

KIC 004938281

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})
004938281-01	OBS	No	4.354683	131.656740	49.1	9.554	8.5	8.2	2.11	8092	1.72	4096.59
004938281-02	OBS	No	4.354515	134.672226	69.3	7.886	10.3	10.5	2.11	8092	2.01	4096.80
004938281-03	OBS	No	4.355660	133.003341	46.8	21.558	8.4	10.3	2.11	8092	1.46	4095.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004938281-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004938281-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD
004938281-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

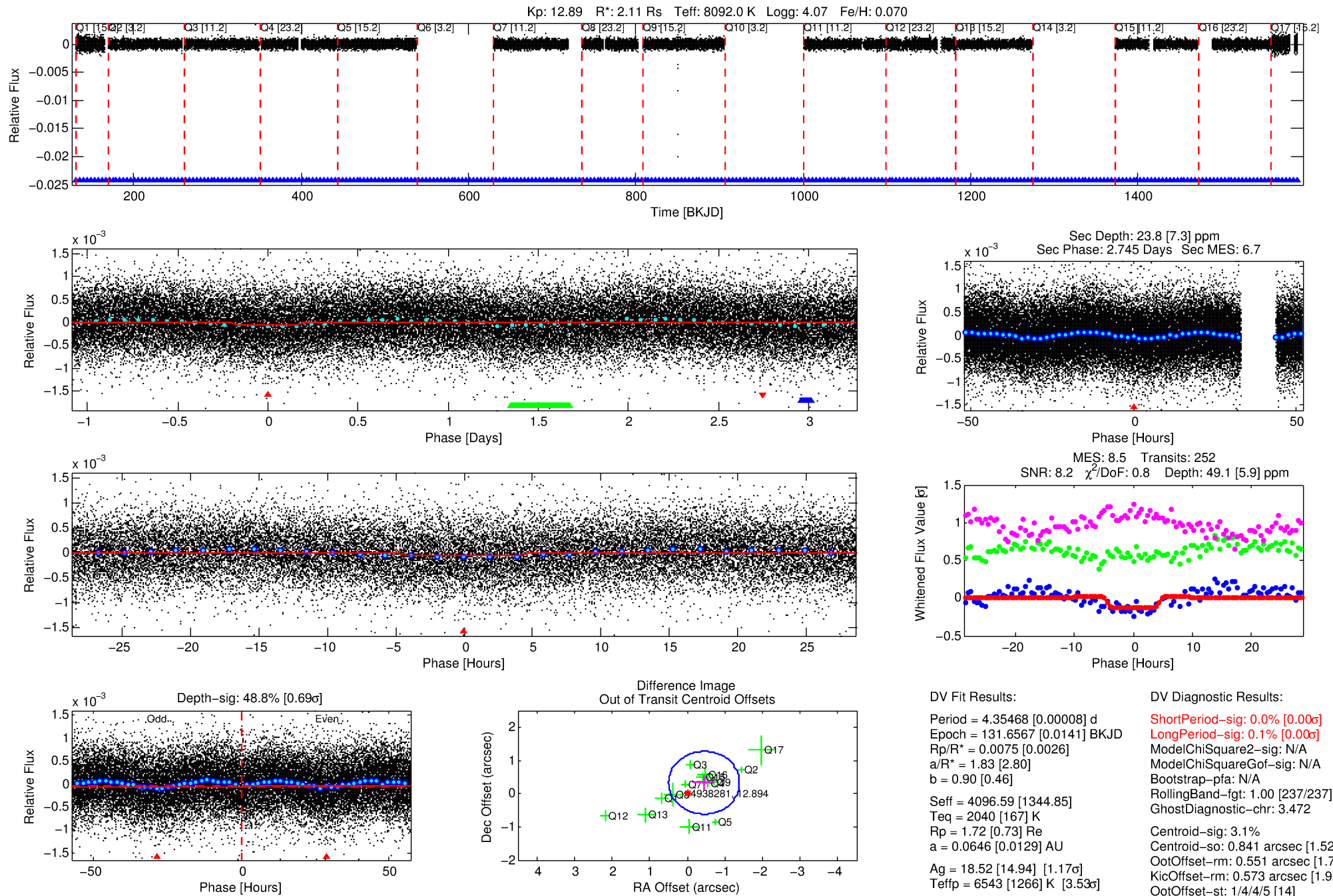
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004938281-01

No Significant Match Found

DV One-Page Summary

KIC: 4938281 Candidate: 1 of 3 Period: 4.355 d



DV Fit Results:

Period = 4.35468 [0.00008] d
Epoch = 131.6567 [0.0141] BKJD
Rp/R* = 0.0075 [0.0026]
a/R* = 1.83 [2.80]
b = 0.90 [0.46]
Seff = 4096.59 [1344.85]
Teq = 2040 [167] K
Rp = 1.72 [0.73] Re
a = 0.0646 [0.0129] AU
Ag = 18.52 [14.94] [1.17 σ]
Teff = 6543 [1266] K [3.53 σ]

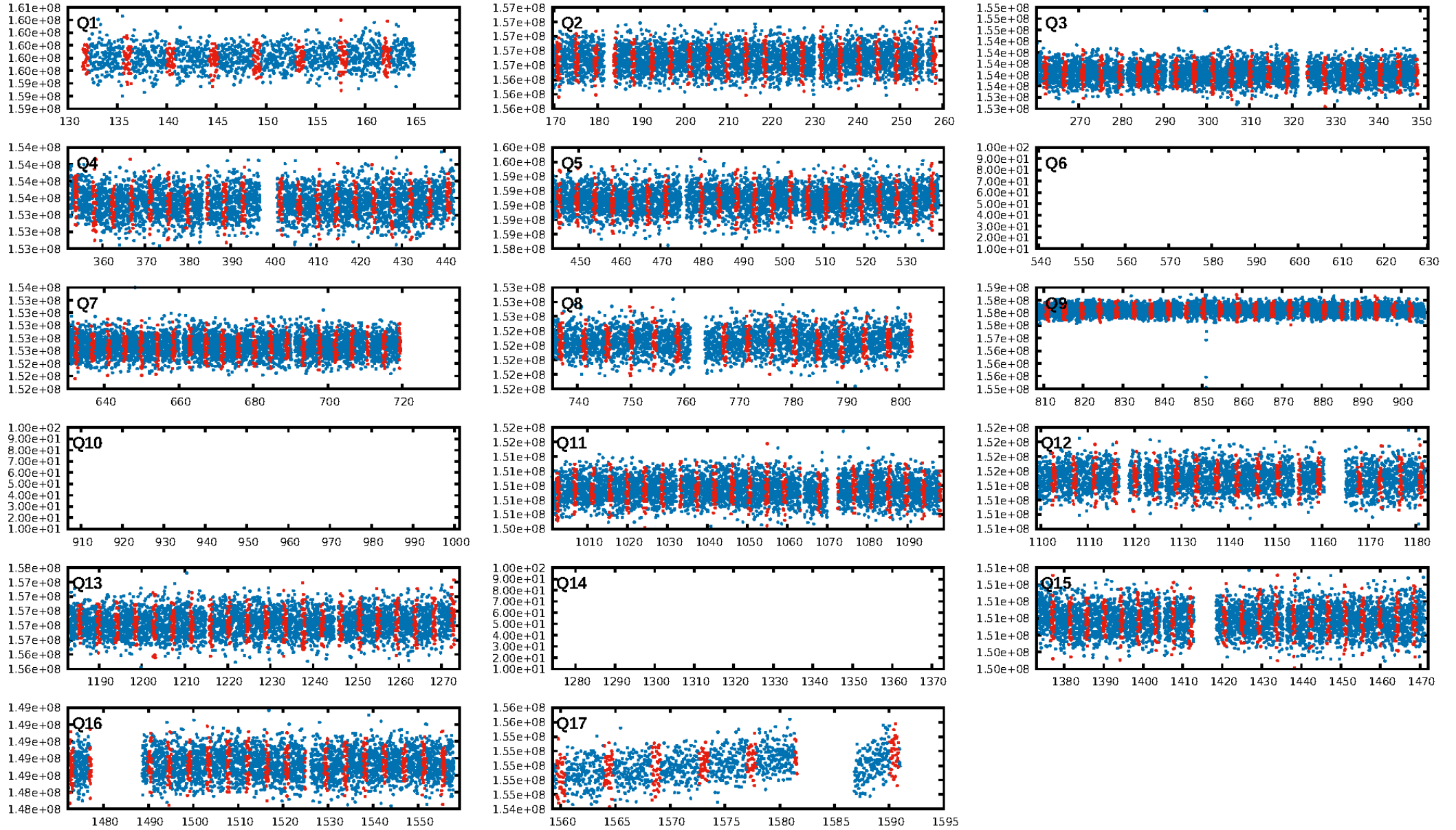
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: 0.1% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [237/237]
GhostDiagnostic-chr: 3.472
Centroid-sig: 3.1%
Centroid-so: 0.841 arcsec [1.52 σ]
OotOffset-rm: 0.551 arcsec [1.75 σ]
KicOffset-rm: 0.573 arcsec [1.92 σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 0.93 [13/14]
DiffImageOverlap-fno: 1.00 [14/14]

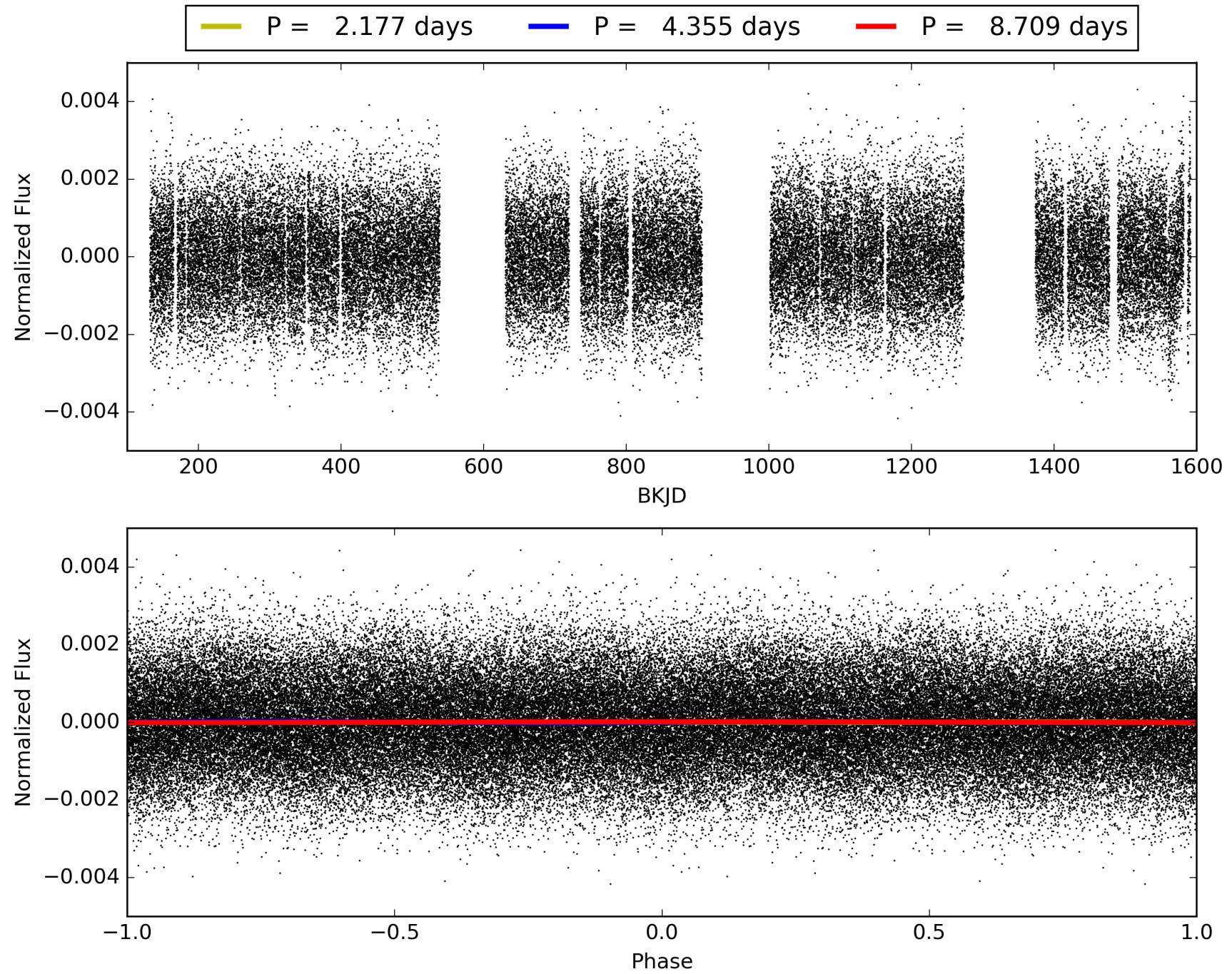
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:26:32 Z

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

TCE 004938281-01, PDC Light Curves

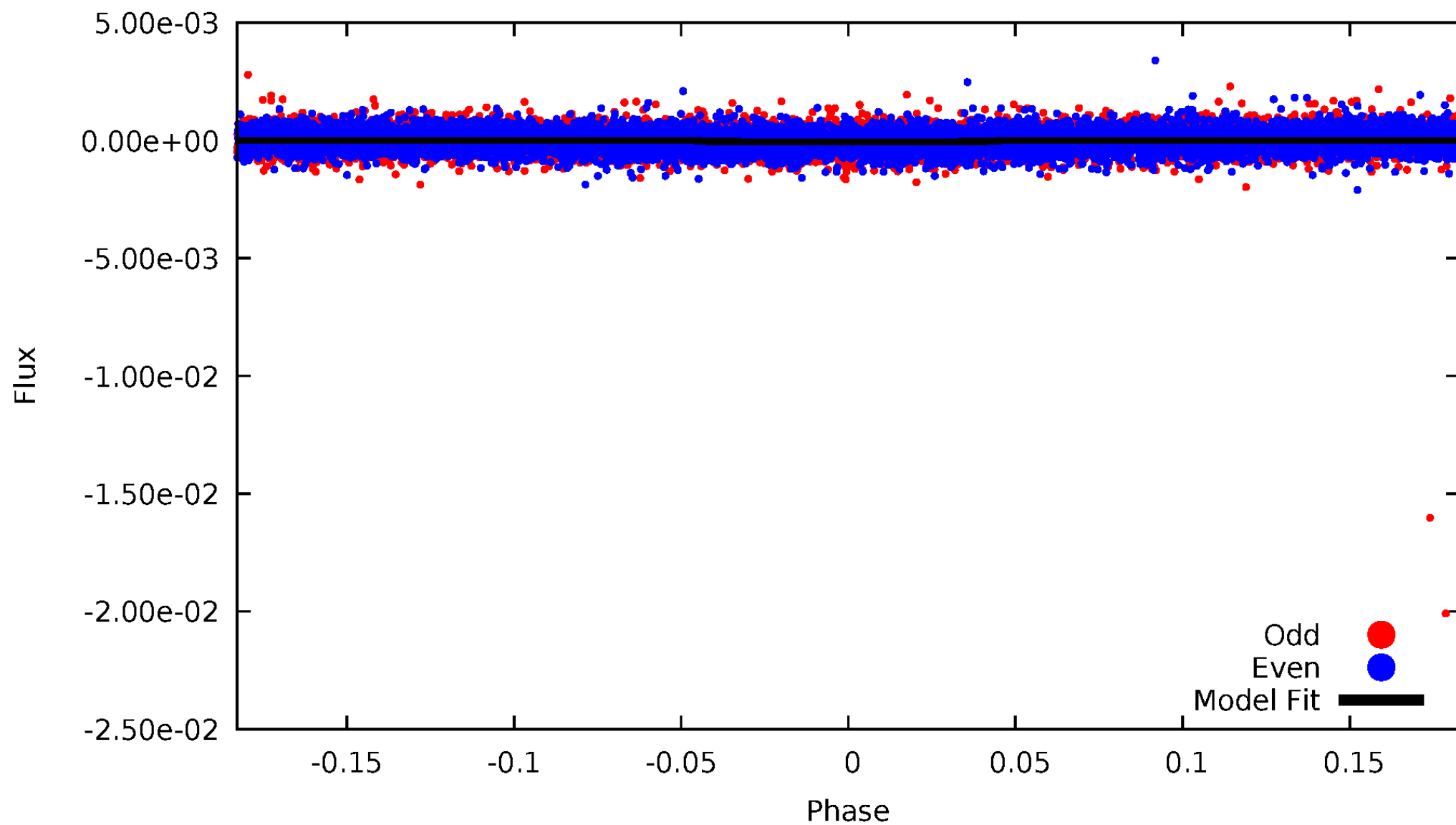


TCE 004938281-01



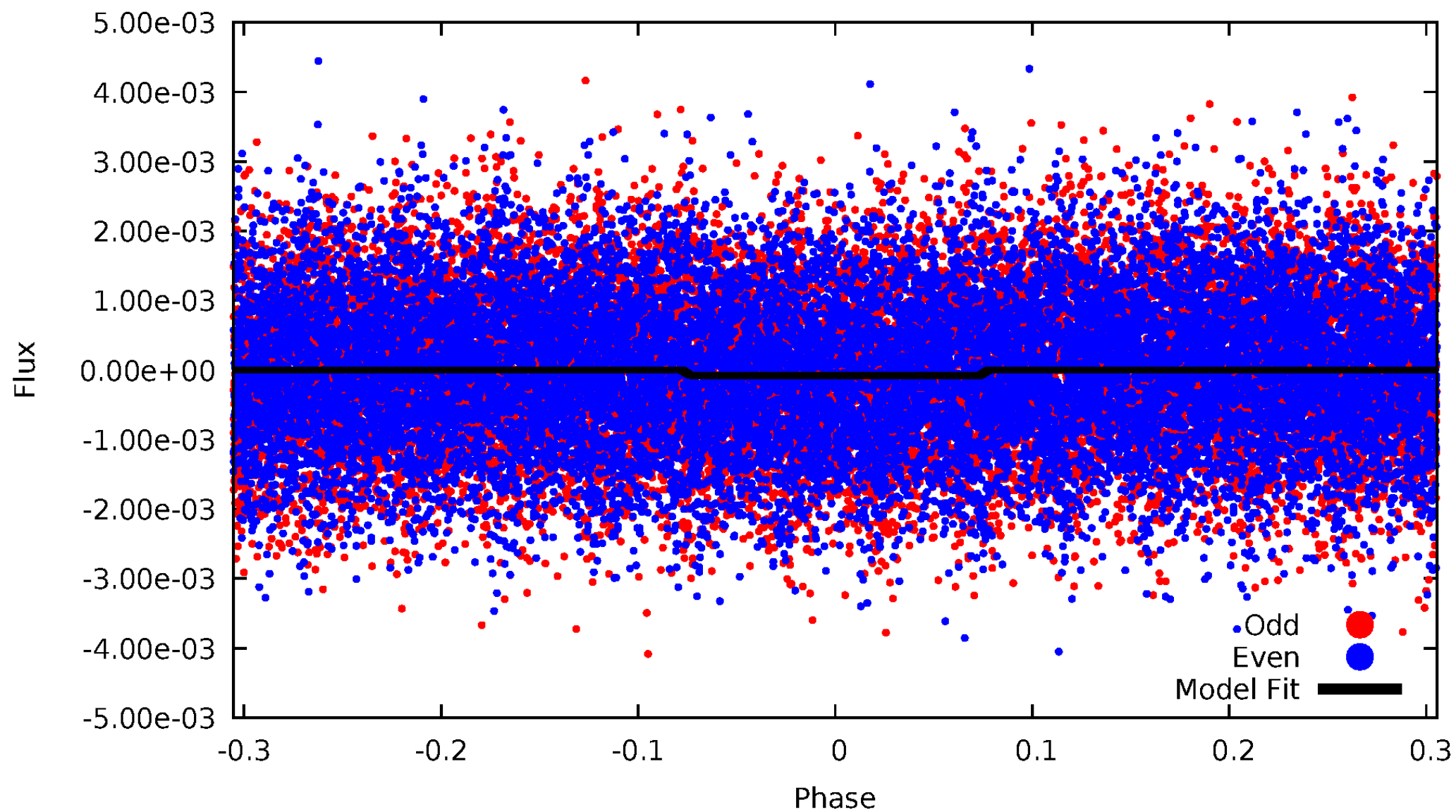
DV Odd/Even

TCE 004938281-01



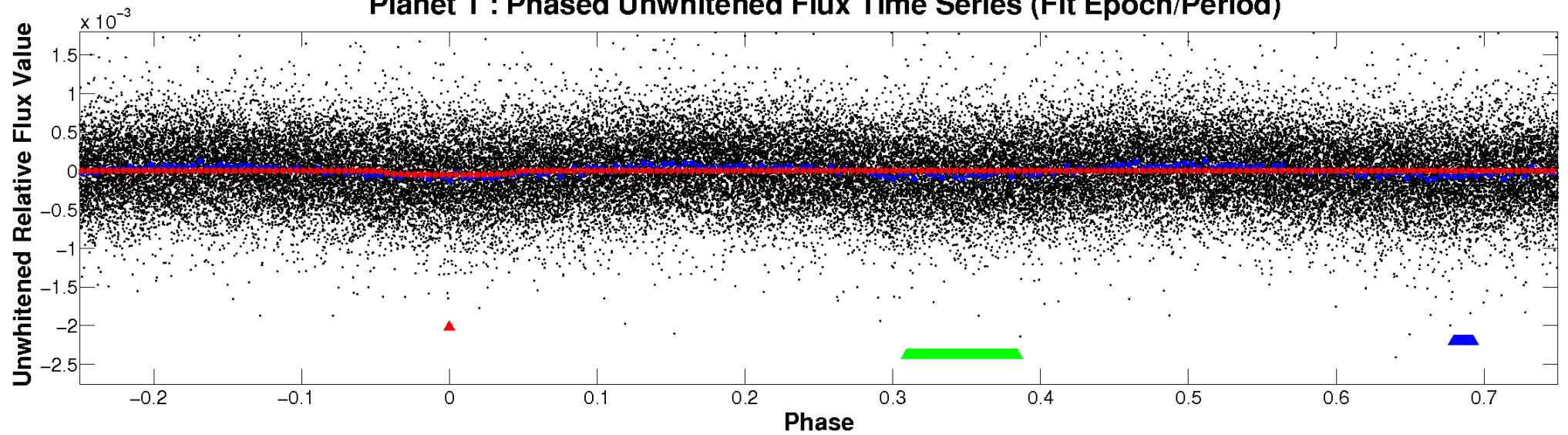
ALT Odd/Even

TCE 004938281-01

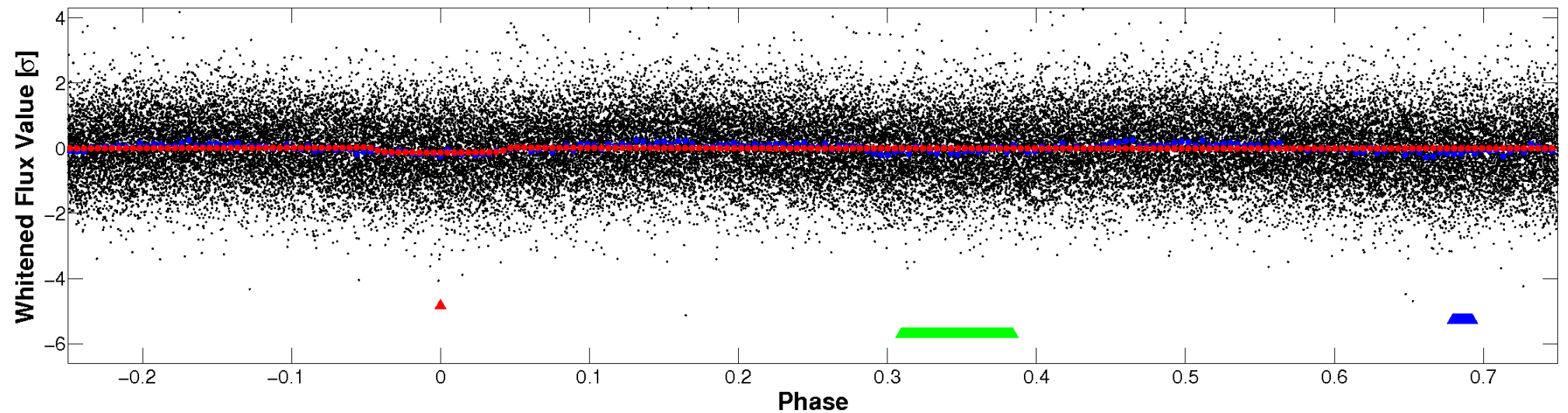


Non-Whitened Vs. Whitened Light Curve

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

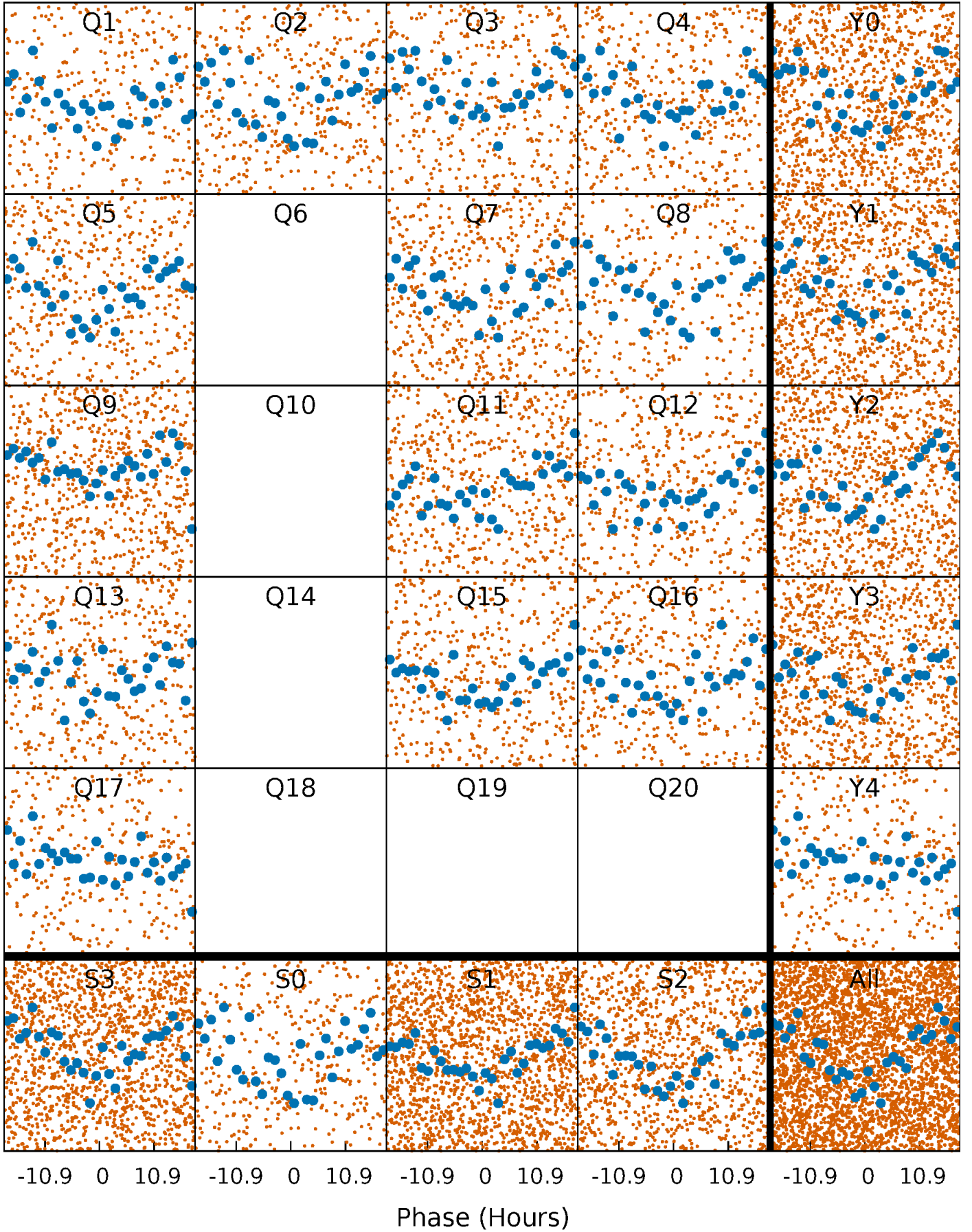


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



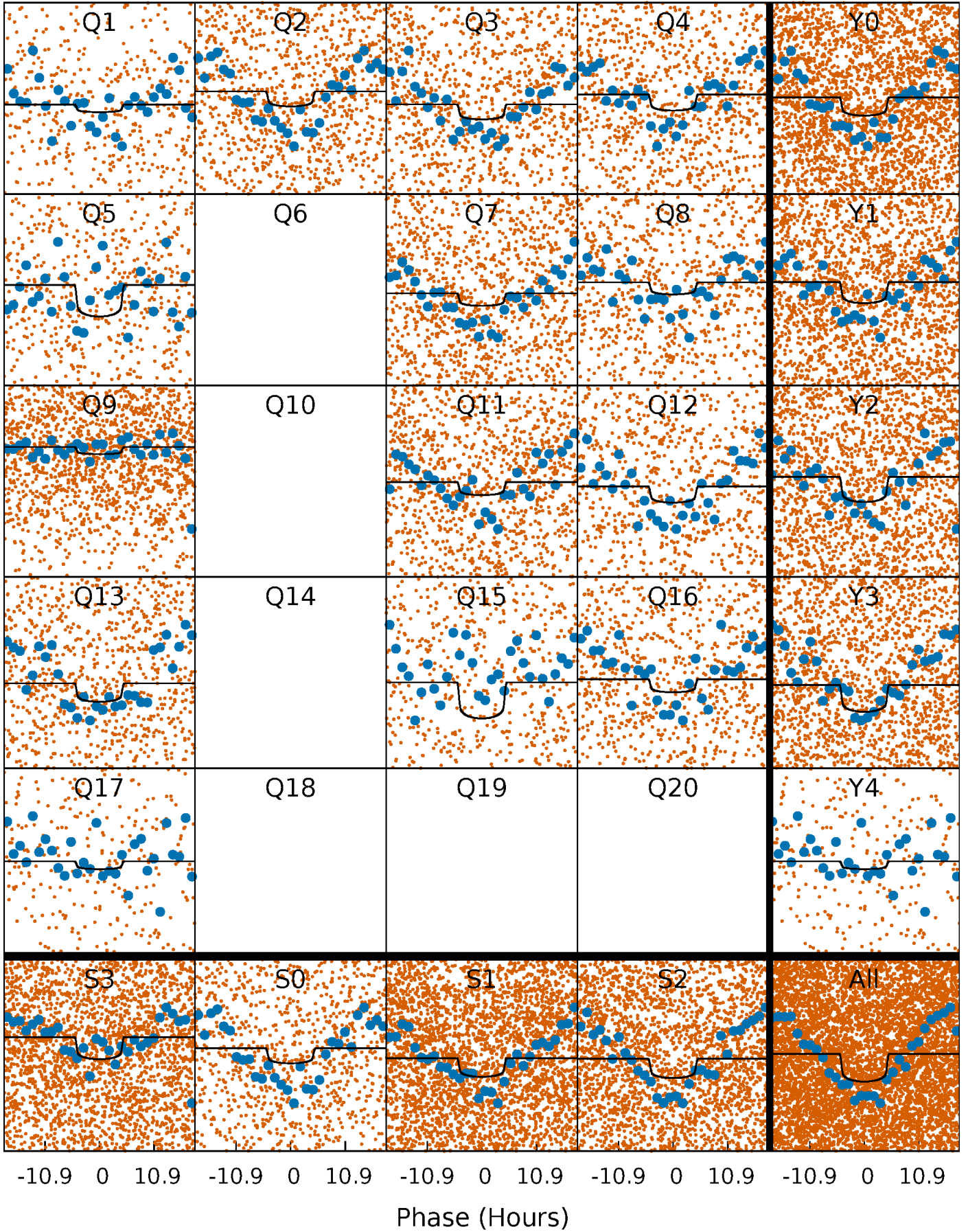
PDC Quarter-Phased Transit Curves

TCE 004938281-01 P= 4.354683 Days $T_0=131.656740$ (BKJD)



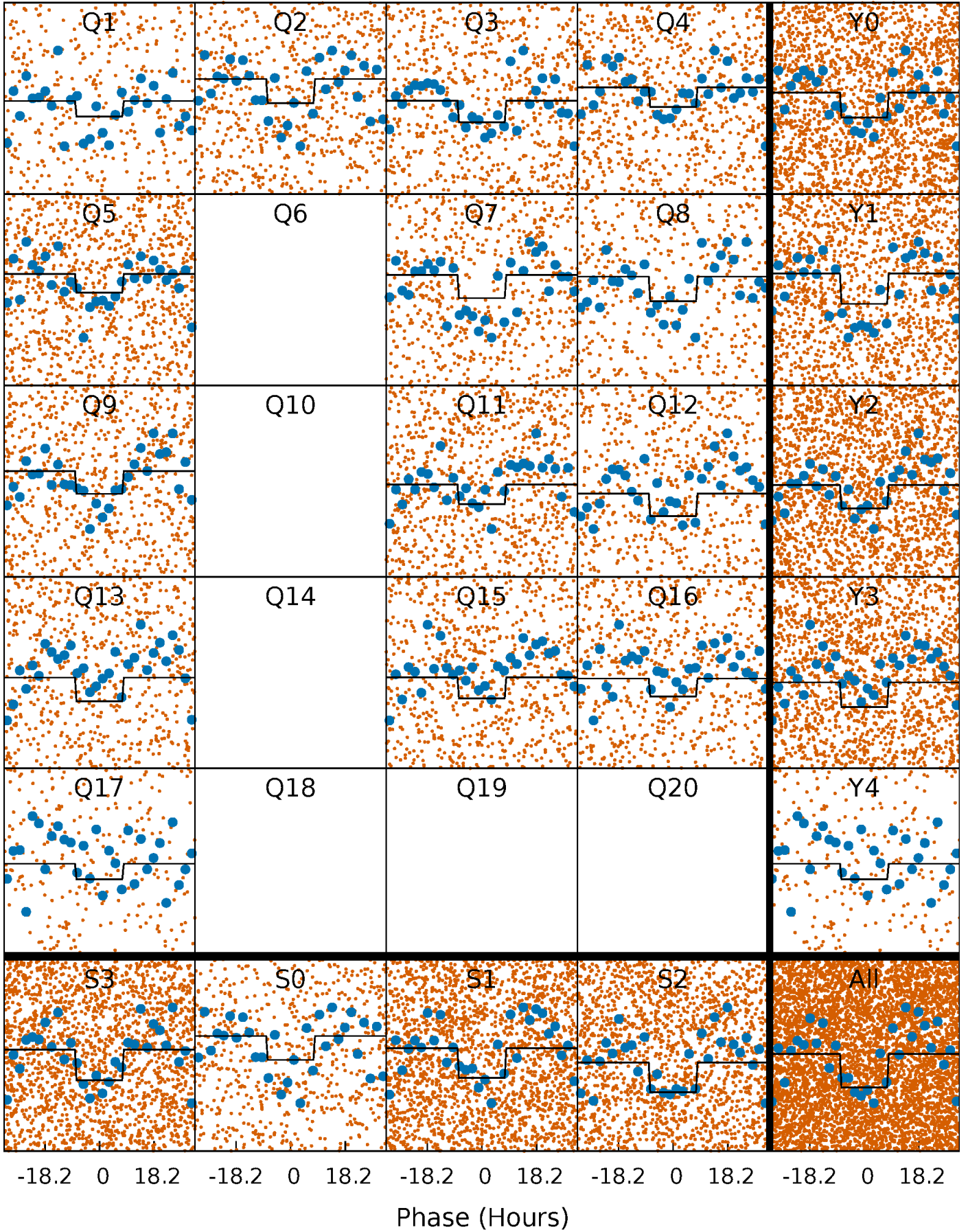
DV Quarter-Phased Transit Curves

TCE 004938281-01 P= 4.354683 Days $T_0=131.656740$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

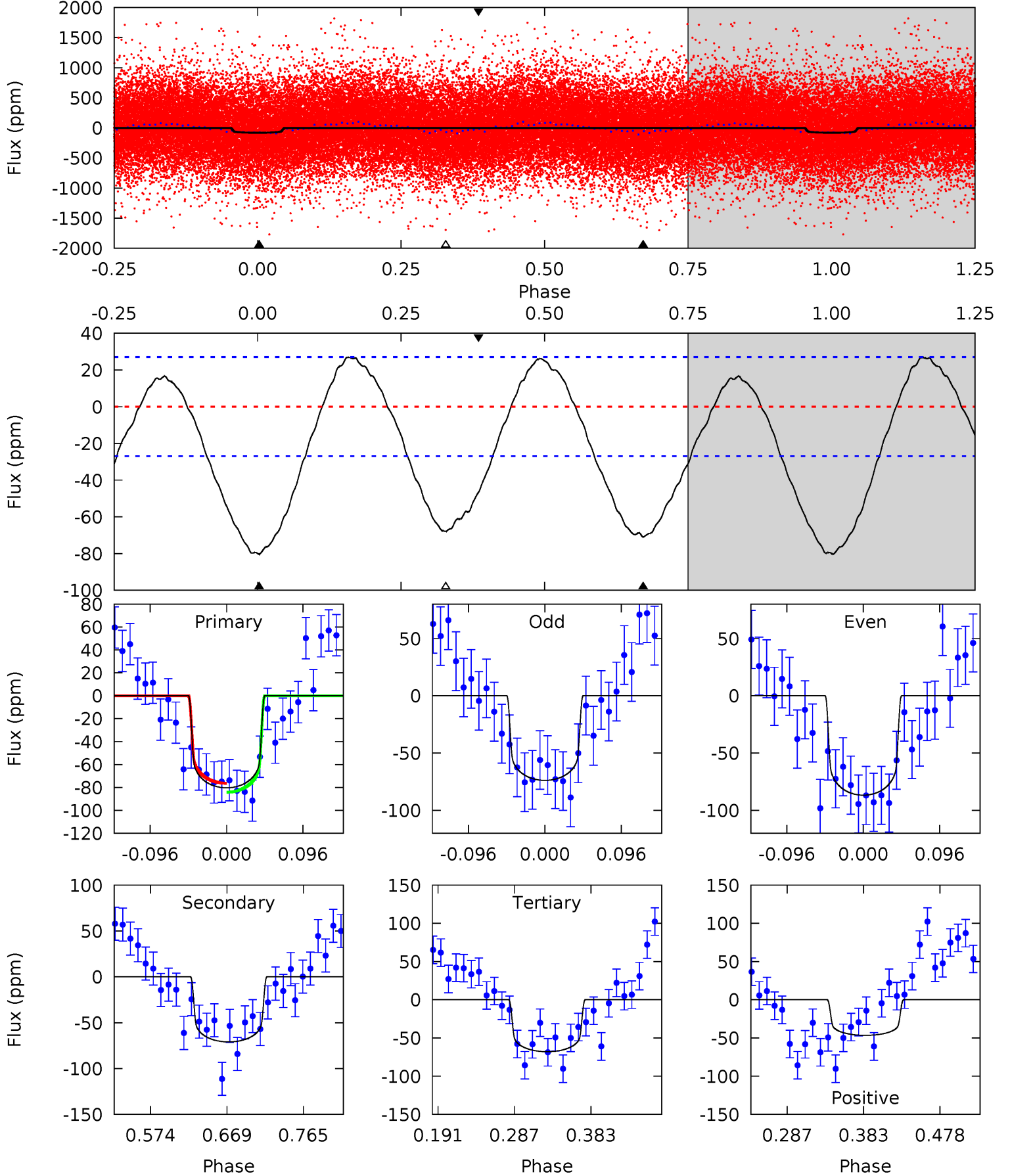
TCE 004938281-01 P= 4.354407 Days $T_0=131.715013$ (BKJD)



DV Model-Shift Uniqueness Test

004938281-01, P = 4.354683 Days, E = 127.302057 Days

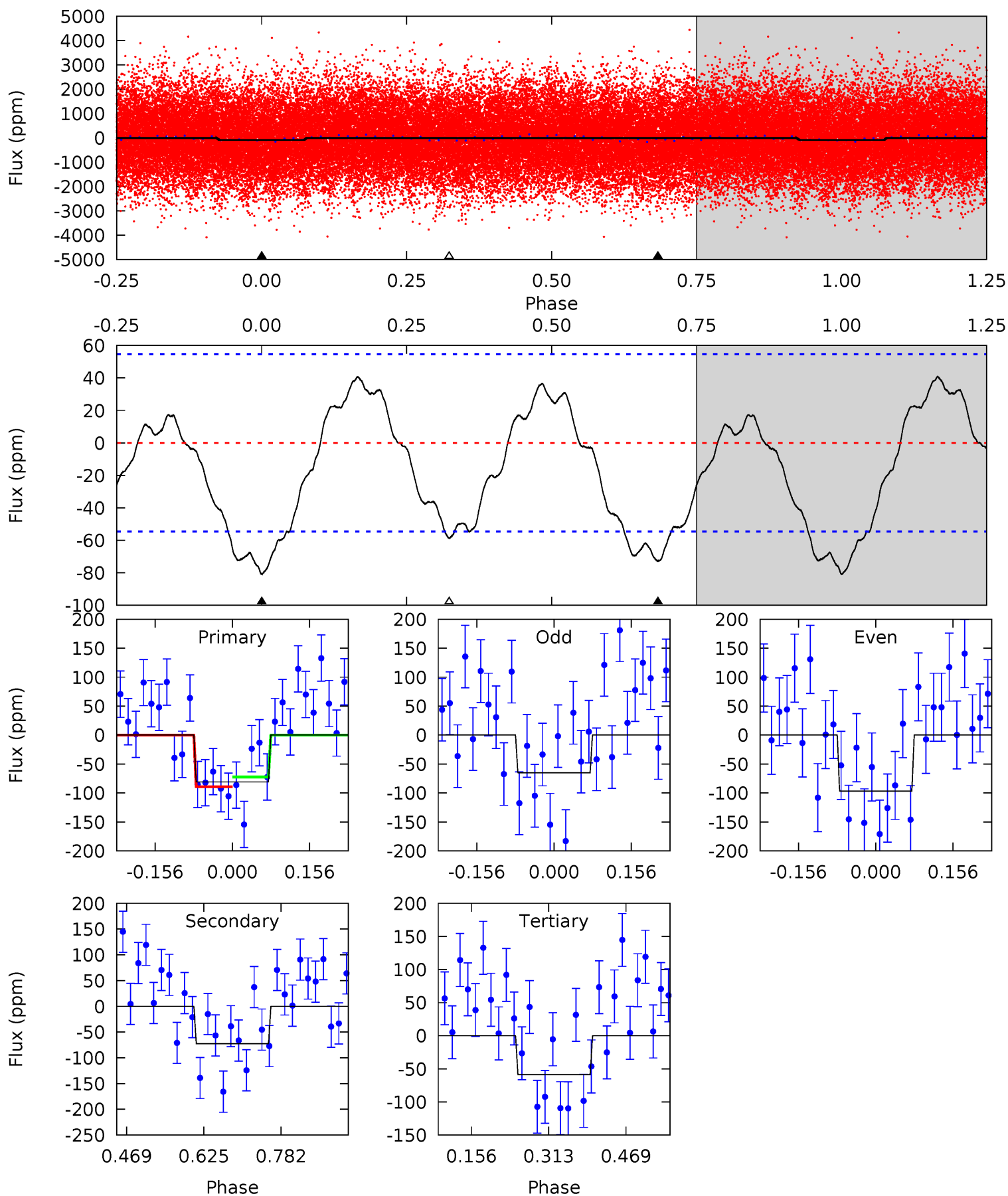
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	12.0	11.5	-7.89	4.57	1.67	4.81	2.10	21.5	0.51	19.9	1.10	1.02	0.25	0.66



Alt Model-Shift Uniqueness Test

004938281-01, P = 4.354407 Days, E = 127.360606 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.62	5.95	4.81	0	4.47	1.42	2.66	1.81	6.62	1.14	5.95	1.30	0.93	0.34	0.70



Stellar Parameters For KIC 004938281

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8092^{+225}_{-338}	$4.067^{+0.150}_{-0.150}$	$0.070^{+0.250}_{-0.450}$	$2.108^{+0.471}_{-0.518}$	$1.890^{+0.210}_{-0.361}$	$0.284^{+0.244}_{-0.112}$
	+3%/-4%	+4%/-4%	+357%/-643%	+22%/-25%	+11%/-19%	+86%/-39%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004938281-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-71 ± 6	$1.73^{+0.65}_{-0.62}$	2852^{+194}_{-194}	8634^{+3329}_{-1426}	54^{+74}_{-25}
Alt.	-73 ± 12	$2.03^{+0.72}_{-0.58}$	2849^{+193}_{-192}	7739^{+1951}_{-1115}	38^{+40}_{-17}

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 $A_{obs} \gg 1.0$

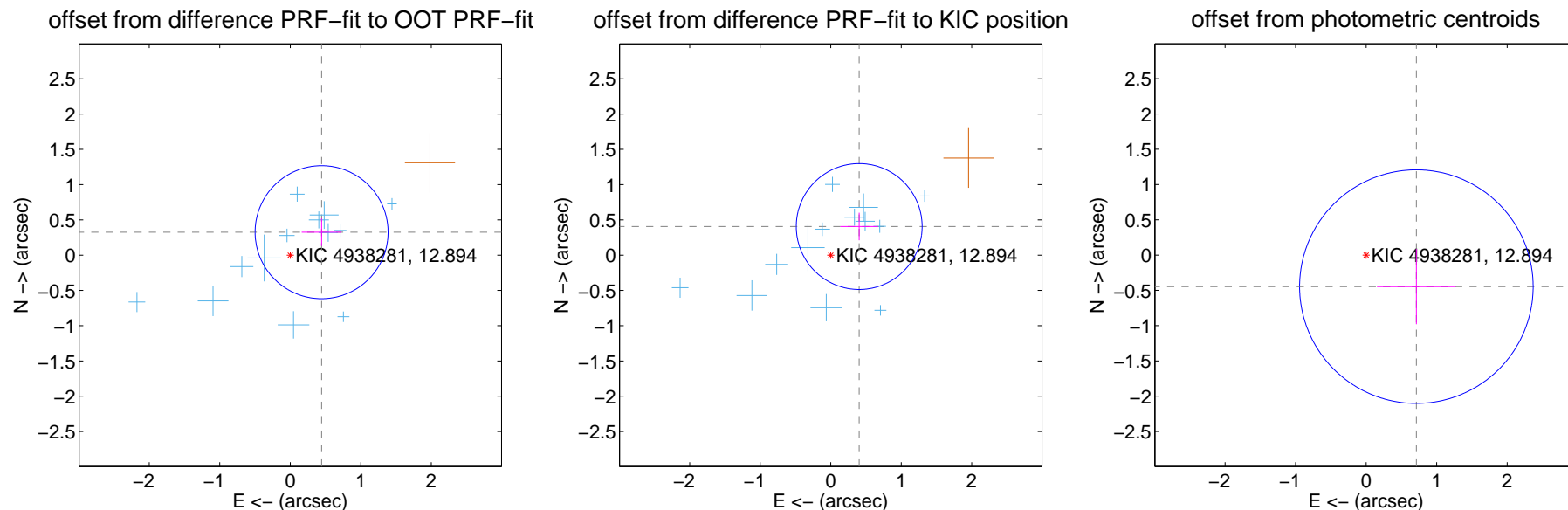
DV Centroid Data

Supplemental centroid analysis for 004938281-01. Kepler magnitude: 12.89. Transit SNR 8.19

There are 13 quarters with good PRF difference image offsets

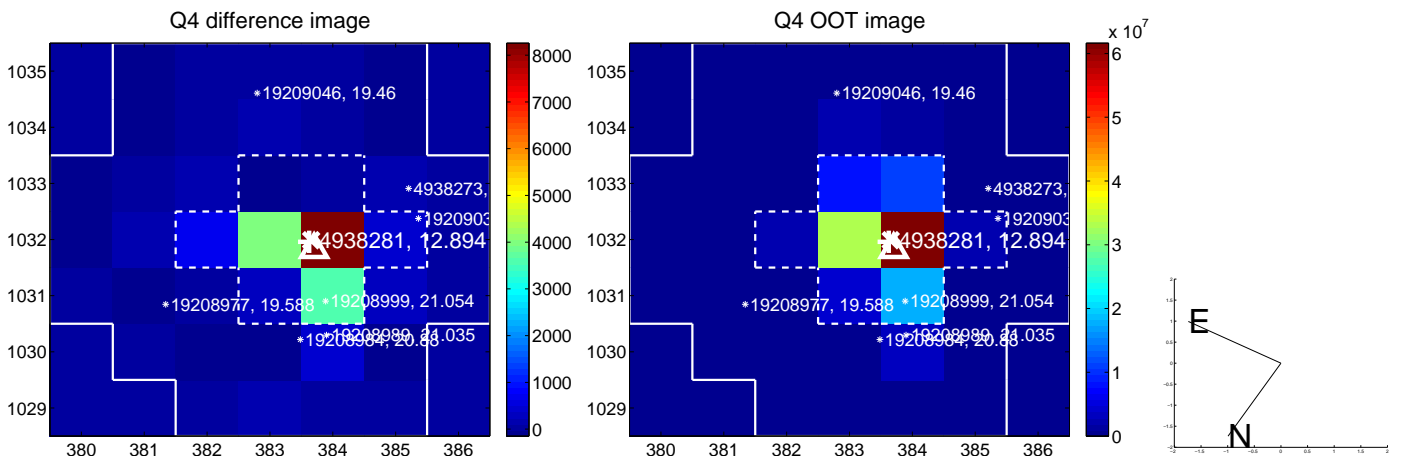
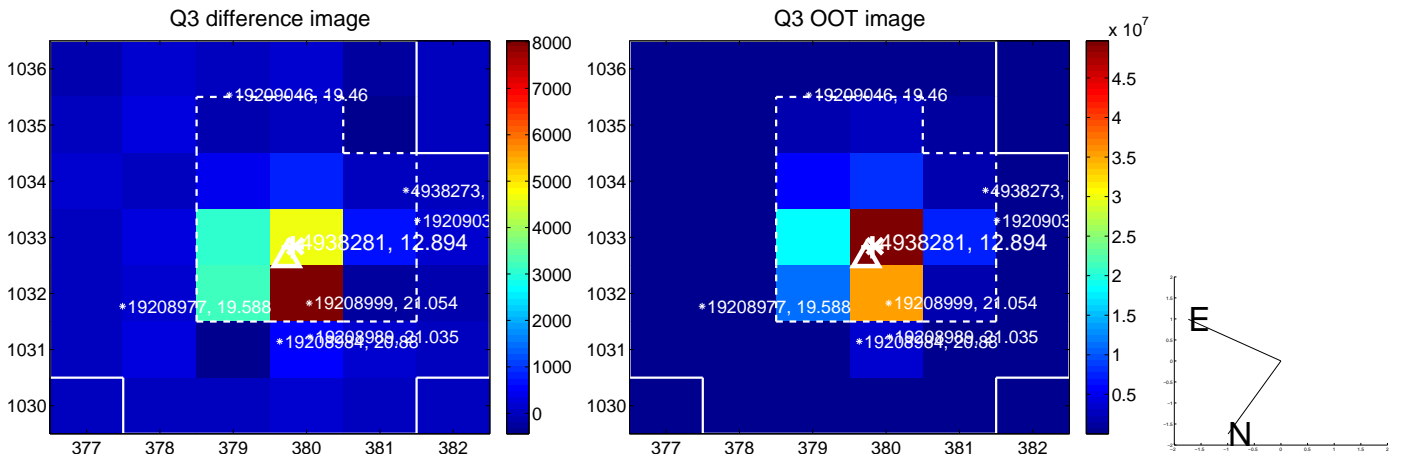
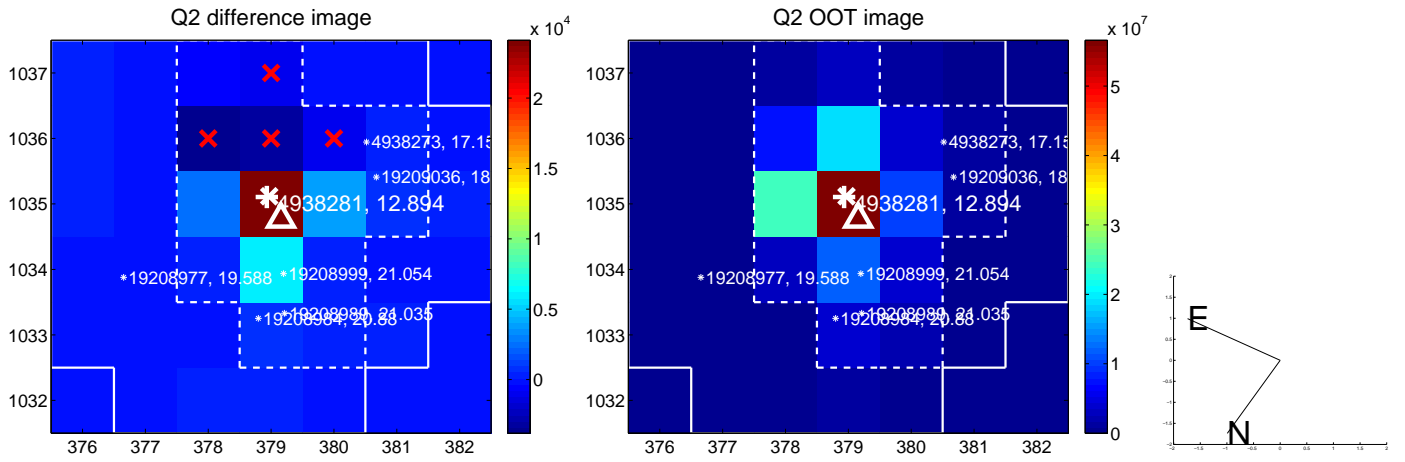
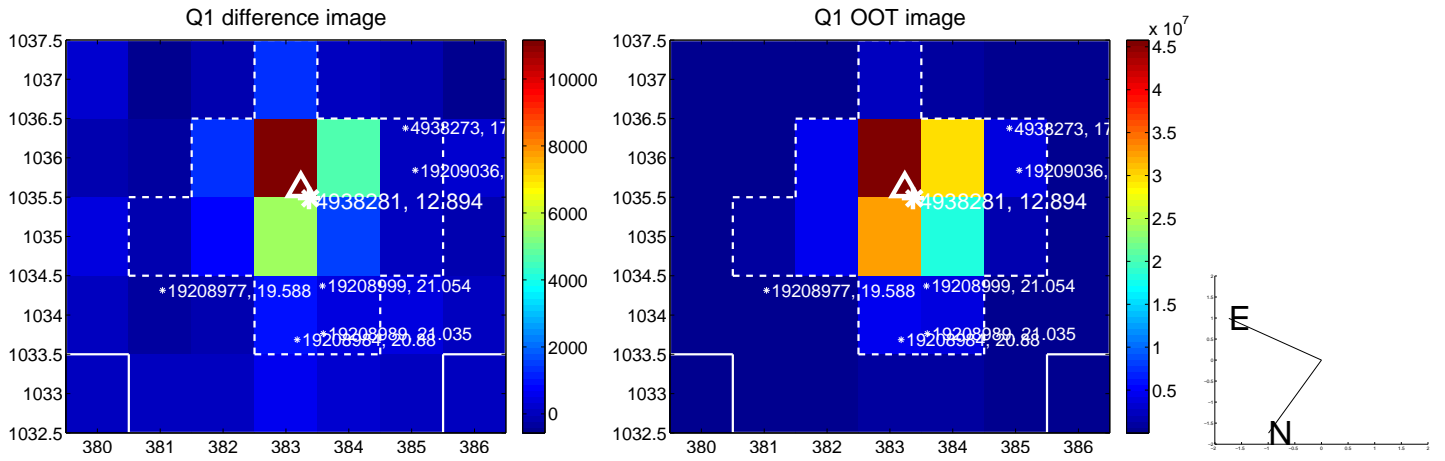
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.551 ± 0.314	1.75	-0.444 ± 0.282	0.325 ± 0.194
PRF-fit source offset from KIC position	0.573 ± 0.298	1.92	-0.404 ± 0.268	0.406 ± 0.196
photometric centroid source offset	0.84 ± 0.55	1.52	-0.71 ± 0.56	-0.45 ± 0.53

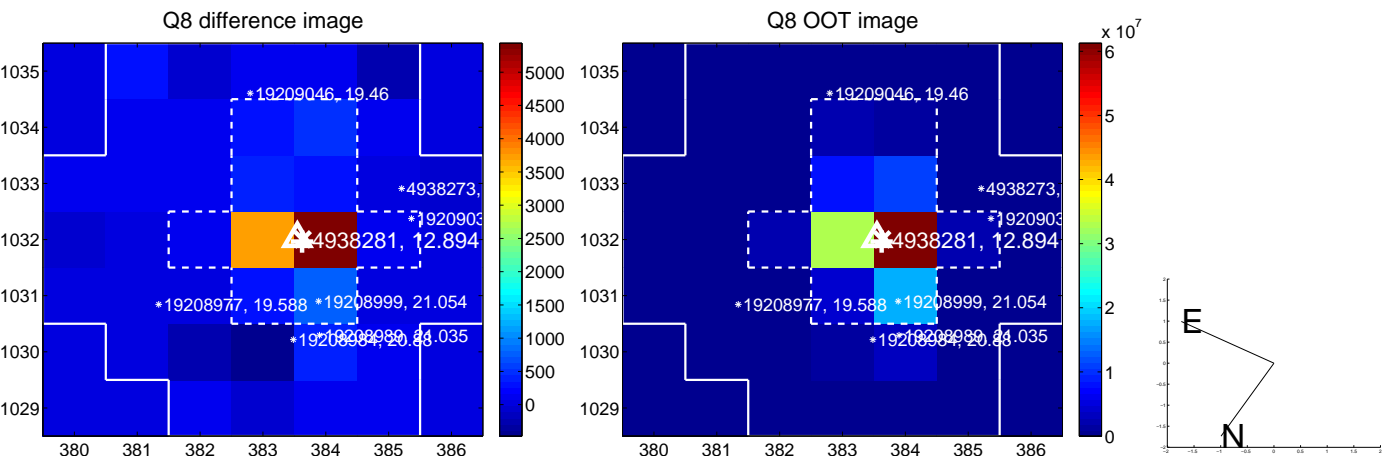
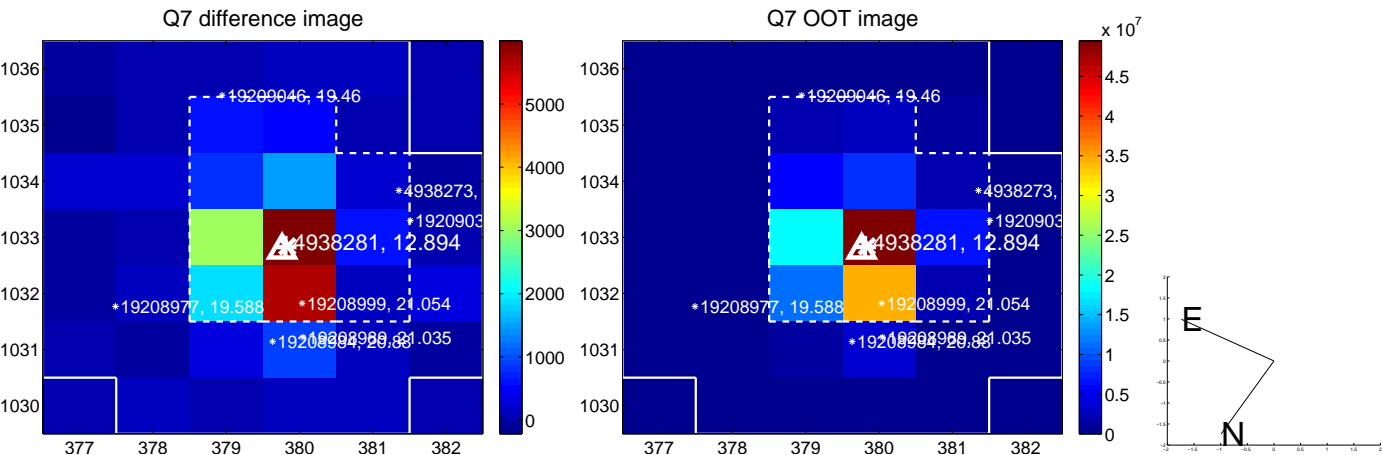
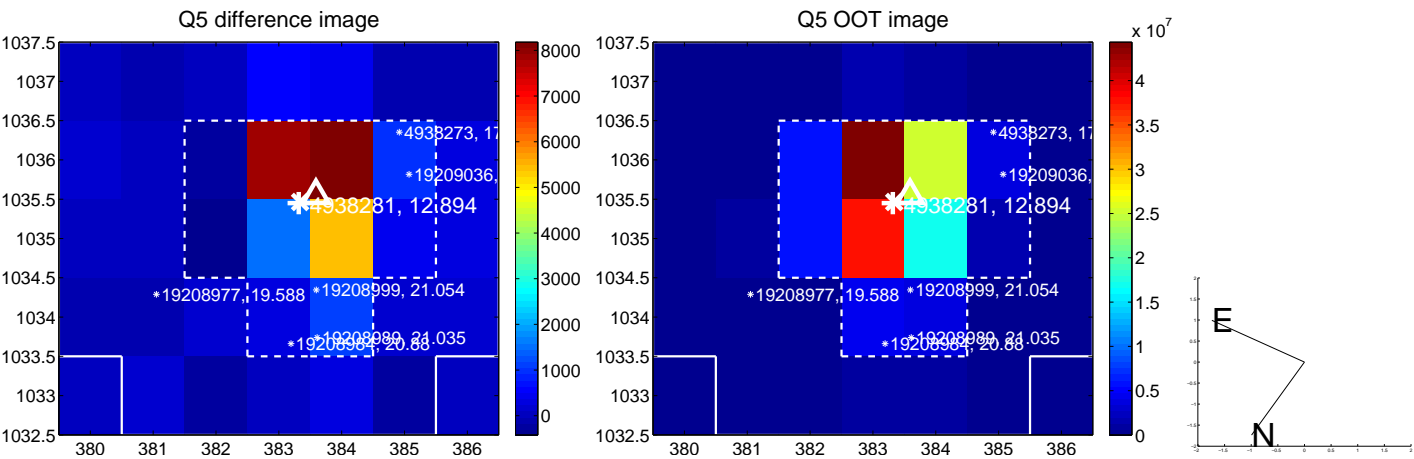


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

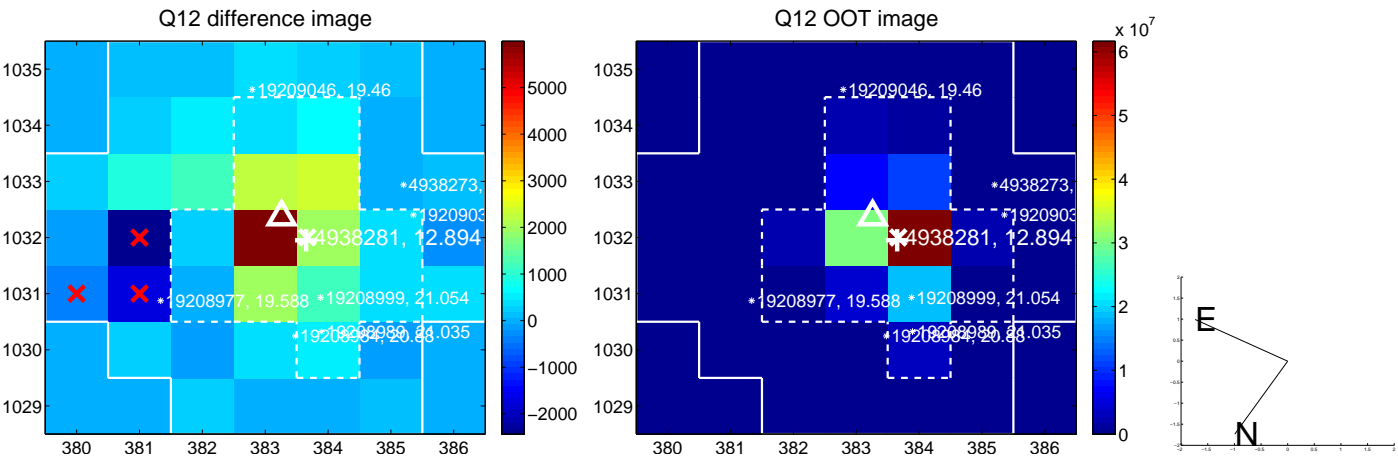
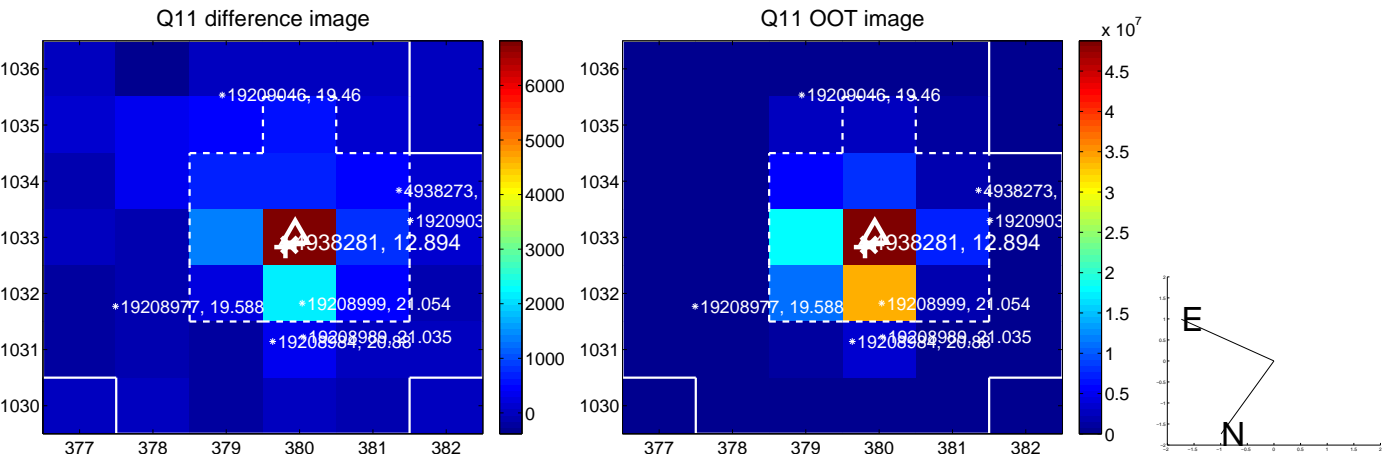
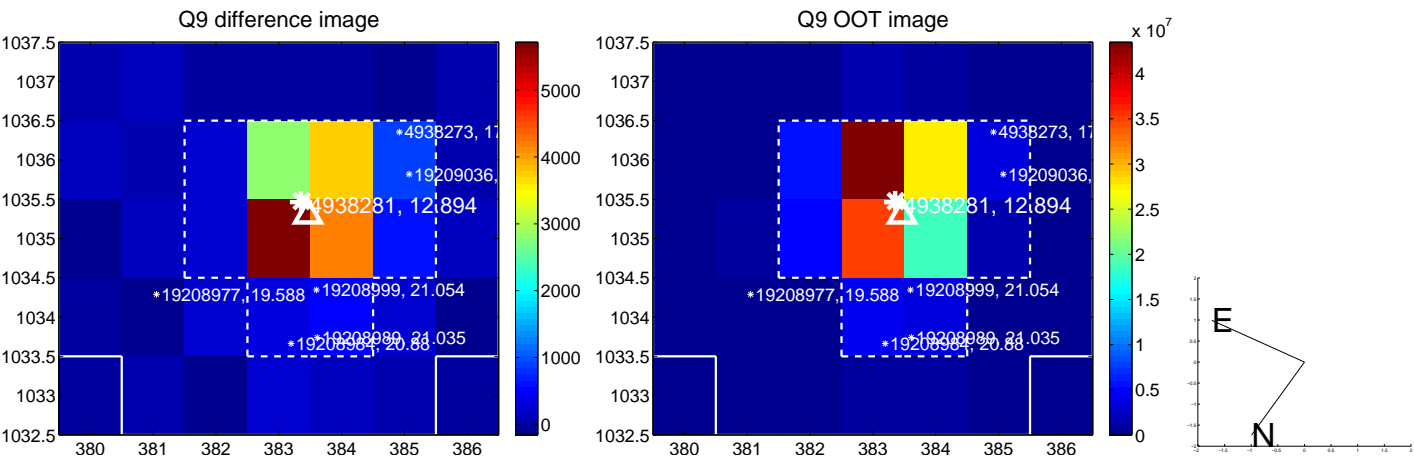
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



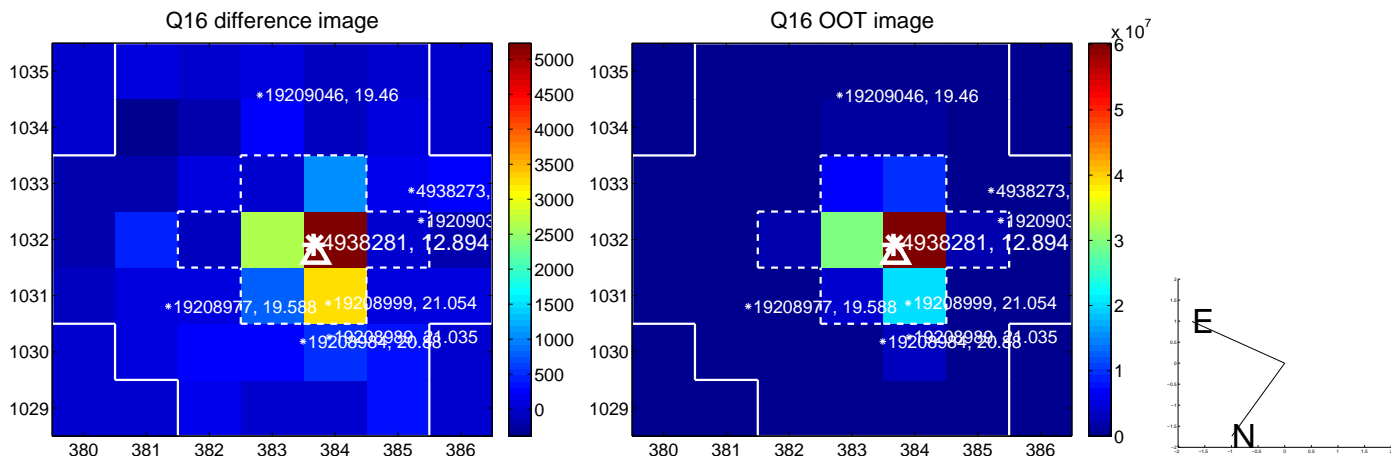
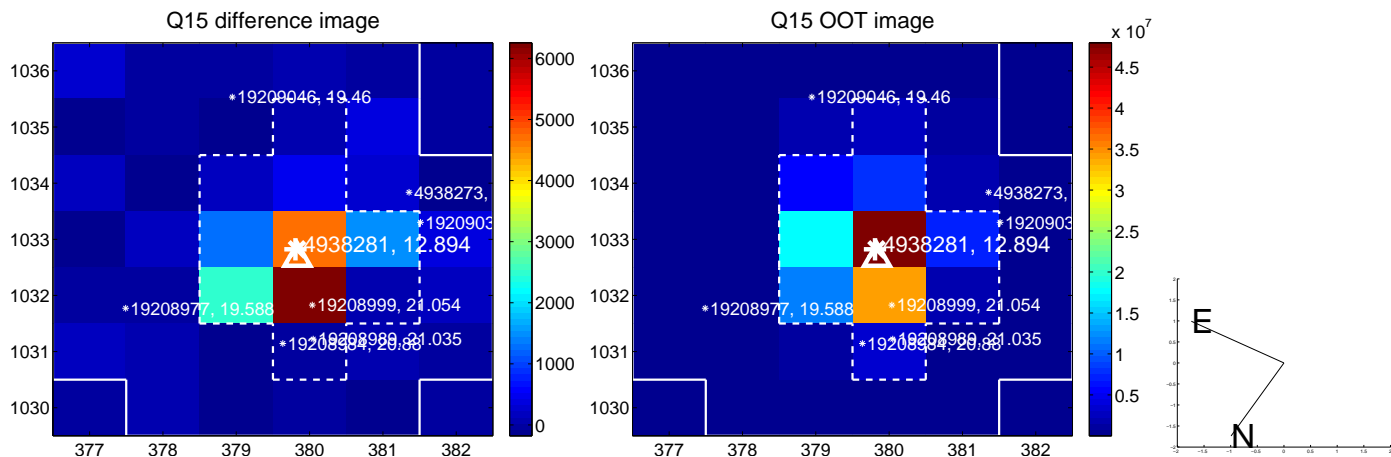
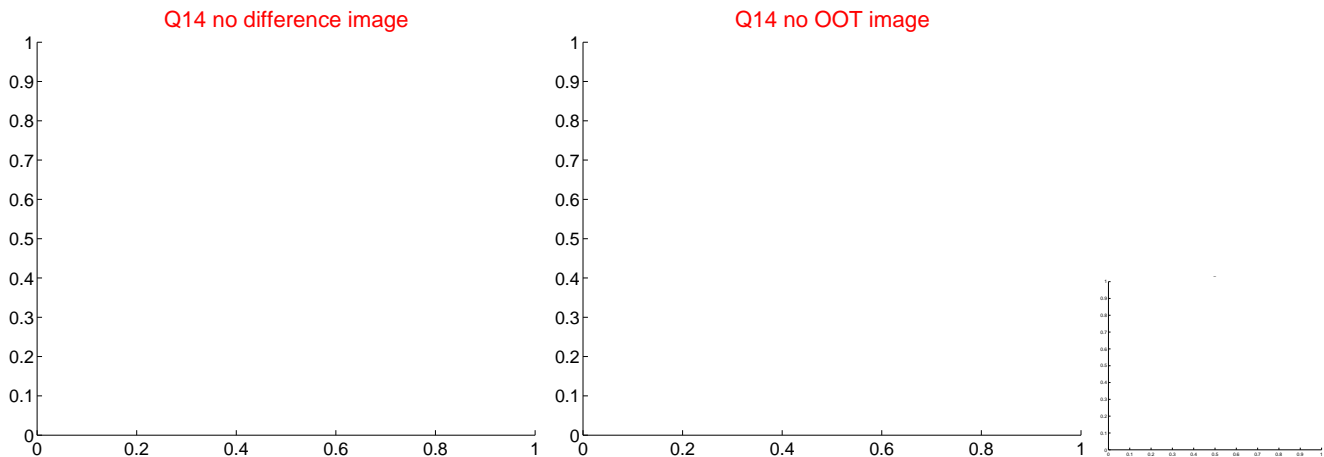
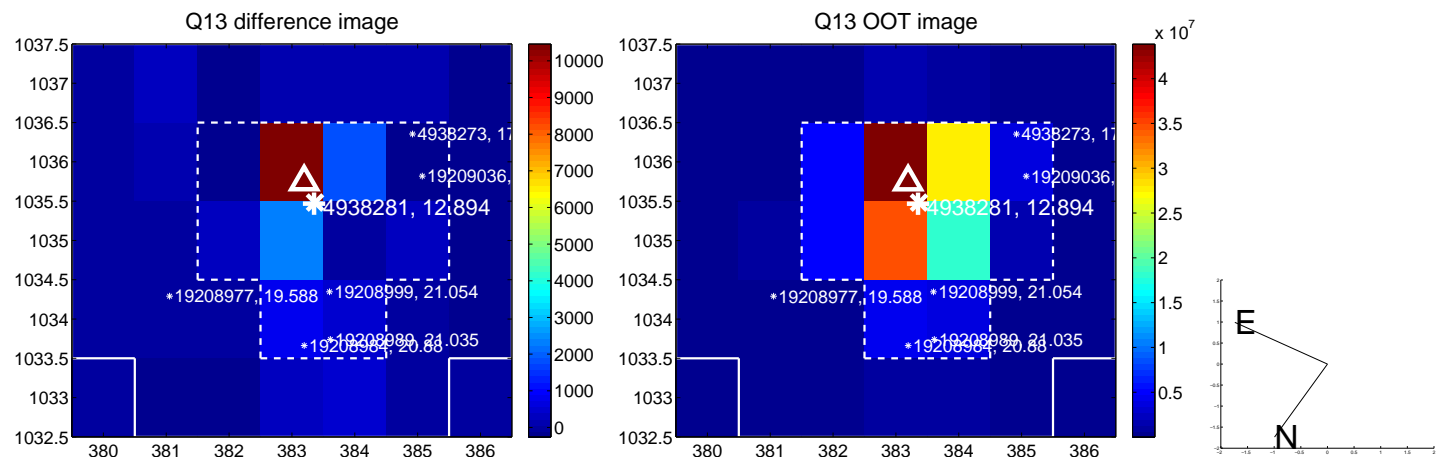
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



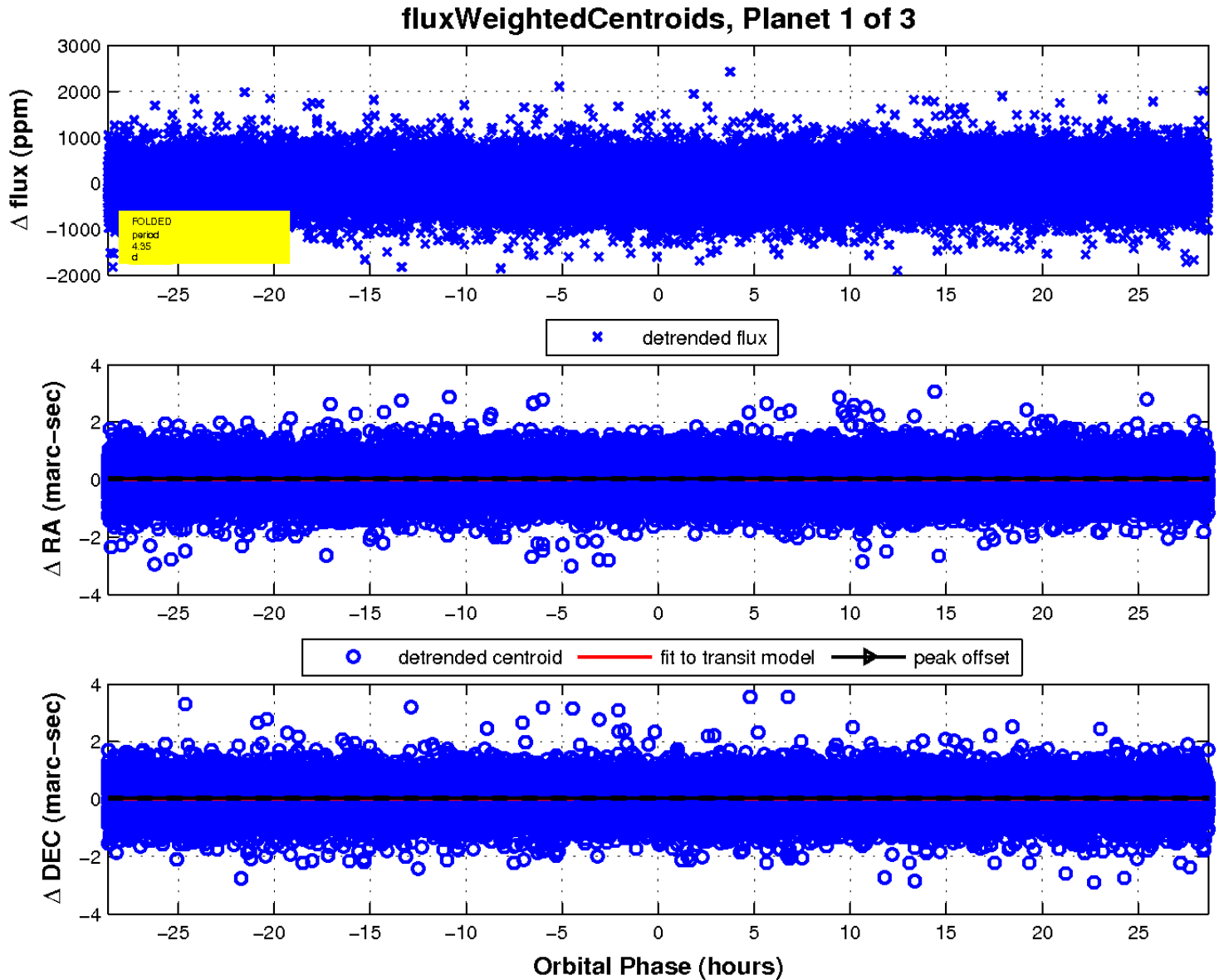
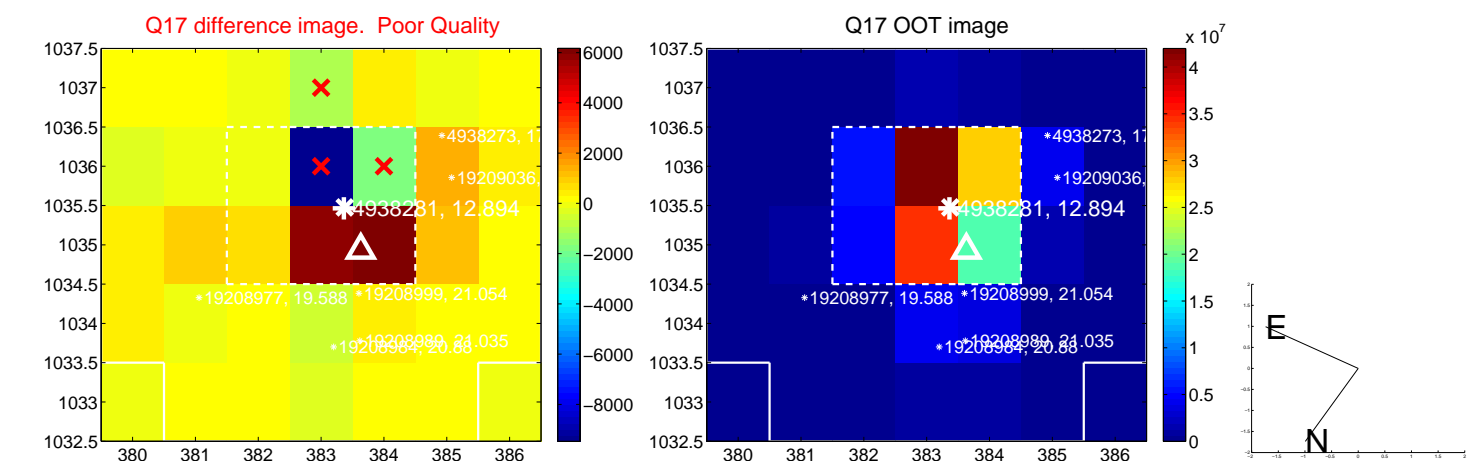
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



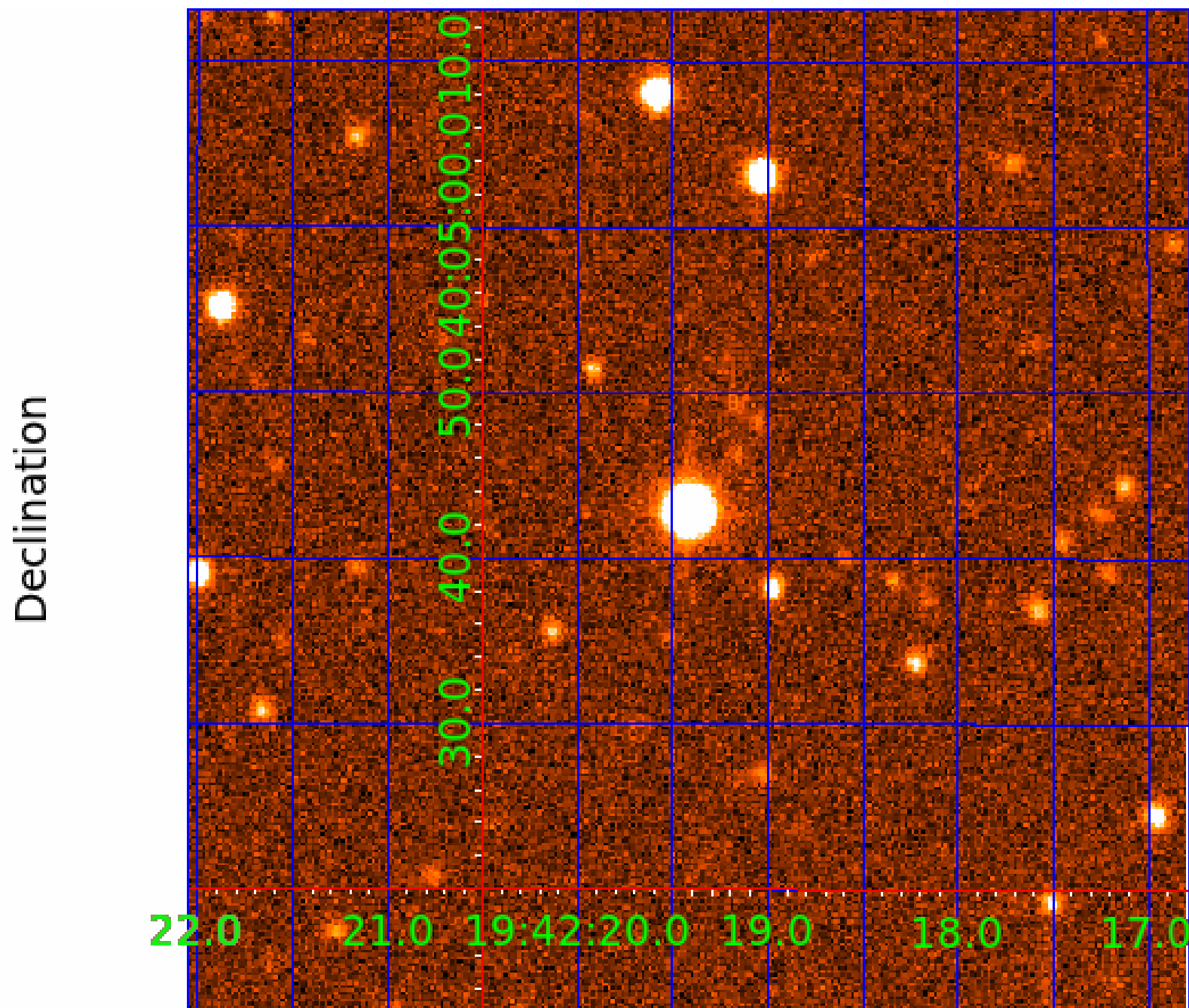
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 004938281

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})
004938281-01	OBS	No	4.354683	131.656740	49.1	9.554	8.5	8.2	2.11	8092	1.72	4096.59
004938281-02	OBS	No	4.354515	134.672226	69.3	7.886	10.3	10.5	2.11	8092	2.01	4096.80
004938281-03	OBS	No	4.355660	133.003341	46.8	21.558	8.4	10.3	2.11	8092	1.46	4095.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004938281-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004938281-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD
004938281-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

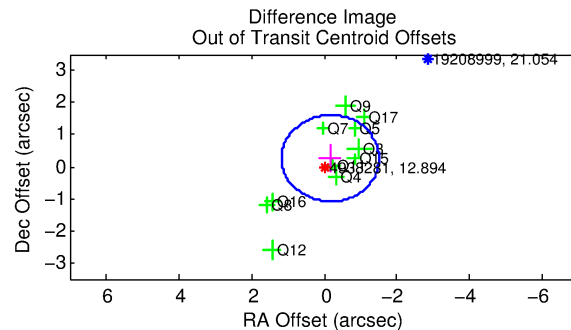
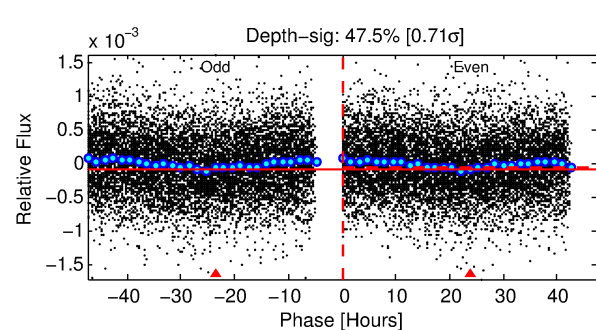
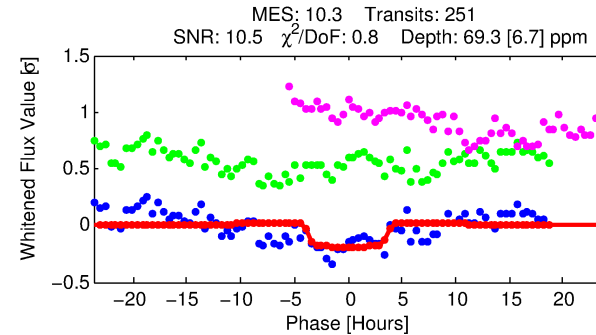
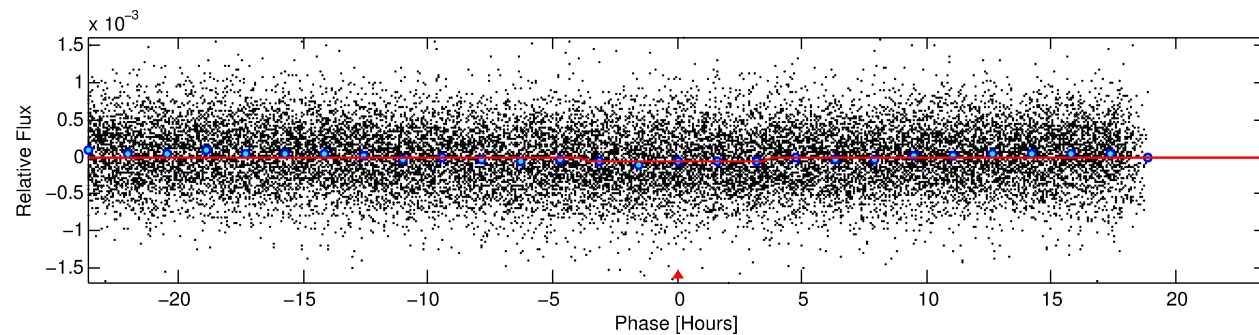
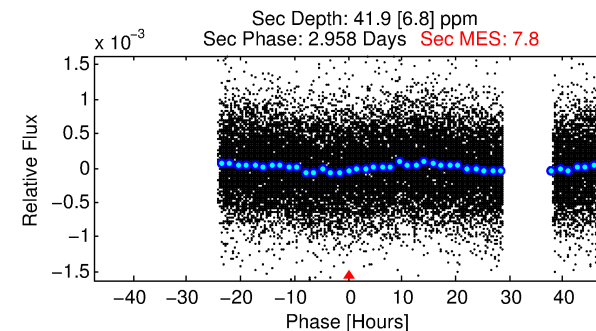
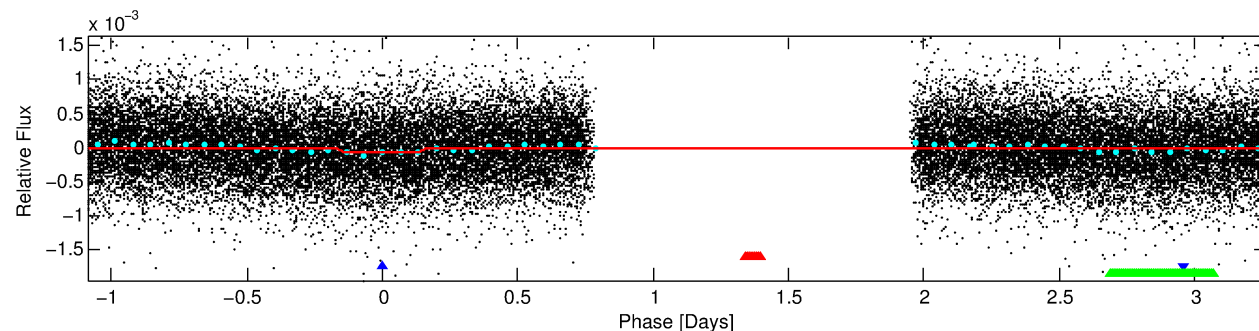
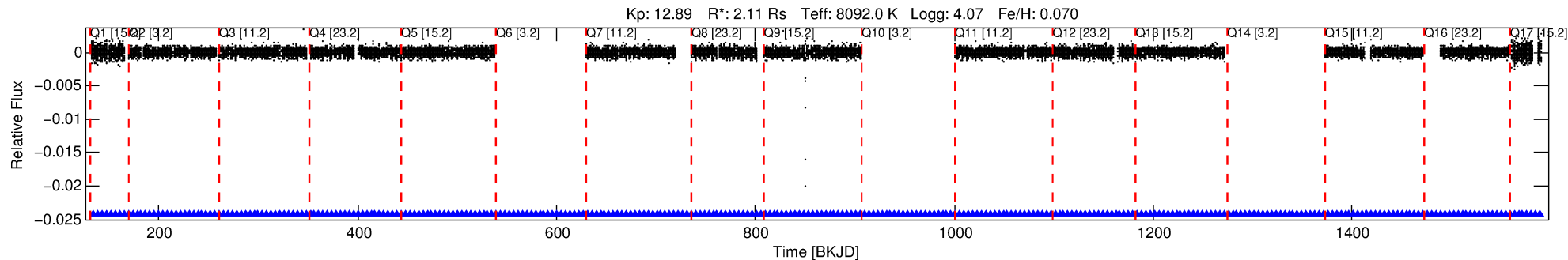
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004938281-02

No Significant Match Found

DV One-Page Summary

KIC: 4938281 Candidate: 2 of 3 Period: 4.355 d



DV Fit Results:

Period = 4.35452 [0.00006] d
Epoch = 134.6722 [0.0099] BKJD
Rp/R* = 0.0087 [0.0030]
a/R* = 2.29 [3.91]
b = 0.88 [0.56]
Seff = 4096.80 [1344.92]
Teq = 2040 [167] K
Rp = 2.01 [0.84] Re
a = 0.0646 [0.0129] AU
Ag = 23.85 [18.00] [1.27σ]
Teff = 6970 [1254] K [3.90σ]

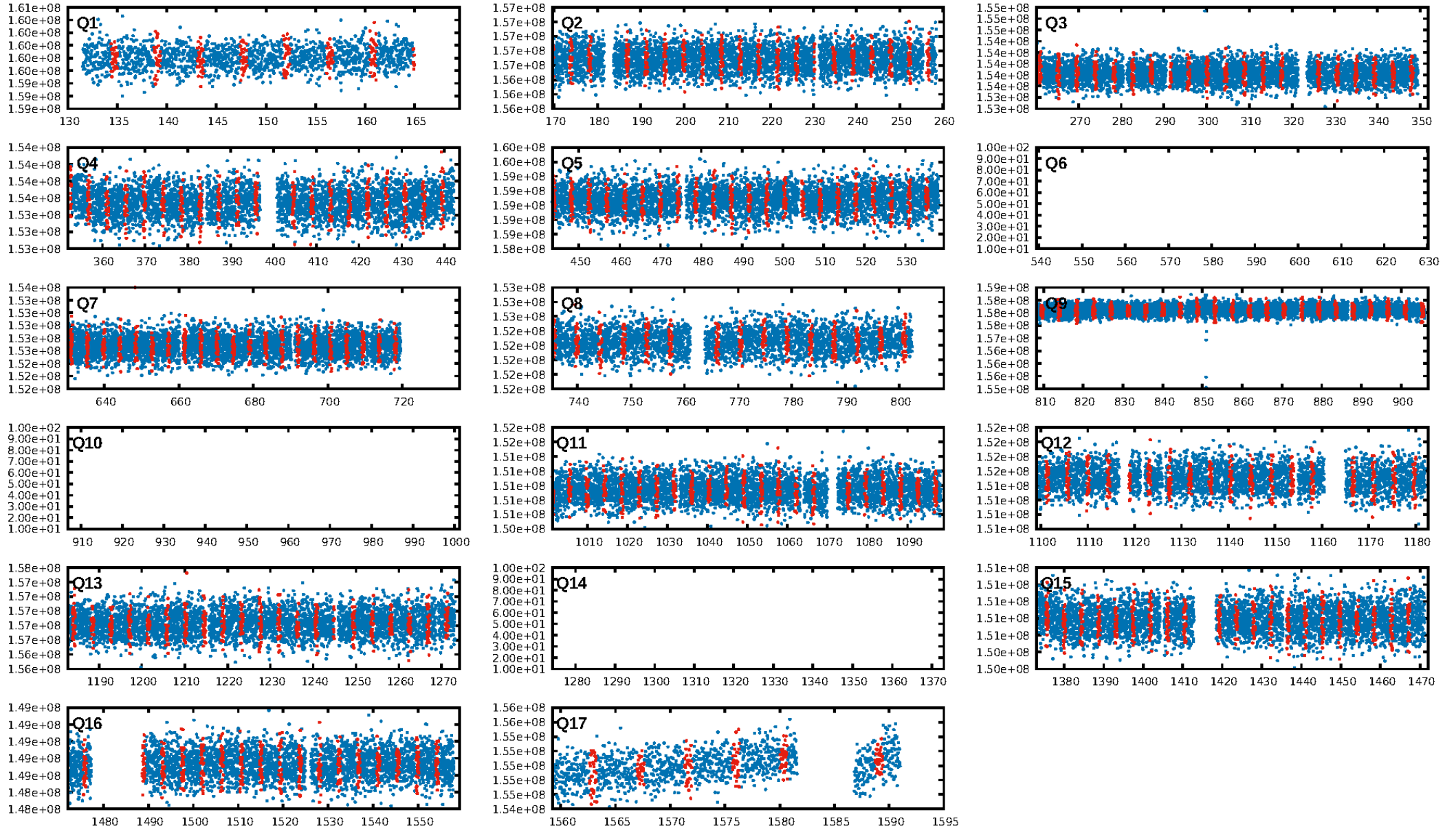
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [237/237]
GhostDiagnostic-chr: 4.446
Centroid-sig: 63.3%
Centroid-so: 0.175 arcsec [0.41σ]
OotOffset-rm: 0.308 arcsec [0.69σ]
KicOffset-rm: 0.406 arcsec [0.99σ]
OotOffset-st: 0/4/4/3 [11]
KicOffset-st: 0/4/4/3 [11]
DiffImageQuality-fgm: 1.00 [11/11]
DiffImageOverlap-fno: 1.00 [14/14]

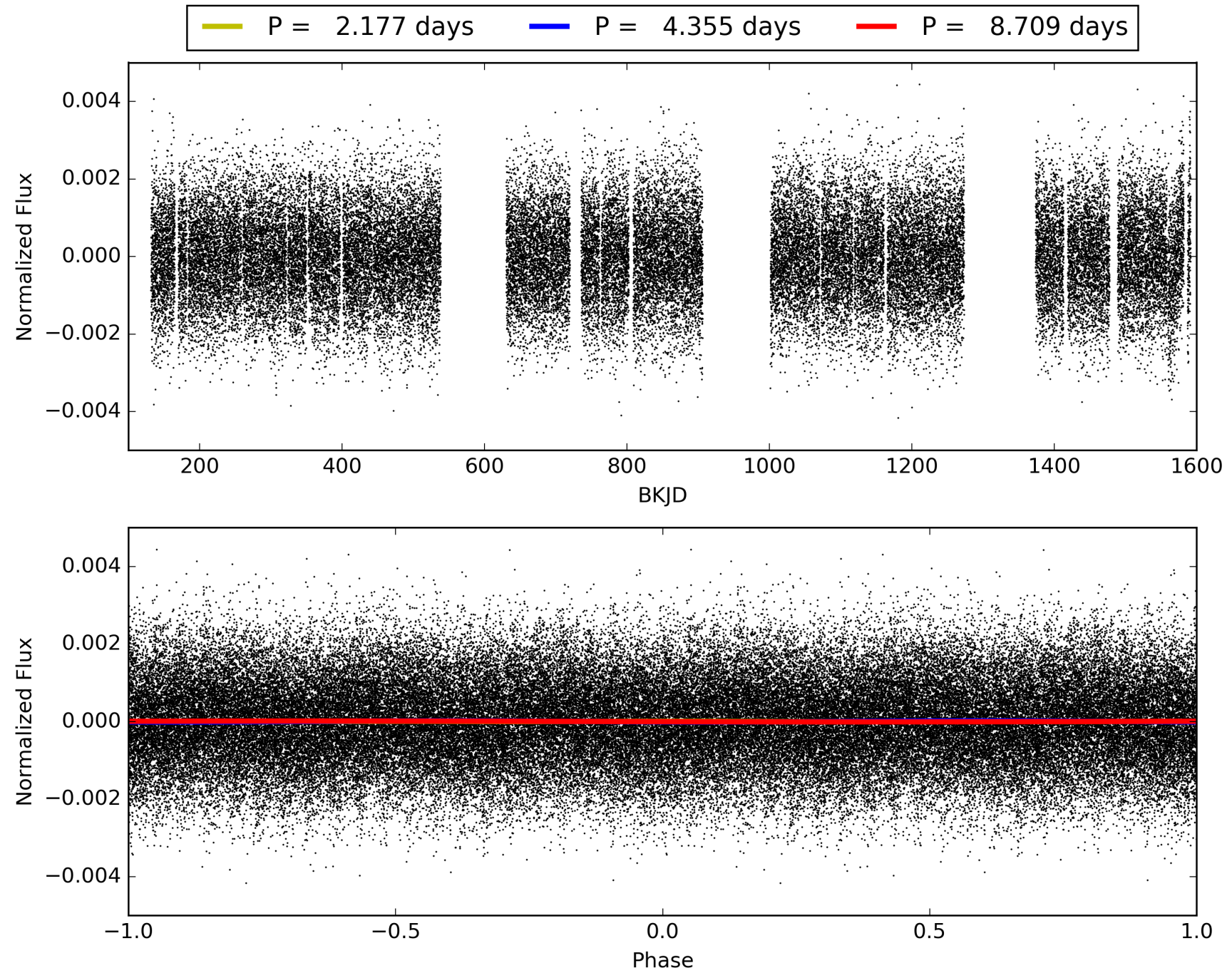
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:26:41 Z

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

TCE 004938281-02, PDC Light Curves

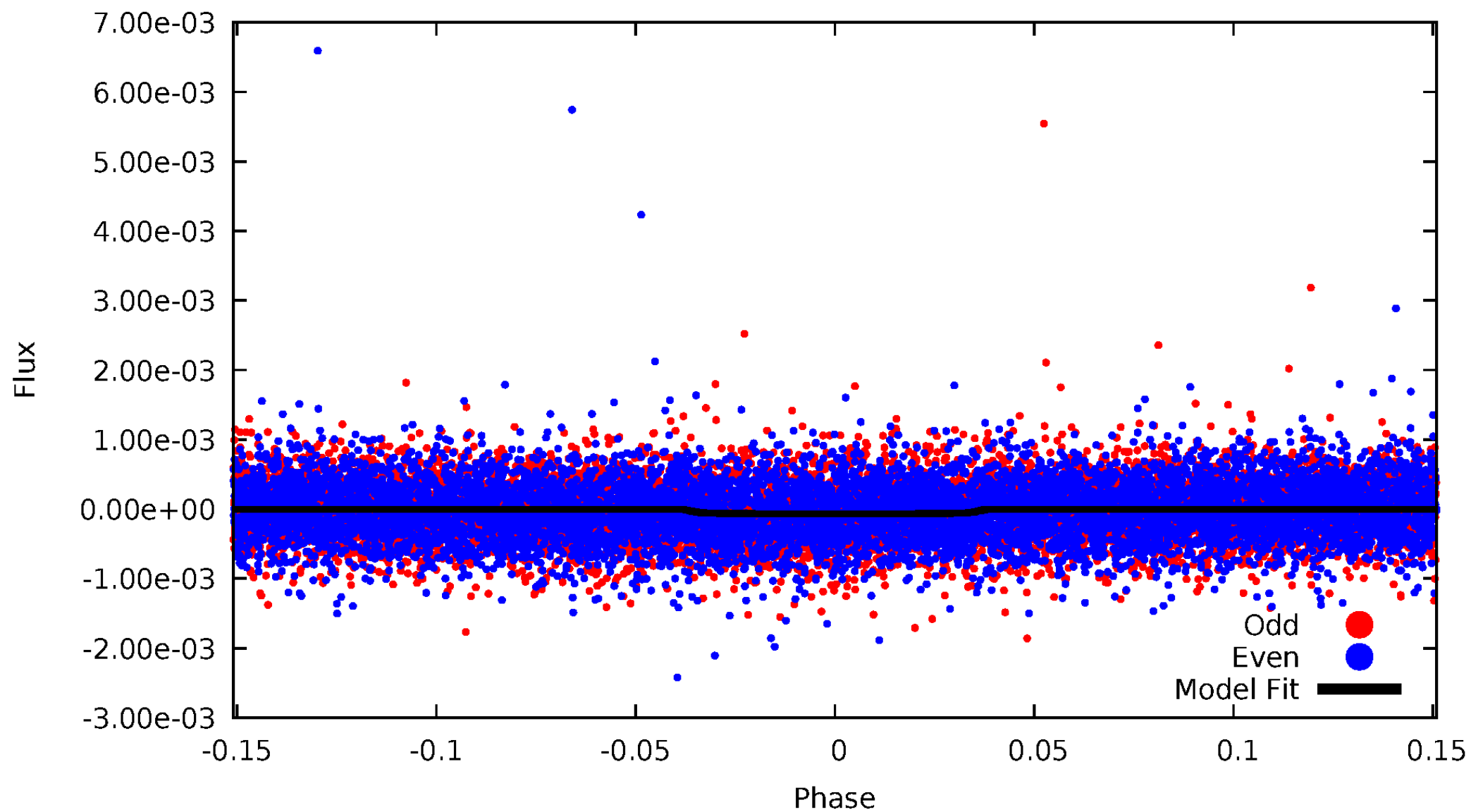


TCE 004938281-02



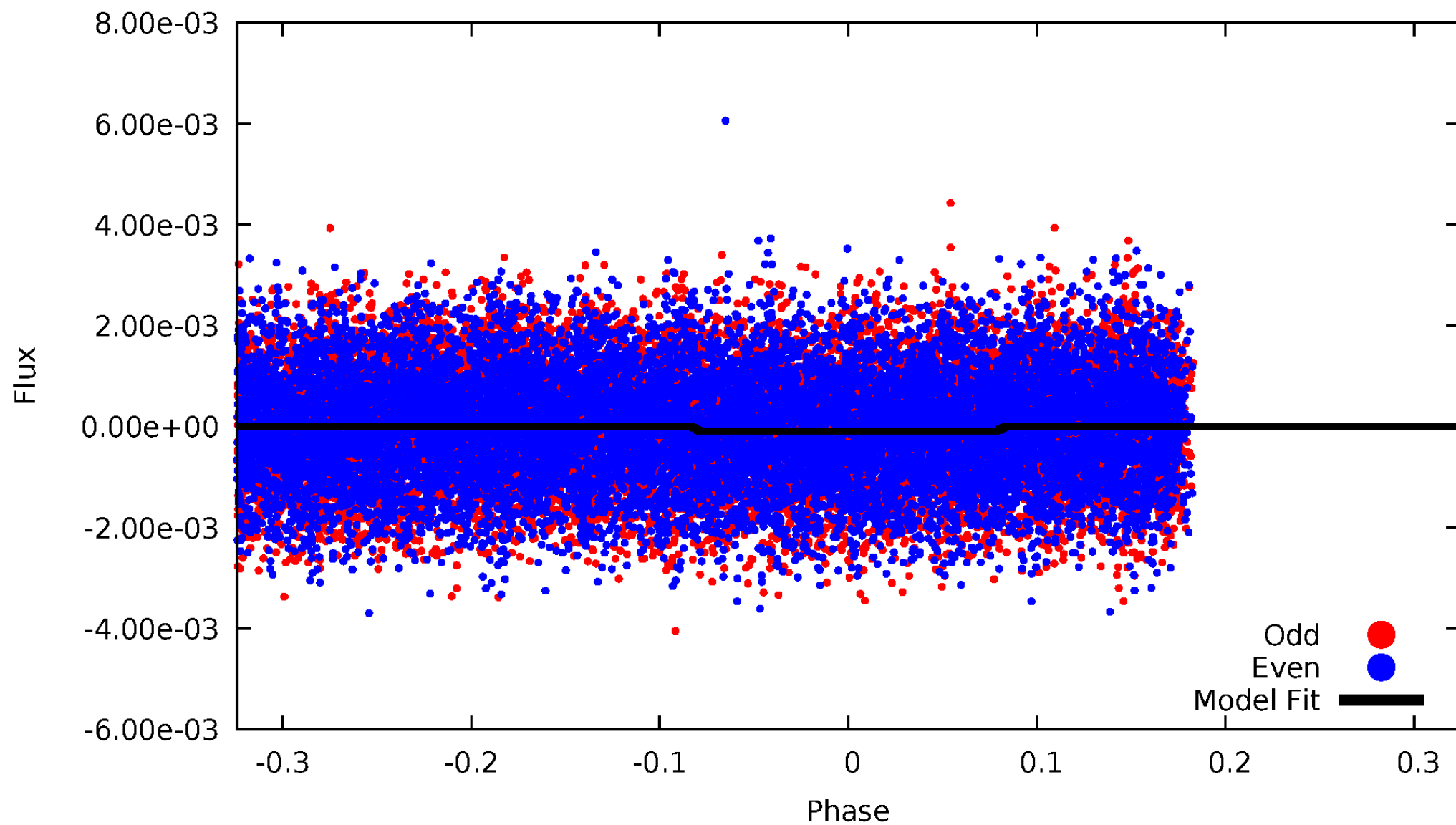
DV Odd/Even

TCE 004938281-02



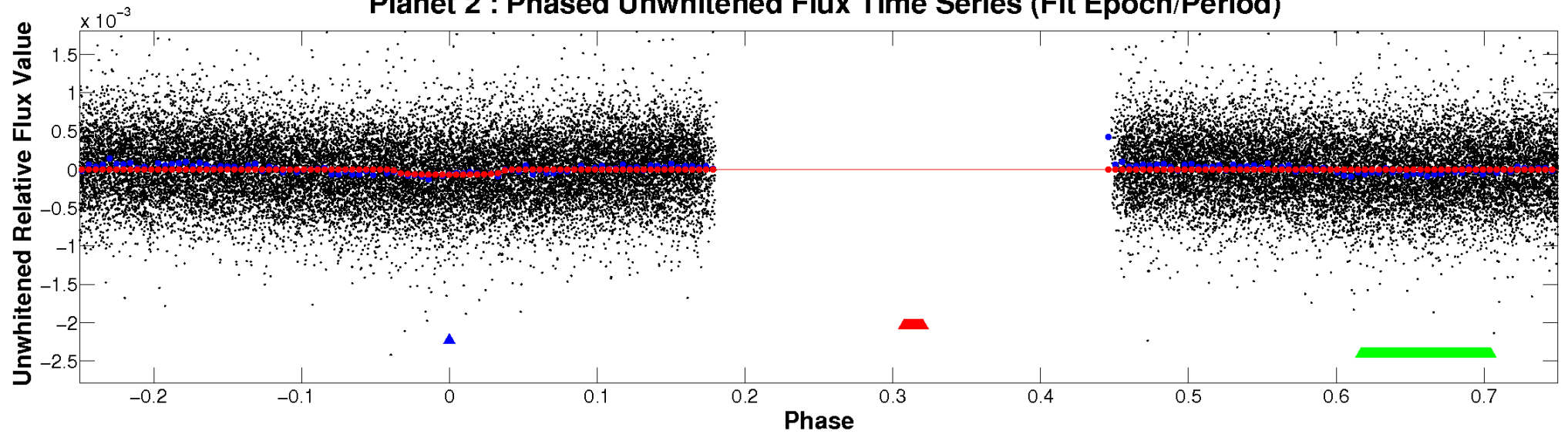
ALT Odd/Even

TCE 004938281-02

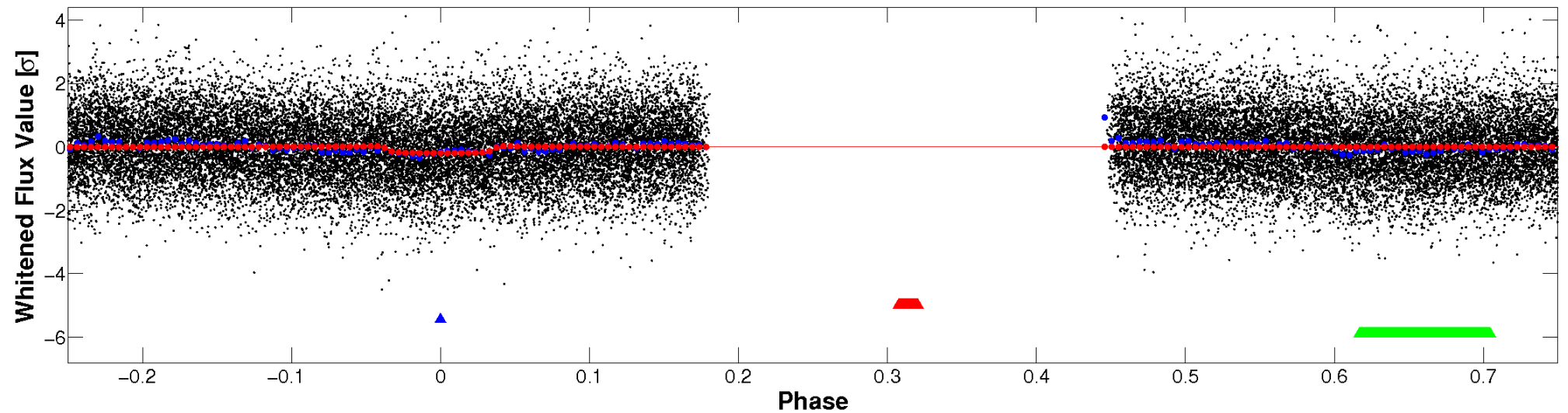


Non-Whitened Vs. Whitened Light Curve

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

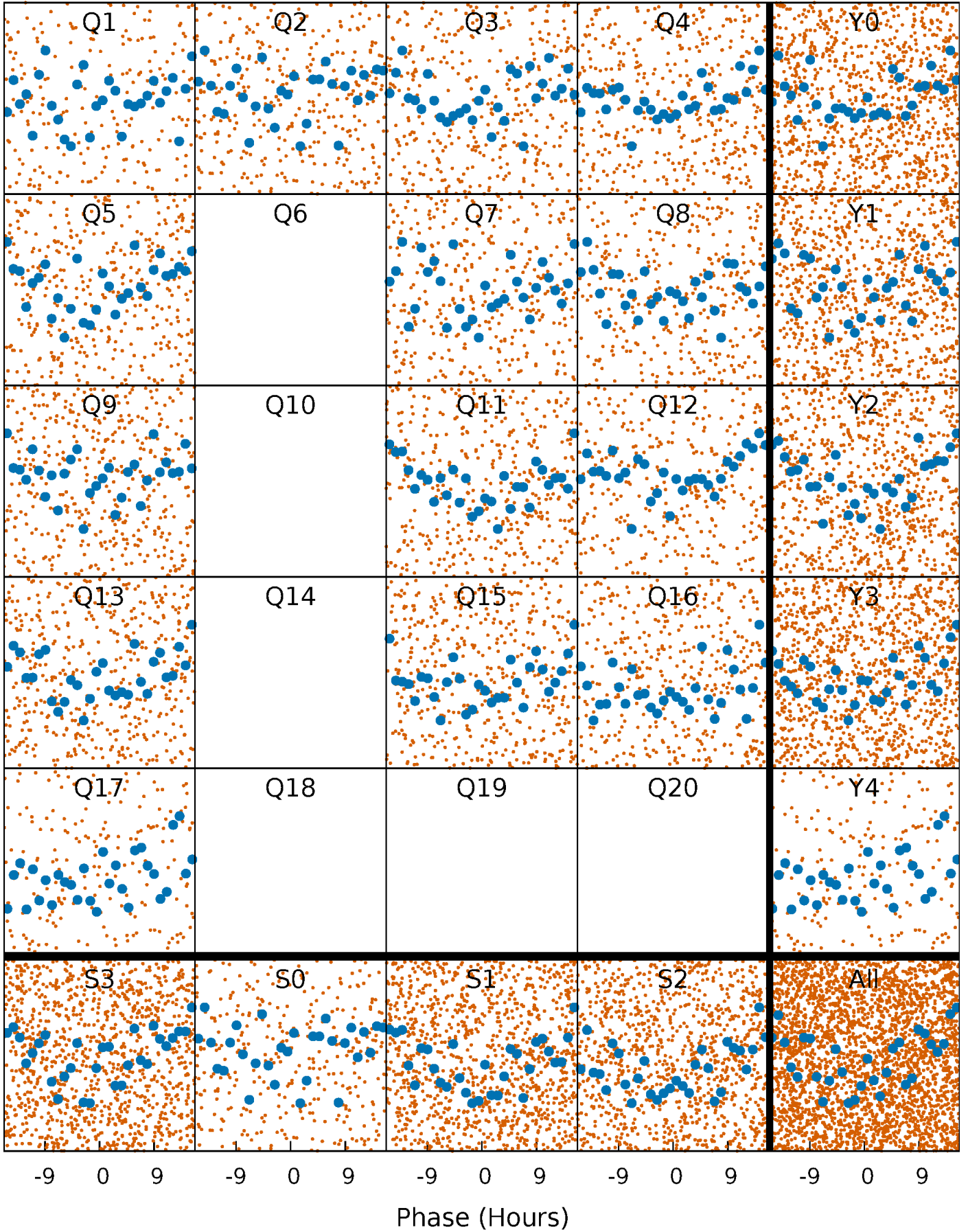


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



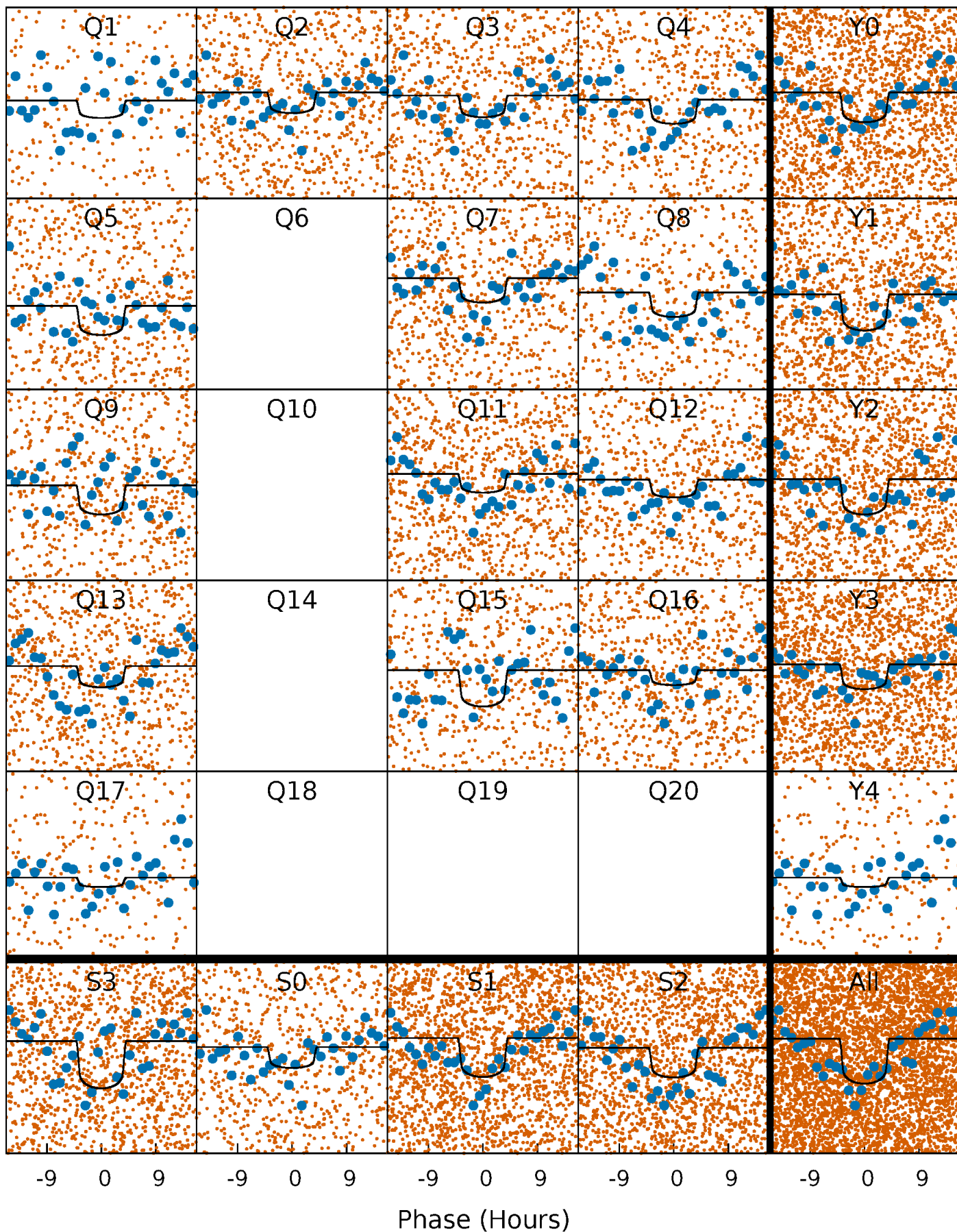
PDC Quarter-Phased Transit Curves

TCE 004938281-02 P= 4.354515 Days $T_0=134.672226$ (BKJD)



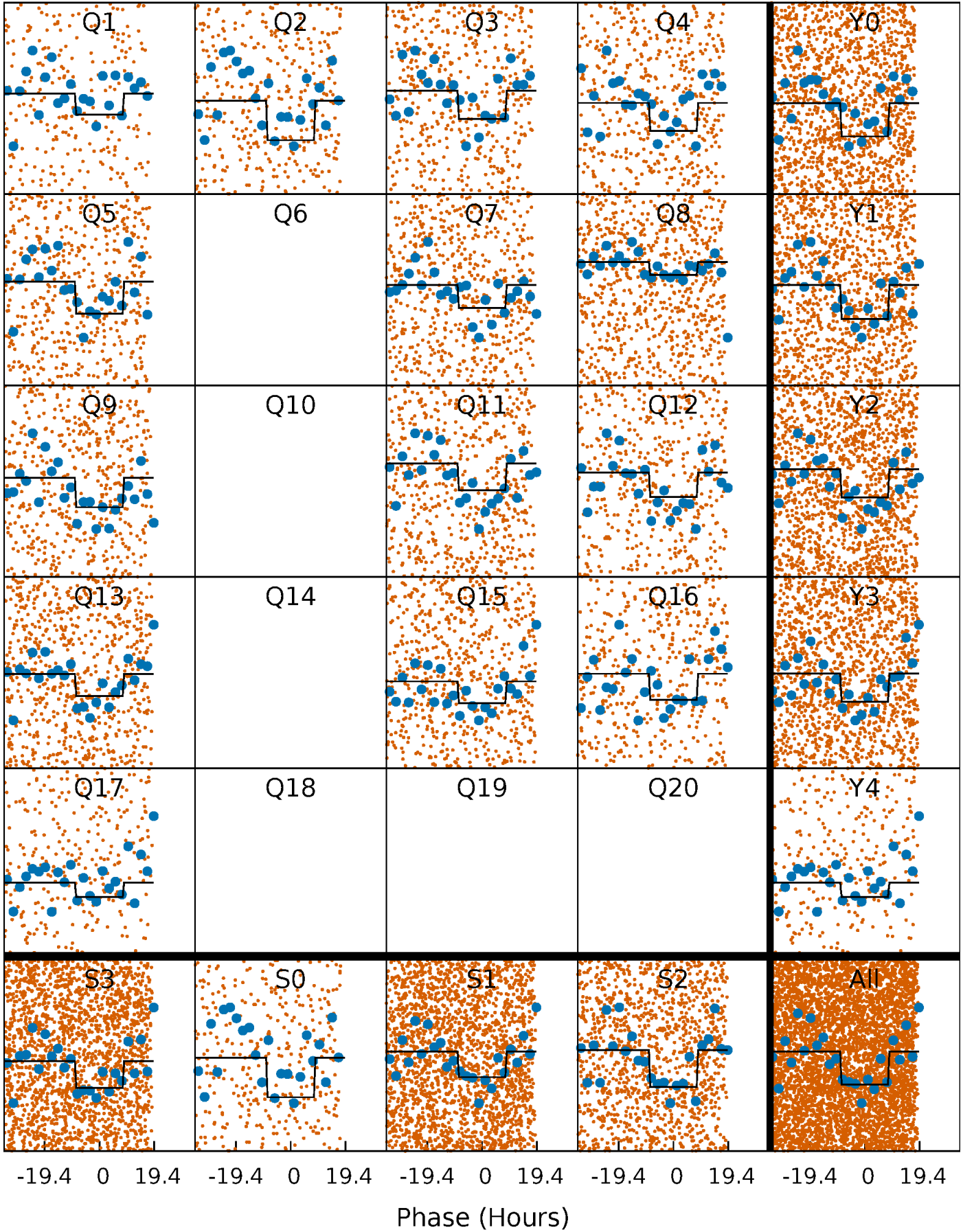
DV Quarter-Phased Transit Curves

TCE 004938281-02 P= 4.354515 Days $T_0=134.672226$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

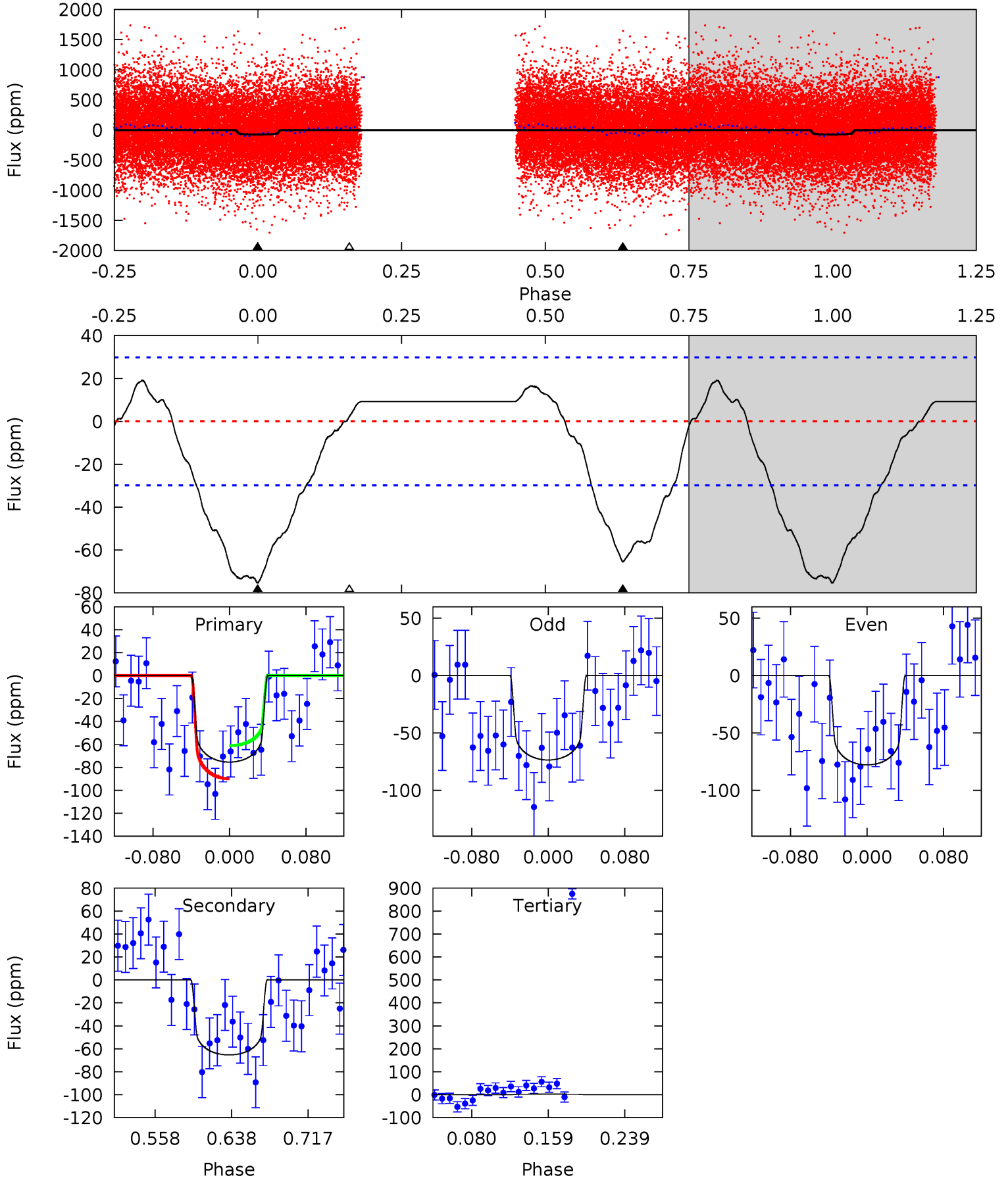
TCE 004938281-02 P= 4.354483 Days $T_0=134.672588$ (BKJD)



DV Model-Shift Uniqueness Test

004938281-02, P = 4.354515 Days, E = 130.317711 Days

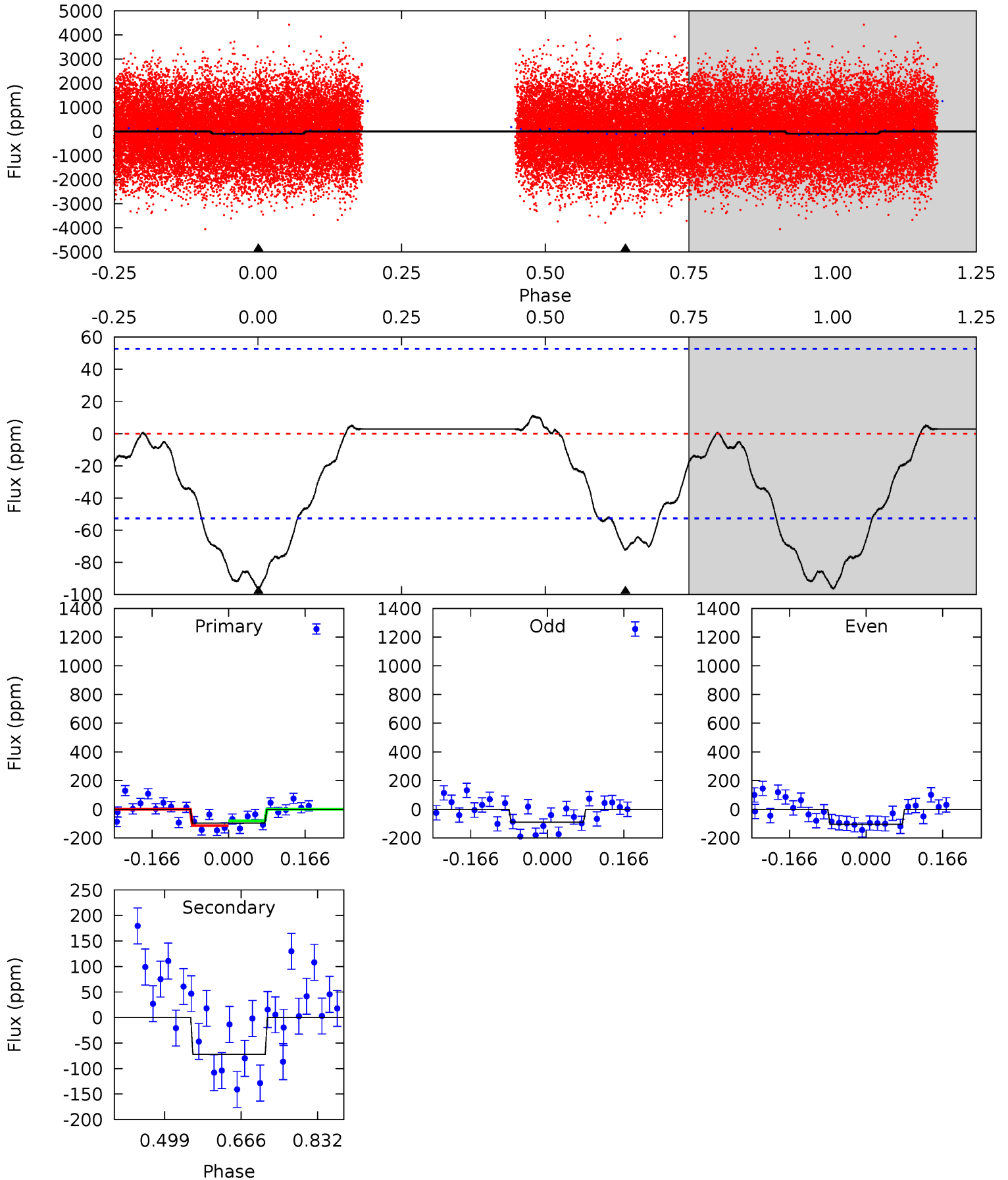
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	10.1	-0.33	0	4.61	1.75	2.65	12.0	11.7	10.4	10.1	0.33	0.98	0.20	2.25



Alt Model-Shift Uniqueness Test

004938281-02, P = 4.354483 Days, E = 130.318105 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.15	6.12	0	0	4.46	1.38	0.51	8.15	8.15	6.12	6.12	0.58	0.99	0.10	1.38



Stellar Parameters For KIC 004938281

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8092^{+225}_{-338}	$4.067^{+0.150}_{-0.150}$	$0.070^{+0.250}_{-0.450}$	$2.108^{+0.471}_{-0.518}$	$1.890^{+0.210}_{-0.361}$	$0.284^{+0.244}_{-0.112}$
	+3%/-4%	+4%/-4%	+357%/-643%	+22%/-25%	+11%/-19%	+86%/-39%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004938281-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-65 ± 6	$2.01^{+0.75}_{-0.67}$	2851^{+168}_{-193}	7633^{+2217}_{-1250}	36^{+44}_{-17}
Alt.	-72 ± 12	$2.20^{+0.85}_{-0.70}$	2840^{+198}_{-178}	7401^{+1987}_{-1114}	33^{+39}_{-16}

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 $A_{obs} \gg 1.0$

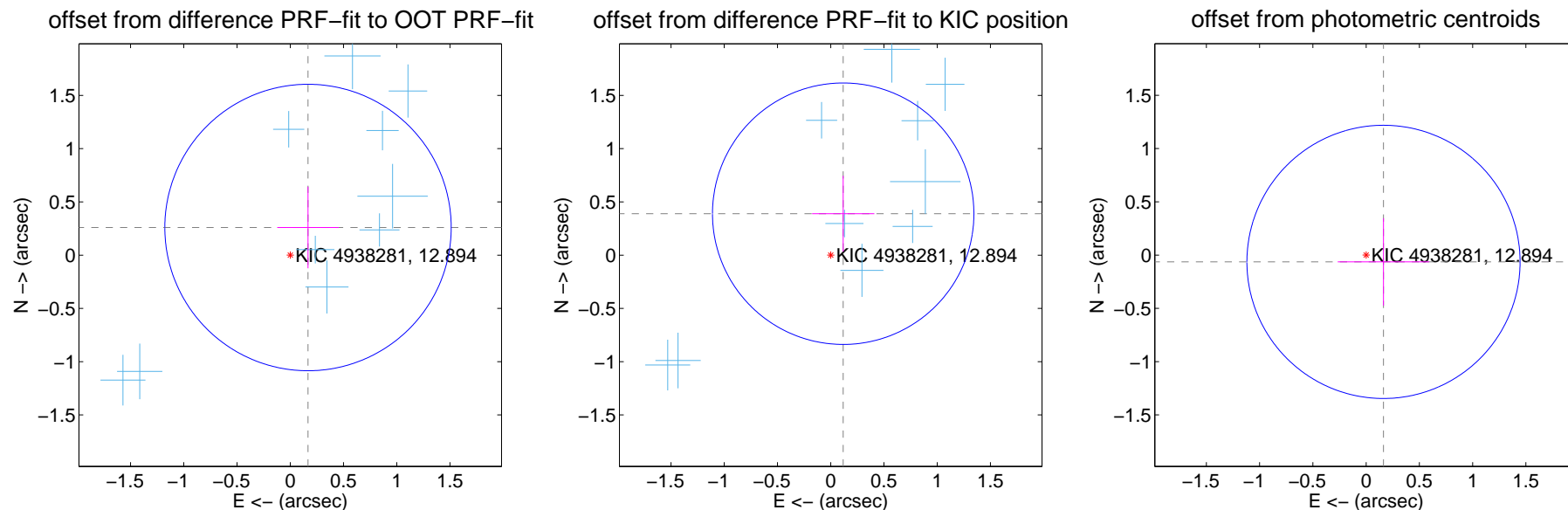
DV Centroid Data

Supplemental centroid analysis for 004938281-02. Kepler magnitude: 12.89. Transit SNR 10.53

There are 11 quarters with good PRF difference image offsets

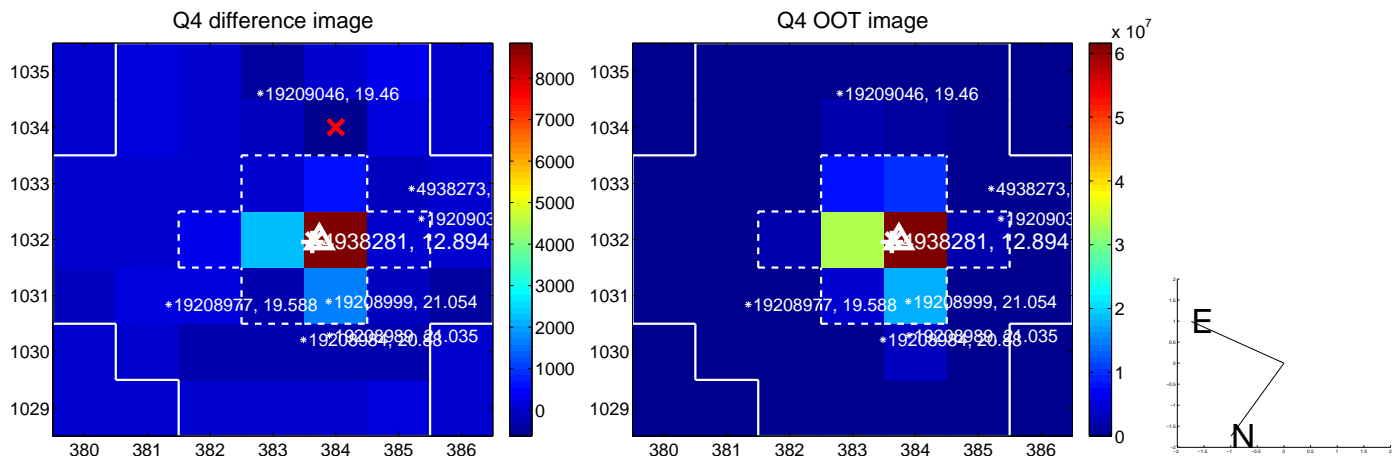
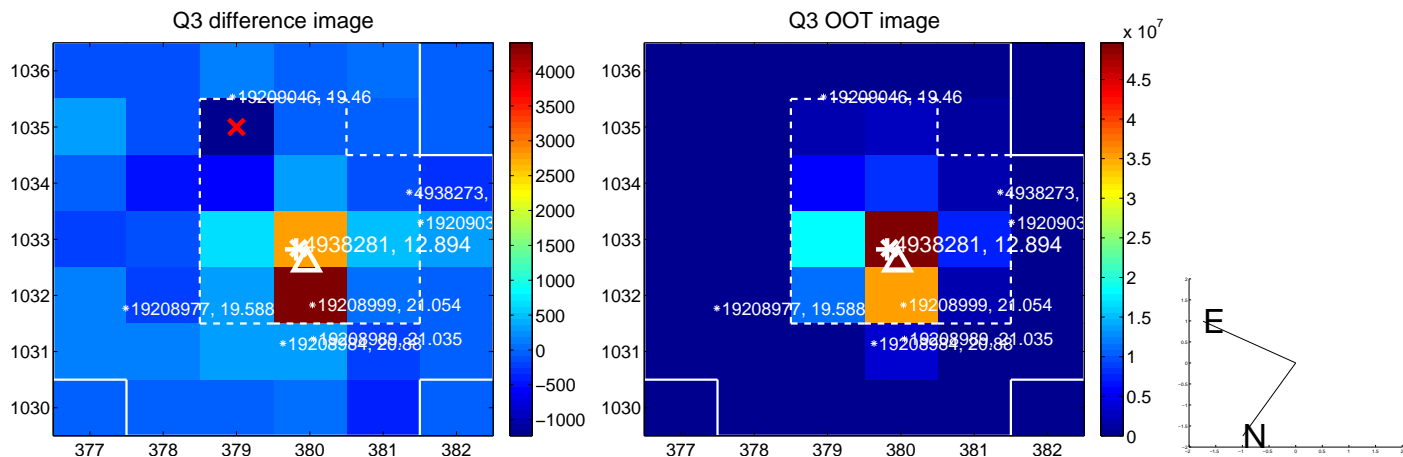
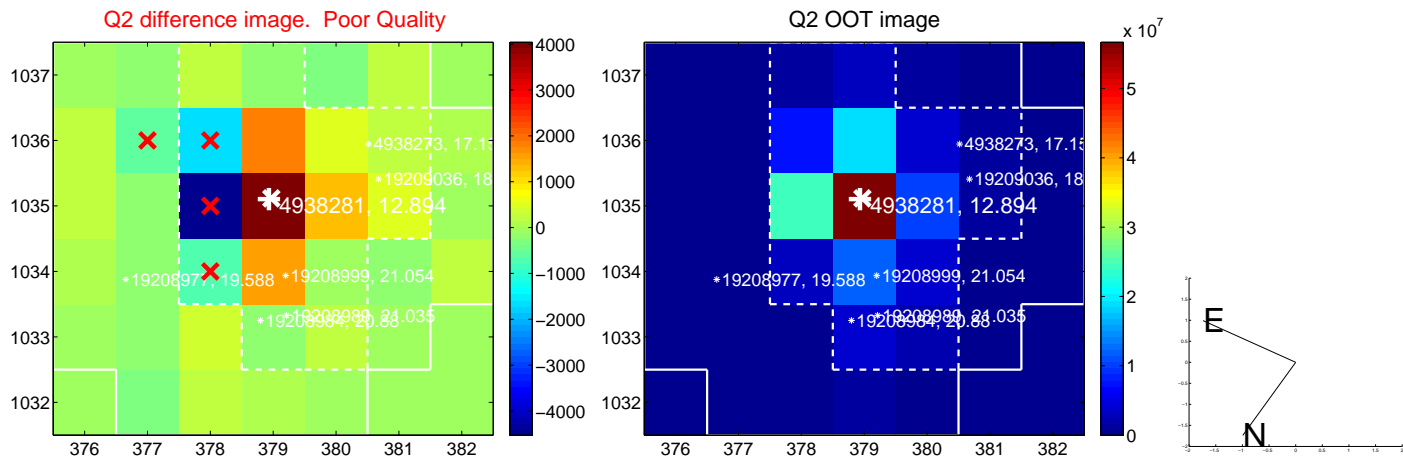
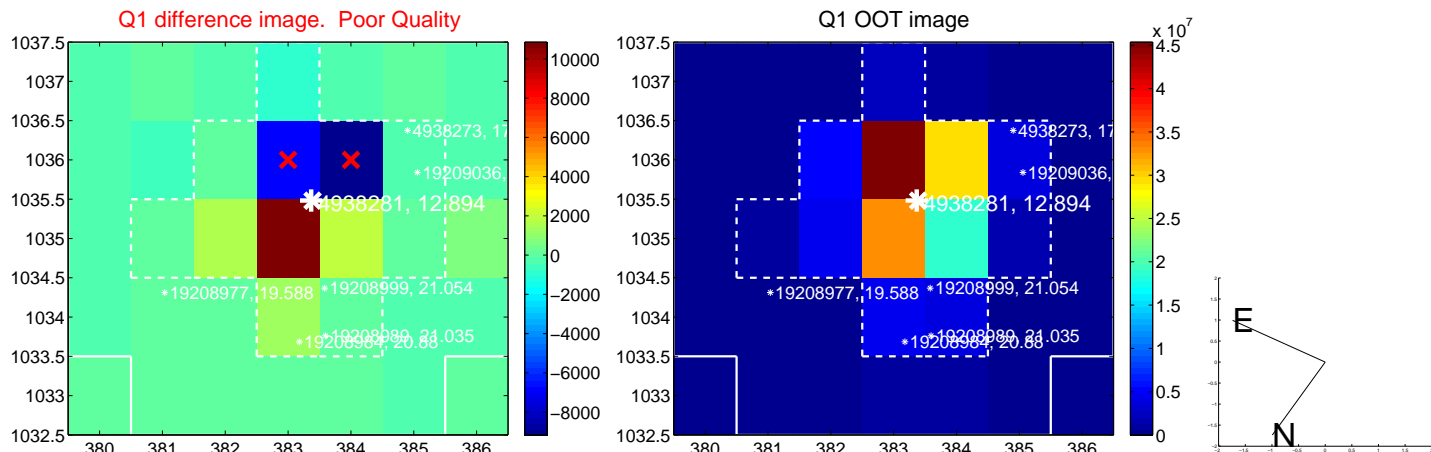
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.308 ± 0.448	0.69	-0.167 ± 0.289	0.259 ± 0.383
PRF-fit source offset from KIC position	0.406 ± 0.409	0.99	-0.117 ± 0.292	0.389 ± 0.356
photometric centroid source offset	0.18 ± 0.43	0.41	-0.16 ± 0.43	-0.06 ± 0.41

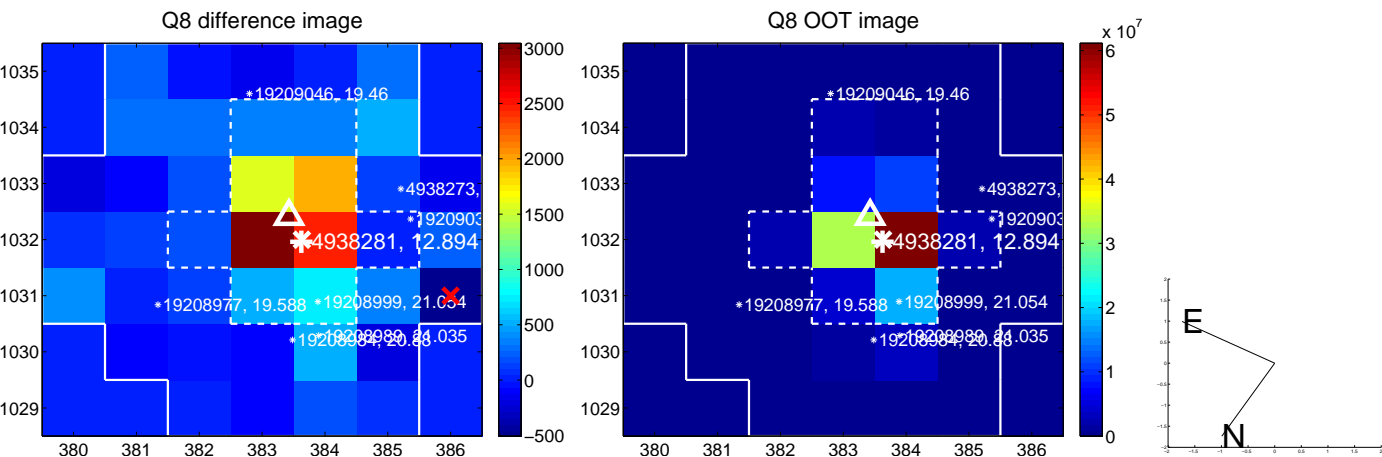
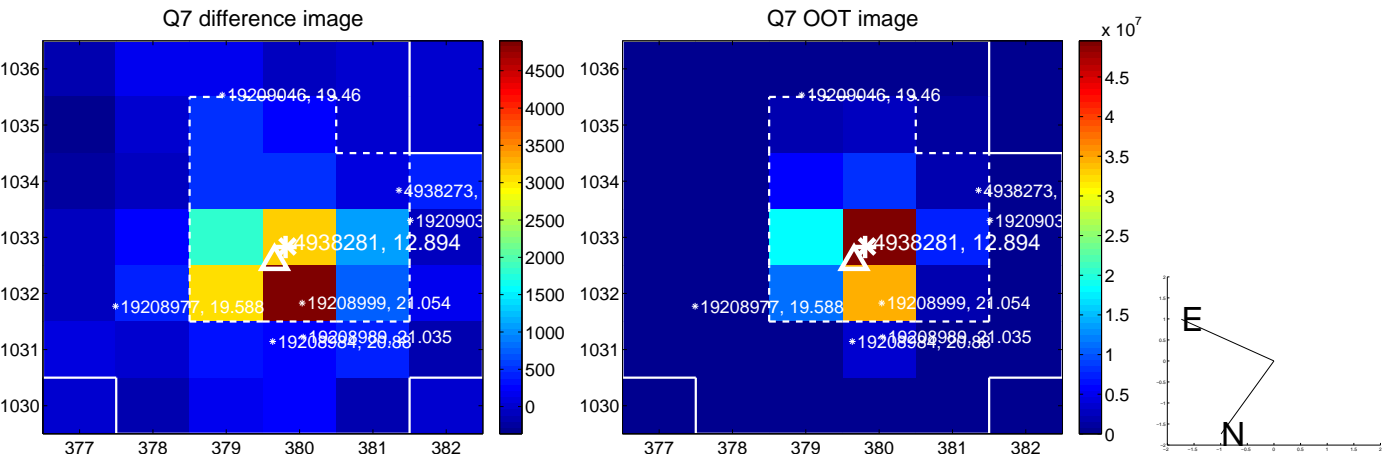
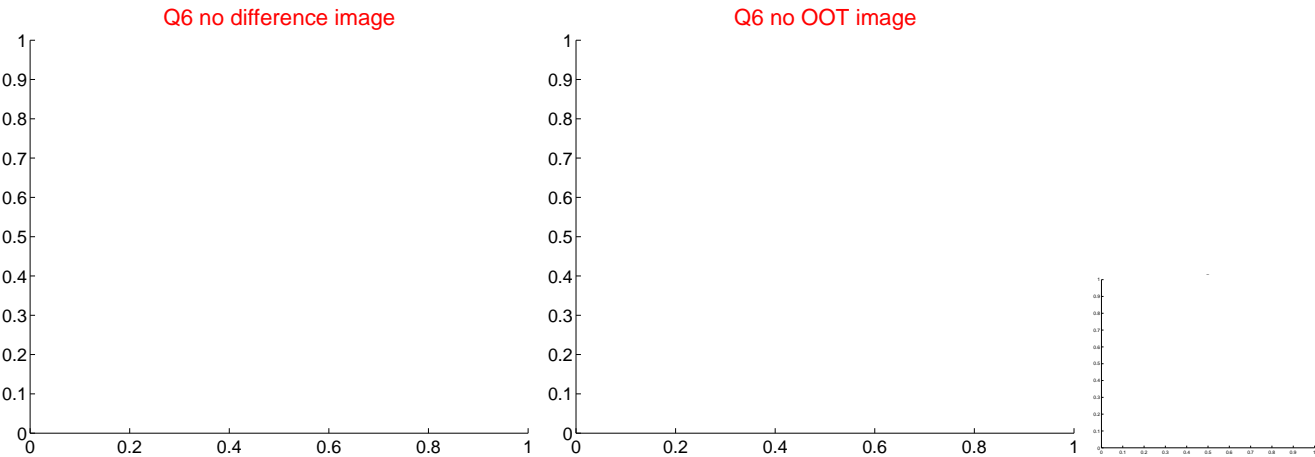
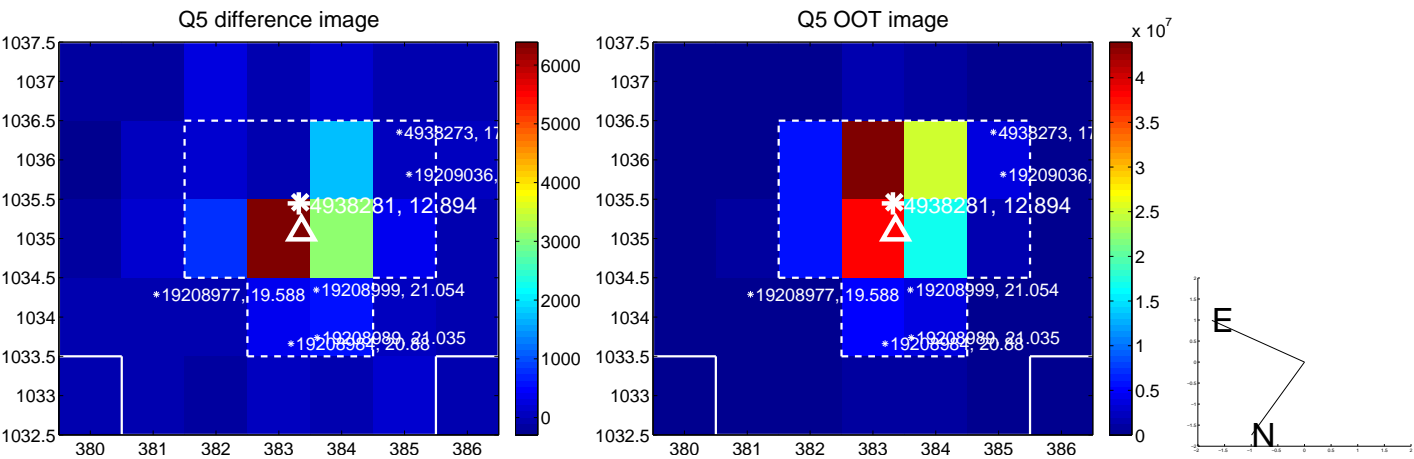


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

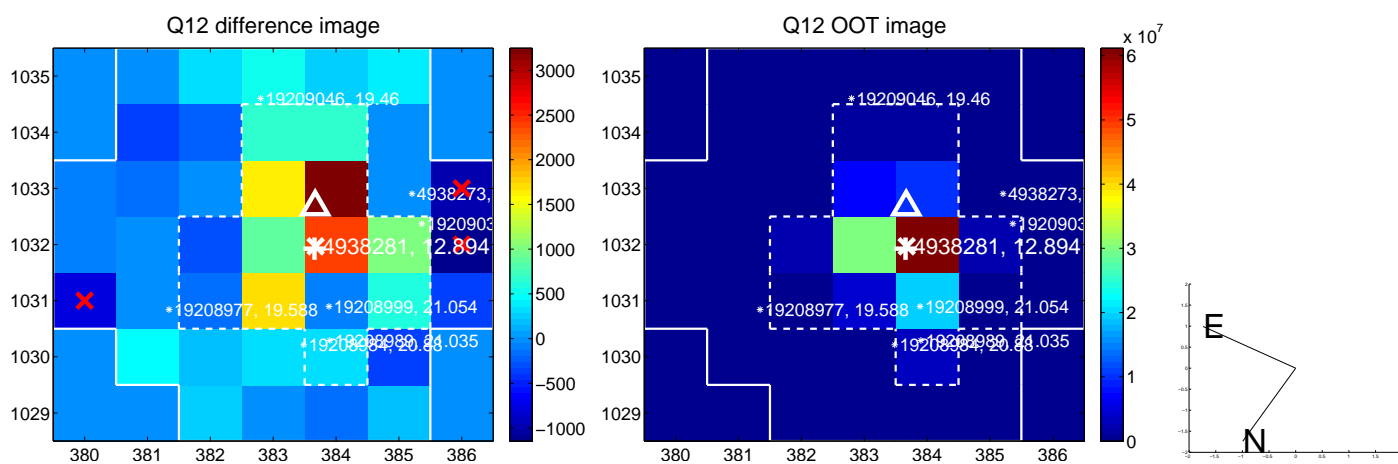
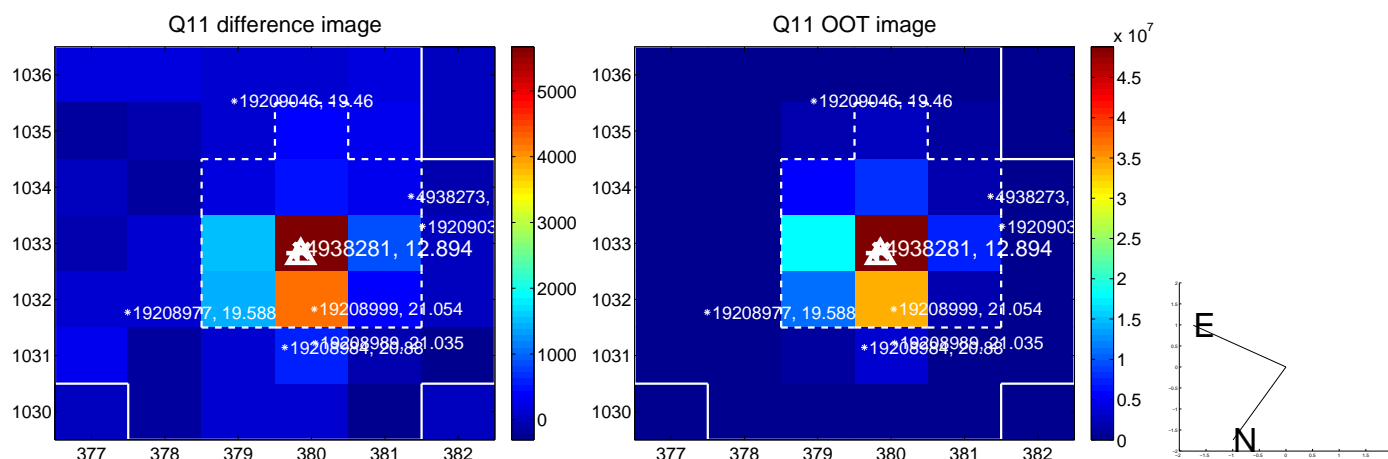
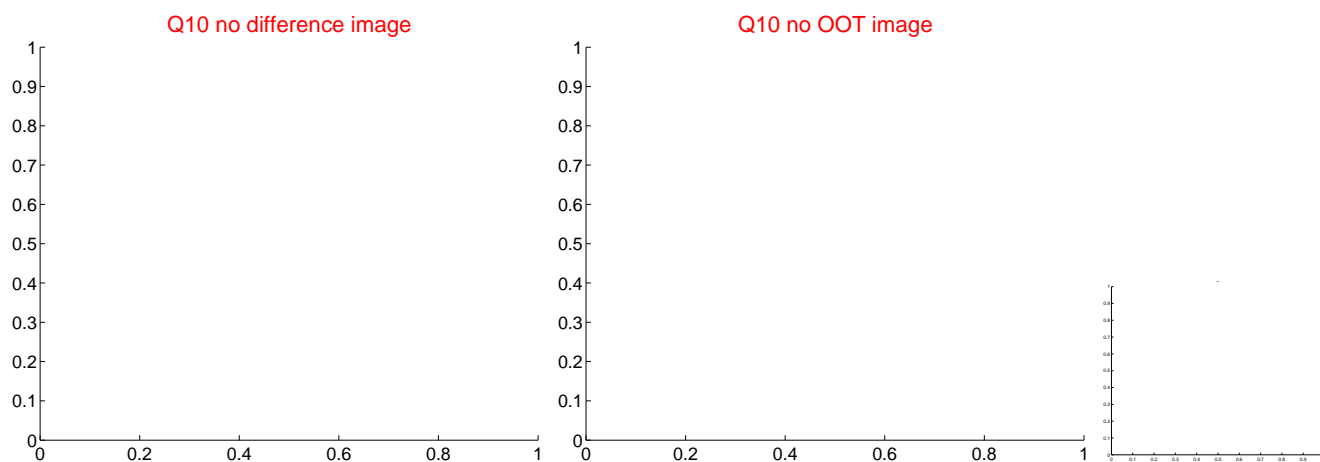
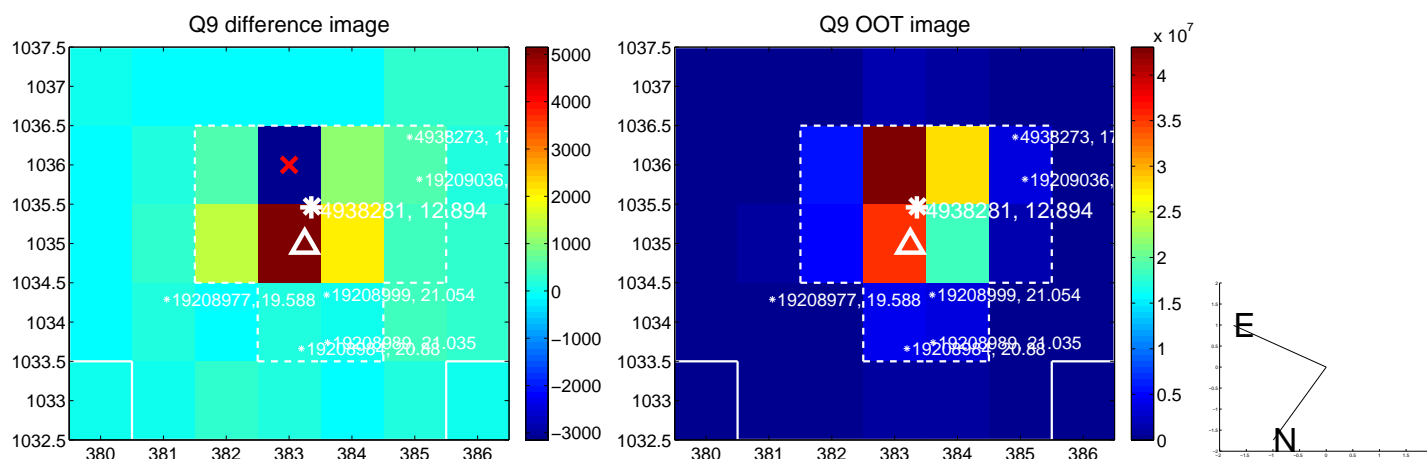
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



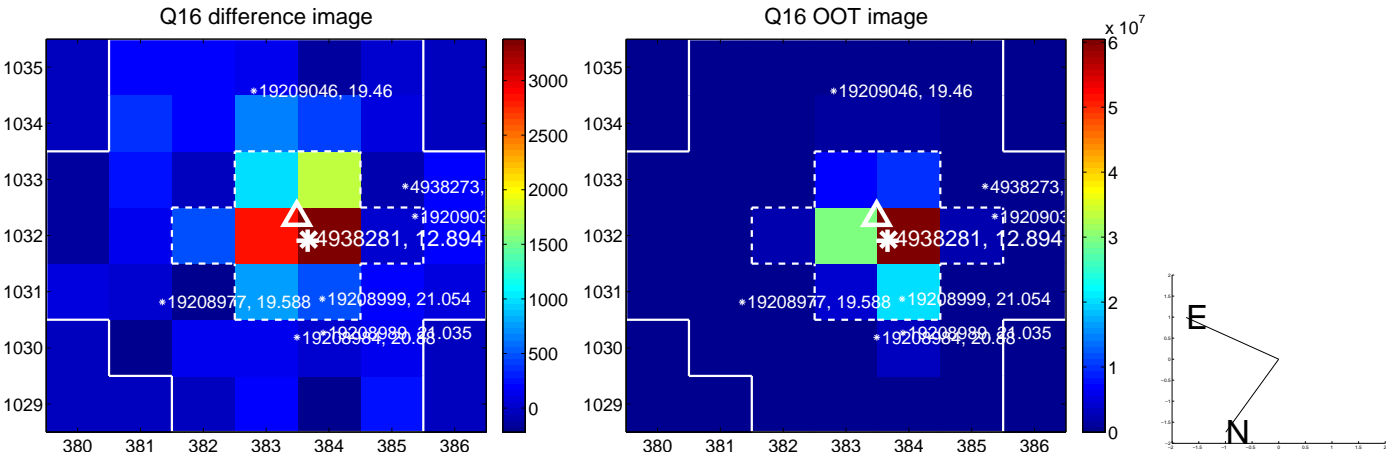
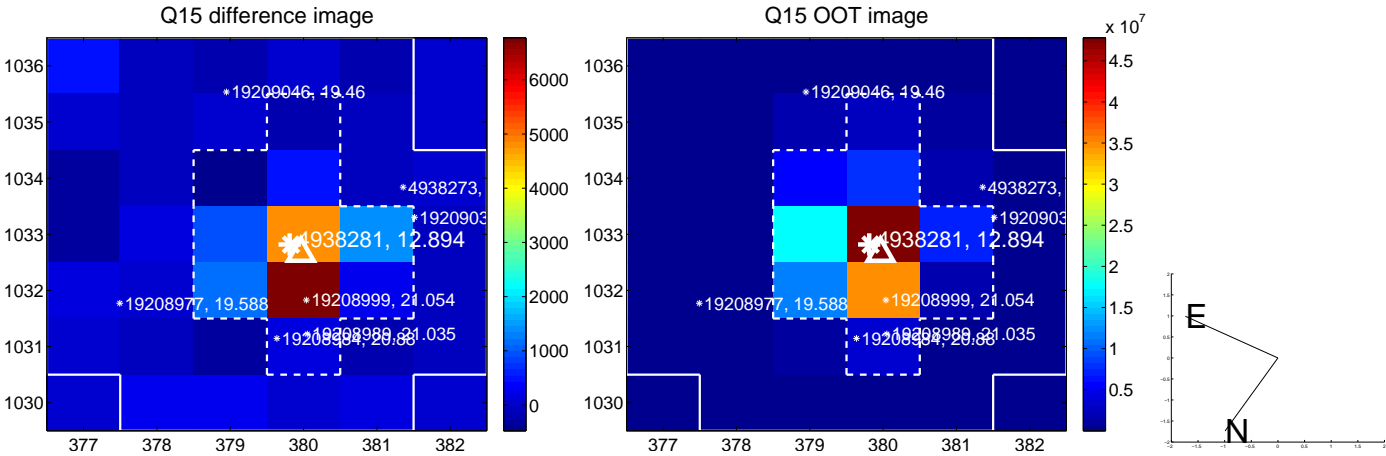
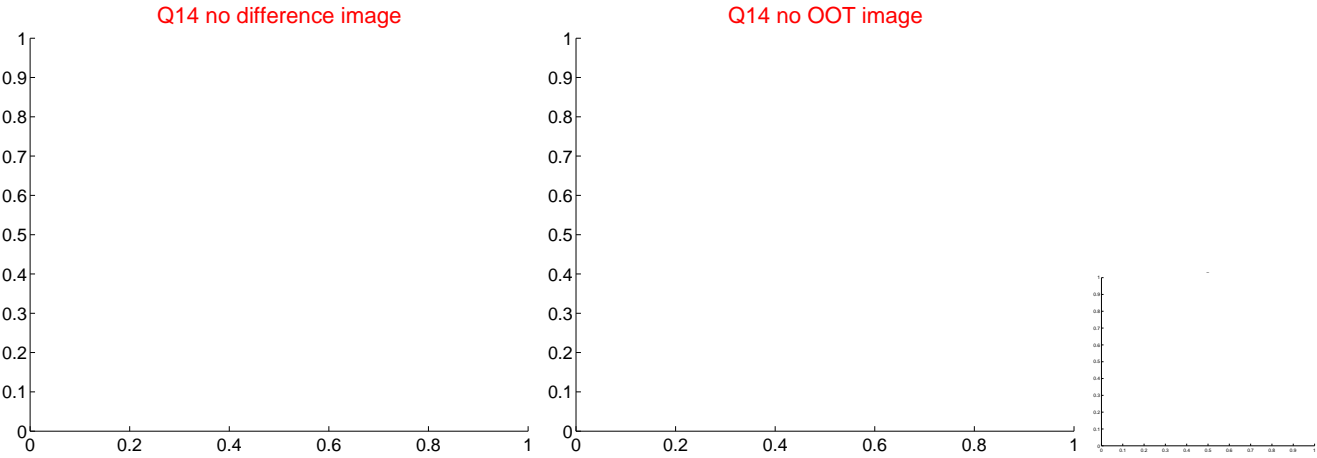
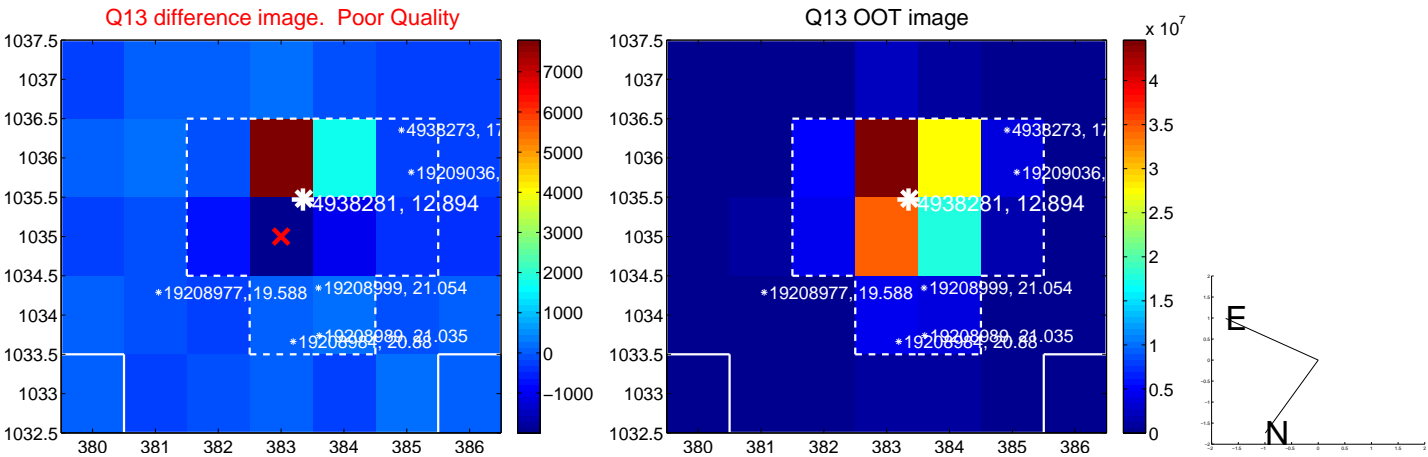
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



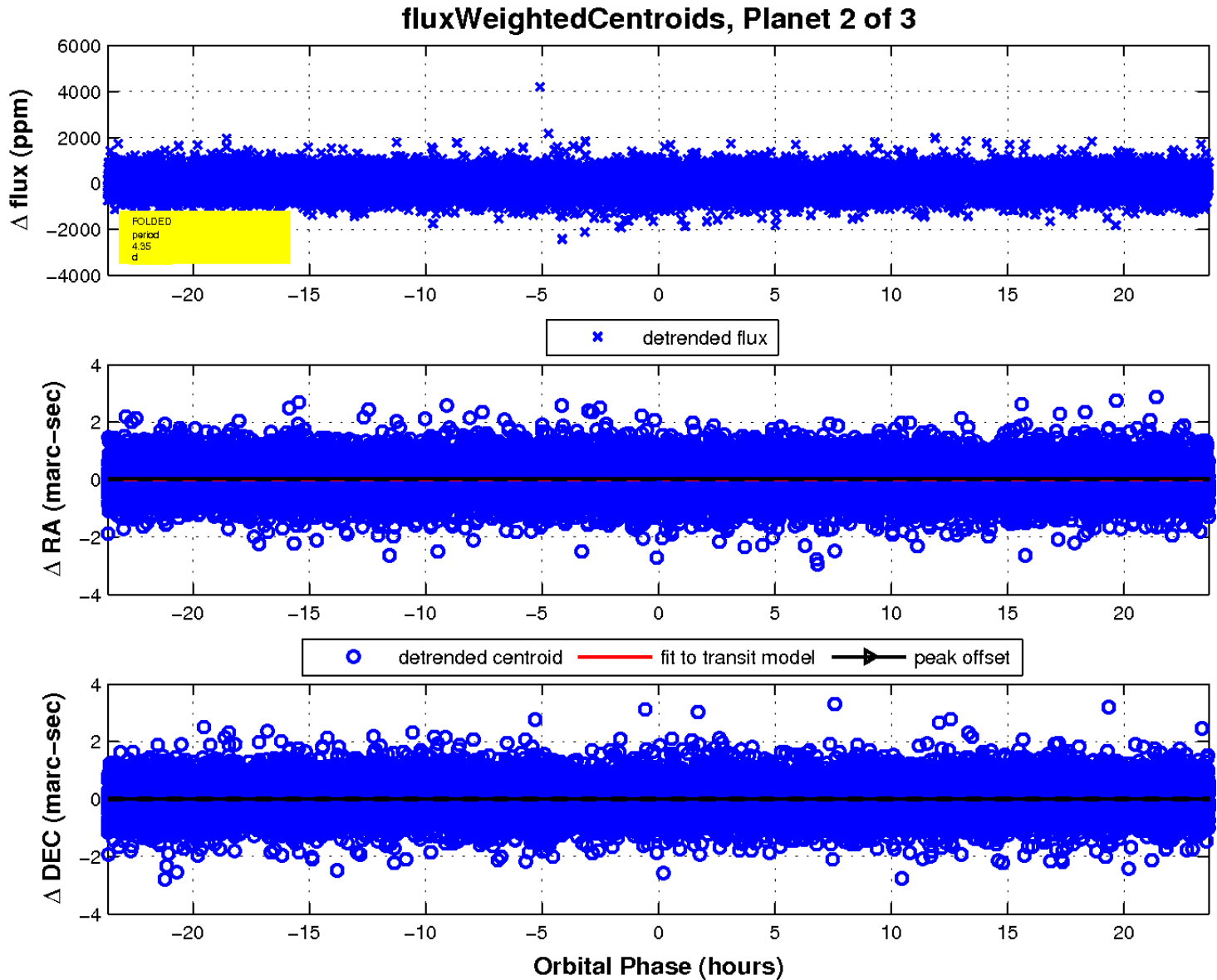
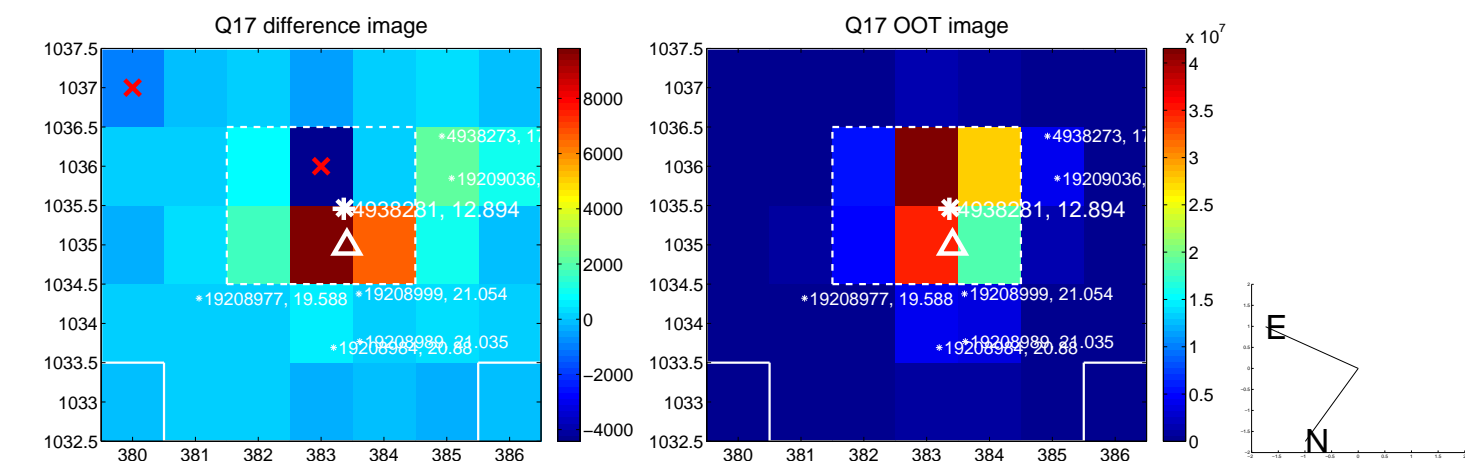
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



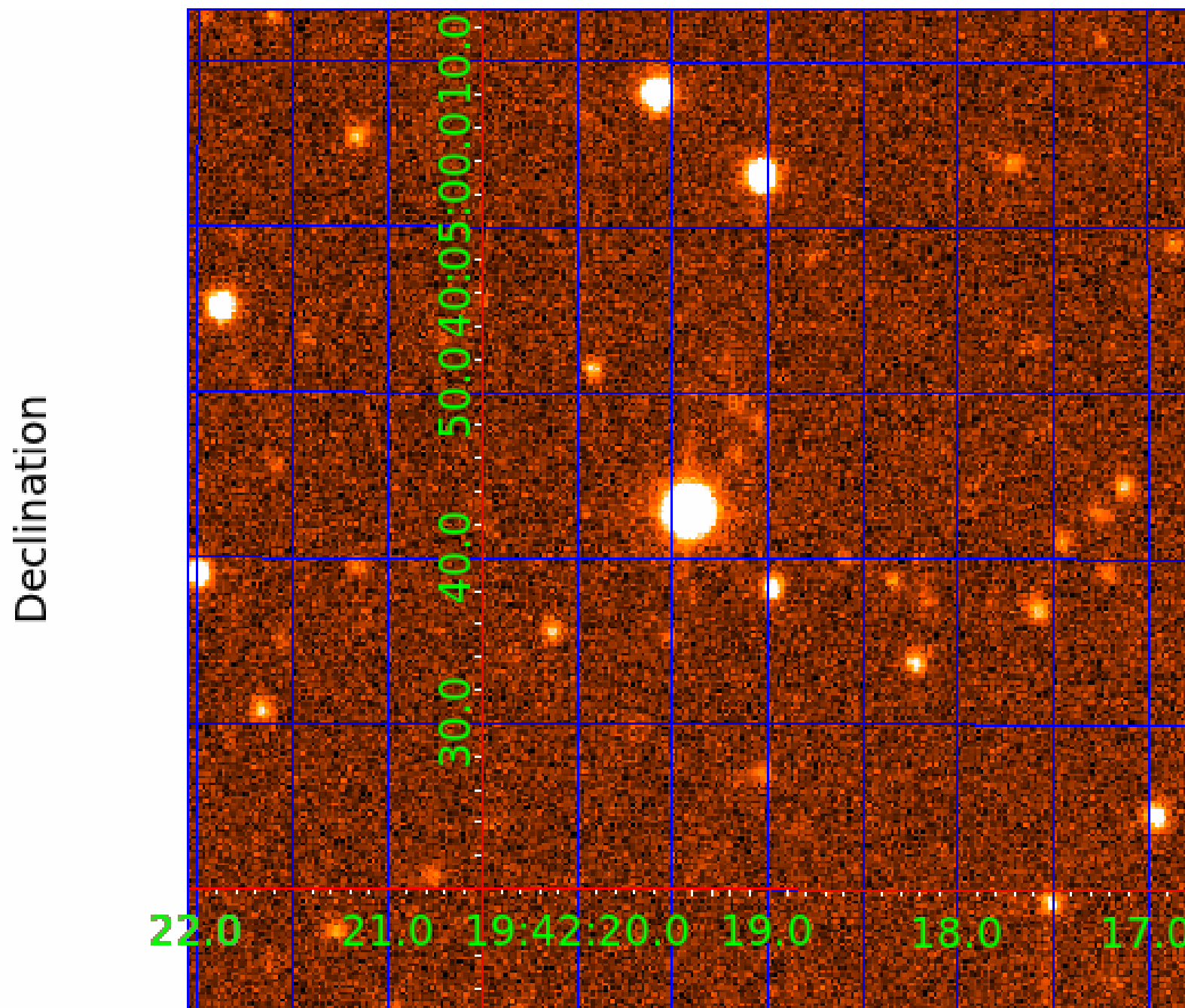
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



UKIRT Image



KIC 004938281

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})
004938281-01	OBS	No	4.354683	131.656740	49.1	9.554	8.5	8.2	2.11	8092	1.72	4096.59
004938281-02	OBS	No	4.354515	134.672226	69.3	7.886	10.3	10.5	2.11	8092	2.01	4096.80
004938281-03	OBS	No	4.355660	133.003341	46.8	21.558	8.4	10.3	2.11	8092	1.46	4095.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004938281-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004938281-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD
004938281-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

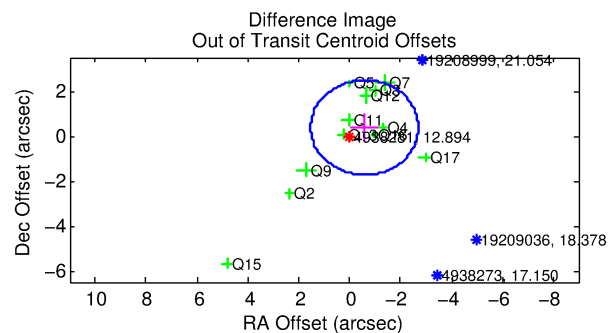
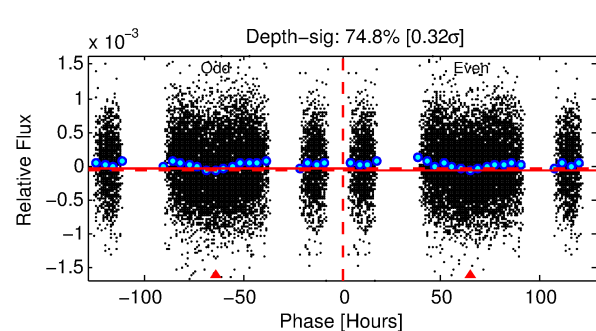
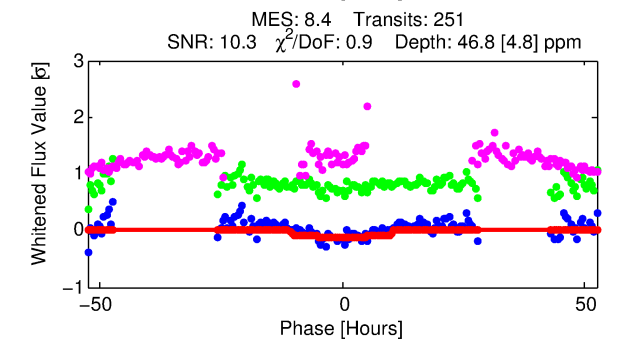
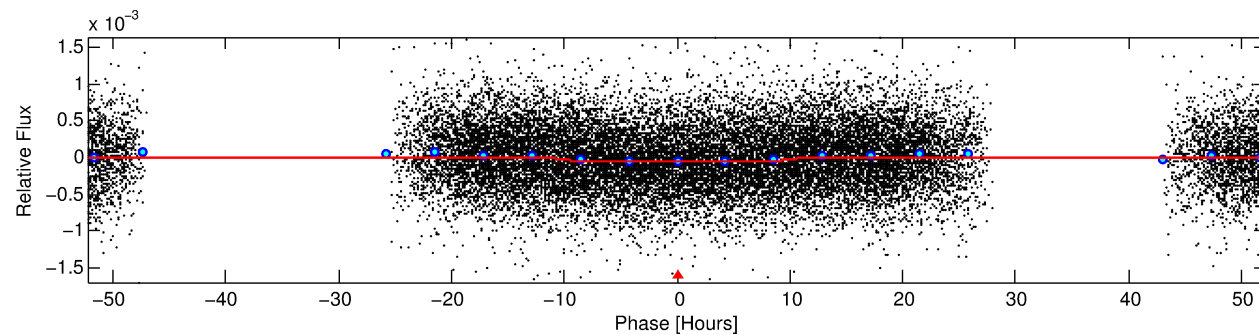
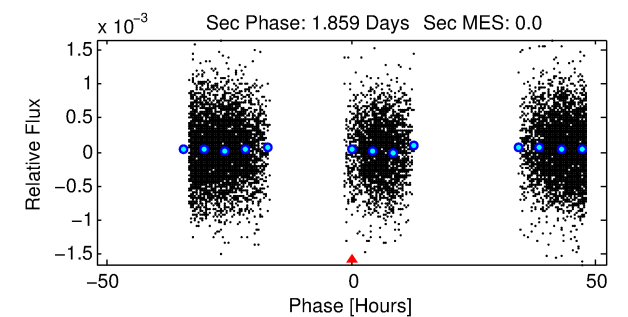
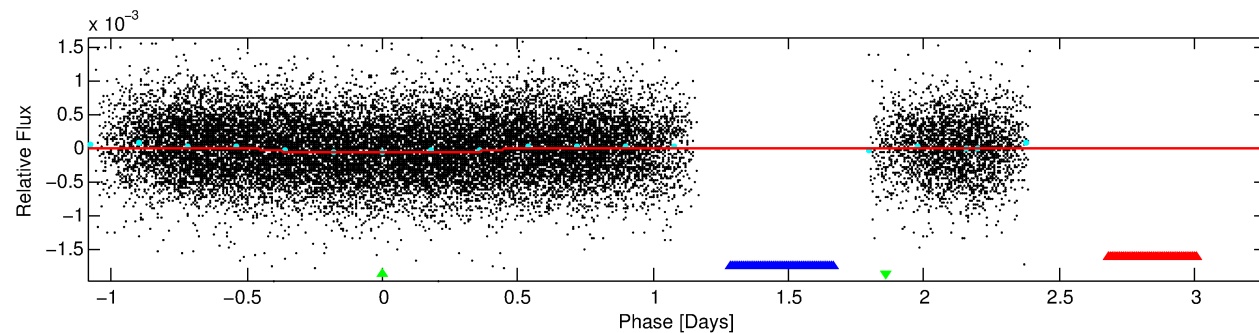
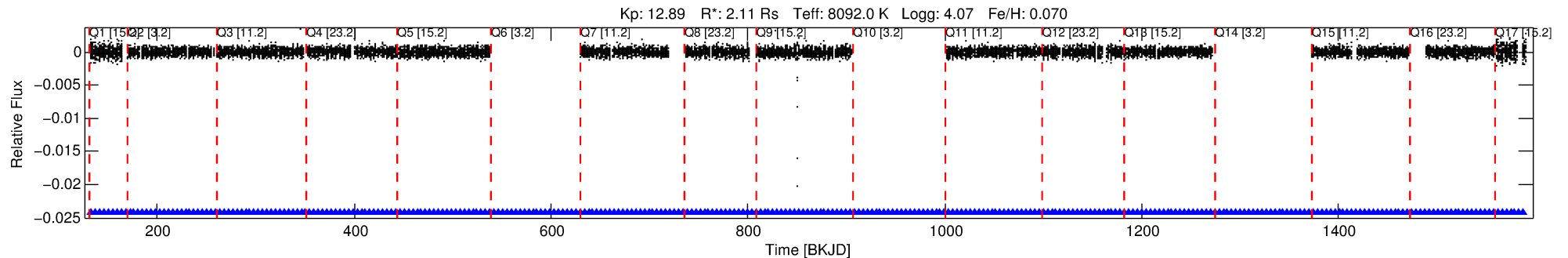
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004938281-03

No Significant Match Found

DV One-Page Summary

KIC: 4938281 Candidate: 3 of 3 Period: 4.356 d



DV Fit Results:

Period = 4.35566 [0.00011] d
Epoch = 133.0033 [0.0181] BKJD
Rp/R* = 0.0064 [0.0095]
a/R* = 1.65 [9.25]
b = 0.16 [53.25]
Seff = 4095.37 [1344.45]
Teq = 2040 [167] K
Rp = 1.46 [2.21] Re
a = 0.0646 [0.0129] AU
Ag = N/A
Teffp = N/A

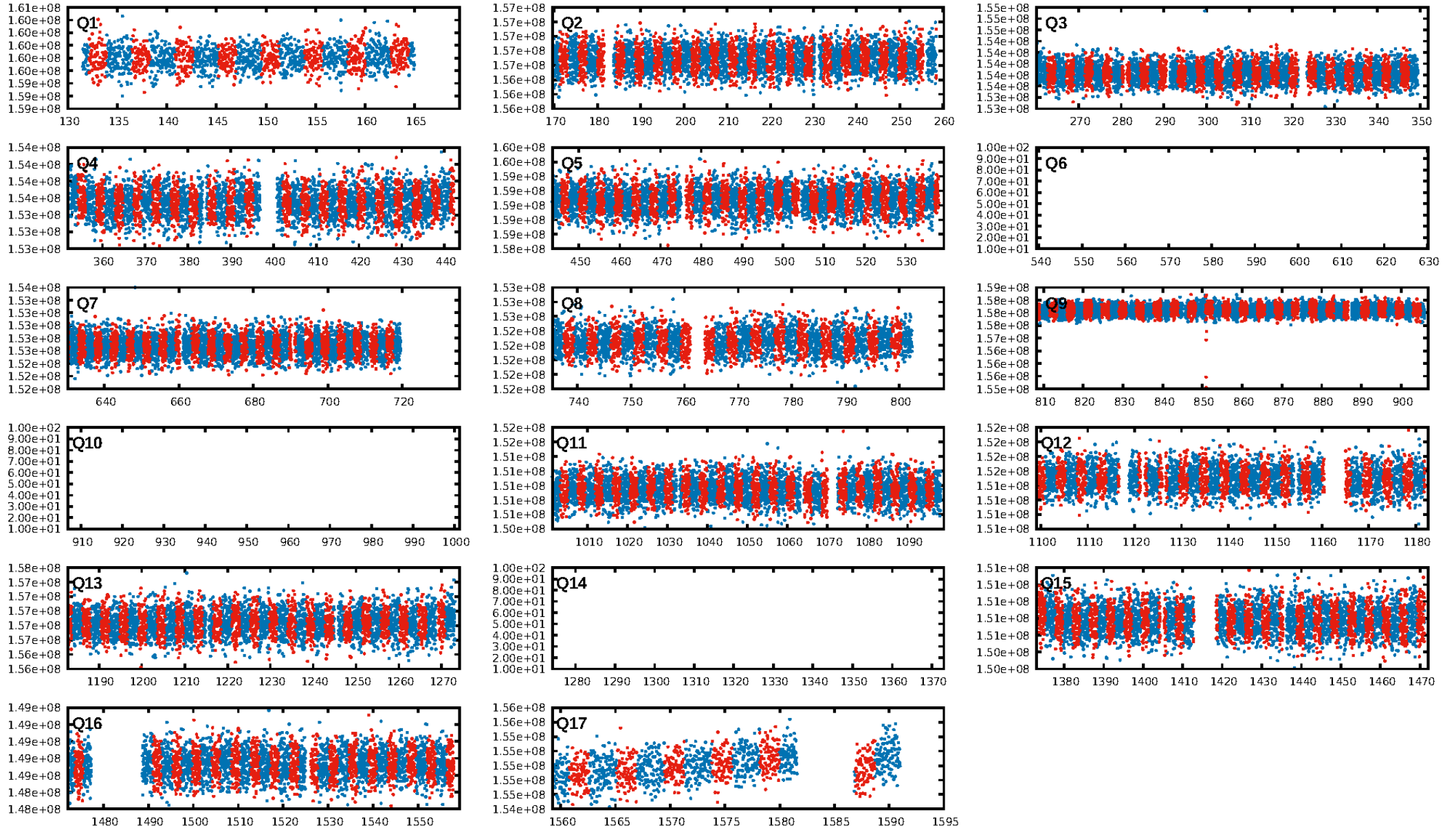
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [237/237]
GhostDiagnostic-chr: 26.02
Centroid-sig: 30.3%
Centroid-so: 0.431 arcsec [1.07σ]
OotOffset-rm: 0.695 arcsec [0.99σ]
KicOffset-rm: 0.756 arcsec [0.94σ]
OotOffset-st: 1/4/3/4 [12]
KicOffset-st: 1/4/3/4 [12]
DiffImageQuality-fgm: 0.83 [10/12]
DiffImageOverlap-fno: 0.00 [0/14]

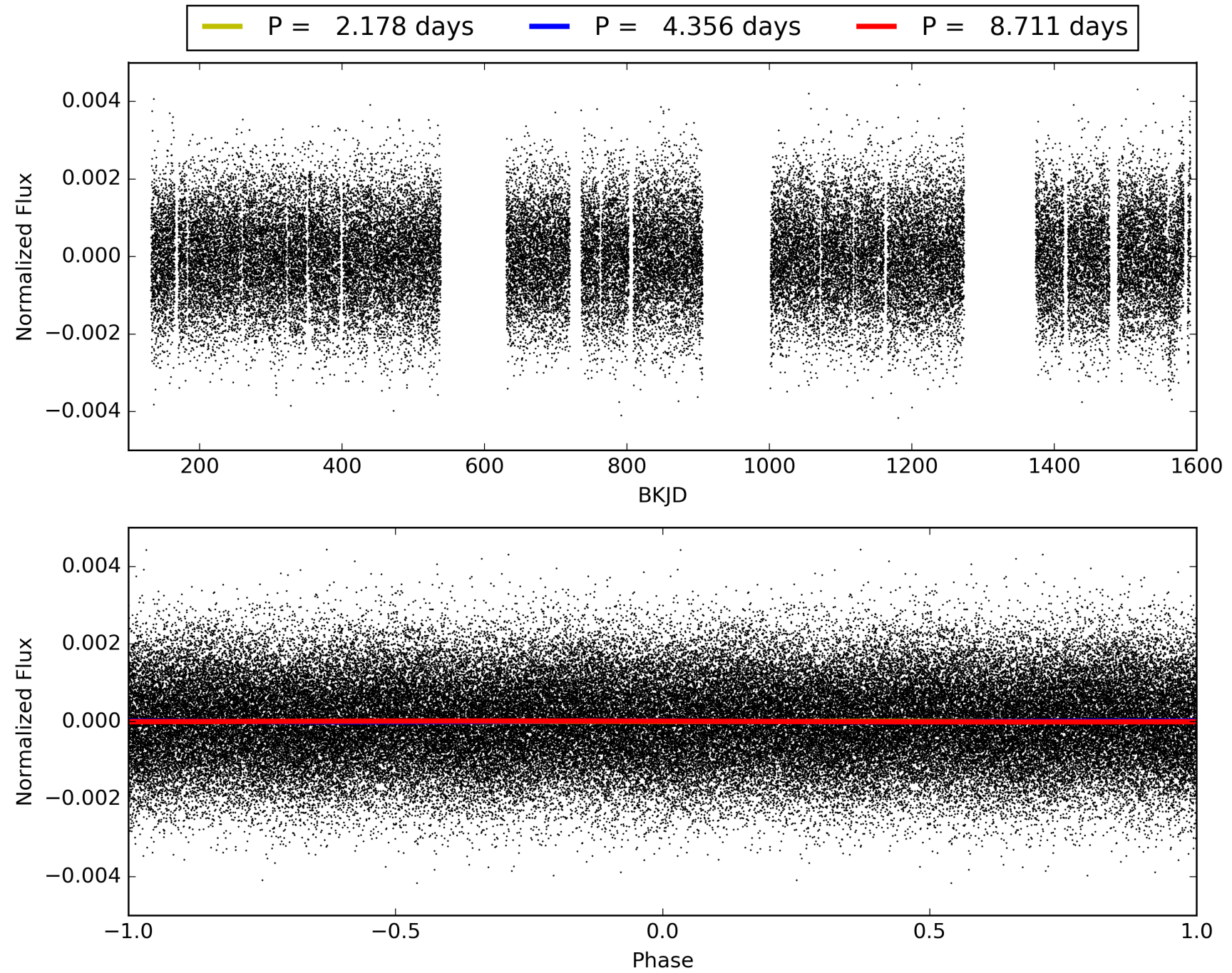
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:26:50 Z

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

TCE 004938281-03, PDC Light Curves

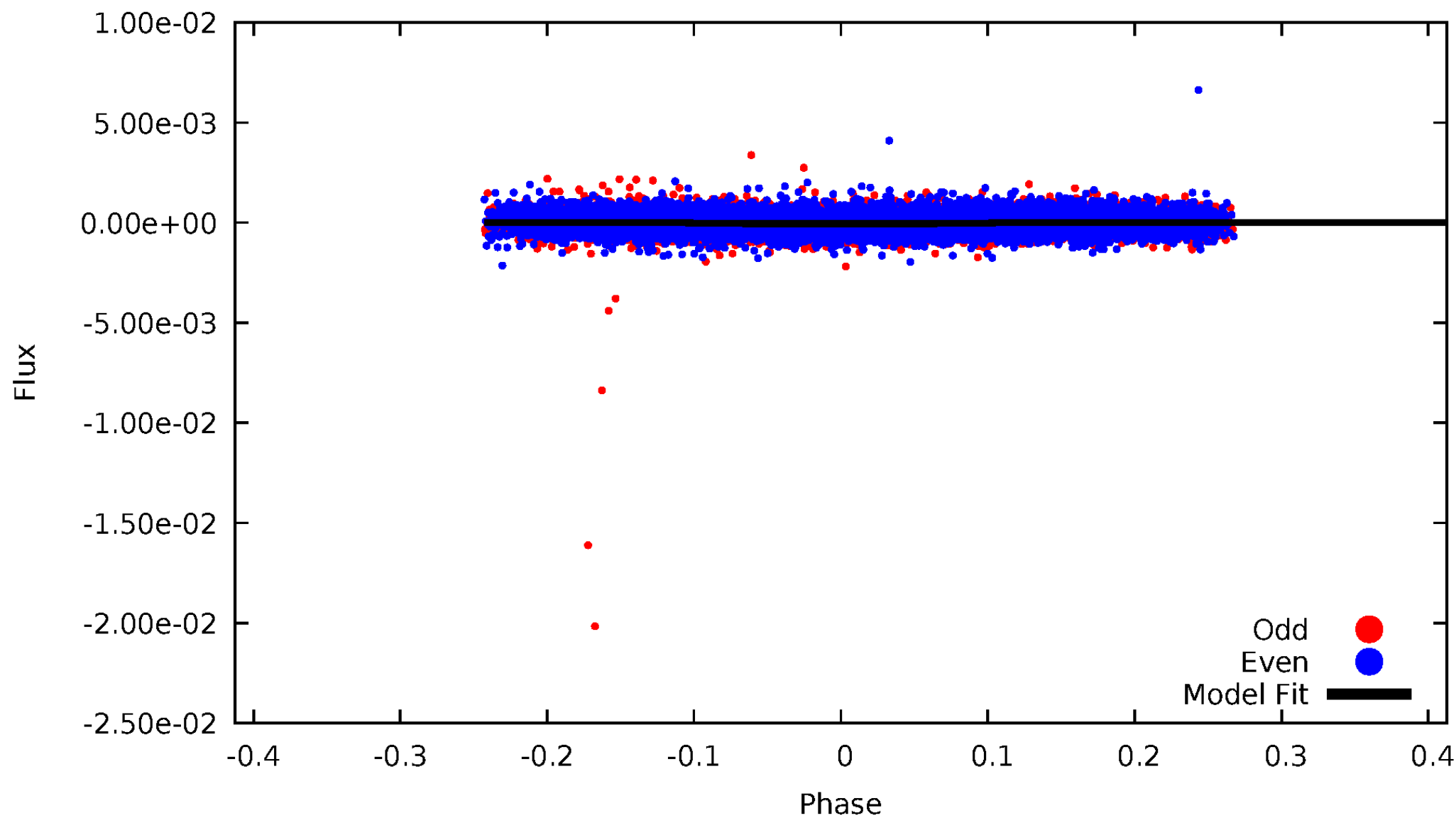


TCE 004938281-03



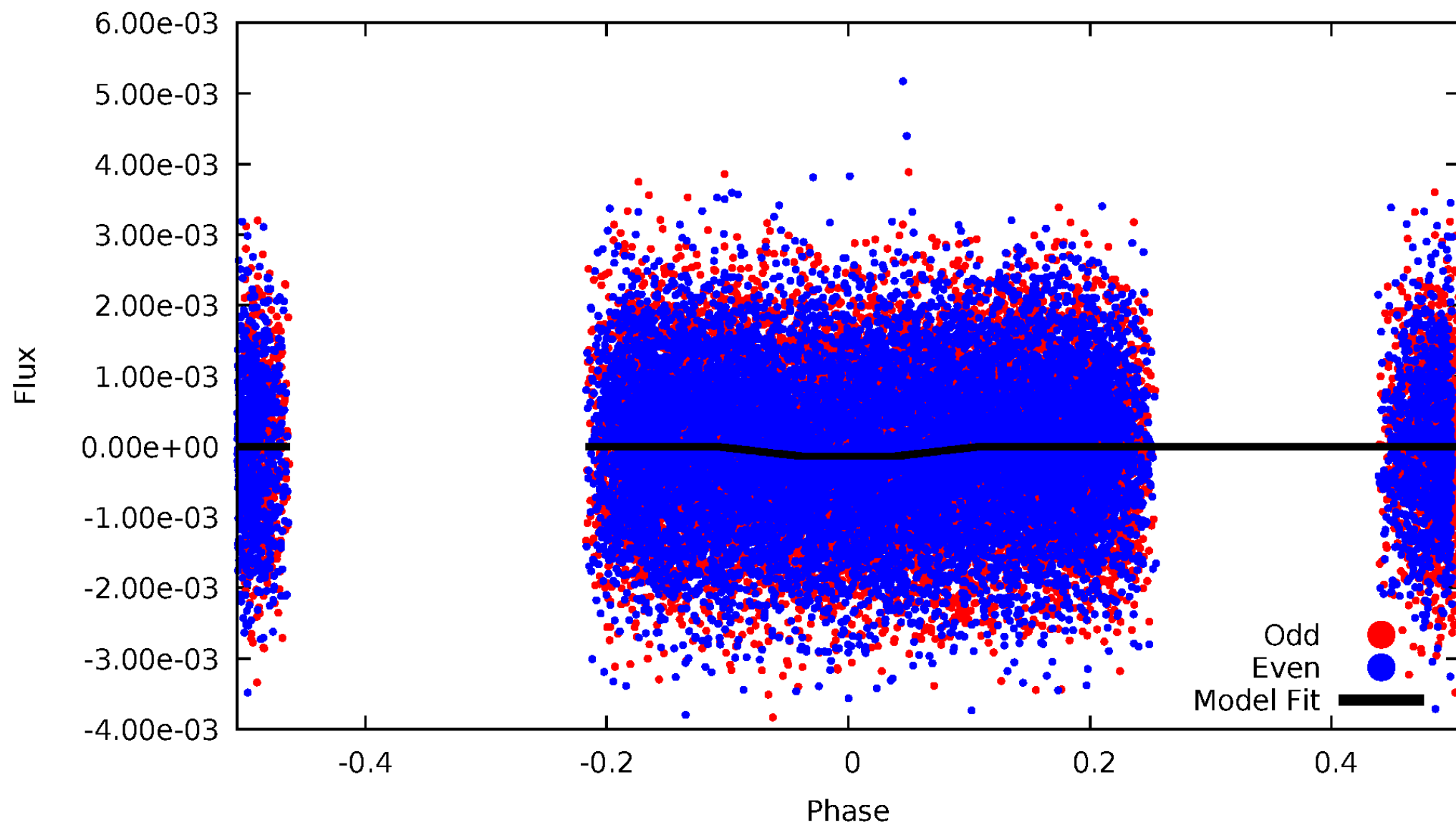
DV Odd/Even

TCE 004938281-03



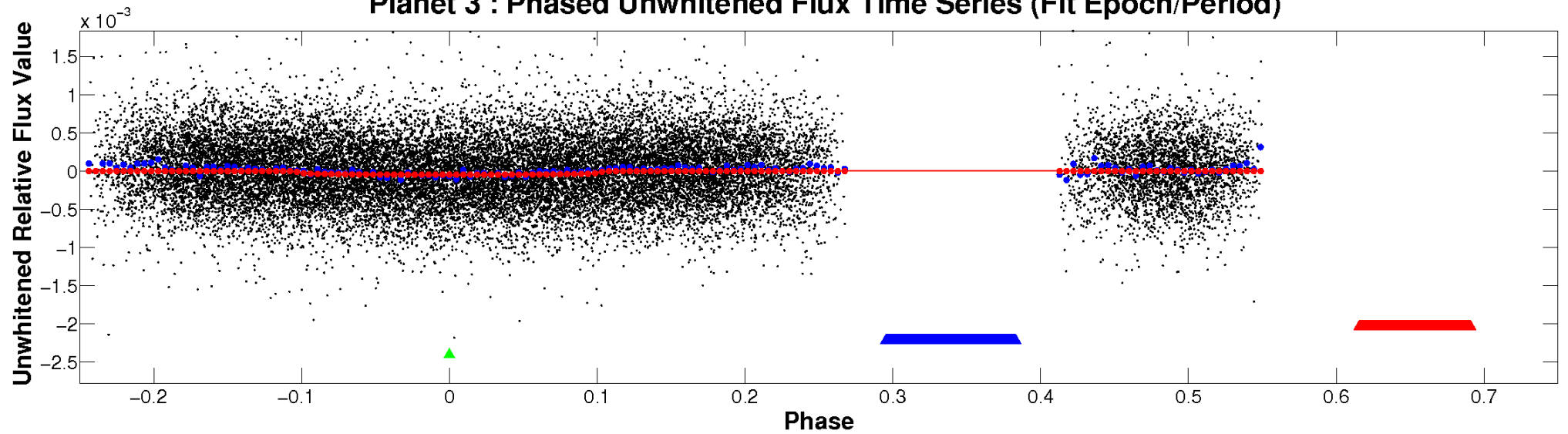
ALT Odd/Even

TCE 004938281-03

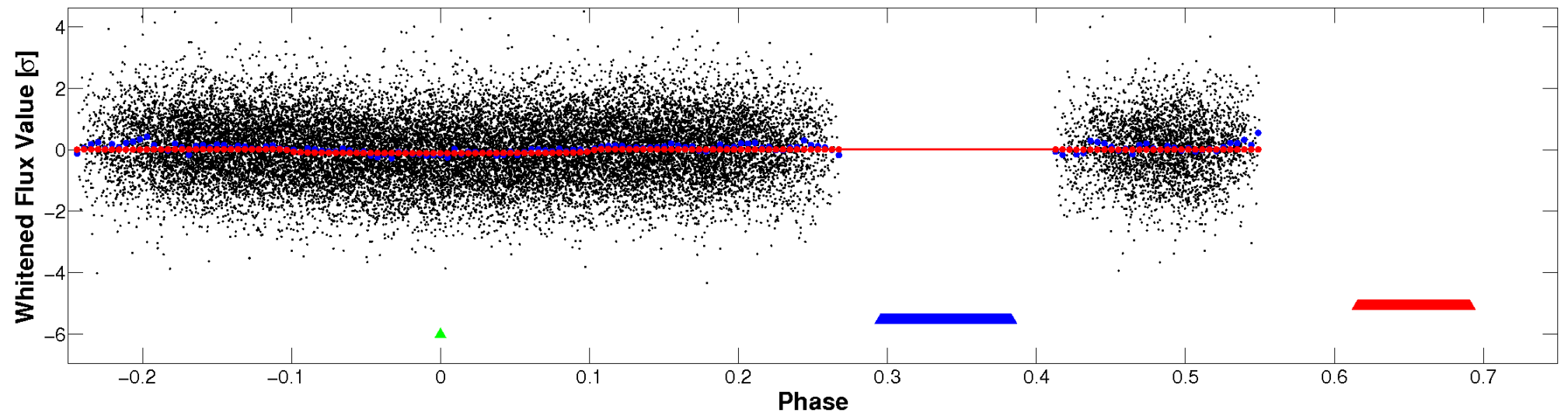


Non-Whitened Vs. Whitened Light Curve

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

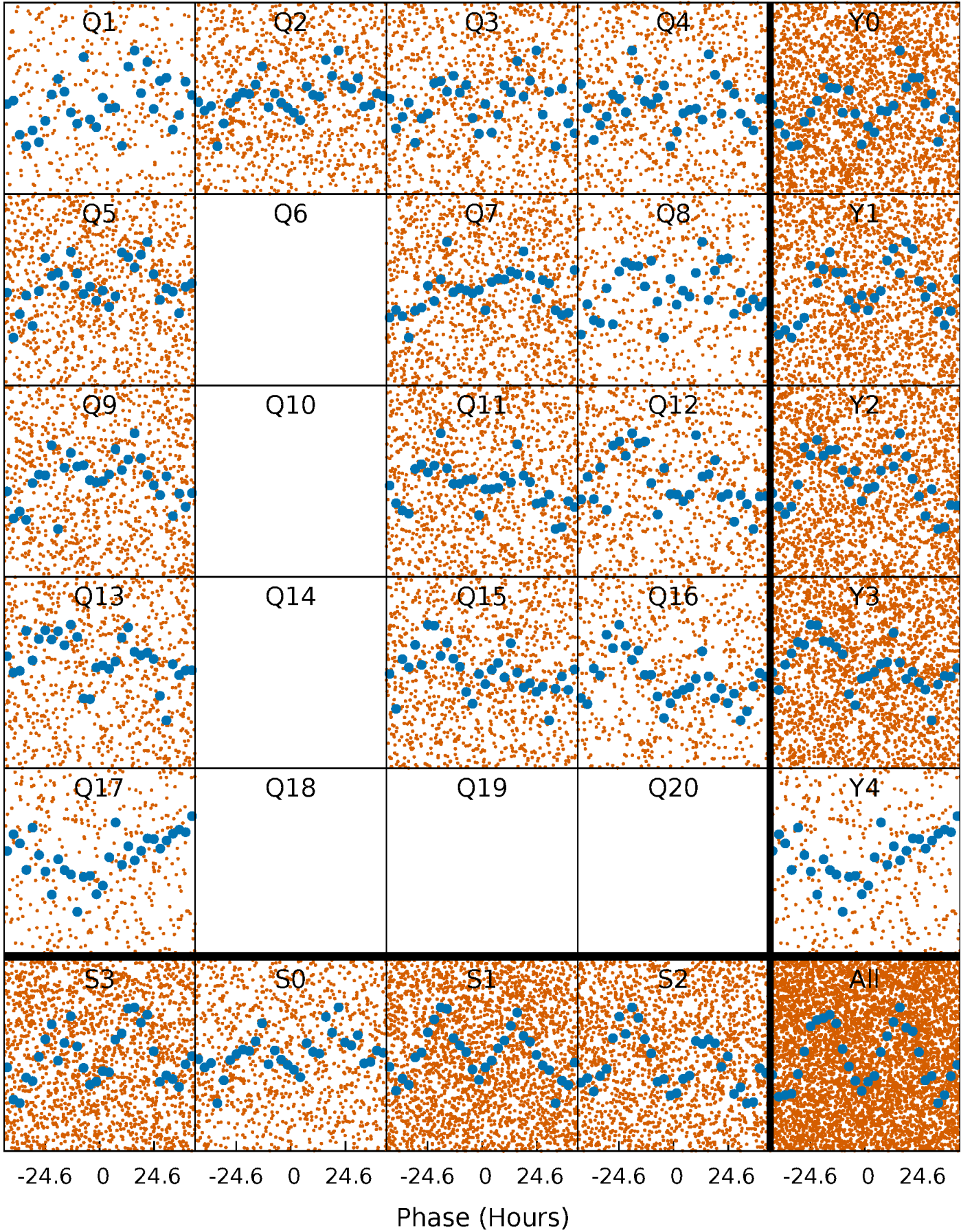


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



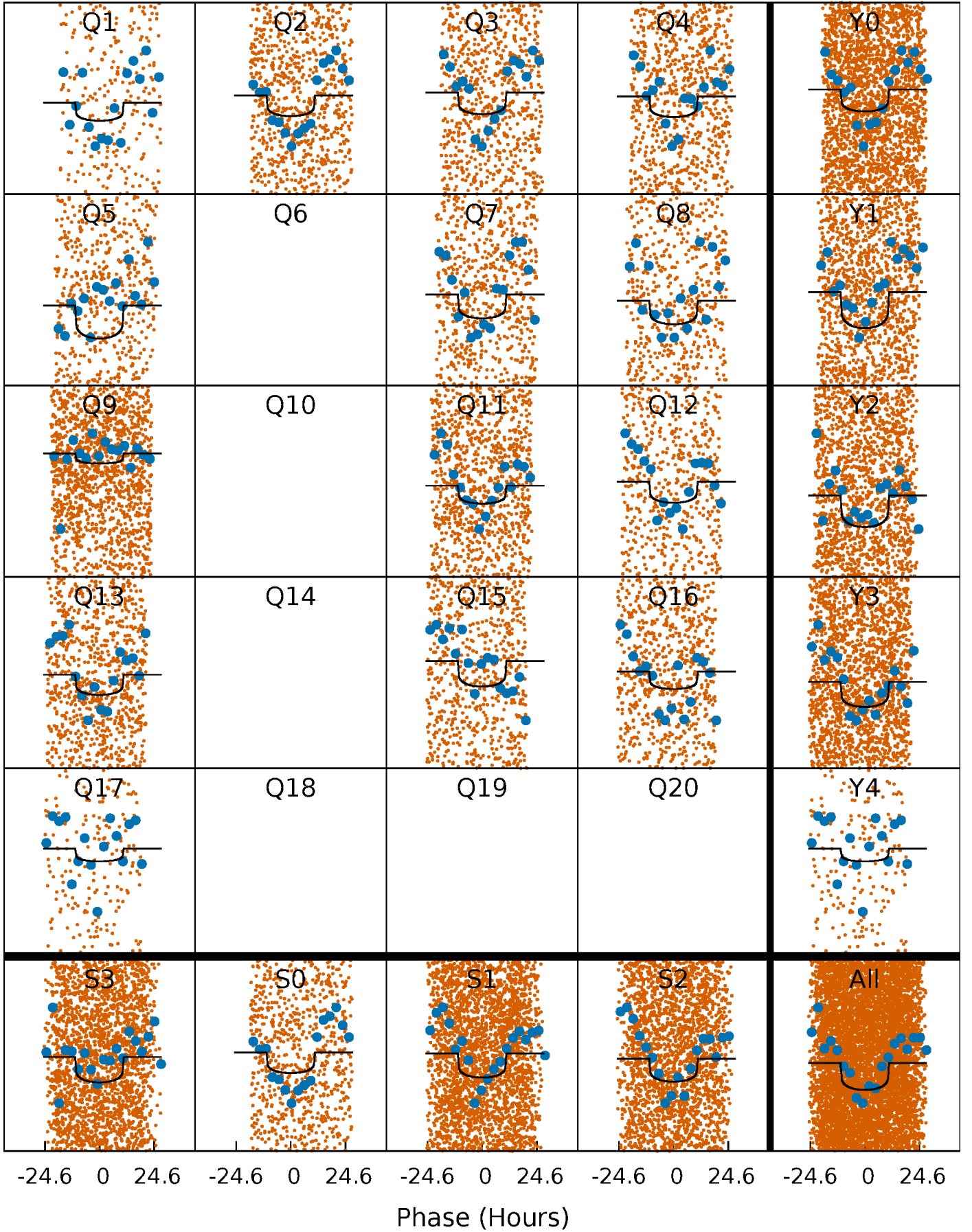
PDC Quarter-Phased Transit Curves

TCE 004938281-03 P= 4.355660 Days $T_0=133.003341$ (BKJD)



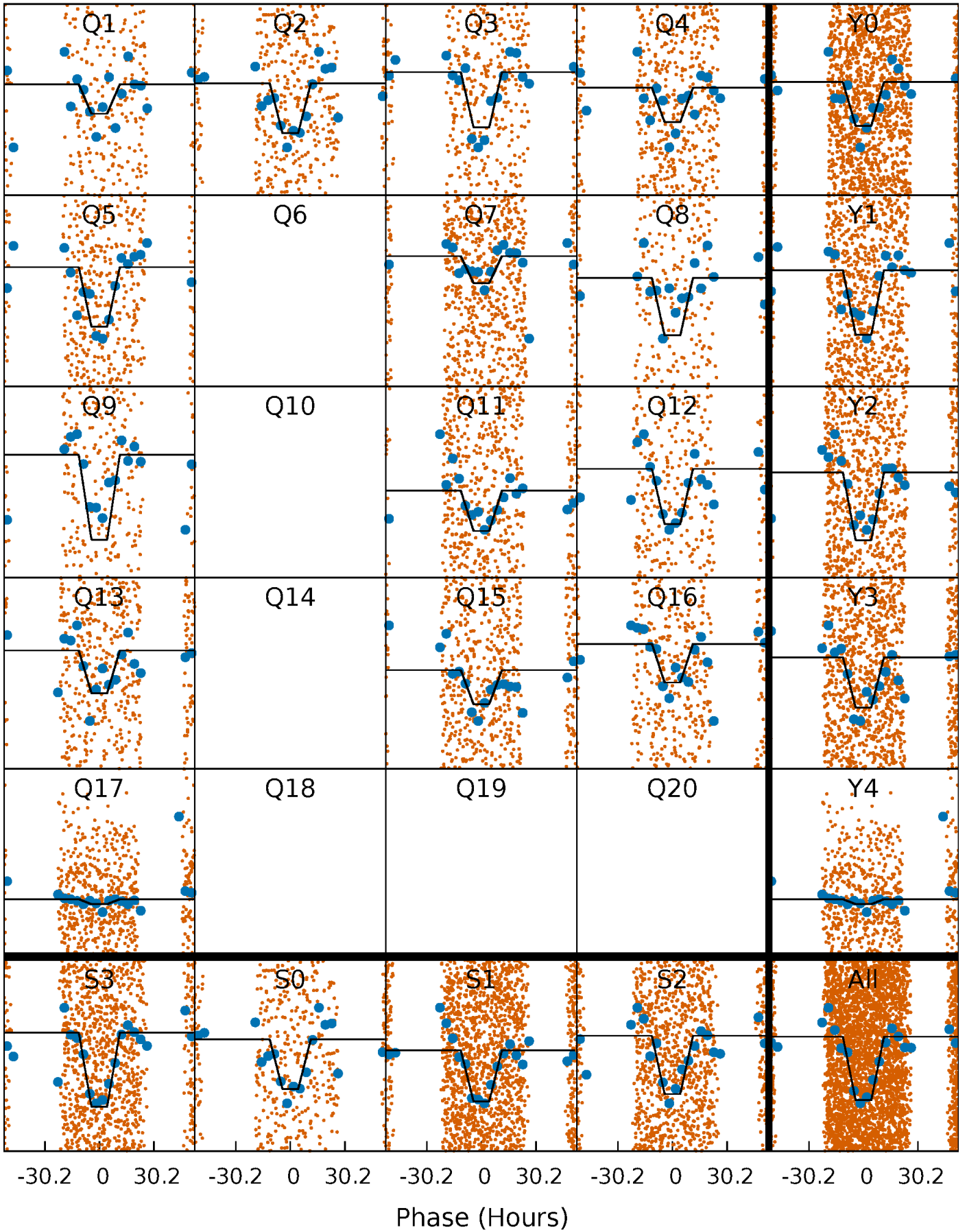
DV Quarter-Phased Transit Curves

TCE 004938281-03 $P = 4.355660$ Days $T_0 = 133.003341$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

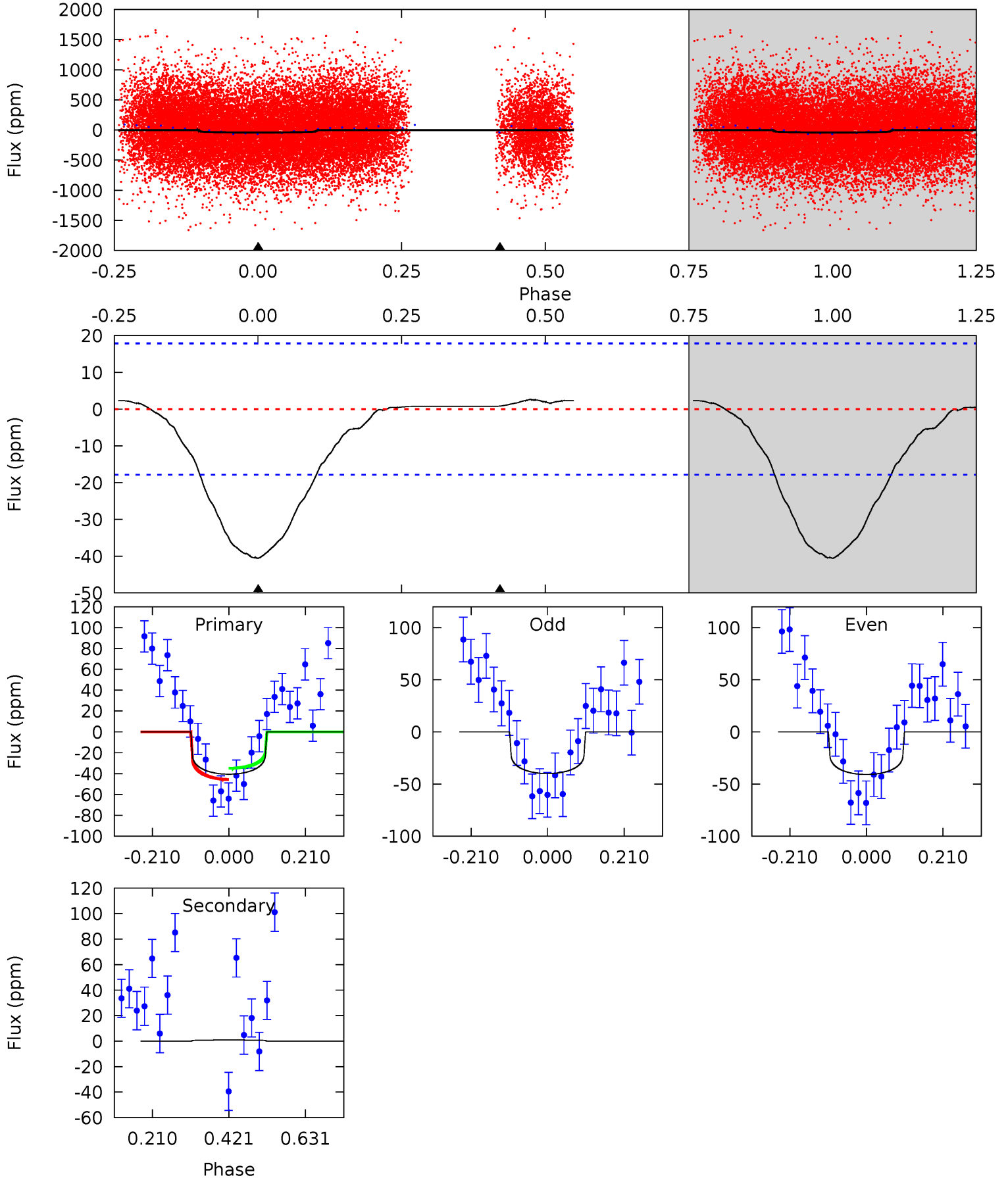
TCE 004938281-03 P= 4.355151 Days $T_0=133.059581$ (BKJD)



DV Model-Shift Uniqueness Test

004938281-03, P = 4.355660 Days, E = 128.647681 Days

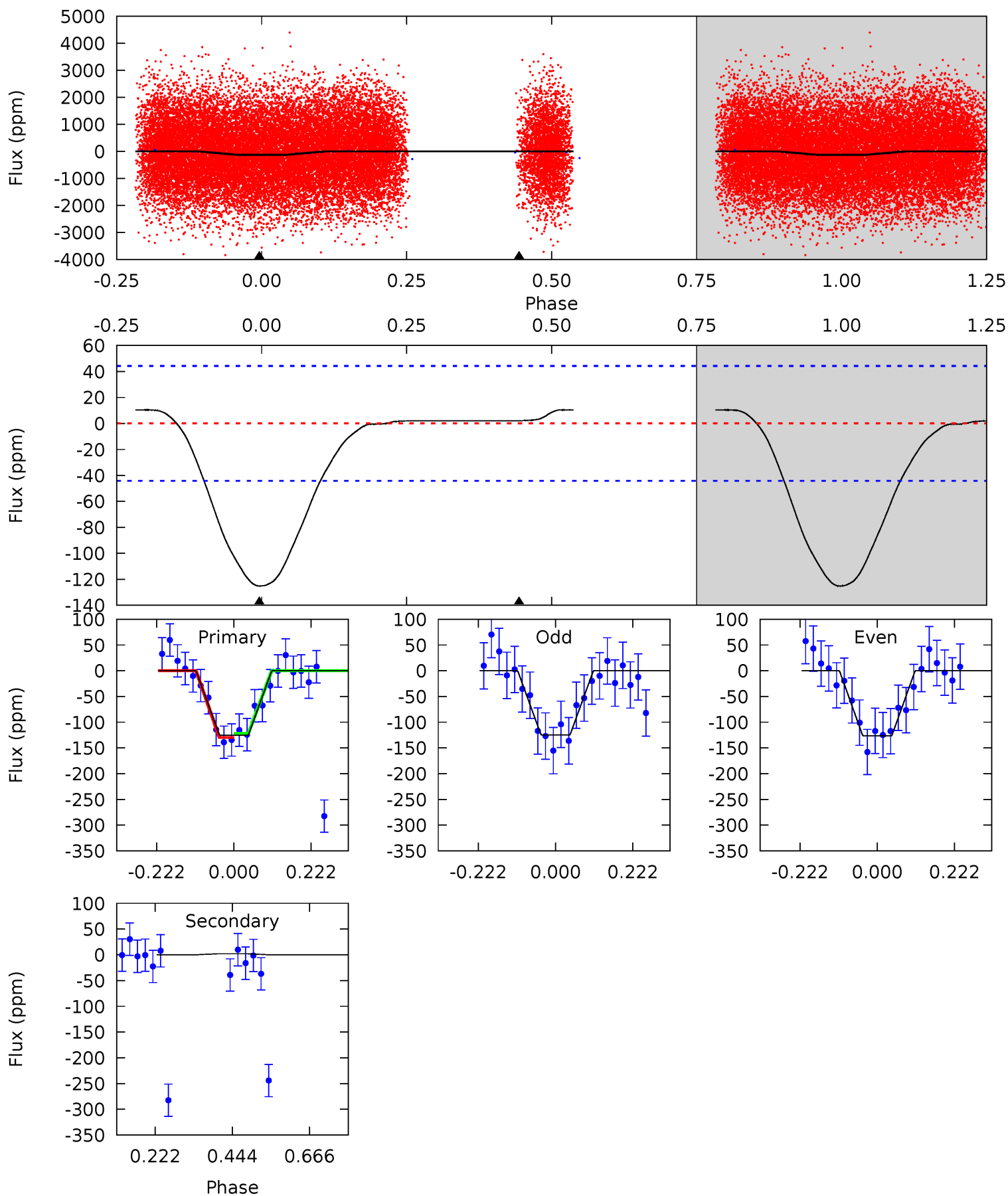
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.0	-0.21	0	0	4.41	1.25	0.37	10.0	10.0	-0.21	-0.21	0.11	1.05	0.06	1.29



Alt Model-Shift Uniqueness Test

004938281-03, P = 4.355151 Days, E = 128.704430 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.4	-0.20	0	0	4.39	1.22	0.36	12.4	12.4	-0.20	-0.20	0.09	2.09	0.08	0.40



Stellar Parameters For KIC 004938281

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8092^{+225}_{-338}	$4.067^{+0.150}_{-0.150}$	$0.070^{+0.250}_{-0.450}$	$2.108^{+0.471}_{-0.518}$	$1.890^{+0.210}_{-0.361}$	$0.284^{+0.244}_{-0.112}$
	+3%/-4%	+4%/-4%	+357%/-643%	+22%/-25%	+11%/-19%	+86%/-39%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004938281-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	1 ± 4	$2.06^{+1.87}_{-1.42}$	2836^{+204}_{-188}	-3219^{+7190}_{-1557}	$-0.260^{+2.857}_{-4.609}$
Alt.	2 ± 10	$3.01^{+2.24}_{-1.77}$	2860^{+177}_{-203}	-3418^{+7238}_{-1492}	$-0.489^{+2.421}_{-5.452}$

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 $A_{obs} \gg 1.0$

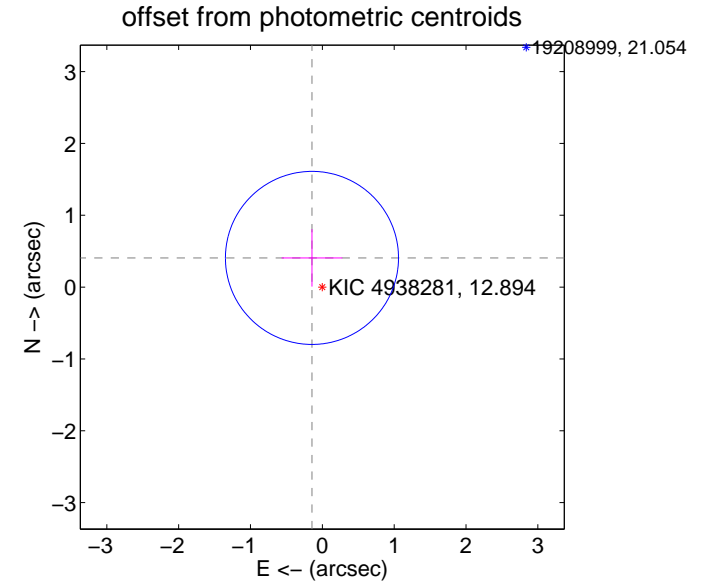
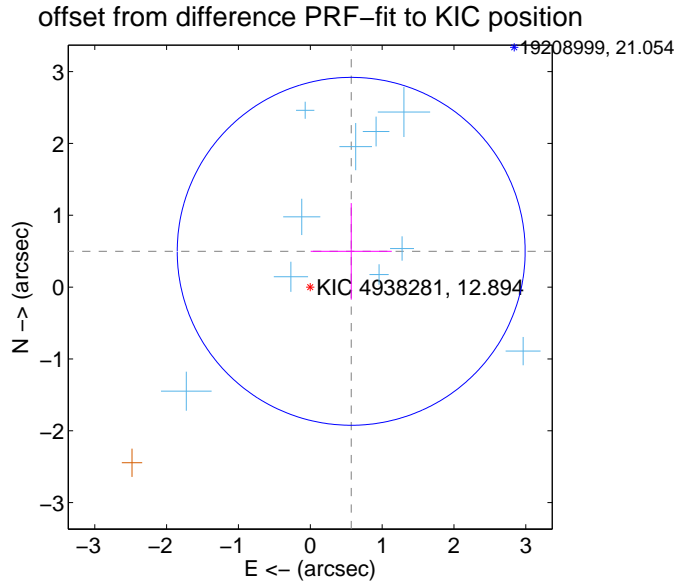
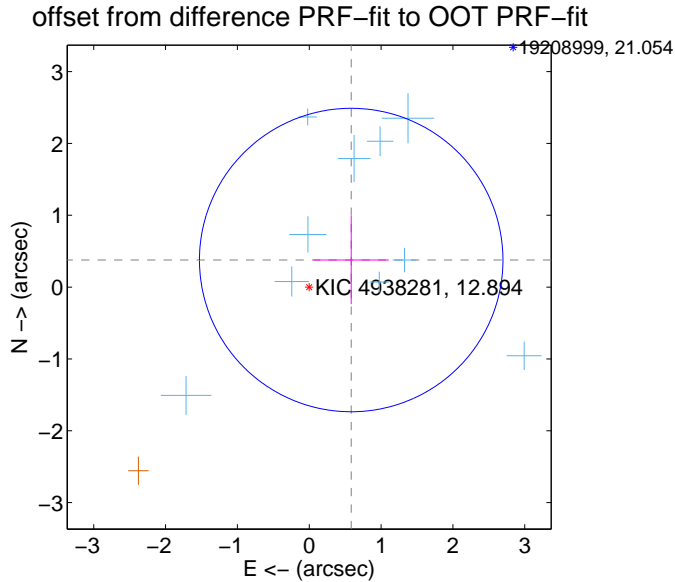
DV Centroid Data

Supplemental centroid analysis for 004938281-03. Kepler magnitude: 12.89. Transit SNR 10.26

There are 10 quarters with good PRF difference image offsets

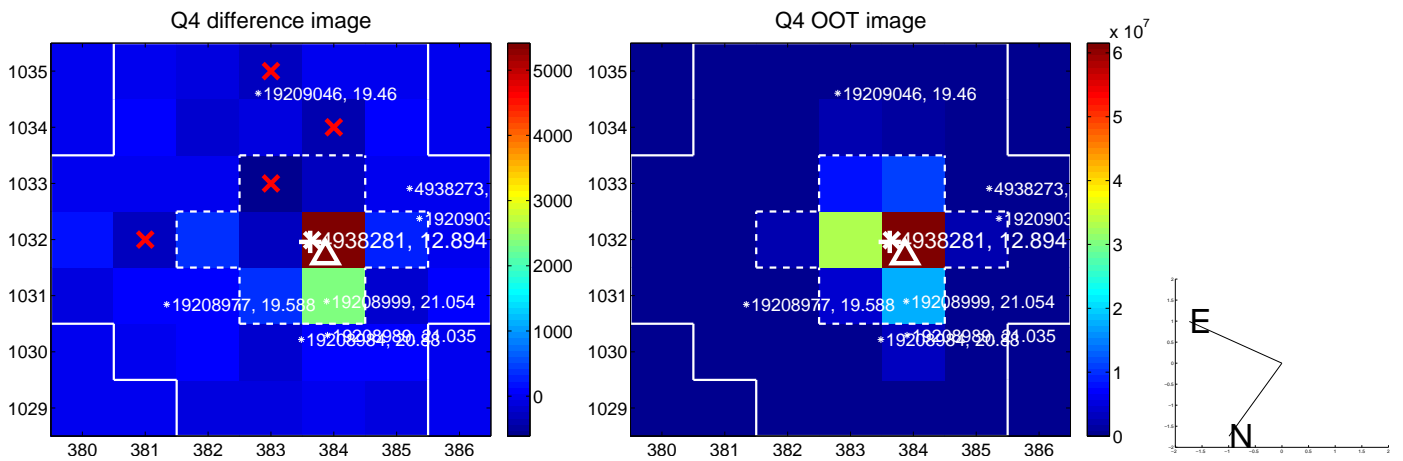
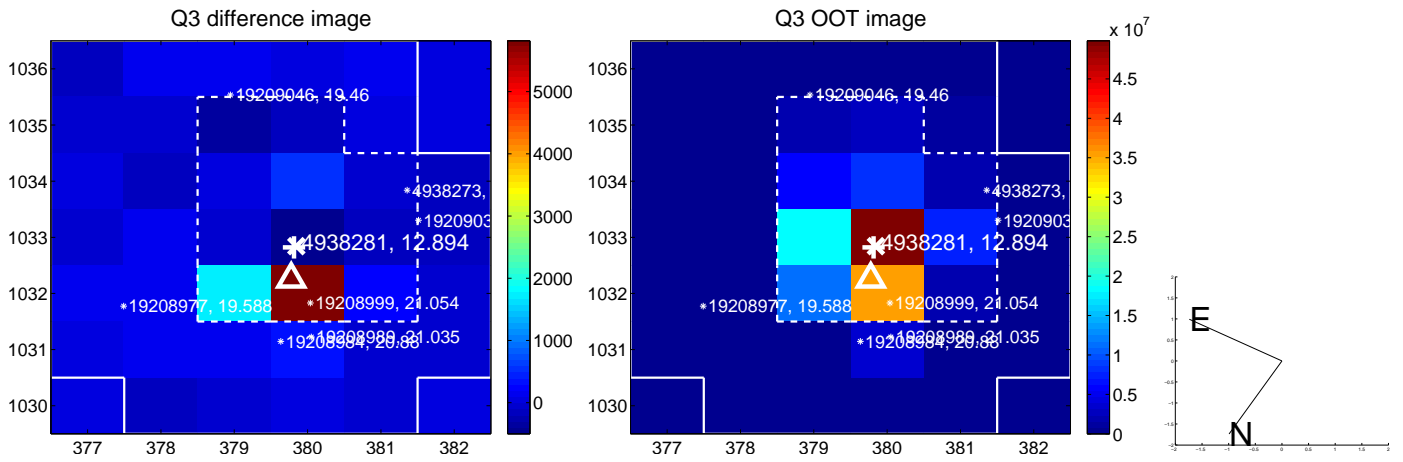
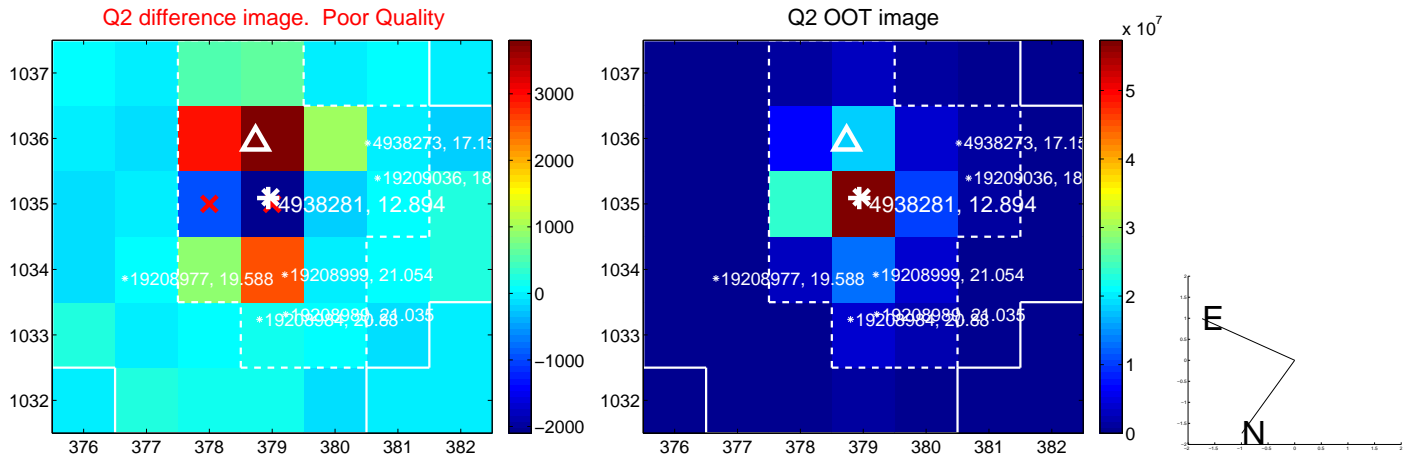
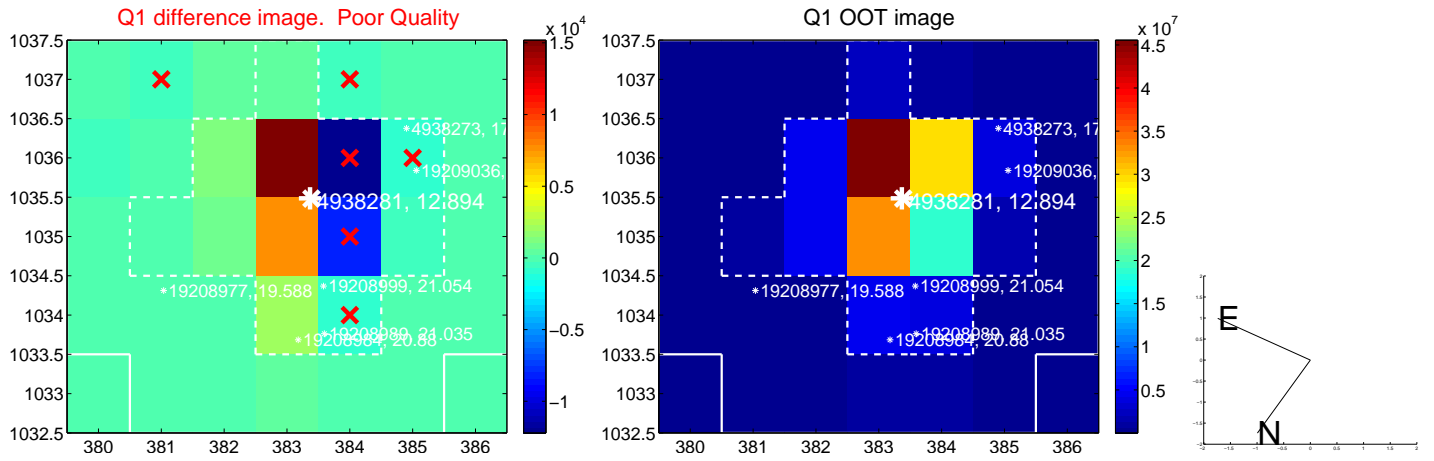
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.695 ± 0.704	0.99	-0.584 ± 0.523	0.377 ± 0.615
PRF-fit source offset from KIC position	0.756 ± 0.807	0.94	-0.569 ± 0.564	0.498 ± 0.672
photometric centroid source offset	0.43 ± 0.40	1.07	0.14 ± 0.42	0.41 ± 0.40

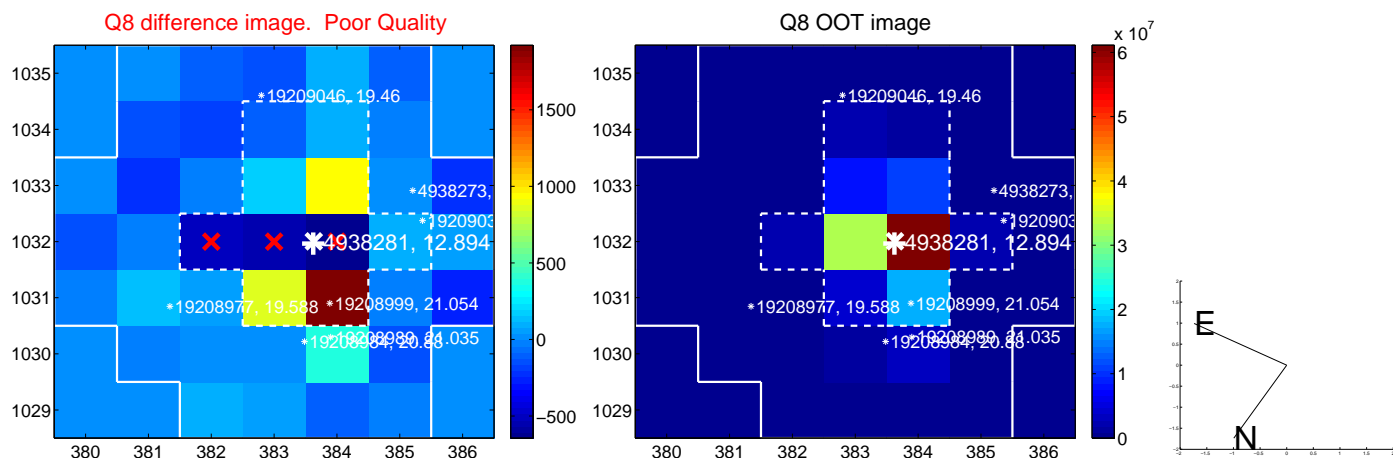
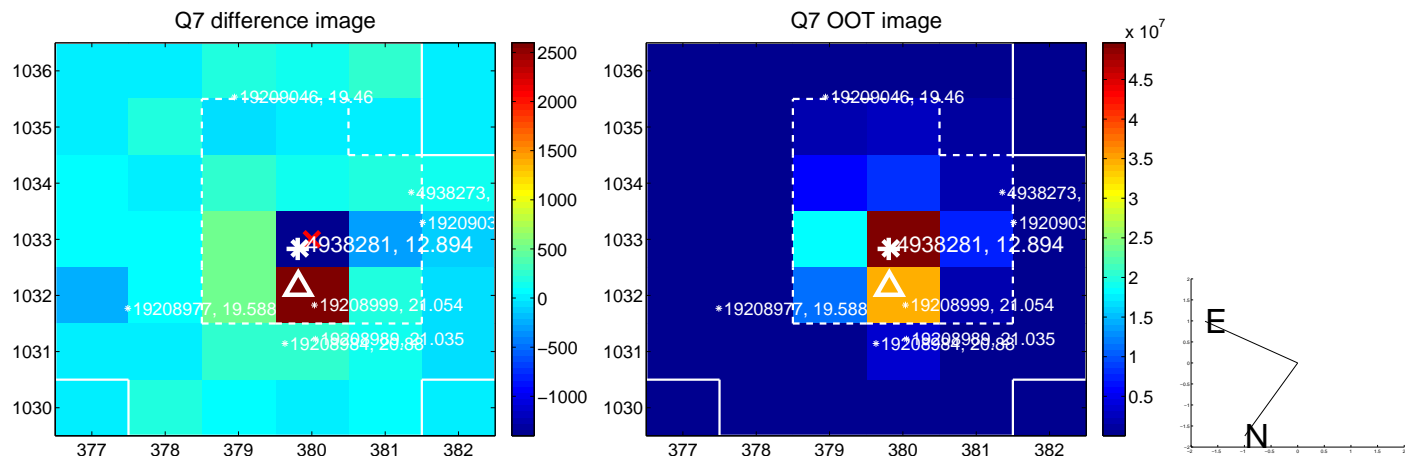
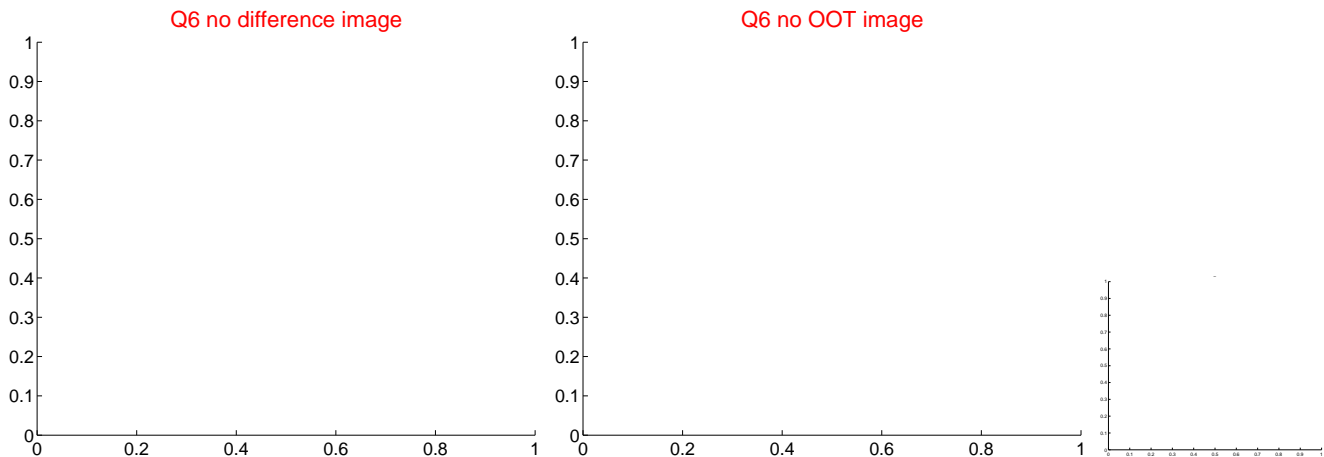
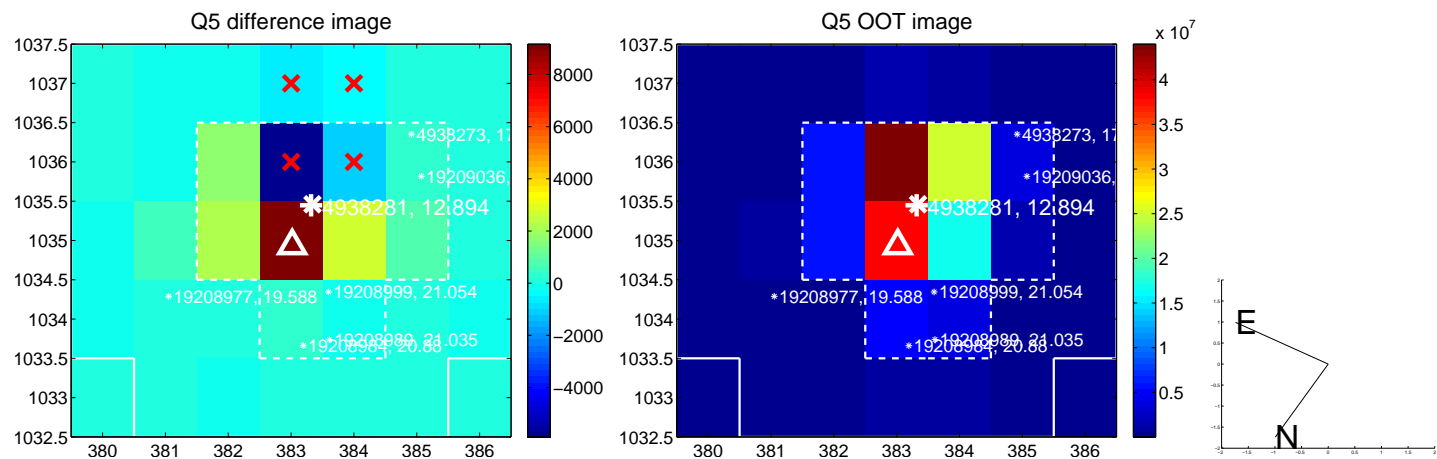


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

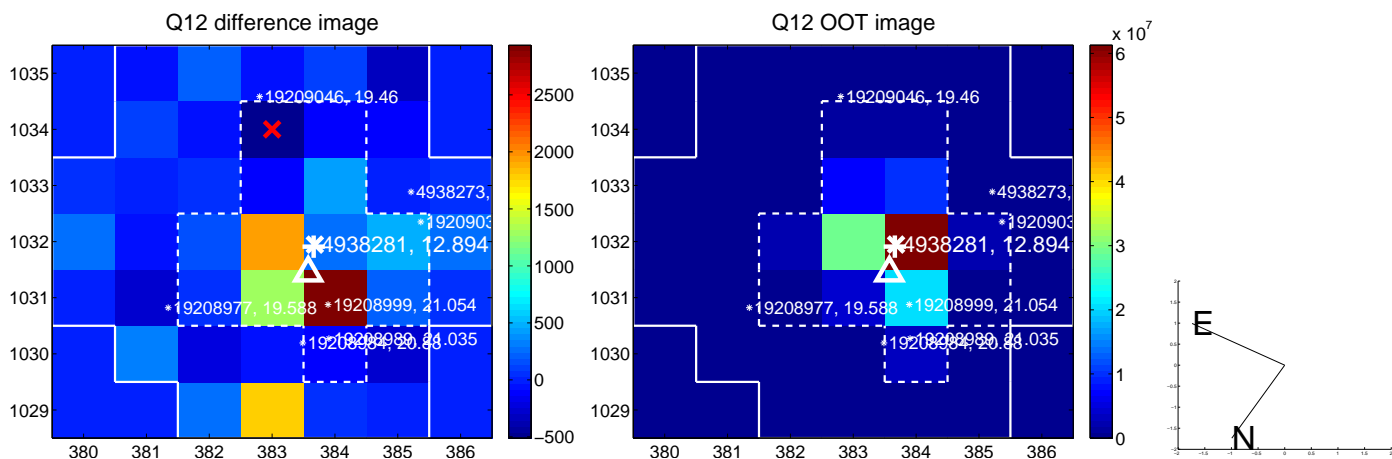
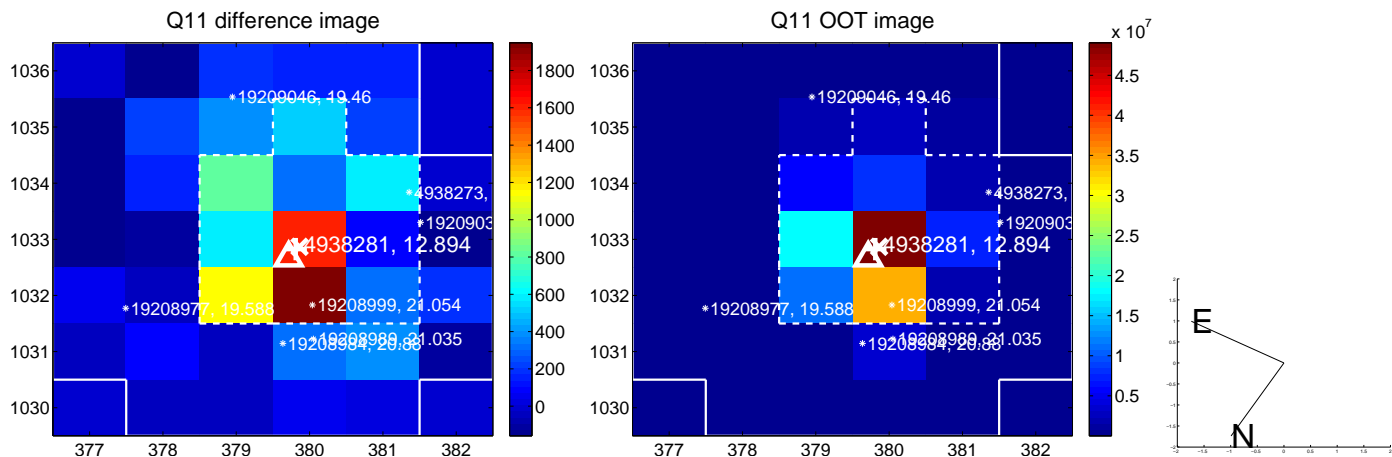
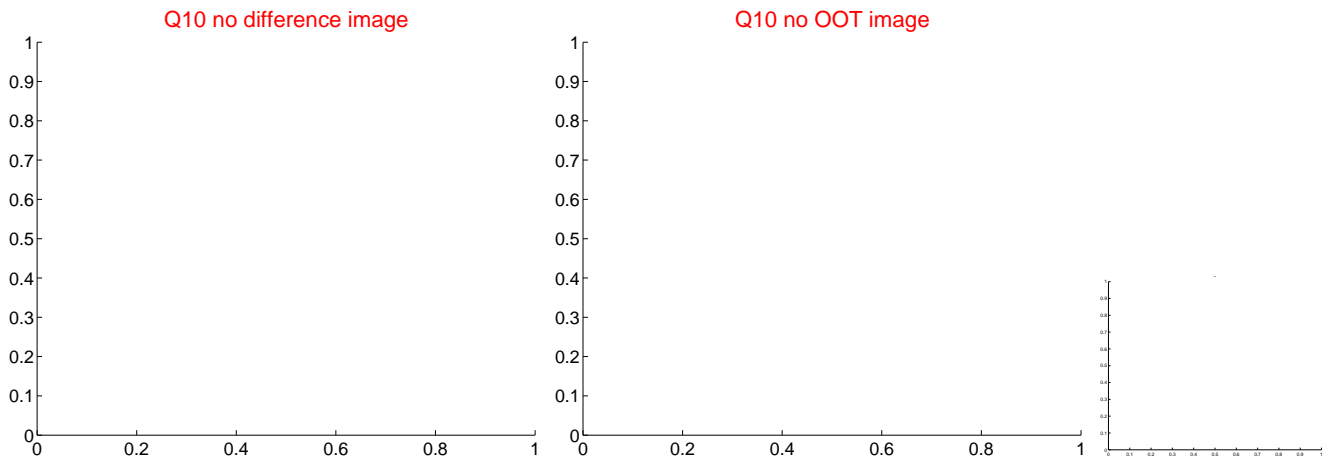
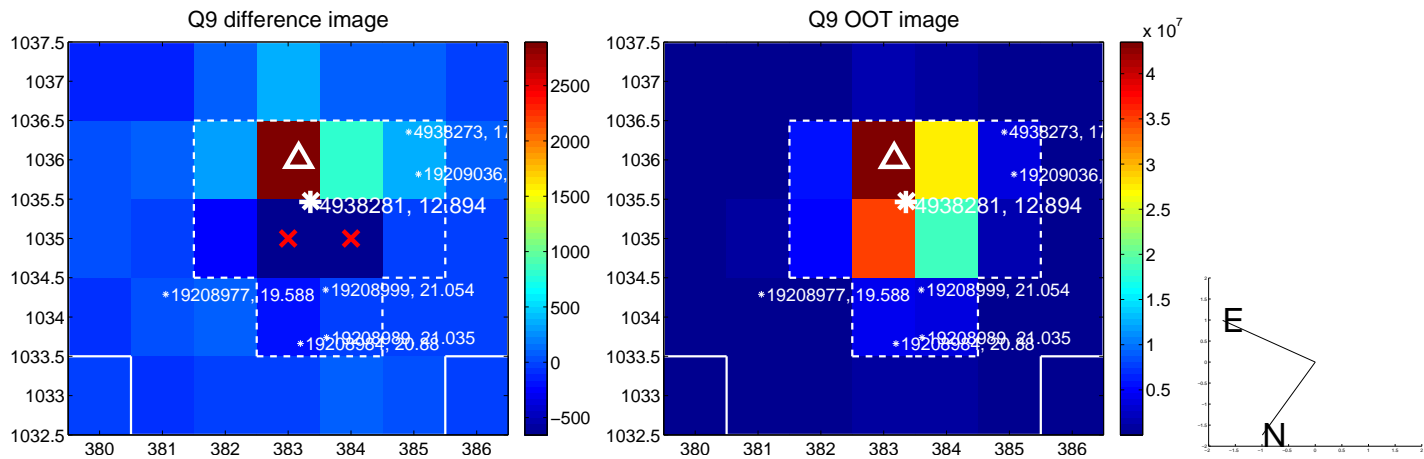
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



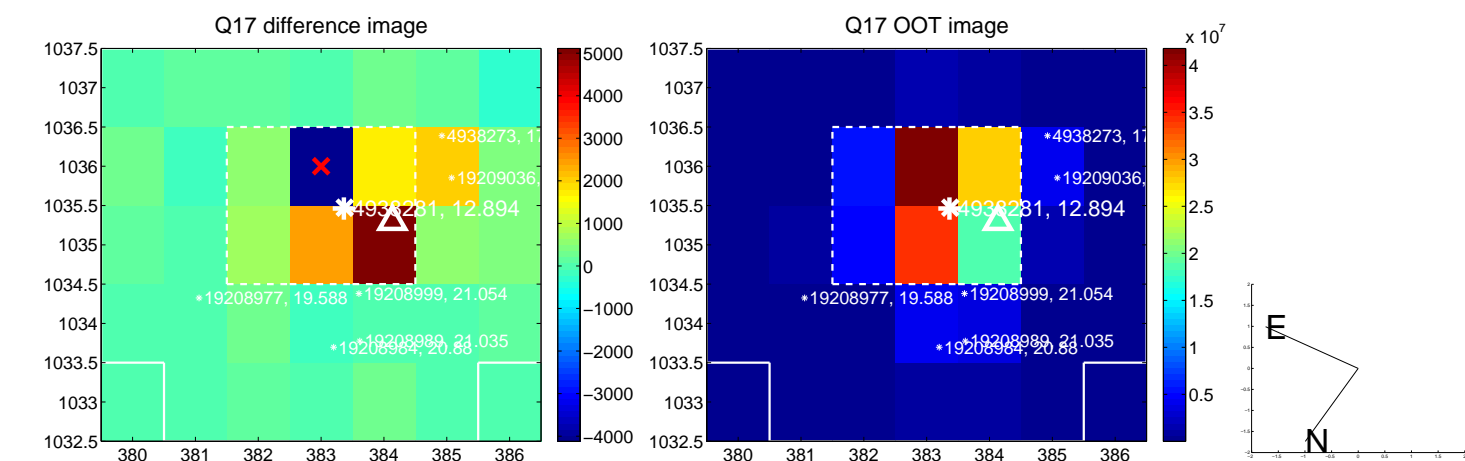
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



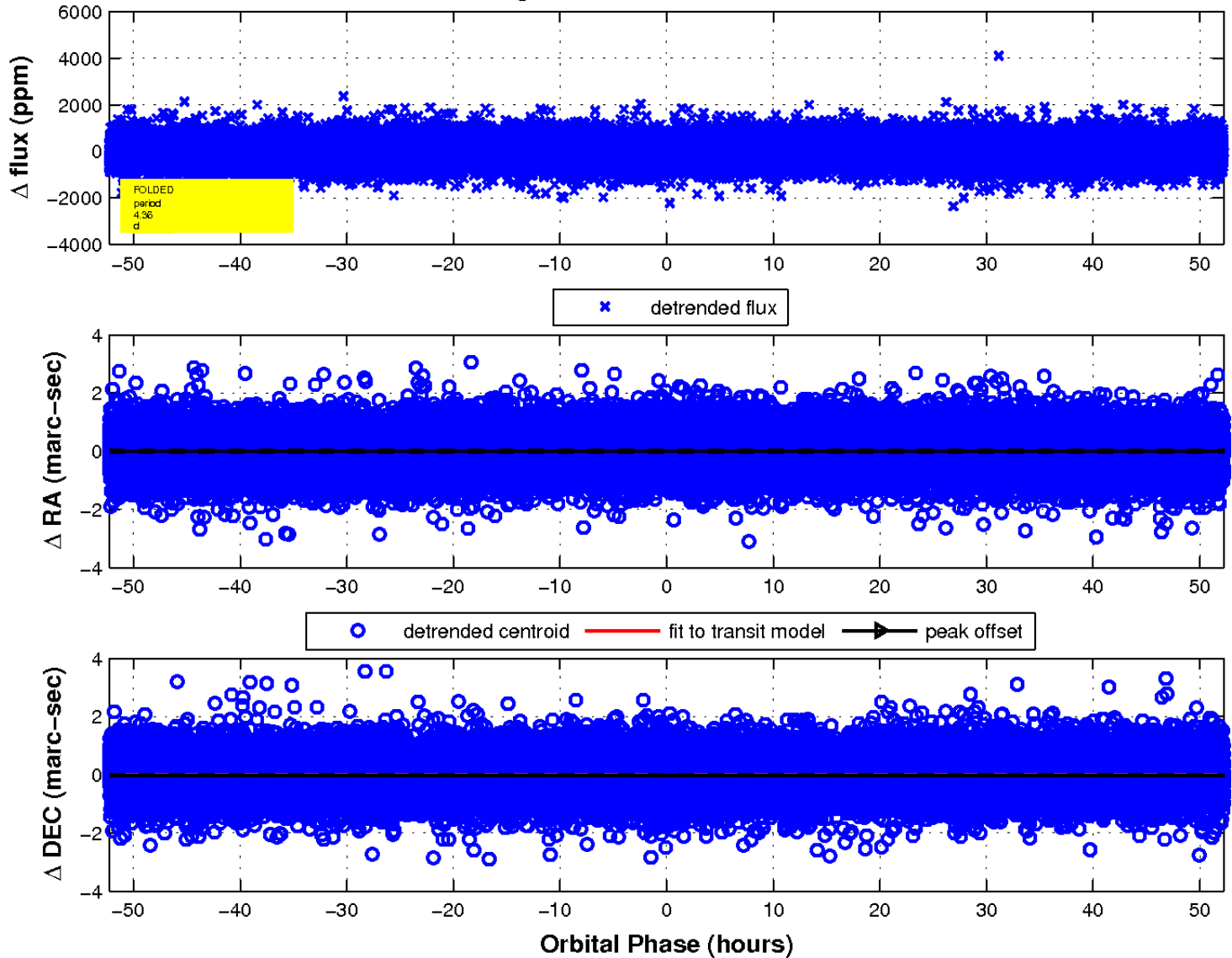
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

