

KIC 007200012

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})
007200012-01	OBS	No	0.566741	131.859829	16.4	3.929	11.1	3.8	0.99	6170	0.41	6821.24
007200012-02	OBS	No	44.089735	131.895873	816.9	1.482	10.2	8.9	0.99	6170	2.85	20.54
007200012-03	OBS	No	28.770856	144.563511	792.5	1.690	9.2	13.3	0.99	6170	2.81	36.29
007200012-04	OBS	No	30.069144	153.624891	666.3	1.971	7.6	8.7	0.99	6170	2.83	34.22
007200012-05	OBS	No	33.514277	157.246090	564.1	1.370	8.9	9.4	0.99	6170	2.39	29.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007200012-01	OBS	FP	0.00	1	0	1	1	LPP_DV—HALO_GHOST—EPHEM_MATCH
007200012-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007200012-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
007200012-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200012-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS

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.

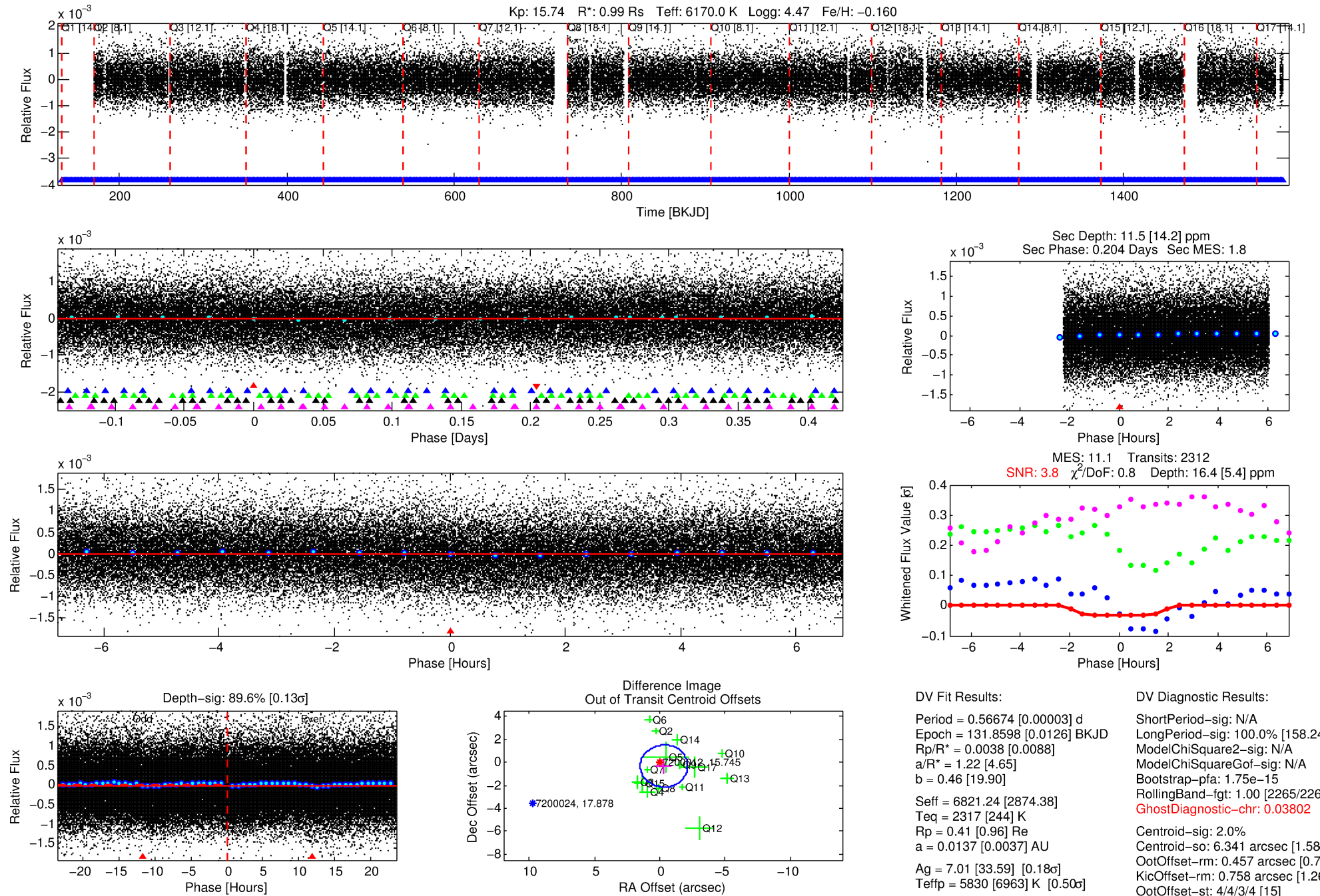
Ephemeris Match Information For 007200012-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (μ)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
007200012-01	7200012	RR-Lyr-pri	7198959	1:1	827.8	109	177	7.86	15.74	38956.00	Direct-PRF	0	1.39	22.32

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

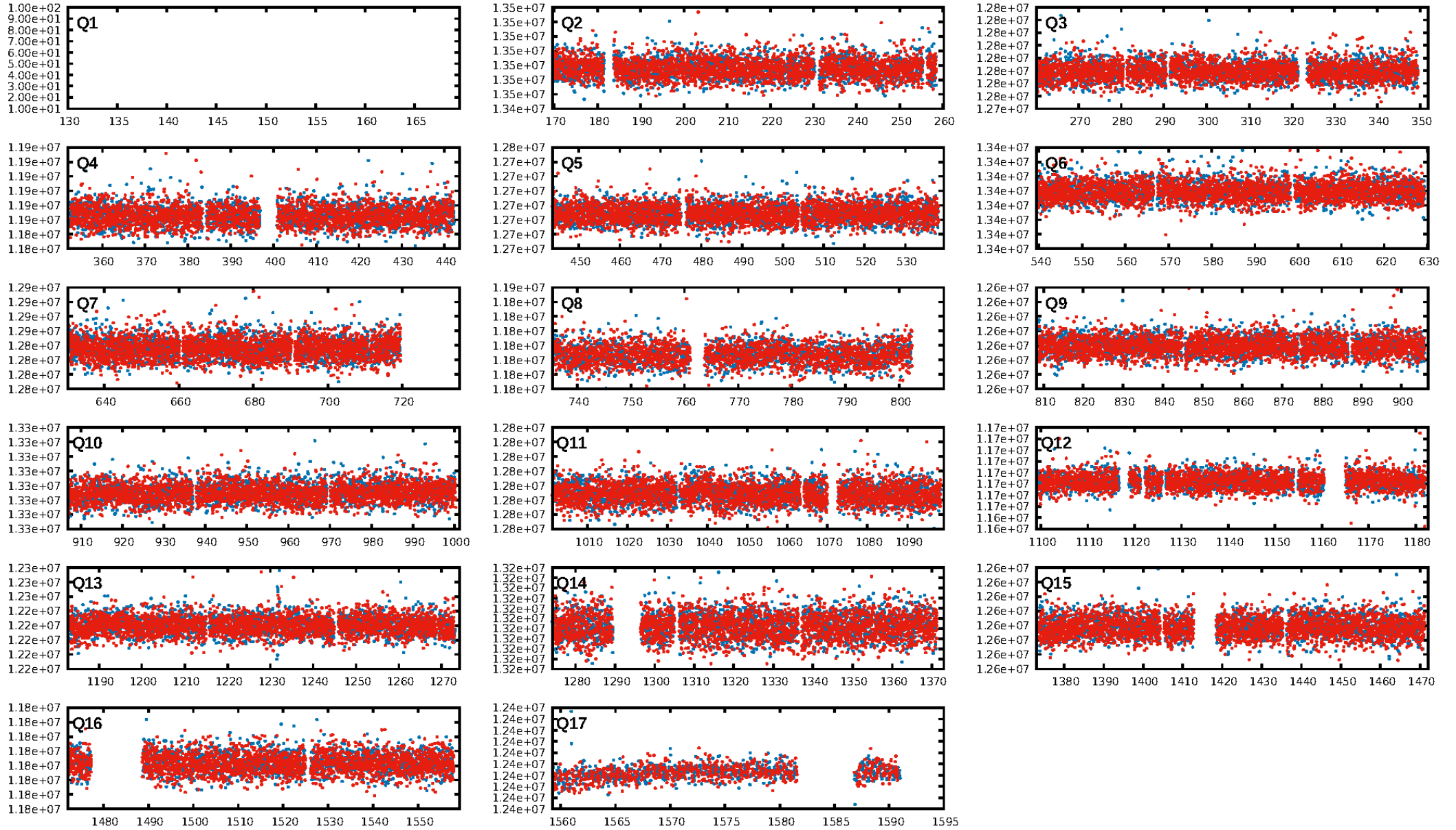
KIC: 7200012 Candidate: 1 of 5 Period: 0.567 d



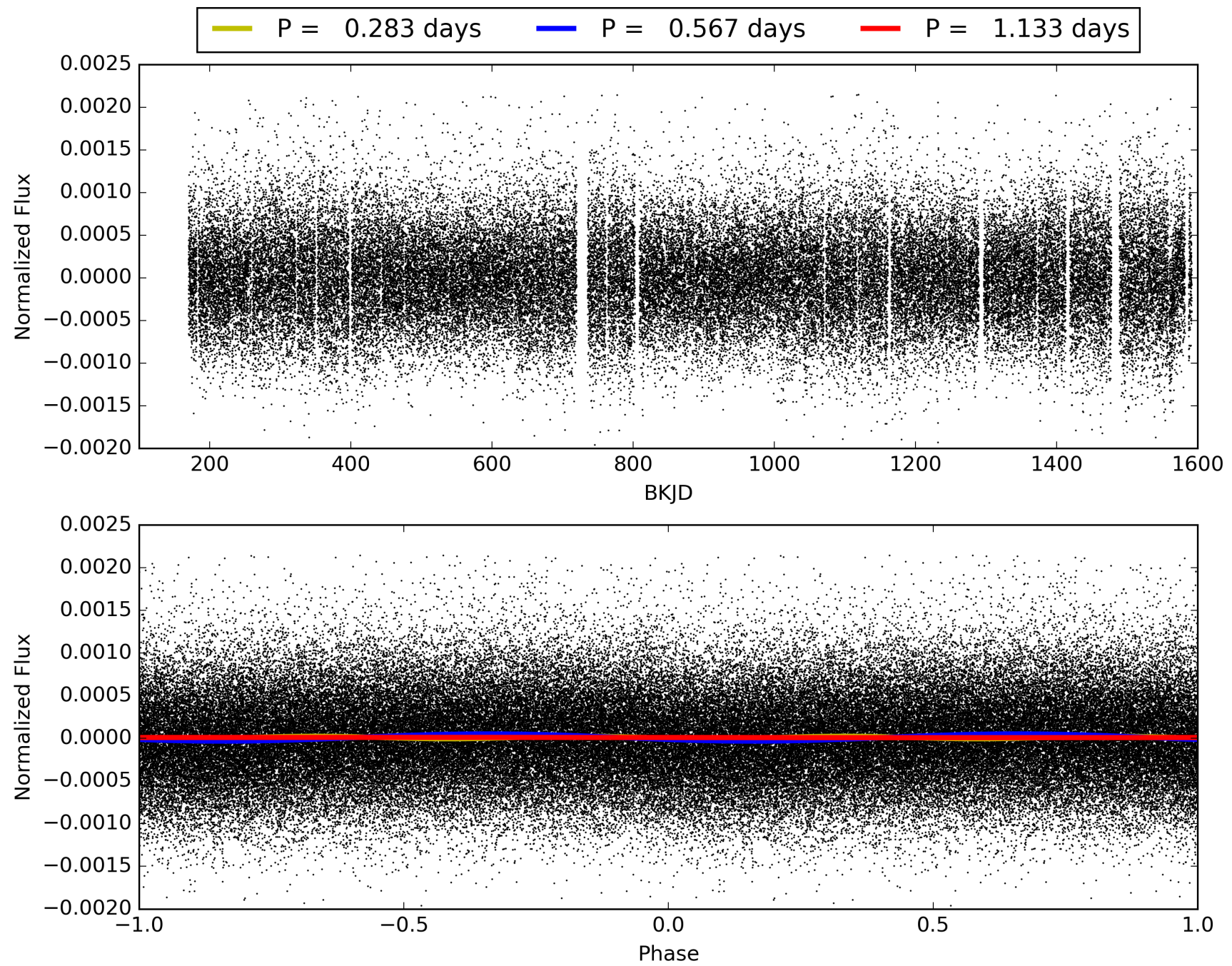
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:26:29 Z

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

TCE 007200012-01, PDC Light Curves

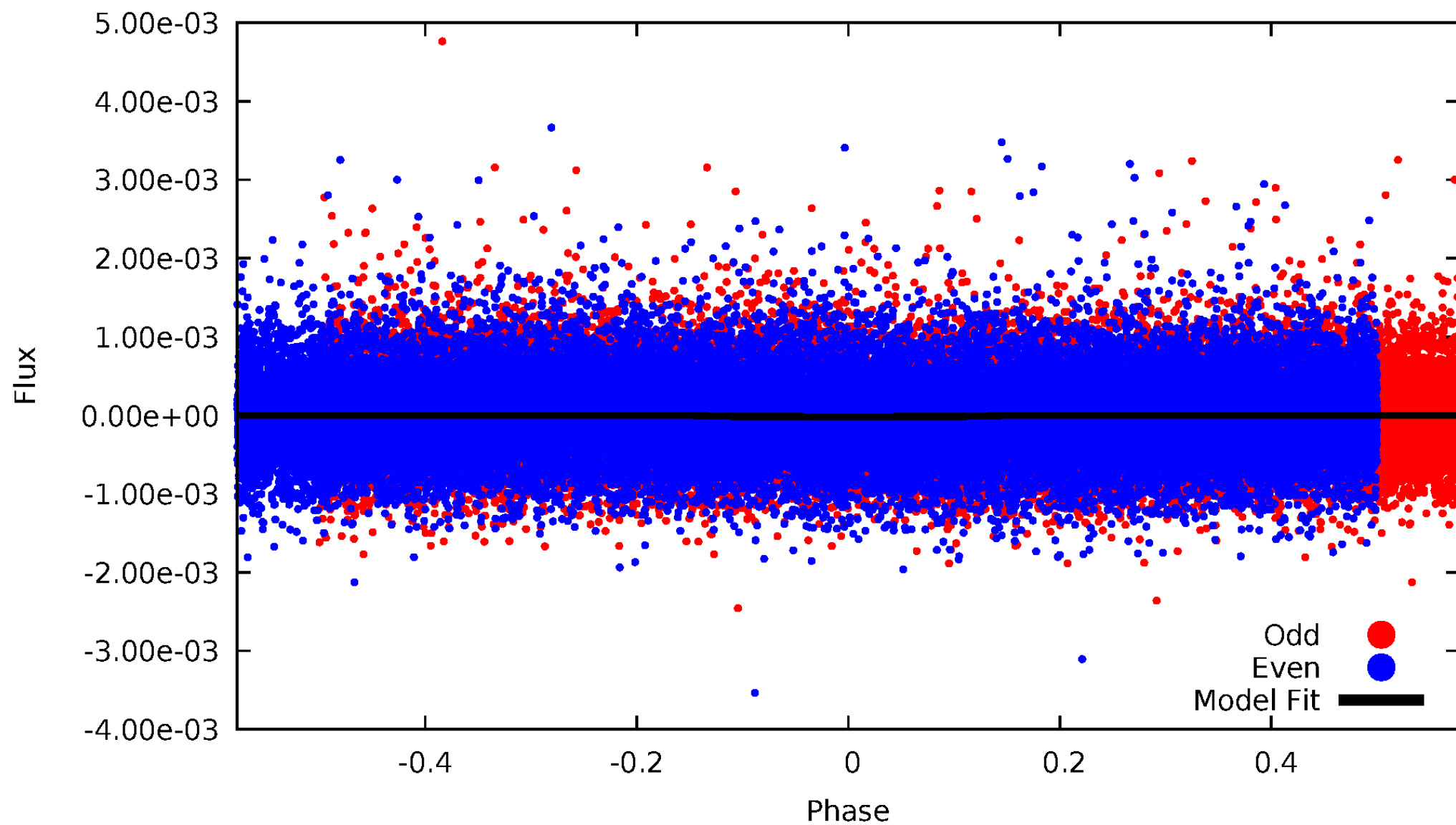


TCE 007200012-01



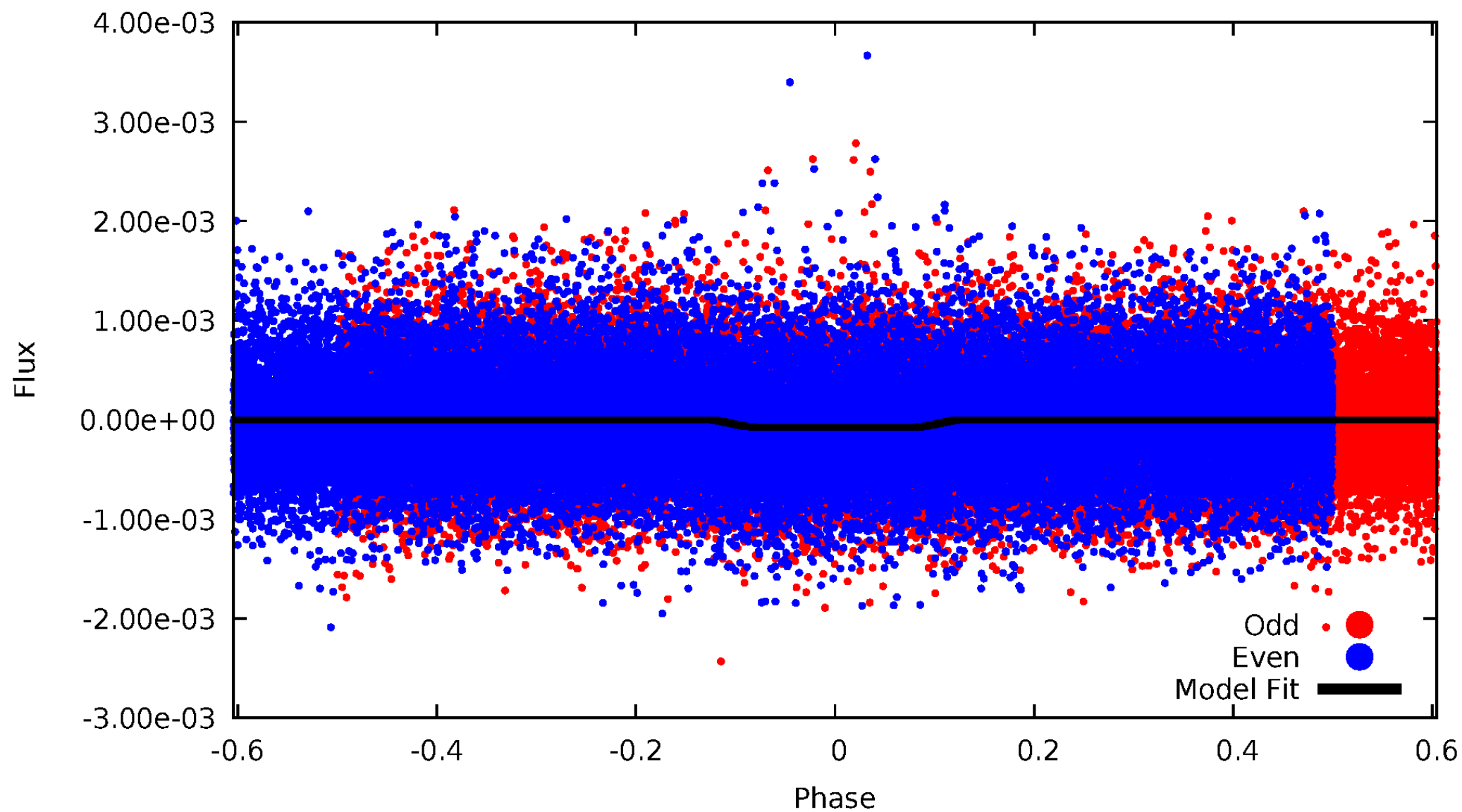
DV Odd/Even

TCE 007200012-01



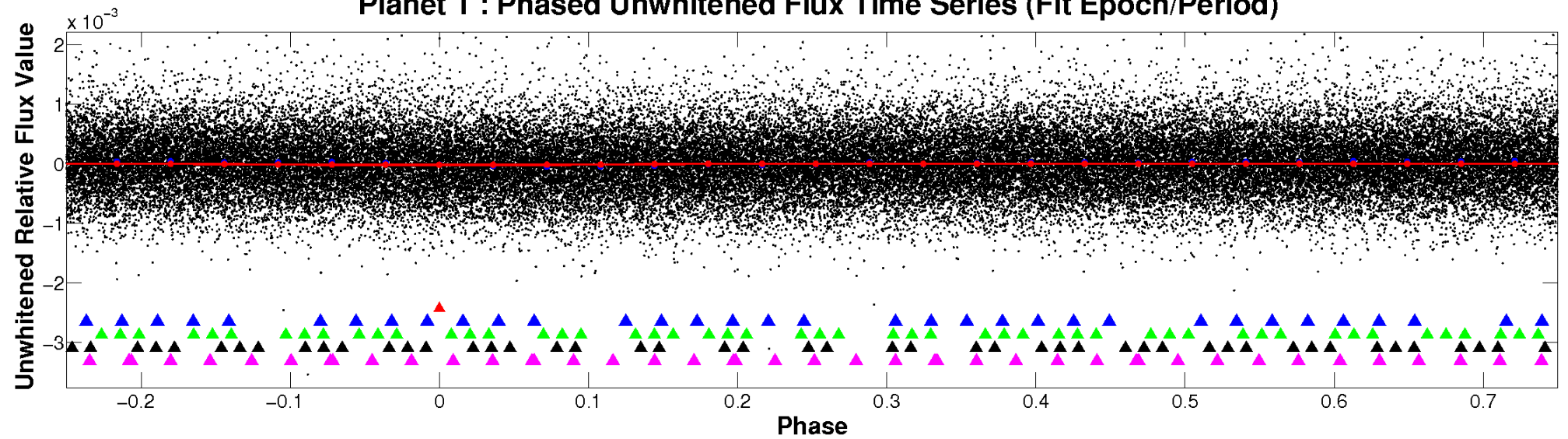
ALT Odd/Even

TCE 007200012-01

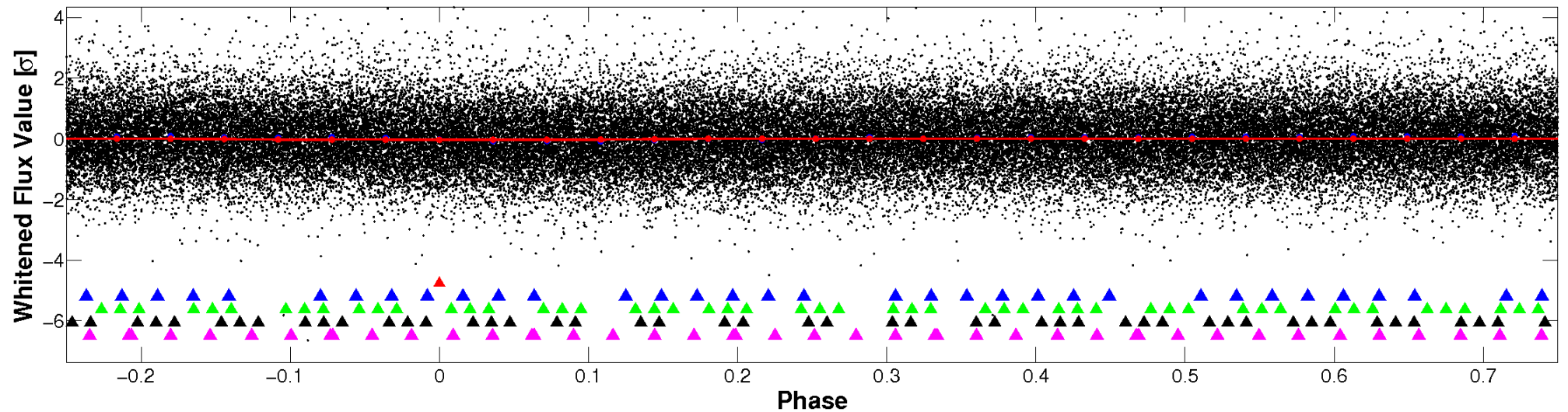


Non-Whitened Vs. Whitened Light Curve

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

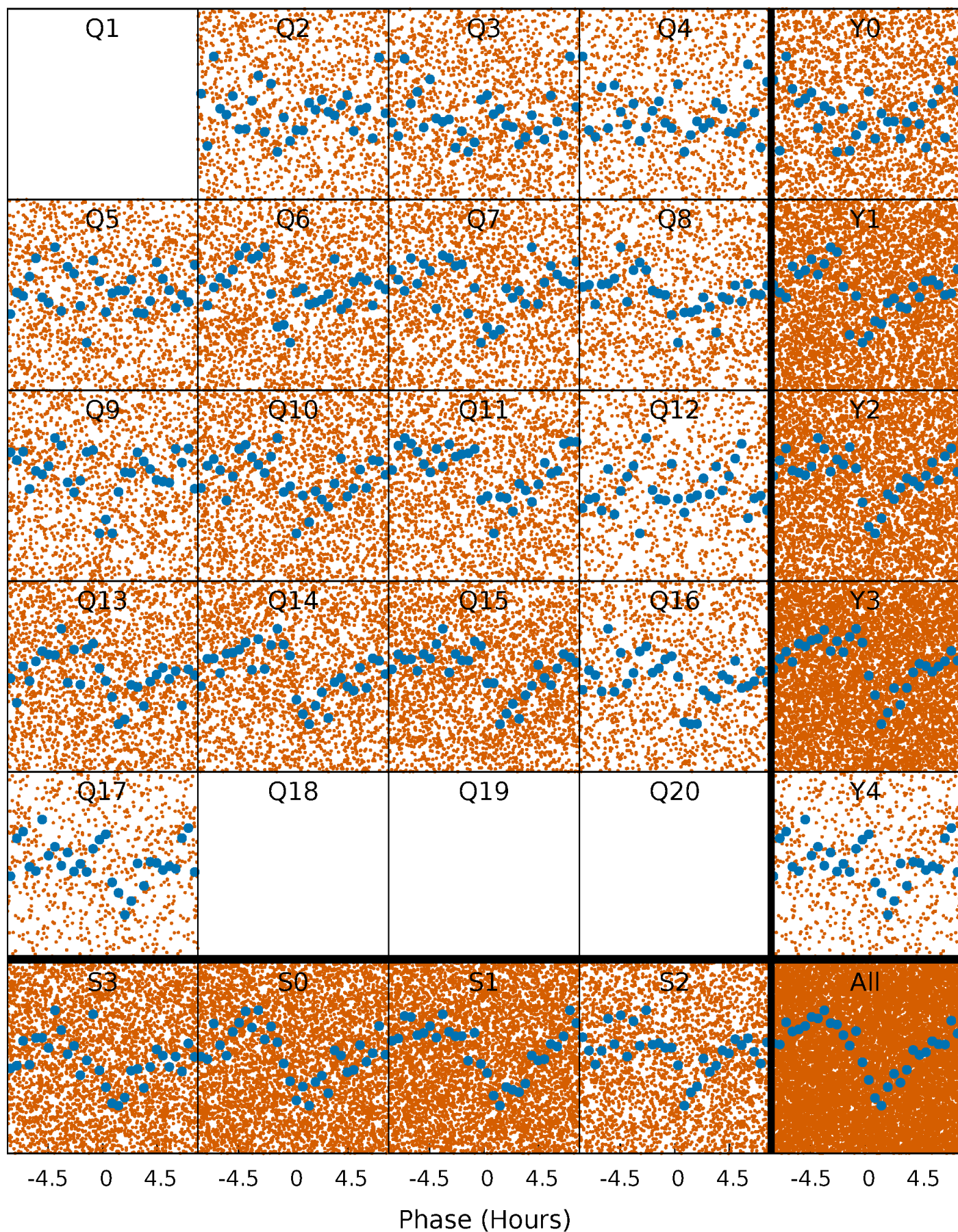


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



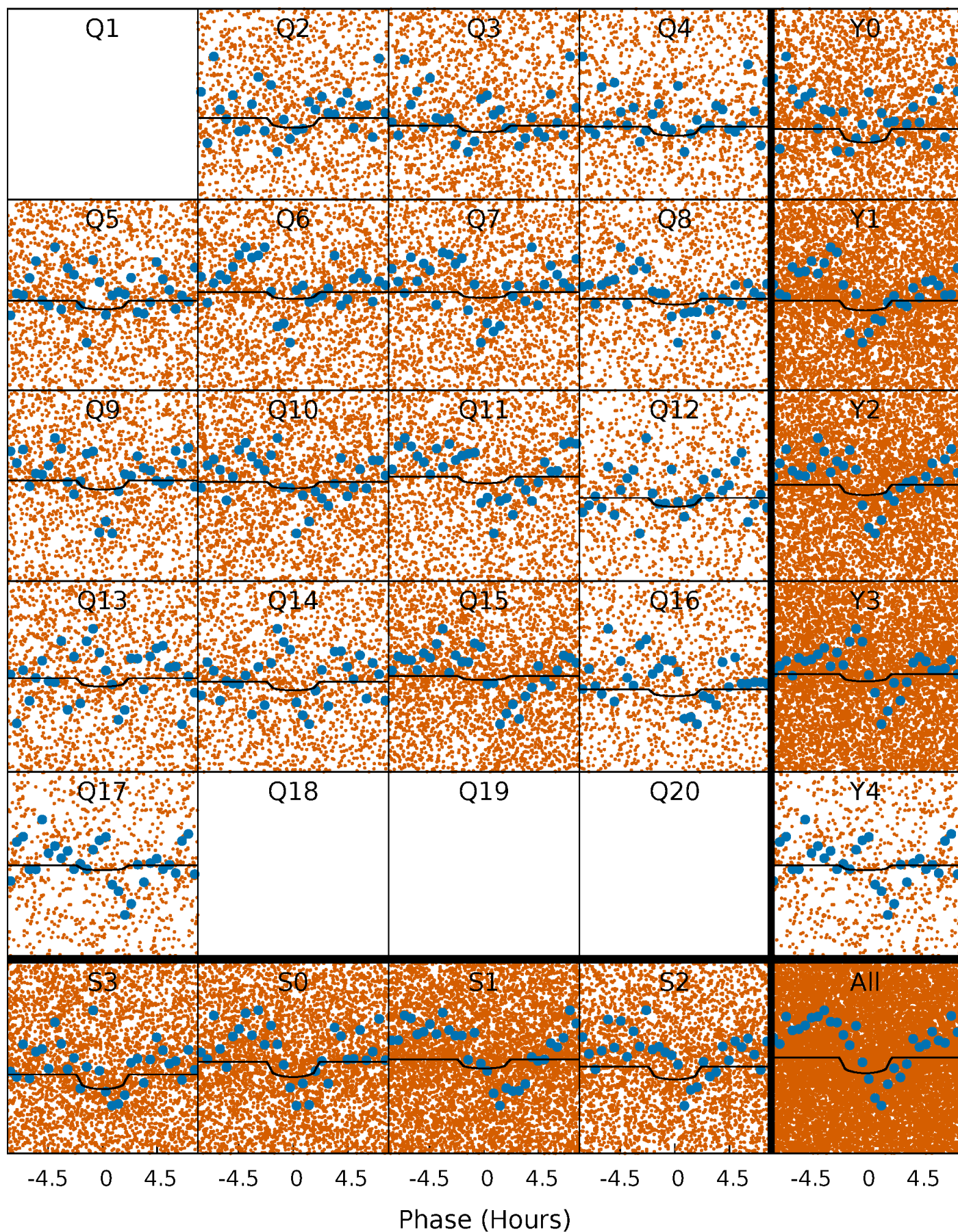
PDC Quarter-Phased Transit Curves

TCE 007200012-01 P= 0.566741 Days $T_0=131.859829$ (BKJD)



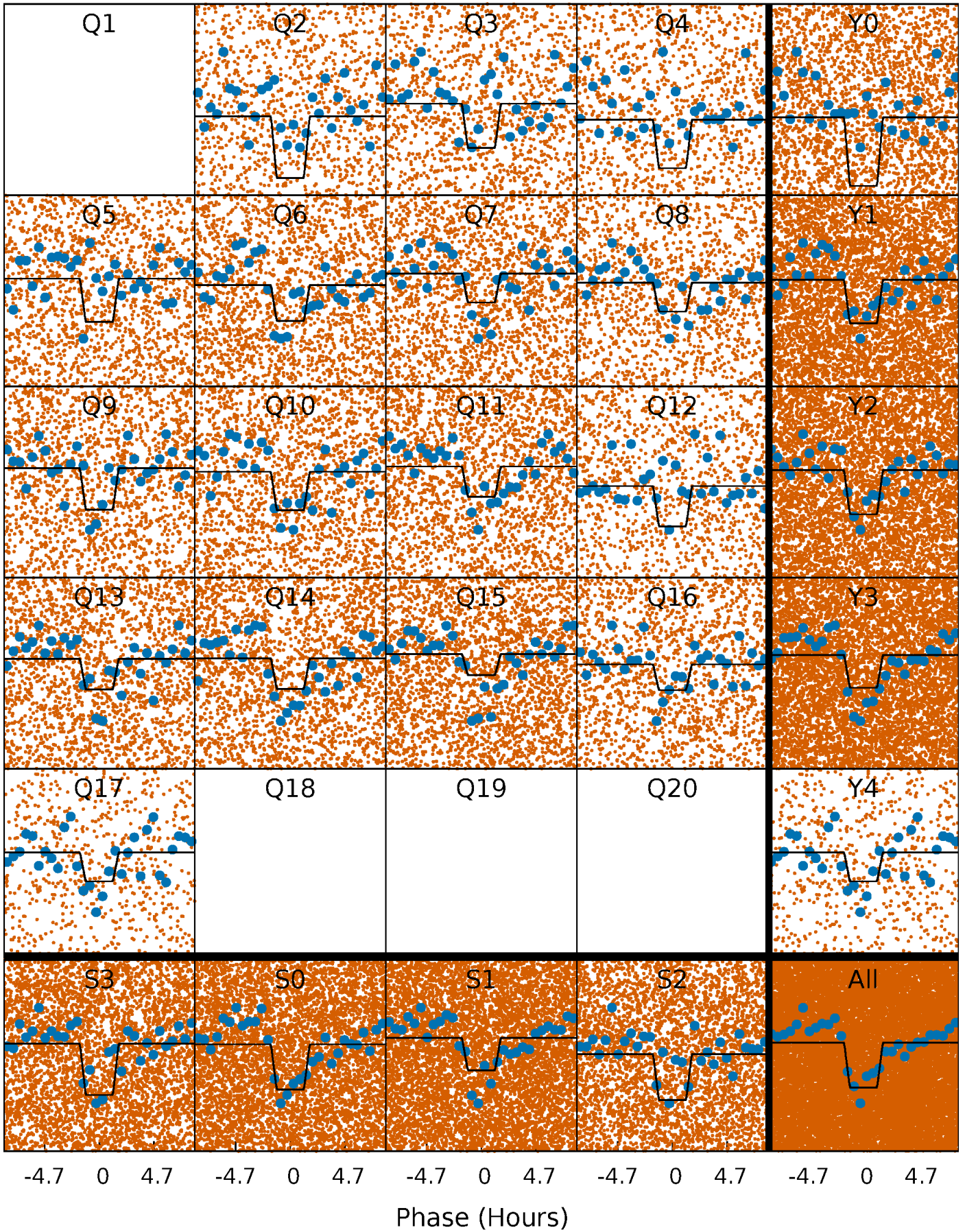
DV Quarter-Phased Transit Curves

TCE 007200012-01 P= 0.566741 Days $T_0=131.859829$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

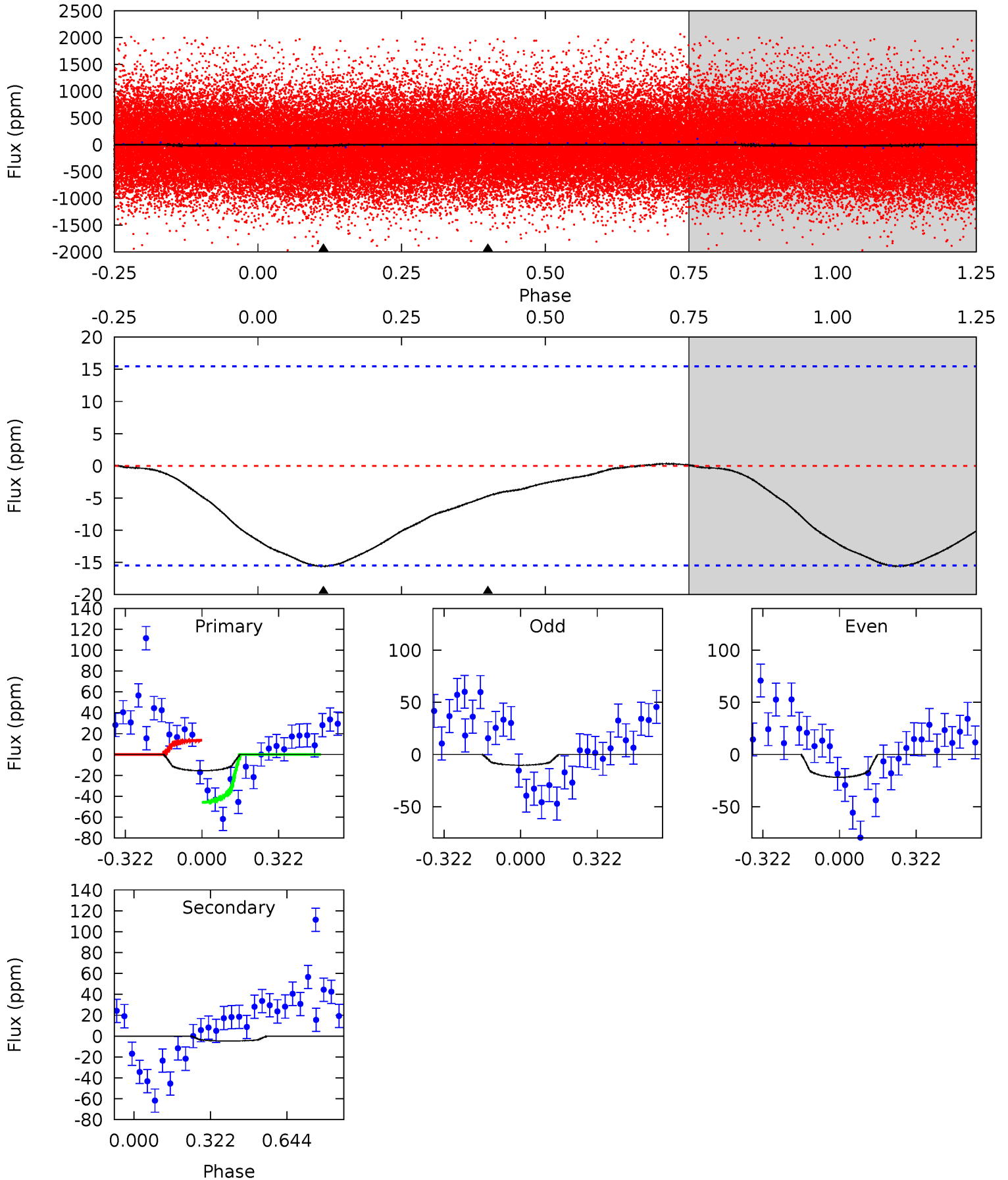
TCE 007200012-01 P= 0.566795 Days $T_0=131.823980$ (BKJD)



DV Model-Shift Uniqueness Test

007200012-01, P = 0.566741 Days, E = 131.859829 Days

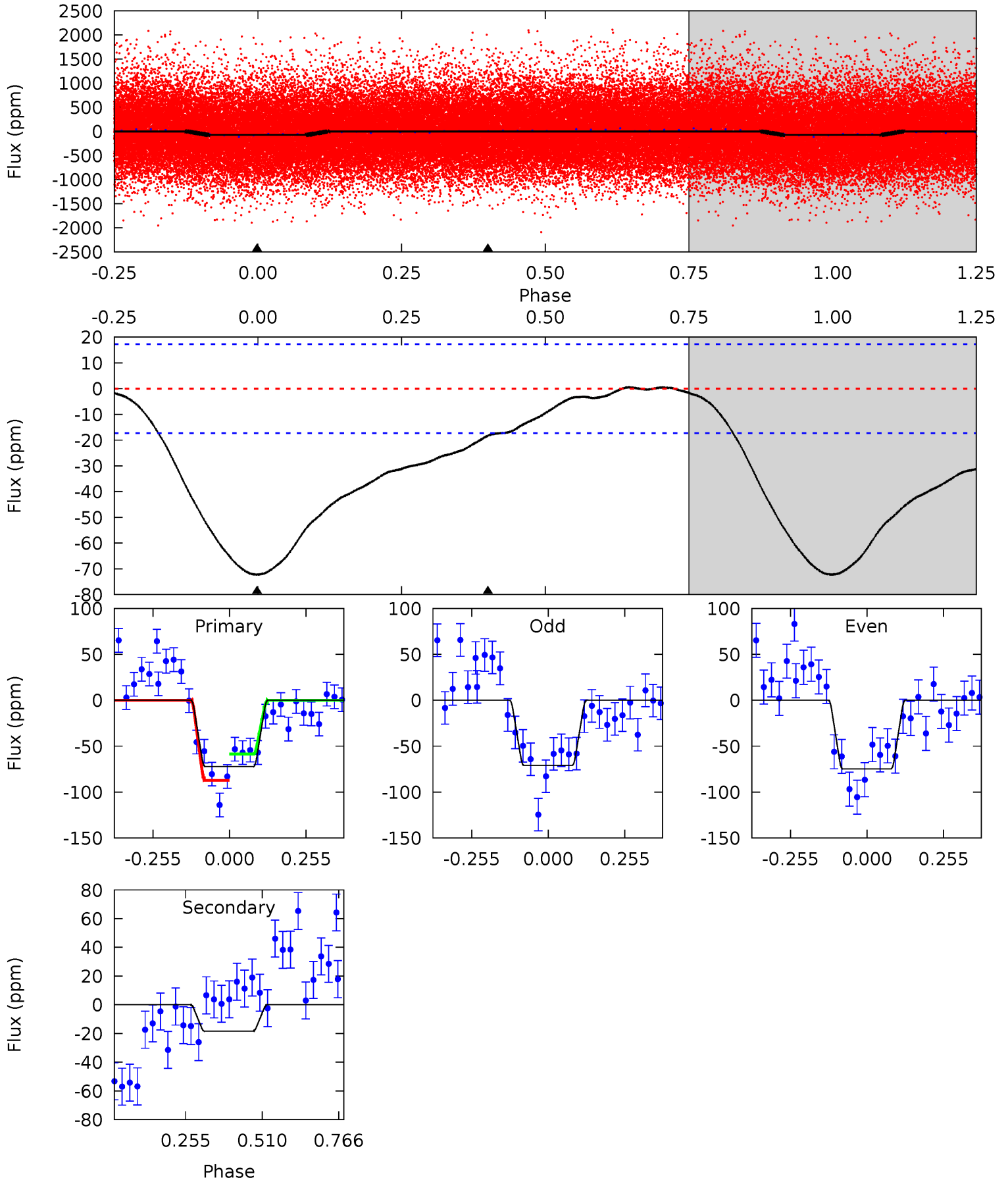
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.35	1.31	0	0	4.31	0.99	0.08	4.35	4.35	1.31	1.31	1.63	0.88	0.02	4.48



Alt Model-Shift Uniqueness Test

007200012-01, P = 0.566795 Days, E = 131.823980 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.3	4.63	0	0	4.36	1.14	0.13	18.3	18.3	4.63	4.63	0.48	0.96	0.01	3.63



Stellar Parameters For KIC 007200012

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6170^{+187}_{-224}	$4.472^{+0.054}_{-0.216}$	$-0.160^{+0.250}_{-0.350}$	$0.992^{+0.321}_{-0.107}$	$1.063^{+0.144}_{-0.144}$	$1.535^{+0.434}_{-0.810}$
	+3%/-4%	+1%/-5%	+156%/-219%	+32%/-11%	+14%/-14%	+28%/-53%
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 007200012-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-5 ± 4	$0.86^{+0.86}_{-0.57}$	3317^{+242}_{-184}	3005^{+2417}_{-6191}	$0.457^{+4.468}_{-0.388}$
Alt.	-18 ± 4	$1.13^{+1.01}_{-0.70}$	3313^{+242}_{-180}	4057^{+2341}_{-1238}	$1.390^{+7.943}_{-0.998}$

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 $A_{obs} \gg 1.0$

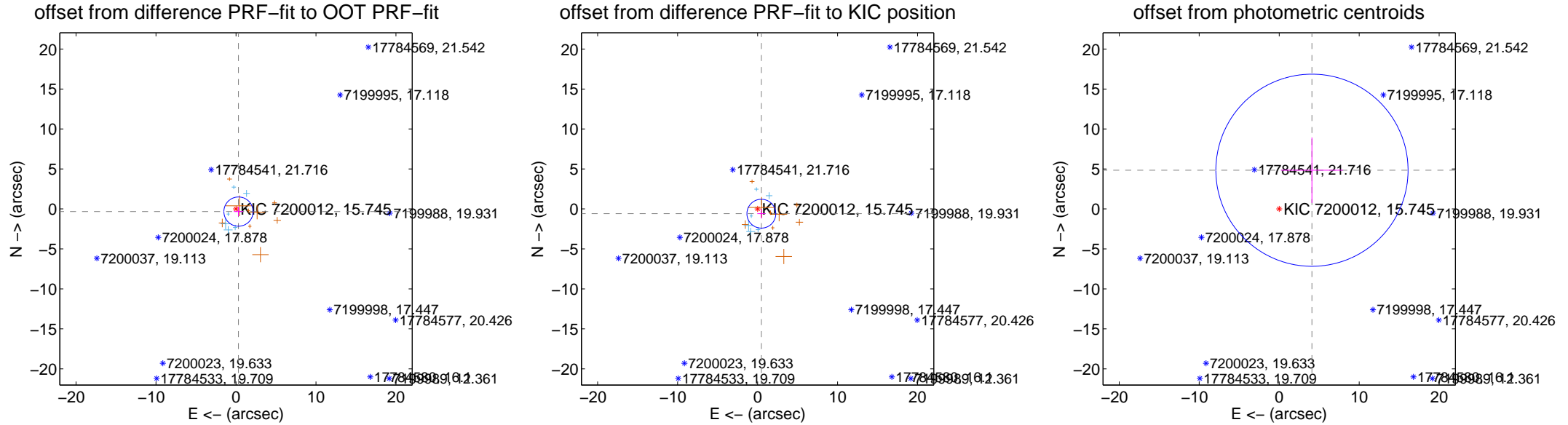
DV Centroid Data

Supplemental centroid analysis for 007200012-01. Kepler magnitude: 15.74. Transit SNR 3.83

There are 6 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.457 ± 0.609	0.75	-0.312 ± 0.591	-0.333 ± 0.594
PRF-fit source offset from KIC position	0.758 ± 0.602	1.26	-0.470 ± 0.502	-0.594 ± 0.603
photometric centroid source offset	6.34 ± 4.00	1.58	-4.10 ± 3.87	4.84 ± 4.10



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.

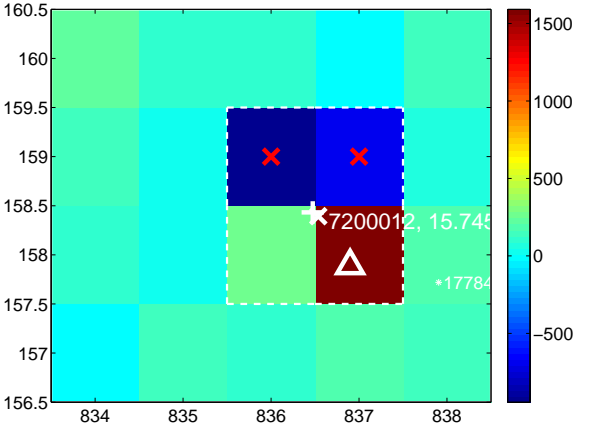
Q1 no difference image



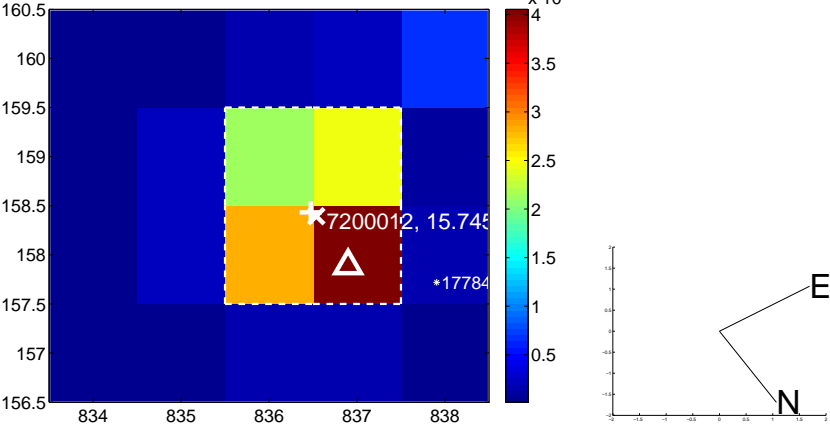
Q1 no OOT image



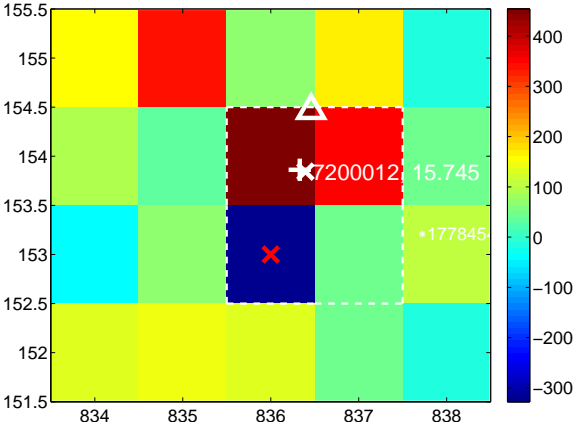
Q2 difference image



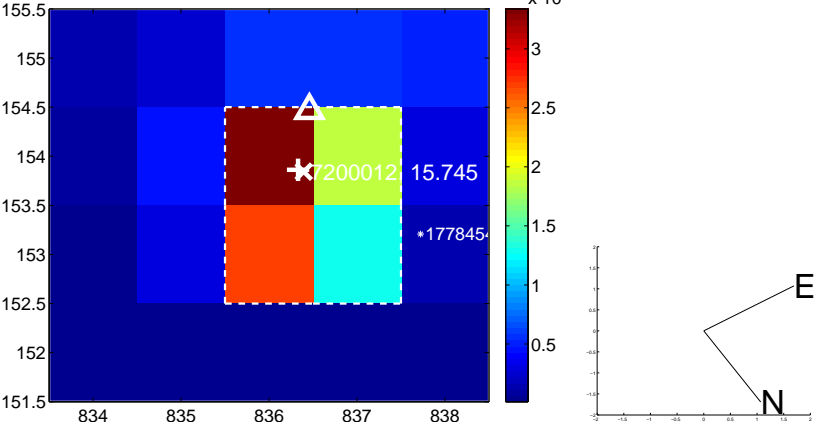
Q2 OOT image



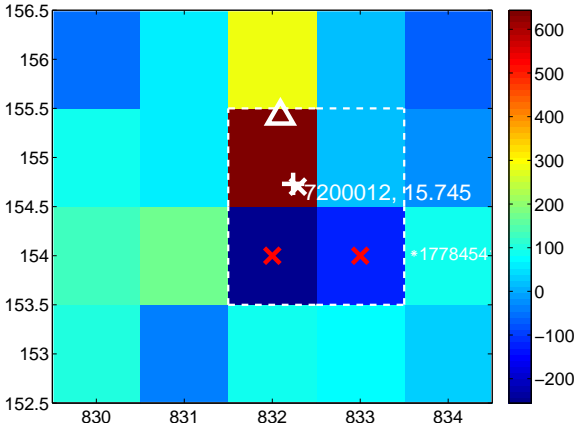
Q3 difference image. Poor Quality



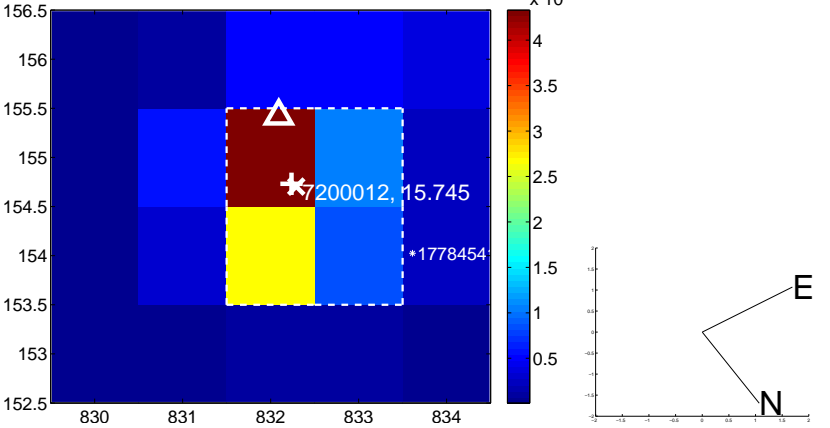
Q3 OOT image



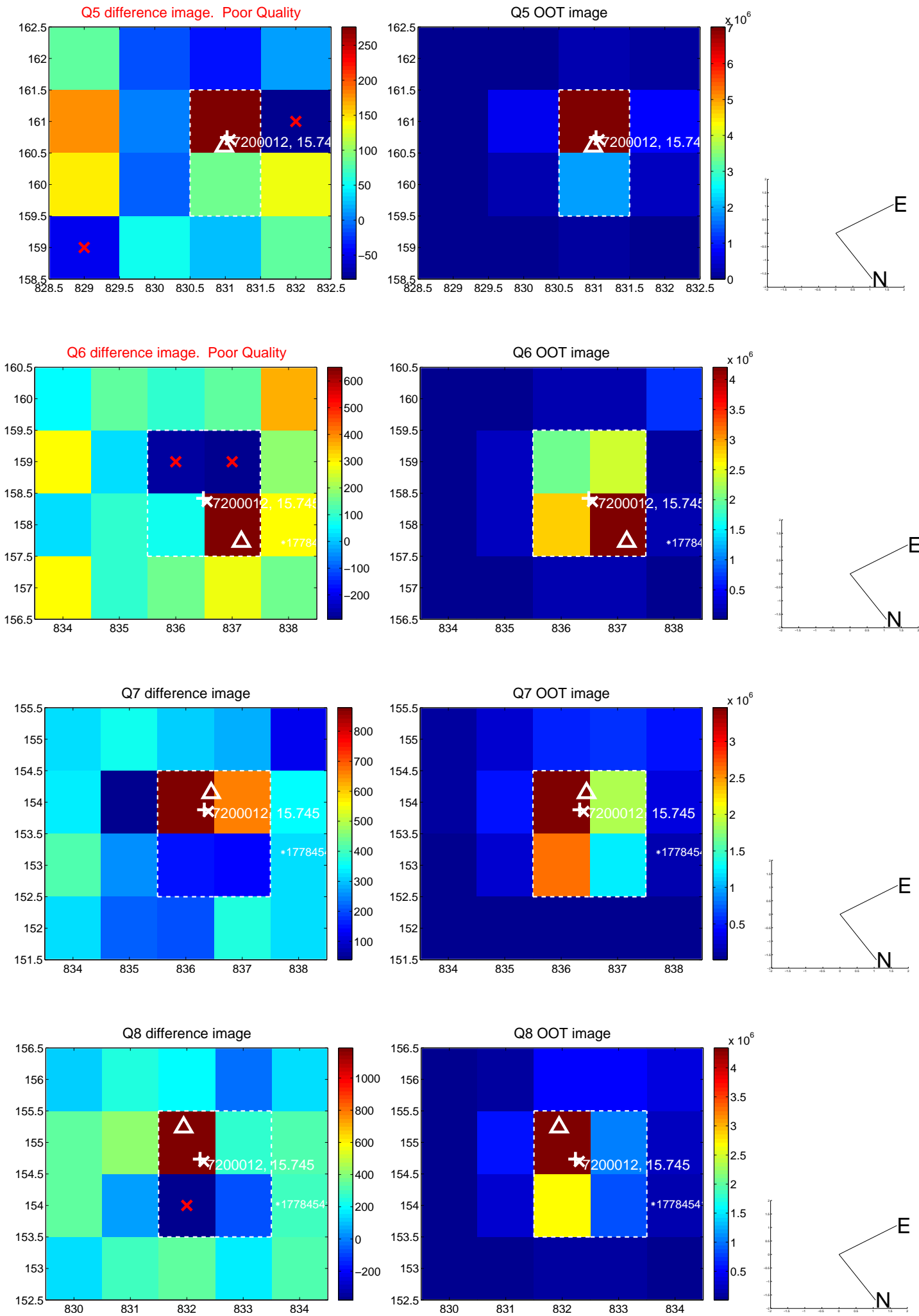
Q4 difference image



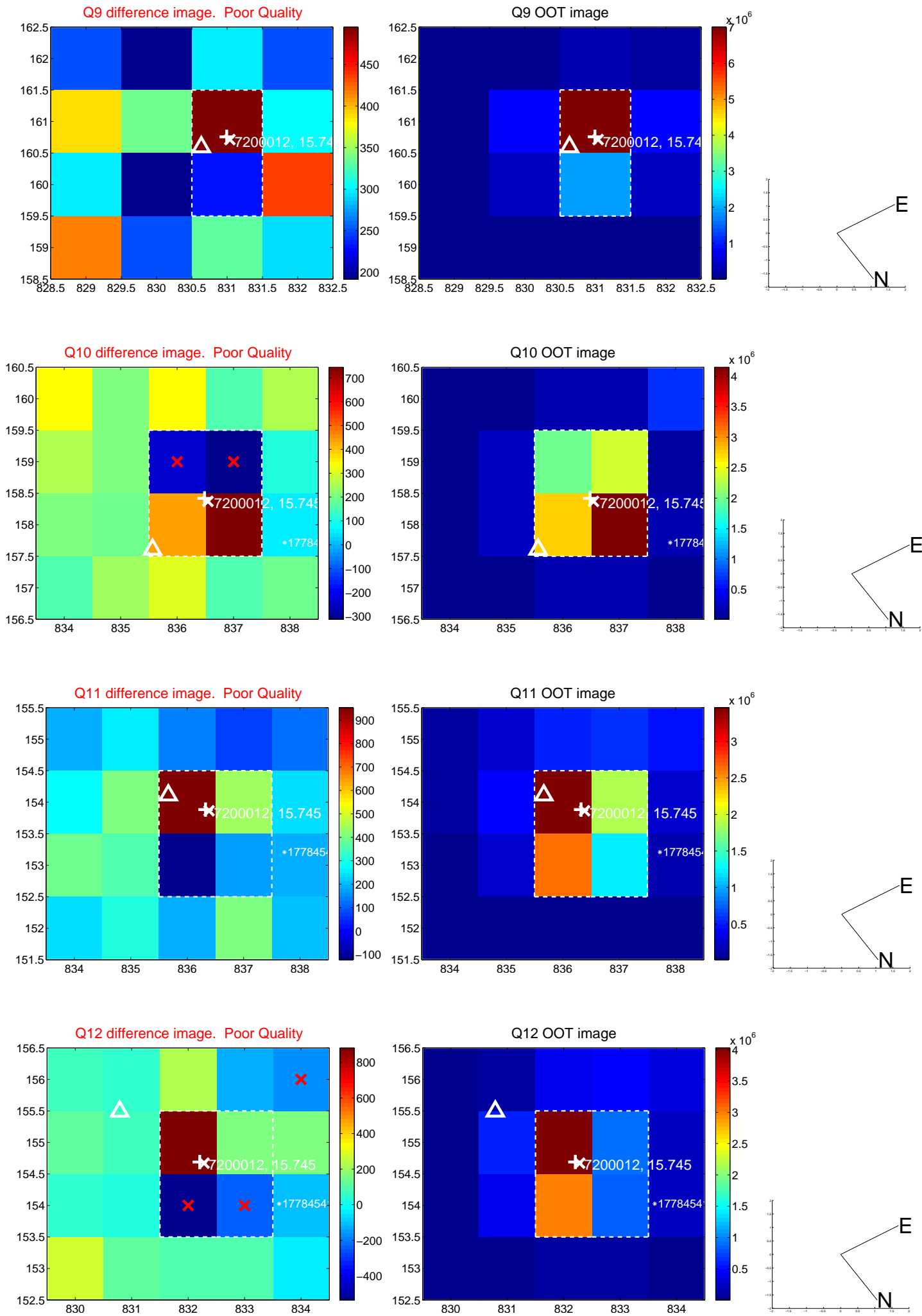
Q4 OOT image



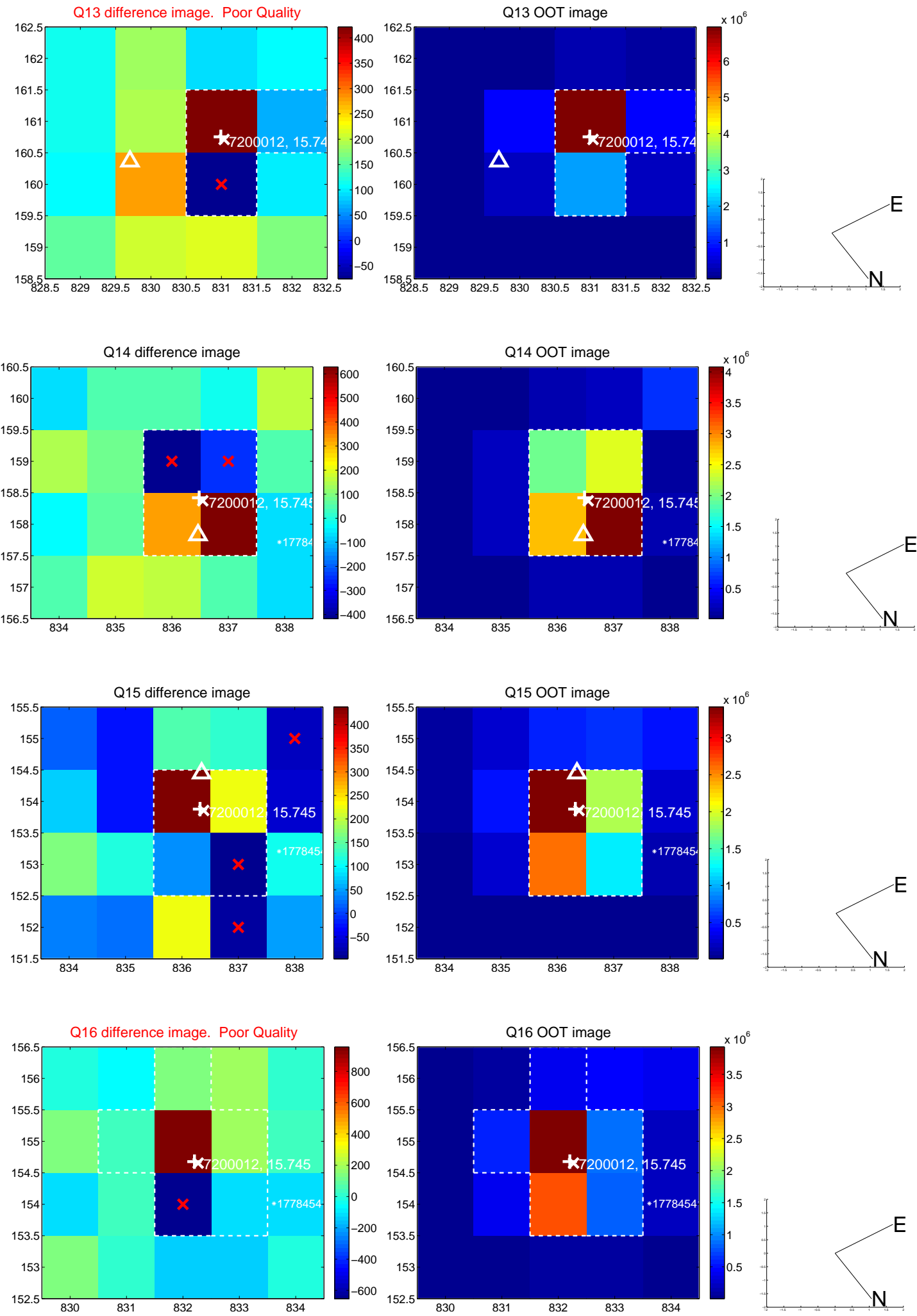
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



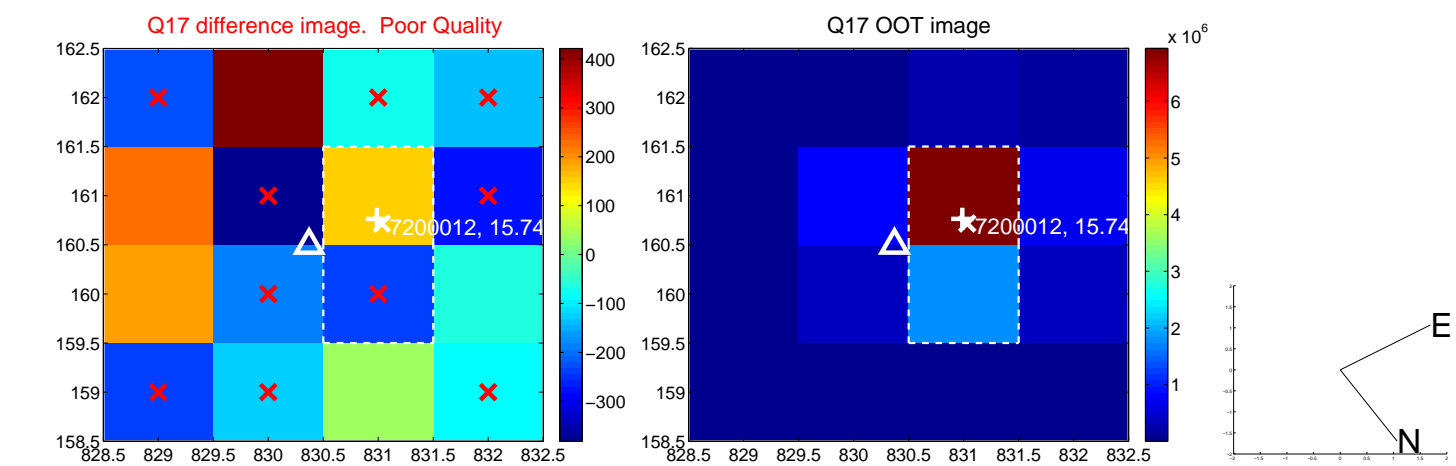
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



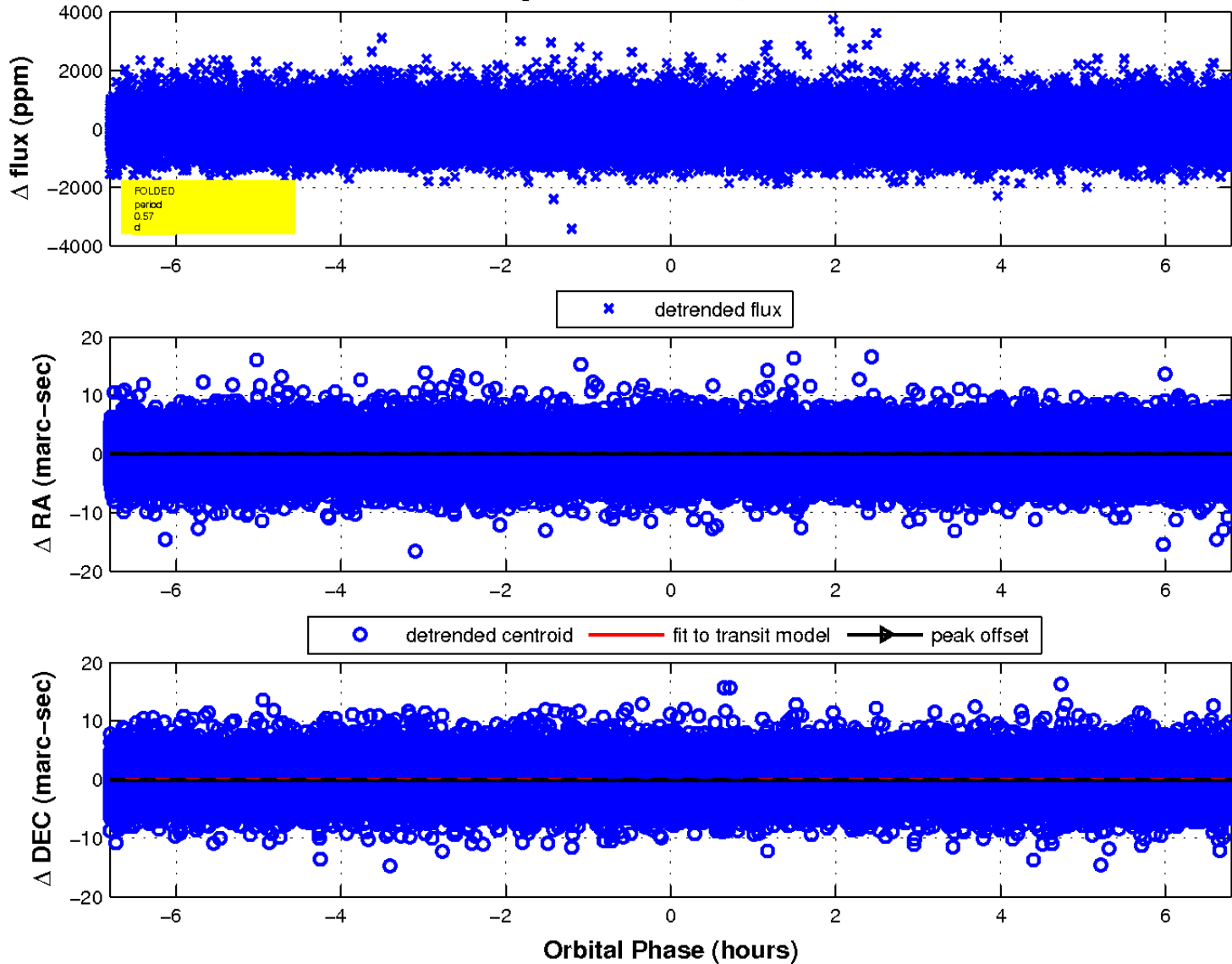
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

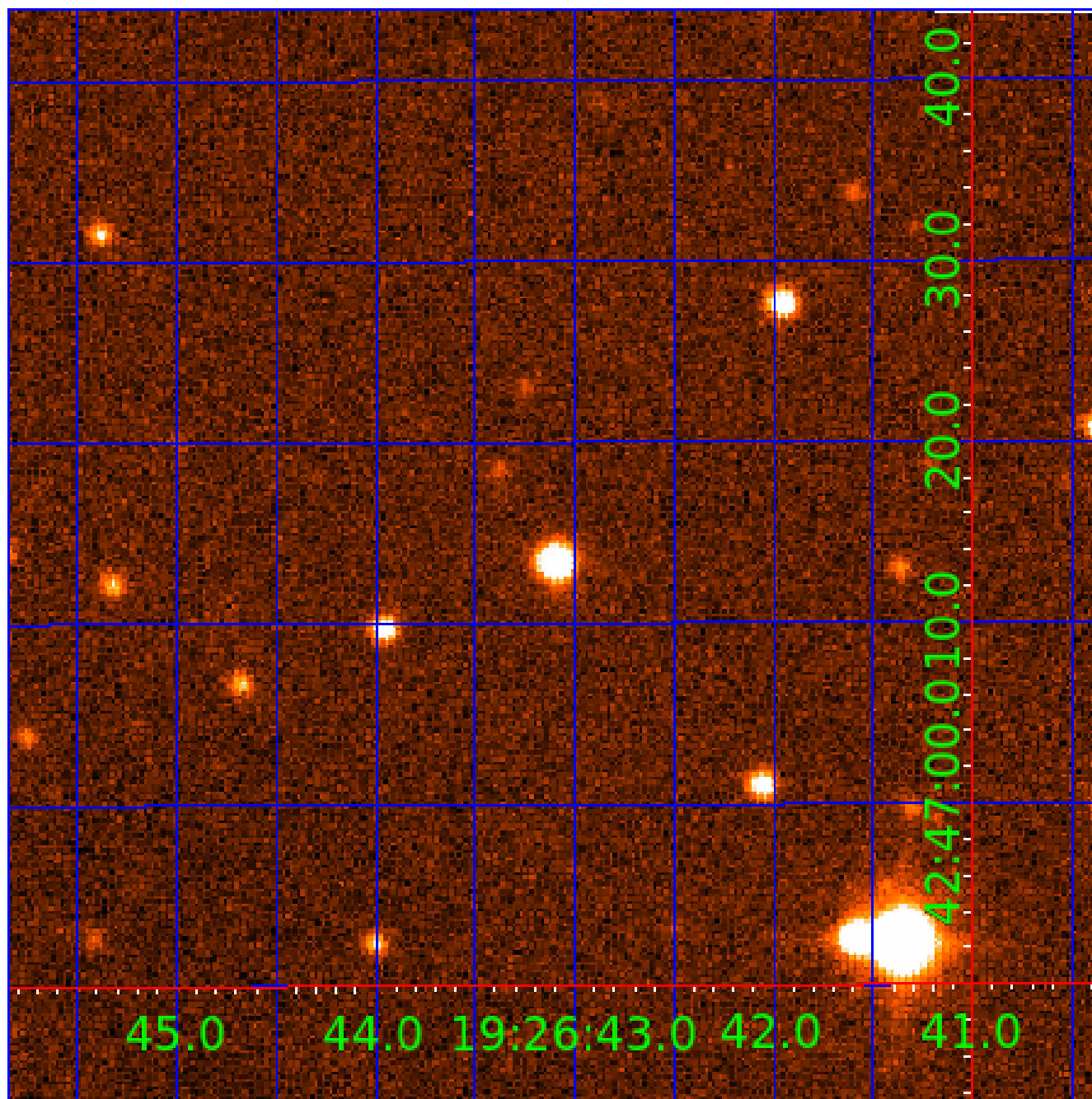


fluxWeightedCentroids, Planet 1 of 5



UKIRT Image

Declination



KIC 007200012

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})
007200012-01	OBS	No	0.566741	131.859829	16.4	3.929	11.1	3.8	0.99	6170	0.41	6821.24
007200012-02	OBS	No	44.089735	131.895873	816.9	1.482	10.2	8.9	0.99	6170	2.85	20.54
007200012-03	OBS	No	28.770856	144.563511	792.5	1.690	9.2	13.3	0.99	6170	2.81	36.29
007200012-04	OBS	No	30.069144	153.624891	666.3	1.971	7.6	8.7	0.99	6170	2.83	34.22
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007200012-01	OBS	FP	0.00	1	0	1	1	LPP_DV—HALO_GHOST—EPHEM_MATCH
007200012-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007200012-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
007200012-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200012-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS

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

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

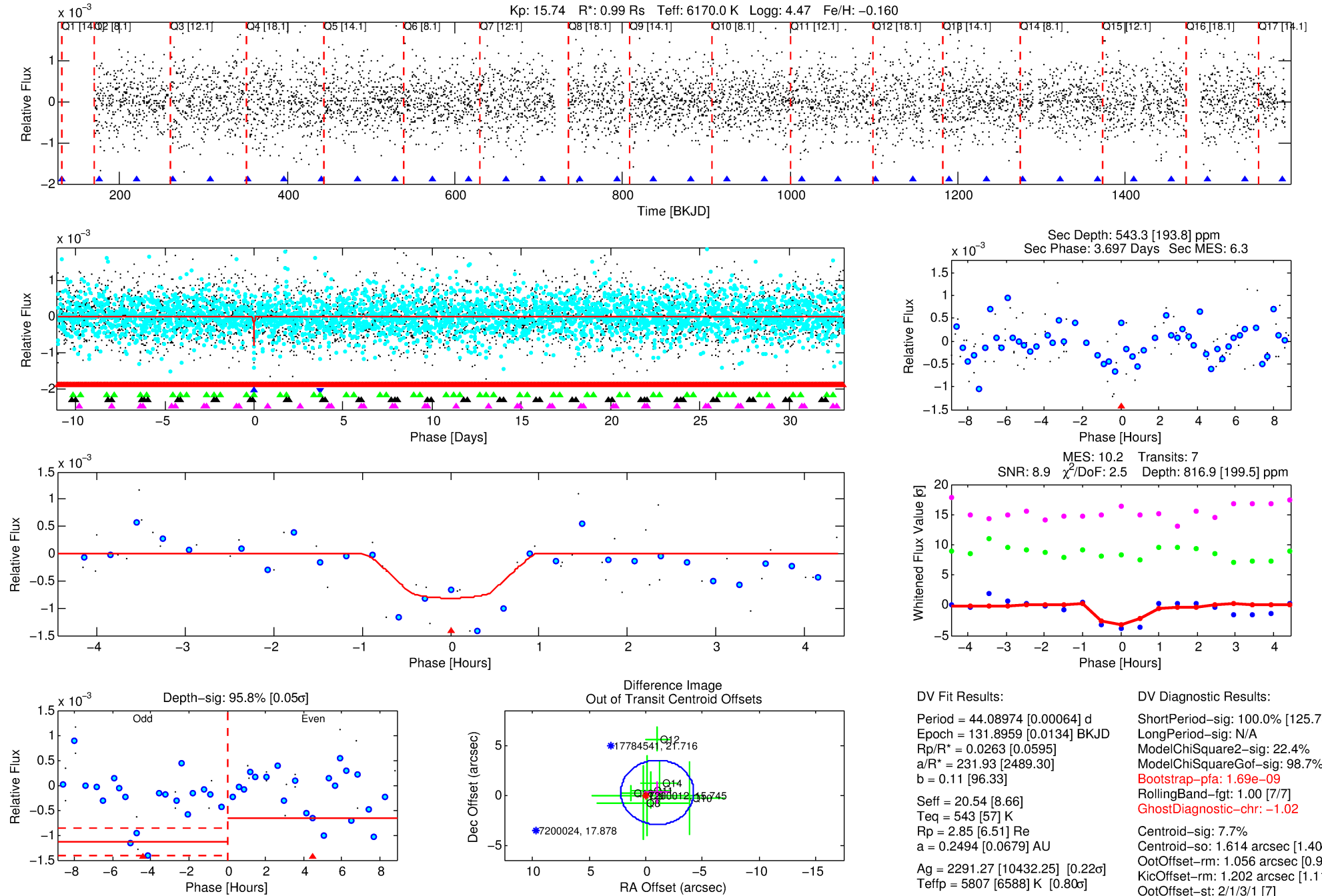
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007200012-02

No Significant Match Found

DV One-Page Summary

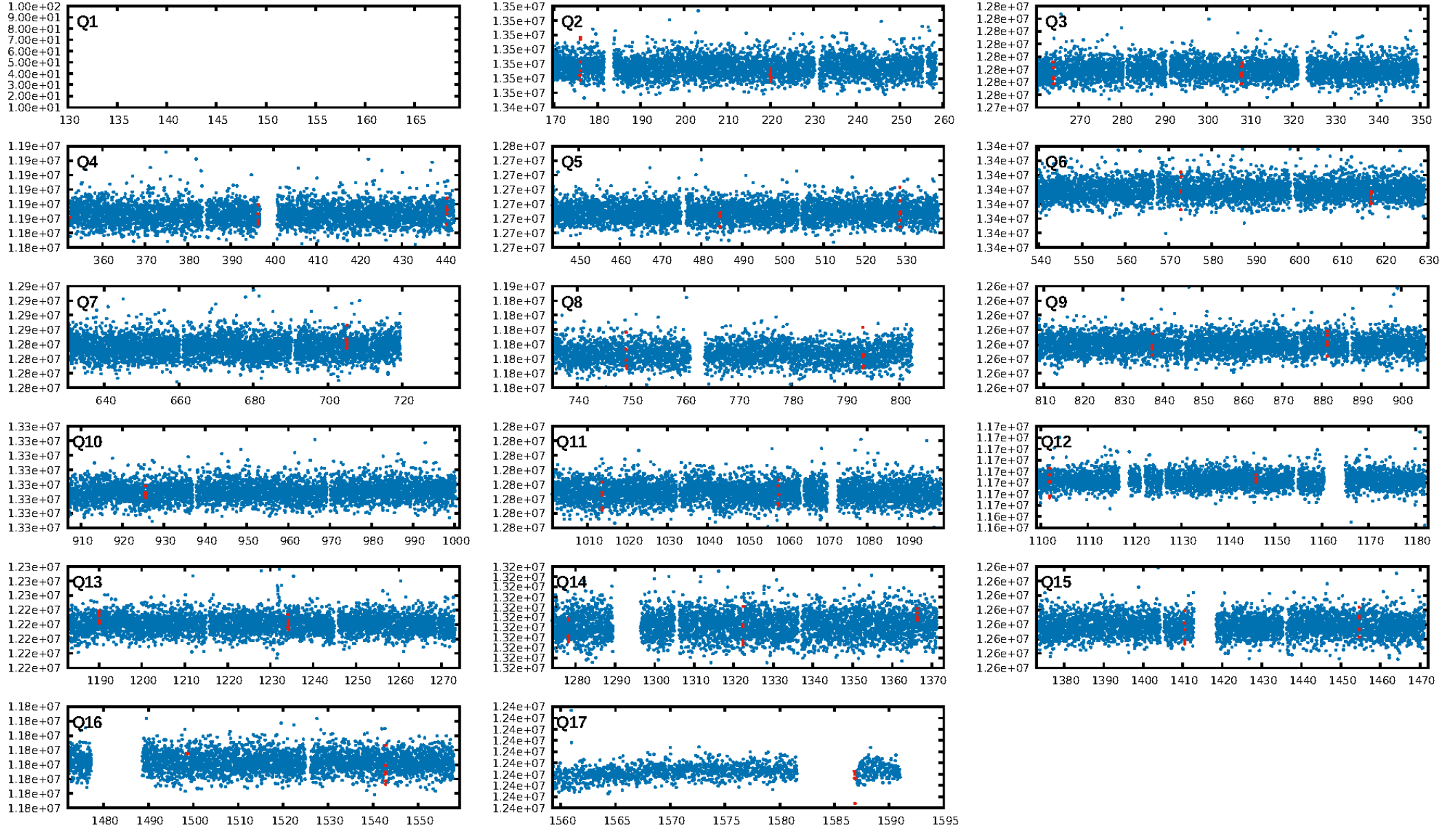
KIC: 7200012 Candidate: 2 of 5 Period: 44.090 d



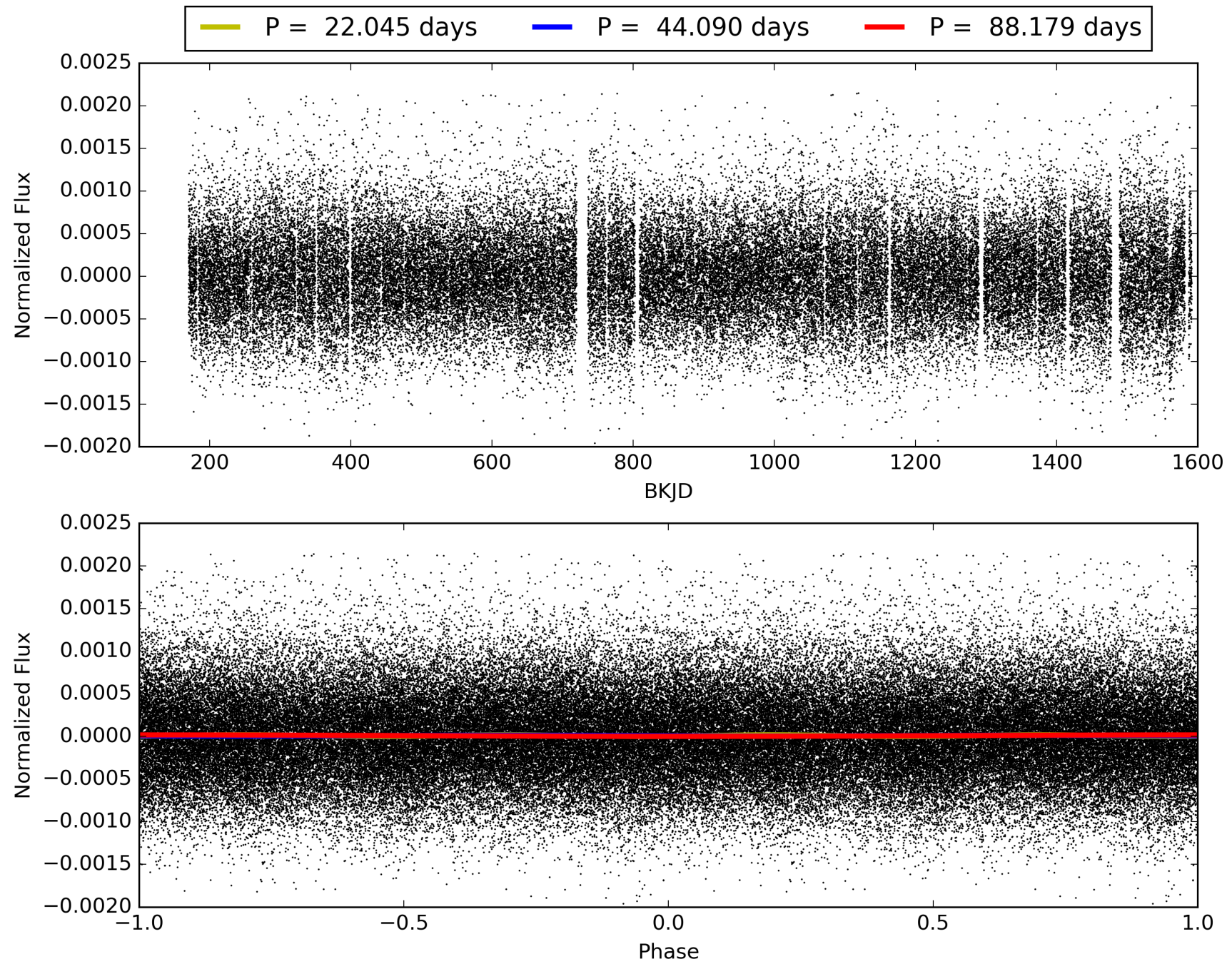
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:26:40 Z

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

TCE 007200012-02, PDC Light Curves

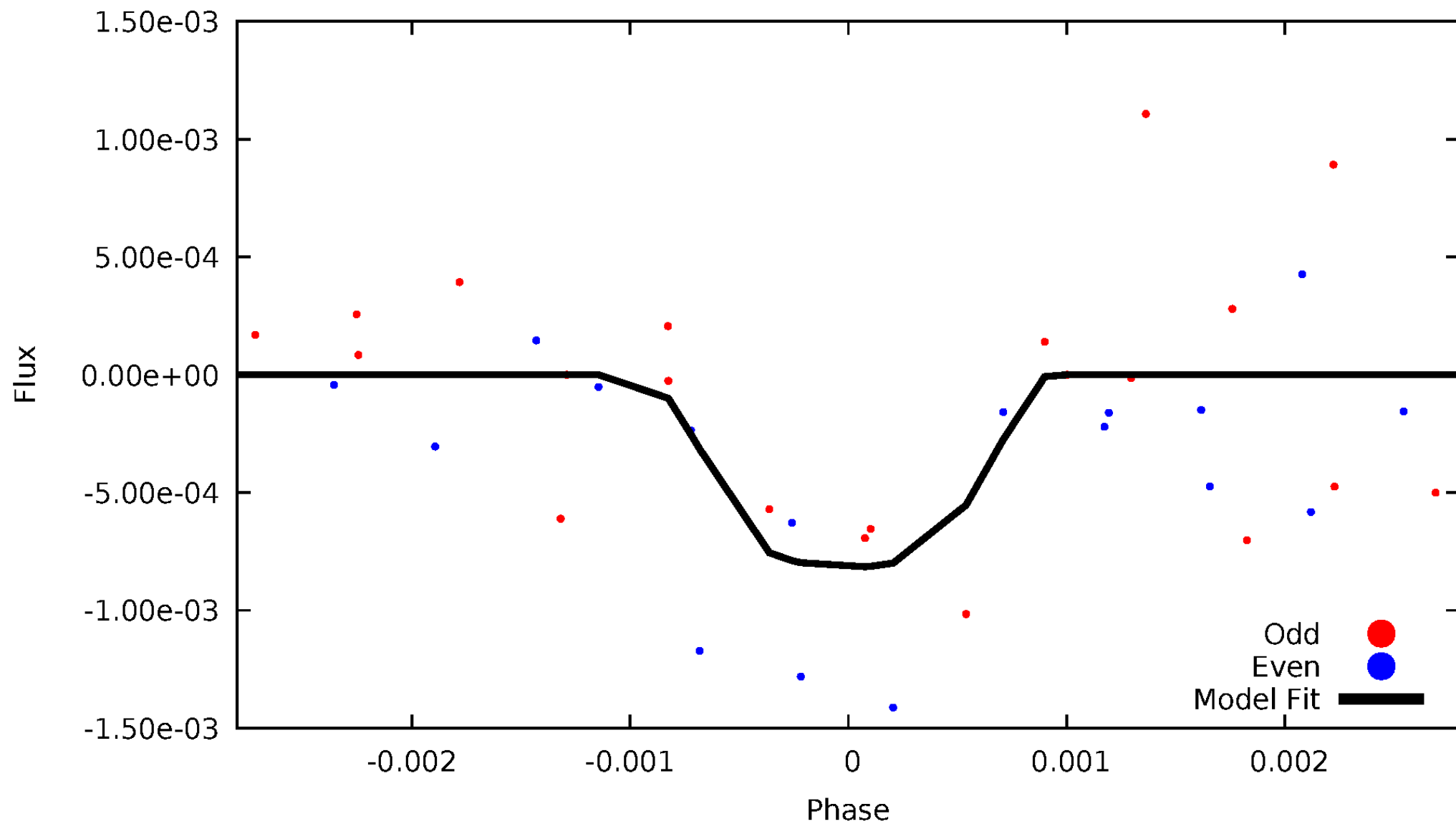


TCE 007200012-02



DV Odd/Even

TCE 007200012-02

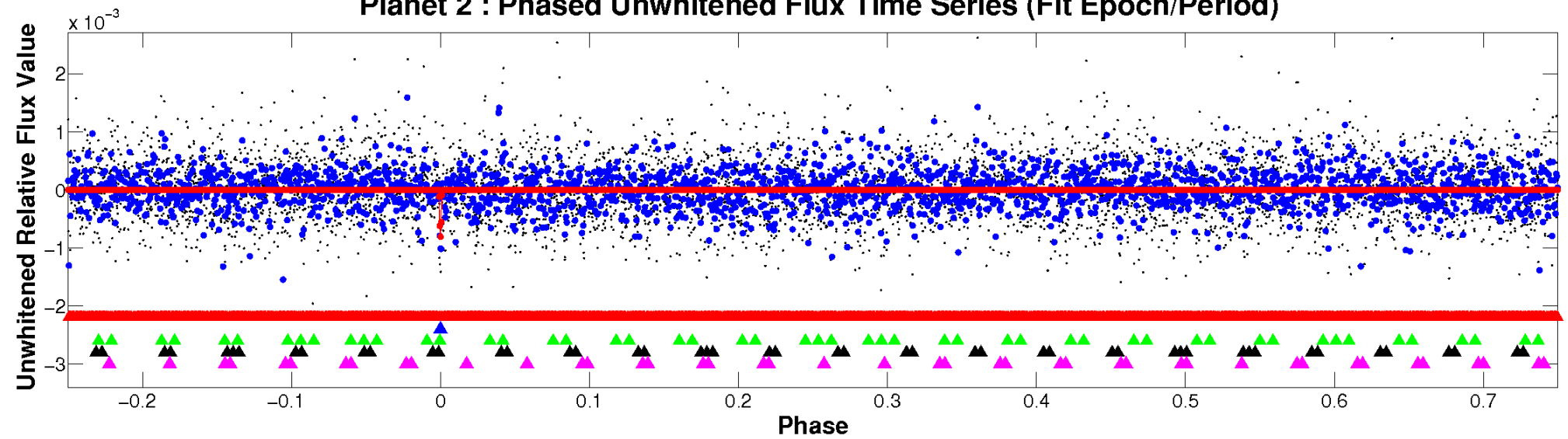


ALT Odd/Even

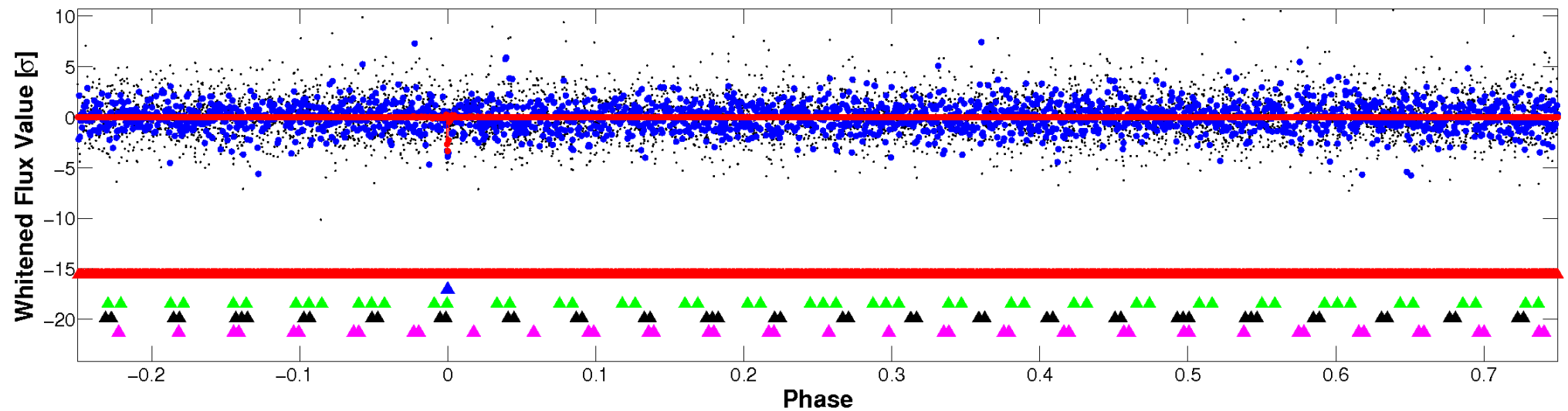
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

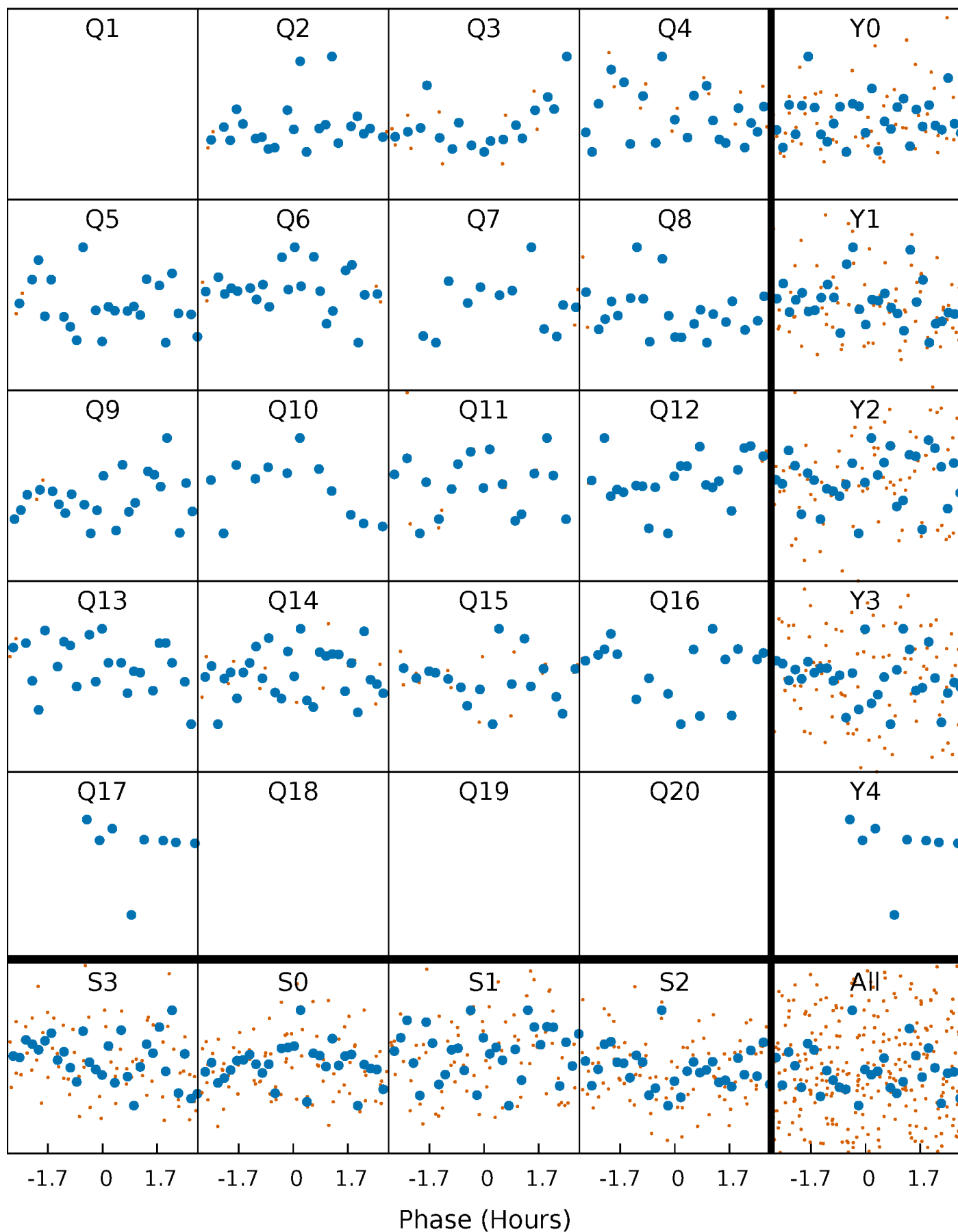


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



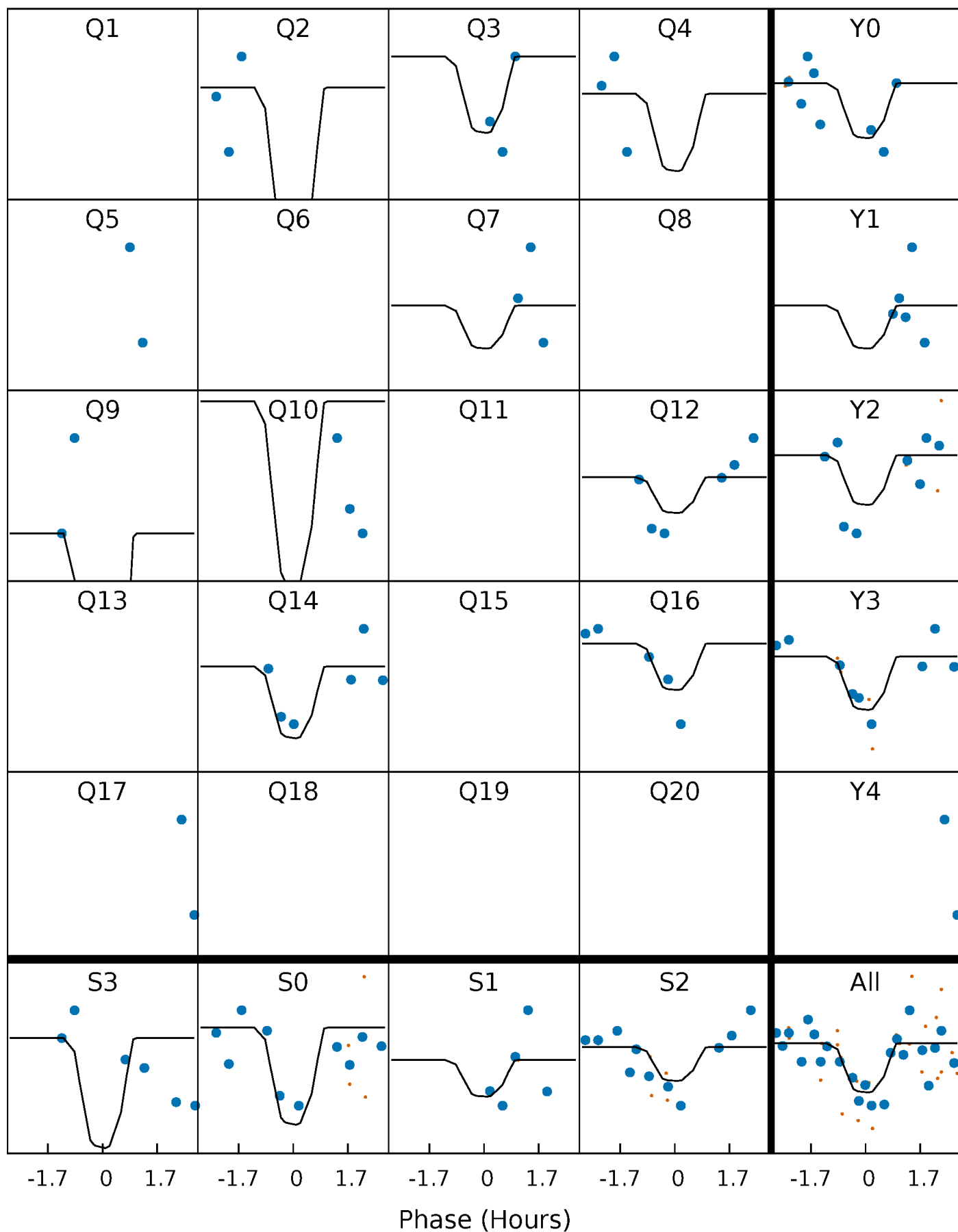
PDC Quarter-Phased Transit Curves

TCE 007200012-02 P= 44.089735 Days $T_0=131.895873$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 007200012-02 P= 44.089735 Days $T_0=131.895873$ (BKJD)

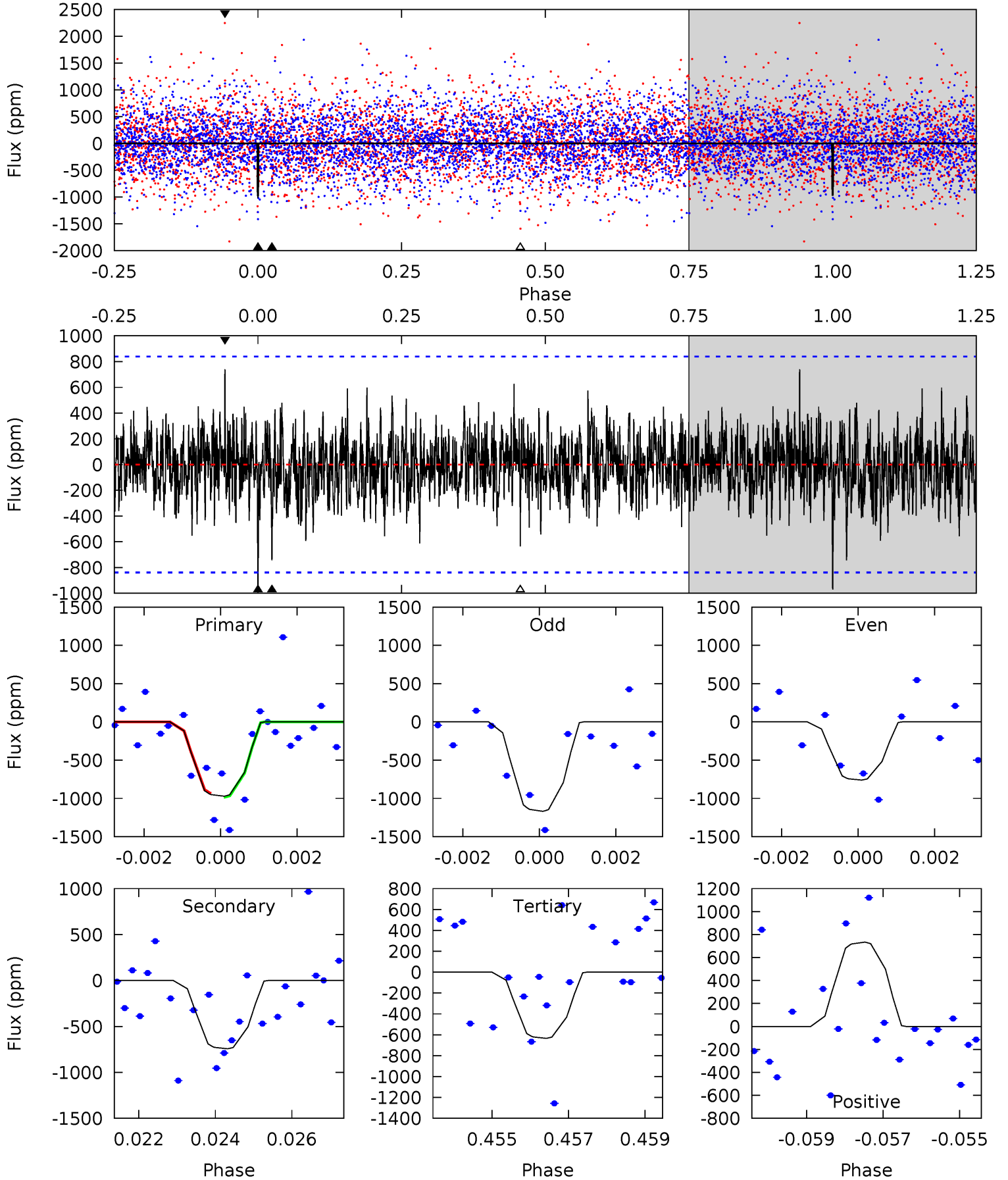


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

007200012-02, P = 44.089735 Days, E = 131.895873 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.20	4.75	4.05	4.69	5.35	3.13	1.21	2.15	1.51	0.70	0.06	1.43	1.05	0.43	0.15



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 007200012

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6170^{+187}_{-224}	$4.472^{+0.054}_{-0.216}$	$-0.160^{+0.250}_{-0.350}$	$0.992^{+0.321}_{-0.107}$	$1.063^{+0.144}_{-0.144}$	$1.535^{+0.434}_{-0.810}$
	+3%/-4%	+1%/-5%	+156%/-219%	+32%/-11%	+14%/-14%	+28%/-53%
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 007200012-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-743 ± 157	$5.94^{+5.45}_{-3.91}$	772^{+55}_{-40}	4641^{+3107}_{-993}	742^{+5148}_{-552}
Alt.	N/A	N/A	N/A	N/A	N/A

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

DV Centroid Data

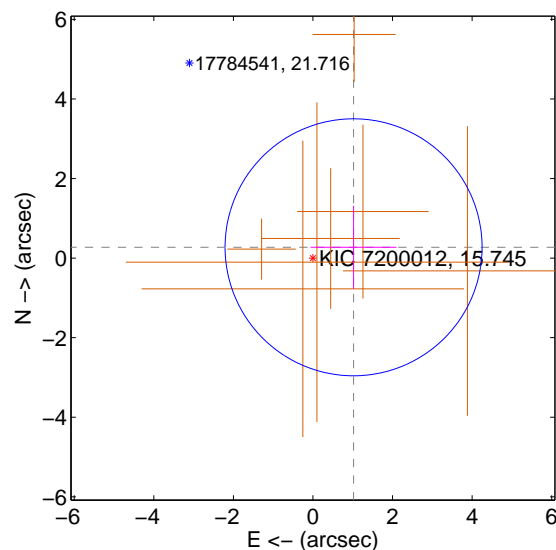
Supplemental centroid analysis for 007200012-02. Kepler magnitude: 15.74. Transit SNR 8.87

There are 0 quarters with good PRF difference image offsets

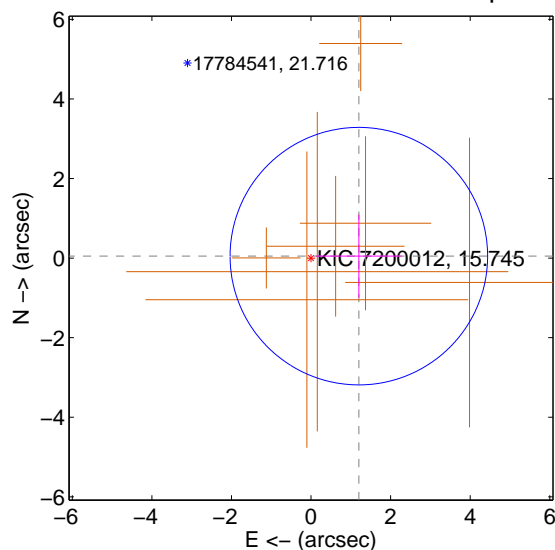
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.056 ± 1.076	0.98	-1.020 ± 1.079	0.271 ± 1.043
PRF-fit source offset from KIC position	1.202 ± 1.078	1.11	-1.201 ± 1.079	0.049 ± 1.043
photometric centroid source offset	1.61 ± 1.15	1.40	-1.22 ± 1.13	-1.06 ± 1.18

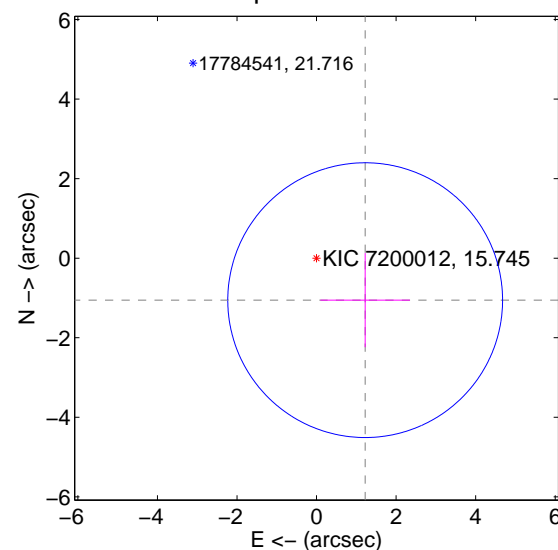
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



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

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

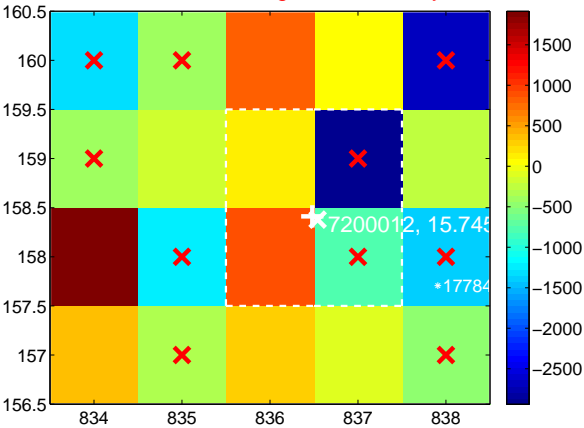
Q1 no difference image



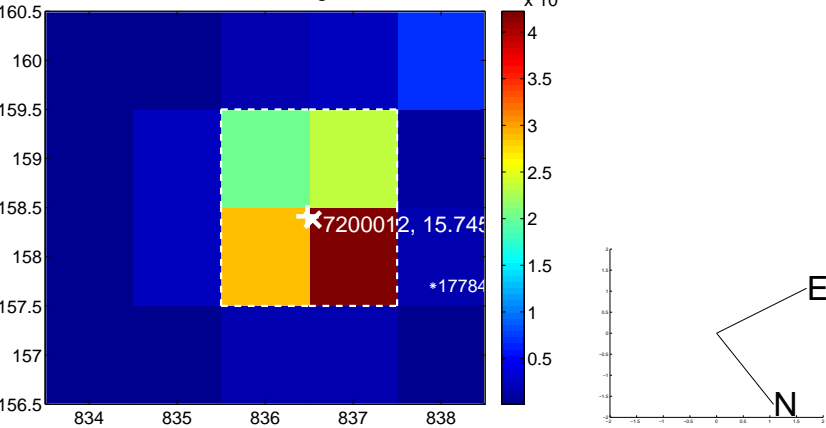
Q1 no OOT image



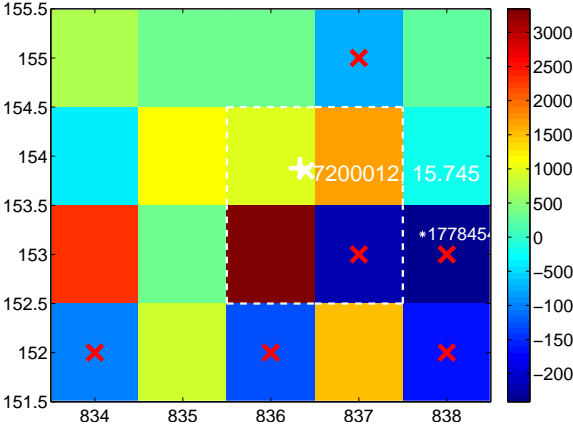
Q2 difference image. Poor Quality



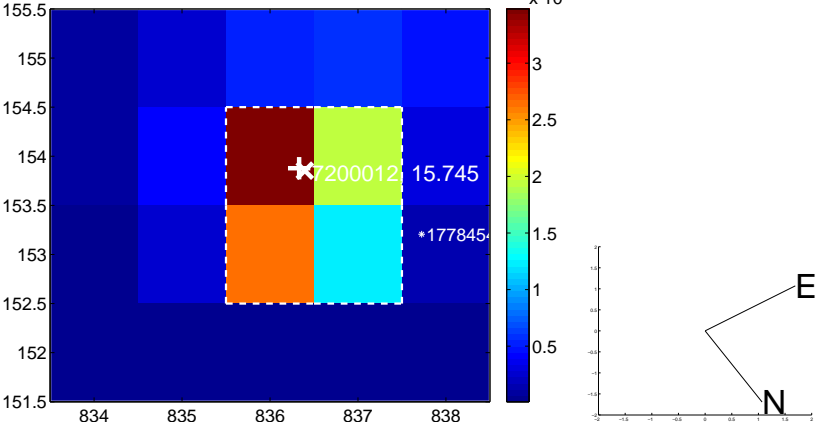
Q2 OOT image



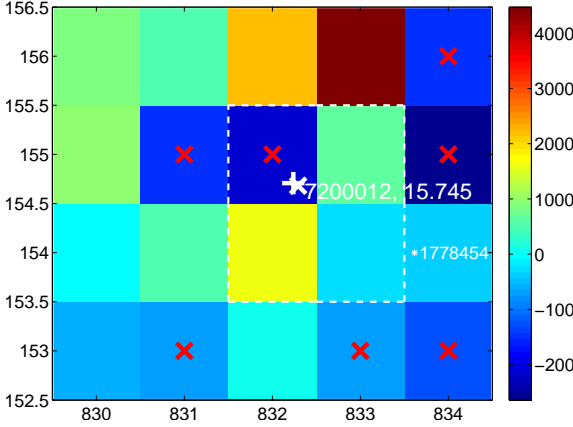
Q3 difference image. Poor Quality



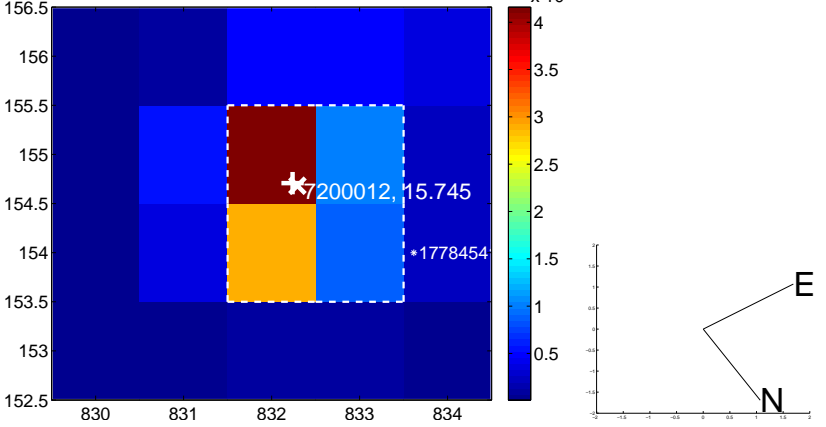
Q3 OOT image



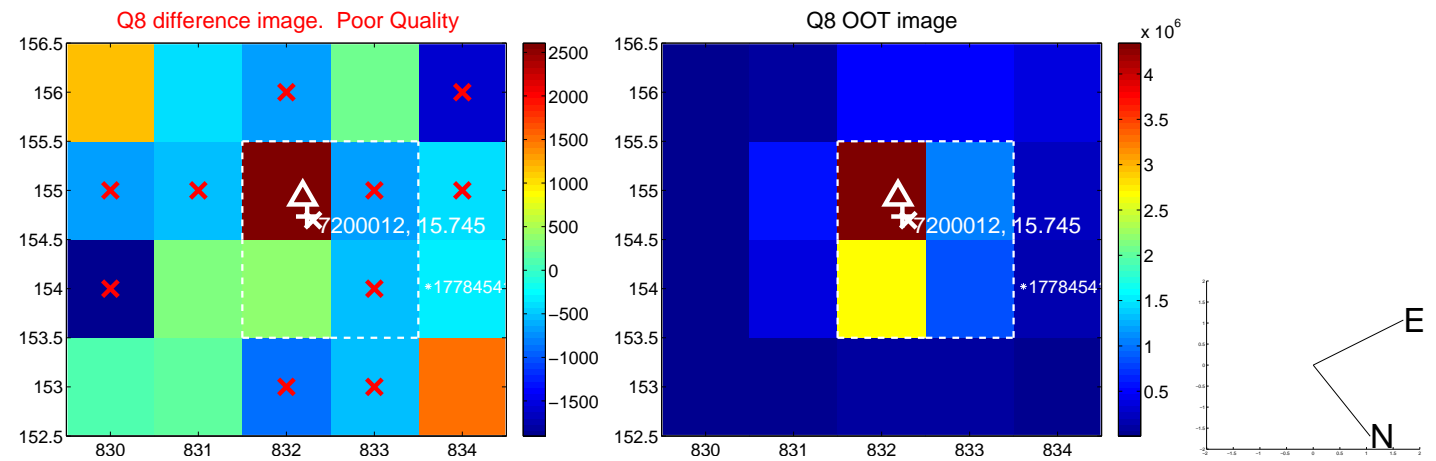
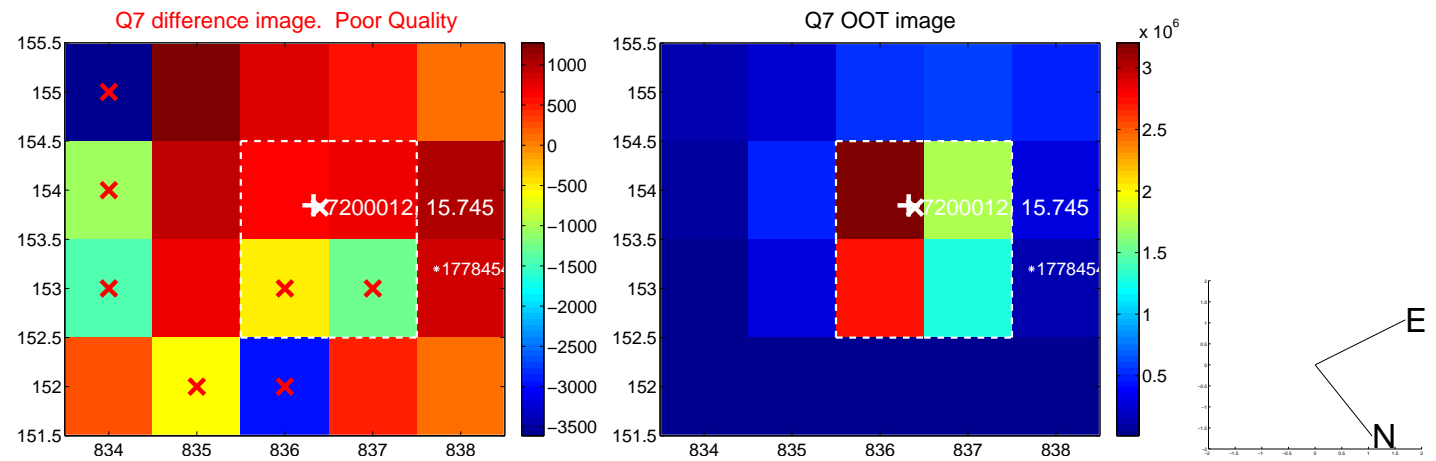
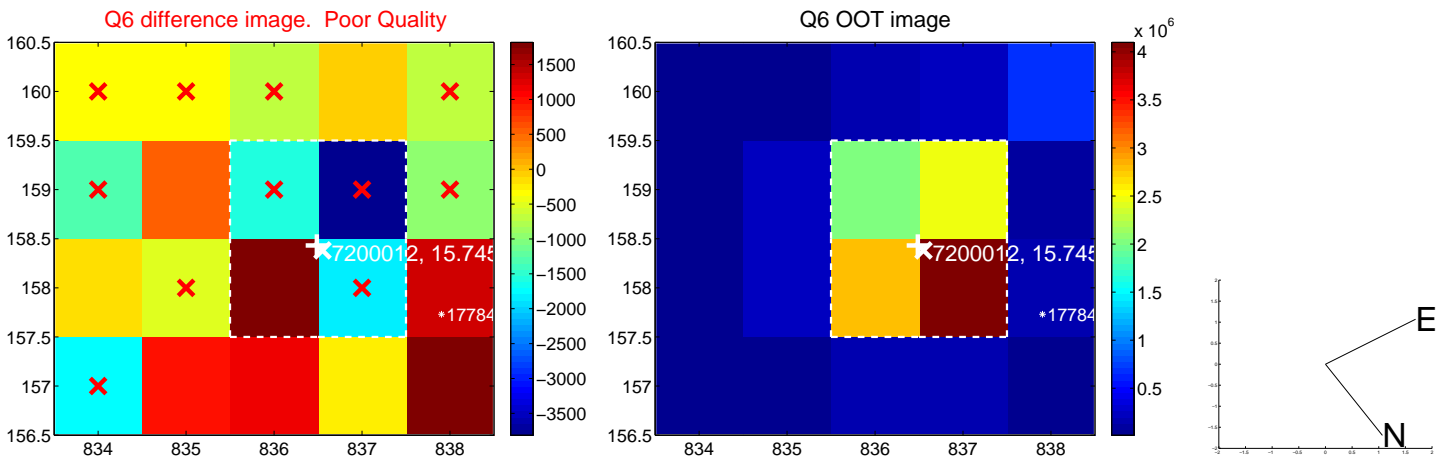
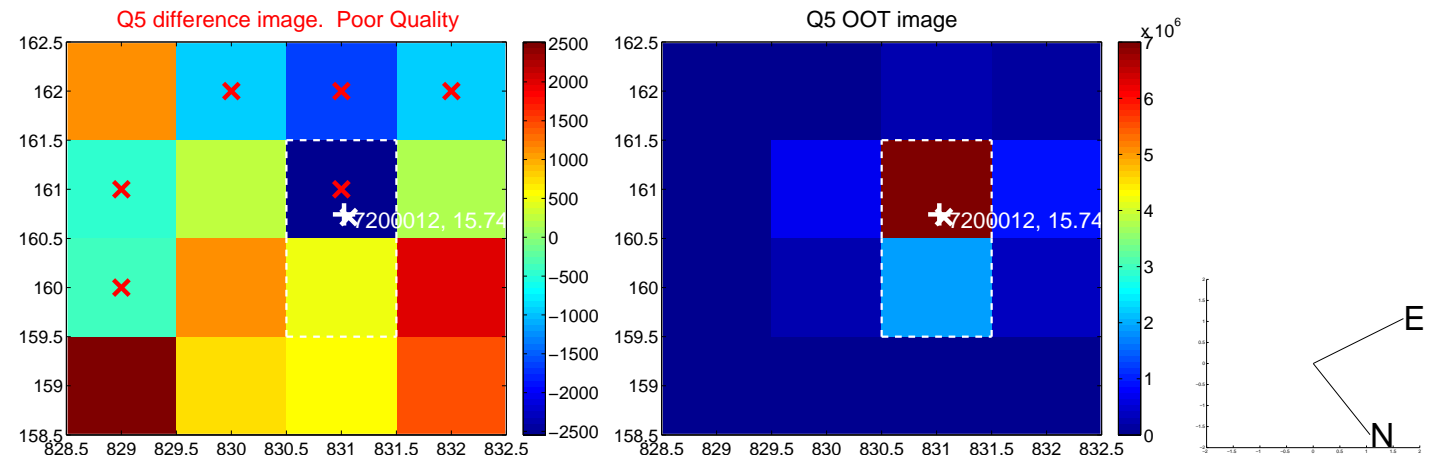
Q4 difference image. Poor Quality



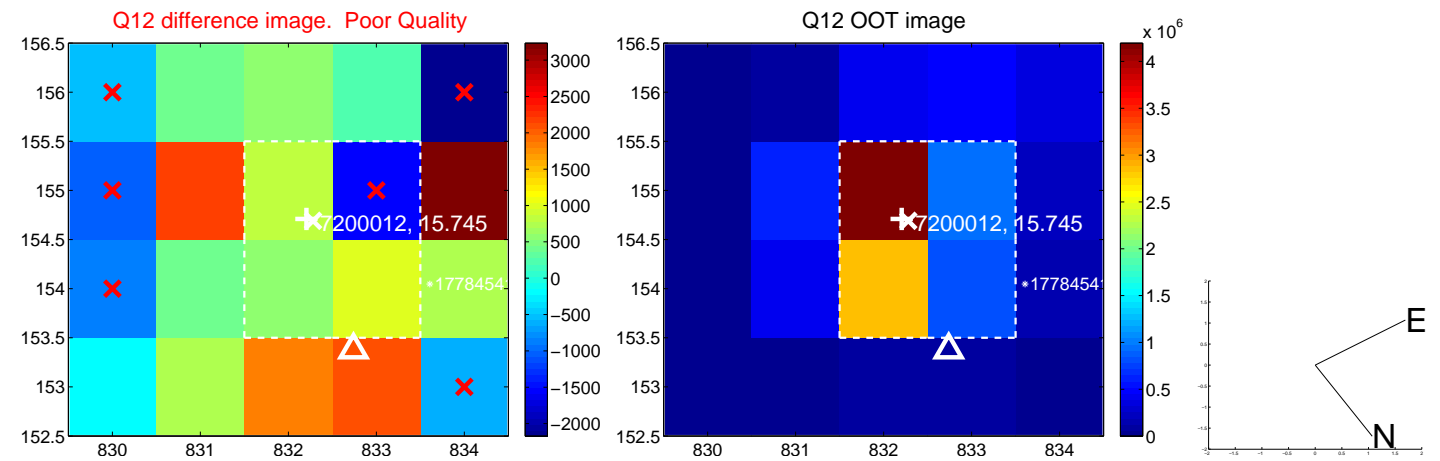
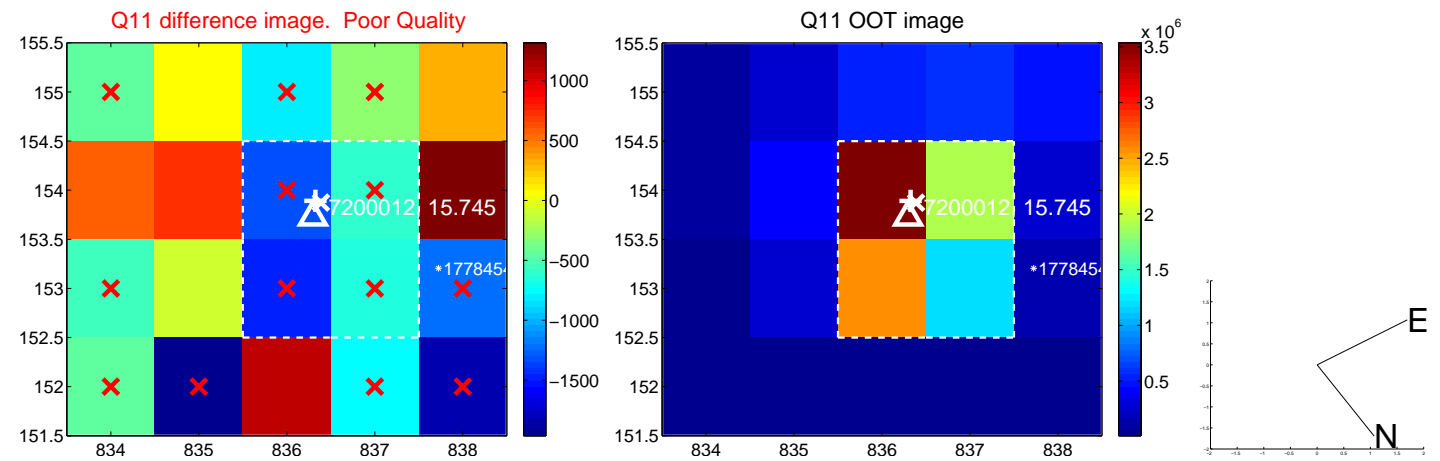
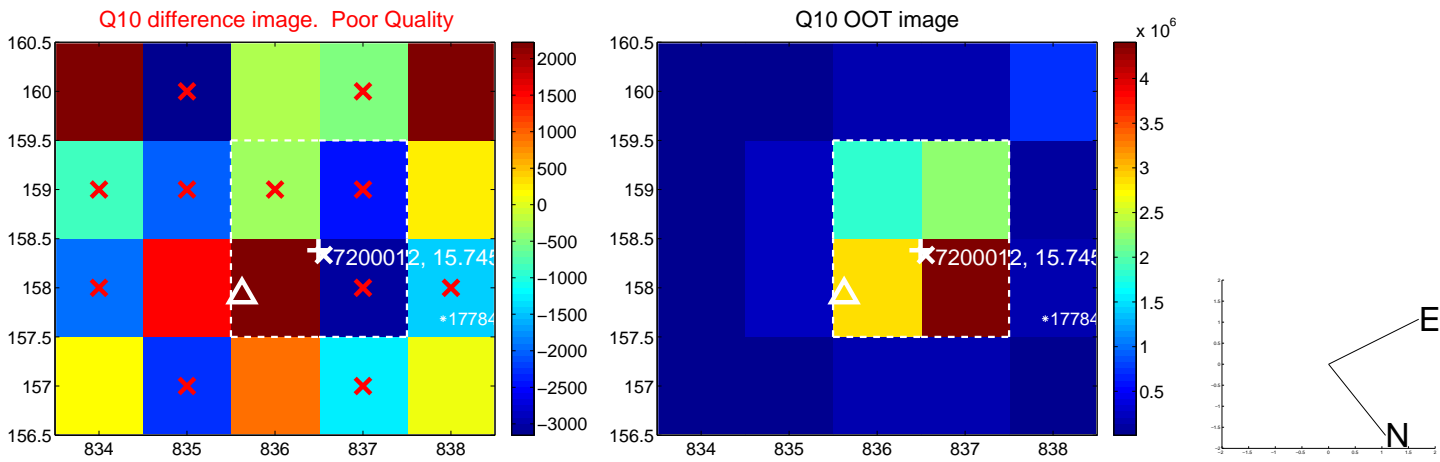
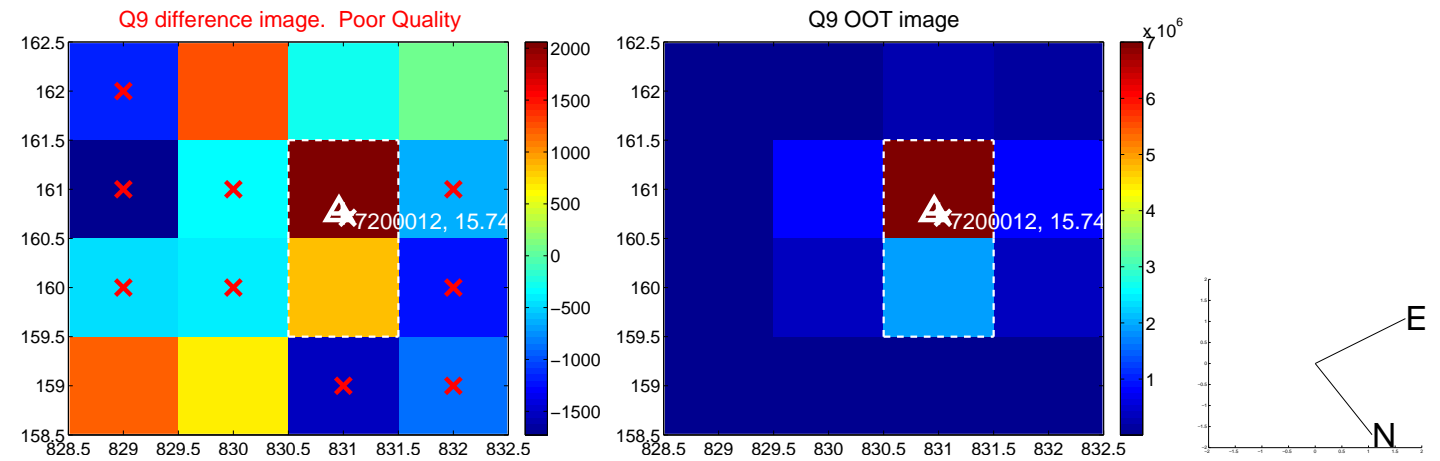
Q4 OOT image



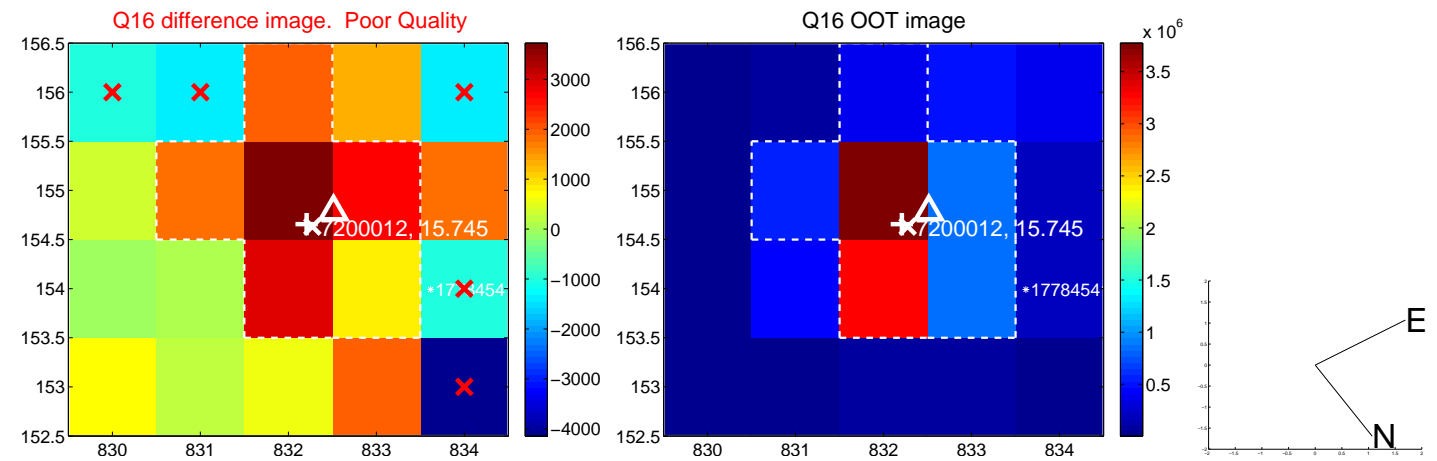
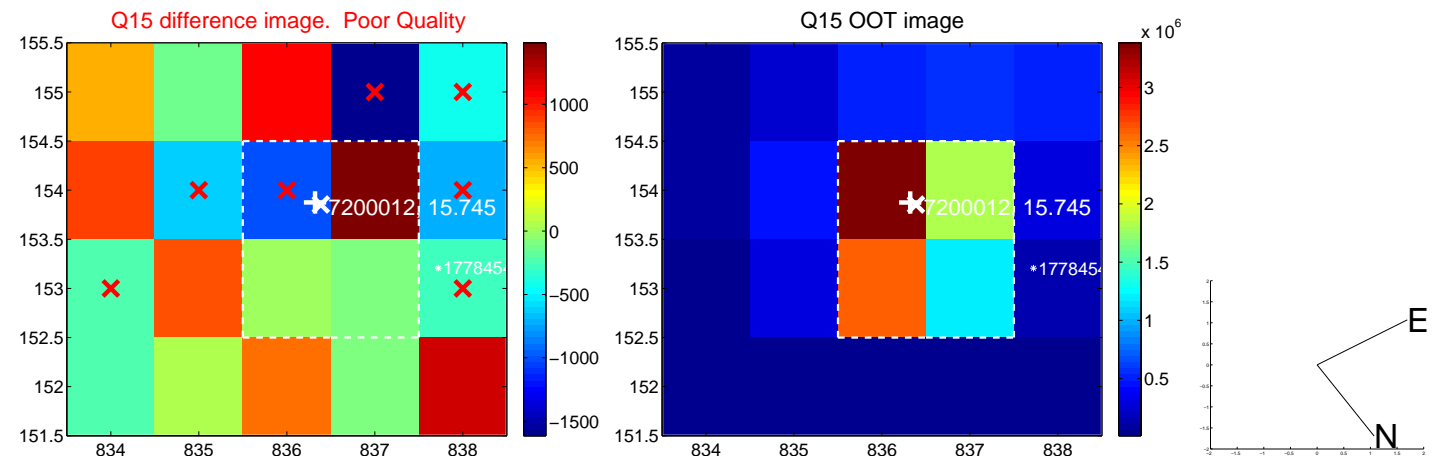
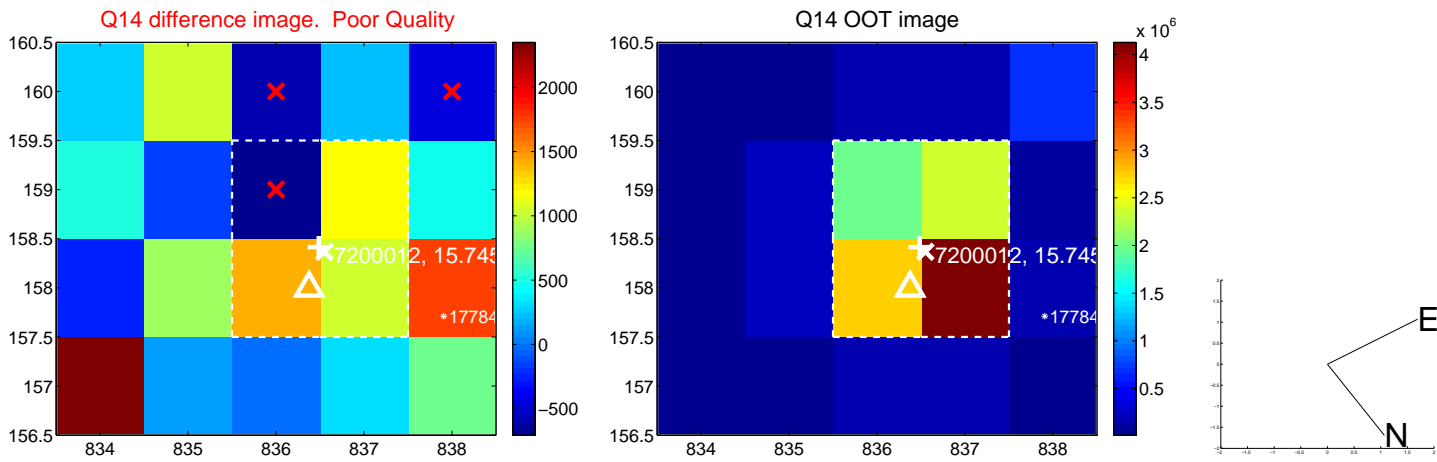
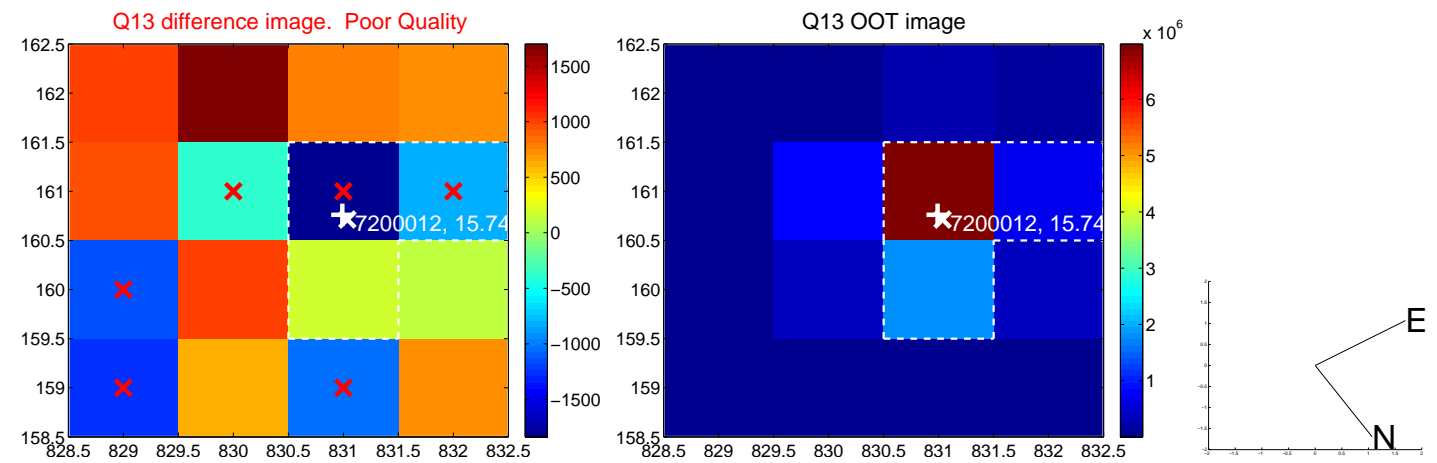
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



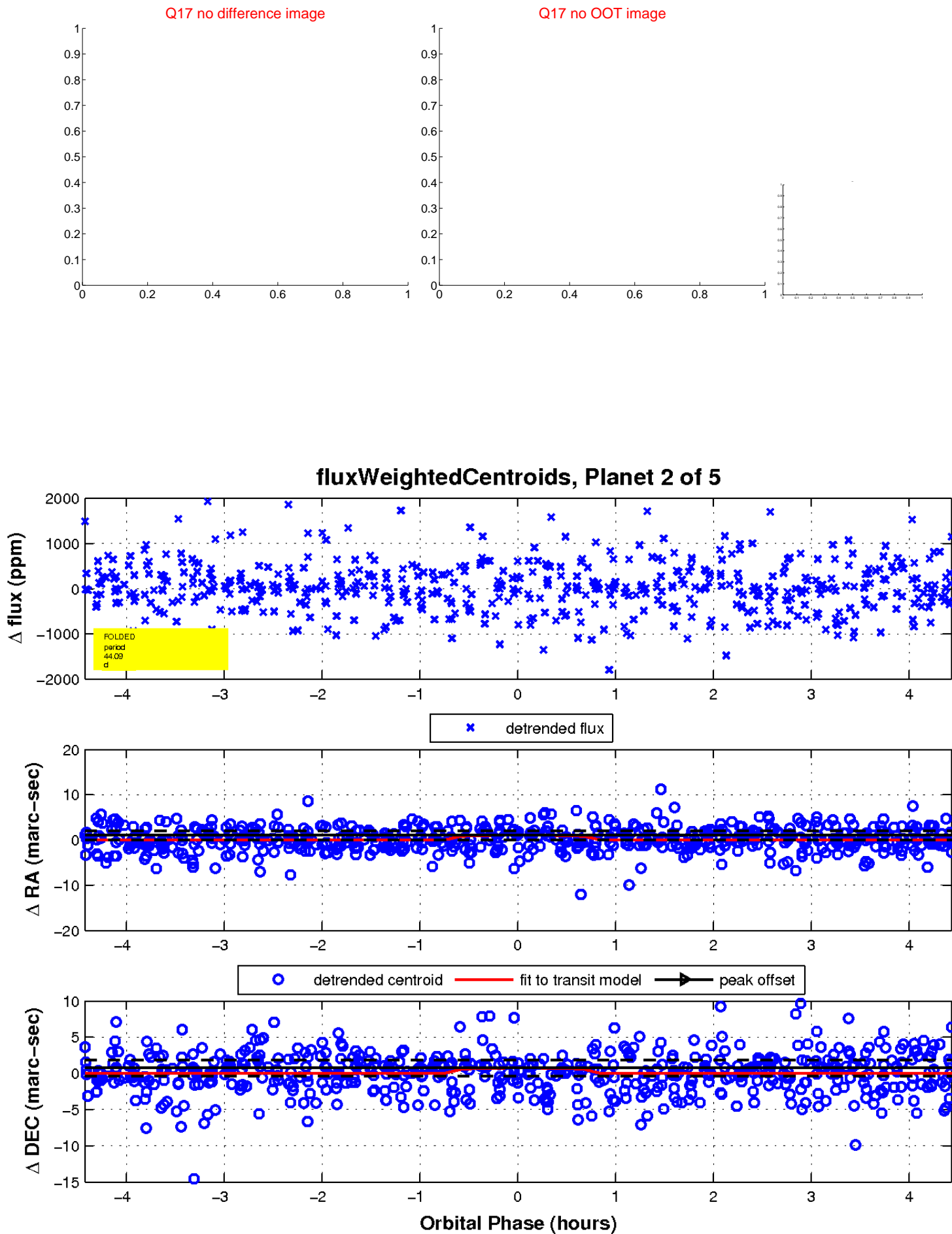
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

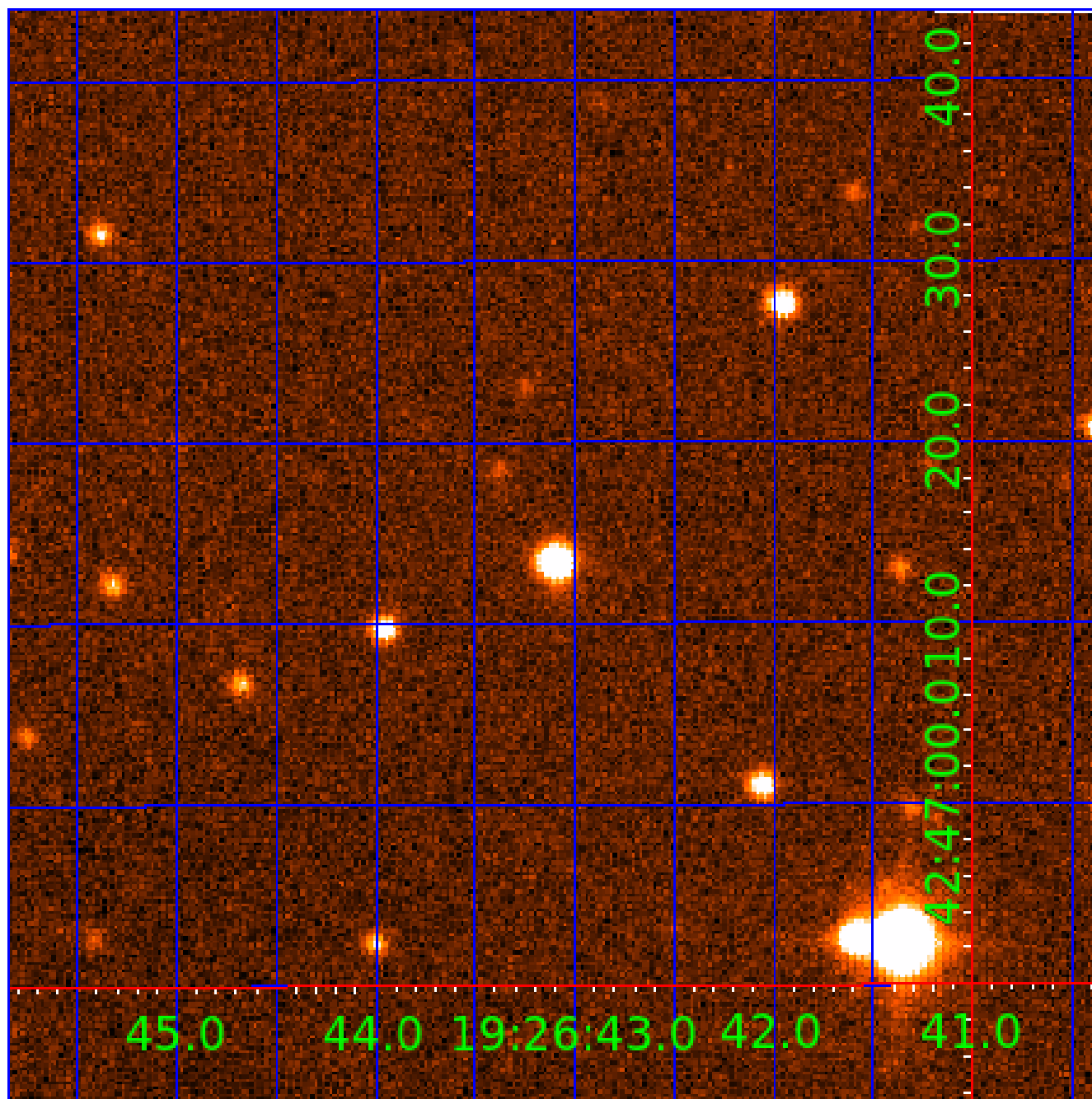


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007200012

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})
007200012-01	OBS	No	0.566741	131.859829	16.4	3.929	11.1	3.8	0.99	6170	0.41	6821.24
007200012-02	OBS	No	44.089735	131.895873	816.9	1.482	10.2	8.9	0.99	6170	2.85	20.54
007200012-03	OBS	No	28.770856	144.563511	792.5	1.690	9.2	13.3	0.99	6170	2.81	36.29
007200012-04	OBS	No	30.069144	153.624891	666.3	1.971	7.6	8.7	0.99	6170	2.83	34.22
007200012-05	OBS	No	33.514277	157.246090	564.1	1.370	8.9	9.4	0.99	6170	2.39	29.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007200012-01	OBS	FP	0.00	1	0	1	1	LPP_DV—HALO_GHOST—EPHEM_MATCH
007200012-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007200012-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
007200012-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200012-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS

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

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

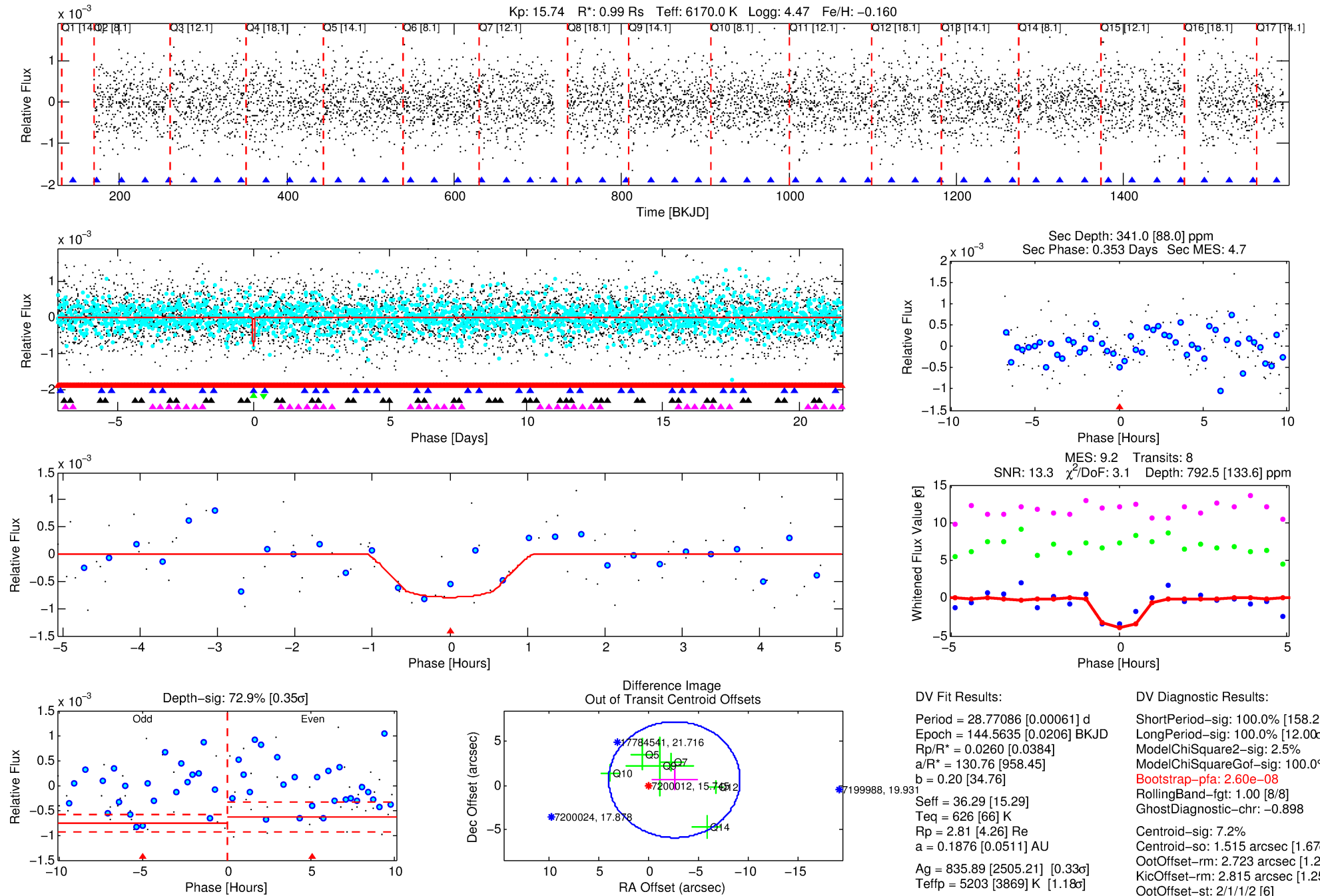
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007200012-03

No Significant Match Found

DV One-Page Summary

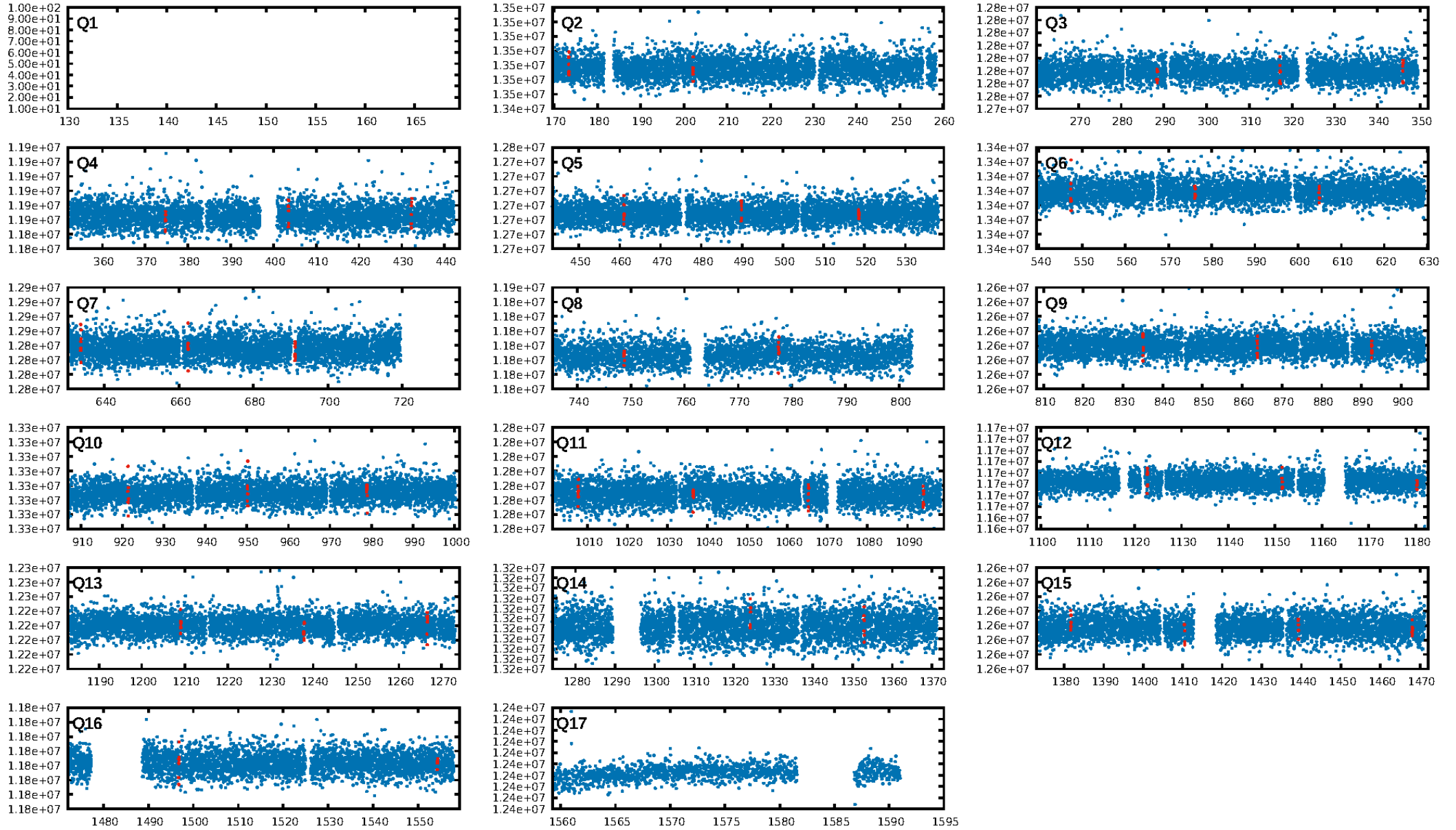
KIC: 7200012 Candidate: 3 of 5 Period: 28.771 d



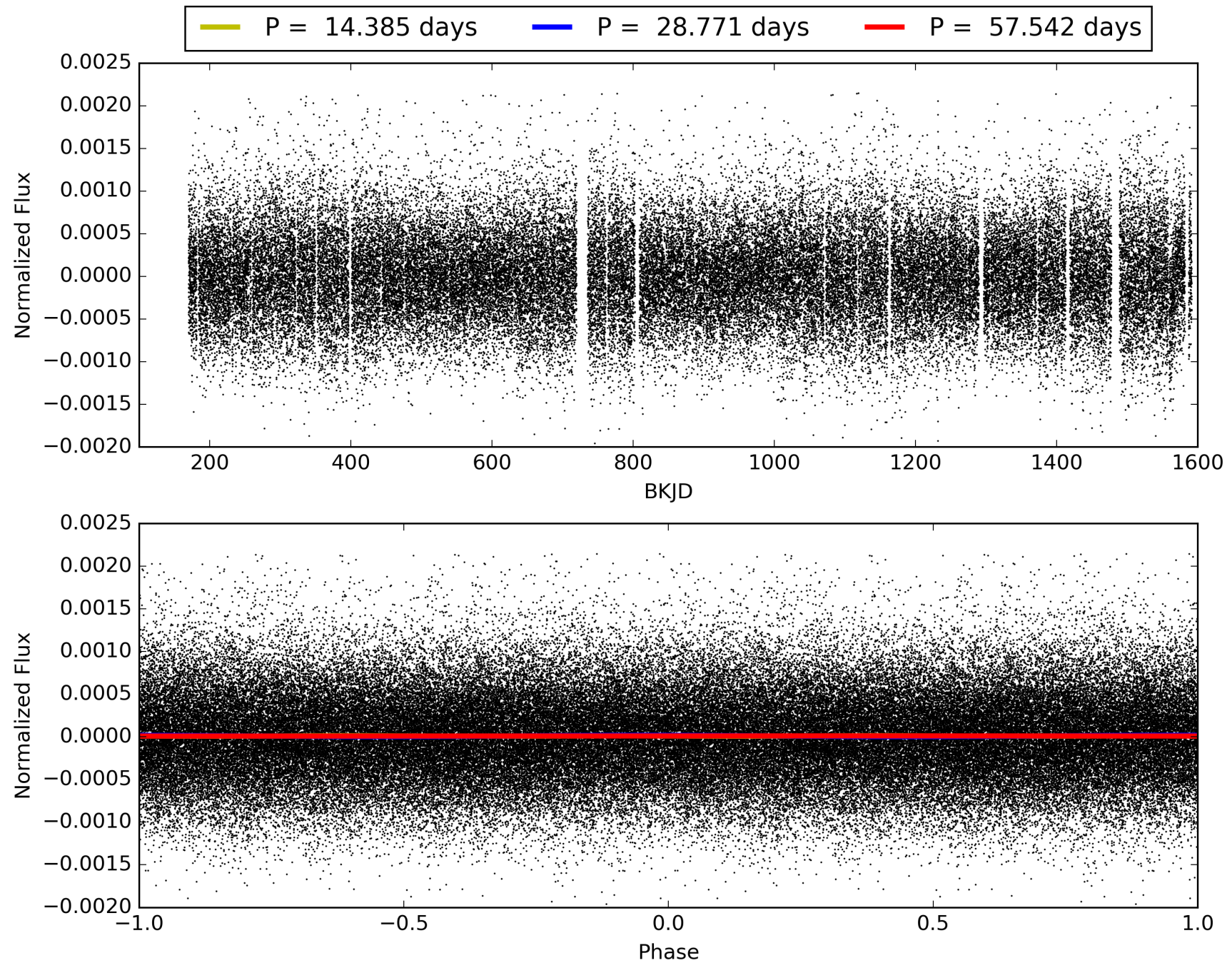
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:26:44 Z

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

TCE 007200012-03, PDC Light Curves

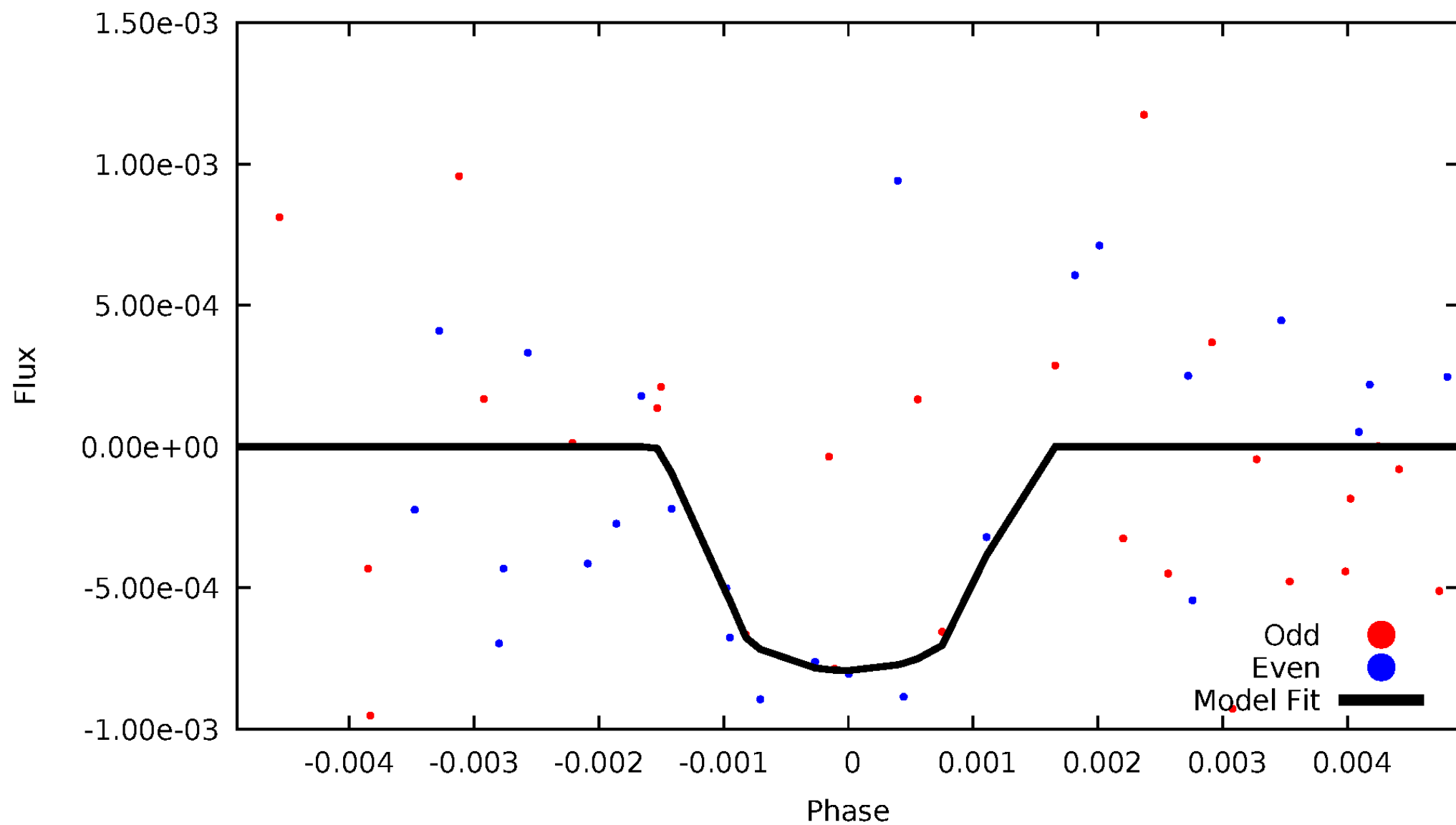


TCE 007200012-03



DV Odd/Even

TCE 007200012-03

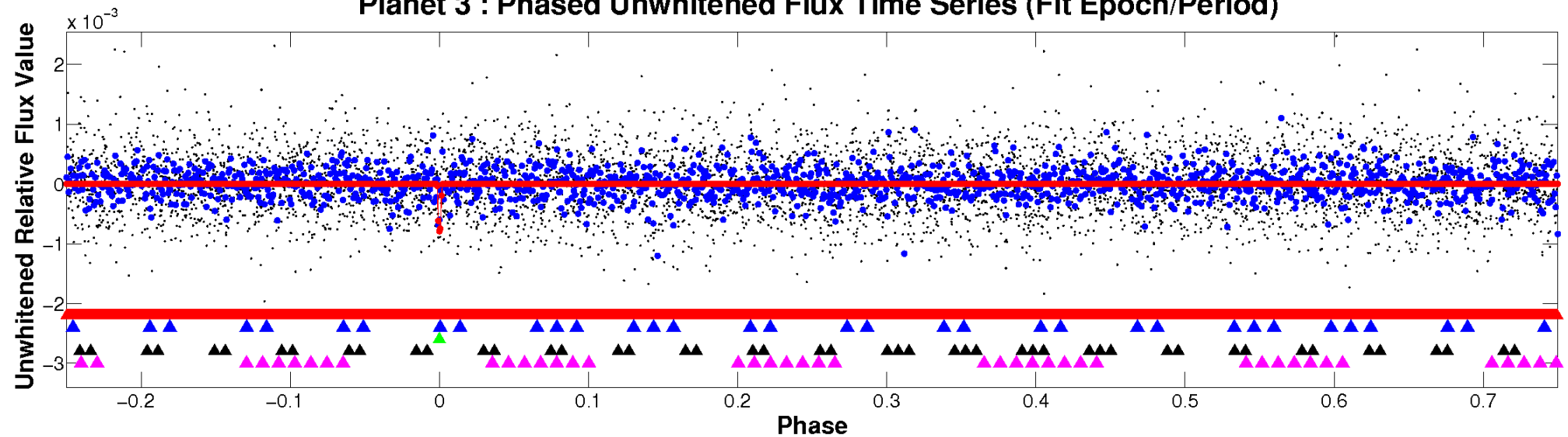


ALT Odd/Even

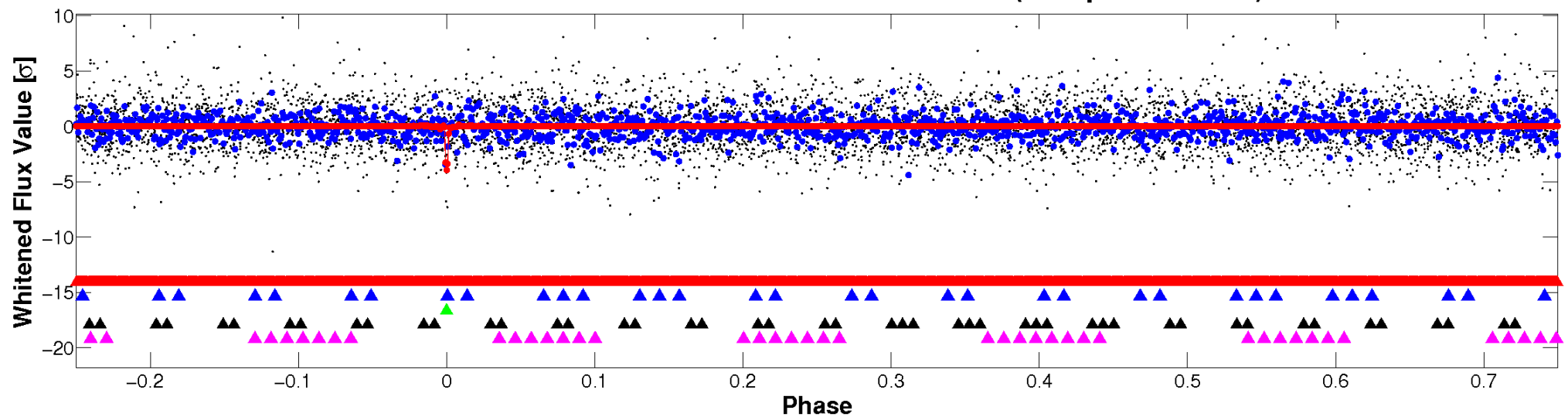
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

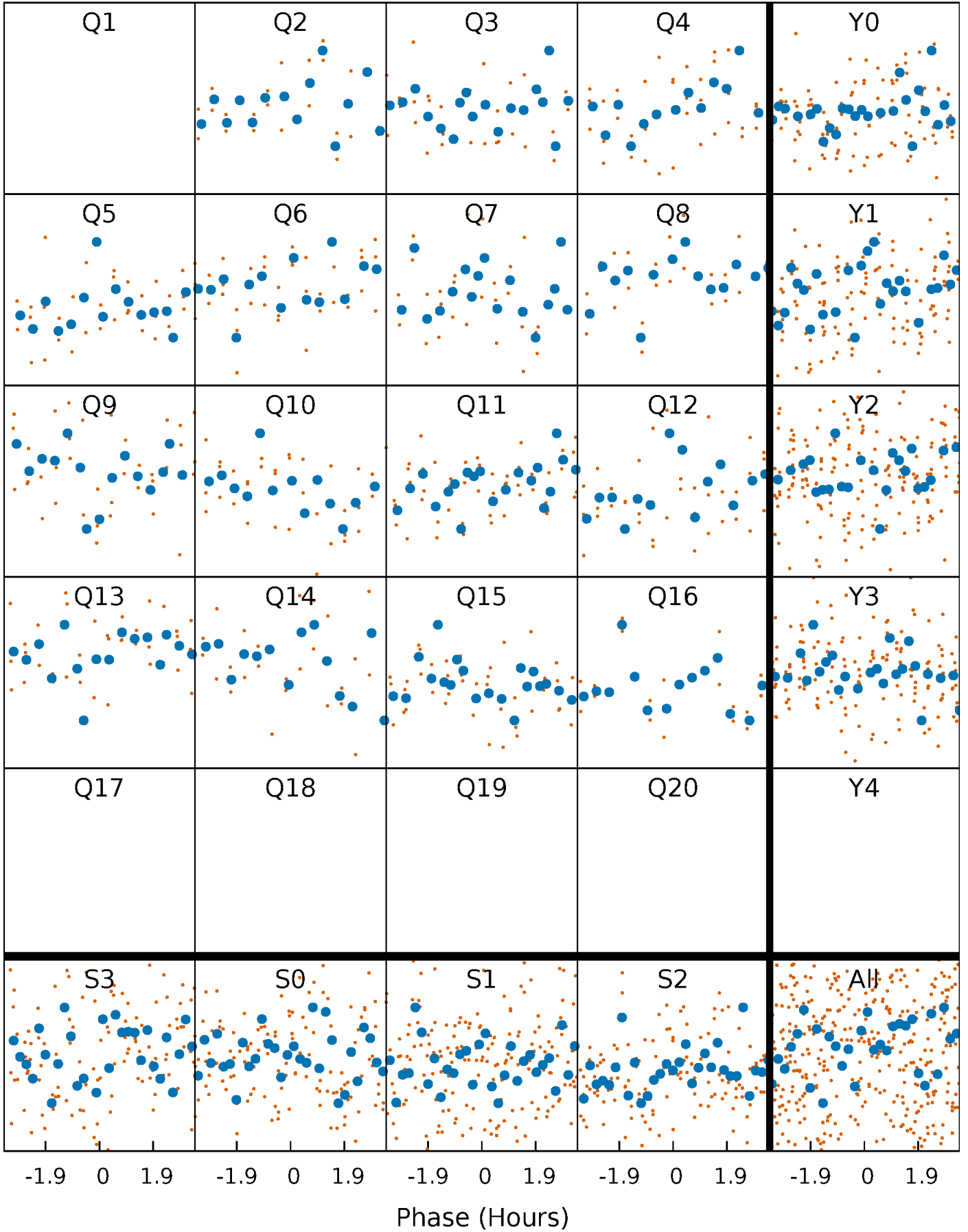


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



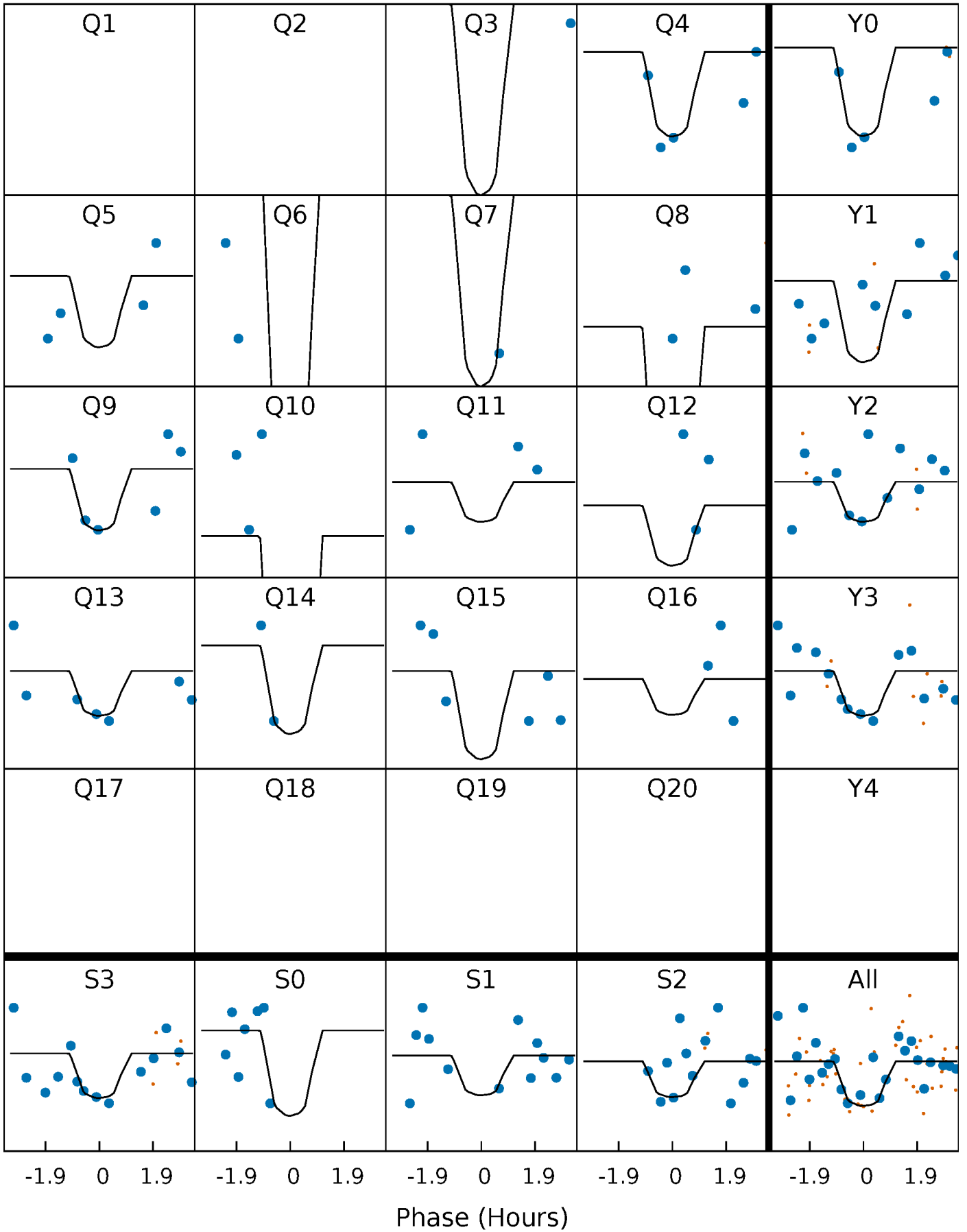
PDC Quarter-Phased Transit Curves

TCE 007200012-03 P= 28.770856 Days $T_0=144.563511$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 007200012-03 $P = 28.770856$ Days $T_0 = 144.563511$ (BKJD)

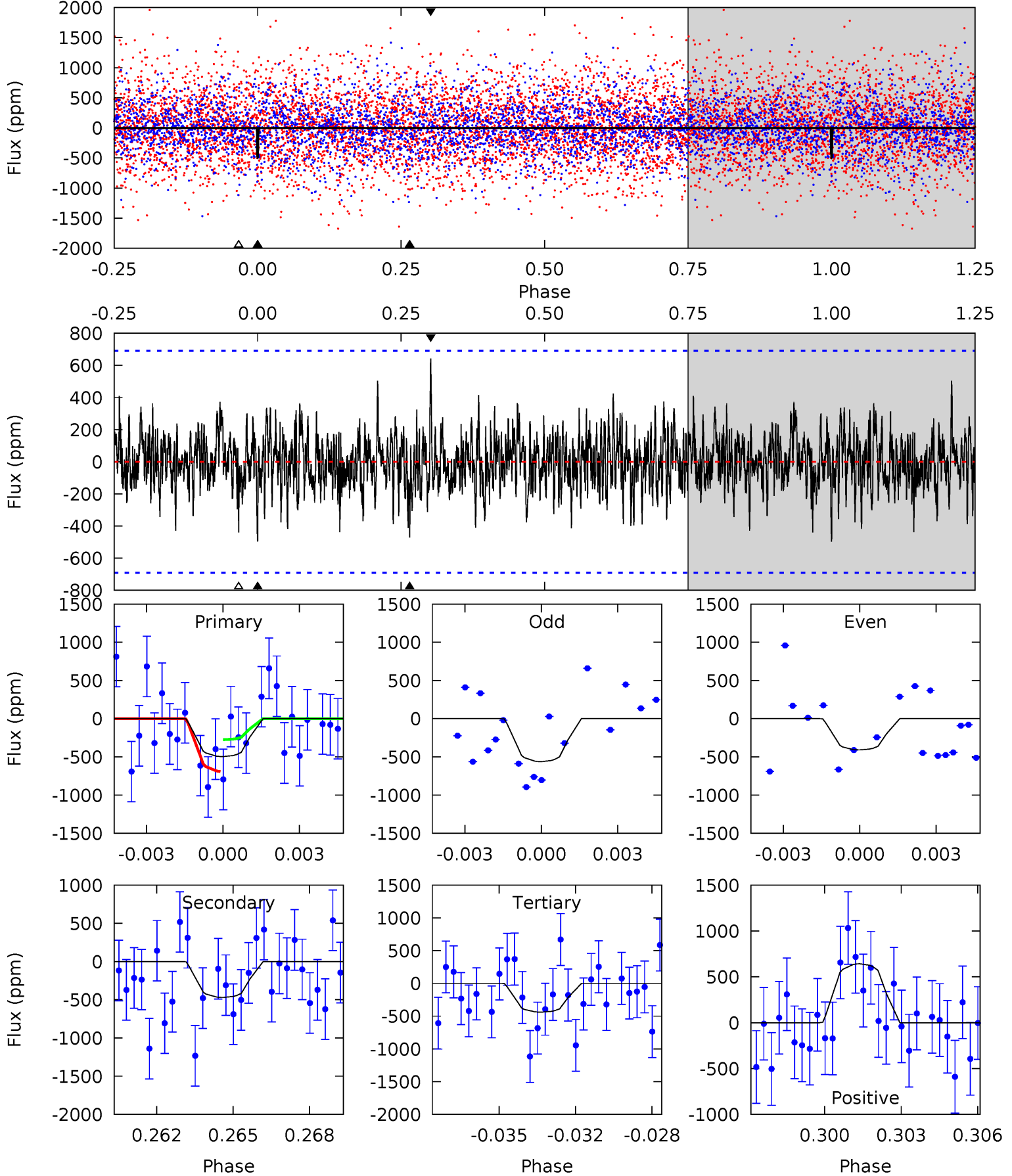


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

007200012-03, P = 28.770856 Days, E = 144.563511 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.77	3.57	3.33	4.87	5.24	2.95	1.11	0.44	-1.11	0.24	-1.31	0.56	0.46	0.56	1.57



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 007200012

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6170^{+187}_{-224}	$4.472^{+0.054}_{-0.216}$	$-0.160^{+0.250}_{-0.350}$	$0.992^{+0.321}_{-0.107}$	$1.063^{+0.144}_{-0.144}$	$1.535^{+0.434}_{-0.810}$
	+3%/-4%	+1%/-5%	+156%/-219%	+32%/-11%	+14%/-14%	+28%/-53%
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 007200012-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-470 ± 132	$4.49^{+3.99}_{-2.74}$	893^{+66}_{-47}	4714^{+2876}_{-1034}	435^{+2567}_{-319}
Alt.	N/A	N/A	N/A	N/A	N/A

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
 A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

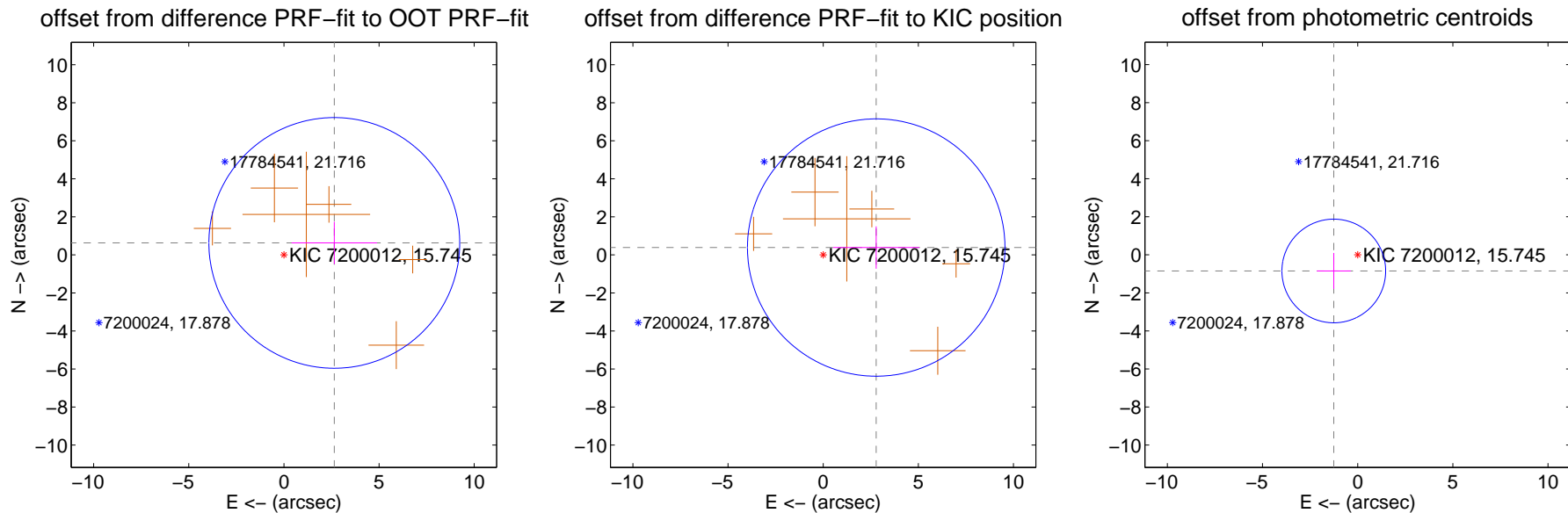
DV Centroid Data

Supplemental centroid analysis for 007200012-03. Kepler magnitude: 15.74. Transit SNR 13.27

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.723 ± 2.198	1.24	-2.649 ± 2.243	0.630 ± 1.114
PRF-fit source offset from KIC position	2.815 ± 2.256	1.25	-2.788 ± 2.272	0.387 ± 1.115
photometric centroid source offset	1.52 ± 0.91	1.67	1.26 ± 0.89	-0.85 ± 0.95



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.

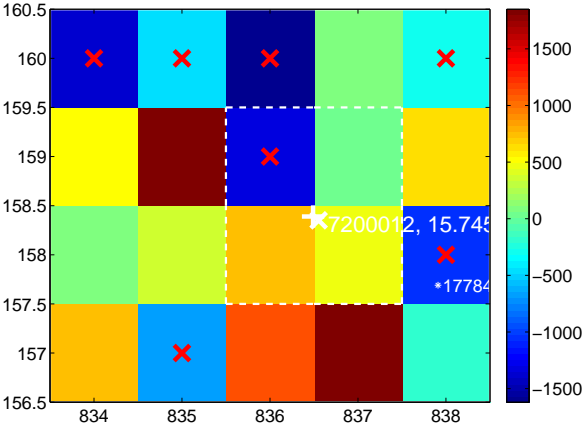
Q1 no difference image



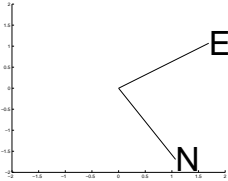
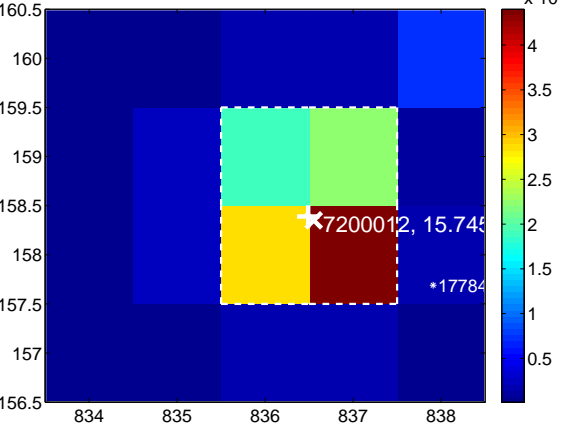
Q1 no OOT image



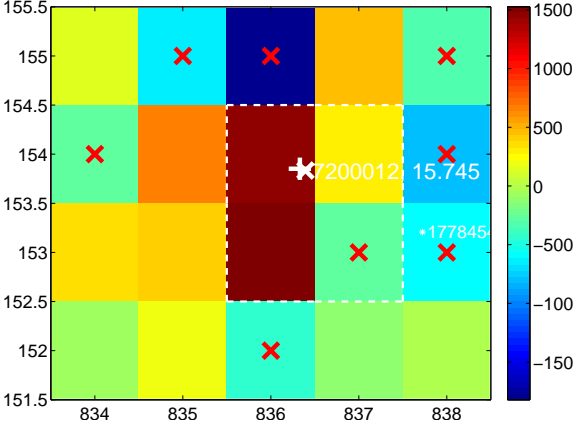
Q2 difference image. Poor Quality



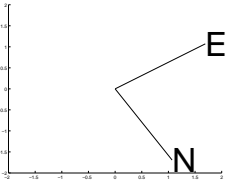
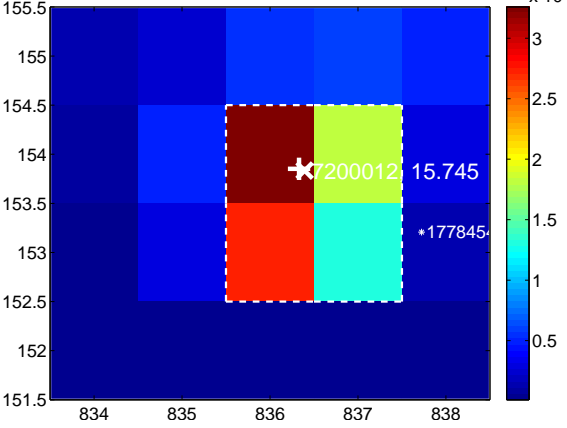
Q2 OOT image



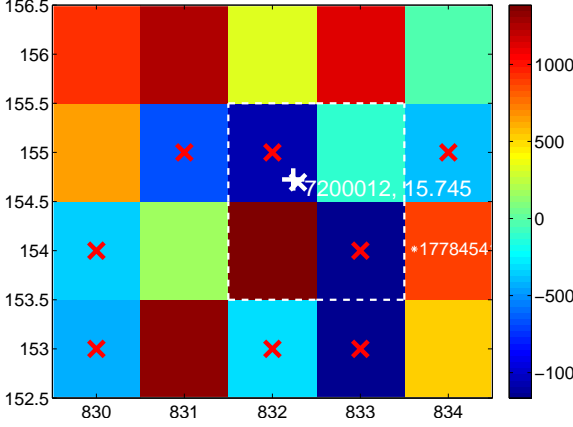
Q3 difference image. Poor Quality



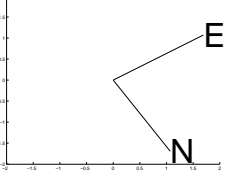
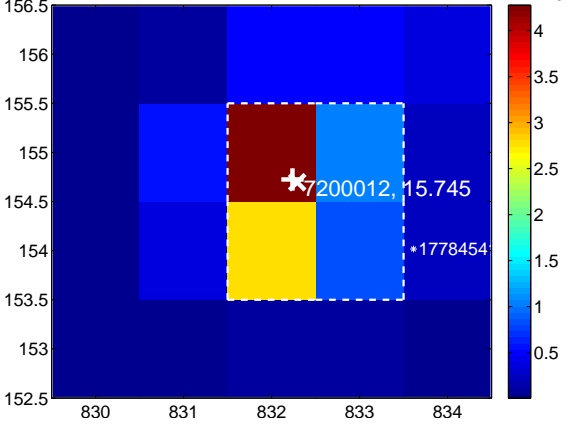
Q3 OOT image



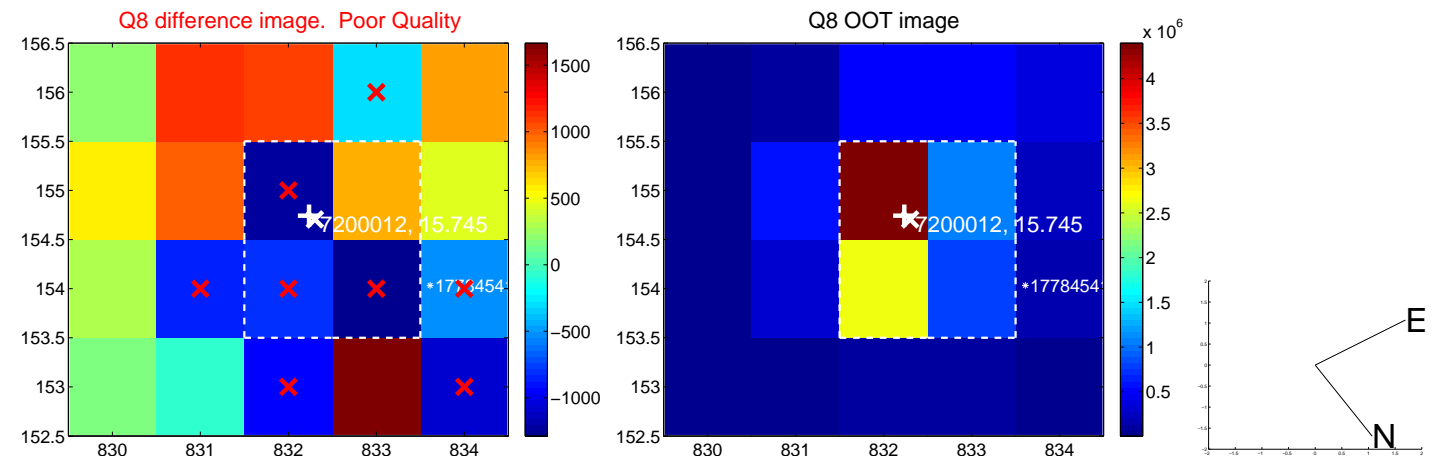
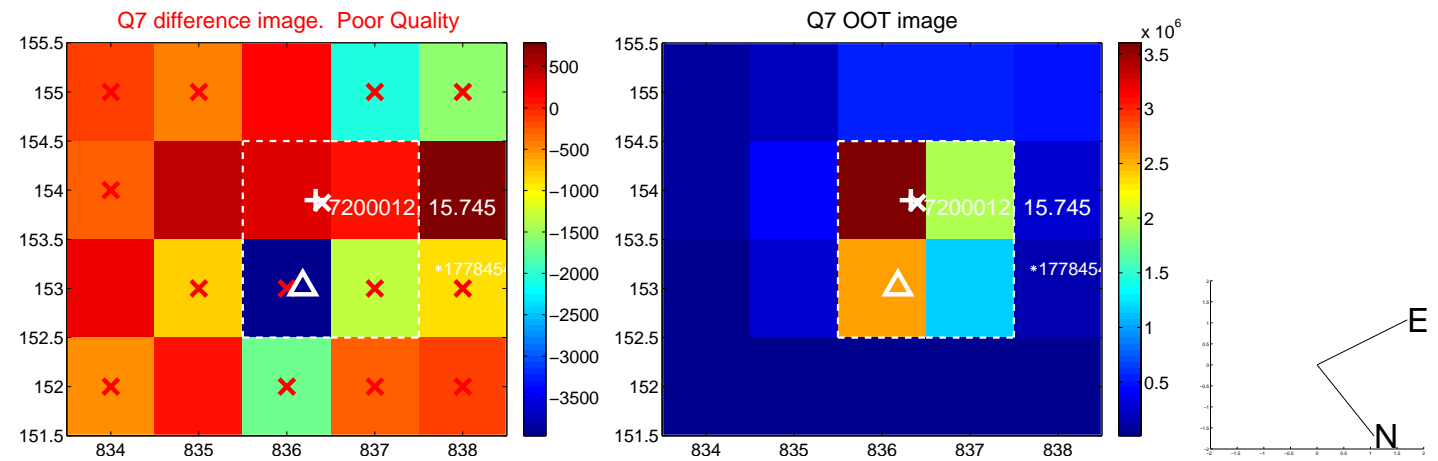
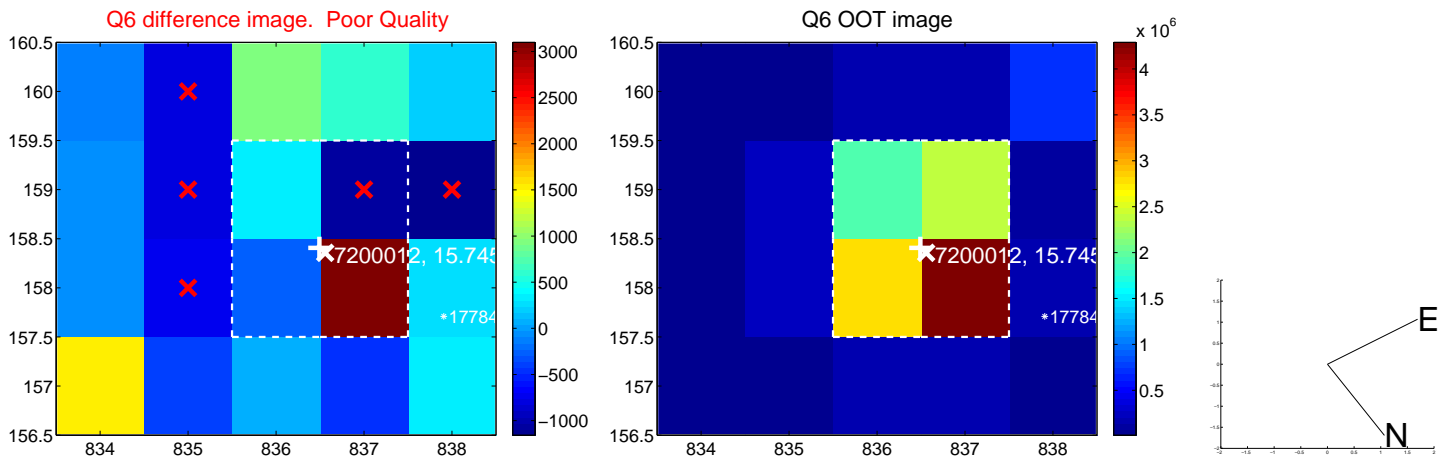
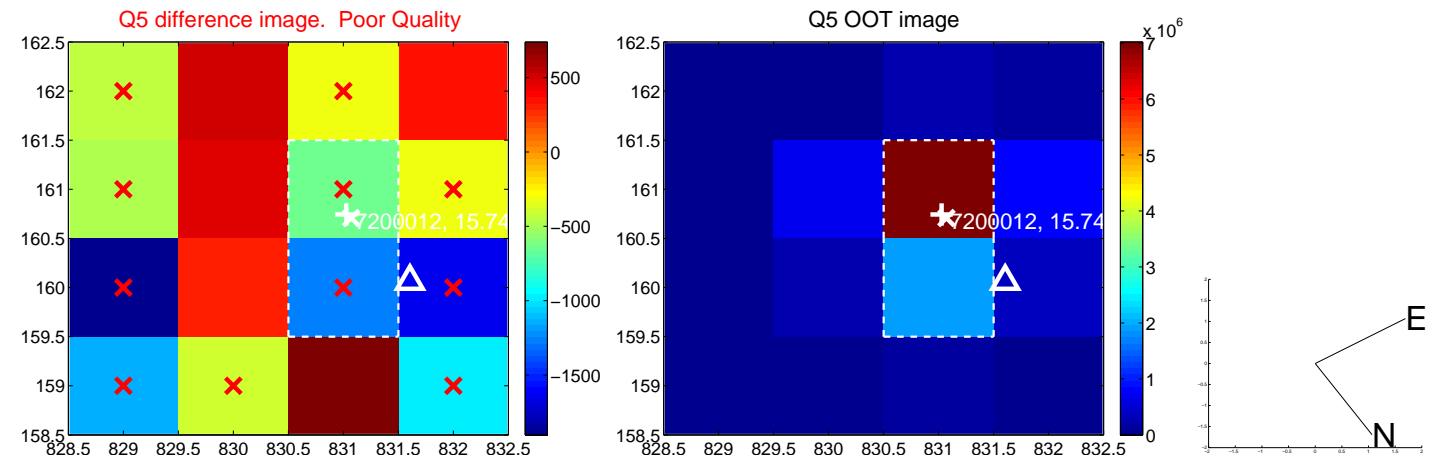
Q4 difference image. Poor Quality



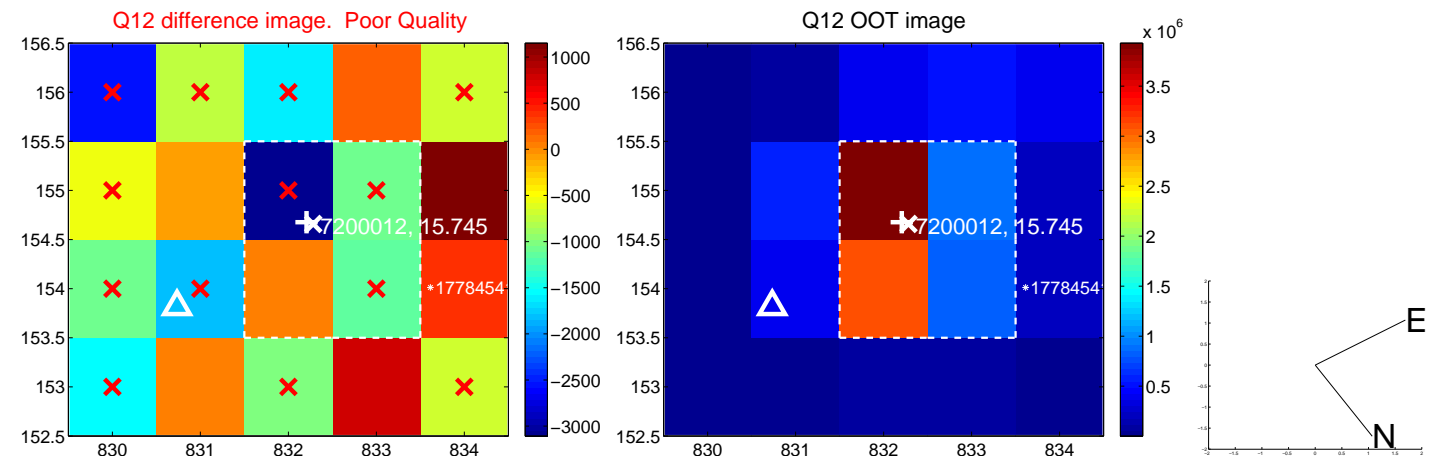
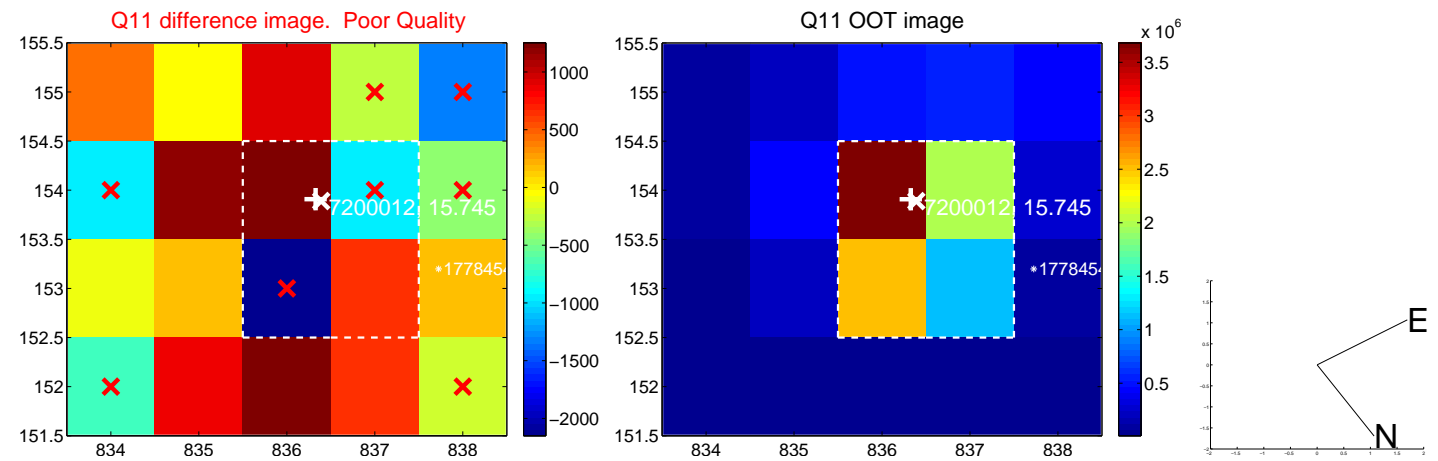
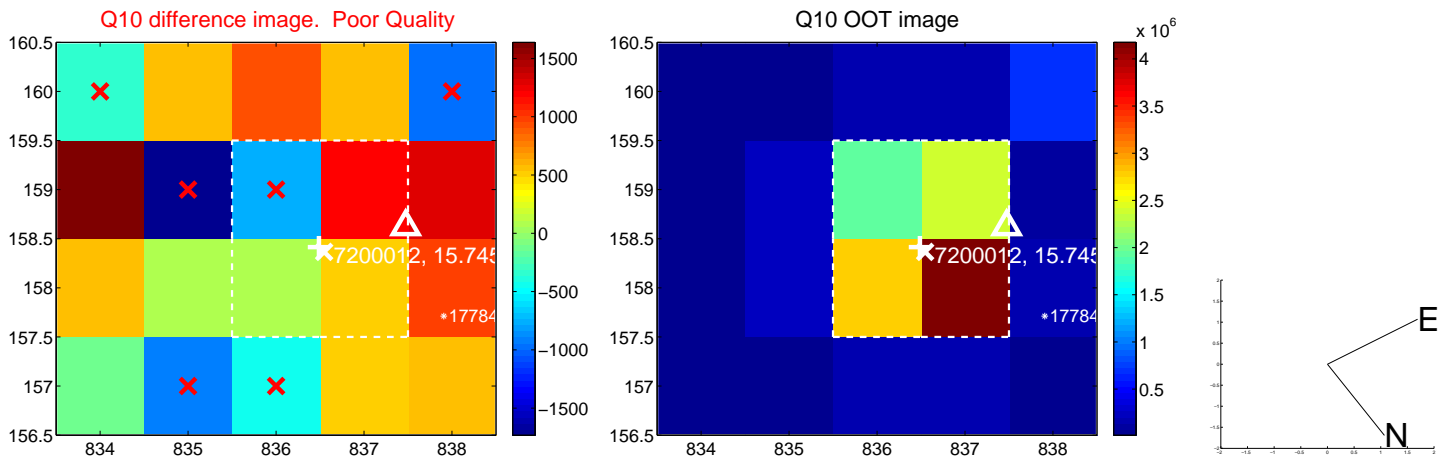
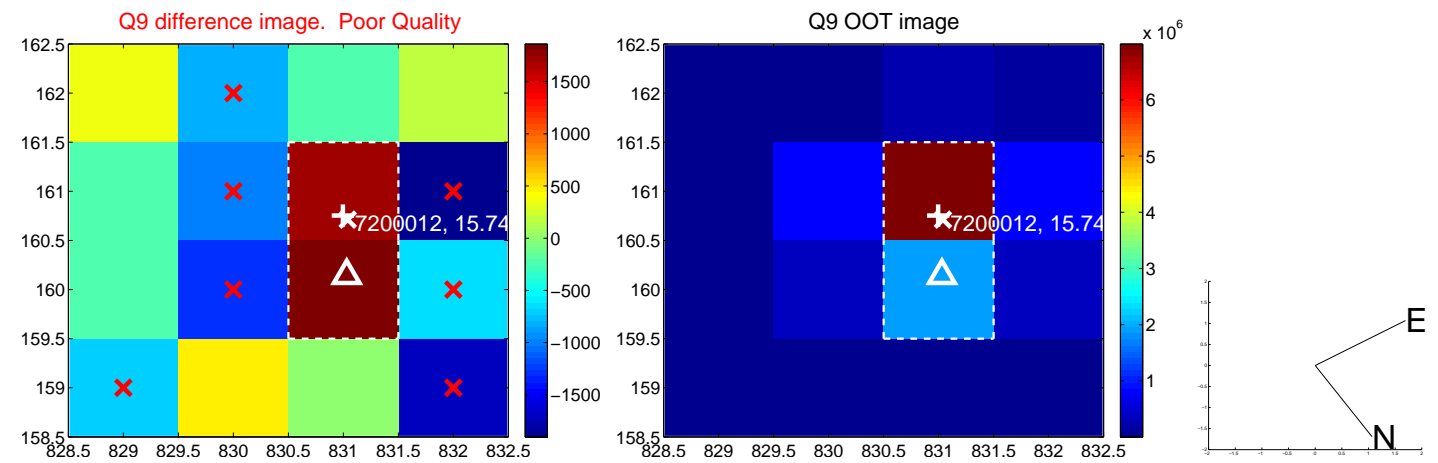
Q4 OOT image



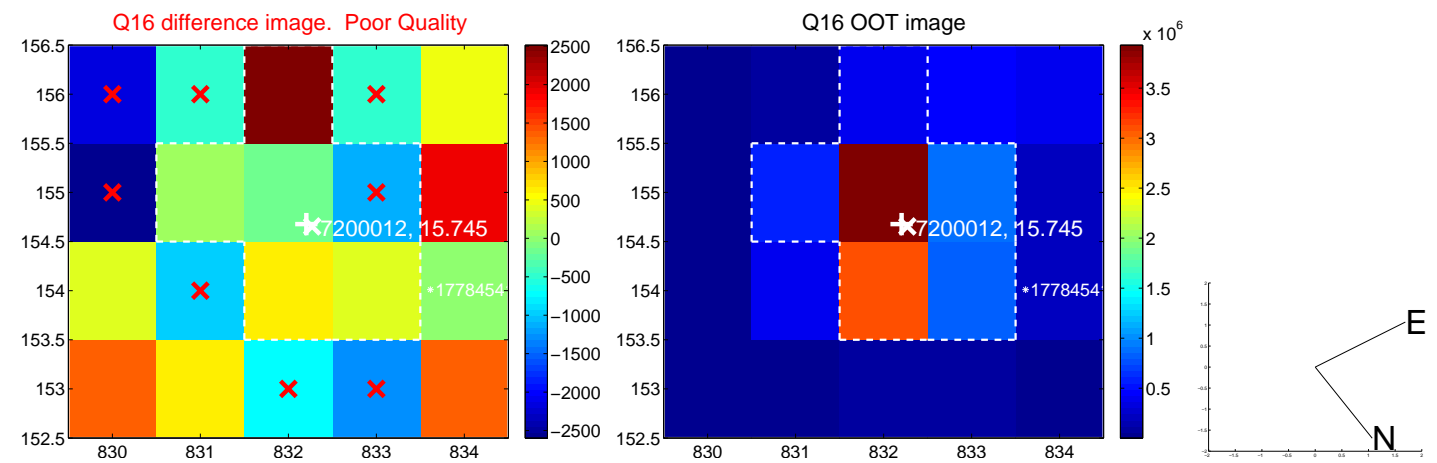
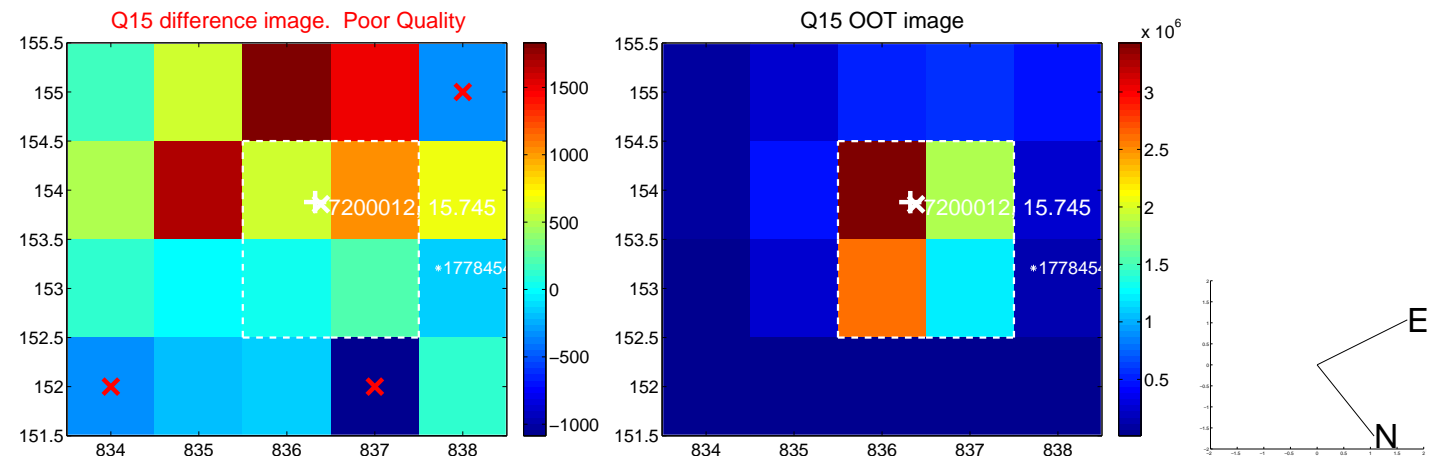
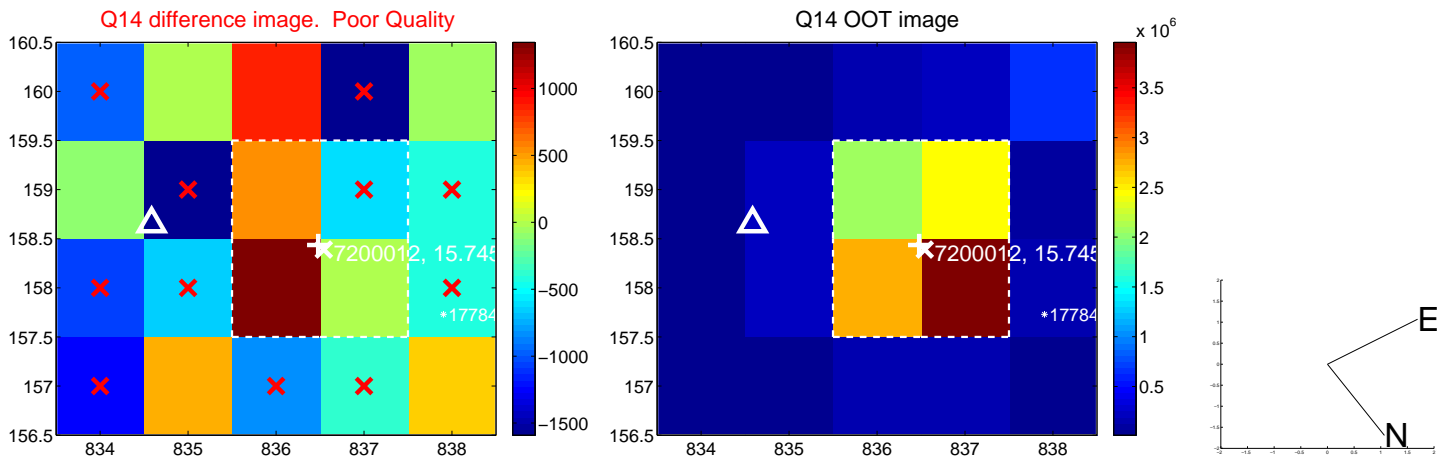
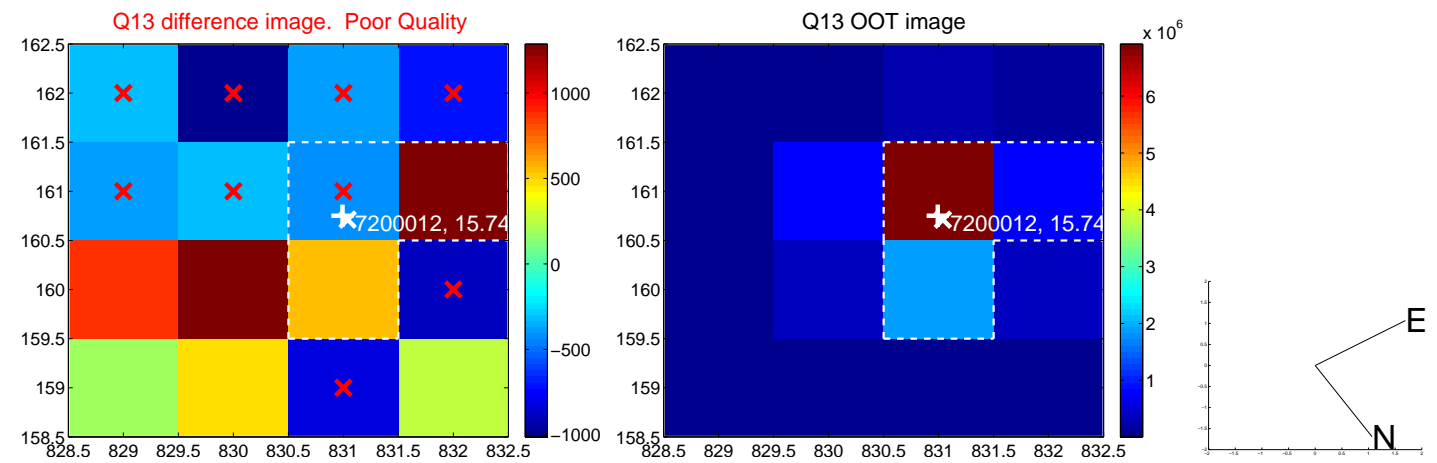
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



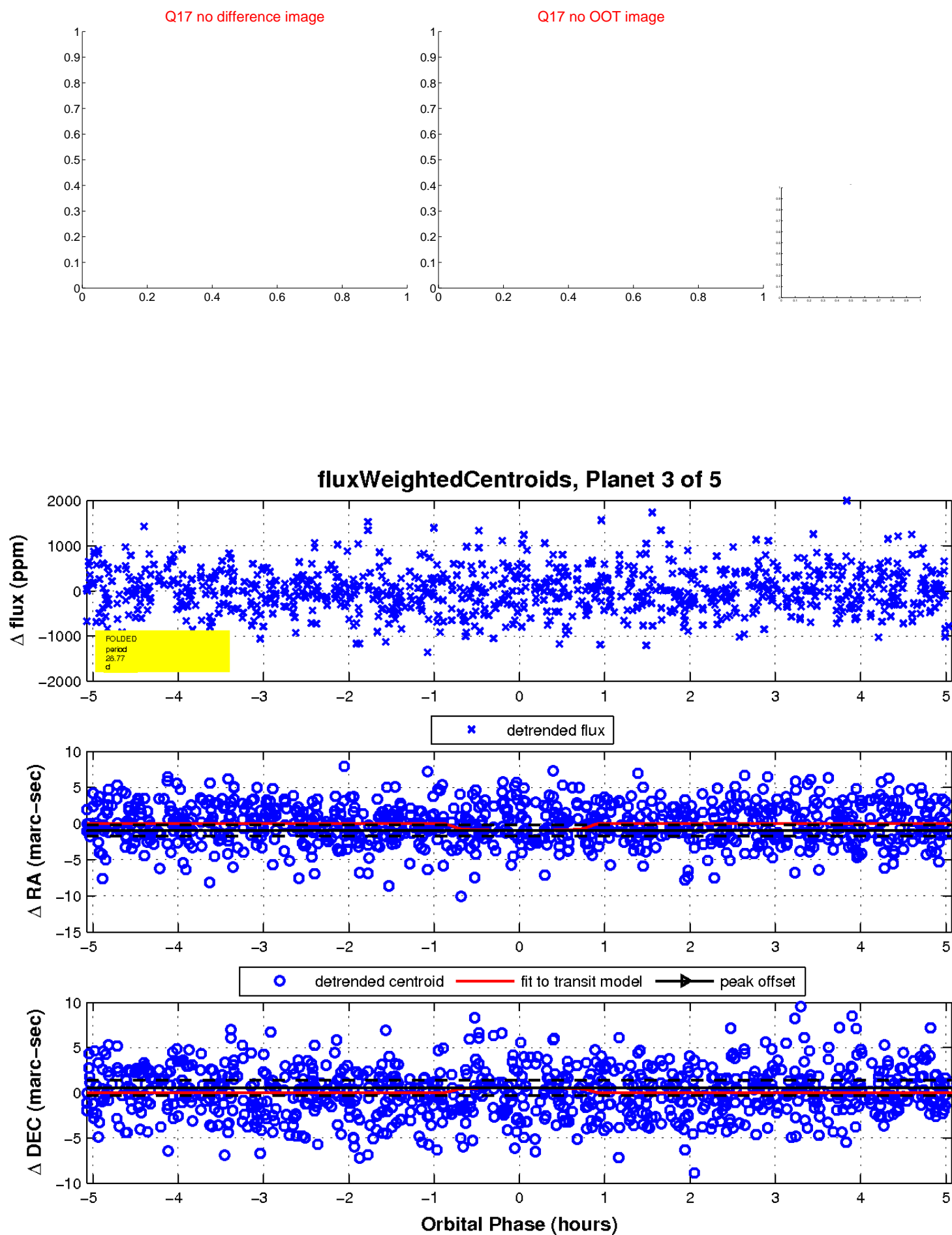
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

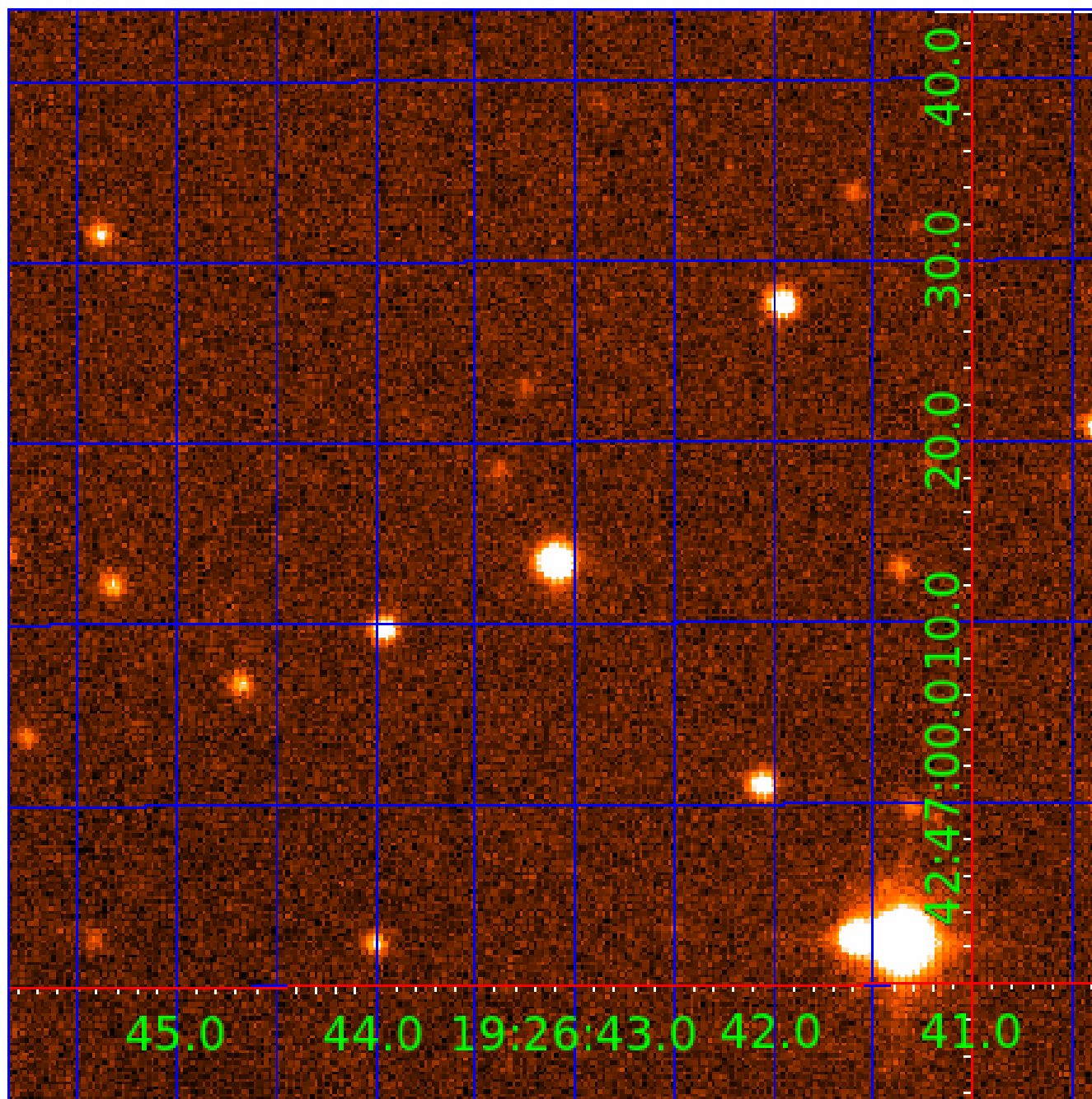


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007200012

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})
007200012-01	OBS	No	0.566741	131.859829	16.4	3.929	11.1	3.8	0.99	6170	0.41	6821.24
007200012-02	OBS	No	44.089735	131.895873	816.9	1.482	10.2	8.9	0.99	6170	2.85	20.54
007200012-03	OBS	No	28.770856	144.563511	792.5	1.690	9.2	13.3	0.99	6170	2.81	36.29
007200012-04	OBS	No	30.069144	153.624891	666.3	1.971	7.6	8.7	0.99	6170	2.83	34.22
007200012-05	OBS	No	33.514277	157.246090	564.1	1.370	8.9	9.4	0.99	6170	2.39	29.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007200012-01	OBS	FP	0.00	1	0	1	1	LPP_DV—HALO_GHOST—EPHEM_MATCH
007200012-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007200012-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
007200012-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200012-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS

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

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

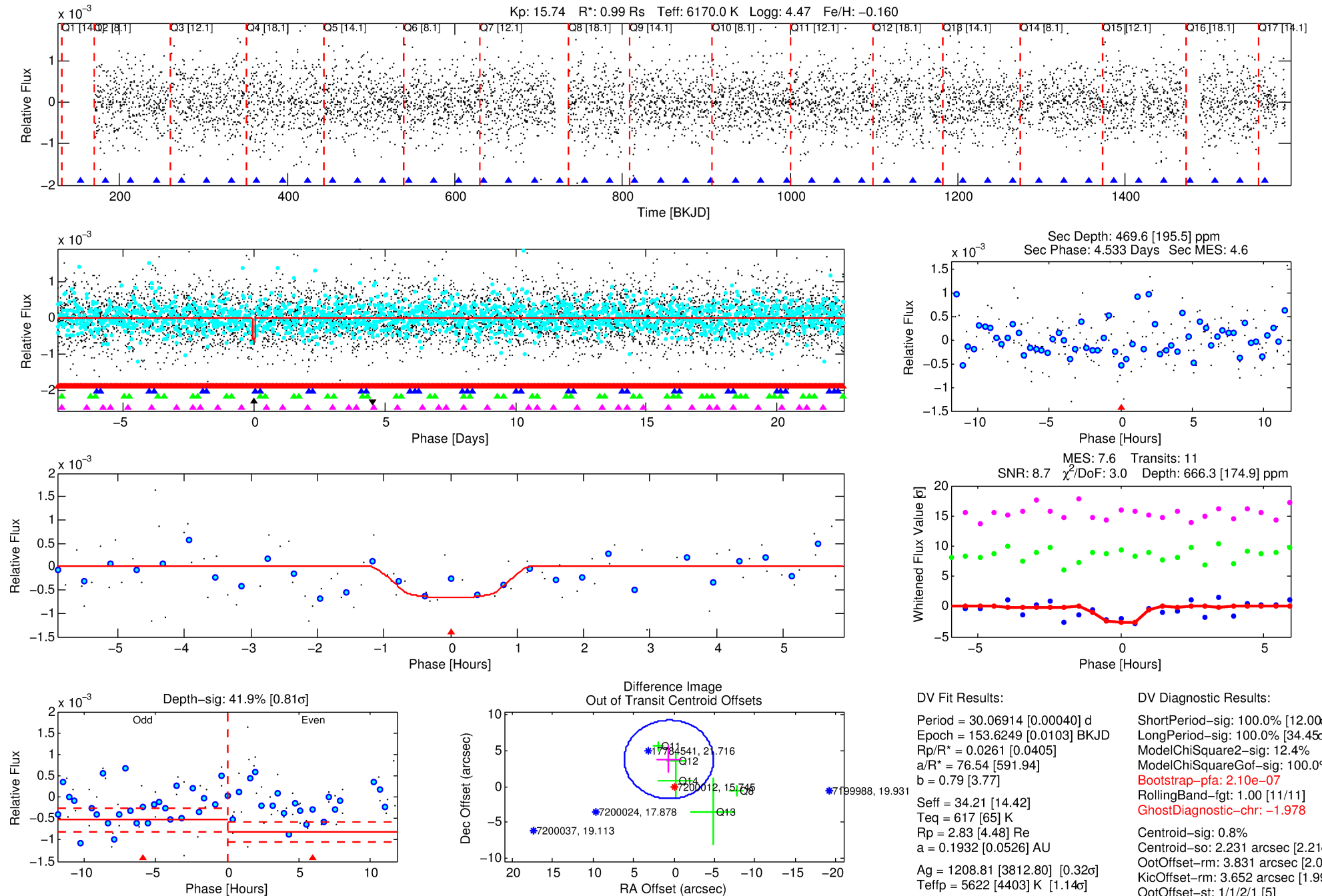
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007200012-04

No Significant Match Found

DV One-Page Summary

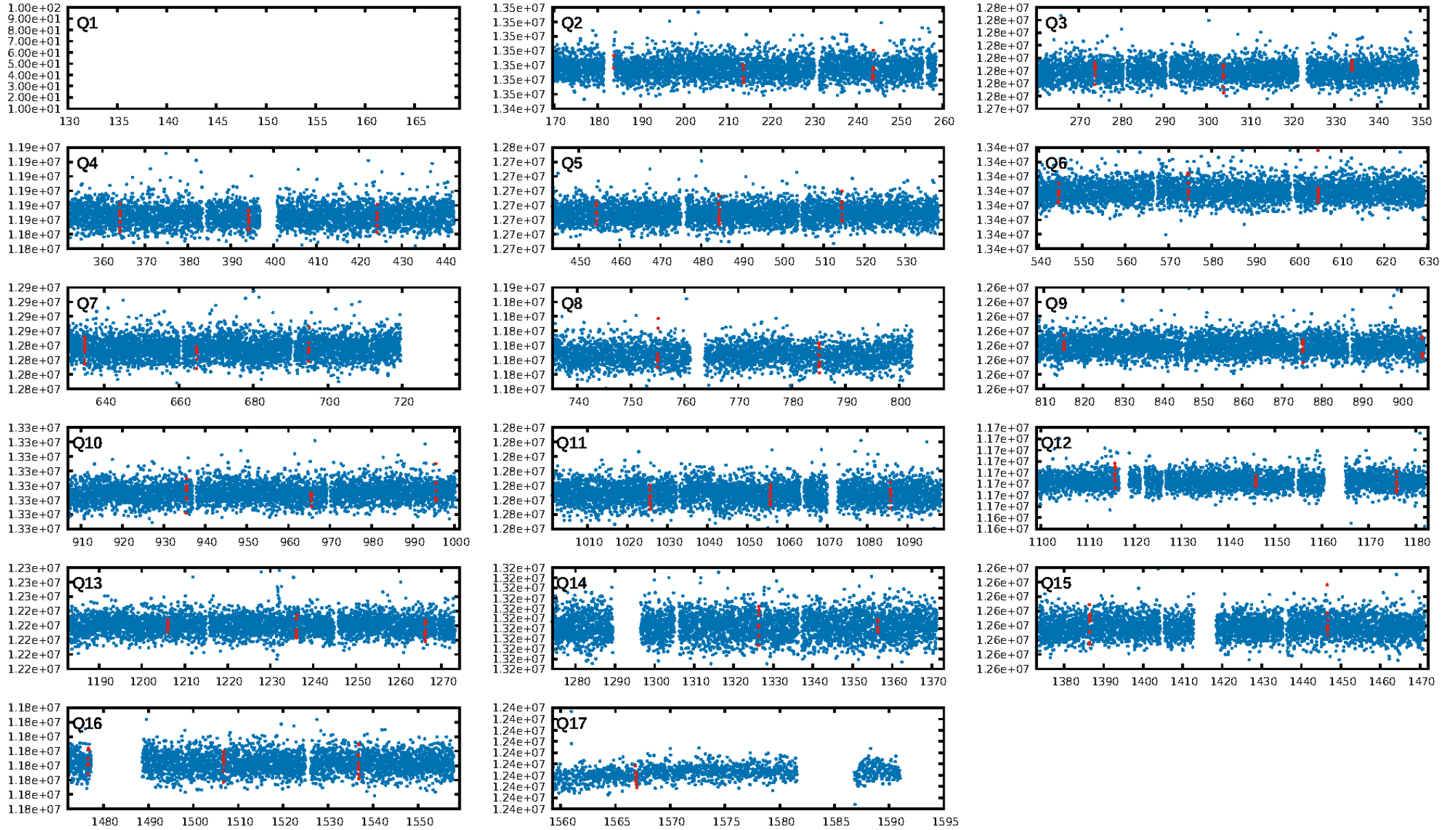
KIC: 7200012 Candidate: 4 of 5 Period: 30.069 d



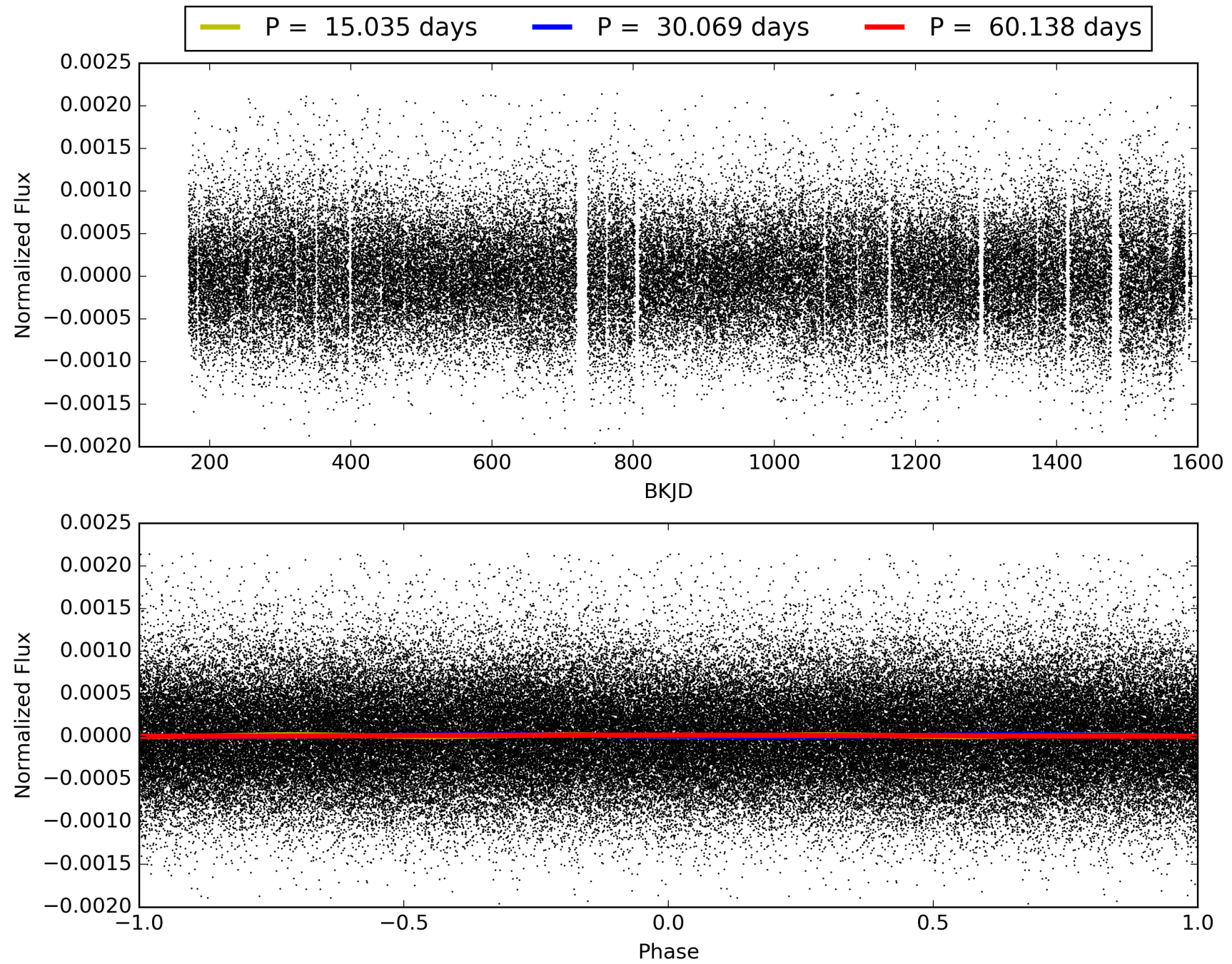
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:26:47 Z

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

TCE 007200012-04, PDC Light Curves

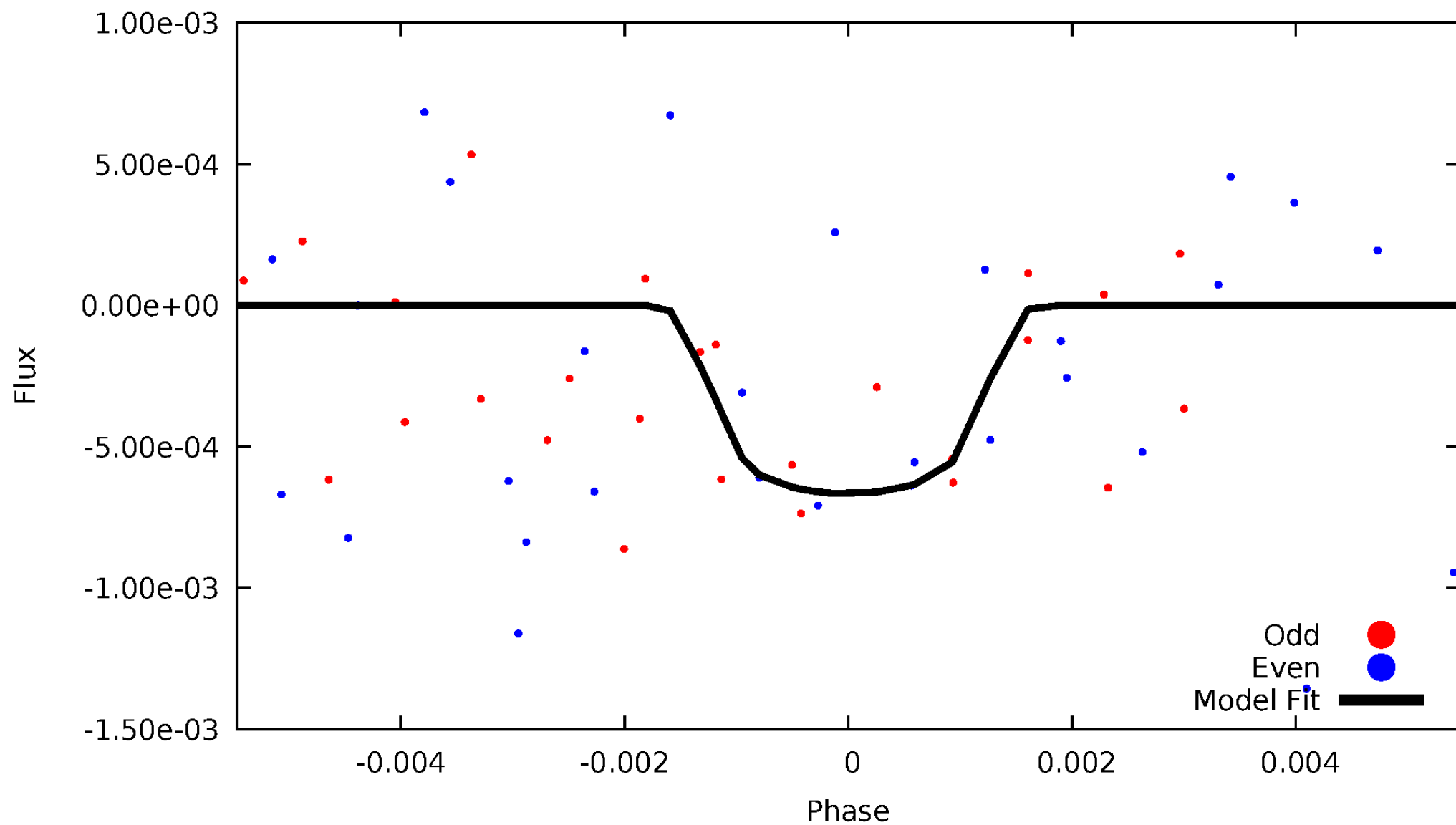


TCE 007200012-04



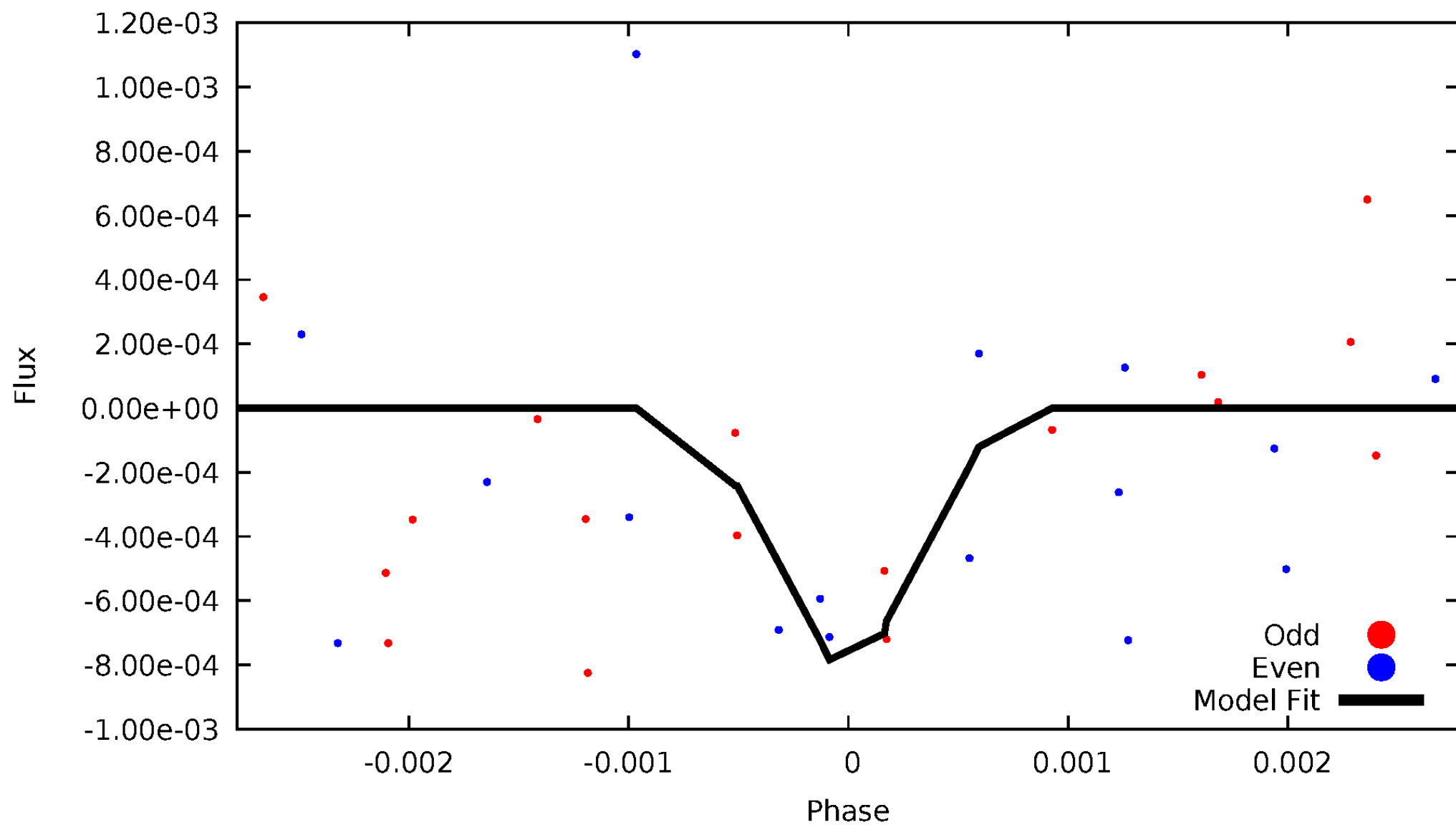
DV Odd/Even

TCE 007200012-04



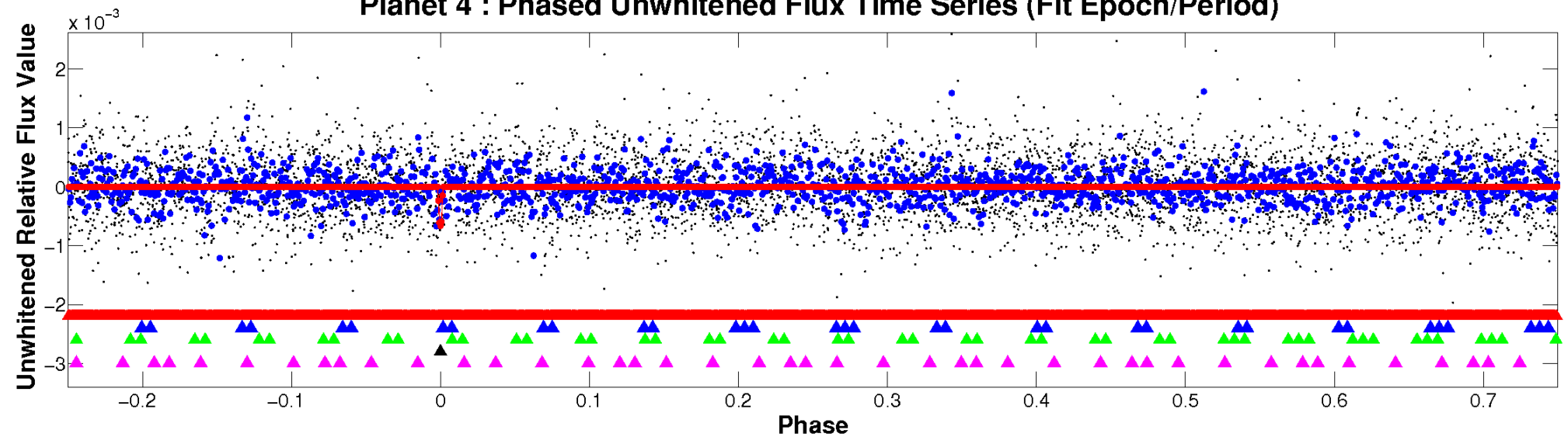
ALT Odd/Even

TCE 007200012-04

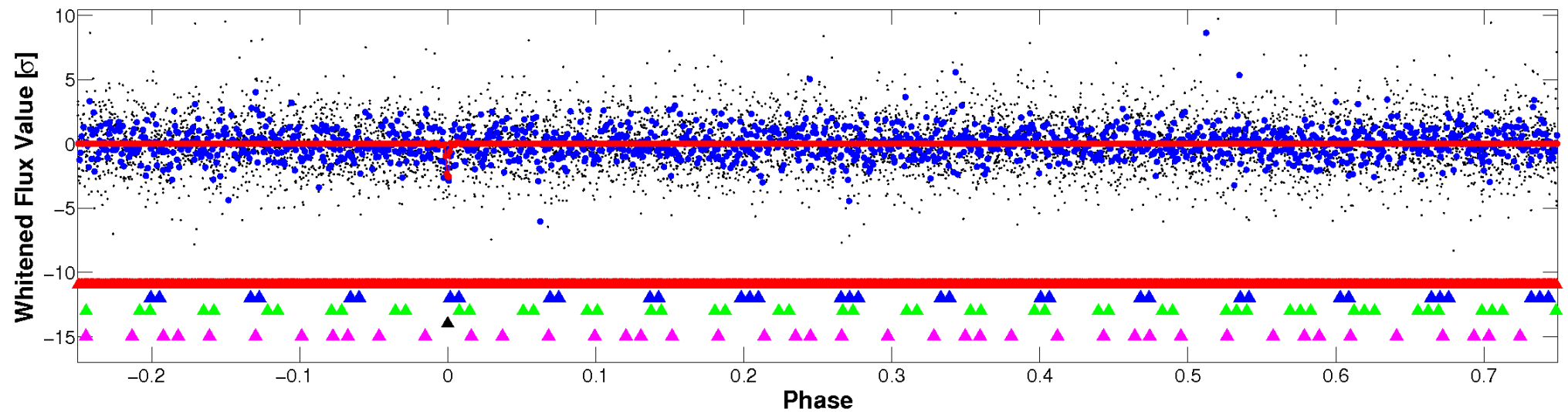


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

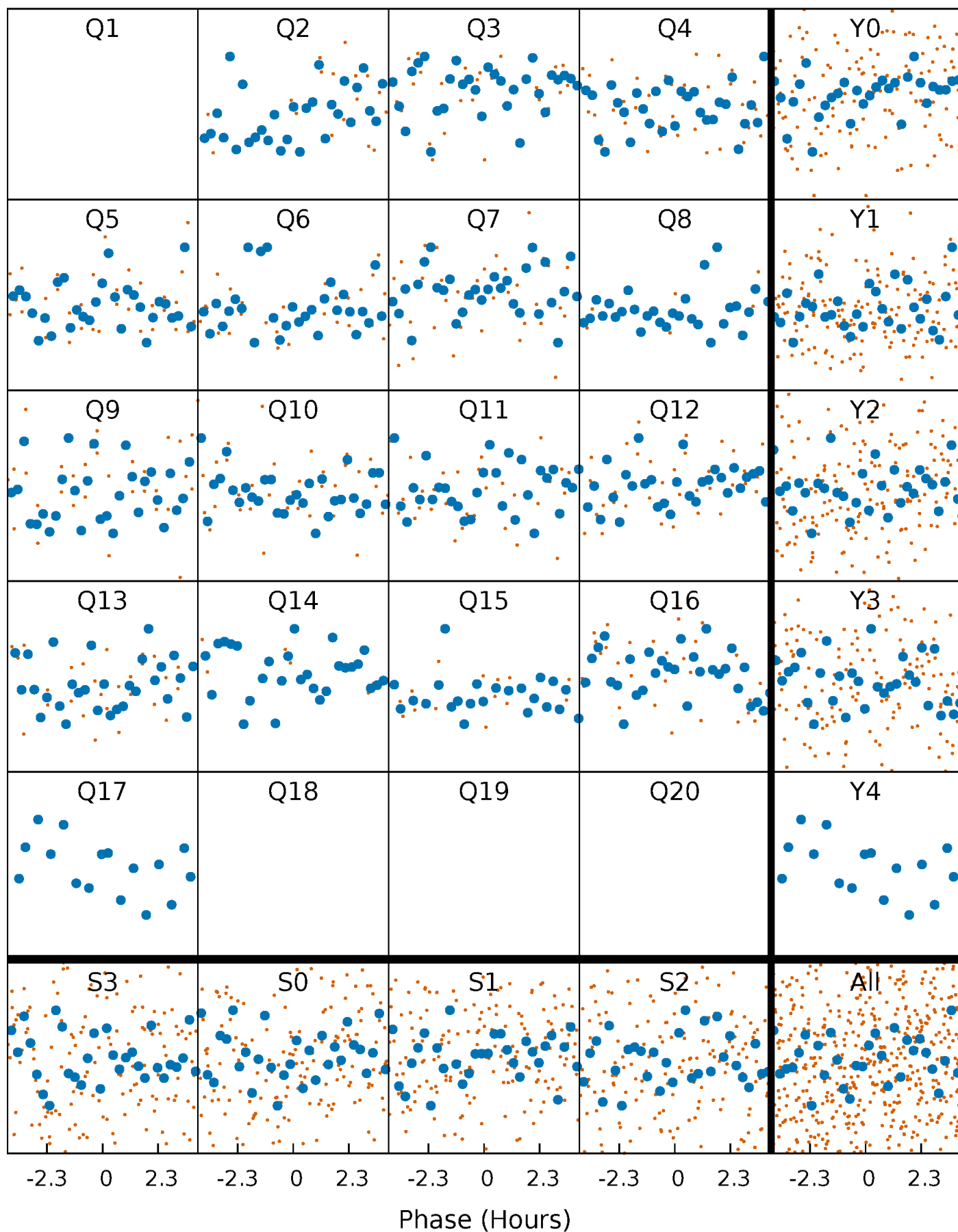


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



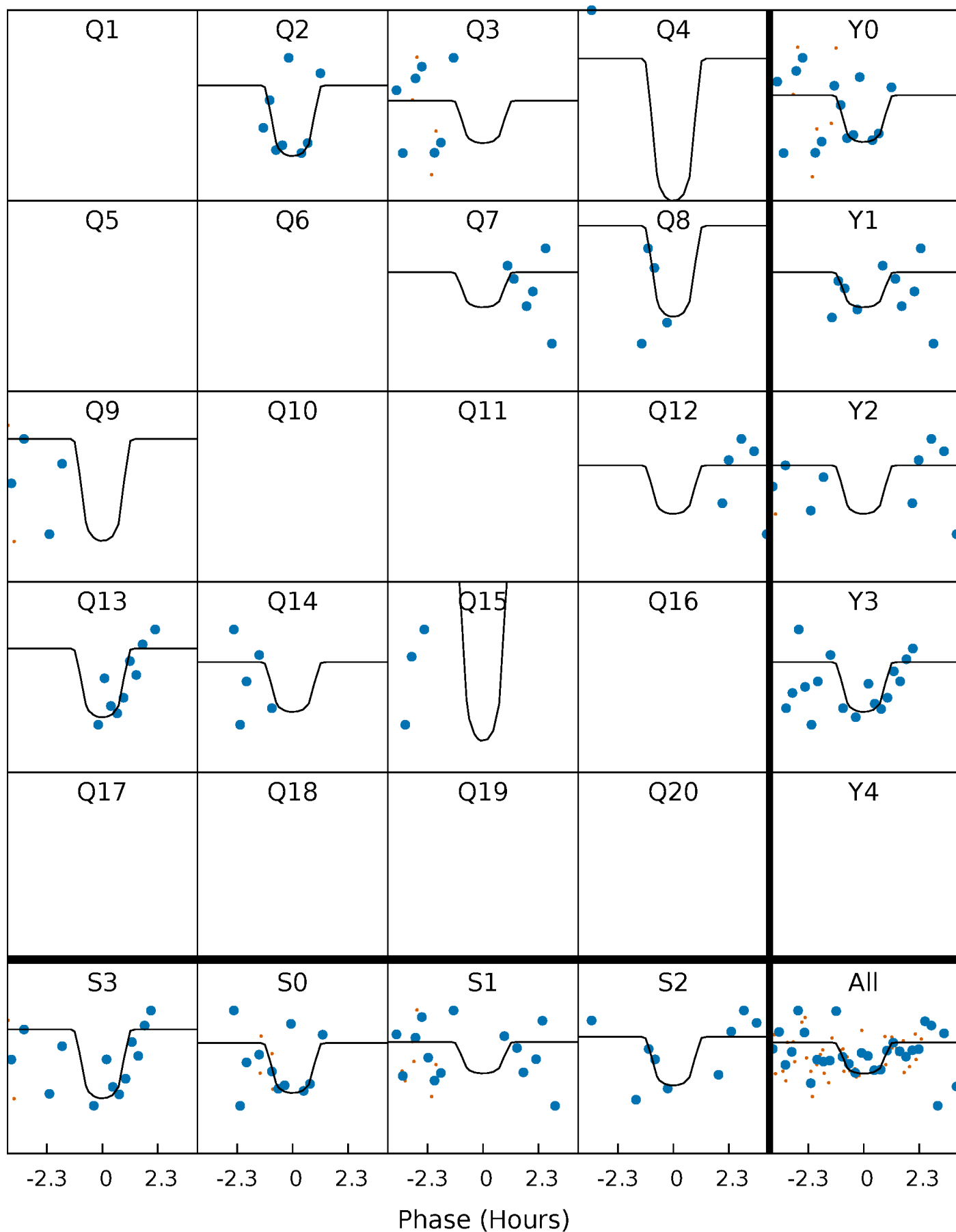
PDC Quarter-Phased Transit Curves

TCE 007200012-04 P= 30.069144 Days $T_0=153.624891$ (BKJD)



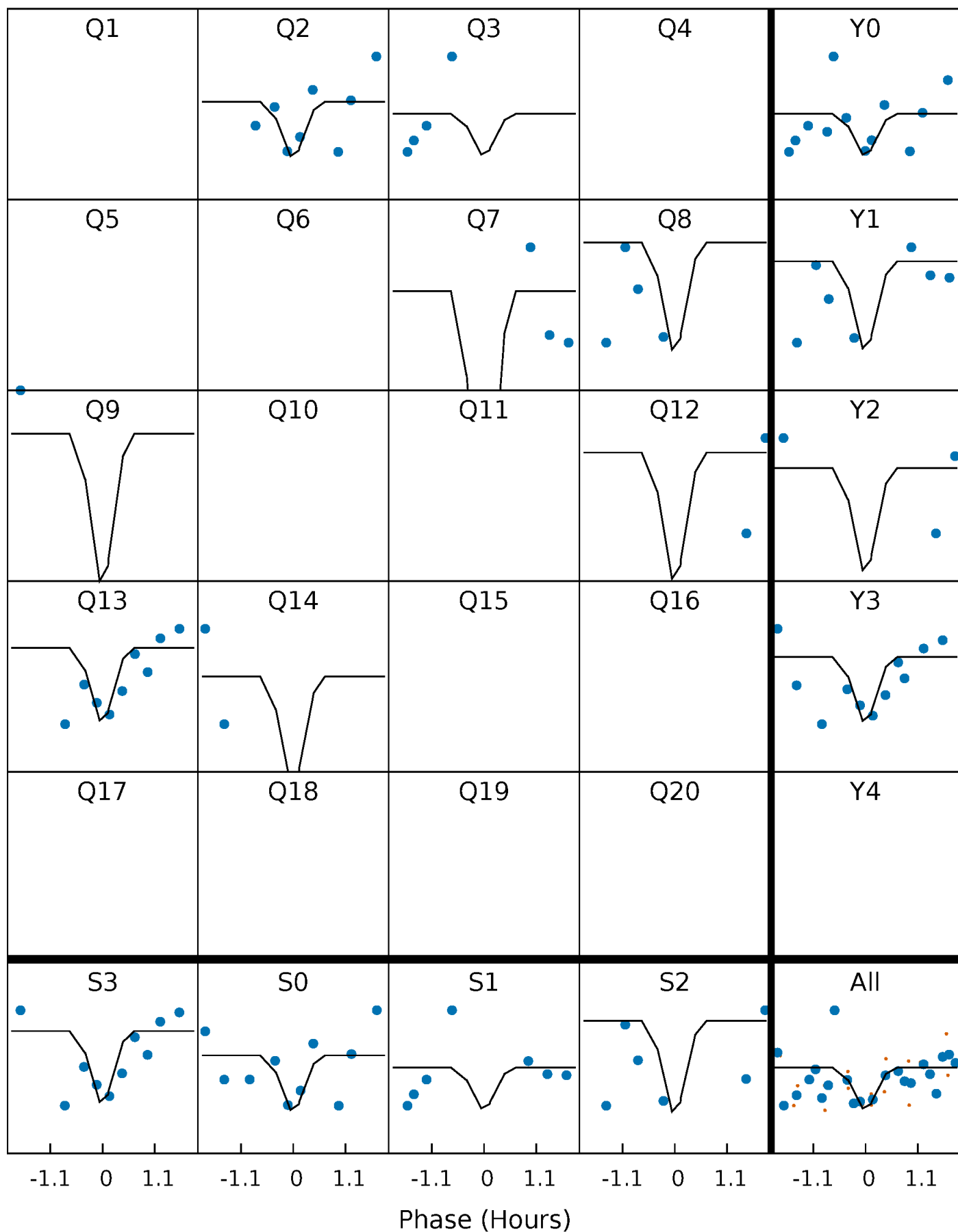
DV Quarter-Phased Transit Curves

TCE 007200012-04 P= 30.069144 Days $T_0=153.624891$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

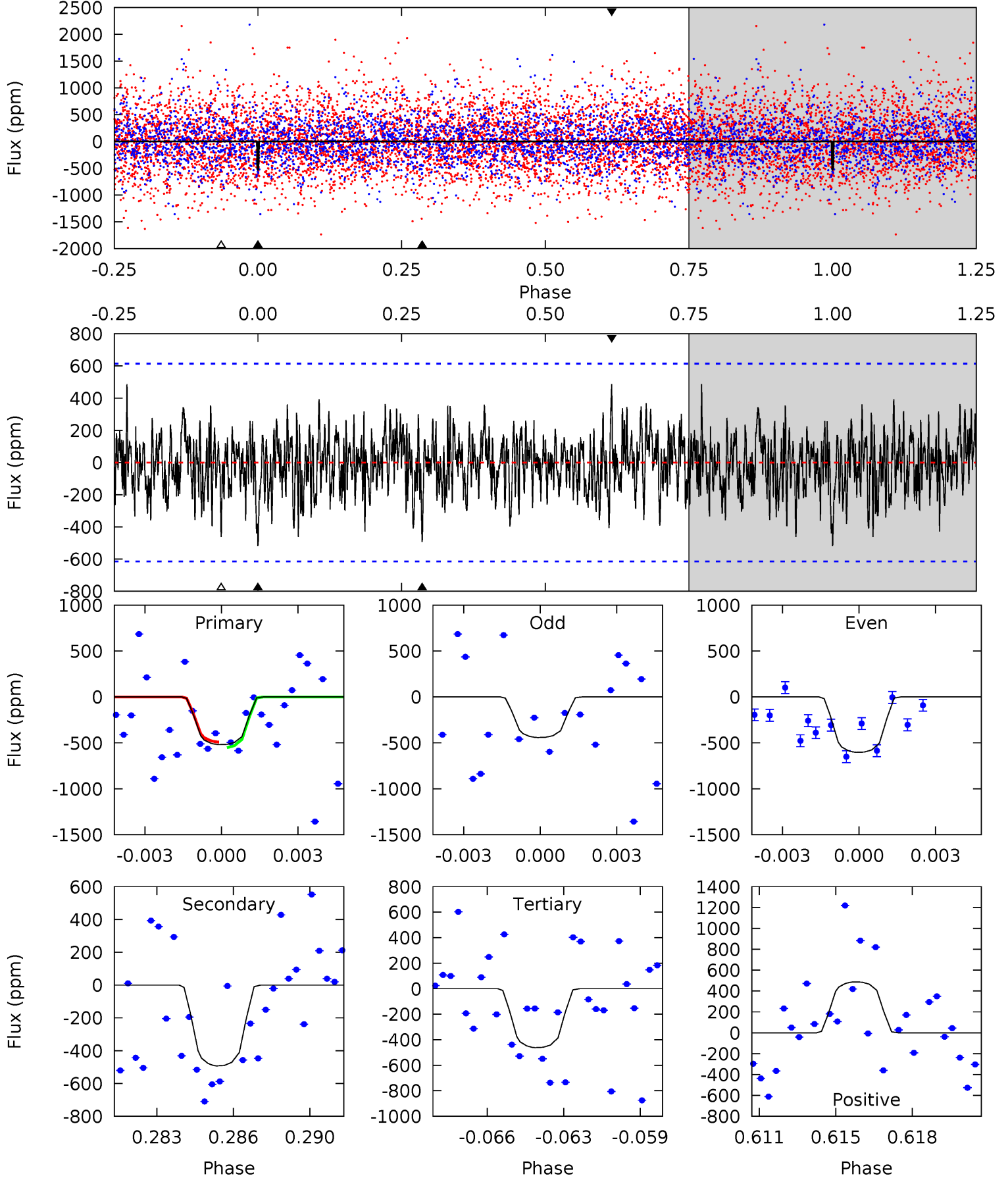
TCE 007200012-04 P= 30.070411 Days $T_0=153.600957$ (BKJD)



DV Model-Shift Uniqueness Test

007200012-04, P = 30.069144 Days, E = 153.624891 Days

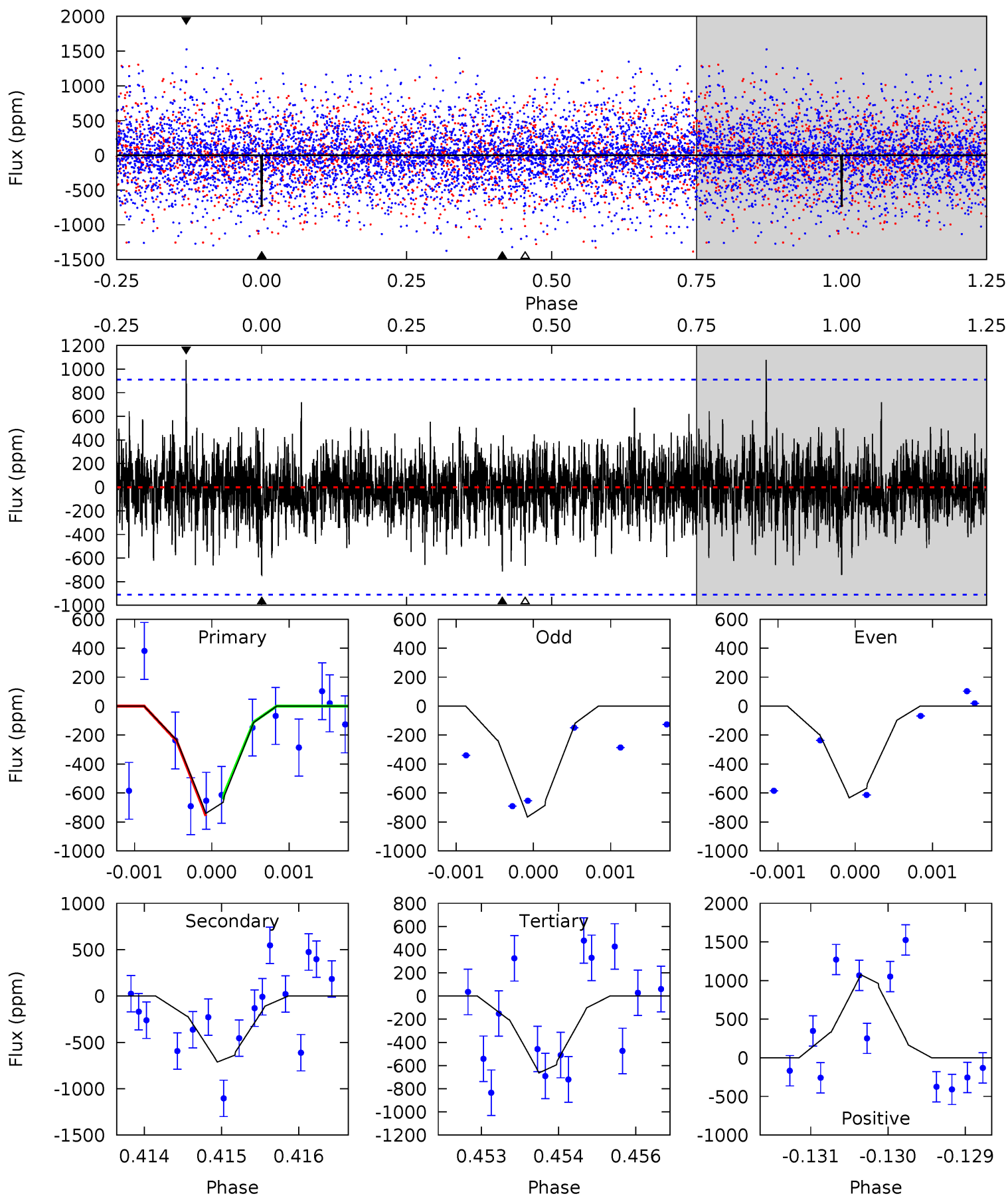
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.41	4.19	3.93	4.14	5.22	2.92	1.27	0.48	0.27	0.26	0.05	0.68	0.96	0.48	0.26



Alt Model-Shift Uniqueness Test

007200012-04, P = 30.070411 Days, E = 153.600957 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.42	4.25	3.96	6.42	5.43	3.26	1.15	0.46	-2.00	0.29	-2.17	0.43	1.01	0.59	0.35



Stellar Parameters For KIC 007200012

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6170^{+187}_{-224}	$4.472^{+0.054}_{-0.216}$	$-0.160^{+0.250}_{-0.350}$	$0.992^{+0.321}_{-0.107}$	$1.063^{+0.144}_{-0.144}$	$1.535^{+0.434}_{-0.810}$
	+3%/-4%	+1%/-5%	+156%/-219%	+32%/-11%	+14%/-14%	+28%/-53%
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 007200012-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-493 ± 118	$4.29^{+4.21}_{-2.75}$	882^{+66}_{-46}	4809^{+3223}_{-1040}	531^{+3575}_{-390}
Alt.	-712 ± 168	$4.64^{+3.94}_{-2.90}$	881^{+60}_{-47}	5007^{+3351}_{-1055}	639^{+4020}_{-455}

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

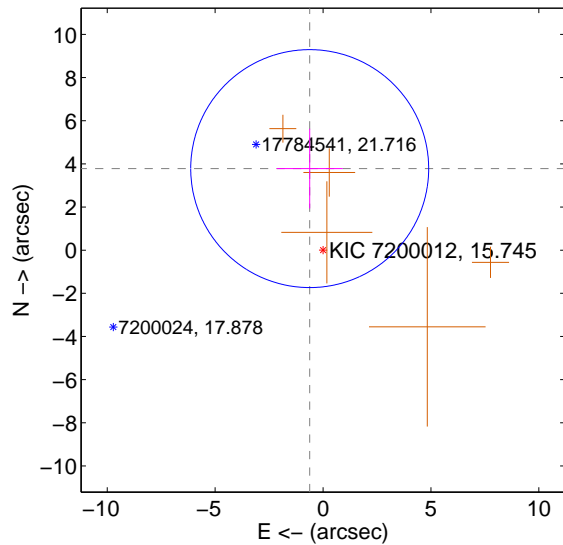
Supplemental centroid analysis for 007200012-04. Kepler magnitude: 15.74. Transit SNR 8.73

There are 0 quarters with good PRF difference image offsets

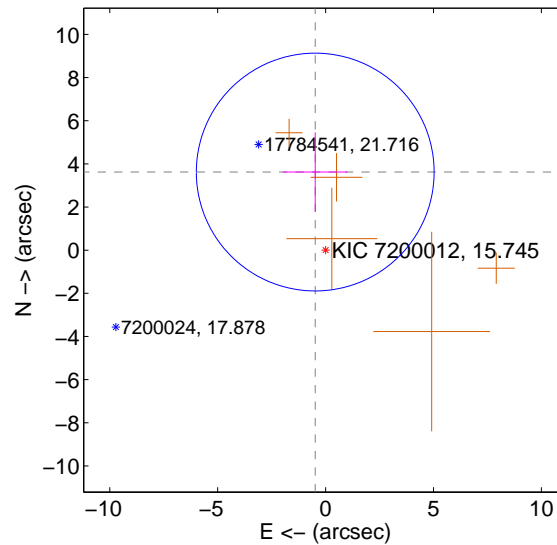
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.831 ± 1.838	2.08	0.618 ± 1.527	3.781 ± 1.845
PRF-fit source offset from KIC position	3.652 ± 1.837	1.99	0.480 ± 1.500	3.620 ± 1.842
photometric centroid source offset	2.23 ± 1.01	2.21	2.22 ± 1.01	0.24 ± 1.05

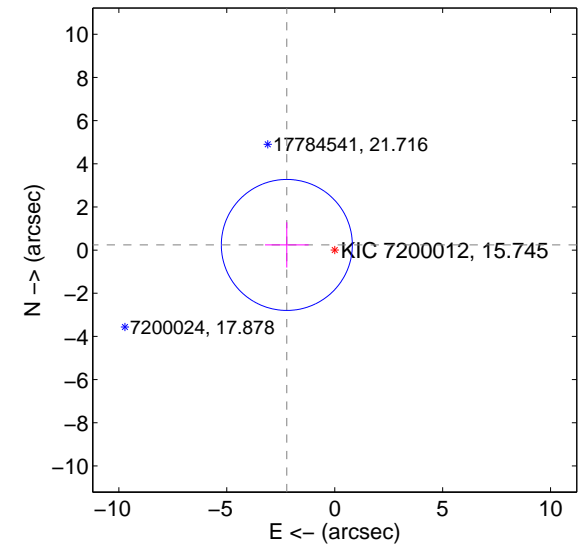
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



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

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

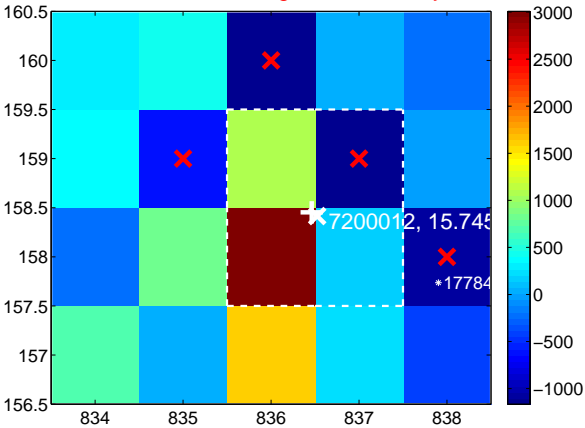
Q1 no difference image



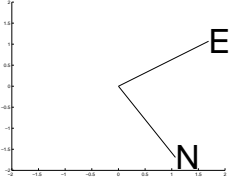
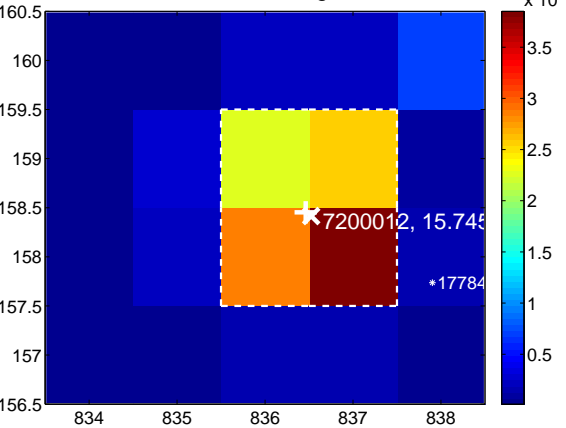
Q1 no OOT image



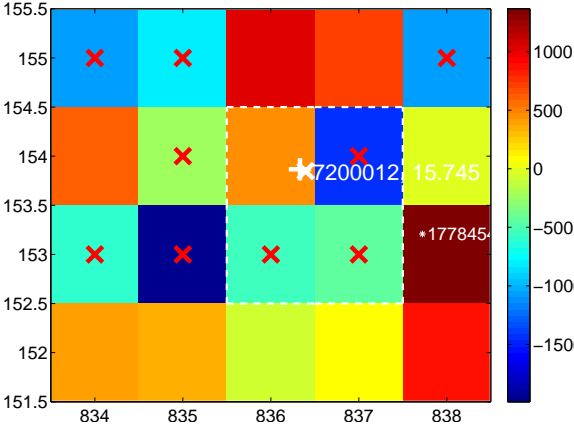
Q2 difference image. Poor Quality



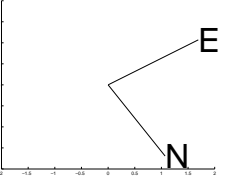
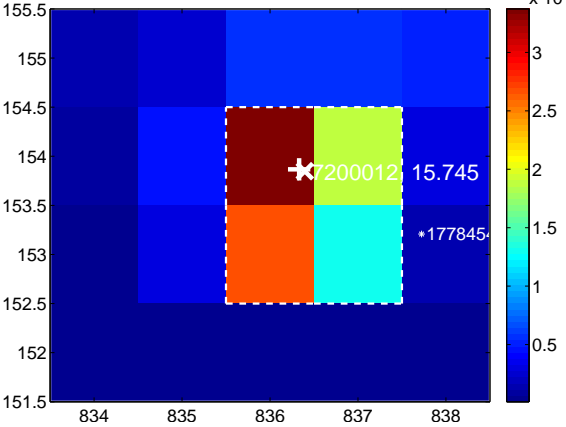
Q2 OOT image



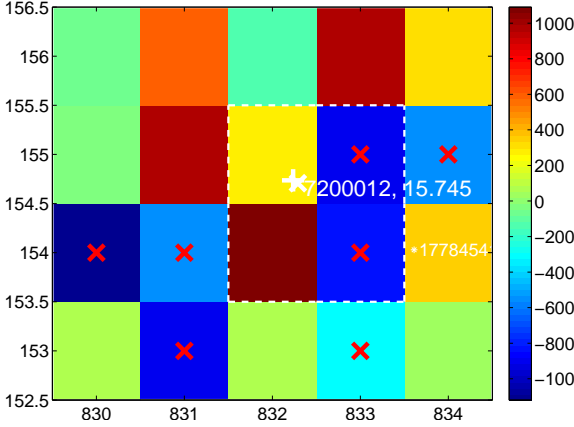
Q3 difference image. Poor Quality



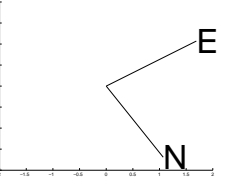
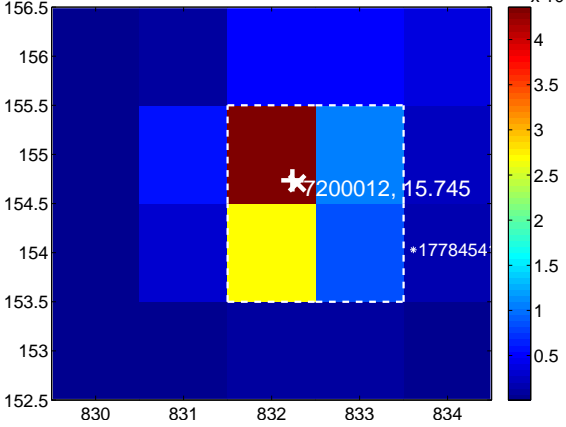
Q3 OOT image



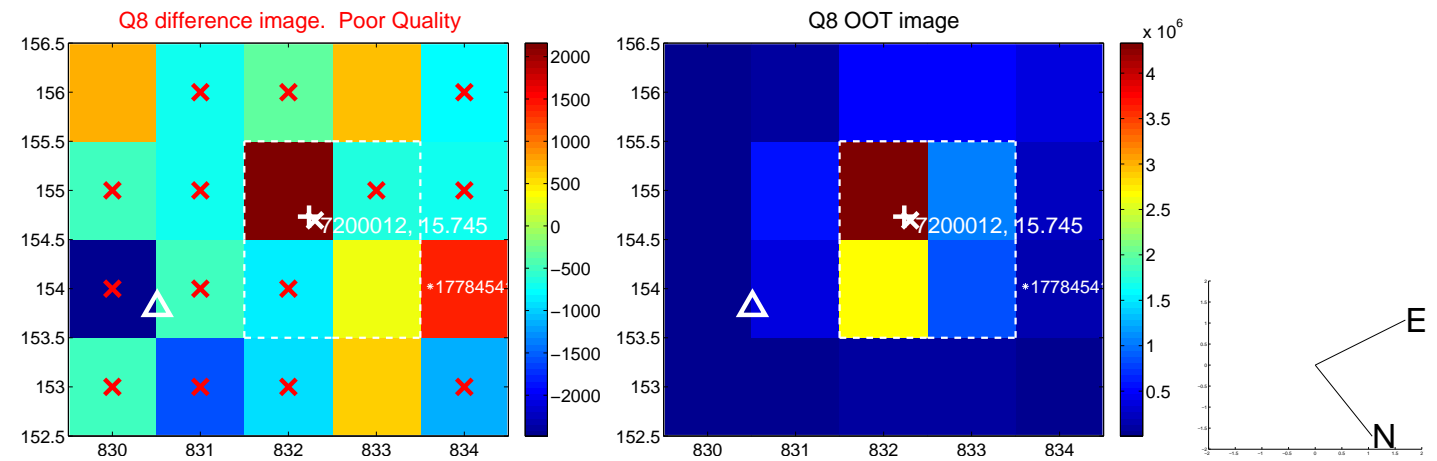
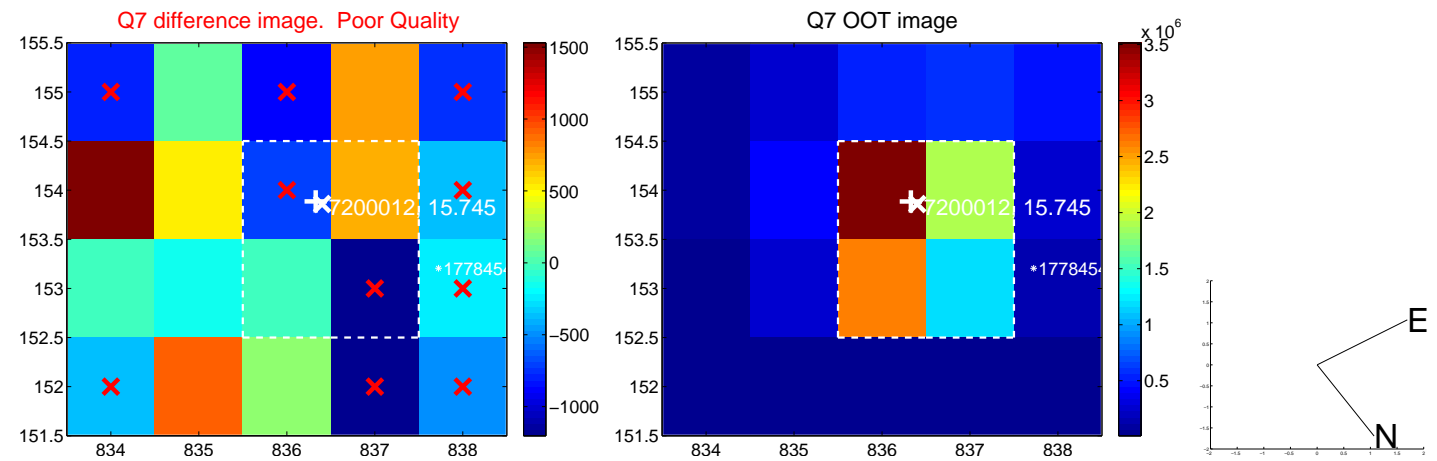
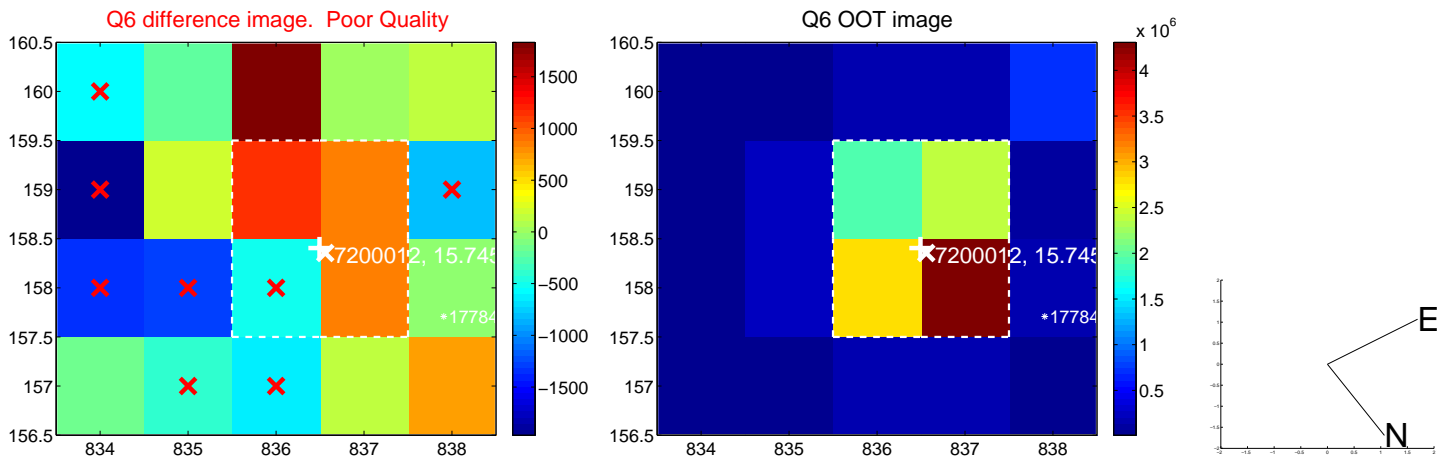
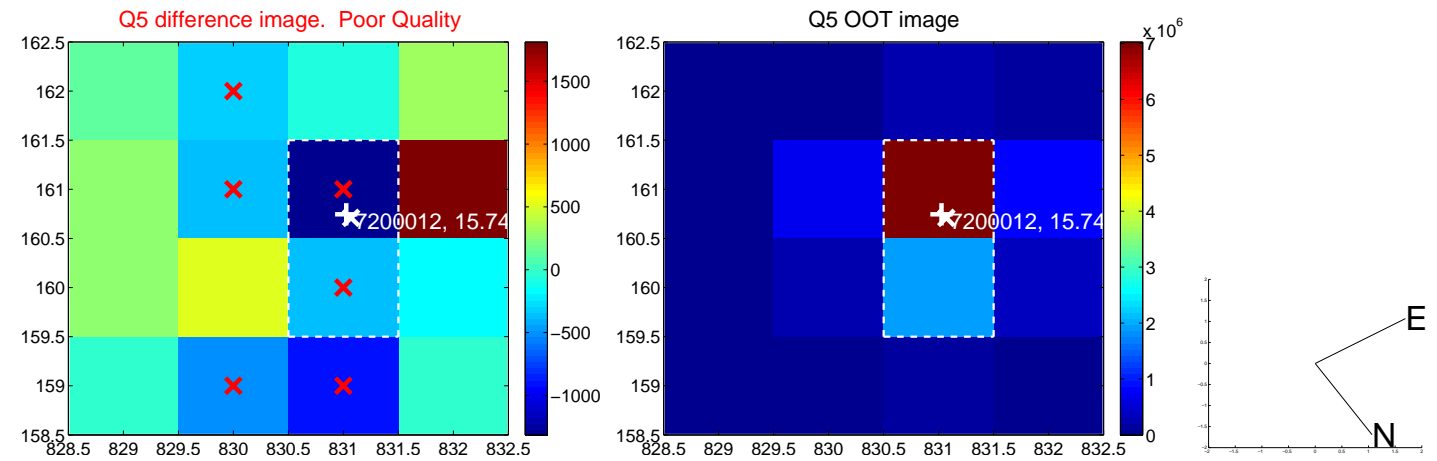
Q4 difference image. Poor Quality



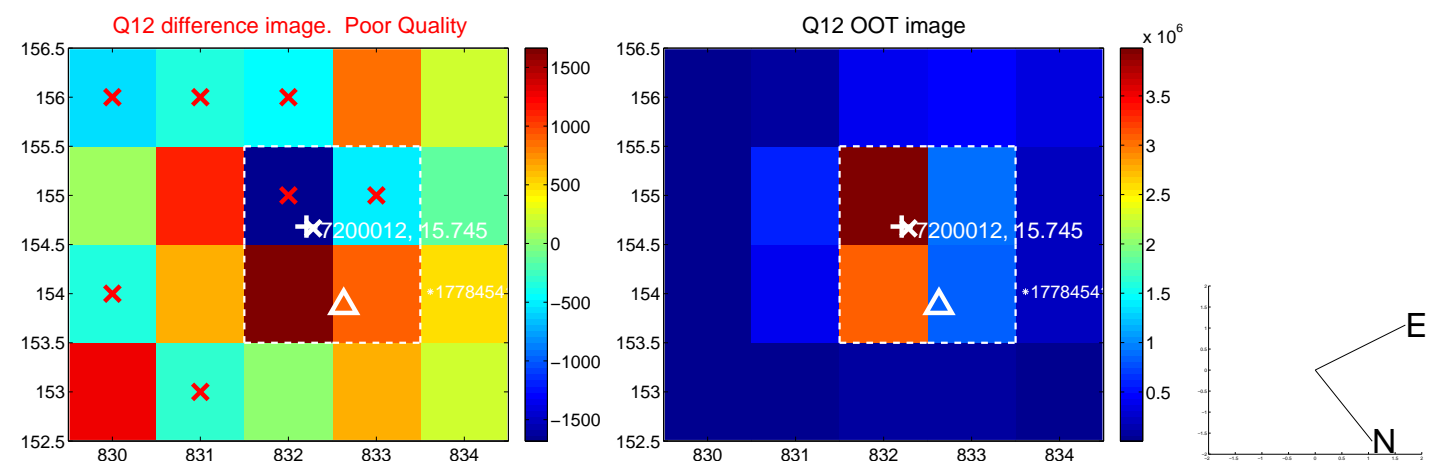
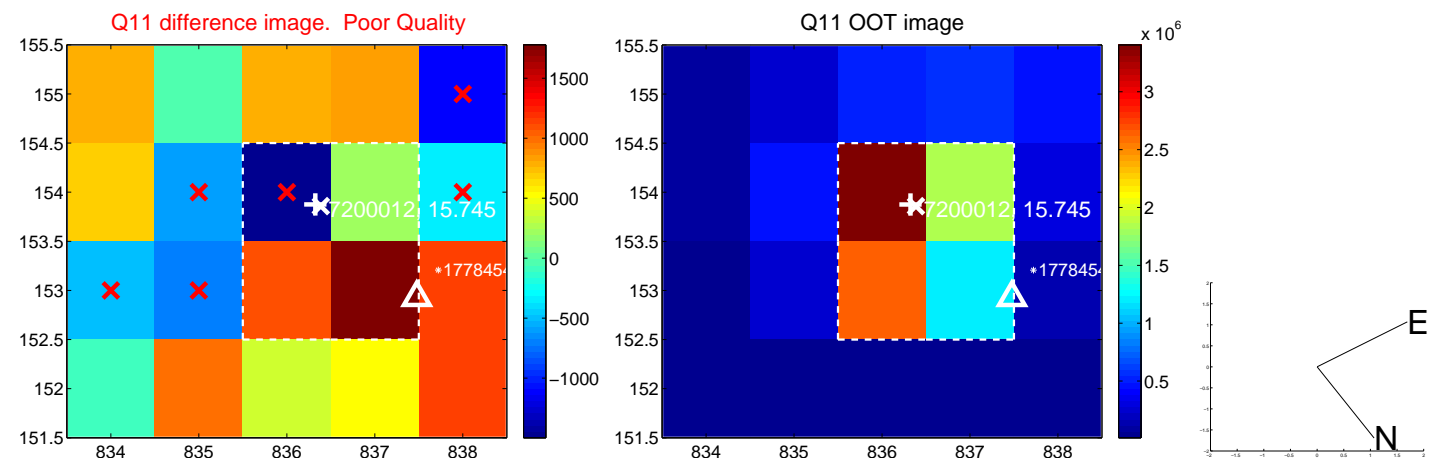
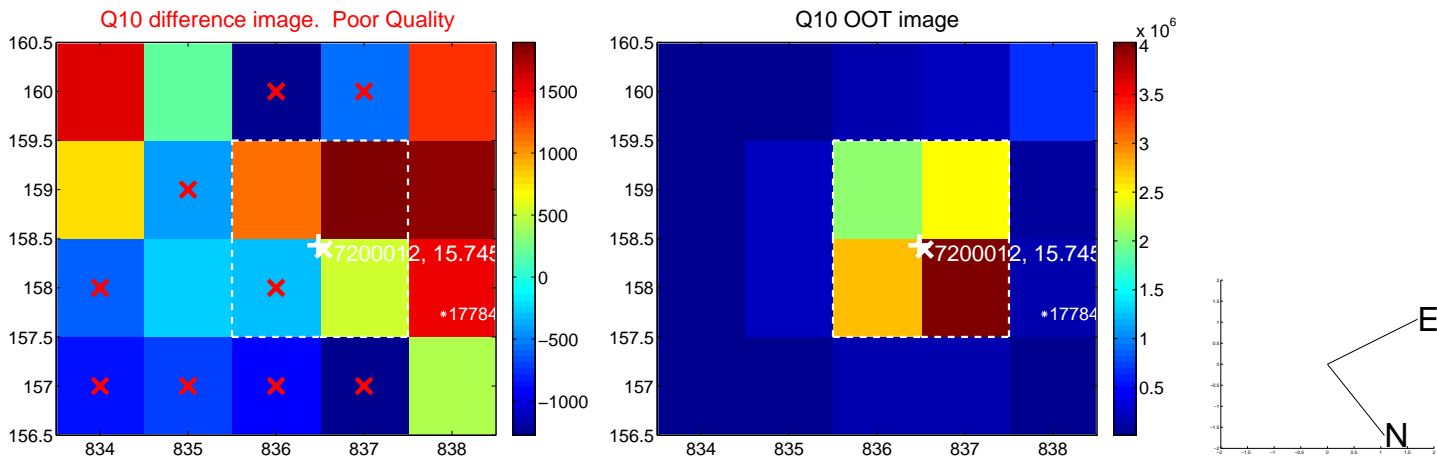
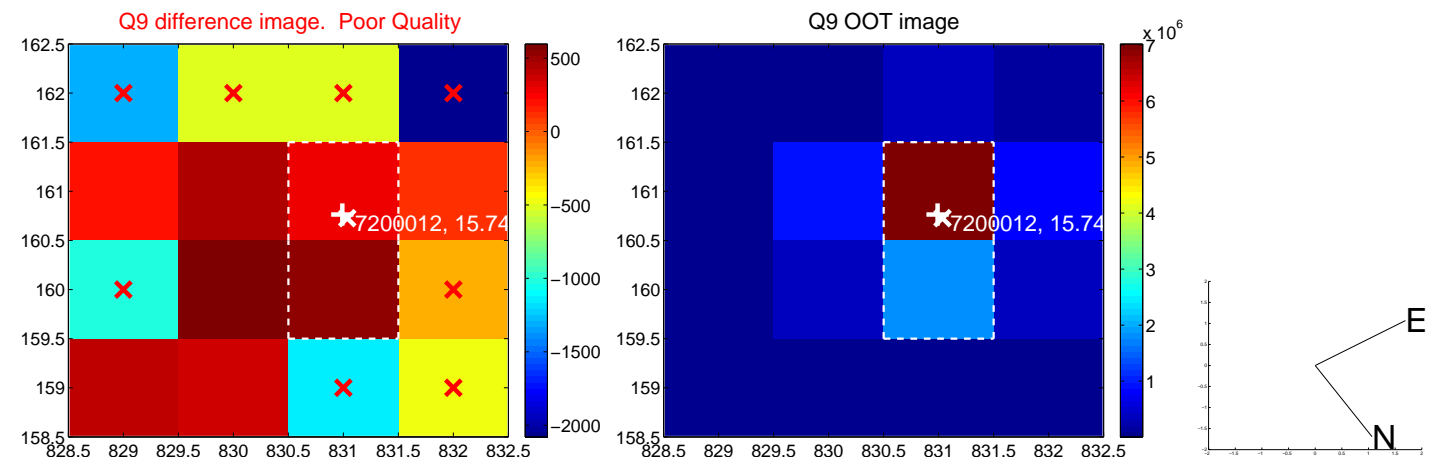
Q4 OOT image



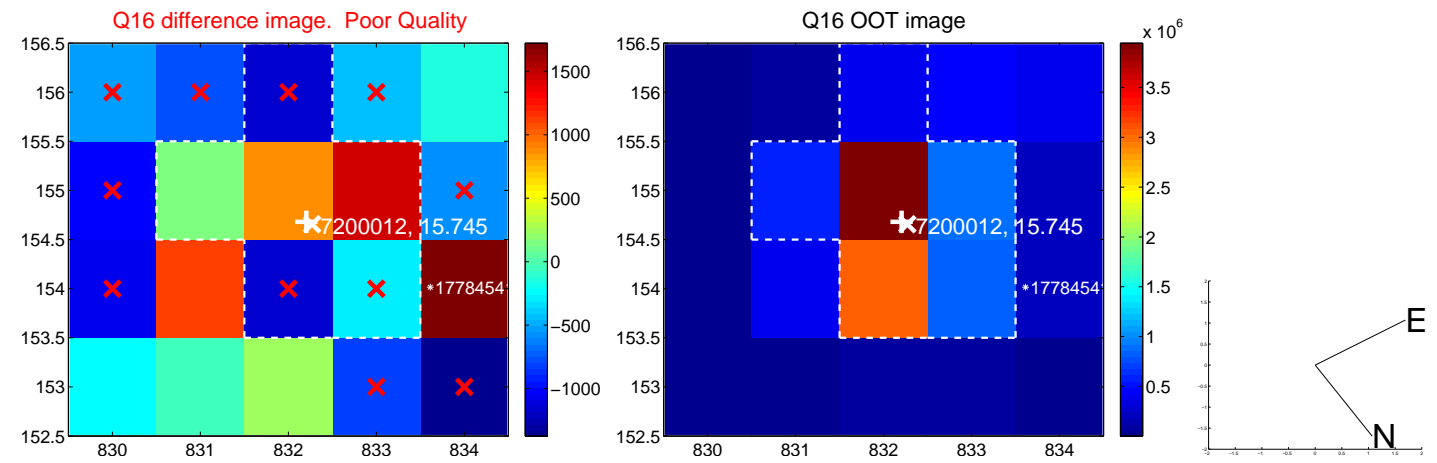
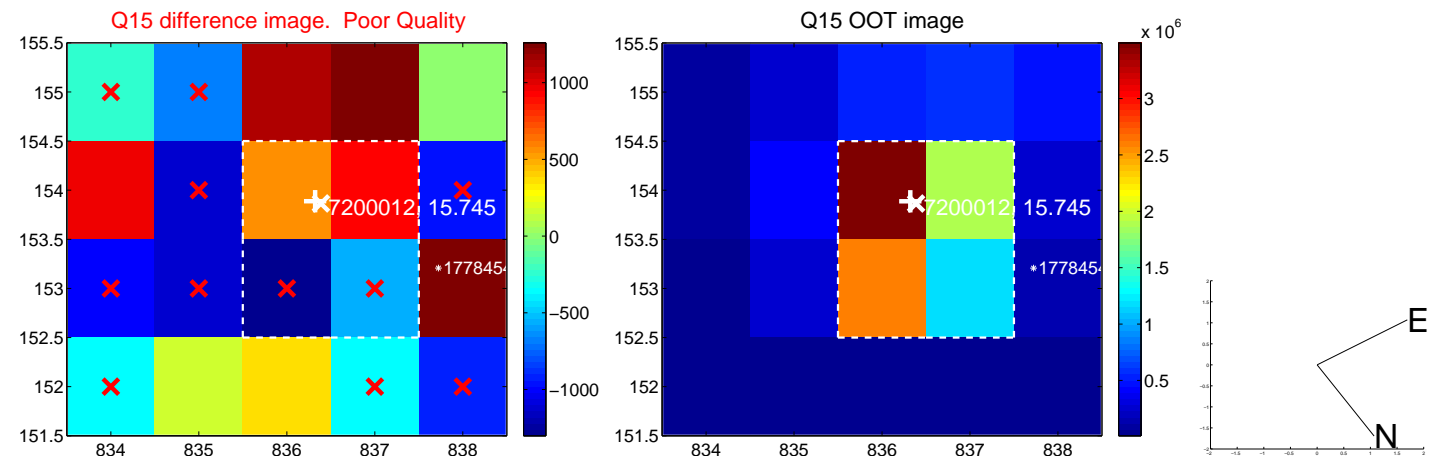
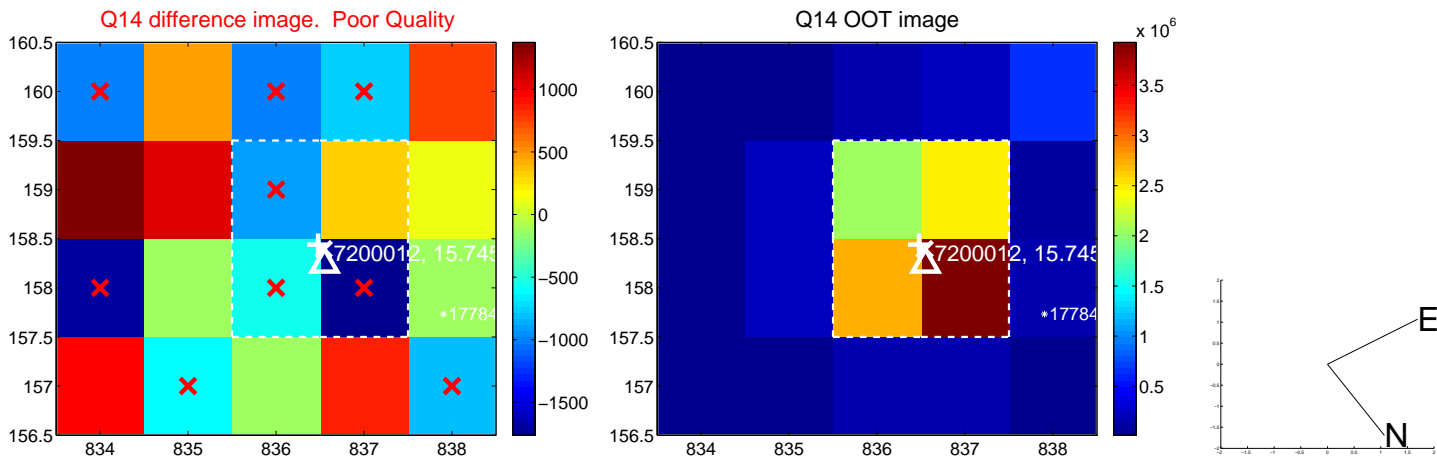
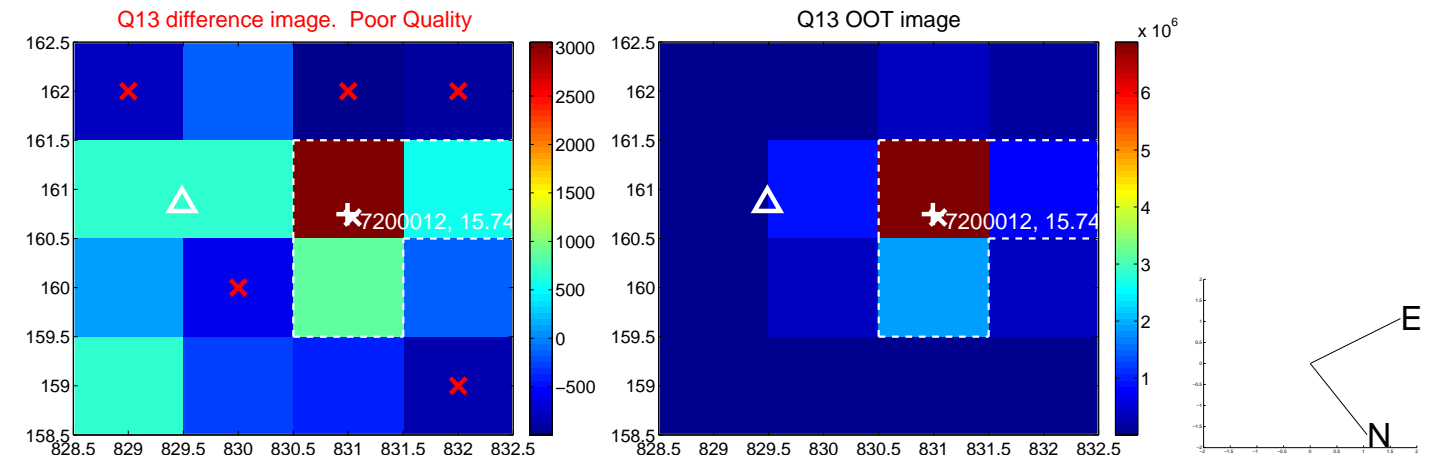
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



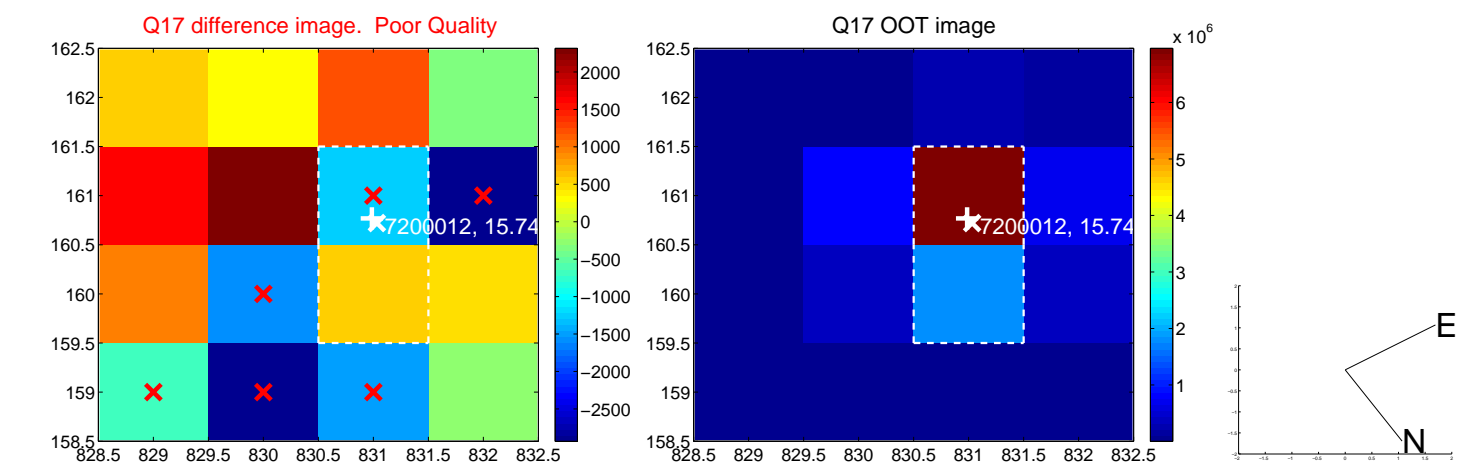
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



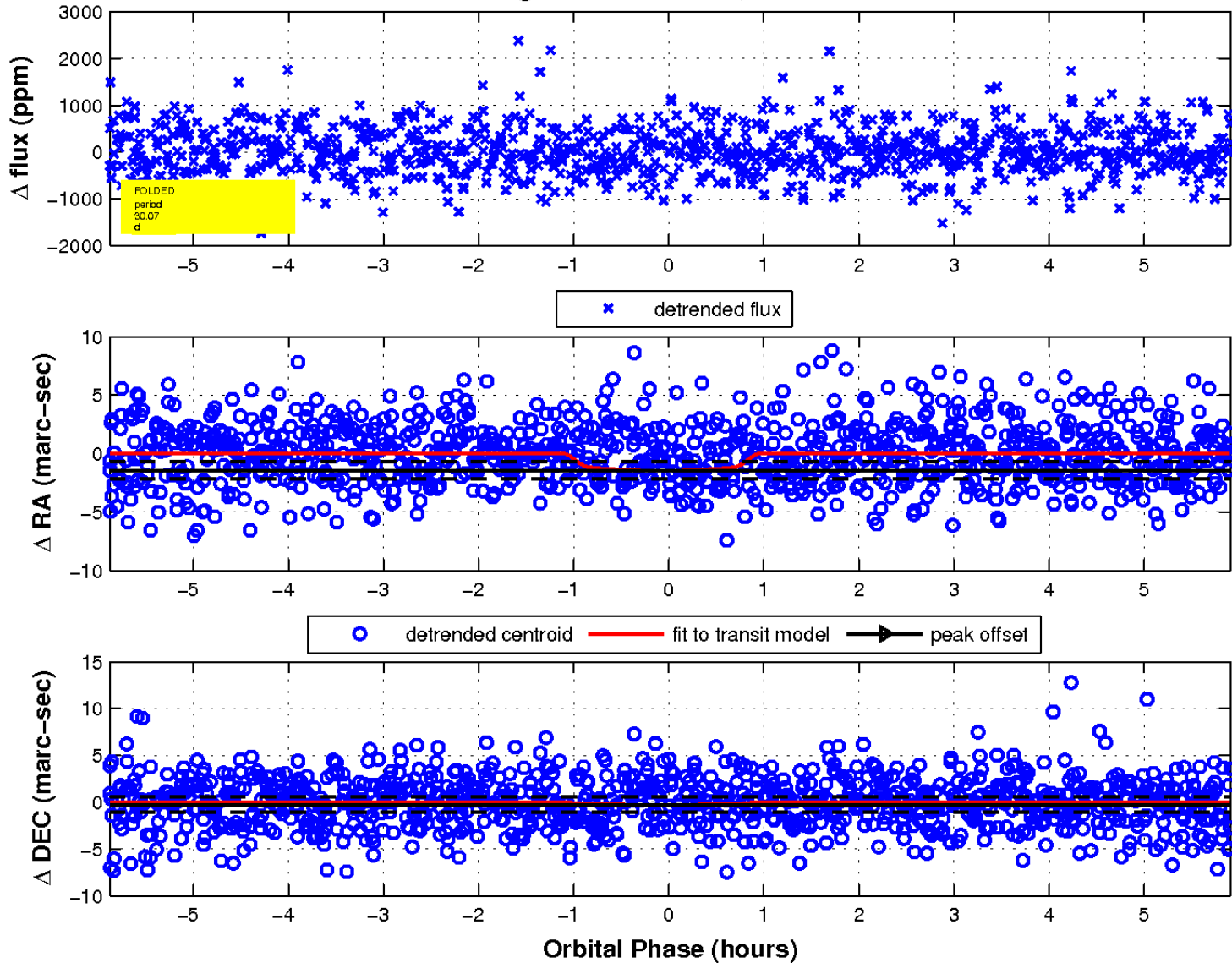
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

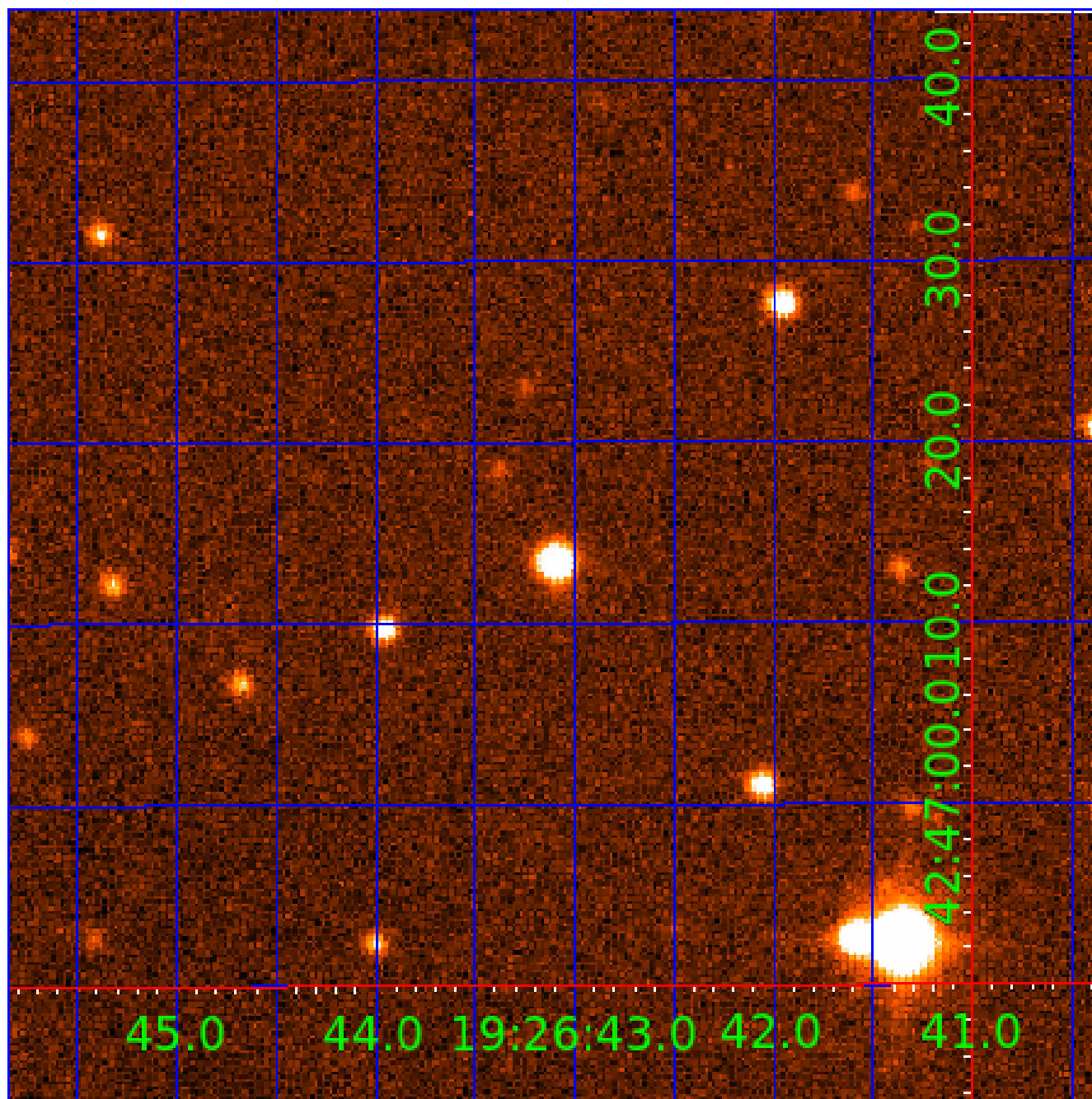


fluxWeightedCentroids, Planet 4 of 5



UKIRT Image

Declination



KIC 007200012

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})
007200012-01	OBS	No	0.566741	131.859829	16.4	3.929	11.1	3.8	0.99	6170	0.41	6821.24
007200012-02	OBS	No	44.089735	131.895873	816.9	1.482	10.2	8.9	0.99	6170	2.85	20.54
007200012-03	OBS	No	28.770856	144.563511	792.5	1.690	9.2	13.3	0.99	6170	2.81	36.29
007200012-04	OBS	No	30.069144	153.624891	666.3	1.971	7.6	8.7	0.99	6170	2.83	34.22
007200012-05	OBS	No	33.514277	157.246090	564.1	1.370	8.9	9.4	0.99	6170	2.39	29.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007200012-01	OBS	FP	0.00	1	0	1	1	LPP_DV—HALO_GHOST—EPHEM_MATCH
007200012-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007200012-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
007200012-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200012-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS

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

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

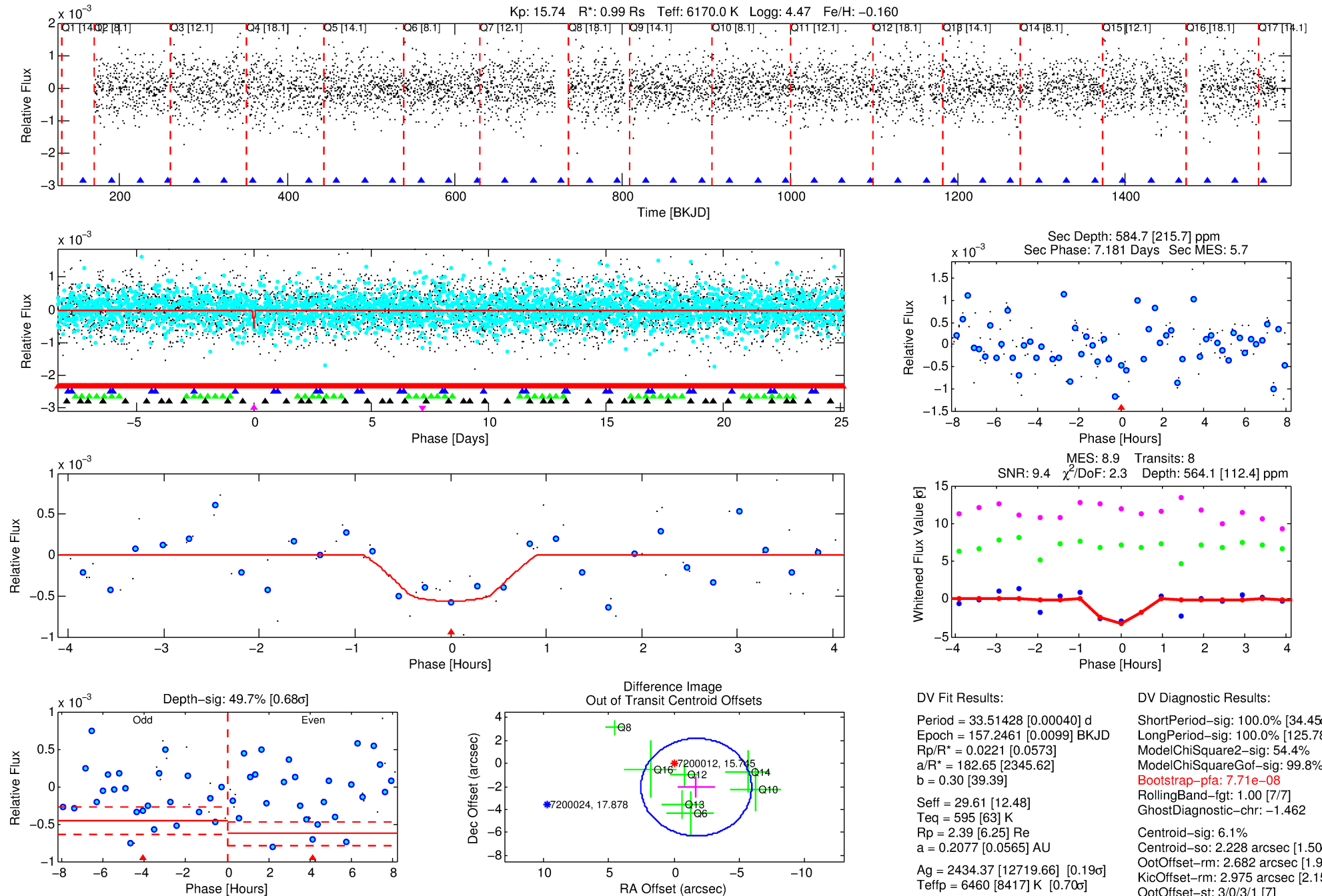
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007200012-05

No Significant Match Found

DV One-Page Summary

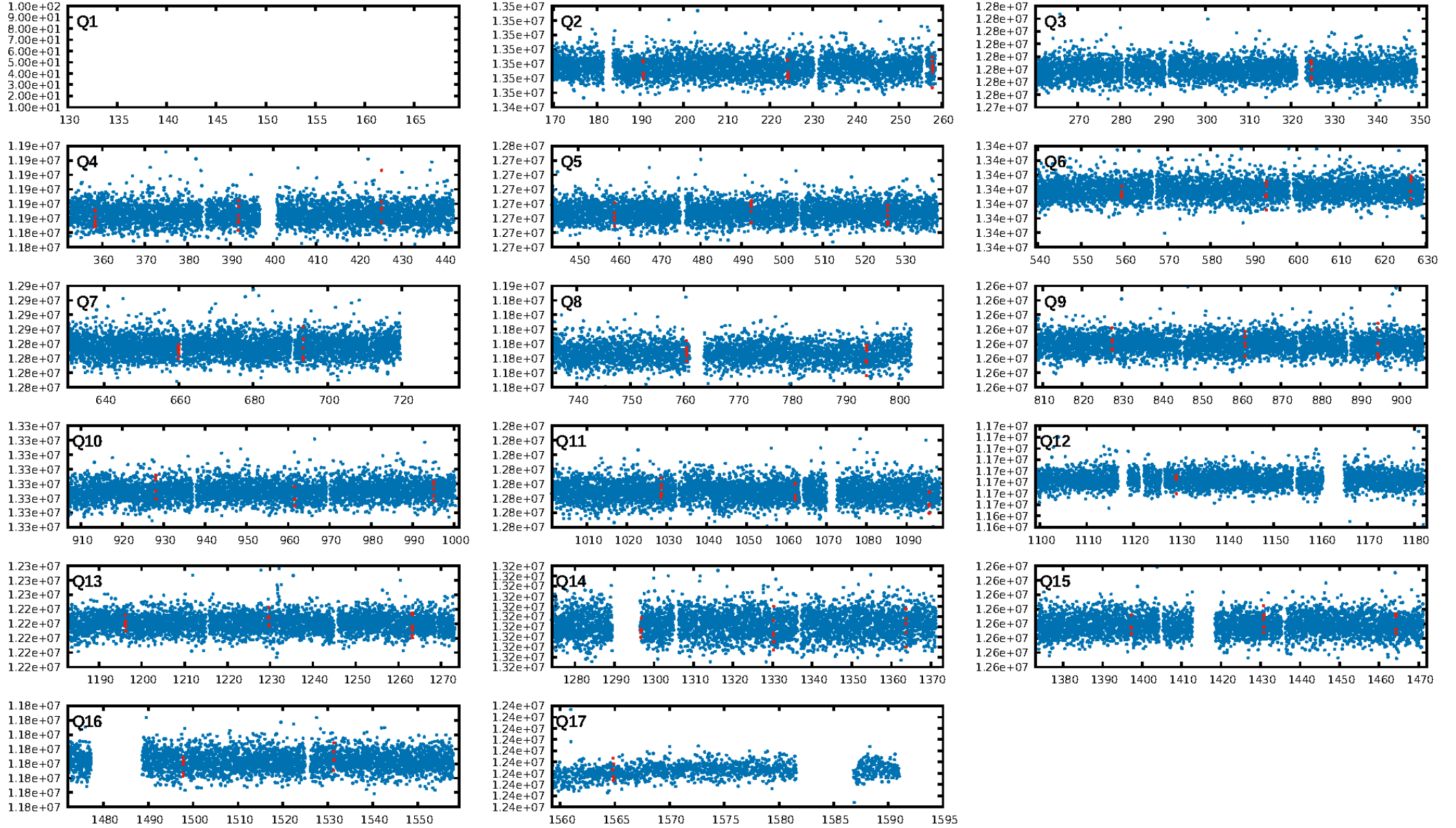
KIC: 7200012 Candidate: 5 of 5 Period: 33.514 d



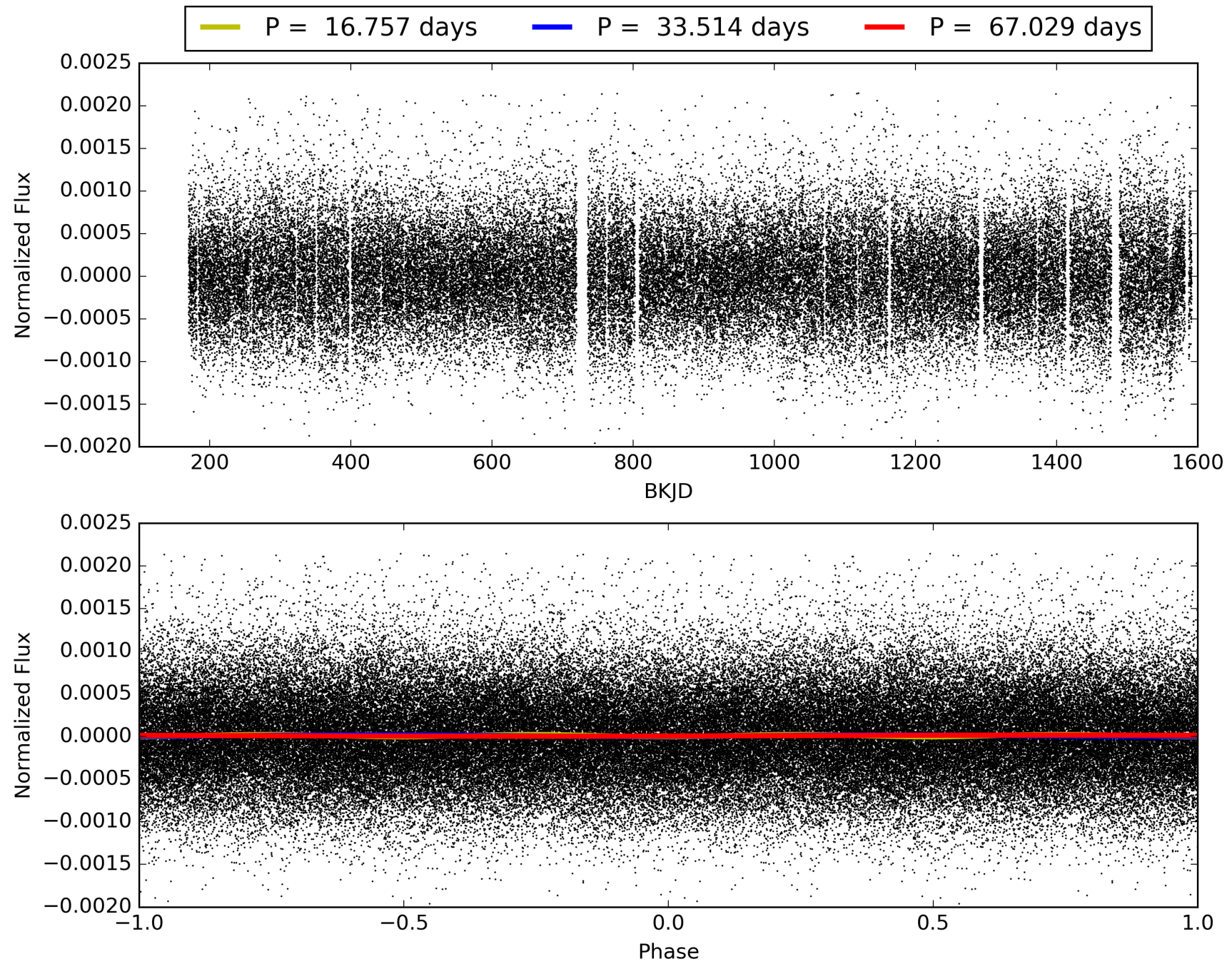
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:26:50 Z

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TCE 007200012-05, PDC Light Curves

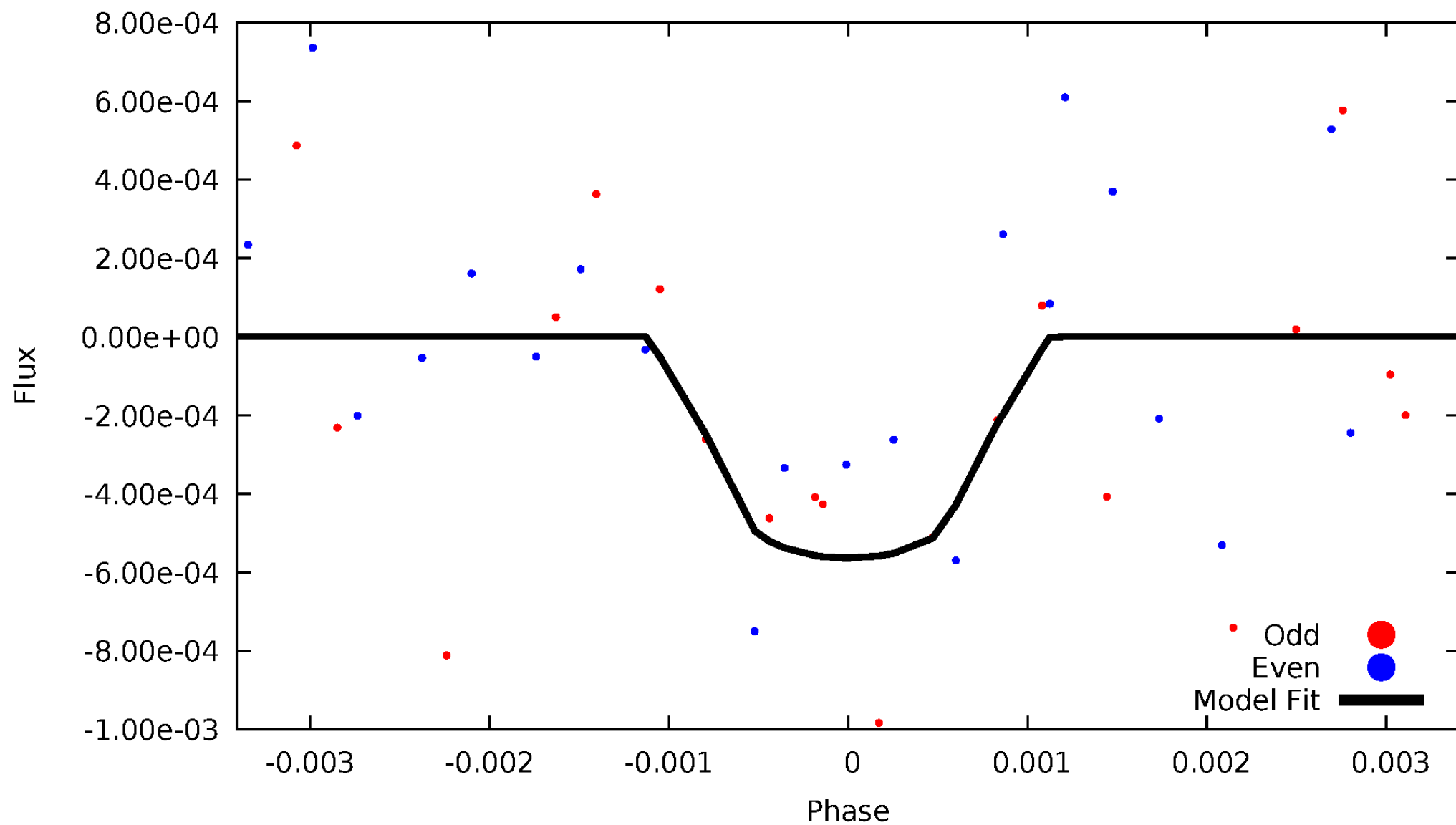


TCE 007200012-05



DV Odd/Even

TCE 007200012-05

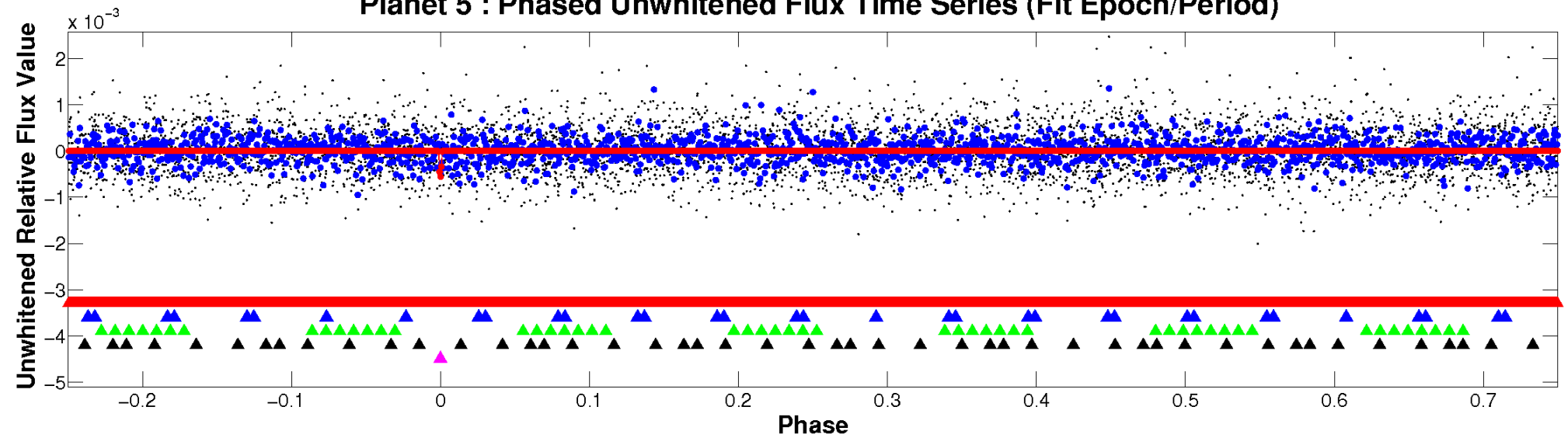


ALT Odd/Even

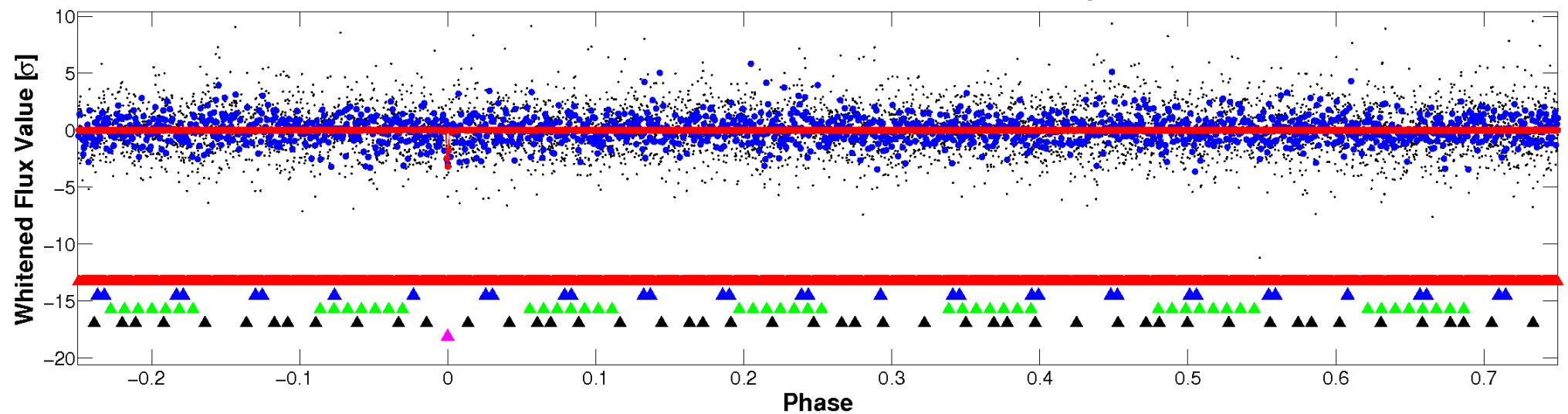
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

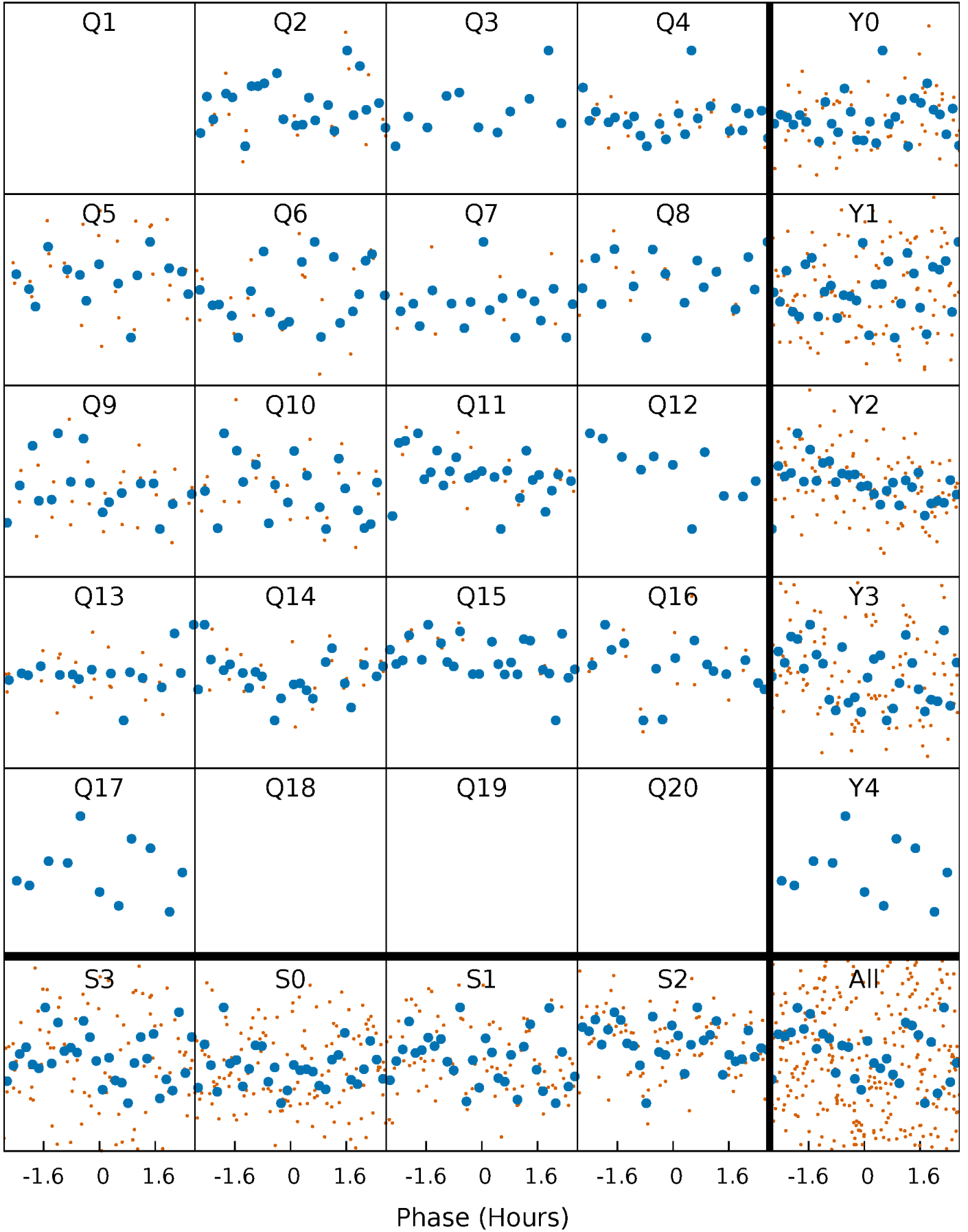


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



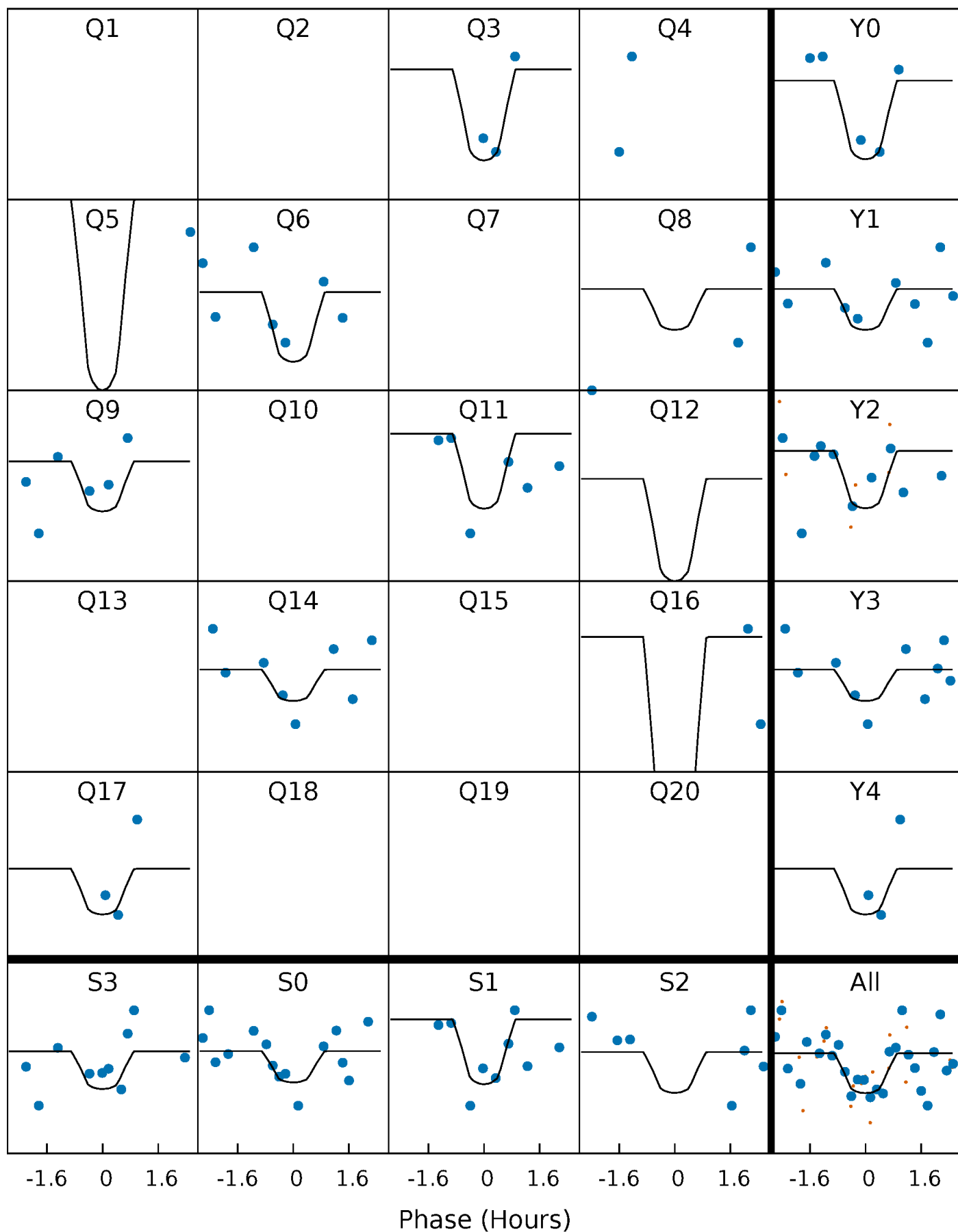
PDC Quarter-Phased Transit Curves

TCE 007200012-05 P= 33.514277 Days $T_0=157.246090$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 007200012-05 $P = 33.514277$ Days $T_0 = 157.246090$ (BKJD)

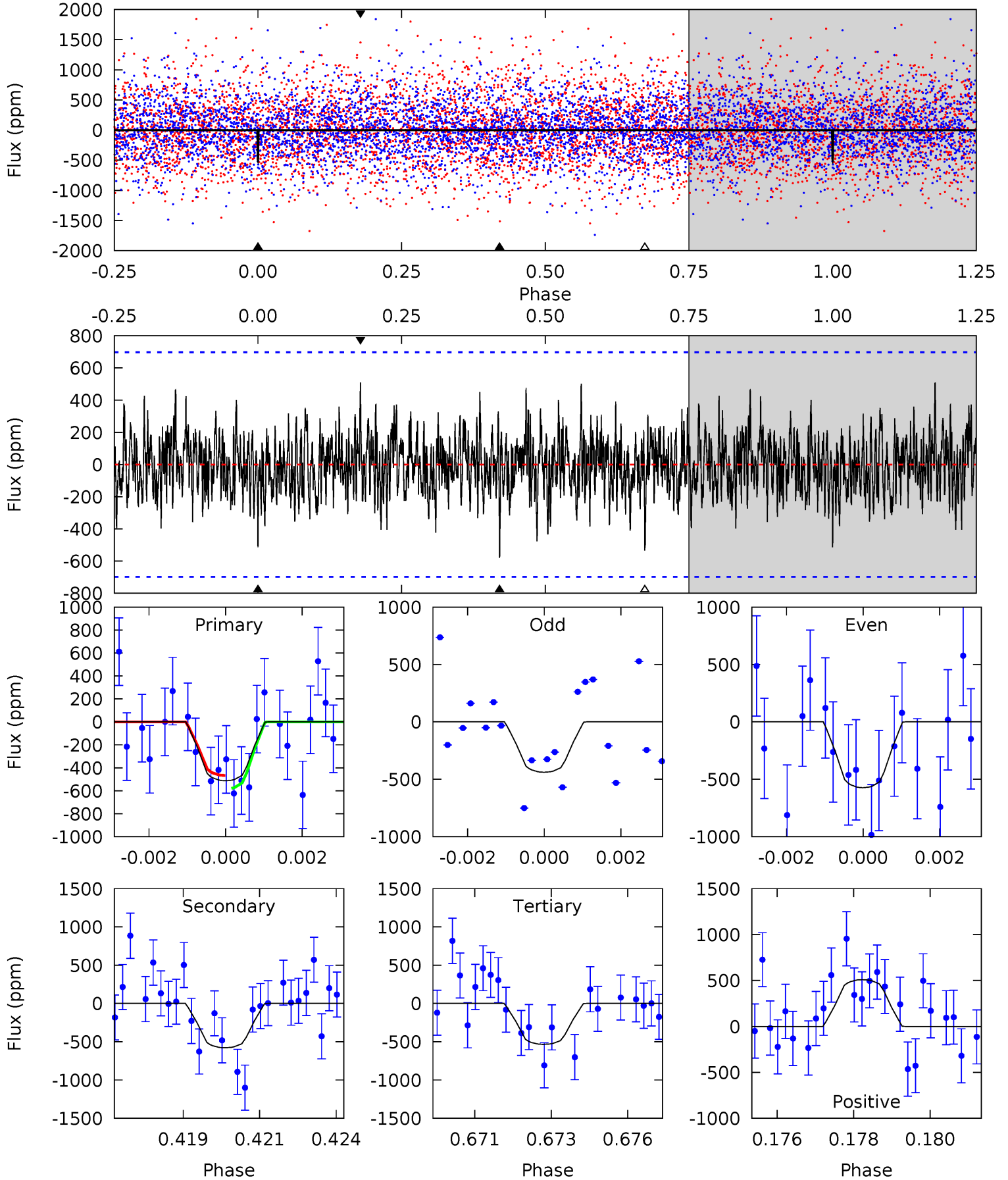


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

007200012-05, P = 33.514277 Days, E = 157.246090 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.90	4.41	4.07	3.88	5.31	3.07	1.15	-0.16	0.03	0.34	0.53	0.51	1.00	0.47	0.43



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 007200012

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6170^{+187}_{-224}	$4.472^{+0.054}_{-0.216}$	$-0.160^{+0.250}_{-0.350}$	$0.992^{+0.321}_{-0.107}$	$1.063^{+0.144}_{-0.144}$	$1.535^{+0.434}_{-0.810}$
	+3%/-4%	+1%/-5%	+156%/-219%	+32%/-11%	+14%/-14%	+28%/-53%
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 007200012-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-579 ± 131	$5.39^{+5.06}_{-3.52}$	847^{+64}_{-45}	4531^{+3153}_{-980}	462^{+3649}_{-344}
Alt.	N/A	N/A	N/A	N/A	N/A

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
 A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

DV Centroid Data

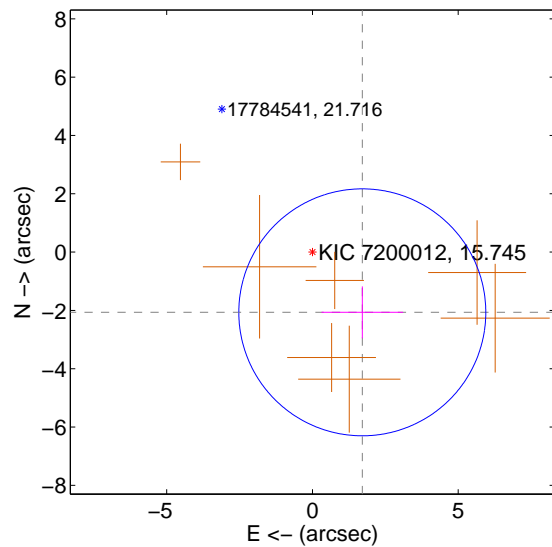
Supplemental centroid analysis for 007200012-05. Kepler magnitude: 15.74. Transit SNR 9.44

There are 0 quarters with good PRF difference image offsets

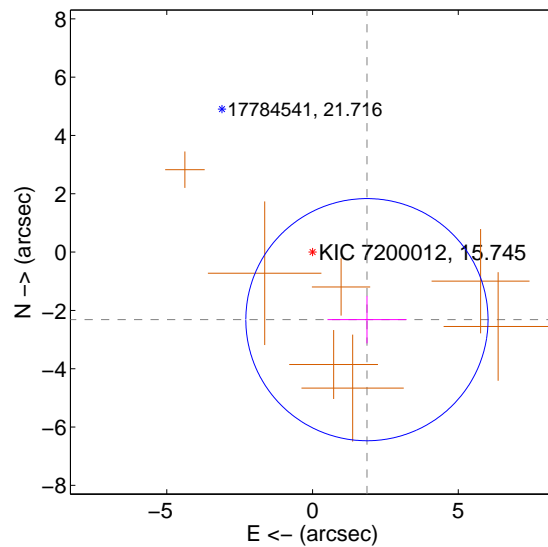
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.682 ± 1.412	1.90	-1.710 ± 1.397	-2.065 ± 0.889
PRF-fit source offset from KIC position	2.975 ± 1.384	2.15	-1.866 ± 1.355	-2.317 ± 0.809
photometric centroid source offset	2.23 ± 1.48	1.50	-1.68 ± 1.45	-1.46 ± 1.53

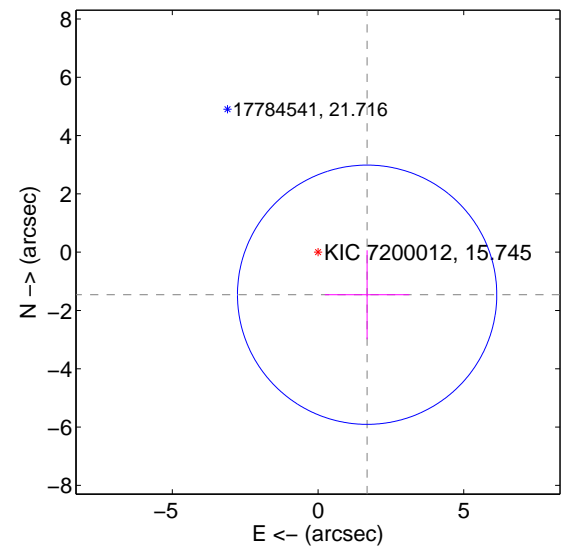
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



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

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

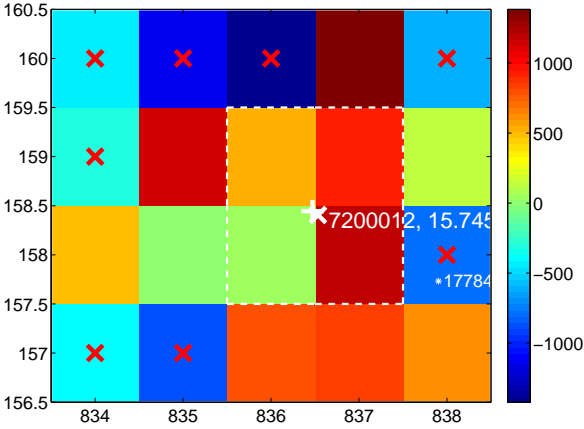
Q1 no difference image



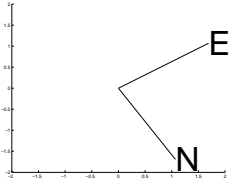
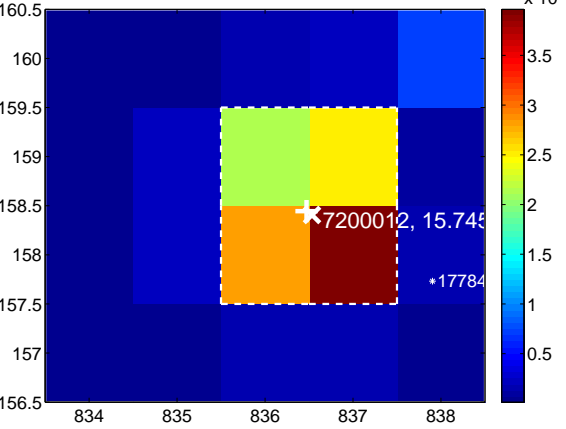
Q1 no OOT image



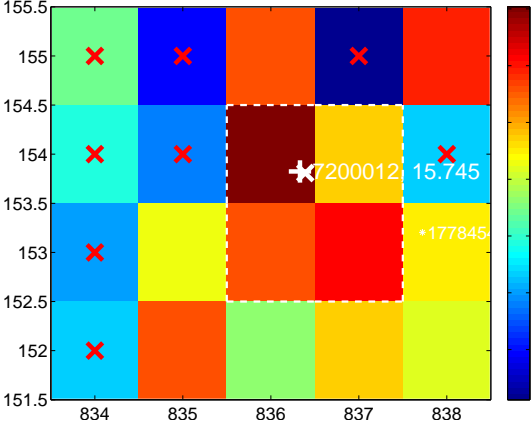
Q2 difference image. Poor Quality



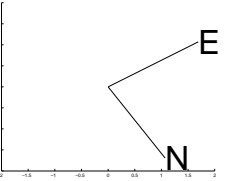
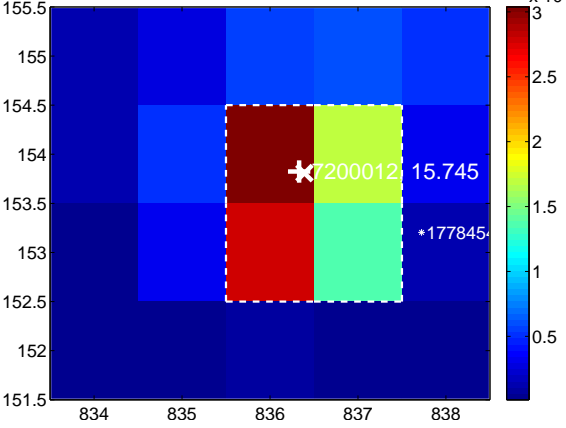
Q2 OOT image



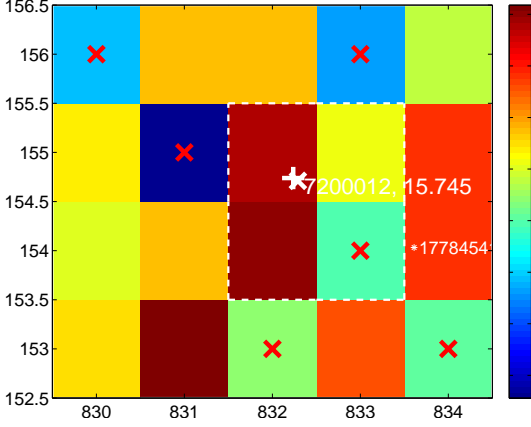
Q3 difference image. Poor Quality



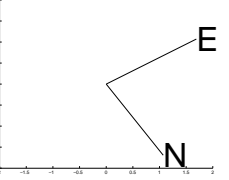
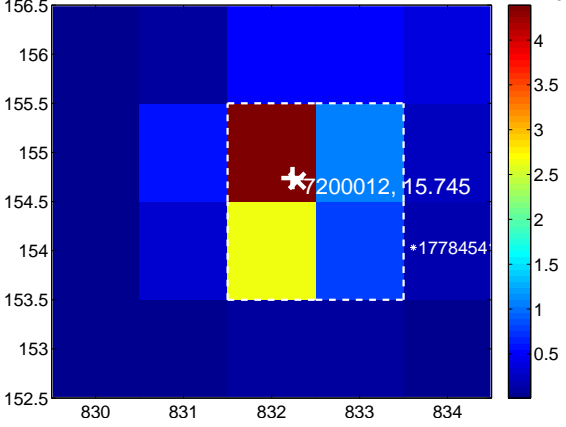
Q3 OOT image



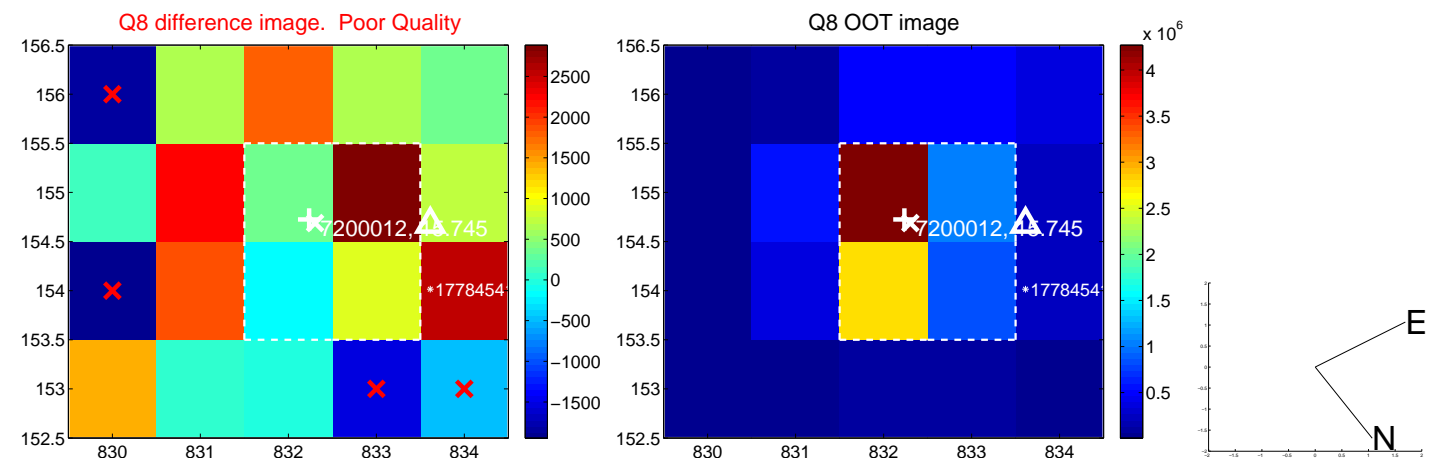
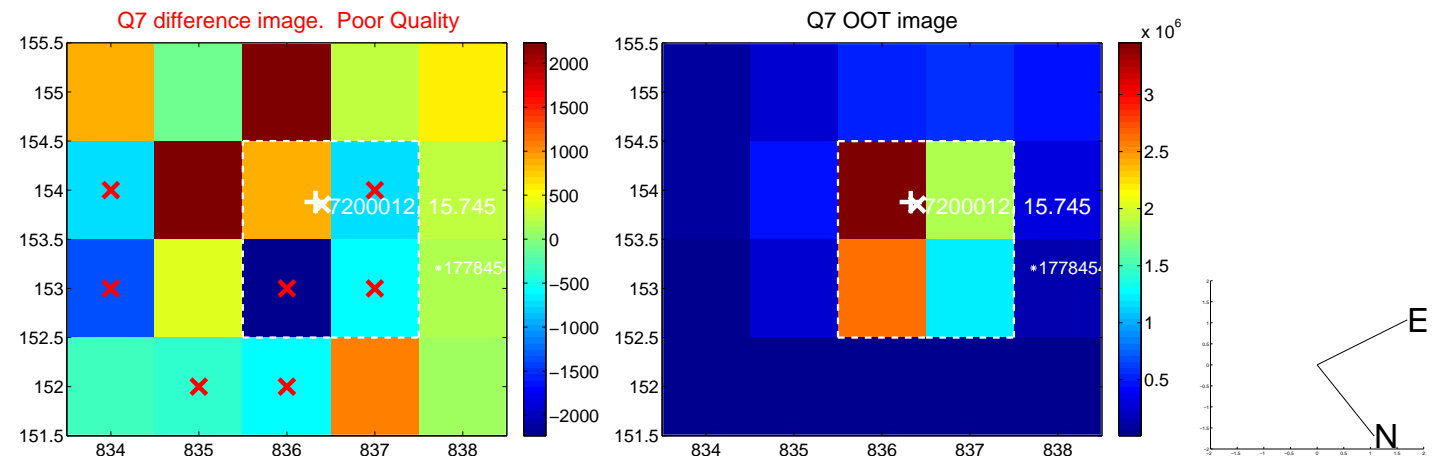
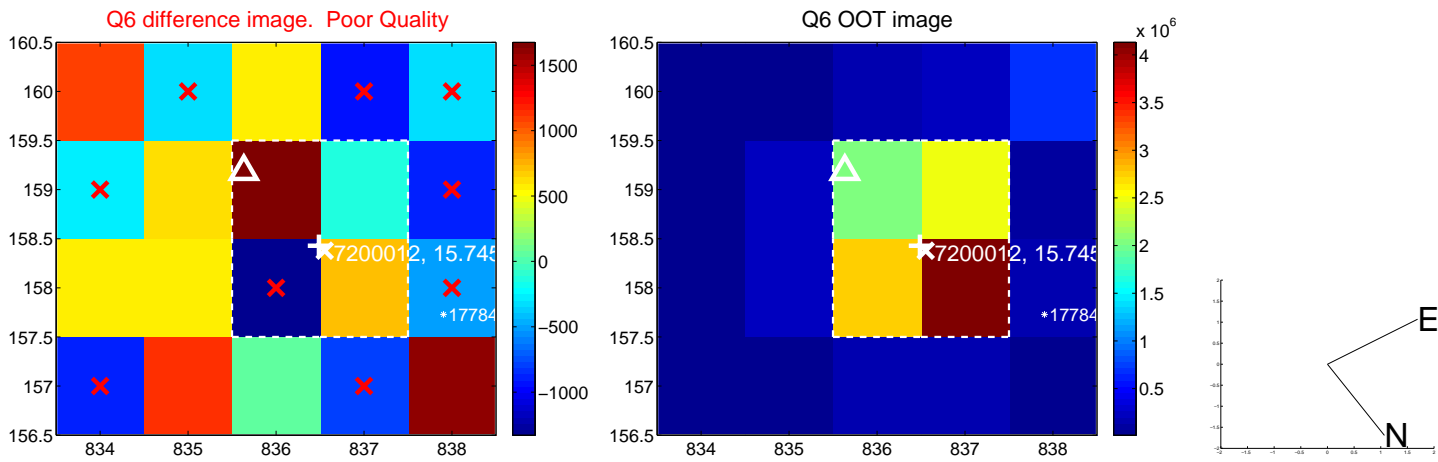
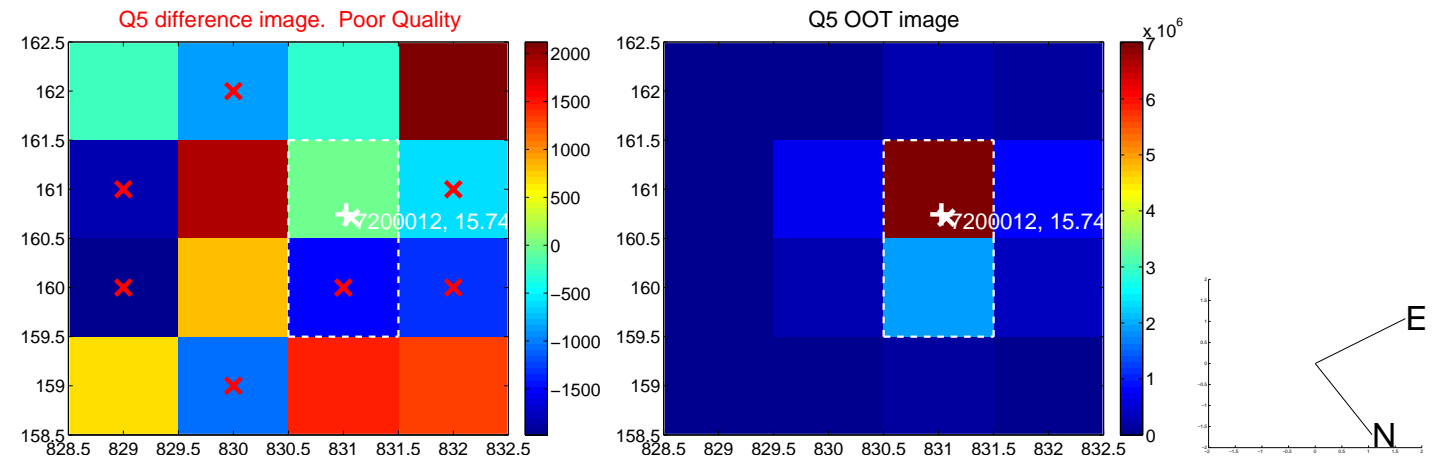
Q4 difference image. Poor Quality



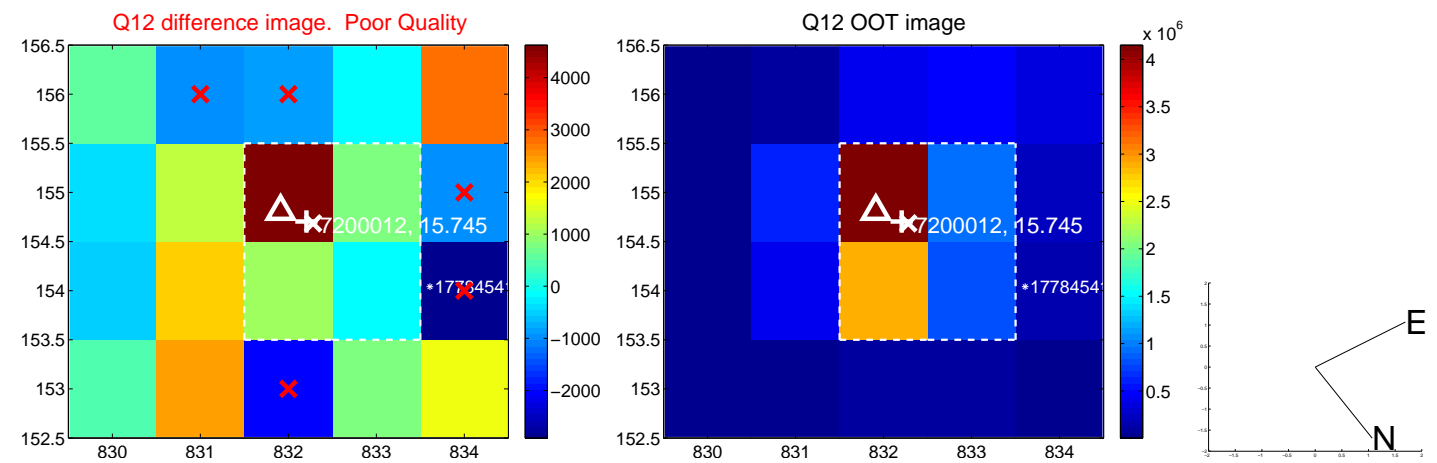
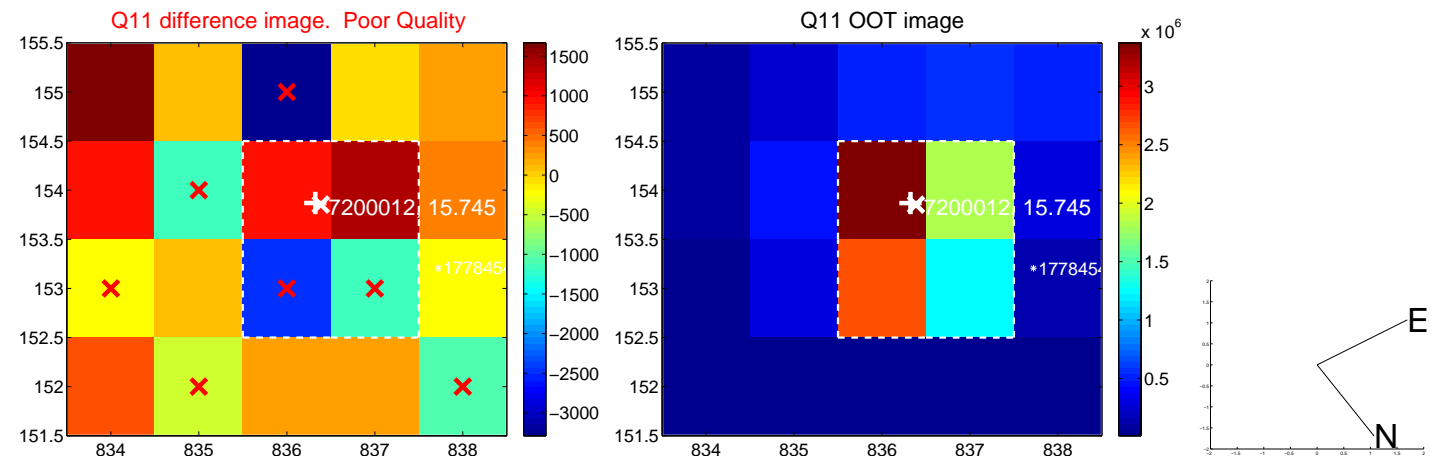
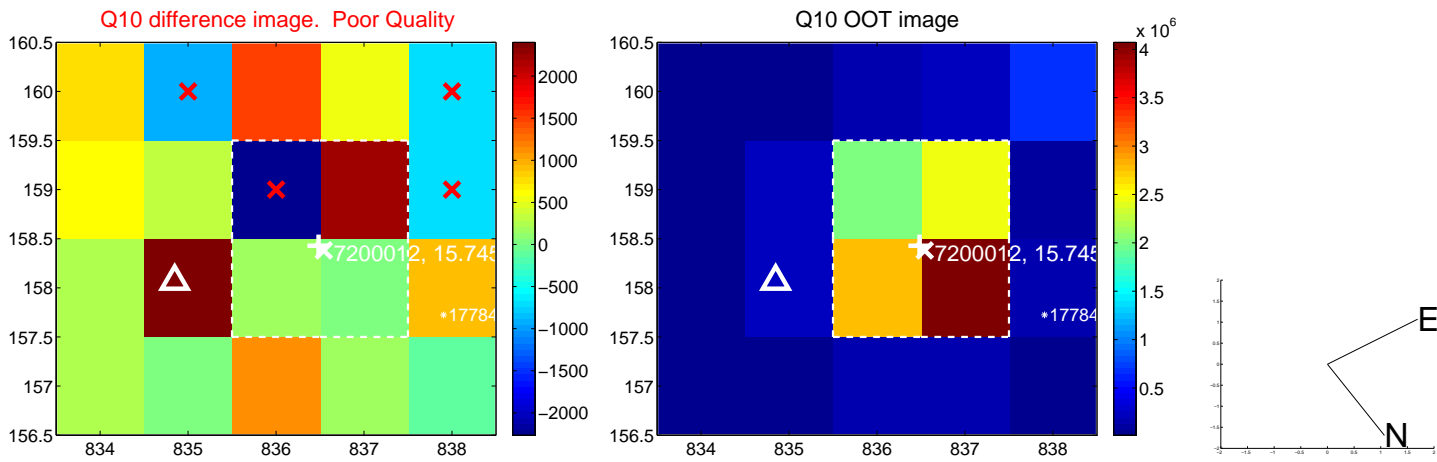
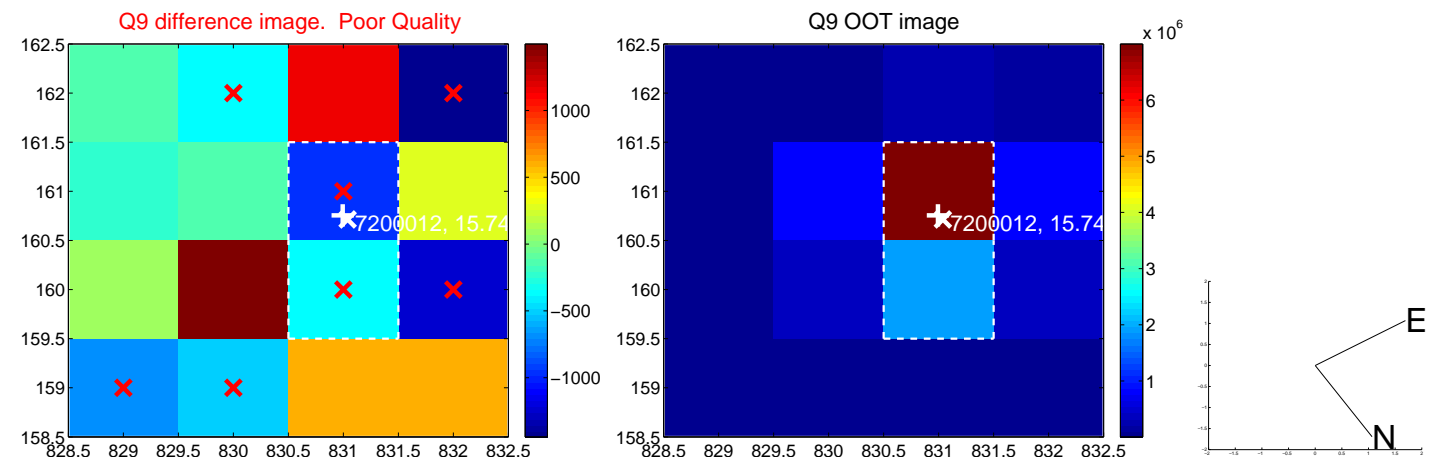
Q4 OOT image



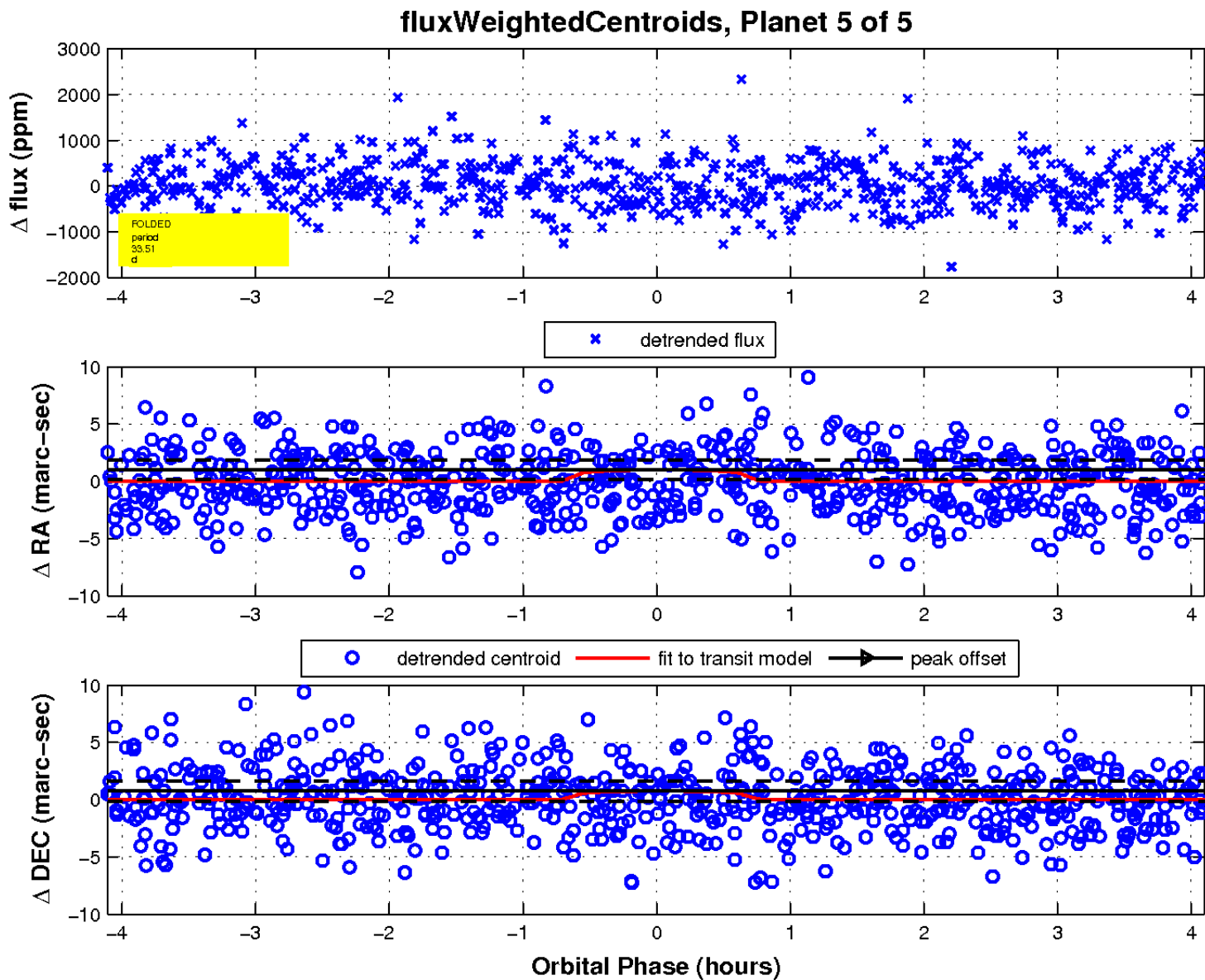
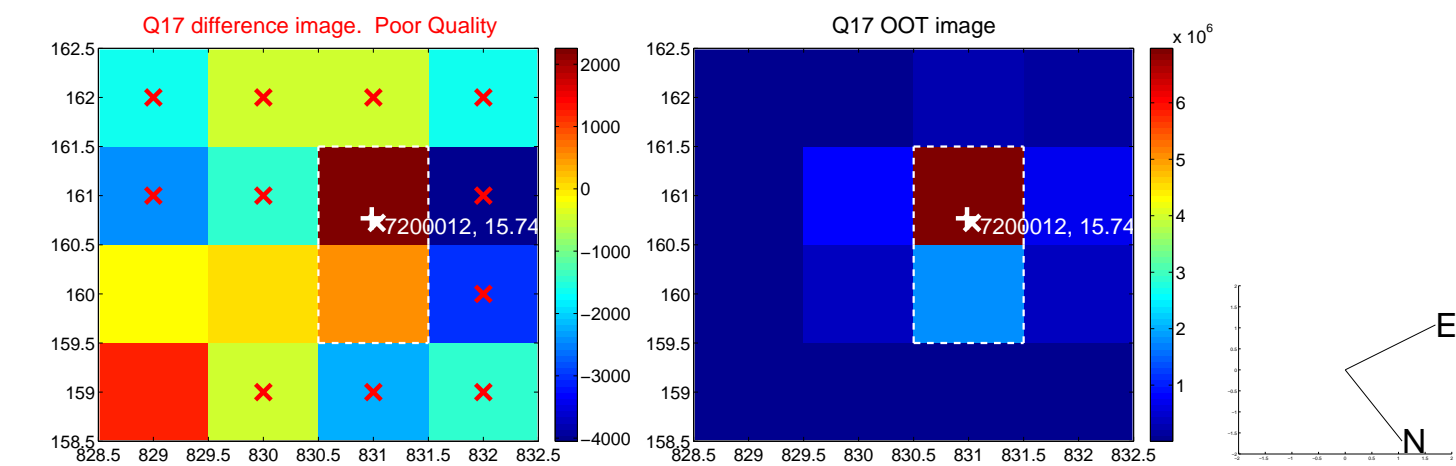
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

