

KIC 010031634

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})
010031634-01	OBS	No	0.652803	131.753870	294.8	2.058	16.2	14.9	1.62	6881	3.25	20030.56
010031634-02	OBS	No	0.652806	131.916219	260.2	1.584	13.3	12.2	1.62	6881	3.06	20030.45
010031634-03	OBS	No	0.652797	132.075594	216.0	1.333	14.0	10.7	1.62	6881	2.79	20030.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010031634-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010031634-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD
010031634-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_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.

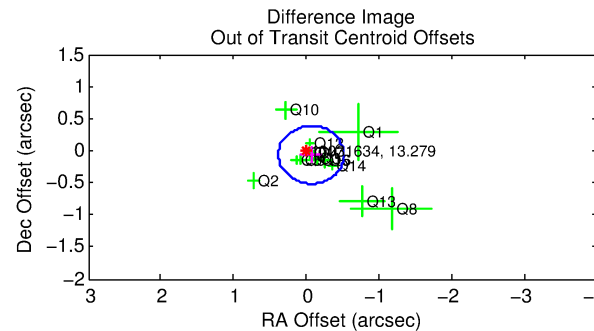
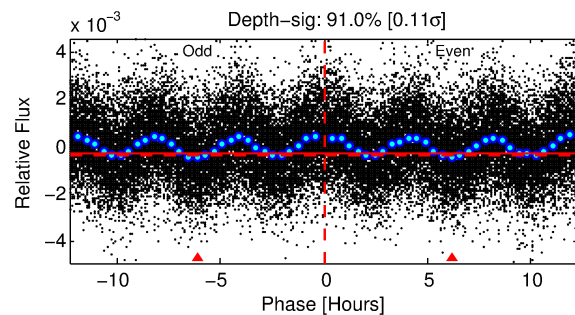
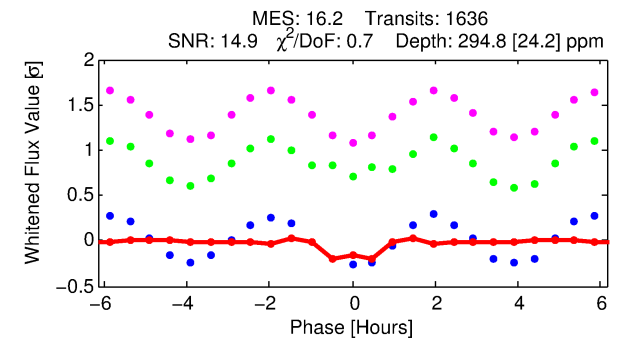
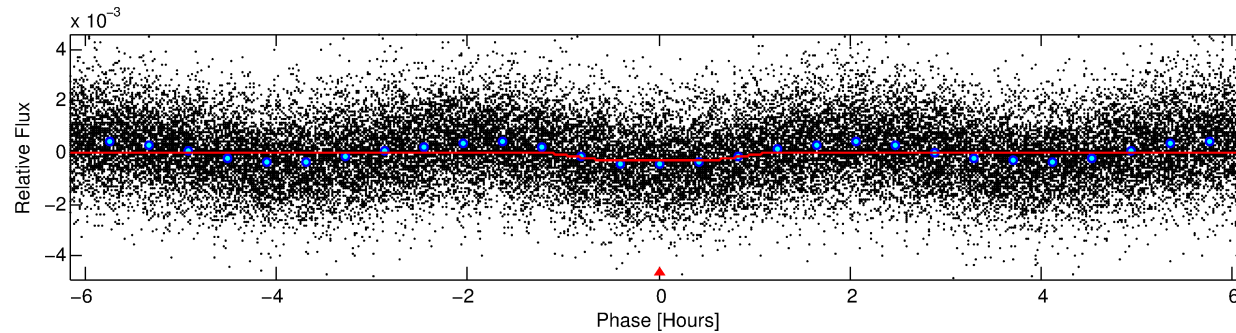
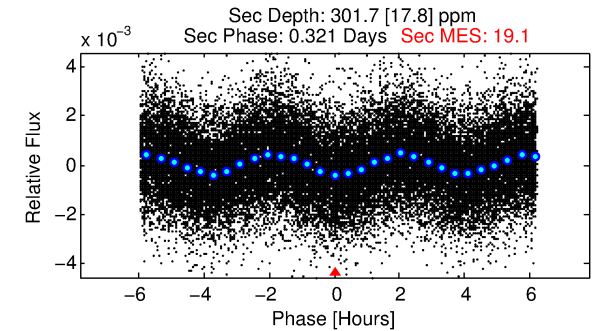
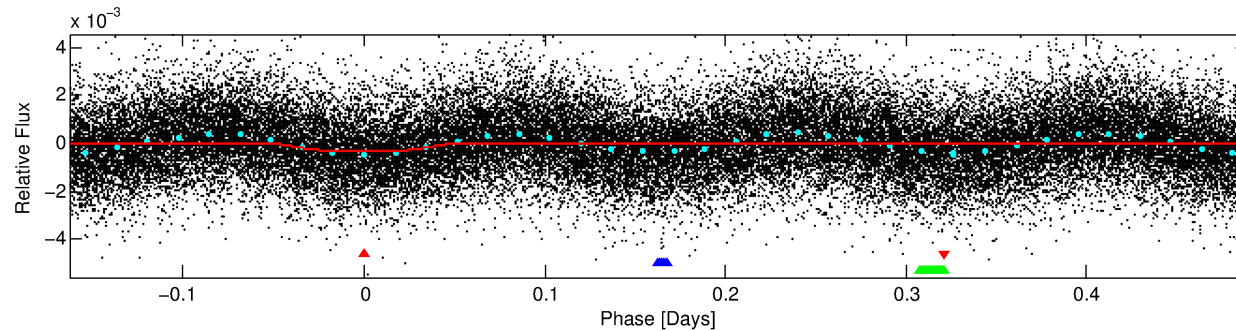
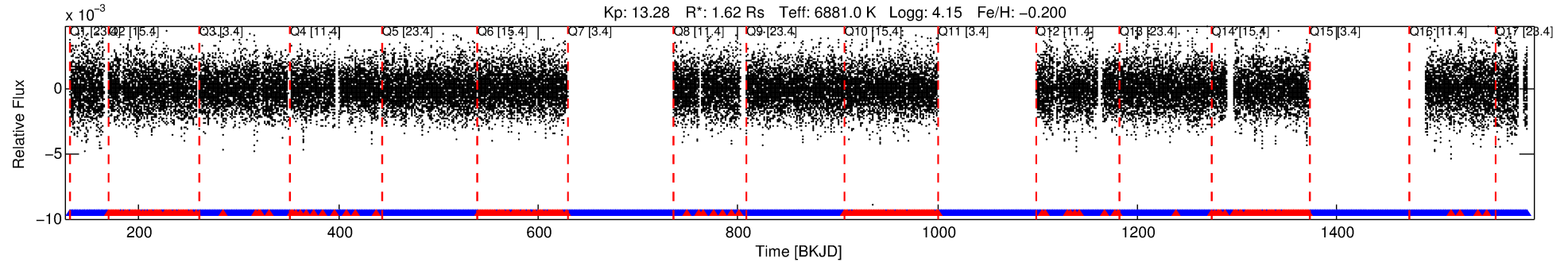
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010031634-01

No Significant Match Found

DV One-Page Summary

KIC: 10031634 Candidate: 1 of 3 Period: 0.653 d



DV Fit Results:

Period = 0.65280 [0.00001] d
Epoch = 131.7539 [0.0009] BKJD
Rp/R* = 0.0183 [0.0022]
a/R* = 1.49 [0.53]
b = 0.90 [0.14]
Seff = 20030.56 [7722.18]
Teq = 3034 [292] K
Rp = 3.25 [1.02] Re
a = 0.0163 [0.0040] AU
Ag = 4.16 [1.80] [1.75σ]
Teffp = 6700 [489] K [6.43σ]

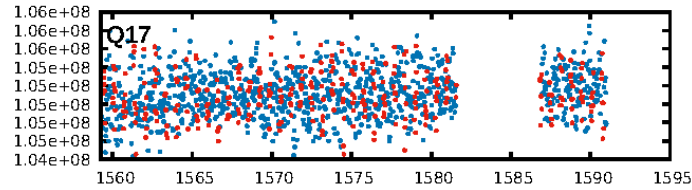
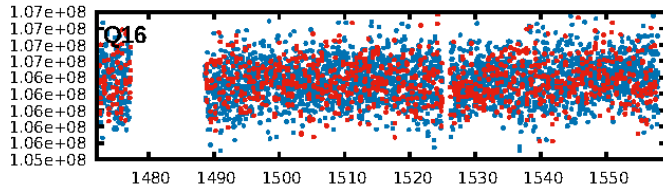
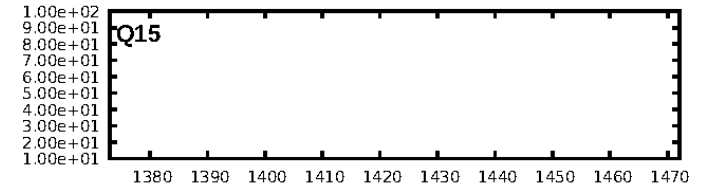
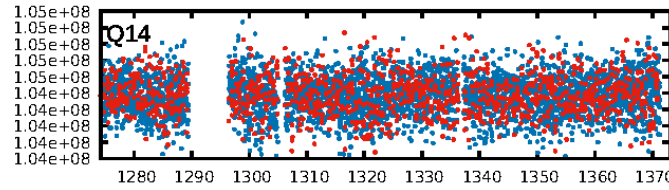
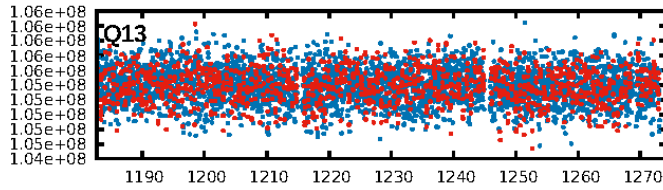
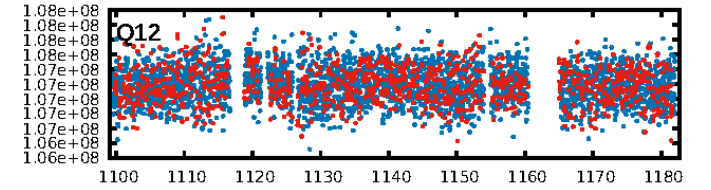
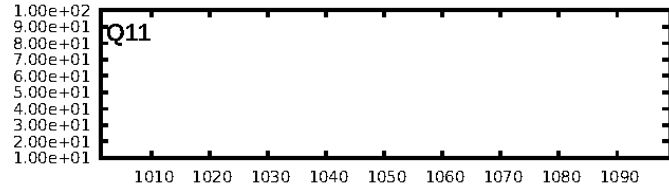
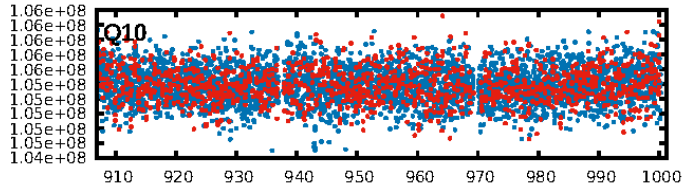
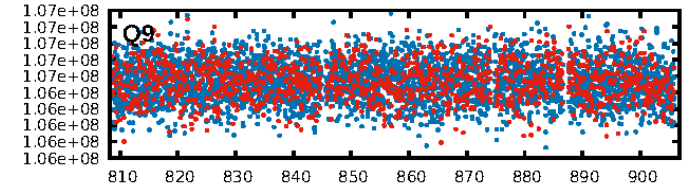
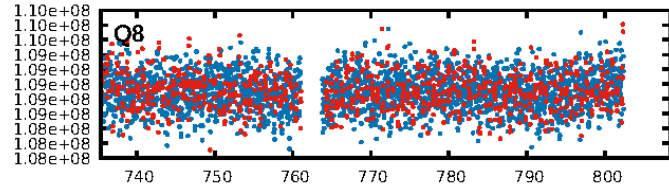
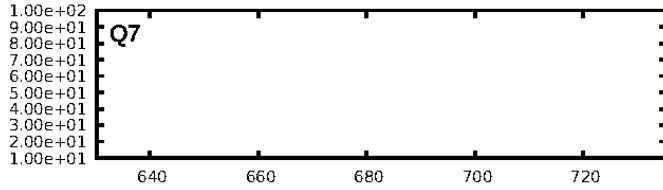
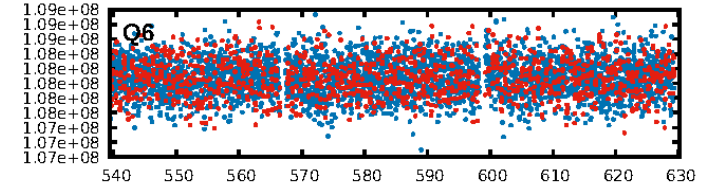
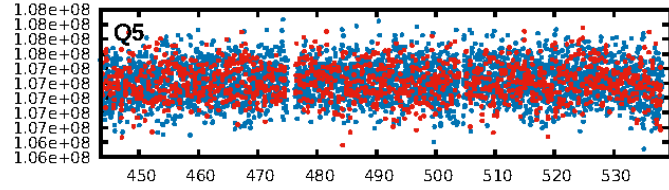
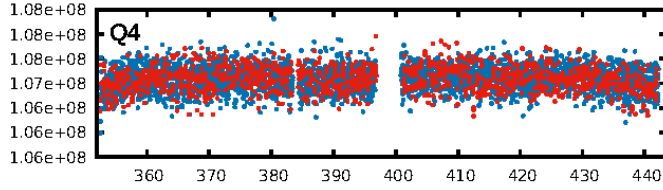
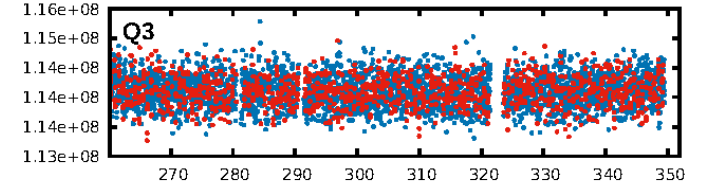
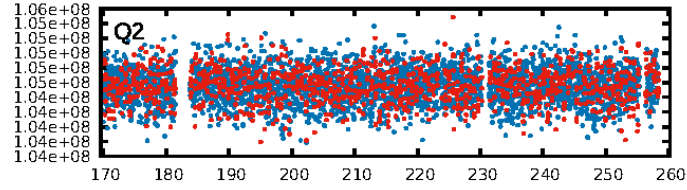
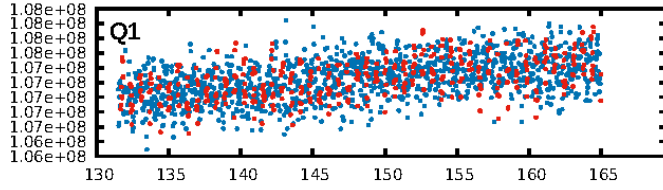
DV Diagnostic Results:

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: 0.78 [1200/1543]
GhostDiagnostic-chr: 1.18
Centroid-sig: N/A
Centroid-so: 0.065 arcsec [0.64σ]
OotOffset-rm: 0.093 arcsec [0.62σ]
KicOffset-rm: 0.106 arcsec [0.68σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/14]

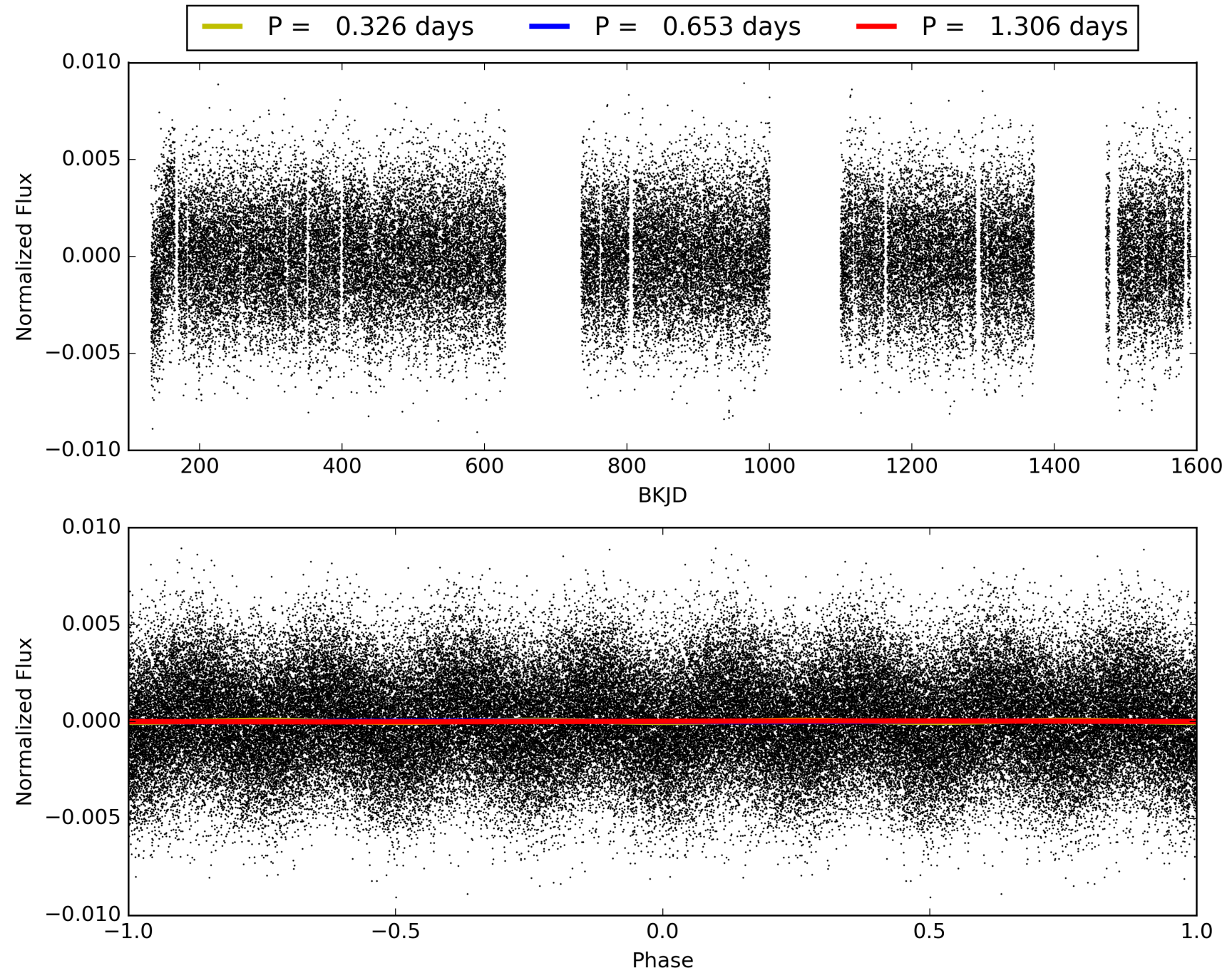
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 18:24:52 Z

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

TCE 010031634-01, PDC Light Curves

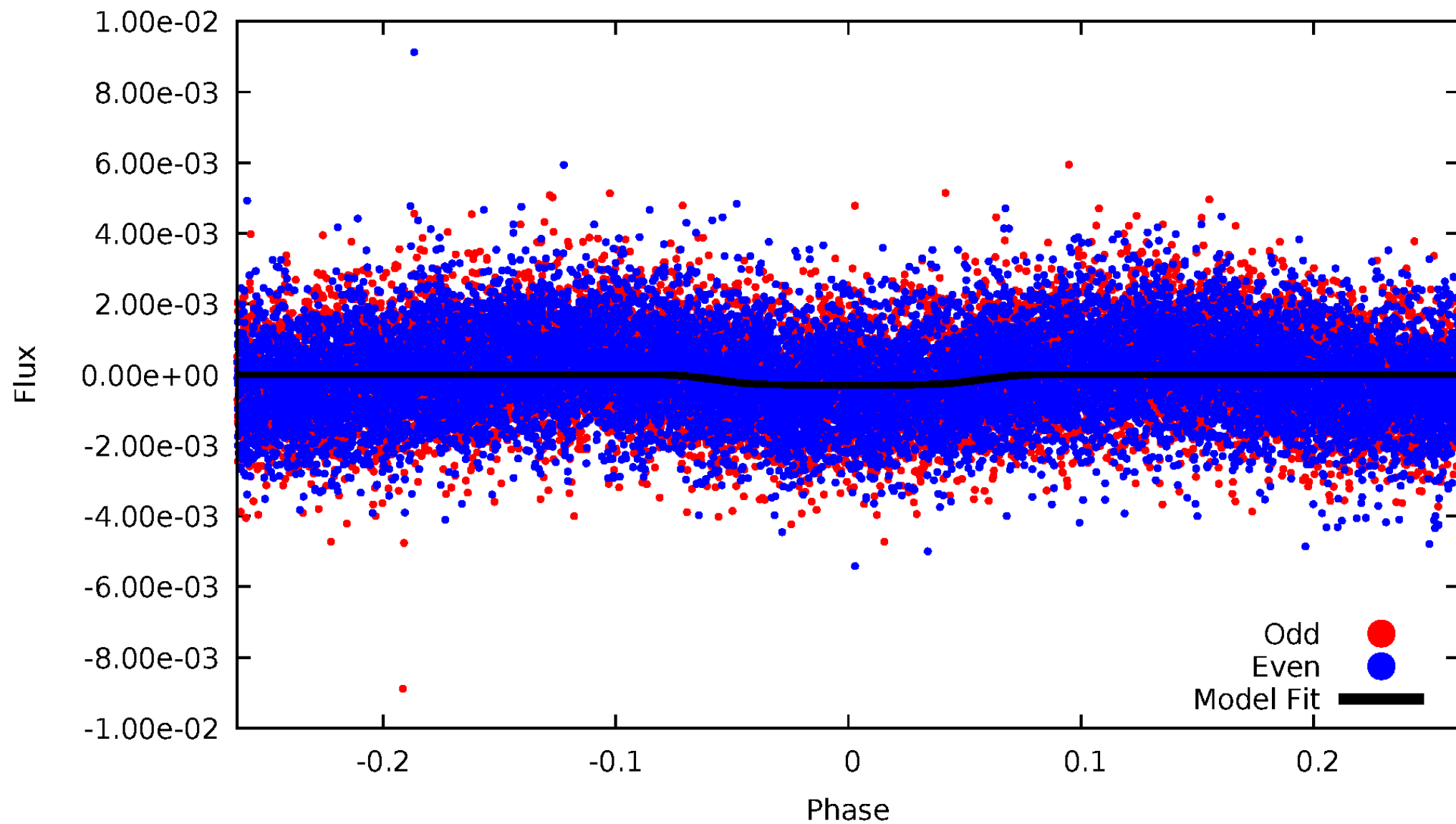


TCE 010031634-01



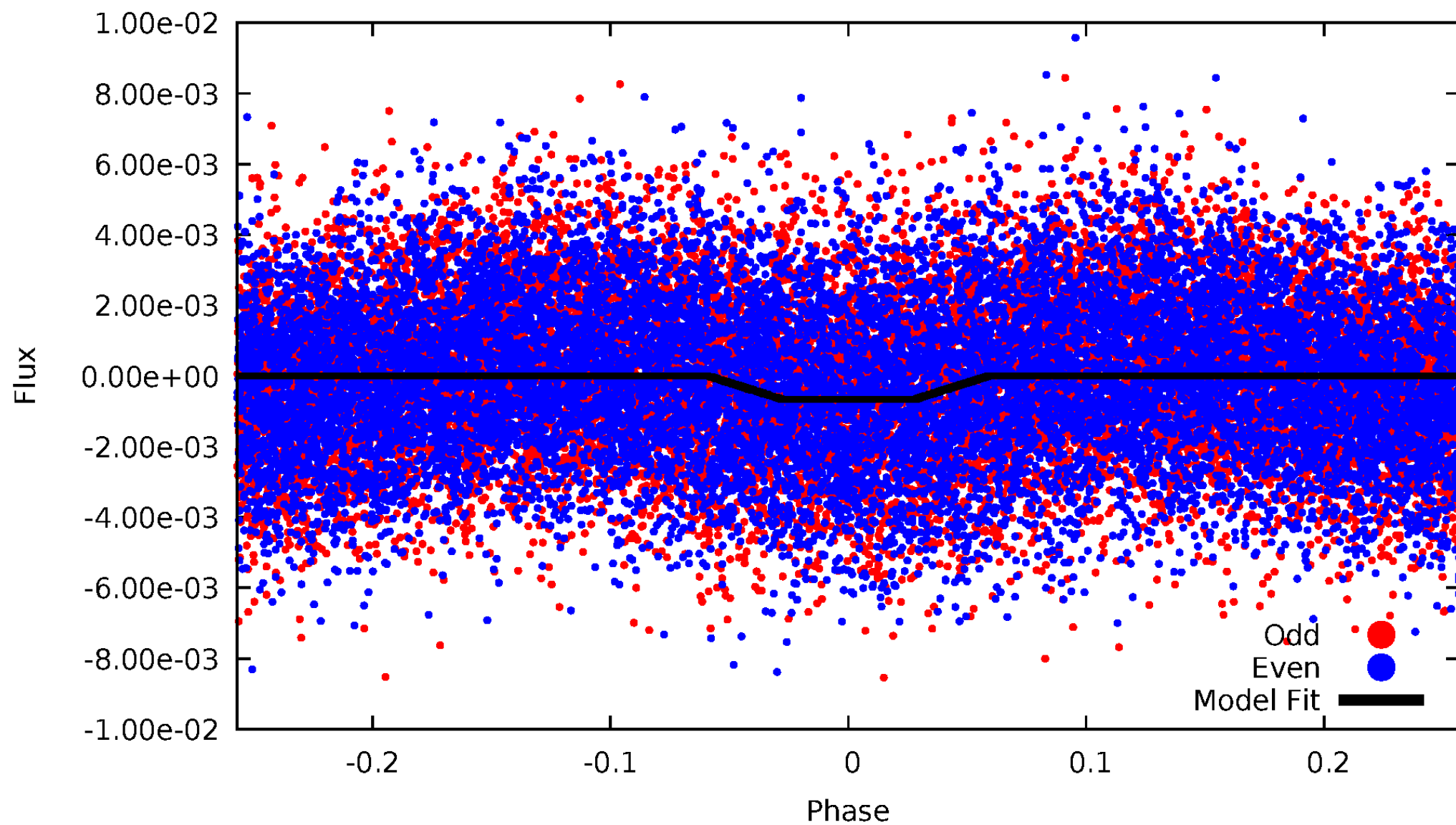
DV Odd/Even

TCE 010031634-01

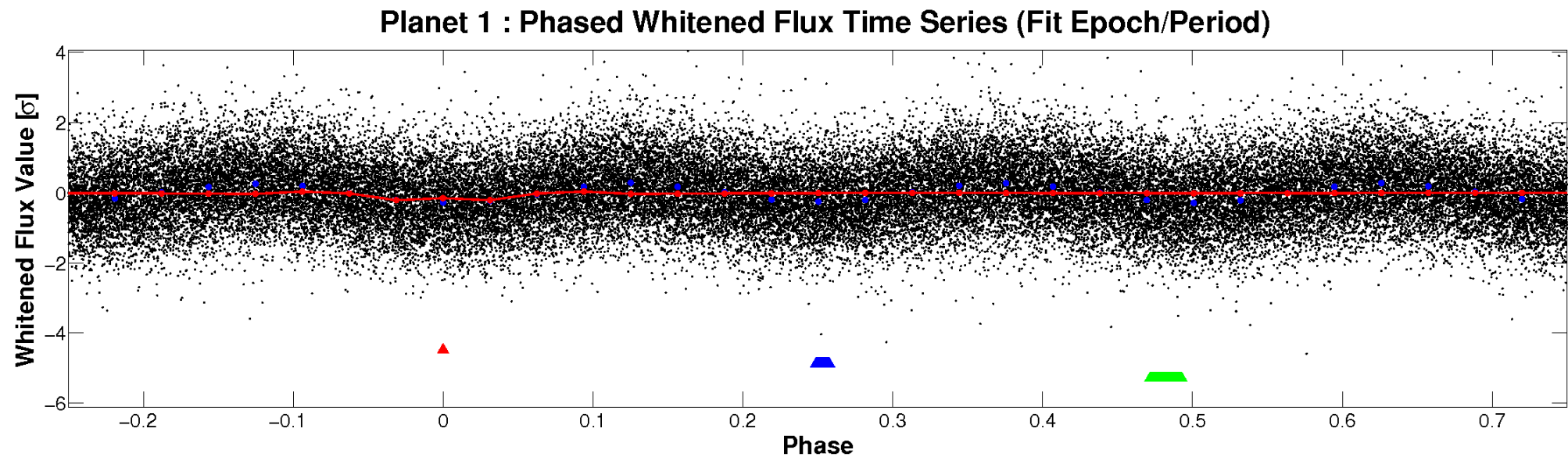
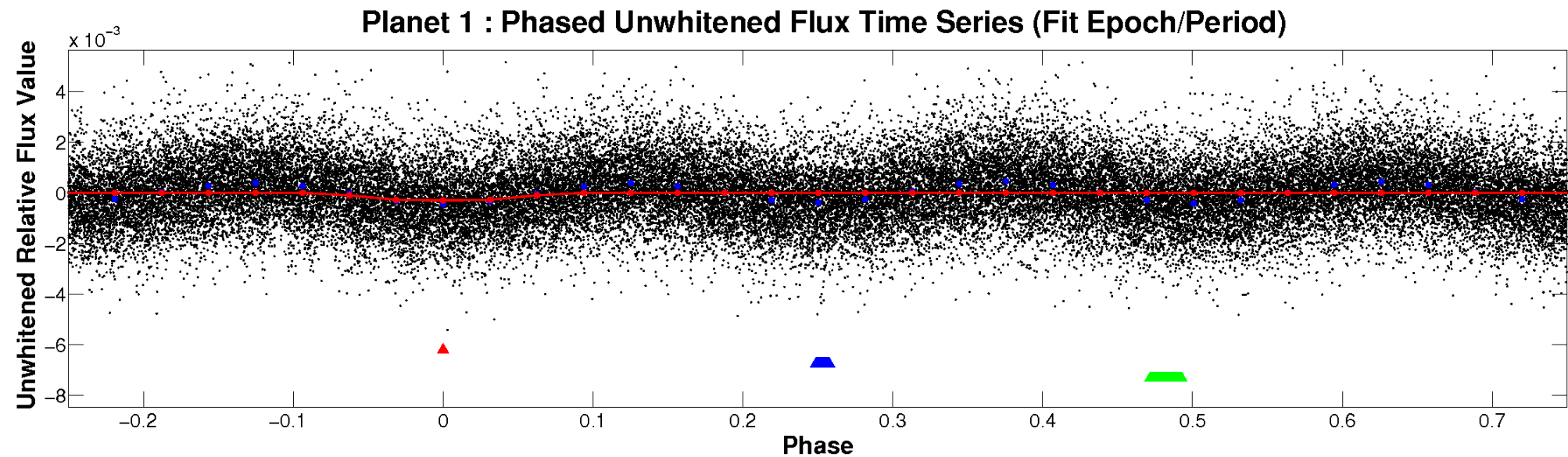


ALT Odd/Even

TCE 010031634-01

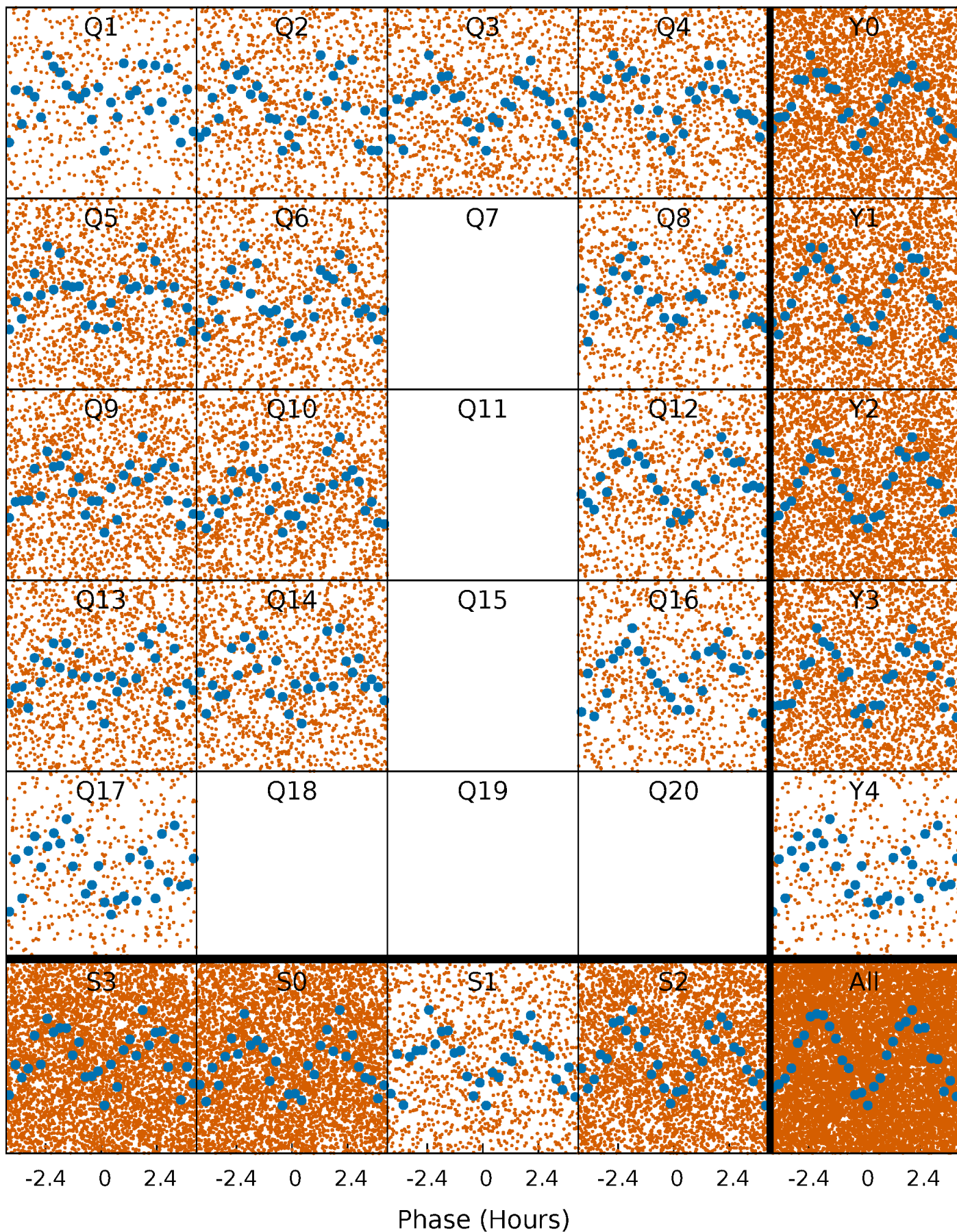


Non-Whitened Vs. Whitened Light Curve



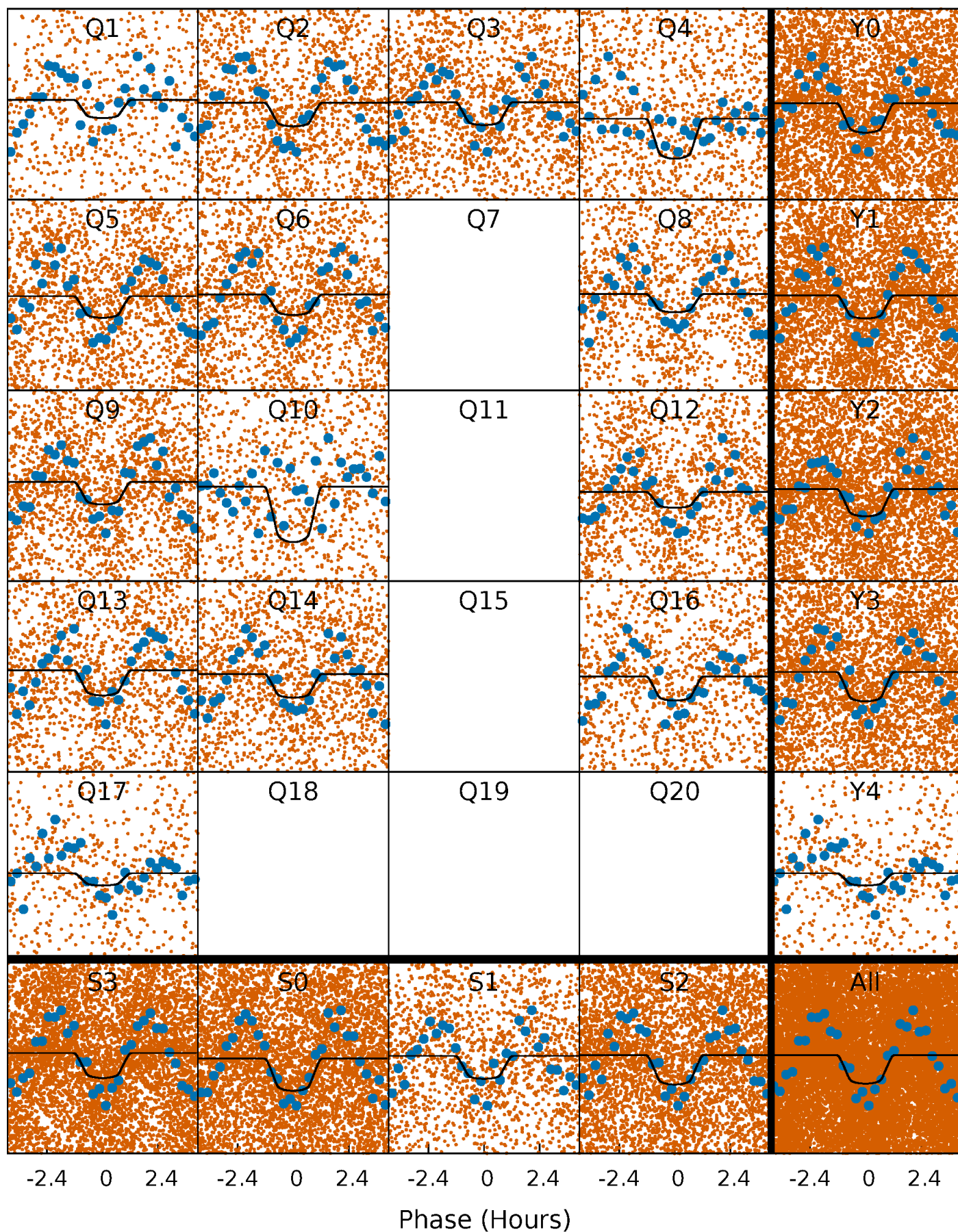
PDC Quarter-Phased Transit Curves

TCE 010031634-01 P= 0.652803 Days $T_0=131.753870$ (BKJD)



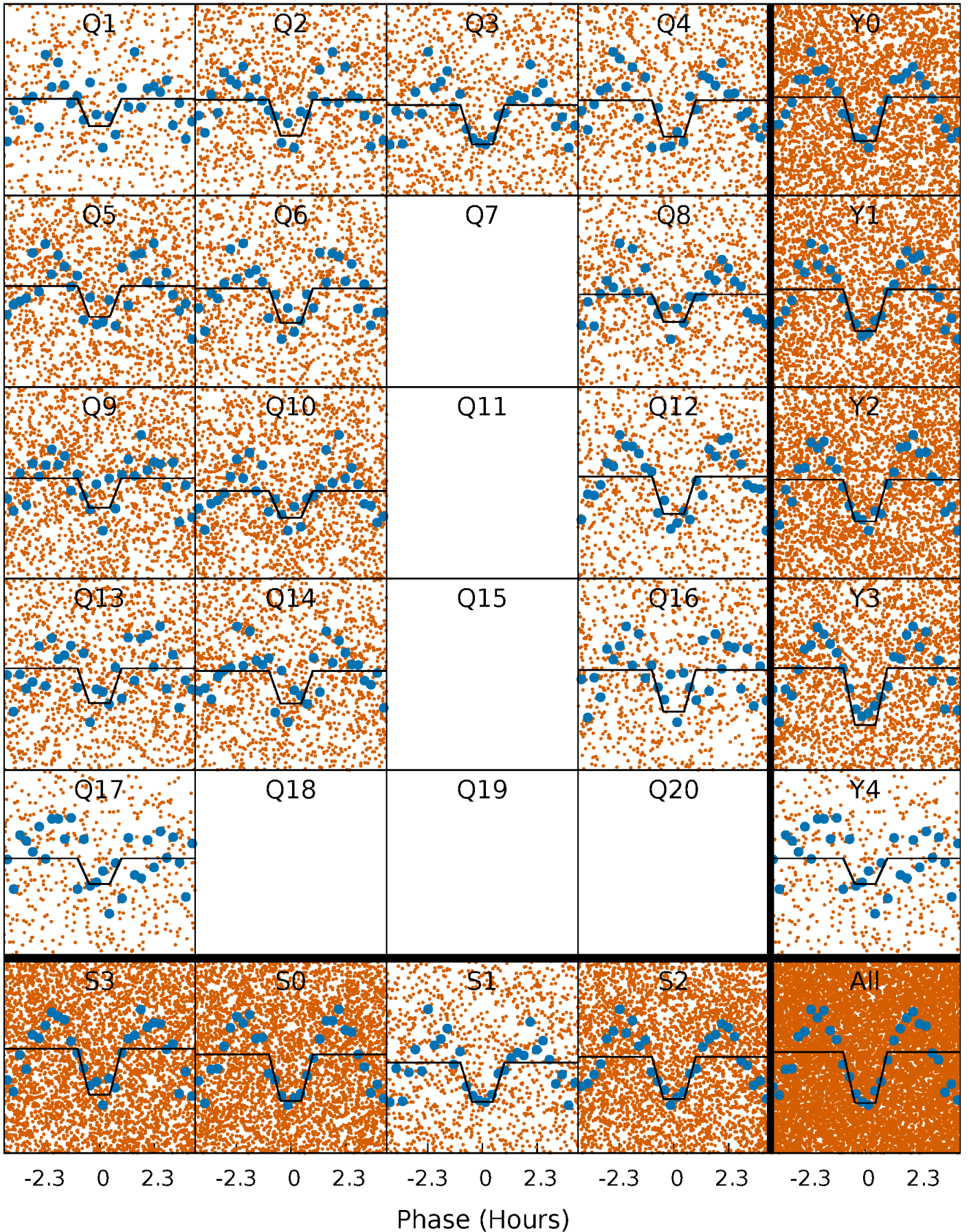
DV Quarter-Phased Transit Curves

TCE 010031634-01 P= 0.652803 Days $T_0=131.753870$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

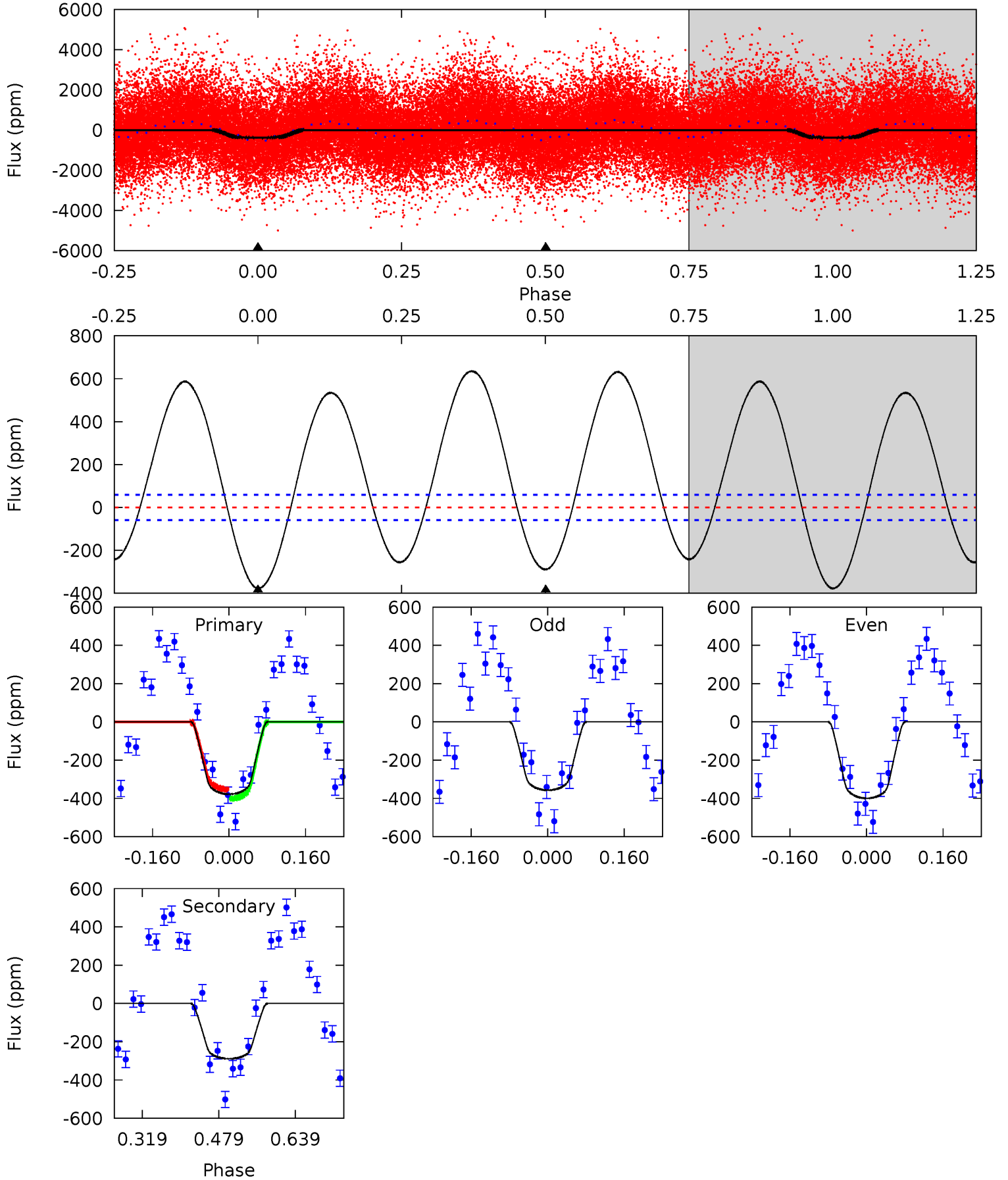
TCE 010031634-01 P= 0.652807 Days $T_0=131.751070$ (BKJD)



DV Model-Shift Uniqueness Test

010031634-01, P = 0.652803 Days, E = 131.101067 Days

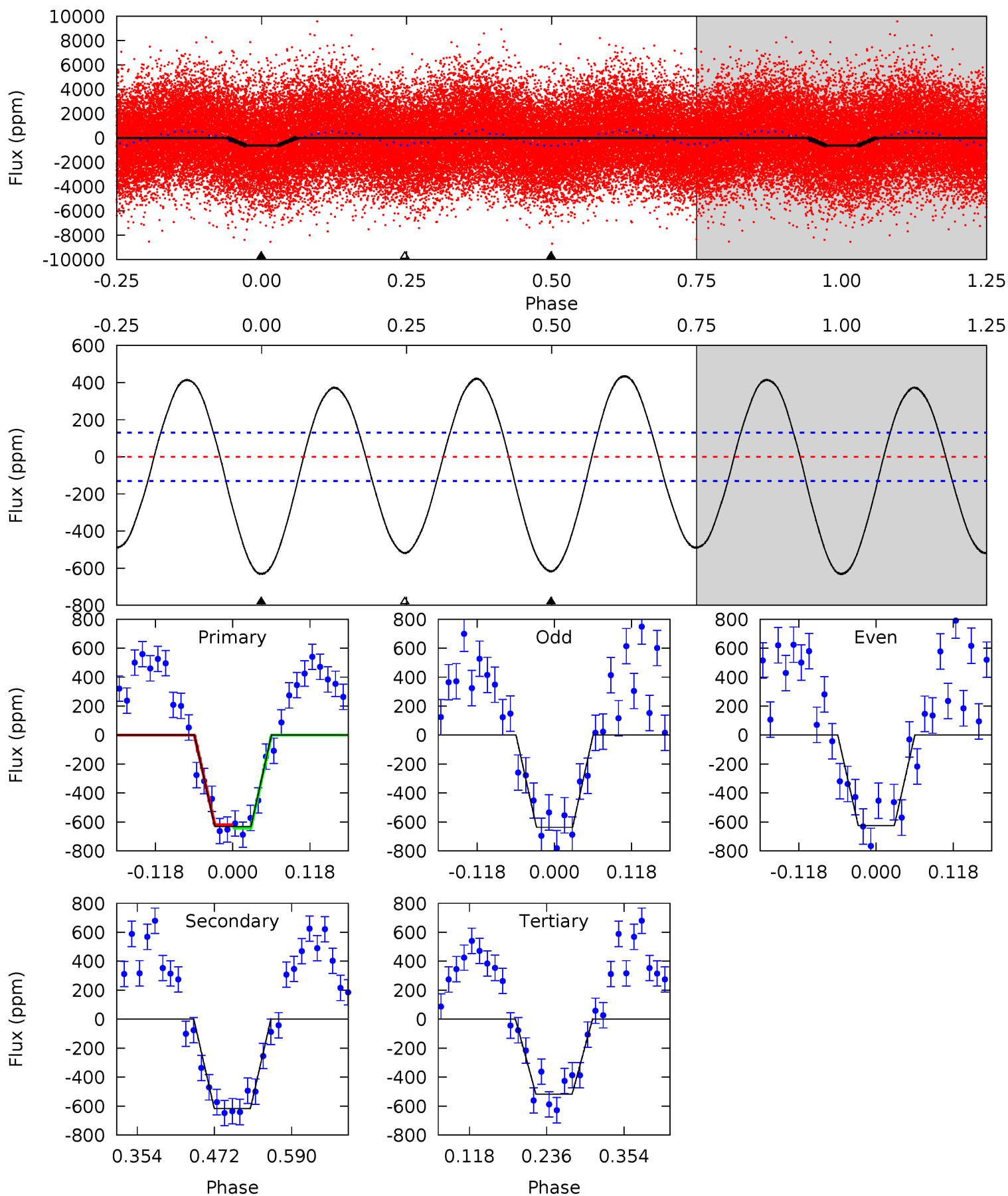
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.6	21.9	0	0	4.47	1.41	17.2	28.6	28.6	21.9	21.9	1.61	0.98	0.63	1.86



Alt Model-Shift Uniqueness Test

010031634-01, P = 0.652807 Days, E = 131.098263 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.9	21.4	18.0	0	4.53	1.56	11.6	3.91	21.9	3.43	21.4	0.20	0.94	0.41	0.41



Stellar Parameters For KIC 010031634

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6881^{+190}_{-262}	$4.146^{+0.175}_{-0.193}$	$-0.200^{+0.250}_{-0.350}$	$1.625^{+0.473}_{-0.387}$	$1.356^{+0.189}_{-0.231}$	$0.445^{+0.435}_{-0.221}$
	+3%/-4%	+4%/-5%	+125%/-175%	+29%/-24%	+14%/-17%	+98%/-50%
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 010031634-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-289 ± 13	$3.22^{+0.60}_{-0.54}$	4227^{+321}_{-291}	6441^{+541}_{-445}	$3.985^{+1.753}_{-1.121}$
Alt.	-617 ± 29	$4.63^{+0.85}_{-0.71}$	4249^{+322}_{-301}	6567^{+445}_{-385}	$4.160^{+1.680}_{-1.136}$

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

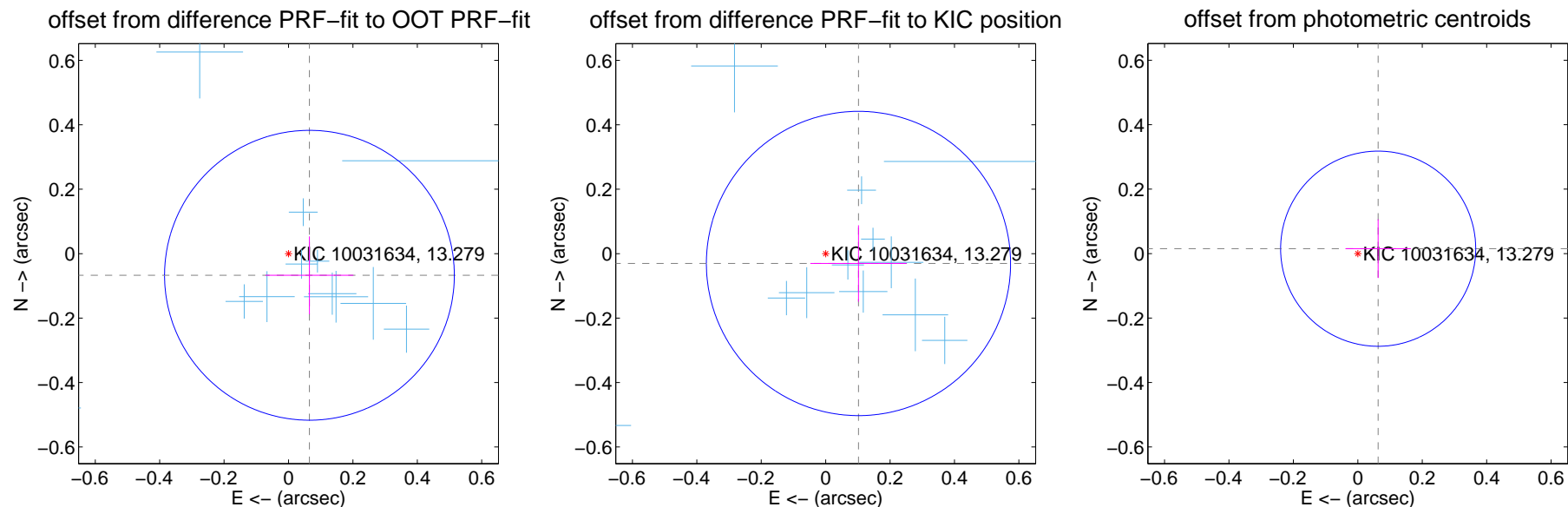
DV Centroid Data

Supplemental centroid analysis for 010031634-01. Kepler magnitude: 13.28. Transit SNR 14.92

There are 14 quarters with good PRF difference image offsets

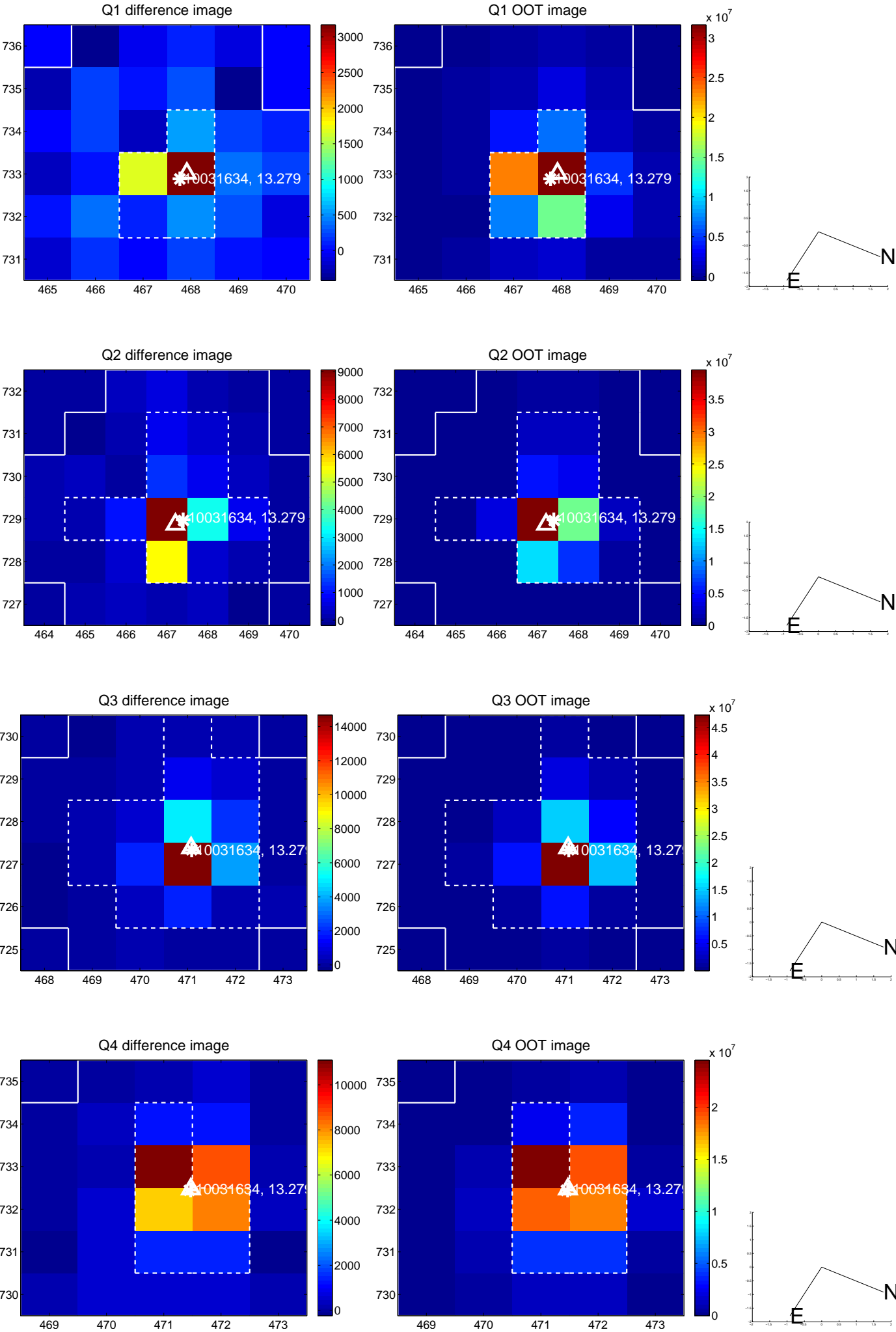
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.093 ± 0.150	0.62	-0.065 ± 0.136	-0.067 ± 0.121
PRF-fit source offset from KIC position	0.106 ± 0.157	0.68	-0.102 ± 0.149	-0.031 ± 0.119
photometric centroid source offset	0.06 ± 0.10	0.64	-0.06 ± 0.10	0.02 ± 0.09

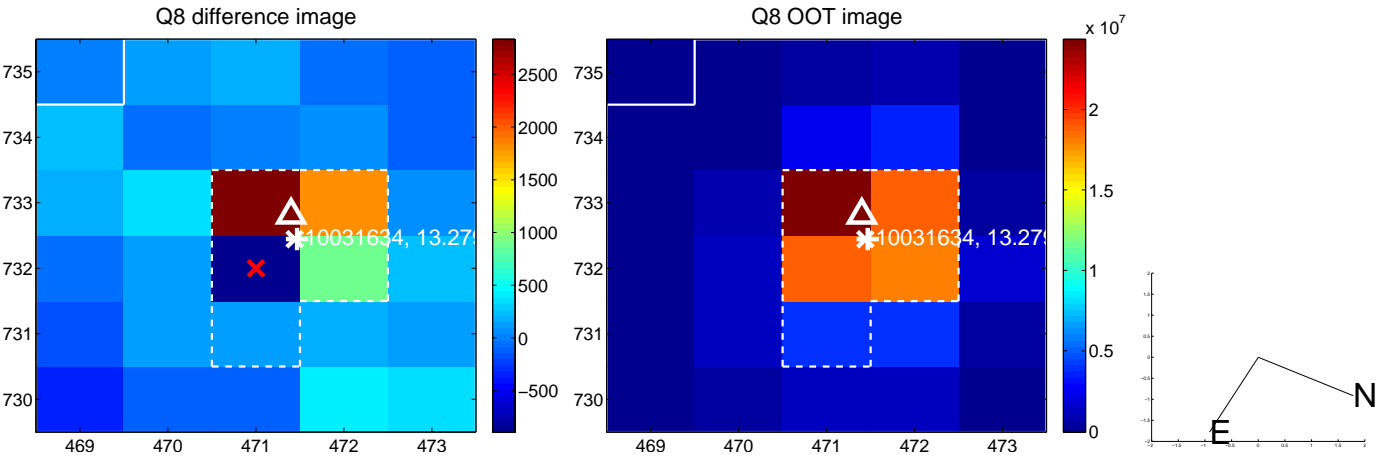
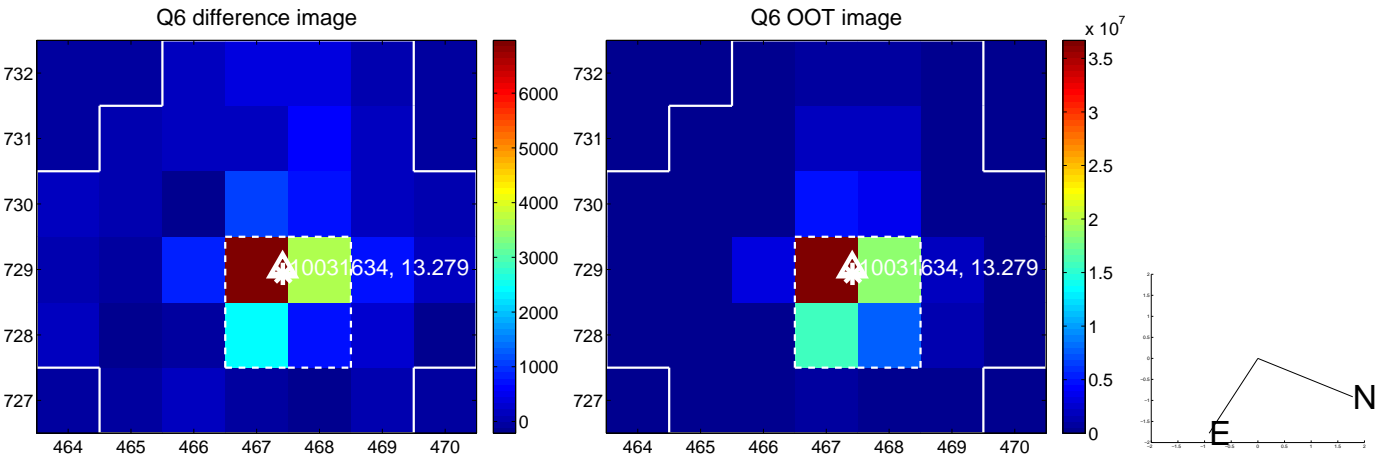
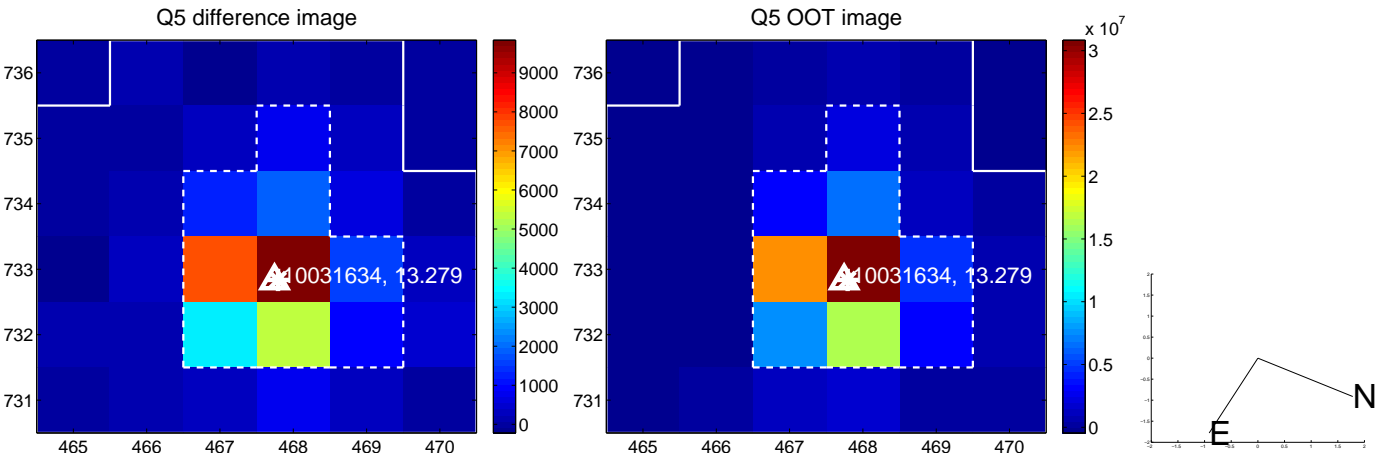


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

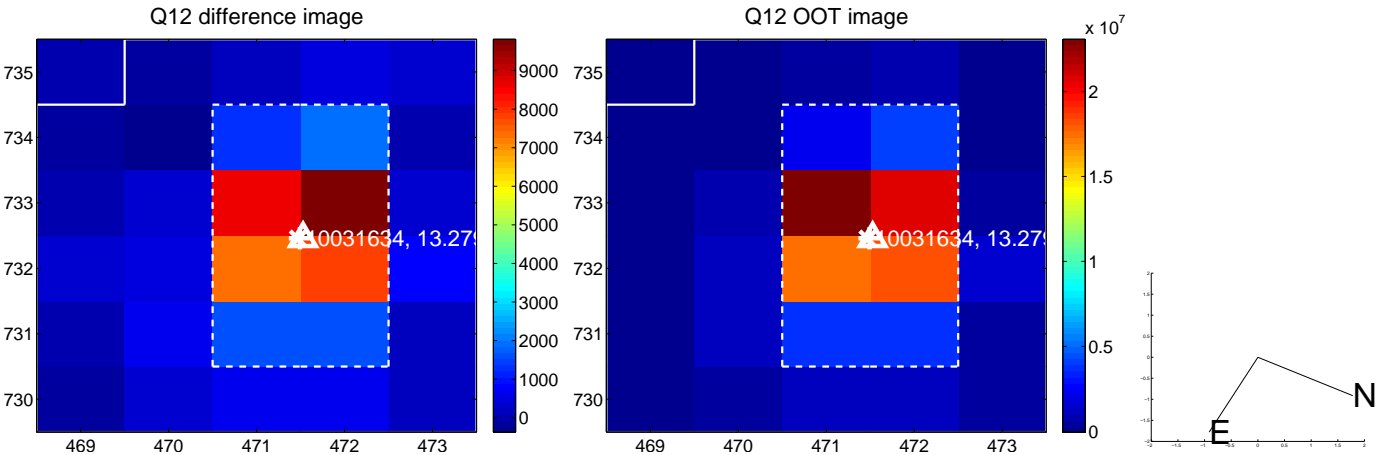
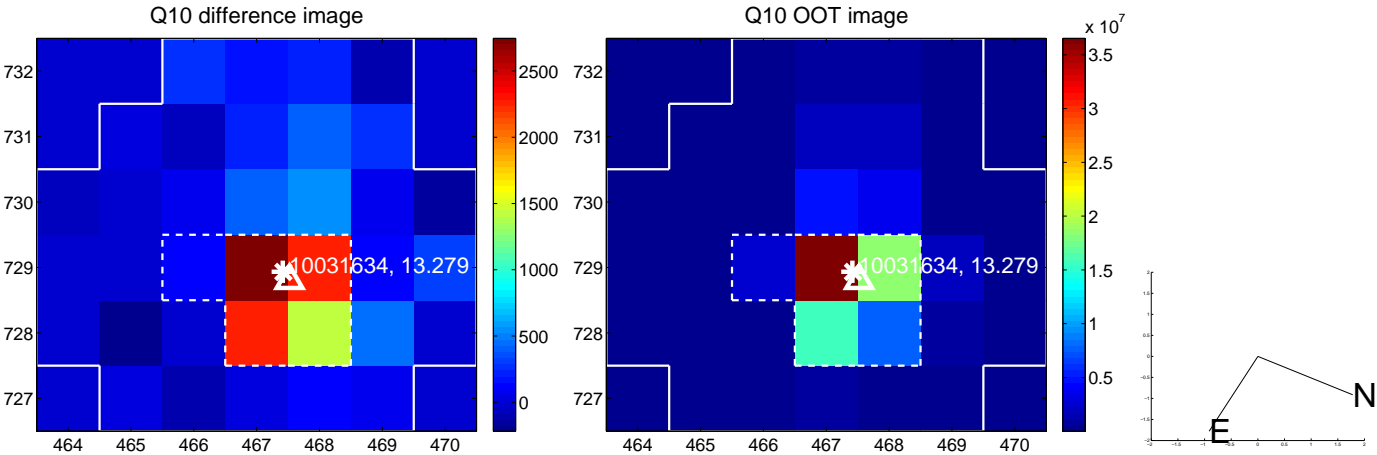
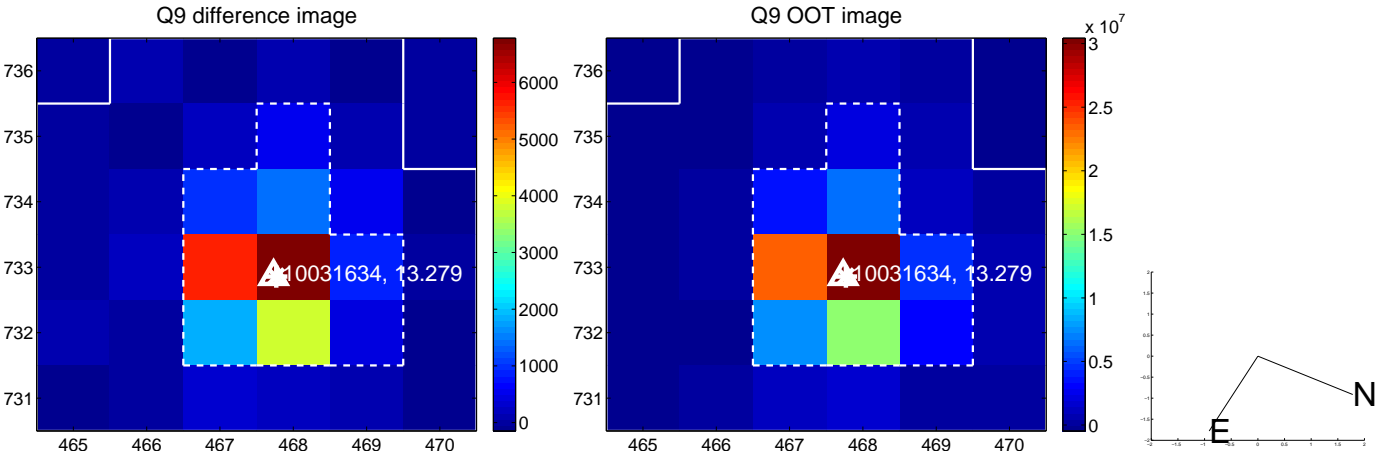
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



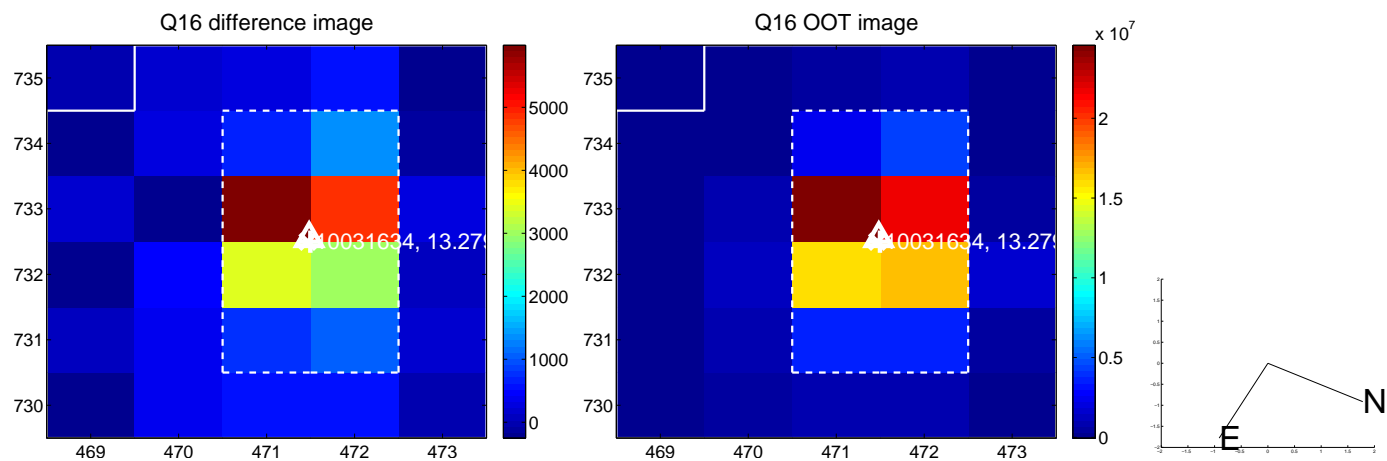
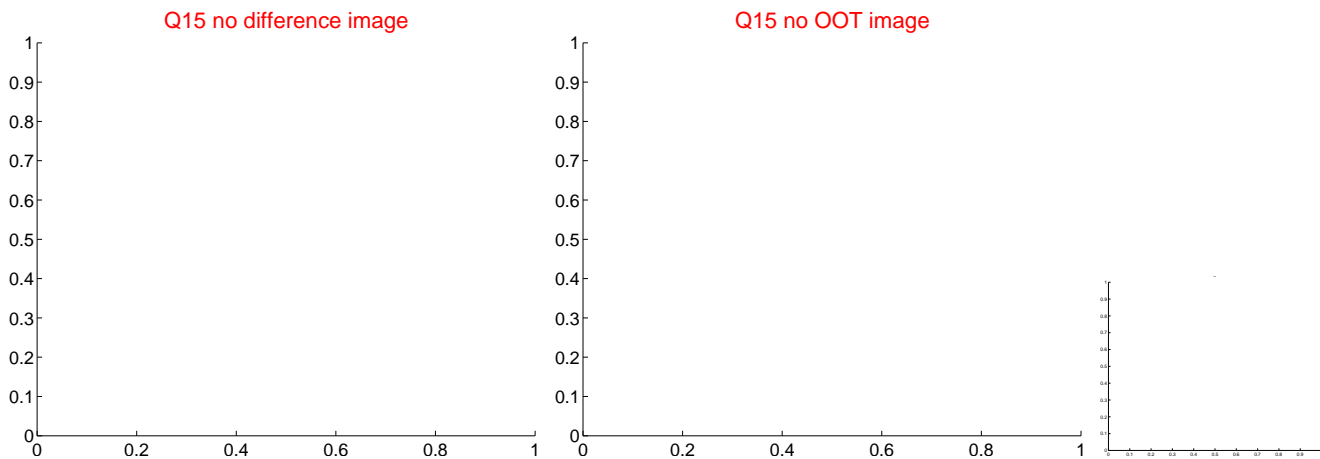
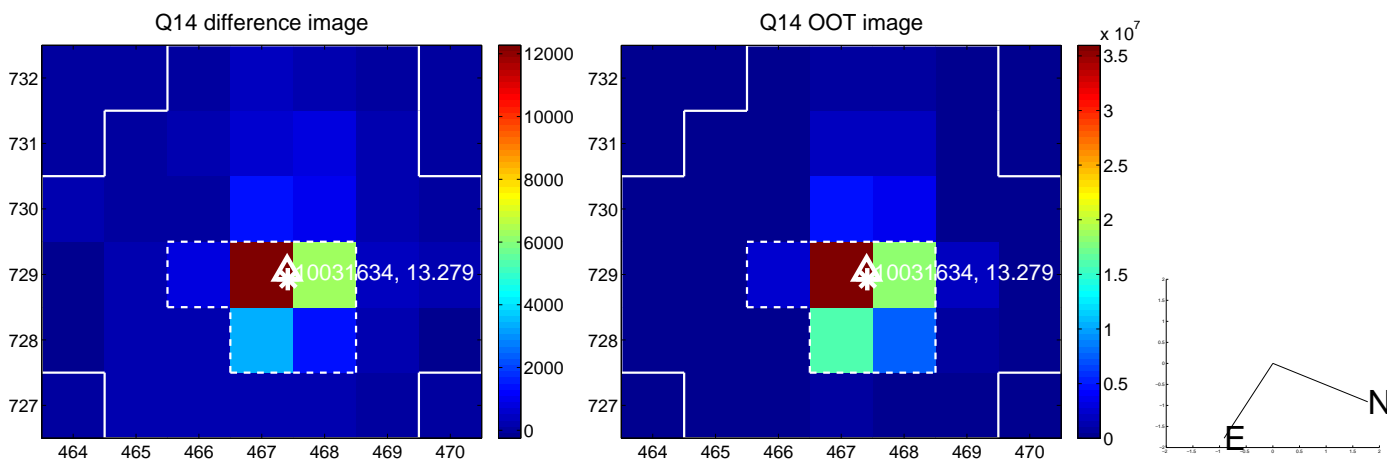
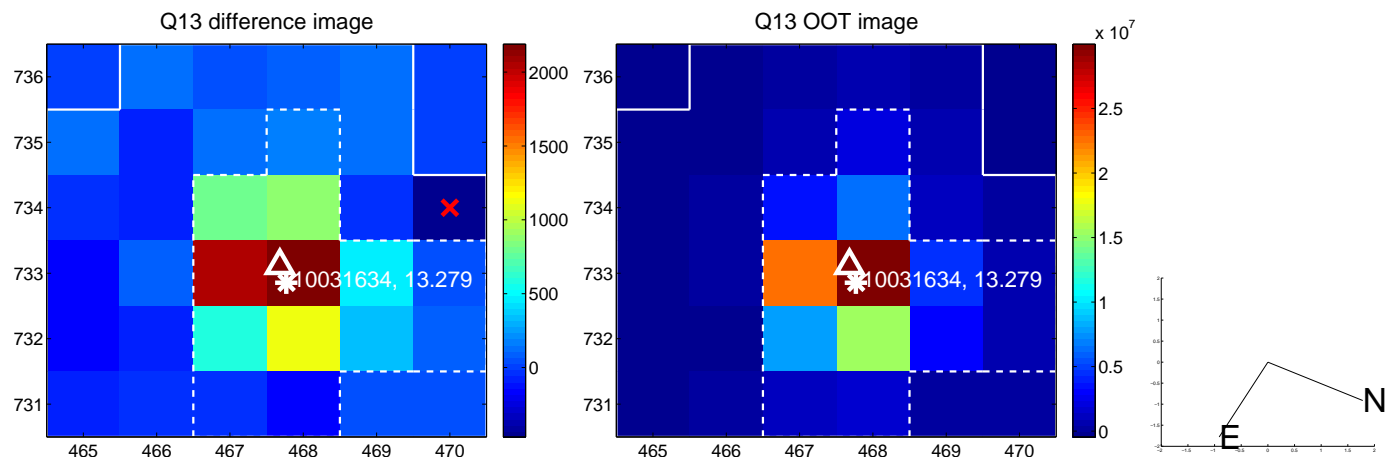
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



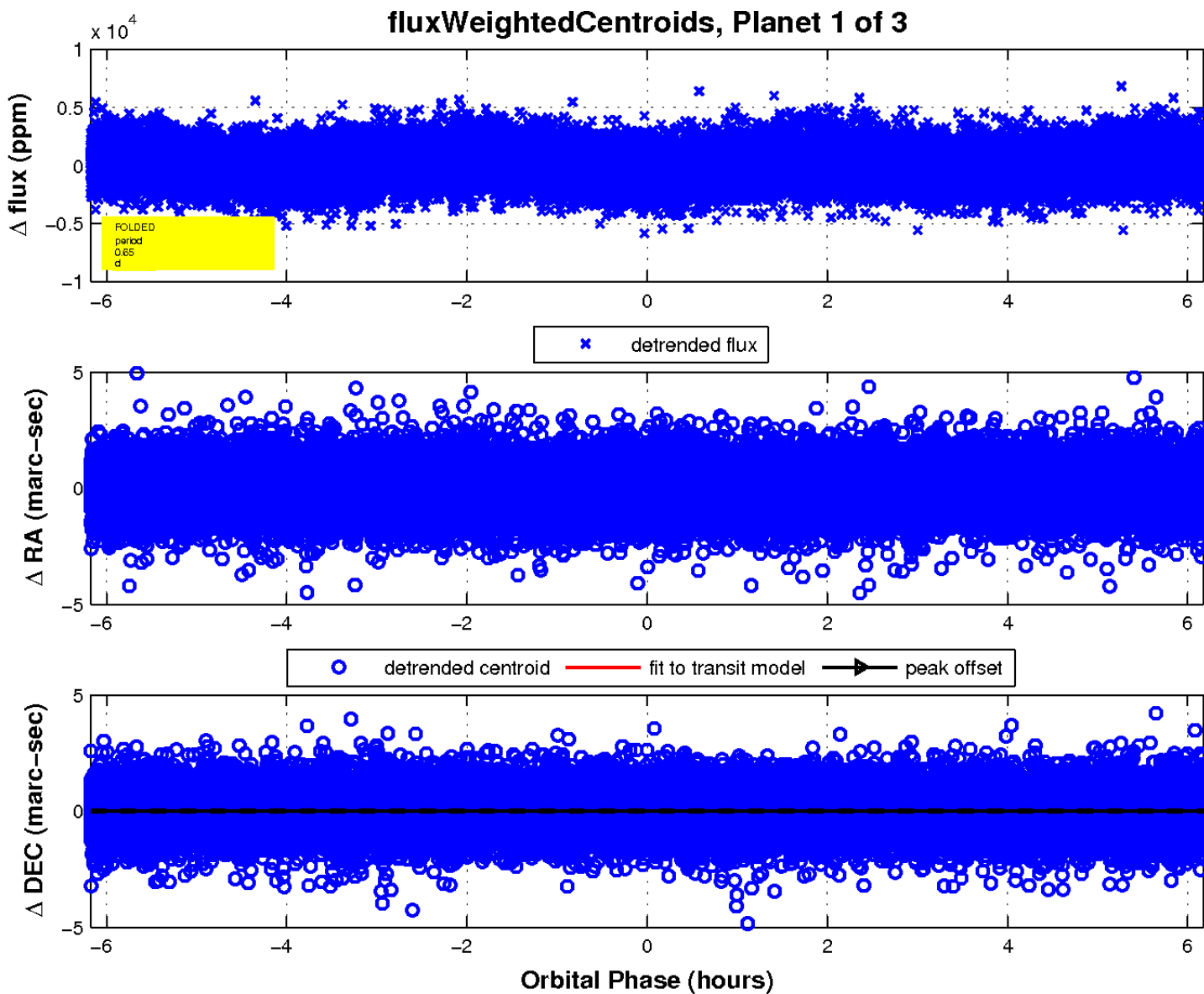
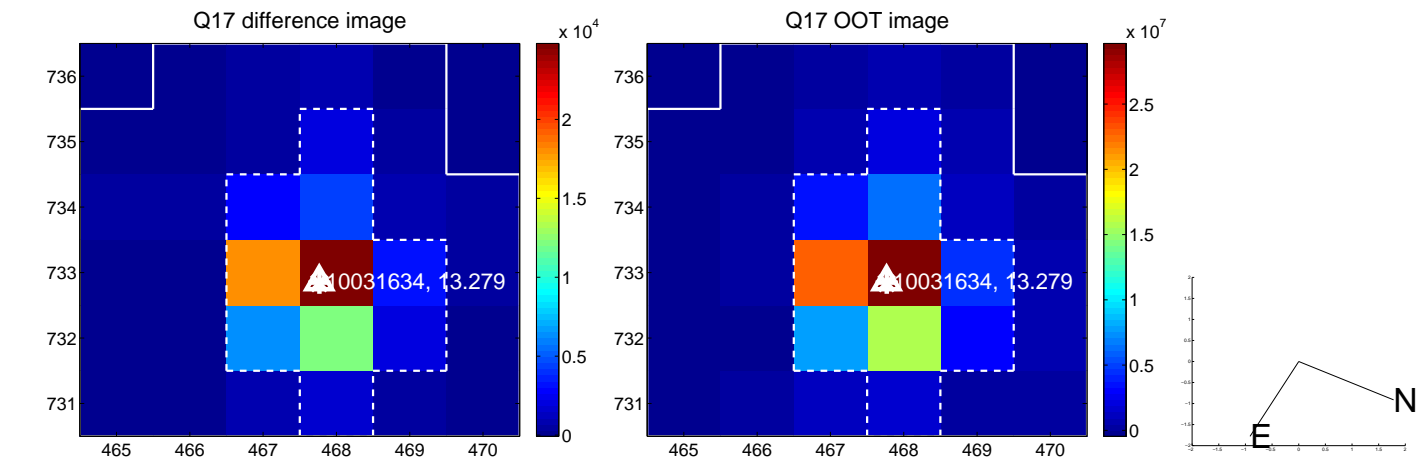
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

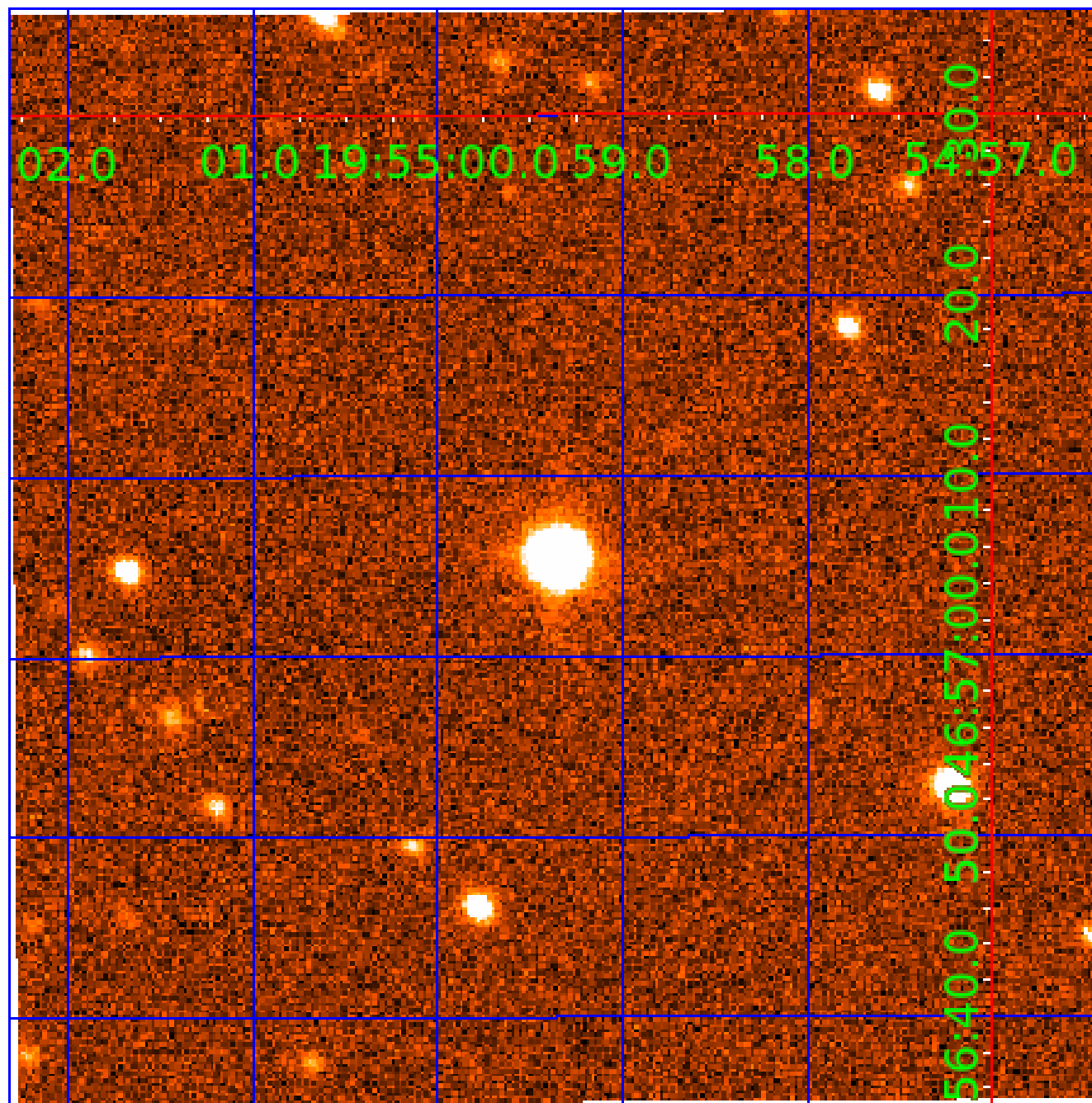


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010031634

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})
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010031634-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010031634-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD
010031634-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_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.

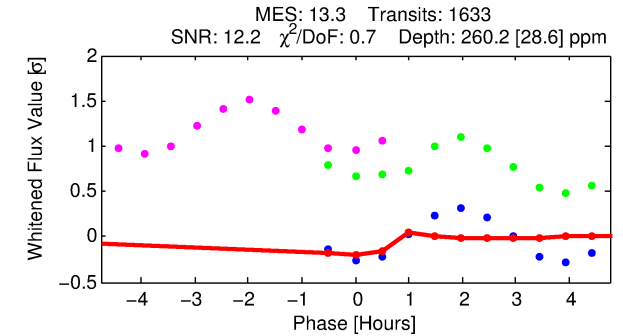
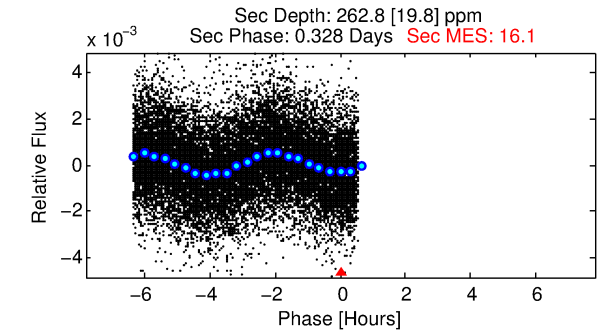
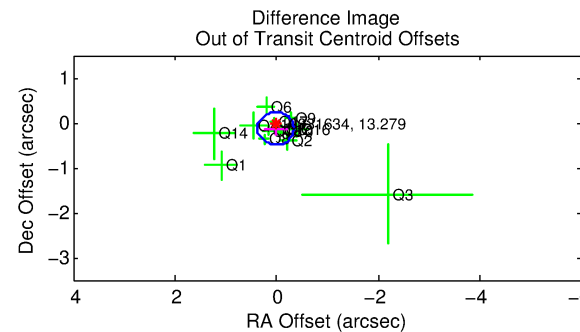
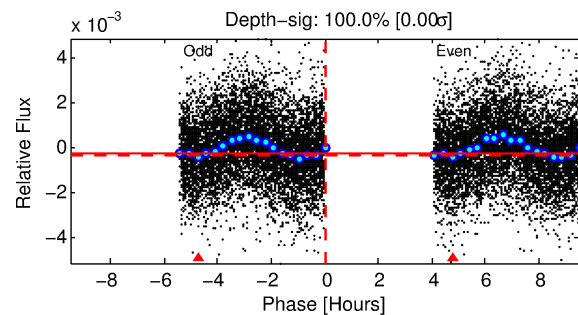
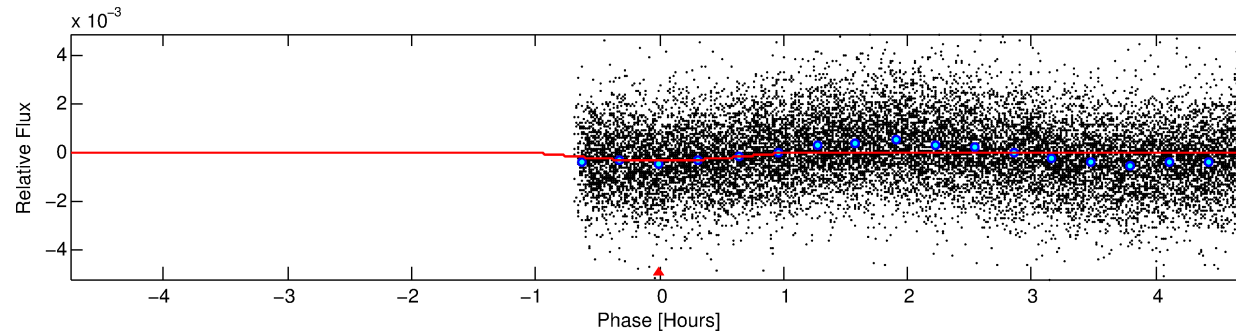
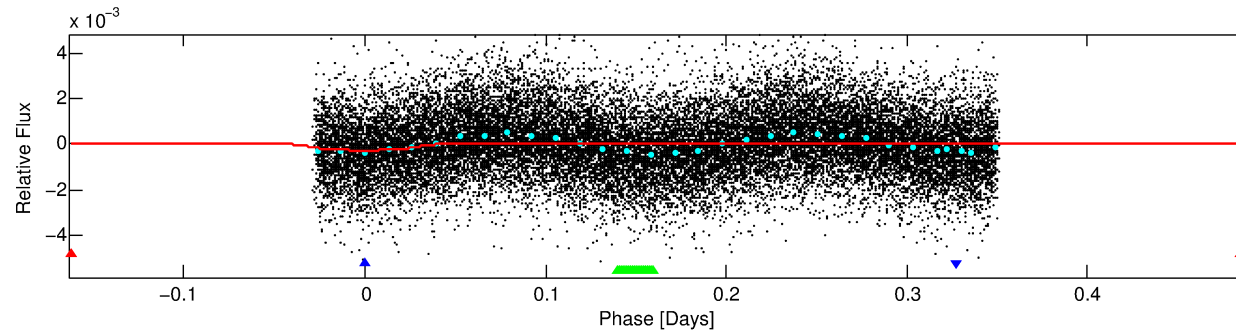
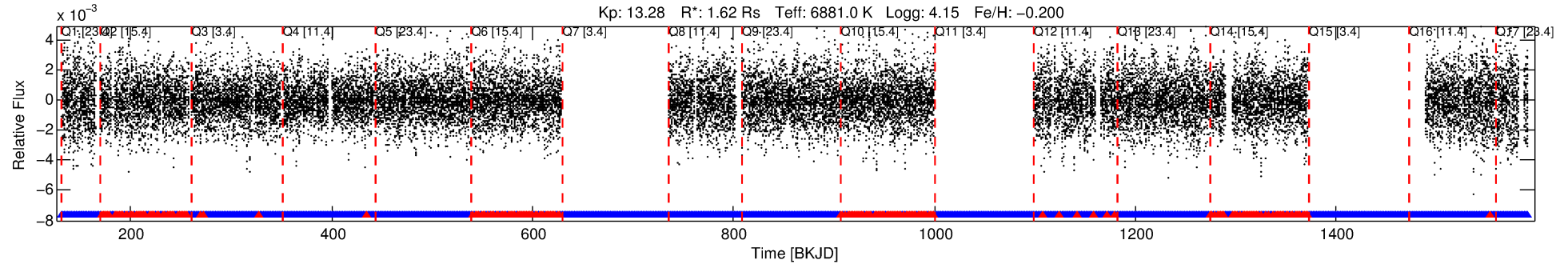
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010031634-02

No Significant Match Found

DV One-Page Summary

KIC: 10031634 Candidate: 2 of 3 Period: 0.653 d



DV Fit Results:

Period = 0.65281 [0.00001] d
Epoch = 131.9162 [0.0015] BKJD
Rp/R* = 0.0172 [0.0046]
a/R* = 1.76 [1.87]
b = 0.90 [0.33]
Seff = 20030.45 [7722.14]
Teq = 3034 [292] K
Rp = 3.06 [1.21] Re
a = 0.0163 [0.0040] AU
Ag = 4.10 [2.64] [1.17σ]
Teffp = 6672 [935] K [3.71σ]

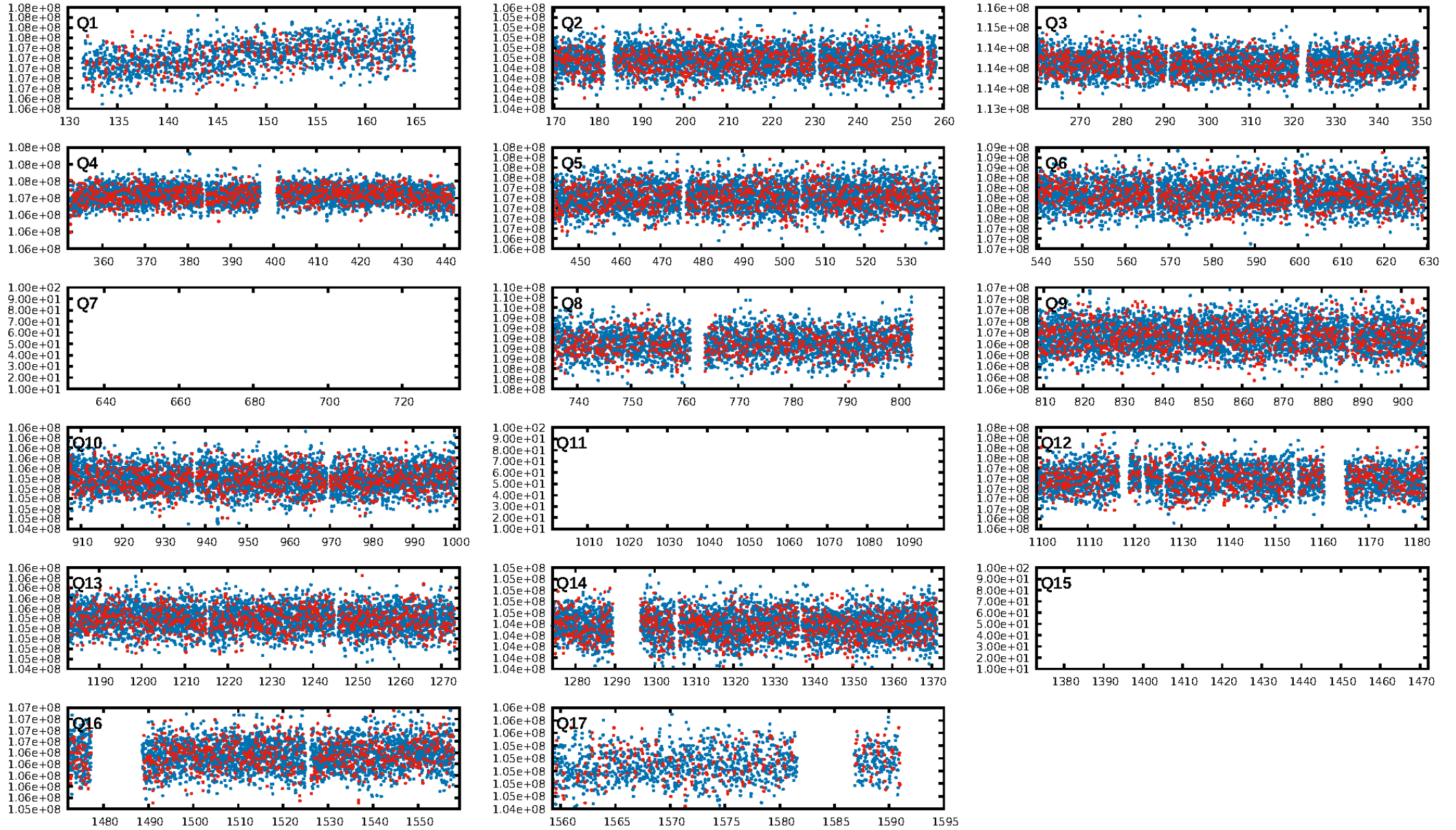
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.83 [1278/1542]
GhostDiagnostic-chr: 7.773
Centroid-sig: N/A
Centroid-so: 0.144 arcsec [1.16σ]
OotOffset-rm: 0.129 arcsec [1.08σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-rm: 0.107 arcsec [0.75σ]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.71 [10/14]
DiffImageOverlap-fno: 0.00 [0/14]

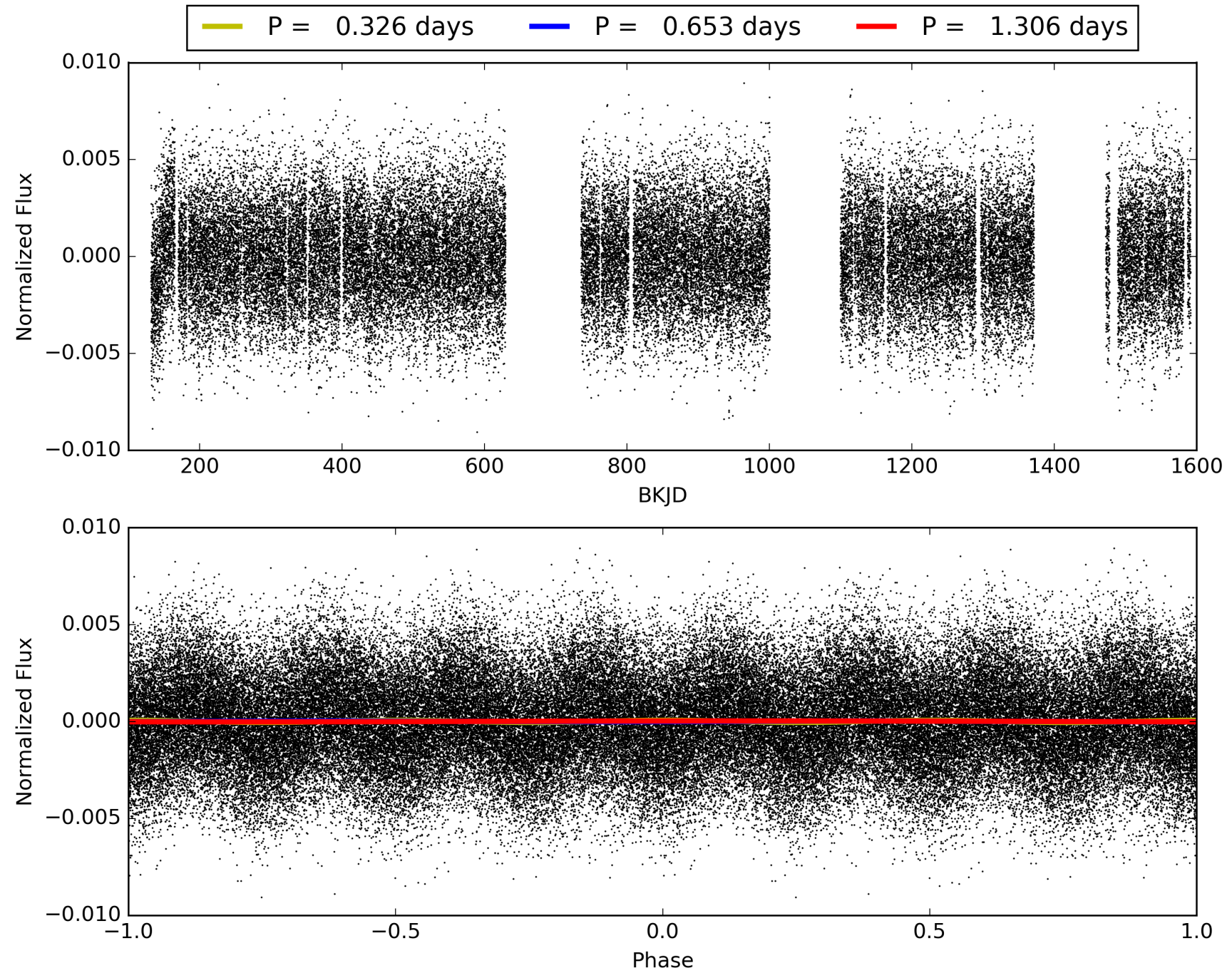
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 18:25:02 Z

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

TCE 010031634-02, PDC Light Curves

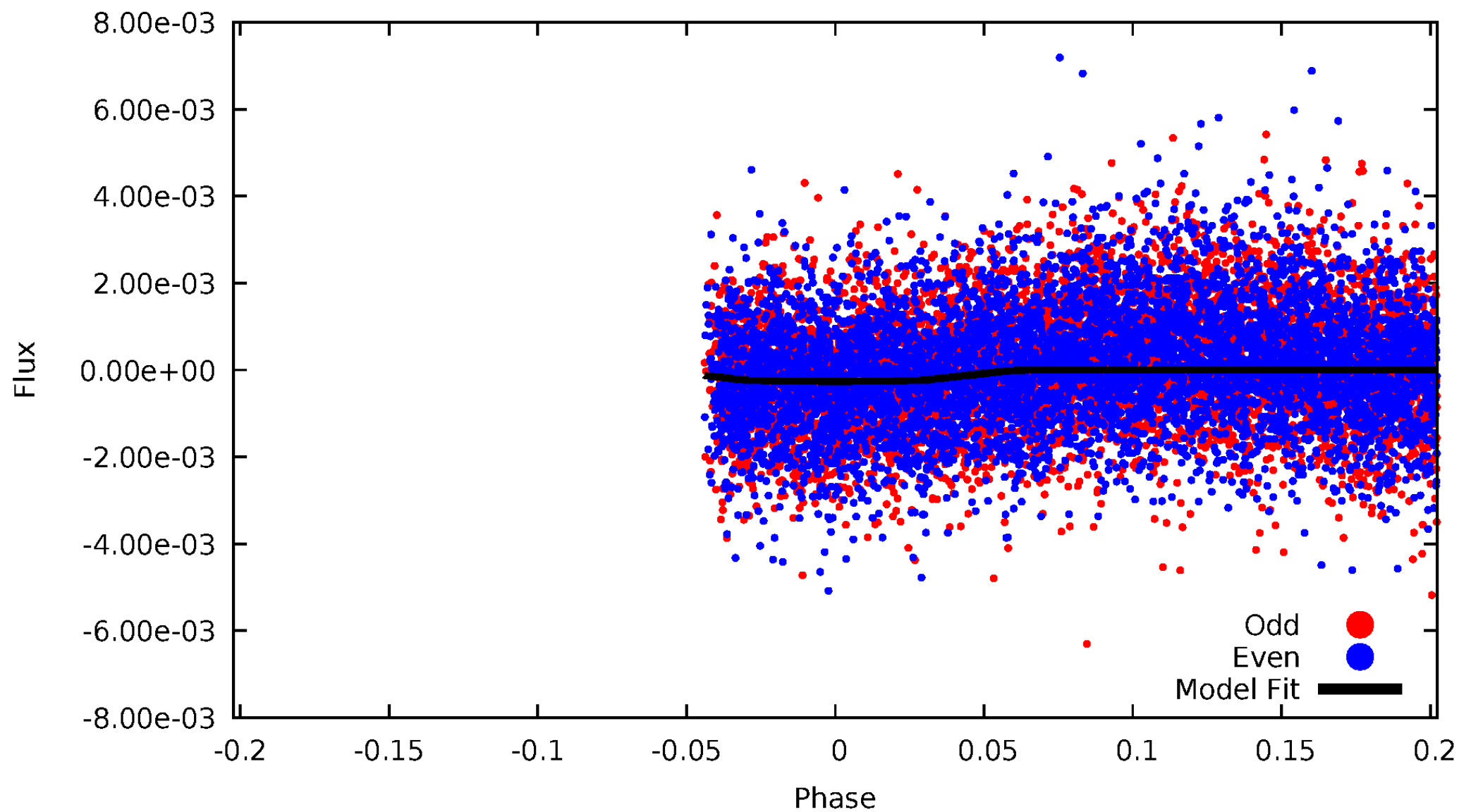


TCE 010031634-02



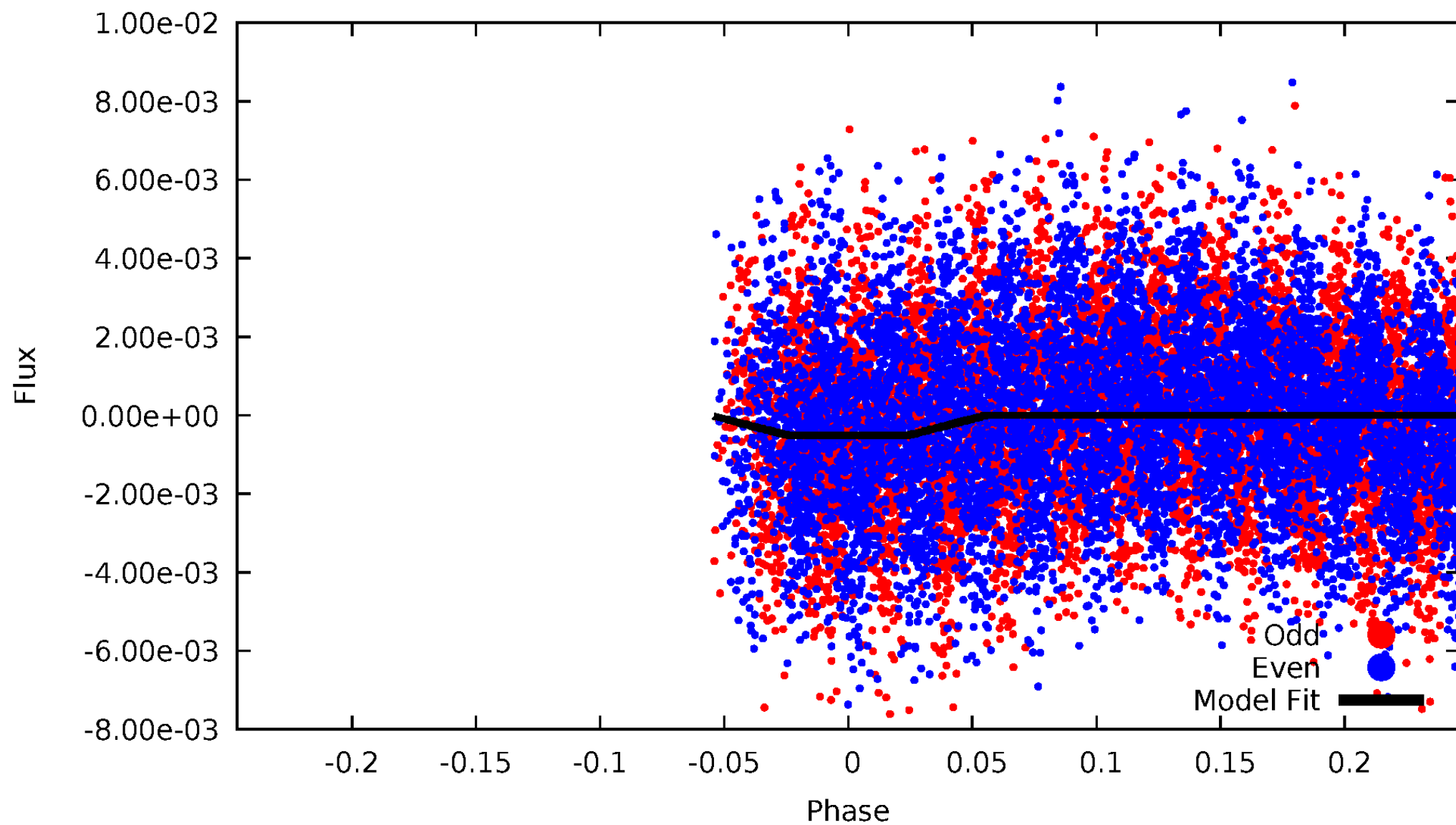
DV Odd/Even

TCE 010031634-02



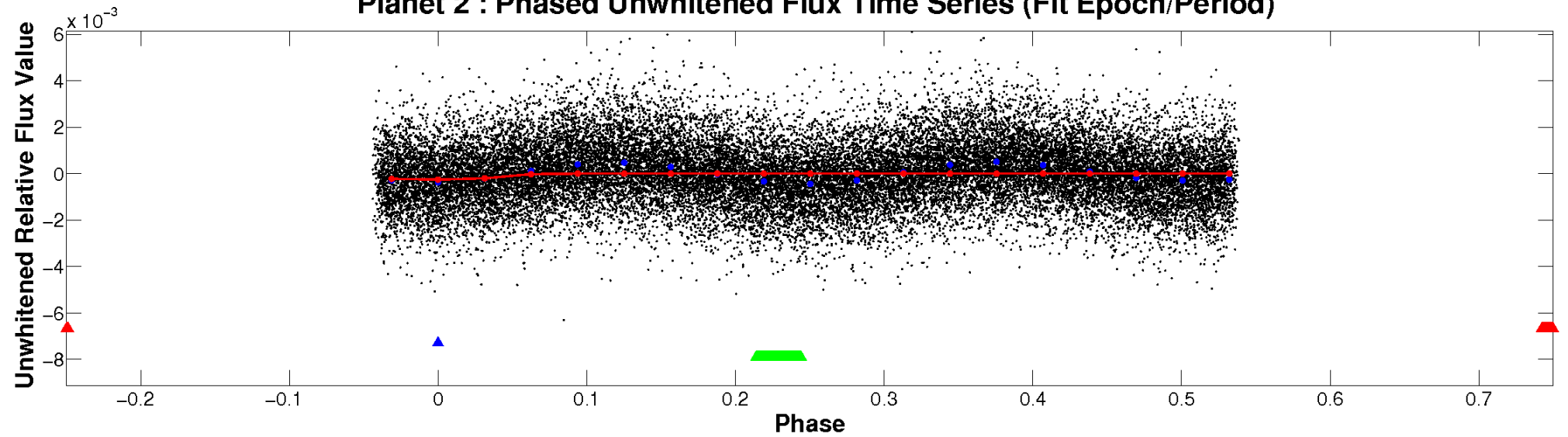
ALT Odd/Even

TCE 010031634-02

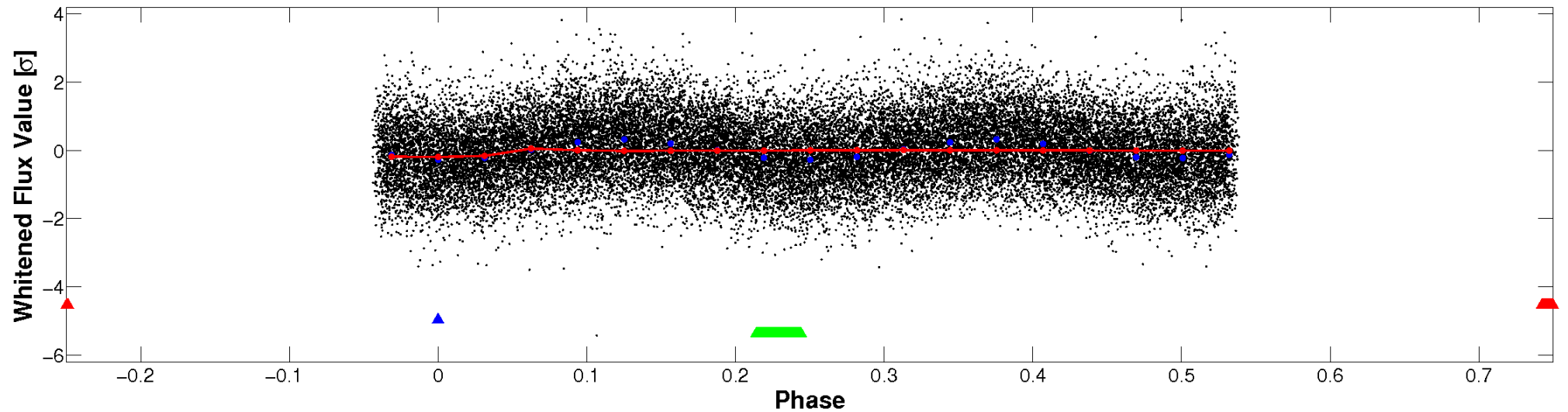


Non-Whitened Vs. Whitened Light Curve

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

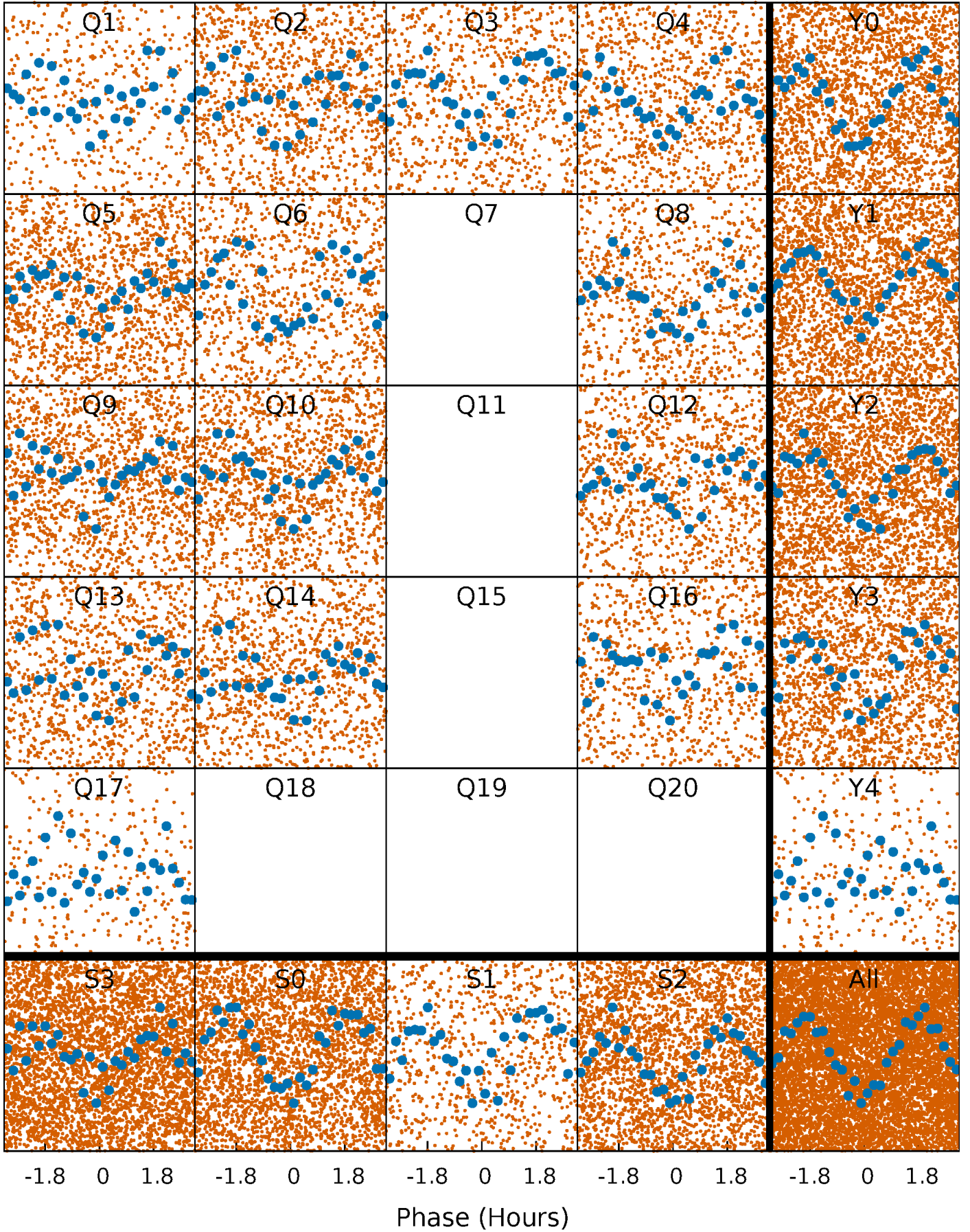


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



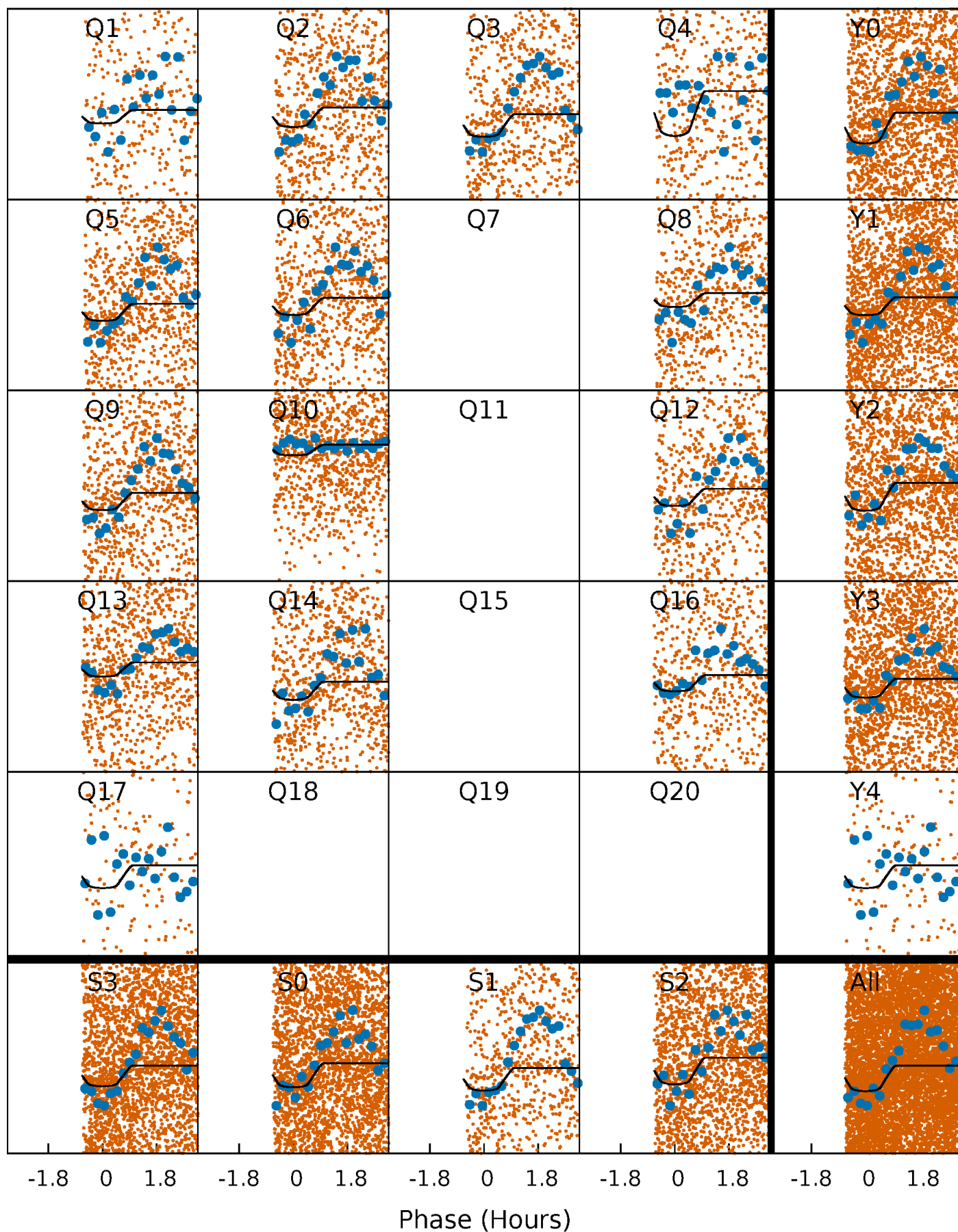
PDC Quarter-Phased Transit Curves

TCE 010031634-02 P= 0.652806 Days $T_0=131.916219$ (BKJD)



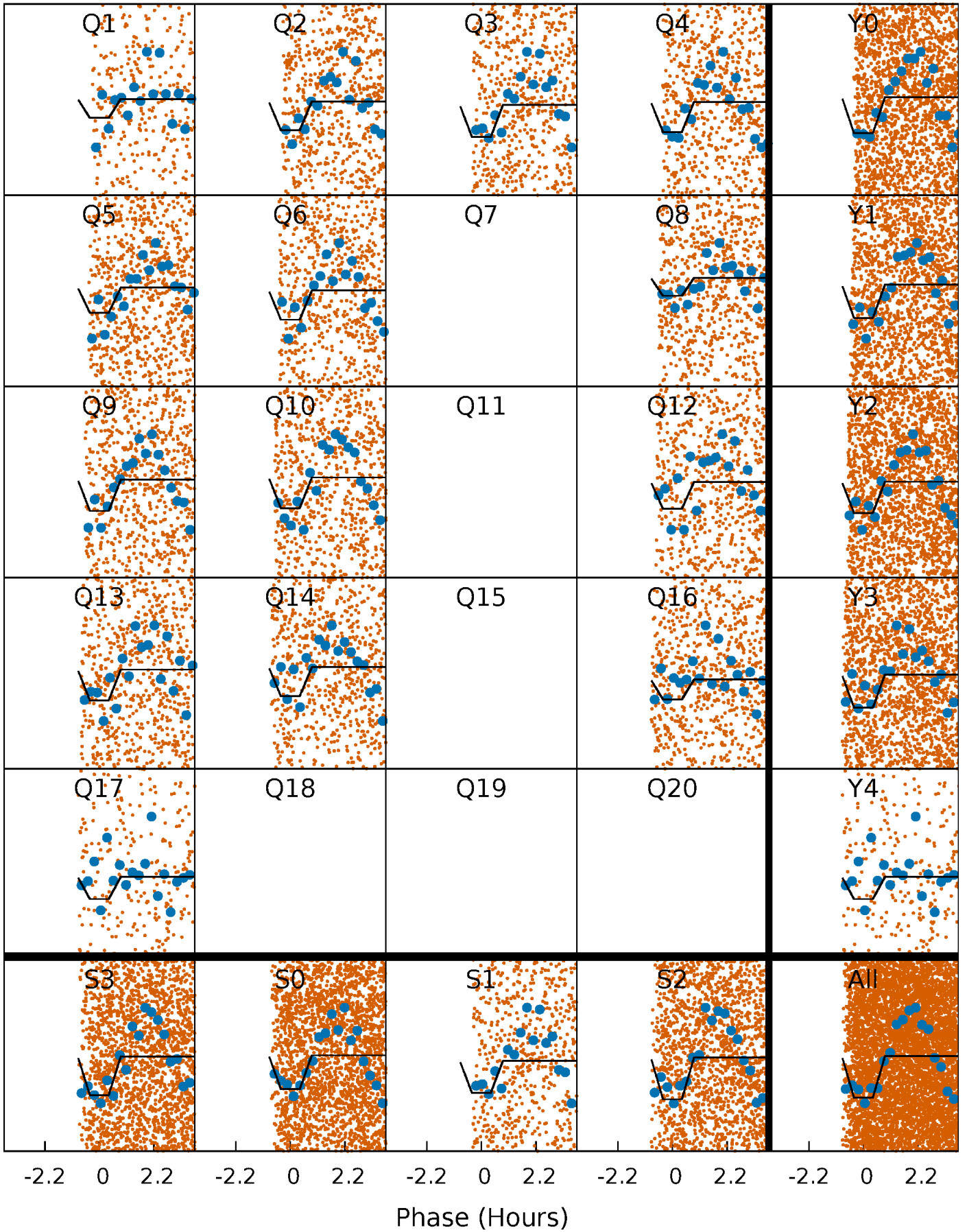
DV Quarter-Phased Transit Curves

TCE 010031634-02 P= 0.652806 Days $T_0=131.916219$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

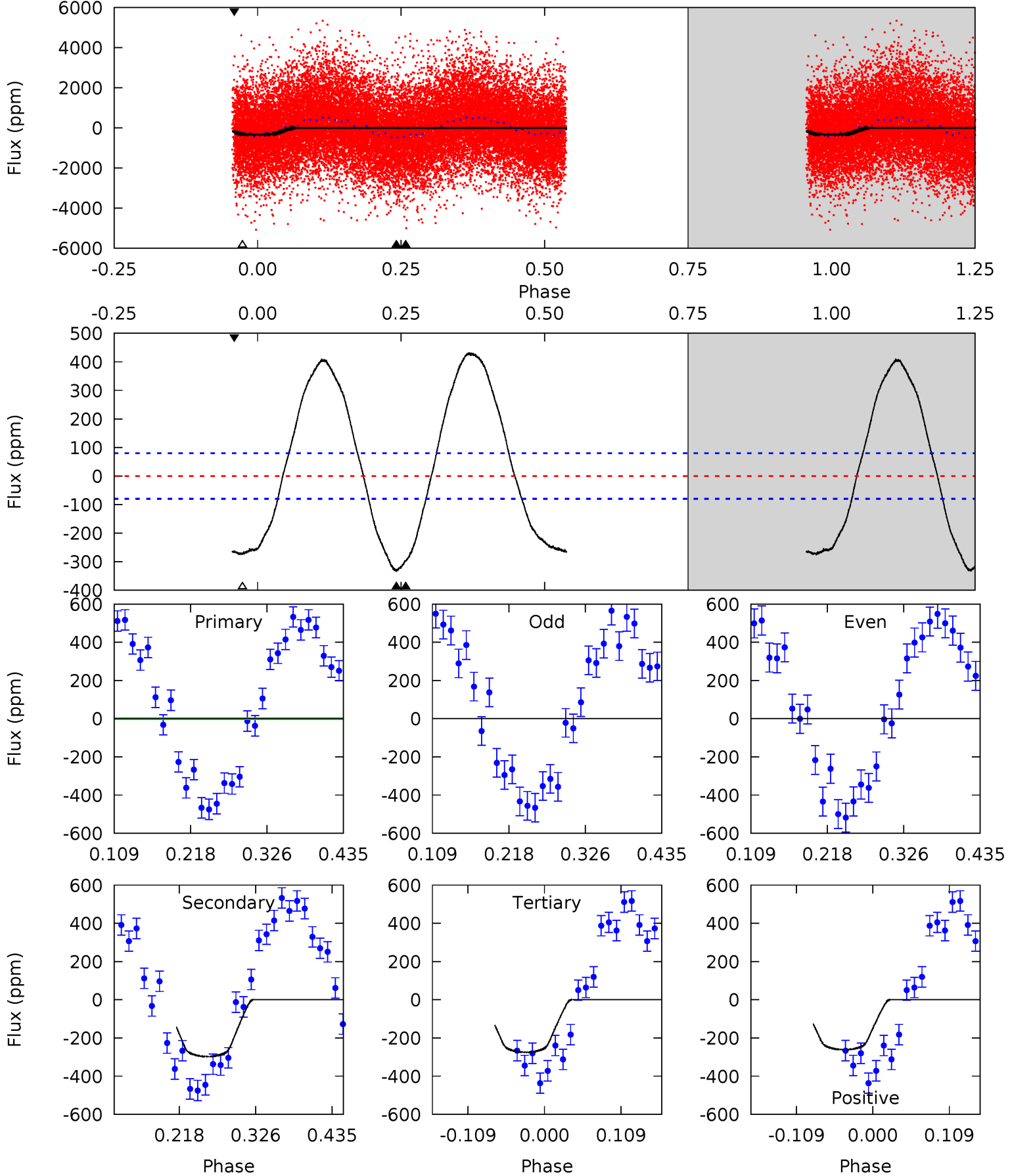
TCE 010031634-02 P= 0.652815 Days $T_0=131.903842$ (BKJD)



DV Model-Shift Uniqueness Test

010031634-02, P = 0.652806 Days, E = 131.263413 Days

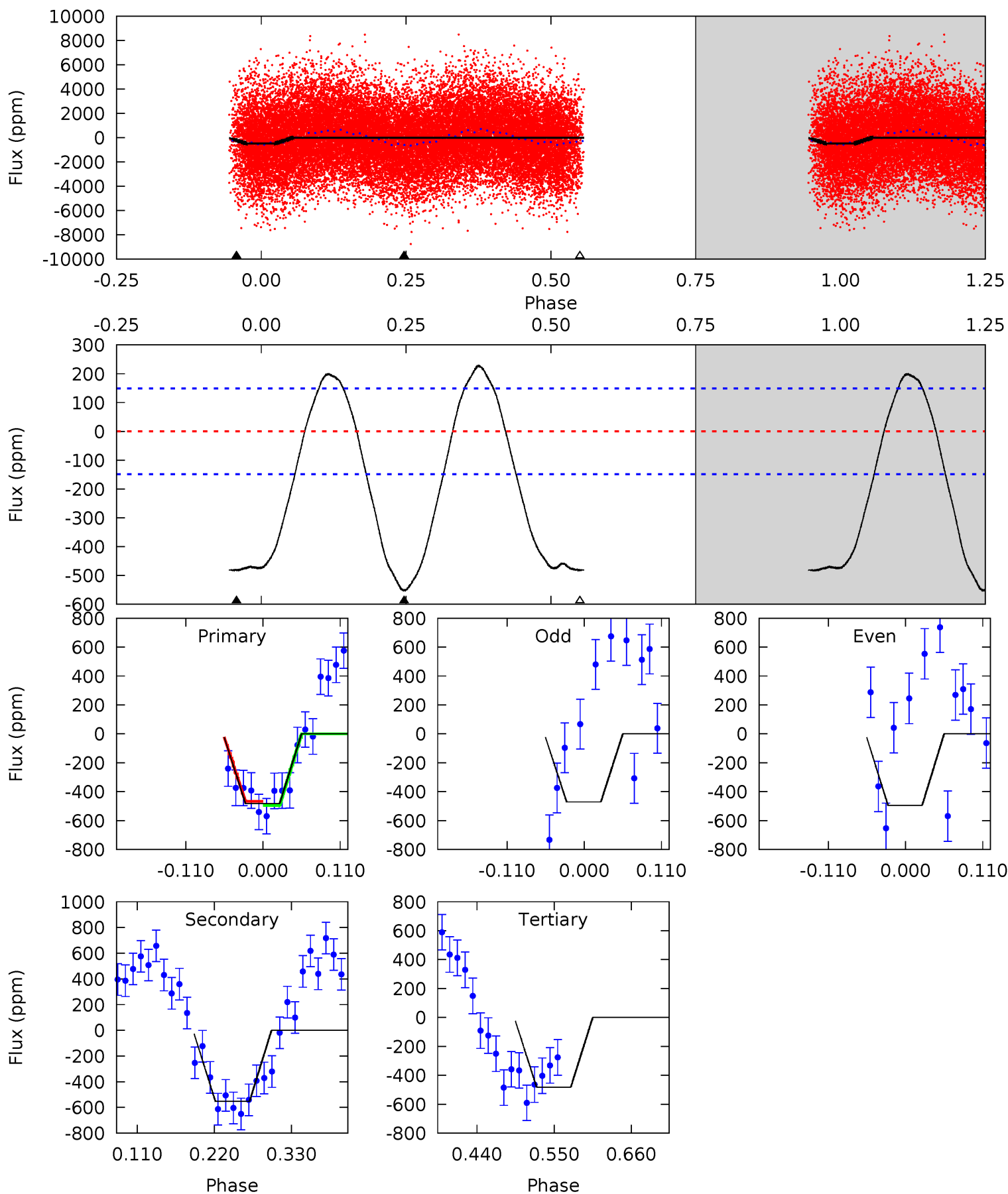
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.9	16.9	15.6	-14.9	4.55	1.60	14.3	3.28	33.8	1.30	31.8	0.50	1.04	0.57	2.42



Alt Model-Shift Uniqueness Test

010031634-02, P = 0.652815 Days, E = 131.251027 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.7	16.9	14.7	0	4.54	1.60	8.19	0.02	14.7	2.15	16.9	0.35	0.85	0.29	0.43



Stellar Parameters For KIC 010031634

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6881^{+190}_{-262}	$4.146^{+0.175}_{-0.193}$	$-0.200^{+0.250}_{-0.350}$	$1.625^{+0.473}_{-0.387}$	$1.356^{+0.189}_{-0.231}$	$0.445^{+0.435}_{-0.221}$
	+3%/-4%	+4%/-5%	+125%/-175%	+29%/-24%	+14%/-17%	+98%/-50%
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 010031634-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-297 ± 18	$3.12^{+1.02}_{-0.84}$	4257^{+344}_{-294}	6650^{+1472}_{-834}	$4.497^{+3.699}_{-1.992}$
Alt.	-552 ± 33	$3.95^{+1.16}_{-0.95}$	4221^{+355}_{-306}	6900^{+1066}_{-740}	$5.077^{+3.611}_{-1.997}$

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 $A_{obs} \gg 1.0$

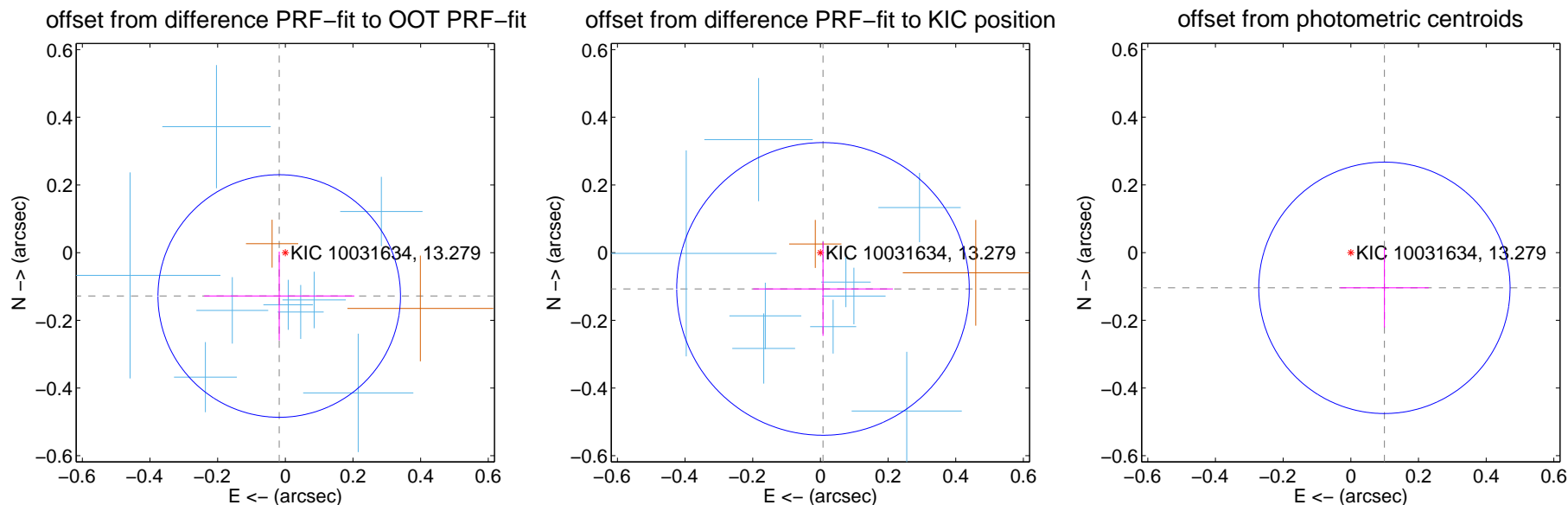
DV Centroid Data

Supplemental centroid analysis for 010031634-02. Kepler magnitude: 13.28. Transit SNR 12.25

There are 10 quarters with good PRF difference image offsets

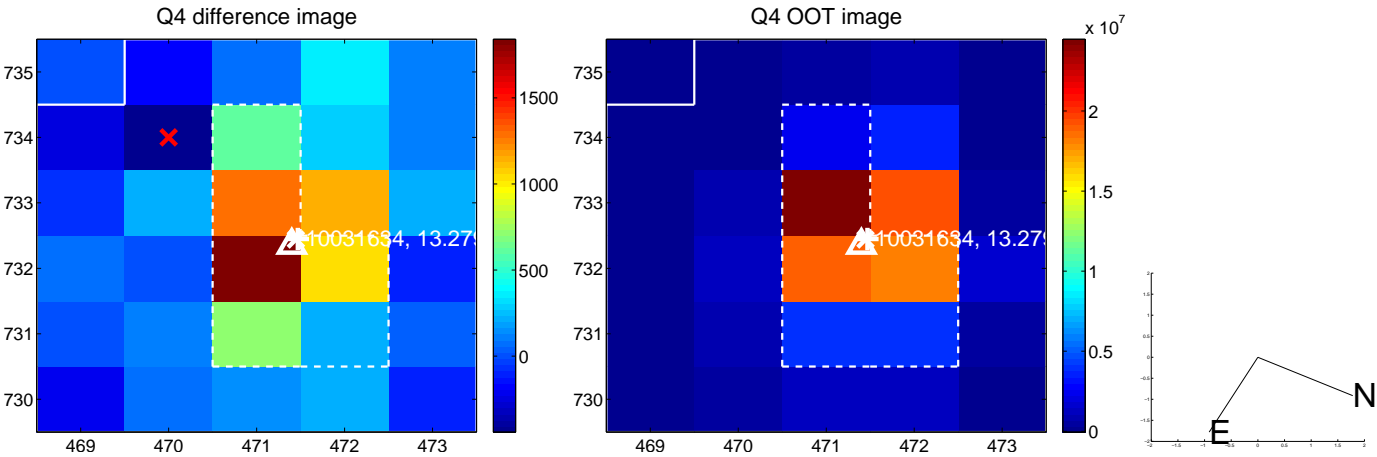
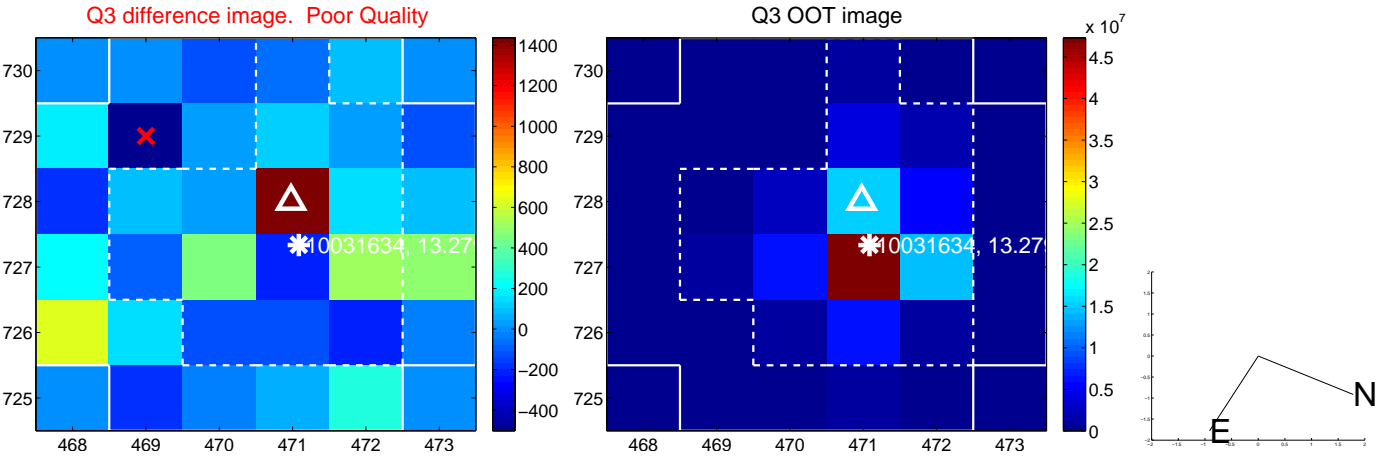
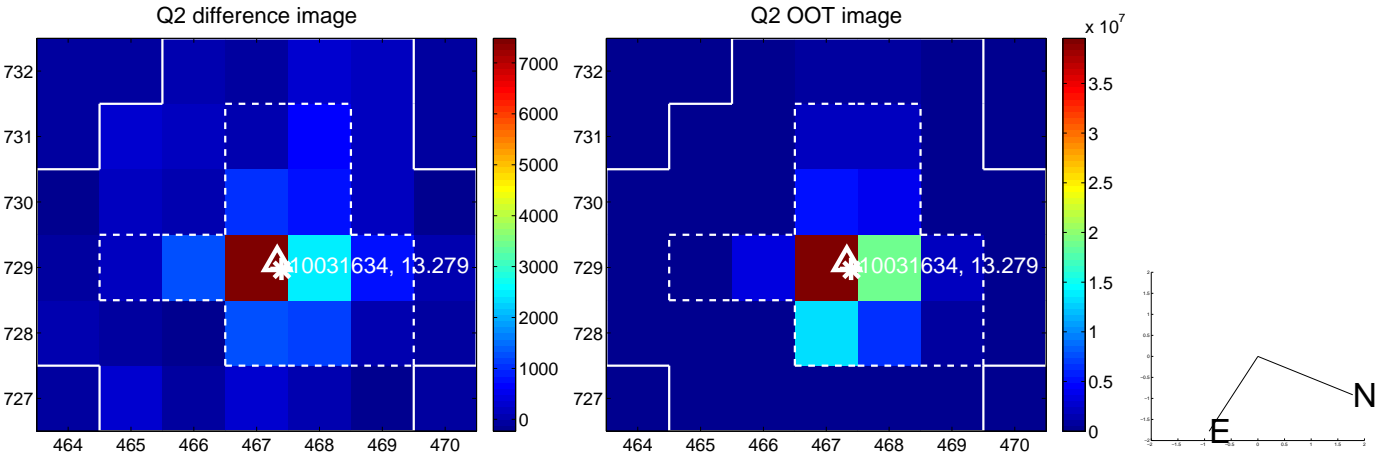
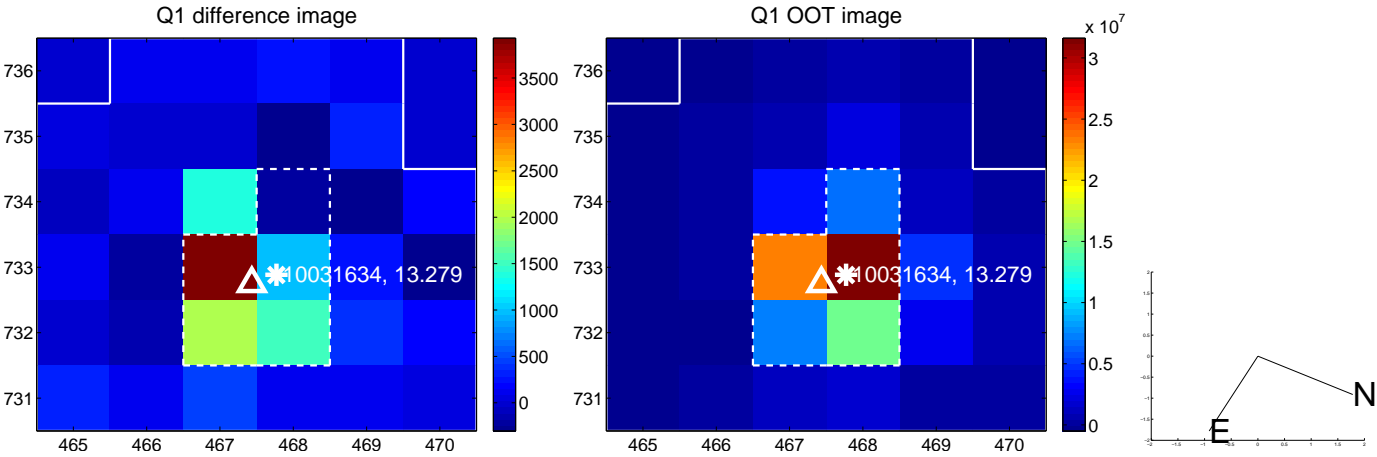
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.129 ± 0.119	1.08	0.018 ± 0.222	-0.128 ± 0.131
PRF-fit source offset from KIC position	0.107 ± 0.144	0.75	-0.008 ± 0.207	-0.107 ± 0.139
photometric centroid source offset	0.14 ± 0.12	1.16	-0.10 ± 0.13	-0.10 ± 0.12

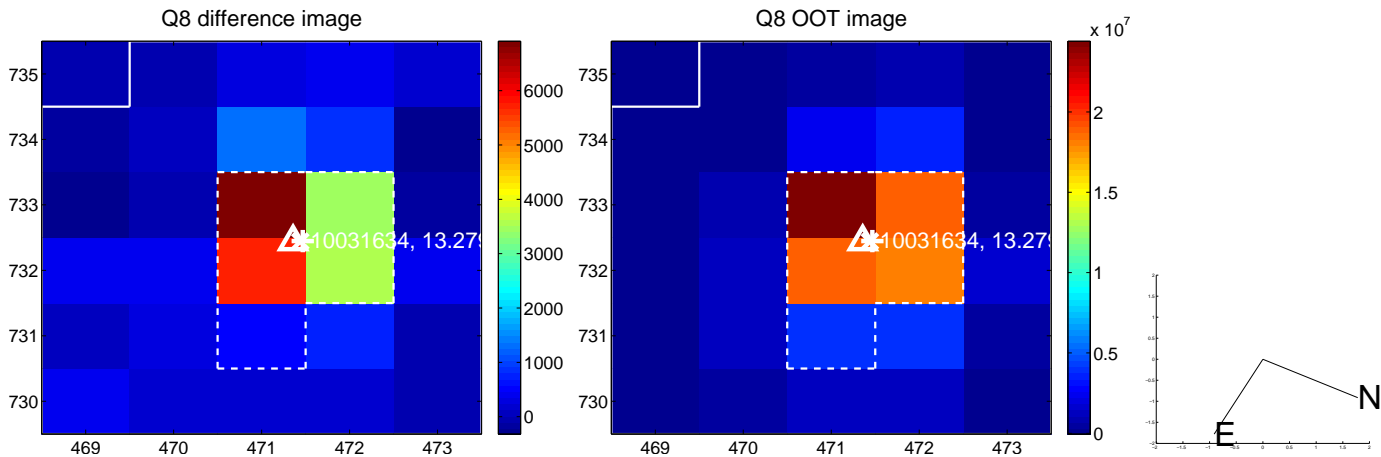
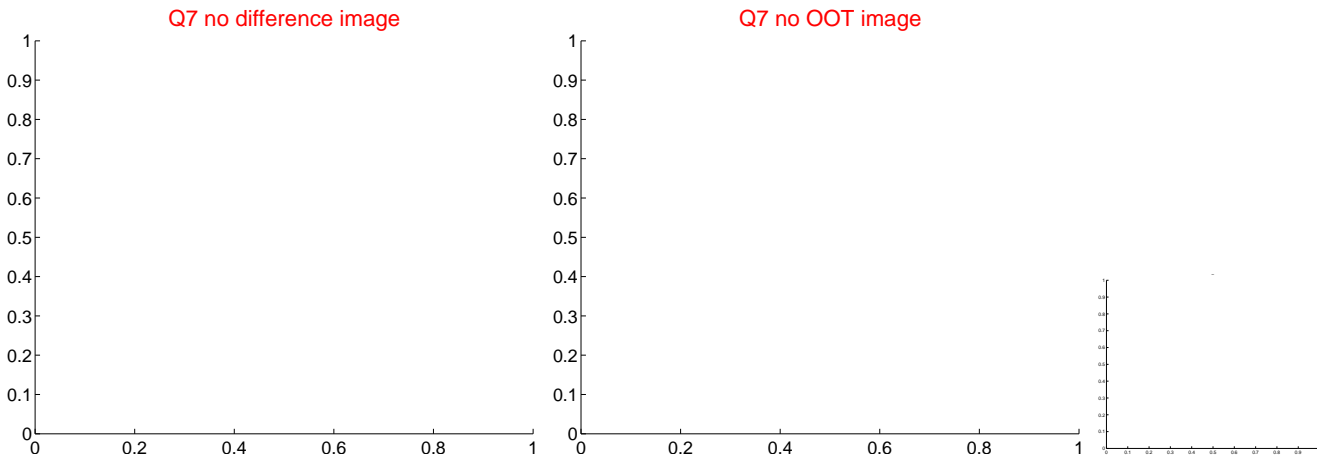
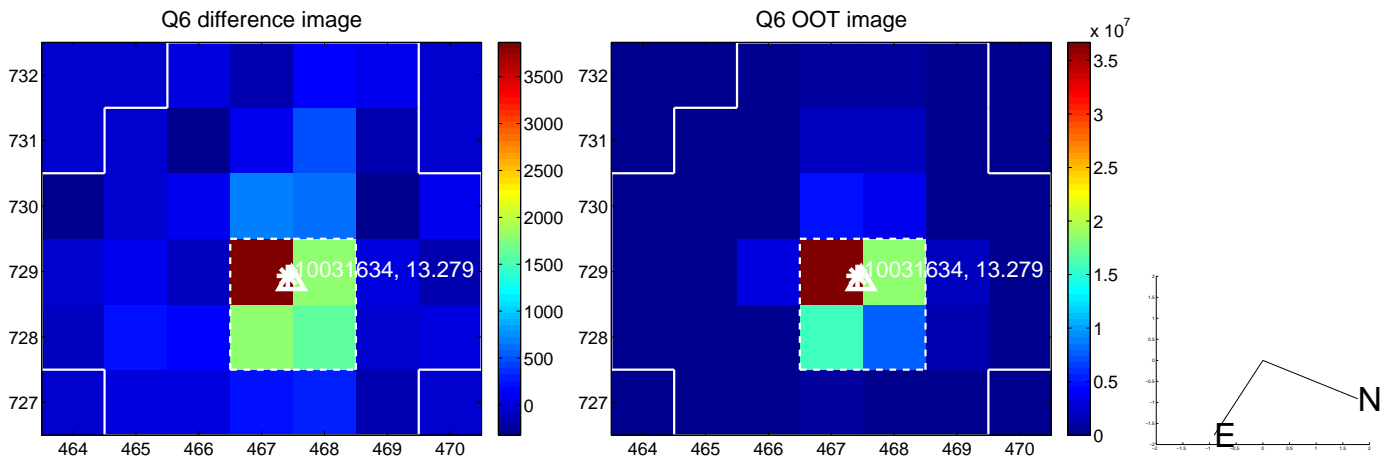
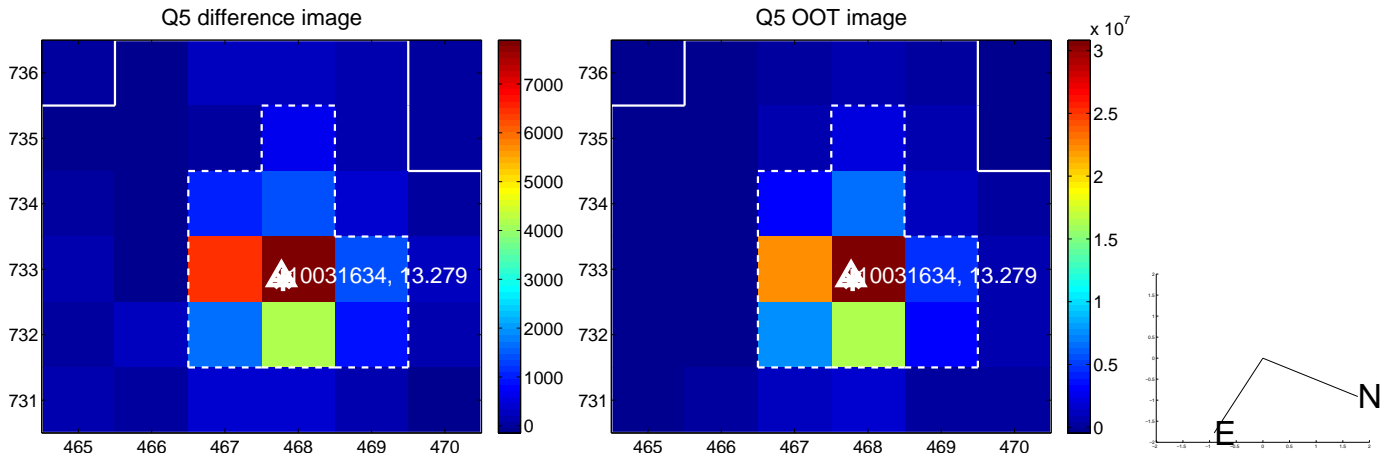


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

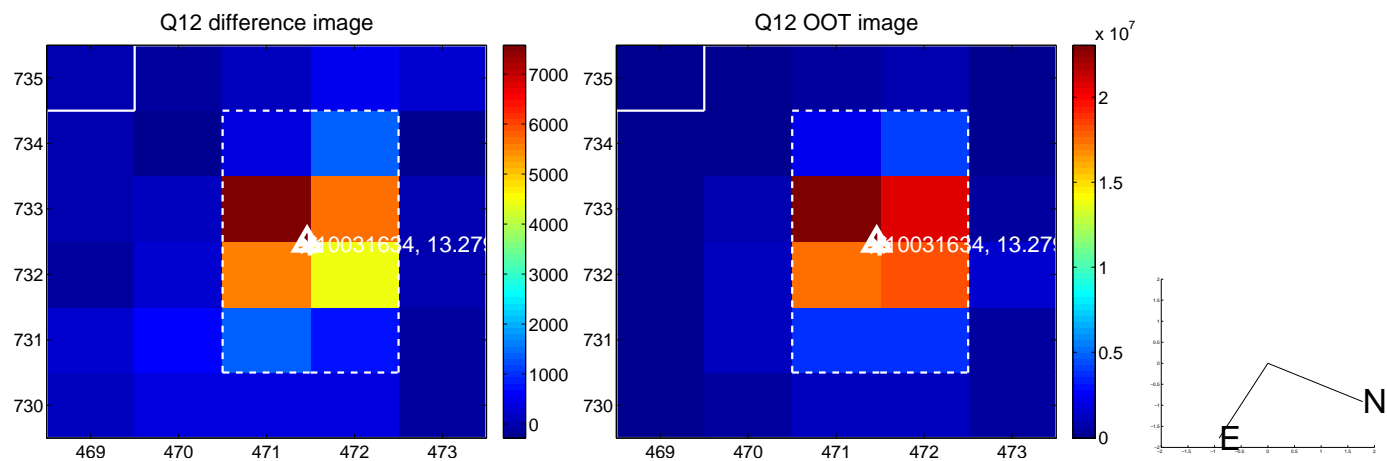
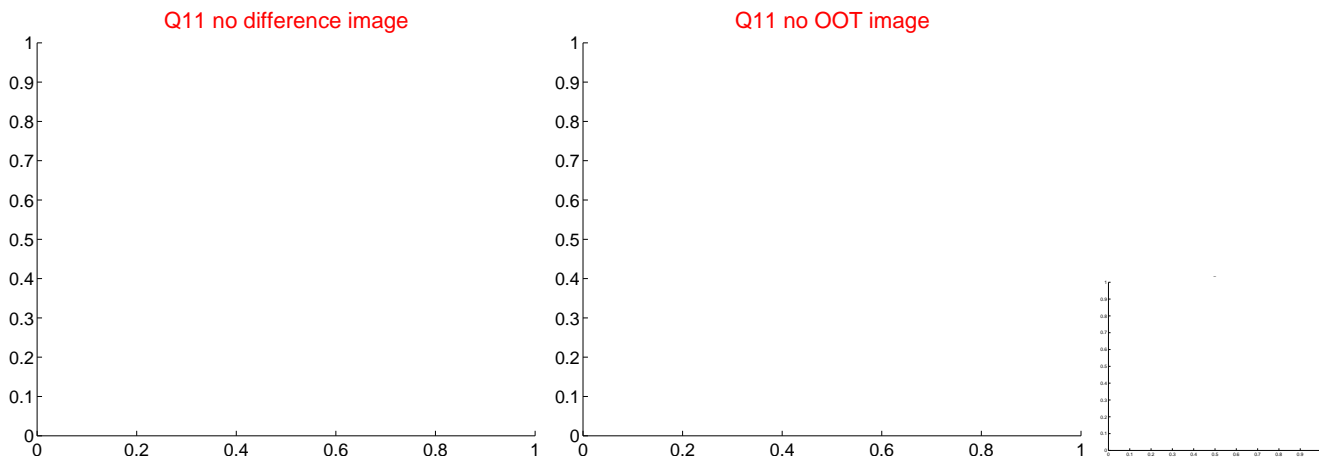
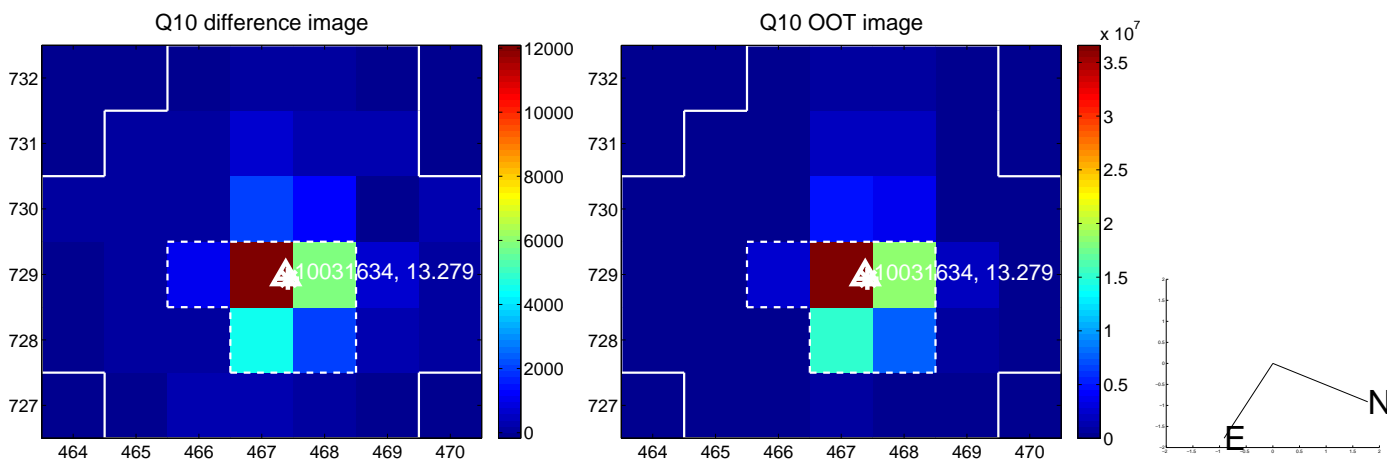
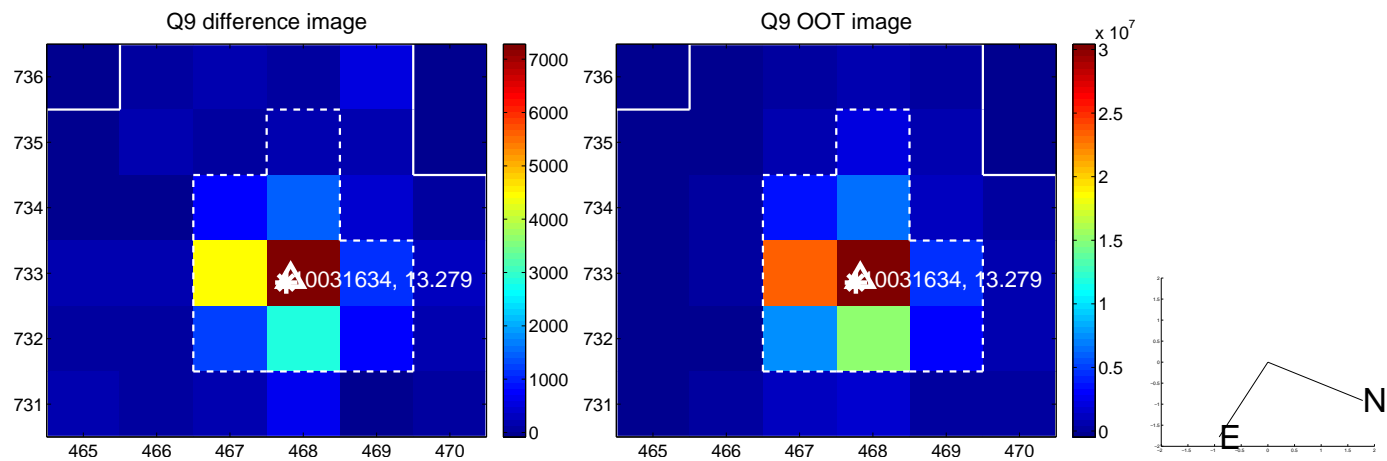
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



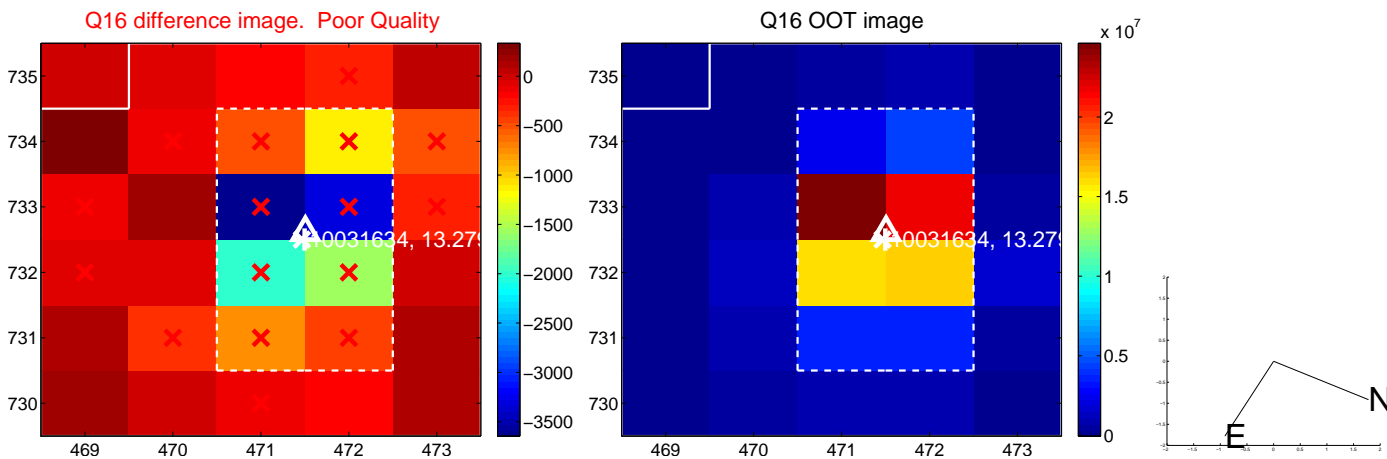
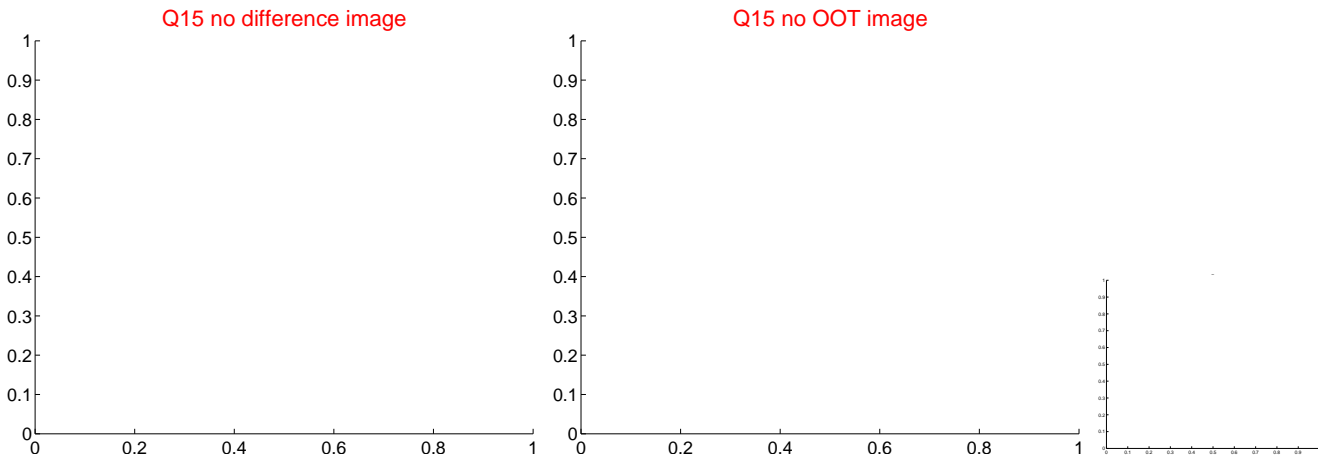
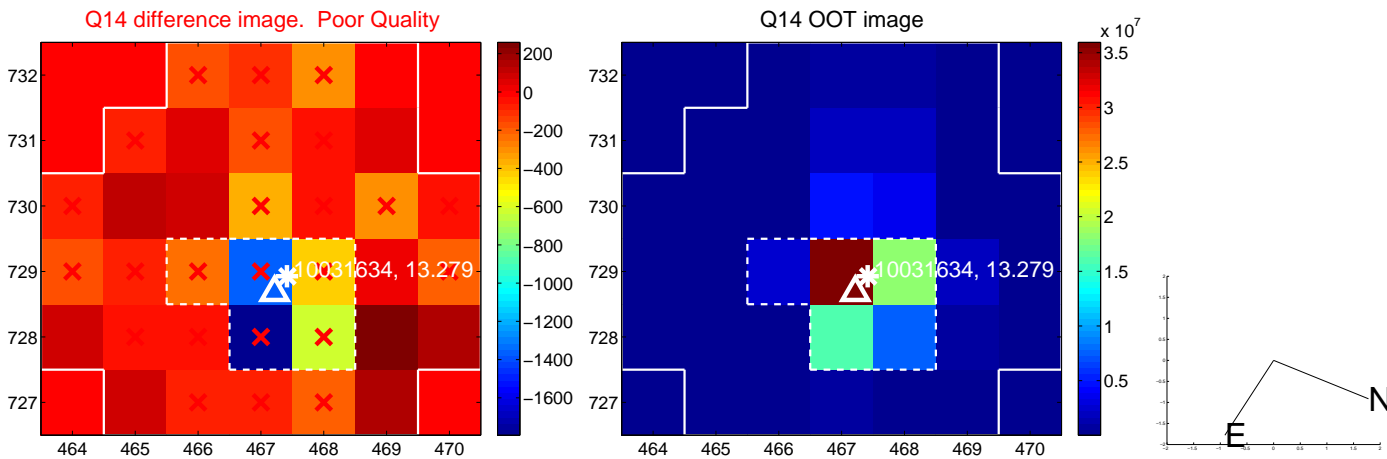
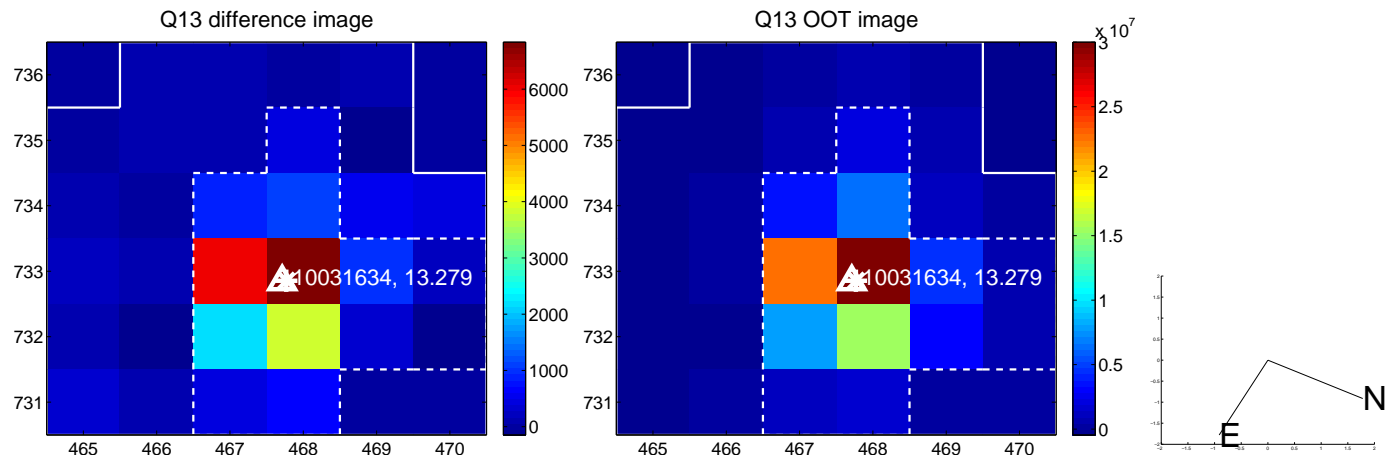
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



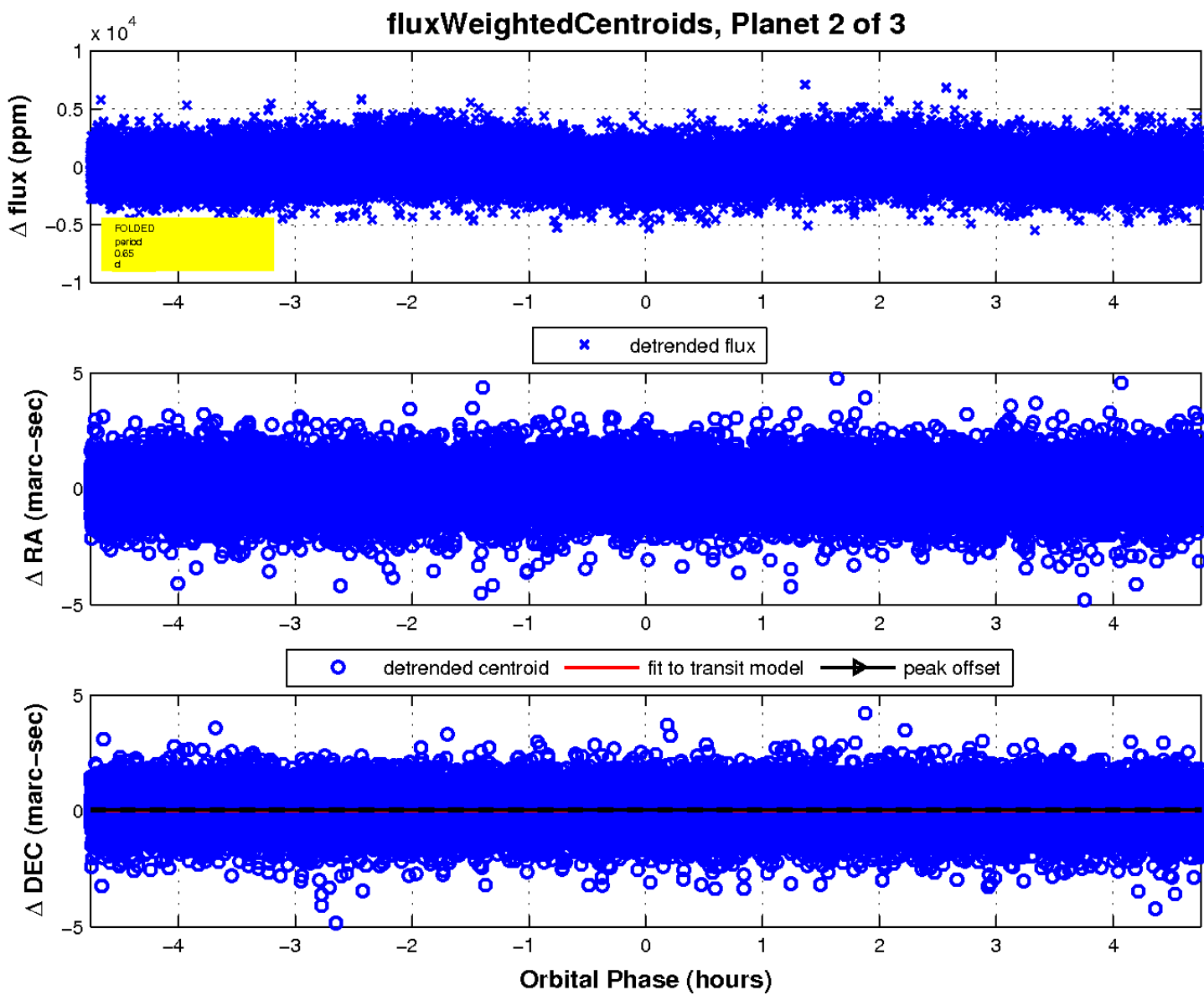
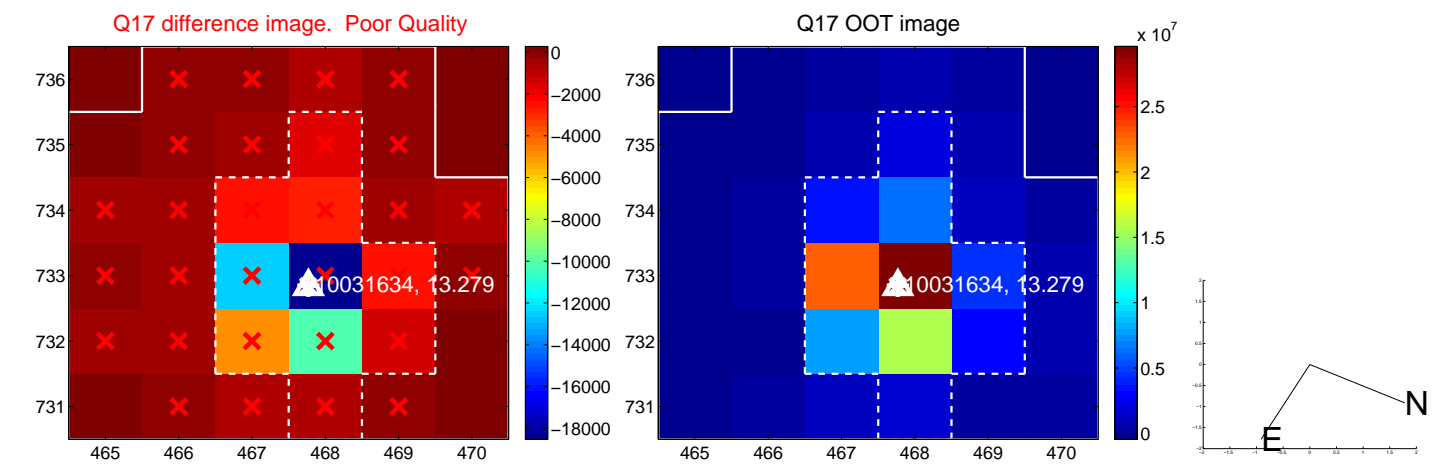
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

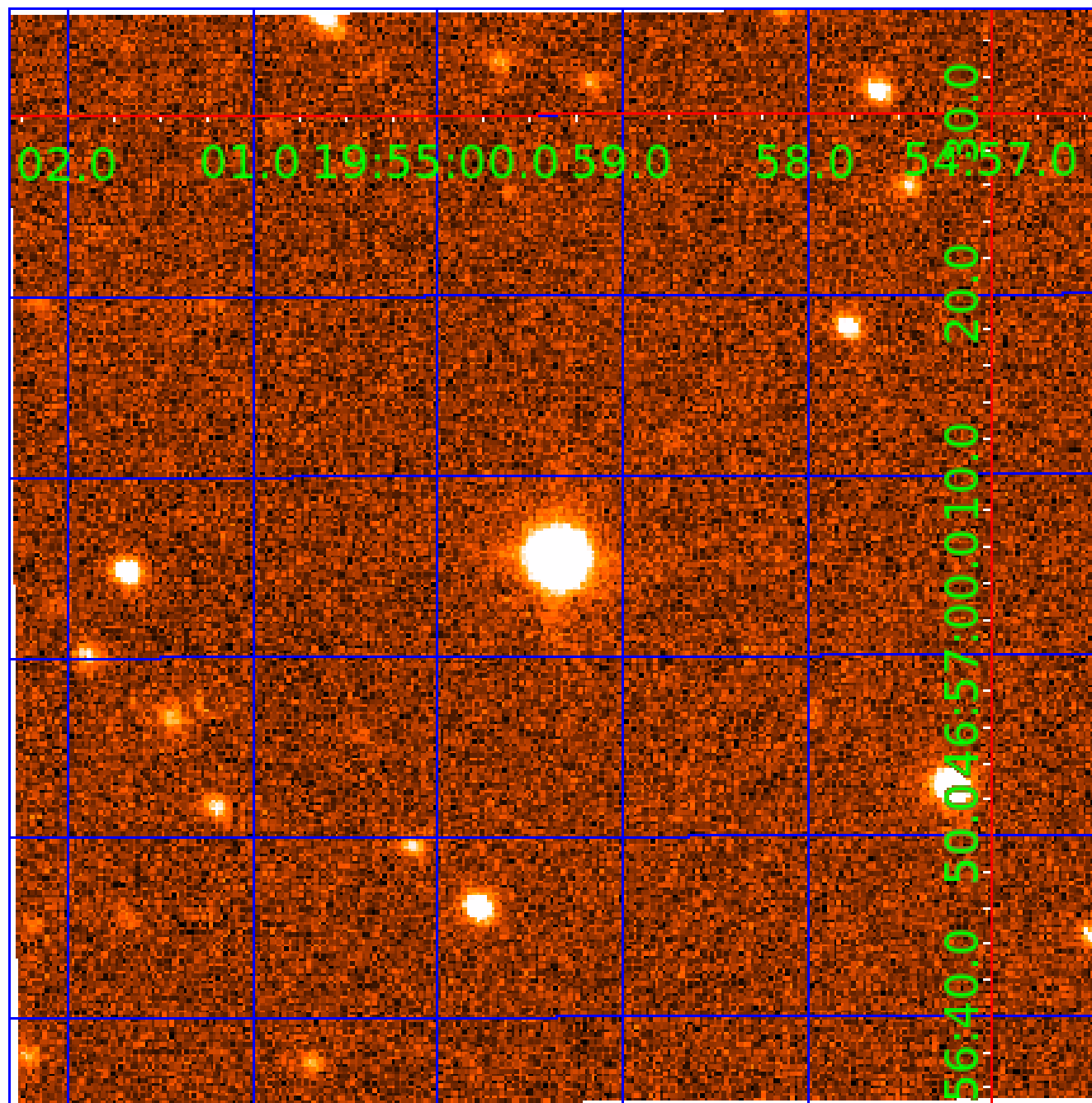


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010031634

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})
010031634-01	OBS	No	0.652803	131.753870	294.8	2.058	16.2	14.9	1.62	6881	3.25	20030.56
010031634-02	OBS	No	0.652806	131.916219	260.2	1.584	13.3	12.2	1.62	6881	3.06	20030.45
010031634-03	OBS	No	0.652797	132.075594	216.0	1.333	14.0	10.7	1.62	6881	2.79	20030.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010031634-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010031634-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD
010031634-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_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.

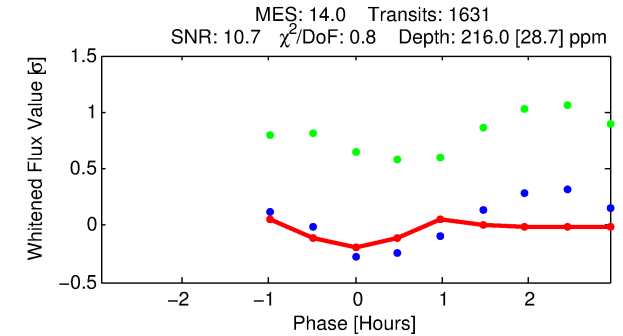
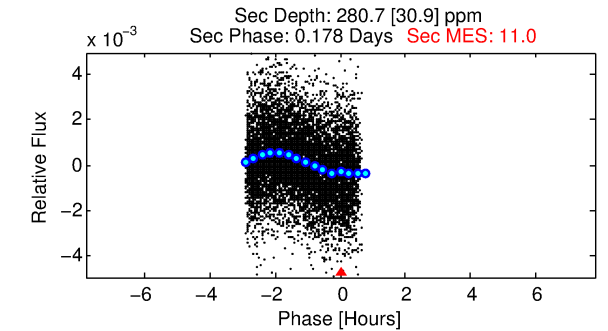
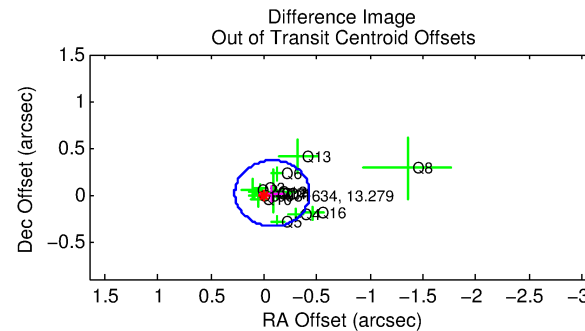
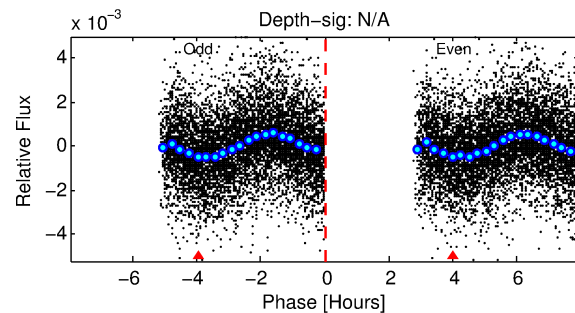
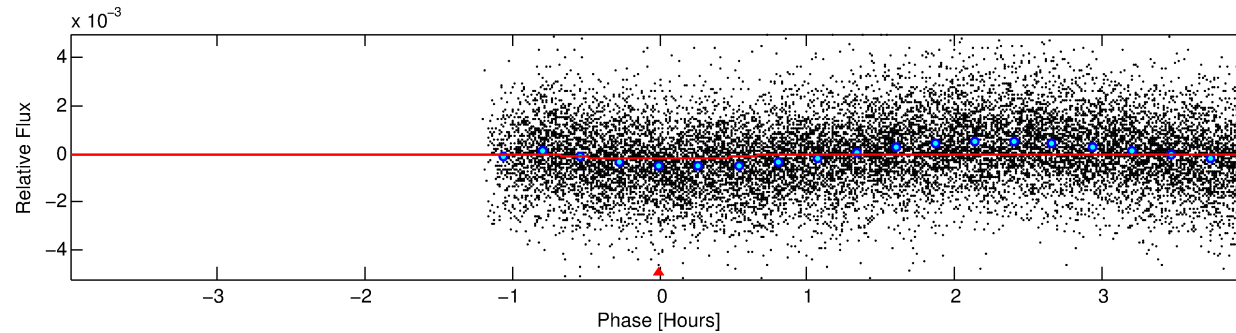
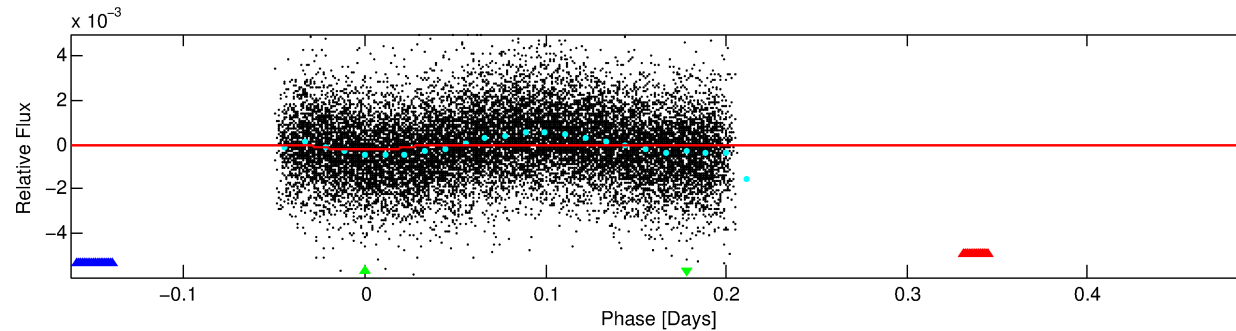
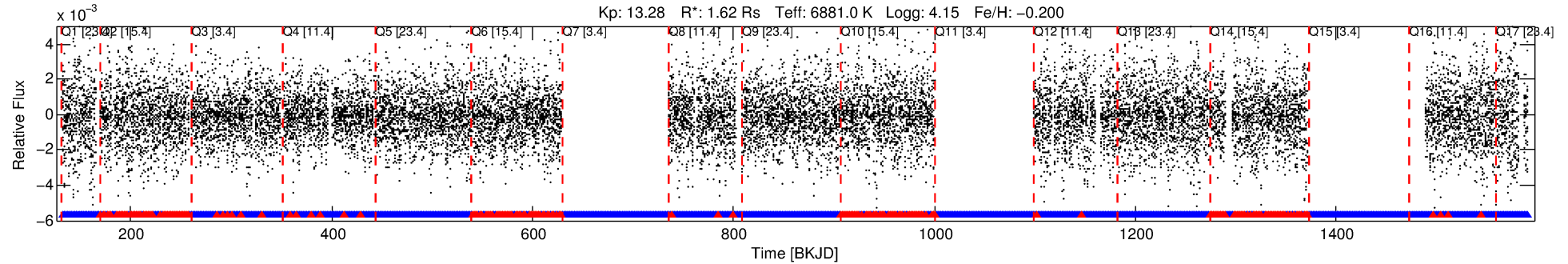
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010031634-03

No Significant Match Found

DV One-Page Summary

KIC: 10031634 Candidate: 3 of 3 Period: 0.653 d



DV Fit Results:

Period = 0.65280 [0.00001] d
Epoch = 132.0756 [0.0013] BKJD
Rp/R* = 0.0157 [0.0057]
a/R* = 2.00 [3.18]
b = 0.90 [0.45]
Seff = 20030.81 [7722.28]
Teq = 3034 [292] K
Rp = 2.79 [1.29] Re
a = 0.0163 [0.0040] AU
Ag = 5.26 [4.26] [1.00σ]
Teffp = 7102 [1323] K [3.00σ]

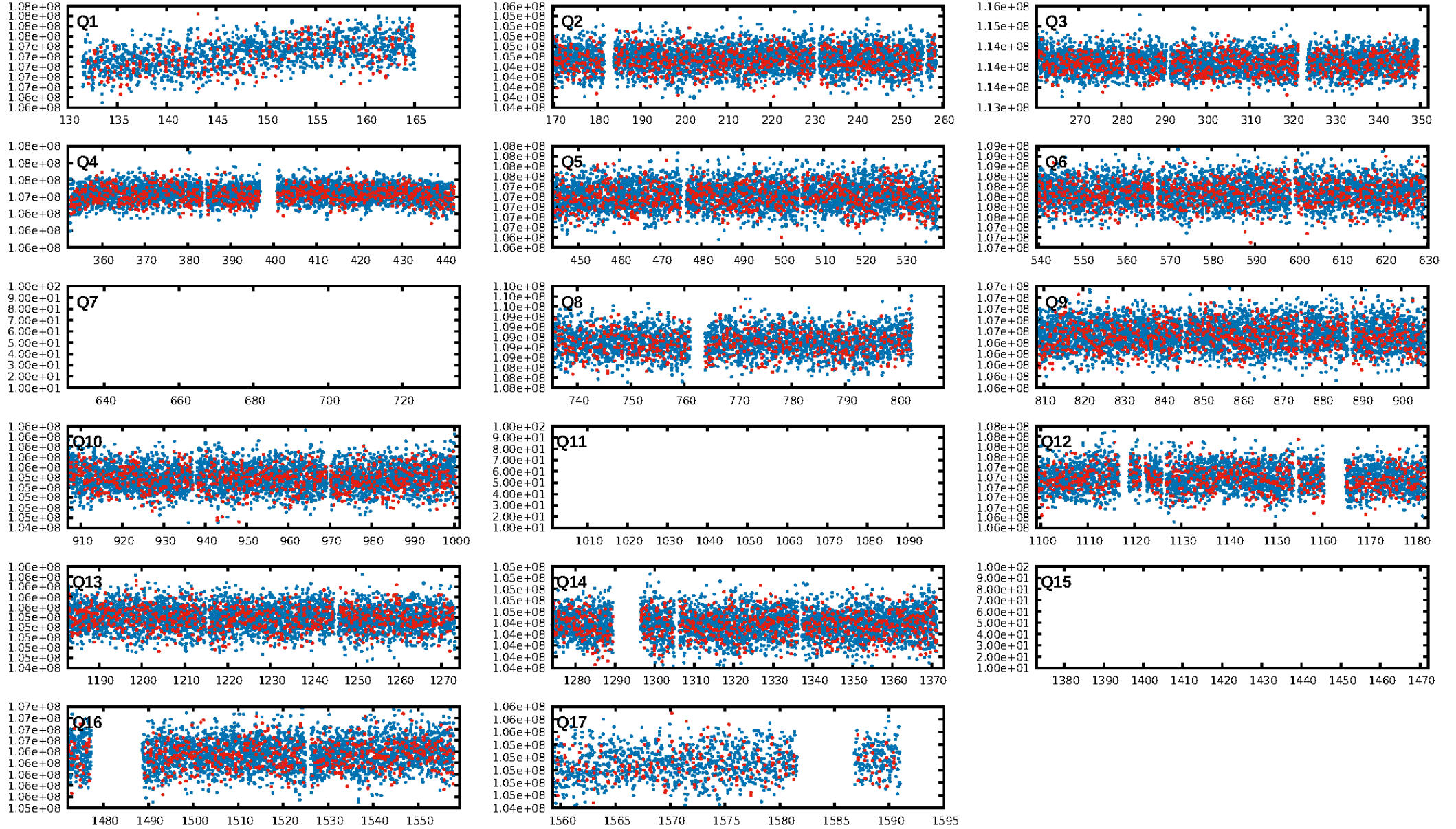
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.81 [1241/1540]
GhostDiagnostic-chr: 0.939
Centroid-sig: N/A
Centroid-so: 0.408 arcsec [2.50σ]
OotOffset-rm: 0.079 arcsec [0.67σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-rm: 0.089 arcsec [0.74σ]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/14]

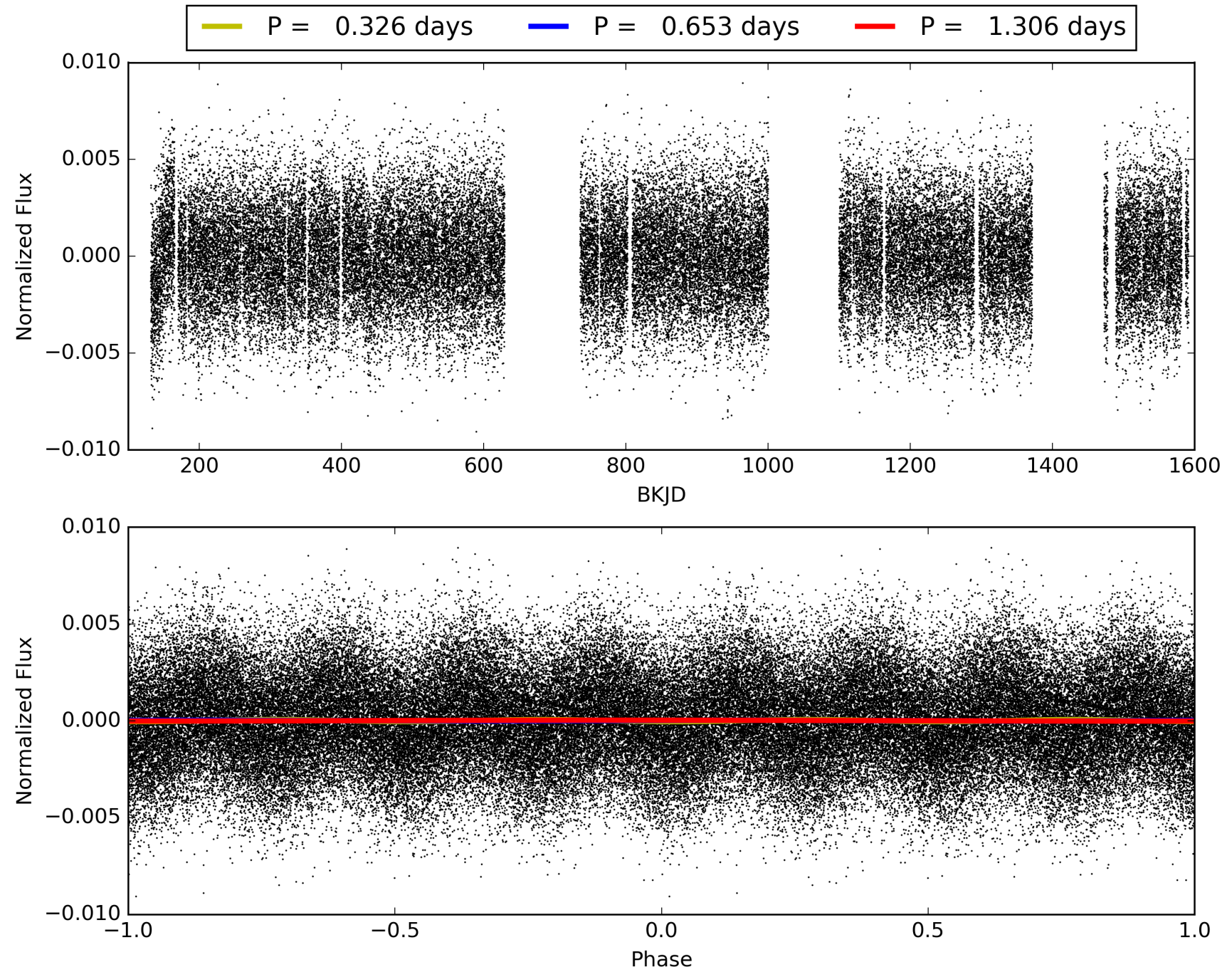
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 18:25:10 Z

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

TCE 010031634-03, PDC Light Curves

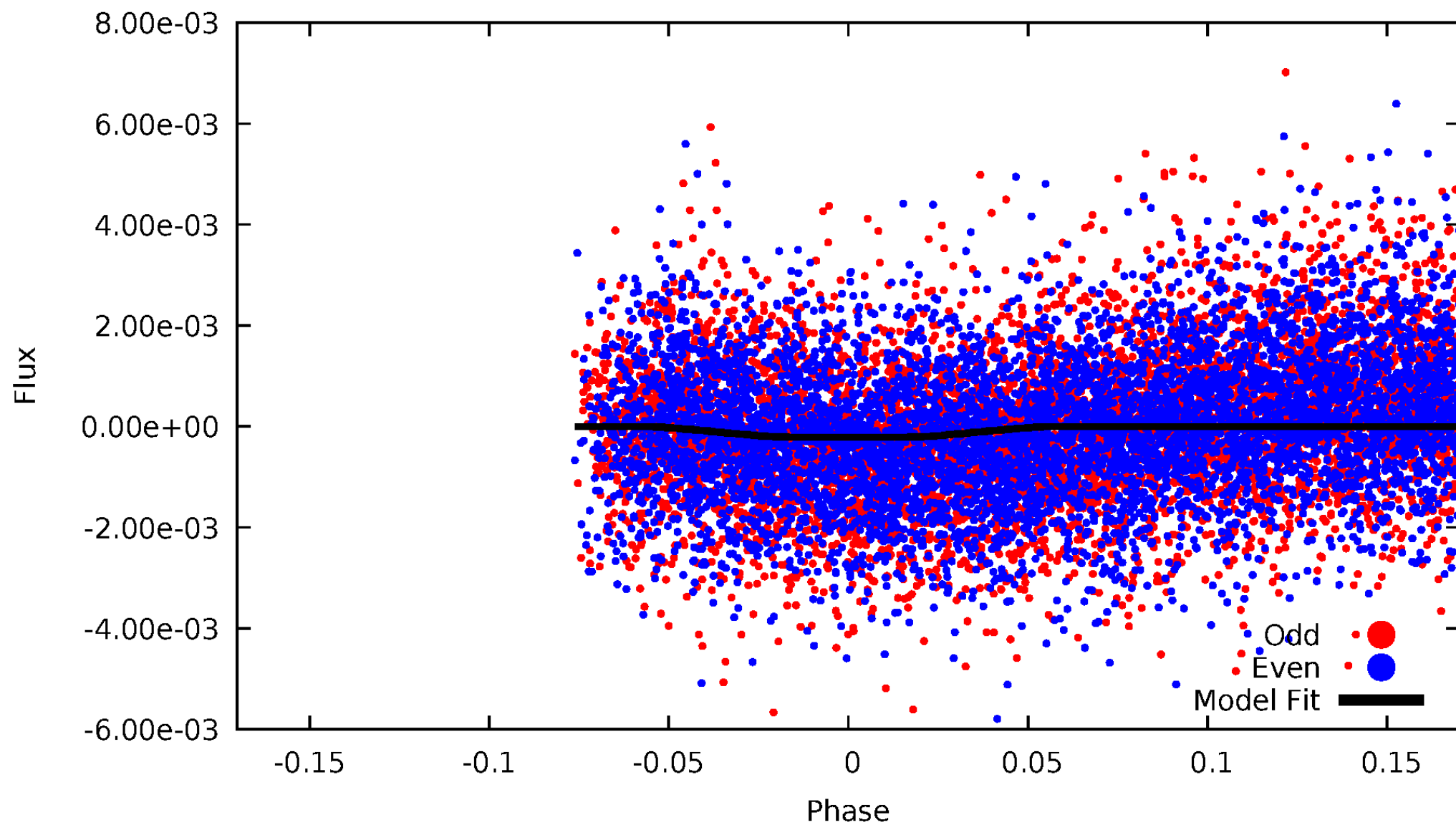


TCE 010031634-03



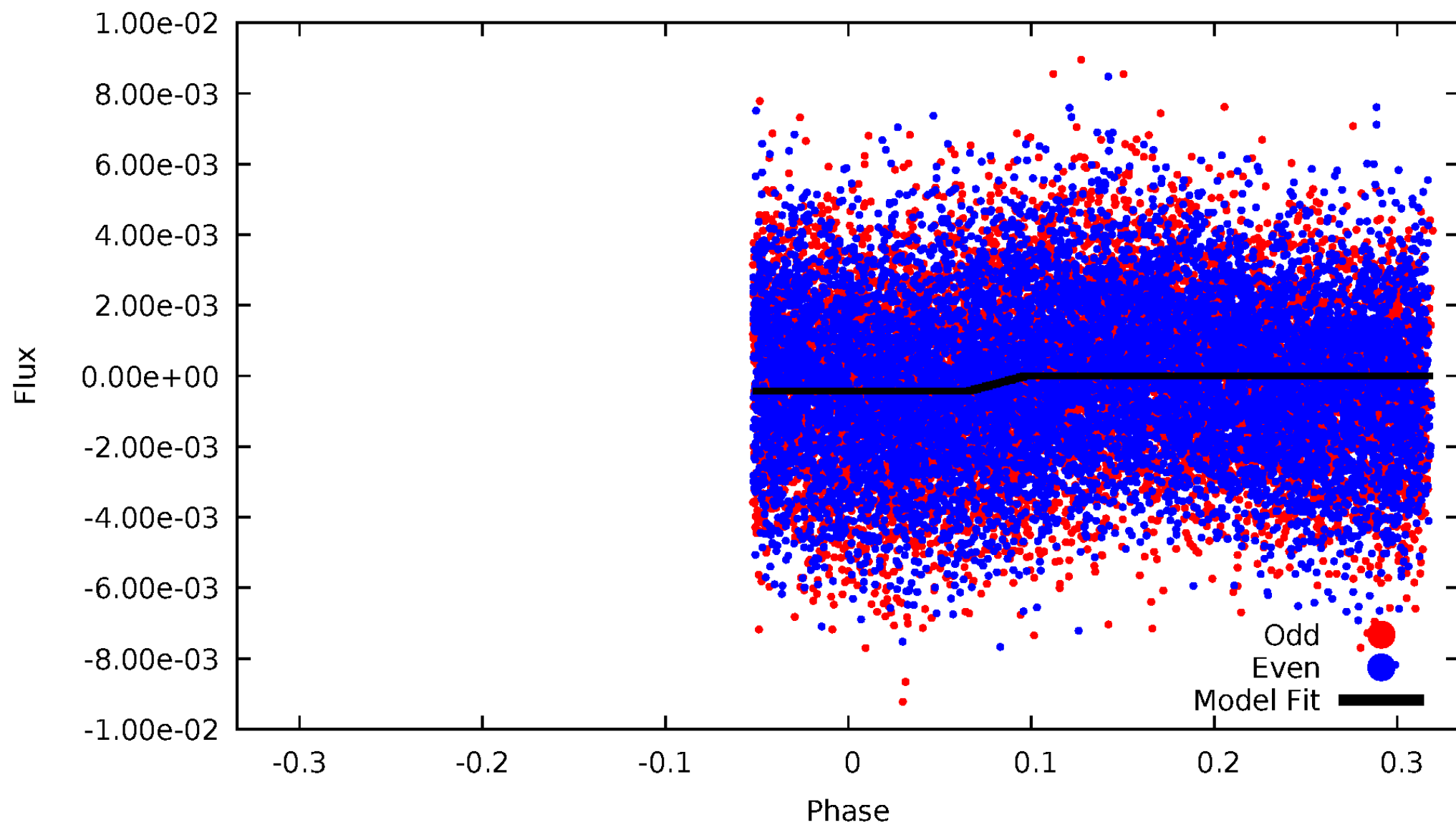
DV Odd/Even

TCE 010031634-03



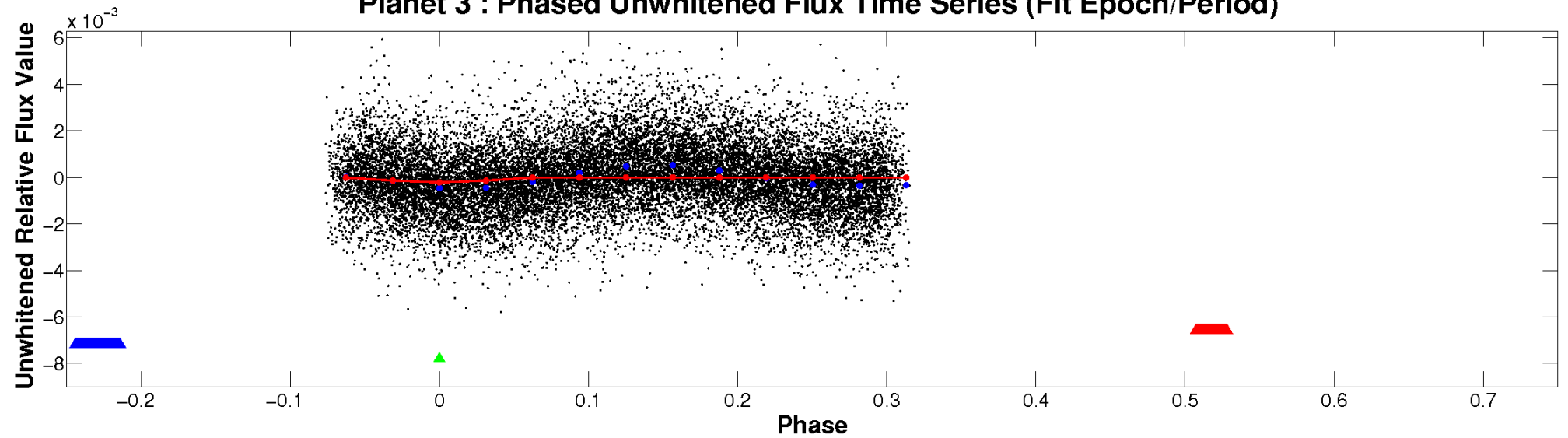
ALT Odd/Even

TCE 010031634-03

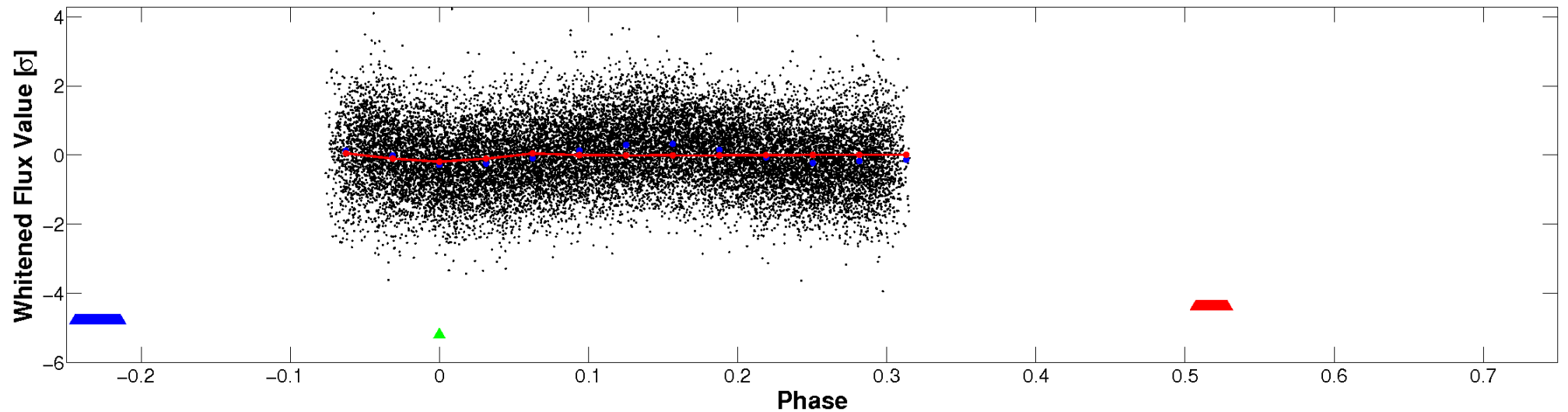


Non-Whitened Vs. Whitened Light Curve

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

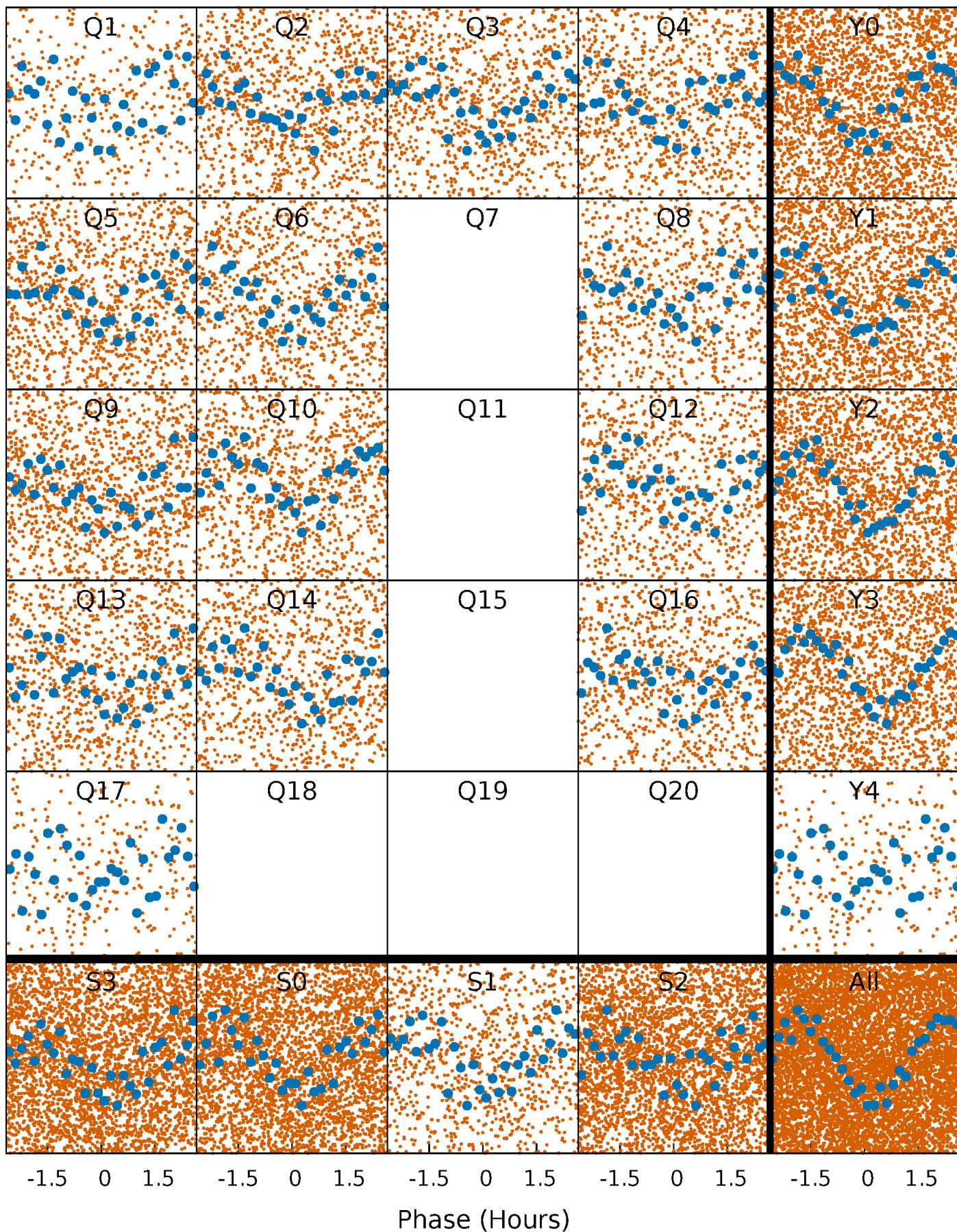


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



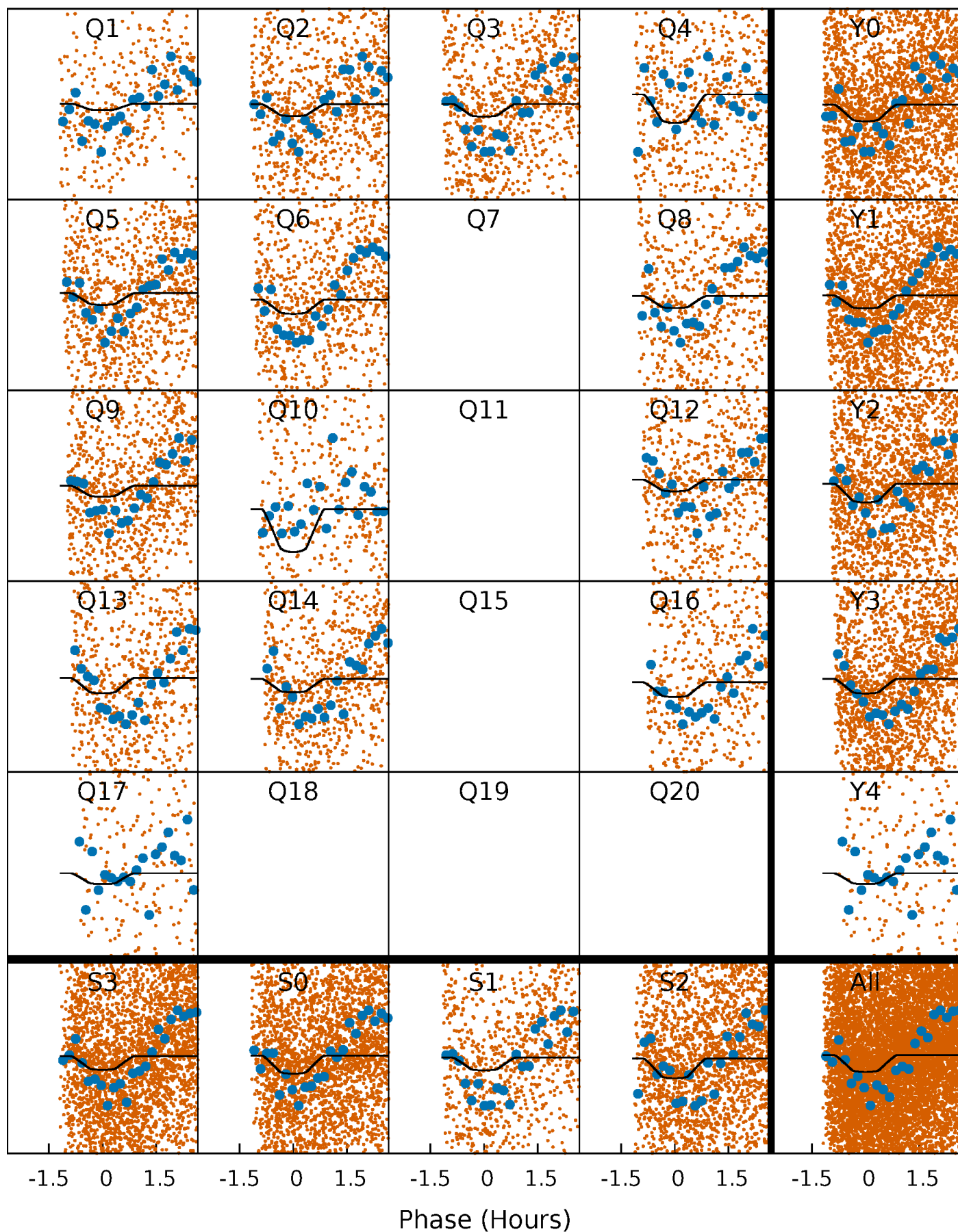
PDC Quarter-Phased Transit Curves

TCE 010031634-03 P= 0.652797 Days $T_0=132.075594$ (BKJD)



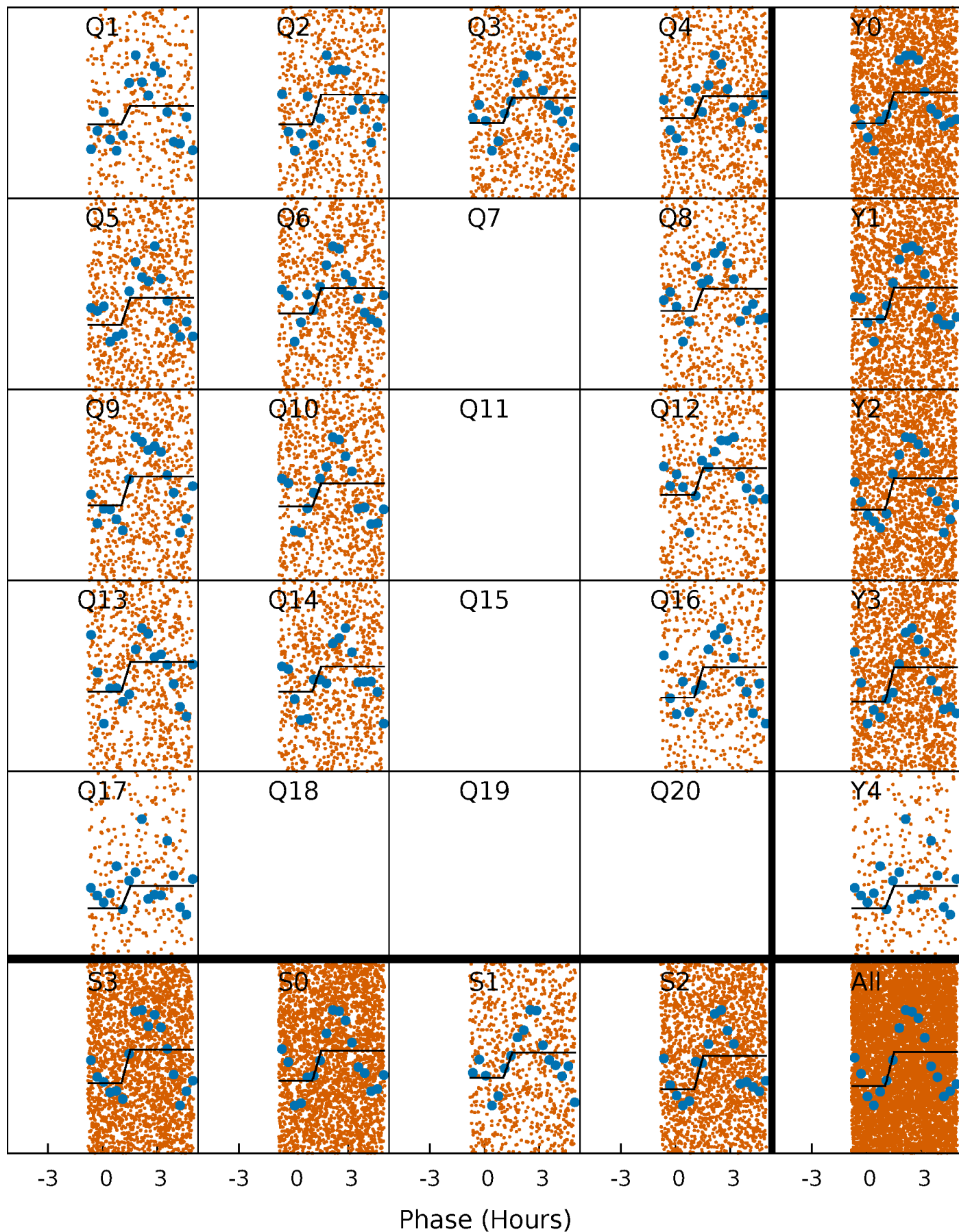
DV Quarter-Phased Transit Curves

TCE 010031634-03 P= 0.652797 Days $T_0=132.075594$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

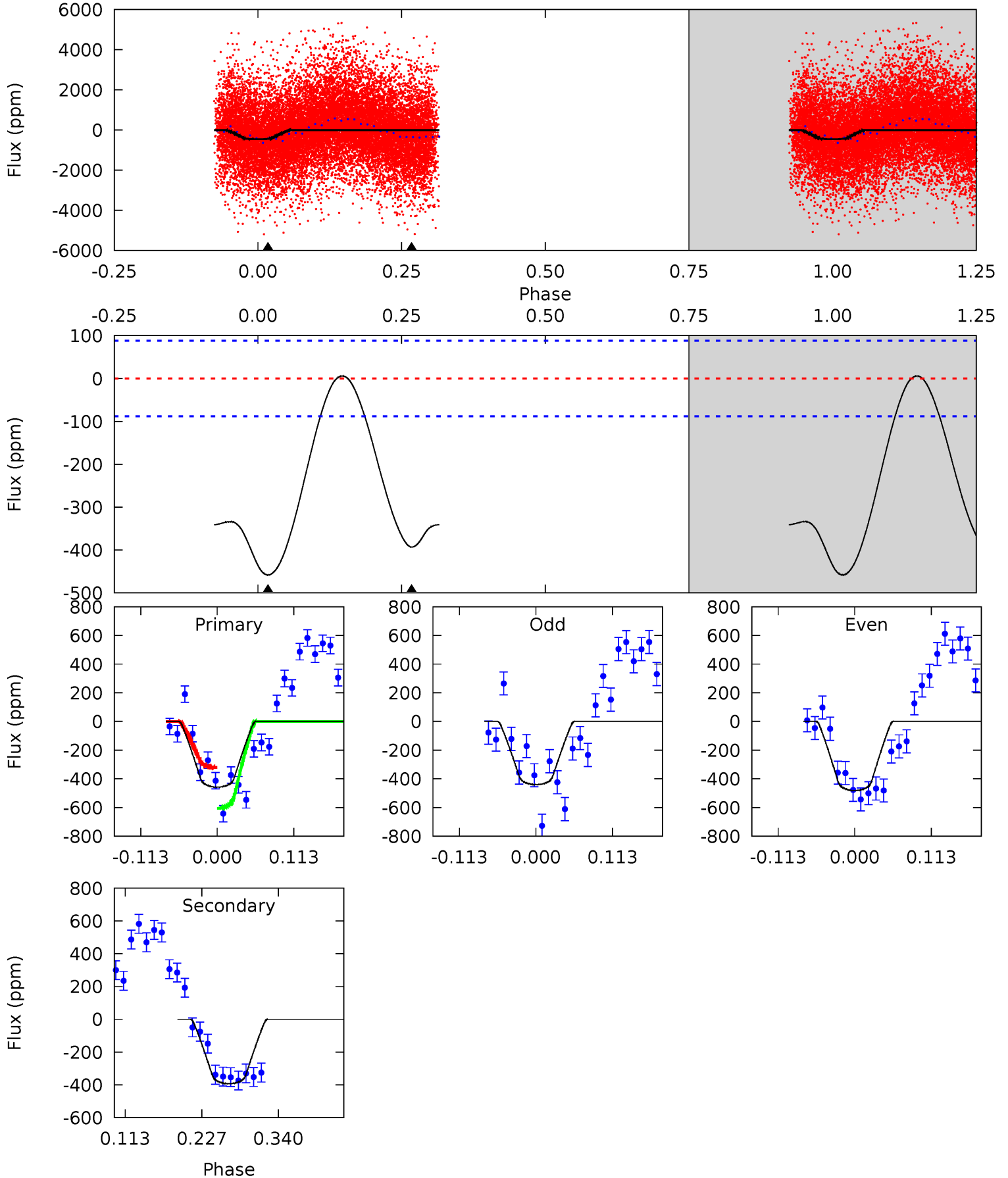
TCE 010031634-03 P= 0.652806 Days $T_0=132.059315$ (BKJD)



DV Model-Shift Uniqueness Test

010031634-03, P = 0.652797 Days, E = 131.422797 Days

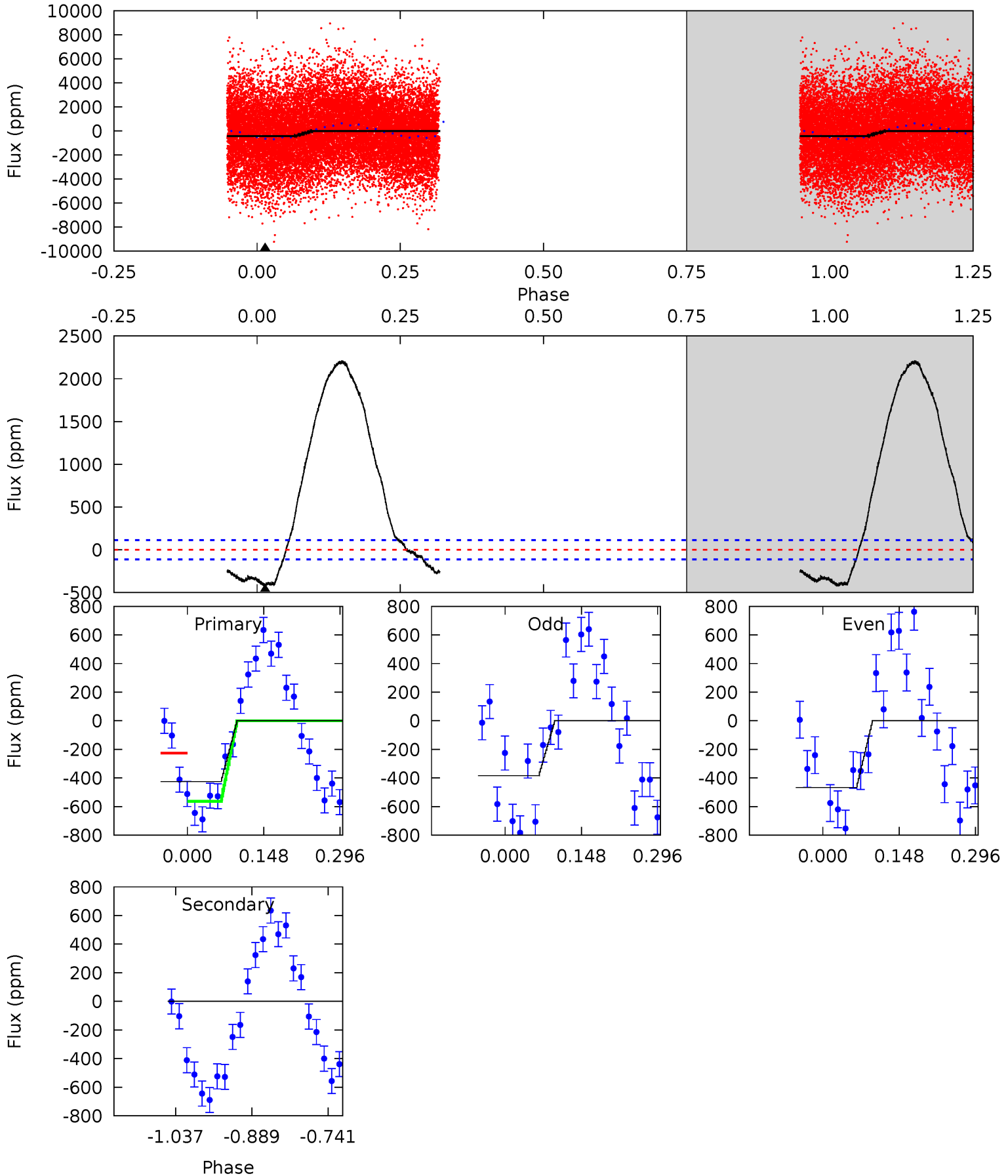
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.6	20.3	0	0	4.54	1.58	0.48	23.6	23.6	20.3	20.3	1.08	1.05	0.01	7.91



Alt Model-Shift Uniqueness Test

010031634-03, P = 0.652806 Days, E = 131.406509 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.9	0	0	0	4.48	1.45	14.4	16.9	16.9	0	0	1.65	1.08	0.84	5.83



Stellar Parameters For KIC 010031634

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6881^{+190}_{-262}	$4.146^{+0.175}_{-0.193}$	$-0.200^{+0.250}_{-0.350}$	$1.625^{+0.473}_{-0.387}$	$1.356^{+0.189}_{-0.231}$	$0.445^{+0.435}_{-0.221}$
	+3%/-4%	+4%/-5%	+125%/-175%	+29%/-24%	+14%/-17%	+98%/-50%
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 010031634-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-393 ± 19	$2.74^{+1.16}_{-1.03}$	4253^{+318}_{-317}	7774^{+2741}_{-1342}	$7.459^{+11.619}_{-3.653}$
Alt.	0 ± 25	$3.71^{+1.26}_{-1.08}$	4259^{+359}_{-286}	-3848^{+1301}_{-540}	$0.001^{+0.282}_{-0.299}$

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 $A_{obs} \gg 1.0$

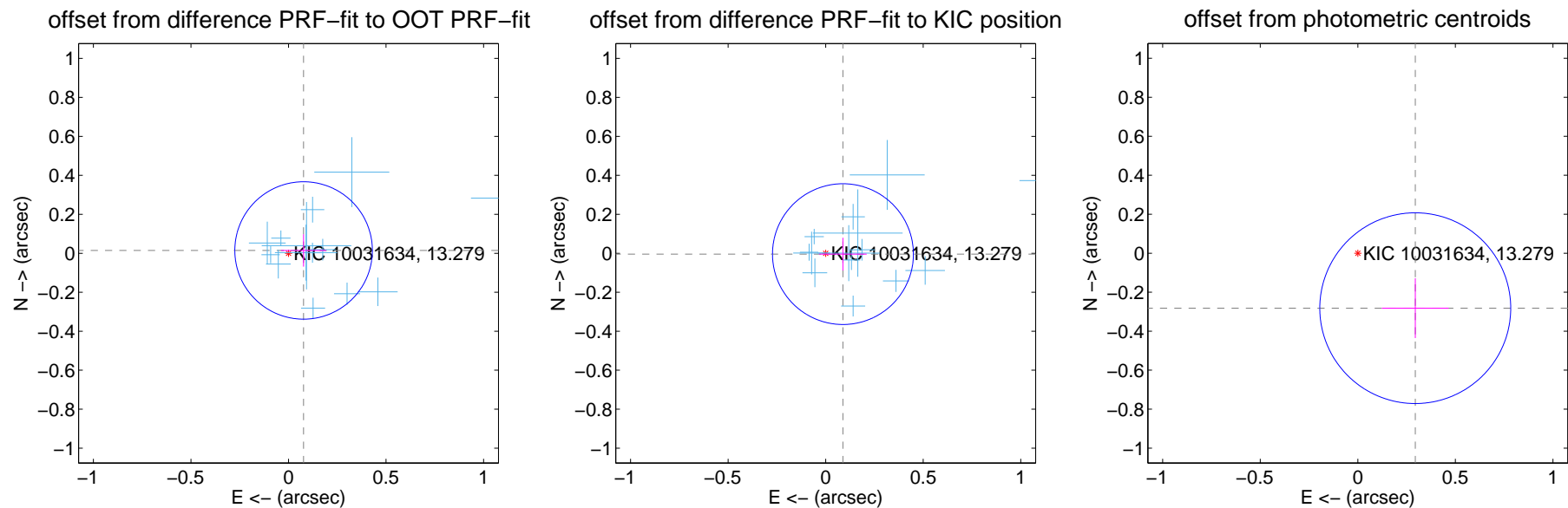
DV Centroid Data

Supplemental centroid analysis for 010031634-03. Kepler magnitude: 13.28. Transit SNR 10.74

There are 14 quarters with good PRF difference image offsets

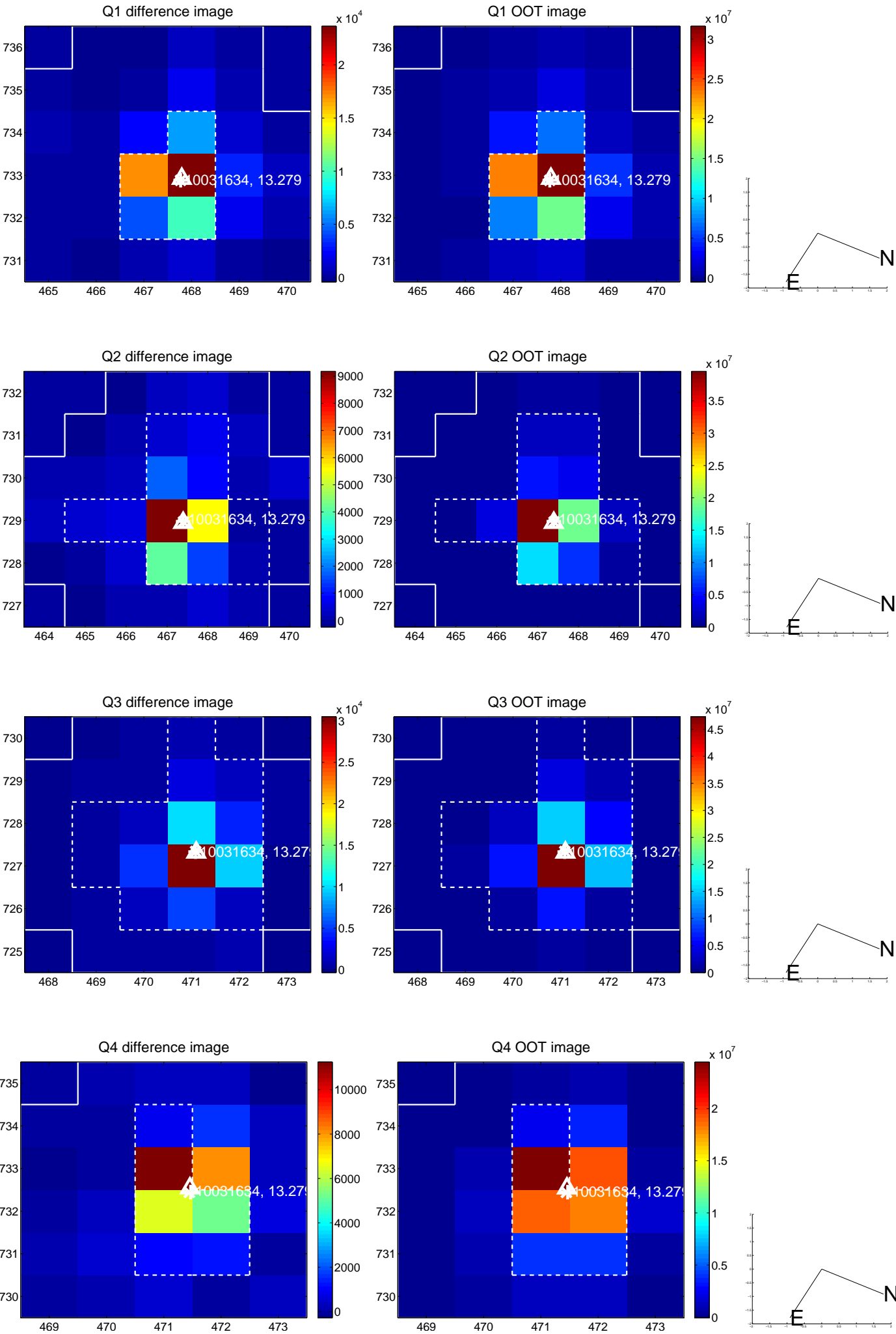
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.079 ± 0.118	0.67	-0.077 ± 0.116	0.015 ± 0.083
PRF-fit source offset from KIC position	0.089 ± 0.120	0.74	-0.089 ± 0.122	-0.004 ± 0.084
photometric centroid source offset	0.41 ± 0.16	2.50	-0.29 ± 0.17	-0.28 ± 0.15

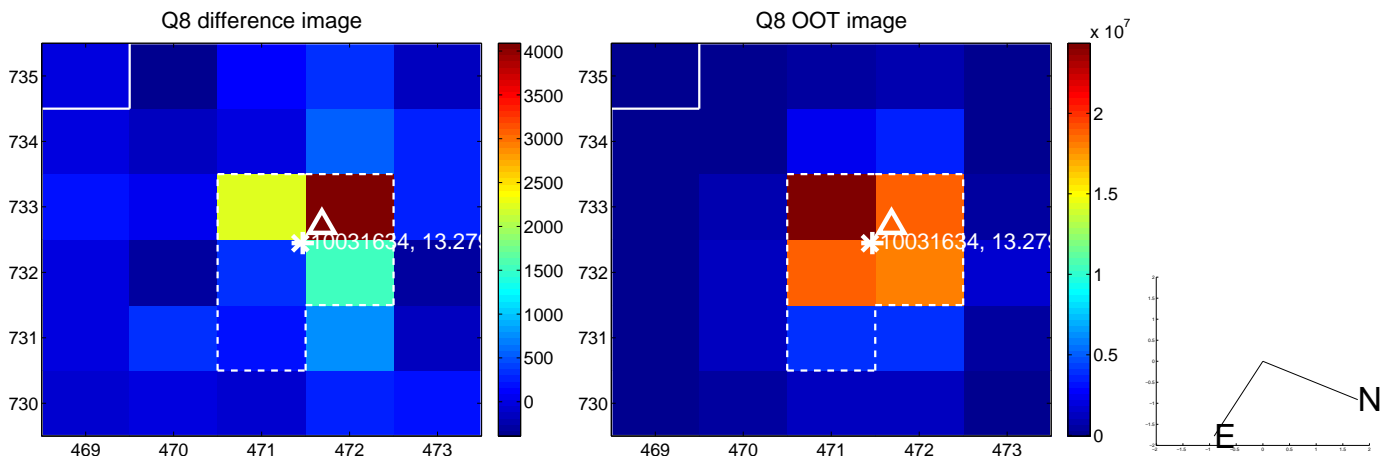
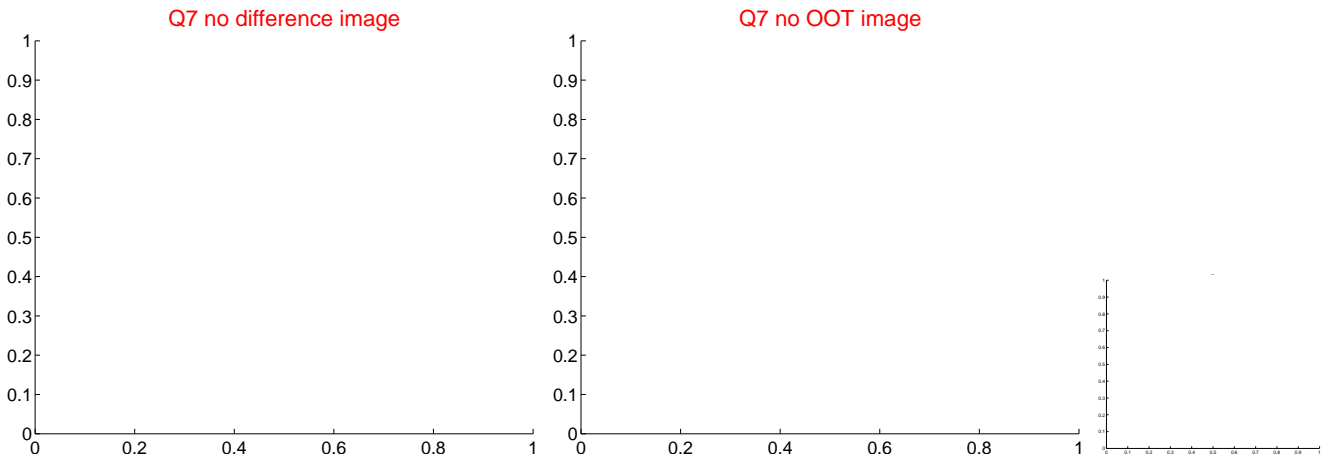
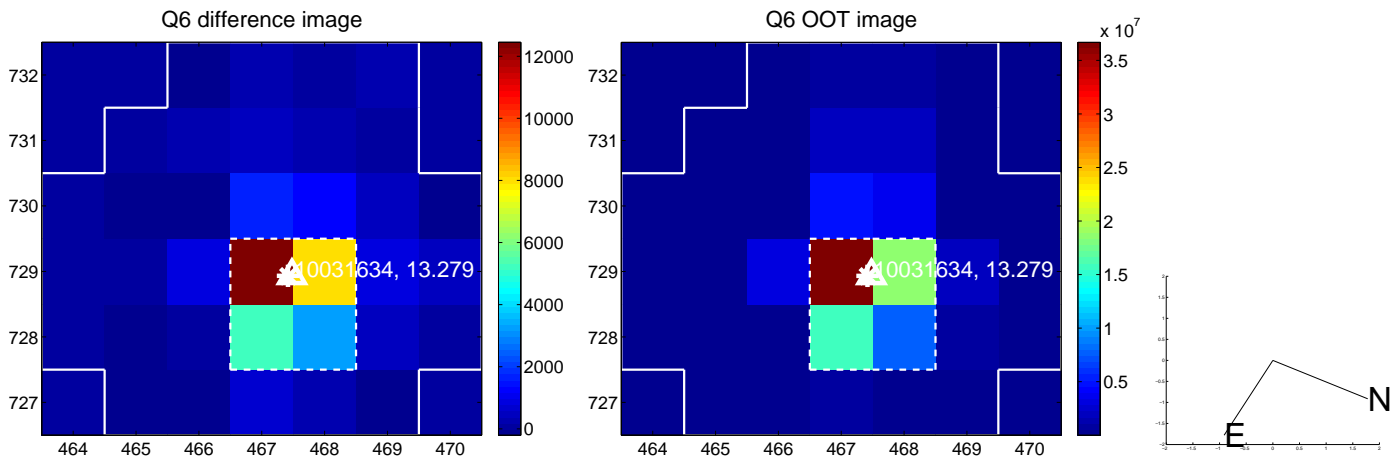
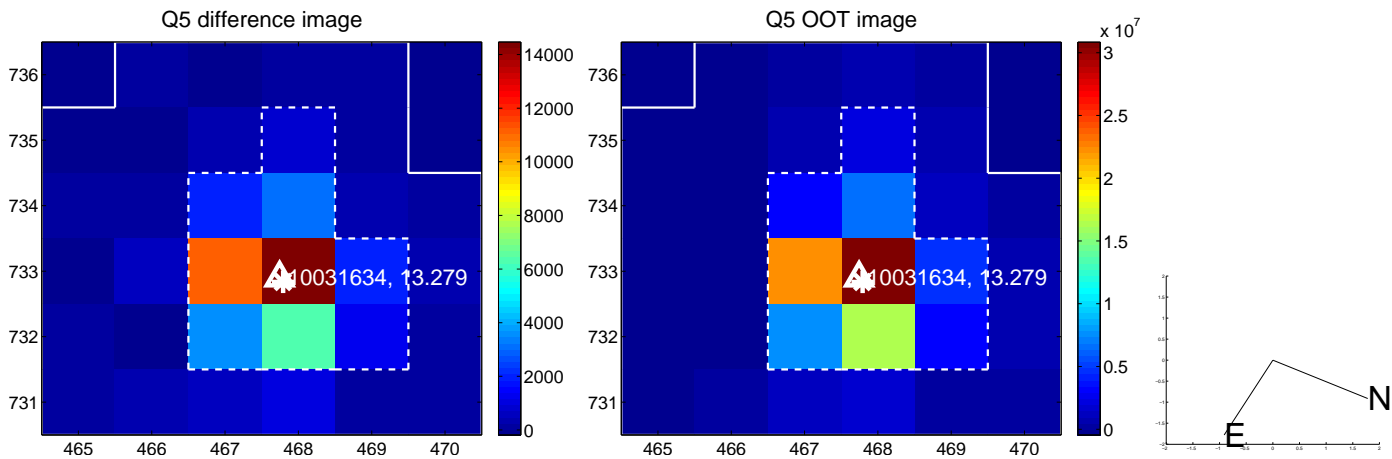


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

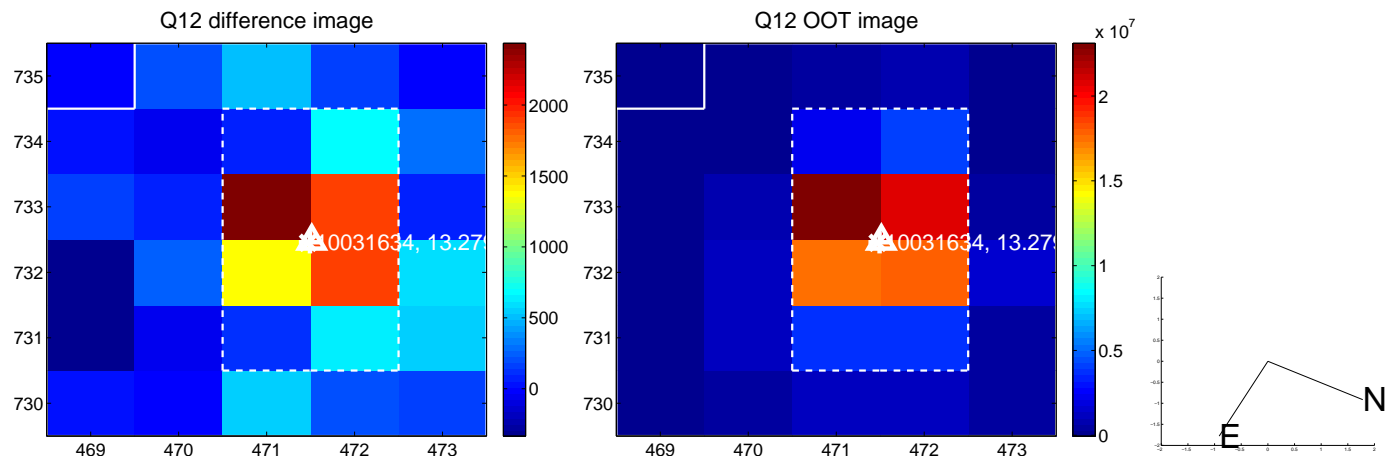
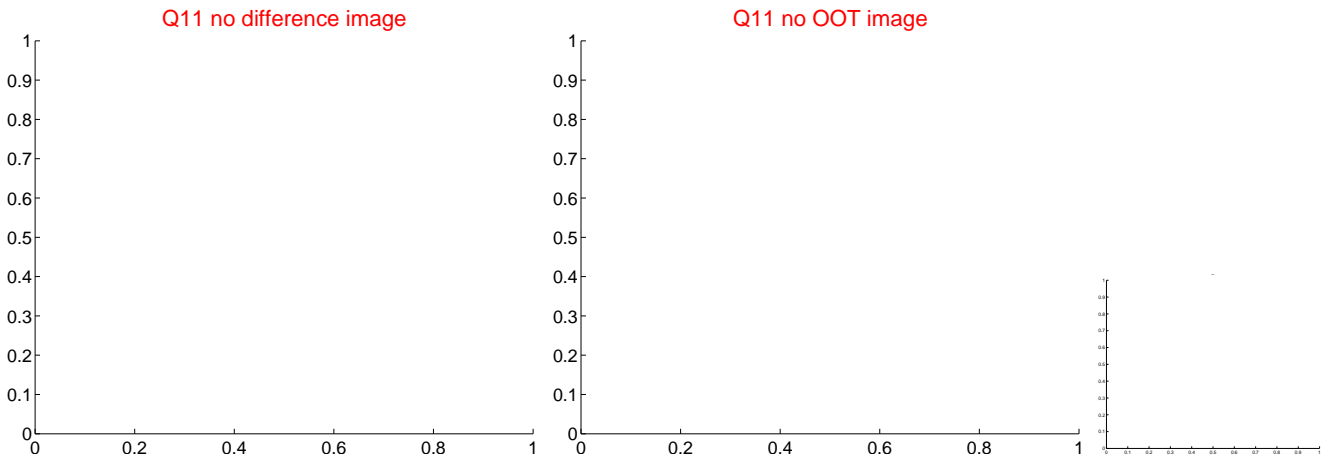
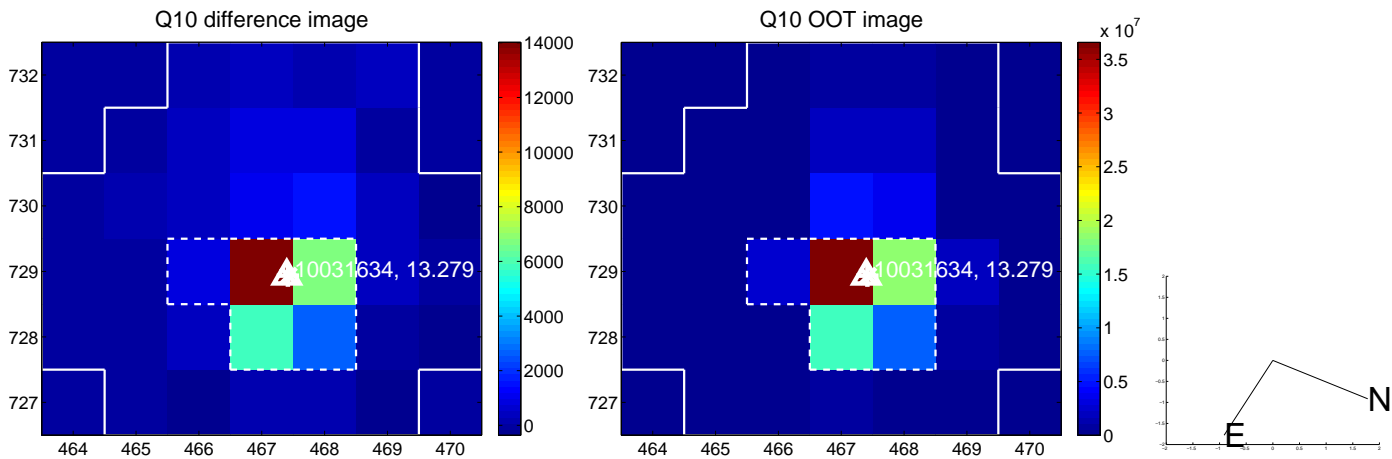
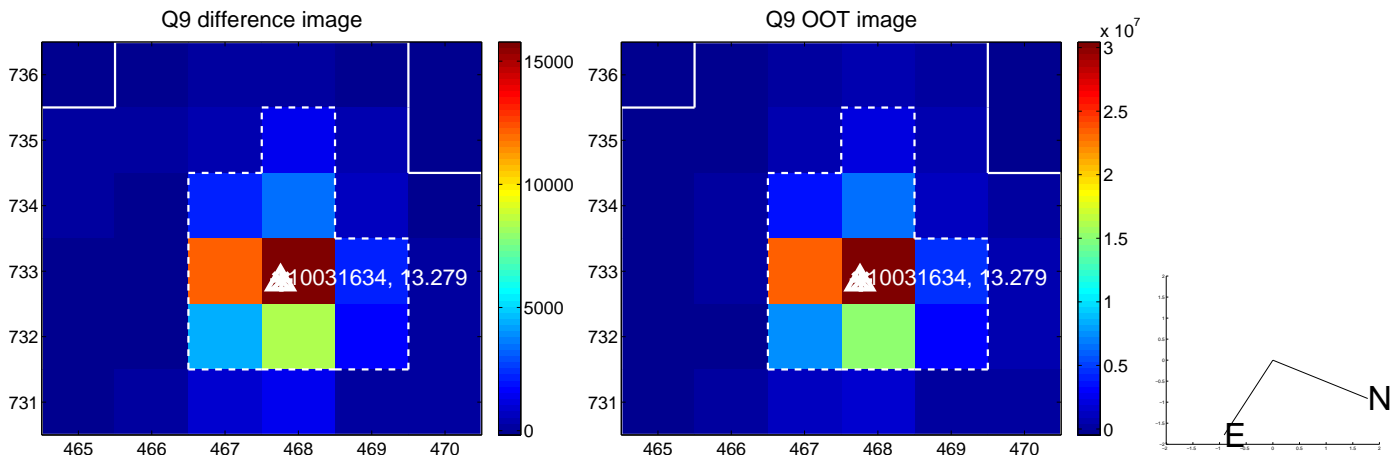
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



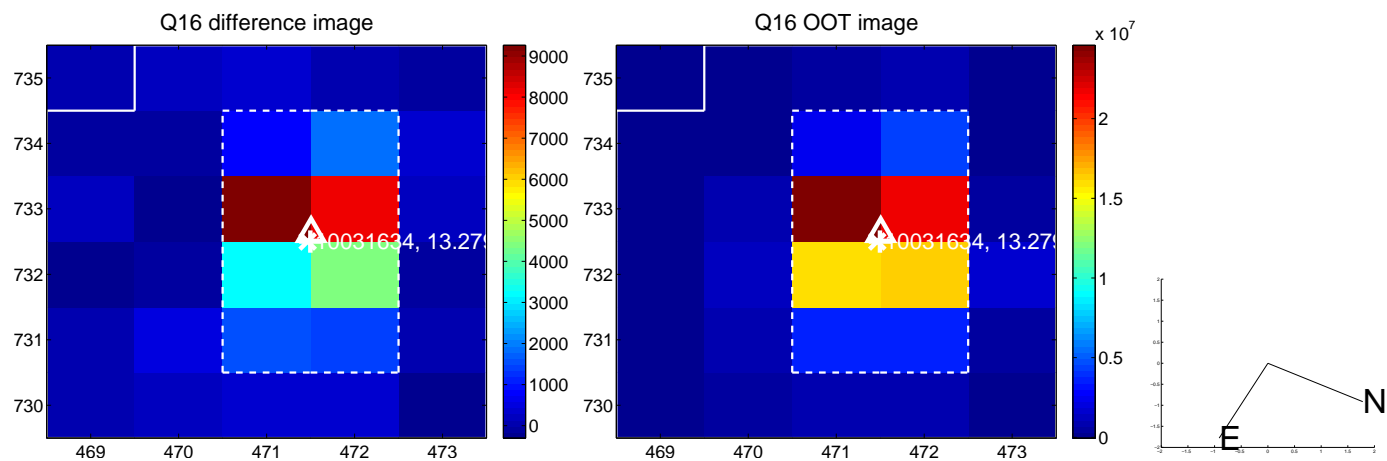
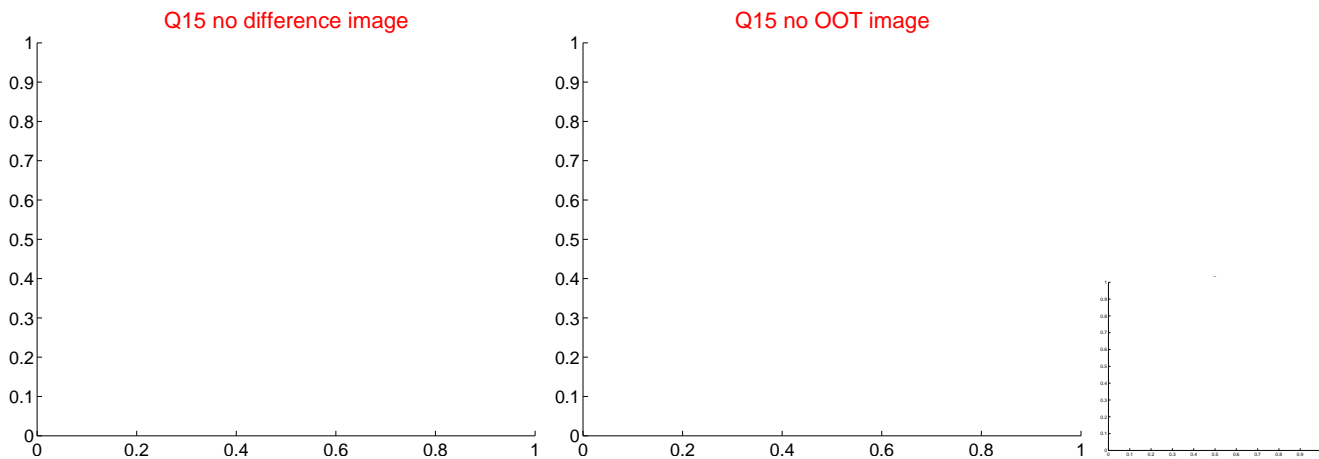
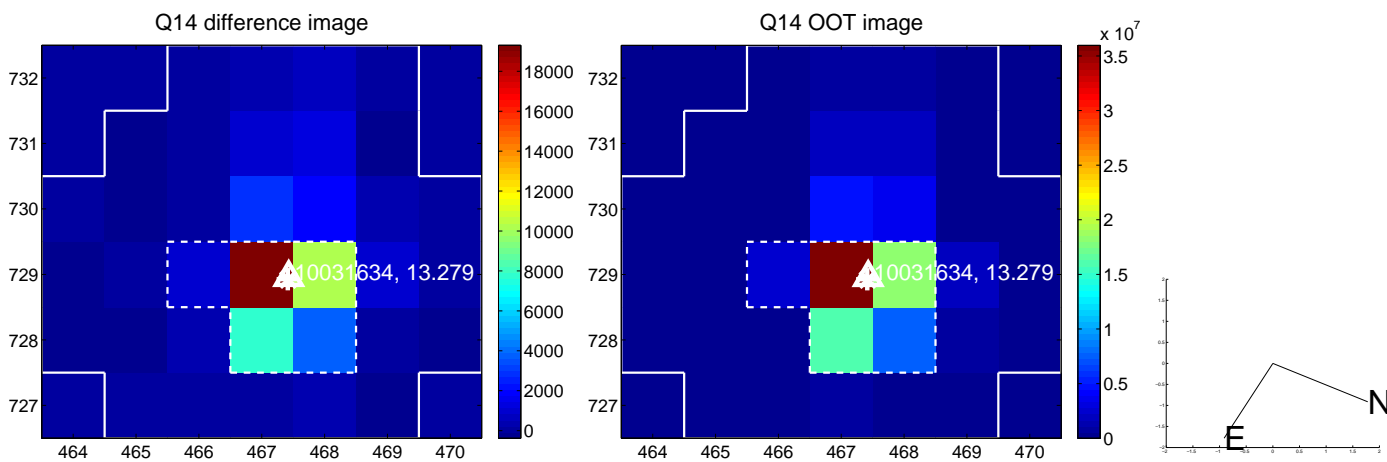
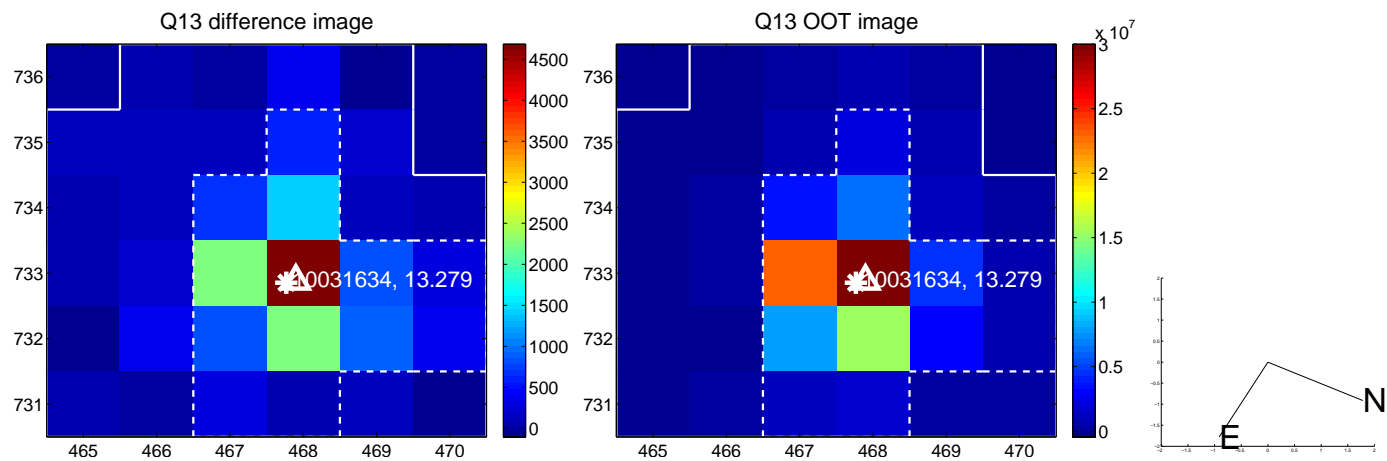
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



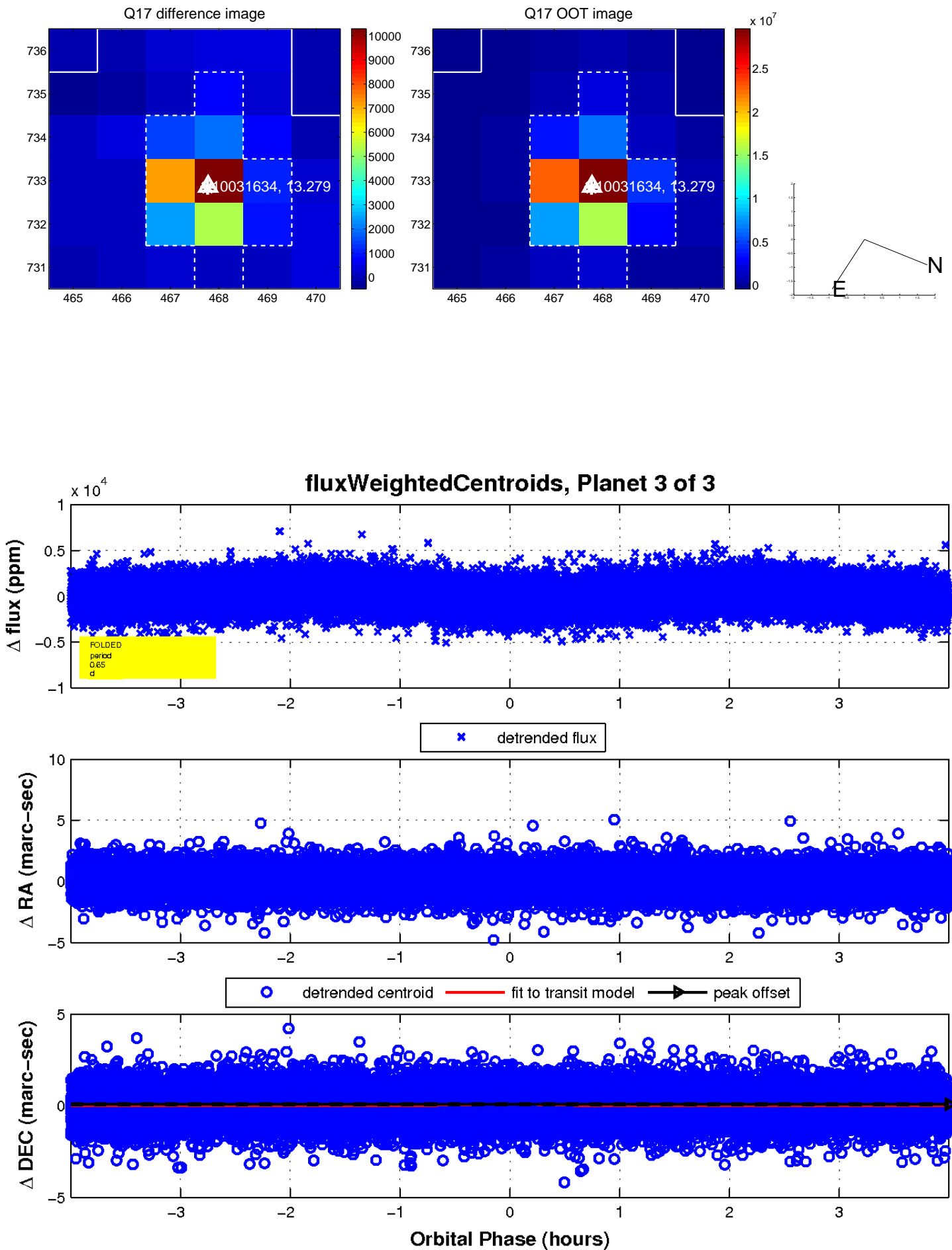
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

