

KIC 002710406

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})
002710406-01	OBS	No	4.254101	134.987524	49.7	12.259	8.3	3.5	1.97	6958	1.65	2375.59
002710406-02	OBS	No	4.254223	132.102109	76.8	6.257	11.0	5.5	1.97	6958	2.06	2375.50
002710406-03	OBS	No	4.253796	134.213520	358.7	45.578	12.1	14.0	1.97	6958	4.37	2375.82

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002710406-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV
002710406-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—HALO_GHOST
002710406-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—CENT_FEW_MEAS

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

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

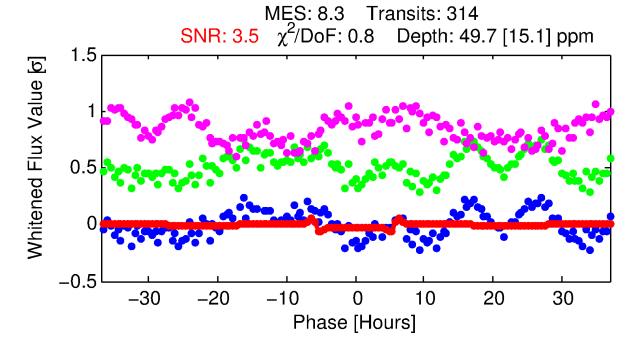
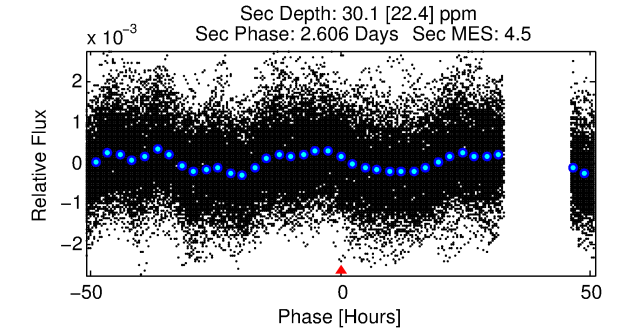
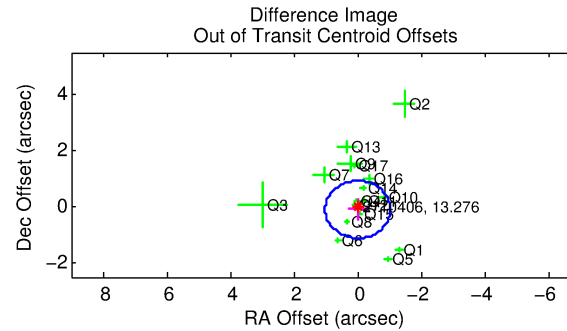
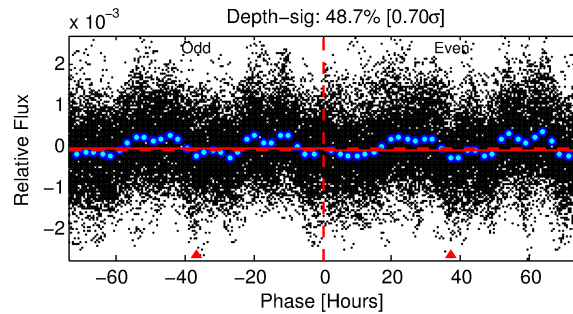
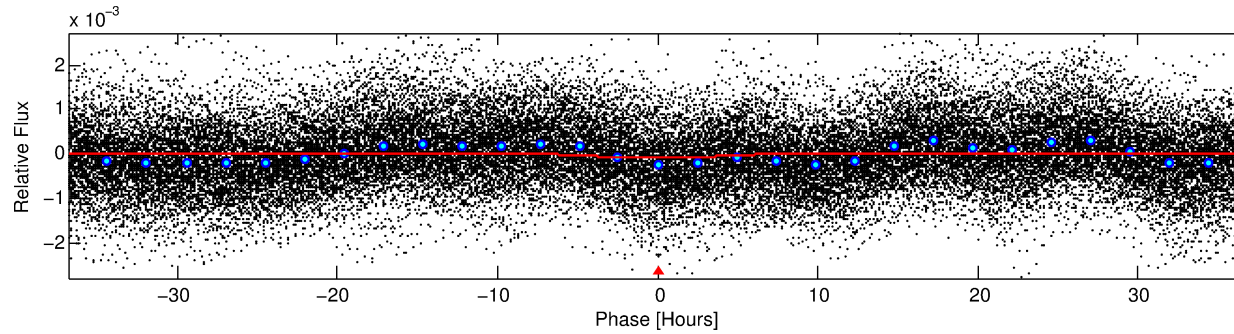
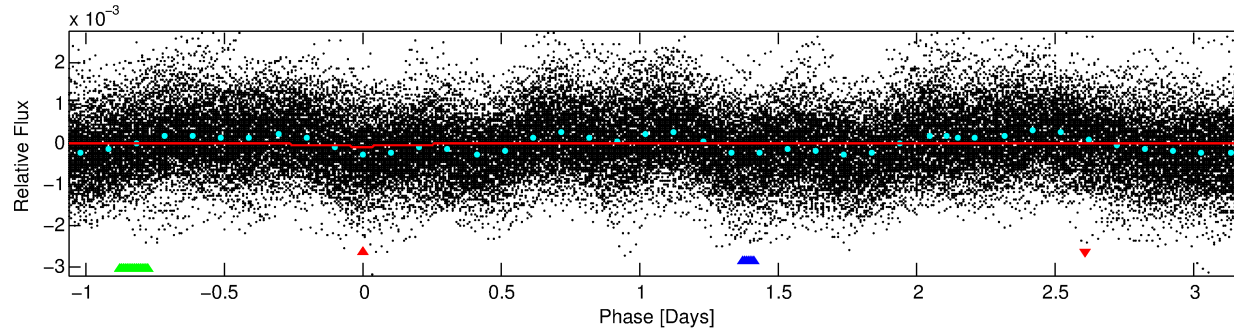
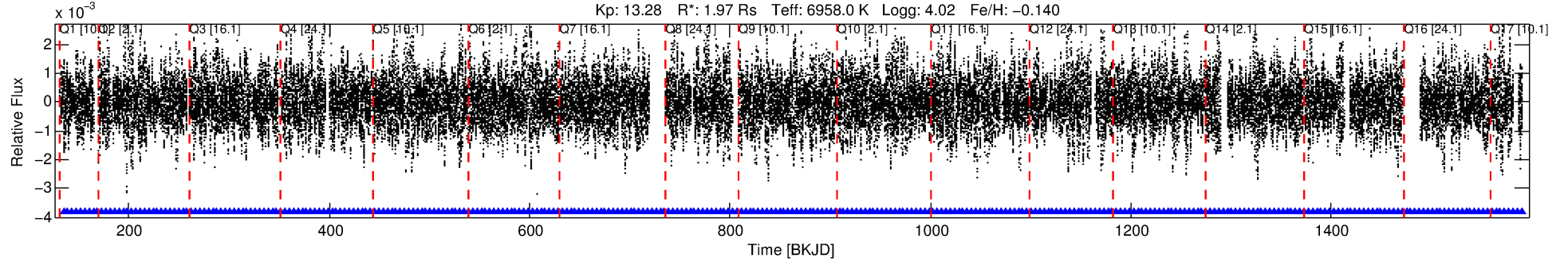
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002710406-01

No Significant Match Found

DV One-Page Summary

KIC: 2710406 Candidate: 1 of 3 Period: 4.254 d



DV Fit Results:

Period = 4.25410 [0.00006] d
Epoch = 134.9875 [0.0081] BKJD
Rp/R* = 0.0077 [0.0014]
a/R* = 1.43 [0.33]
b = 0.93 [0.07]
Seff = 2375.59 [651.32]
Teq = 1780 [122] K
Rp = 1.65 [0.44] Re
a = 0.0585 [0.0103] AU
Ag = 20.90 [18.17] [1.09 σ]
Teffp = 5885 [1218] K [3.35 σ]

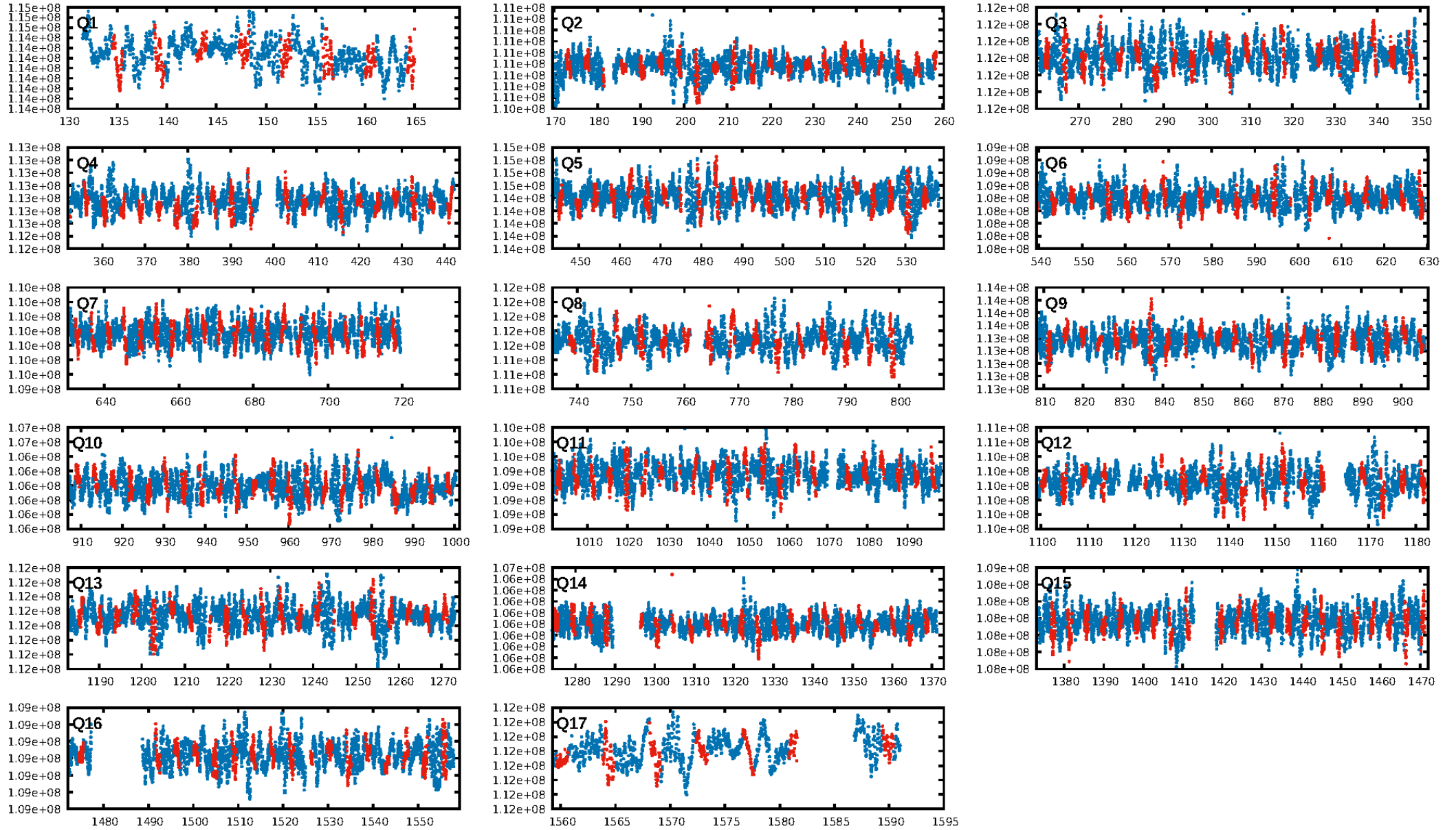
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [299/299]
GhostDiagnostic-chr: 1.031
Centroid-sig: 0.8%
Centroid-so: 1.228 arcsec [1.92 σ]
OotOffset-rm: 0.099 arcsec [0.29 σ]
KicOffset-rm: 0.024 arcsec [0.08 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.76 [13/17]
DiffImageOverlap-fno: 0.00 [0/17]

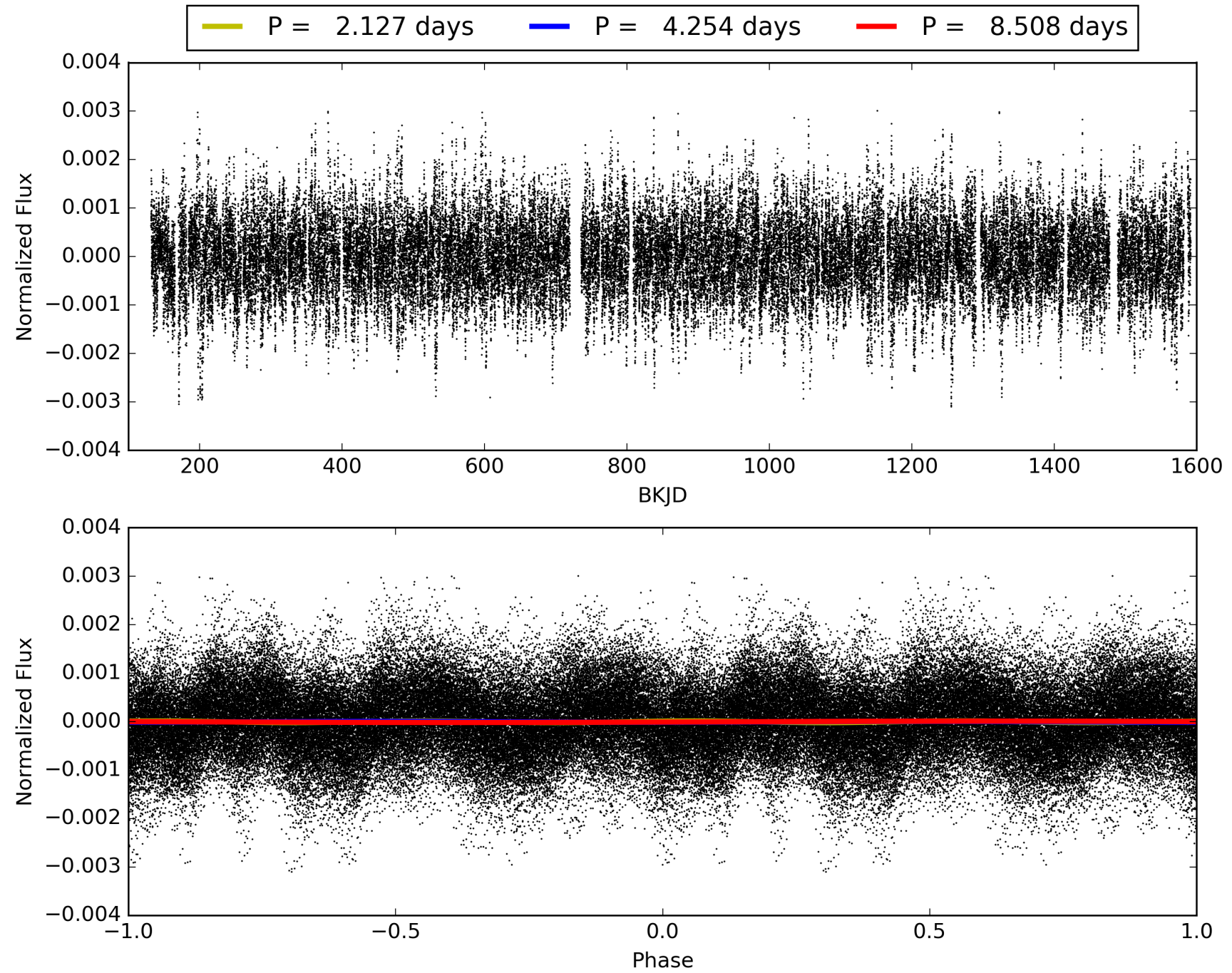
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 05:24:09 Z

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

TCE 002710406-01, PDC Light Curves

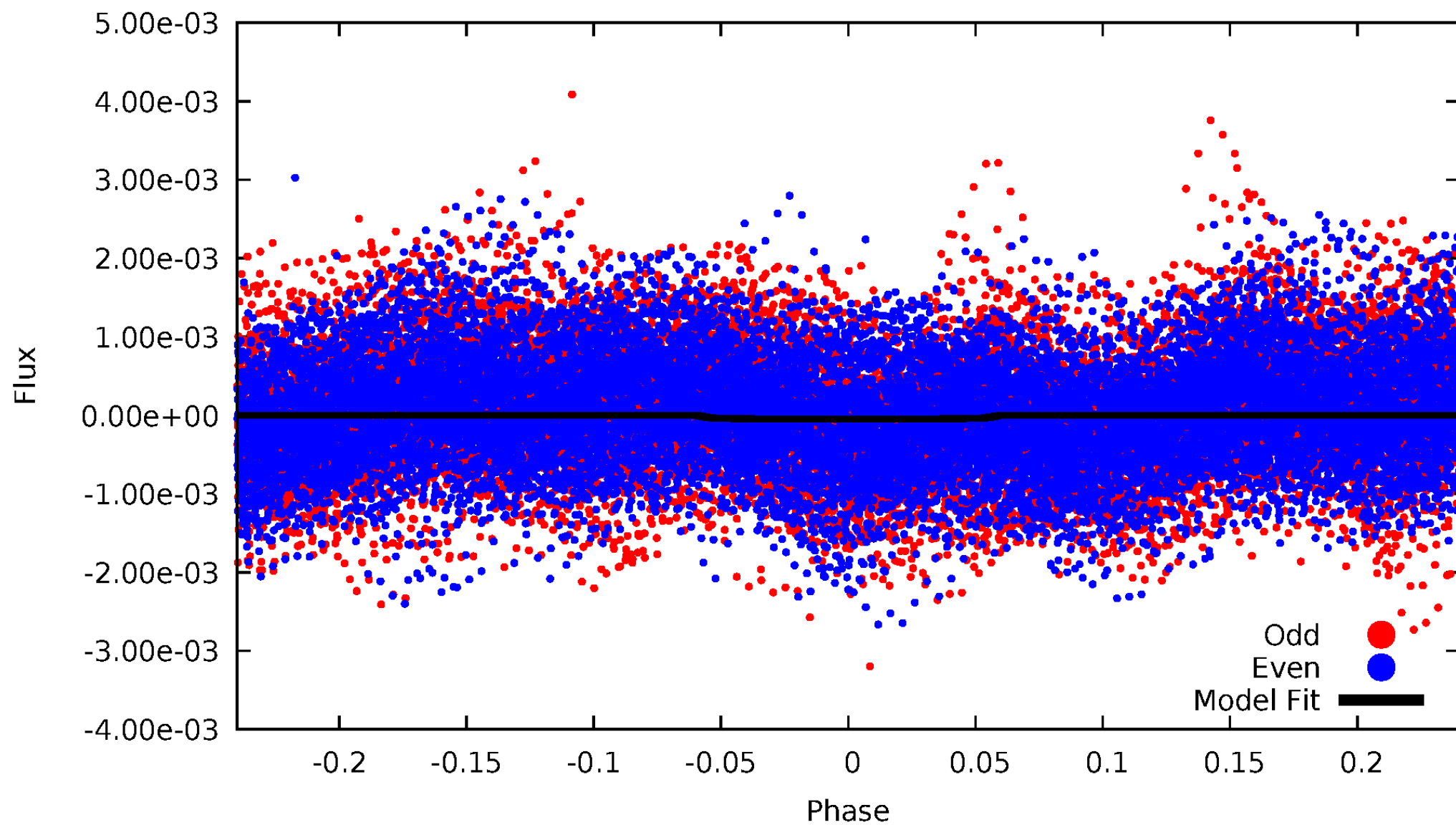


TCE 002710406-01



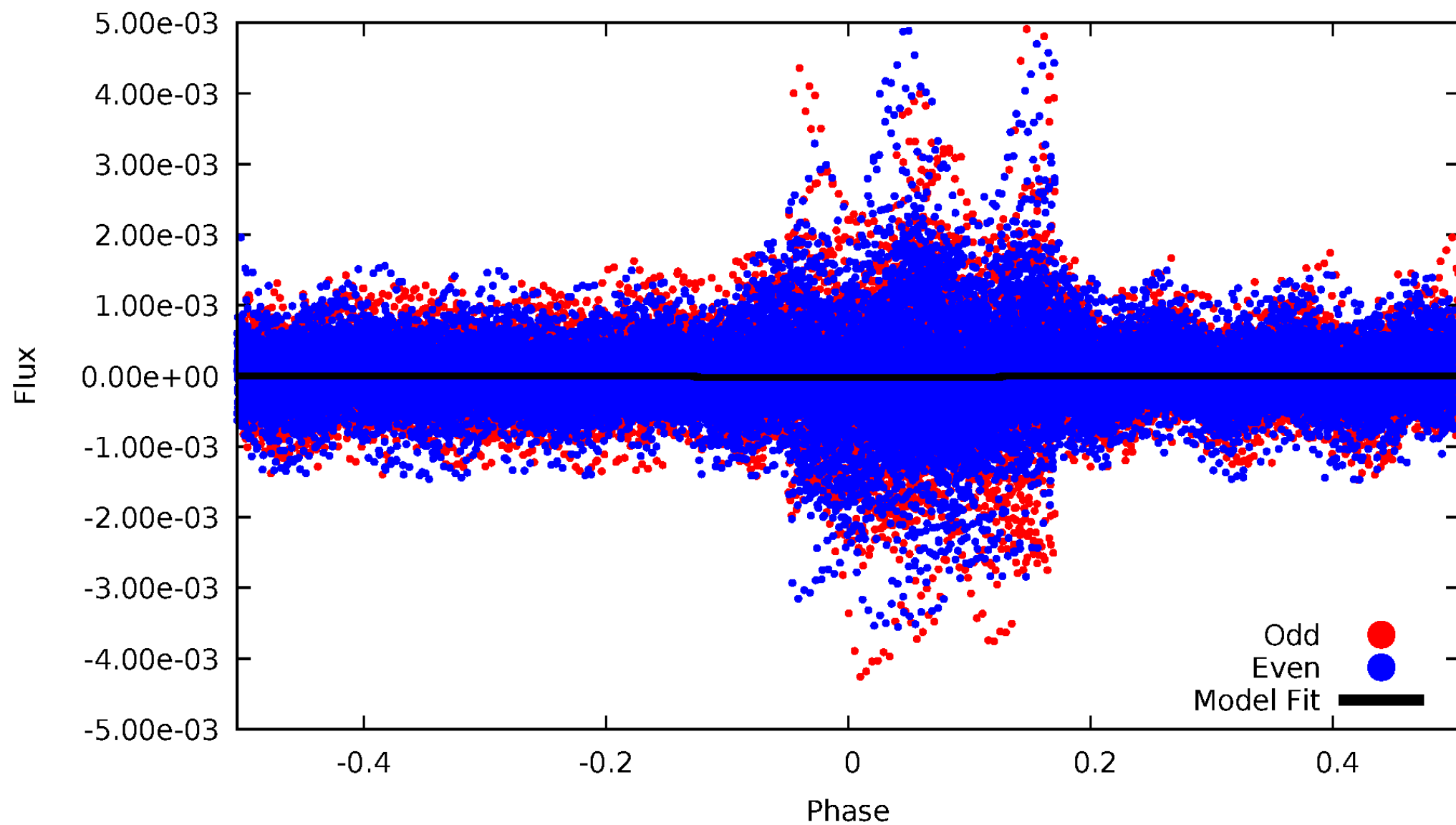
DV Odd/Even

TCE 002710406-01

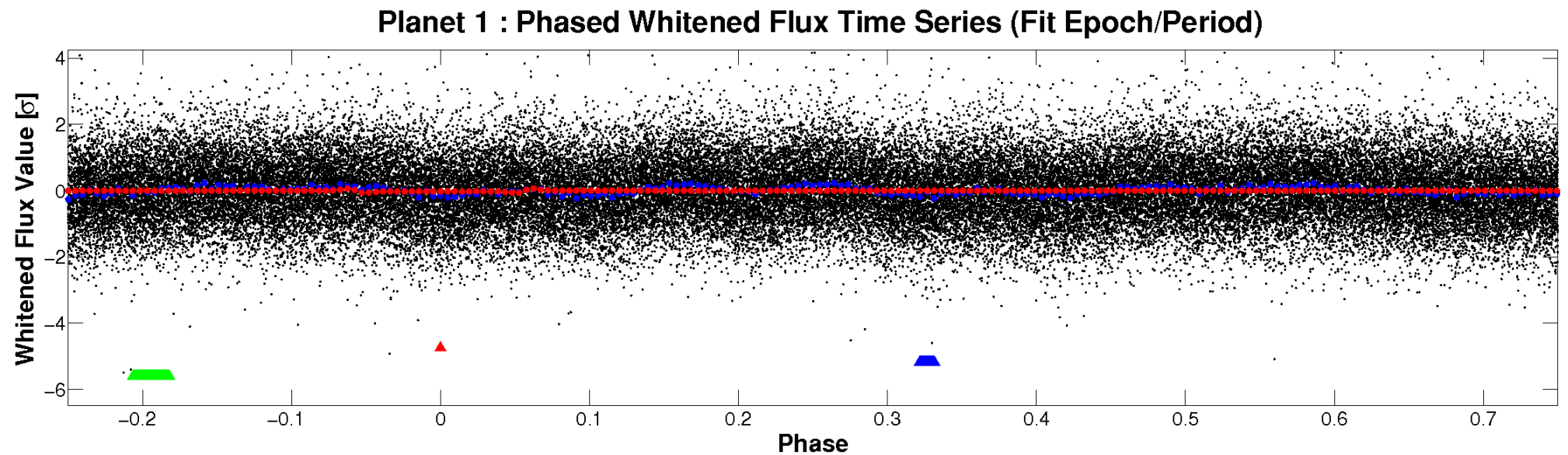
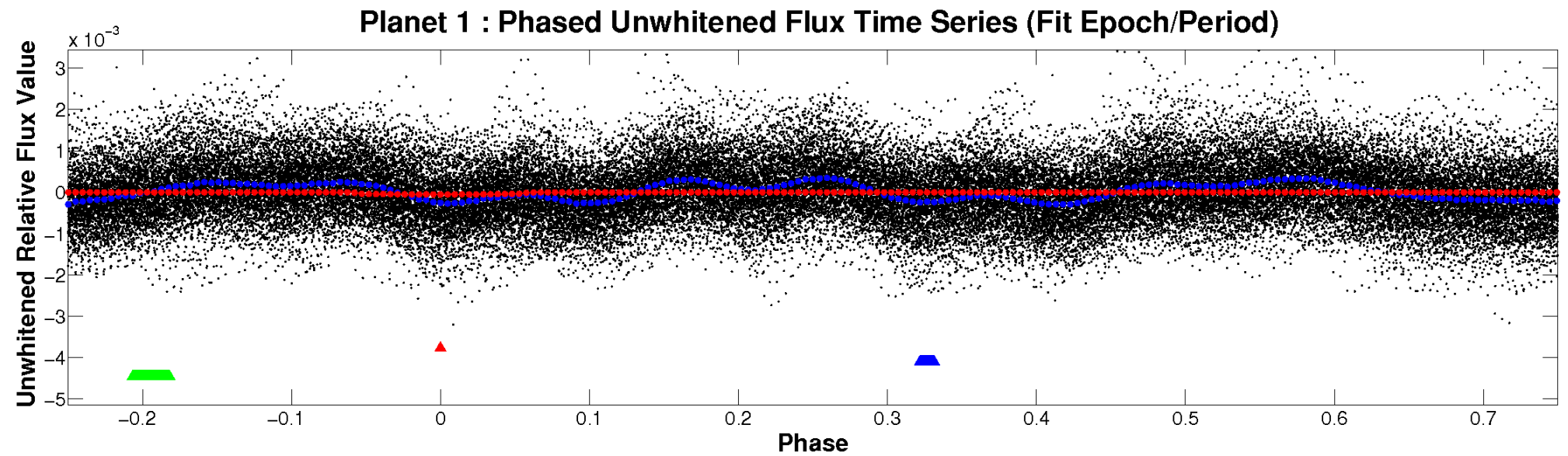


ALT Odd/Even

TCE 002710406-01

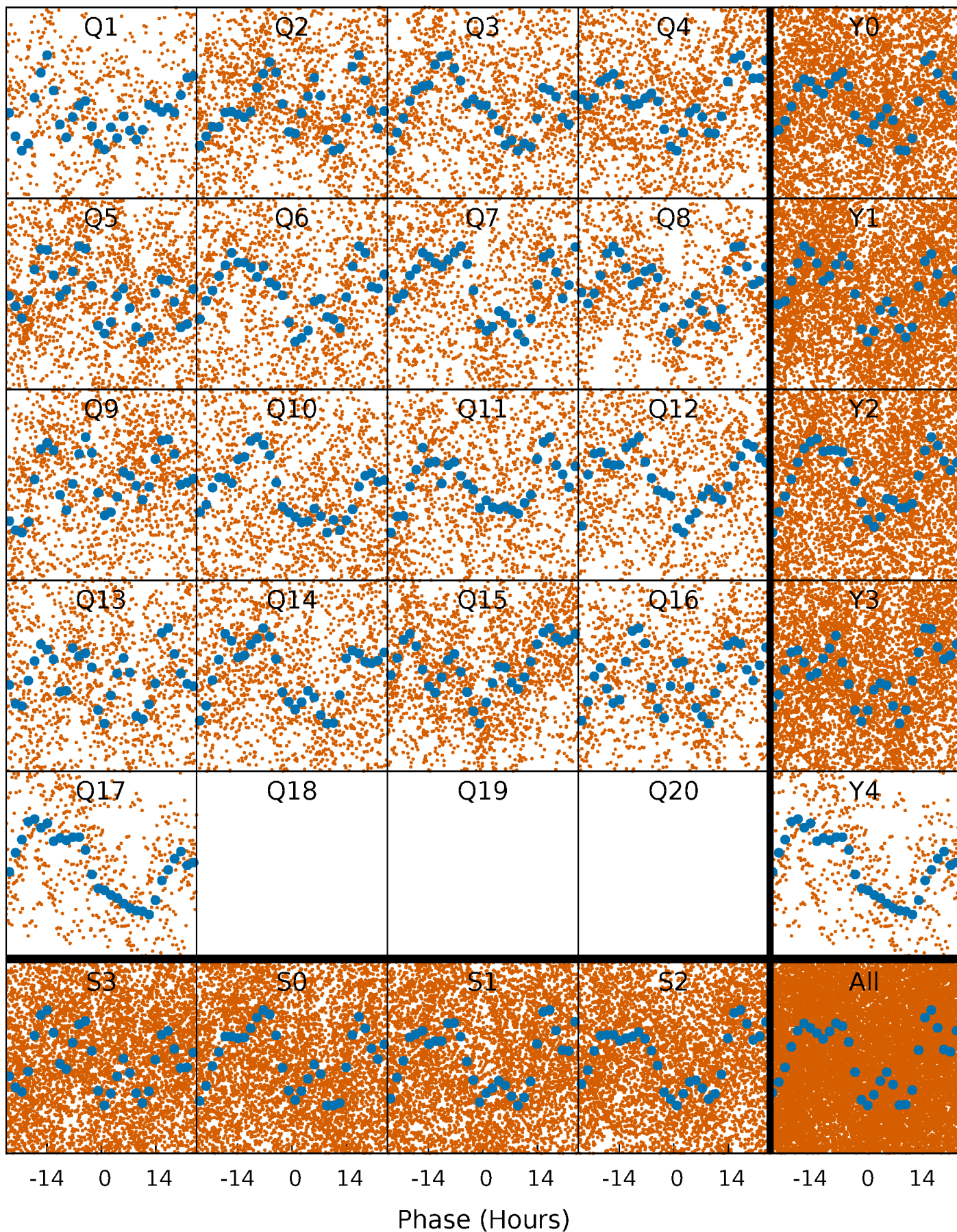


Non-Whitened Vs. Whitened Light Curve



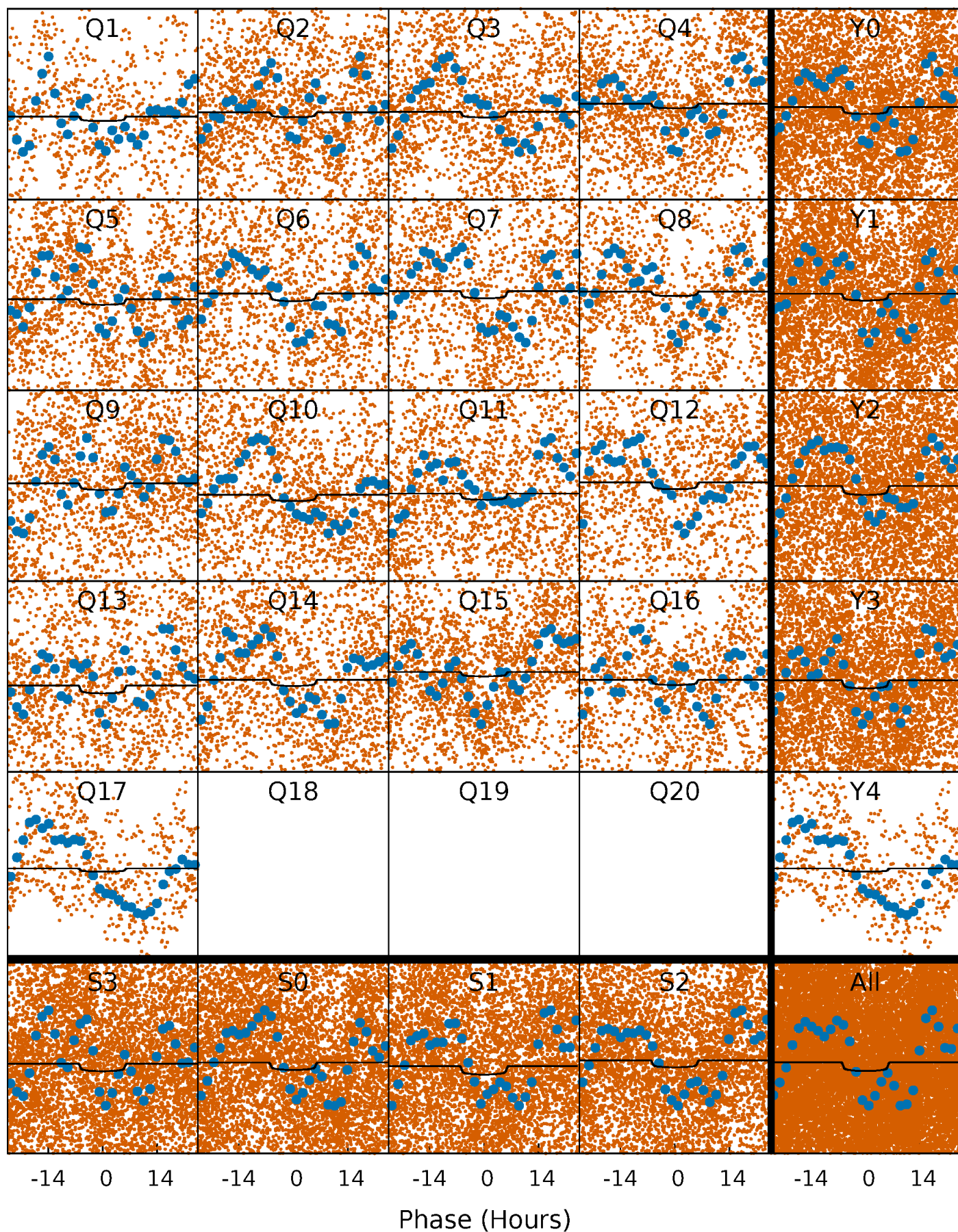
PDC Quarter-Phased Transit Curves

TCE 002710406-01 P= 4.254101 Days $T_0=134.987524$ (BKJD)



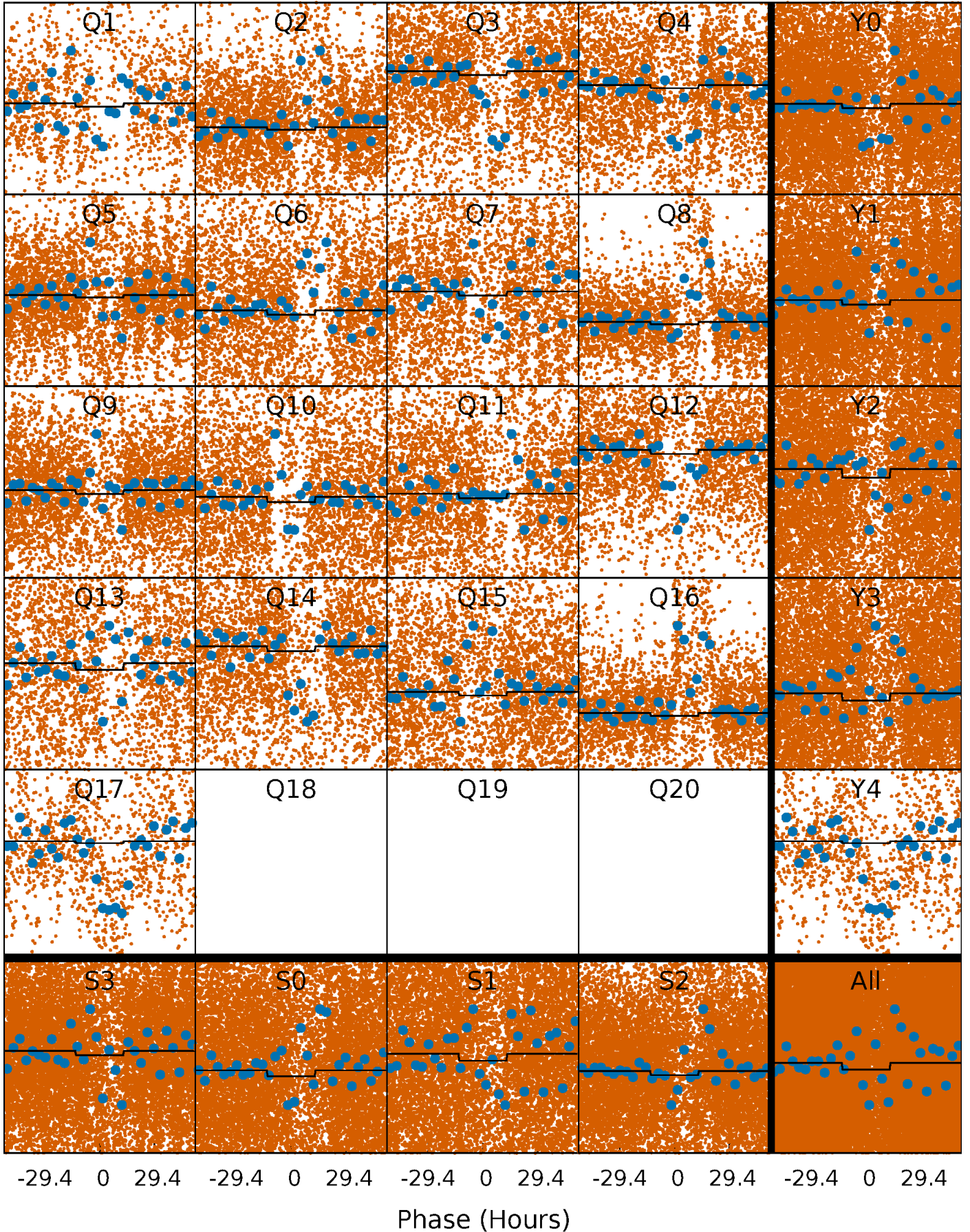
DV Quarter-Phased Transit Curves

TCE 002710406-01 P= 4.254101 Days $T_0=134.987524$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

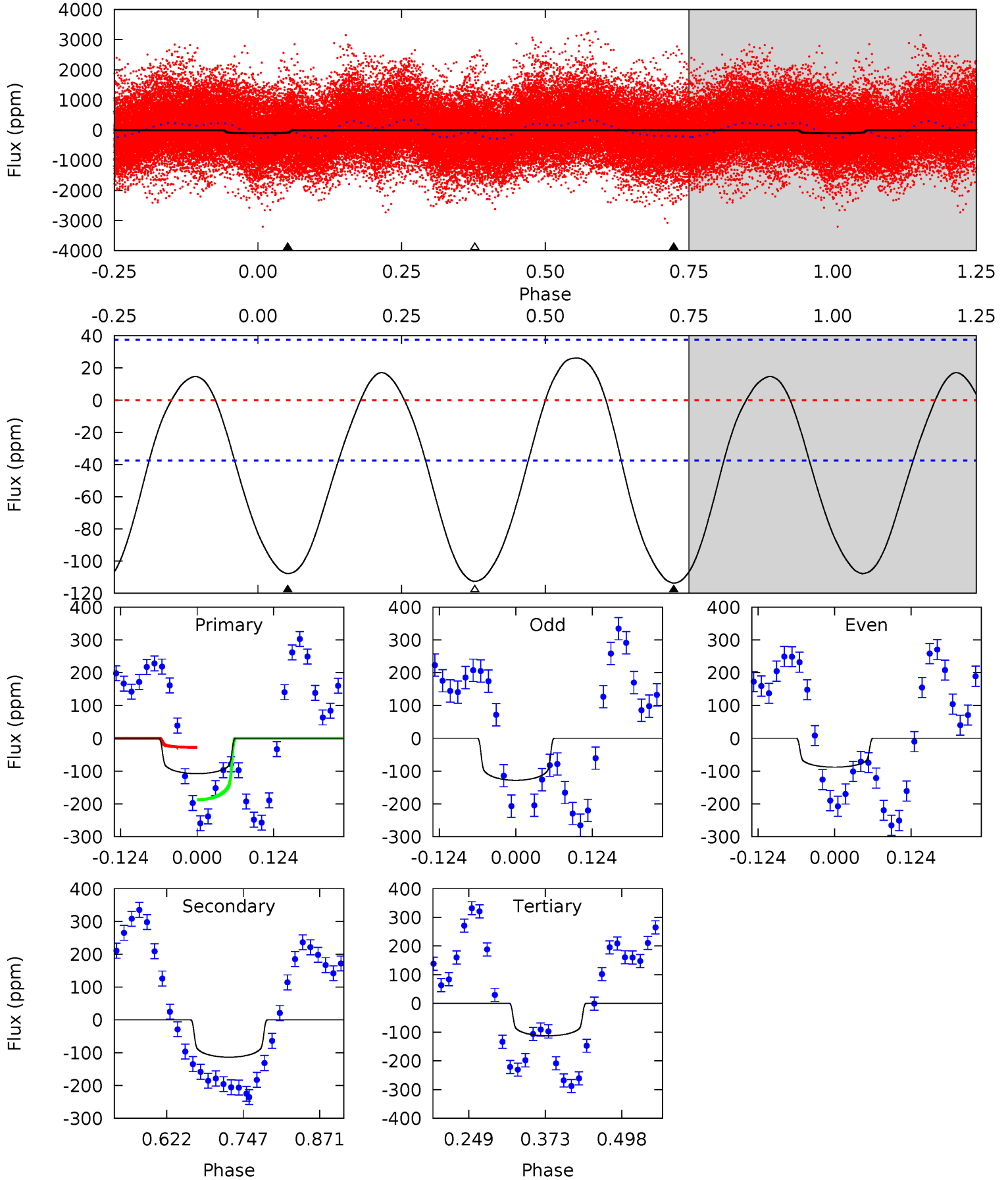
TCE 002710406-01 P= 4.253927 Days $T_0=134.995007$ (BKJD)



DV Model-Shift Uniqueness Test

002710406-01, P = 4.254101 Days, E = 130.733423 Days

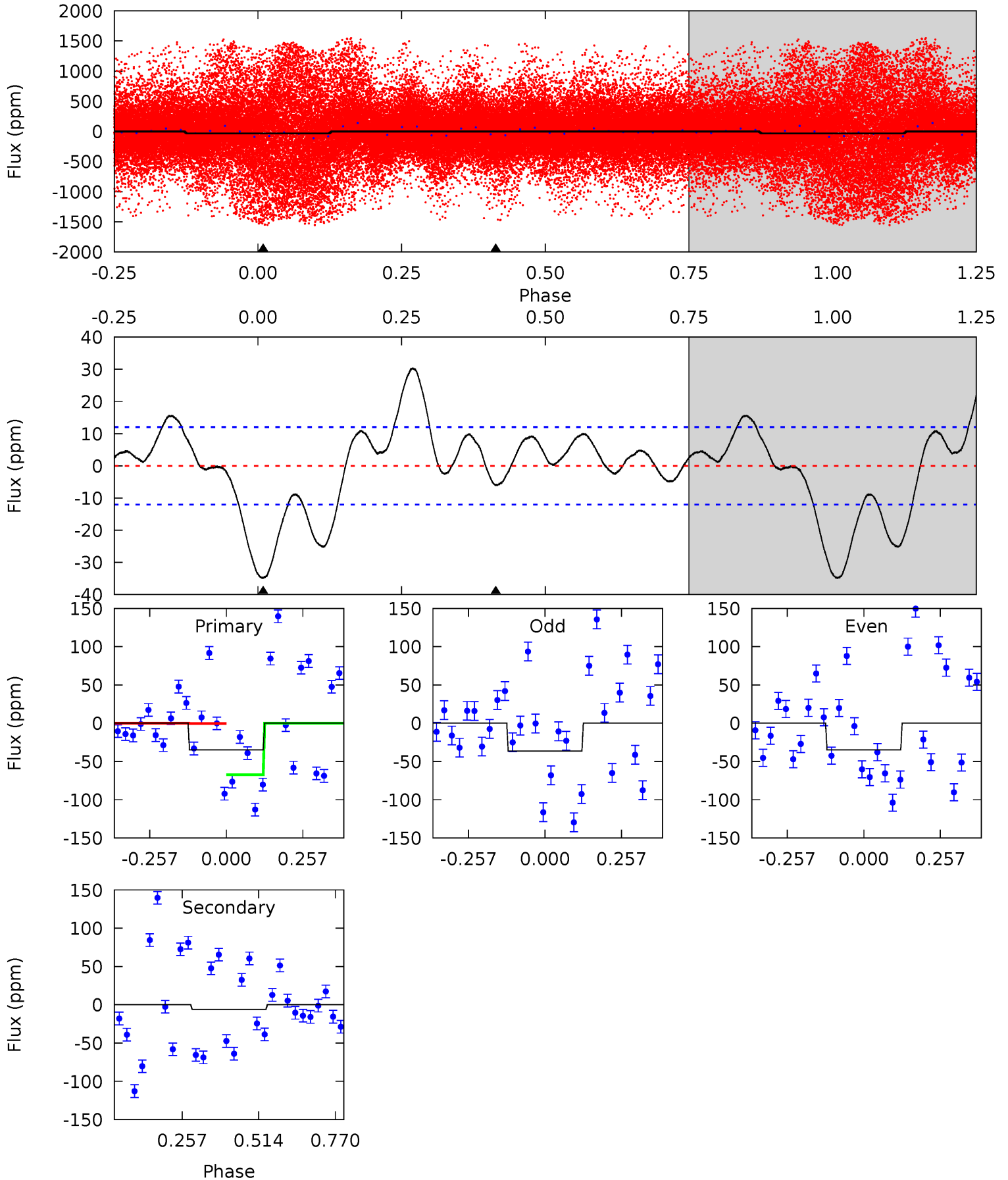
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.9	13.7	13.5	0	4.52	1.54	5.79	-0.58	12.9	0.14	13.7	2.45	1.38	0.19	9.52



Alt Model-Shift Uniqueness Test

002710406-01, P = 4.253927 Days, E = 130.741080 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.6	2.18	0	0	4.36	1.13	1.20	12.6	12.6	2.18	2.18	0.27	-27.9	0.47	11.0



Stellar Parameters For KIC 002710406

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6958^{+73}_{-83}	$4.019^{+0.154}_{-0.126}$	$-0.140^{+0.150}_{-0.150}$	$1.968^{+0.385}_{-0.385}$	$1.476^{+0.119}_{-0.132}$	$0.273^{+0.212}_{-0.093}$
	+1%/-1%	+4%/-3%	+107%/-107%	+20%/-20%	+8%/-9%	+78%/-34%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 002710406-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-114 ± 8	$1.65^{+0.39}_{-0.33}$	2484^{+119}_{-123}	8370^{+1219}_{-843}	79^{+44}_{-27}
Alt.	-6 ± 3	$0.94^{+0.33}_{-0.31}$	2489^{+124}_{-138}	5165^{+1172}_{-812}	13^{+17}_{-7}

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 $A_{obs} \gg 1.0$

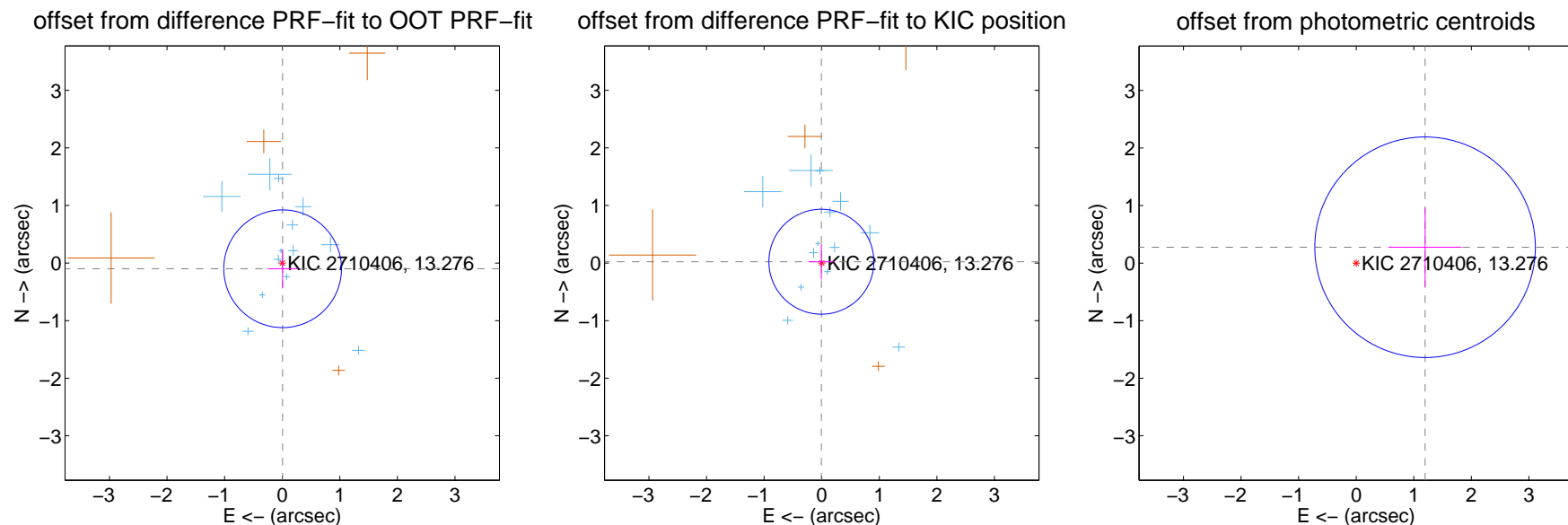
DV Centroid Data

Supplemental centroid analysis for 002710406-01. Kepler magnitude: 13.28. Transit SNR 3.51

There are 13 quarters with good PRF difference image offsets

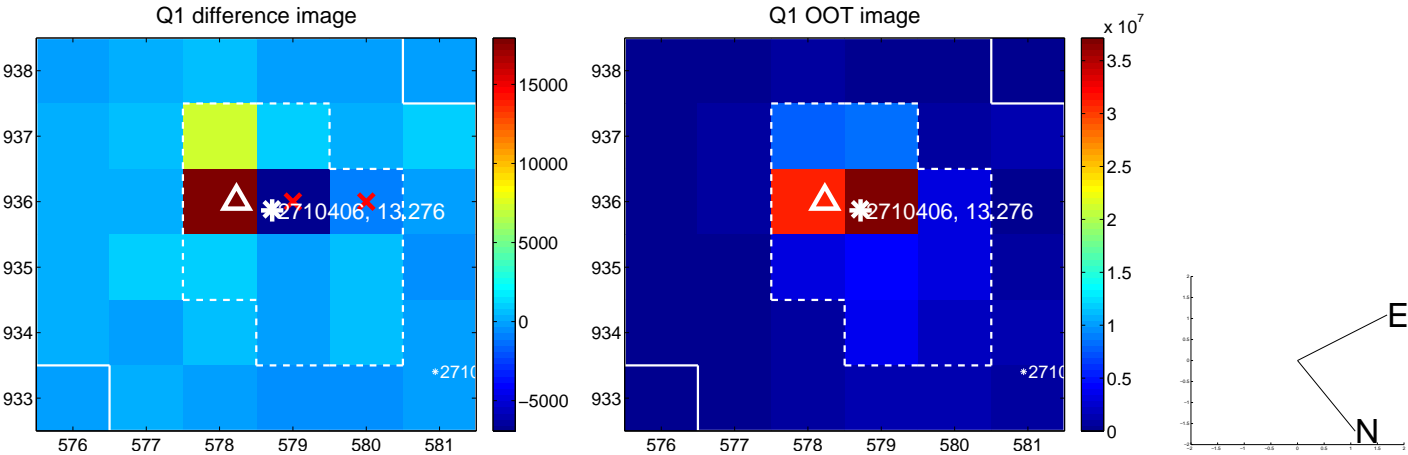
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.099 ± 0.341	0.29	-0.007 ± 0.266	-0.099 ± 0.341
PRF-fit source offset from KIC position	0.024 ± 0.304	0.08	0.006 ± 0.230	0.023 ± 0.308
photometric centroid source offset	1.23 ± 0.64	1.92	-1.20 ± 0.64	0.28 ± 0.69

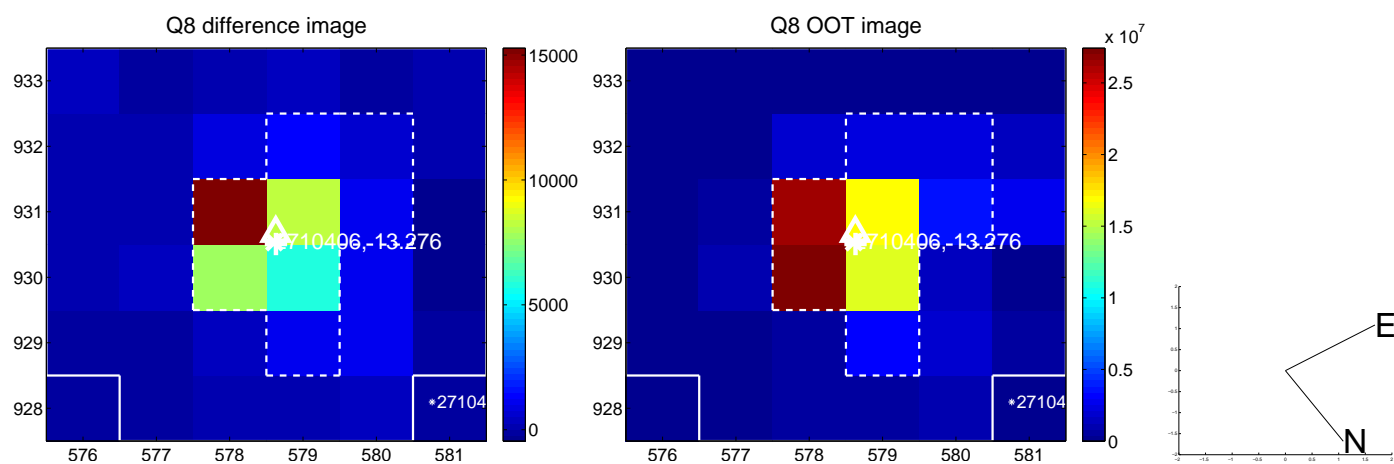
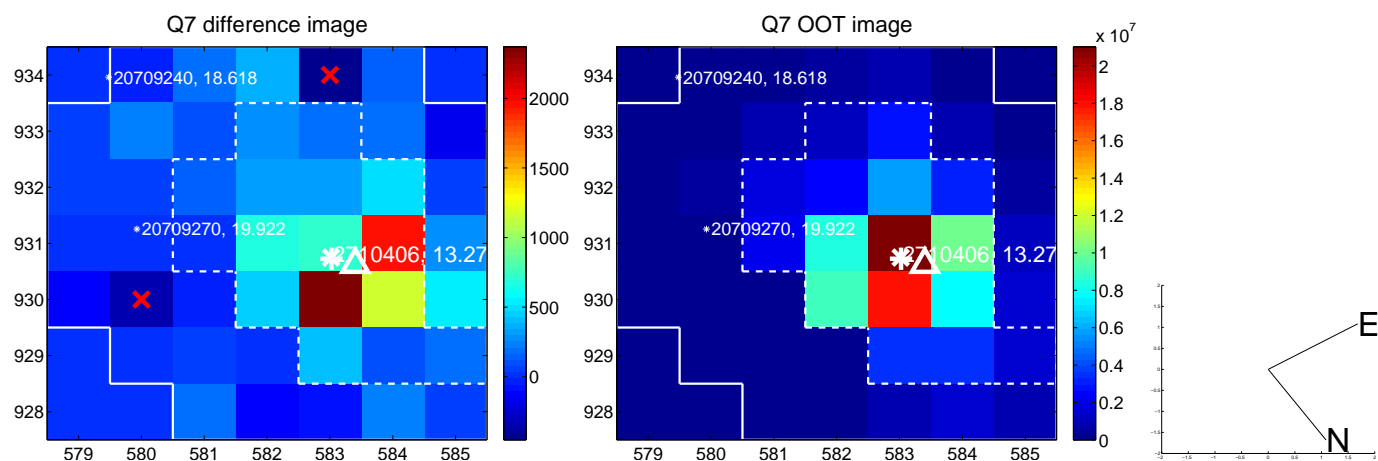
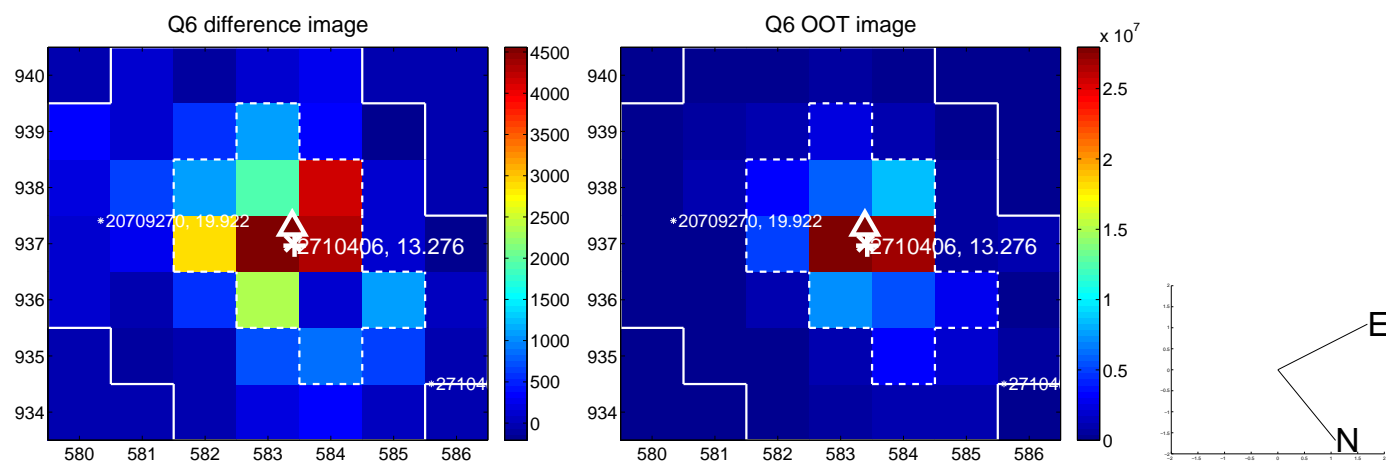
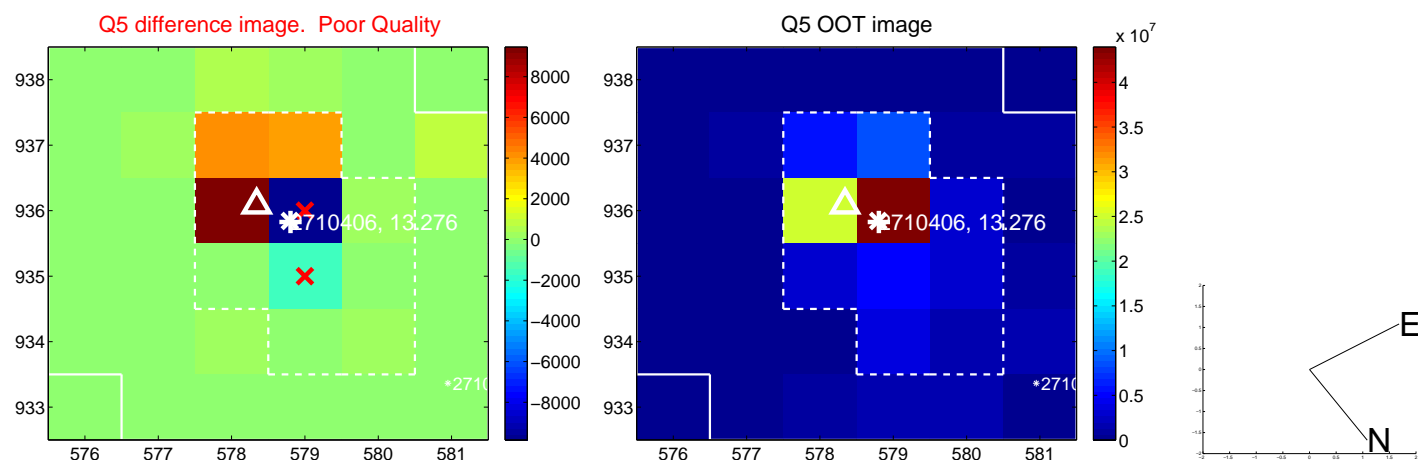


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

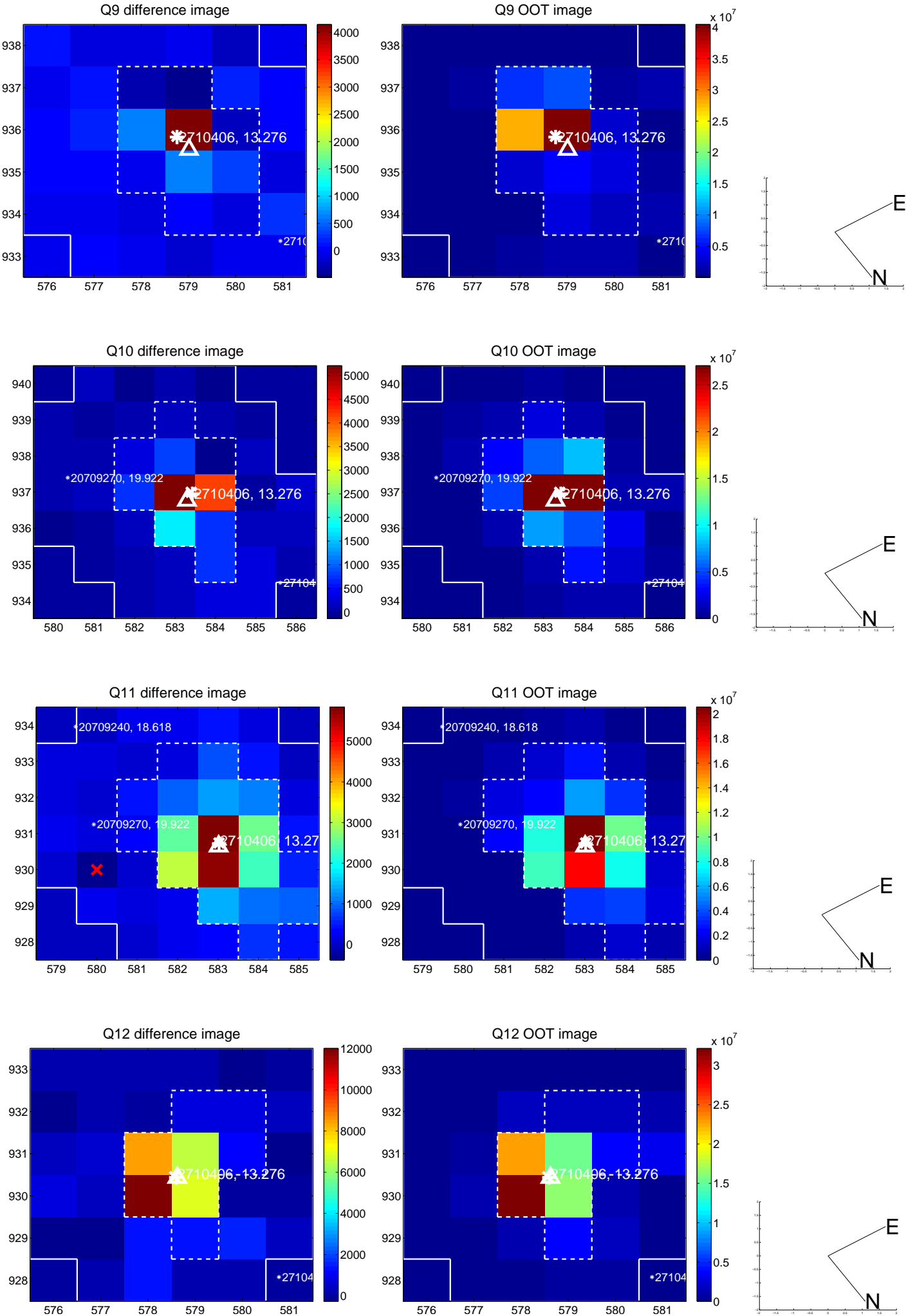
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



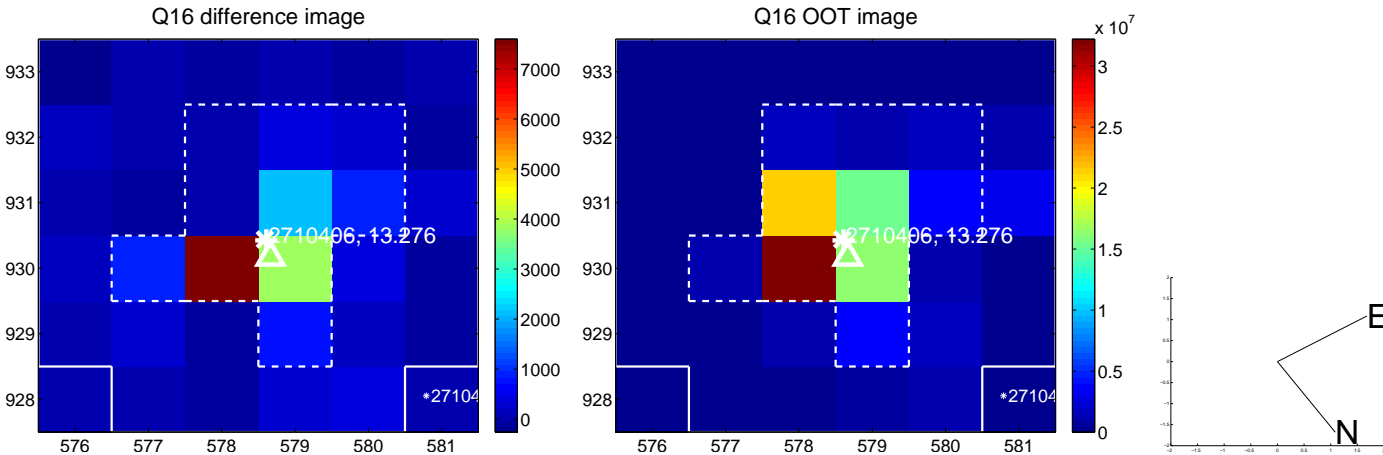
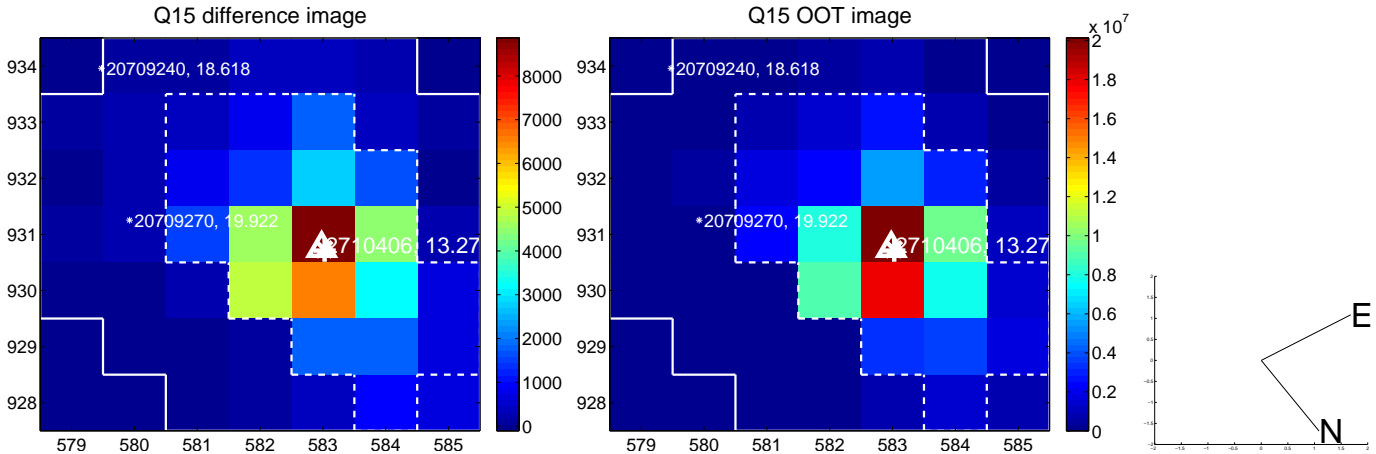
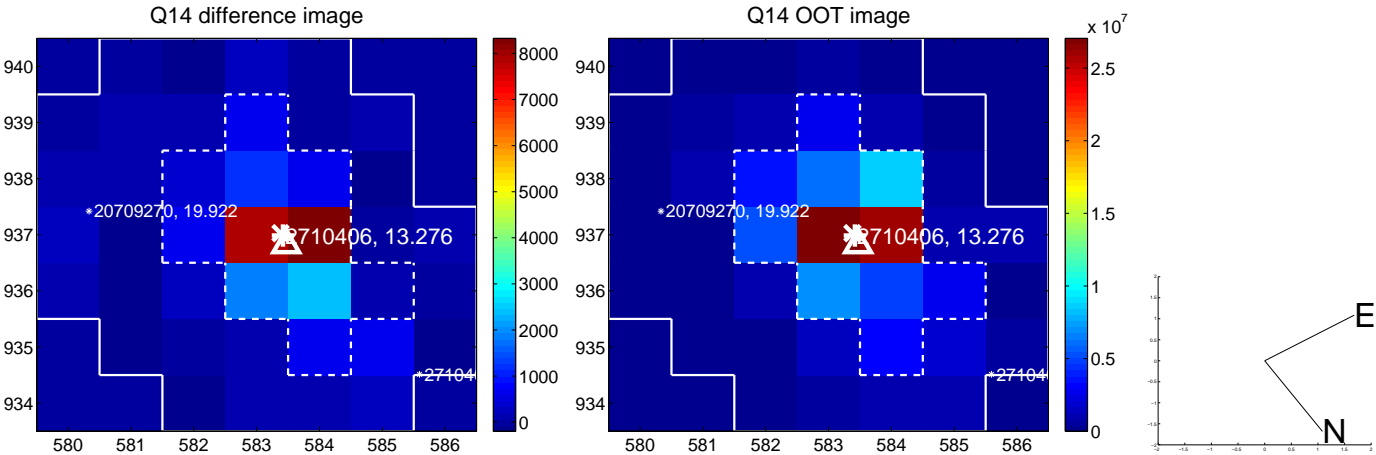
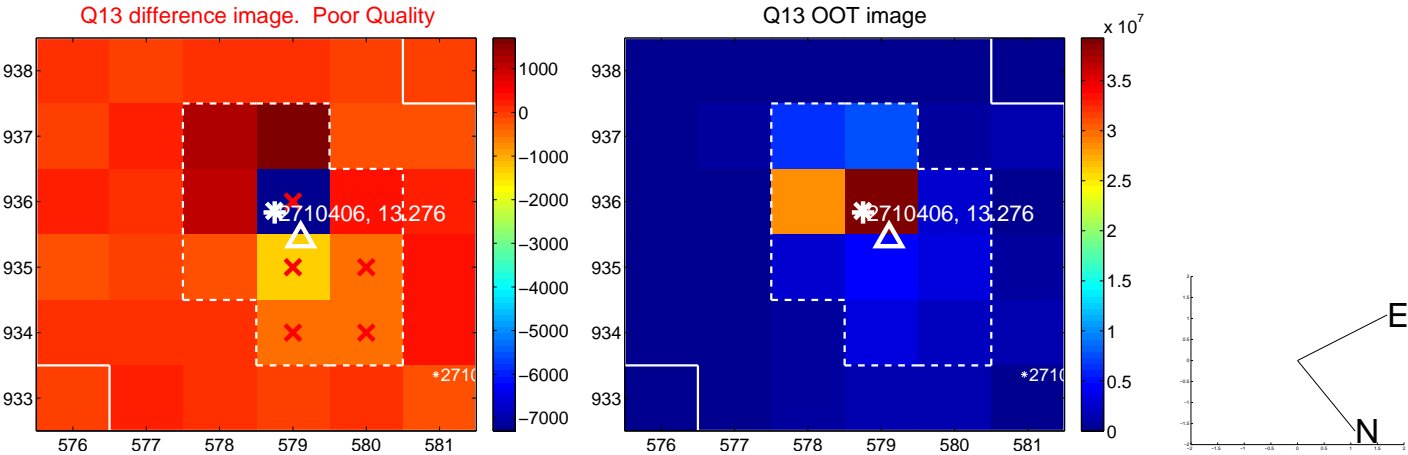
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



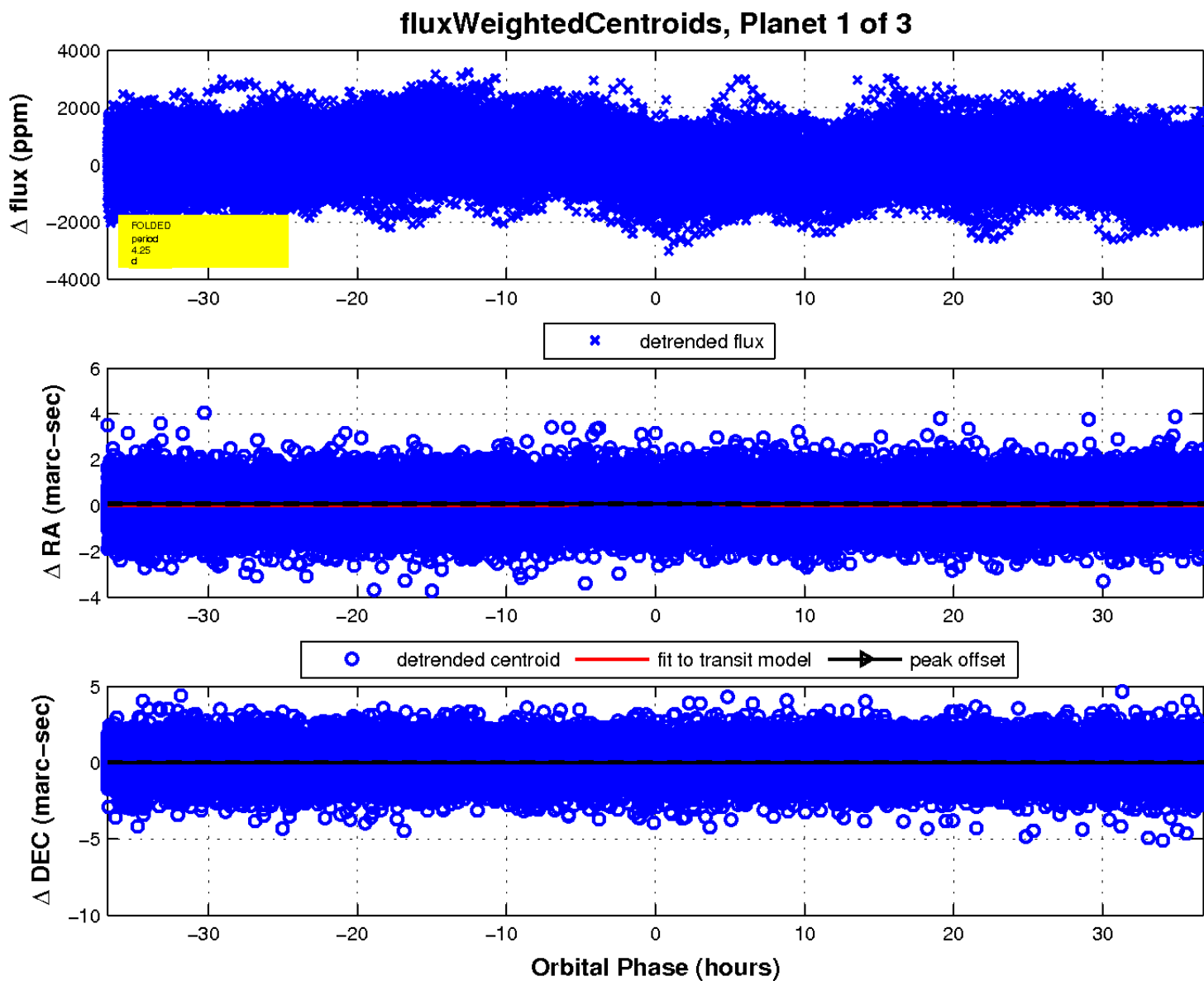
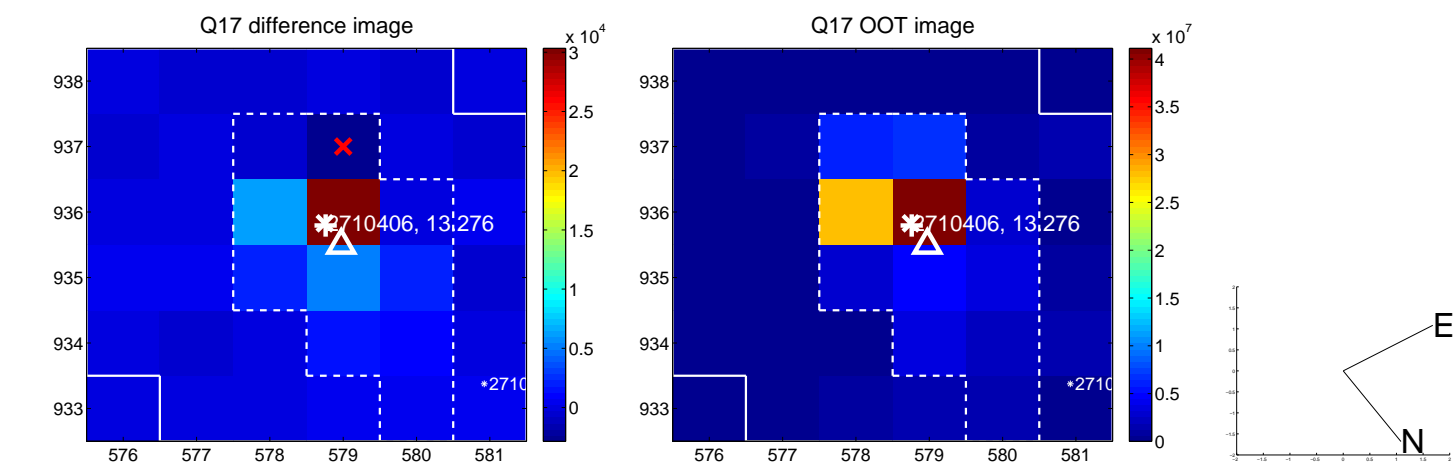
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

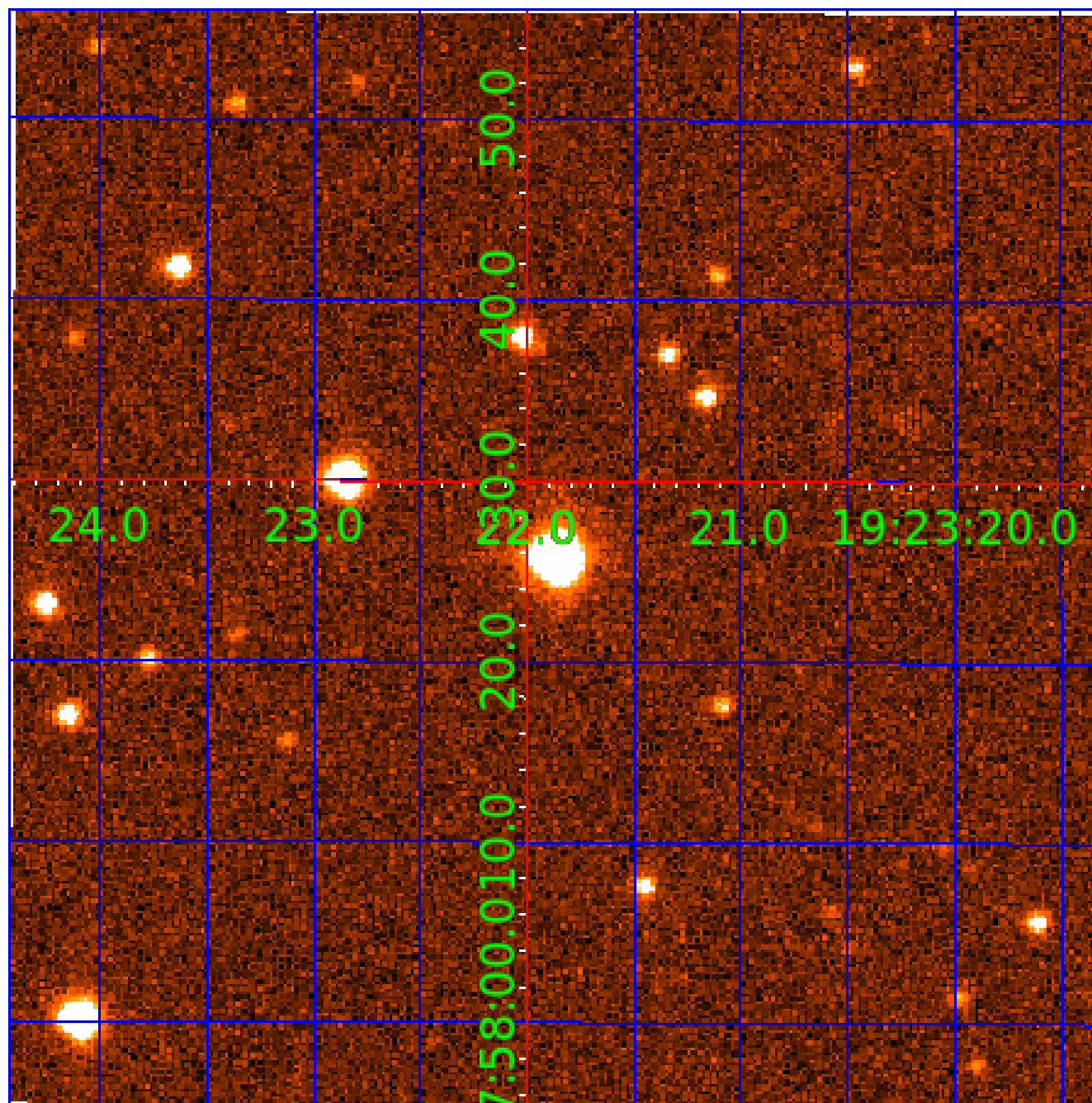


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002710406

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})
002710406-01	OBS	No	4.254101	134.987524	49.7	12.259	8.3	3.5	1.97	6958	1.65	2375.59
002710406-02	OBS	No	4.254223	132.102109	76.8	6.257	11.0	5.5	1.97	6958	2.06	2375.50
002710406-03	OBS	No	4.253796	134.213520	358.7	45.578	12.1	14.0	1.97	6958	4.37	2375.82

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002710406-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV
002710406-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—HALO_GHOST
002710406-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—CENT_FEW_MEAS

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

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

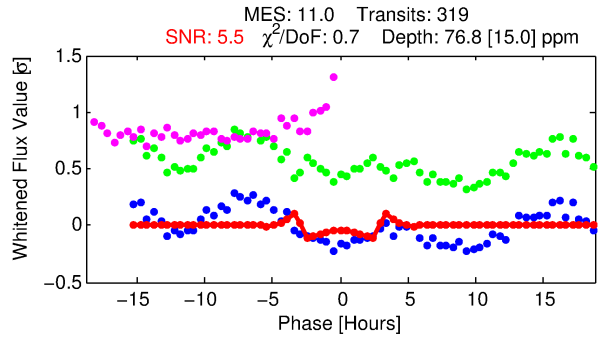
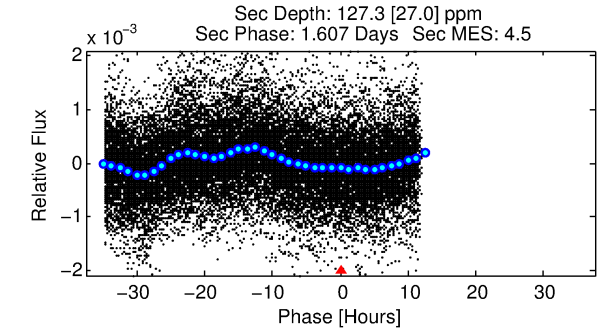
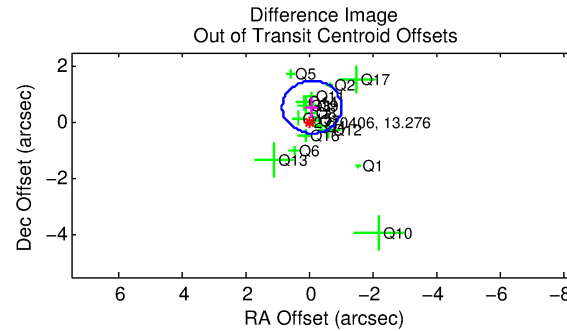
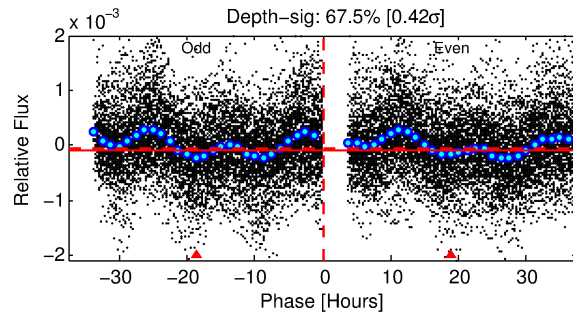
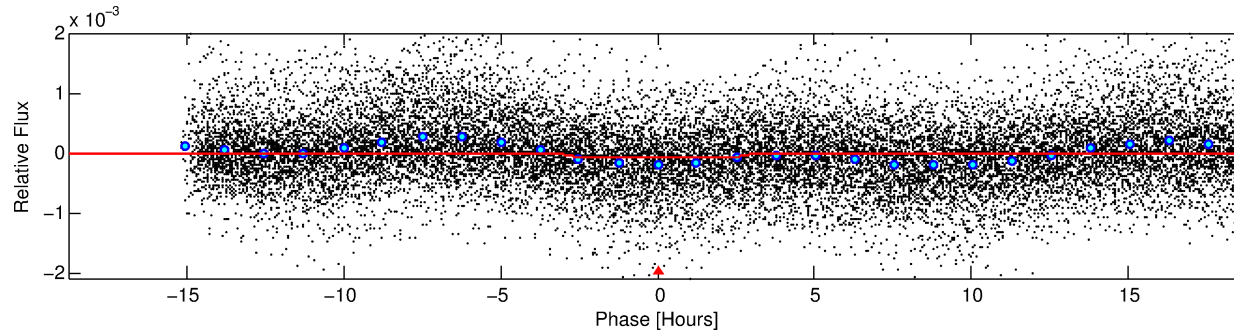
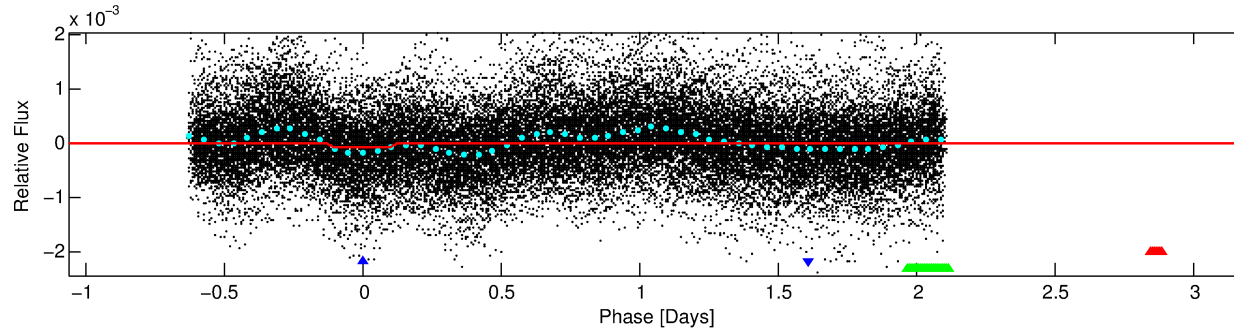
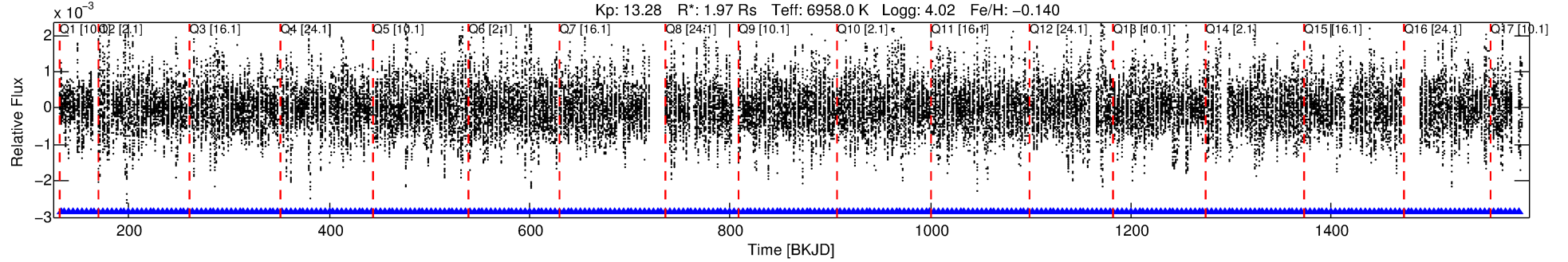
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002710406-02

No Significant Match Found

DV One-Page Summary

KIC: 2710406 Candidate: 2 of 3 Period: 4.254 d



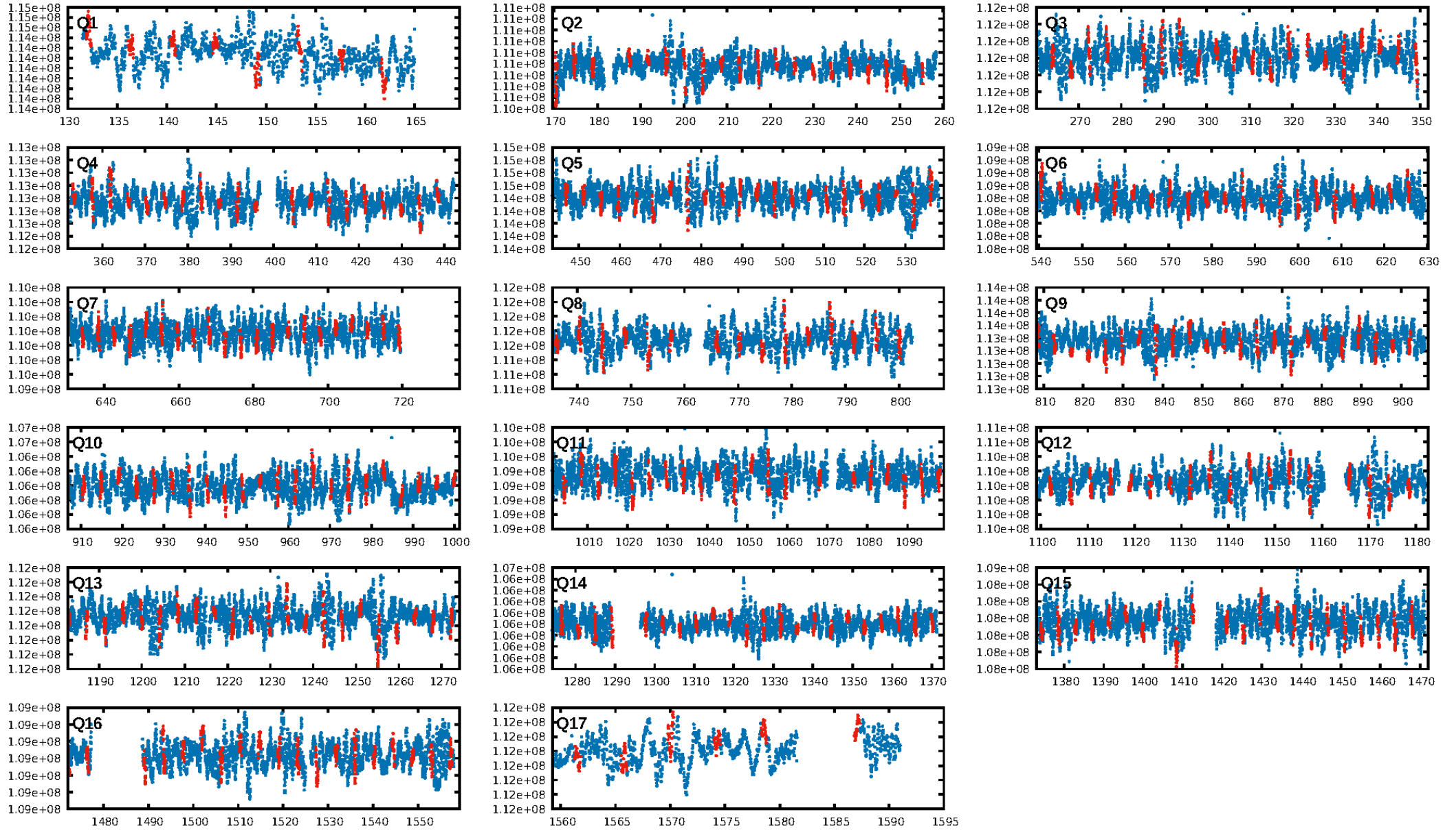
DV Fit Results:

Period = 4.25422 [0.00003] d
Epoch = 132.1021 [0.0043] BKJD
Rp/R* = 0.0096 [0.0015]
a/R* = 2.23 [1.07]
b = 0.93 [0.08]
Seff = 2375.50 [651.30]
Teq = 1780 [122] K
Rp = 2.06 [0.51] Re
a = 0.0585 [0.0103] AU
Ag = 56.25 [25.72] [2.15 σ]
Teffp = 7538 [701] K [8.09 σ]

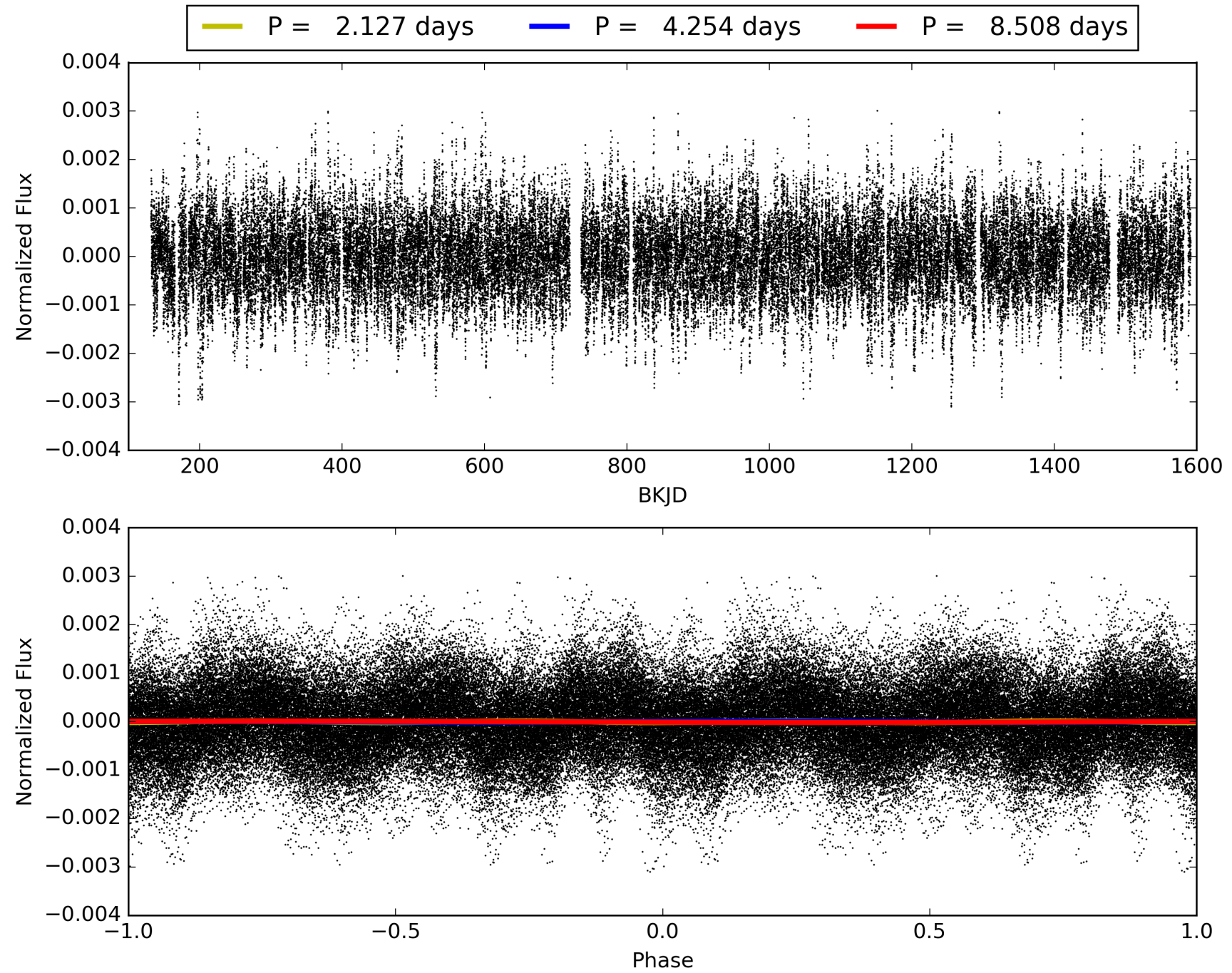
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [305/305]
GhostDiagnostic-chr: 0.2307
Centroid-sig: 40.6%
Centroid-so: 0.277 arcsec [0.50 σ]
OotOffset-rm: 0.555 arcsec [1.78 σ]
KicOffset-rm: 0.612 arcsec [1.91 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.82 [14/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 002710406-02, PDC Light Curves

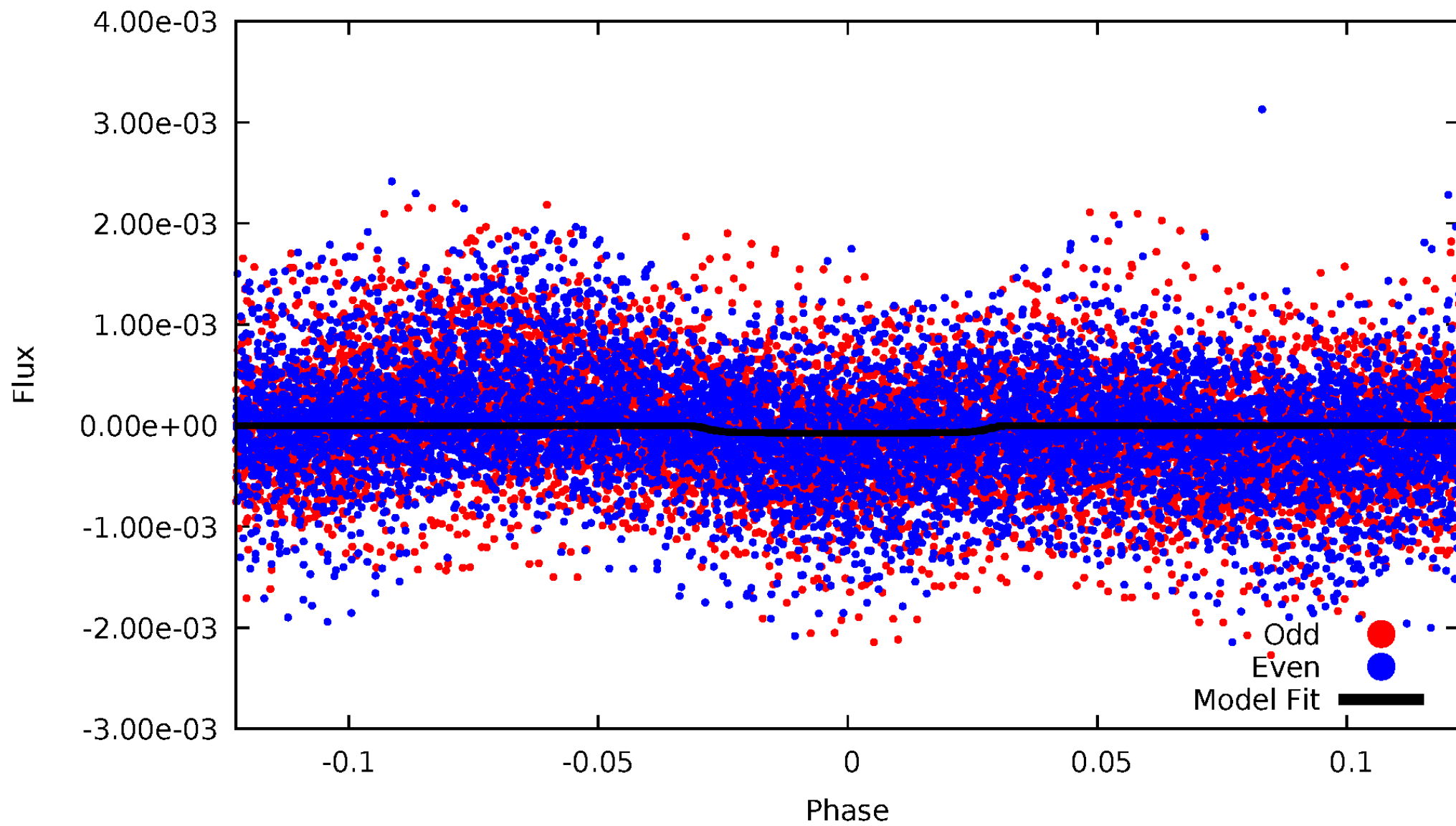


TCE 002710406-02



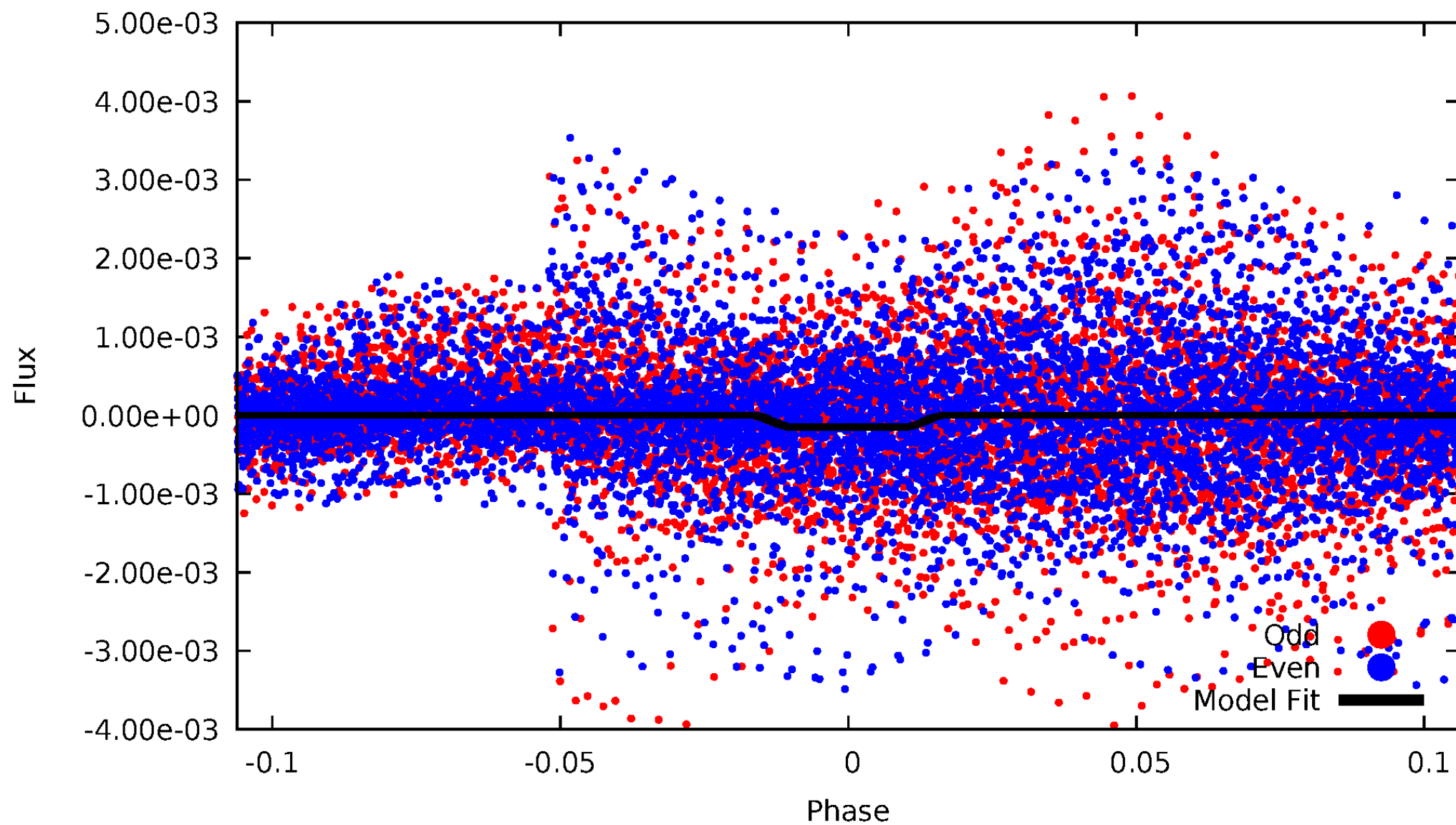
DV Odd/Even

TCE 002710406-02



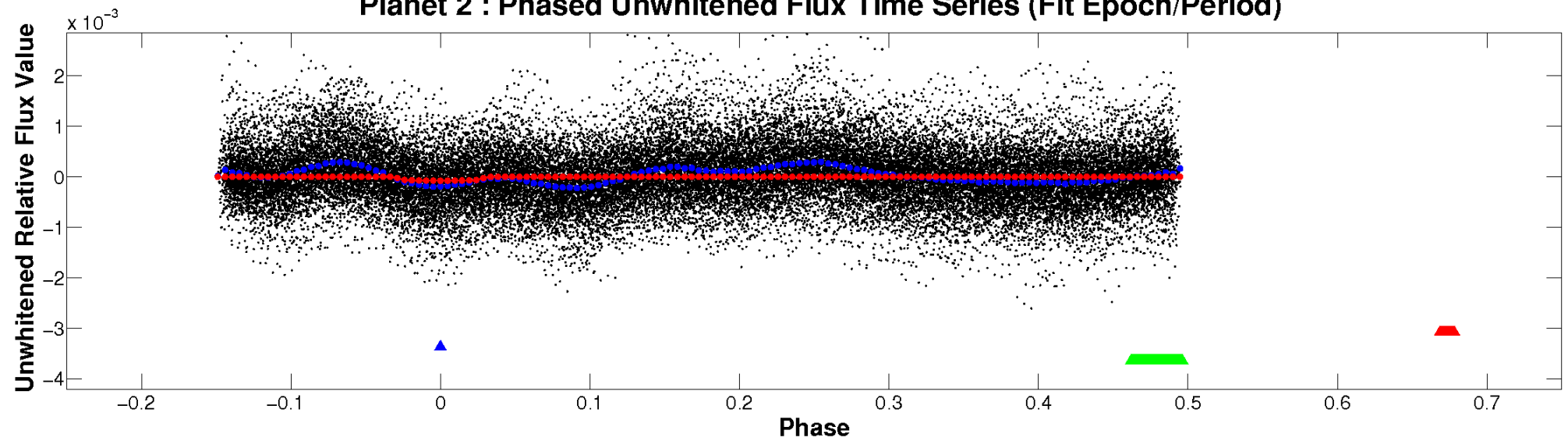
ALT Odd/Even

TCE 002710406-02

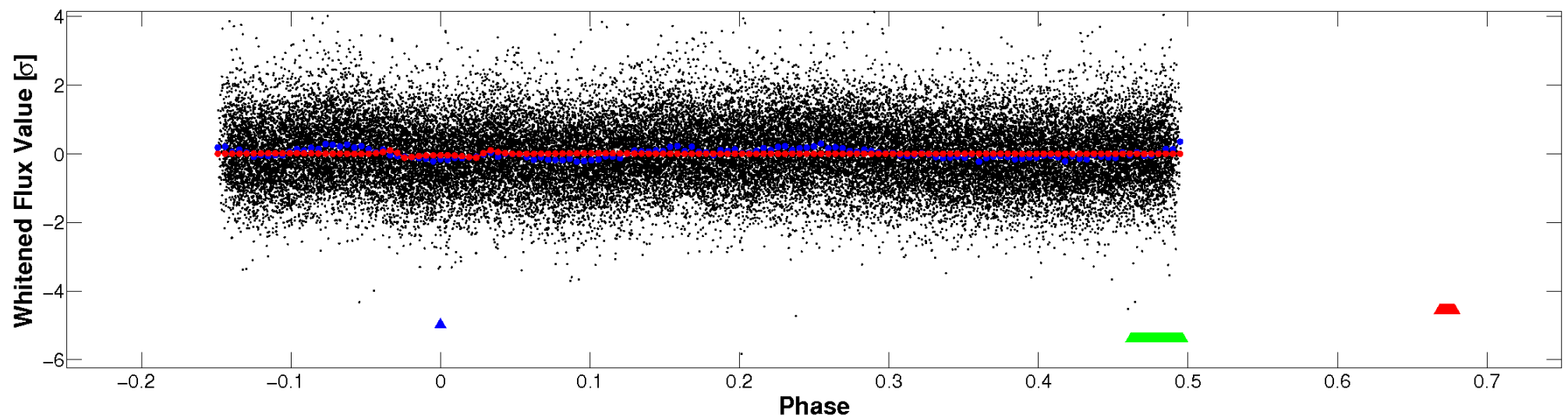


Non-Whitened Vs. Whitened Light Curve

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

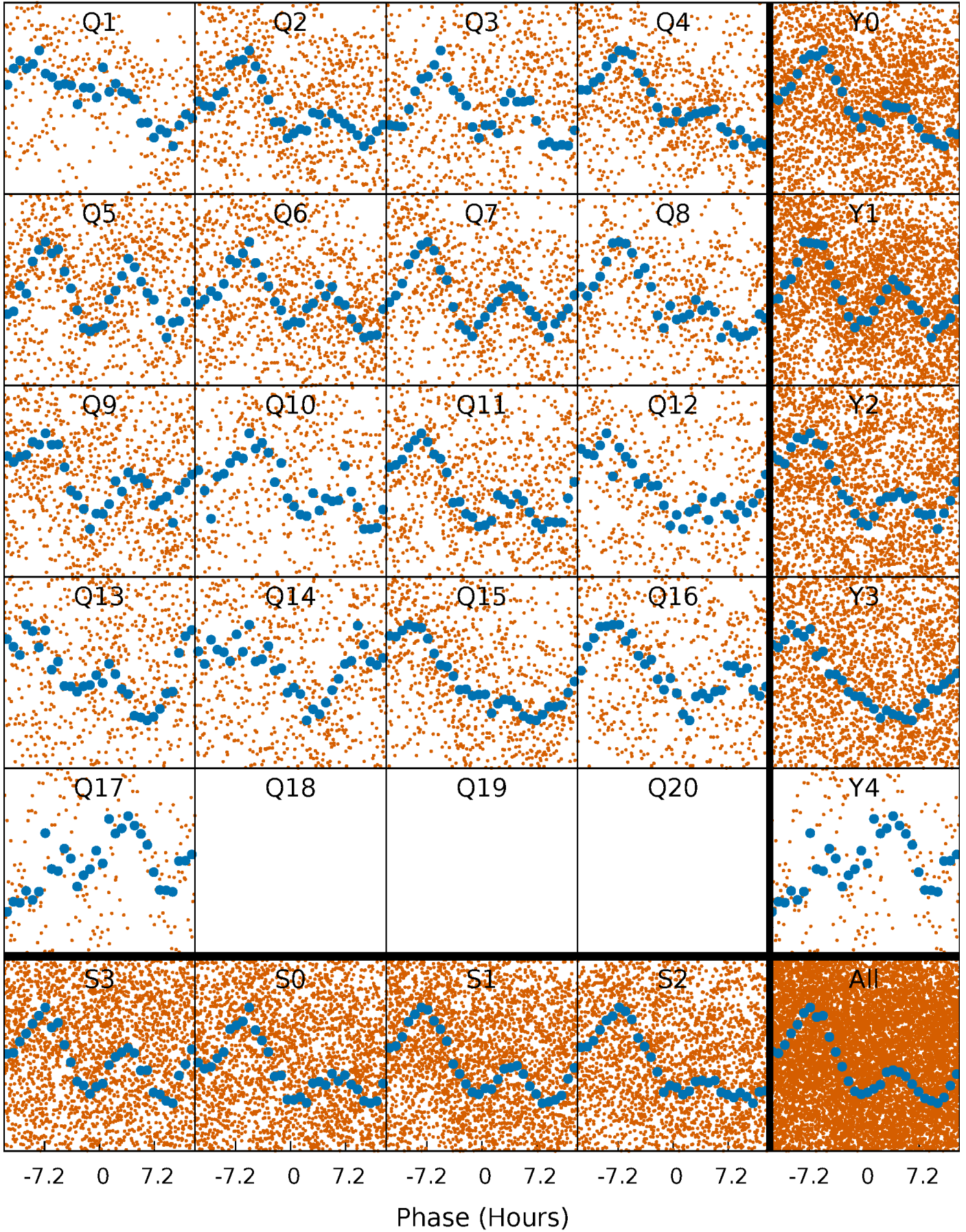


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



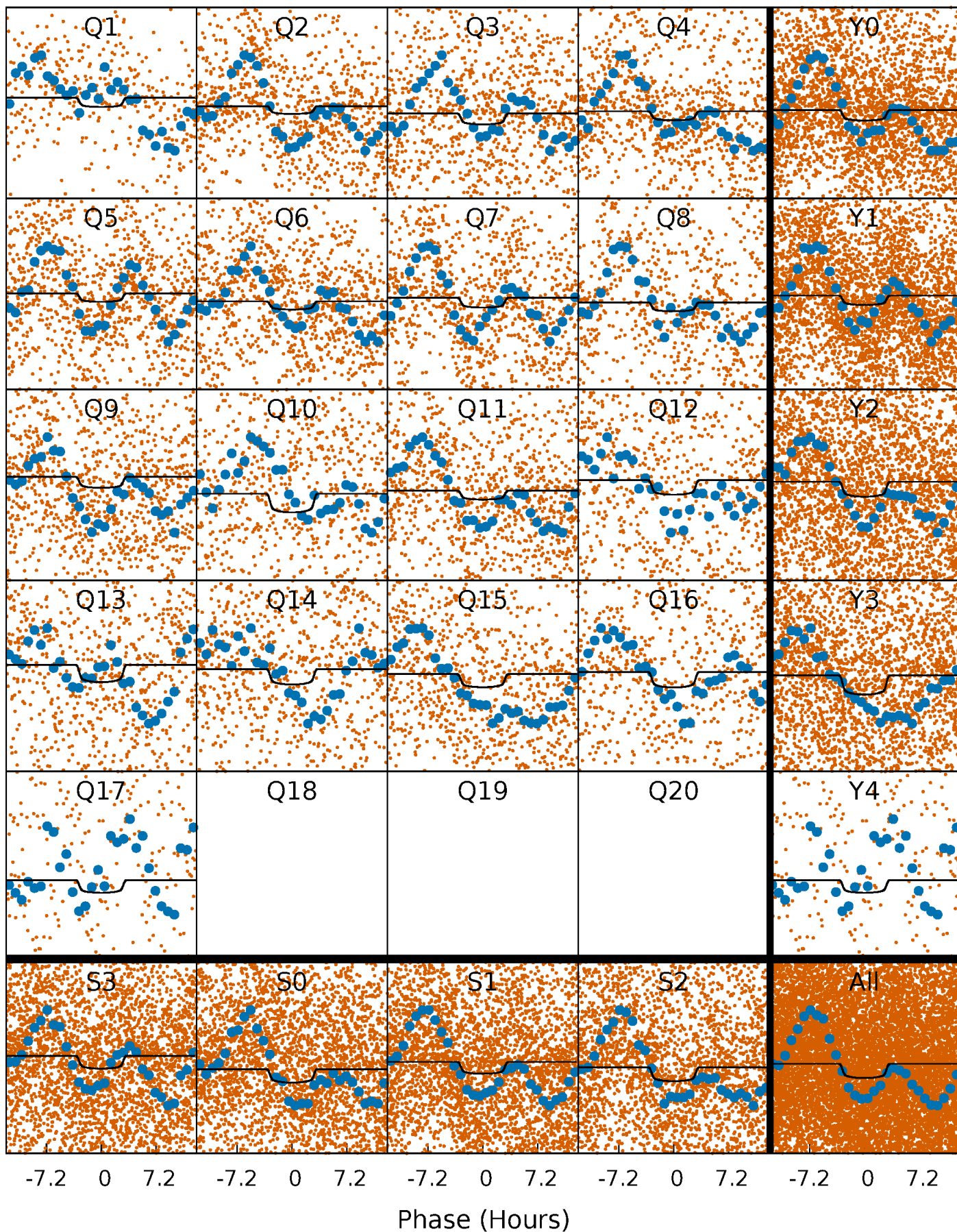
PDC Quarter-Phased Transit Curves

TCE 002710406-02 P= 4.254223 Days $T_0=132.102109$ (BKJD)



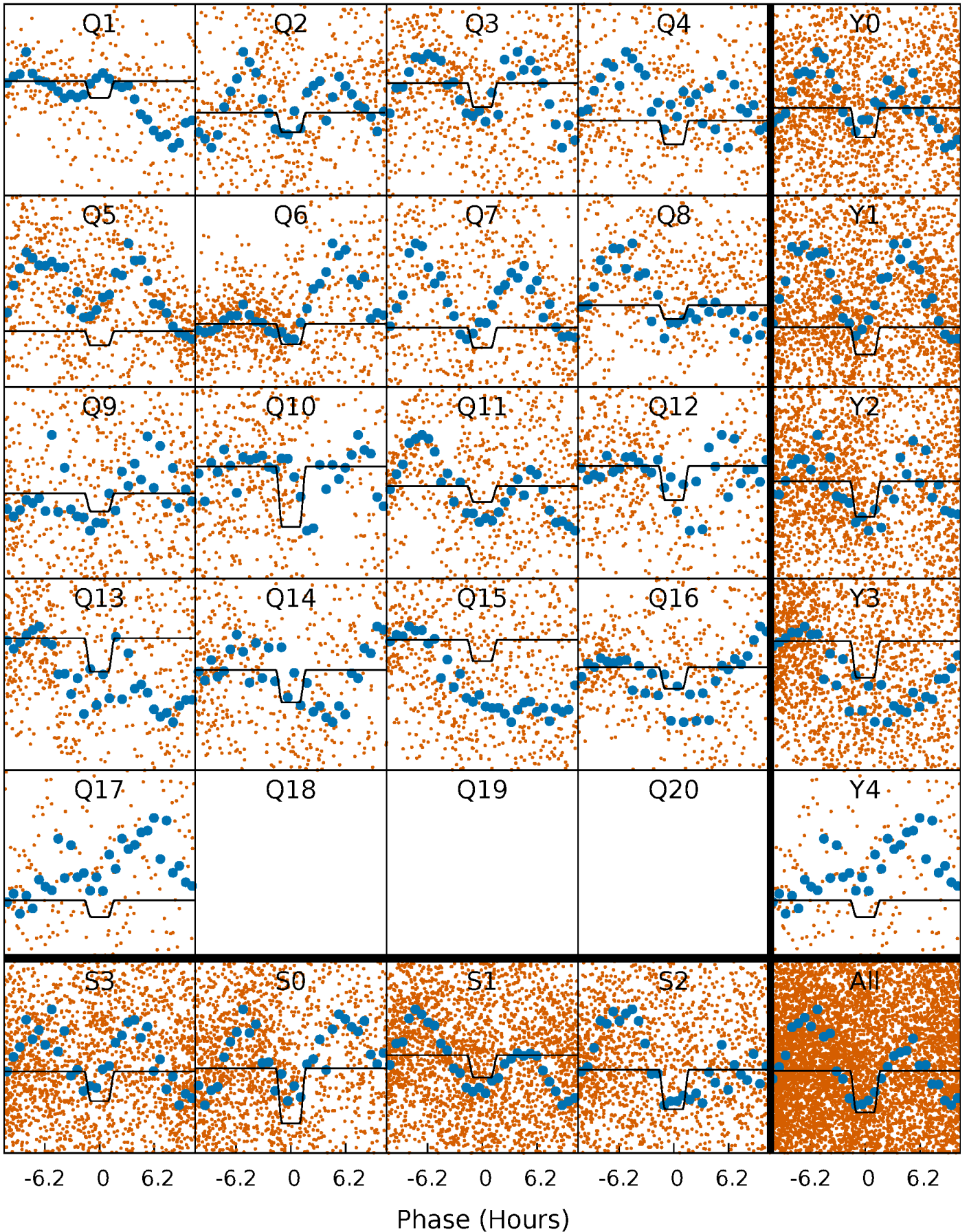
DV Quarter-Phased Transit Curves

TCE 002710406-02 P= 4.254223 Days $T_0=132.102109$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

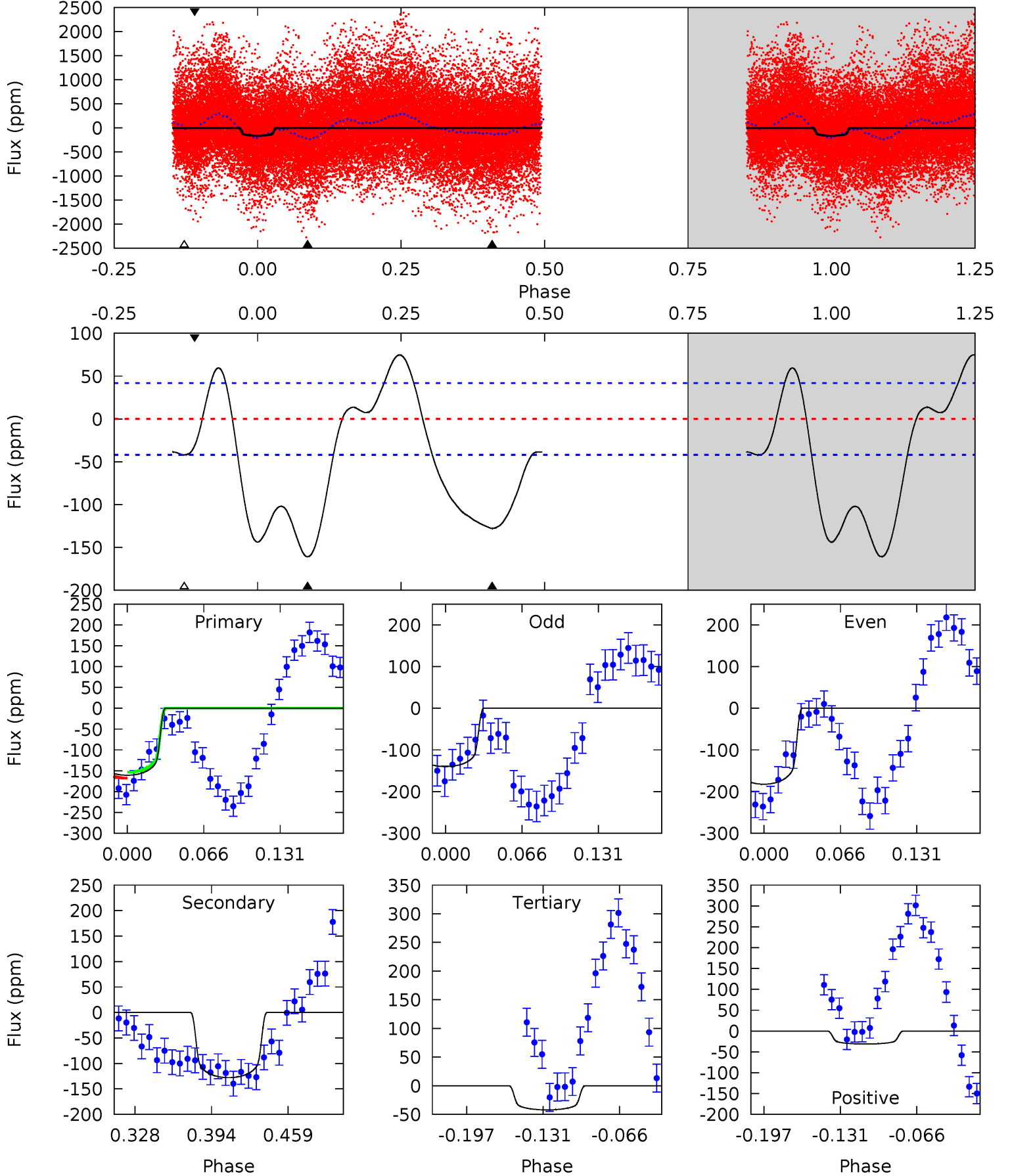
TCE 002710406-02 $P = 4.253927$ Days $T_0 = 132.123880$ (BKJD)



DV Model-Shift Uniqueness Test

002710406-02, P = 4.254223 Days, E = 127.847886 Days

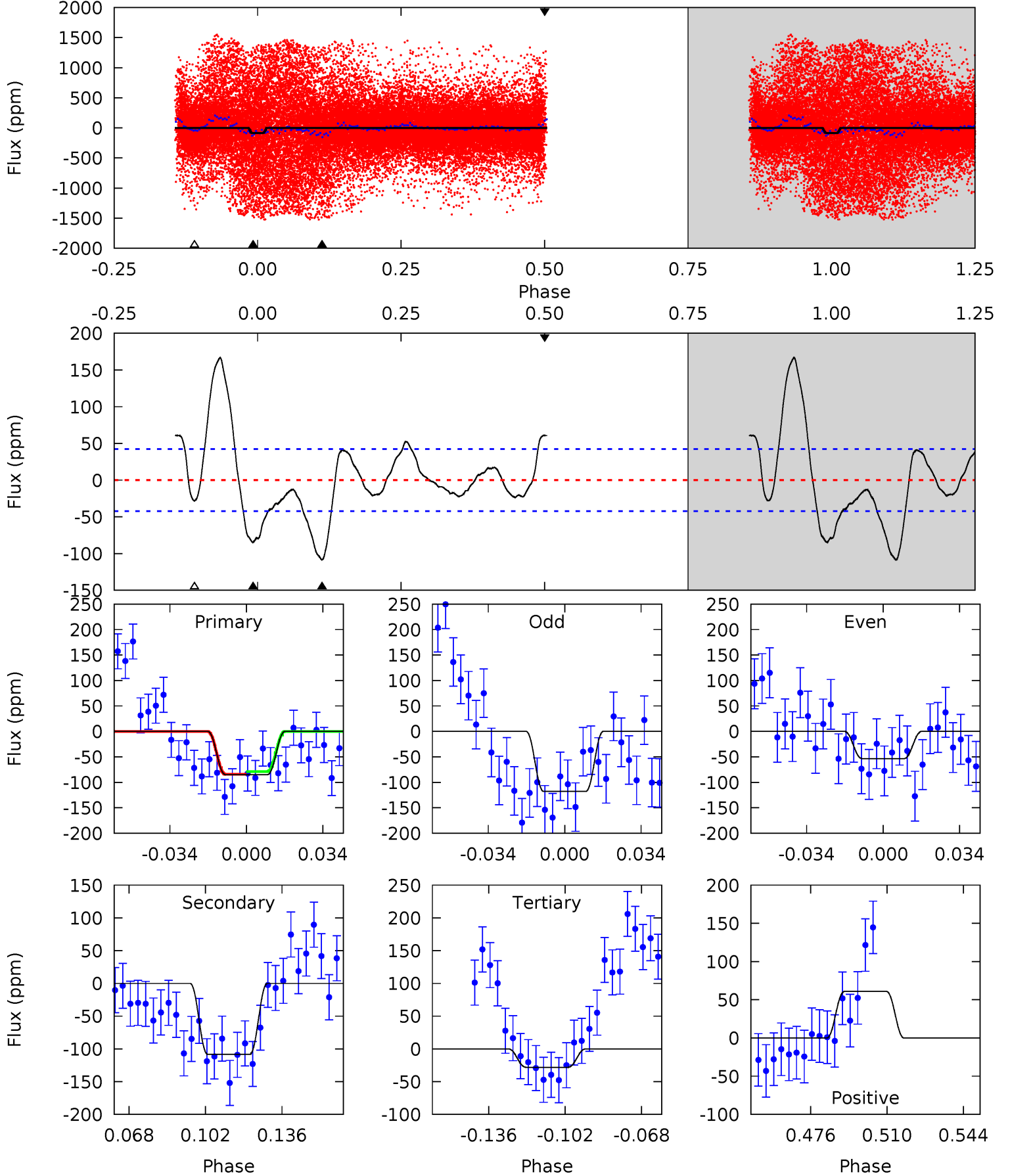
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.9	14.2	4.68	-3.47	4.65	1.84	6.82	13.2	21.4	9.55	17.7	2.37	1.17	0.32	0.81



Alt Model-Shift Uniqueness Test

002710406-02, P = 4.253927 Days, E = 127.869953 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.57	12.2	3.16	6.87	4.79	2.12	4.83	6.41	2.70	9.08	5.37	3.71	1.59	0.61	0.29



Stellar Parameters For KIC 002710406

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6958^{+73}_{-83}	$4.019^{+0.154}_{-0.126}$	$-0.140^{+0.150}_{-0.150}$	$1.968^{+0.385}_{-0.385}$	$1.476^{+0.119}_{-0.132}$	$0.273^{+0.212}_{-0.093}$
	+1%/-1%	+4%/-3%	+107%/-107%	+20%/-20%	+8%/-9%	+78%/-34%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 002710406-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-128 ± 9	$2.05^{+0.39}_{-0.37}$	2479^{+131}_{-125}	7618^{+832}_{-607}	57^{+27}_{-17}
Alt.	-108 ± 9	$2.61^{+0.44}_{-0.42}$	2478^{+129}_{-128}	6342^{+485}_{-373}	29^{+13}_{-7}

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

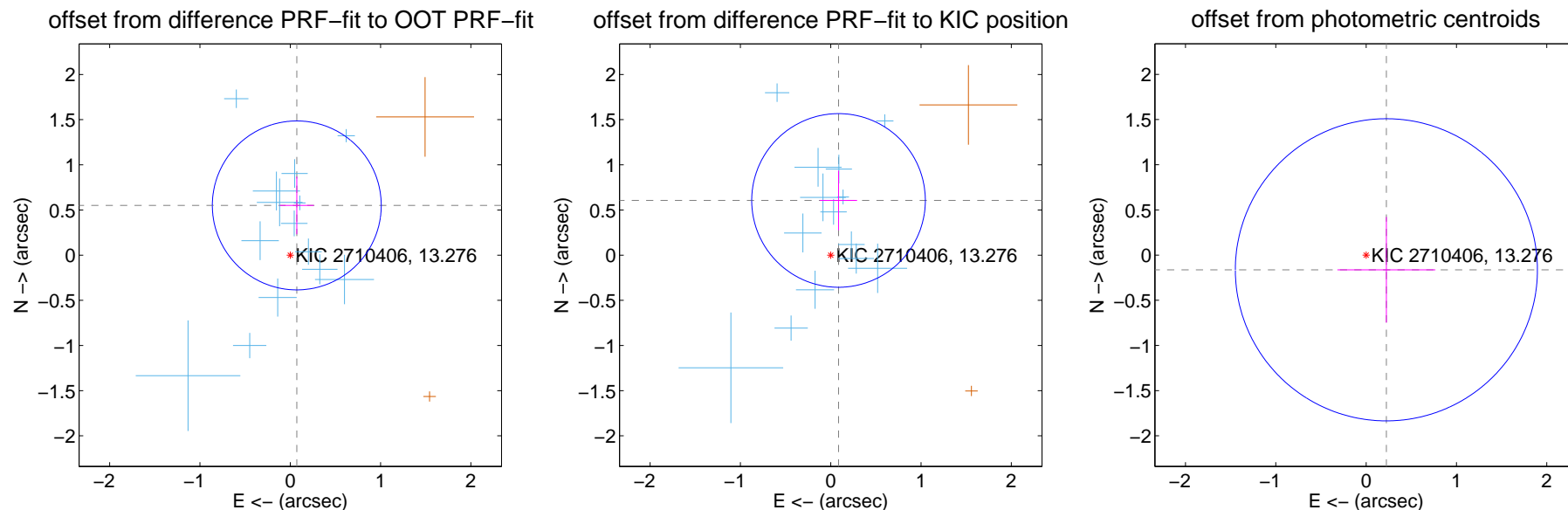
DV Centroid Data

Supplemental centroid analysis for 002710406-02. Kepler magnitude: 13.28. Transit SNR 5.48

There are 14 quarters with good PRF difference image offsets

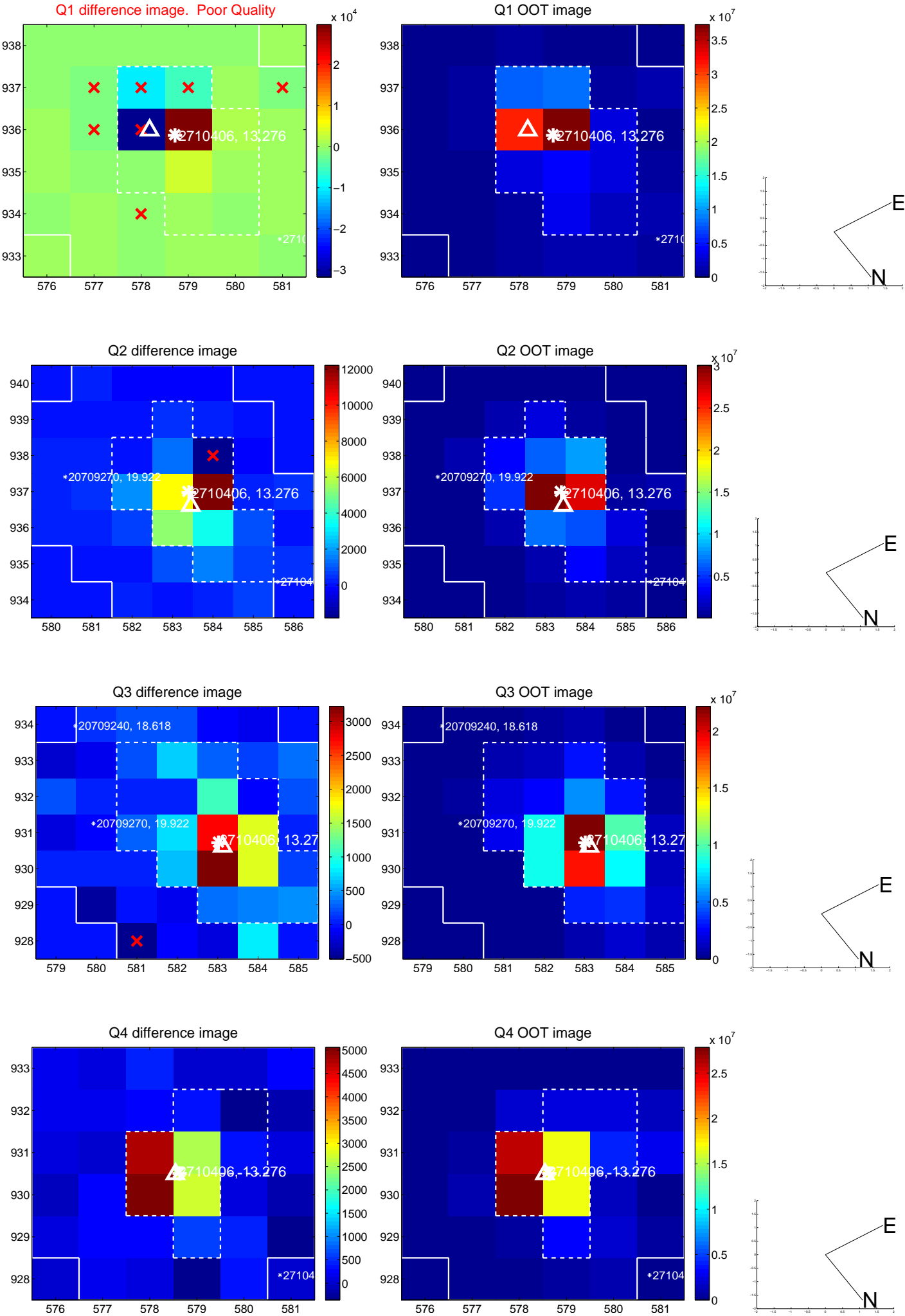
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.555 ± 0.312	1.78	-0.072 ± 0.188	0.551 ± 0.318
PRF-fit source offset from KIC position	0.612 ± 0.320	1.91	-0.086 ± 0.205	0.606 ± 0.330
photometric centroid source offset	0.28 ± 0.56	0.50	-0.22 ± 0.54	-0.16 ± 0.58

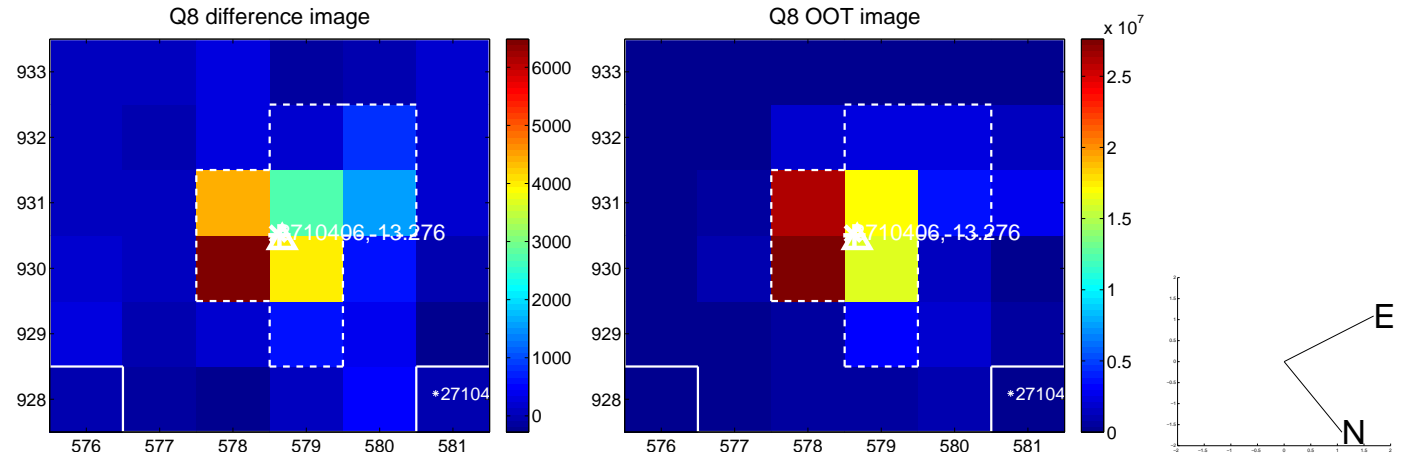
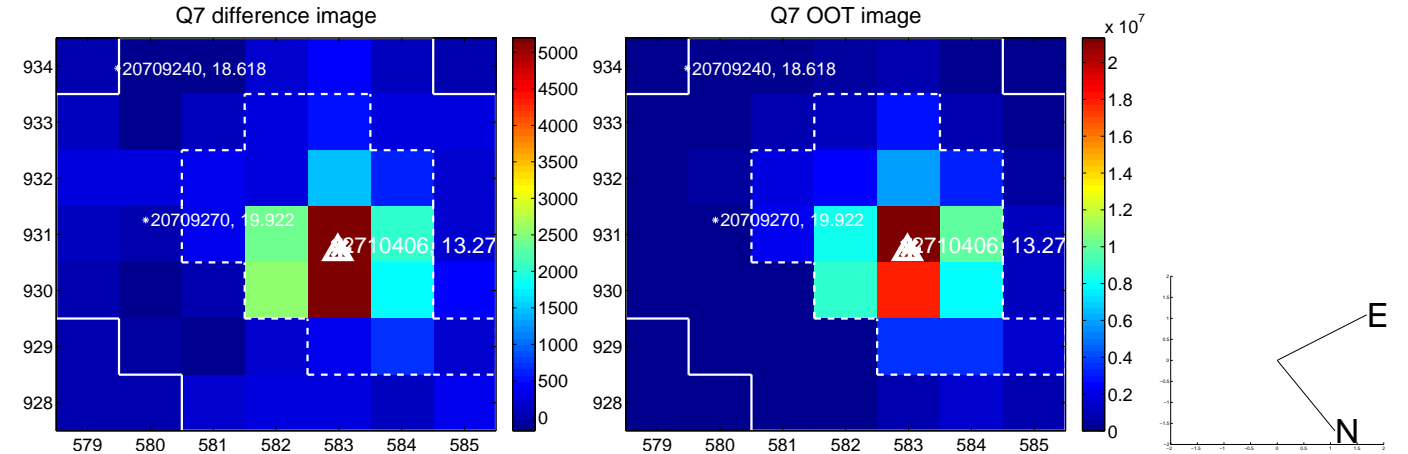
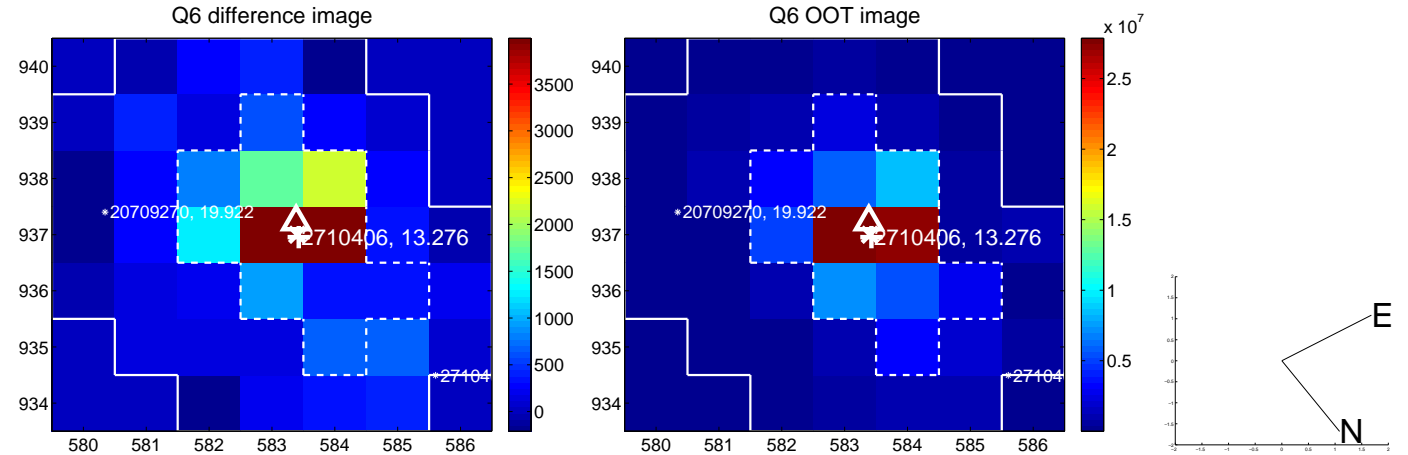
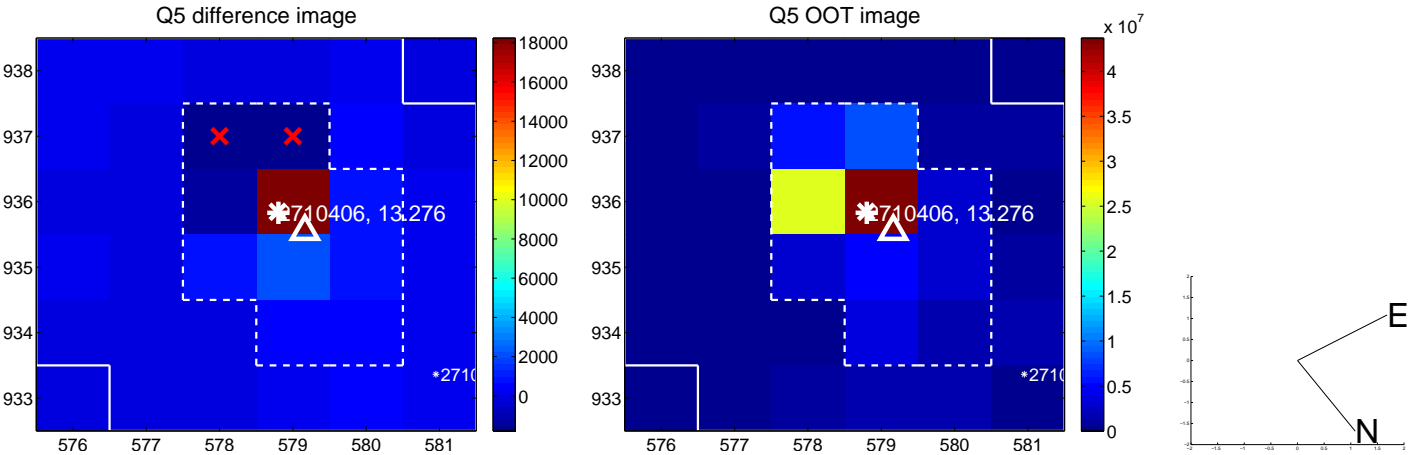


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

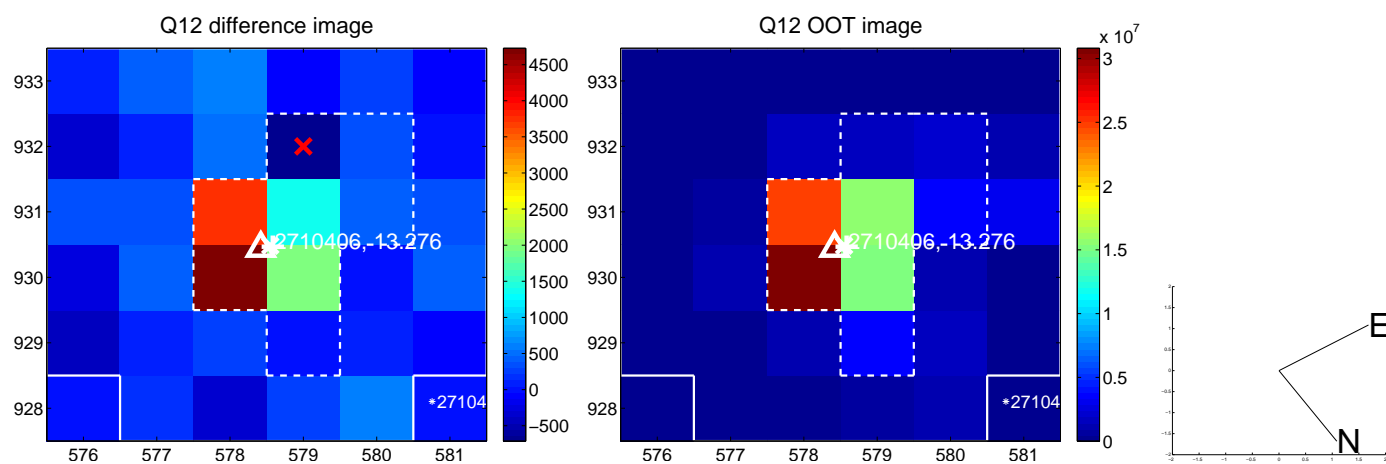
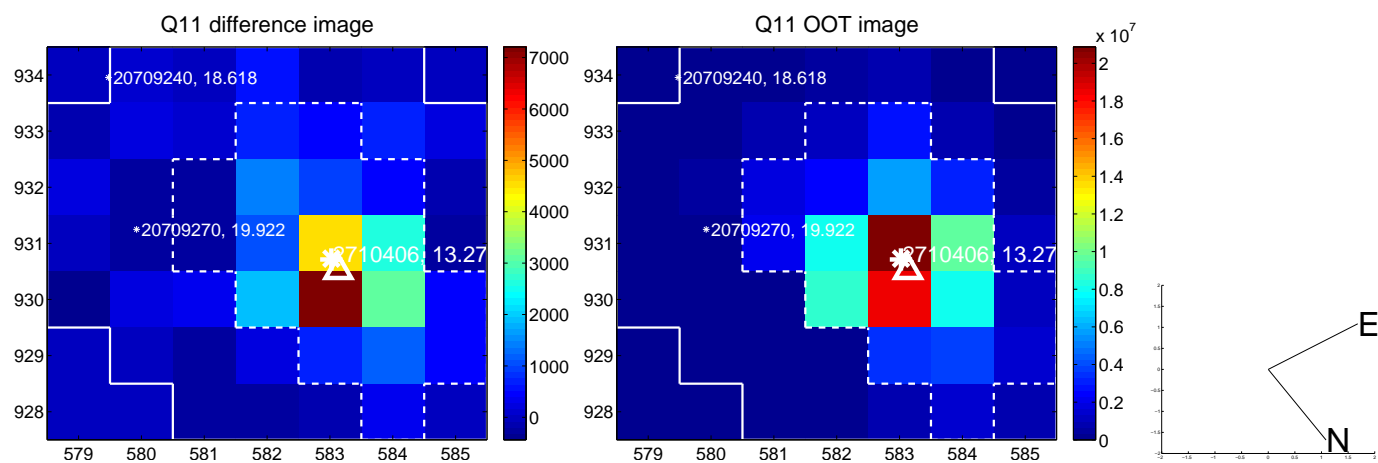
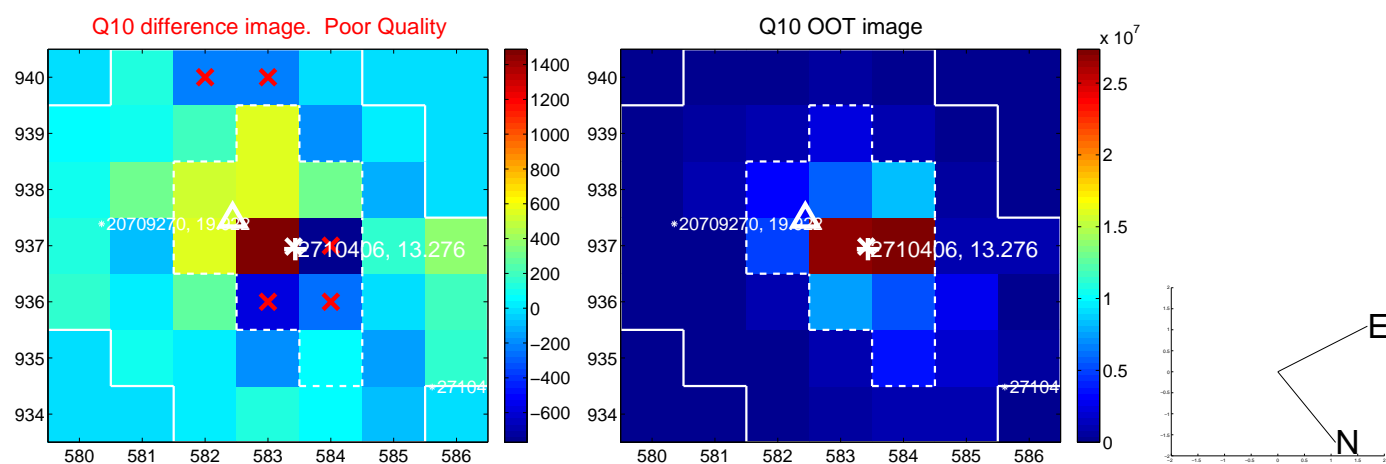
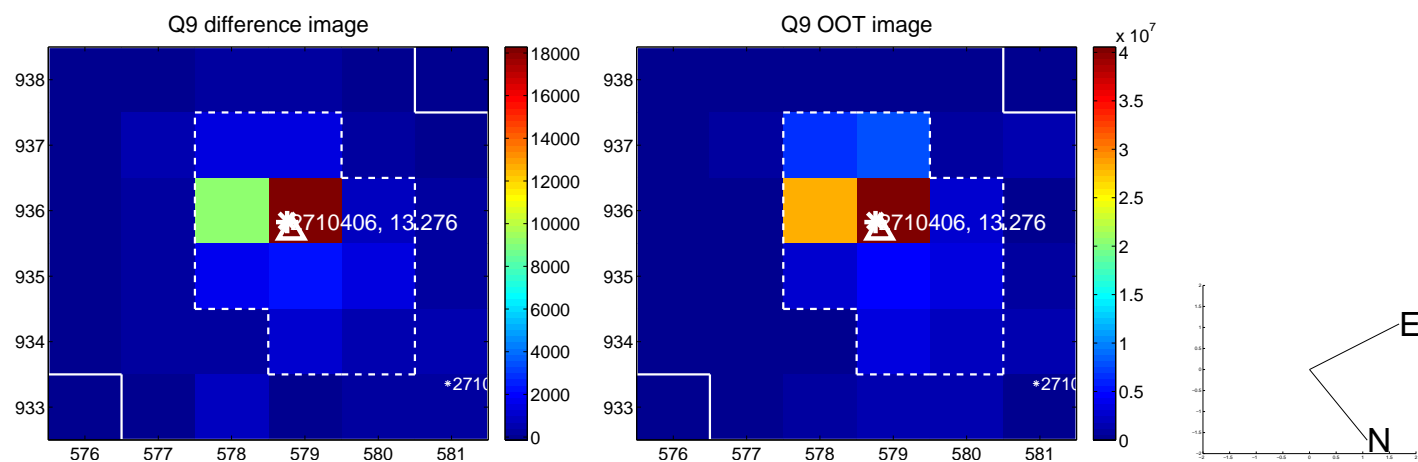
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



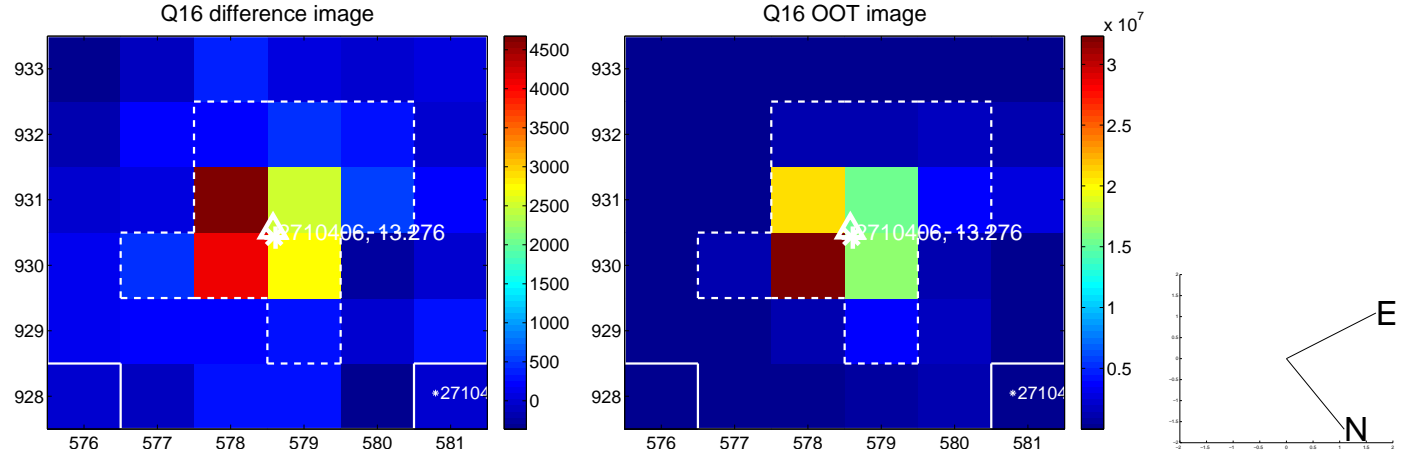
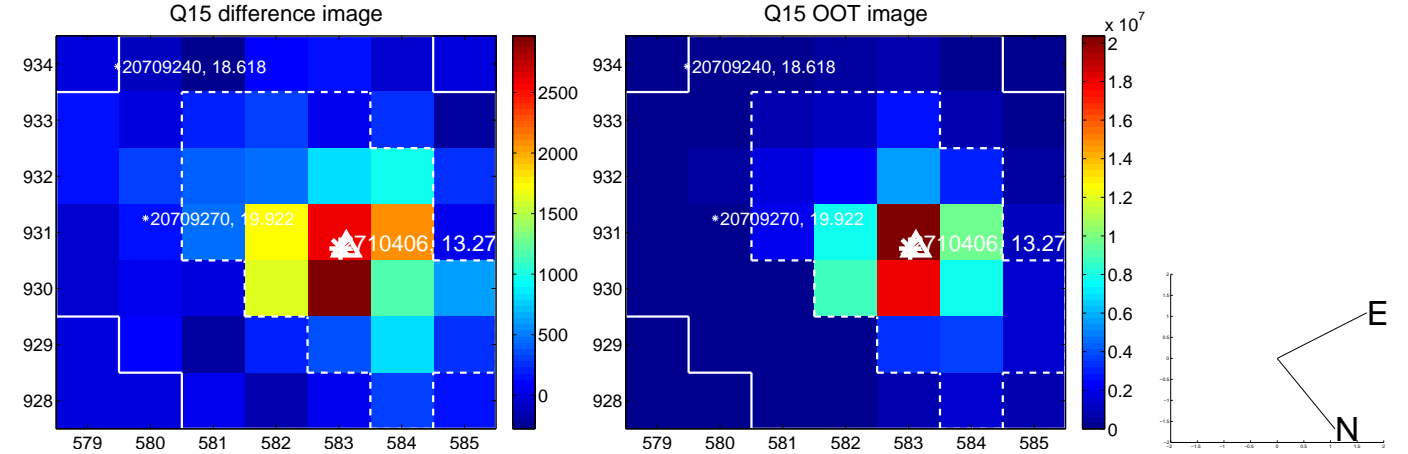
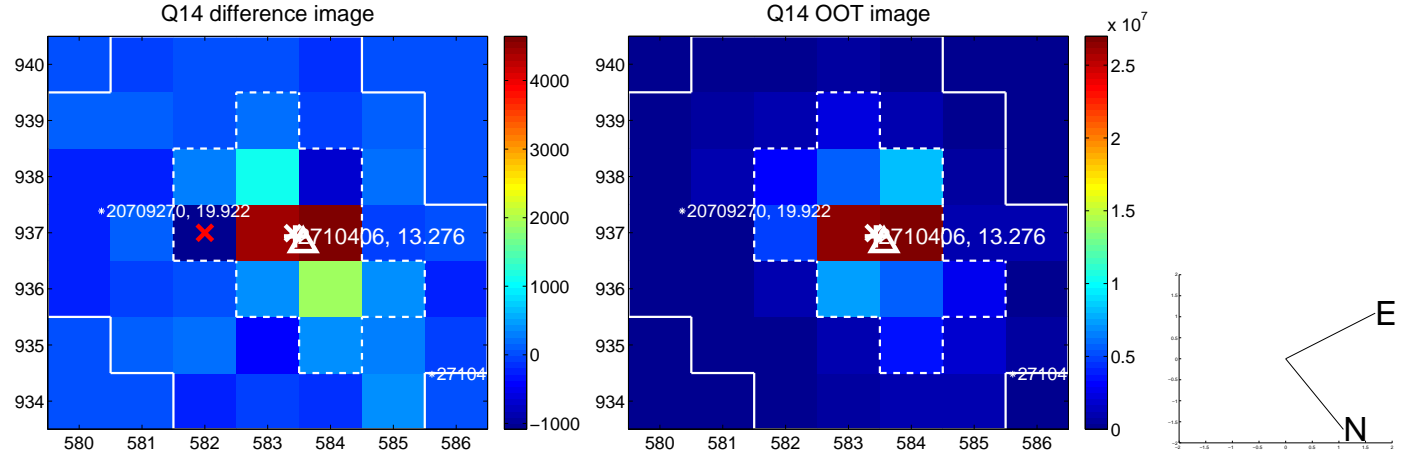
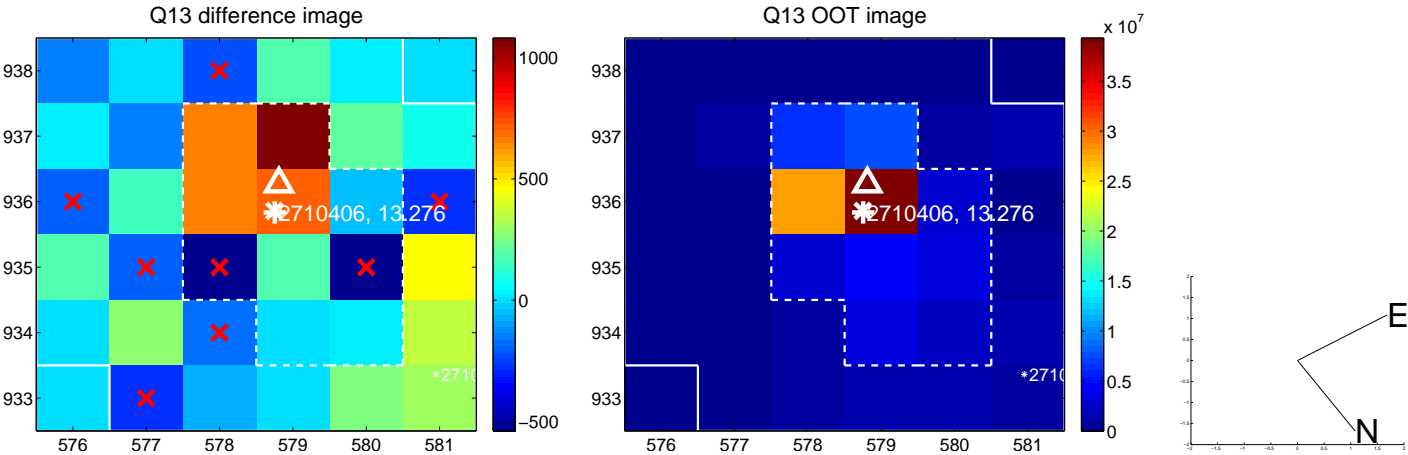
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



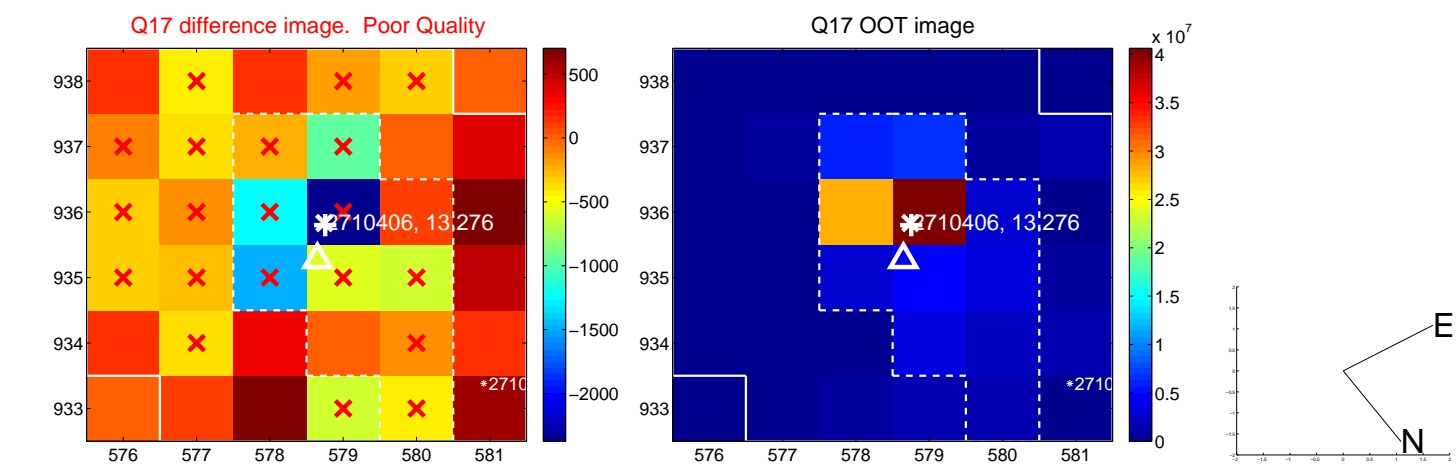
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



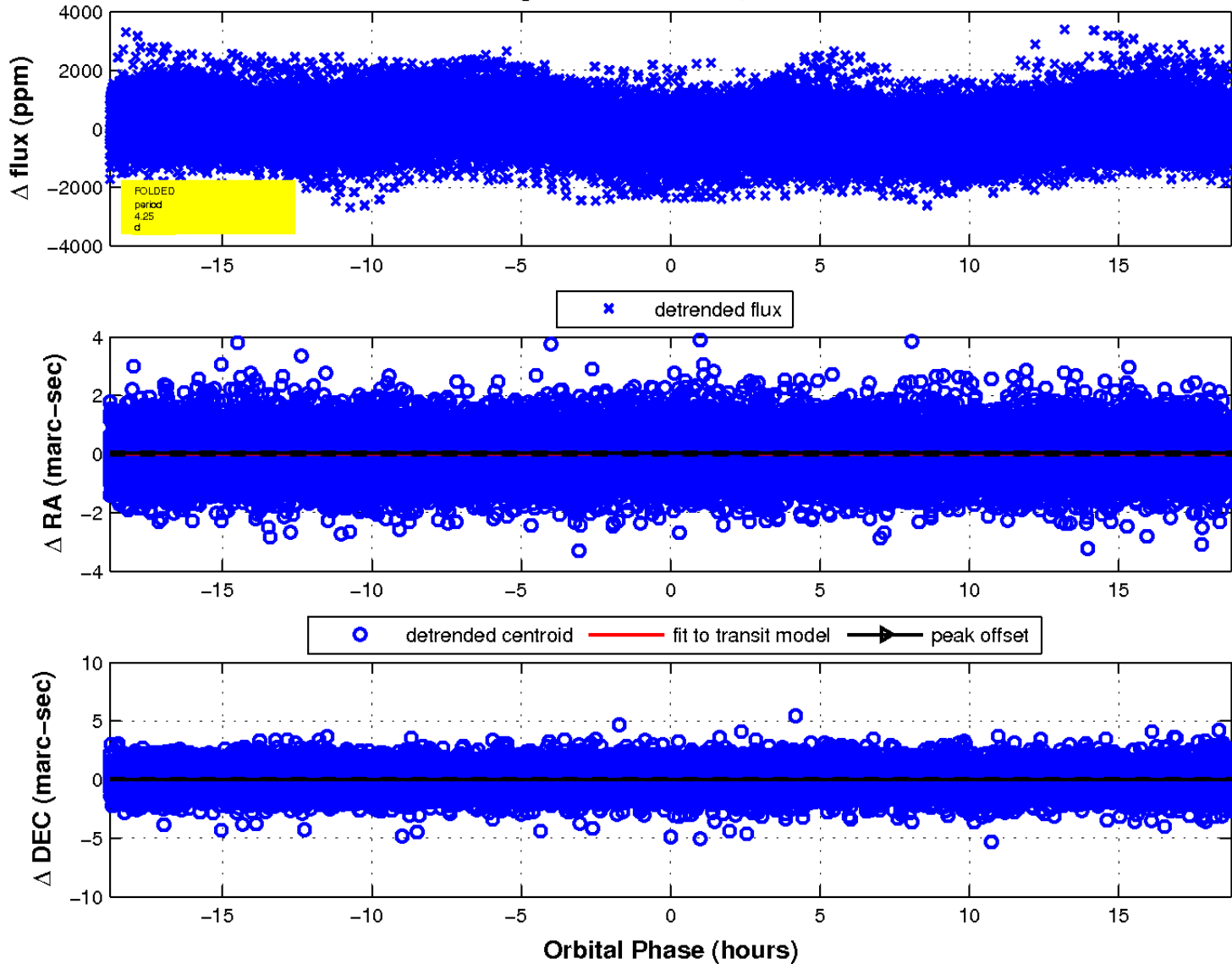
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

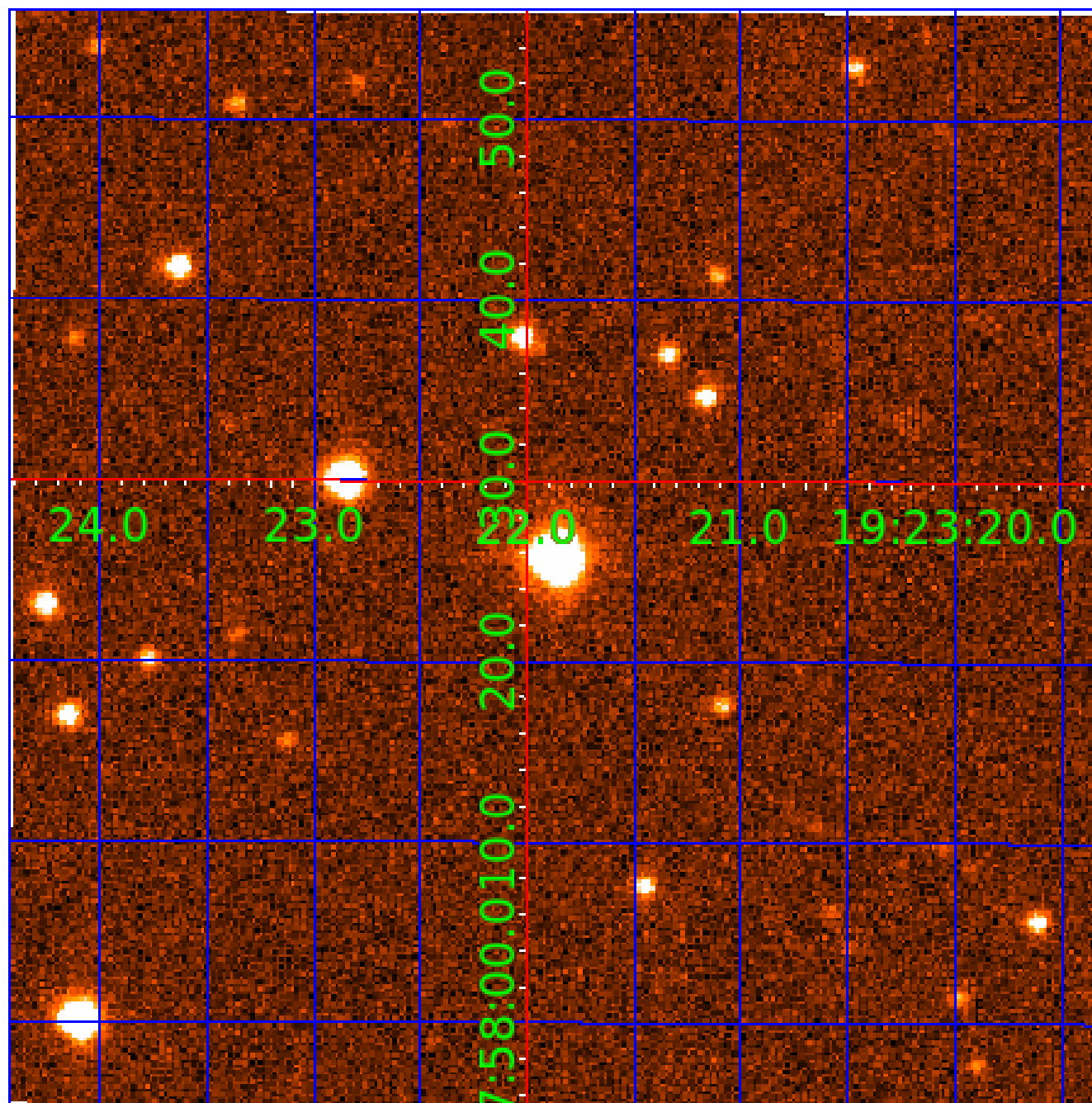


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 002710406

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})
002710406-01	OBS	No	4.254101	134.987524	49.7	12.259	8.3	3.5	1.97	6958	1.65	2375.59
002710406-02	OBS	No	4.254223	132.102109	76.8	6.257	11.0	5.5	1.97	6958	2.06	2375.50
002710406-03	OBS	No	4.253796	134.213520	358.7	45.578	12.1	14.0	1.97	6958	4.37	2375.82

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002710406-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV
002710406-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—HALO_GHOST
002710406-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—CENT_FEW_MEAS

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

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

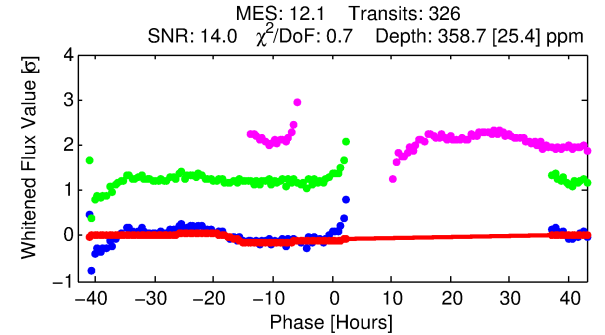
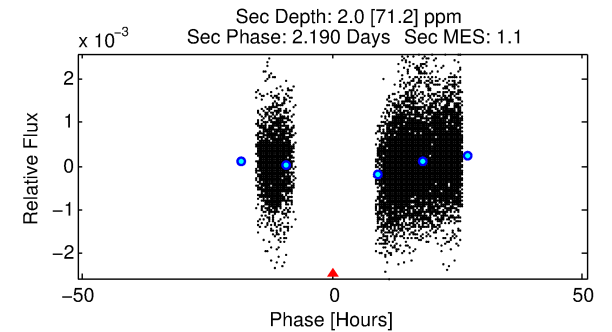
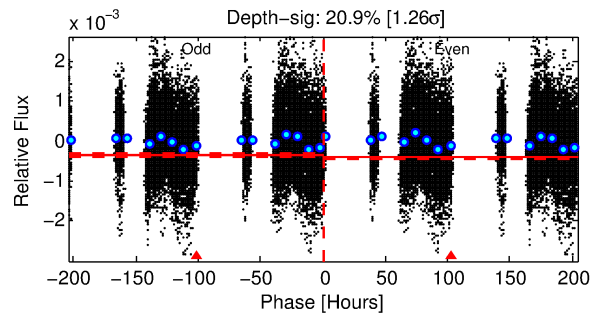
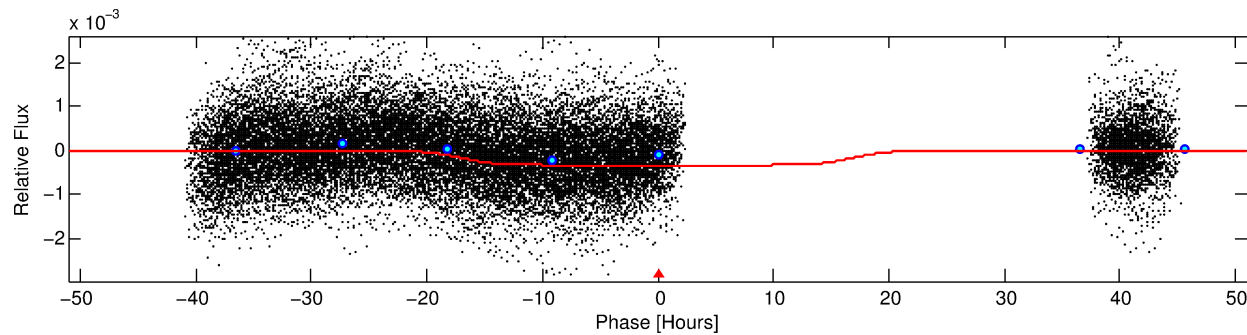
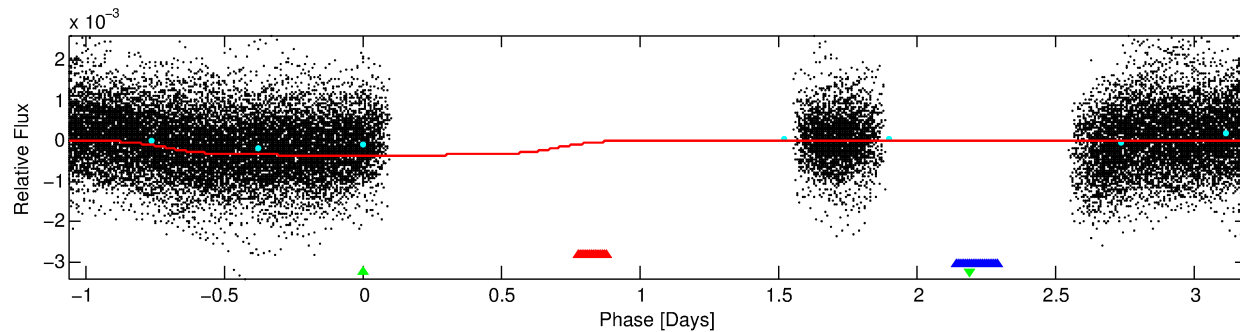
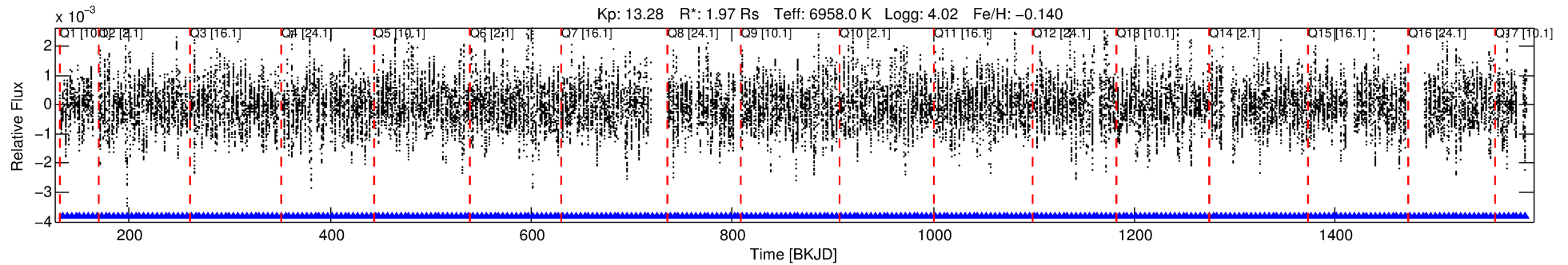
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002710406-03

No Significant Match Found

DV One-Page Summary

KIC: 2710406 Candidate: 3 of 3 Period: 4.254 d



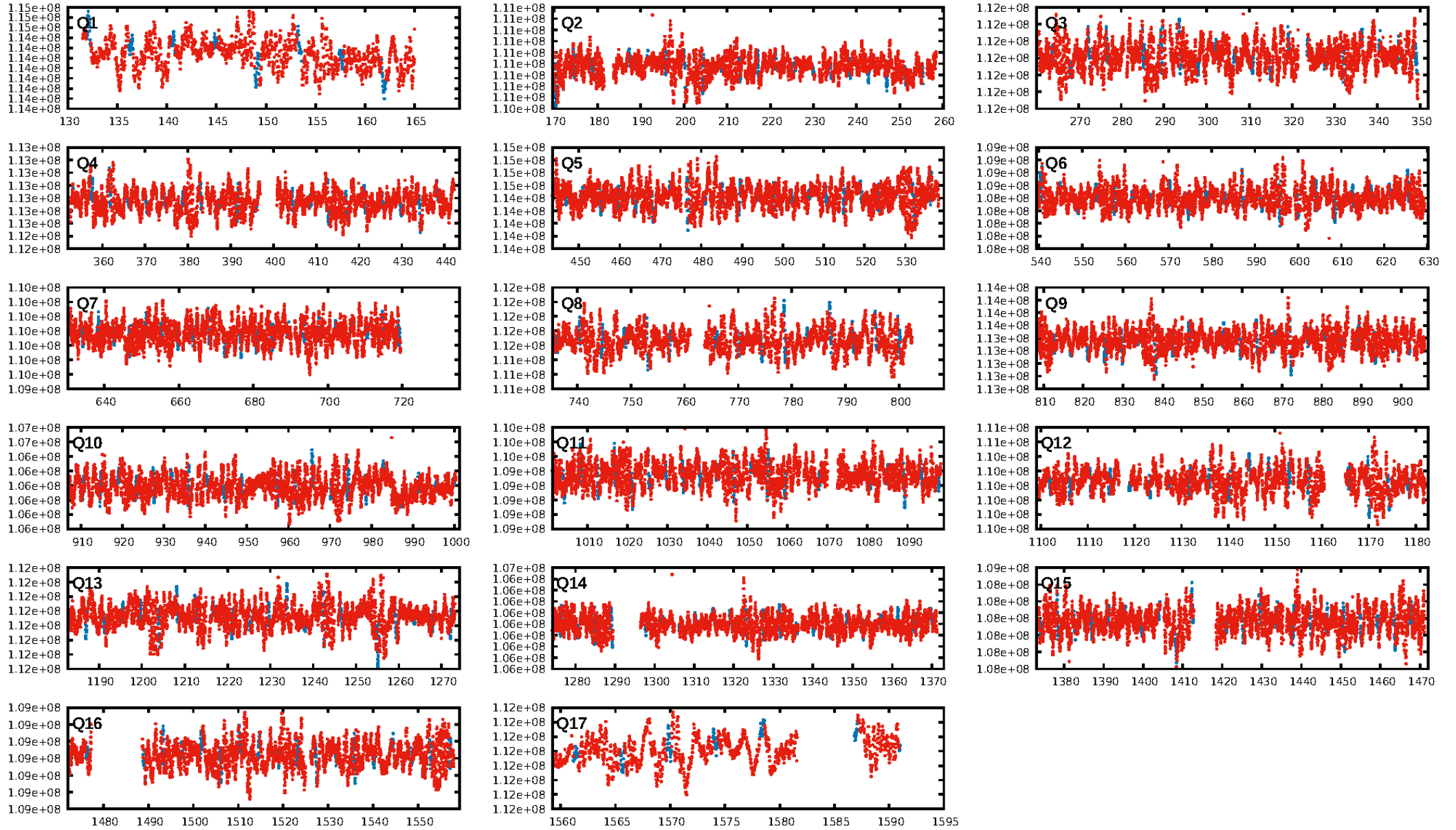
DV Fit Results:

Period = 4.25380 [0.00014] d
Epoch = 134.2135 [0.1129] BKJD
Rp/R* = 0.0203 [0.0008]
a/R* = 1.02 [0.01]
b = 0.91 [0.04]
Seff = 2375.82 [651.38]
Teff = 1780 [122] K
Rp = 4.37 [0.87] Re
a = 0.0585 [0.0103] AU
Ag = 0.20 [7.03] [-0.11 σ]
Teffp = 1837 [16293] K [0.00 σ]

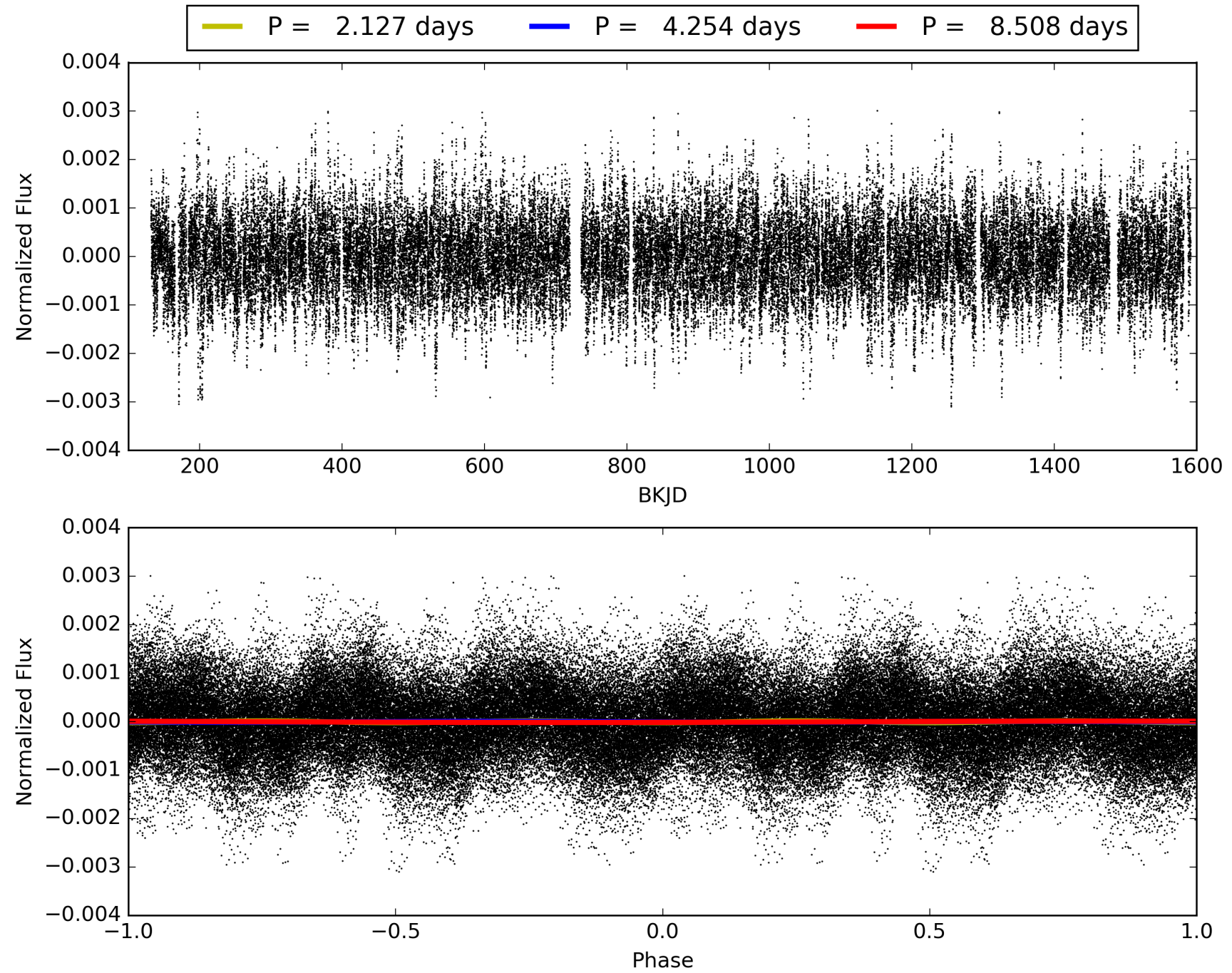
DV Diagnostic Results:

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 [311/311]
GhostDiagnostic-chr: 1.05
Centroid-sig: 46.0%
Centroid-so: 0.246 arcsec [4.23 σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 0.00 [0/17]

TCE 002710406-03, PDC Light Curves

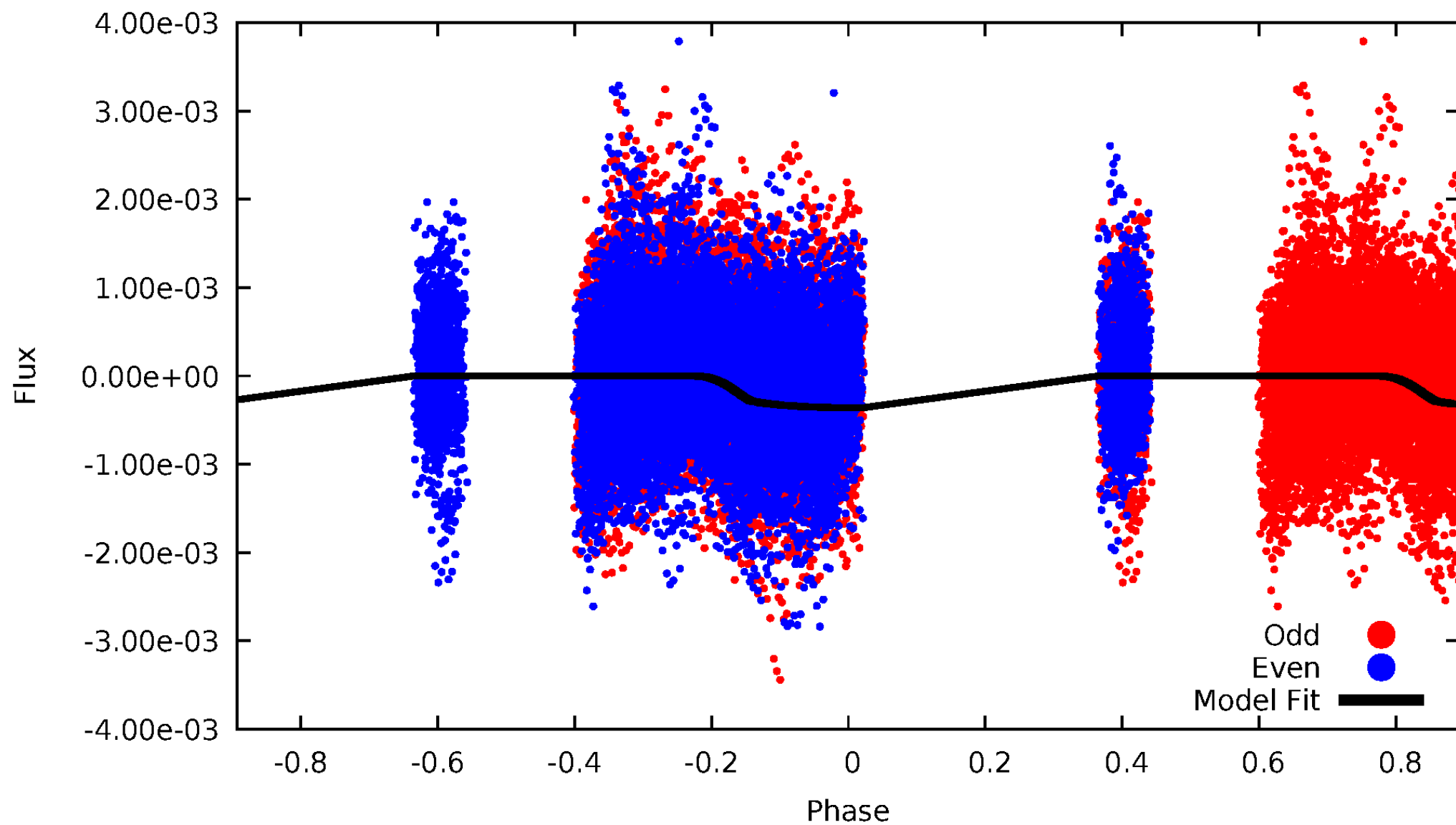


TCE 002710406-03



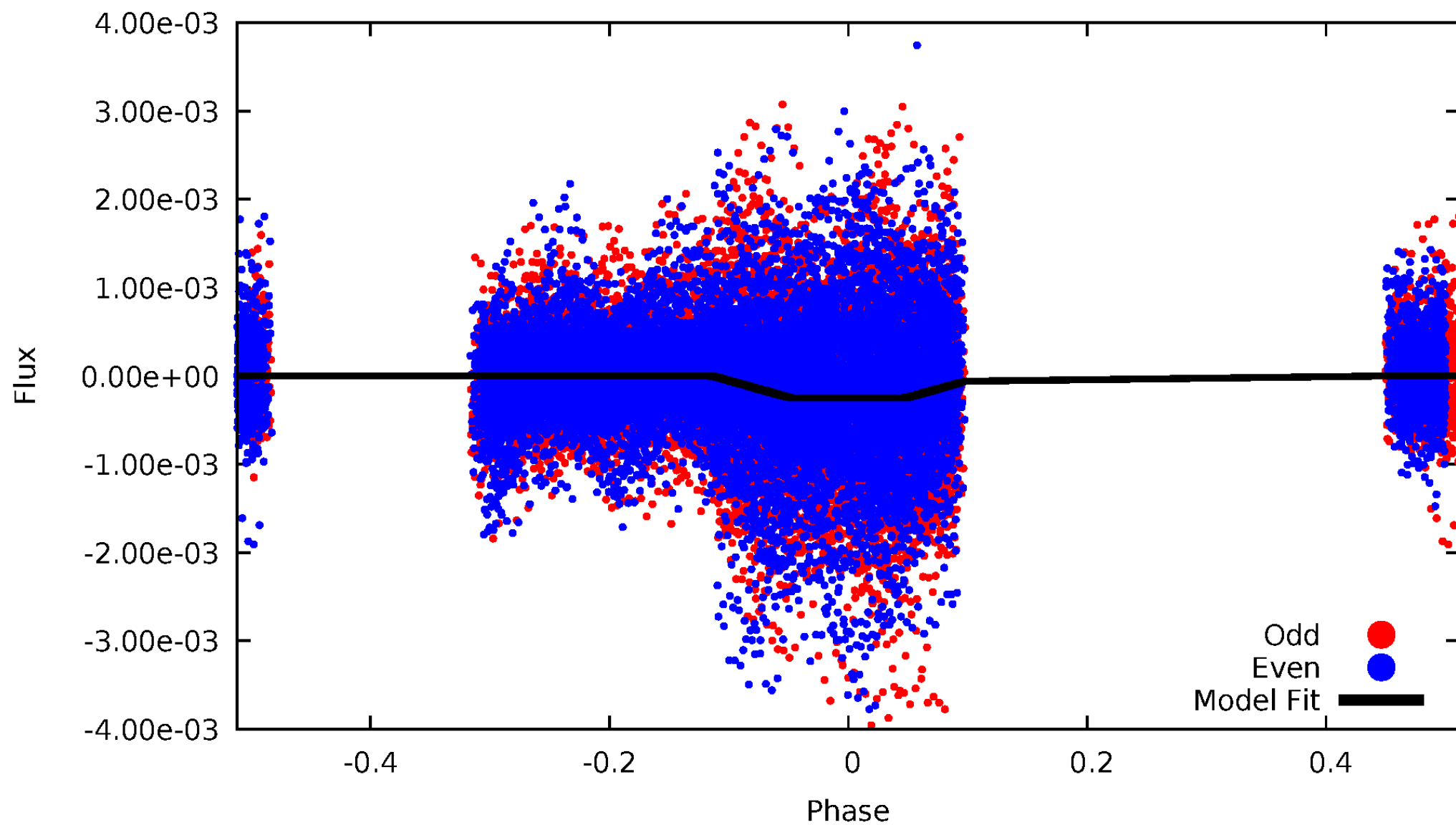
DV Odd/Even

TCE 002710406-03



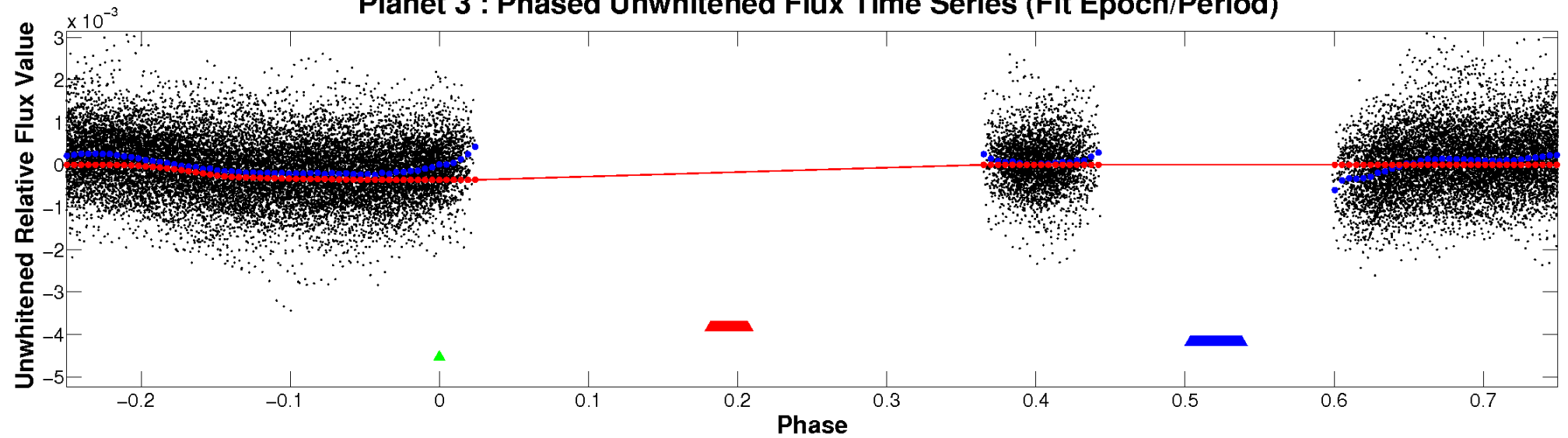
ALT Odd/Even

TCE 002710406-03

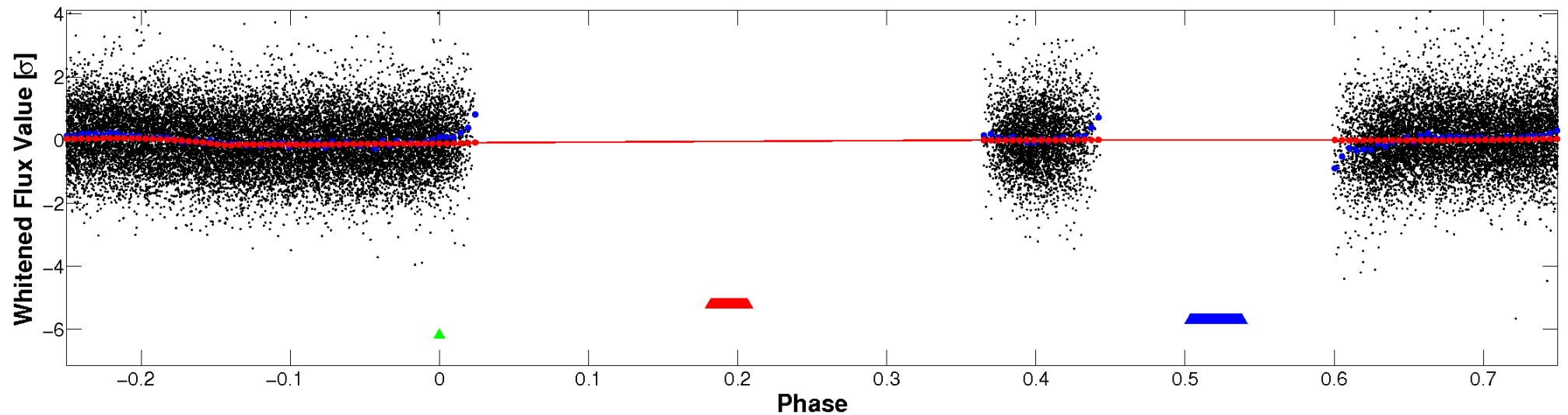


Non-Whitened Vs. Whitened Light Curve

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

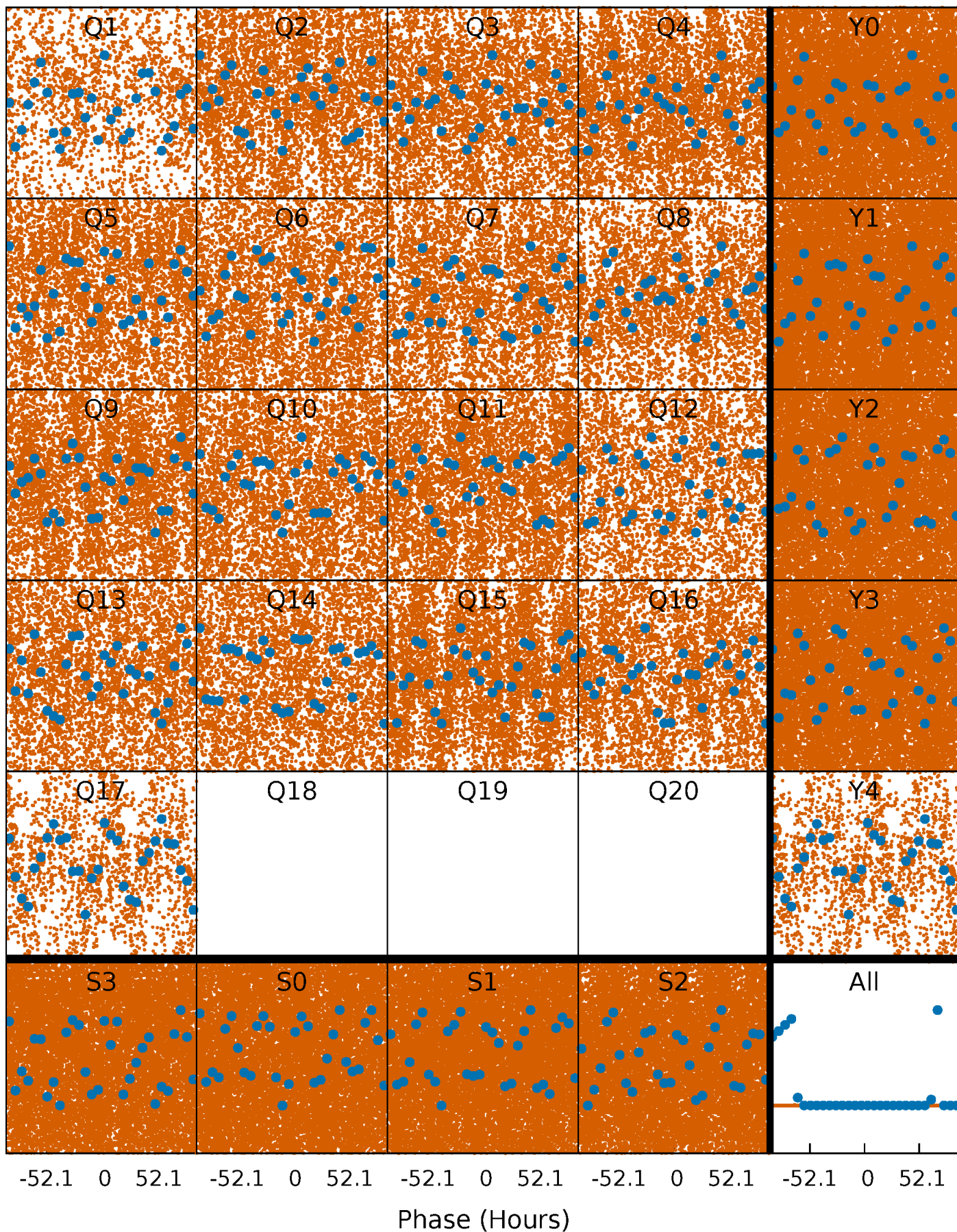


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



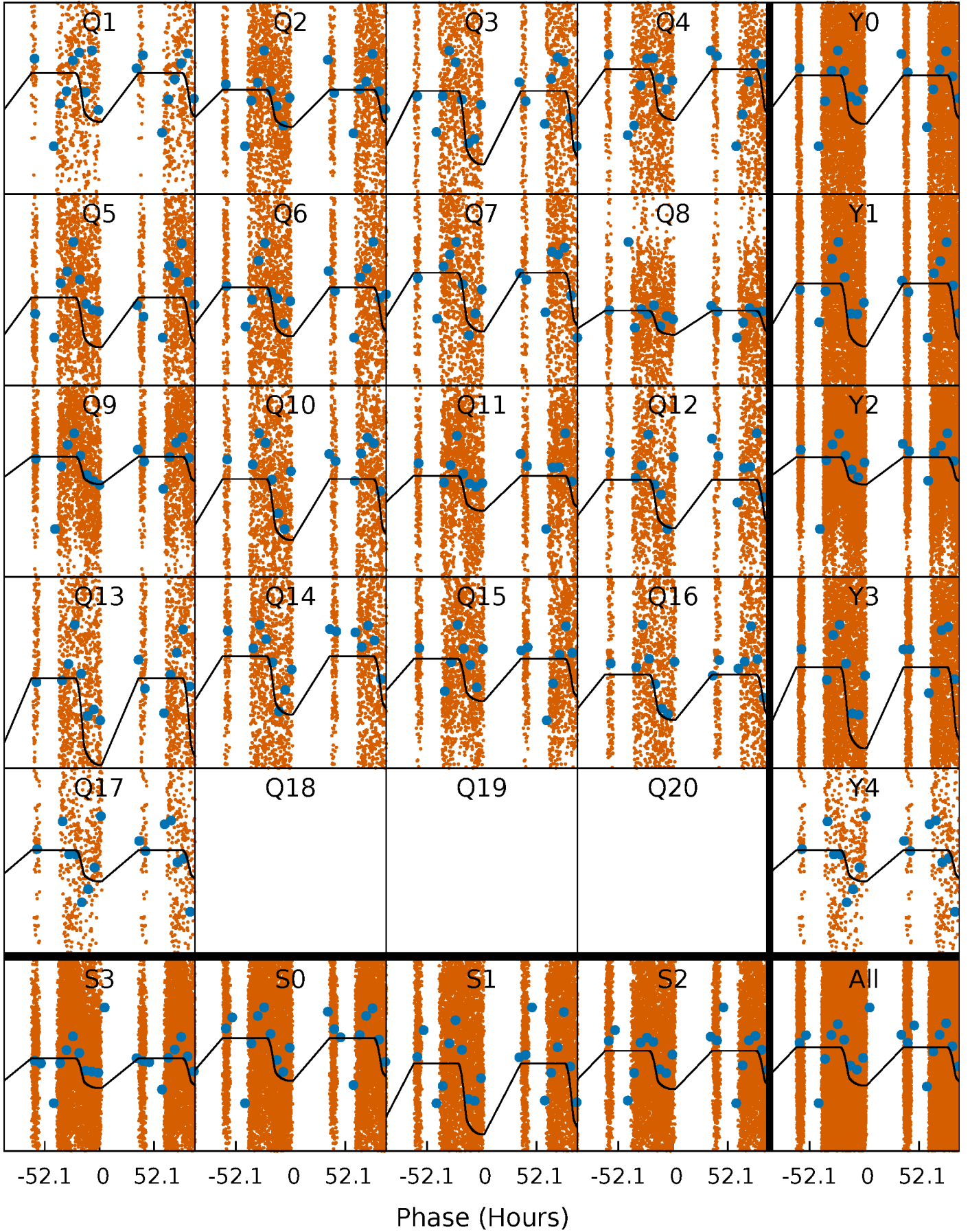
PDC Quarter-Phased Transit Curves

TCE 002710406-03 P= 4.253796 Days $T_0=134.213520$ (BKJD)



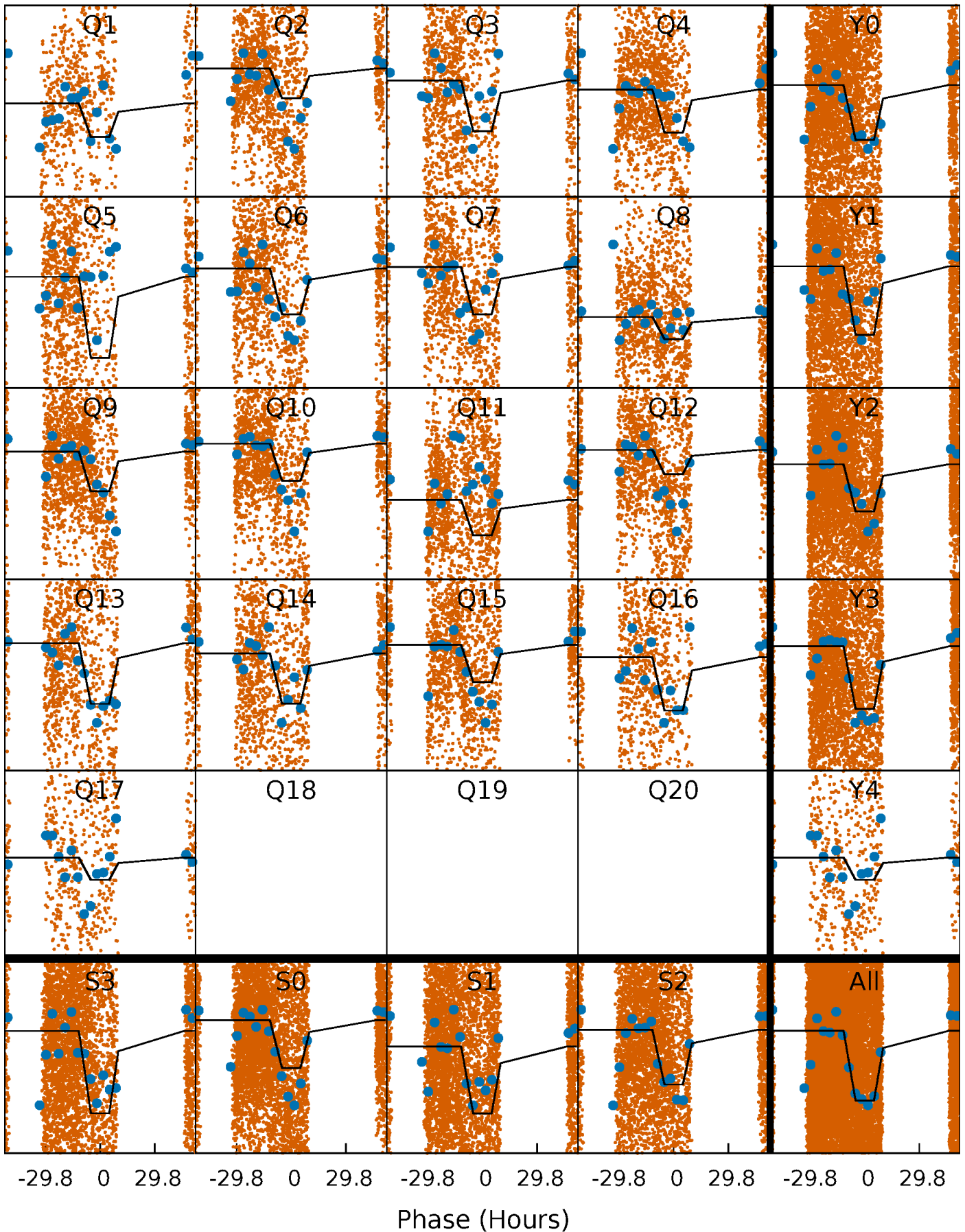
DV Quarter-Phased Transit Curves

TCE 002710406-03 P= 4.253796 Days $T_0=134.213520$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

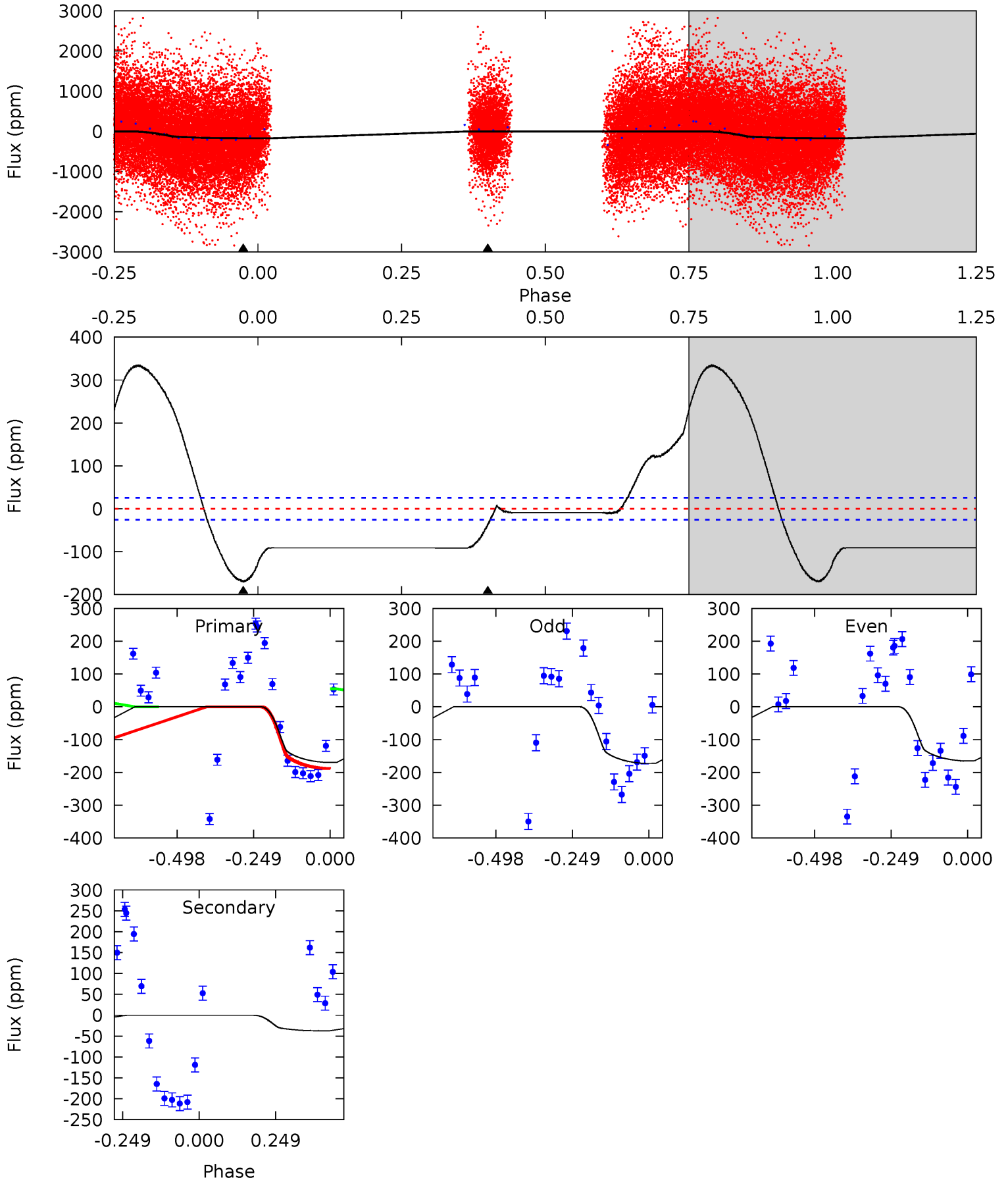
TCE 002710406-03 P= 4.253927 Days $T_0=133.852669$ (BKJD)



DV Model-Shift Uniqueness Test

002710406-03, P = 4.253796 Days, E = 129.959724 Days

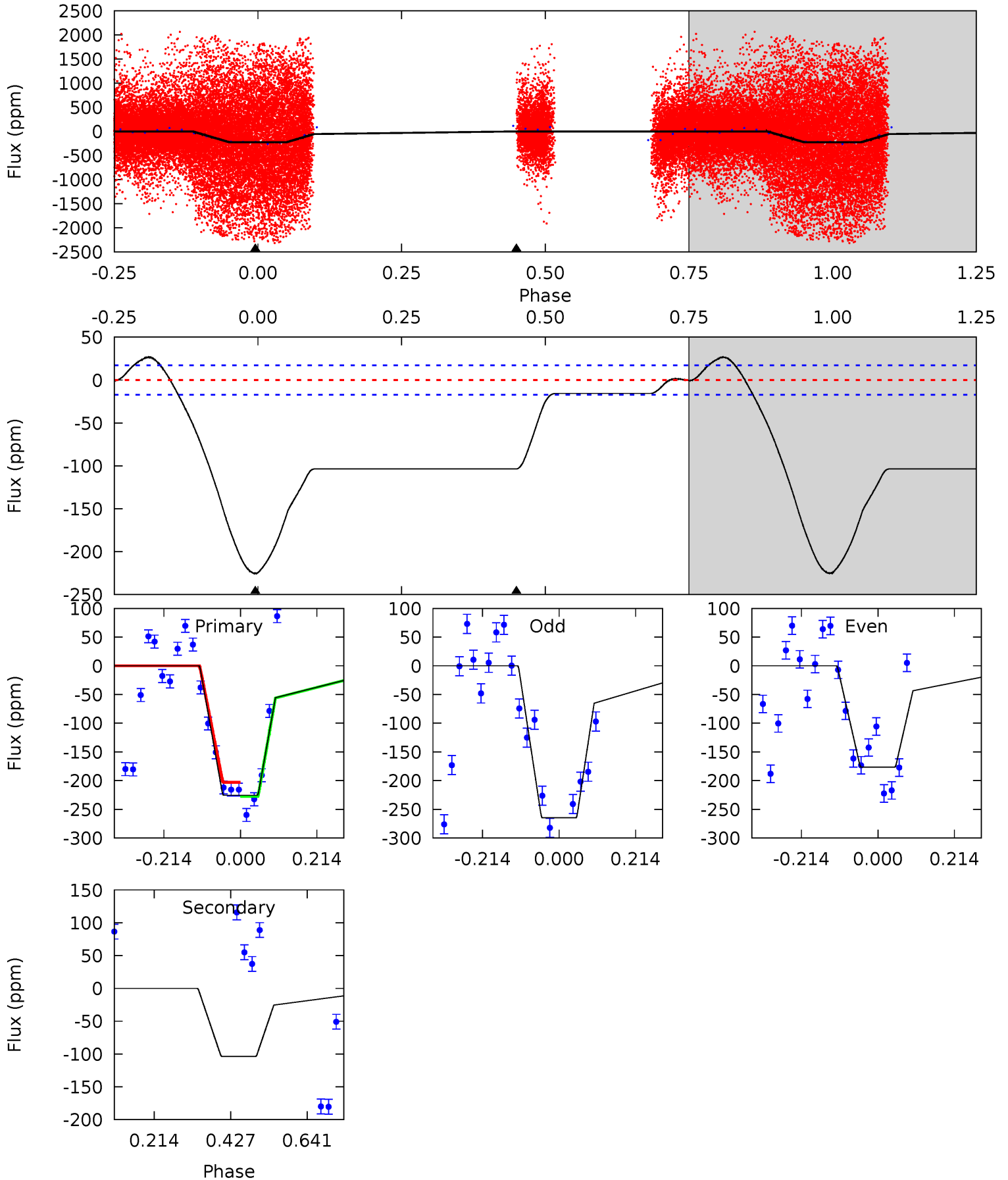
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.6	6.34	0	0	4.37	1.15	6.79	28.6	28.6	6.34	6.34	0.66	1.03	0.66	5.40



Alt Model-Shift Uniqueness Test

002710406-03, P = 4.253927 Days, E = 129.598742 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
57.8	26.6	0	0	4.40	1.24	1.06	57.8	57.8	26.6	26.6	11.3	1.27	0.11	2.14



Stellar Parameters For KIC 002710406

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6958^{+73}_{-83}	$4.019^{+0.154}_{-0.126}$	$-0.140^{+0.150}_{-0.150}$	$1.968^{+0.385}_{-0.385}$	$1.476^{+0.119}_{-0.132}$	$0.273^{+0.212}_{-0.093}$
	+1%/-1%	+4%/-3%	+107%/-107%	+20%/-20%	+8%/-9%	+78%/-34%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 002710406-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-38 ± 6	$4.35^{+0.50}_{-0.50}$	2479^{+133}_{-127}	4025^{+135}_{-134}	$3.712^{+1.193}_{-0.820}$
Alt.	-104 ± 4	$3.33^{+0.39}_{-0.40}$	2480^{+127}_{-136}	5581^{+159}_{-144}	17^{+5}_{-3}

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

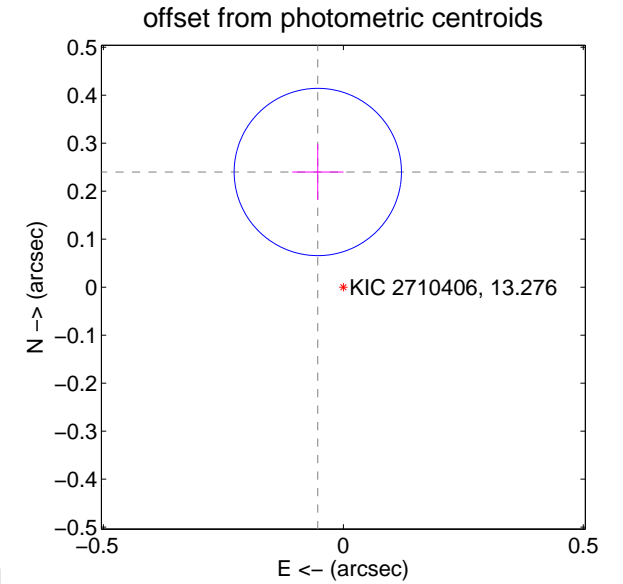
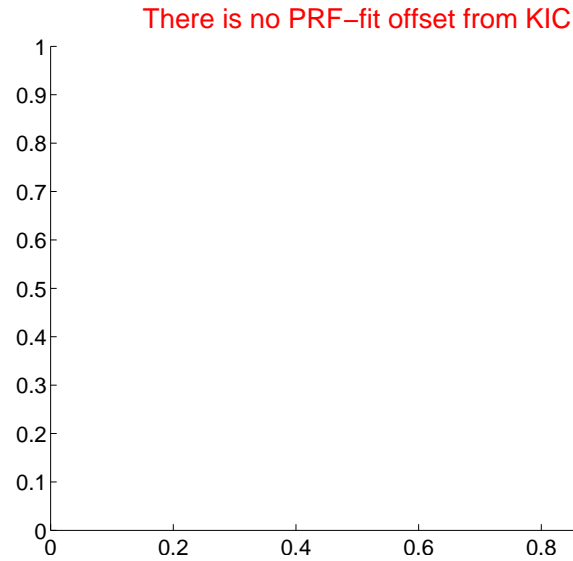
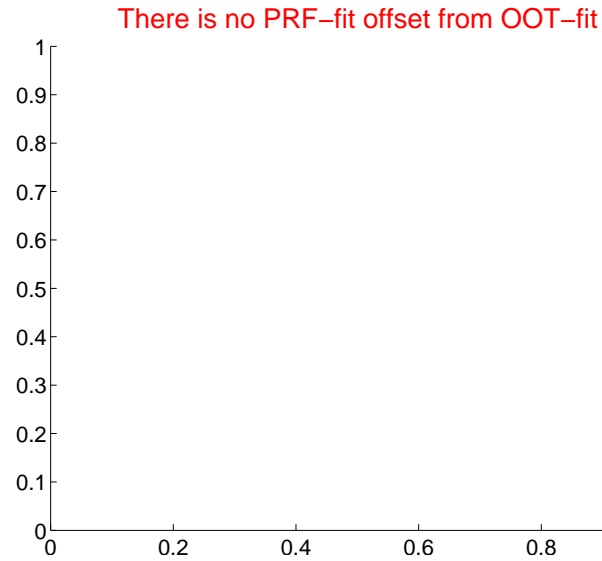
DV Centroid Data

Supplemental centroid analysis for 002710406-03. Kepler magnitude: 13.28. Transit SNR 13.96

There are 0 quarters with good PRF difference image offsets

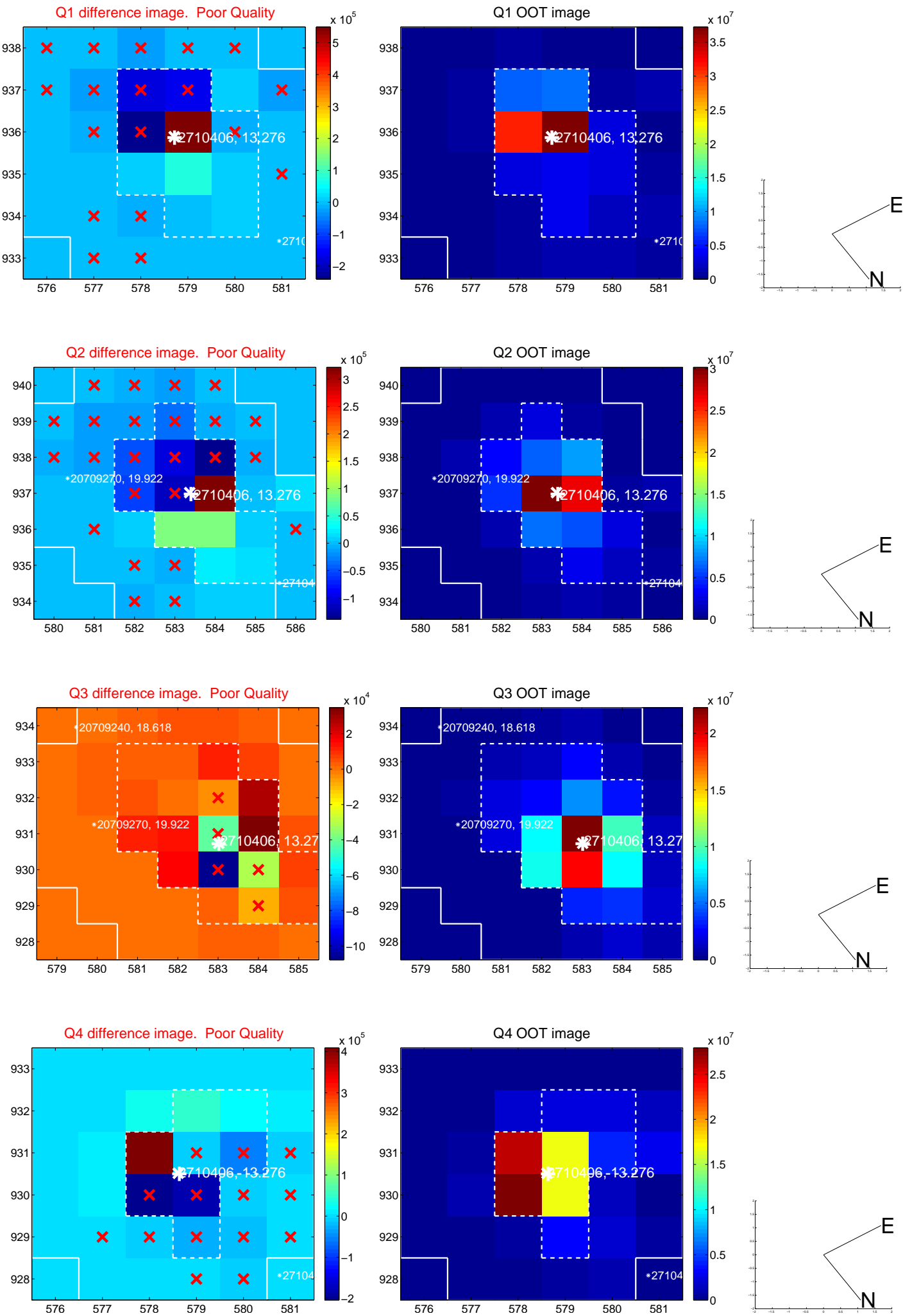
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	0.25 ± 0.06	4.23	0.05 ± 0.05	0.24 ± 0.06

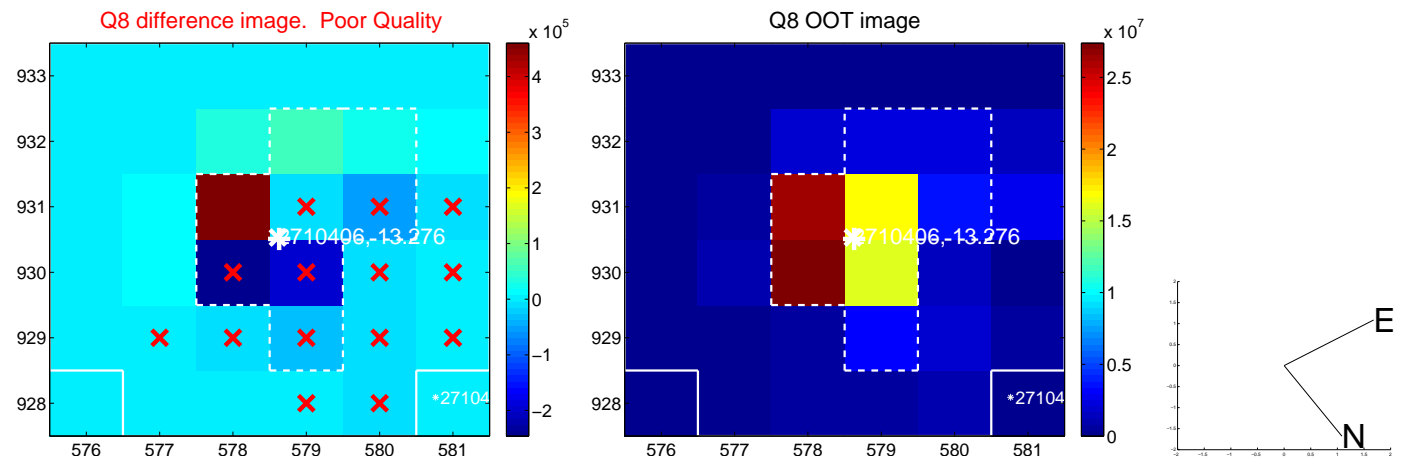
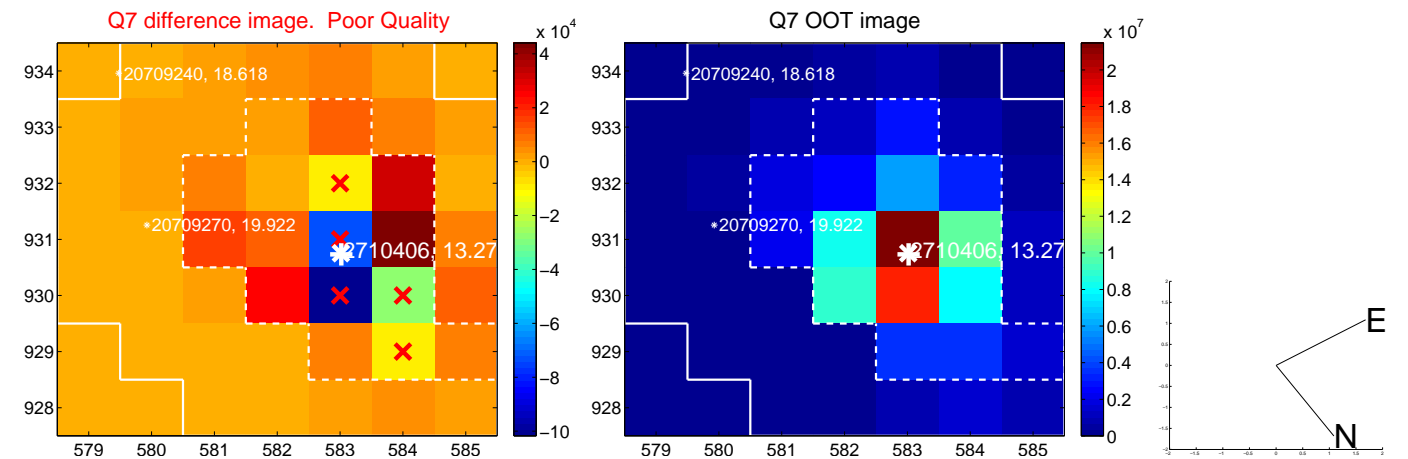
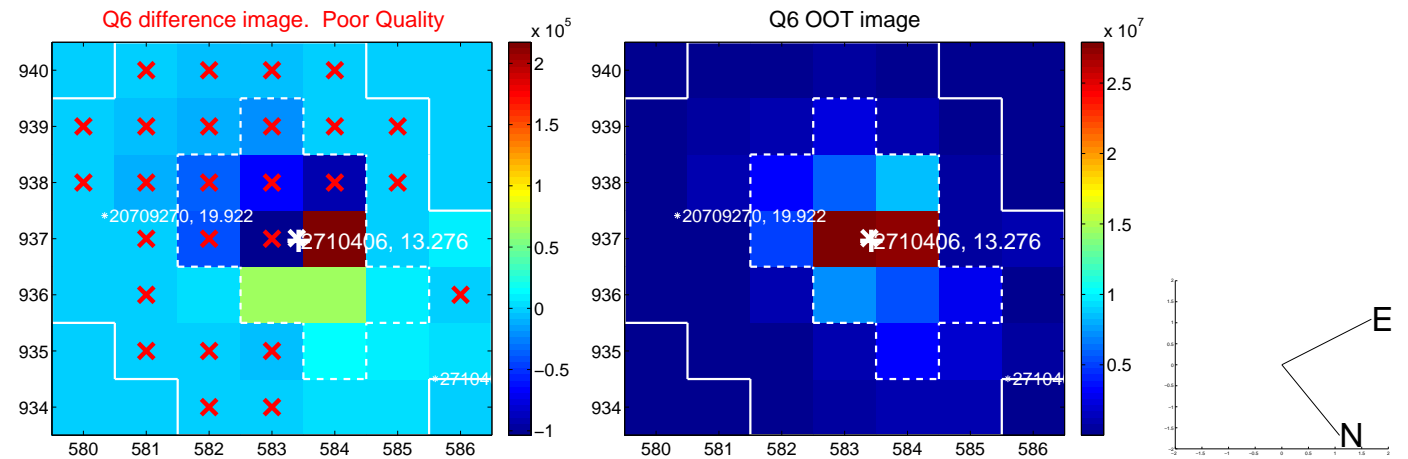
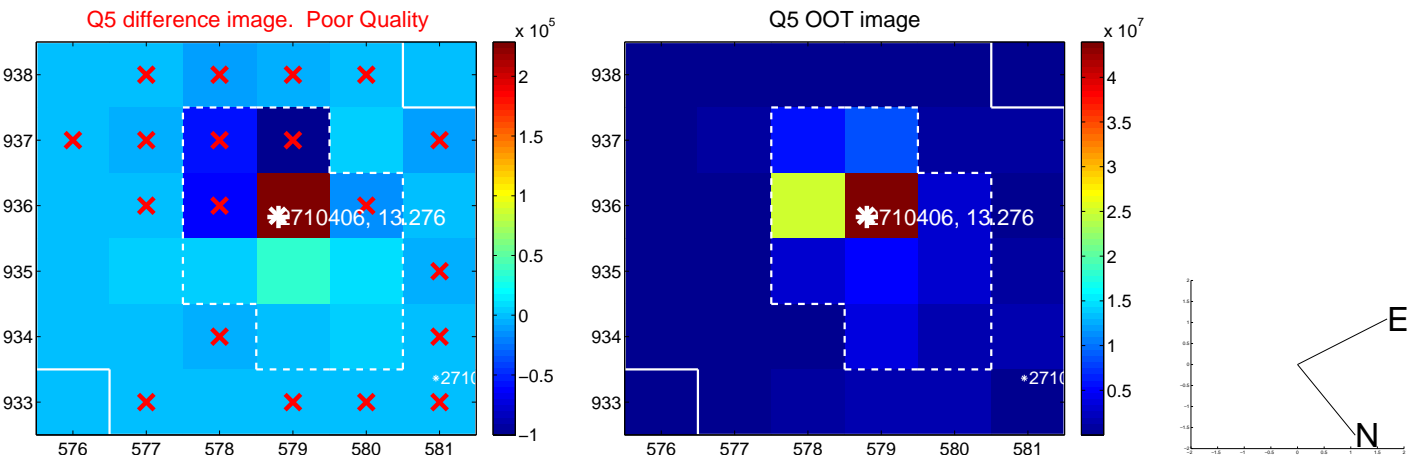


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

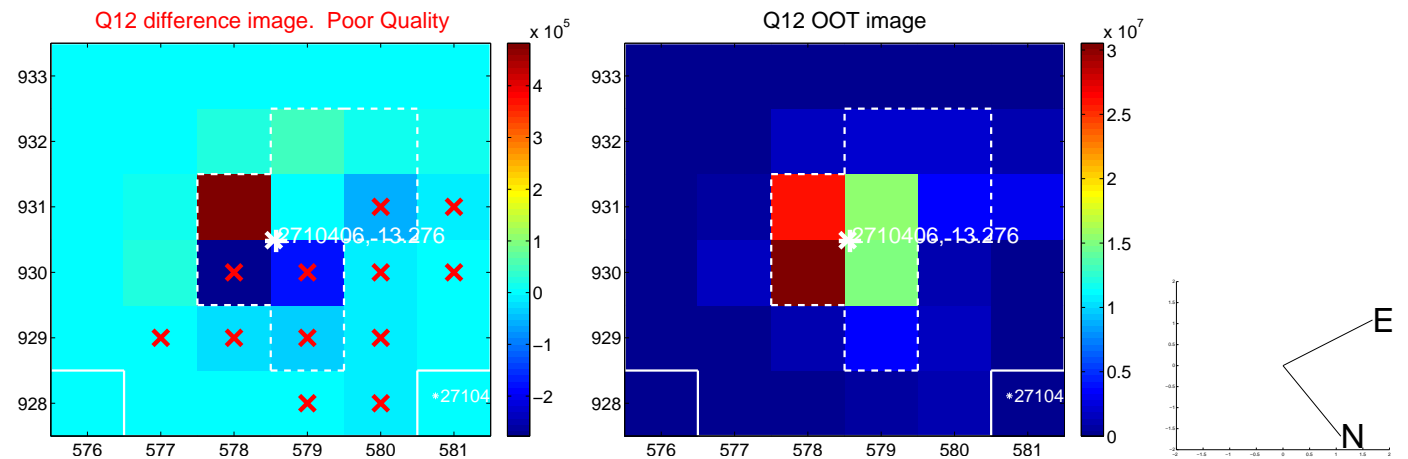
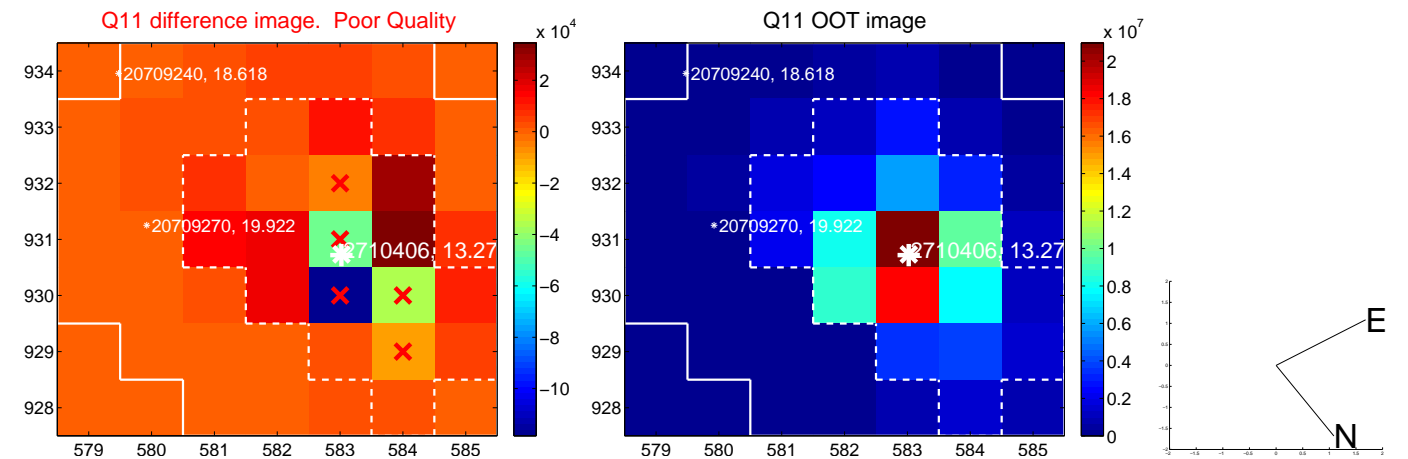
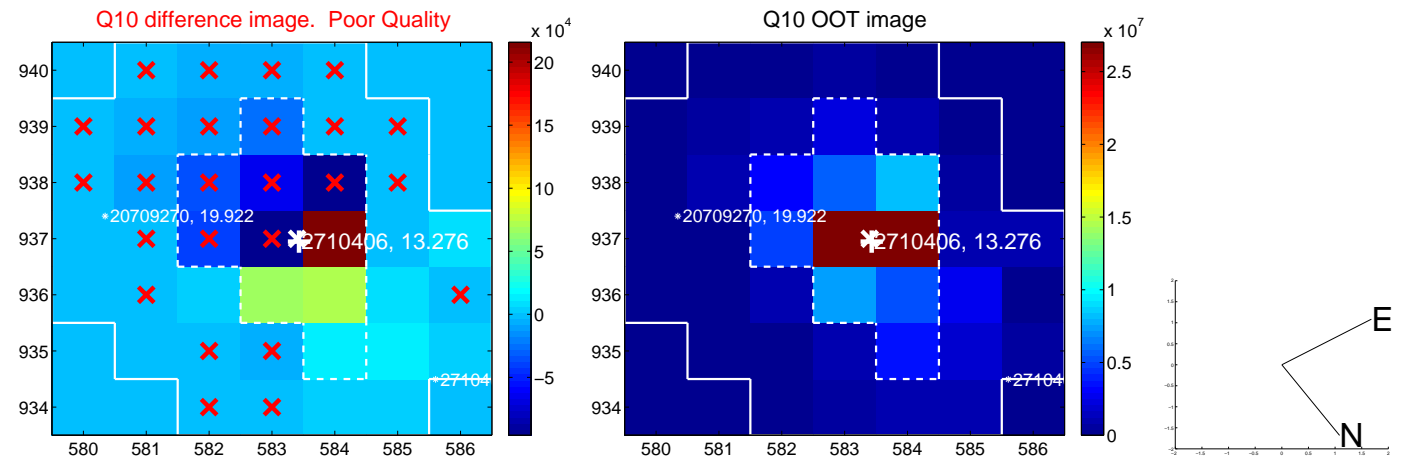
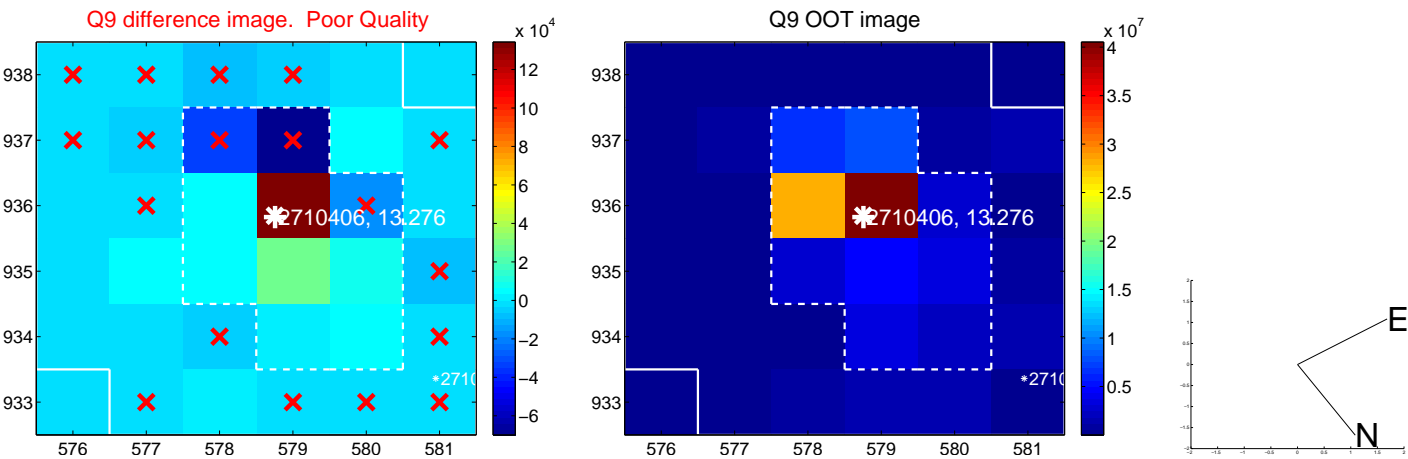
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



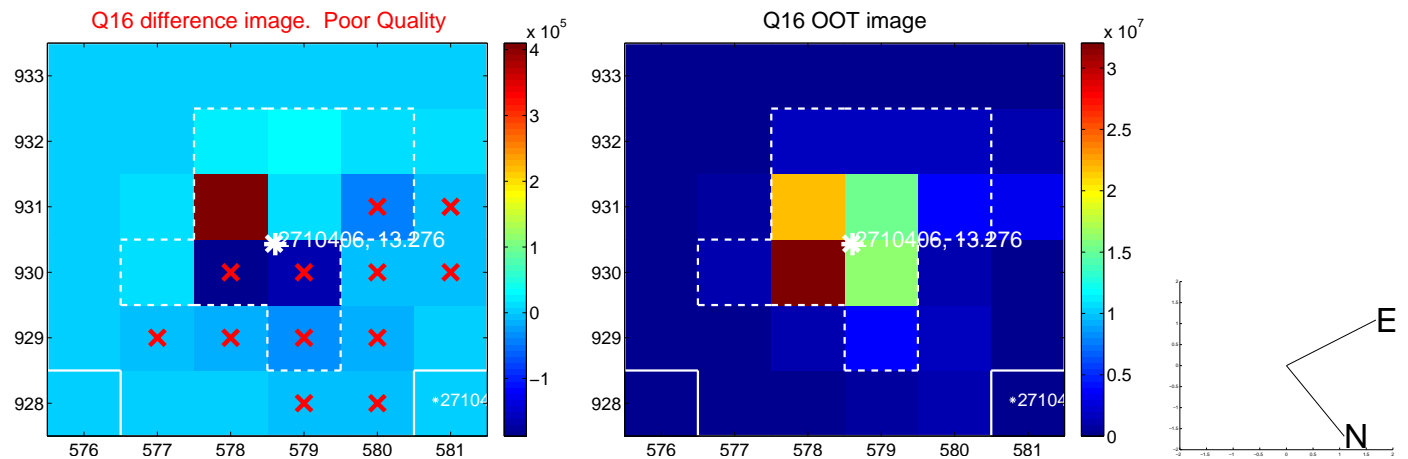
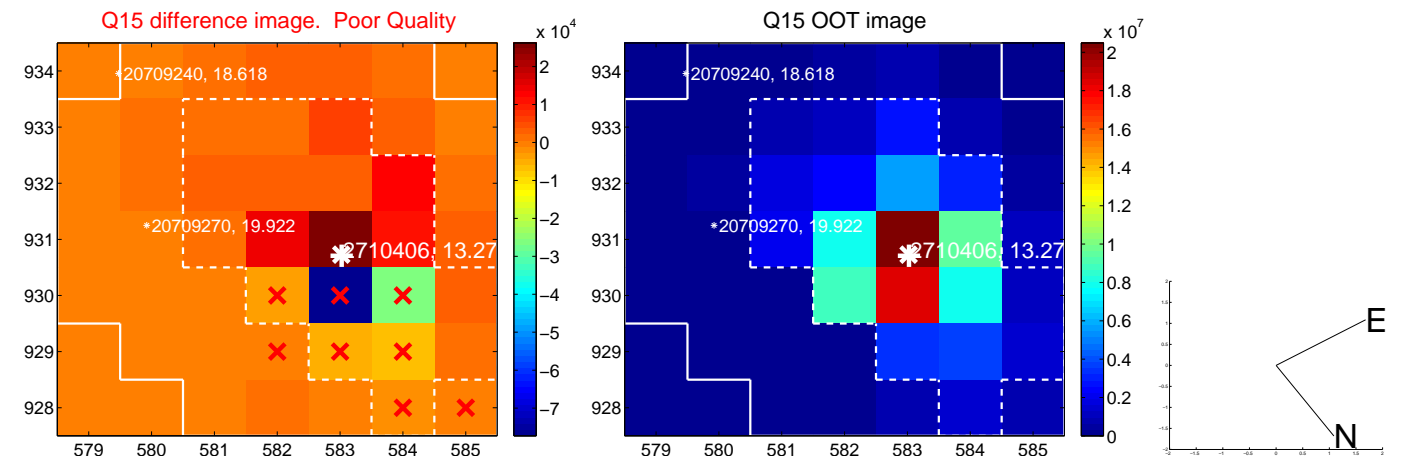
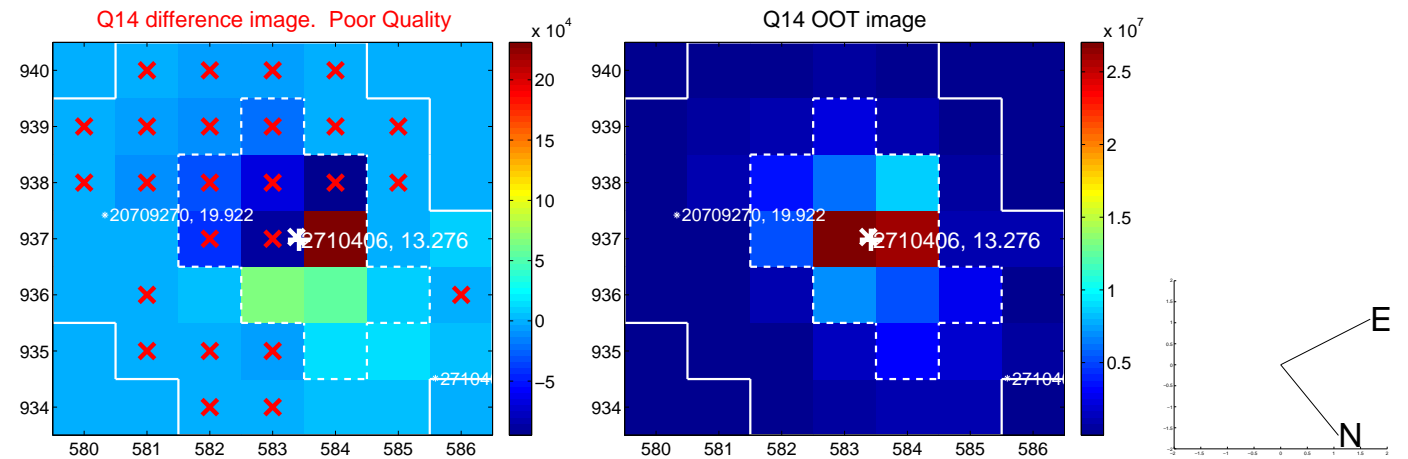
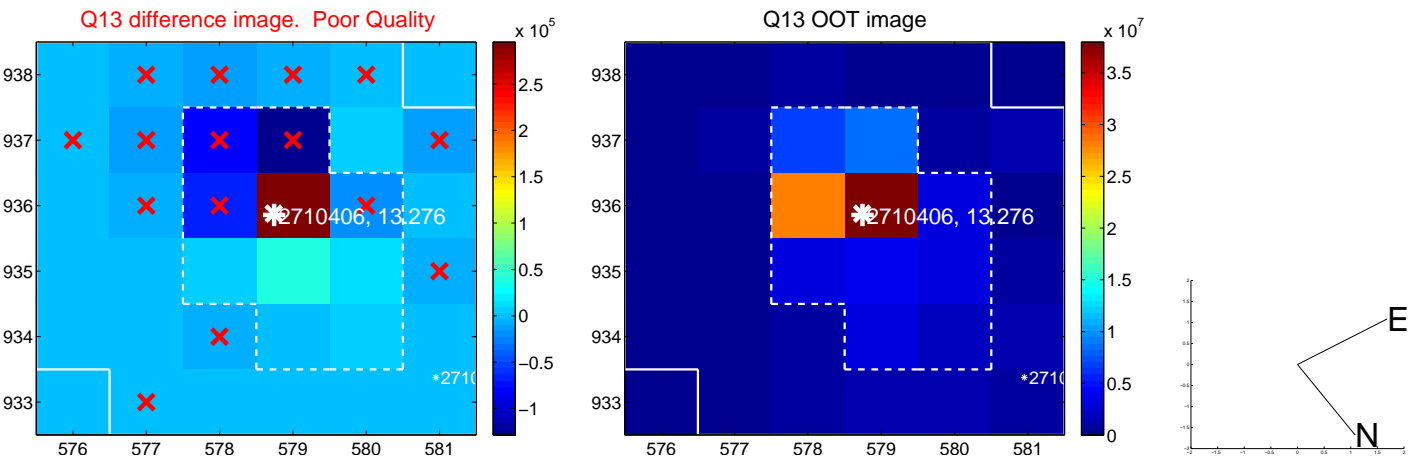
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



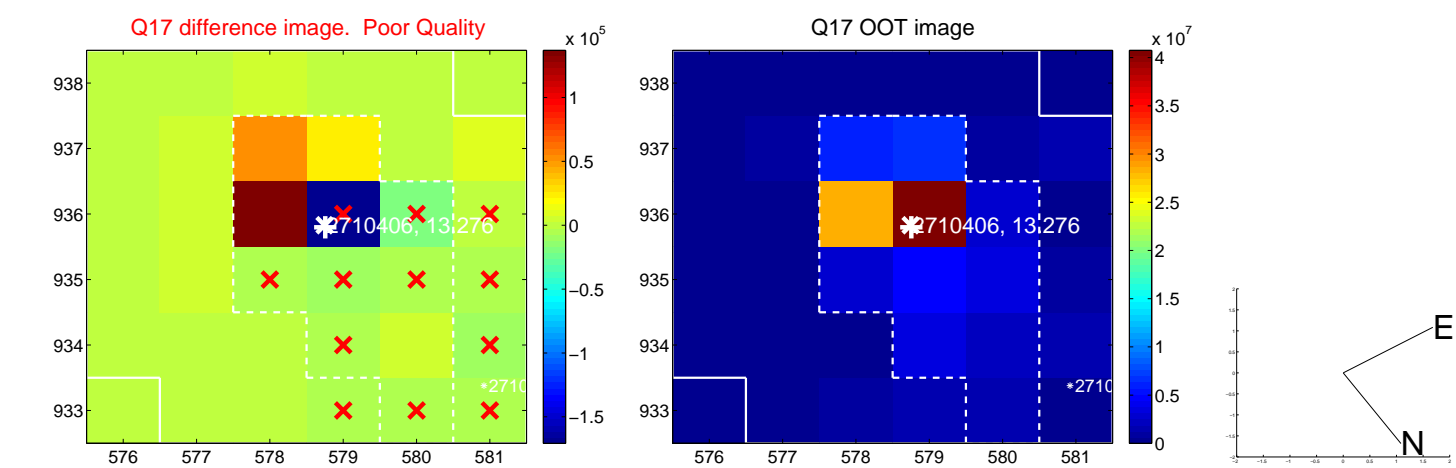
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



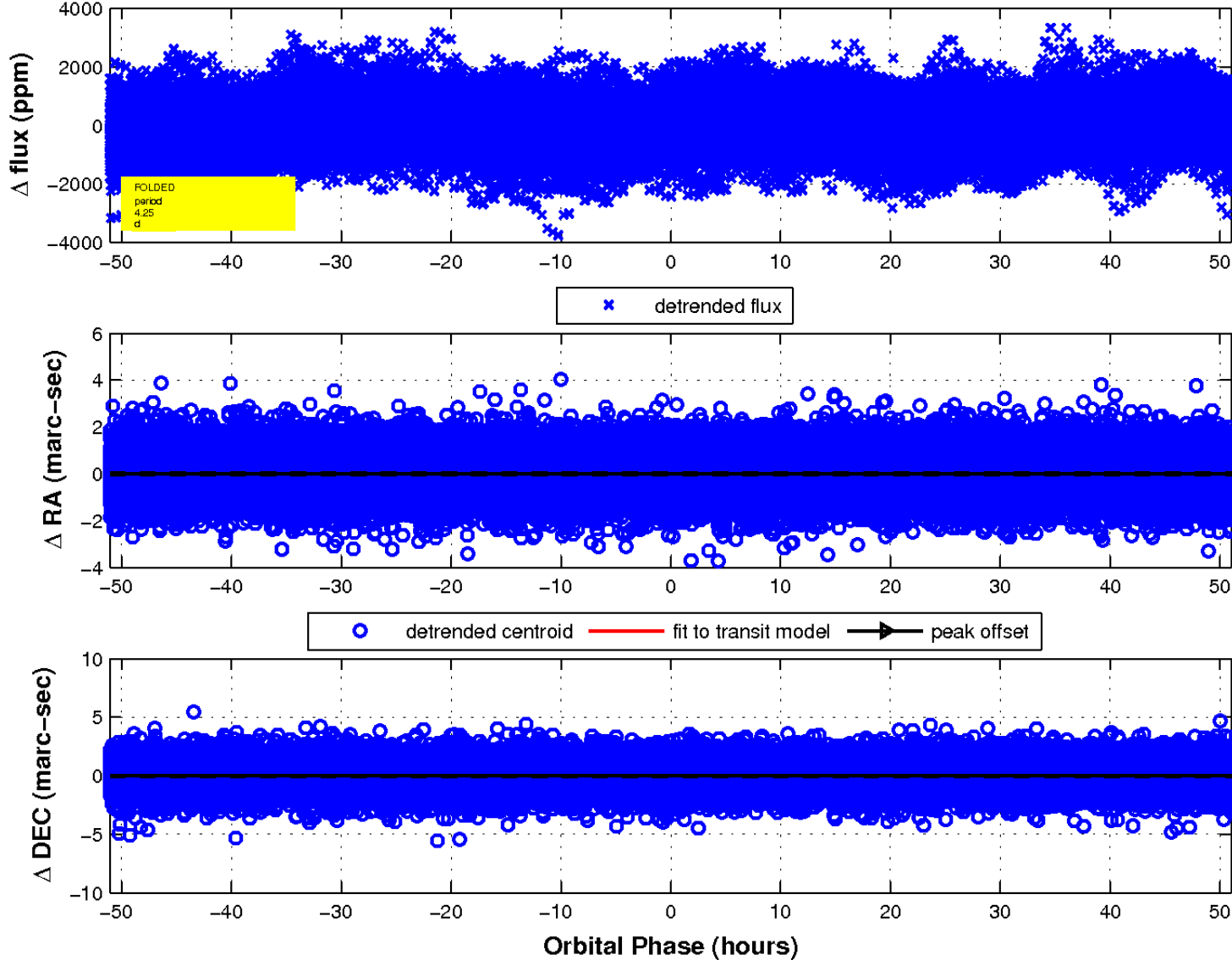
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

