

KIC 009410527

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})
009410527-01	OBS	No	2.391951	131.790735	127.5	7.078	8.2	9.5	1.63	7266	2.26	3857.92
009410527-02	OBS	No	1.195919	132.434047	99.0	7.571	10.4	11.3	1.63	7266	1.65	9721.97
009410527-03	OBS	No	5.473845	133.257074	139.9	23.648	12.0	5.9	1.63	7266	2.06	1279.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009410527-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009410527-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD
009410527-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_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.

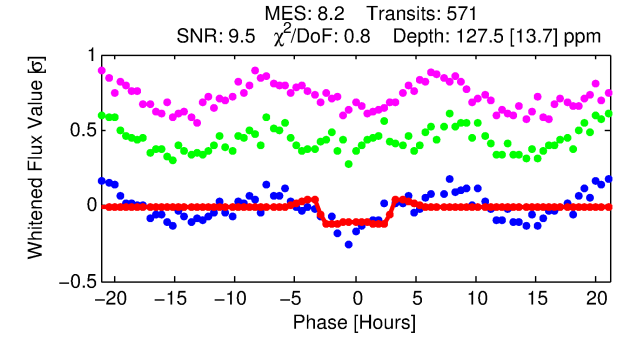
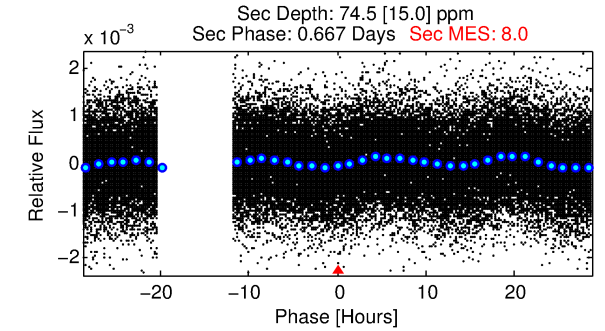
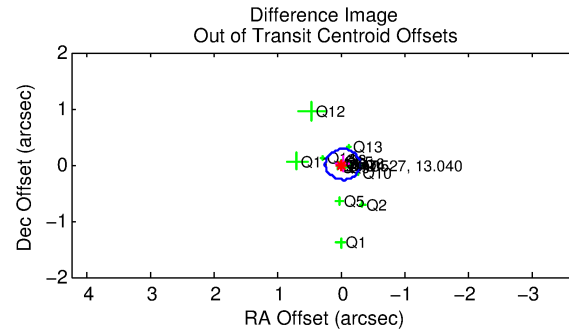
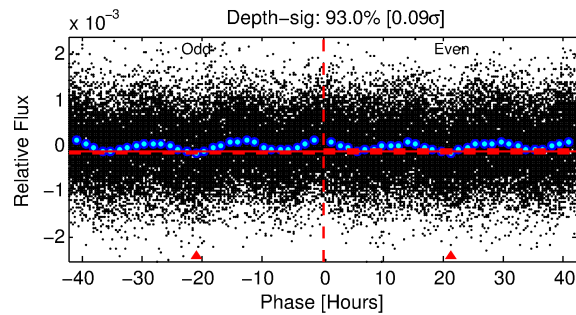
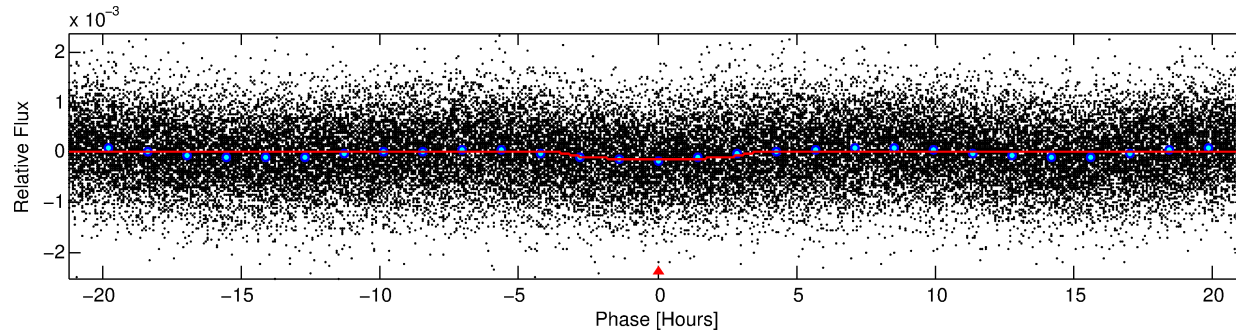
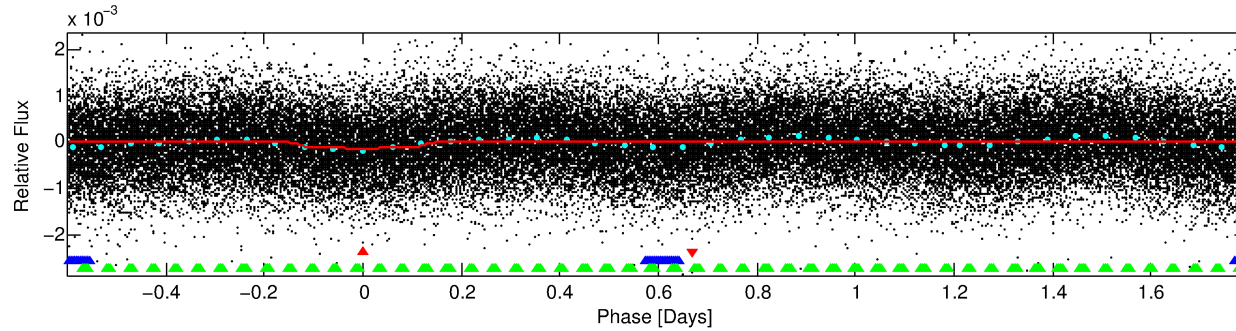
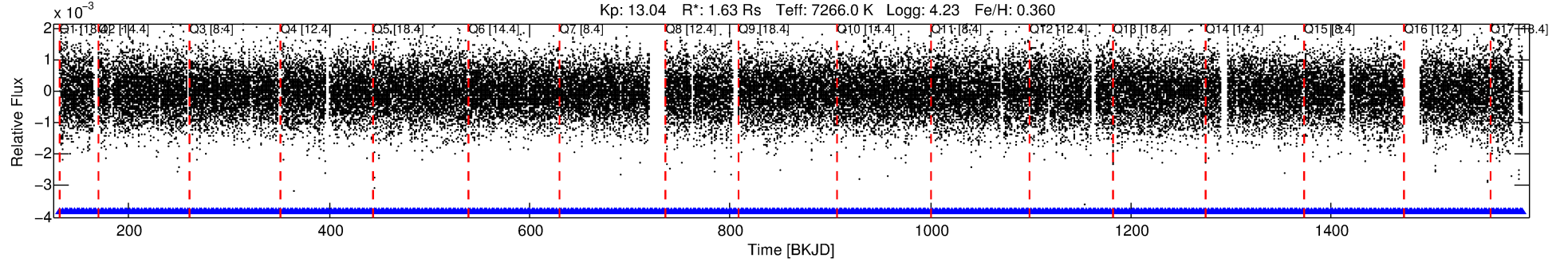
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009410527-01

No Significant Match Found

DV One-Page Summary

KIC: 9410527 Candidate: 1 of 3 Period: 2.392 d



DV Fit Results:

Period = 2.39195 [0.00002] d
Epoch = 131.7907 [0.0059] BKJD
Rp/R* = 0.0127 [0.0009]
a/R* = 1.31 [0.16]
b = 0.95 [0.03]
Seff = 3857.92 [1792.17]
Teq = 2010 [233] K
Rp = 2.26 [0.86] Re
a = 0.0414 [0.0125] AU
Ag = 13.78 [6.77] [1.89 σ]
Teffp = 5986 [465] K [7.64 σ]

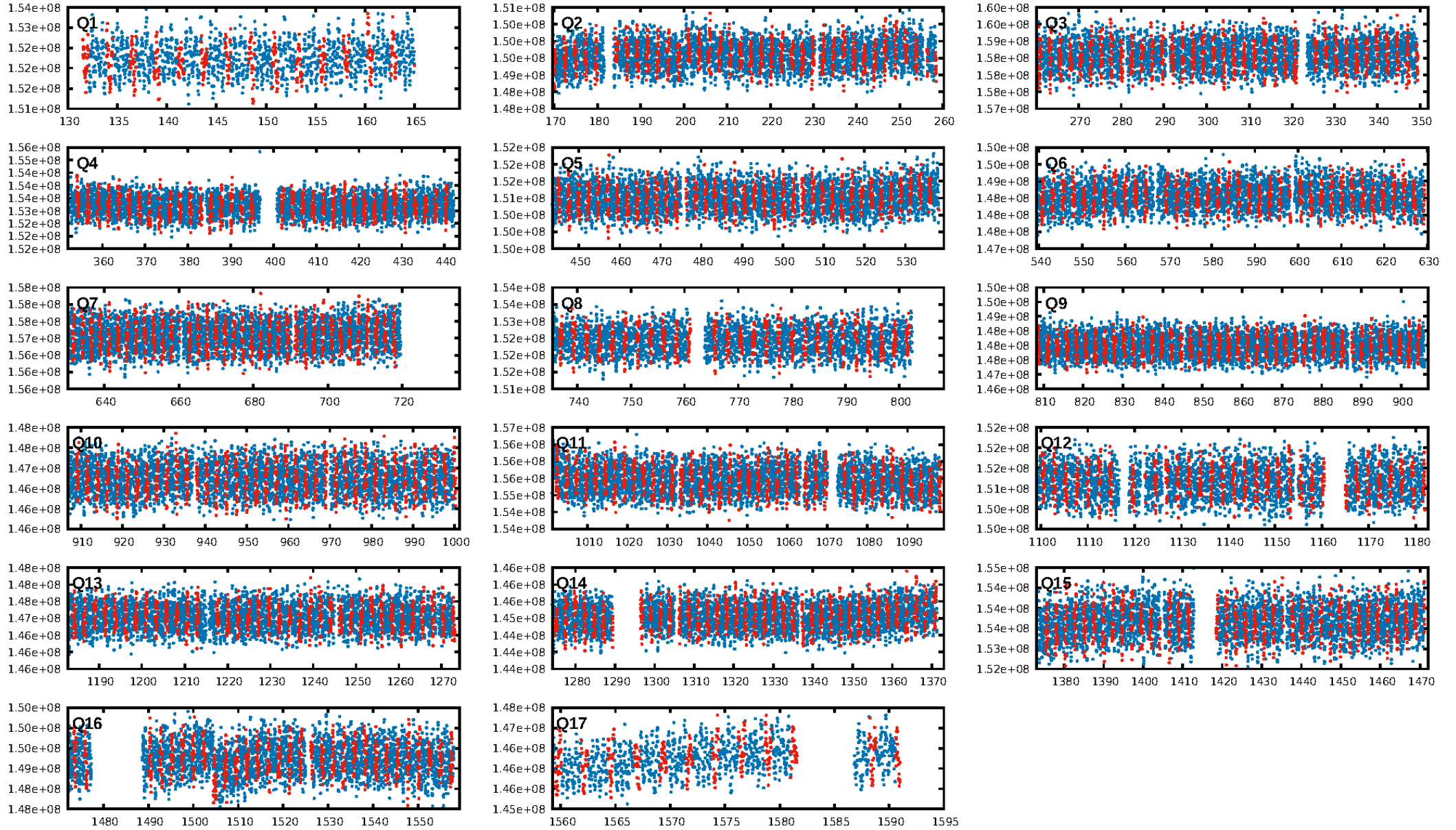
DV Diagnostic Results:

ShortPeriod-sig: 99.4% [2.77 σ]
LongPeriod-sig: 99.7% [3.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [545/545]
GhostDiagnostic-chr: 1.671
Centroid-sig: 0.8%
Centroid-so: 0.251 arcsec [1.52 σ]
OotOffset-rm: 0.019 arcsec [0.21 σ]
KicOffset-rm: 0.046 arcsec [0.37 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.59 [10/17]
DiffImageOverlap-fno: 0.00 [0/17]

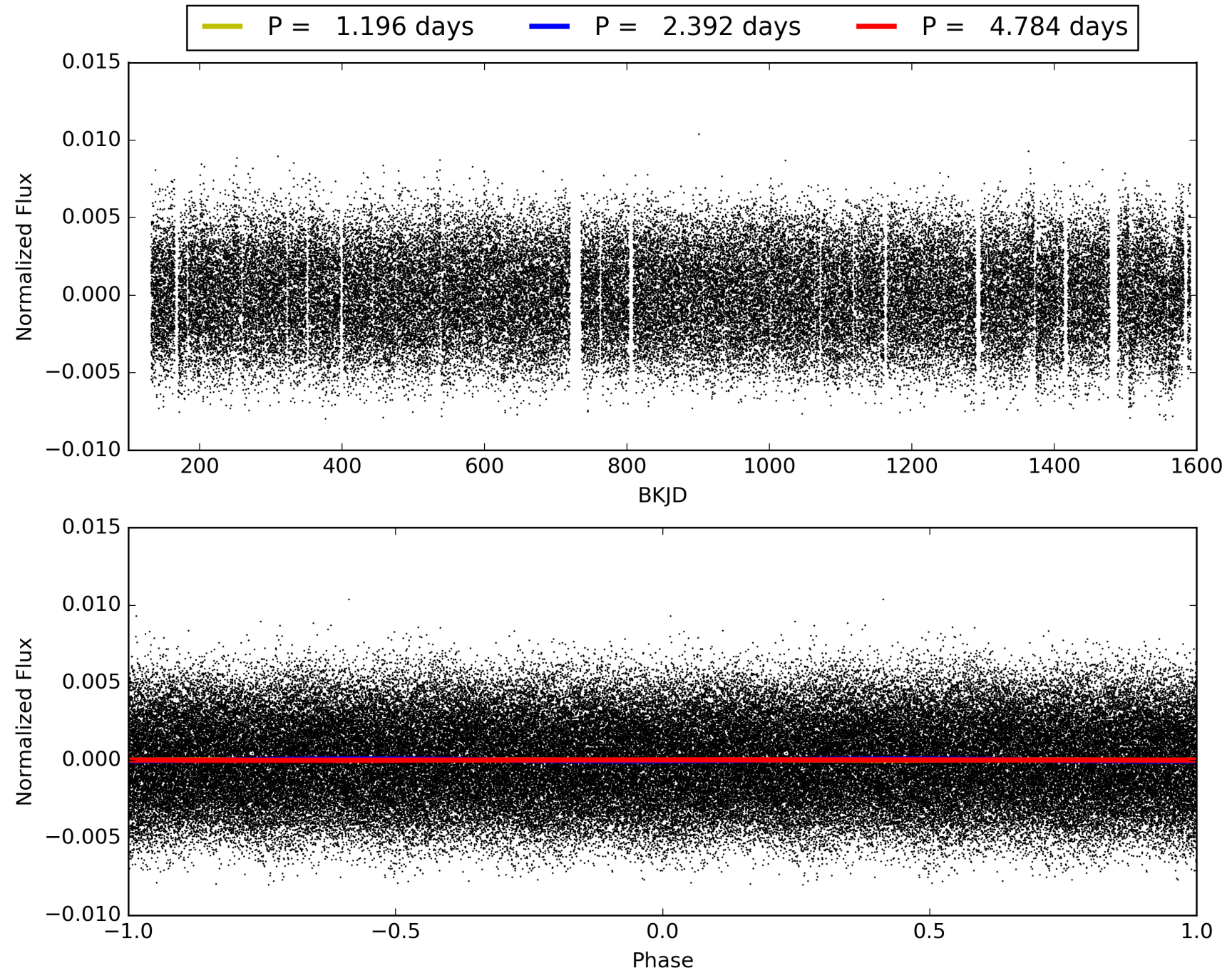
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009410527-01, PDC Light Curves

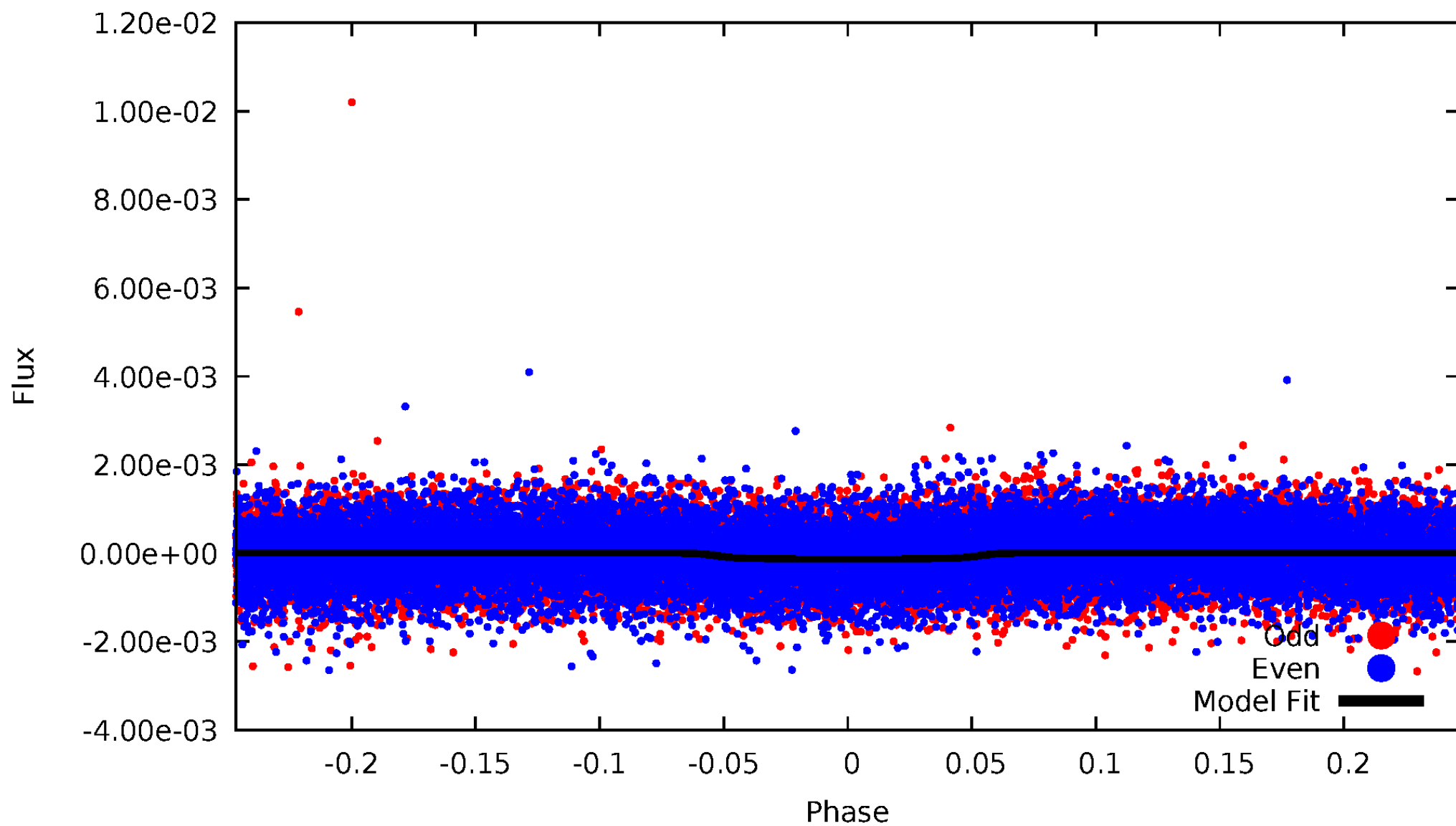


TCE 009410527-01



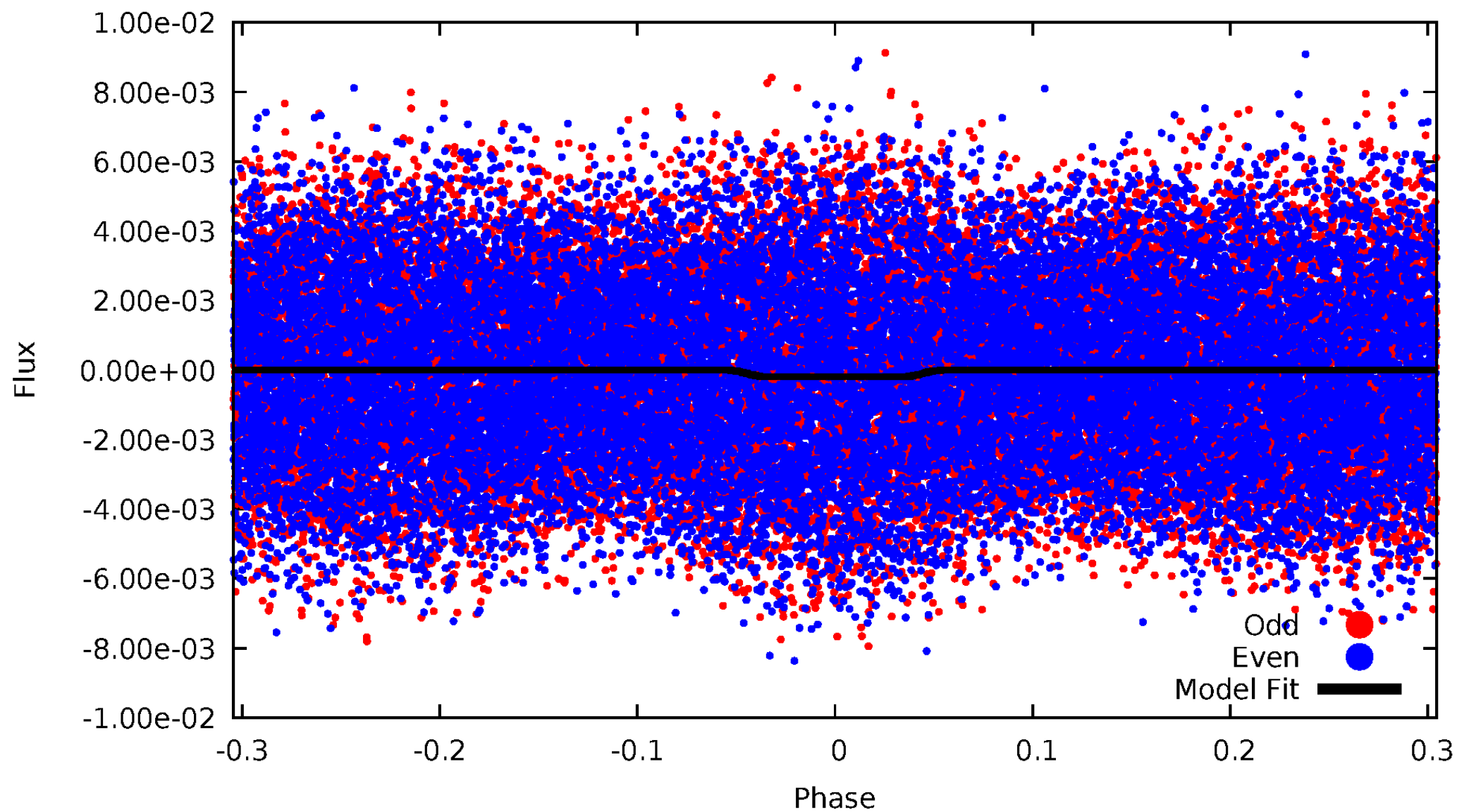
DV Odd/Even

TCE 009410527-01



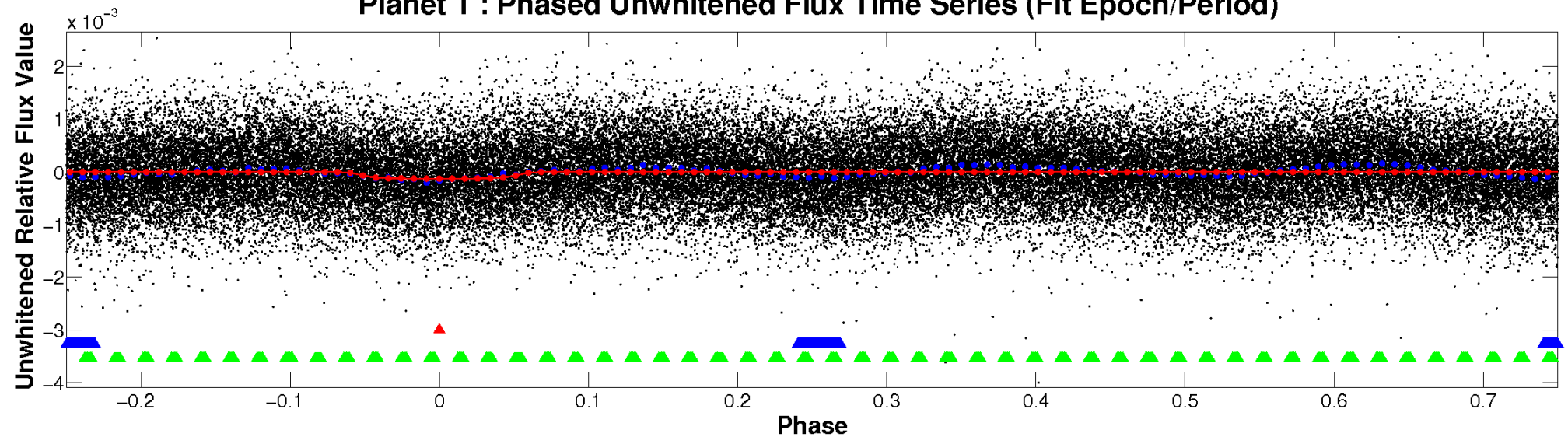
ALT Odd/Even

TCE 009410527-01

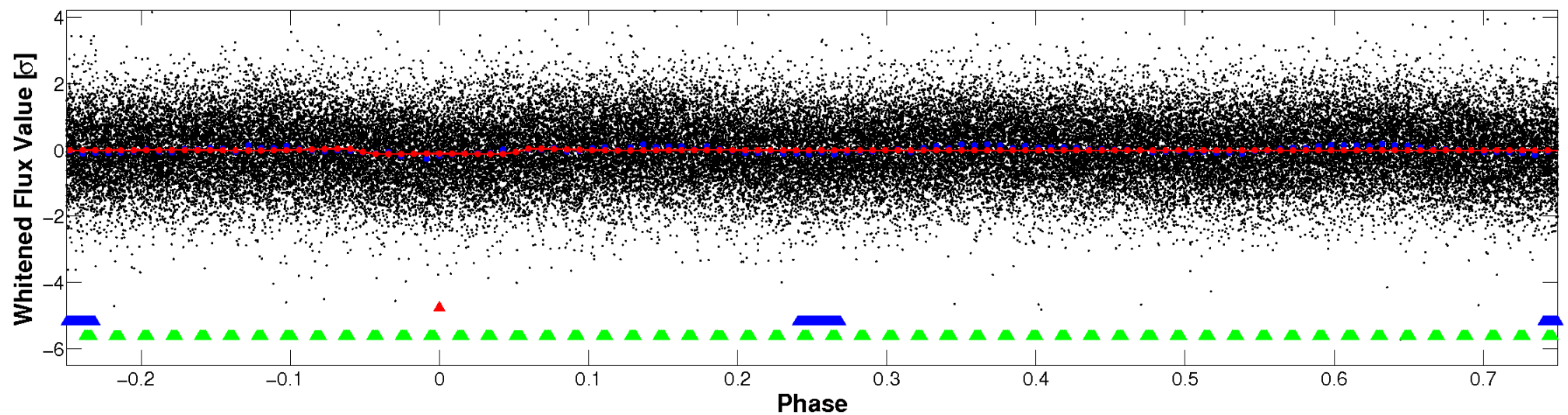


Non-Whitened Vs. Whitened Light Curve

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

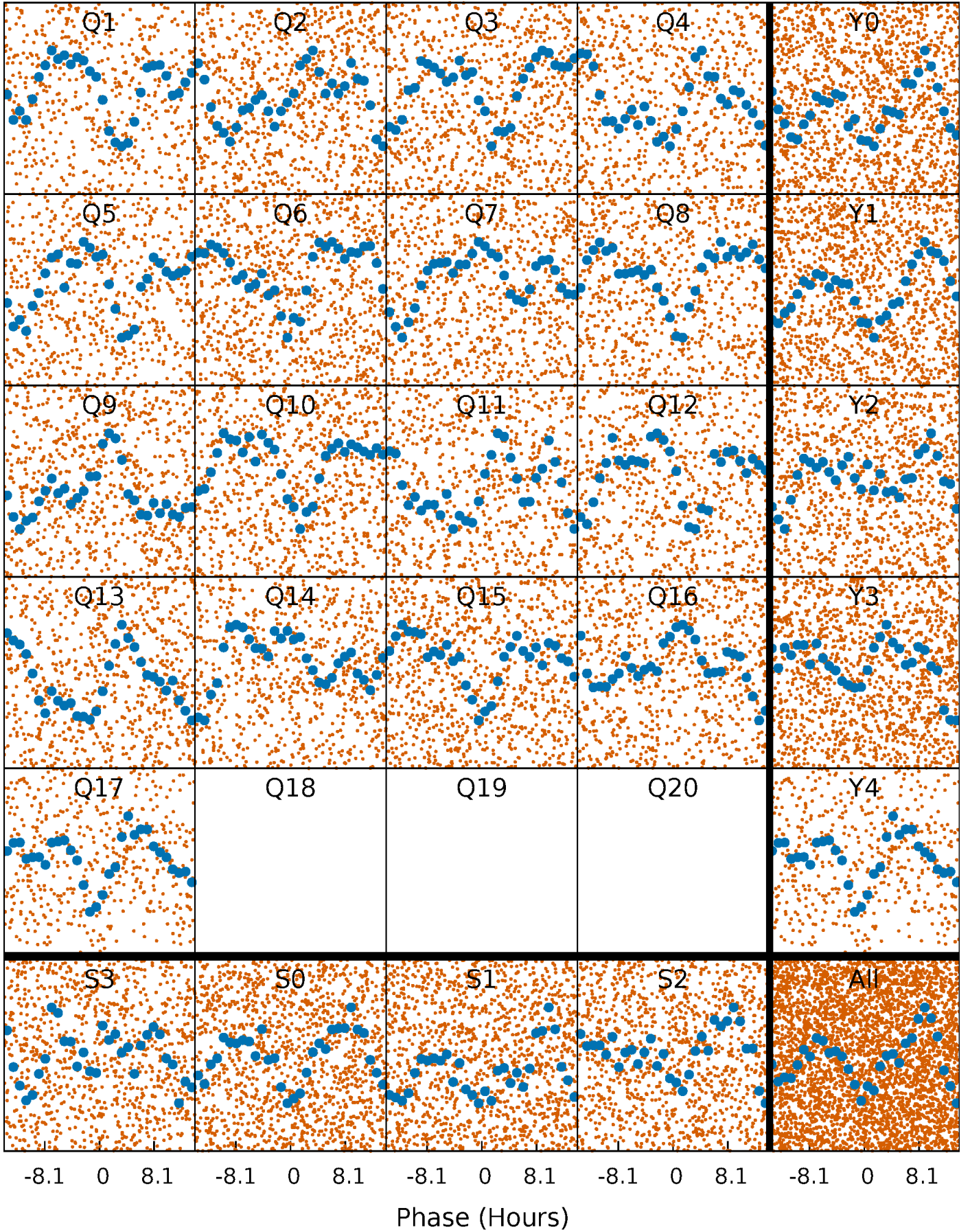


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



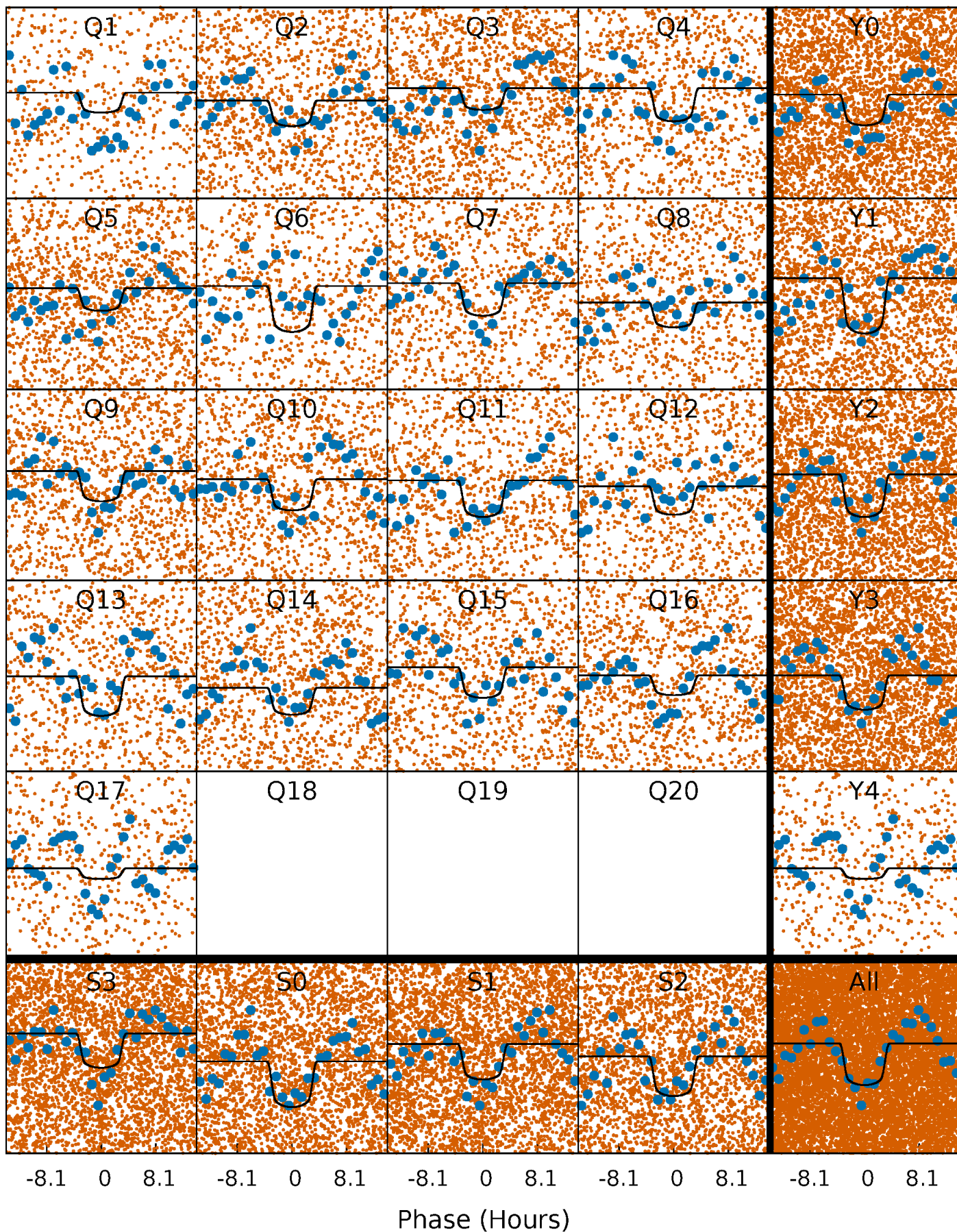
PDC Quarter-Phased Transit Curves

TCE 009410527-01 P= 2.391951 Days $T_0=131.790735$ (BKJD)



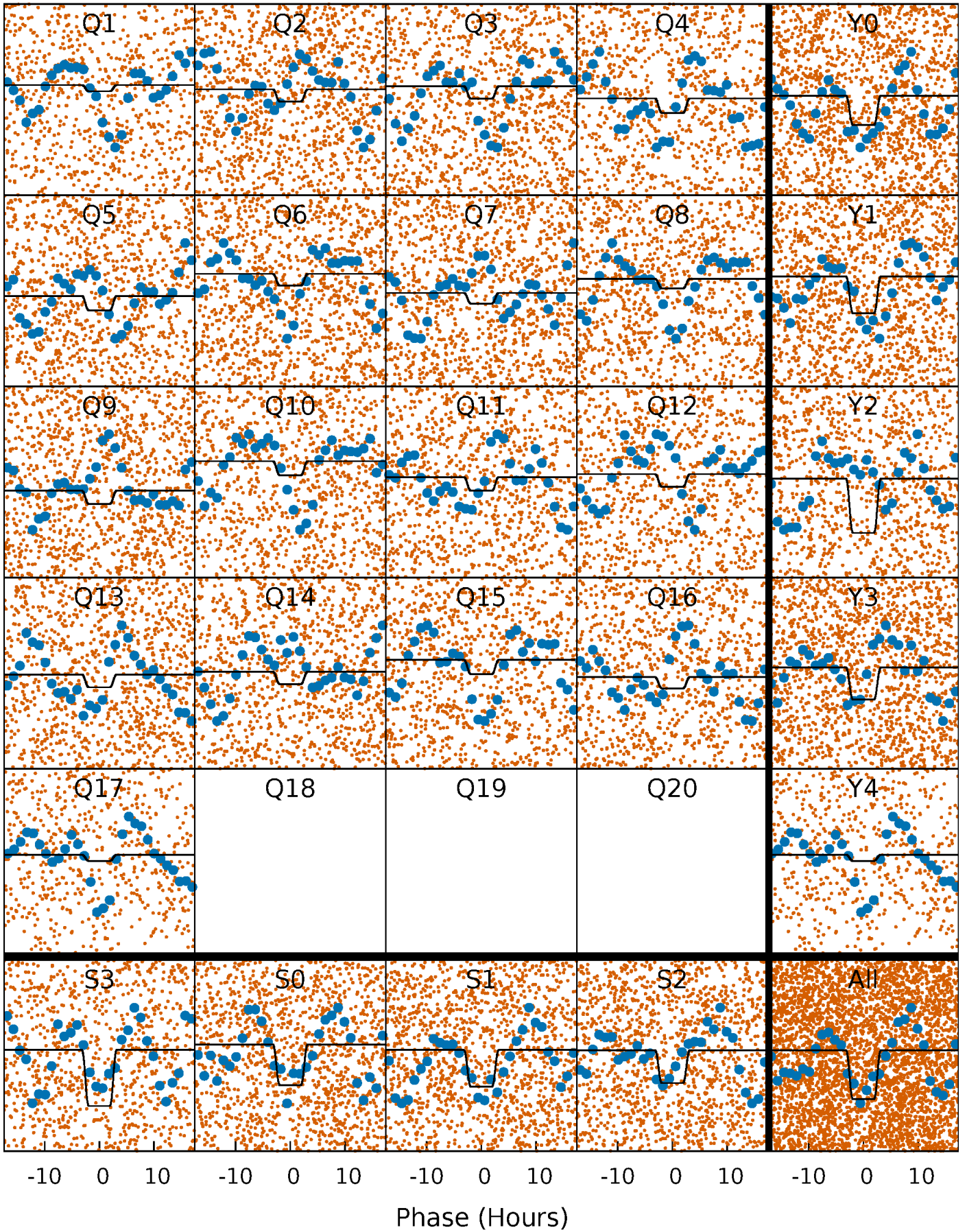
DV Quarter-Phased Transit Curves

TCE 009410527-01 P= 2.391951 Days $T_0=131.790735$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

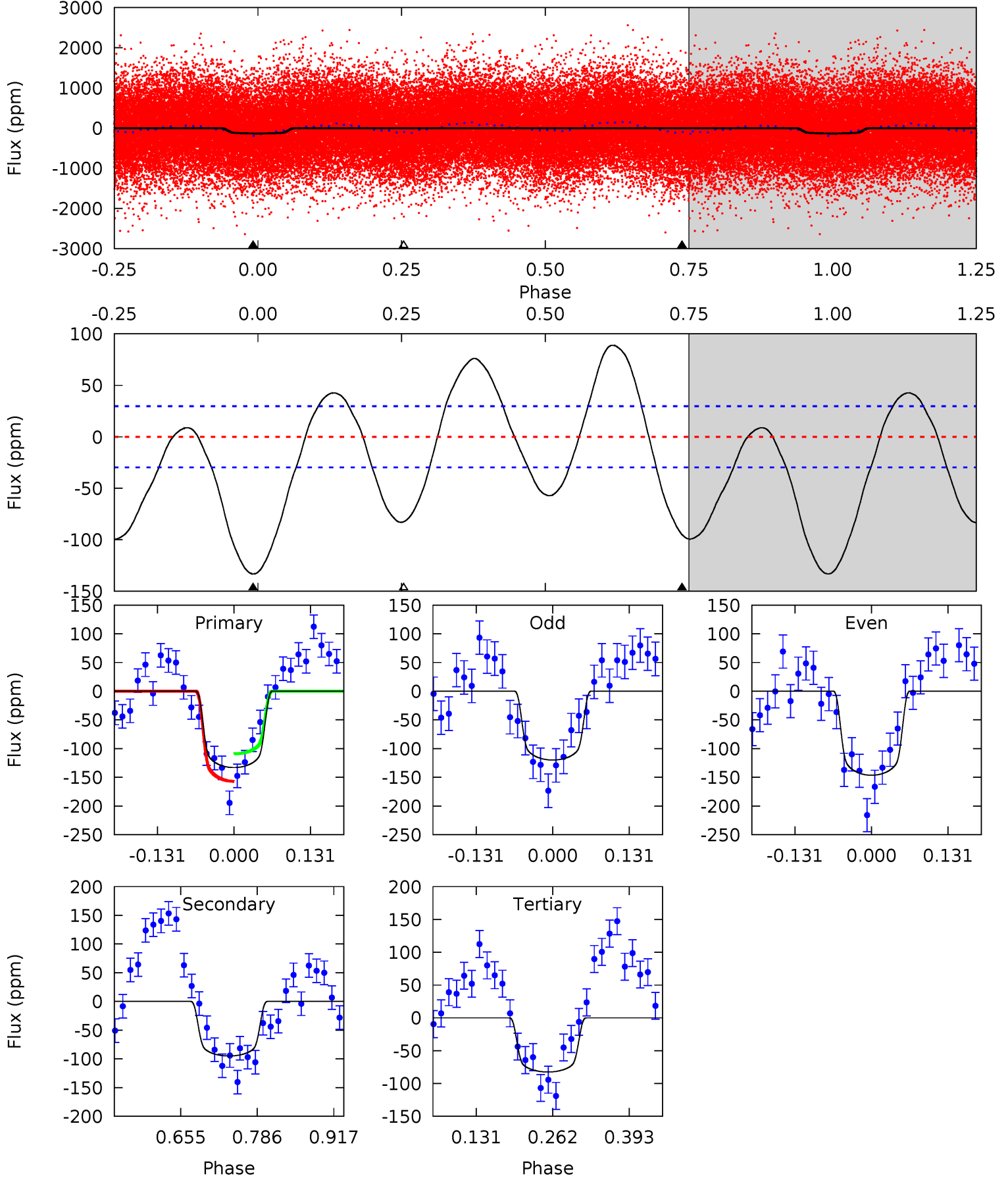
TCE 009410527-01 P= 2.391842 Days $T_0=131.820390$ (BKJD)



DV Model-Shift Uniqueness Test

009410527-01, P = 2.391951 Days, E = 129.398784 Days

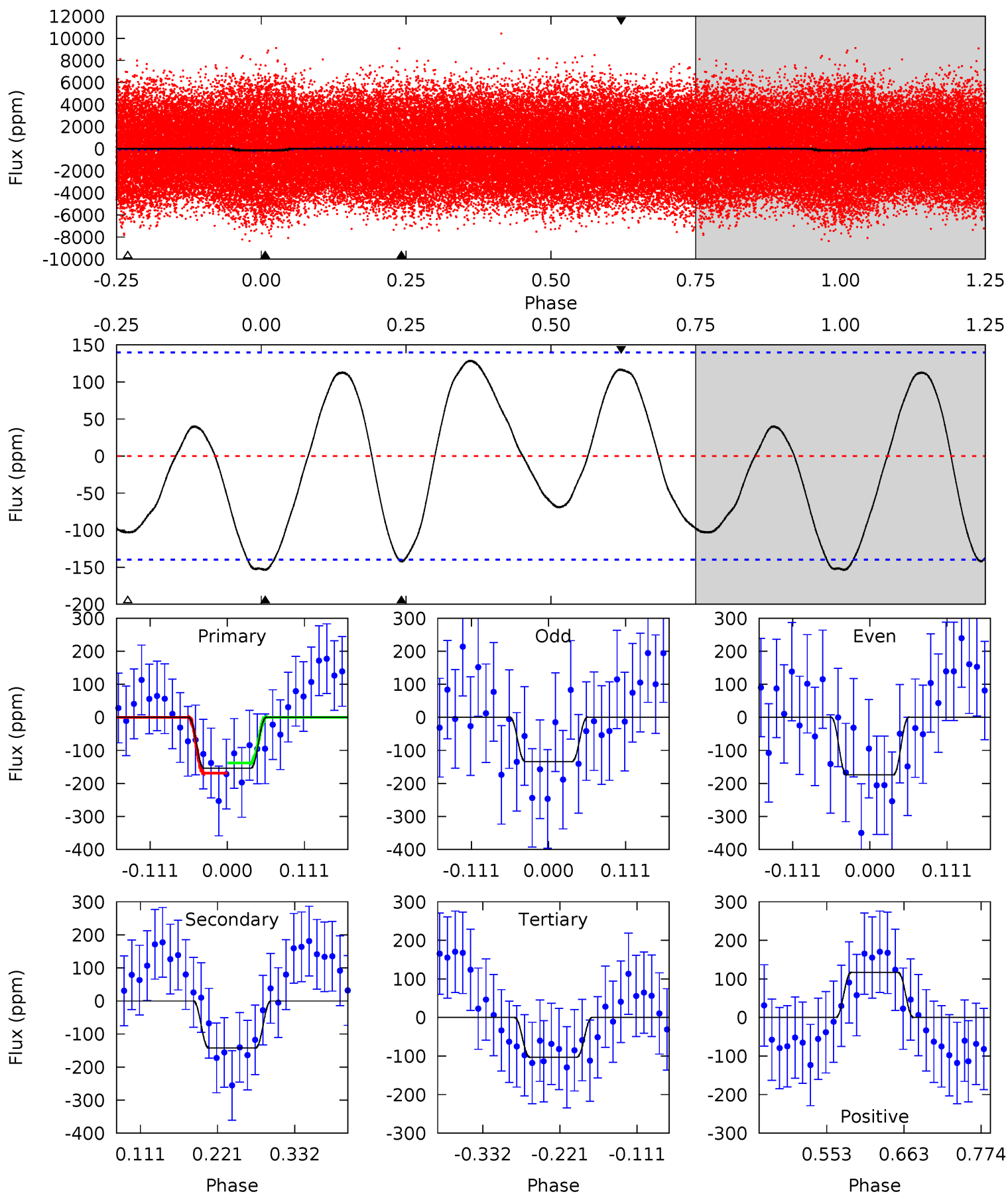
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.2	14.4	12.5	0	4.51	1.51	7.54	7.67	20.2	1.89	14.4	2.01	1.08	0.40	3.61



Alt Model-Shift Uniqueness Test

009410527-01, P = 2.391842 Days, E = 129.428548 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.99	4.61	3.34	3.79	4.54	1.60	2.38	1.65	1.20	1.27	0.83	0.65	1.60	0.46	0.50



Stellar Parameters For KIC 009410527

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7266^{+200}_{-342}	$4.234^{+0.056}_{-0.224}$	$0.360^{+0.100}_{-0.350}$	$1.629^{+0.609}_{-0.152}$	$1.660^{+0.200}_{-0.200}$	$0.540^{+0.131}_{-0.314}$
	+3%/-5%	+1%/-5%	+28%/-97%	+37%/-9%	+12%/-12%	+24%/-58%
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 009410527-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-95 ± 7	$2.31^{+0.42}_{-0.24}$	2845^{+221}_{-169}	6230^{+317}_{-359}	16^{+4}_{-4}
Alt.	-142 ± 31	$2.55^{+0.43}_{-0.27}$	2852^{+215}_{-156}	6603^{+488}_{-543}	20^{+7}_{-6}

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

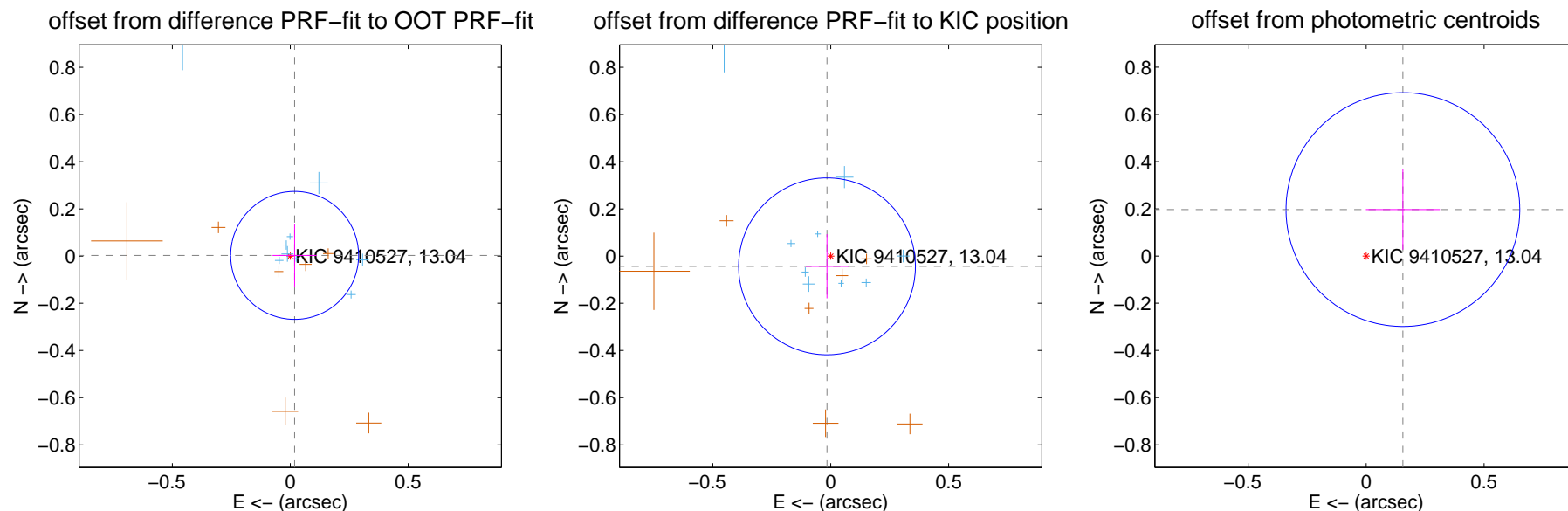
DV Centroid Data

Supplemental centroid analysis for 009410527-01. Kepler magnitude: 13.04. Transit SNR 9.52

There are 10 quarters with good PRF difference image offsets

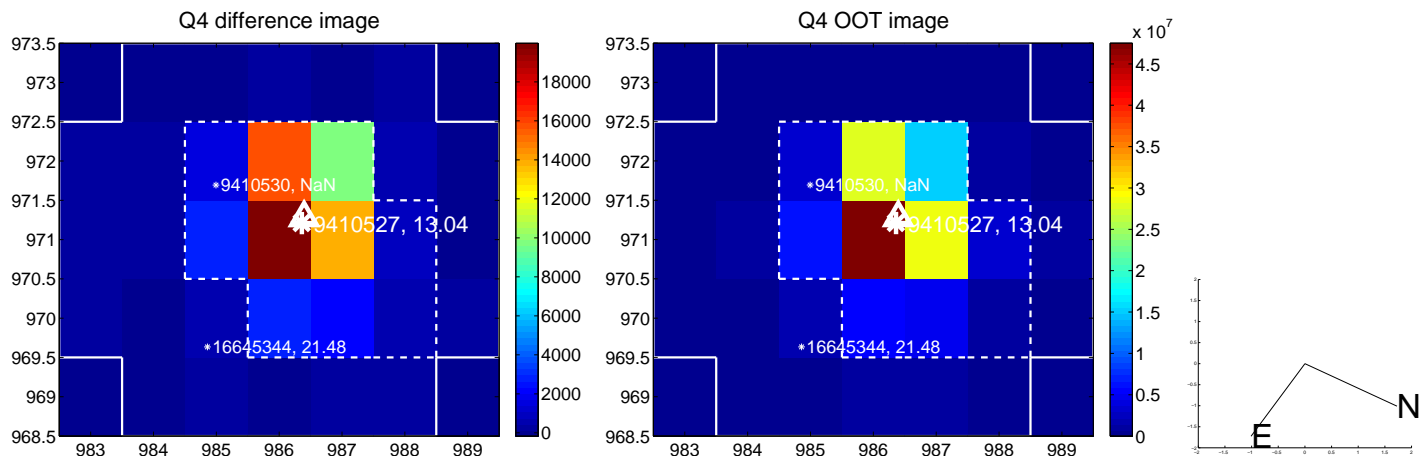
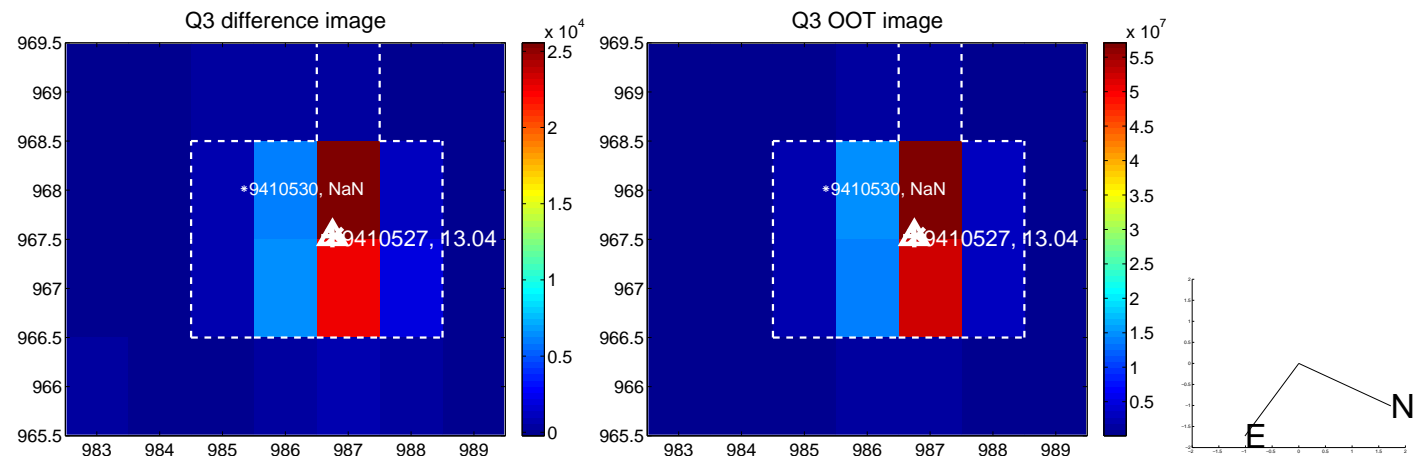
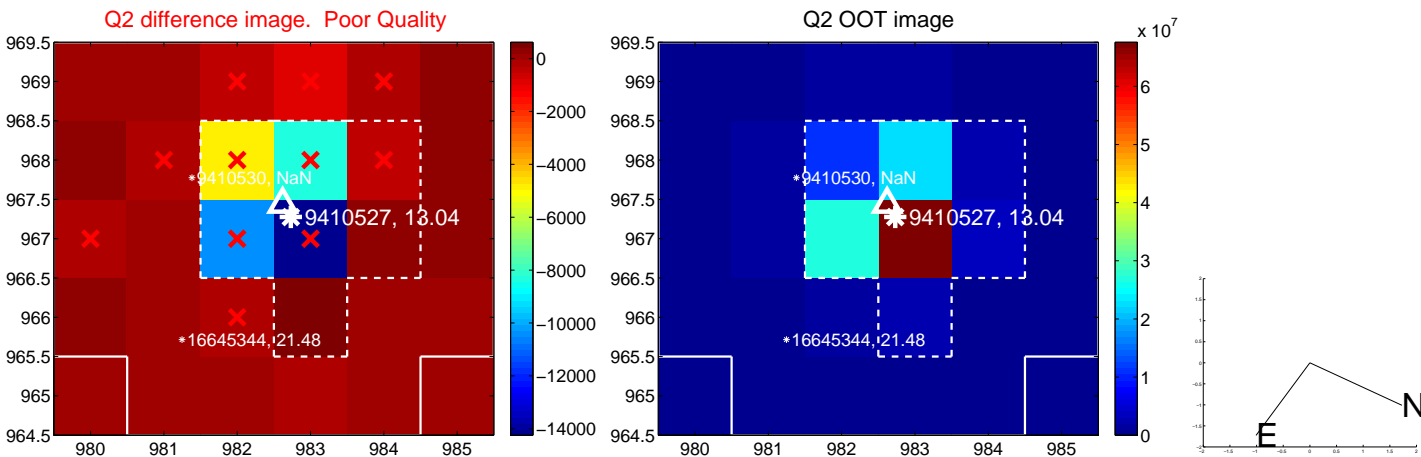
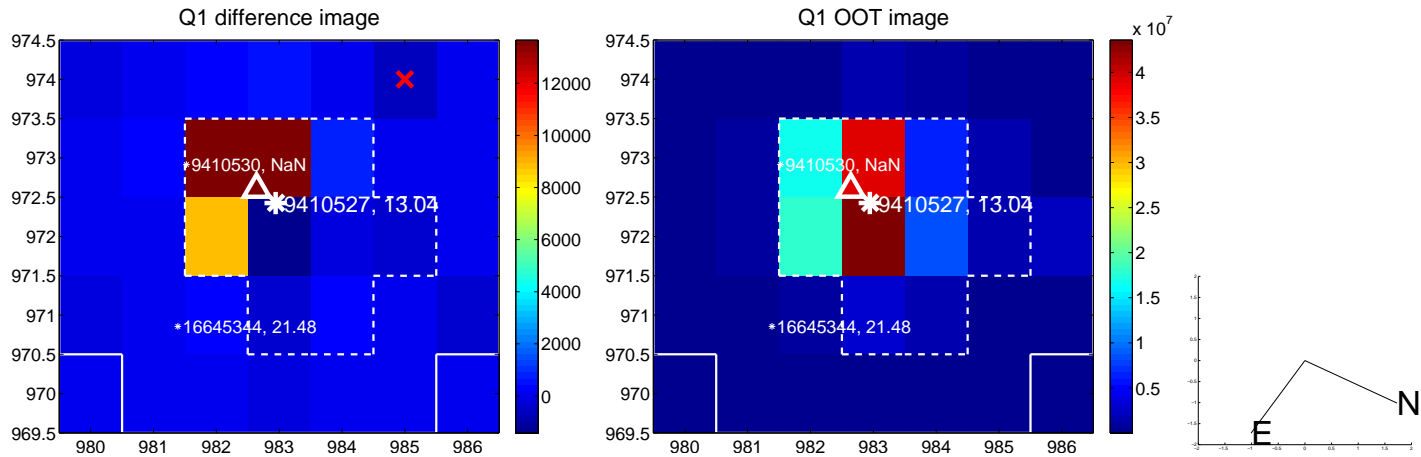
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.019 ± 0.090	0.21	-0.019 ± 0.094	0.003 ± 0.133
PRF-fit source offset from KIC position	0.046 ± 0.125	0.37	0.016 ± 0.091	-0.043 ± 0.136
photometric centroid source offset	0.25 ± 0.17	1.52	-0.16 ± 0.16	0.20 ± 0.17

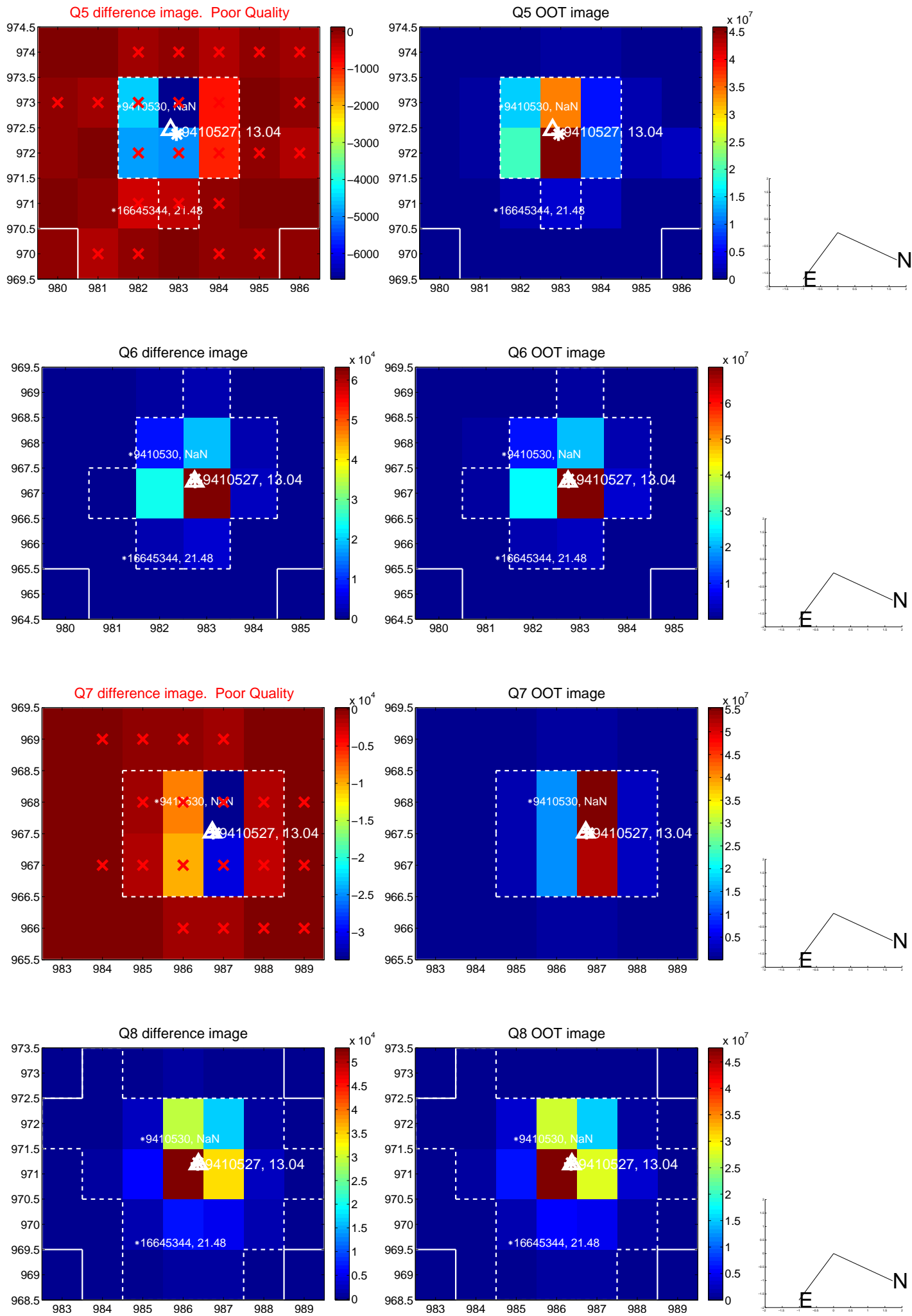


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

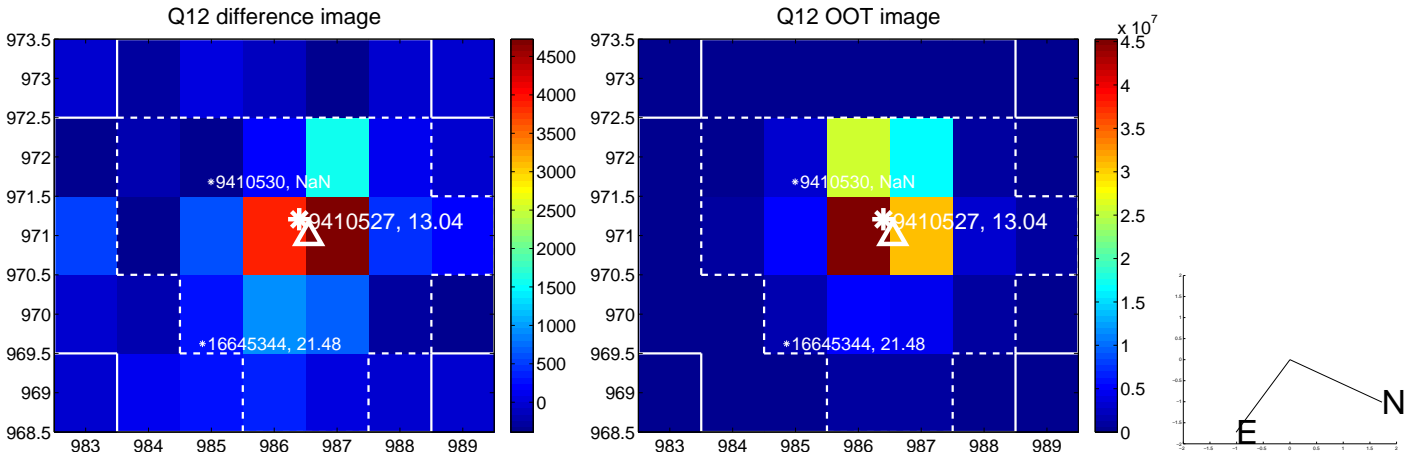
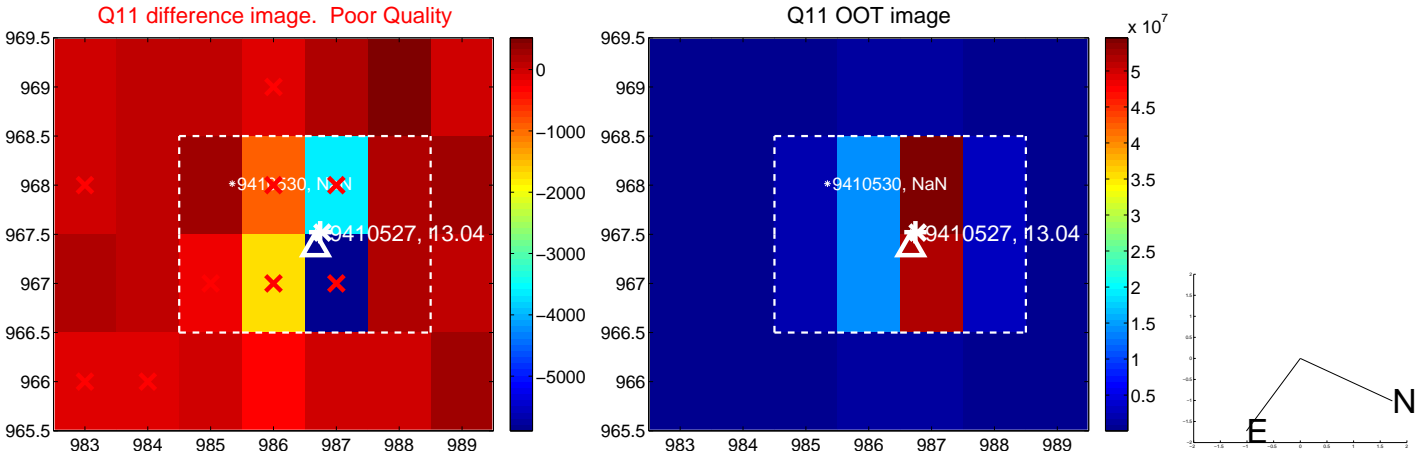
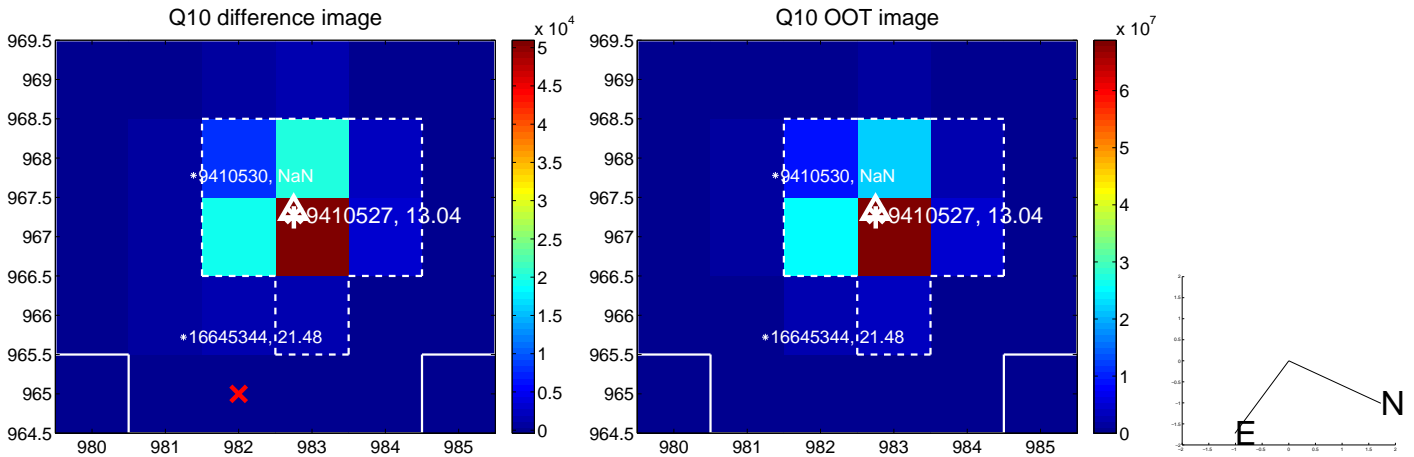
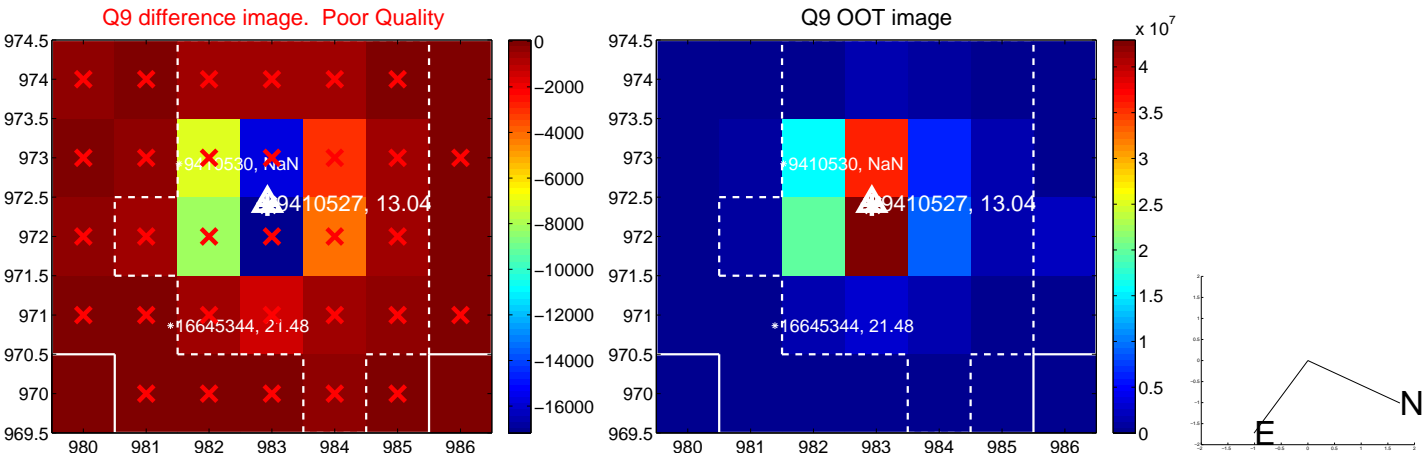
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



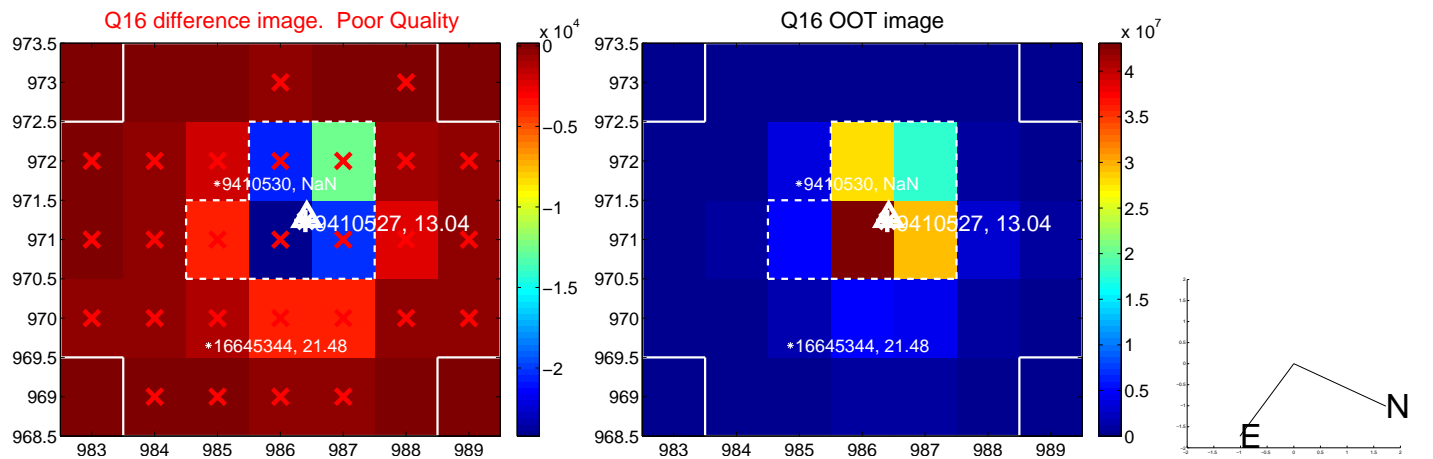
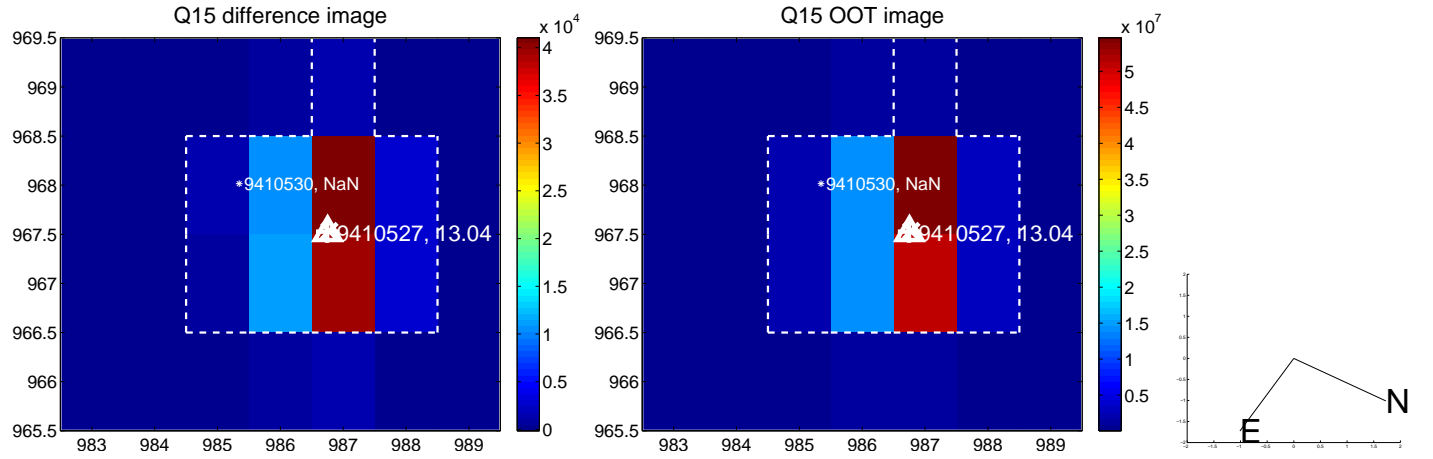
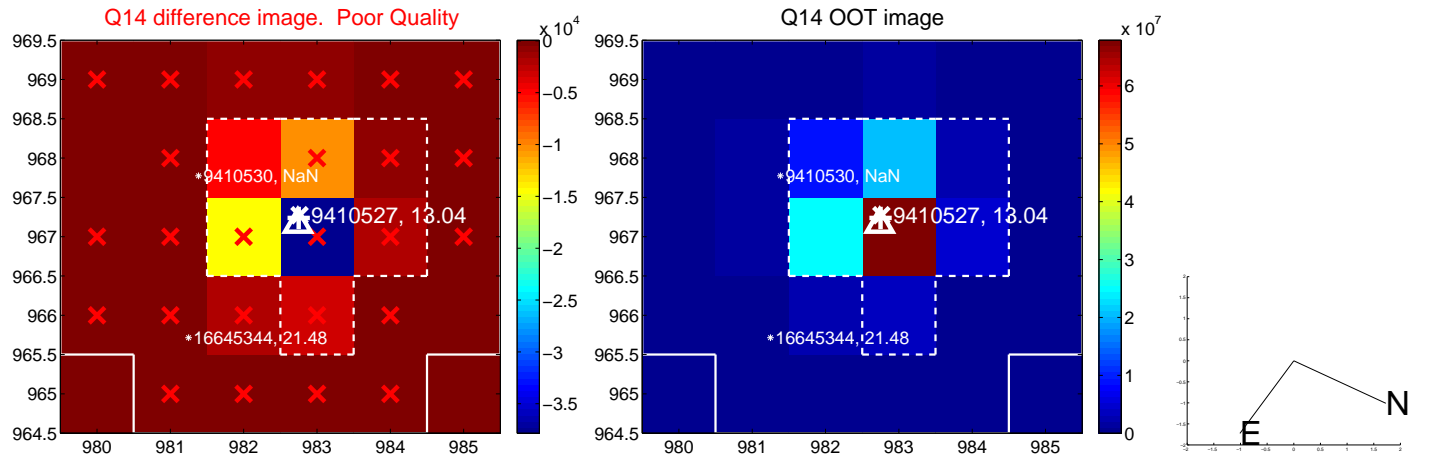
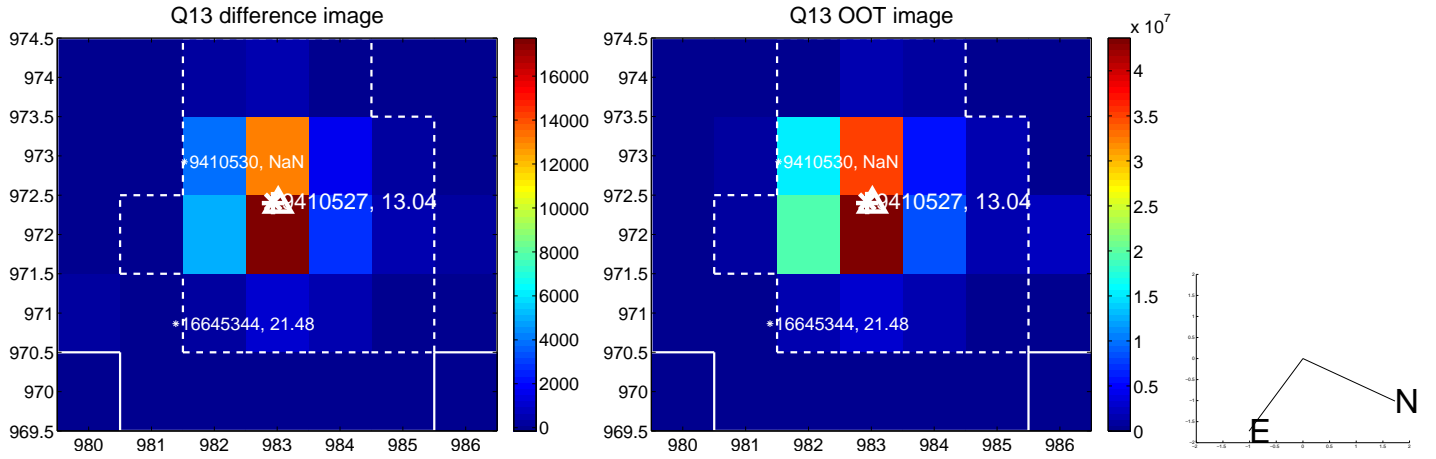
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



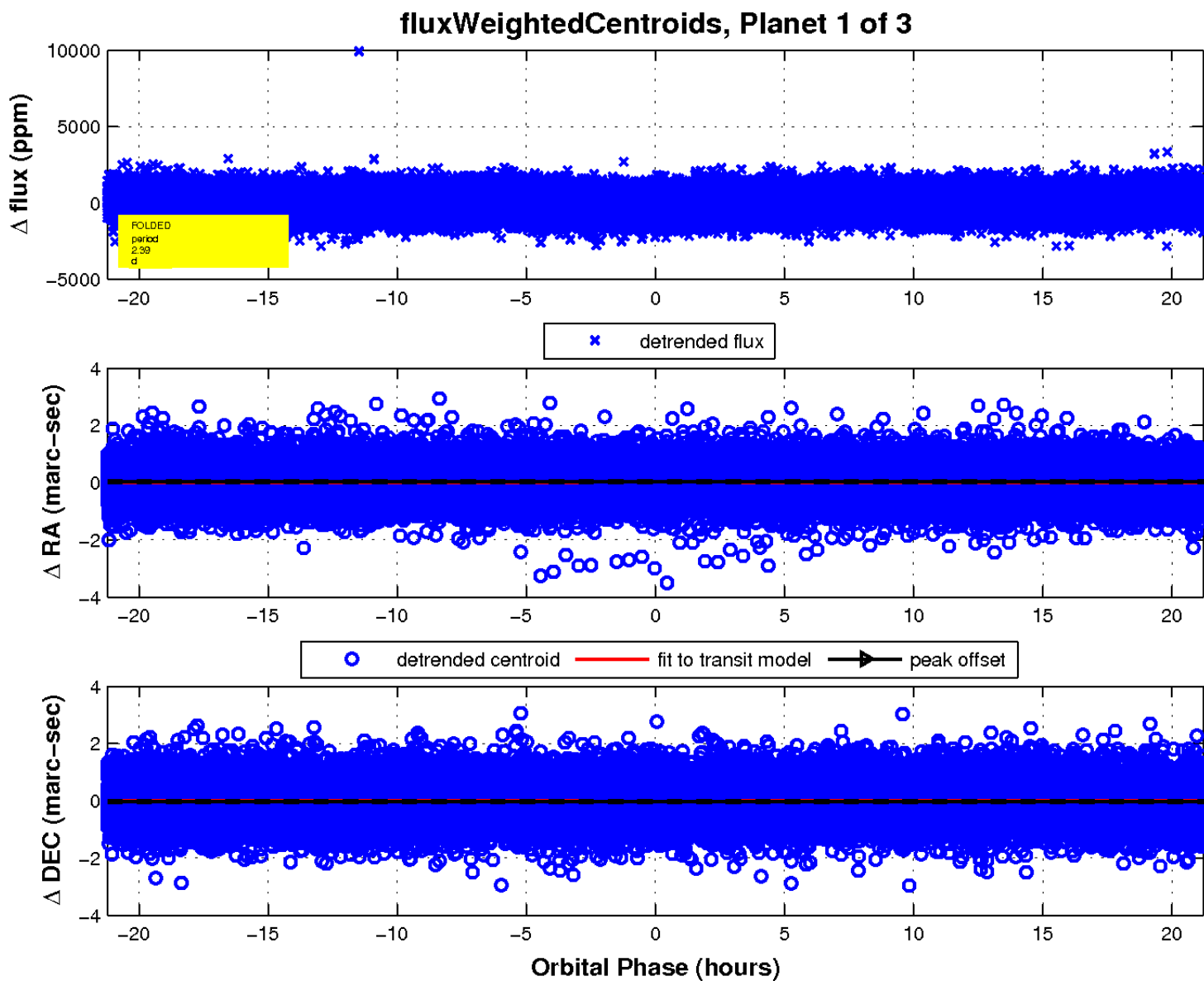
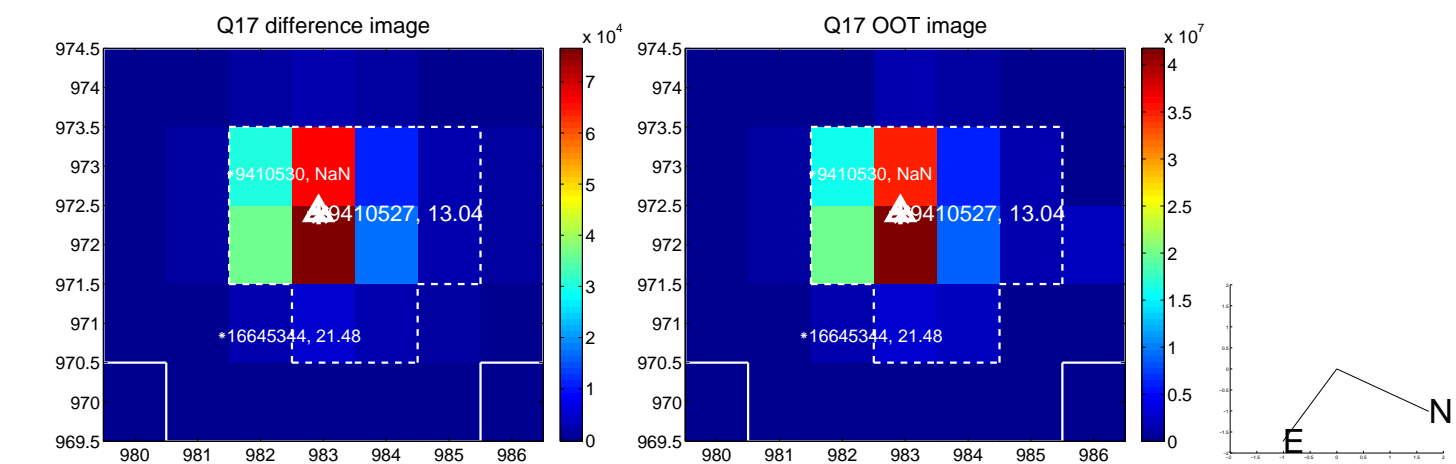
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white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

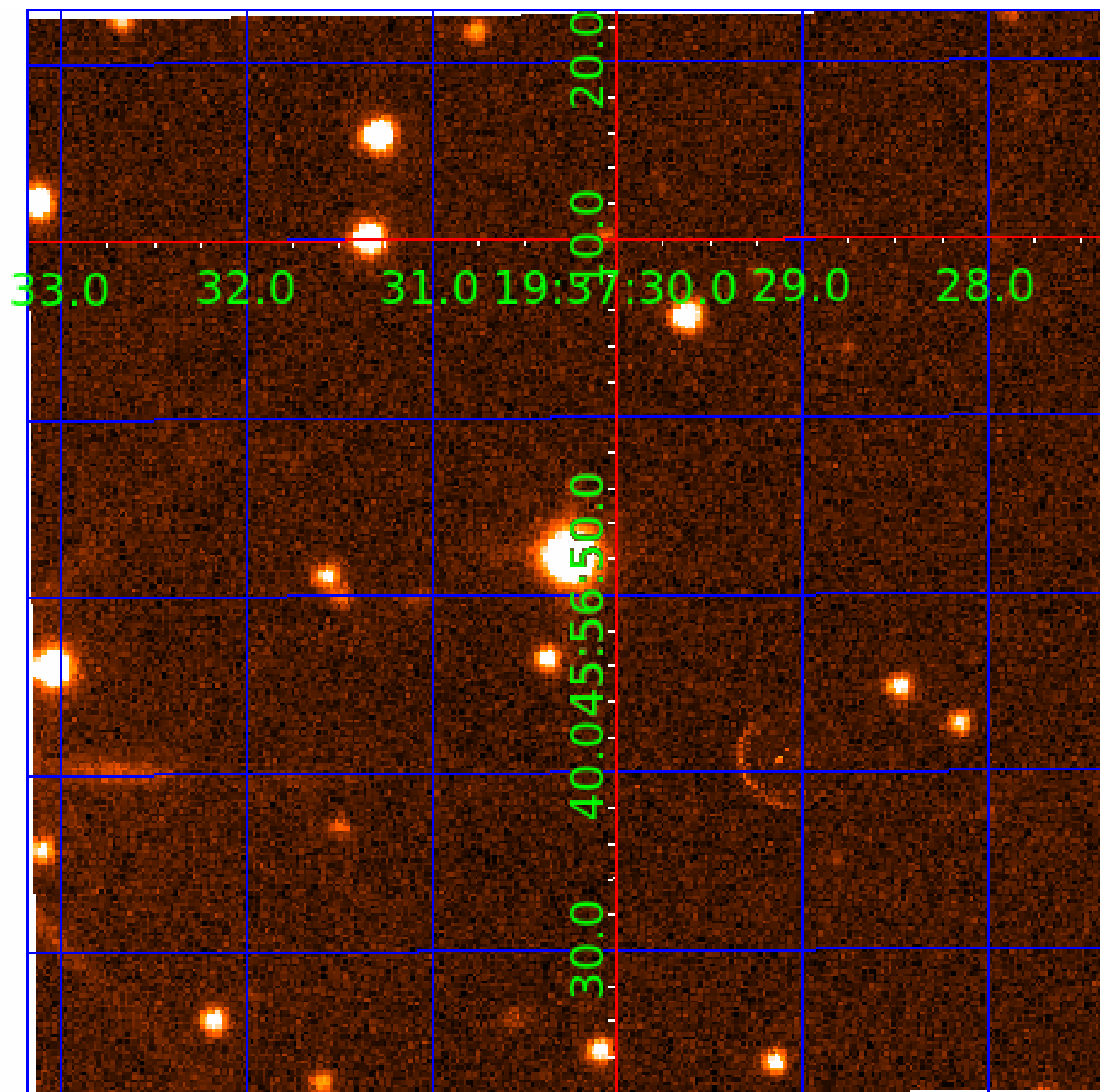


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009410527

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})
009410527-01	OBS	No	2.391951	131.790735	127.5	7.078	8.2	9.5	1.63	7266	2.26	3857.92
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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009410527-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD
009410527-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_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.

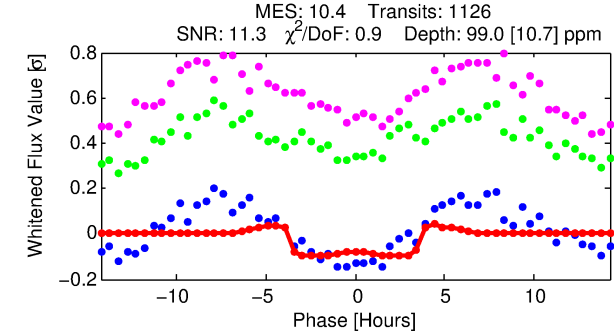
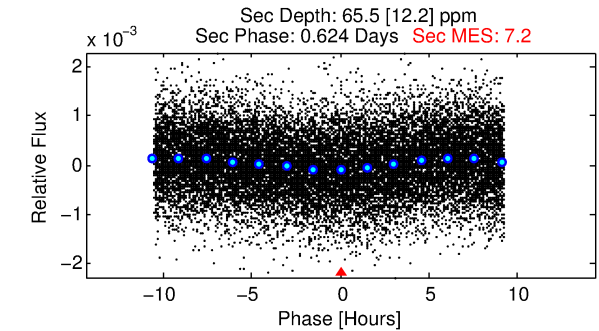
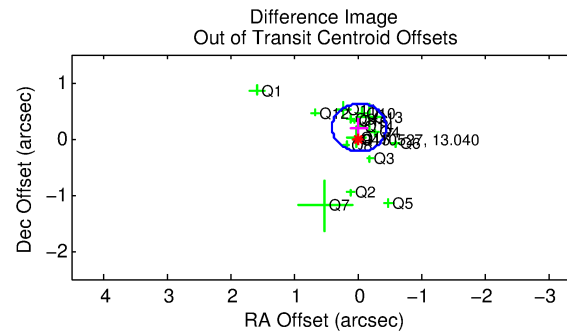
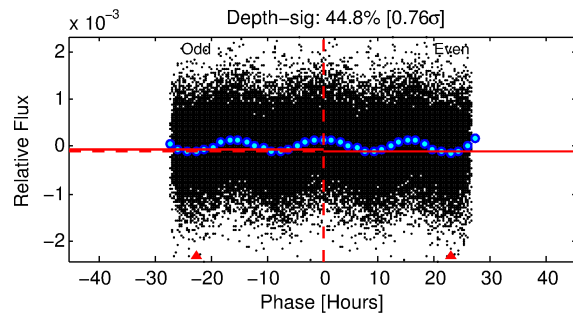
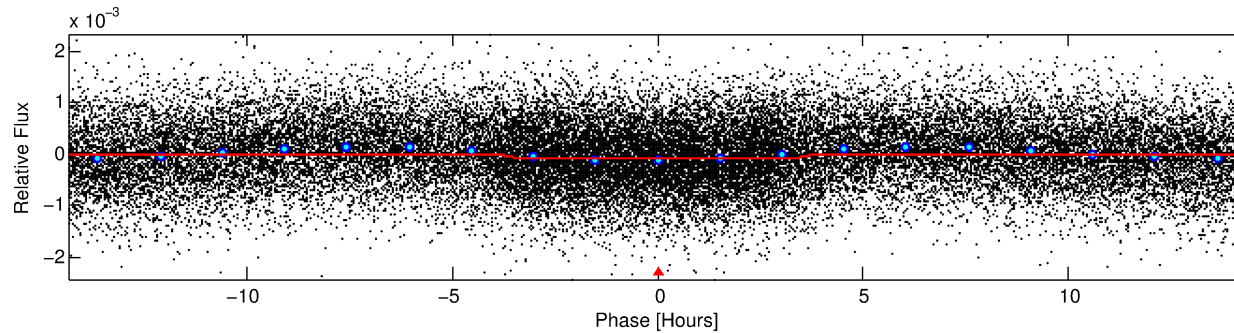
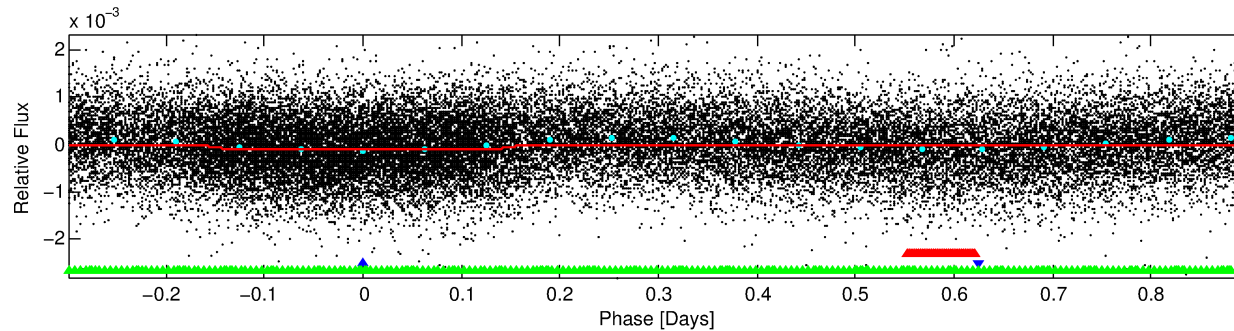
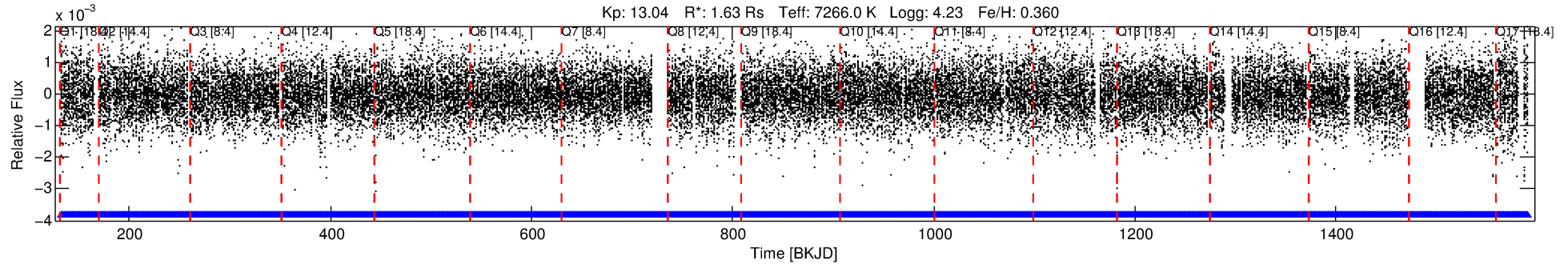
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009410527-02

No Significant Match Found

DV One-Page Summary

KIC: 9410527 Candidate: 2 of 3 Period: 1.196 d



DV Fit Results:

Period = 1.19592 [0.00002] d
Epoch = 132.4340 [0.0043] BKJD
Rp/R* = 0.0093 [0.0079]
a/R* = 1.36 [3.12]
b = 0.20 [24.83]
Seff = 9721.97 [4516.26]
Teq = 2532 [294] K
Rp = 1.65 [1.53] Re
a = 0.0261 [0.0079] AU
Ag = 9.06 [15.97] [0.51 σ]
Teffp = 6793 [2921] K [1.45 σ]

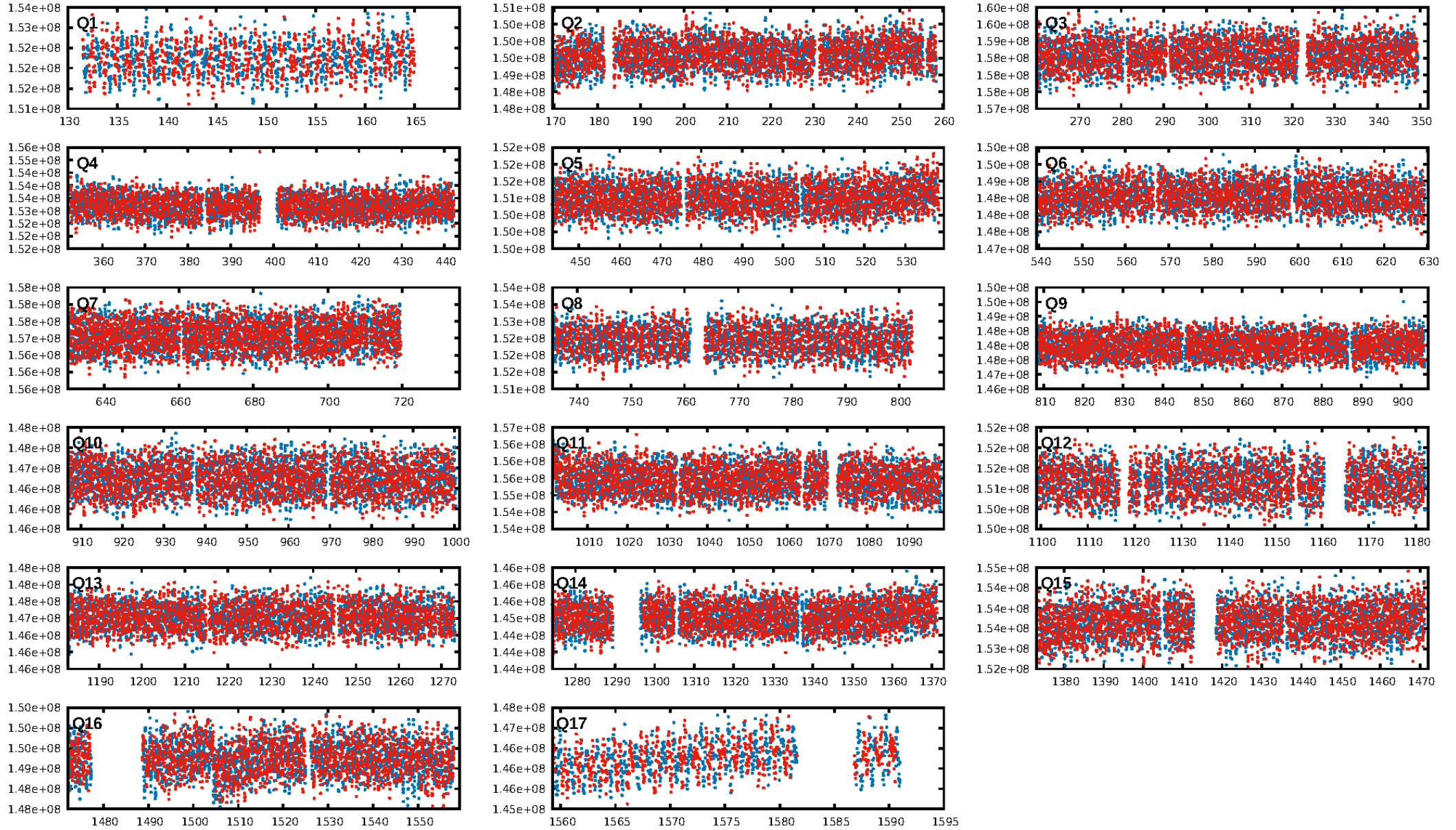
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 99.4% [2.77 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1075/1075]
GhostDiagnostic-chr: 1.525
Centroid-sig: 11.9%
Centroid-so: 0.188 arcsec [1.33 σ]
OotOffset-rm: 0.200 arcsec [1.41 σ]
KicOffset-rm: 0.205 arcsec [1.22 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

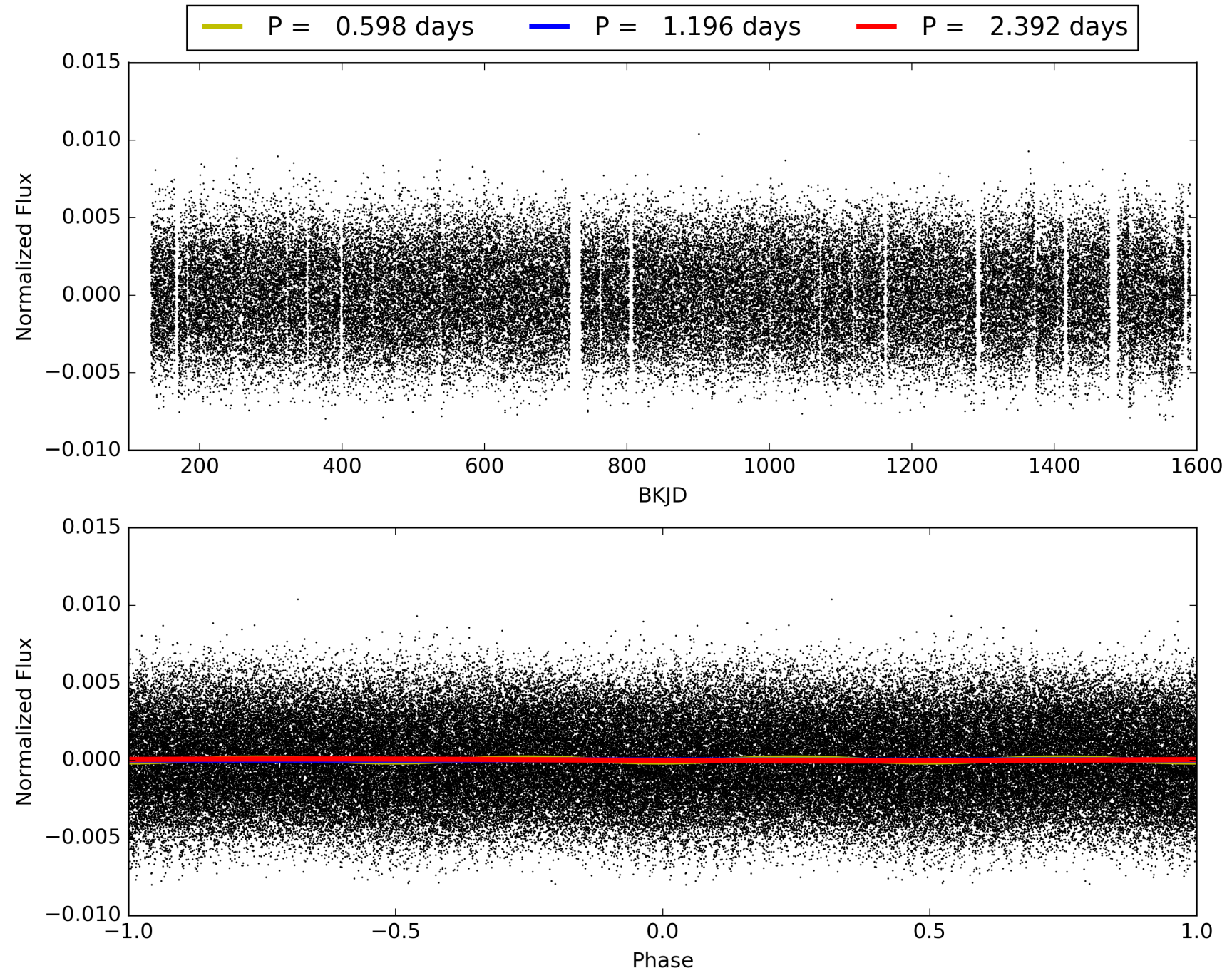
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 02:10:52 Z

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

TCE 009410527-02, PDC Light Curves

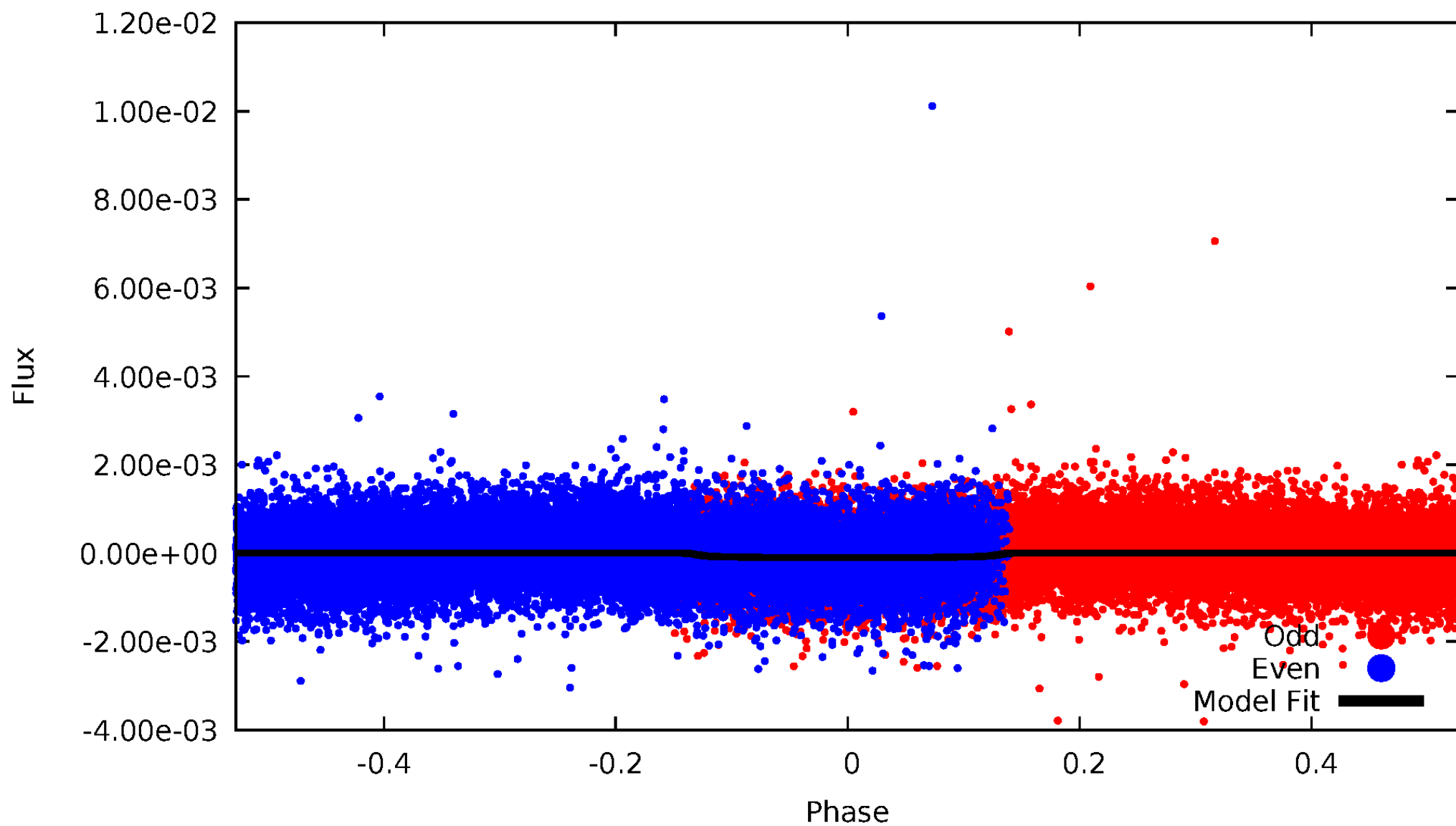


TCE 009410527-02



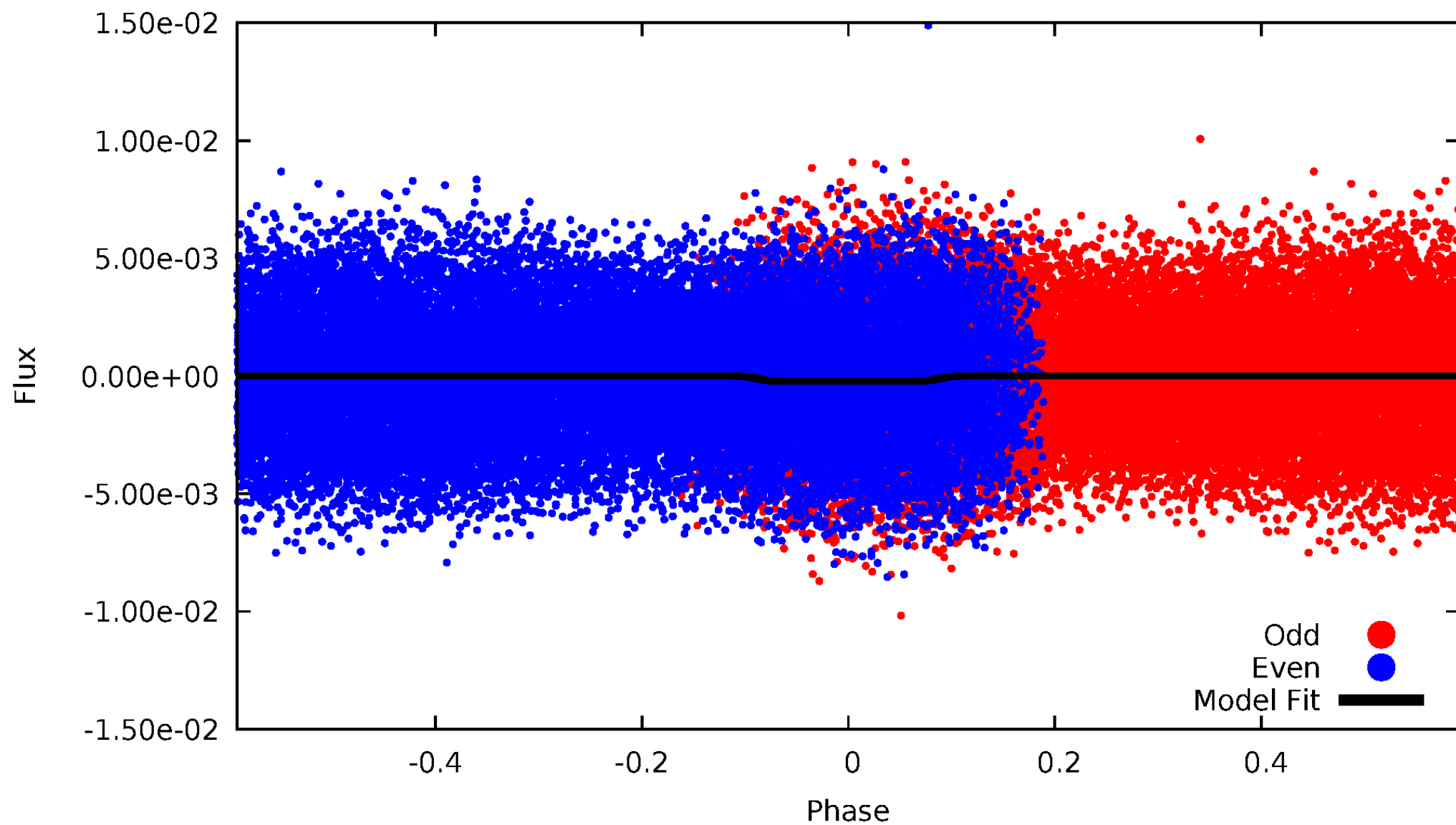
DV Odd/Even

TCE 009410527-02



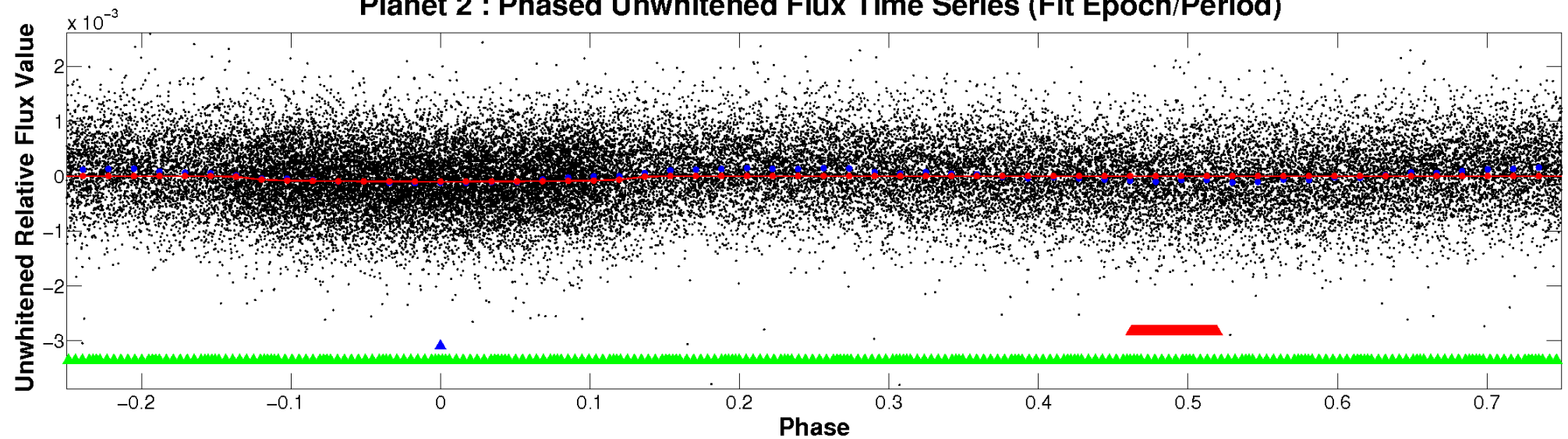
ALT Odd/Even

TCE 009410527-02

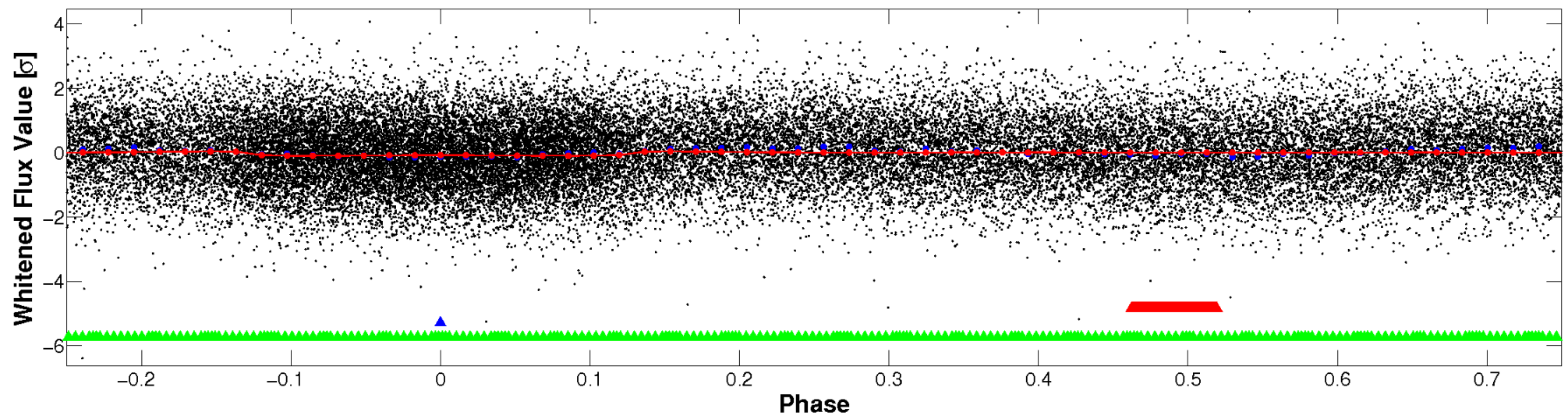


Non-Whitened Vs. Whitened Light Curve

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

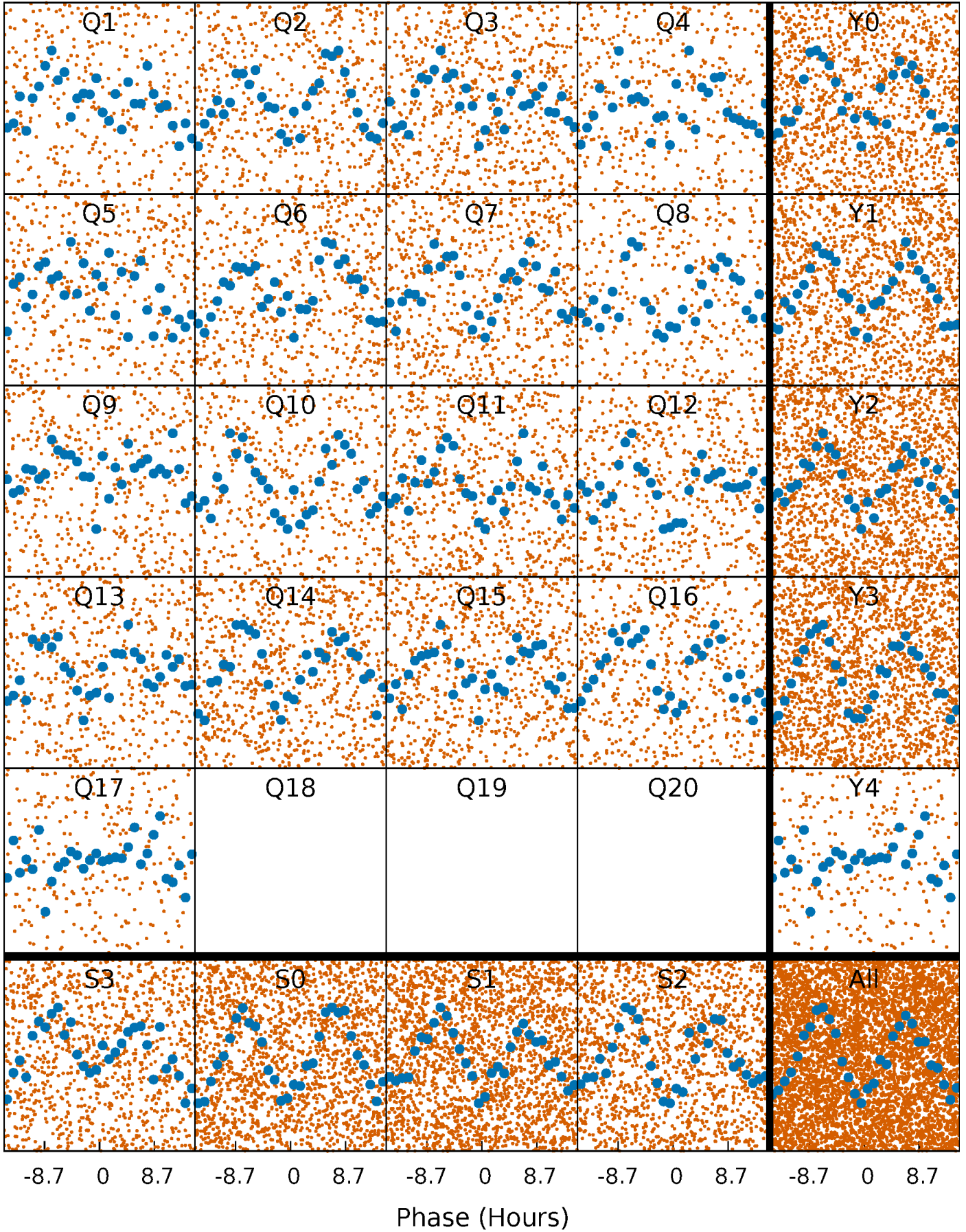


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



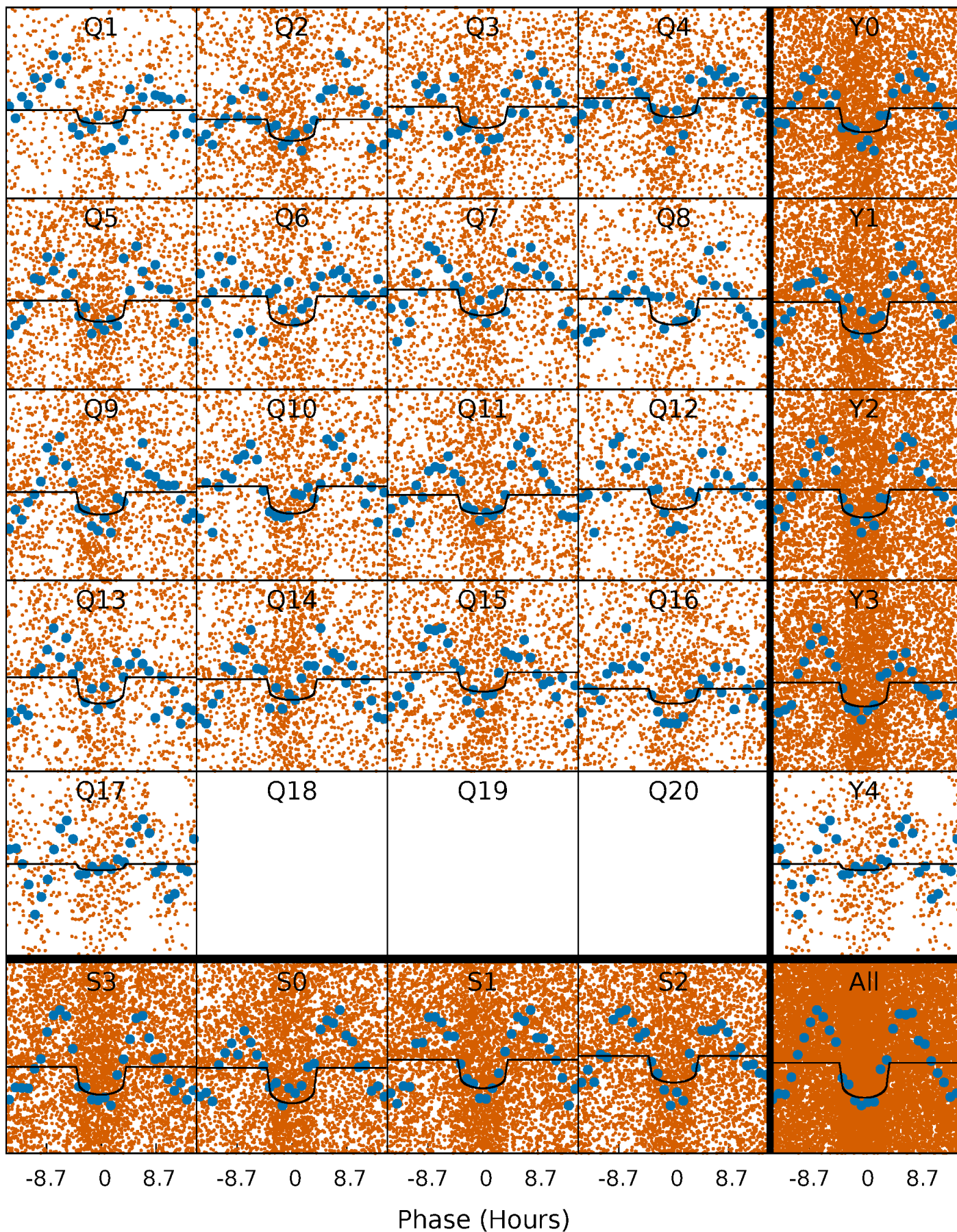
PDC Quarter-Phased Transit Curves

TCE 009410527-02 P= 1.195919 Days $T_0=132.434047$ (BKJD)



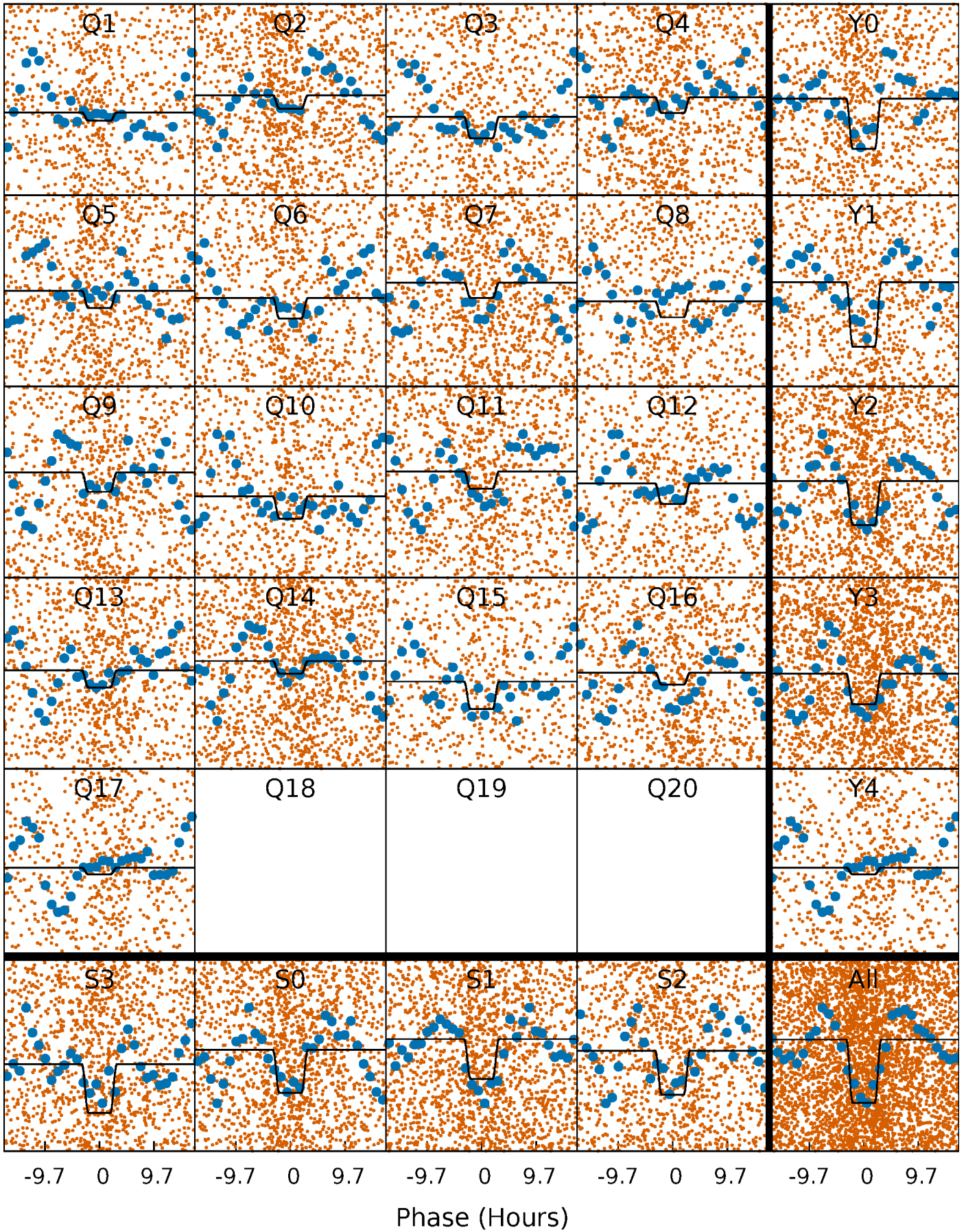
DV Quarter-Phased Transit Curves

TCE 009410527-02 P= 1.195919 Days $T_0=132.434047$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

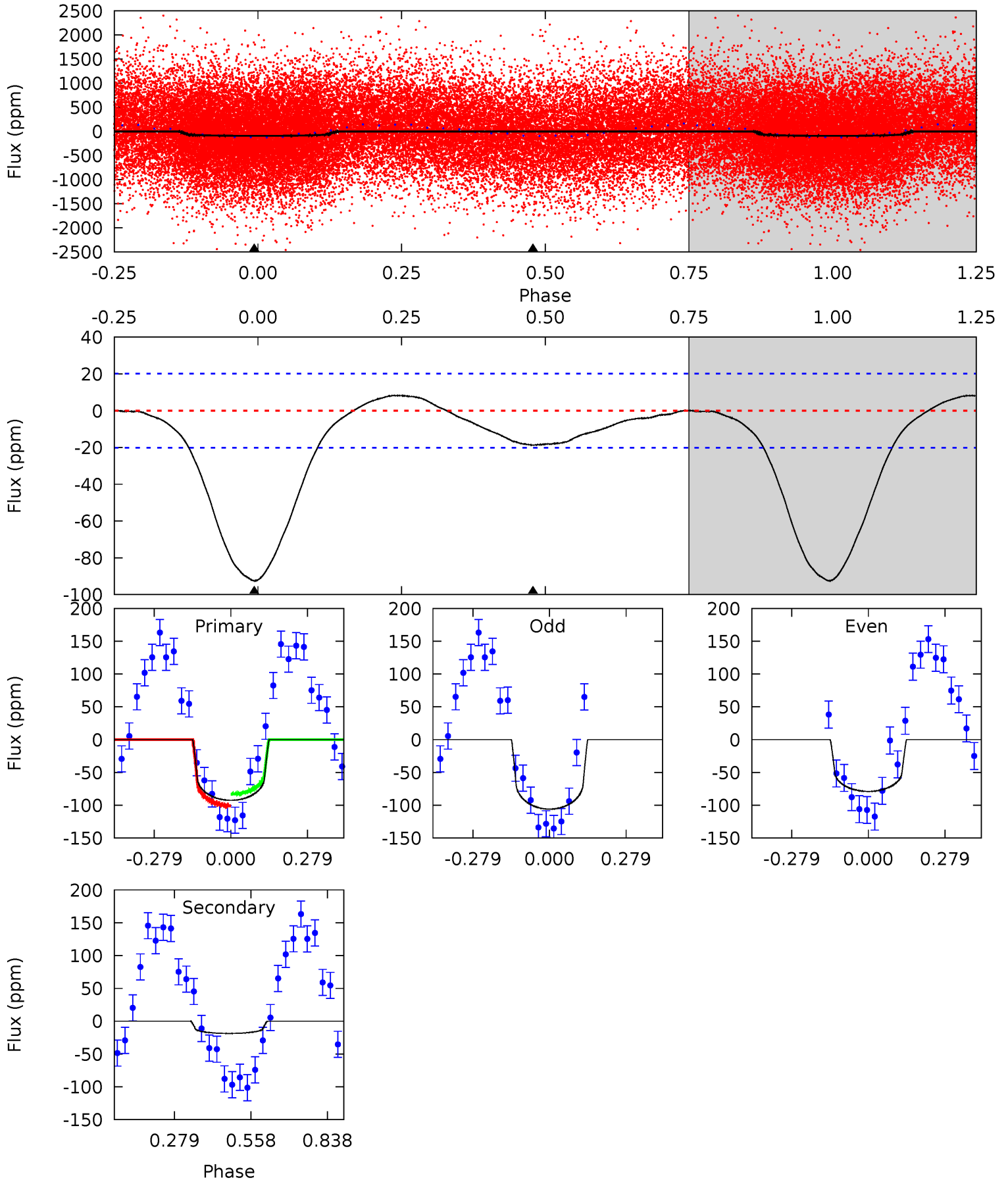
TCE 009410527-02 P= 1.195864 Days $T_0=132.440665$ (BKJD)



DV Model-Shift Uniqueness Test

009410527-02, P = 1.195919 Days, E = 131.238128 Days

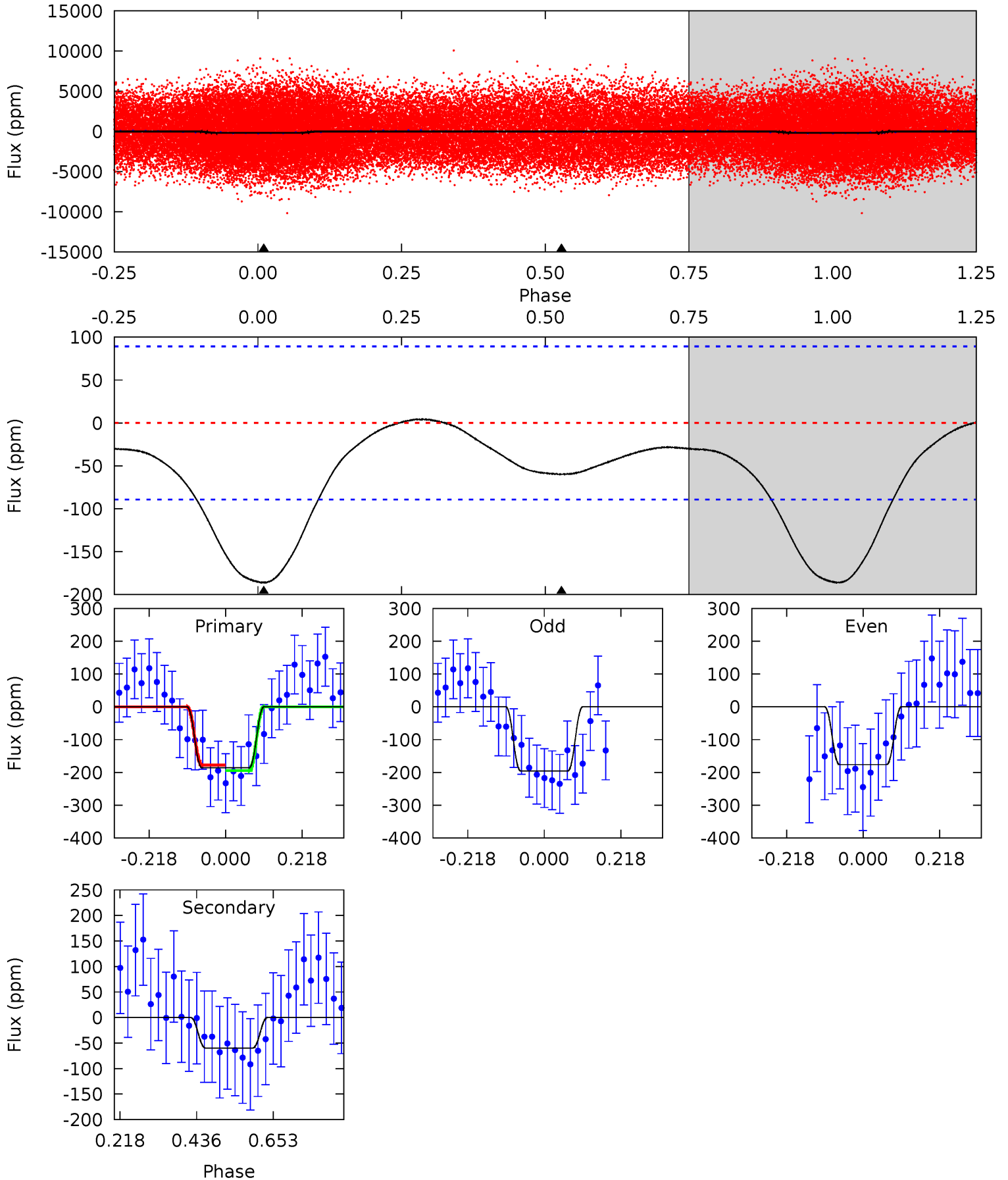
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.9	4.03	0	0	4.34	1.08	0.93	19.9	19.9	4.03	4.03	2.89	1.05	0.08	1.90



Alt Model-Shift Uniqueness Test

009410527-02, P = 1.195864 Days, E = 131.244801 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.17	2.95	0	0	4.40	1.23	0.79	9.17	9.17	2.95	2.95	0.47	0.83	0.02	0.41



Stellar Parameters For KIC 009410527

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7266^{+200}_{-342}	$4.234^{+0.056}_{-0.224}$	$0.360^{+0.100}_{-0.350}$	$1.629^{+0.609}_{-0.152}$	$1.660^{+0.200}_{-0.200}$	$0.540^{+0.131}_{-0.314}$
	+3%/-5%	+1%/-5%	+28%/-97%	+37%/-9%	+12%/-12%	+24%/-58%
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 009410527-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-19 ± 5	$1.84^{+1.41}_{-1.17}$	3593^{+268}_{-186}	4611^{+3386}_{-1206}	$1.925^{+14.197}_{-1.326}$
Alt.	-60 ± 20	$2.82^{+1.49}_{-1.44}$	3594^{+292}_{-192}	5014^{+2376}_{-1021}	$2.719^{+8.829}_{-1.691}$

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

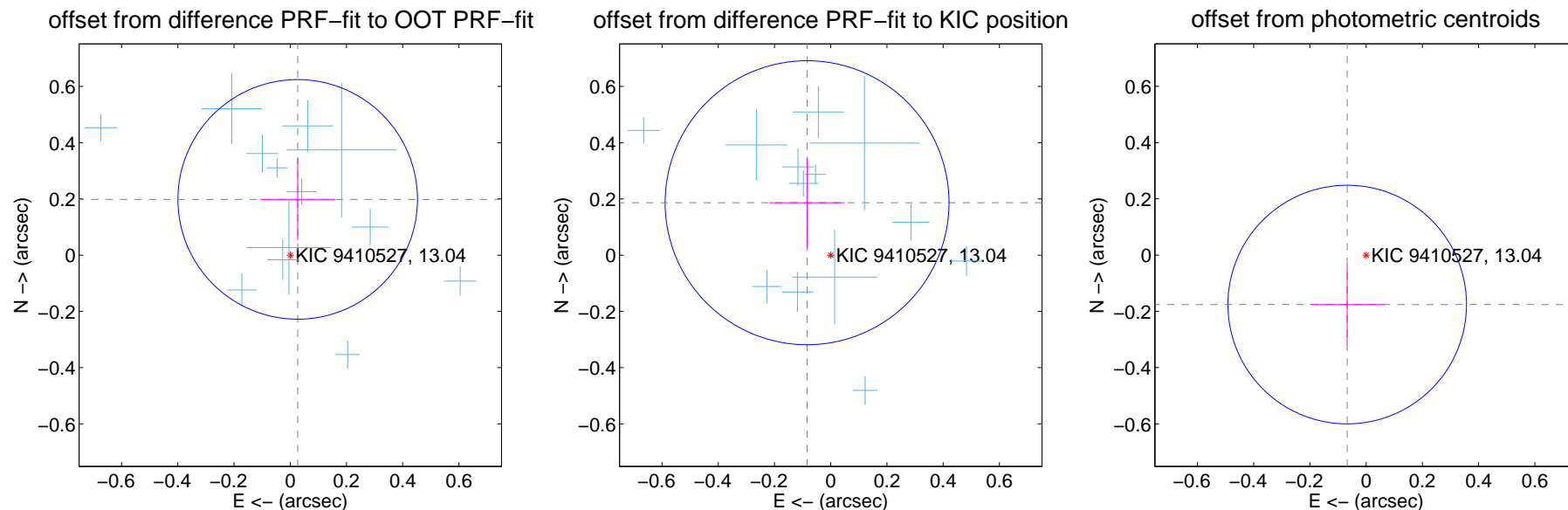
DV Centroid Data

Supplemental centroid analysis for 009410527-02. Kepler magnitude: 13.04. Transit SNR 11.28

There are 17 quarters with good PRF difference image offsets

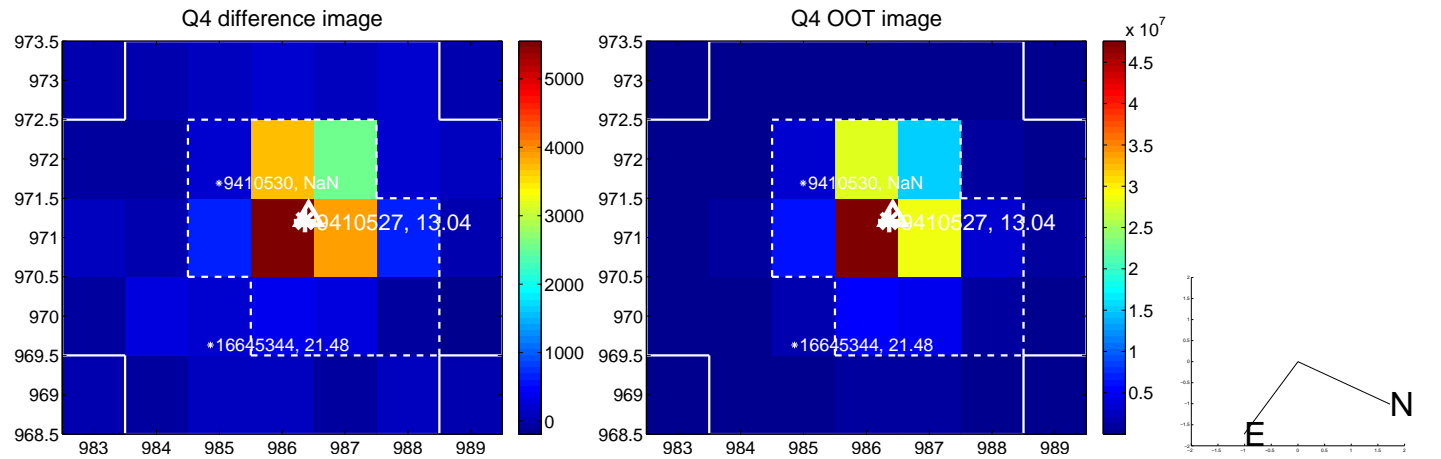
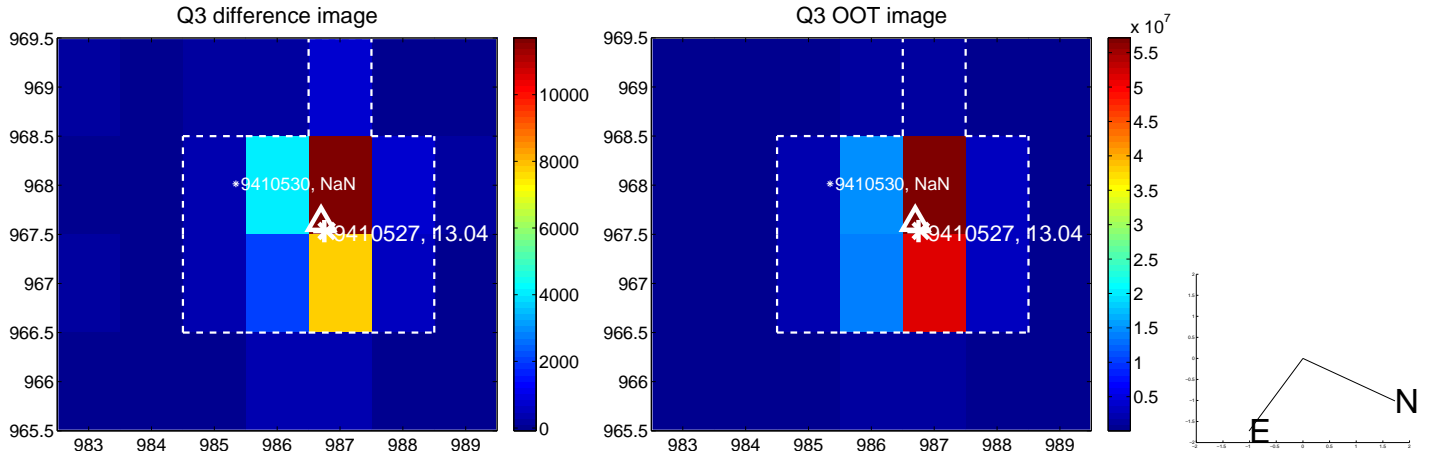
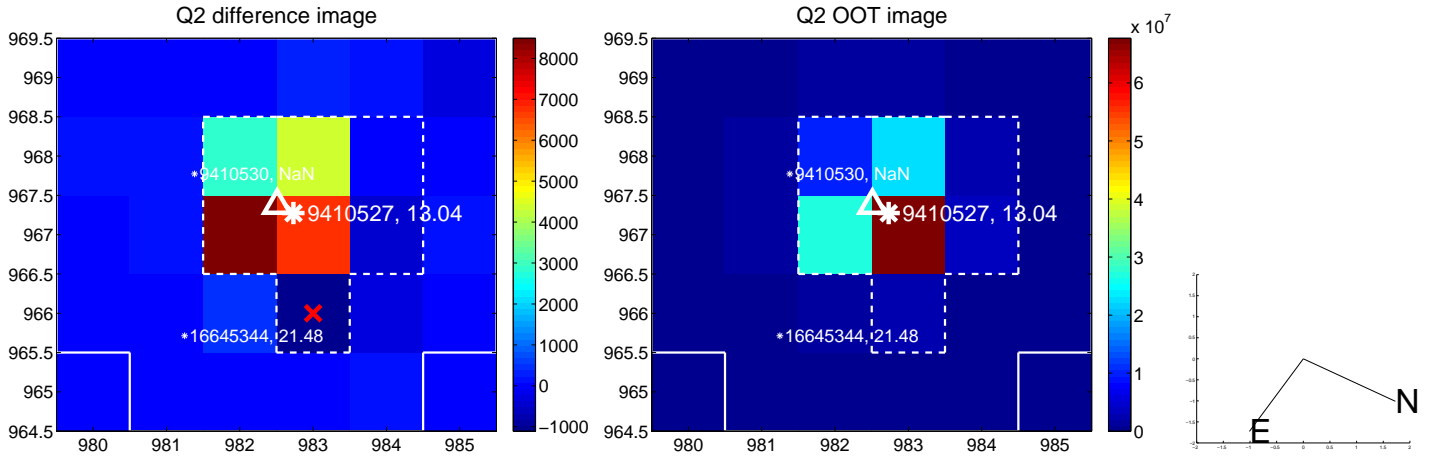
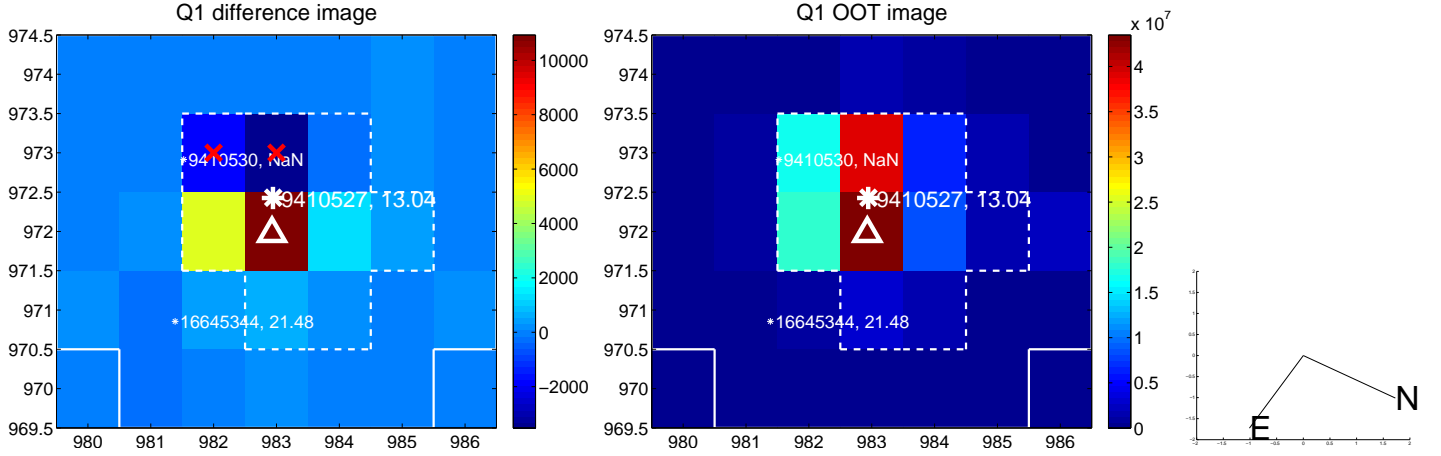
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.200 ± 0.142	1.41	-0.026 ± 0.134	0.198 ± 0.146
PRF-fit source offset from KIC position	0.205 ± 0.168	1.22	0.084 ± 0.134	0.187 ± 0.159
photometric centroid source offset	0.19 ± 0.14	1.33	0.07 ± 0.13	-0.18 ± 0.14

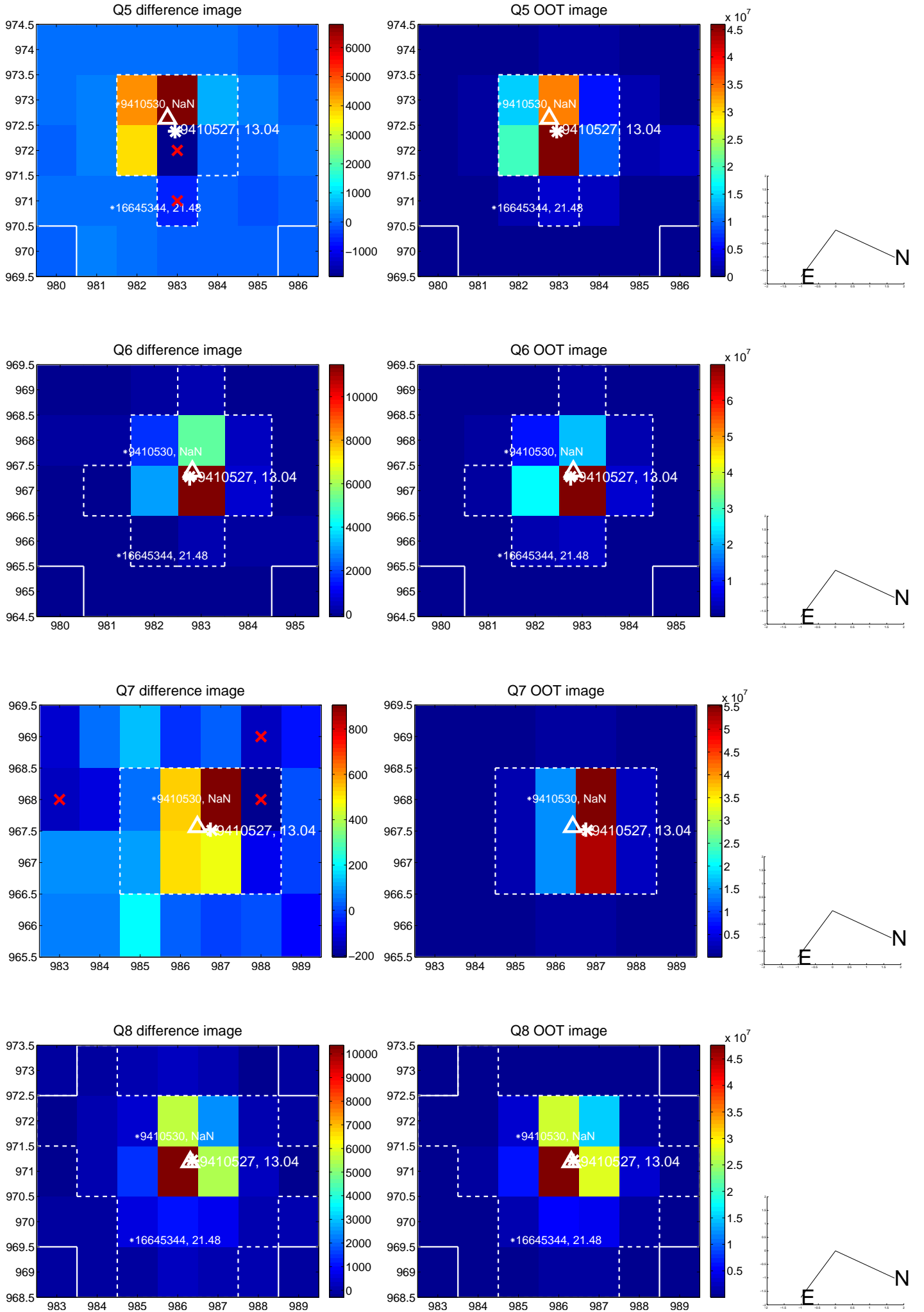


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

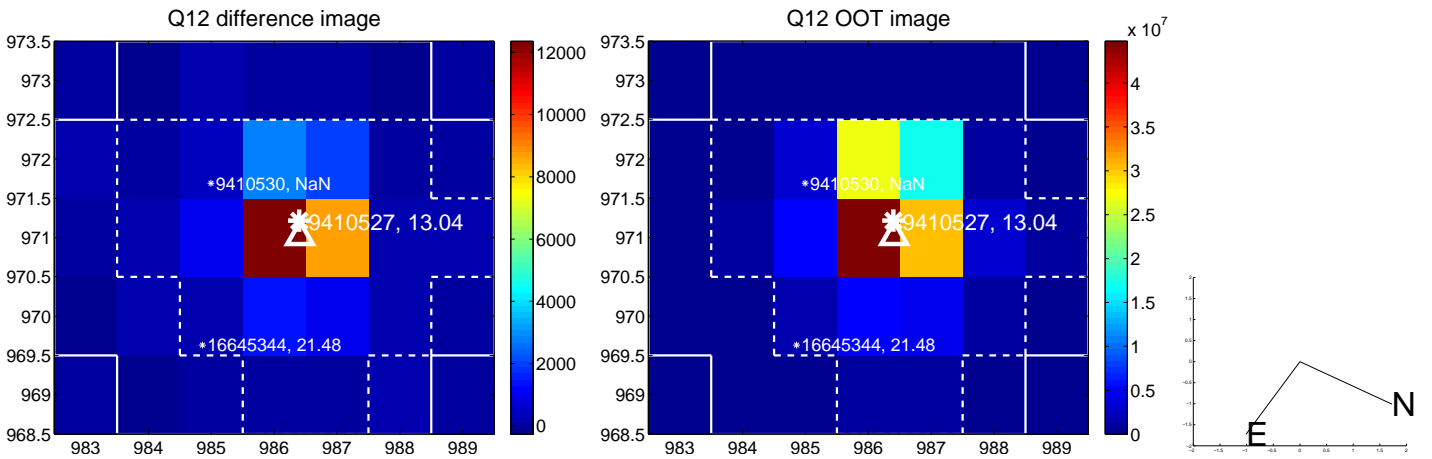
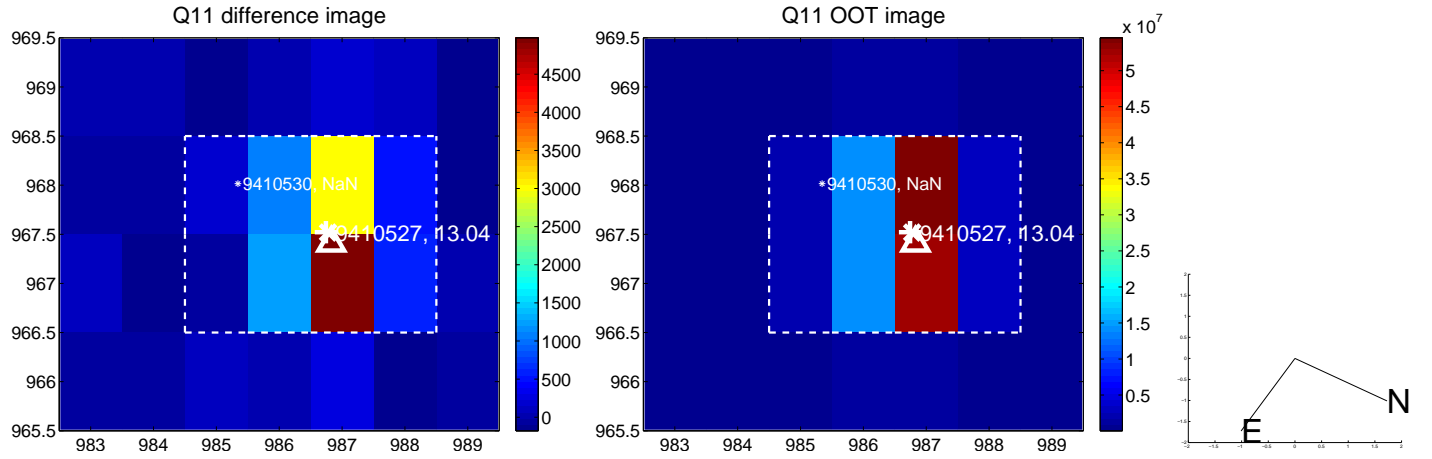
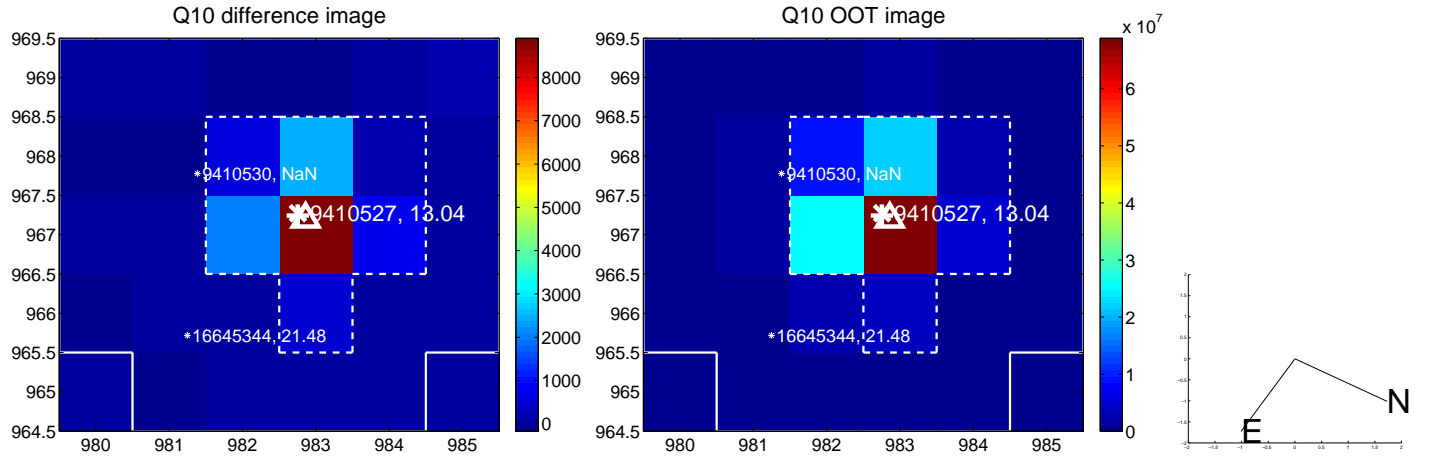
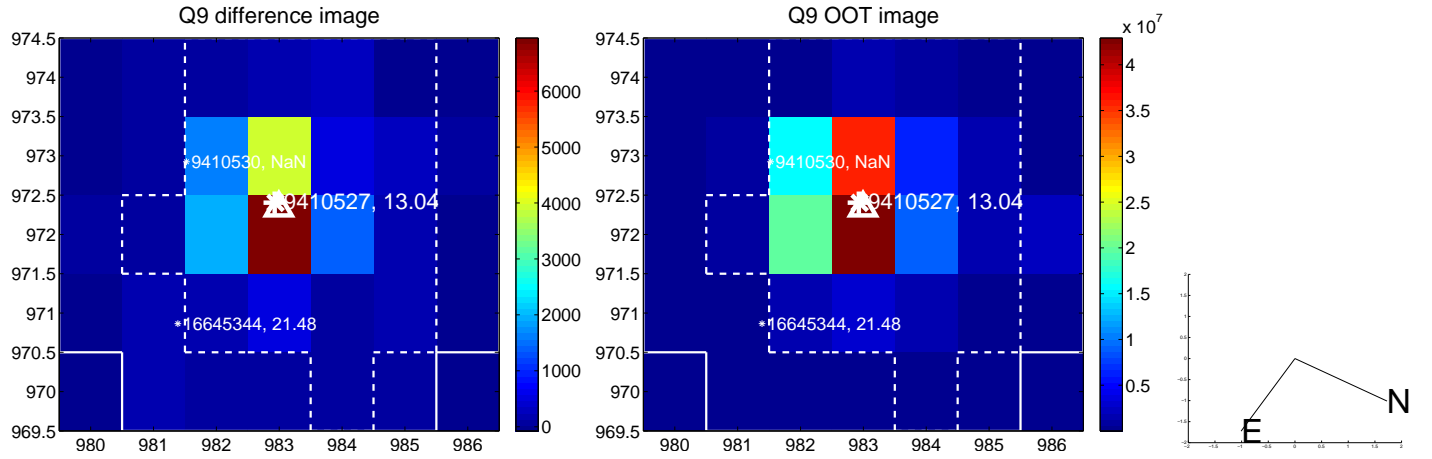
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



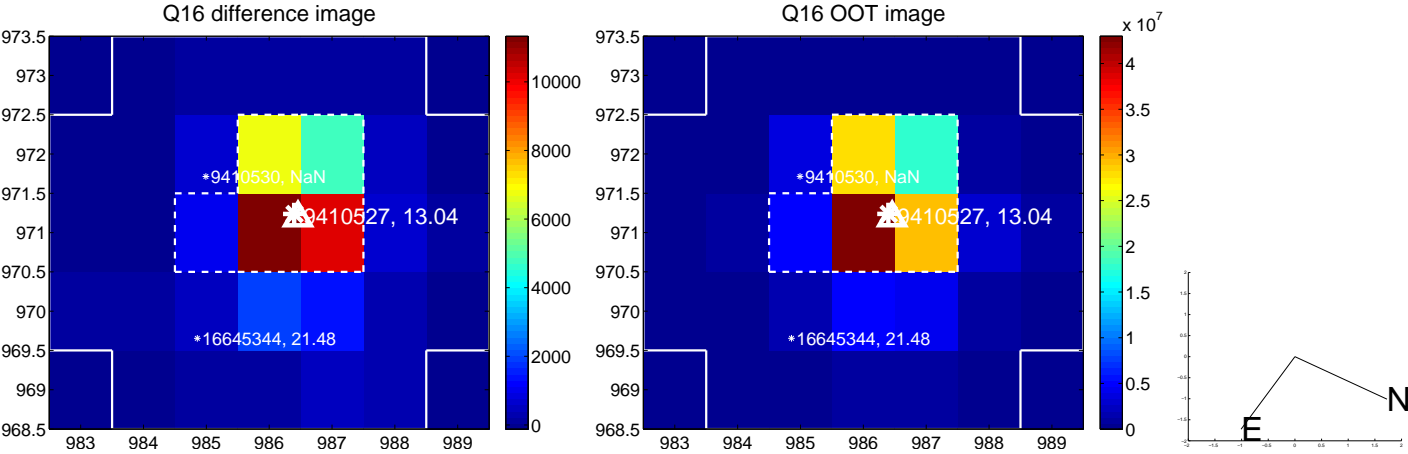
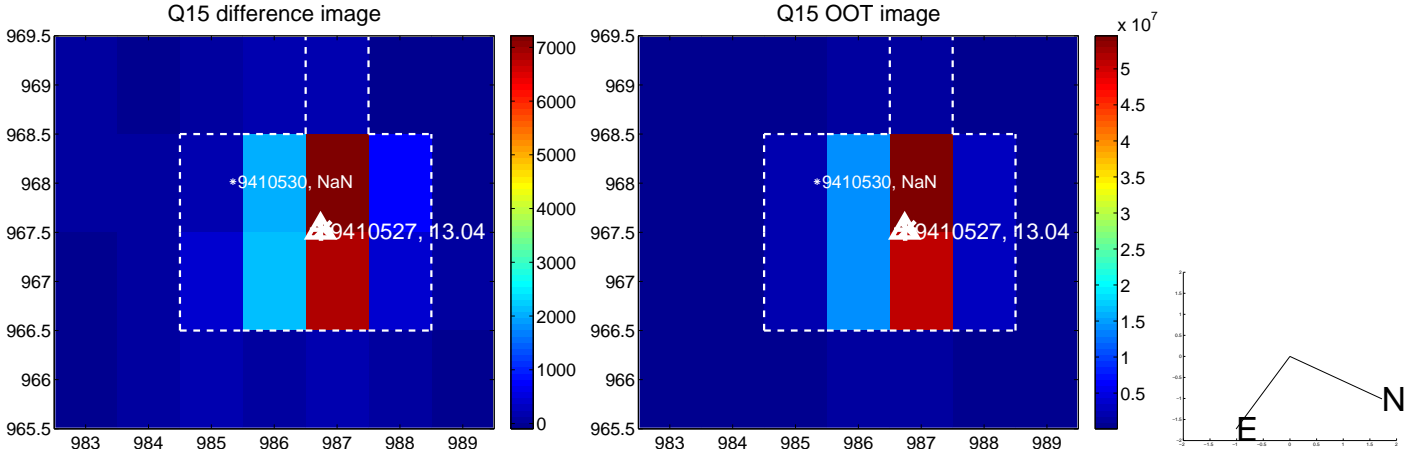
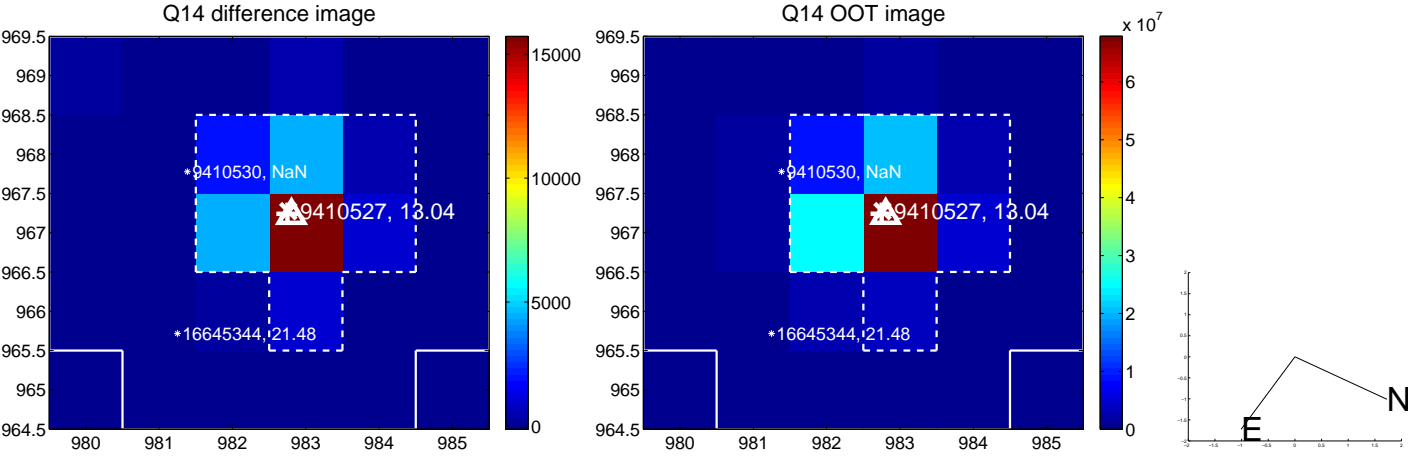
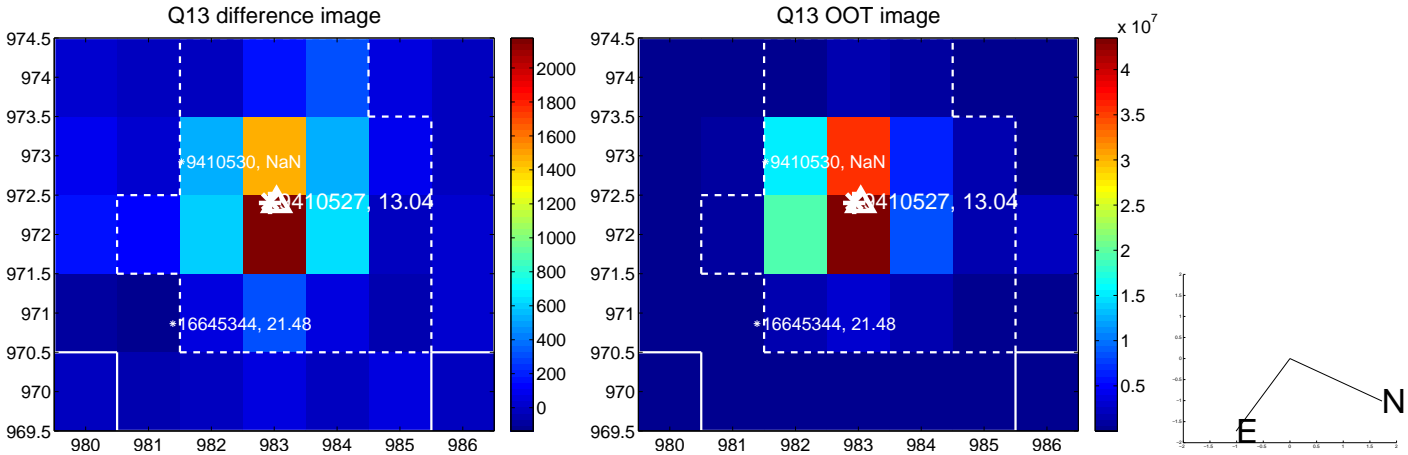
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



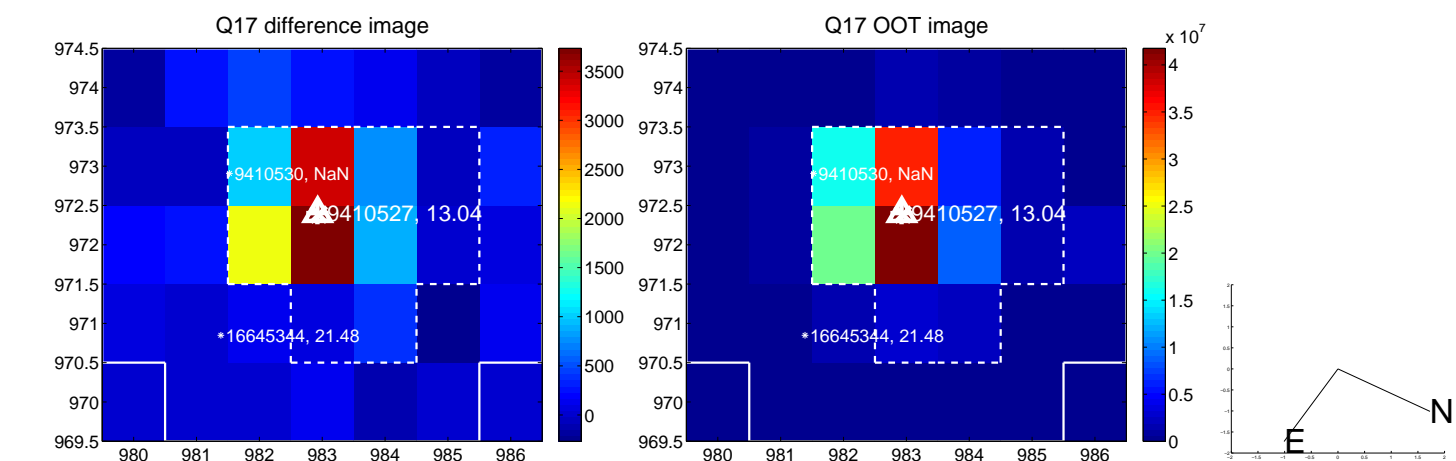
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



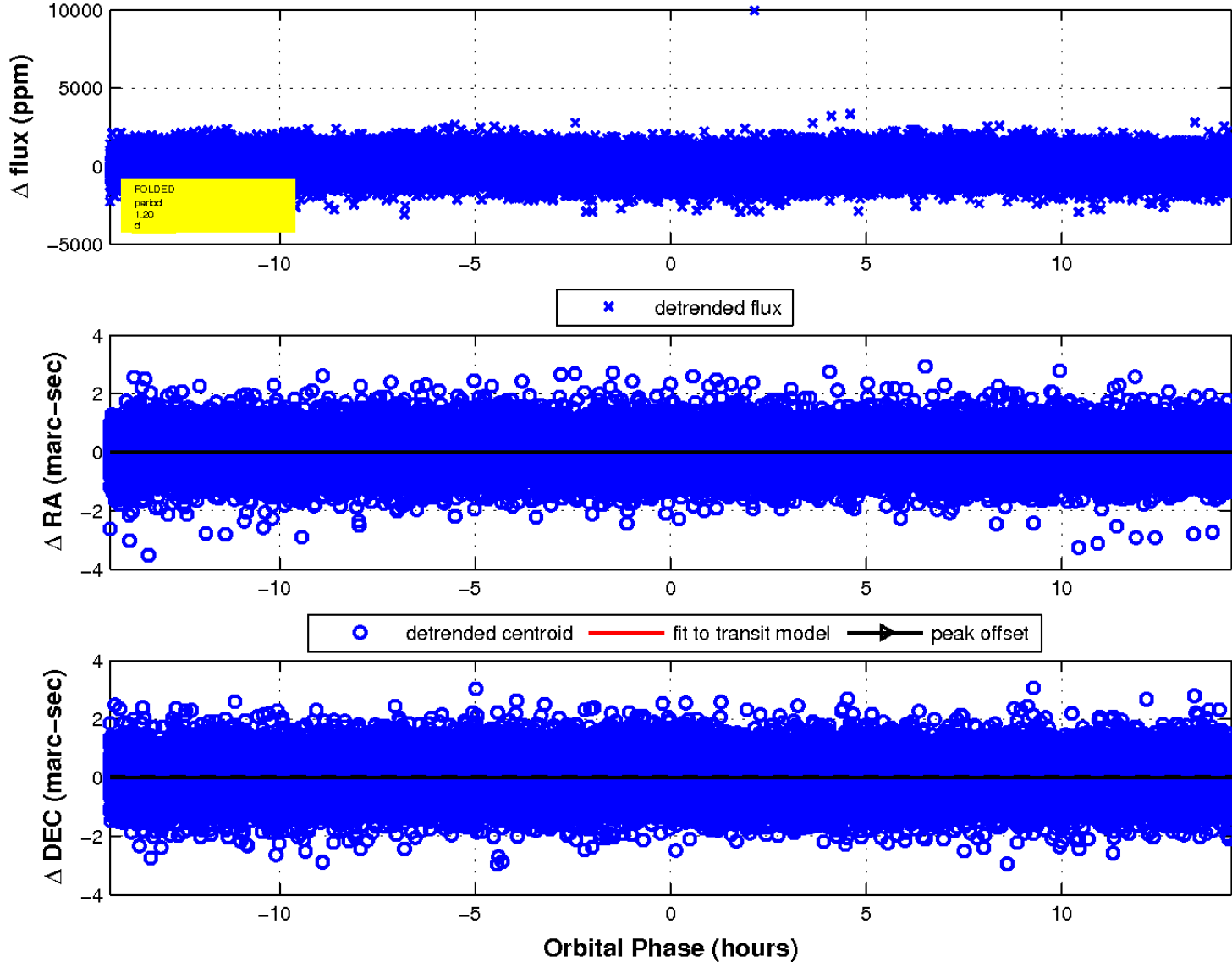
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

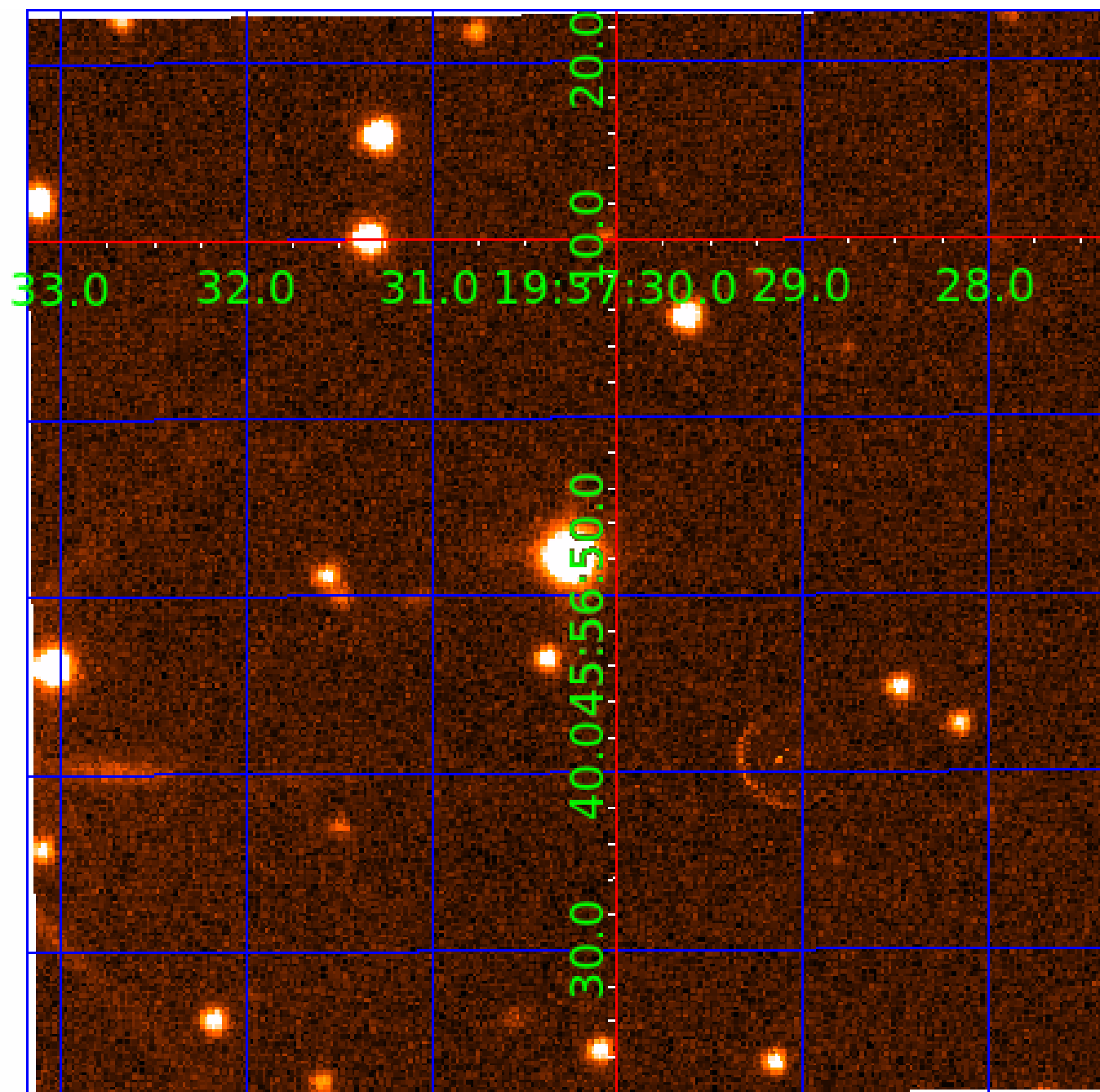


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 009410527

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})
009410527-01	OBS	No	2.391951	131.790735	127.5	7.078	8.2	9.5	1.63	7266	2.26	3857.92
009410527-02	OBS	No	1.195919	132.434047	99.0	7.571	10.4	11.3	1.63	7266	1.65	9721.97
009410527-03	OBS	No	5.473845	133.257074	139.9	23.648	12.0	5.9	1.63	7266	2.06	1279.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009410527-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009410527-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD
009410527-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_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.

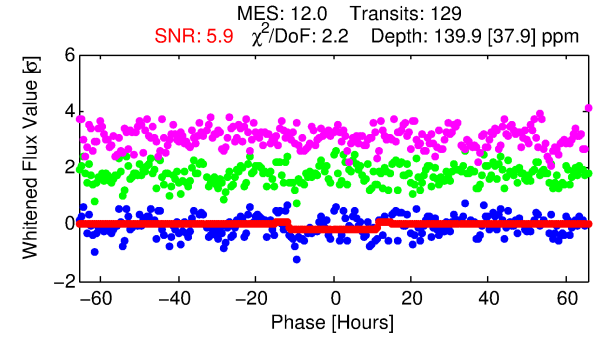
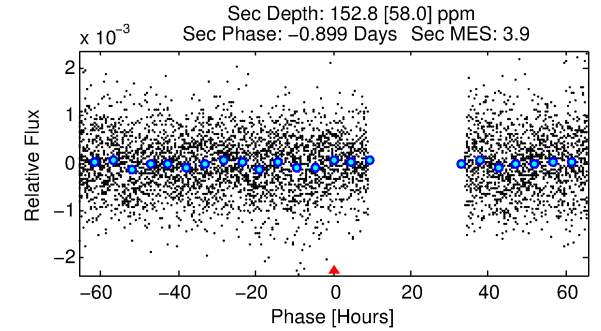
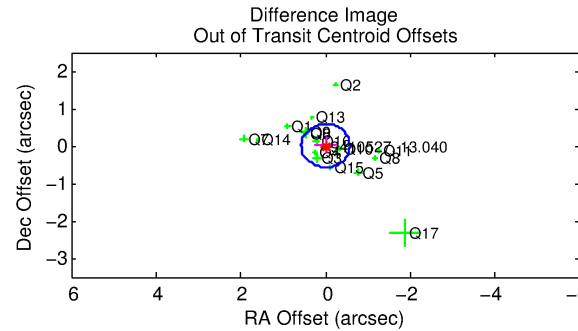
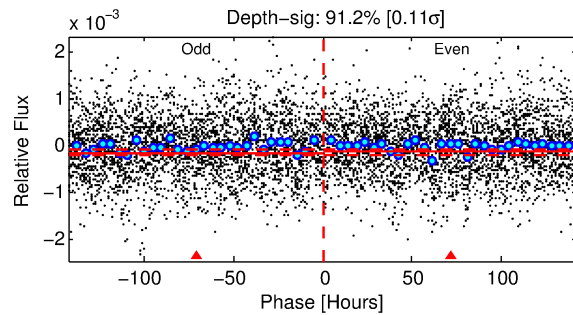
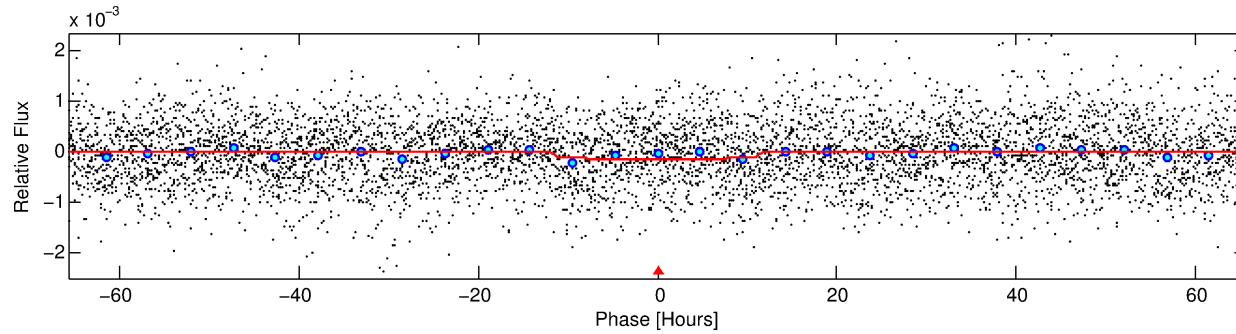
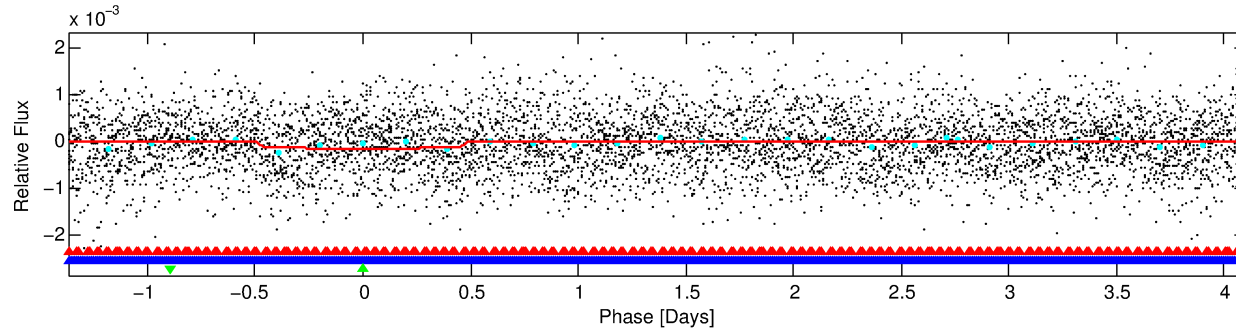
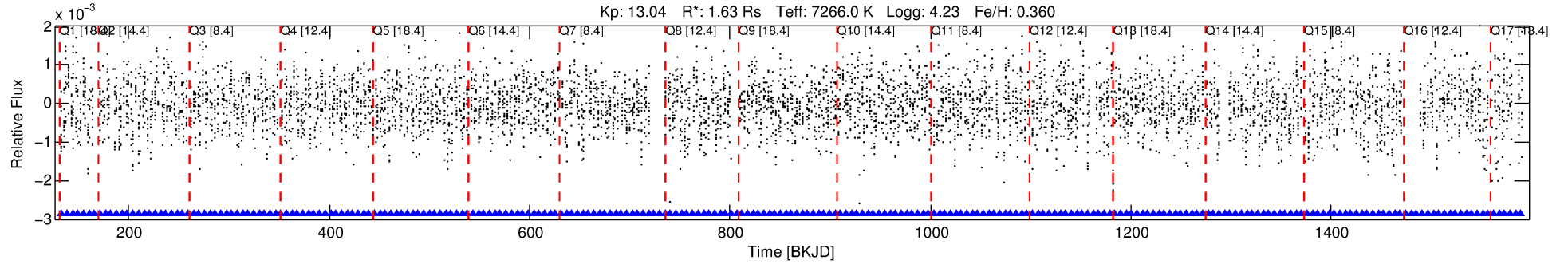
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009410527-03

No Significant Match Found

DV One-Page Summary

KIC: 9410527 Candidate: 3 of 3 Period: 5.474 d



DV Fit Results:

Period = 5.47384 [0.00030] d
Epoch = 133.2571 [0.0377] BKJD
Rp/R* = 0.0116 [0.0048]
a/R* = 1.54 [2.10]
b = 0.69 [1.77]
Seff = 1279.28 [594.28]
Teq = 1525 [177] K
Rp = 2.06 [1.15] Re
a = 0.0720 [0.0218] AU
Ag = 102.53 [103.50] [0.98 σ]
Teffp = 7503 [1754] K [3.39 σ]

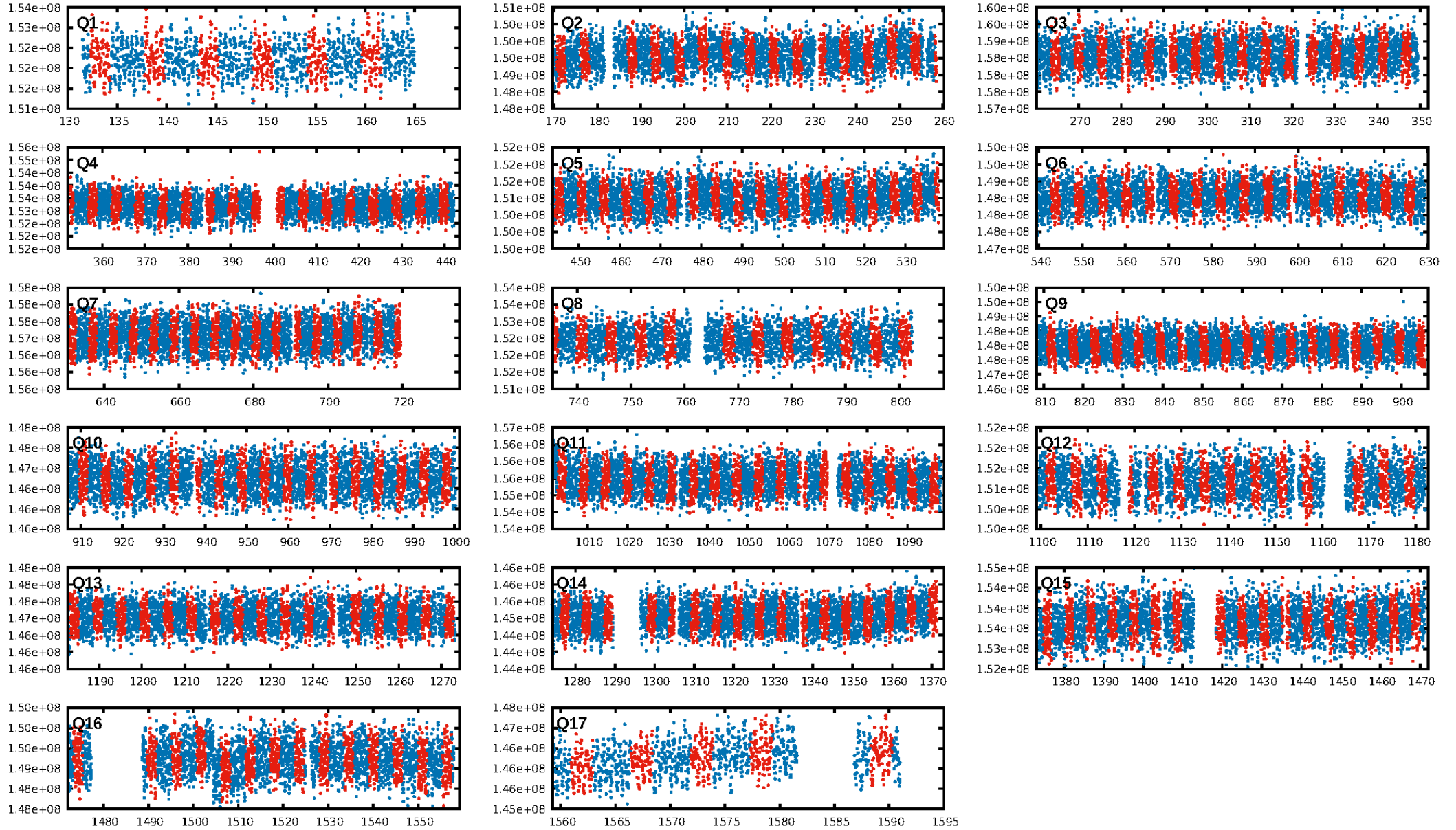
DV Diagnostic Results:

ShortPeriod-sig: 99.7% [3.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [124/124]
GhostDiagnostic-chr: 5.683
Centroid-sig: 18.3%
Centroid-so: 0.149 arcsec [1.08 σ]
OotOffset-rm: 0.011 arcsec [0.06 σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-rm: 0.060 arcsec [0.21 σ]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.44 [7/16]
DiffImageOverlap-fno: 0.00 [0/17]

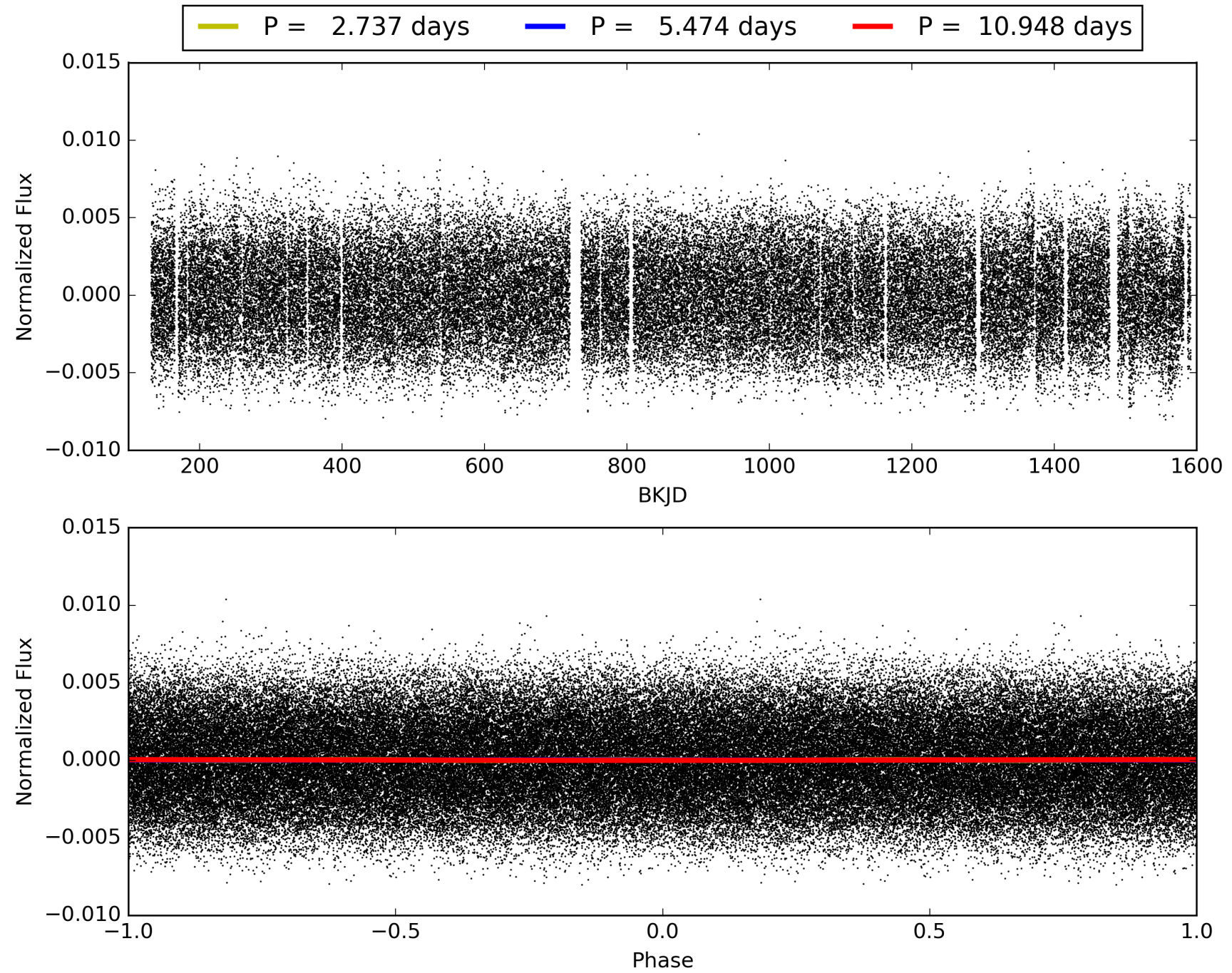
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 02:11:03 Z

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

TCE 009410527-03, PDC Light Curves

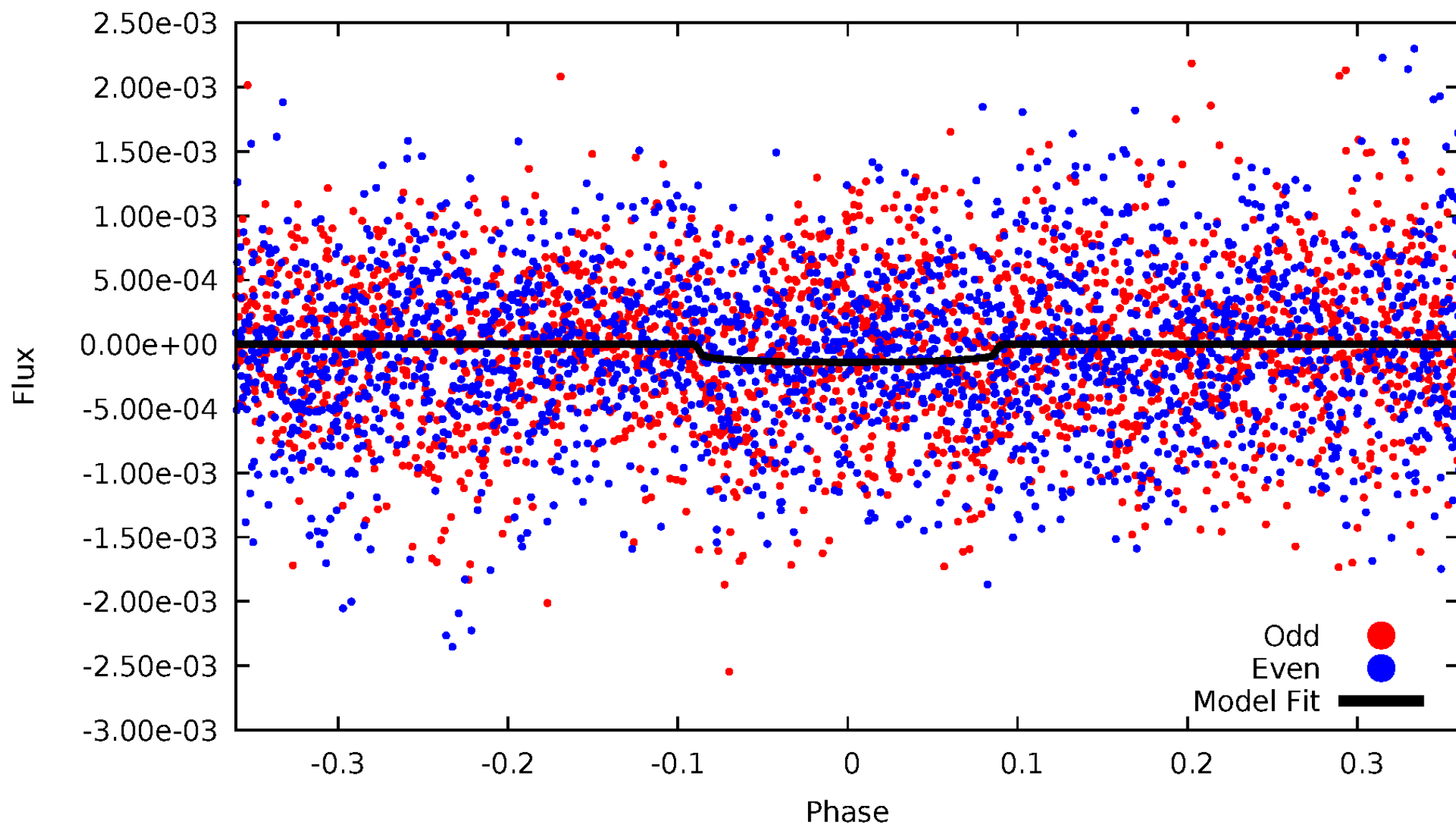


TCE 009410527-03



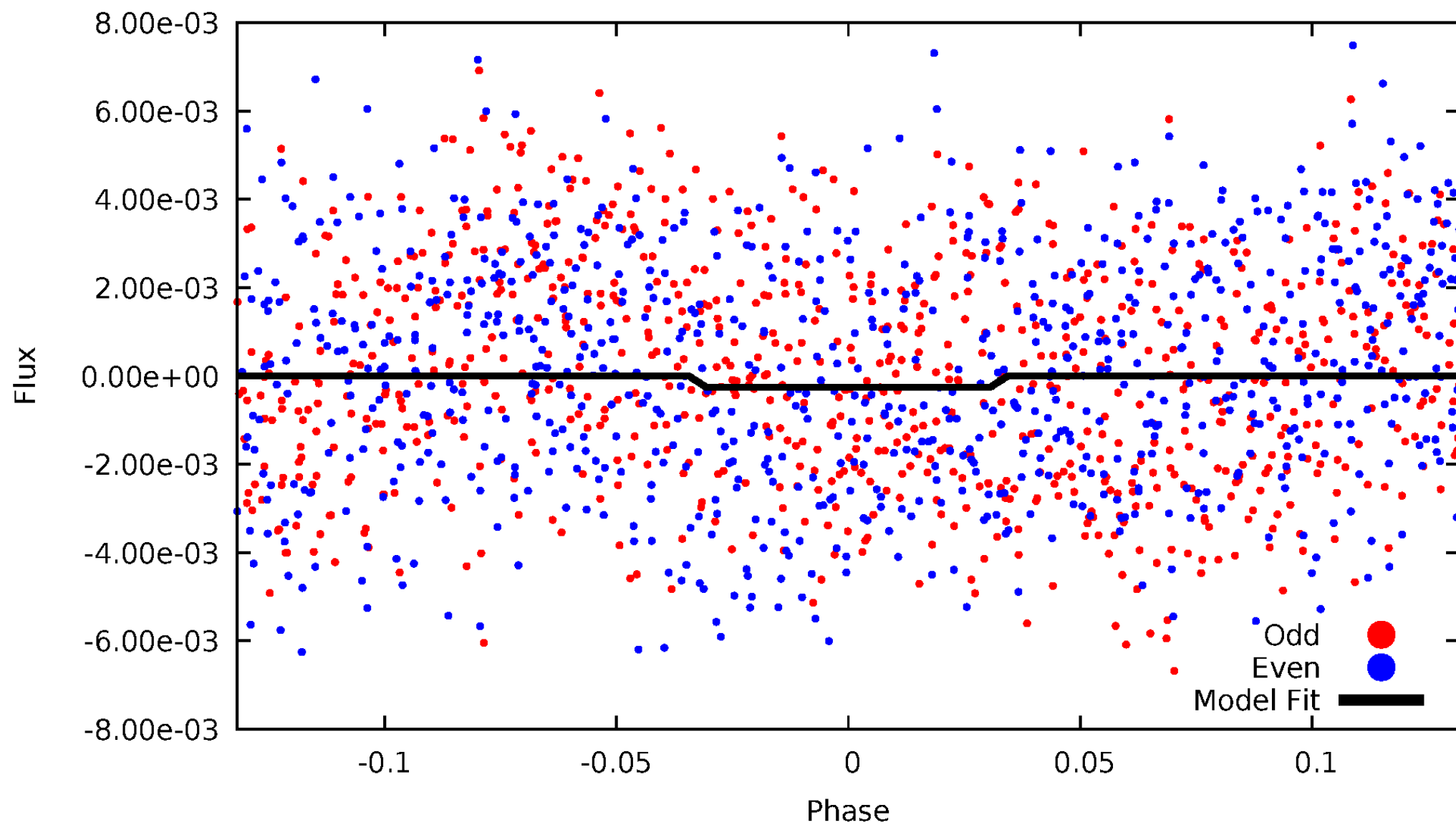
DV Odd/Even

TCE 009410527-03



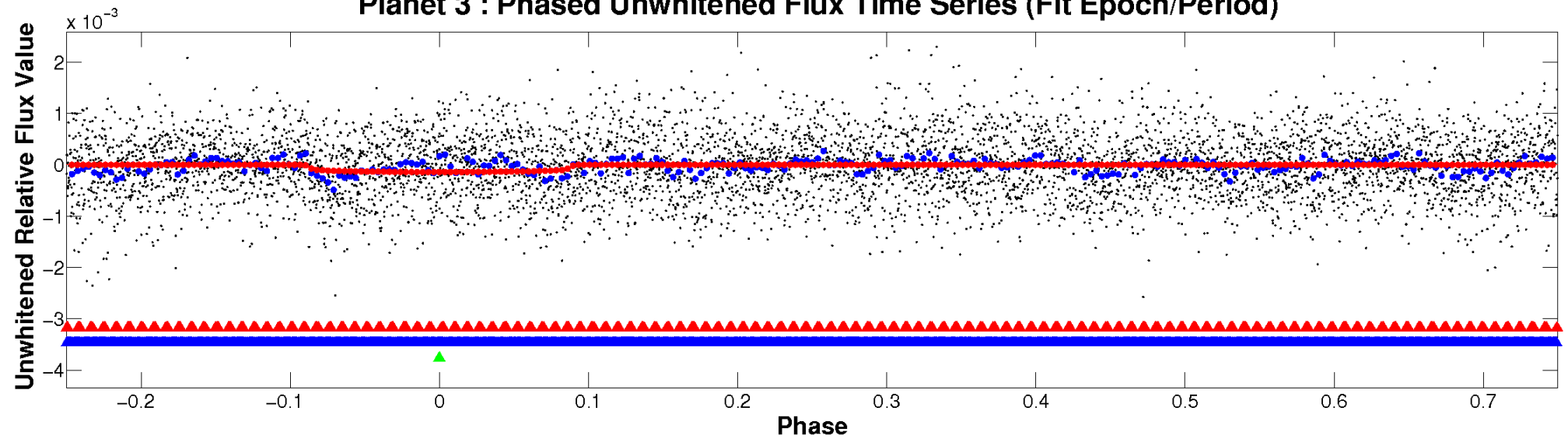
ALT Odd/Even

TCE 009410527-03

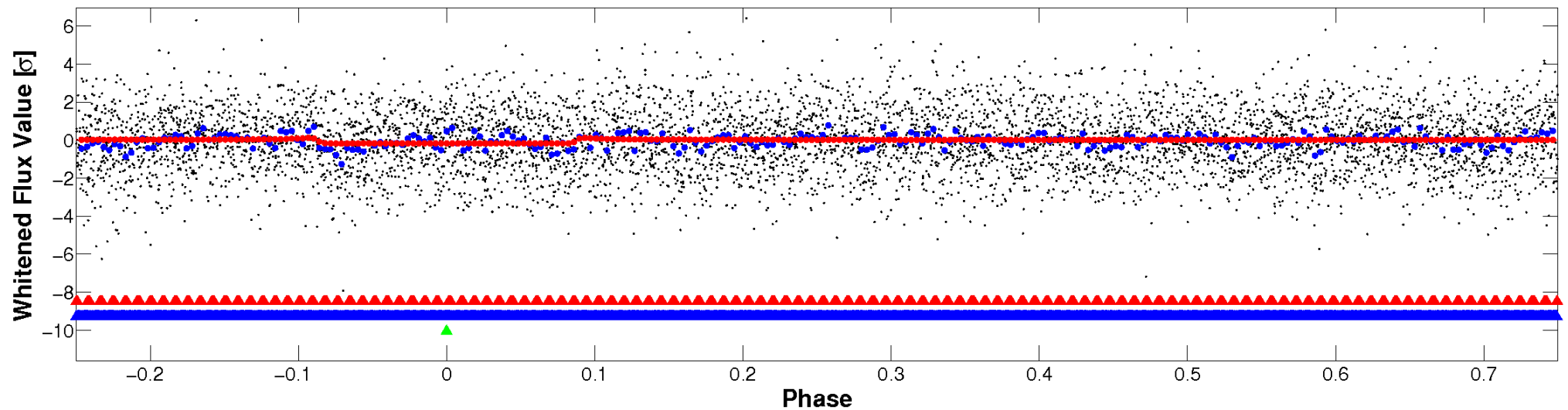


Non-Whitened Vs. Whitened Light Curve

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

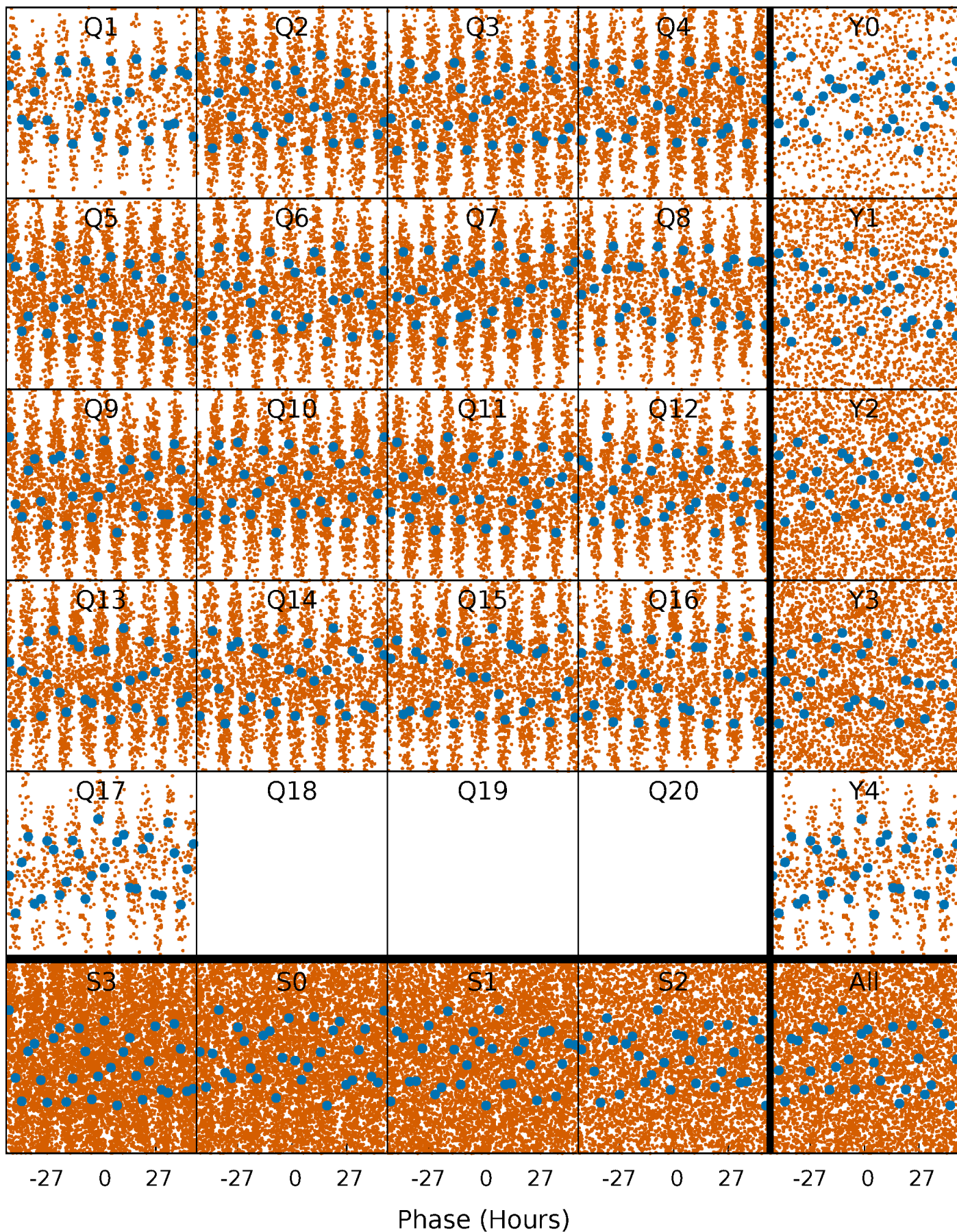


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



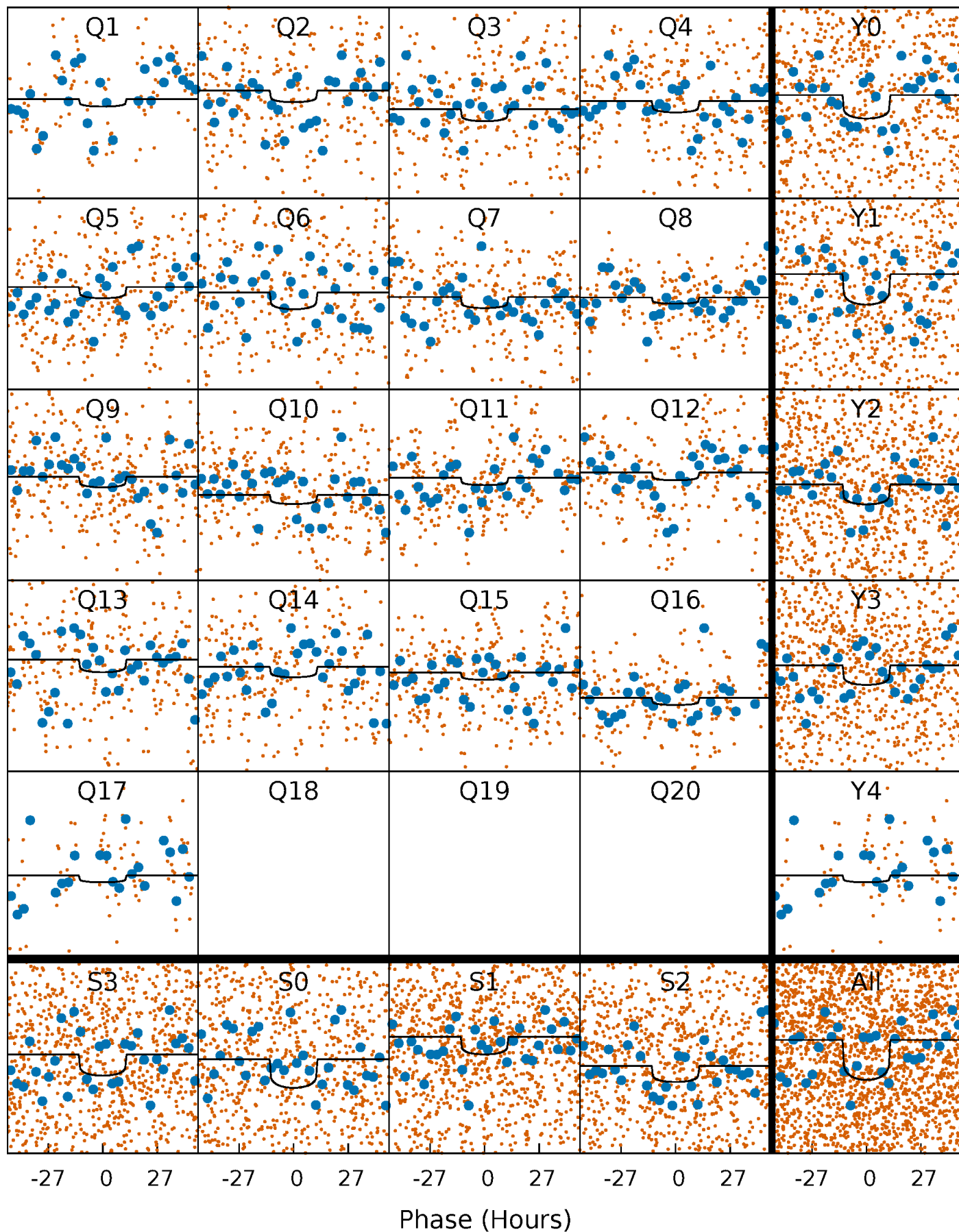
PDC Quarter-Phased Transit Curves

TCE 009410527-03 P= 5.473845 Days $T_0=133.257074$ (BKJD)



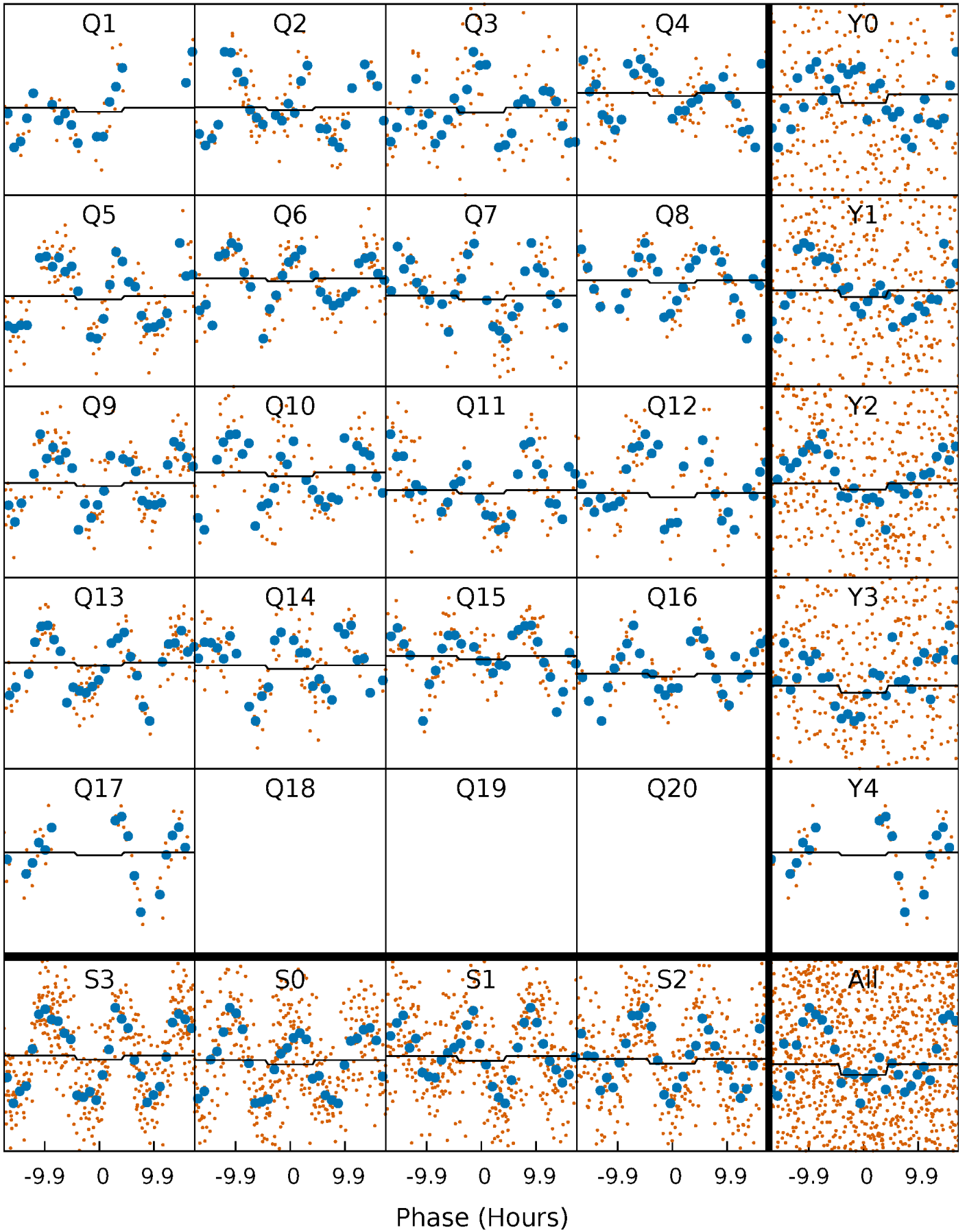
DV Quarter-Phased Transit Curves

TCE 009410527-03 P= 5.473845 Days $T_0=133.257074$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

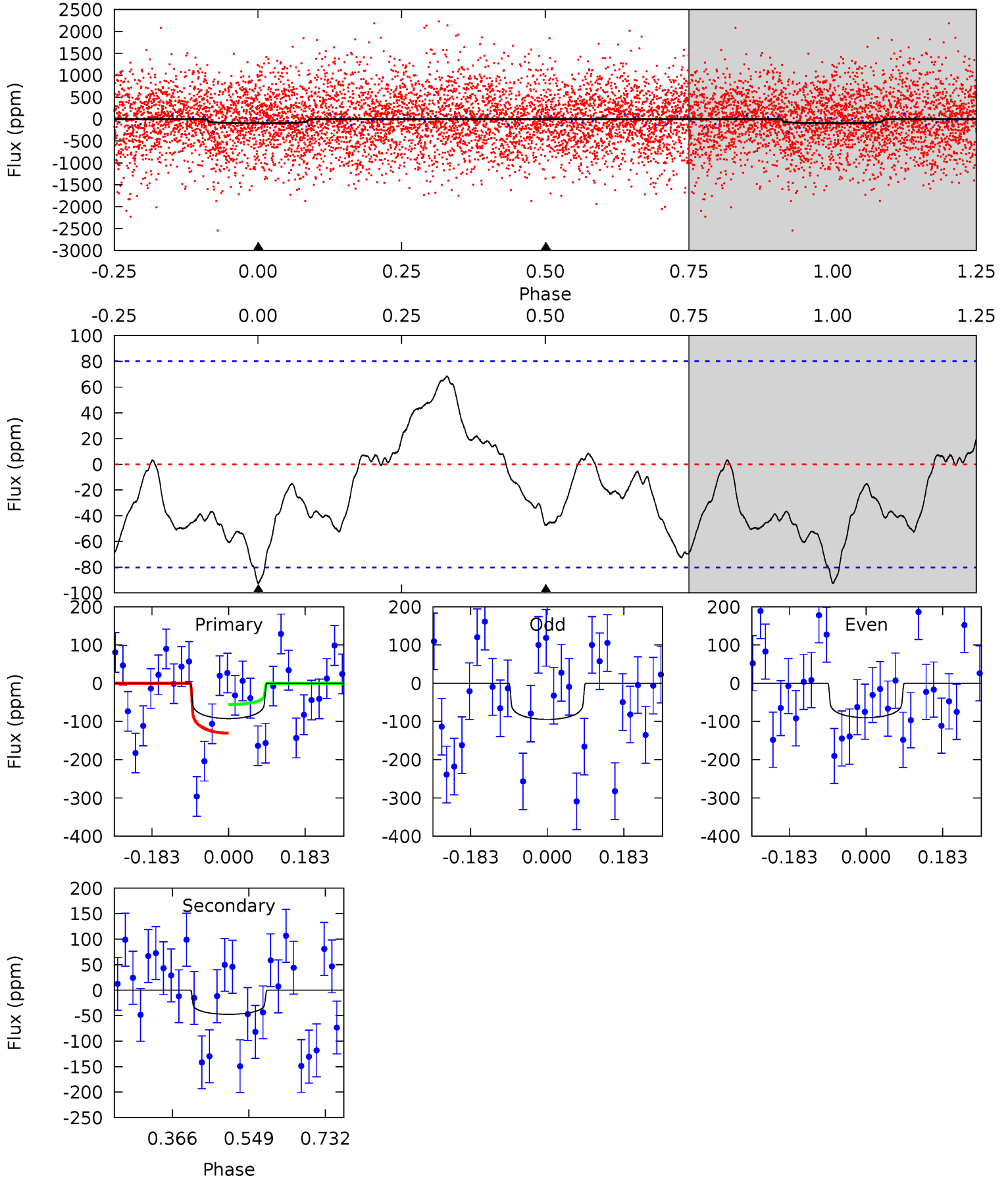
TCE 009410527-03 P= 5.473034 Days $T_0=133.283229$ (BKJD)



DV Model-Shift Uniqueness Test

009410527-03, P = 5.473845 Days, E = 127.783229 Days

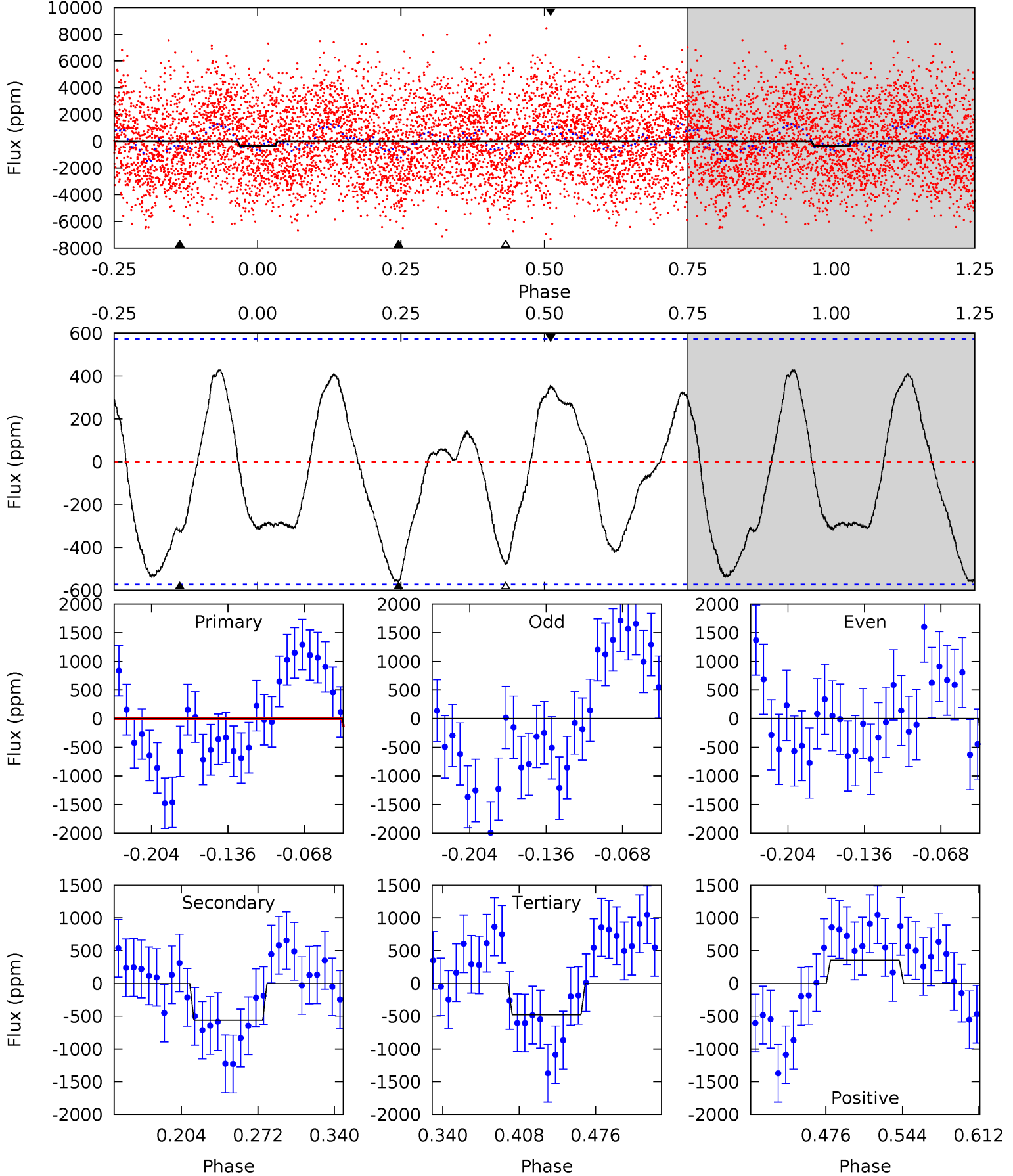
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.12	2.62	0	0	4.44	1.33	2.17	5.12	5.12	2.62	2.62	0.13	1.17	0.43	2.14



Alt Model-Shift Uniqueness Test

009410527-03, P = 5.473034 Days, E = 127.810195 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.65	4.56	3.88	2.89	4.65	1.82	2.01	-1.24	-0.24	0.68	1.68	2.51	0.33	0.43	1.05



Stellar Parameters For KIC 009410527

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7266^{+200}_{-342}	$4.234^{+0.056}_{-0.224}$	$0.360^{+0.100}_{-0.350}$	$1.629^{+0.609}_{-0.152}$	$1.660^{+0.200}_{-0.200}$	$0.540^{+0.131}_{-0.314}$
	+3%/-5%	+1%/-5%	+28%/-97%	+37%/-9%	+12%/-12%	+24%/-58%
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 009410527-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-47 ± 18	$2.26^{+0.91}_{-0.94}$	2159^{+171}_{-118}	5380^{+1554}_{-908}	26^{+54}_{-15}
Alt.	-563 ± 123	$3.03^{+0.94}_{-0.96}$	2172^{+155}_{-126}	9162^{+3296}_{-1653}	170^{+213}_{-77}

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 $A_{obs} \gg 1.0$

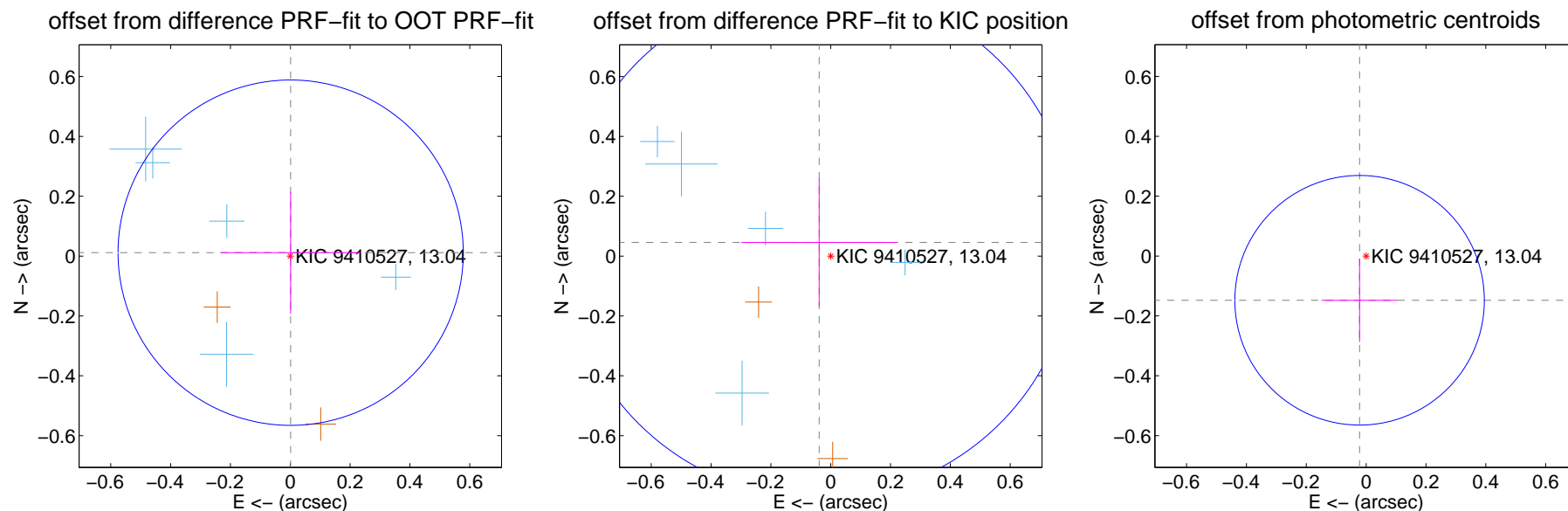
DV Centroid Data

Supplemental centroid analysis for 009410527-03. Kepler magnitude: 13.04. Transit SNR 5.90

There are 7 quarters with good PRF difference image offsets

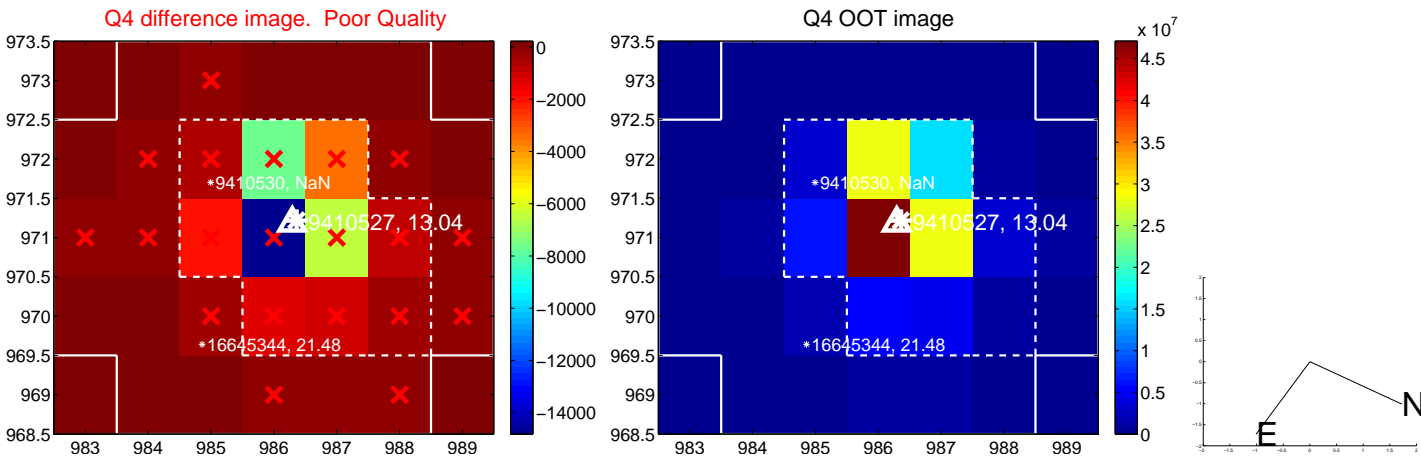
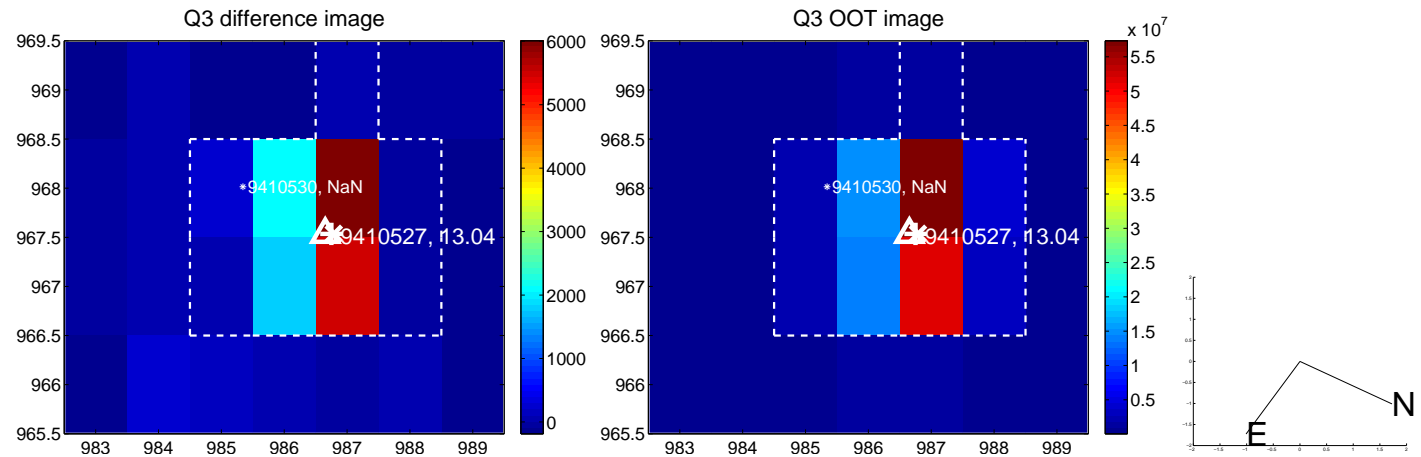
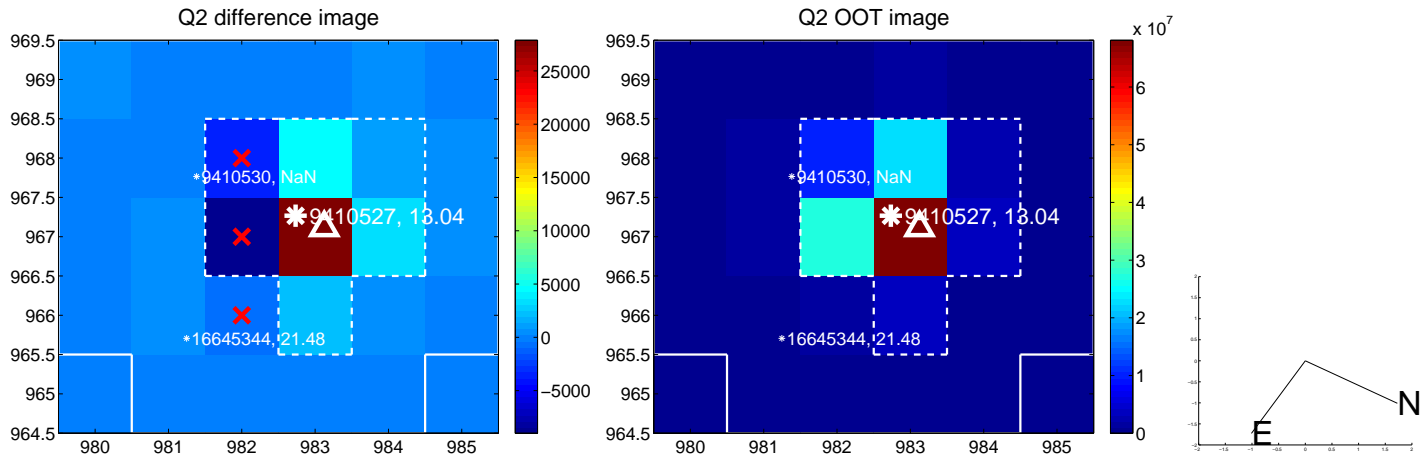
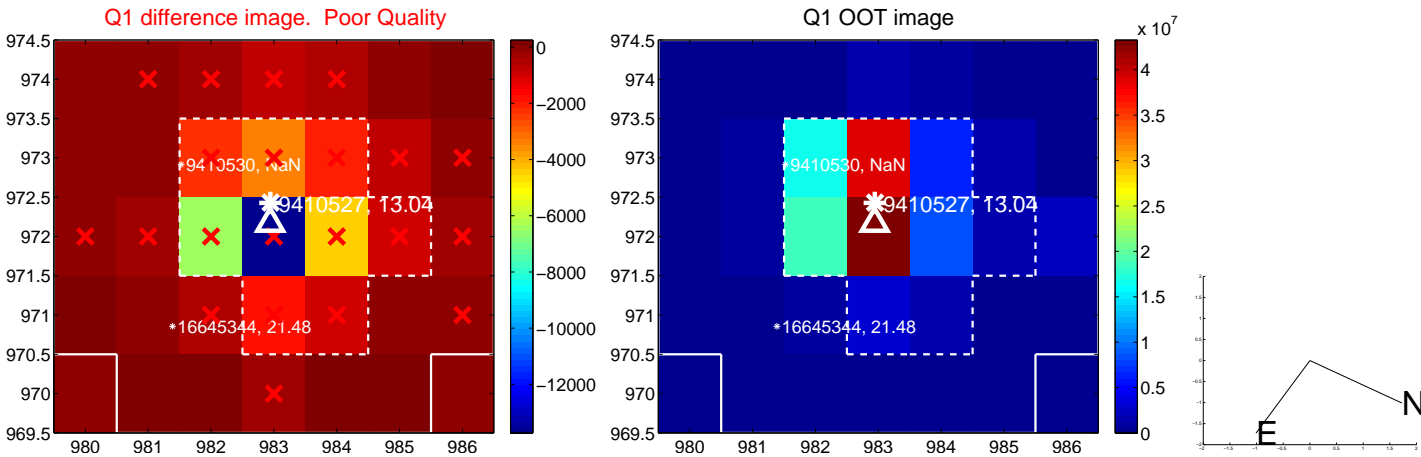
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.011 ± 0.192	0.06	-0.001 ± 0.235	0.011 ± 0.204
PRF-fit source offset from KIC position	0.060 ± 0.285	0.21	0.039 ± 0.261	0.046 ± 0.214
photometric centroid source offset	0.15 ± 0.14	1.08	0.02 ± 0.13	-0.15 ± 0.14

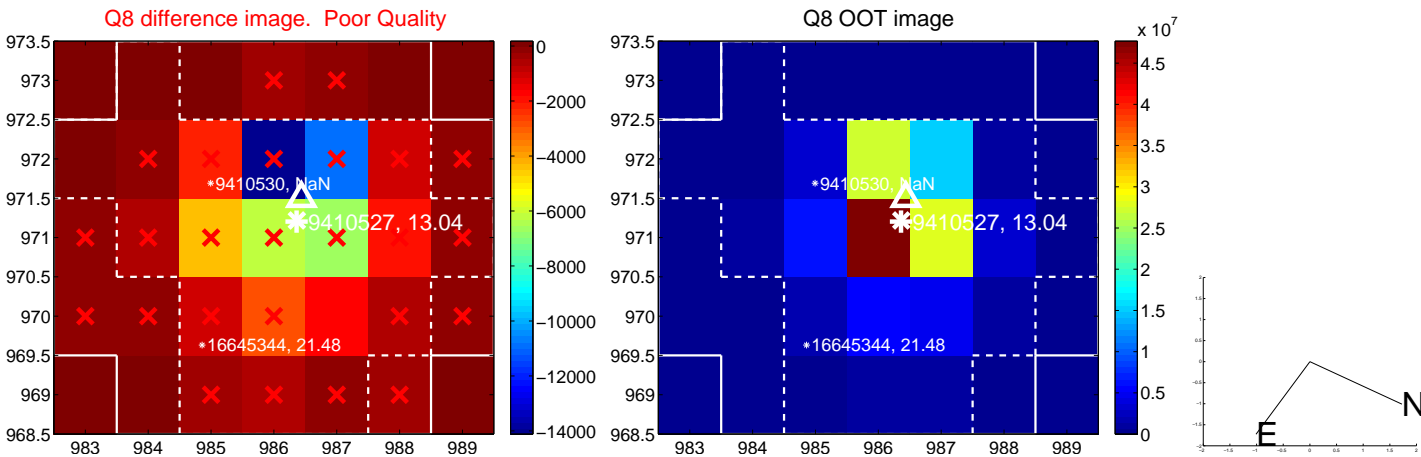
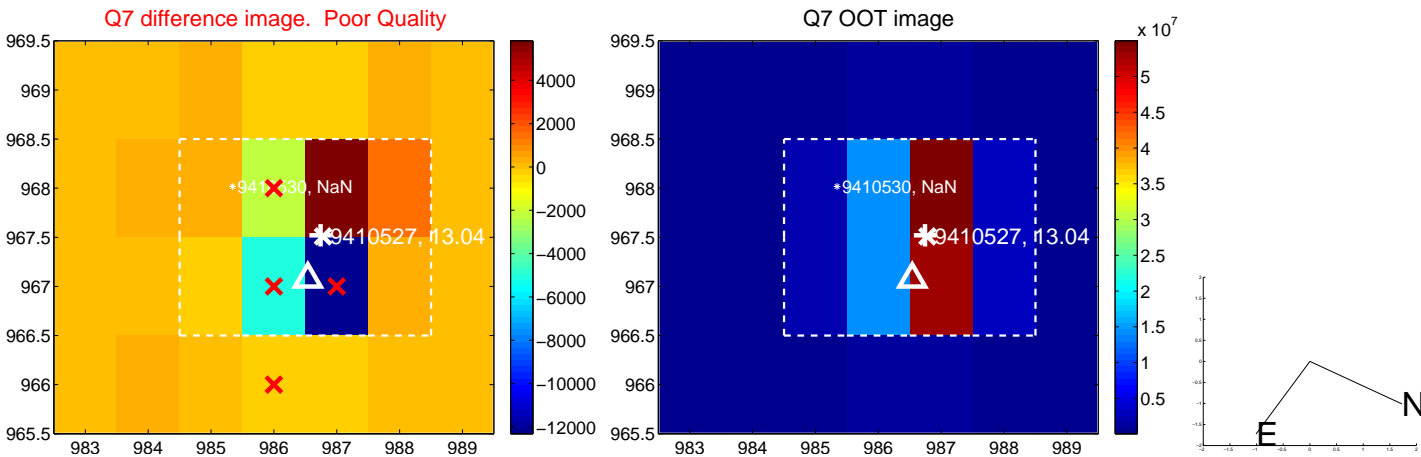
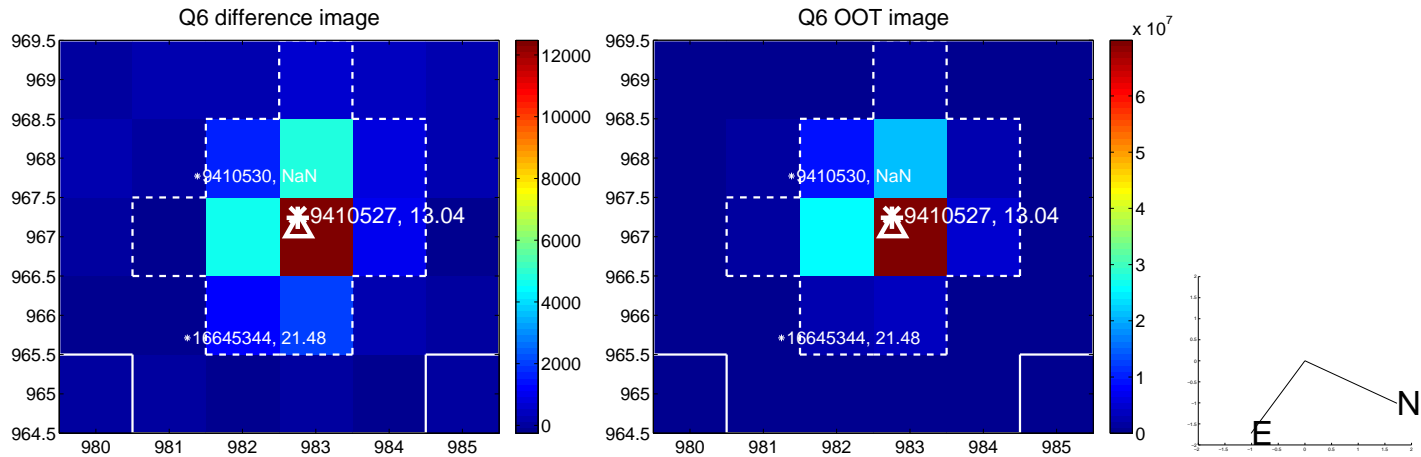
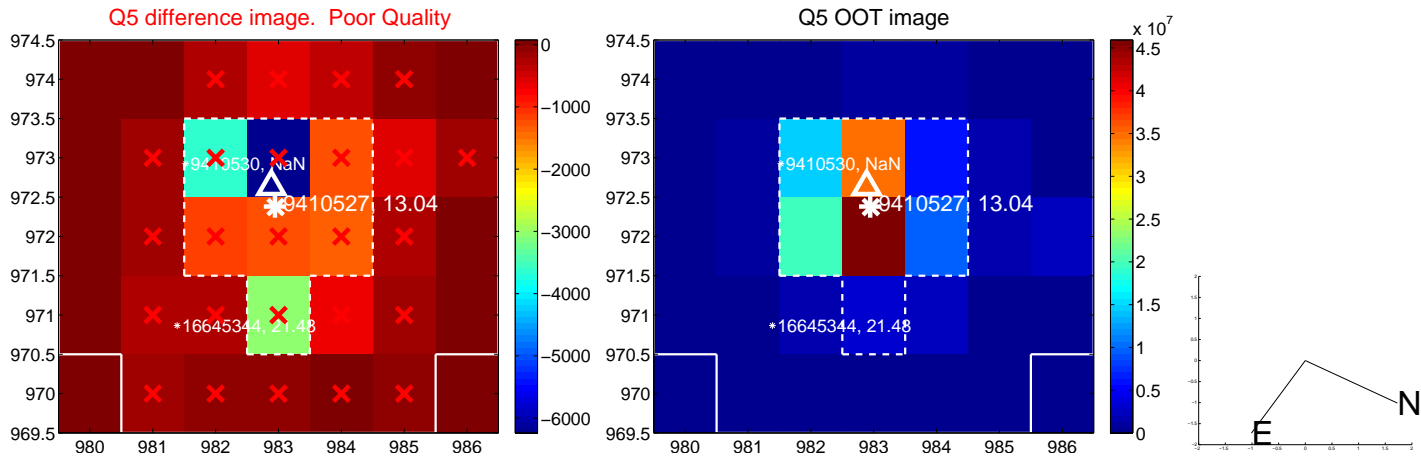


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

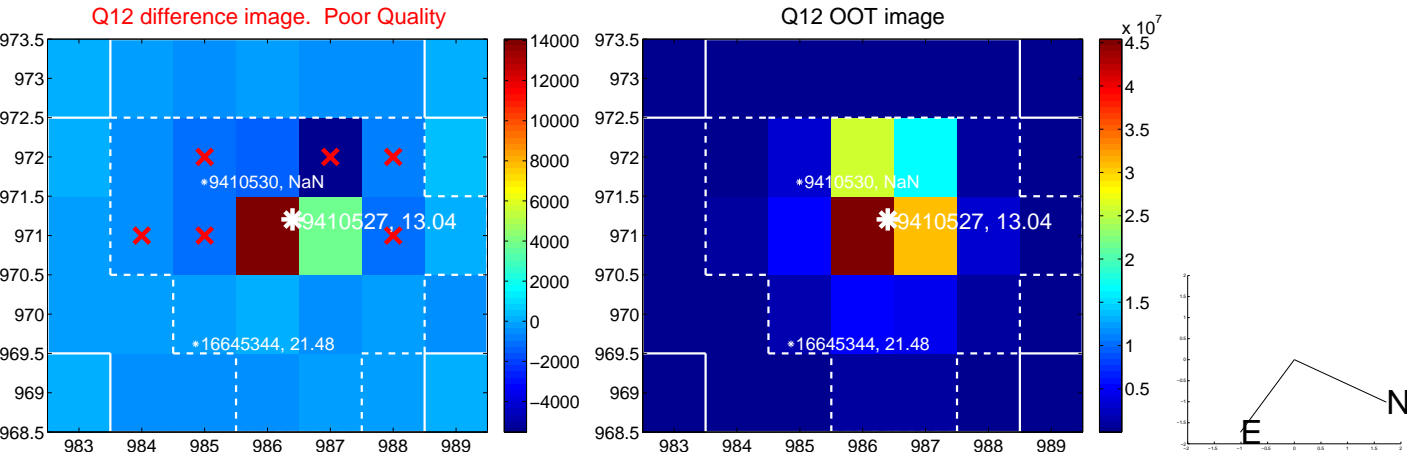
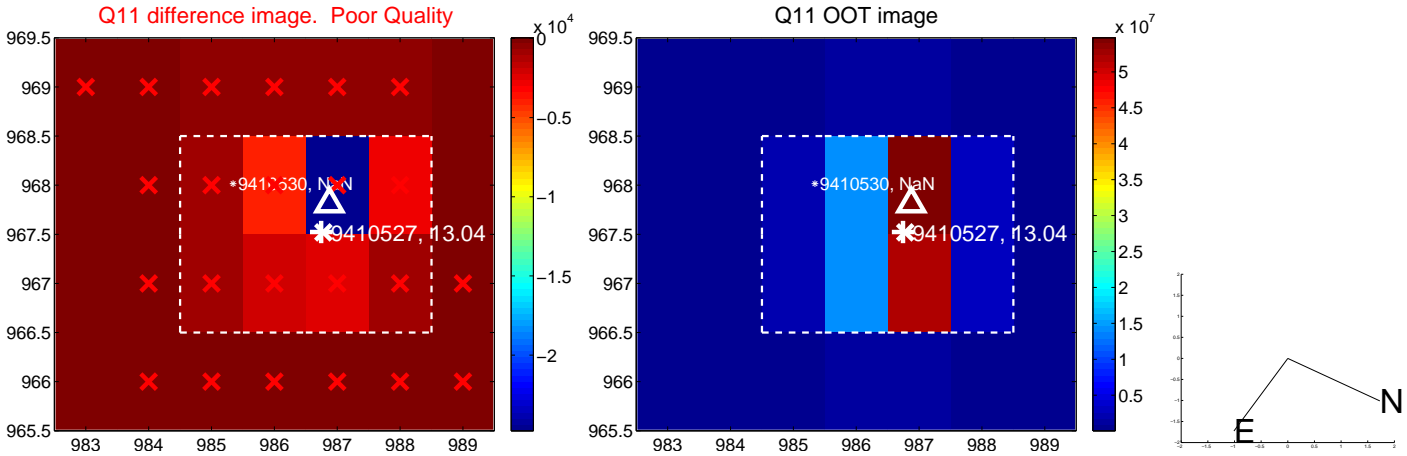
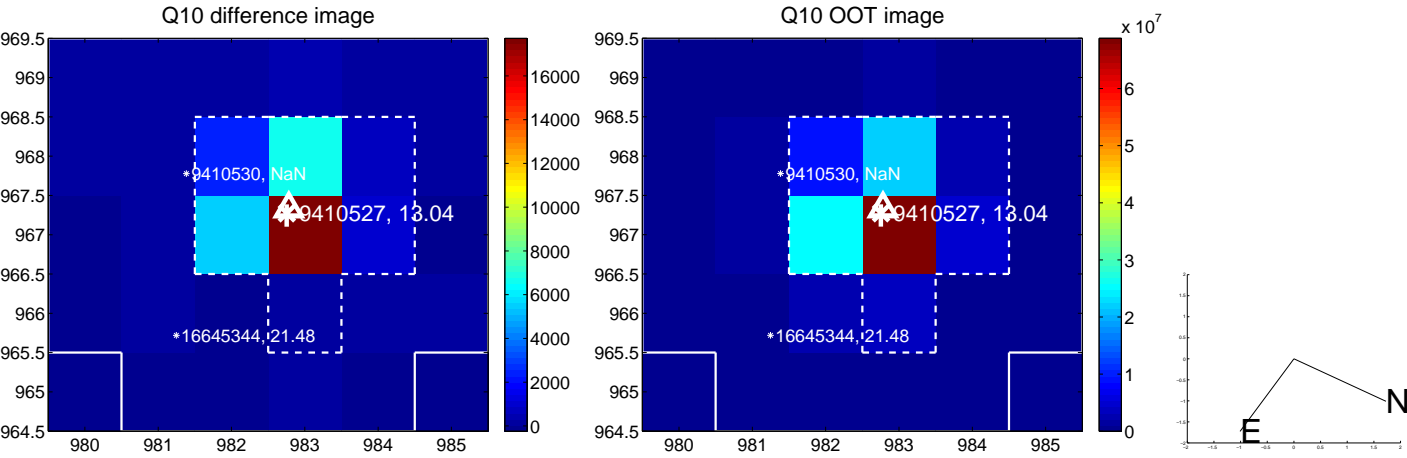
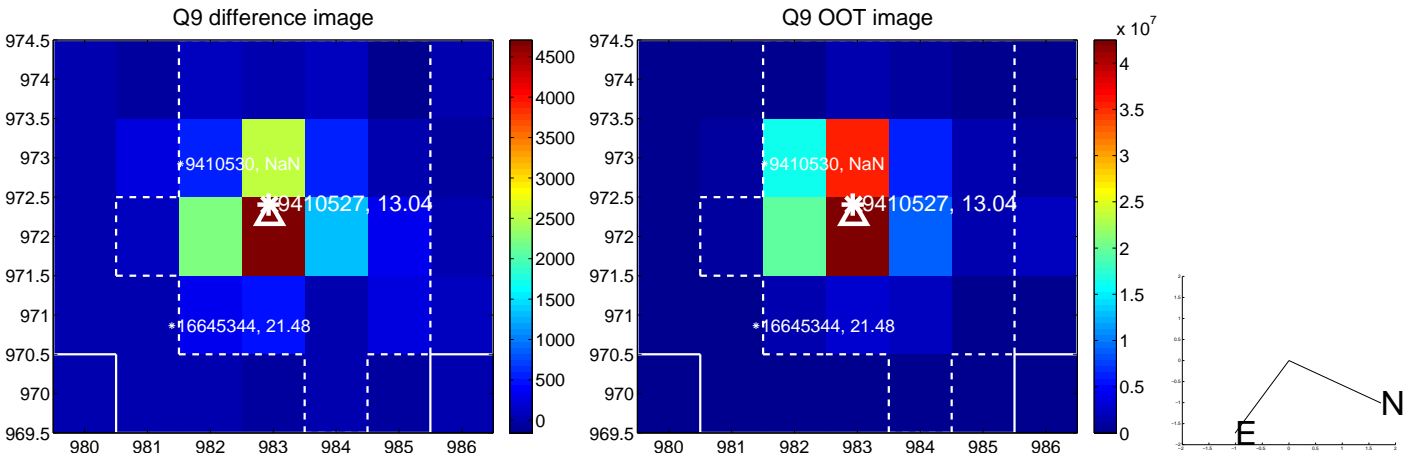
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



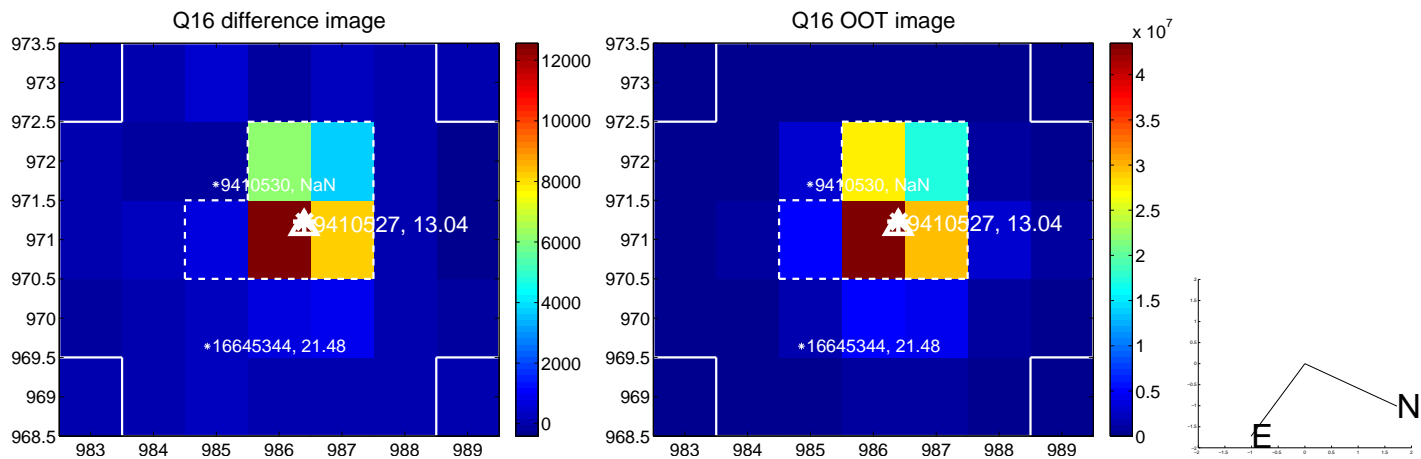
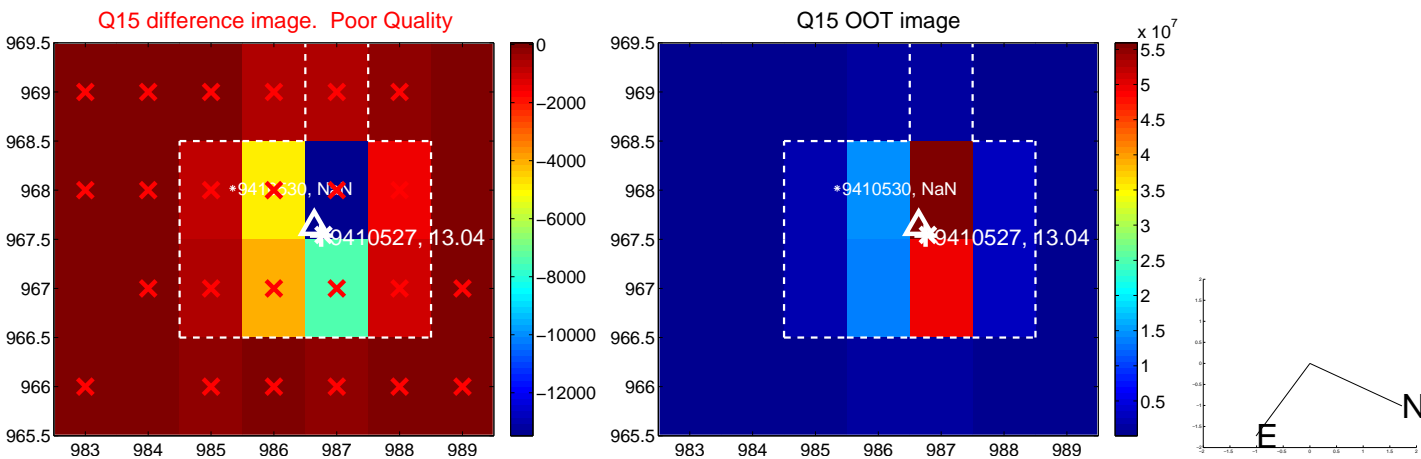
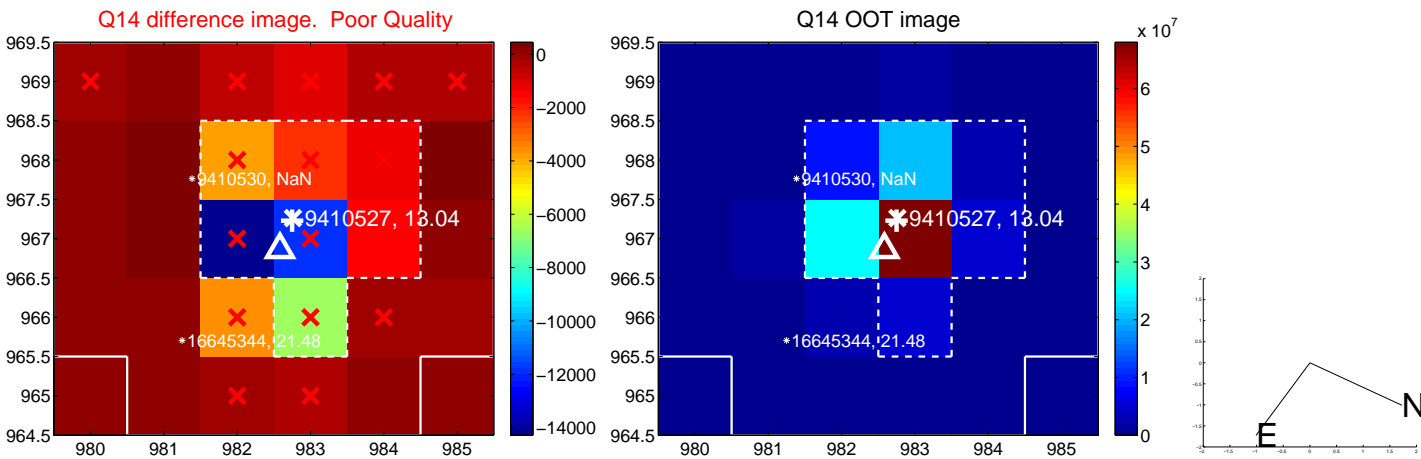
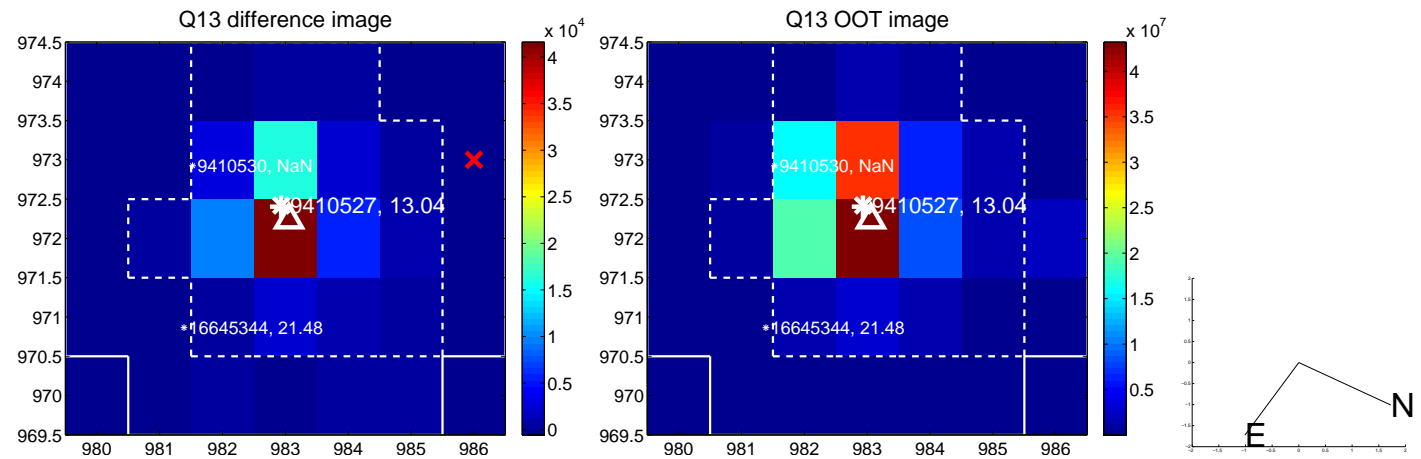
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



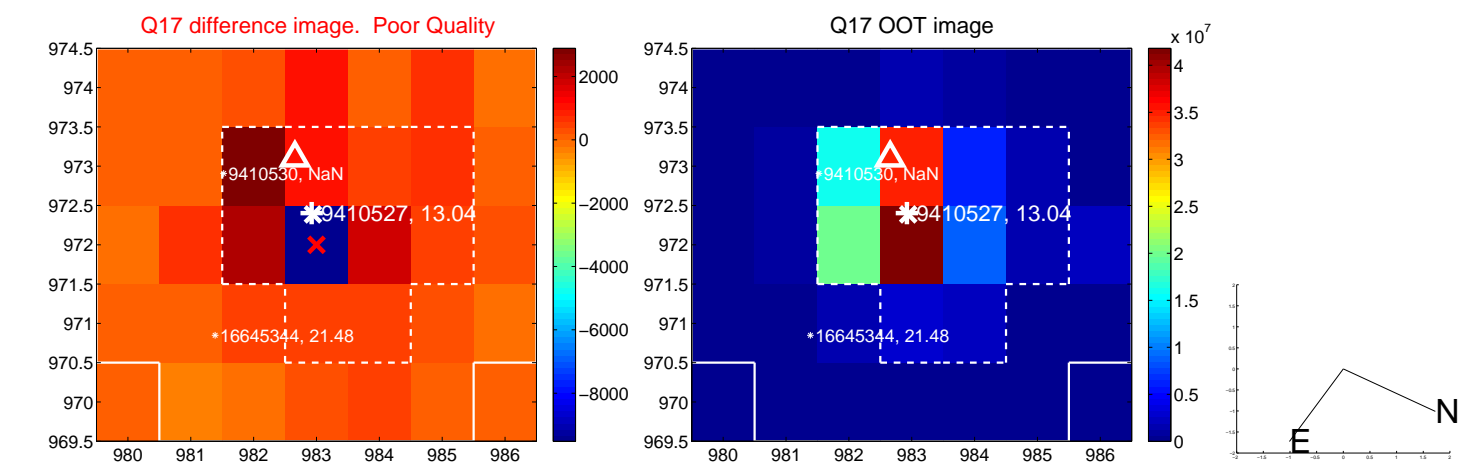
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



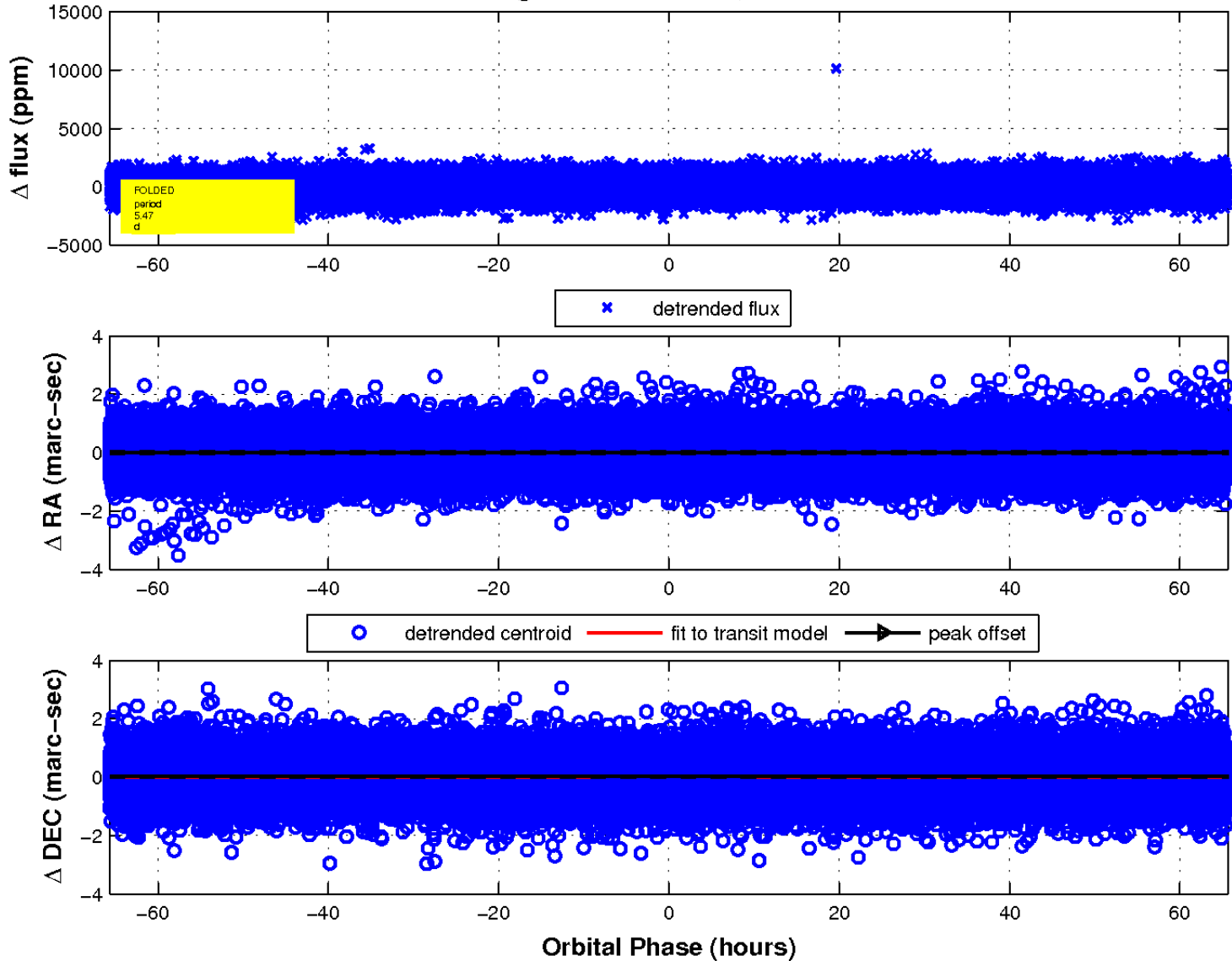
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

