

KIC 009243671

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})
009243671-01	OBS	No	0.593649	131.748082	18.9	2.939	9.7	5.1	1.23	6366	0.57	11197.46
009243671-02	OBS	No	0.593654	131.934856	54.4	1.931	10.7	11.0	1.23	6366	0.92	11197.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009243671-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009243671-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD

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

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

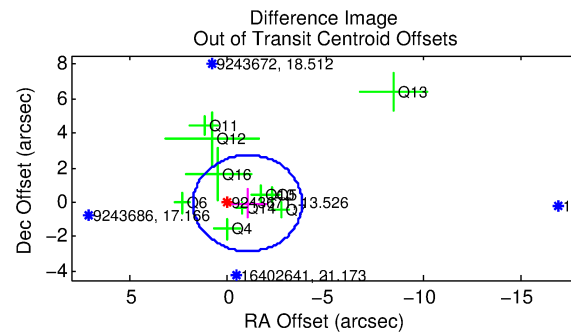
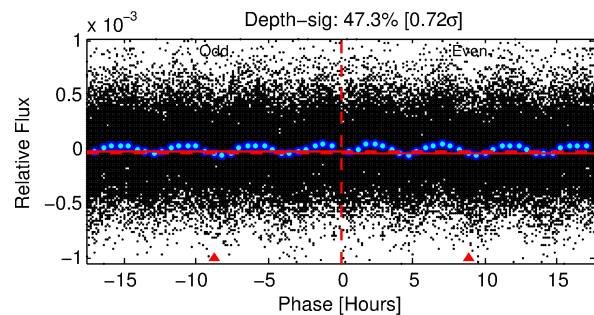
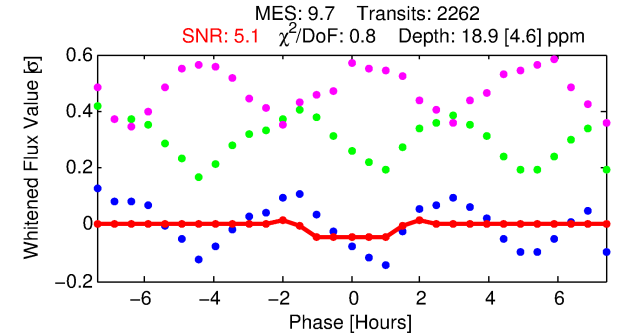
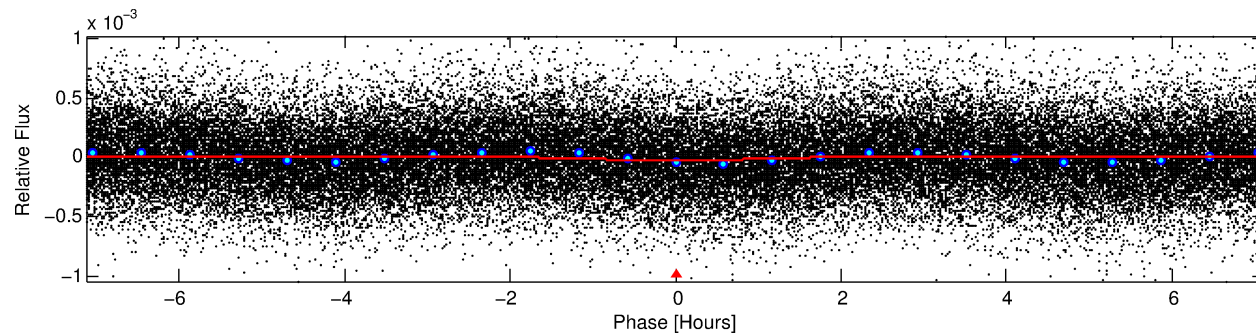
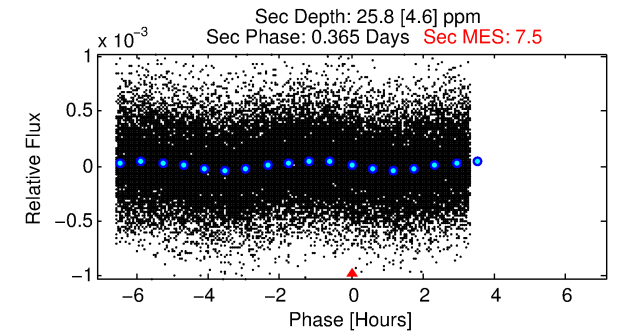
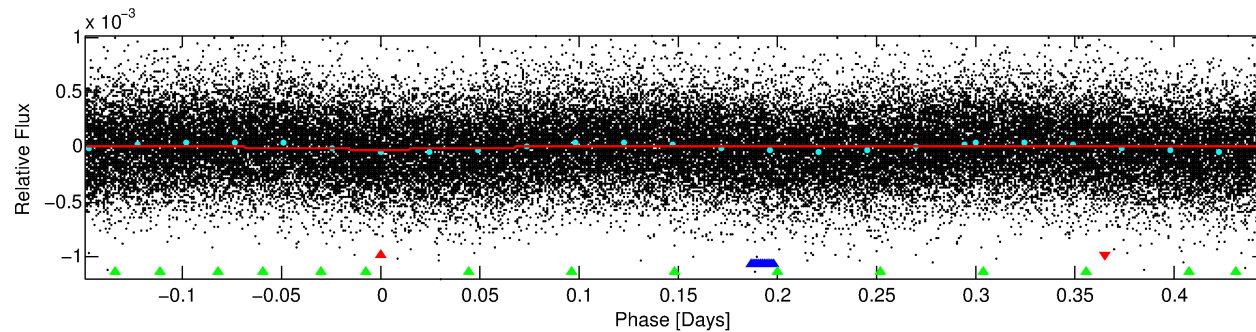
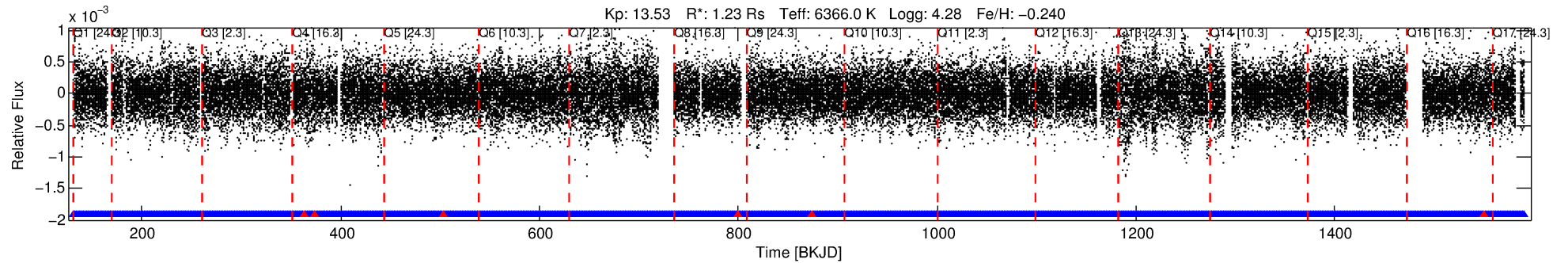
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009243671-01

No Significant Match Found

DV One-Page Summary

KIC: 9243671 Candidate: 1 of 3 Period: 0.594 d



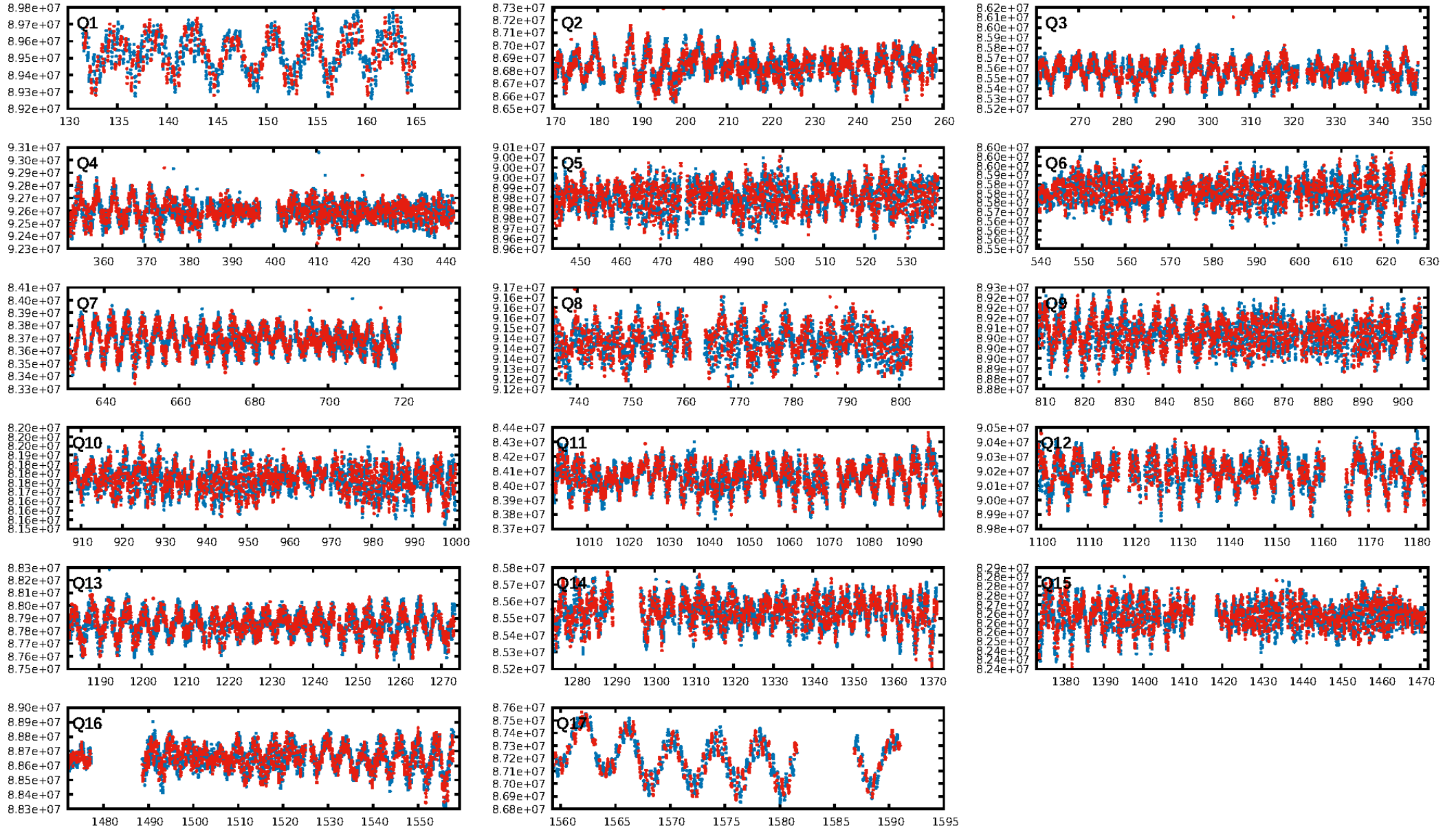
DV Fit Results:

Period = 0.59365 [0.00002] d
Epoch = 131.7481 [0.0045] BKJD
Rp/R* = 0.0043 [0.0016]
a/R* = 1.37 [1.27]
b = 0.71 [1.38]
Seff = 11197.46 [4353.88]
Teff = 2623 [255] K
Rp = 0.57 [0.28] Re
a = 0.0141 [0.0036] AU
Ag = 8.57 [7.43] [1.02σ]
Teffp = 6939 [1382] K [3.07σ]




DV Diagnostic Results:

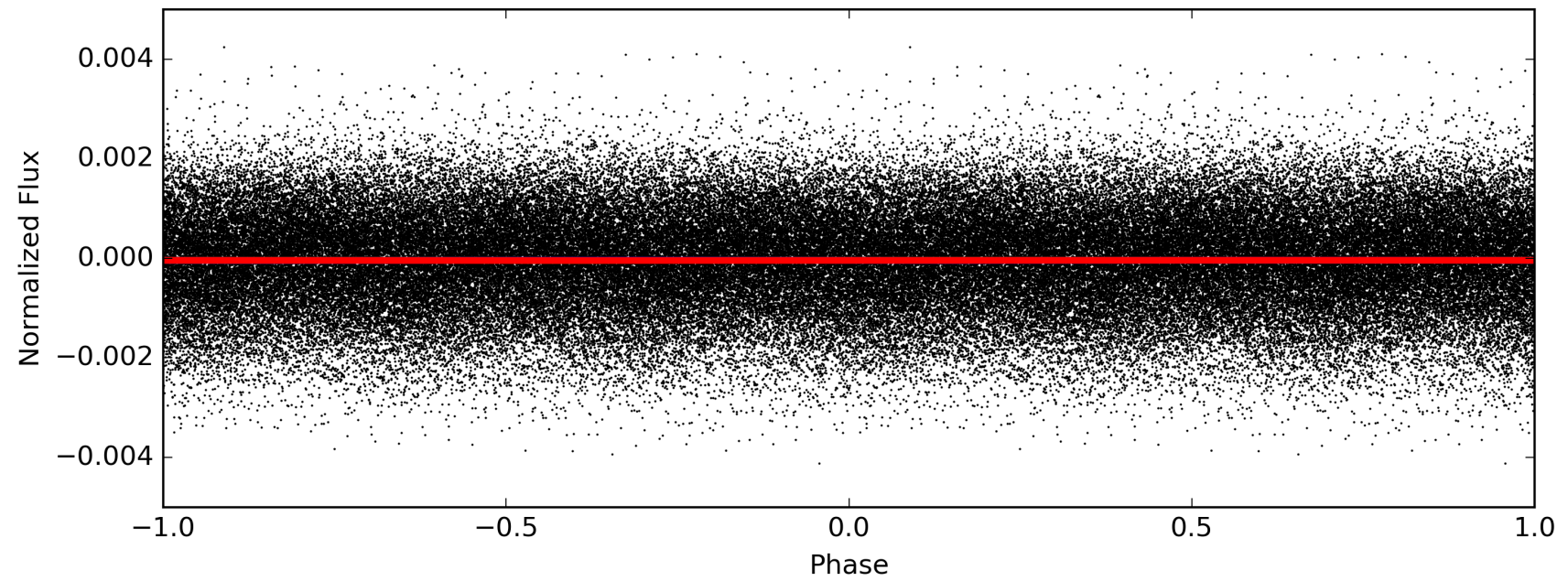
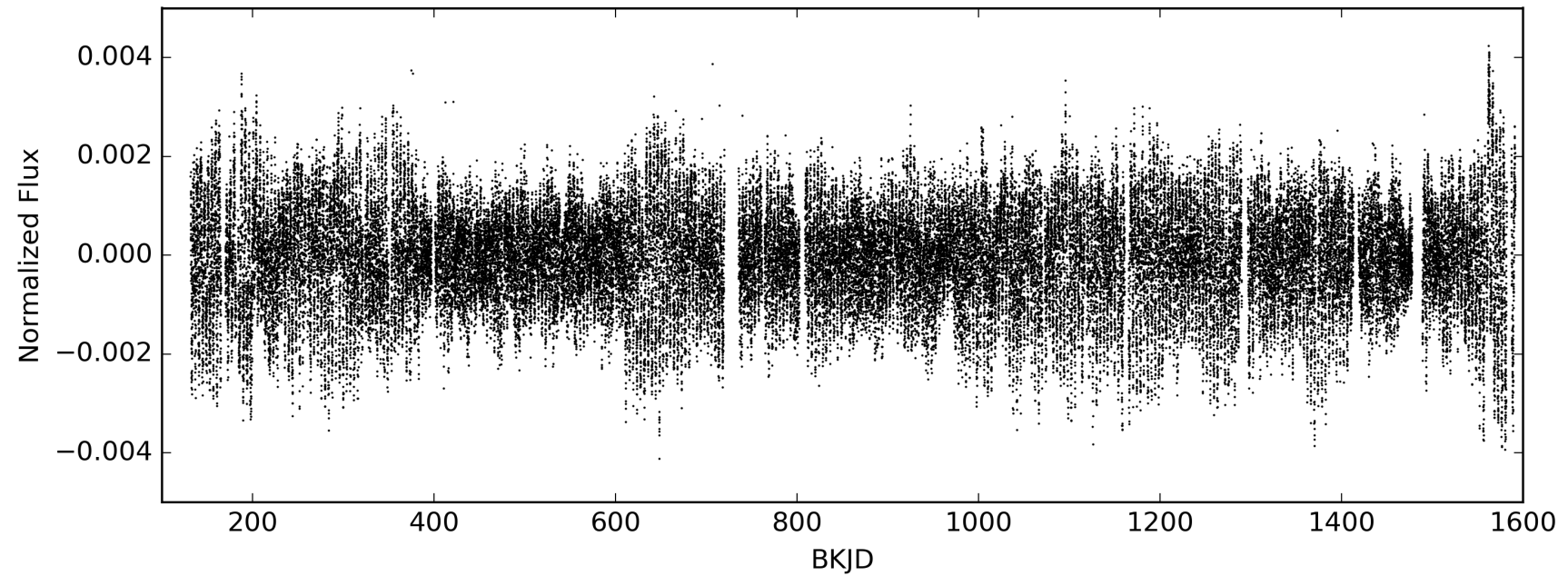
ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.30e-24
RollingBand-fgt: 1.00 [2153/2159]
GhostDiagnostic-chr: 1.512
Centroid-sig: 33.1%
Centroid-so: 0.887 arcsec [0.67σ]
OotOffset-rm: 1.018 arcsec [1.10σ]
KicOffset-rm: 1.155 arcsec [1.47σ]
OotOffset-st: 3/2/3/2 [10]
KicOffset-st: 3/2/3/2 [10]
DiffImageQuality-fgm: 0.40 [4/10]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 009243671-01, PDC Light Curves



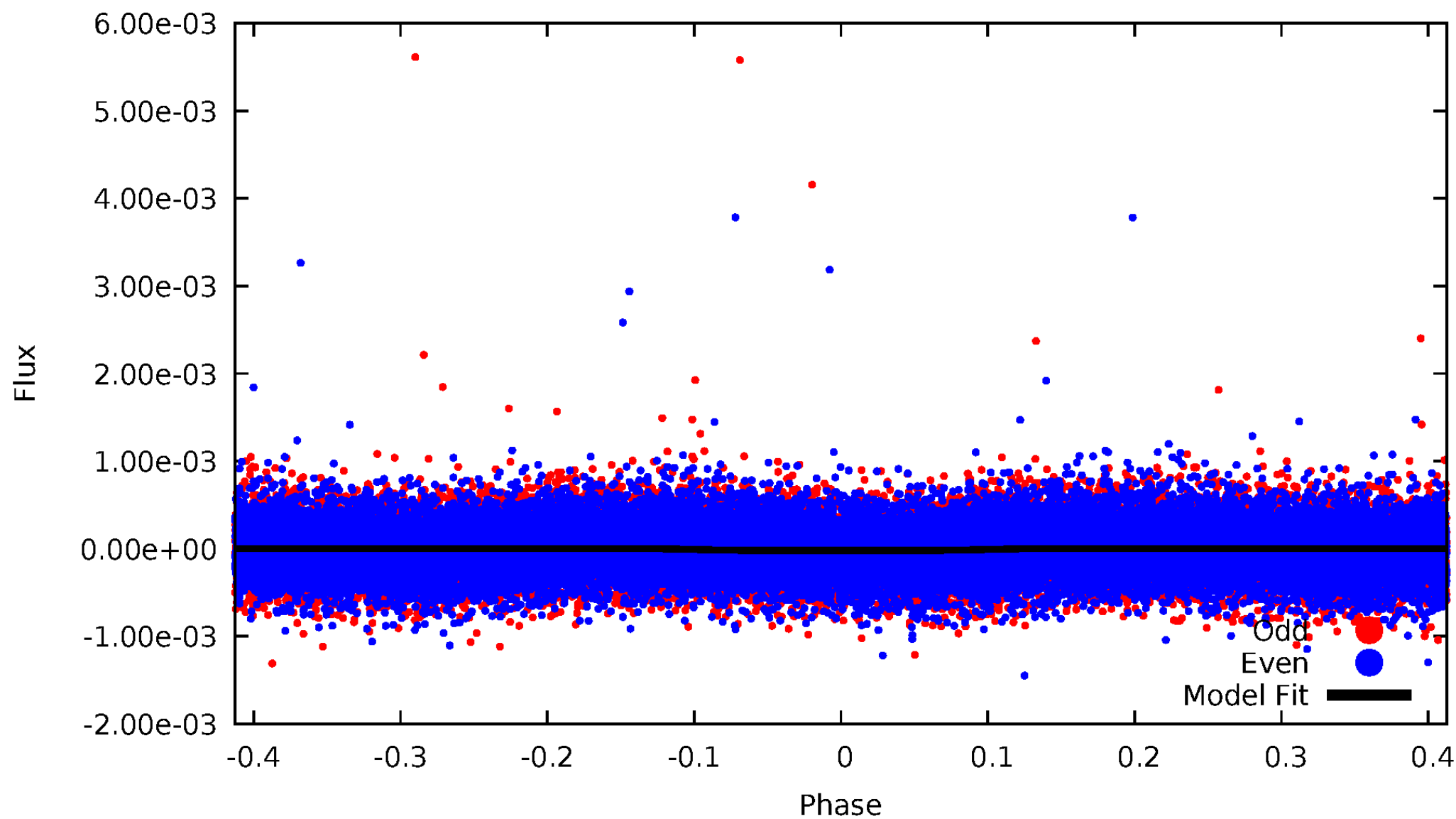
TCE 009243671-01

 P = 0.297 days  P = 0.594 days  P = 1.187 days



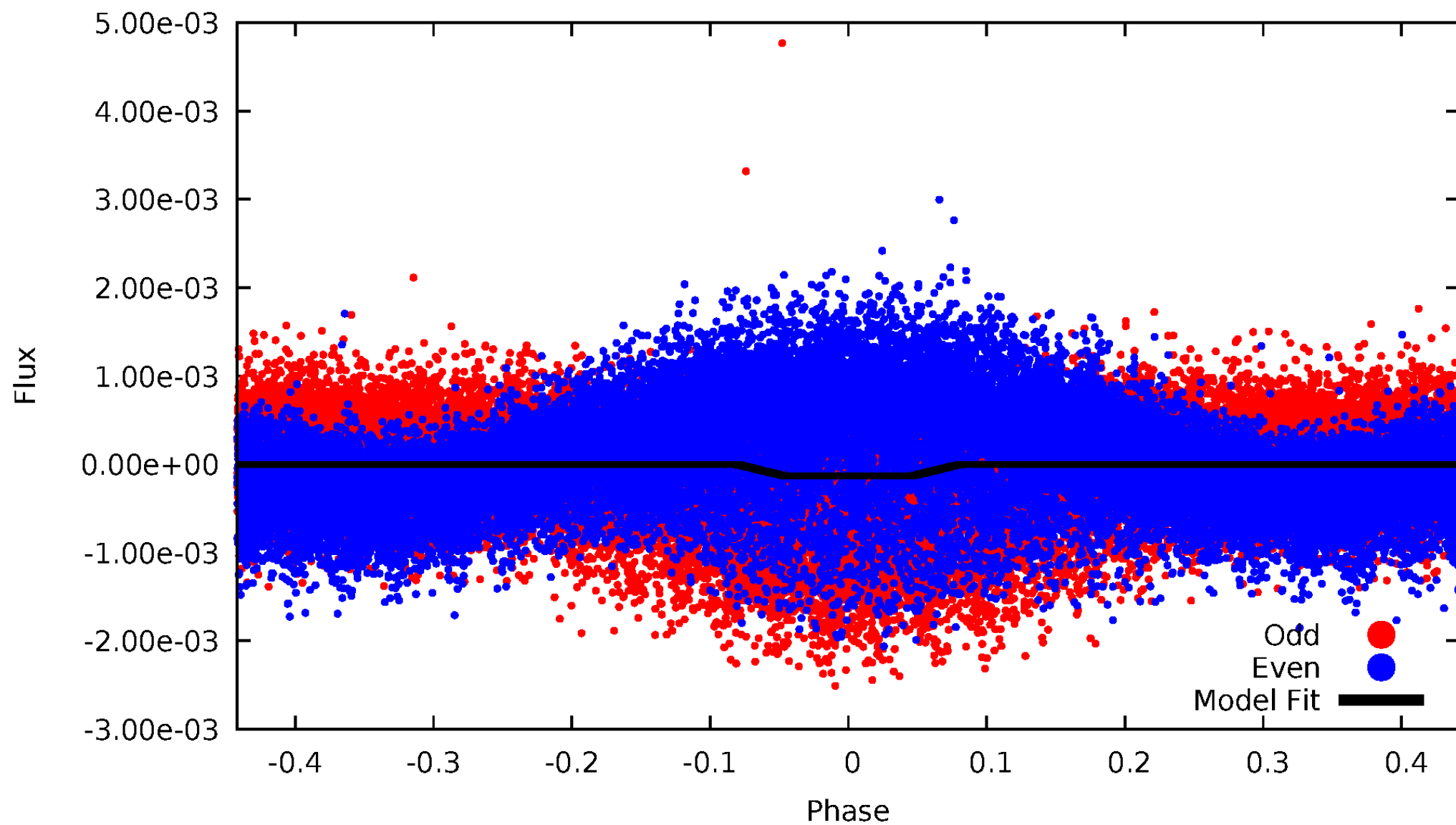
DV Odd/Even

TCE 009243671-01



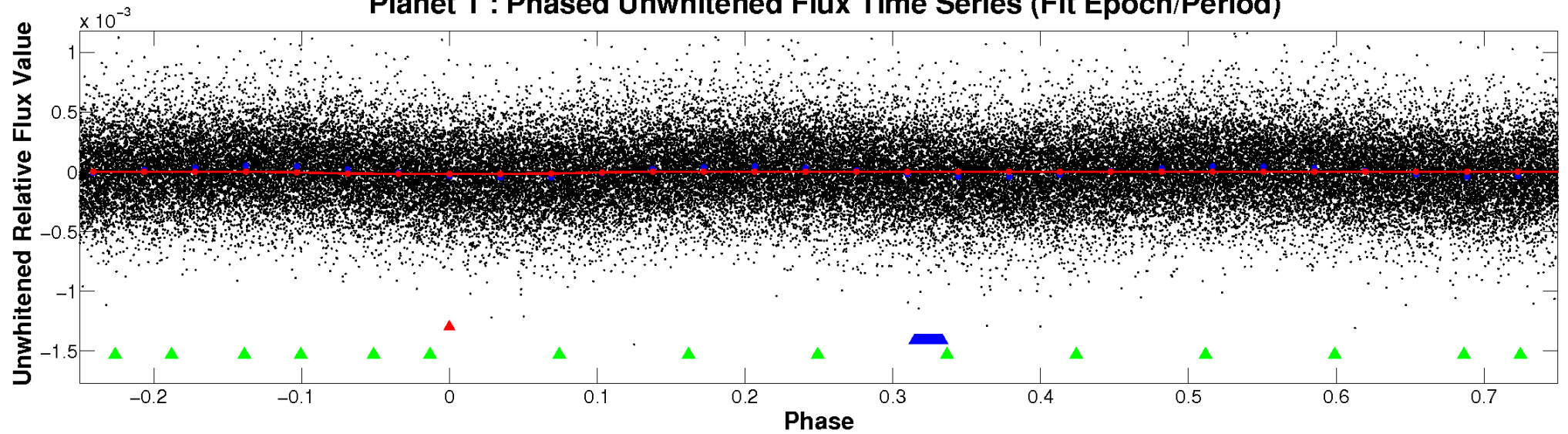
ALT Odd/Even

TCE 009243671-01

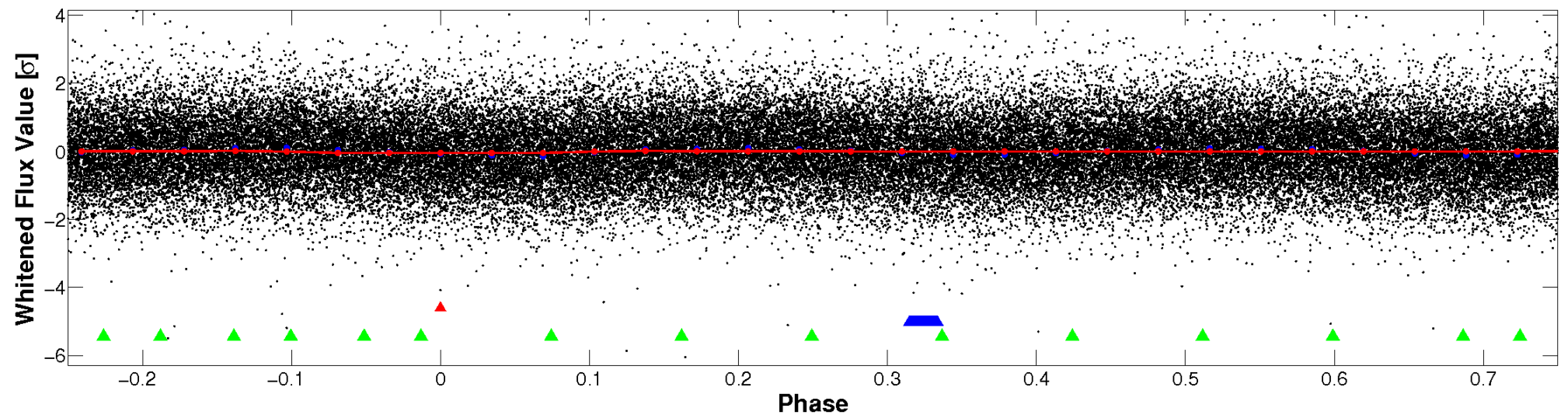


Non-Whitened Vs. Whitened Light Curve

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

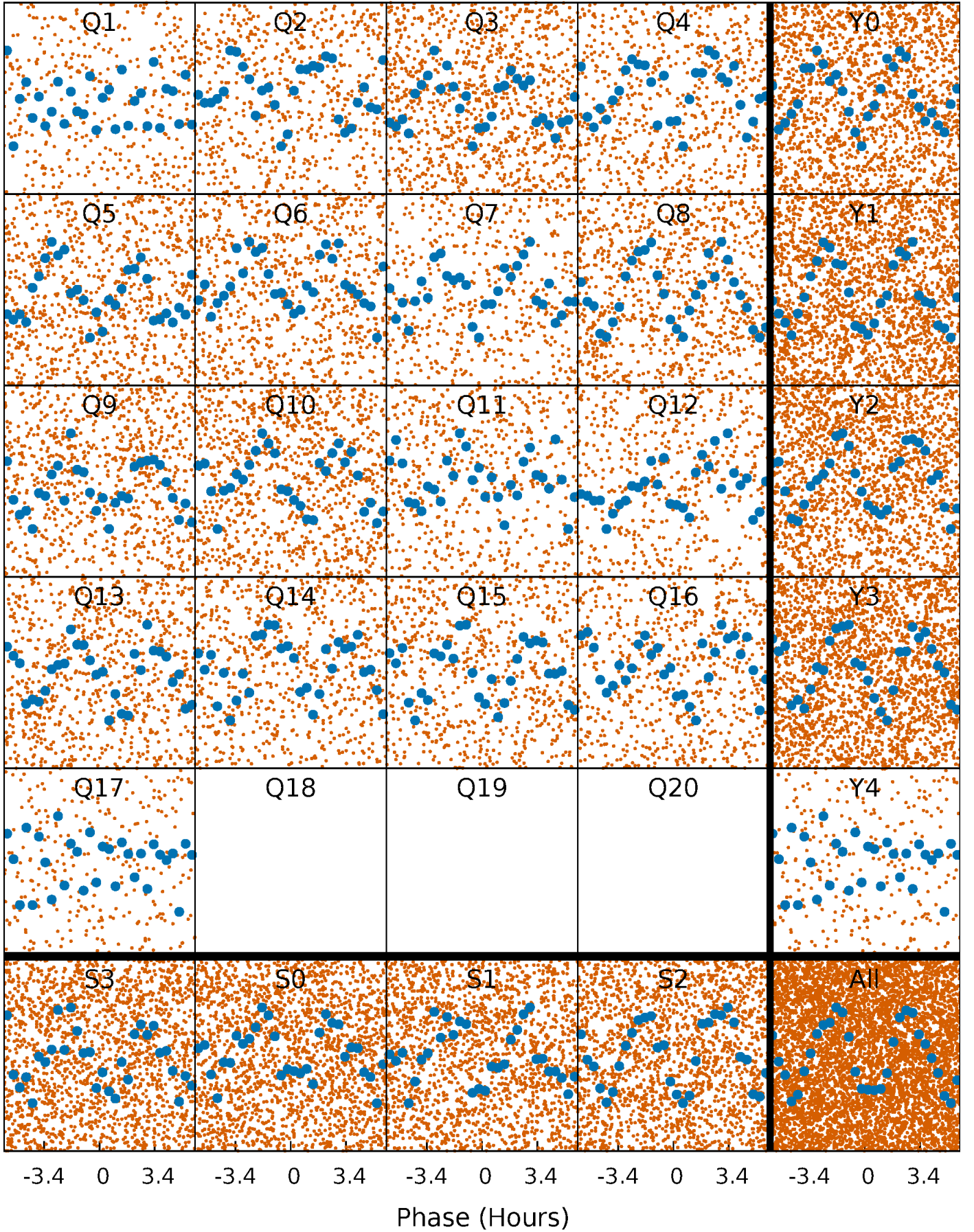


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



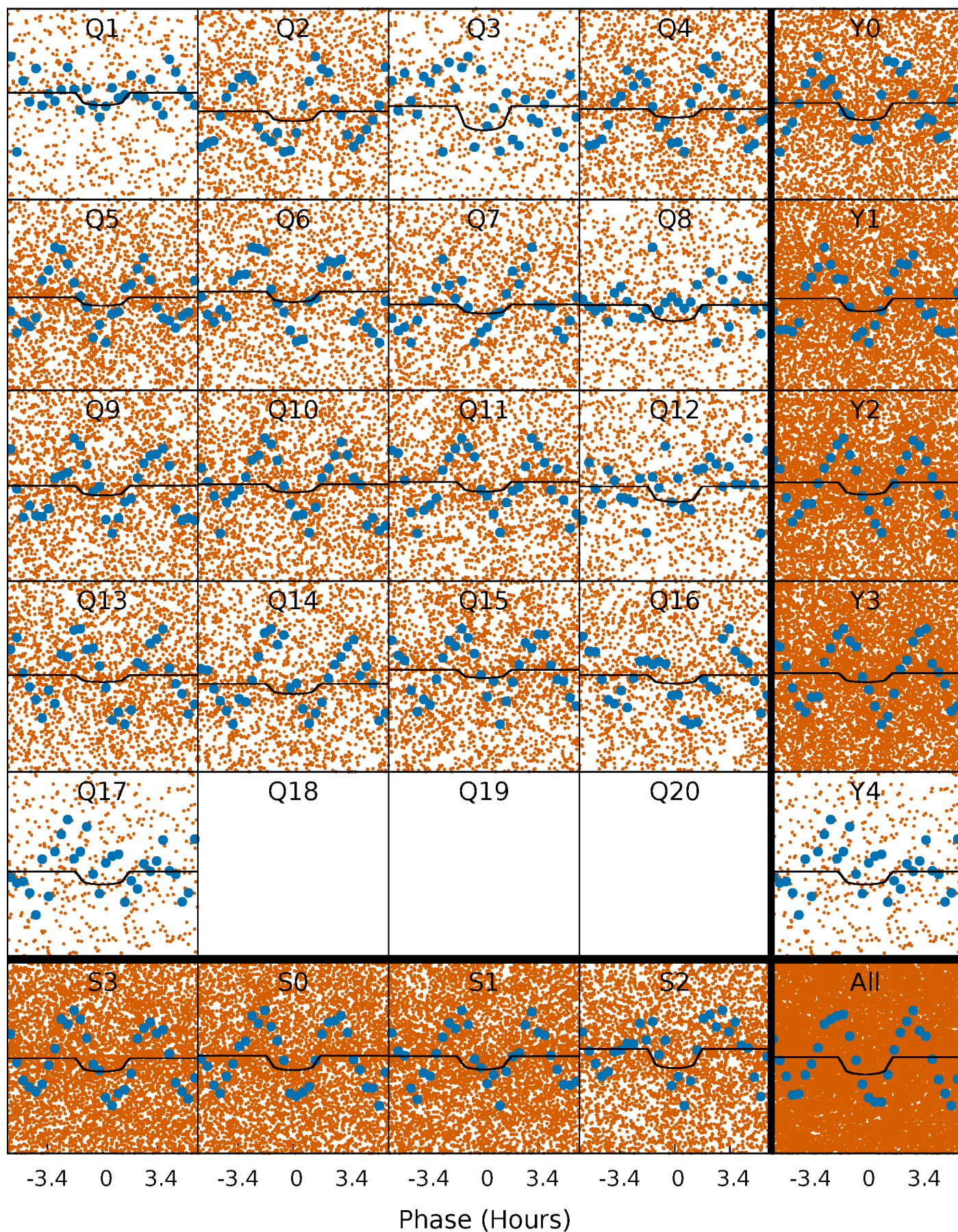
PDC Quarter-Phased Transit Curves

TCE 009243671-01 P= 0.593649 Days $T_0=131.748082$ (BKJD)



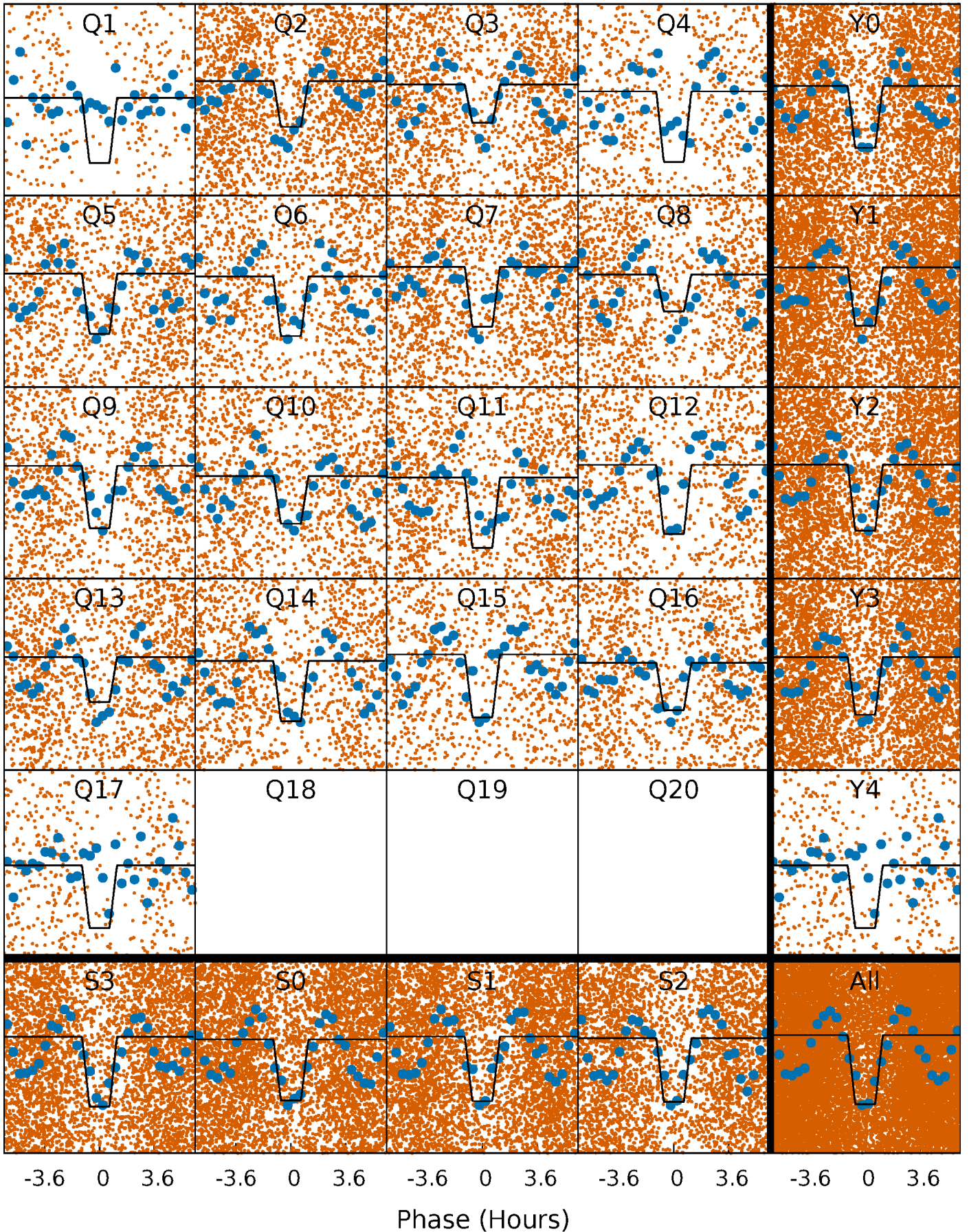
DV Quarter-Phased Transit Curves

TCE 009243671-01 P= 0.593649 Days $T_0=131.748082$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

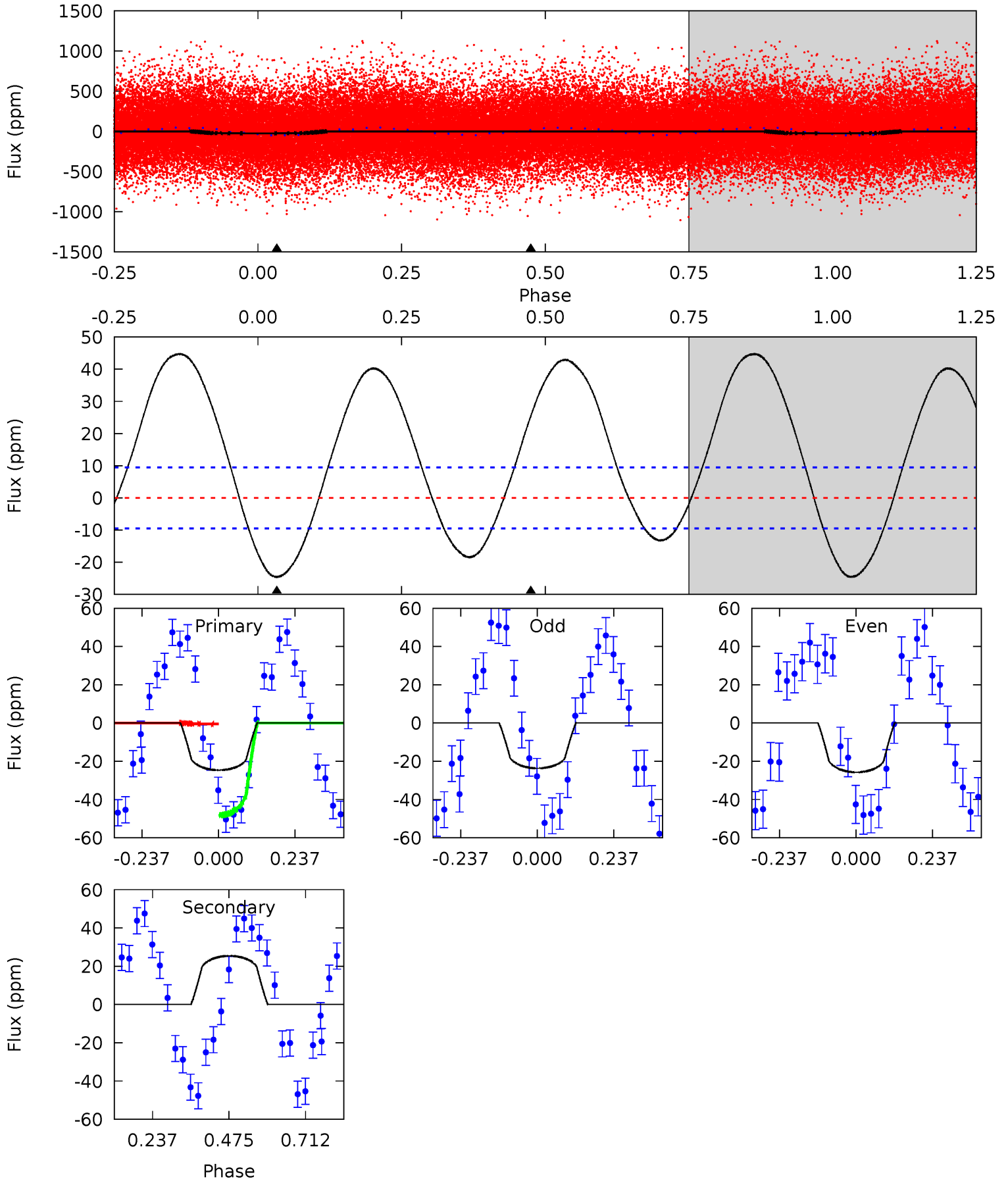
TCE 009243671-01 P= 0.593679 Days $T_0=131.726817$ (BKJD)



DV Model-Shift Uniqueness Test

009243671-01, P = 0.593649 Days, E = 131.154433 Days

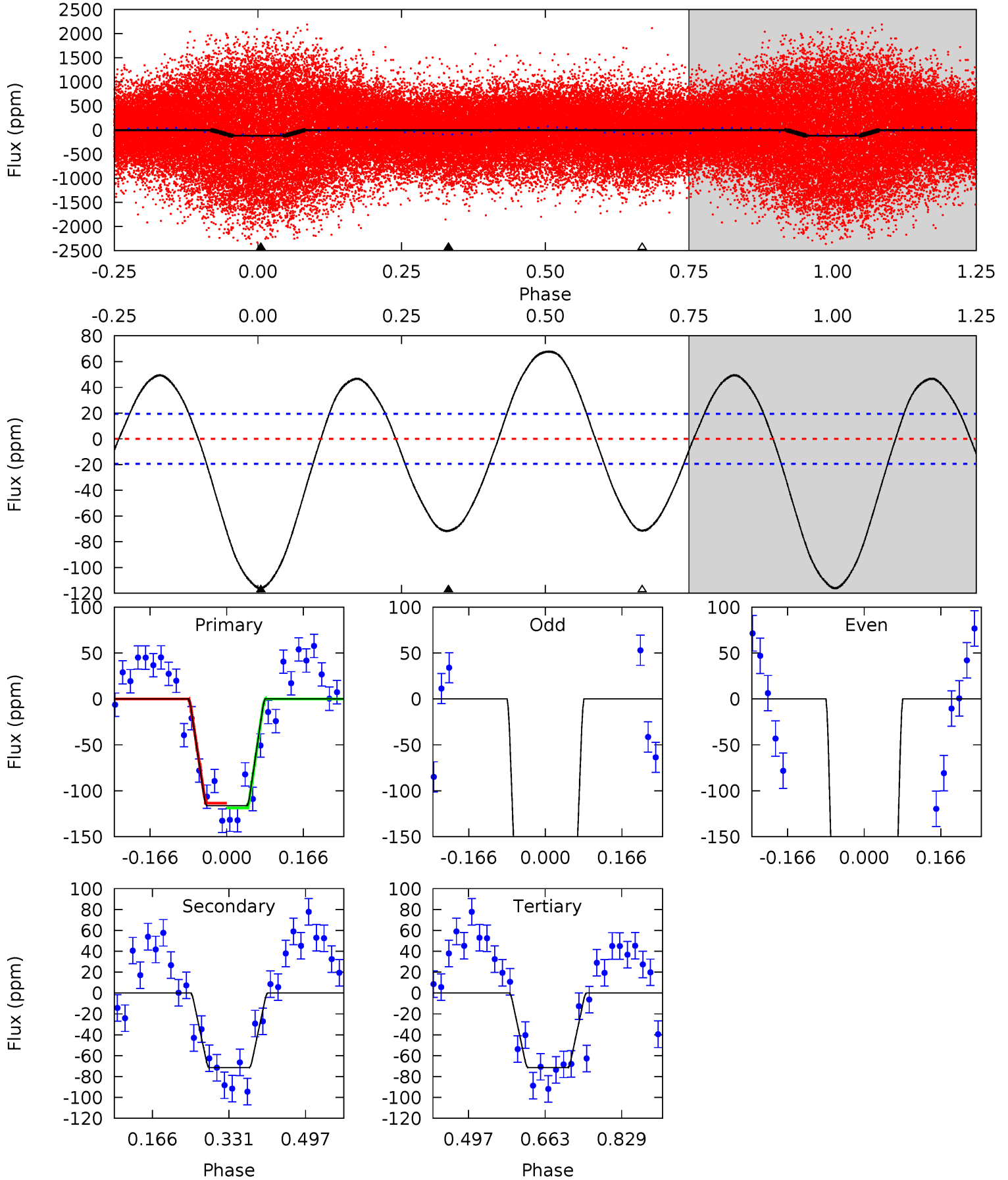
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	-11.7	0	0	4.38	1.18	5.84	11.4	11.4	-11.7	-11.7	0.48	0.92	0.65	10.9



Alt Model-Shift Uniqueness Test

009243671-01, P = 0.593679 Days, E = 131.133138 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.7	16.4	16.4	0	4.46	1.39	10.8	10.3	26.7	0.04	16.4	23.0	1.00	0.37	0.60



Stellar Parameters For KIC 009243671

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6366^{+170}_{-207}	$4.283^{+0.132}_{-0.198}$	$-0.240^{+0.250}_{-0.300}$	$1.228^{+0.377}_{-0.203}$	$1.051^{+0.184}_{-0.123}$	$0.799^{+0.568}_{-0.408}$
	+3%/-3%	+3%/-5%	+104%/-125%	+31%/-17%	+18%/-12%	+71%/-51%
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 009243671-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	25 ± 2	$0.59^{+0.24}_{-0.22}$	3691^{+294}_{-229}	-7027^{+1070}_{-2322}	$-8.134^{+4.105}_{-13.222}$
Alt.	-72 ± 4	$1.57^{+0.37}_{-0.28}$	3682^{+282}_{-212}	5330^{+463}_{-389}	$3.131^{+1.554}_{-1.010}$

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

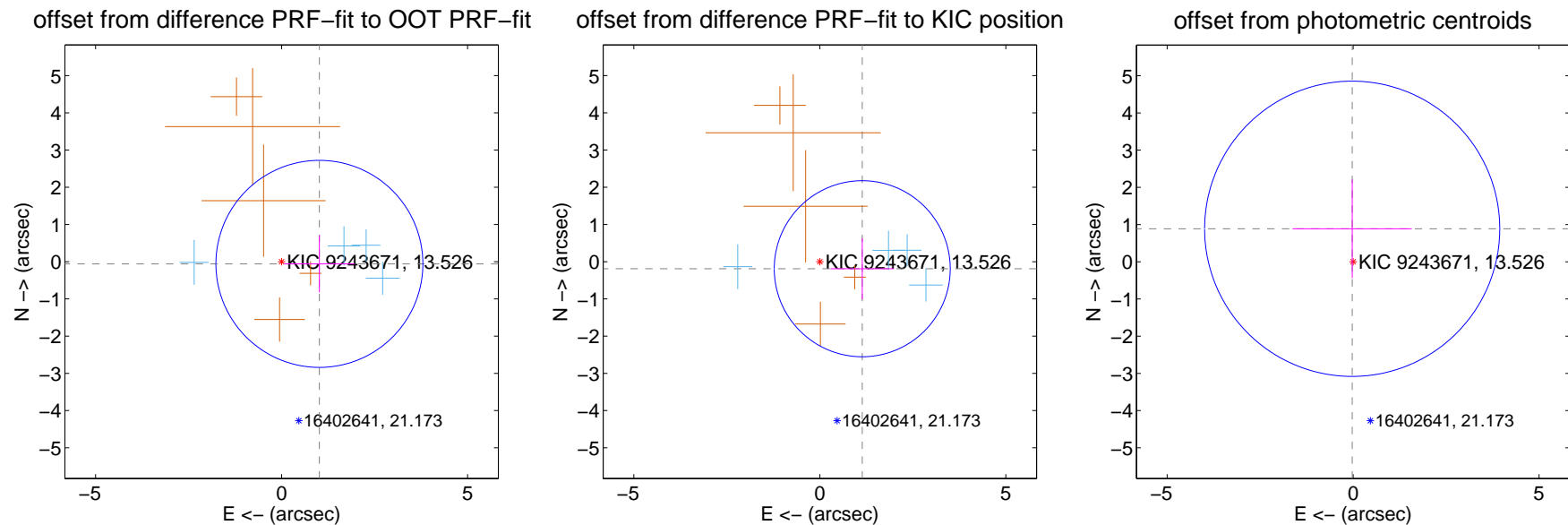
DV Centroid Data

Supplemental centroid analysis for 009243671-01. Kepler magnitude: 13.53. Transit SNR 5.09

There are 4 quarters with good PRF difference image offsets

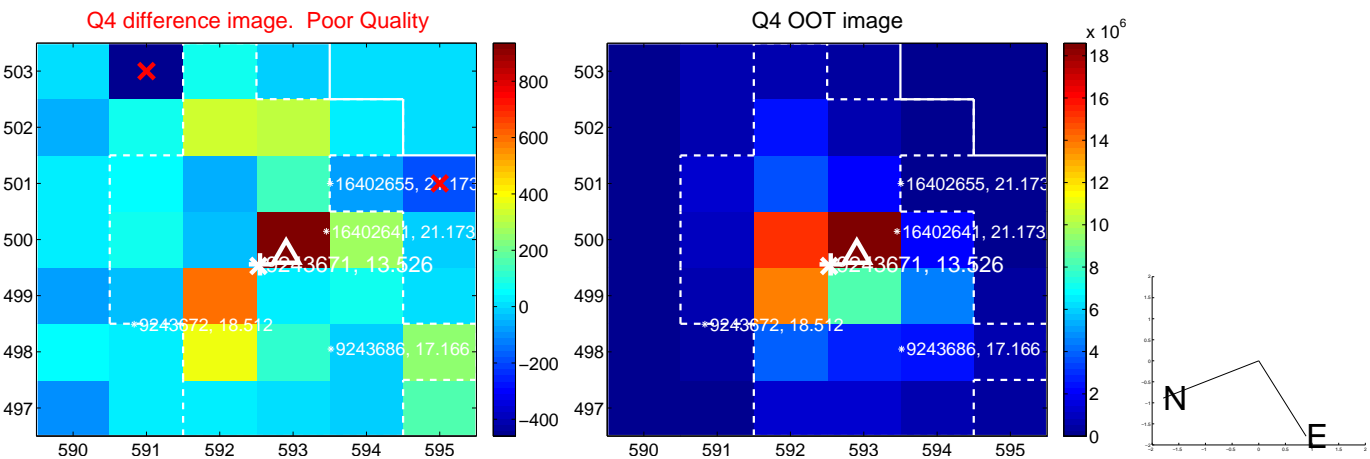
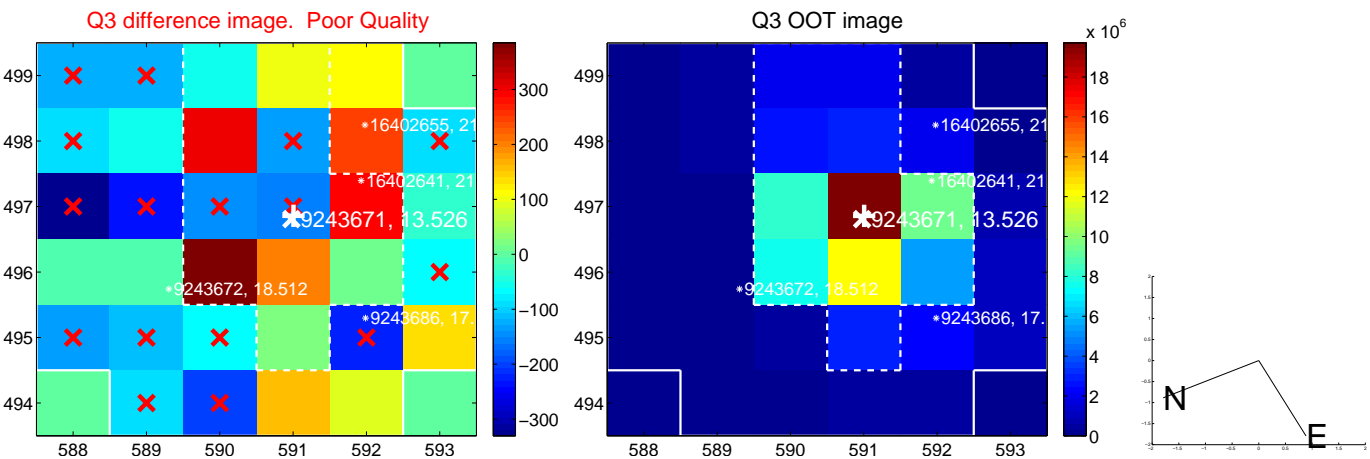
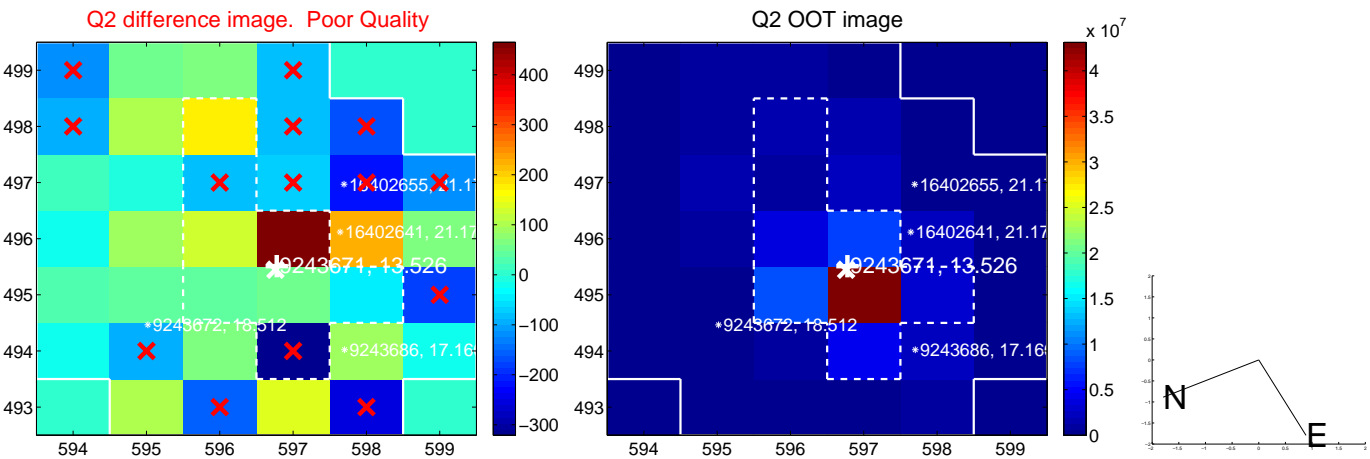
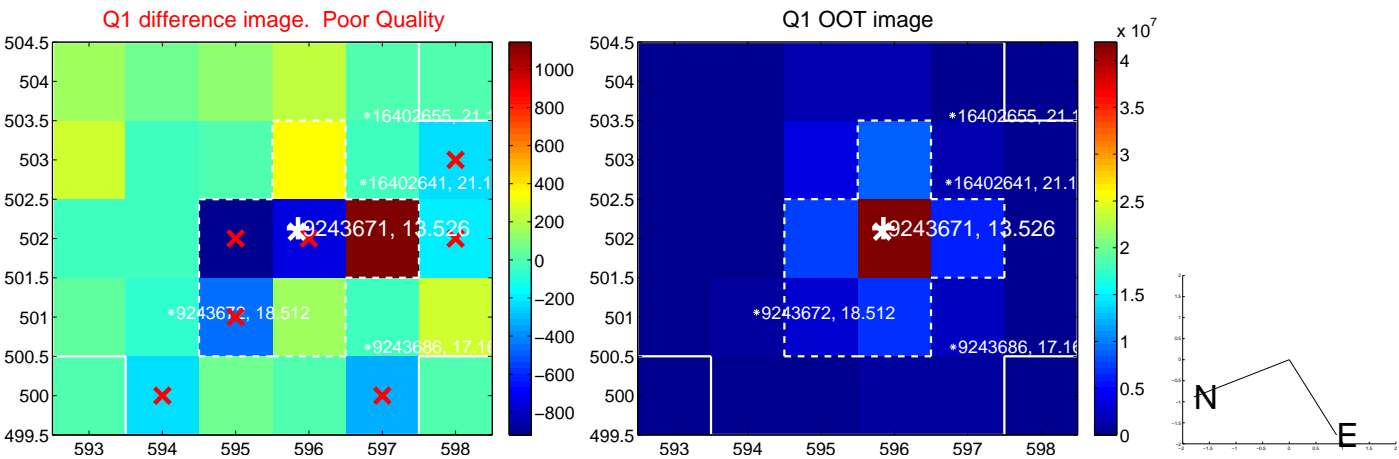
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.018 ± 0.927	1.10	-1.017 ± 0.944	-0.059 ± 0.767
PRF-fit source offset from KIC position	1.155 ± 0.788	1.47	-1.140 ± 0.852	-0.189 ± 0.821
photometric centroid source offset	0.89 ± 1.32	0.67	0.02 ± 1.60	0.89 ± 1.32

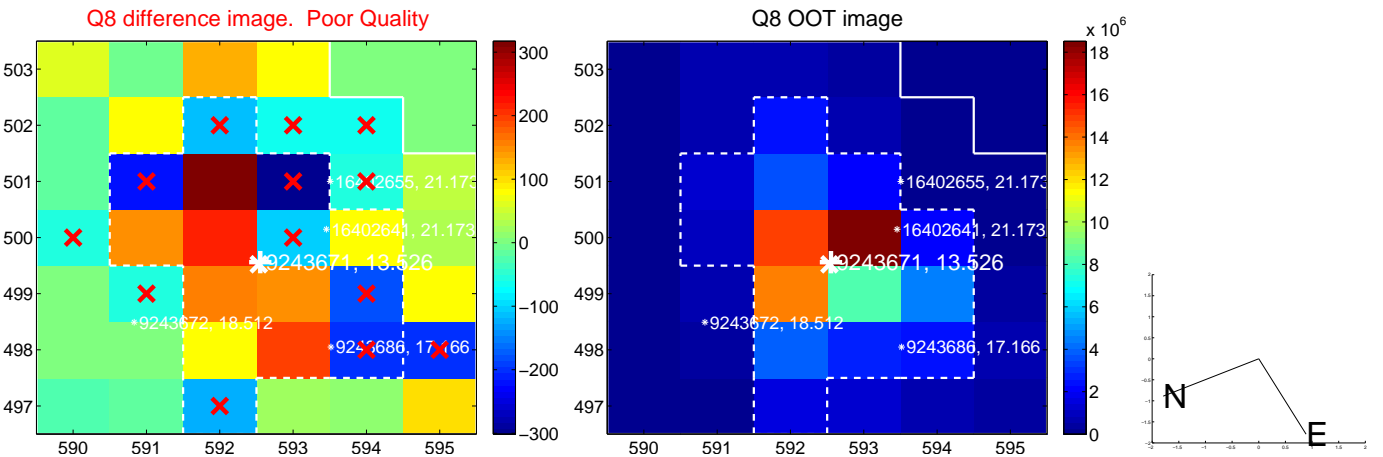
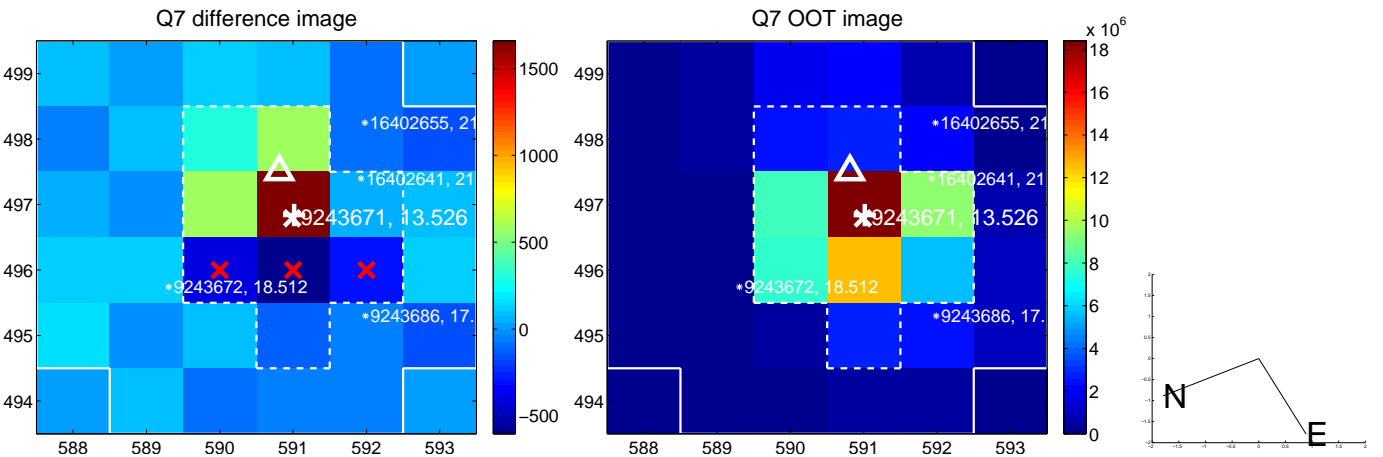
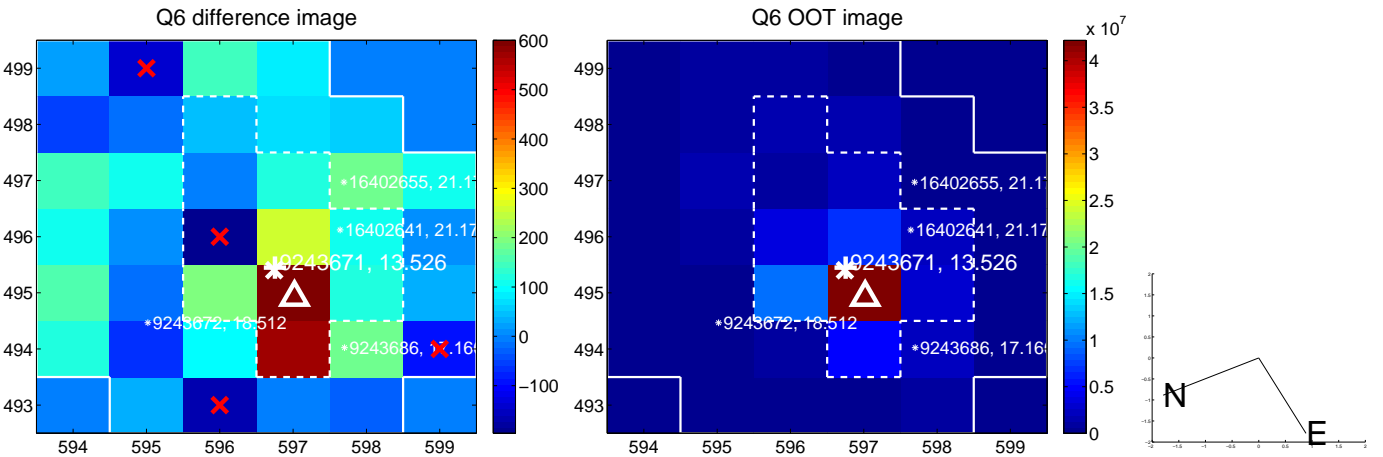
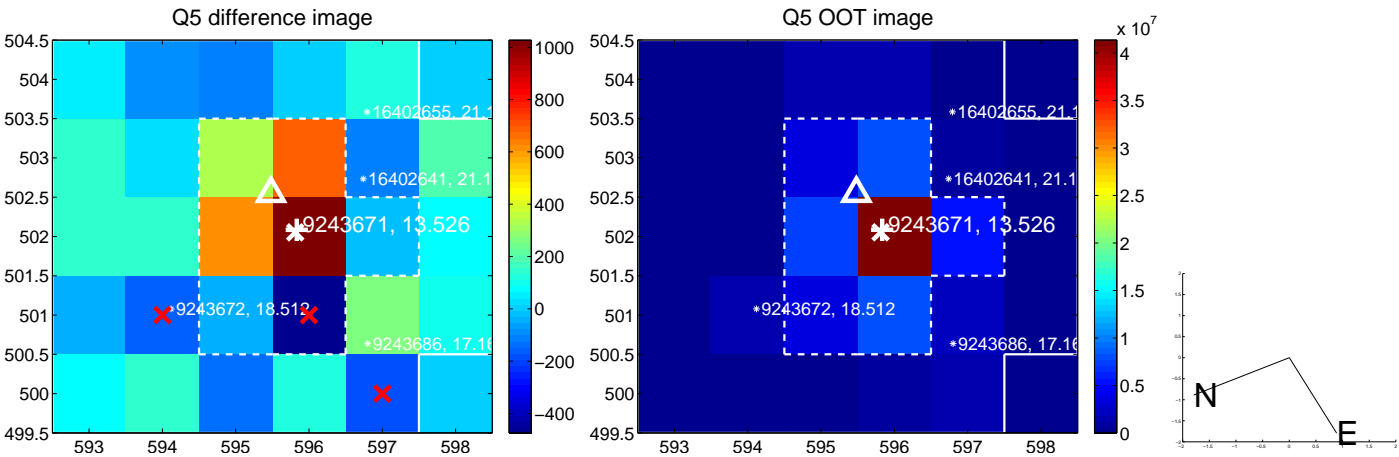


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

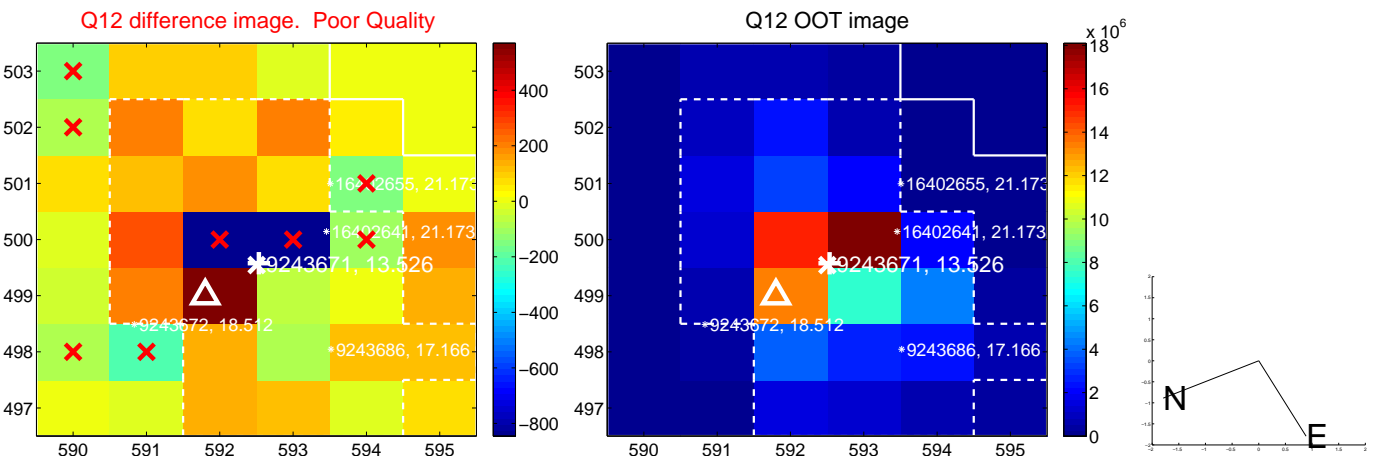
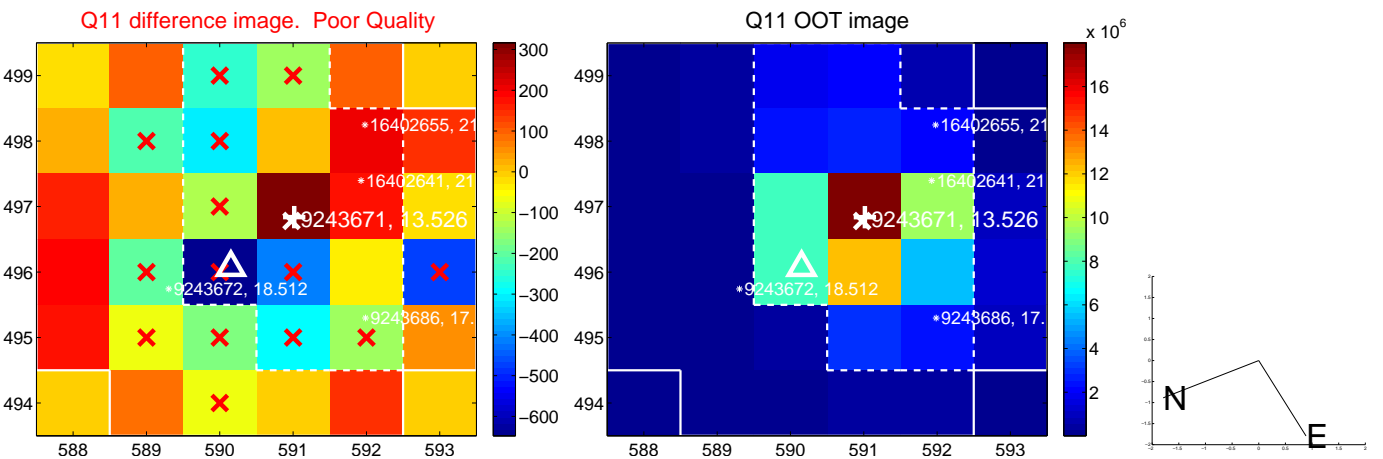
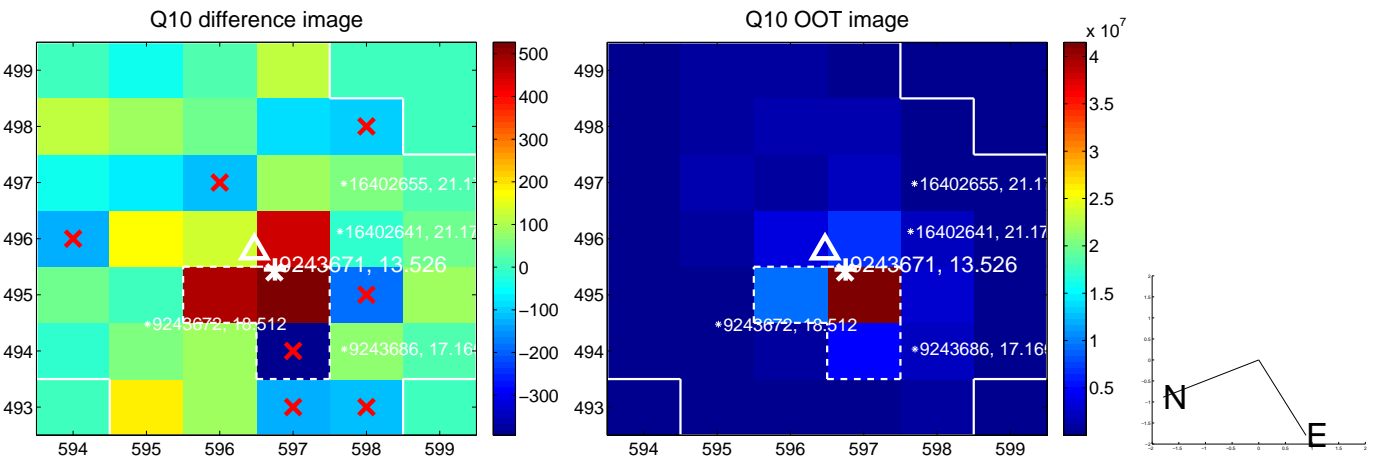
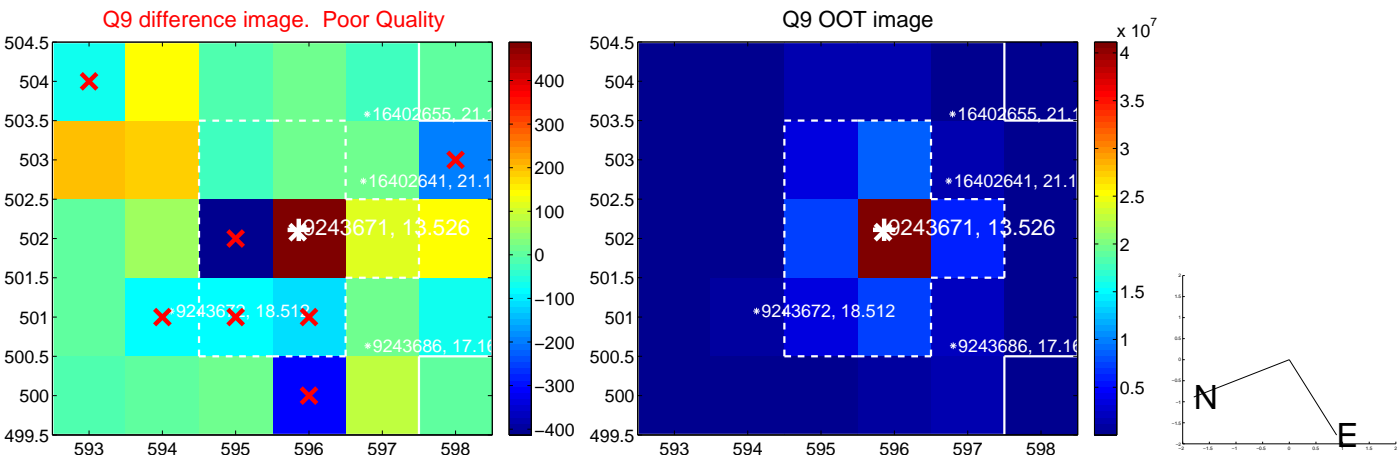
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



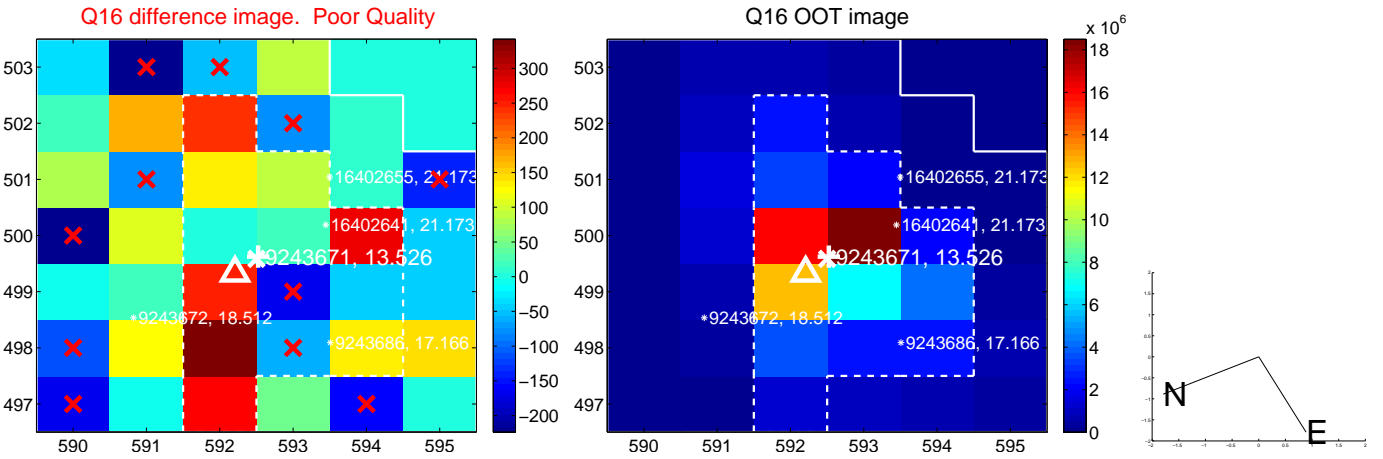
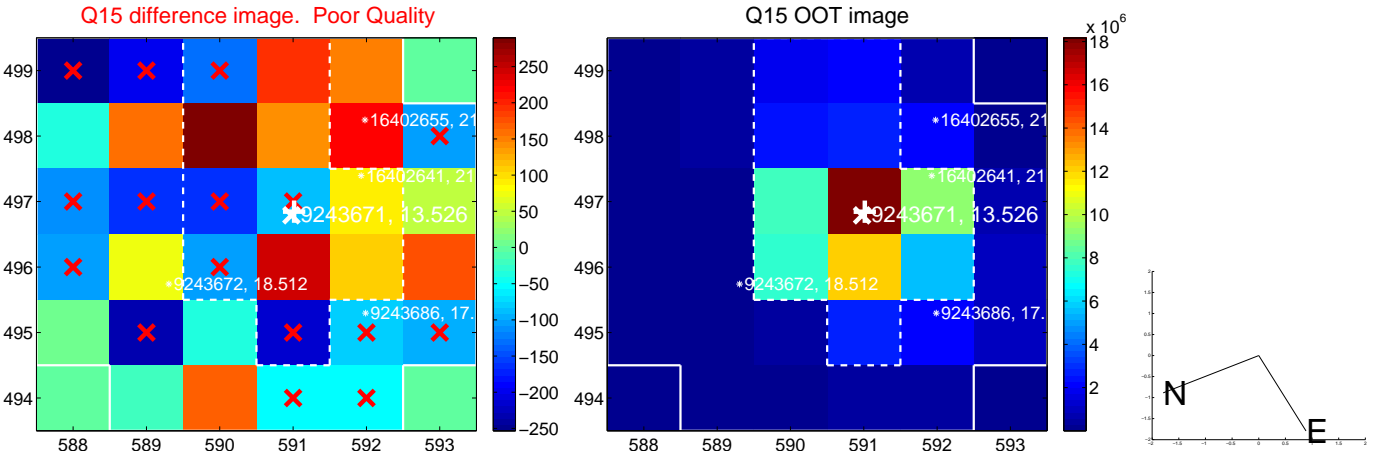
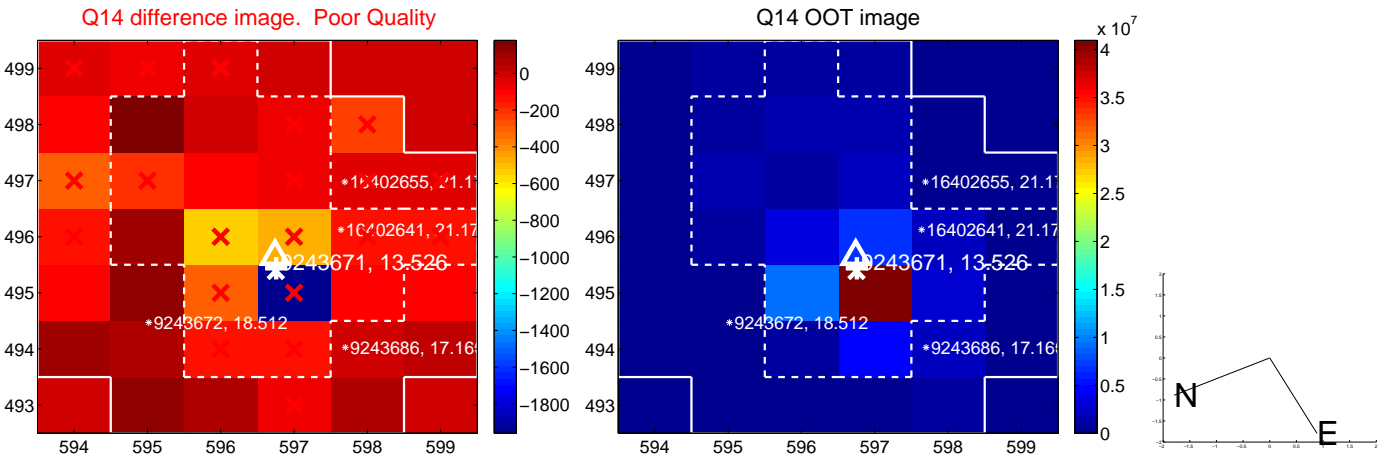
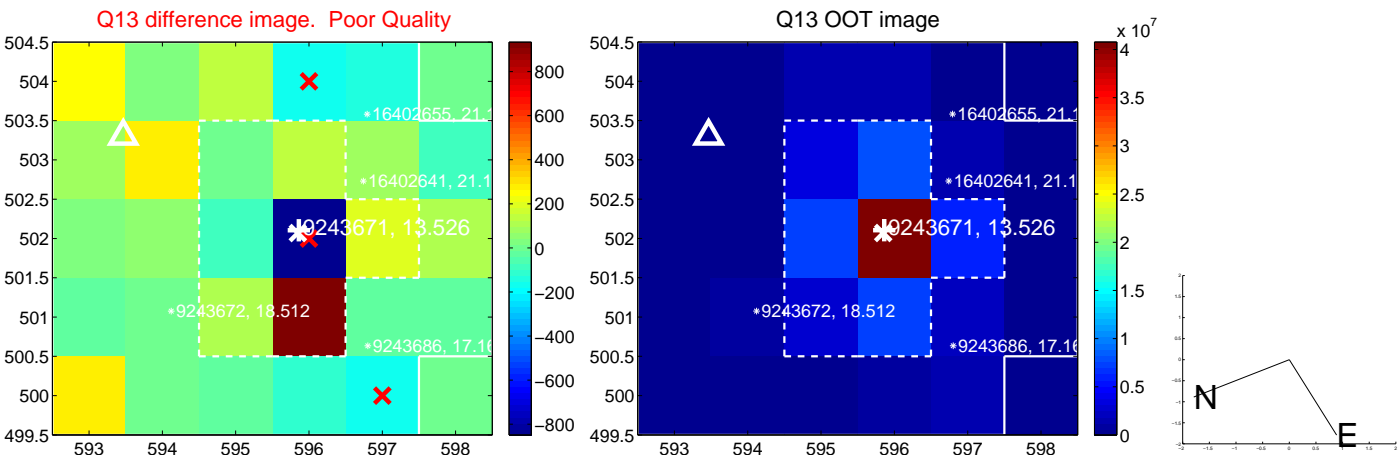
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



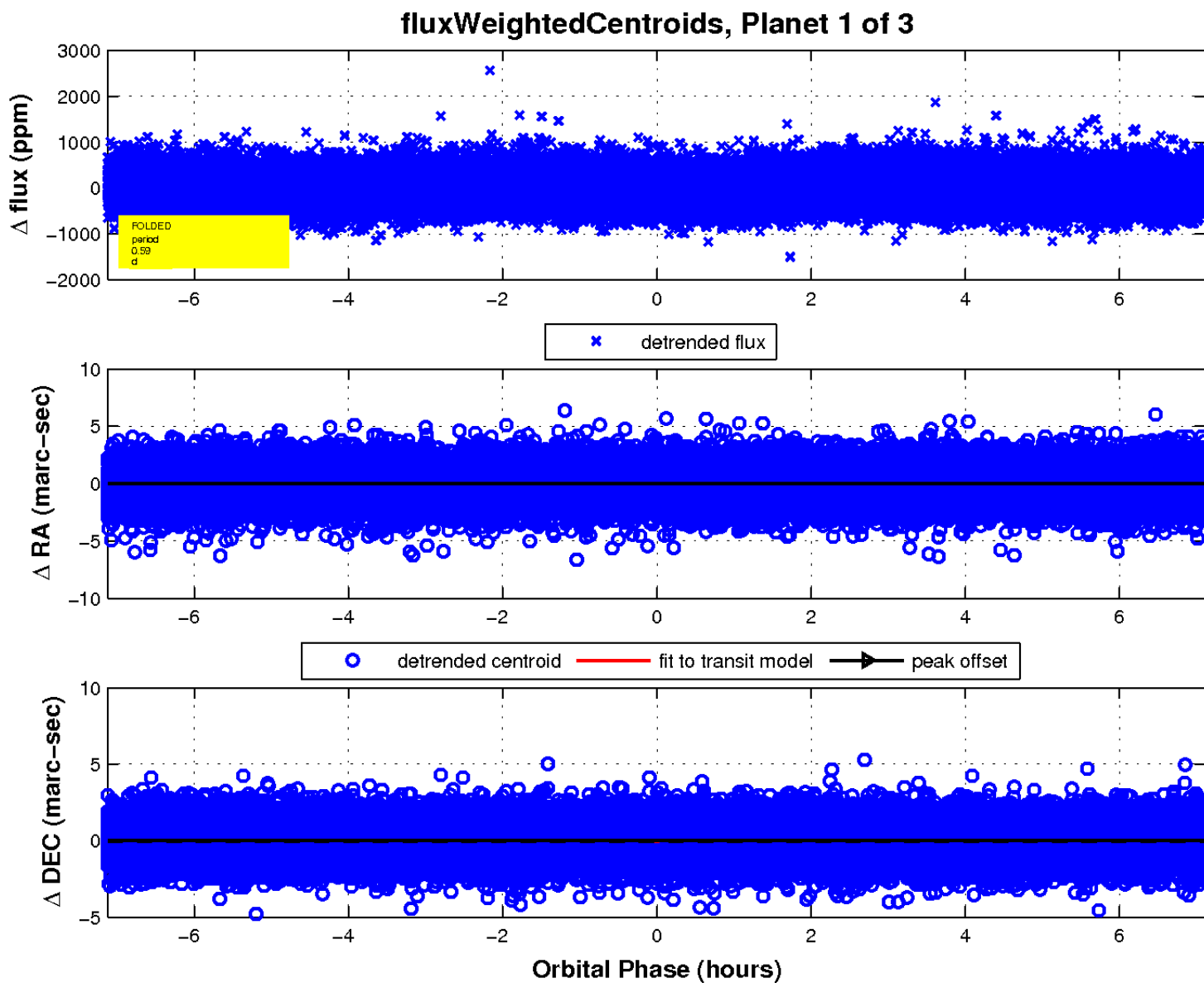
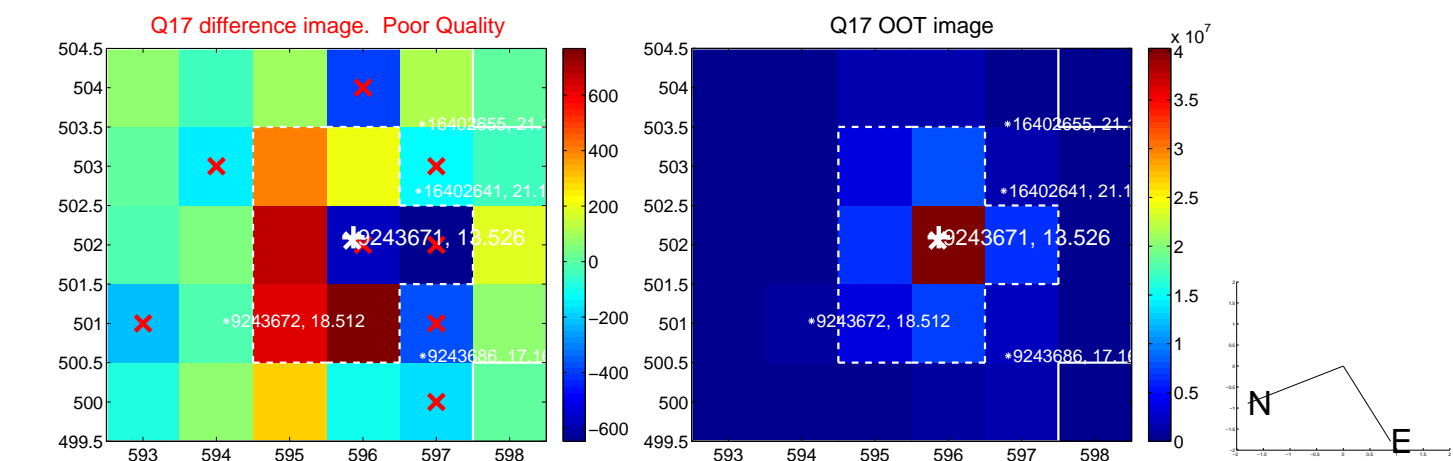
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

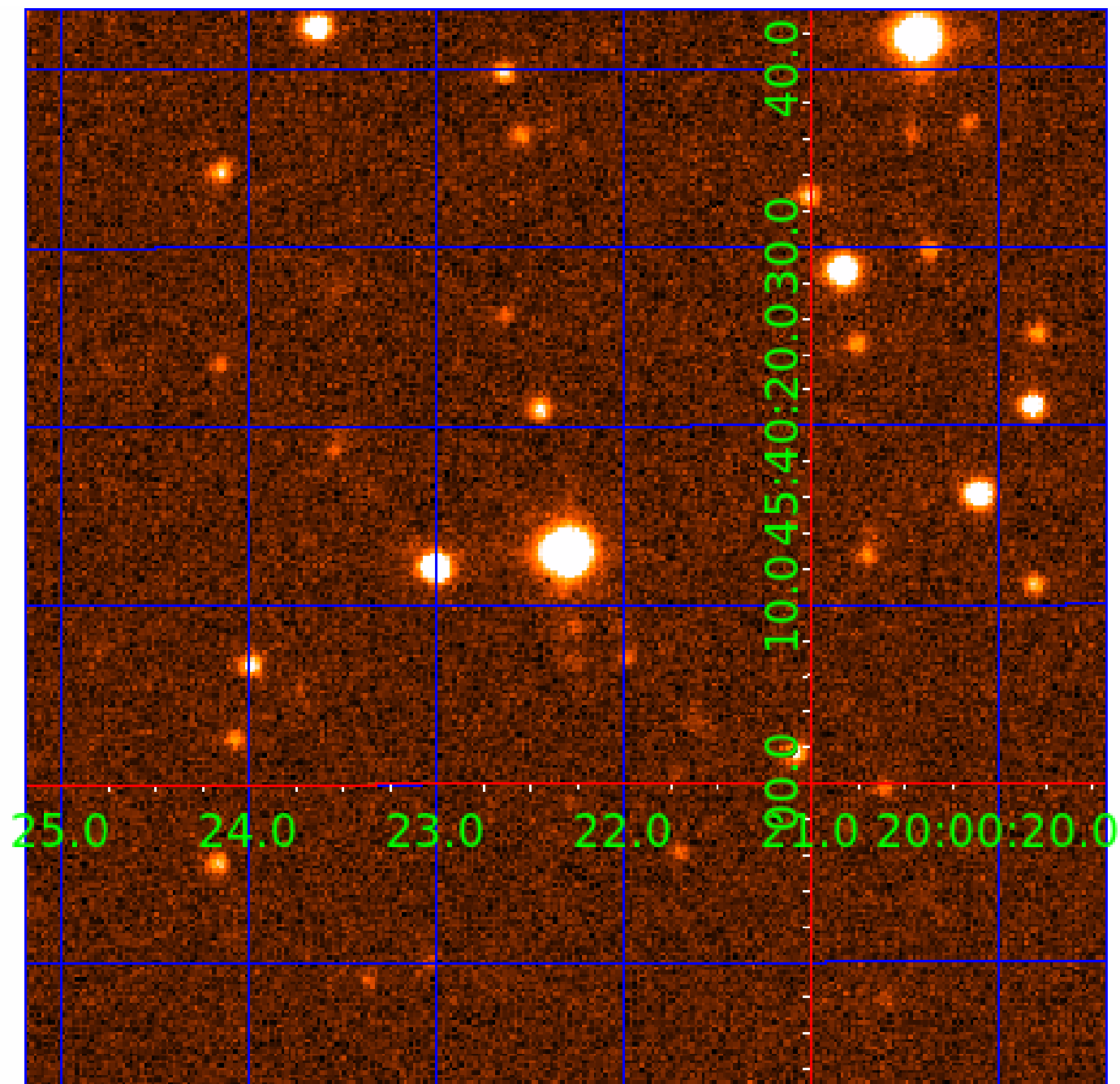


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009243671

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})
009243671-01	OBS	No	0.593649	131.748082	18.9	2.939	9.7	5.1	1.23	6366	0.57	11197.46
009243671-02	OBS	No	0.593654	131.934856	54.4	1.931	10.7	11.0	1.23	6366	0.92	11197.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009243671-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009243671-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD

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

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

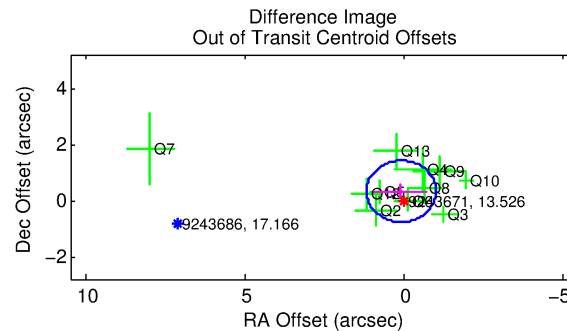
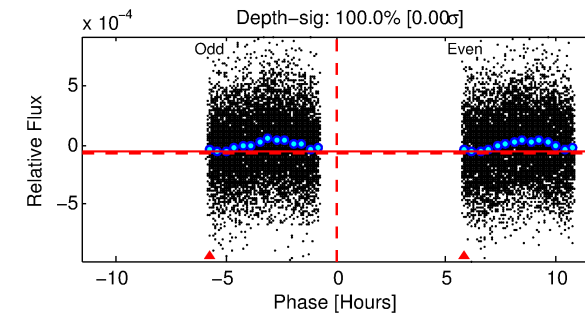
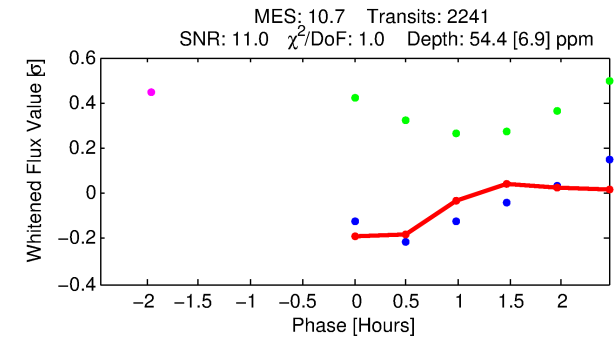
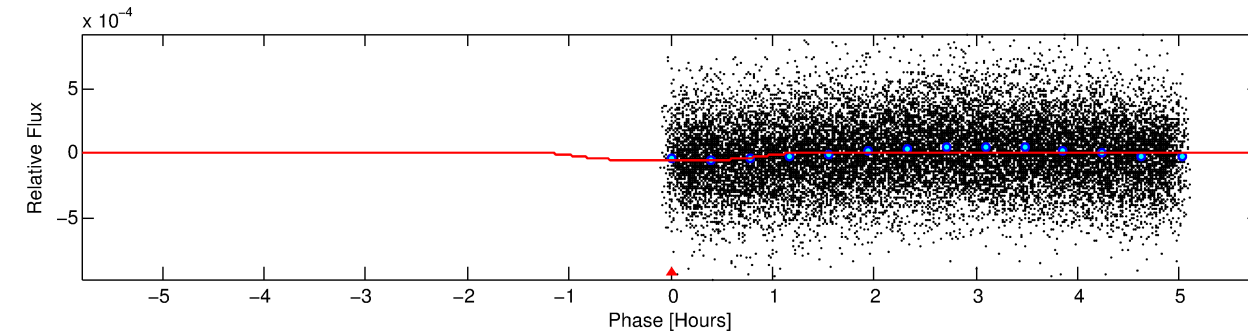
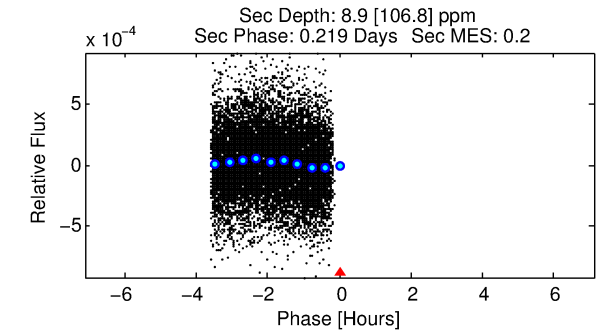
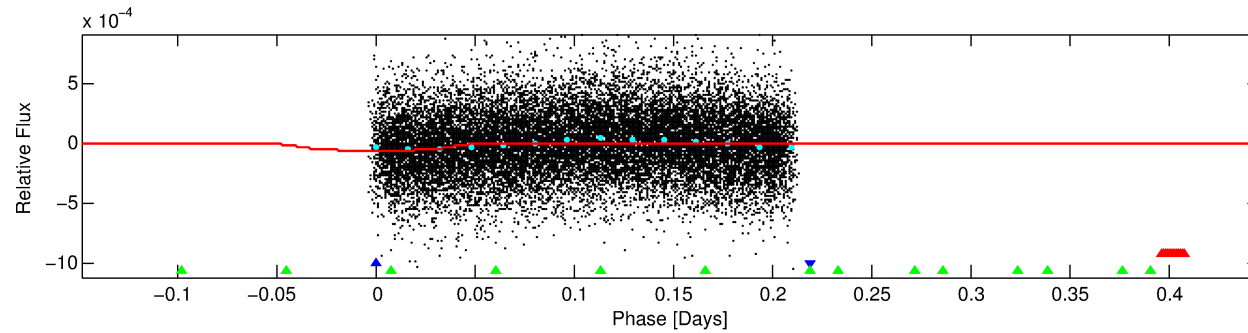
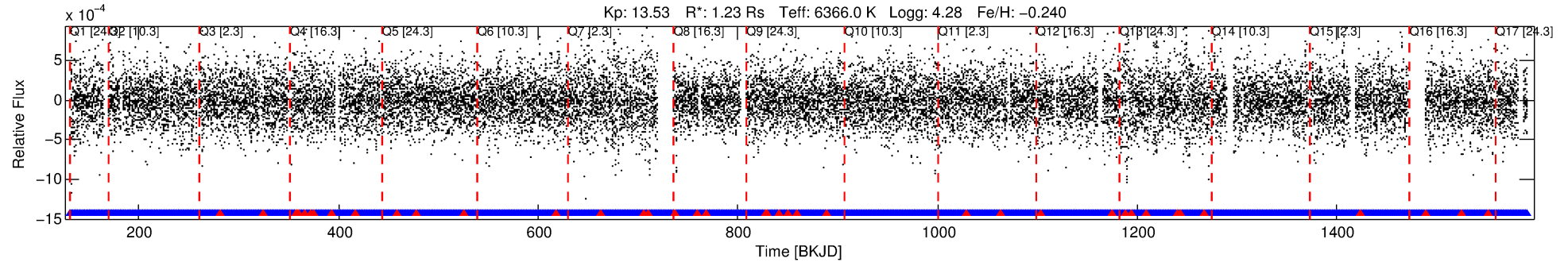
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009243671-02

No Significant Match Found

DV One-Page Summary

KIC: 9243671 Candidate: 2 of 3 Period: 0.594 d



DV Fit Results:

Period = 0.59365 [0.00001] d
Epoch = 131.9349 [0.0033] BKJD
Rp/R* = 0.0069 [0.0049]
a/R* = 2.35 [7.11]
b = 0.30 [11.25]
Seff = 11197.35 [4353.84]
Teq = 2623 [255] K
Rp = 0.92 [0.71] Re
a = 0.0141 [0.0036] AU
Ag = 1.15 [13.90] [0.01σ]
Teffp = 4202 [12667] K [0.12σ]

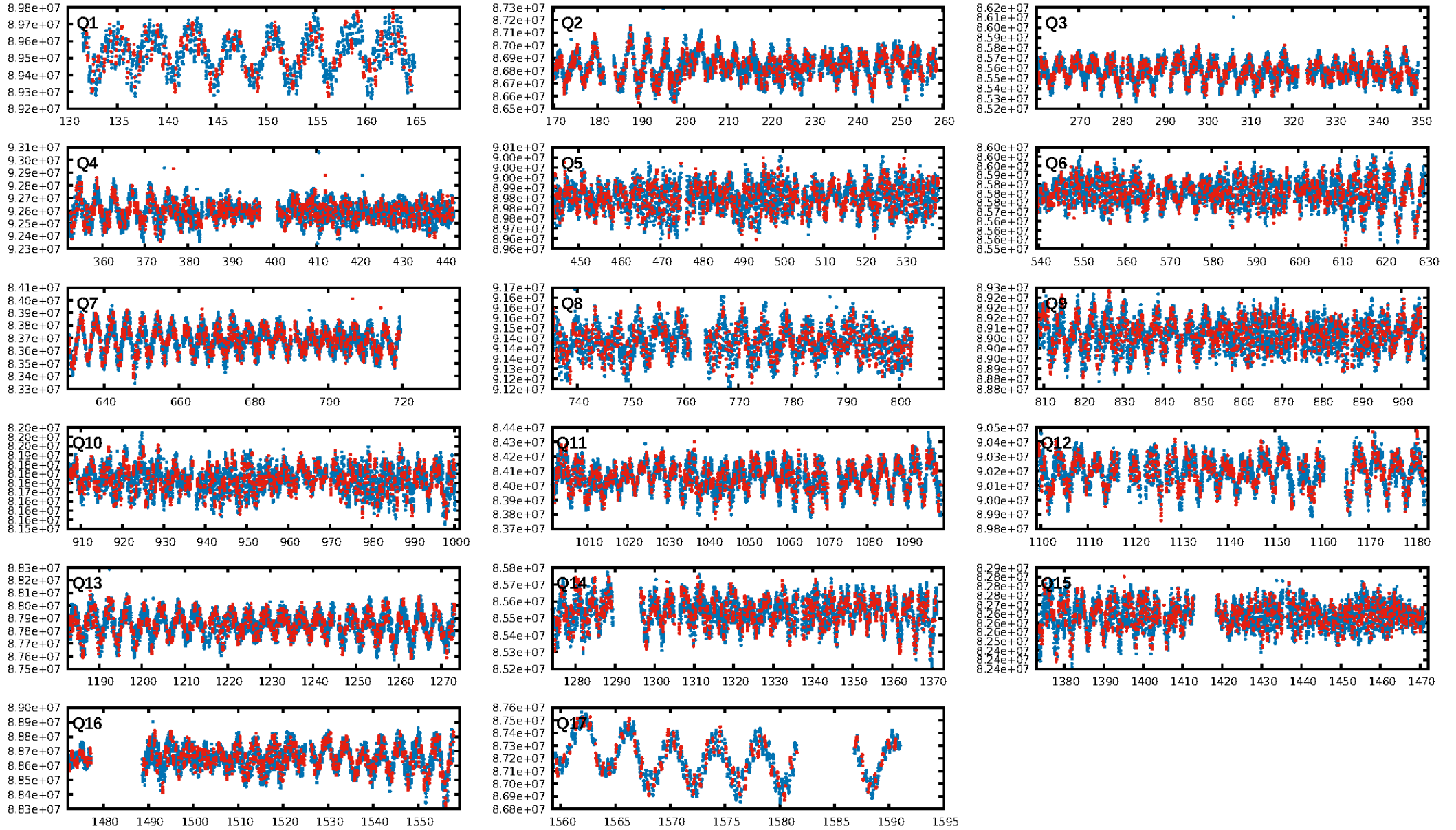
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [500.33σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.75e-28
RollingBand-fgt: 0.98 [2101/2142]
GhostDiagnostic-chr: 1.382
Centroid-sig: 0.0%
Centroid-so: 1.769 arcsec [3.11σ]
OotOffset-rm: 0.381 arcsec [1.05σ]
KicOffset-rm: 0.245 arcsec [1.09σ]
OotOffset-st: 3/2/3/3 [11]
KicOffset-st: 3/2/3/3 [11]
DiffImageQuality-fgm: 0.82 [9/11]
DiffImageOverlap-fno: 0.00 [0/17]




Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:55:37 Z

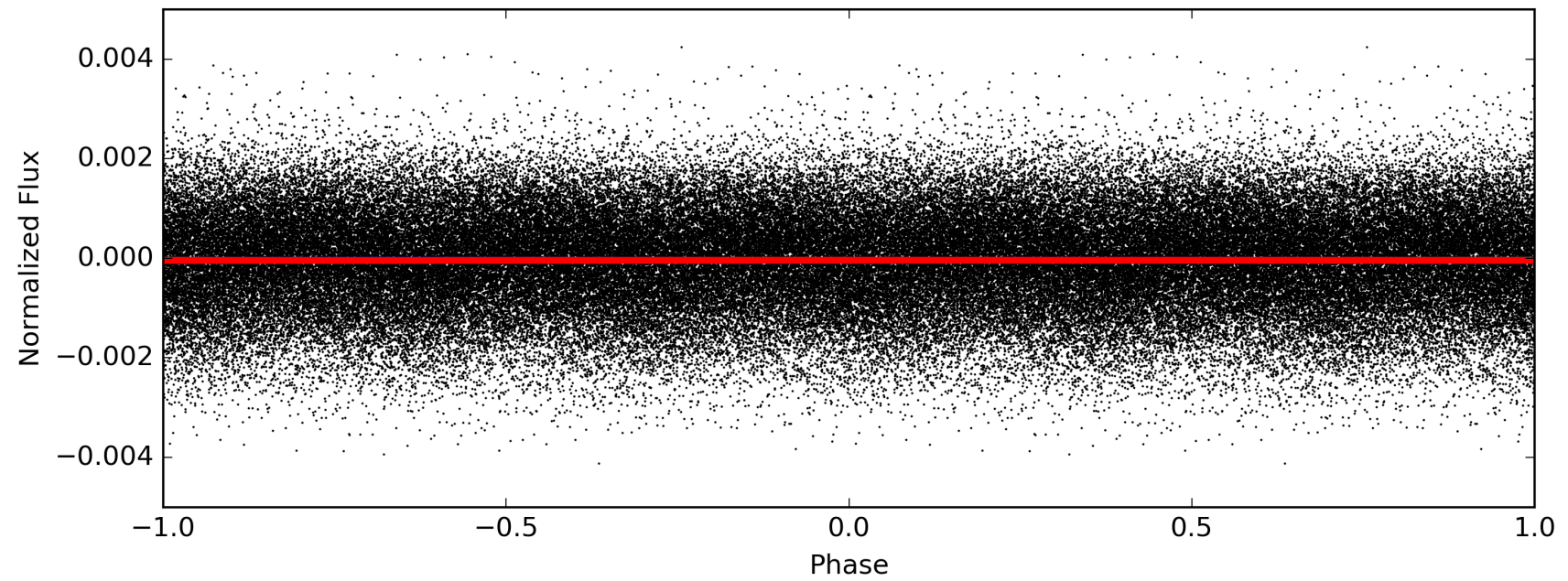
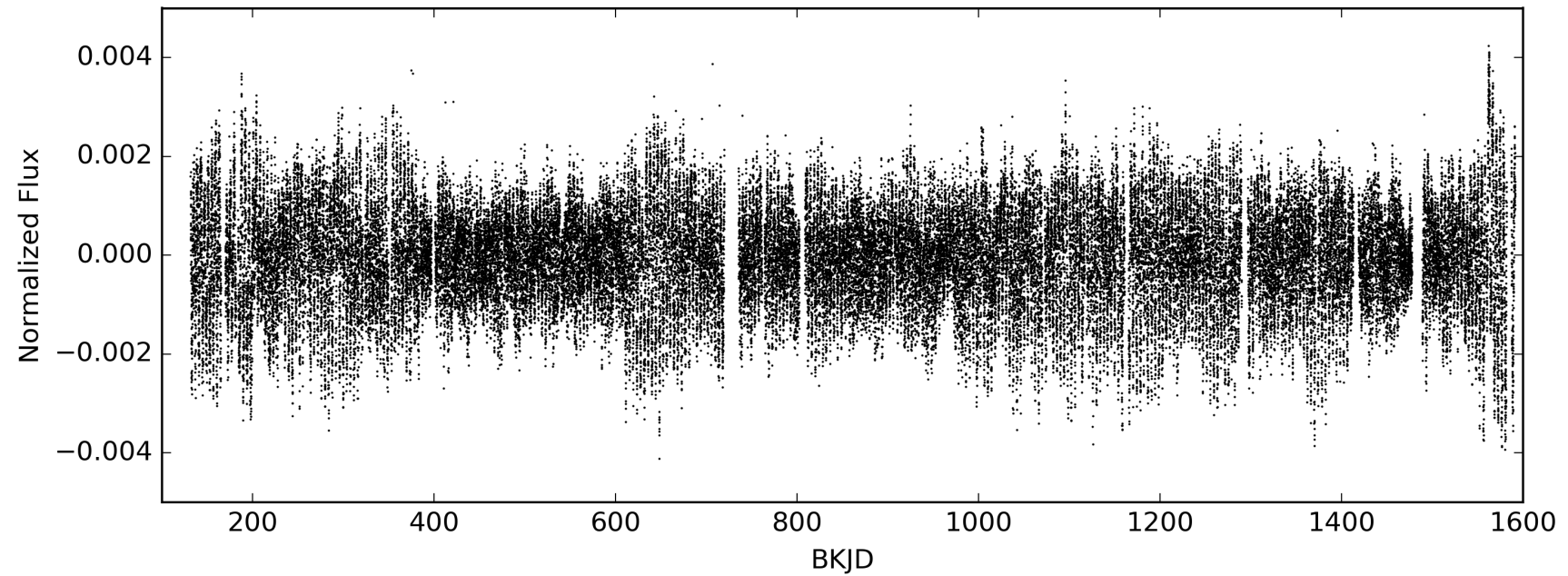
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009243671-02, PDC Light Curves



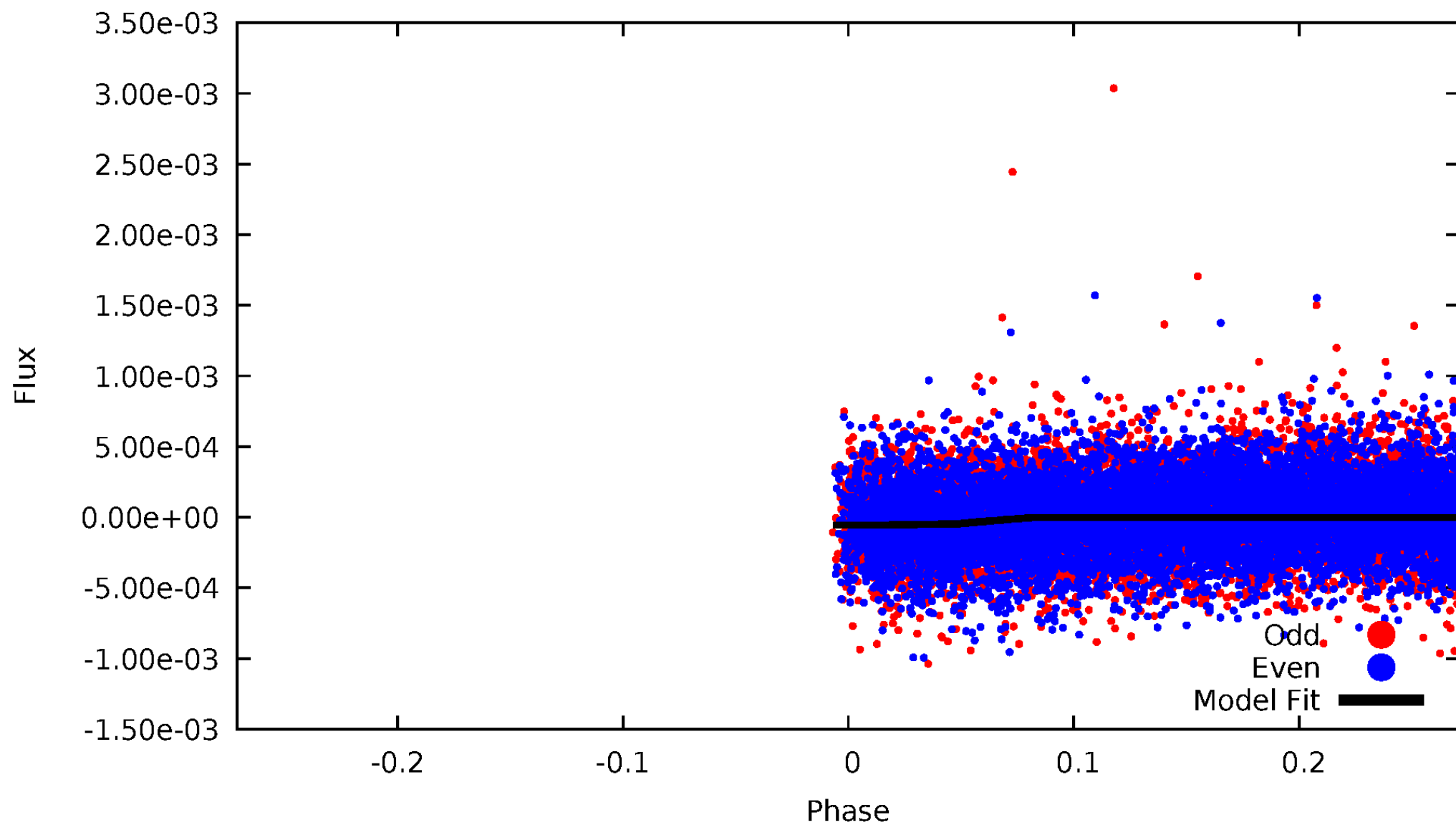
TCE 009243671-02

 P = 0.297 days  P = 0.594 days  P = 1.187 days



DV Odd/Even

TCE 009243671-02

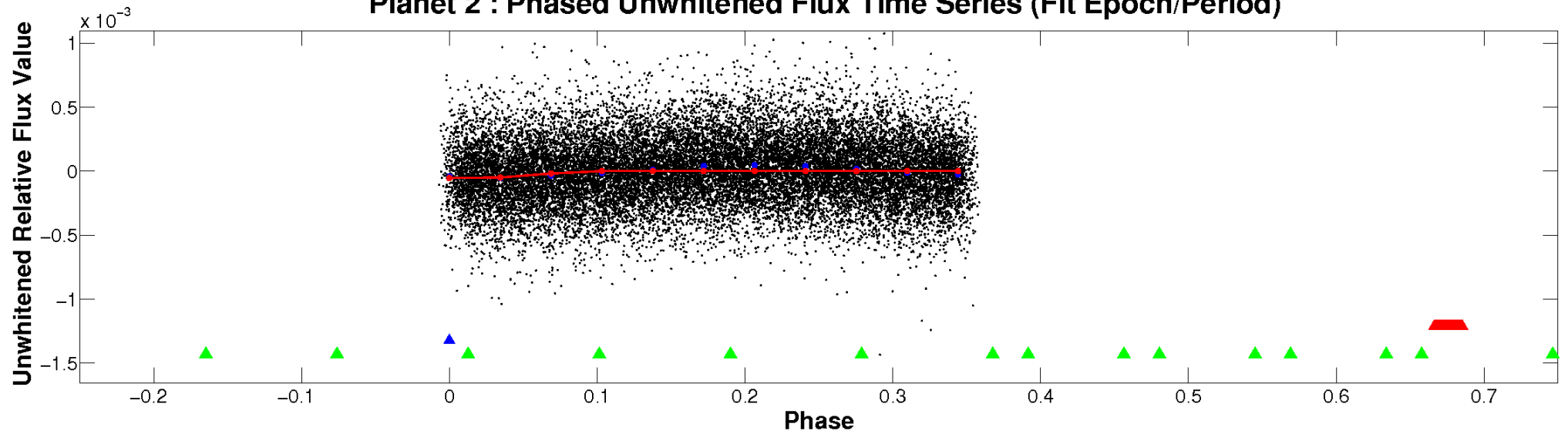


ALT Odd/Even

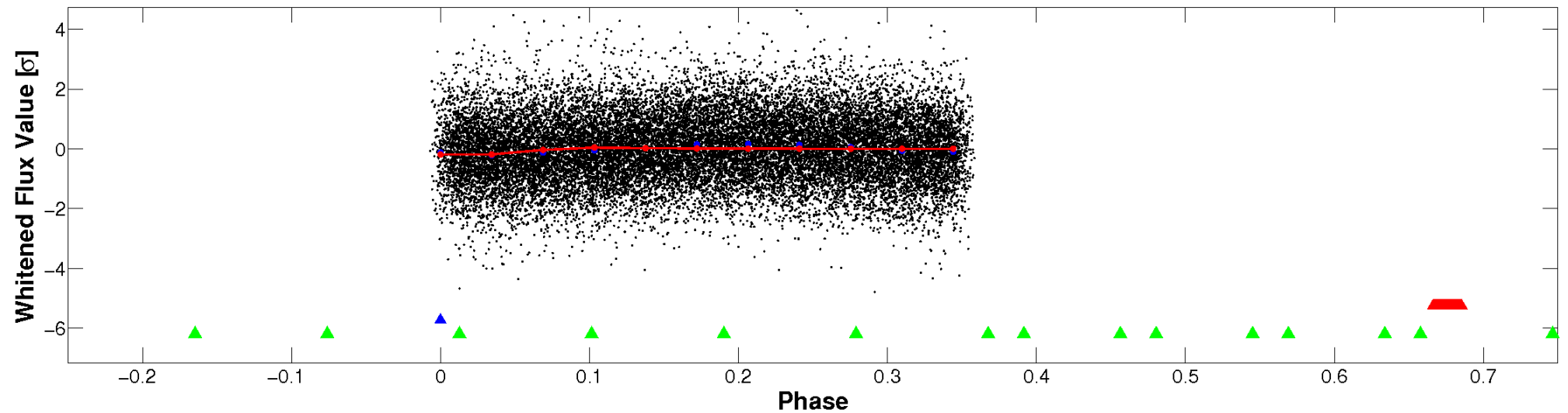
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

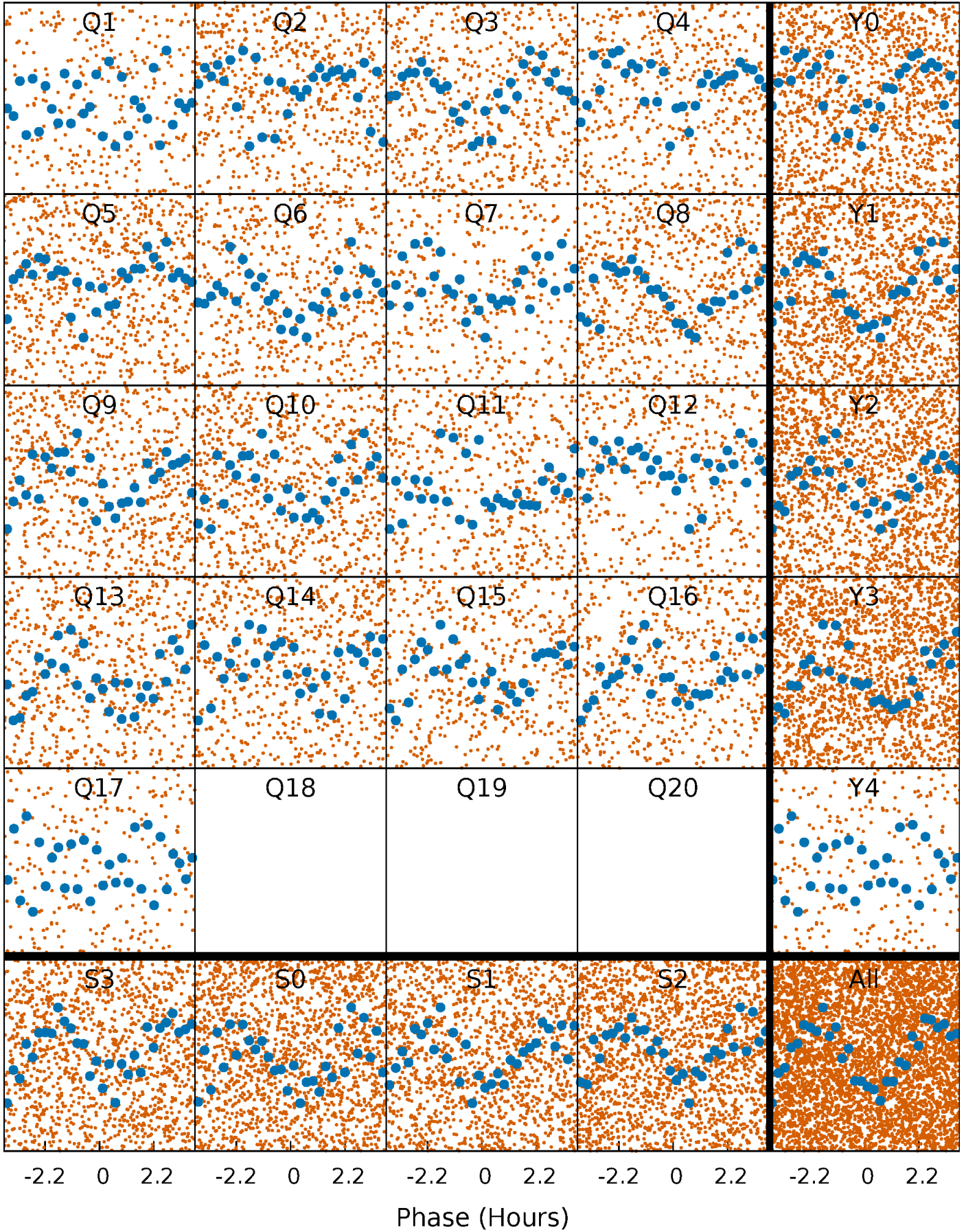


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



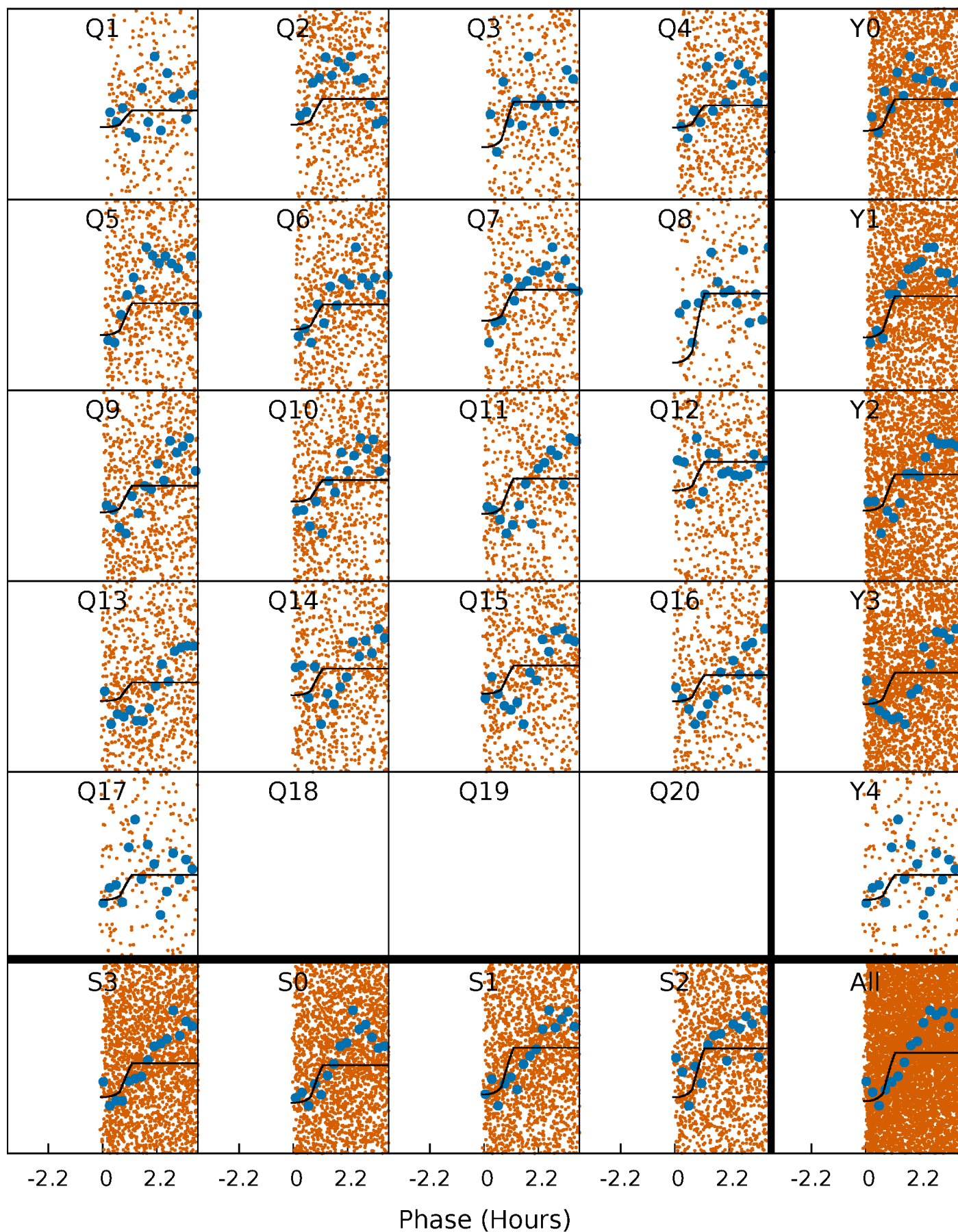
PDC Quarter-Phased Transit Curves

TCE 009243671-02 P= 0.593654 Days $T_0=131.934856$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 009243671-02 P= 0.593654 Days $T_0=131.934856$ (BKJD)

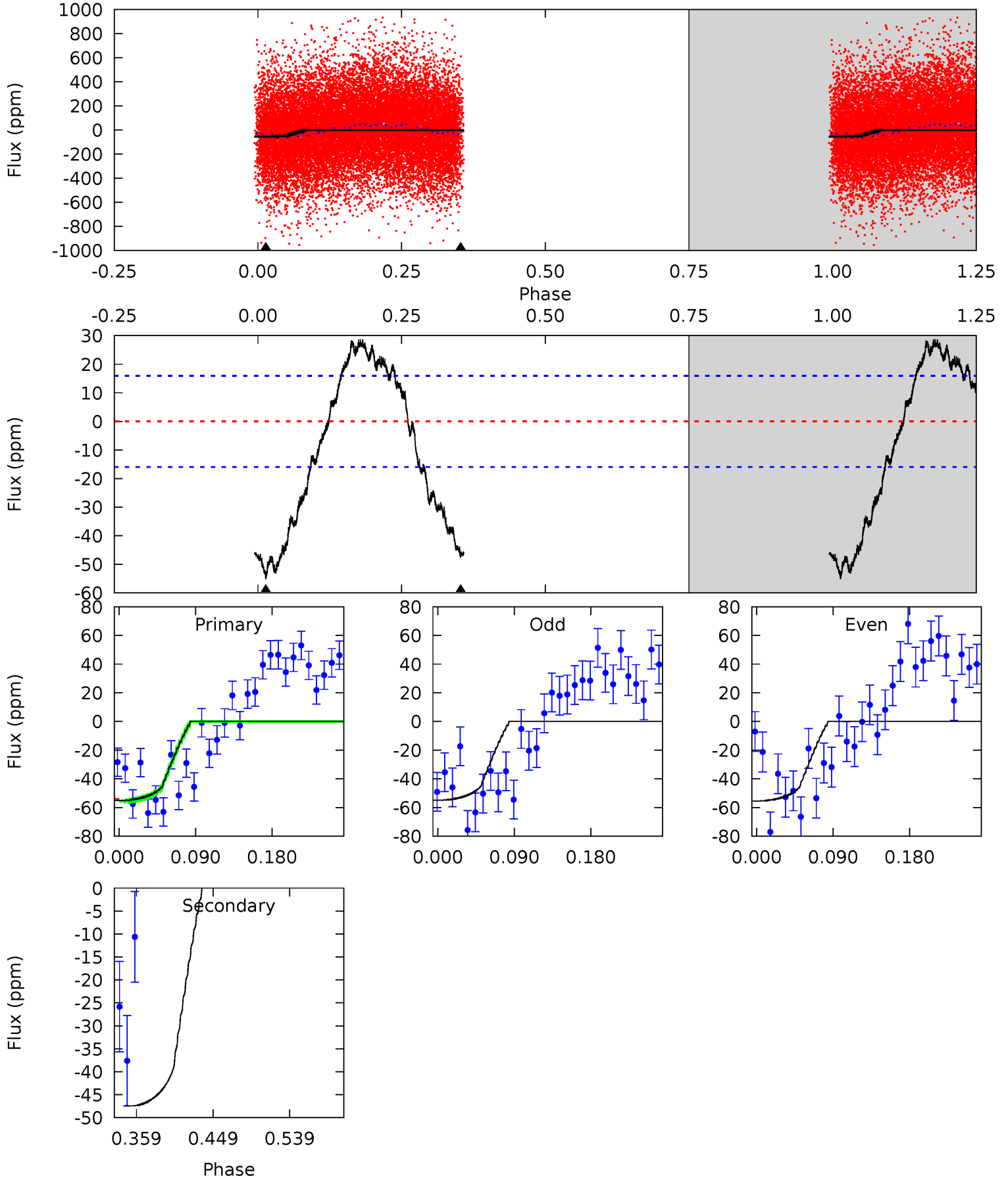


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

009243671-02, P = 0.593654 Days, E = 131.341202 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	13.6	0	0	4.59	1.70	6.51	15.9	15.9	13.6	13.6	0.08	1.01	0.34	0.04



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 009243671

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6366^{+170}_{-207}	$4.283^{+0.132}_{-0.198}$	$-0.240^{+0.250}_{-0.300}$	$1.228^{+0.377}_{-0.203}$	$1.051^{+0.184}_{-0.123}$	$0.799^{+0.568}_{-0.408}$
	+3%/-3%	+3%/-5%	+104%/-125%	+31%/-17%	+18%/-12%	+71%/-51%
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 009243671-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-47 ± 3	$1.00^{+0.68}_{-0.57}$	3684^{+291}_{-227}	6086^{+4043}_{-1384}	$5.125^{+22.662}_{-3.291}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

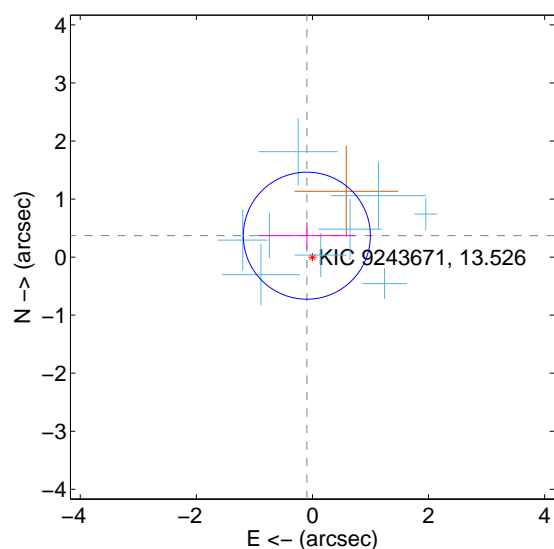
Supplemental centroid analysis for 009243671-02. Kepler magnitude: 13.53. Transit SNR 10.99

There are 9 quarters with good PRF difference image offsets

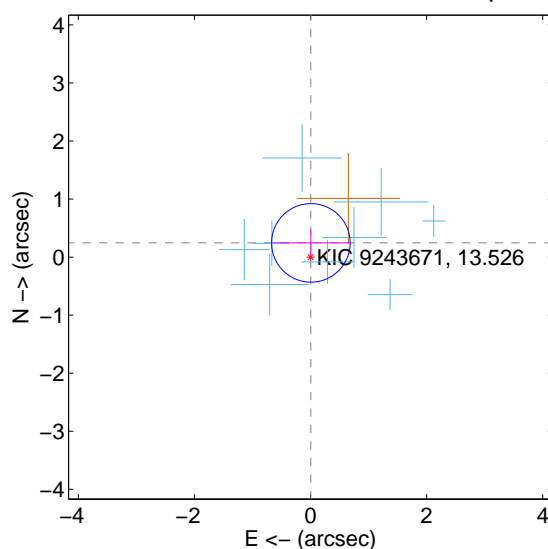
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.381 ± 0.365	1.05	0.097 ± 0.830	0.369 ± 0.232
PRF-fit source offset from KIC position	0.245 ± 0.225	1.09	-0.006 ± 0.662	0.245 ± 0.230
photometric centroid source offset	1.77 ± 0.57	3.11	0.06 ± 0.68	-1.77 ± 0.57

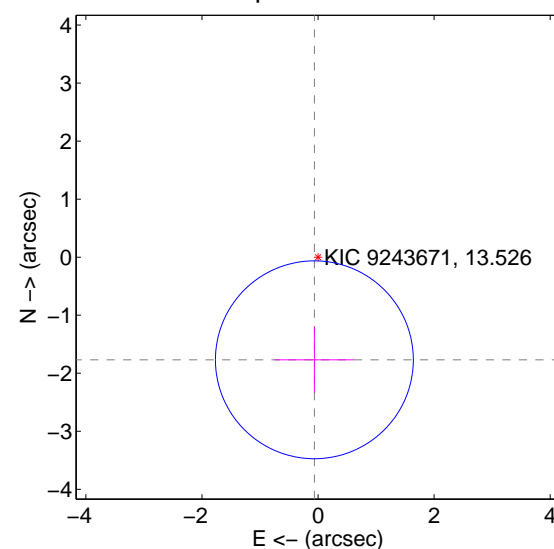
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

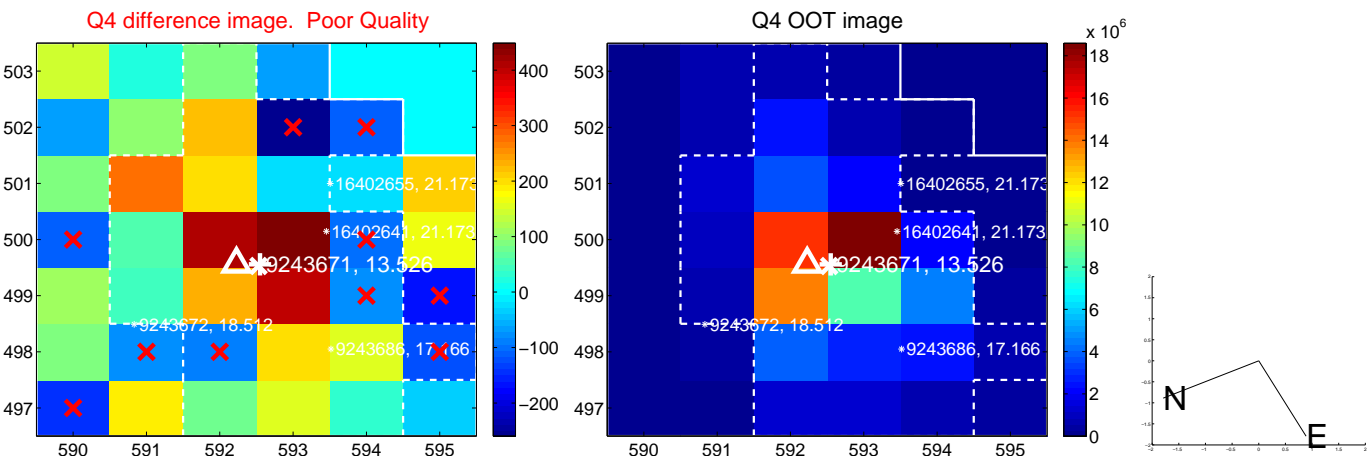
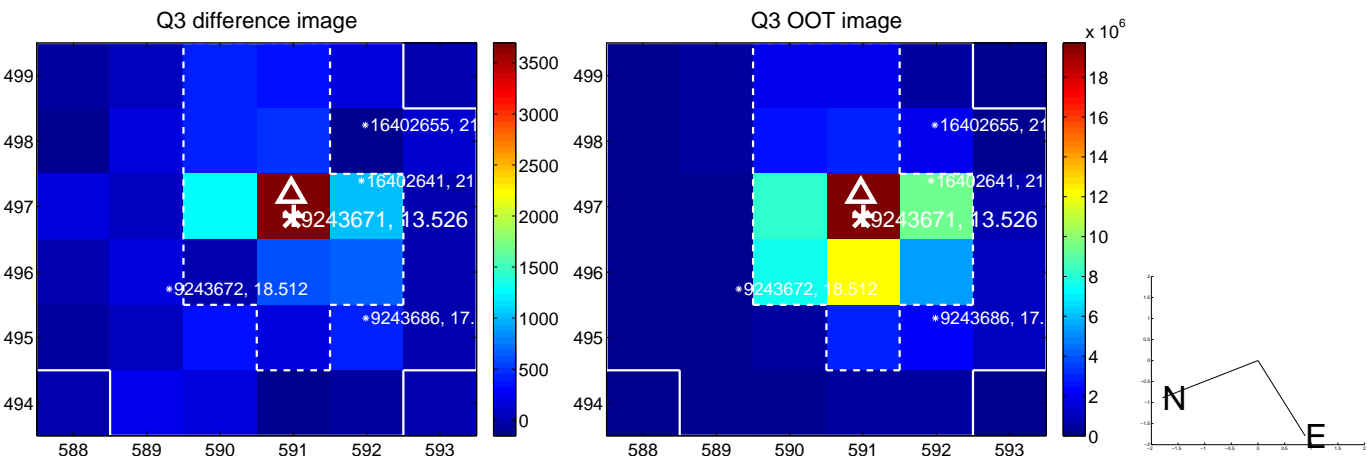
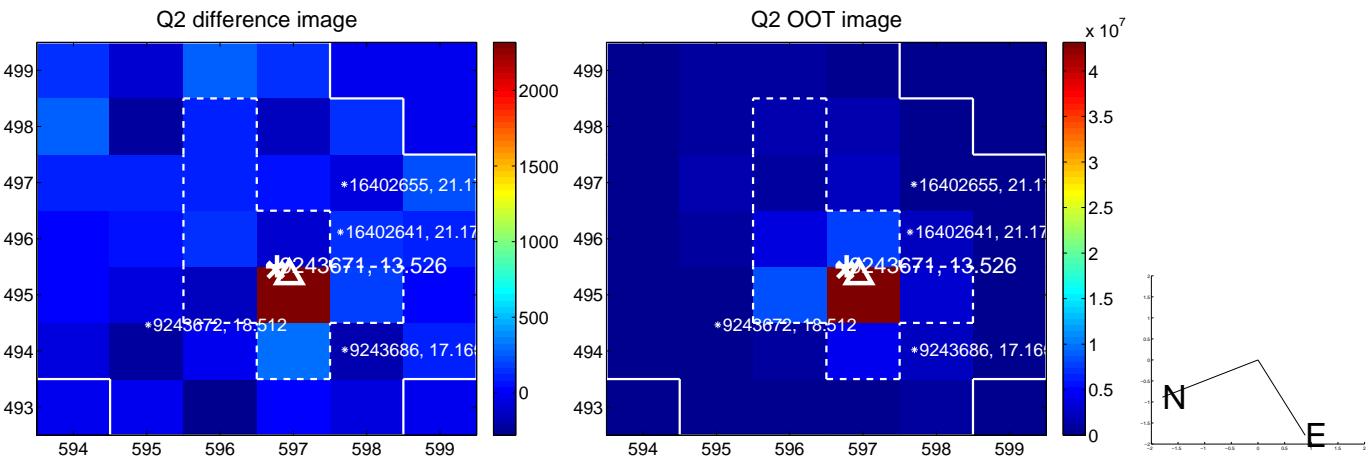
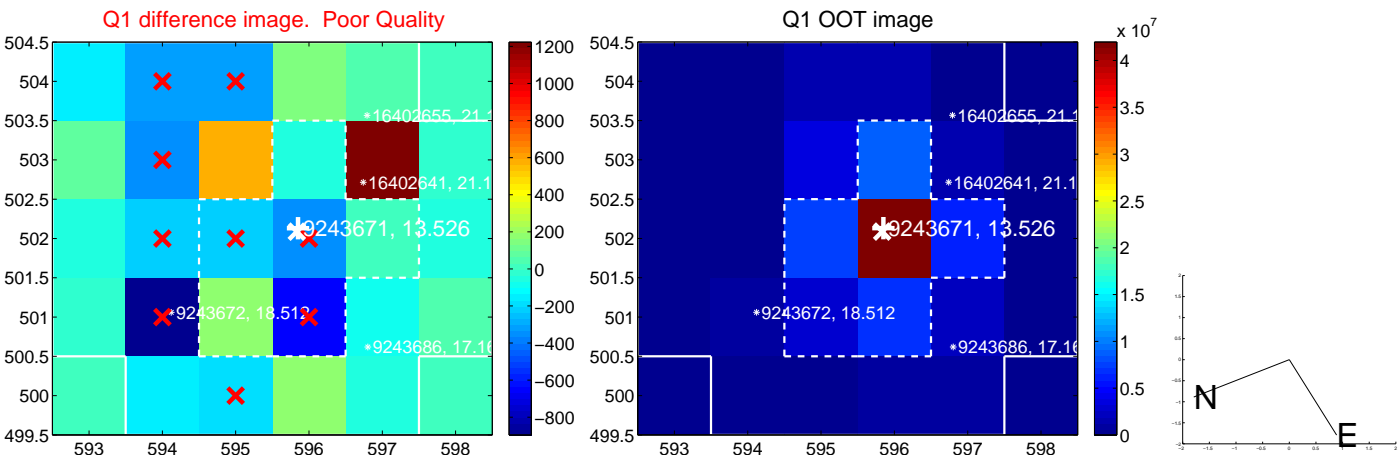


offset from photometric centroids

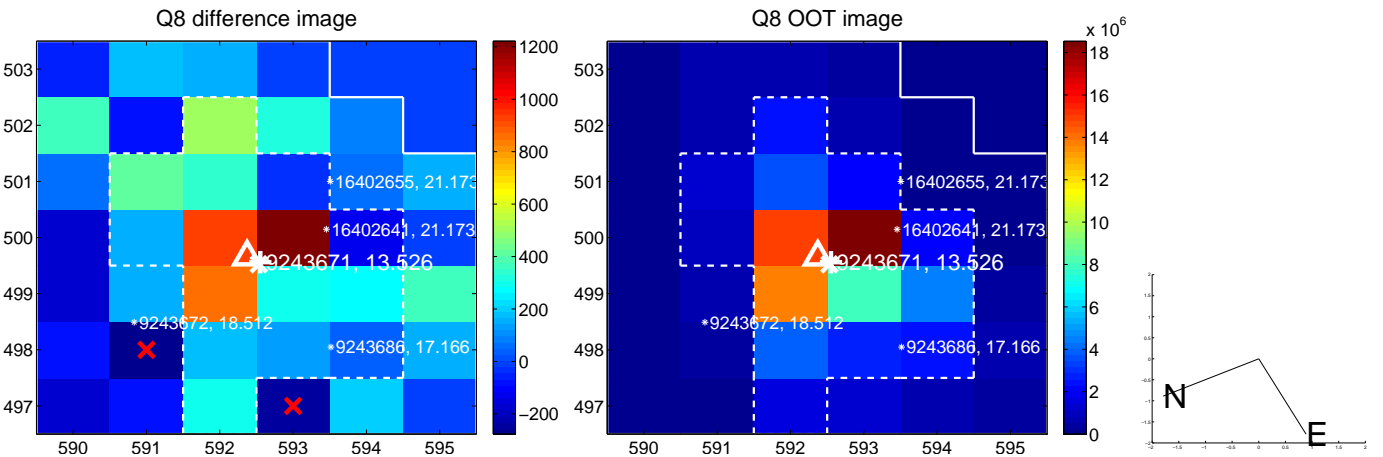
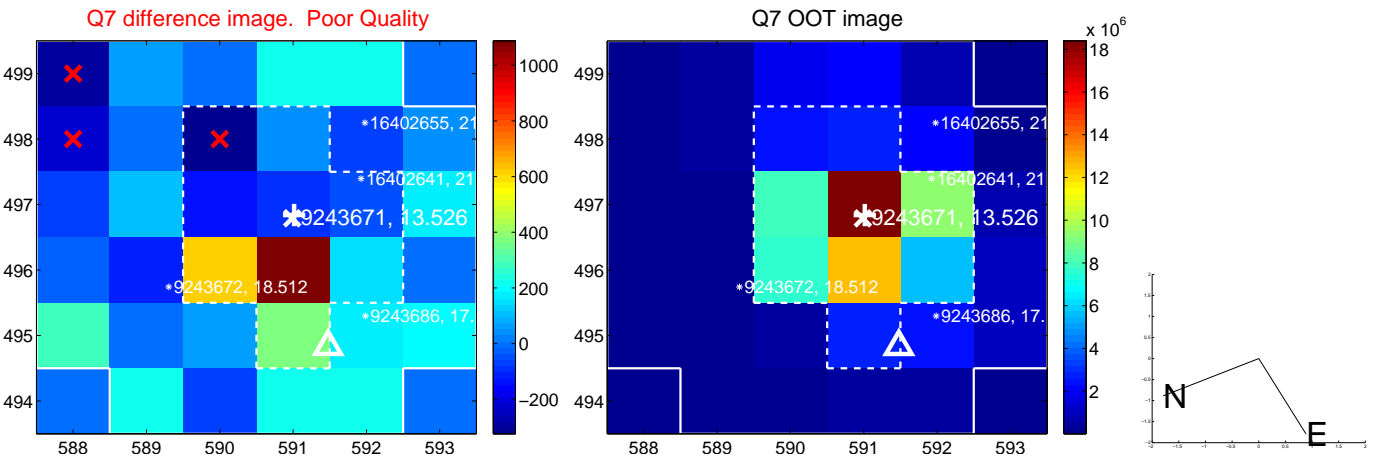
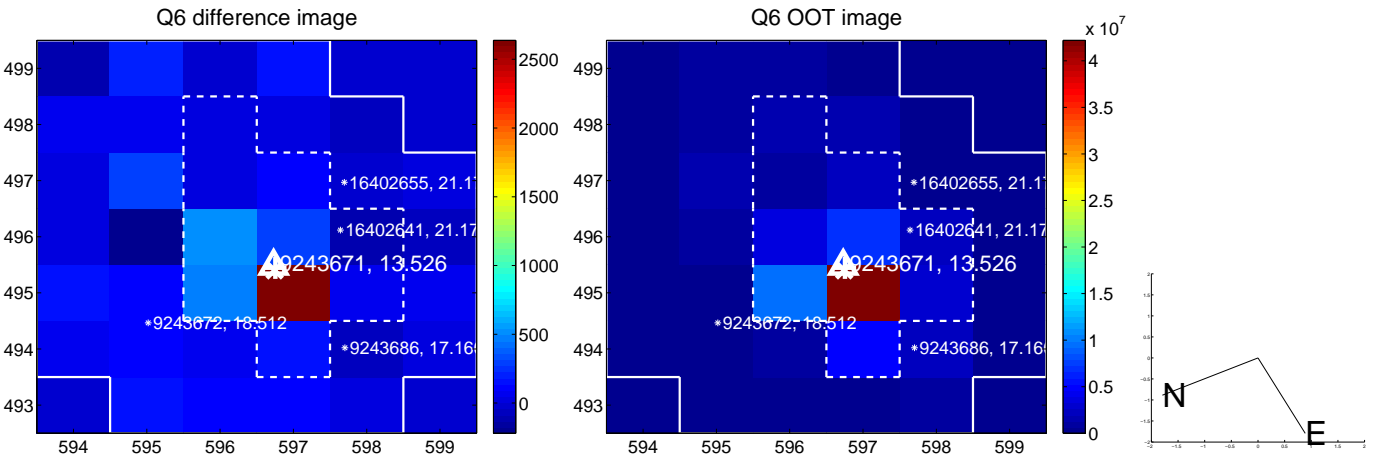
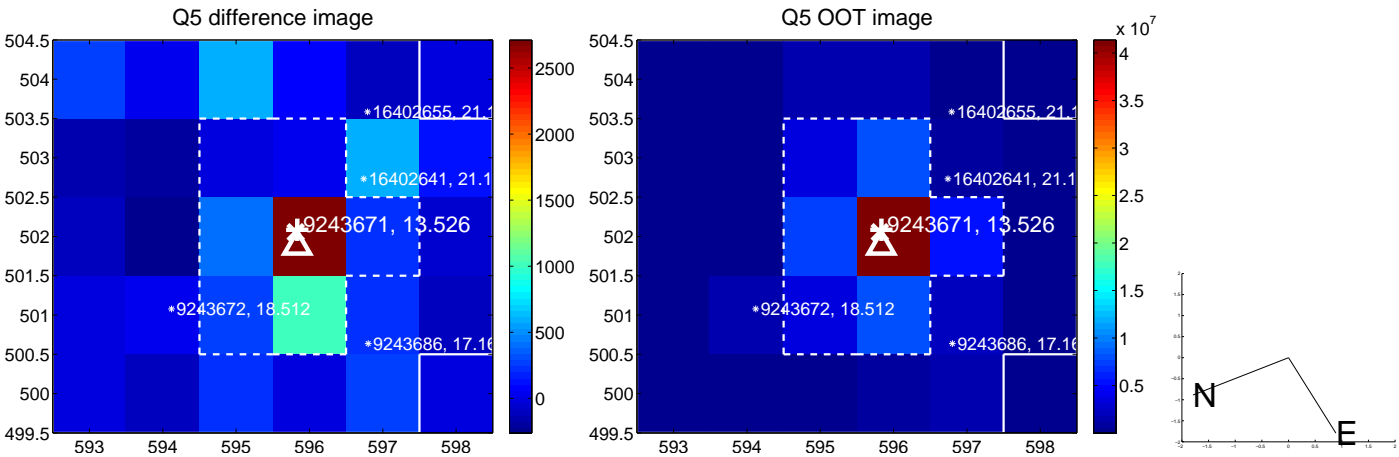


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

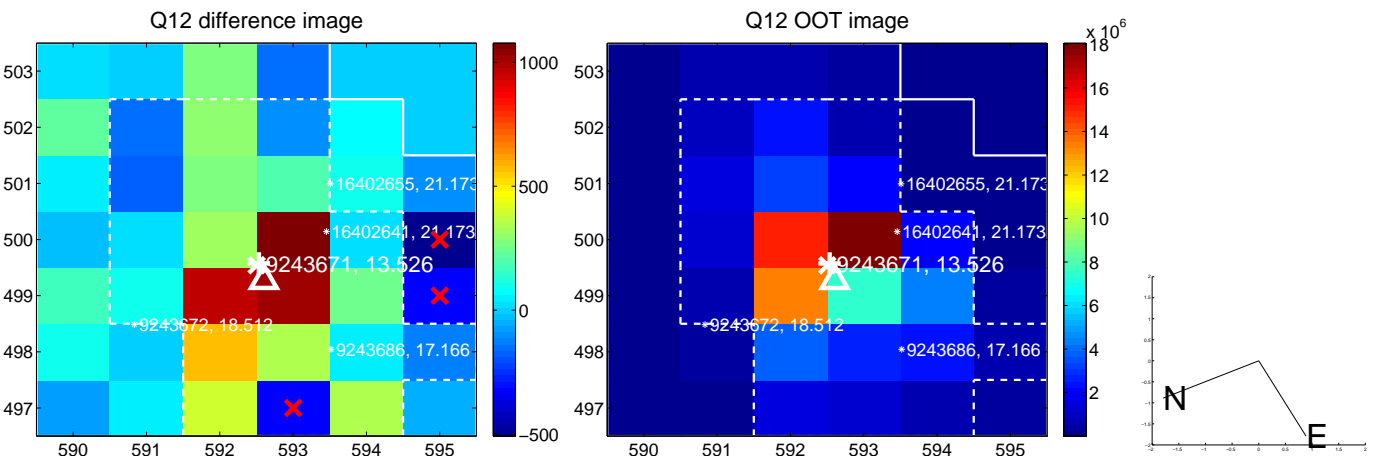
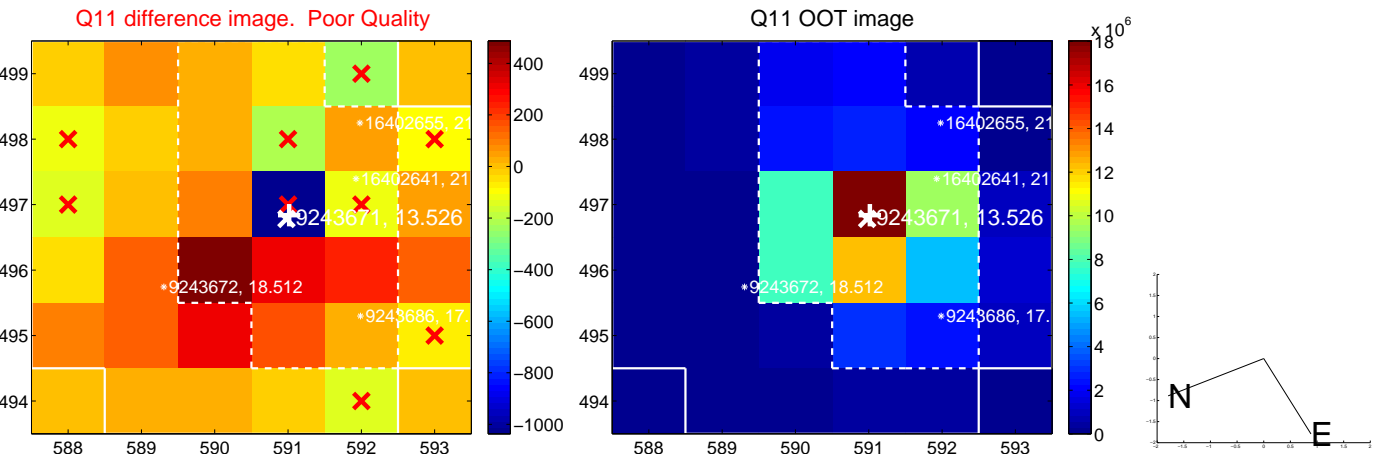
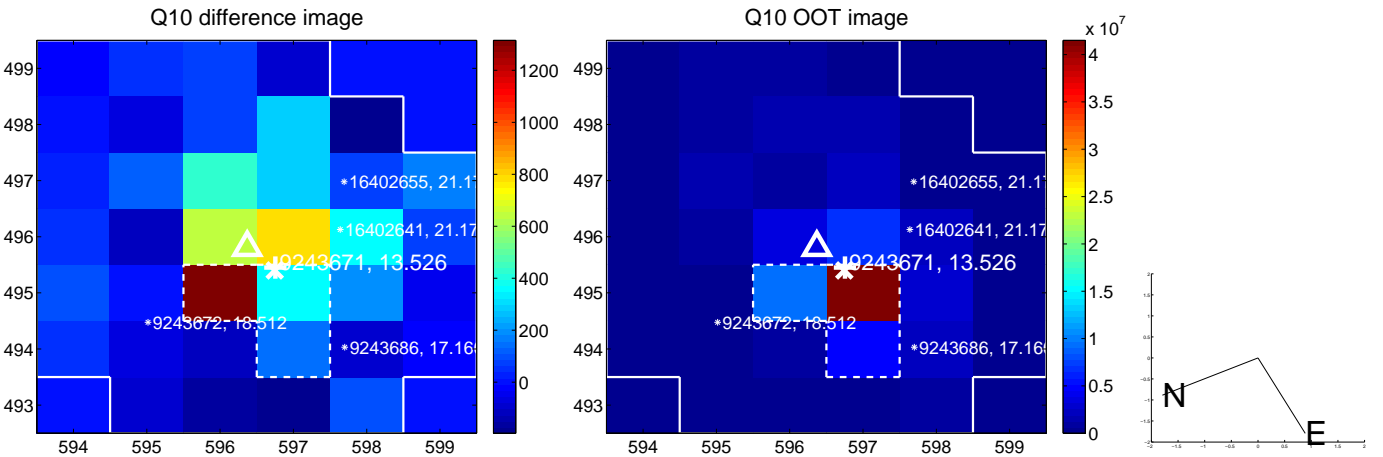
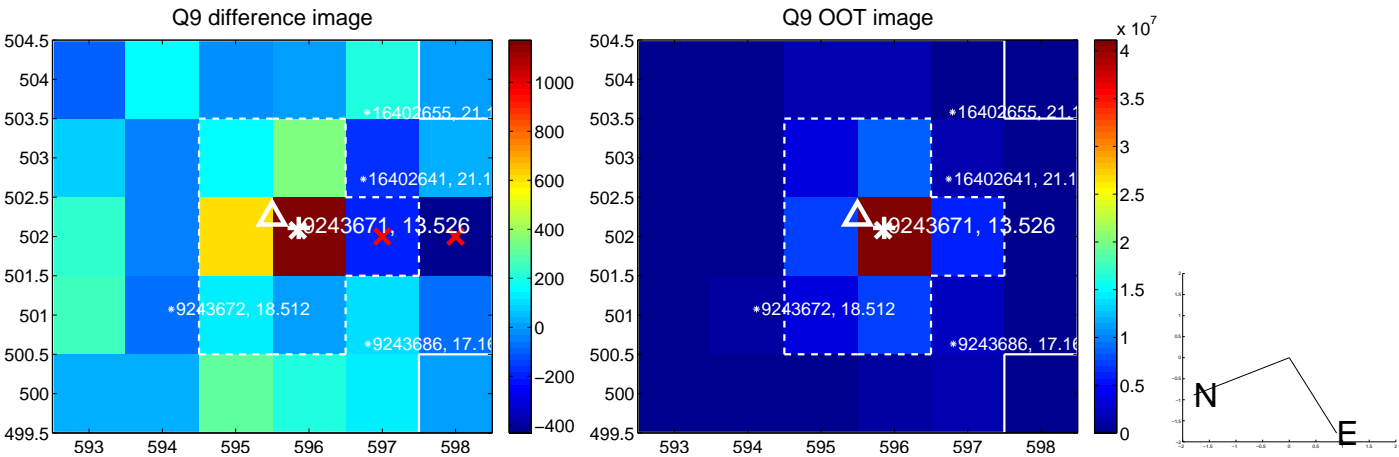
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



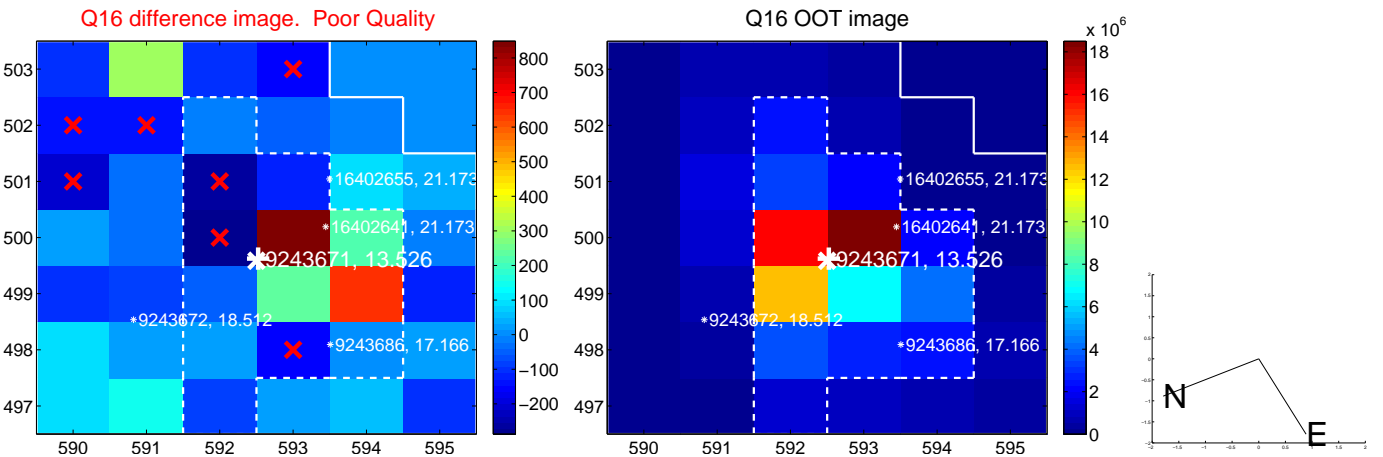
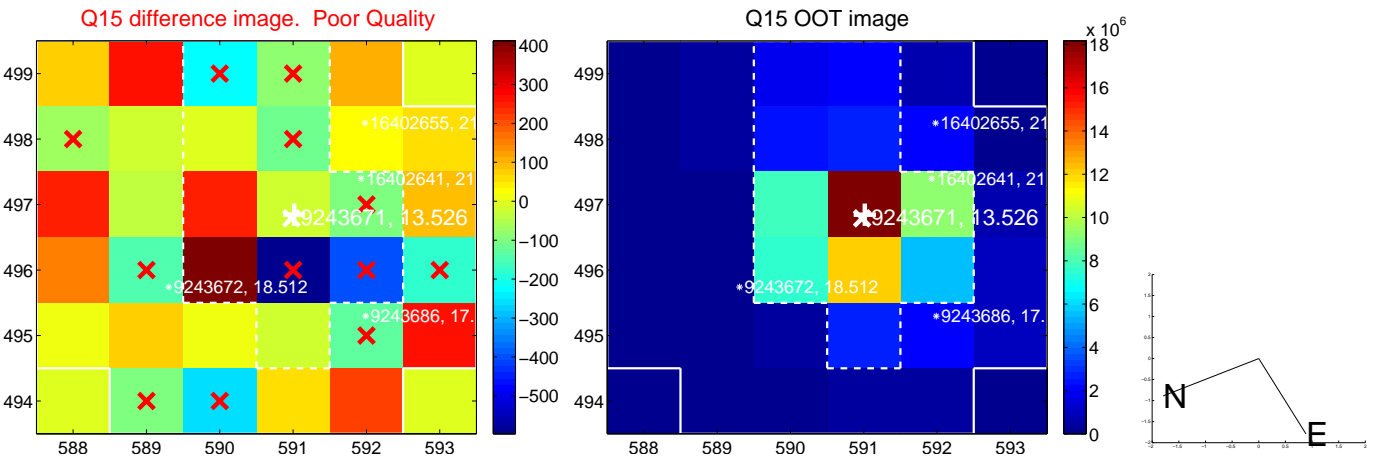
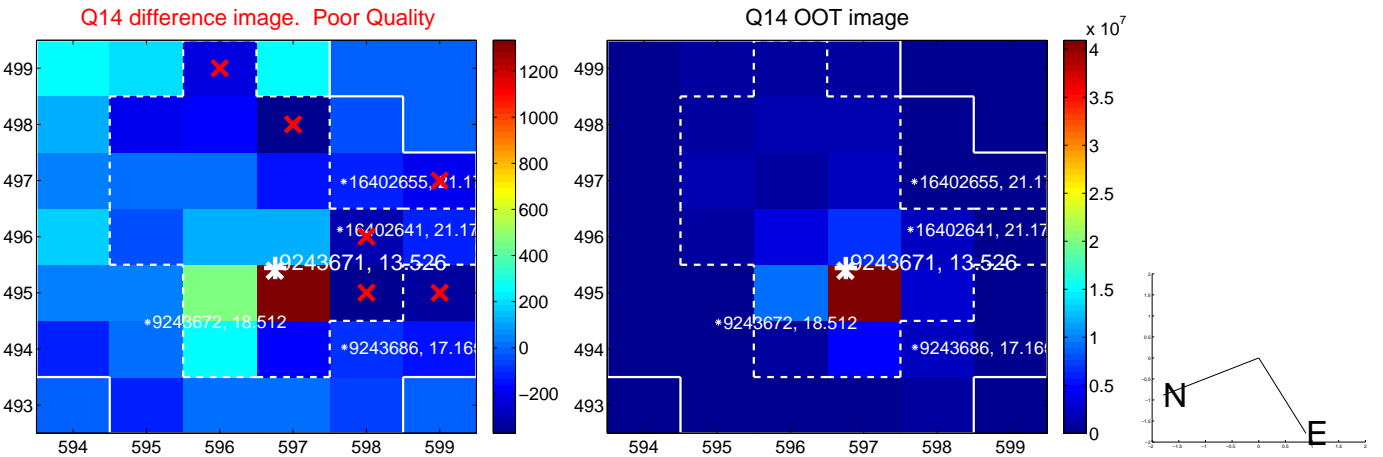
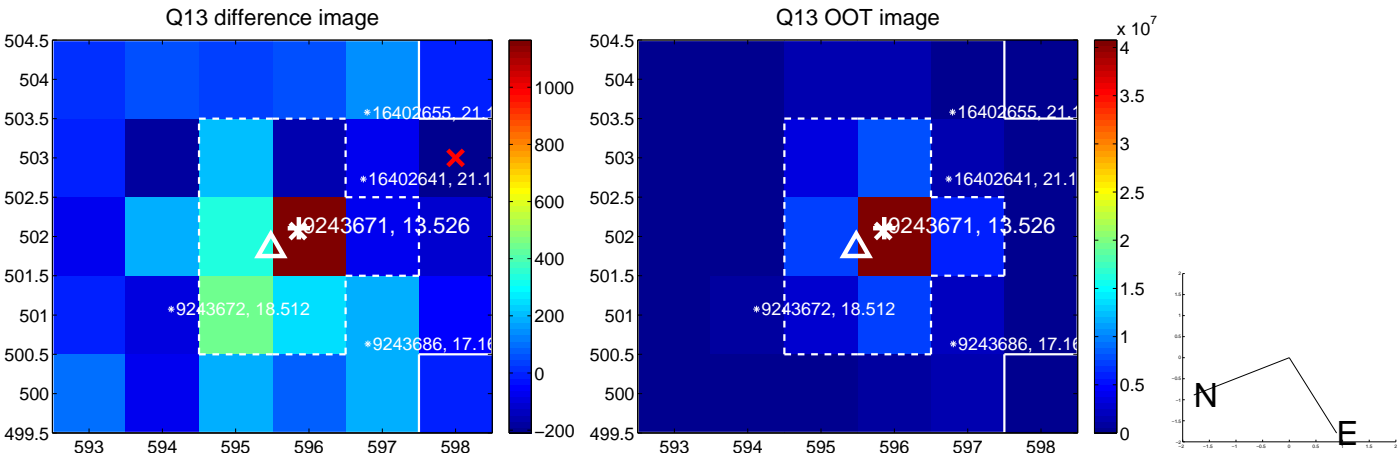
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



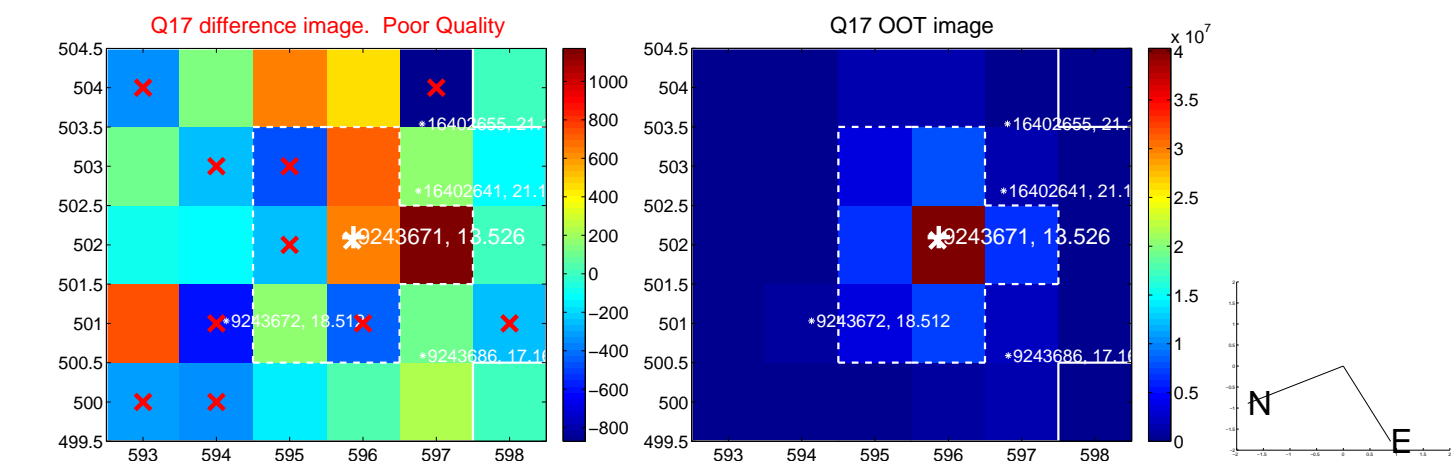
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



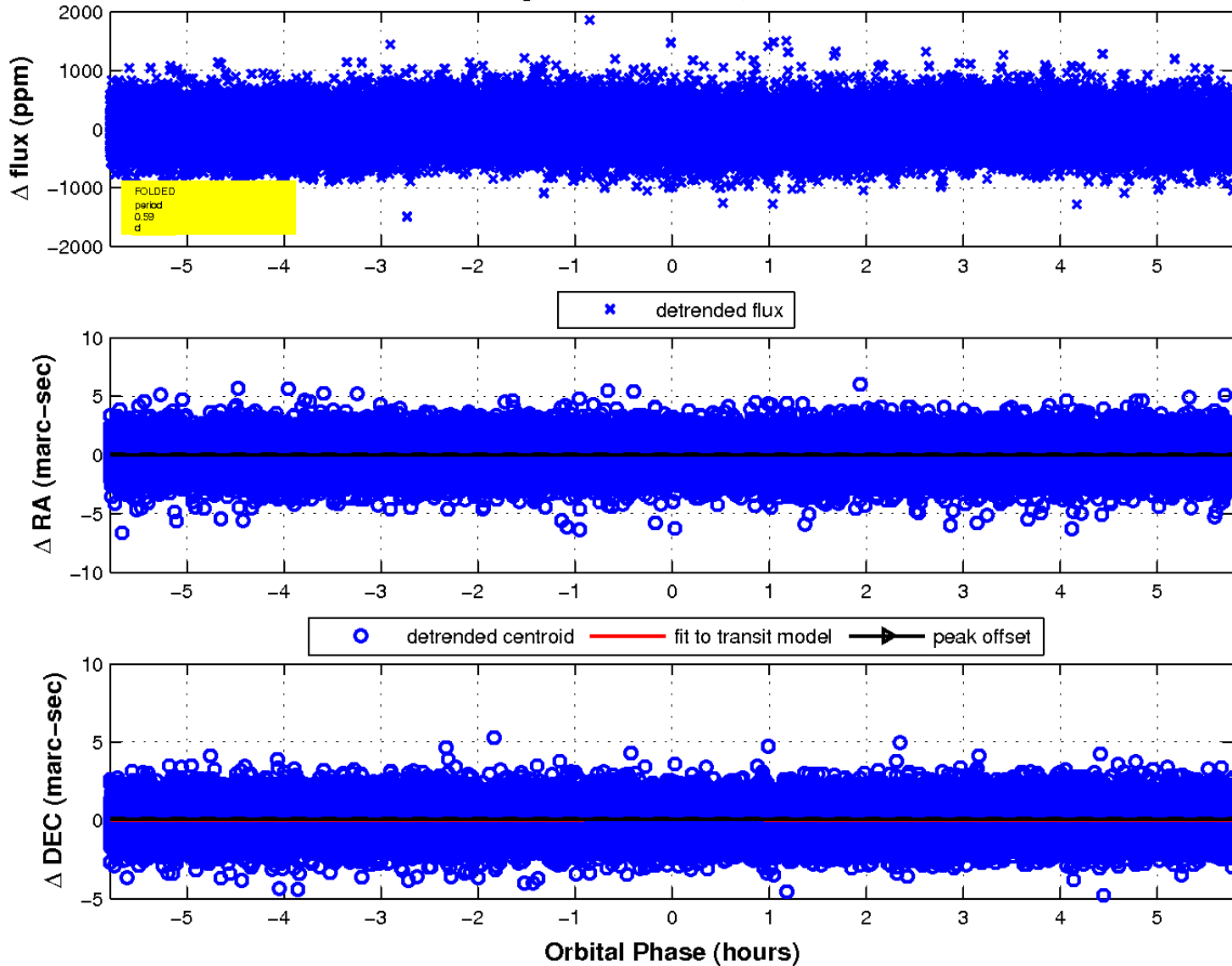
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination

