

KIC 008311110

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})
008311110-01	OBS	No	1.473253	132.103201	98.6	6.169	10.5	10.9	2.64	7311	3.07	18814.66
008311110-02	OBS	No	16.179784	135.811659	424.3	5.878	9.1	9.7	2.64	7311	6.03	770.73
008311110-03	OBS	No	1.079089	132.168601	125.0	5.830	8.3	9.8	2.64	7311	3.53	28496.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008311110-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008311110-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008311110-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT

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

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

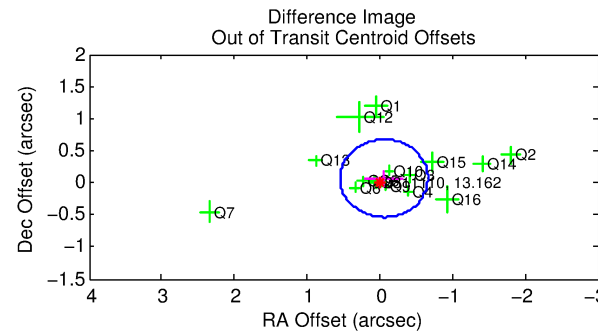
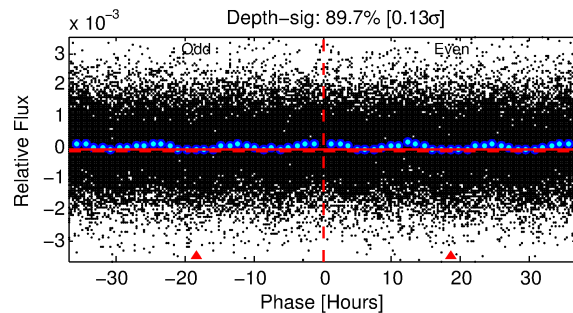
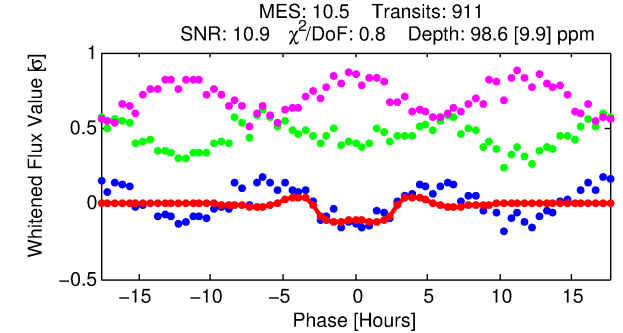
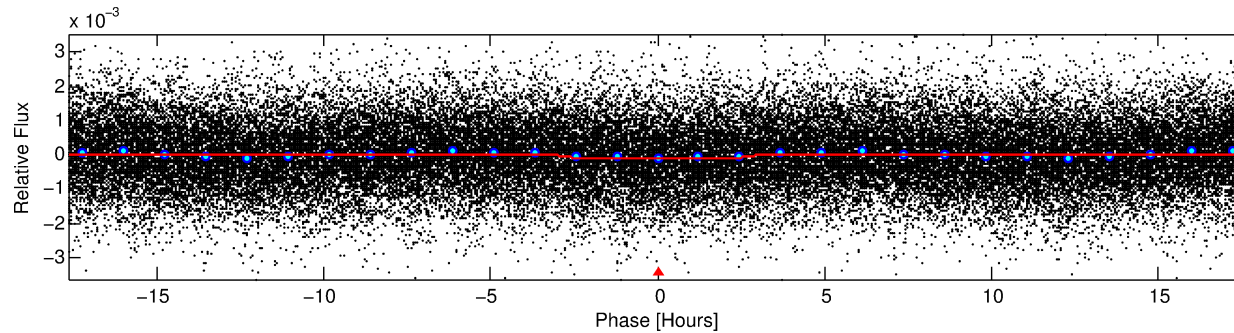
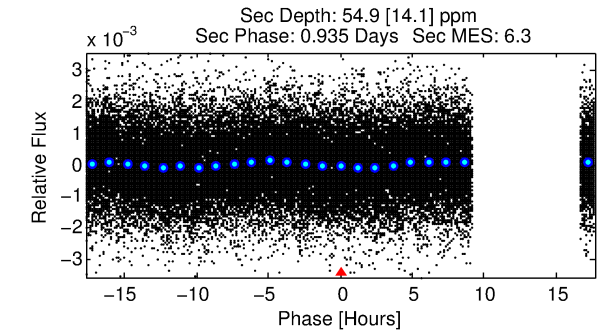
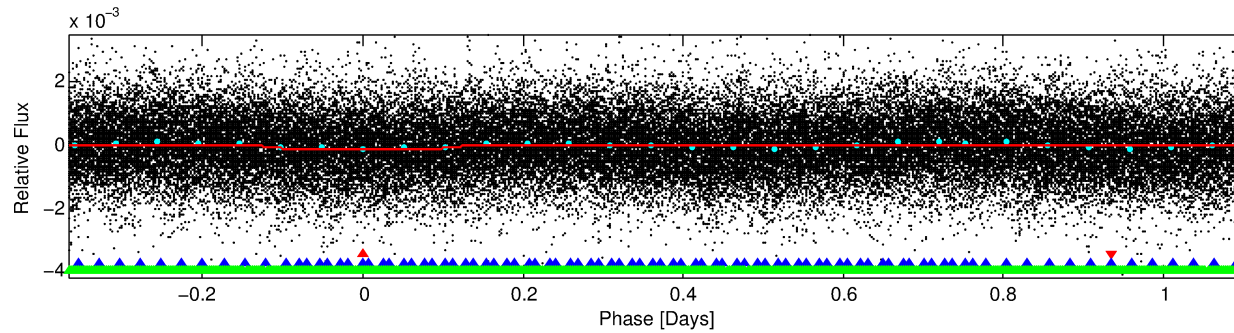
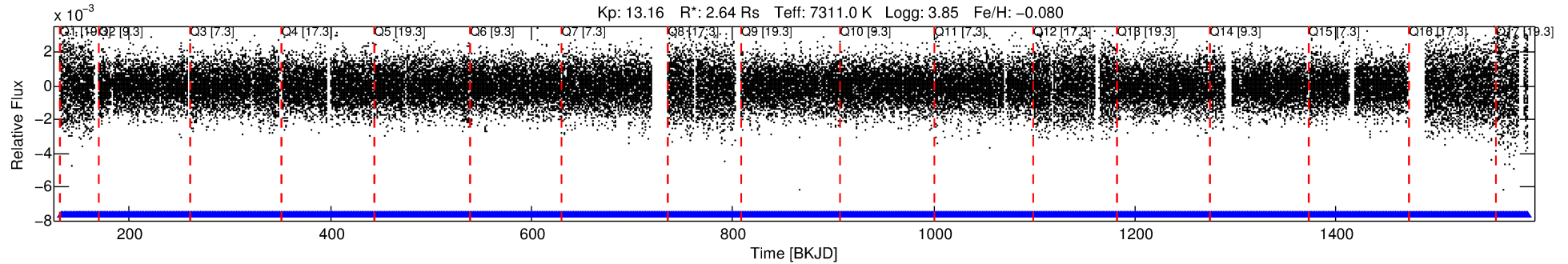
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008311110-01

No Significant Match Found

DV One-Page Summary

KIC: 8311110 Candidate: 1 of 3 Period: 1.473 d



DV Fit Results:

Period = 1.47325 [0.00001] d
Epoch = 132.1032 [0.0055] BKJD
Rp/R* = 0.0106 [0.0025]
a/R* = 1.24 [0.62]
b = 0.91 [0.27]
Seff = 18814.66 [11889.06]
Teq = 2986 [472] K
Rp = 3.07 [1.46] Re
a = 0.0308 [0.0118] AU
Ag = 3.04 [2.44] [0.84σ]
Teffp = 6099 [871] K [3.14σ]

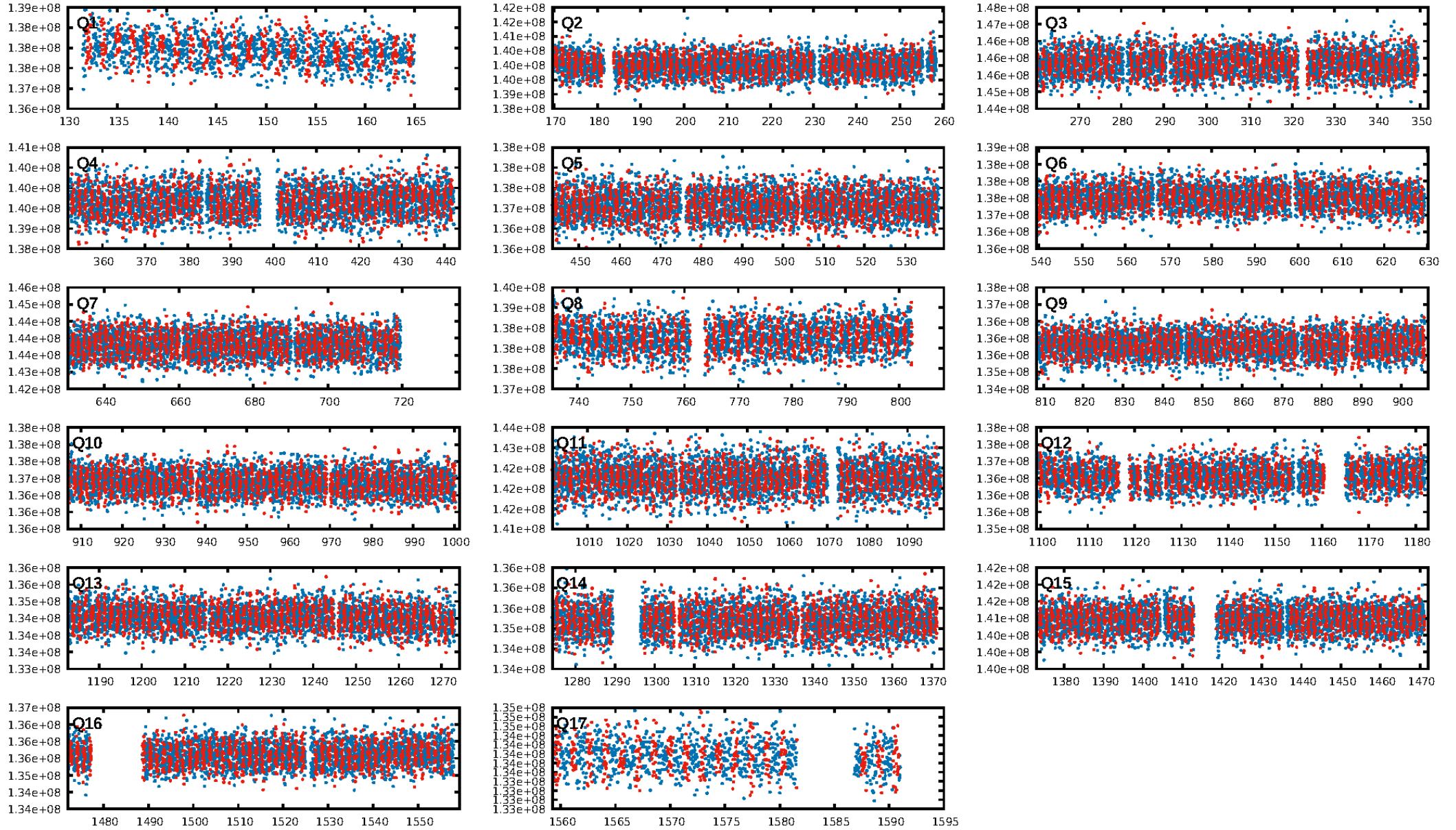
DV Diagnostic Results:

ShortPeriod-sig: 73.5% [1.11σ]
LongPeriod-sig: 100.0% [41.42σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.63e-52
RollingBand-fgt: 1.00 [870/870]
GhostDiagnostic-chr: 2.291
Centroid-sig: 44.5%
Centroid-so: 0.206 arcsec [1.50σ]
OotOffset-rm: 0.087 arcsec [0.43σ]
KicOffset-rm: 0.122 arcsec [0.56σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.94 [15/16]
DiffImageOverlap-fno: 0.00 [0/17]

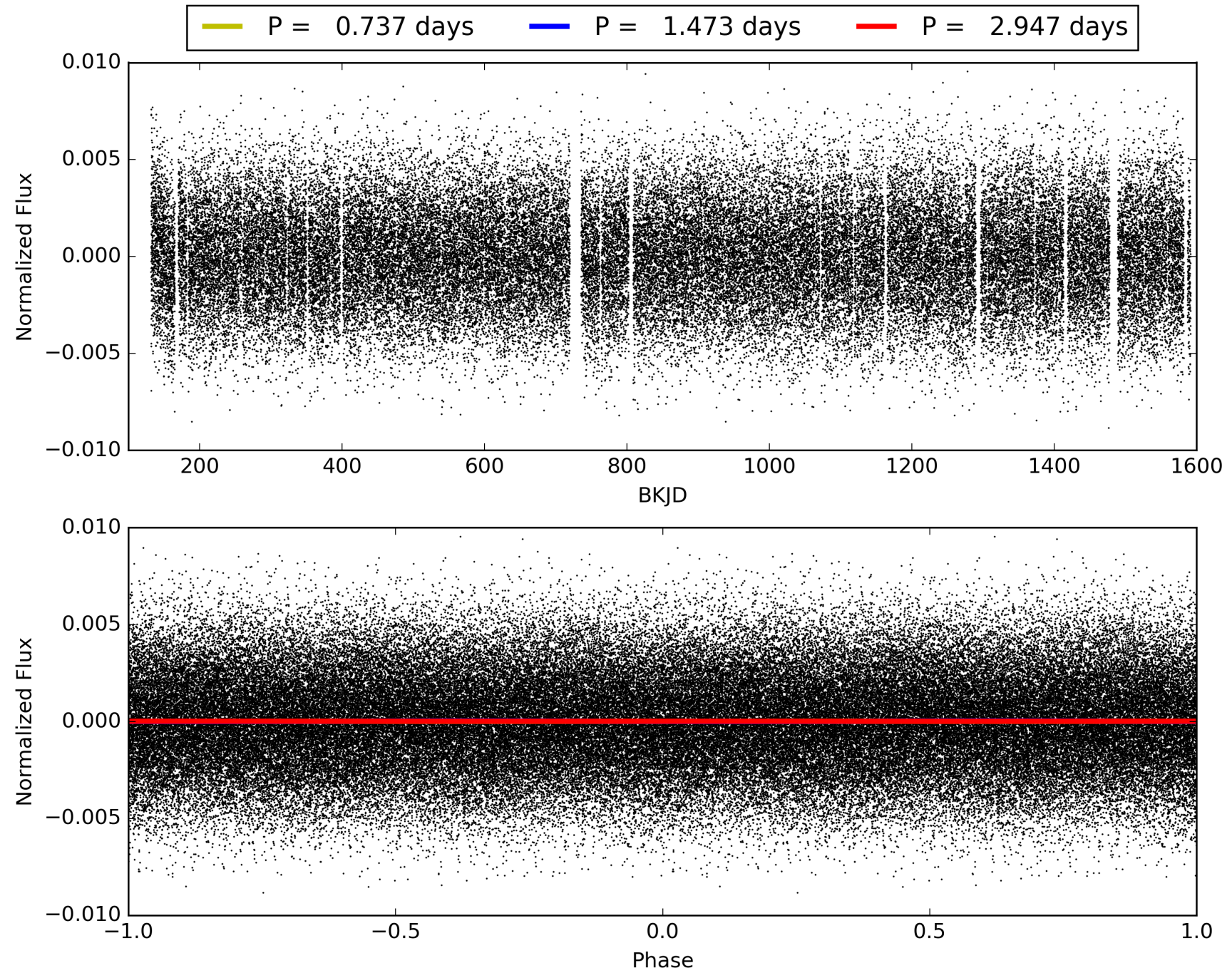
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:49:35 Z

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

TCE 008311110-01, PDC Light Curves

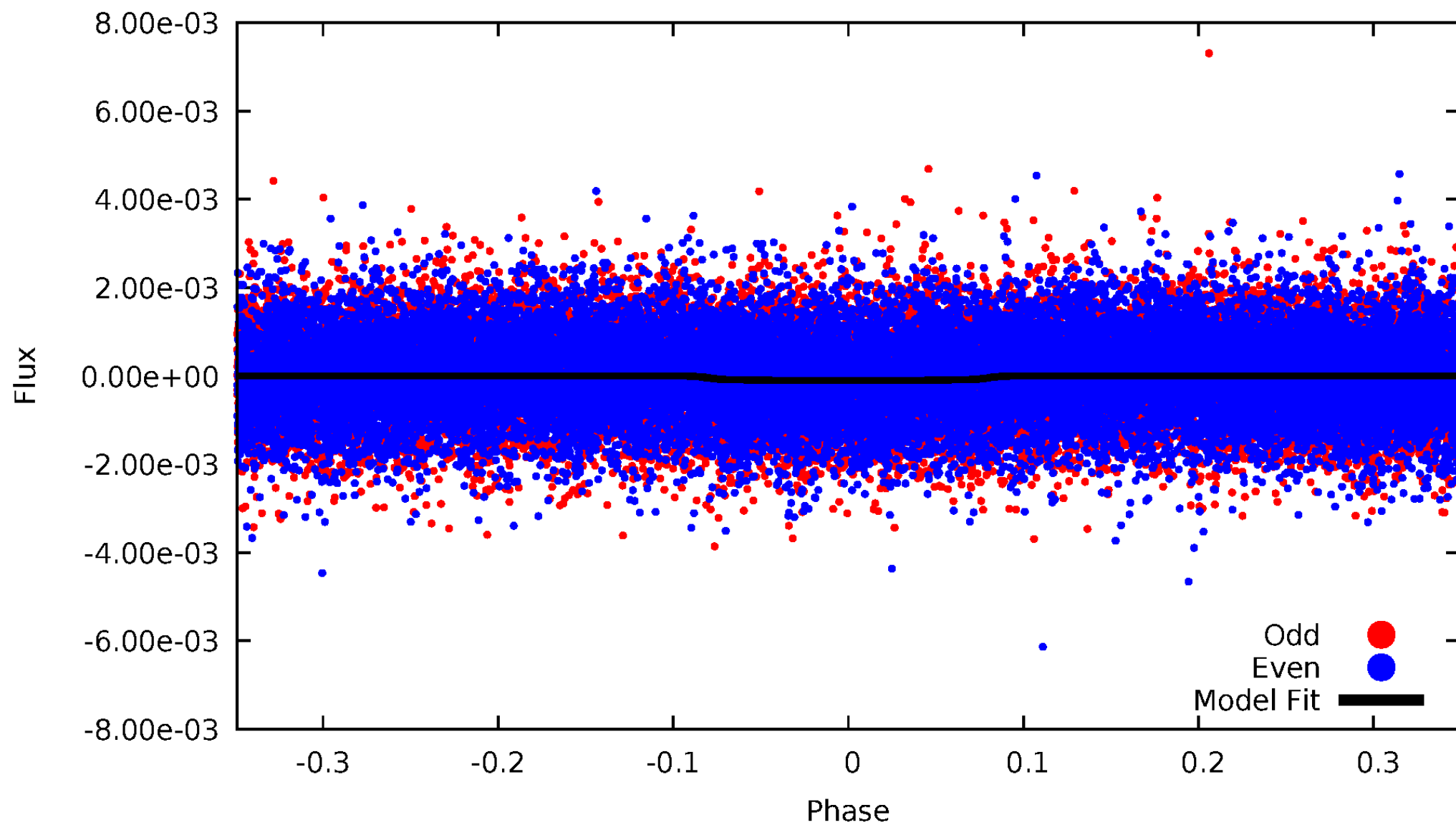


TCE 008311110-01



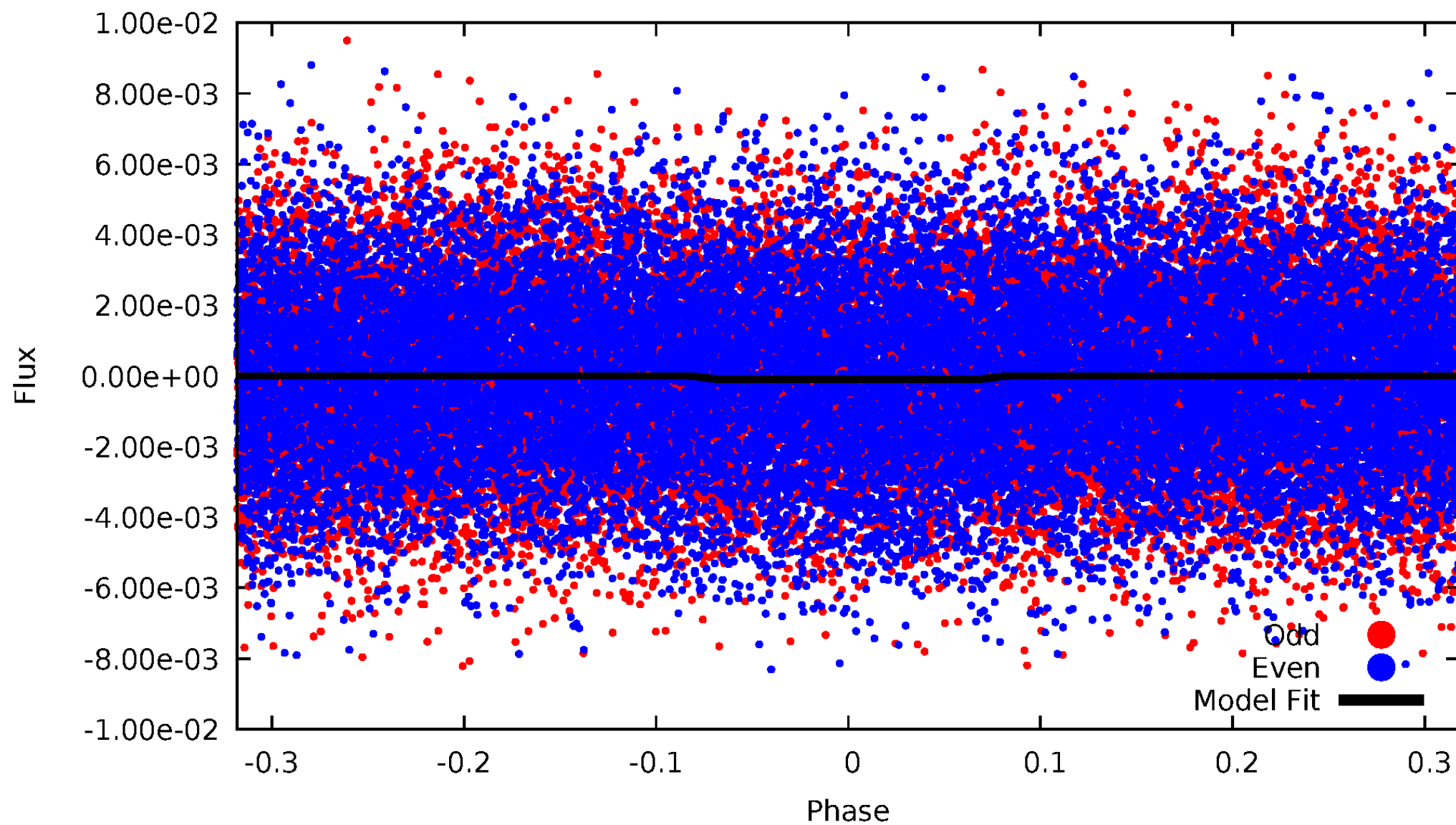
DV Odd/Even

TCE 008311110-01



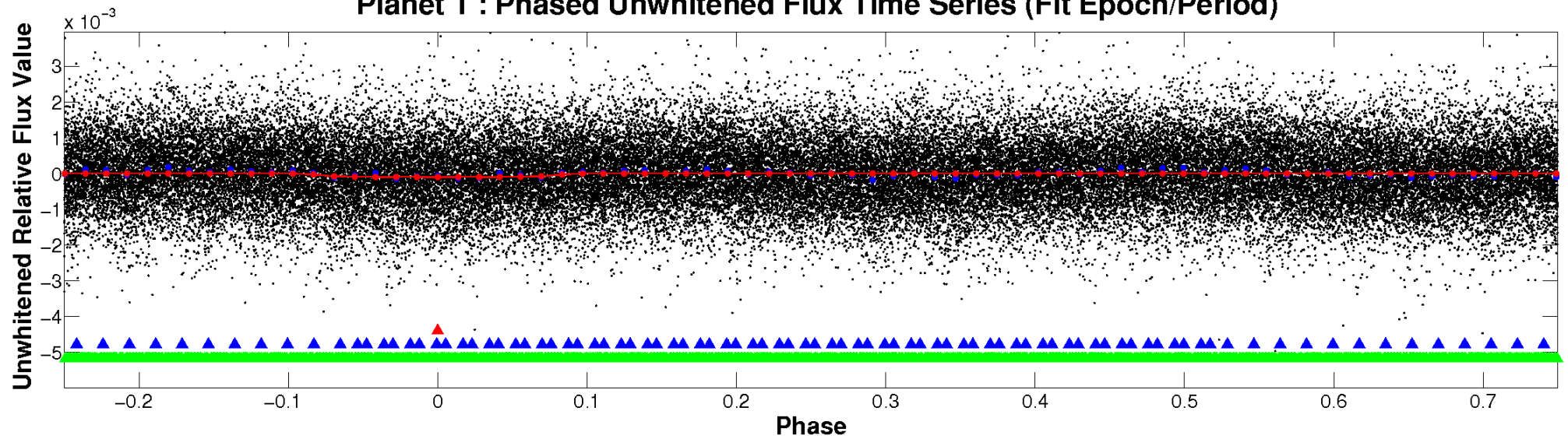
ALT Odd/Even

TCE 008311110-01

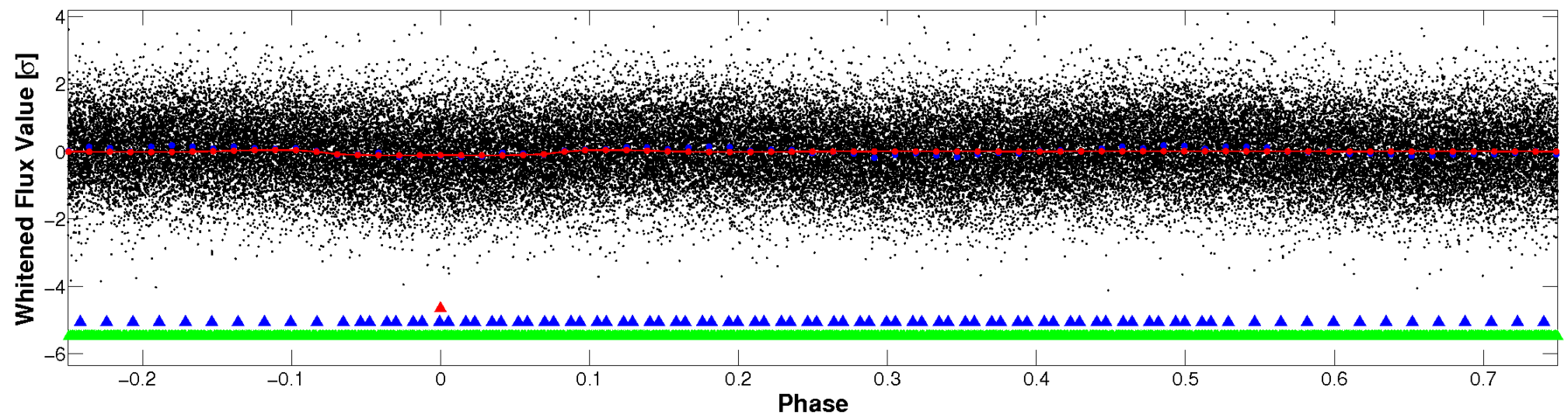


Non-Whitened Vs. Whitened Light Curve

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

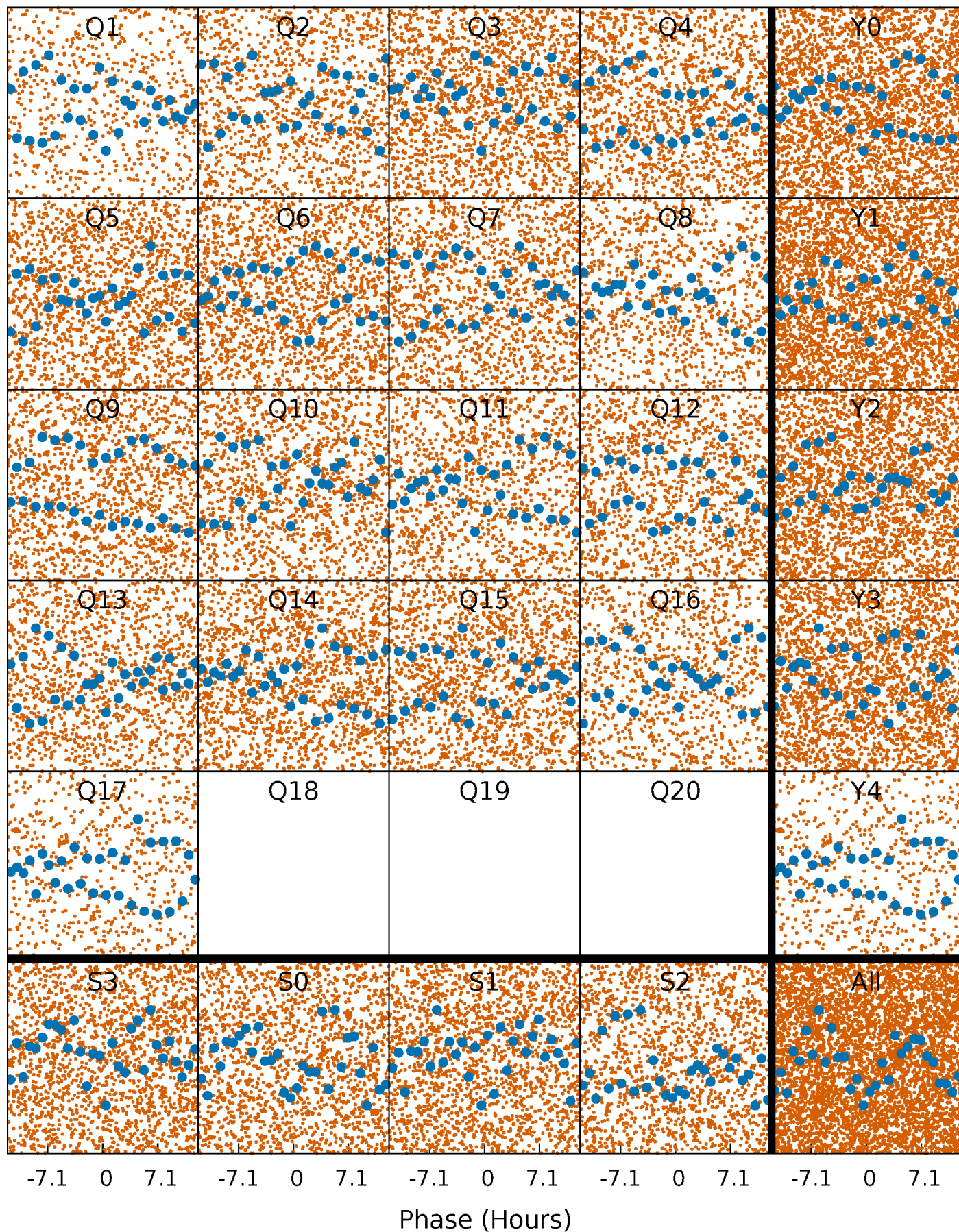


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



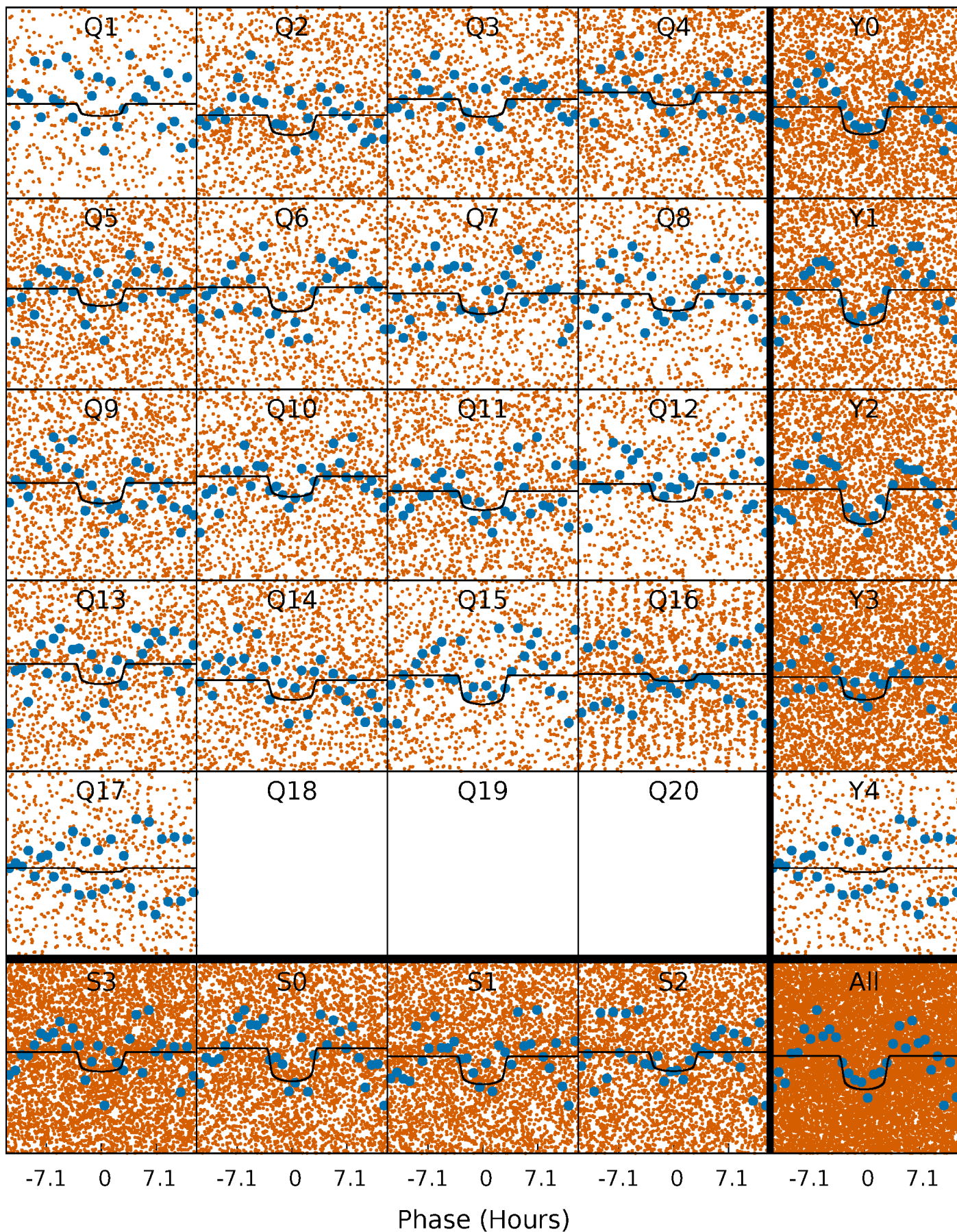
PDC Quarter-Phased Transit Curves

TCE 008311110-01 P= 1.473253 Days $T_0=132.103201$ (BKJD)



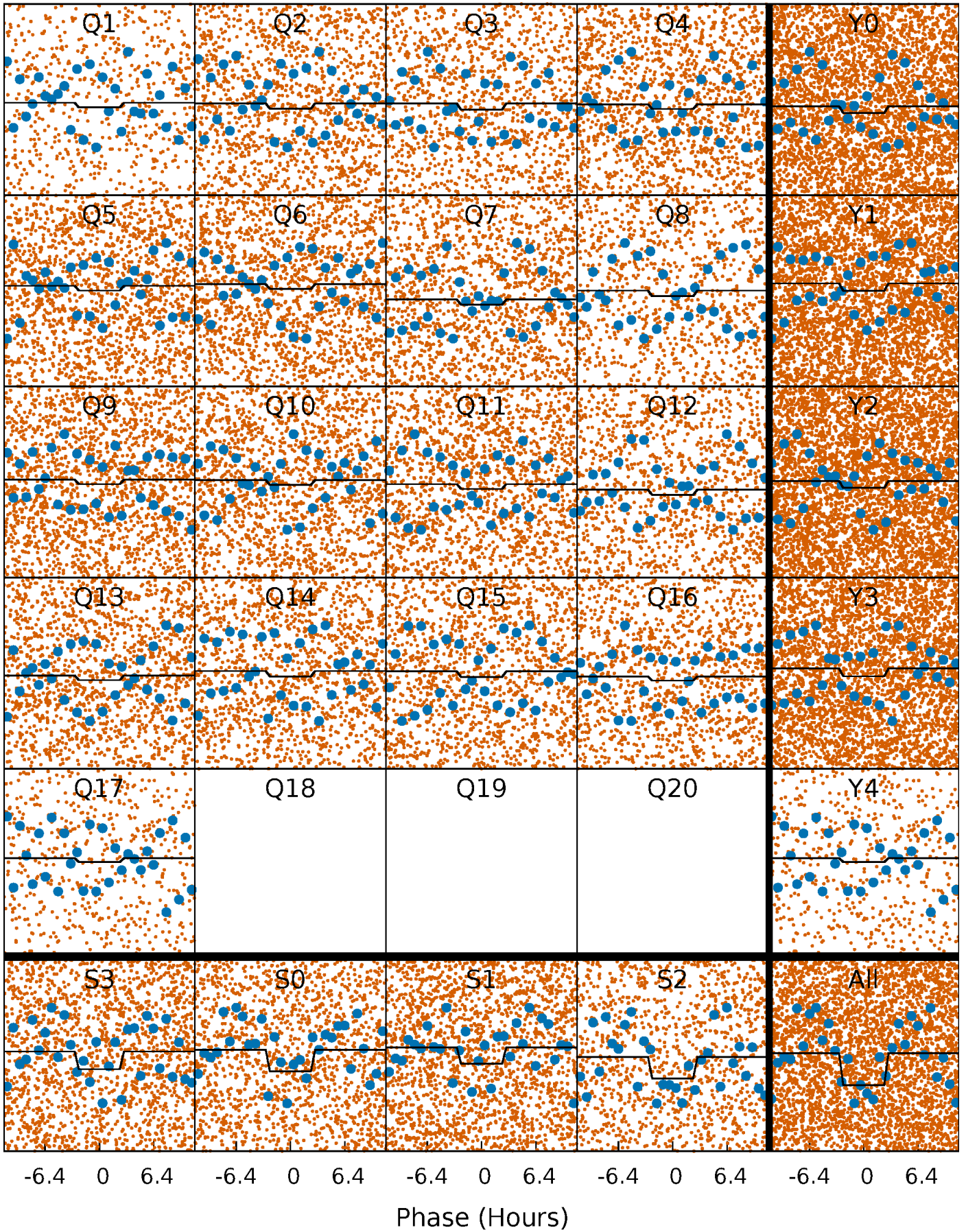
DV Quarter-Phased Transit Curves

TCE 008311110-01 P= 1.473253 Days $T_0=132.103201$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

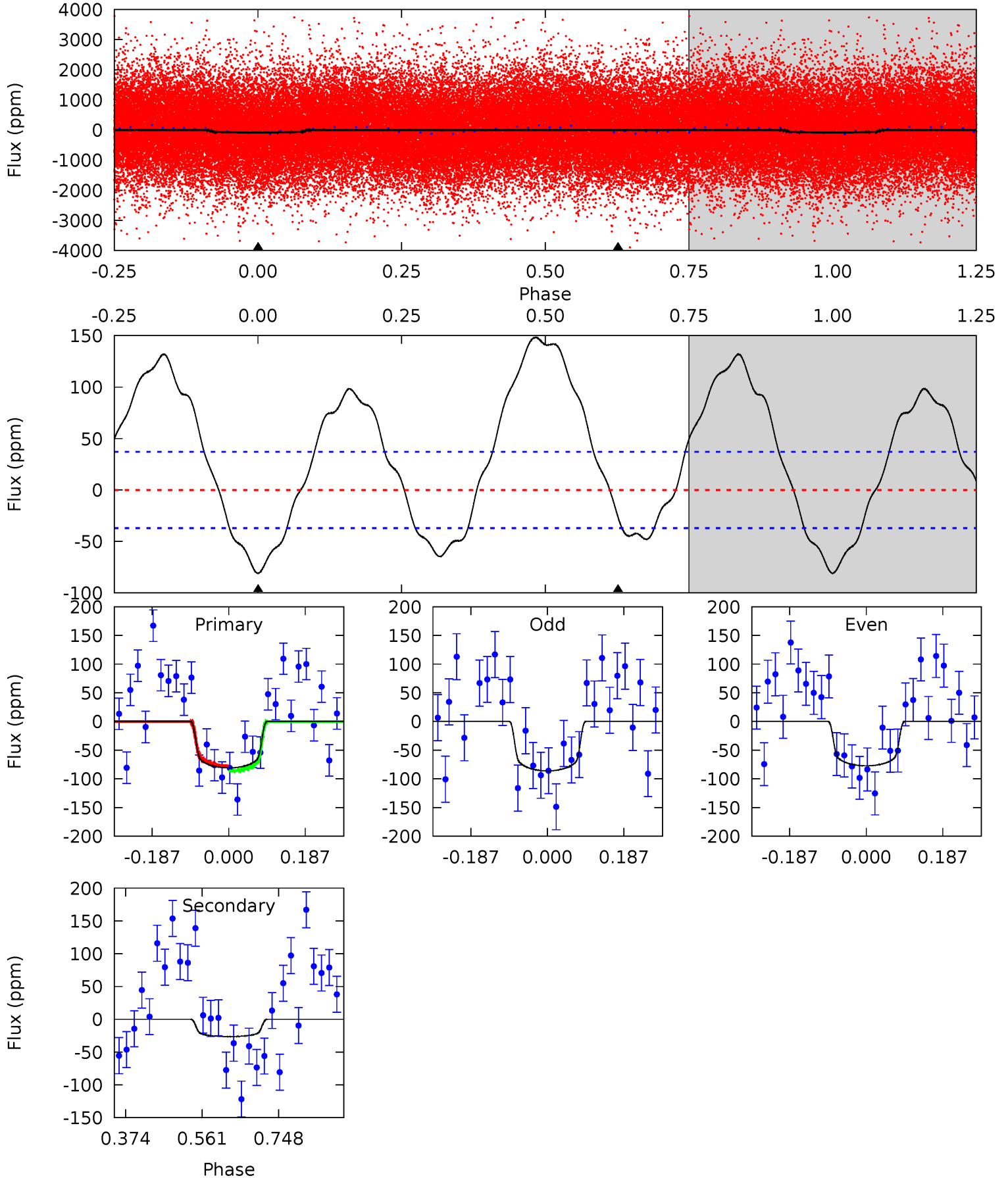
TCE 008311110-01 P= 1.473196 Days $T_0=132.127851$ (BKJD)



DV Model-Shift Uniqueness Test

008311110-01, P = 1.473253 Days, E = 130.629948 Days

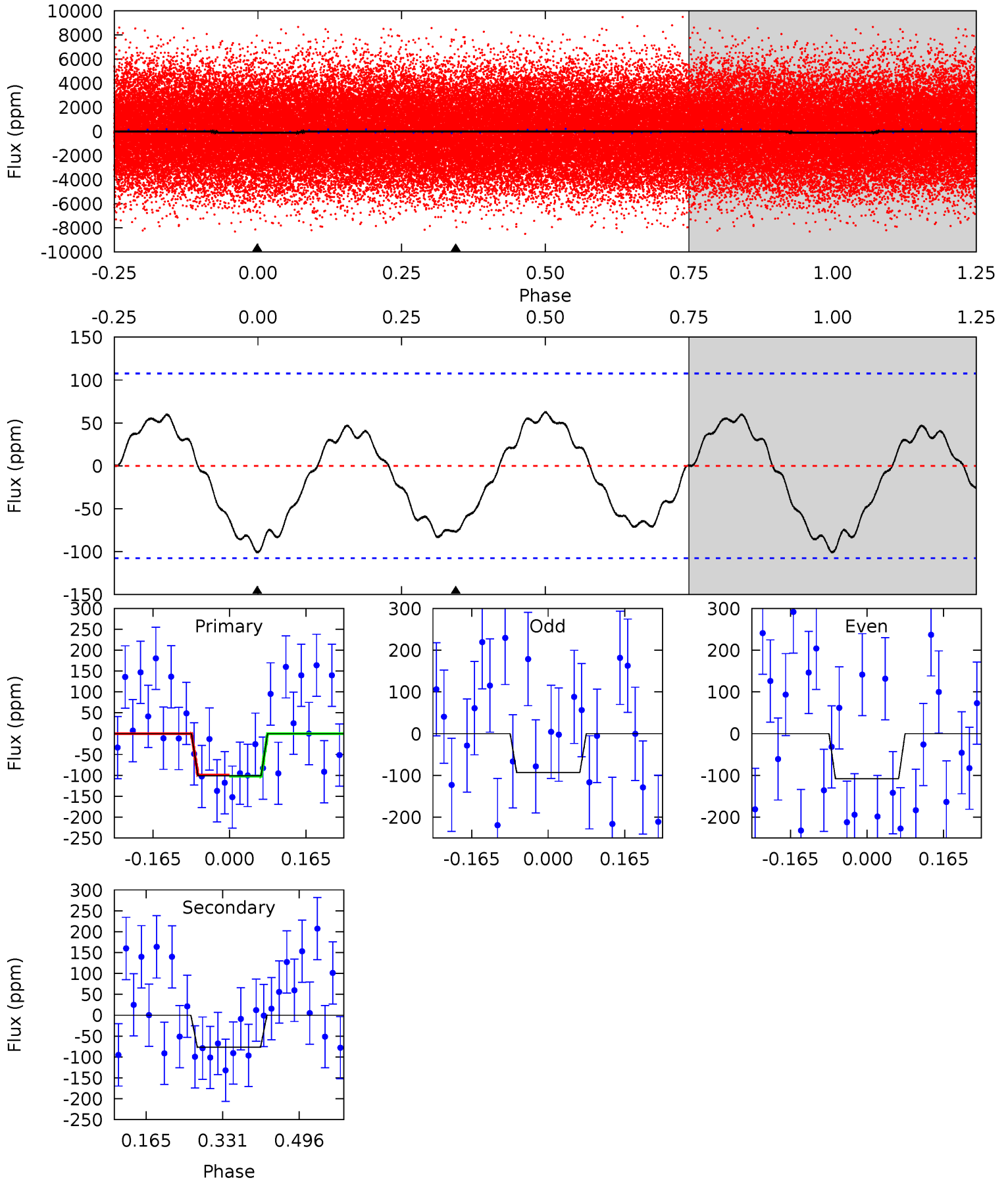
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.68	3.17	0	0	4.43	1.32	5.95	9.68	9.68	3.17	3.17	0.53	0.88	0.65	0.54



Alt Model-Shift Uniqueness Test

008311110-01, P = 1.473196 Days, E = 130.654655 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.17	3.18	0	0	4.46	1.39	1.82	4.17	4.17	3.18	3.18	0.31	1.46	0.38	0.06



Stellar Parameters For KIC 008311110

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7311^{+232}_{-377}	$3.849^{+0.345}_{-0.115}$	$-0.080^{+0.250}_{-0.350}$	$2.643^{+0.469}_{-1.095}$	$1.797^{+0.184}_{-0.430}$	$0.137^{+0.372}_{-0.049}$
	+3%/-5%	+9%/-3%	+312%/-438%	+18%/-41%	+10%/-24%	+271%/-36%
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 008311110-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-26 ± 8	$2.90^{+0.85}_{-0.83}$	4069^{+310}_{-423}	4843^{+869}_{-688}	$1.635^{+1.732}_{-0.781}$
Alt.	-77 ± 24	$2.61^{+0.88}_{-0.75}$	4056^{+306}_{-419}	6710^{+1462}_{-960}	$5.795^{+6.360}_{-2.700}$

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

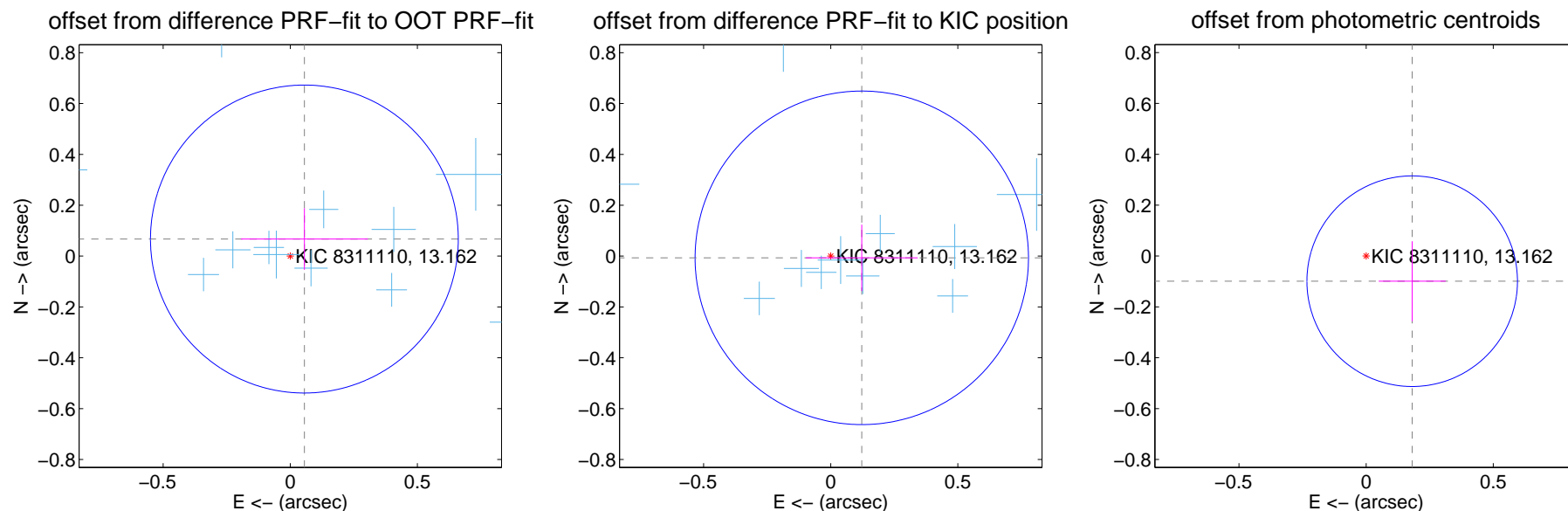
DV Centroid Data

Supplemental centroid analysis for 008311110-01. Kepler magnitude: 13.16. Transit SNR 10.94

There are 15 quarters with good PRF difference image offsets

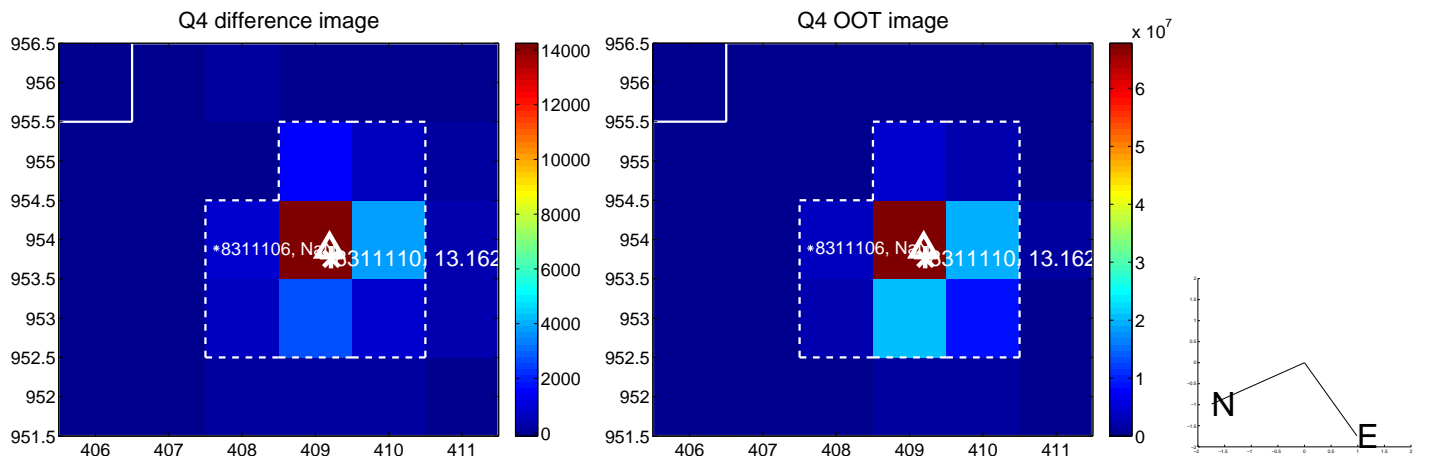
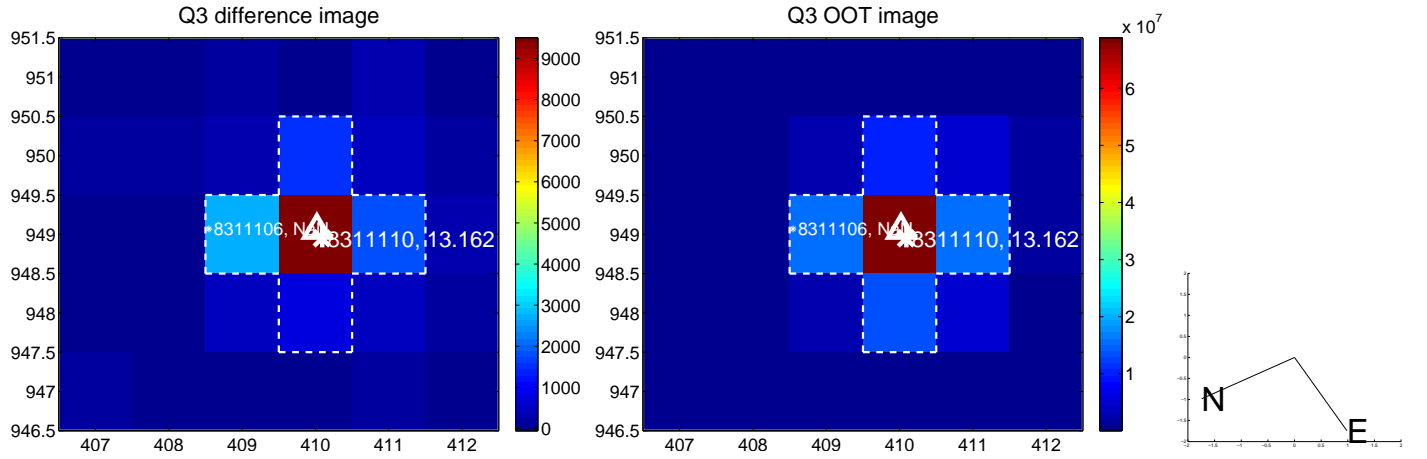
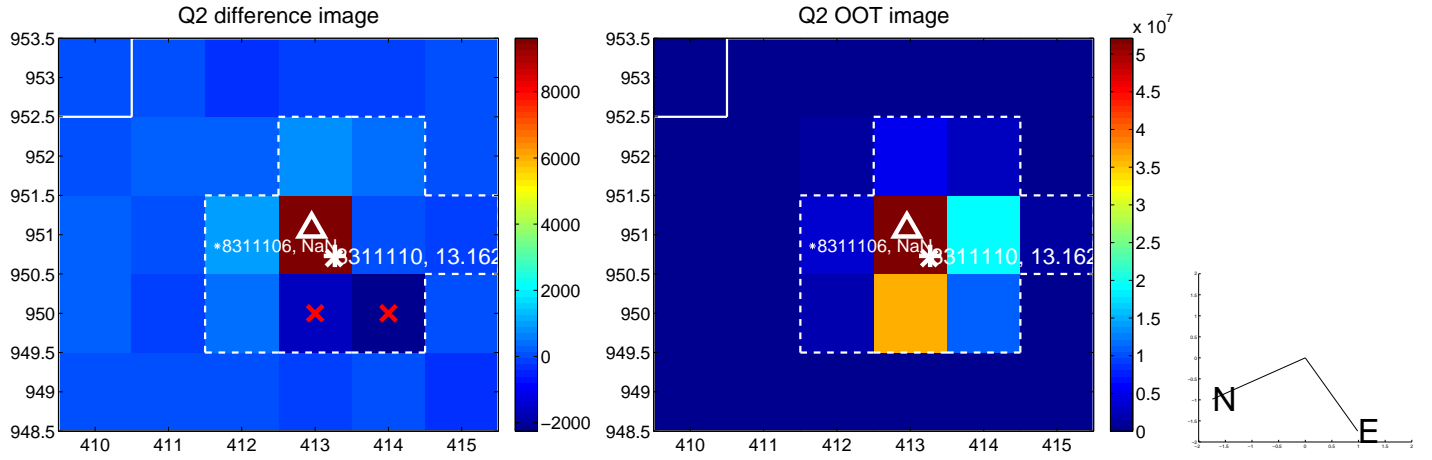
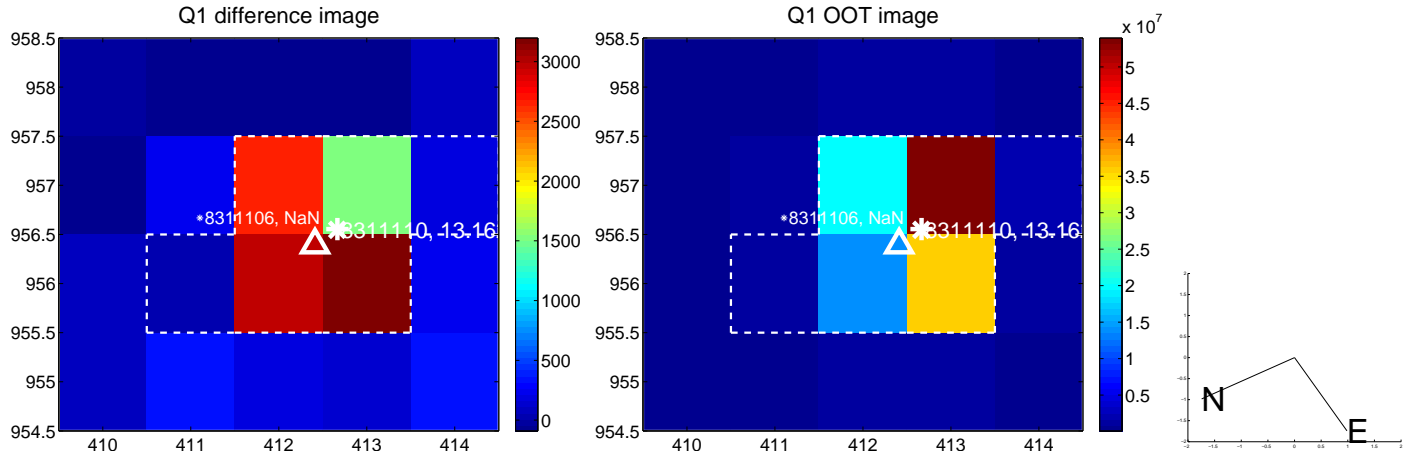
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.087 ± 0.202	0.43	-0.056 ± 0.250	0.067 ± 0.121
PRF-fit source offset from KIC position	0.122 ± 0.219	0.56	-0.122 ± 0.220	-0.007 ± 0.131
photometric centroid source offset	0.21 ± 0.14	1.50	-0.18 ± 0.13	-0.10 ± 0.16

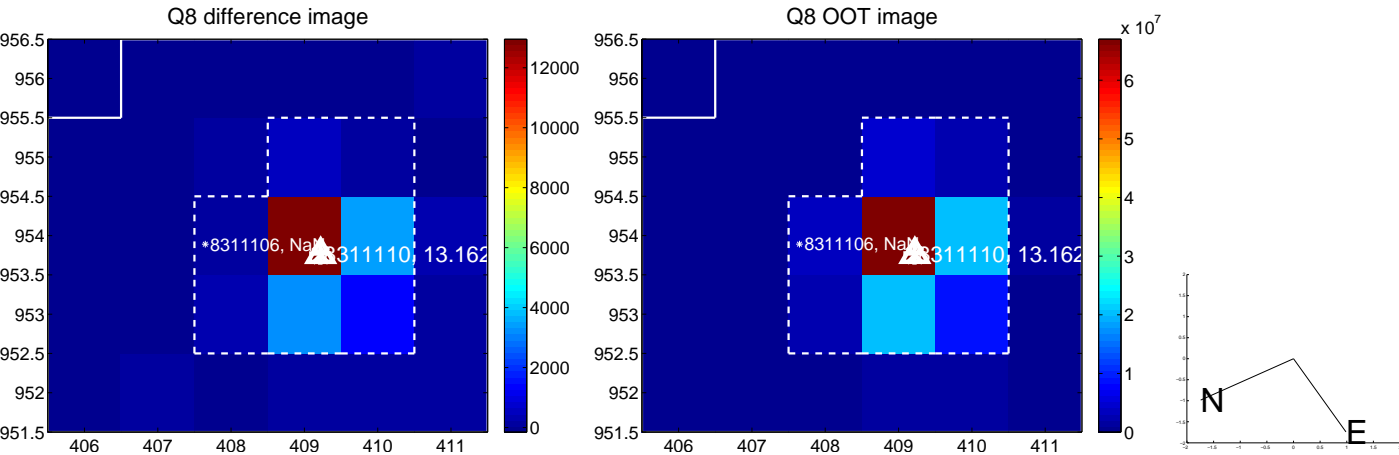
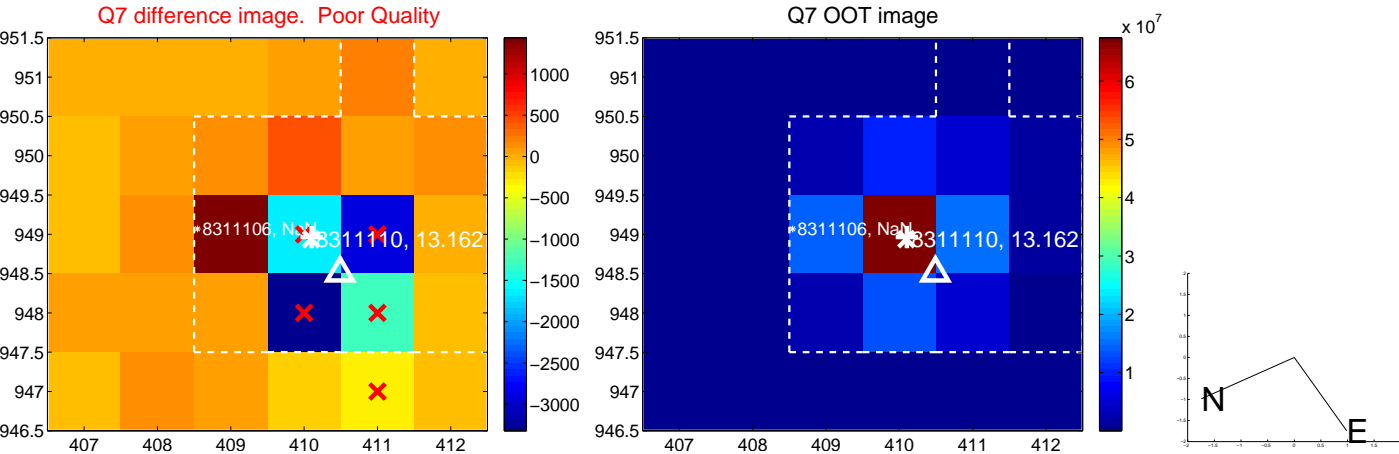
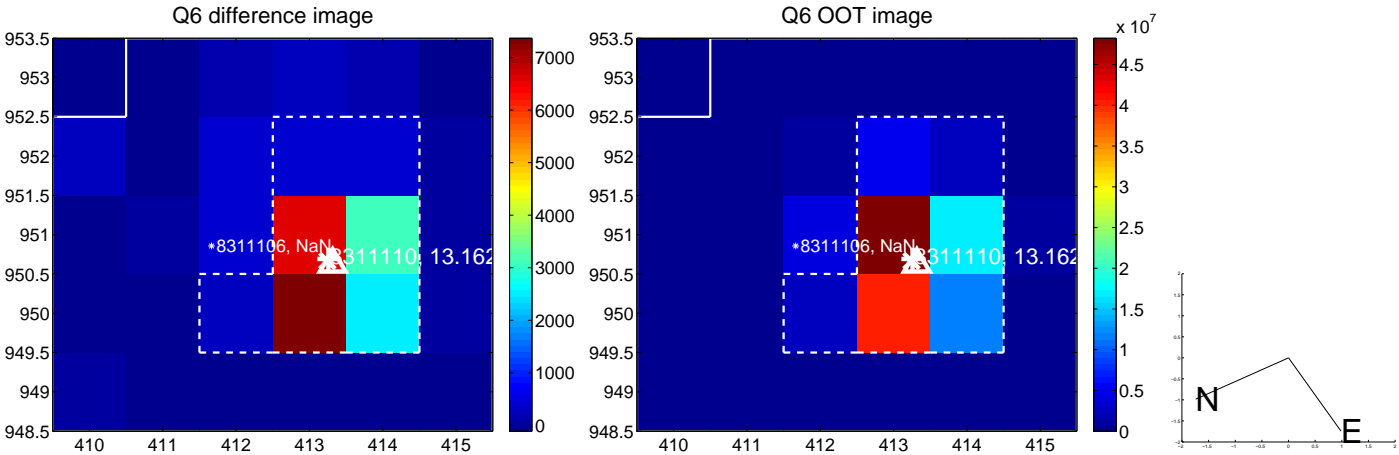
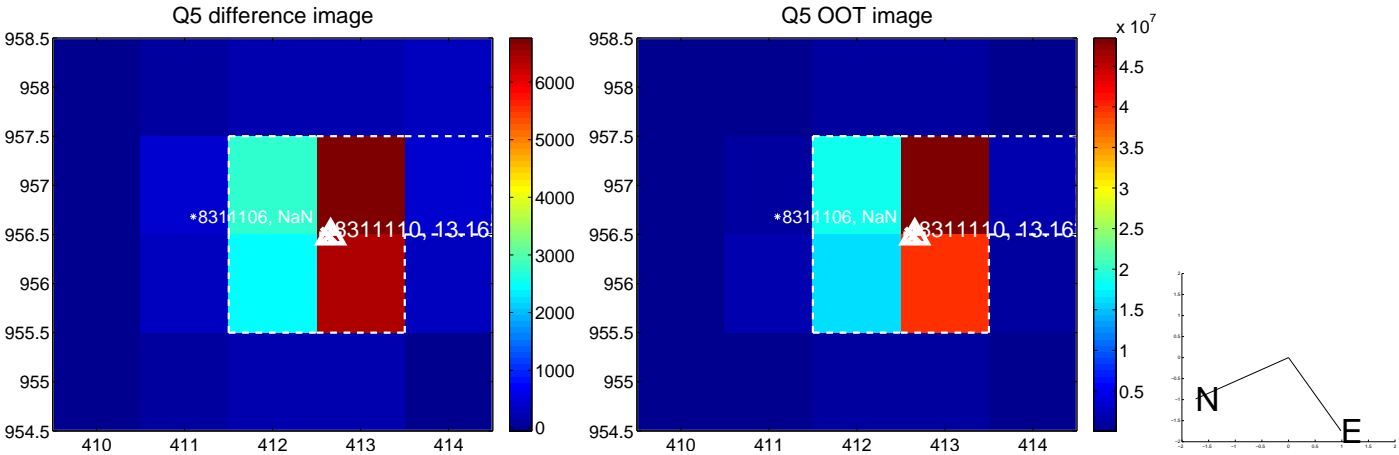


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

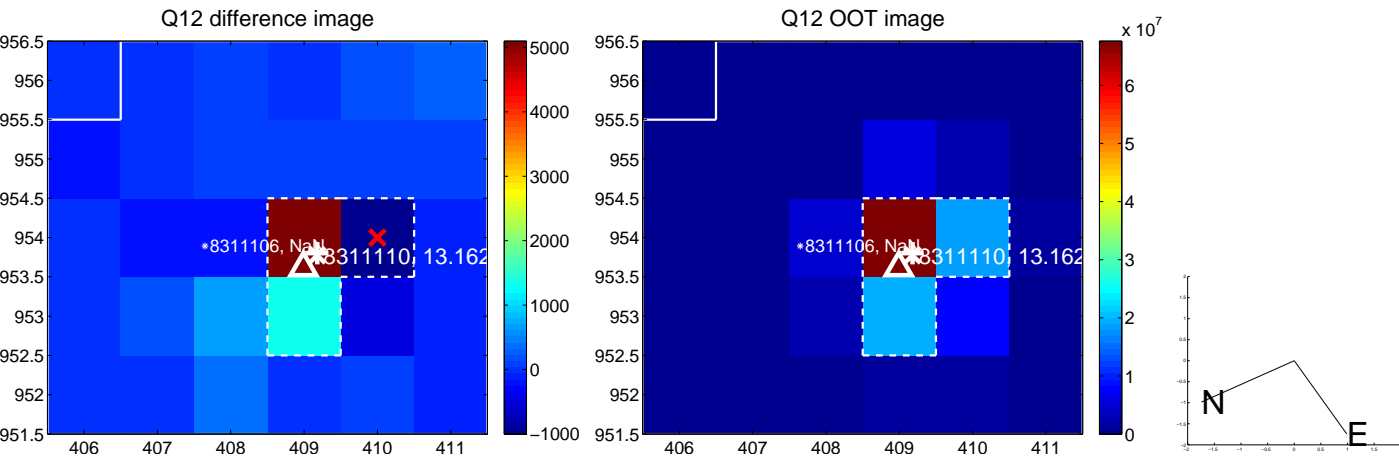
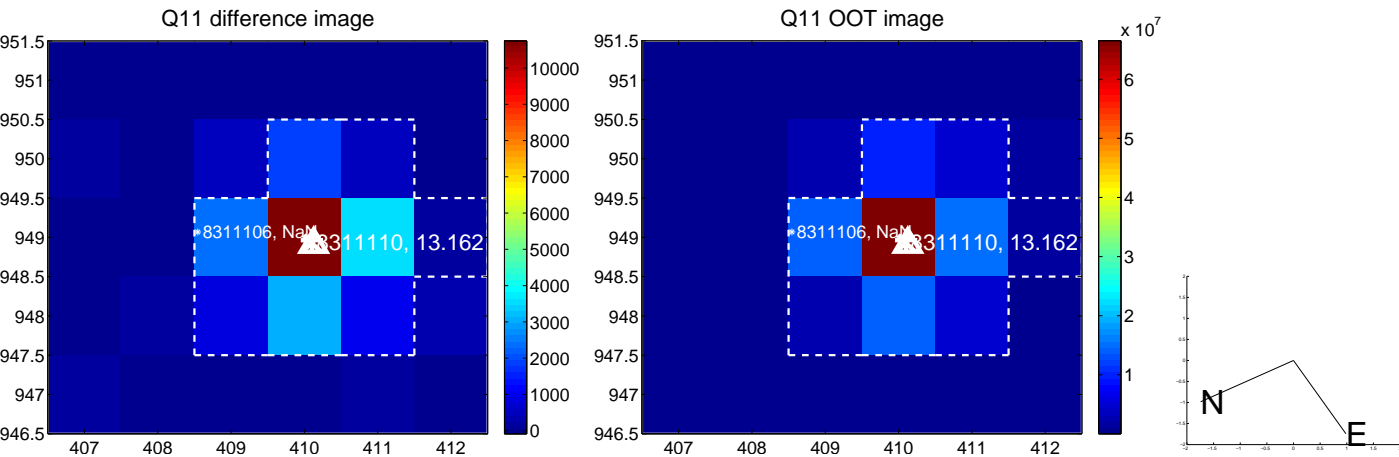
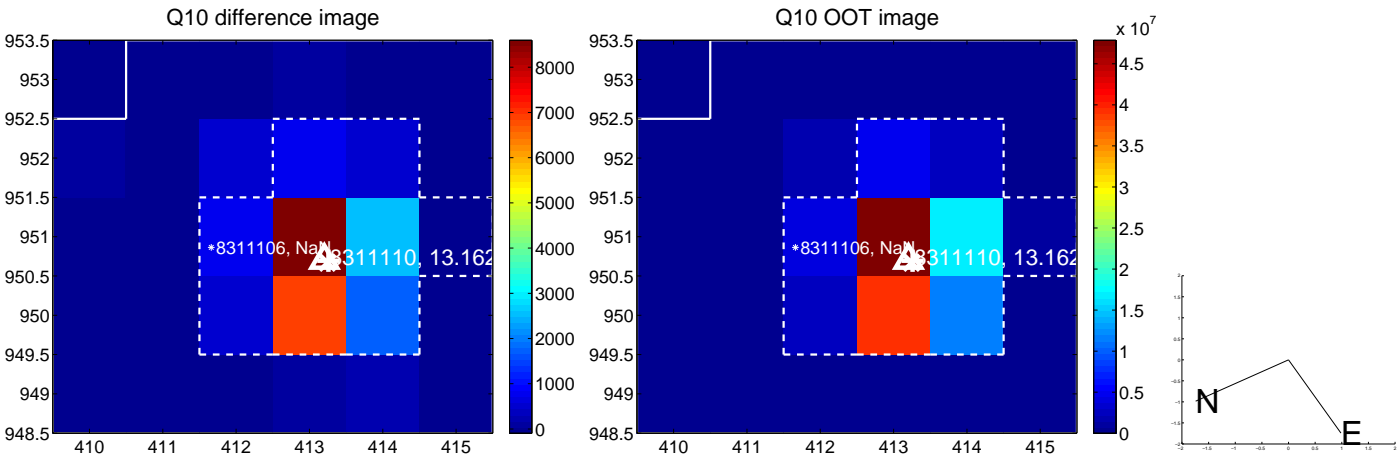
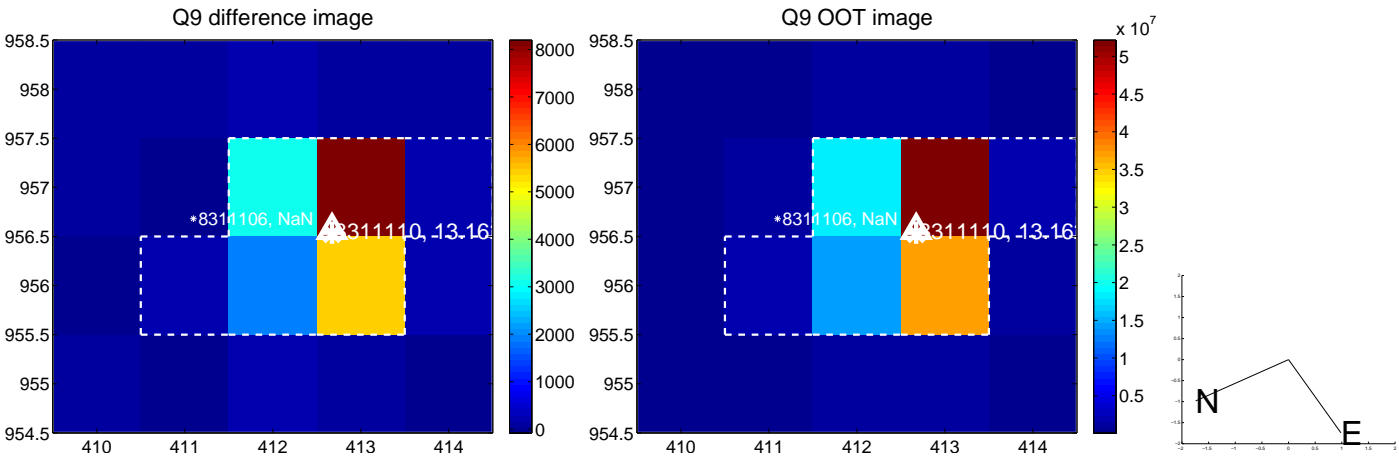
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



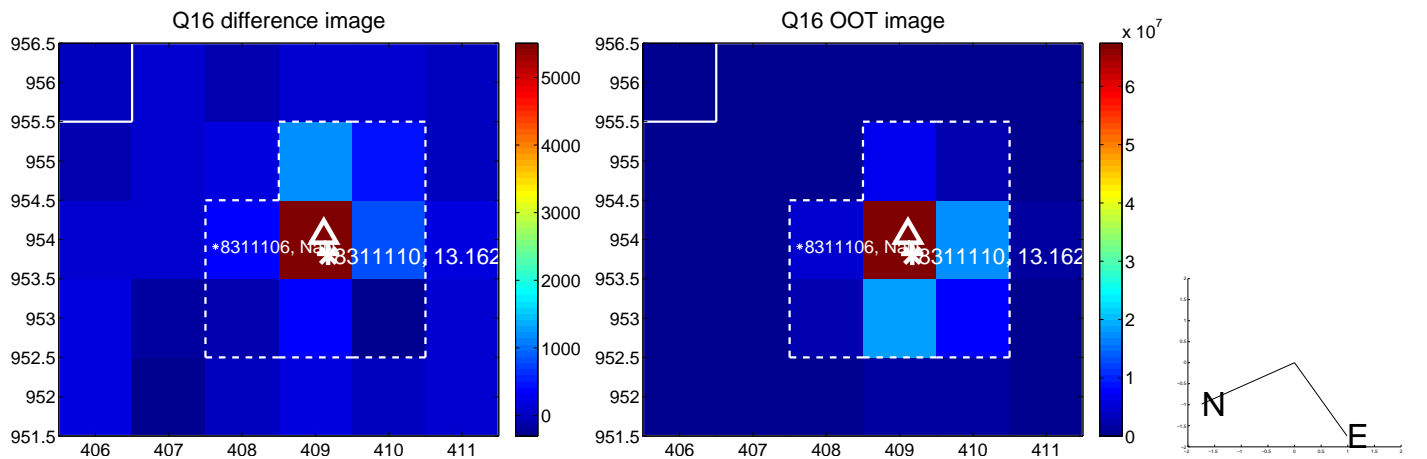
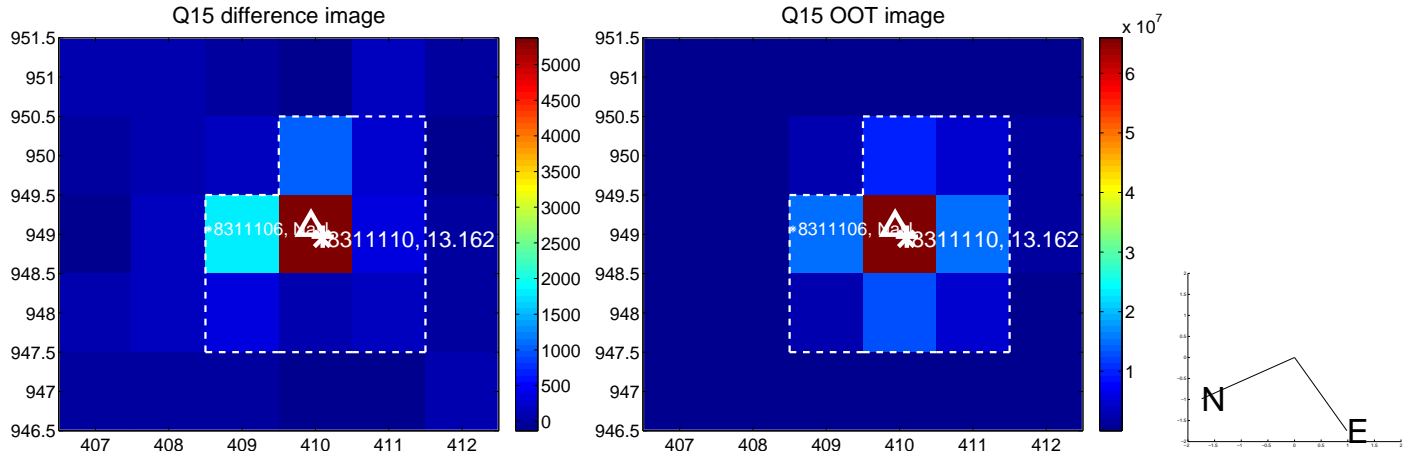
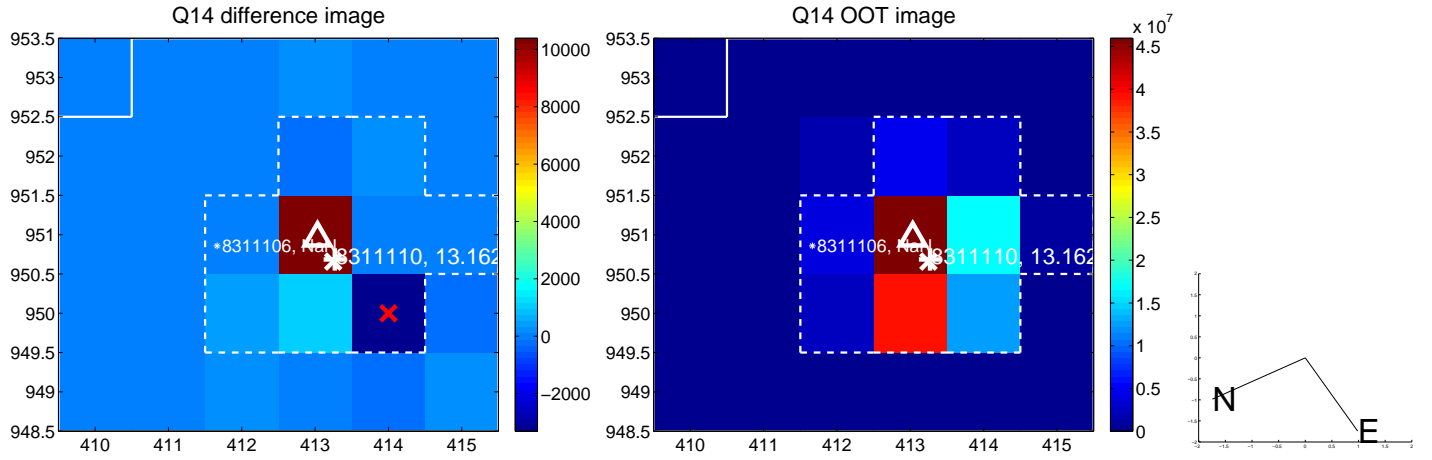
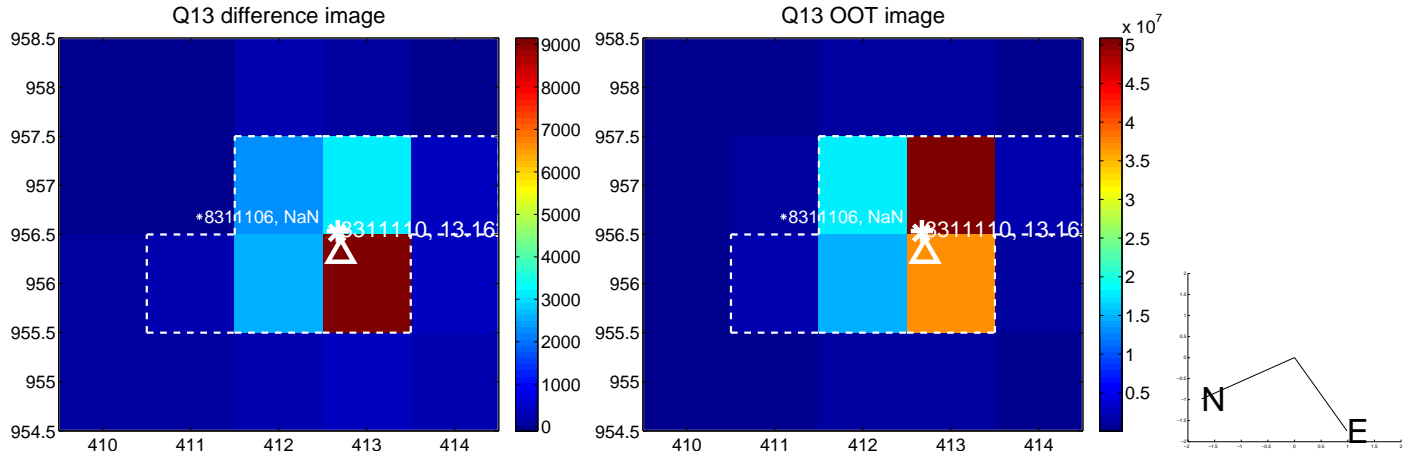
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



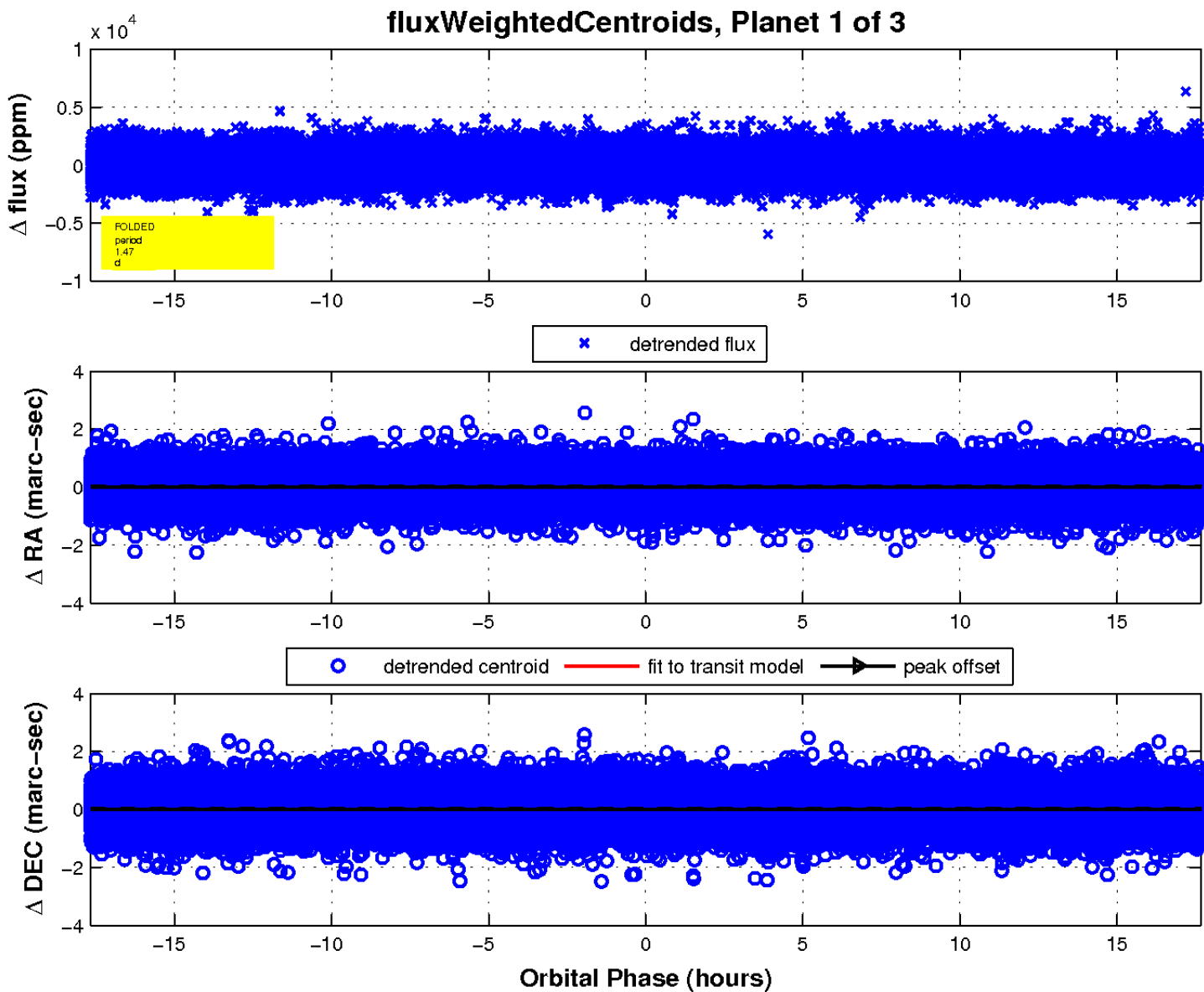
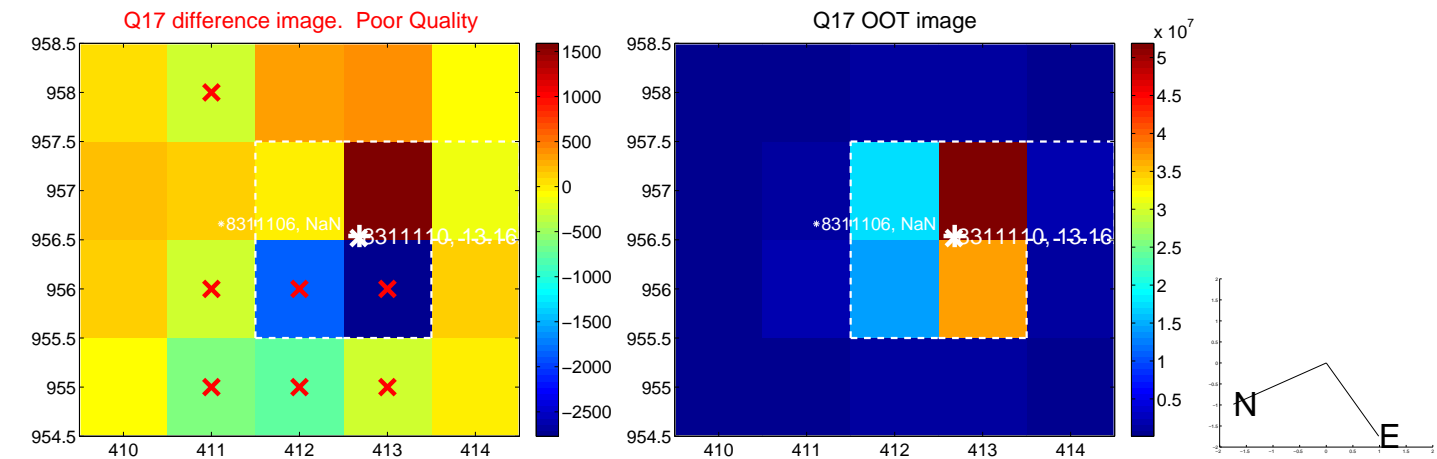
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



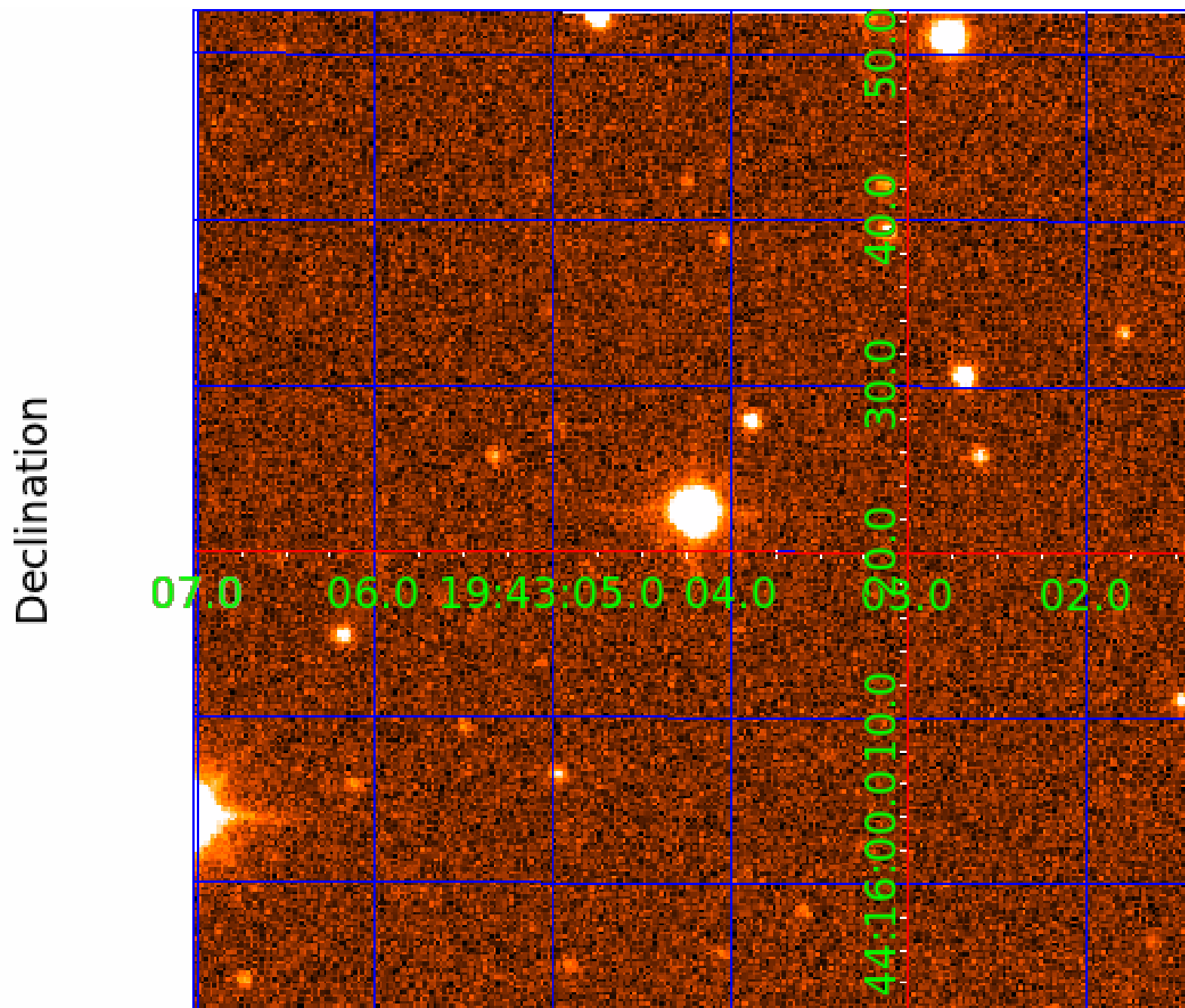
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008311110

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})
008311110-01	OBS	No	1.473253	132.103201	98.6	6.169	10.5	10.9	2.64	7311	3.07	18814.66
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008311110-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008311110-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008311110-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT

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

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

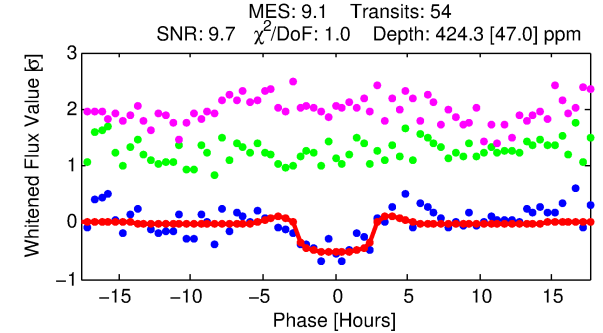
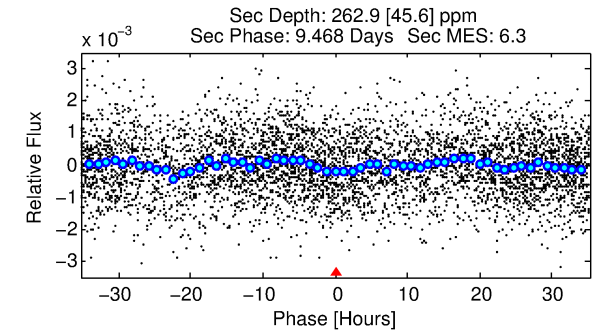
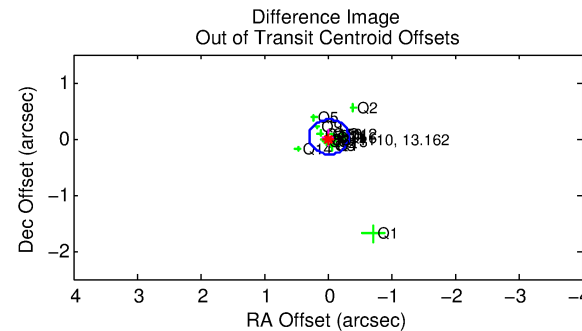
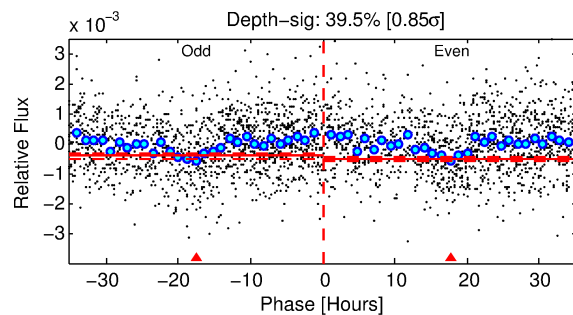
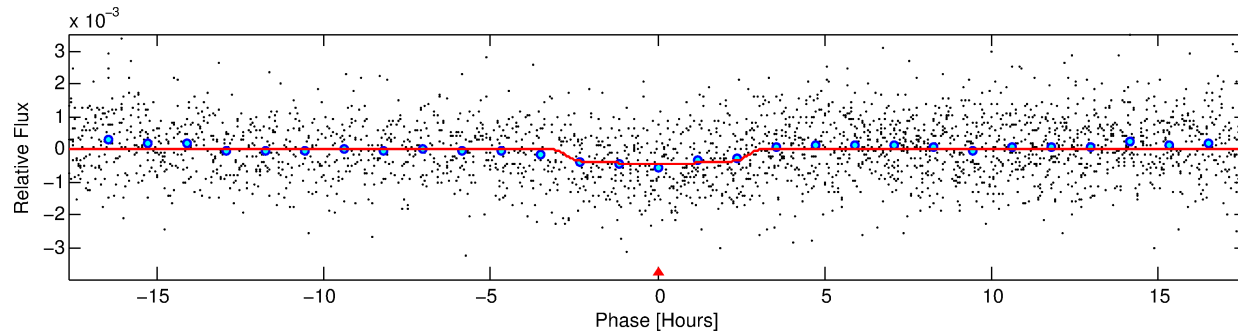
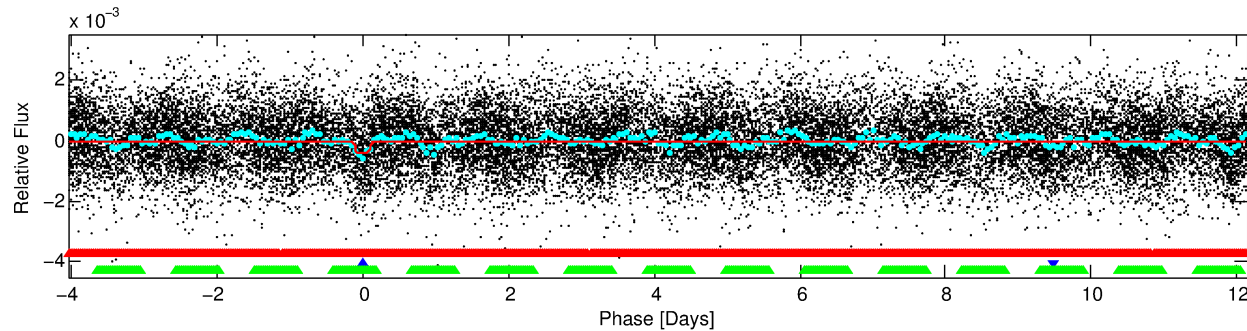
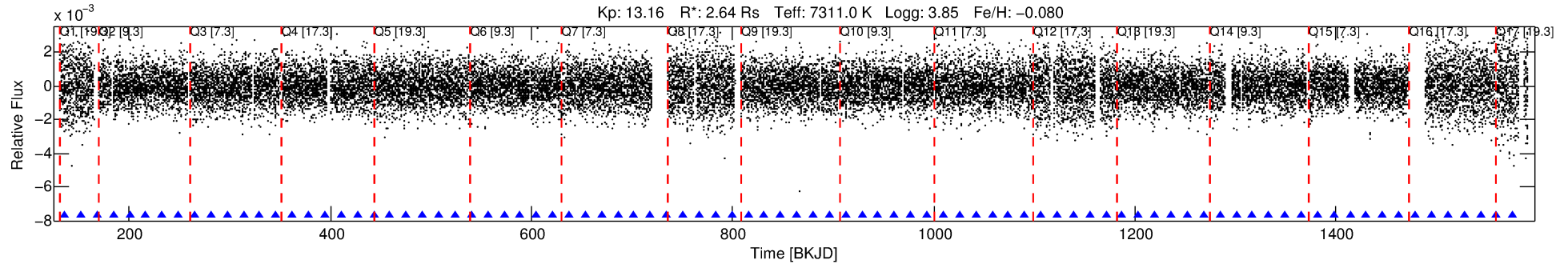
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008311110-02

No Significant Match Found

DV One-Page Summary

KIC: 8311110 Candidate: 2 of 3 Period: 16.180 d



DV Fit Results:

Period = 16.17978 [0.00024] d
Epoch = 135.8117 [0.0118] BKJD
Rp/R* = 0.0209 [0.0075]
a/R* = 12.98 [28.29]
b = 0.81 [0.91]
Seff = 770.73 [487.03]
Teq = 1344 [212] K
Rp = 6.03 [3.31] Re
a = 0.1523 [0.0583] AU
Ag = 92.21 [87.71] [1.04 σ]
Teffp = 6437 [1237] K [4.06 σ]

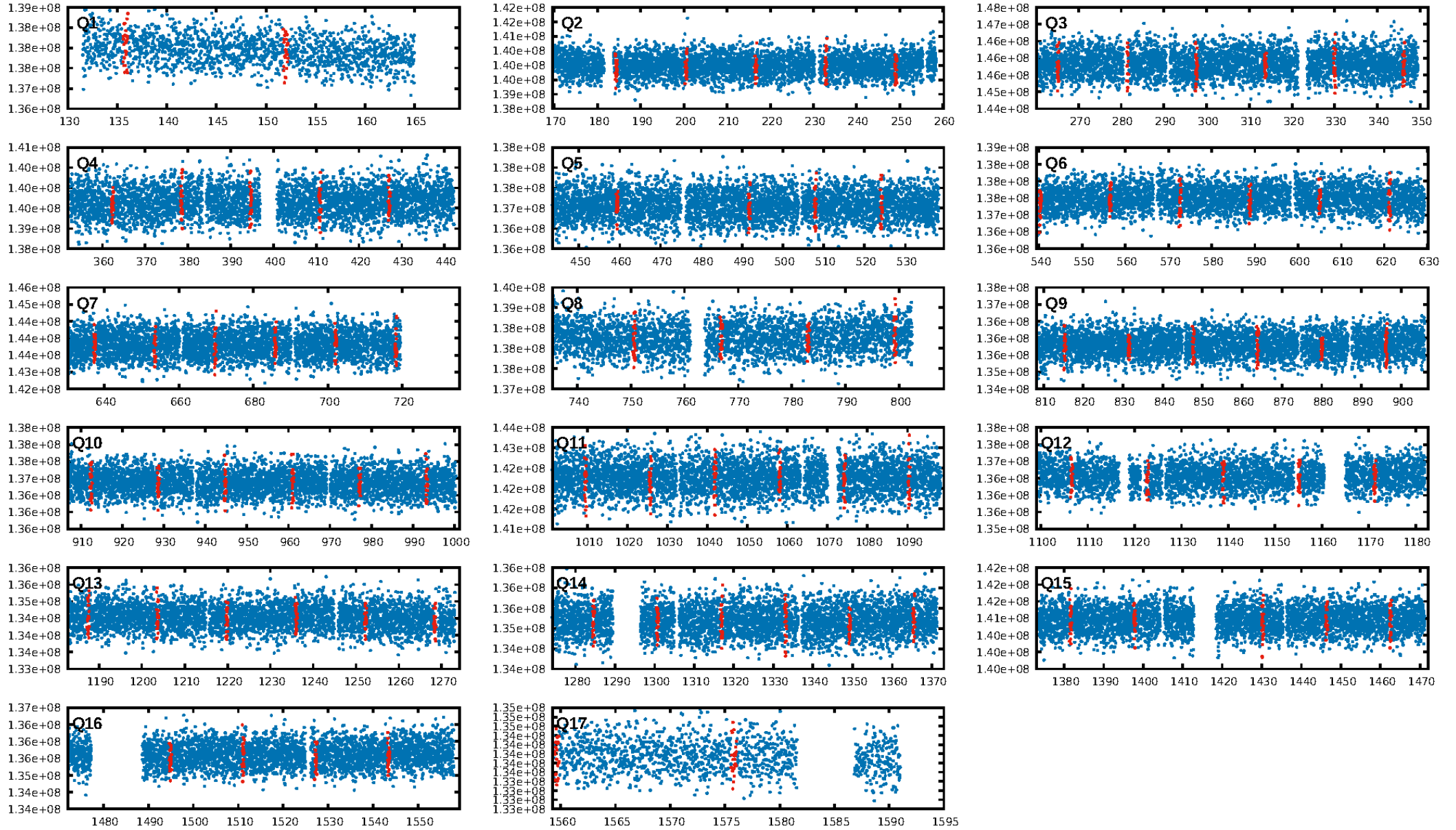
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [41.42 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 94.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.09e-23
RollingBand-fgt: 1.00 [52/52]
GhostDiagnostic-chr: 1.981
Centroid-sig: 53.1%
Centroid-so: 0.040 arcsec [0.36 σ]
OotOffset-rm: 0.037 arcsec [0.35 σ]
KicOffset-rm: 0.103 arcsec [1.02 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

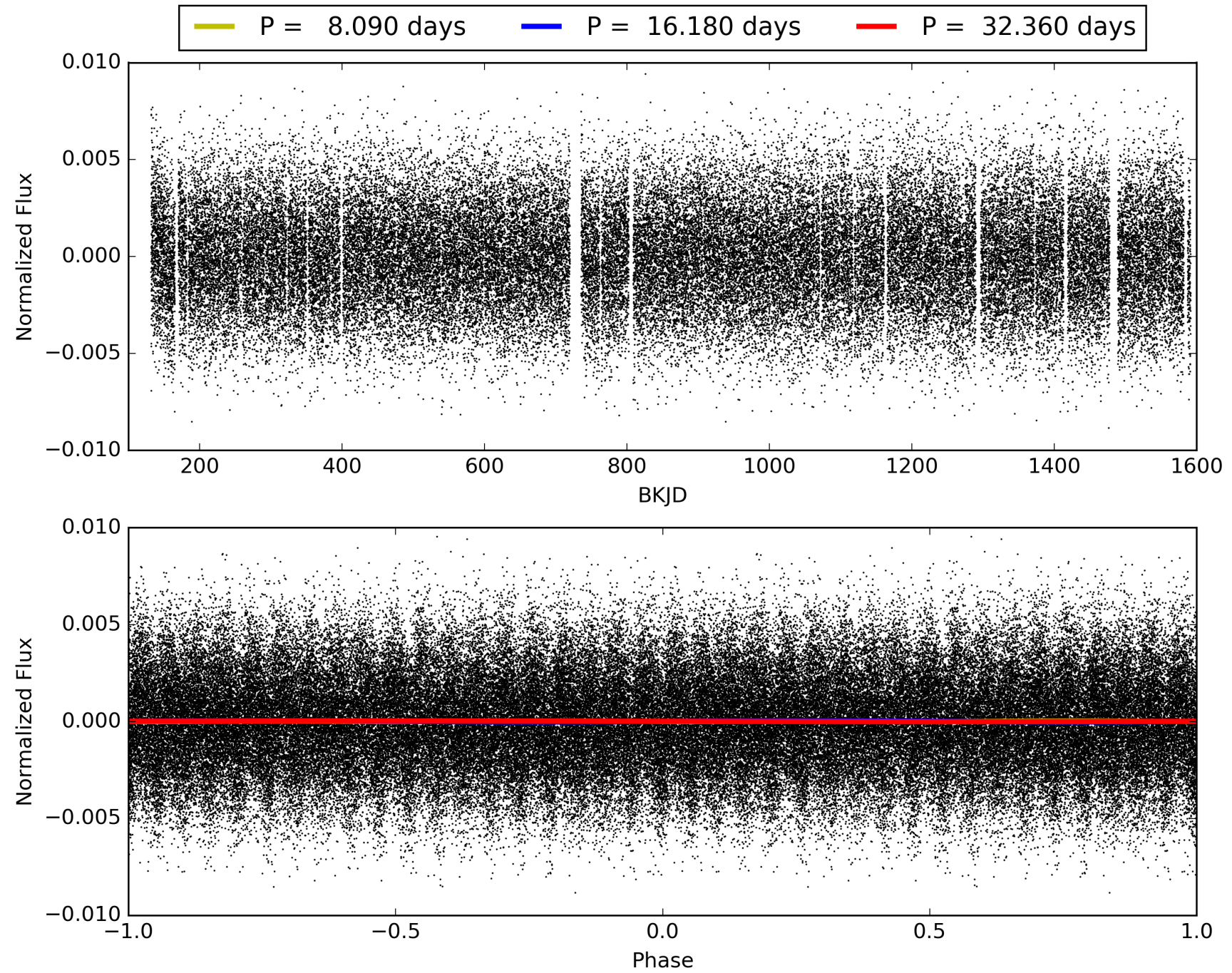
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:49:45 Z

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

TCE 008311110-02, PDC Light Curves

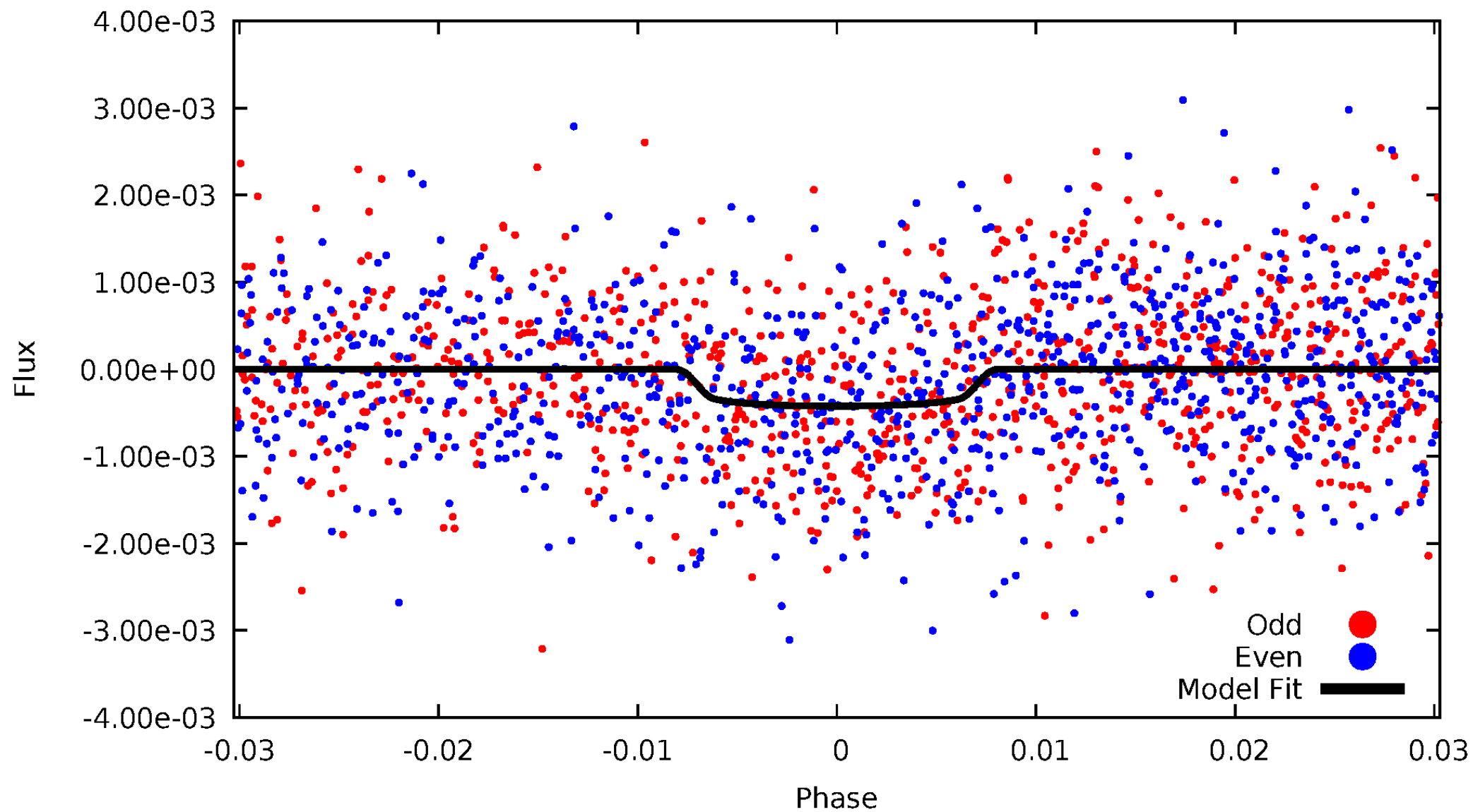


TCE 008311110-02



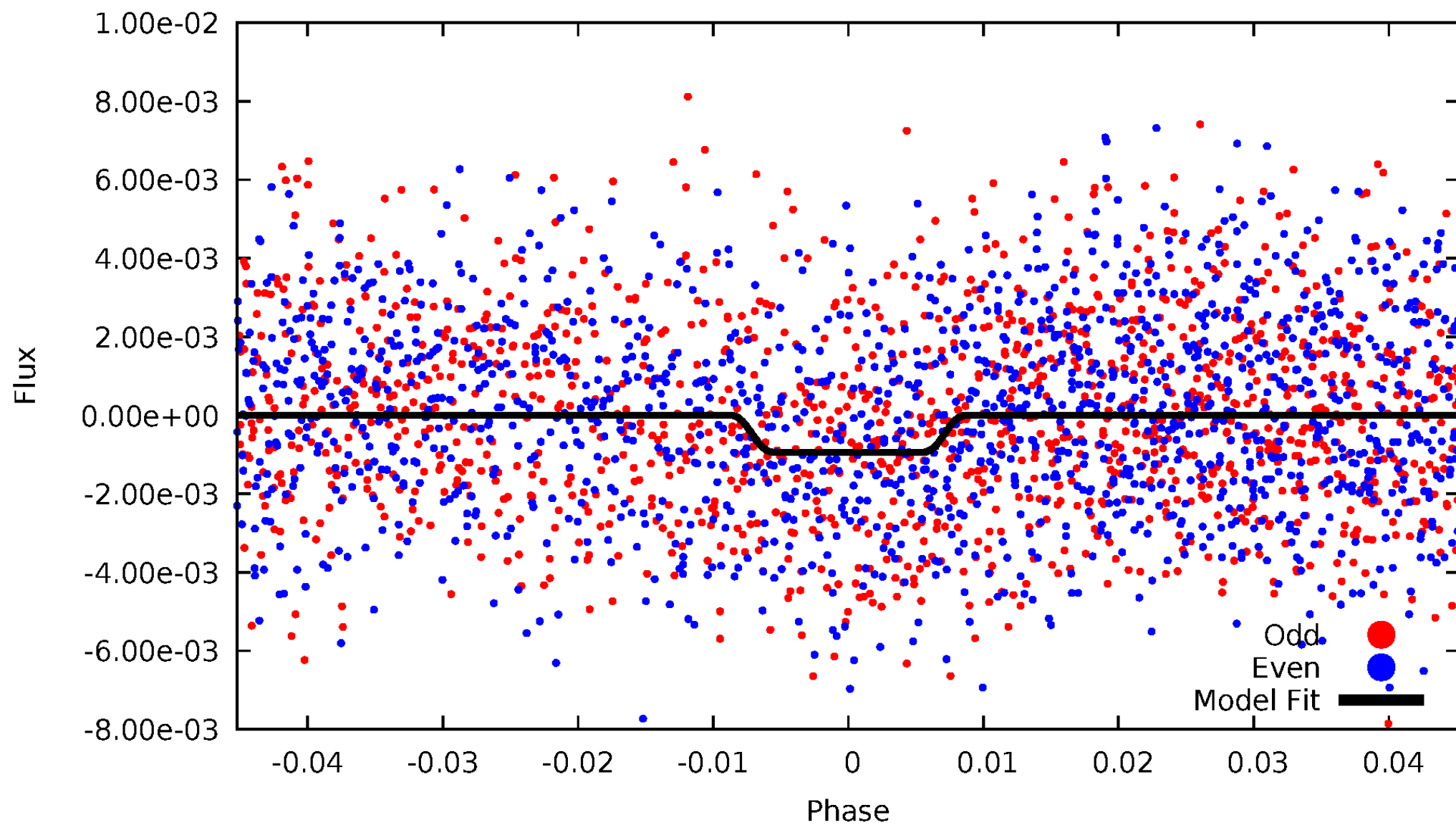
DV Odd/Even

TCE 008311110-02



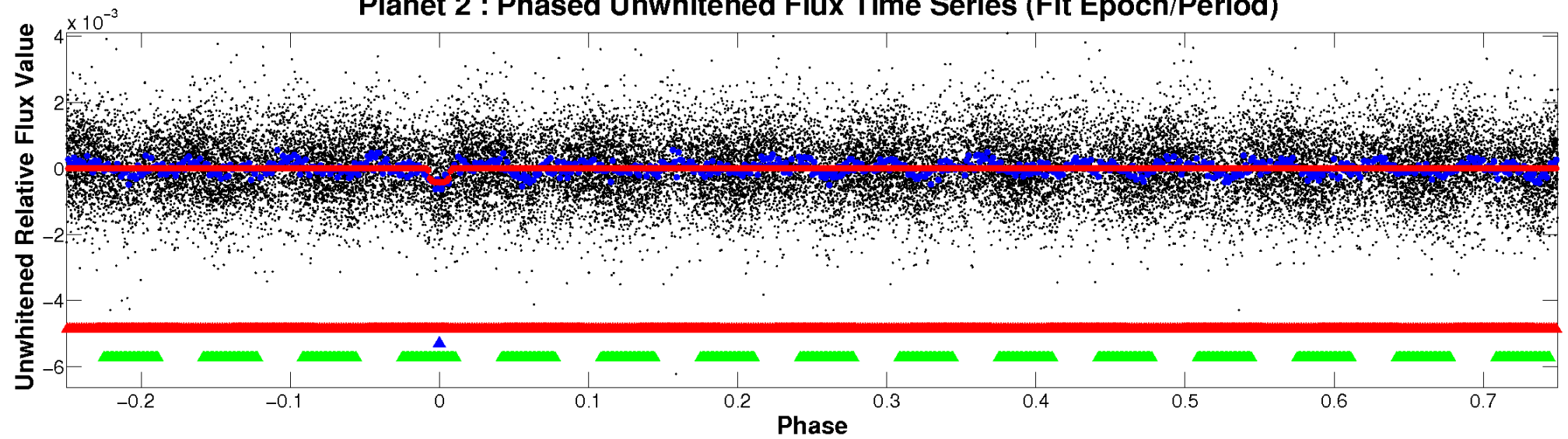
ALT Odd/Even

TCE 008311110-02

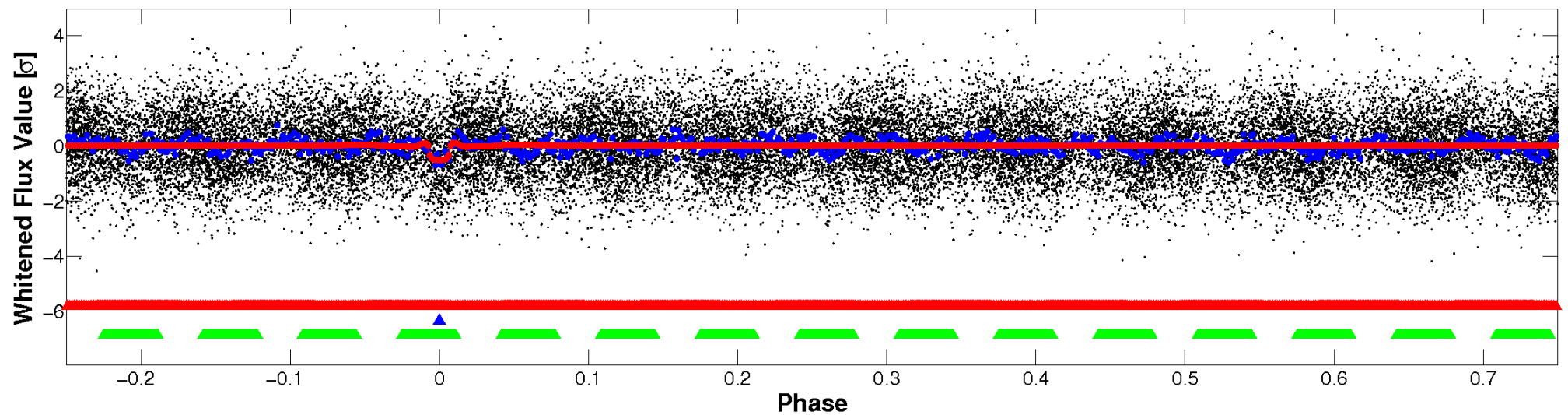


Non-Whitened Vs. Whitened Light Curve

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

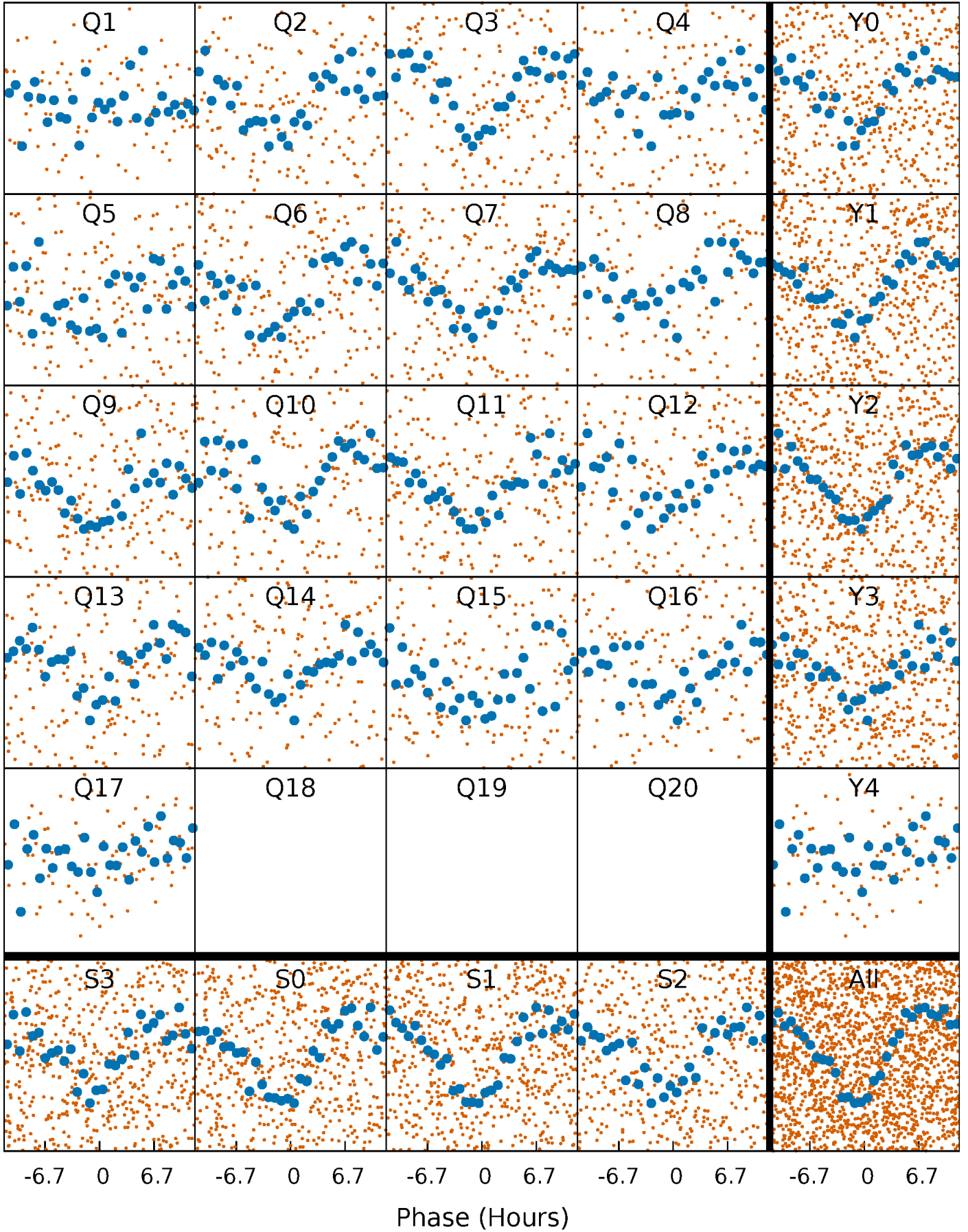


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



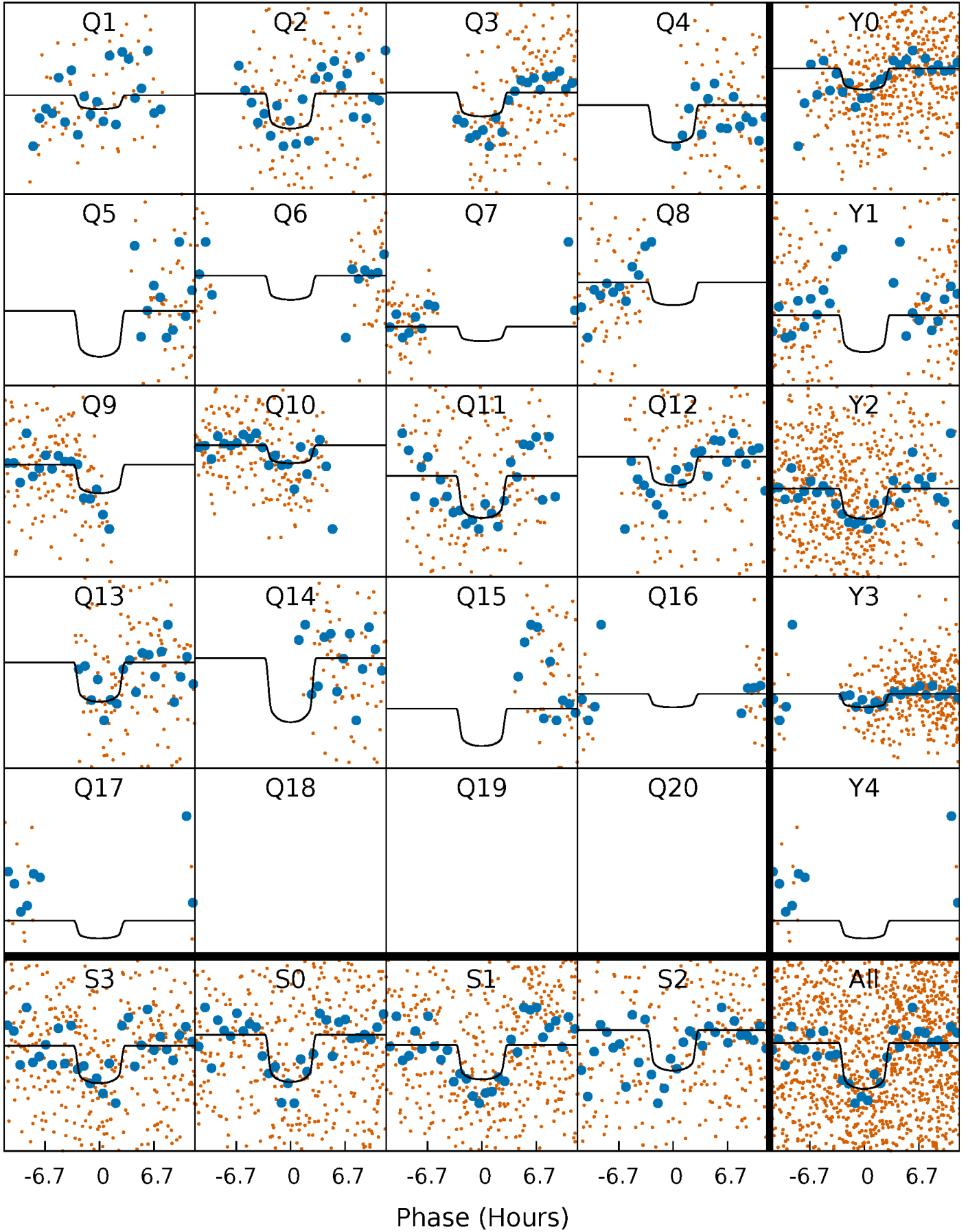
PDC Quarter-Phased Transit Curves

TCE 008311110-02 P= 16.179784 Days $T_0=135.811659$ (BKJD)



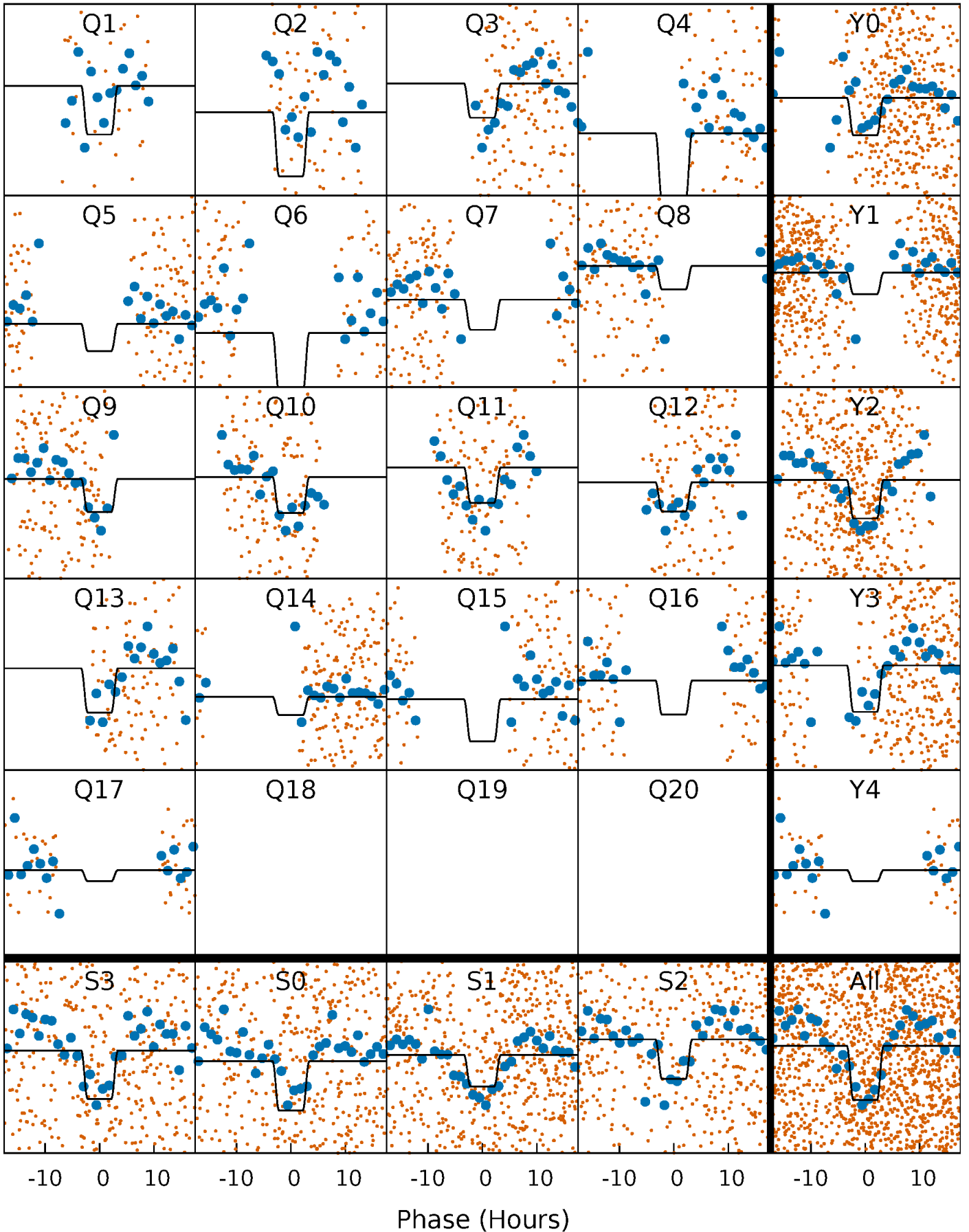
DV Quarter-Phased Transit Curves

TCE 008311110-02 P= 16.179784 Days $T_0=135.811659$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

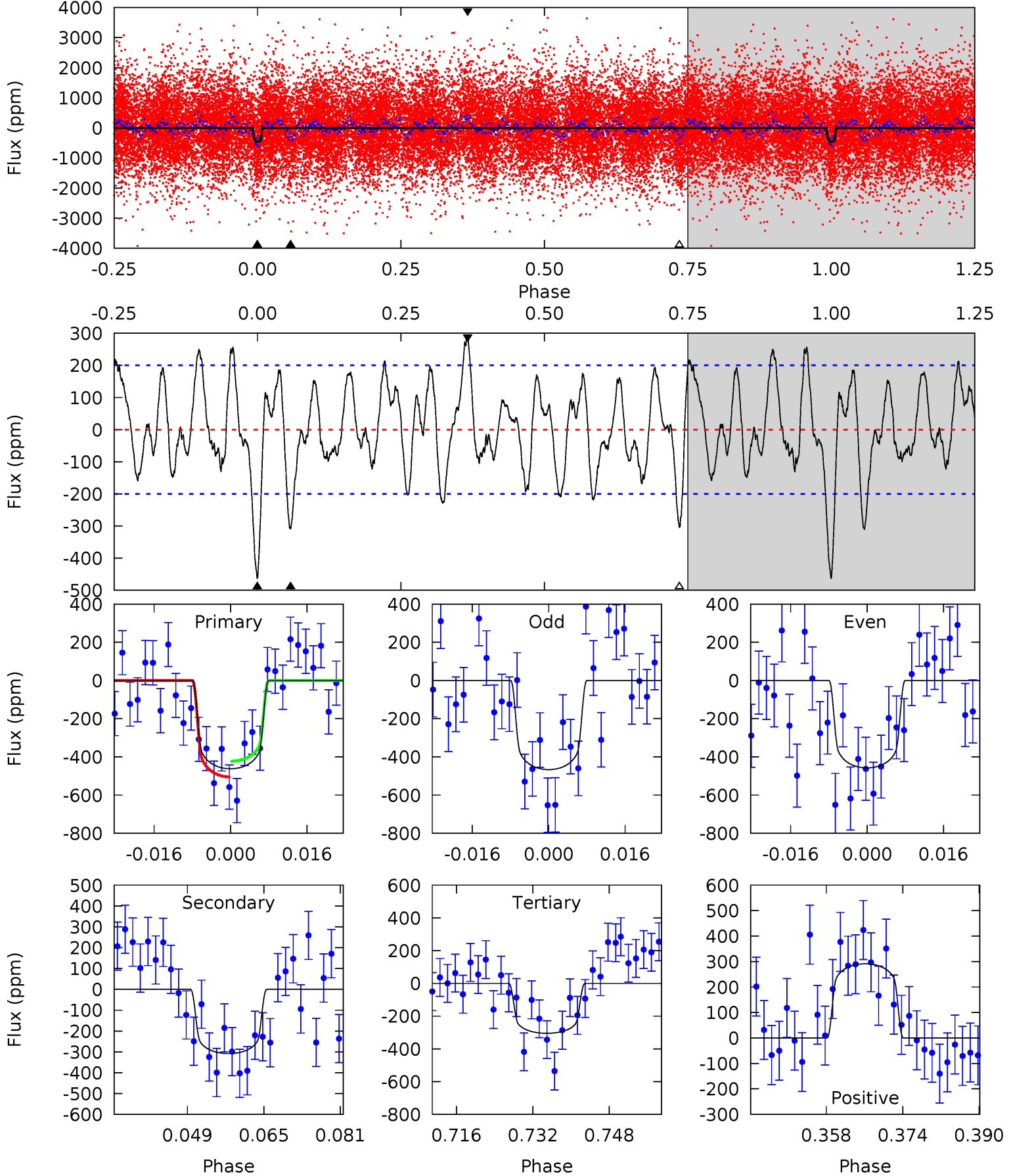
TCE 008311110-02 P= 16.180492 Days $T_0=135.740035$ (BKJD)



DV Model-Shift Uniqueness Test

008311110-02, P = 16.179784 Days, E = 119.631875 Days

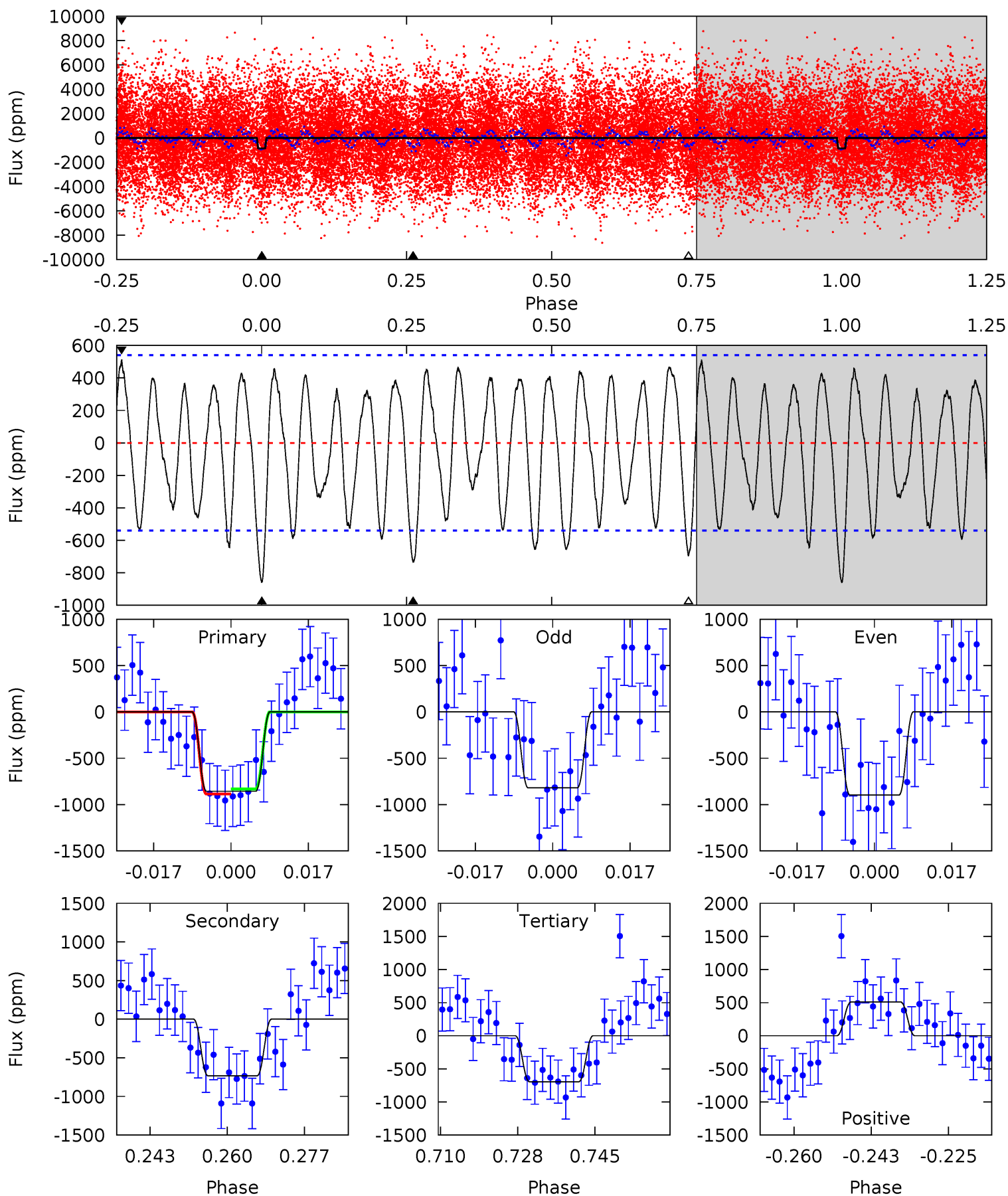
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	7.60	7.51	7.17	4.93	2.40	2.83	3.88	4.21	0.08	0.42	0.11	0.88	0.39	1.02



Alt Model-Shift Uniqueness Test

008311110-02, P = 16.180492 Days, E = 119.559543 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.80	6.67	6.32	4.65	4.92	2.38	2.94	1.48	3.15	0.34	2.02	0.35	0.88	0.37	0.25



Stellar Parameters For KIC 008311110

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7311^{+232}_{-377}	$3.849^{+0.345}_{-0.115}$	$-0.080^{+0.250}_{-0.350}$	$2.643^{+0.469}_{-1.095}$	$1.797^{+0.184}_{-0.430}$	$0.137^{+0.372}_{-0.049}$
	+3%/-5%	+9%/-3%	+312%/-438%	+18%/-41%	+10%/-24%	+271%/-36%
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 008311110-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-308 ± 41	$5.67^{+2.25}_{-2.27}$	1836^{+136}_{-187}	6546^{+2080}_{-946}	121^{+213}_{-58}
Alt.	-732 ± 110	$8.16^{+2.76}_{-2.37}$	1824^{+150}_{-194}	6741^{+1236}_{-789}	138^{+128}_{-62}

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

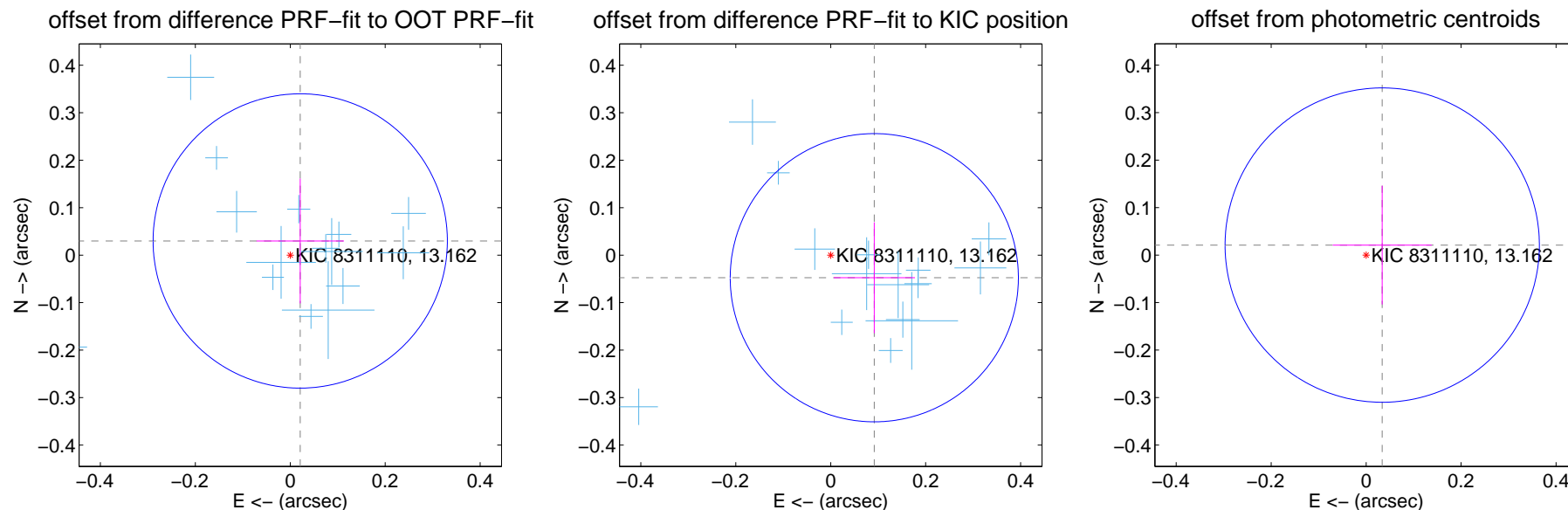
DV Centroid Data

Supplemental centroid analysis for 008311110-02. Kepler magnitude: 13.16. Transit SNR 9.68

There are 17 quarters with good PRF difference image offsets

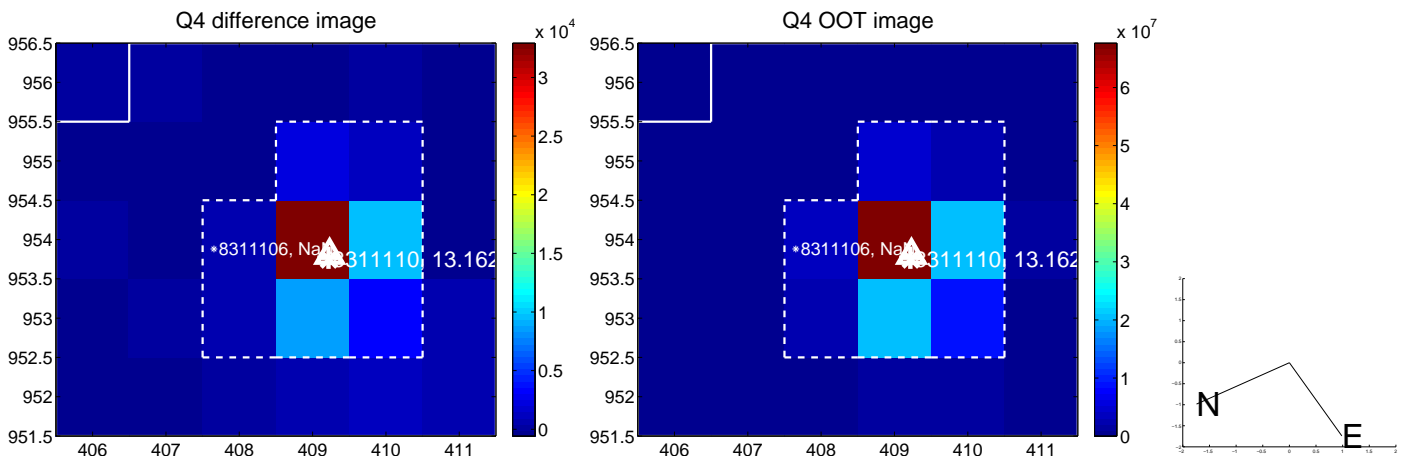
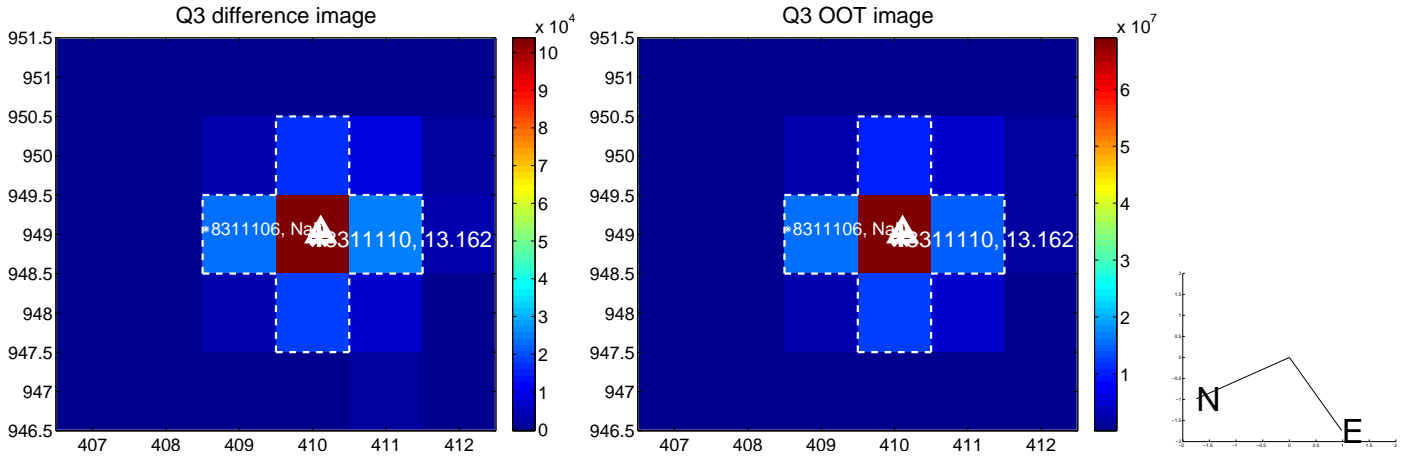
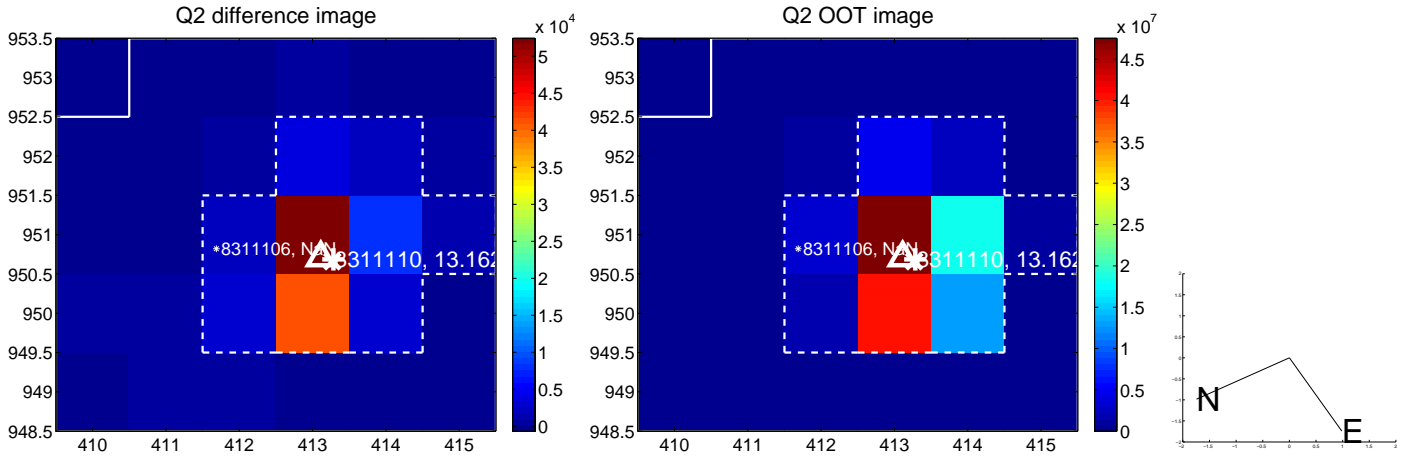
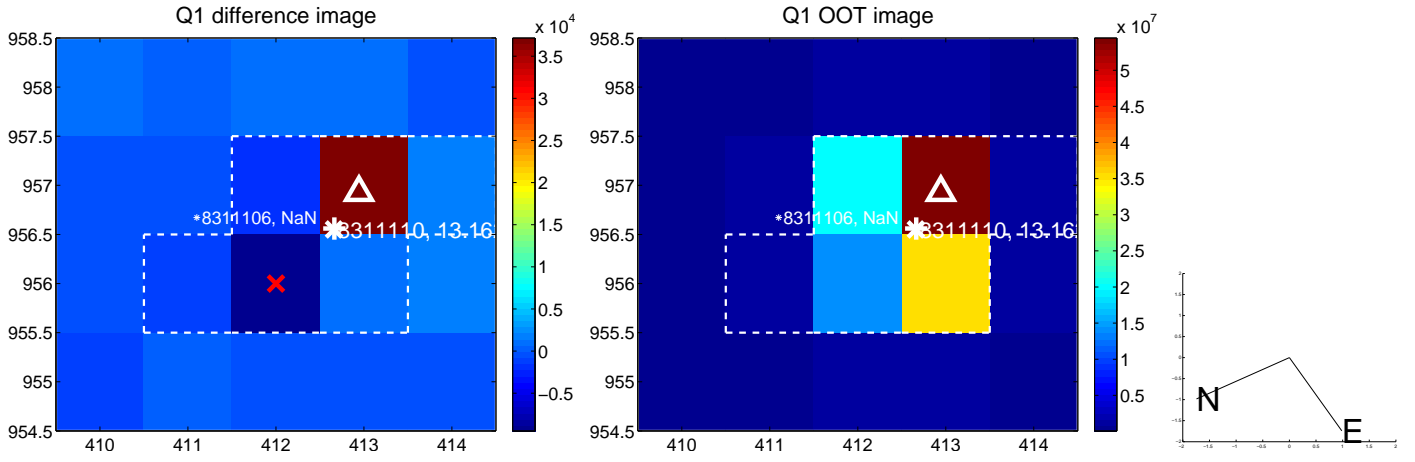
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.037 ± 0.103	0.35	-0.021 ± 0.092	0.030 ± 0.131
PRF-fit source offset from KIC position	0.103 ± 0.101	1.02	-0.092 ± 0.086	-0.048 ± 0.117
photometric centroid source offset	0.04 ± 0.11	0.36	-0.03 ± 0.10	0.02 ± 0.12

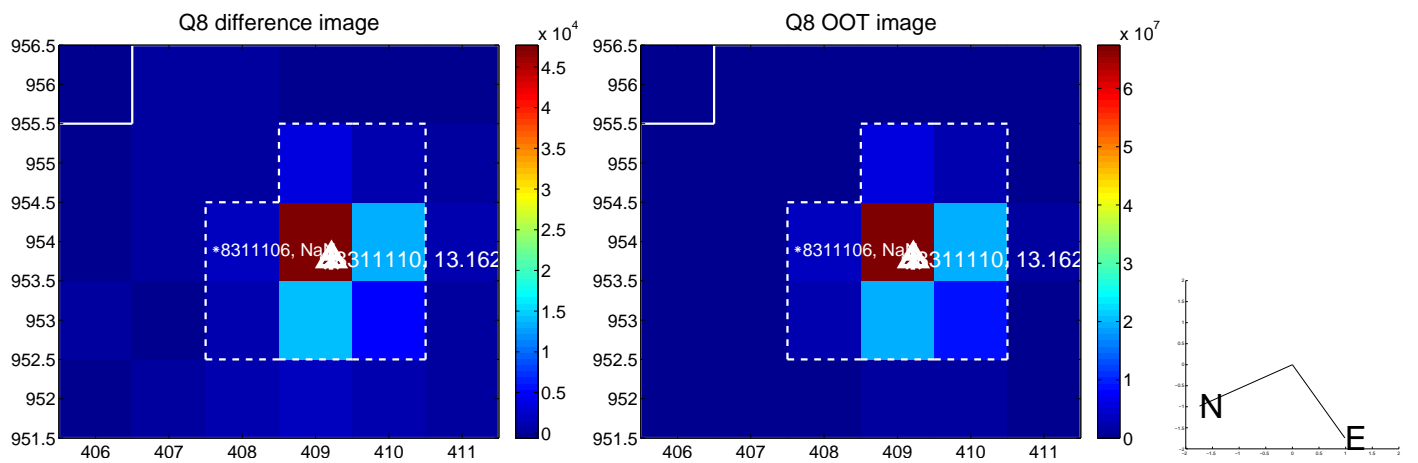
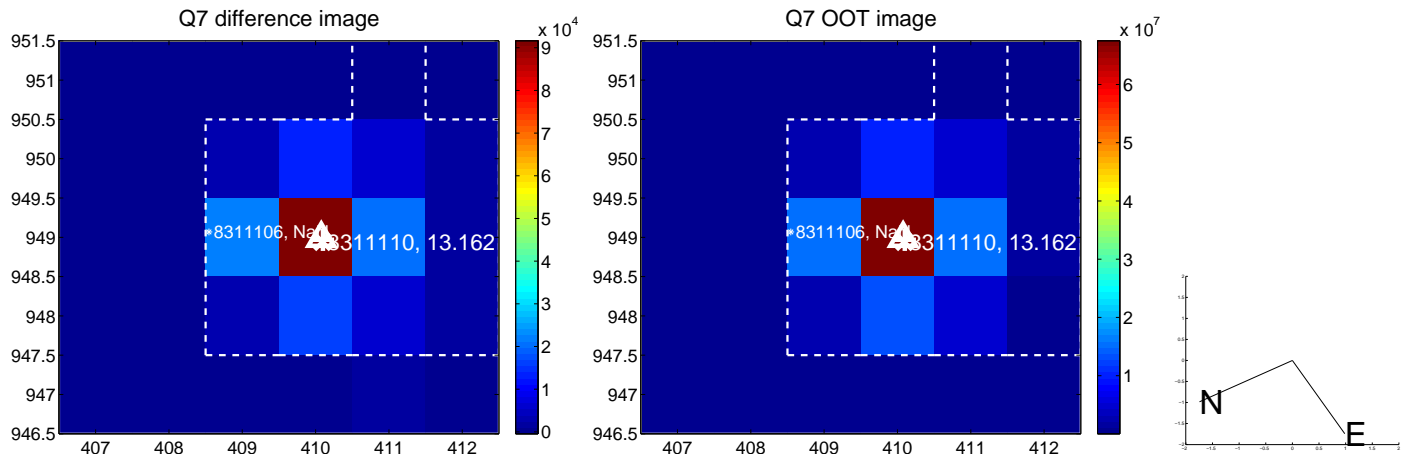
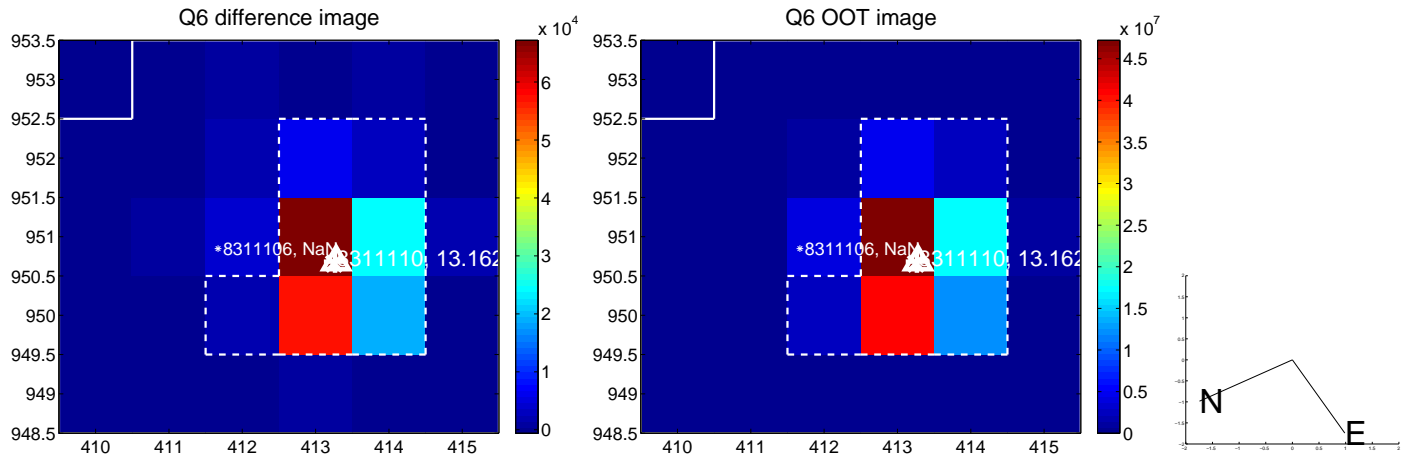
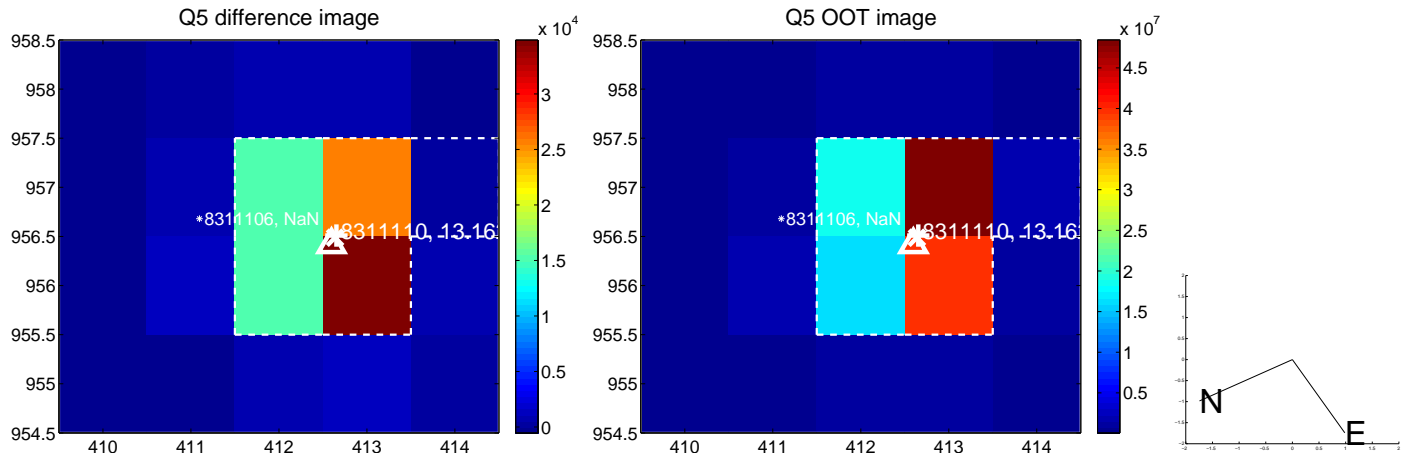


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

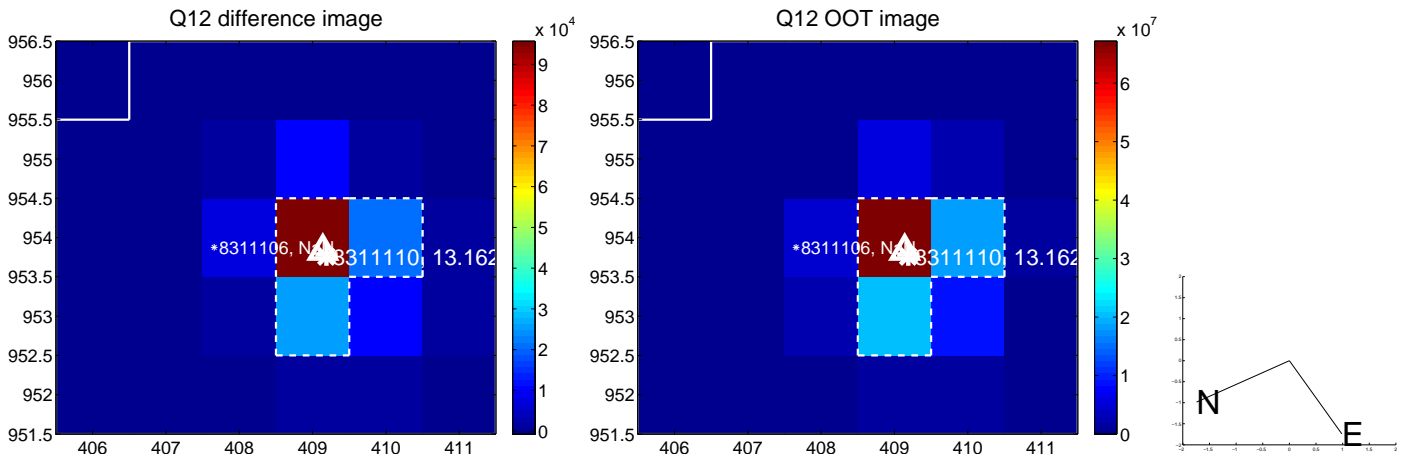
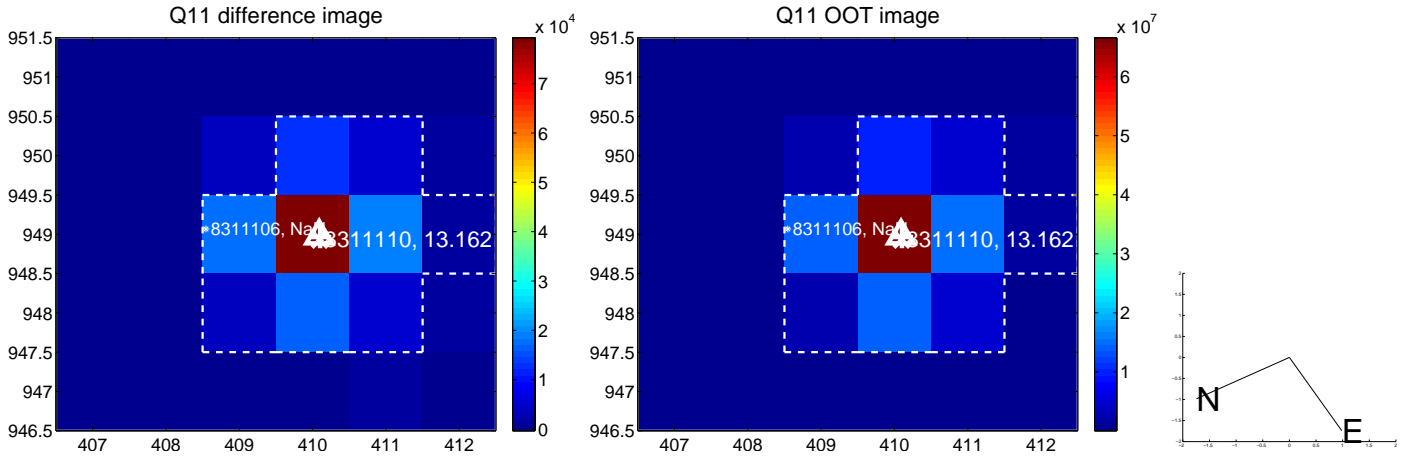
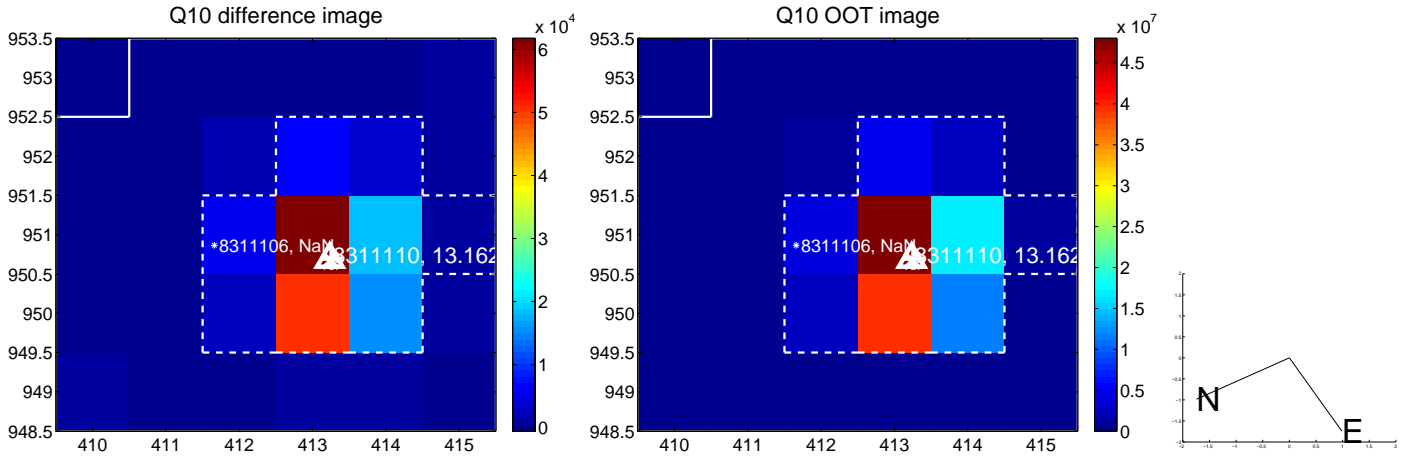
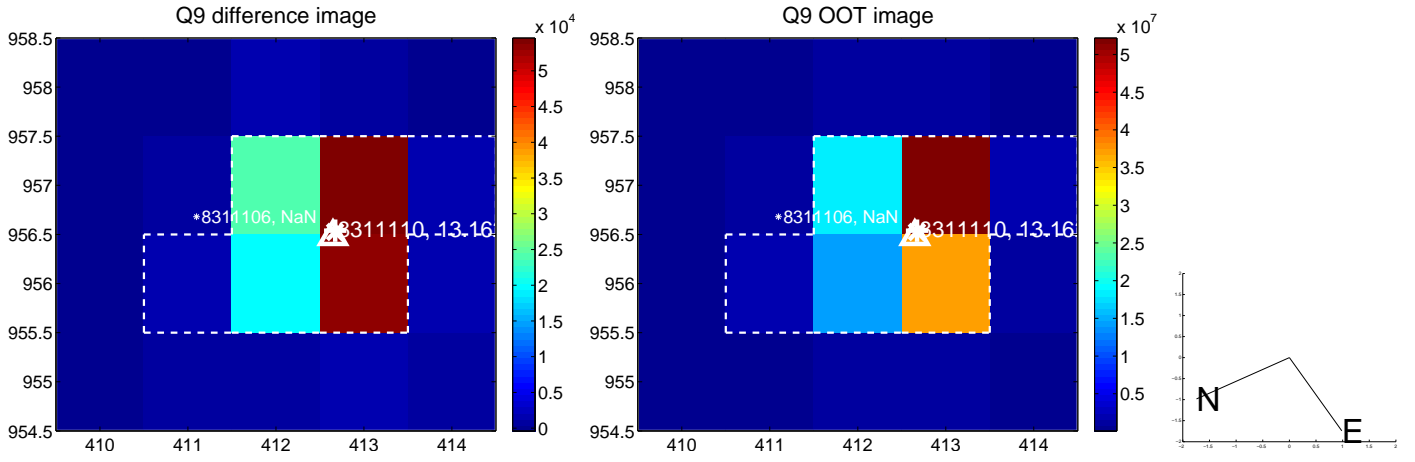
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



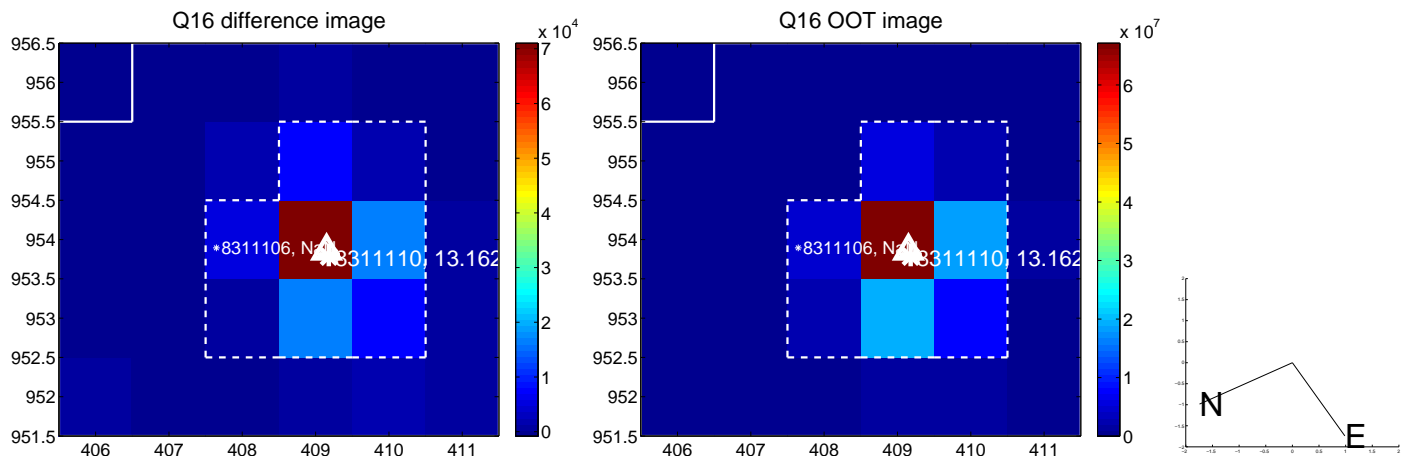
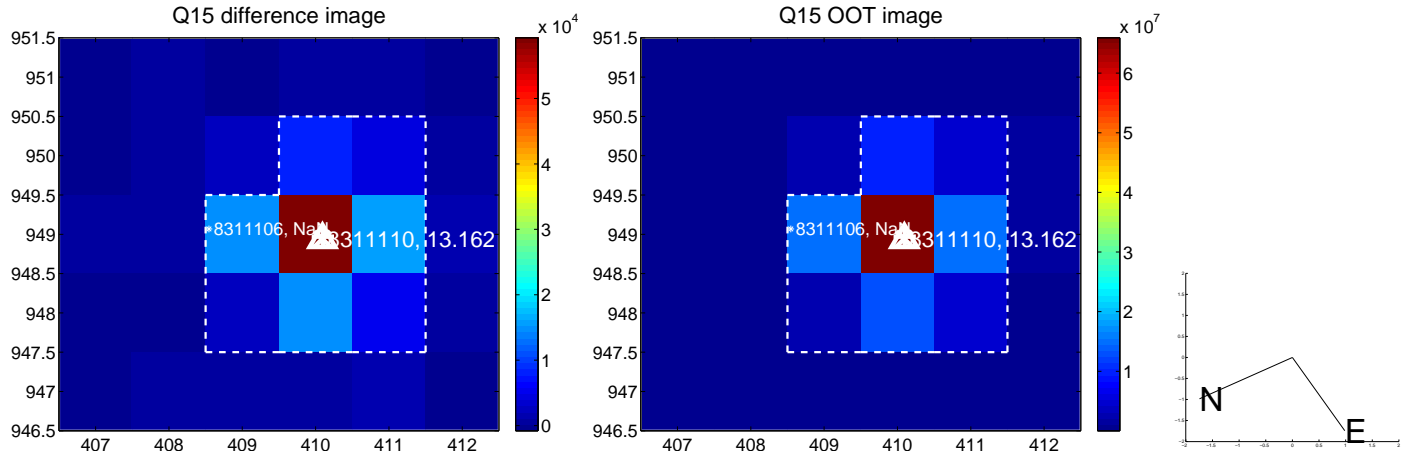
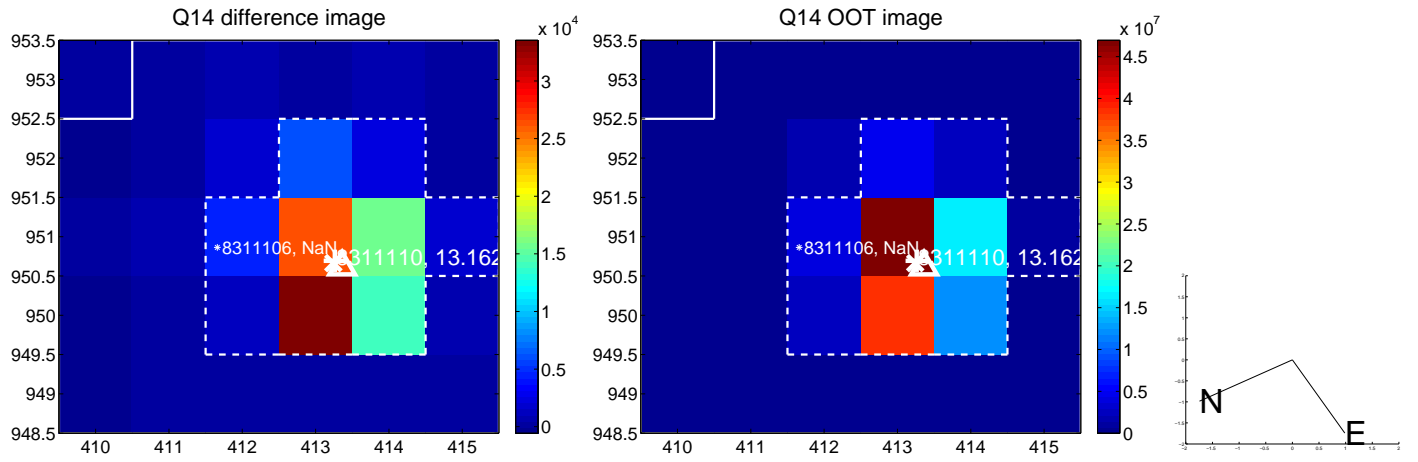
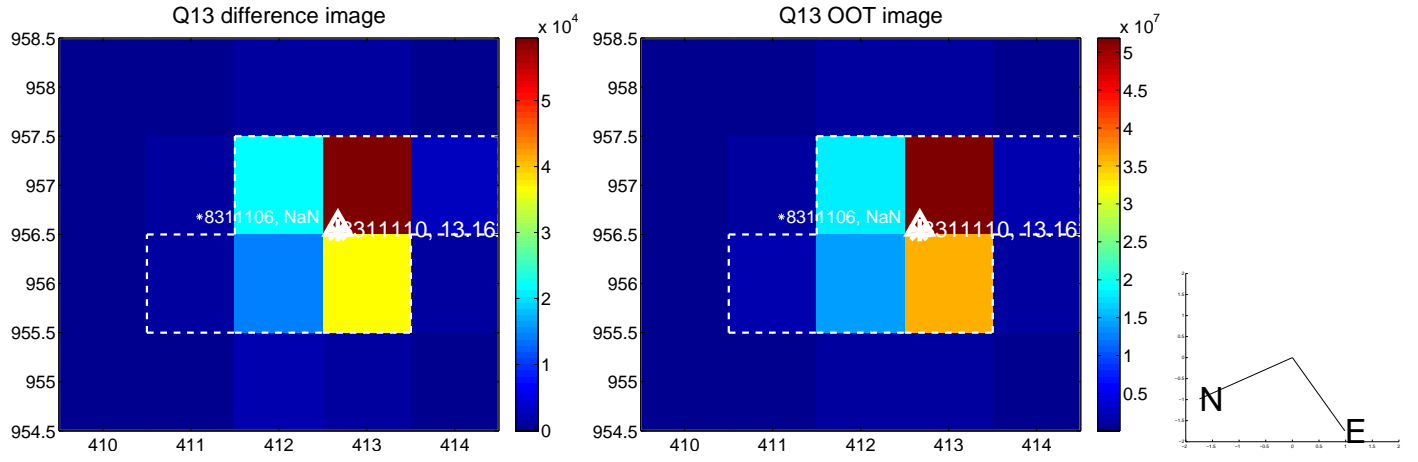
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



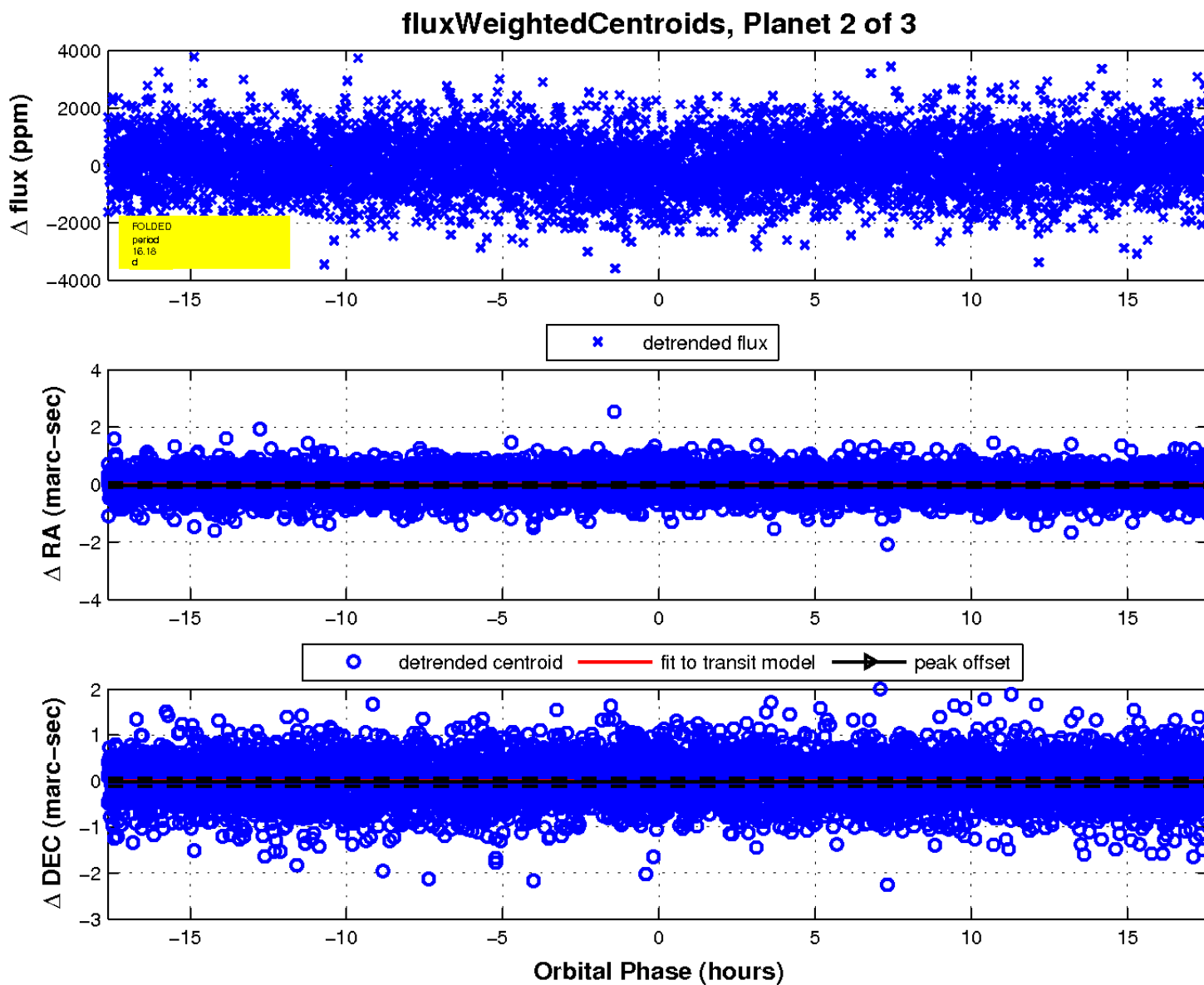
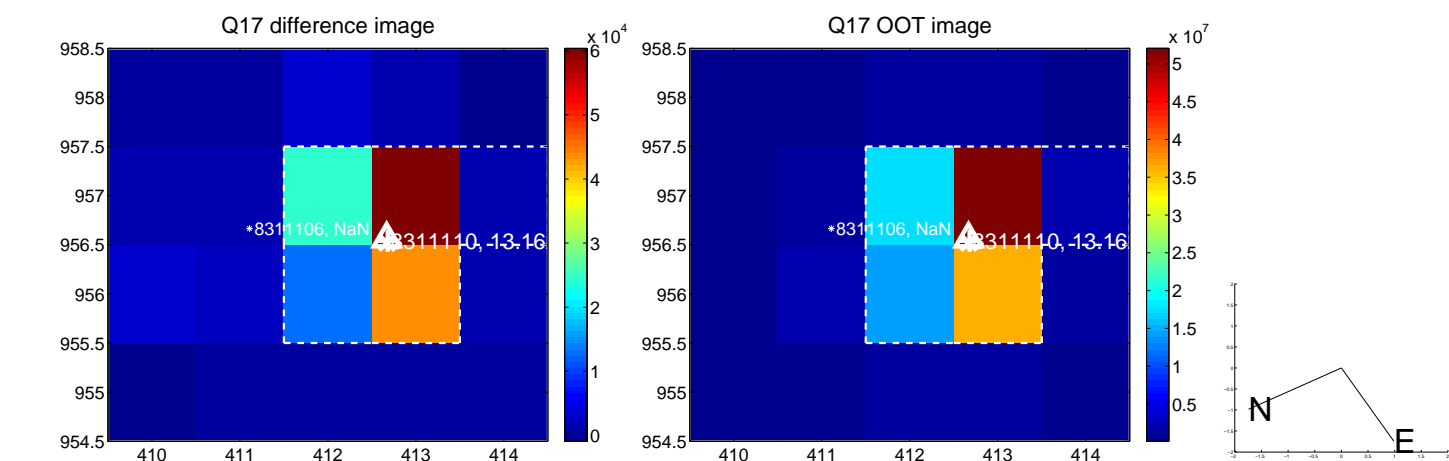
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



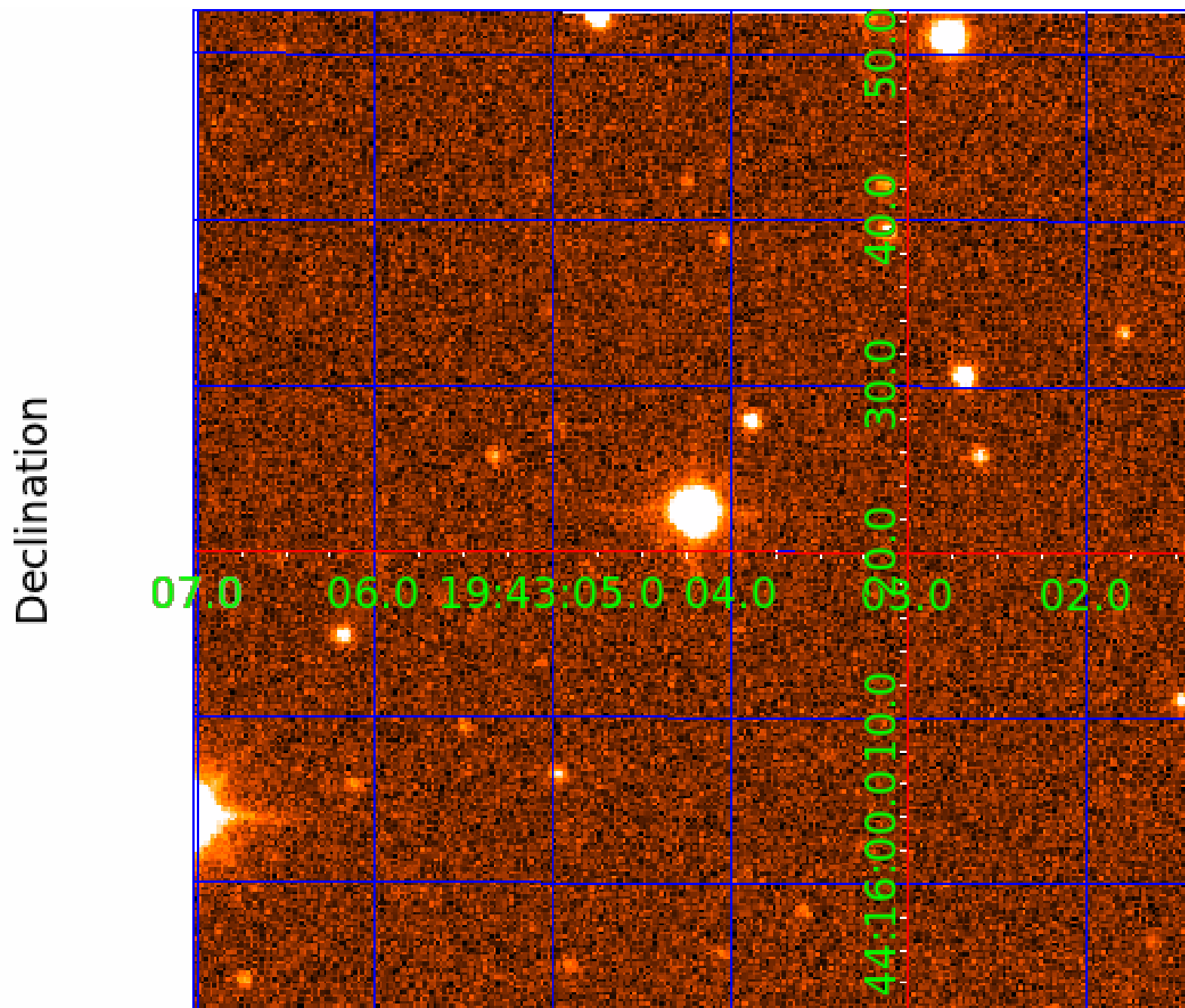
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008311110

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})
008311110-01	OBS	No	1.473253	132.103201	98.6	6.169	10.5	10.9	2.64	7311	3.07	18814.66
008311110-02	OBS	No	16.179784	135.811659	424.3	5.878	9.1	9.7	2.64	7311	6.03	770.73
008311110-03	OBS	No	1.079089	132.168601	125.0	5.830	8.3	9.8	2.64	7311	3.53	28496.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008311110-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008311110-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008311110-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT

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

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

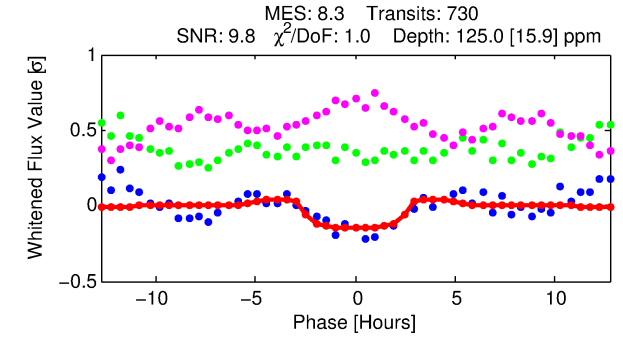
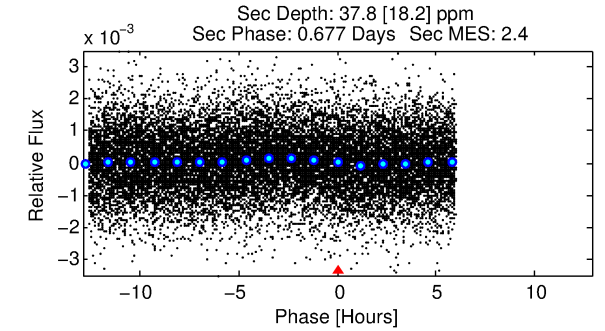
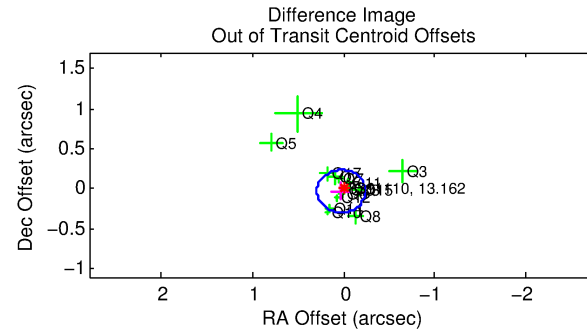
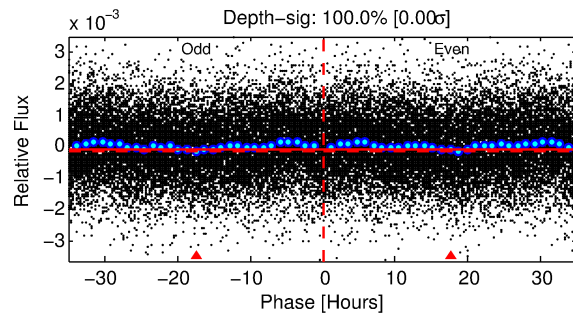
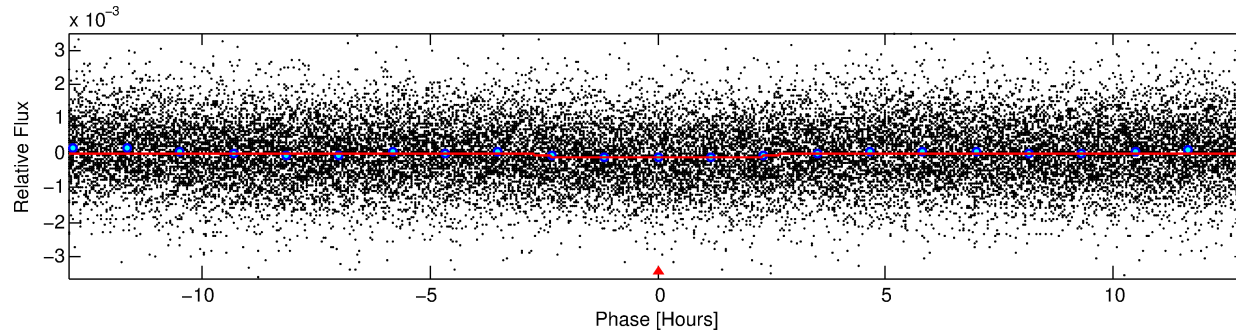
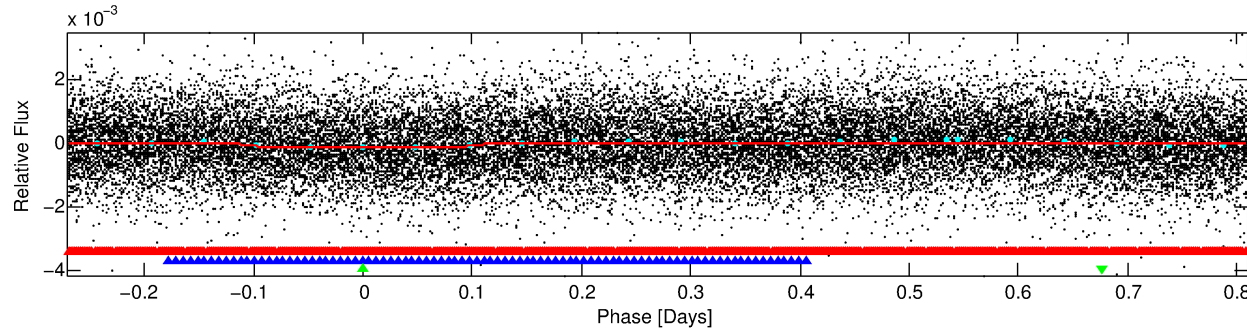
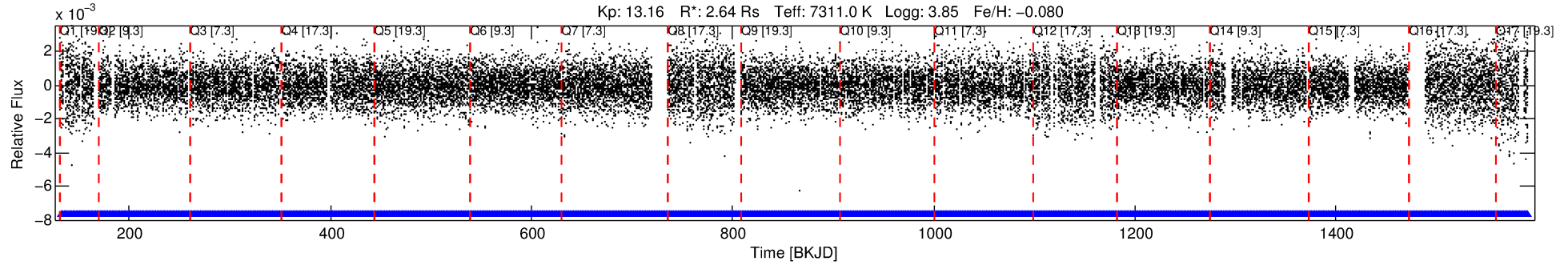
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008311110-03

No Significant Match Found

DV One-Page Summary

KIC: 8311110 Candidate: 3 of 3 Period: 1.079 d



DV Fit Results:

Period = 1.07909 [0.00002] d
Epoch = 132.1686 [0.0065] BKJD
Rp/R* = 0.0122 [0.0020]
a/R* = 1.11 [0.20]
b = 0.93 [0.14]
Seff = 28496.38 [18006.98]
Teq = 3313 [523] K
Rp = 3.53 [1.57] Re
a = 0.0250 [0.0096] AU
Ag = 1.05 [0.88] [0.06 σ]
Teffp = 5185 [803] K [1.95 σ]

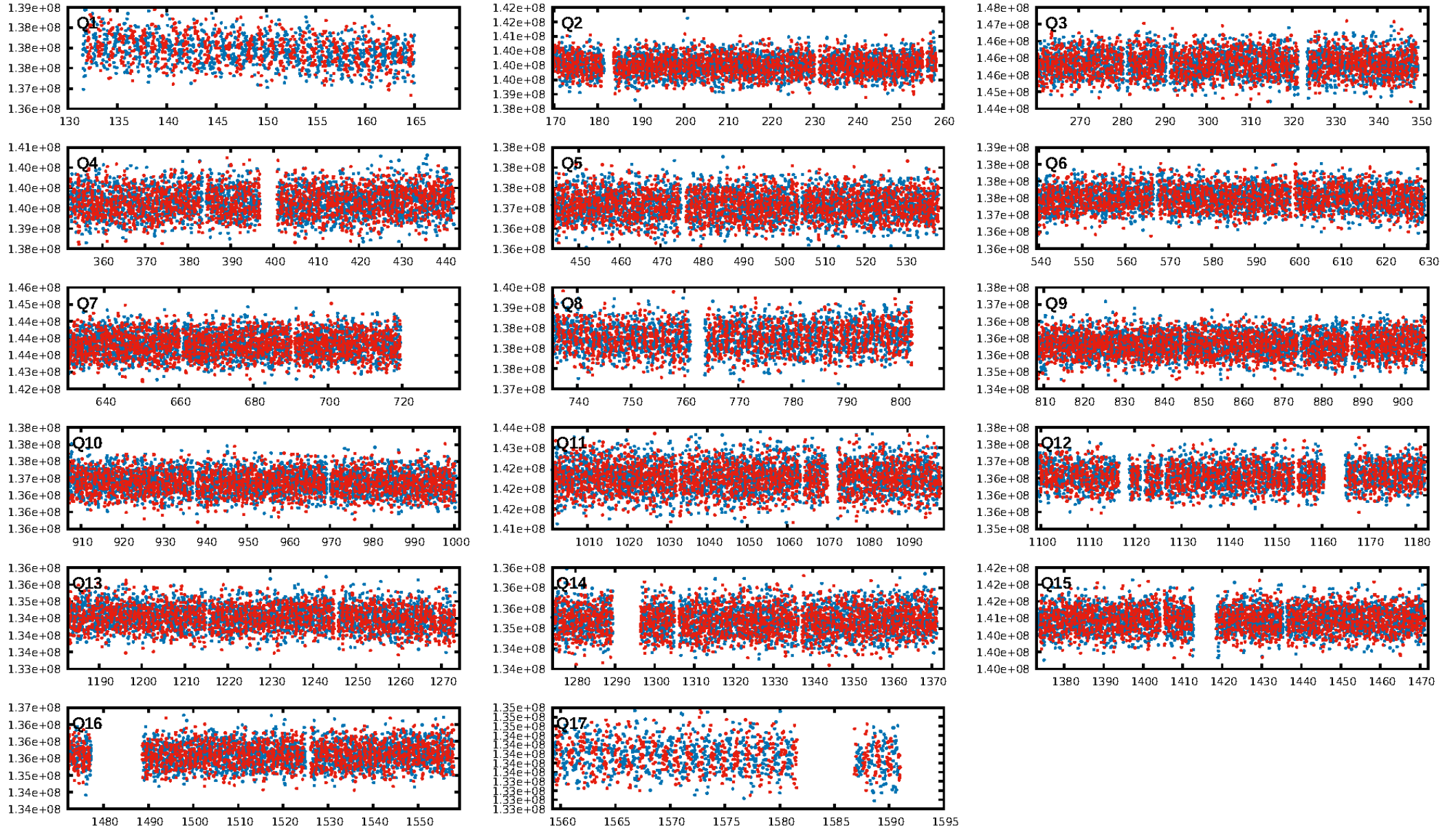
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 73.5% [1.11 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.02e-42
RollingBand-fgt: 1.00 [698/698]
GhostDiagnostic-chr: 1.903
Centroid-sig: 56.5%
Centroid-so: 0.043 arcsec [0.45 σ]
OotOffset-rm: 0.044 arcsec [0.49 σ]
KicOffset-rm: 0.106 arcsec [0.95 σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-st: 4/4/3/4 [15]
DiffImageQuality-fgm: 0.80 [12/15]
DiffImageOverlap-fno: 1.00 [17/17]

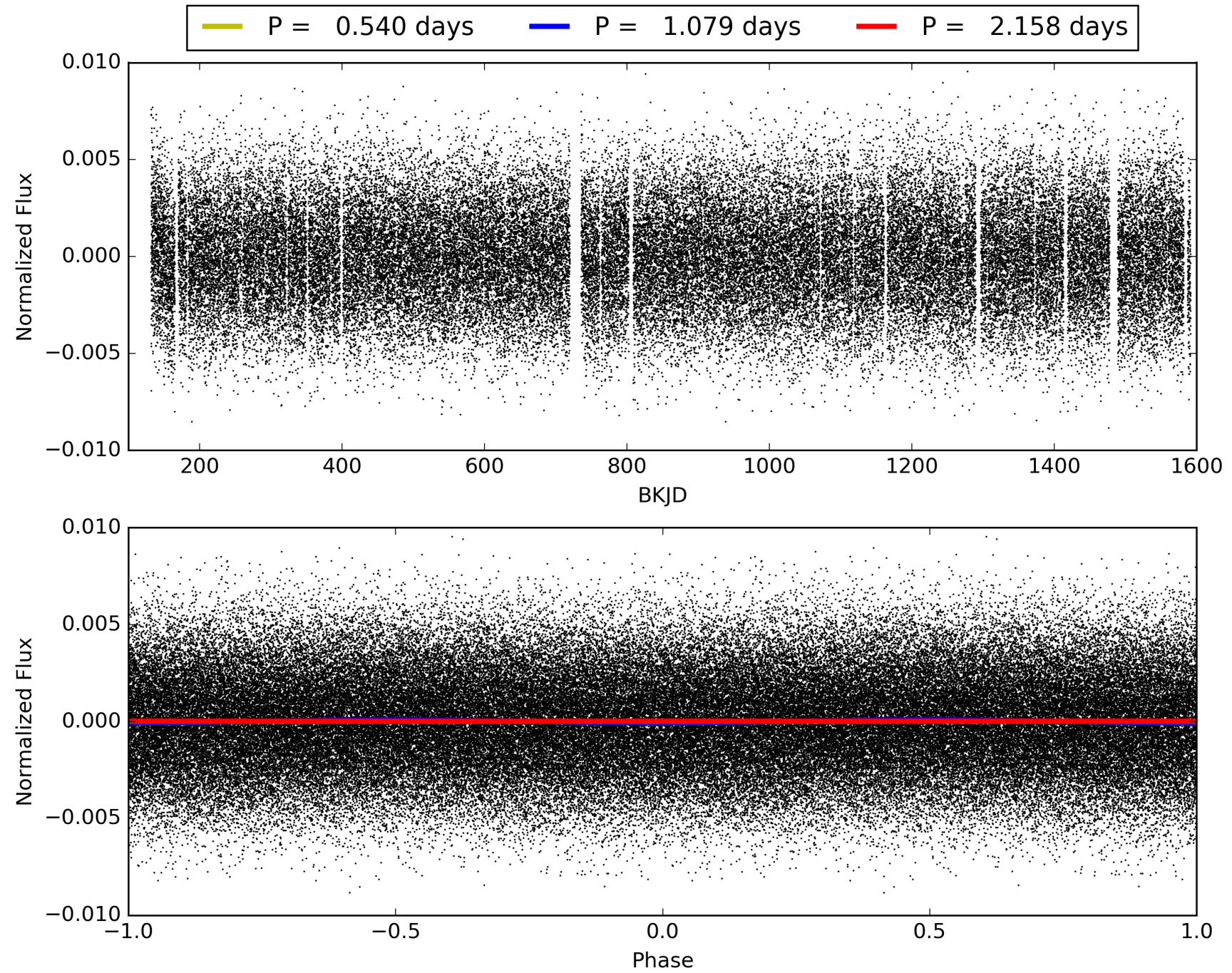
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:49:53 Z

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

TCE 008311110-03, PDC Light Curves

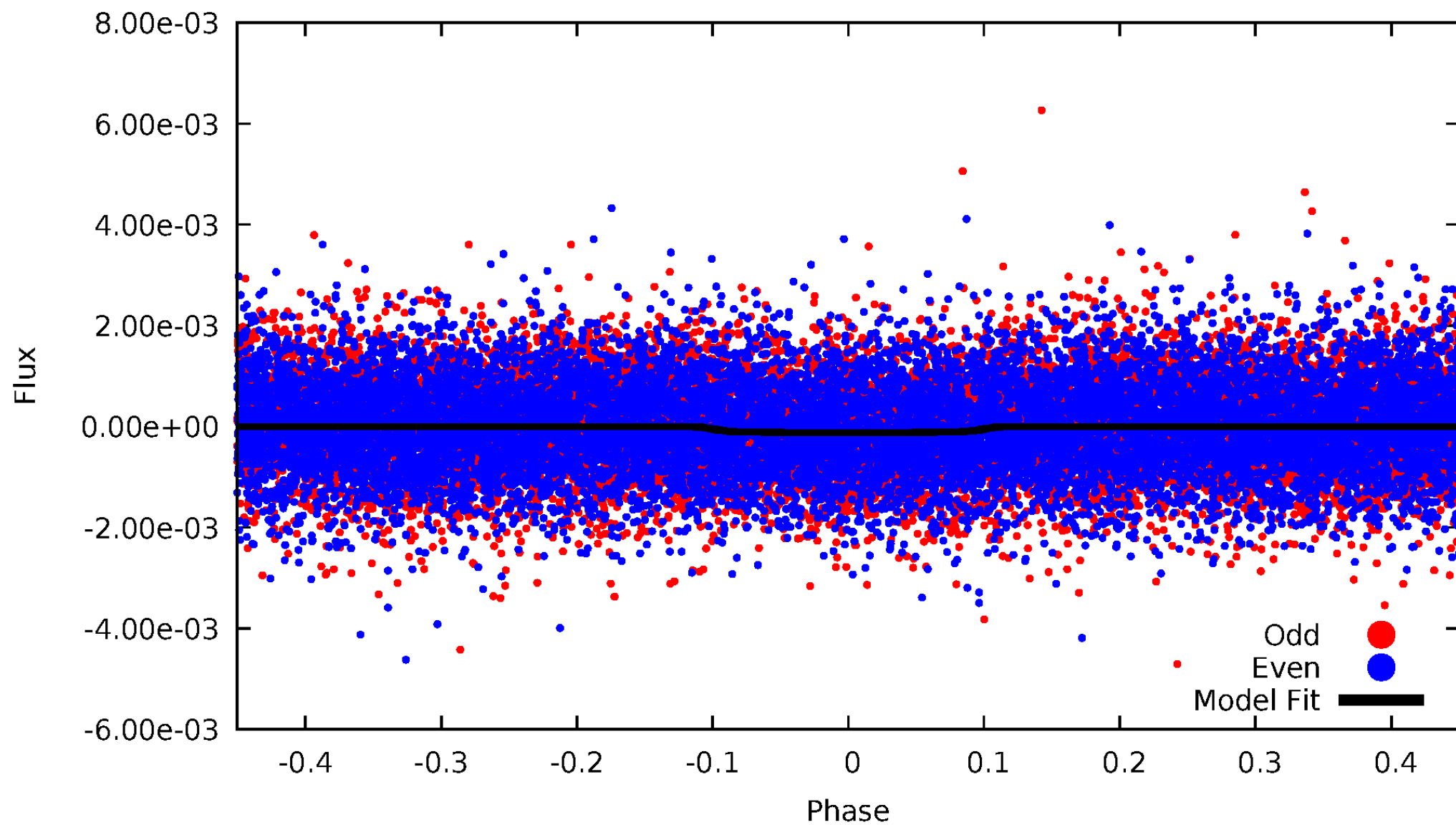


TCE 008311110-03



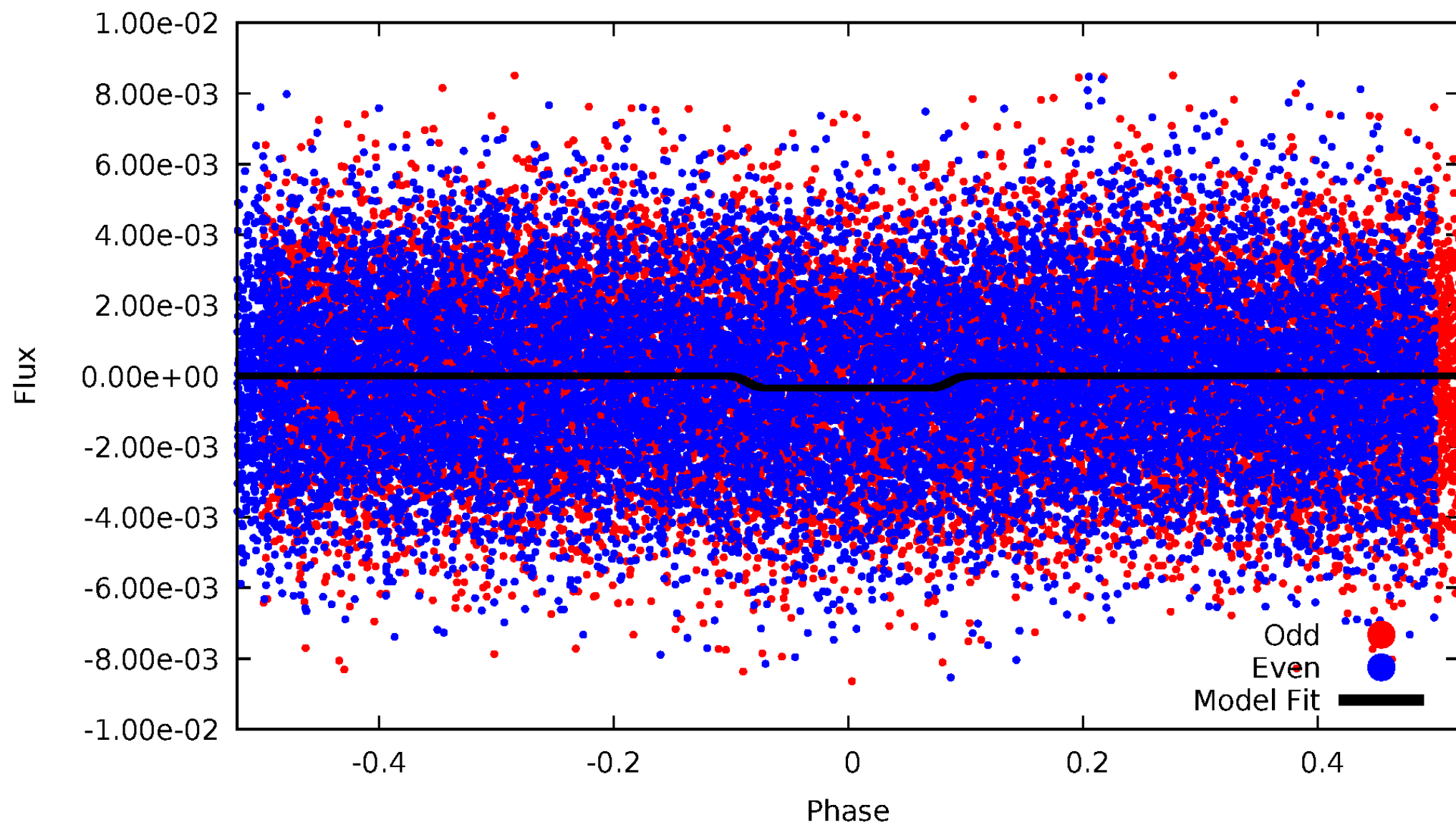
DV Odd/Even

TCE 008311110-03



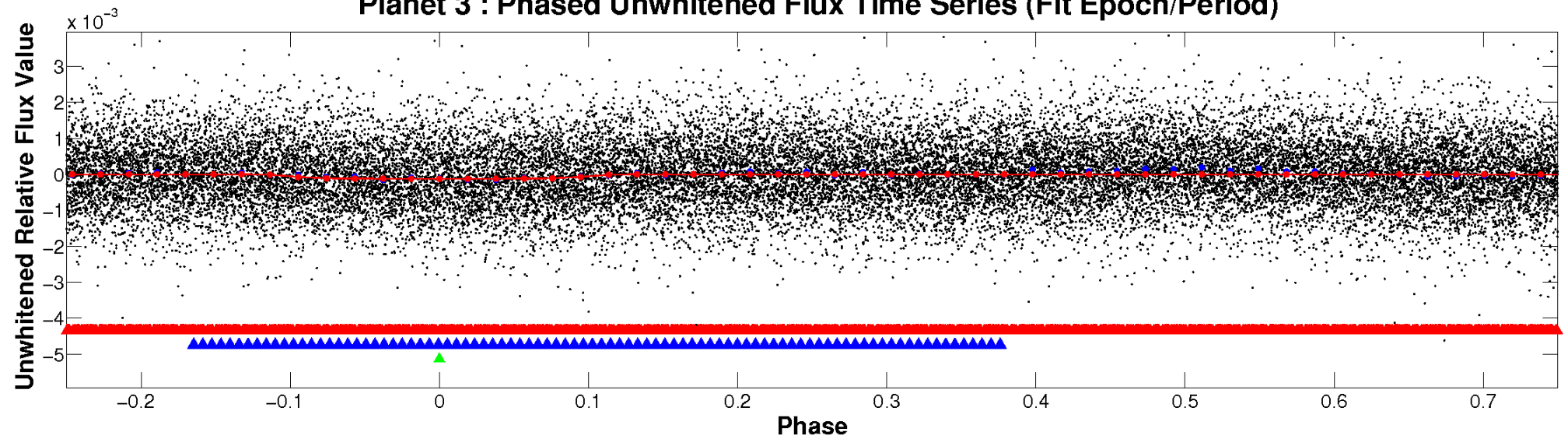
ALT Odd/Even

TCE 008311110-03

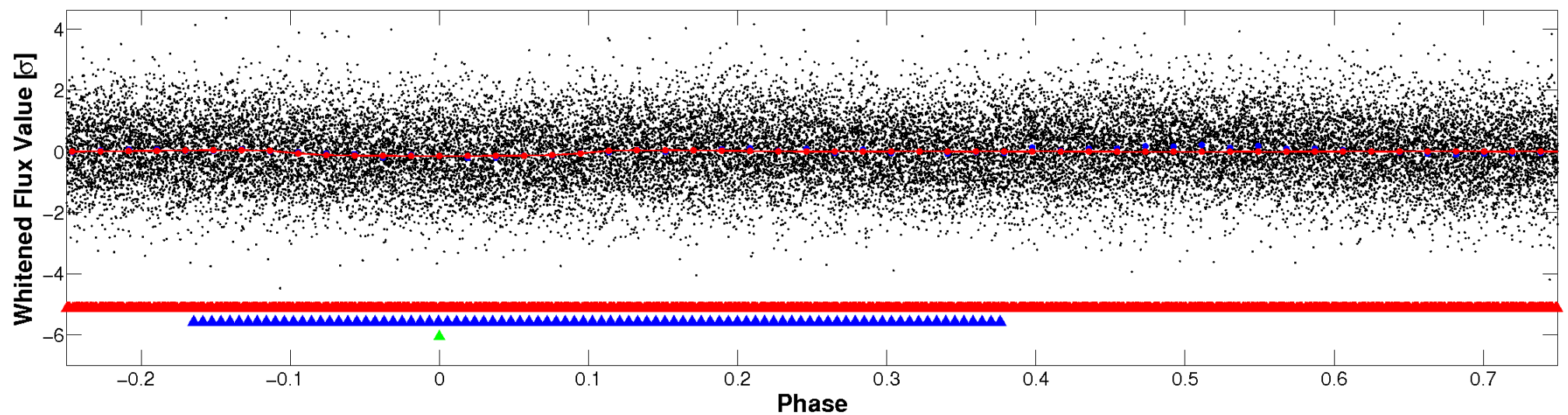


Non-Whitened Vs. Whitened Light Curve

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

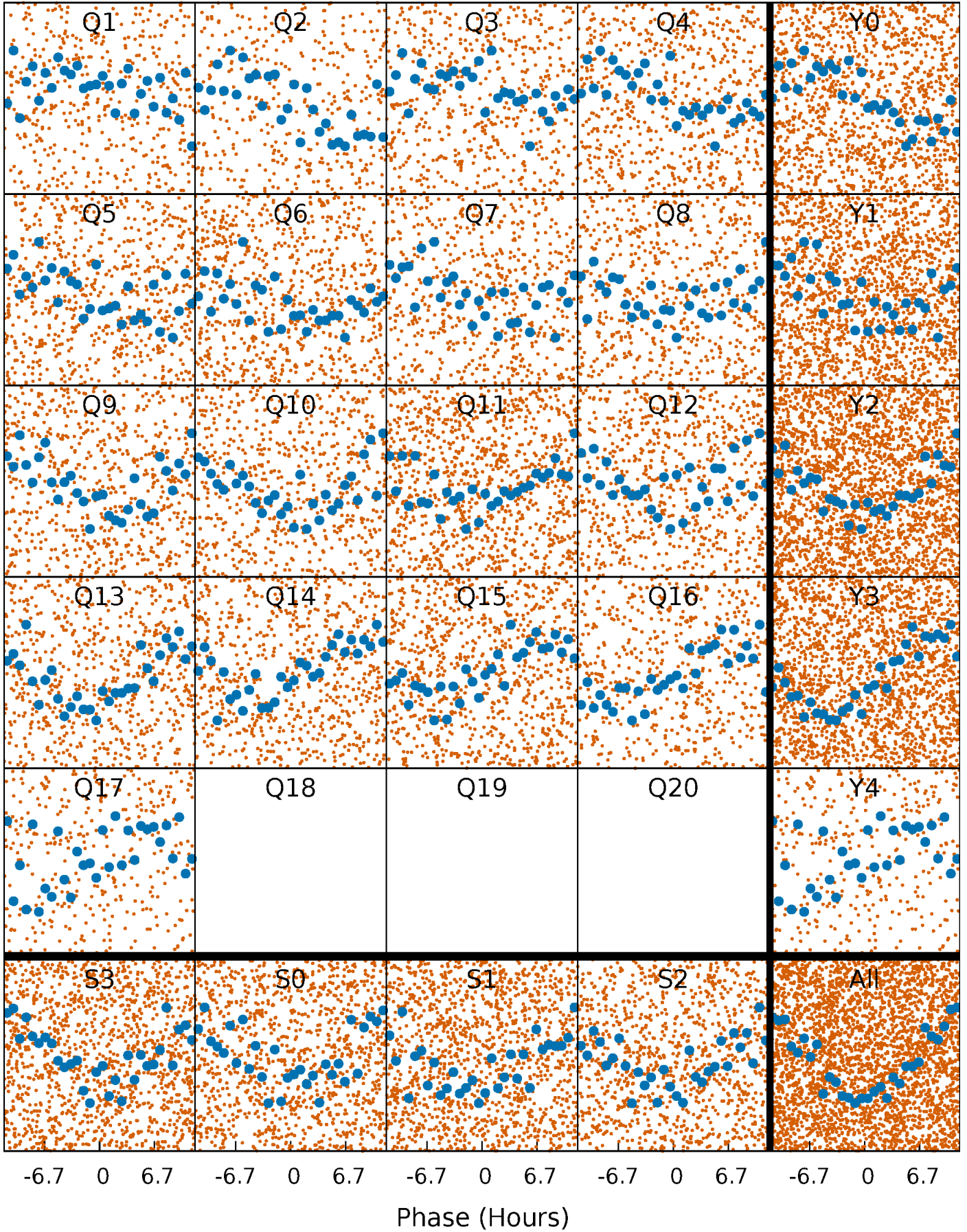


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



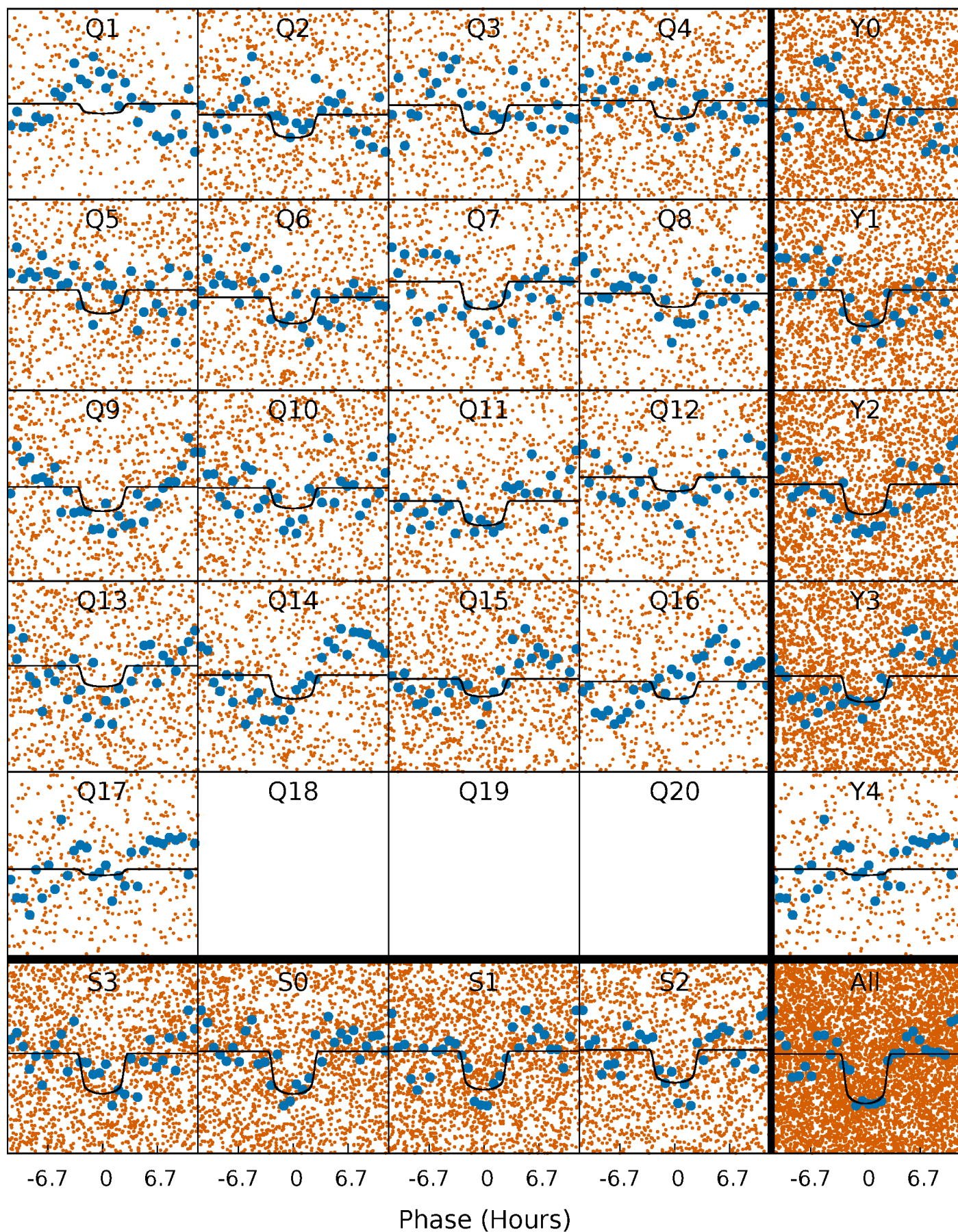
PDC Quarter-Phased Transit Curves

TCE 008311110-03 P= 1.079089 Days $T_0=132.168601$ (BKJD)



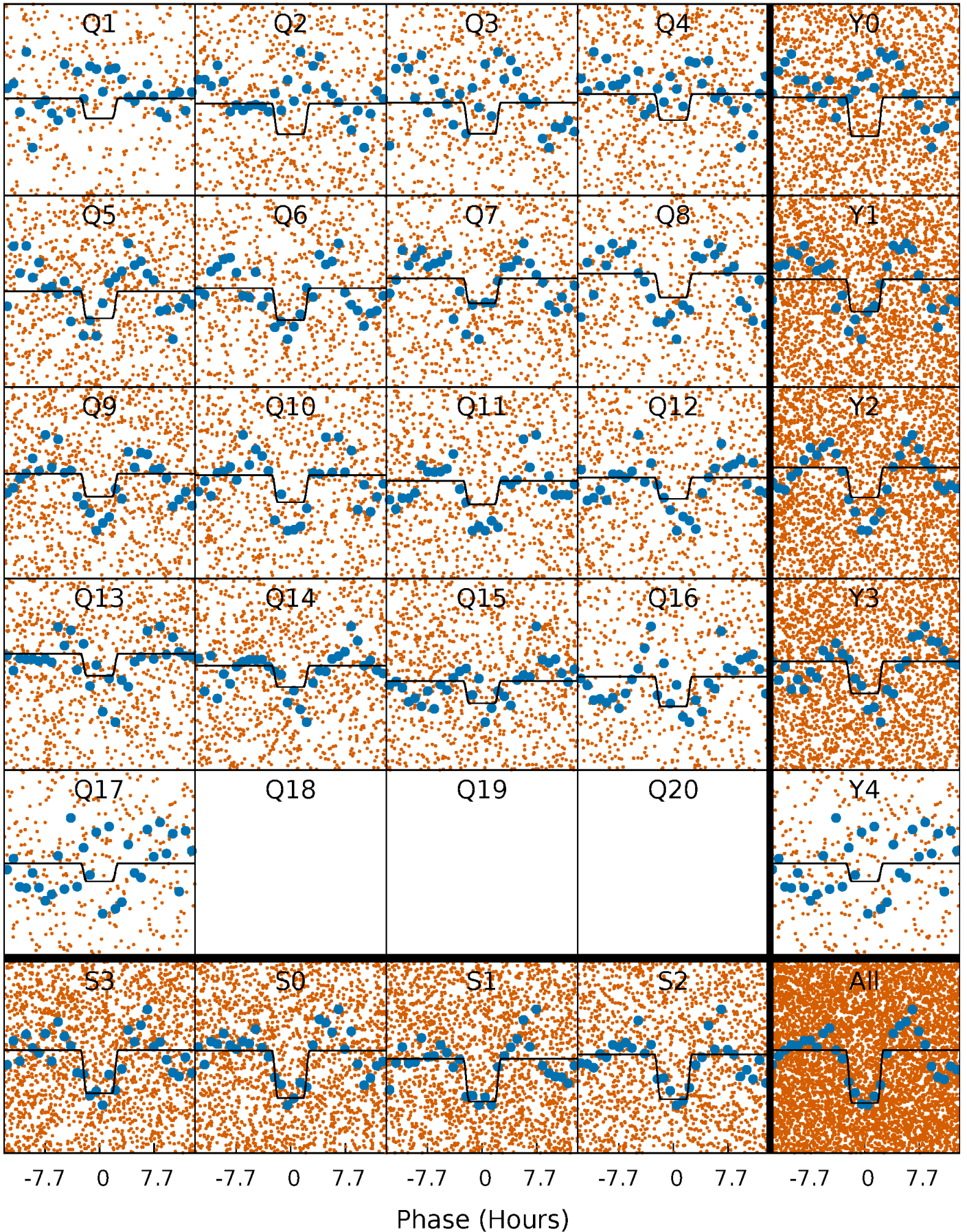
DV Quarter-Phased Transit Curves

TCE 008311110-03 P= 1.079089 Days $T_0=132.168601$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

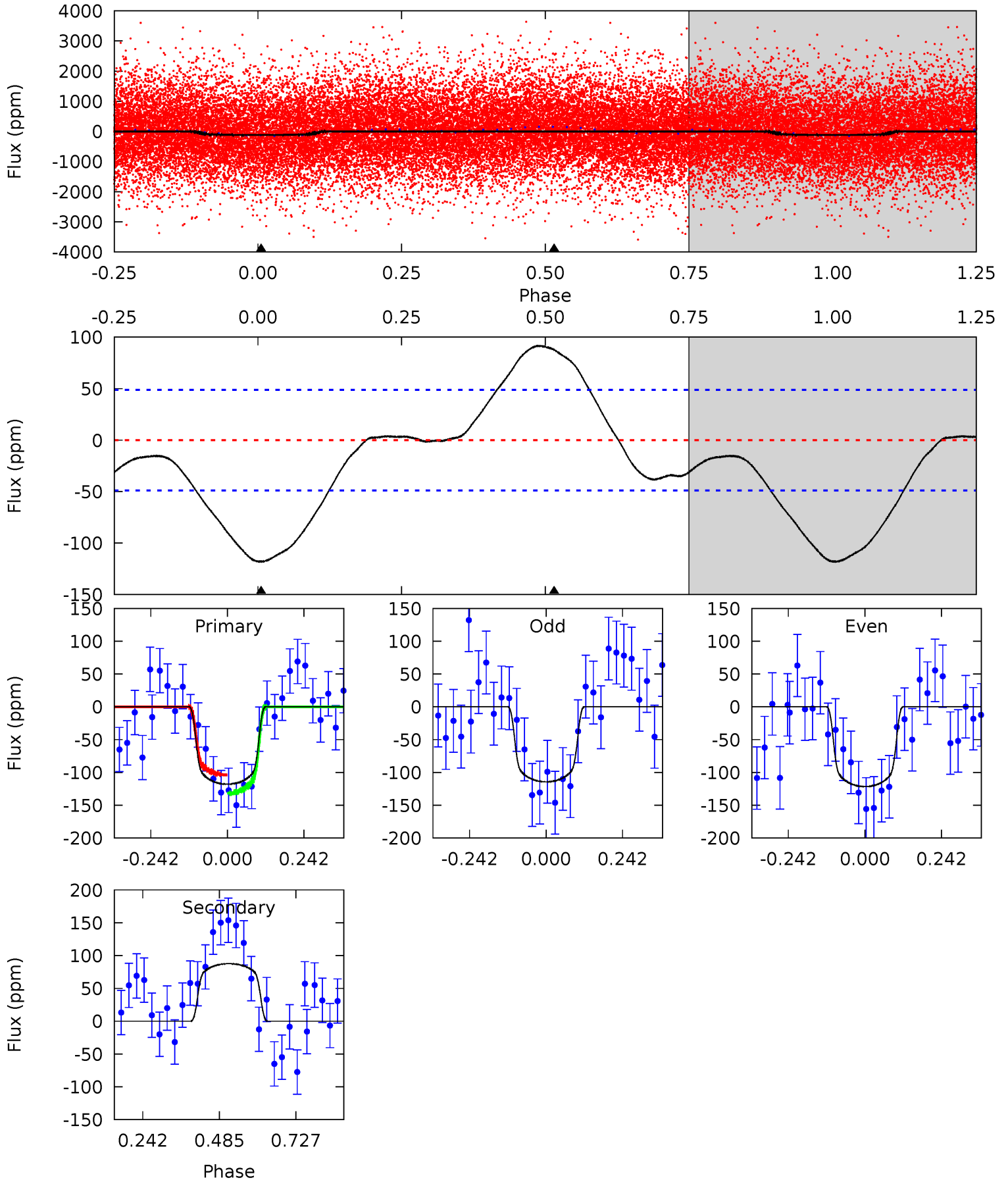
TCE 008311110-03 P= 1.079087 Days $T_0=132.136013$ (BKJD)



DV Model-Shift Uniqueness Test

008311110-03, P = 1.079089 Days, E = 131.089512 Days

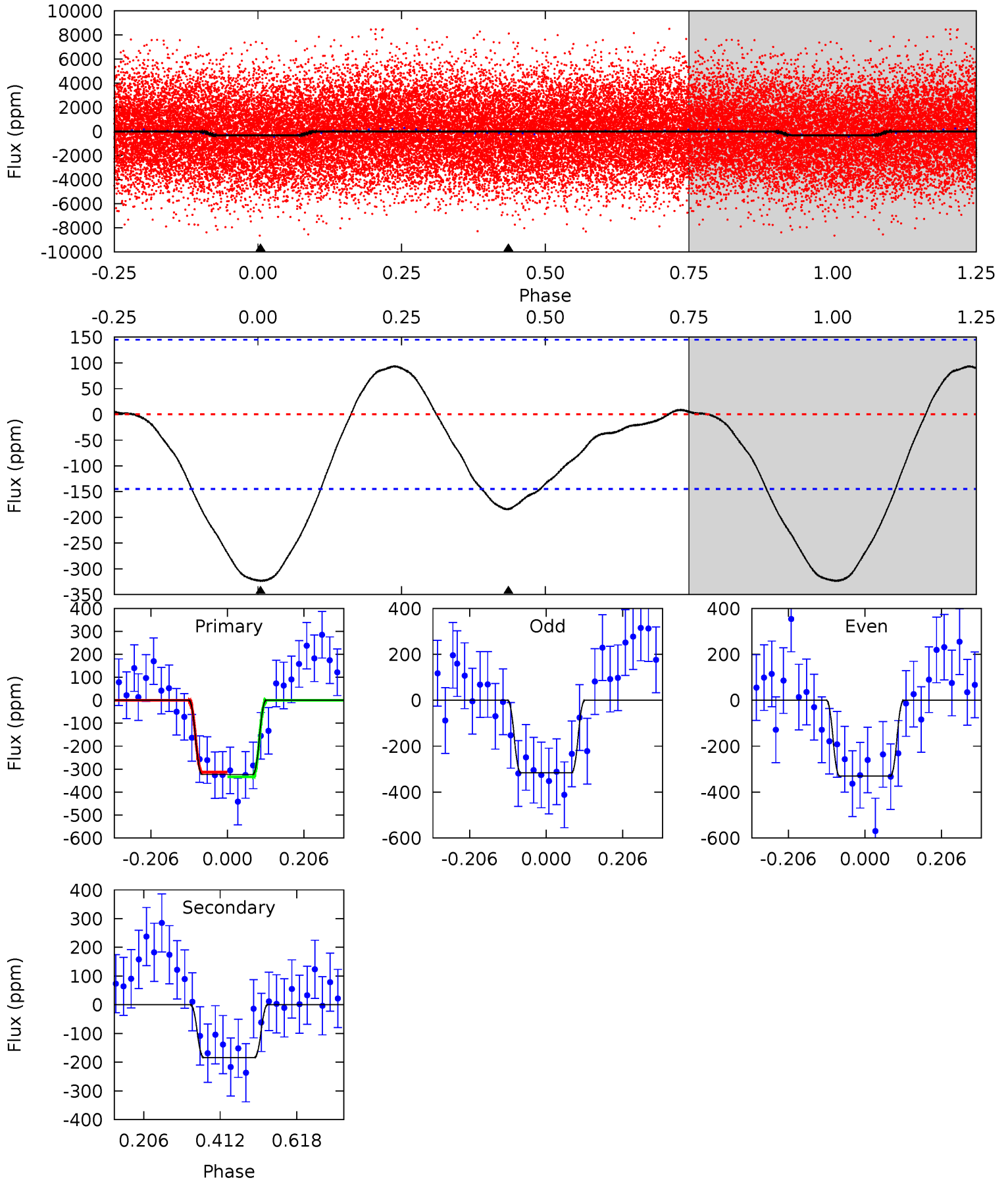
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.6	-7.85	0	0	4.38	1.17	1.31	10.6	10.6	-7.85	-7.85	0.32	1.00	0.44	1.25



Alt Model-Shift Uniqueness Test

008311110-03, P = 1.079087 Days, E = 131.056926 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.83	5.60	0	0	4.41	1.26	0.92	9.83	9.83	5.60	5.60	0.22	0.93	0.22	0.30



Stellar Parameters For KIC 008311110

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7311^{+232}_{-377}	$3.849^{+0.345}_{-0.115}$	$-0.080^{+0.250}_{-0.350}$	$2.643^{+0.469}_{-1.095}$	$1.797^{+0.184}_{-0.430}$	$0.137^{+0.372}_{-0.049}$
	+3%/-5%	+9%/-3%	+312%/-438%	+18%/-41%	+10%/-24%	+271%/-36%
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 008311110-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	88 ± 11	$3.28^{+0.83}_{-0.88}$	4505^{+350}_{-470}	-6478^{+550}_{-772}	$-2.736^{+0.980}_{-2.286}$
Alt.	-184 ± 33	$5.20^{+0.97}_{-1.11}$	4547^{+317}_{-440}	5889^{+558}_{-465}	$2.344^{+1.342}_{-0.751}$

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 $A_{obs} \gg 1.0$

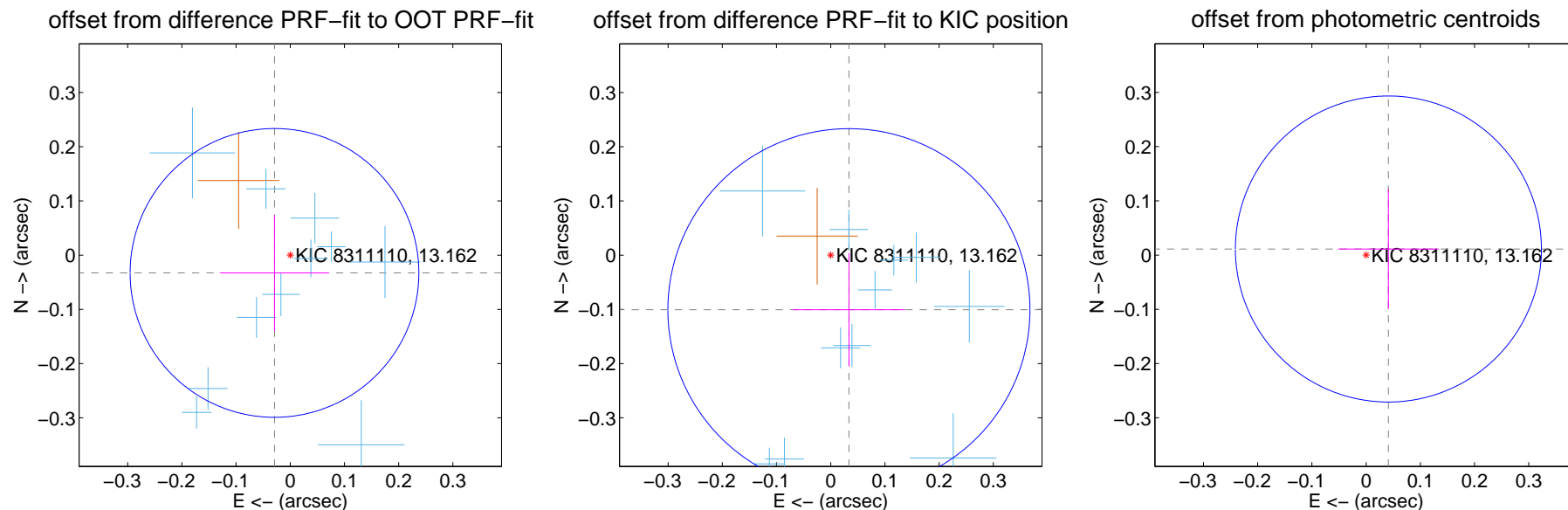
DV Centroid Data

Supplemental centroid analysis for 008311110-03. Kepler magnitude: 13.16. Transit SNR 9.83

There are 12 quarters with good PRF difference image offsets

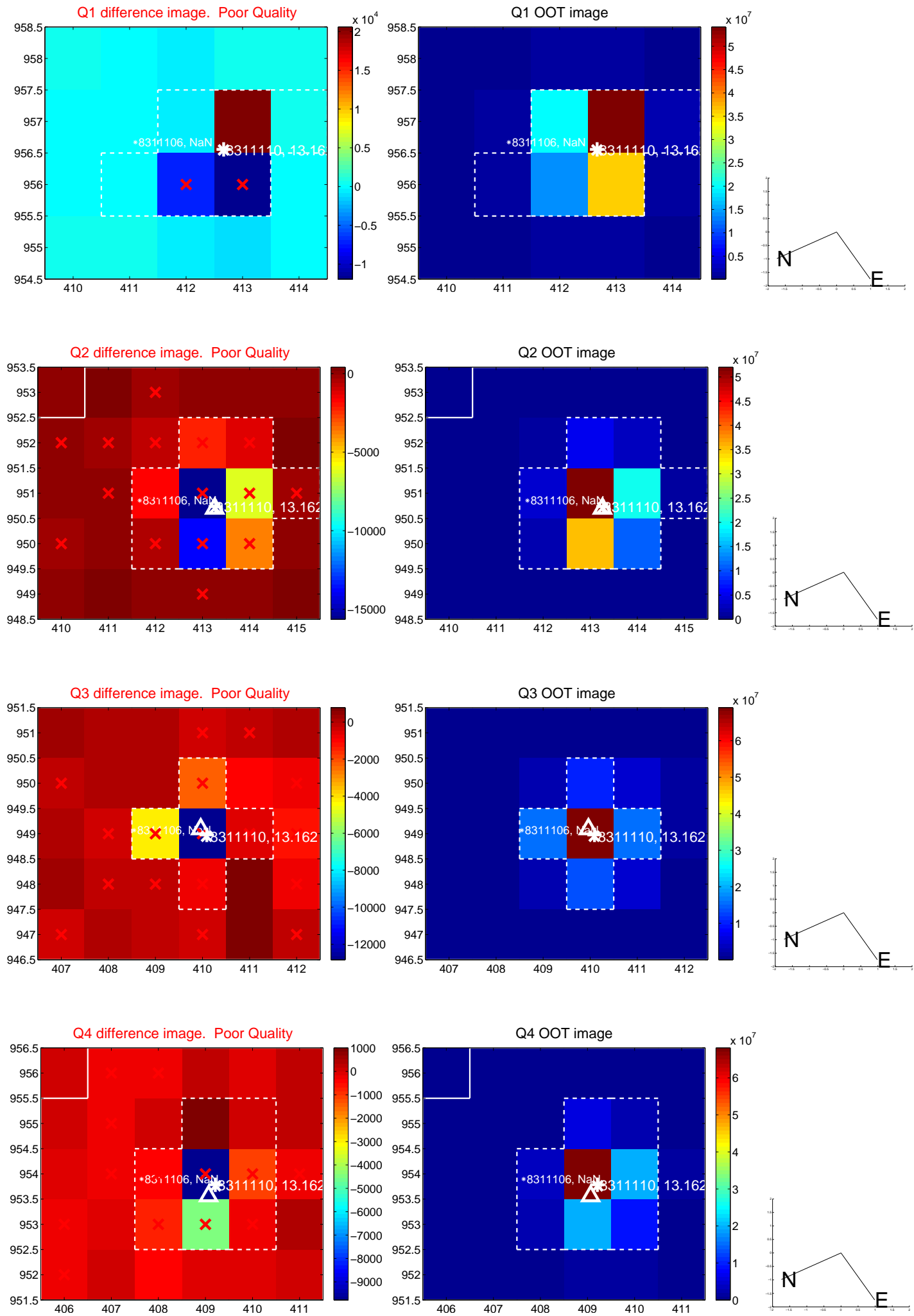
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.044 ± 0.089	0.49	0.029 ± 0.101	-0.033 ± 0.107
PRF-fit source offset from KIC position	0.106 ± 0.111	0.95	-0.034 ± 0.103	-0.101 ± 0.104
photometric centroid source offset	0.04 ± 0.09	0.45	-0.04 ± 0.09	0.01 ± 0.11

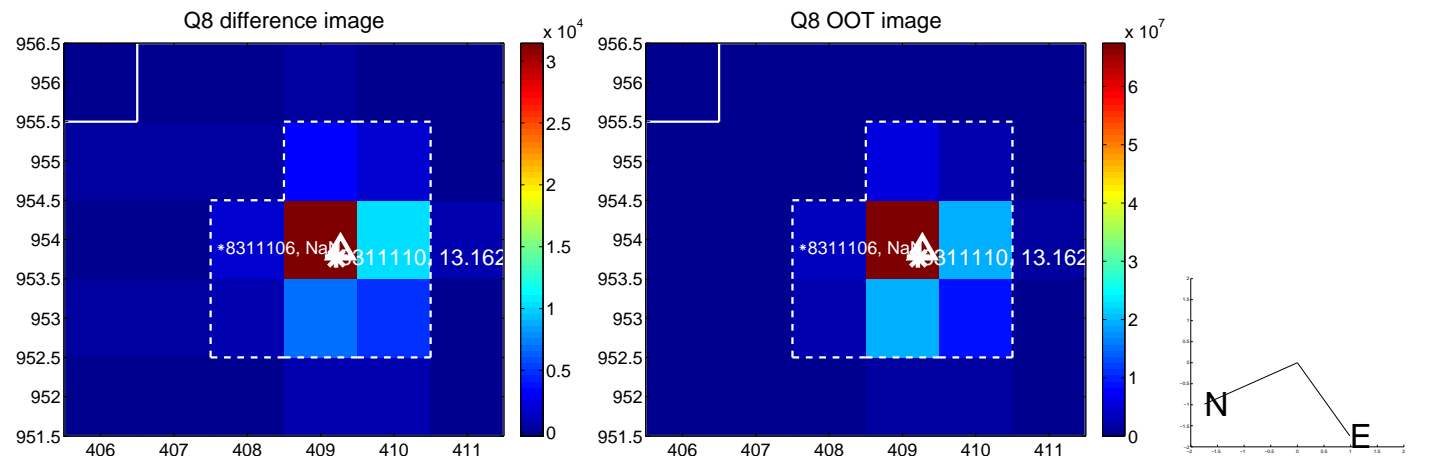
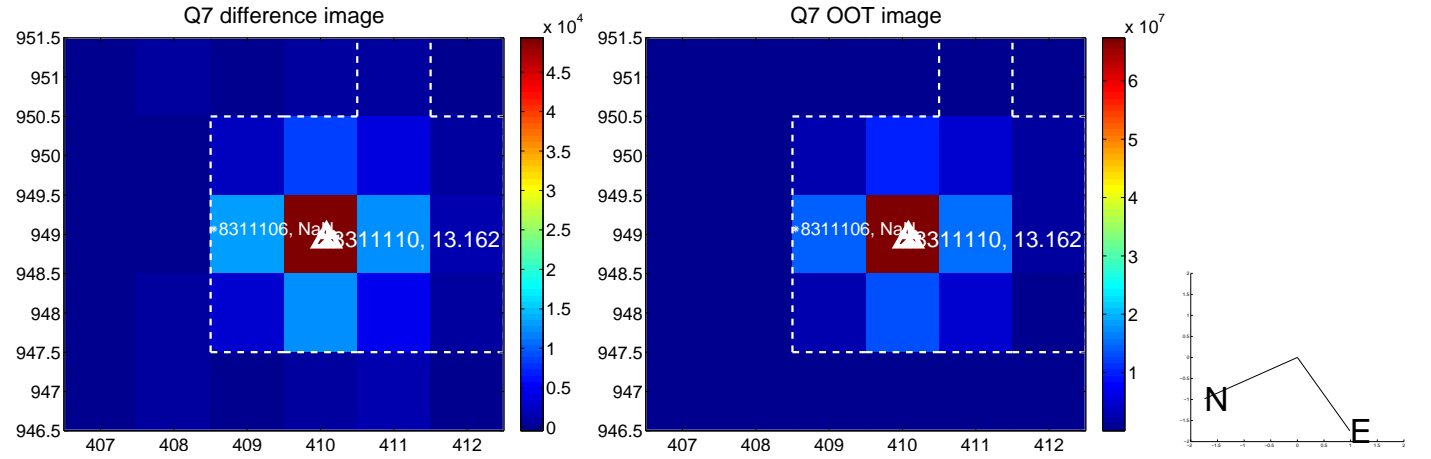
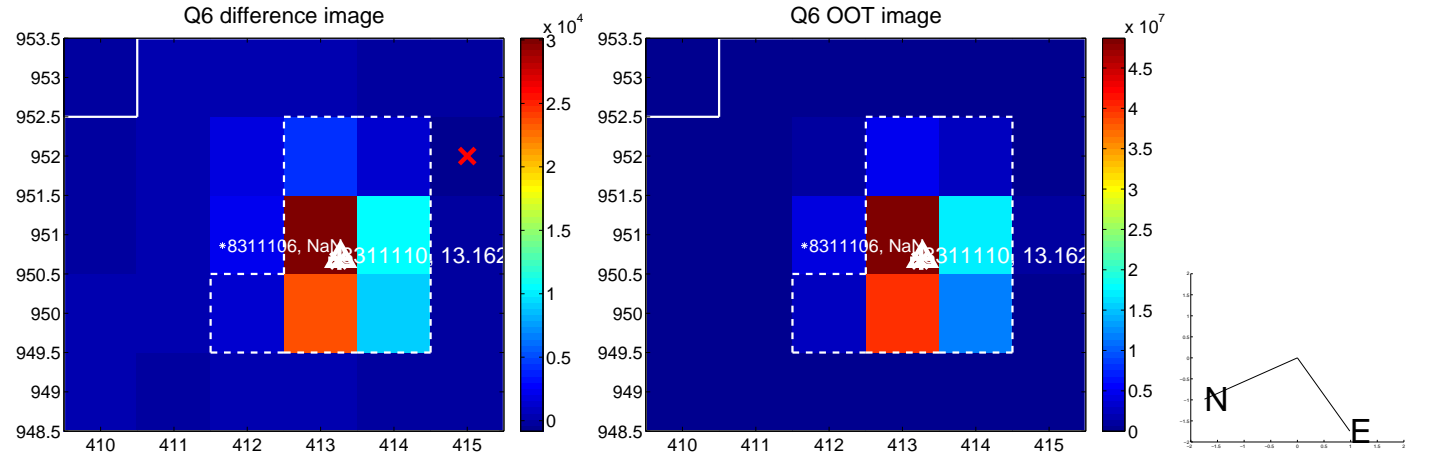
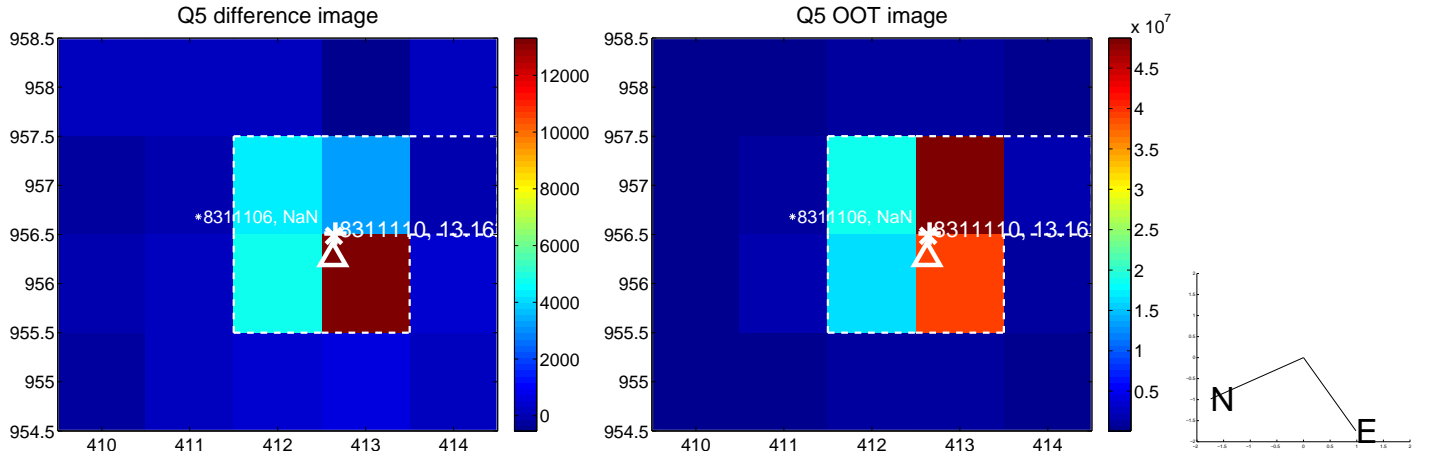


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

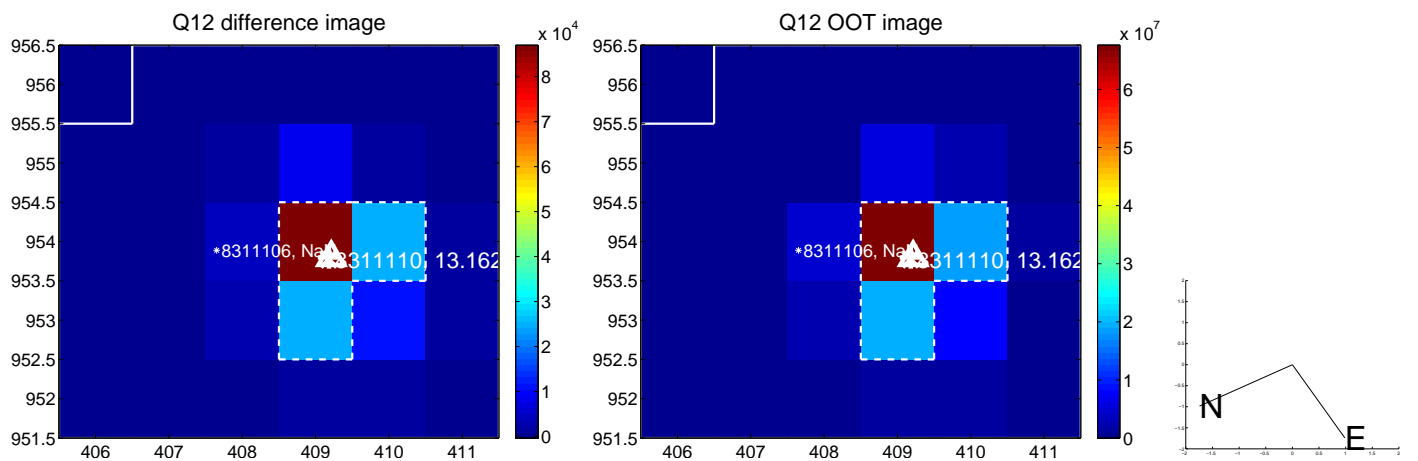
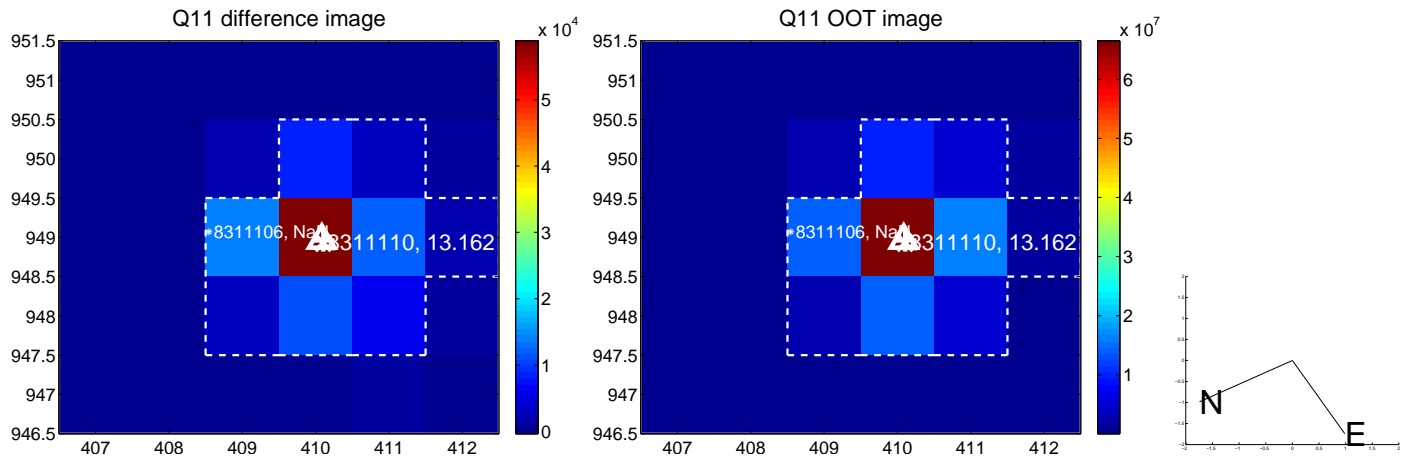
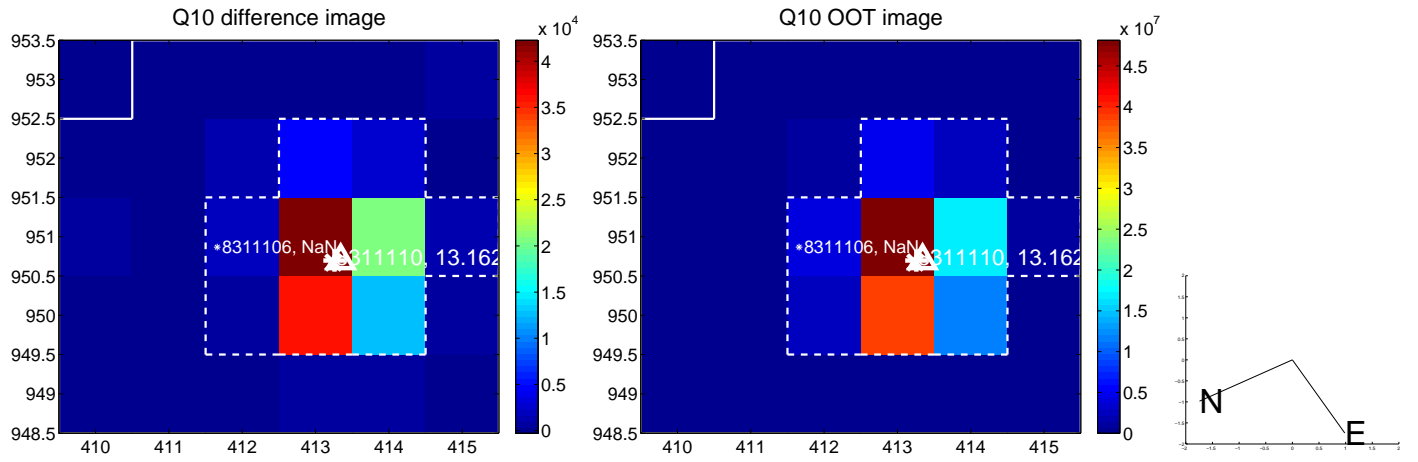
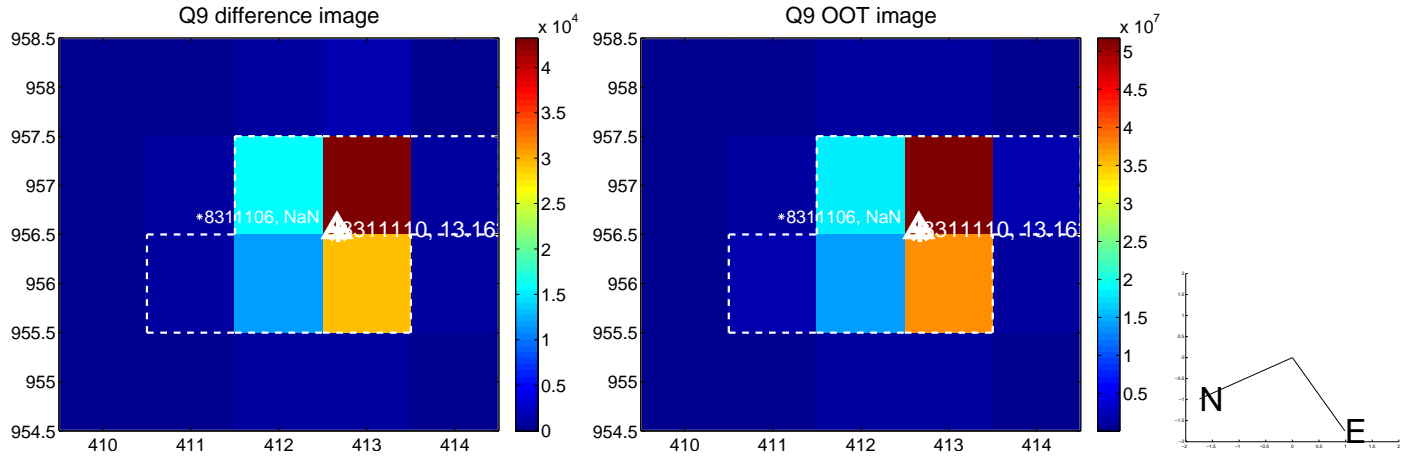
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



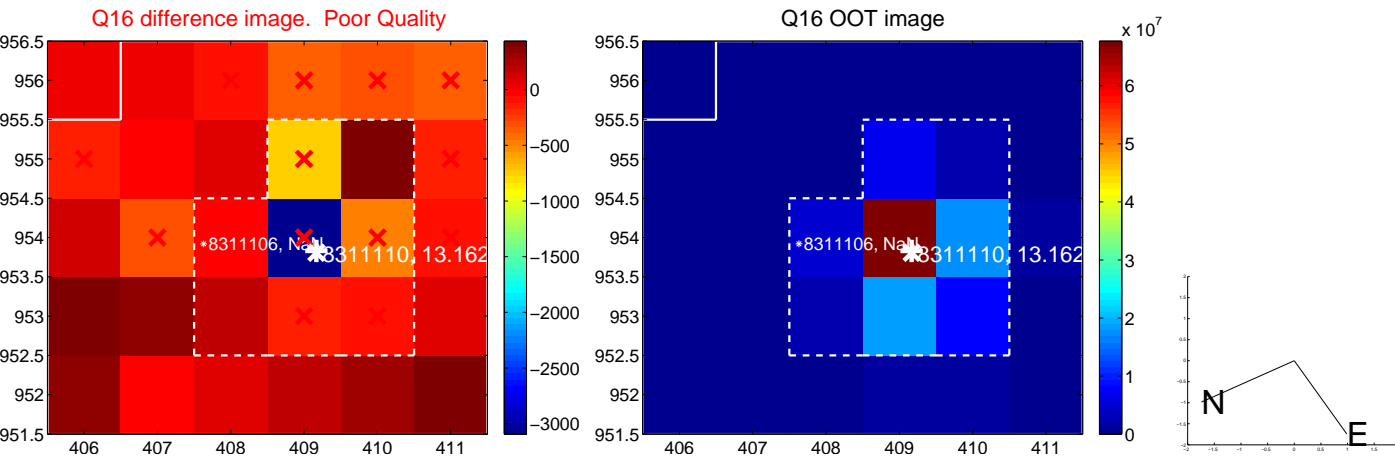
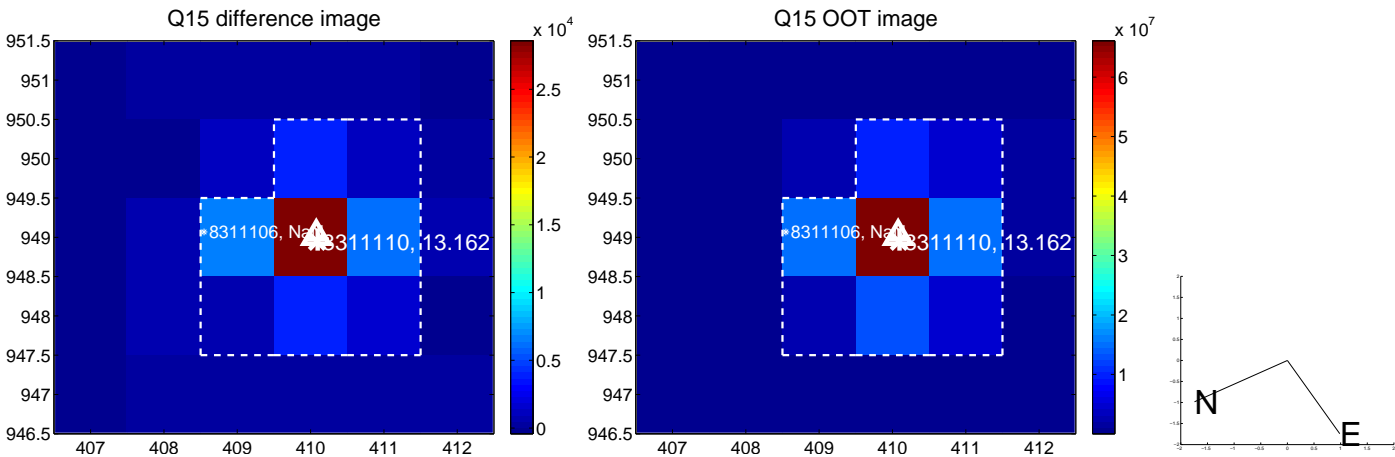
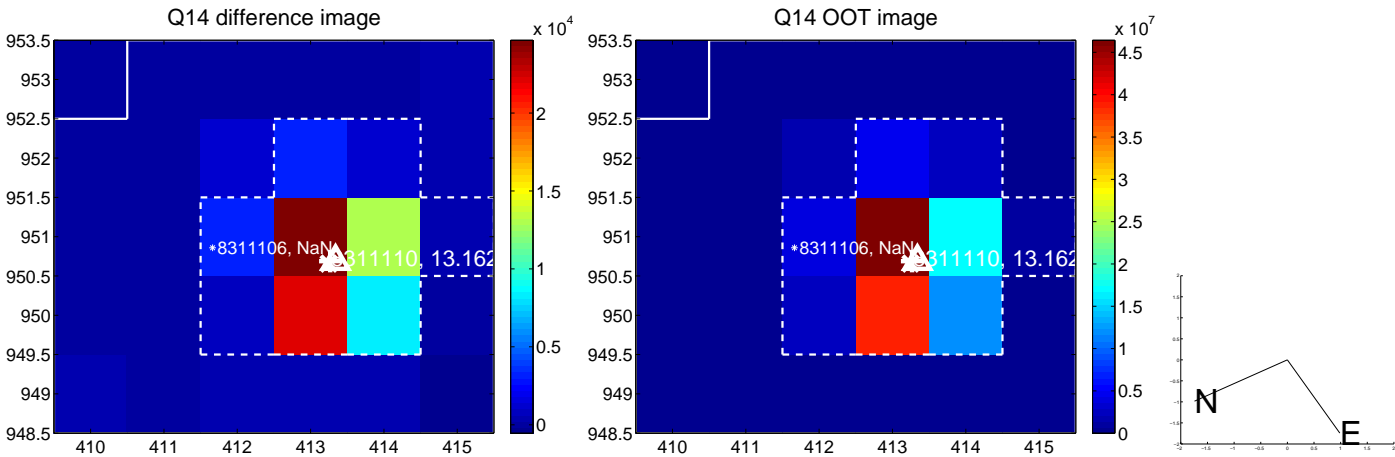
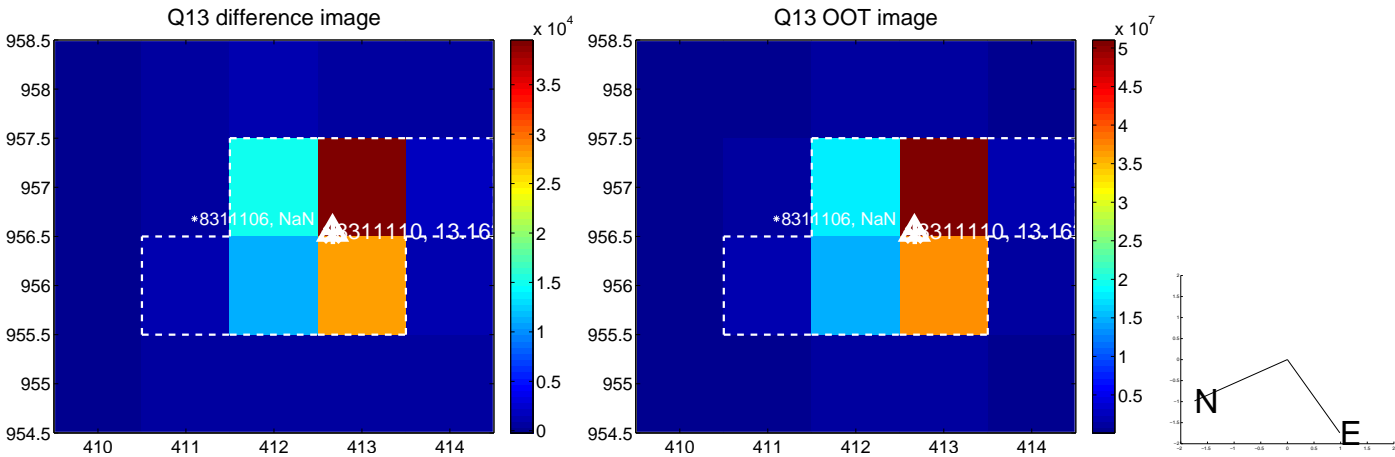
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



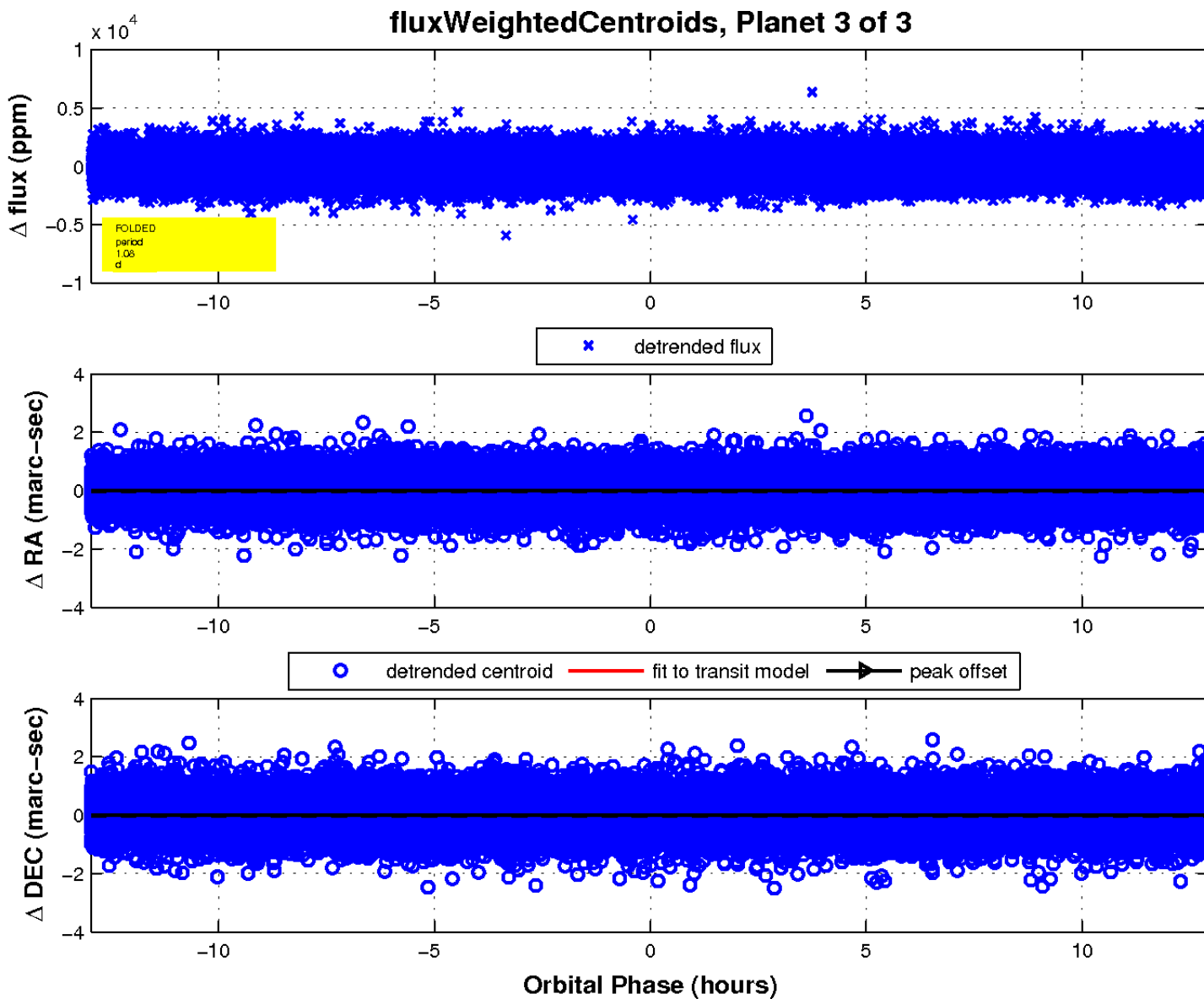
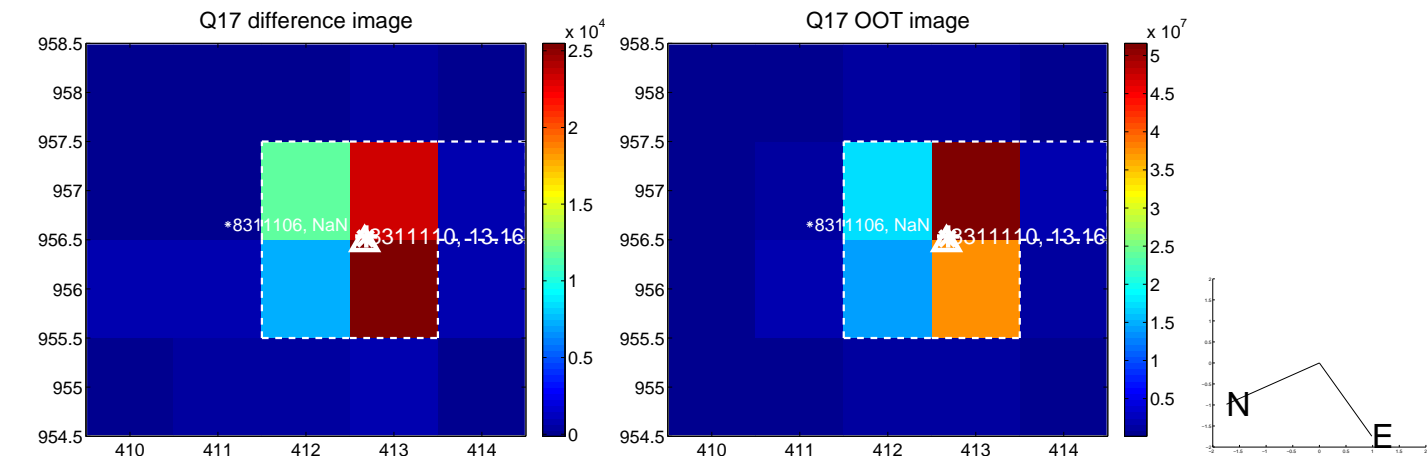
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

