

KIC 008008067

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})
008008067-01	OBS	0316.01	15.771086	137.591497	538.4	5.151	89.6	91.2	1.14	5620	2.84	75.75
008008067-02	OBS	0316.02	157.065530	167.142050	549.3	7.896	34.2	34.4	1.14	5620	2.91	3.54
008008067-03	OBS	0316.03	7.305682	131.782199	249.8	1.522	33.3	39.9	1.14	5620	2.18	211.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008008067-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
008008067-02	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
008008067-03	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

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

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

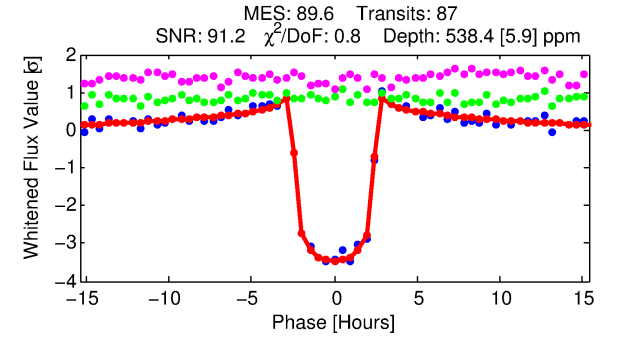
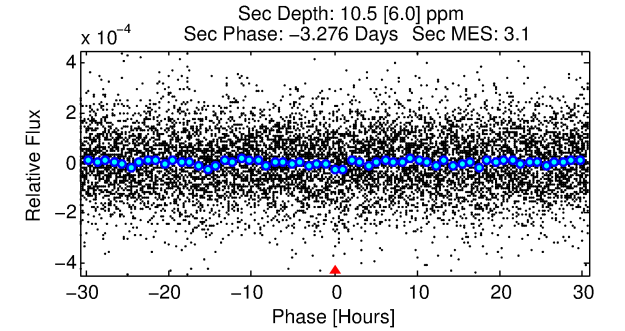
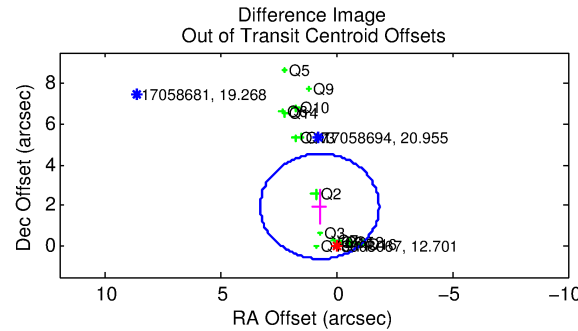
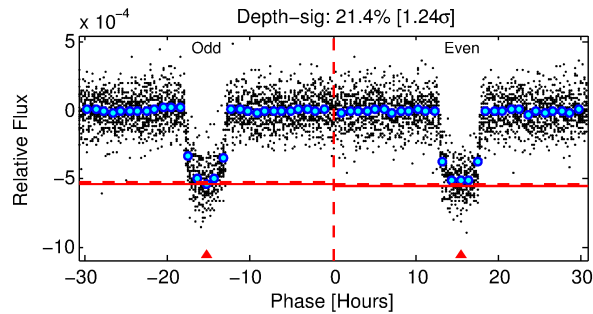
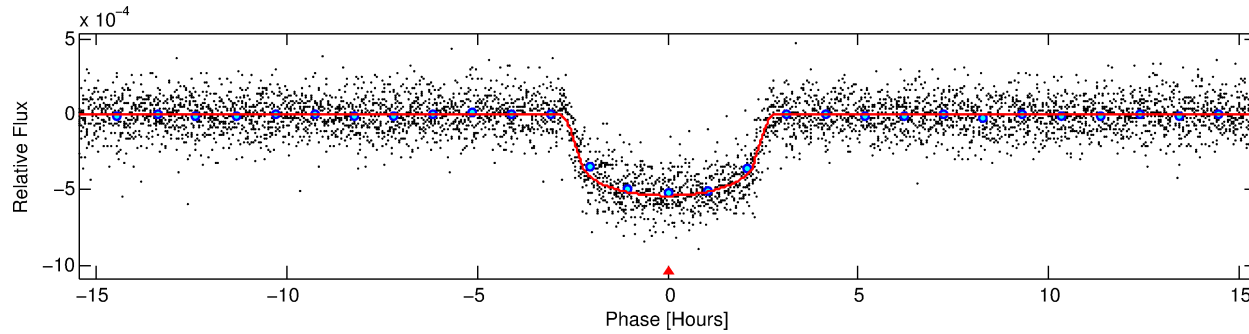
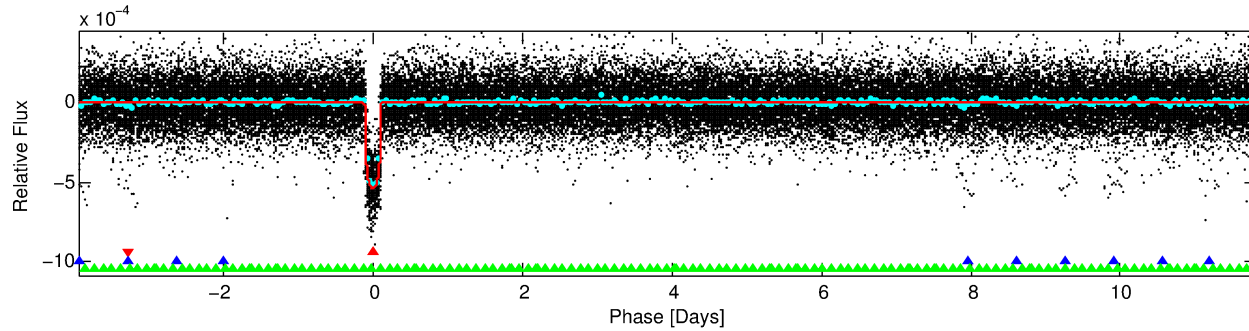
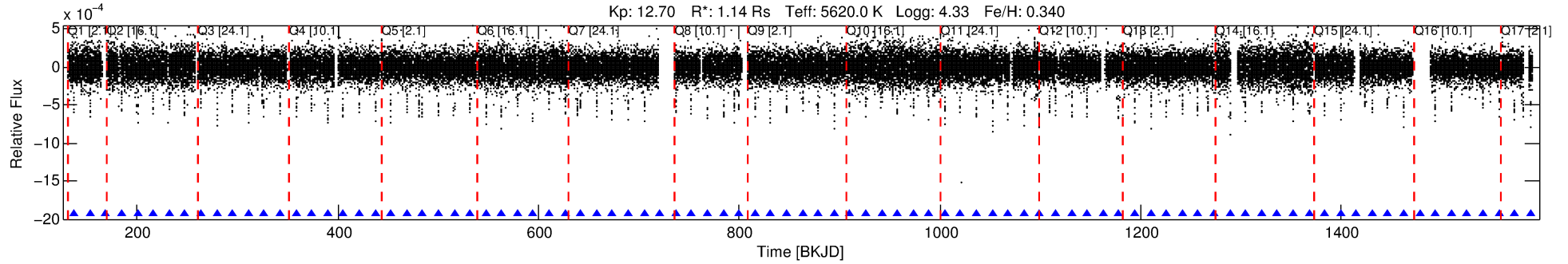
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008008067-01

No Significant Match Found

DV One-Page Summary

KIC: 8008067 Candidate: 1 of 3 Period: 15.771 d
KOI: K00316.01 Name: Kepler-139b Corr: 0.990



DV Fit Results:

Period = 15.77109 [0.00002] d
Epoch = 137.5915 [0.0010] BKJD
Rp/R* = 0.0228 [0.0019]
a/R* = 17.26 [5.87]
b = 0.71 [0.24]
Seff = 75.75 [16.56]
Teq = 752 [41] K
Rp = 2.84 [0.49] Re
a = 0.1242 [0.0167] AU
Ag = 11.02 [6.97] [1.44 σ]
Teffp = 2119 [320] K [4.24 σ]

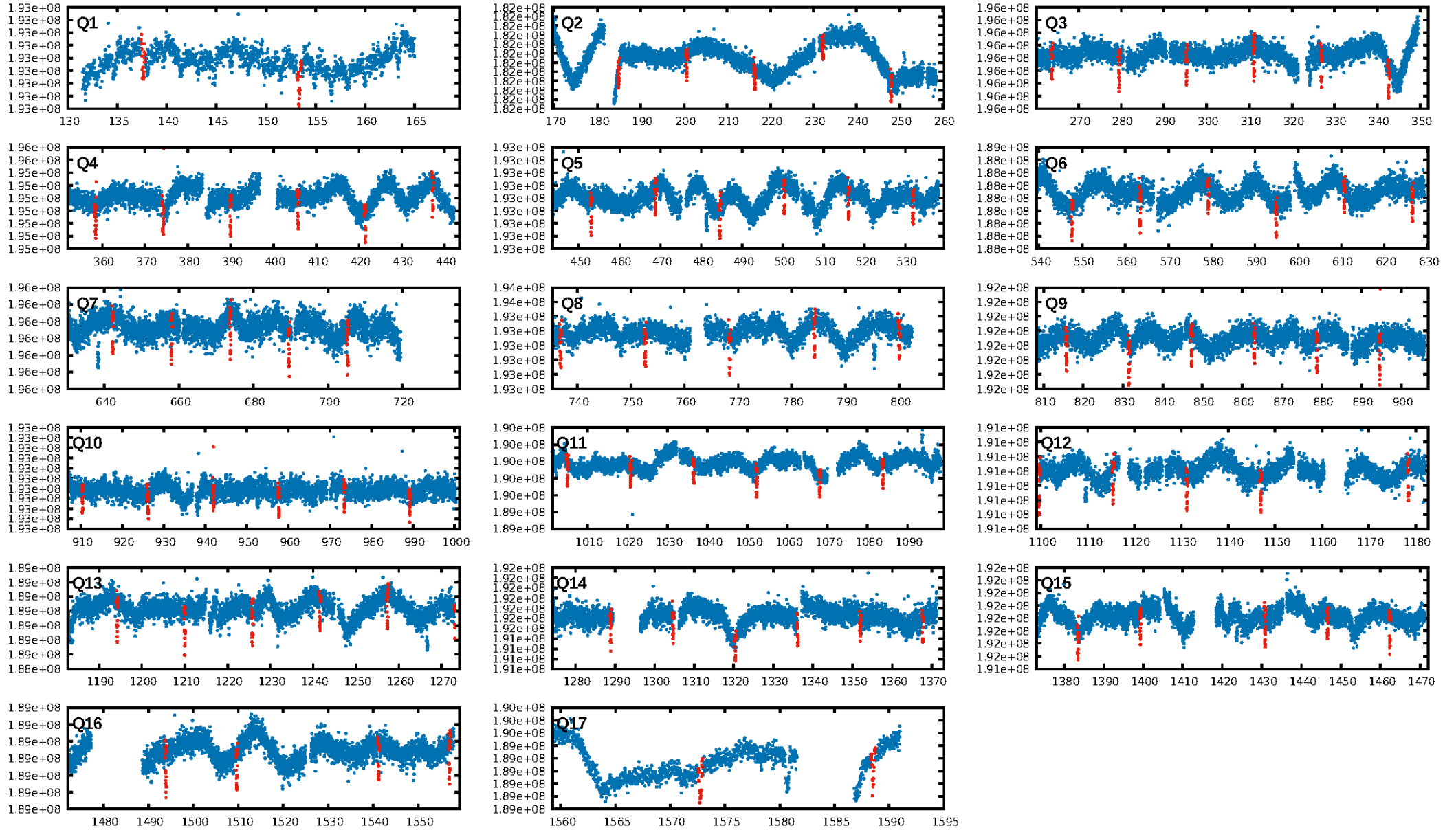
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [37.82 σ]
LongPeriod-sig: 100.0% [359.67 σ]
ModelChiSquare2-sig: 81.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [83/83]
GhostDiagnostic-chr: 5.879
Centroid-sig: 0.0%
Centroid-so: 1.514 arcsec [12.04 σ]
OotOffset-rm: 2.090 arcsec [2.44 σ]
KicOffset-rm: 0.326 arcsec [2.34 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [17/17]

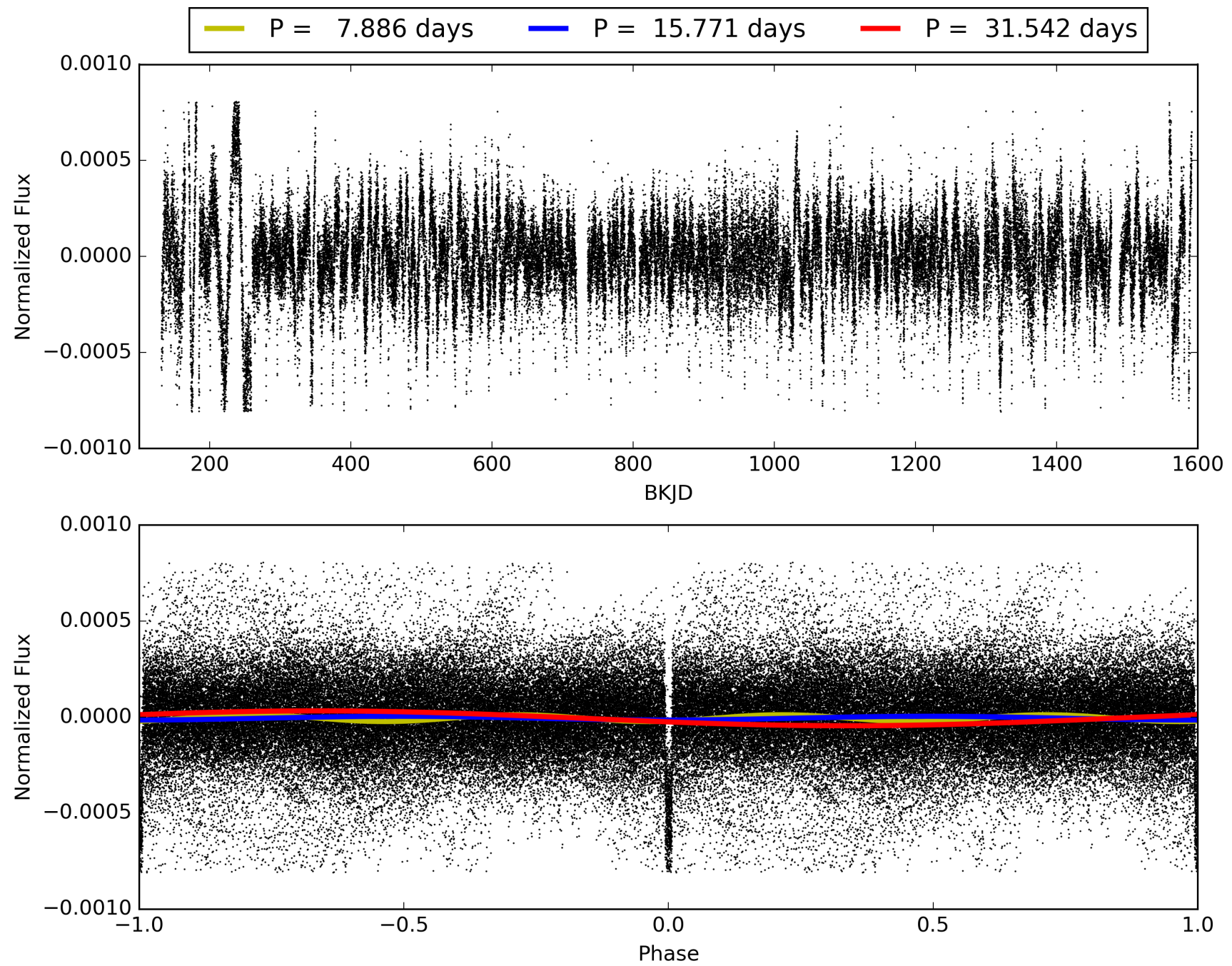
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 07:58:08 Z

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

TCE 008008067-01, PDC Light Curves

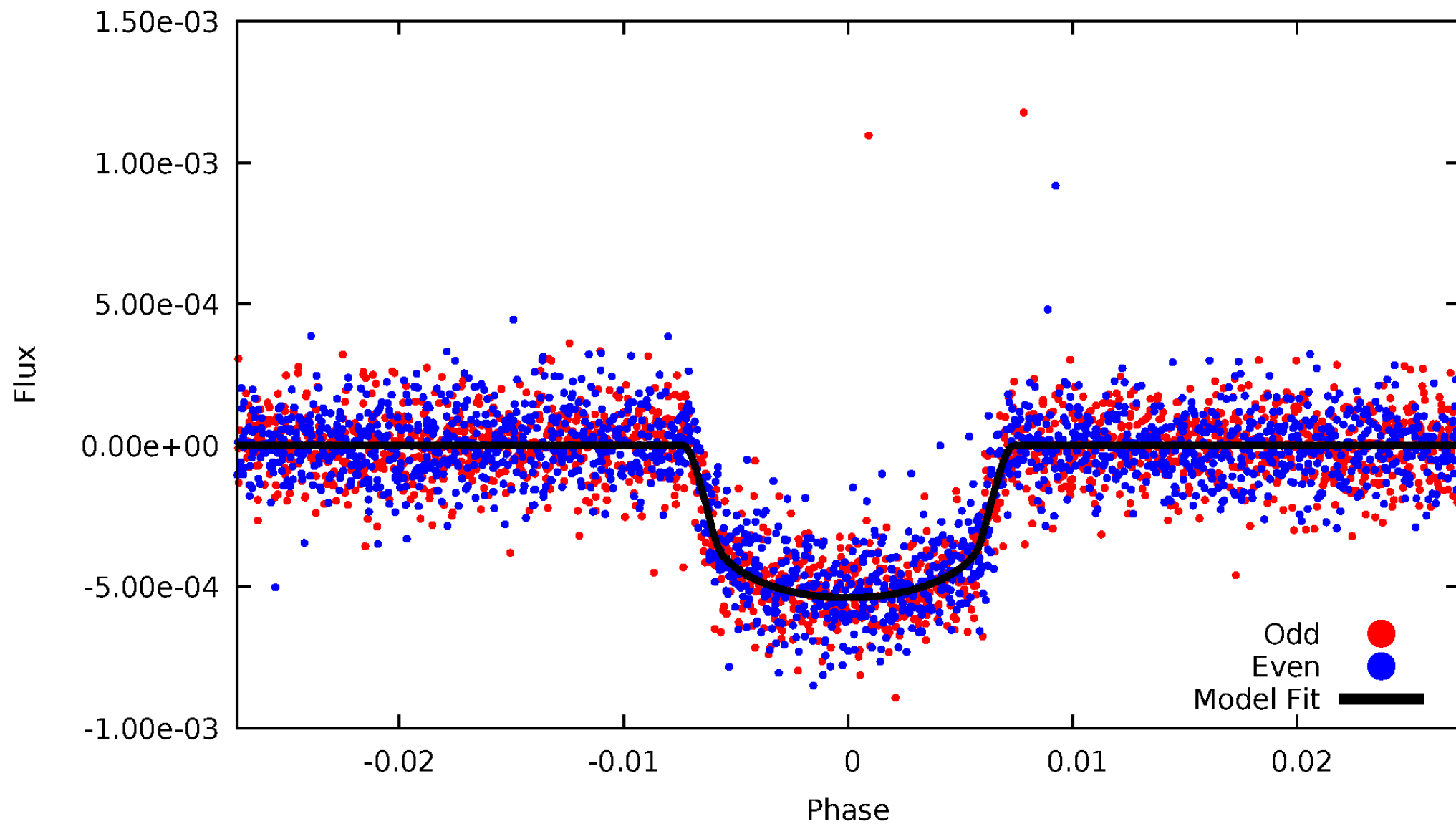


TCE 008008067-01



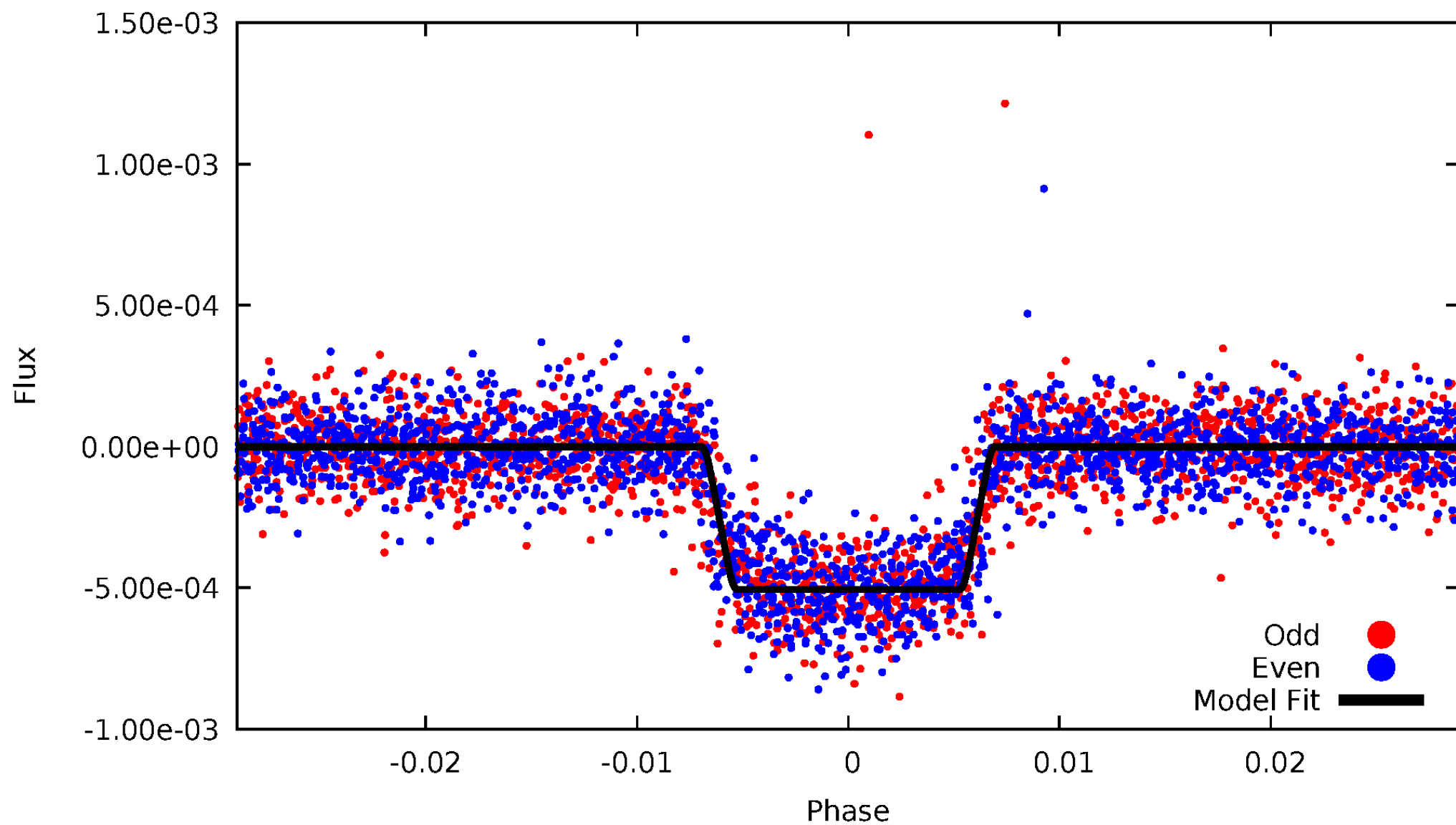
DV Odd/Even

TCE 008008067-01



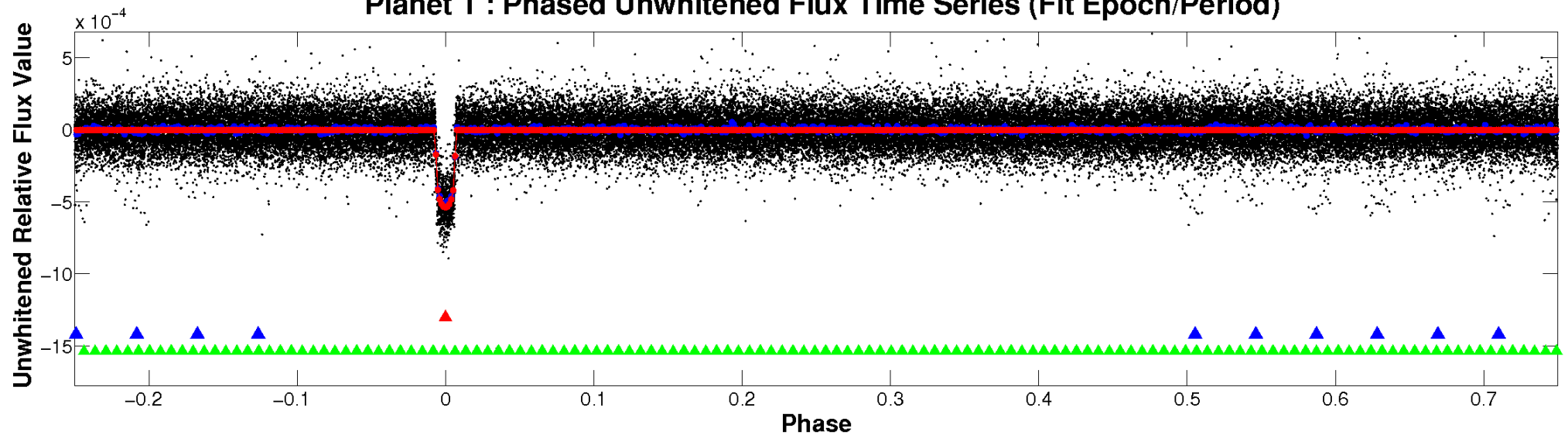
ALT Odd/Even

TCE 008008067-01

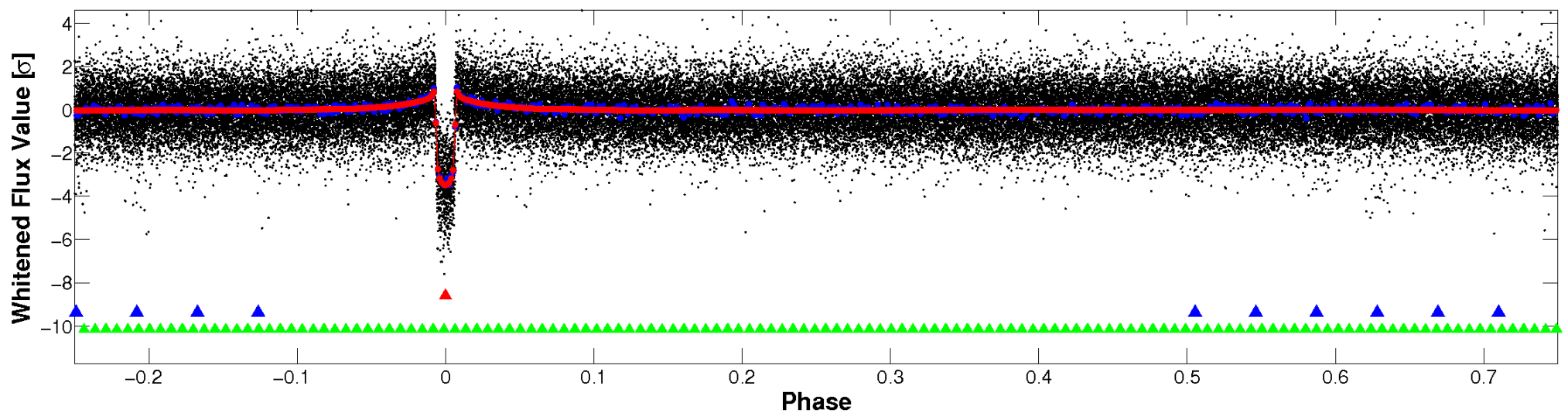


Non-Whitened Vs. Whitened Light Curve

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

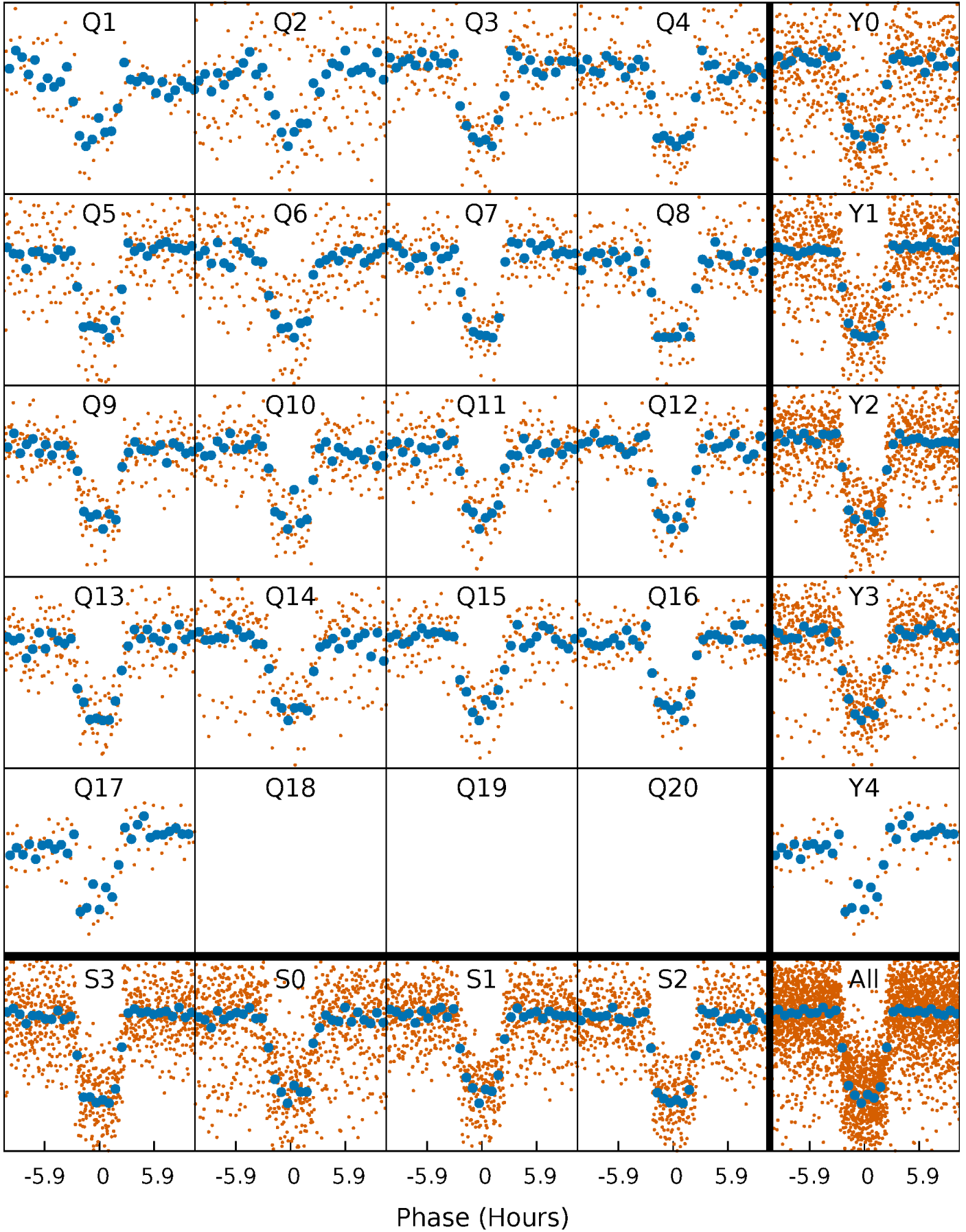


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



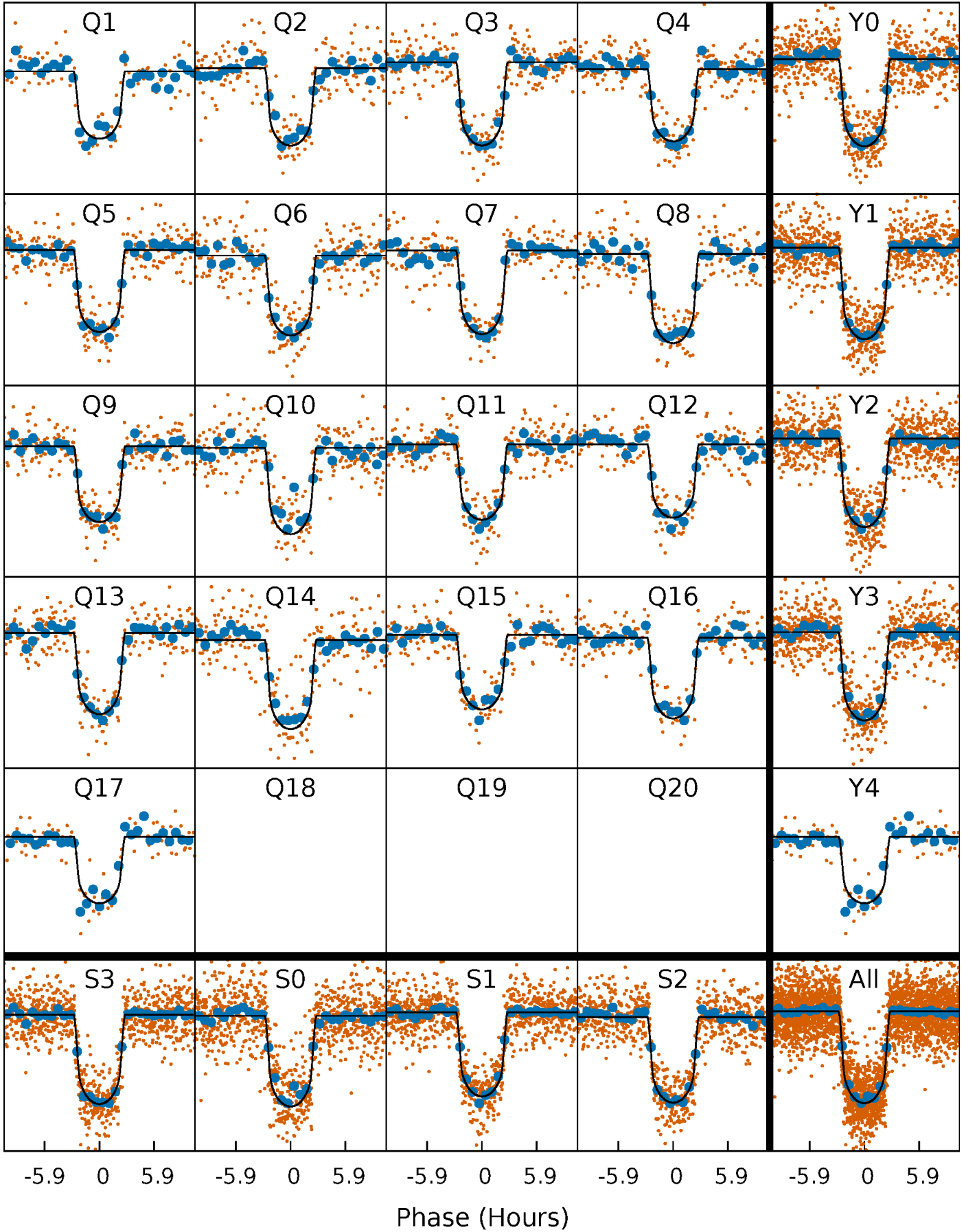
PDC Quarter-Phased Transit Curves

TCE 008008067-01 P= 15.771086 Days $T_0=137.591497$ (BKJD)



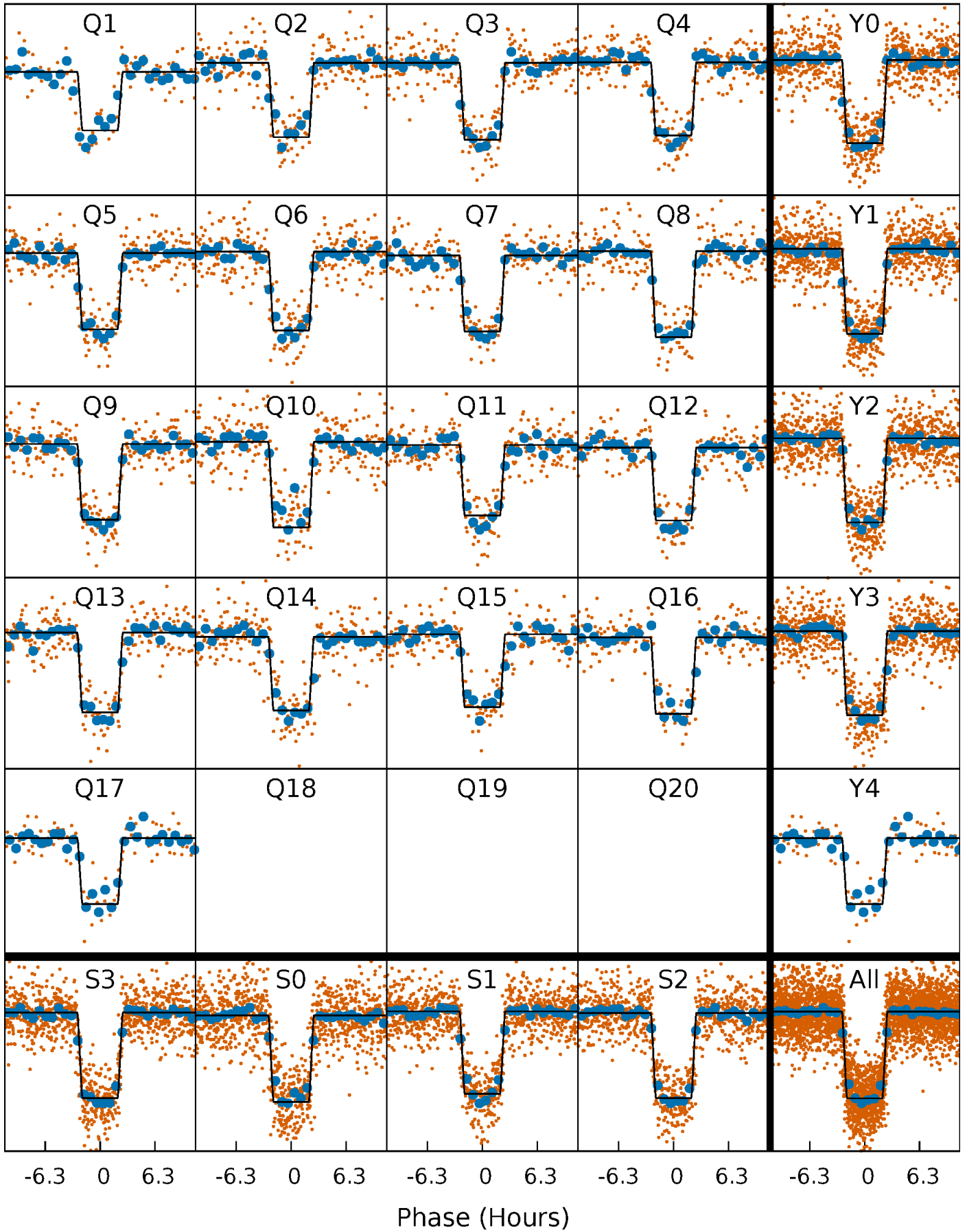
DV Quarter-Phased Transit Curves

TCE 008008067-01 P= 15.771086 Days $T_0=137.591497$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

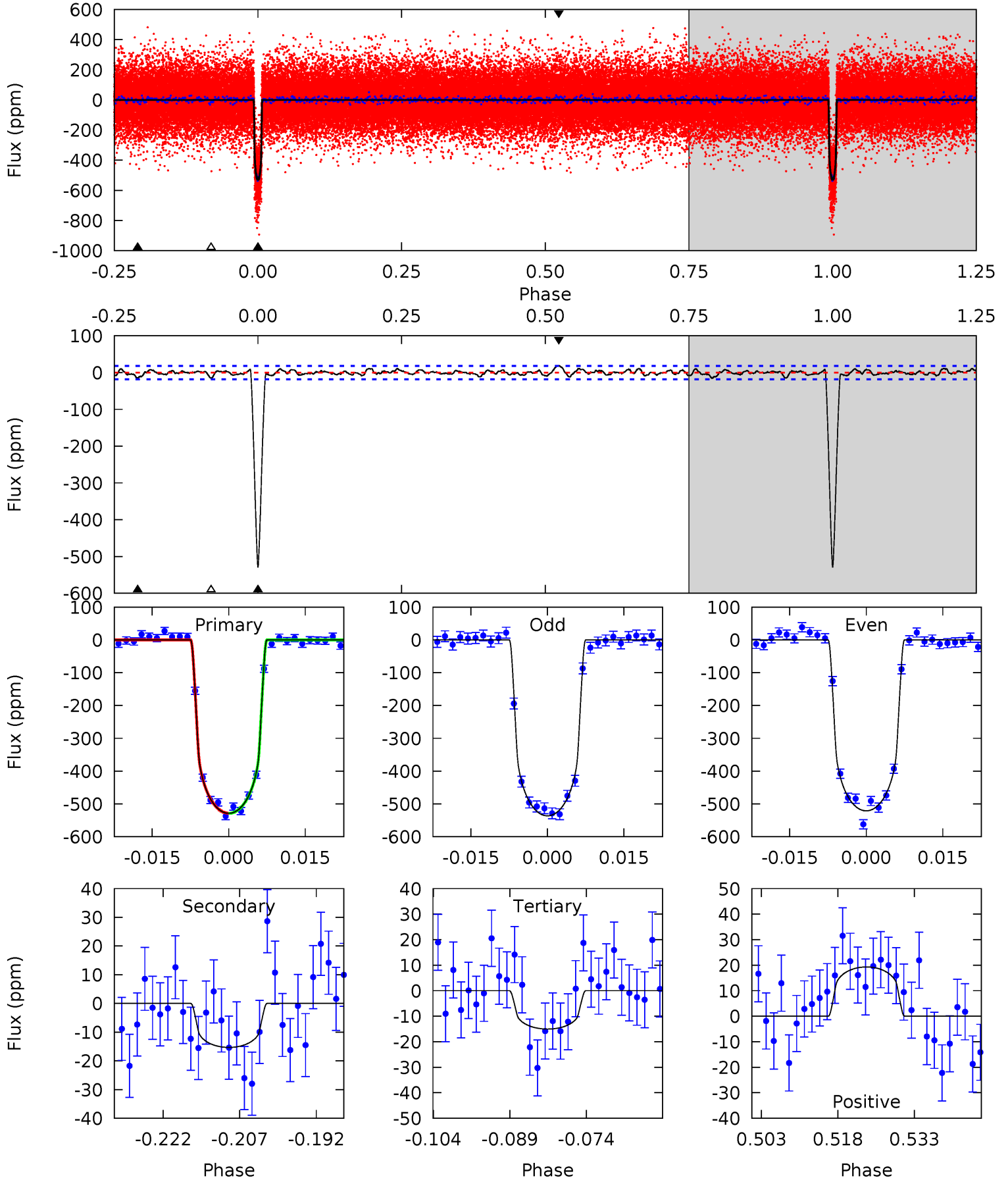
TCE 008008067-01 P= 15.770888 Days $T_0=137.600697$ (BKJD)



DV Model-Shift Uniqueness Test

008008067-01, $P = 15.771086$ Days, $E = 121.820411$ Days

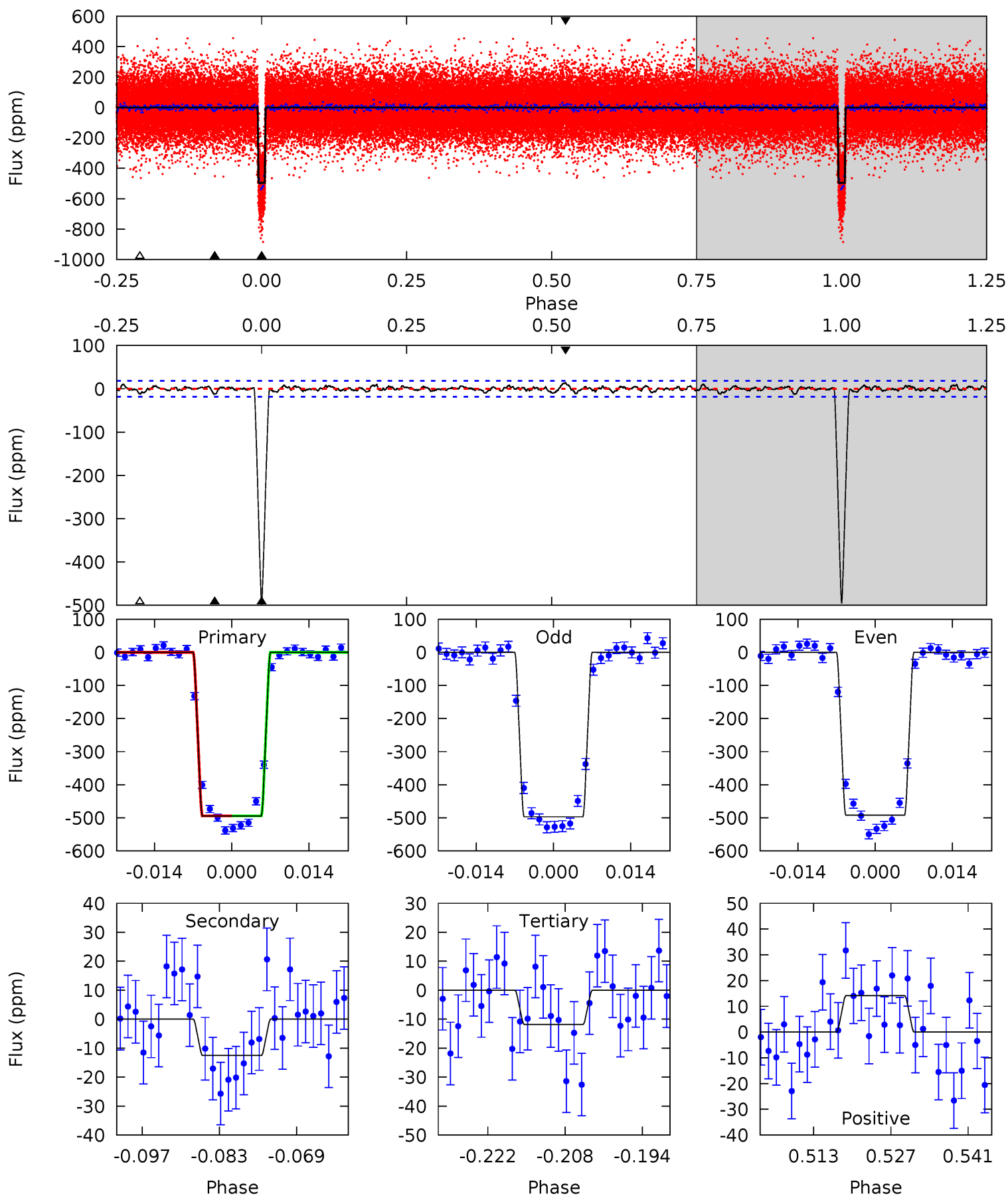
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
144.3	4.18	4.10	5.27	4.95	2.44	1.39	140.2	139.0	0.08	-1.09	2.09	0.98	0.04	0.06



Alt Model-Shift Uniqueness Test

008008067-01, $P = 15.770888$ Days, $E = 121.829809$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
134.2	3.40	3.20	3.82	4.96	2.46	1.09	131.0	130.4	0.20	-0.42	0.63	1.00	0.03	0.00



Stellar Parameters For KIC 008008067

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5620^{+100}_{-112}	$4.333^{+0.115}_{-0.115}$	$0.340^{+0.100}_{-0.150}$	$1.143^{+0.174}_{-0.139}$	$1.025^{+0.063}_{-0.063}$	$0.967^{+0.481}_{-0.322}$
	+2%/-2%	+3%/-3%	+29%/-44%	+15%/-12%	+6%/-6%	+50%/-33%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 008008067-01 / KOI 0316.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-15 ± 4	$2.83^{+0.37}_{-0.31}$	1053^{+43}_{-47}	2992^{+131}_{-153}	16^{+6}_{-5}
Alt.	-13 ± 4	$2.80^{+0.35}_{-0.32}$	1048^{+49}_{-45}	2902^{+137}_{-144}	13^{+6}_{-4}

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

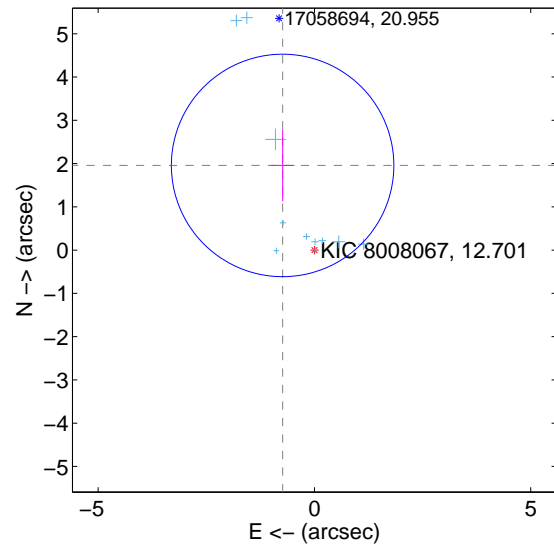
Supplemental centroid analysis for 008008067-01. Kepler magnitude: 12.70. Transit SNR 91.16

There are 16 quarters with good PRF difference image offsets

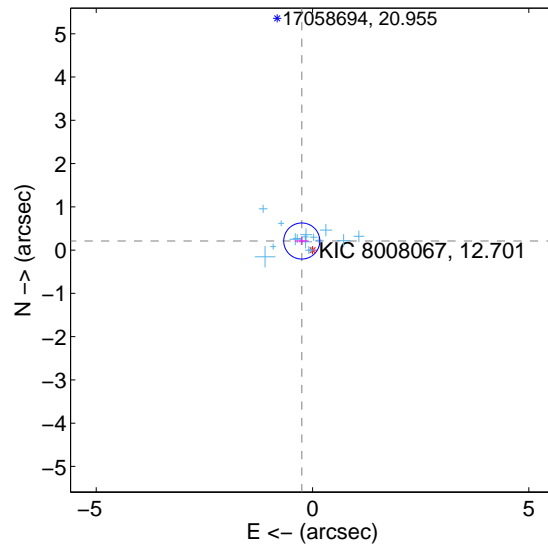
The OOT PRF centroid is offset from the target star catalog position by about 5.25 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.090 ± 0.857	2.44	0.736 ± 0.275	1.957 ± 0.828
PRF-fit source offset from KIC position	0.326 ± 0.139	2.34	0.249 ± 0.160	0.210 ± 0.092
photometric centroid source offset	1.51 ± 0.13	12.04	-0.27 ± 0.08	-1.49 ± 0.13

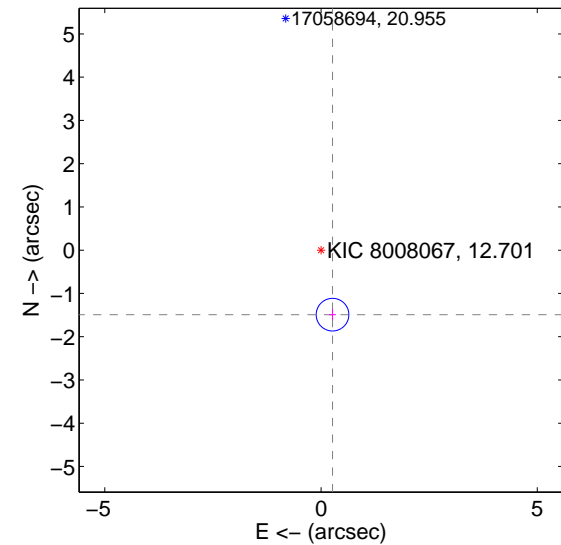
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

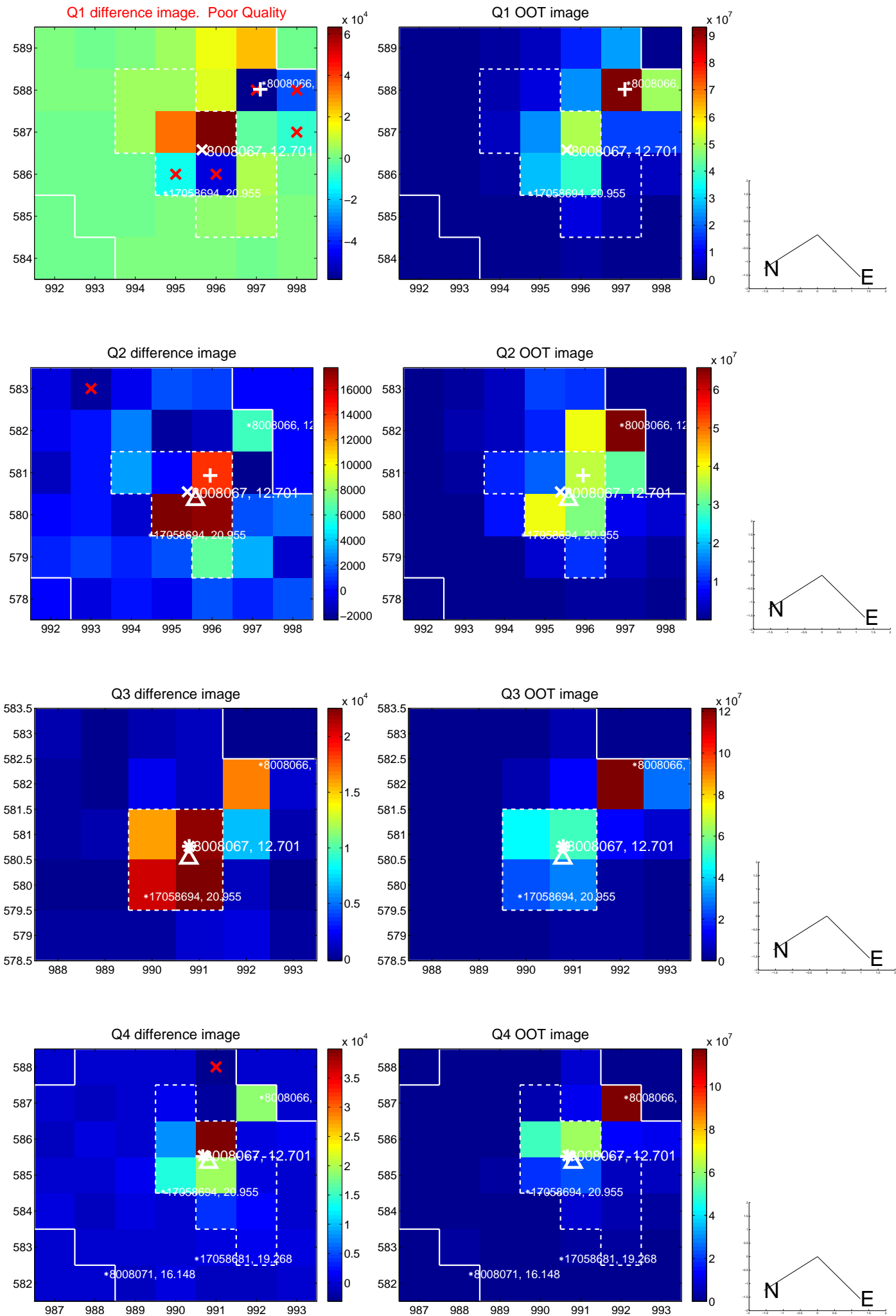


offset from photometric centroids

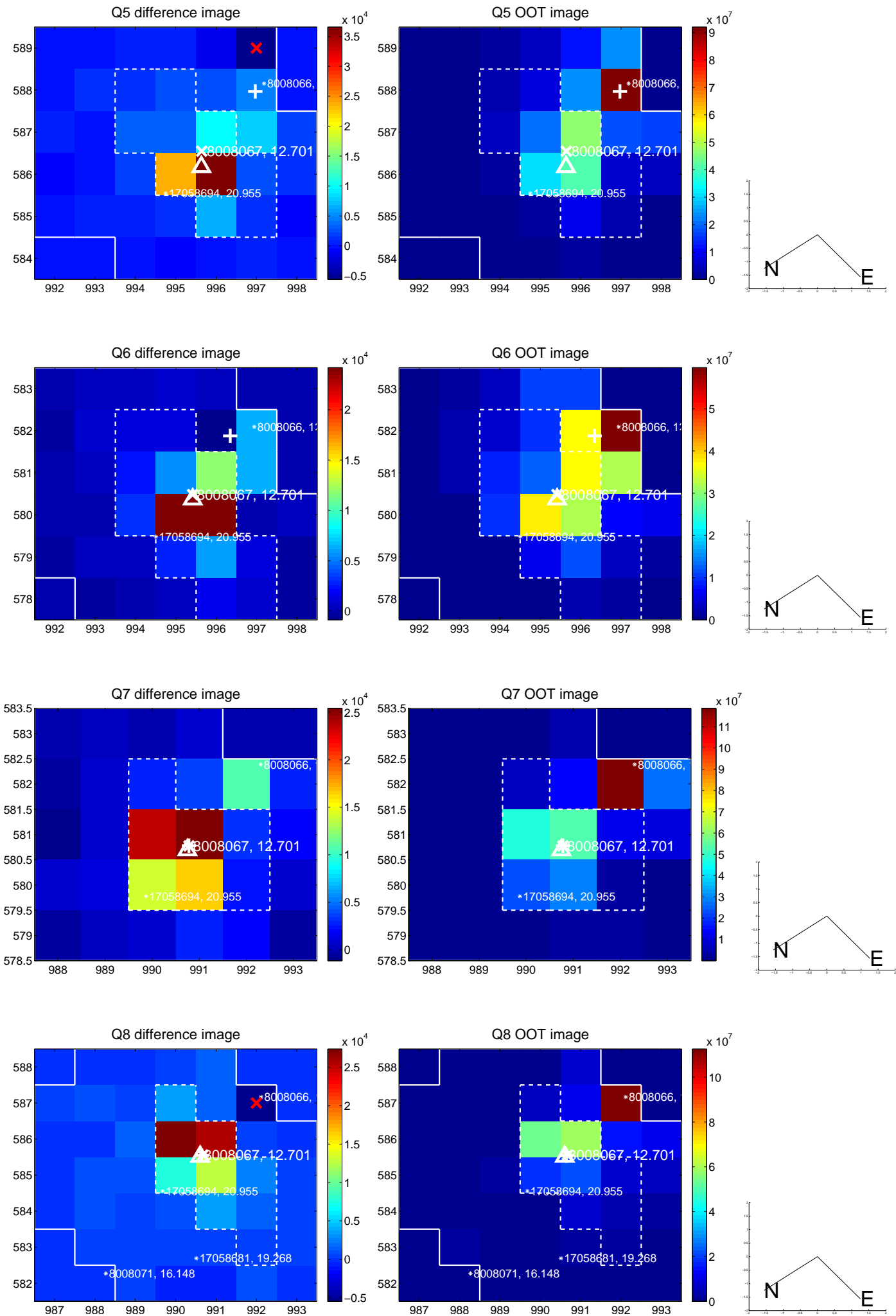


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

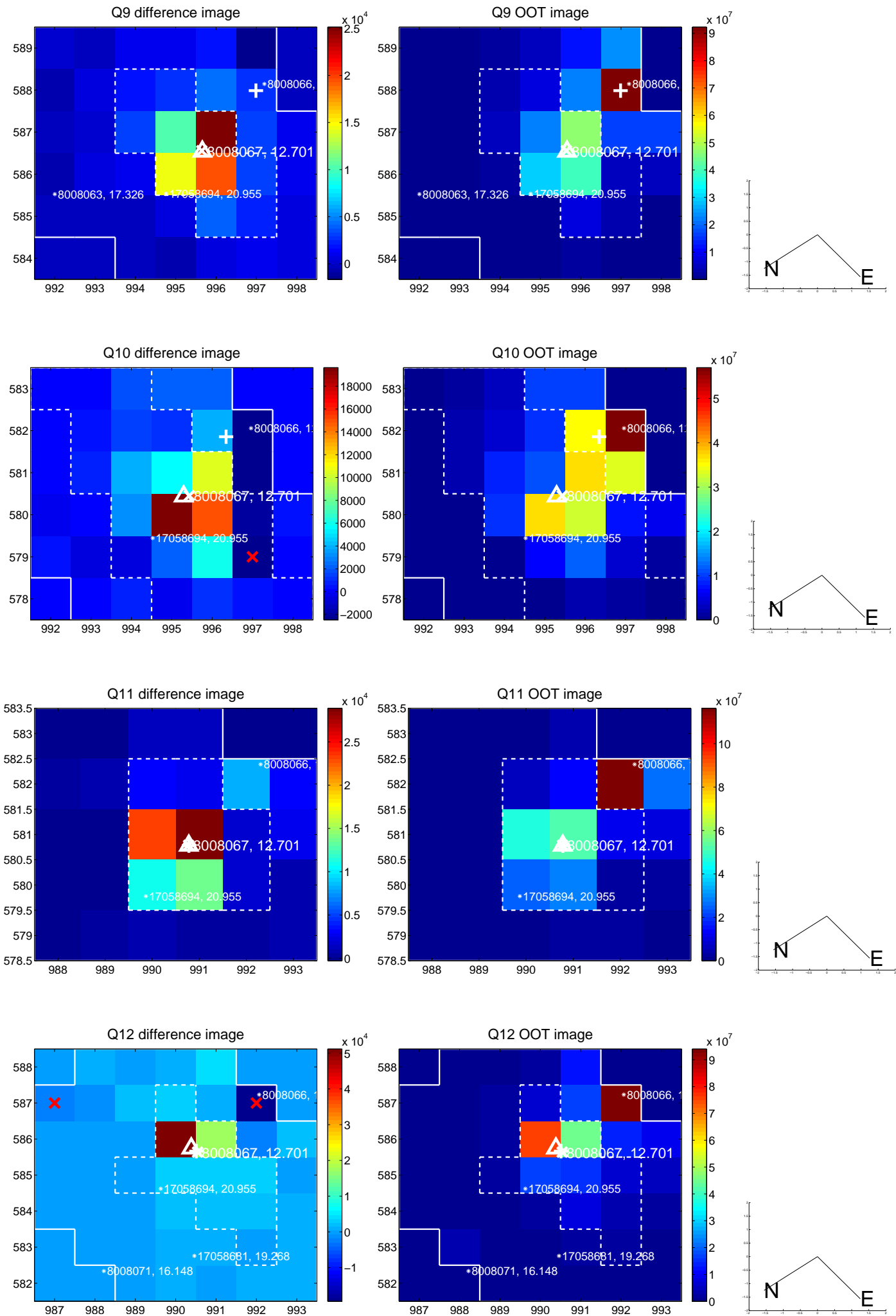
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



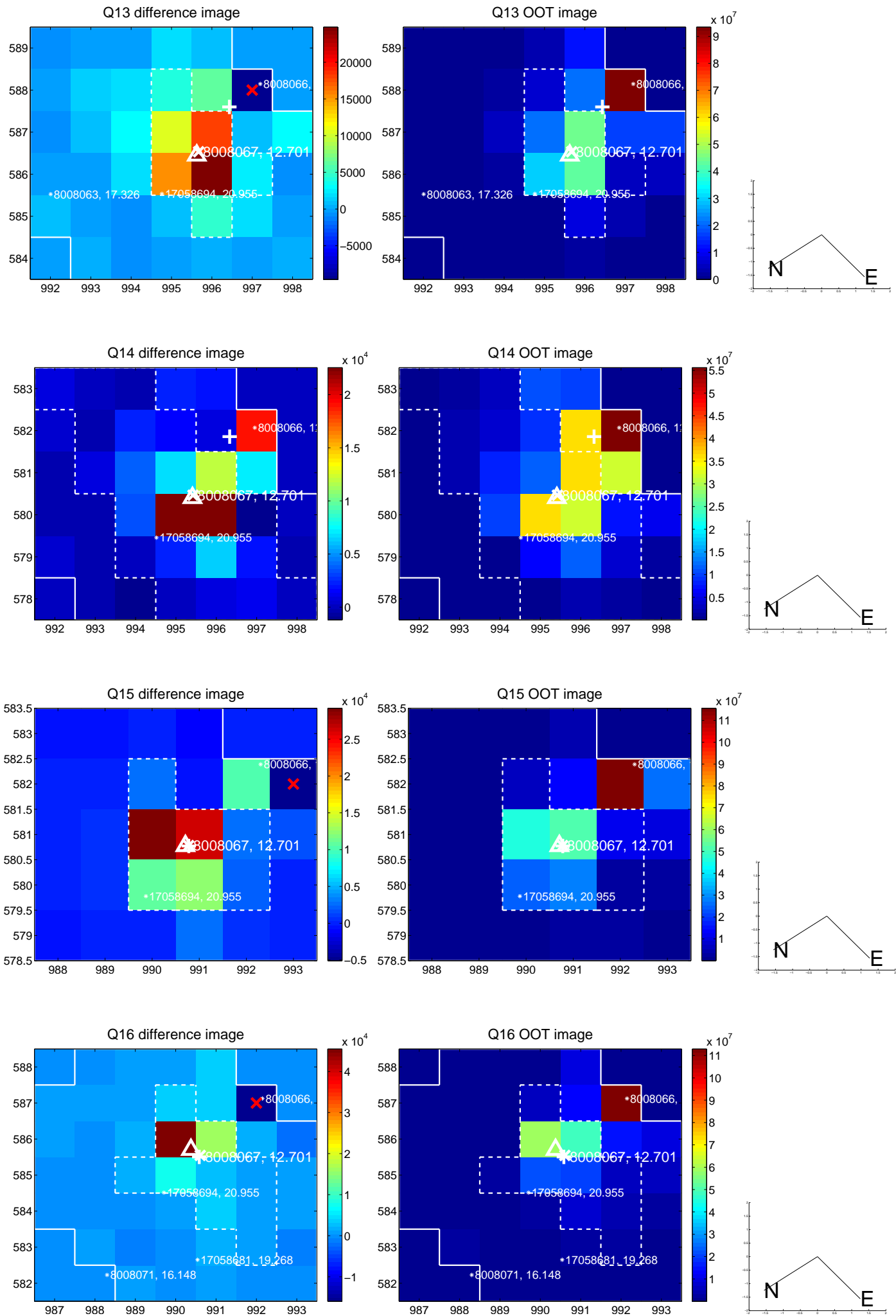
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



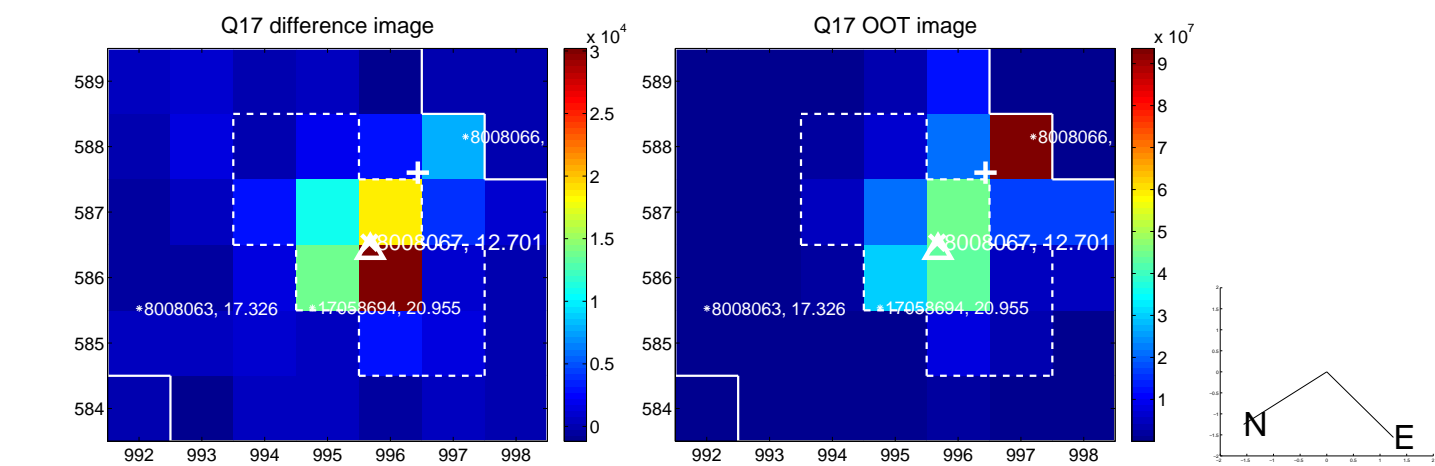
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



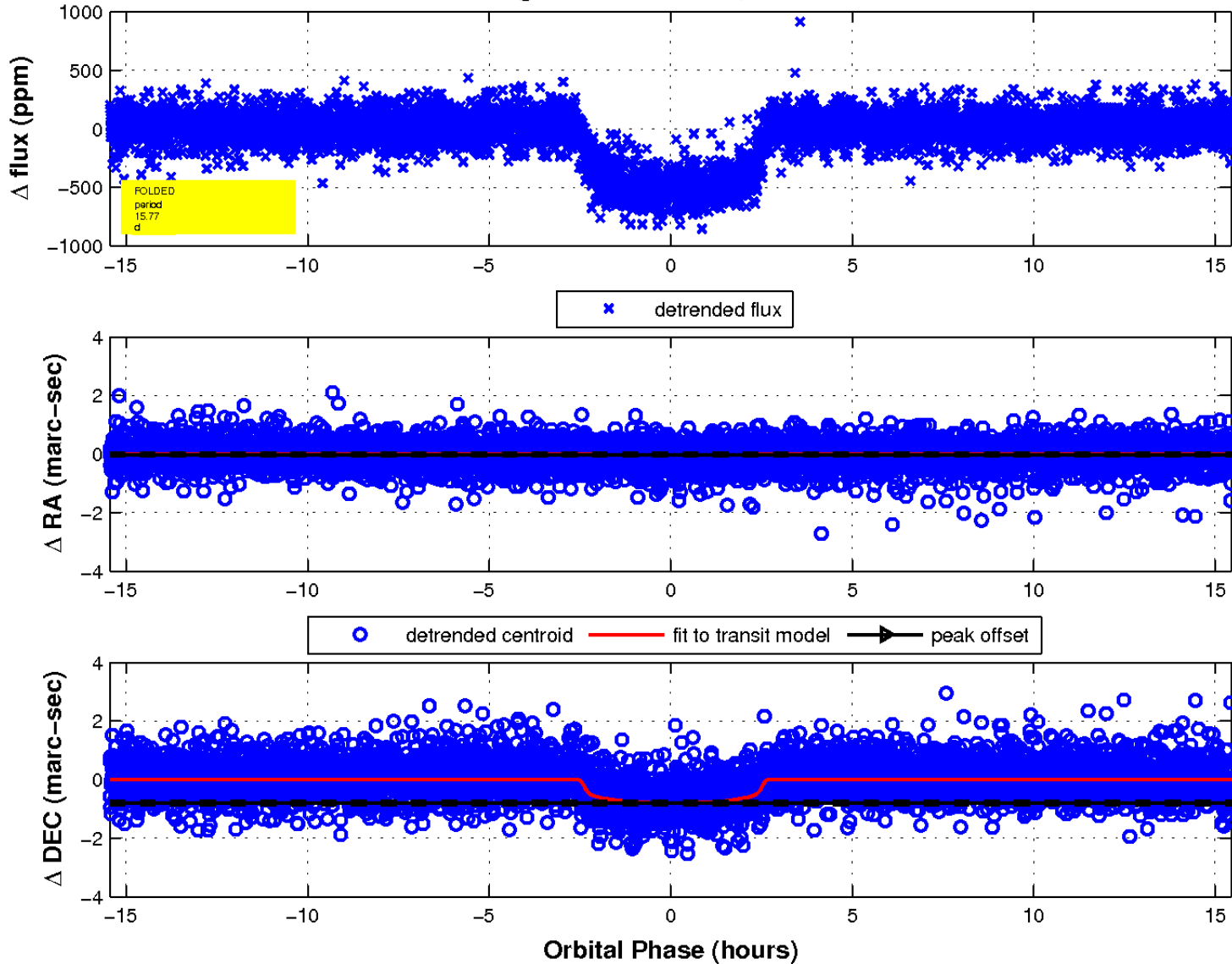
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

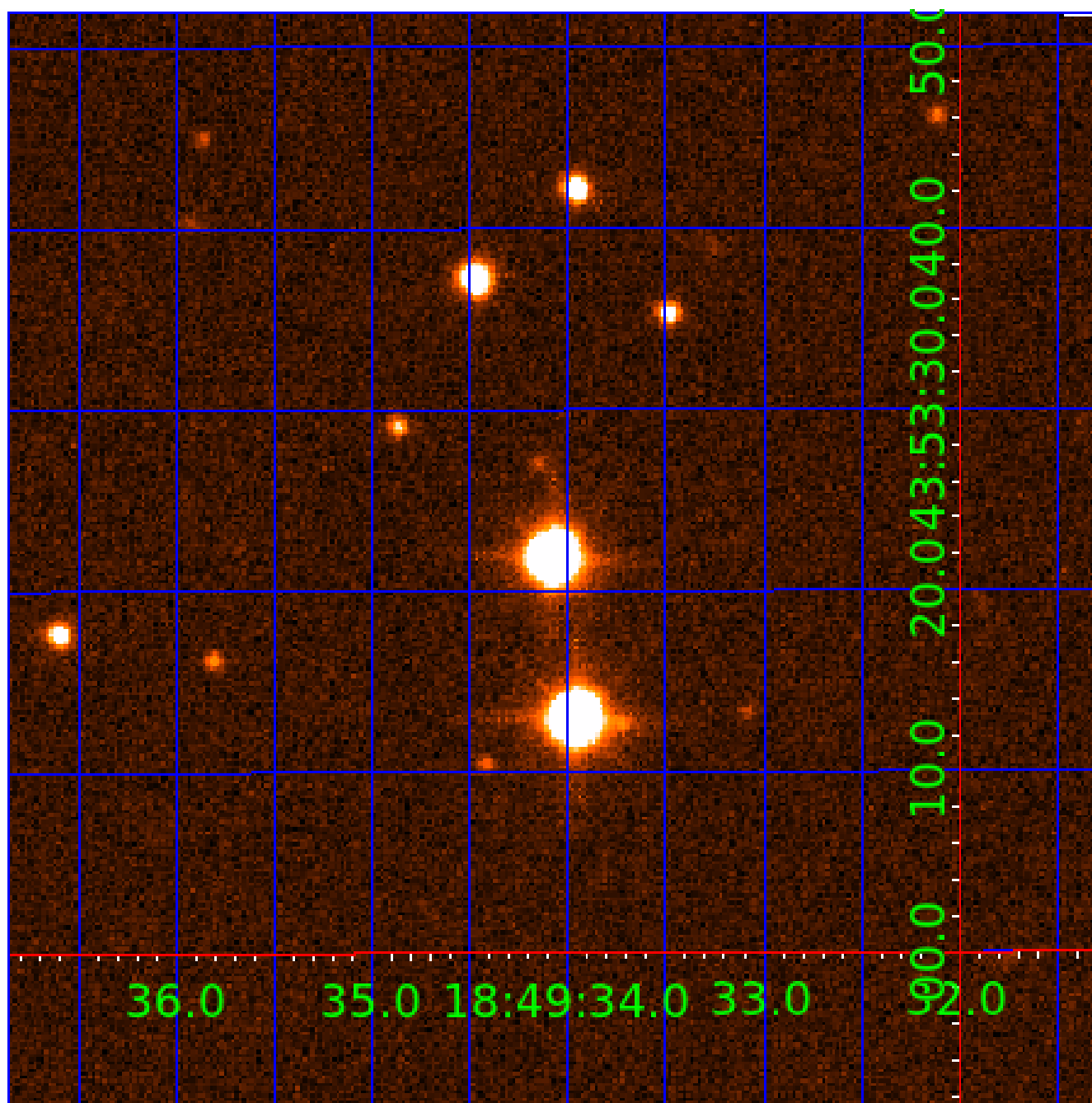


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 008008067

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})
008008067-01	OBS	0316.01	15.771086	137.591497	538.4	5.151	89.6	91.2	1.14	5620	2.84	75.75
008008067-02	OBS	0316.02	157.065530	167.142050	549.3	7.896	34.2	34.4	1.14	5620	2.91	3.54
008008067-03	OBS	0316.03	7.305682	131.782199	249.8	1.522	33.3	39.9	1.14	5620	2.18	211.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008008067-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
008008067-02	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
008008067-03	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

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

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

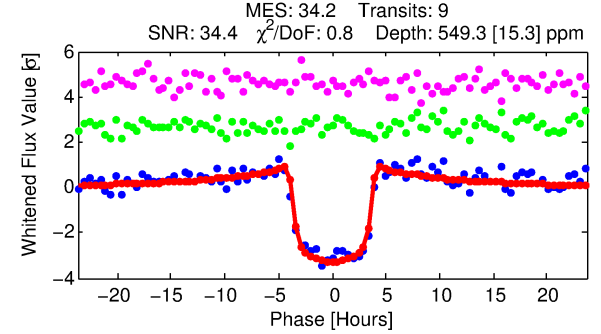
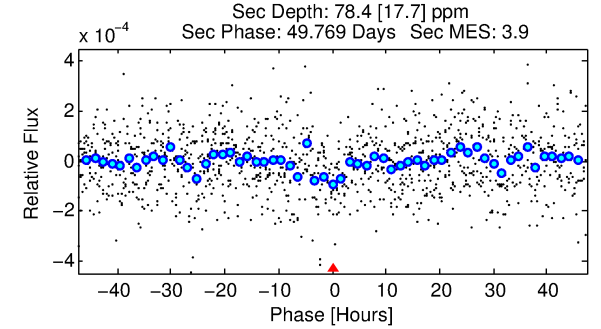
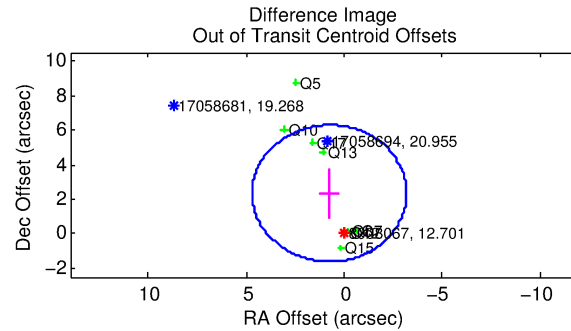
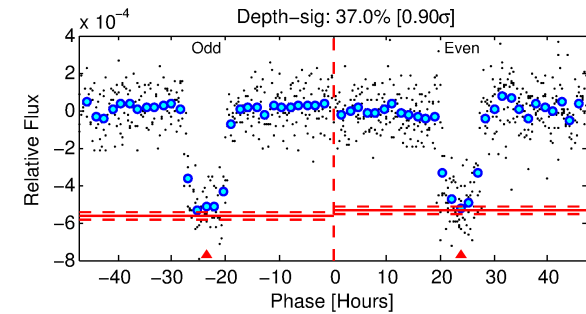
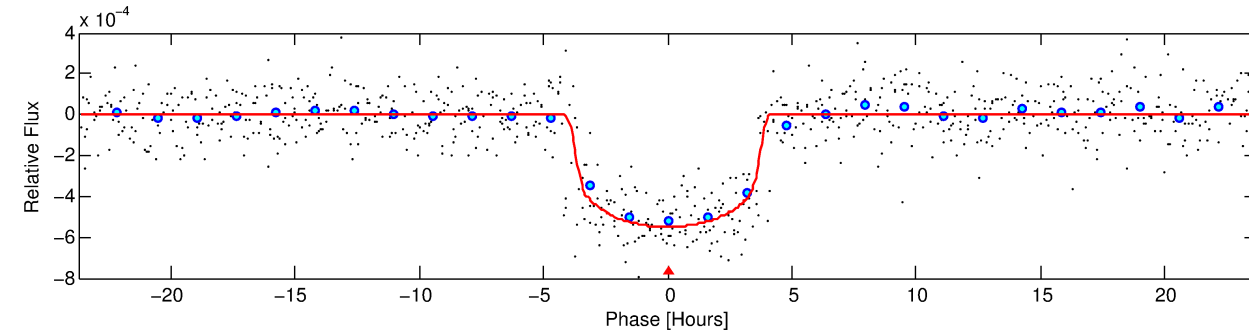
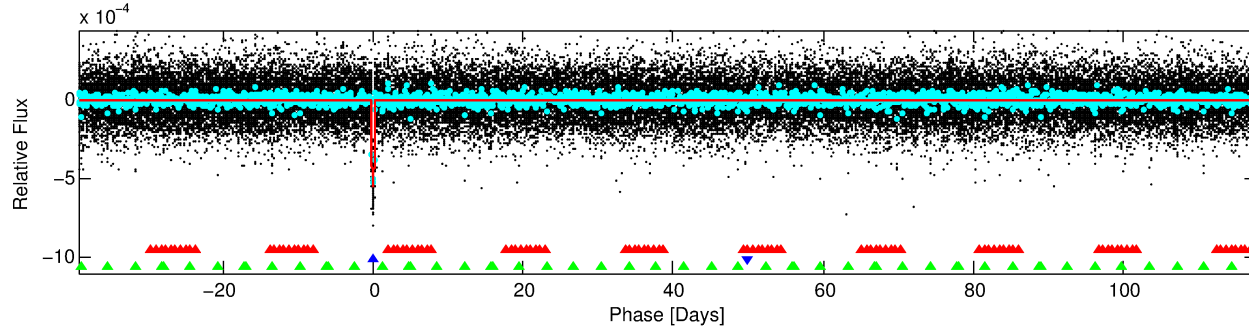
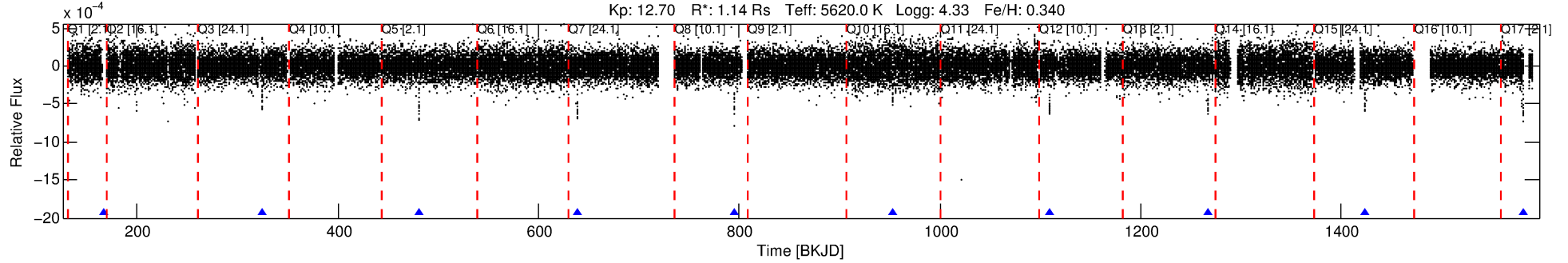
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008008067-02

No Significant Match Found

DV One-Page Summary

KIC: 8008067 Candidate: 2 of 3 Period: 157.066 d
KOI: K00316.02 Name: Kepler-139c Corr: 0.992



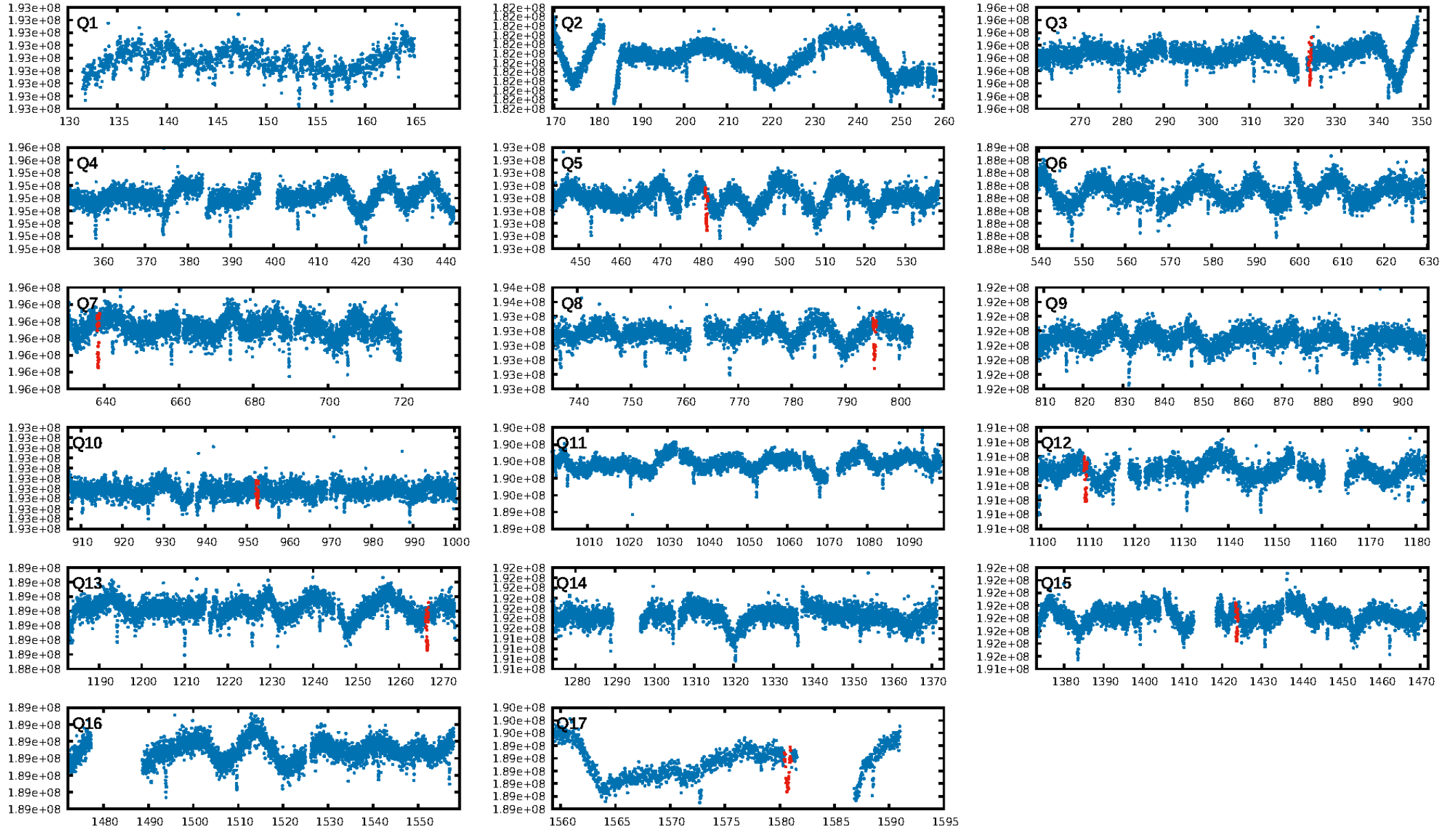
DV Fit Results:

Period = 157.06553 [0.00060] d
Epoch = 167.1421 [0.0034] BKJD
Rp/R* = 0.0233 [0.0030]
a/R* = 106.47 [54.59]
b = 0.75 [0.31]
Seff = 3.54 [0.77]
Teq = 350 [19] K
Rp = 2.91 [0.58] Re
a = 0.5747 [0.0773] AU
Ag = 1684.75 [668.64] [2.52 σ]
Teffp = 3463 [303] K [10.26 σ]

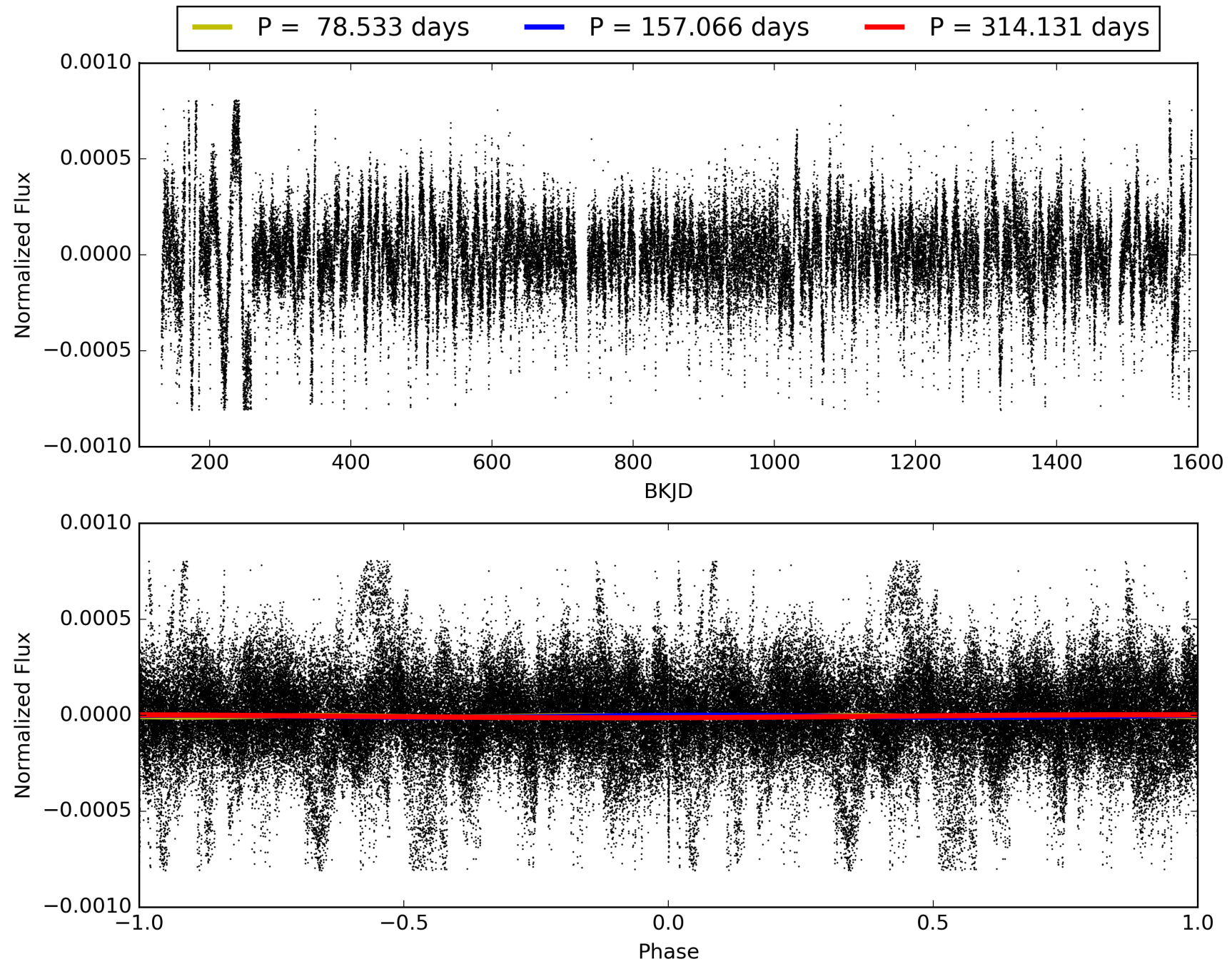
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [359.67 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 16.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.63e-160
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 5.19
Centroid-sig: 0.0%
Centroid-so: 1.388 arcsec [4.13 σ]
OotOffset-rm: 2.459 arcsec [1.87 σ]
KicOffset-rm: 0.132 arcsec [0.77 σ]
OotOffset-st: 1/2/2/3 [8]
KicOffset-st: 1/2/2/3 [8]
DiffImageQuality-fgm: 0.88 [7/8]
DiffImageOverlap-fno: 1.00 [8/8]

TCE 008008067-02, PDC Light Curves

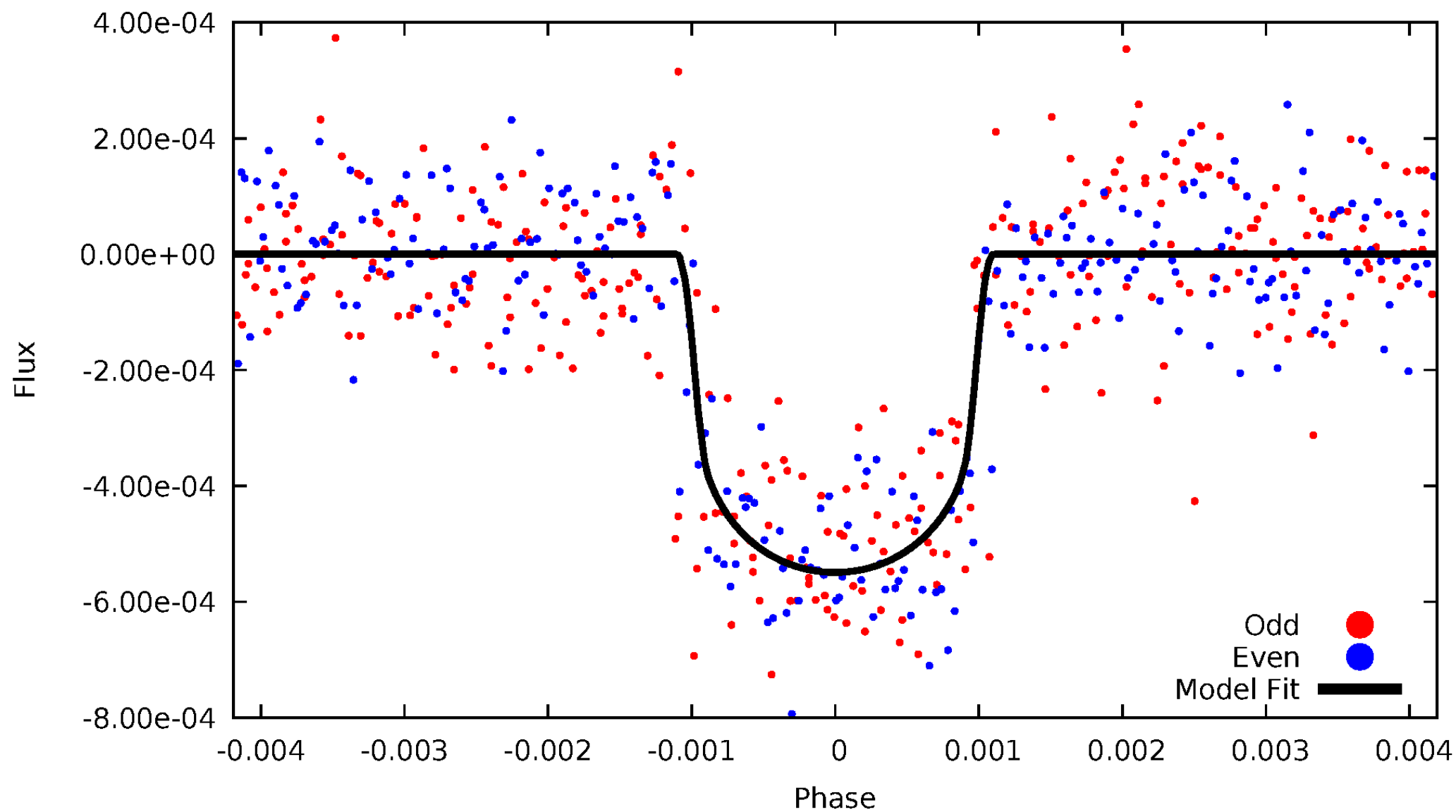


TCE 008008067-02



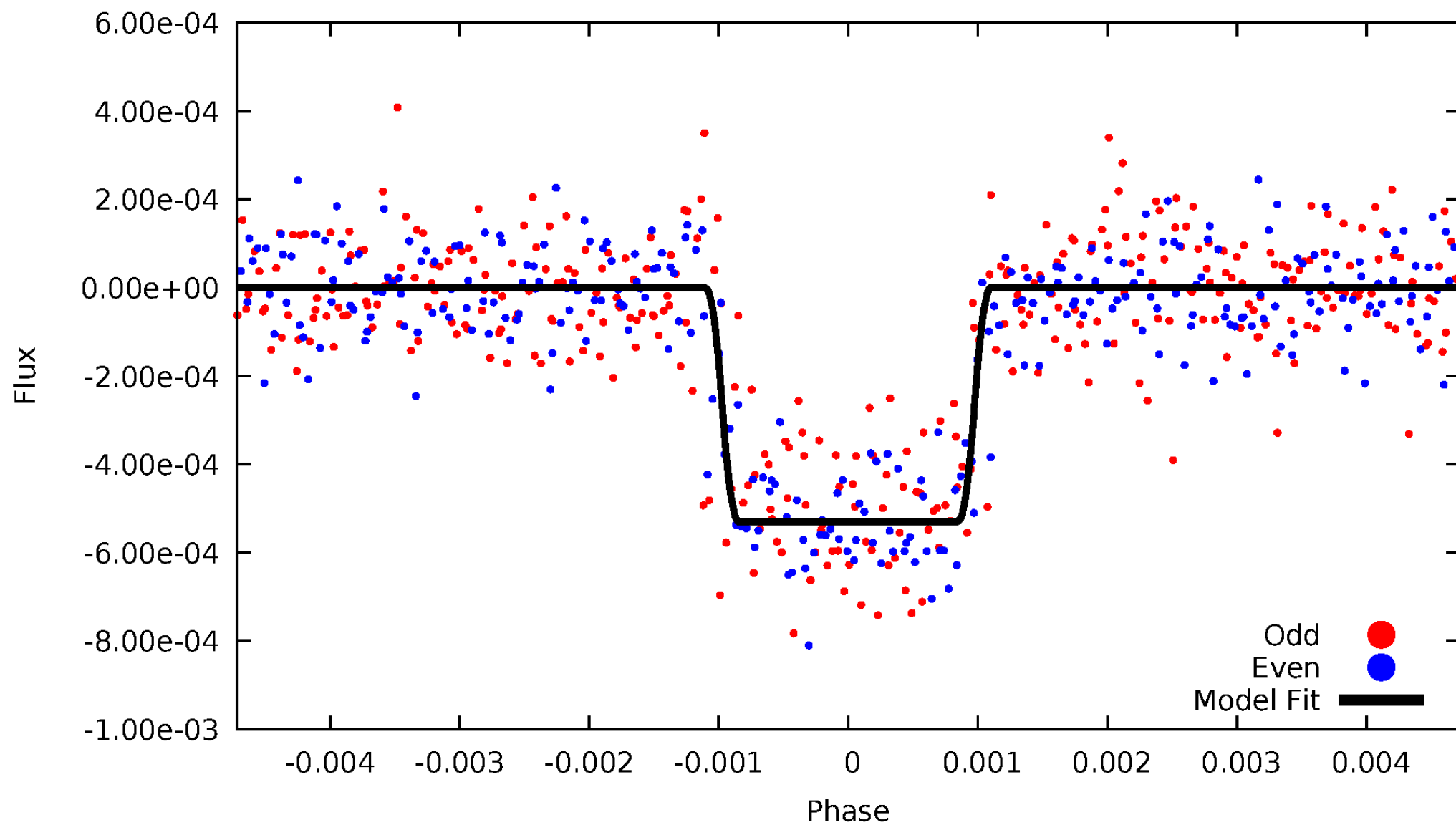
DV Odd/Even

TCE 008008067-02



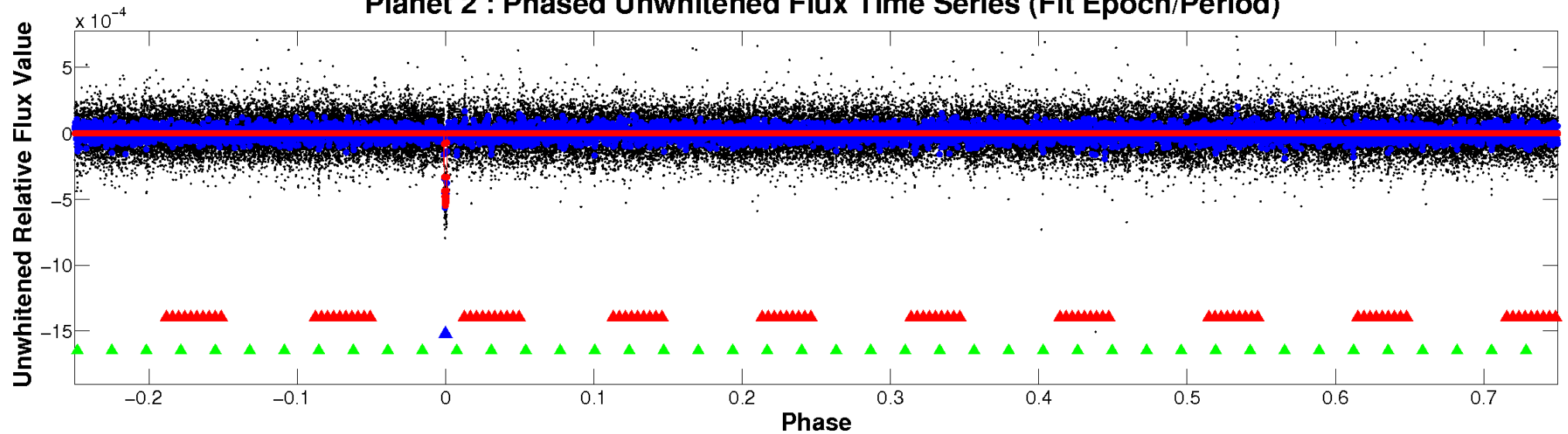
ALT Odd/Even

TCE 008008067-02

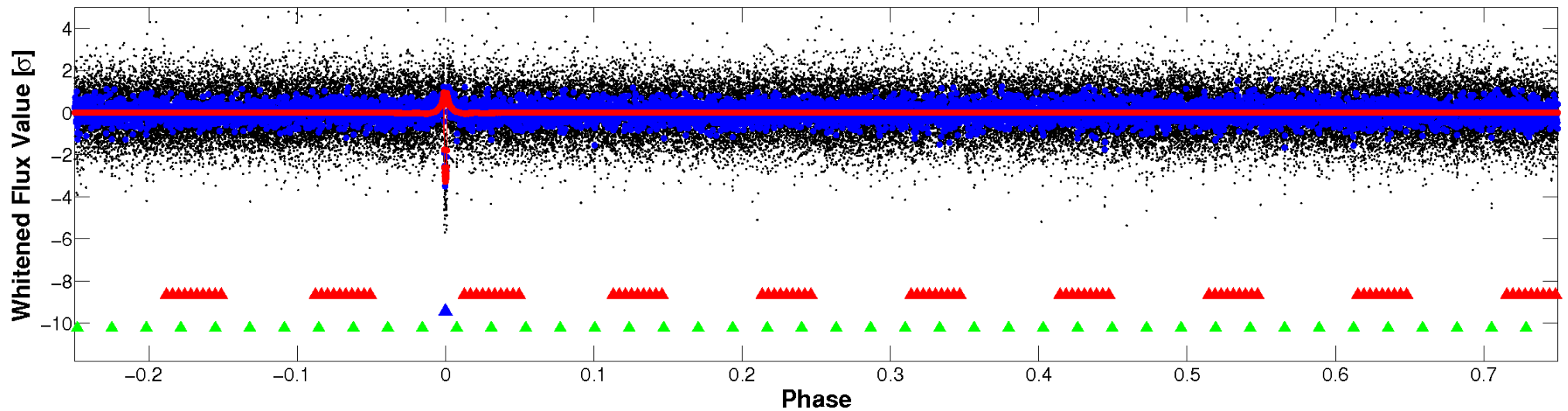


Non-Whitened Vs. Whitened Light Curve

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

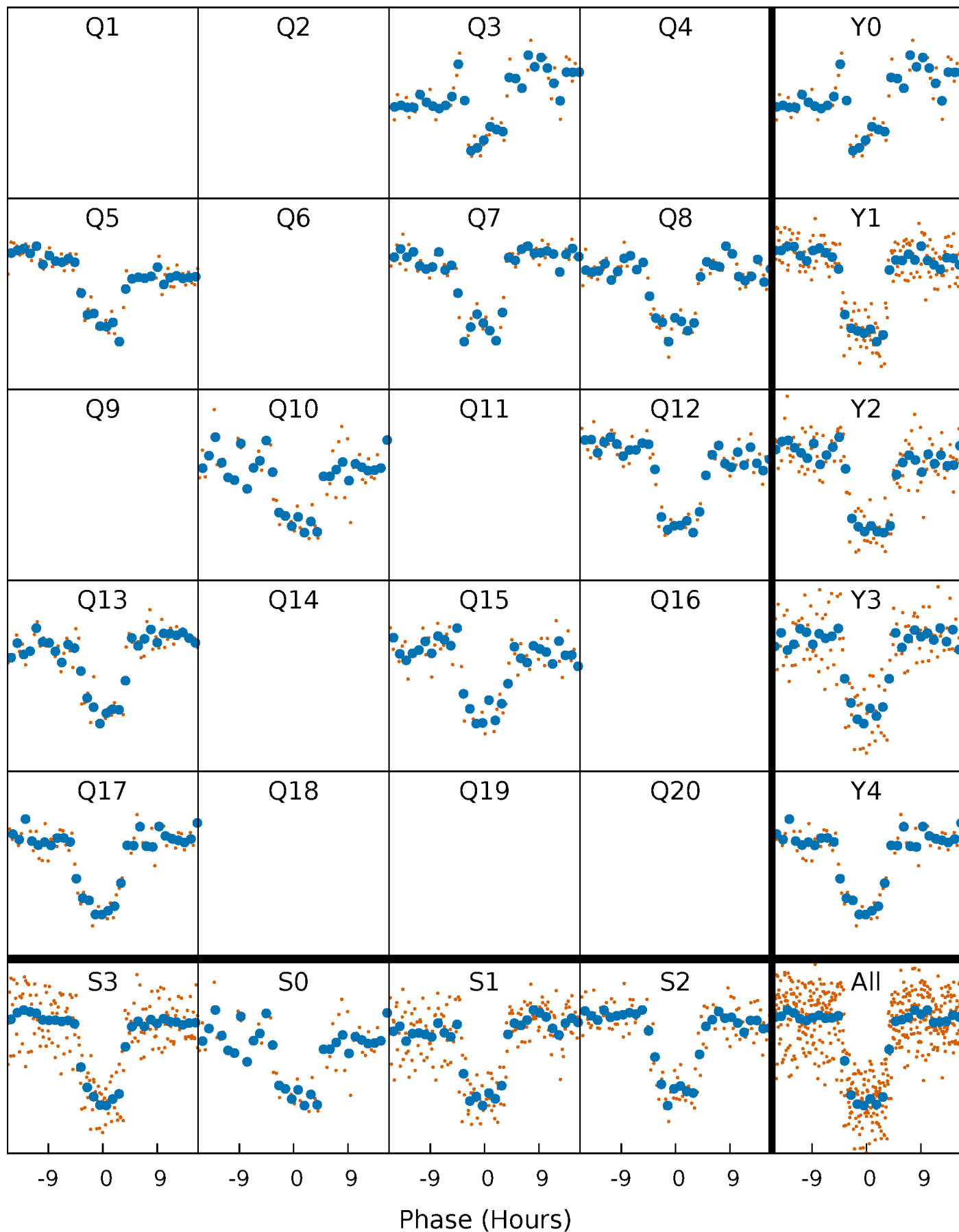


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



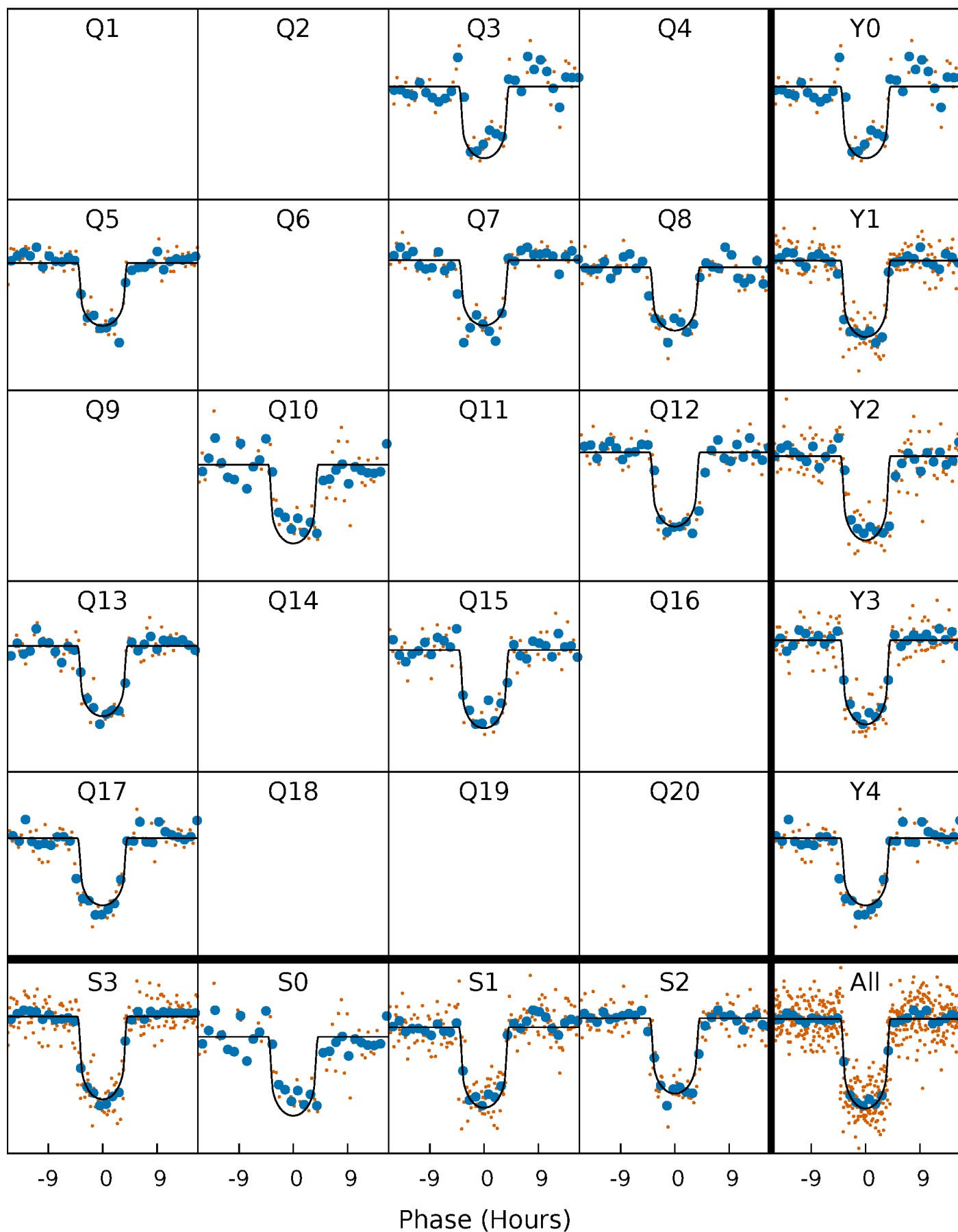
PDC Quarter-Phased Transit Curves

TCE 008008067-02 P=157.065530 Days $T_0=167.142050$ (BKJD)



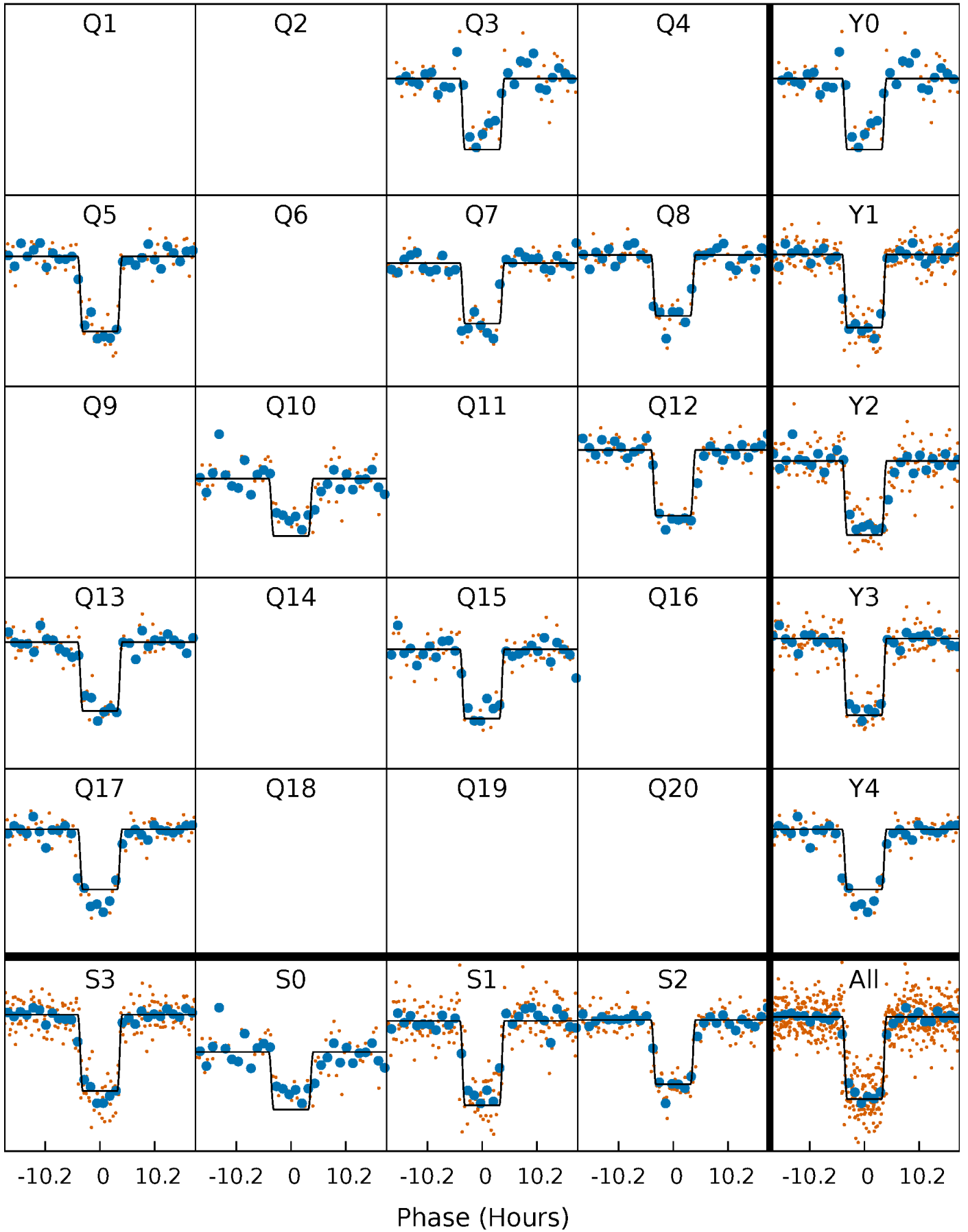
DV Quarter-Phased Transit Curves

TCE 008008067-02 $P=157.065530$ Days $T_0=167.142050$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

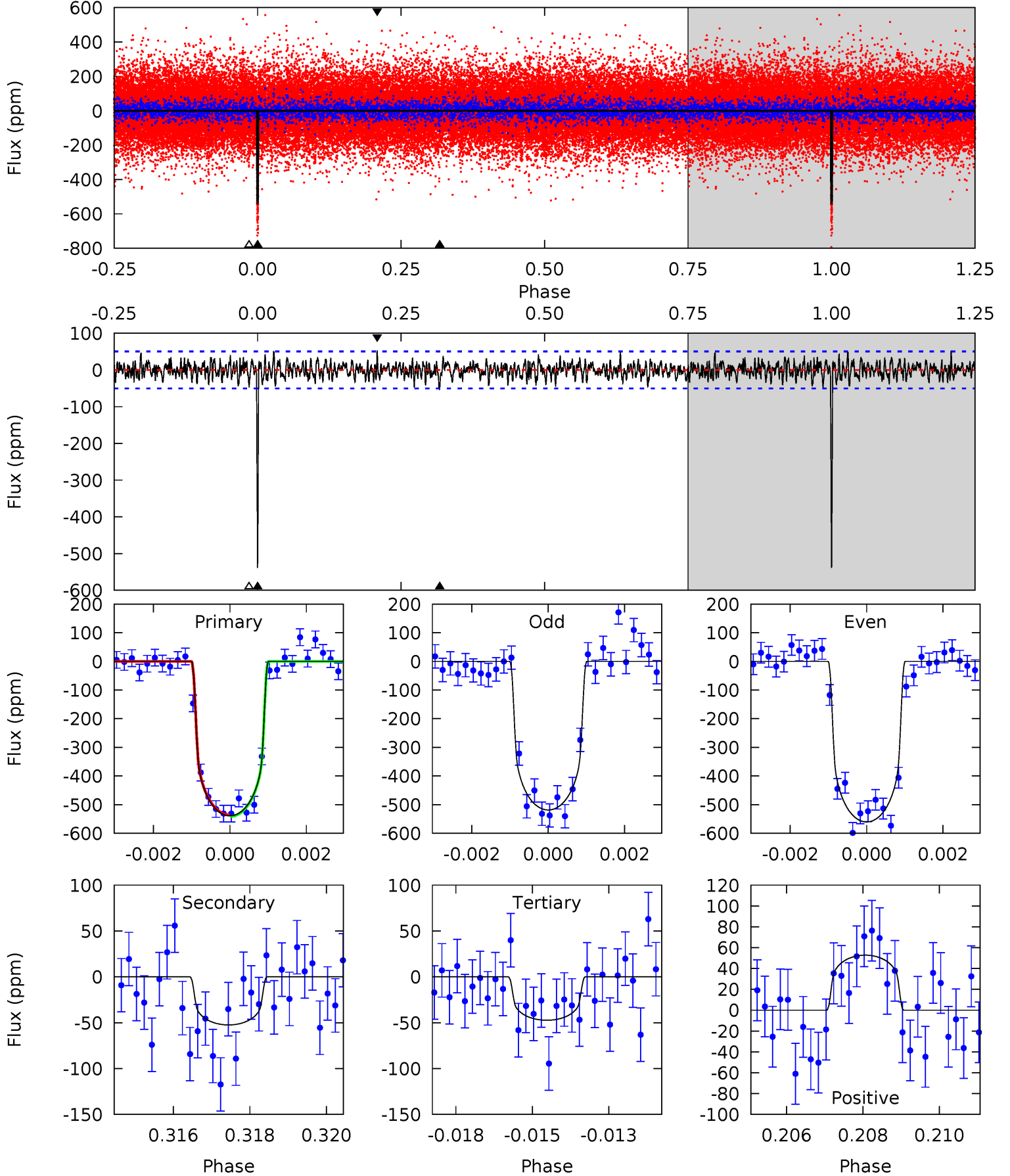
TCE 008008067-02 P=157.064782 Days $T_0=167.145496$ (BKJD)



DV Model-Shift Uniqueness Test

008008067-02, $P = 157.065530$ Days, $E = 10.076520$ Days

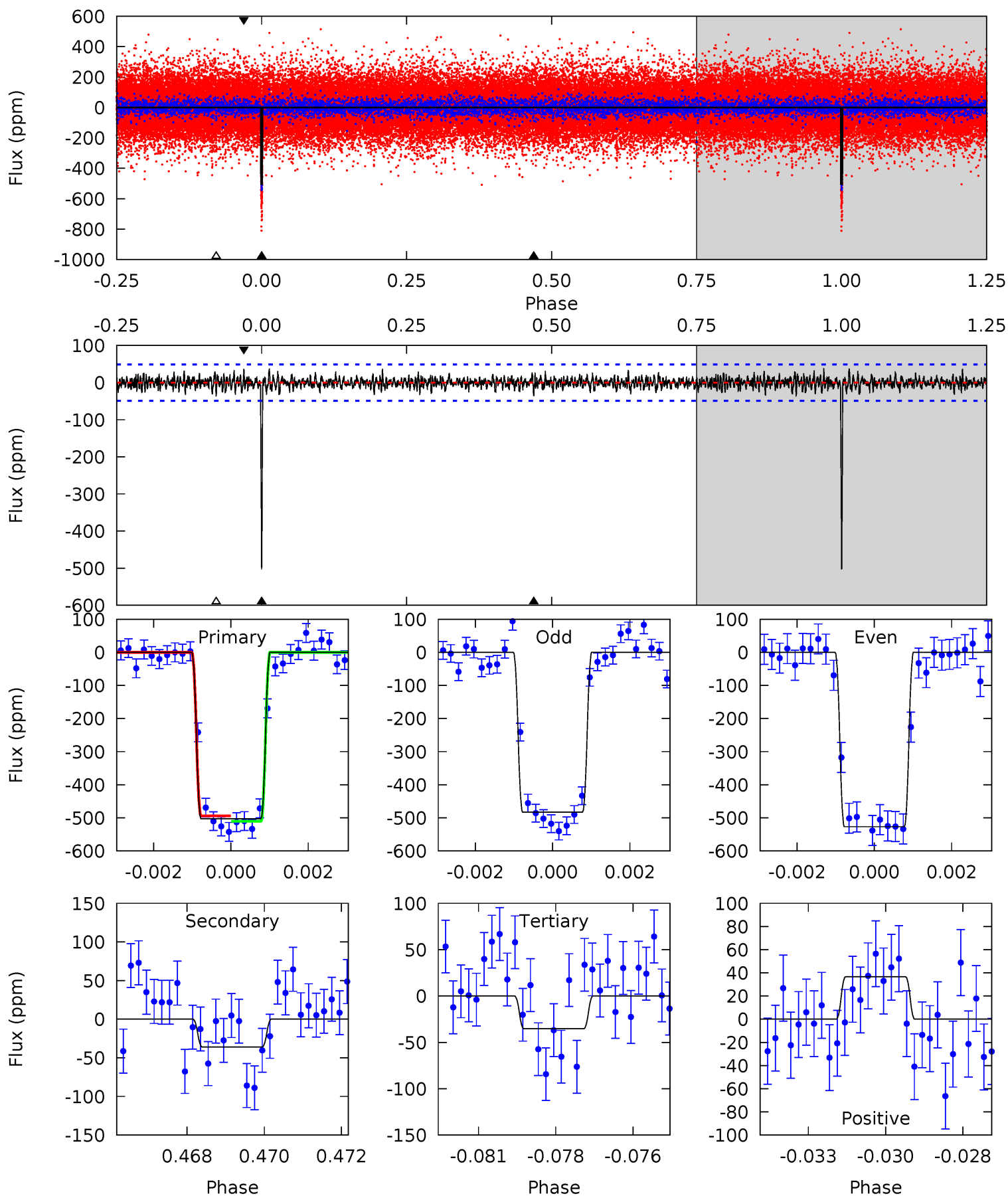
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
56.8	5.53	4.99	5.57	5.31	3.06	1.65	51.8	51.3	0.54	-0.03	2.20	0.94	0.09	0.25



Alt Model-Shift Uniqueness Test

008008067-02, $P = 157.064782$ Days, $E = 10.080714$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
54.5	3.90	3.83	3.97	5.31	3.07	1.13	50.7	50.5	0.07	-0.07	2.39	0.96	0.07	0.91



Stellar Parameters For KIC 008008067

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5620^{+100}_{-112}	$4.333^{+0.115}_{-0.115}$	$0.340^{+0.100}_{-0.150}$	$1.143^{+0.174}_{-0.139}$	$1.025^{+0.063}_{-0.063}$	$0.967^{+0.481}_{-0.322}$
	+2%/-2%	+3%/-3%	+29%/-44%	+15%/-12%	+6%/-6%	+50%/-33%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 008008067-02 / KOI 0316.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-52 ± 9	$2.90^{+0.43}_{-0.44}$	488^{+21}_{-21}	3581^{+197}_{-168}	1144^{+457}_{-339}
Alt.	-36 ± 9	$2.86^{+0.49}_{-0.42}$	489^{+22}_{-21}	3379^{+213}_{-197}	783^{+364}_{-266}

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

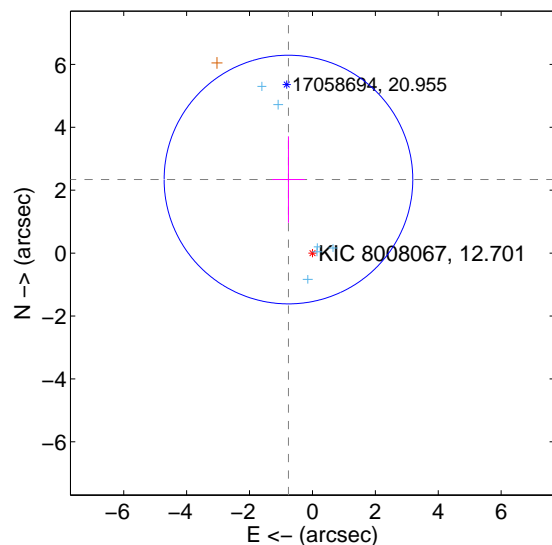
Supplemental centroid analysis for 008008067-02. Kepler magnitude: 12.70. Transit SNR 34.45

There are 7 quarters with good PRF difference image offsets

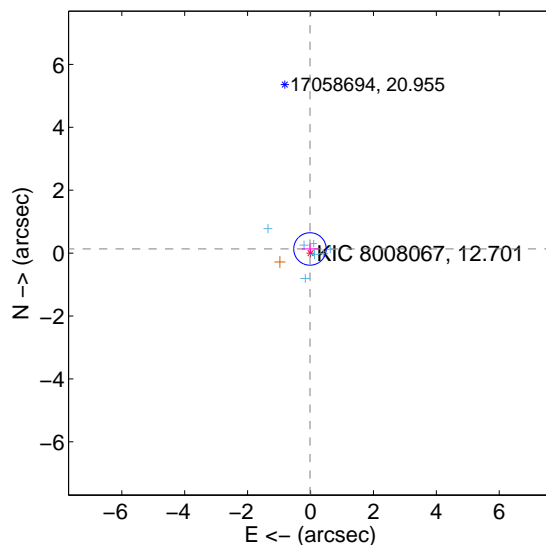
The OOT PRF centroid is offset from the target star catalog position by about 5.24 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.459 ± 1.317	1.87	0.762 ± 0.518	2.338 ± 1.375
PRF-fit source offset from KIC position	0.132 ± 0.172	0.77	0.017 ± 0.262	0.131 ± 0.170
photometric centroid source offset	1.39 ± 0.34	4.13	0.53 ± 0.21	-1.28 ± 0.35

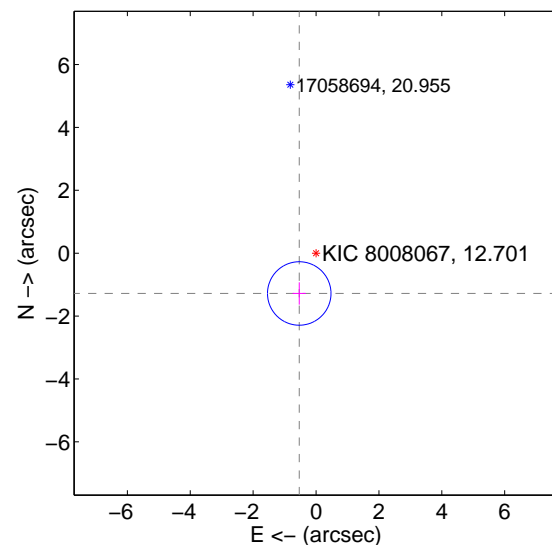
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

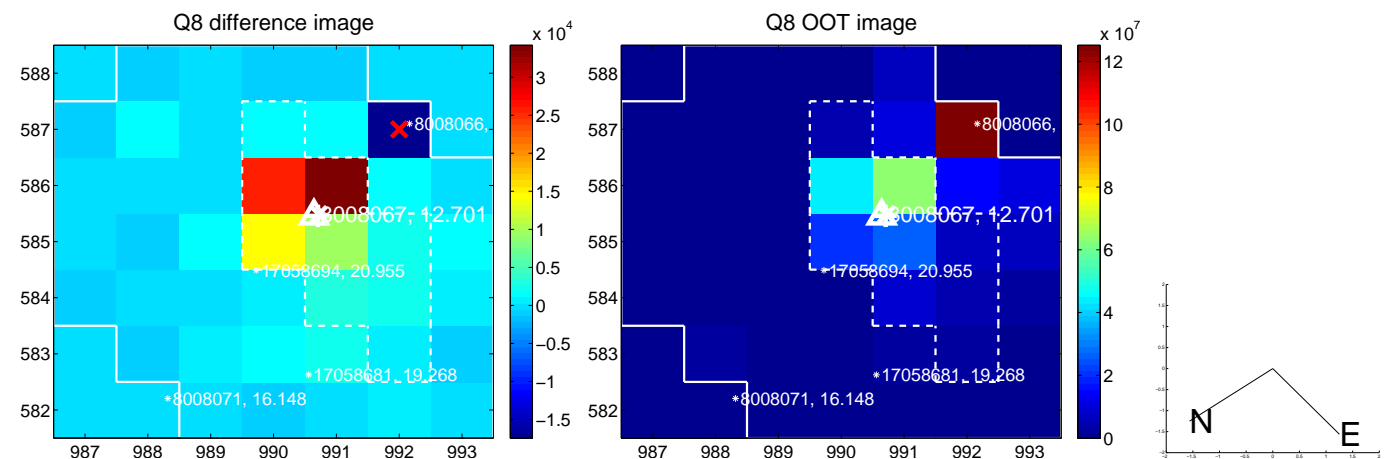
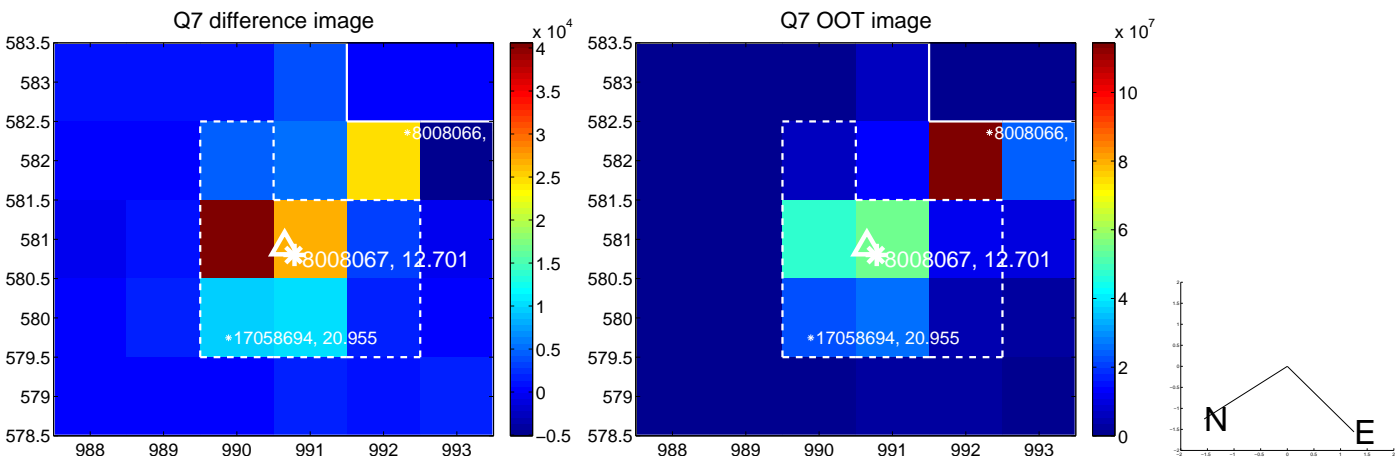
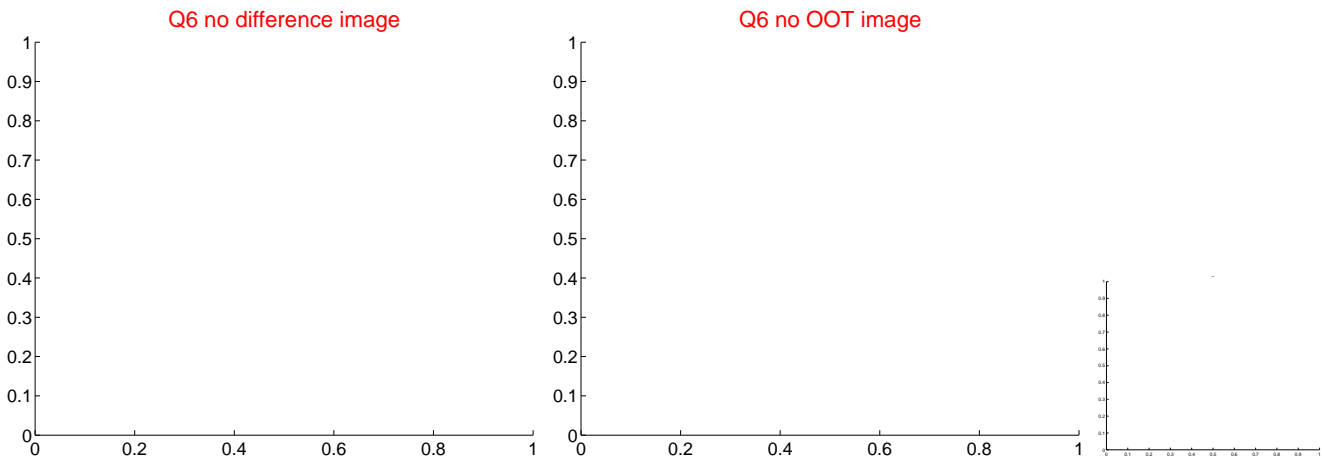
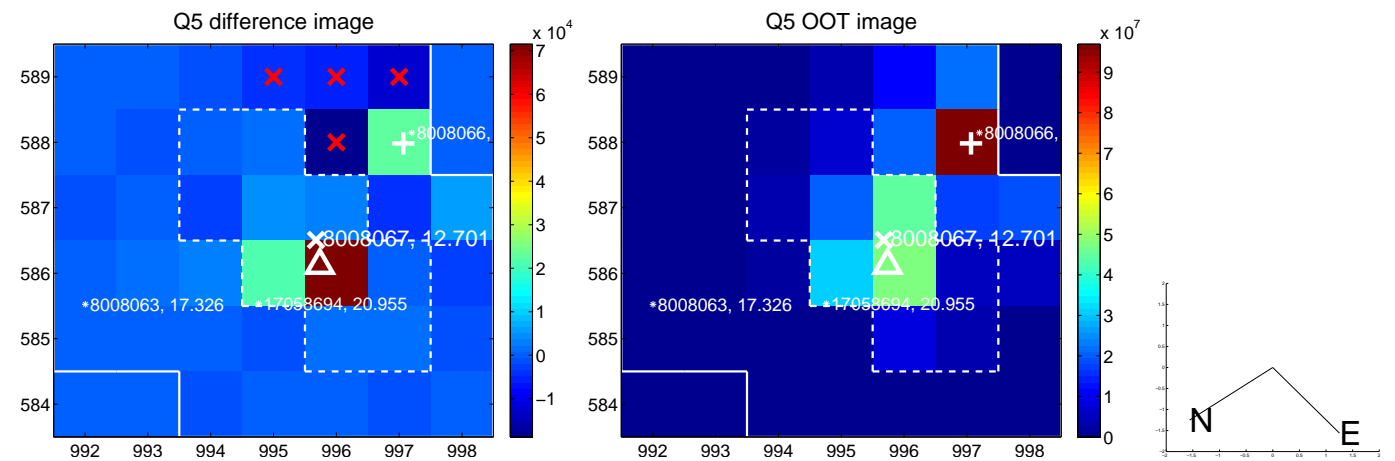


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

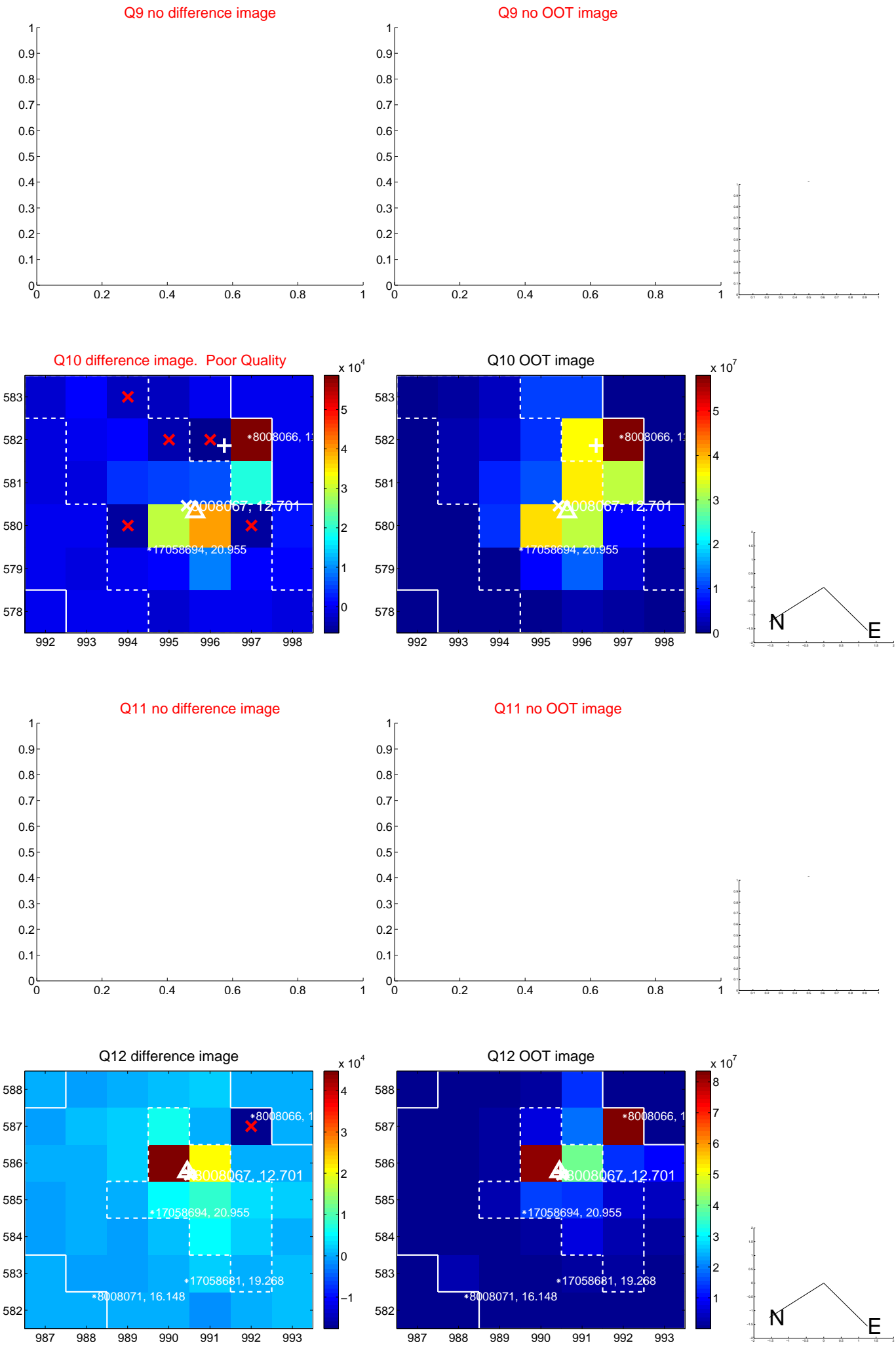
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



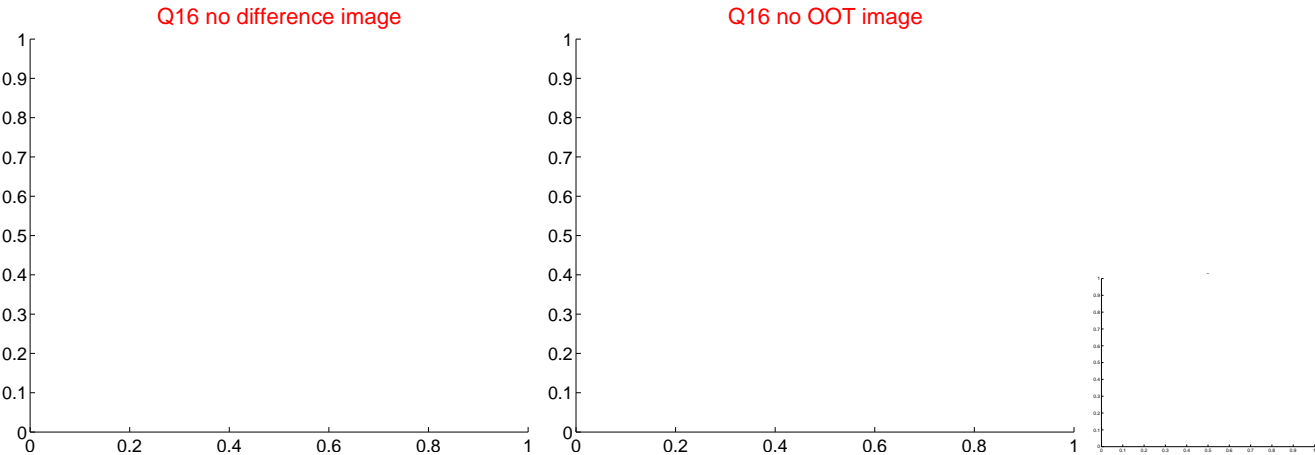
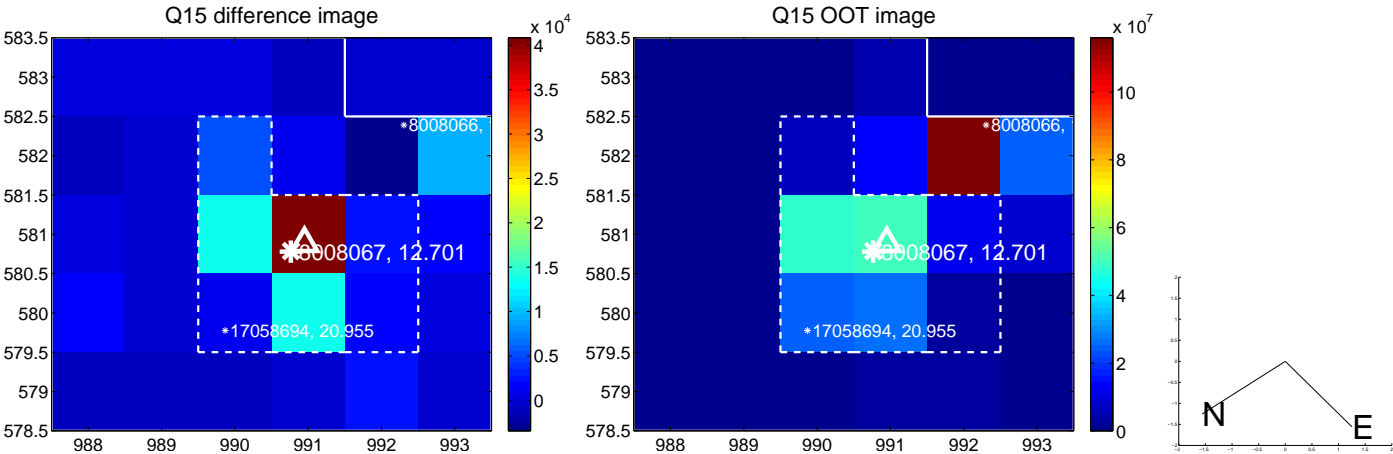
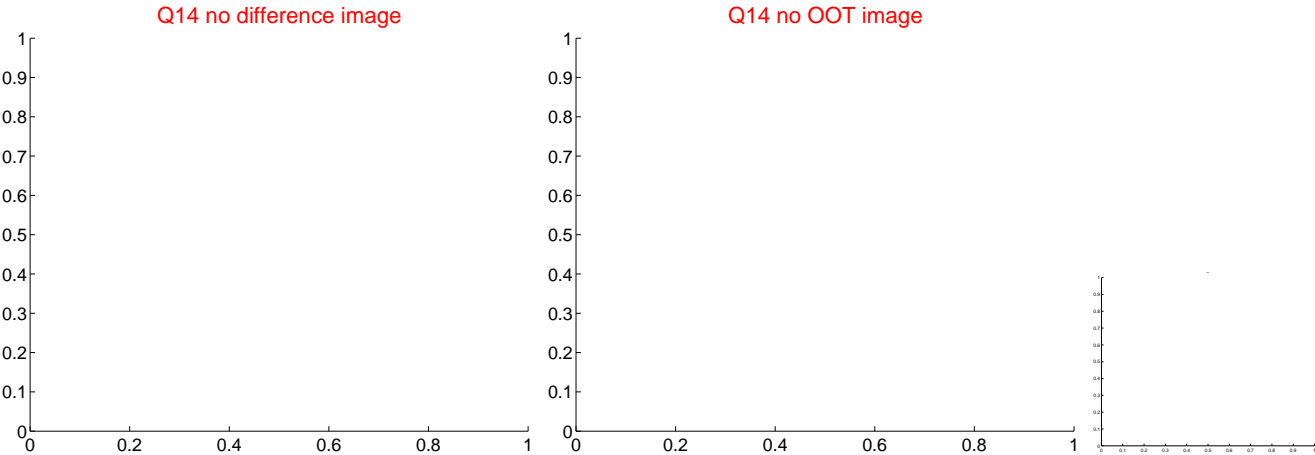
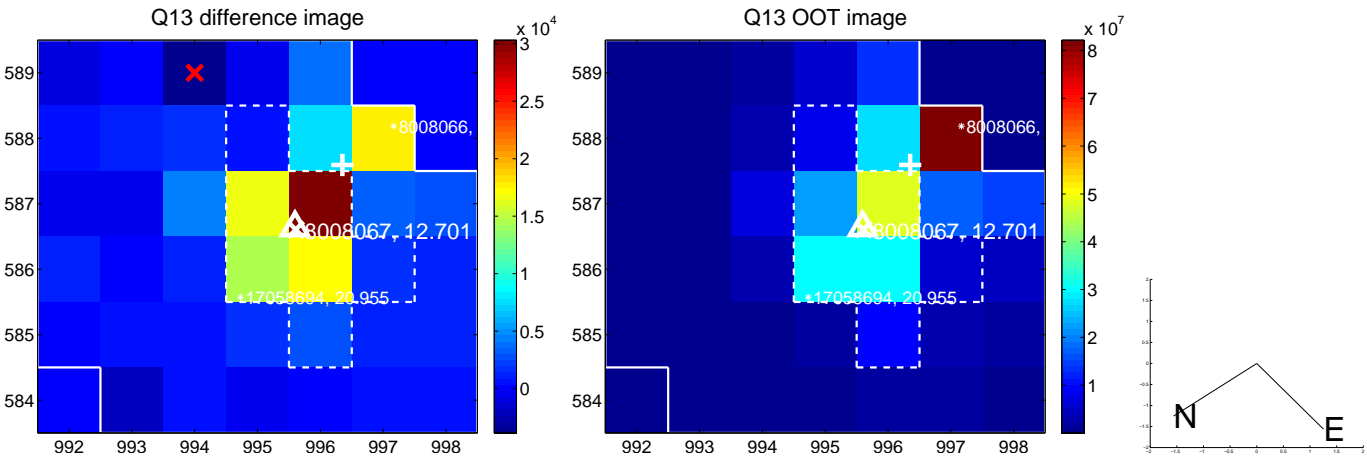
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



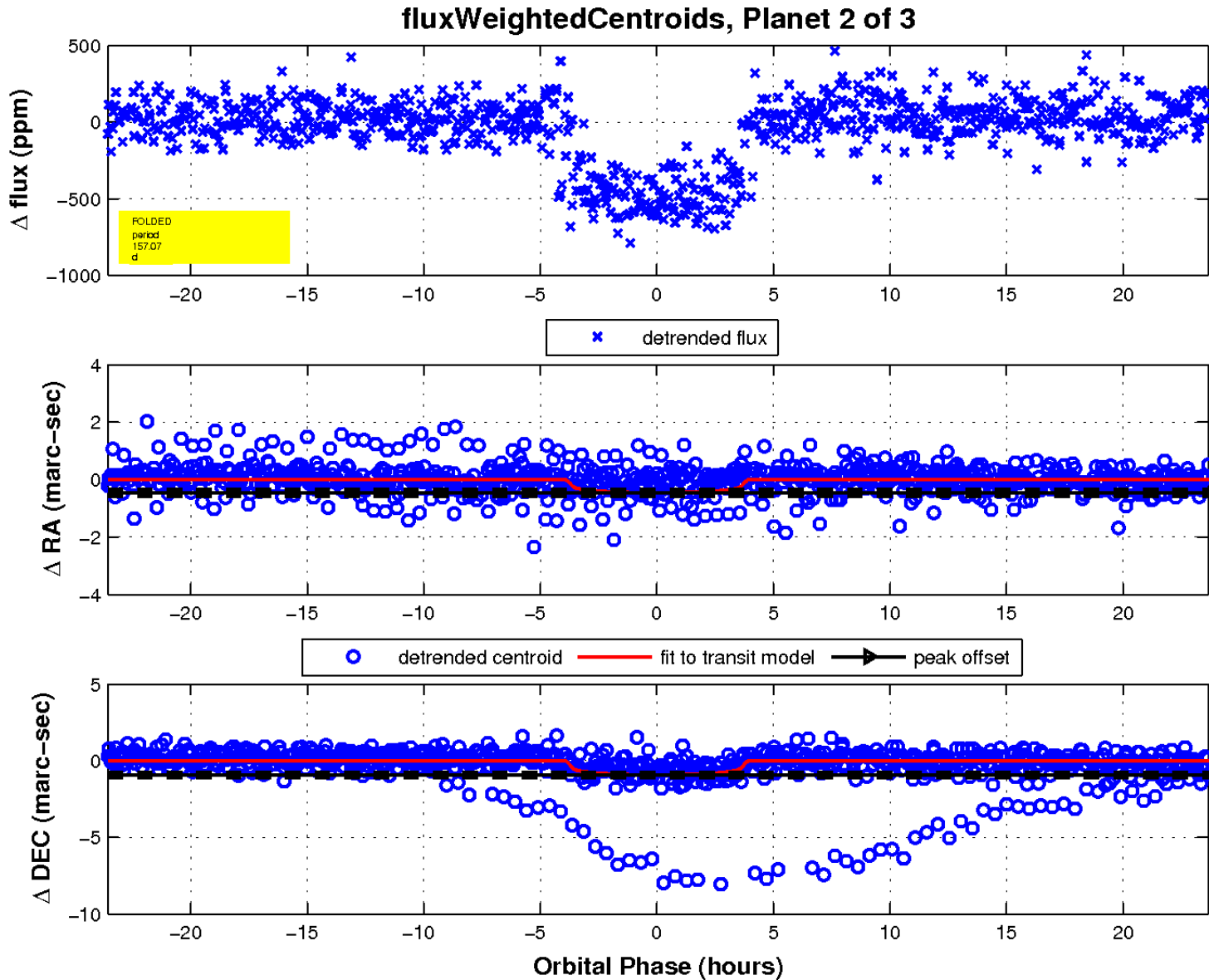
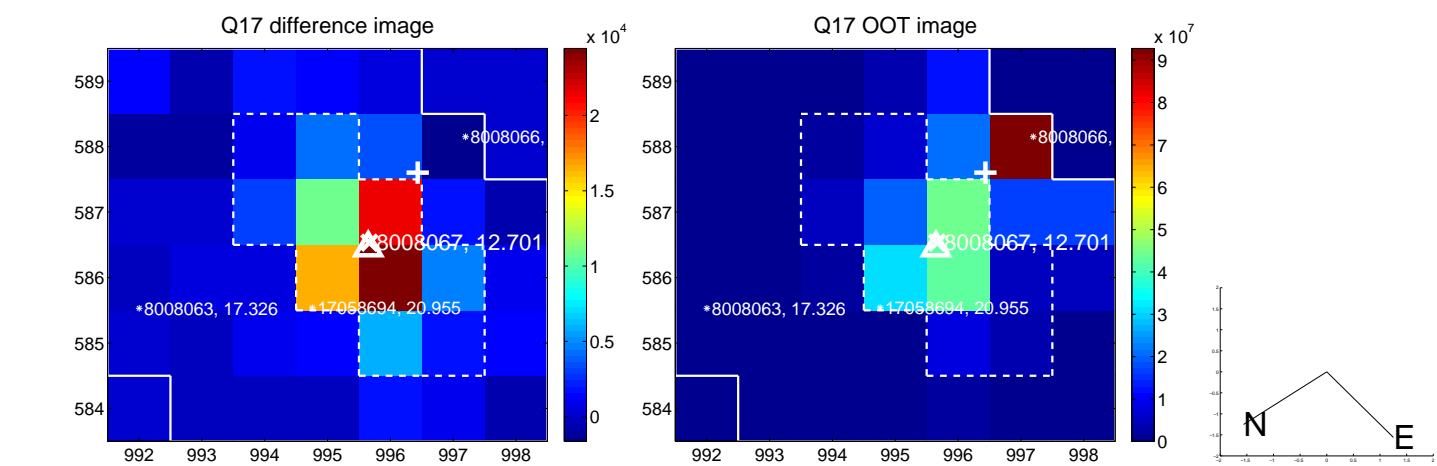
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

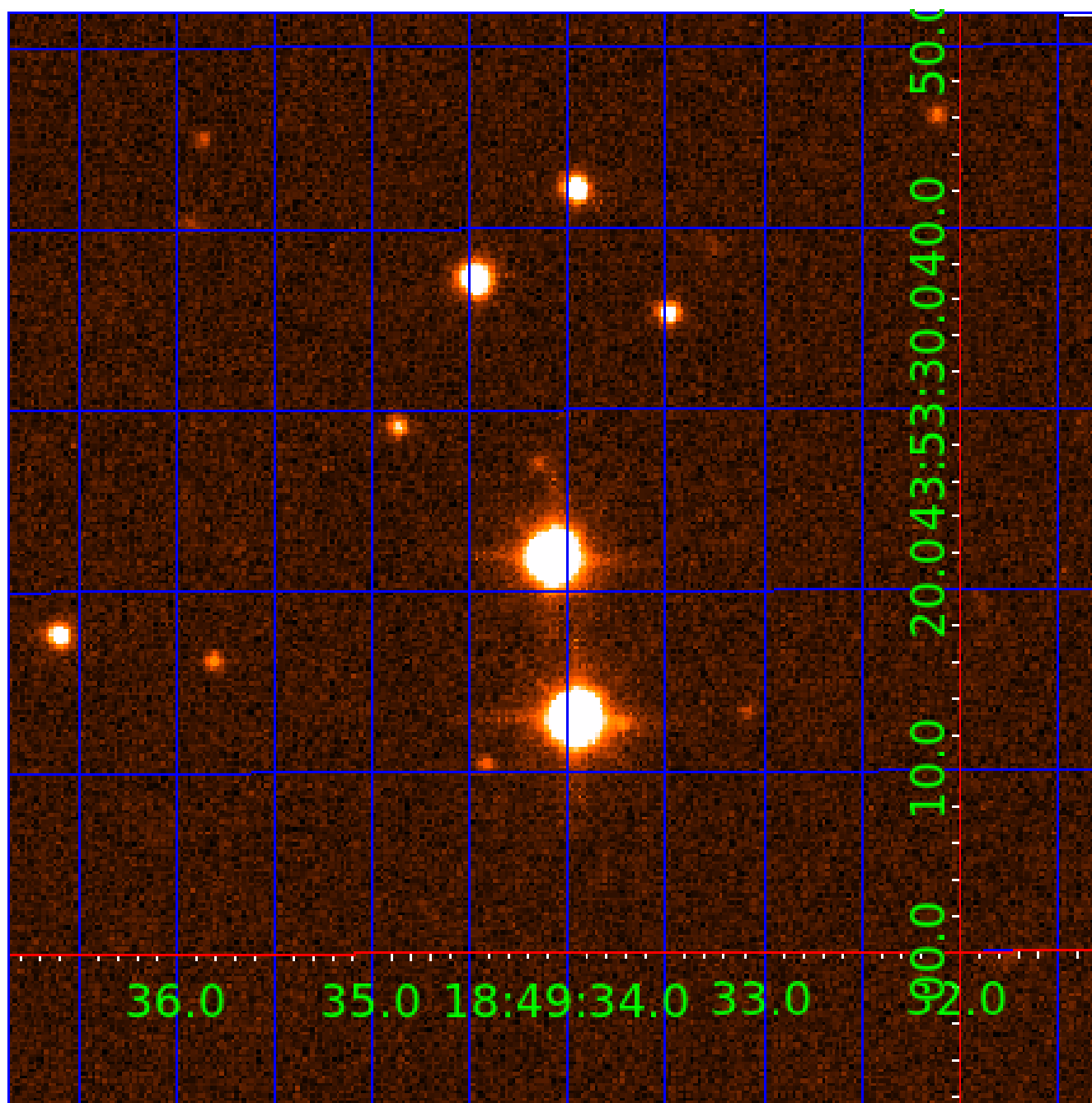


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008008067

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})
008008067-01	OBS	0316.01	15.771086	137.591497	538.4	5.151	89.6	91.2	1.14	5620	2.84	75.75
008008067-02	OBS	0316.02	157.065530	167.142050	549.3	7.896	34.2	34.4	1.14	5620	2.91	3.54
008008067-03	OBS	0316.03	7.305682	131.782199	249.8	1.522	33.3	39.9	1.14	5620	2.18	211.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008008067-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
008008067-02	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
008008067-03	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

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

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

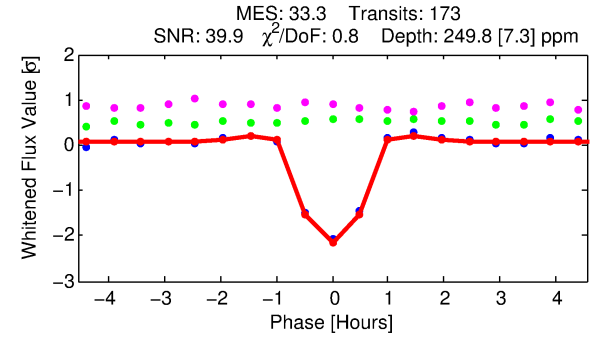
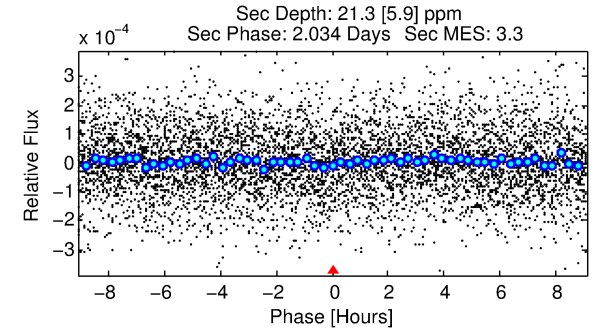
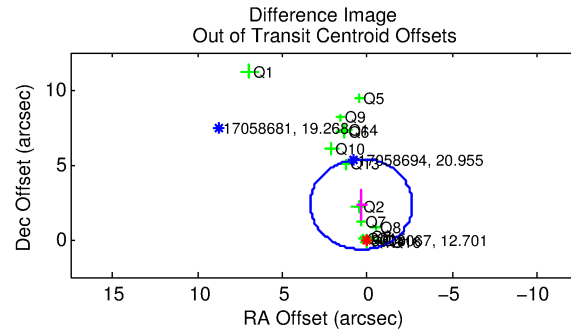
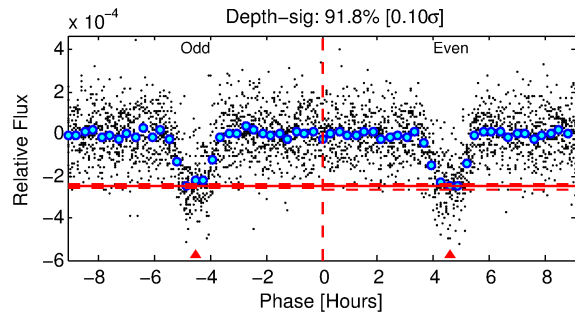
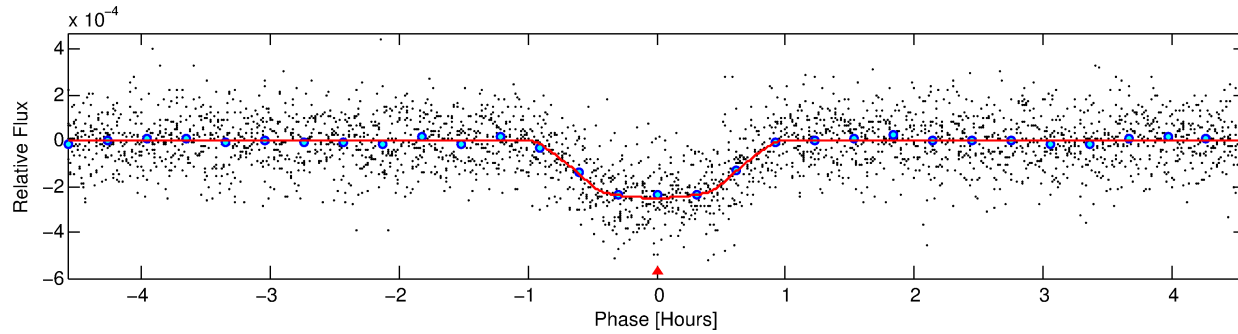
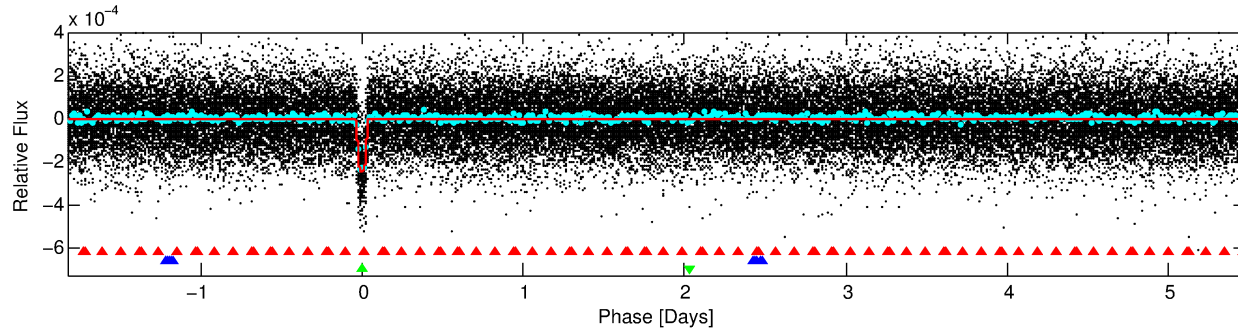
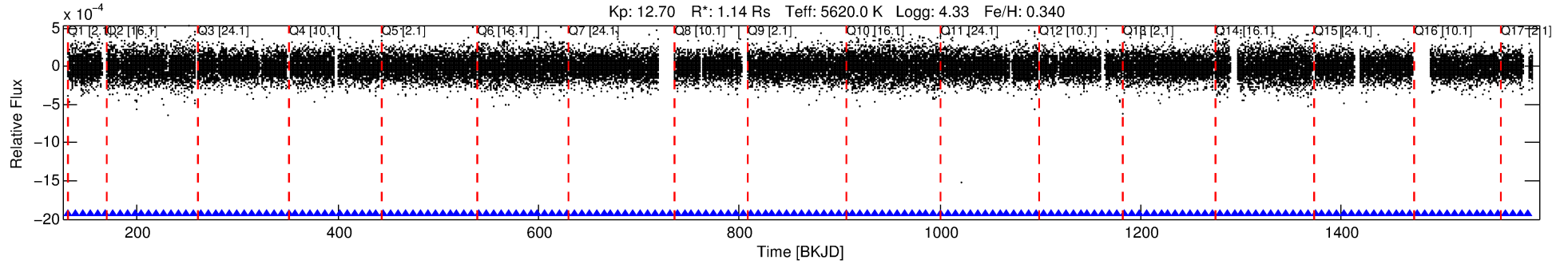
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008008067-03

No Significant Match Found

DV One-Page Summary

KIC: 8008067 Candidate: 3 of 3 Period: 7.306 d
KOI: K00316.03 Corr: 0.964



DV Fit Results:

Period = 7.30568 [0.00001] d
Epoch = 131.7822 [0.0009] BKJD
Rp/R* = 0.0174 [0.0036]
a/R* = 17.41 [15.81]
b = 0.90 [0.20]
Seff = 211.34 [46.22]
Teq = 972 [53] K
Rp = 2.18 [0.56] Re
a = 0.0743 [0.0100] AU
Ag = 13.69 [7.37] [1.72σ]
Teffp = 2891 [365] K [5.20σ]

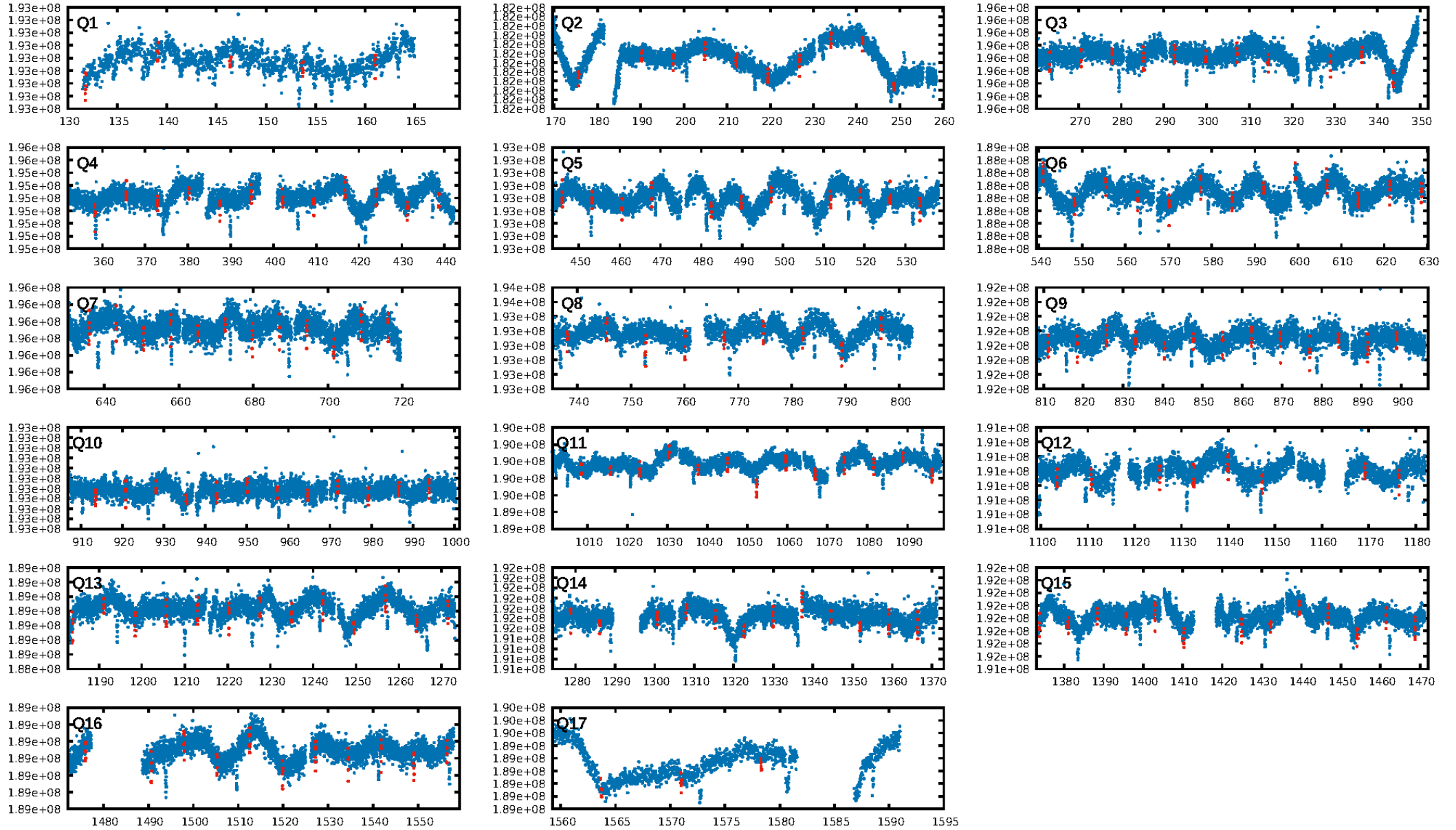
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [37.82σ]
ModelChiSquare2-sig: 98.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.95e-234
RollingBand-fgt: 1.00 [165/165]
GhostDiagnostic-chr: 41.96
Centroid-sig: 0.0%
Centroid-so: 1.546 arcsec [5.75σ]
OotOffset-rm: 2.376 arcsec [2.36σ]
KicOffset-rm: 0.358 arcsec [1.97σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.94 [15/16]
DiffImageOverlap-fno: 1.00 [17/17]

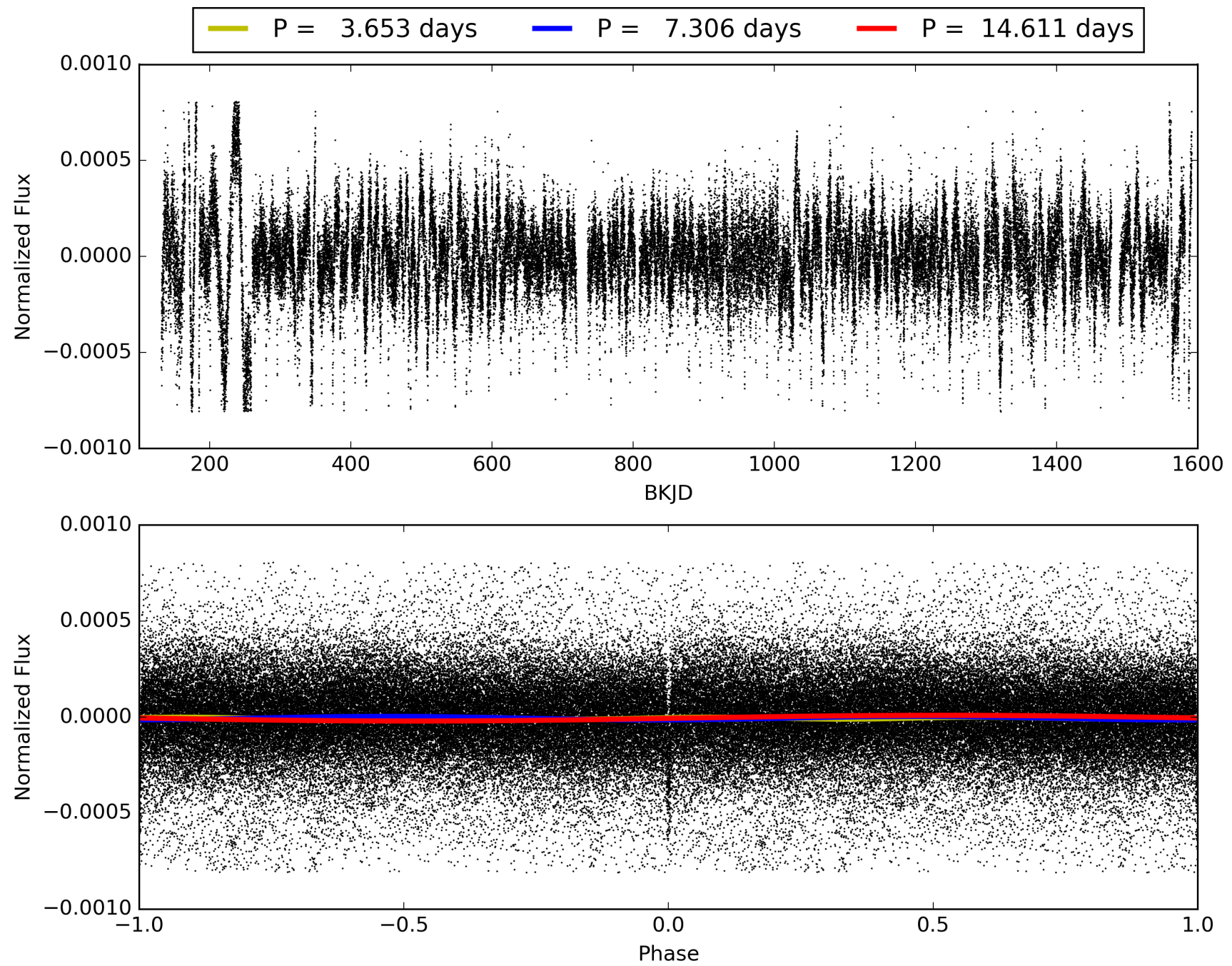
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 07:58:23 Z

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

TCE 008008067-03, PDC Light Curves

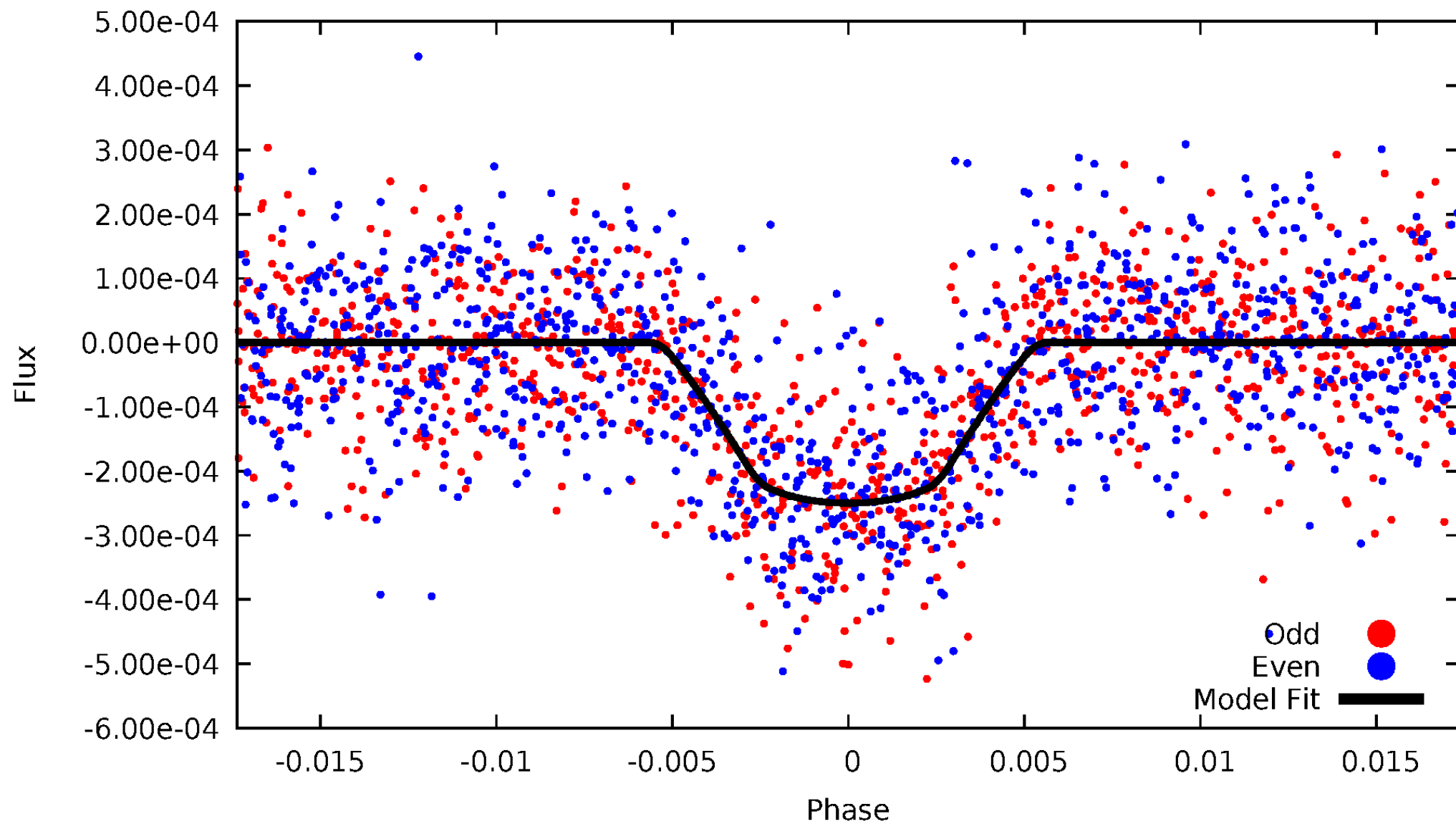


TCE 008008067-03



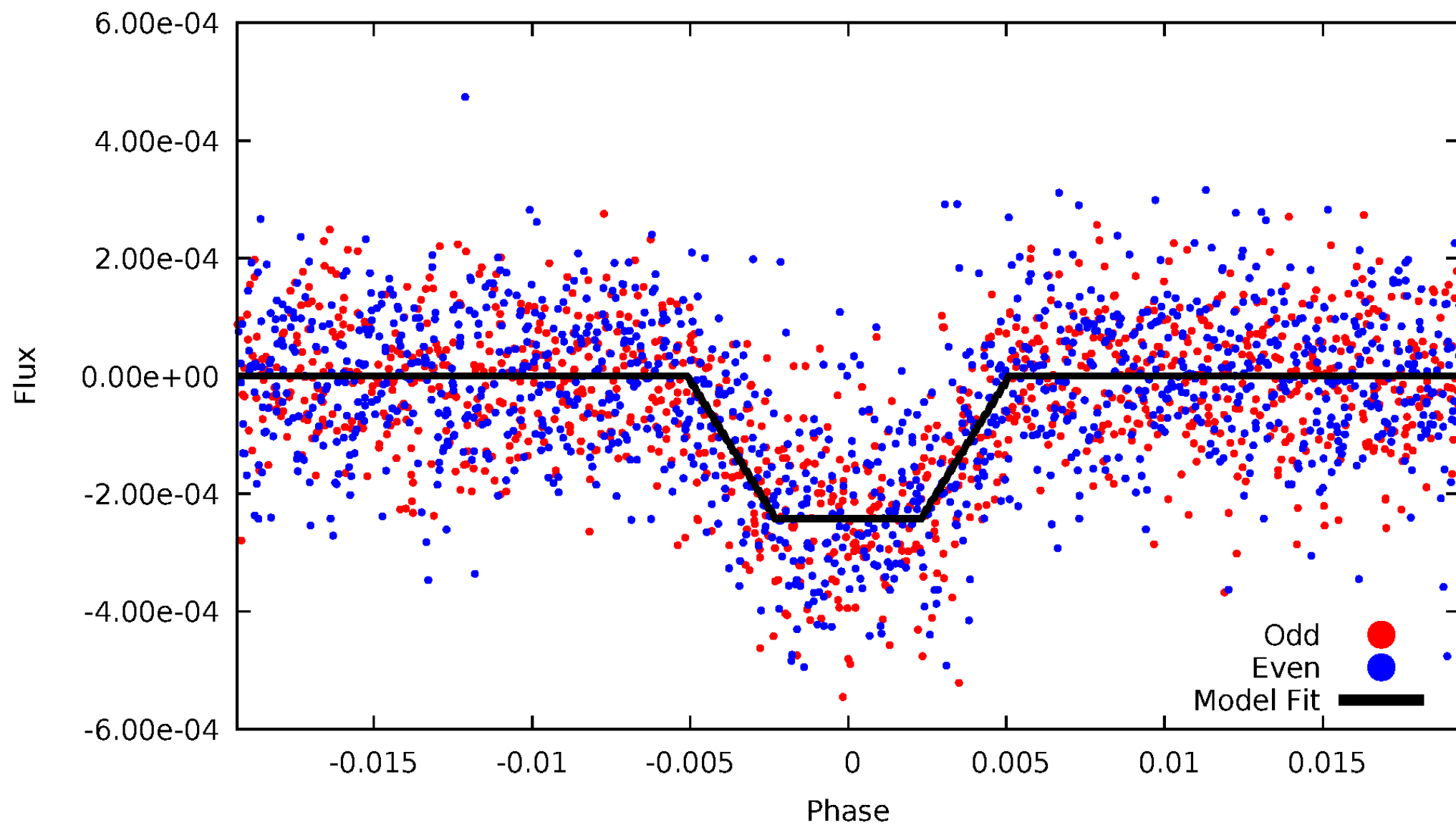
DV Odd/Even

TCE 008008067-03



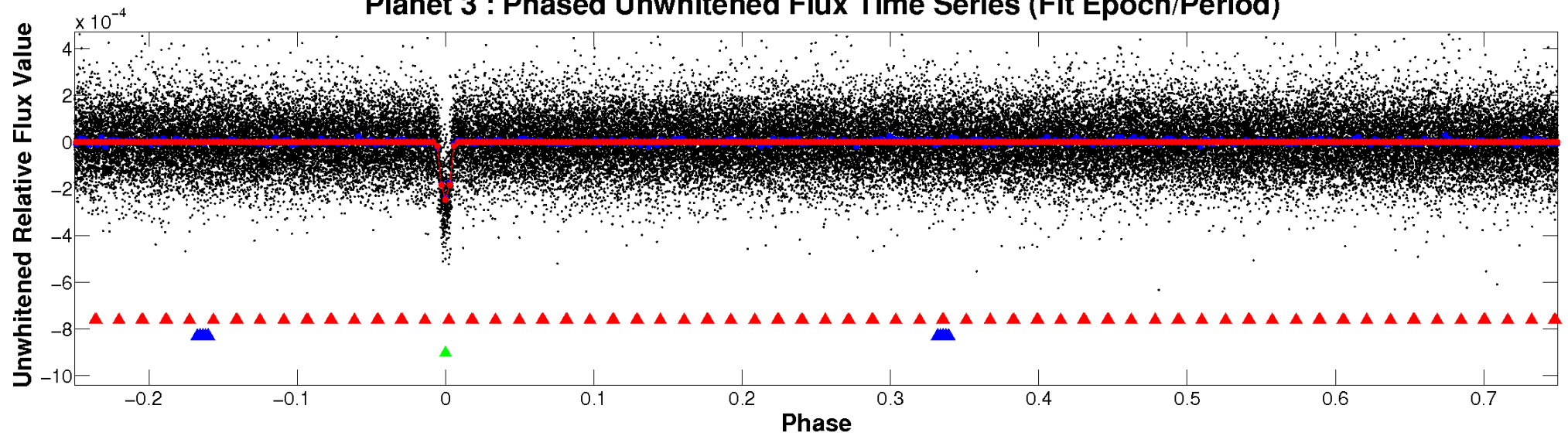
ALT Odd/Even

TCE 008008067-03

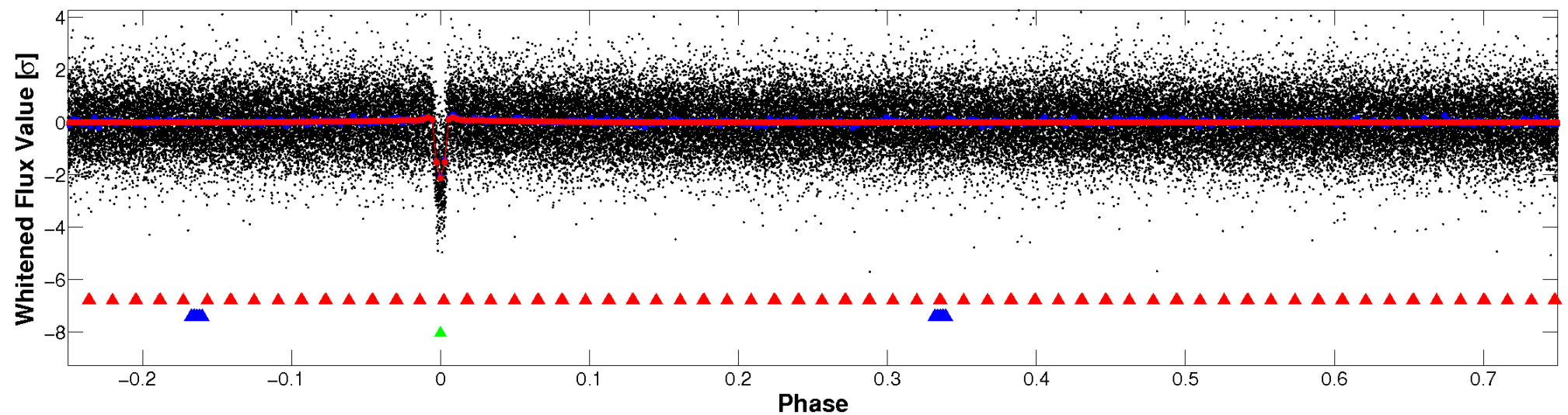


Non-Whitened Vs. Whitened Light Curve

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

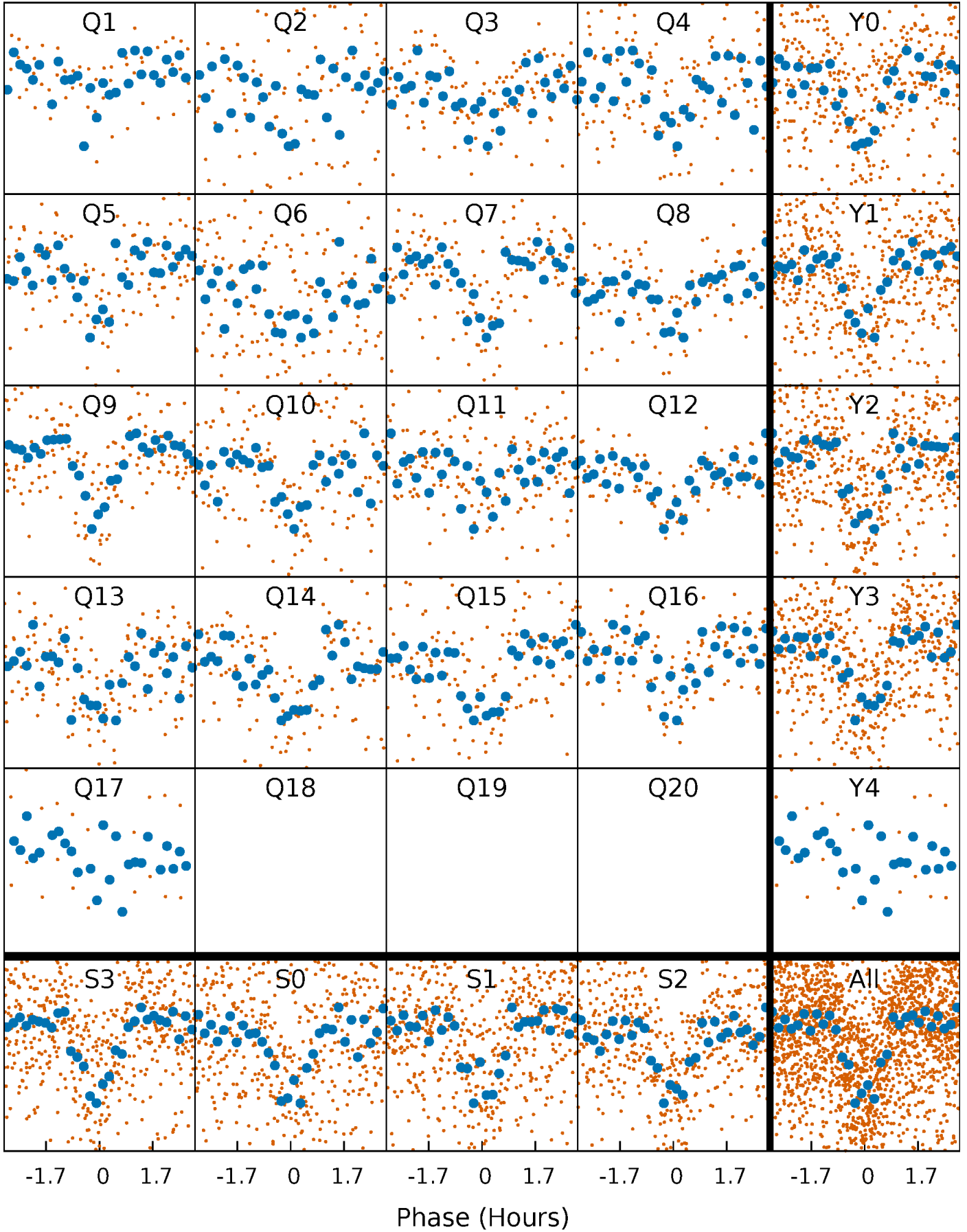


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



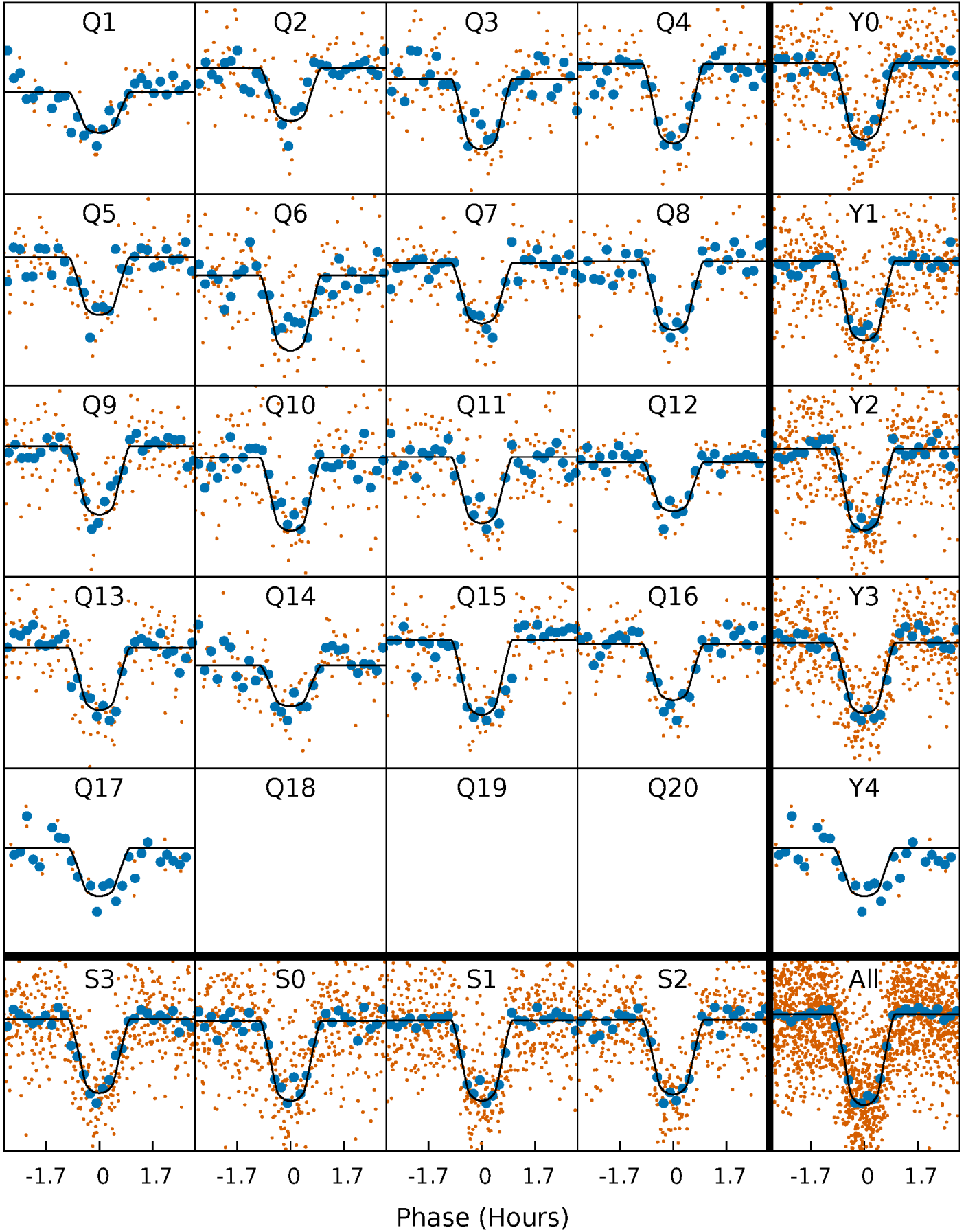
PDC Quarter-Phased Transit Curves

TCE 008008067-03 P= 7.305682 Days $T_0=131.782199$ (BKJD)



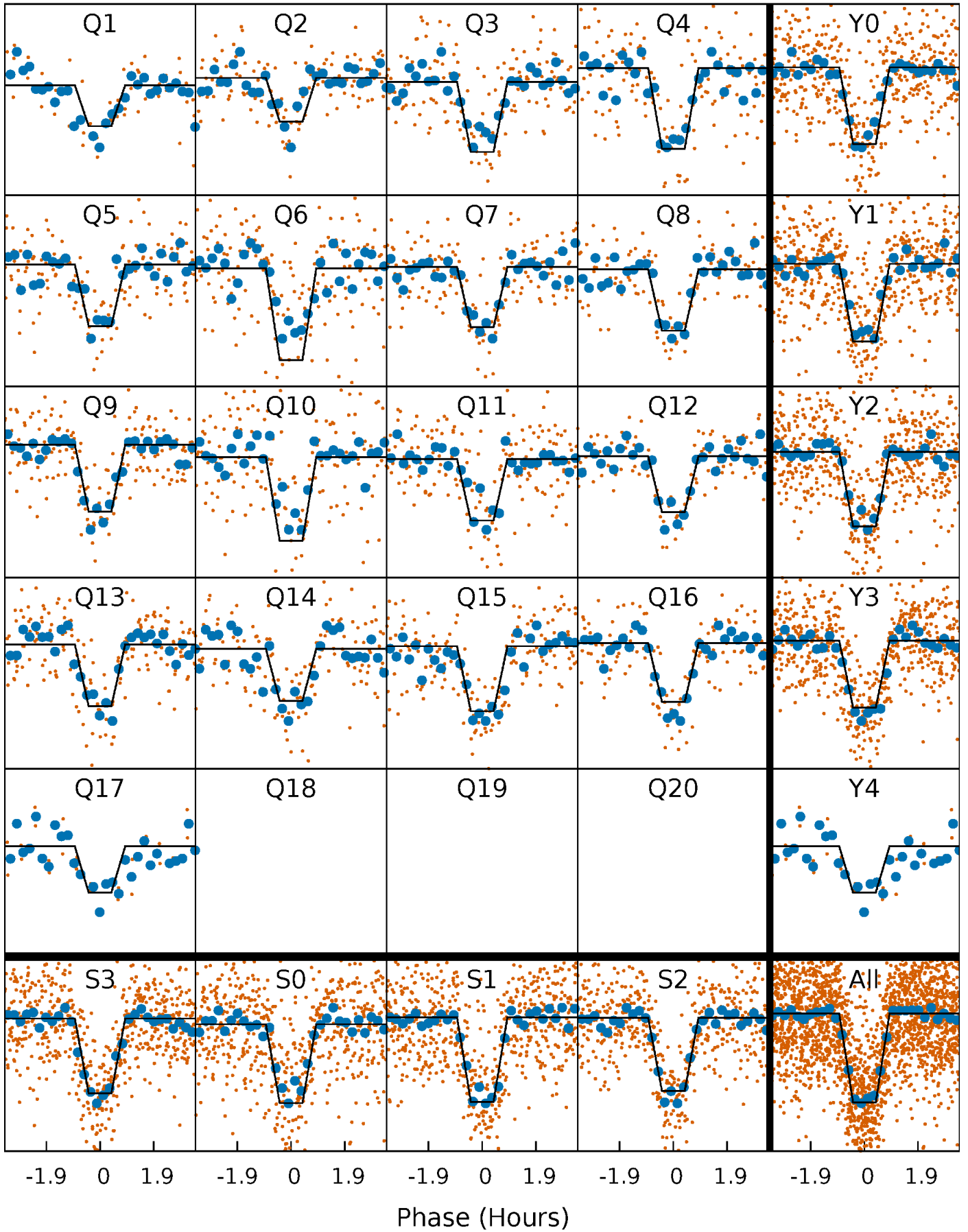
DV Quarter-Phased Transit Curves

TCE 008008067-03 P= 7.305682 Days $T_0=131.782199$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

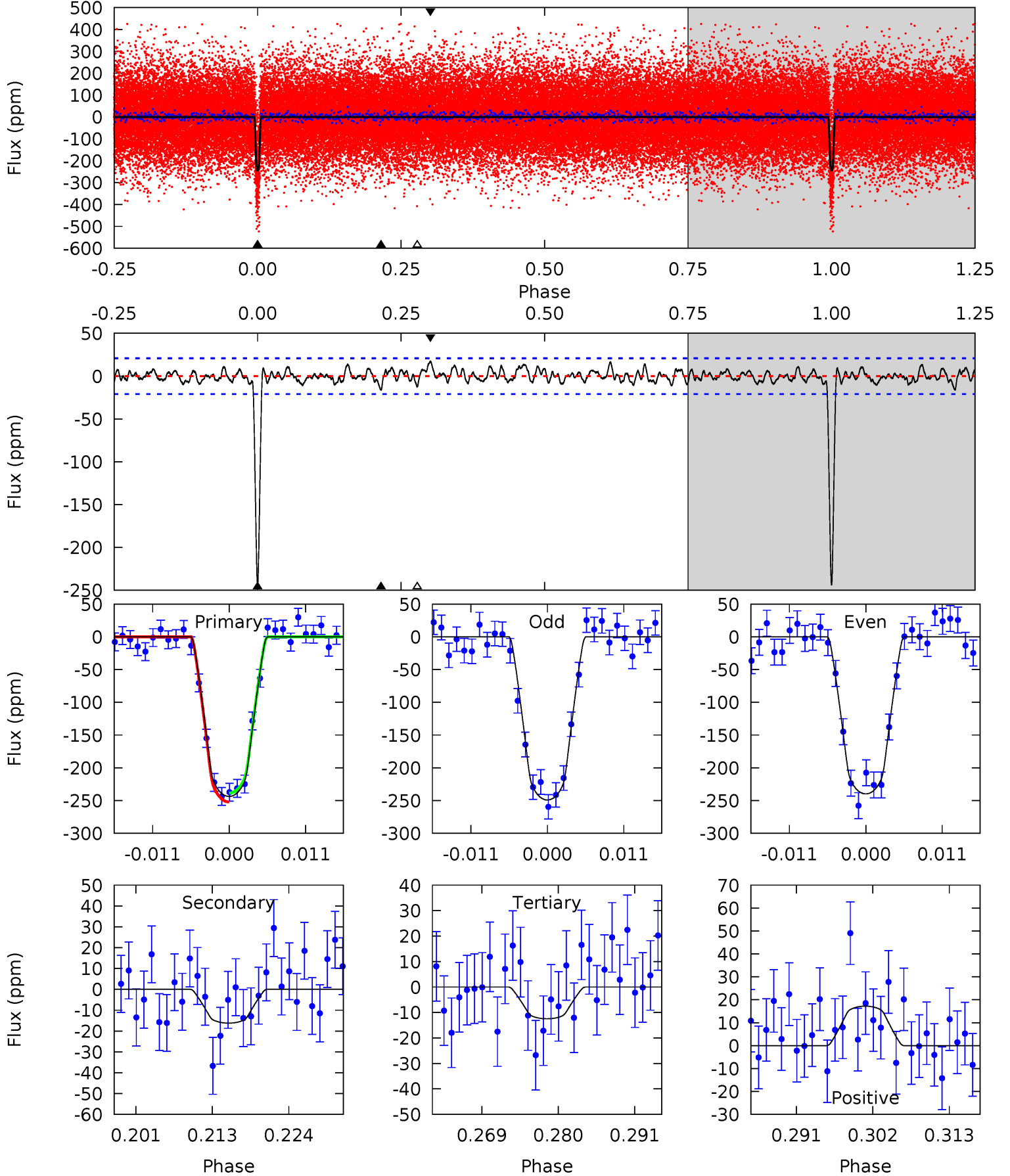
TCE 008008067-03 P= 7.305676 Days $T_0=131.782381$ (BKJD)



DV Model-Shift Uniqueness Test

008008067-03, P = 7.305682 Days, E = 124.476517 Days

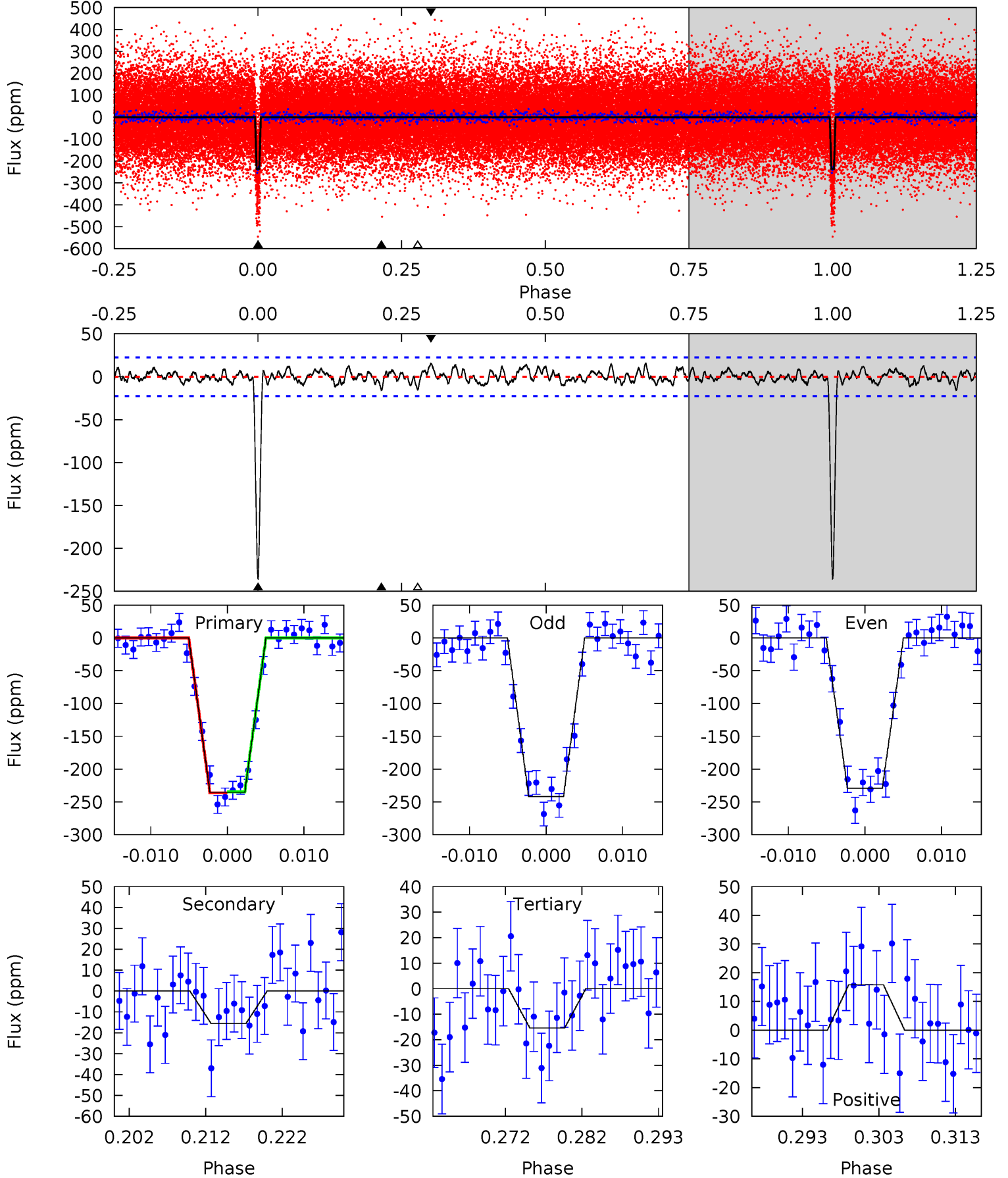
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
58.5	3.89	2.99	4.13	5.00	2.54	1.32	55.5	54.3	0.90	-0.24	1.12	1.01	0.07	1.64



Alt Model-Shift Uniqueness Test

008008067-03, P = 7.305676 Days, E = 124.476705 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
52.5	3.47	3.43	3.52	5.02	2.57	1.27	49.1	49.0	0.04	-0.05	1.41	0.98	0.06	0.16



Stellar Parameters For KIC 008008067

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5620^{+100}_{-112}	$4.333^{+0.115}_{-0.115}$	$0.340^{+0.100}_{-0.150}$	$1.143^{+0.174}_{-0.139}$	$1.025^{+0.063}_{-0.063}$	$0.967^{+0.481}_{-0.322}$
	+2%/-2%	+3%/-3%	+29%/-44%	+15%/-12%	+6%/-6%	+50%/-33%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 008008067-03 / KOI 0316.03

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-16 ± 4	$2.16^{+0.47}_{-0.47}$	1360^{+64}_{-60}	3259^{+260}_{-231}	11^{+7}_{-4}
Alt.	-16 ± 4	$1.91^{+0.52}_{-0.44}$	1358^{+63}_{-56}	3344^{+325}_{-270}	12^{+10}_{-5}

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

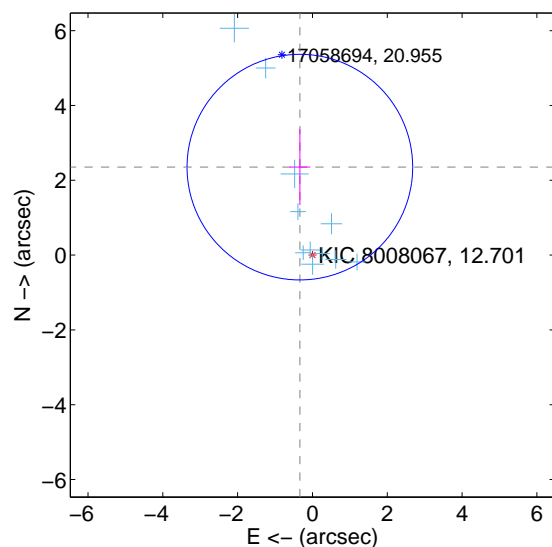
Supplemental centroid analysis for 008008067-03. Kepler magnitude: 12.70. Transit SNR 39.91

There are 15 quarters with good PRF difference image offsets

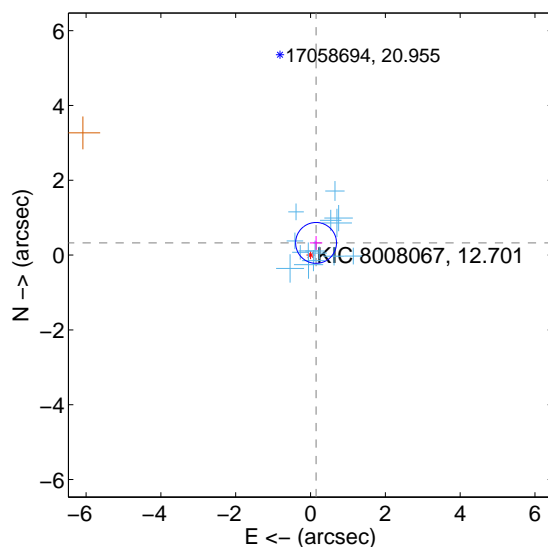
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.376 ± 1.005	2.36	0.336 ± 0.279	2.352 ± 1.015
PRF-fit source offset from KIC position	0.358 ± 0.182	1.97	-0.148 ± 0.166	0.326 ± 0.185
photometric centroid source offset	1.55 ± 0.27	5.75	-0.00 ± 0.20	-1.55 ± 0.27

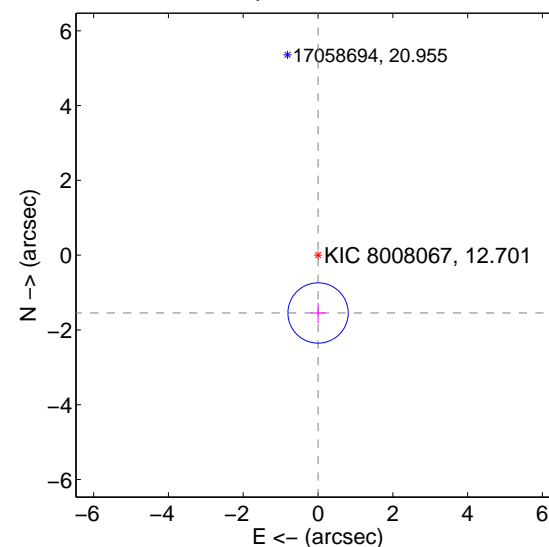
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

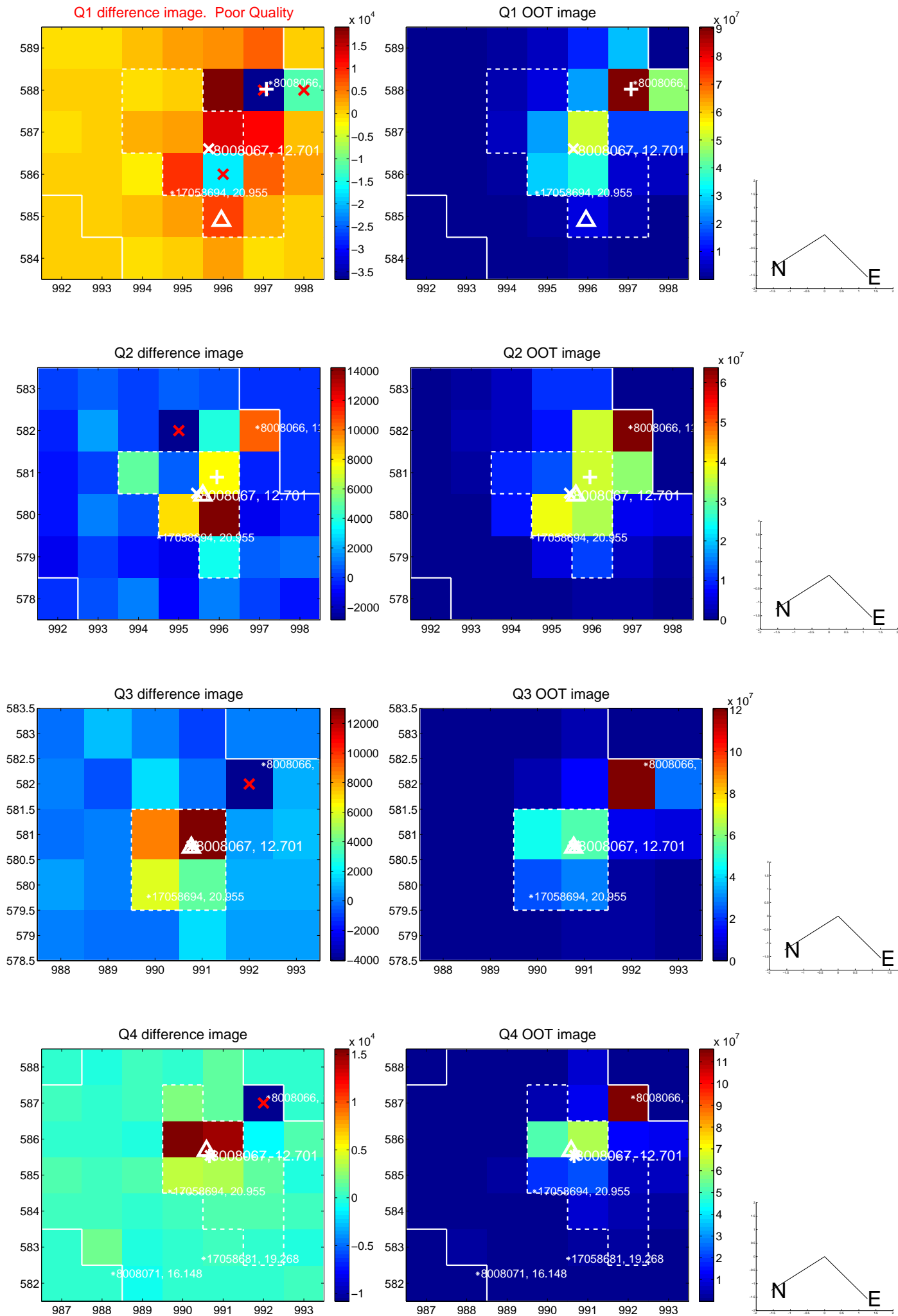


offset from photometric centroids

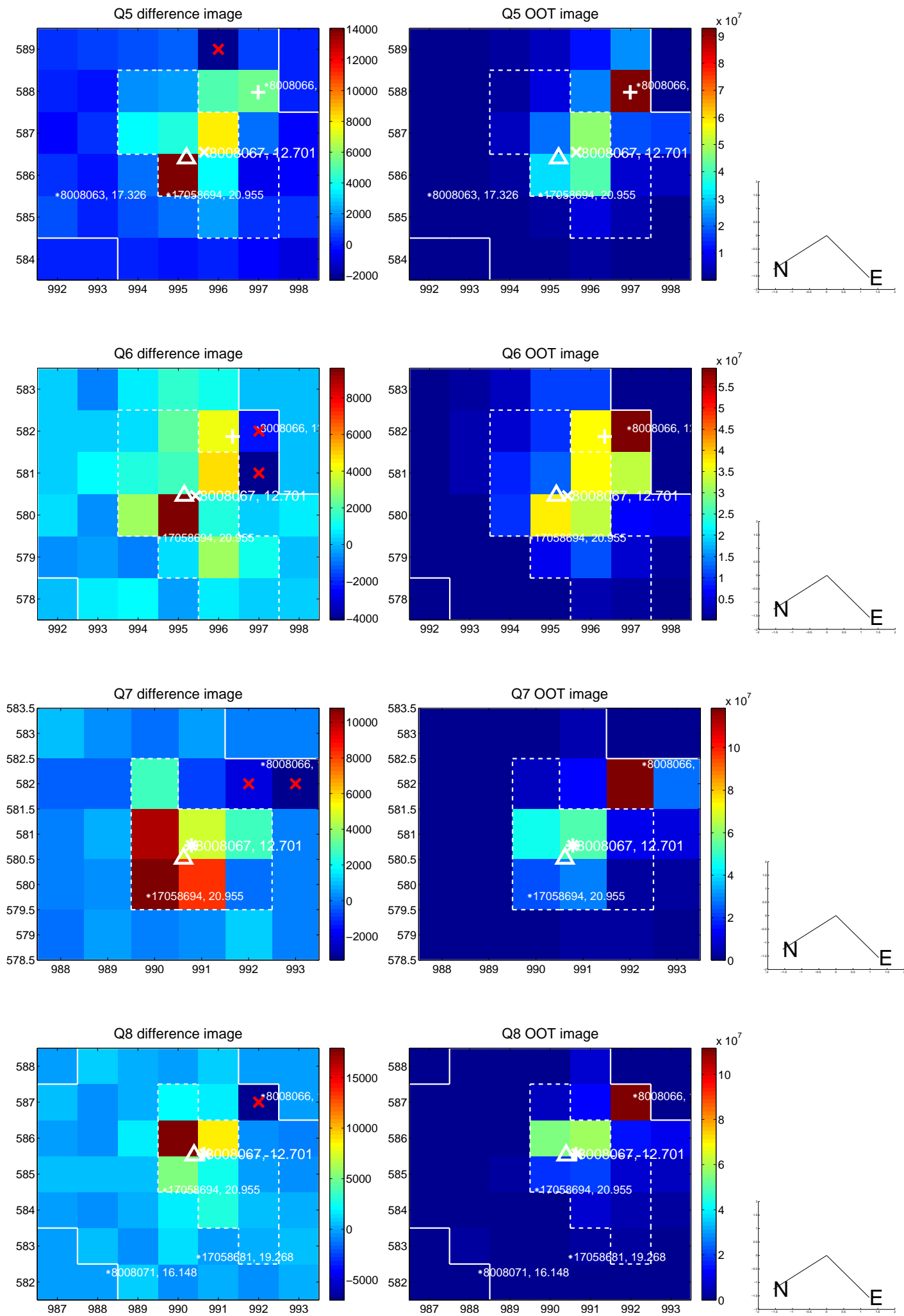


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

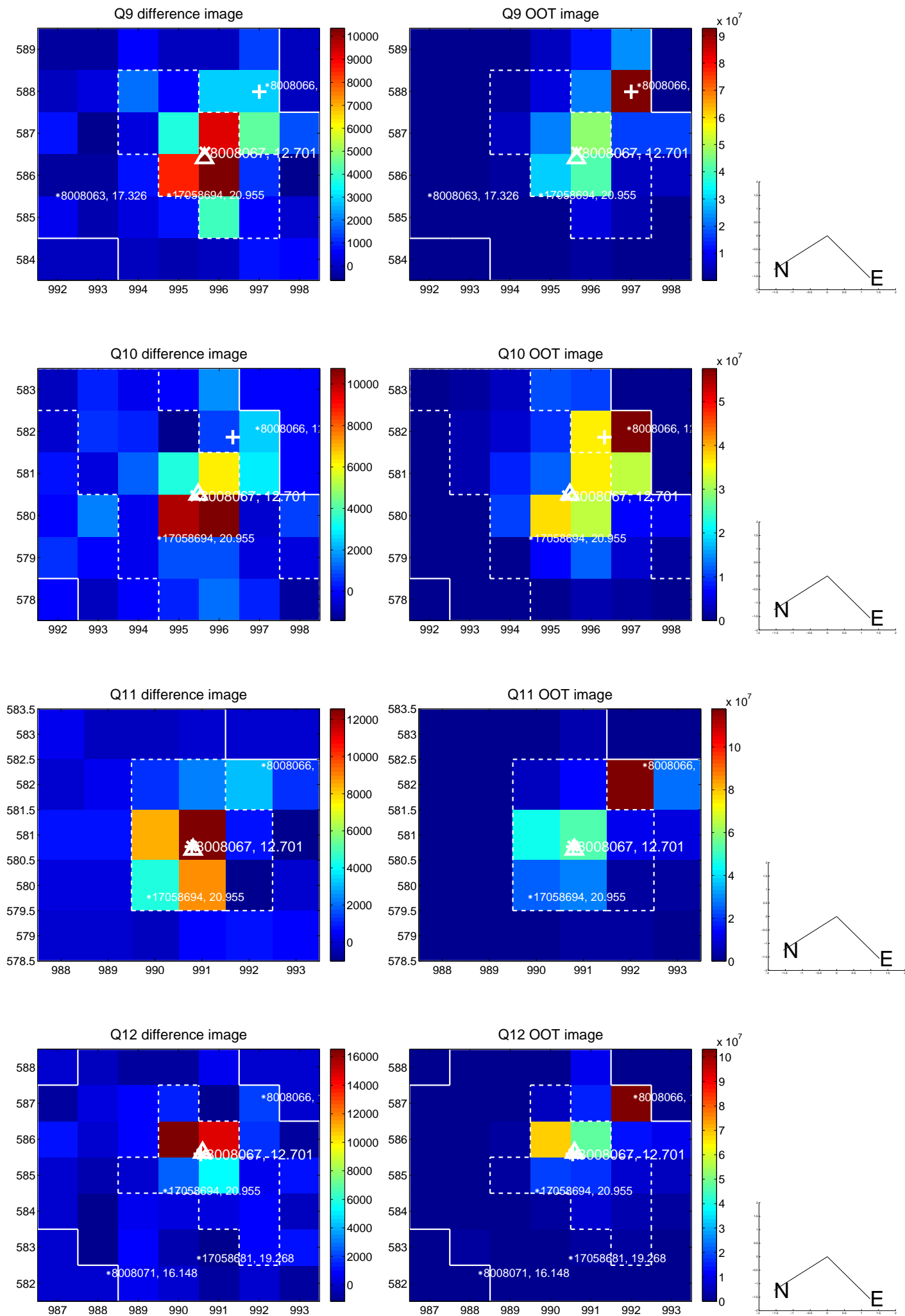
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



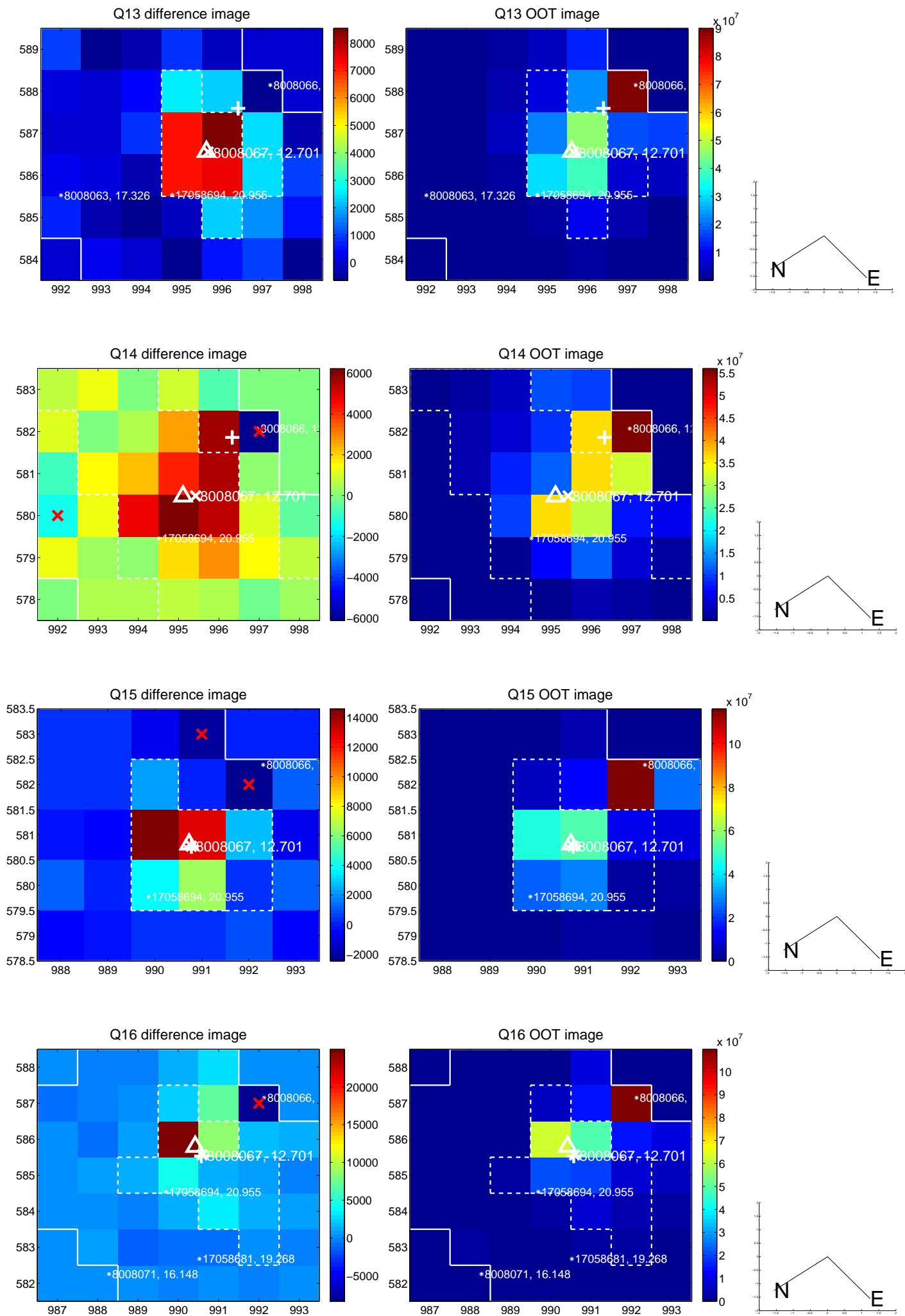
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



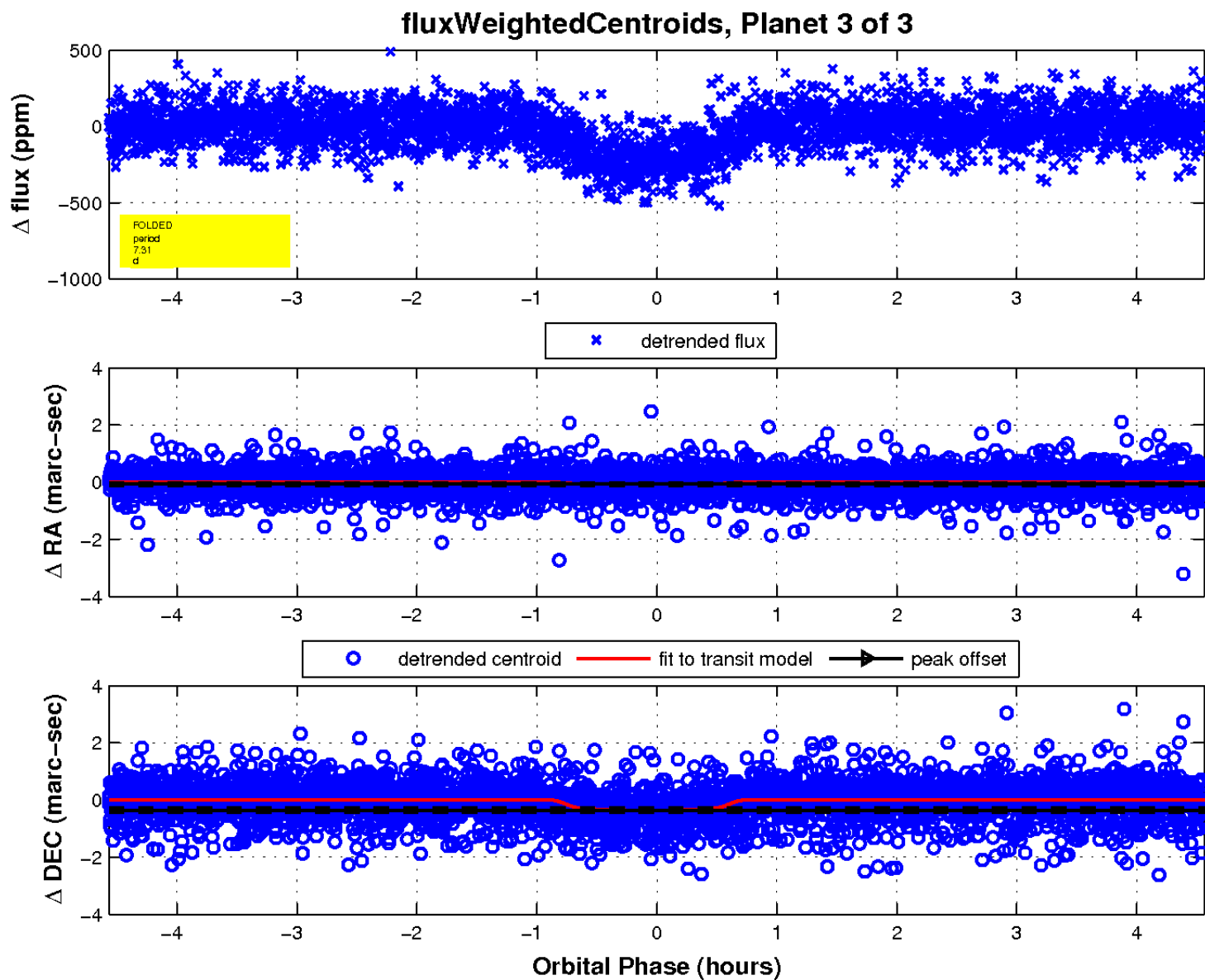
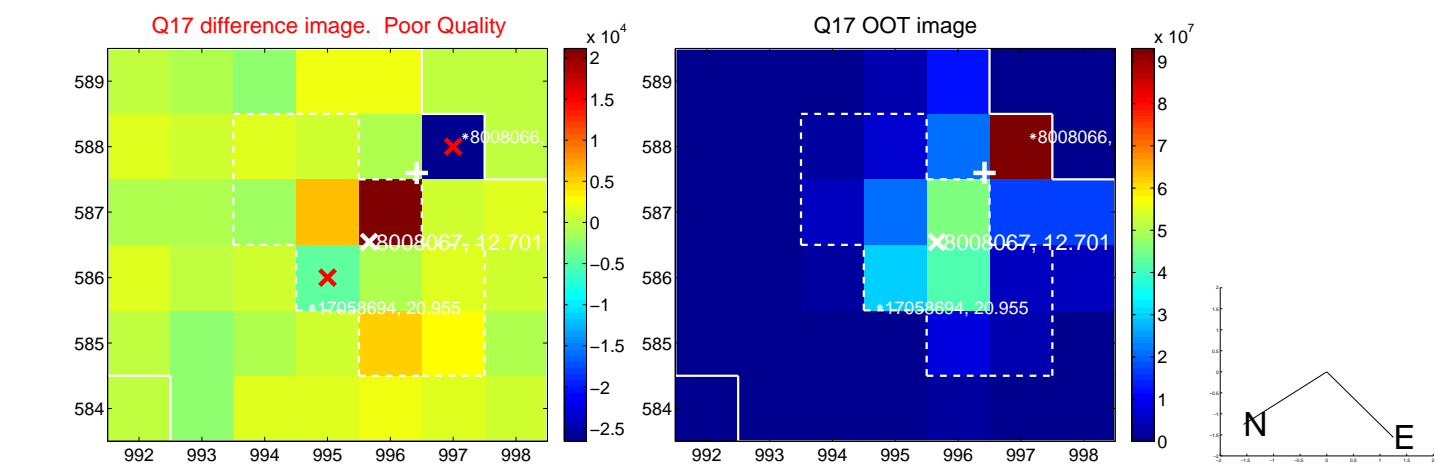
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



This astronomical image displays a field of stars against a dark background. A blue grid is overlaid on the image, with green numerical labels indicating the coordinates. The horizontal axis (Right Ascension) is labeled at the bottom with values 36.0, 35.0, 18:49:34.0, 33.0, and 32.0. The vertical axis (Declination) is labeled on the right side with values 50.0, 40.0, 30.0, 20.0, 10.0, and 0.0. The stars are concentrated in the central region of the image, with a prominent bright star near the center.

This astronomical image displays a field of stars against a dark background. A blue grid is overlaid on the image, with green numerical labels indicating the coordinates. The horizontal axis (Right Ascension) is labeled at the bottom with values 36.0, 35.0, 18:49:34.0, 33.0, and 32.0. The vertical axis (Declination) is labeled on the right side with values 50.0, 40.0, 30.0, 20.0, 10.0, and 0.0. The stars are concentrated in the central region of the image, with a prominent bright star near the center.