

KIC 008112039

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})
008112039-01	OBS	No	41.798645	146.940743	117.2	15.380	36.8	23.1	2.10	8308	2.32	230.44
008112039-02	OBS	No	41.803750	144.205427	22.6	6.438	39.4	5.3	2.10	8308	1.18	230.40
008112039-03	OBS	No	41.806907	143.303402	2320.9	74.392	44.5	120.7	2.10	8308	13.13	230.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008112039-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
008112039-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— SAME_NTL_PERIOD—CENT_SATURATED
008112039-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

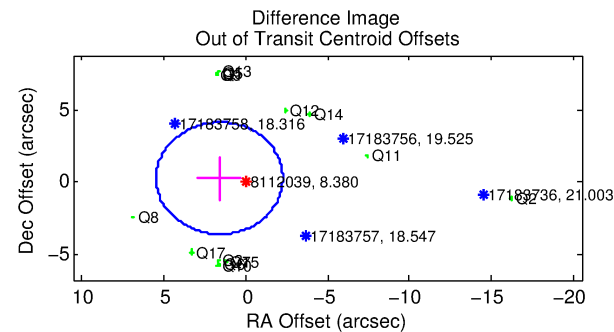
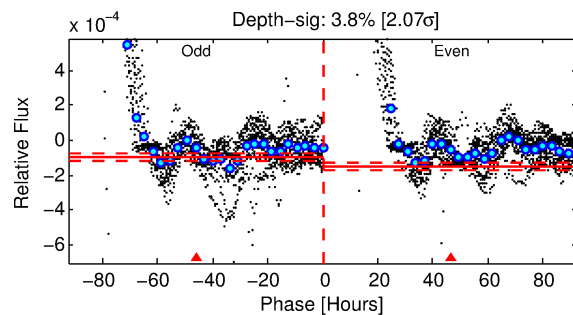
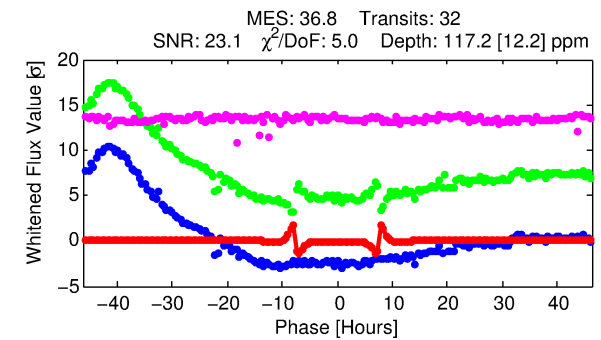
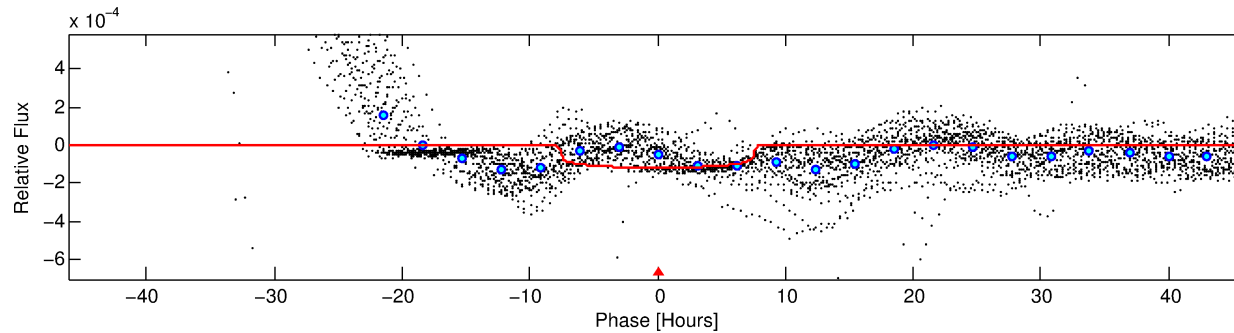
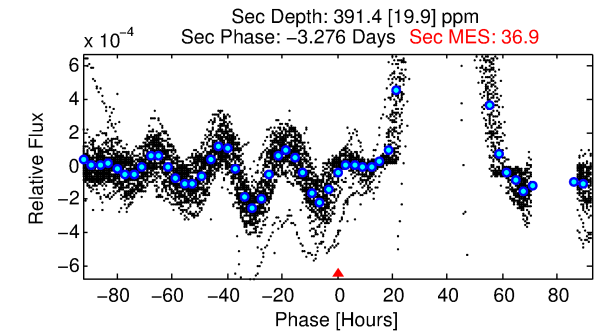
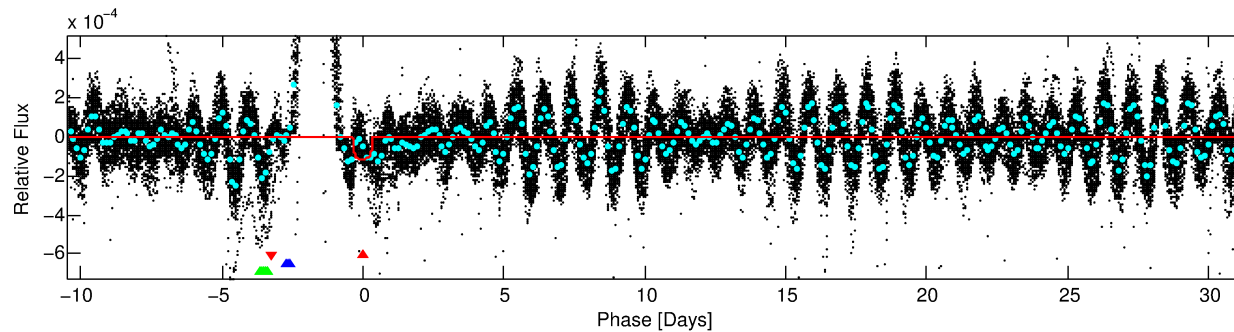
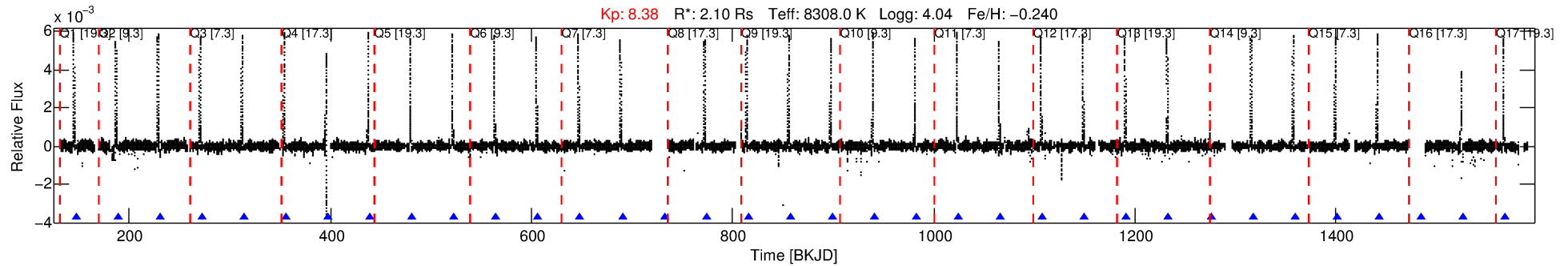
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008112039-01

No Significant Match Found

DV One-Page Summary

KIC: 8112039 Candidate: 1 of 3 Period: 41.799 d



DV Fit Results:

Period = 41.79865 [0.00017] d
Epoch = 146.9407 [0.0033] BKJD
Rp/R* = 0.0101 [0.0019]
a/R* = 20.28 [22.78]
b = 0.26 [4.05]
Seff = 230.44 [84.26]
Teq = 993 [91] K
Rp = 2.32 [0.74] Re
a = 0.2862 [0.0632] AU
Ag = 3290.05 [1678.67] [1.96σ]
Teffp = 11633 [1214] K [8.74σ]

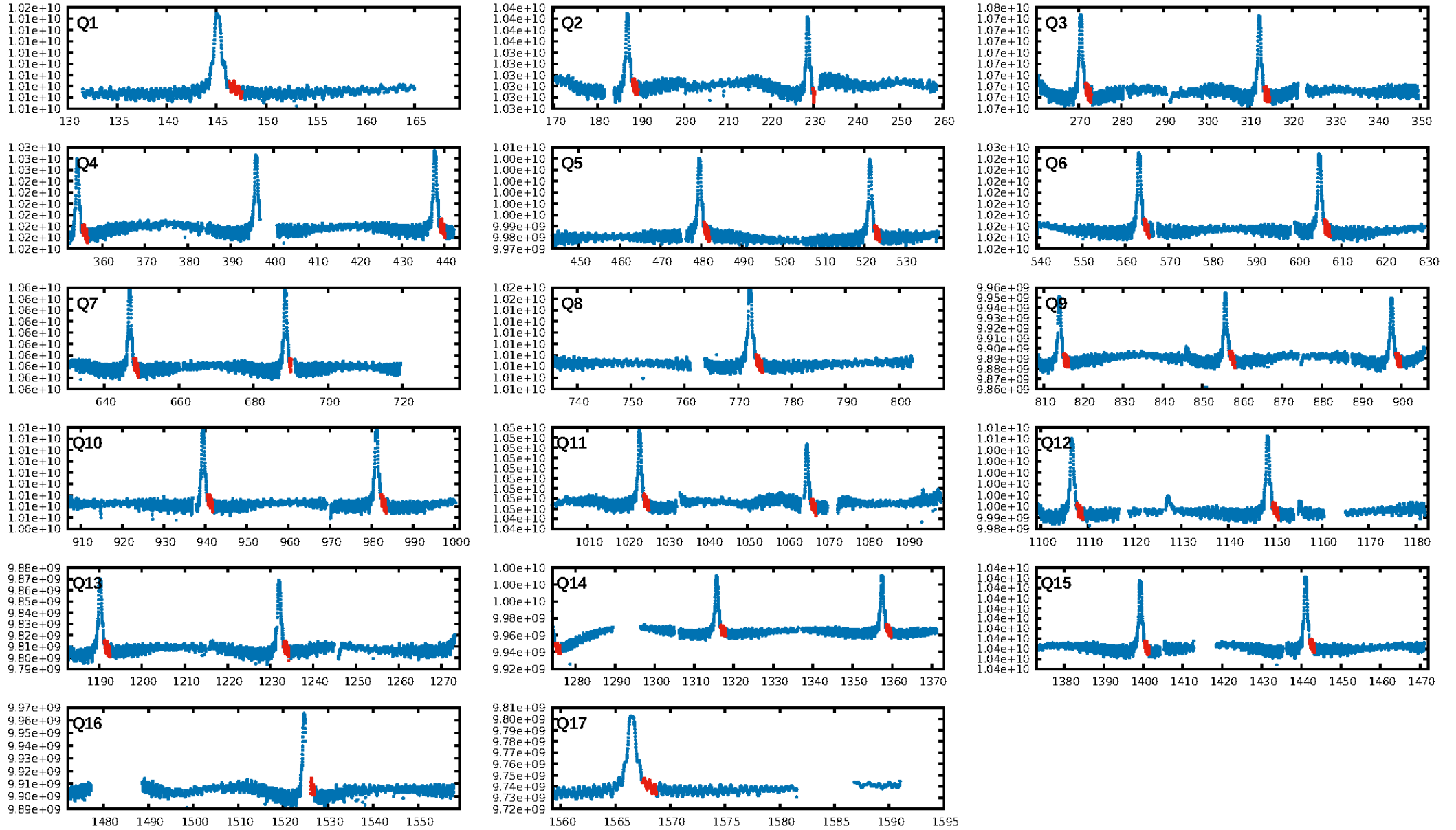
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.6% [0.01σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 1.19e-31
RollingBand-fgt: 1.00 [30/30]
GhostDiagnostic-chr: N/A
Centroid-sig: 27.5%
Centroid-so: 2.272 arcsec [2.52σ]
OotOffset-rm: 1.604 arcsec [1.25σ]
KicOffset-rm: 5.505 arcsec [4.76σ]
OotOffset-st: 4/4/2/5 [15]
KicOffset-st: 4/4/2/5 [15]
DiffImageQuality-fgm: 0.00 [0/15]
DiffImageOverlap-fno: 1.00 [16/16]

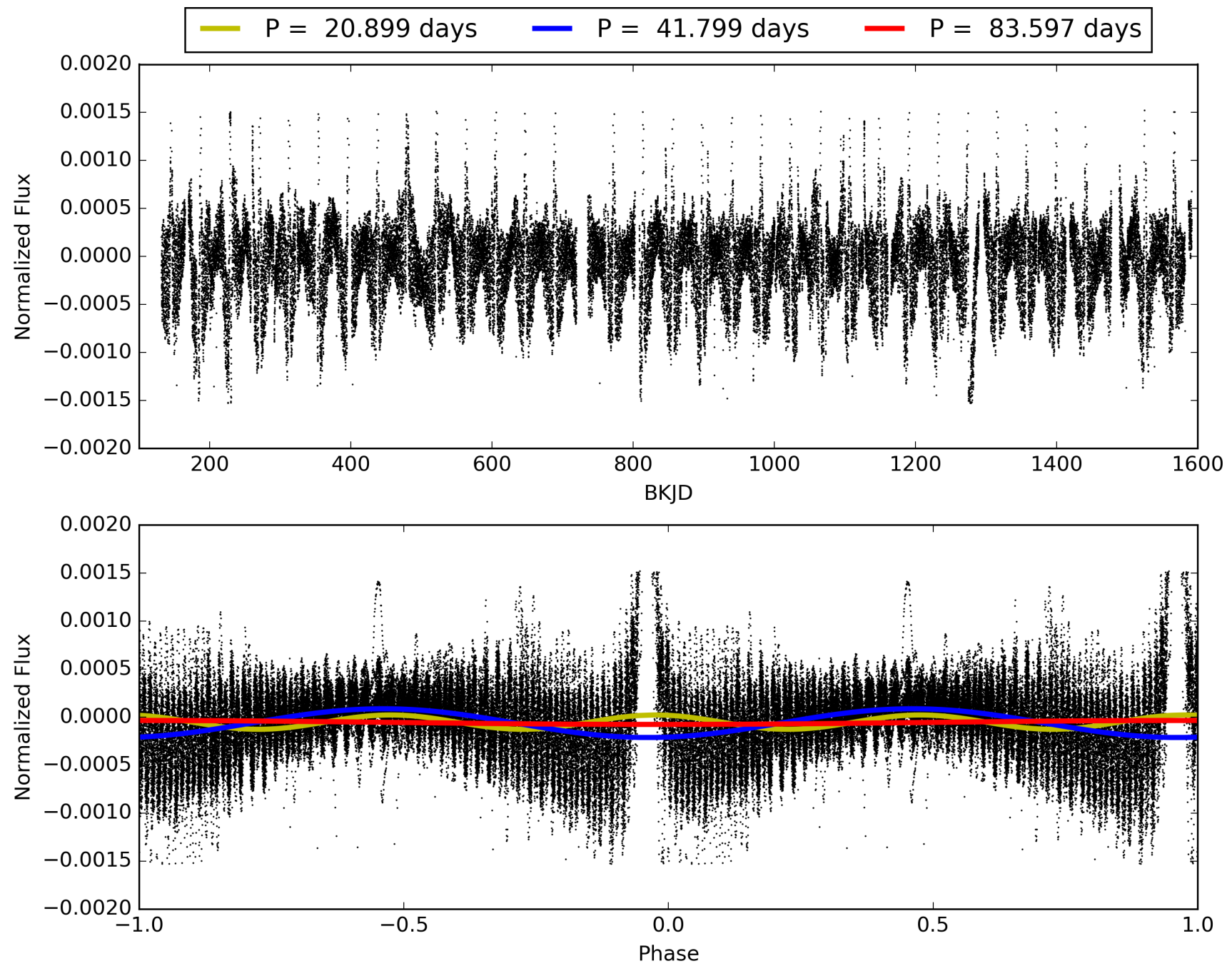
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:06:57 Z

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

TCE 008112039-01, PDC Light Curves

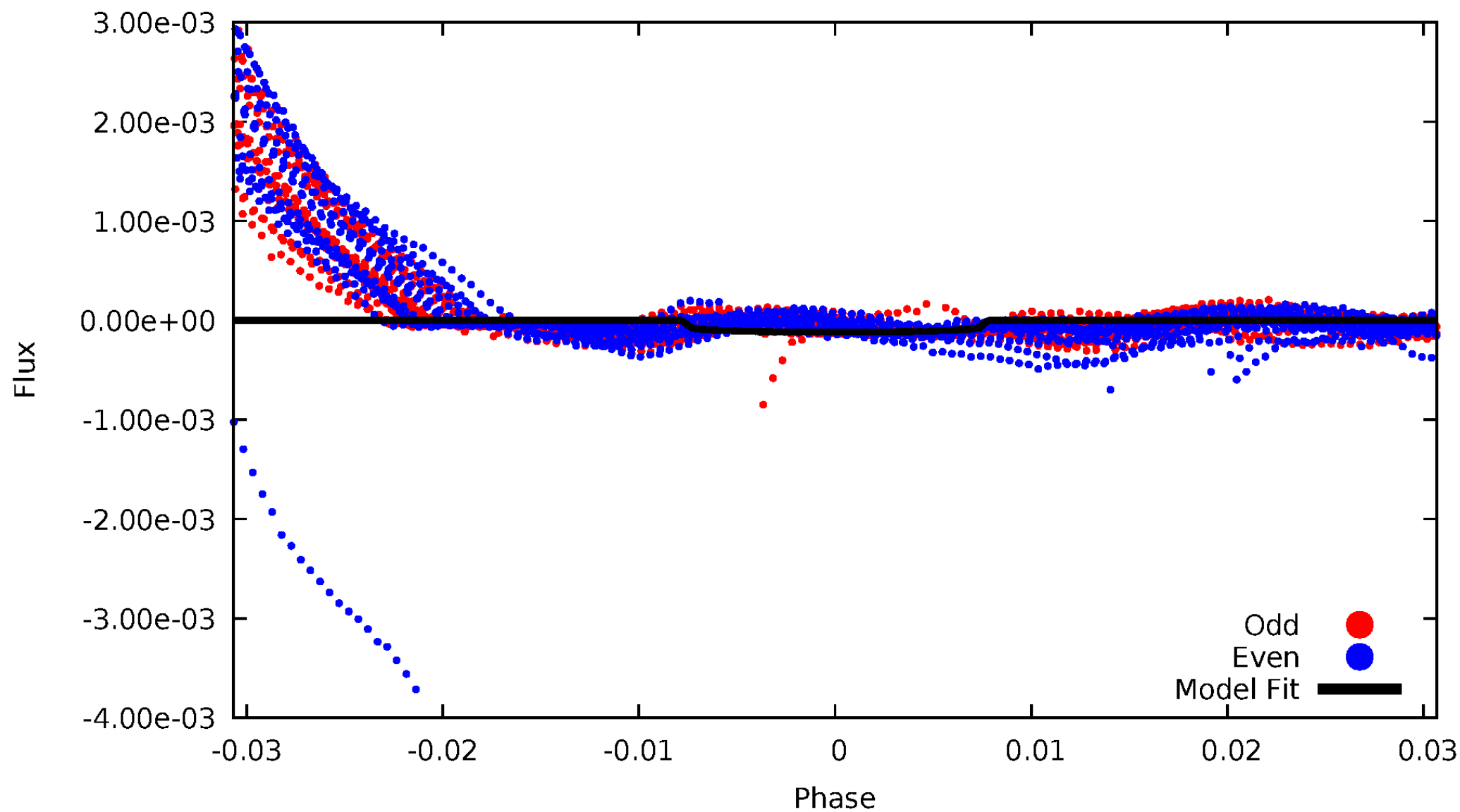


TCE 008112039-01



DV Odd/Even

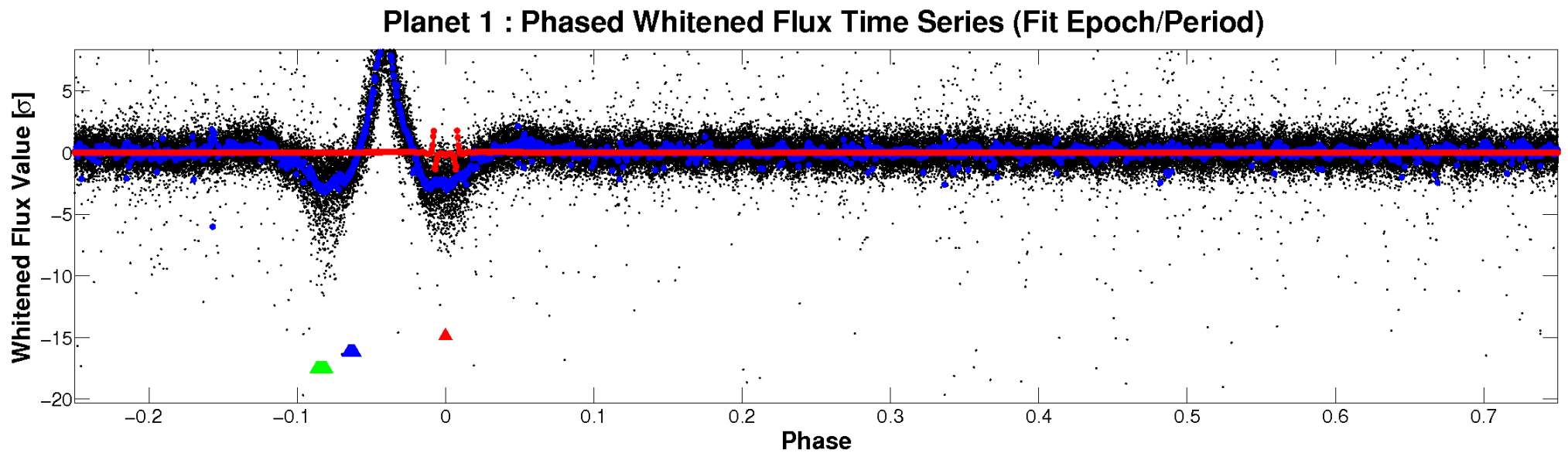
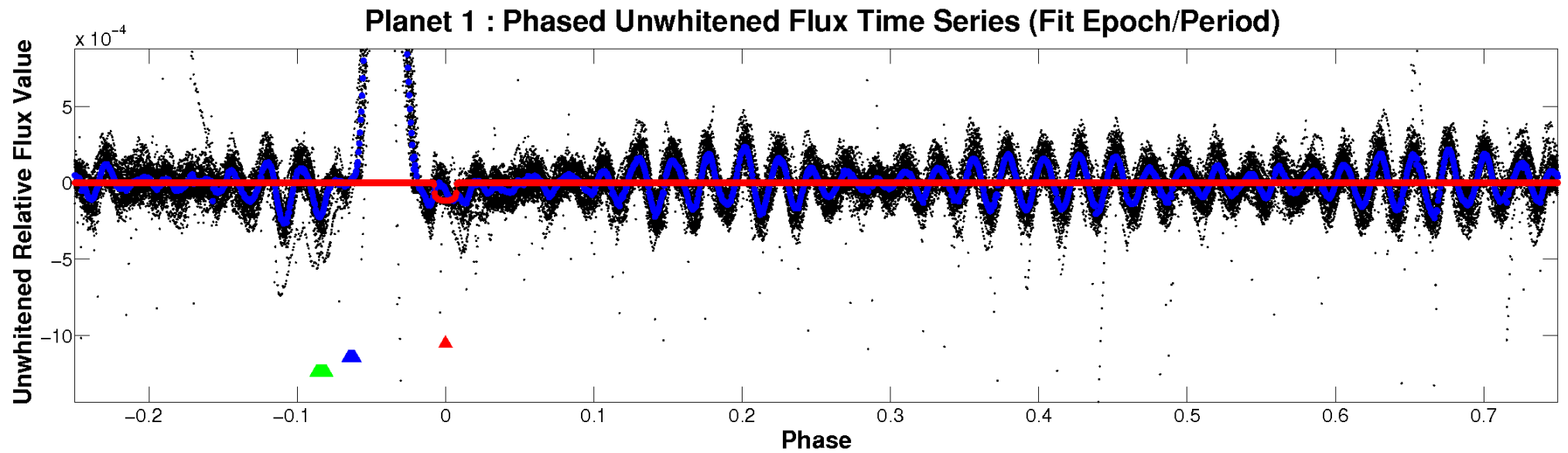
TCE 008112039-01



ALT Odd/Even

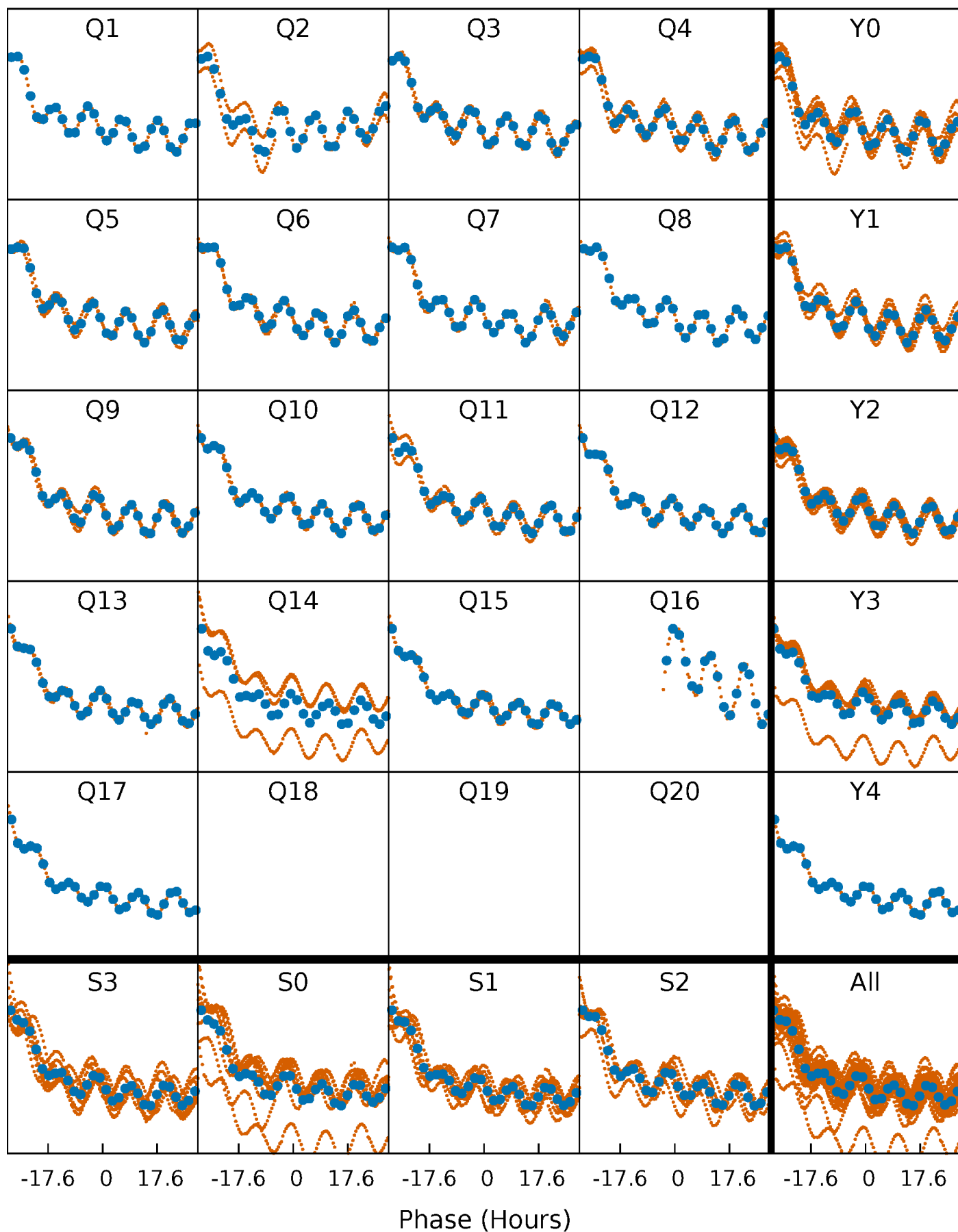
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve



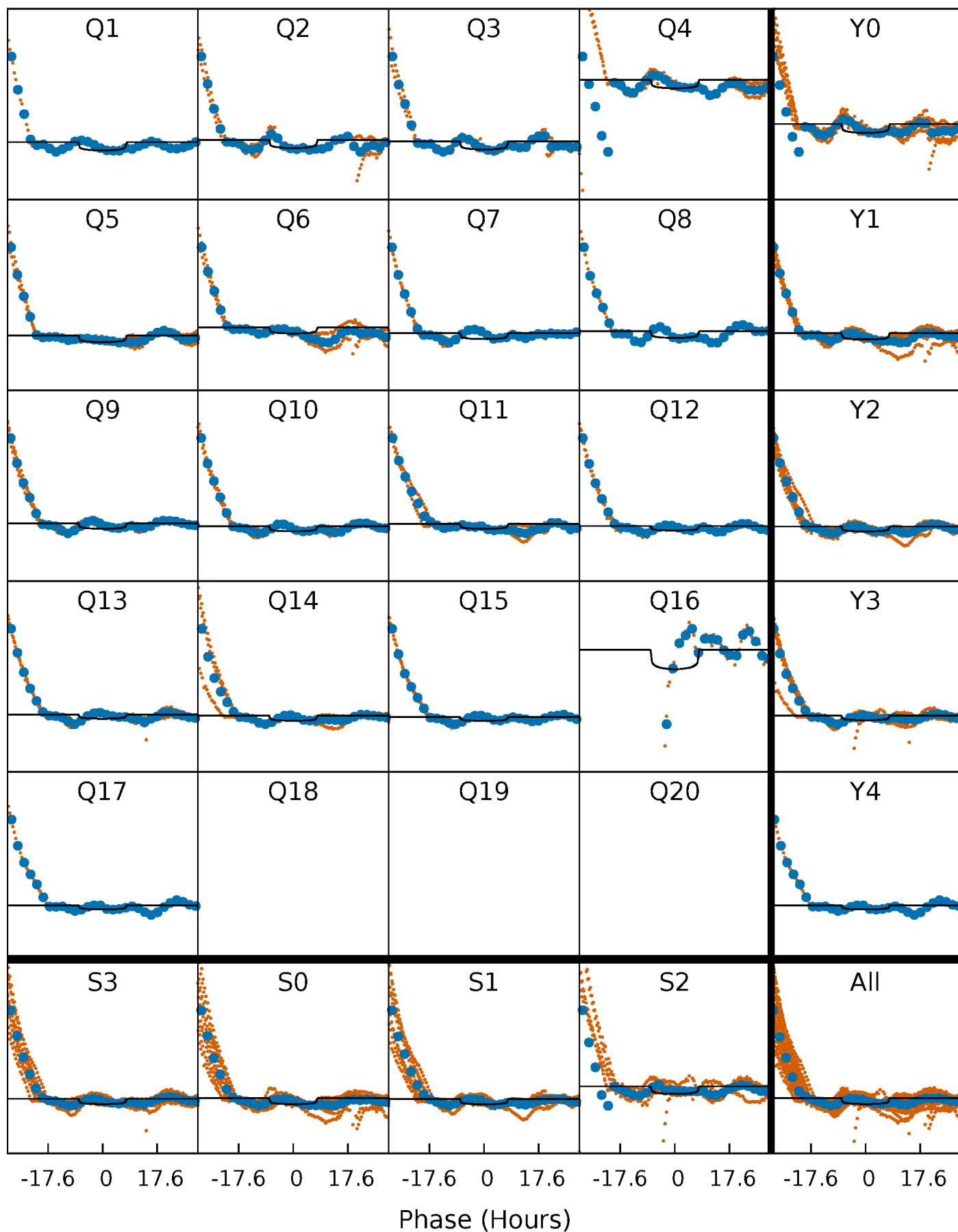
PDC Quarter-Phased Transit Curves

TCE 008112039-01 P= 41.798645 Days $T_0=146.940742$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008112039-01 P= 41.798645 Days $T_0=146.940742$ (BKJD)

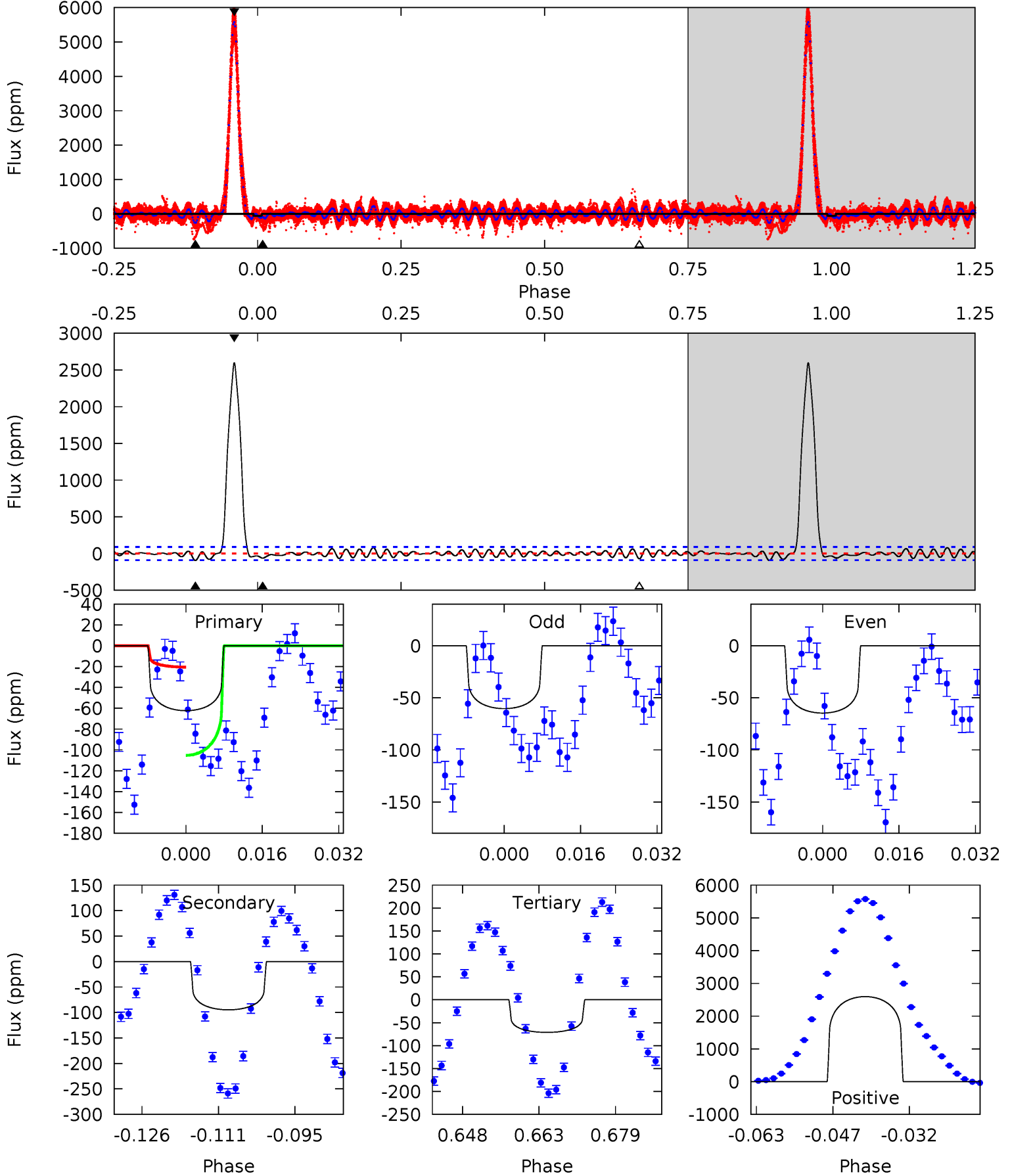


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

008112039-01, P = 41.798645 Days, E = 105.142097 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.42	5.20	3.91	142.5	4.94	2.41	15.9	-0.49	-139.1	1.29	-137.3	0.12	0.83	0.96	2.28



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 008112039

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8308^{+233}_{-320}	$4.045^{+0.186}_{-0.139}$	$-0.240^{+0.250}_{-0.300}$	$2.103^{+0.435}_{-0.532}$	$1.787^{+0.146}_{-0.292}$	$0.271^{+0.284}_{-0.103}$
	+3%/-4%	+5%/-3%	+104%/-125%	+21%/-25%	+8%/-16%	+105%/-38%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008112039-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-95 ± 18	$2.29^{+0.51}_{-0.48}$	1383^{+85}_{-99}	8026^{+1242}_{-959}	783^{+511}_{-283}
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 $A_{obs} \gg 1.0$

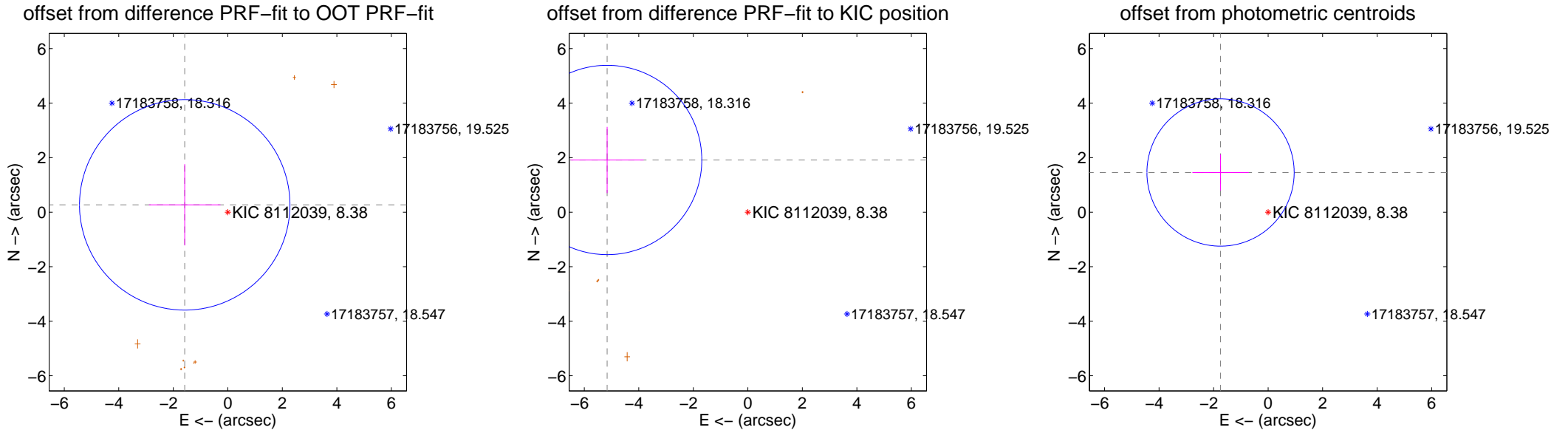
DV Centroid Data

Supplemental centroid analysis for 008112039-01. **Kepler magnitude: 8.38.** Transit SNR 23.09

There are 0 quarters with good PRF difference image offsets

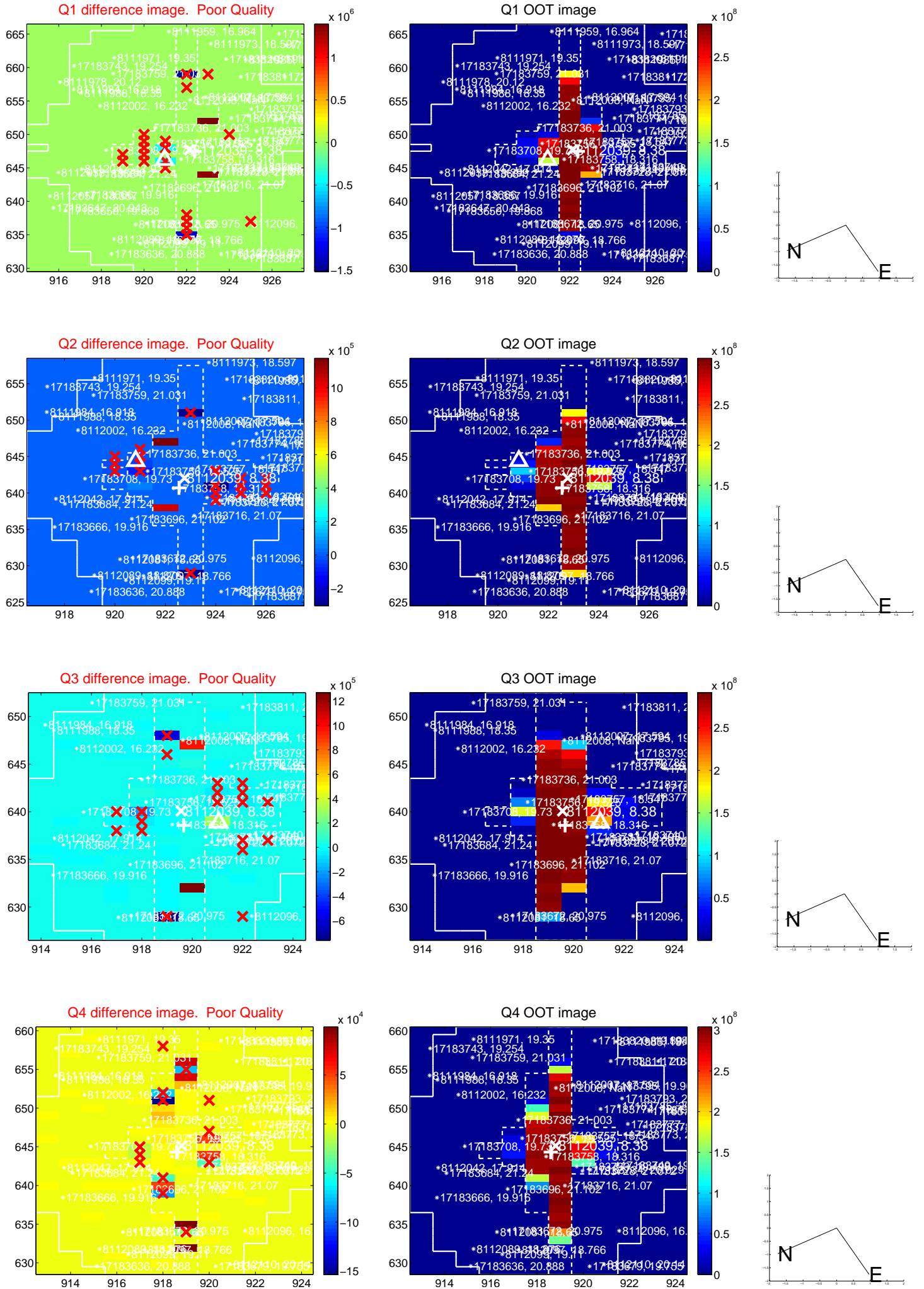
The direct PRF centroid is offset from the target star catalog position by about 1.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.604 ± 1.287	1.25	1.581 ± 1.311	0.269 ± 1.491
PRF-fit source offset from KIC position	5.505 ± 1.157	4.76	5.162 ± 1.339	1.914 ± 1.215
photometric centroid source offset	2.27 ± 0.90	2.52	1.75 ± 1.04	1.45 ± 0.66

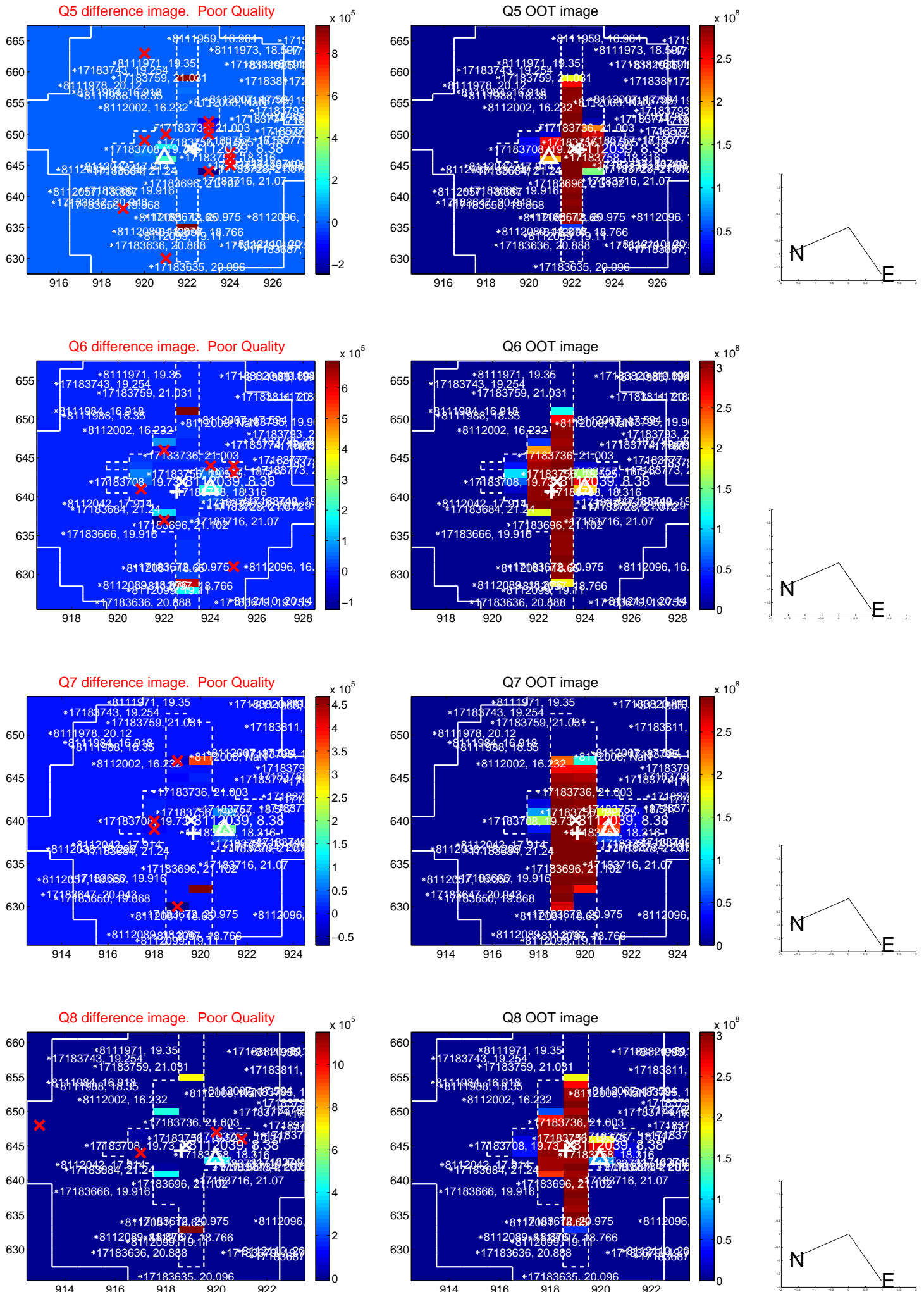


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

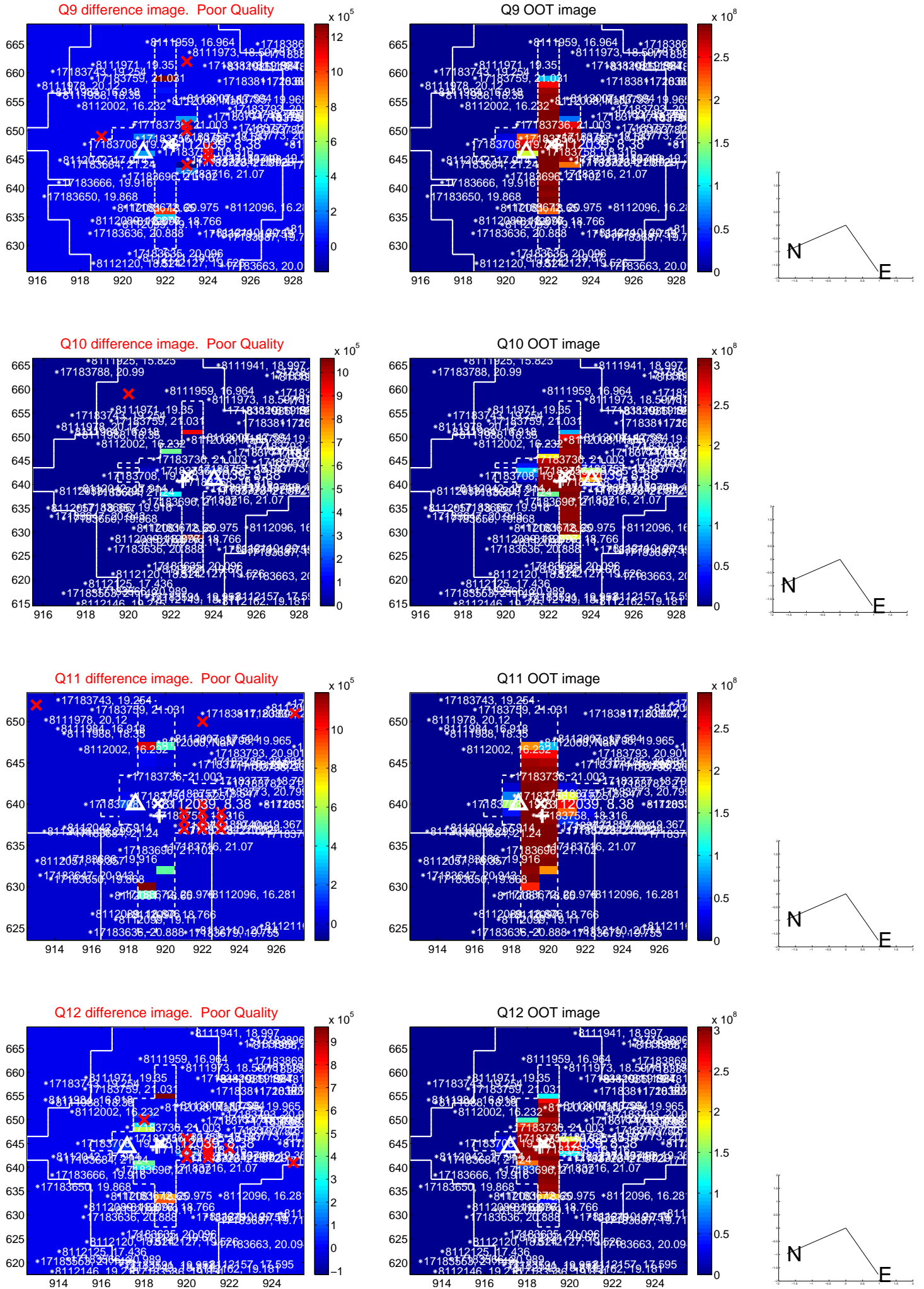
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



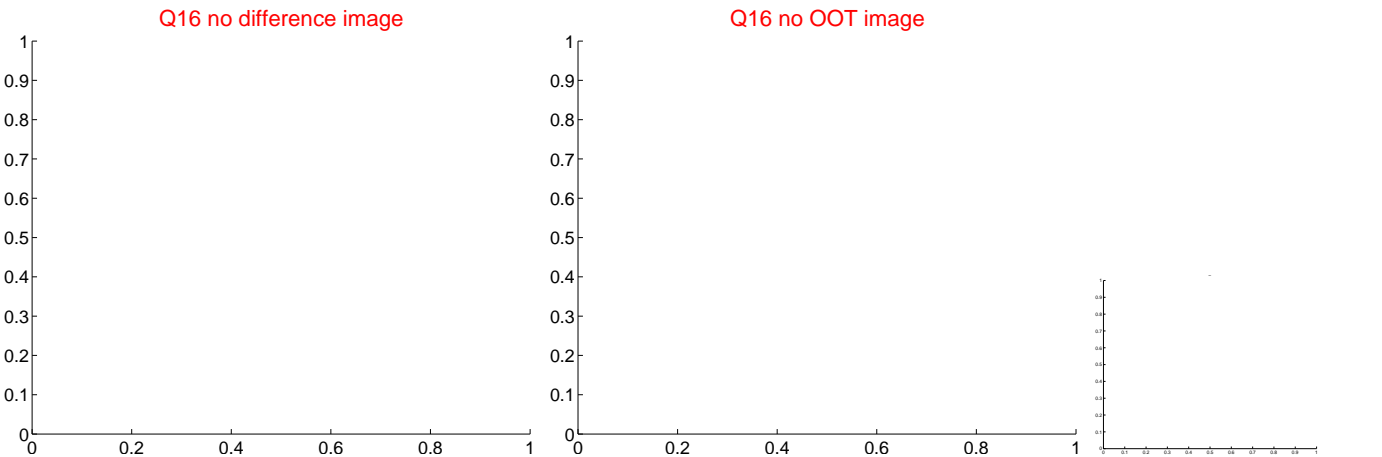
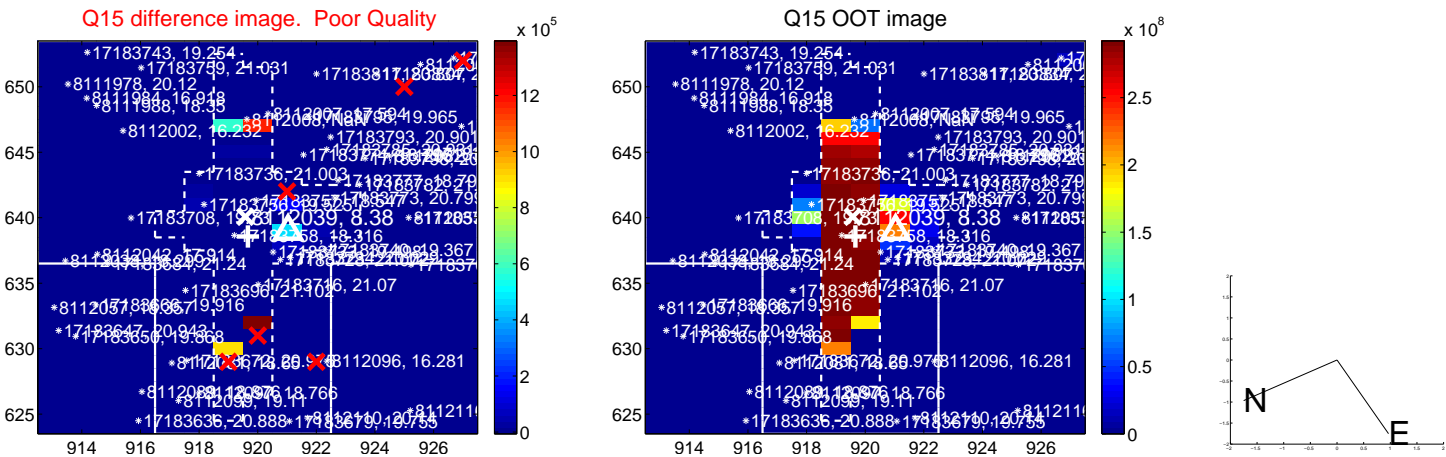
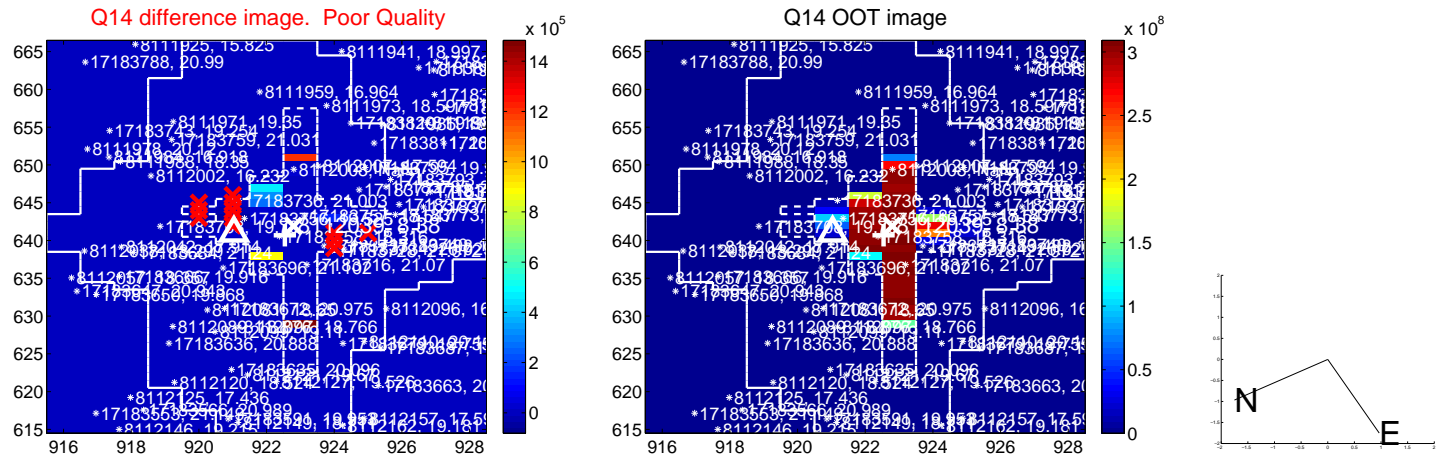
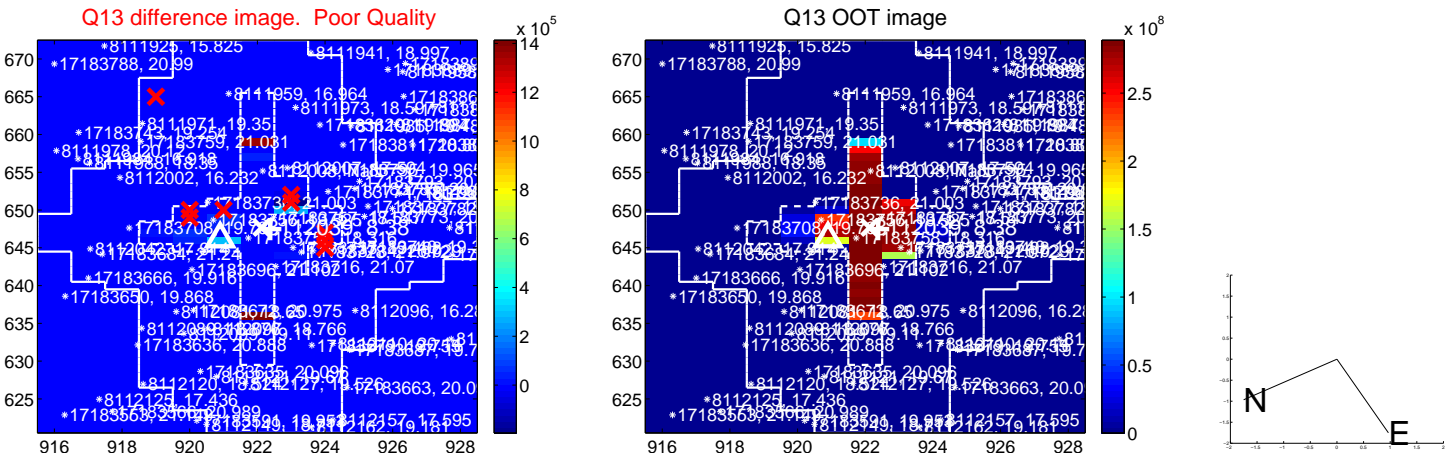
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



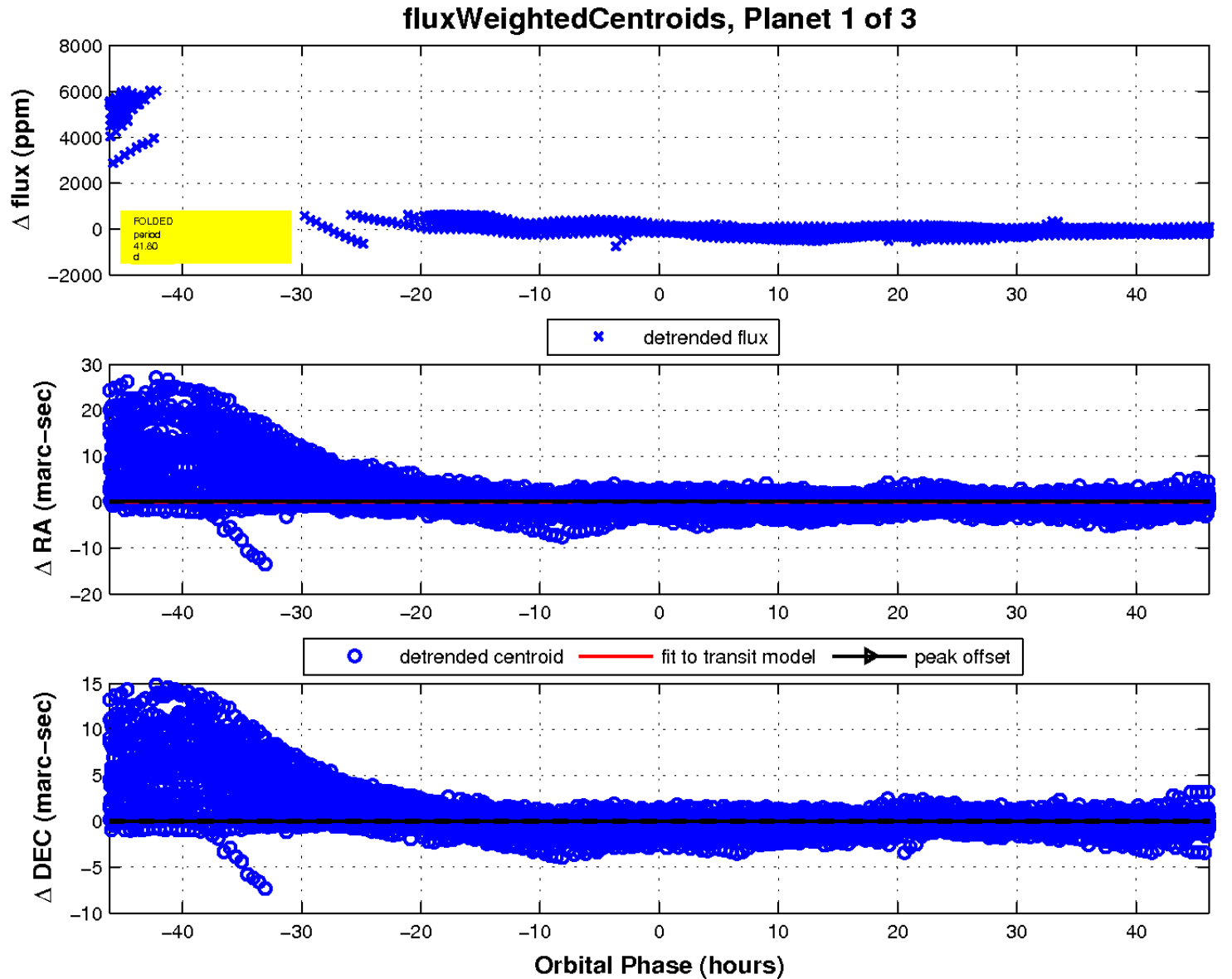
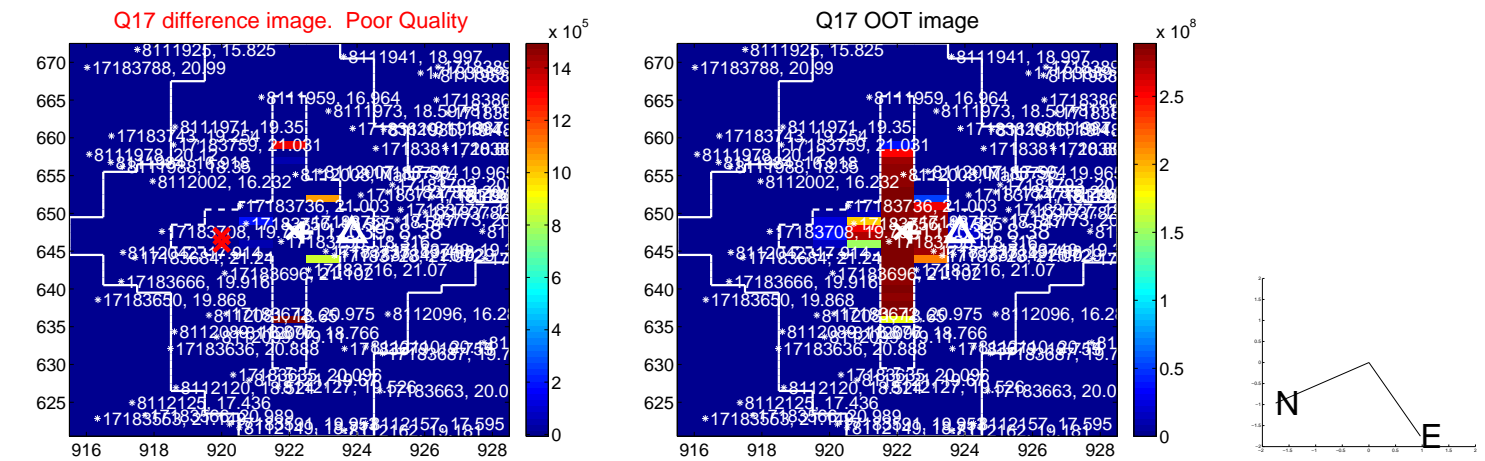
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

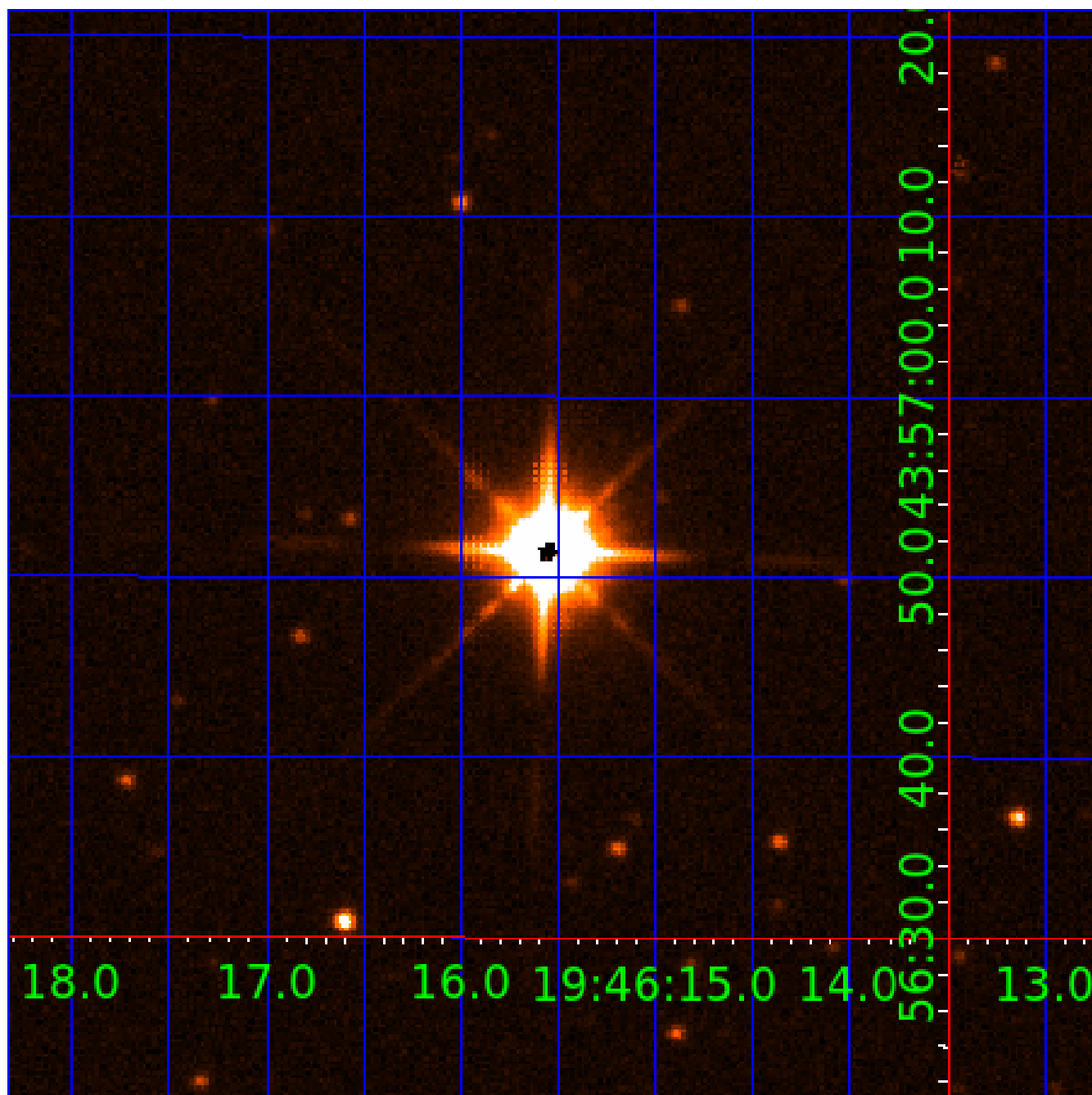


white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008112039

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})
008112039-01	OBS	No	41.798645	146.940743	117.2	15.380	36.8	23.1	2.10	8308	2.32	230.44
008112039-02	OBS	No	41.803750	144.205427	22.6	6.438	39.4	5.3	2.10	8308	1.18	230.40
008112039-03	OBS	No	41.806907	143.303402	2320.9	74.392	44.5	120.7	2.10	8308	13.13	230.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008112039-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
008112039-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
008112039-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

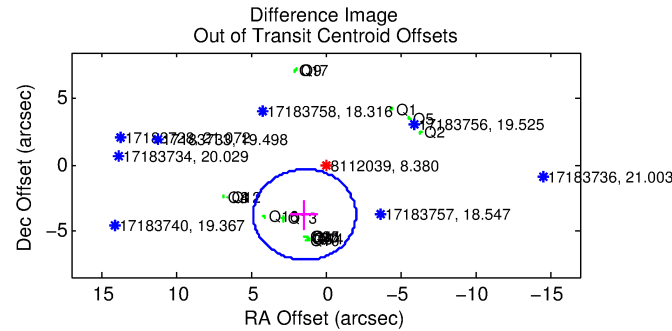
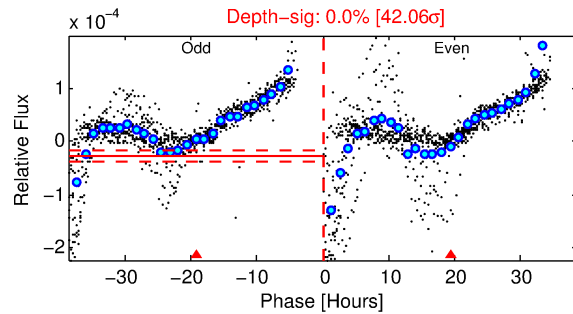
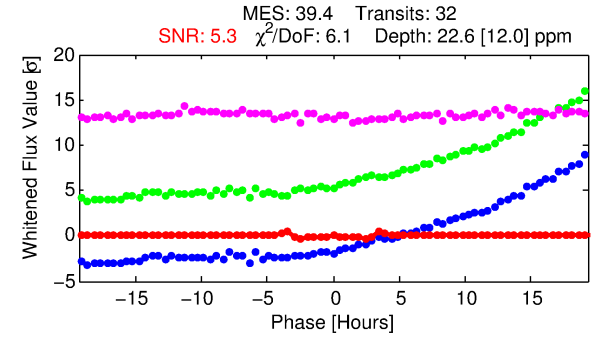
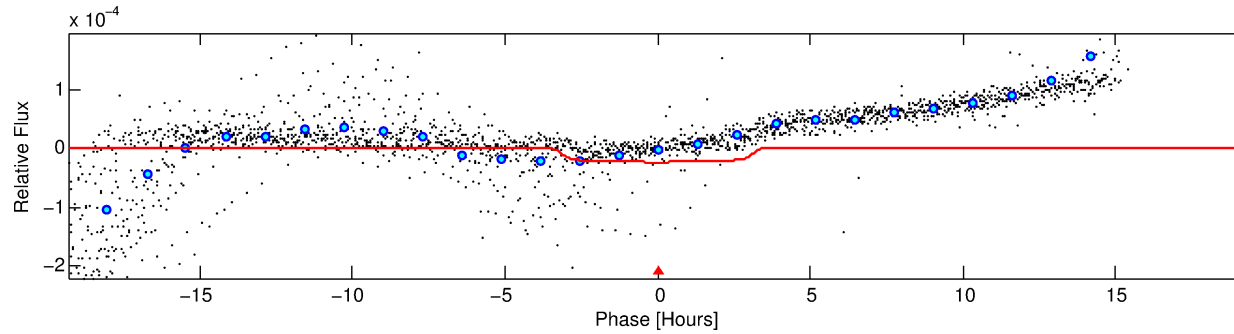
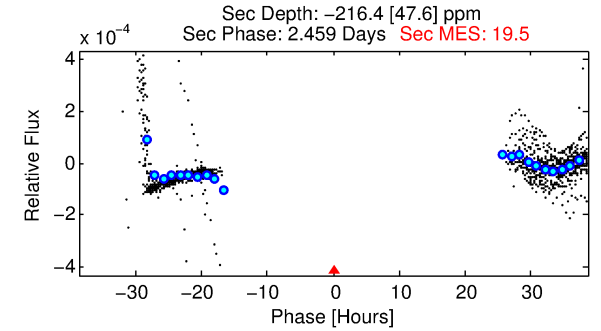
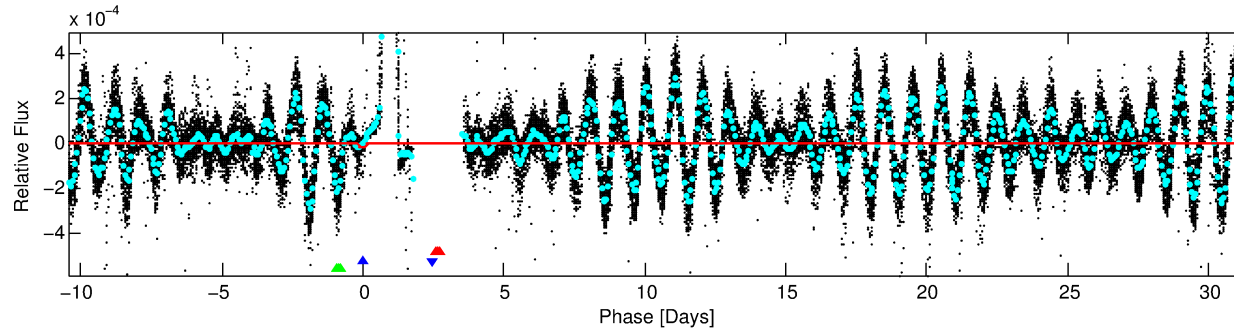
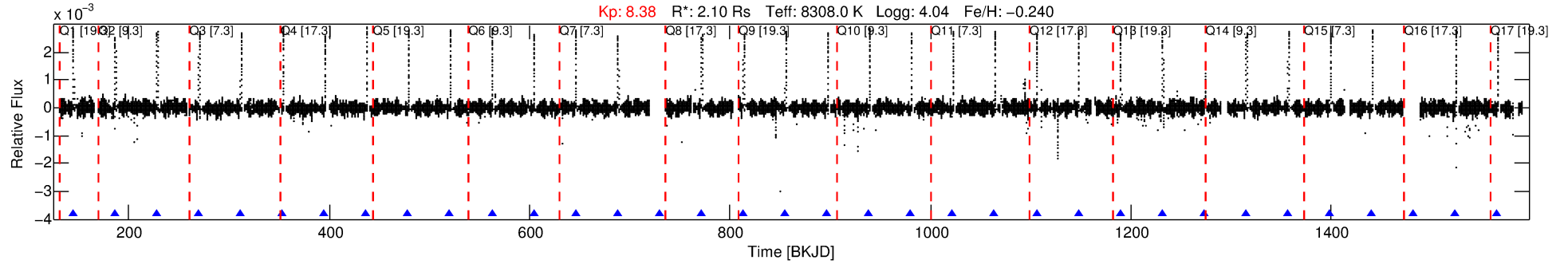
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008112039-02

No Significant Match Found

DV One-Page Summary

KIC: 8112039 Candidate: 2 of 3 Period: 41.804 d



DV Fit Results:

Period = 41.80375 [0.00080] d
Epoch = 144.2054 [0.0155] BKJD
 $R_p/R^* = 0.0051$ [0.0024]
 $a/R^* = 20.61$ [45.26]
 $b = 0.92$ [0.39]
Seff = 230.40 [84.25]
Teq = 993 [91] K
 $R_p = 1.18$ [0.63] R_e
 $a = 0.2862$ [0.0632] AU
Ag = N/A
Teffp = N/A

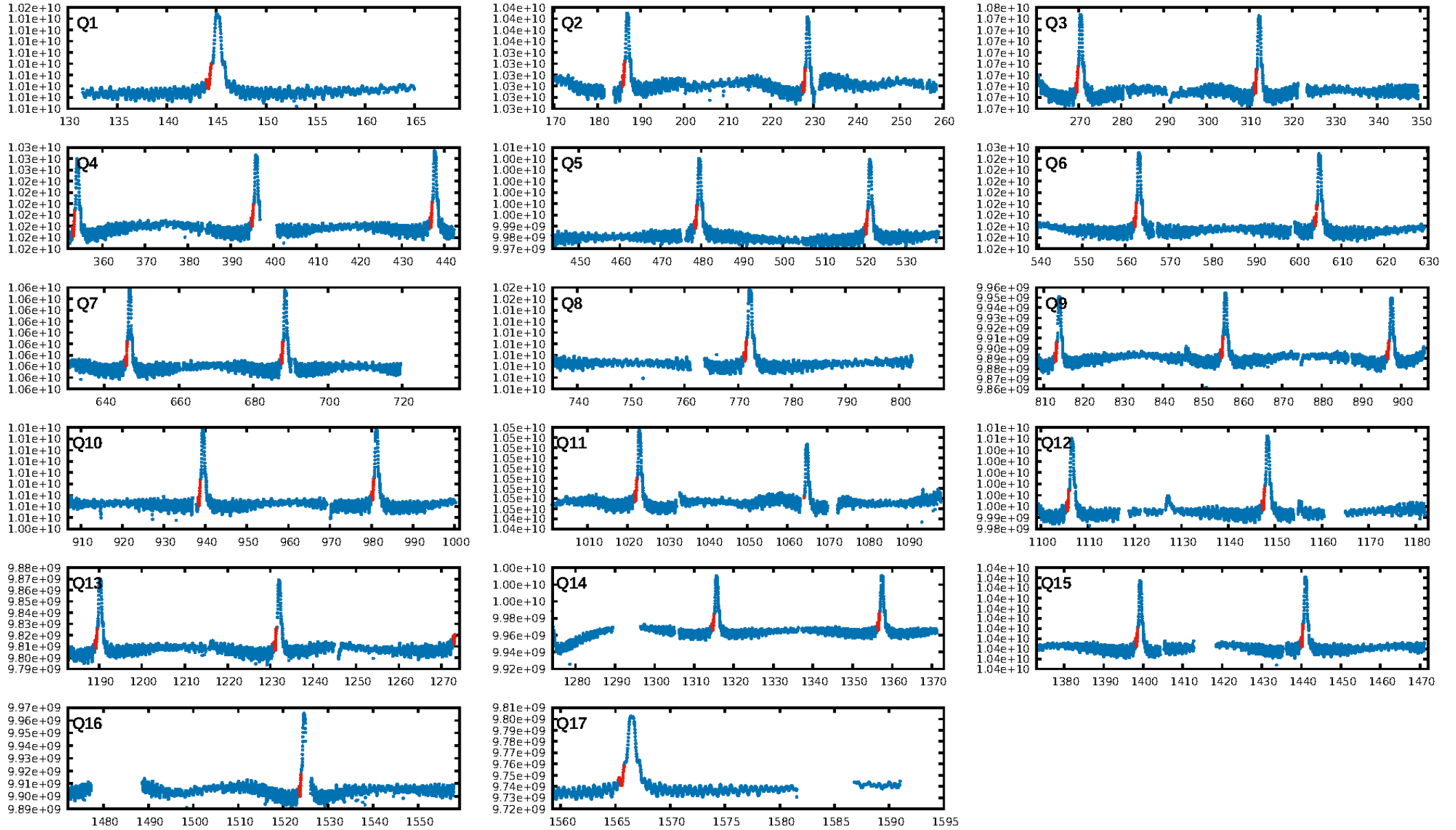
DV Diagnostic Results:

ShortPeriod-sig: 0.6% [0.01σ]
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: 1.3%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 3.30e-35
RollingBand-fgt: 1.00 [30/30]
GhostDiagnostic-chr: N/A
Centroid-sig: 47.6%
Centroid-so: 3.375 arcsec [0.68σ]
OotOffset-rm: 4.037 arcsec [3.53σ]
KicOffset-rm: 6.755 arcsec [6.47σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 0.00 [0/17]

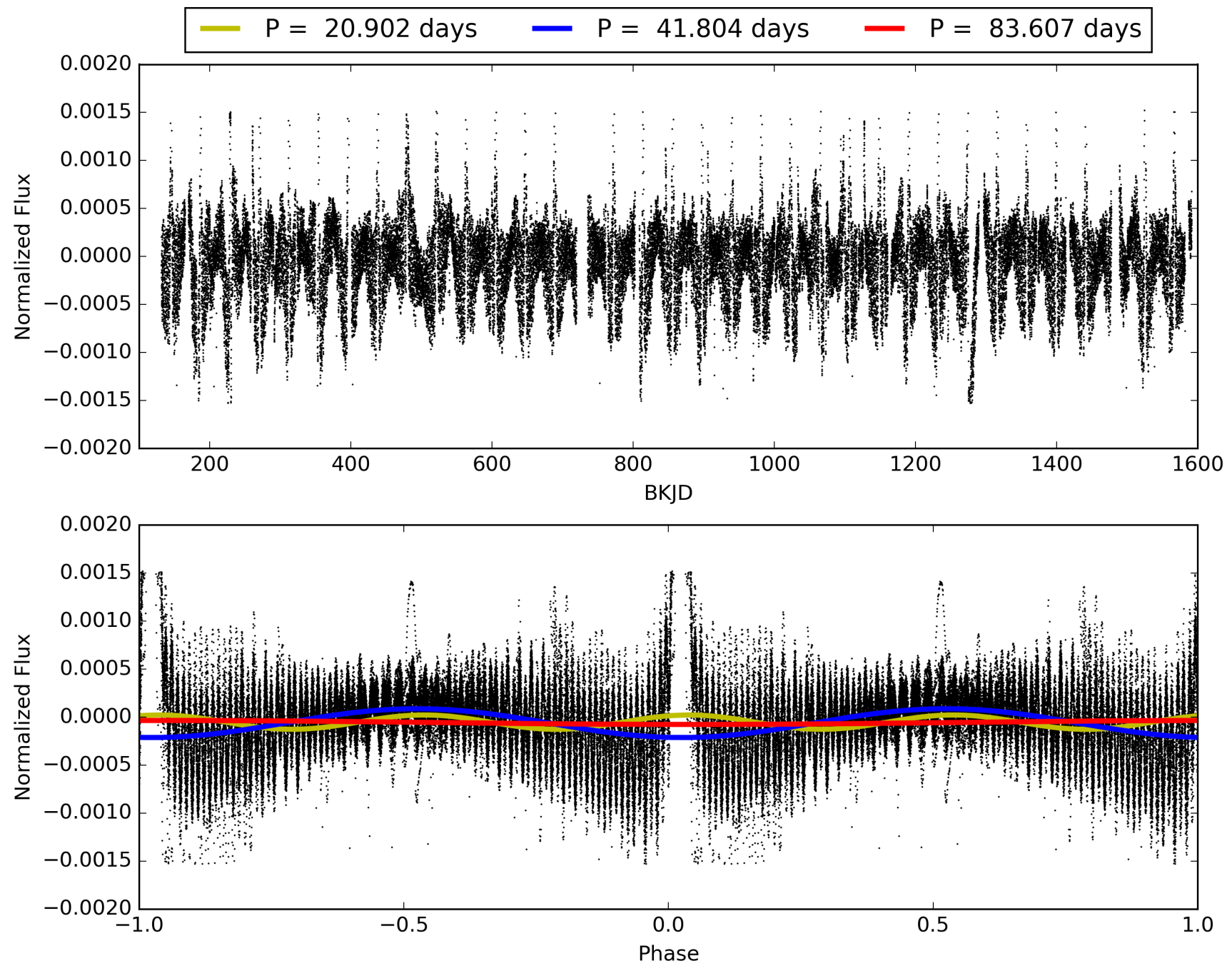
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:07:03 Z

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

TCE 008112039-02, PDC Light Curves

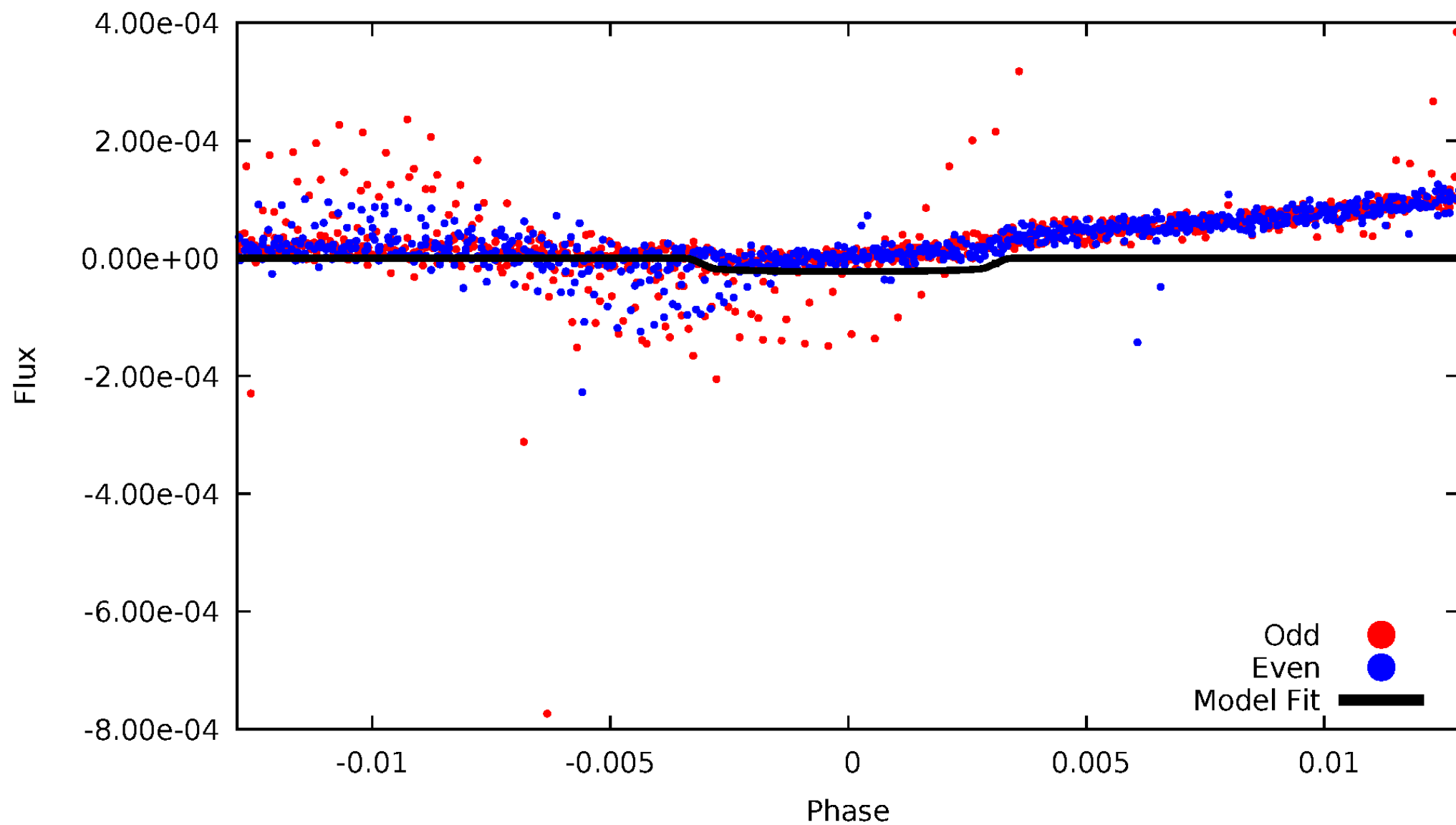


TCE 008112039-02



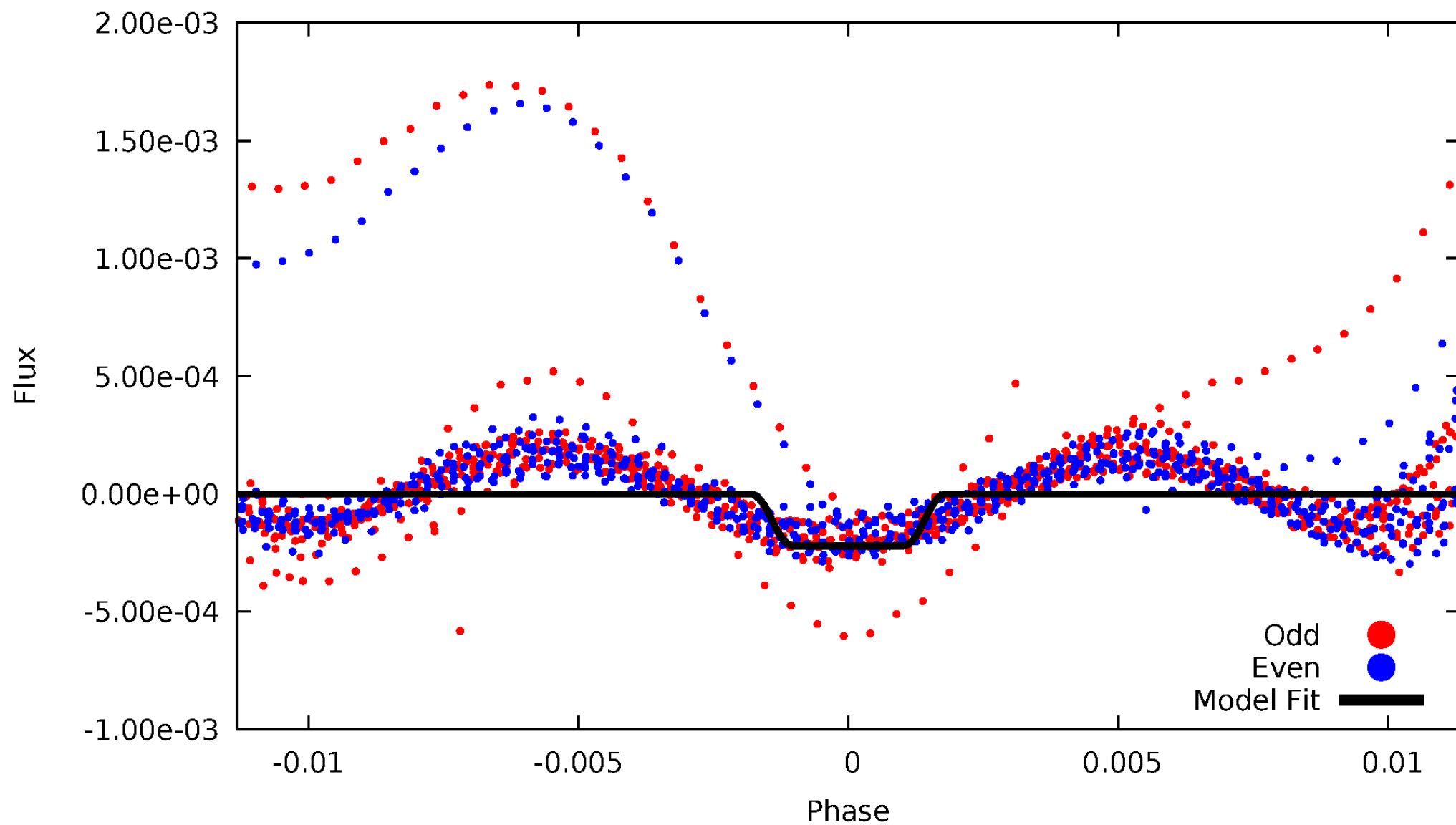
DV Odd/Even

TCE 008112039-02



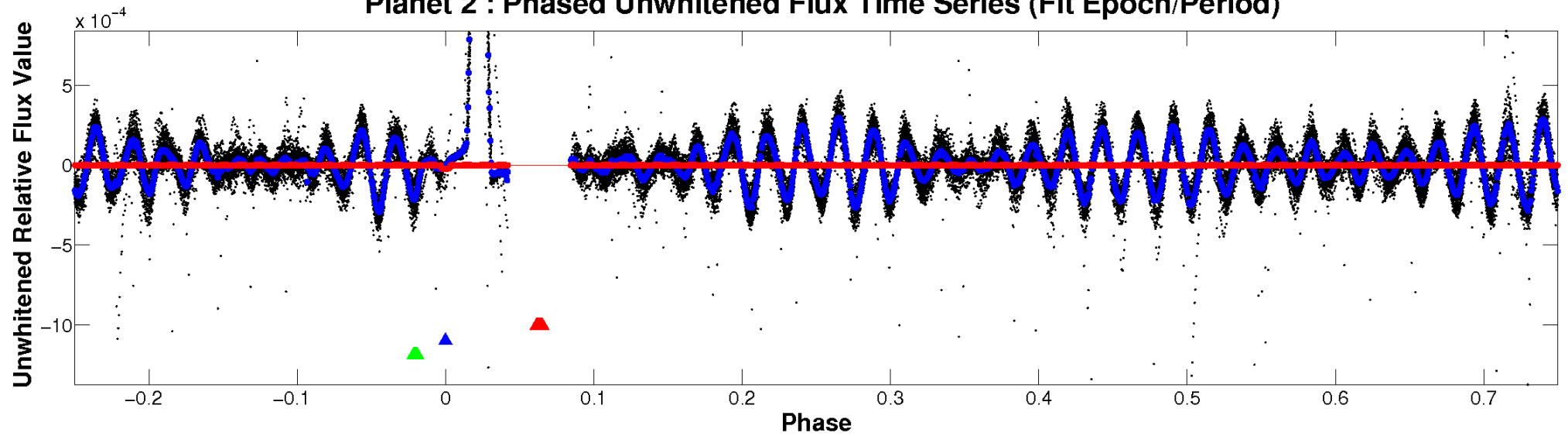
ALT Odd/Even

TCE 008112039-02

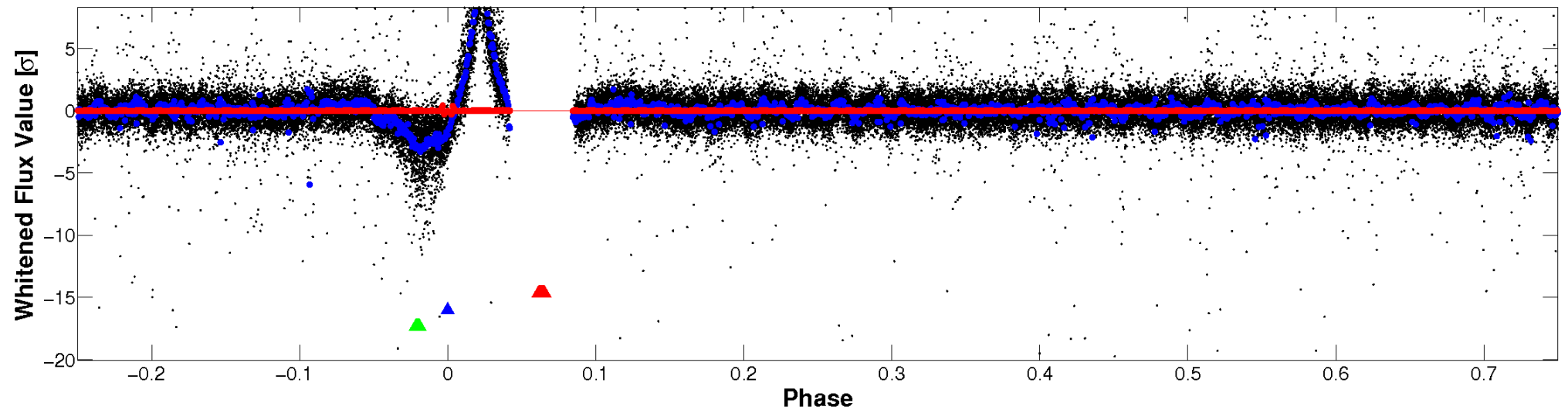


Non-Whitened Vs. Whitened Light Curve

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

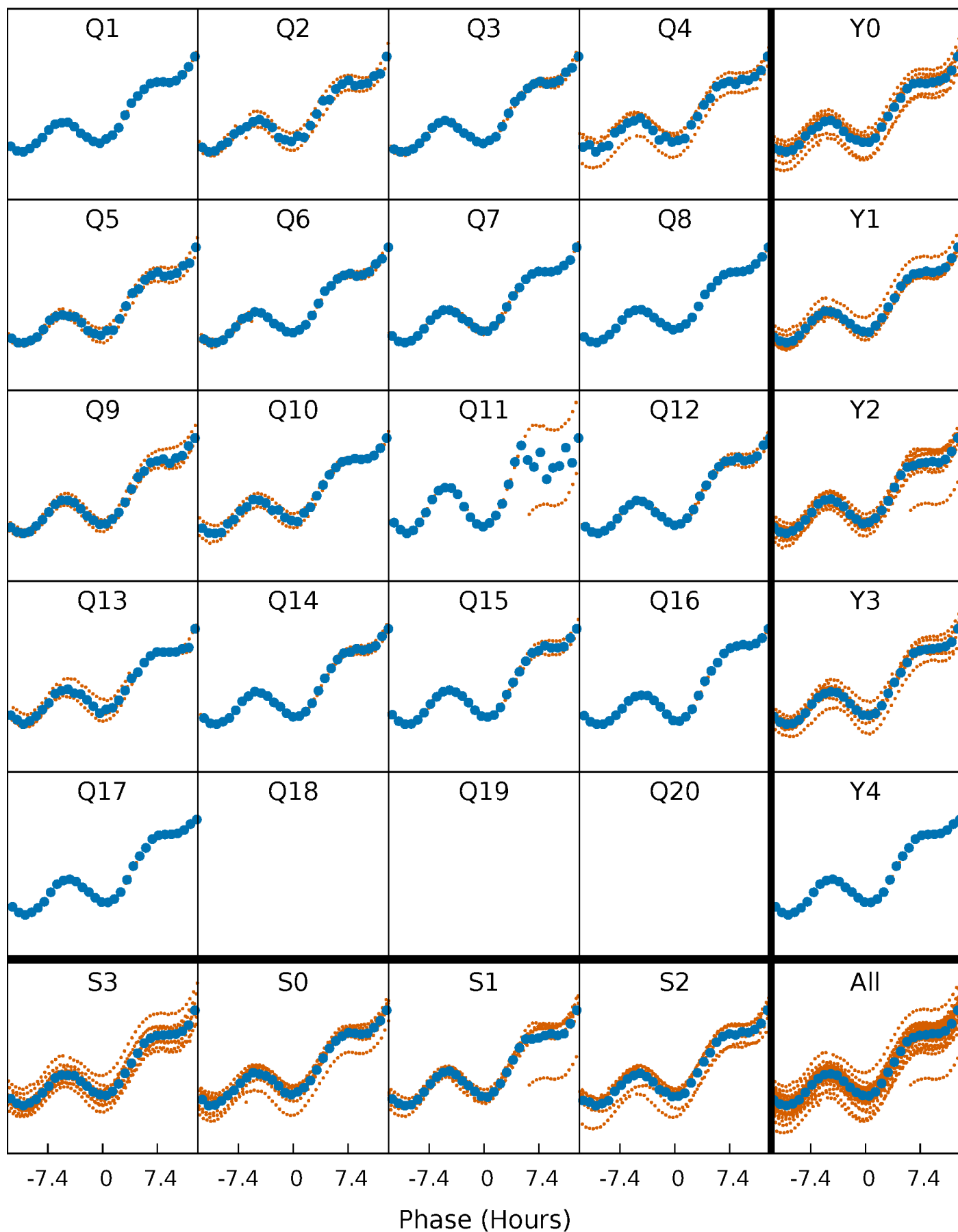


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



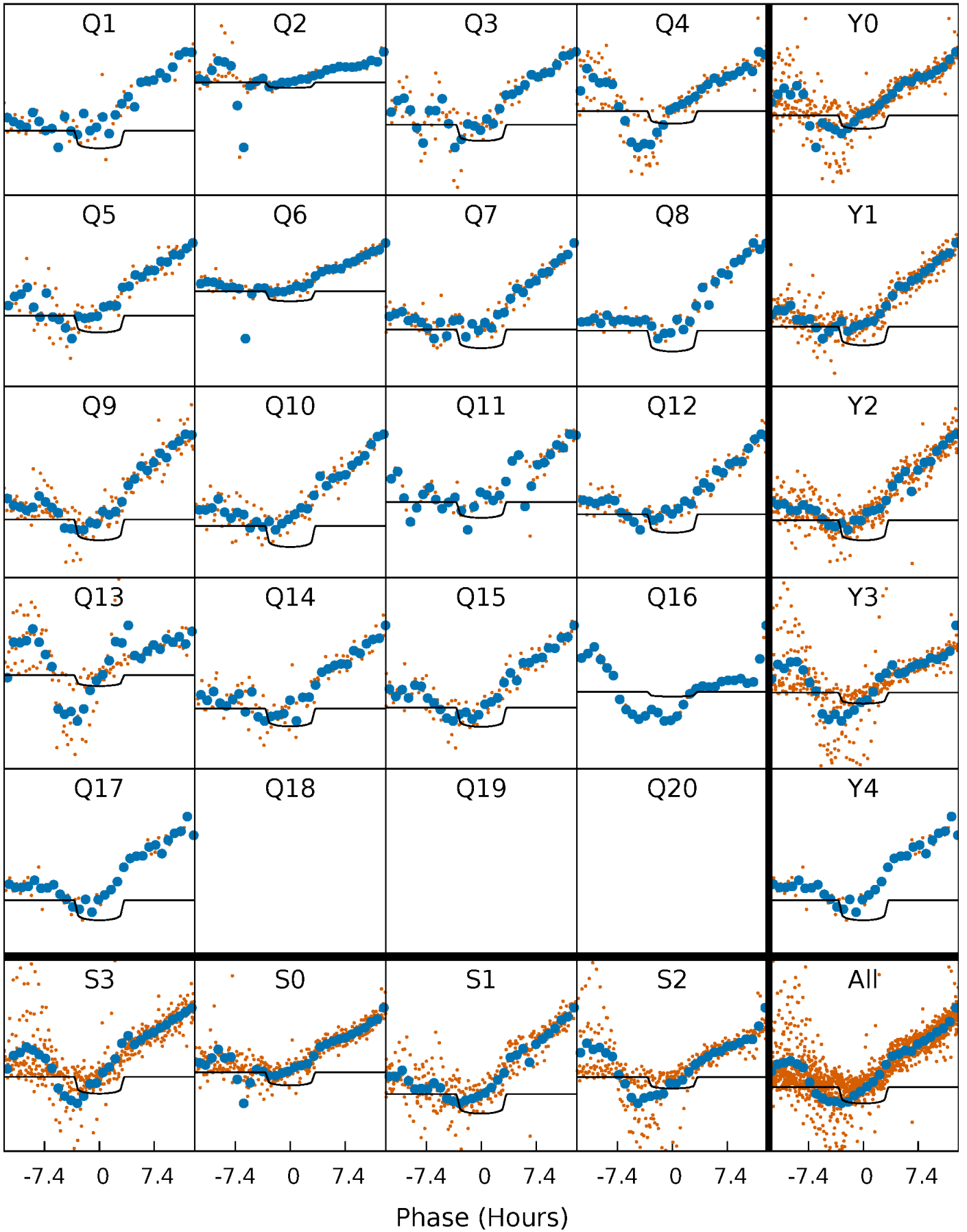
PDC Quarter-Phased Transit Curves

TCE 008112039-02 P= 41.803750 Days $T_0=144.205427$ (BKJD)



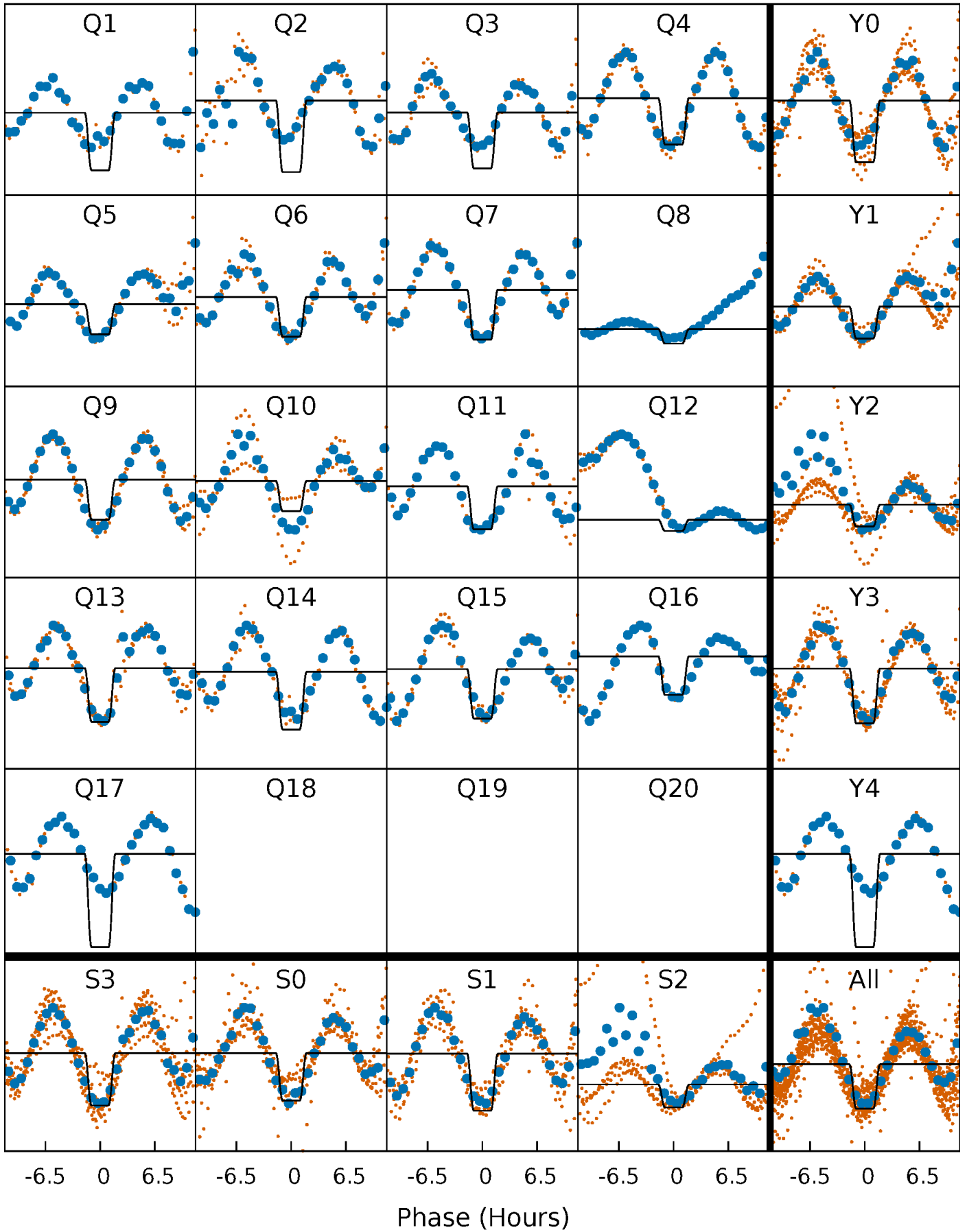
DV Quarter-Phased Transit Curves

TCE 008112039-02 P= 41.803750 Days $T_0=144.205427$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

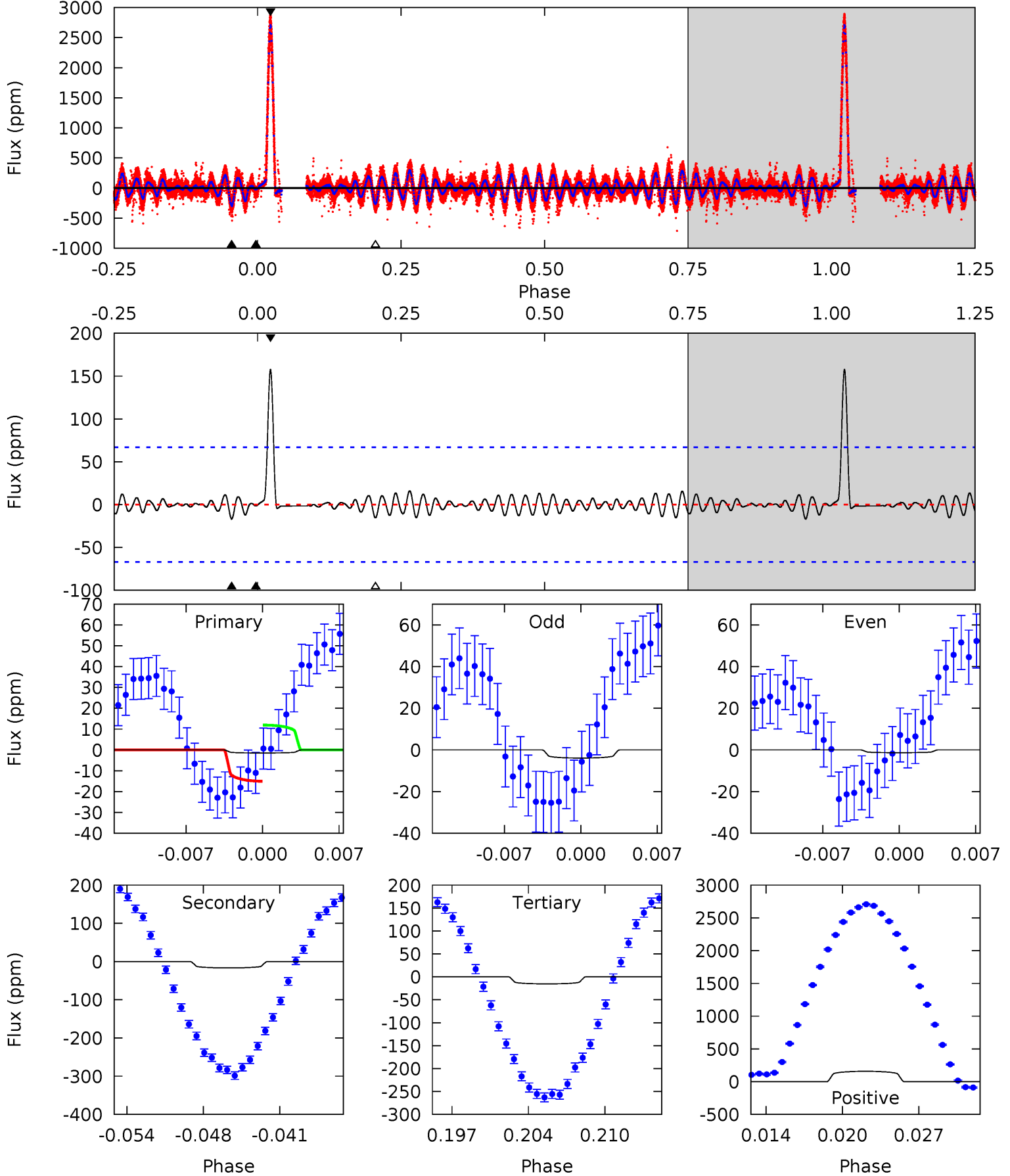
TCE 008112039-02 P= 41.803136 Days $T_0=144.242279$ (BKJD)



DV Model-Shift Uniqueness Test

008112039-02, P = 41.803750 Days, E = 102.401677 Days

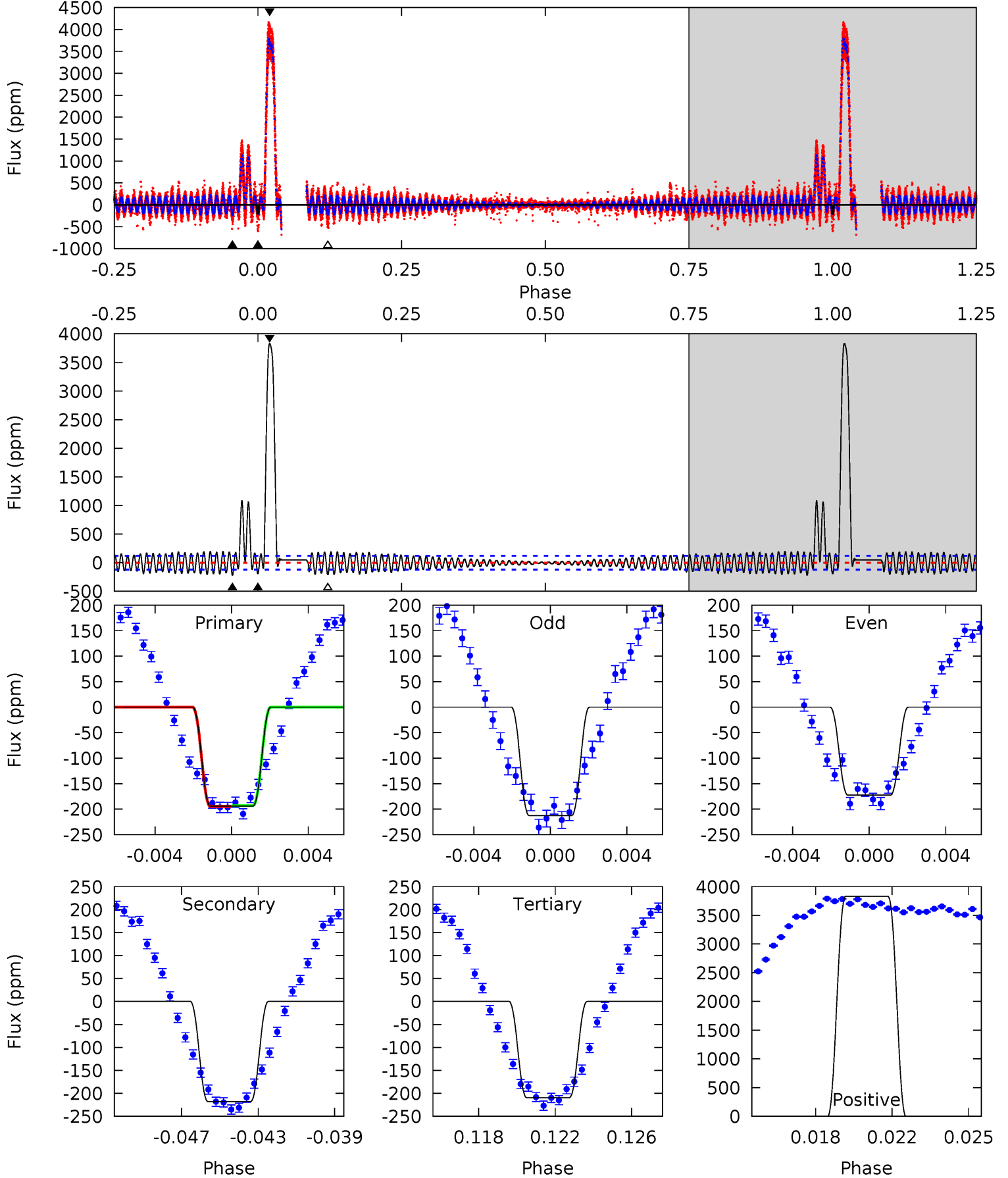
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.11	1.27	1.18	12.0	5.10	2.71	1.20	-1.06	-11.9	0.09	-10.7	0.13	-0.62	0.90	0.19



Alt Model-Shift Uniqueness Test

008112039-02, P = 41.803136 Days, E = 102.439143 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.40	9.46	9.09	166.2	5.22	2.91	15.0	-0.68	-157.8	0.37	-156.8	0.87	0.95	0.95	0.04



Stellar Parameters For KIC 008112039

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8308^{+233}_{-320}	$4.045^{+0.186}_{-0.139}$	$-0.240^{+0.250}_{-0.300}$	$2.103^{+0.435}_{-0.532}$	$1.787^{+0.146}_{-0.292}$	$0.271^{+0.284}_{-0.103}$
	+3%/-4%	+5%/-3%	+104%/-125%	+21%/-25%	+8%/-16%	+105%/-38%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008112039-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-17 ± 13	$1.20^{+0.58}_{-0.54}$	1385^{+87}_{-99}	6959^{+3292}_{-2078}	486^{+1234}_{-374}
Alt.	-218 ± 23	$3.35^{+0.70}_{-0.65}$	1379^{+90}_{-94}	8240^{+1074}_{-814}	861^{+481}_{-273}

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

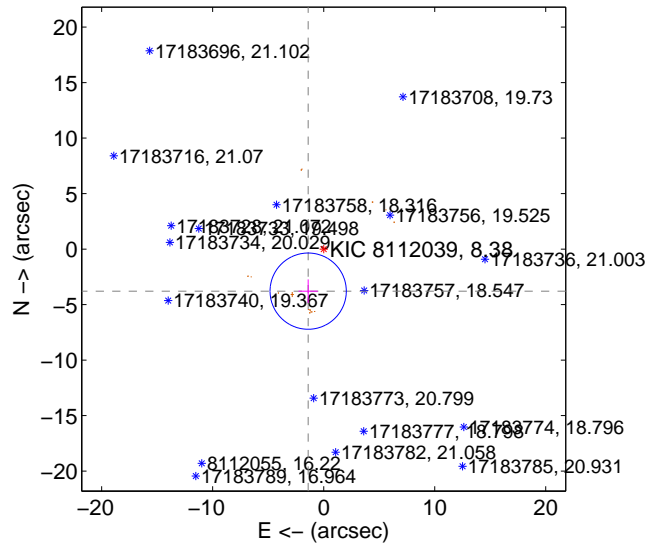
Supplemental centroid analysis for 008112039-02. **Kepler magnitude: 8.38.** Transit SNR 5.34

There are 0 quarters with good PRF difference image offsets

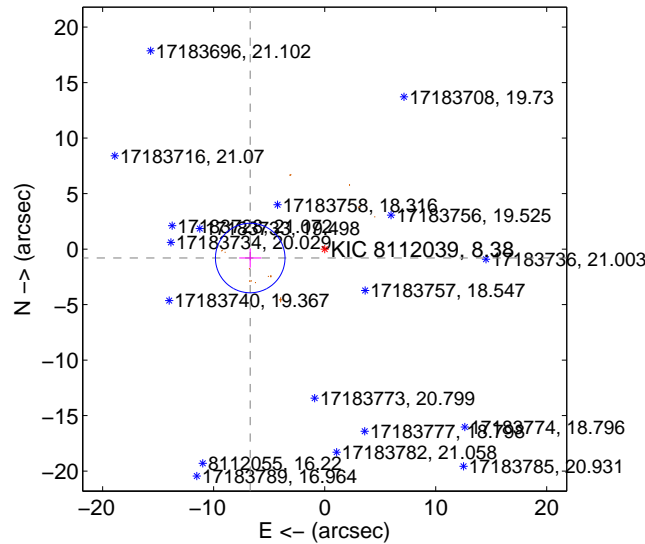
The direct PRF centroid is offset from the target star catalog position by about 1.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.037 ± 1.144	3.53	1.398 ± 0.868	-3.787 ± 1.062
PRF-fit source offset from KIC position	6.755 ± 1.044	6.47	6.707 ± 0.992	-0.802 ± 0.872
photometric centroid source offset	3.37 ± 4.93	0.68	-2.33 ± 6.06	2.44 ± 3.60

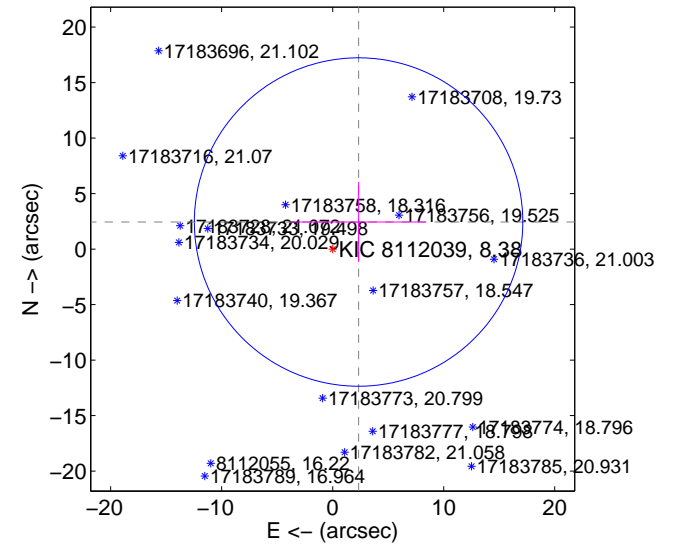
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

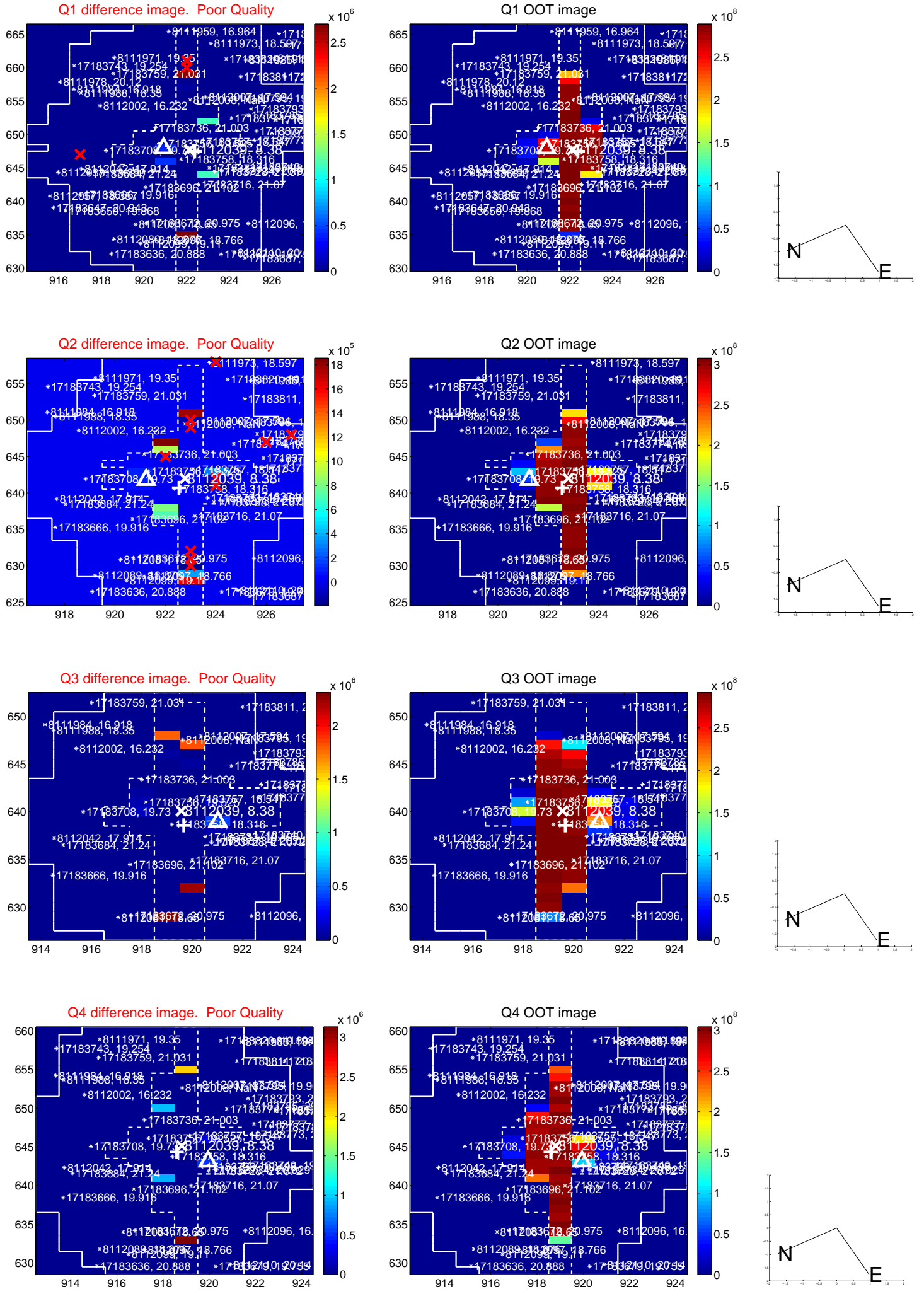


offset from photometric centroids

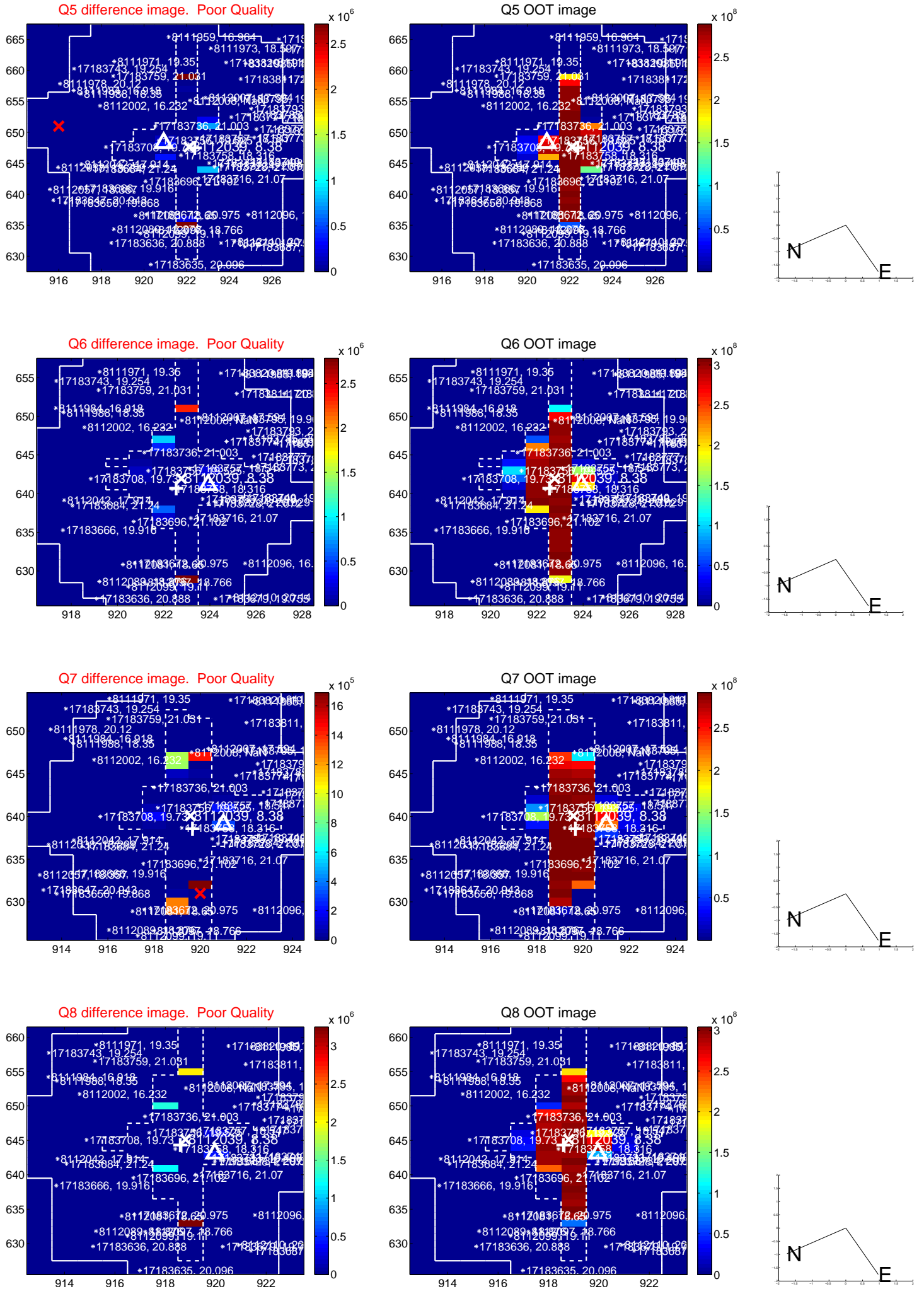


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

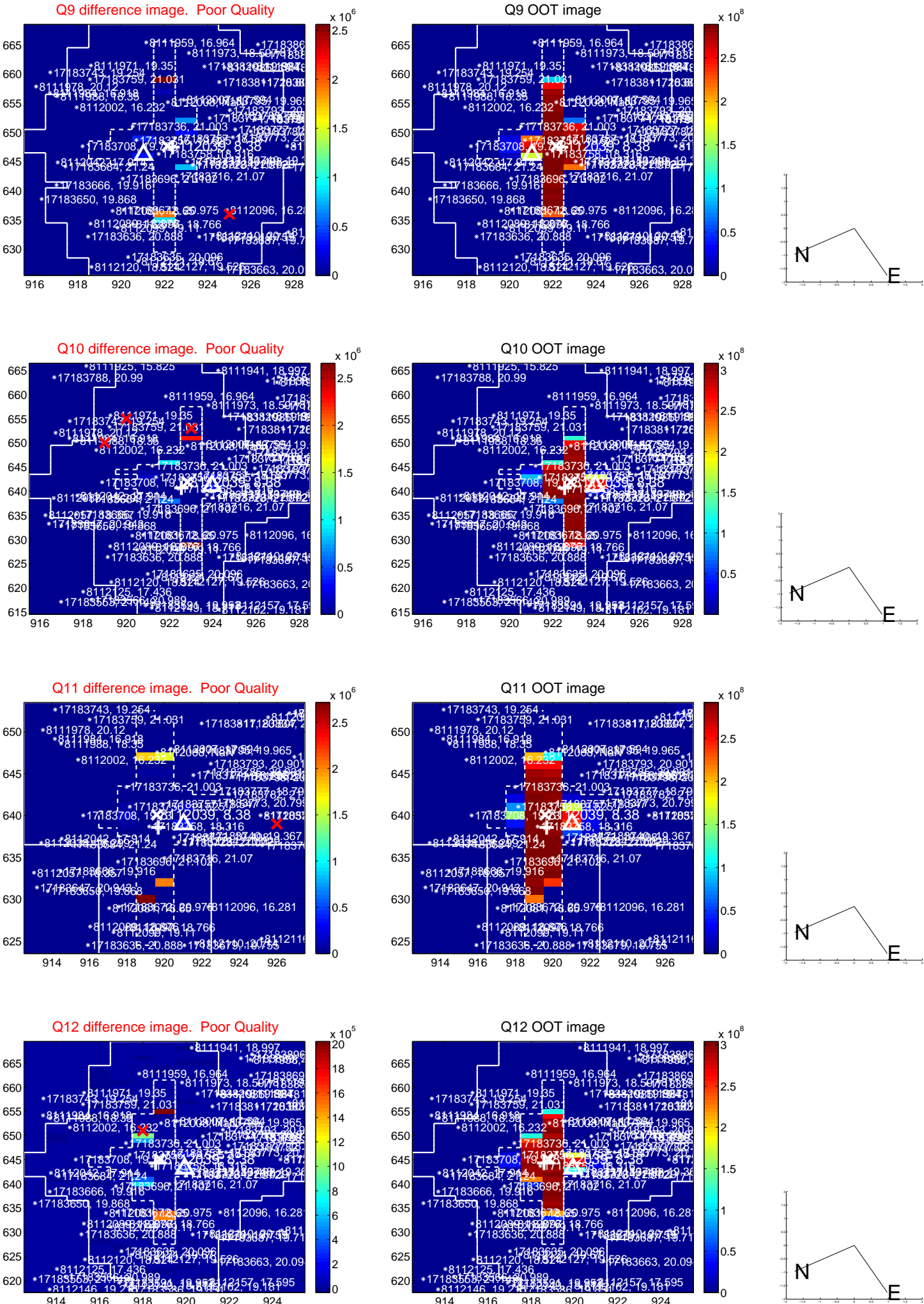
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



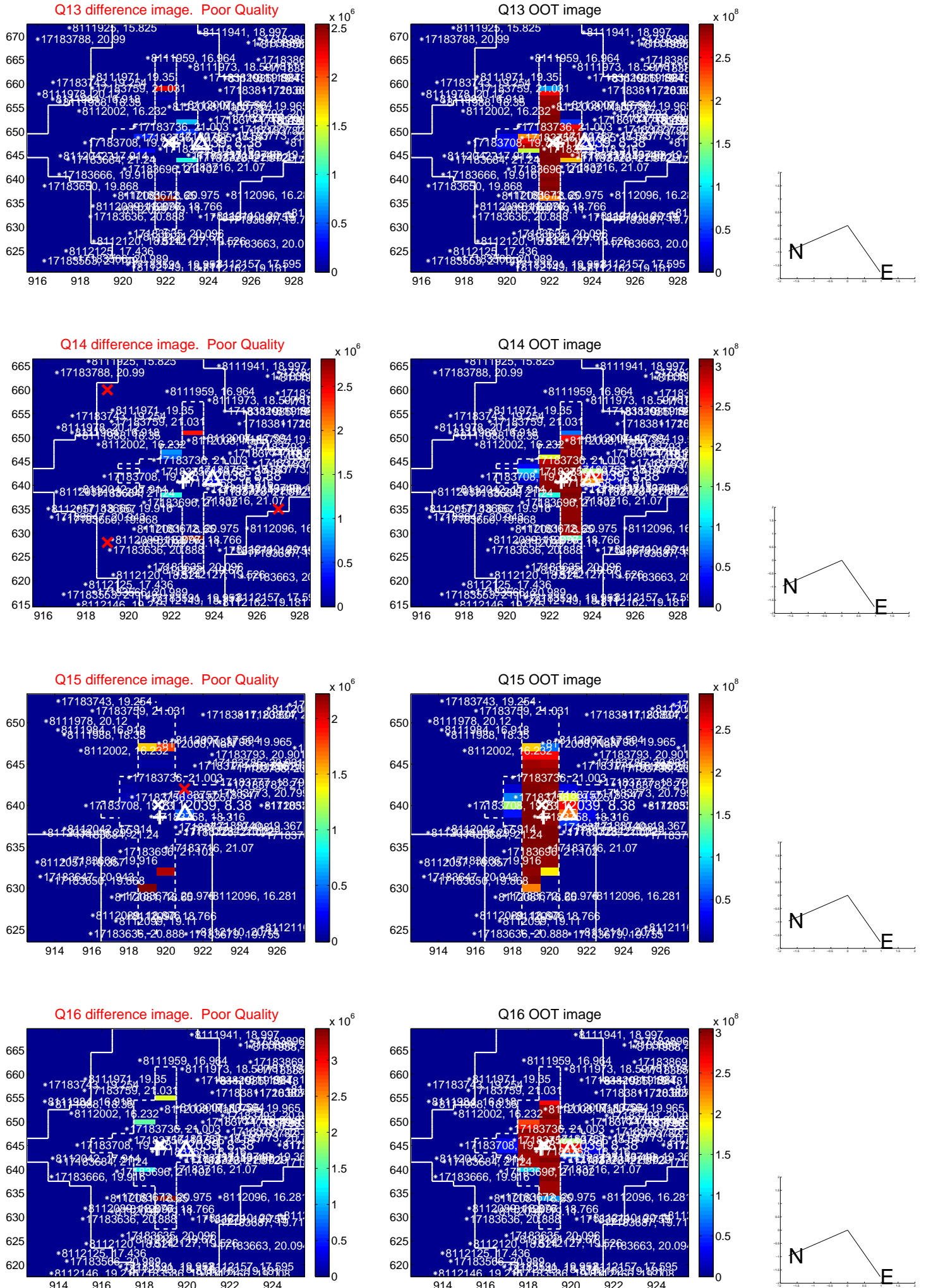
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

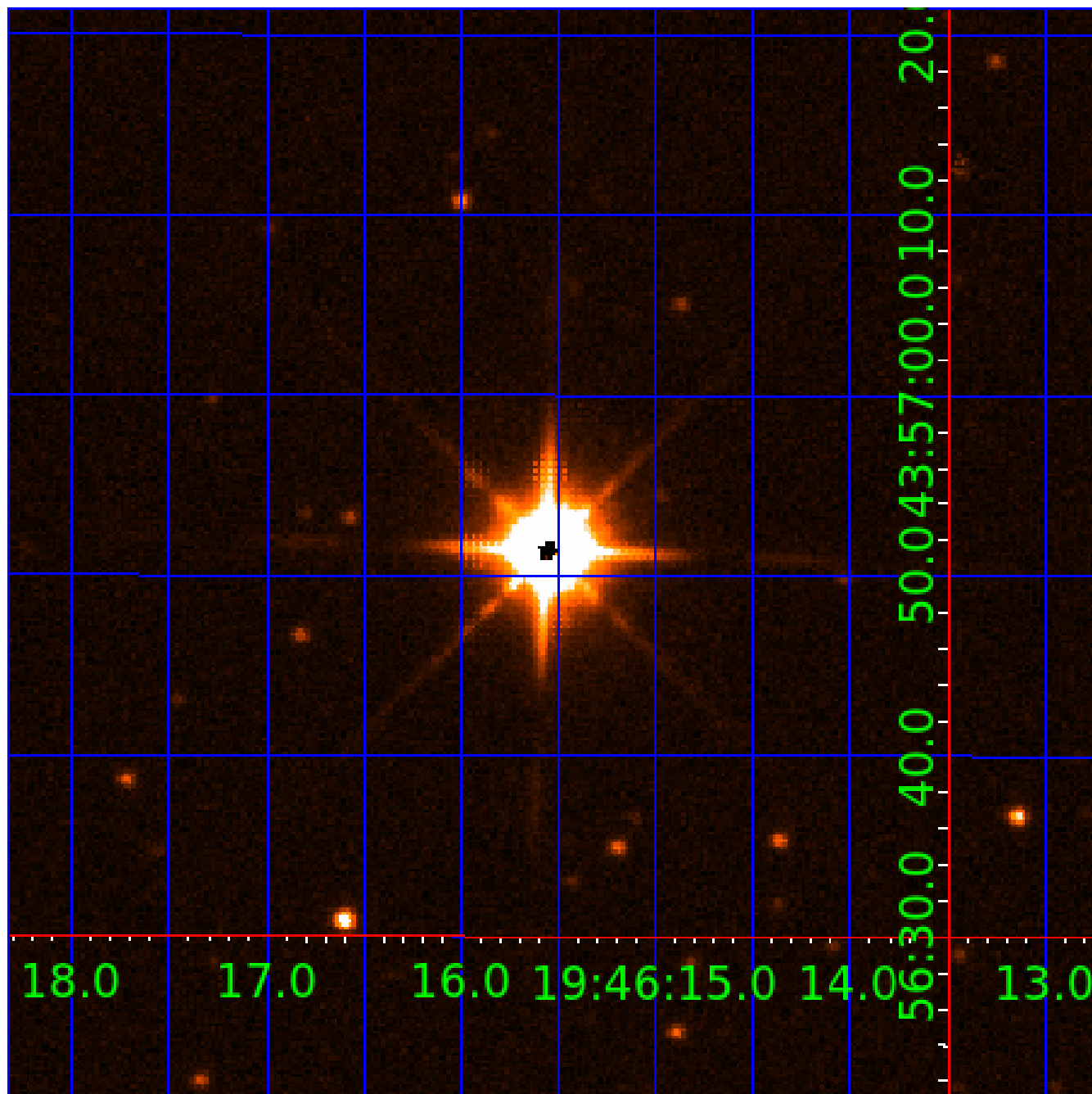


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008112039

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})
008112039-01	OBS	No	41.798645	146.940743	117.2	15.380	36.8	23.1	2.10	8308	2.32	230.44
008112039-02	OBS	No	41.803750	144.205427	22.6	6.438	39.4	5.3	2.10	8308	1.18	230.40
008112039-03	OBS	No	41.806907	143.303402	2320.9	74.392	44.5	120.7	2.10	8308	13.13	230.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008112039-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
008112039-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
008112039-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

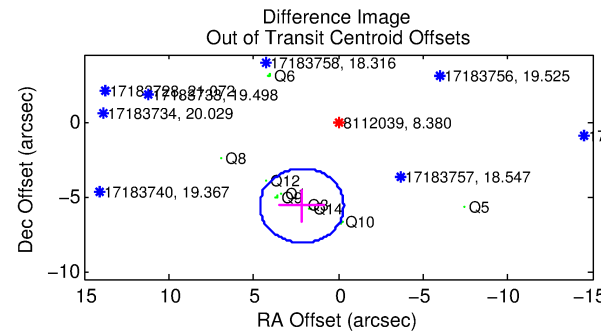
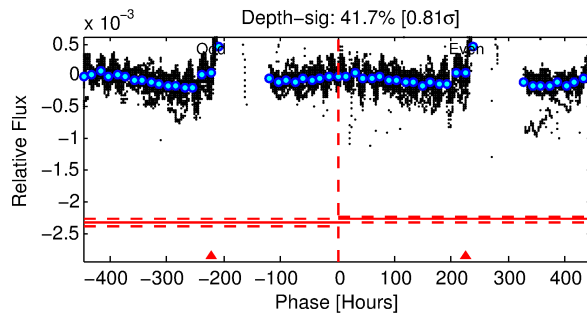
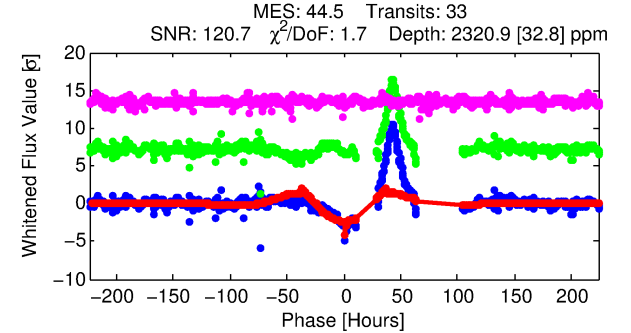
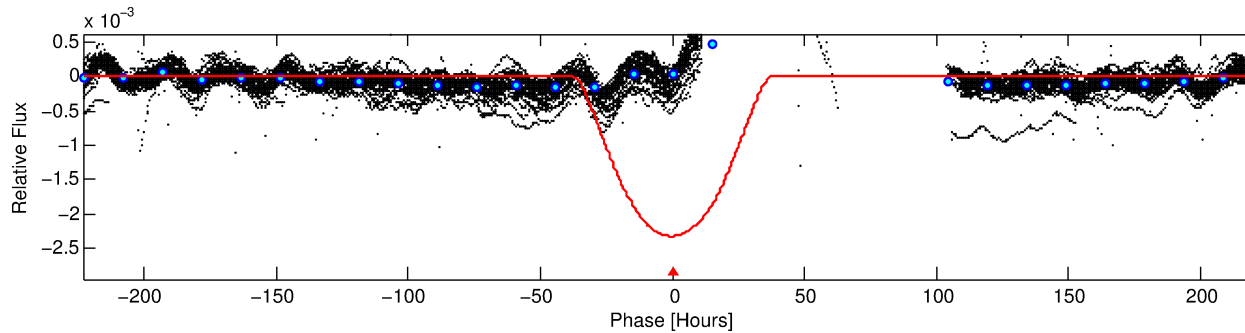
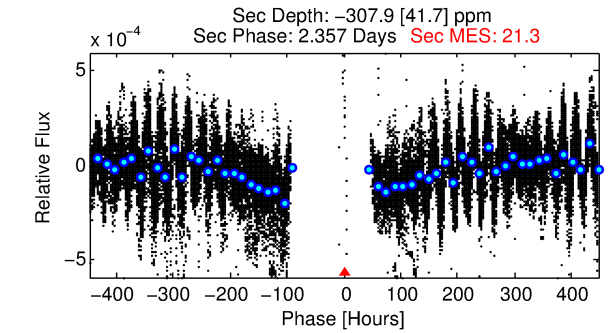
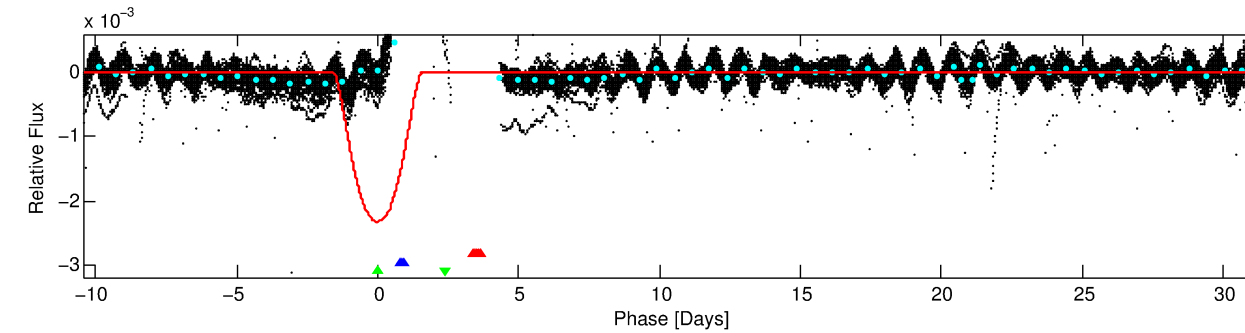
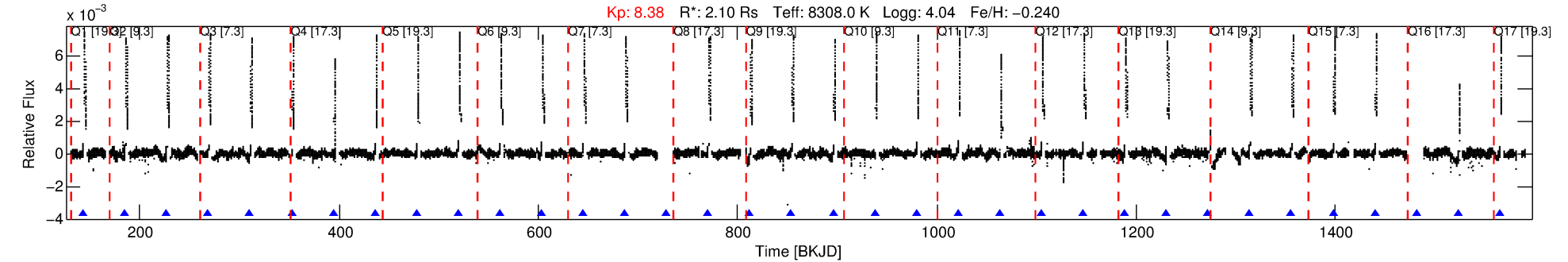
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008112039-03

No Significant Match Found

DV One-Page Summary

KIC: 8112039 Candidate: 3 of 3 Period: 41.807 d



DV Fit Results:

Period = 41.80691 [0.00060] d
Epoch = 143.3034 [0.0112] BKJD
Rp/R* = 0.0572 [0.0023]
ModelChiSquareGof-R* = 2.16 [0.03]
b = 0.96 [0.01]
Seff = 230.38 [84.24]
Teq = 993 [91] K
Rp = 13.13 [3.36] Re
a = 0.2863 [0.0633] AU
Ag = N/A
Teffp = N/A

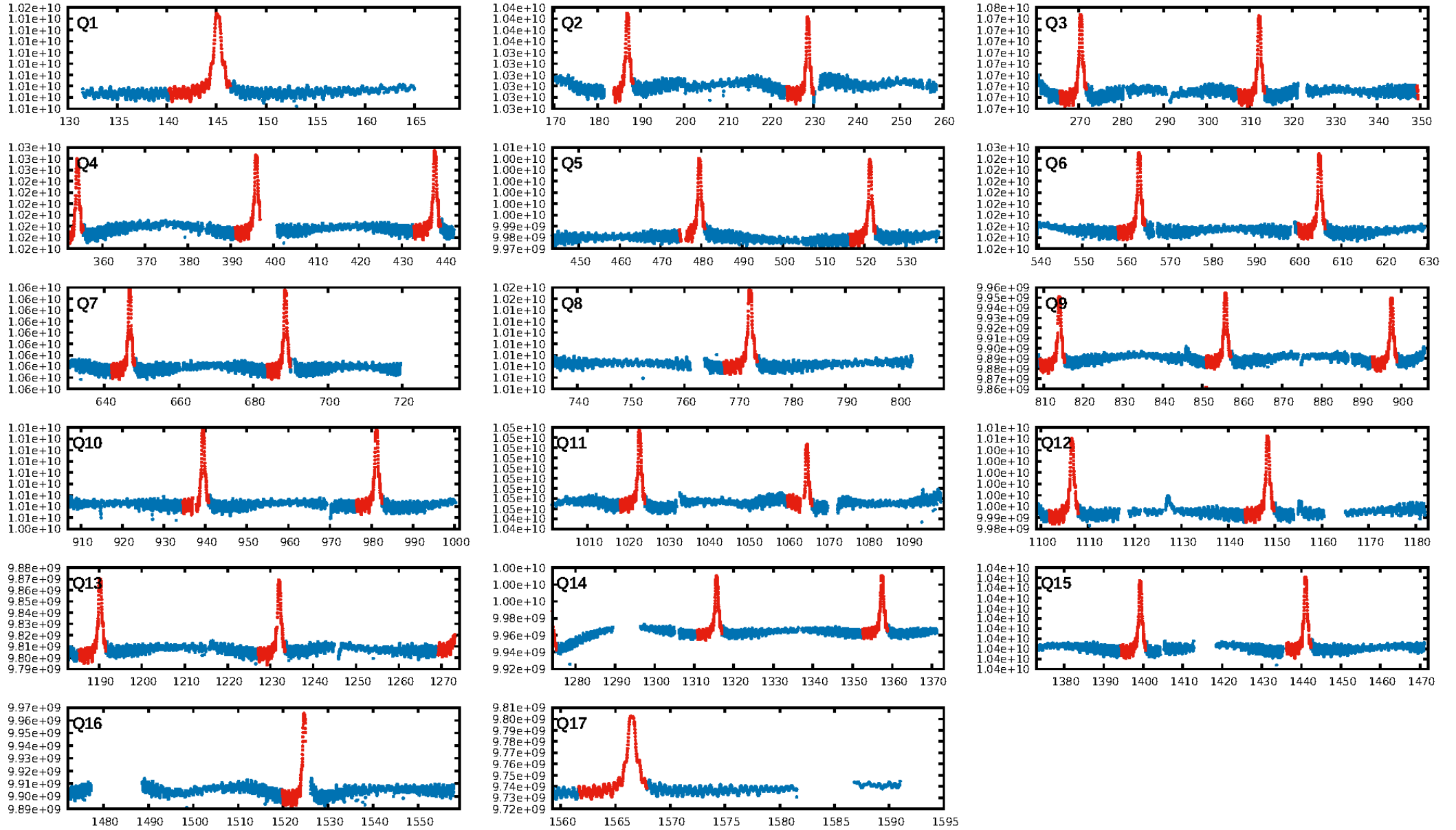
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.39e-43
RollingBand-fgt: 1.00 [31/31]
GhostDiagnostic-chr: N/A
Centroid-sig: 7.1%
Centroid-so: 3.294 arcsec [115.33σ]
OotOffset-rm: 6.009 arcsec [7.27σ]
KicOffset-rm: 6.332 arcsec [6.40σ]
OotOffset-st: 3/1/2/3 [9]
KicOffset-st: 3/1/2/3 [9]
DiffImageQuality-fgm: 0.00 [0/9]
DiffImageOverlap-fno: 0.00 [0/9]

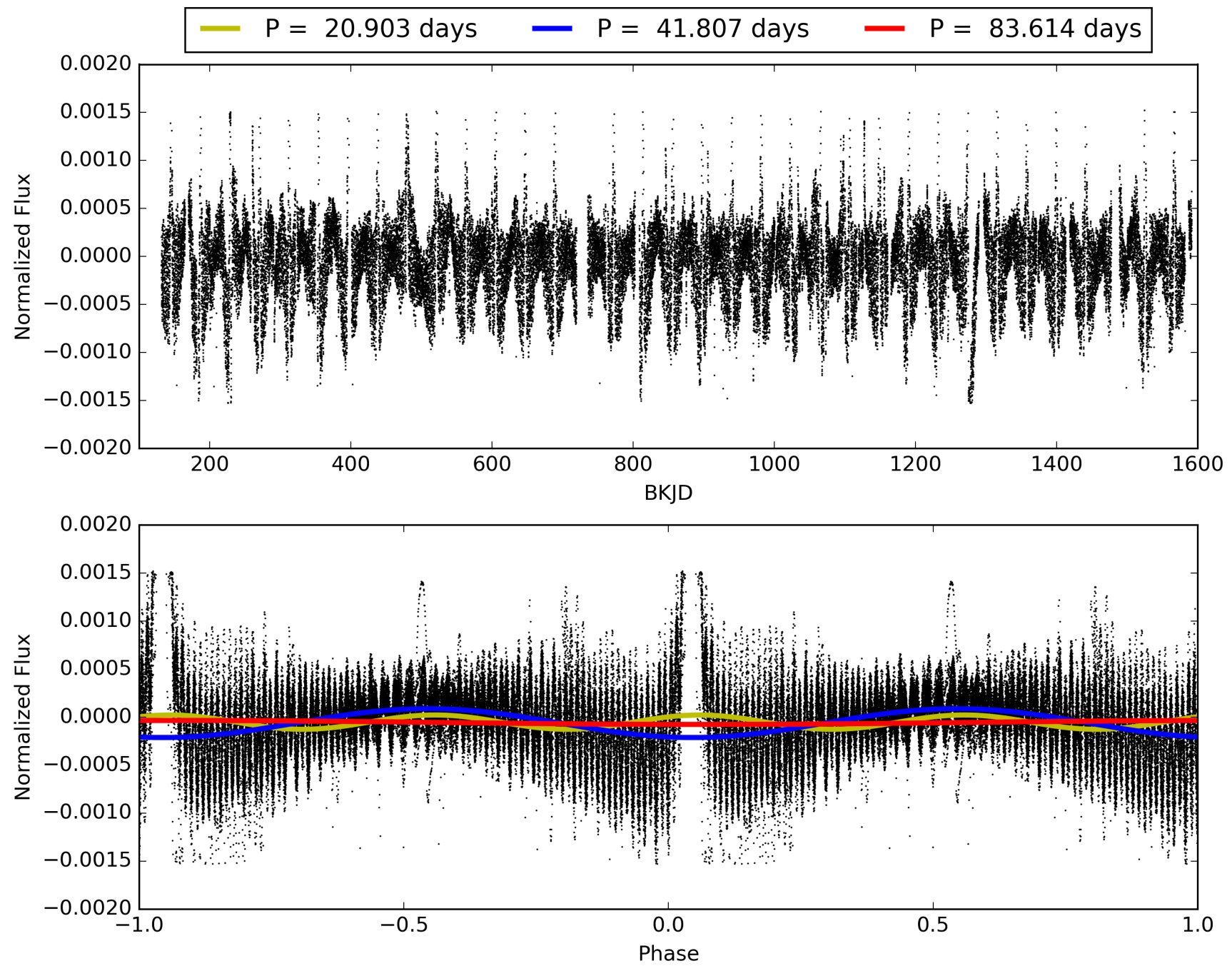
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:07:11 Z

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

TCE 008112039-03, PDC Light Curves

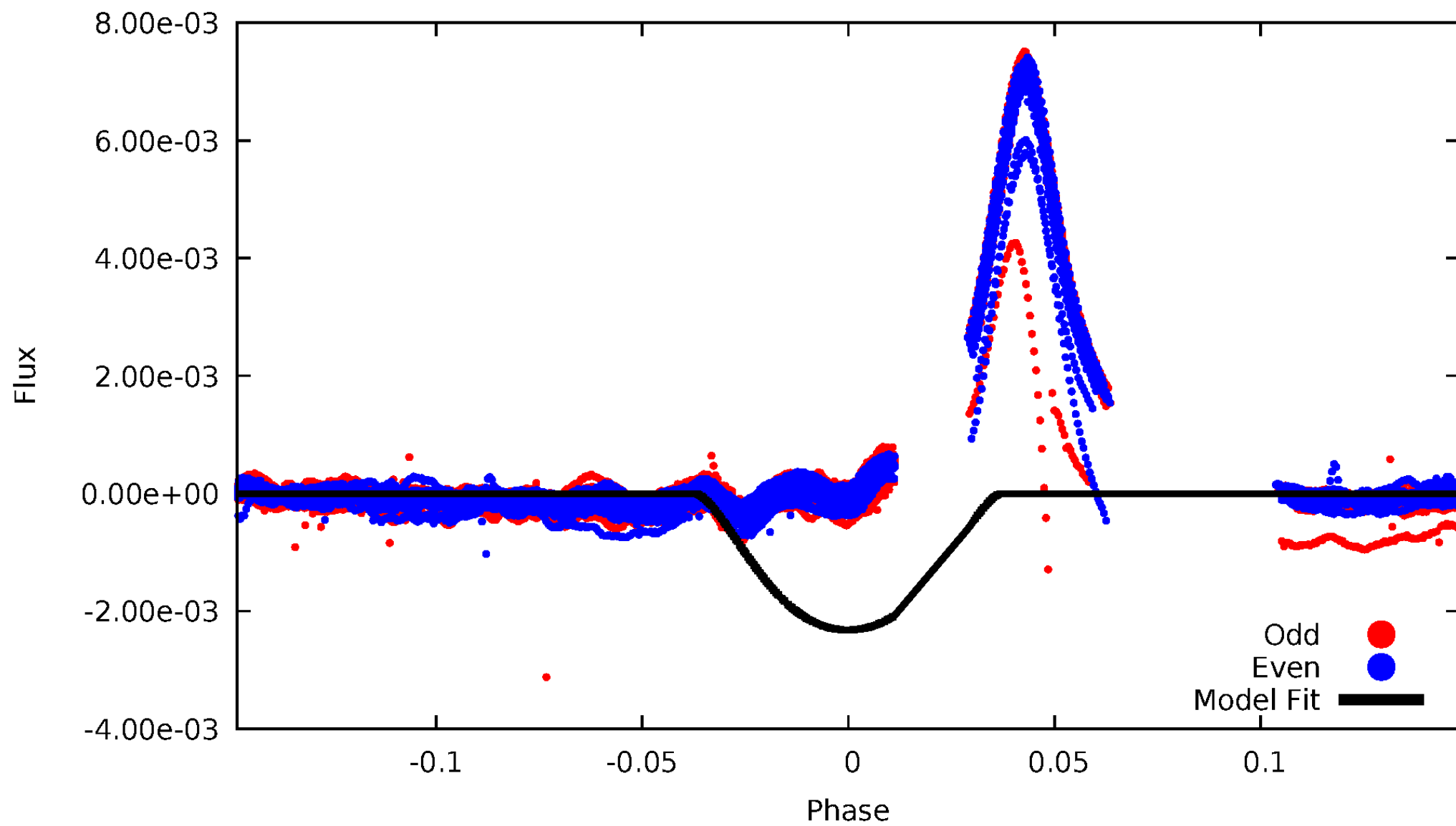


TCE 008112039-03



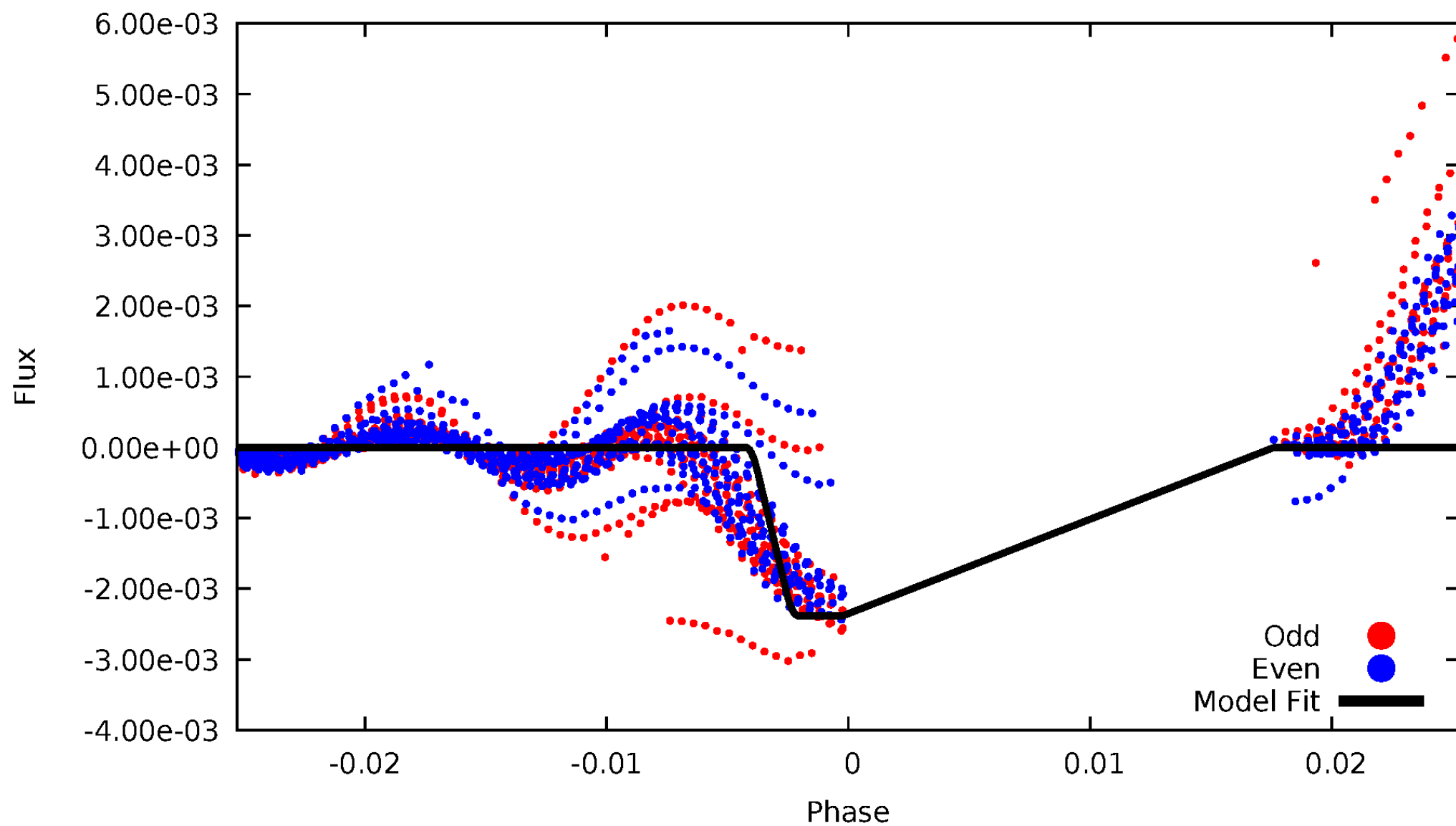
DV Odd/Even

TCE 008112039-03



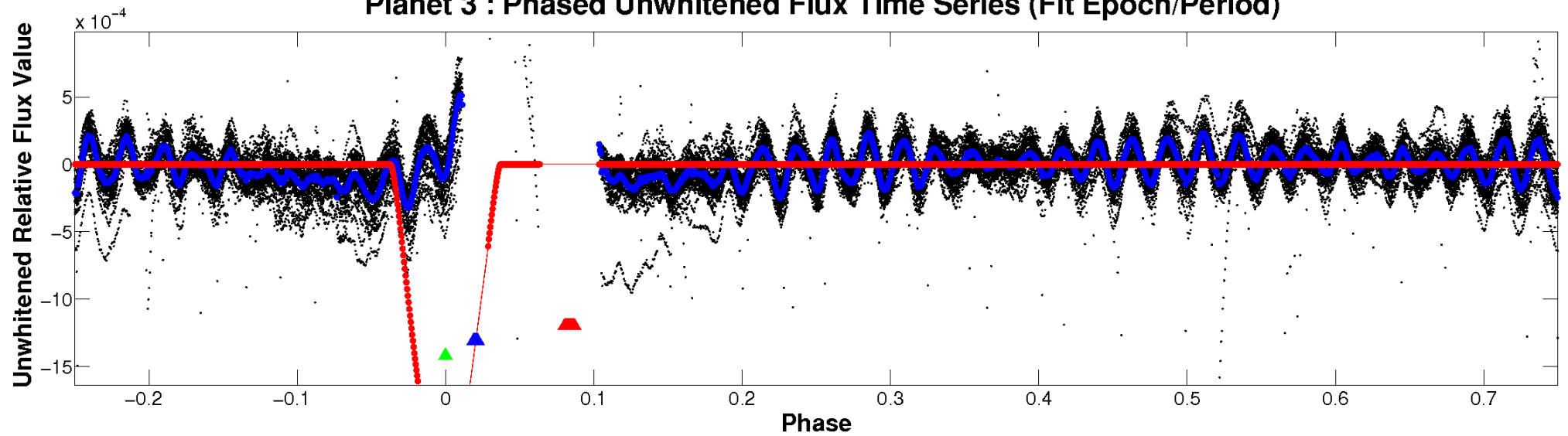
ALT Odd/Even

TCE 008112039-03

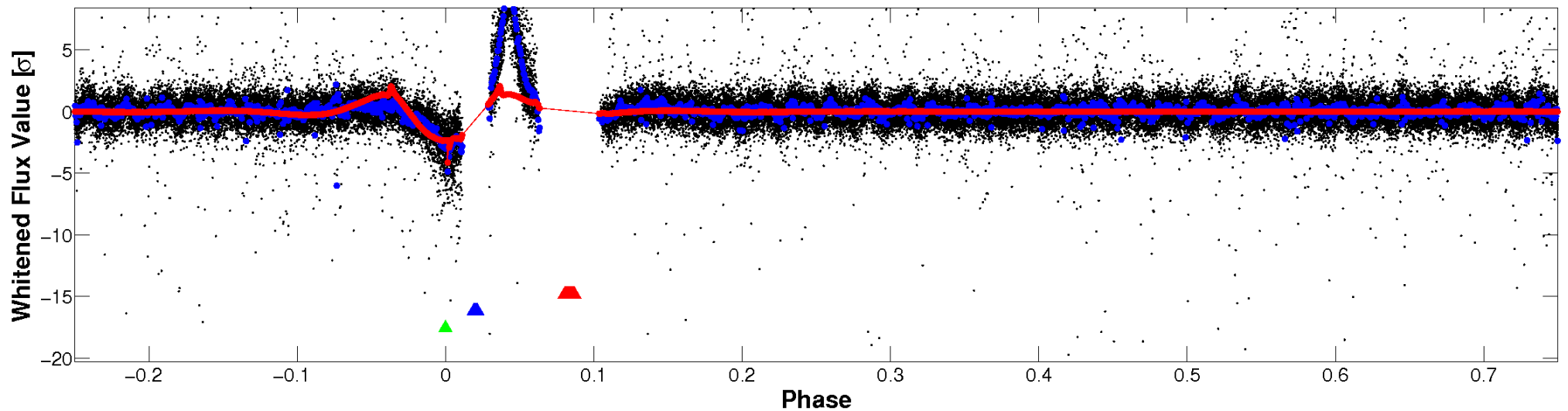


Non-Whitened Vs. Whitened Light Curve

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

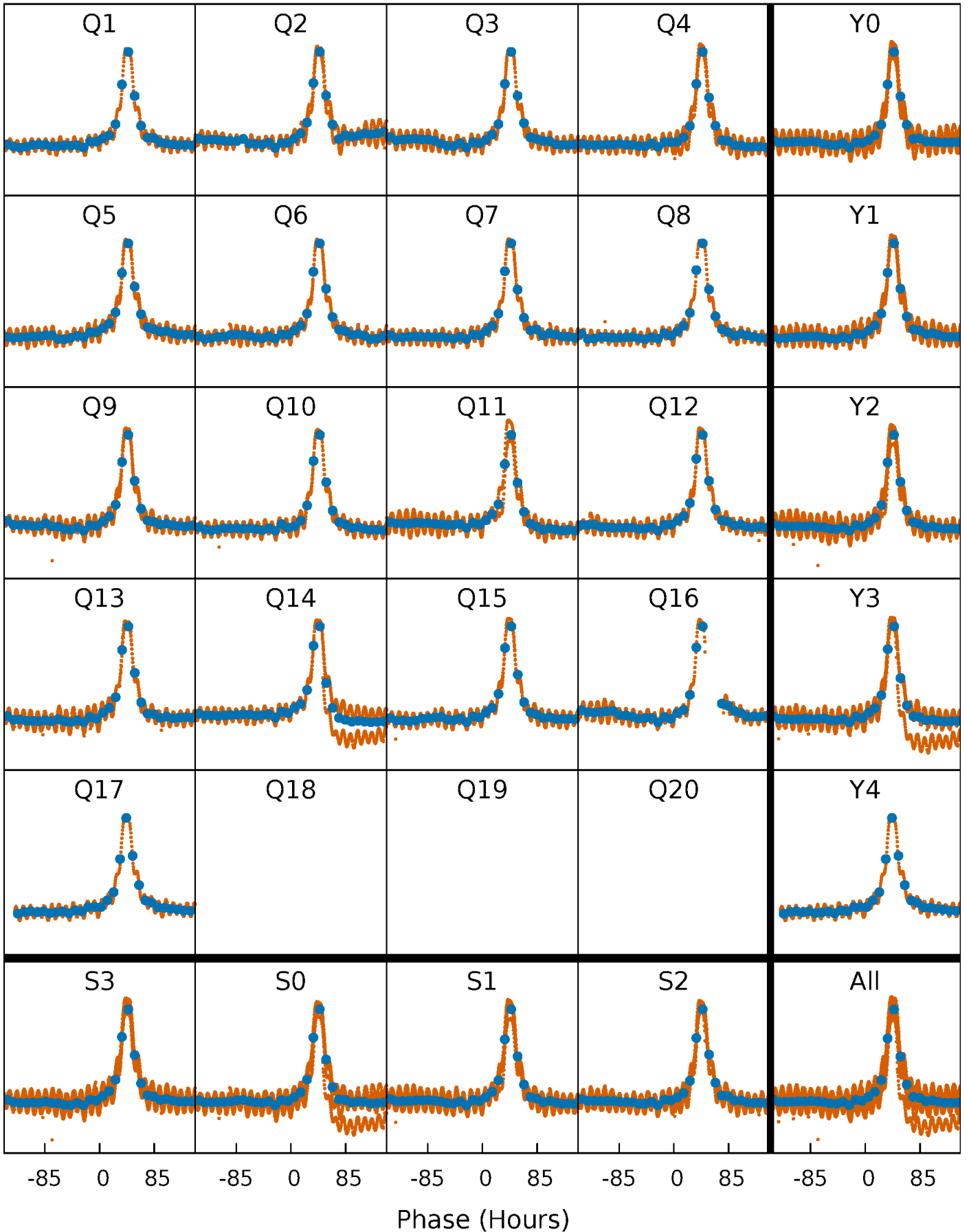


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



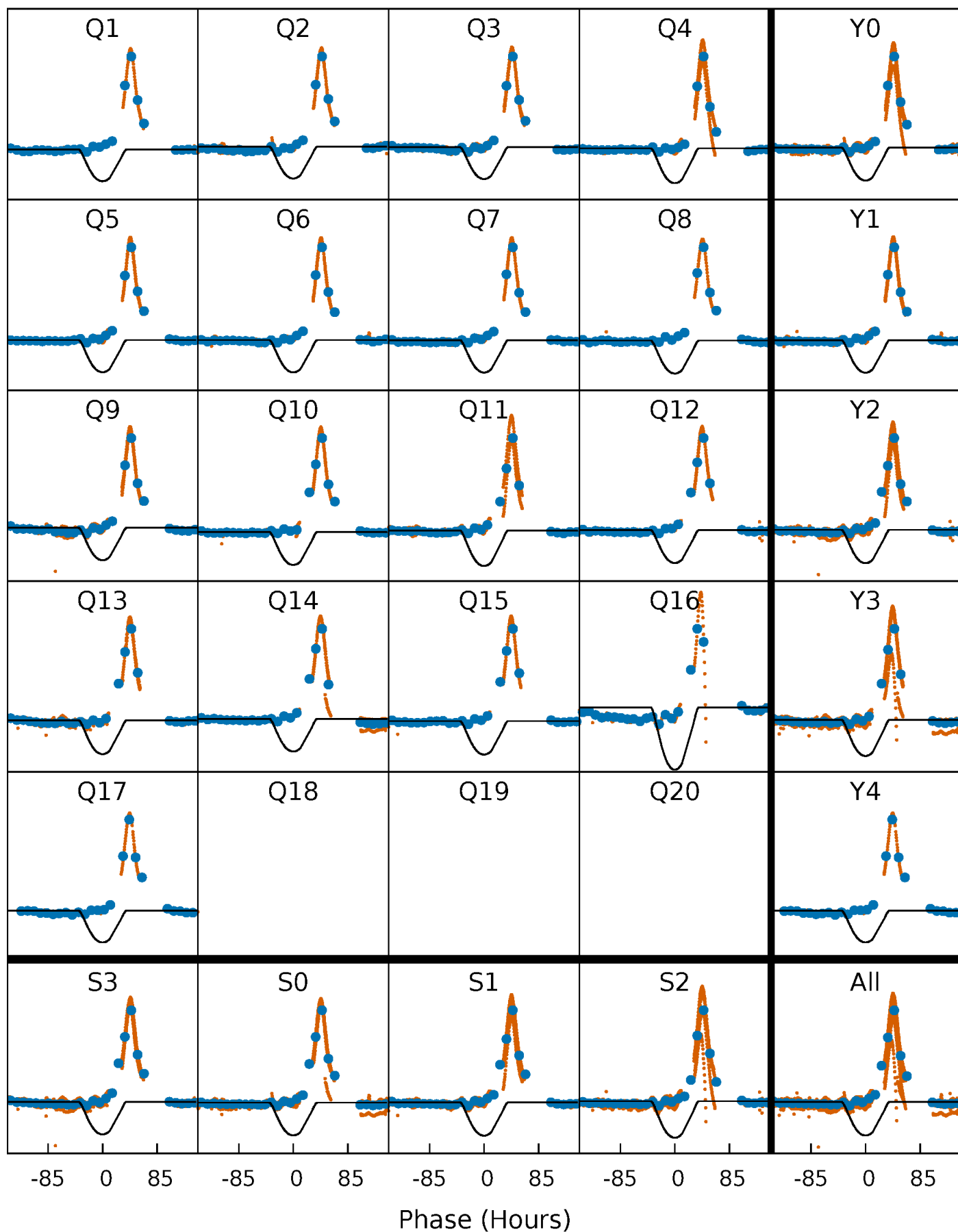
PDC Quarter-Phased Transit Curves

TCE 008112039-03 P= 41.806907 Days $T_0=143.303402$ (BKJD)



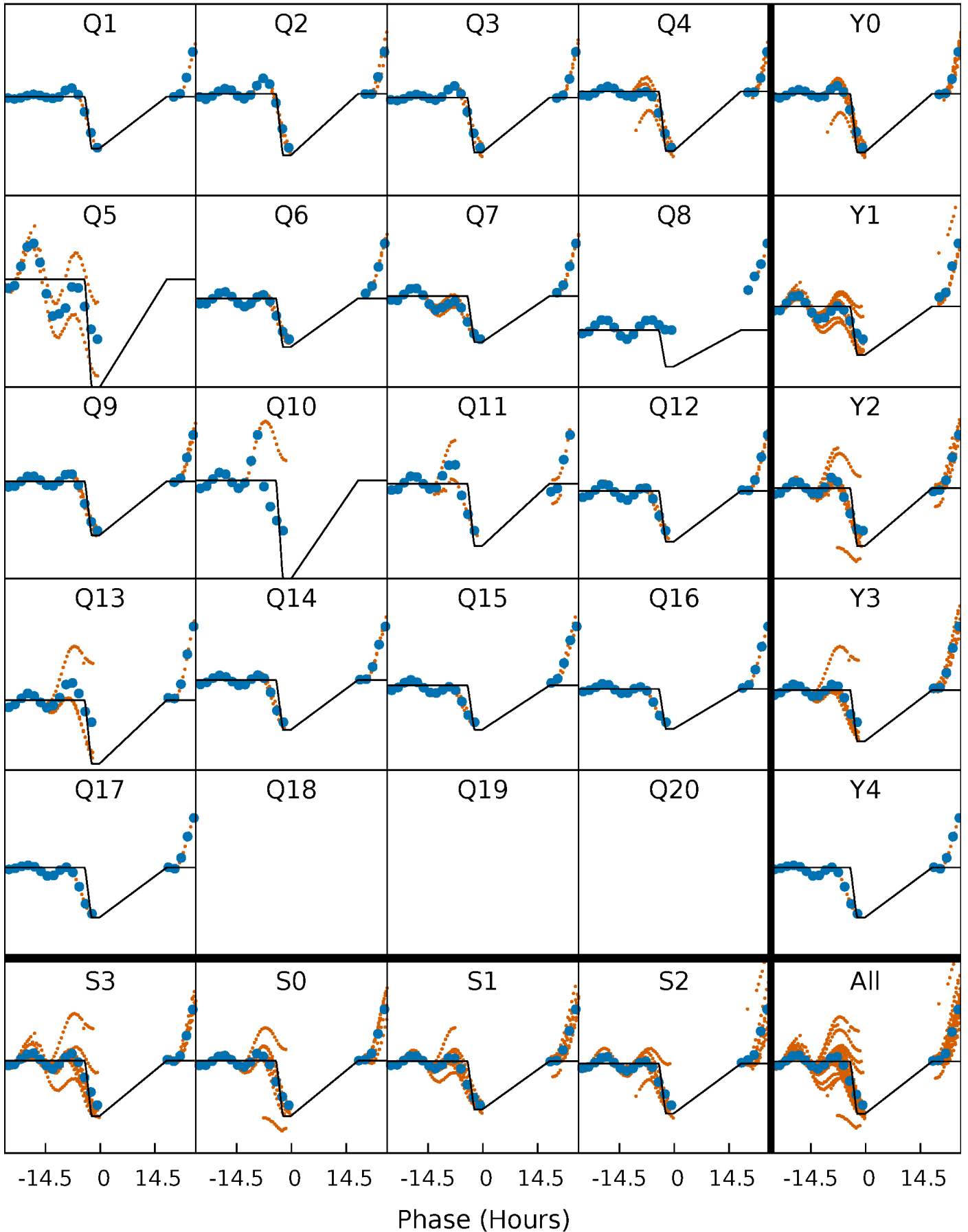
DV Quarter-Phased Transit Curves

TCE 008112039-03 P= 41.806907 Days $T_0=143.303402$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

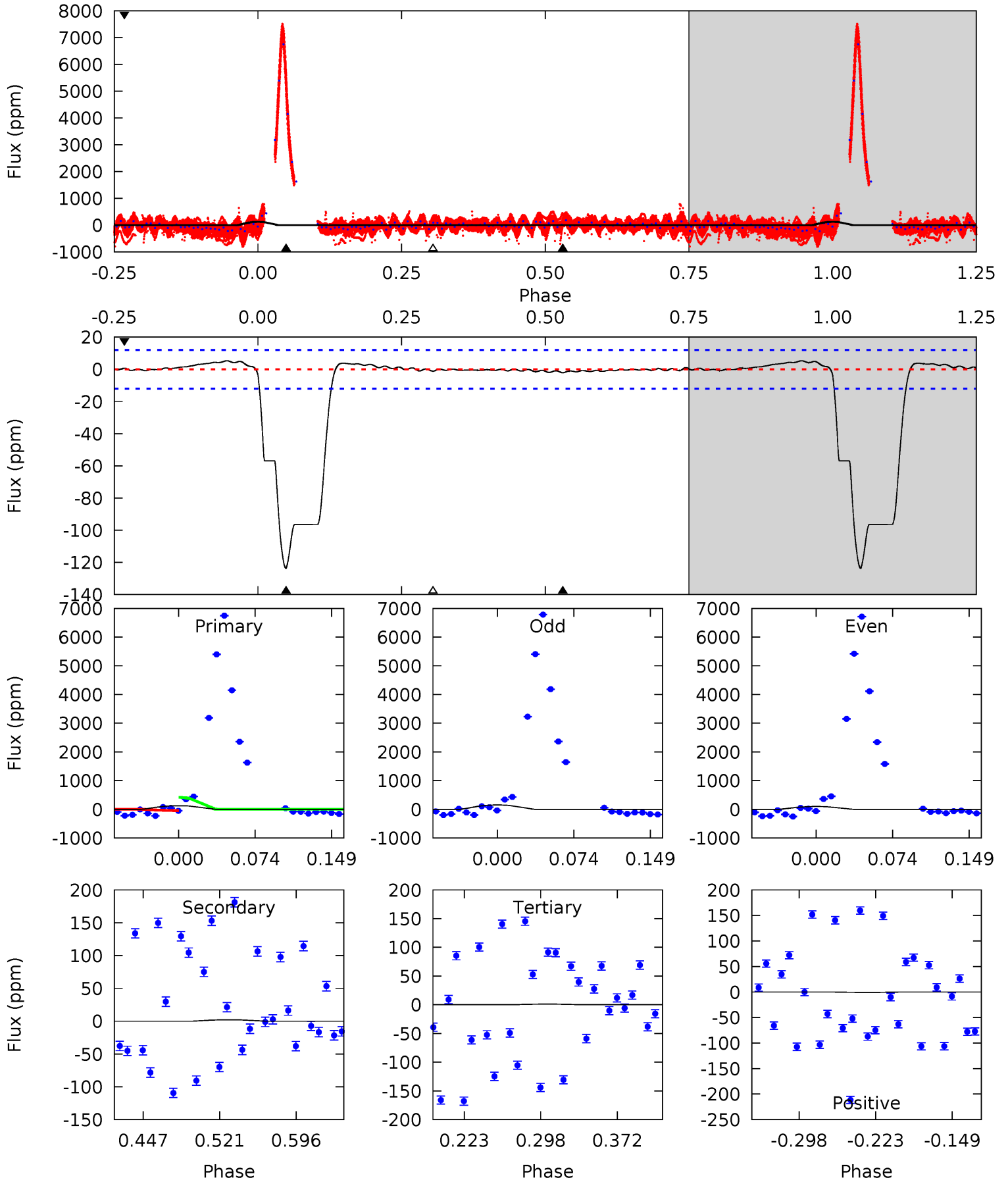
TCE 008112039-03 $P = 41.806708$ Days $T_0 = 143.784648$ (BKJD)



DV Model-Shift Uniqueness Test

008112039-03, P = 41.806907 Days, E = 101.496495 Days

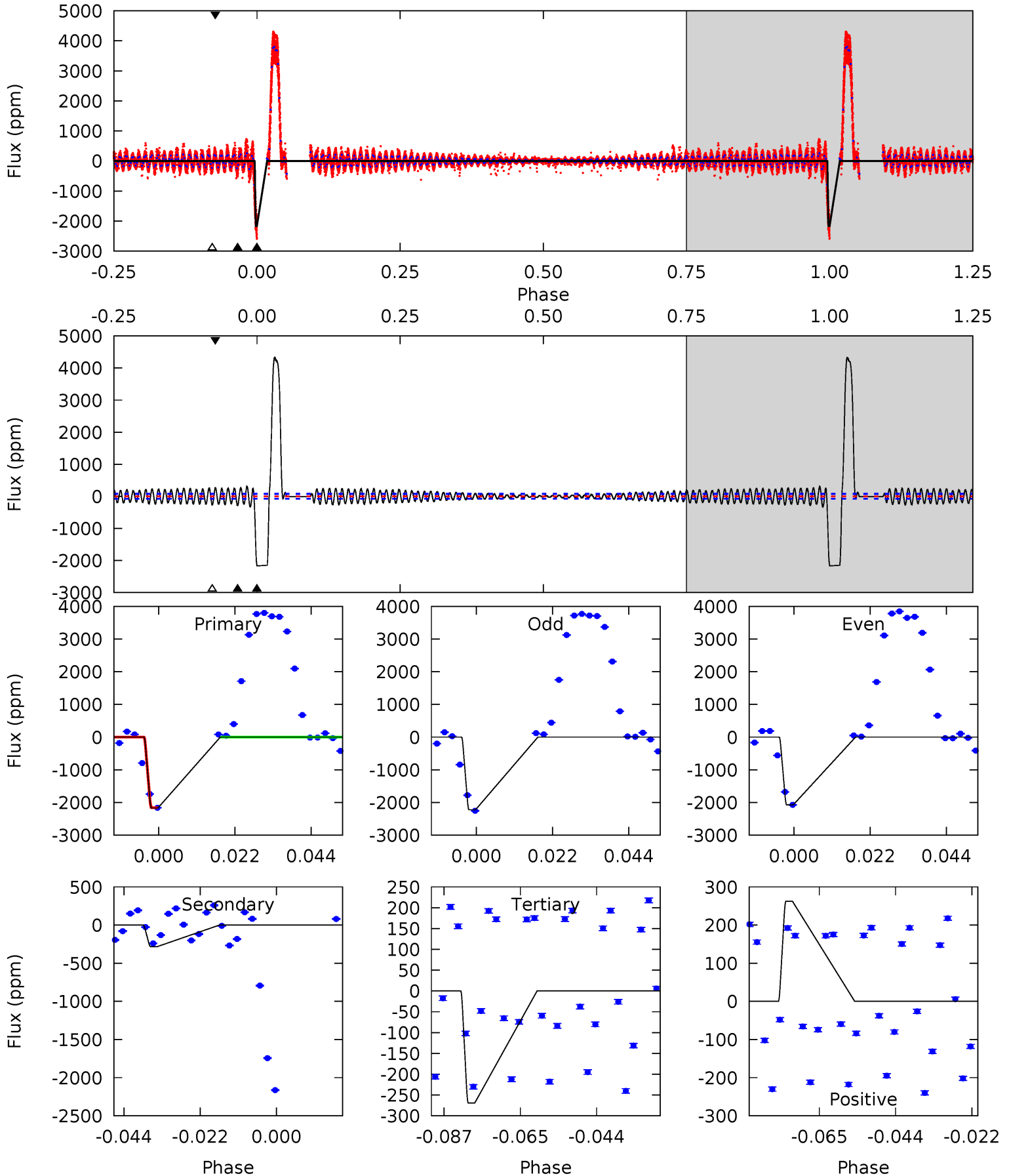
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.5	0.81	0.44	0.27	4.63	1.78	0.87	47.0	47.2	0.37	0.54	10.1	0.87	0.04	71.8



Alt Model-Shift Uniqueness Test

008112039-03, P = 41.806708 Days, E = 101.977940 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
136.6	17.9	17.0	16.5	4.87	2.29	15.8	119.6	120.0	0.90	1.33	4.51	0	0.67	0



Stellar Parameters For KIC 008112039

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8308^{+233}_{-320}	$4.045^{+0.186}_{-0.139}$	$-0.240^{+0.250}_{-0.300}$	$2.103^{+0.435}_{-0.532}$	$1.787^{+0.146}_{-0.292}$	$0.271^{+0.284}_{-0.103}$
	+3%/-4%	+5%/-3%	+104%/-125%	+21%/-25%	+8%/-16%	+105%/-38%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008112039-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2 ± 3	$13.03^{+1.59}_{-1.67}$	1381^{+89}_{-93}	2031^{+332}_{-4210}	$0.533^{+0.743}_{-0.689}$
Alt.	-283 ± 16	$11.01^{+1.53}_{-1.47}$	1381^{+88}_{-96}	4825^{+150}_{-159}	102^{+35}_{-21}

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

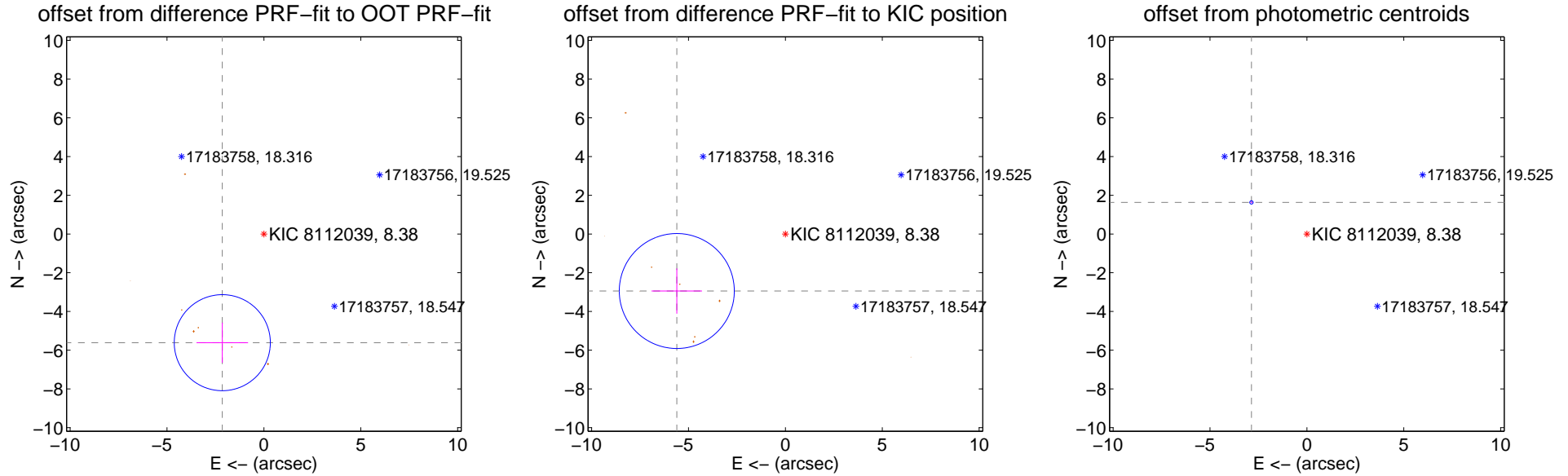
DV Centroid Data

Supplemental centroid analysis for 008112039-03. **Kepler magnitude: 8.38.** Transit SNR 120.75

There are 0 quarters with good PRF difference image offsets

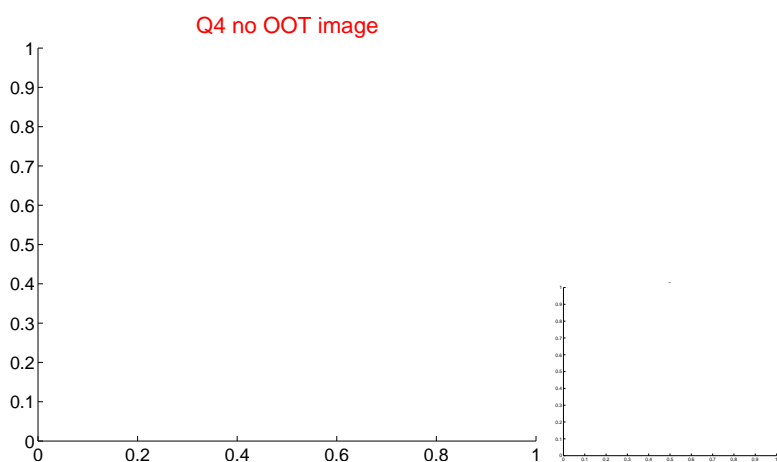
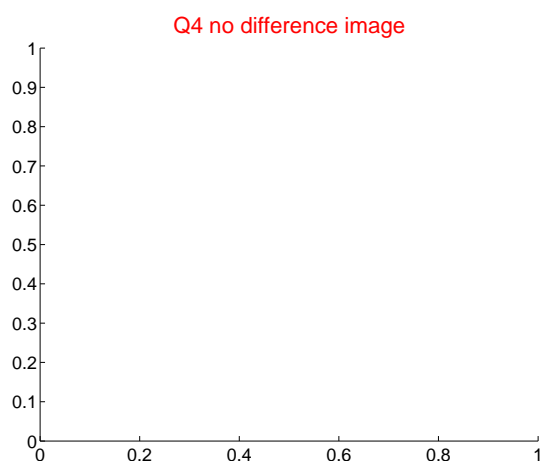
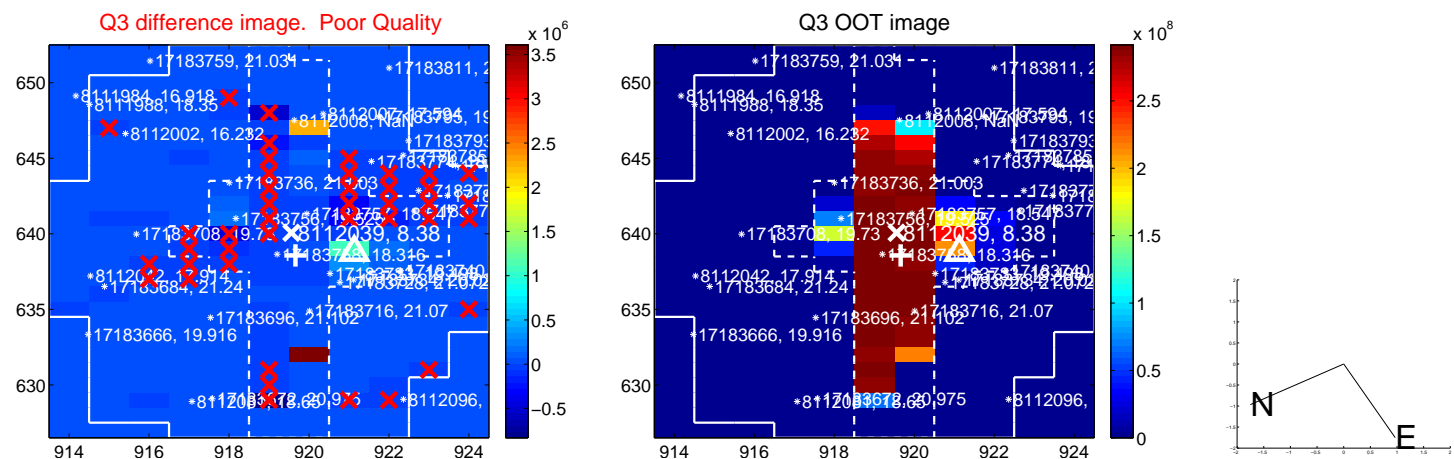
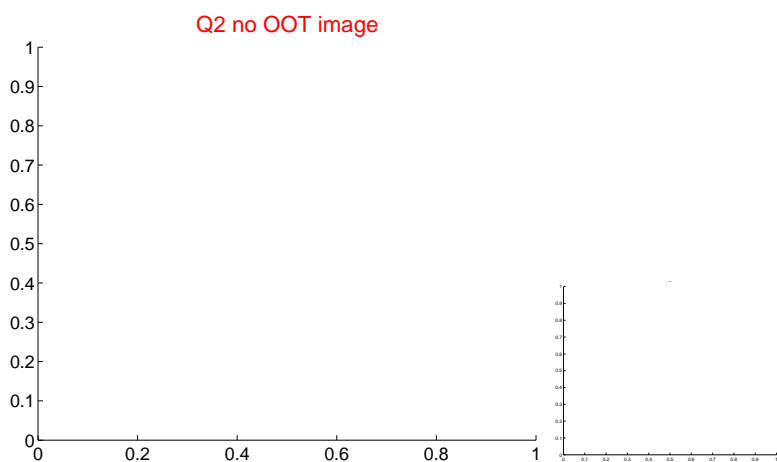
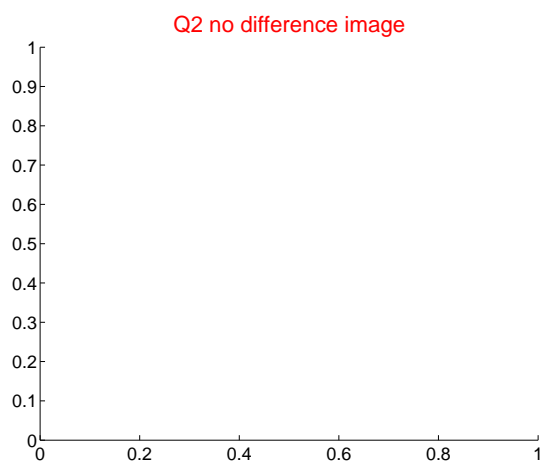
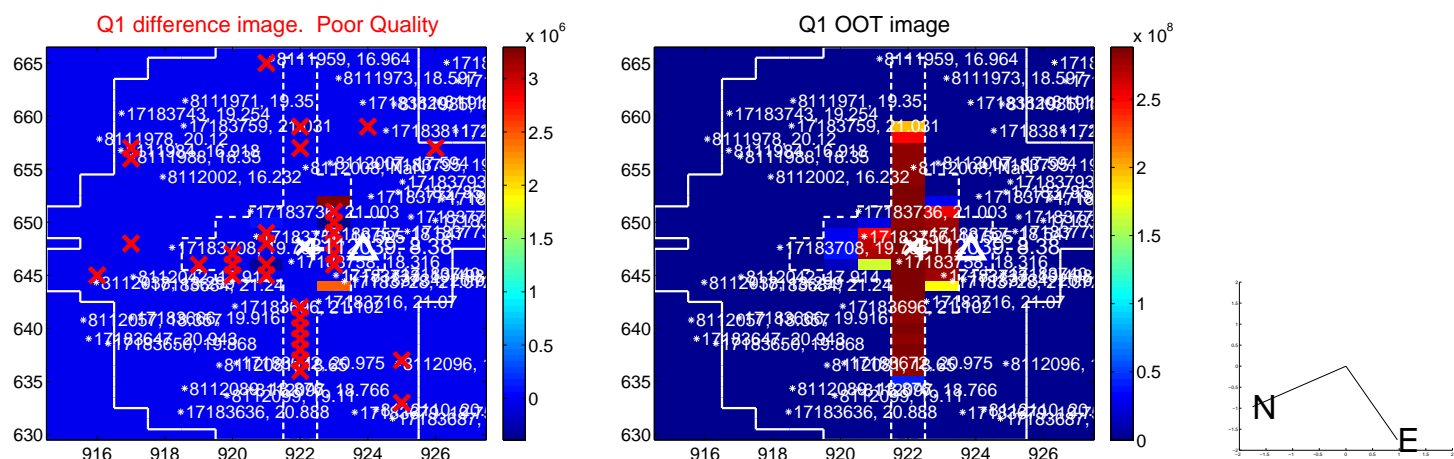
The OOT PRF centroid is offset from the target star catalog position by about 4.99 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.009 ± 0.827	7.27	2.147 ± 1.330	-5.612 ± 1.034
PRF-fit source offset from KIC position	6.332 ± 0.990	6.40	5.606 ± 1.303	-2.944 ± 1.169
photometric centroid source offset	3.29 ± 0.03	115.33	2.86 ± 0.03	1.63 ± 0.02

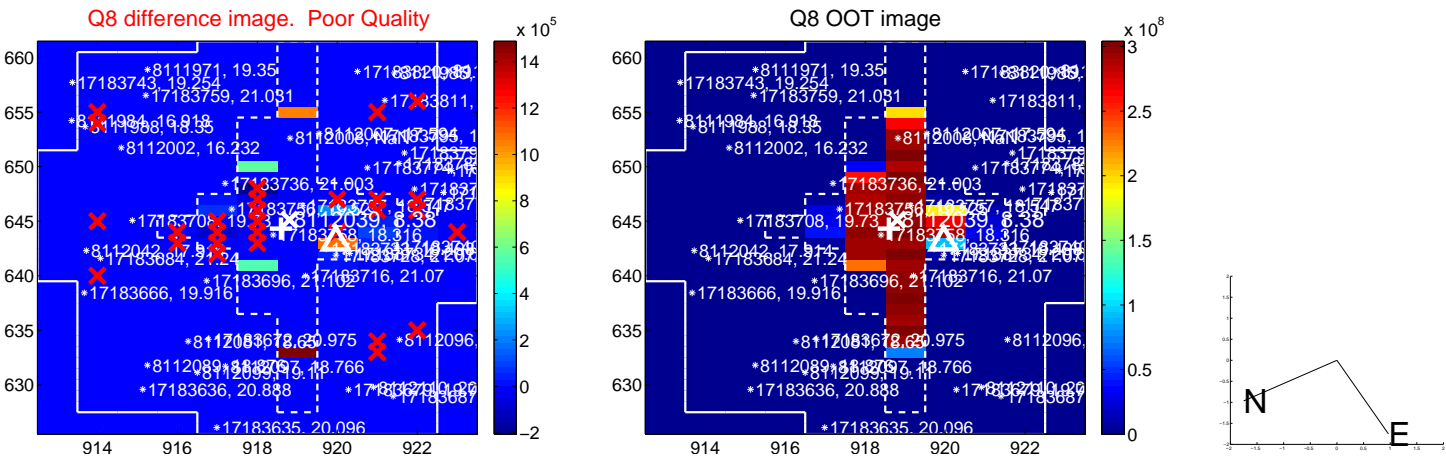
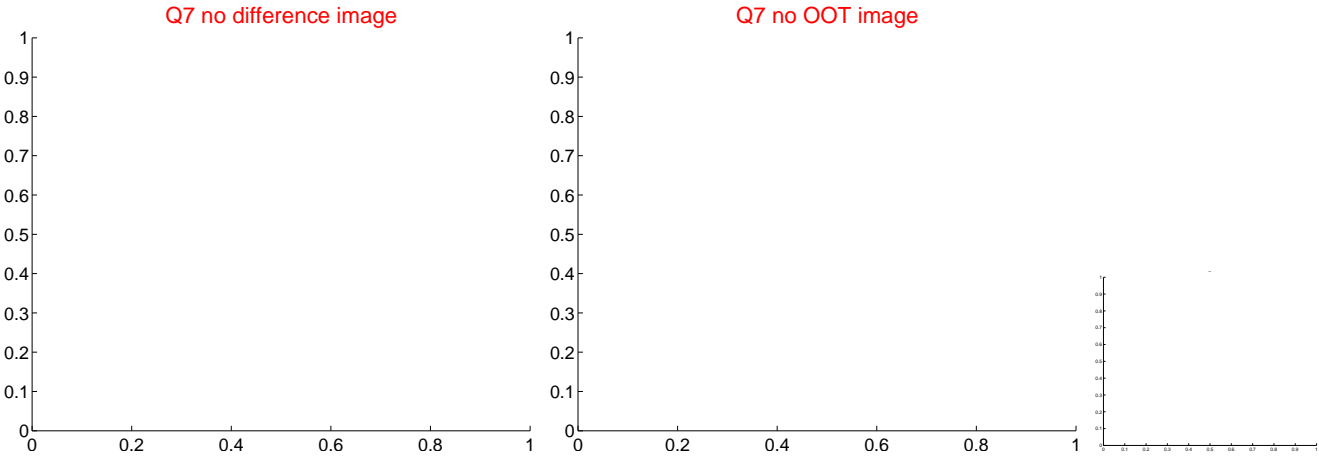
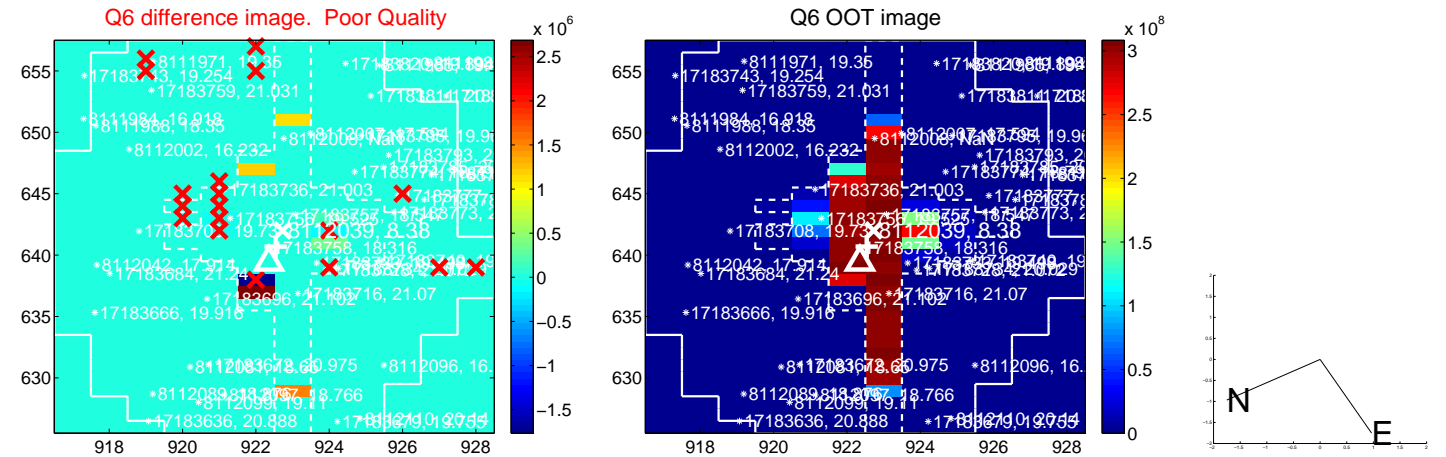
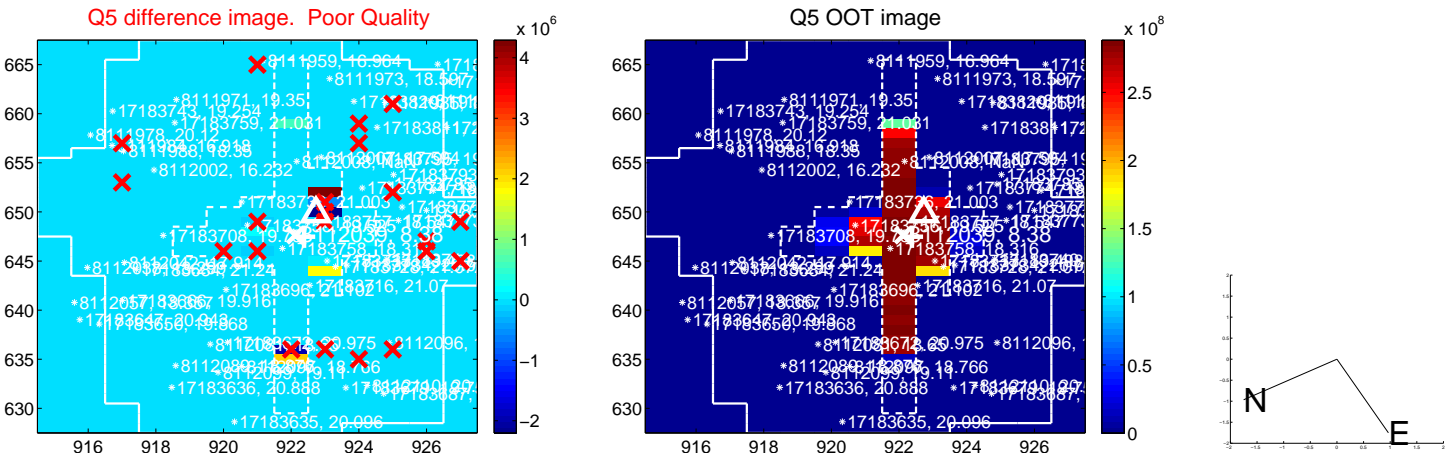


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

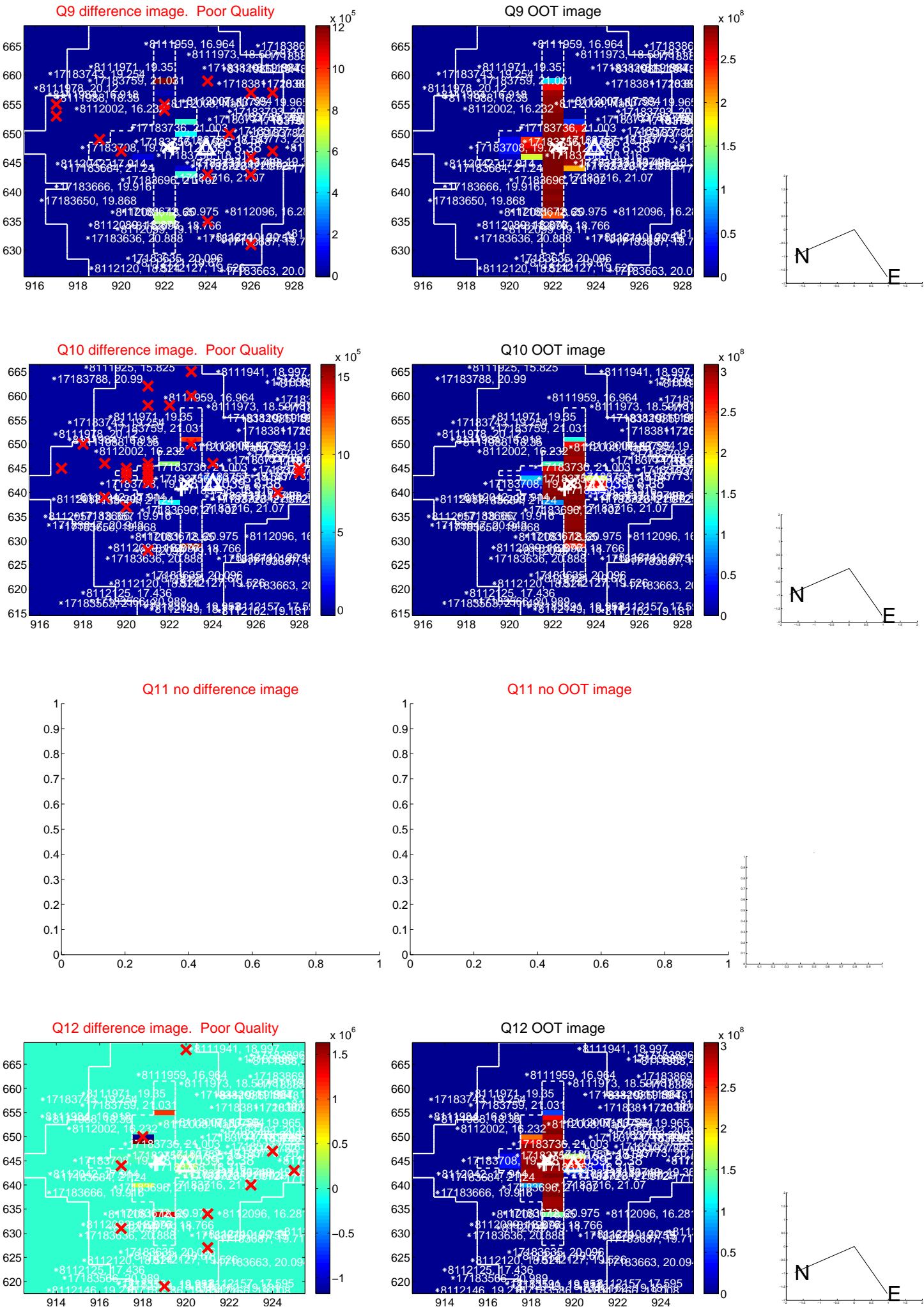
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



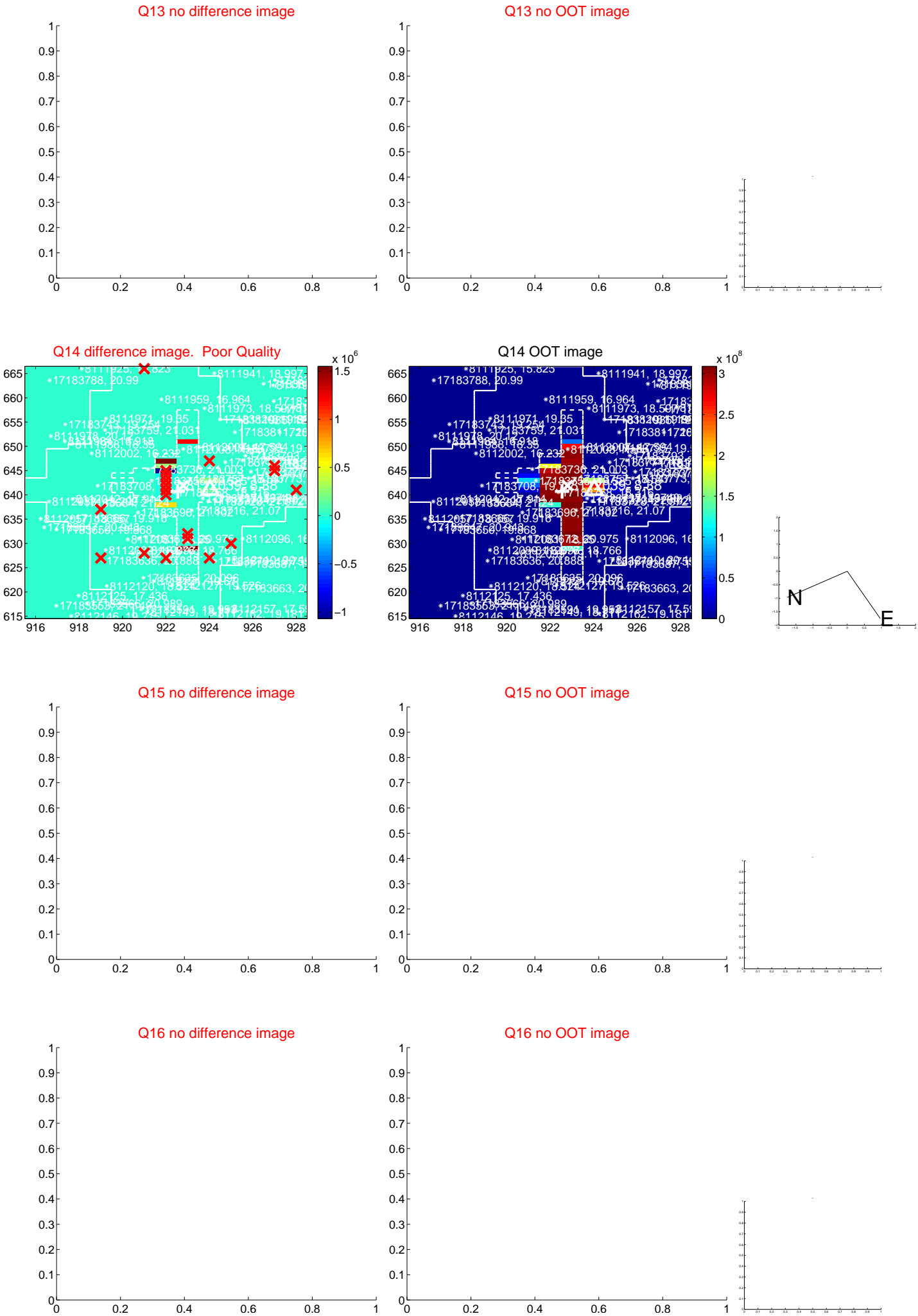
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



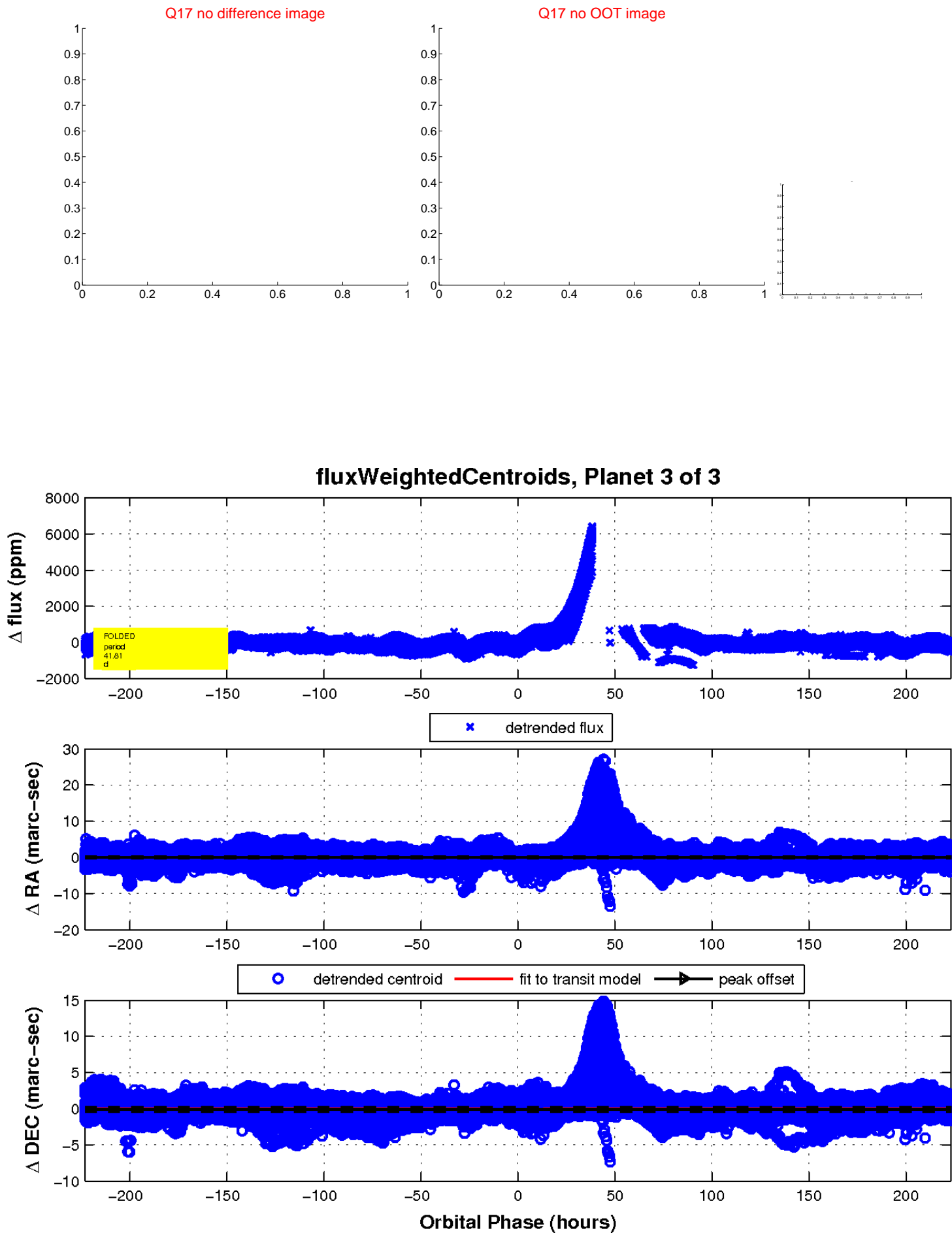
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

