

KIC 009892624

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})
009892624-01	OBS	No	0.600207	132.100636	64.3	1.667	14.8	15.2	1.82	7389	1.57	33627.39
009892624-02	OBS	No	0.967299	132.225822	63.2	4.385	9.8	12.4	1.82	7389	1.48	17797.02
009892624-03	OBS	No	66.628016	169.791503	598.6	5.648	9.5	7.6	1.82	7389	4.96	63.03
009892624-04	OBS	No	0.967309	131.734355	53.3	4.683	10.1	11.9	1.82	7389	1.36	17796.77

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009892624-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009892624-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
009892624-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009892624-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

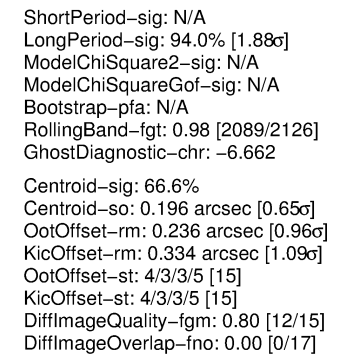
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

Ephemeris Match Information For 009892624-01

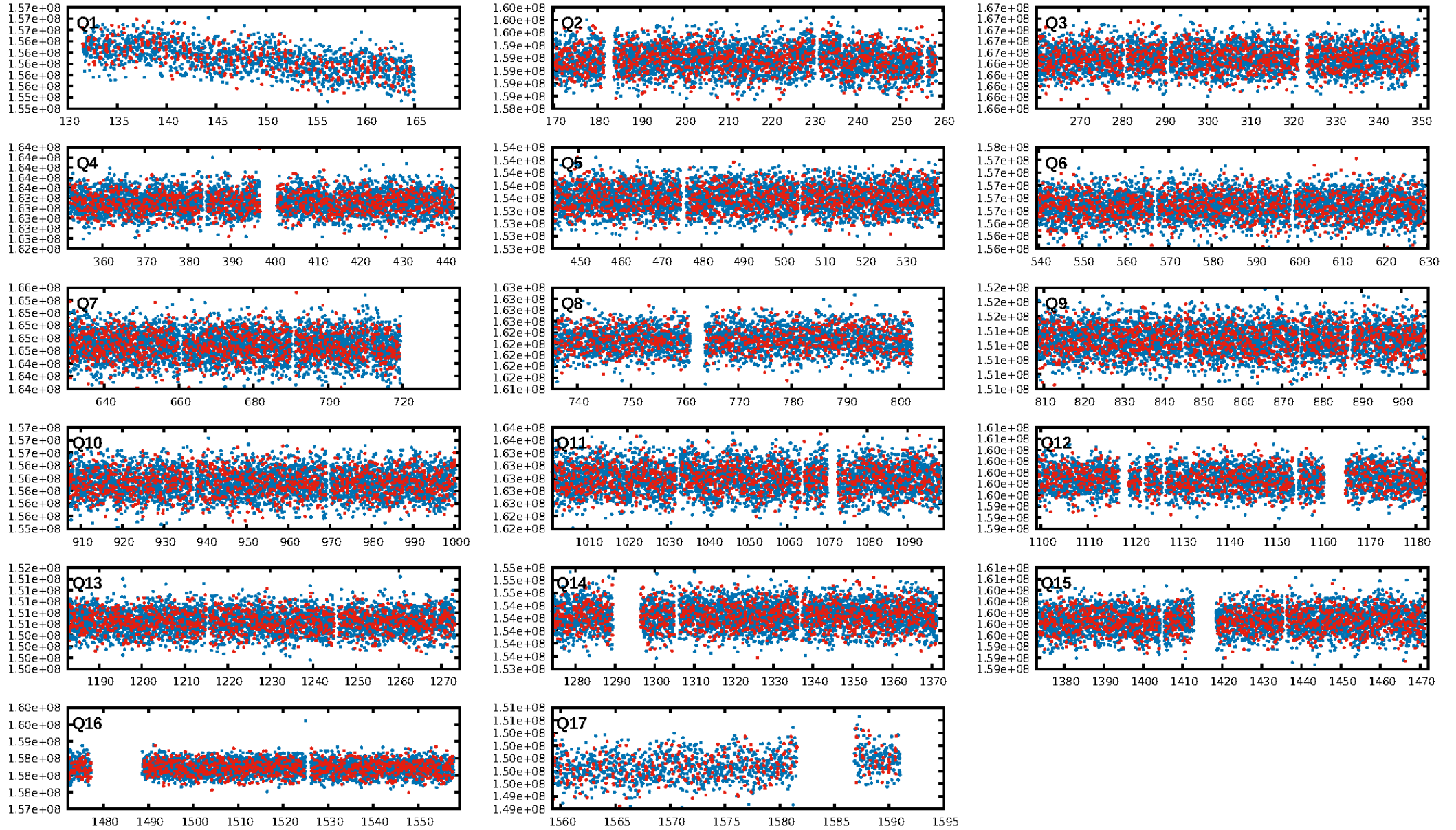
No Significant Match Found

KIC: 9892624 Candidate: 1 of 4 Period: 0.600 d

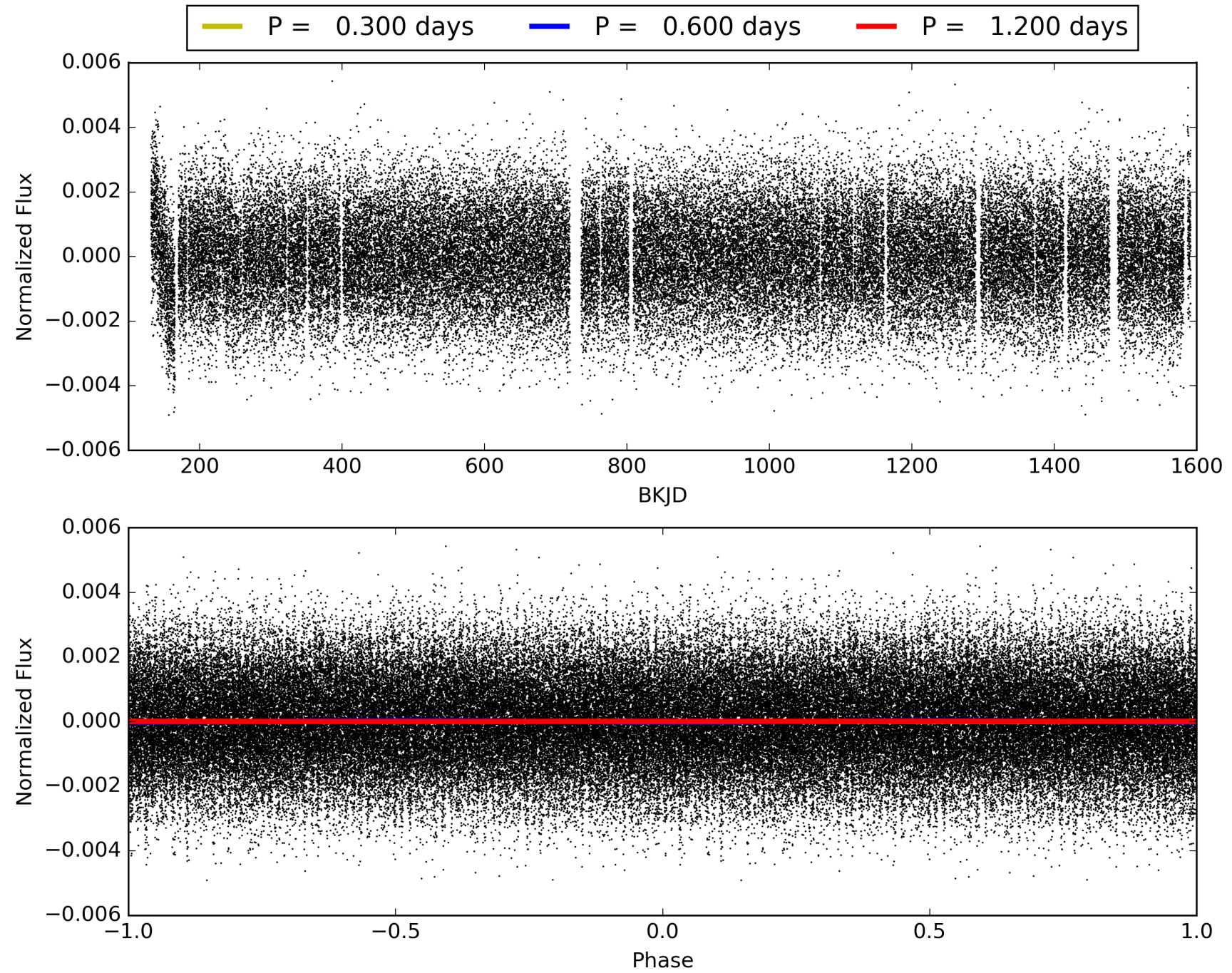


This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009892624-01, PDC Light Curves

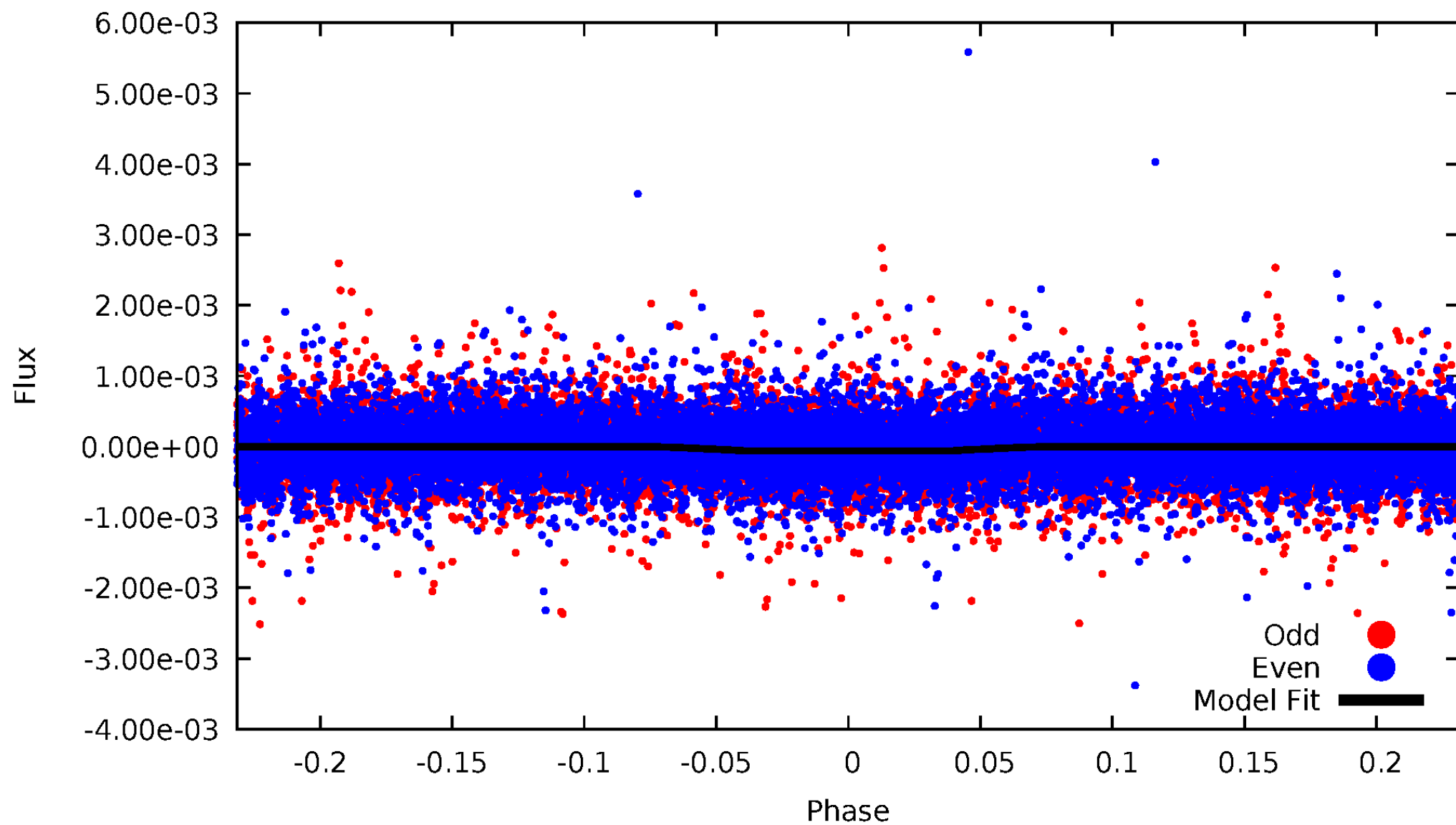


TCE 009892624-01



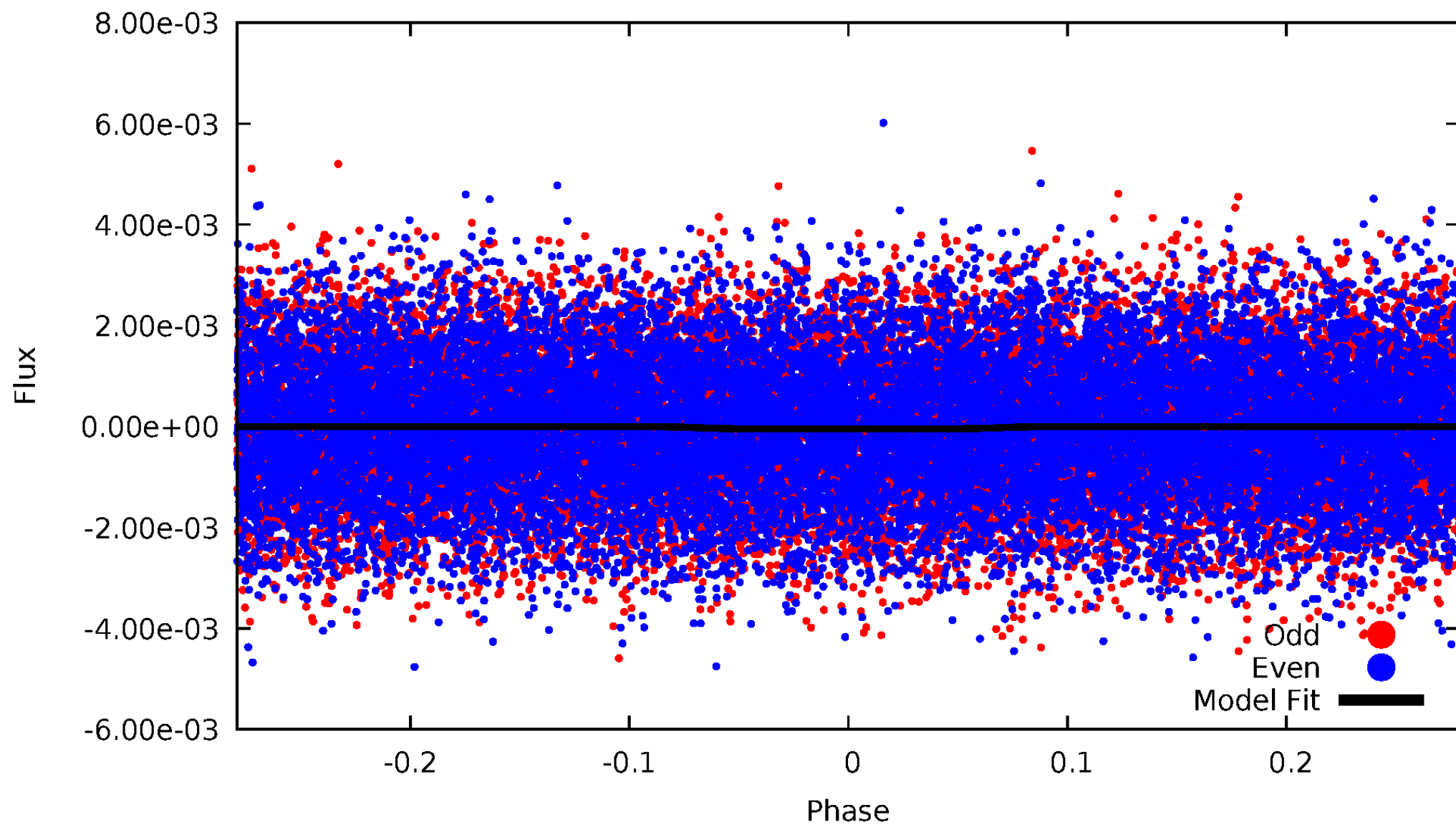
DV Odd/Even

TCE 009892624-01



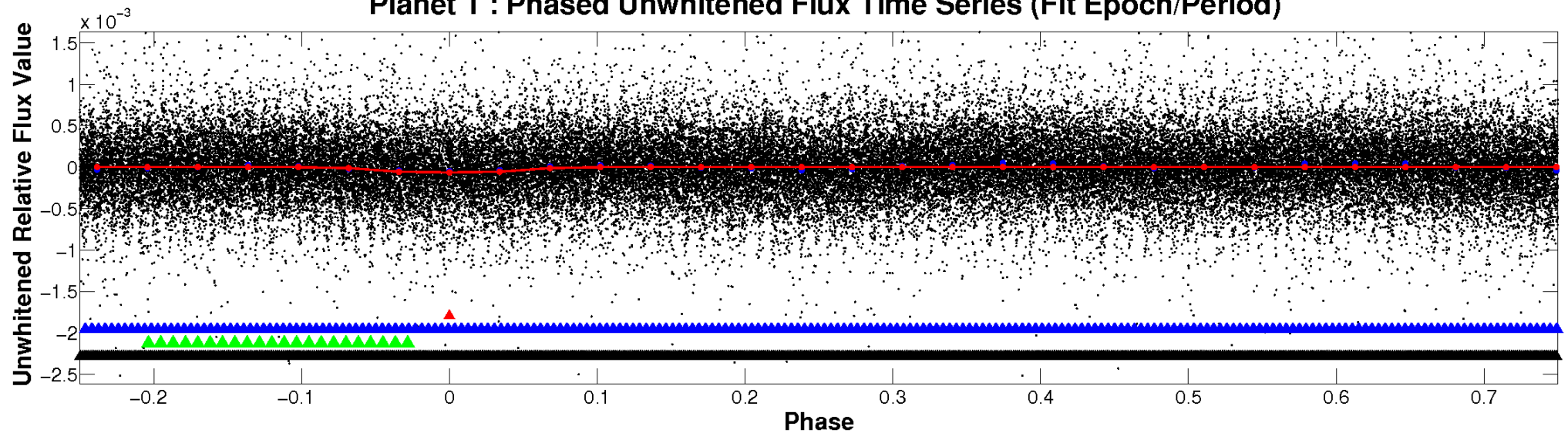
ALT Odd/Even

TCE 009892624-01

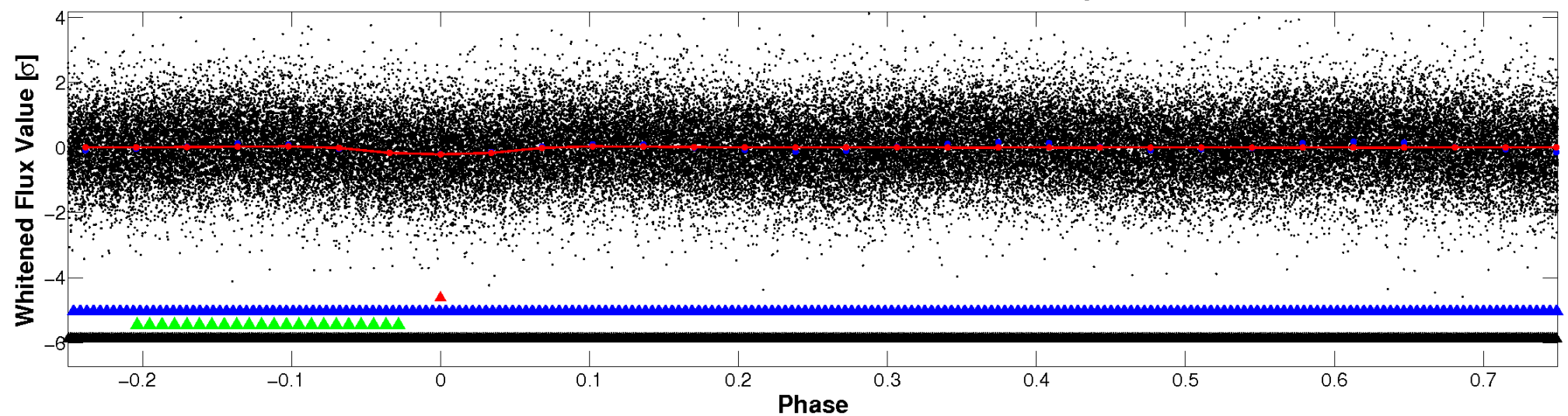


Non-Whitened Vs. Whitened Light Curve

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

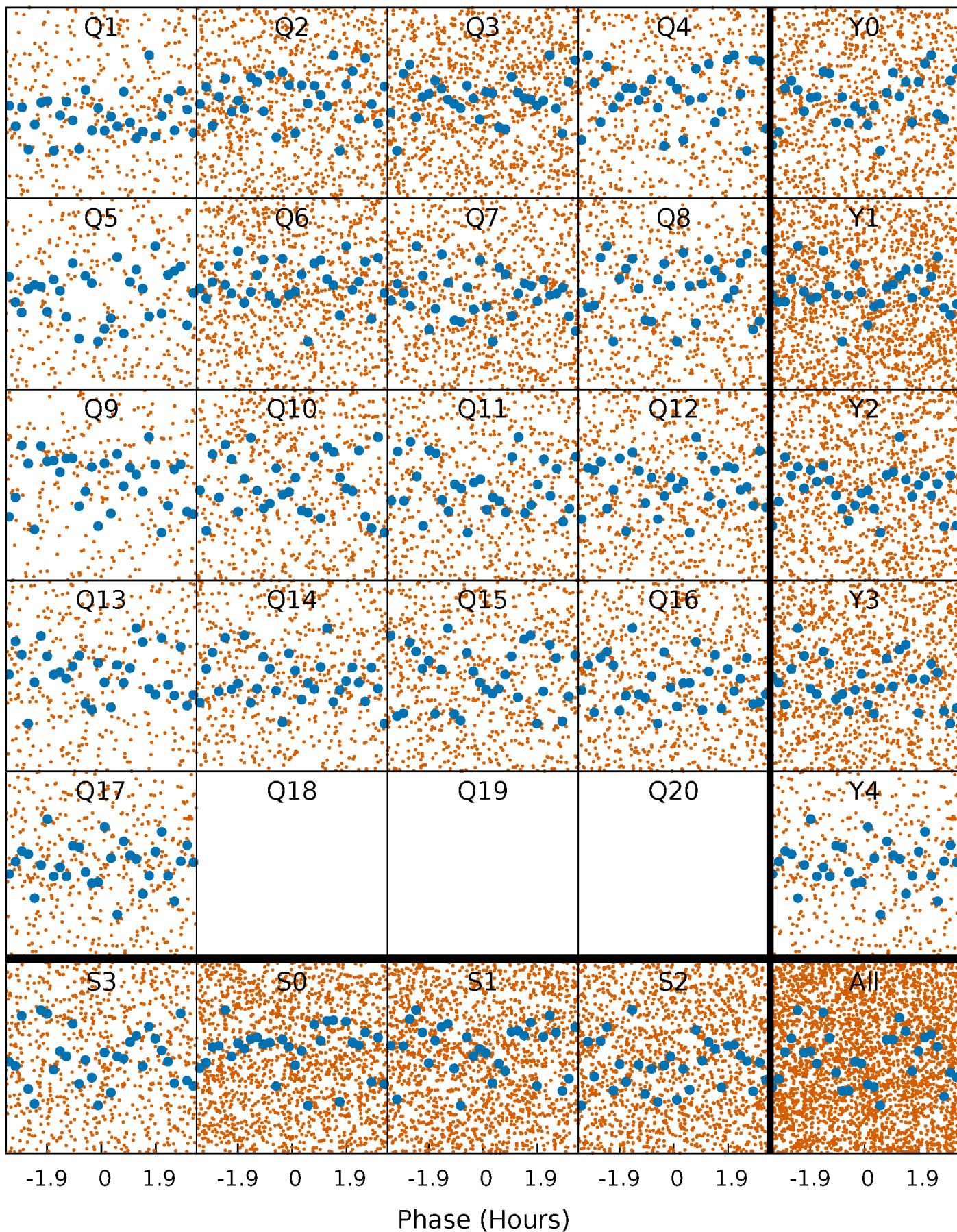


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



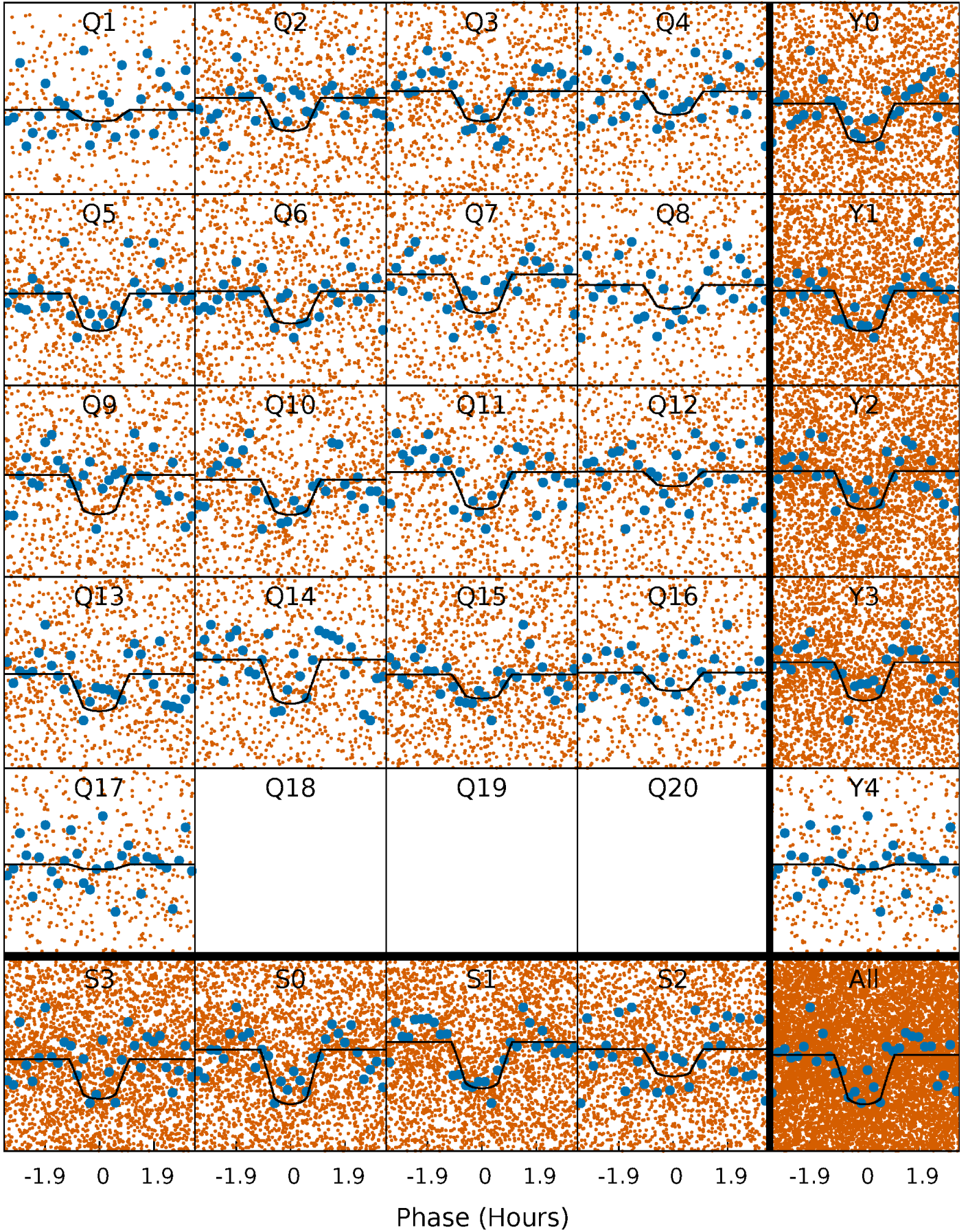
PDC Quarter-Phased Transit Curves

TCE 009892624-01 P= 0.600207 Days $T_0=132.100636$ (BKJD)



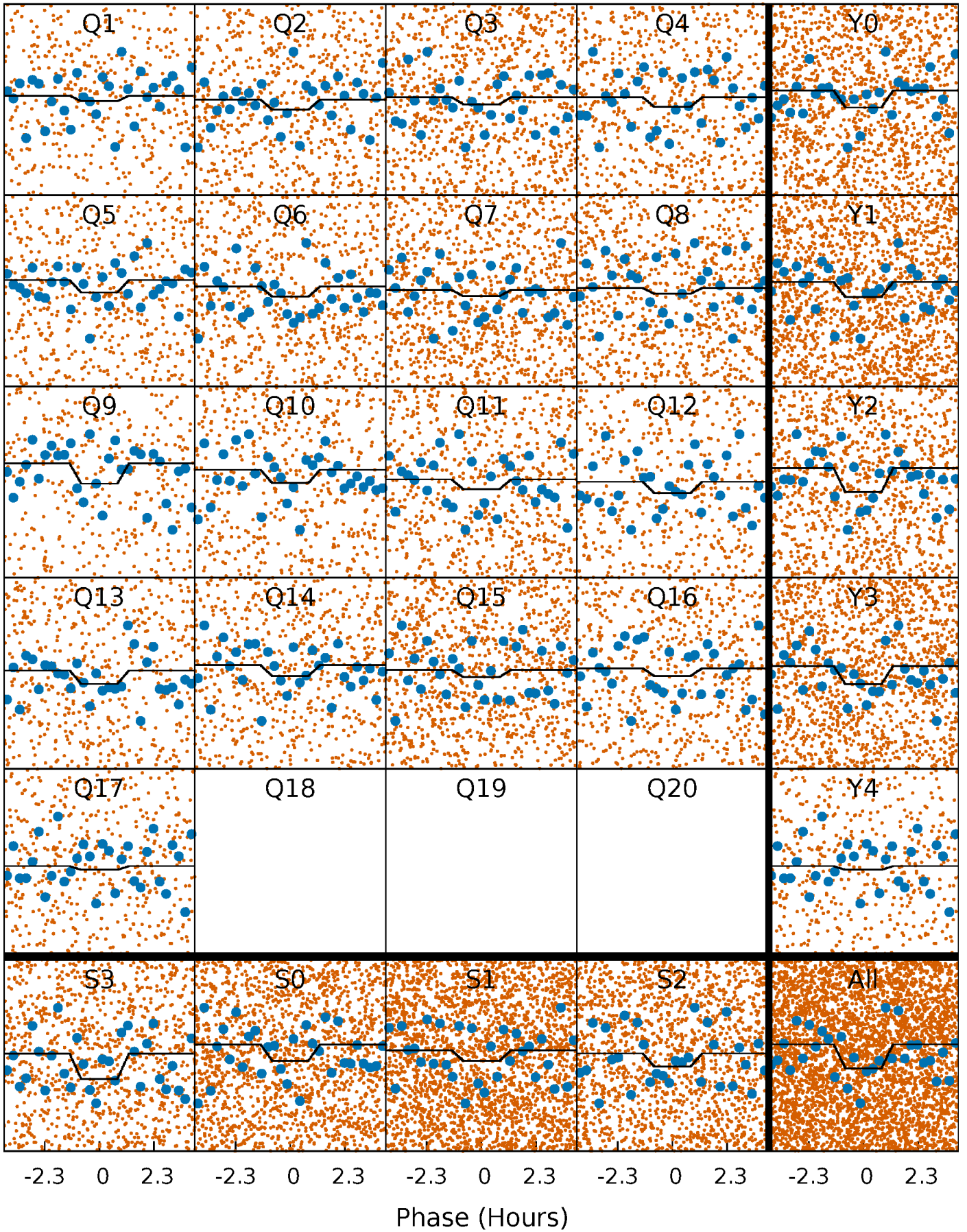
DV Quarter-Phased Transit Curves

TCE 009892624-01 P= 0.600207 Days $T_0=132.100636$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

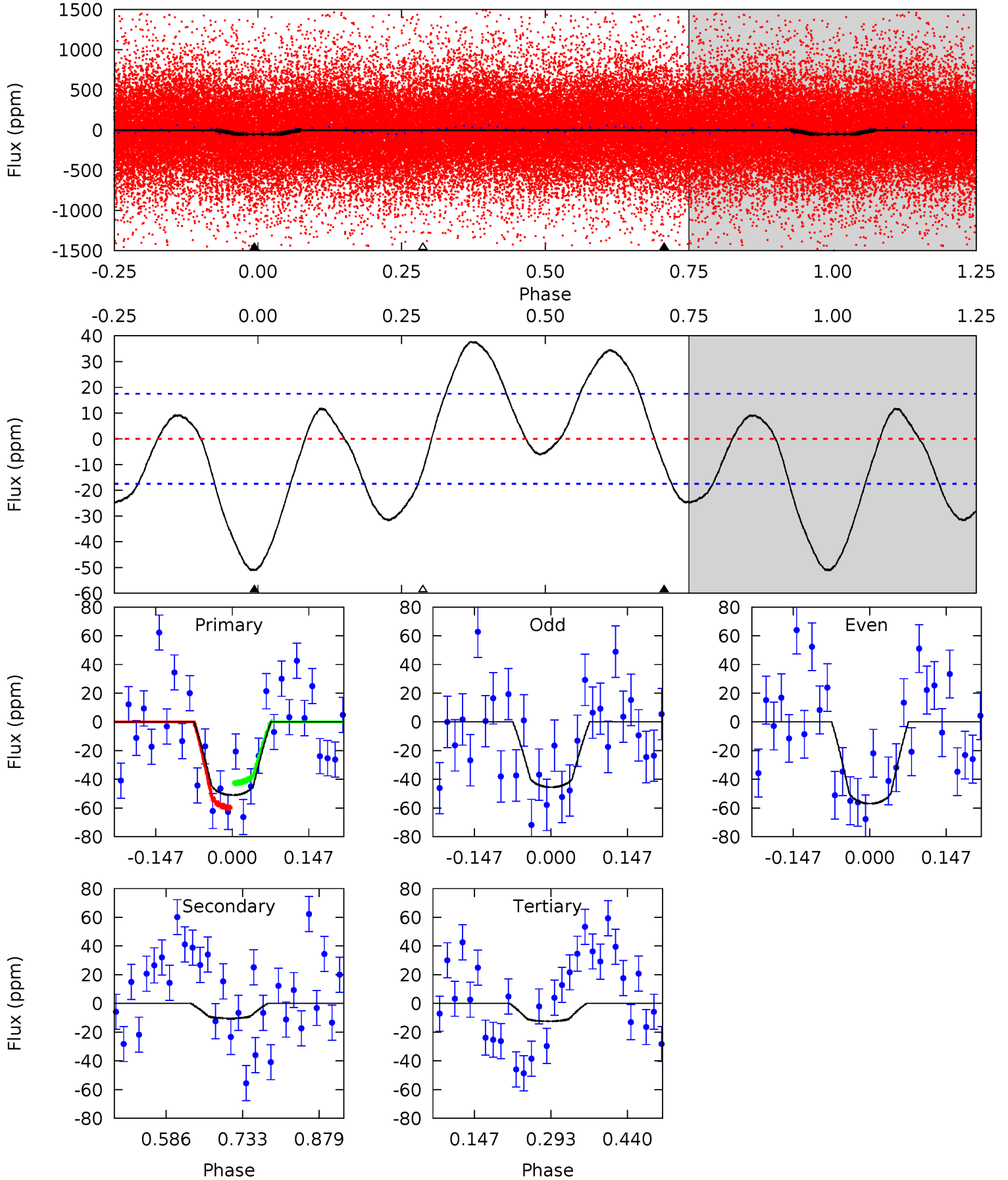
TCE 009892624-01 P= 0.600194 Days $T_0=131.523748$ (BKJD)



DV Model-Shift Uniqueness Test

009892624-01, P = 0.600207 Days, E = 131.500429 Days

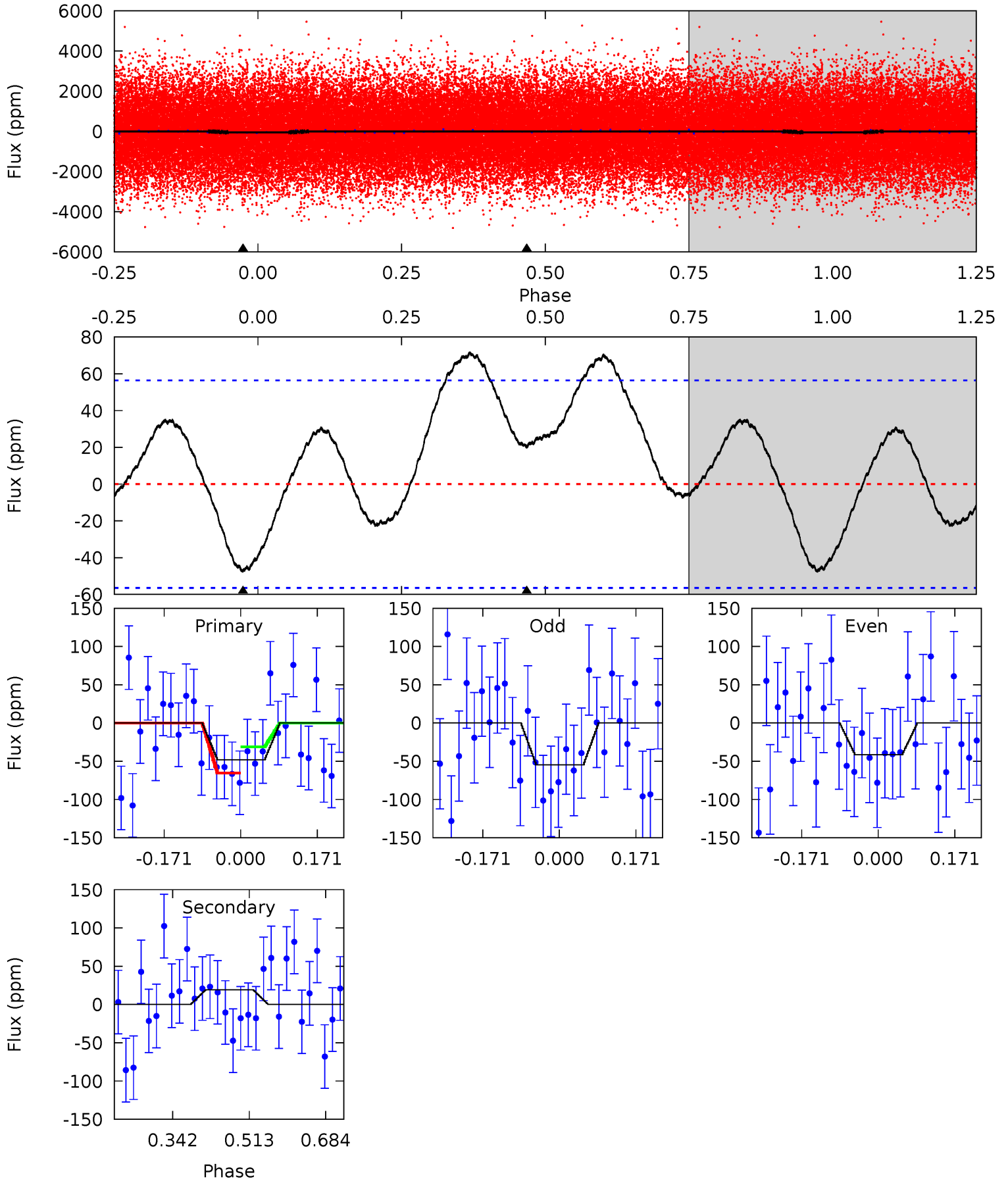
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	2.65	3.18	0	4.48	1.45	5.35	9.92	13.1	-0.54	2.65	1.48	1.03	0.42	2.23



Alt Model-Shift Uniqueness Test

009892624-01, P = 0.600194 Days, E = 130.923554 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.78	-1.53	0	0	4.45	1.37	1.40	3.78	3.78	-1.53	-1.53	0.53	1.13	0.60	1.34



Stellar Parameters For KIC 009892624

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7389^{+233}_{-311}	$4.117^{+0.140}_{-0.171}$	$-0.020^{+0.200}_{-0.350}$	$1.823^{+0.548}_{-0.365}$	$1.586^{+0.200}_{-0.244}$	$0.369^{+0.259}_{-0.175}$
	+3%/-4%	+3%/-4%	+1000%/-1750%	+30%/-20%	+13%/-15%	+70%/-47%
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 009892624-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-10 ± 4	$1.57^{+0.41}_{-0.35}$	4824^{+376}_{-324}	4171^{+883}_{-1530}	$0.601^{+0.514}_{-0.287}$
Alt.	19 ± 13	$1.39^{+0.38}_{-0.39}$	4836^{+348}_{-301}	-6019^{+1069}_{-1245}	$-1.370^{+1.006}_{-1.766}$

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 $A_{obs} \gg 1.0$

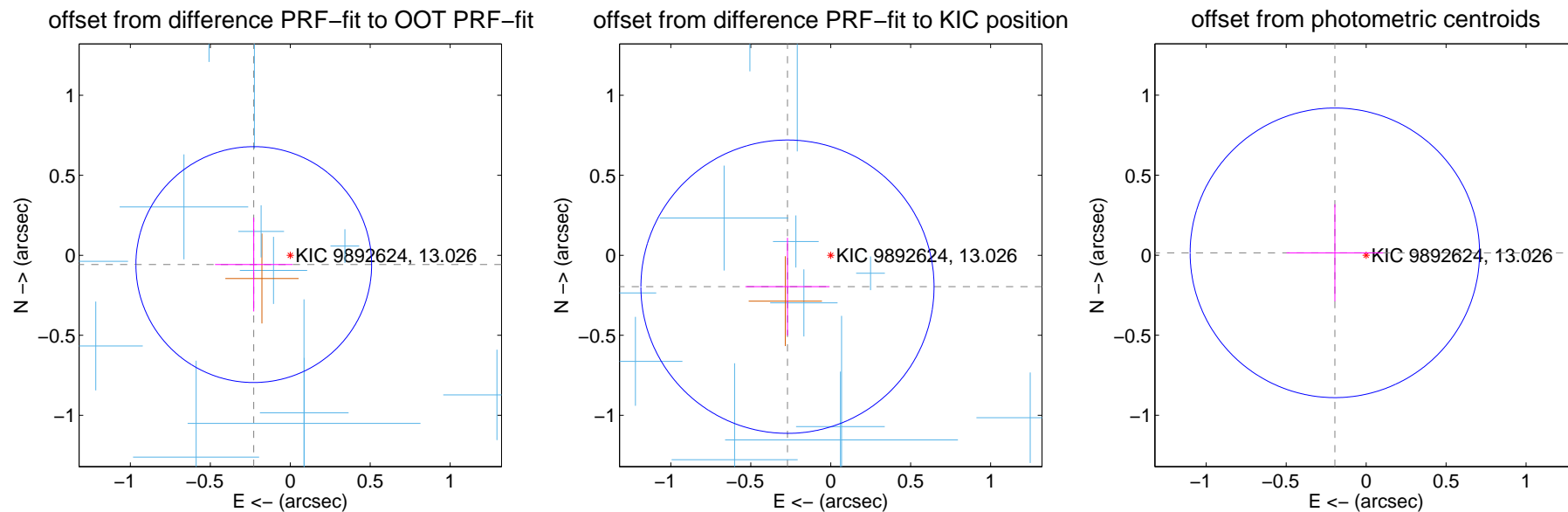
DV Centroid Data

Supplemental centroid analysis for 009892624-01. Kepler magnitude: 13.03. Transit SNR 15.18

There are 12 quarters with good PRF difference image offsets

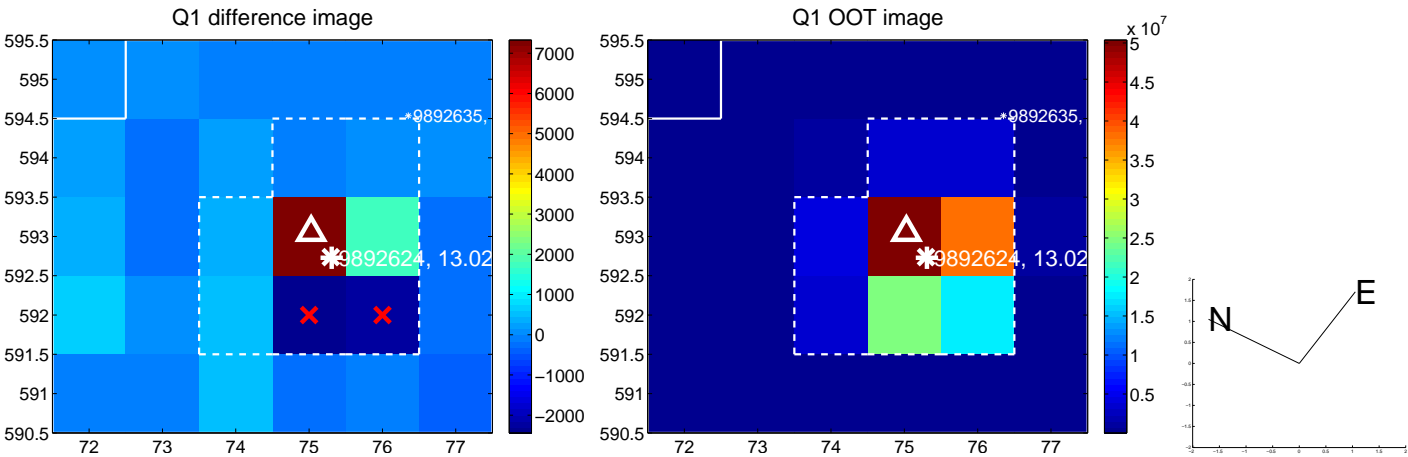
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.236 ± 0.246	0.96	0.228 ± 0.242	-0.058 ± 0.293
PRF-fit source offset from KIC position	0.334 ± 0.306	1.09	0.270 ± 0.263	-0.196 ± 0.305
photometric centroid source offset	0.20 ± 0.30	0.65	0.20 ± 0.30	0.01 ± 0.30

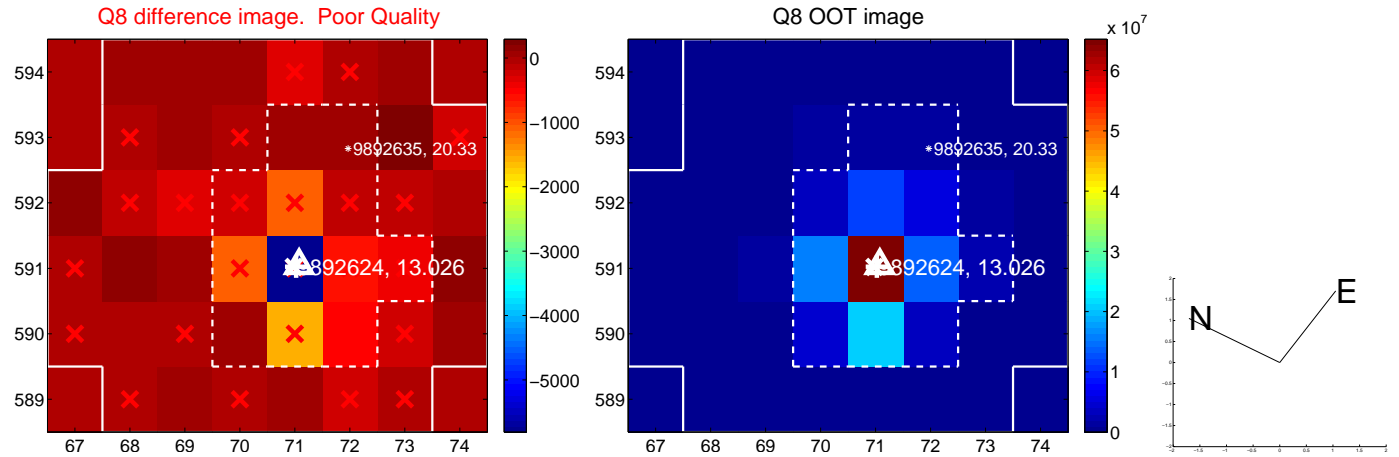
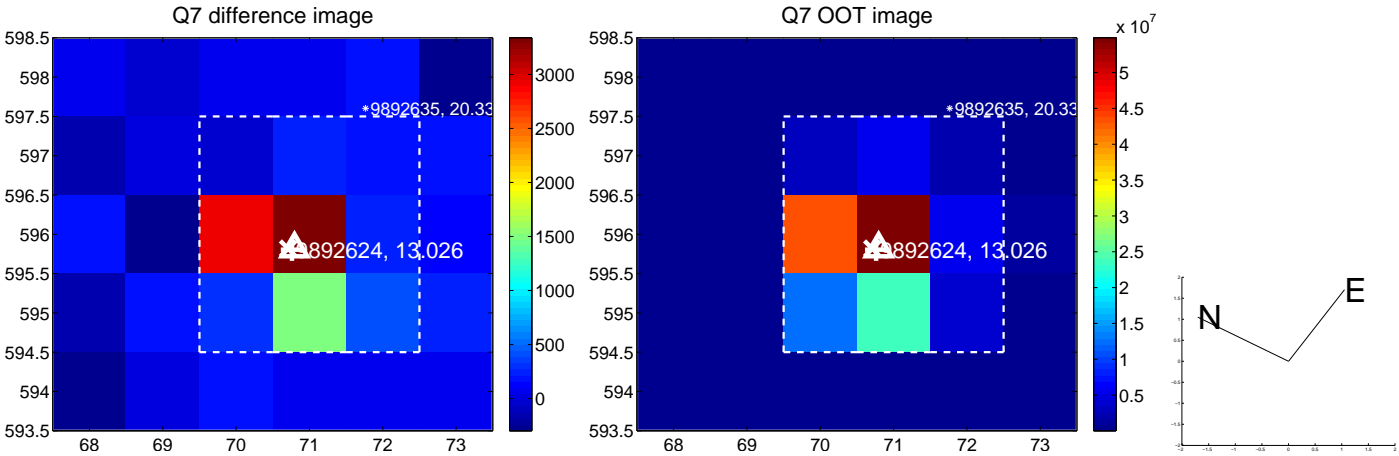
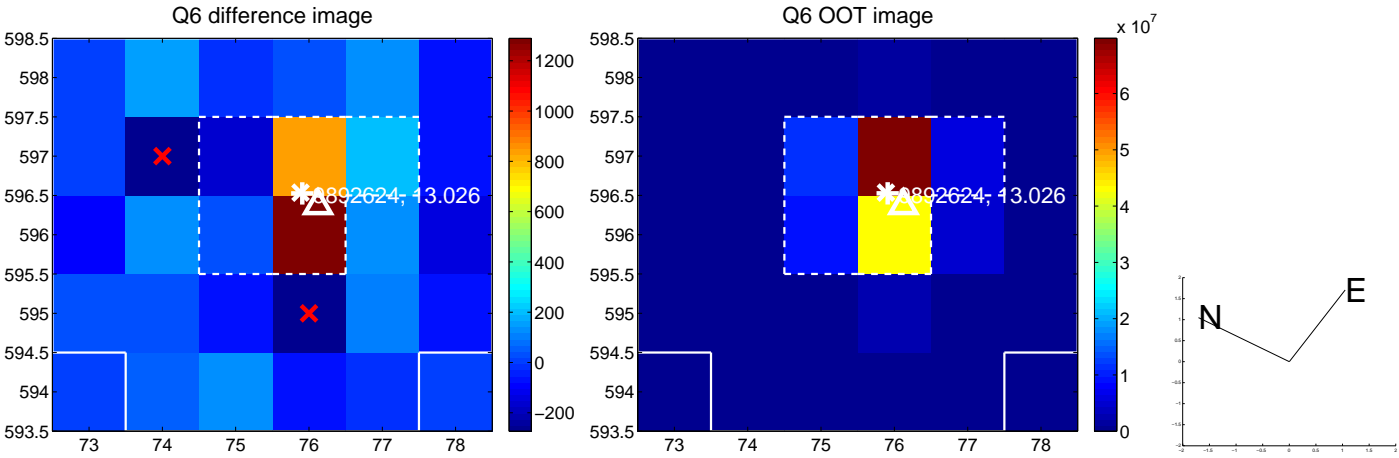
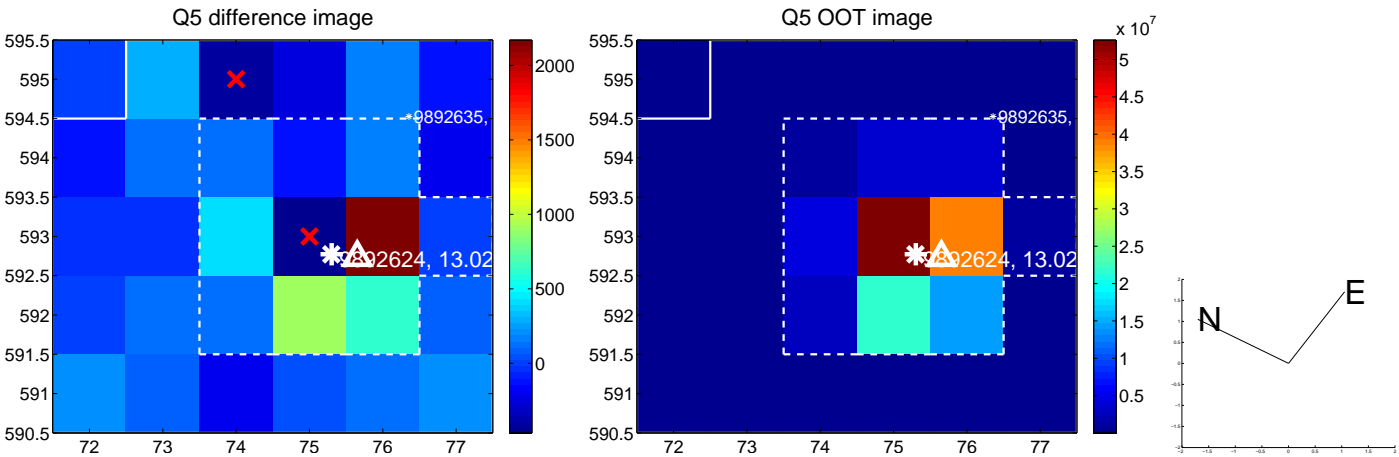


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

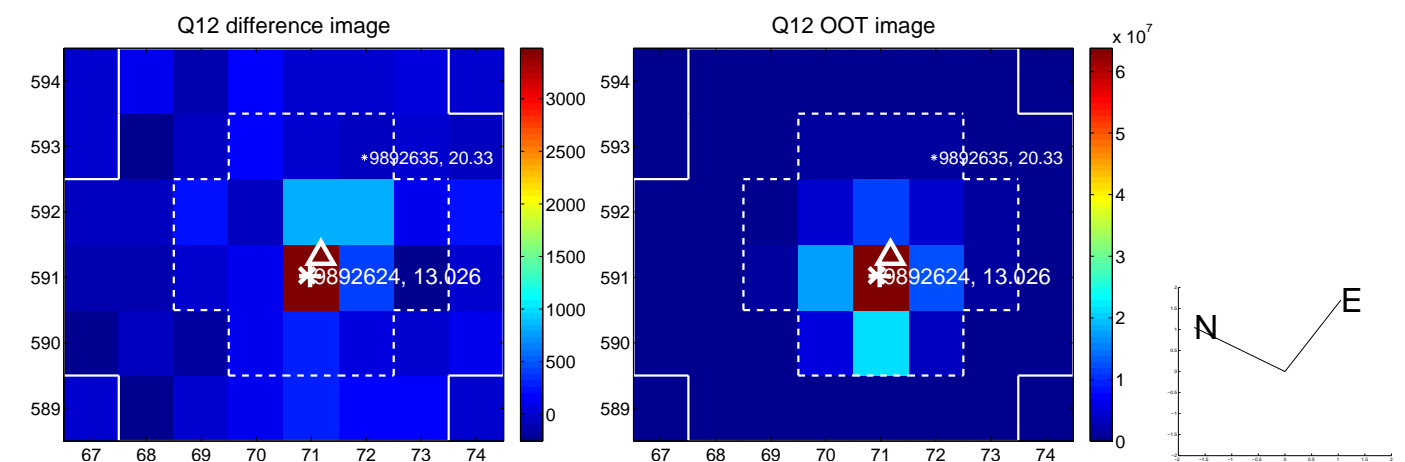
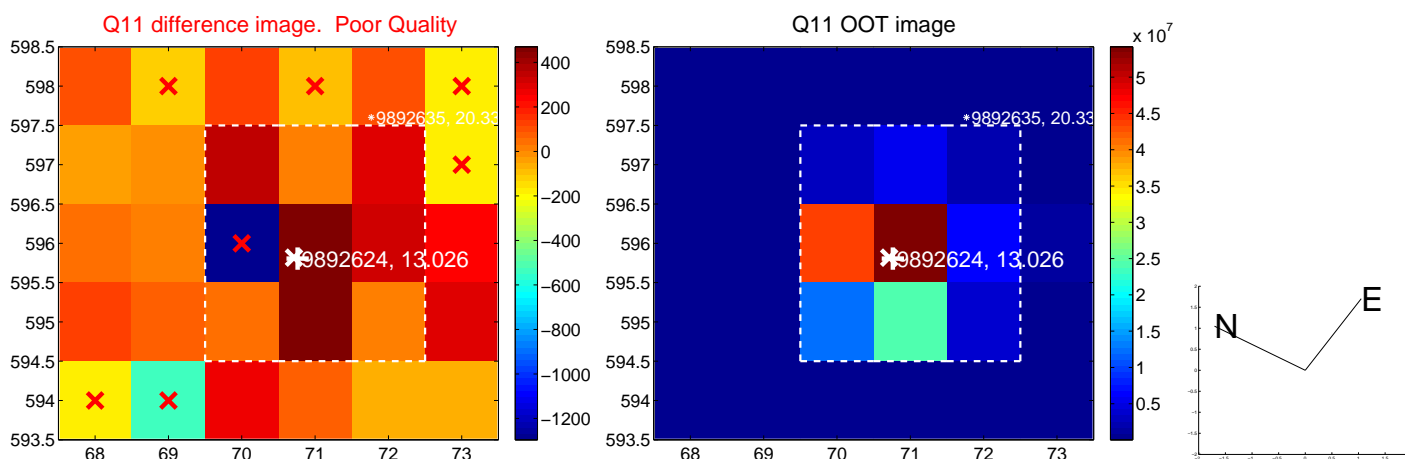
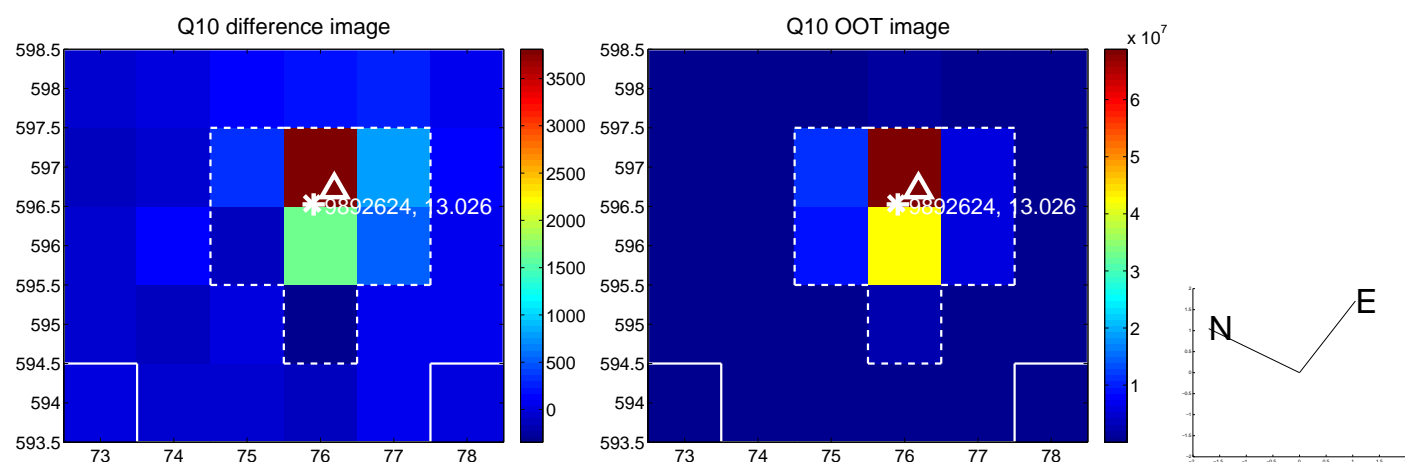
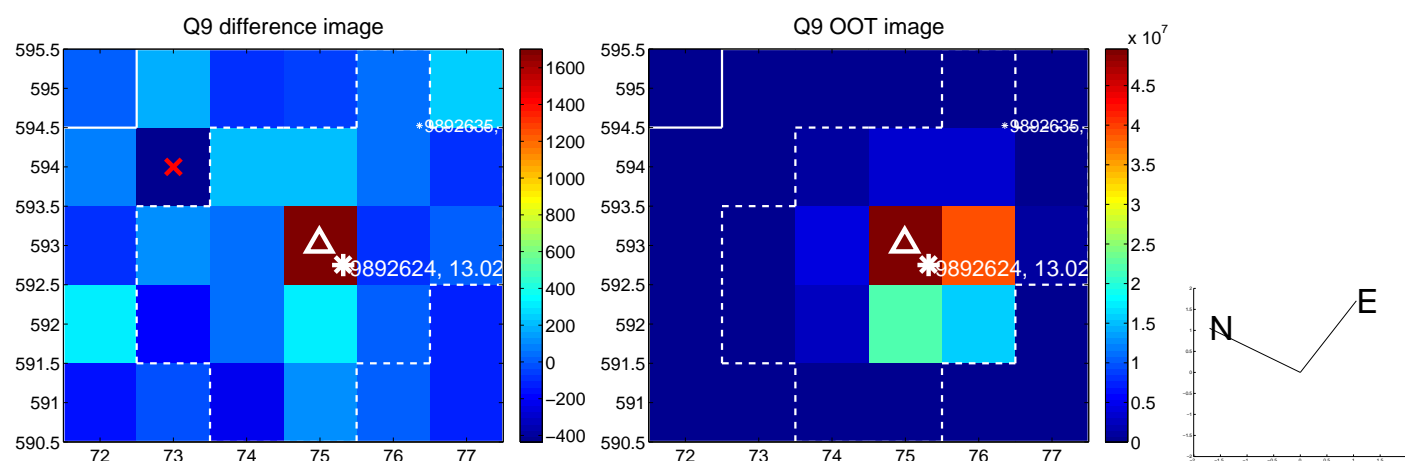
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



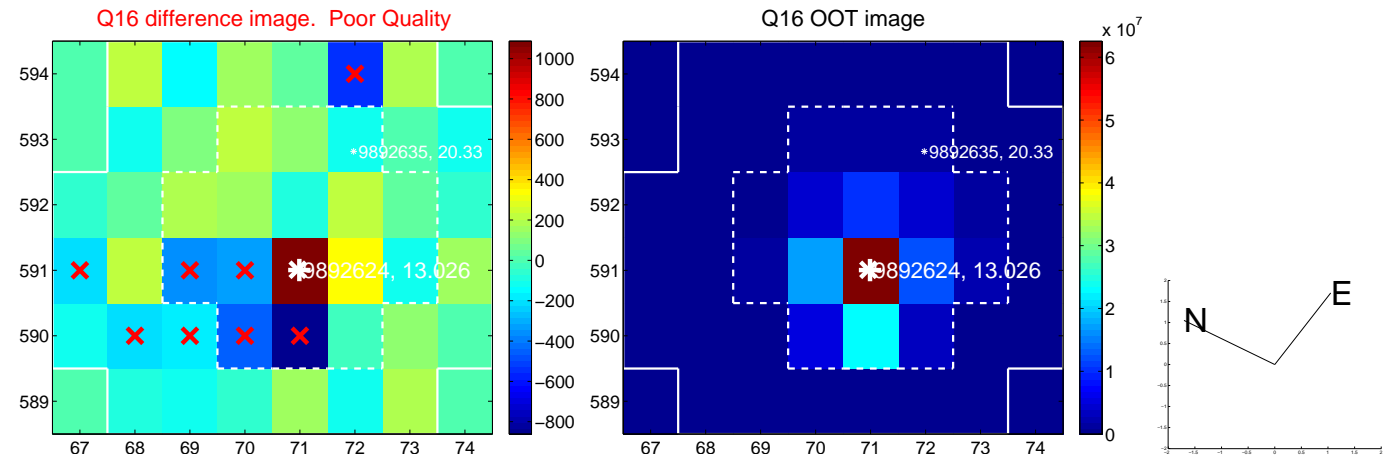
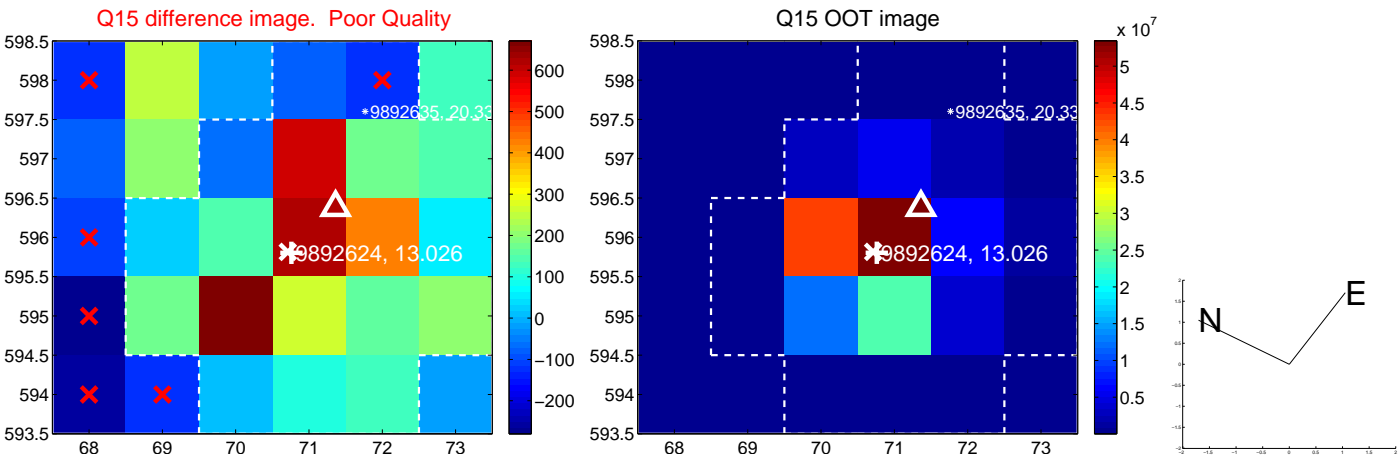
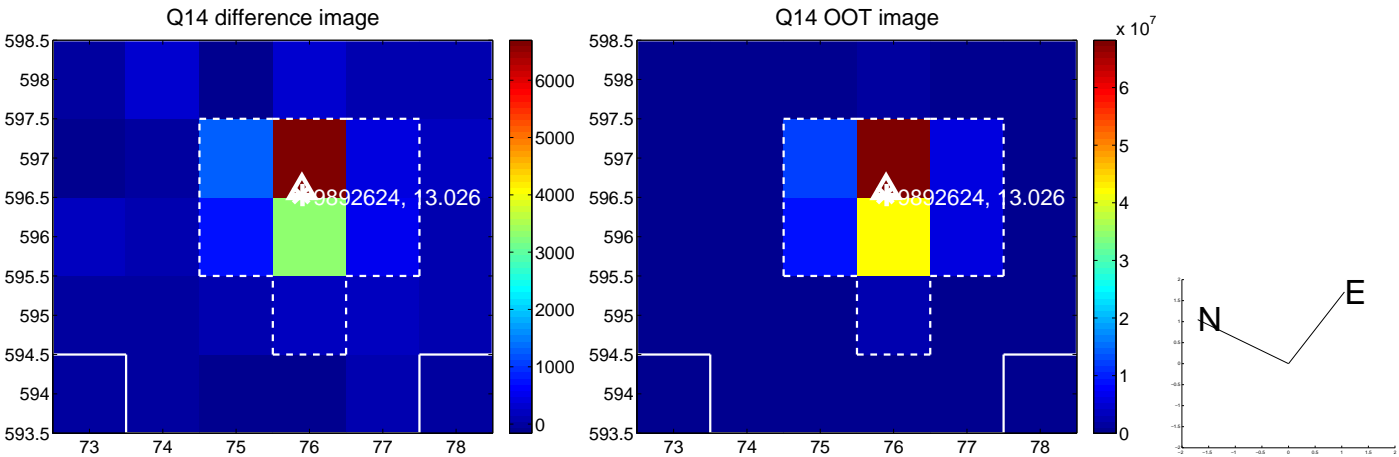
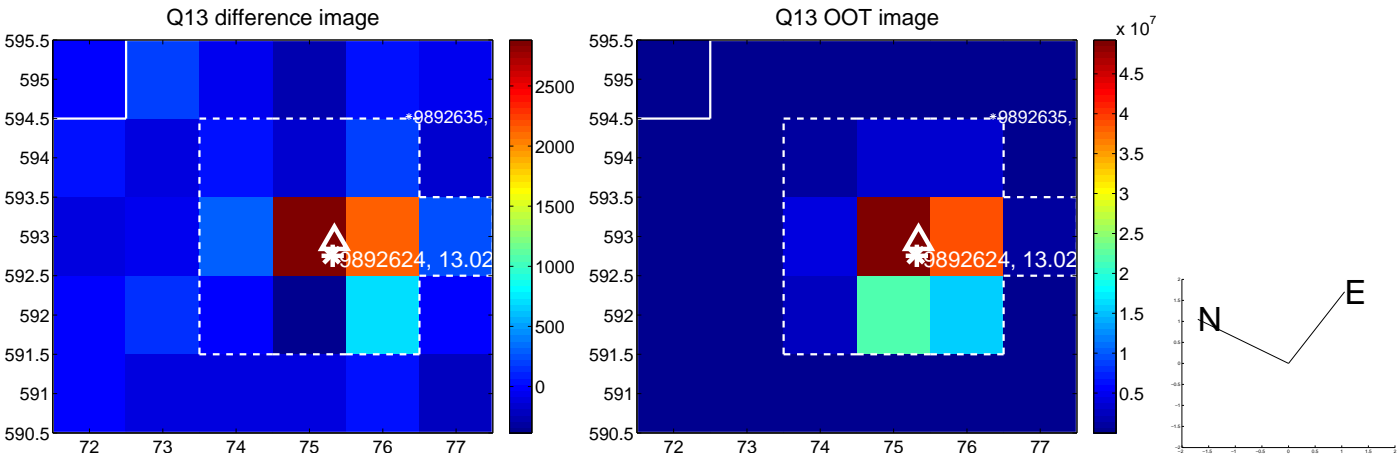
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



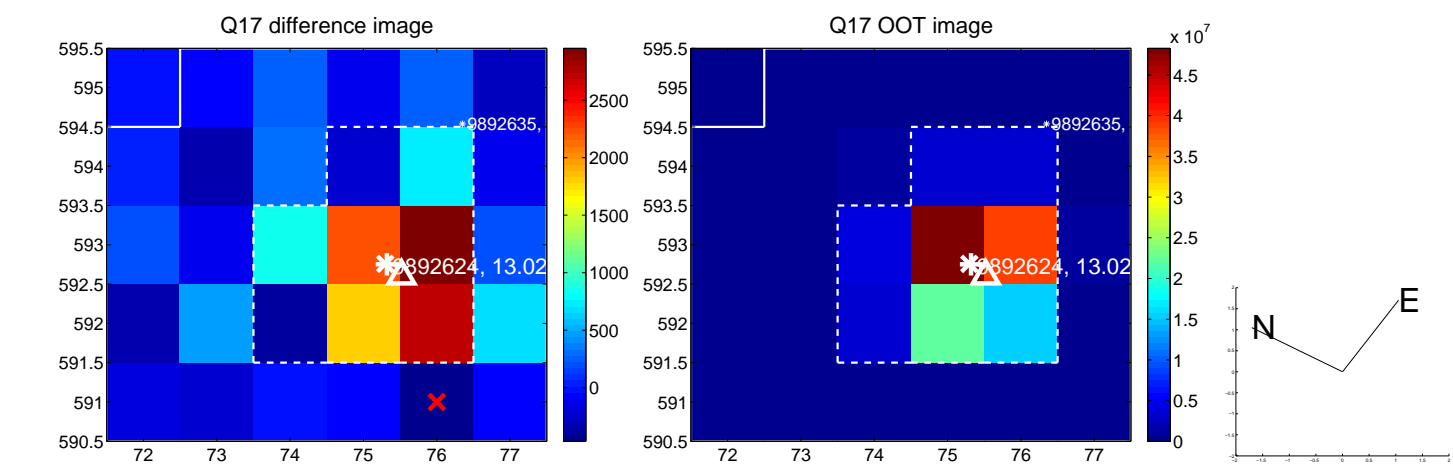
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



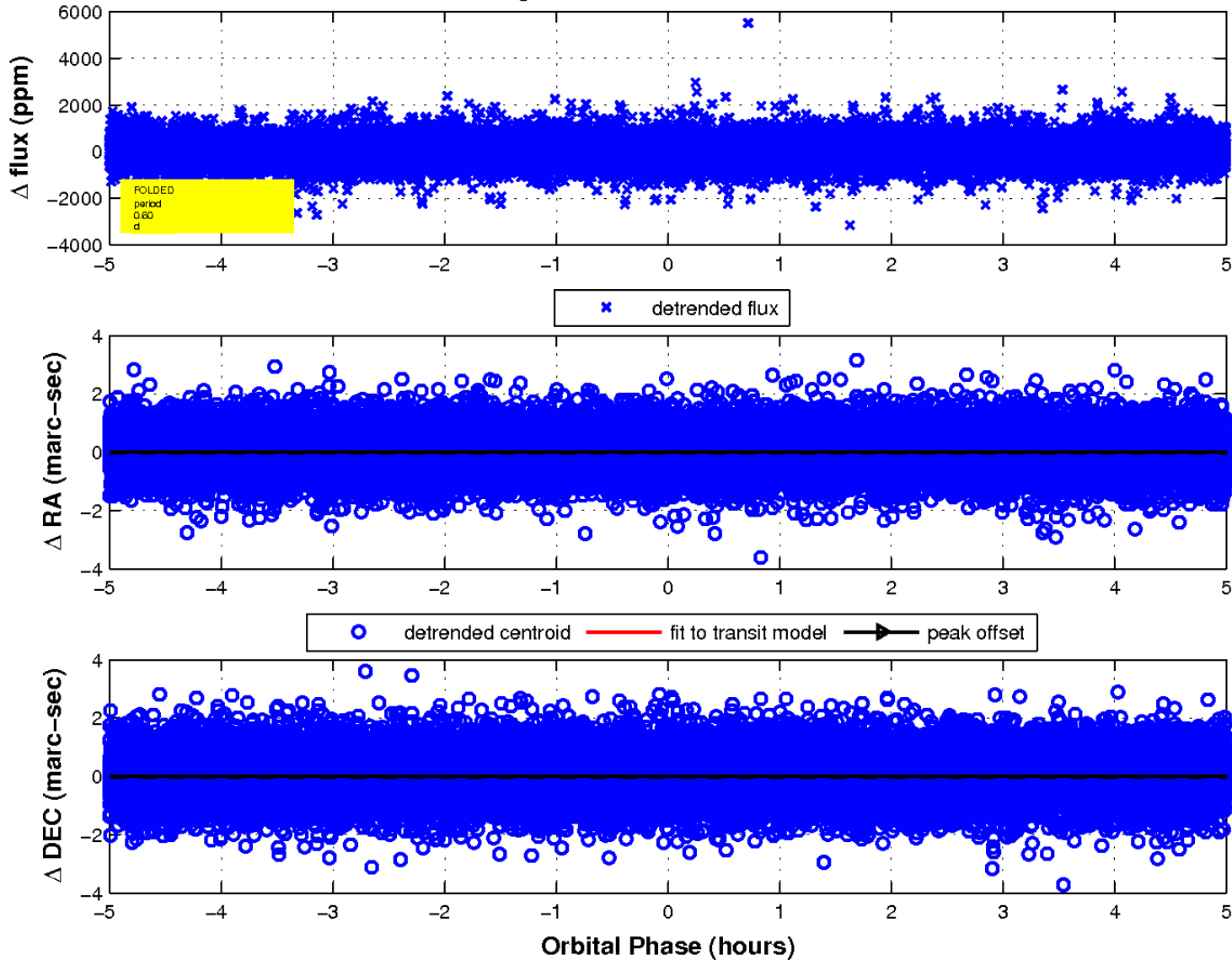
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

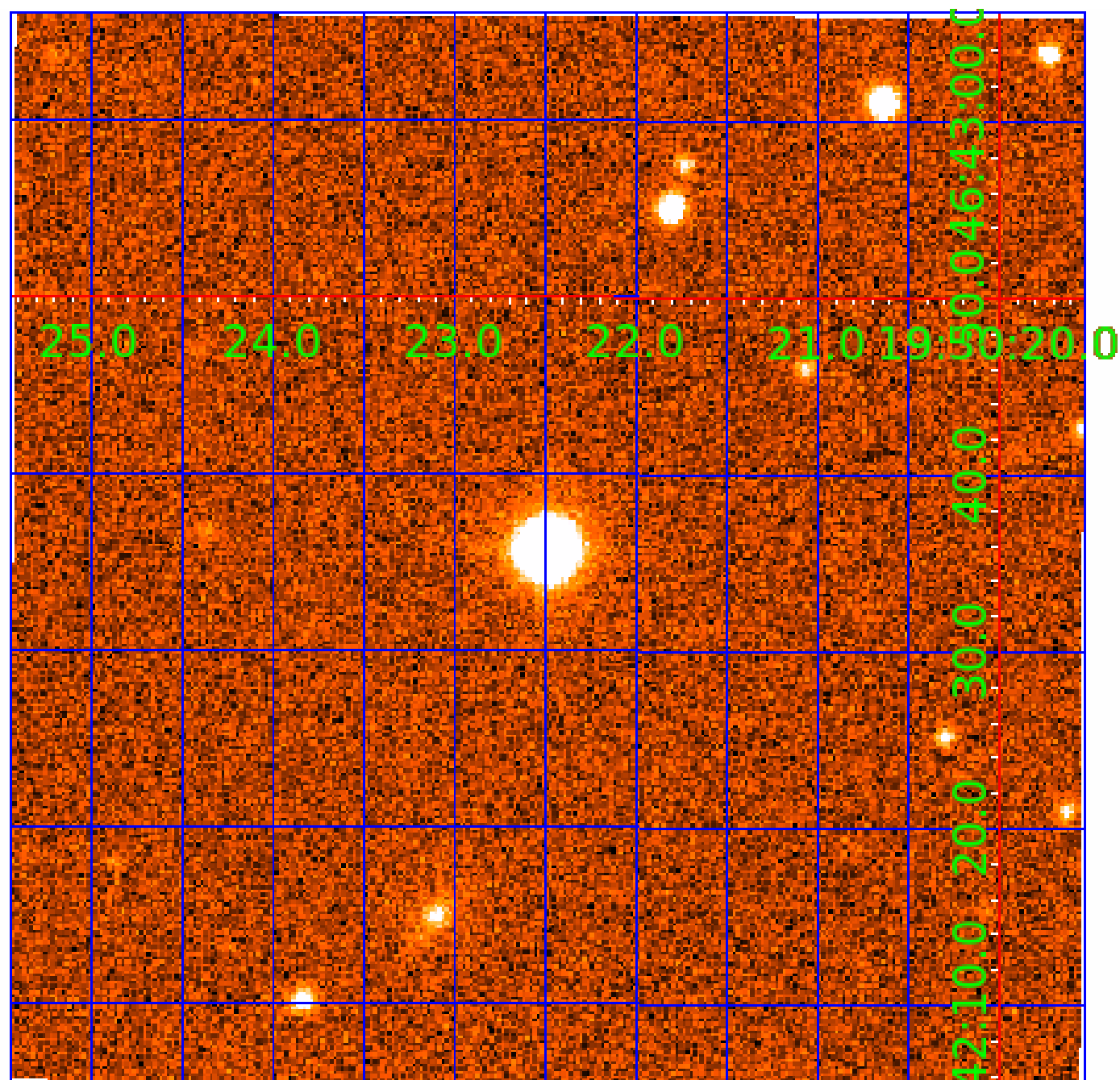


fluxWeightedCentroids, Planet 1 of 4



UKIRT Image

Declination



KIC 009892624

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})
009892624-01	OBS	No	0.600207	132.100636	64.3	1.667	14.8	15.2	1.82	7389	1.57	33627.39
009892624-02	OBS	No	0.967299	132.225822	63.2	4.385	9.8	12.4	1.82	7389	1.48	17797.02
009892624-03	OBS	No	66.628016	169.791503	598.6	5.648	9.5	7.6	1.82	7389	4.96	63.03
009892624-04	OBS	No	0.967309	131.734355	53.3	4.683	10.1	11.9	1.82	7389	1.36	17796.77

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009892624-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009892624-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
009892624-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009892624-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—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.

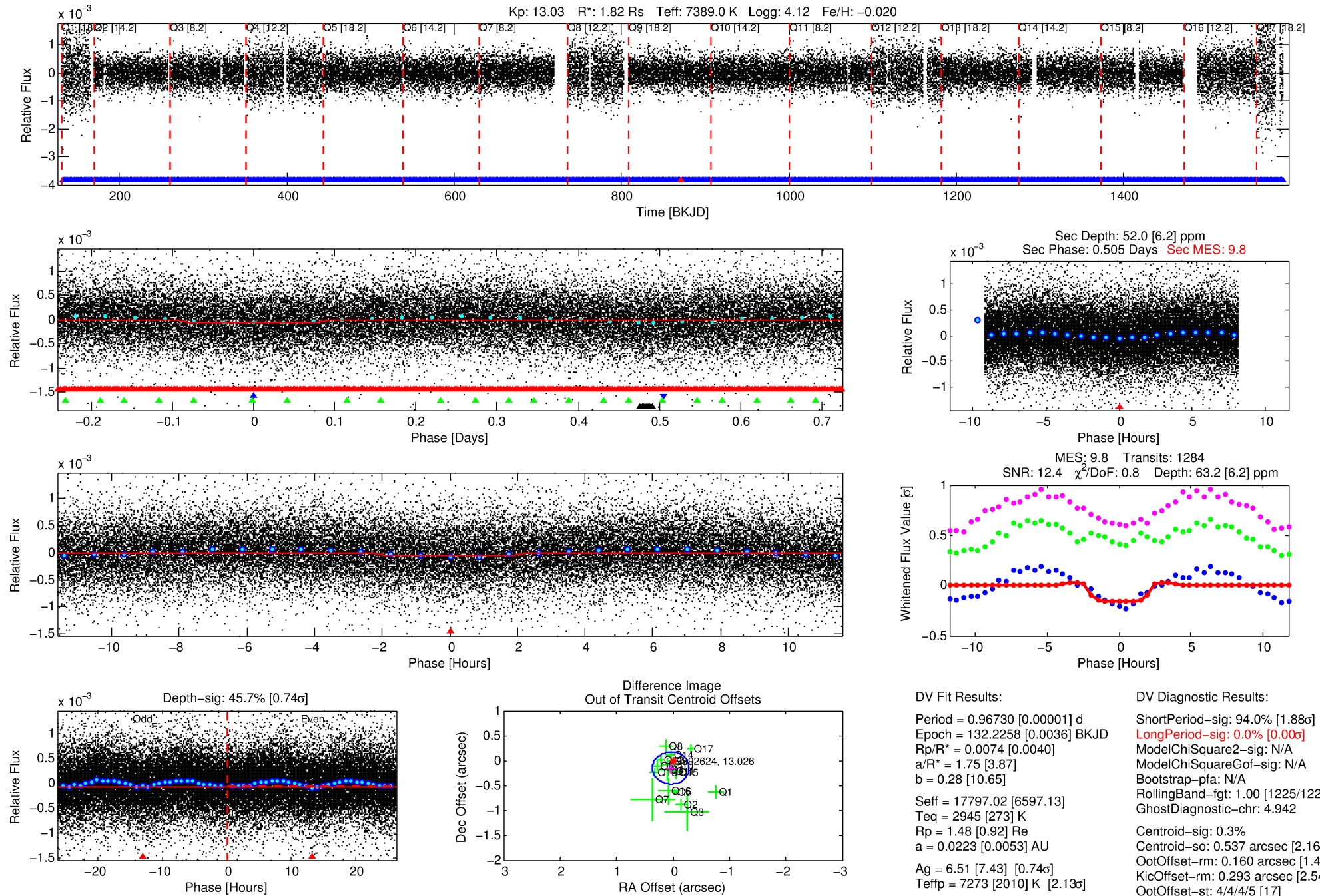
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009892624-02

No Significant Match Found

DV One-Page Summary

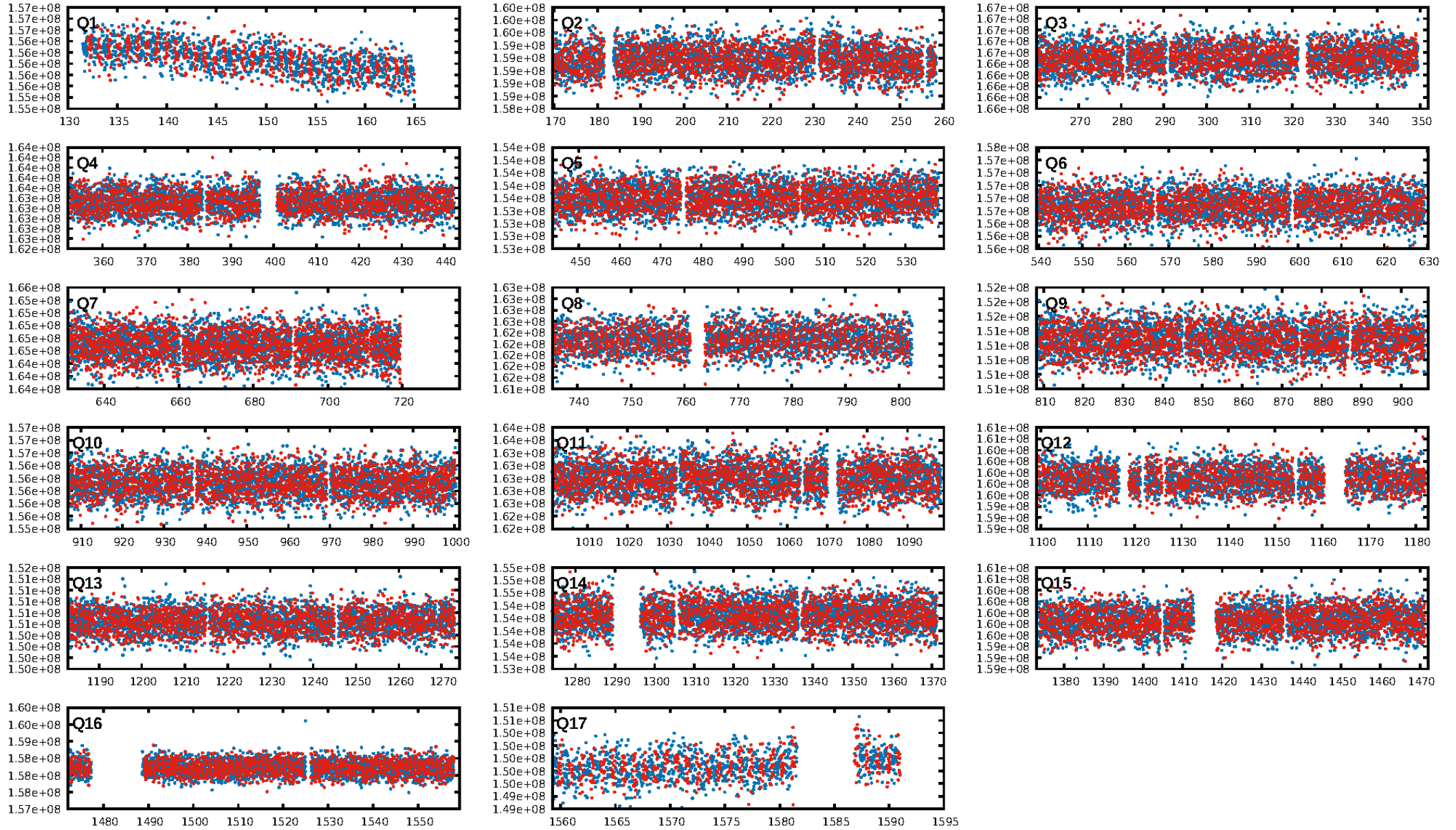
KIC: 9892624 Candidate: 2 of 4 Period: 0.967 d



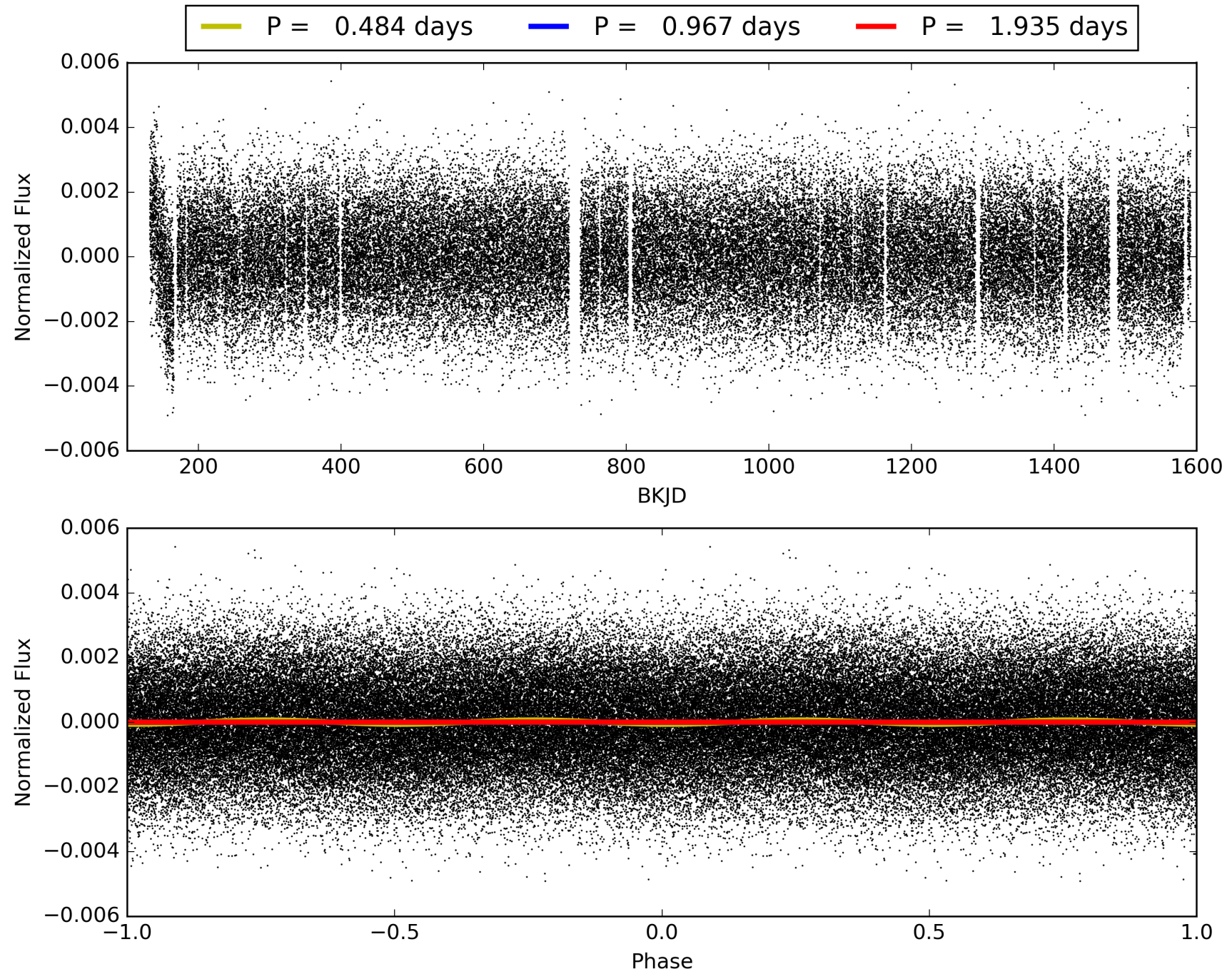
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:07:22 Z

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

TCE 009892624-02, PDC Light Curves

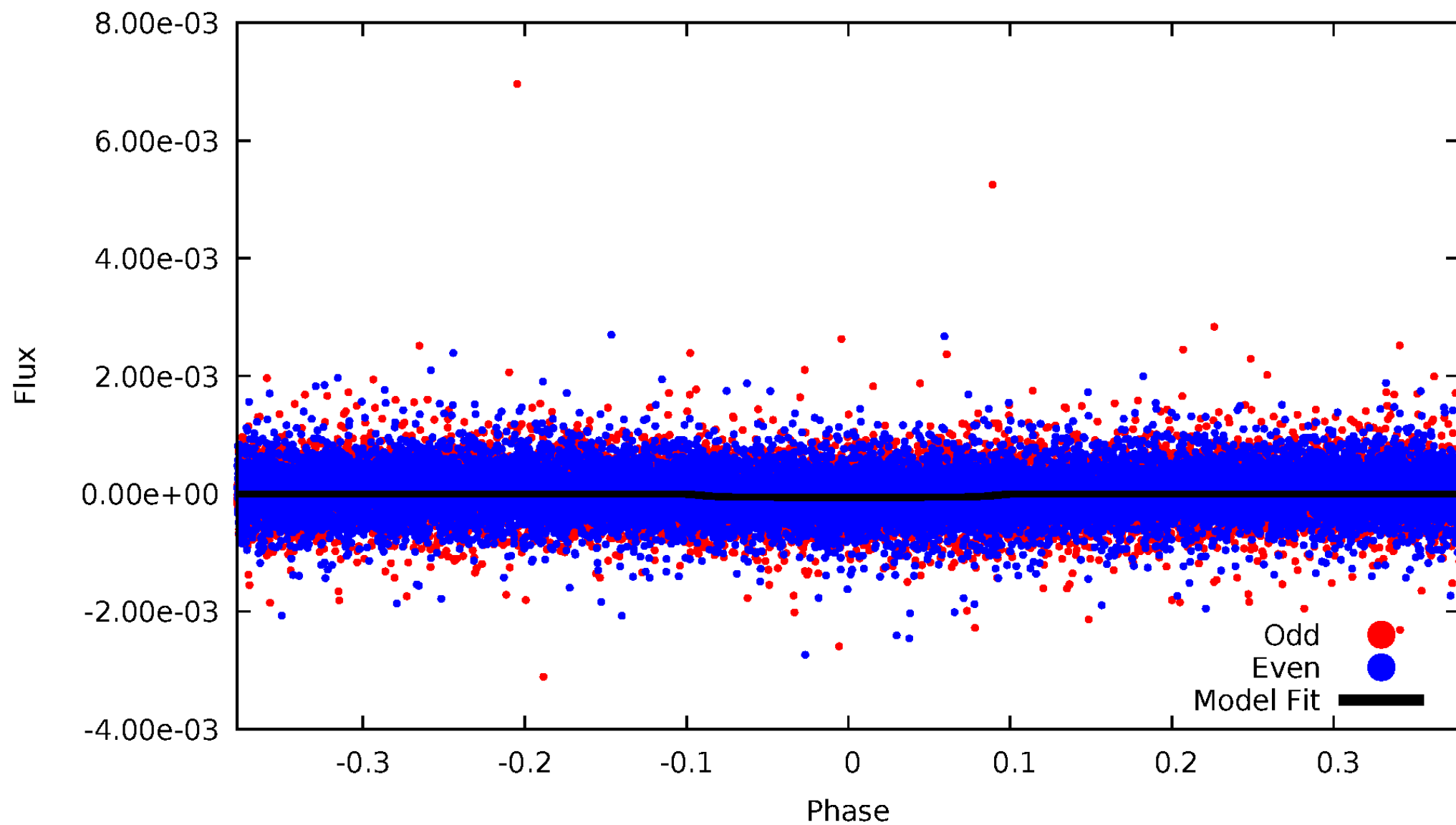


TCE 009892624-02



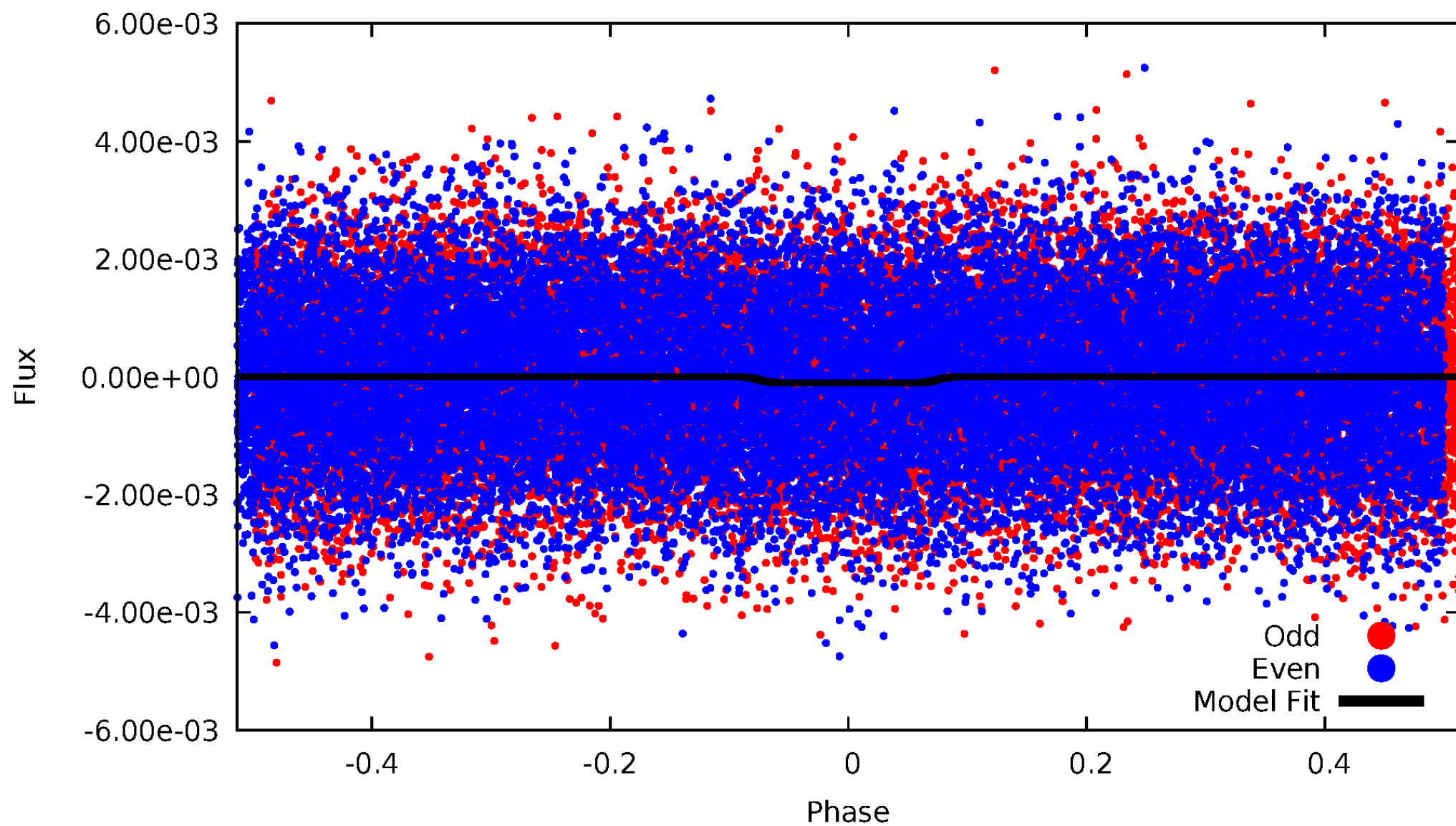
DV Odd/Even

TCE 009892624-02



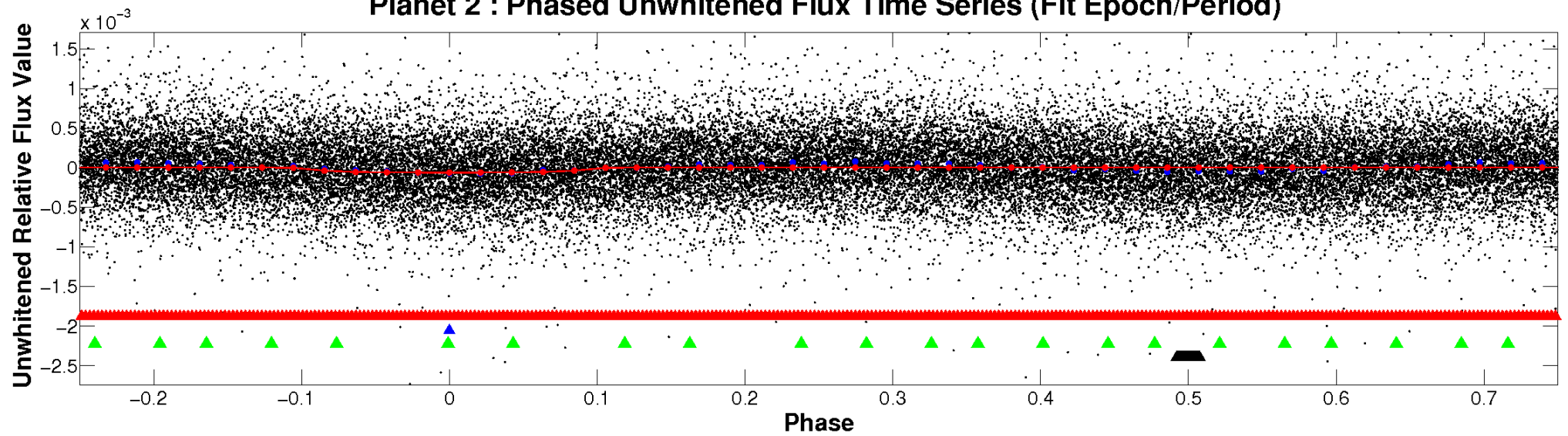
ALT Odd/Even

TCE 009892624-02

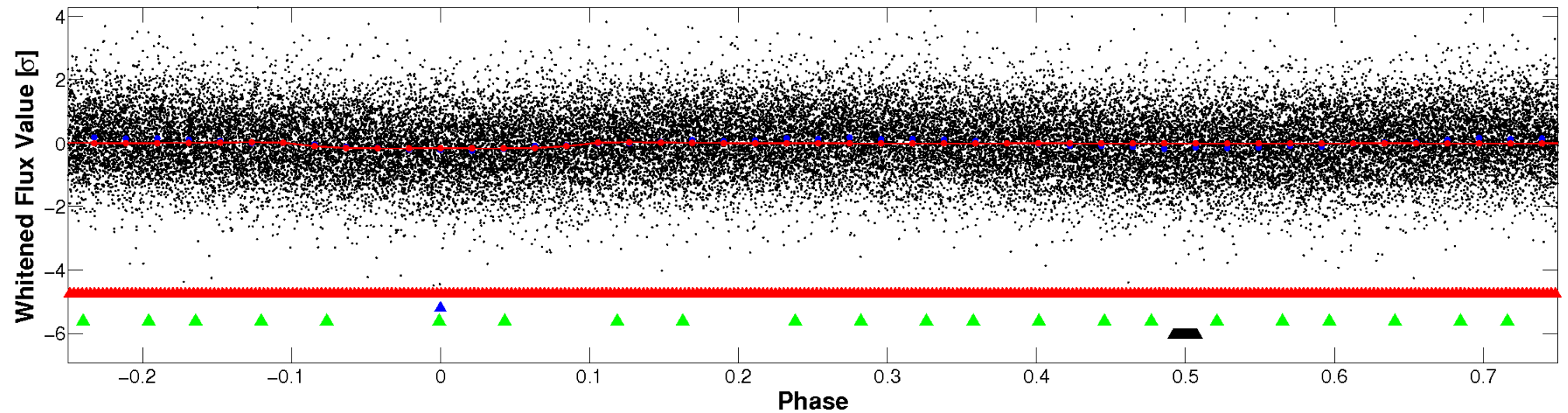


Non-Whitened Vs. Whitened Light Curve

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

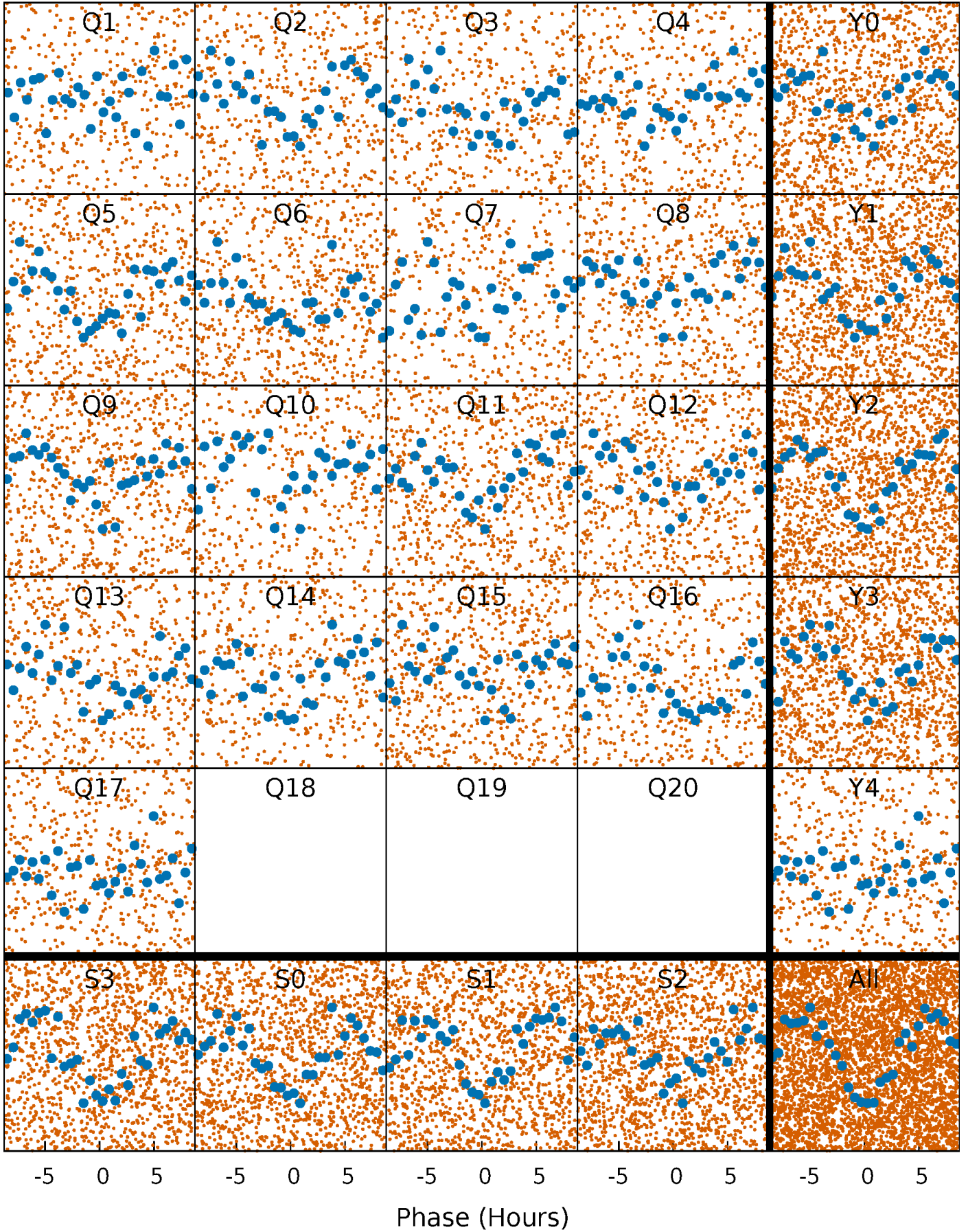


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



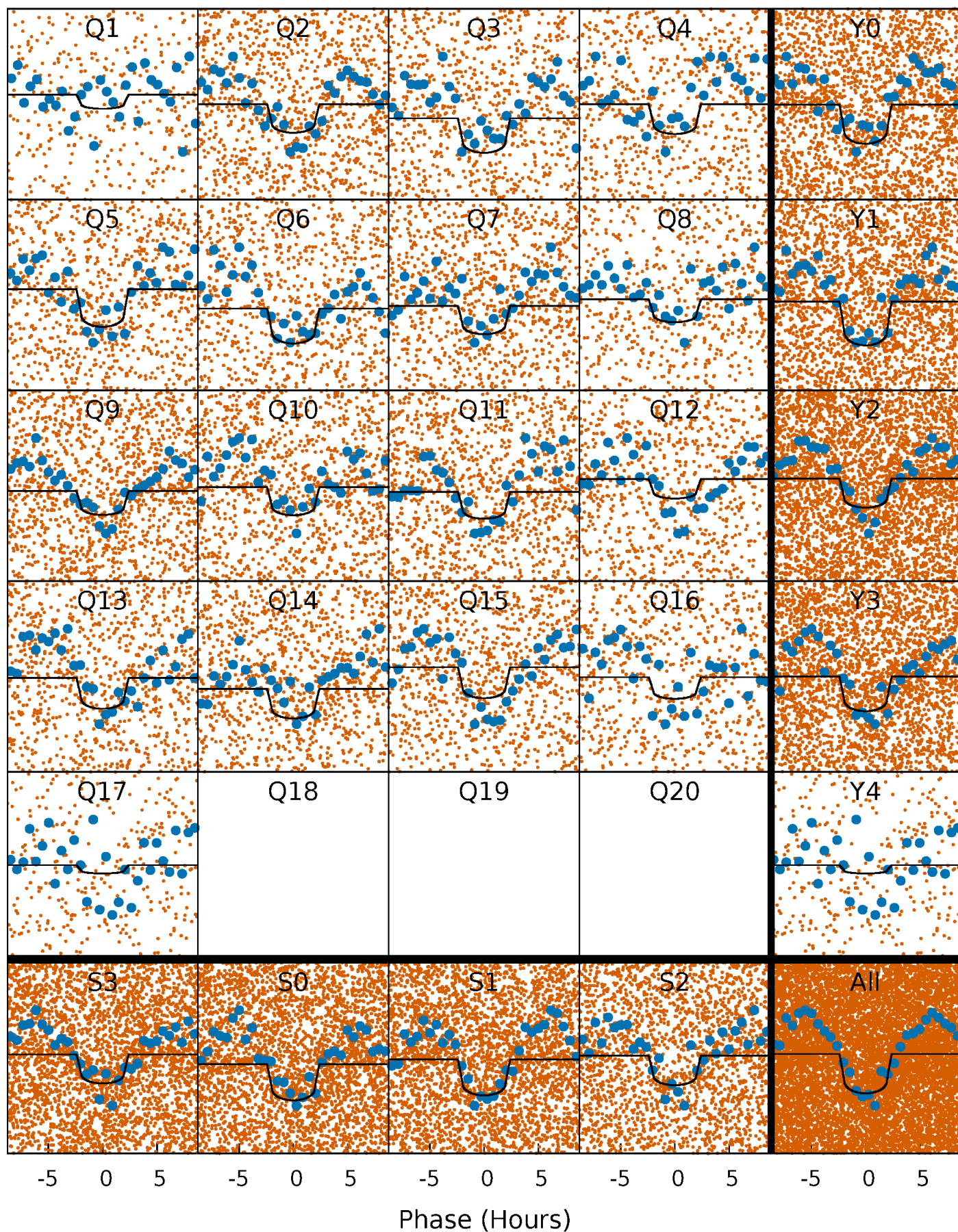
PDC Quarter-Phased Transit Curves

TCE 009892624-02 P= 0.967299 Days $T_0=132.225822$ (BKJD)



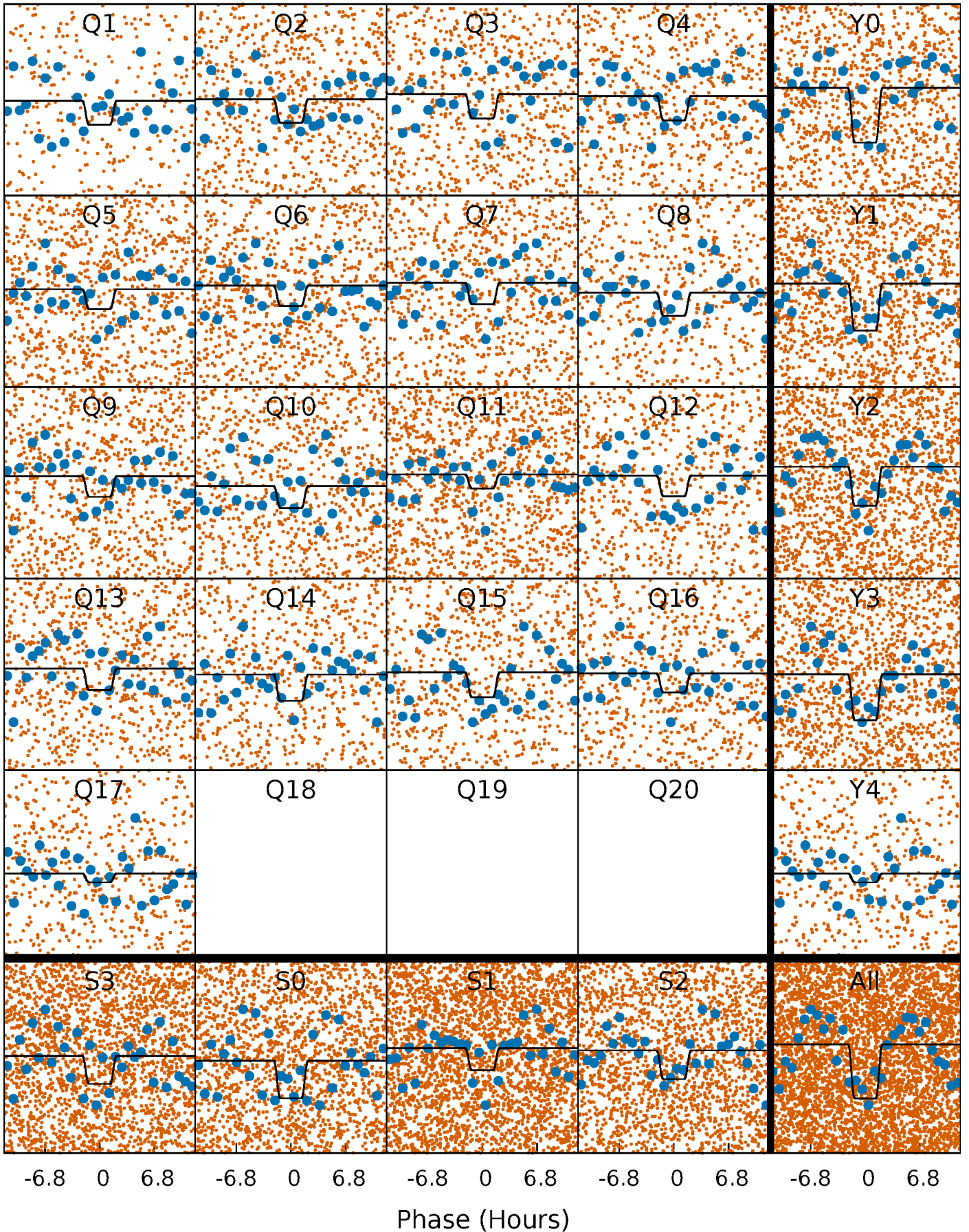
DV Quarter-Phased Transit Curves

TCE 009892624-02 P= 0.967299 Days $T_0=132.225822$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

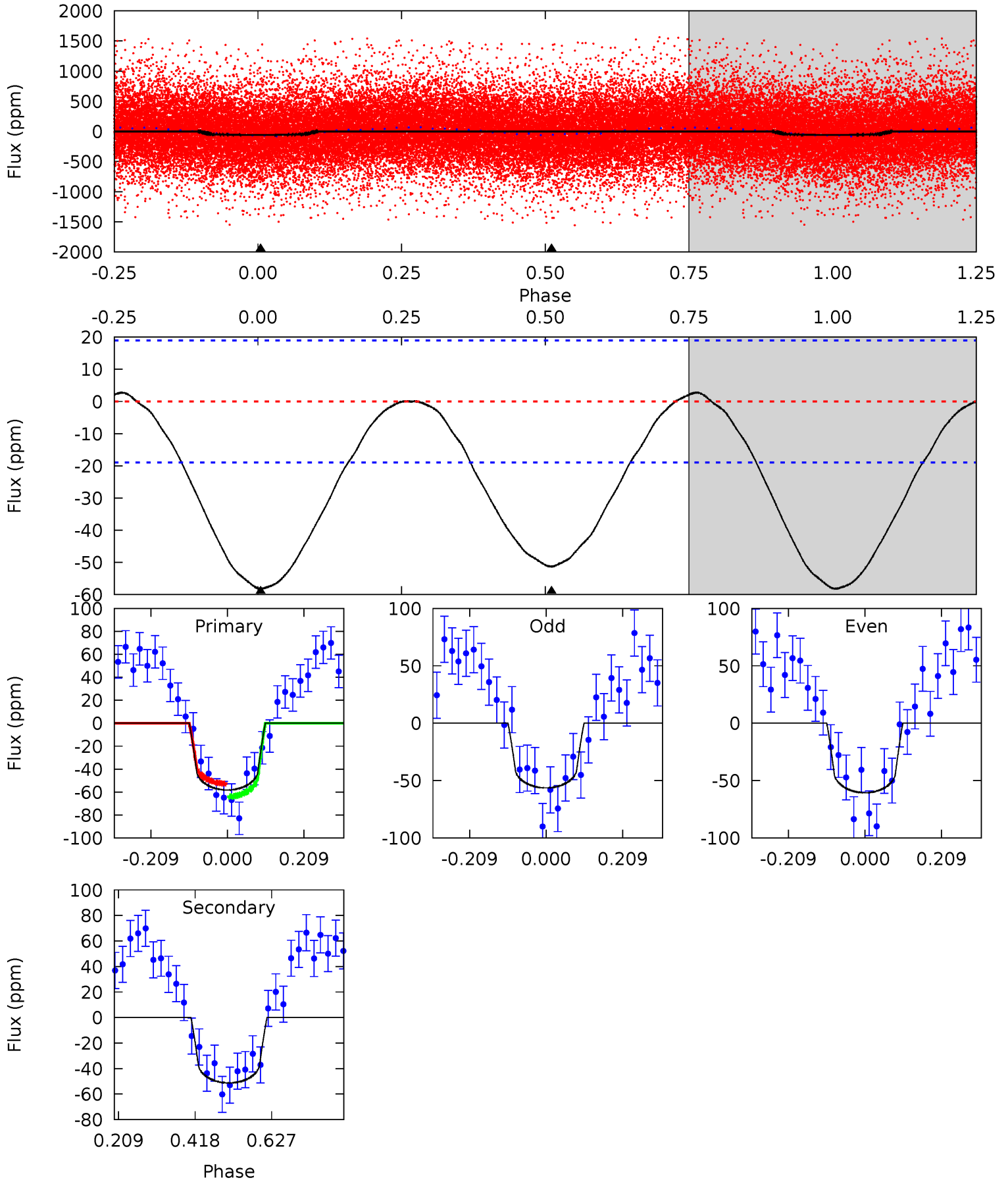
TCE 009892624-02 P= 0.967339 Days $T_0=132.182510$ (BKJD)



DV Model-Shift Uniqueness Test

009892624-02, P = 0.967299 Days, E = 131.258523 Days

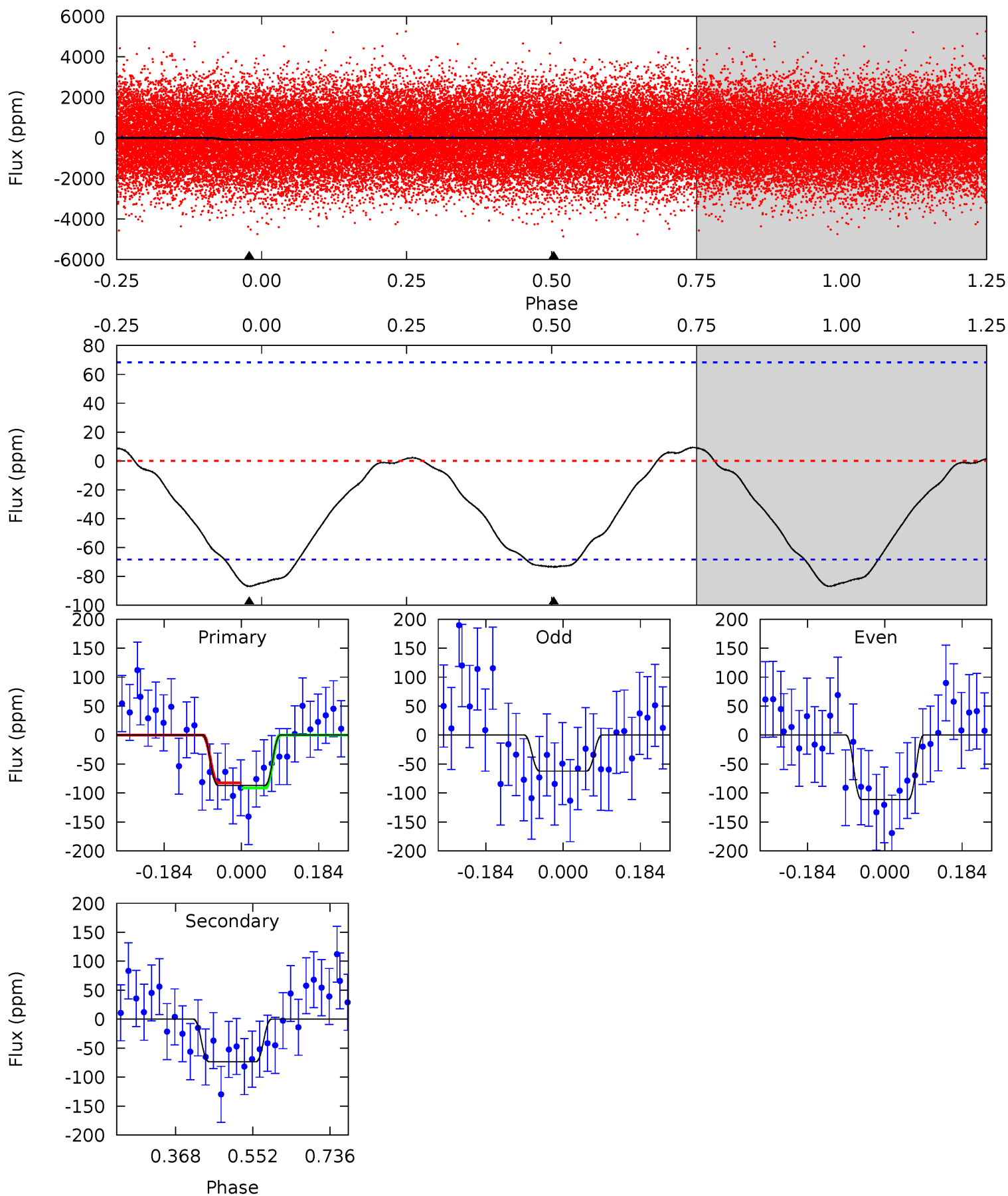
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.5	11.9	0	0	4.41	1.26	0.36	13.5	13.5	11.9	11.9	0.49	1.08	0.05	1.34



Alt Model-Shift Uniqueness Test

009892624-02, P = 0.967339 Days, E = 131.215171 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.64	4.77	0	0	4.44	1.33	0.40	5.64	5.64	4.77	4.77	1.59	0.92	0.10	0.29



Stellar Parameters For KIC 009892624

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7389^{+233}_{-311}	$4.117^{+0.140}_{-0.171}$	$-0.020^{+0.200}_{-0.350}$	$1.823^{+0.548}_{-0.365}$	$1.586^{+0.200}_{-0.244}$	$0.369^{+0.259}_{-0.175}$
	+3%/-4%	+3%/-4%	+1000%/-1750%	+30%/-20%	+13%/-15%	+70%/-47%
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 009892624-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-51 ± 4	$1.56^{+0.84}_{-0.79}$	4115^{+331}_{-260}	6954^{+3978}_{-1464}	$5.859^{+17.863}_{-3.443}$
Alt.	-73 ± 15	$2.07^{+0.88}_{-0.85}$	4115^{+321}_{-249}	6490^{+2478}_{-1126}	$4.618^{+8.651}_{-2.337}$

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

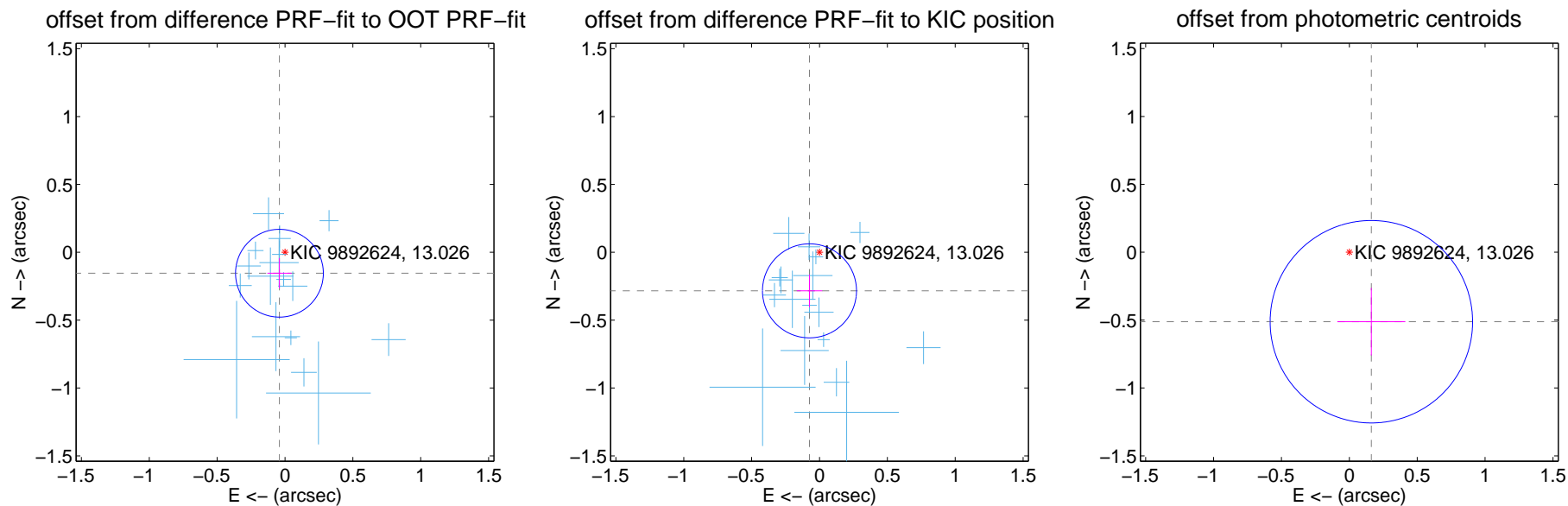
DV Centroid Data

Supplemental centroid analysis for 009892624-02. Kepler magnitude: 13.03. Transit SNR 12.42

There are 17 quarters with good PRF difference image offsets

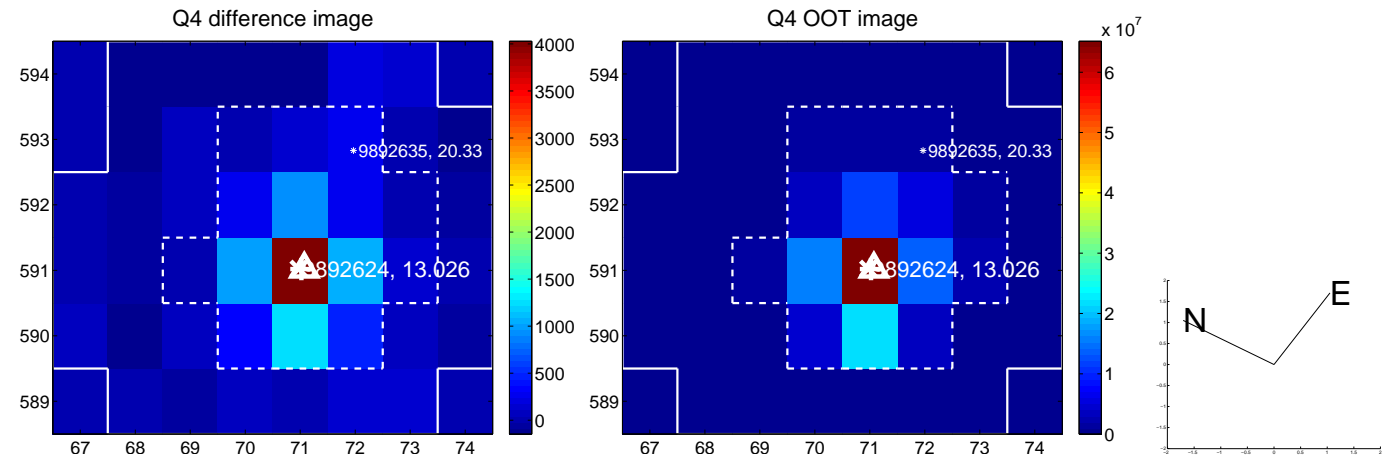
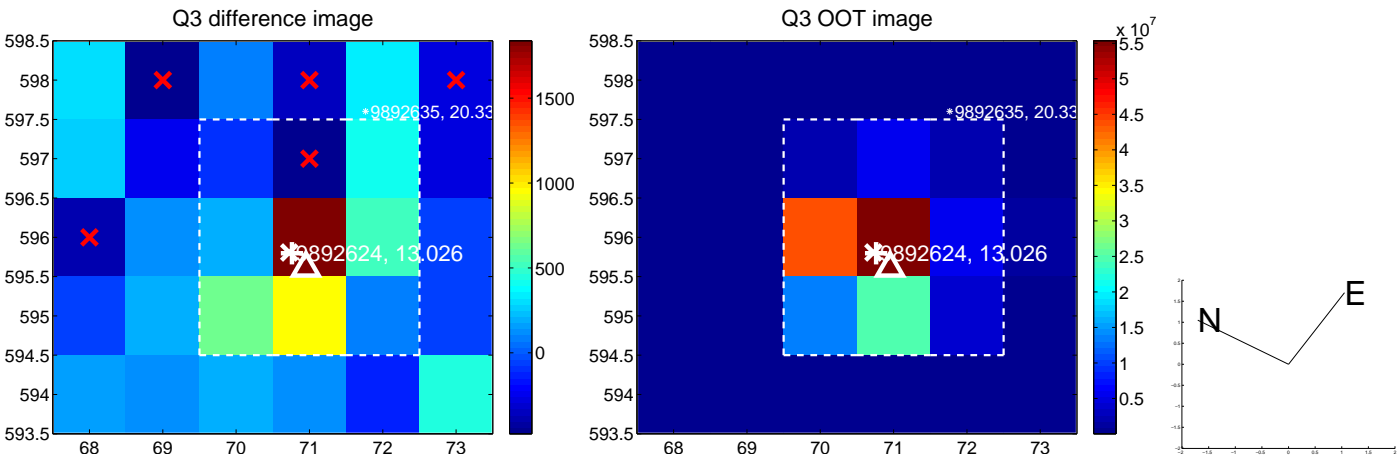
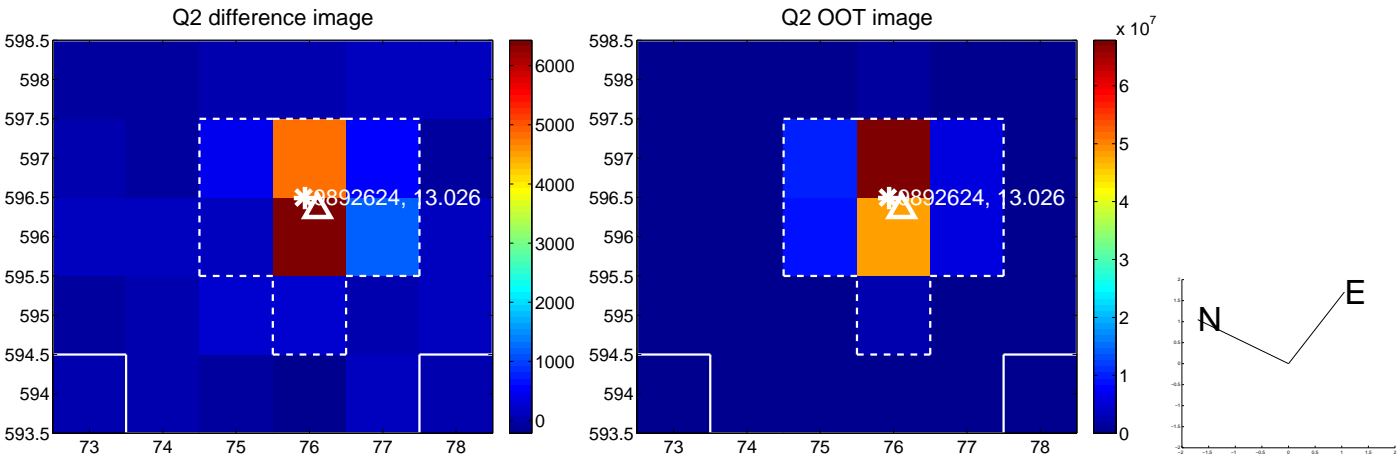
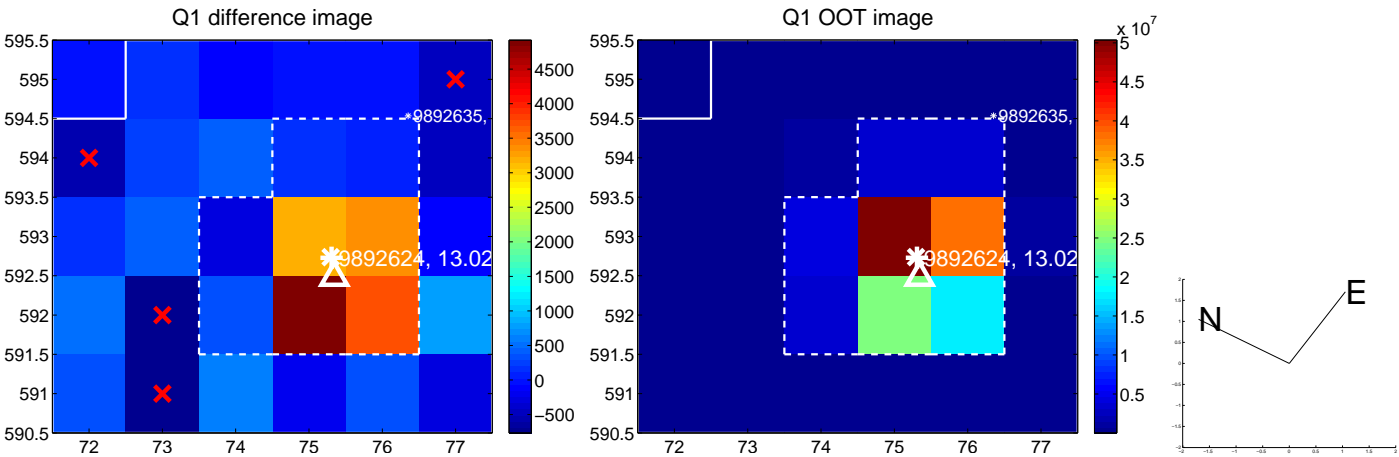
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.160 ± 0.108	1.48	0.041 ± 0.089	-0.154 ± 0.111
PRF-fit source offset from KIC position	0.293 ± 0.115	2.54	0.074 ± 0.094	-0.284 ± 0.120
photometric centroid source offset	0.54 ± 0.25	2.16	-0.16 ± 0.25	-0.51 ± 0.25

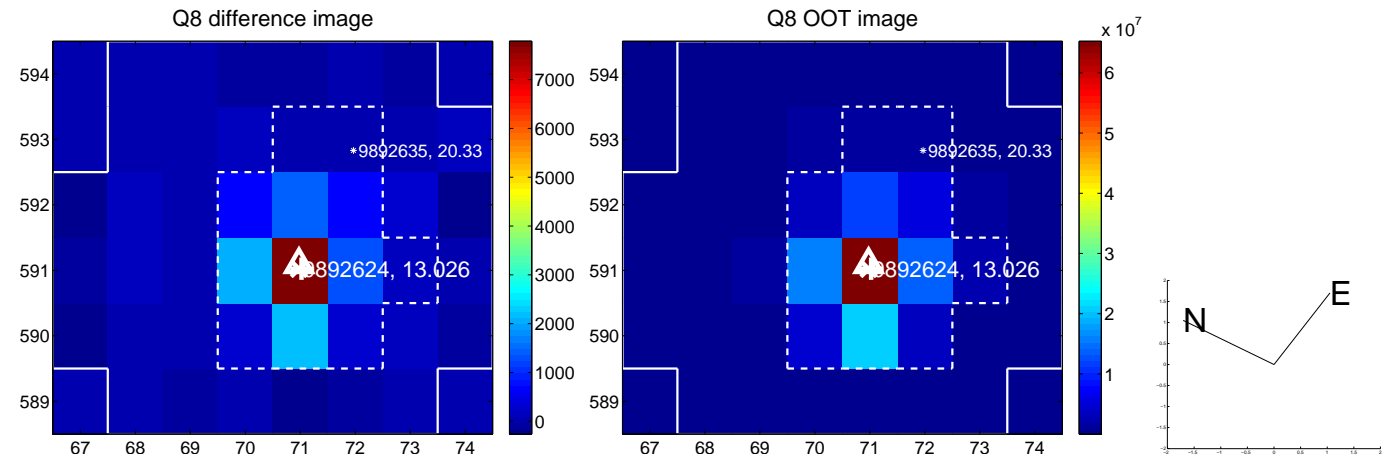
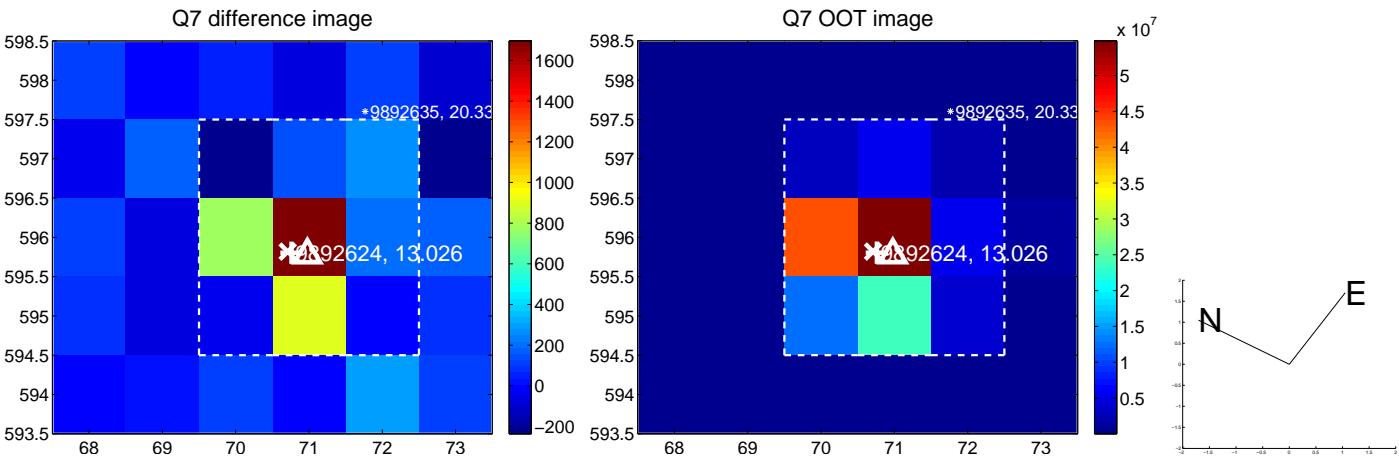
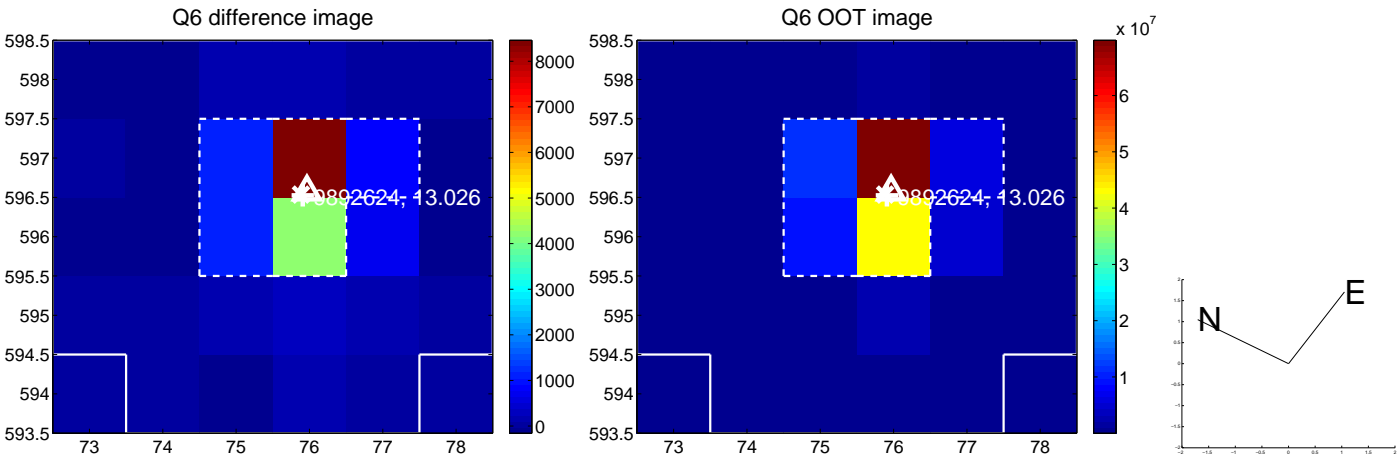
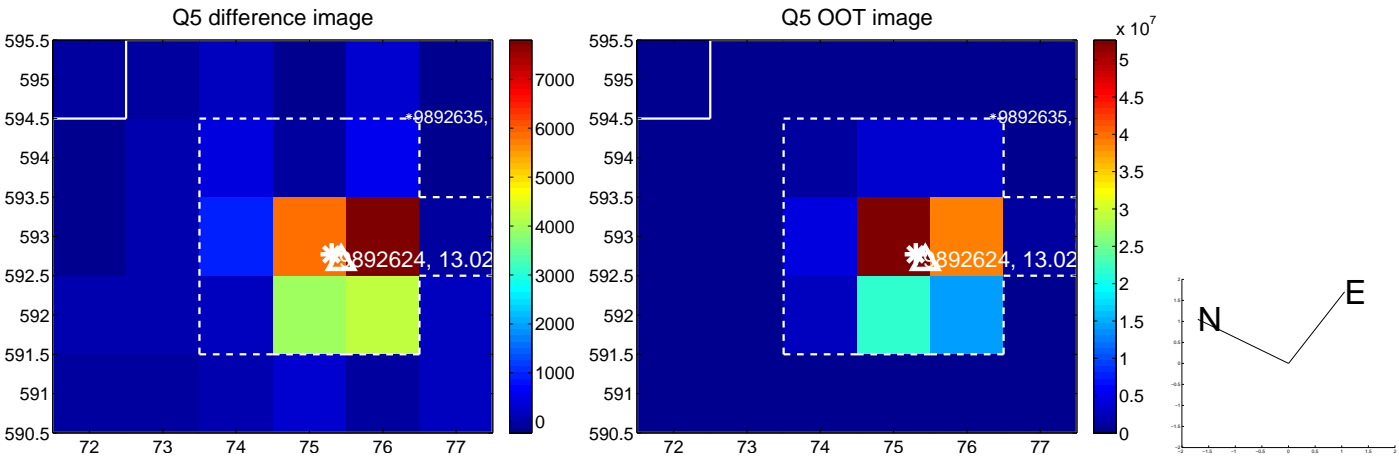


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

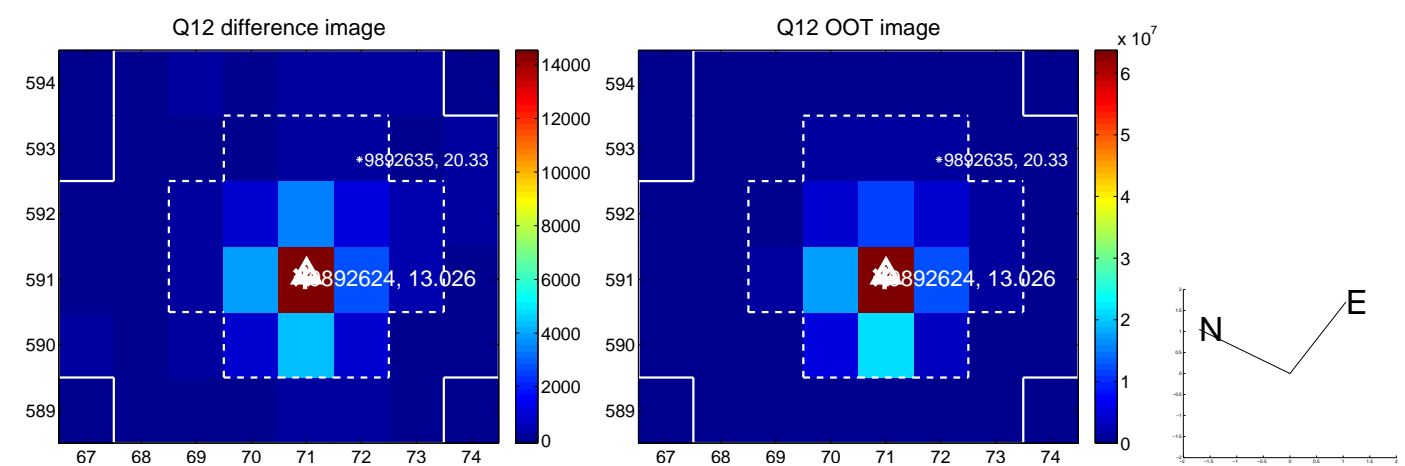
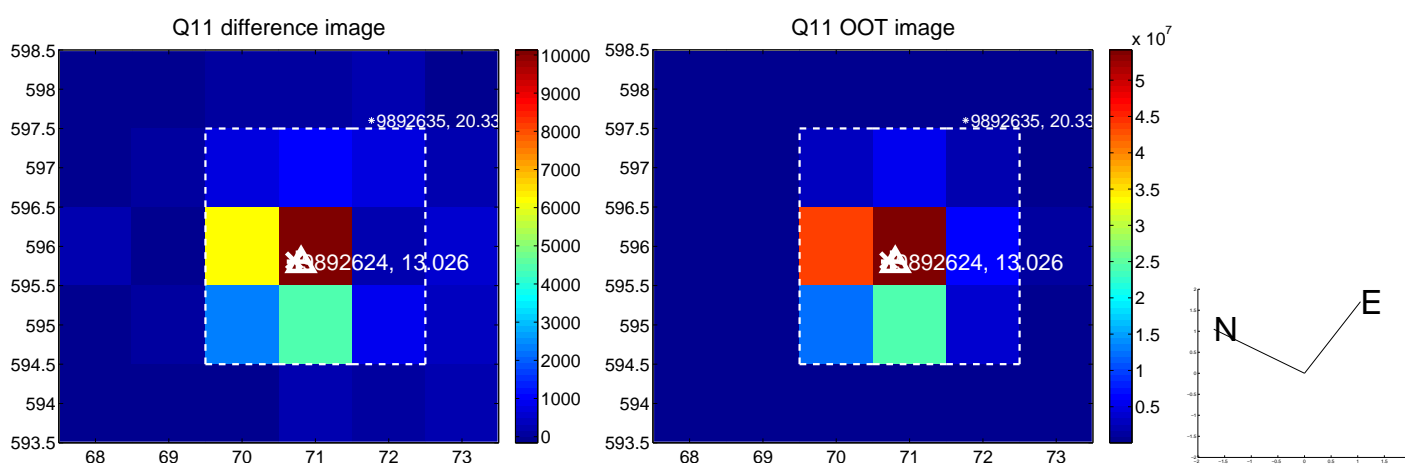
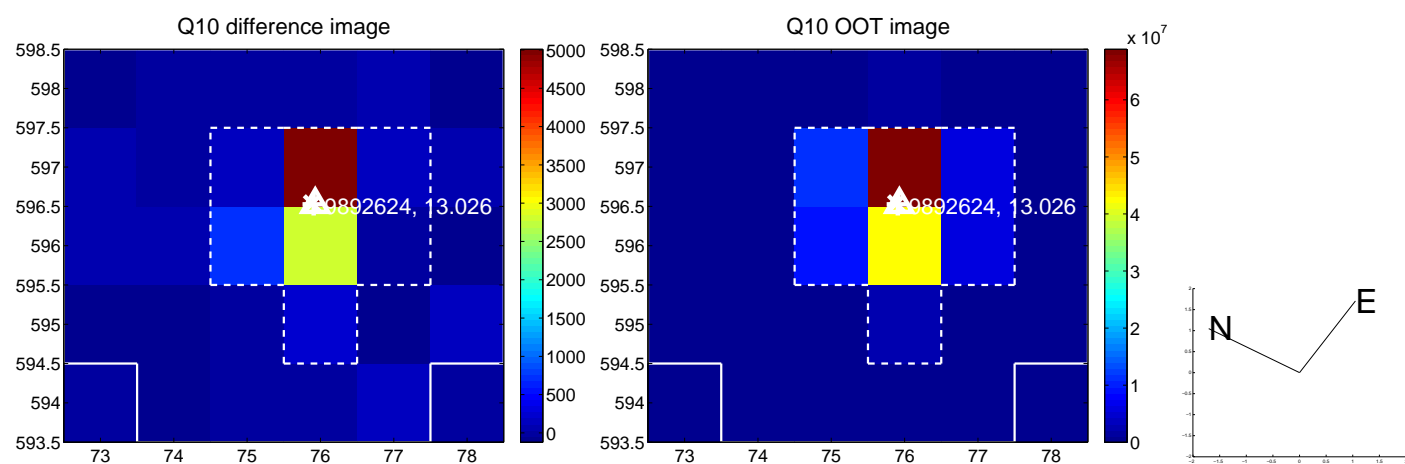
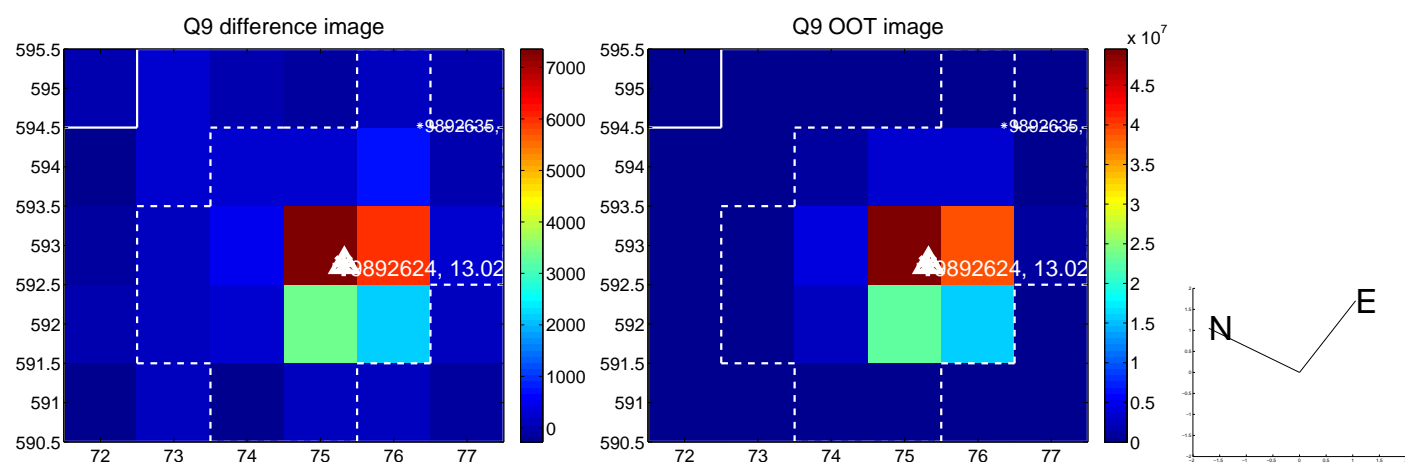
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



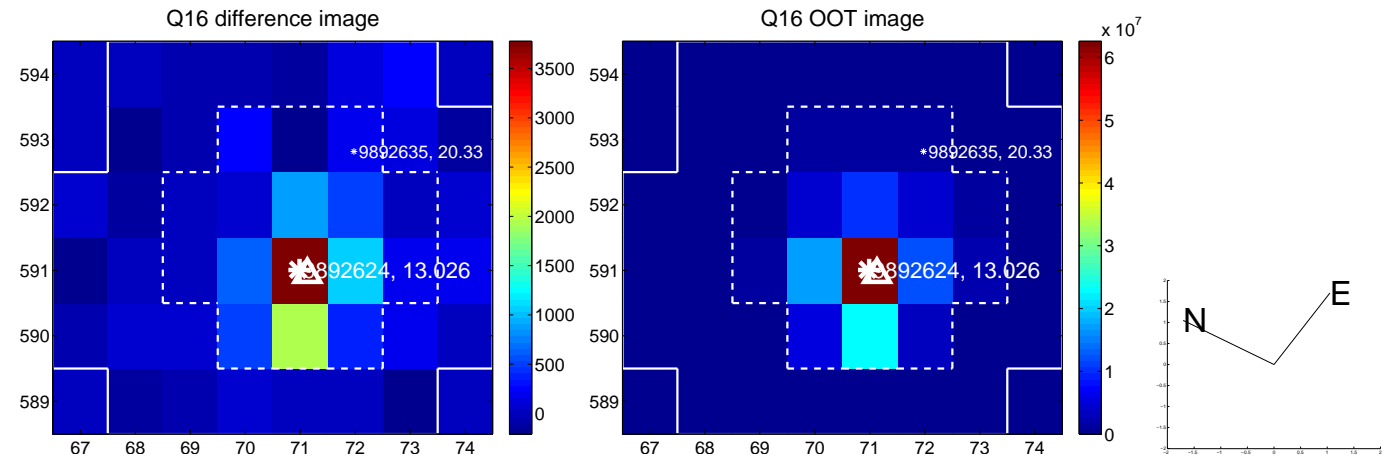
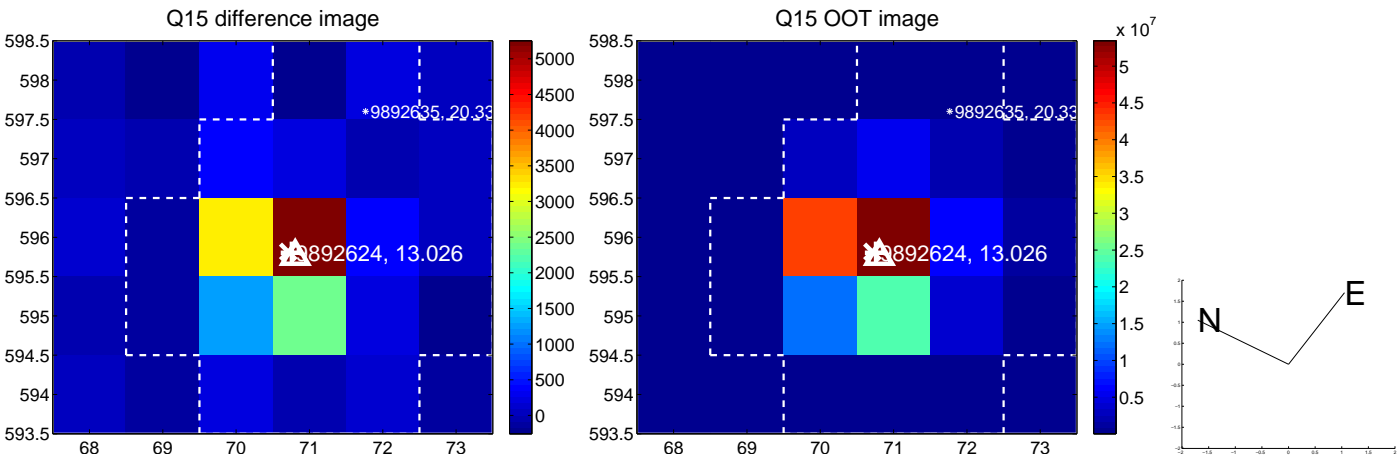
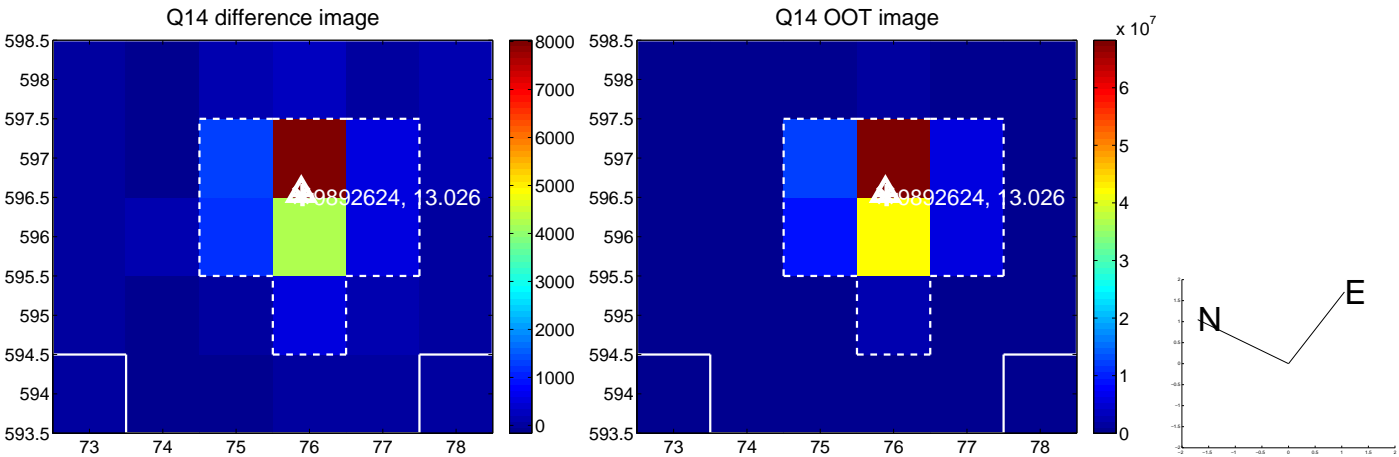
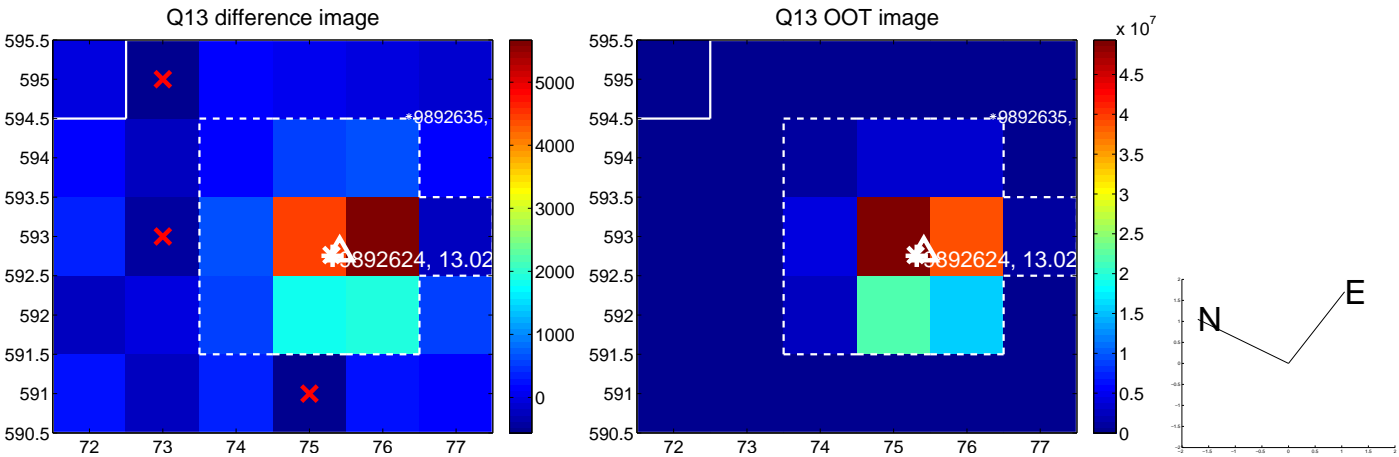
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



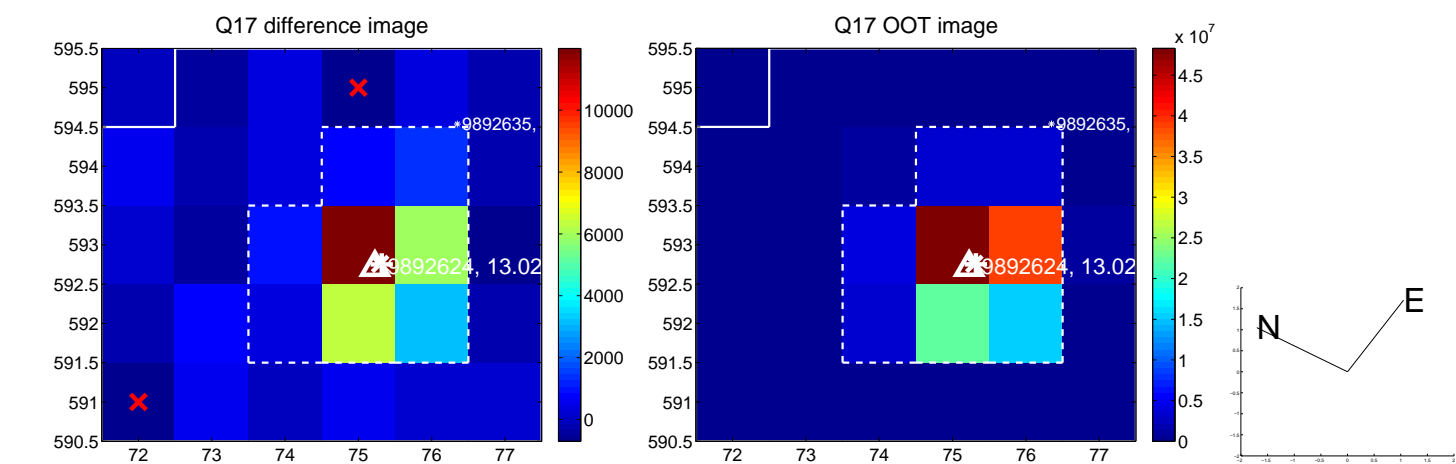
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



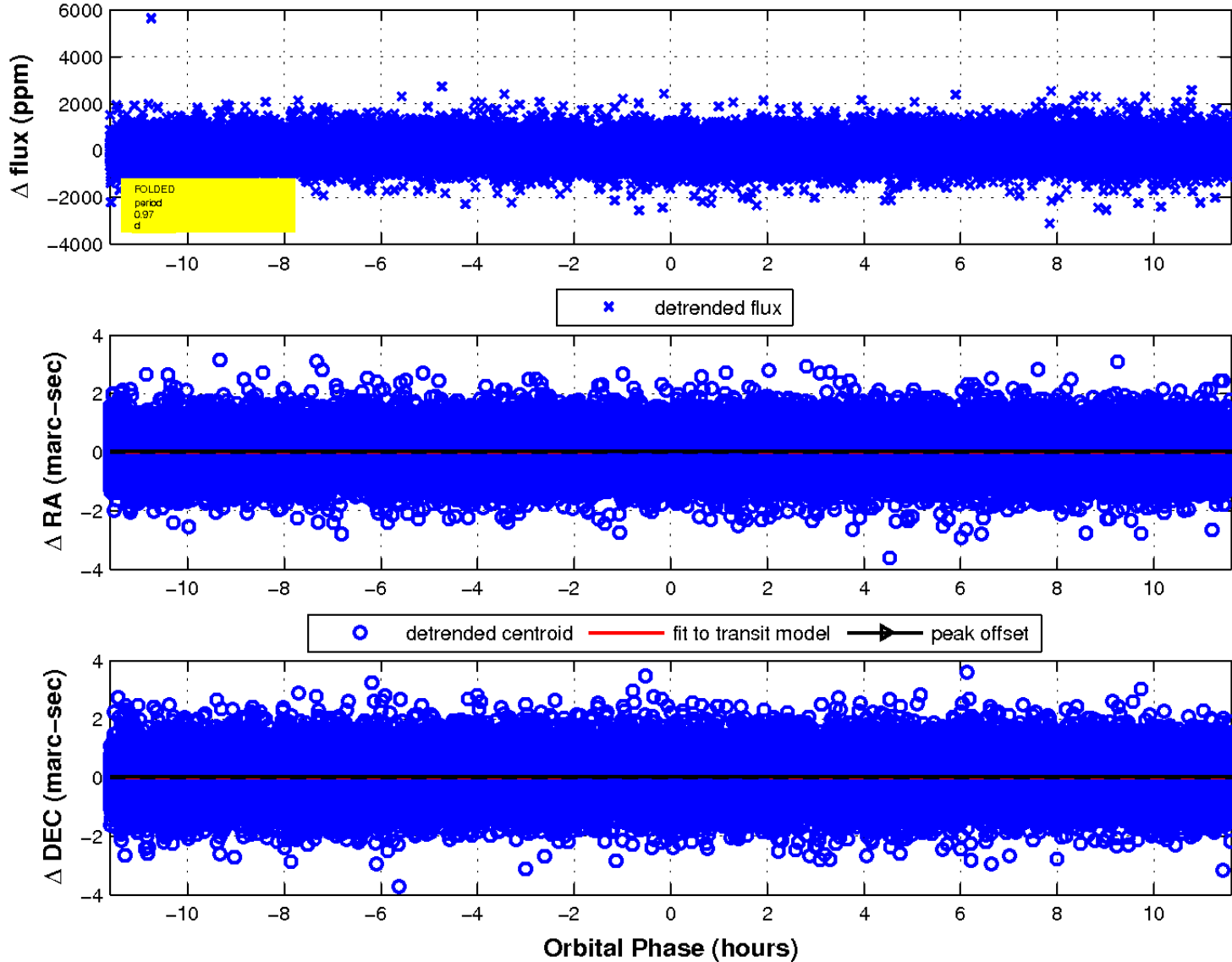
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

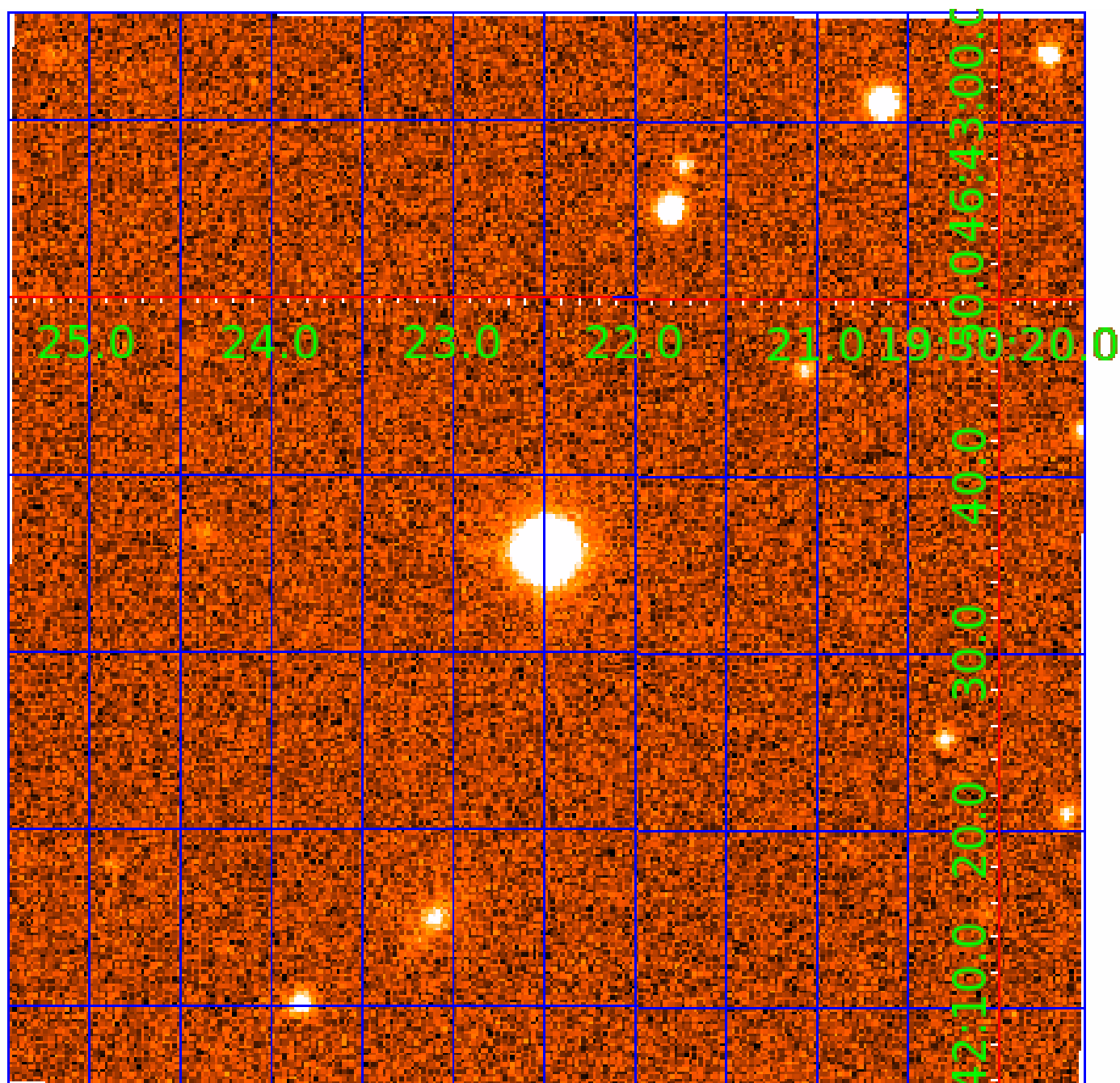


fluxWeightedCentroids, Planet 2 of 4



UKIRT Image

Declination



KIC 009892624

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})
009892624-01	OBS	No	0.600207	132.100636	64.3	1.667	14.8	15.2	1.82	7389	1.57	33627.39
009892624-02	OBS	No	0.967299	132.225822	63.2	4.385	9.8	12.4	1.82	7389	1.48	17797.02
009892624-03	OBS	No	66.628016	169.791503	598.6	5.648	9.5	7.6	1.82	7389	4.96	63.03
009892624-04	OBS	No	0.967309	131.734355	53.3	4.683	10.1	11.9	1.82	7389	1.36	17796.77

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009892624-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009892624-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
009892624-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009892624-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—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.

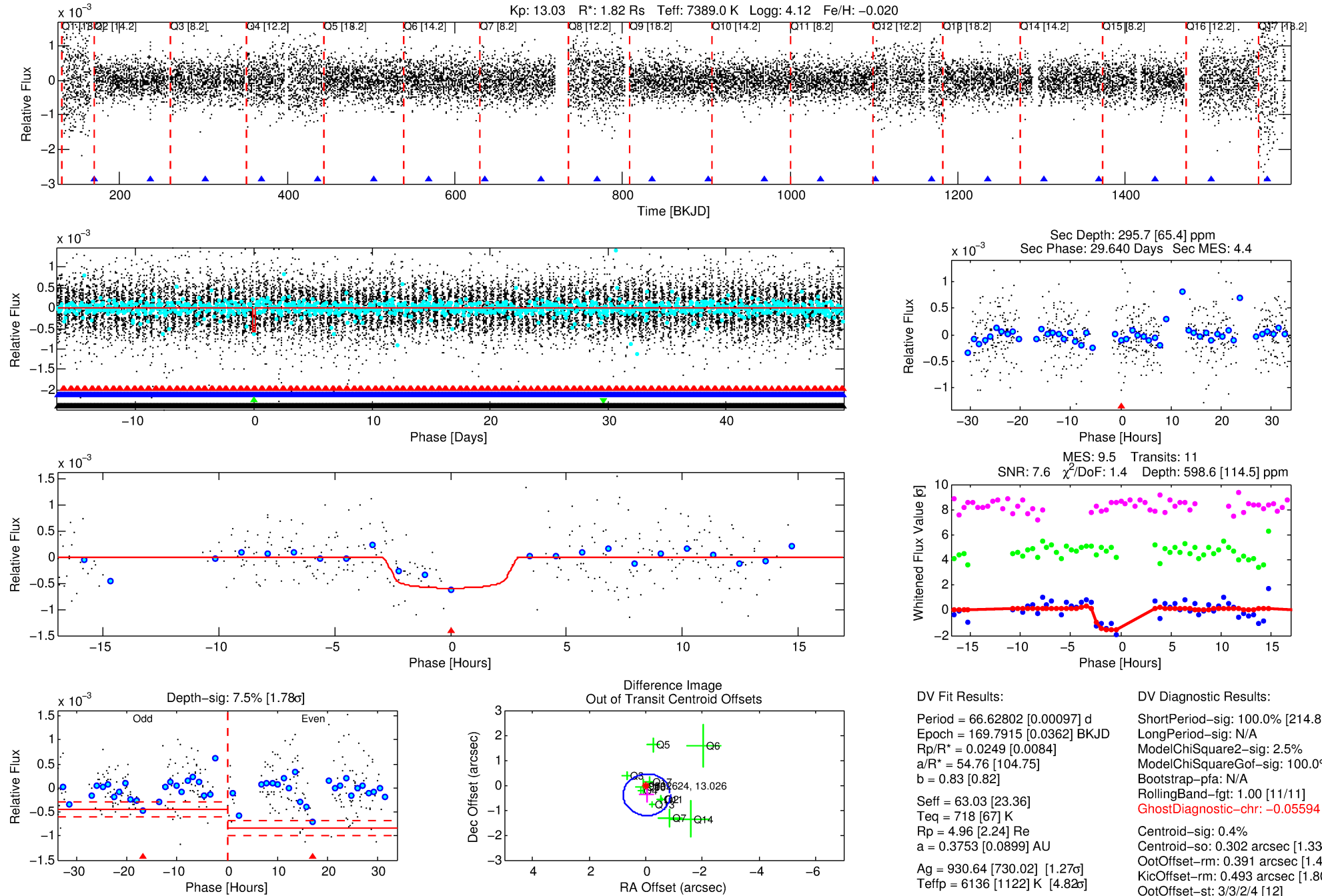
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009892624-03

No Significant Match Found

DV One-Page Summary

KIC: 9892624 Candidate: 3 of 4 Period: 66.628 d



DV Fit Results:

Period = 66.62802 [0.00097] d
Epoch = 169.7915 [0.0362] BKJD
Rp/R* = 0.0249 [0.0084]
a/R* = 54.76 [104.75]
b = 0.83 [0.82]
Seff = 63.03 [23.36]
Teff = 718 [67] K
Rp = 4.96 [2.24] Re
a = 0.3753 [0.0899] AU
Ag = 930.64 [730.02] [1.27 σ]
Teffp = 6136 [1122] K [4.82 σ]

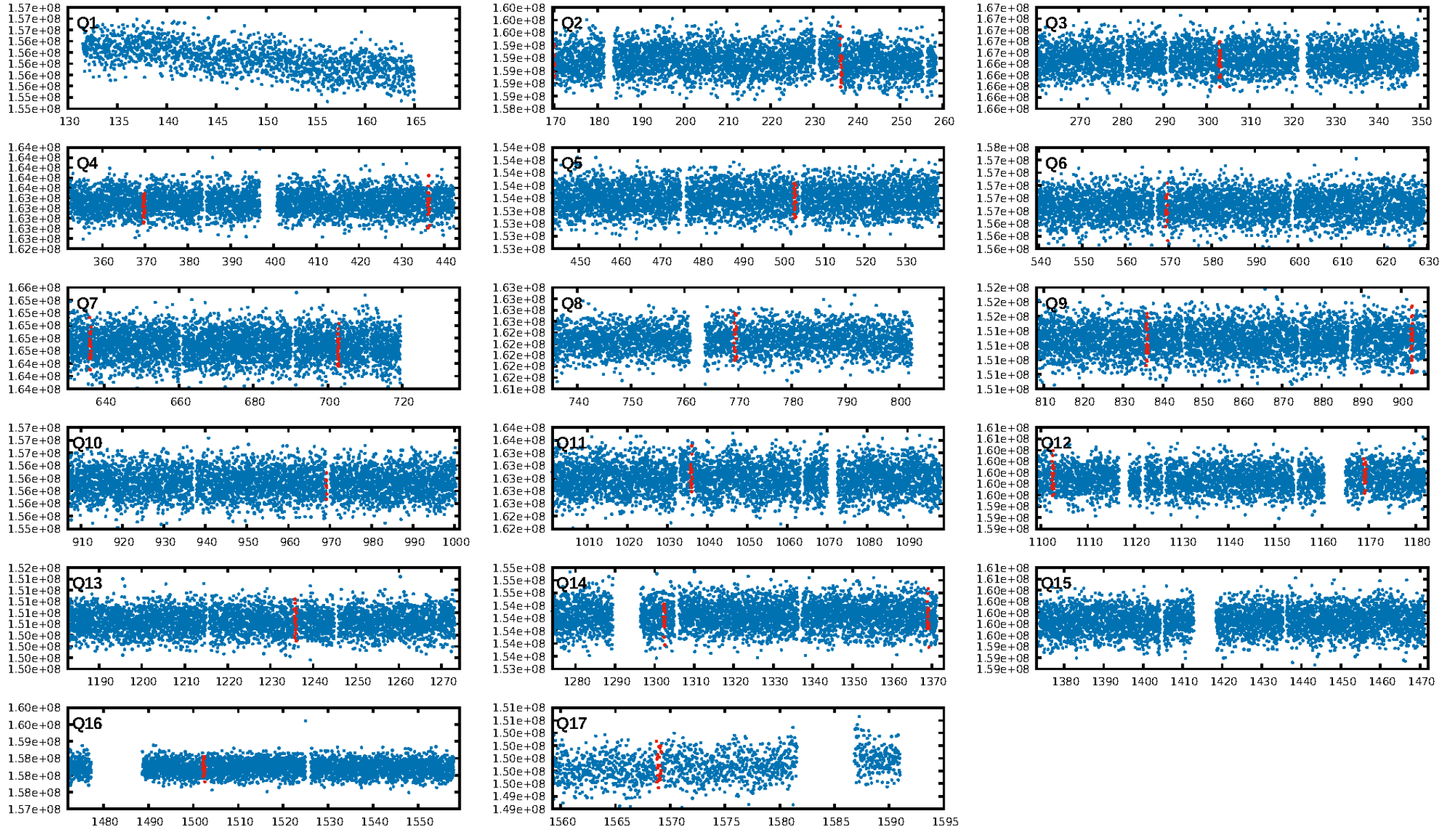
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [214.80 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [11/11]
GhostDiagnostic-chr: -0.05594
Centroid-sig: 0.4%
Centroid-so: 0.302 arcsec [1.33 σ]
OotOffset-rm: 0.391 arcsec [1.41 σ]
KicOffset-rm: 0.493 arcsec [1.80 σ]
OotOffset-st: 3/3/2/4 [12]
KicOffset-st: 3/3/2/4 [12]
DiffImageQuality-fgm: 0.58 [7/12]
DiffImageOverlap-fno: 0.00 [0/14]

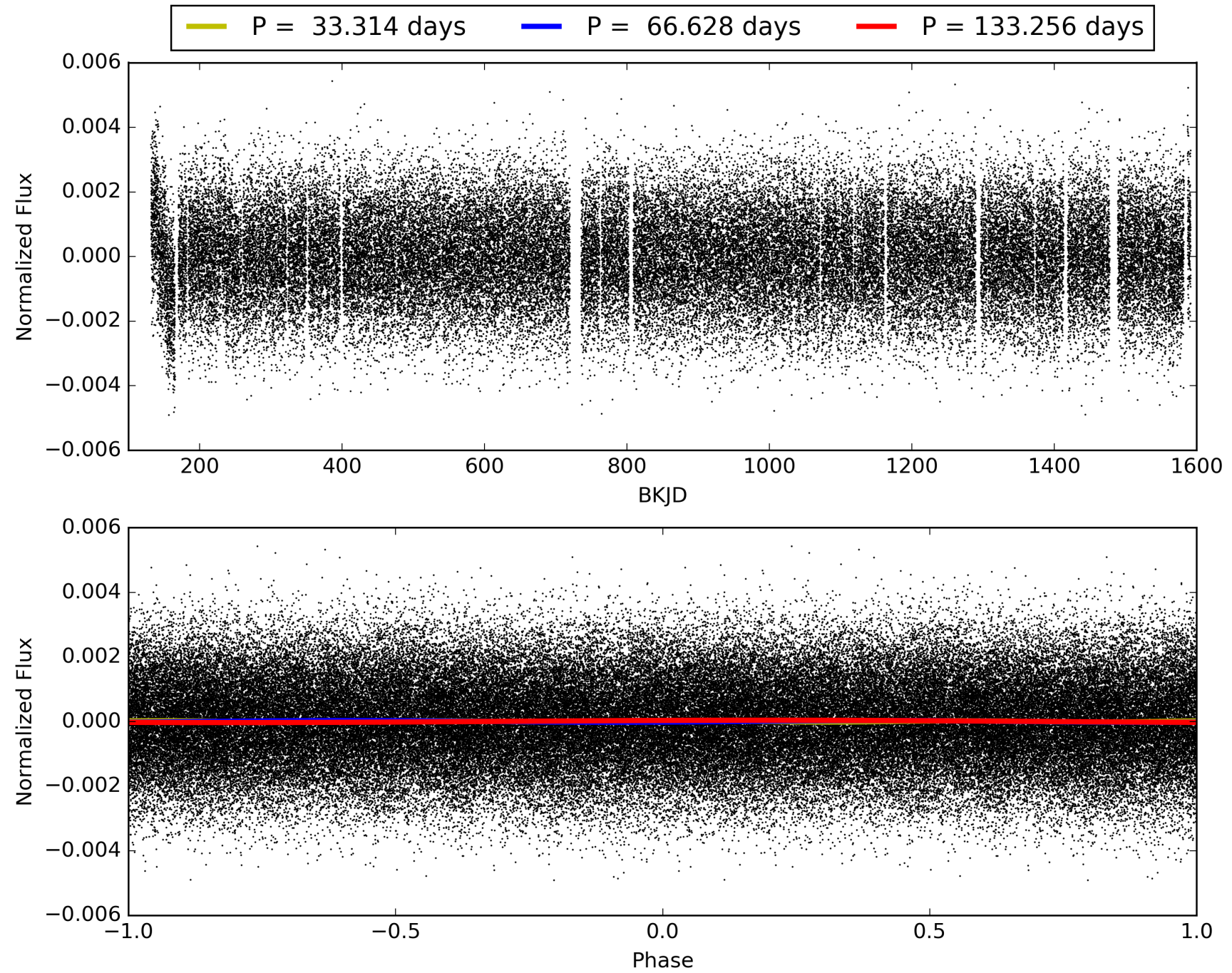
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:07:31 Z

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

TCE 009892624-03, PDC Light Curves

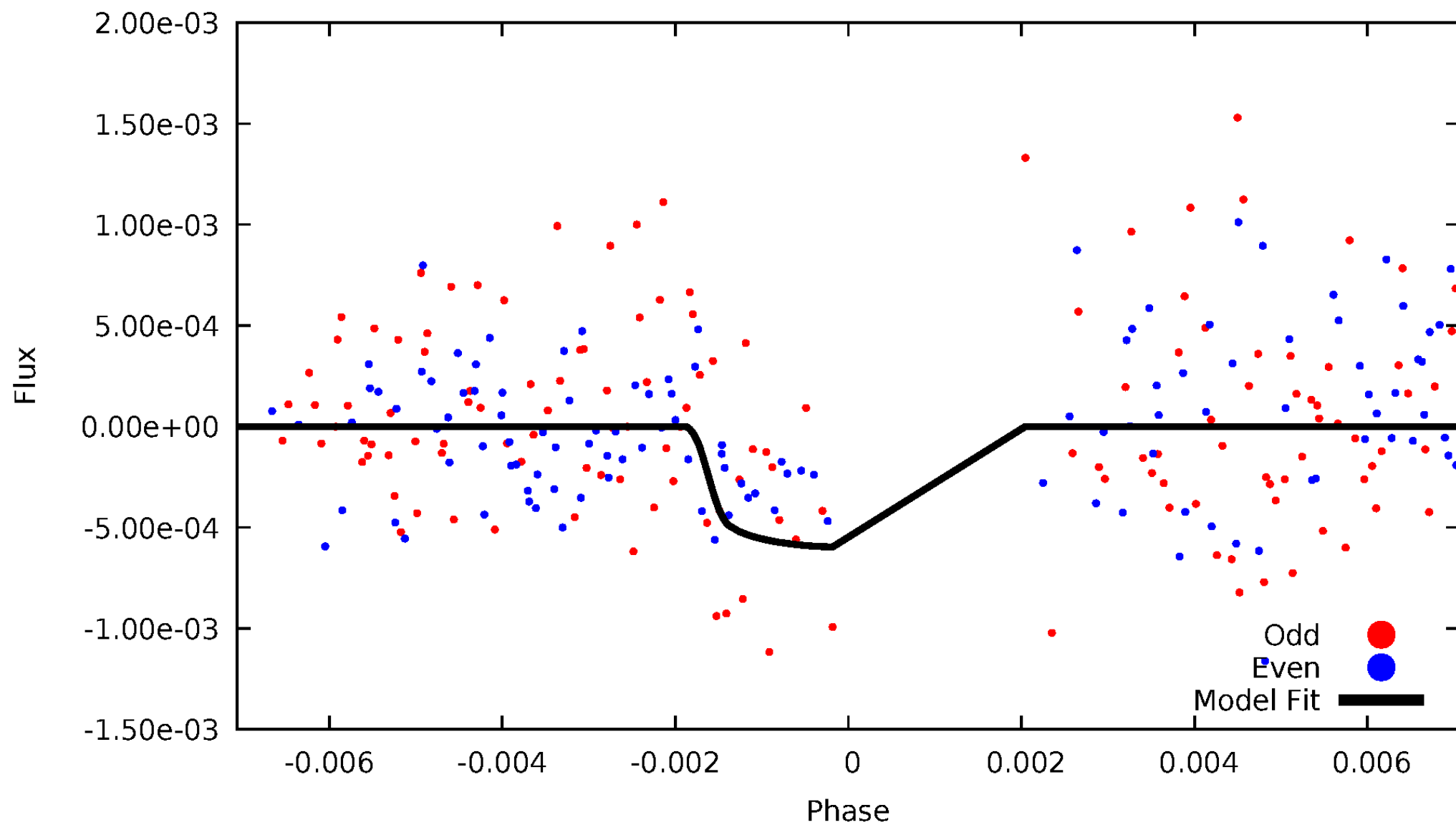


TCE 009892624-03



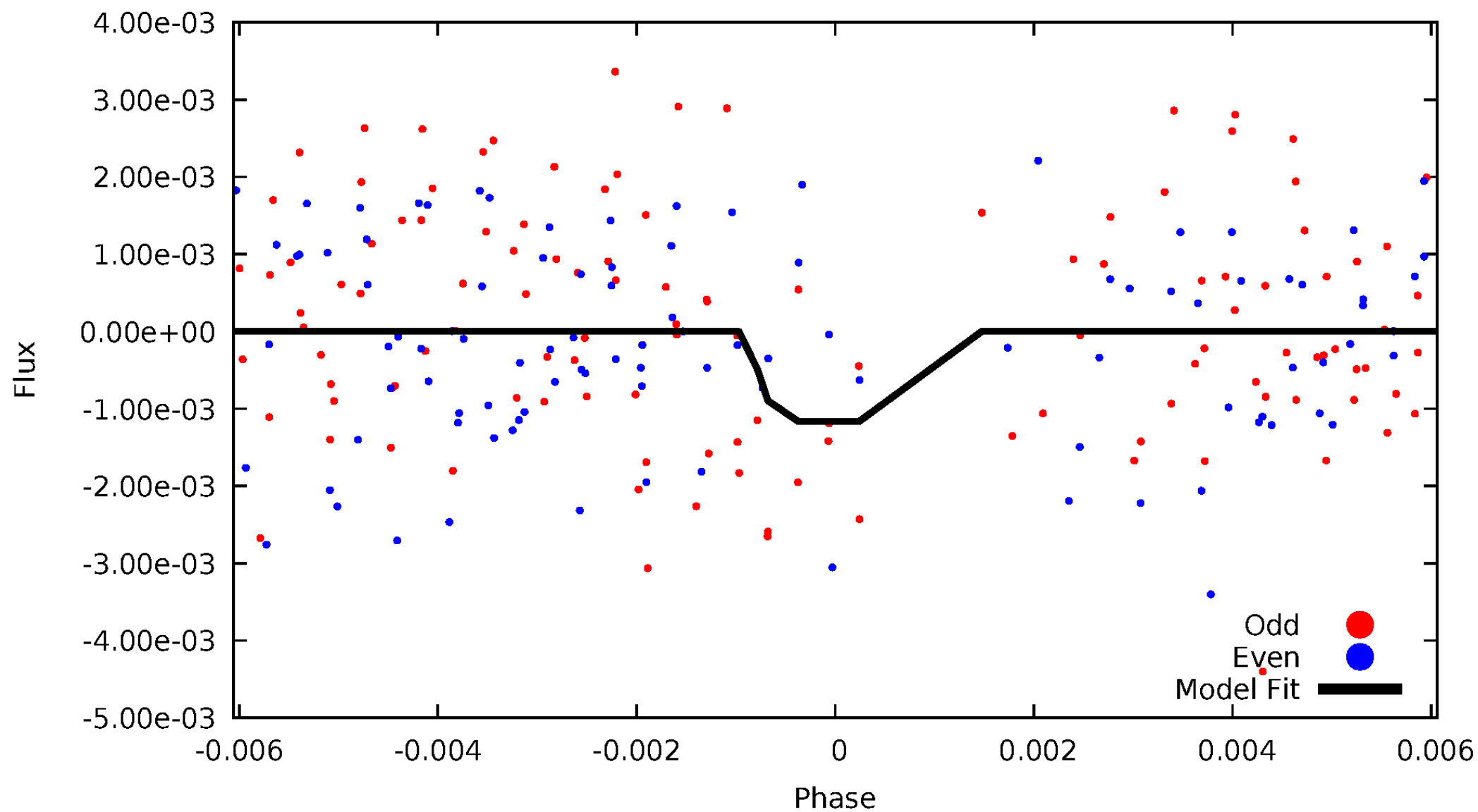
DV Odd/Even

TCE 009892624-03



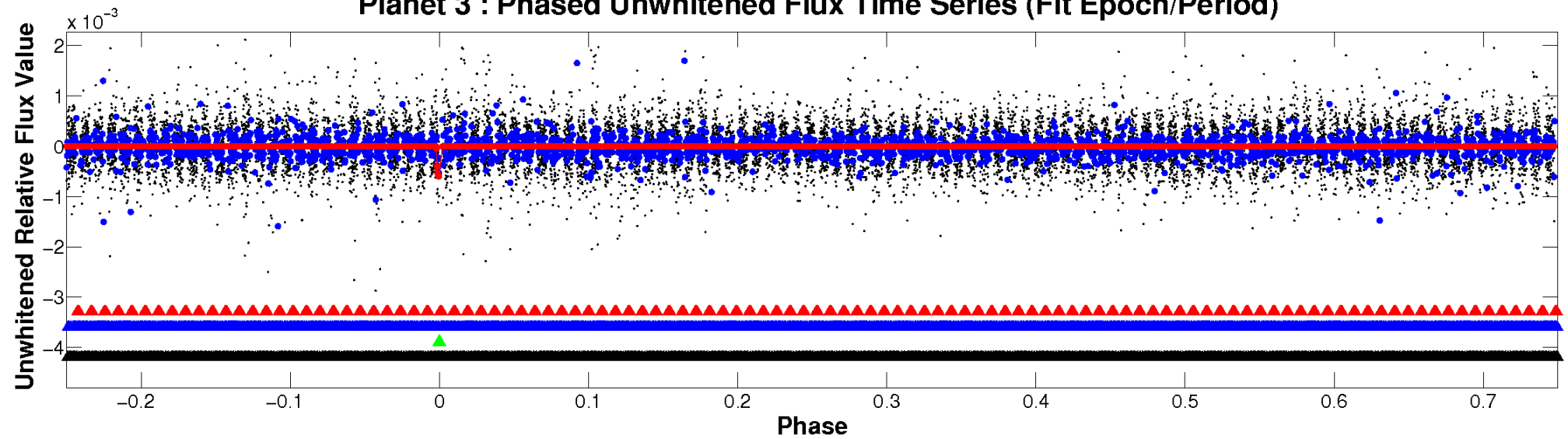
ALT Odd/Even

TCE 009892624-03

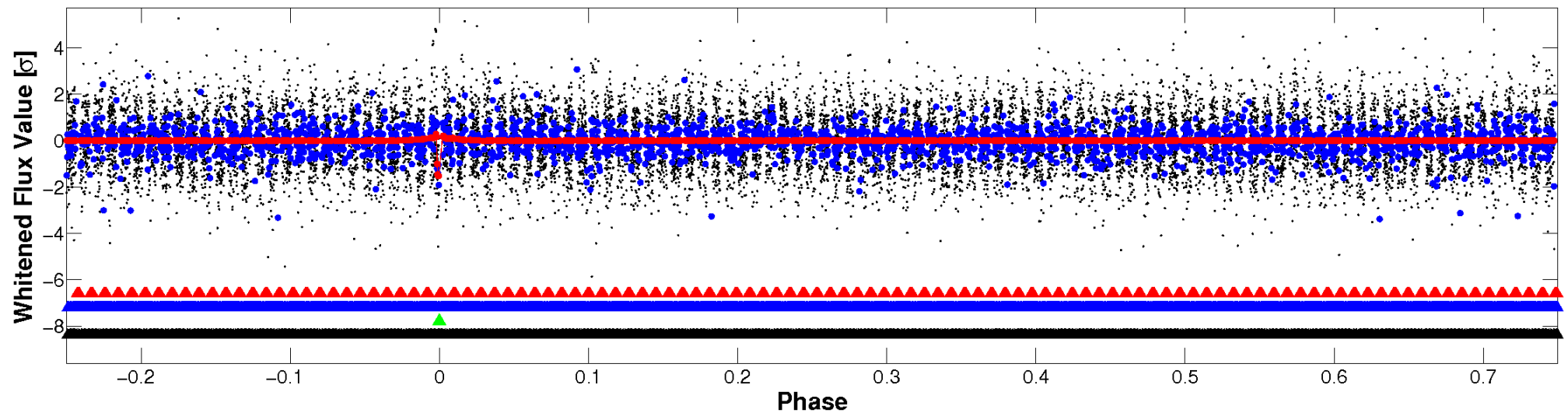


Non-Whitened Vs. Whitened Light Curve

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

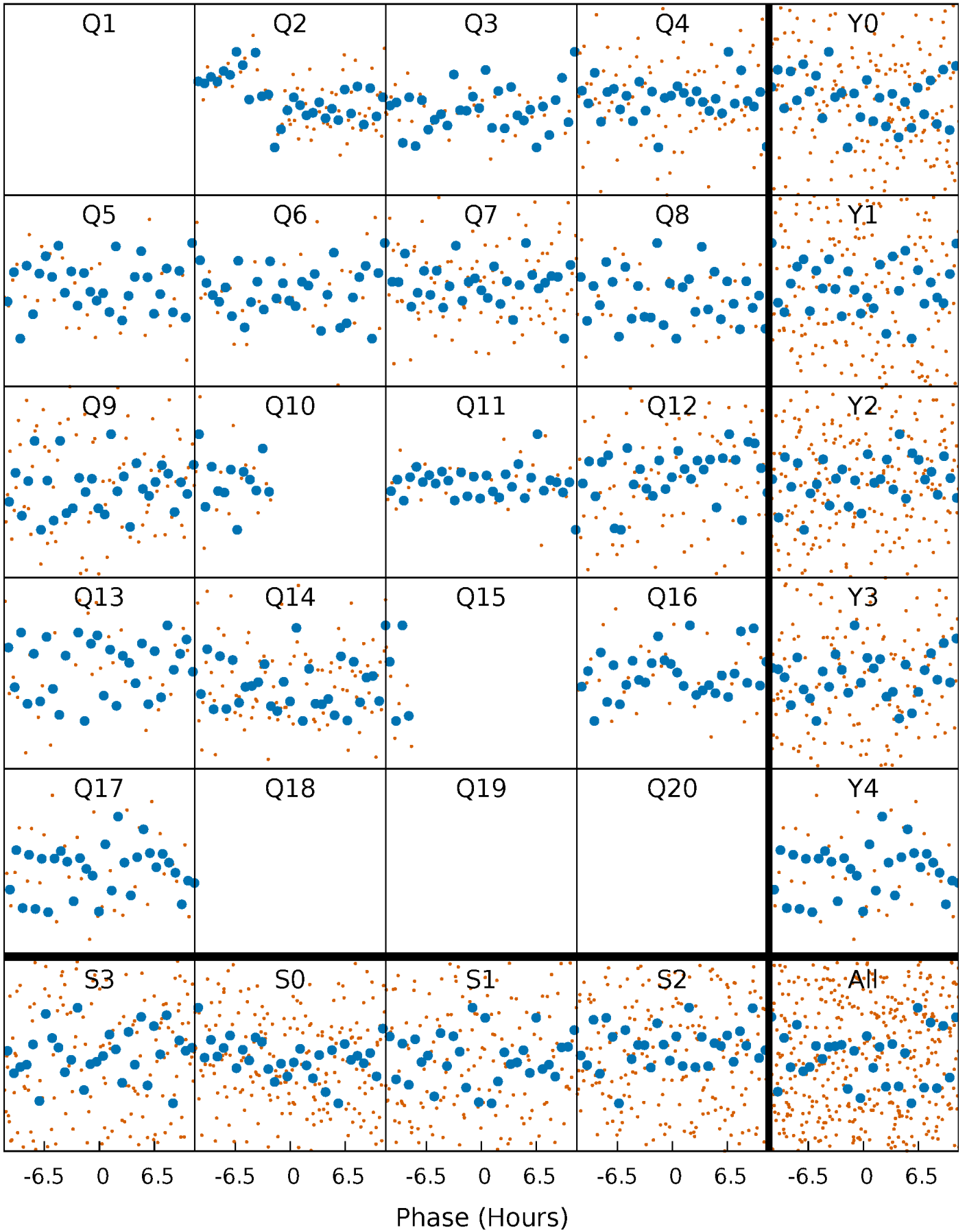


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



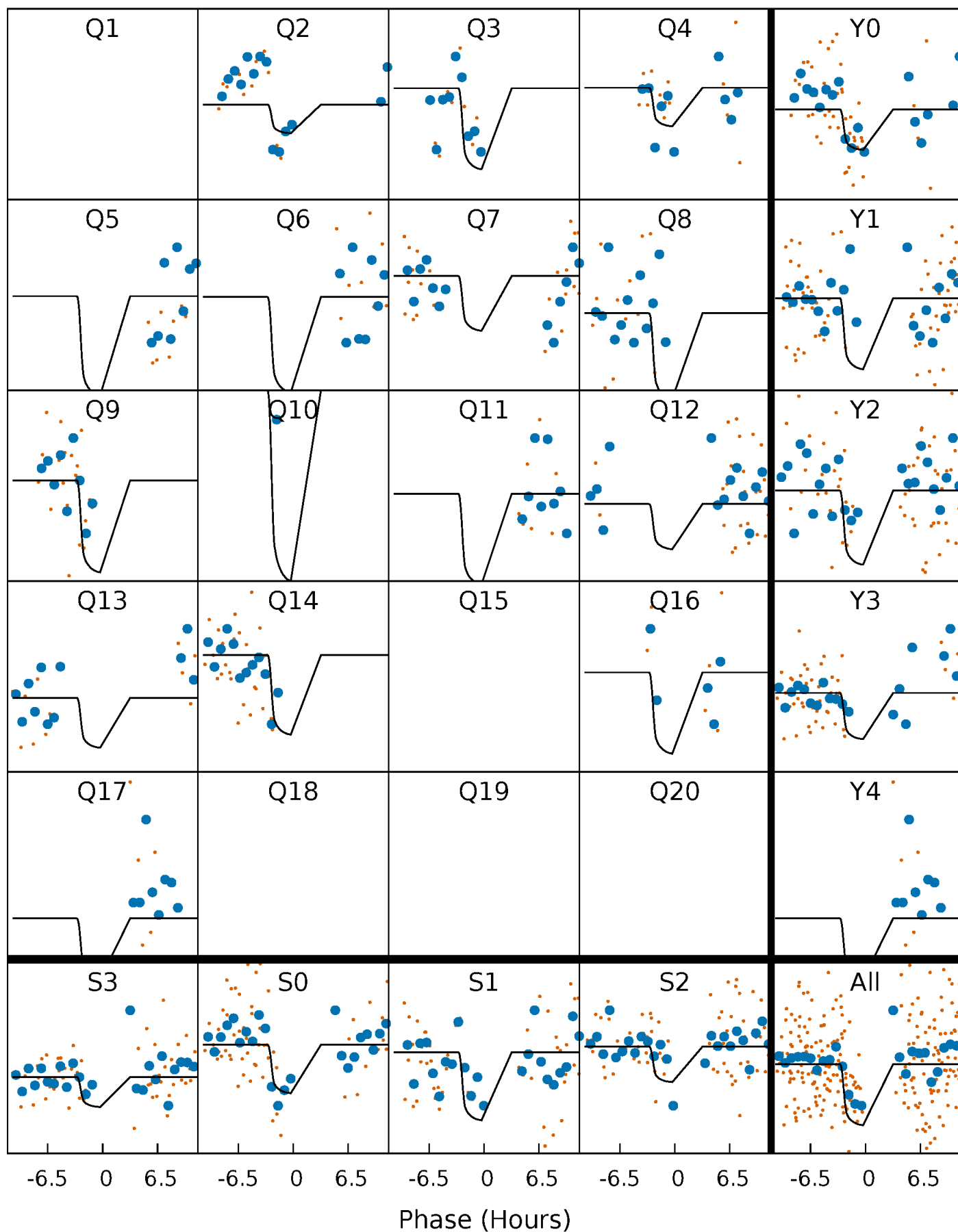
PDC Quarter-Phased Transit Curves

TCE 009892624-03 P= 66.628016 Days $T_0=169.791503$ (BKJD)



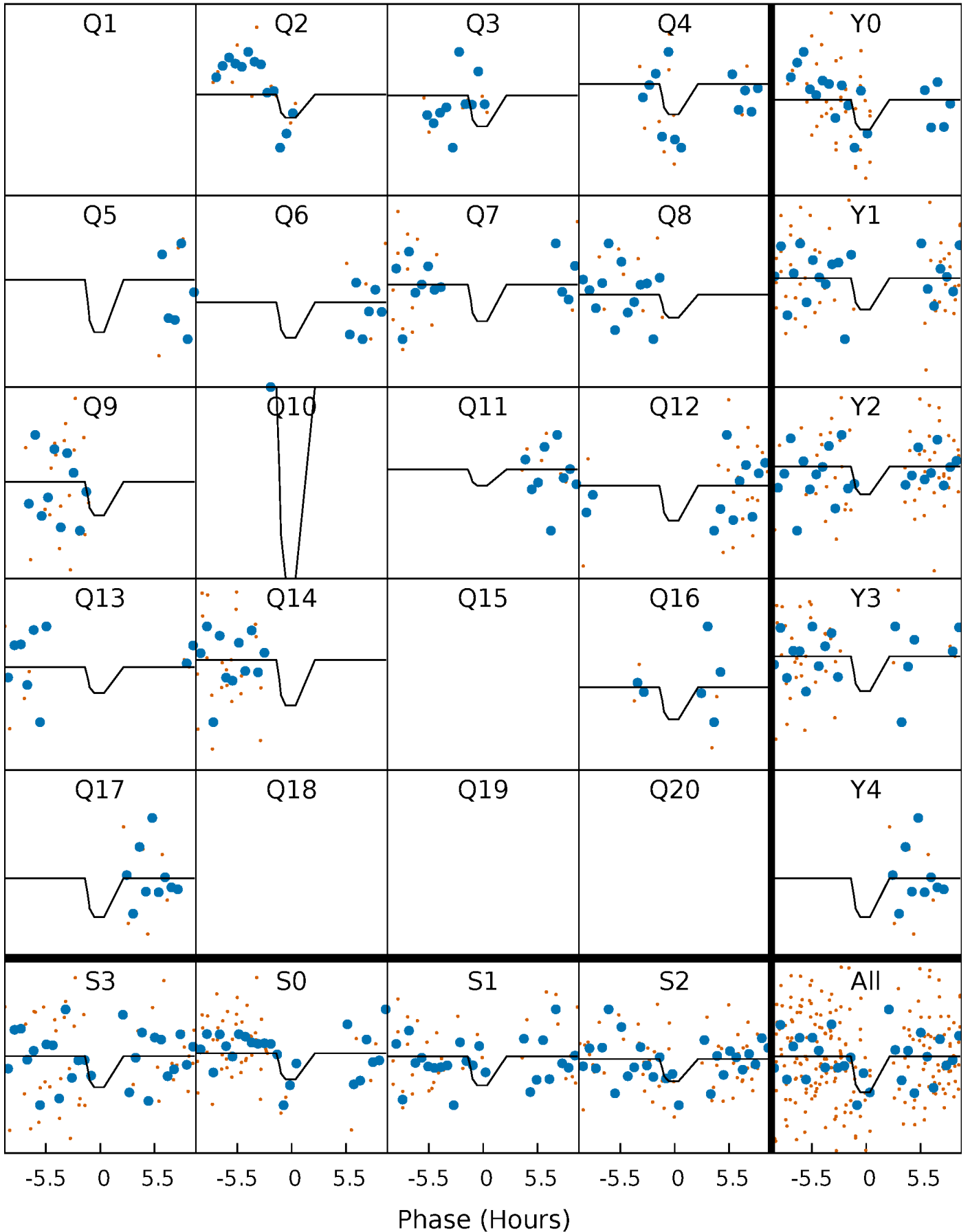
DV Quarter-Phased Transit Curves

TCE 009892624-03 P= 66.628016 Days $T_0=169.791503$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

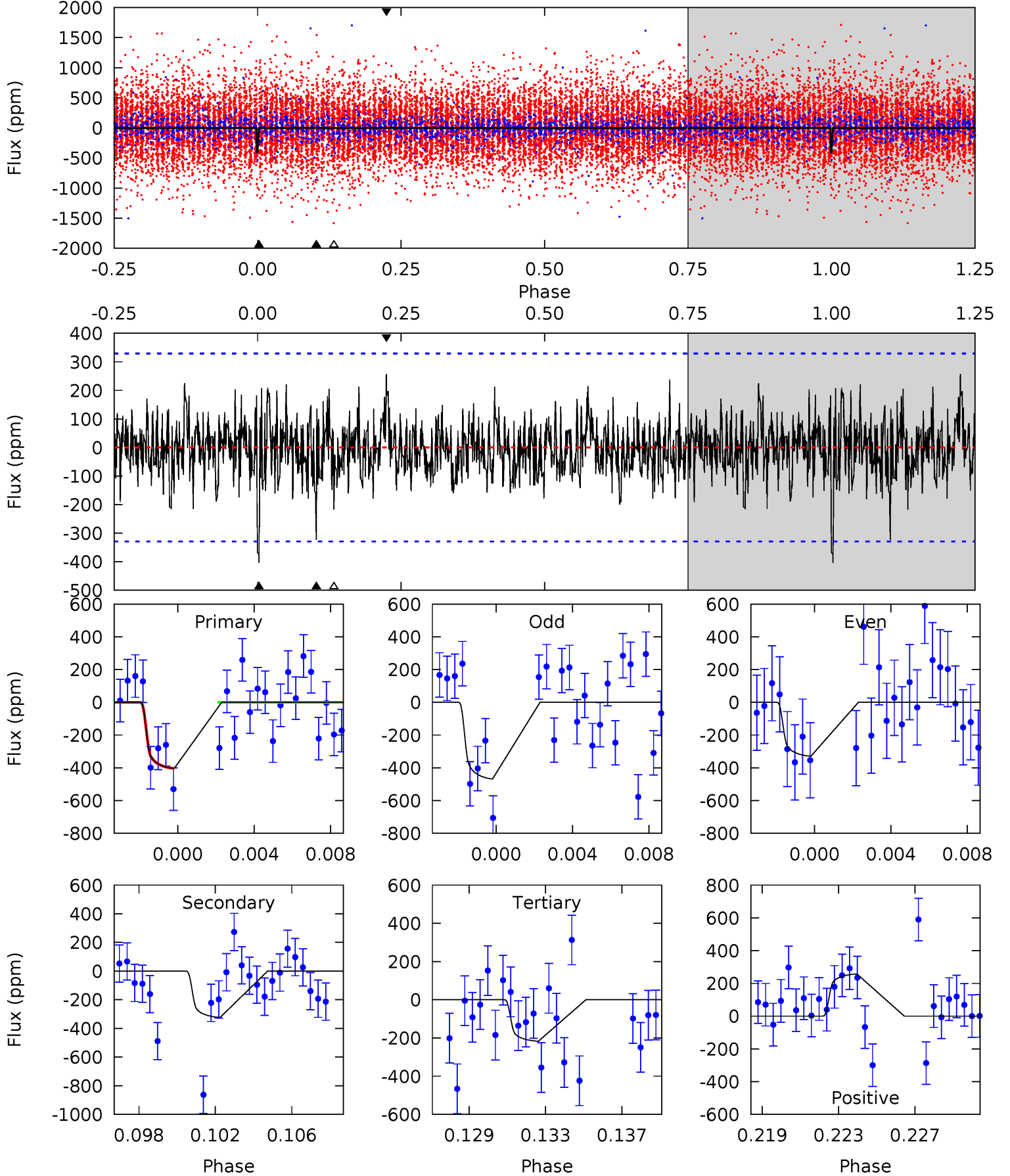
TCE 009892624-03 P= 66.631700 Days $T_0=169.752069$ (BKJD)



DV Model-Shift Uniqueness Test

009892624-03, P = 66.628016 Days, E = 103.163487 Days

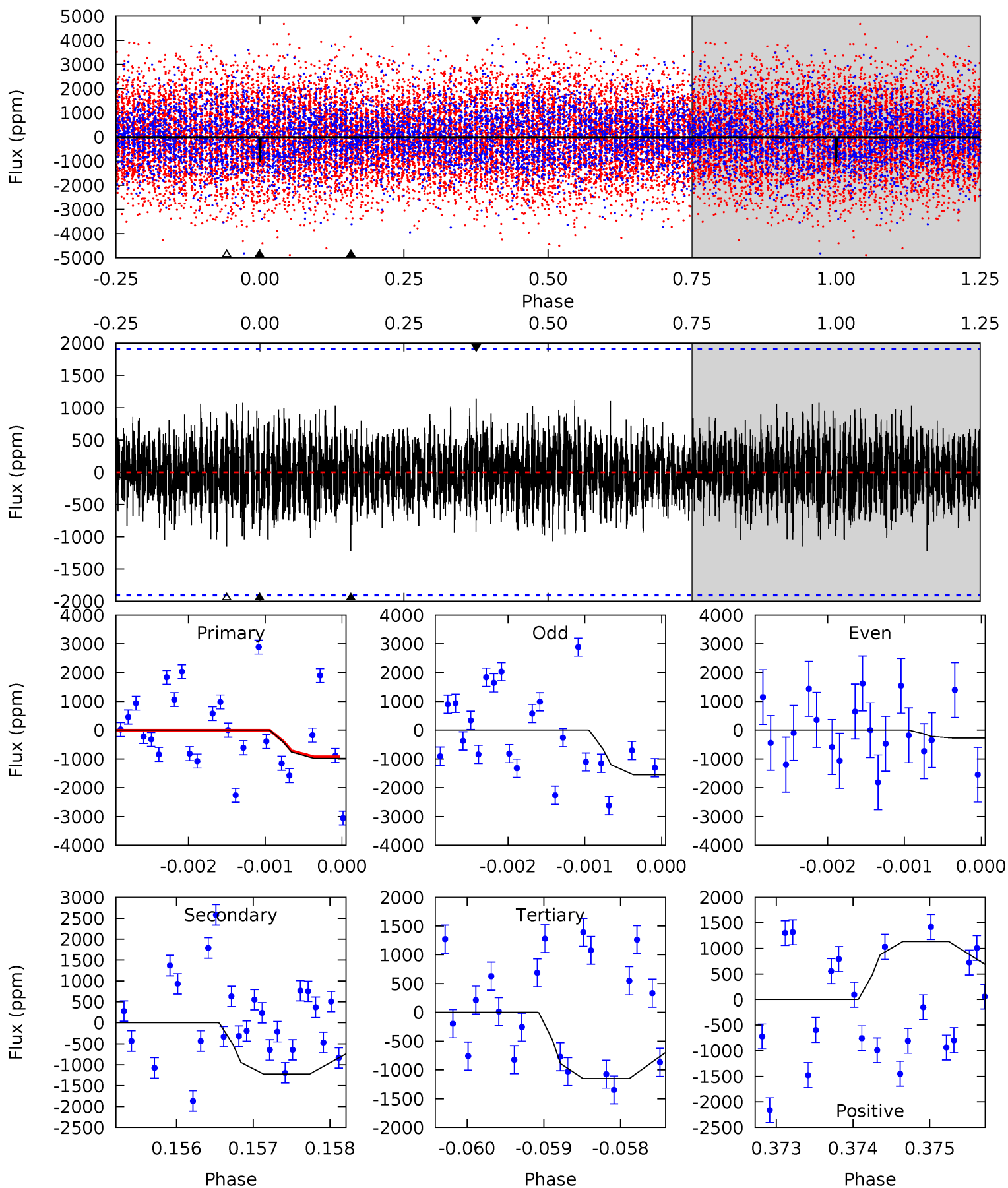
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.38	5.11	3.43	4.07	5.20	2.88	1.08	2.95	2.31	1.68	1.04	1.11	0	0.39	0



Alt Model-Shift Uniqueness Test

009892624-03, P = 66.631700 Days, E = 103.120369 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.80	3.49	3.28	3.24	5.45	3.28	0.90	-0.48	-0.43	0.21	0.26	1.81	0.91	0.48	0.24



Stellar Parameters For KIC 009892624

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7389^{+233}_{-311}	$4.117^{+0.140}_{-0.171}$	$-0.020^{+0.200}_{-0.350}$	$1.823^{+0.548}_{-0.365}$	$1.586^{+0.200}_{-0.244}$	$0.369^{+0.259}_{-0.175}$
	+3%/-4%	+3%/-4%	+1000%/-1750%	+30%/-20%	+13%/-15%	+70%/-47%
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 009892624-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-323 ± 63	$4.91^{+1.97}_{-1.62}$	1004^{+72}_{-63}	6129^{+1561}_{-837}	990^{+1294}_{-498}
Alt.	-1224 ± 350	$6.80^{+2.03}_{-1.83}$	1002^{+71}_{-67}	7406^{+1749}_{-1049}	1975^{+2001}_{-888}

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

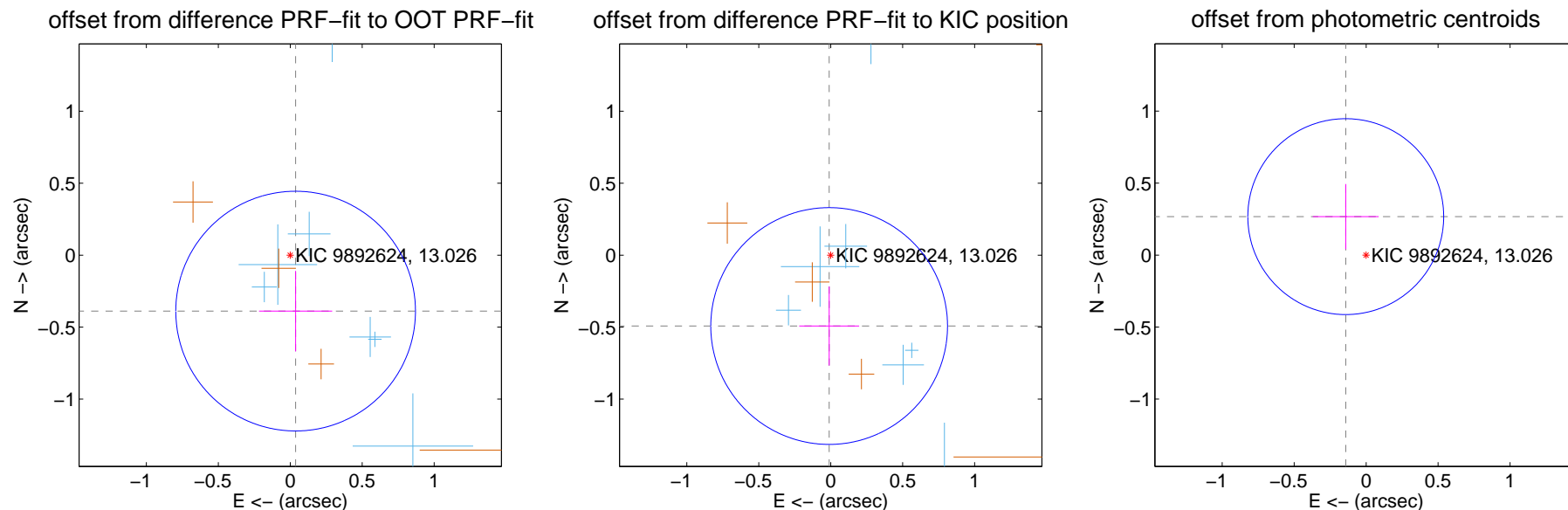
DV Centroid Data

Supplemental centroid analysis for 009892624-03. Kepler magnitude: 13.03. Transit SNR 7.60

There are 7 quarters with good PRF difference image offsets

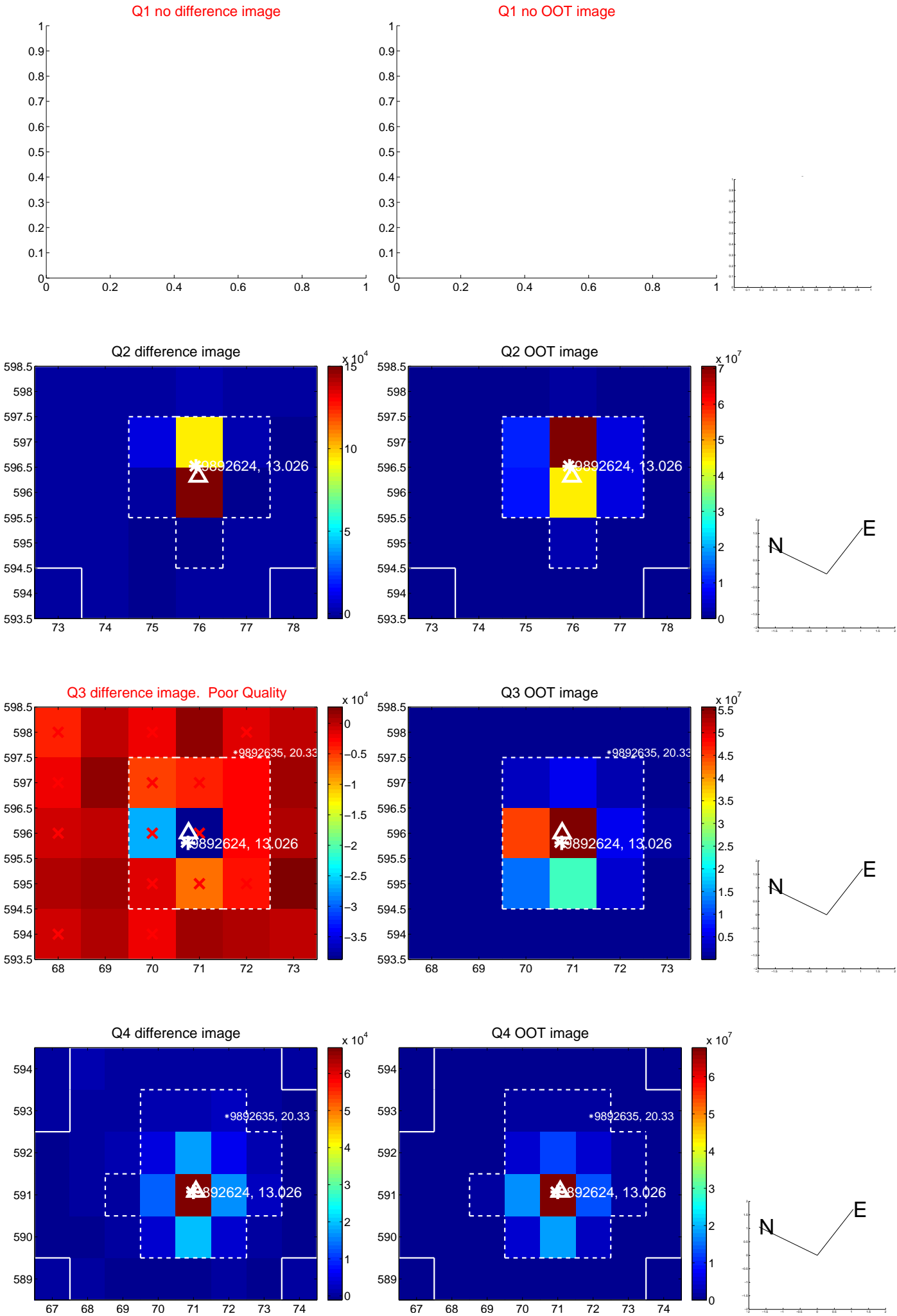
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.391 ± 0.278	1.41	-0.037 ± 0.254	-0.389 ± 0.280
PRF-fit source offset from KIC position	0.493 ± 0.274	1.80	0.011 ± 0.209	-0.493 ± 0.275
photometric centroid source offset	0.30 ± 0.23	1.33	0.14 ± 0.23	0.27 ± 0.23

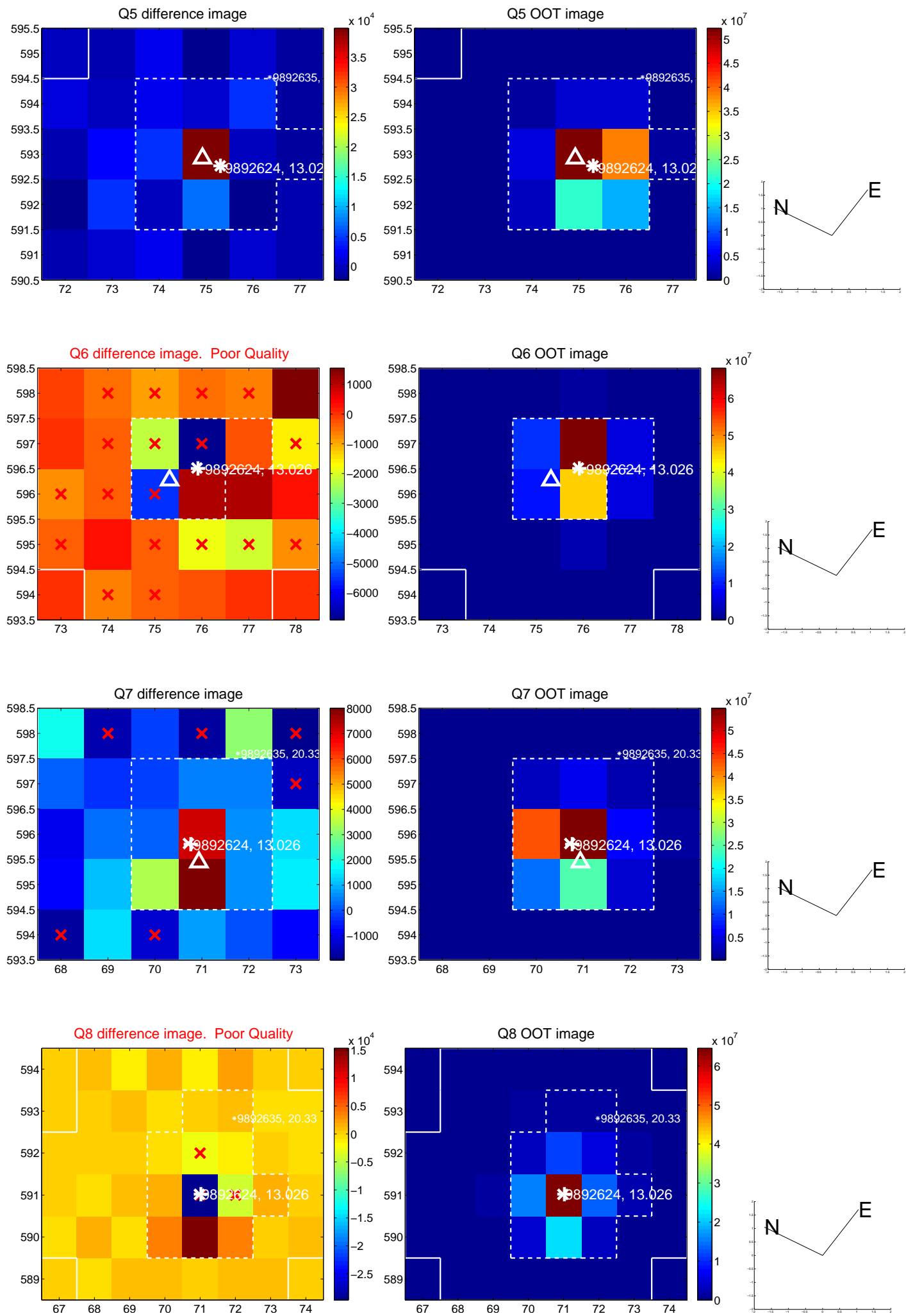


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

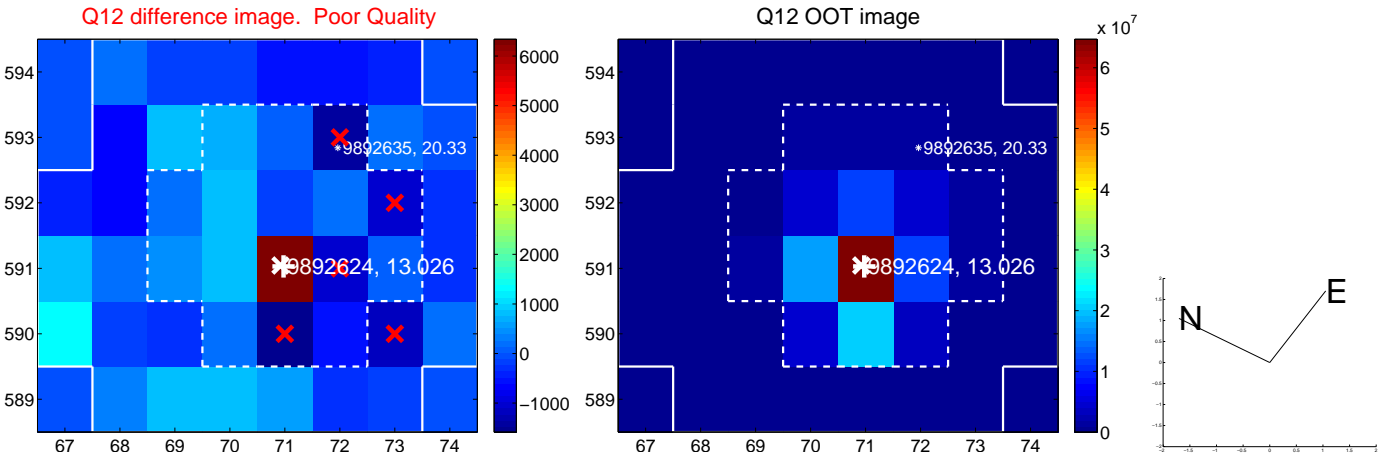
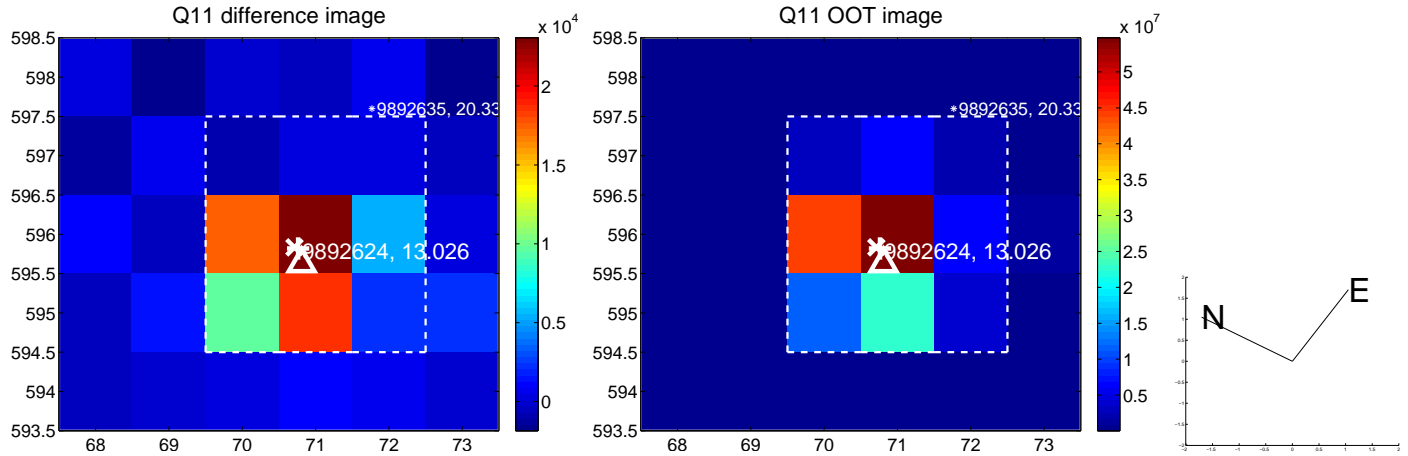
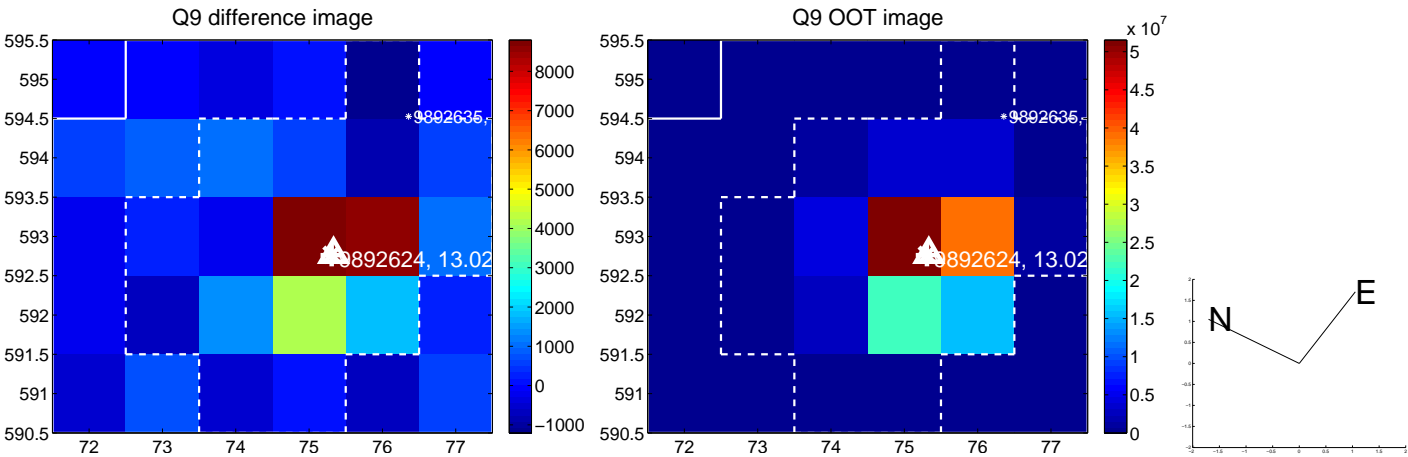
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



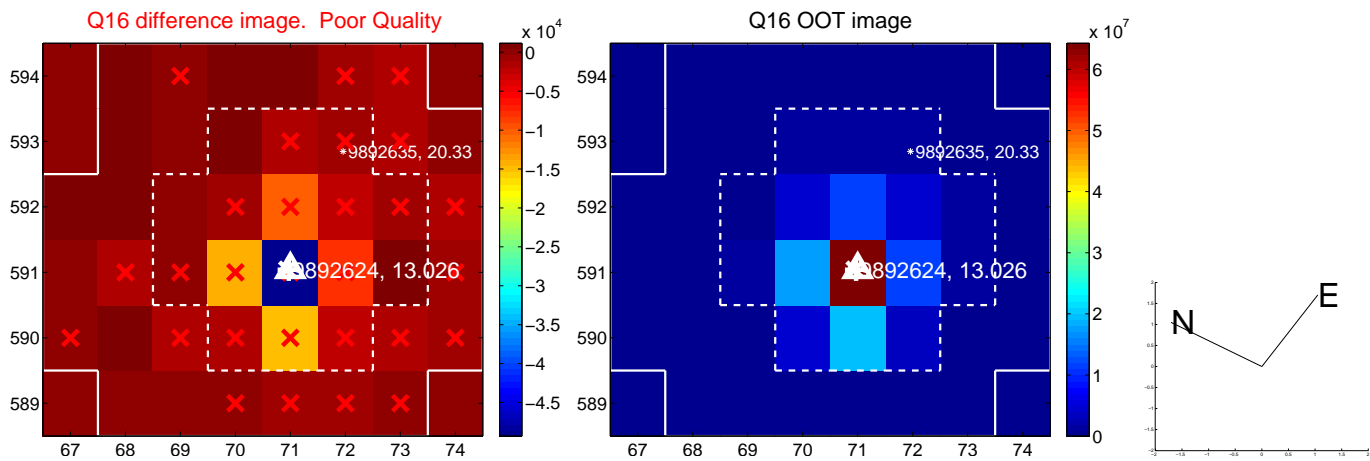
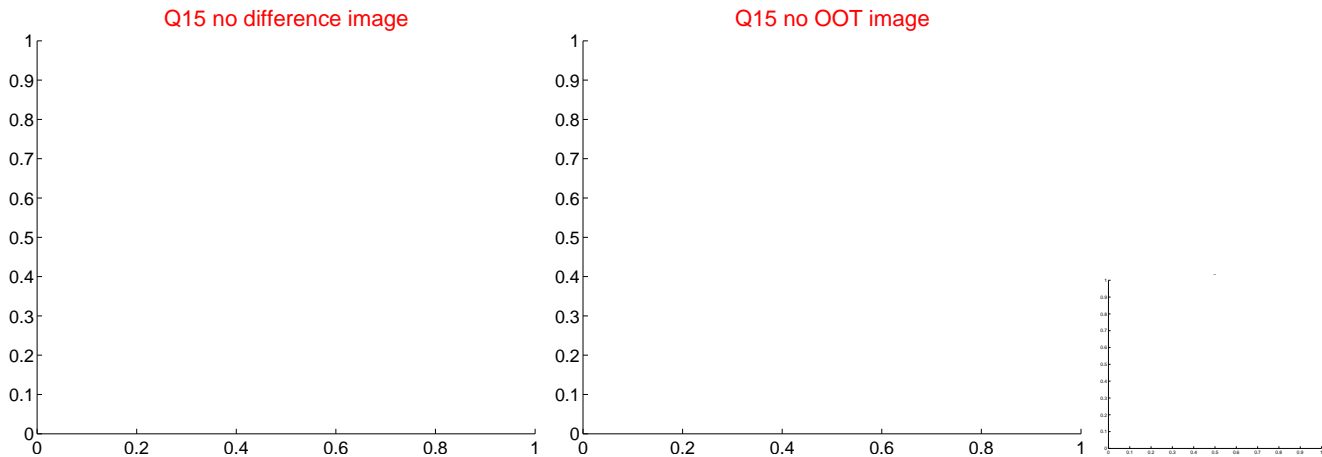
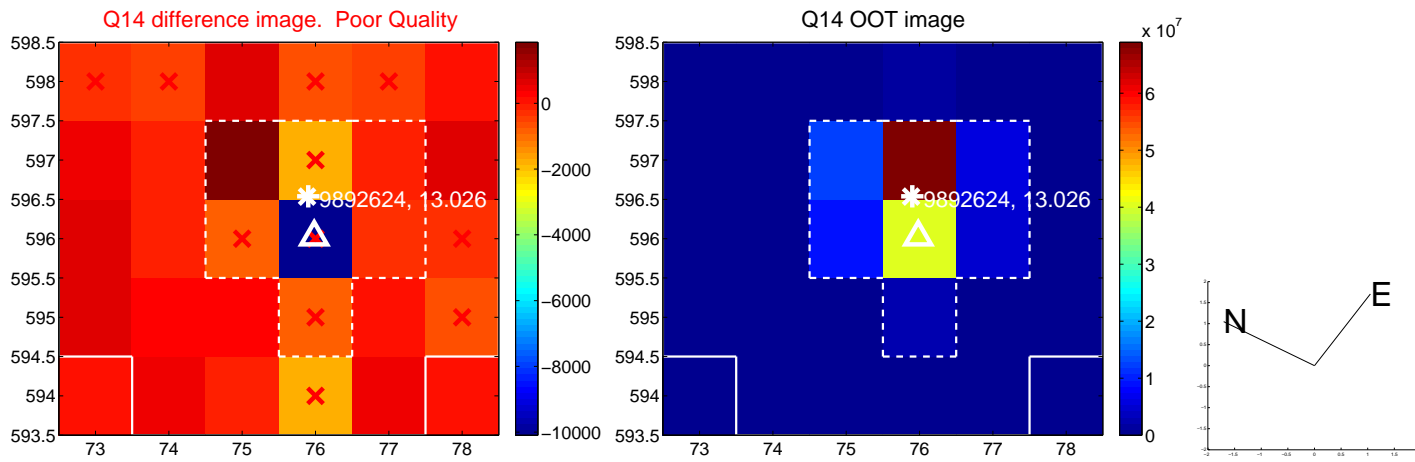
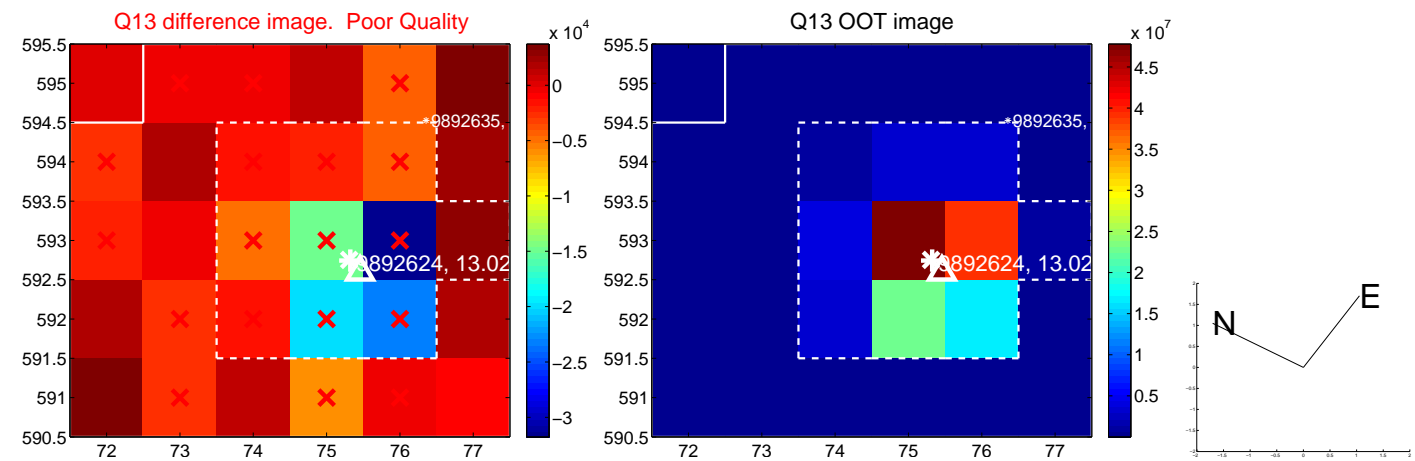
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

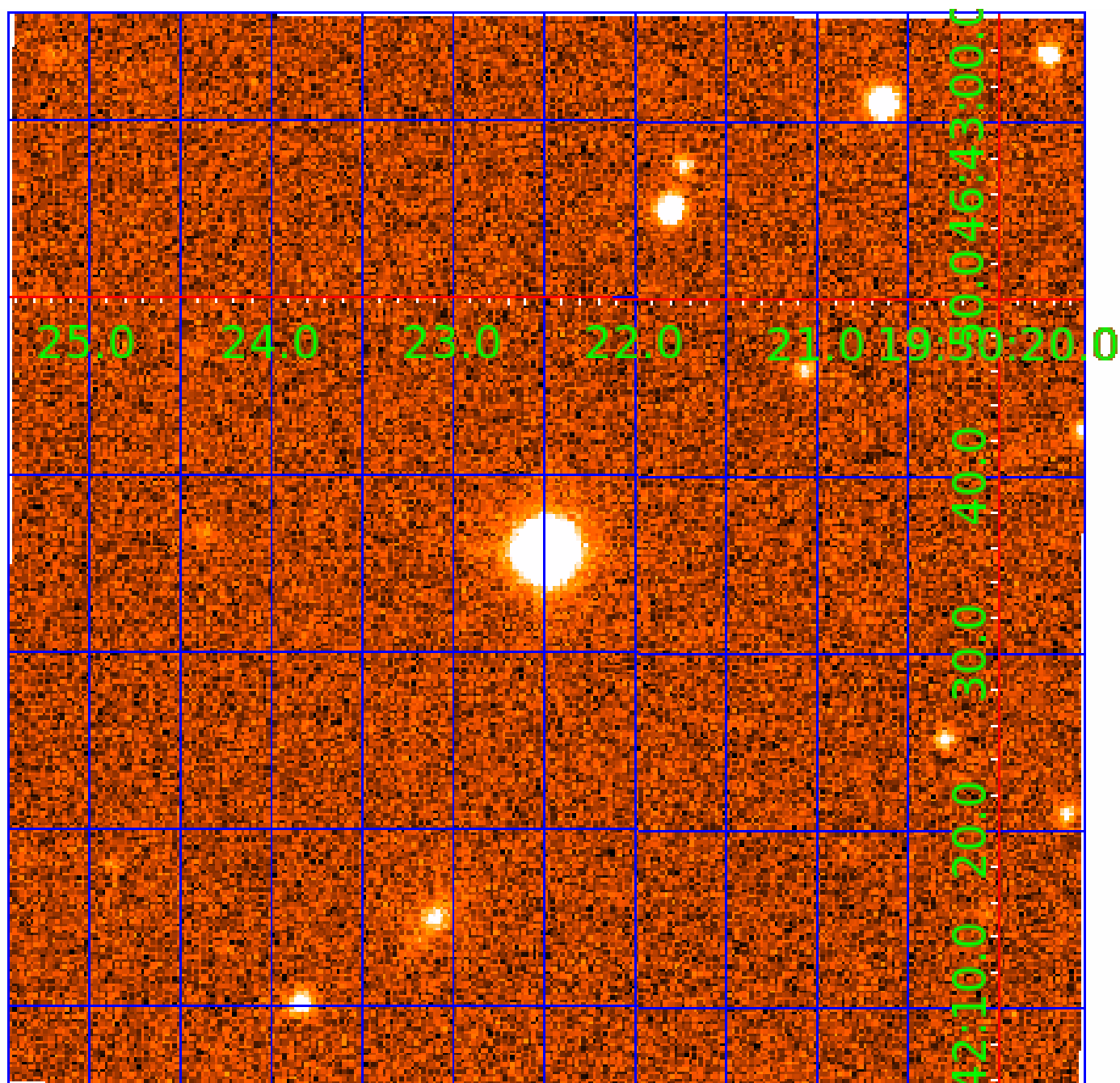


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009892624

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})
009892624-01	OBS	No	0.600207	132.100636	64.3	1.667	14.8	15.2	1.82	7389	1.57	33627.39
009892624-02	OBS	No	0.967299	132.225822	63.2	4.385	9.8	12.4	1.82	7389	1.48	17797.02
009892624-03	OBS	No	66.628016	169.791503	598.6	5.648	9.5	7.6	1.82	7389	4.96	63.03
009892624-04	OBS	No	0.967309	131.734355	53.3	4.683	10.1	11.9	1.82	7389	1.36	17796.77

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009892624-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009892624-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
009892624-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009892624-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—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.

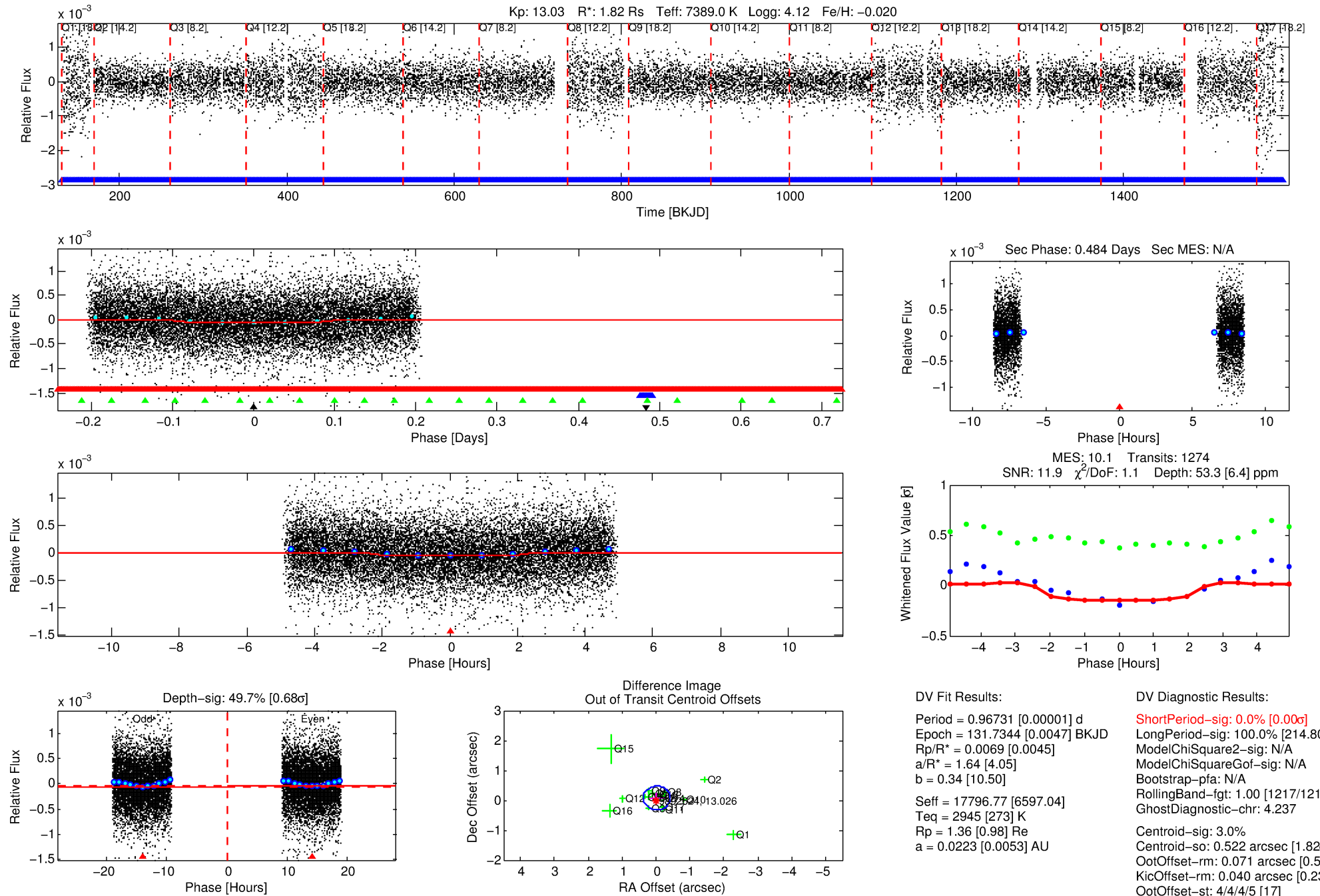
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009892624-04

No Significant Match Found

DV One-Page Summary

KIC: 9892624 Candidate: 4 of 4 Period: 0.967 d



DV Fit Results:

Period = 0.96731 [0.00001] d
Epoch = 131.7344 [0.0047] BKJD
Rp/R* = 0.0069 [0.0045]
a/R* = 1.64 [4.05]
b = 0.34 [10.50]
Seff = 17796.77 [6597.04]
Teff = 2945 [273] K
Rp = 1.36 [0.98] Re
a = 0.0223 [0.0053] AU

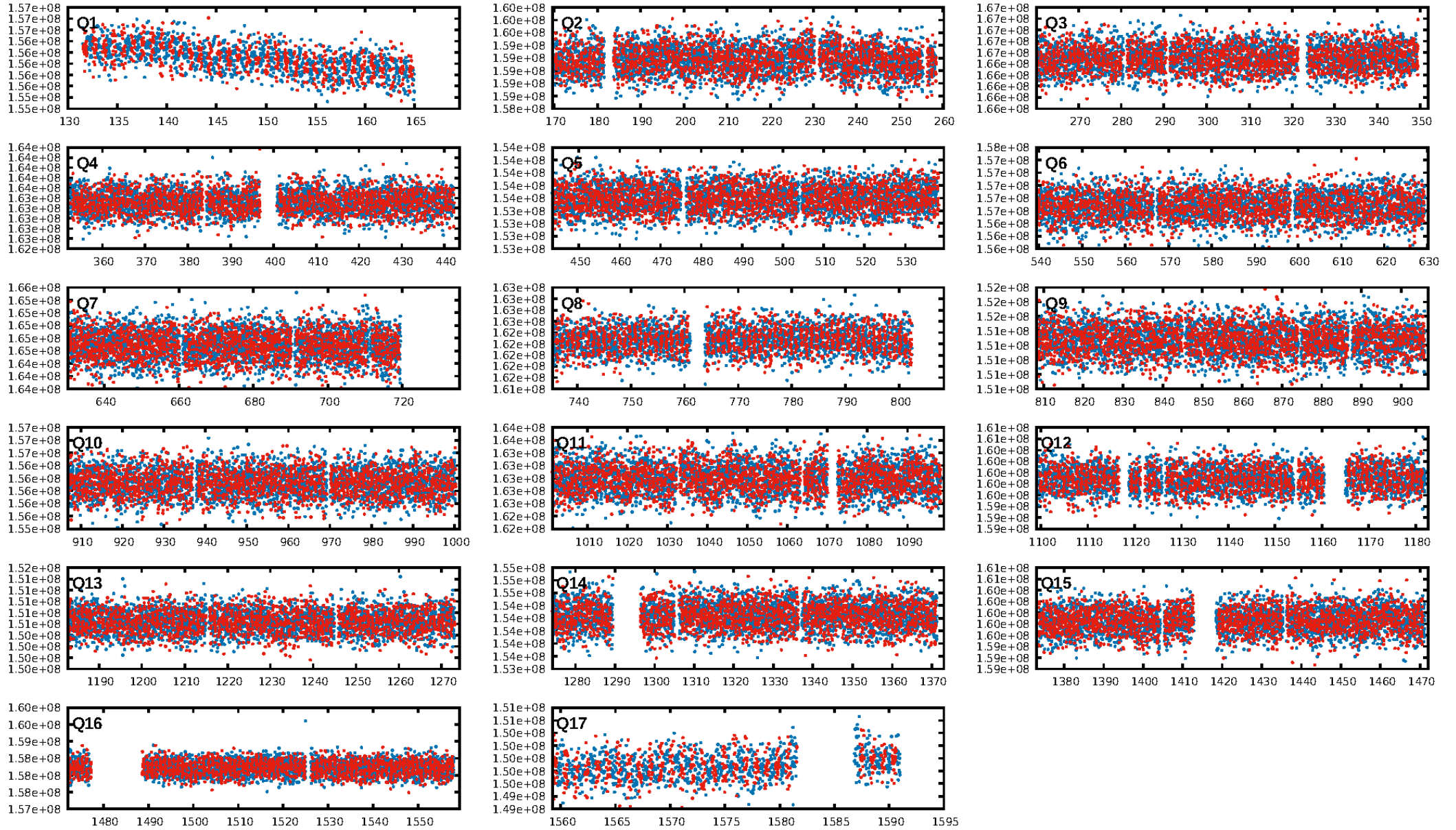
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: 100.0% [214.80 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1217/1217]
GhostDiagnostic-chr: 4.237
Centroid-sig: 3.0%
Centroid-so: 0.522 arcsec [1.82 σ]
OotOffset-rm: 0.071 arcsec [0.53 σ]
KicOffset-rm: 0.040 arcsec [0.23 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 0.00 [0/17]

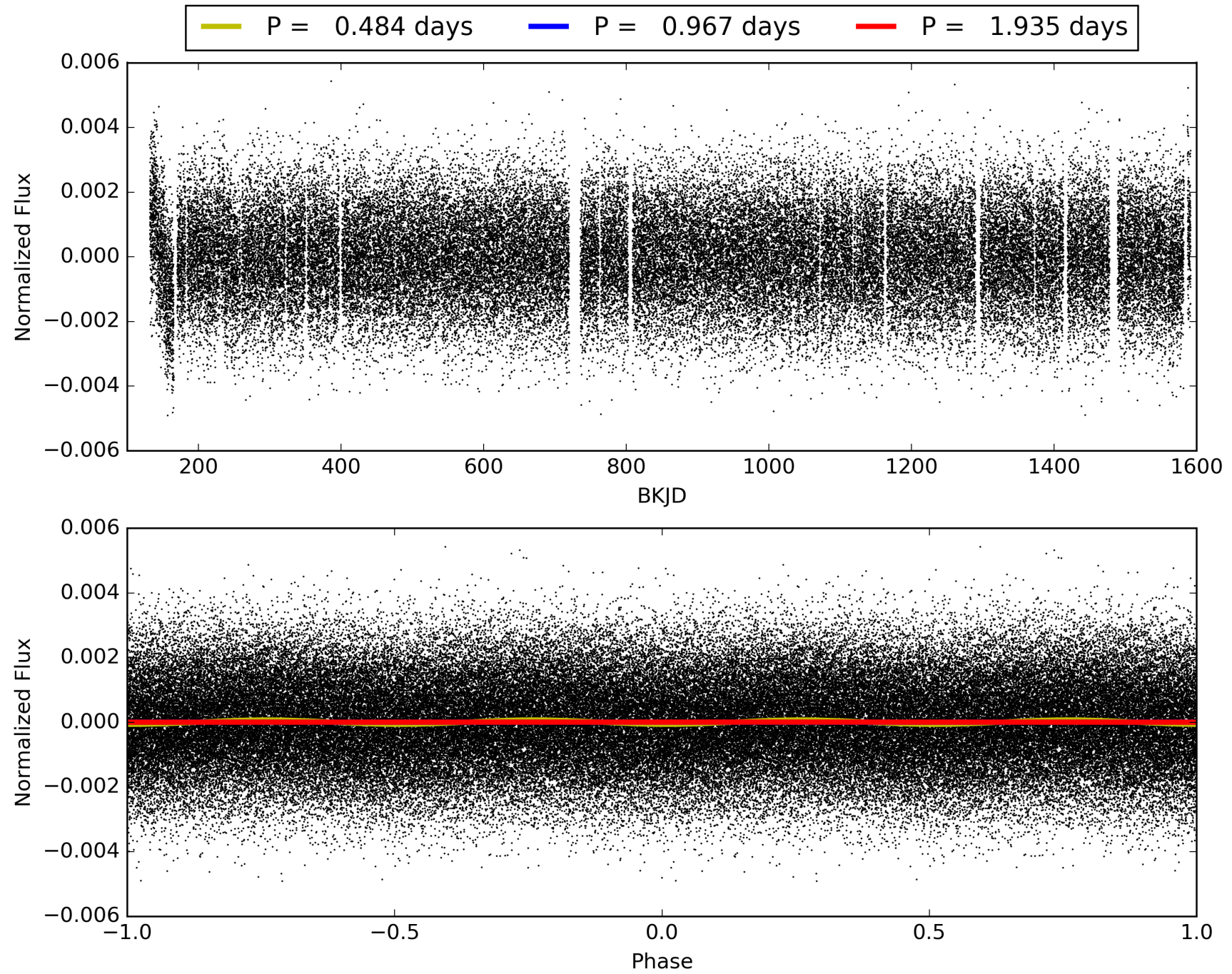
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:07:37 Z

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

TCE 009892624-04, PDC Light Curves

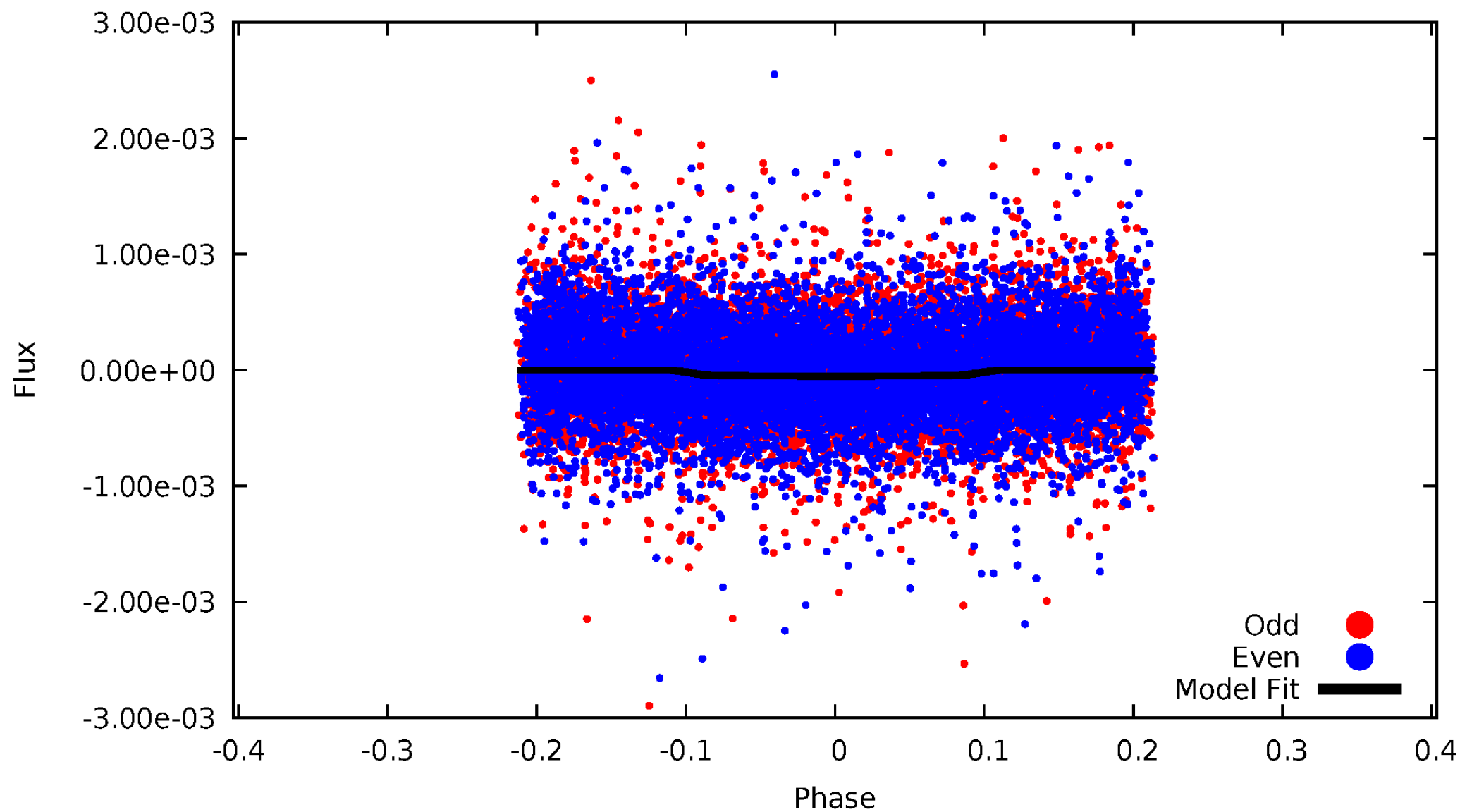


TCE 009892624-04



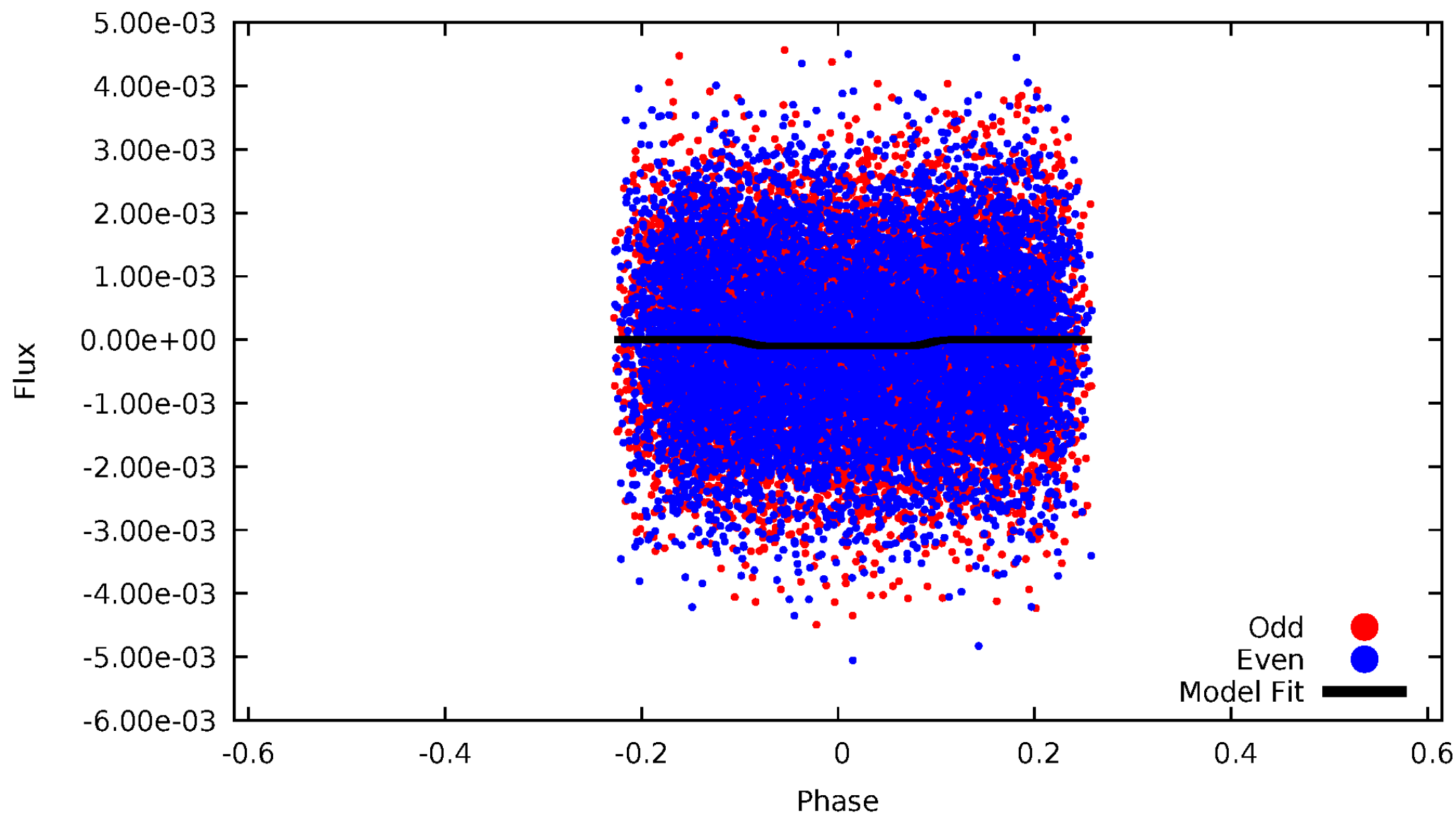
DV Odd/Even

TCE 009892624-04



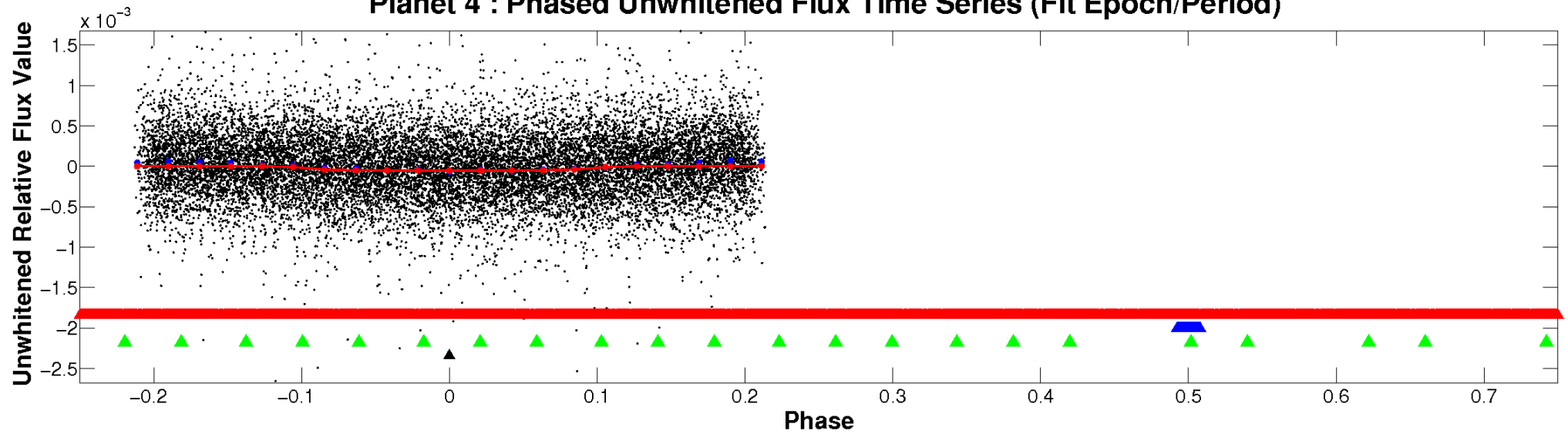
ALT Odd/Even

TCE 009892624-04

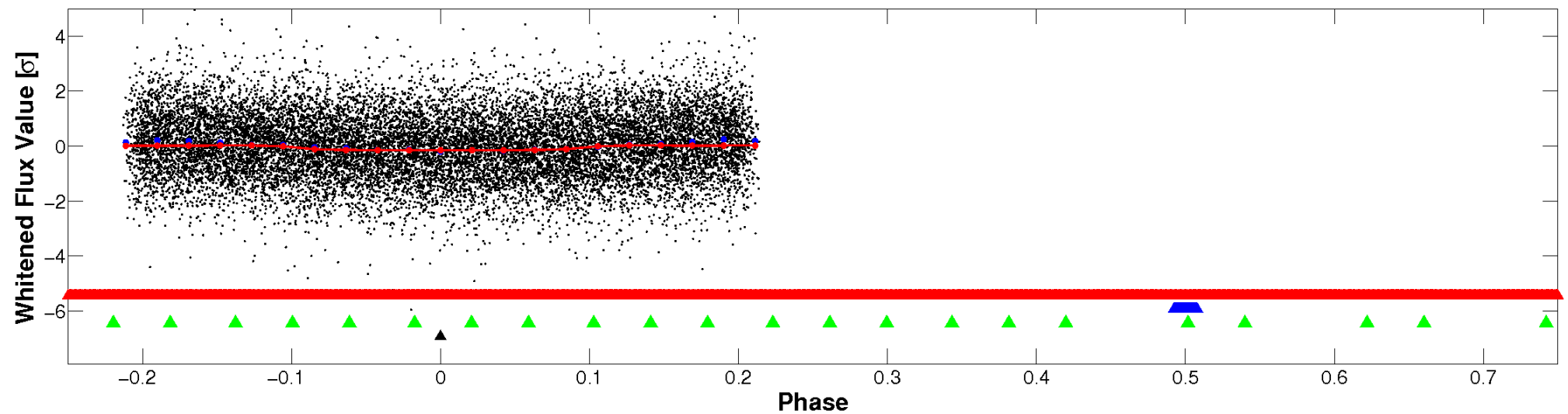


Non-Whitened Vs. Whitened Light Curve

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

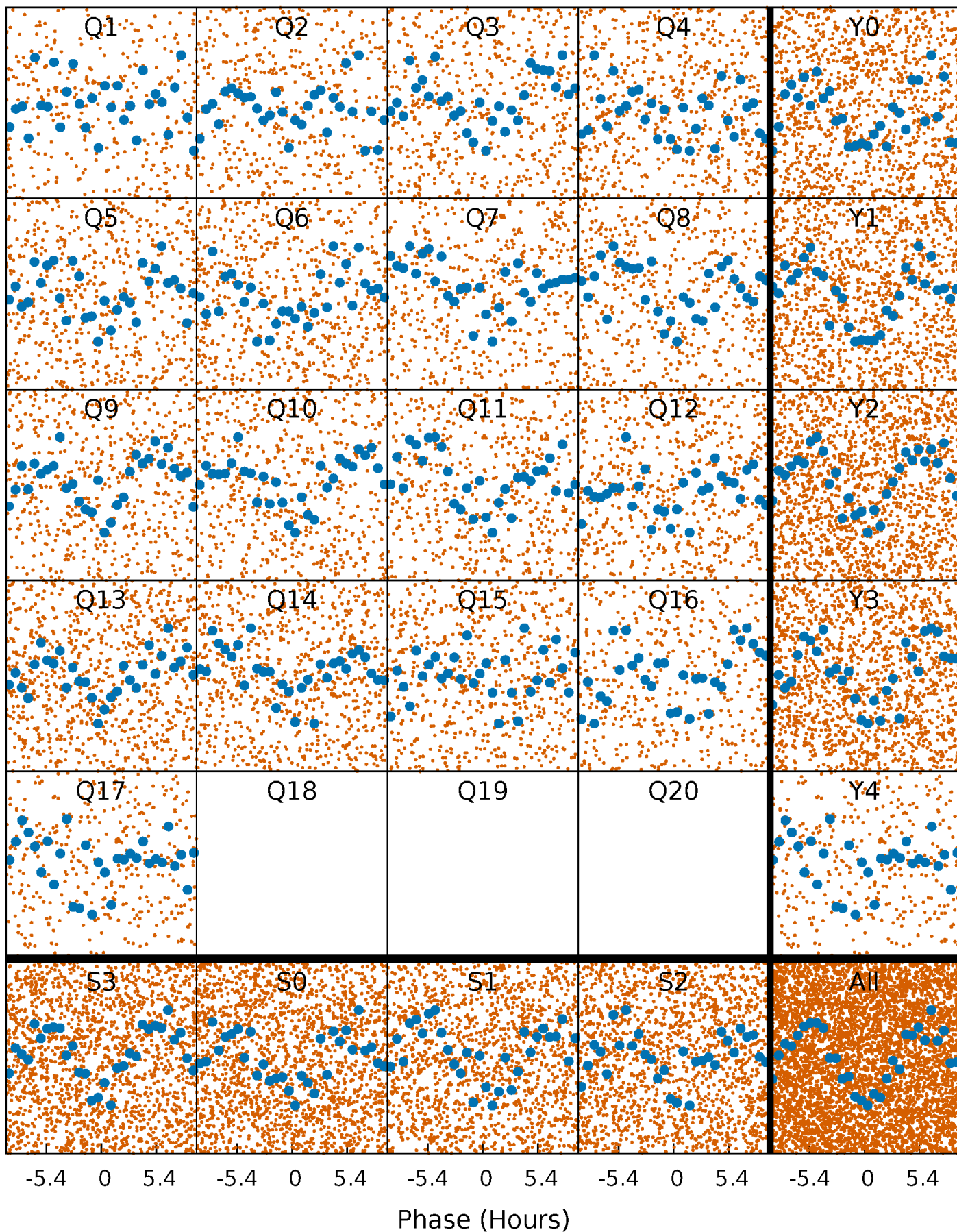


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



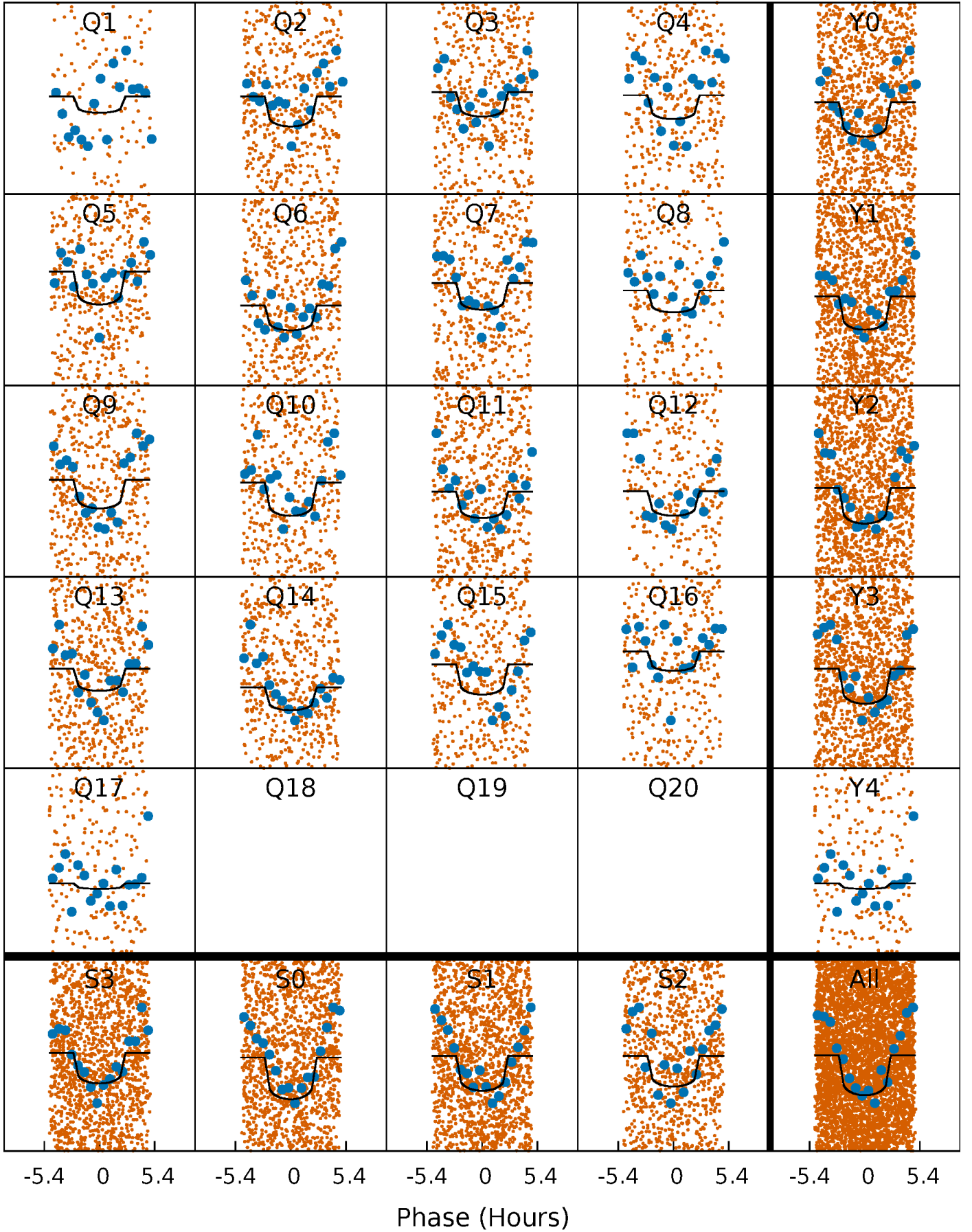
PDC Quarter-Phased Transit Curves

TCE 009892624-04 P= 0.967309 Days $T_0=131.734355$ (BKJD)



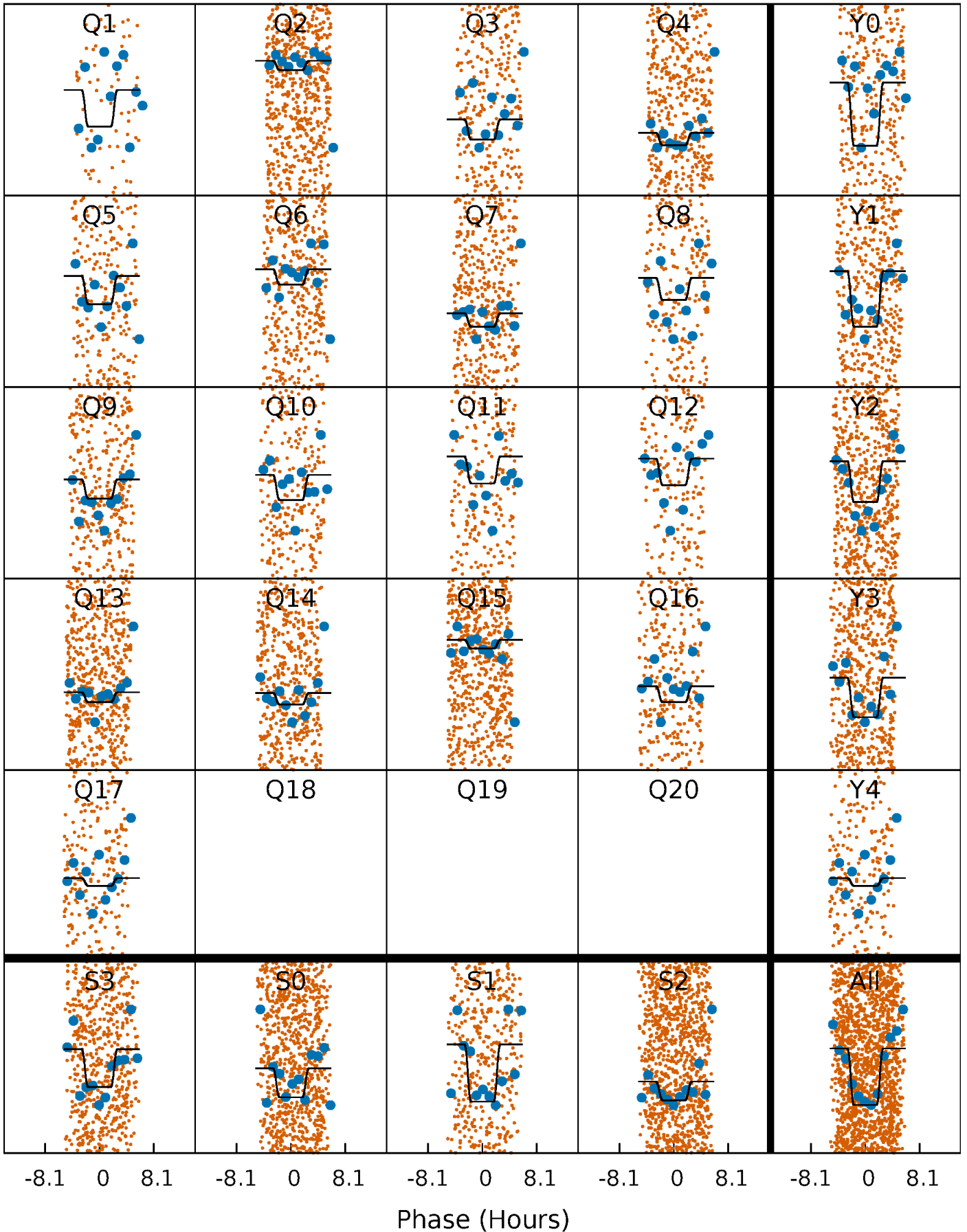
DV Quarter-Phased Transit Curves

TCE 009892624-04 P= 0.967309 Days $T_0=131.734355$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

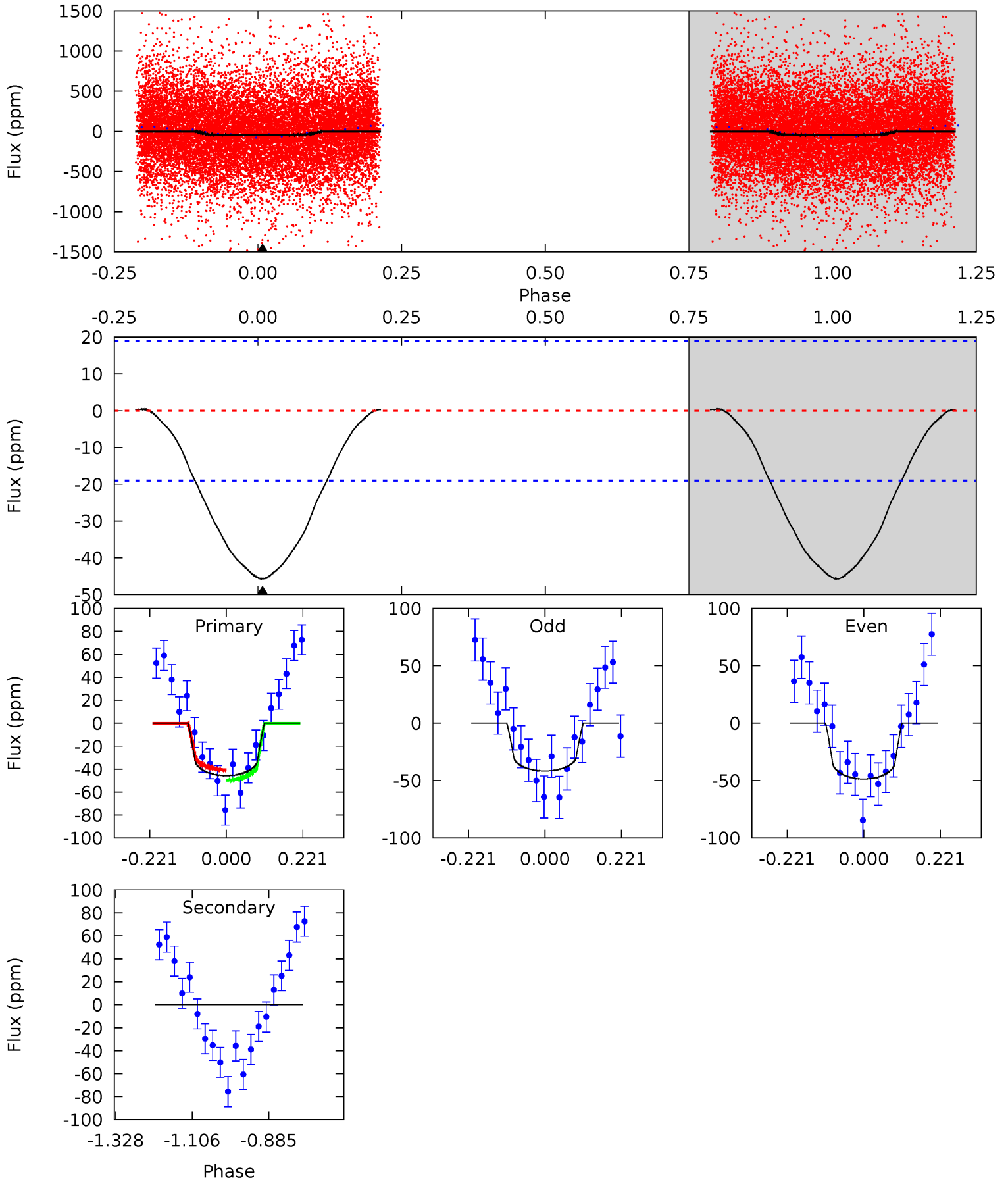
TCE 009892624-04 P= 0.967348 Days $T_0=131.691463$ (BKJD)



DV Model-Shift Uniqueness Test

009892624-04, P = 0.967309 Days, E = 130.767046 Days

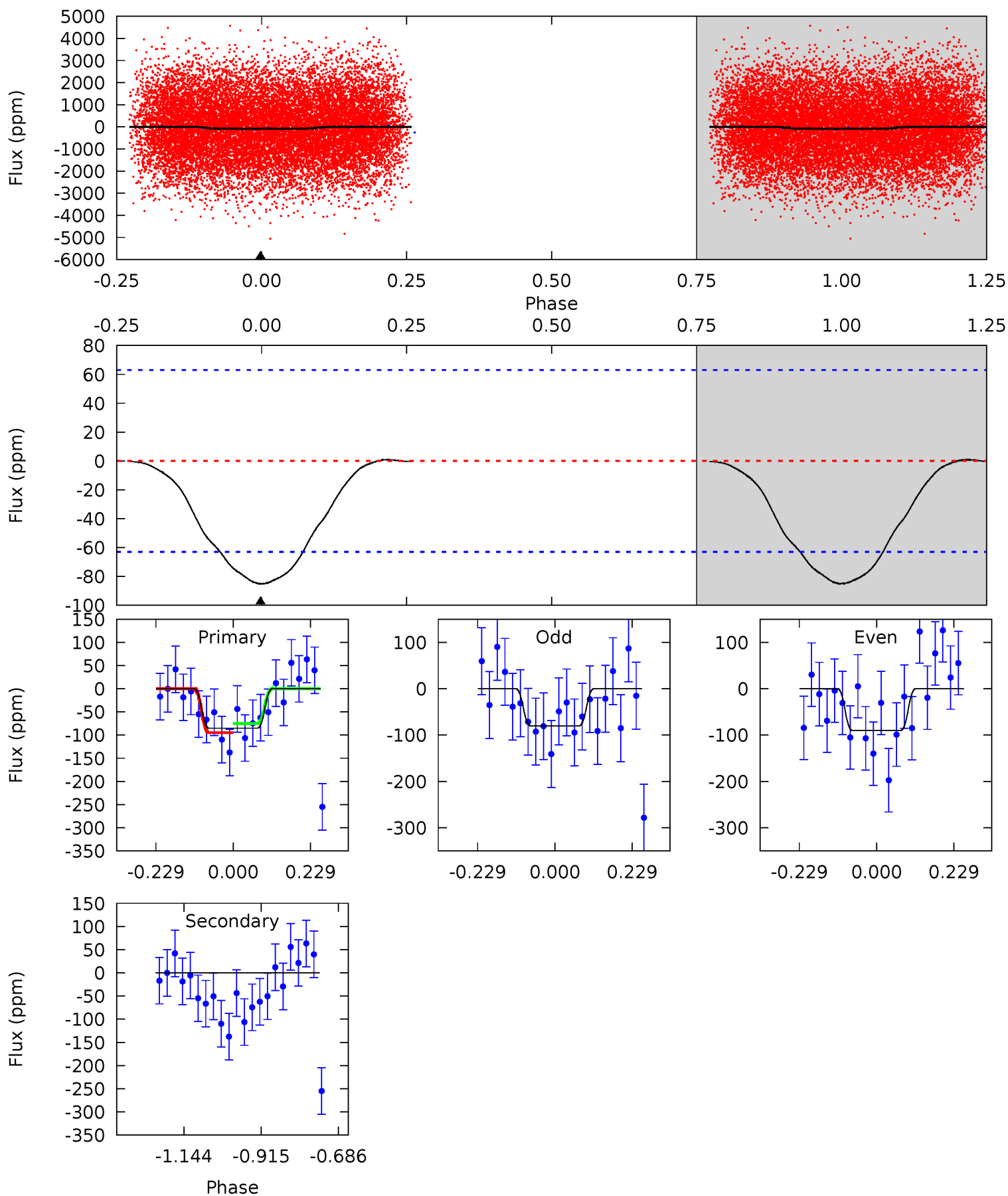
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.6	0	0	0	4.40	1.22	0.12	10.6	10.6	0	0	0.81	1.09	0.01	1.11



Alt Model-Shift Uniqueness Test

009892624-04, P = 0.967348 Days, E = 130.724115 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.93	0	0	0	4.39	1.20	0.07	5.93	5.93	0	0	0.35	0.84	0.01	0.70



Stellar Parameters For KIC 009892624

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7389^{+233}_{-311}	$4.117^{+0.140}_{-0.171}$	$-0.020^{+0.200}_{-0.350}$	$1.823^{+0.548}_{-0.365}$	$1.586^{+0.200}_{-0.244}$	$0.369^{+0.259}_{-0.175}$
	+3%/-4%	+3%/-4%	+1000%/-1750%	+30%/-20%	+13%/-15%	+70%/-47%
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 009892624-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 4	$1.45^{+0.88}_{-0.81}$	4123^{+297}_{-263}	-3792^{+7731}_{-953}	$-0.021^{+0.749}_{-0.758}$
Alt.	0 ± 14	$1.89^{+0.97}_{-0.82}$	4111^{+329}_{-265}	-3681^{+8260}_{-1324}	$0.030^{+1.277}_{-1.229}$

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 $A_{obs} \gg 1.0$

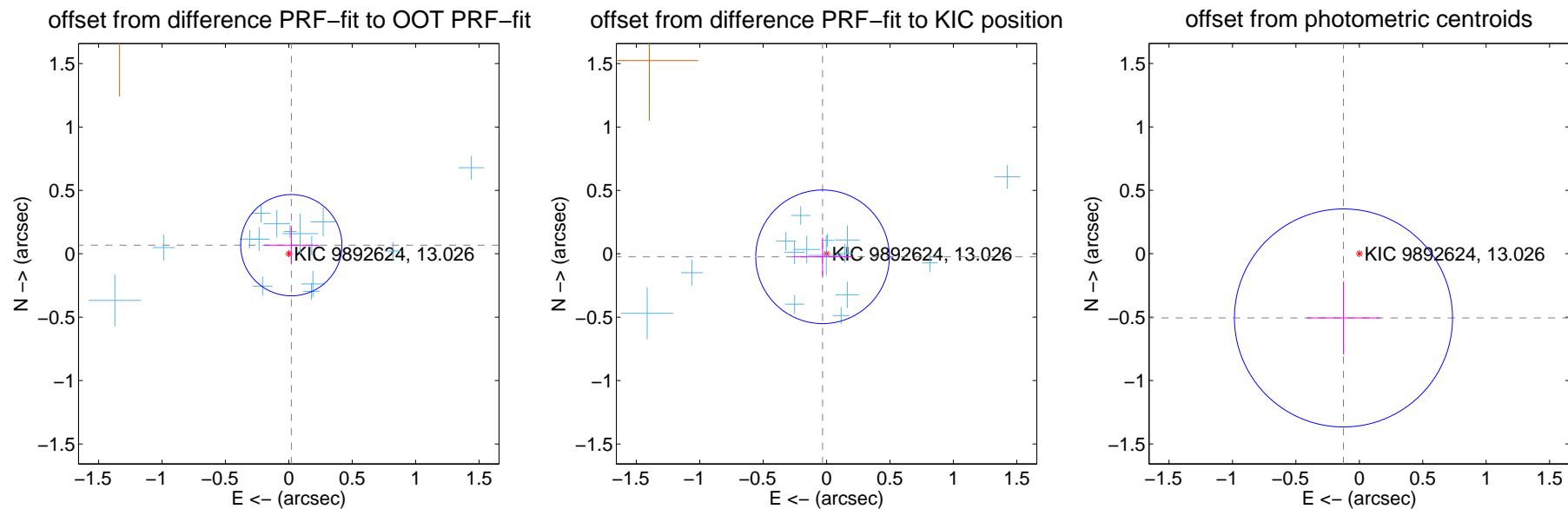
DV Centroid Data

Supplemental centroid analysis for 009892624-04. Kepler magnitude: 13.03. Transit SNR 11.88

There are 16 quarters with good PRF difference image offsets

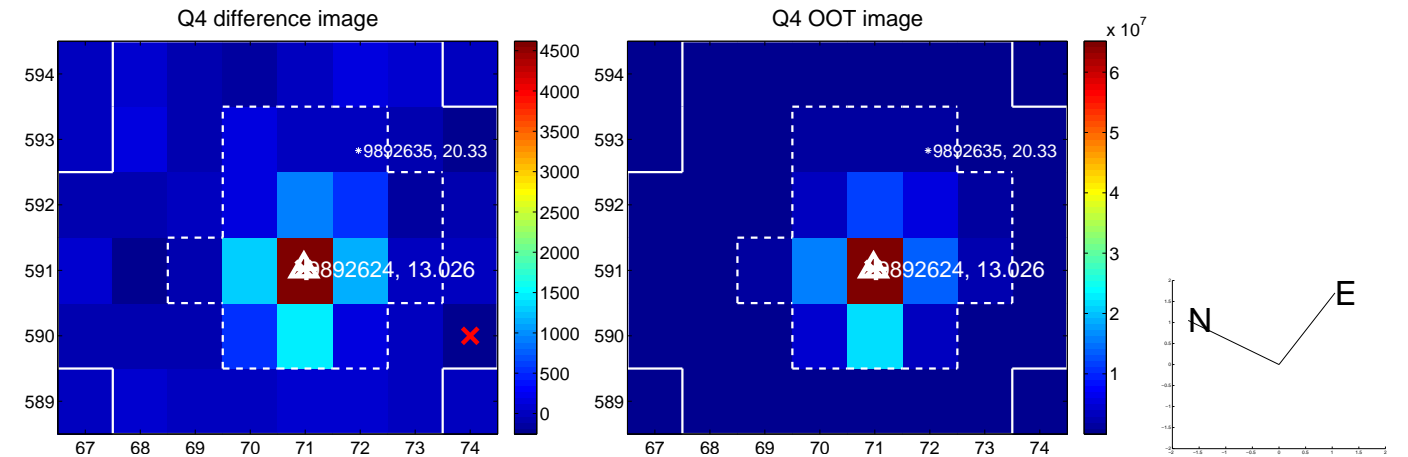
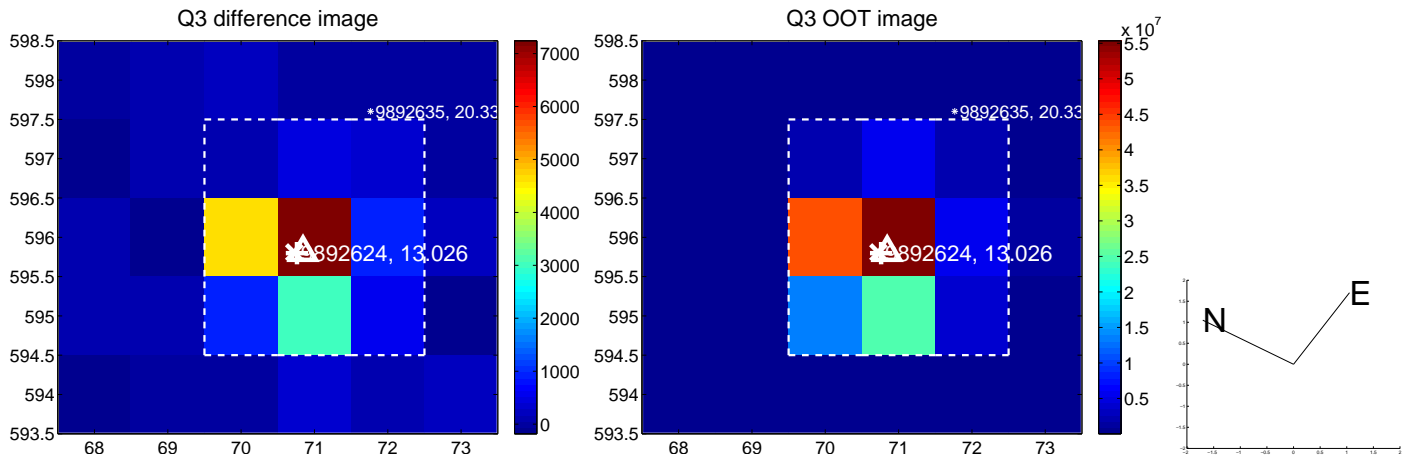
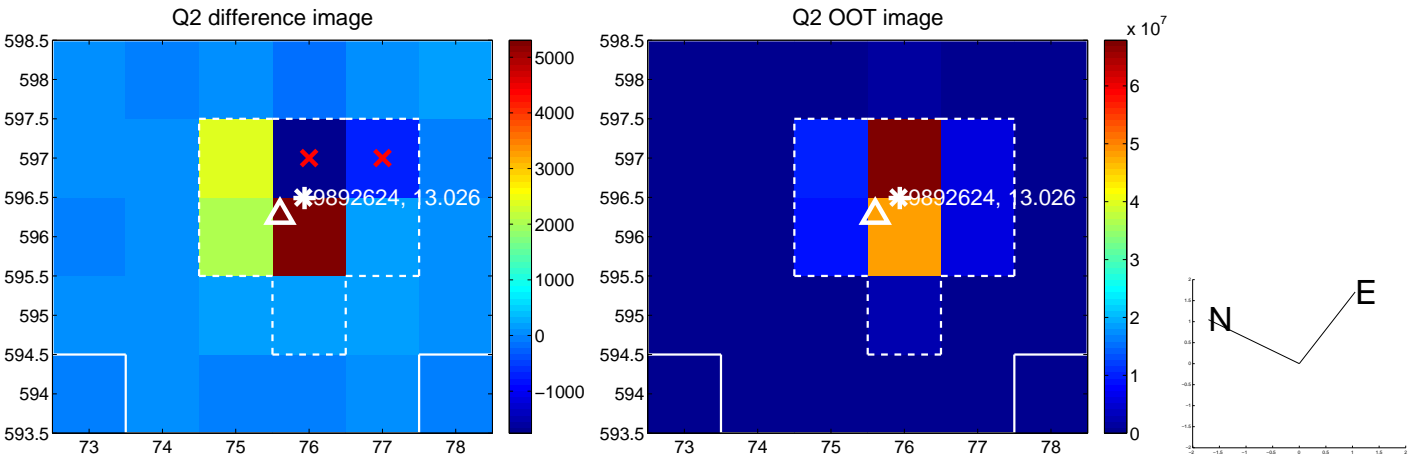
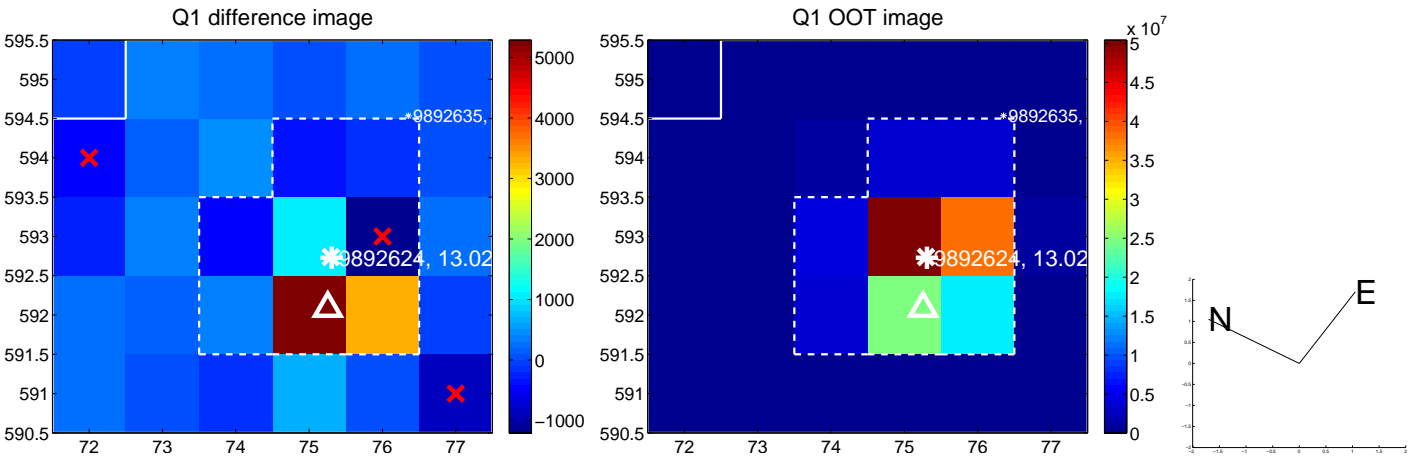
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.071 ± 0.133	0.53	-0.020 ± 0.215	0.068 ± 0.152
PRF-fit source offset from KIC position	0.040 ± 0.176	0.23	0.032 ± 0.235	-0.024 ± 0.151
photometric centroid source offset	0.52 ± 0.29	1.82	0.12 ± 0.29	-0.51 ± 0.29

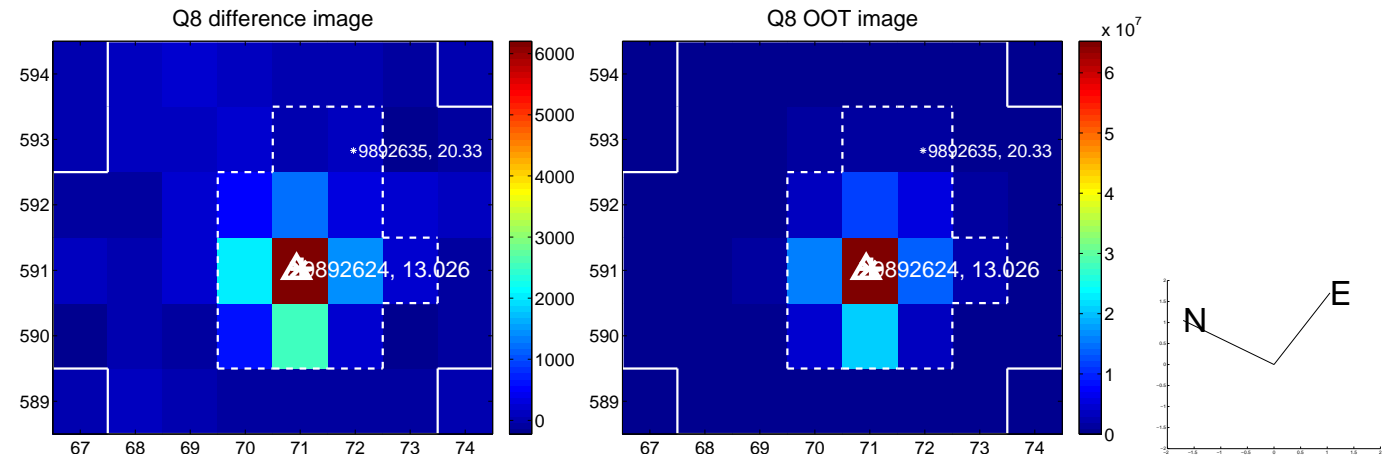
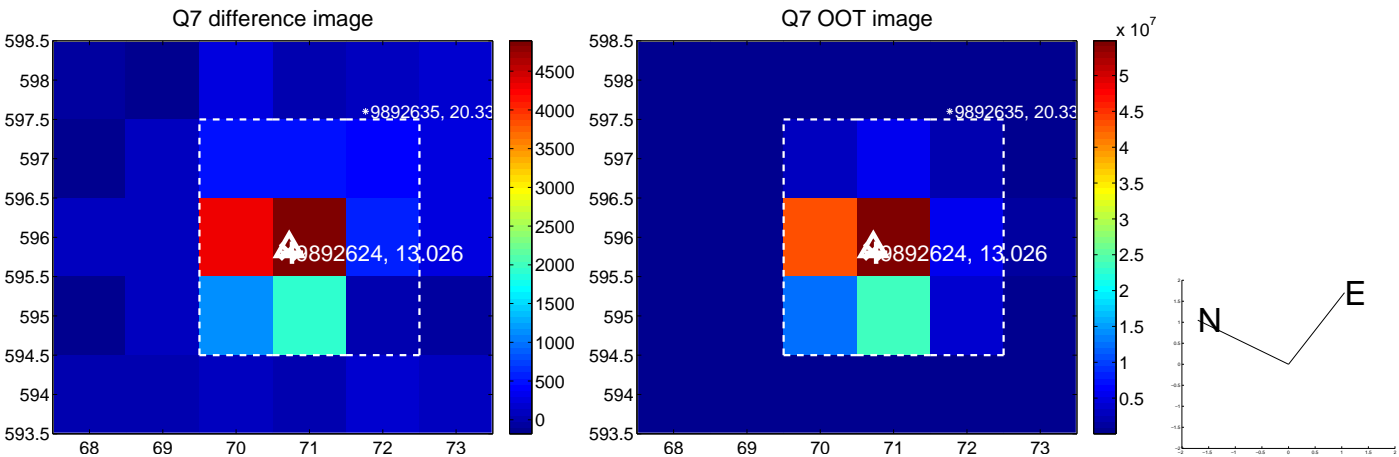
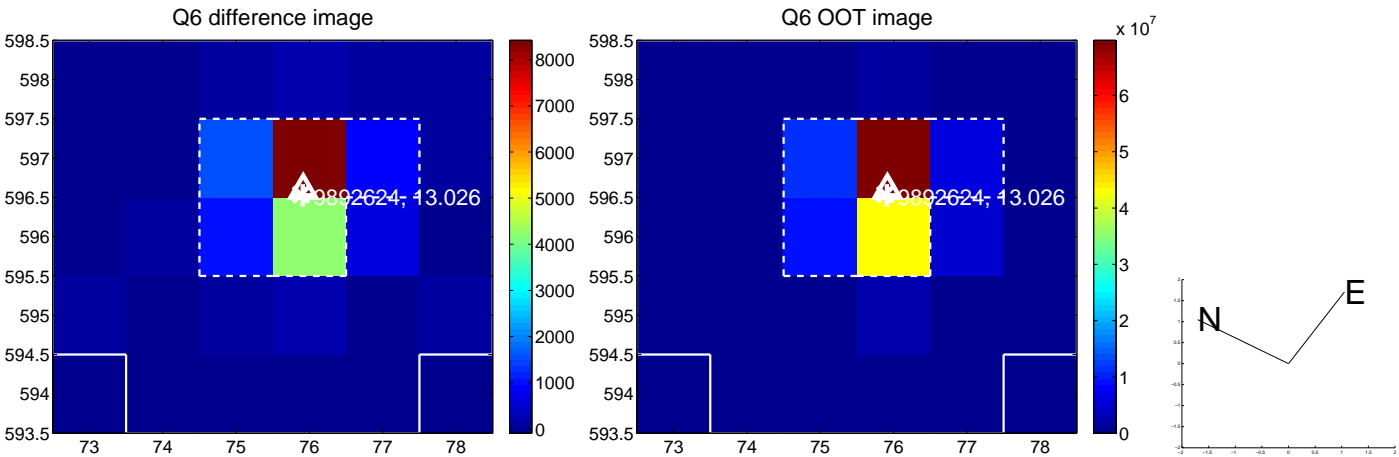
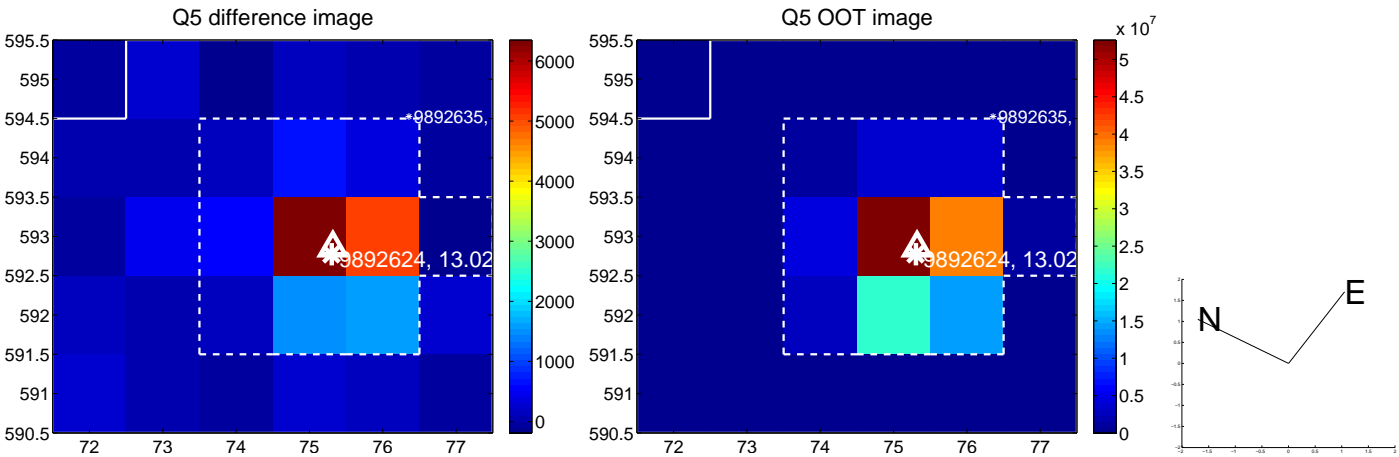


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

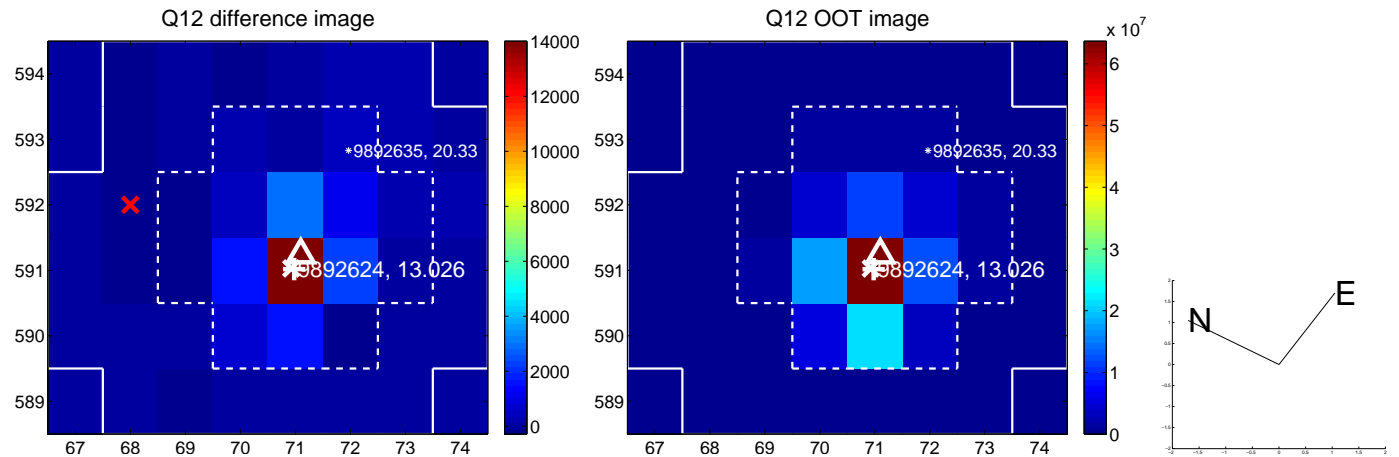
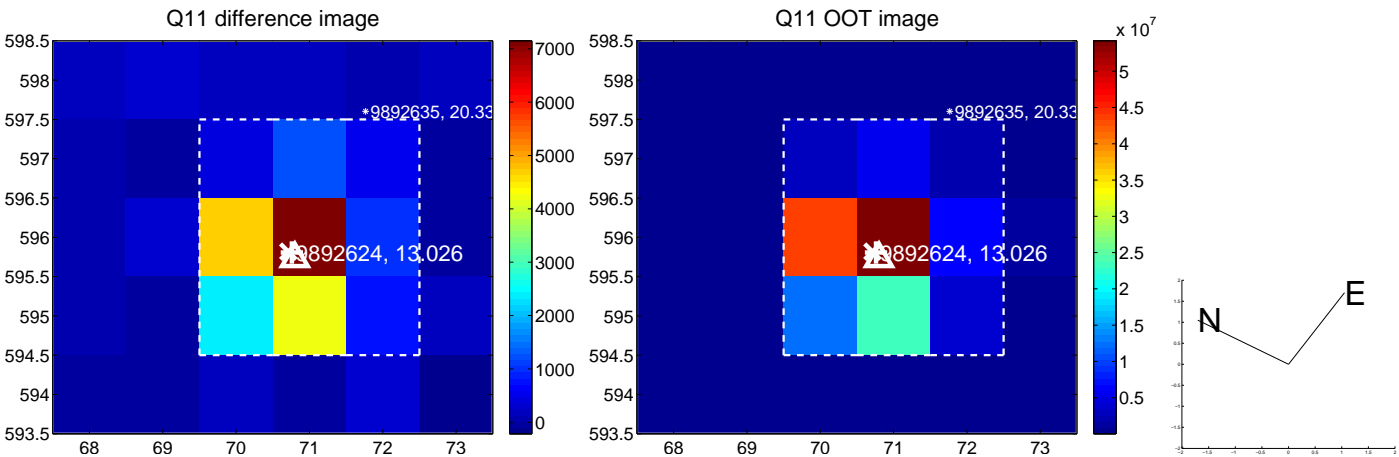
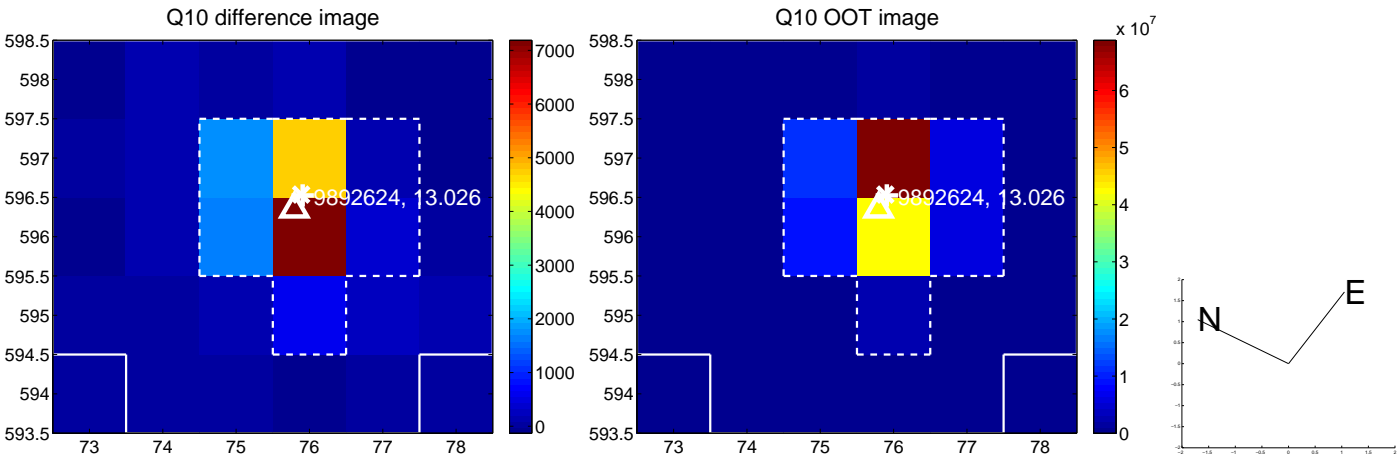
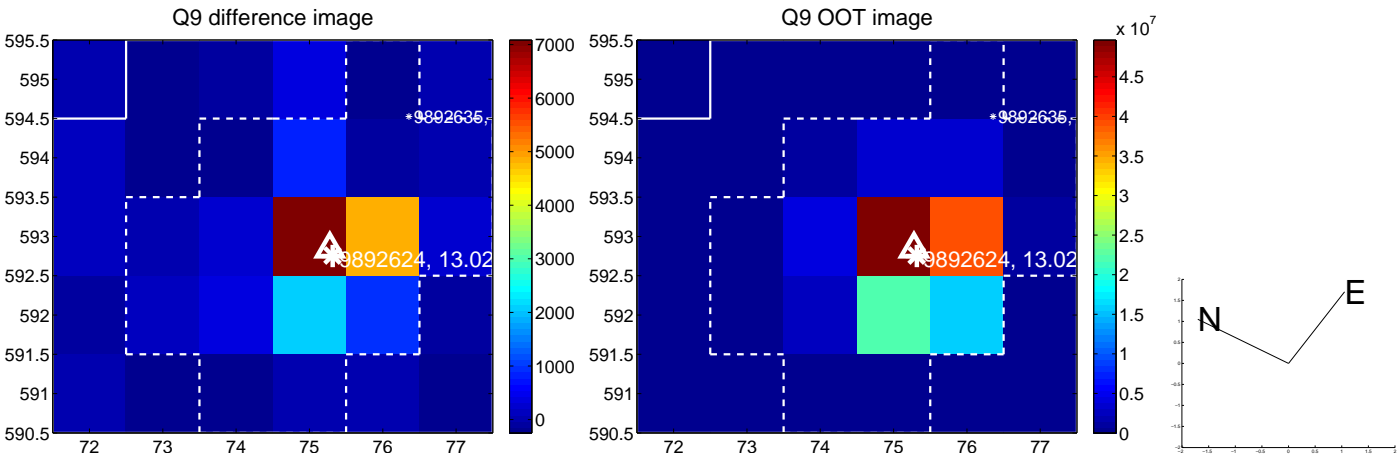
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



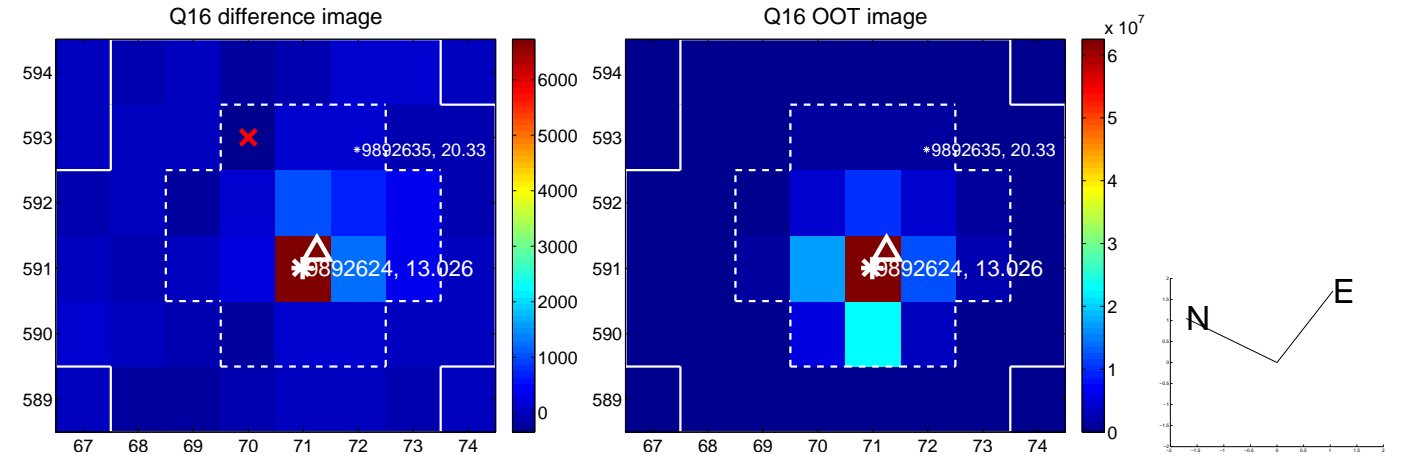
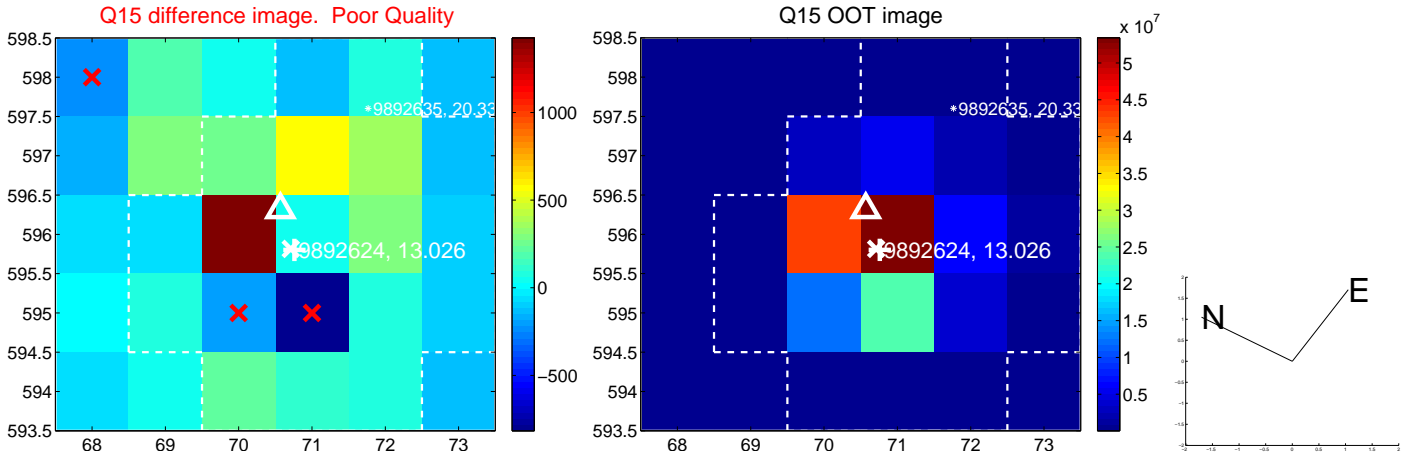
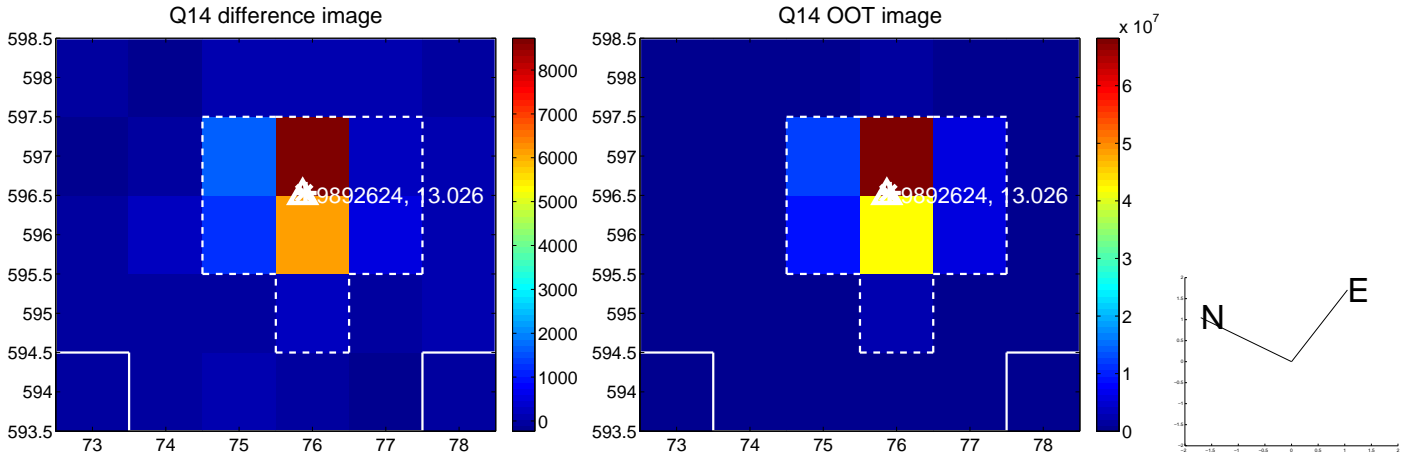
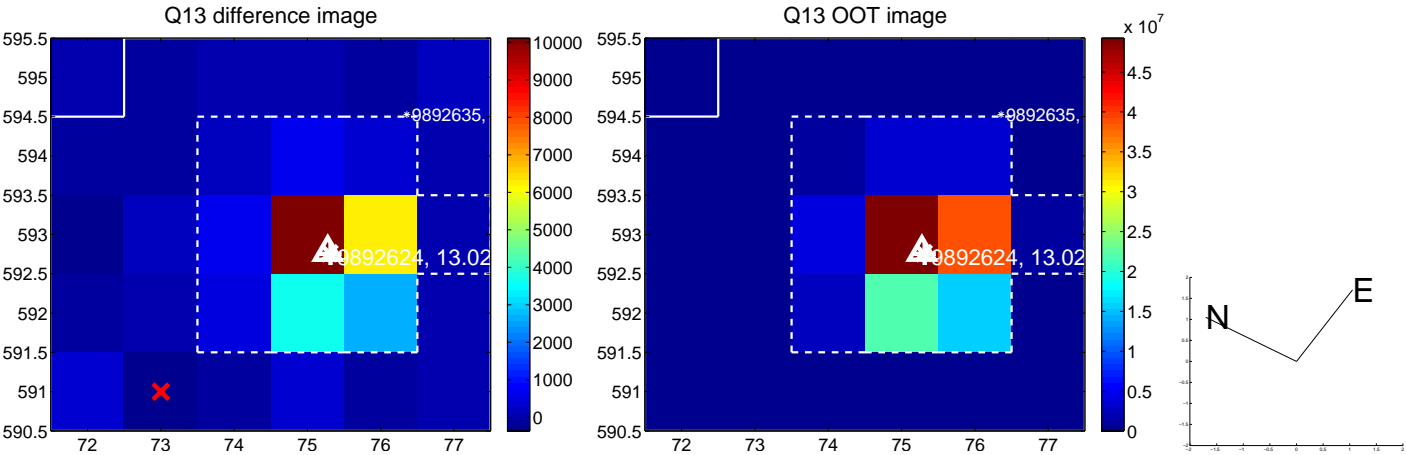
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



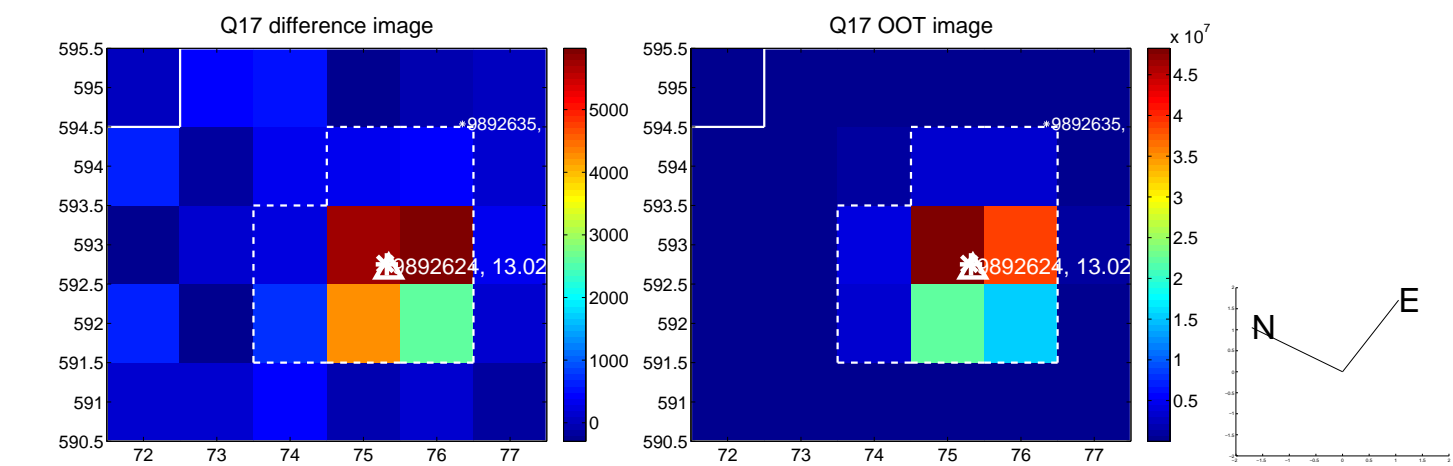
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



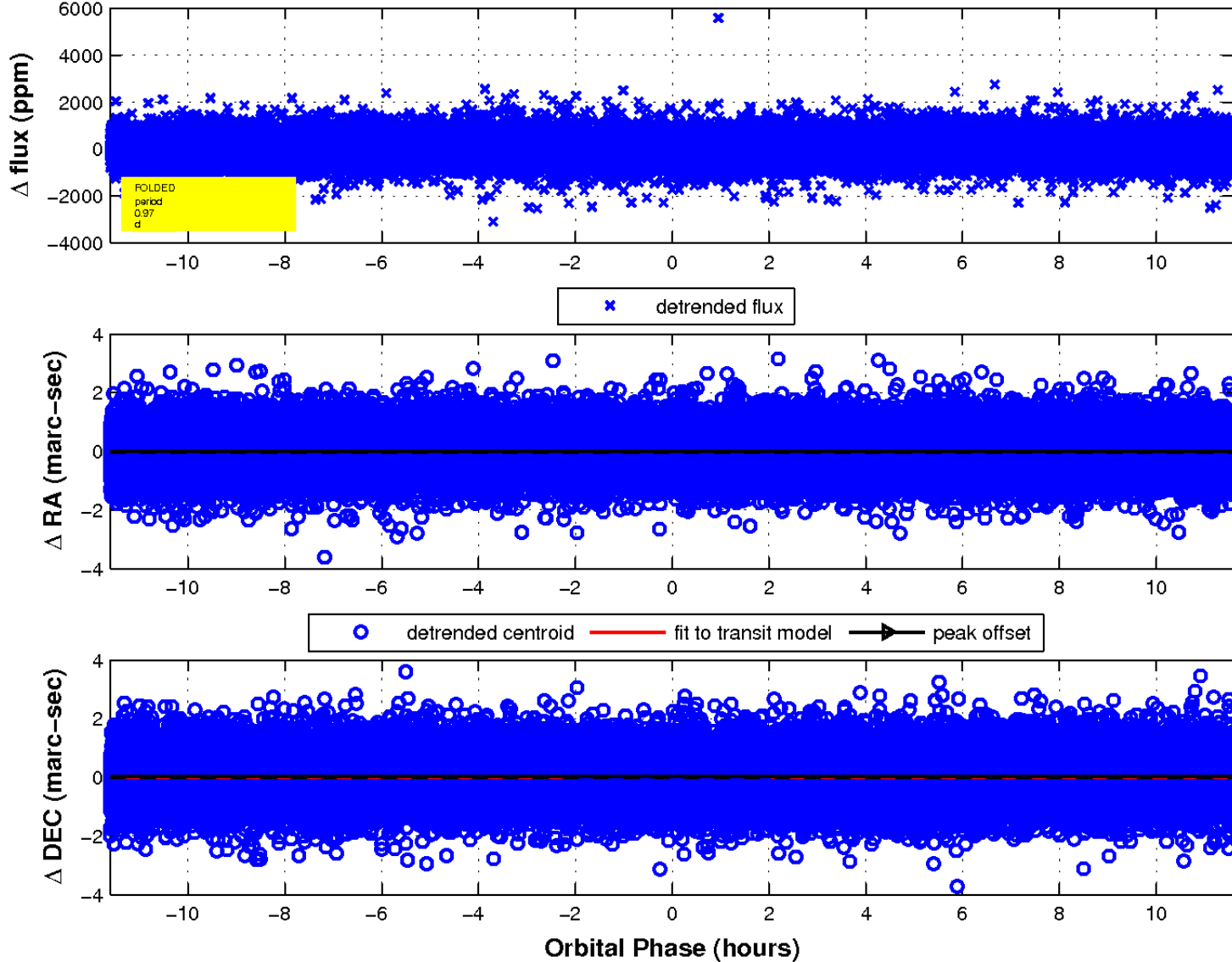
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 4 of 4



UKIRT Image

Declination

