

KIC 008019250

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})
008019250-01	OBS	No	1.234863	132.389647	14.1	8.430	8.8	12.7	3.10	7502	1.42	32172.55
008019250-02	OBS	No	59.841252	172.102977	229.7	4.690	11.1	10.8	3.10	7502	5.12	182.10
008019250-04	OBS	No	43.099519	153.631905	134.4	2.243	8.7	7.9	3.10	7502	4.06	282.06
008019250-05	OBS	No	30.507126	134.580259	187.5	1.195	8.4	7.1	3.10	7502	5.06	447.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008019250-01	OBS	FP	0.00	1	0	0	0	LPP_DV
008019250-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008019250-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—HALO_GHOST
008019250-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

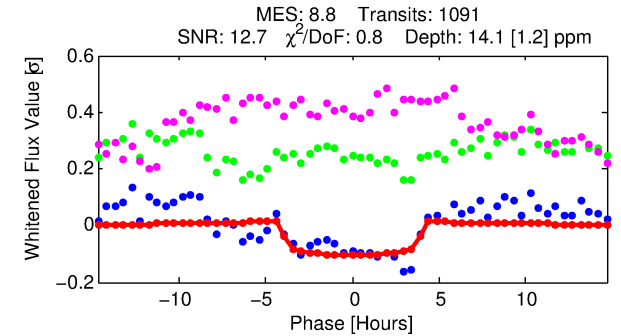
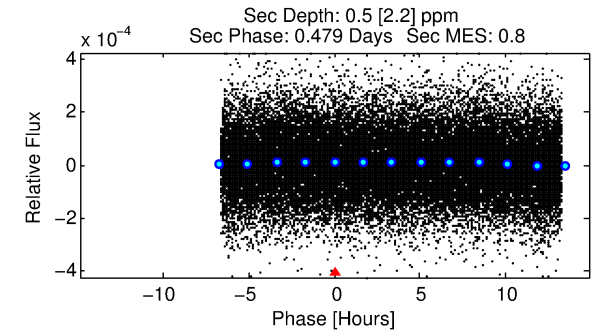
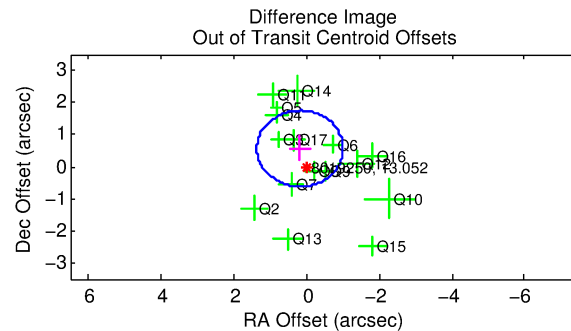
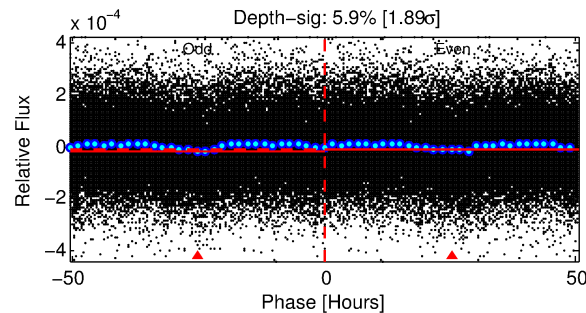
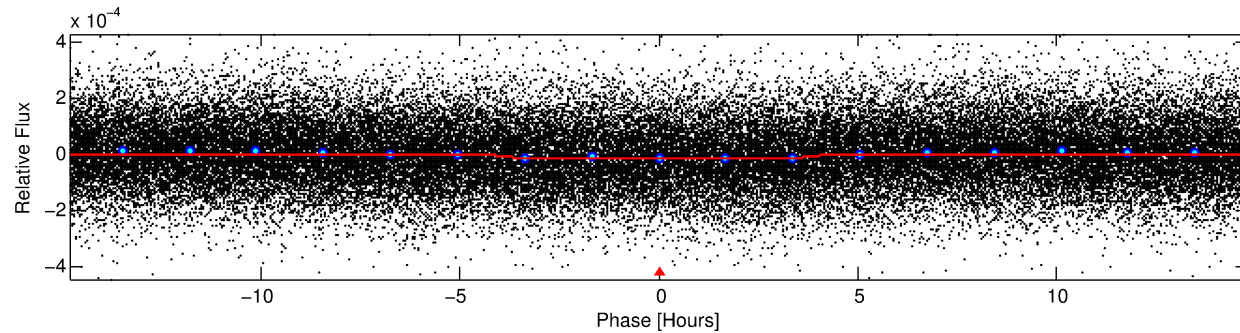
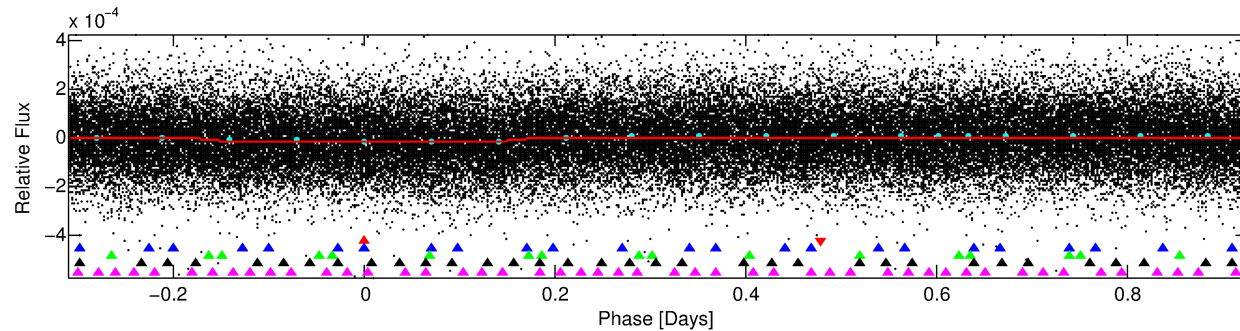
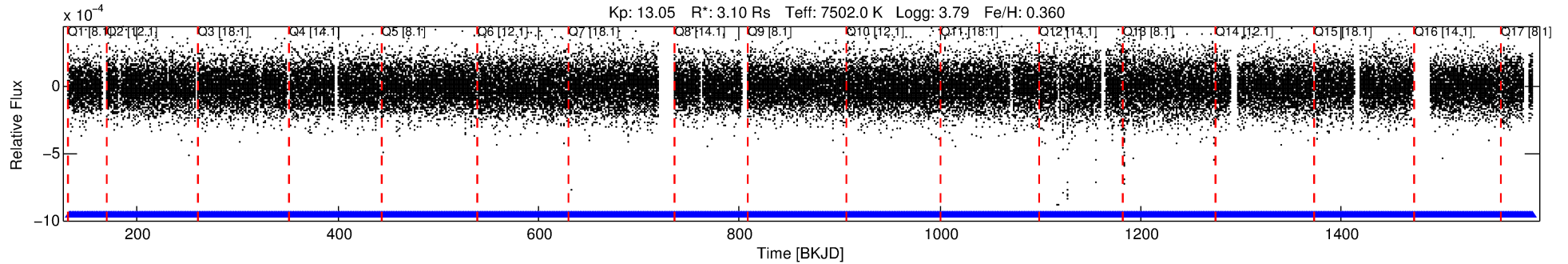
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008019250-01

No Significant Match Found

DV One-Page Summary

KIC: 8019250 Candidate: 1 of 5 Period: 1.235 d



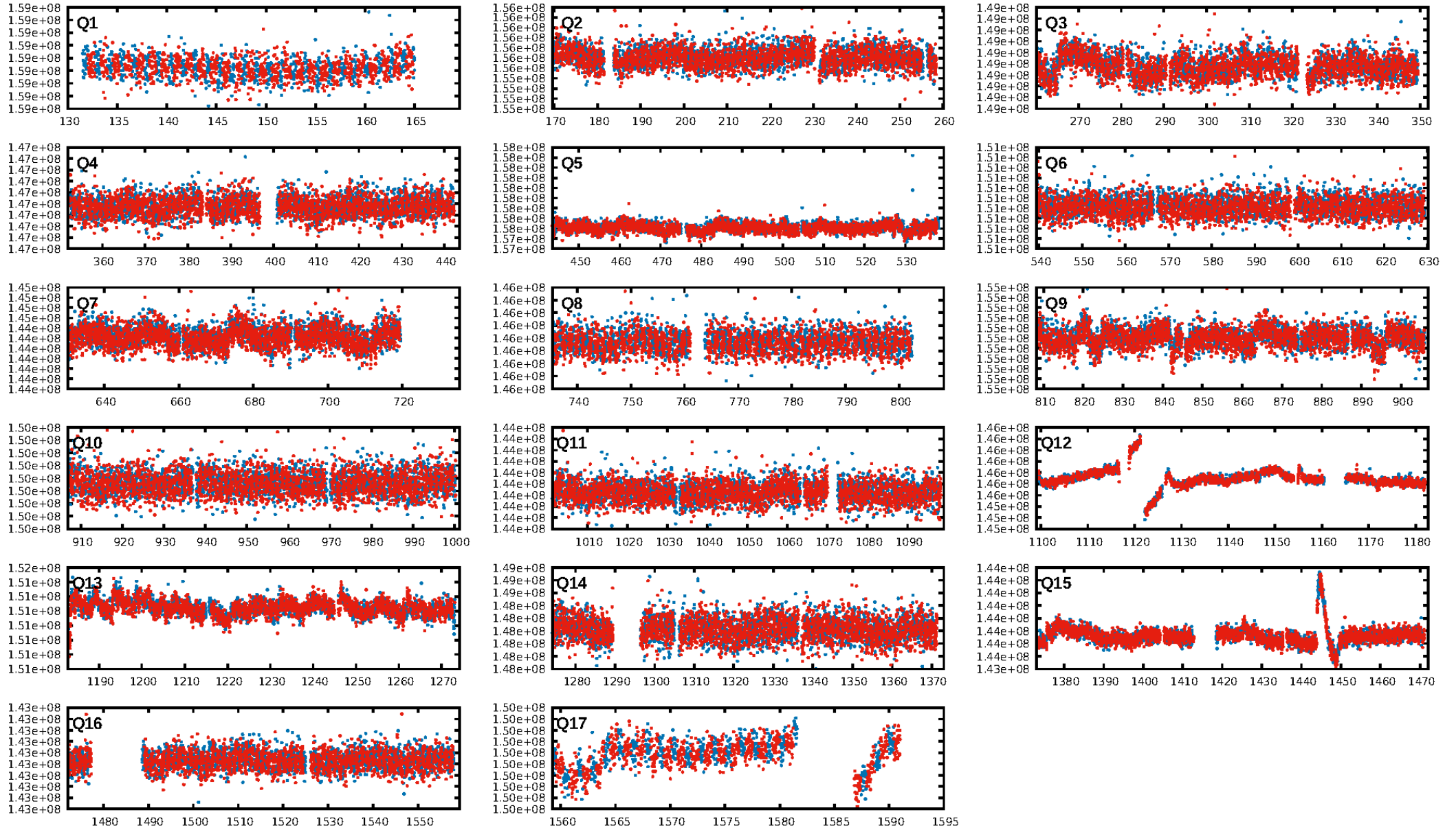
DV Fit Results:

Period = 1.23486 [0.00002] d
Epoch = 132.3896 [0.0059] BKJD
Rp/R* = 0.0042 [0.0007]
a/R* = 1.04 [0.08]
b = 0.95 [0.12]
Seff = 32172.55 [11162.87]
Teq = 3415 [296] K
Rp = 1.42 [0.44] Re
a = 0.0292 [0.0067] AU
Ag = 0.12 [0.51] [-1.71 σ]
Teffp = 3098 [3348] K [-0.09 σ]

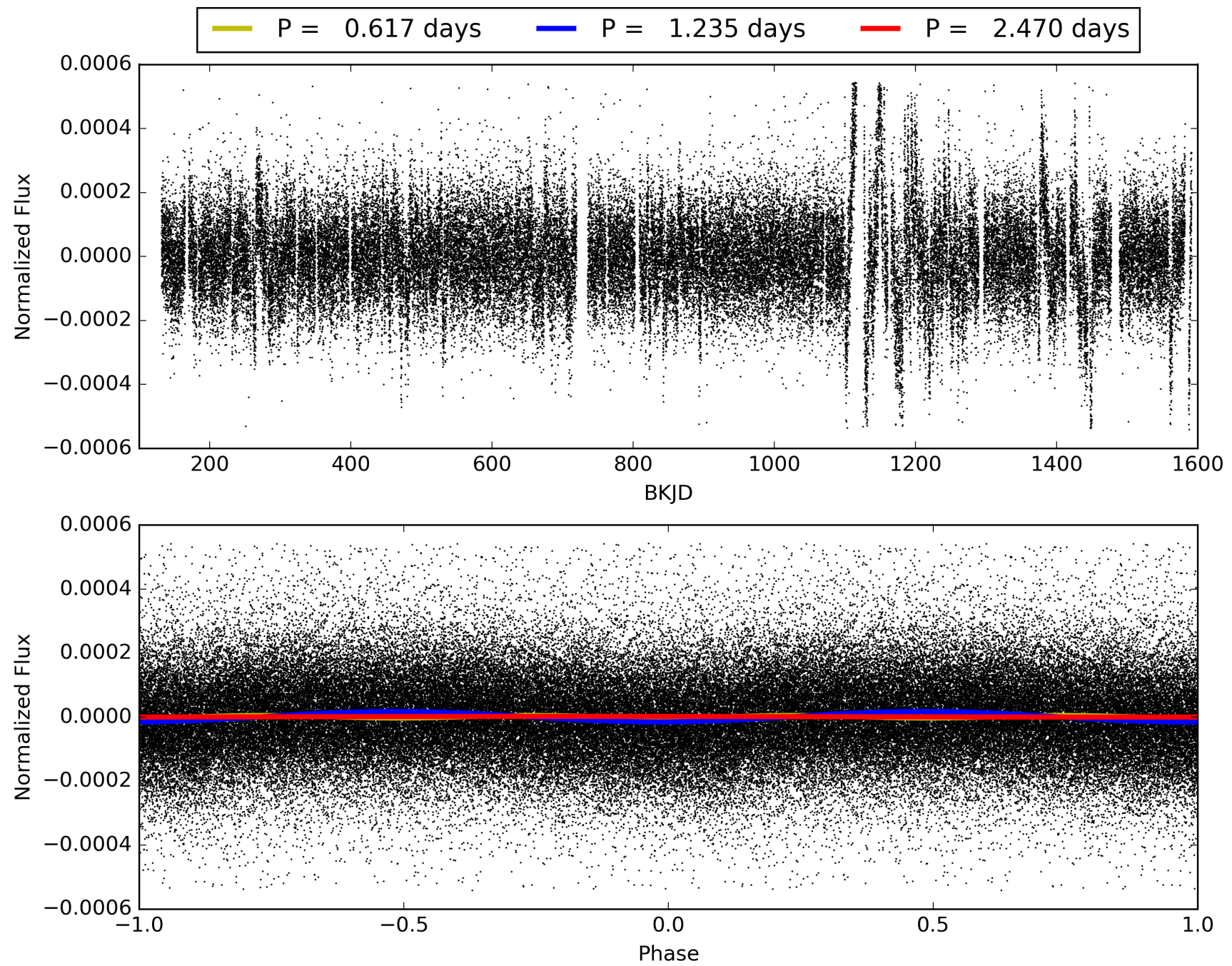
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [82.51 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.41e-15
RollingBand-fgt: 1.00 [1042/1042]
GhostDiagnostic-chr: 1.953
Centroid-sig: N/A
Centroid-so: 2.080 arcsec [2.38 σ]
OotOffset-rm: 0.592 arcsec [1.50 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-rm: 0.617 arcsec [1.64 σ]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.88 [14/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008019250-01, PDC Light Curves

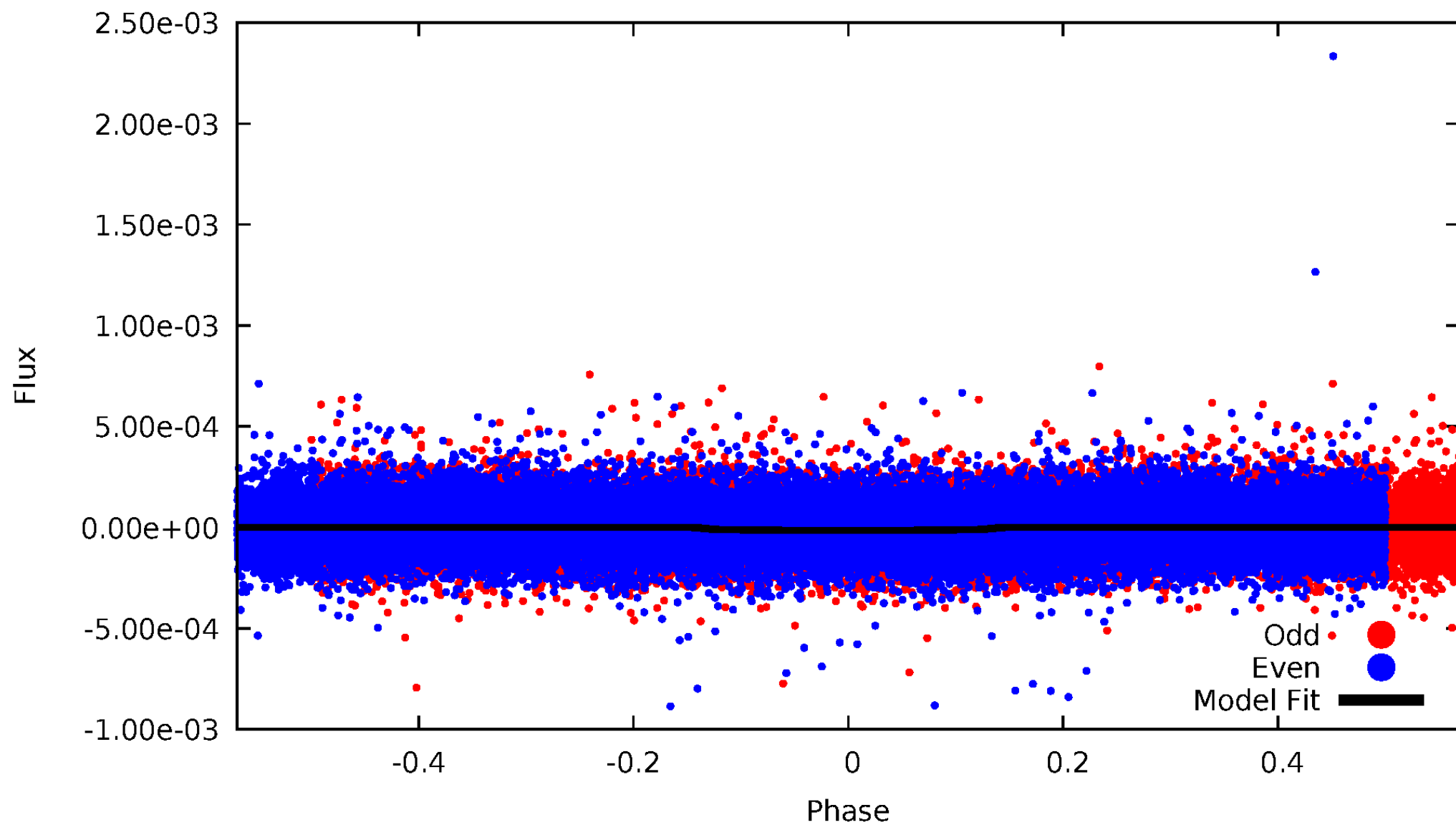


TCE 008019250-01



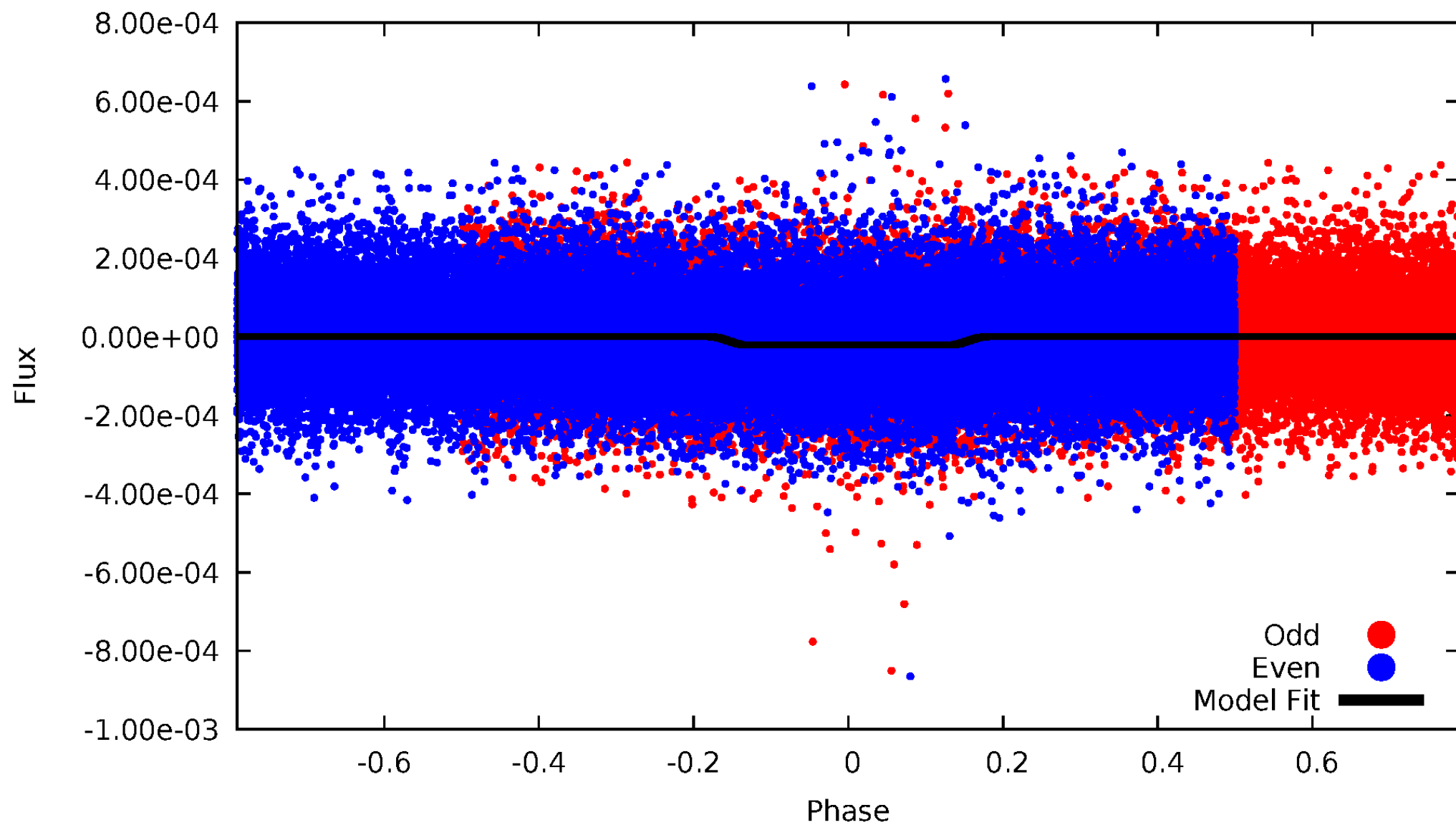
DV Odd/Even

TCE 008019250-01



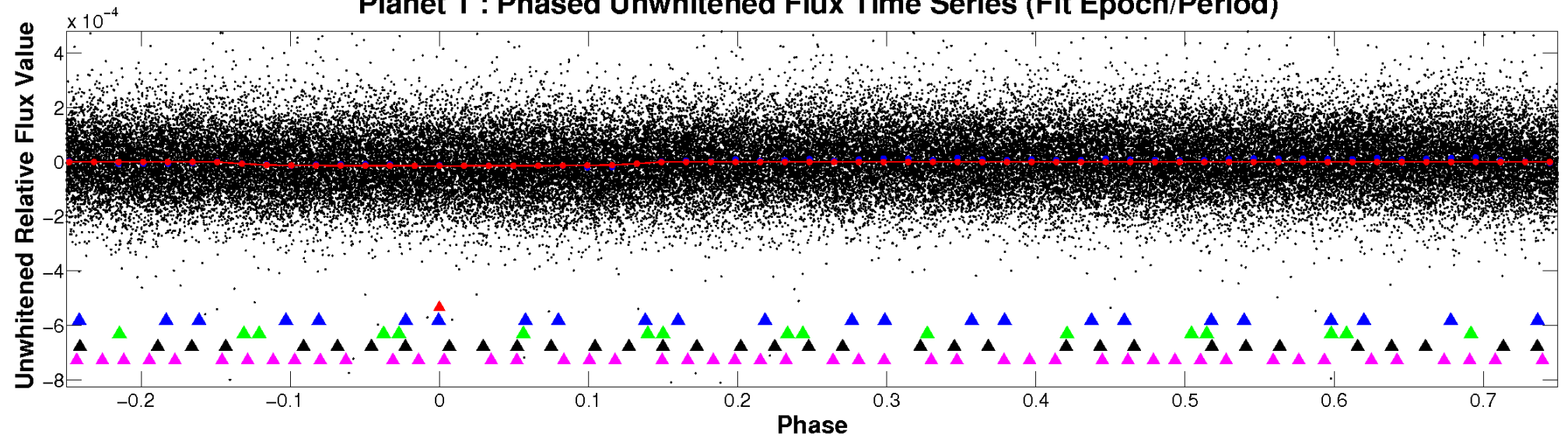
ALT Odd/Even

TCE 008019250-01

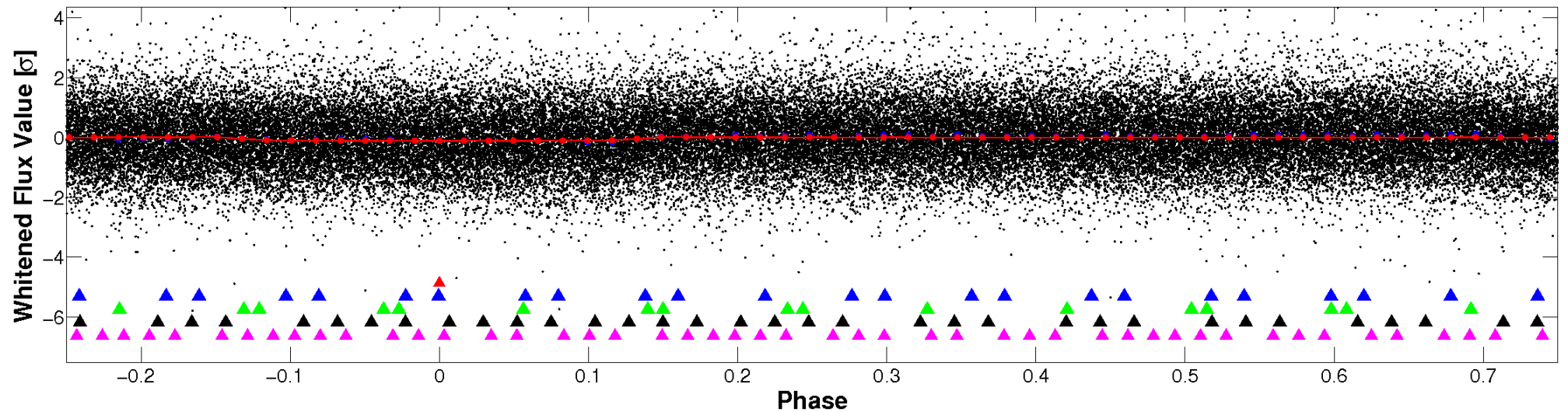


Non-Whitened Vs. Whitened Light Curve

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

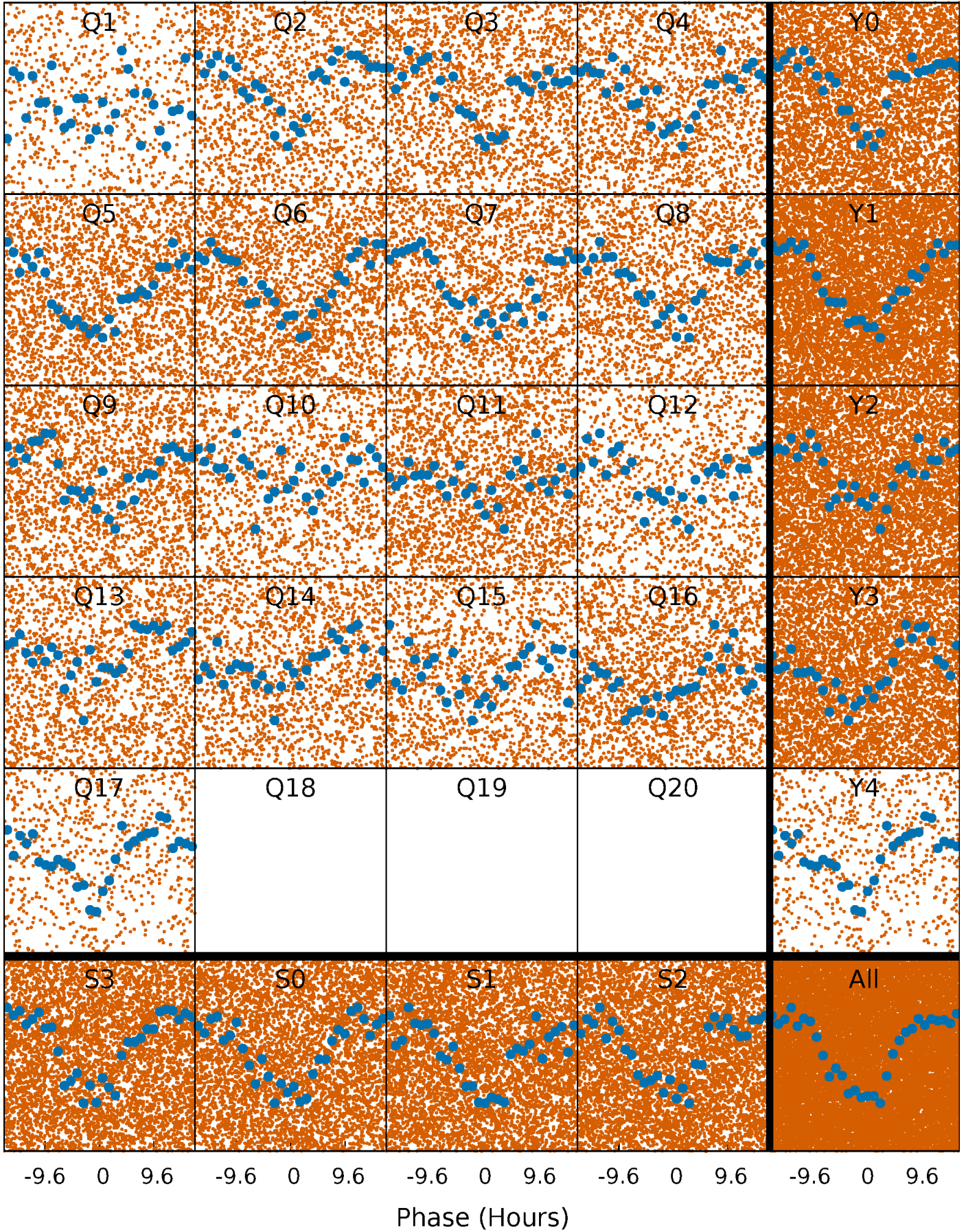


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



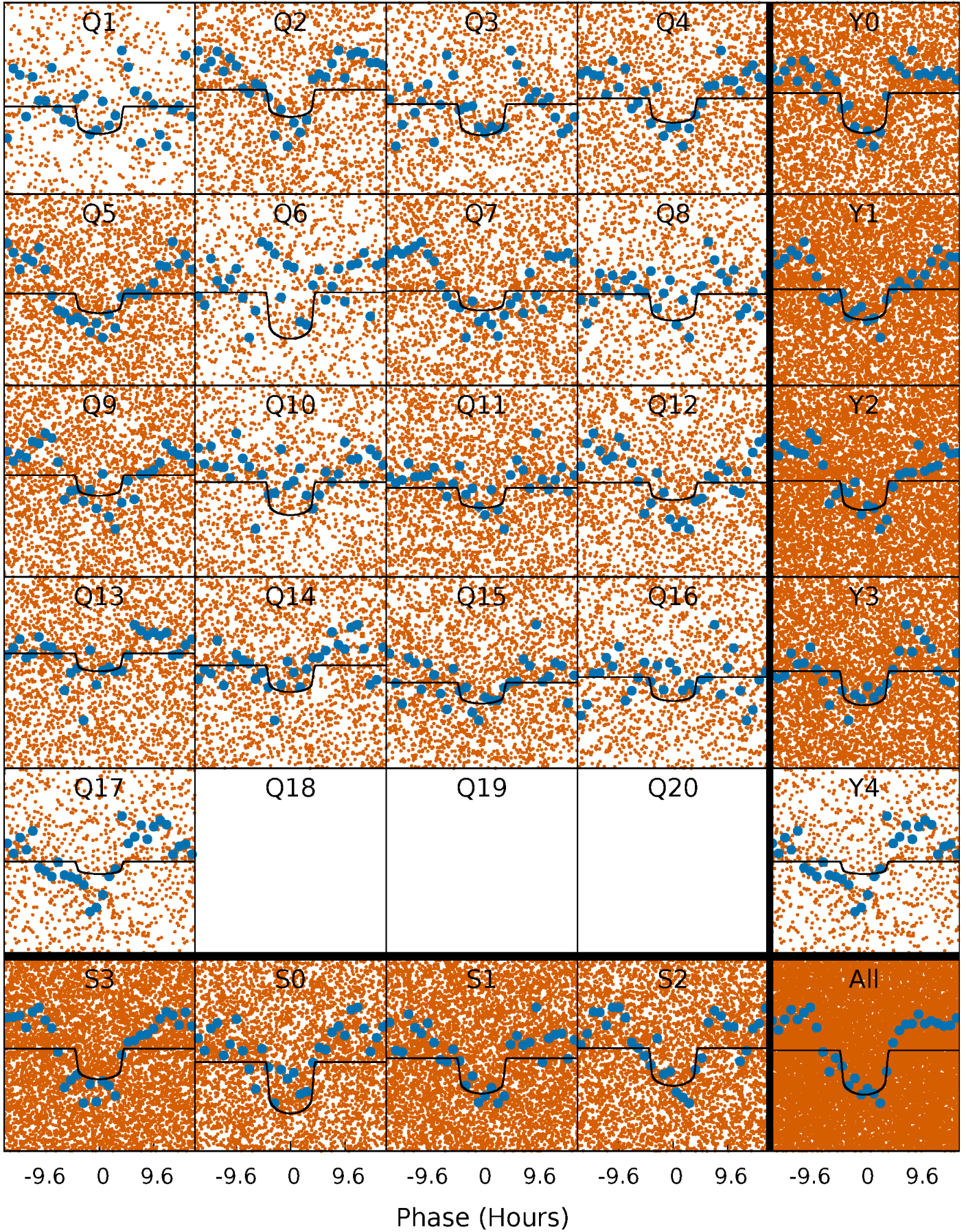
PDC Quarter-Phased Transit Curves

TCE 008019250-01 P= 1.234863 Days $T_0=132.389647$ (BKJD)



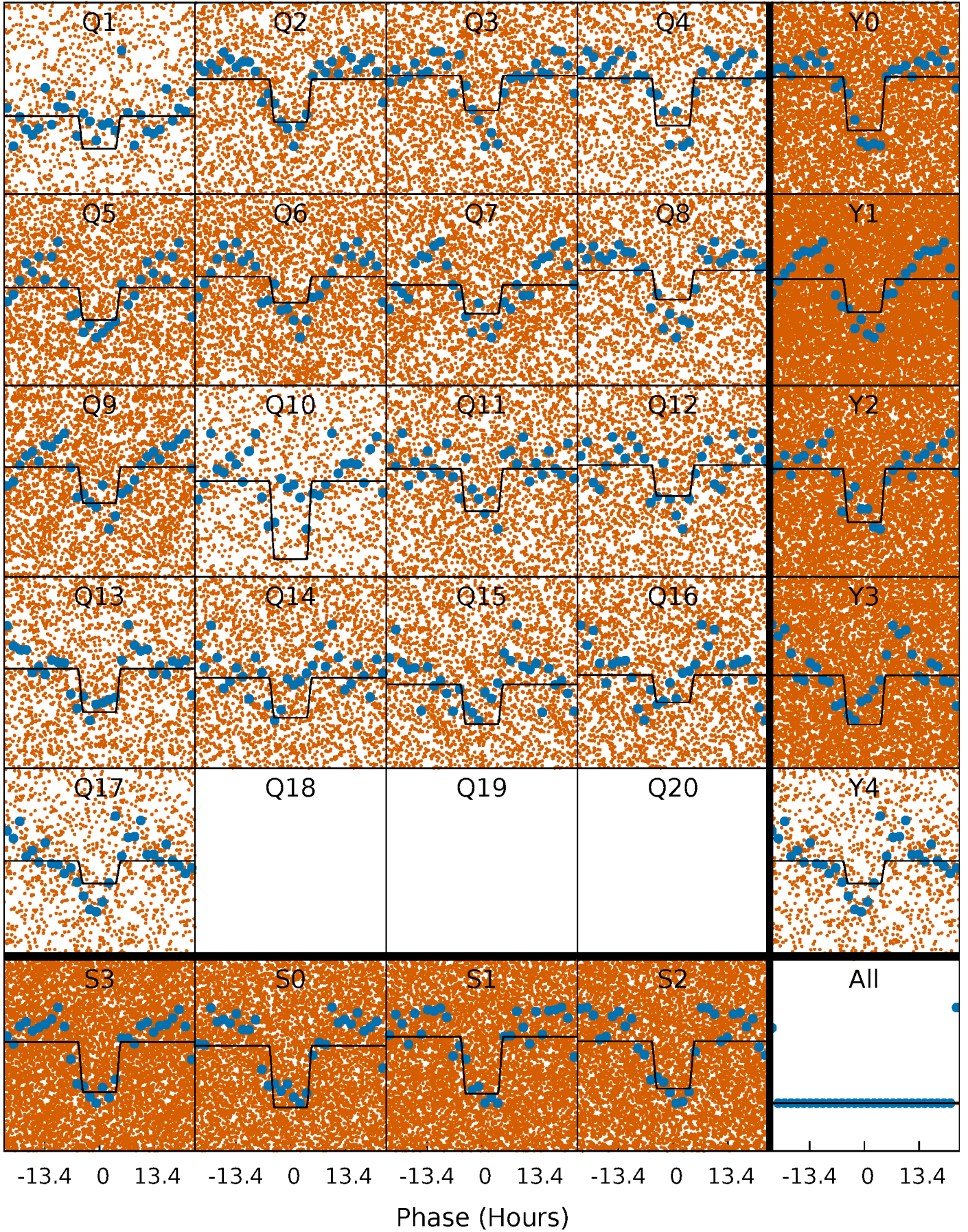
DV Quarter-Phased Transit Curves

TCE 008019250-01 P= 1.234863 Days $T_0=132.389647$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

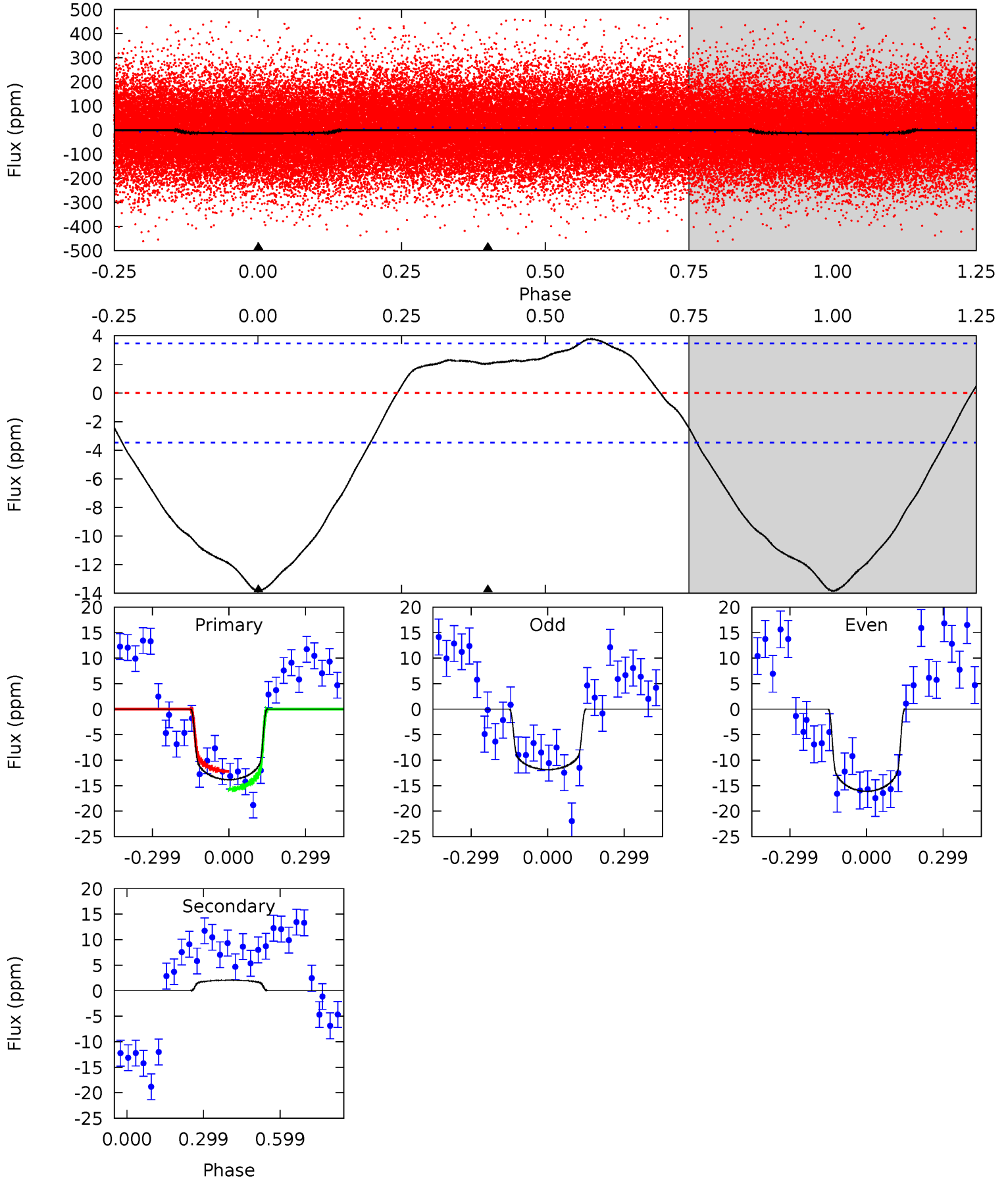
TCE 008019250-01 P= 1.234910 Days $T_0=132.352435$ (BKJD)



DV Model-Shift Uniqueness Test

008019250-01, P = 1.234863 Days, E = 131.154784 Days

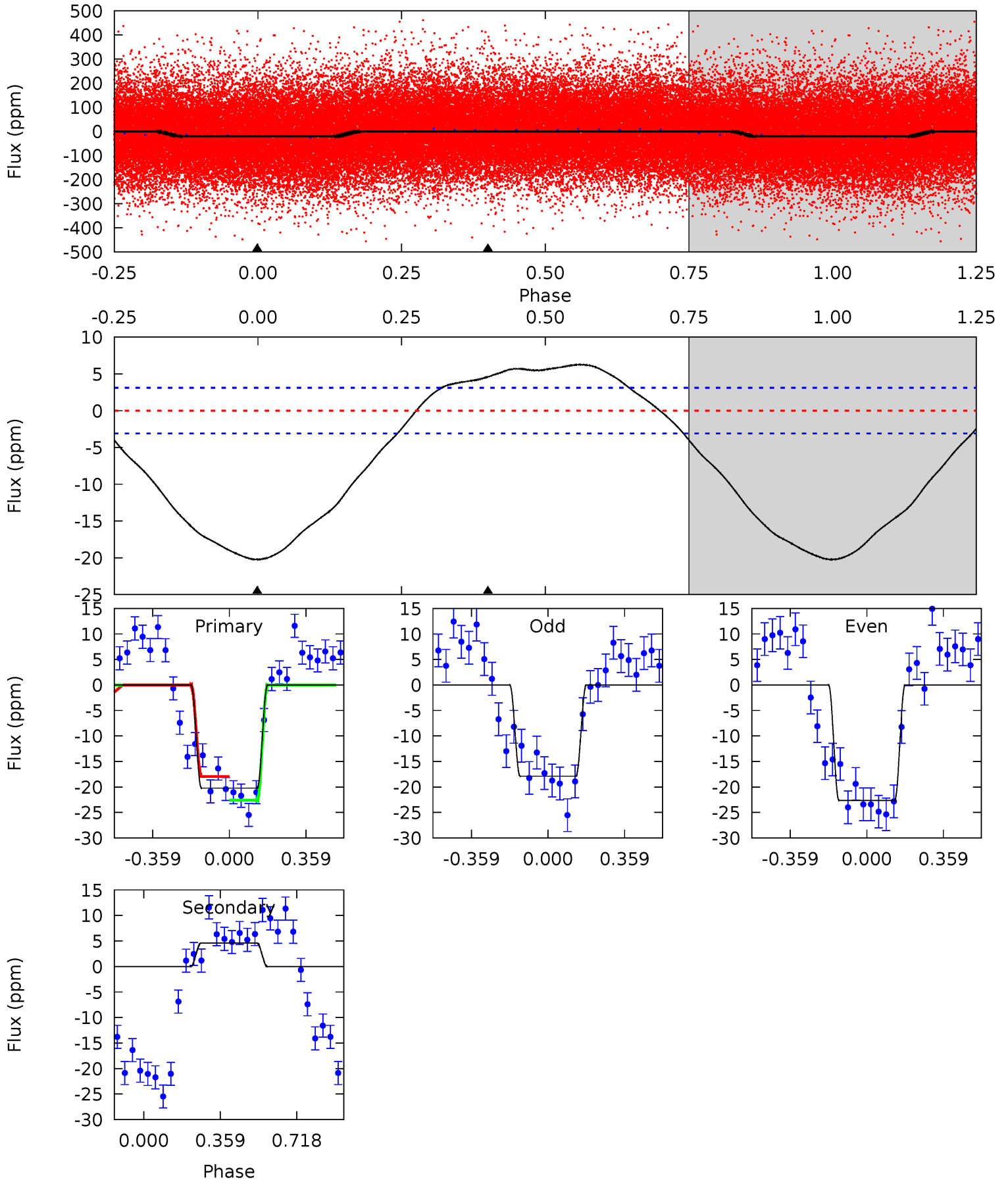
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.3	-2.56	0	0	4.33	1.04	1.77	17.3	17.3	-2.56	-2.56	2.70	1.09	0.21	2.20



Alt Model-Shift Uniqueness Test

008019250-01, P = 1.234910 Days, E = 131.117525 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.9	-6.35	0	0	4.29	0.92	2.65	27.9	27.9	-6.35	-6.35	3.26	1.06	0.24	3.17



Stellar Parameters For KIC 008019250

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7502^{+67}_{-97}	$3.790^{+0.192}_{-0.112}$	$0.360^{+0.100}_{-0.200}$	$3.105^{+0.545}_{-0.818}$	$2.165^{+0.168}_{-0.287}$	$0.102^{+0.127}_{-0.034}$
	+1%/-1%	+5%/-3%	+28%/-56%	+18%/-26%	+8%/-13%	+125%/-33%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 008019250-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	2 ± 1	$1.39^{+0.33}_{-0.28}$	4753^{+229}_{-292}	-4948^{+311}_{-382}	$-0.478^{+0.219}_{-0.355}$
Alt.	5 ± 1	$1.52^{+0.30}_{-0.28}$	4764^{+203}_{-308}	-5450^{+301}_{-374}	$-0.914^{+0.304}_{-0.517}$

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

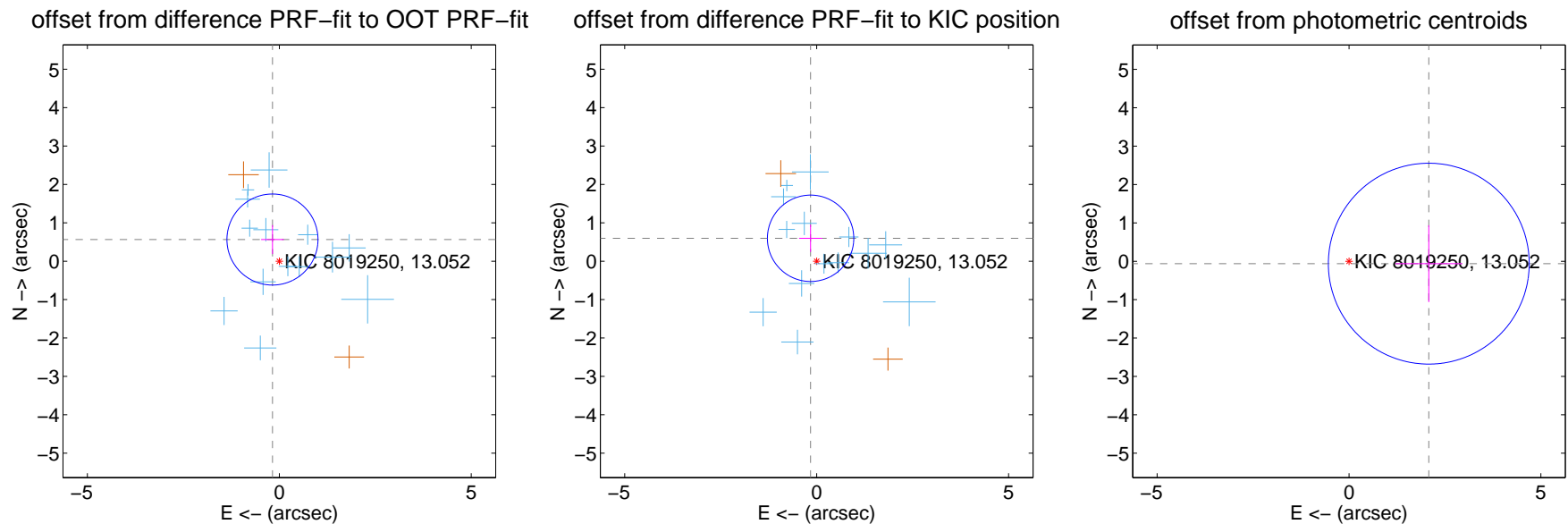
DV Centroid Data

Supplemental centroid analysis for 008019250-01. Kepler magnitude: 13.05. Transit SNR 12.66

There are 14 quarters with good PRF difference image offsets

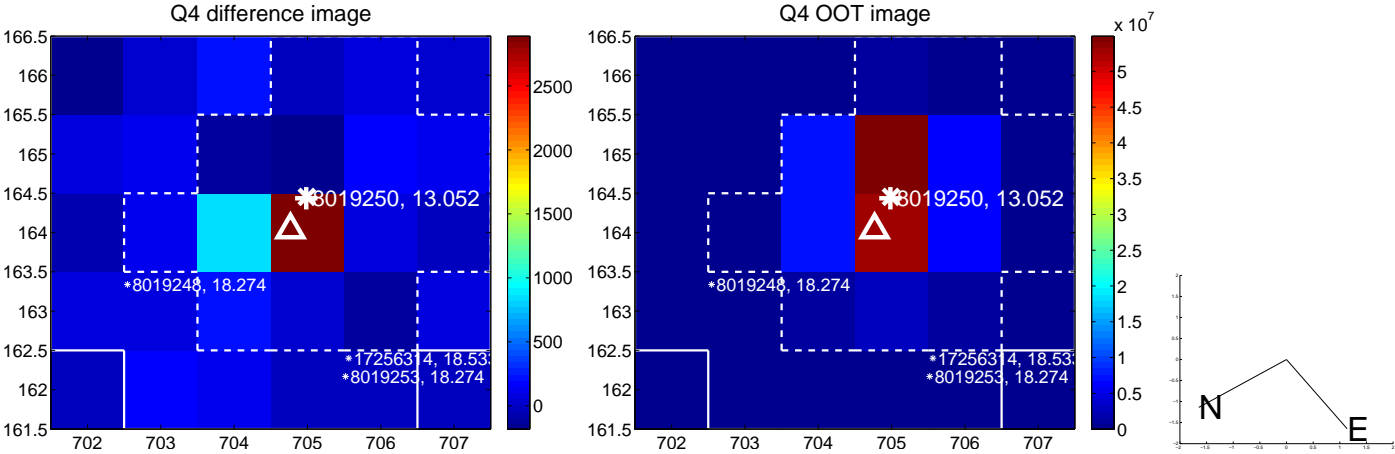
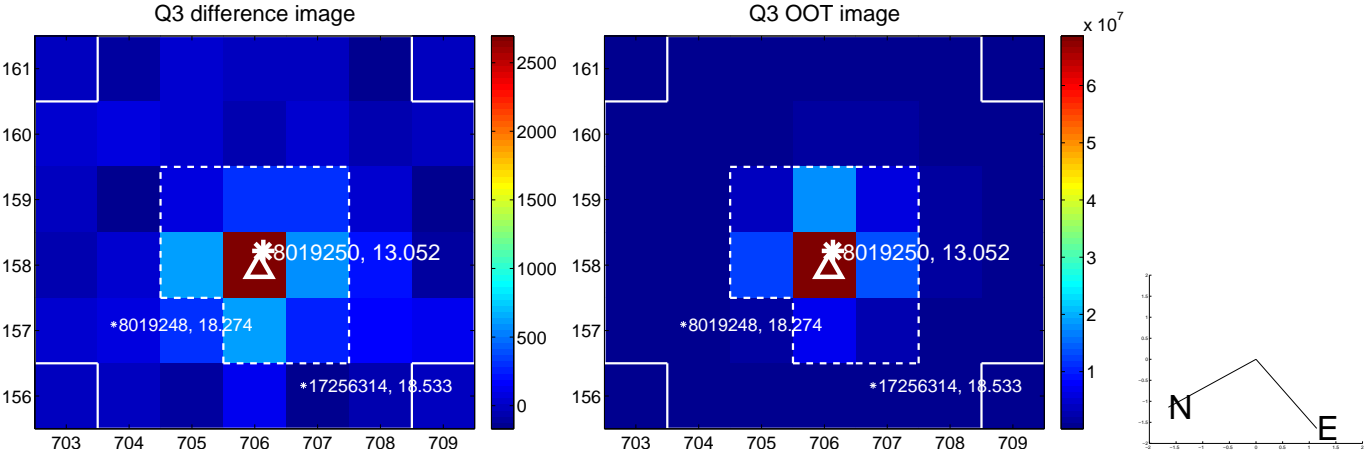
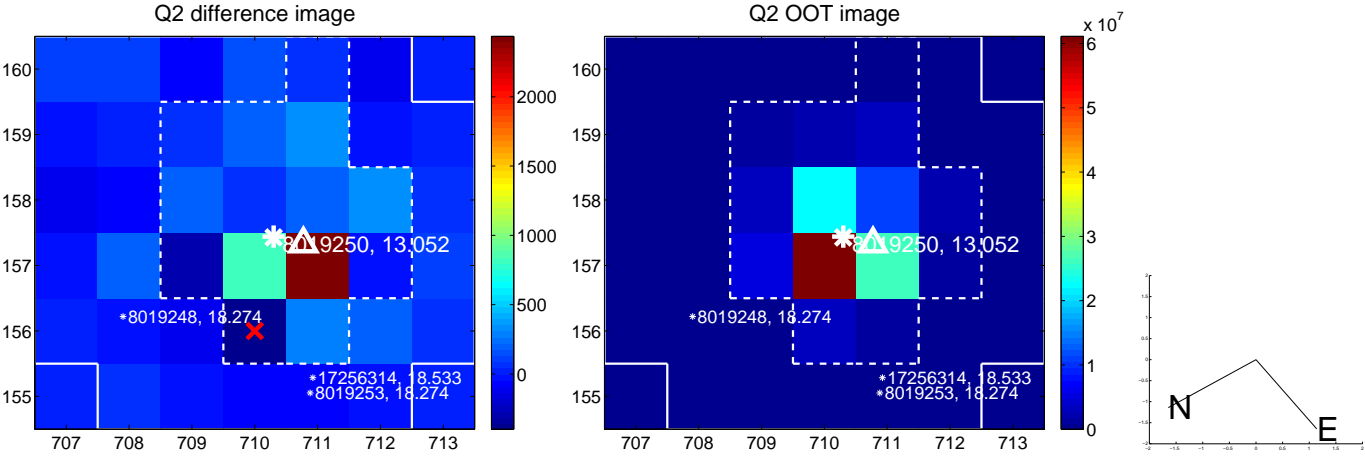
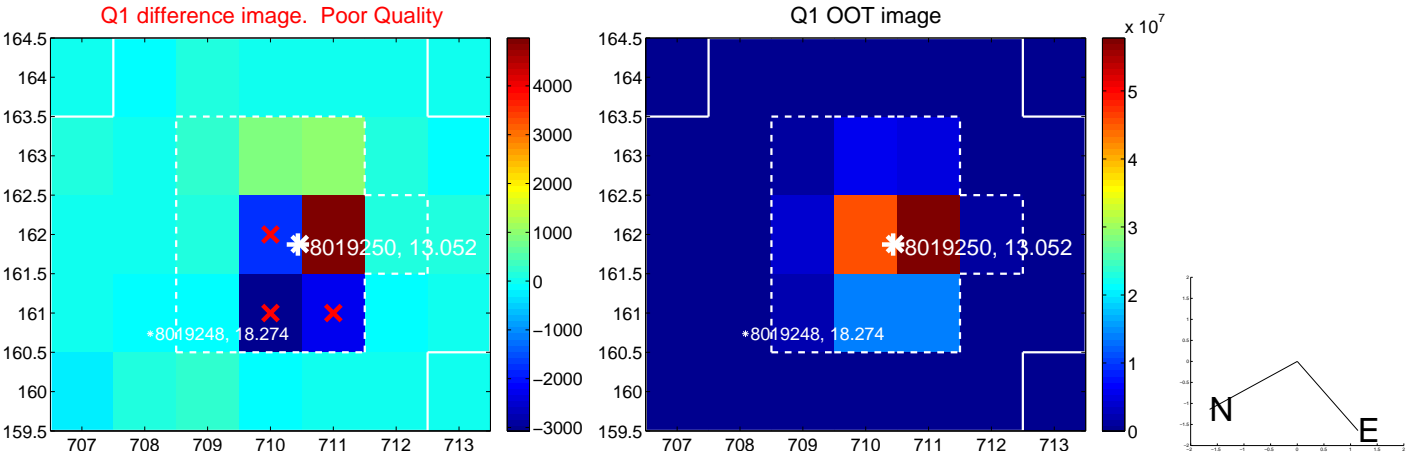
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.592 ± 0.395	1.50	0.178 ± 0.296	0.564 ± 0.377
PRF-fit source offset from KIC position	0.617 ± 0.375	1.64	0.158 ± 0.300	0.596 ± 0.355
photometric centroid source offset	2.08 ± 0.87	2.38	-2.08 ± 0.87	-0.06 ± 1.00

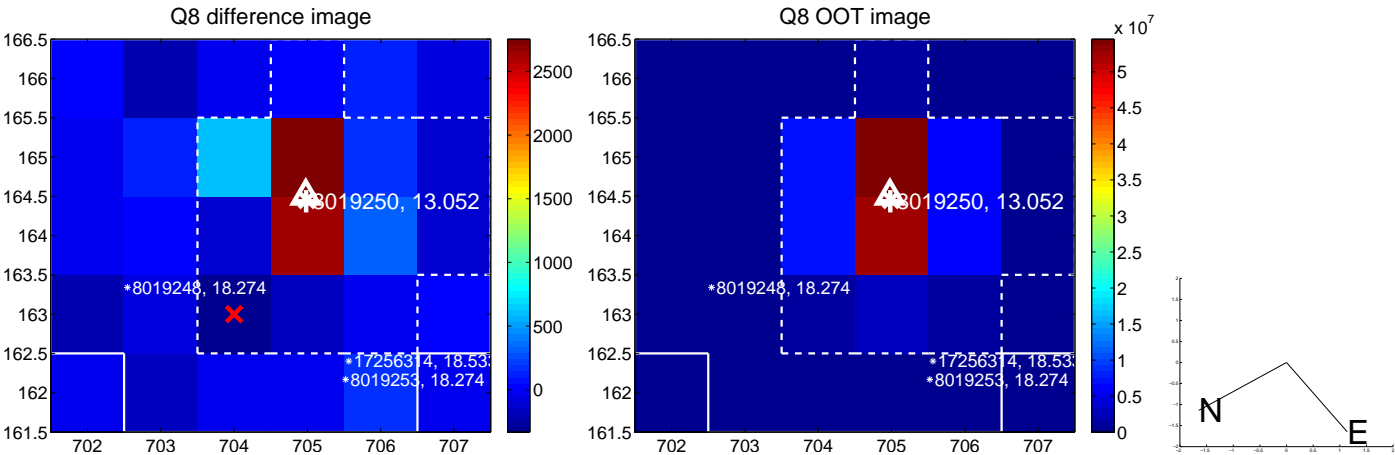
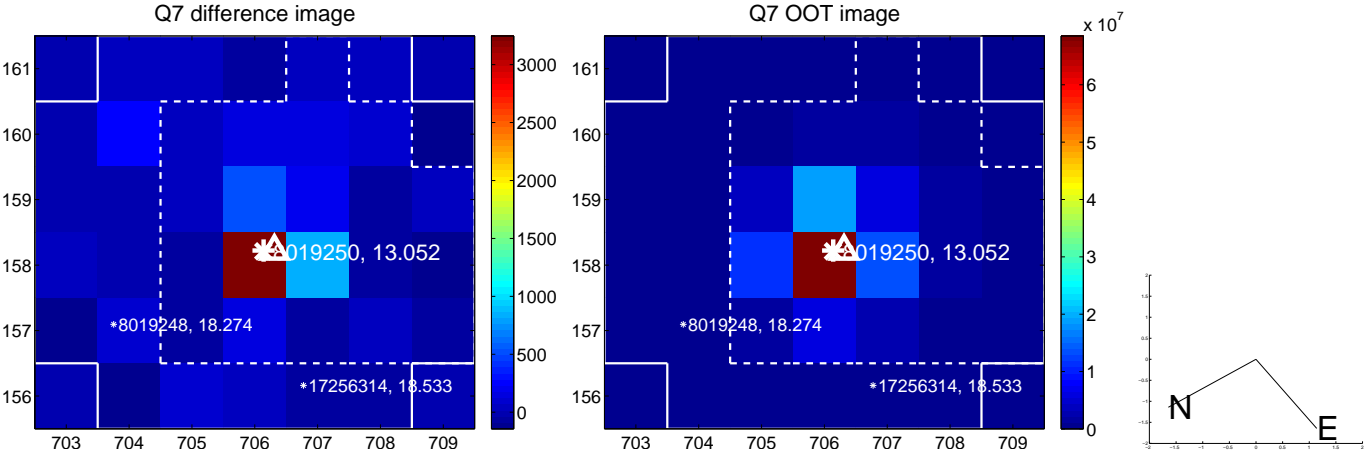
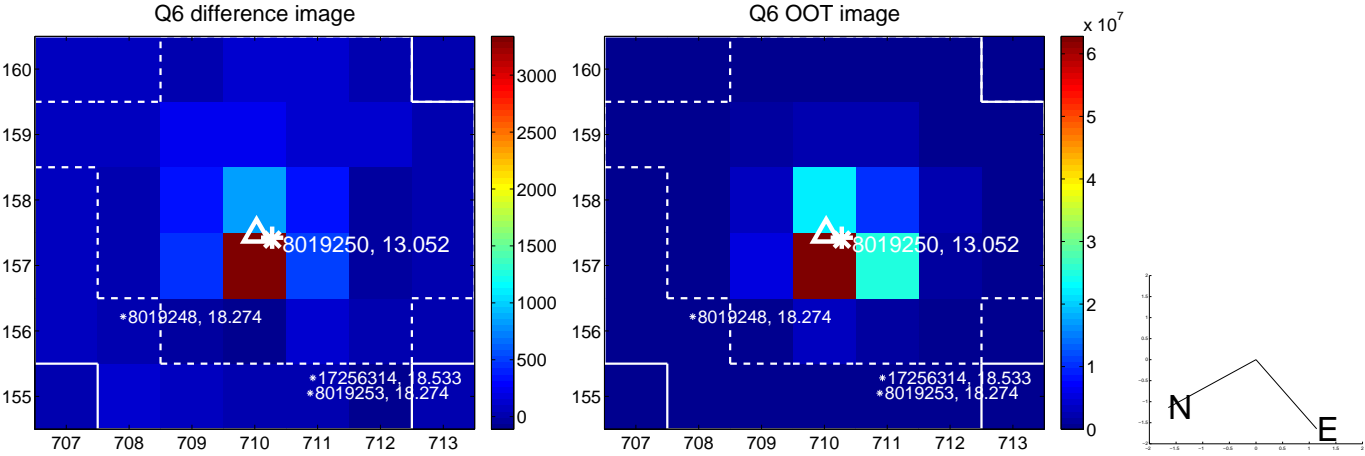
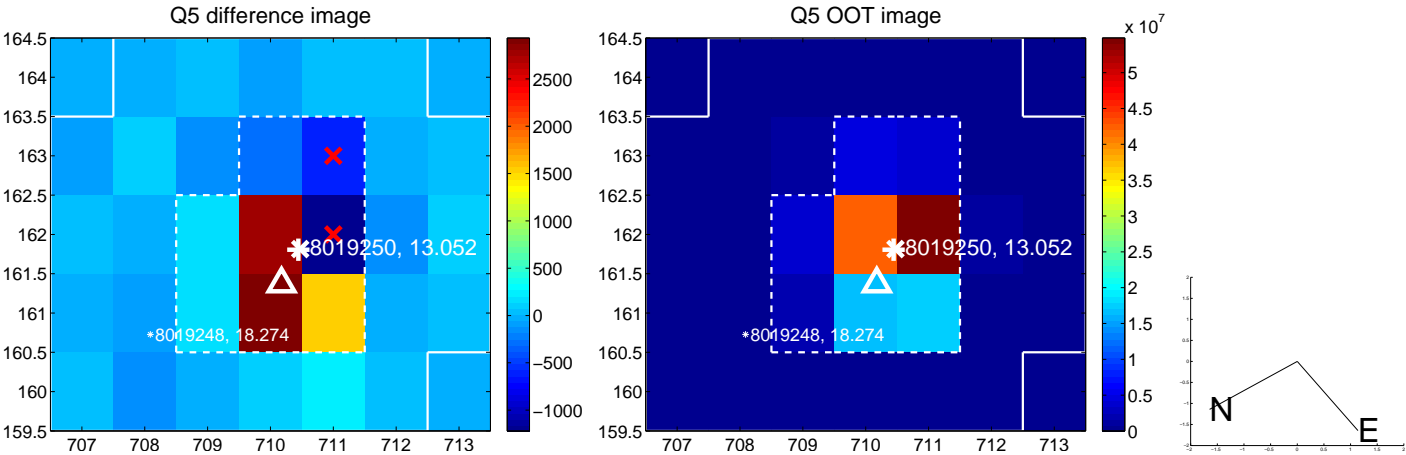


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

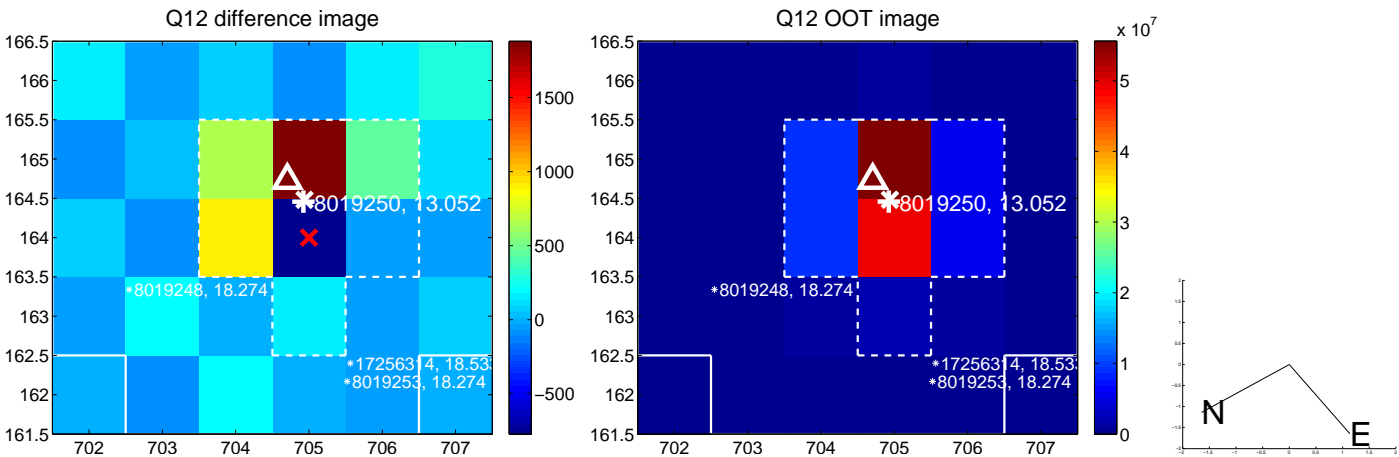
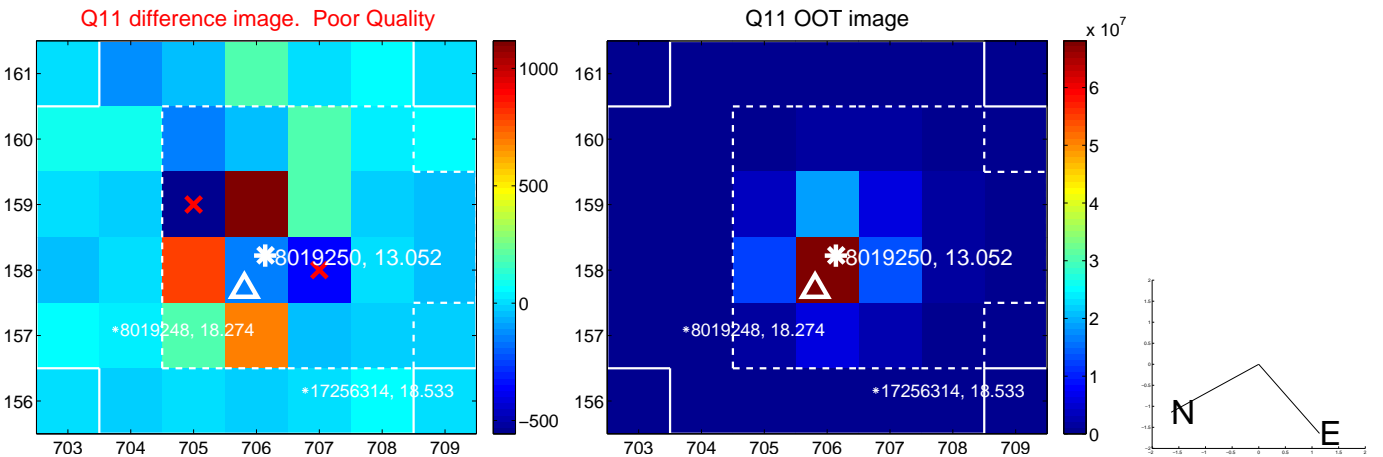
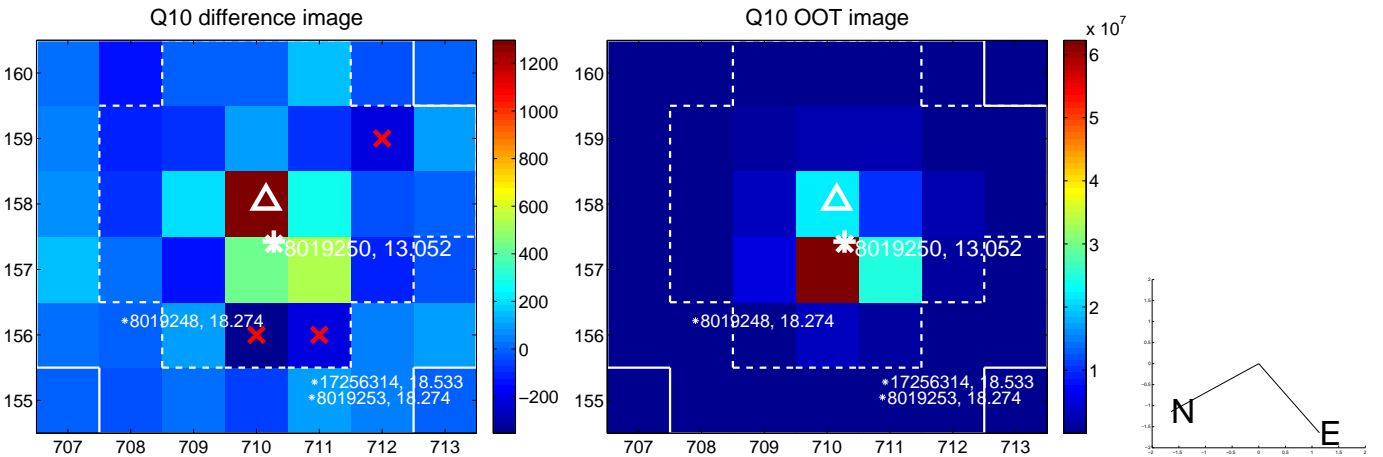
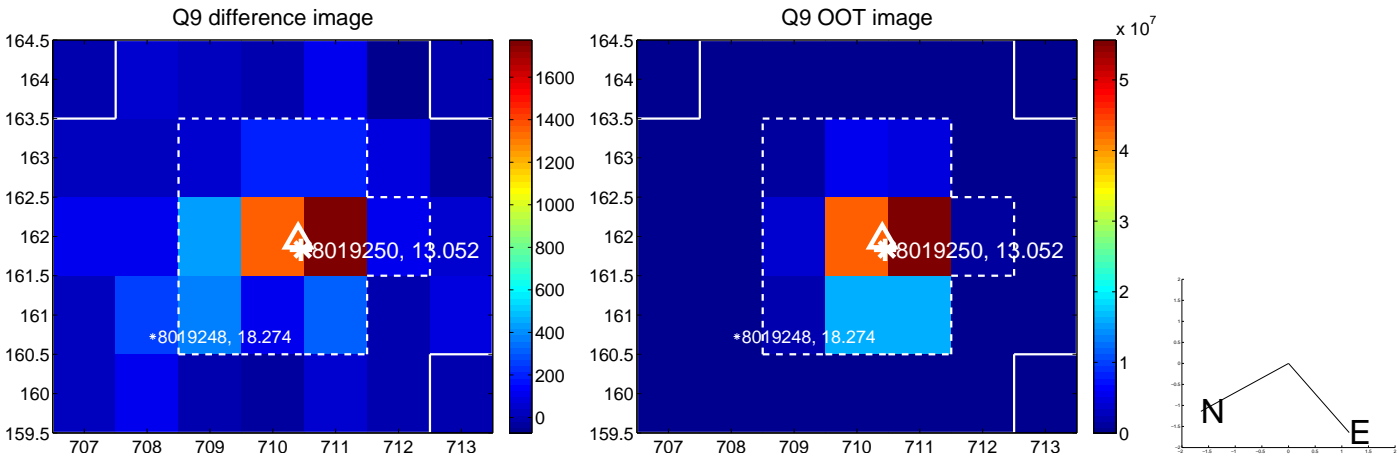
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



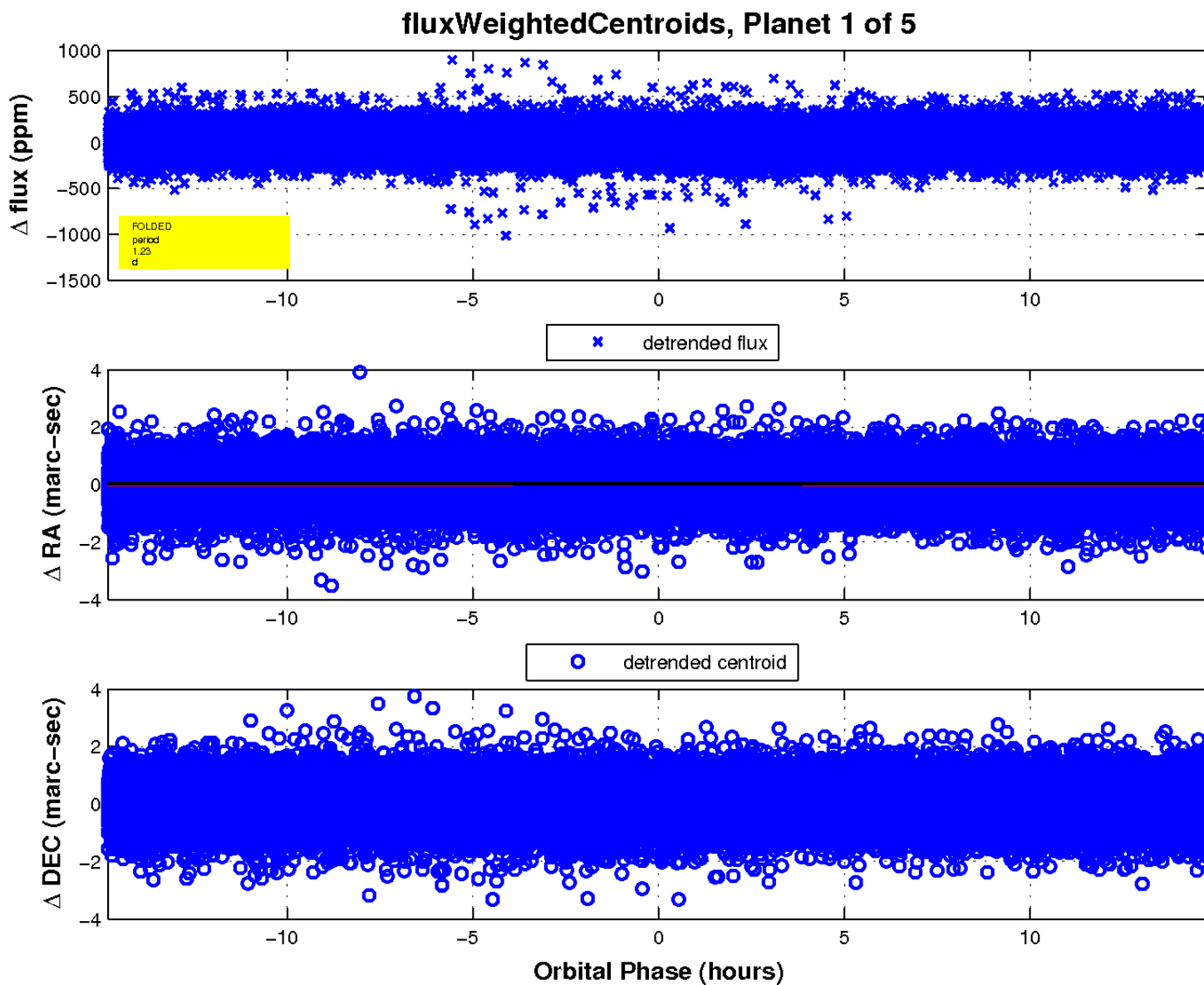
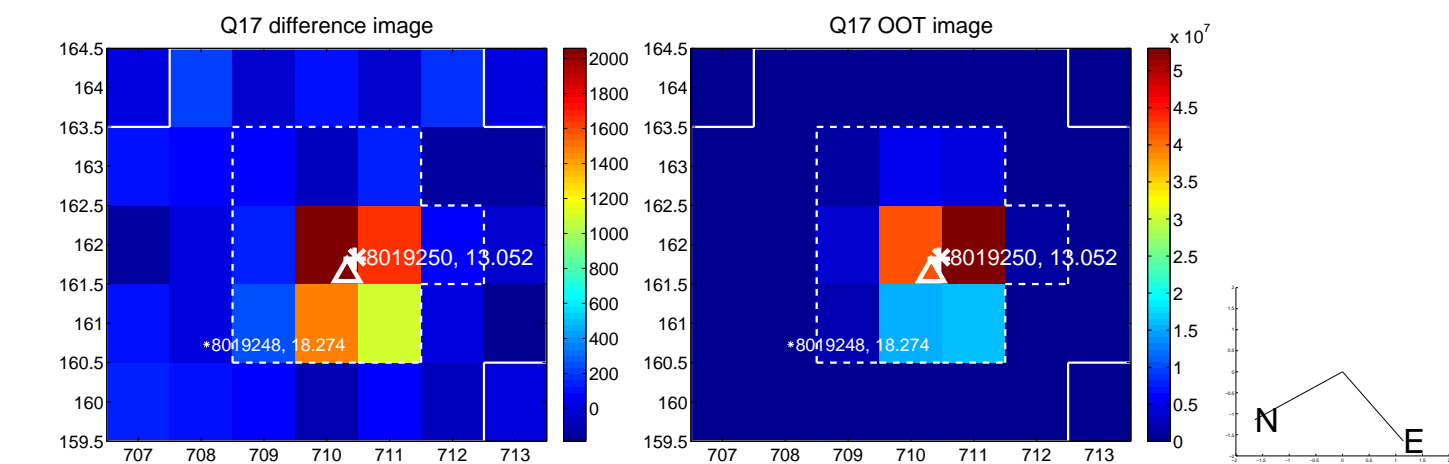
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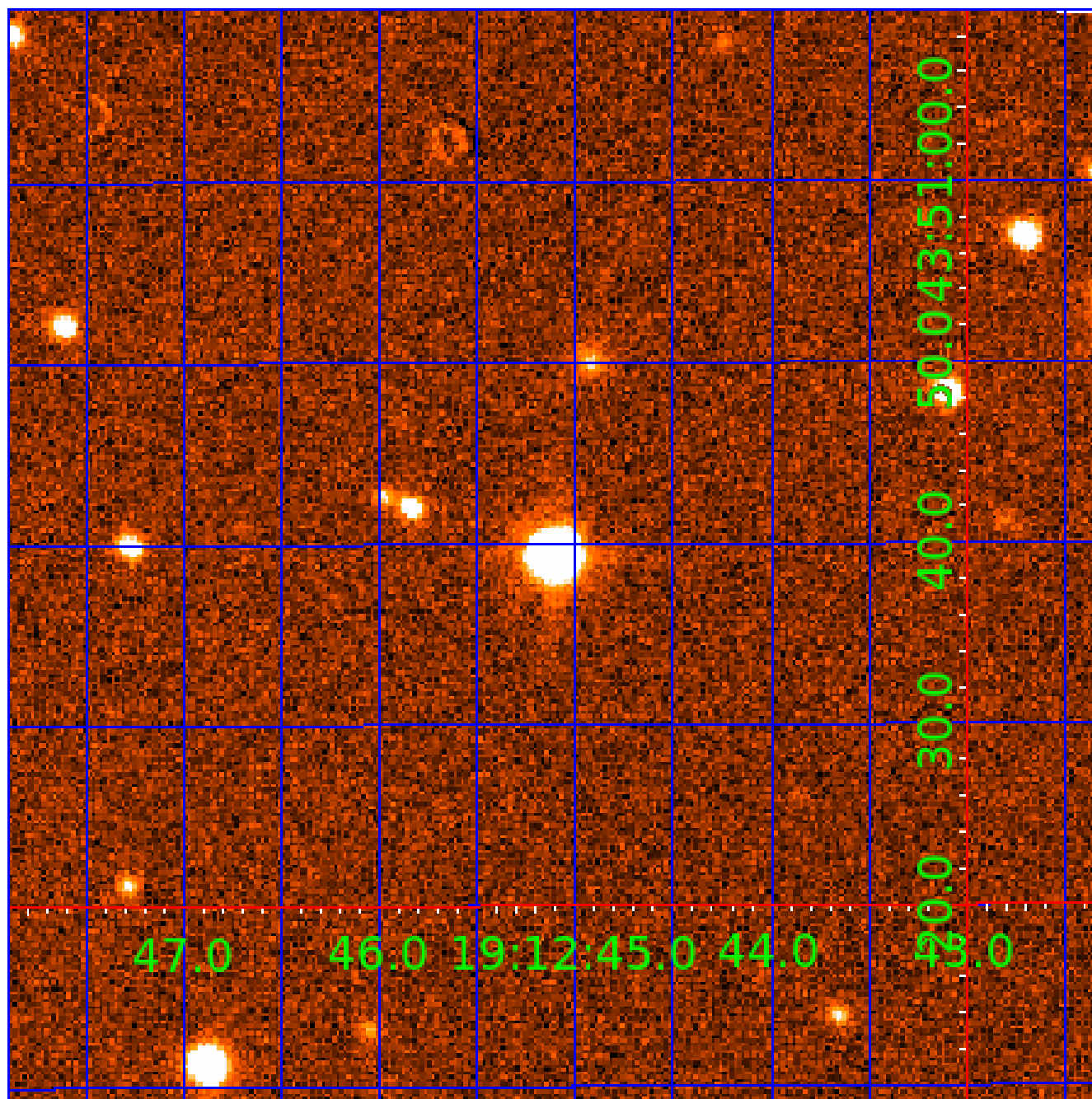


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008019250

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})
008019250-01	OBS	No	1.234863	132.389647	14.1	8.430	8.8	12.7	3.10	7502	1.42	32172.55
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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008019250-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008019250-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—HALO_GHOST
008019250-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

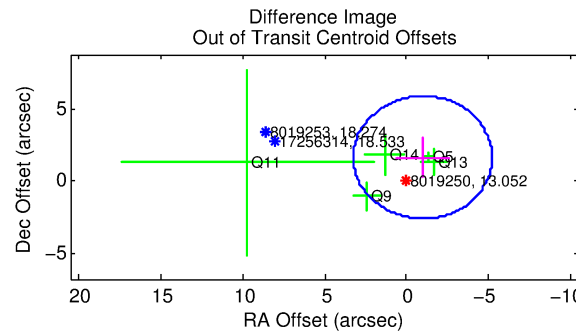
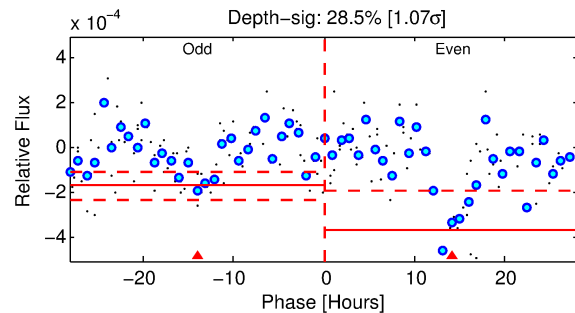
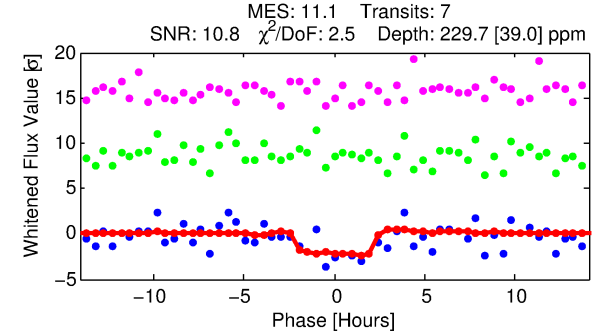
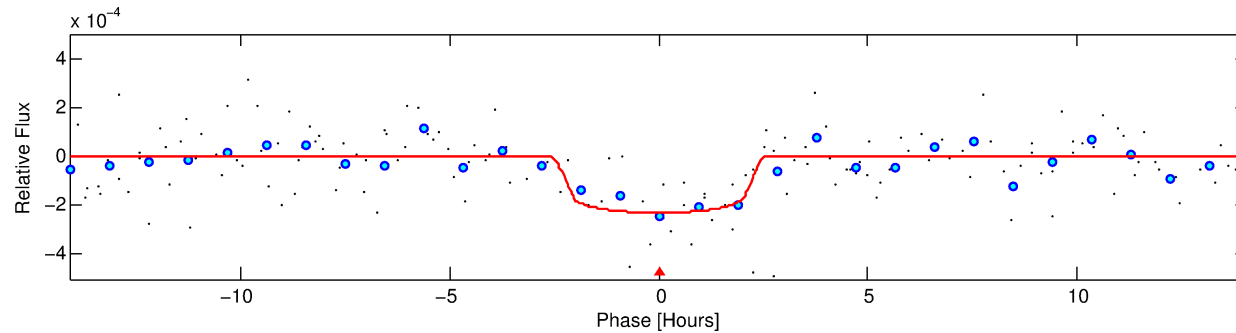
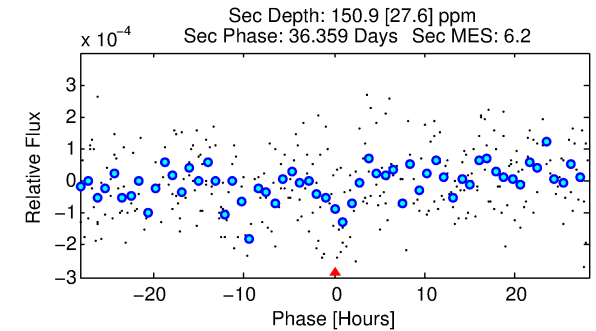
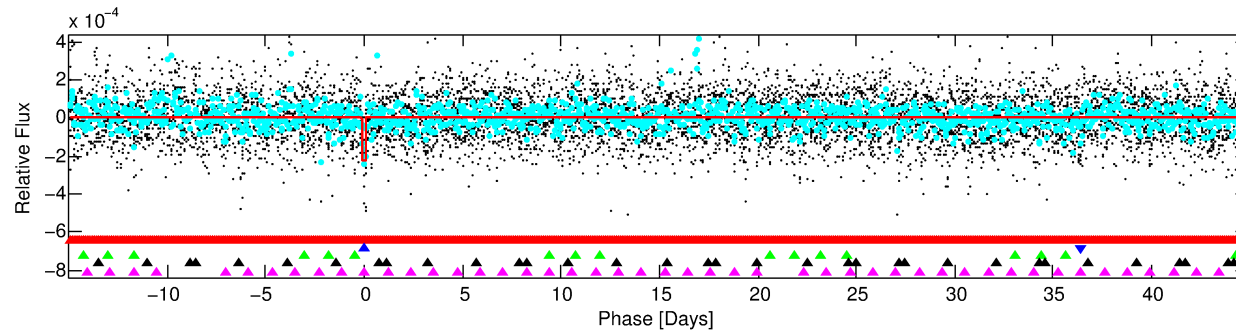
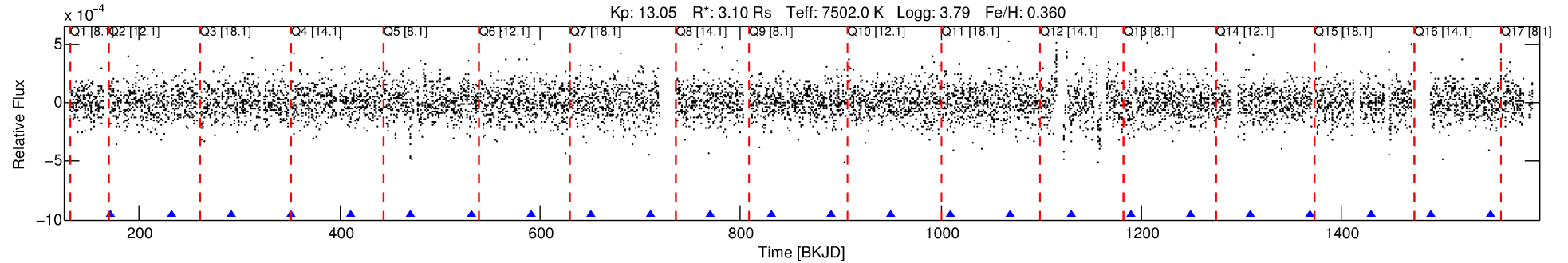
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008019250-02

No Significant Match Found

DV One-Page Summary

KIC: 8019250 Candidate: 2 of 5 Period: 59.841 d



DV Fit Results:

Period = 59.84125 [0.00094] d
Epoch = 172.1030 [0.0108] BKJD
Rp/R* = 0.0151 [0.0181]
a/R* = 65.43 [474.54]
b = 0.76 [4.03]
Seff = 182.10 [63.18]
Teq = 937 [81] K
Rp = 5.12 [6.28] Re
a = 0.3876 [0.0889] AU
Ag = 475.05 [1151.97] [0.41 σ]
Teffp = 6761 [4059] K [1.43 σ]

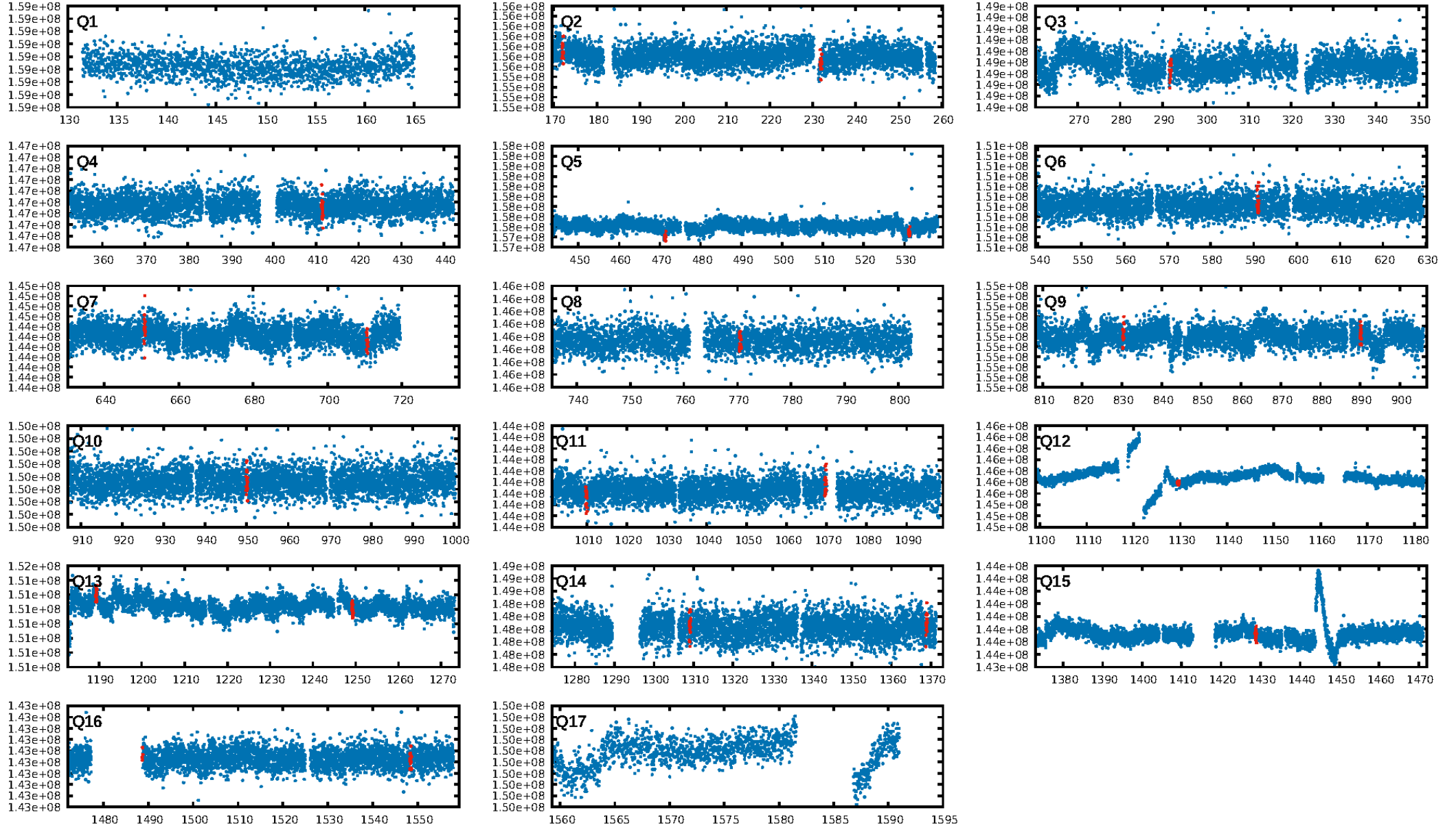
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [77.29 σ]
LongPeriod-sig: 100.0% [110.10 σ]
ModelChiSquare2-sig: 0.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.16e-13
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: -1.187
Centroid-sig: N/A
Centroid-so: 0.561 arcsec [1.04 σ]
OotOffset-rm: 1.902 arcsec [1.35 σ]
KicOffset-rm: 1.849 arcsec [1.30 σ]
OotOffset-st: 1/1/0/3 [5]
KicOffset-st: 1/1/0/3 [5]
DiffImageQuality-fgm: 0.40 [2/5]
DiffImageOverlap-fno: 0.00 [0/14]

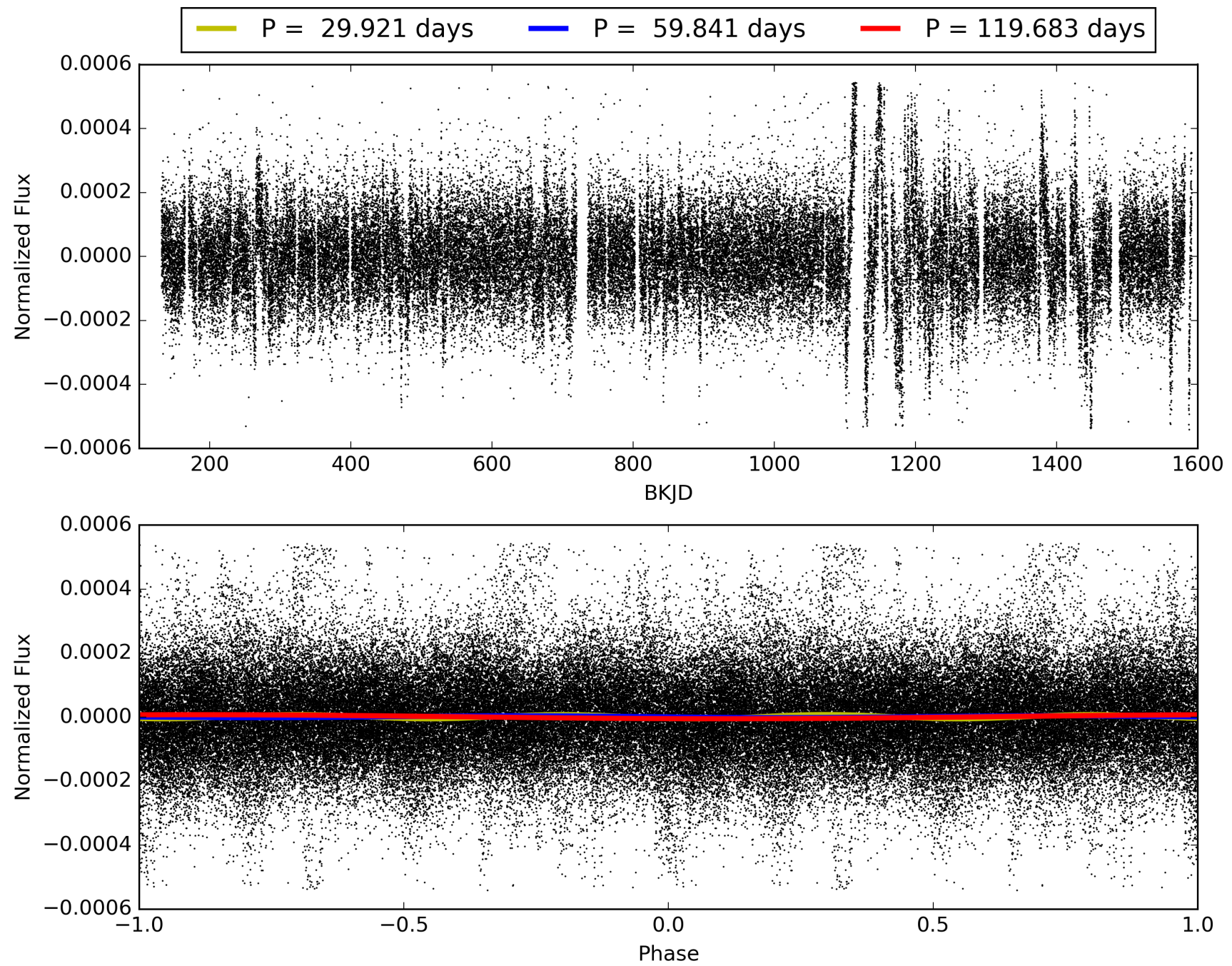
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 21:39:10 Z

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

TCE 008019250-02, PDC Light Curves

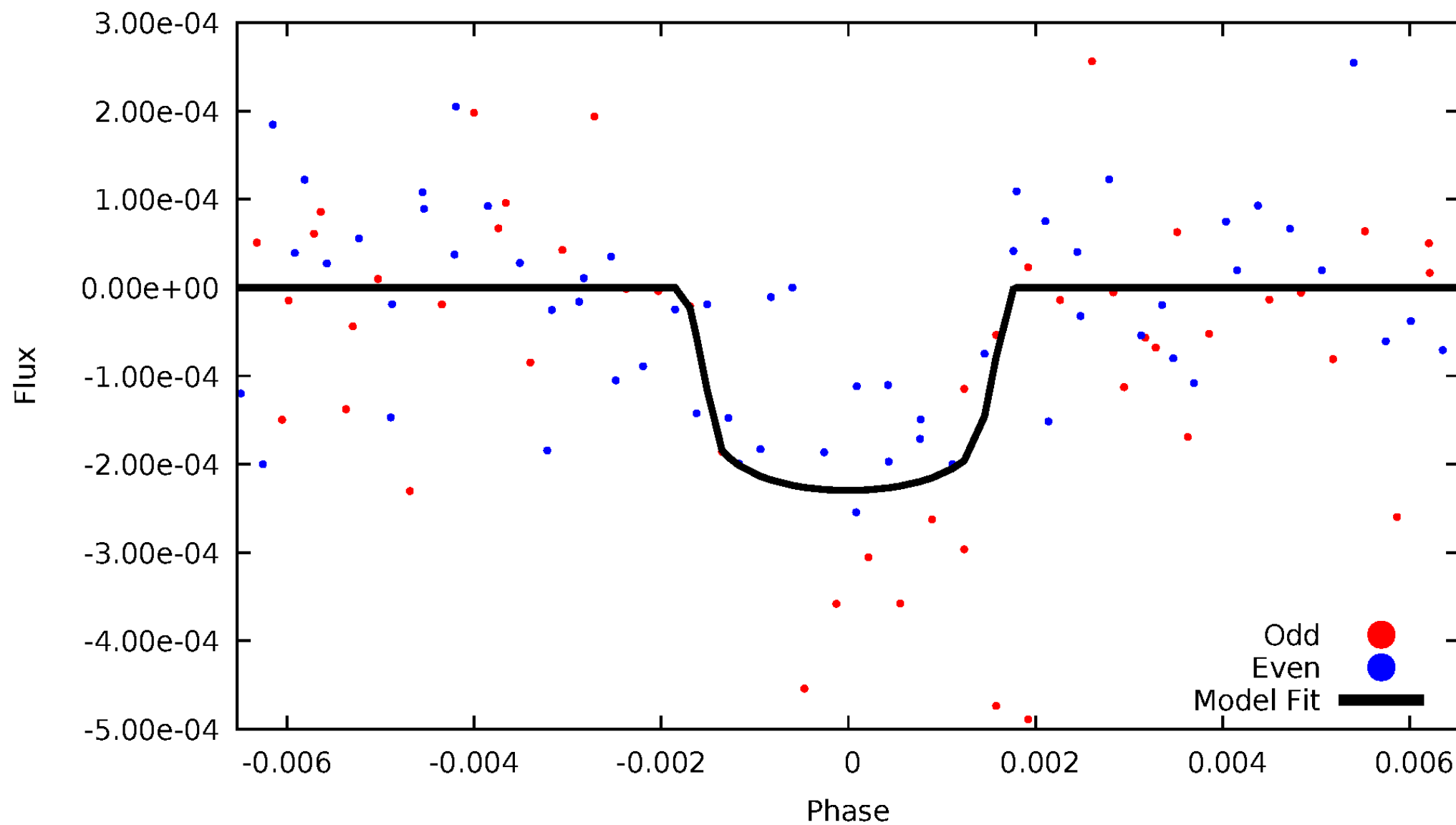


TCE 008019250-02



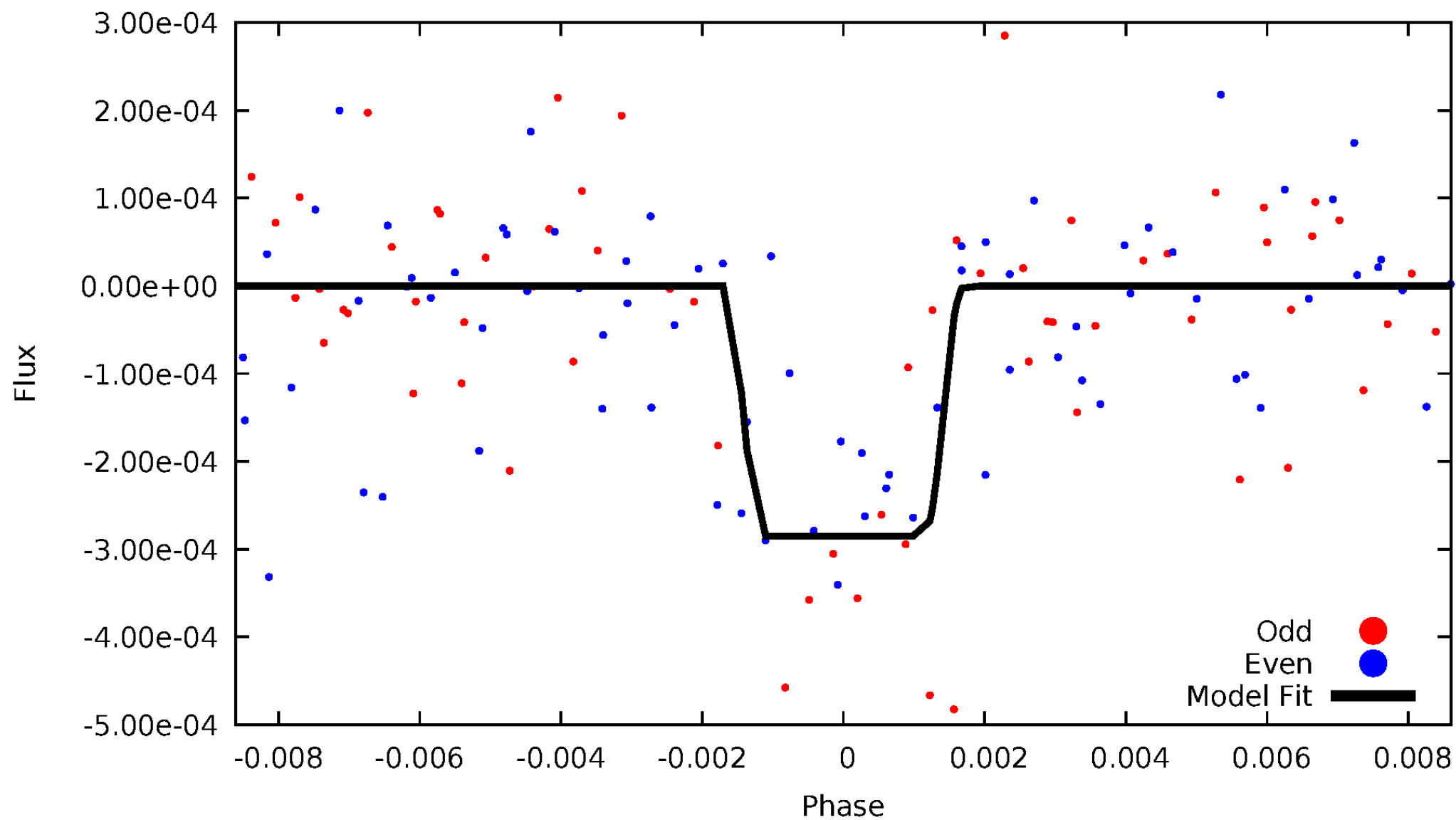
DV Odd/Even

TCE 008019250-02



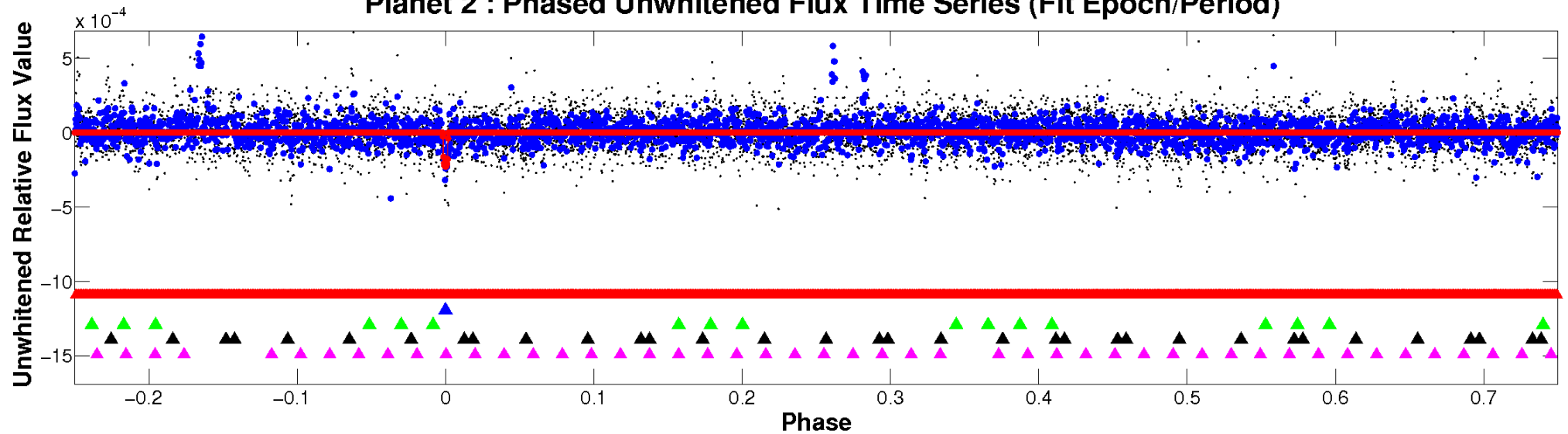
ALT Odd/Even

TCE 008019250-02

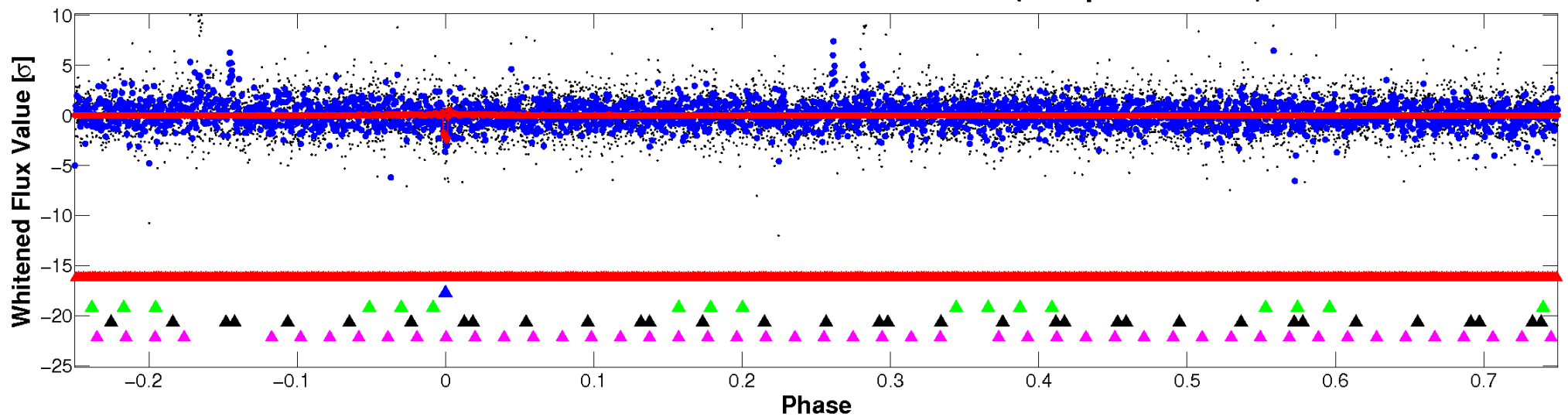


Non-Whitened Vs. Whitened Light Curve

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

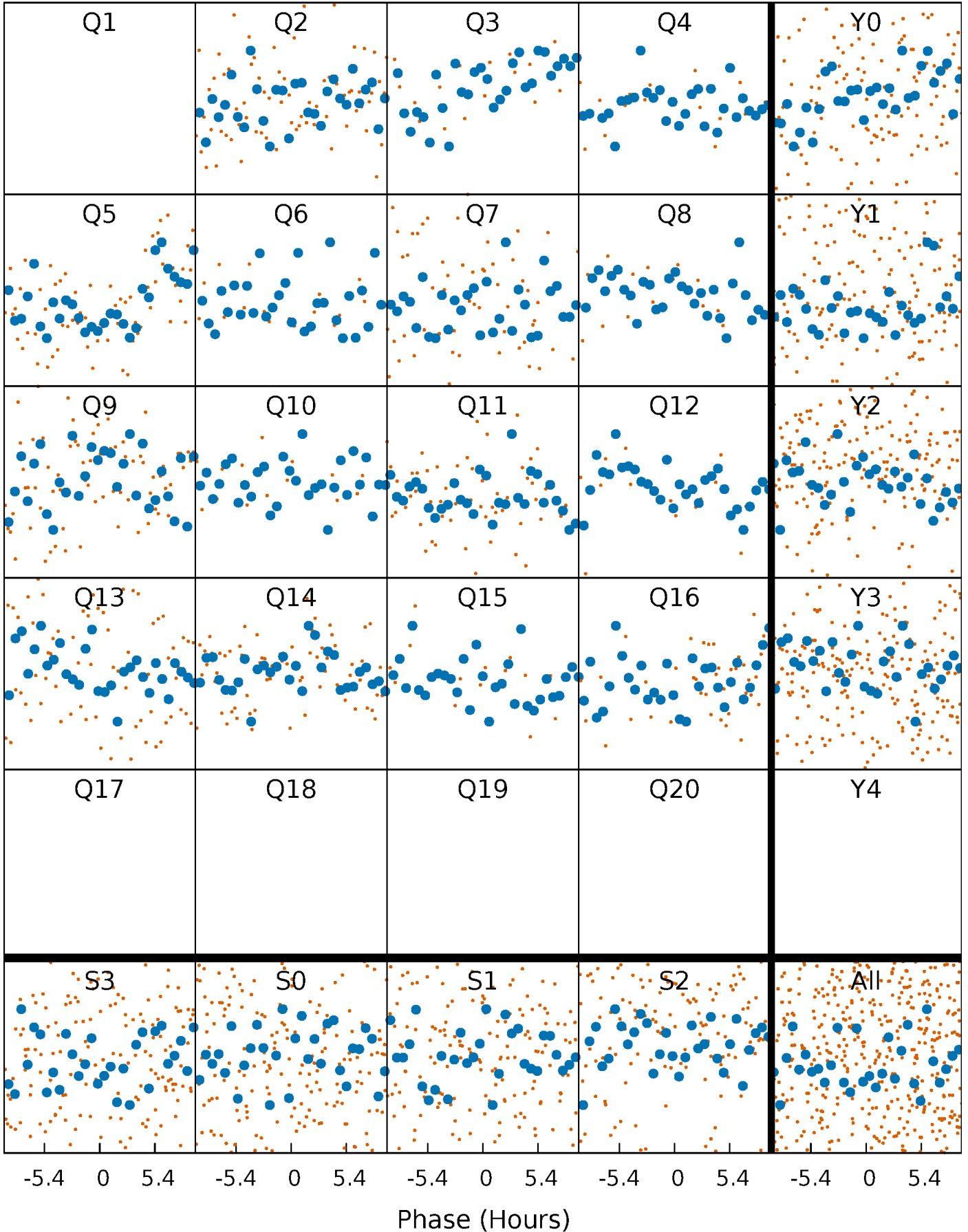


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



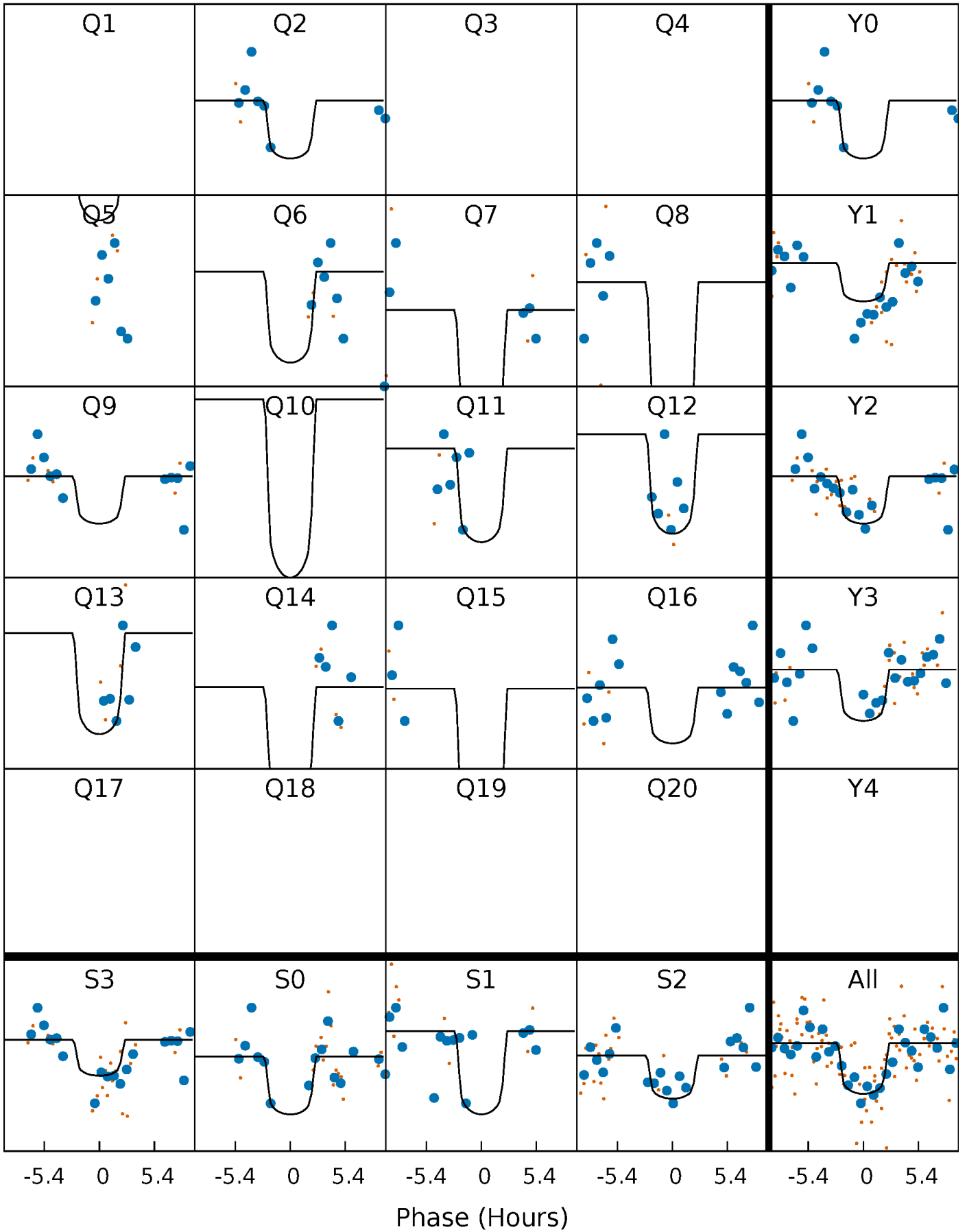
PDC Quarter-Phased Transit Curves

TCE 008019250-02 P= 59.841252 Days $T_0=172.102977$ (BKJD)



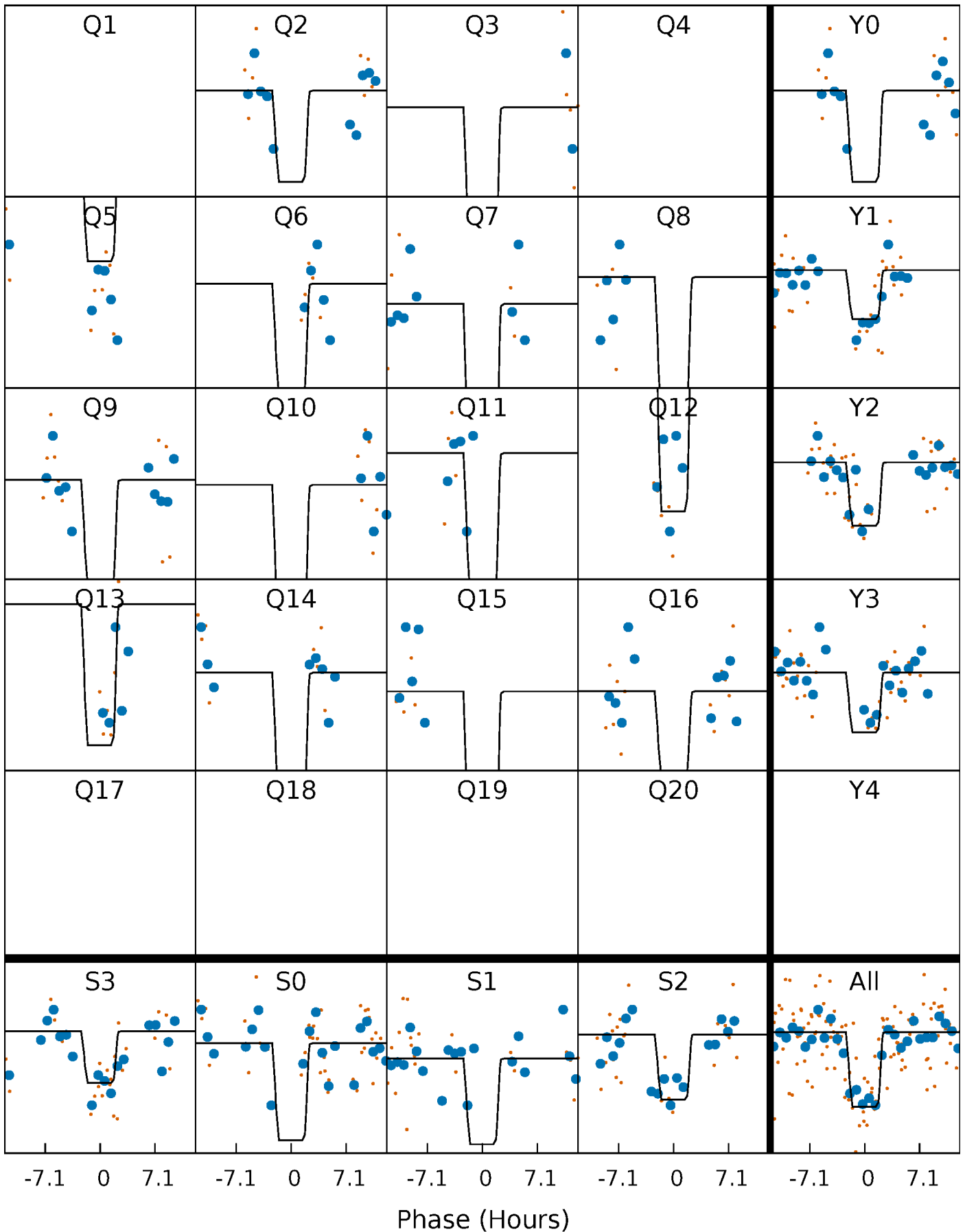
DV Quarter-Phased Transit Curves

TCE 008019250-02 P= 59.841252 Days $T_0=172.102977$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

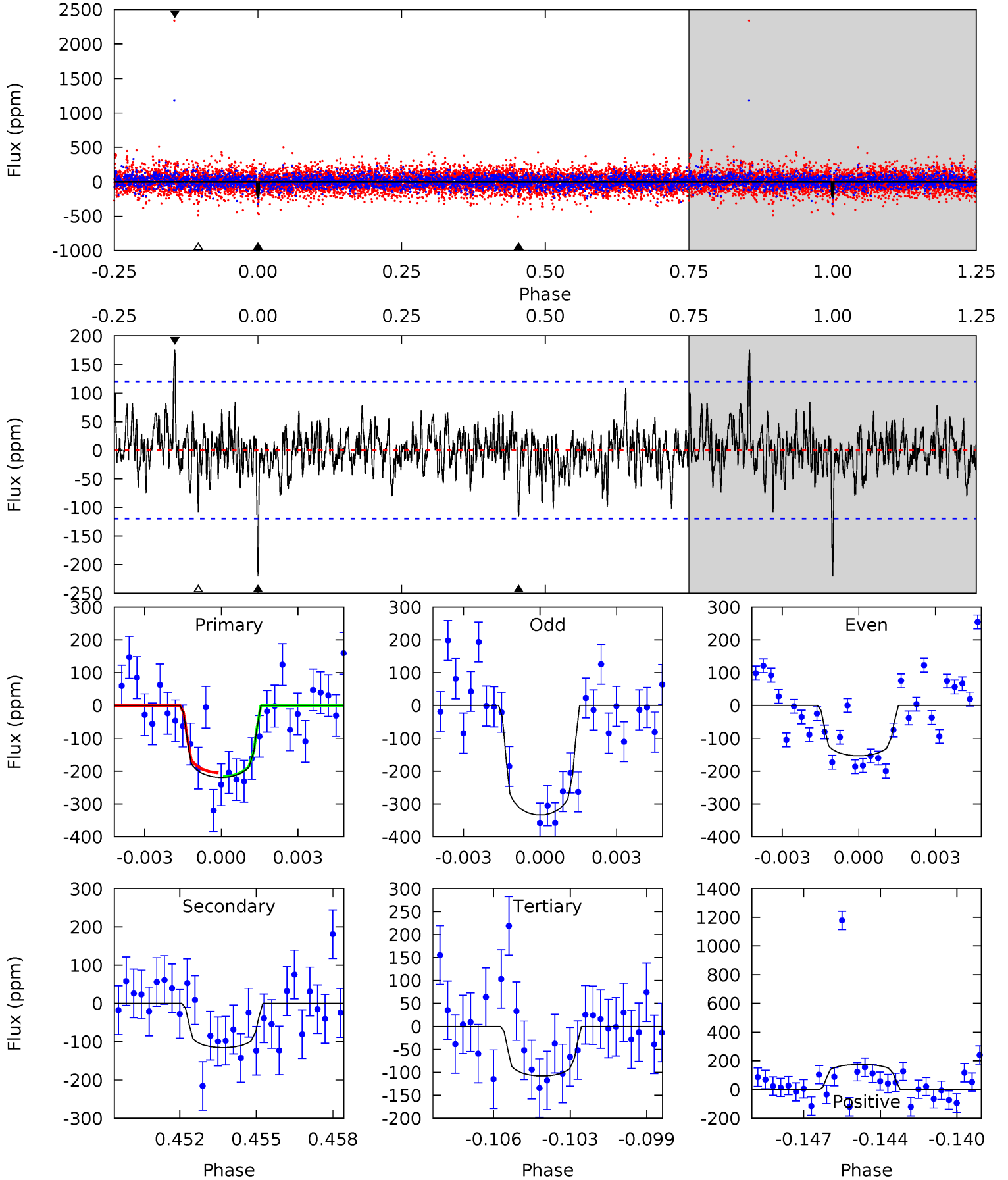
TCE 008019250-02 P= 59.840198 Days $T_0=172.129472$ (BKJD)



DV Model-Shift Uniqueness Test

008019250-02, P = 59.841252 Days, E = 112.261725 Days

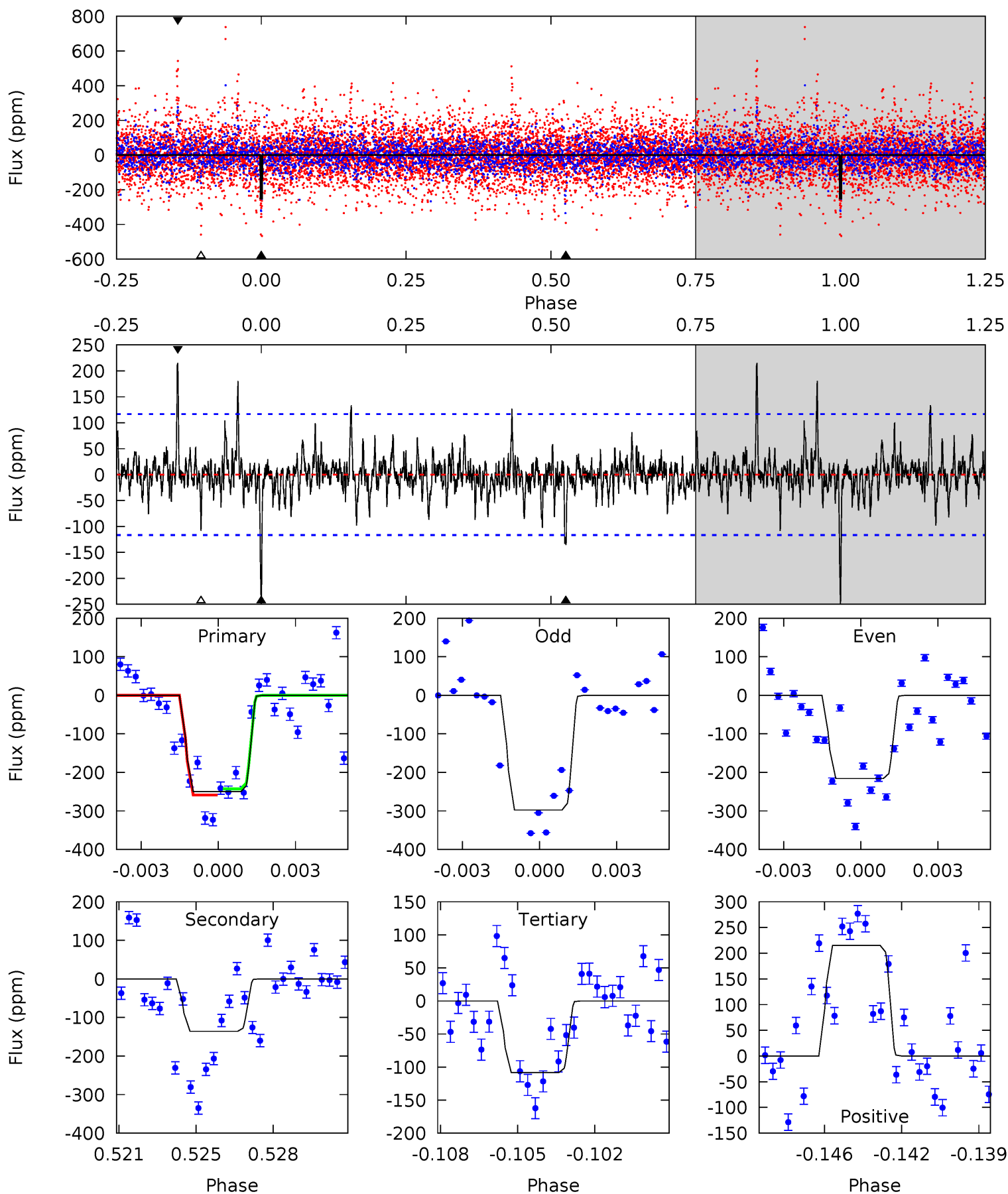
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.57	5.04	4.72	7.65	5.23	2.93	1.38	4.85	1.92	0.31	-2.62	3.15	1.20	0.44	0.25



Alt Model-Shift Uniqueness Test

008019250-02, P = 59.840198 Days, E = 112.289274 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	6.08	4.85	9.64	5.23	2.93	1.35	6.35	1.56	1.24	-3.55	1.82	0.85	0.46	0.35



Stellar Parameters For KIC 008019250

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7502^{+67}_{-97}	$3.790^{+0.192}_{-0.112}$	$0.360^{+0.100}_{-0.200}$	$3.105^{+0.545}_{-0.818}$	$2.165^{+0.168}_{-0.287}$	$0.102^{+0.127}_{-0.034}$
	+1%/-1%	+5%/-3%	+28%/-56%	+18%/-26%	+8%/-13%	+125%/-33%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 008019250-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-115 ± 23	$6.20^{+5.55}_{-3.95}$	1300^{+63}_{-83}	5574^{+4374}_{-1243}	243^{+1594}_{-177}
Alt.	-136 ± 22	$6.99^{+5.50}_{-4.23}$	1303^{+63}_{-82}	5529^{+3682}_{-1233}	226^{+1174}_{-158}

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

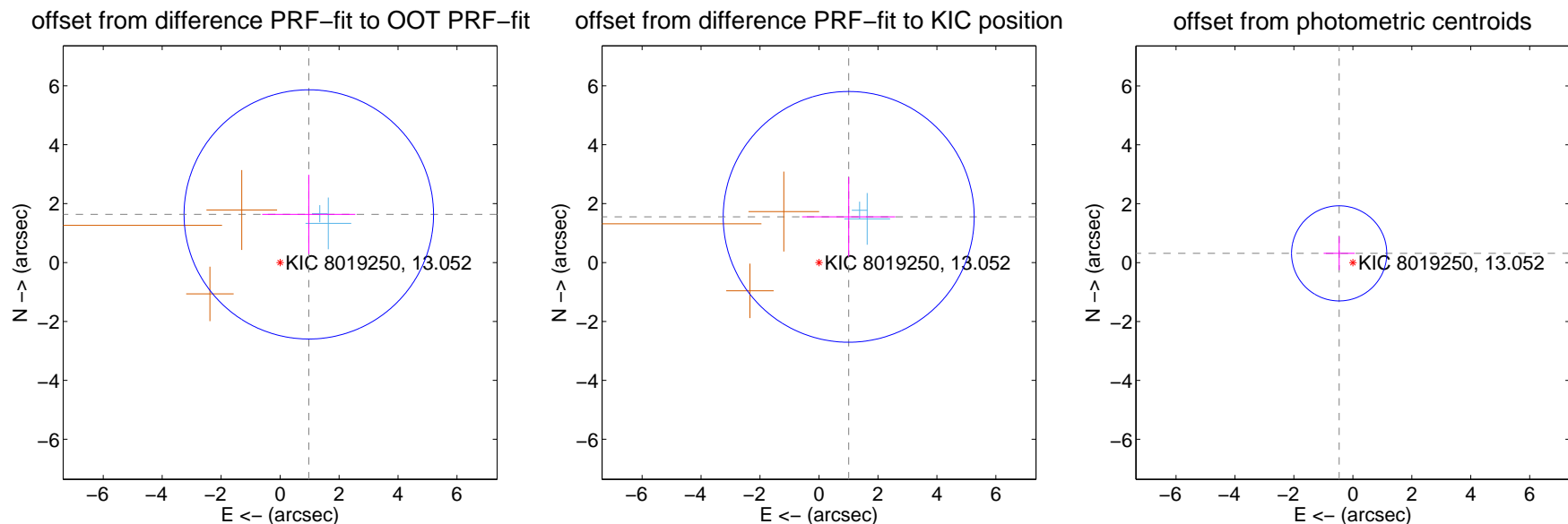
DV Centroid Data

Supplemental centroid analysis for 008019250-02. Kepler magnitude: 13.05. Transit SNR 10.76

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.902 ± 1.410	1.35	-0.973 ± 1.579	1.634 ± 1.345
PRF-fit source offset from KIC position	1.849 ± 1.419	1.30	-1.008 ± 1.579	1.550 ± 1.345
photometric centroid source offset	0.56 ± 0.54	1.04	0.46 ± 0.52	0.31 ± 0.57



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.

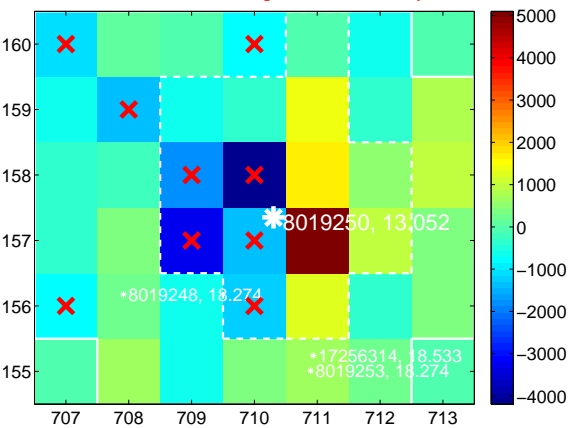
Q1 no difference image



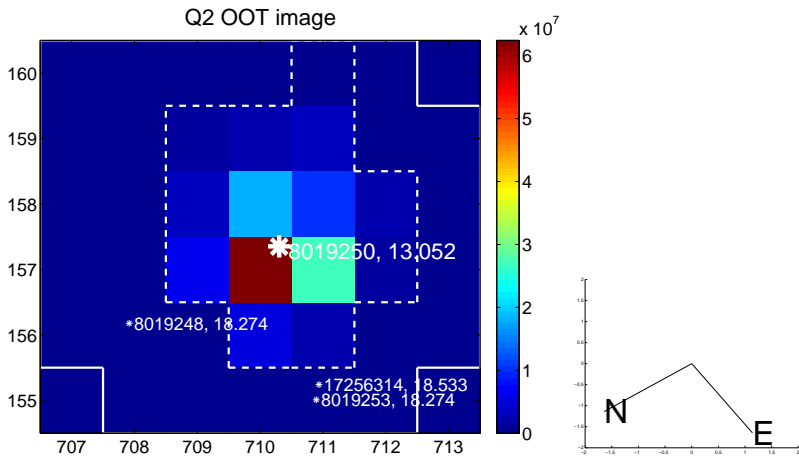
Q1 no OOT image



Q2 difference image. Poor Quality



Q2 OOT image



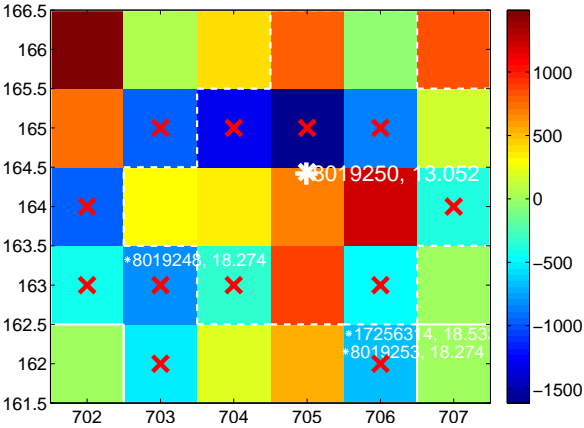
Q3 no difference image



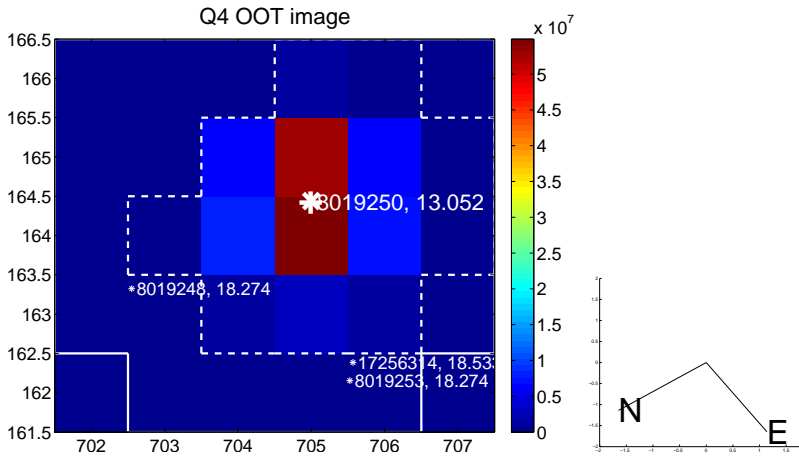
Q3 no OOT image



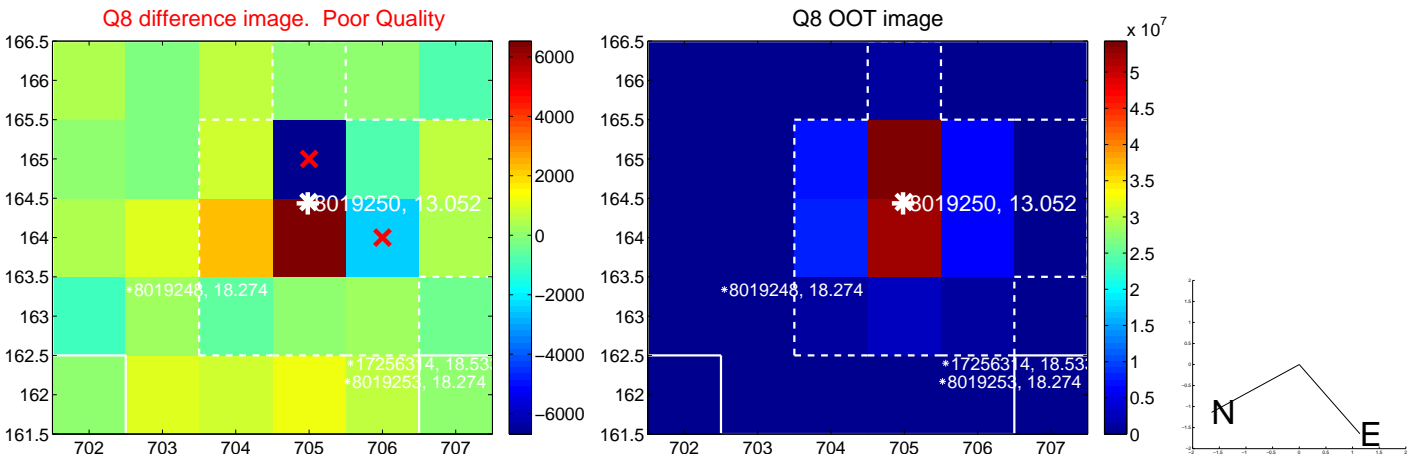
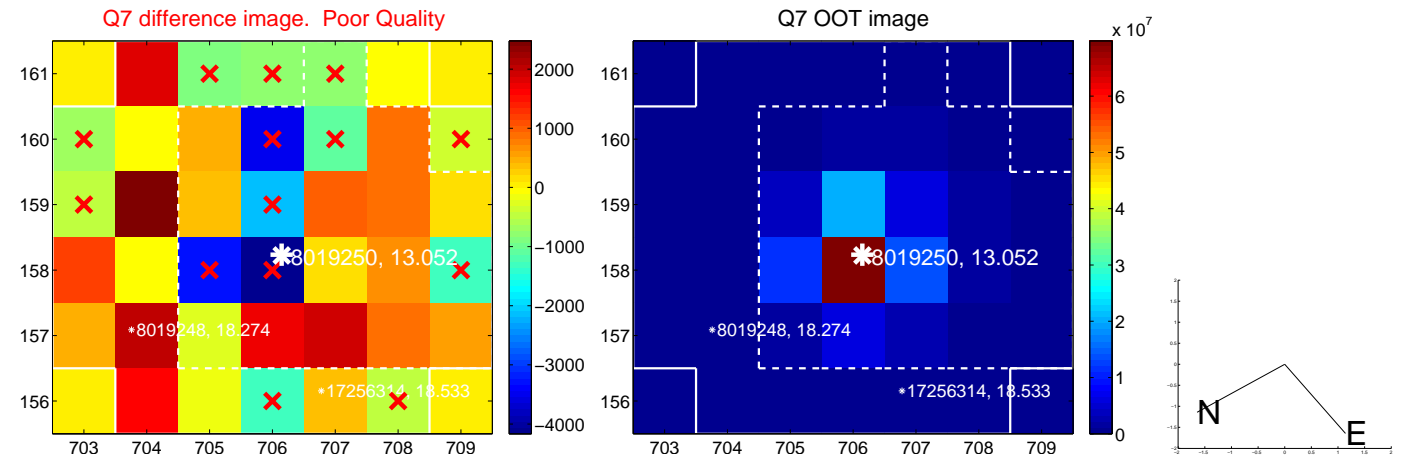
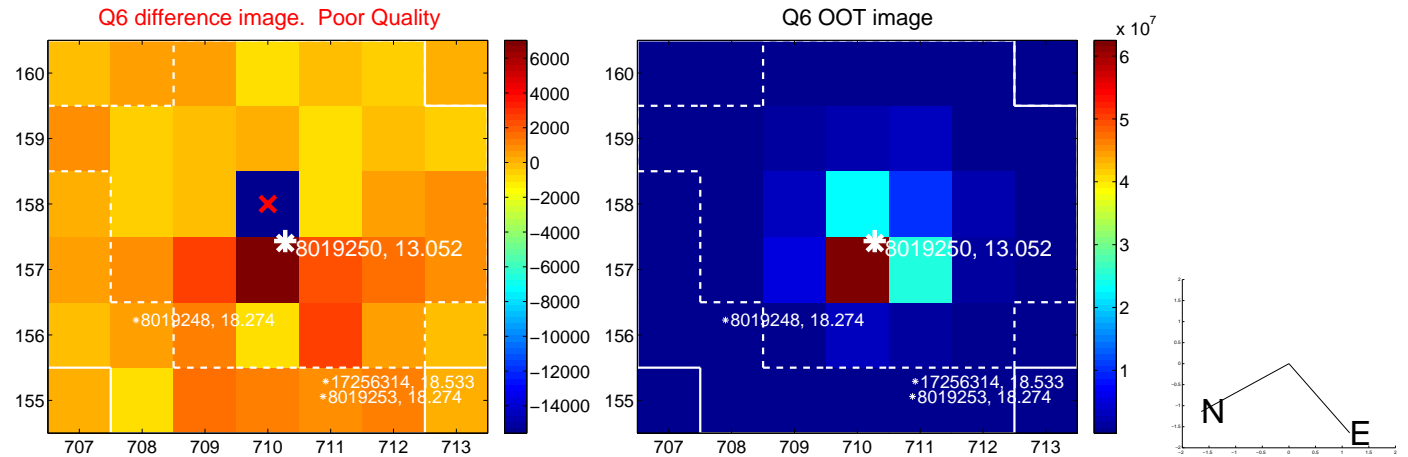
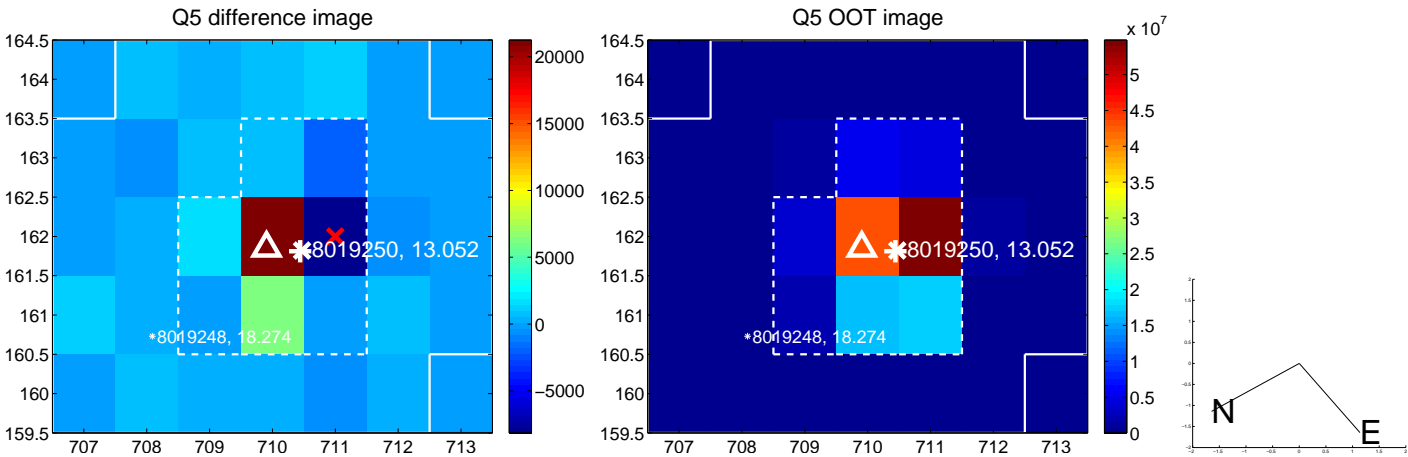
Q4 difference image. Poor Quality



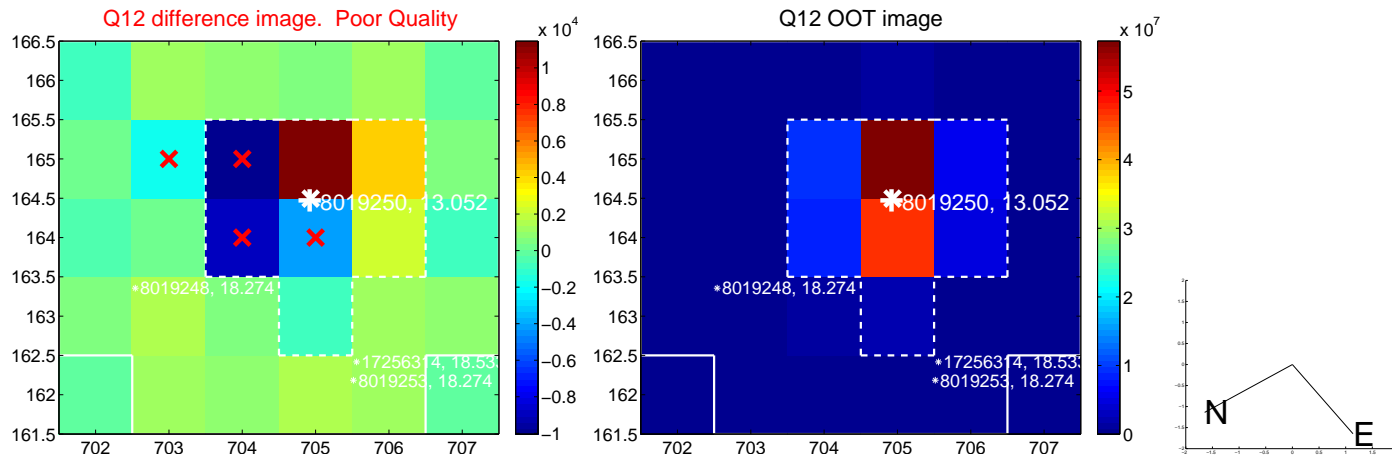
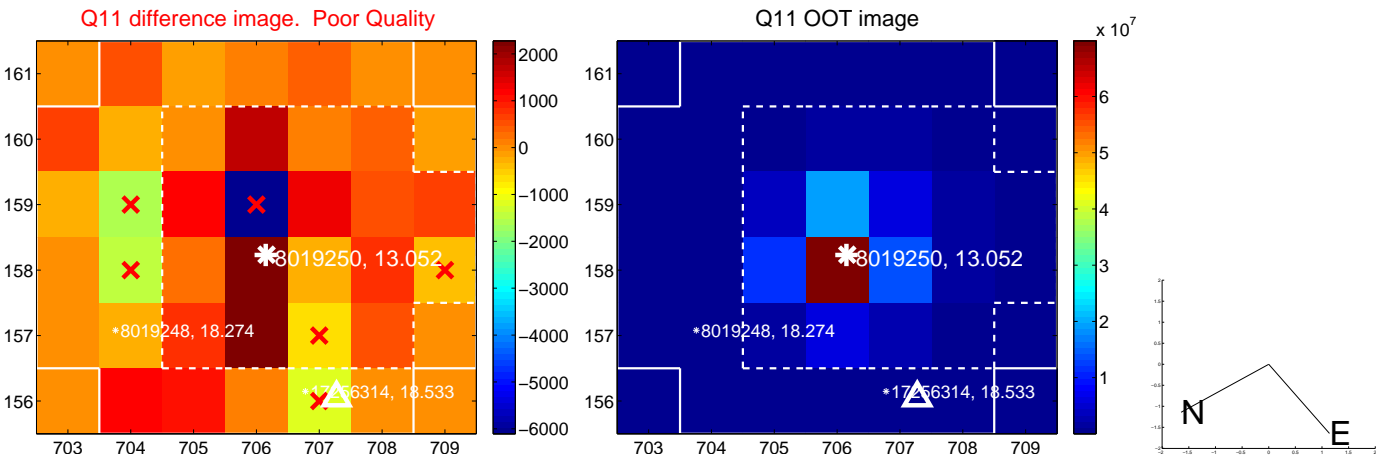
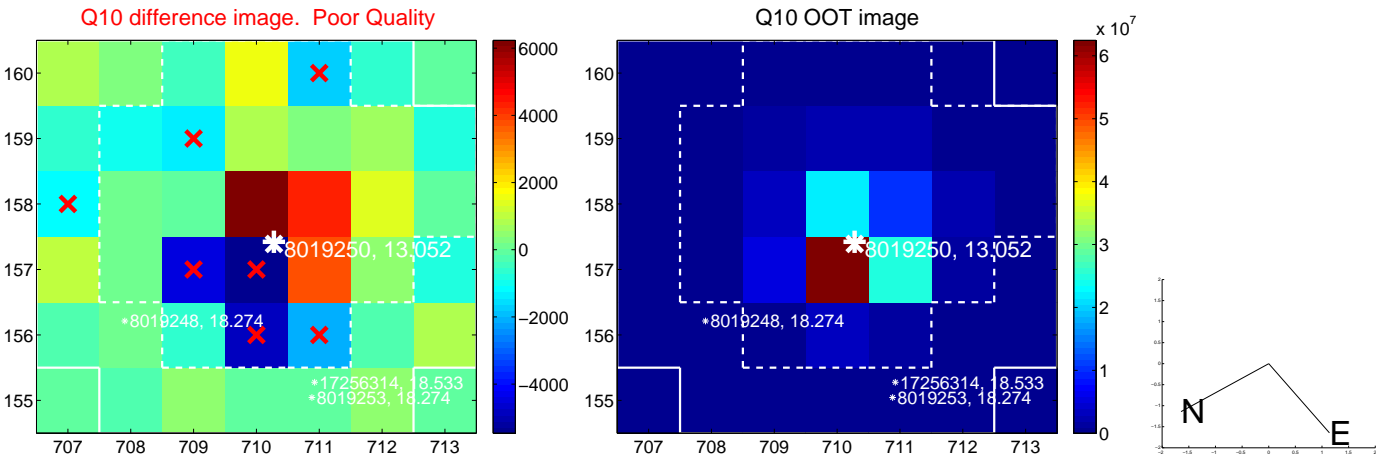
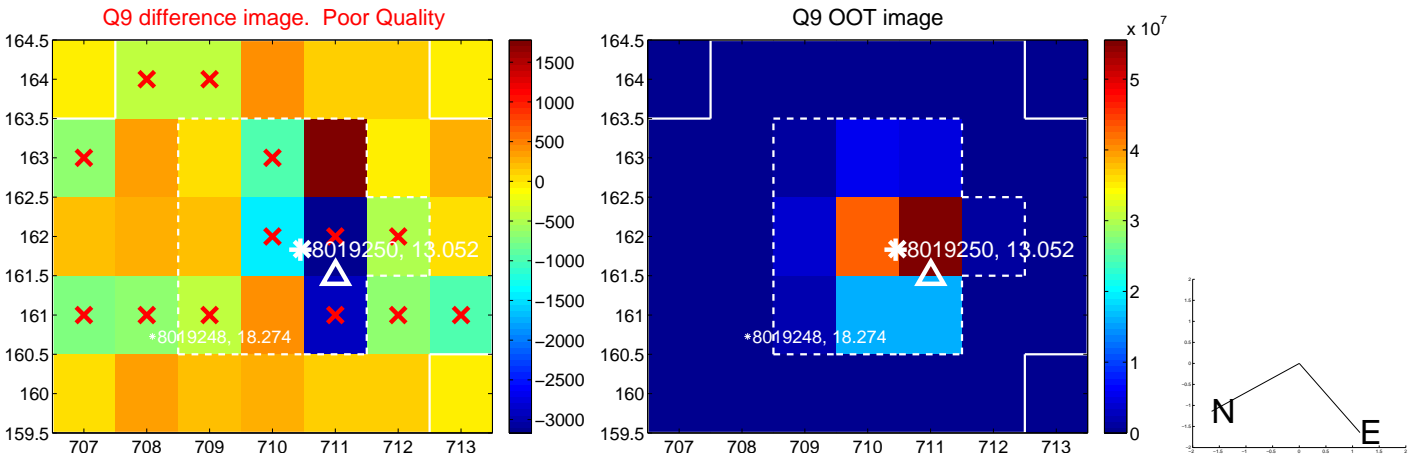
Q4 OOT image



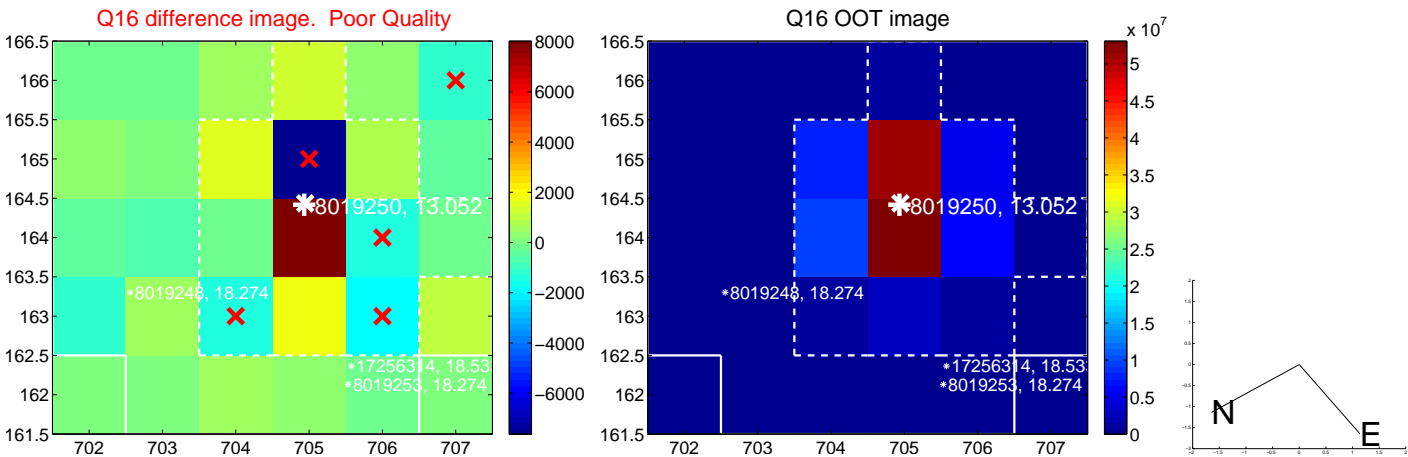
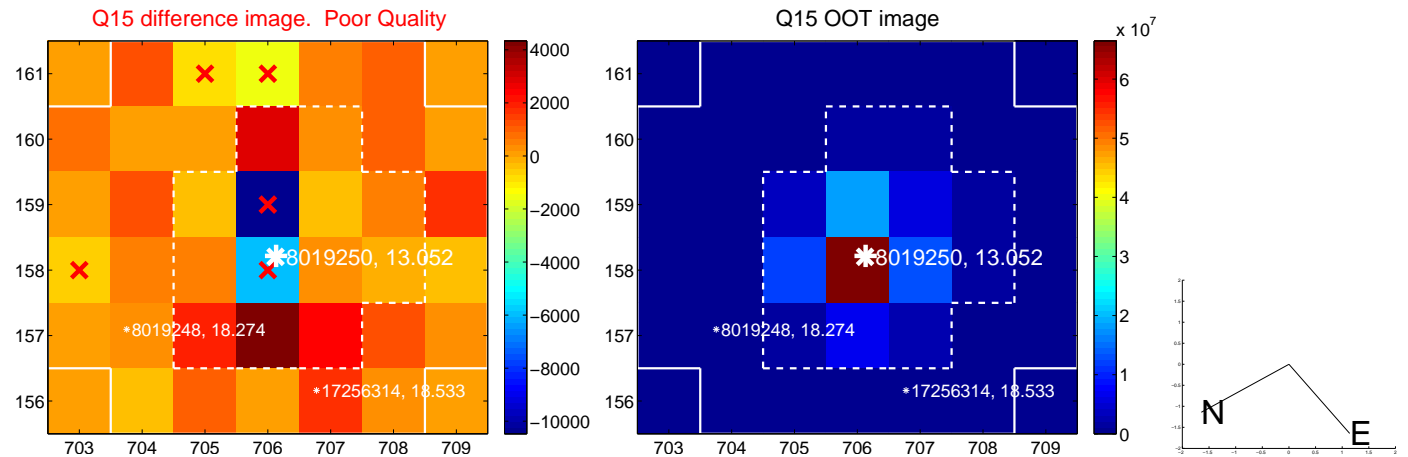
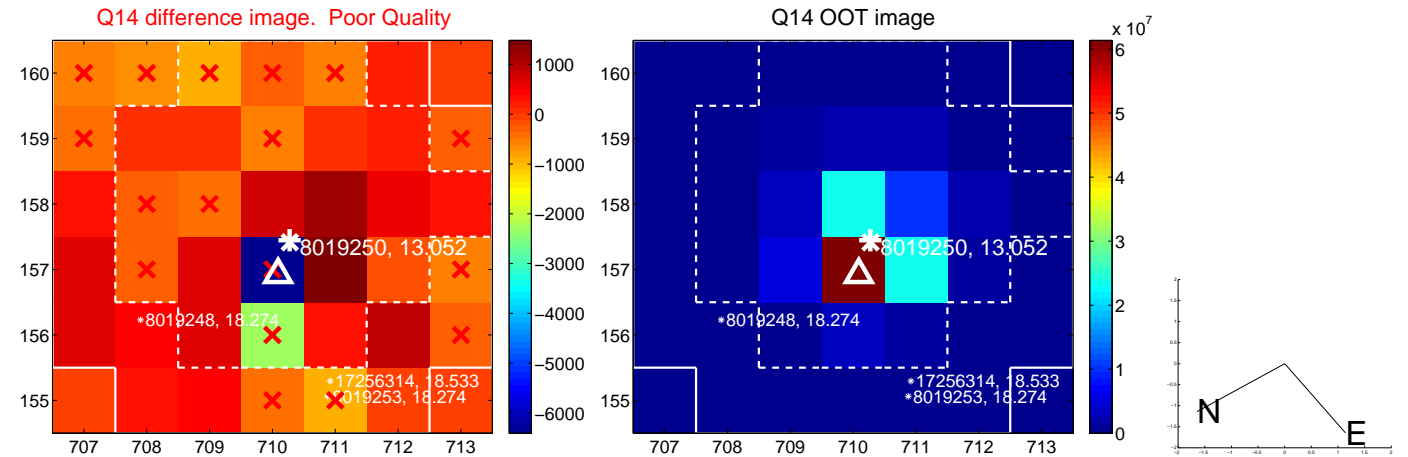
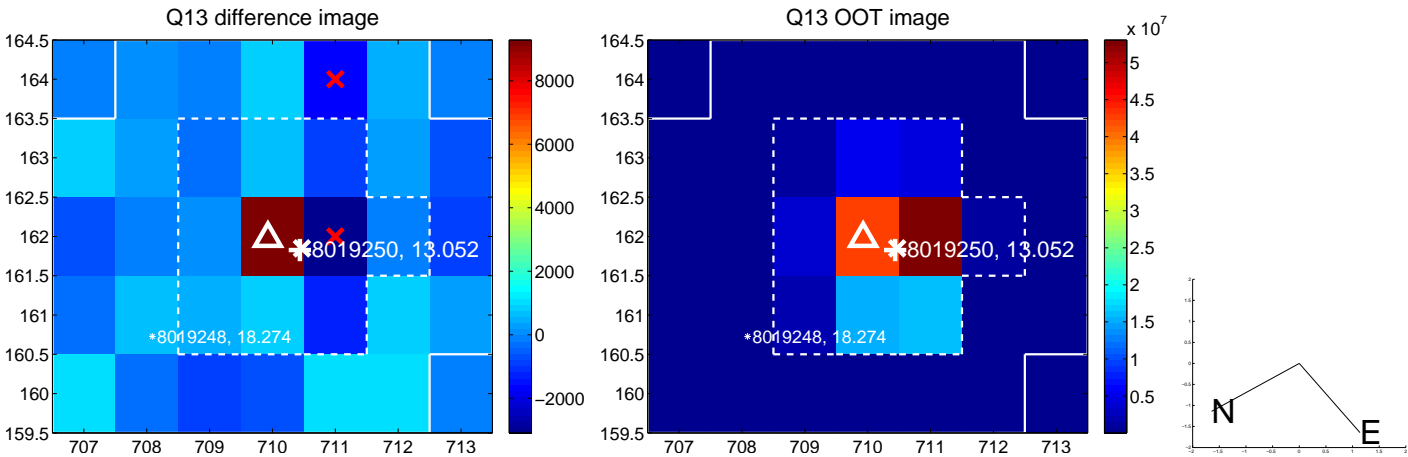
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



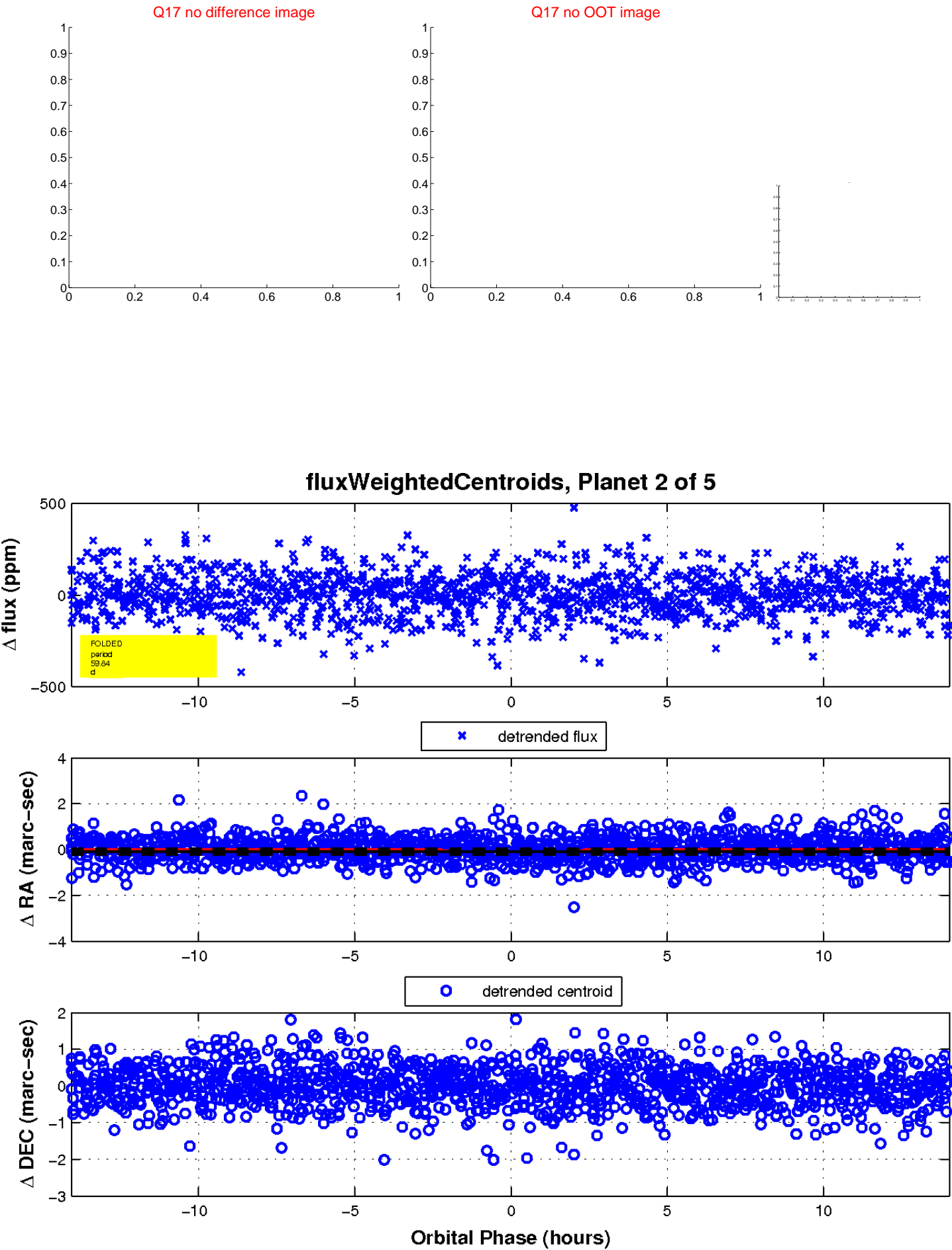
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

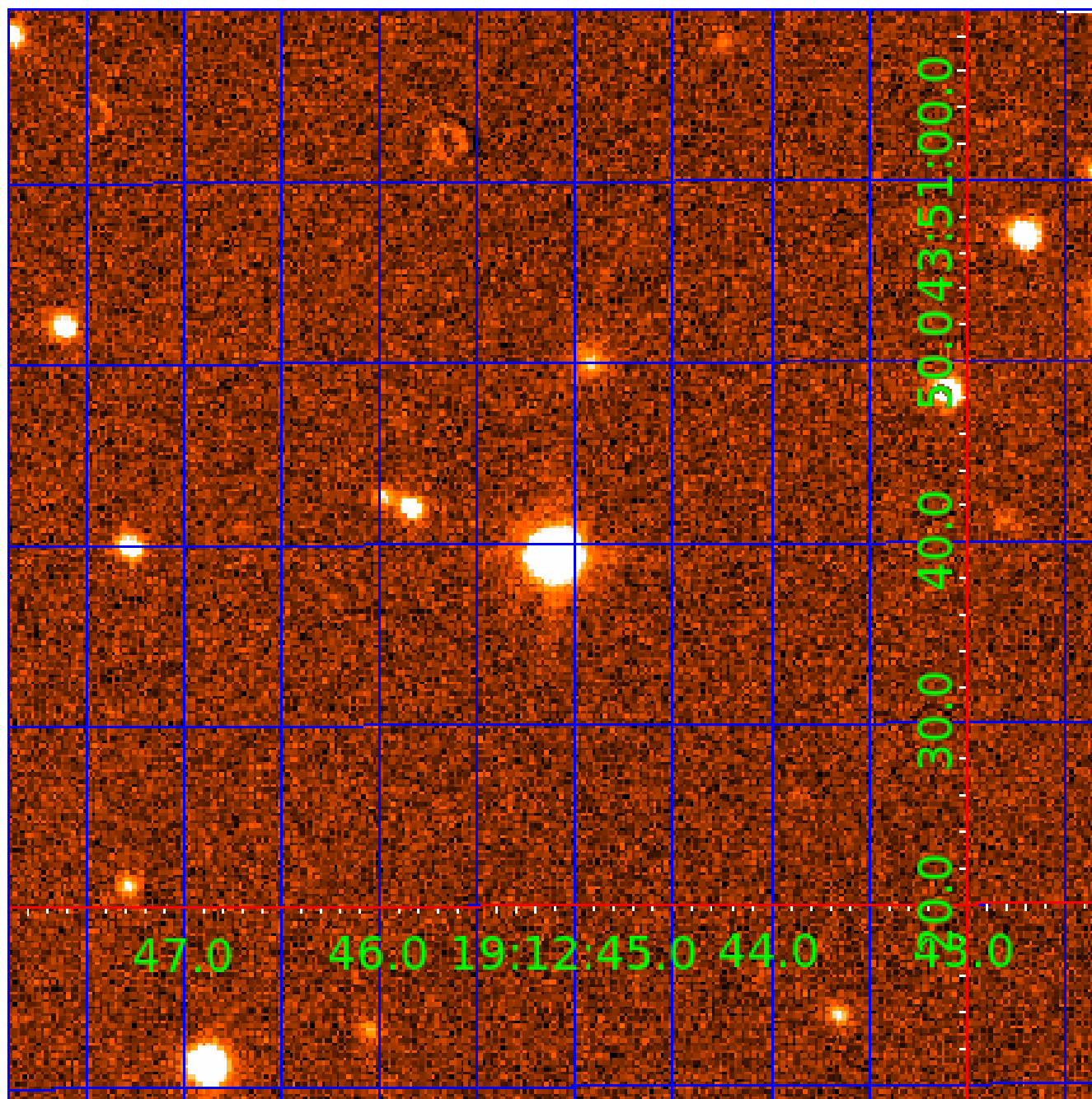


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008019250

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})
008019250-01	OBS	No	1.234863	132.389647	14.1	8.430	8.8	12.7	3.10	7502	1.42	32172.55
008019250-02	OBS	No	59.841252	172.102977	229.7	4.690	11.1	10.8	3.10	7502	5.12	182.10
008019250-04	OBS	No	43.099519	153.631905	134.4	2.243	8.7	7.9	3.10	7502	4.06	282.06
008019250-05	OBS	No	30.507126	134.580259	187.5	1.195	8.4	7.1	3.10	7502	5.06	447.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008019250-01	OBS	FP	0.00	1	0	0	0	LPP_DV
008019250-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008019250-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—HALO_GHOST
008019250-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

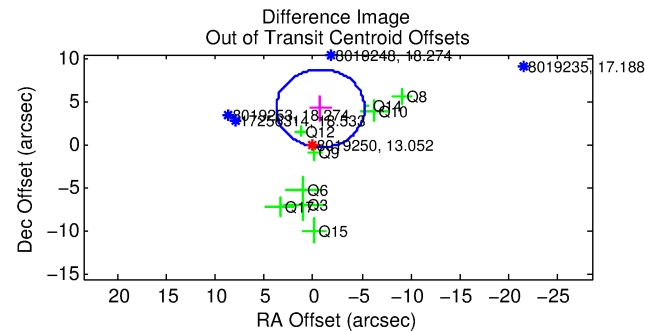
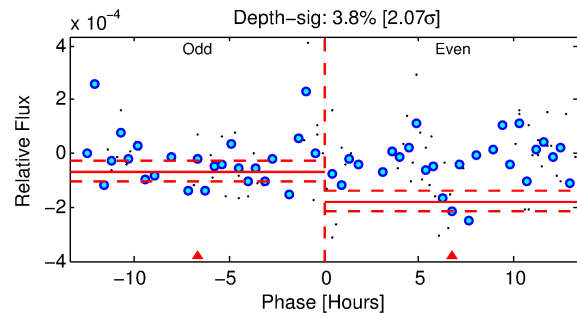
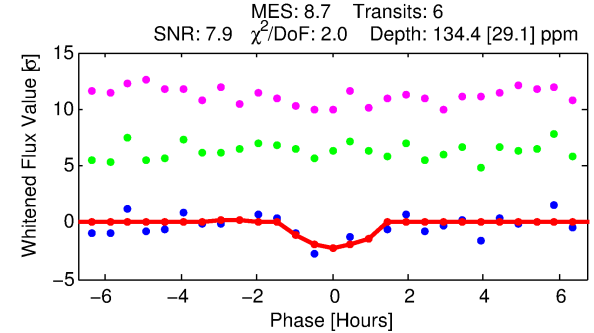
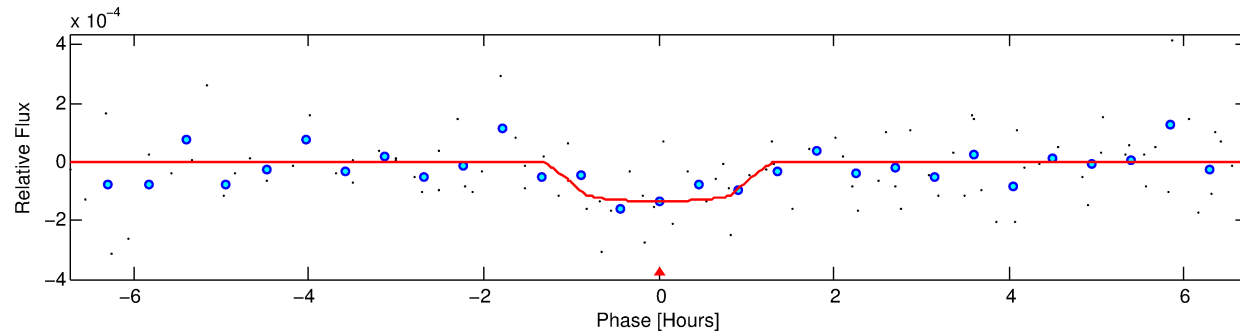
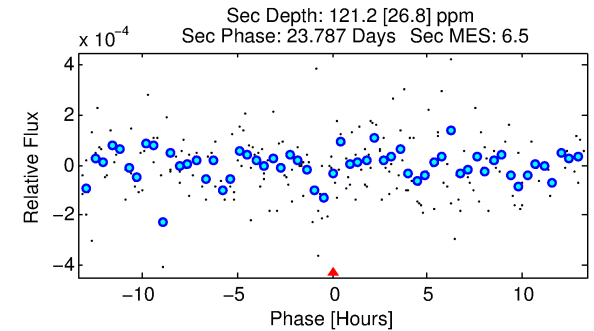
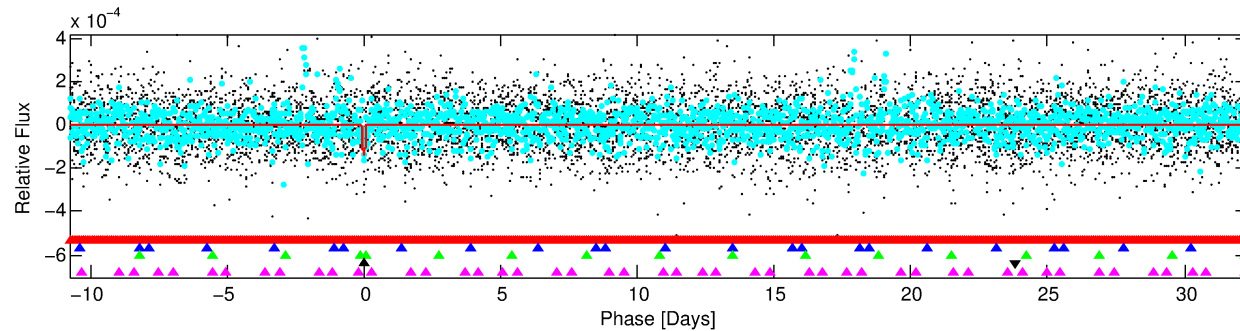
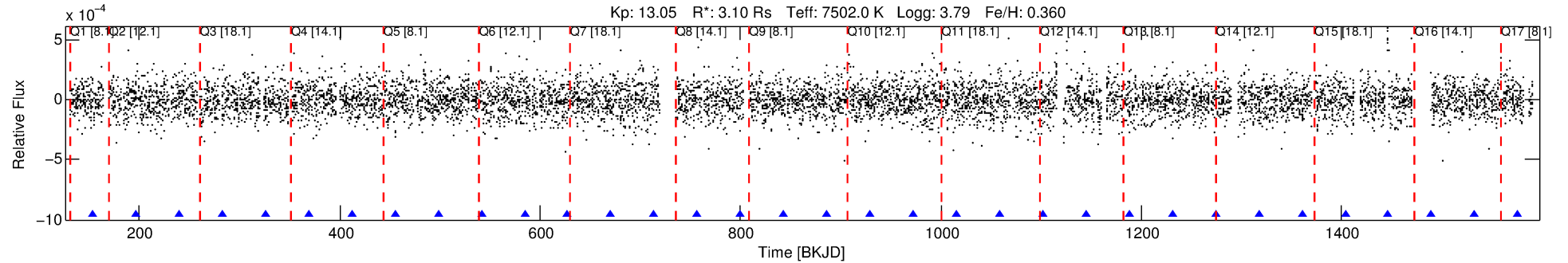
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008019250-04

No Significant Match Found

DV One-Page Summary

KIC: 8019250 Candidate: 4 of 5 Period: 43.100 d



DV Fit Results:

Period = 43.09952 [0.00084] d
Epoch = 153.6319 [0.0154] BKJD
Rp/R* = 0.0120 [0.0184]
a/R* = 80.25 [753.73]
b = 0.85 [3.07]
Seff = 282.06 [97.87]
Teq = 1045 [91] K
Rp = 4.06 [6.34] Re
a = 0.3114 [0.0714] AU
Ag = 392.09 [1216.17] [0.32σ]
Teffp = 7190 [5542] K [1.11σ]

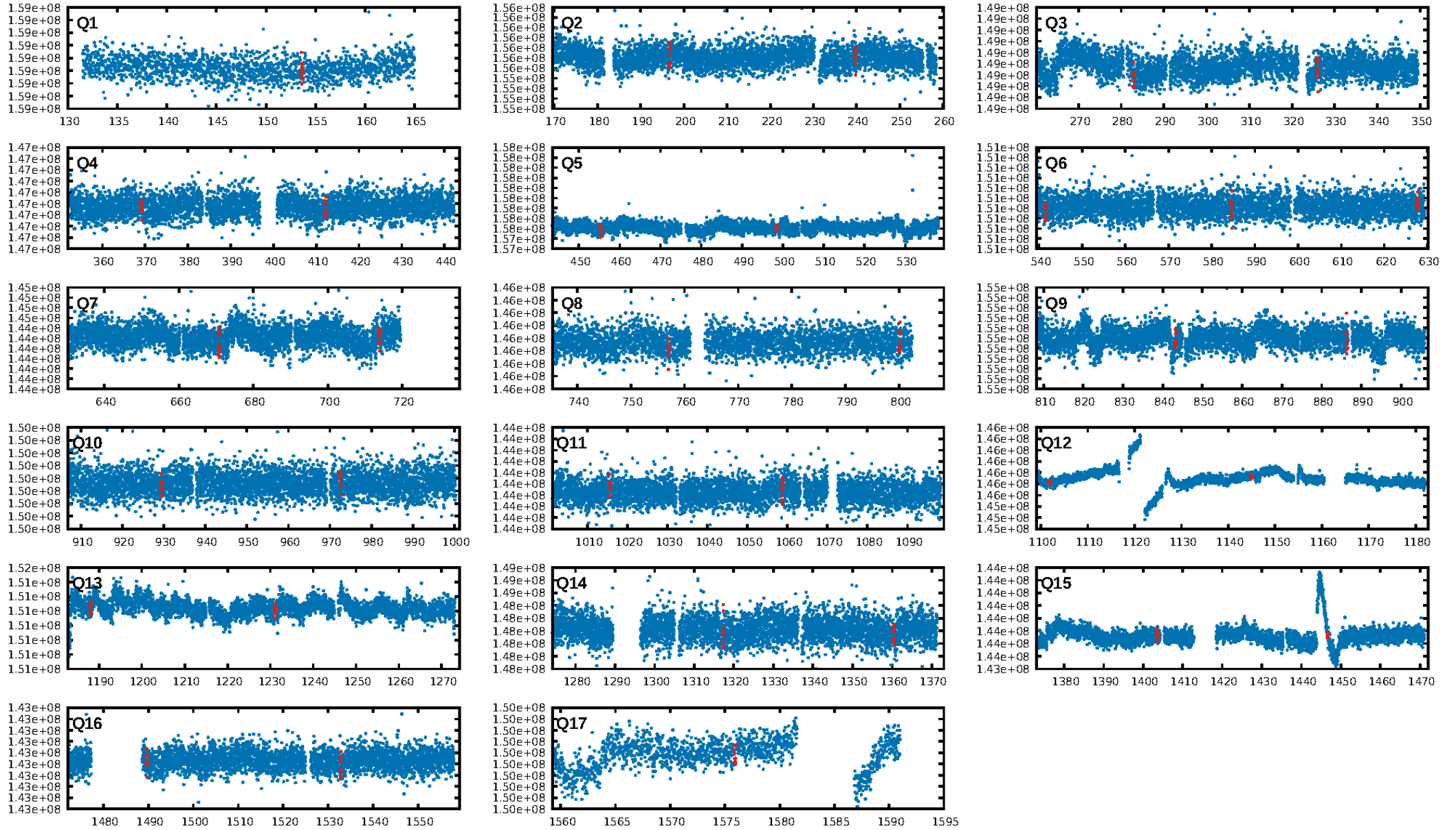
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [118.92σ]
LongPeriod-sig: 100.0% [77.29σ]
ModelChiSquare2-sig: 7.2%
ModelChiSquareGof-sig: 79.8%
Bootstrap-pfa: 7.63e-08
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 0.2107
Centroid-sig: N/A
Centroid-so: 1.646 arcsec [1.64σ]
OotOffset-rm: 4.312 arcsec [2.87σ]
KicOffset-rm: 4.274 arcsec [2.20σ]
OotOffset-st: 3/2/2/2 [9]
KicOffset-st: 3/2/2/2 [9]
DiffImageQuality-fgm: 0.22 [2/9]
DiffImageOverlap-fno: 0.35 [6/17]

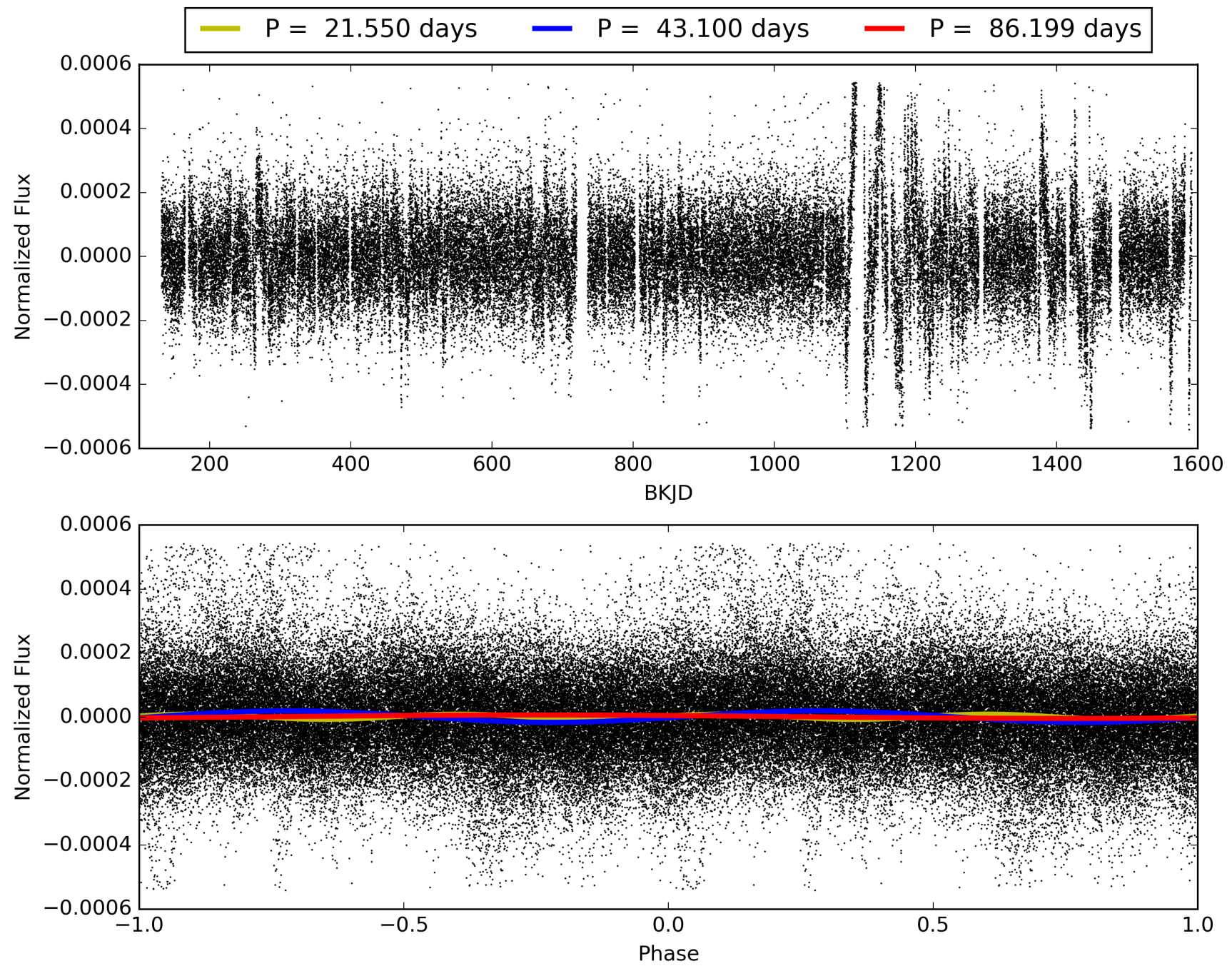
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 21:39:17 Z

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

TCE 008019250-04, PDC Light Curves

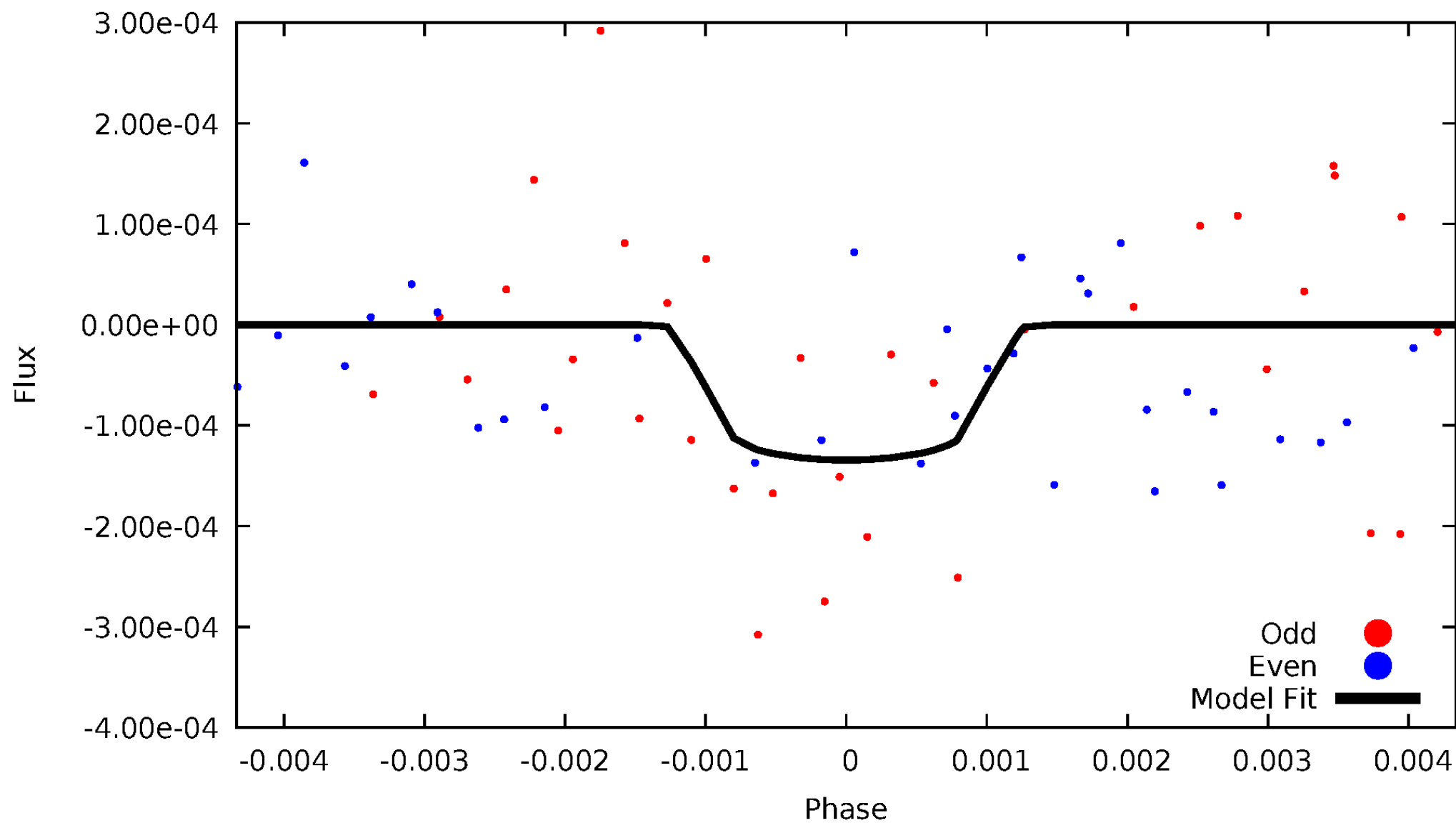


TCE 008019250-04



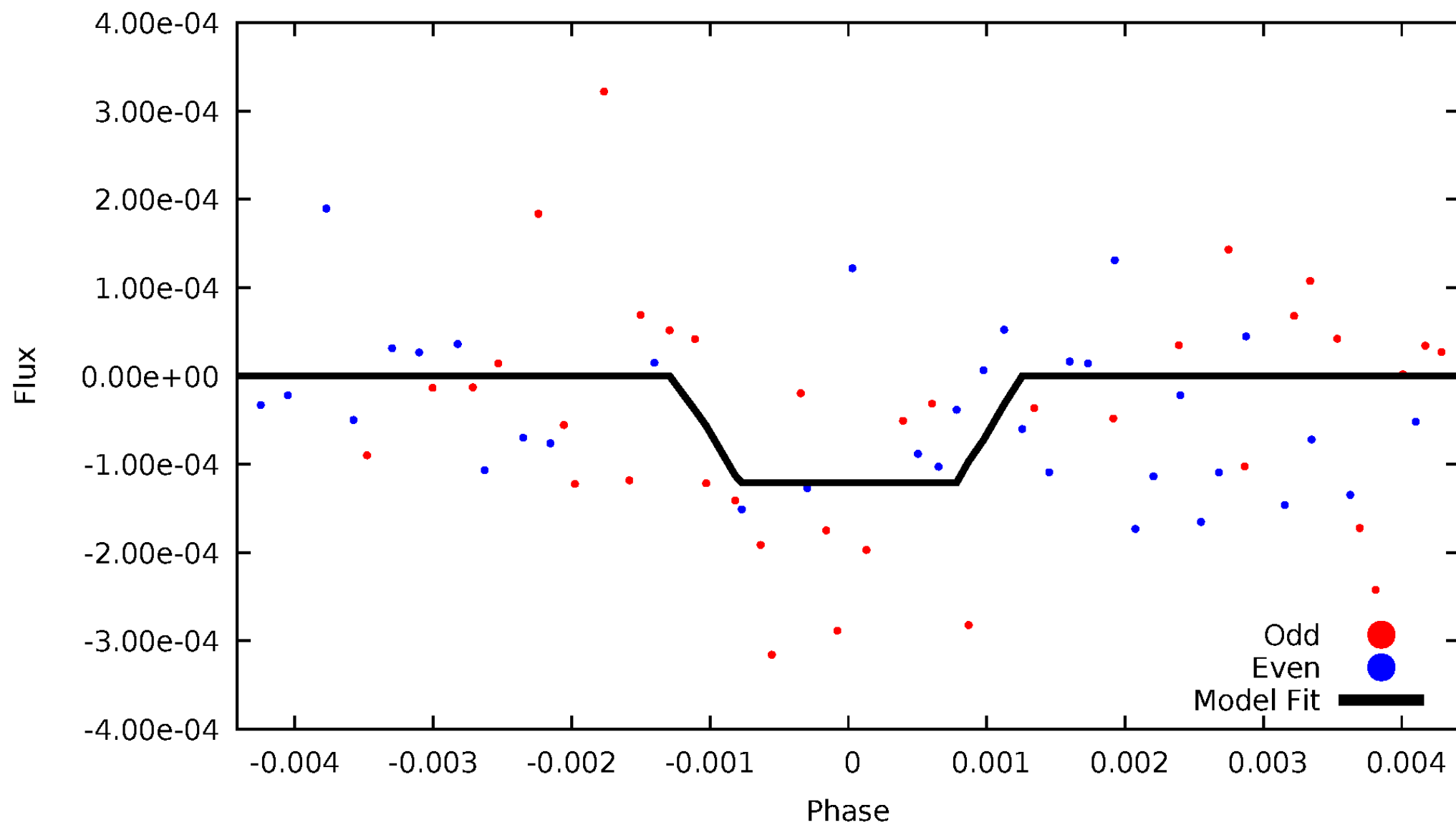
DV Odd/Even

TCE 008019250-04



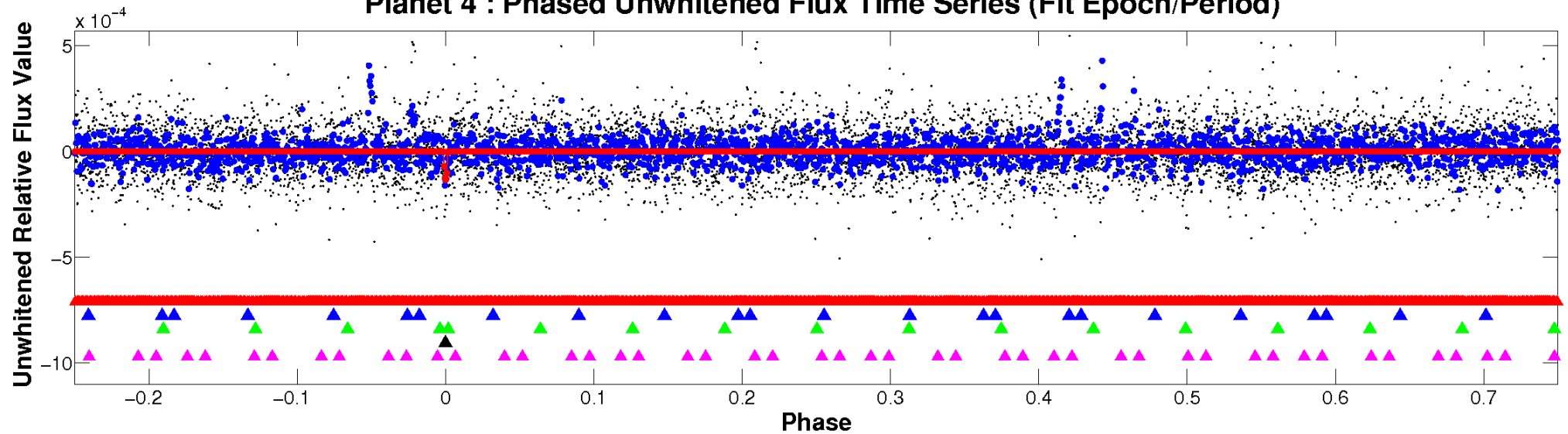
ALT Odd/Even

TCE 008019250-04

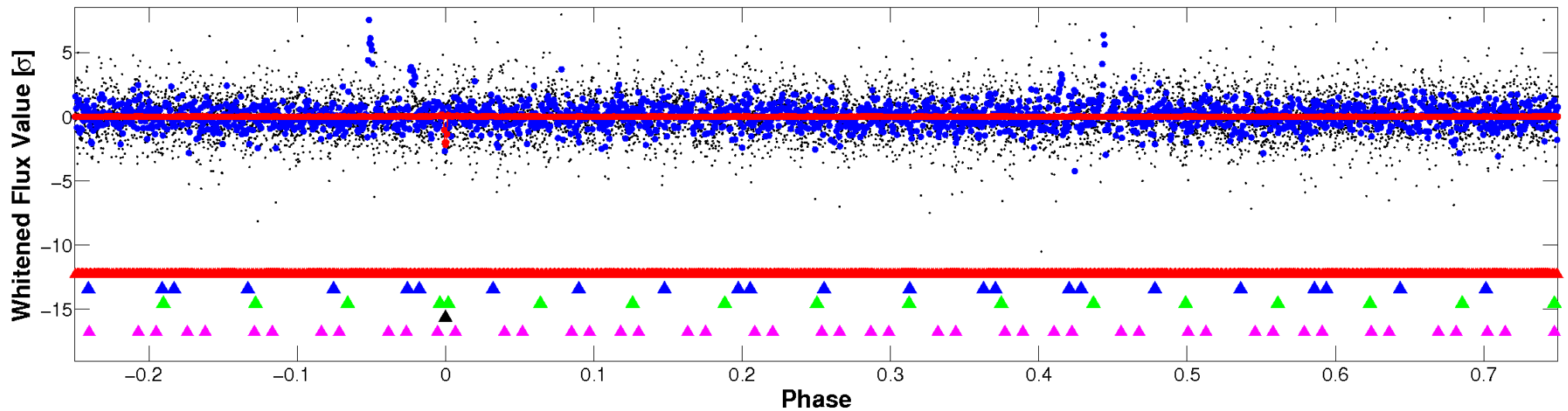


Non-Whitened Vs. Whitened Light Curve

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

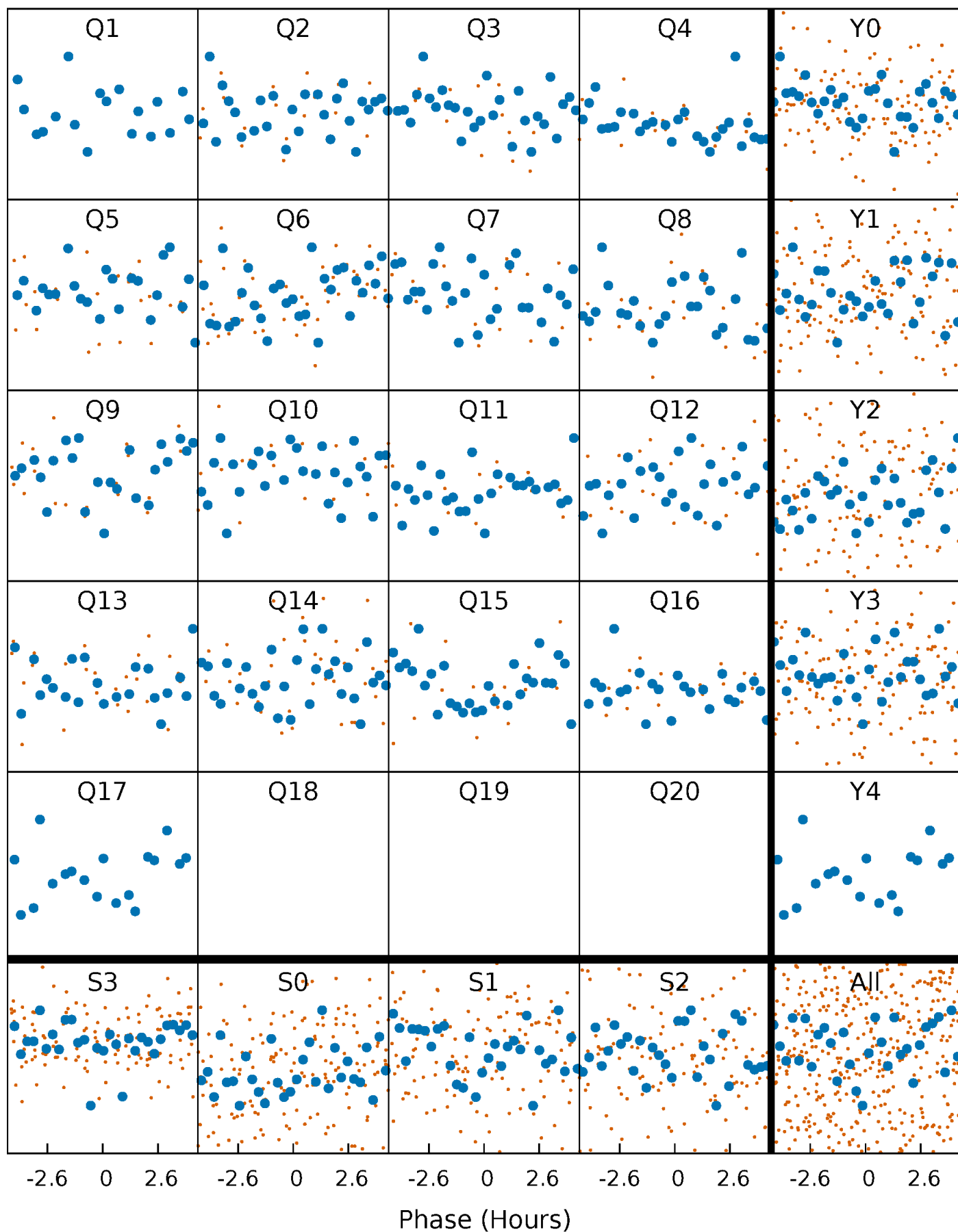


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



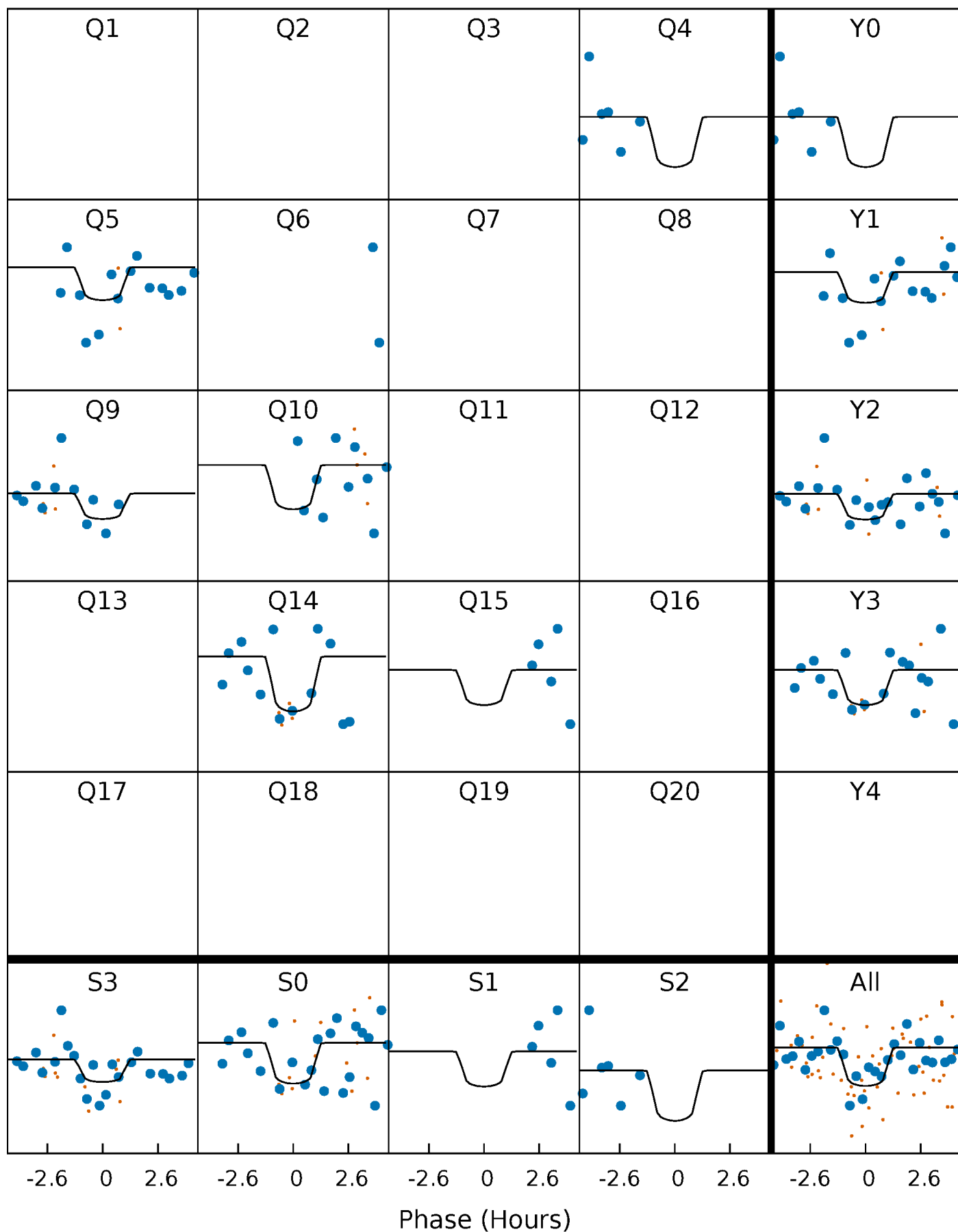
PDC Quarter-Phased Transit Curves

TCE 008019250-04 P= 43.099519 Days $T_0=153.631905$ (BKJD)



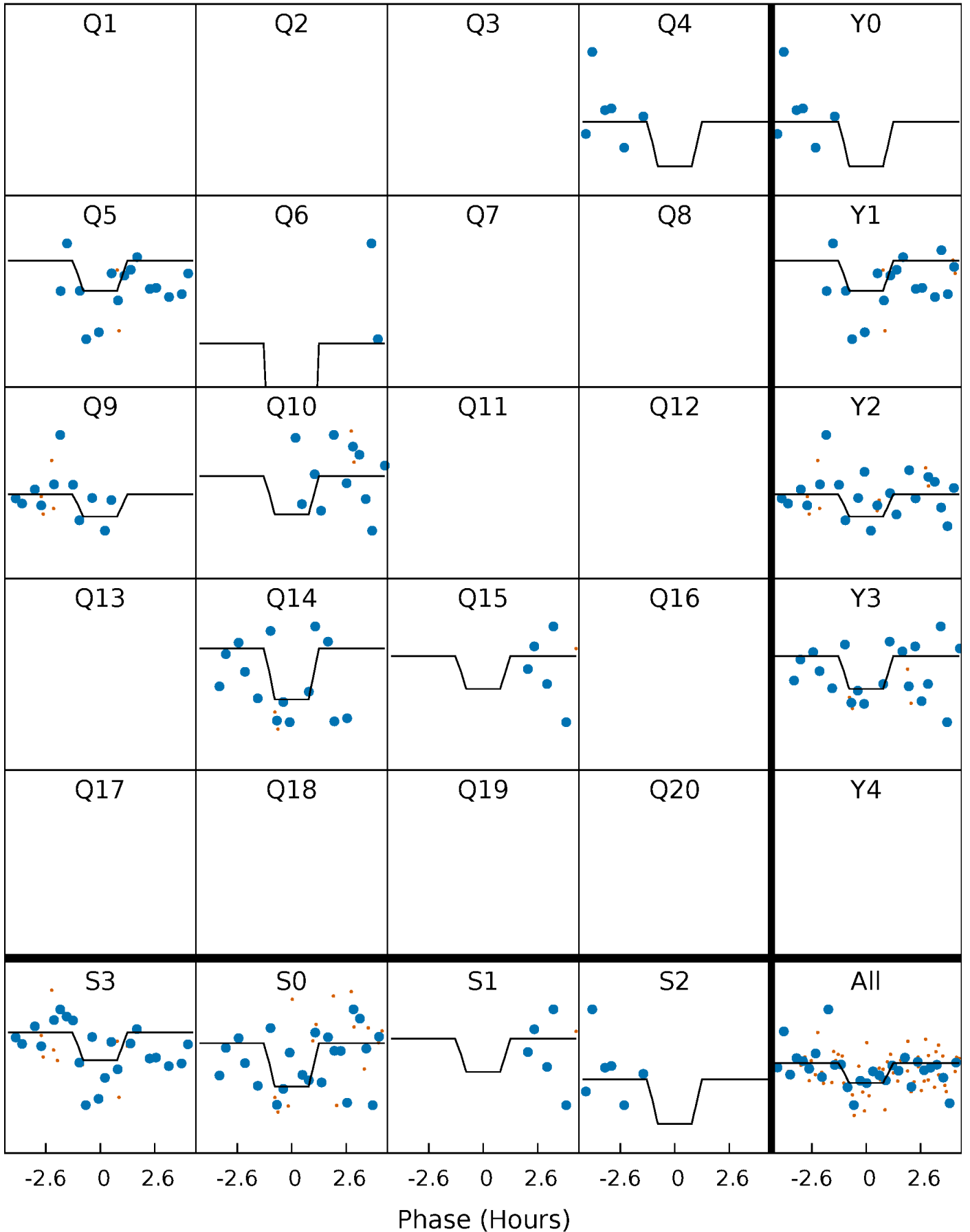
DV Quarter-Phased Transit Curves

TCE 008019250-04 P= 43.099519 Days $T_0=153.631905$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

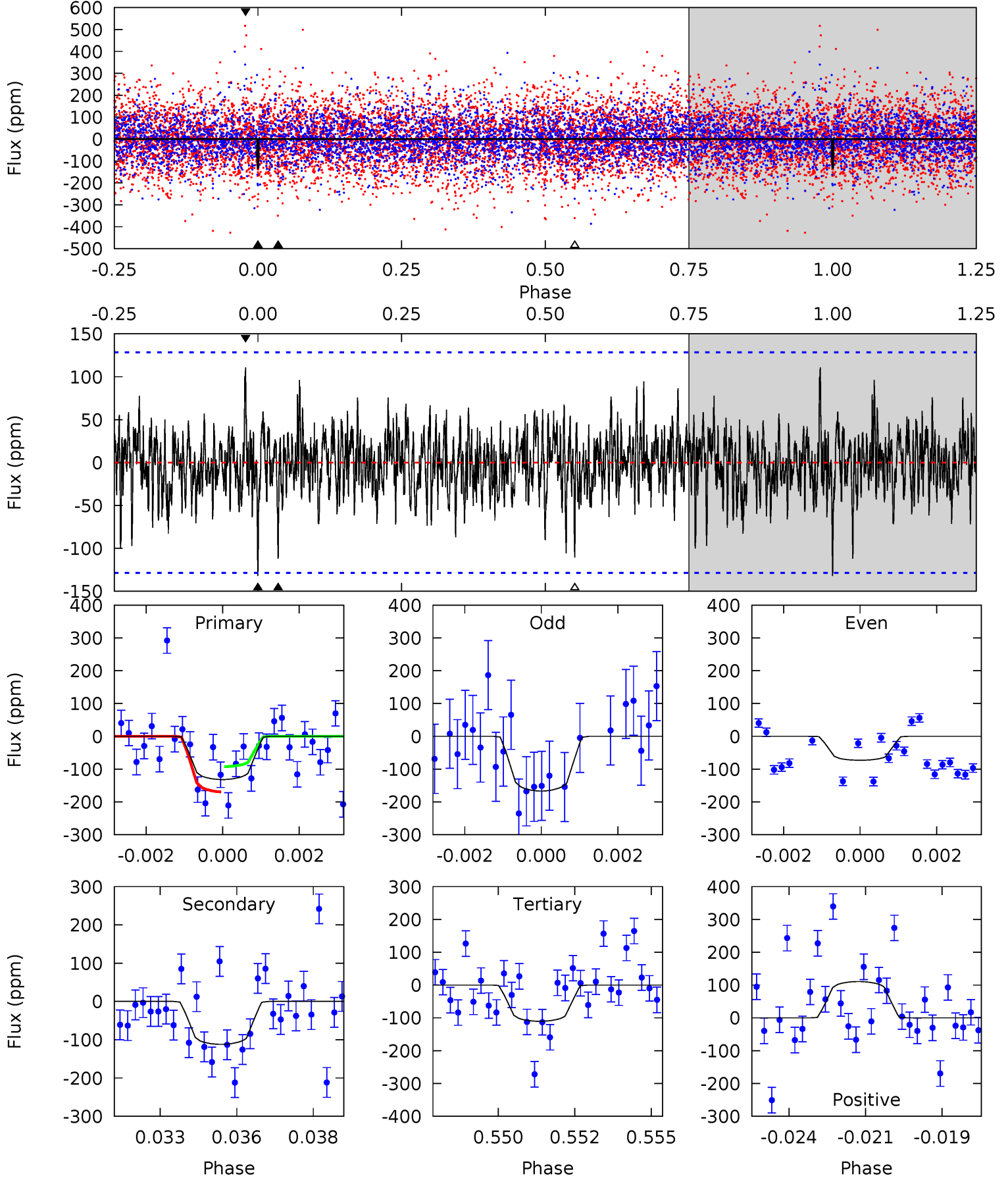
TCE 008019250-04 $P = 43.099922$ Days $T_0 = 153.625830$ (BKJD)



DV Model-Shift Uniqueness Test

008019250-04, P = 43.099519 Days, E = 110.532386 Days

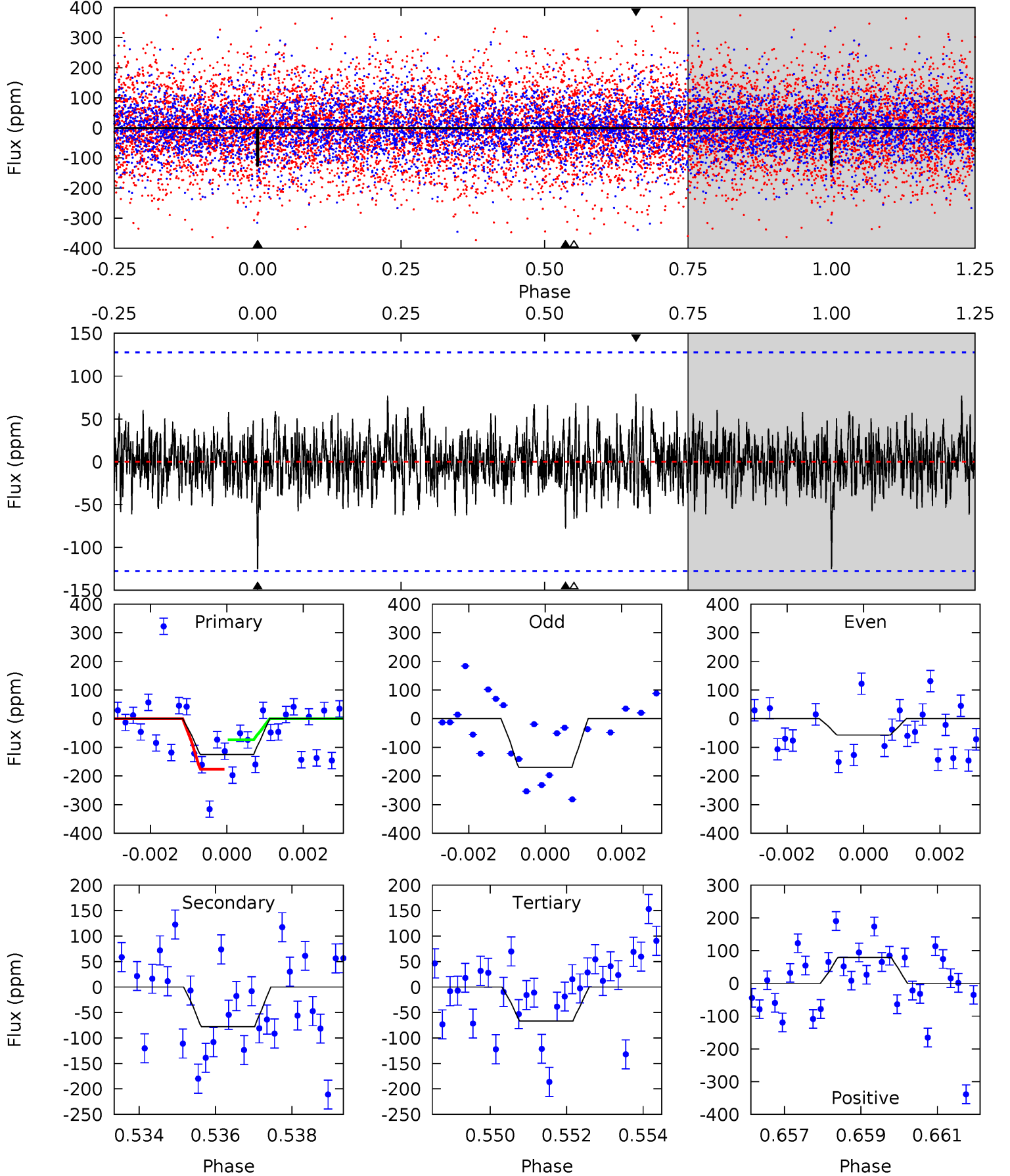
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.43	4.62	4.55	4.56	5.30	3.04	1.23	0.88	0.87	0.07	0.06	1.89	0.89	0.46	1.58



Alt Model-Shift Uniqueness Test

008019250-04, P = 43.099922 Days, E = 110.525908 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.20	3.23	2.76	3.29	5.31	3.06	0.96	2.44	1.91	0.47	-0.06	2.31	1.03	0.39	2.14



Stellar Parameters For KIC 008019250

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7502^{+67}_{-97}	$3.790^{+0.192}_{-0.112}$	$0.360^{+0.100}_{-0.200}$	$3.105^{+0.545}_{-0.818}$	$2.165^{+0.168}_{-0.287}$	$0.102^{+0.127}_{-0.034}$
	+1%/-1%	+5%/-3%	+28%/-56%	+18%/-26%	+8%/-13%	+125%/-33%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 008019250-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-112 ± 24	$6.07^{+5.46}_{-3.87}$	1453^{+73}_{-84}	5590^{+4597}_{-1319}	167^{+1010}_{-124}
Alt.	-78 ± 24	$5.54^{+5.58}_{-3.53}$	1451^{+70}_{-86}	5247^{+4371}_{-1213}	128^{+884}_{-95}

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 $A_{obs} \gg 1.0$

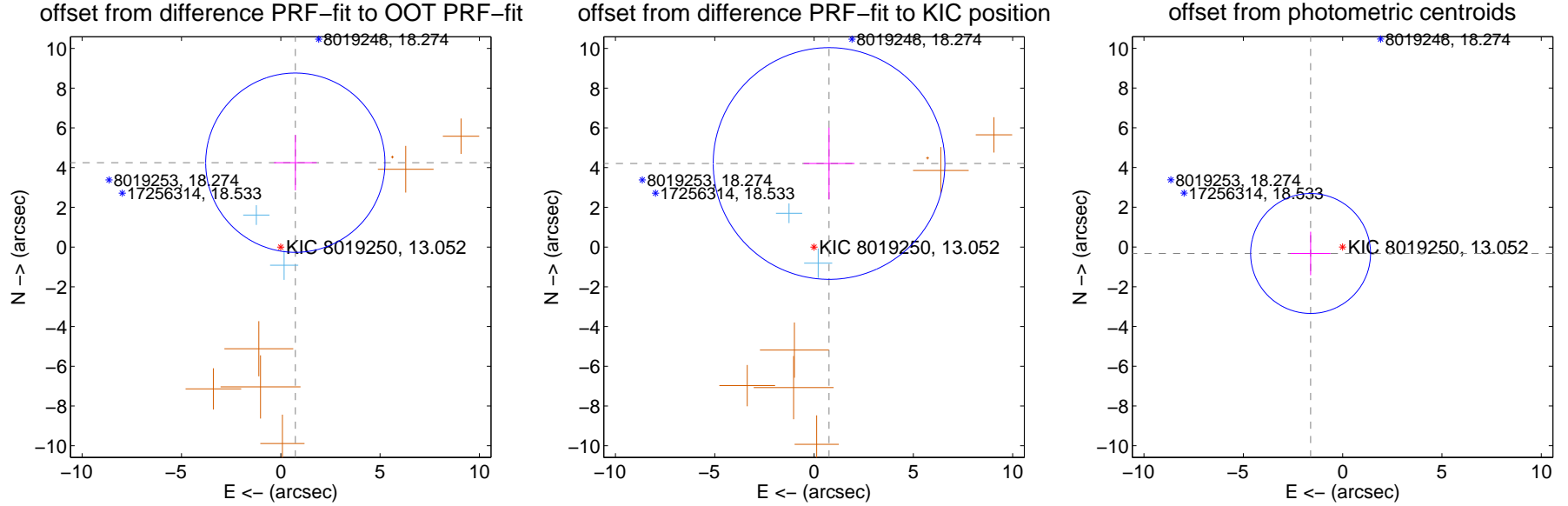
DV Centroid Data

Supplemental centroid analysis for 008019250-04. Kepler magnitude: 13.05. Transit SNR 7.88

There are 2 quarters with good PRF difference image offsets

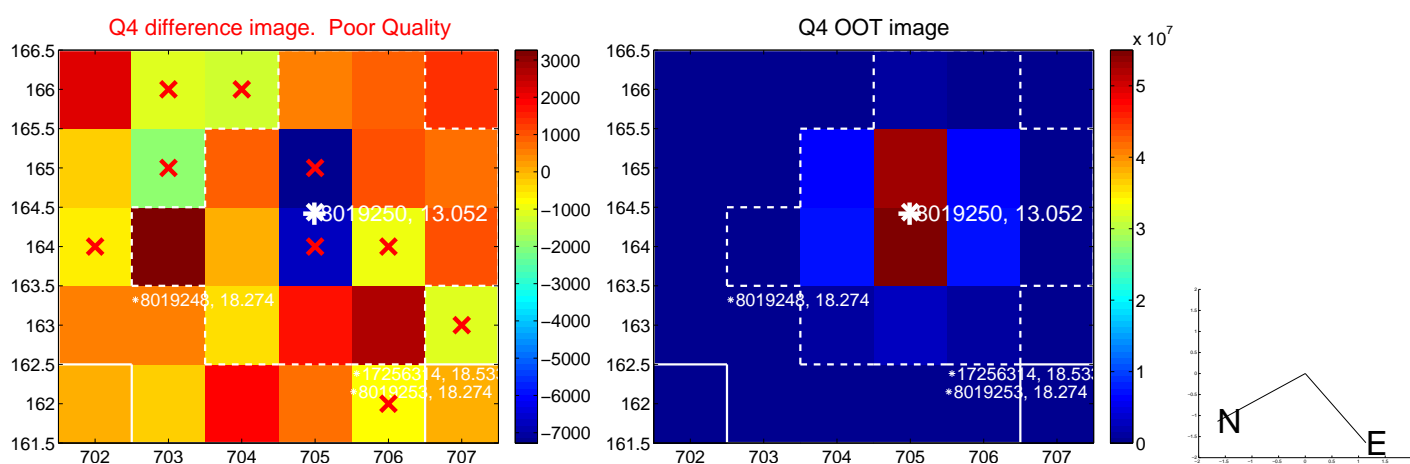
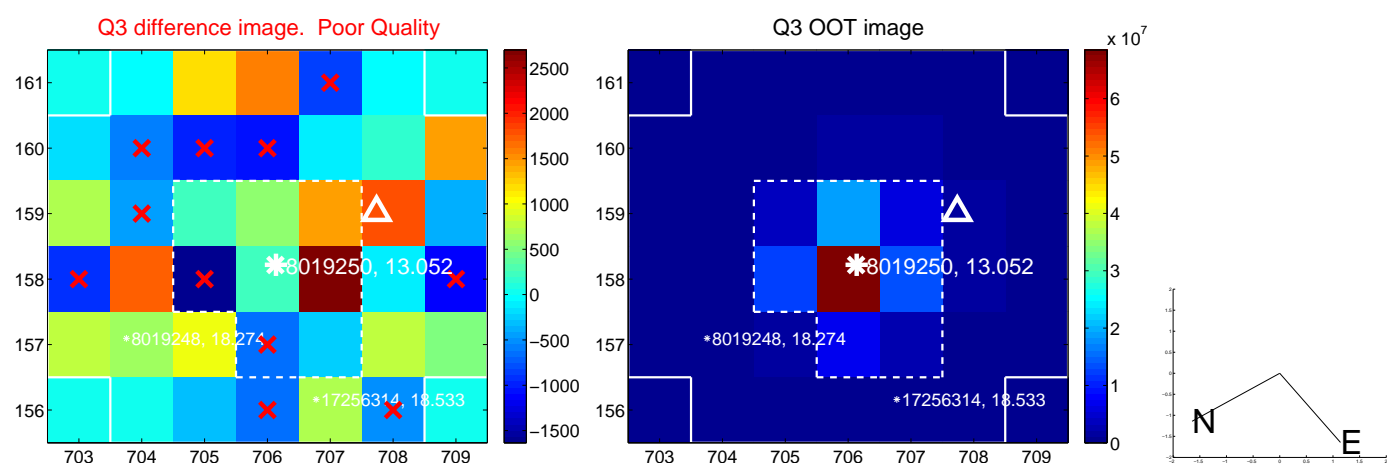
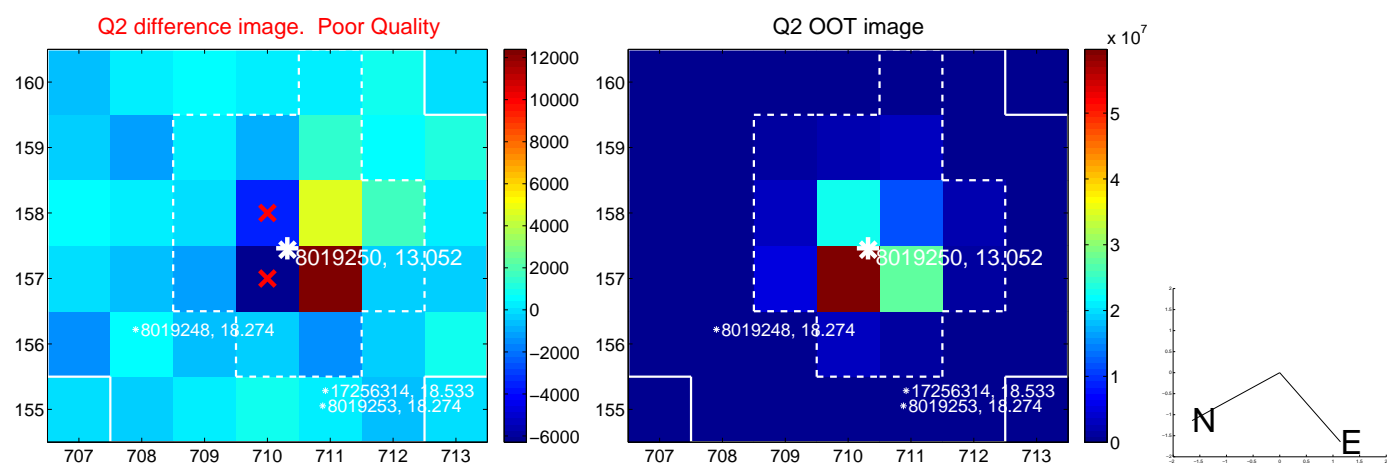
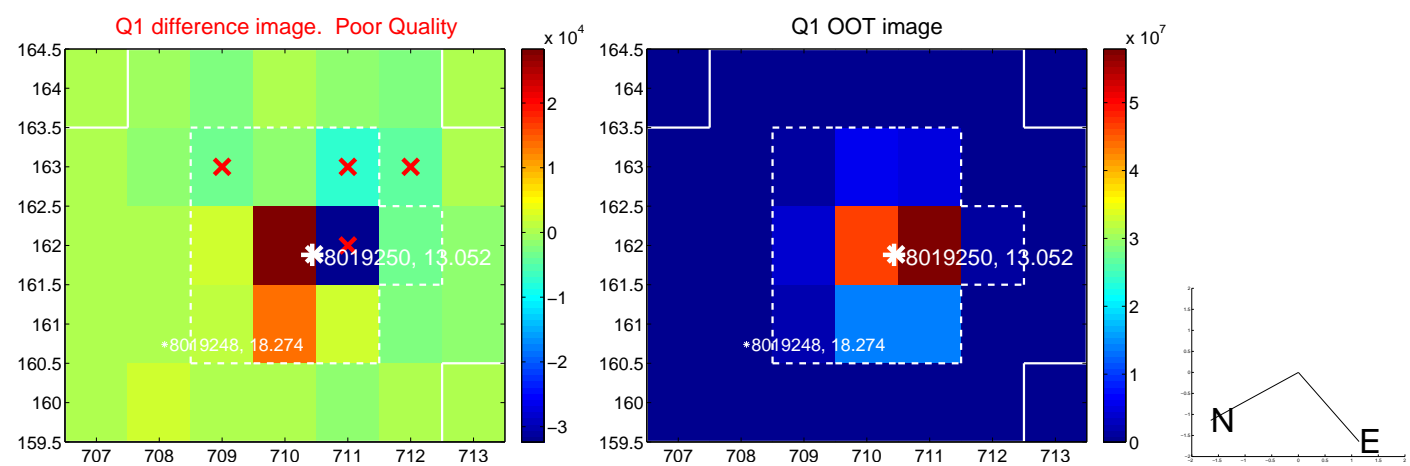
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.312 ± 1.505	2.87	-0.733 ± 1.076	4.249 ± 1.394
PRF-fit source offset from KIC position	4.274 ± 1.944	2.20	-0.755 ± 1.282	4.207 ± 1.804
photometric centroid source offset	1.65 ± 1.01	1.64	1.61 ± 1.00	-0.33 ± 1.09

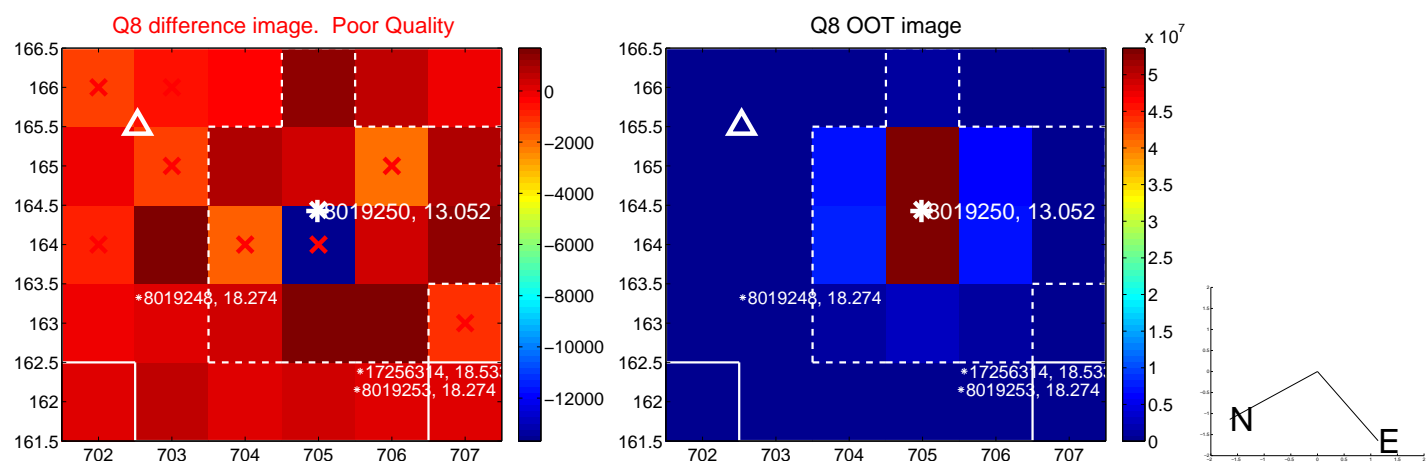
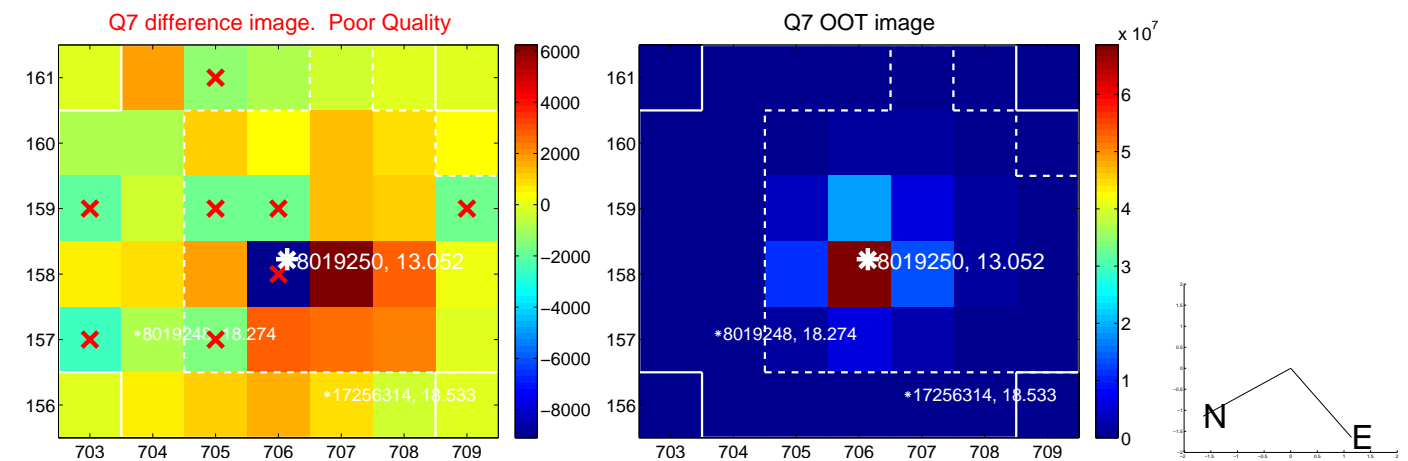
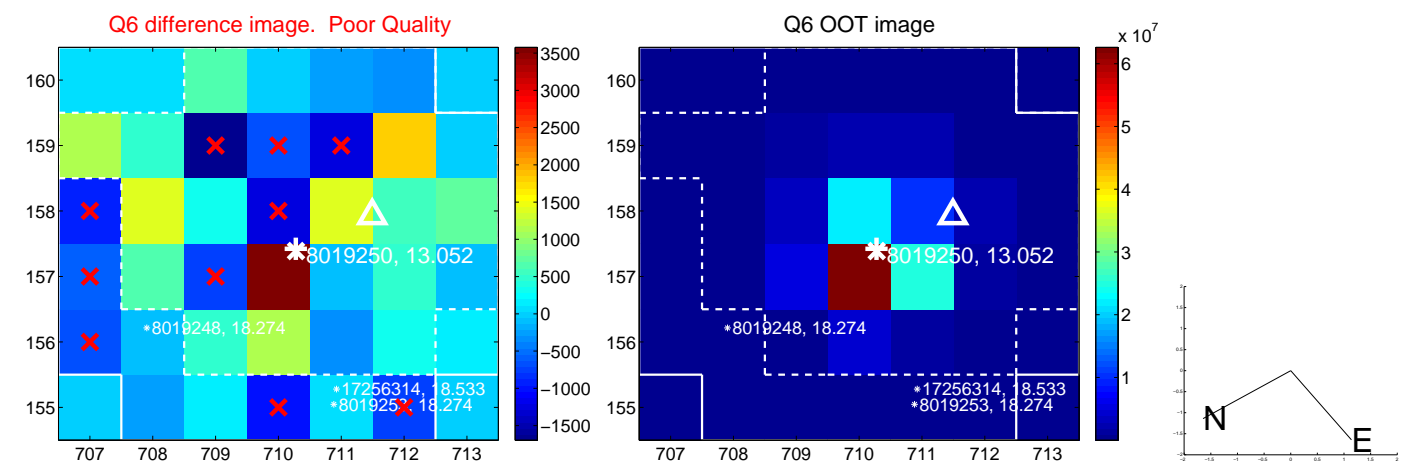
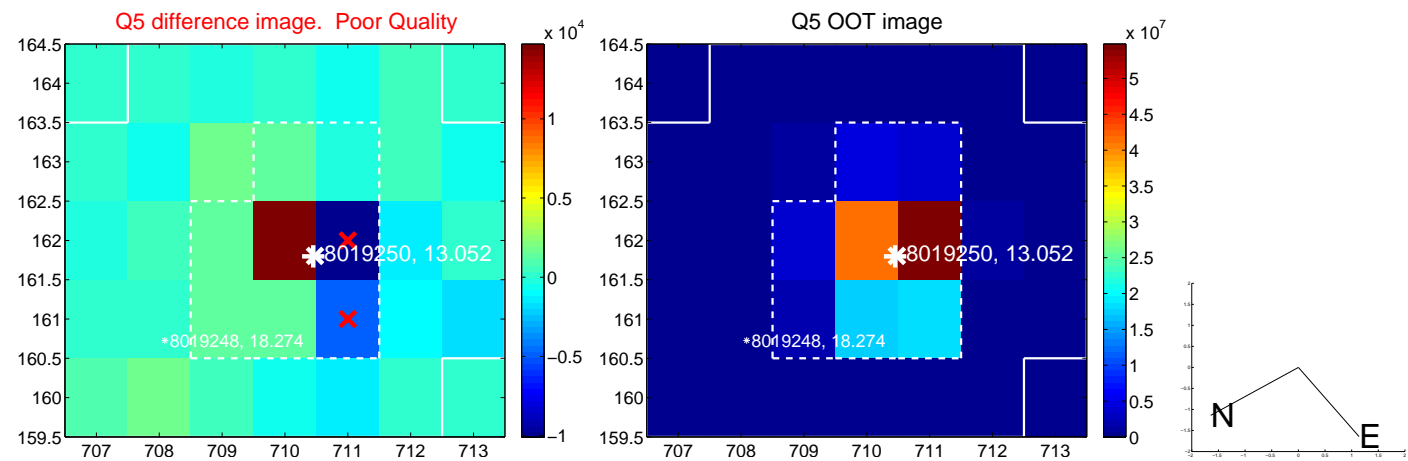


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

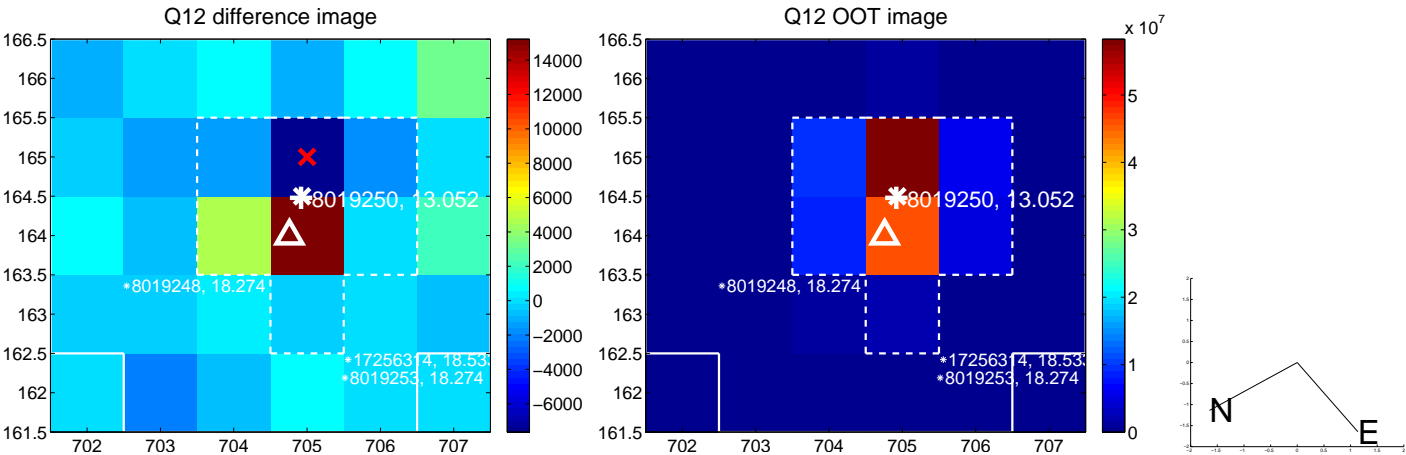
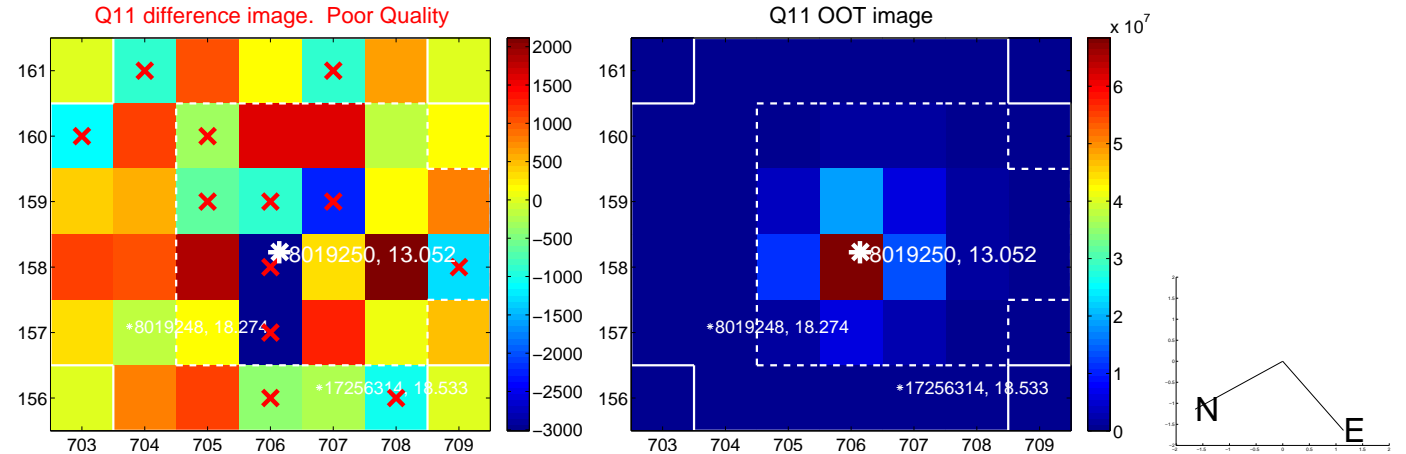
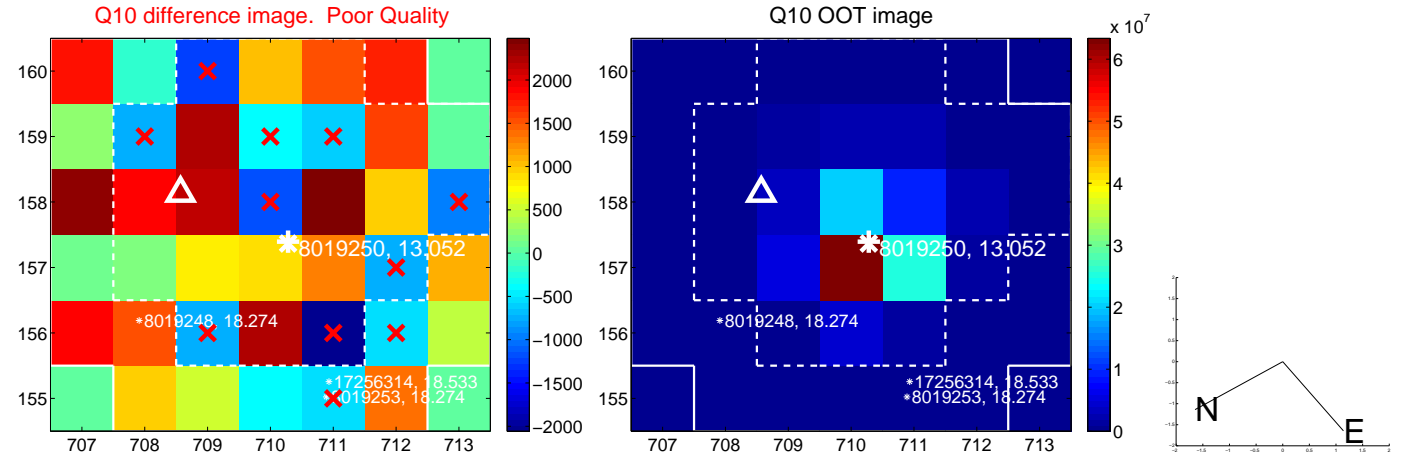
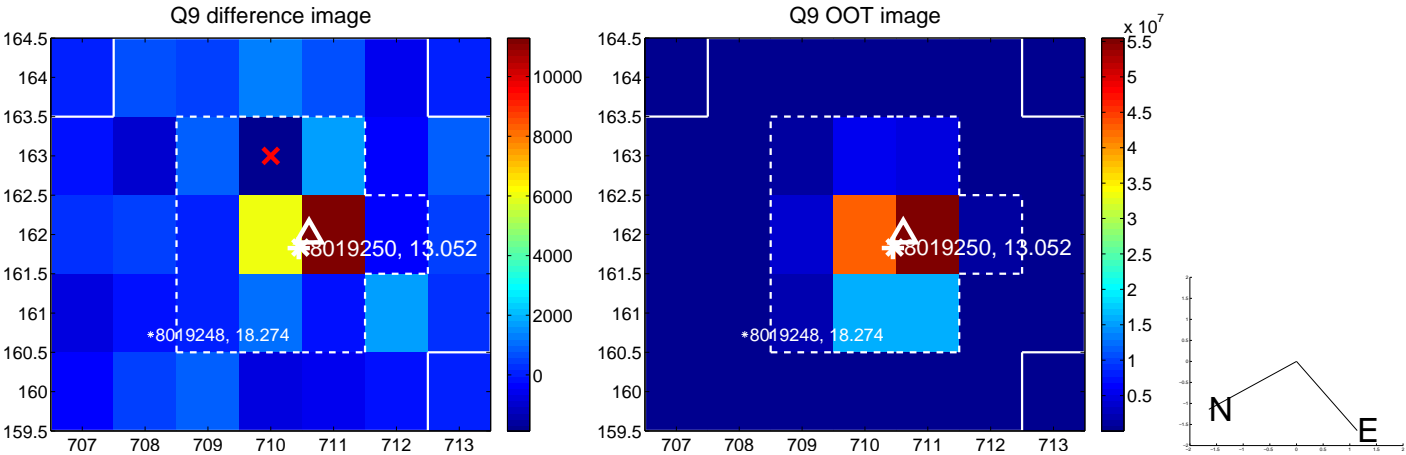
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



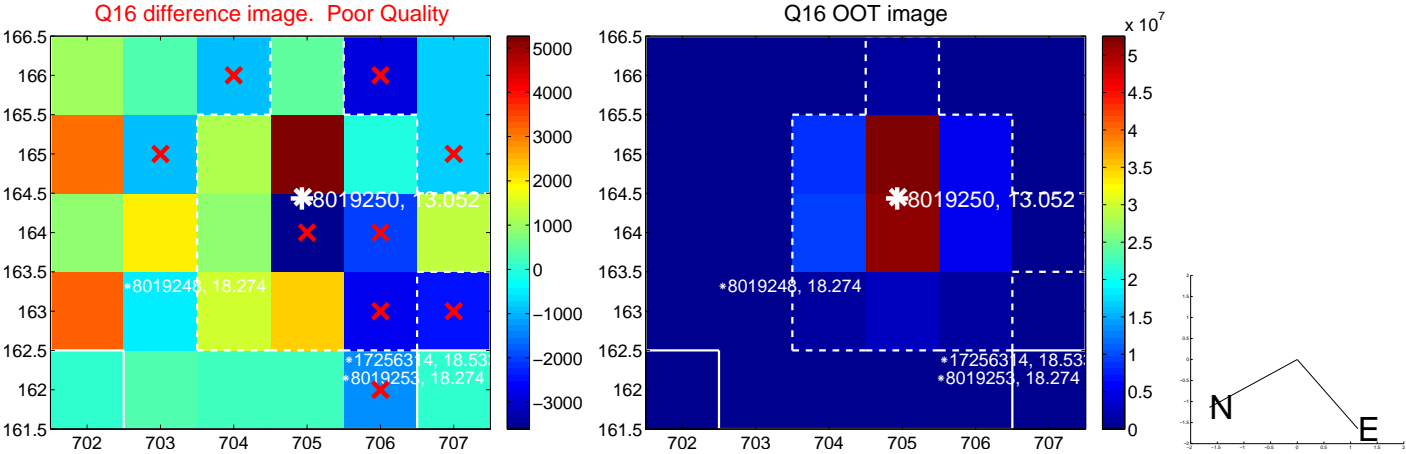
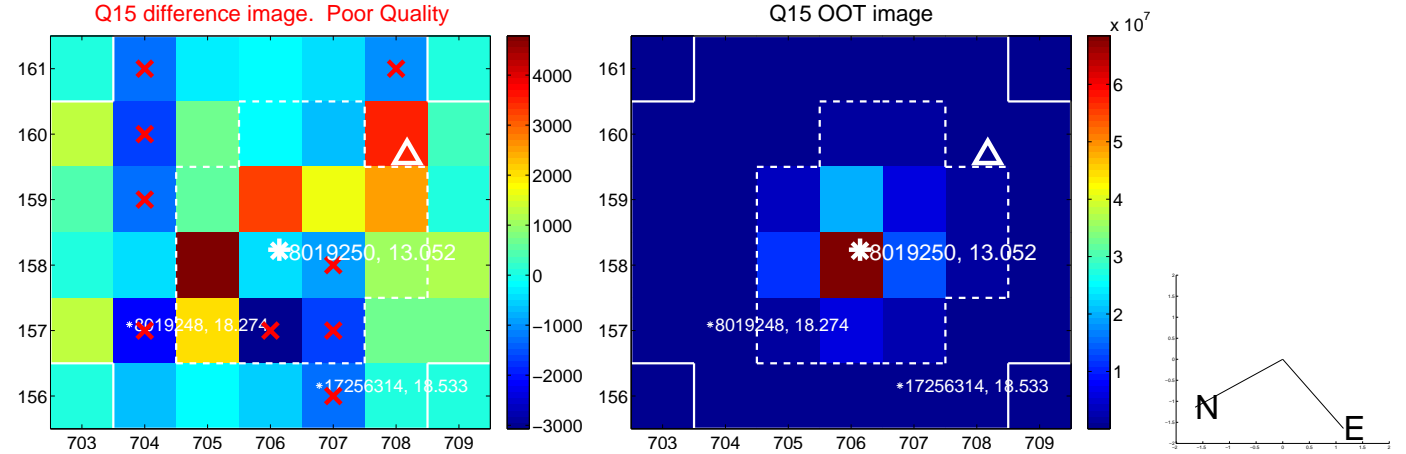
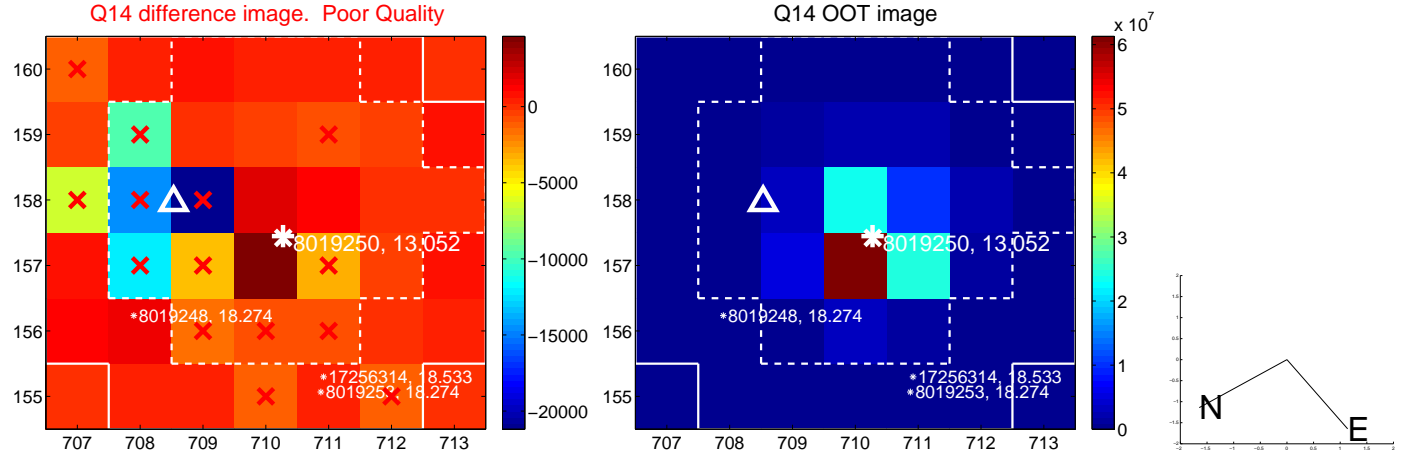
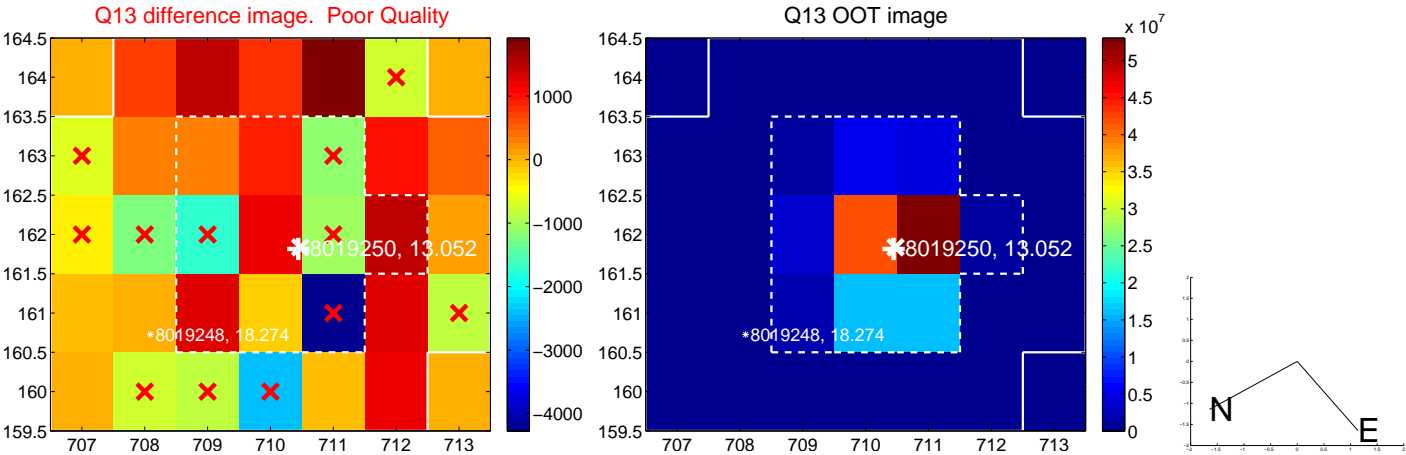
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



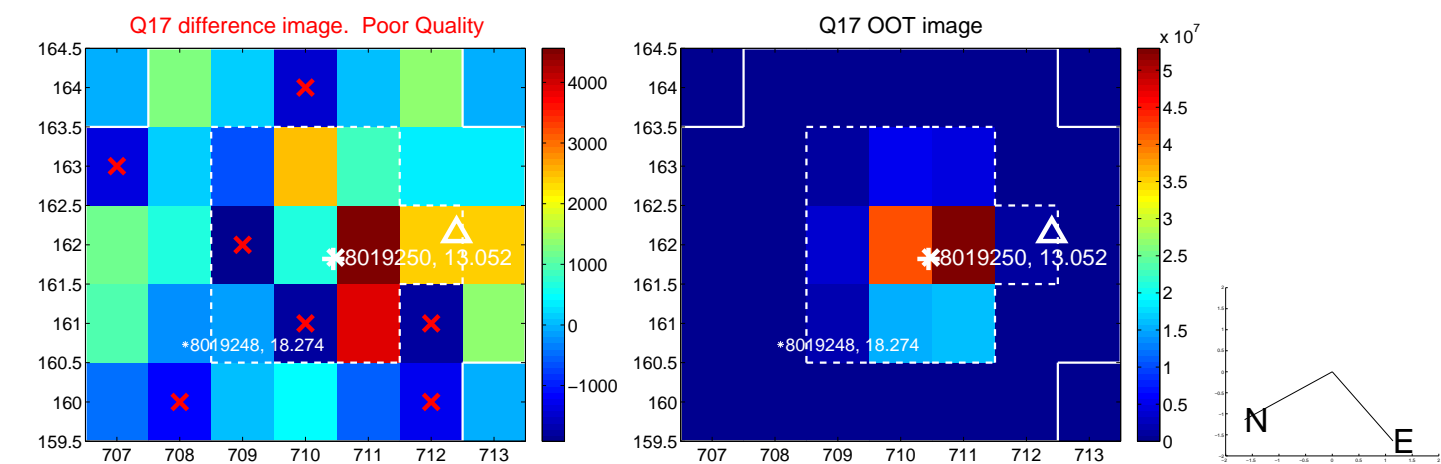
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



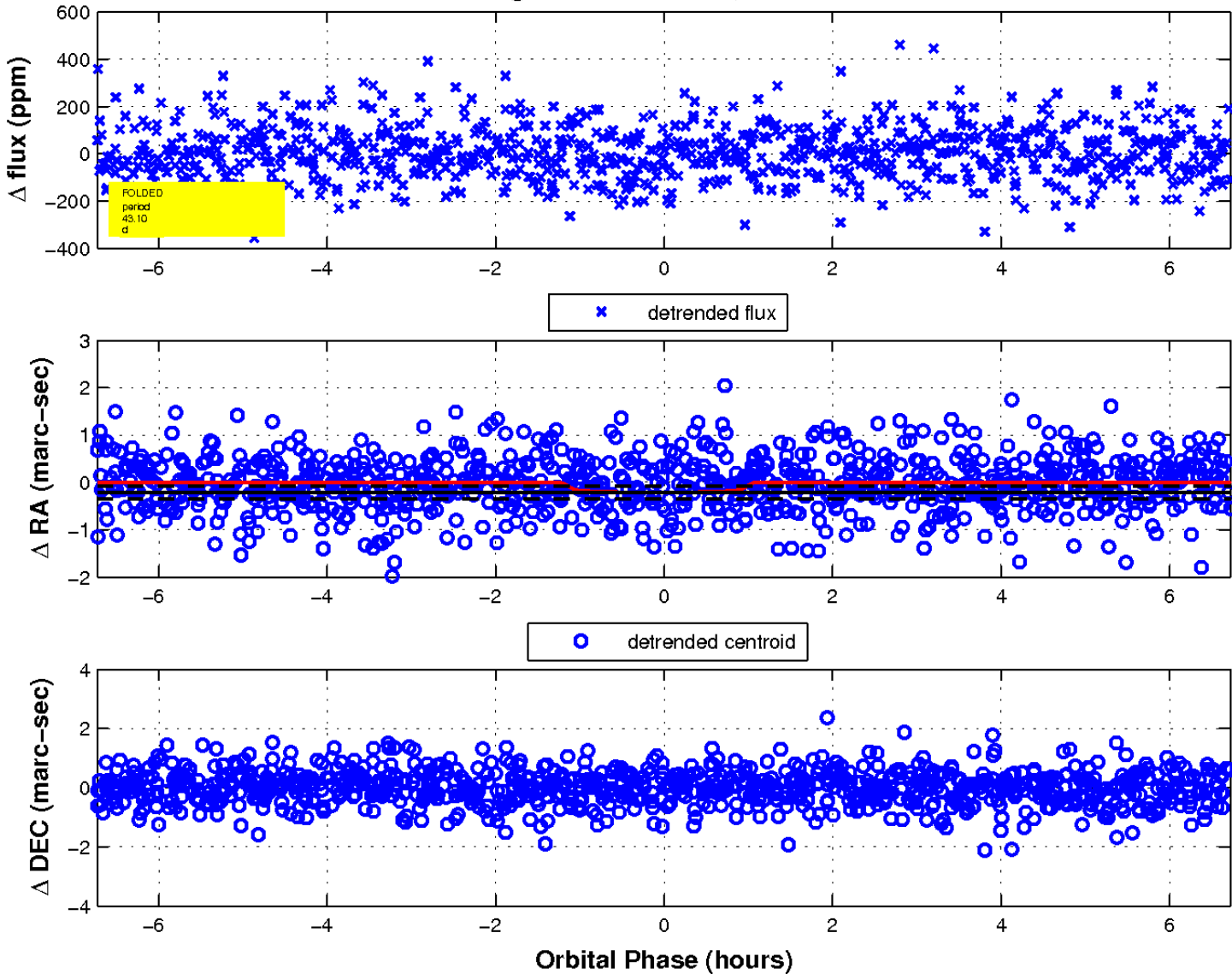
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

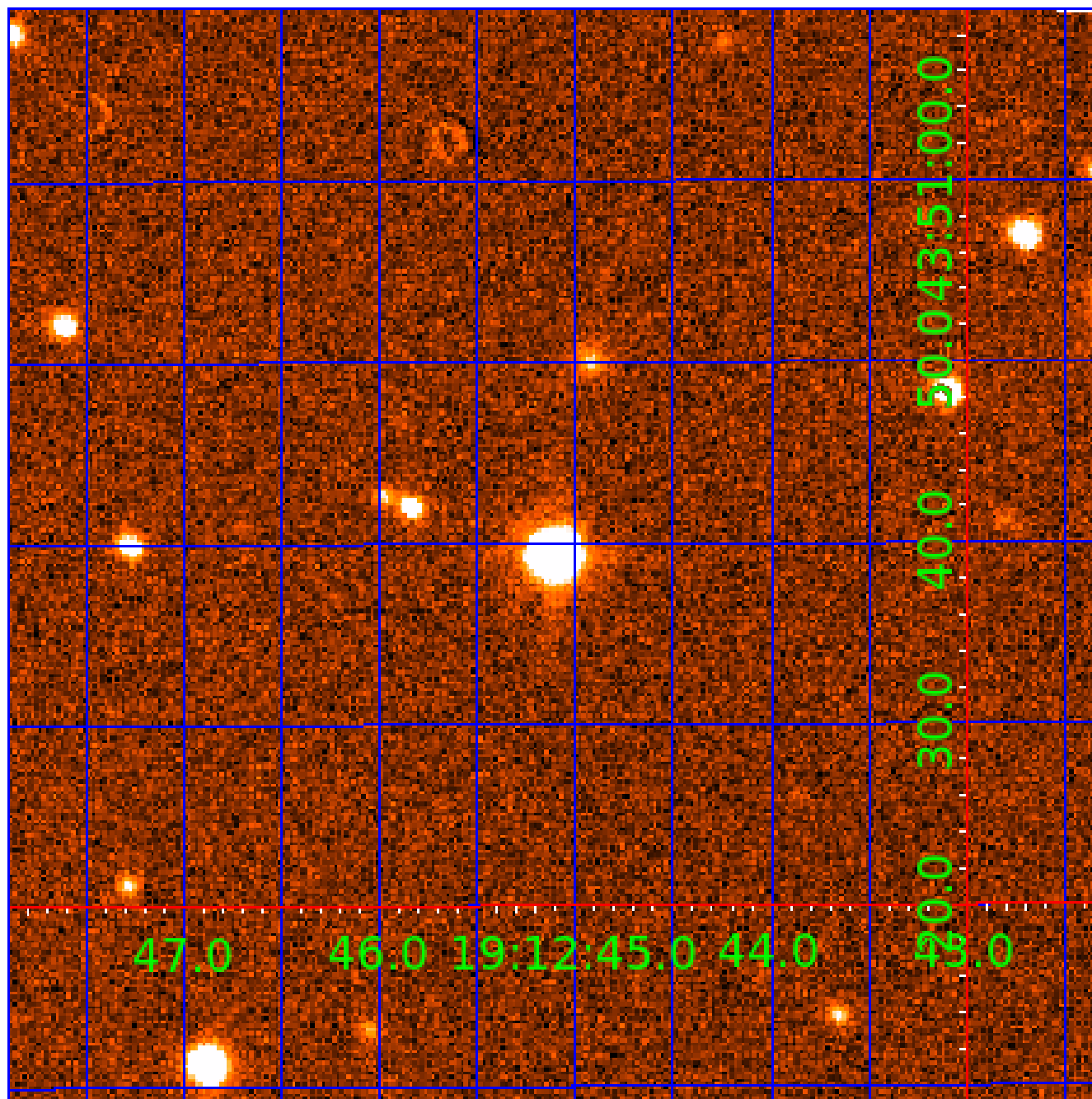


fluxWeightedCentroids, Planet 4 of 5



UKIRT Image

Declination



KIC 008019250

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})
008019250-01	OBS	No	1.234863	132.389647	14.1	8.430	8.8	12.7	3.10	7502	1.42	32172.55
008019250-02	OBS	No	59.841252	172.102977	229.7	4.690	11.1	10.8	3.10	7502	5.12	182.10
008019250-04	OBS	No	43.099519	153.631905	134.4	2.243	8.7	7.9	3.10	7502	4.06	282.06
008019250-05	OBS	No	30.507126	134.580259	187.5	1.195	8.4	7.1	3.10	7502	5.06	447.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008019250-01	OBS	FP	0.00	1	0	0	0	LPP_DV
008019250-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008019250-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—HALO_GHOST
008019250-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

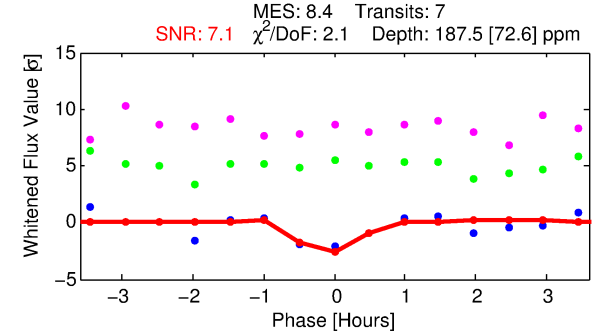
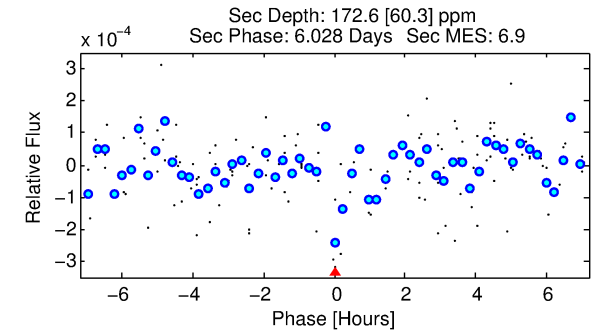
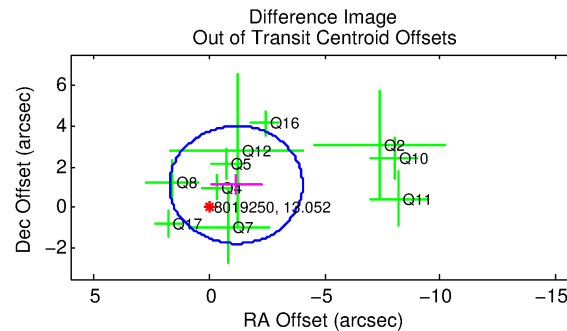
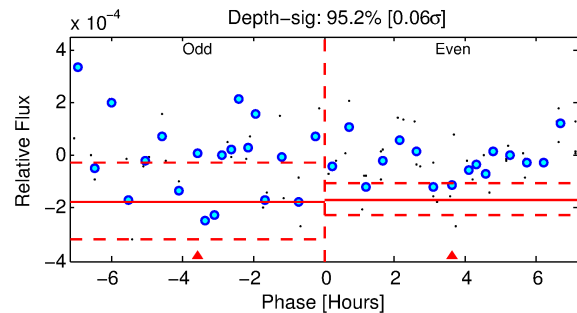
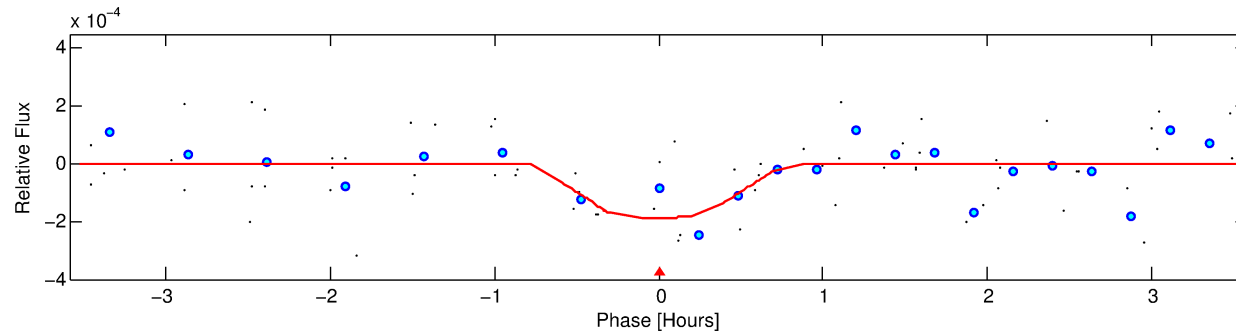
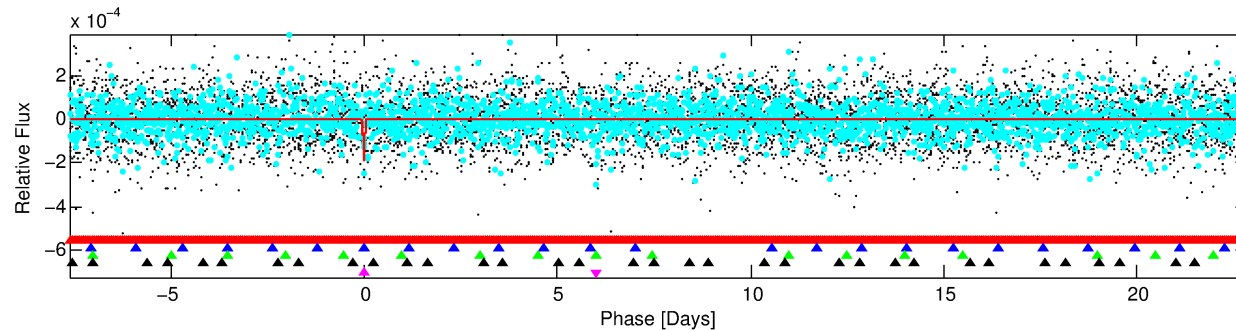
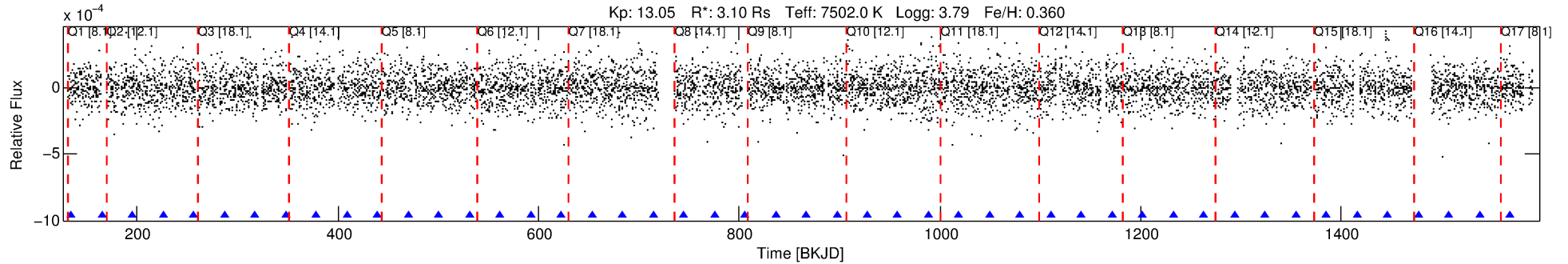
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008019250-05

No Significant Match Found

DV One-Page Summary

KIC: 8019250 Candidate: 5 of 5 Period: 30.507 d



DV Fit Results:

Period = 30.50713 [0.00037] d
Epoch = 134.5803 [0.0109] BKJD
Rp/R* = 0.0149 [0.0407]
a/R* = 81.87 [1431.75]
b = 0.92 [2.80]
Seff = 447.14 [155.14]
Teq = 1173 [102] K
Rp = 5.06 [13.86] Re
a = 0.2474 [0.0567] AU
Ag = 226.76 [1240.74] [0.18 σ]
Teffp = 7035 [9605] K [0.61 σ]

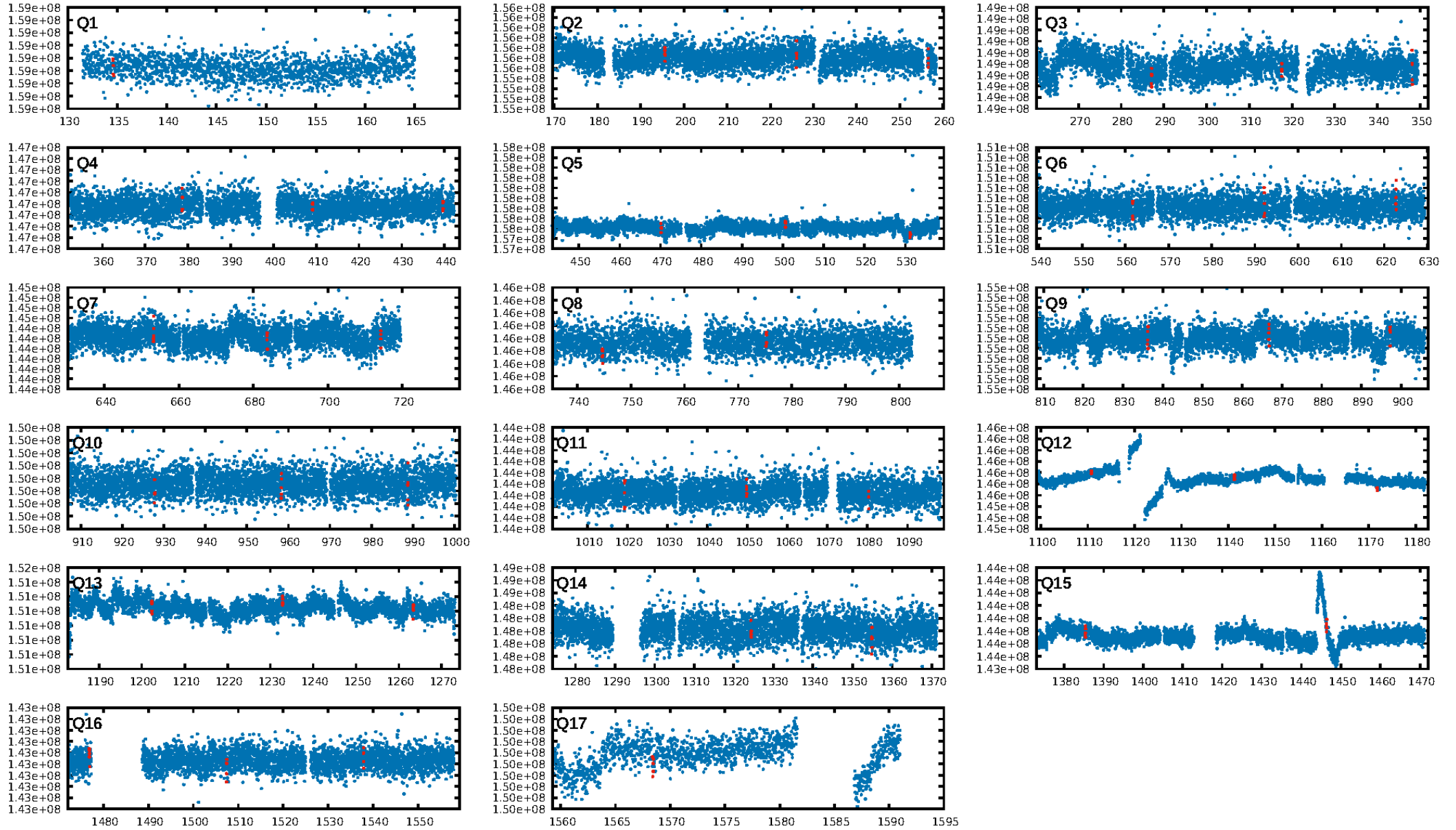
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [82.51 σ]
LongPeriod-sig: 100.0% [118.92 σ]
ModelChiSquare2-sig: 3.7%
ModelChiSquareGof-sig: 65.4%
Bootstrap-pfa: 1.68e-07
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 0.8933
Centroid-sig: N/A
Centroid-so: 0.597 arcsec [0.61 σ]
OotOffset-rm: 1.613 arcsec [1.68 σ]
OotOffset-st: 2/2/4/2 [10]
KicOffset-rm: 1.636 arcsec [1.47 σ]
KicOffset-st: 2/2/4/2 [10]
DiffImageQuality-fgm: 0.20 [2/10]
DiffImageOverlap-fno: 0.75 [12/16]

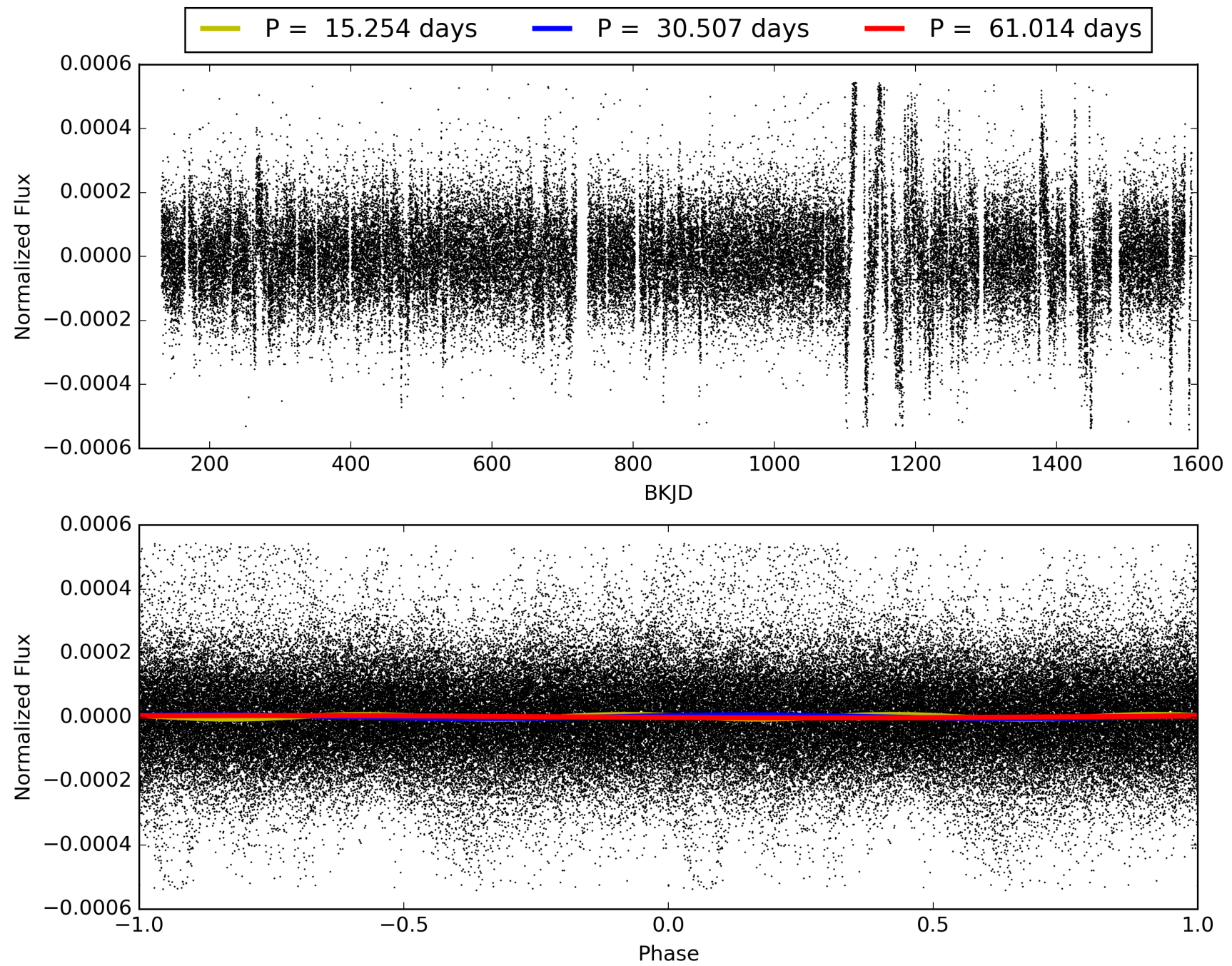
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 21:39:21 Z

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

TCE 008019250-05, PDC Light Curves

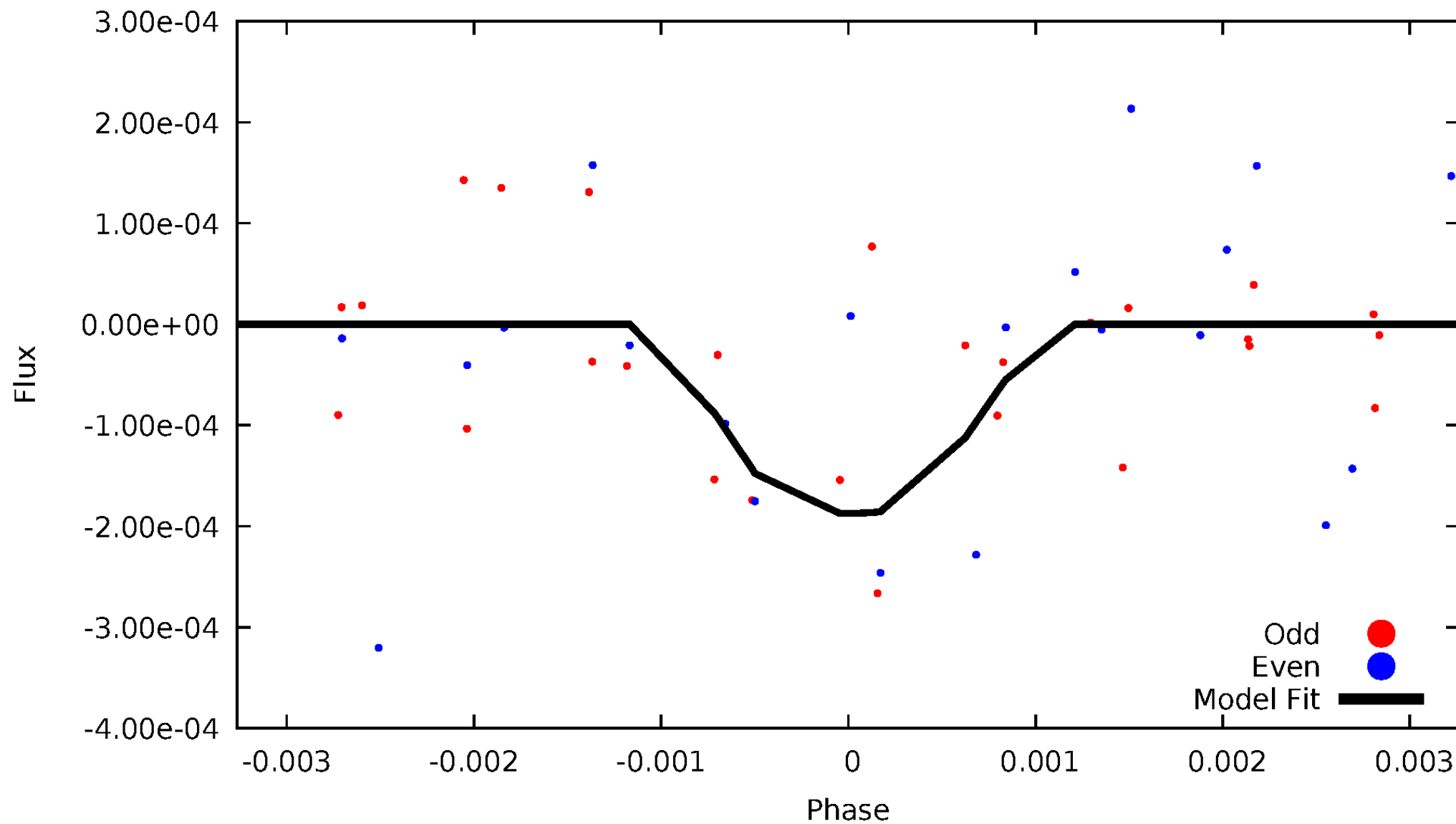


TCE 008019250-05



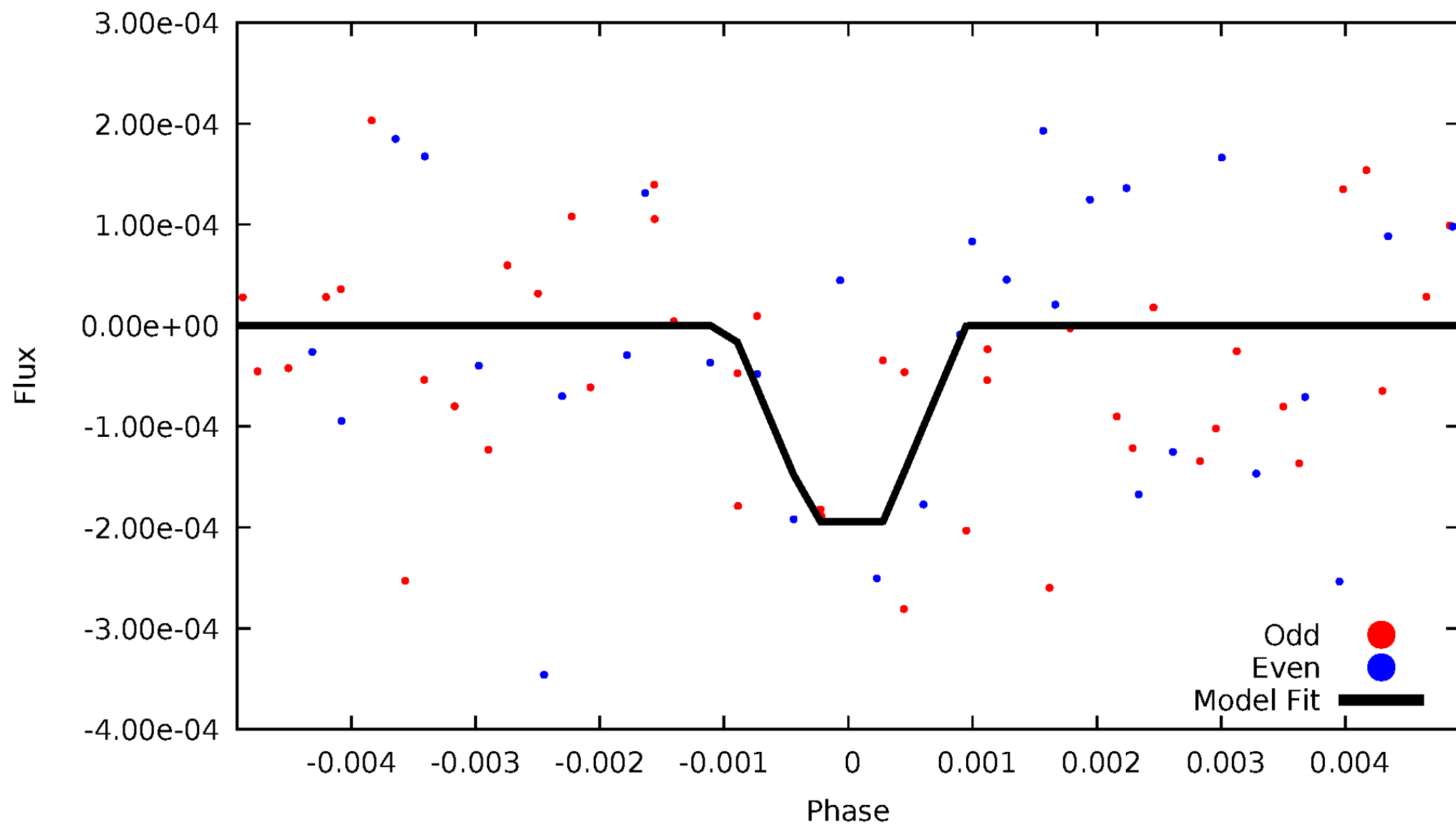
DV Odd/Even

TCE 008019250-05



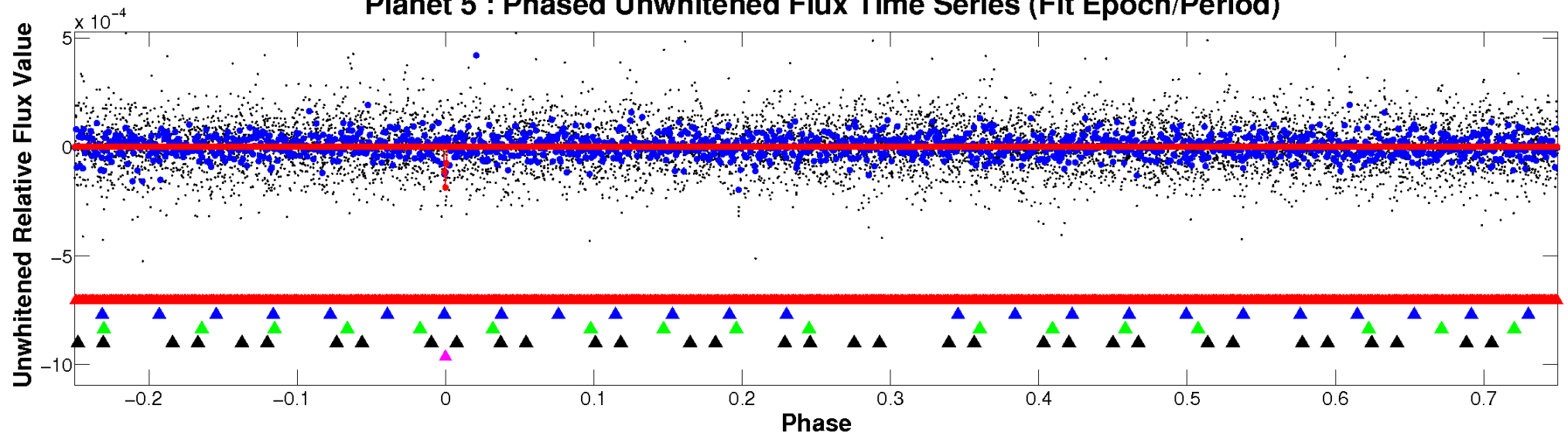
ALT Odd/Even

TCE 008019250-05

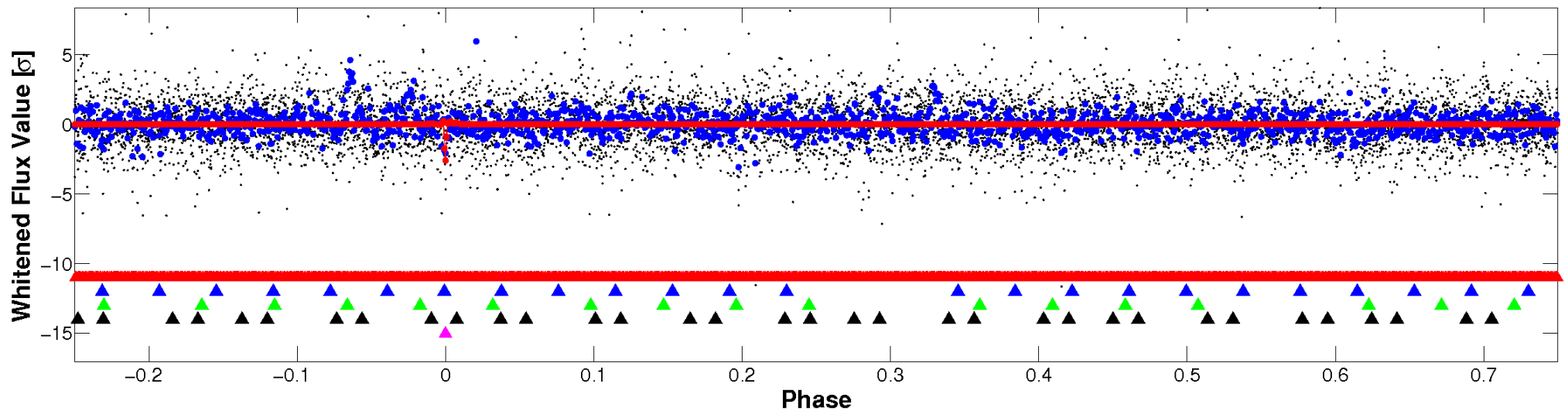


Non-Whitened Vs. Whitened Light Curve

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

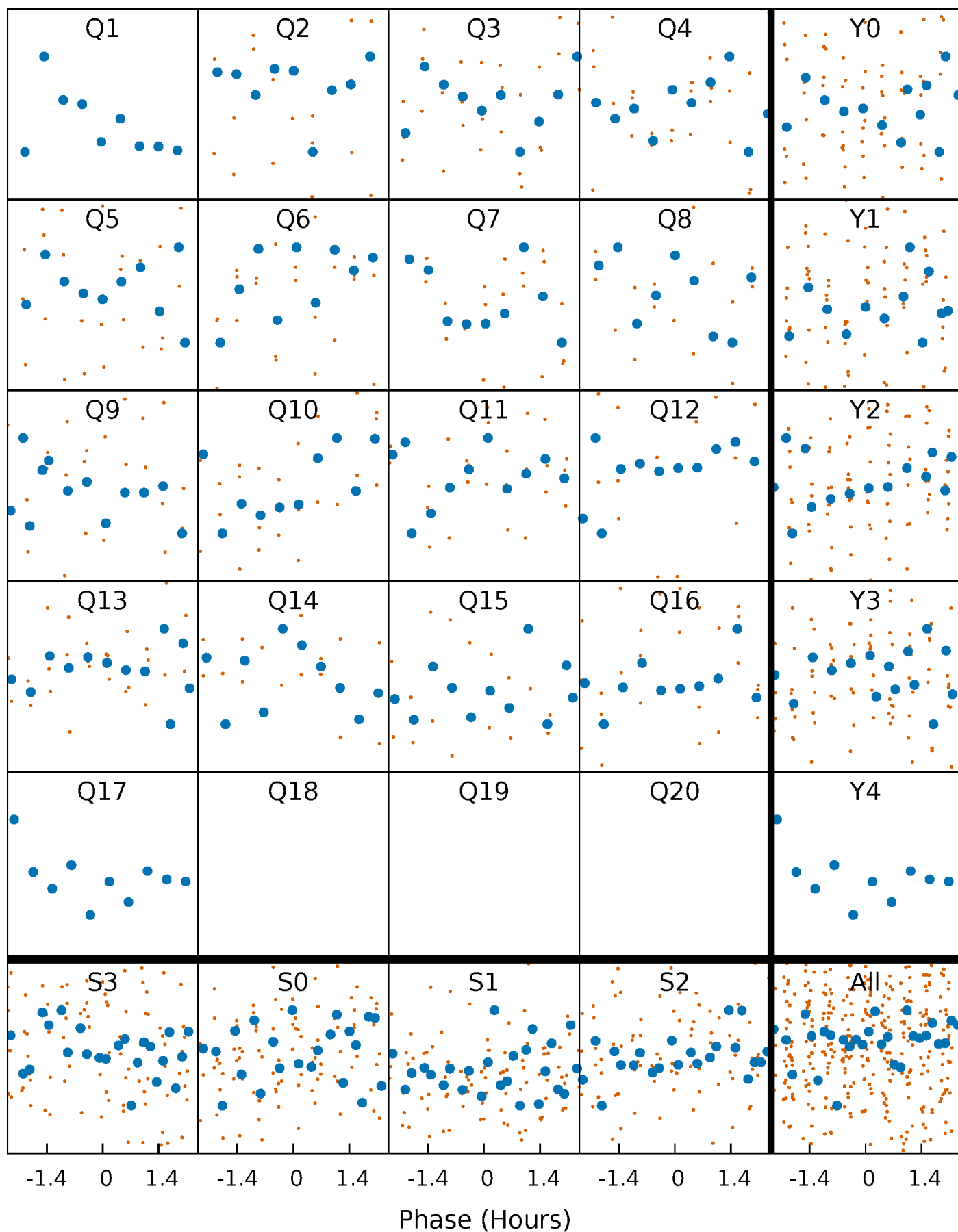


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



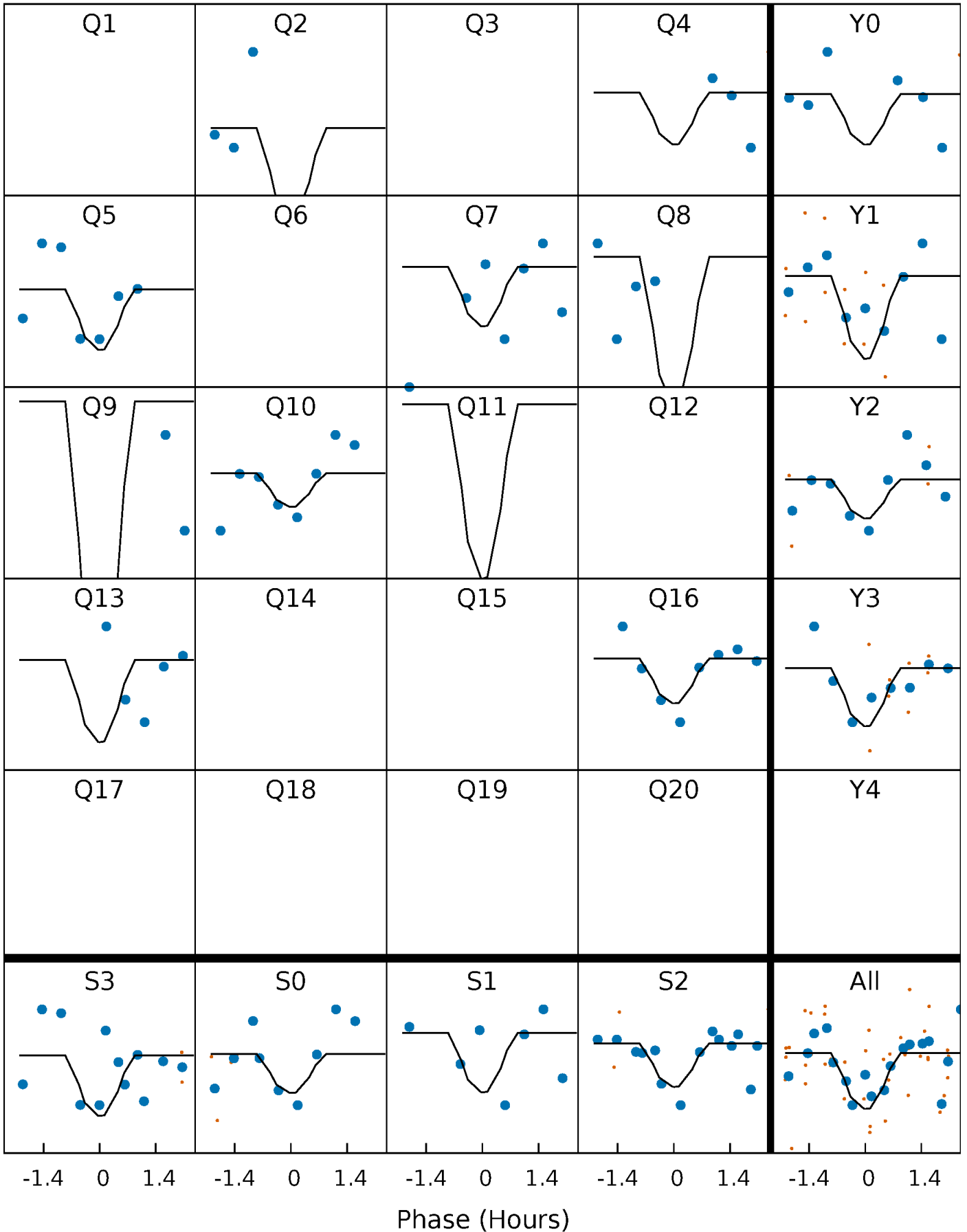
PDC Quarter-Phased Transit Curves

TCE 008019250-05 $P = 30.507126$ Days $T_0 = 134.580259$ (BKJD)



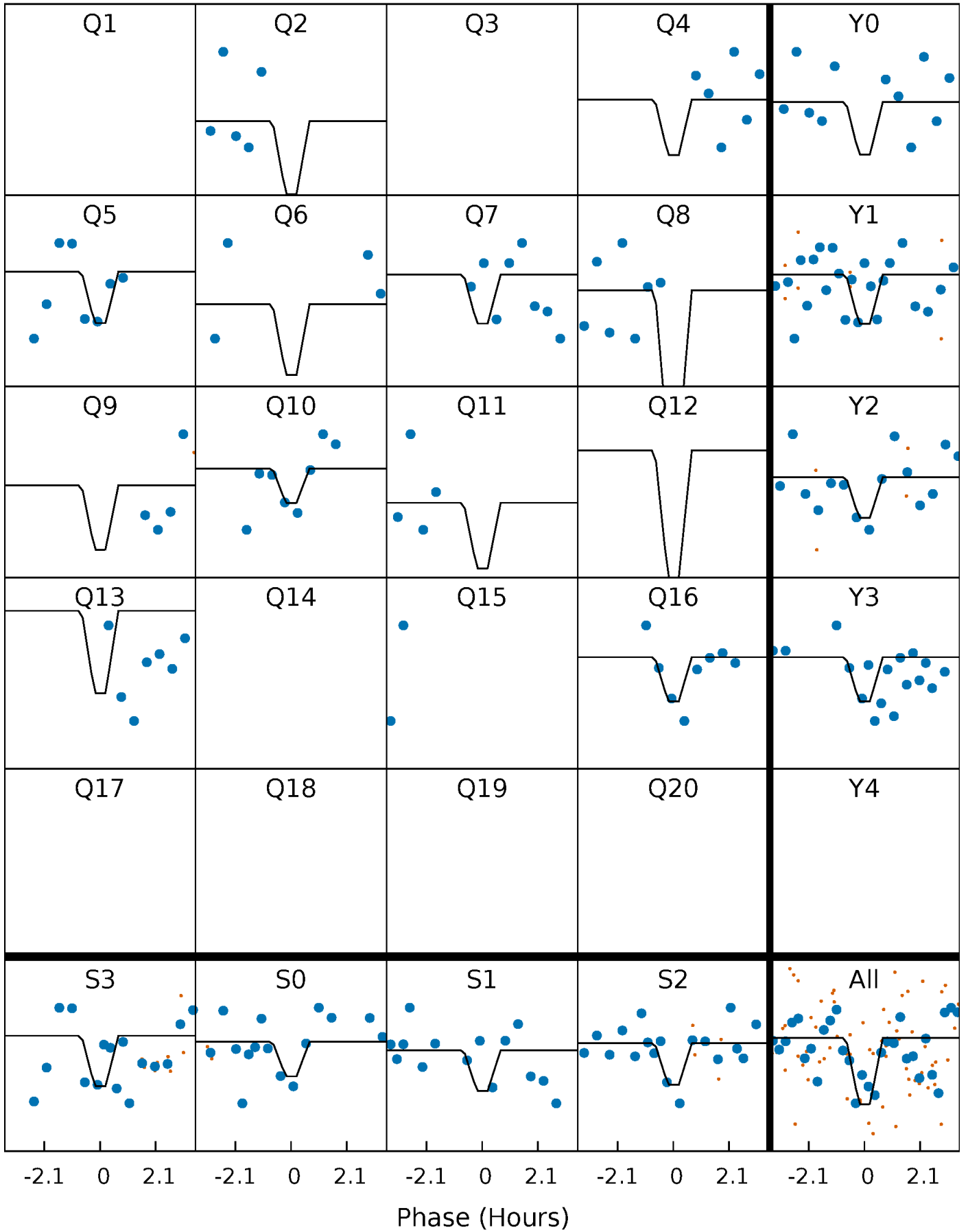
DV Quarter-Phased Transit Curves

TCE 008019250-05 $P = 30.507126$ Days $T_0 = 134.580259$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

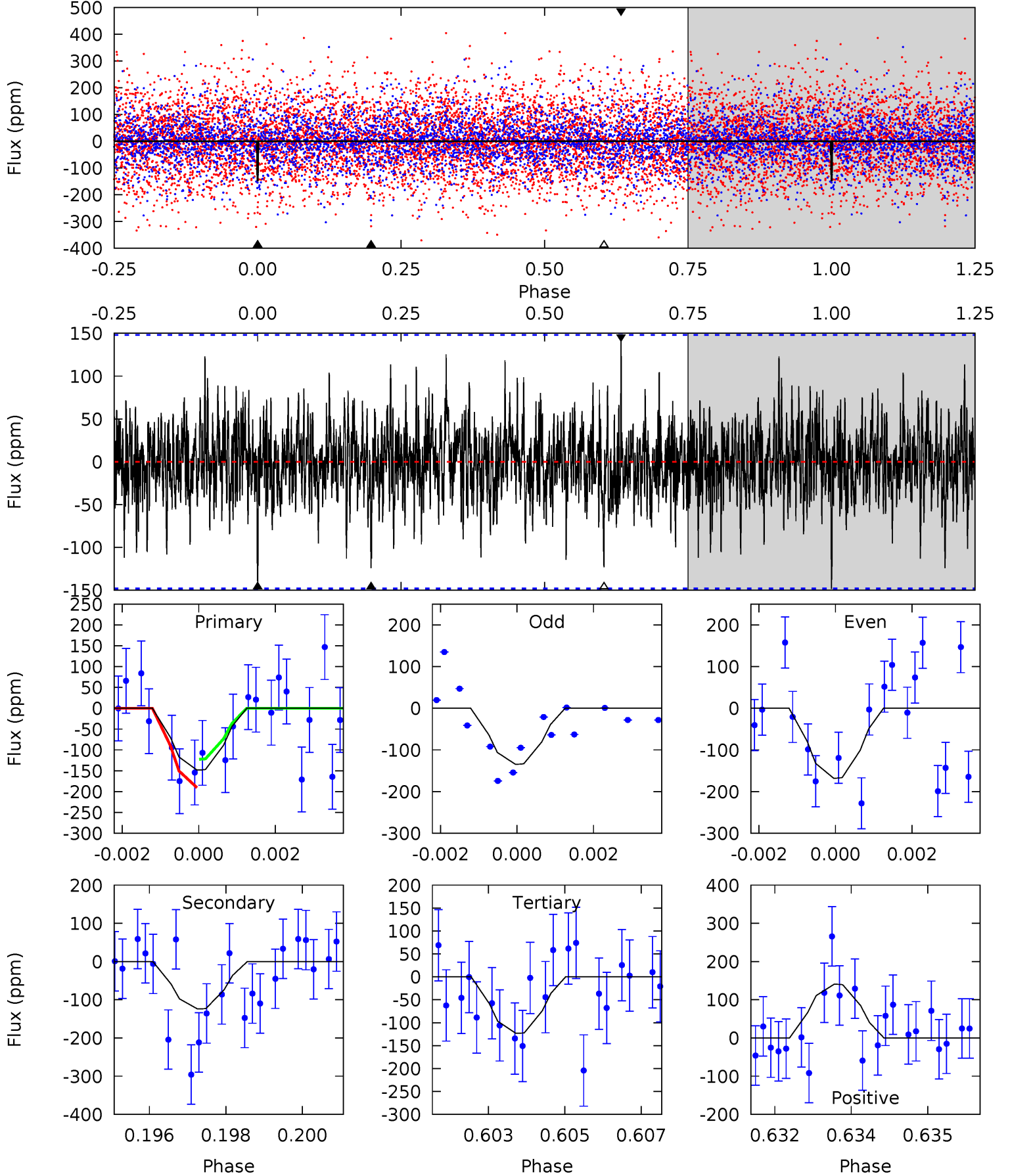
TCE 008019250-05 P= 30.506710 Days $T_0=134.590129$ (BKJD)



DV Model-Shift Uniqueness Test

008019250-05, $P = 30.507126$ Days, $E = 104.073133$ Days

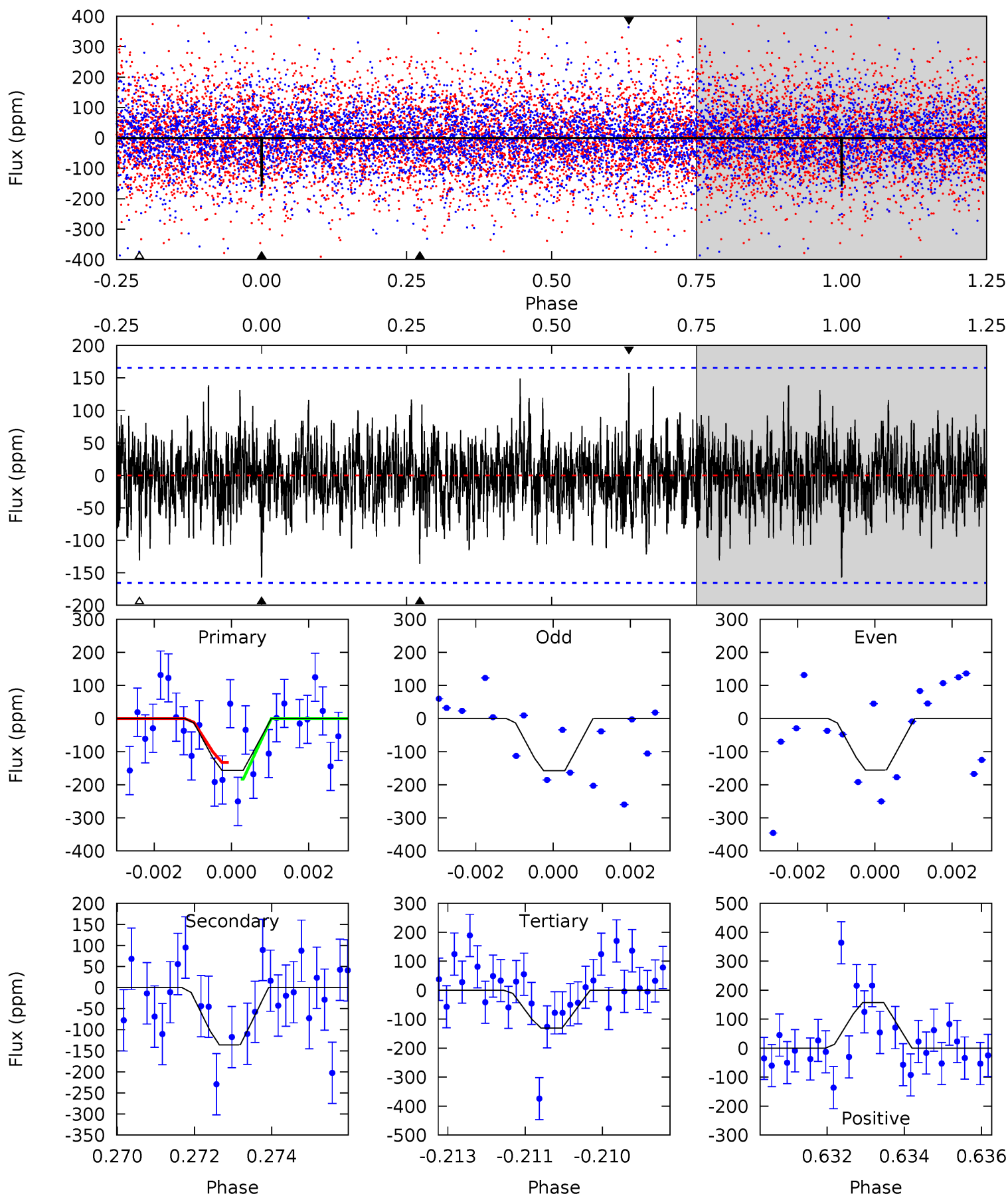
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.34	4.46	4.44	5.07	5.33	3.10	1.27	0.91	0.27	0.03	-0.60	0.62	0.91	0.49	1.18



Alt Model-Shift Uniqueness Test

008019250-05, P = 30.506710 Days, E = 104.083419 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.07	4.39	4.23	5.08	5.34	3.12	1.28	0.84	-0.01	0.16	-0.69	0.04	0.96	0.50	0.83



Stellar Parameters For KIC 008019250

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7502^{+67}_{-97}	$3.790^{+0.192}_{-0.112}$	$0.360^{+0.100}_{-0.200}$	$3.105^{+0.545}_{-0.818}$	$2.165^{+0.168}_{-0.287}$	$0.102^{+0.127}_{-0.034}$
	+1%/-1%	+5%/-3%	+28%/-56%	+18%/-26%	+8%/-13%	+125%/-33%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 008019250-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-124±28	$11.68^{+10.83}_{-7.92}$	1628^{+80}_{-98}	4285^{+3128}_{-856}	29^{+267}_{-21}
Alt.	-136±31	$10.44^{+12.03}_{-6.93}$	1630^{+83}_{-103}	4562^{+3247}_{-1031}	39^{+312}_{-30}

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

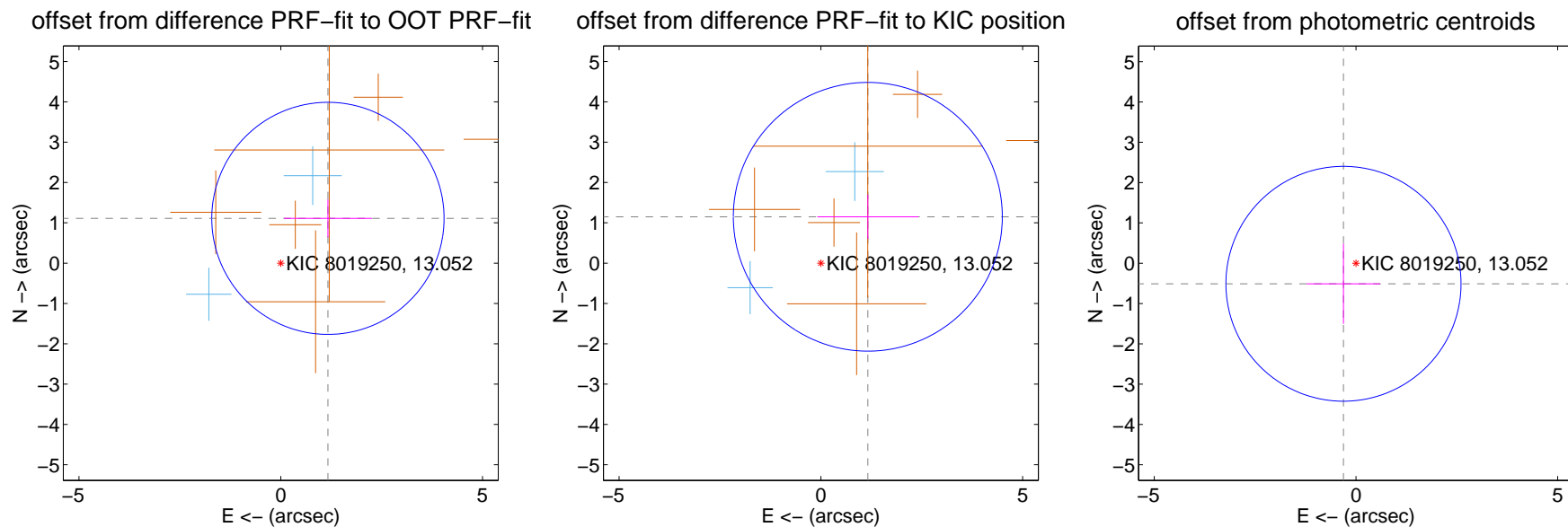
DV Centroid Data

Supplemental centroid analysis for 008019250-05. Kepler magnitude: 13.05. Transit SNR 7.08

There are 2 quarters with good PRF difference image offsets

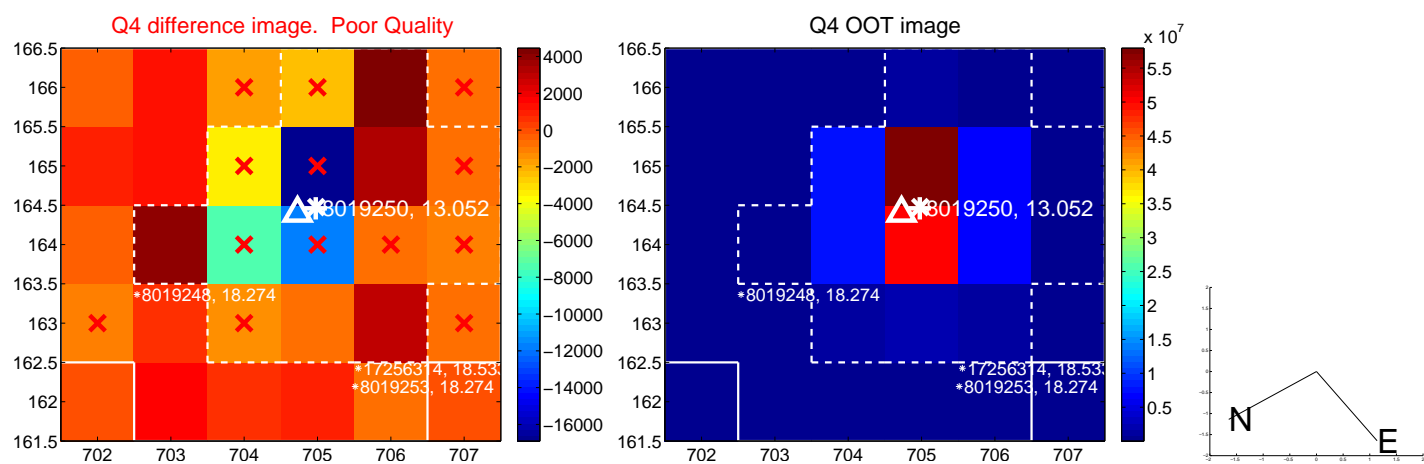
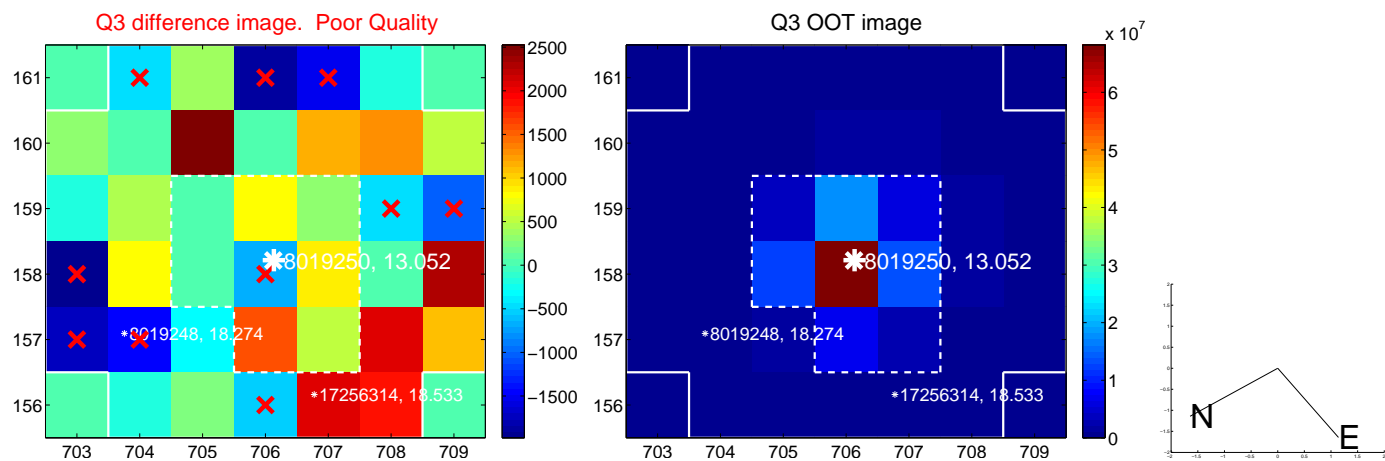
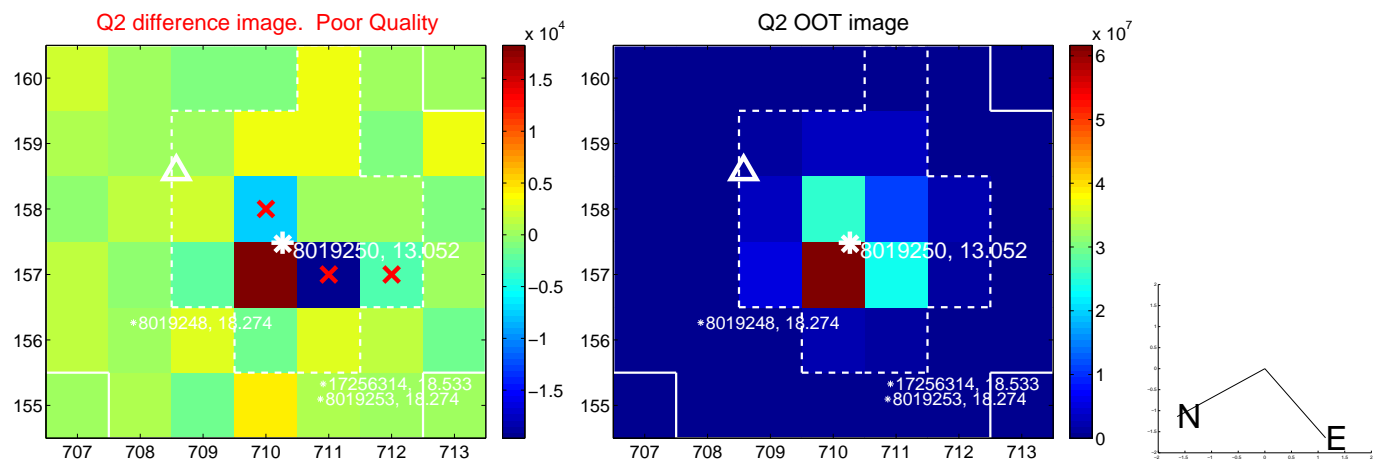
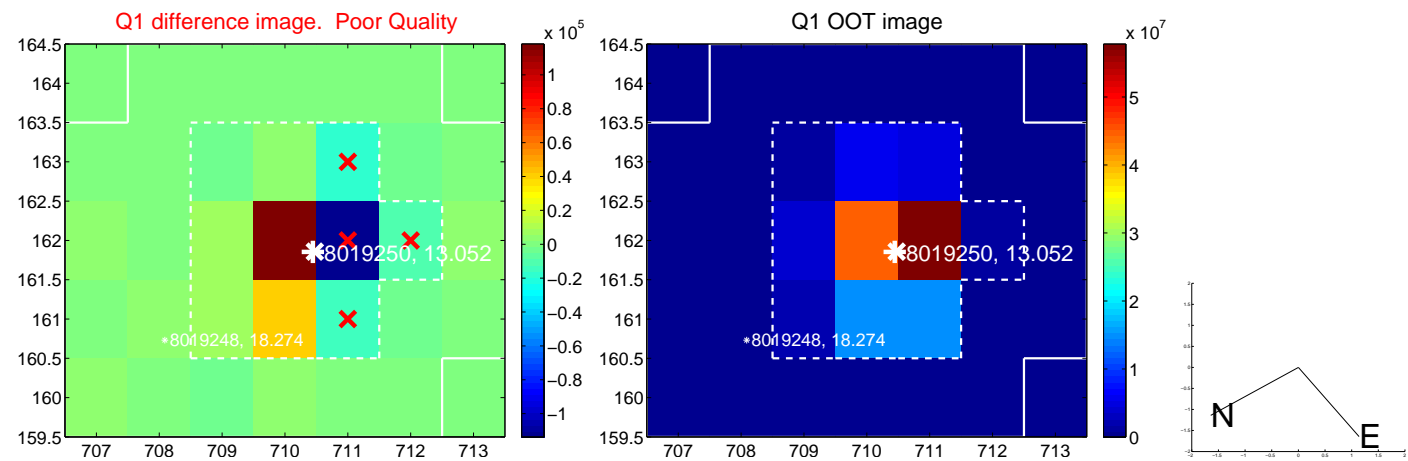
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.613 ± 0.960	1.68	-1.169 ± 1.091	1.111 ± 0.471
PRF-fit source offset from KIC position	1.636 ± 1.111	1.47	-1.164 ± 1.253	1.150 ± 0.550
photometric centroid source offset	0.60 ± 0.97	0.61	0.31 ± 0.91	-0.51 ± 0.99

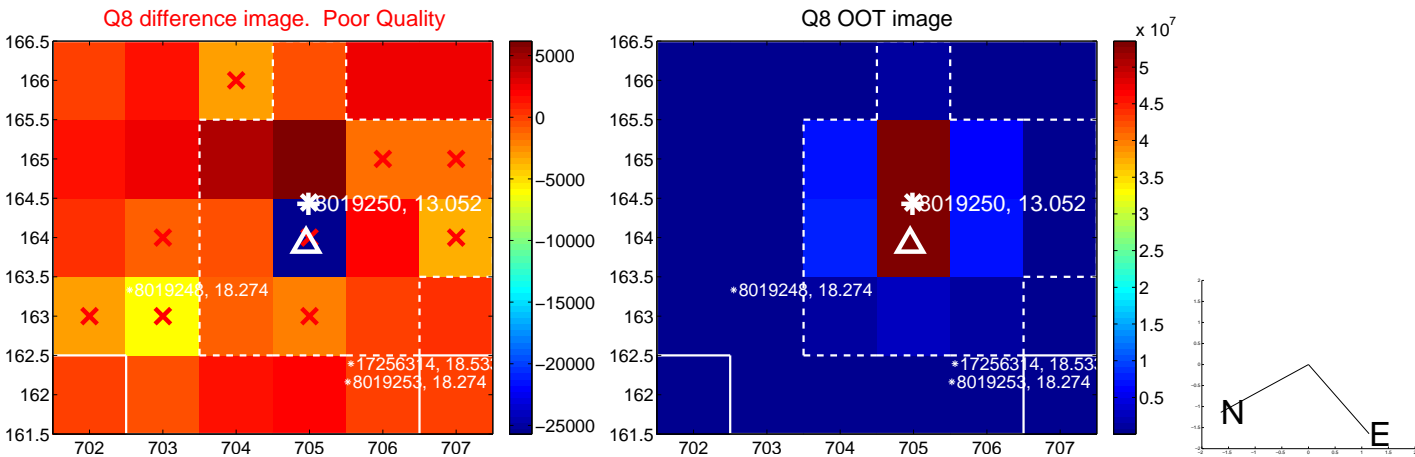
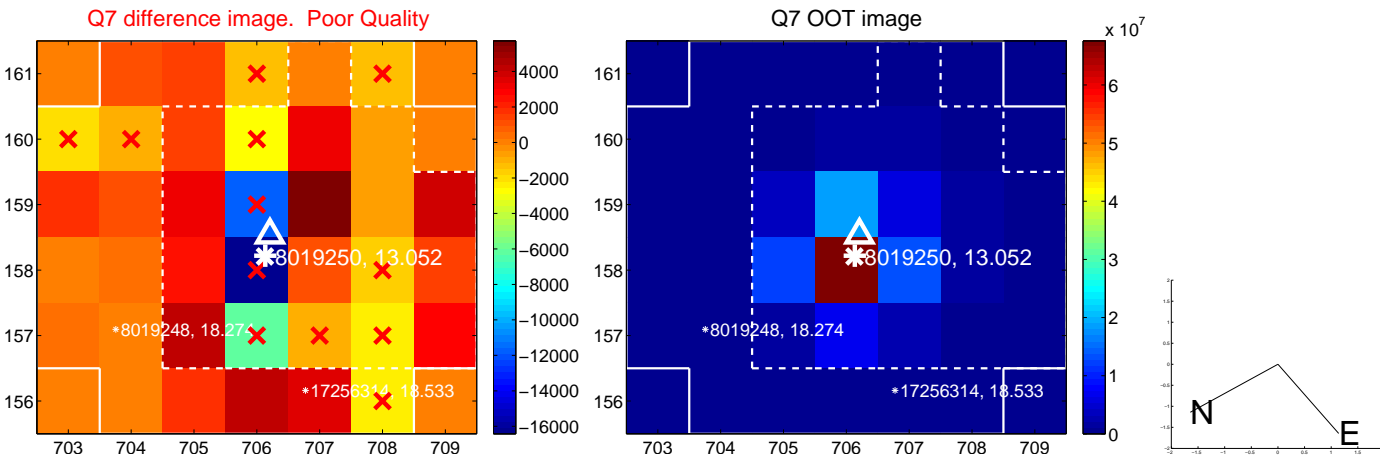
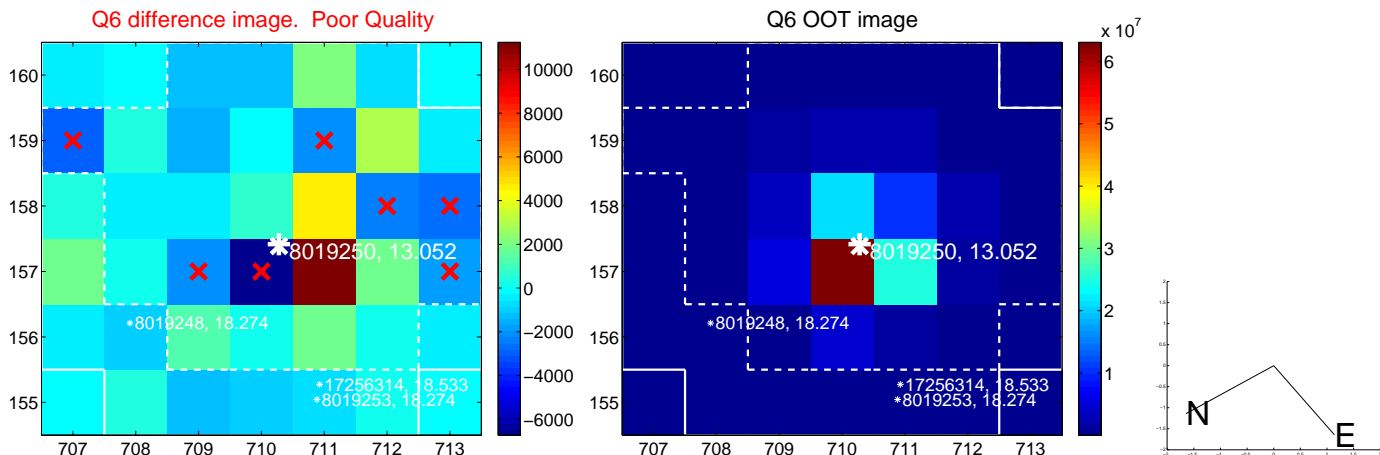
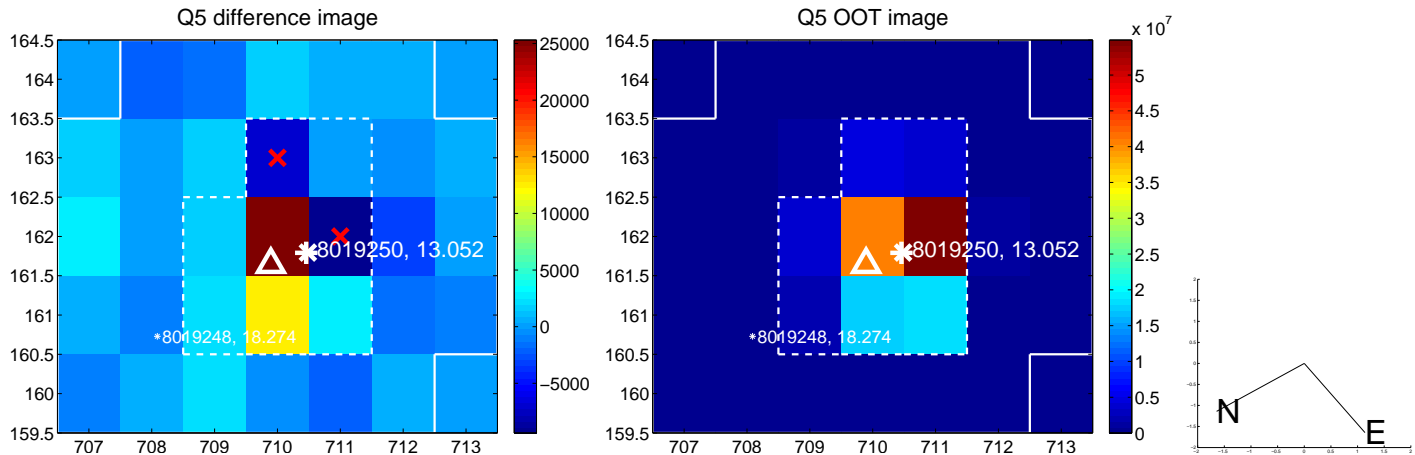


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

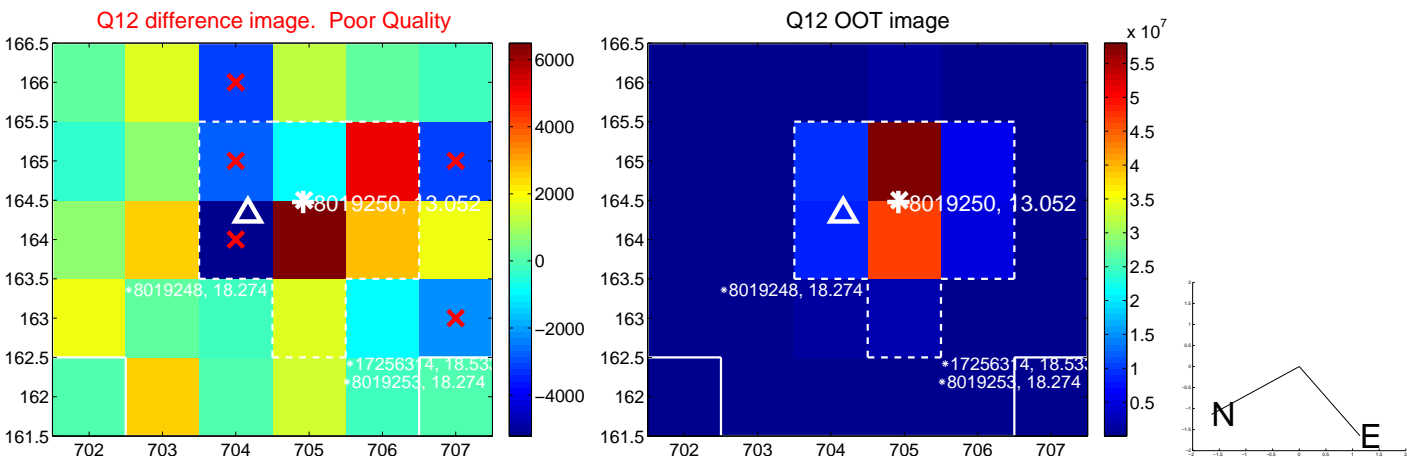
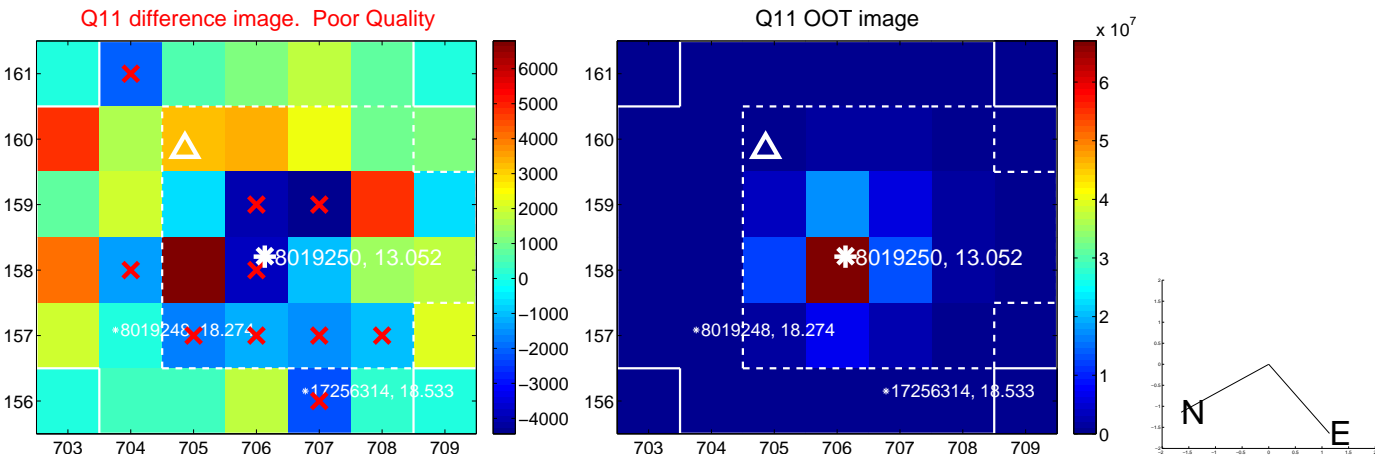
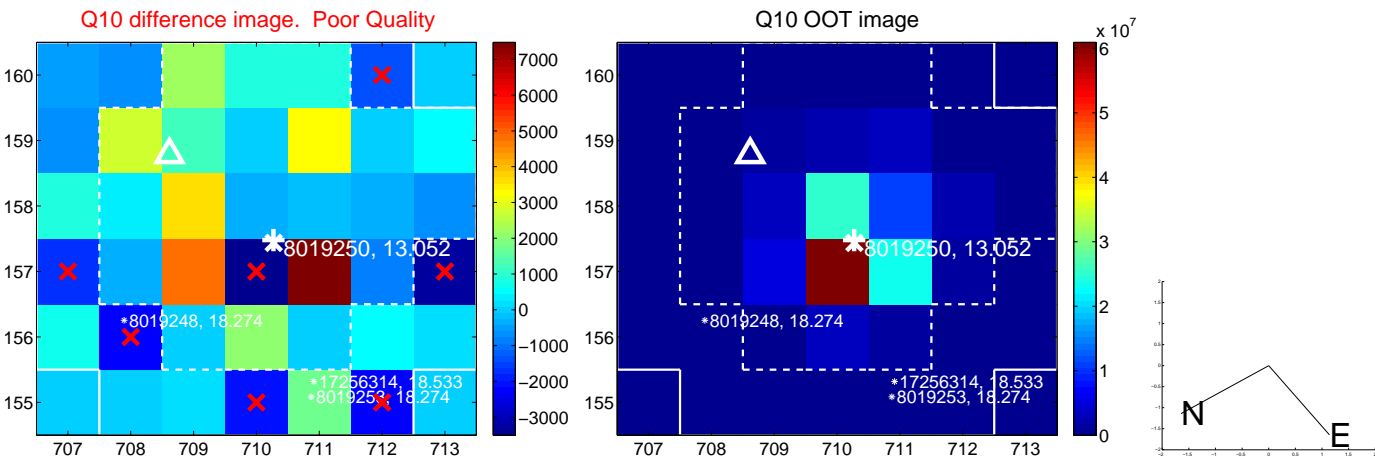
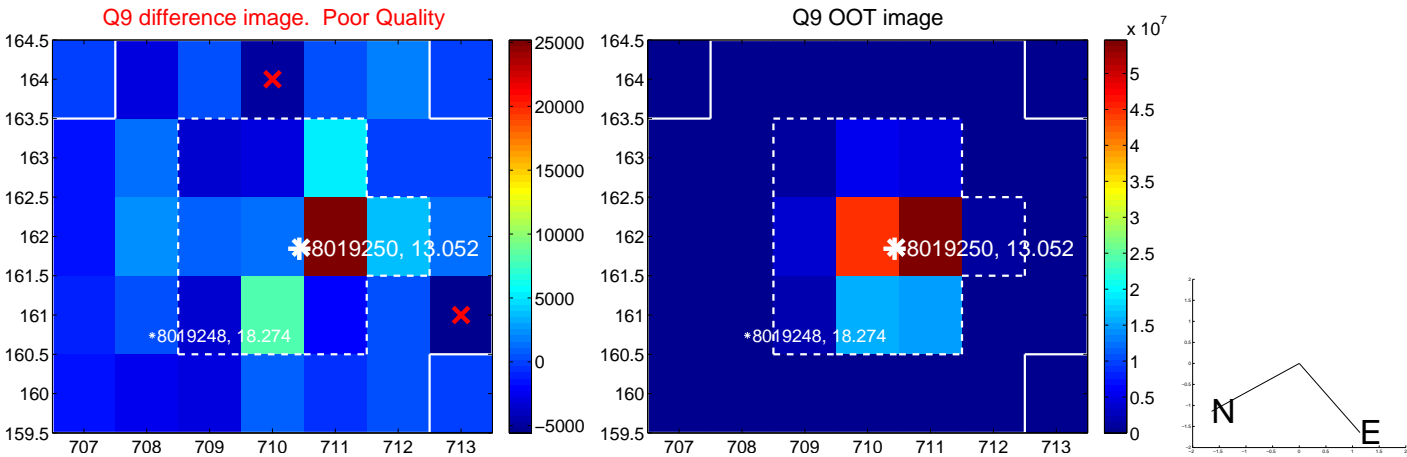
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



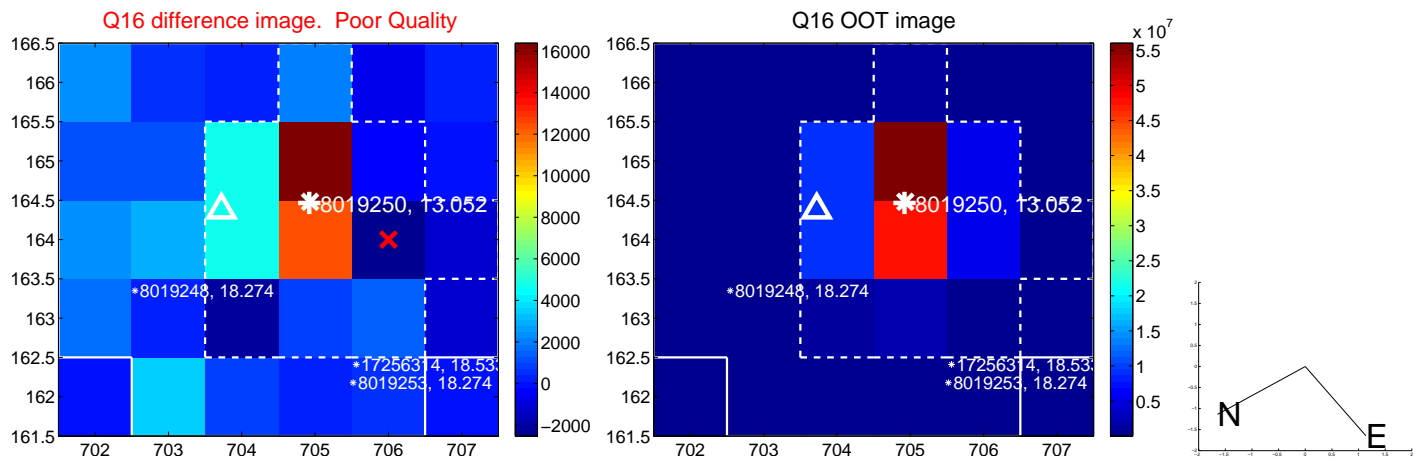
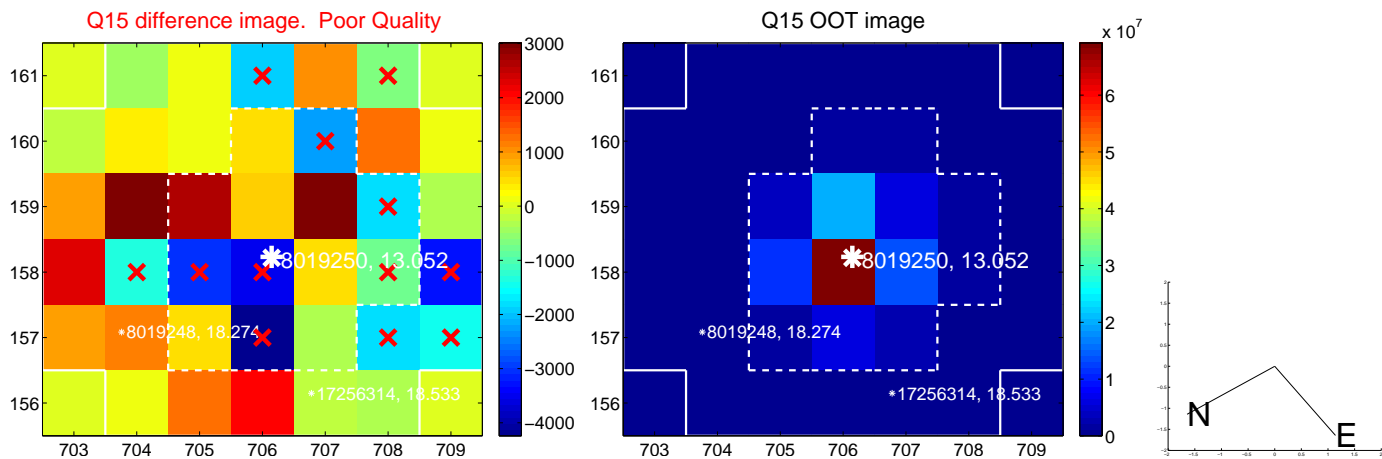
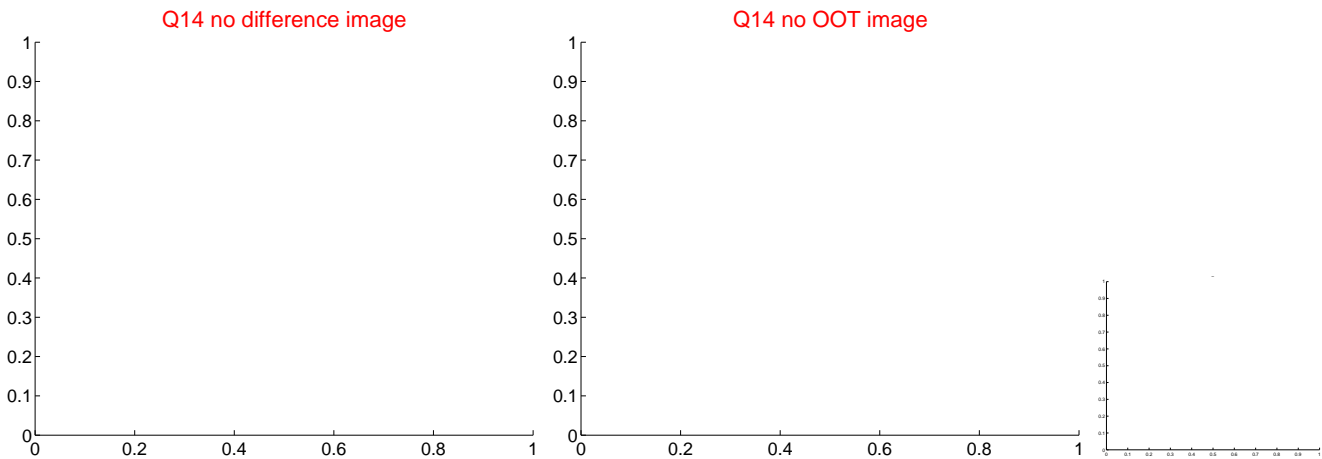
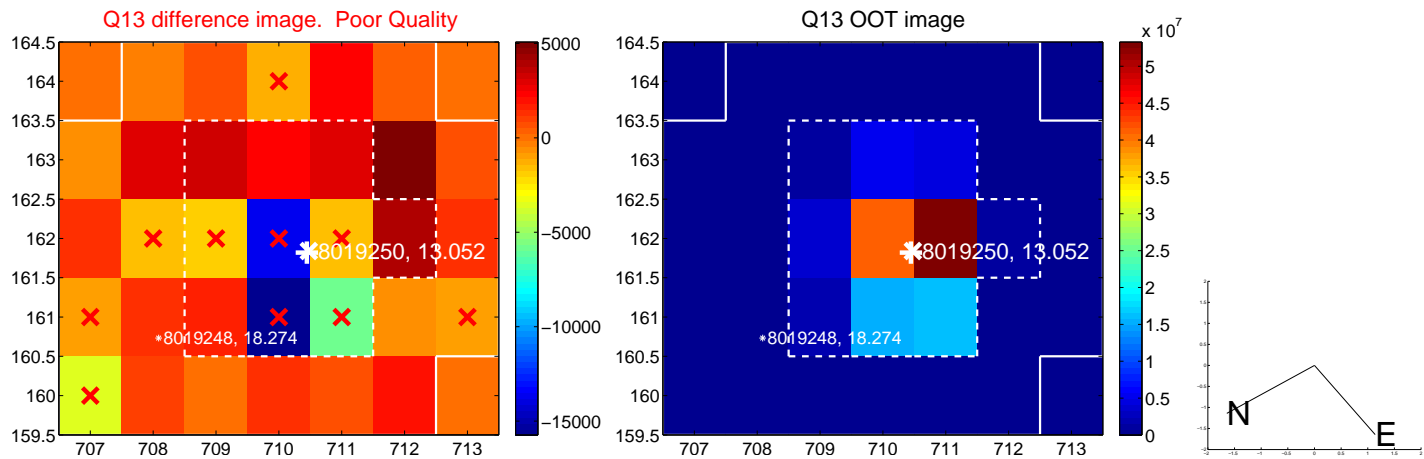
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



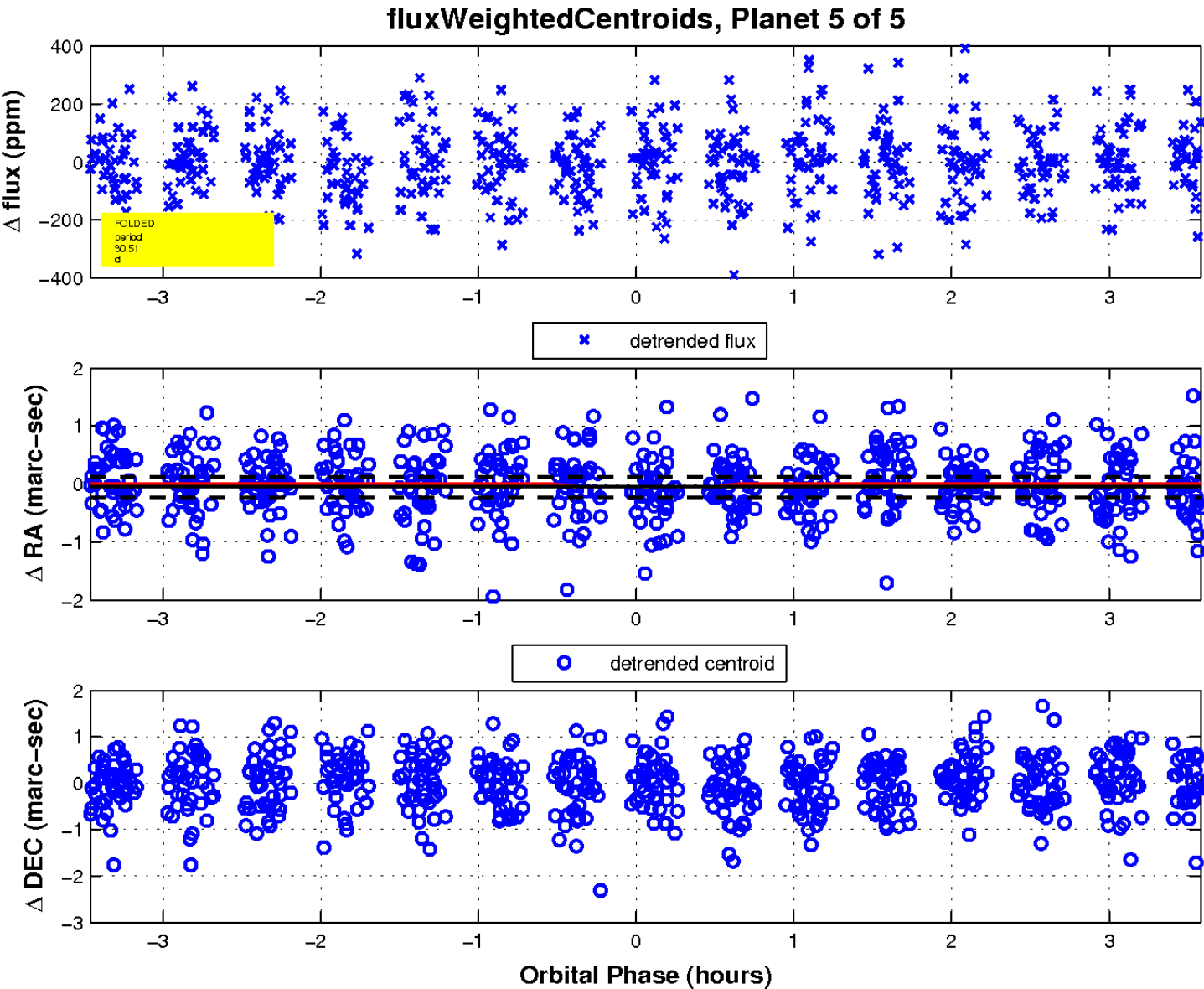
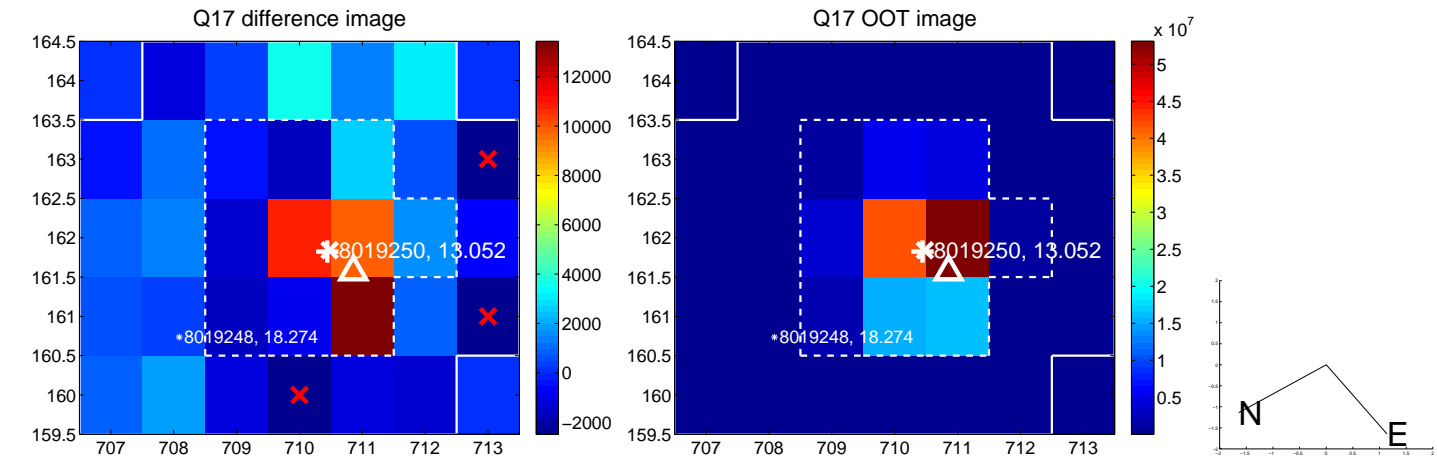
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

