

KIC 003120320

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})
003120320-01	OBS	6307.01	10.265613	136.488733	150458.6	5.673	19184.8	12566.2	1.42	5865	61.50	237.09
003120320-02	OBS	No	10.265615	131.591807	13791.2	5.467	2013.1	1831.2	1.42	5865	21.28	237.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003120320-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_SATURATED
003120320-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—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.

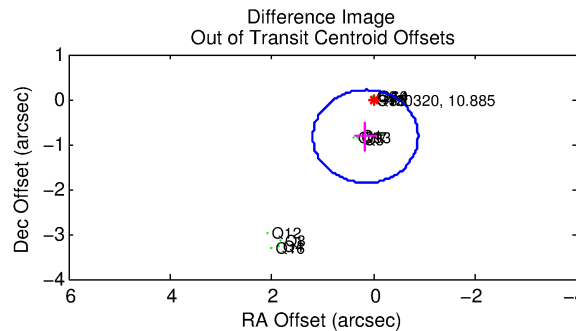
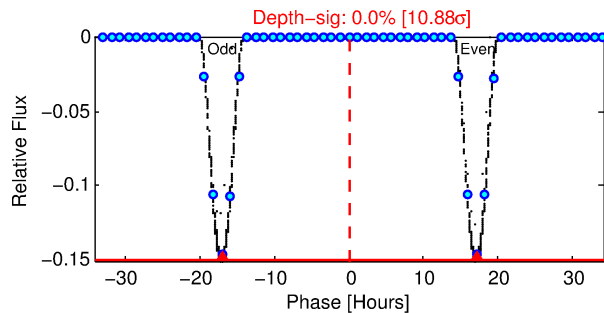
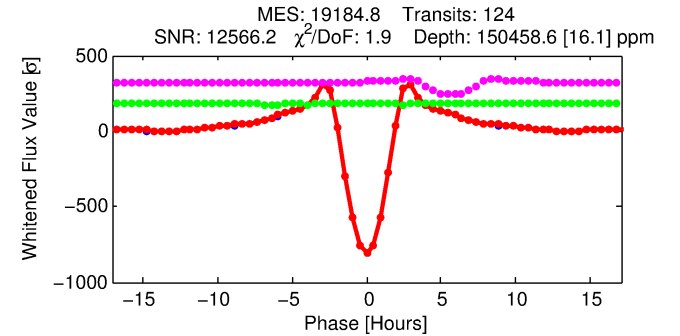
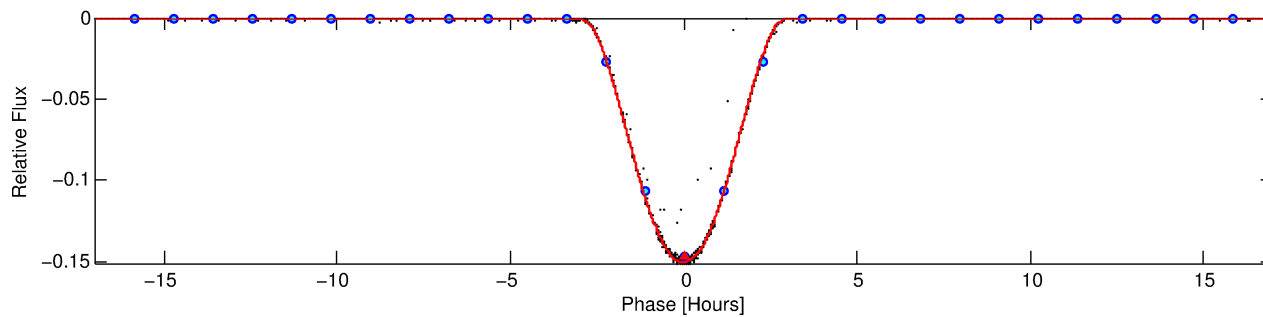
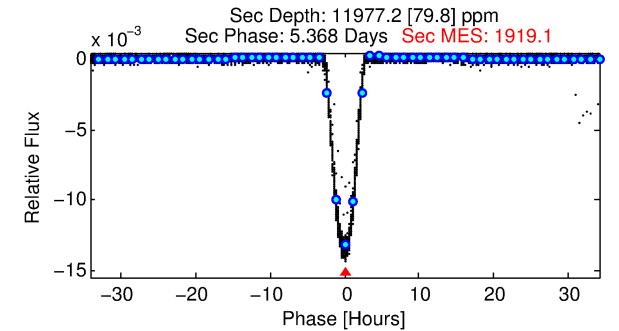
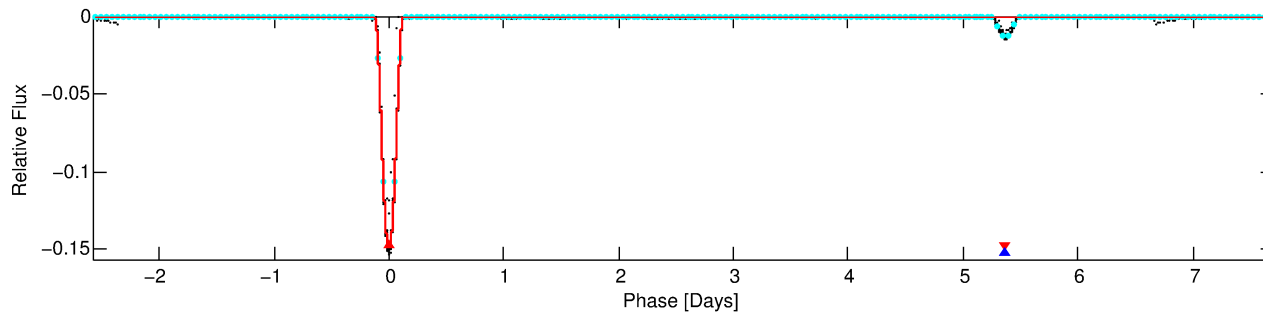
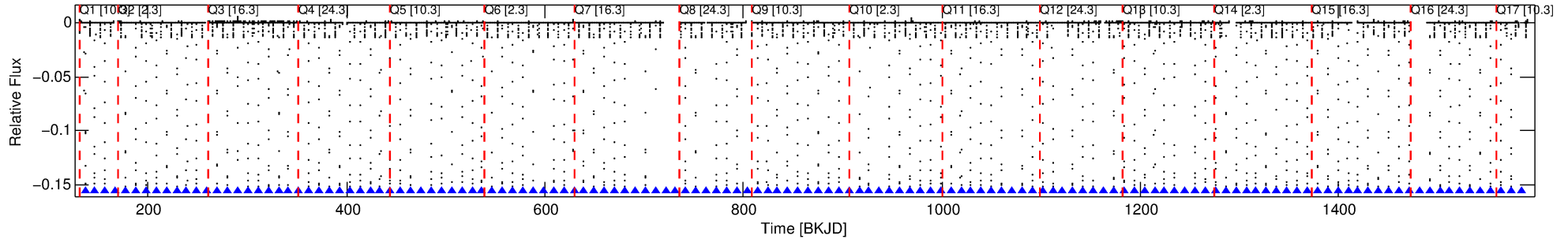
Ephemeris Match Information For 003120320-01

No Significant Match Found

DV One-Page Summary

KIC: 3120320 Candidate: 1 of 2 Period: 10.266 d
KOI: K06307.01 Corr: 1.000

Kp: 10.89 R*: 1.42 Rs Teff: 5865.0 K Logg: 4.17 Fe/H: 0.160



DV Fit Results:

Period = 10.26561 [0.00000] d
Epoch = 136.4887 [0.0000] BKJD
Rp/R* = 0.3960 [0.0001]
a/R* = 16.97 [0.00]
b = 0.67 [0.00]
Seff = 237.10 [67.37]
Teq = 1001 [71] K
Rp = 61.50 [11.67] Re
a = 0.0952 [0.0169] AU
Ag = 15.78 [4.40] [3.36σ]
Teffp = 3083 [42] K [25.25σ]

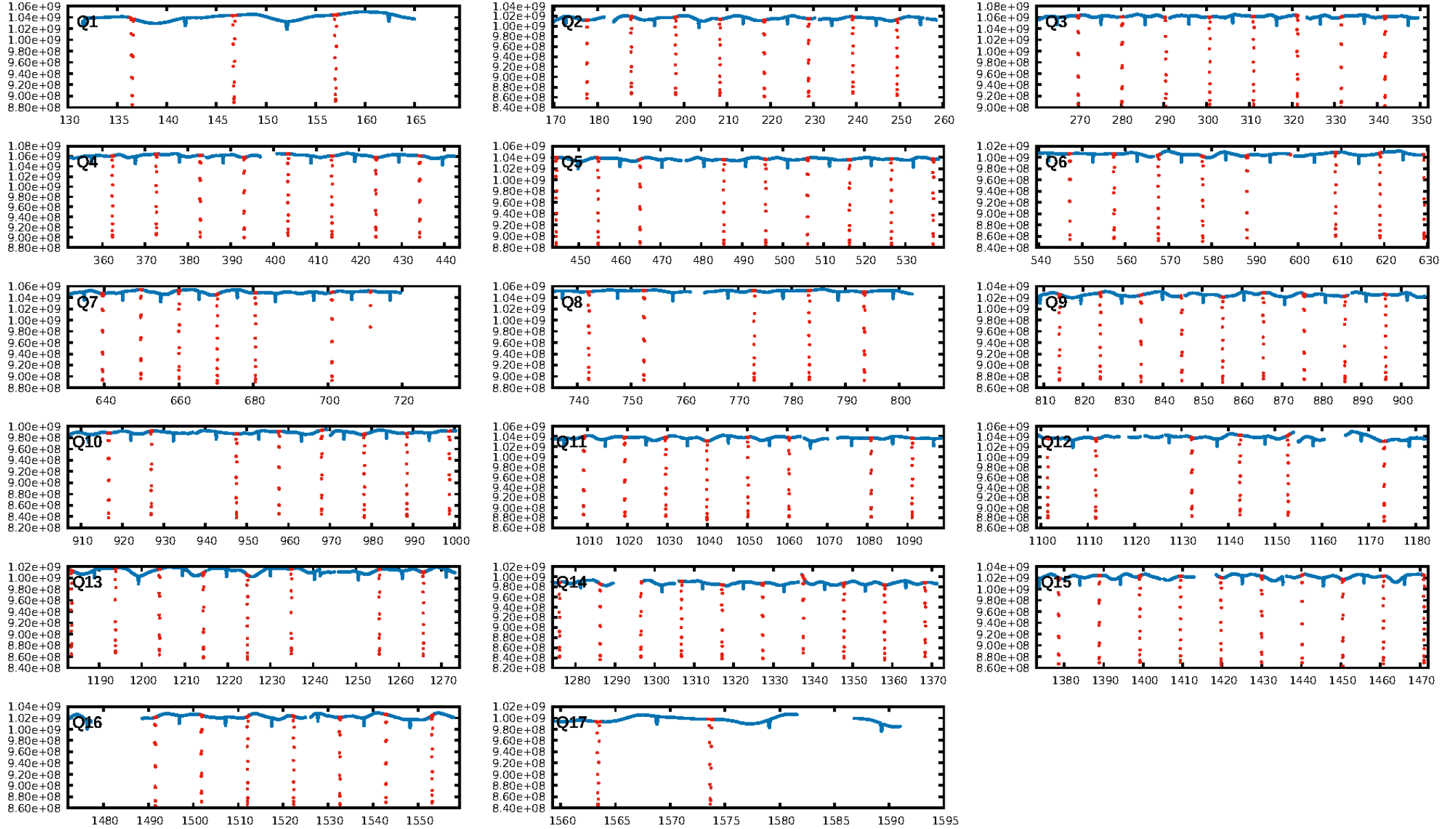
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [119/119]
GhostDiagnostic-chr: 3.624
Centroid-sig: 0.0%
Centroid-so: 0.619 arcsec [1606.14σ]
OotOffset-rm: 0.842 arcsec [2.44σ]
KicOffset-rm: 1.552 arcsec [5.17σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 1.00 [17/17]

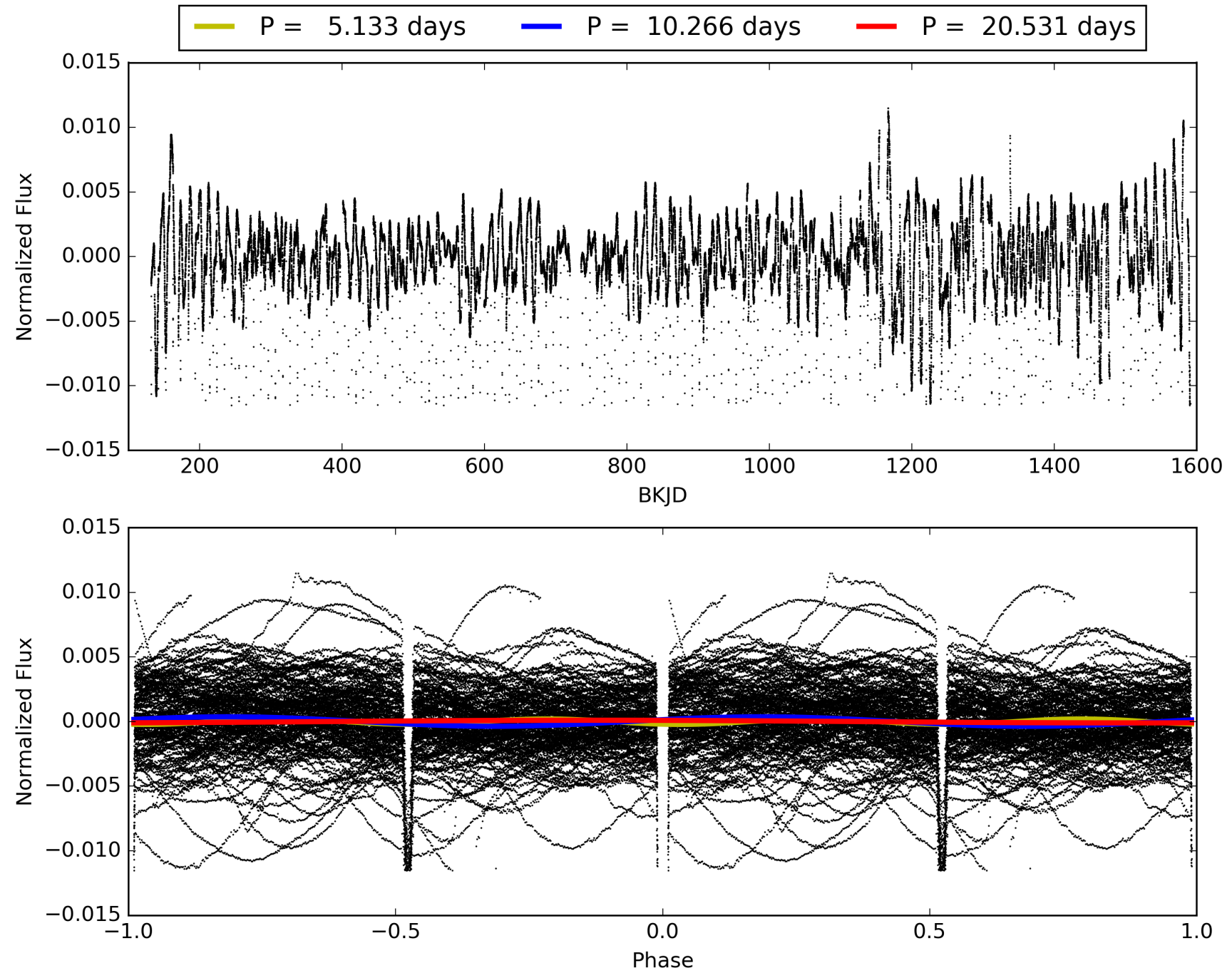
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:40:21 Z

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

TCE 003120320-01, PDC Light Curves

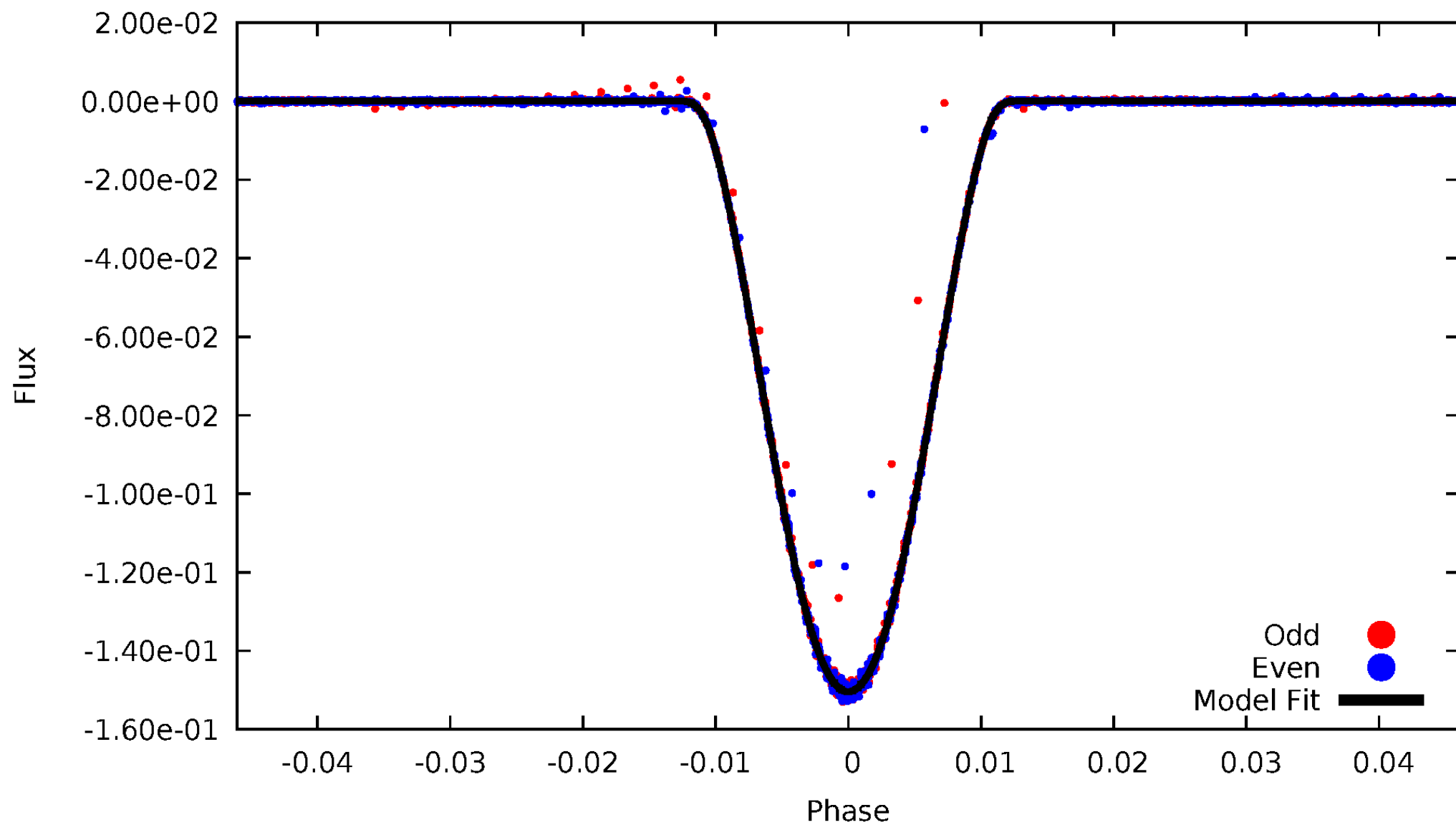


TCE 003120320-01



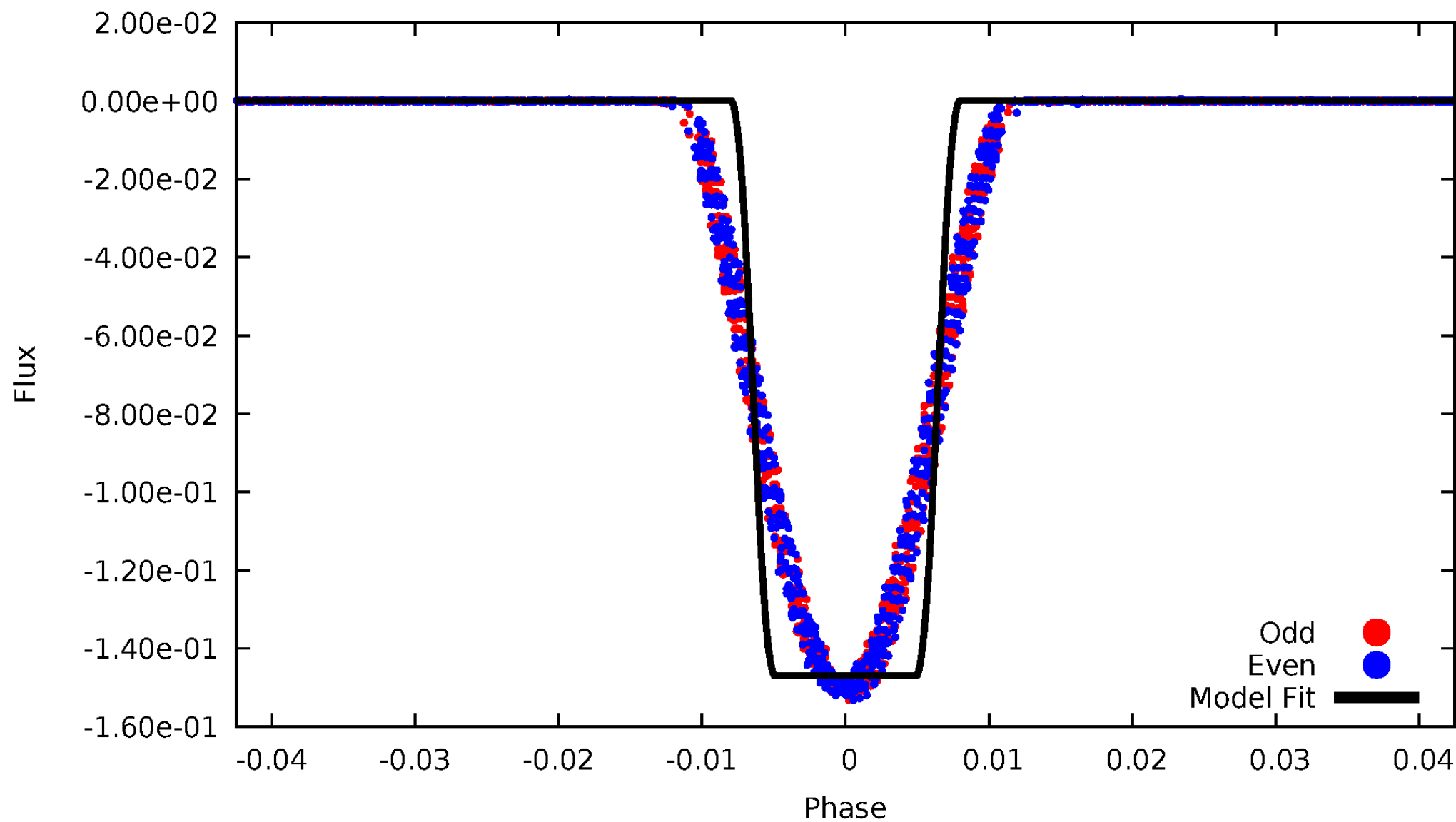
DV Odd/Even

TCE 003120320-01



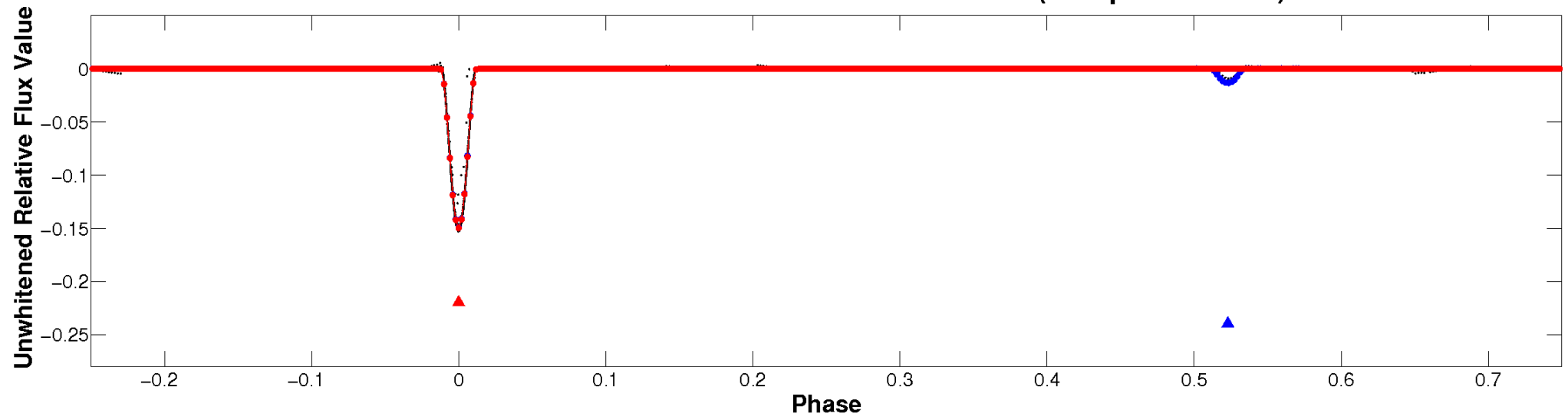
ALT Odd/Even

TCE 003120320-01

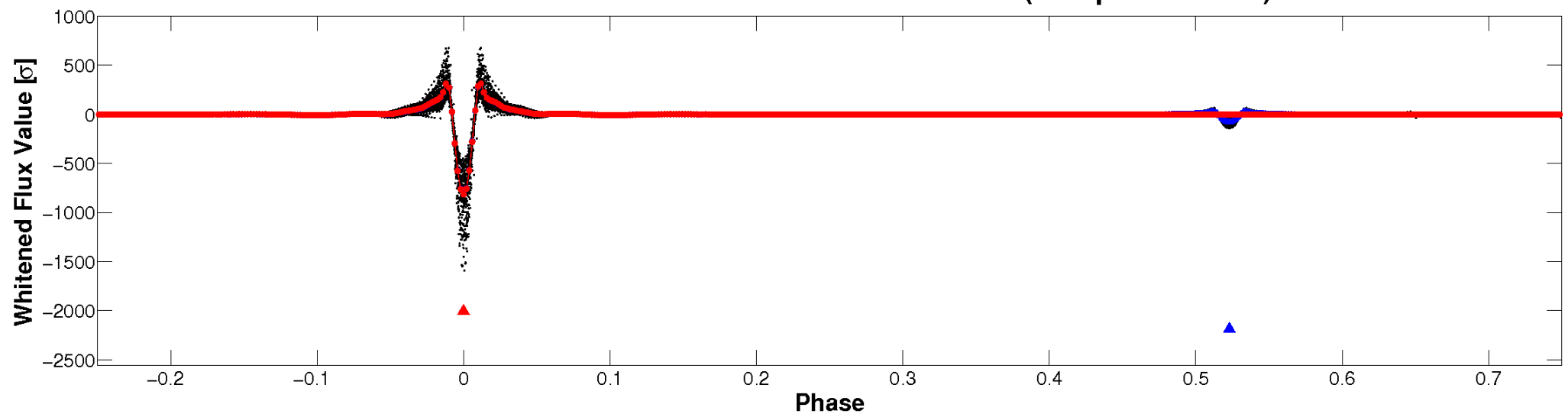


Non-Whitened Vs. Whitened Light Curve

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

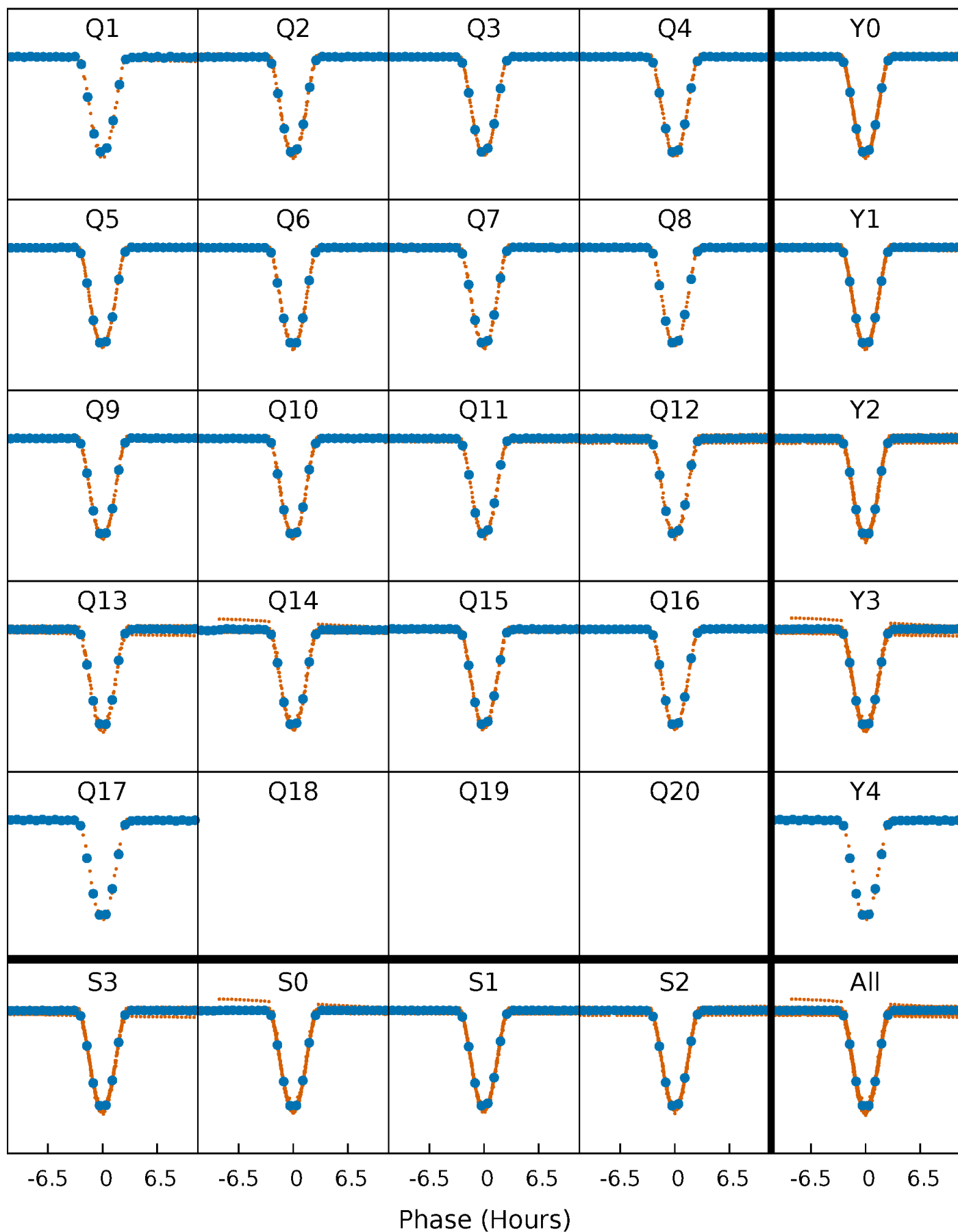


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



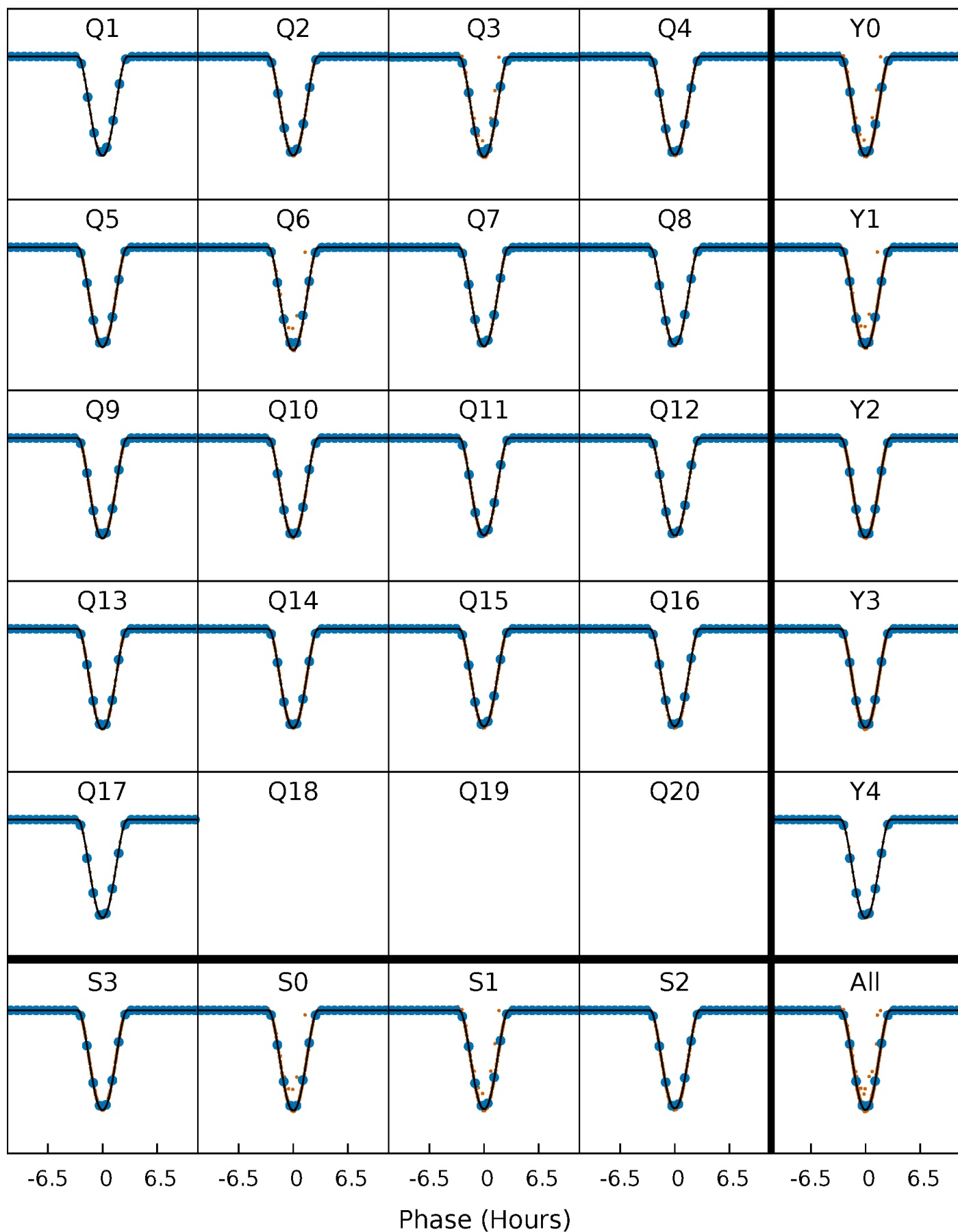
PDC Quarter-Phased Transit Curves

TCE 003120320-01 P= 10.265613 Days $T_0=136.488733$ (BKJD)



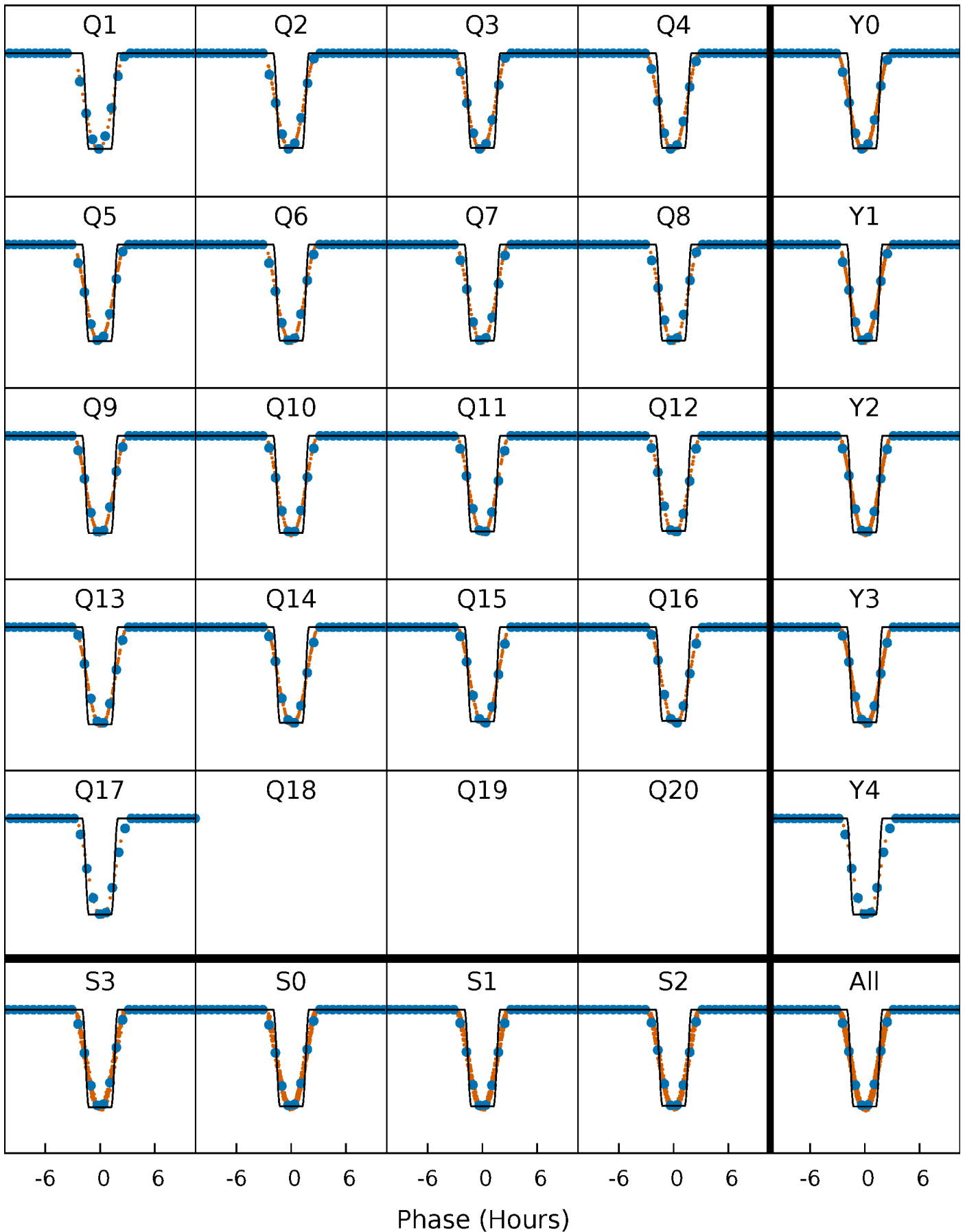
DV Quarter-Phased Transit Curves

TCE 003120320-01 P= 10.265613 Days $T_0=136.488733$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

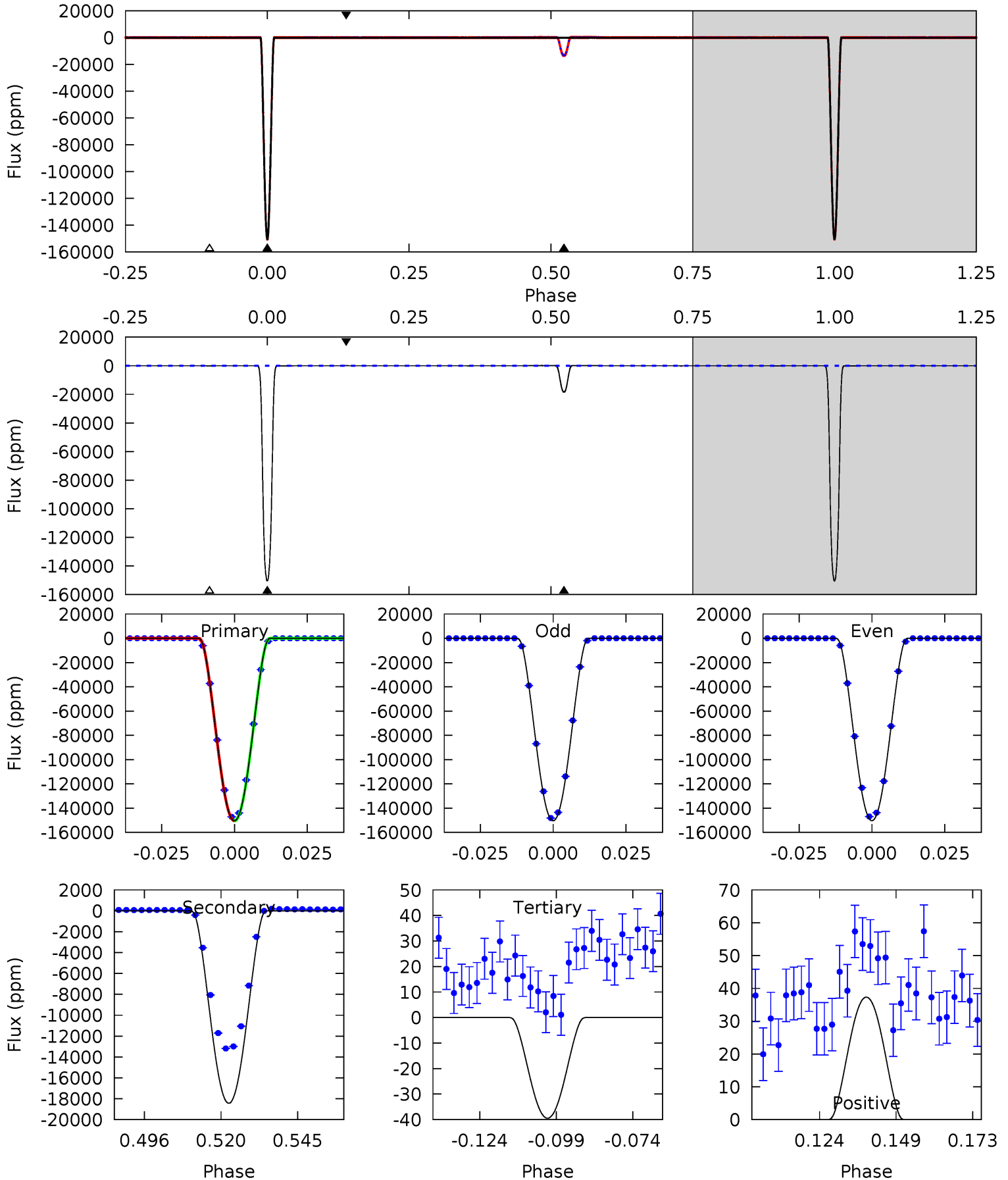
TCE 003120320-01 P= 10.265508 Days $T_0=136.496122$ (BKJD)



DV Model-Shift Uniqueness Test

003120320-01, P = 10.265613 Days, E = 126.223120 Days

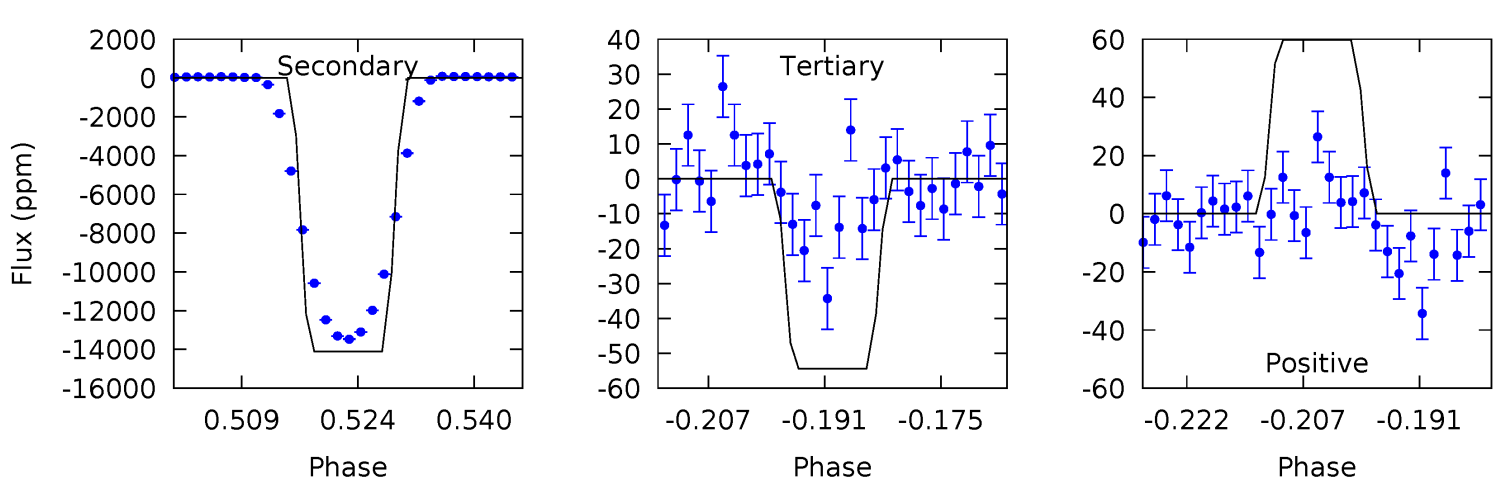
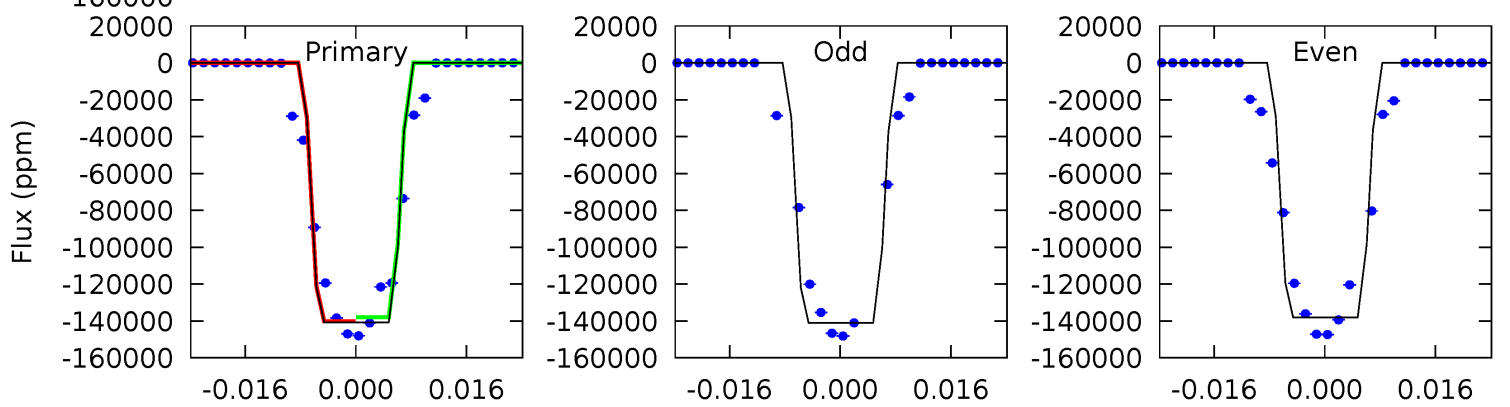
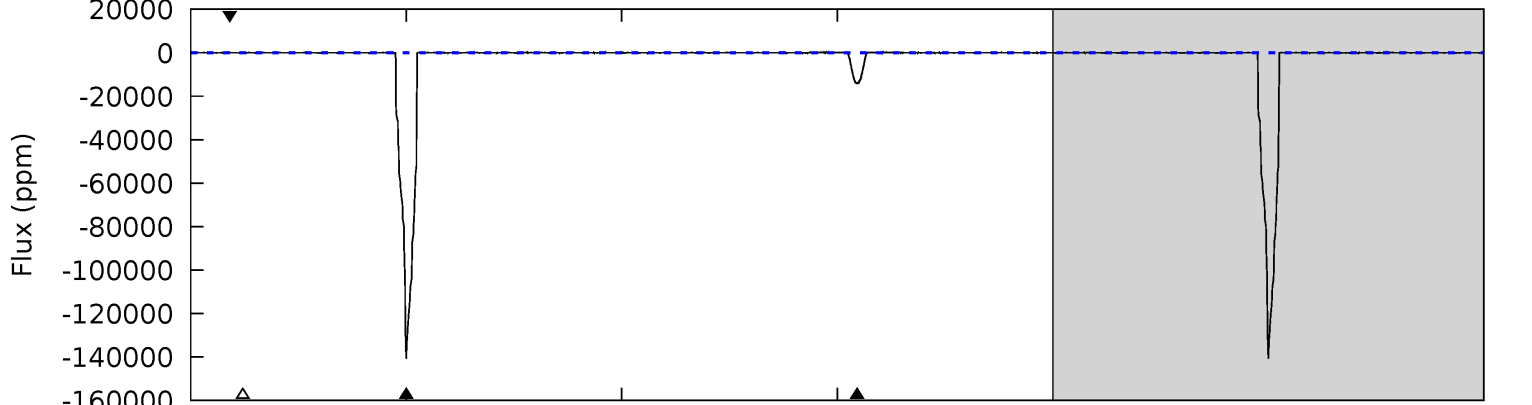
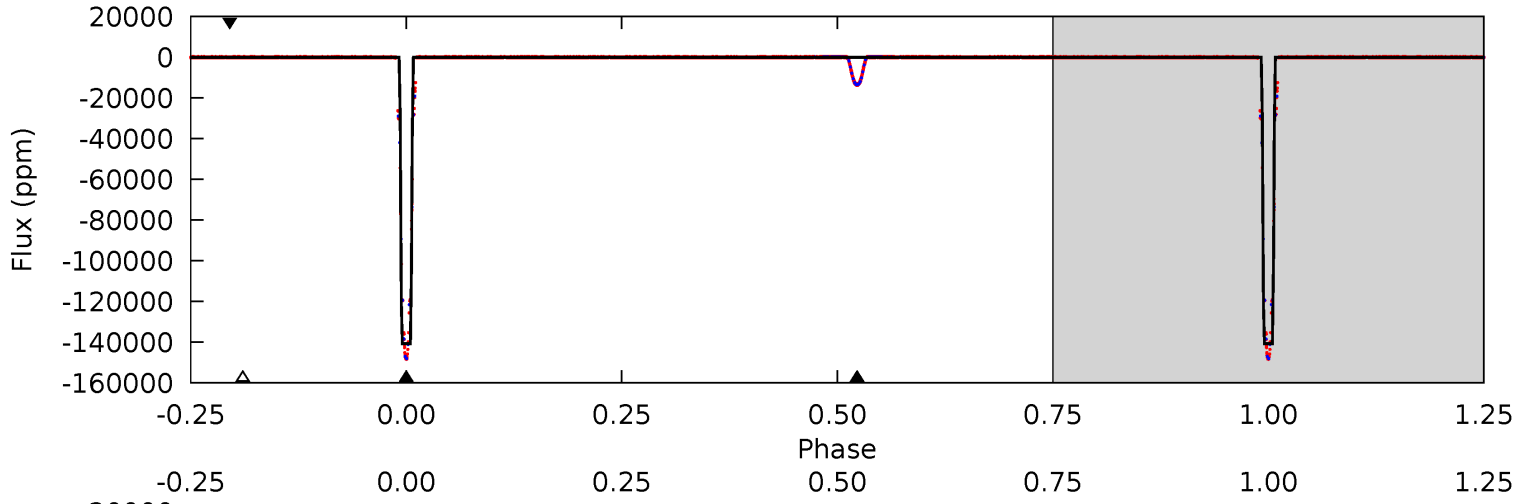
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36516	4475	9.58	9.06	4.85	2.24	8.75	36507	36507	4466	4466	14.5	1.00	0.00	0



Alt Model-Shift Uniqueness Test

003120320-01, P = 10.265508 Days, E = 126.230614 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10314	1033	3.99	4.38	4.94	2.41	1.36	10310	10309	1029	1029	112.5	1.00	0.00	8.39



Stellar Parameters For KIC 003120320

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5865^{+79}_{-79}	$4.169^{+0.162}_{-0.108}$	$0.160^{+0.150}_{-0.150}$	$1.423^{+0.246}_{-0.270}$	$1.090^{+0.098}_{-0.080}$	$0.532^{+0.434}_{-0.175}$
	+1%/-1%	+4%/-3%	+94%/-94%	+17%/-19%	+9%/-7%	+81%/-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 003120320-01 / KOI 6307.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-18439 ± 4	$61.28^{+6.06}_{-6.33}$	1392^{+69}_{-72}	3817^{+37}_{-40}	25^{+6}_{-4}
Alt.	-14102 ± 14	$59.29^{+5.95}_{-6.20}$	1392^{+64}_{-72}	3683^{+33}_{-35}	20^{+5}_{-3}

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

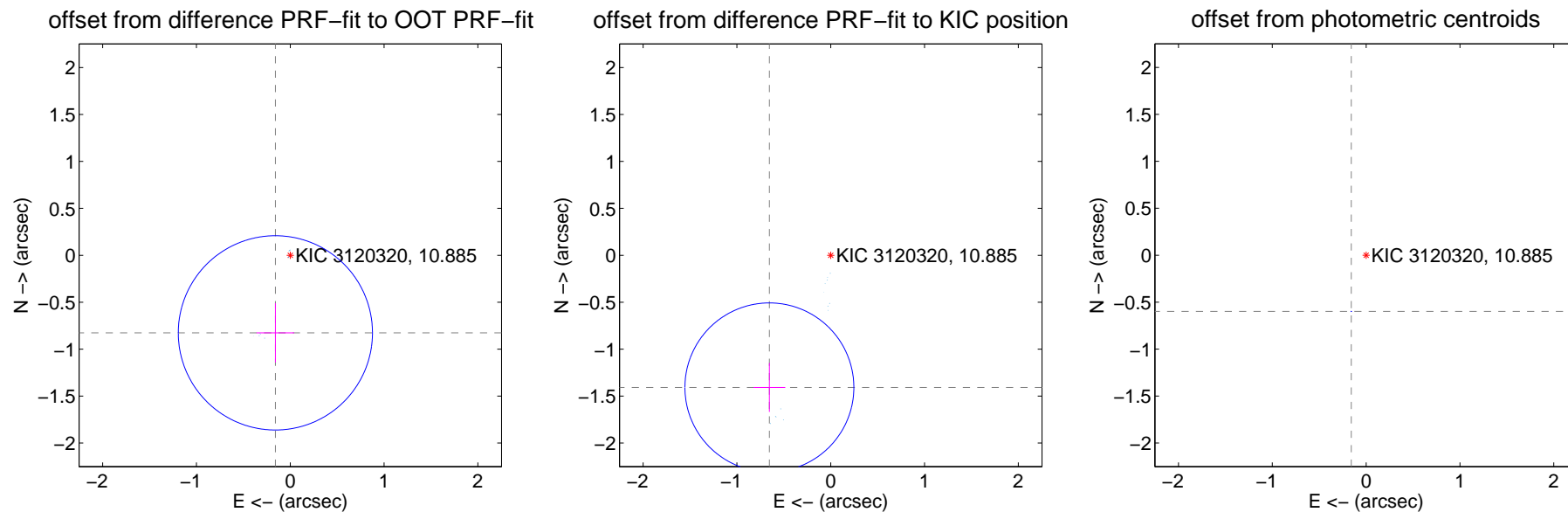
DV Centroid Data

Supplemental centroid analysis for 003120320-01. **Kepler magnitude: 10.88.** Transit SNR 12566.17

There are 16 quarters with good PRF difference image offsets

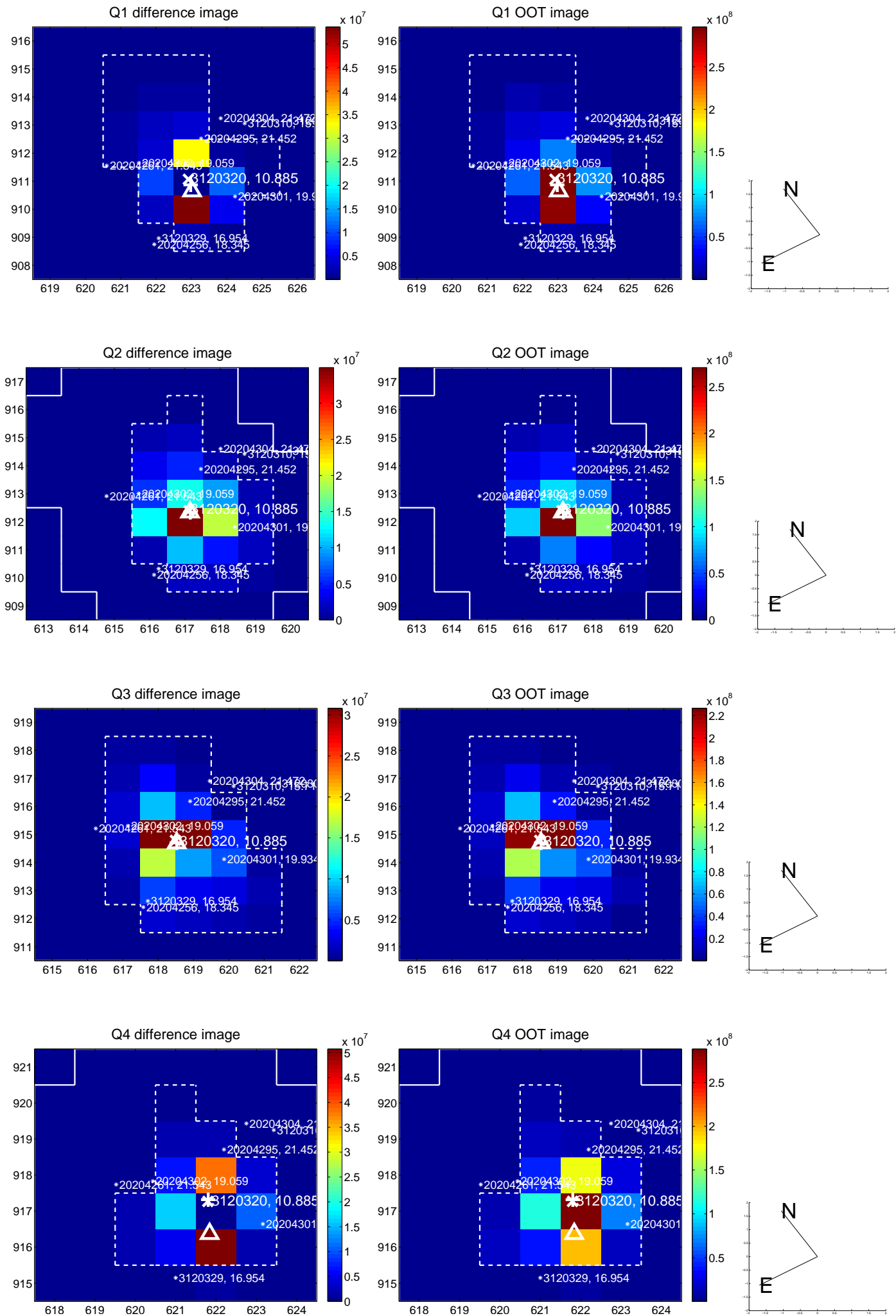
The direct PRF centroid is offset from the target star catalog position by about 0.97 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.842 ± 0.345	2.44	0.159 ± 0.201	-0.826 ± 0.316
PRF-fit source offset from KIC position	1.552 ± 0.300	5.17	0.654 ± 0.170	-1.408 ± 0.261
photometric centroid source offset	0.62 ± 0.00	1606.14	0.16 ± 0.00	-0.60 ± 0.00

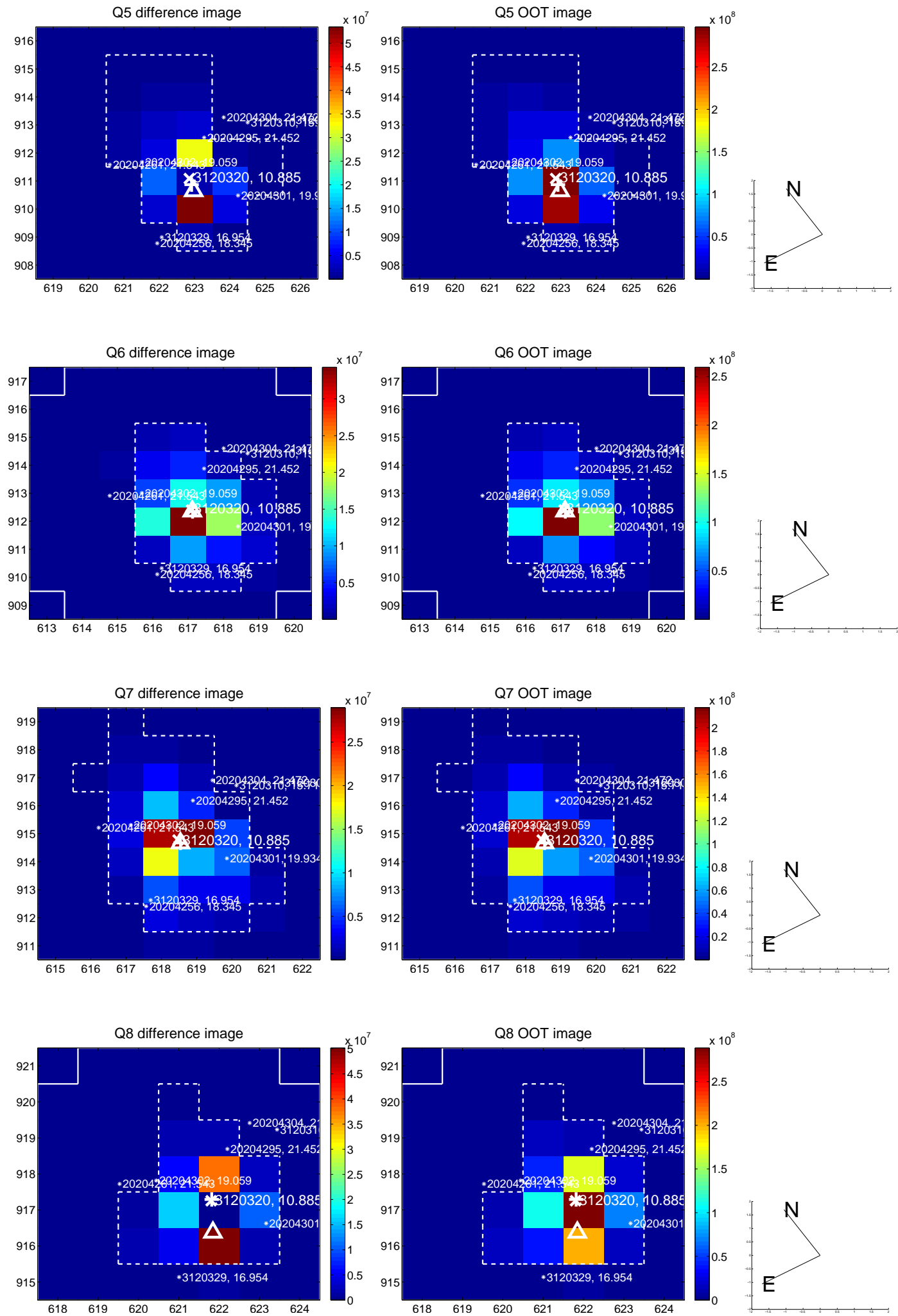


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

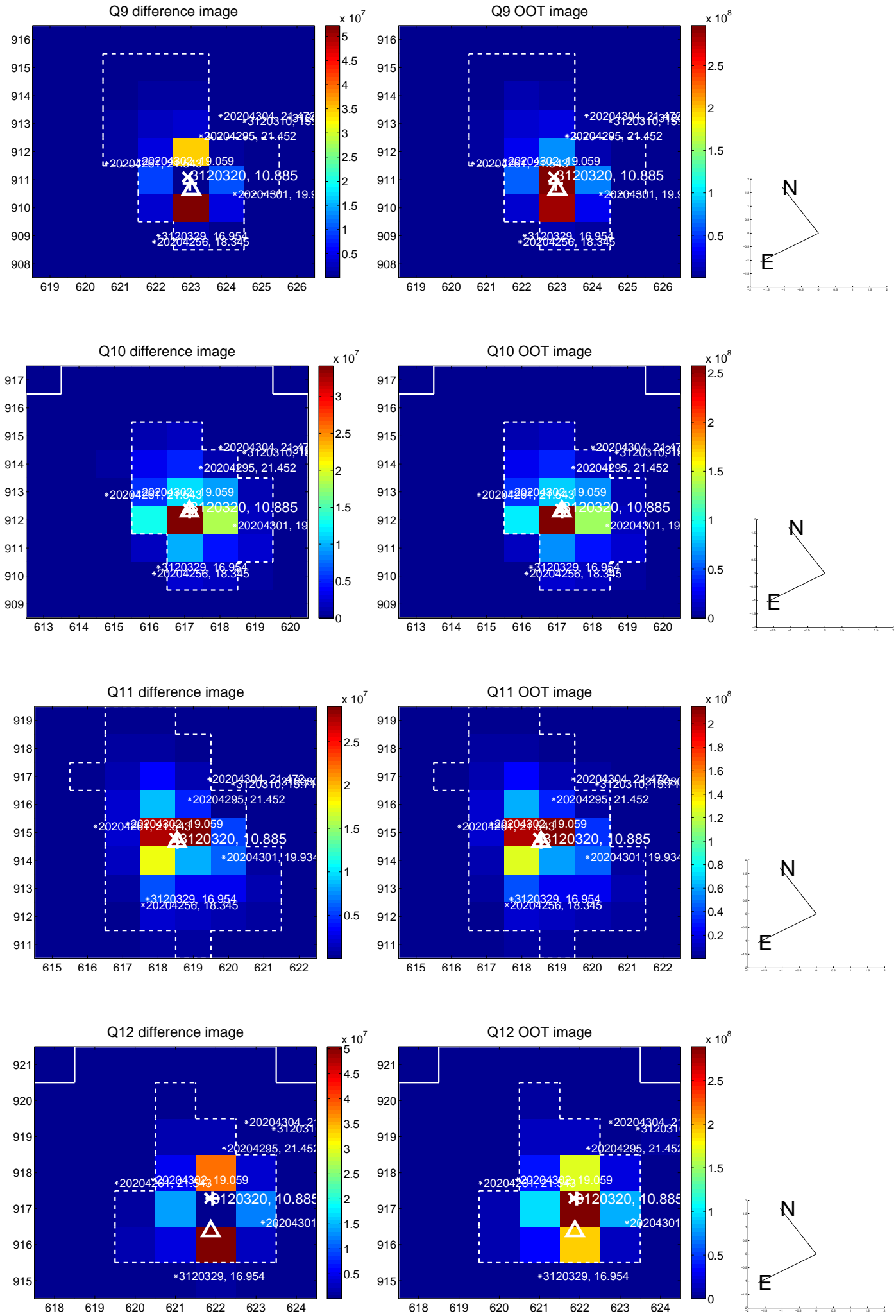
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



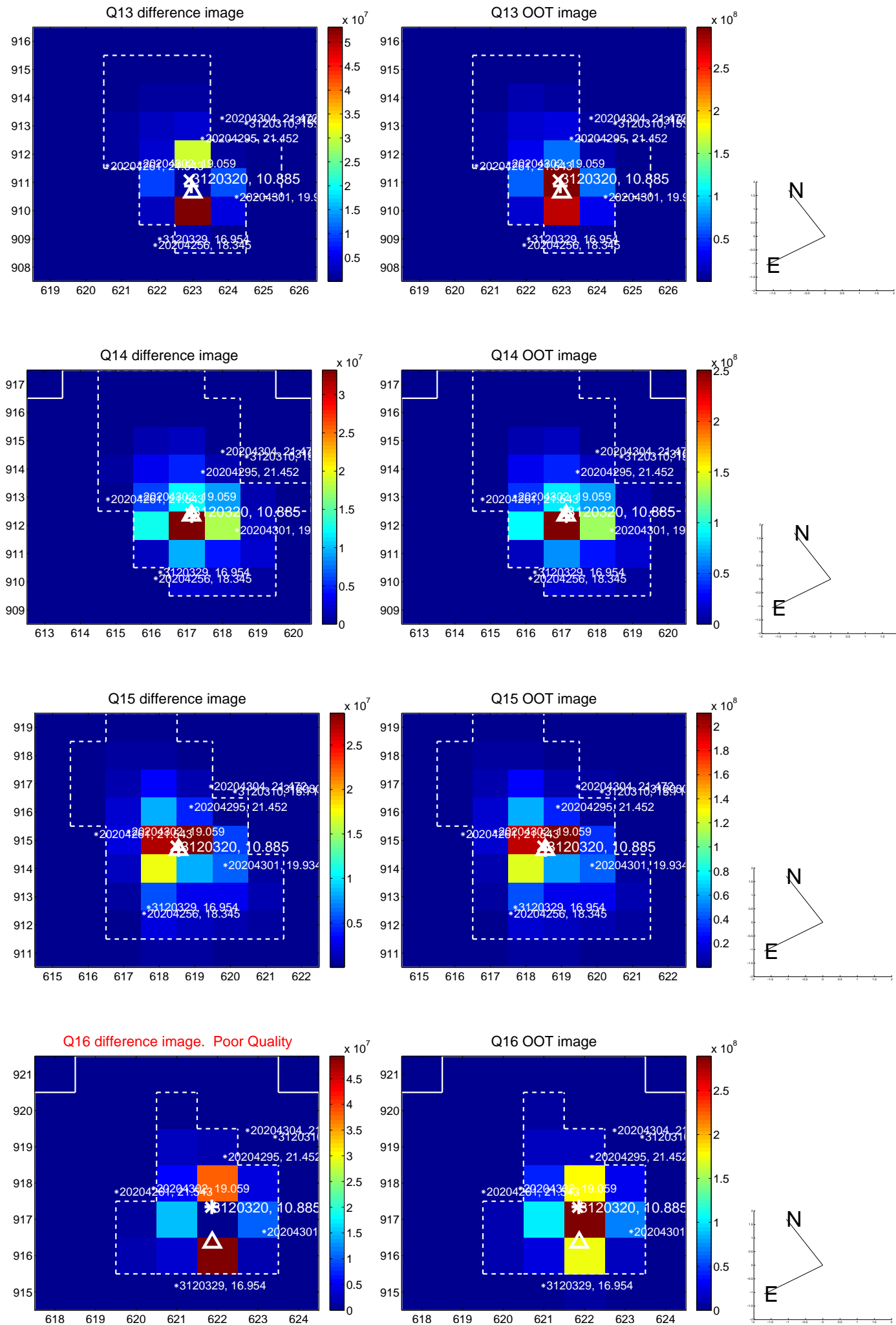
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

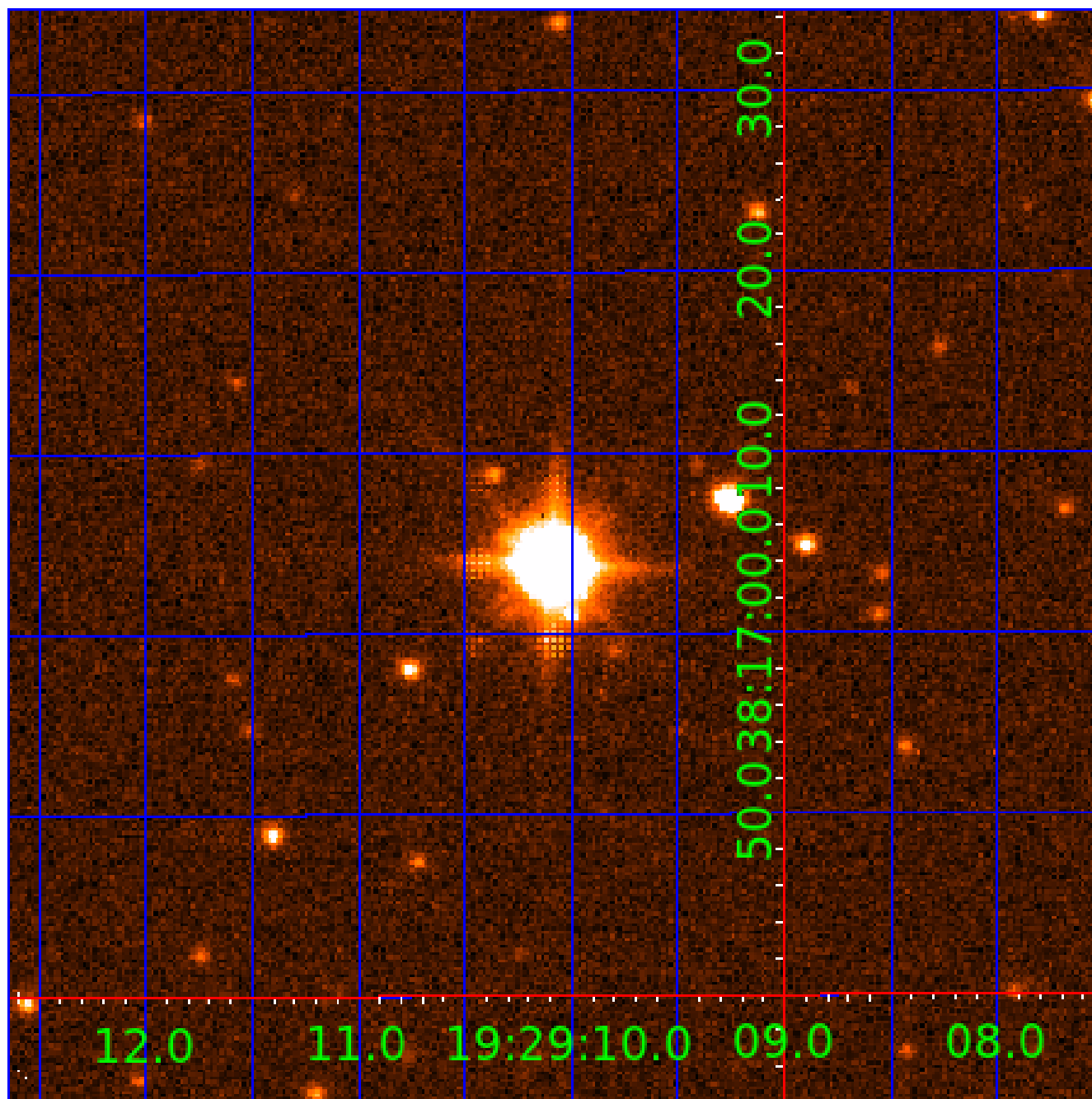


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003120320

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})
003120320-01	OBS	6307.01	10.265613	136.488733	150458.6	5.673	19184.8	12566.2	1.42	5865	61.50	237.09
003120320-02	OBS	No	10.265615	131.591807	13791.2	5.467	2013.1	1831.2	1.42	5865	21.28	237.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003120320-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_SATURATED
003120320-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—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.

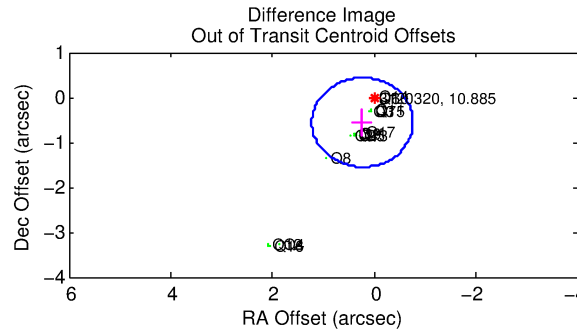
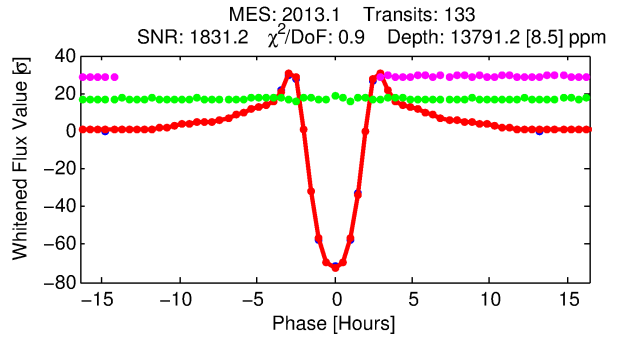
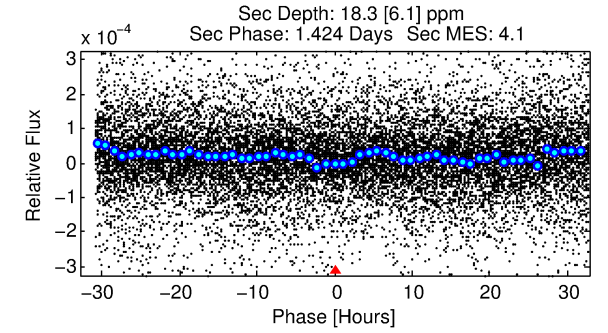
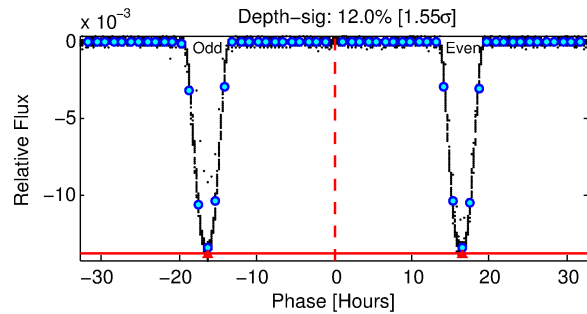
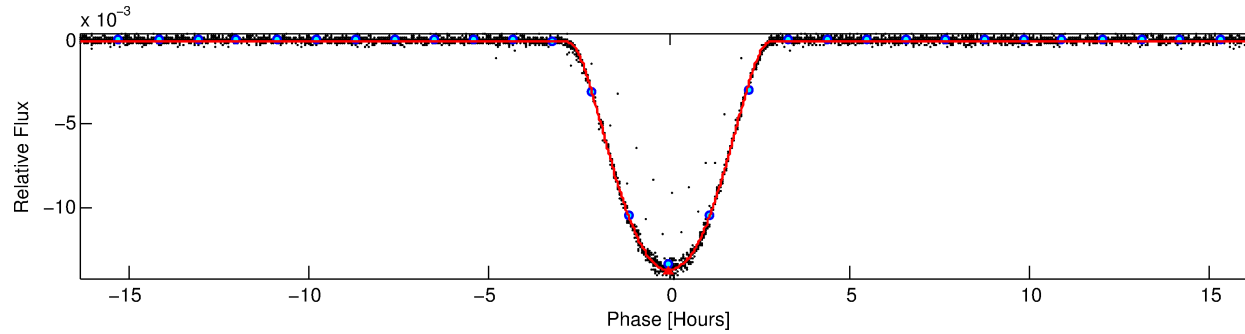
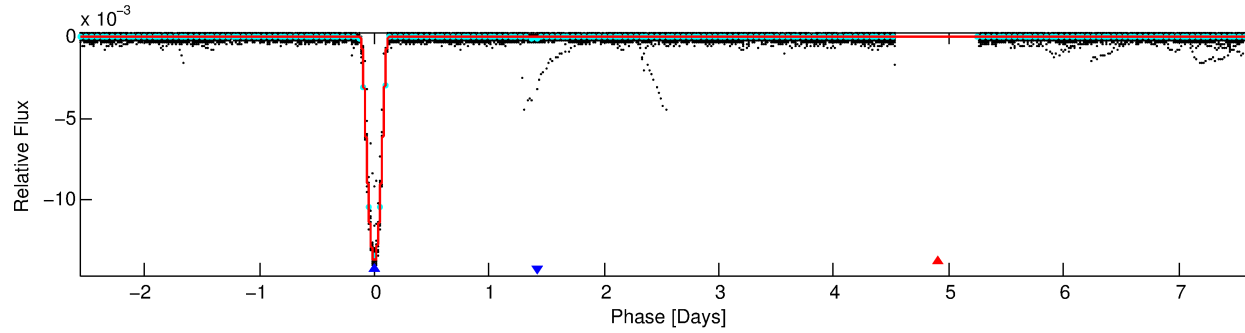
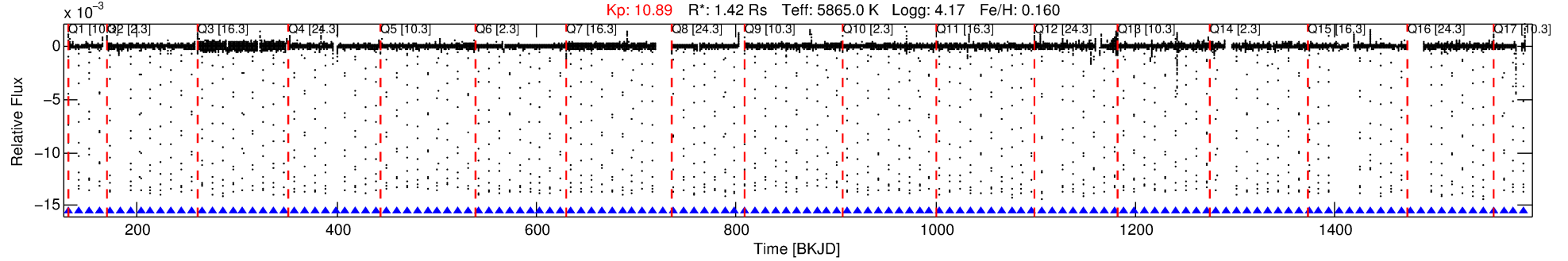
Ephemeris Match Information For 003120320-02

No Significant Match Found

DV One-Page Summary

KIC: 3120320 Candidate: 2 of 2 Period: 10.266 d
KOI: K06307 Corr: No Ephemeris Match

Kp: 10.89 R*: 1.42 Rs Teff: 5865.0 K Logg: 4.17 Fe/H: 0.160



DV Fit Results:

Period = 10.26561 [0.00000] d
Epoch = 131.5918 [0.0000] BKJD
Rp/R* = 0.1370 [0.0003]
a/R* = 9.91 [0.01]
b = 0.91 [0.00]
Seff = 237.10 [67.37]
Teq = 1001 [71] K
Rp = 21.28 [4.04] Re
a = 0.0952 [0.0169] AU
Ag = 0.20 [0.09] [-9.08σ]
Teffp = 1037 [88] K [0.32σ]

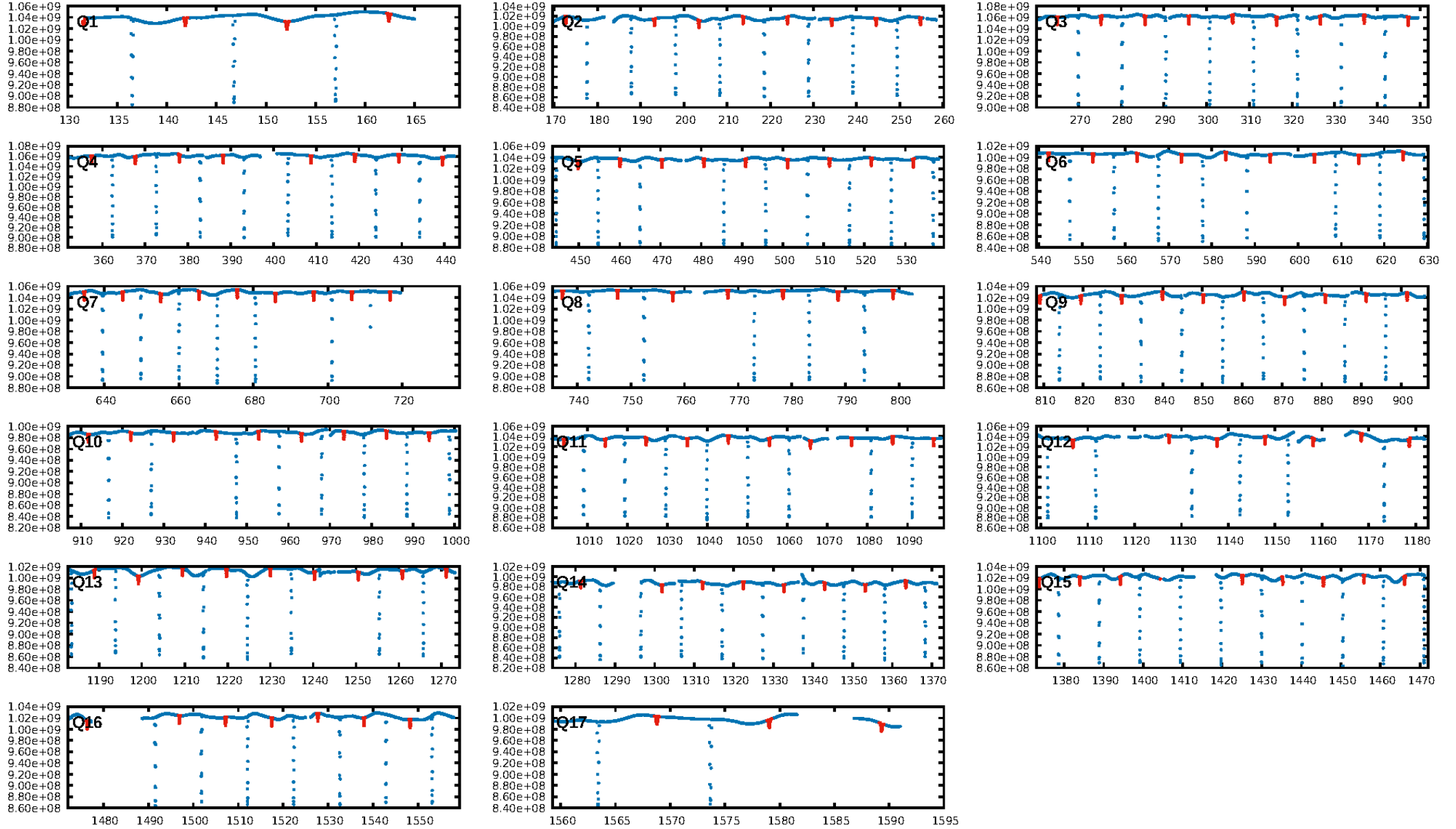
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 93.2%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [126/126]
GhostDiagnostic-chr: 4.735
Centroid-sig: 0.0%
Centroid-so: 0.756 arcsec [204.91σ]
OotOffset-rm: 0.606 arcsec [1.83σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 1.534 arcsec [4.86σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.76 [13/17]
DiffImageOverlap-fno: 1.00 [17/17]

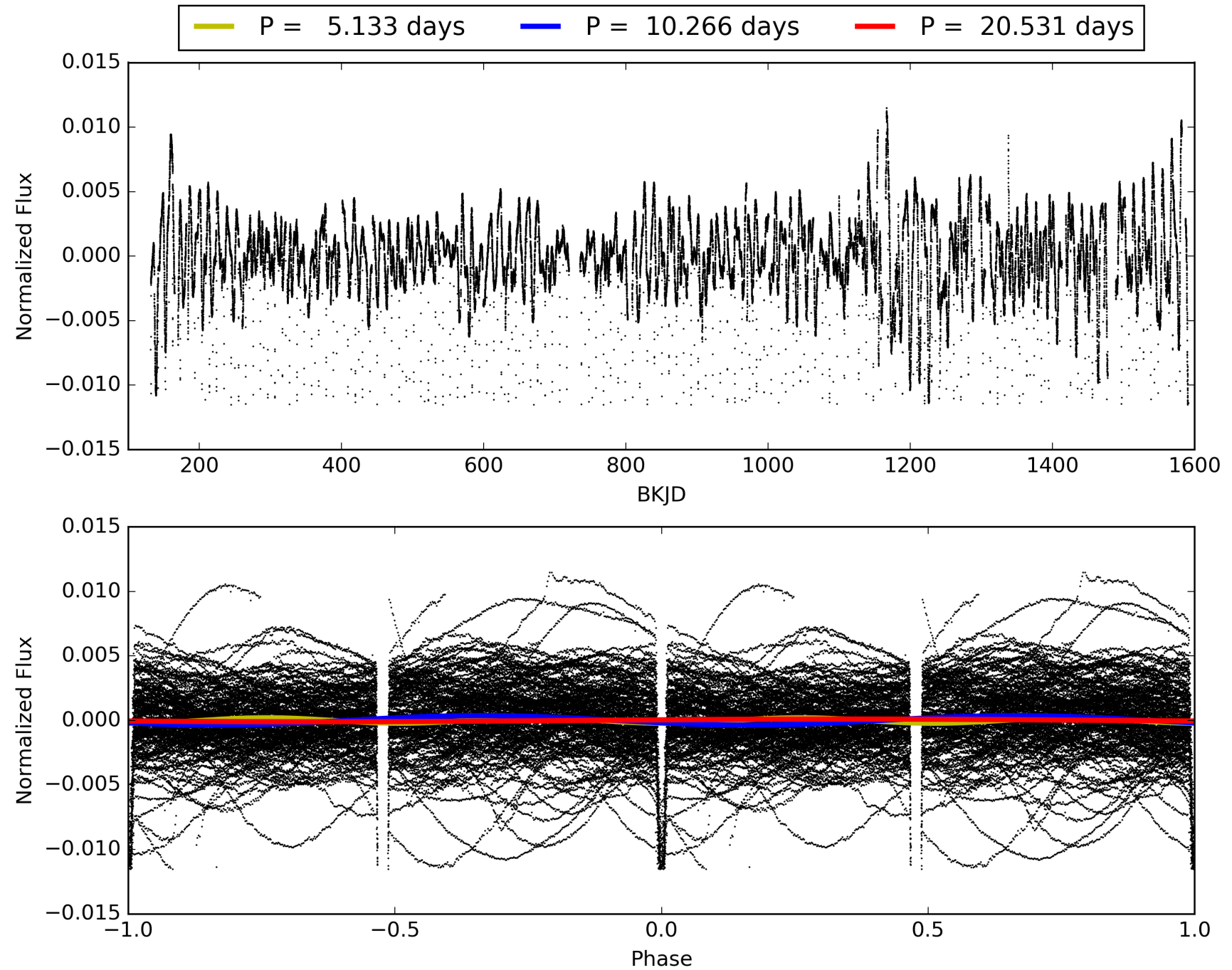
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:40:25 Z

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

TCE 003120320-02, PDC Light Curves

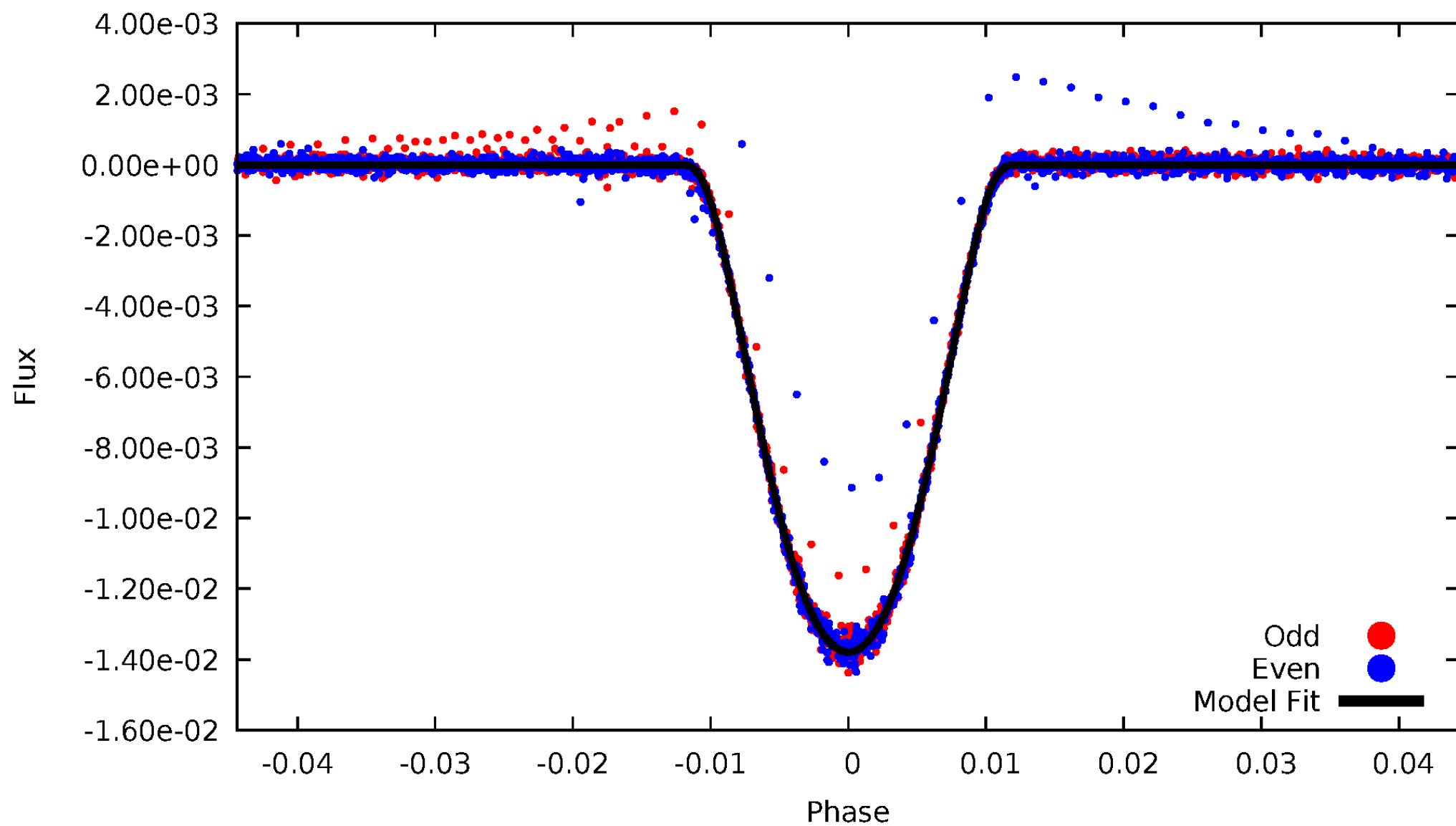


TCE 003120320-02



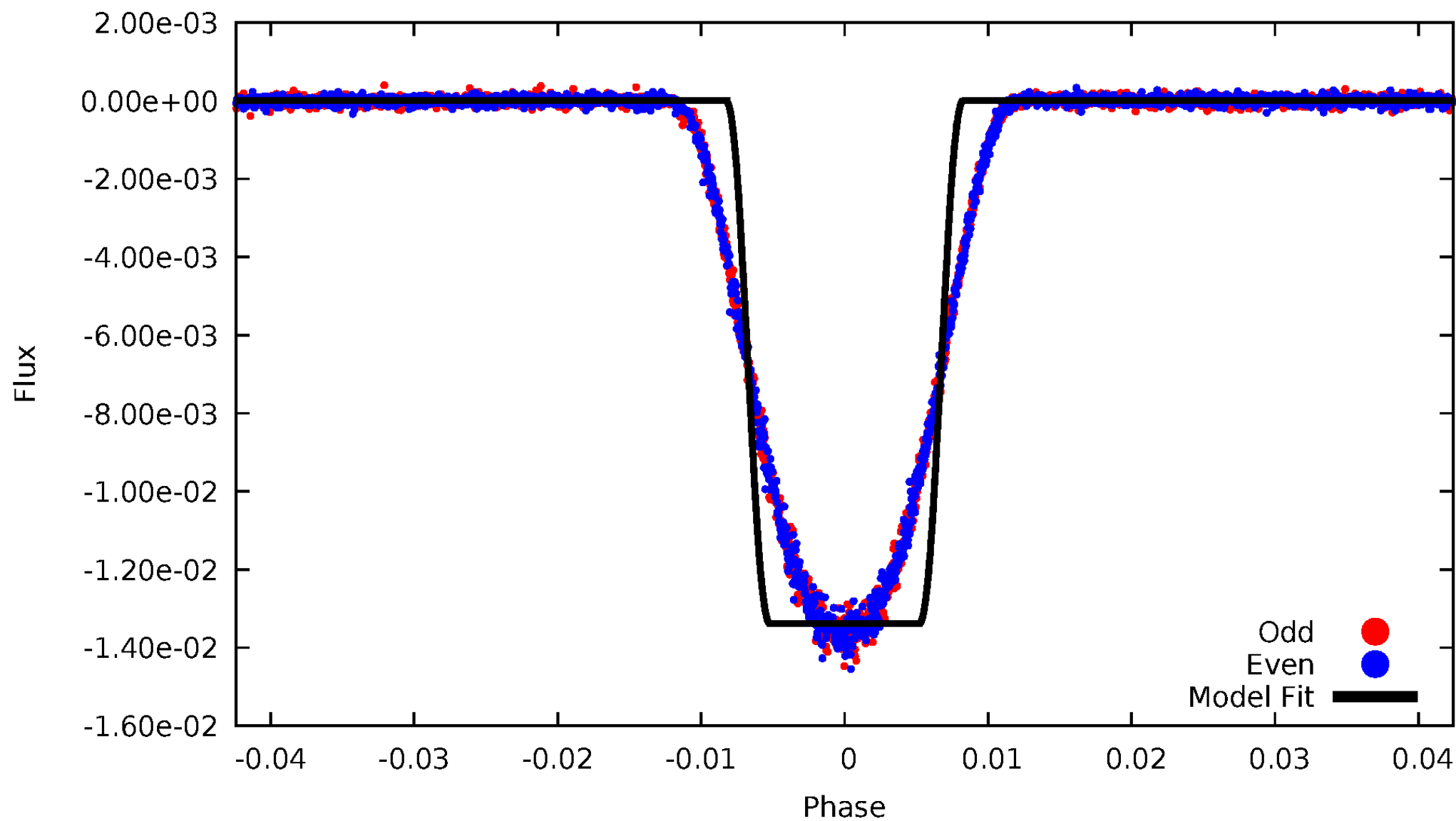
DV Odd/Even

TCE 003120320-02



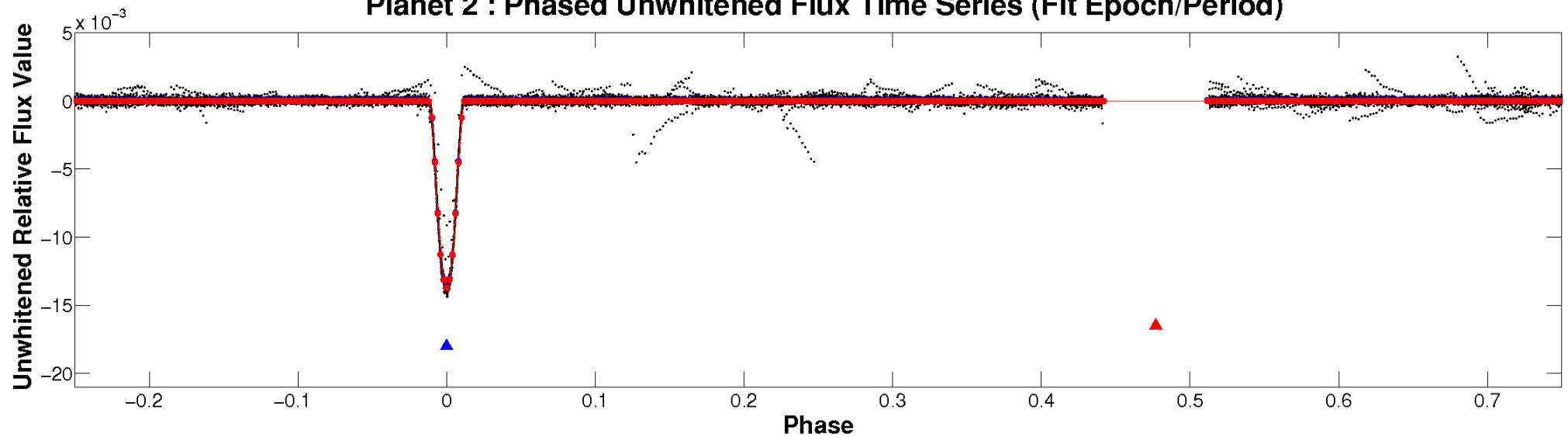
ALT Odd/Even

TCE 003120320-02

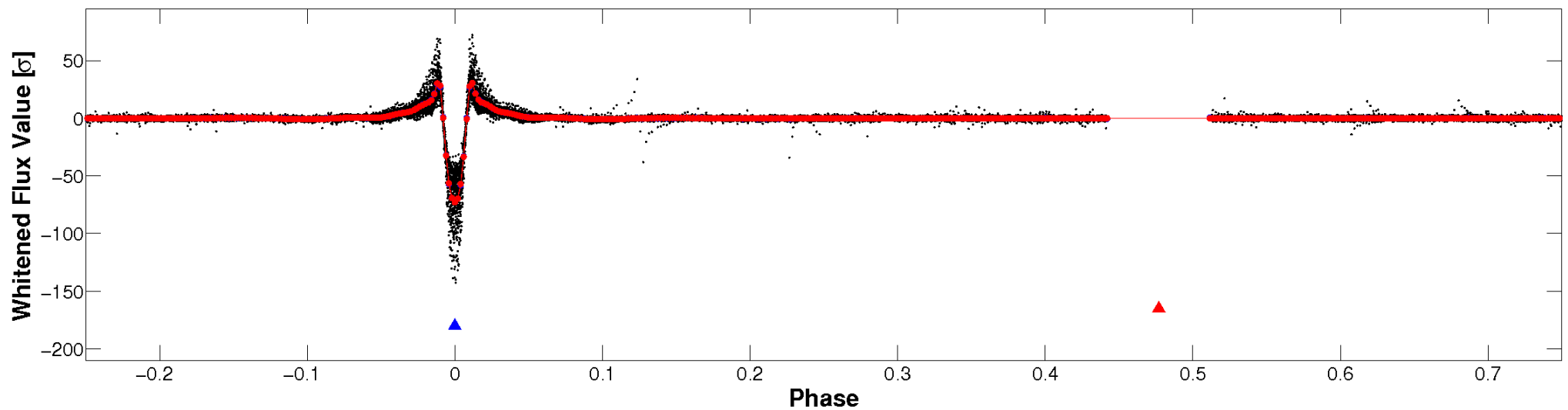


Non-Whitened Vs. Whitened Light Curve

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

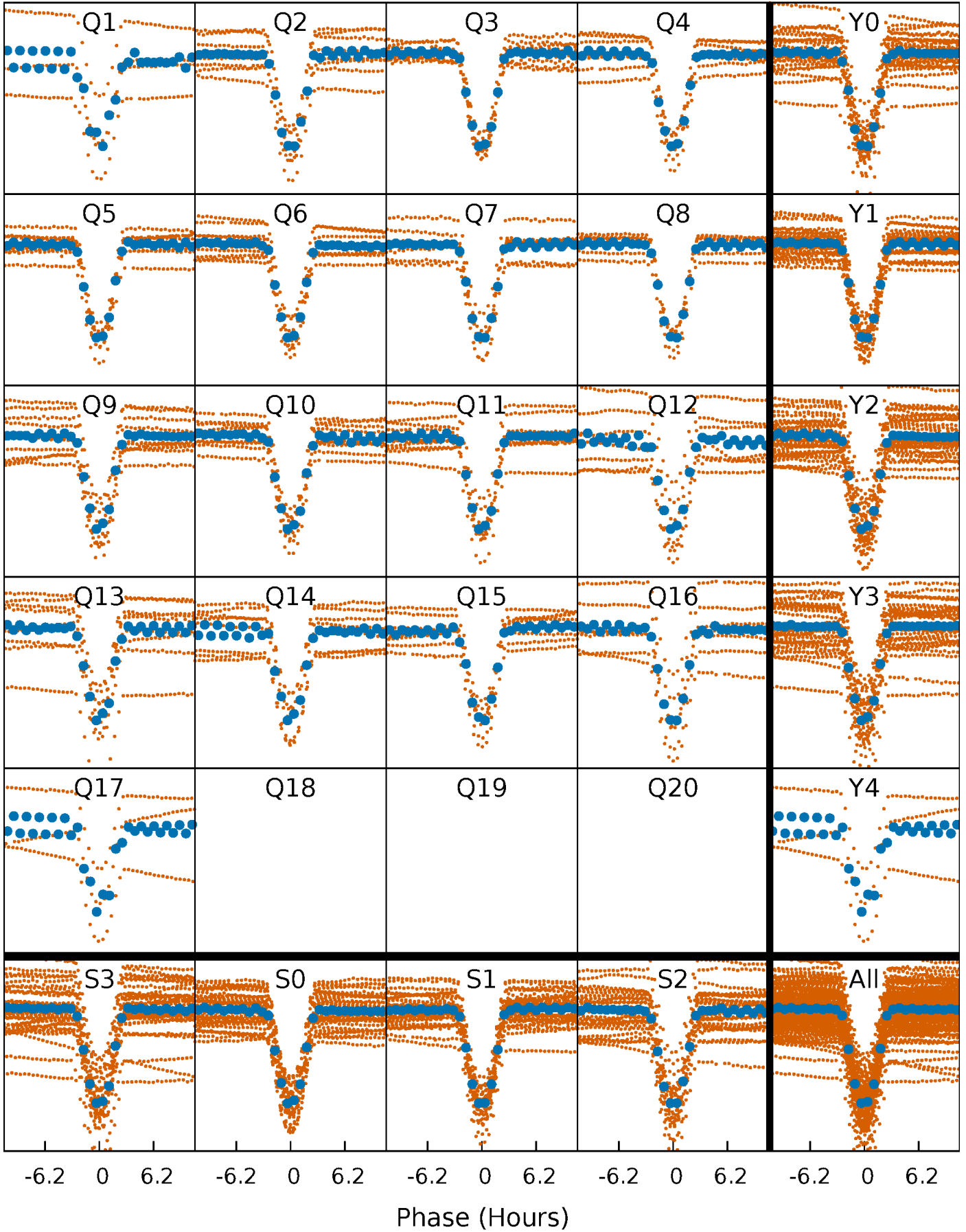


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



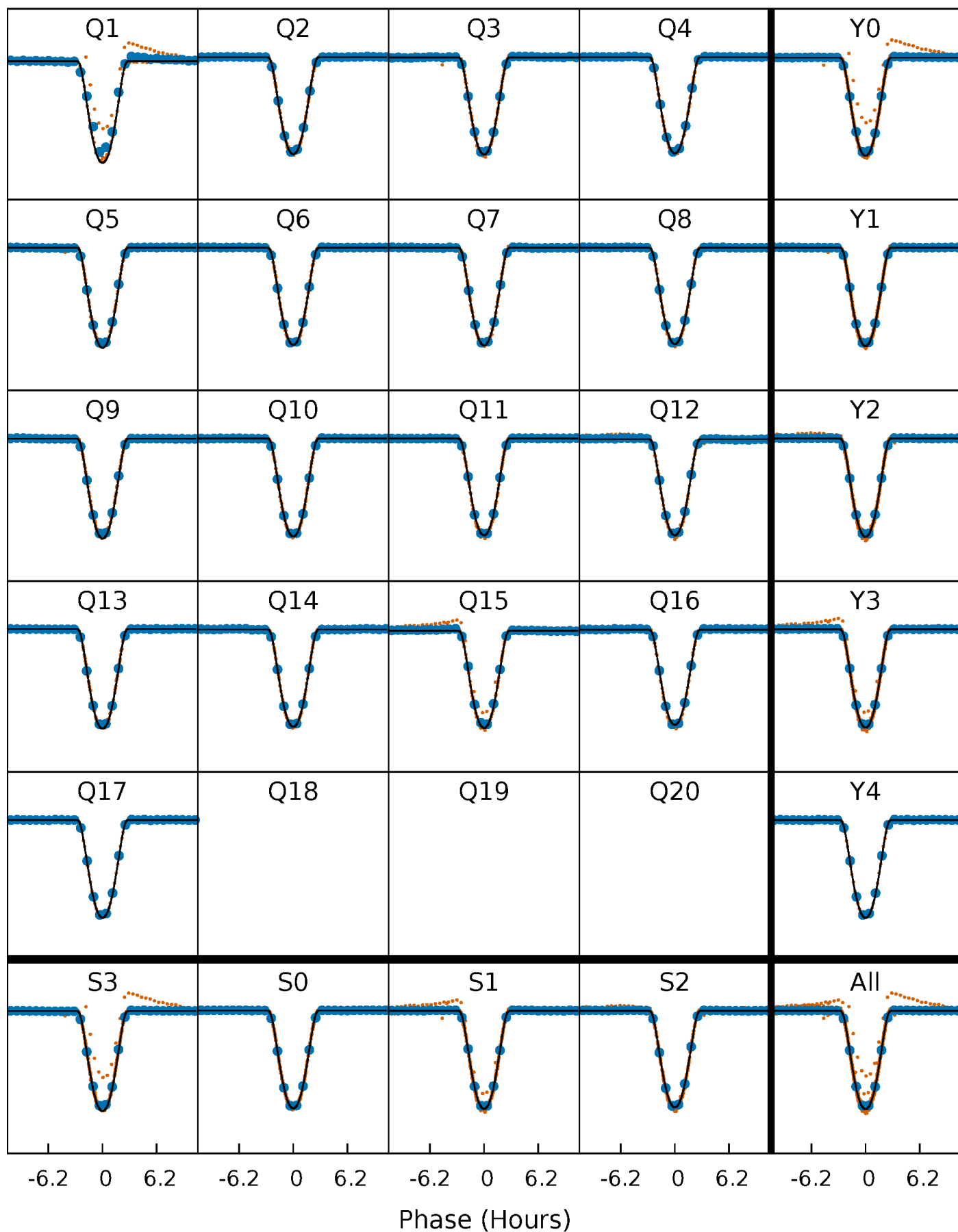
PDC Quarter-Phased Transit Curves

TCE 003120320-02 P= 10.265615 Days $T_0=131.591807$ (BKJD)



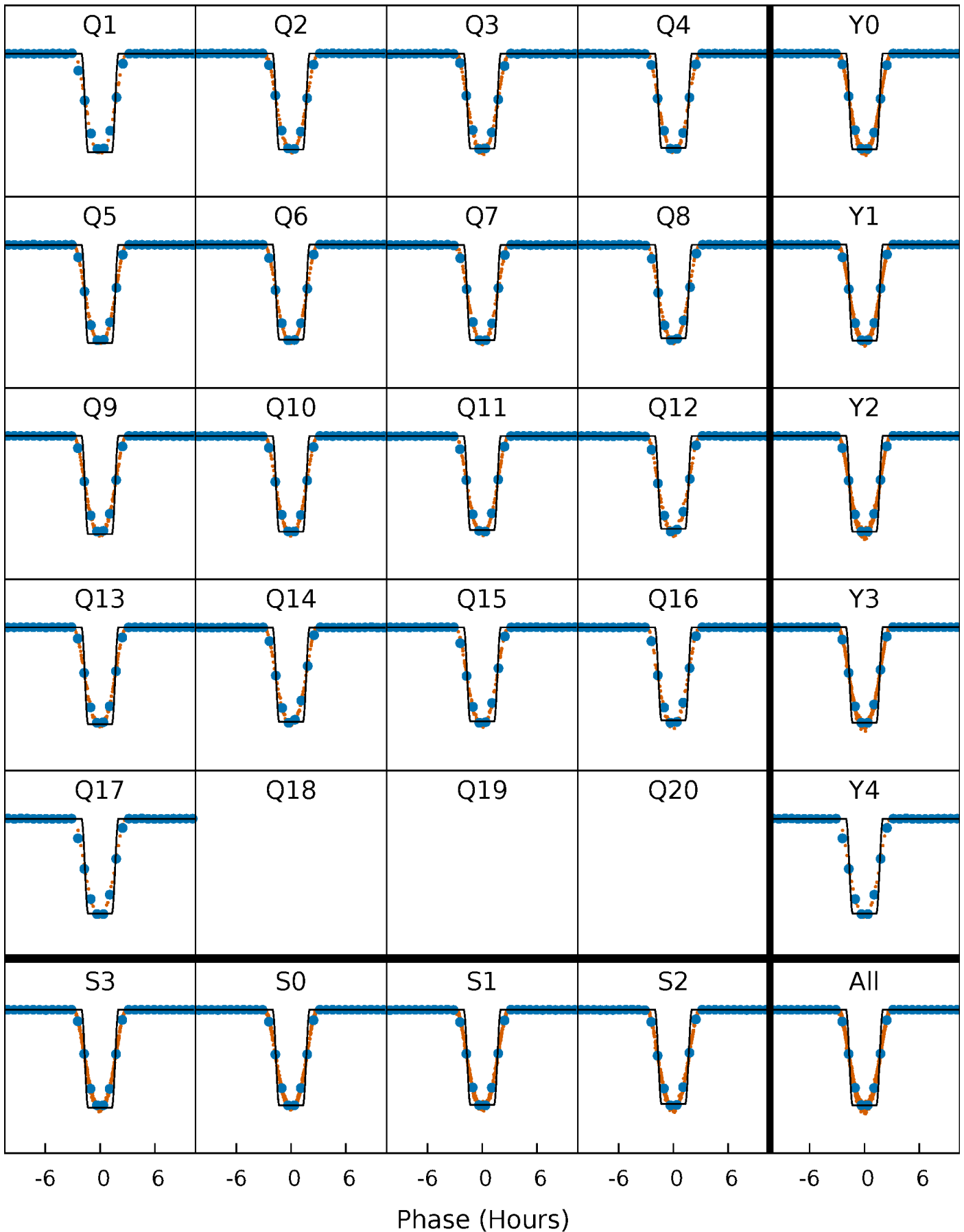
DV Quarter-Phased Transit Curves

TCE 003120320-02 P= 10.265615 Days $T_0=131.591807$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

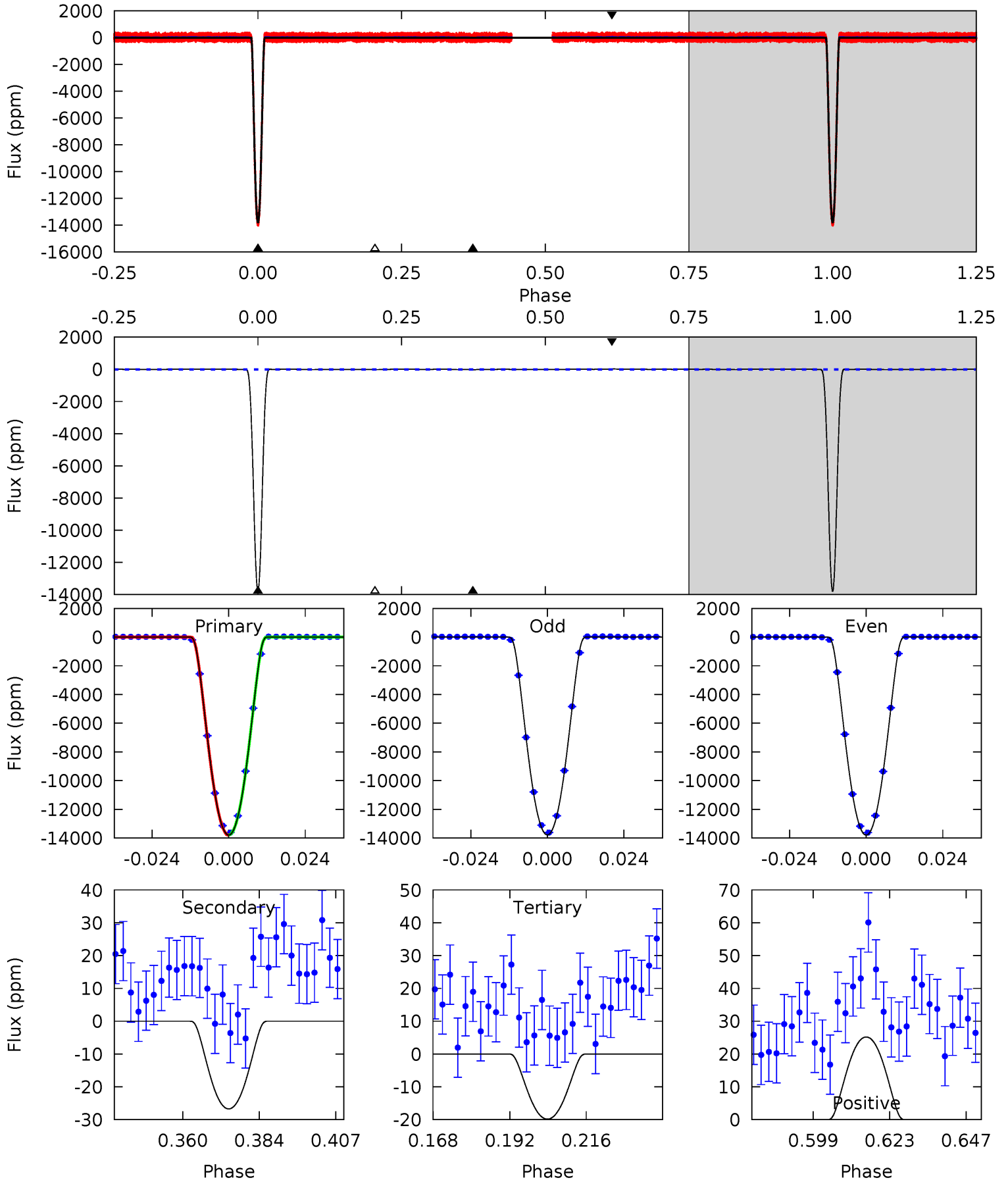
TCE 003120320-02 P= 10.265636 Days $T_0=131.590132$ (BKJD)



DV Model-Shift Uniqueness Test

003120320-02, P = 10.265615 Days, E = 121.326192 Days

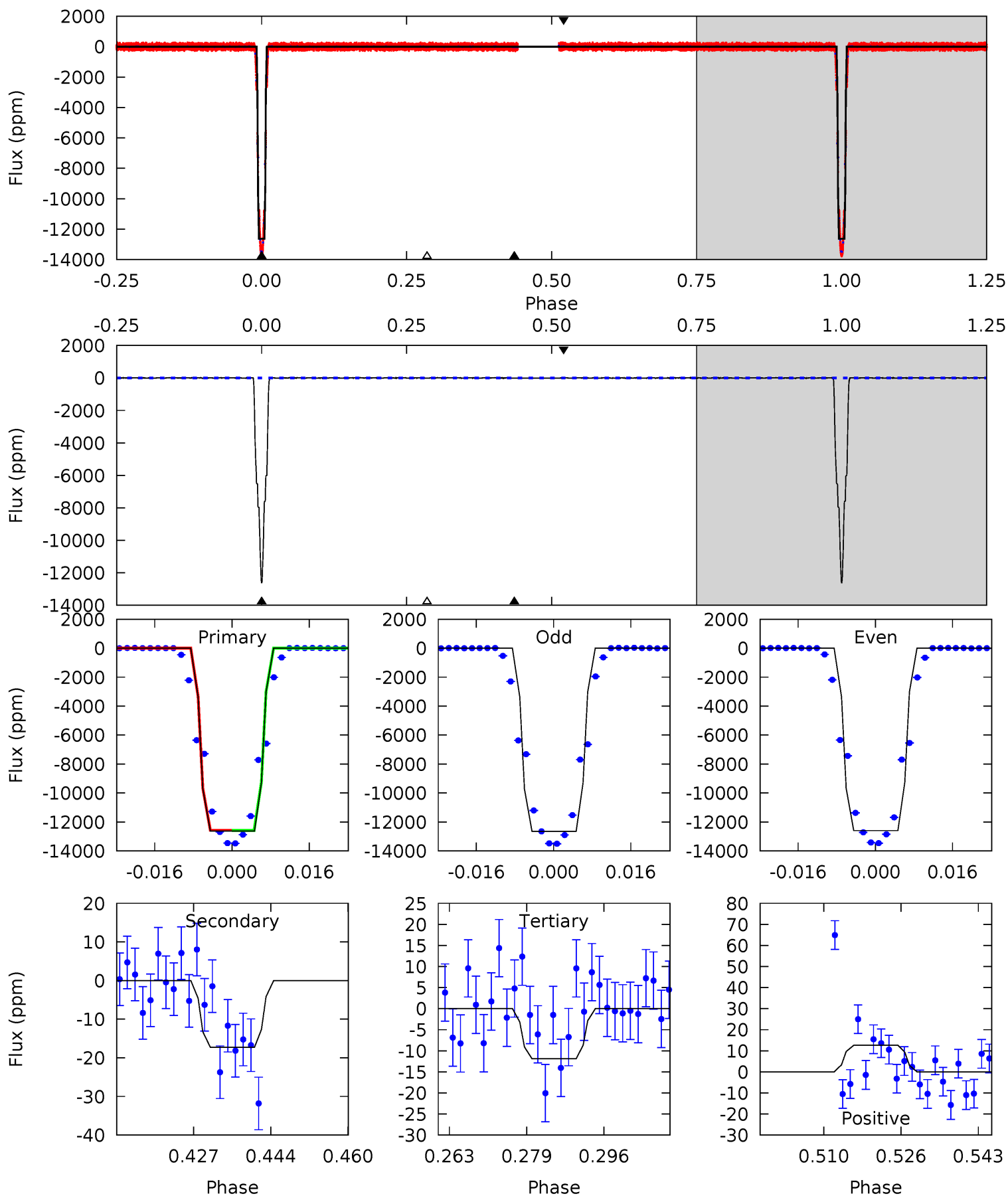
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5034	9.76	7.24	9.19	4.86	2.26	3.16	5026	5024	2.52	0.57	2.89	1.00	0.00	0



Alt Model-Shift Uniqueness Test

003120320-02, P = 10.265636 Days, E = 121.324496 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3826	5.23	3.60	3.82	4.93	2.40	1.06	3823	3822	1.63	1.41	7.57	1.00	0.00	2.00



Stellar Parameters For KIC 003120320

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5865^{+79}_{-79}	$4.169^{+0.162}_{-0.108}$	$0.160^{+0.150}_{-0.150}$	$1.423^{+0.246}_{-0.270}$	$1.090^{+0.098}_{-0.080}$	$0.532^{+0.434}_{-0.175}$
	+1%/-1%	+4%/-3%	+94%/-94%	+17%/-19%	+9%/-7%	+81%/-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 003120320-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-27 ± 3	$21.17^{+1.97}_{-2.19}$	1391^{+66}_{-71}	1333^{+472}_{-3139}	$0.301^{+0.072}_{-0.056}$
Alt.	-17 ± 3	$17.86^{+1.77}_{-1.88}$	1392^{+63}_{-76}	-1668^{+3439}_{-227}	$0.274^{+0.087}_{-0.064}$

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 $A_{obs} \gg 1.0$

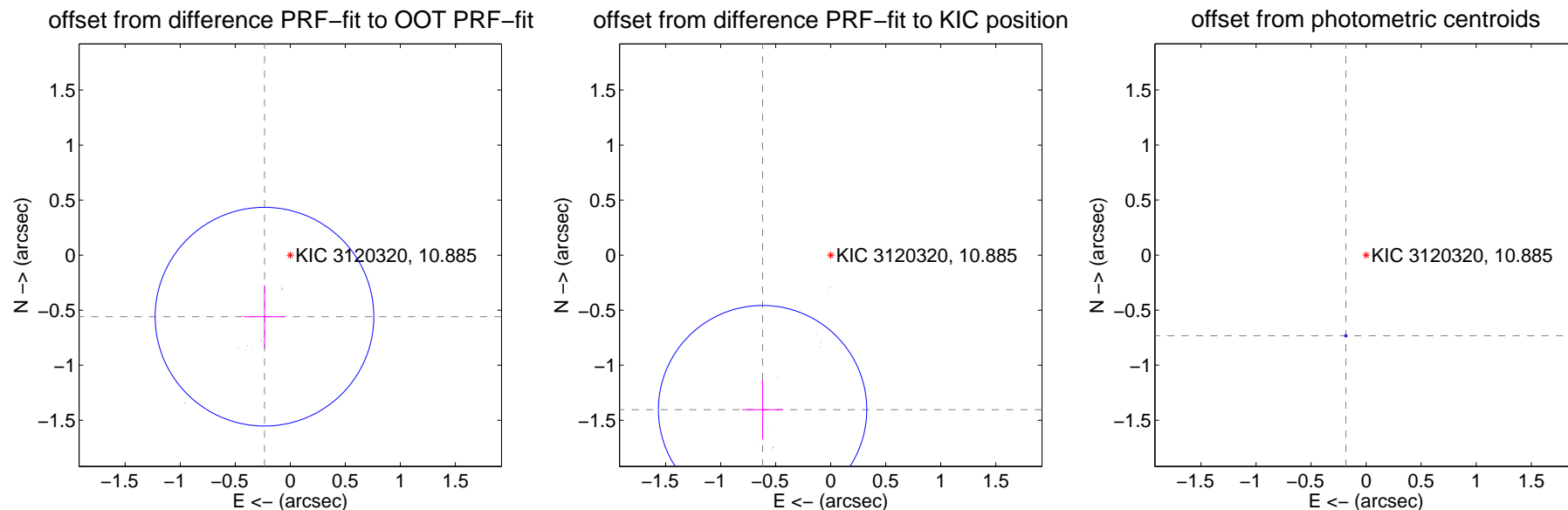
DV Centroid Data

Supplemental centroid analysis for 003120320-02. **Kepler magnitude: 10.88.** Transit SNR 1831.16

There are 13 quarters with good PRF difference image offsets

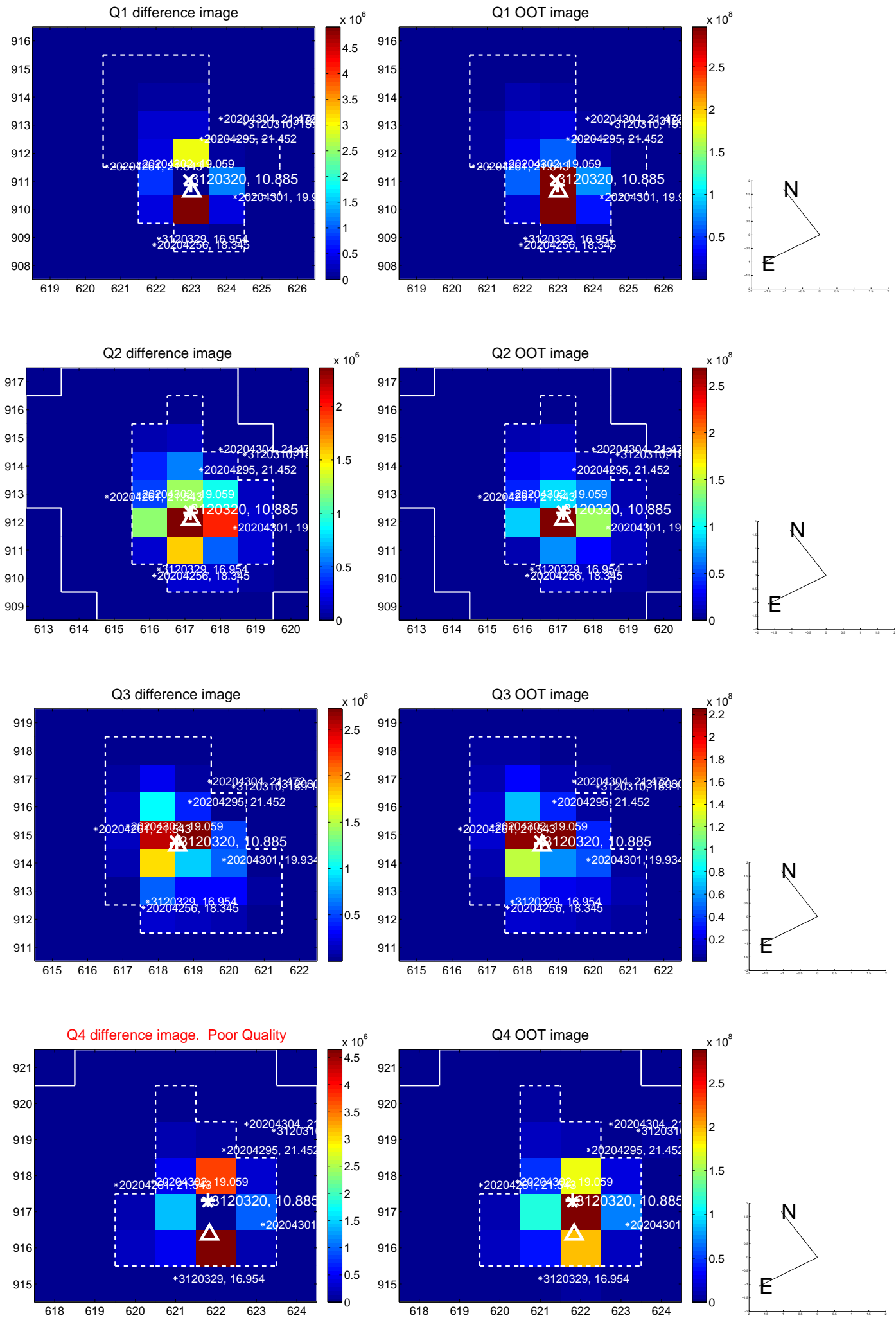
The direct PRF centroid is offset from the target star catalog position by about 1.00 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.606 ± 0.331	1.83	0.234 ± 0.189	-0.559 ± 0.286
PRF-fit source offset from KIC position	1.534 ± 0.316	4.86	0.619 ± 0.185	-1.404 ± 0.270
photometric centroid source offset	0.76 ± 0.00	204.91	0.18 ± 0.00	-0.73 ± 0.00

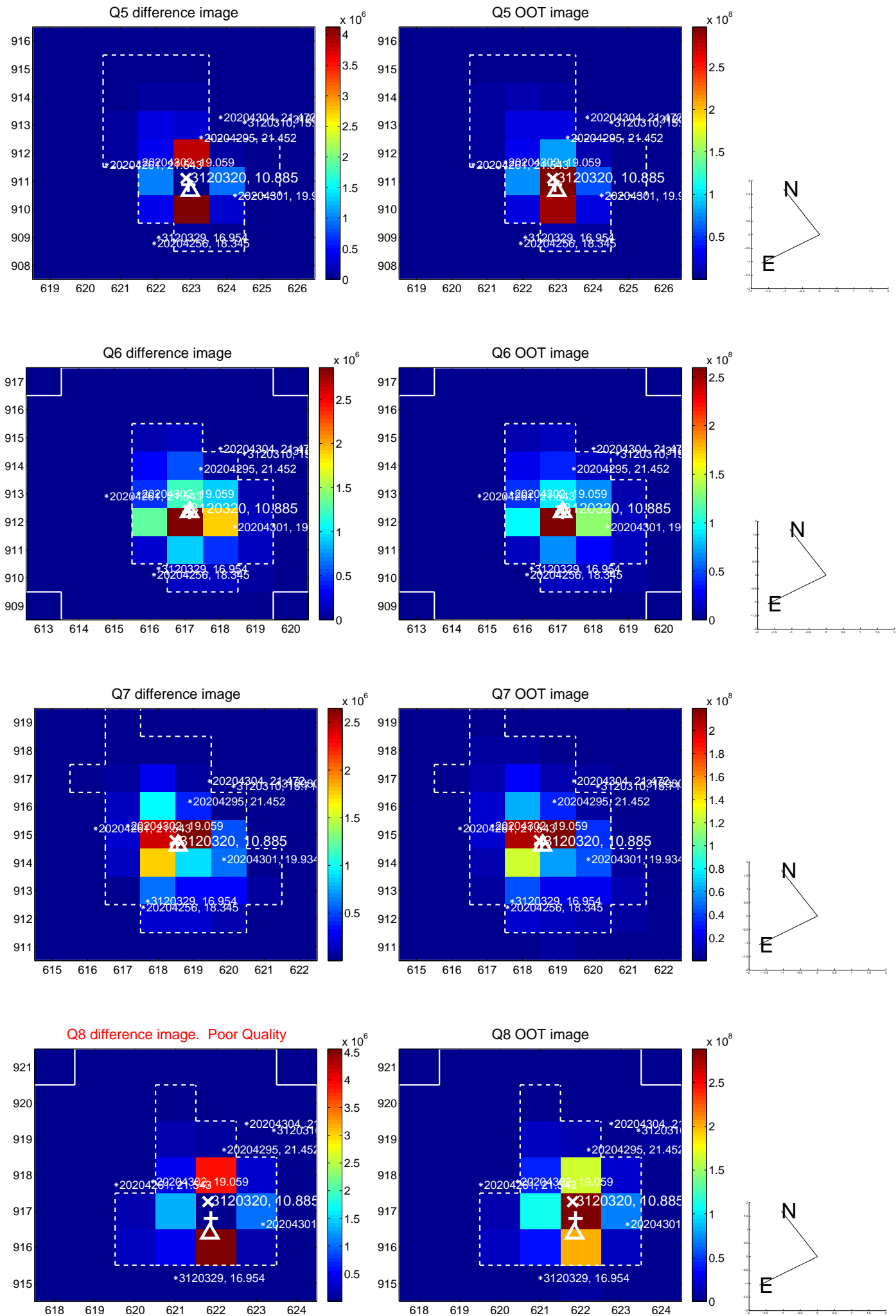


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

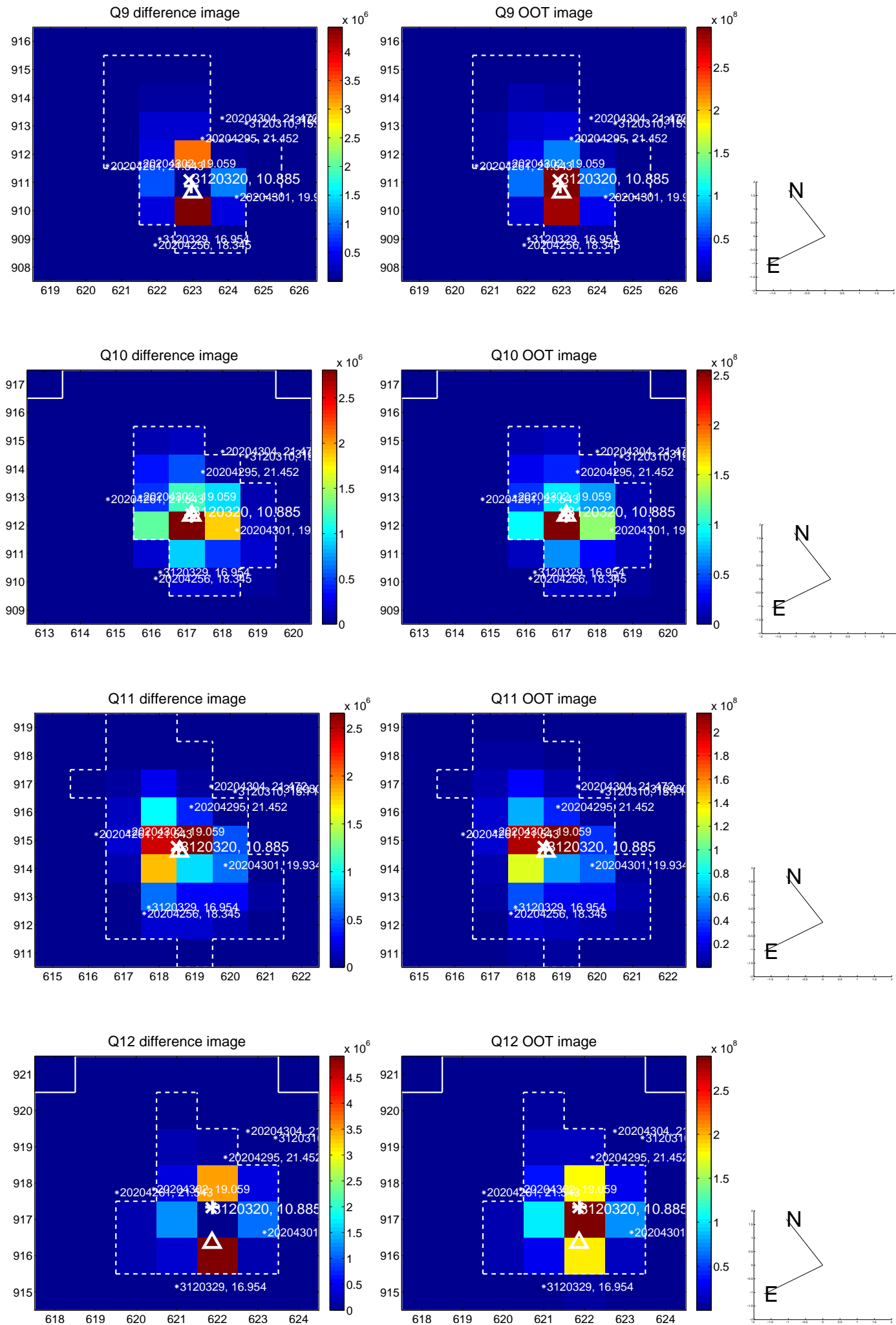
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



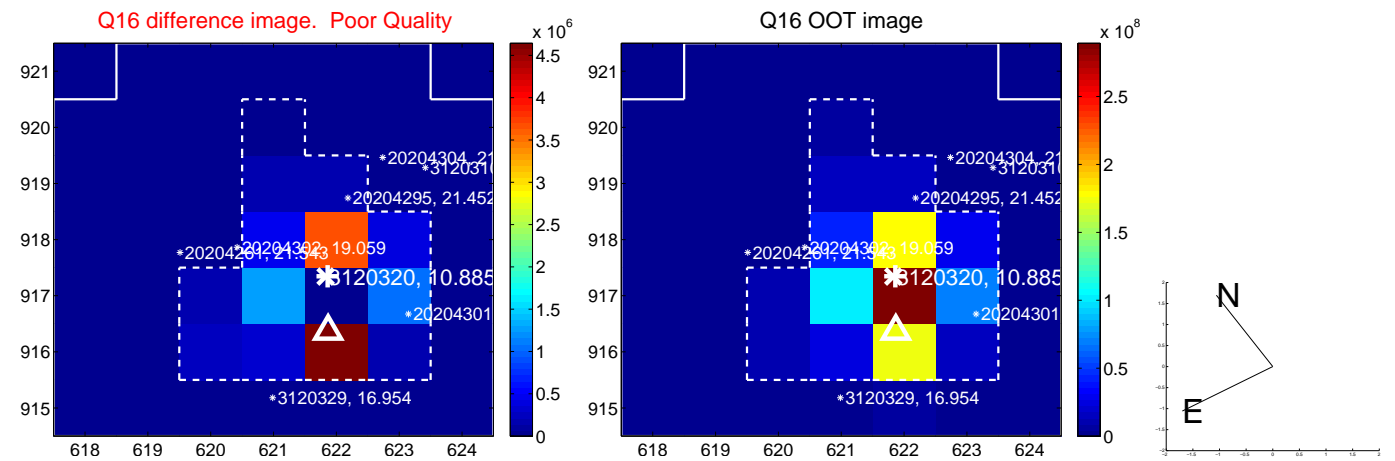
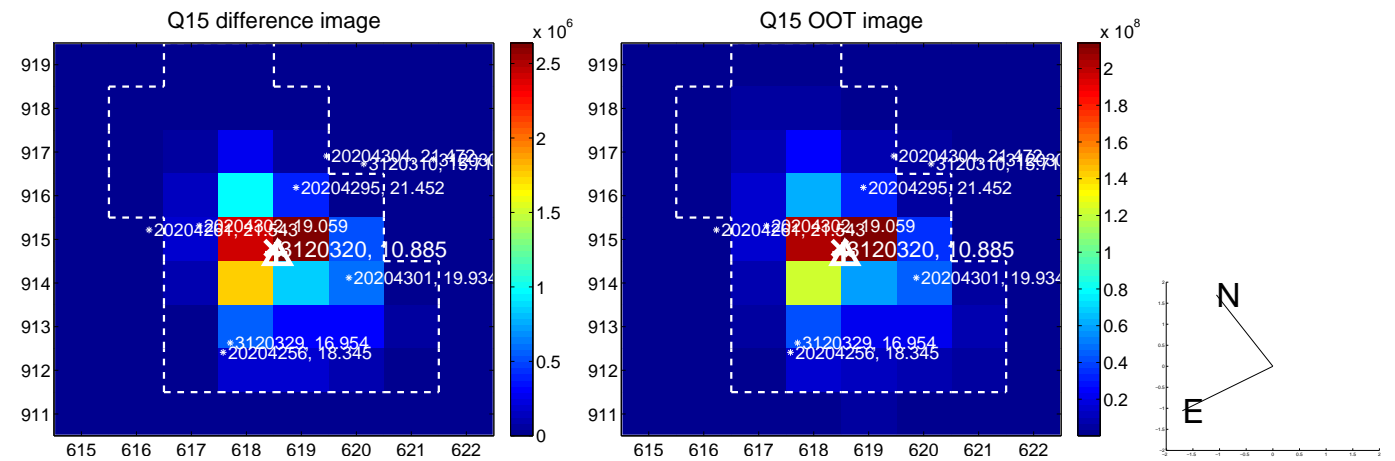
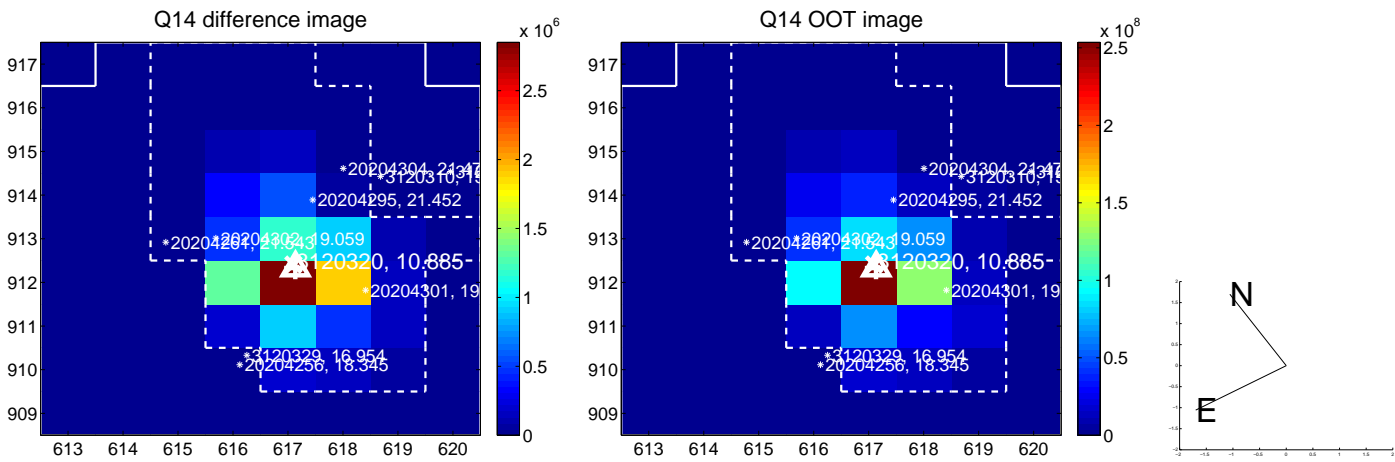
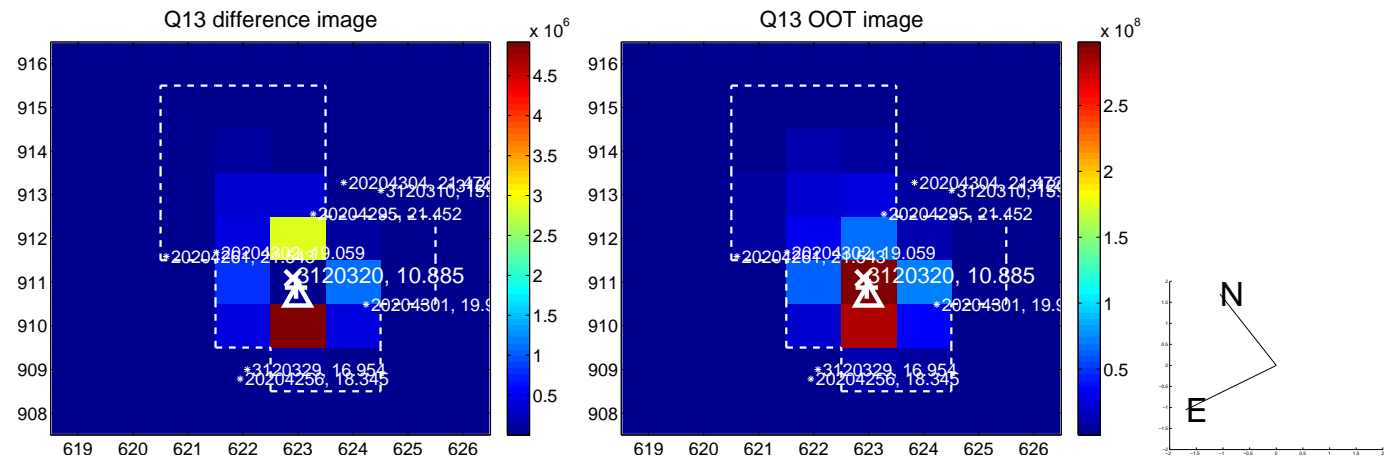
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



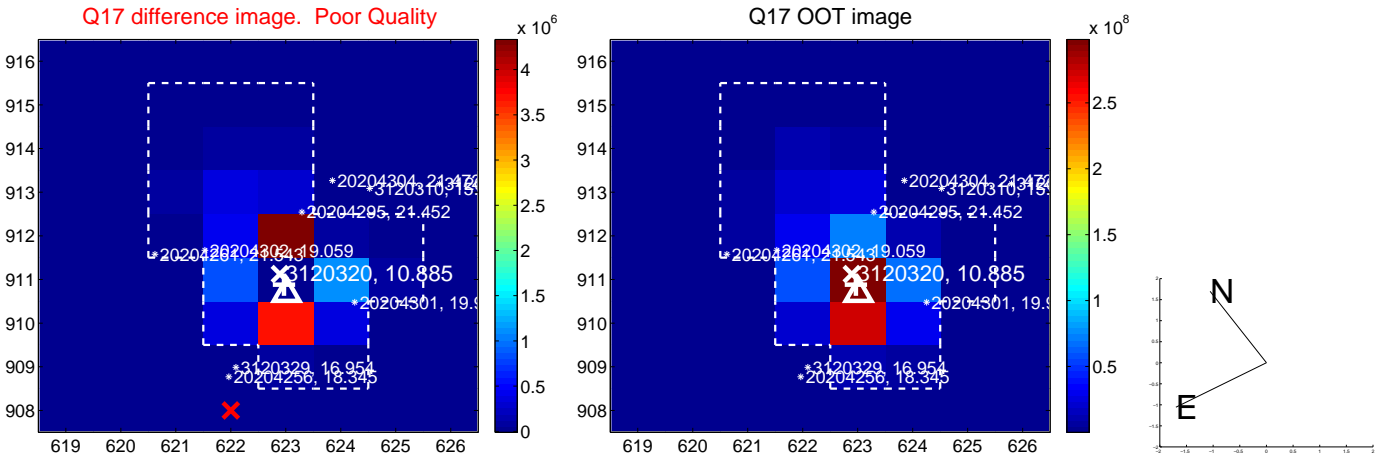
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



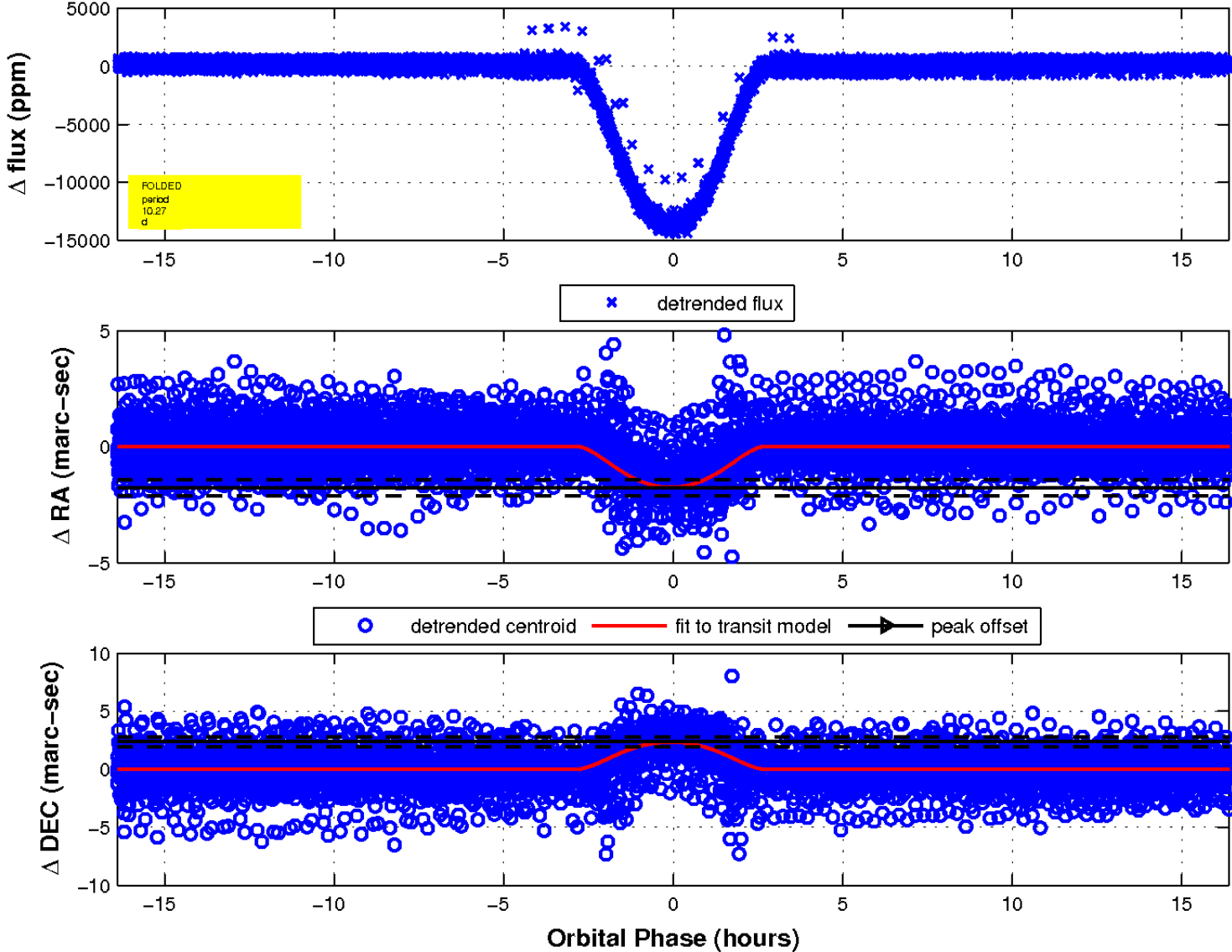
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

