

KIC 010224920

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})
010224920-01	OBS	No	0.573508	131.971247	497.8	1.203	10.1	12.5	1.77	7084	4.63	29484.79
010224920-02	OBS	No	0.573503	131.830762	545.0	1.098	10.9	11.2	1.77	7084	4.82	29485.18
010224920-03	OBS	No	0.573501	131.689227	573.8	1.228	11.2	12.1	1.77	7084	4.95	29485.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010224920-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
010224920-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD
010224920-03	OBS	FP	0.00	1	0	0	0	LPP_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.

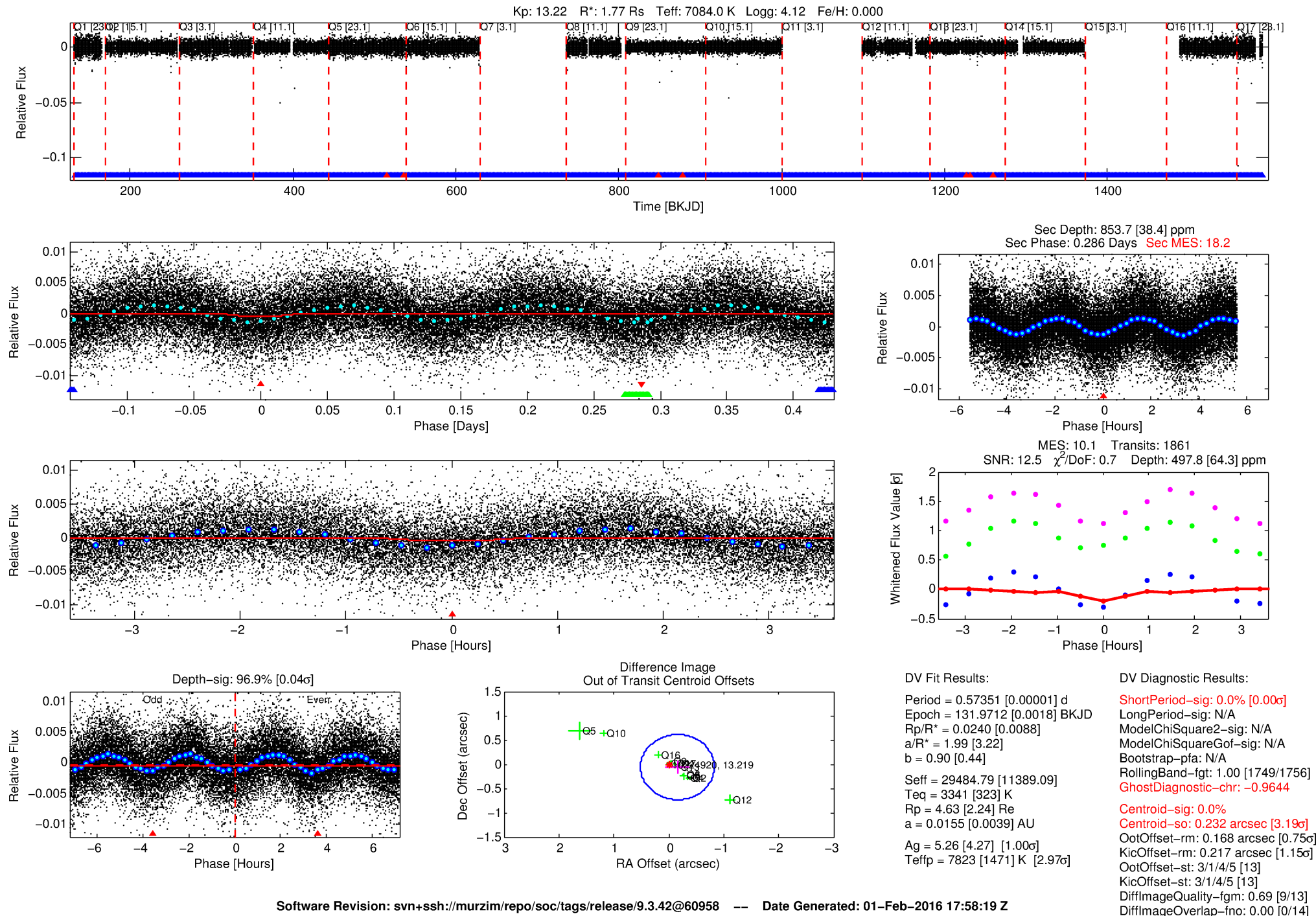
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010224920-01

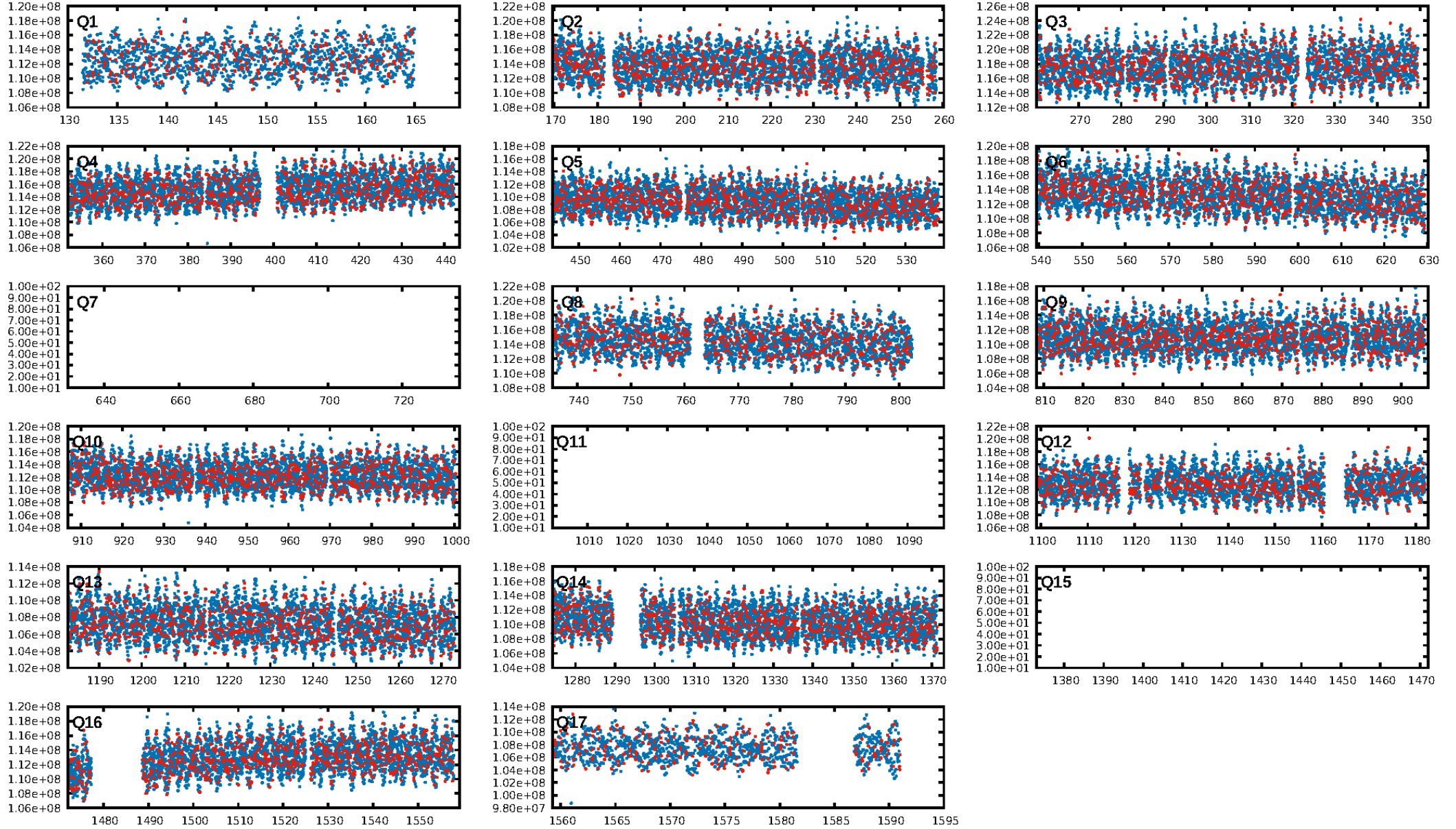
No Significant Match Found

DV One-Page Summary

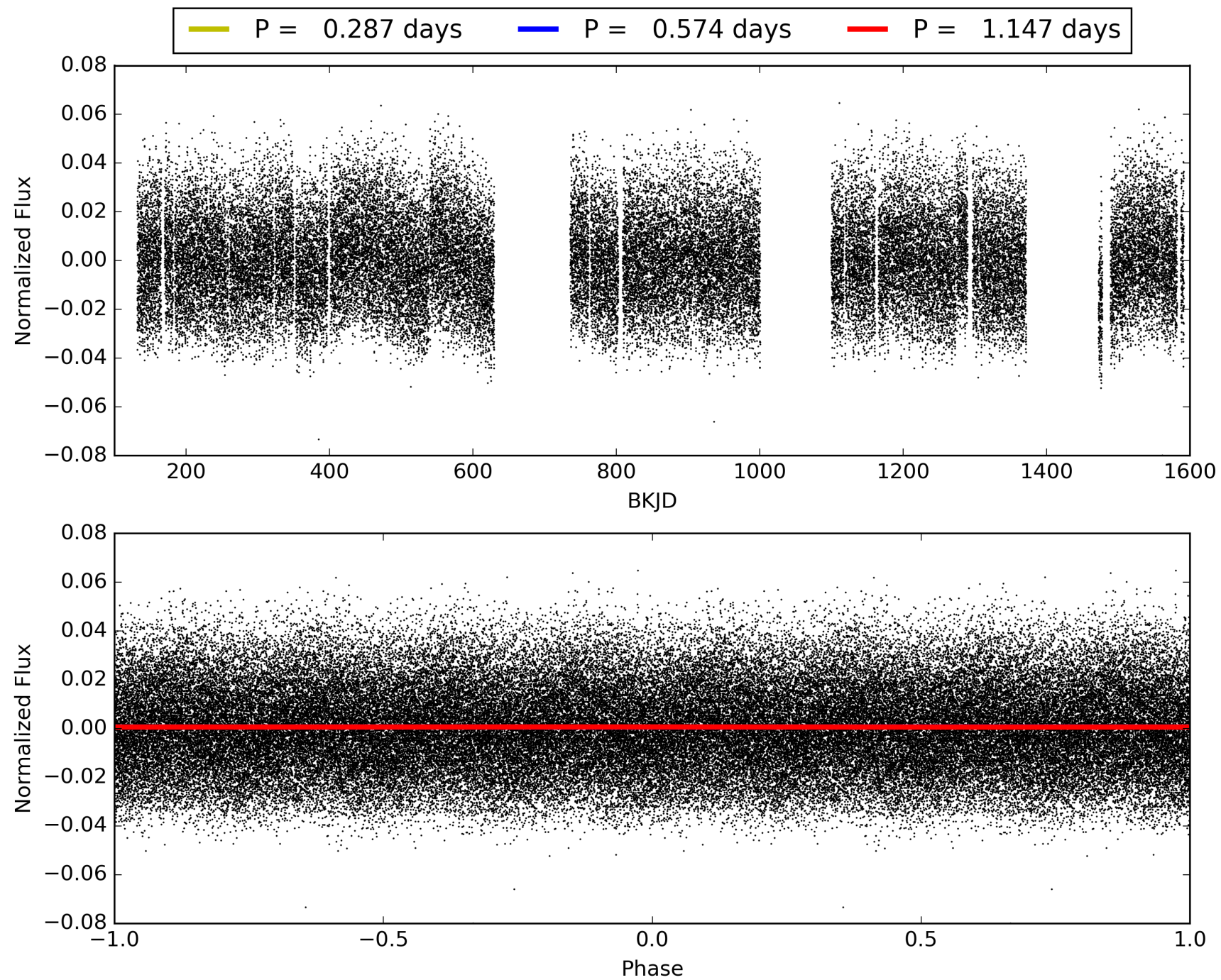
KIC: 10224920 Candidate: 1 of 3 Period: 0.574 d



TCE 010224920-01, PDC Light Curves

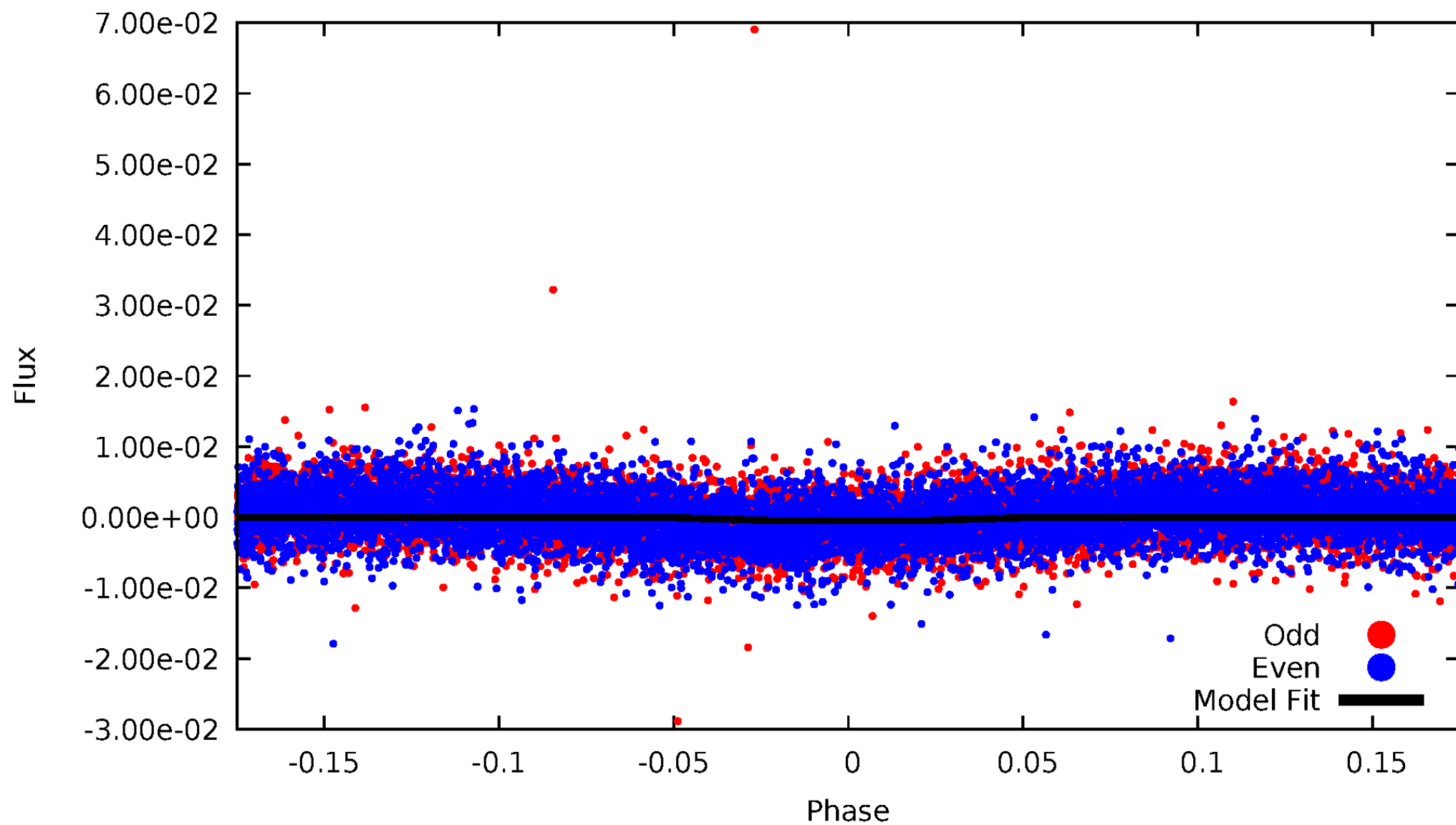


TCE 010224920-01



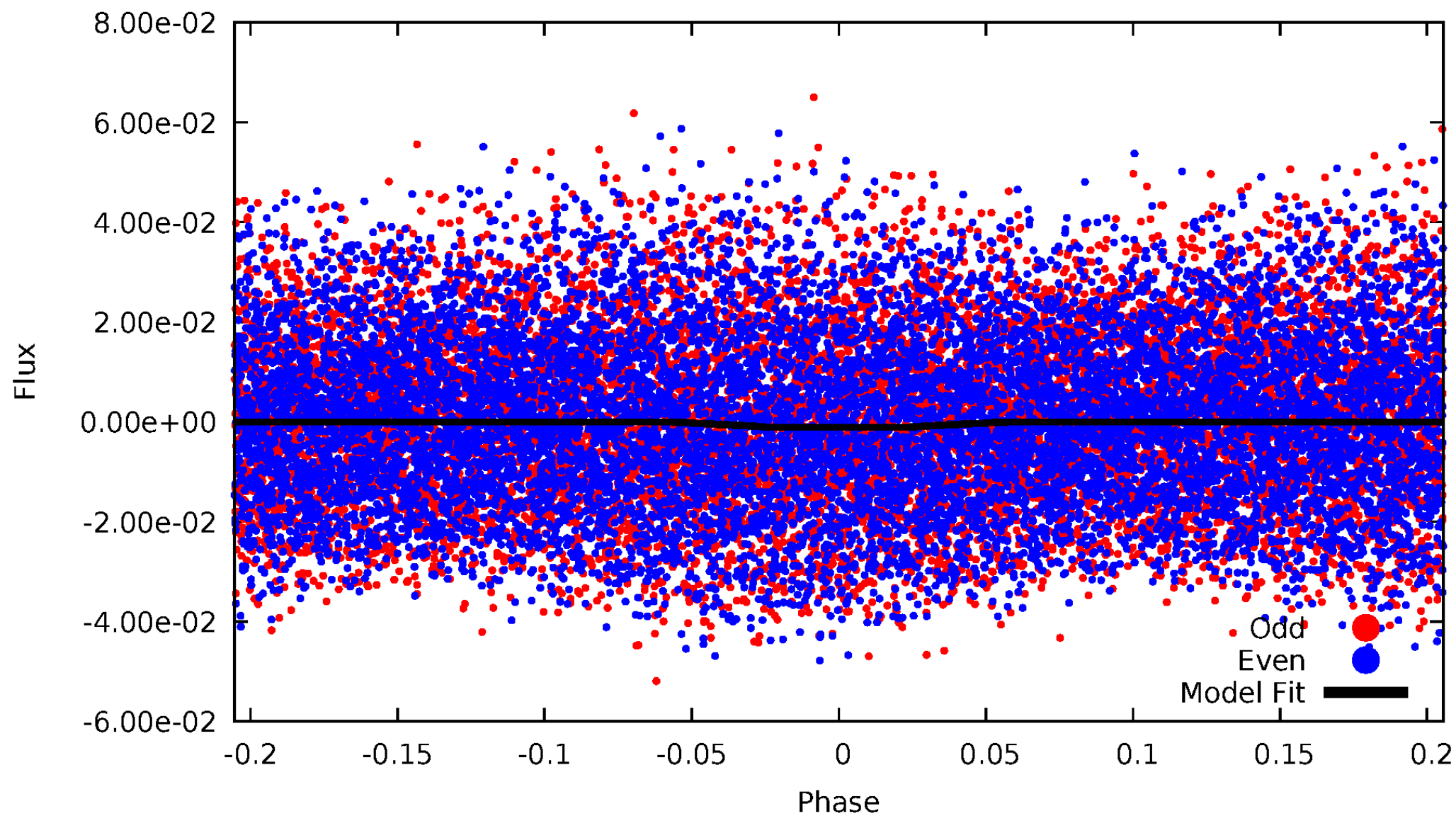
DV Odd/Even

TCE 010224920-01



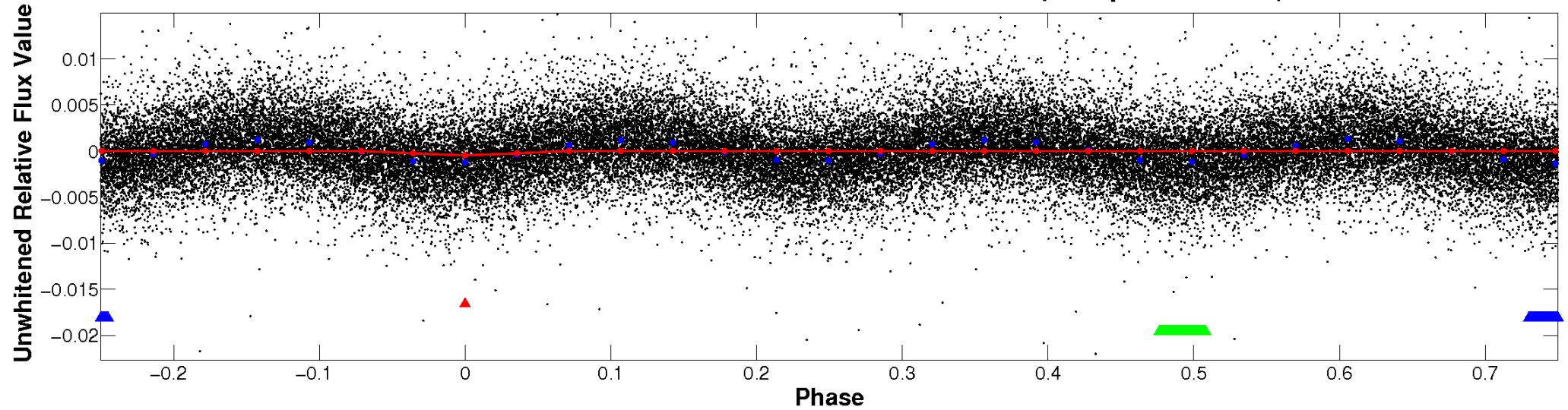
ALT Odd/Even

TCE 010224920-01

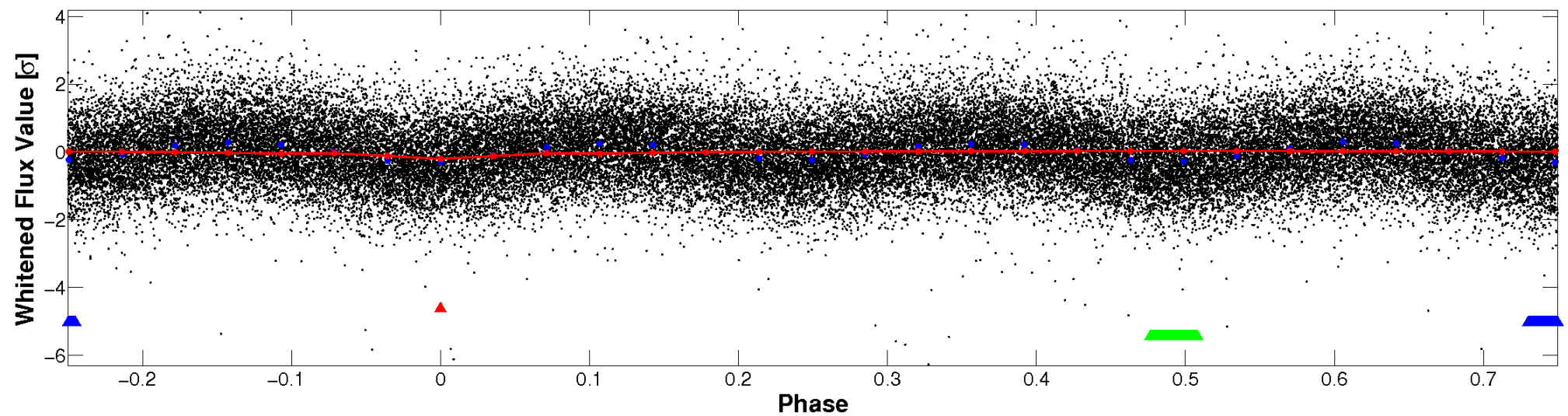


Non-Whitened Vs. Whitened Light Curve

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

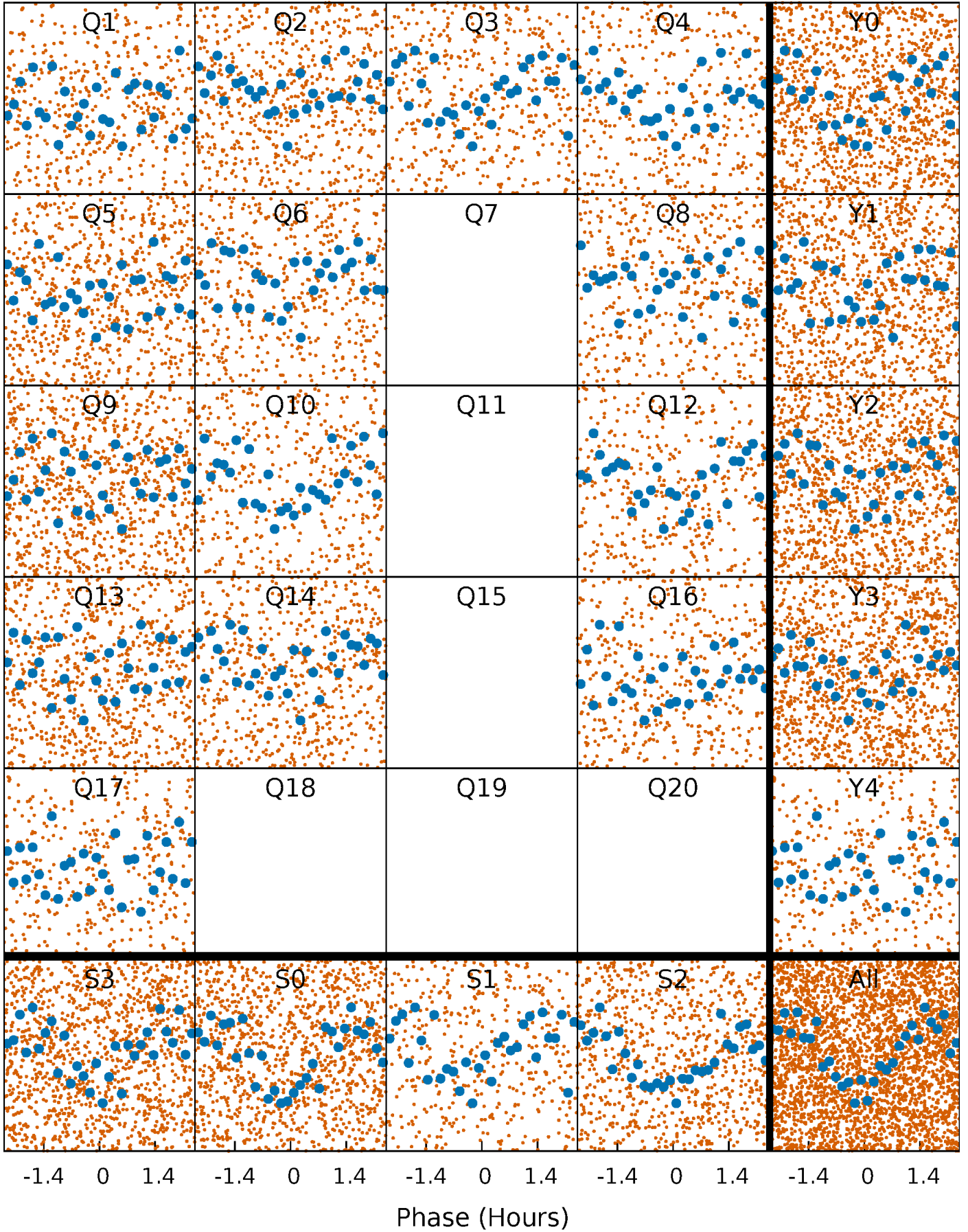


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



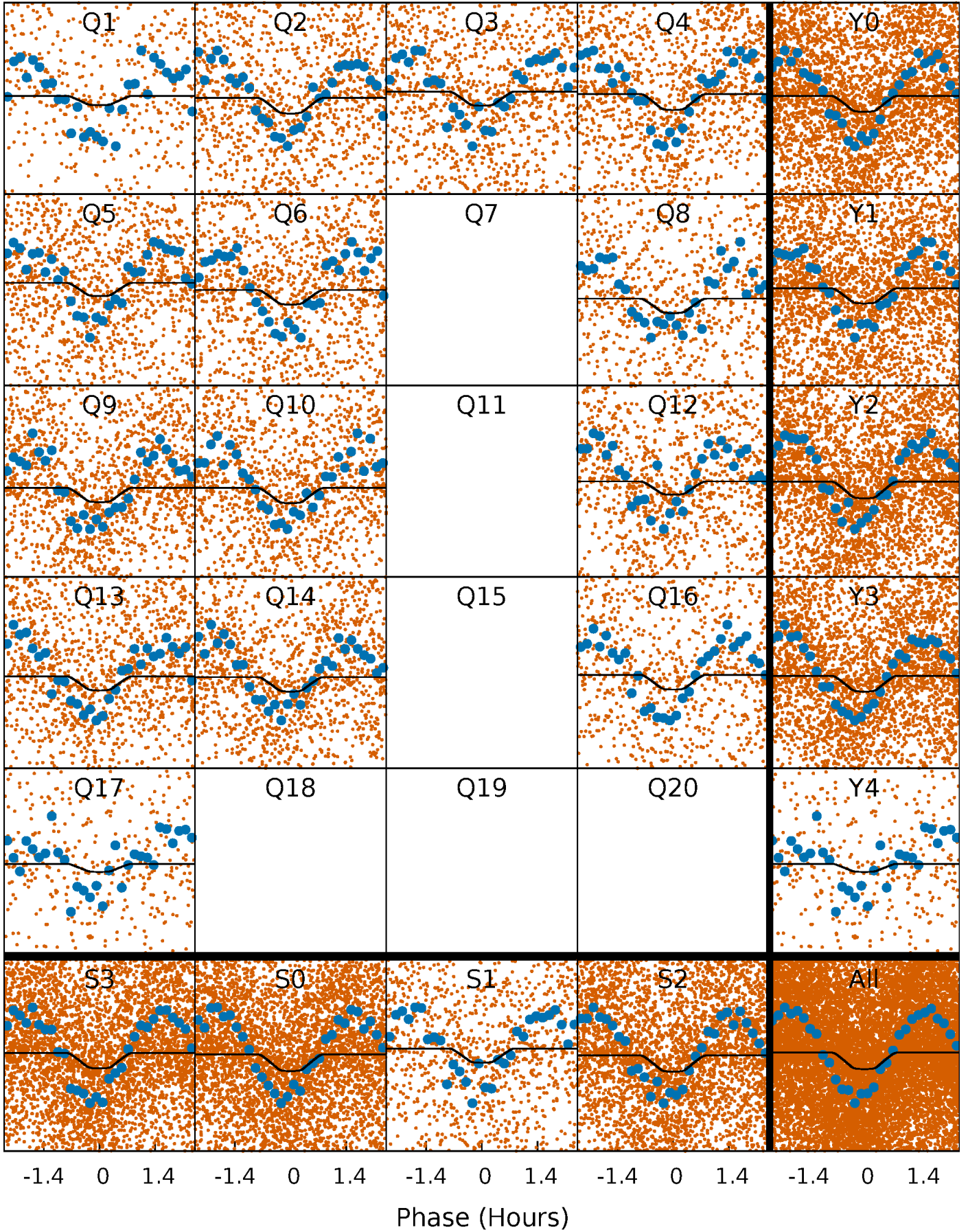
PDC Quarter-Phased Transit Curves

TCE 010224920-01 P= 0.573508 Days $T_0=131.971247$ (BKJD)



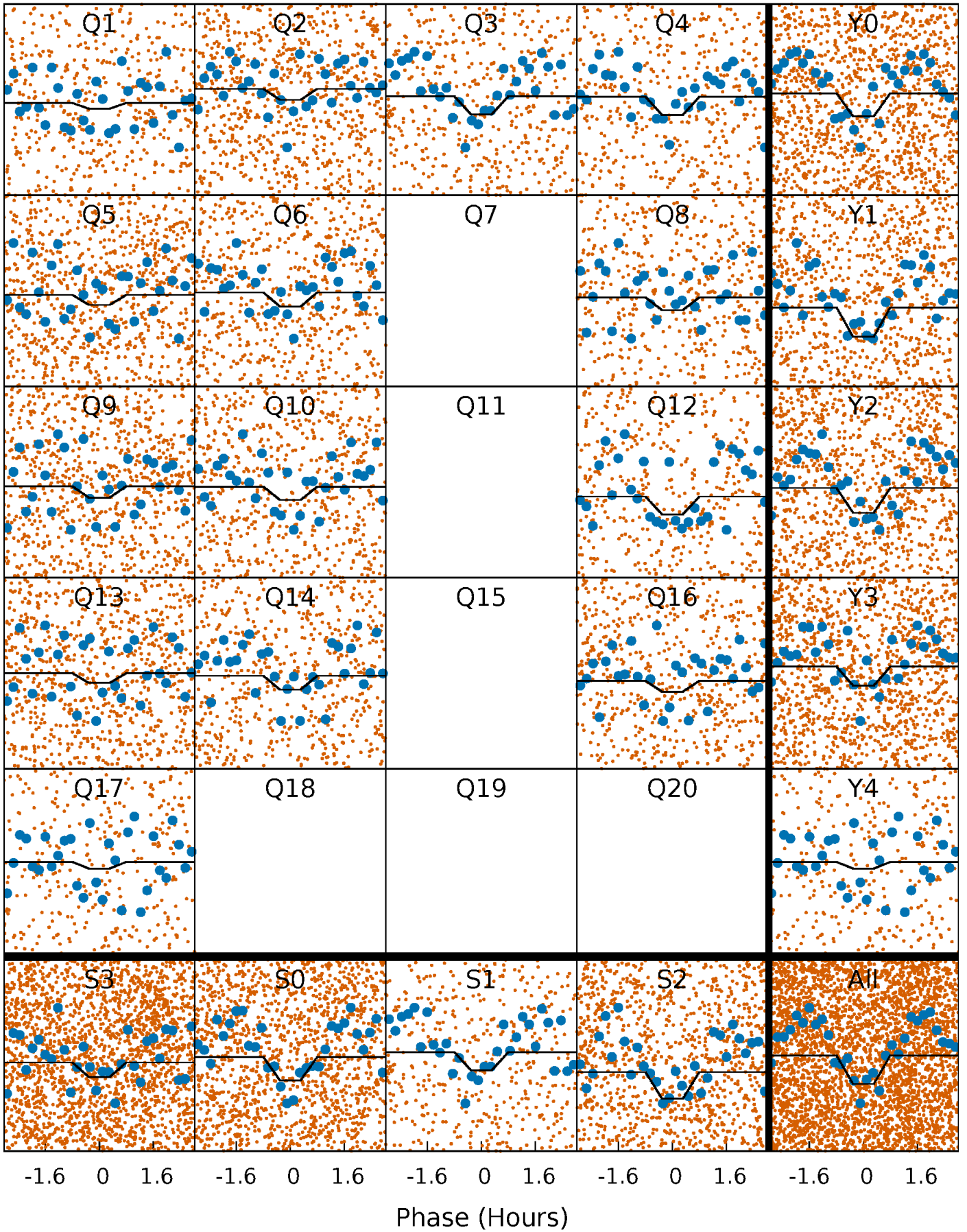
DV Quarter-Phased Transit Curves

TCE 010224920-01 P= 0.573508 Days $T_0=131.971247$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

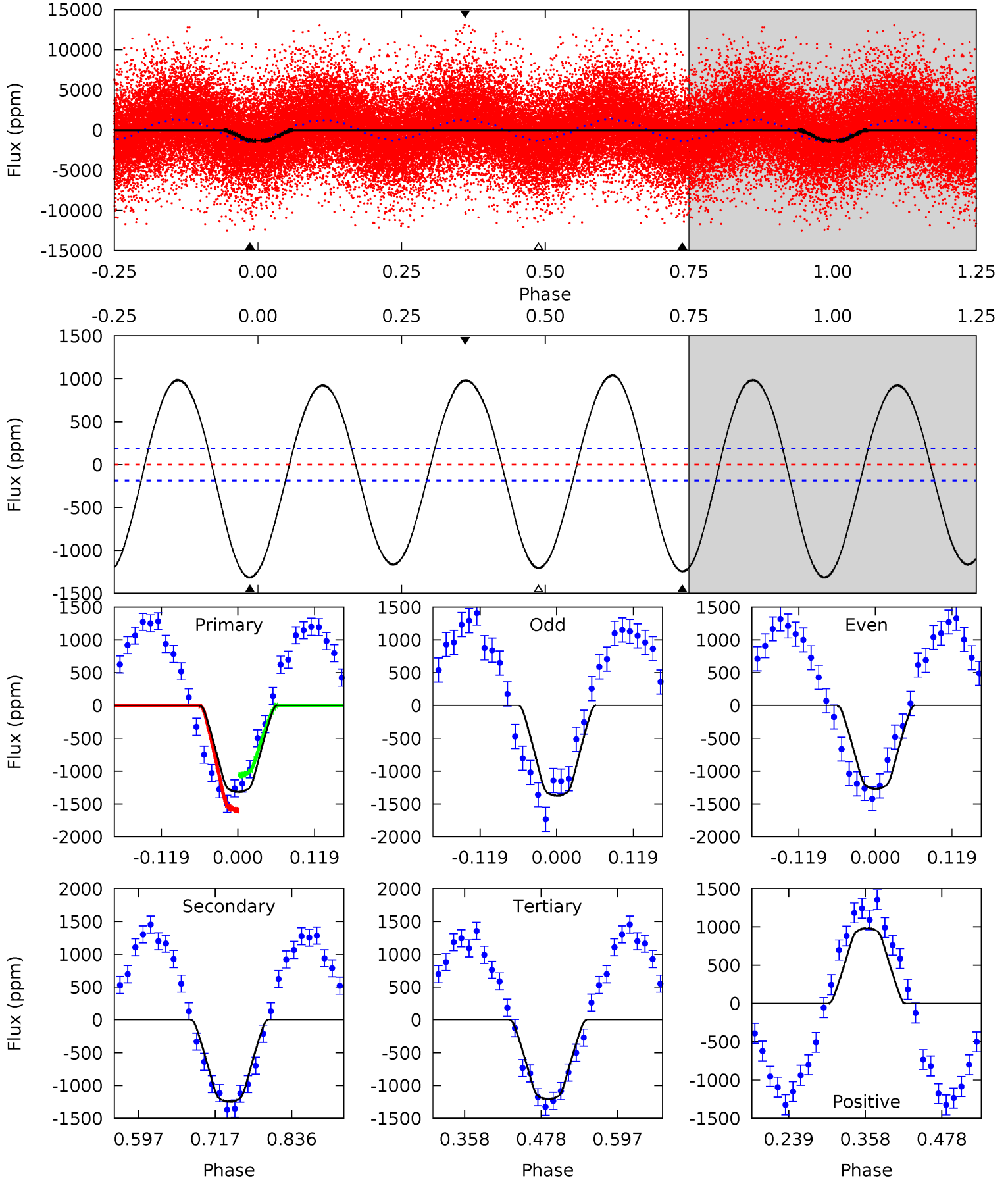
TCE 010224920-01 P= 0.573501 Days $T_0=131.972485$ (BKJD)



DV Model-Shift Uniqueness Test

010224920-01, P = 0.573508 Days, E = 131.397739 Days

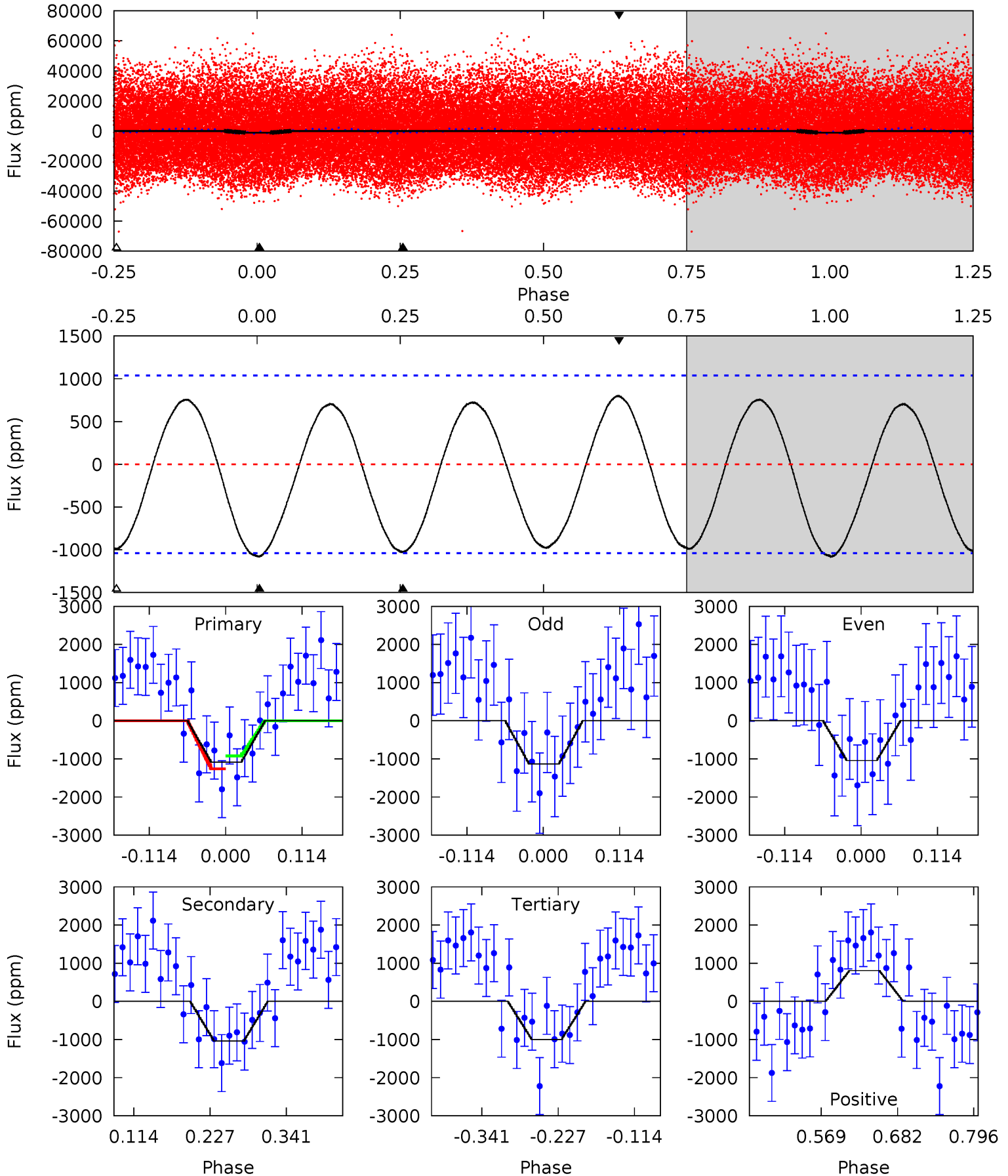
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.1	30.3	29.4	23.9	4.53	1.56	18.9	2.68	8.18	0.94	6.43	1.29	1.03	0.44	6.58



Alt Model-Shift Uniqueness Test

010224920-01, P = 0.573501 Days, E = 131.398984 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.75	4.54	4.36	3.53	4.54	1.58	2.77	0.39	1.22	0.17	1.00	0.19	0.73	0.43	0.72



Stellar Parameters For KIC 010224920

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7084^{+197}_{-296}	$4.120^{+0.132}_{-0.181}$	$0.000^{+0.200}_{-0.350}$	$1.772^{+0.558}_{-0.372}$	$1.508^{+0.220}_{-0.242}$	$0.382^{+0.297}_{-0.194}$
	+3%/-4%	+3%/-4%	+inf%/-inf%	+31%/-21%	+15%/-16%	+78%/-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 010224920-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1246 ± 41	$4.72^{+1.88}_{-1.82}$	4671^{+372}_{-309}	8802^{+3424}_{-1574}	$7.450^{+11.537}_{-3.631}$
Alt.	-1038 ± 229	$6.44^{+2.14}_{-1.93}$	4671^{+363}_{-286}	6716^{+1534}_{-948}	$3.222^{+3.172}_{-1.480}$

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

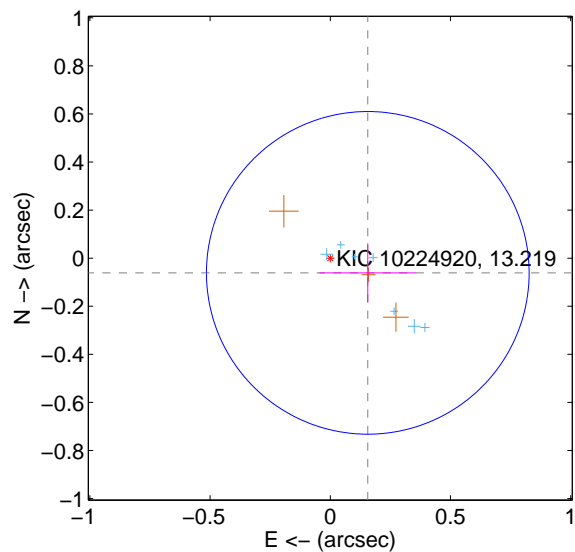
Supplemental centroid analysis for 010224920-01. Kepler magnitude: 13.22. Transit SNR 12.50

There are 9 quarters with good PRF difference image offsets

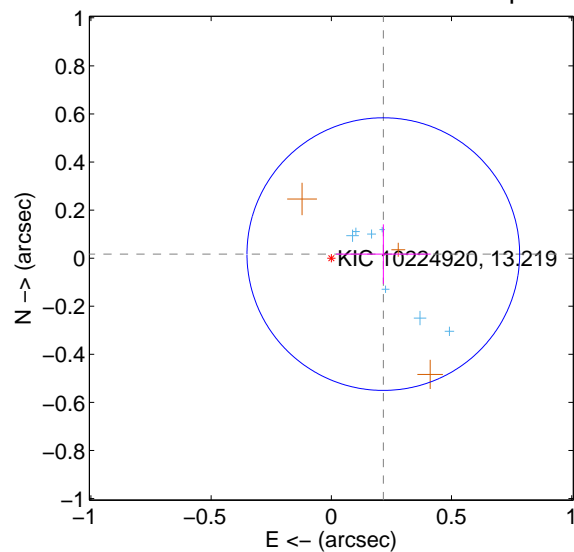
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.168 ± 0.224	0.75	-0.156 ± 0.201	-0.061 ± 0.123
PRF-fit source offset from KIC position	0.217 ± 0.189	1.15	-0.216 ± 0.197	0.017 ± 0.124
photometric centroid source offset	0.23 ± 0.07	3.19	-0.23 ± 0.07	0.01 ± 0.08

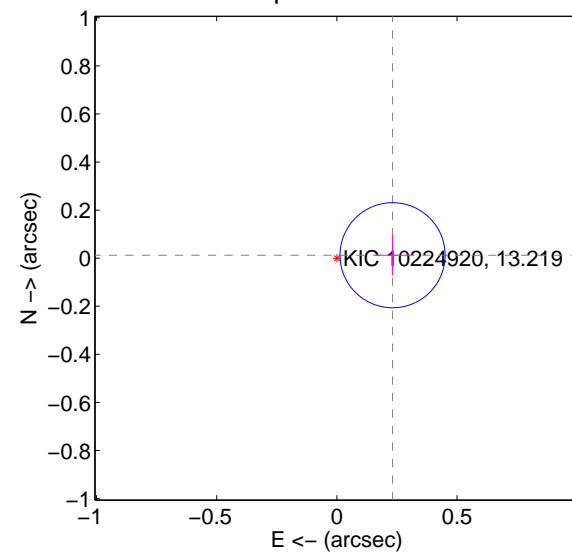
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

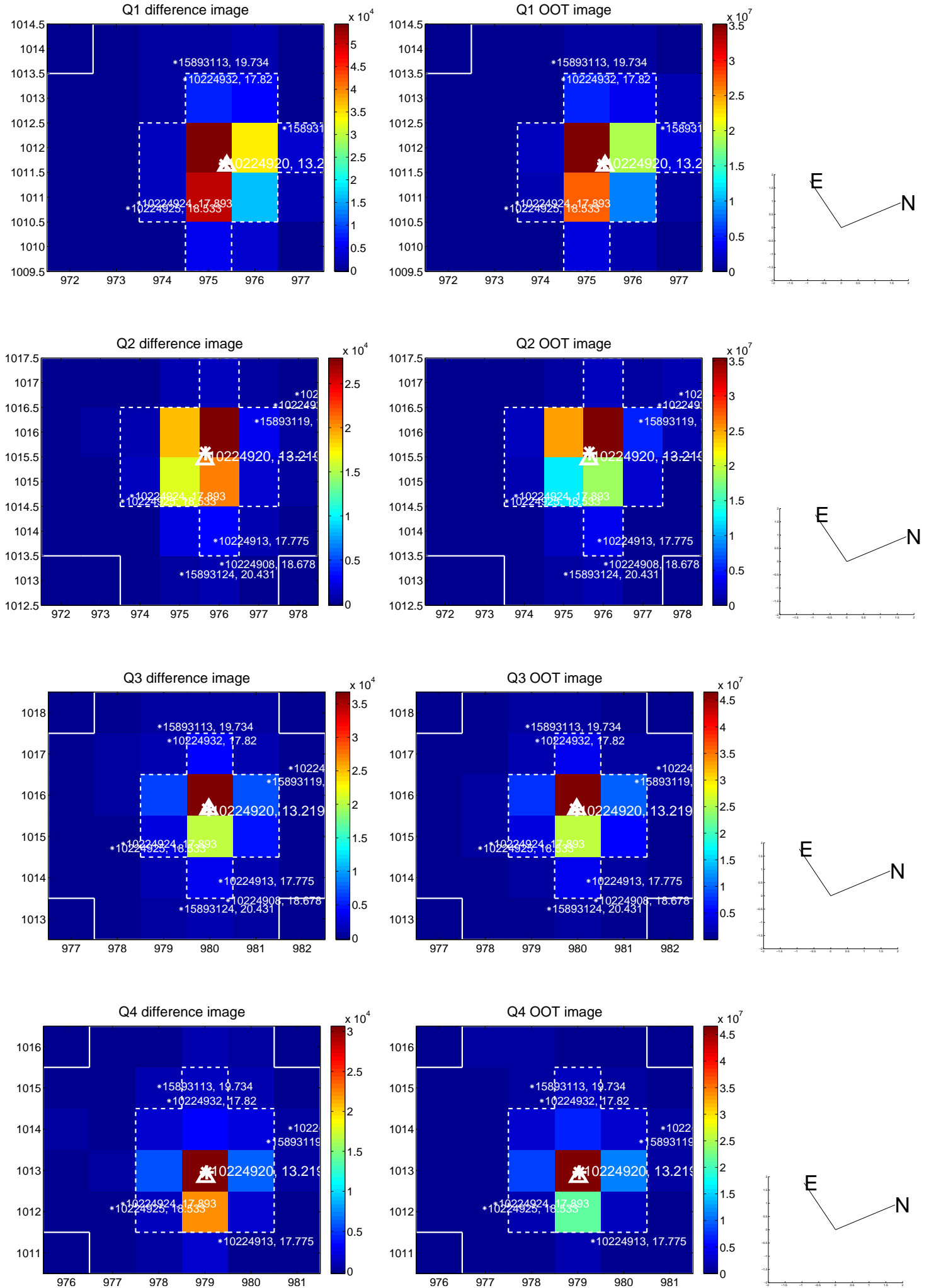


offset from photometric centroids

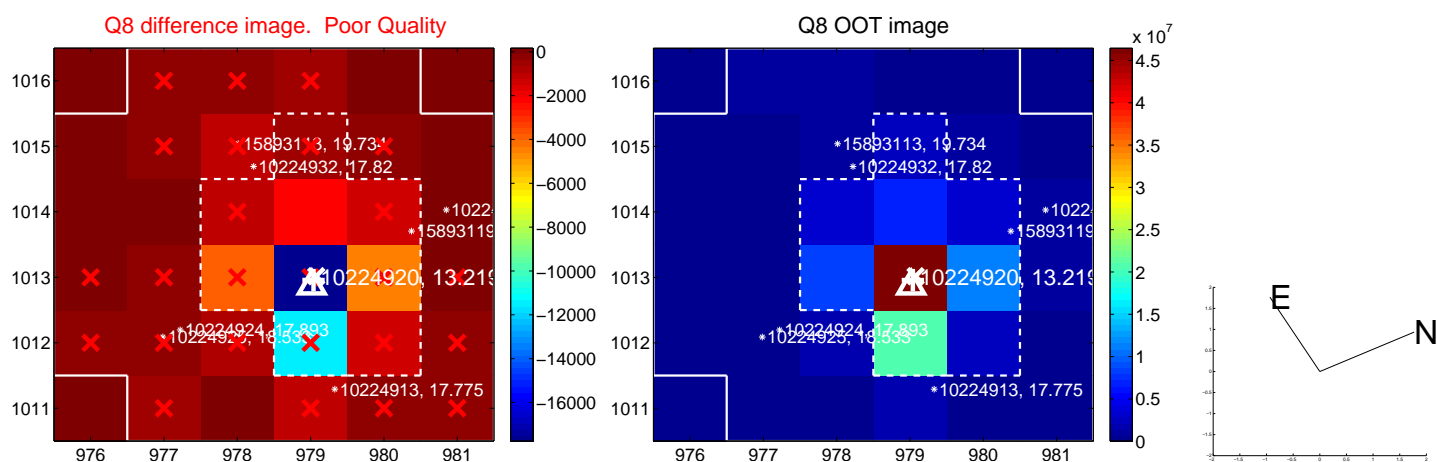
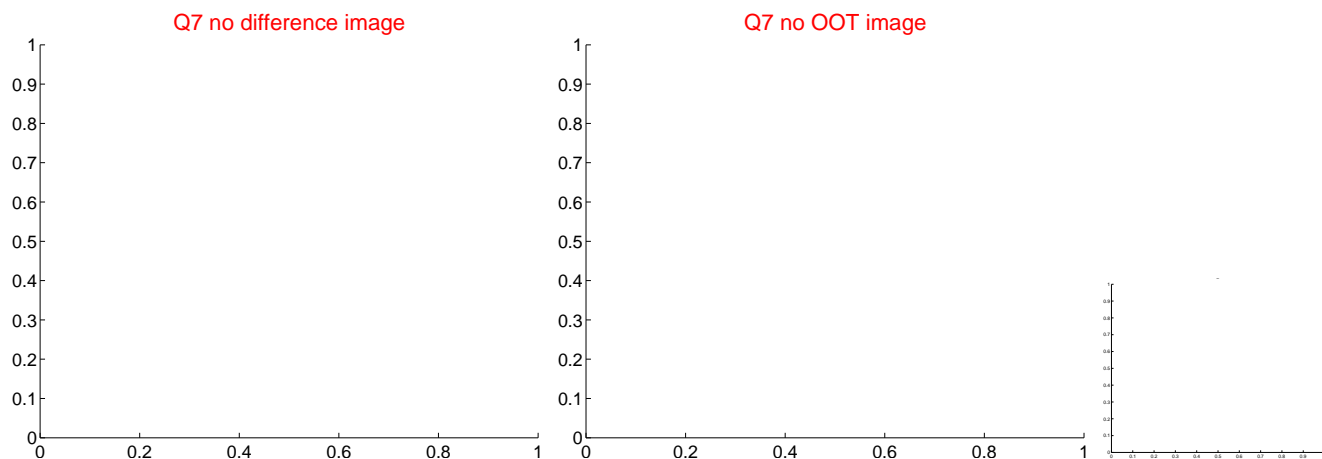
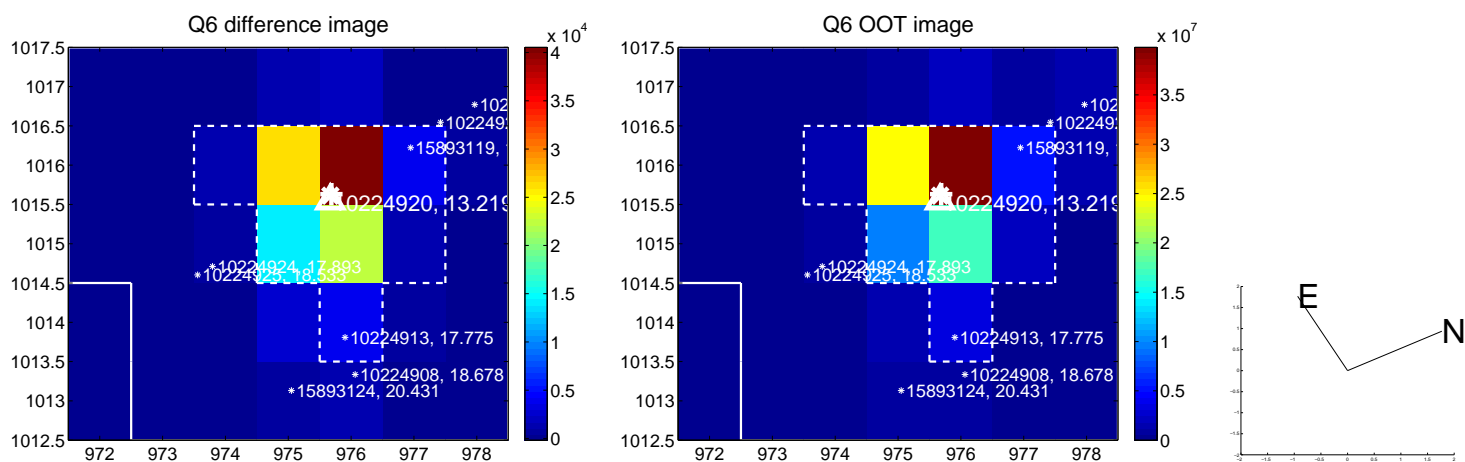
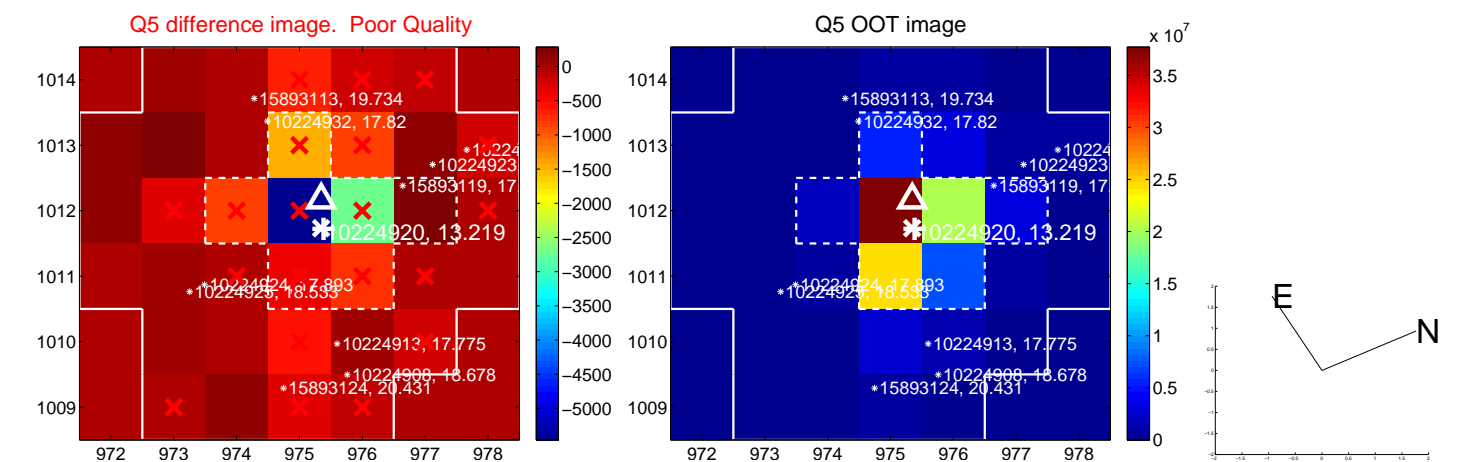


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

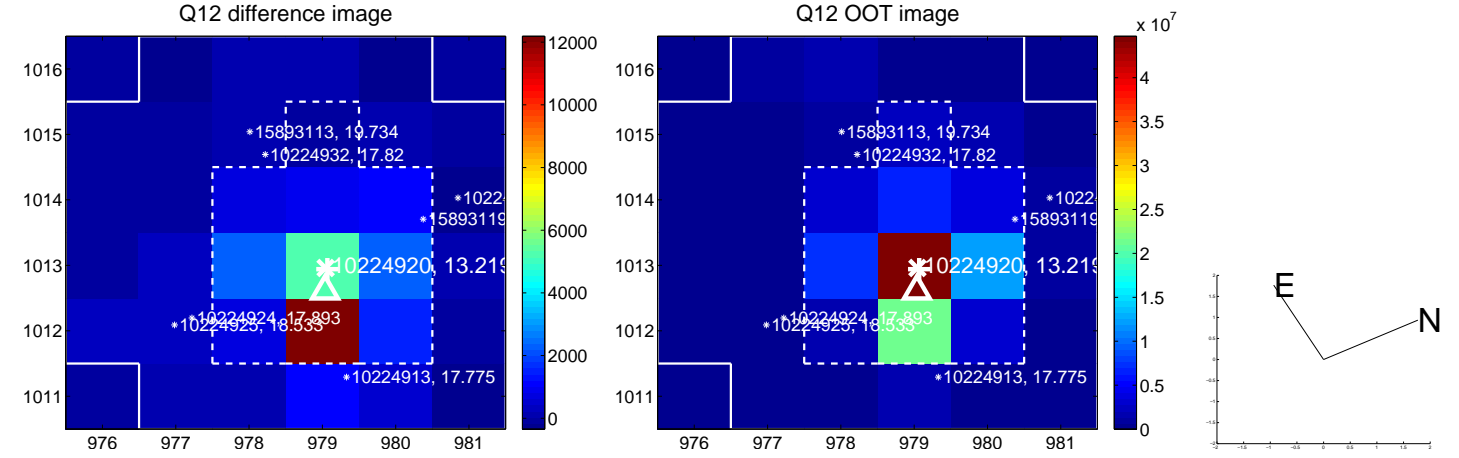
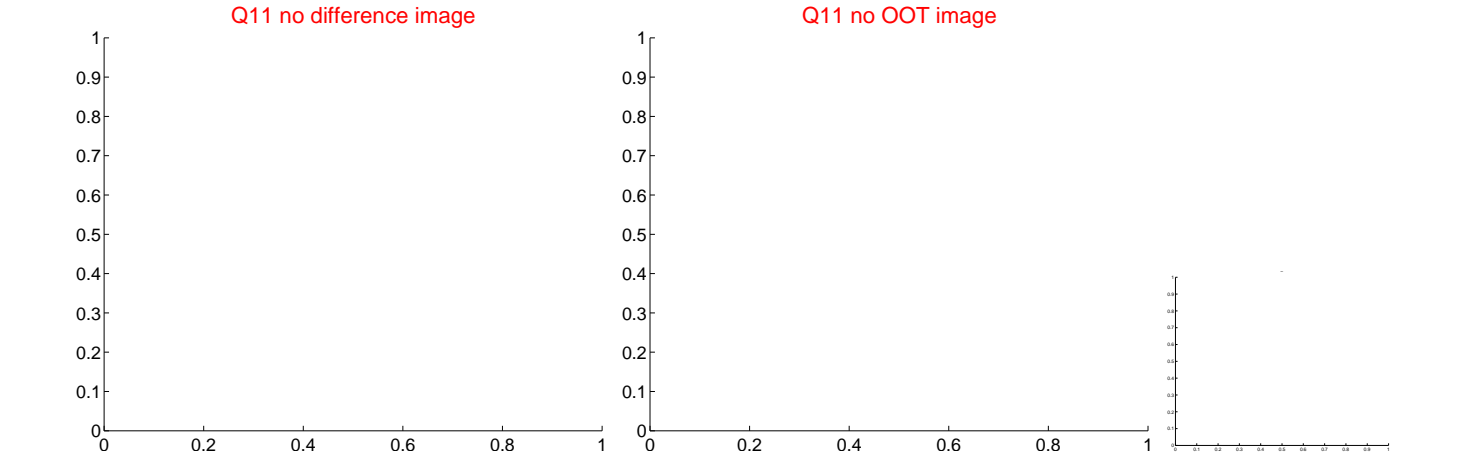
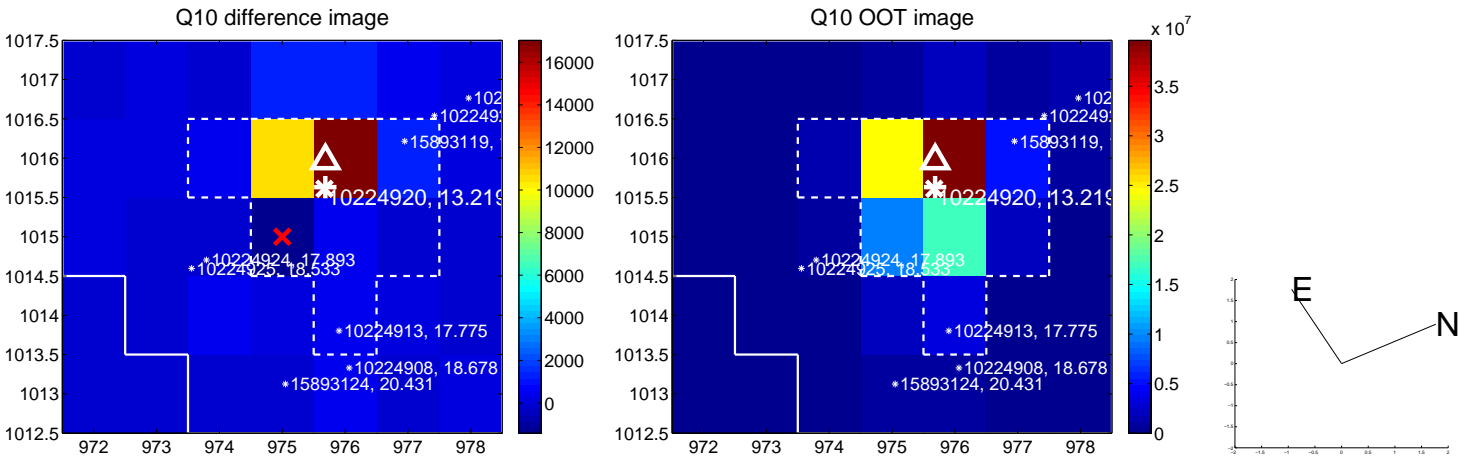
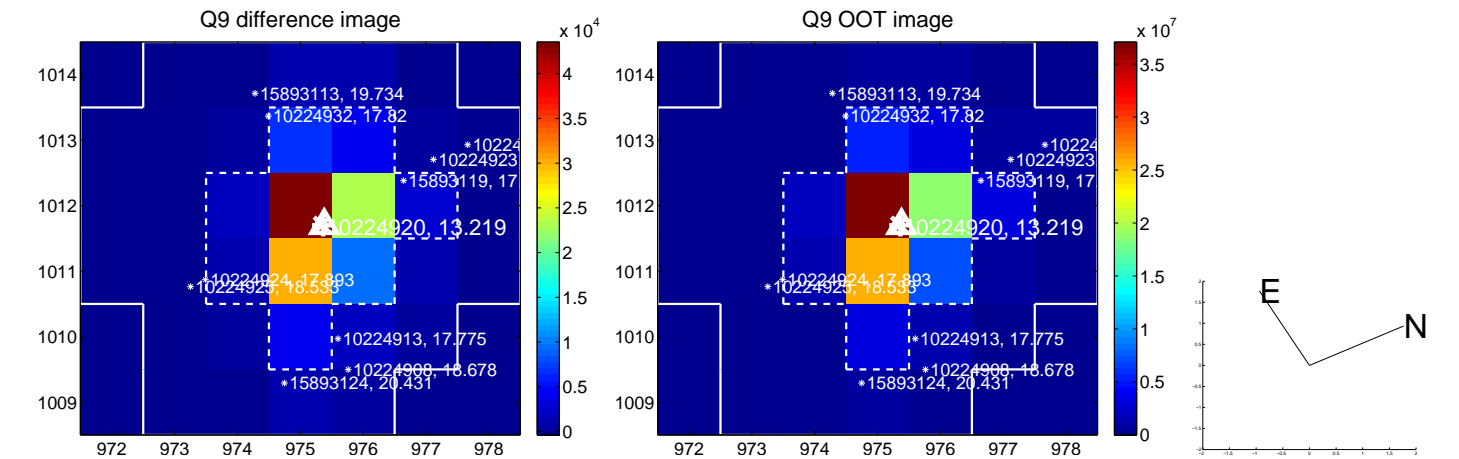
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



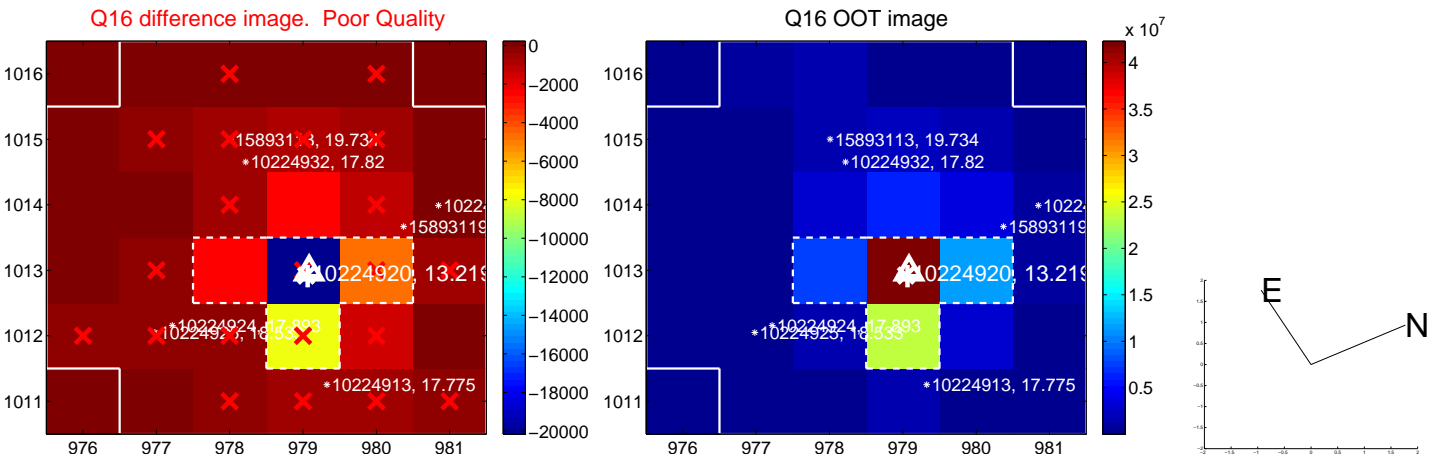
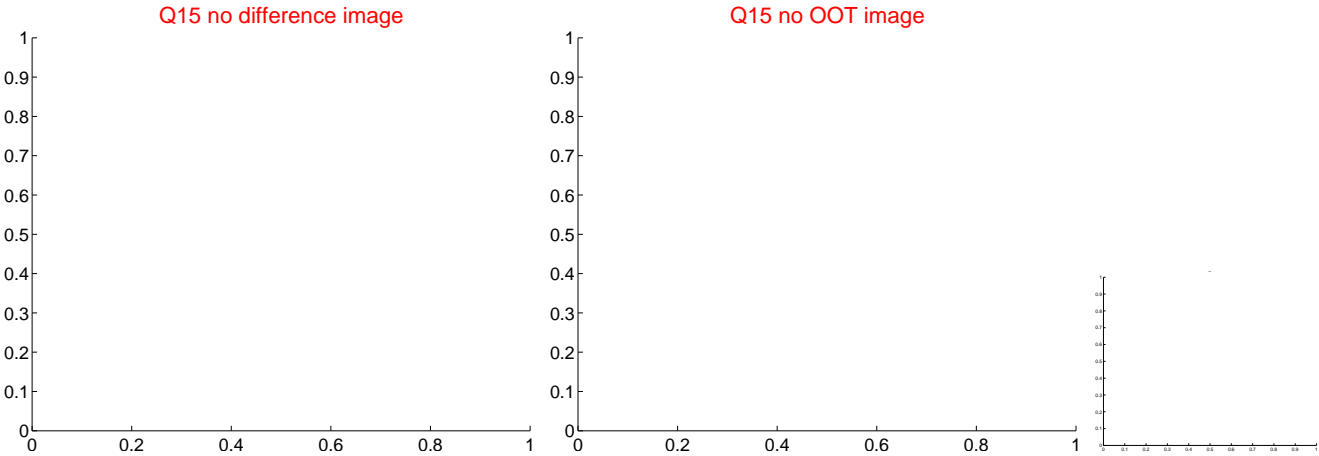
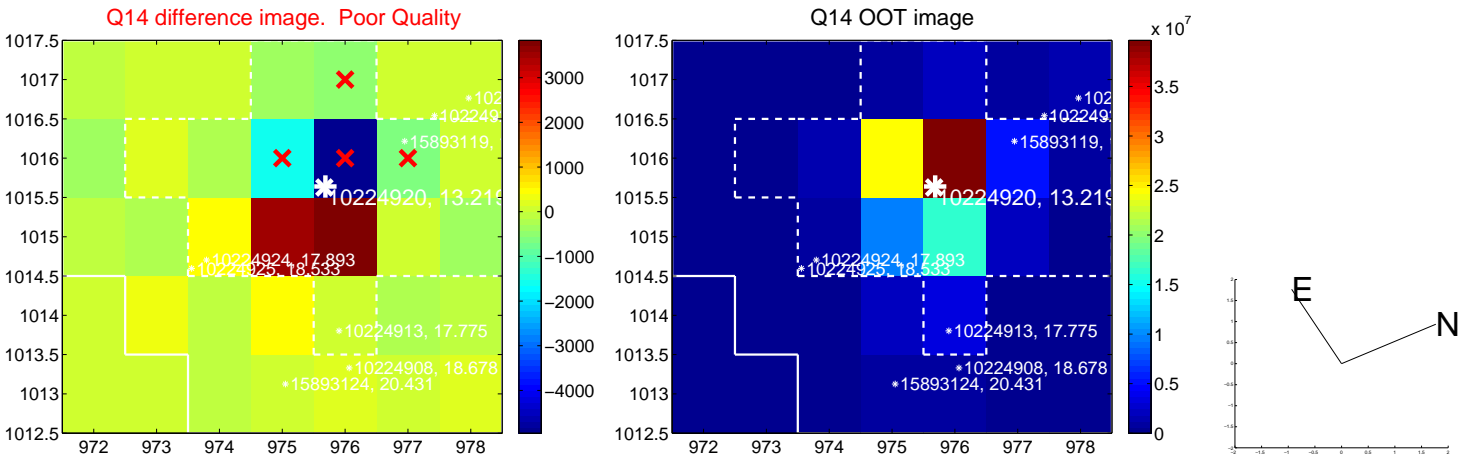
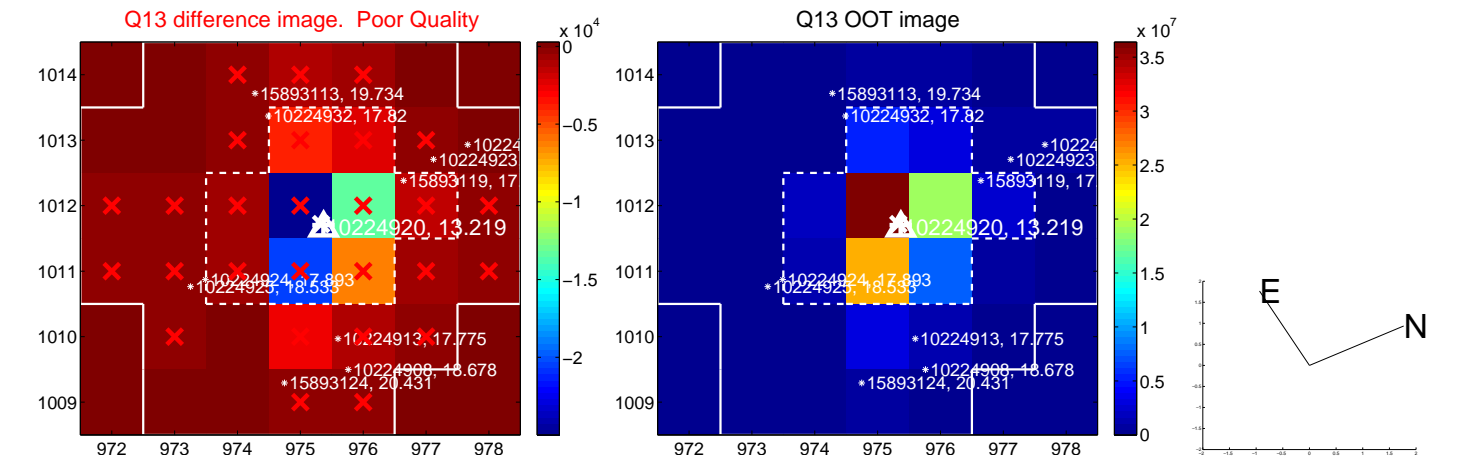
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



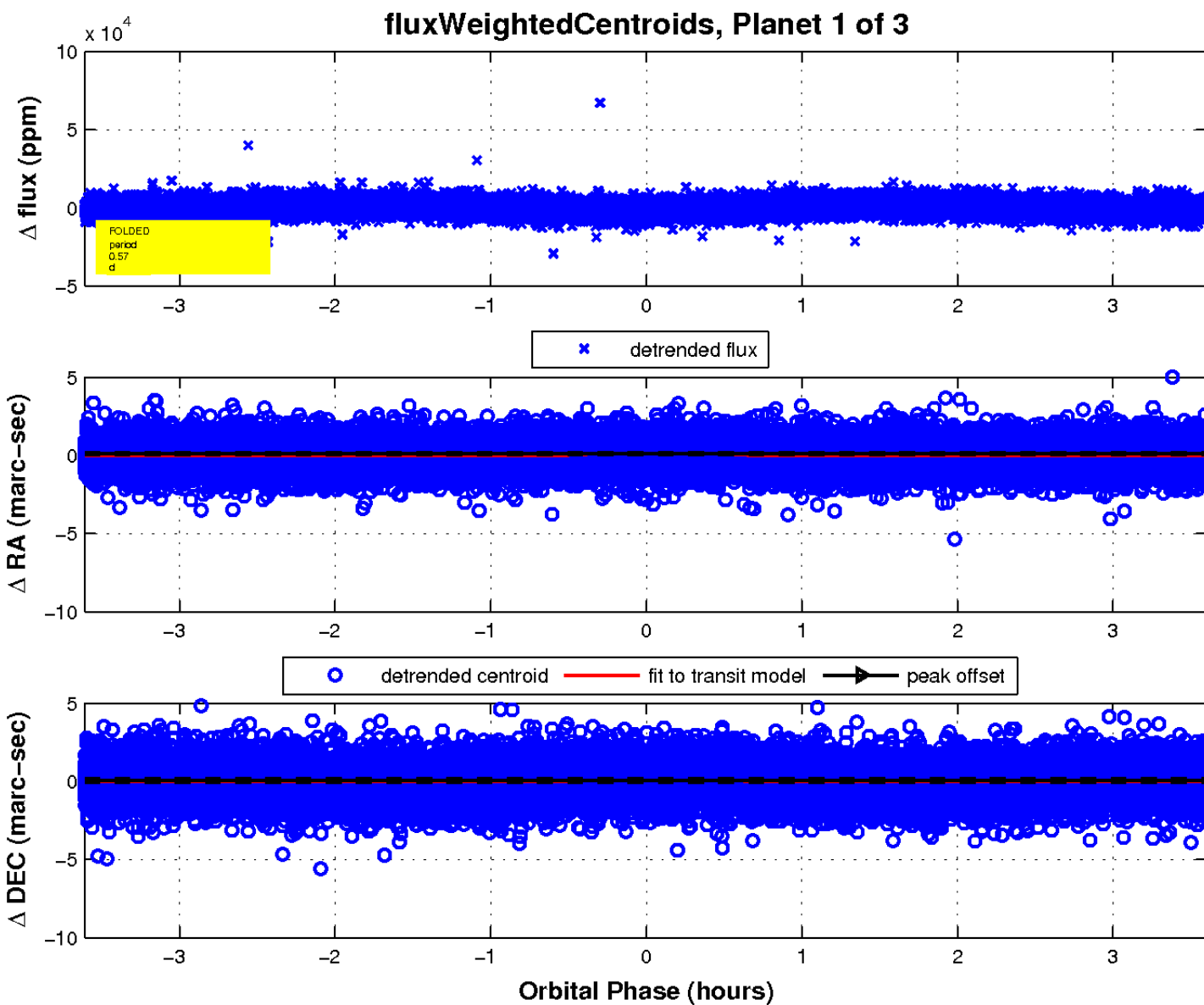
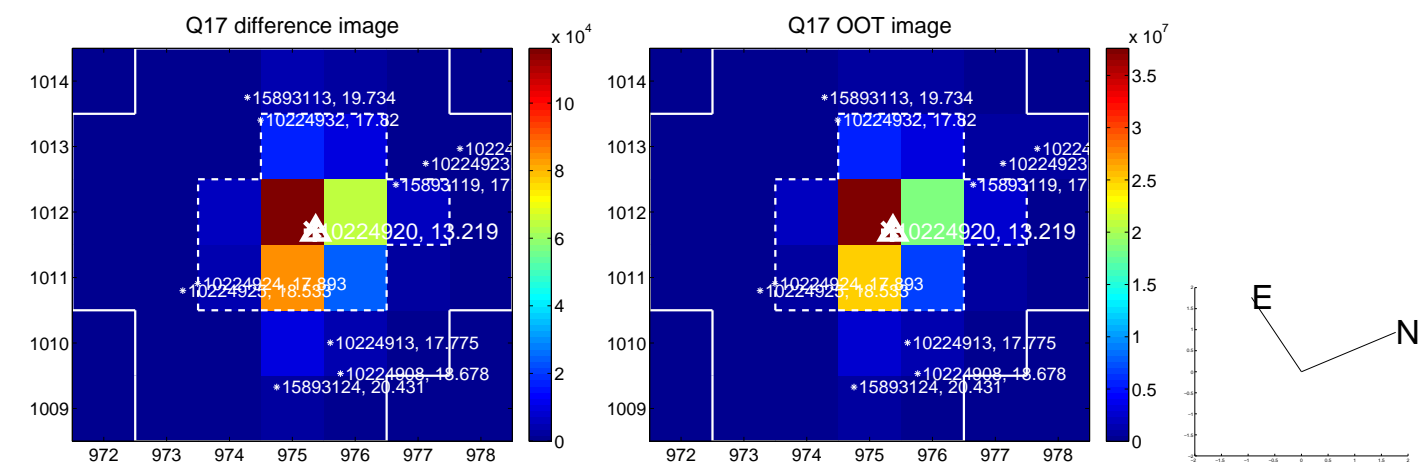
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

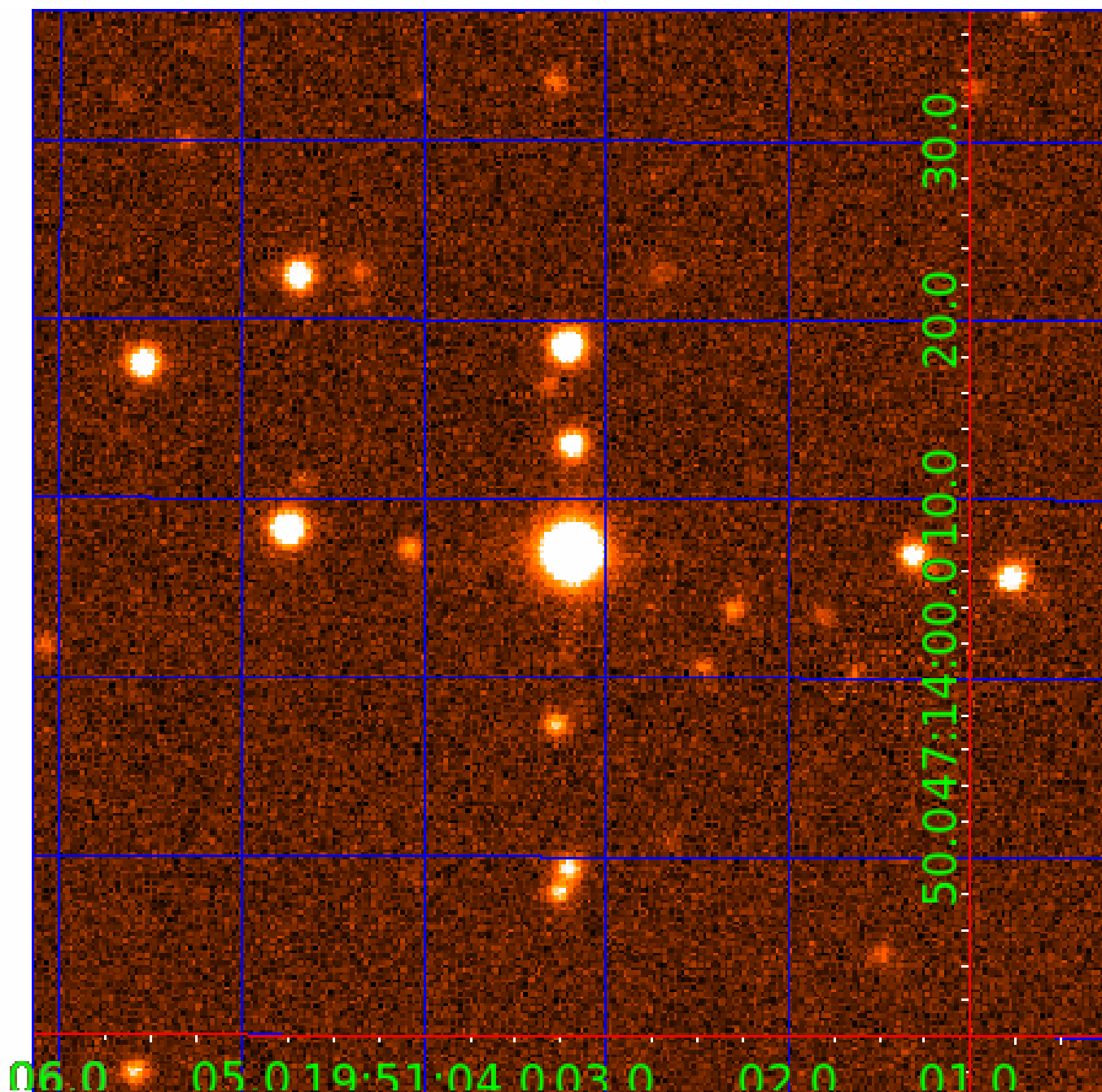


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010224920

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})
010224920-01	OBS	No	0.573508	131.971247	497.8	1.203	10.1	12.5	1.77	7084	4.63	29484.79
010224920-02	OBS	No	0.573503	131.830762	545.0	1.098	10.9	11.2	1.77	7084	4.82	29485.18
010224920-03	OBS	No	0.573501	131.689227	573.8	1.228	11.2	12.1	1.77	7084	4.95	29485.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010224920-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
010224920-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD
010224920-03	OBS	FP	0.00	1	0	0	0	LPP_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.

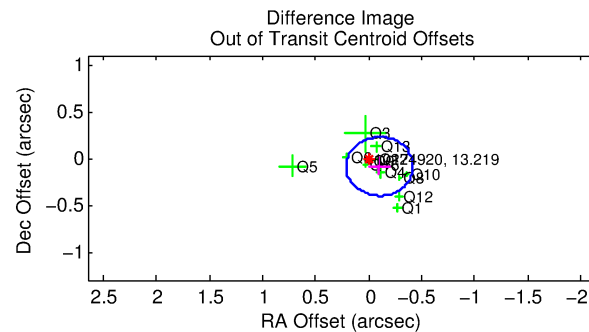
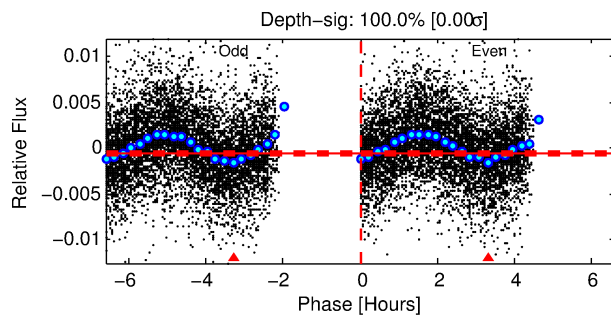
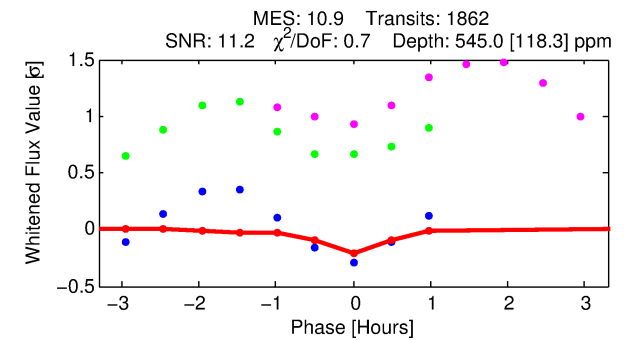
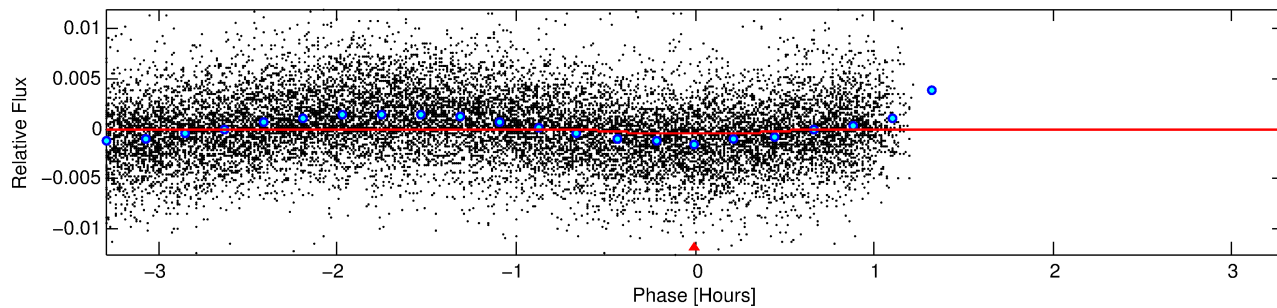
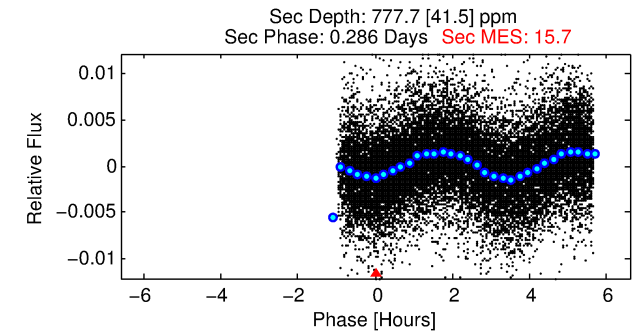
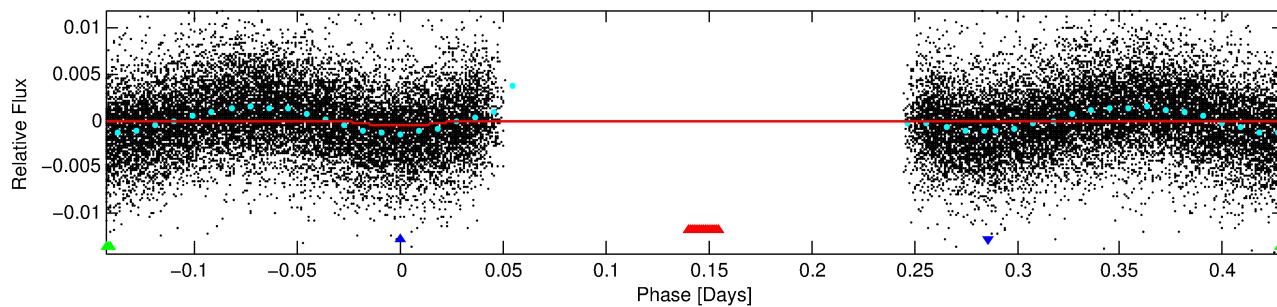
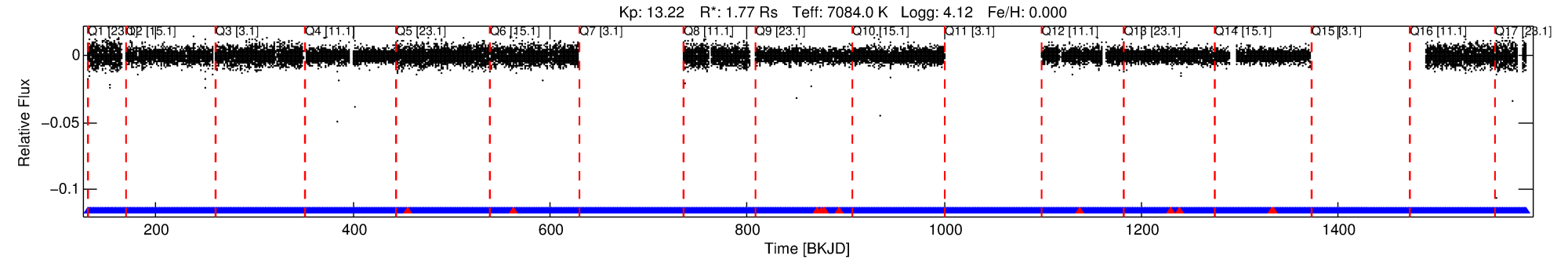
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010224920-02

No Significant Match Found

DV One-Page Summary

KIC: 10224920 Candidate: 2 of 3 Period: 0.574 d



DV Fit Results:

Period = 0.57350 [0.00002] d
Epoch = 131.8308 [0.0017] BKJD
Rp/R* = 0.0249 [0.0120]
a/R* = 2.21 [4.97]
b = 0.89 [0.64]
Seff = 29485.18 [11389.24]
Teq = 3341 [323] K
Rp = 4.82 [2.77] Re
a = 0.0155 [0.0039] AU
Ag = 4.43 [4.55] [0.75σ]
Teffp = 7495 [1837] K [2.23σ]

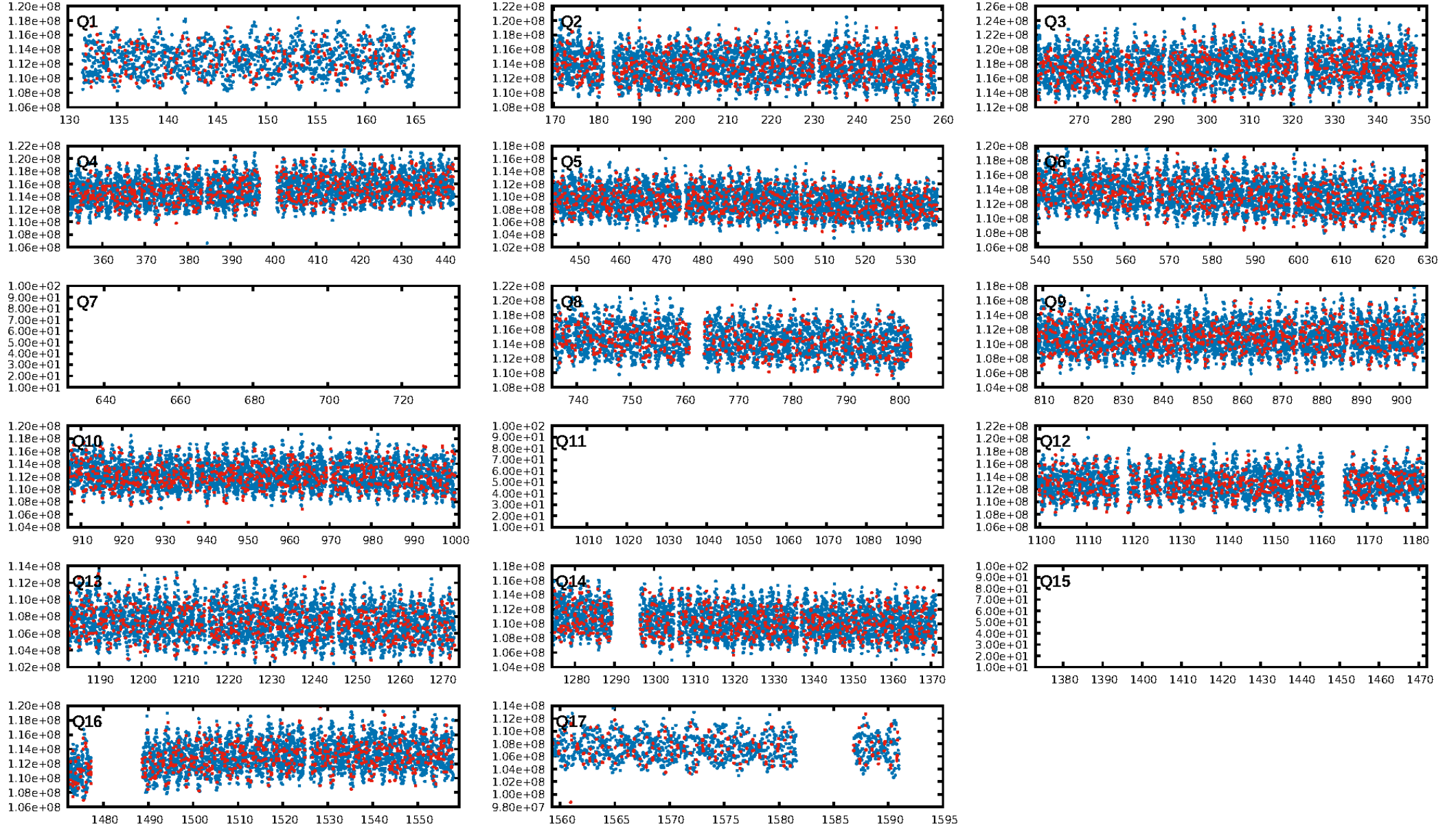
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [1746/1757]
GhostDiagnostic-chr: 2.008
Centroid-sig: 52.4%
Centroid-so: 0.180 arcsec [2.29σ]
OotOffset-rm: 0.135 arcsec [1.28σ]
KicOffset-rm: 0.185 arcsec [1.74σ]
OotOffset-st: 2/1/4/5 [12]
KicOffset-st: 2/1/4/5 [12]
DiffImageQuality-fgm: 0.50 [6/12]
DiffImageOverlap-fno: 0.00 [0/14]

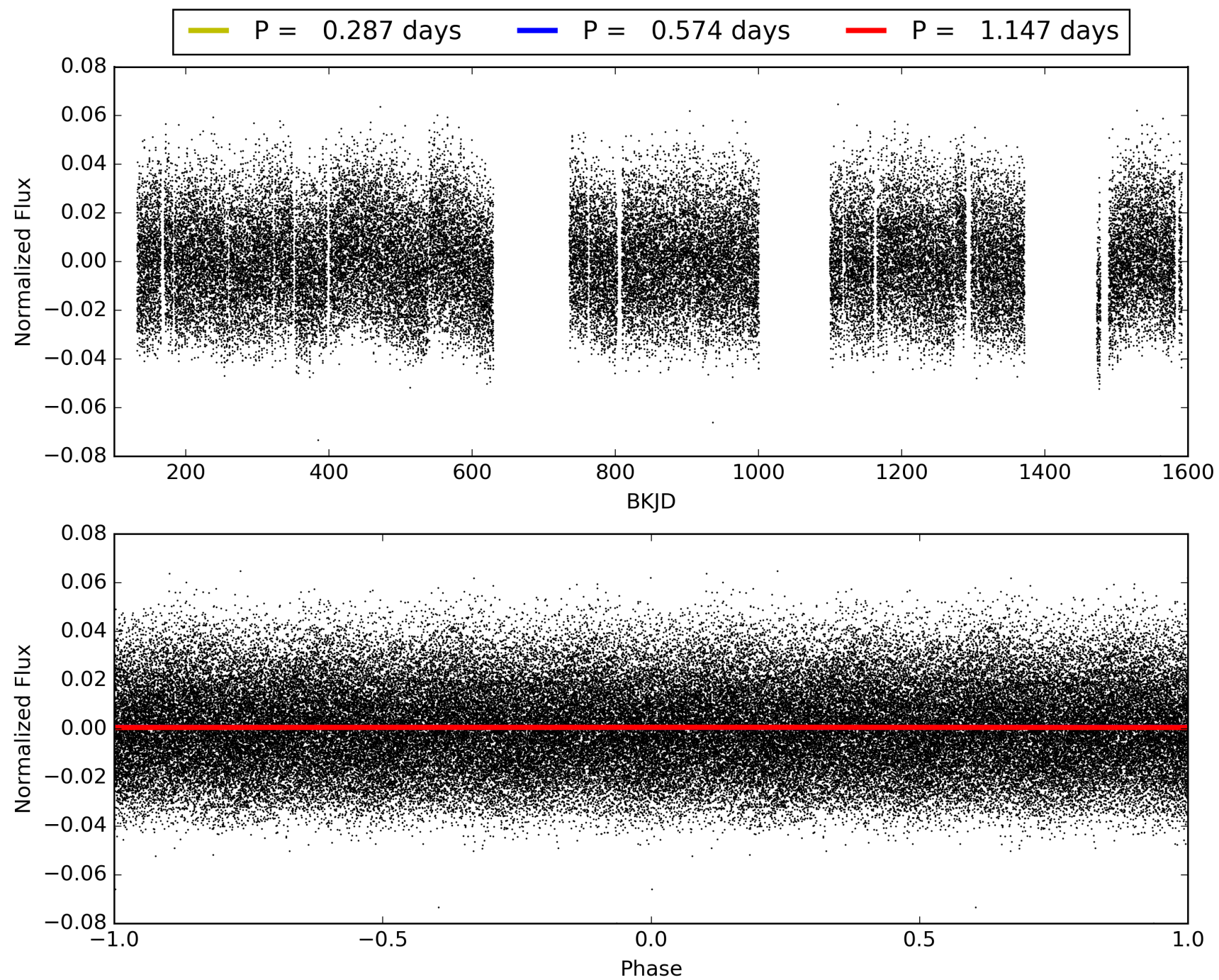
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:58:28 Z

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

TCE 010224920-02, PDC Light Curves

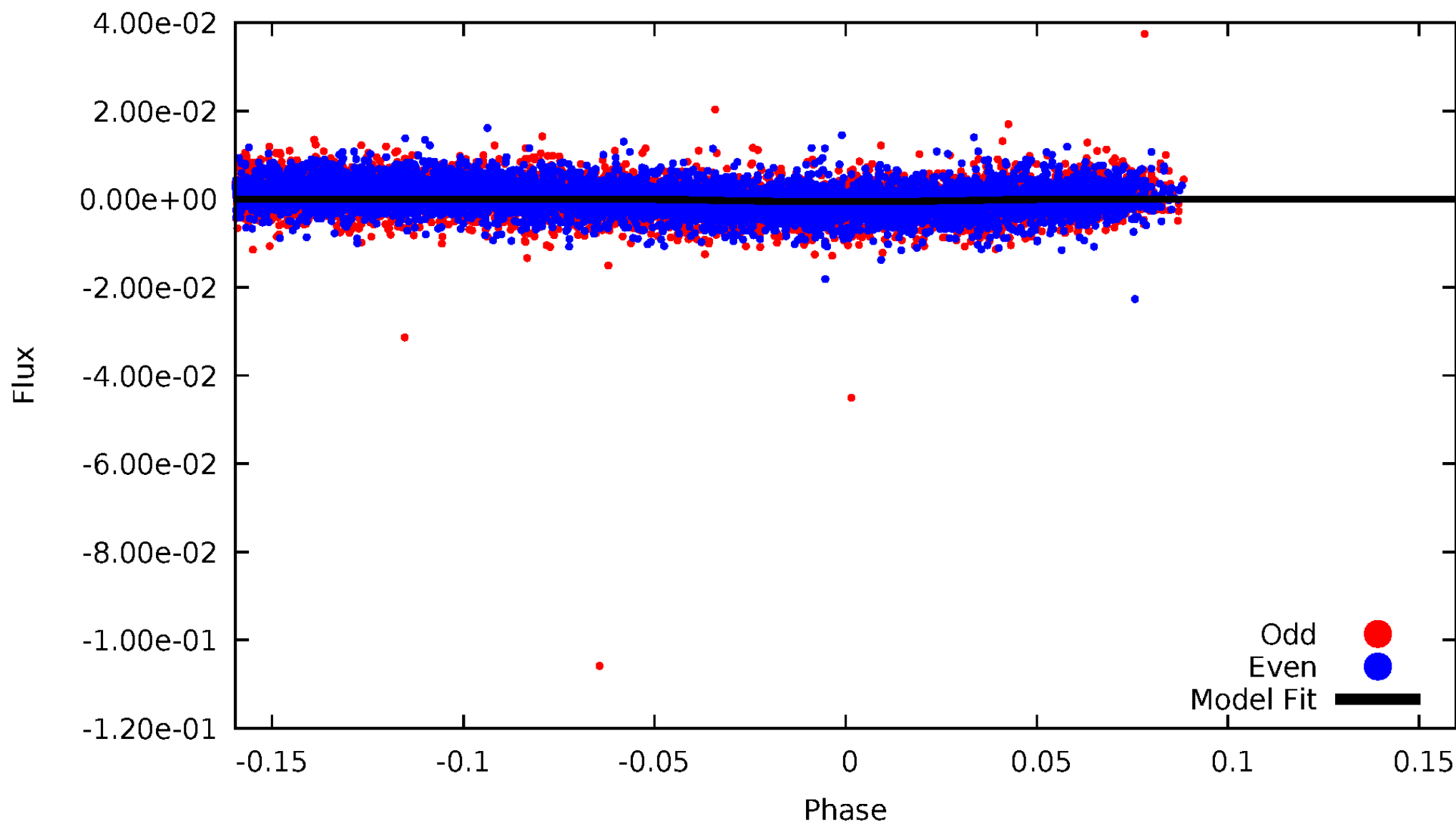


TCE 010224920-02



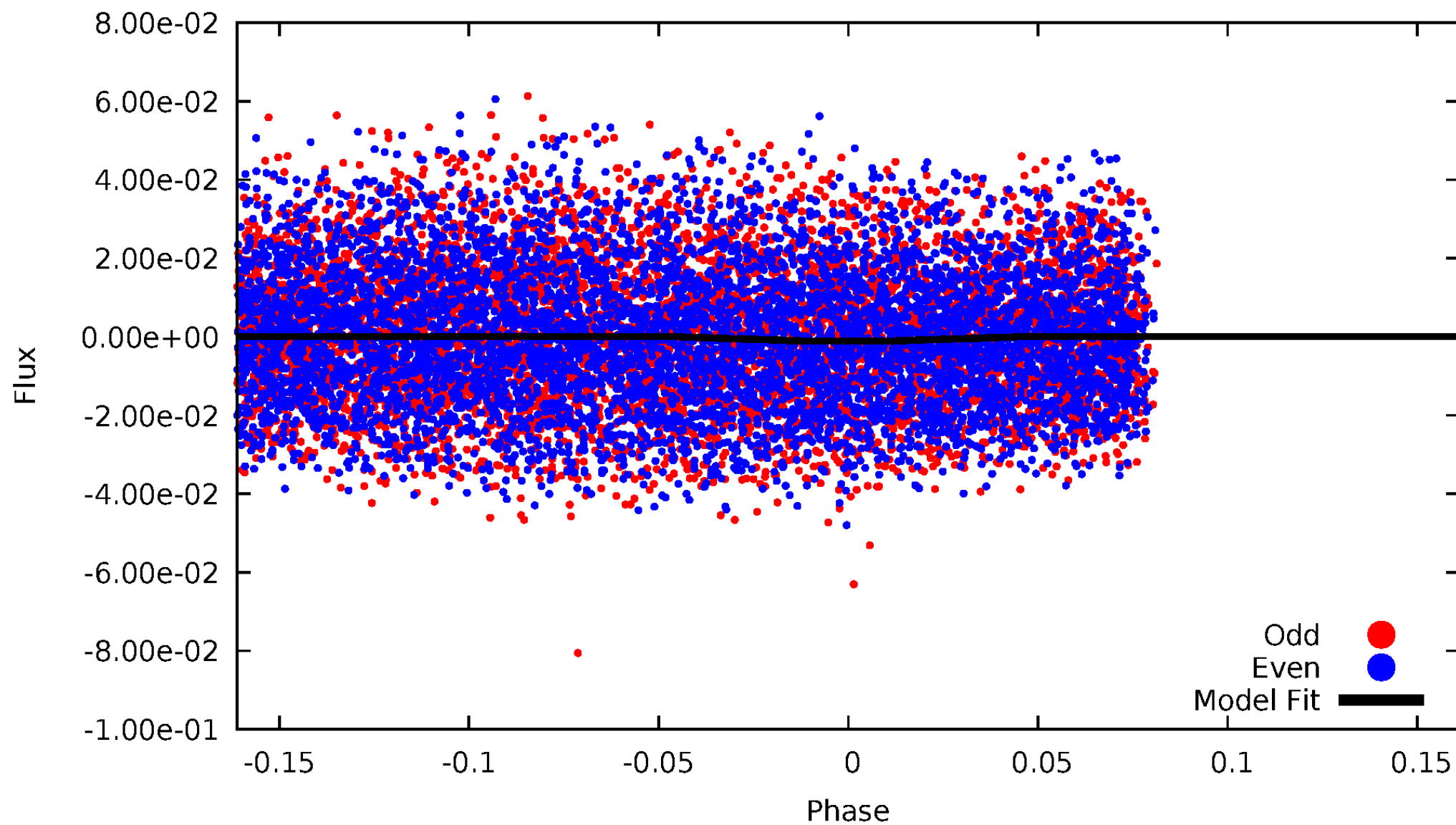
DV Odd/Even

TCE 010224920-02



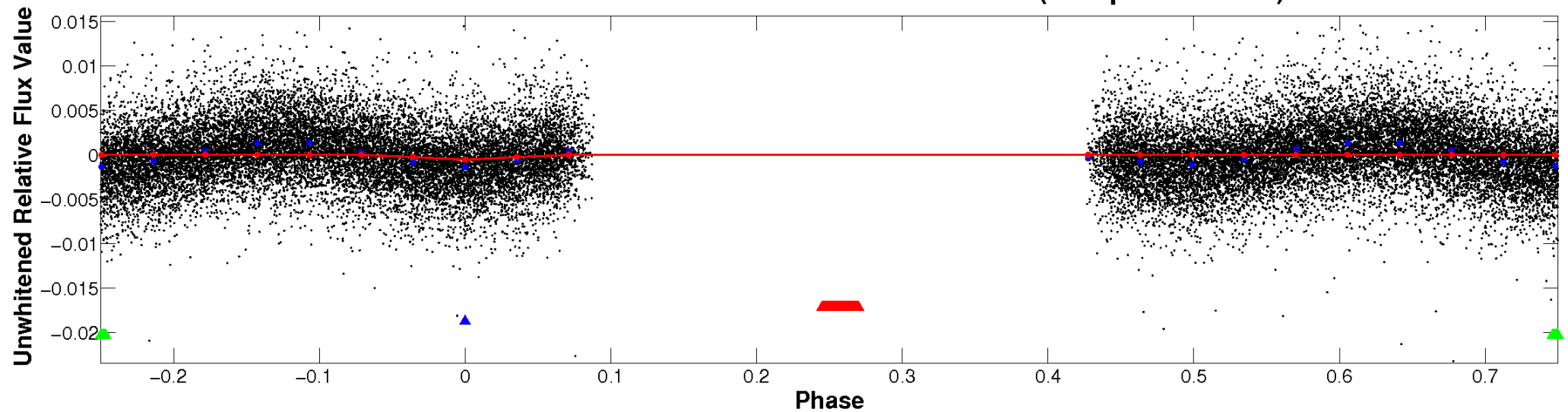
ALT Odd/Even

TCE 010224920-02

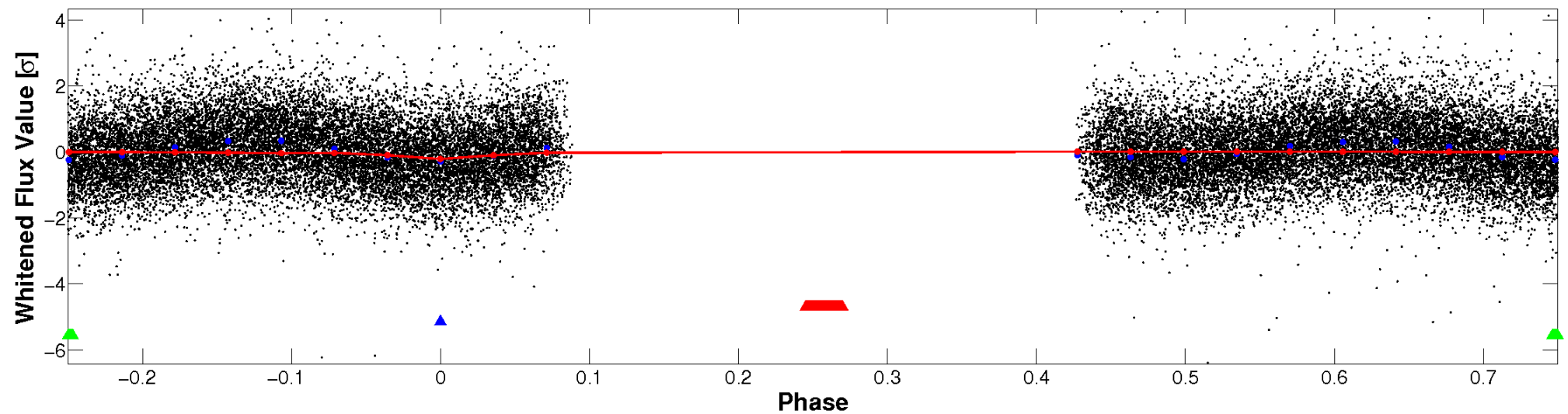


Non-Whitened Vs. Whitened Light Curve

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

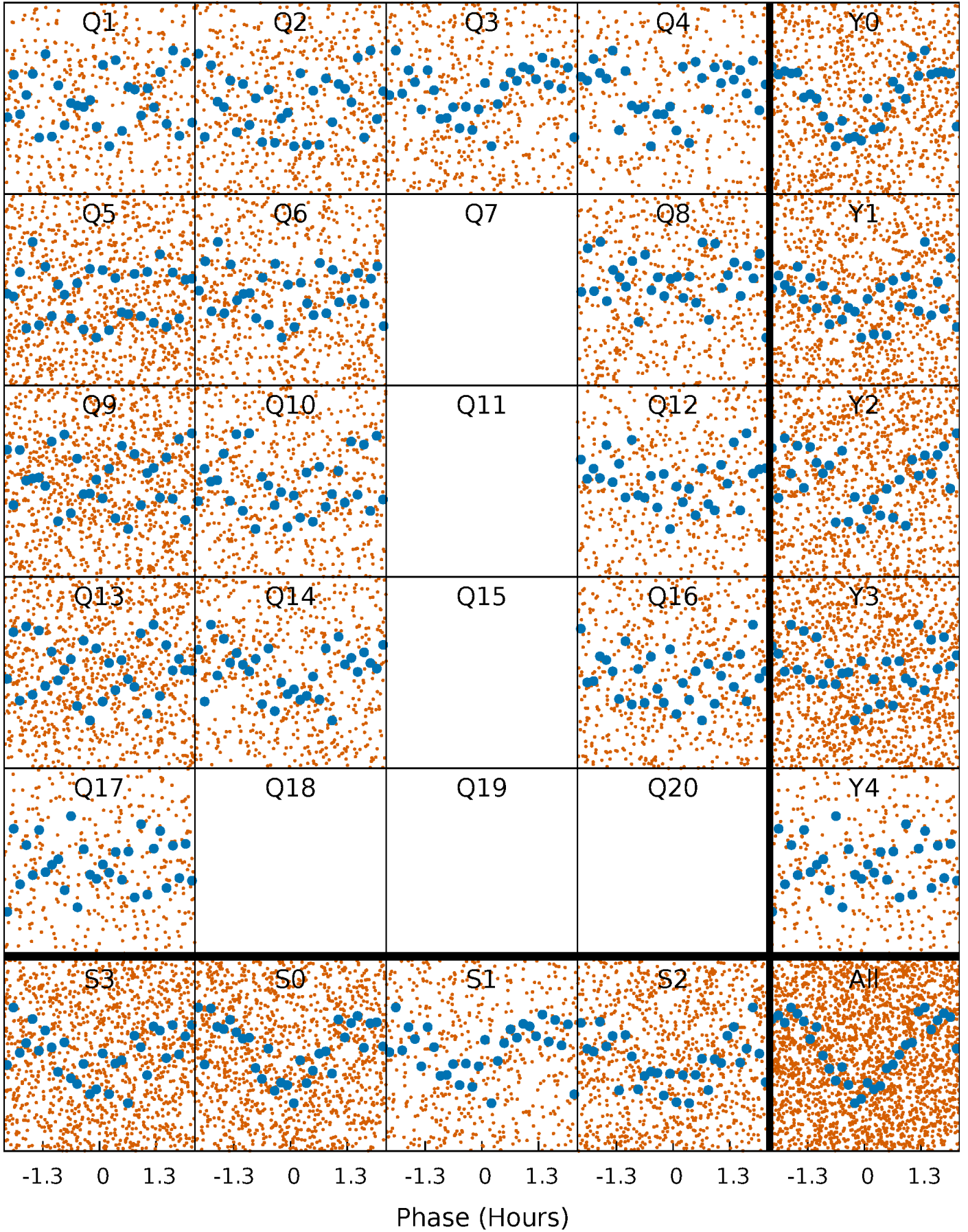


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



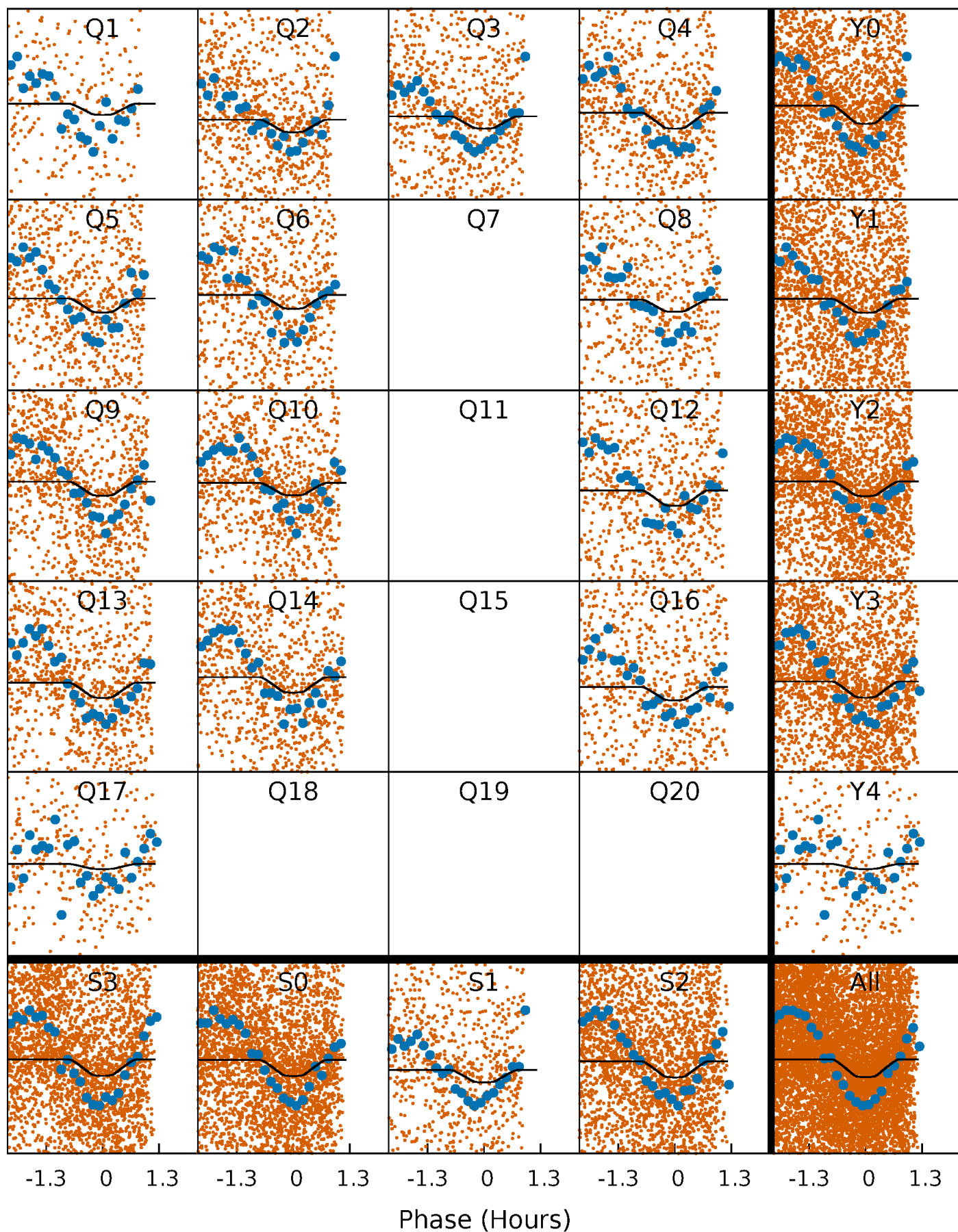
PDC Quarter-Phased Transit Curves

TCE 010224920-02 P= 0.573503 Days $T_0=131.830762$ (BKJD)



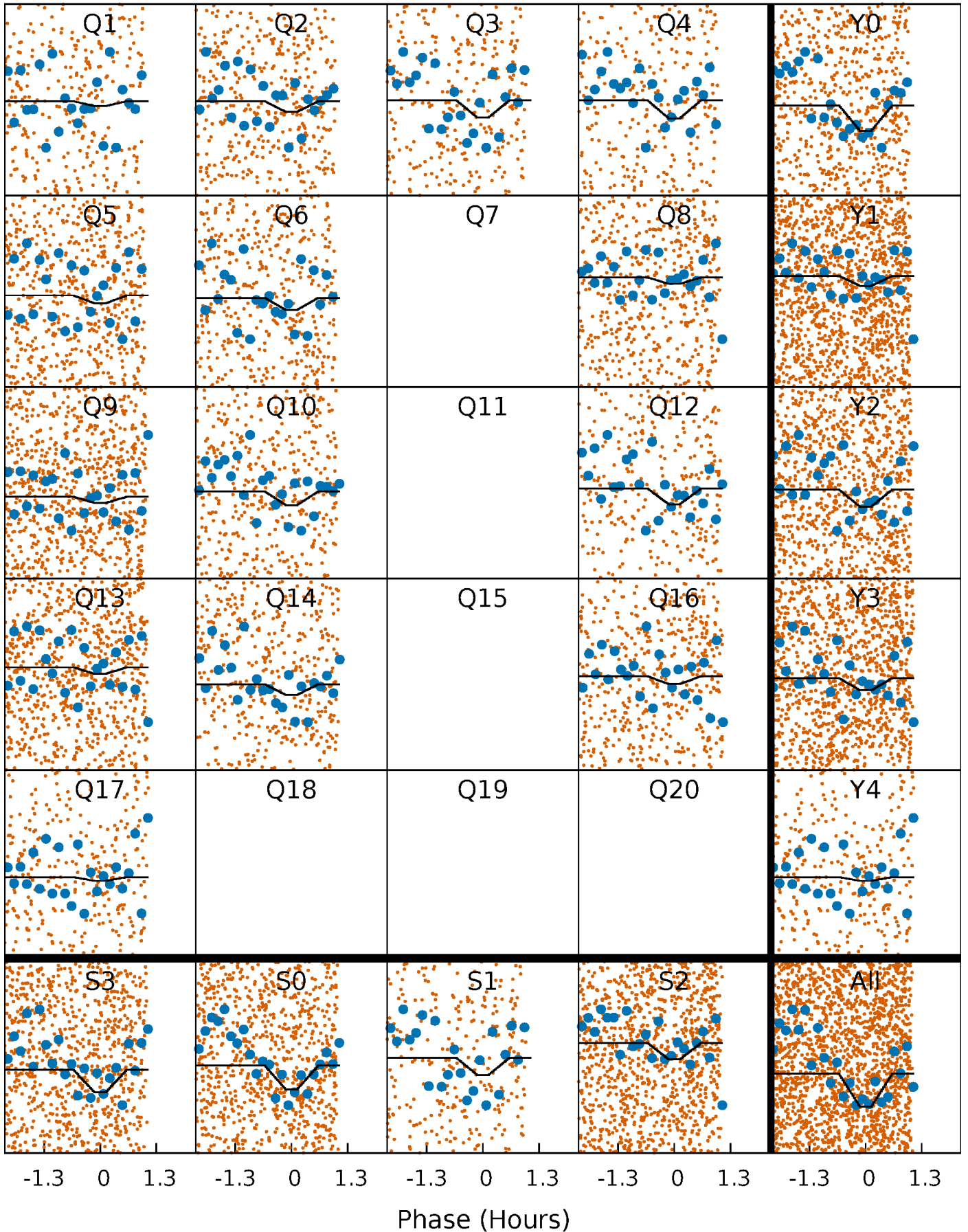
DV Quarter-Phased Transit Curves

TCE 010224920-02 P= 0.573503 Days $T_0=131.830762$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

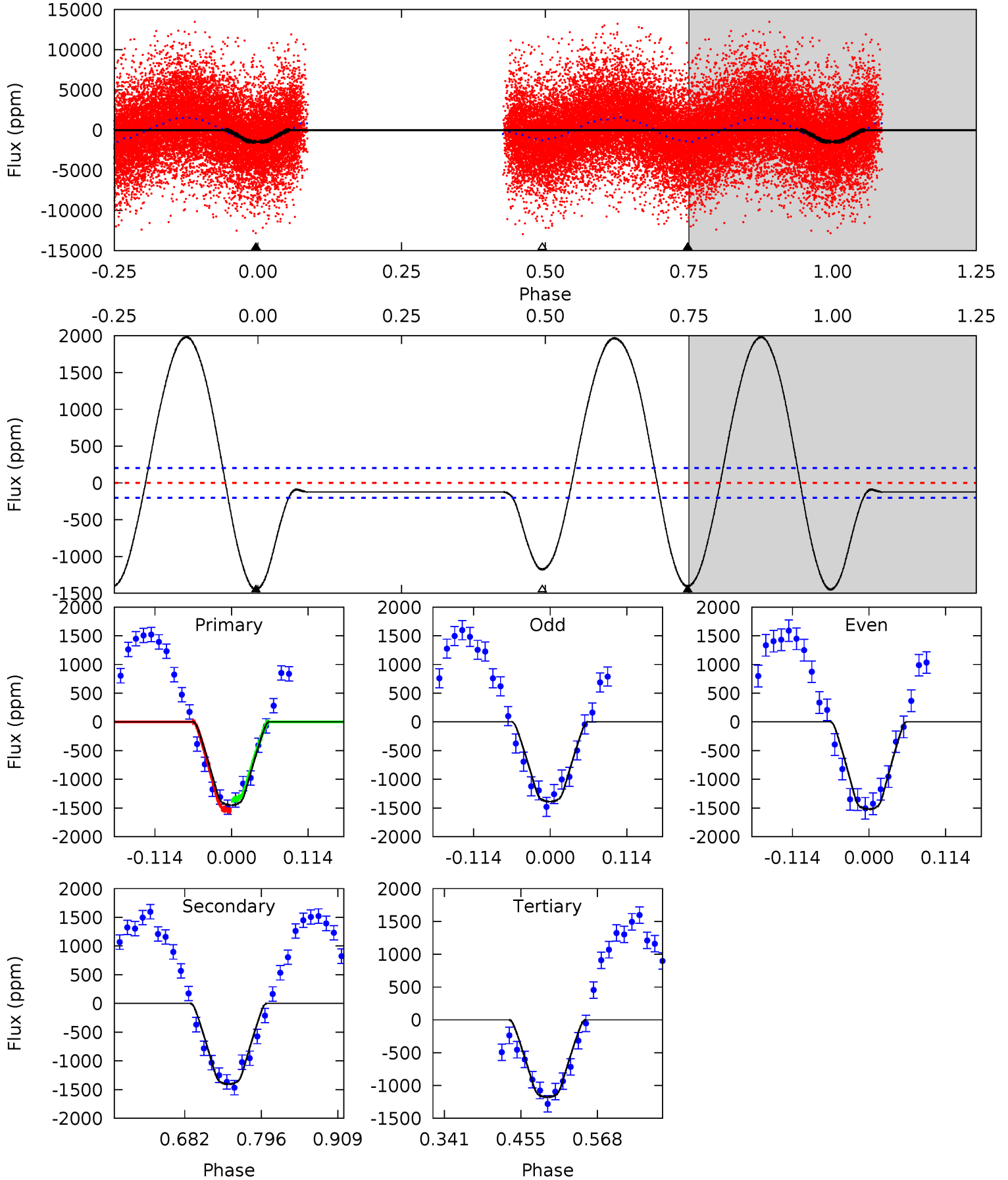
TCE 010224920-02 P= 0.573506 Days $T_0=131.825666$ (BKJD)



DV Model-Shift Uniqueness Test

010224920-02, P = 0.573503 Days, E = 131.257259 Days

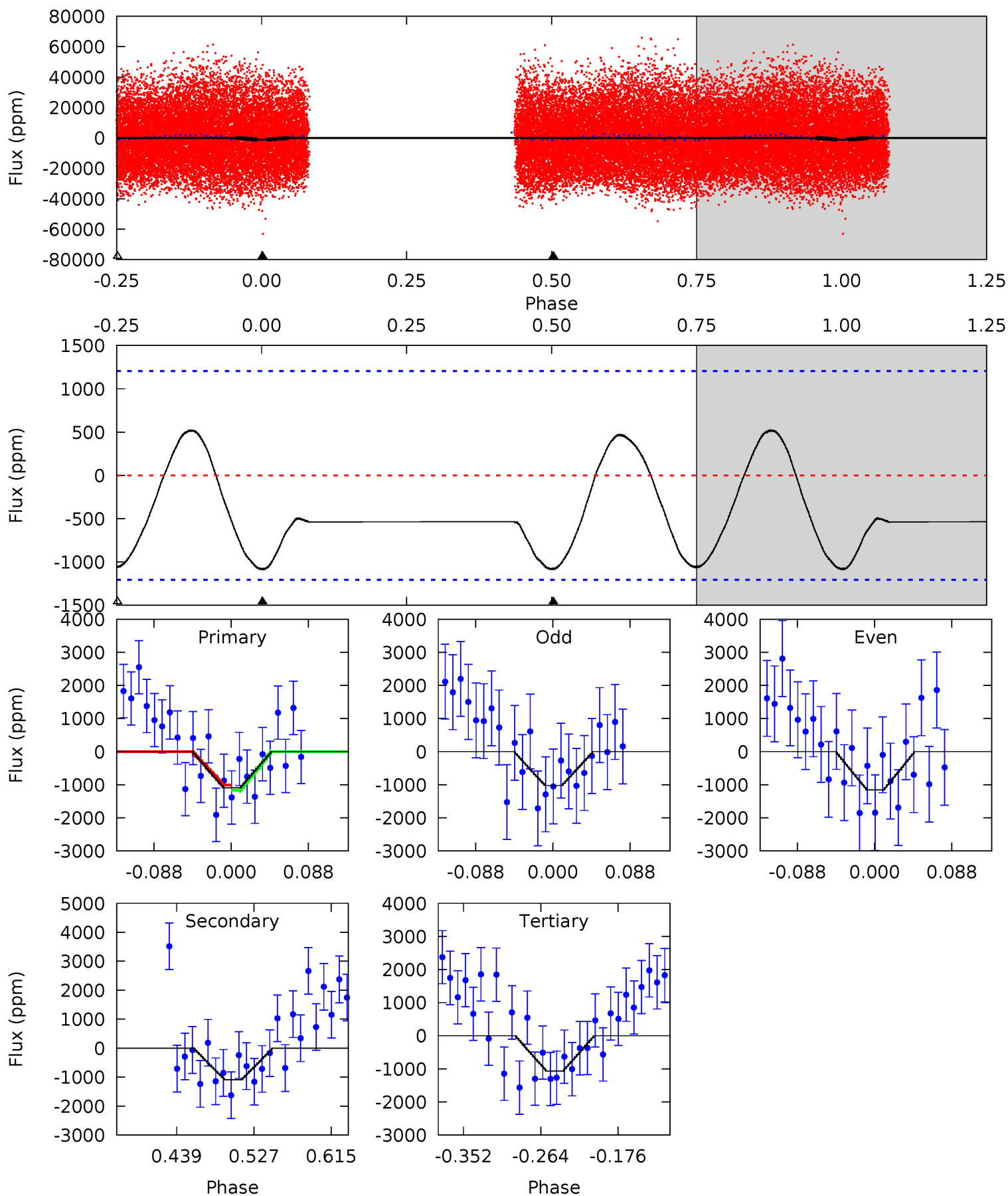
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.7	31.6	26.5	0	4.54	1.58	27.2	6.16	32.7	5.15	31.6	1.49	1.08	0.58	2.28



Alt Model-Shift Uniqueness Test

010224920-02, P = 0.573506 Days, E = 131.252160 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.16	4.16	4.07	0	4.59	1.71	2.13	0.10	4.16	0.09	4.16	0.25	0.88	0.33	0.33



Stellar Parameters For KIC 010224920

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7084^{+197}_{-296}	$4.120^{+0.132}_{-0.181}$	$0.000^{+0.200}_{-0.350}$	$1.772^{+0.558}_{-0.372}$	$1.508^{+0.220}_{-0.242}$	$0.382^{+0.297}_{-0.194}$
	+3%/-4%	+3%/-4%	+inf%/-inf%	+31%/-21%	+15%/-16%	+78%/-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 010224920-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1405 ± 44	$4.72^{+2.61}_{-2.15}$	4683^{+352}_{-282}	9148^{+5839}_{-2126}	$8.335^{+18.908}_{-4.877}$
Alt.	-1092 ± 263	$6.57^{+2.77}_{-2.45}$	4690^{+357}_{-317}	6692^{+2505}_{-1196}	$3.241^{+4.827}_{-1.721}$

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

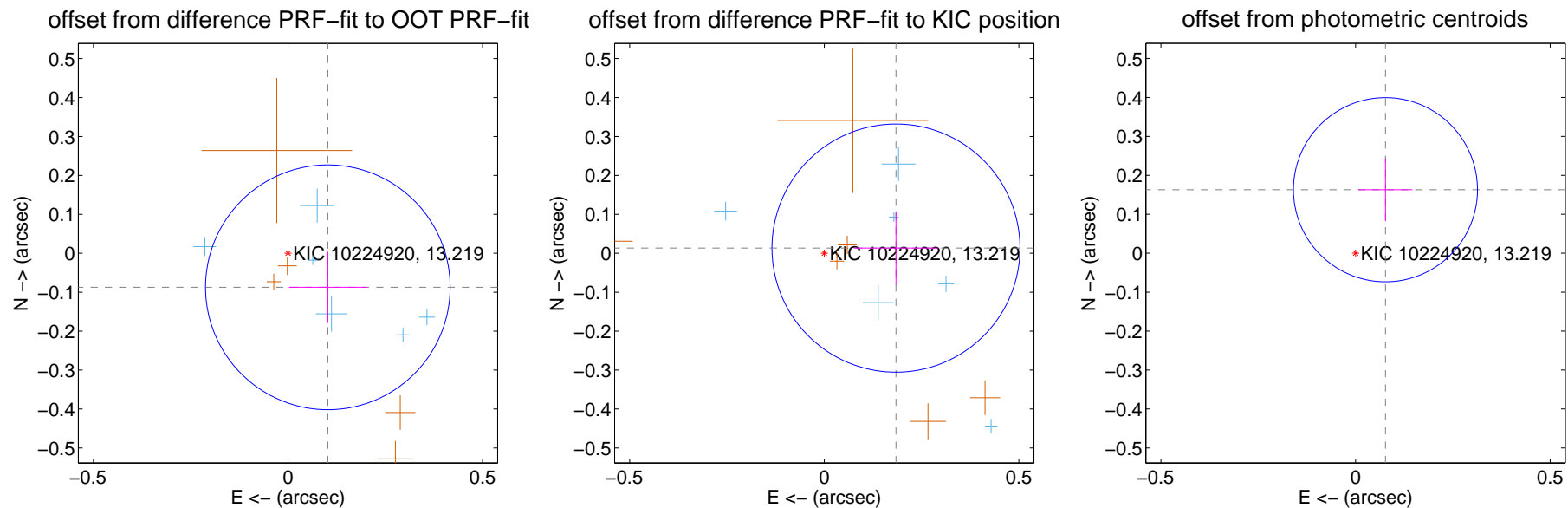
DV Centroid Data

Supplemental centroid analysis for 010224920-02. Kepler magnitude: 13.22. Transit SNR 11.16

There are 6 quarters with good PRF difference image offsets

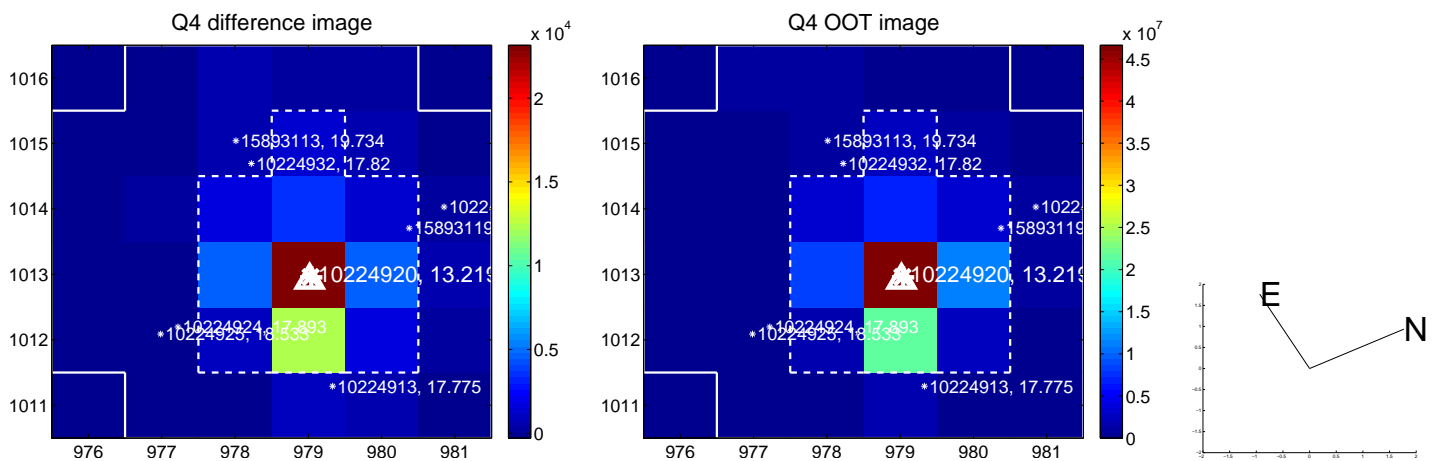
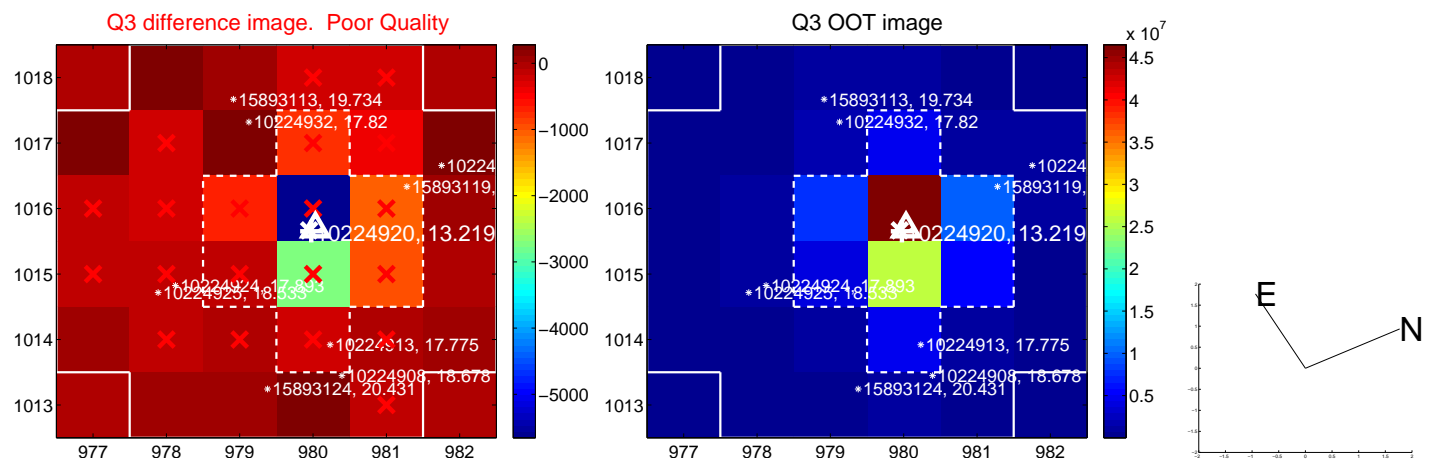
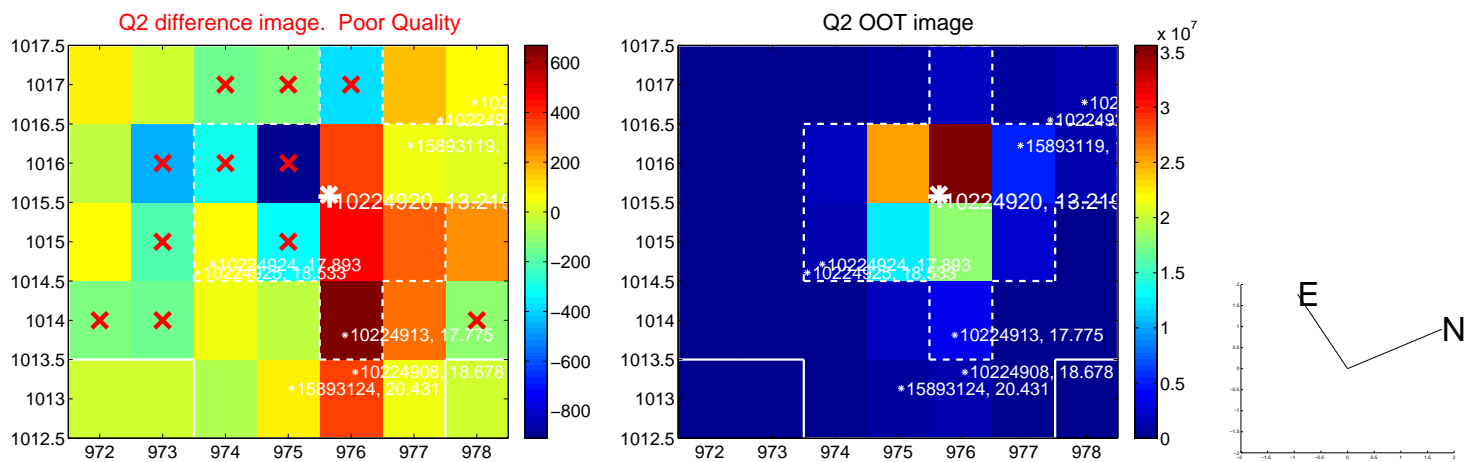
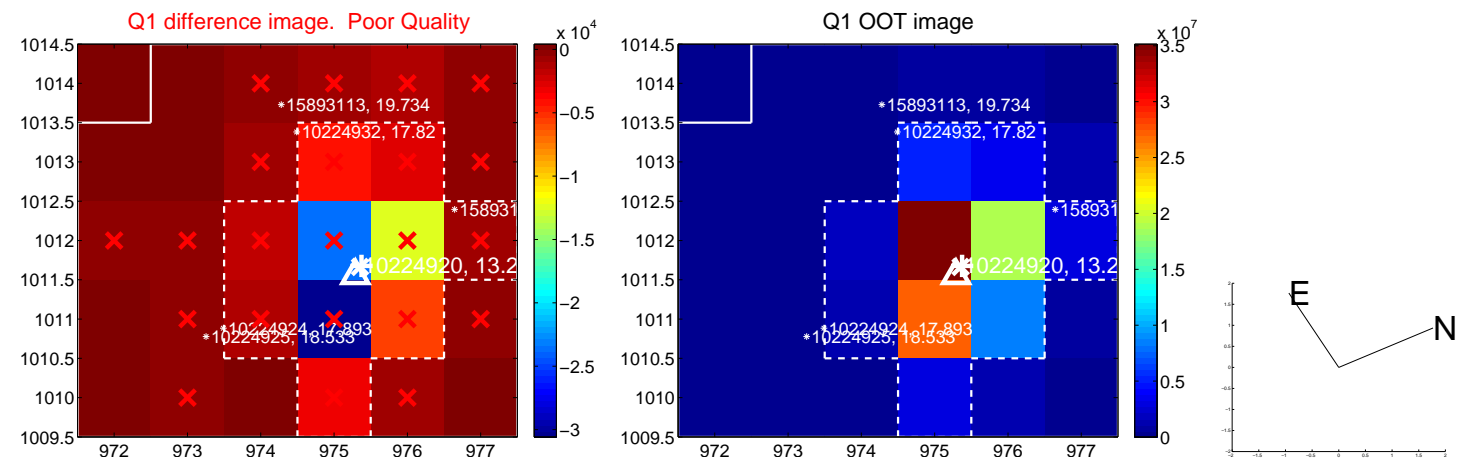
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.135 ± 0.105	1.28	-0.102 ± 0.100	-0.087 ± 0.092
PRF-fit source offset from KIC position	0.185 ± 0.106	1.74	-0.184 ± 0.108	0.013 ± 0.095
photometric centroid source offset	0.18 ± 0.08	2.29	-0.08 ± 0.07	0.16 ± 0.08

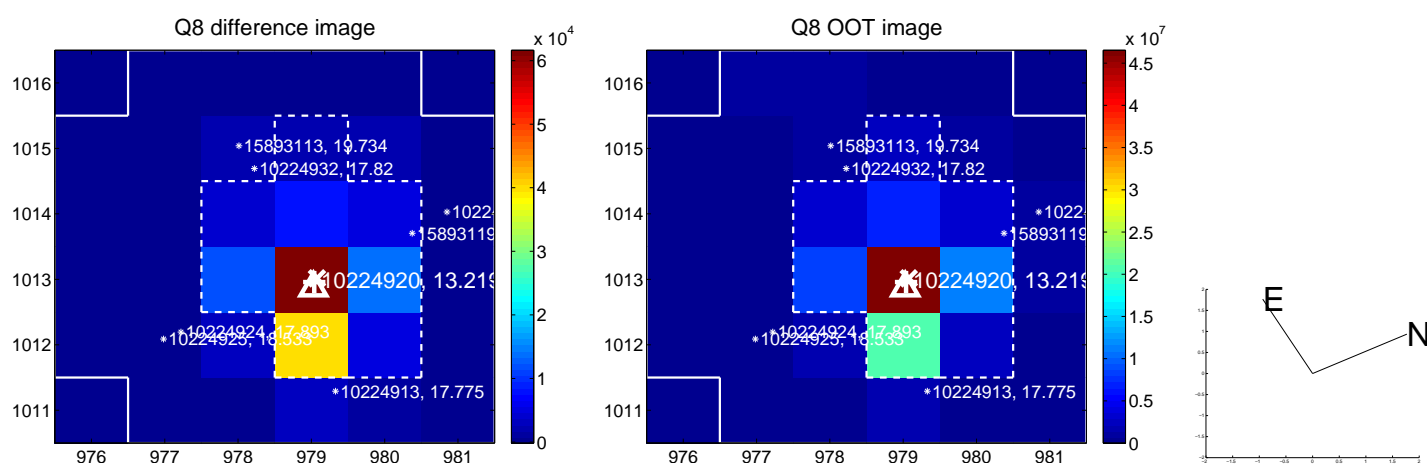
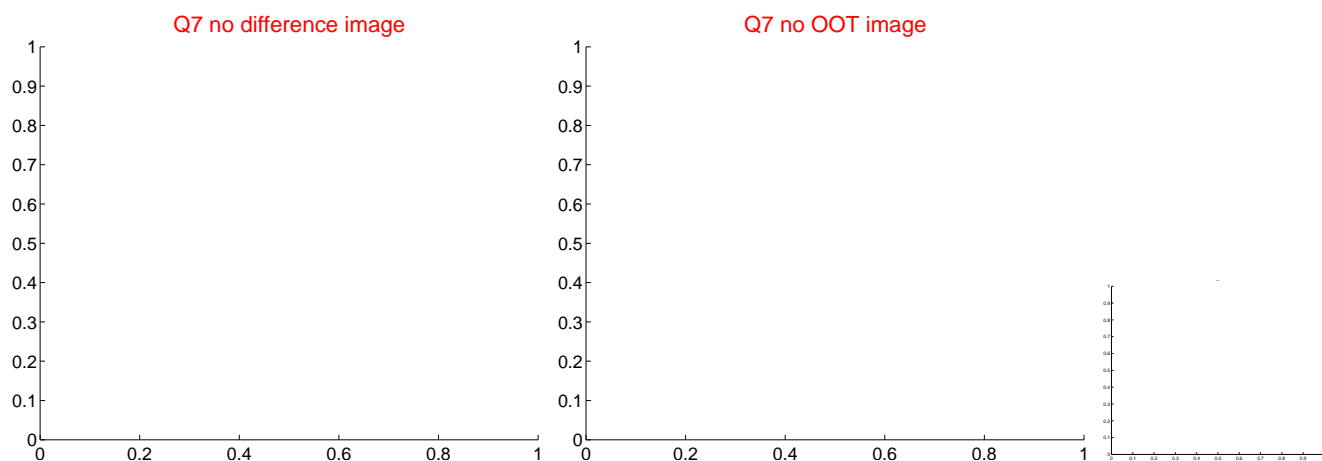
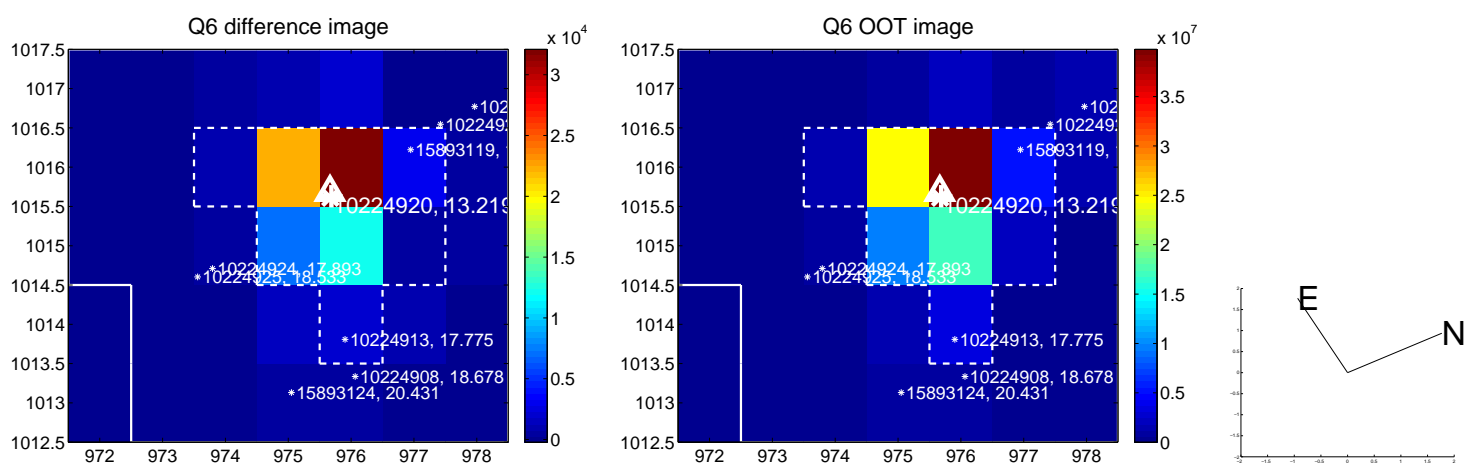
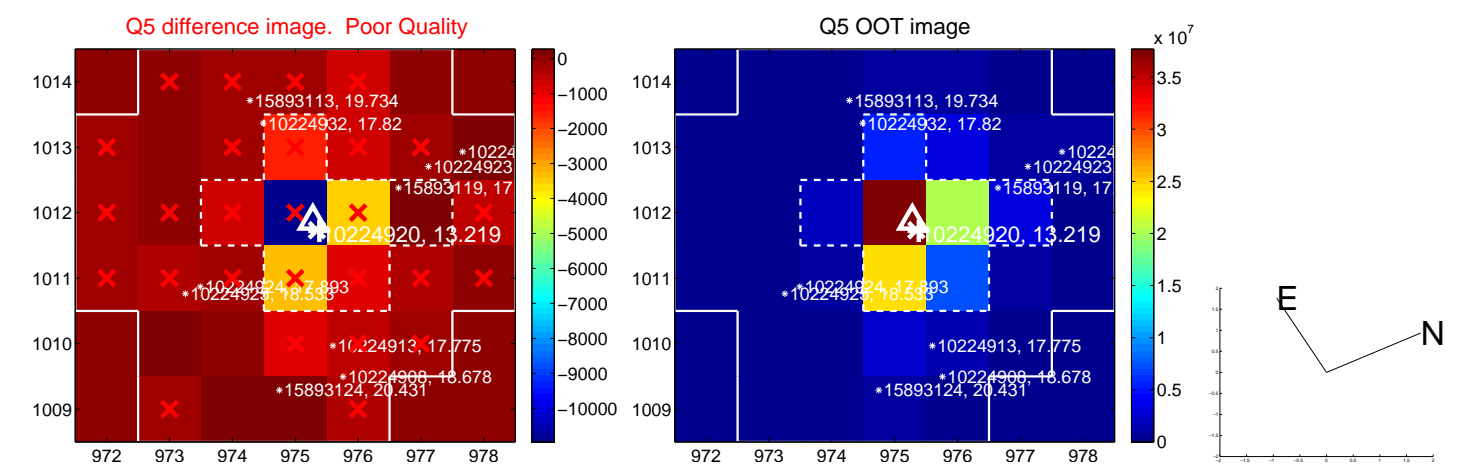


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

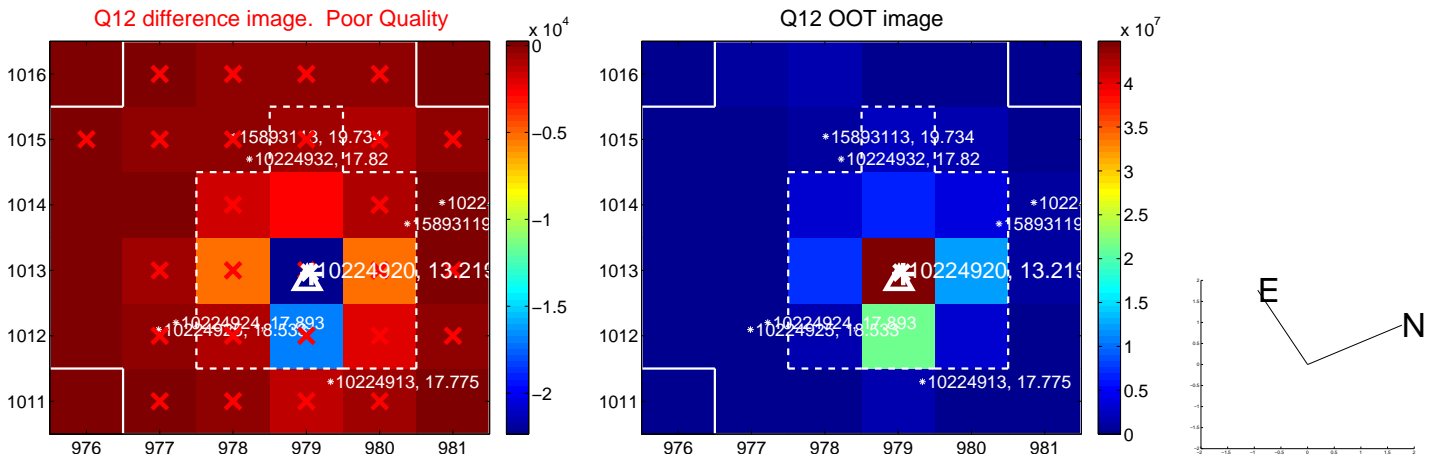
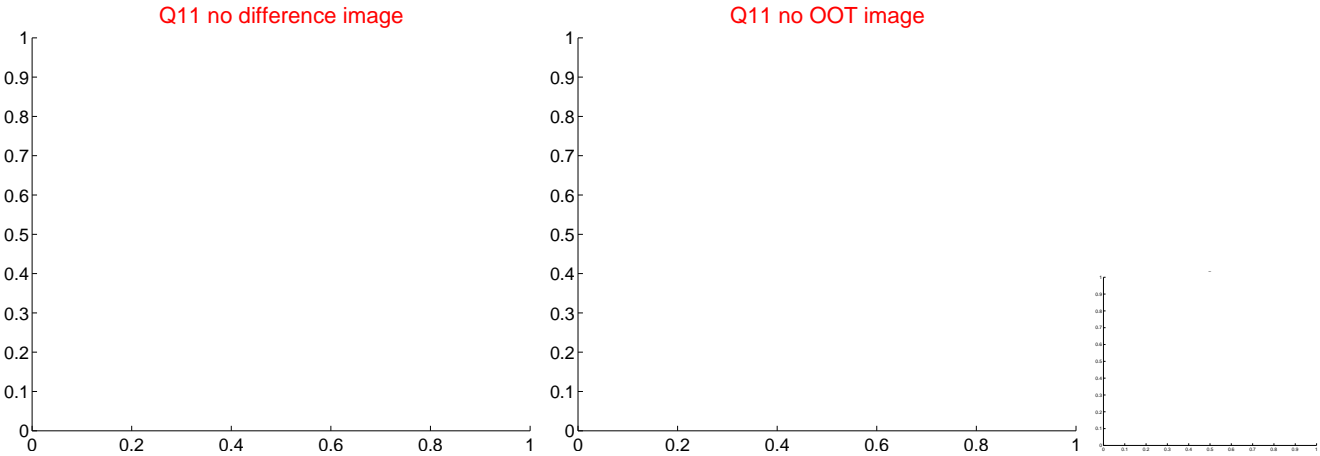
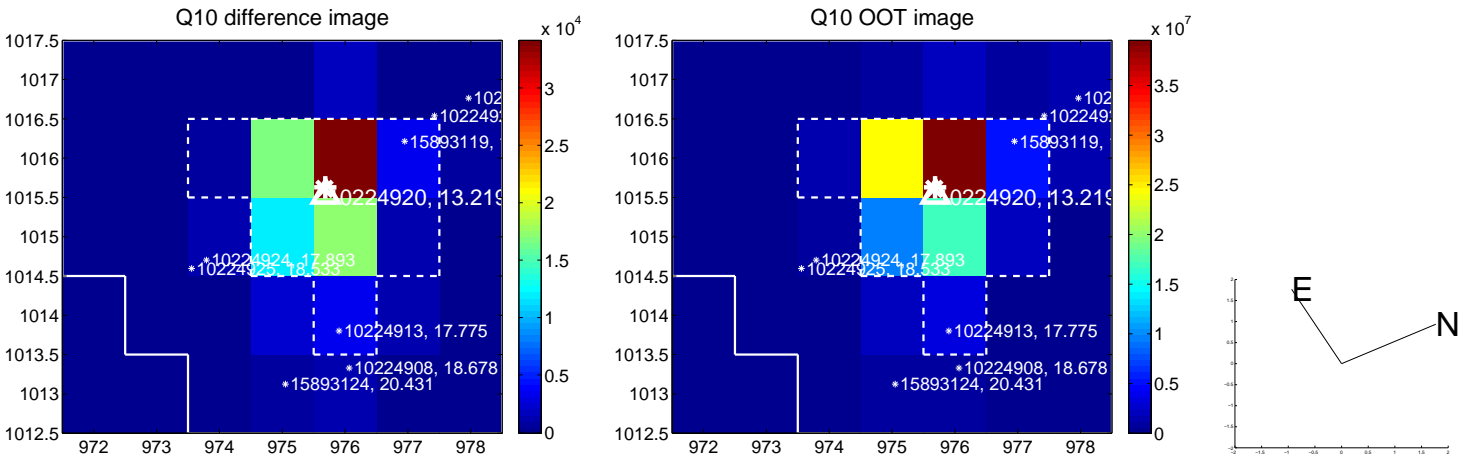
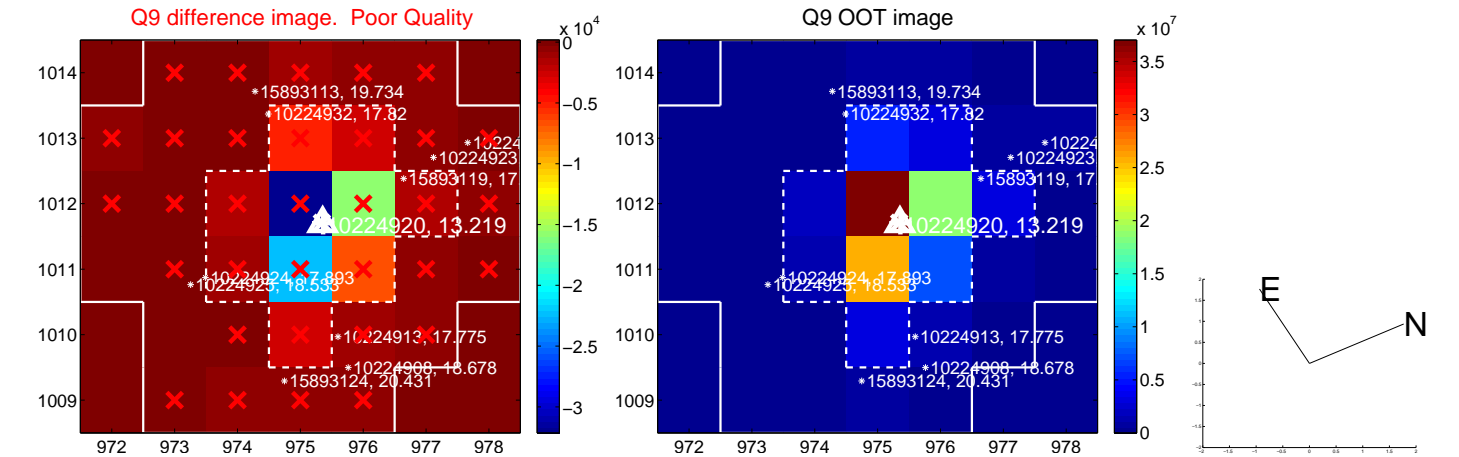
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



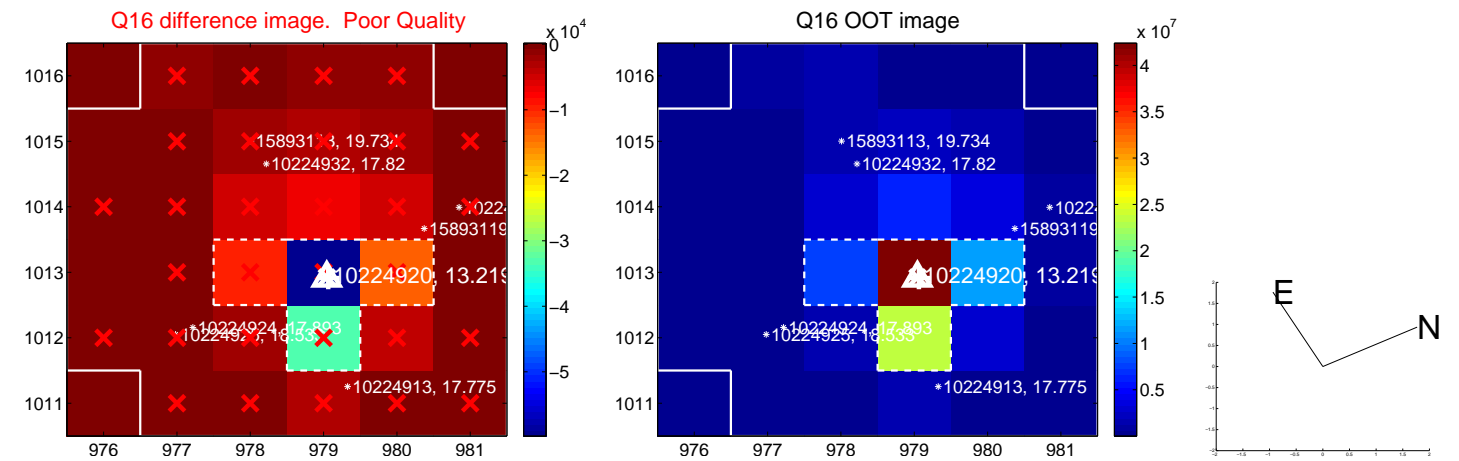
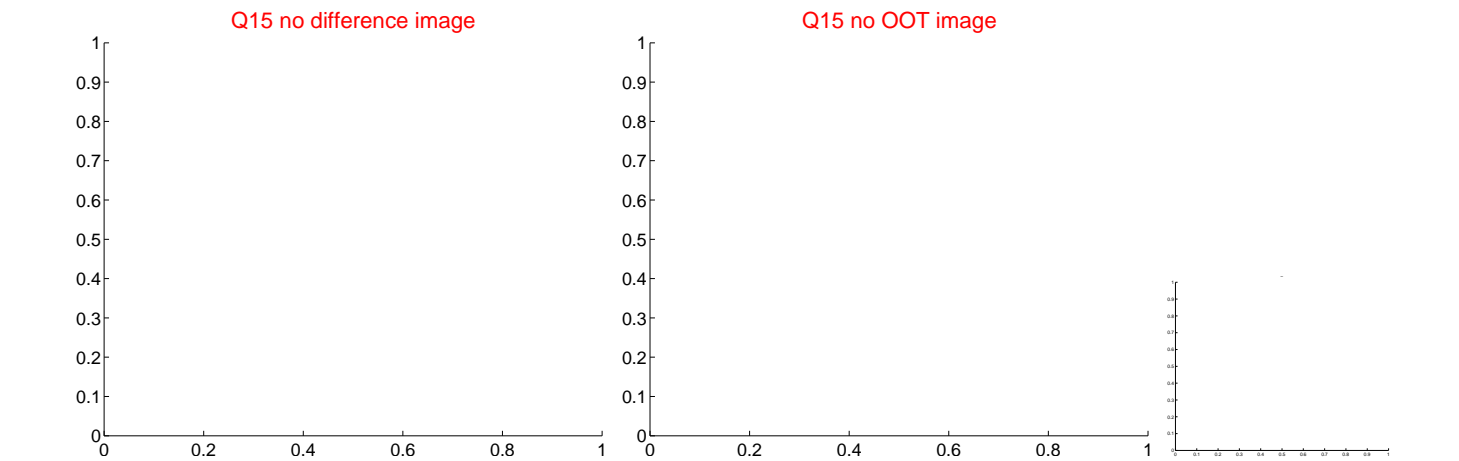
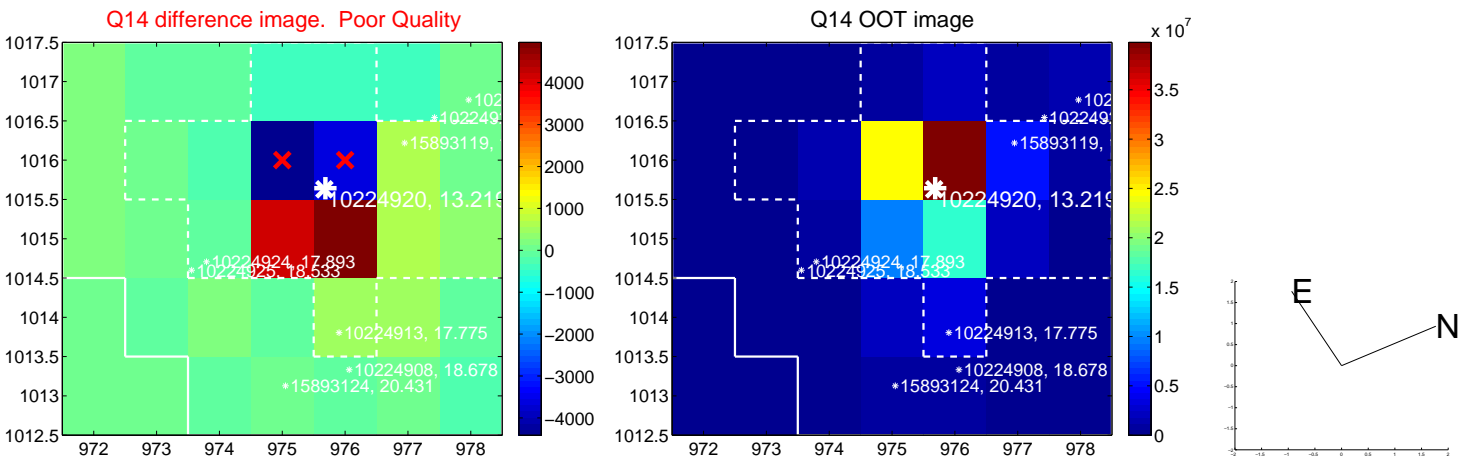
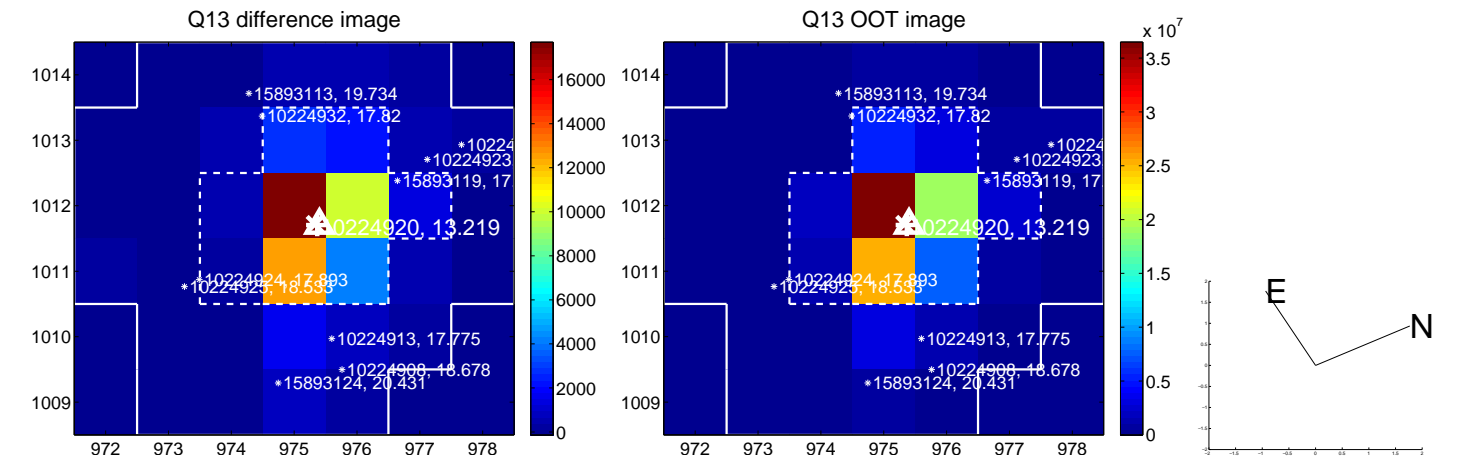
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



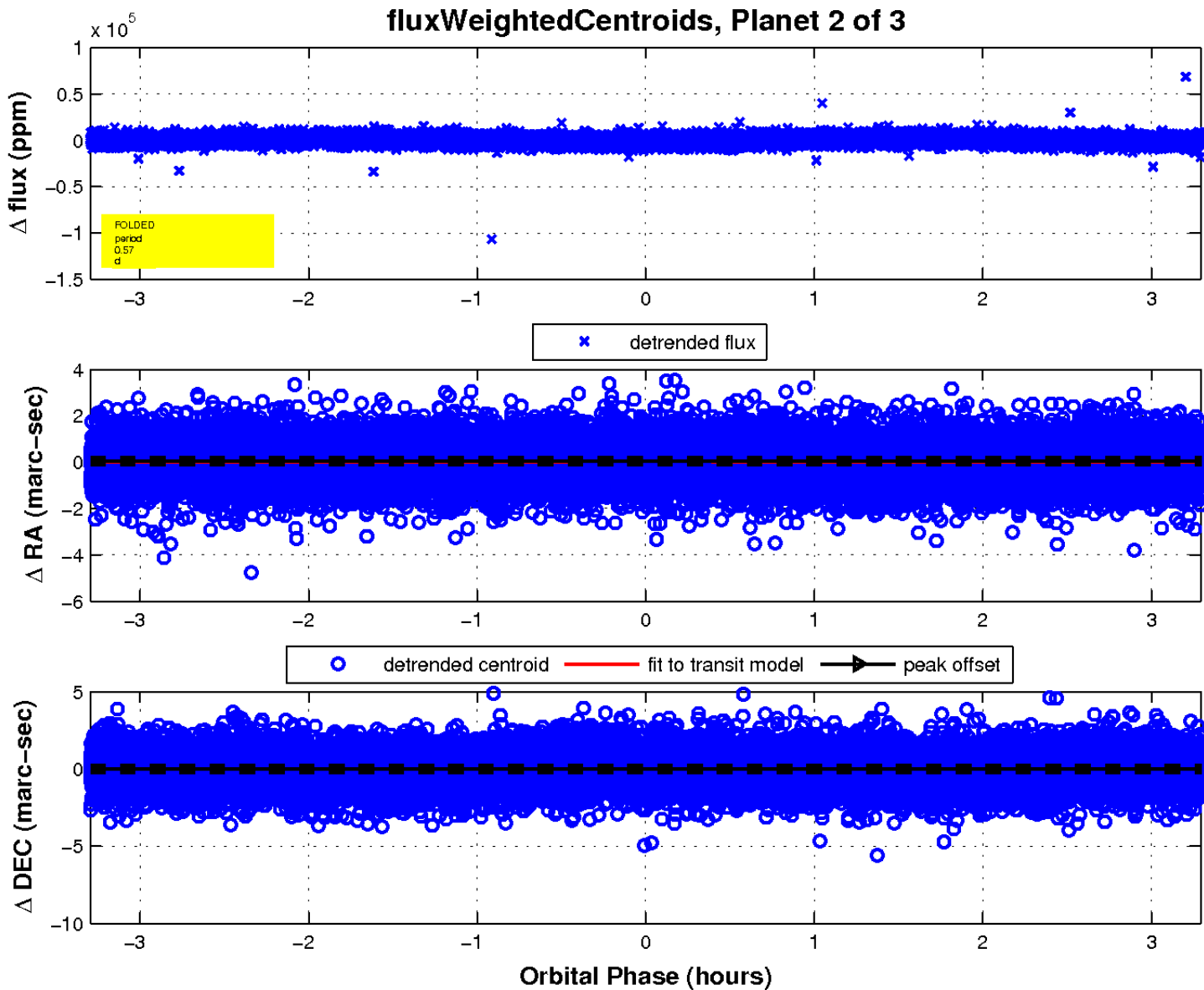
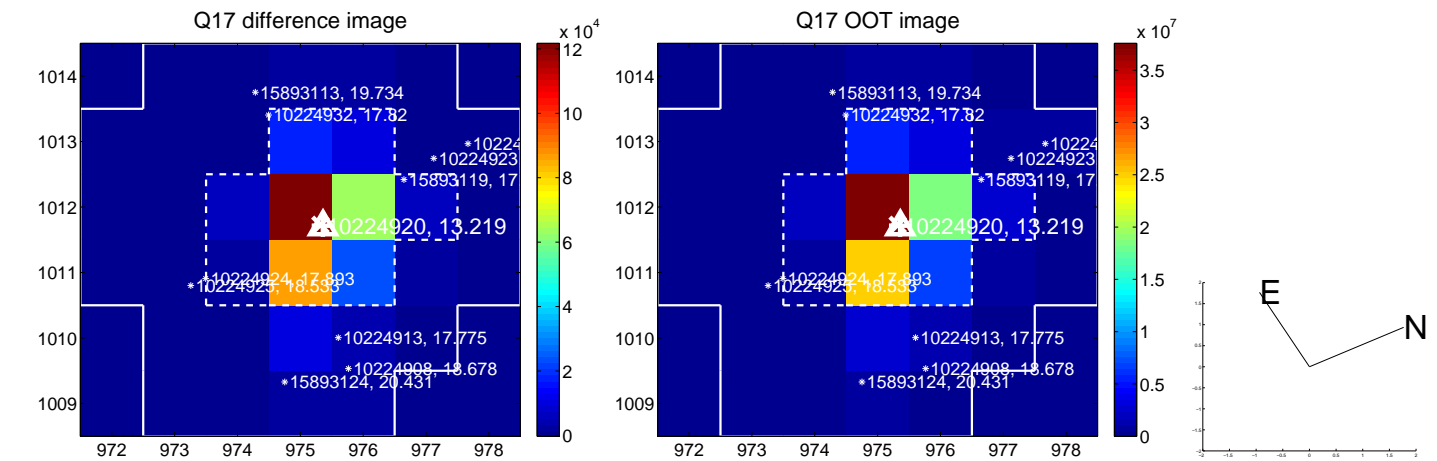
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

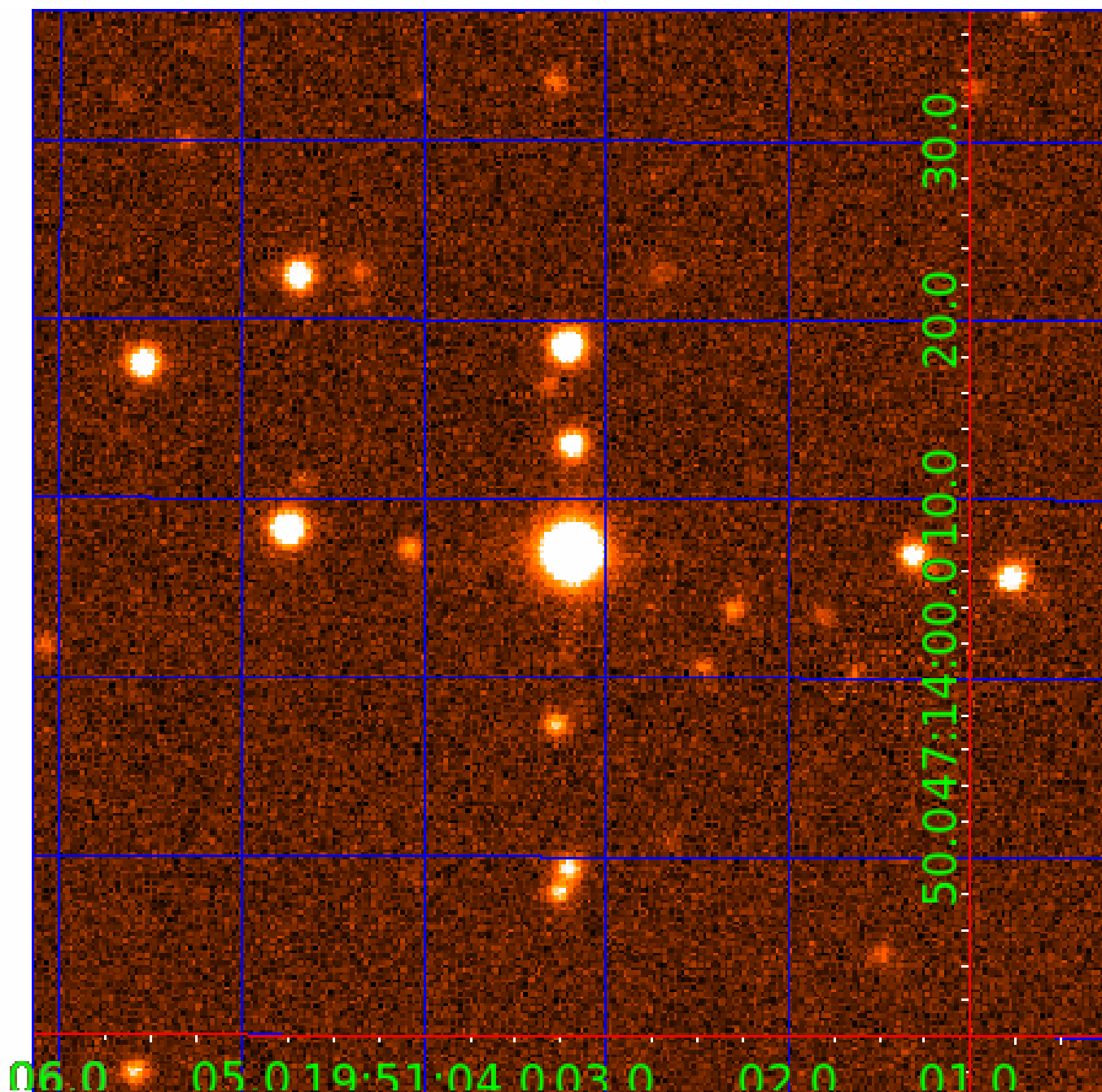


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010224920

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})
010224920-01	OBS	No	0.573508	131.971247	497.8	1.203	10.1	12.5	1.77	7084	4.63	29484.79
010224920-02	OBS	No	0.573503	131.830762	545.0	1.098	10.9	11.2	1.77	7084	4.82	29485.18
010224920-03	OBS	No	0.573501	131.689227	573.8	1.228	11.2	12.1	1.77	7084	4.95	29485.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010224920-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
010224920-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD
010224920-03	OBS	FP	0.00	1	0	0	0	LPP_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.

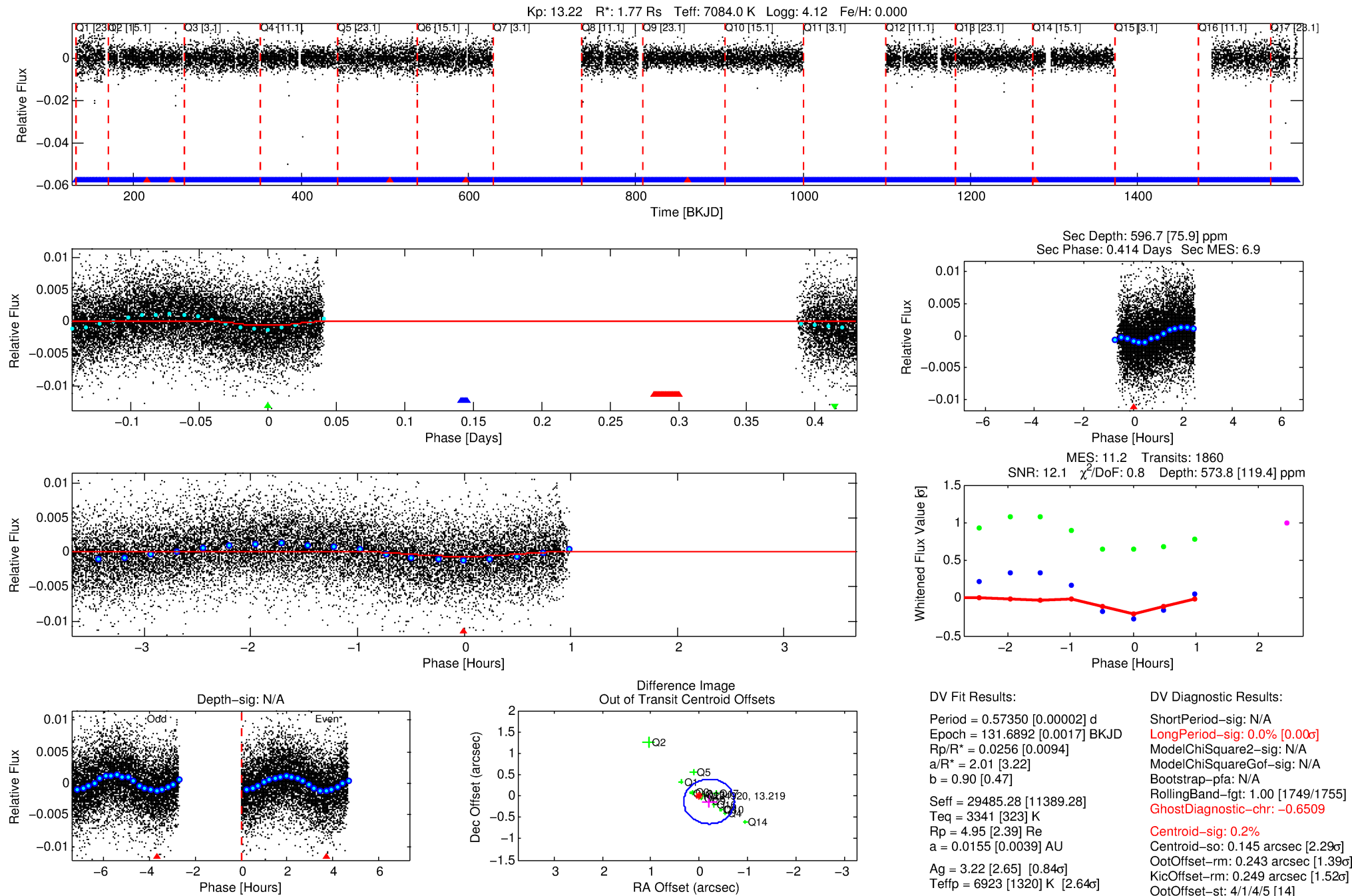
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010224920-03

No Significant Match Found

DV One-Page Summary

KIC: 10224920 Candidate: 3 of 3 Period: 0.574 d



DV Fit Results:

Period = 0.57350 [0.00002] d
Epoch = 131.6892 [0.0017] BKJD
Rp/R* = 0.0256 [0.0094]
a/R* = 2.01 [3.22]
b = 0.90 [0.47]
Seff = 29485.28 [11389.28]
Teq = 3341 [323] K
Rp = 4.95 [2.39] Re
a = 0.0155 [0.0039] AU
Ag = 3.22 [2.65] [0.84 σ]
Teffp = 6923 [1320] K [2.64 σ]

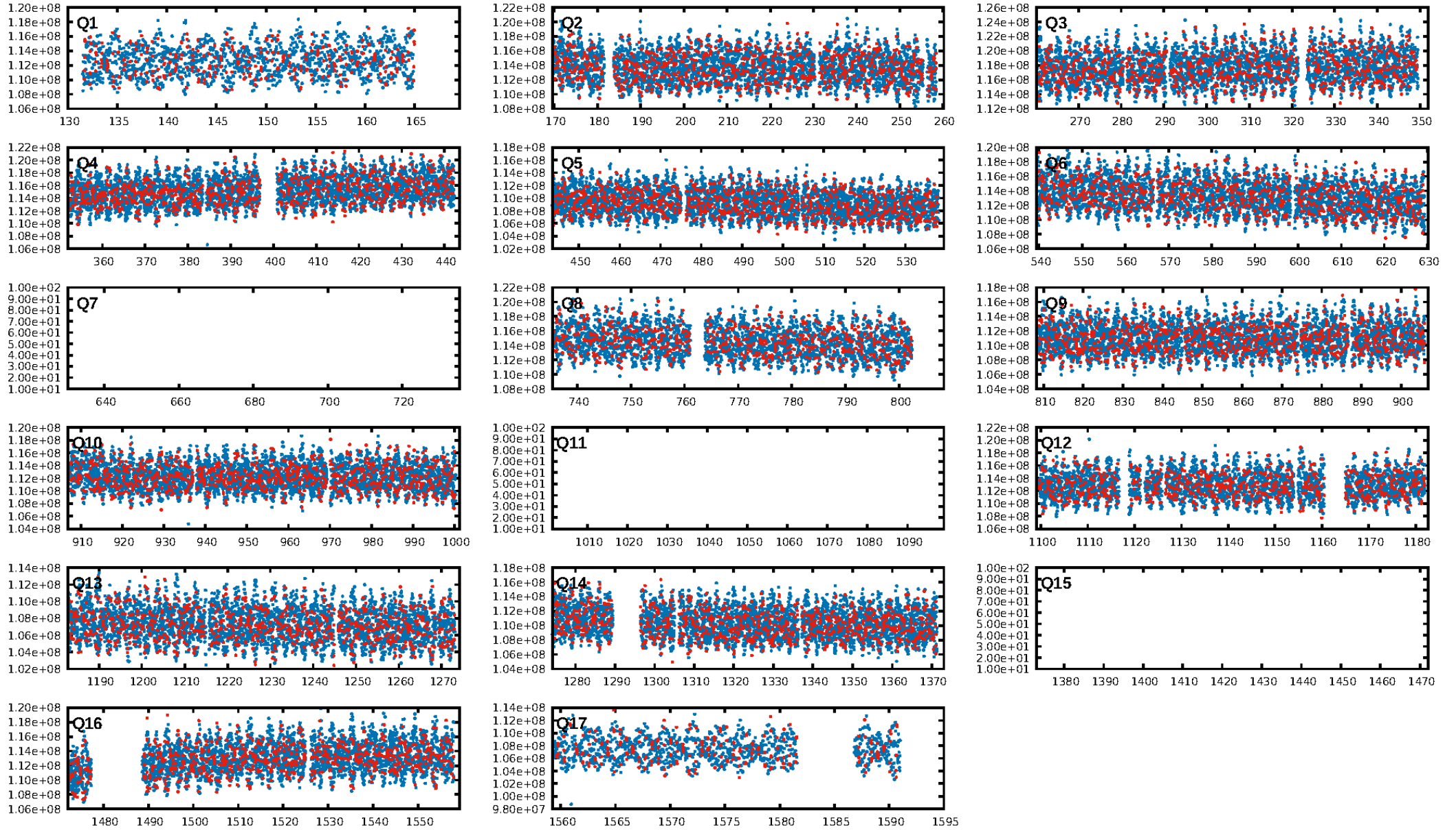
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1749/1755]
GhostDiagnostic-chr: -0.6509
Centroid-sig: 0.2%
Centroid-so: 0.145 arcsec [2.29 σ]
OotOffset-rm: 0.243 arcsec [1.39 σ]
KicOffset-rm: 0.249 arcsec [1.52 σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.64 [9/14]
DiffImageOverlap-fno: 0.00 [0/14]

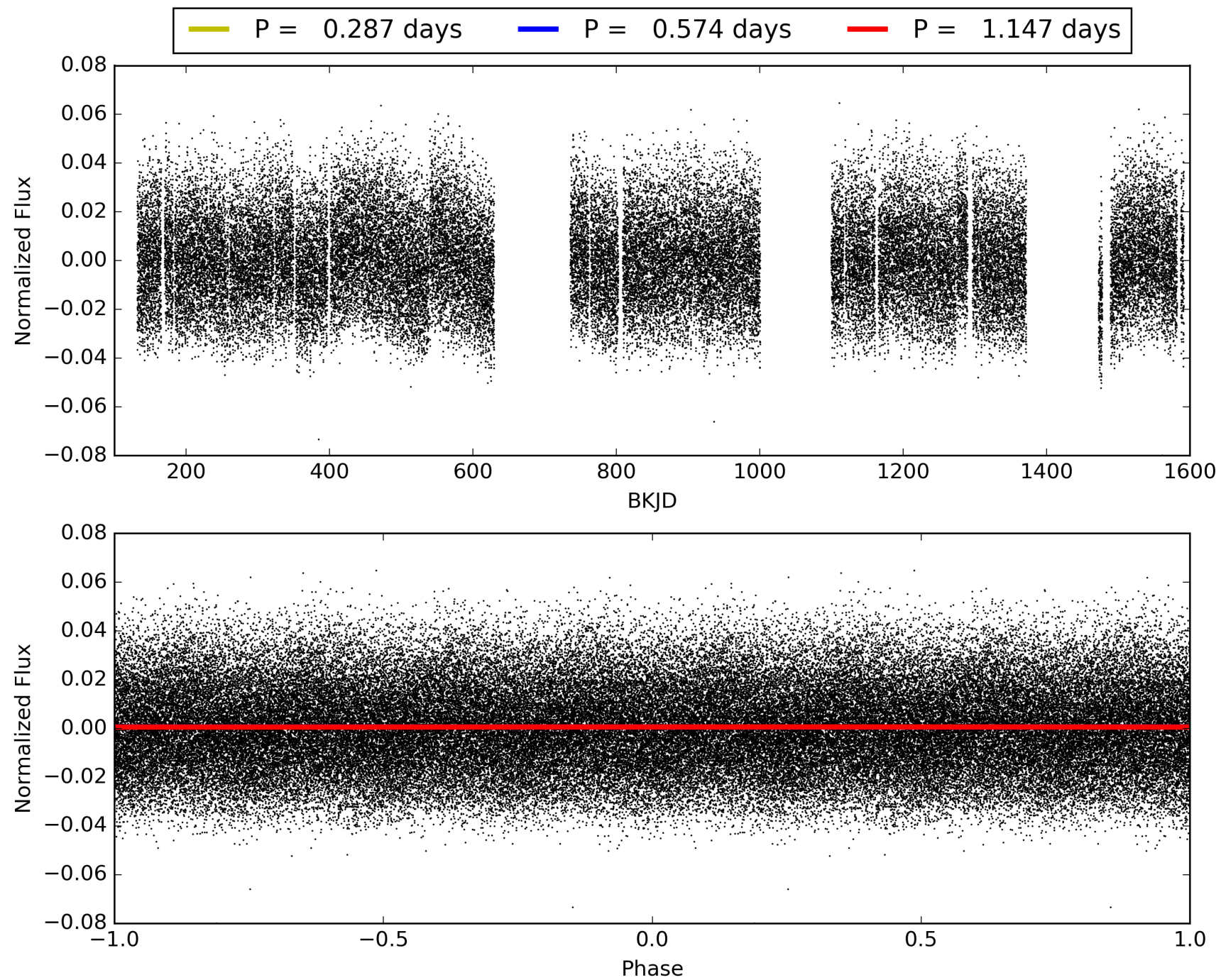
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:58:35 Z

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

TCE 010224920-03, PDC Light Curves

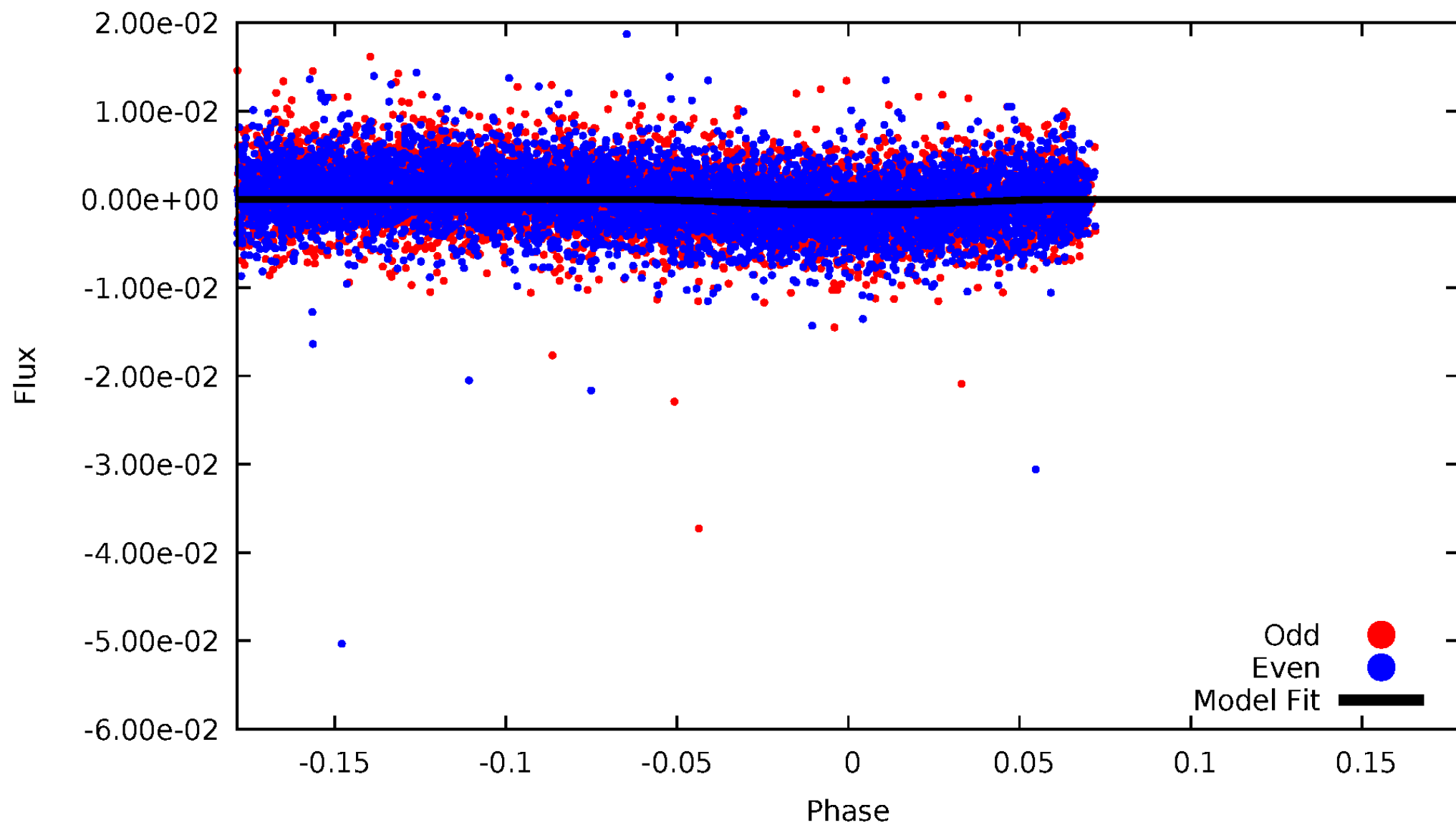


TCE 010224920-03



DV Odd/Even

TCE 010224920-03

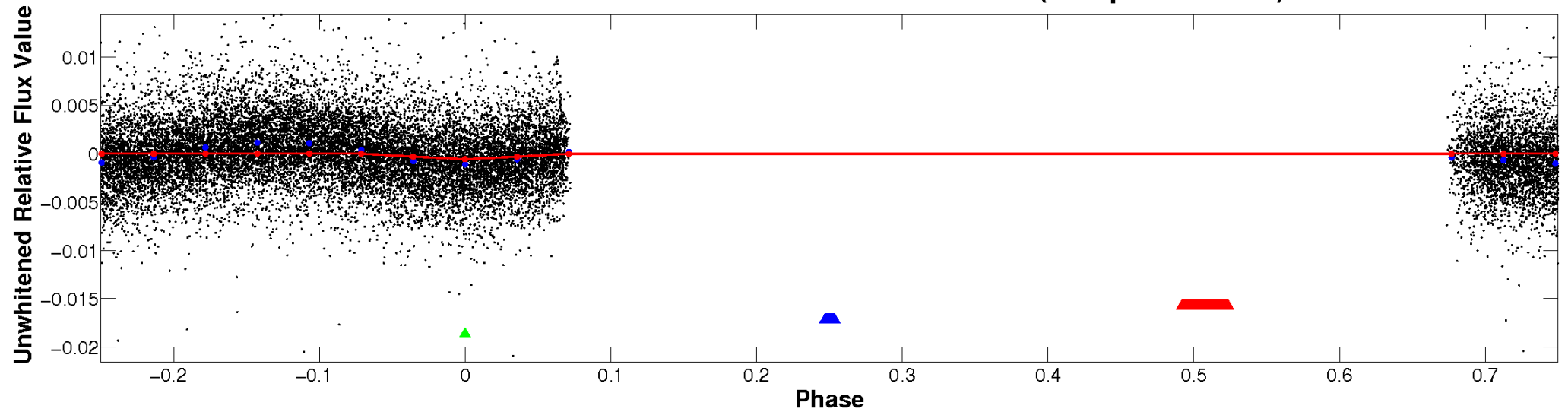


ALT Odd/Even

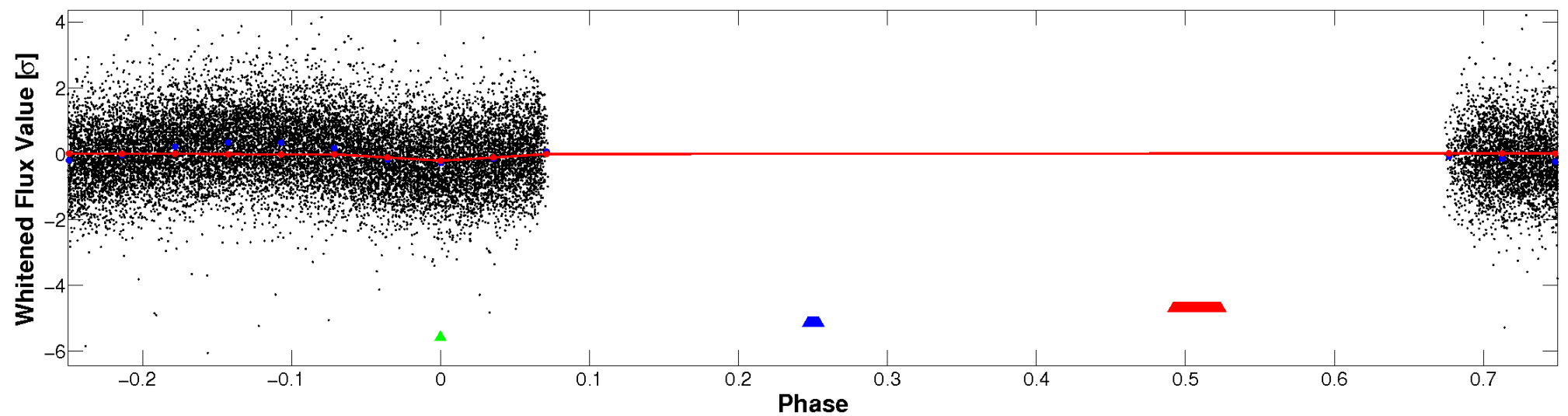
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

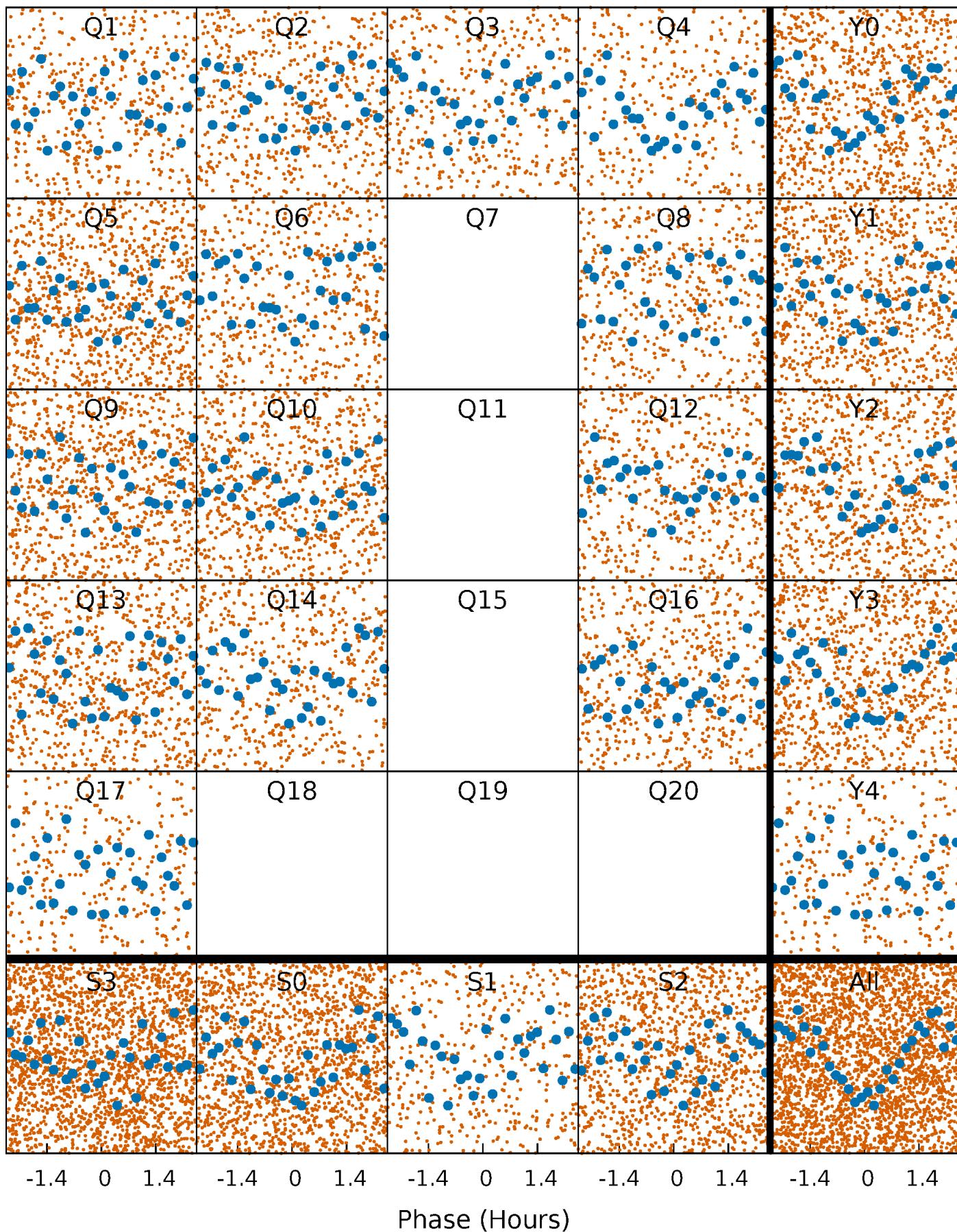


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



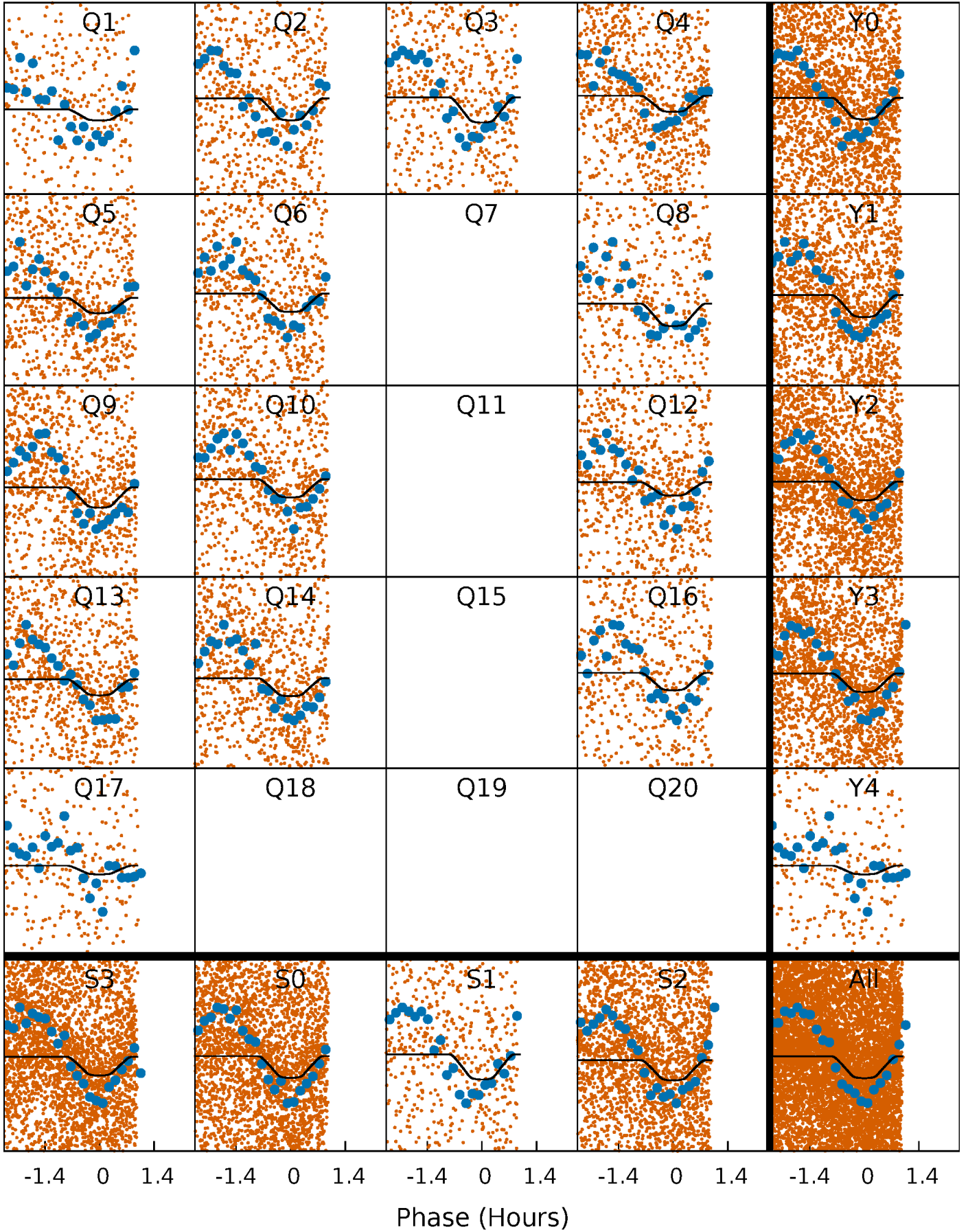
PDC Quarter-Phased Transit Curves

TCE 010224920-03 P= 0.573501 Days $T_0=131.689227$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 010224920-03 P= 0.573501 Days $T_0=131.689227$ (BKJD)

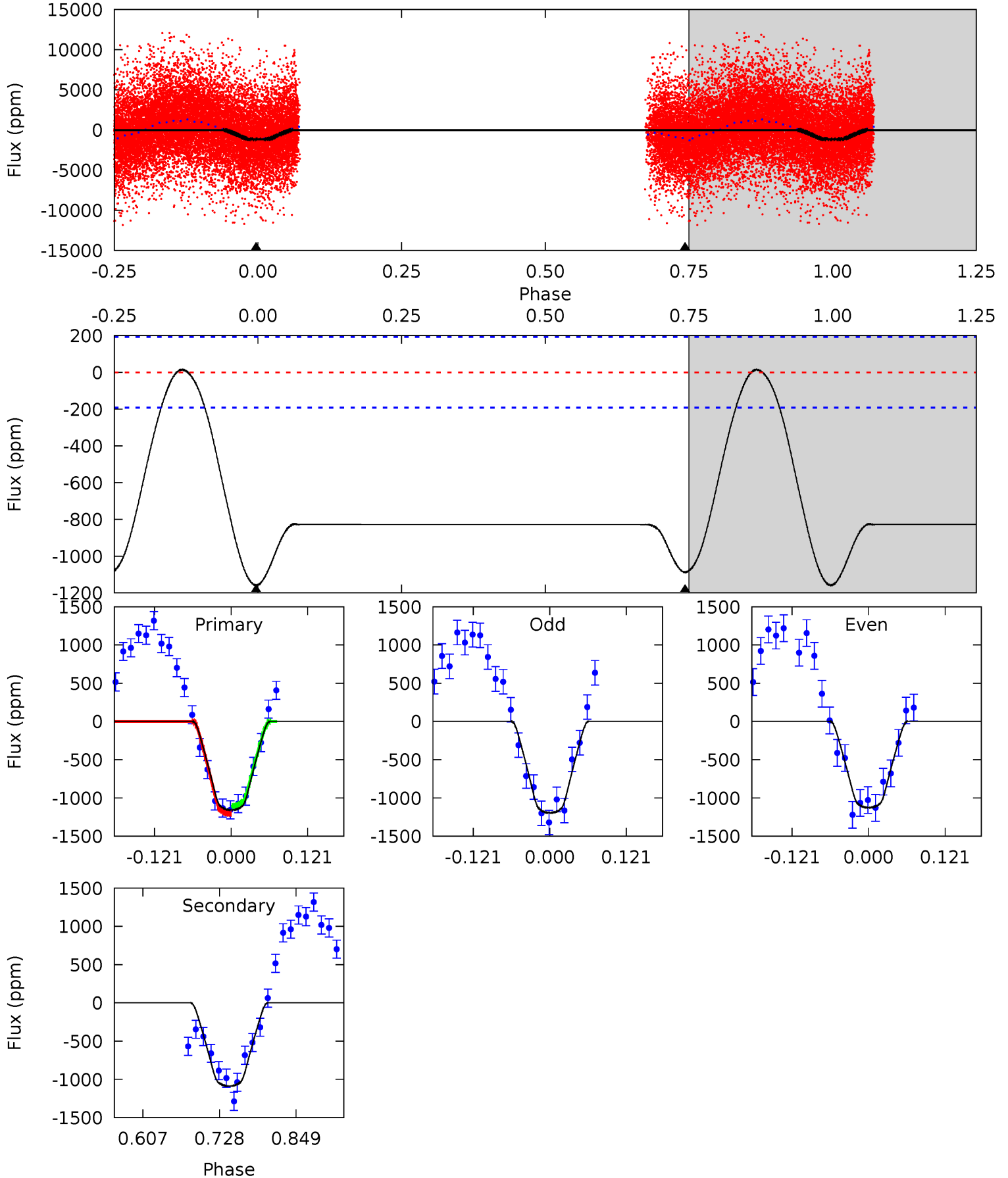


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

010224920-03, P = 0.573501 Days, E = 131.115726 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.3	25.6	0	0	4.52	1.55	0.39	27.3	27.3	25.6	25.6	0.80	1.02	0.01	1.27



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 010224920

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7084^{+197}_{-296}	$4.120^{+0.132}_{-0.181}$	$0.000^{+0.200}_{-0.350}$	$1.772^{+0.558}_{-0.372}$	$1.508^{+0.220}_{-0.242}$	$0.382^{+0.297}_{-0.194}$
	+3%/-4%	+3%/-4%	+inf%/-inf%	+31%/-21%	+15%/-16%	+78%/-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 010224920-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1088 ± 42	$5.01^{+1.98}_{-1.76}$	4683^{+346}_{-308}	8019^{+2899}_{-1321}	$5.689^{+7.467}_{-2.751}$
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 $A_{obs} \gg 1.0$

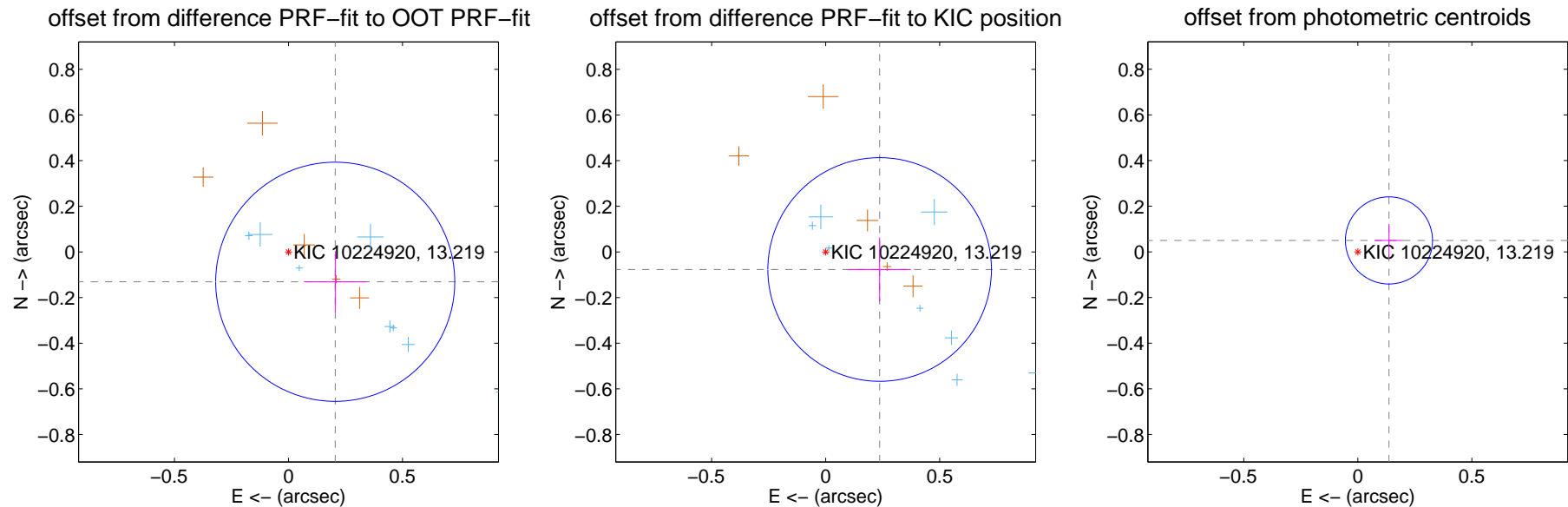
DV Centroid Data

Supplemental centroid analysis for 010224920-03. Kepler magnitude: 13.22. Transit SNR 12.07

There are 9 quarters with good PRF difference image offsets

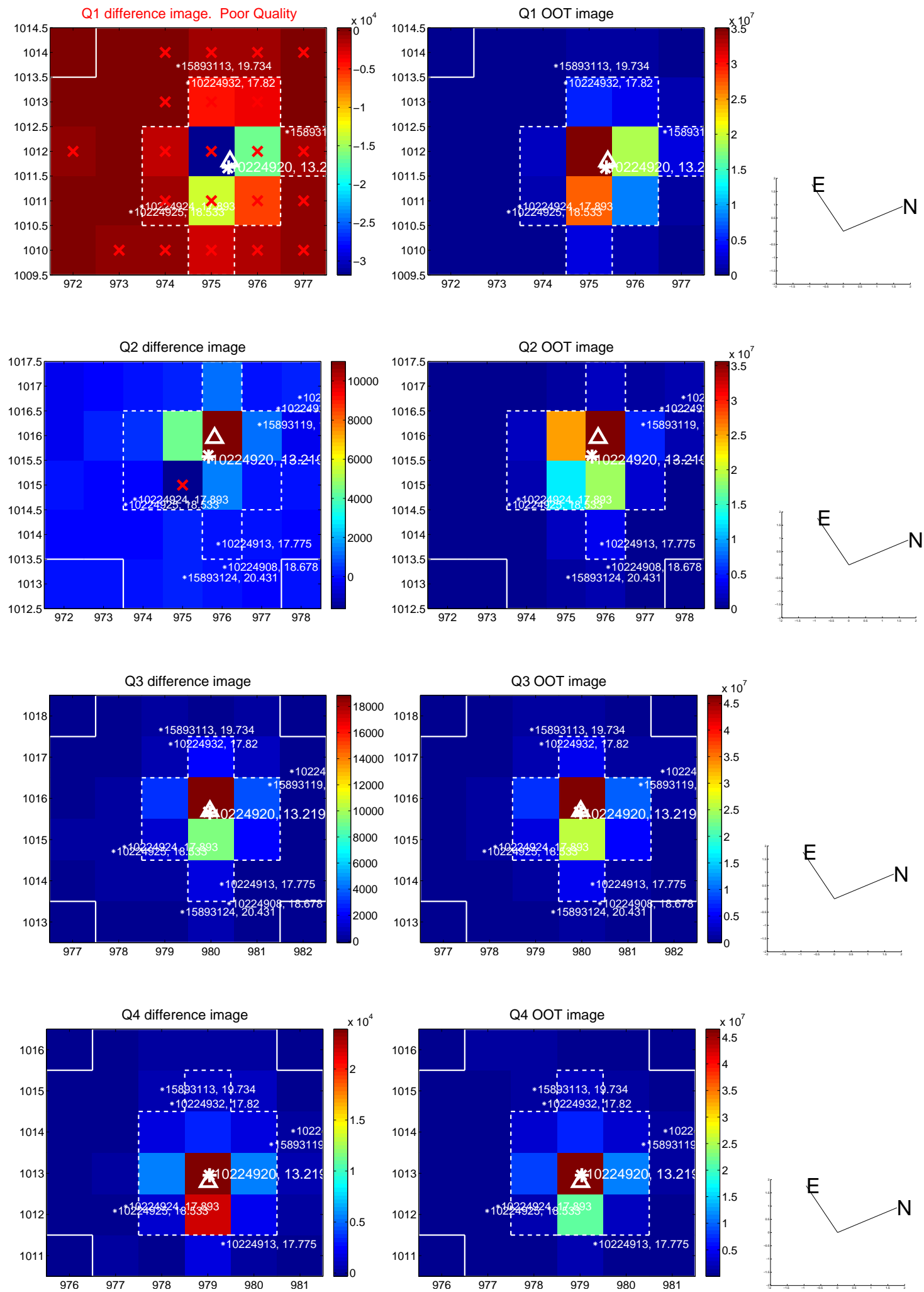
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.243 ± 0.175	1.39	-0.205 ± 0.138	-0.131 ± 0.134
PRF-fit source offset from KIC position	0.249 ± 0.163	1.52	-0.237 ± 0.137	-0.077 ± 0.140
photometric centroid source offset	0.15 ± 0.06	2.29	-0.14 ± 0.06	0.05 ± 0.07

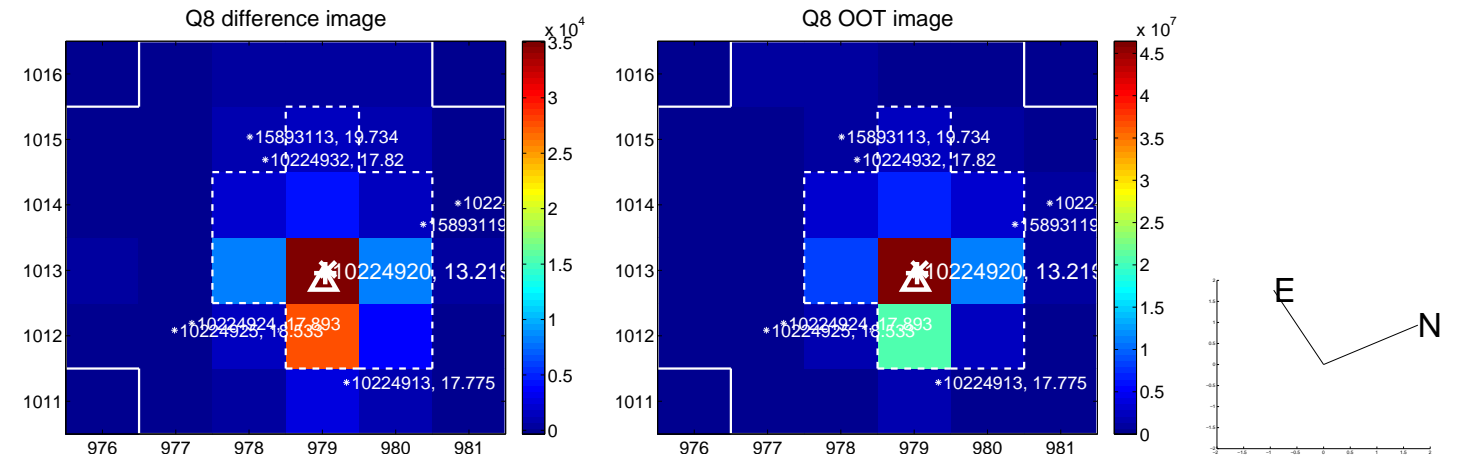
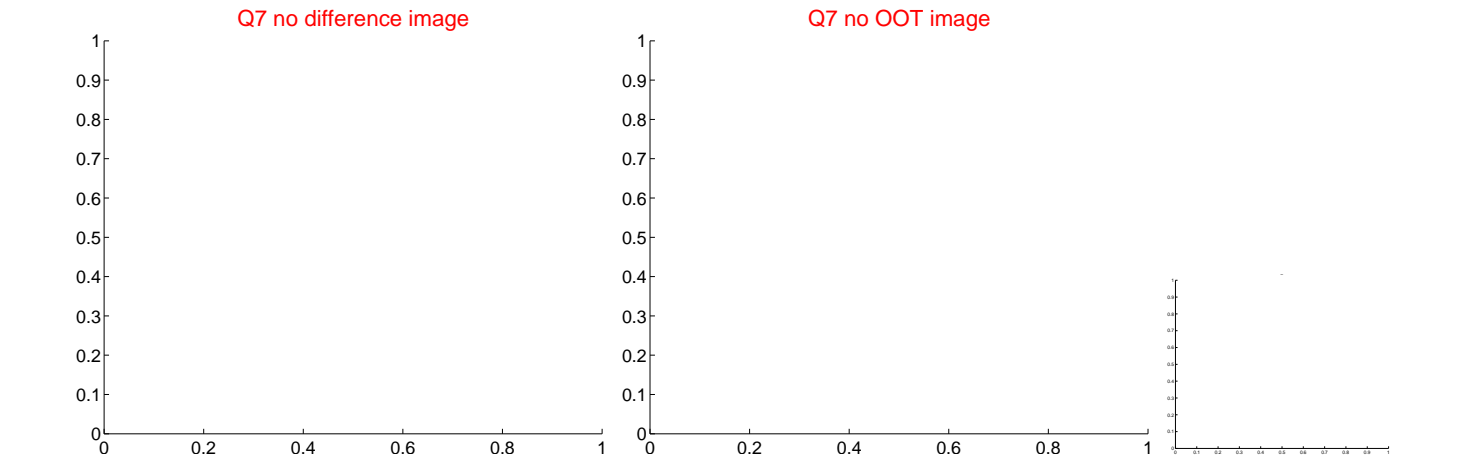
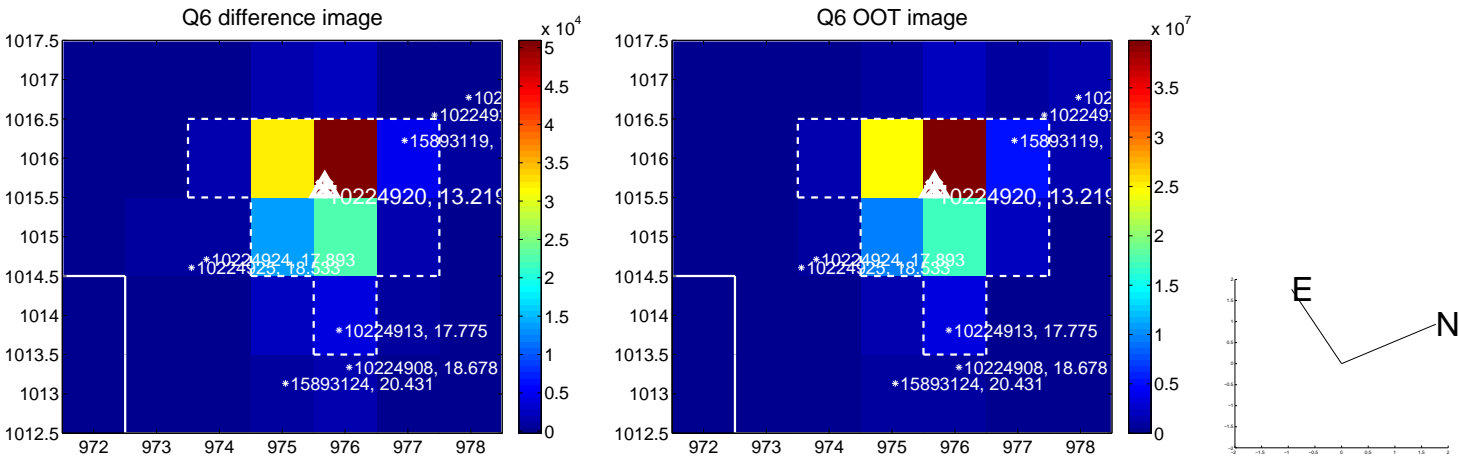
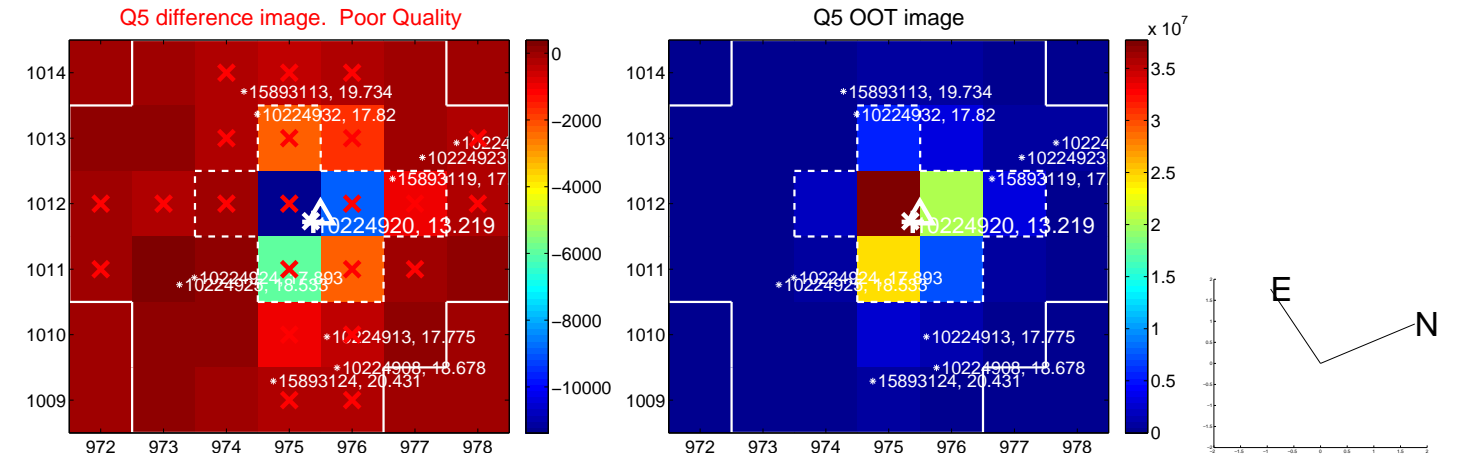


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

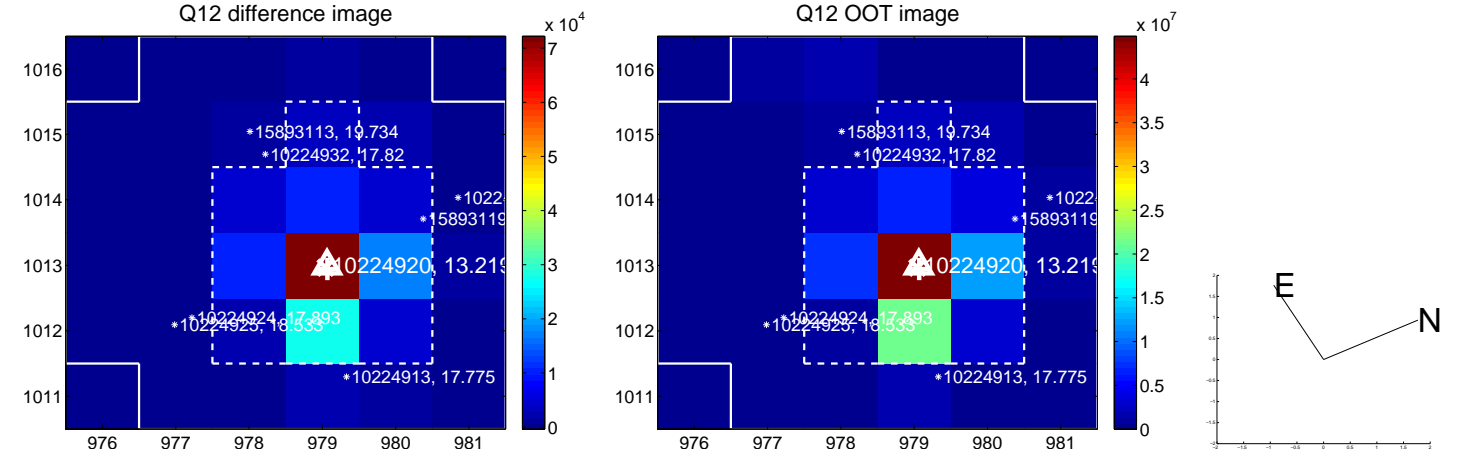
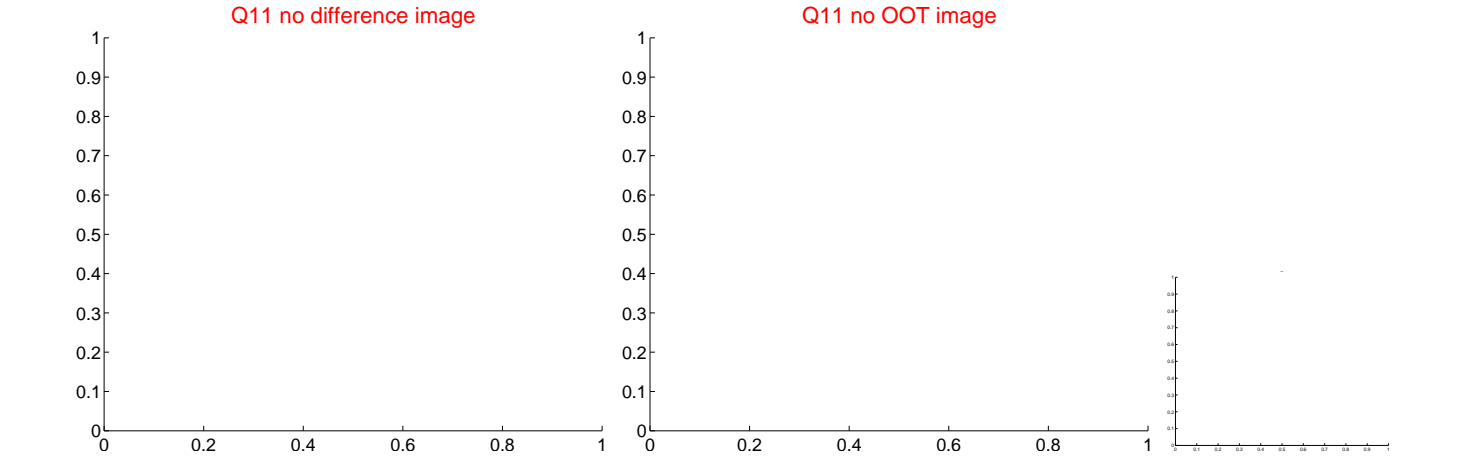
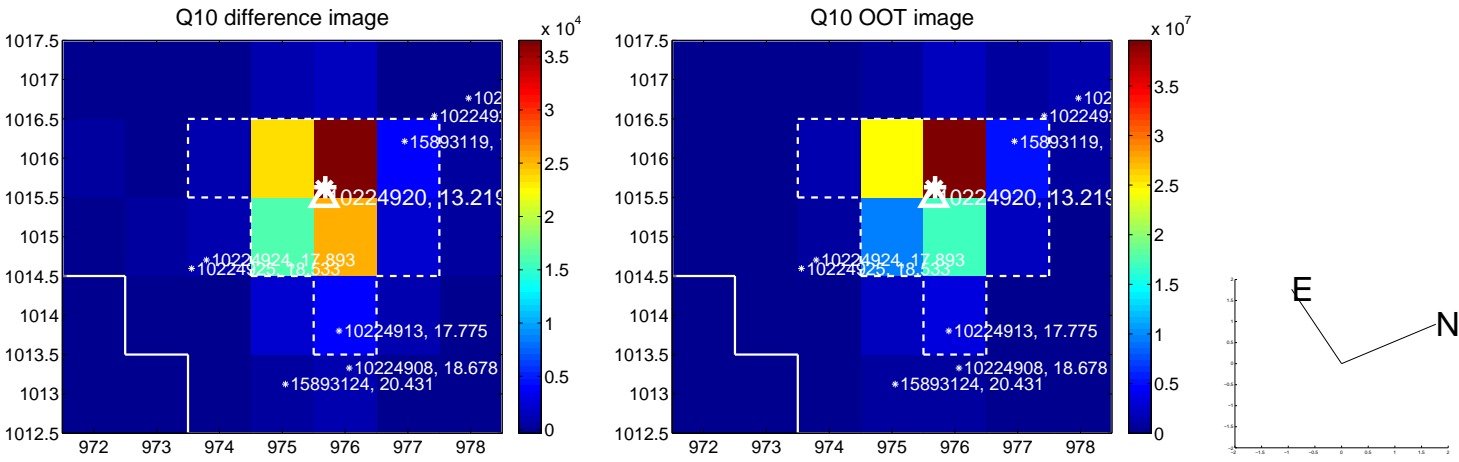
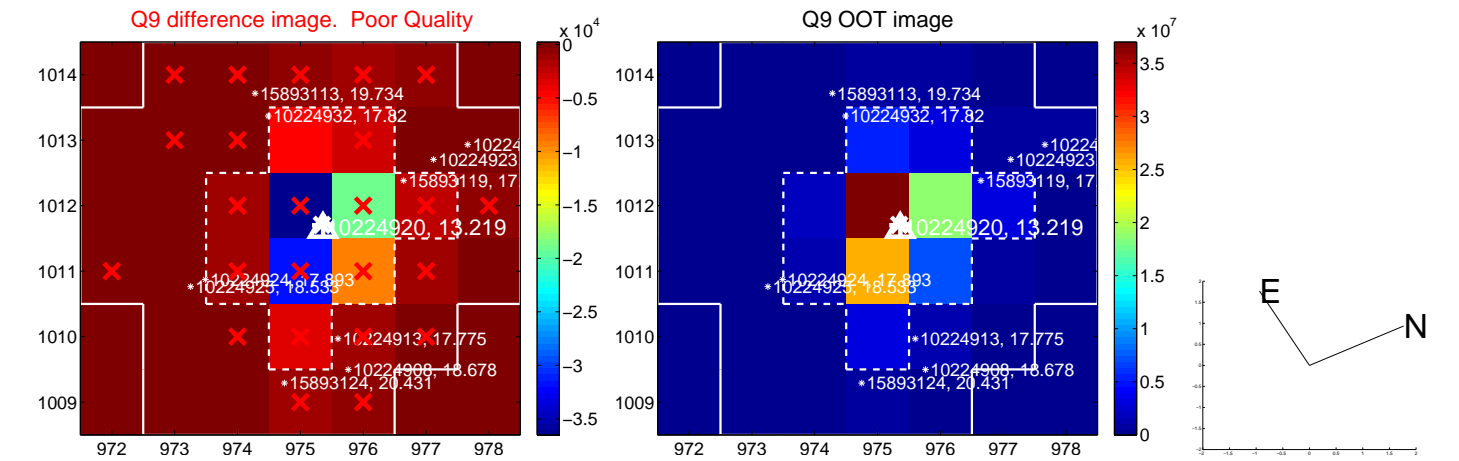
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



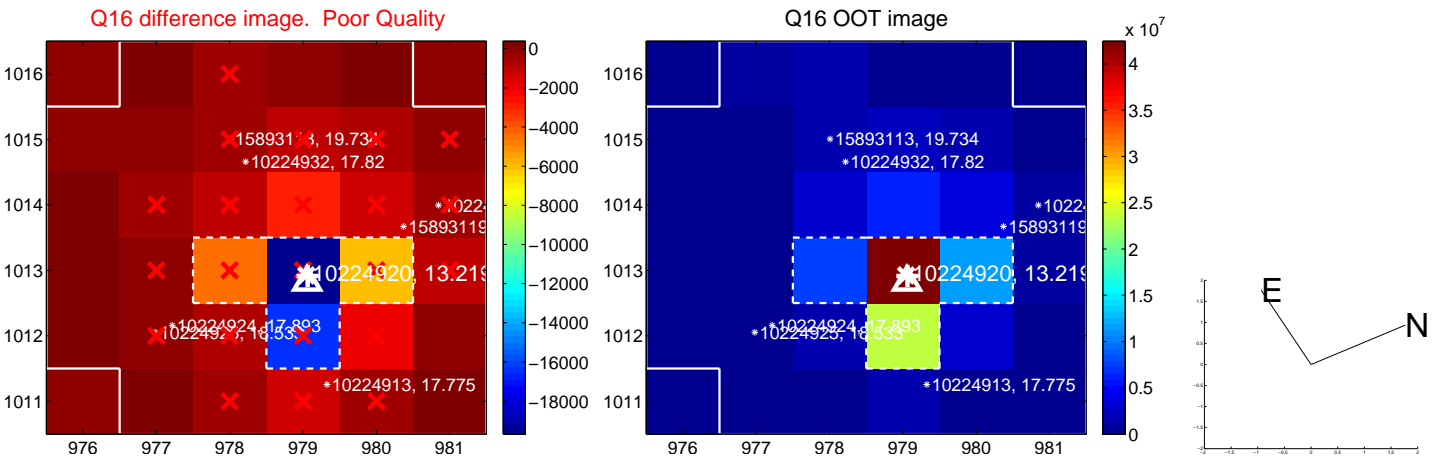
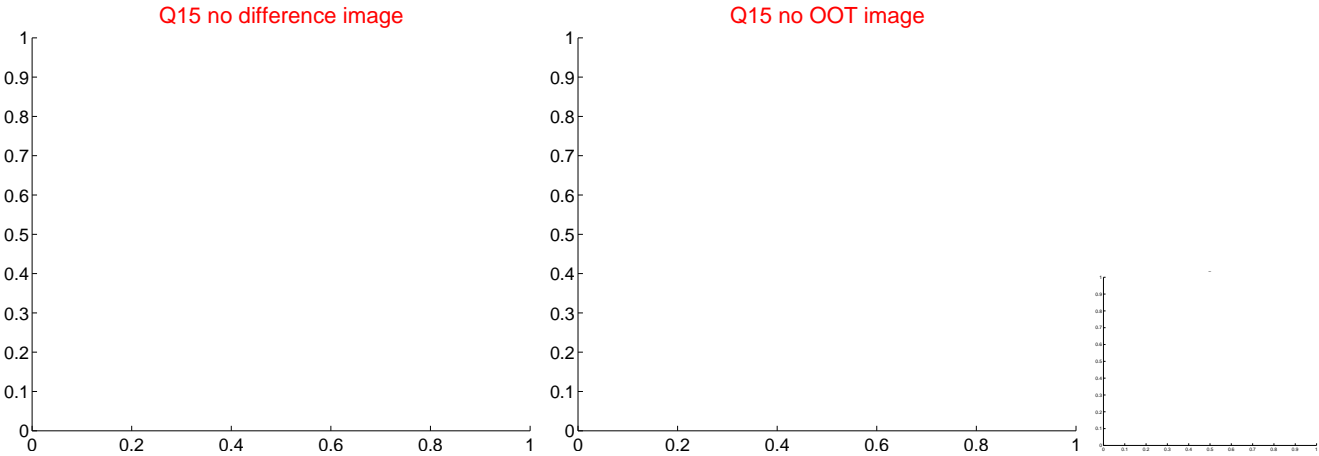
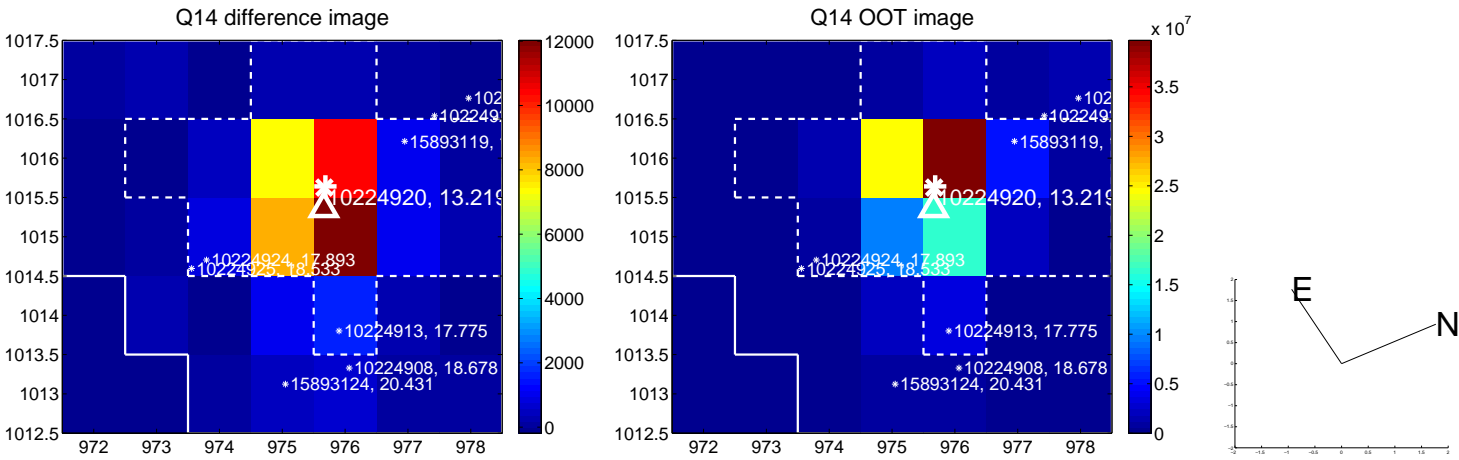
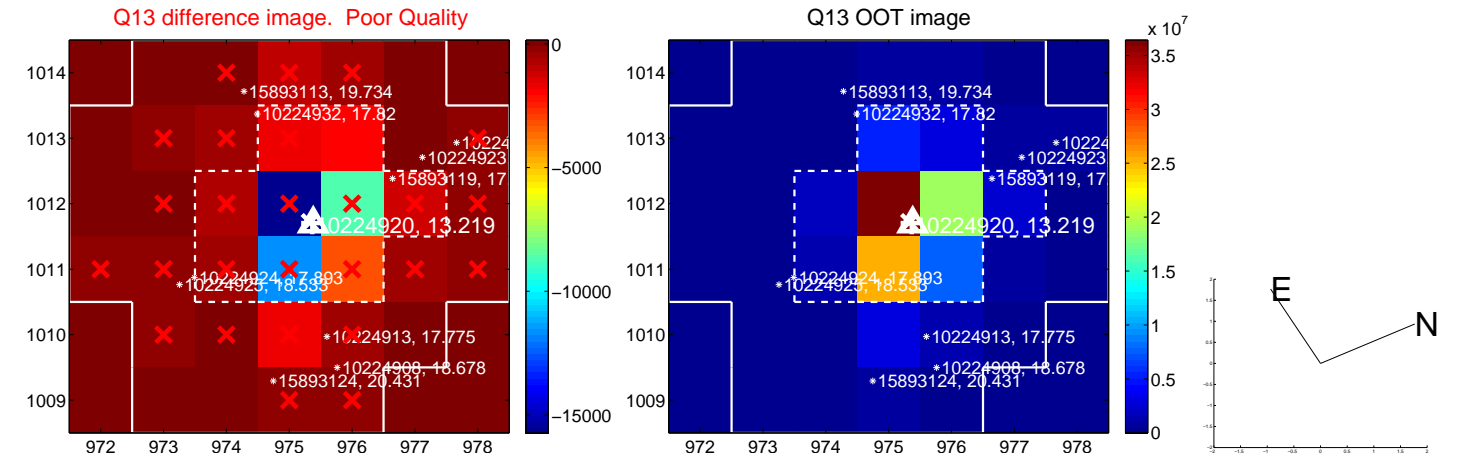
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



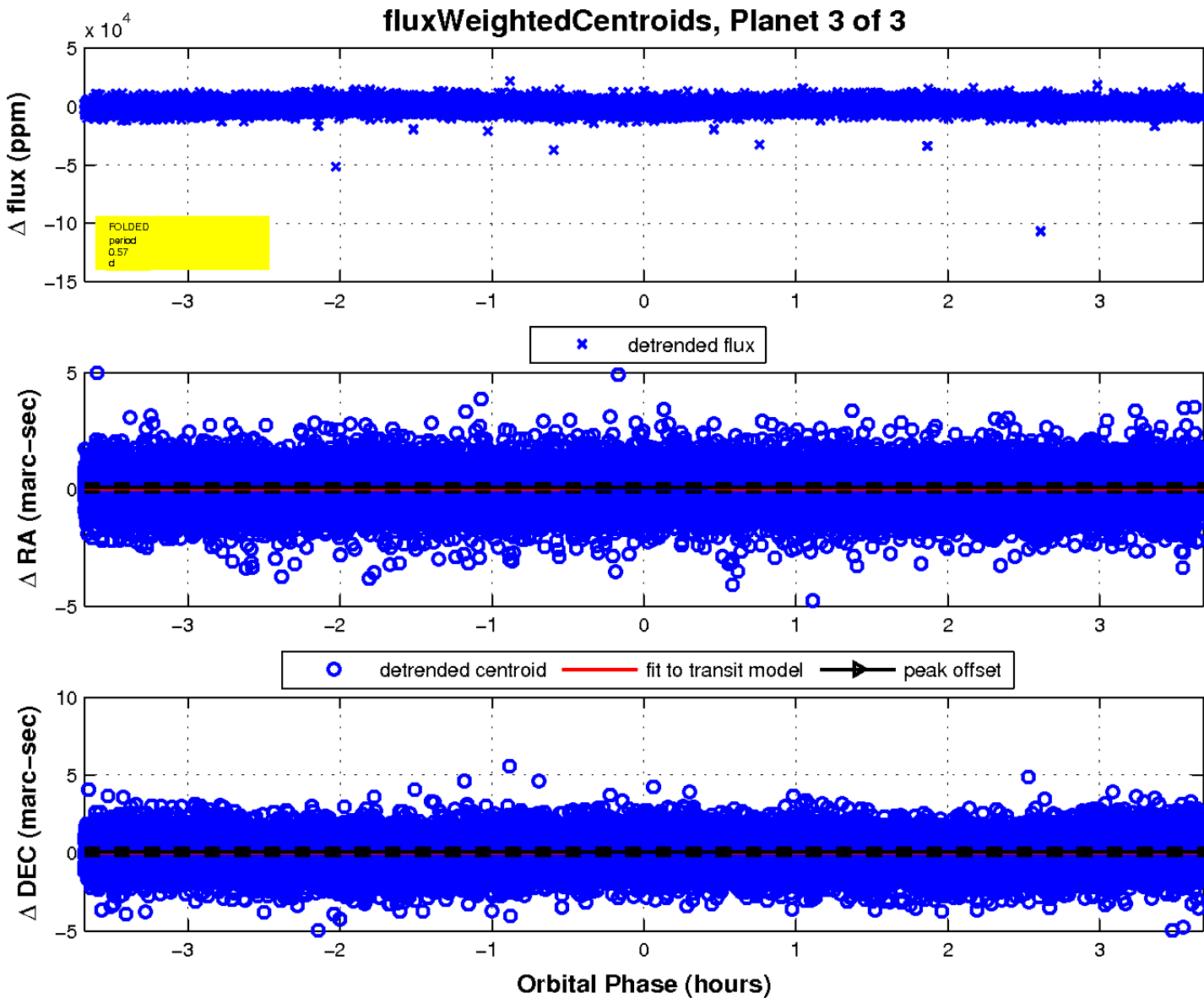
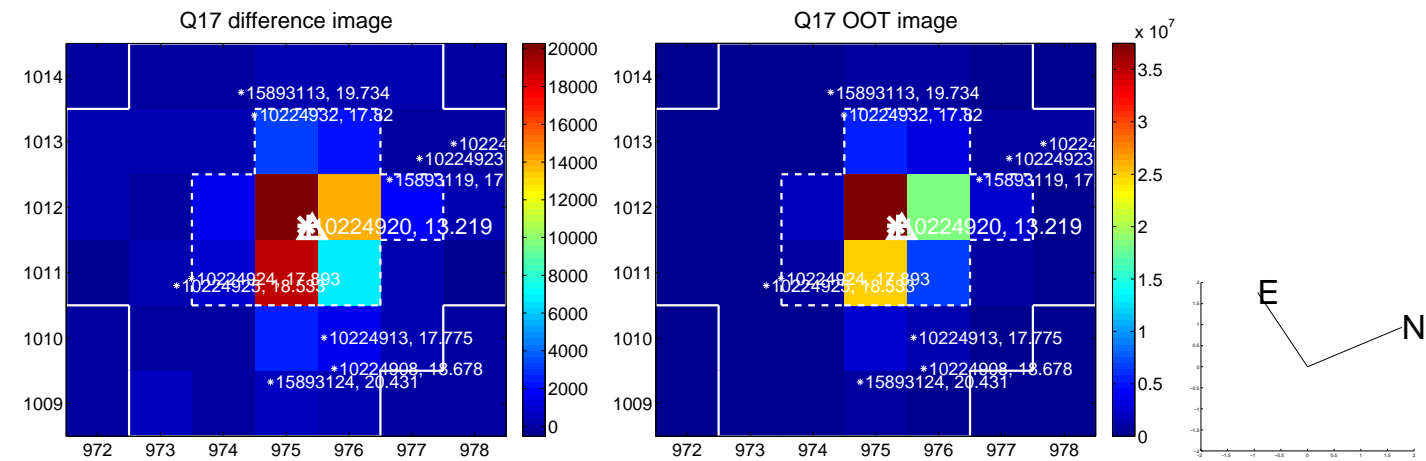
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

