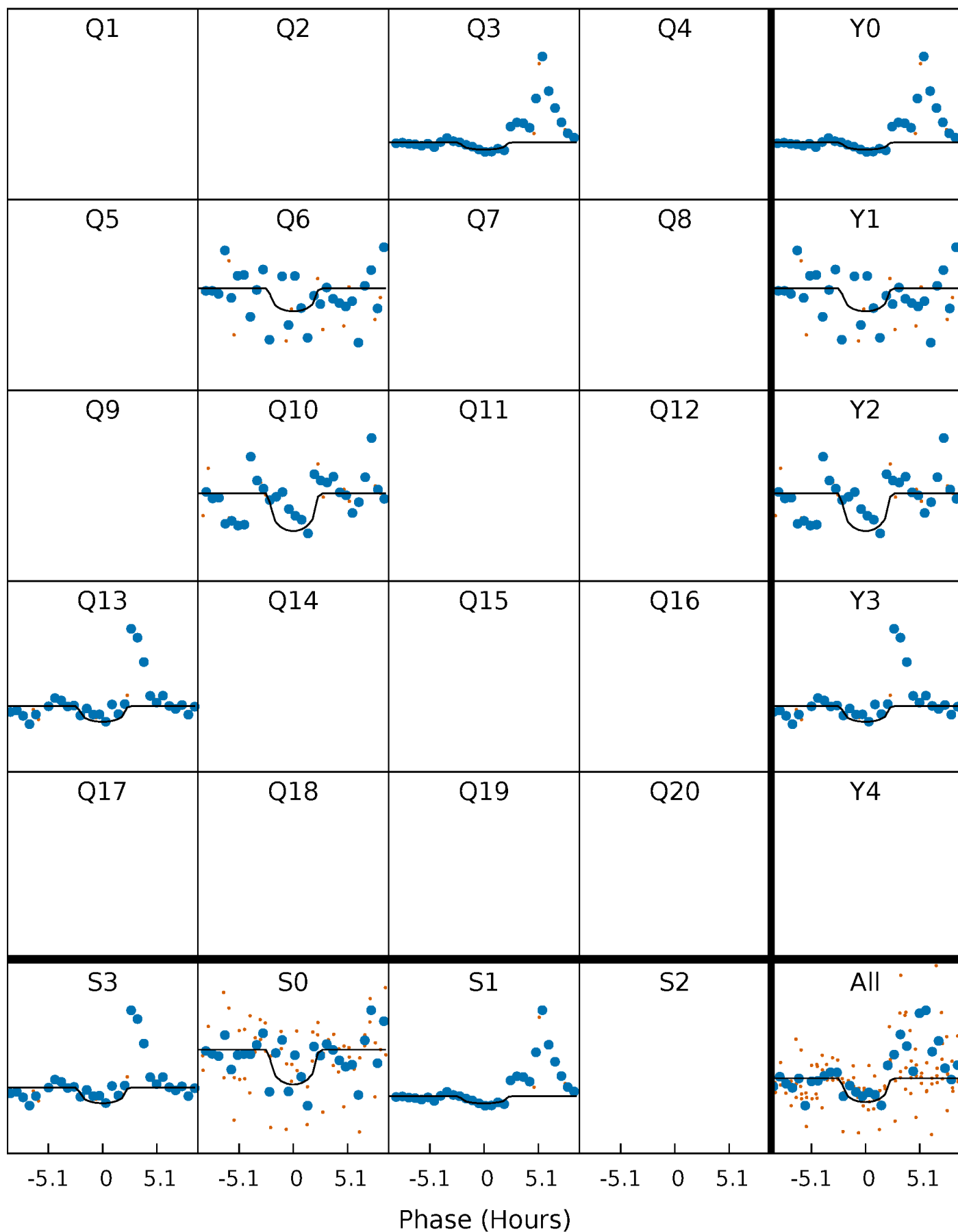
PDC Quarter-Phased Transit Curves

TCE 002692704-03 $P=335.191770$ Days $T_0=266.118443$ (BKJD)



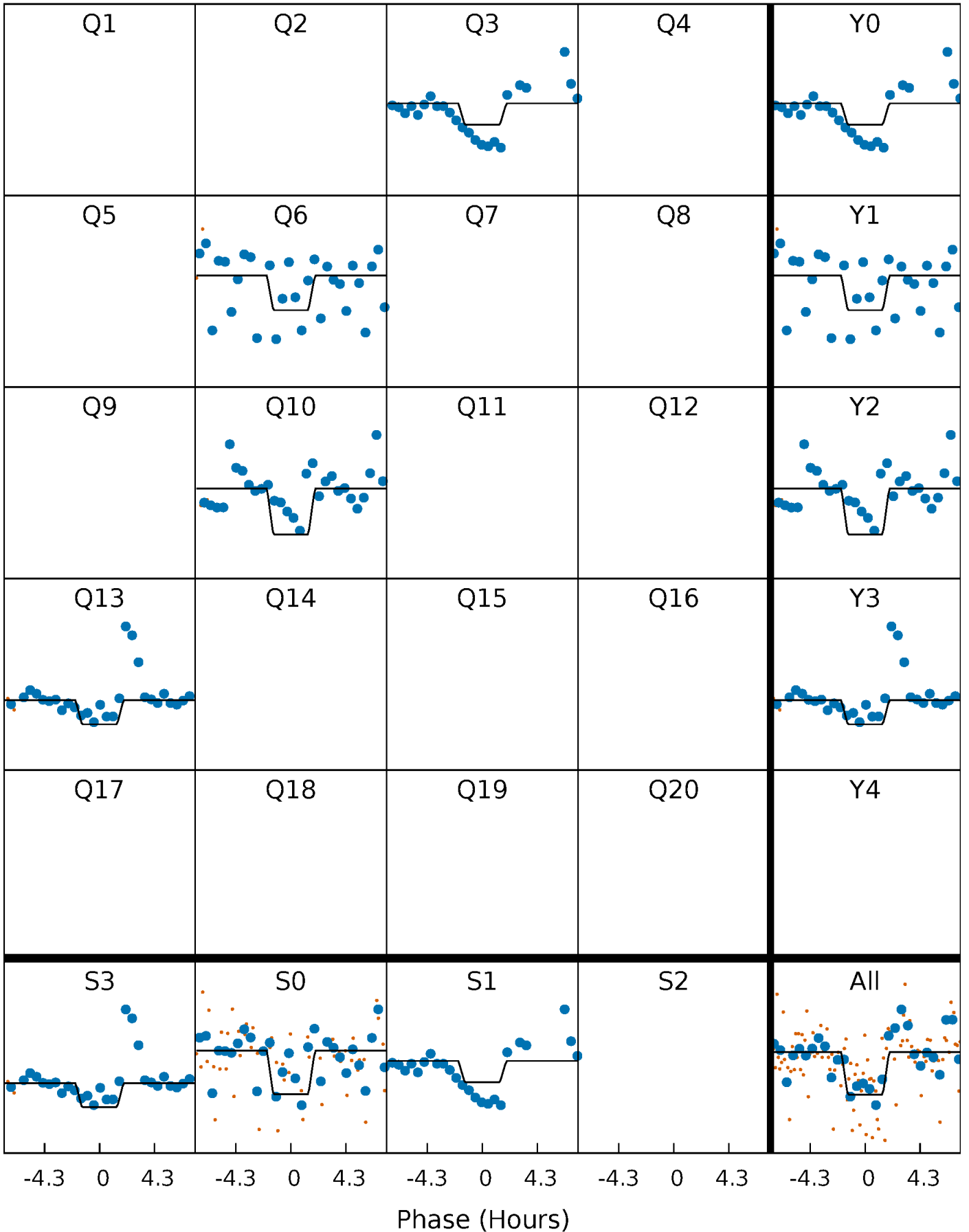
DV Quarter-Phased Transit Curves

TCE 002692704-03 $P=335.191770$ Days $T_0=266.118443$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

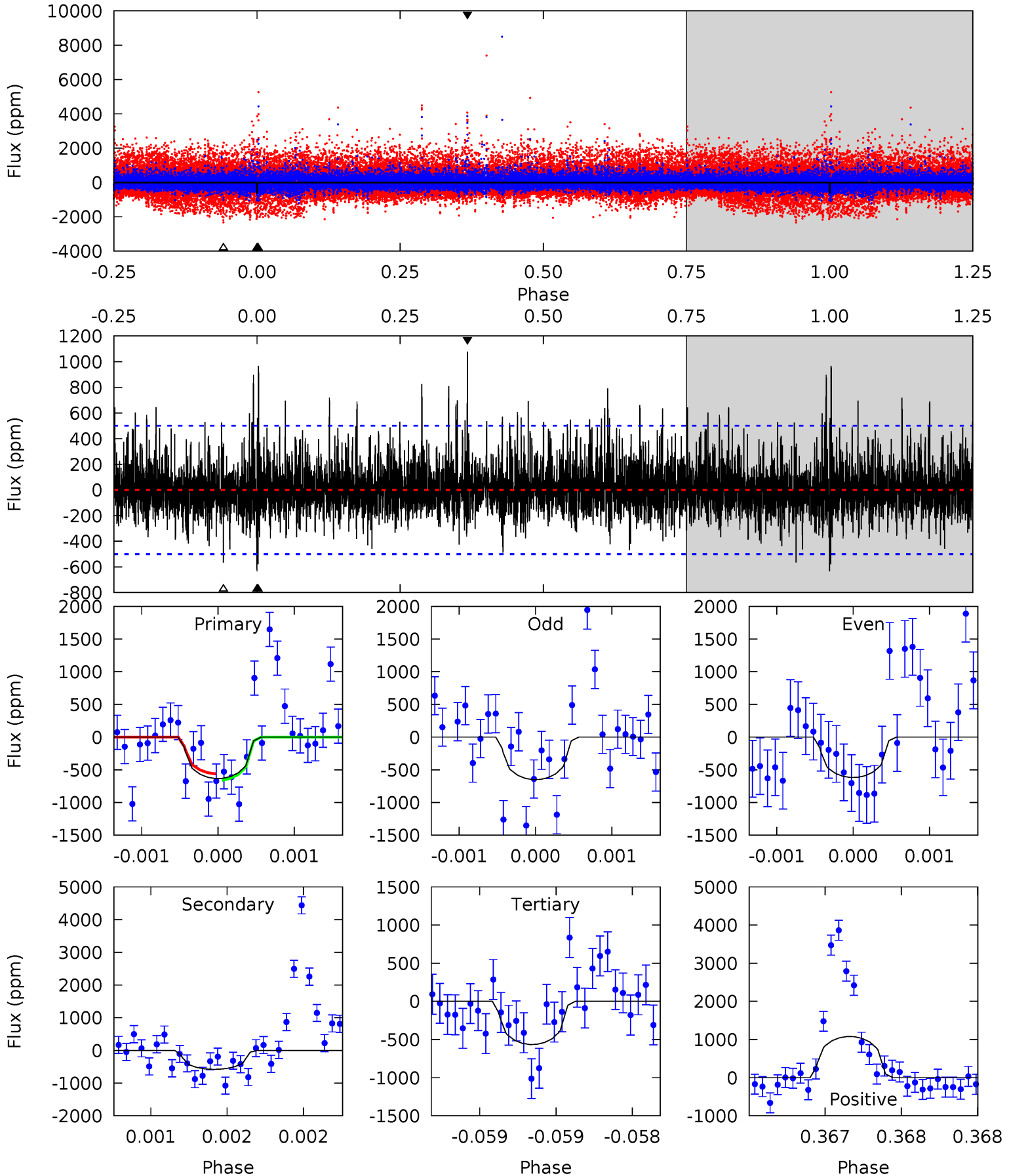
TCE 002692704-03 $P=335.198240$ Days $T_0=266.126837$ (BKJD)



DV Model-Shift Uniqueness Test

002692704-03, P = 335.191770 Days, E = 266.118443 Days

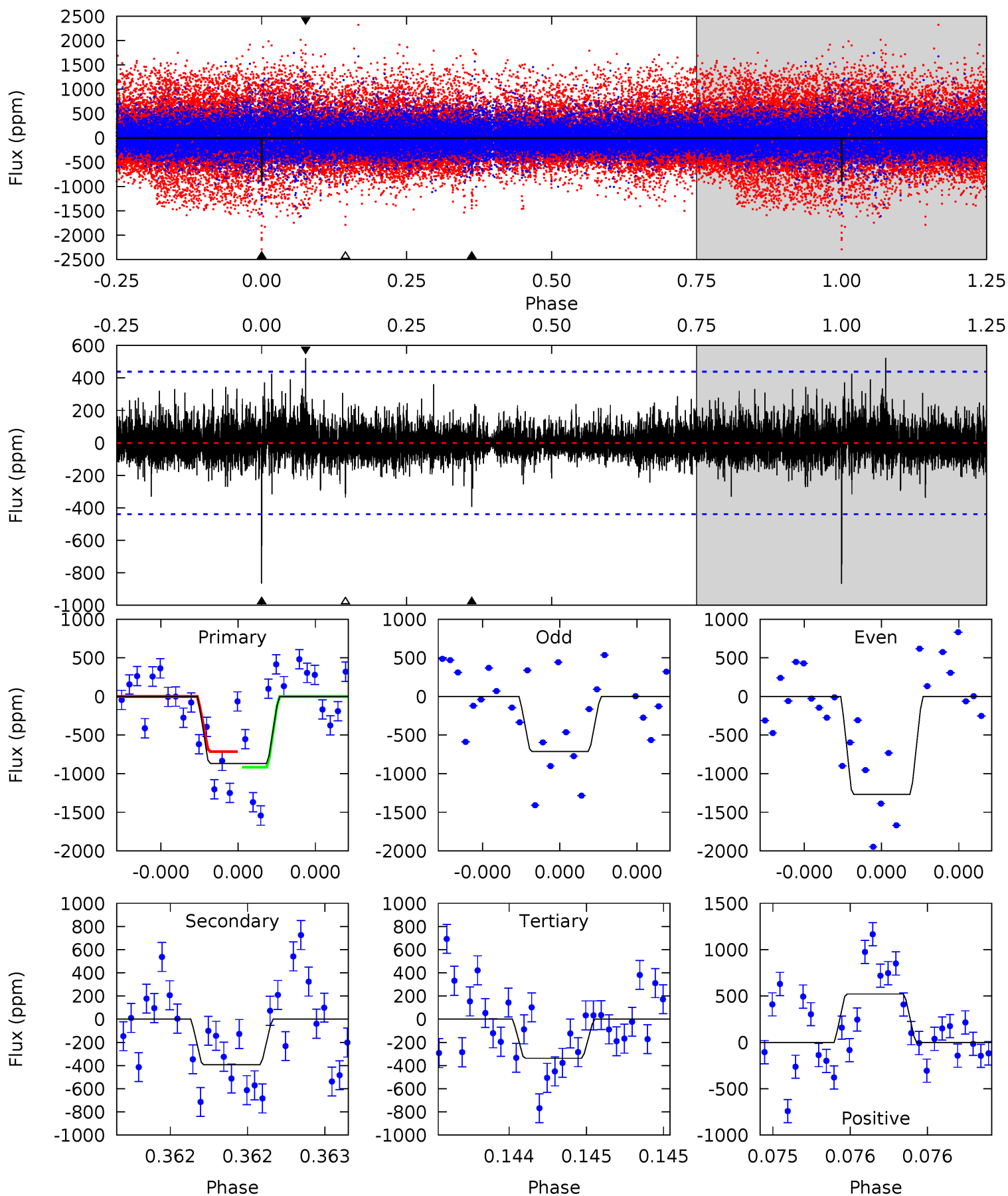
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.02	6.41	6.27	11.9	5.54	3.42	1.83	0.76	-4.92	0.14	-5.54	0.13	0.97	0.63	0.55



Alt Model-Shift Uniqueness Test

002692704-03, P = 335.198240 Days, E = 266.126837 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	5.01	4.30	6.65	5.59	3.51	0.98	6.75	4.40	0.71	-1.64	3.38	1.35	0.38	1.26



Stellar Parameters For KIC 002692704

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3792^{+120}_{-147}	$4.664^{+0.072}_{-0.018}$	$0.560^{+0.050}_{-0.300}$	$0.594^{+0.028}_{-0.075}$	$0.594^{+0.040}_{-0.060}$	$3.990^{+1.358}_{-0.371}$
	+3%/-4%	+2%/-0%	+9%/-54%	+5%/-13%	+7%/-10%	+34%/-9%
Source	KIC0	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 002692704-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-578 ± 90	$2.42^{+2.30}_{-1.59}$	201^{+7}_{-9}	3265^{+1518}_{-557}	$33580^{+264408}_{-24045}$
Alt.	-393 ± 78	$2.79^{+2.13}_{-1.83}$	200^{+8}_{-8}	2968^{+1204}_{-426}	$17230^{+134049}_{-11620}$

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

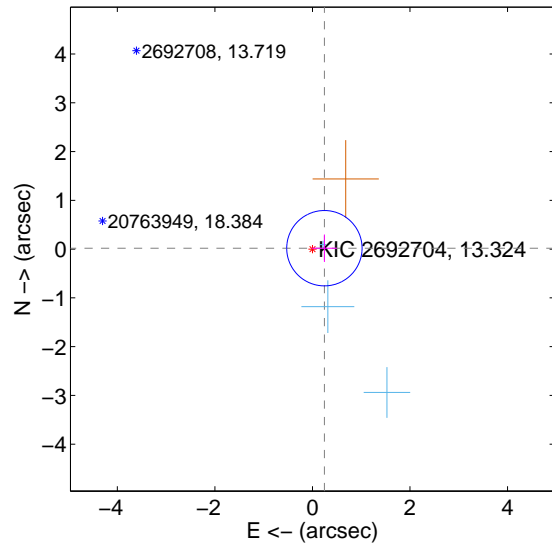
Supplemental centroid analysis for 002692704-03. Kepler magnitude: 13.32. Transit SNR 5.95

There are 3 quarters with good PRF difference image offsets

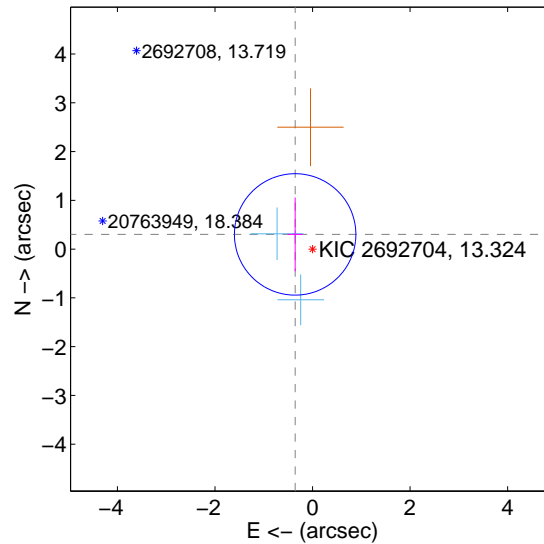
The direct PRF centroid is offset from the target star catalog position by about 1.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.246 ± 0.258	0.95	-0.245 ± 0.257	0.018 ± 0.282
PRF-fit source offset from KIC position	0.467 ± 0.415	1.12	0.356 ± 0.157	0.301 ± 0.756
photometric centroid source offset	1.31 ± 0.94	1.39	0.52 ± 0.89	1.20 ± 0.95

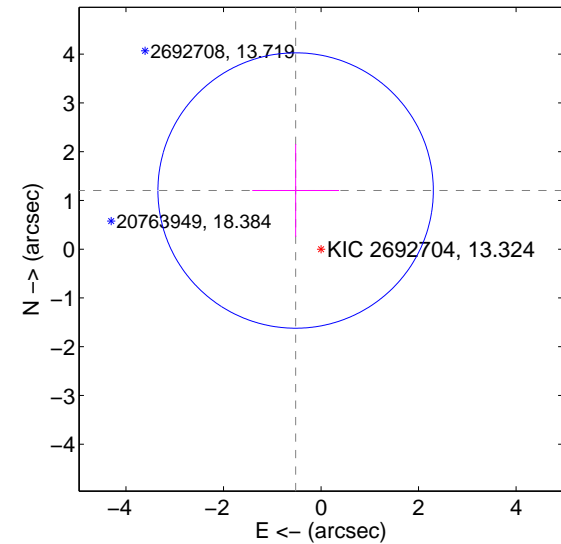
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



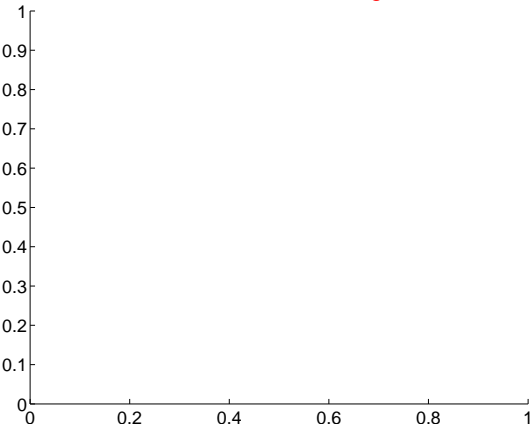
offset from photometric centroids



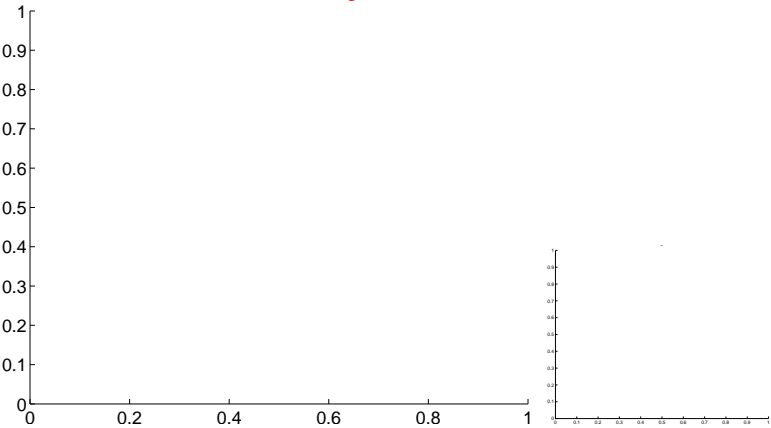
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

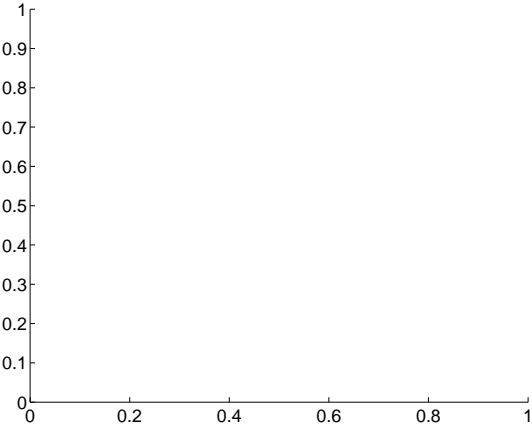
Q1 no difference image



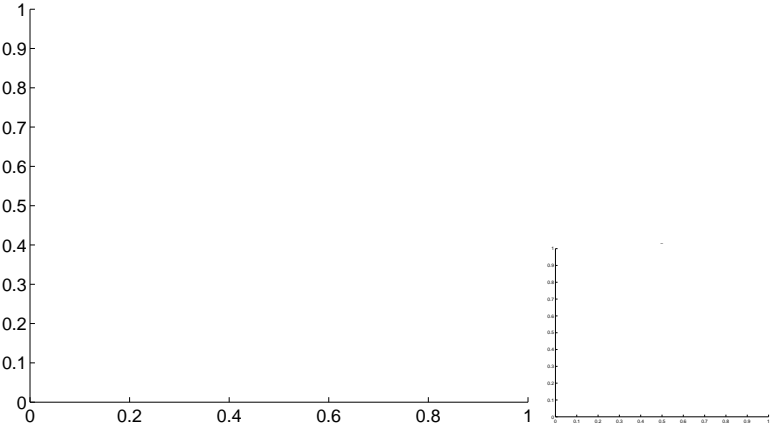
Q1 no OOT image



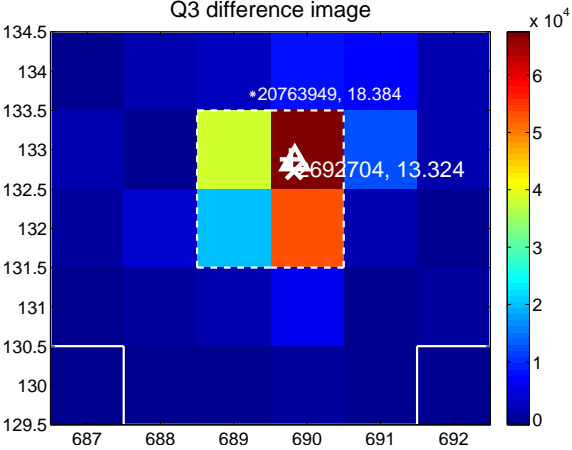
Q2 no difference image



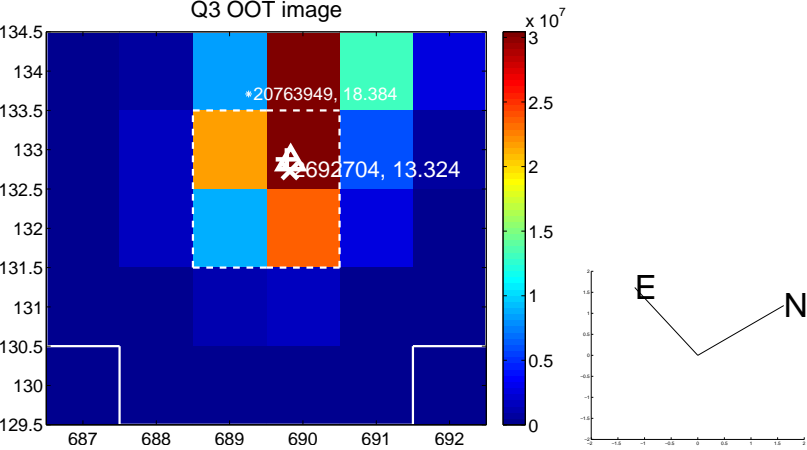
Q2 no OOT image



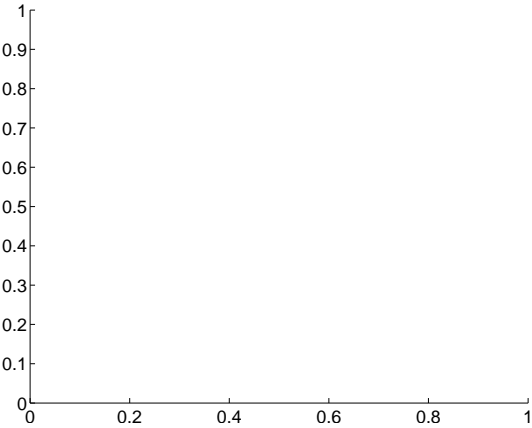
Q3 difference image



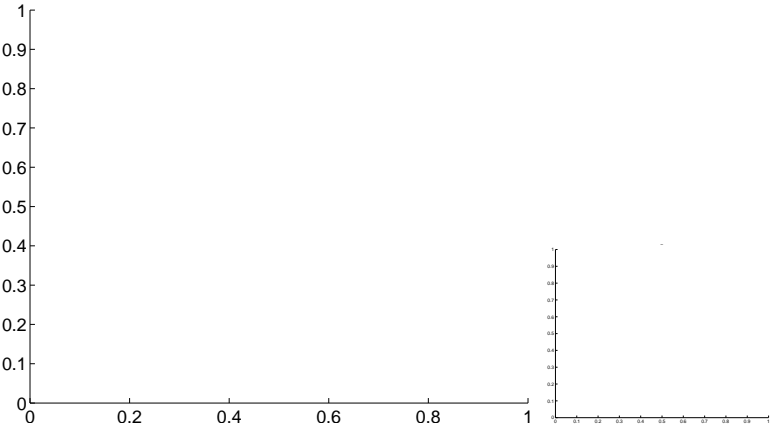
Q3 OOT image



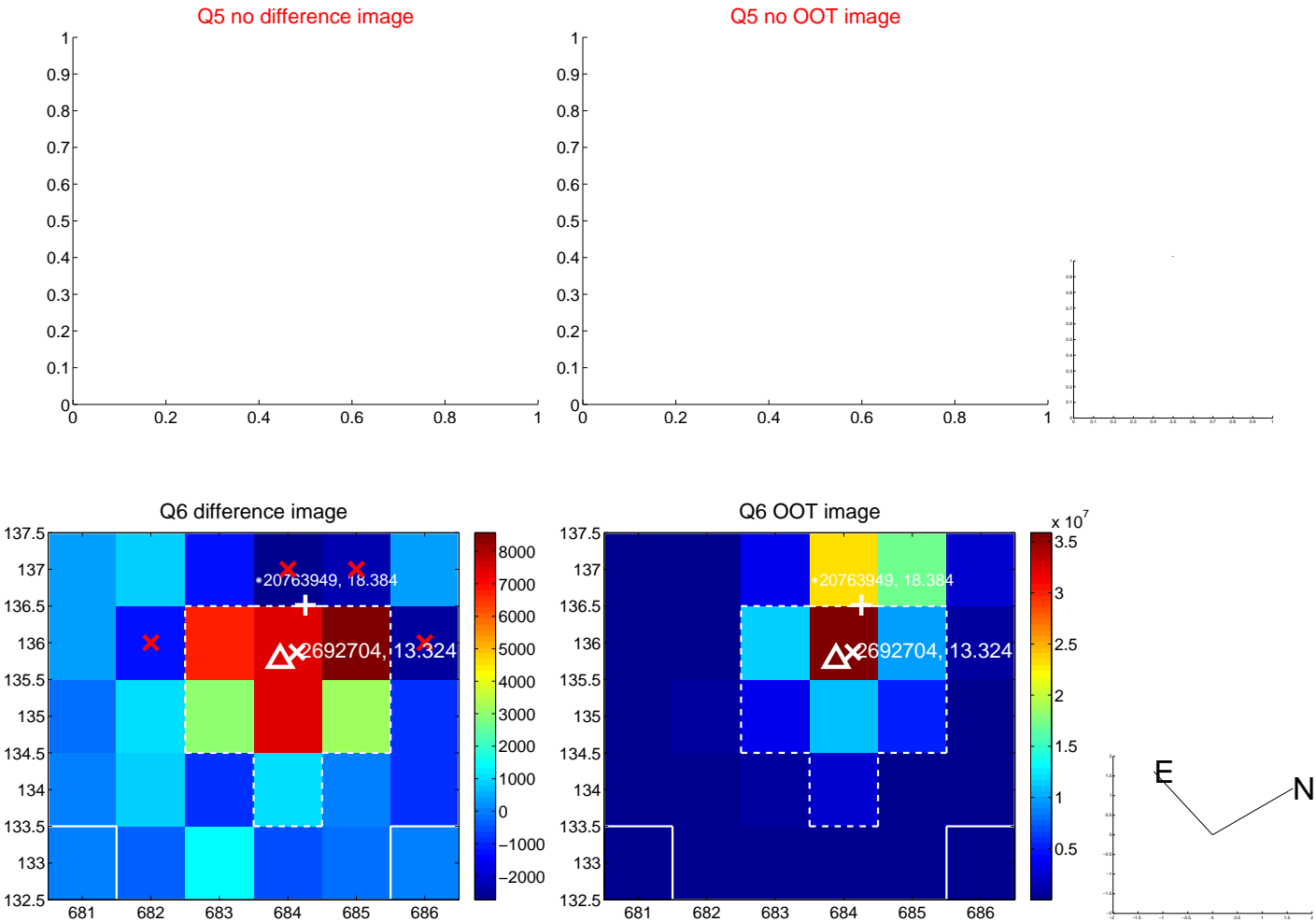
Q4 no difference image



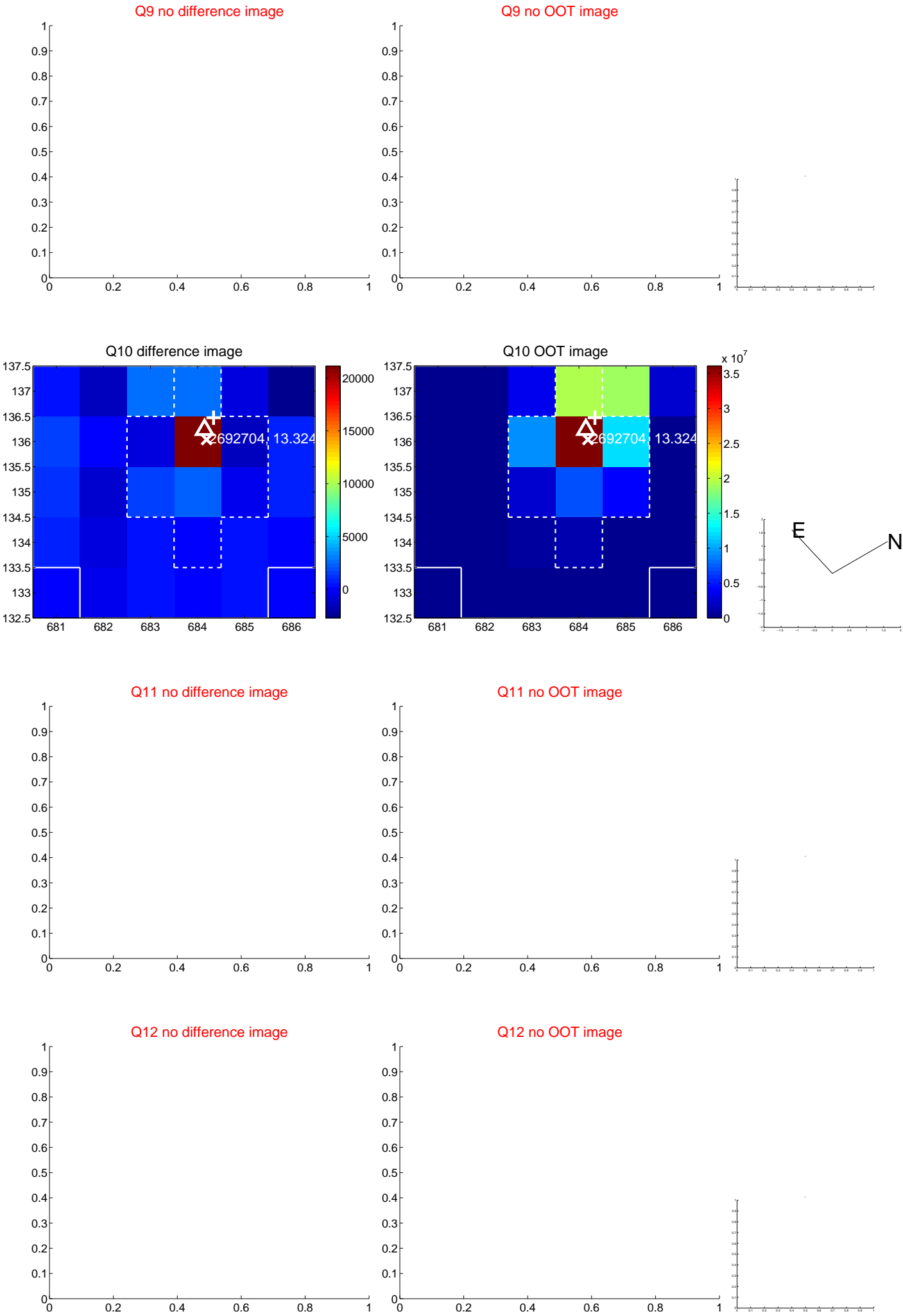
Q4 no OOT image



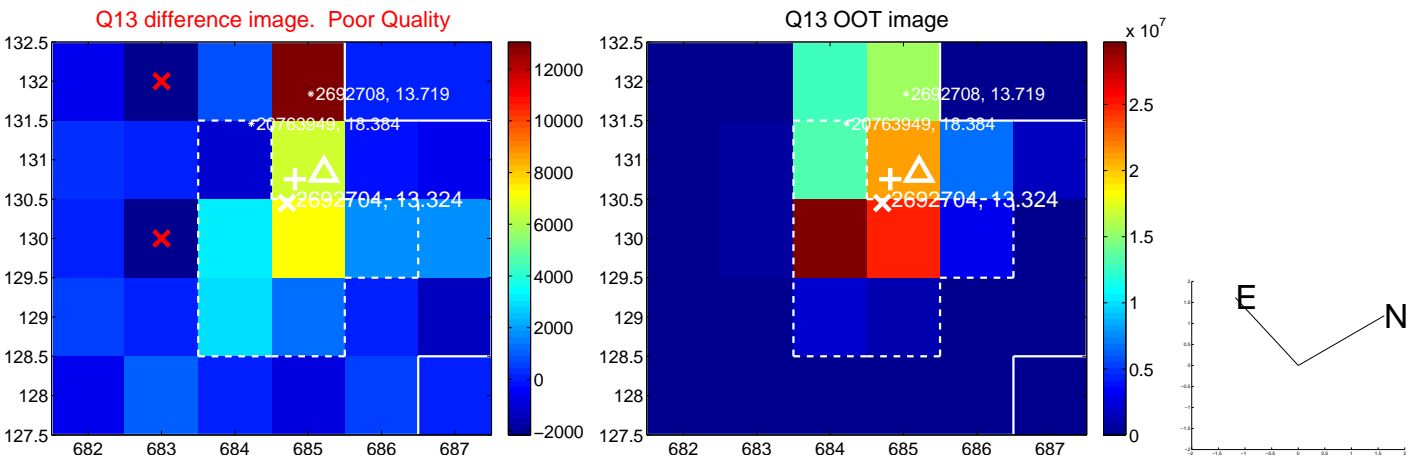
white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



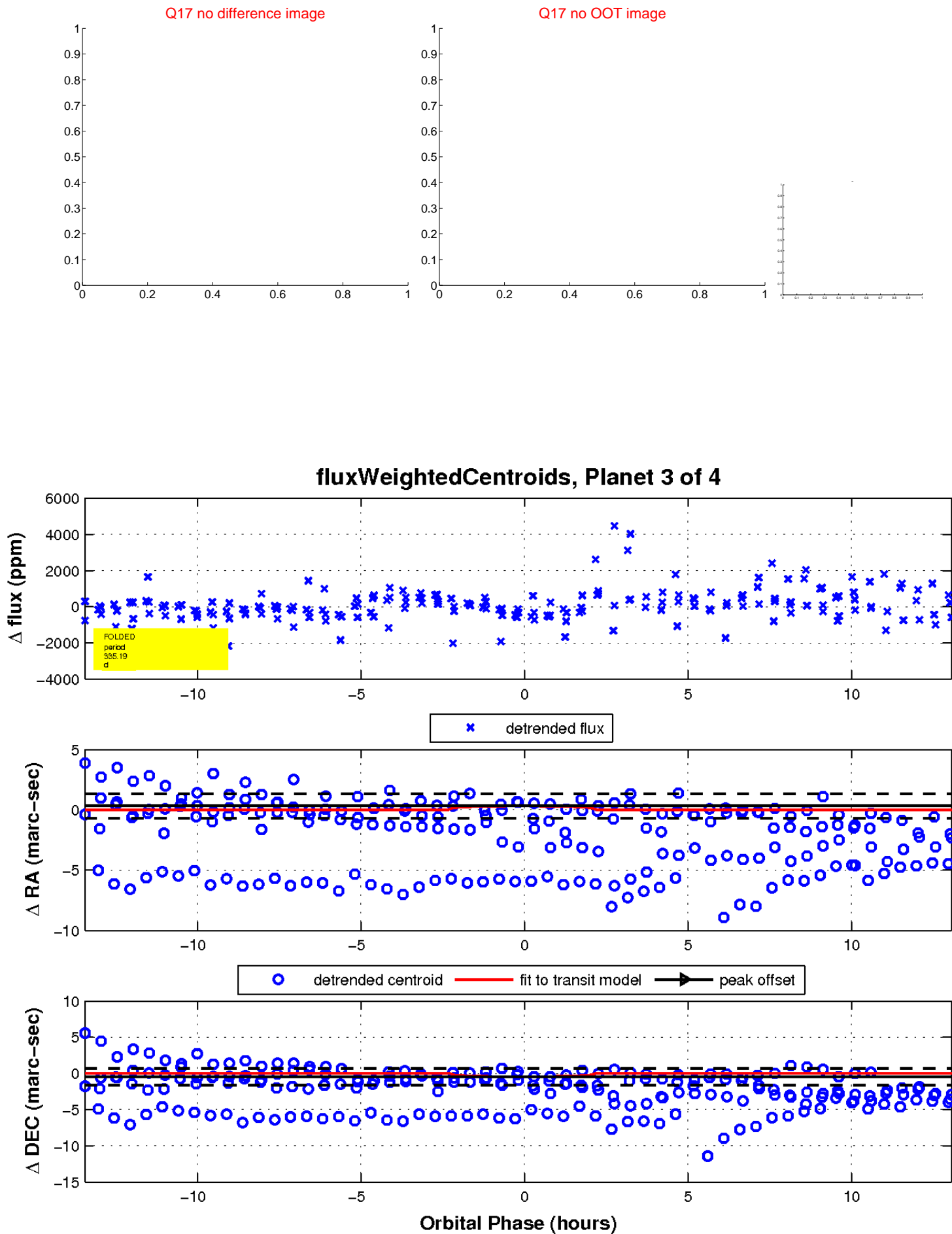
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

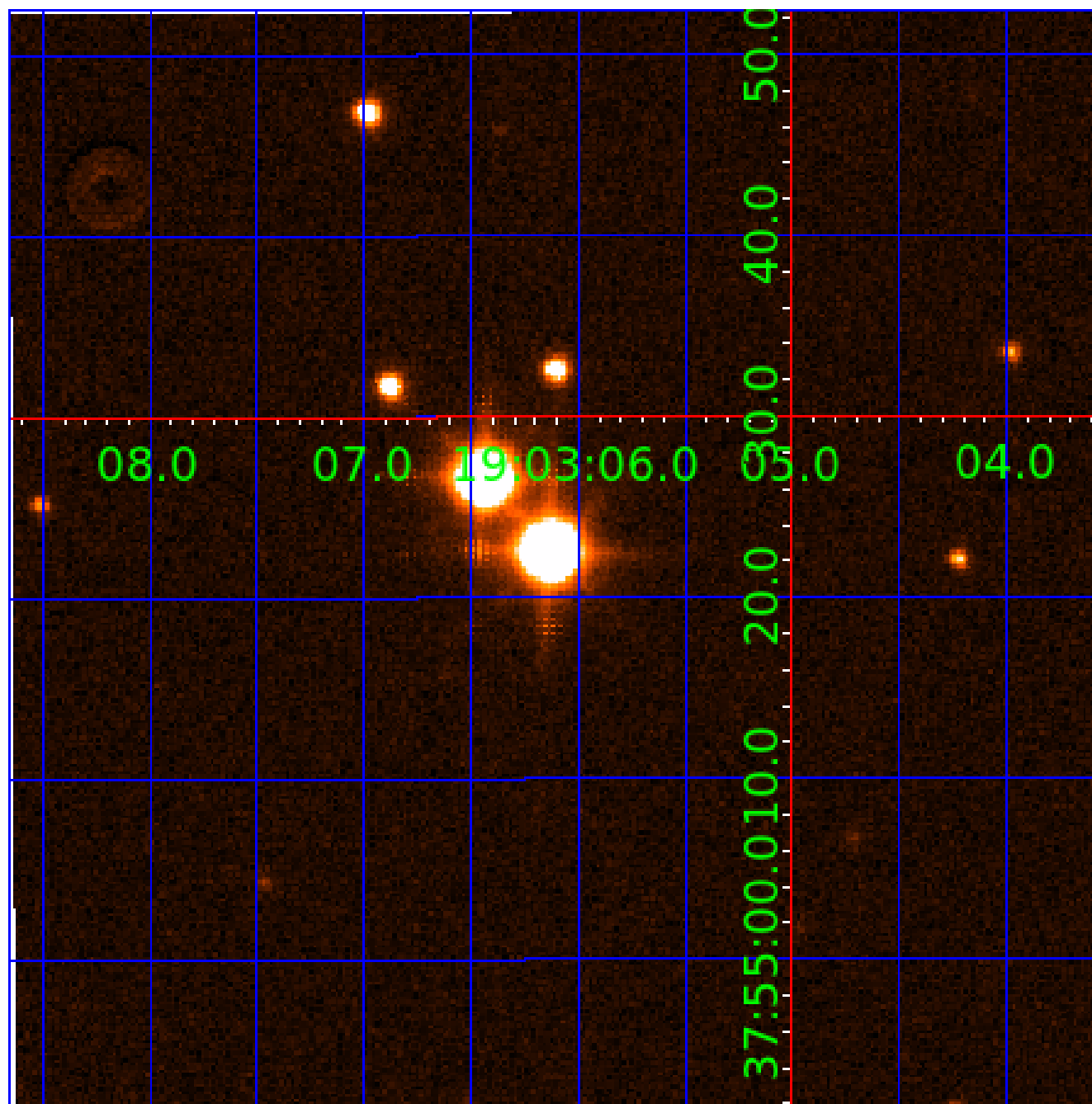


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002692704

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})
002692704-01	OBS	No	552.861883	466.636047	861.8	6.317	13.3	5.4	0.59	3792	1.95	0.05
002692704-02	OBS	No	438.338978	313.768366	970.0	10.803	11.0	6.1	0.59	3792	1.94	0.07
002692704-03	OBS	No	335.191770	266.118443	892.4	4.478	11.9	6.0	0.59	3792	1.70	0.10
002692704-04	OBS	No	78.428844	197.709041	230.3	1.771	9.0	2.8	0.59	3792	1.32	0.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002692704-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
002692704-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
002692704-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
002692704-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

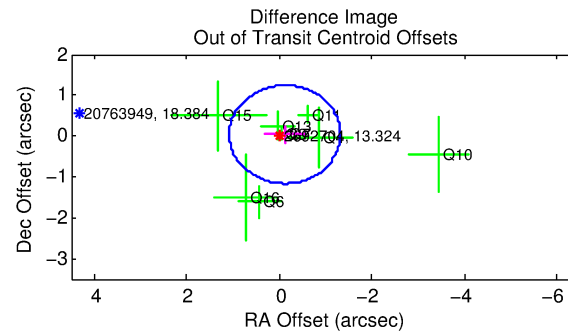
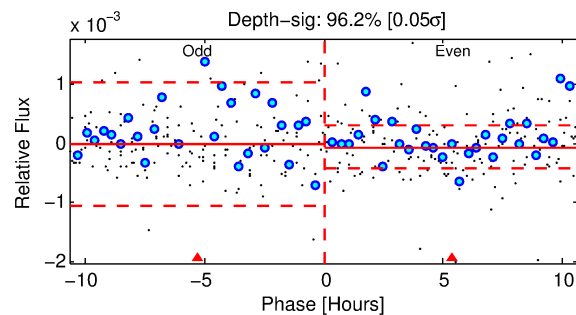
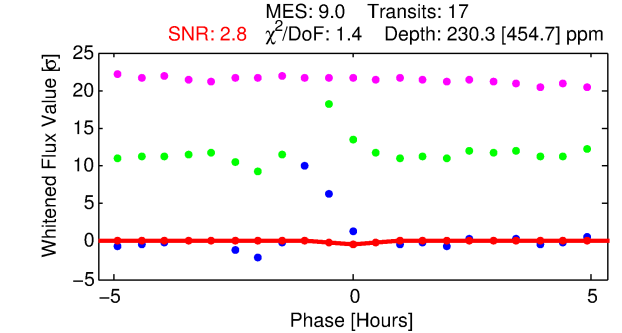
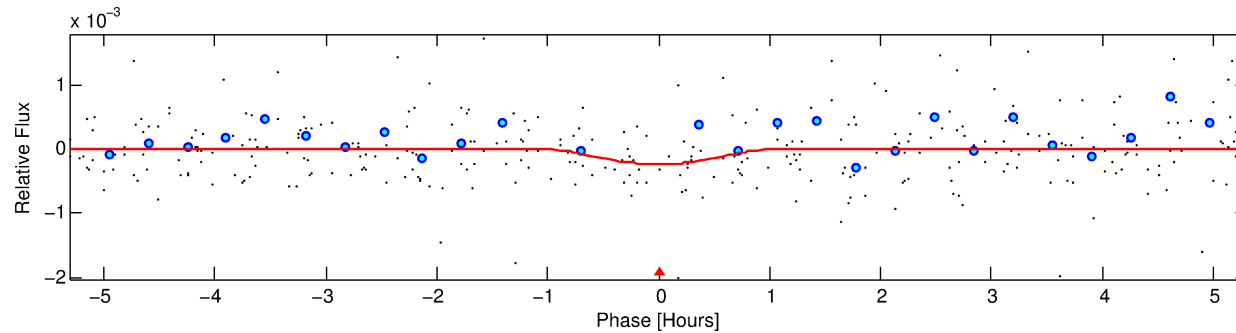
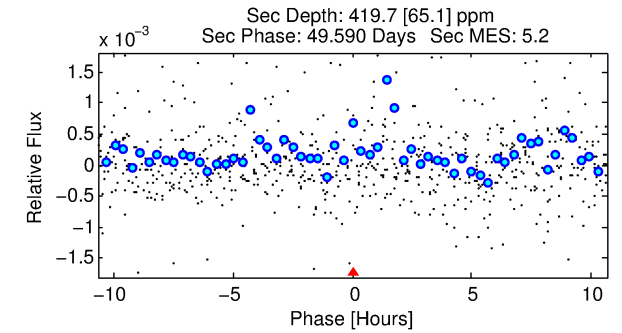
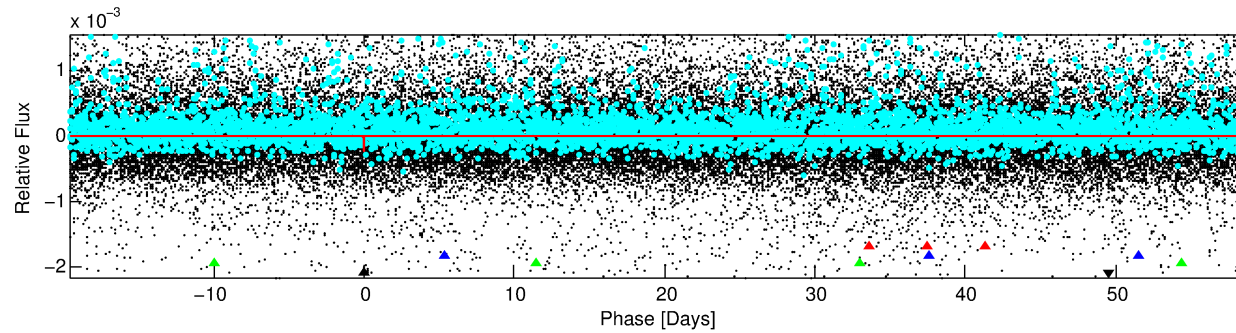
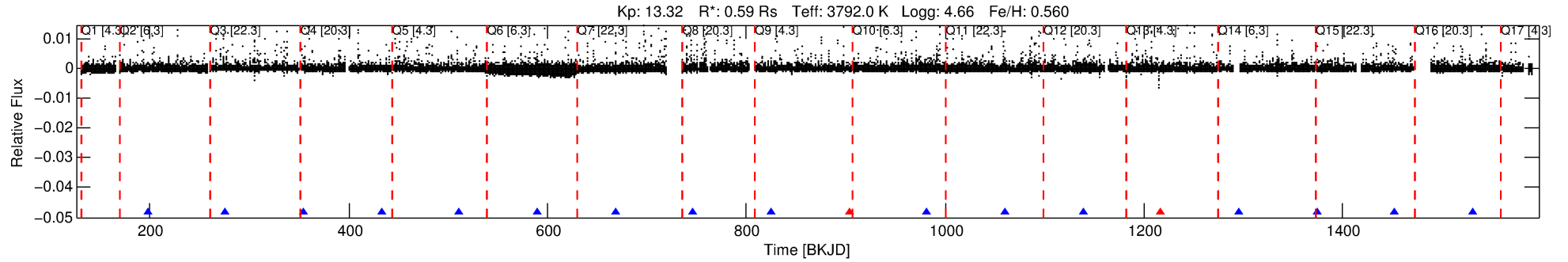
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002692704-04

No Significant Match Found

DV One-Page Summary

KIC: 2692704 Candidate: 4 of 4 Period: 78.429 d



DV Fit Results:

Period = 78.42884 [0.00306] d
Epoch = 197.7090 [0.0315] BKJD
Rp/R* = 0.0204 [0.0376]
a/R* = 98.35 [298.48]
b = 0.98 [0.19]
Seff = 0.72 [0.15]
Teq = 235 [12] K
Rp = 1.32 [2.44] Re
a = 0.3014 [0.0304] AU
Ag = 11977.91 [44207.89] [0.27σ]
Teffp = 3798 [3505] K [1.02σ]

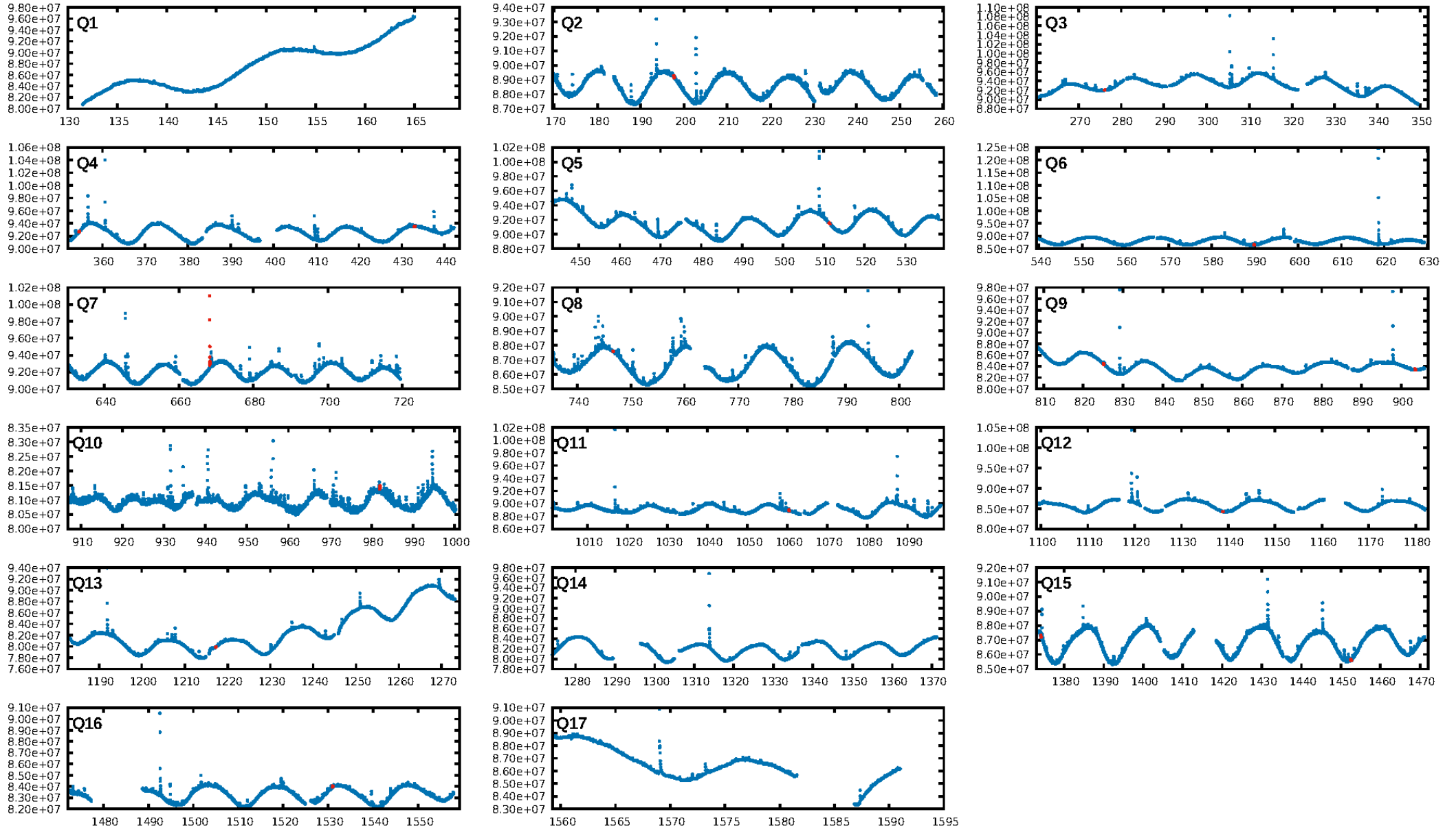
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1279.65σ]
ModelChiSquare2-sig: 45.3%
ModelChiSquareGof-sig: 99.3%
Bootstrap-pfa: 7.62e-09
RollingBand-fgt: 0.88 [15/17]
GhostDiagnostic-chr: 13.41
Centroid-sig: 37.8%
Centroid-so: 0.668 arcsec [0.31σ]
OotOffset-rm: 0.123 arcsec [0.31σ]
OotOffset-st: 2/3/2/2 [9]
KicOffset-rm: **1.082 arcsec [5.00σ]**
KicOffset-st: 2/3/2/2 [9]
DiffImageQuality-fgm: 0.44 [4/9]
DiffImageOverlap-fno: 1.00 [14/14]

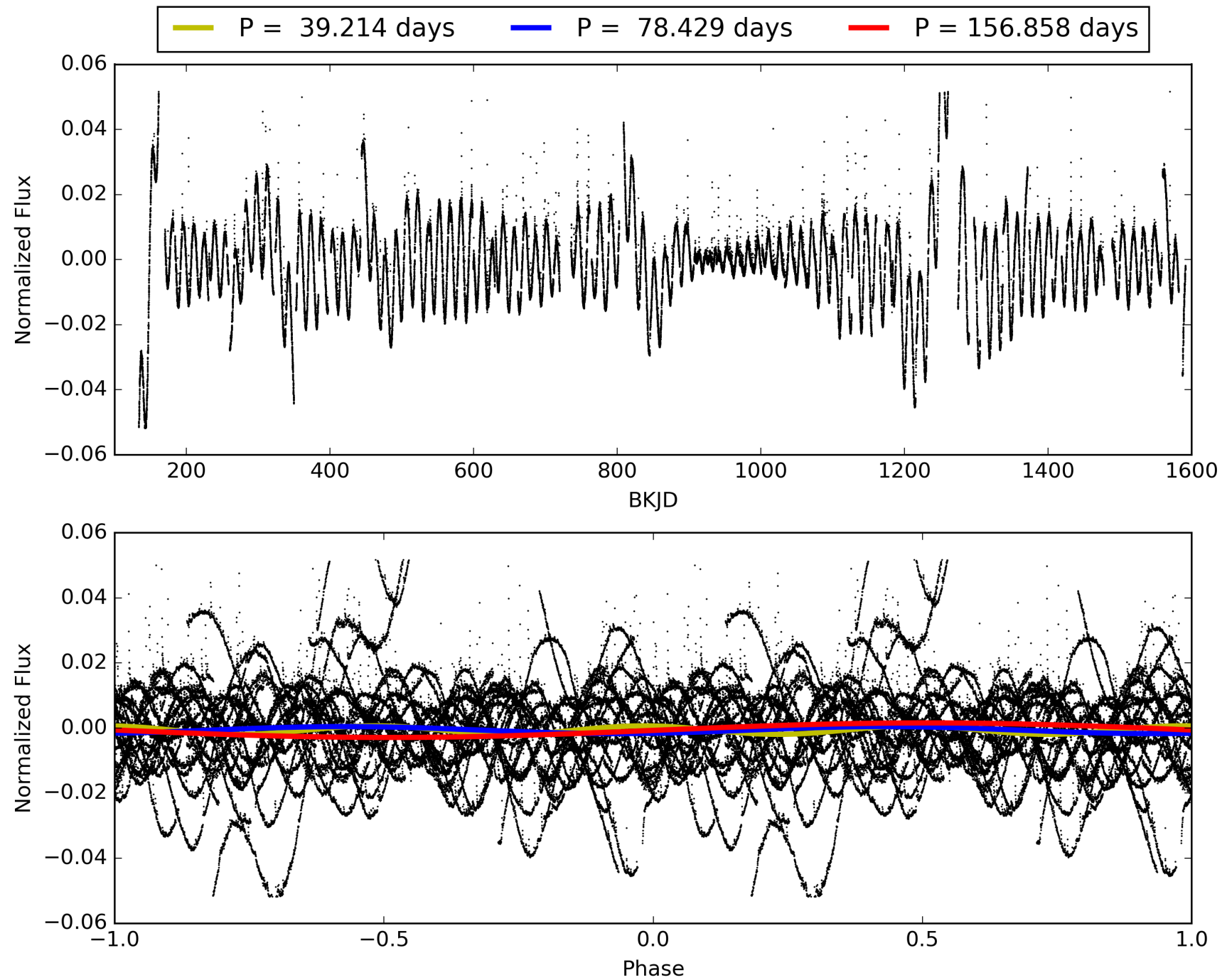
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:44:23 Z

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

TCE 002692704-04, PDC Light Curves

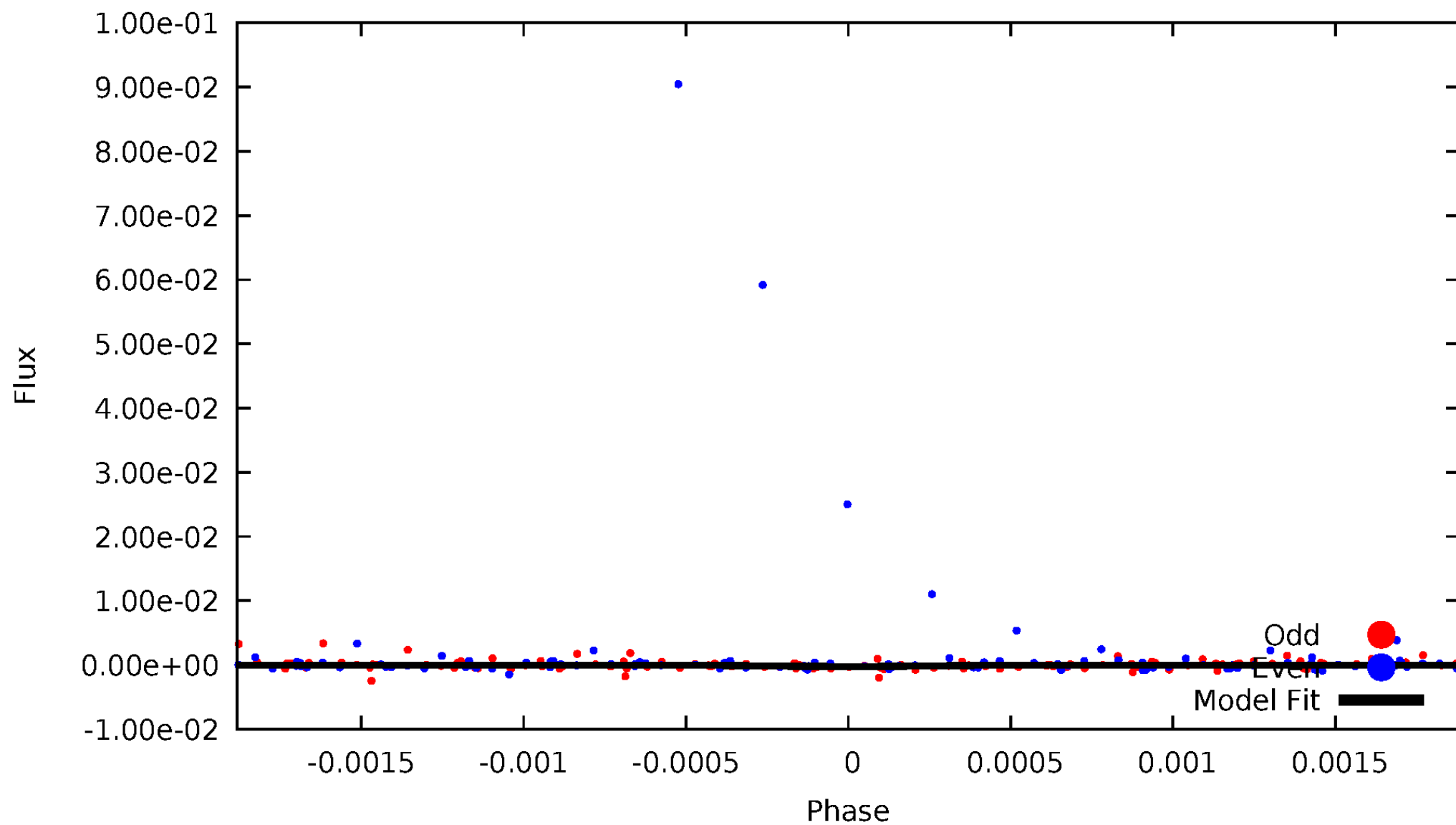


TCE 002692704-04



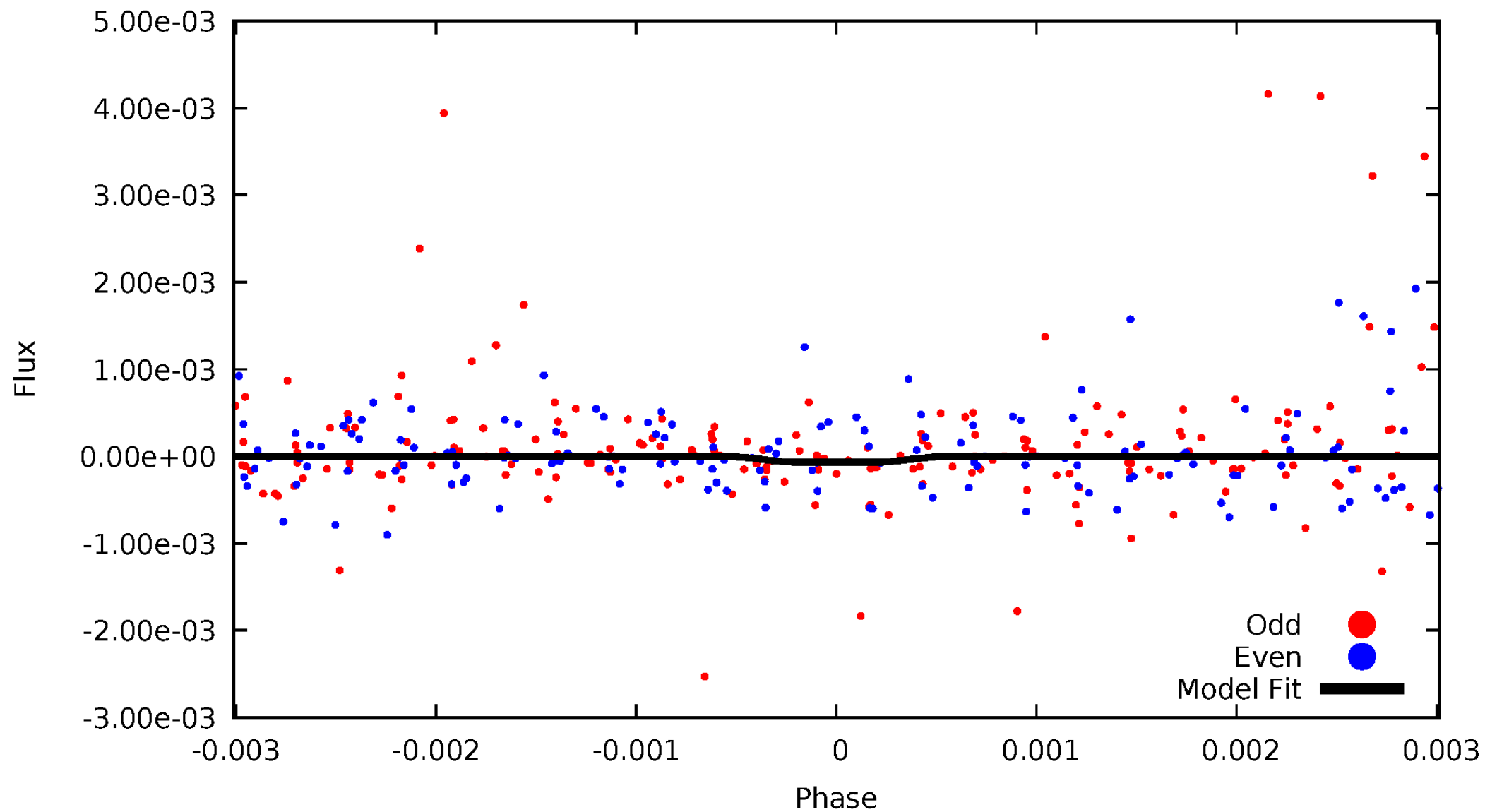
DV Odd/Even

TCE 002692704-04



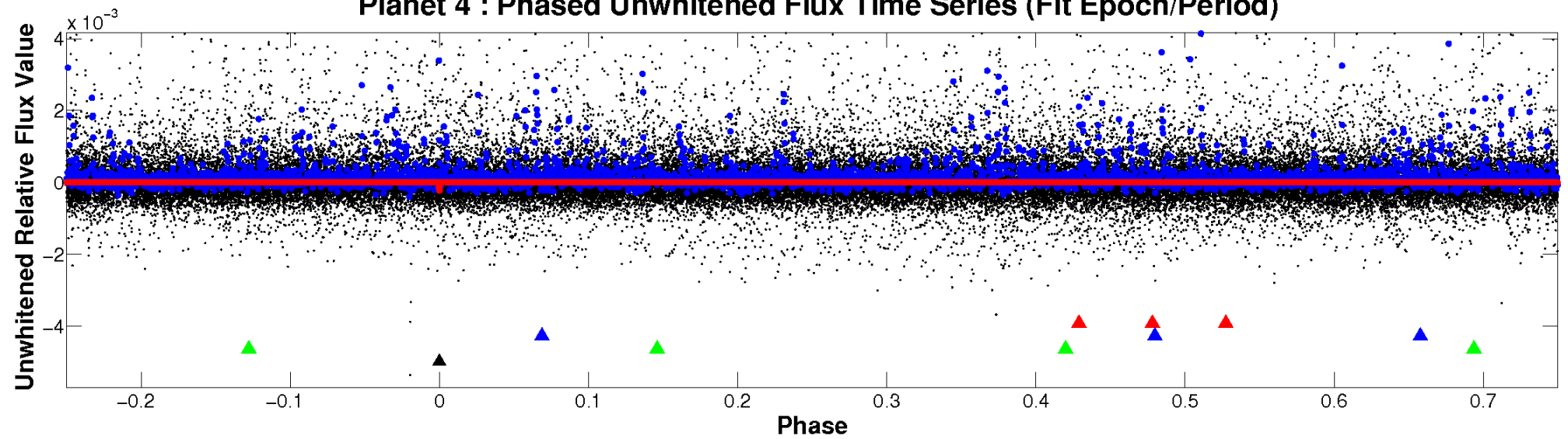
ALT Odd/Even

TCE 002692704-04

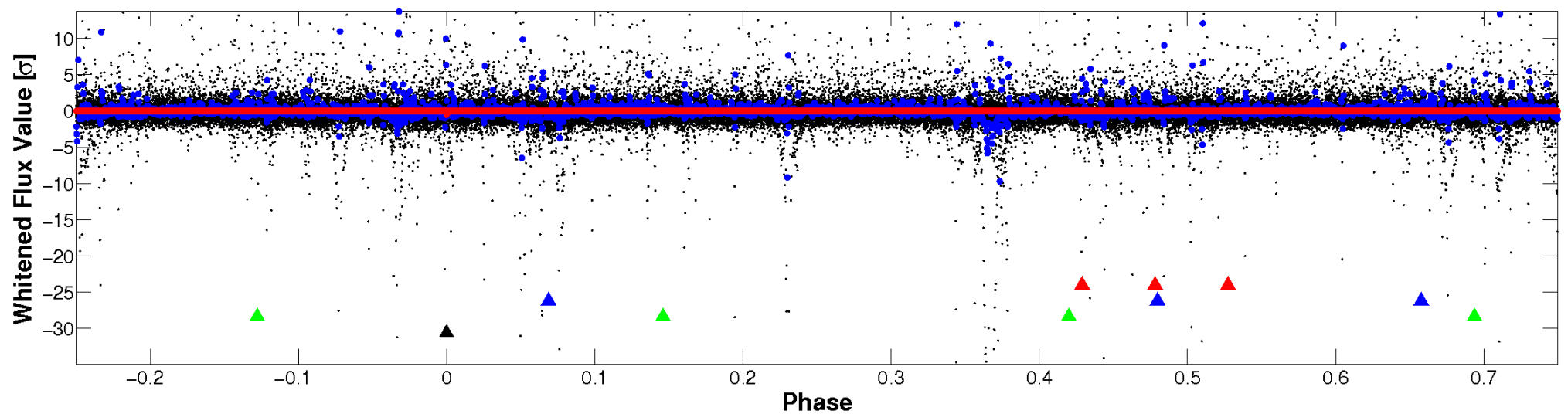


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

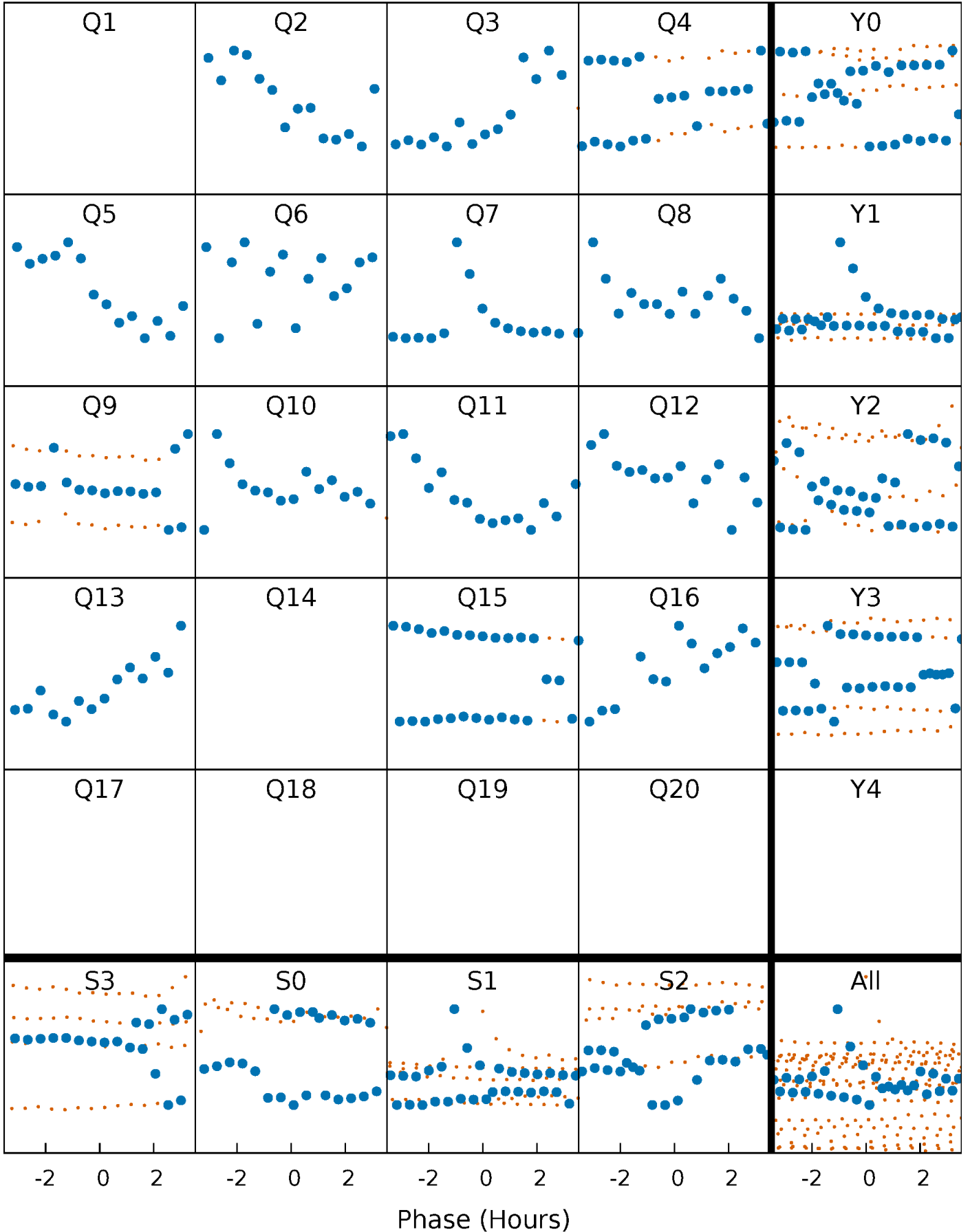


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



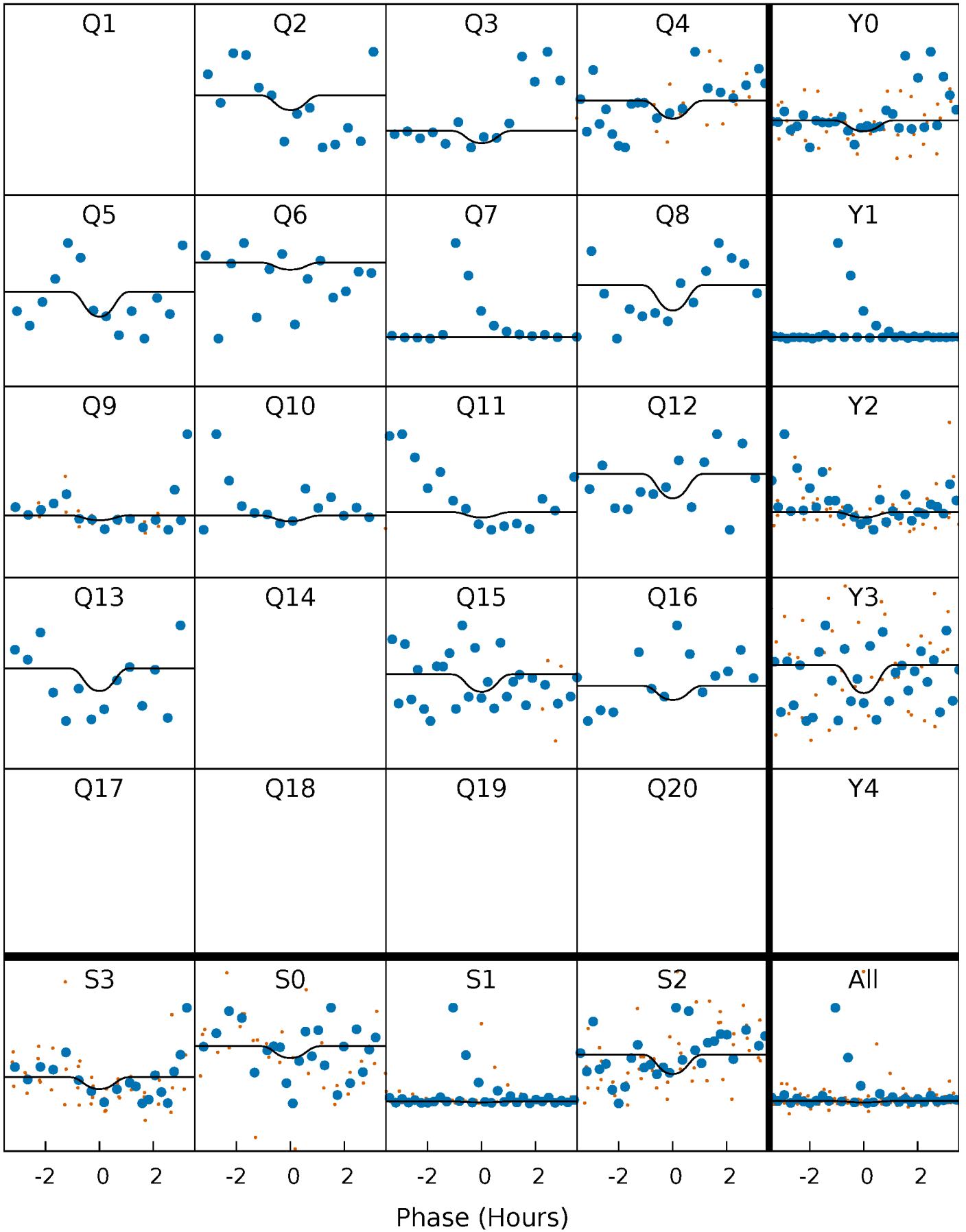
PDC Quarter-Phased Transit Curves

TCE 002692704-04 $P = 78.428844$ Days $T_0 = 197.709041$ (BKJD)



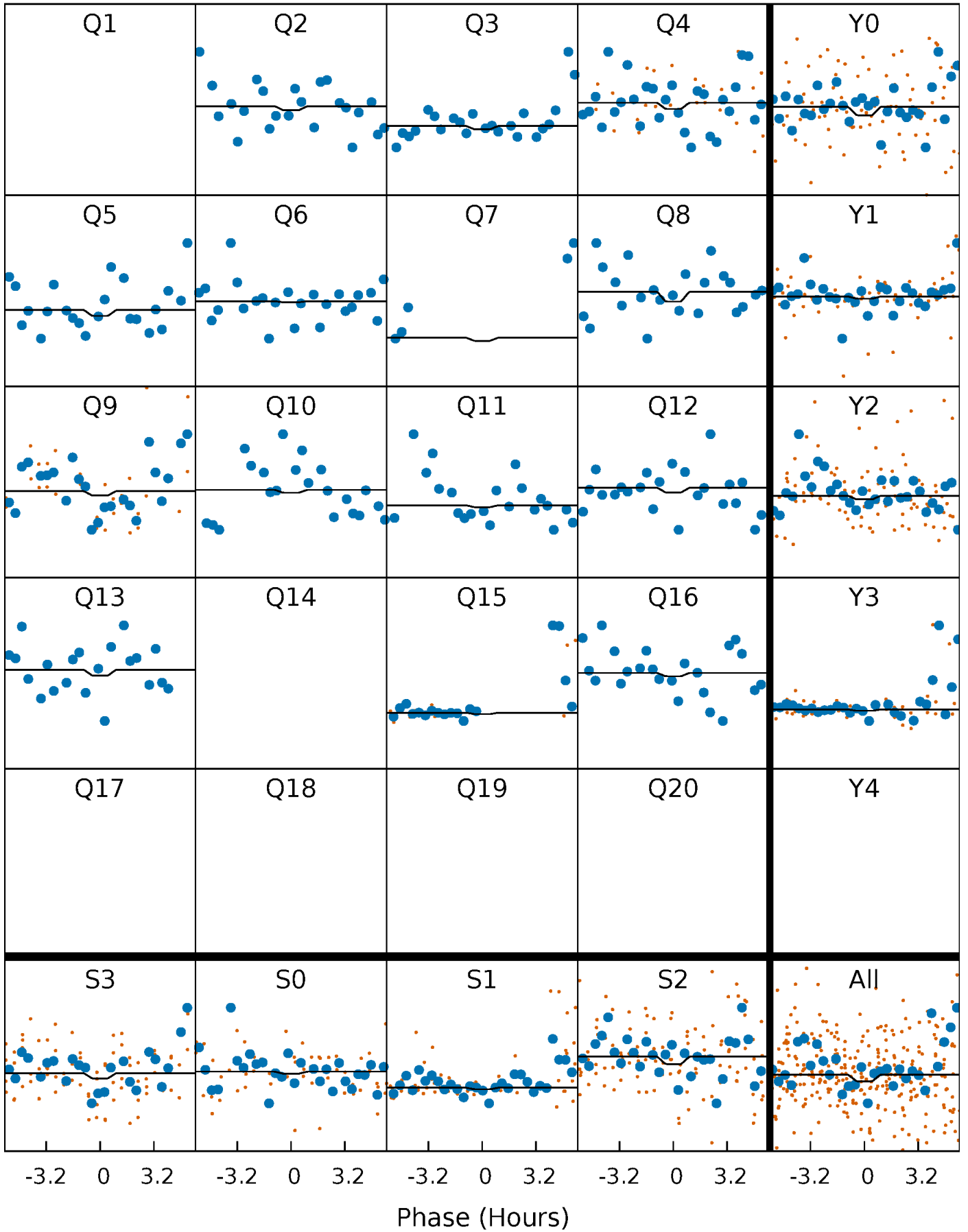
DV Quarter-Phased Transit Curves

TCE 002692704-04 $P = 78.428844$ Days $T_0 = 197.709041$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

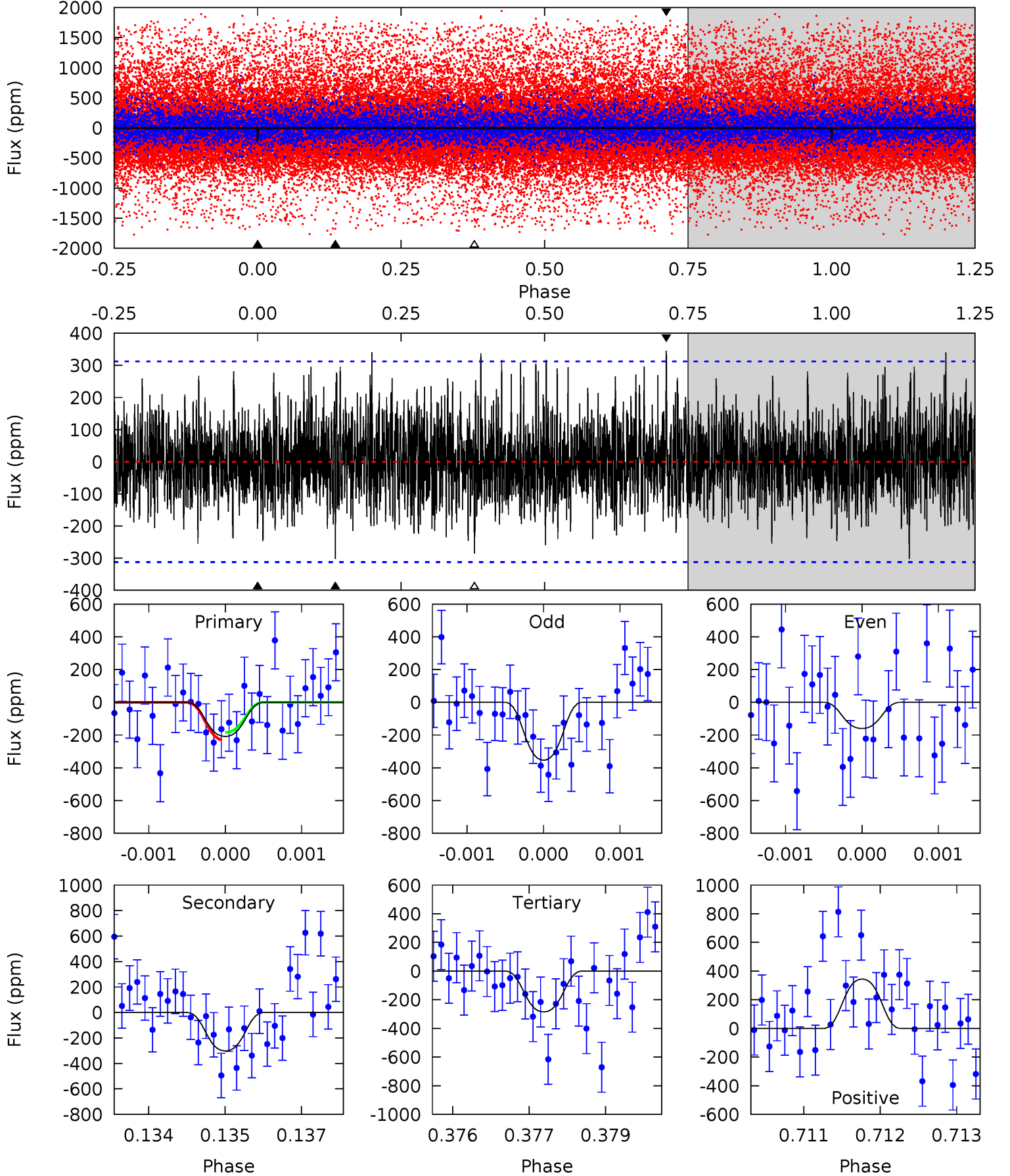
TCE 002692704-04 P= 78.448931 Days $T_0=197.545141$ (BKJD)



DV Model-Shift Uniqueness Test

002692704-04, P = 78.428844 Days, E = 119.280197 Days

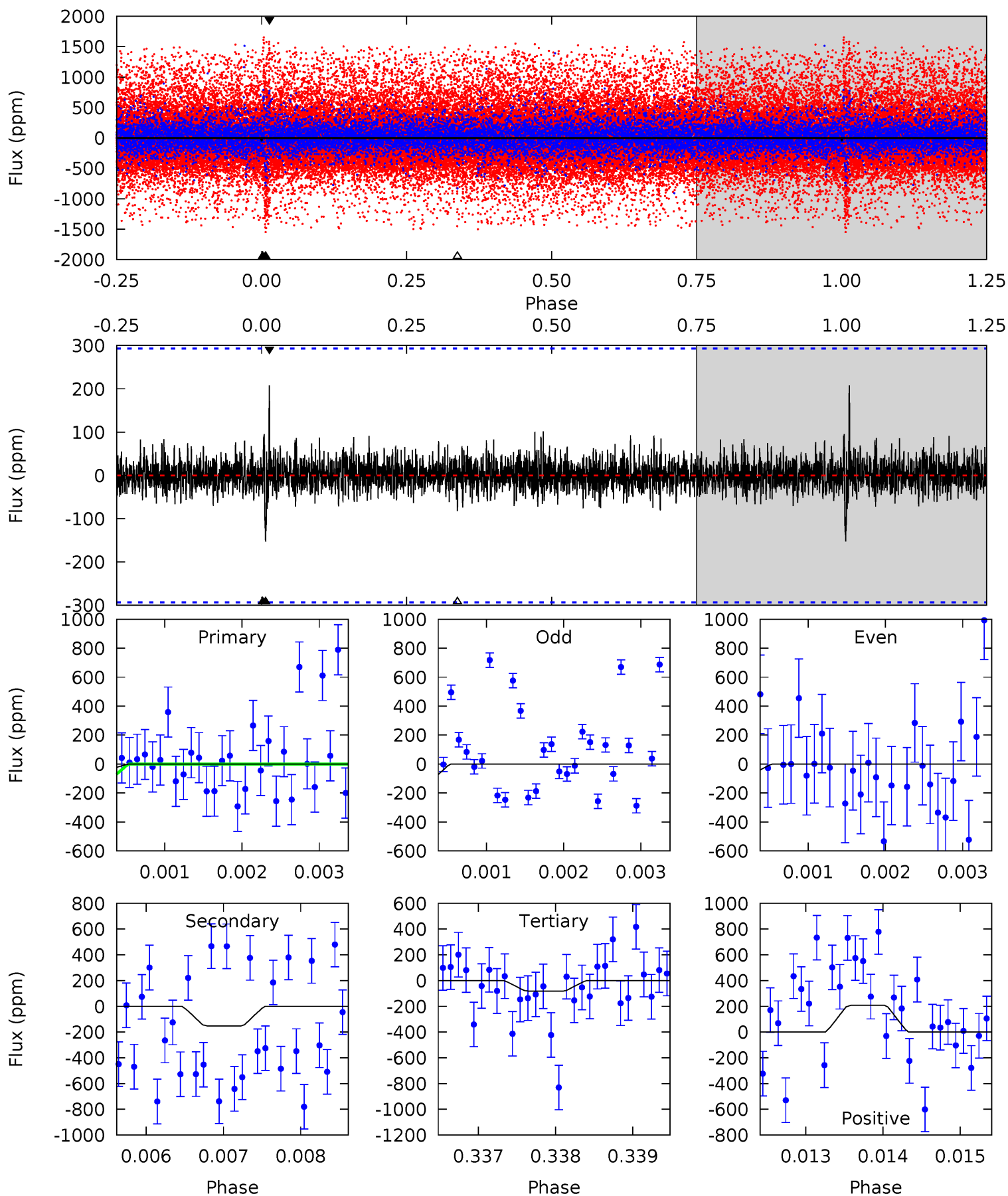
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.62	5.24	4.95	5.98	5.42	3.24	1.63	-1.33	-2.36	0.29	-0.74	1.68	-9.15	0.53	0



Alt Model-Shift Uniqueness Test

002692704-04, P = 78.448931 Days, E = 119.096210 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.78	2.84	1.54	3.86	5.46	3.30	0.50	-0.76	-3.08	1.30	-1.02	0.54	1.30	0.58	0.95



Stellar Parameters For KIC 002692704

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3792^{+120}_{-147}	$4.664^{+0.072}_{-0.018}$	$0.560^{+0.050}_{-0.300}$	$0.594^{+0.028}_{-0.075}$	$0.594^{+0.040}_{-0.060}$	$3.990^{+1.358}_{-0.371}$
	+3%/-4%	+2%/-0%	+9%/-54%	+5%/-13%	+7%/-10%	+34%/-9%
Source	KIC0	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 002692704-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-302 ± 58	$2.17^{+2.03}_{-1.40}$	324^{+12}_{-13}	3054^{+1246}_{-504}	3211^{+22981}_{-2352}
Alt.	-152 ± 54	$1.87^{+1.93}_{-1.30}$	325^{+12}_{-14}	2862^{+1368}_{-497}	1977^{+21039}_{-1543}

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

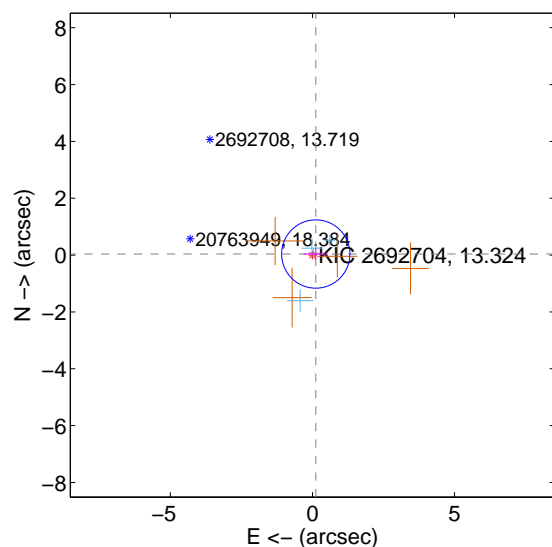
Supplemental centroid analysis for 002692704-04. Kepler magnitude: 13.32. Transit SNR 2.75

There are 4 quarters with good PRF difference image offsets

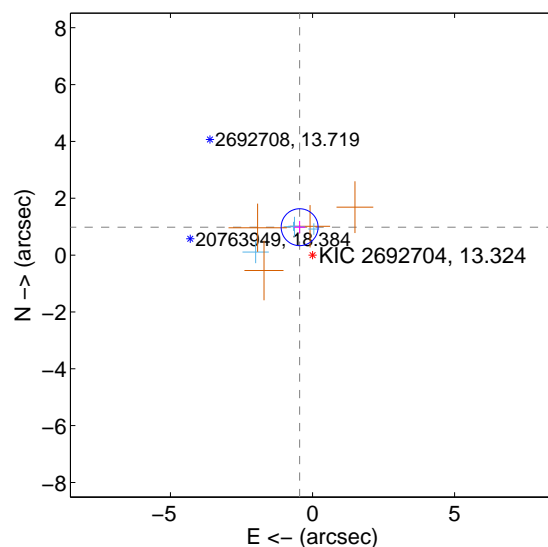
The direct PRF centroid is offset from the target star catalog position by about 1.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.123 ± 0.400	0.31	-0.117 ± 0.427	0.038 ± 0.208
PRF-fit source offset from KIC position	1.082 ± 0.216	5.00	0.454 ± 0.199	0.982 ± 0.220
photometric centroid source offset	0.67 ± 2.14	0.31	-0.56 ± 2.09	-0.36 ± 2.28

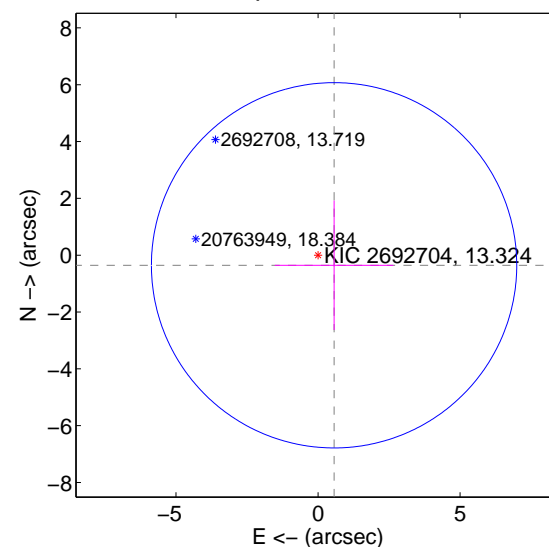
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

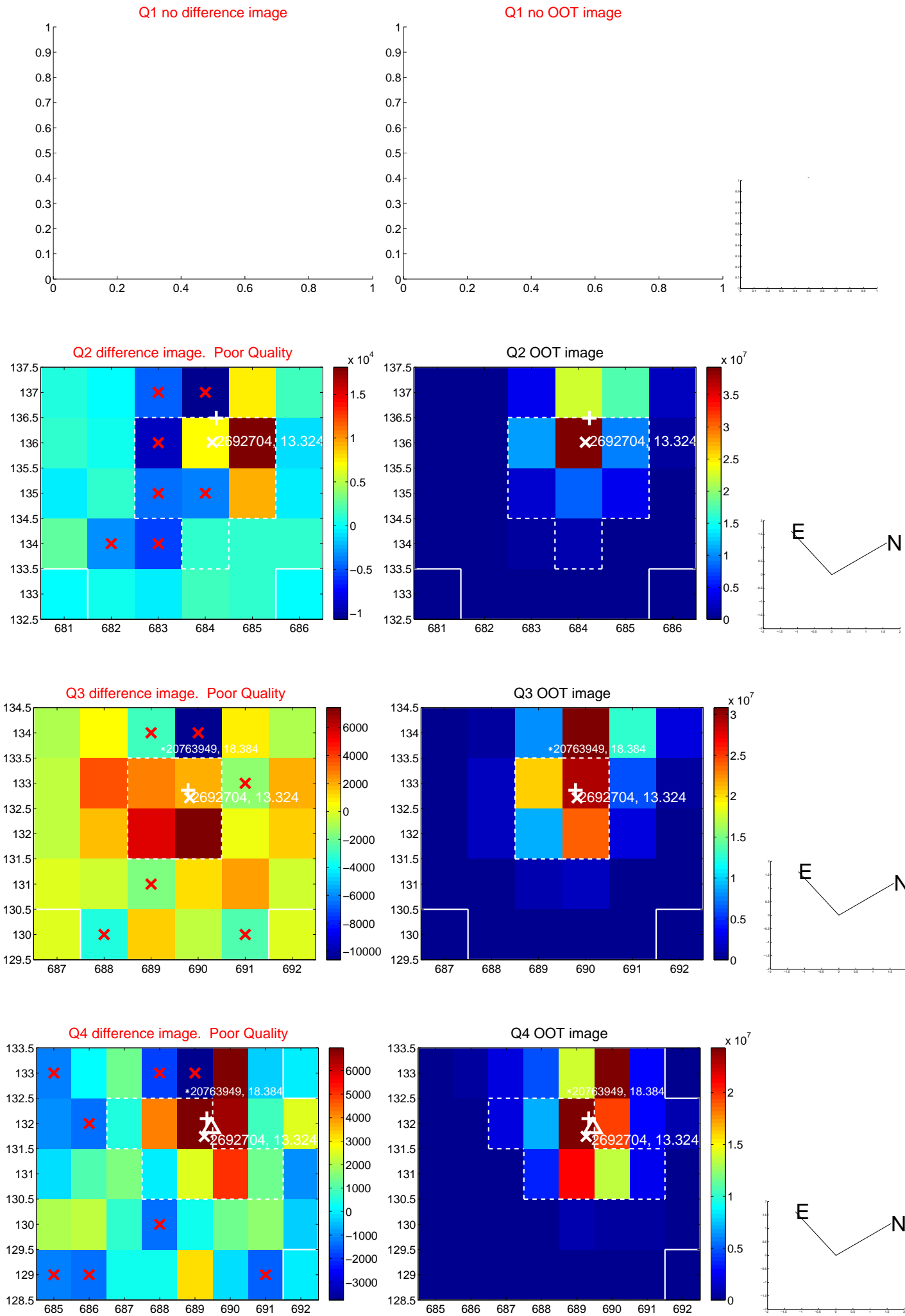


offset from photometric centroids

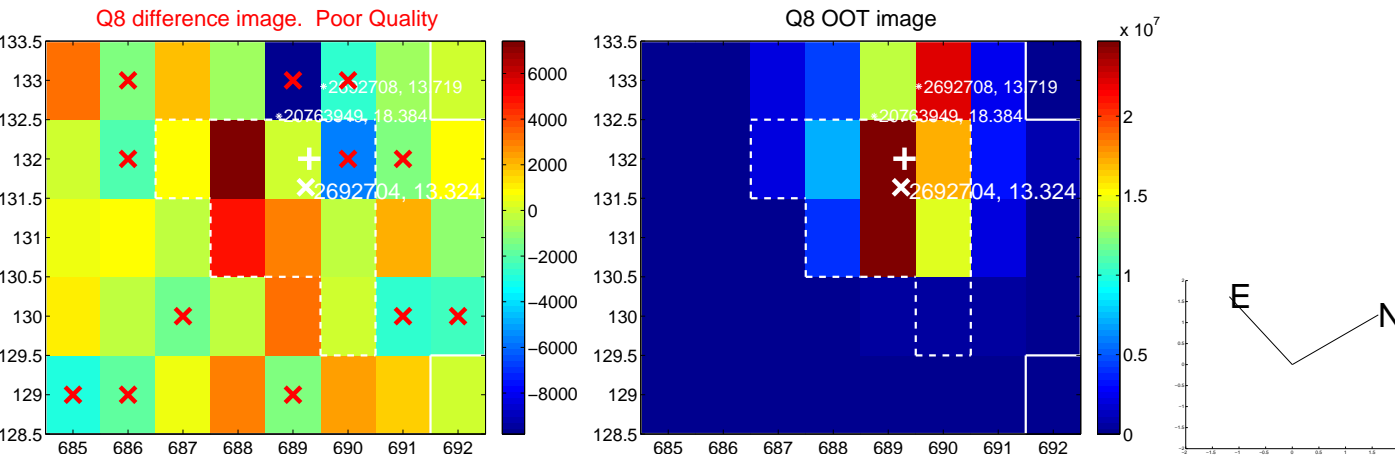
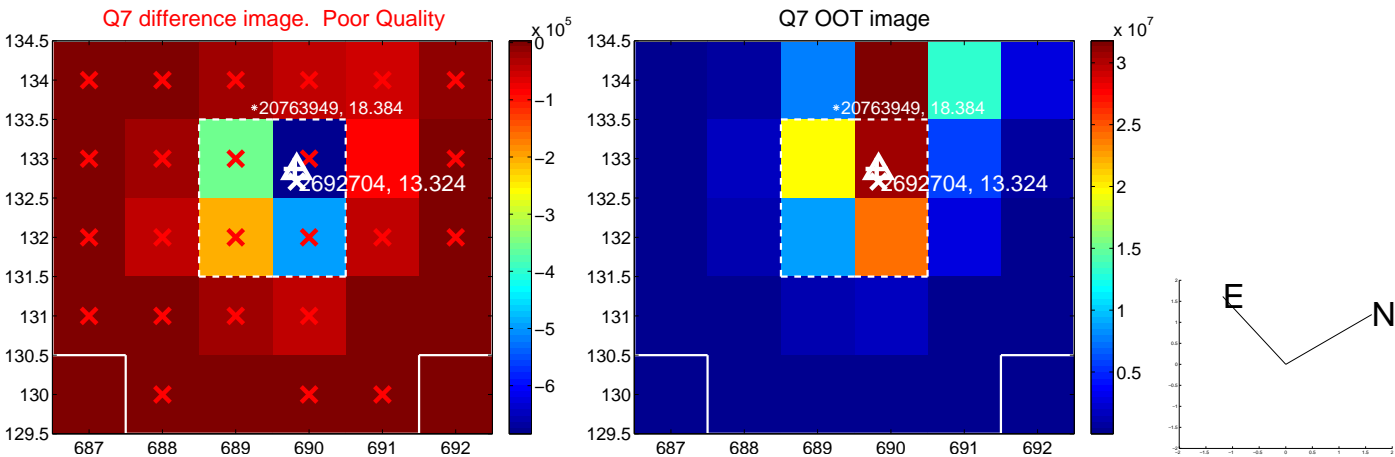
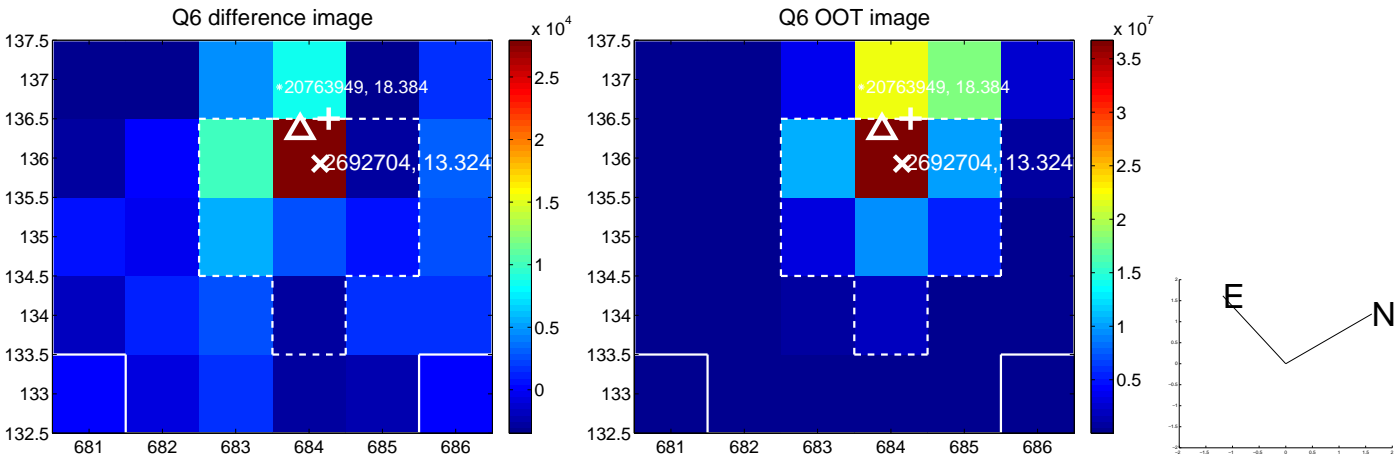
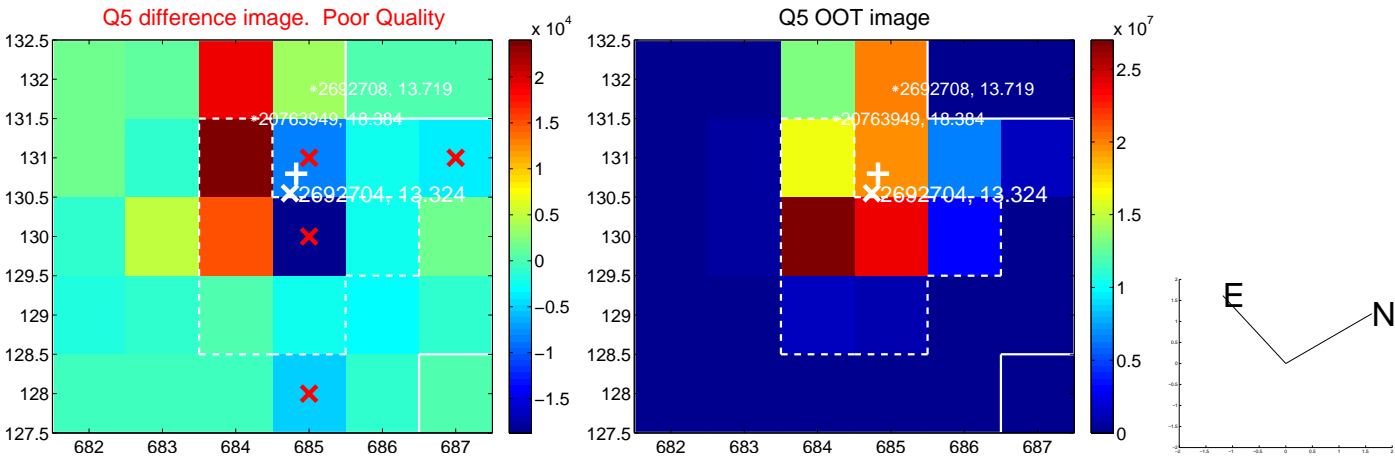


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

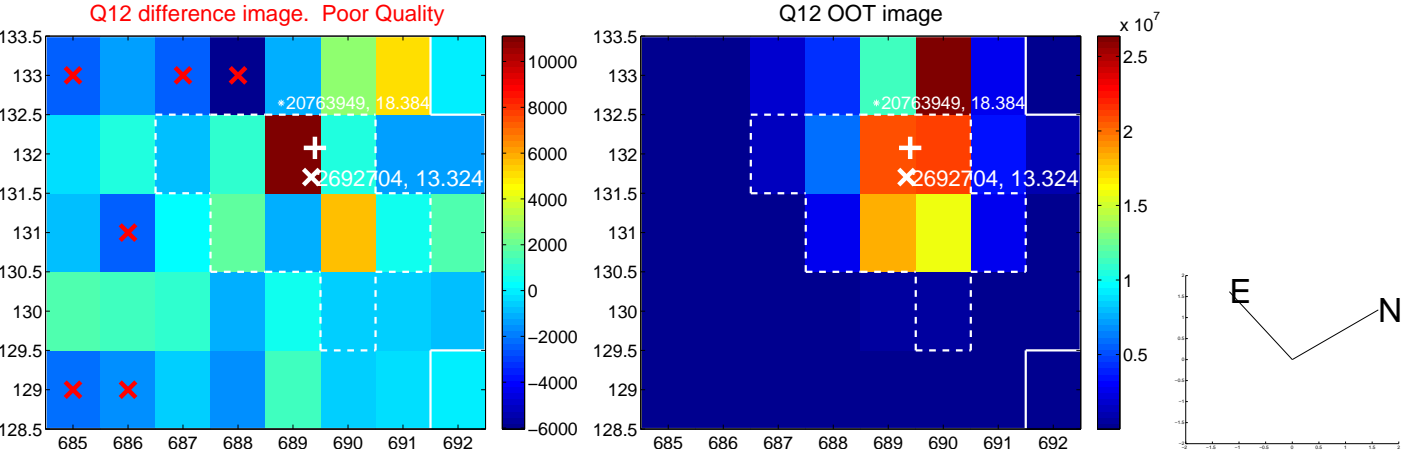
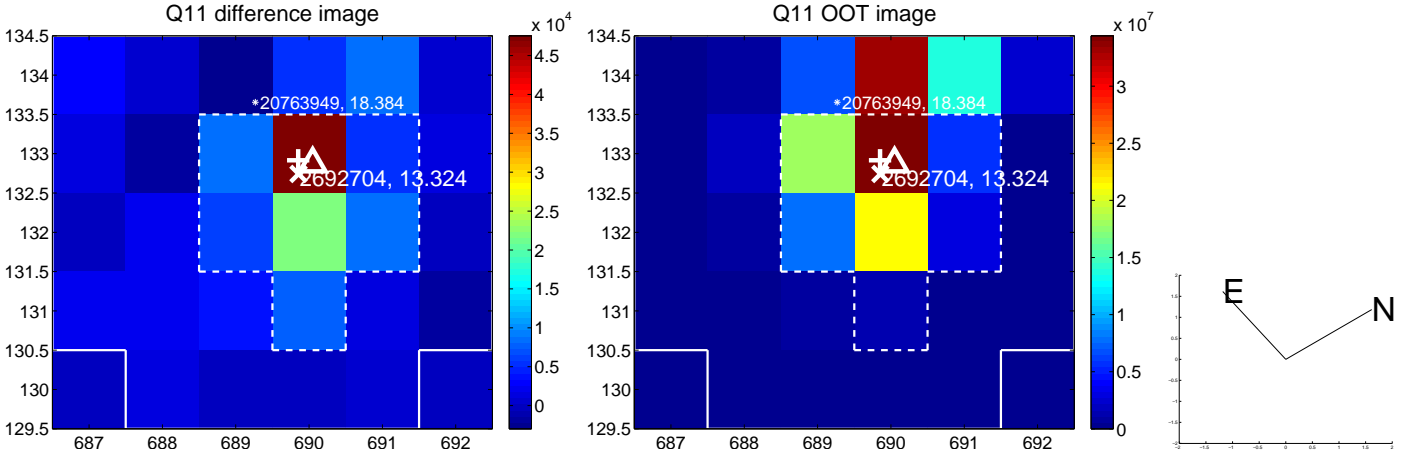
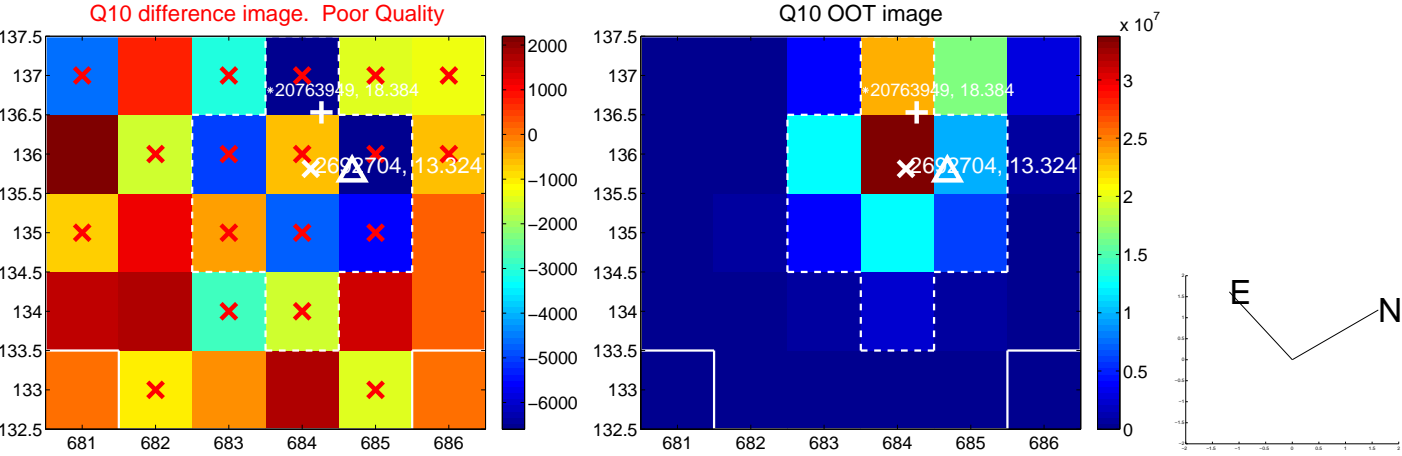
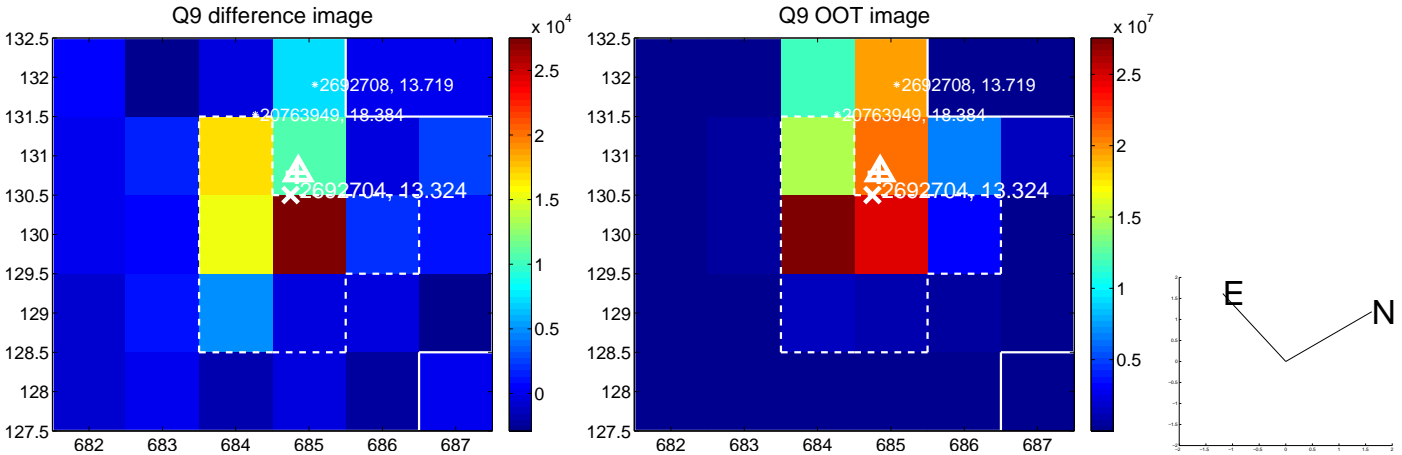
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



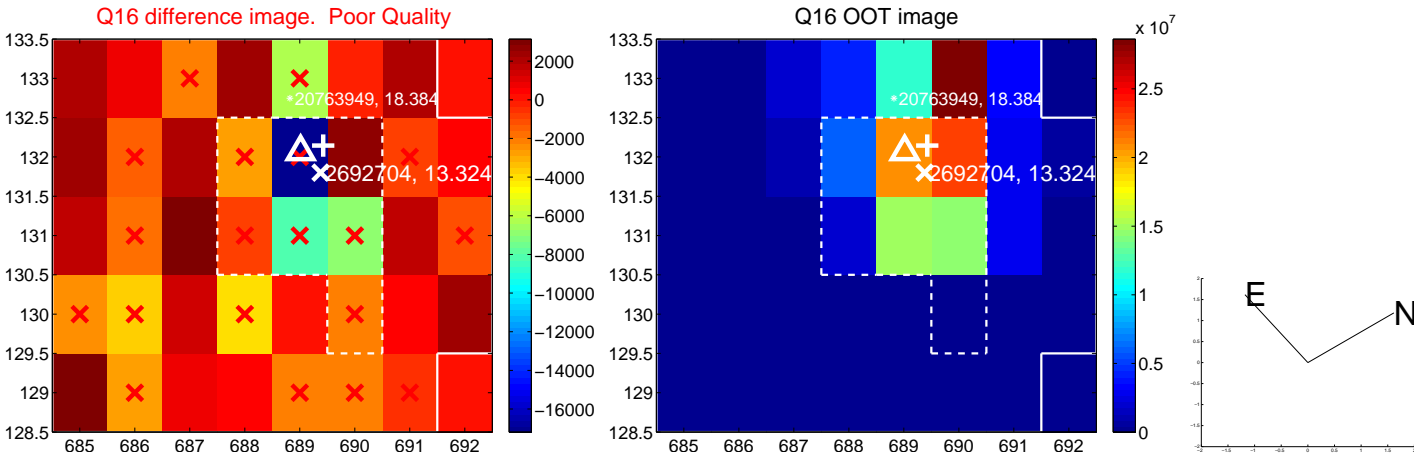
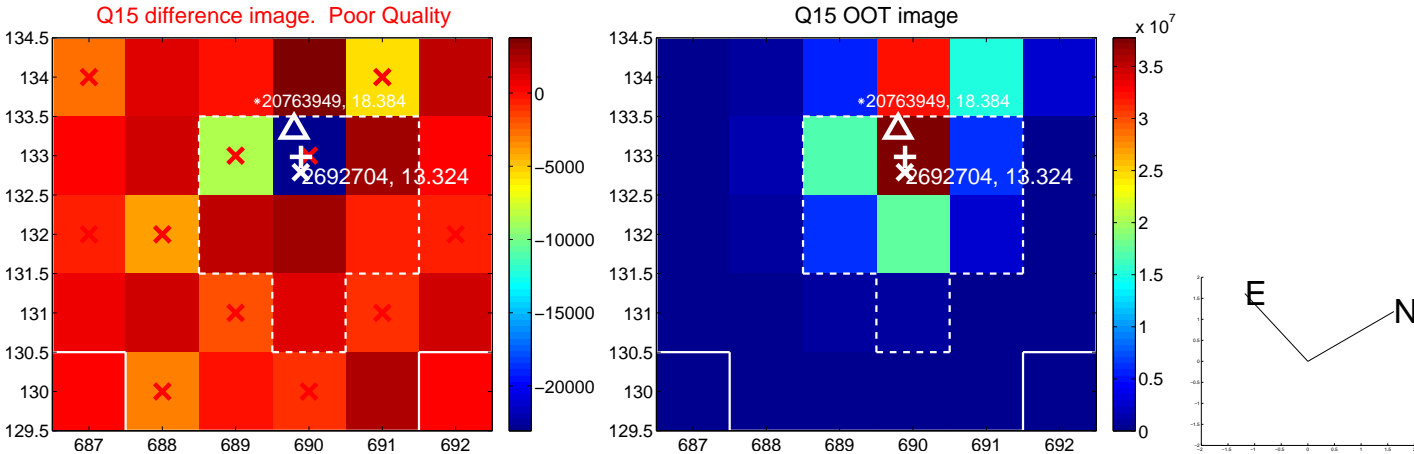
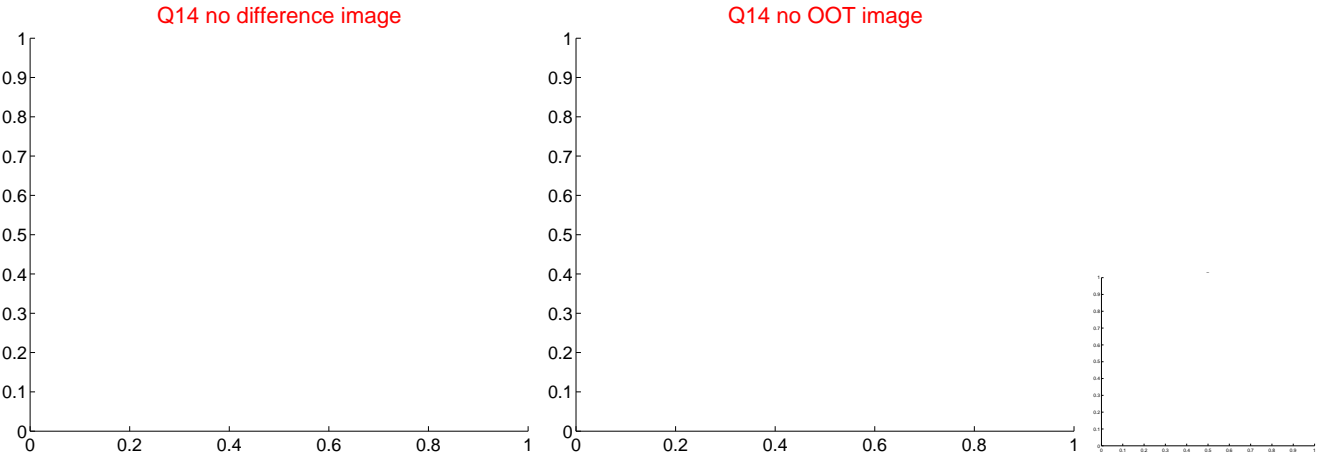
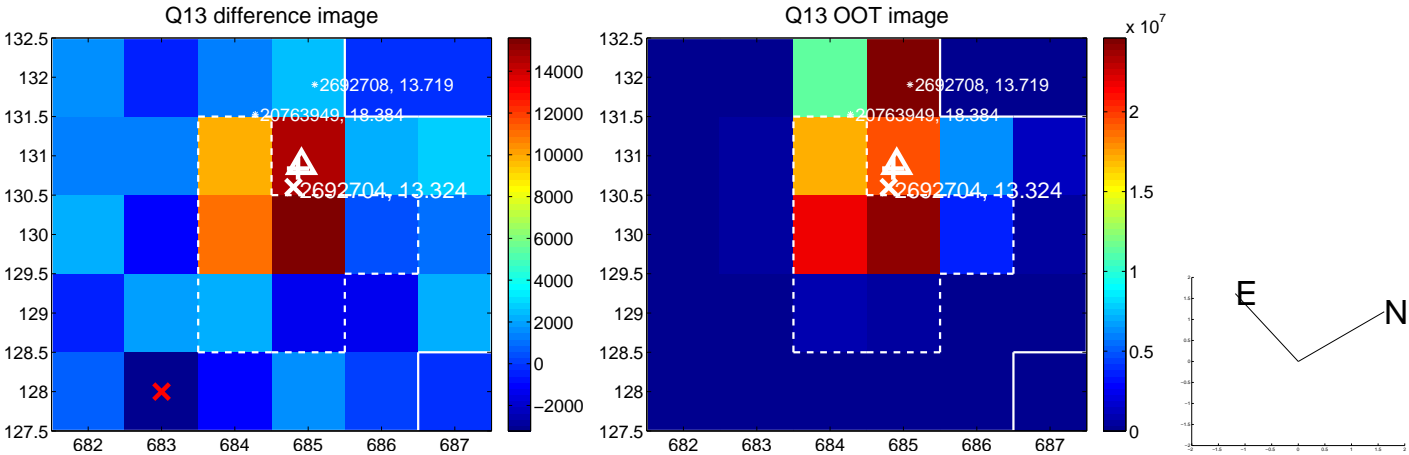
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



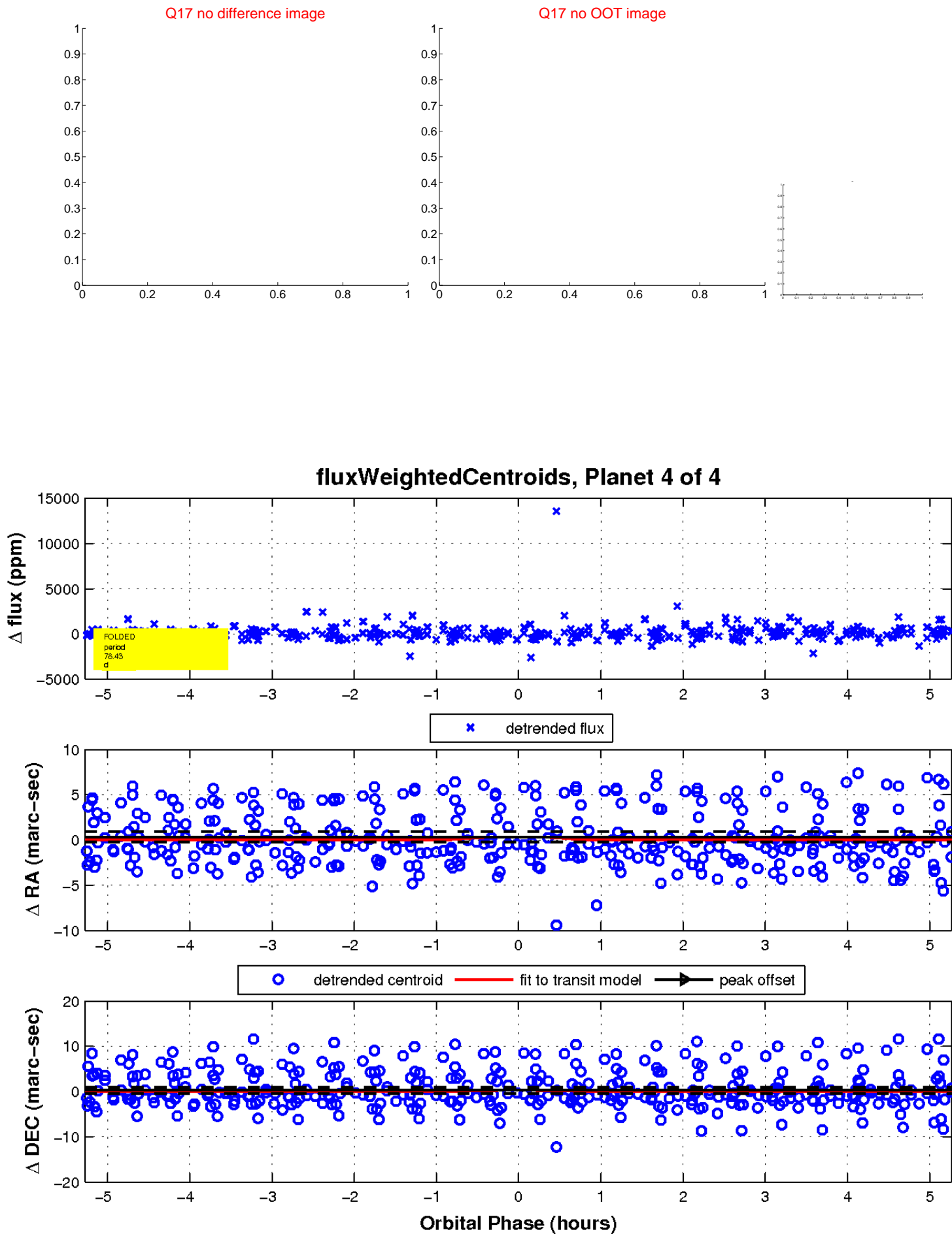
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

