

KIC 009632895

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})
009632895-01	OBS	1451.01	27.322043	132.425263	77586.8	5.683	4301.1	3318.5	0.77	5620	21.55	18.83
009632895-02	OBS	No	27.322047	145.977392	2646.0	5.031	150.9	144.9	0.77	5620	4.53	18.83
009632895-03	OBS	No	434.326077	553.079358	4917.4	7.162	64.5	64.0	0.77	5620	5.86	0.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009632895-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
009632895-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
009632895-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

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

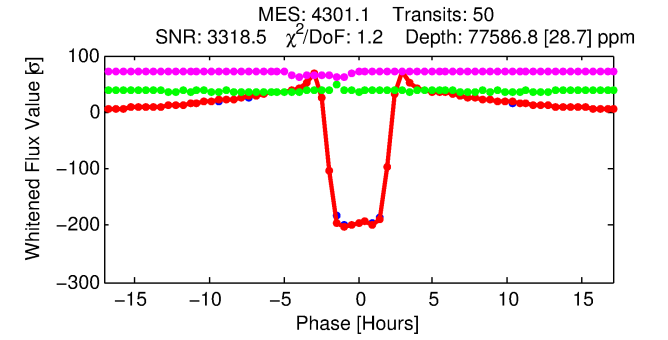
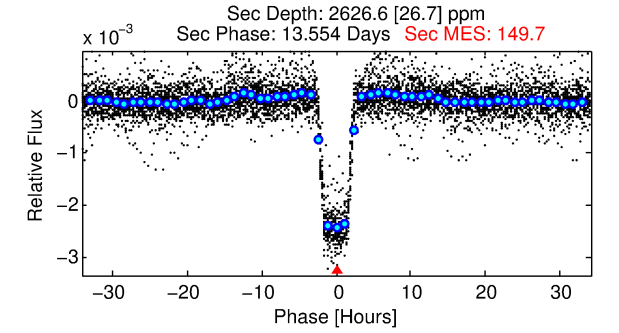
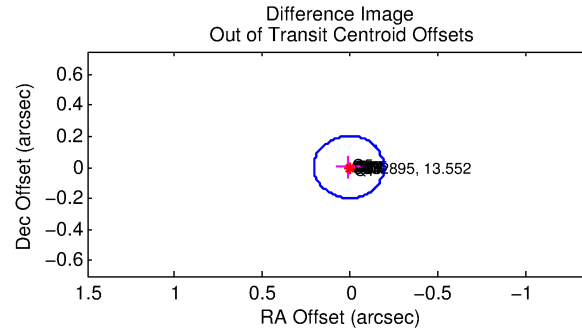
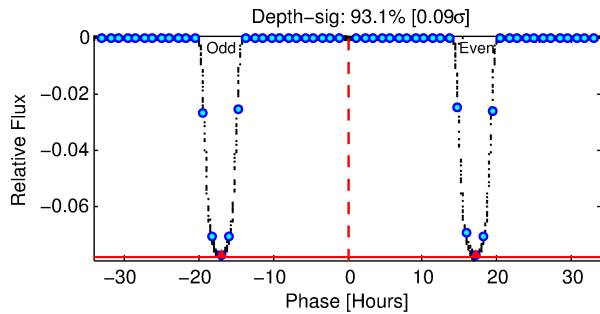
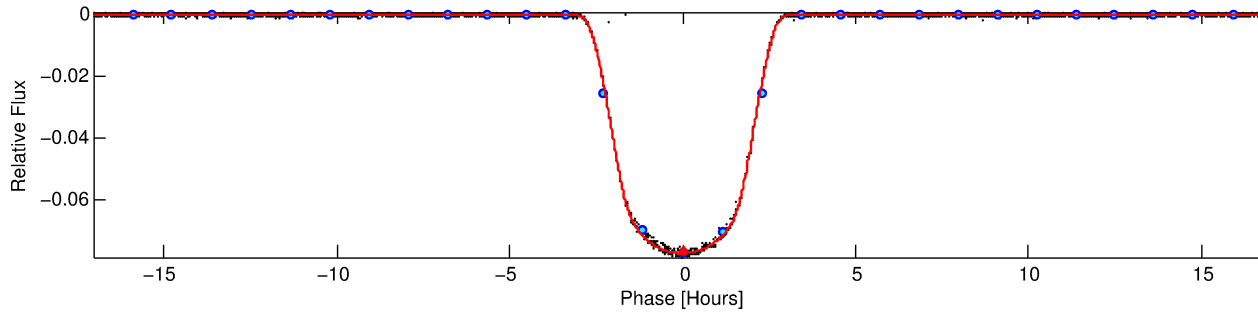
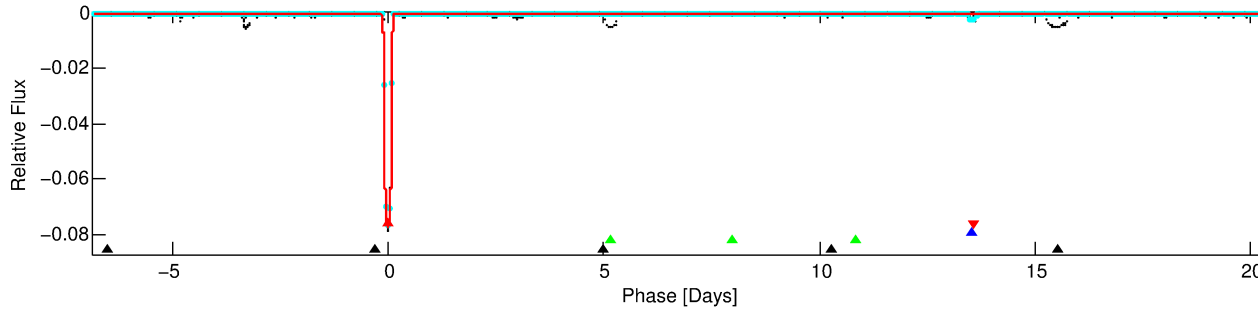
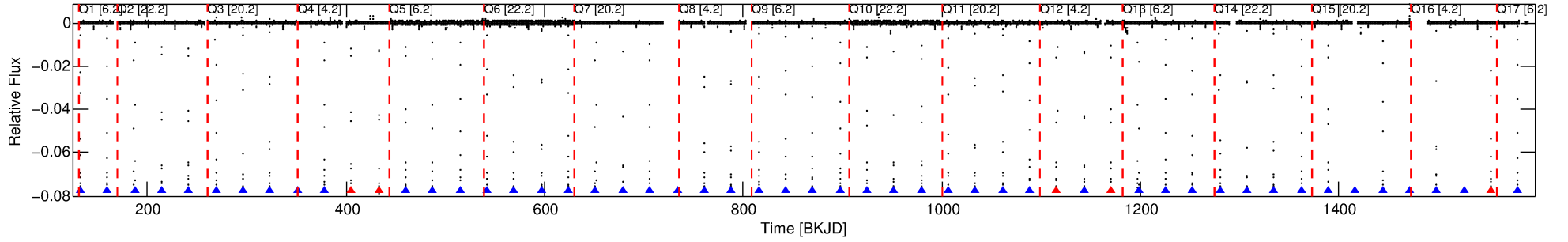
Ephemeris Match Information For 009632895-01

No Significant Match Found

DV One-Page Summary

KIC: 9632895 Candidate: 1 of 4 Period: 27.322 d
KOI: K01451.01 Name: Kepler-453b Corr: 0.996

Kp: 13.55 R*: 0.77 Rs Teff: 5620.0 K Logg: 4.59 Fe/H: -0.360



DV Fit Results:

Period = 27.32204 [0.00000] d
Epoch = 132.4253 [0.0000] BKJD
Rp/R* = 0.2559 [0.0001]
a/R* = 45.10 [0.03]
b = 0.26 [0.00]
Seff = 18.83 [5.19]
Teq = 531 [37] K
Rp = 21.55 [4.72] Re
a = 0.1682 [0.0301] AU
Ag = 87.98 [22.32] [3.90σ]
Teffp = 2515 [68] K [25.60σ]

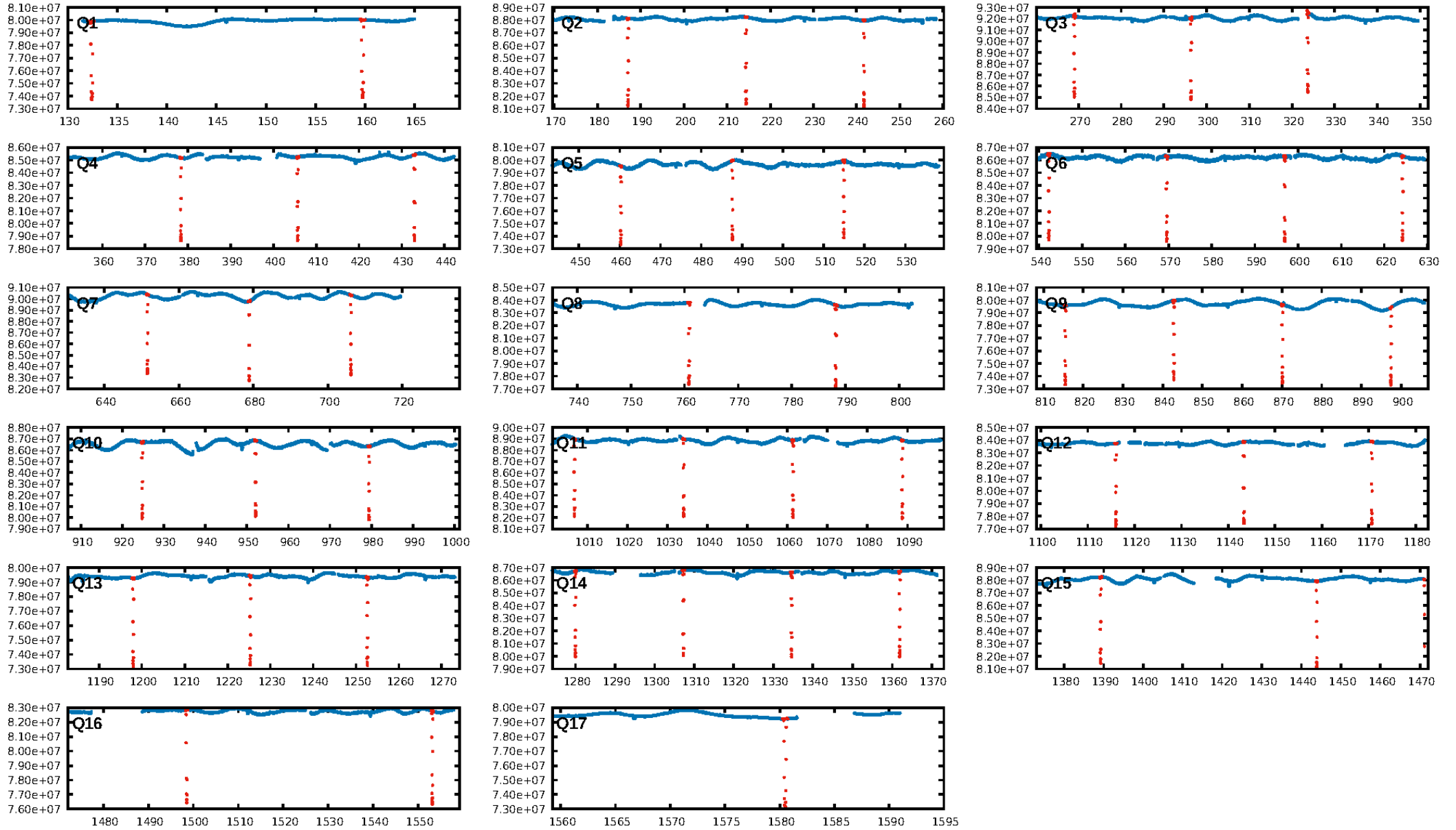
DV Diagnostic Results:

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: 0.89 [42/47]
GhostDiagnostic-chr: 3.453
Centroid-sig: 0.0%
Centroid-so: 0.082 arcsec [44.79σ]
OotOffset-rm: 0.009 arcsec [0.14σ]
KicOffset-rm: 0.051 arcsec [0.72σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

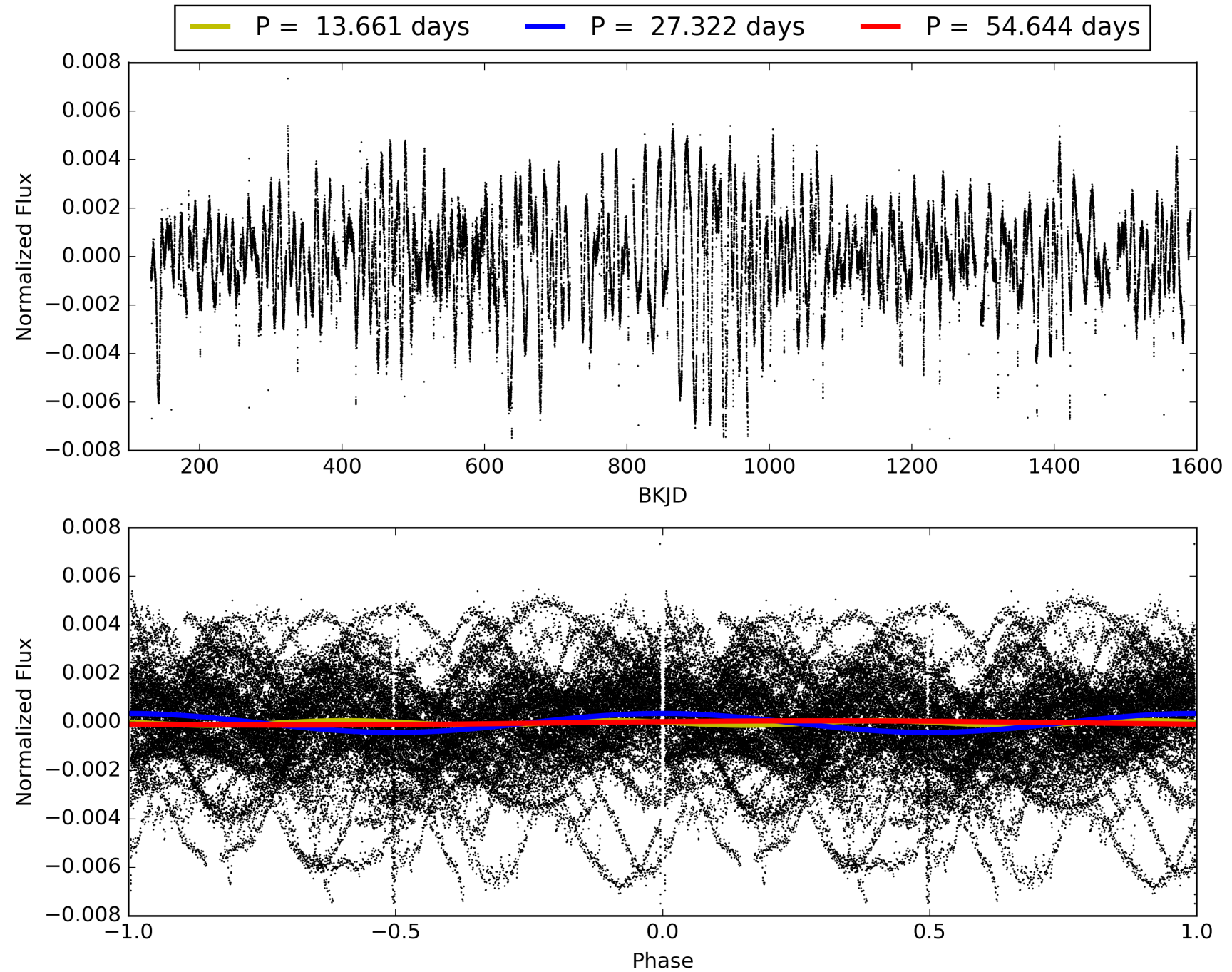
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:05:00 Z

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

TCE 009632895-01, PDC Light Curves

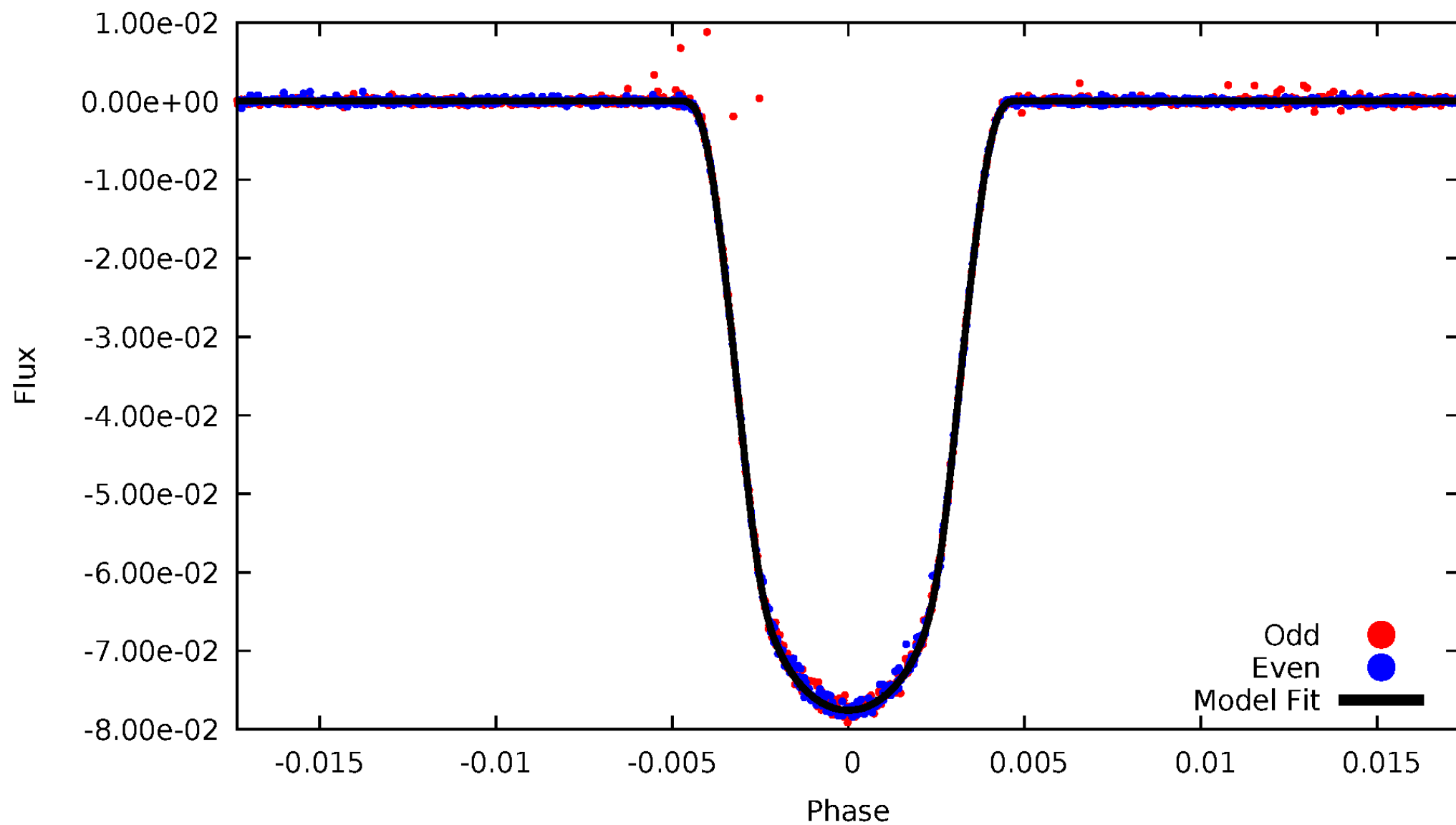


TCE 009632895-01



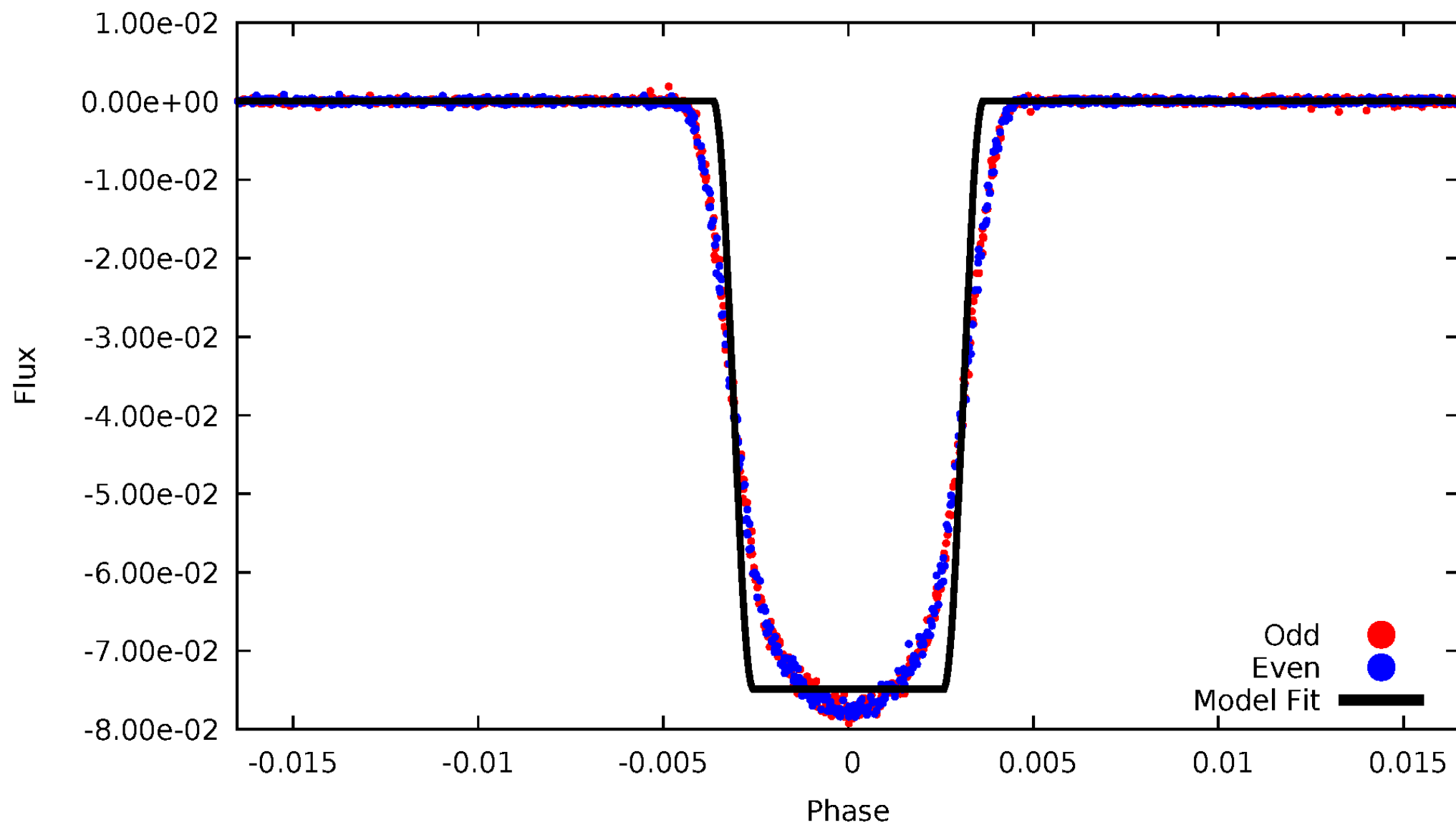
DV Odd/Even

TCE 009632895-01



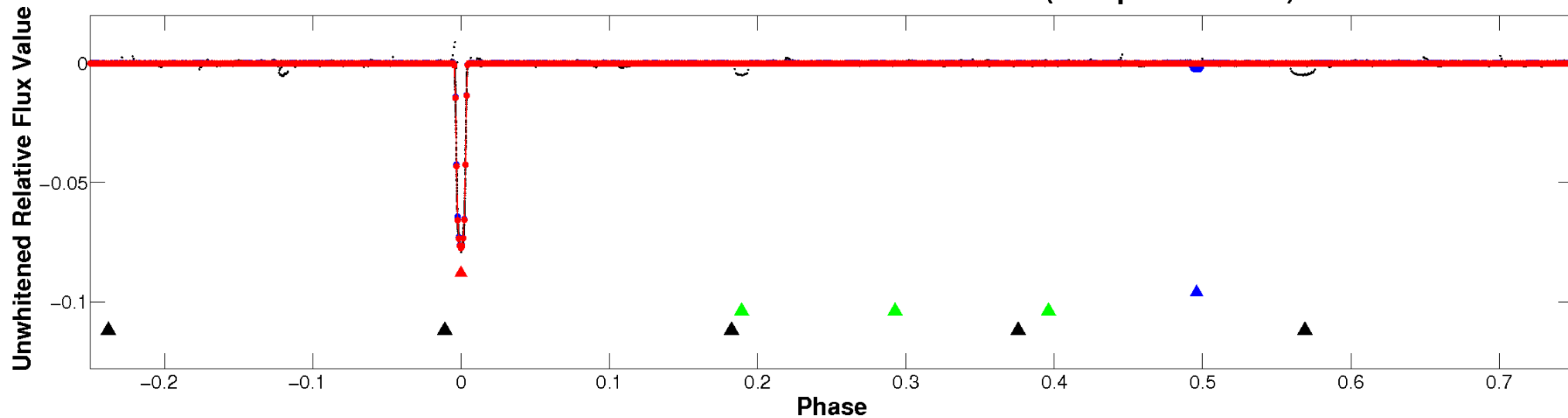
ALT Odd/Even

TCE 009632895-01

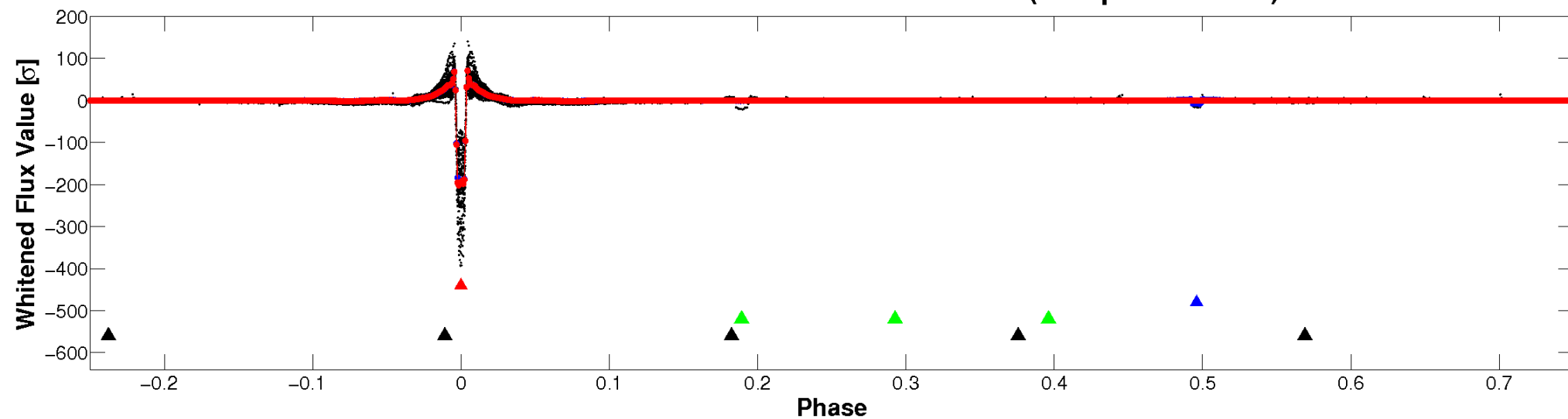


Non-Whitened Vs. Whitened Light Curve

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

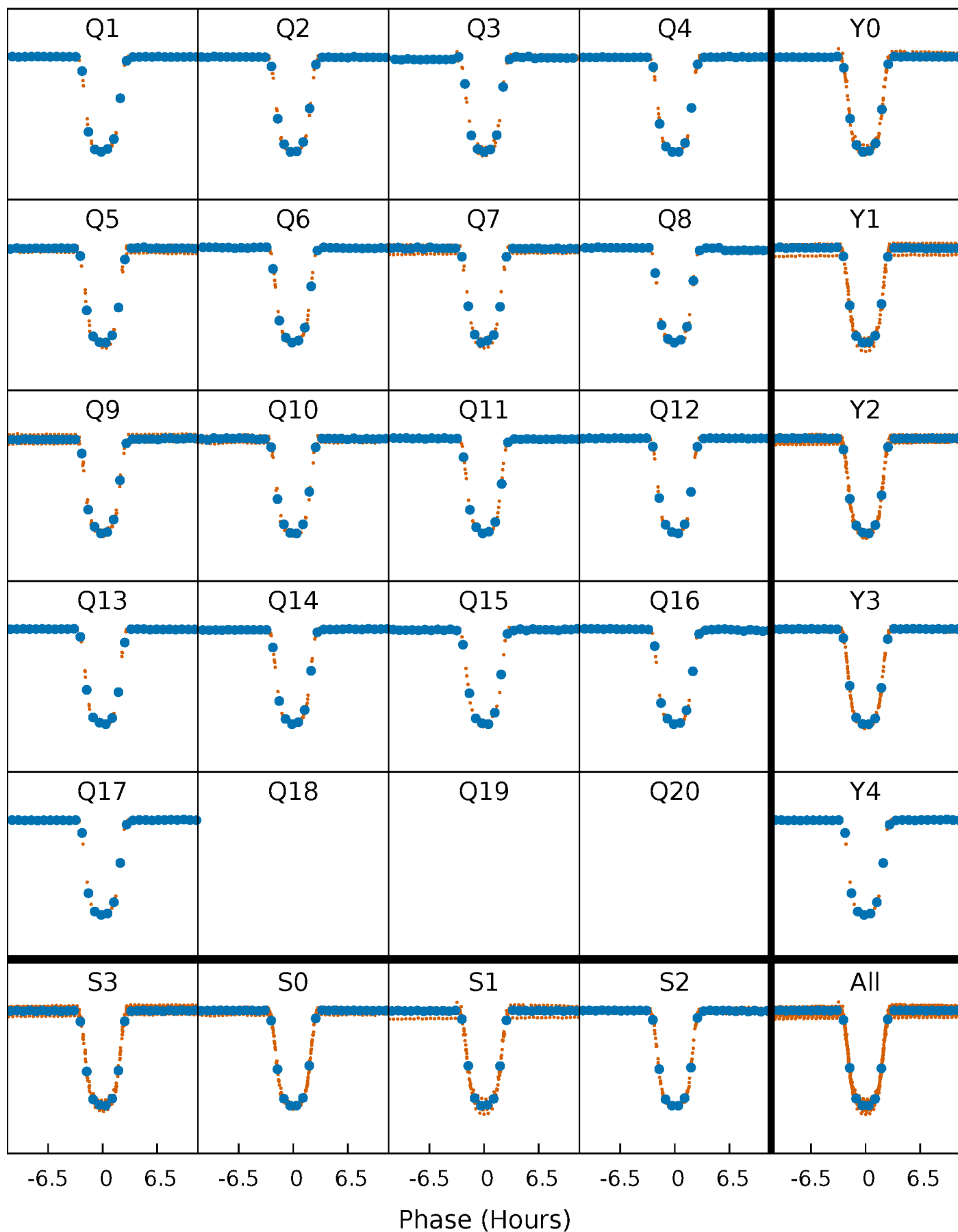


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



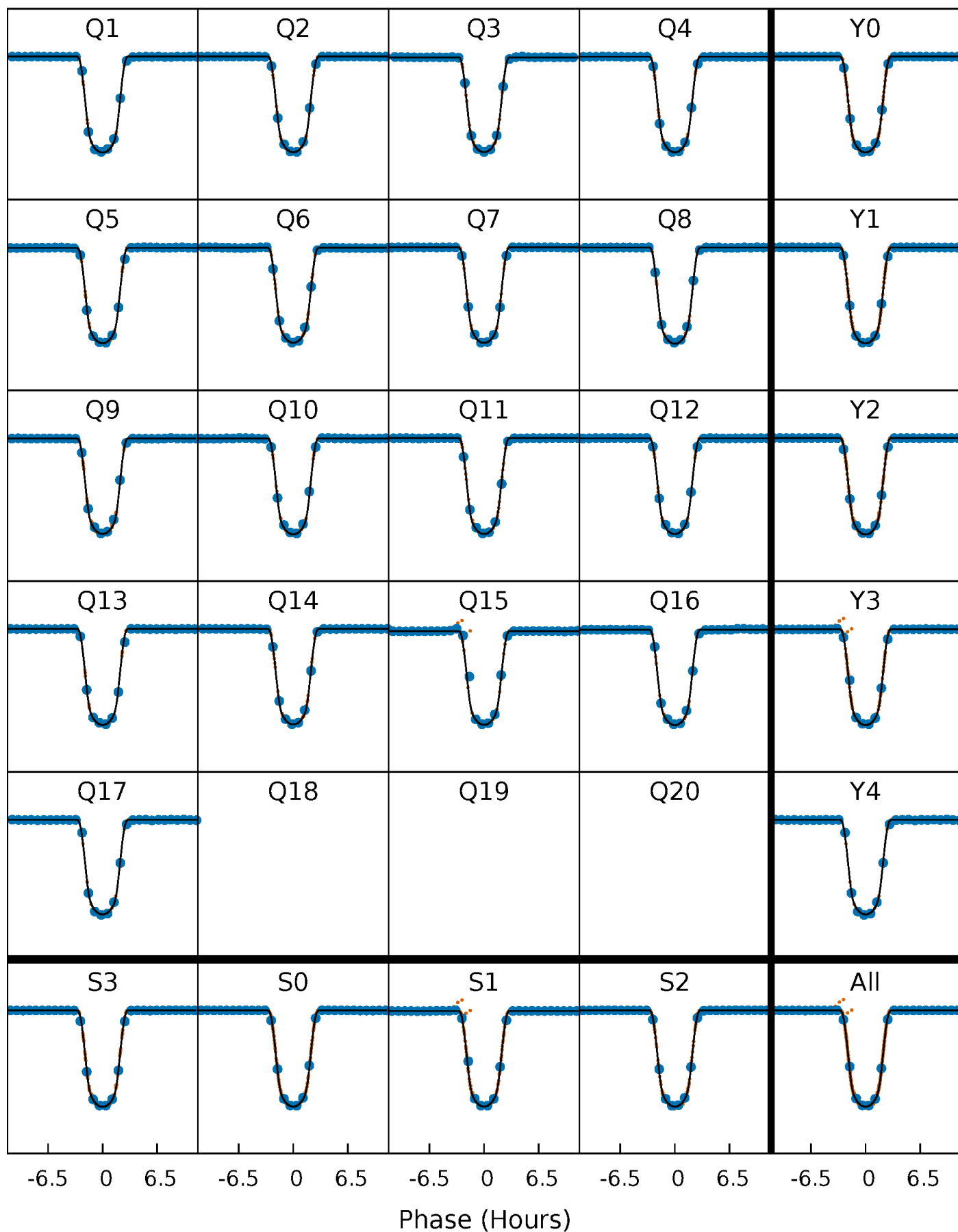
PDC Quarter-Phased Transit Curves

TCE 009632895-01 P= 27.322043 Days $T_0=132.425263$ (BKJD)



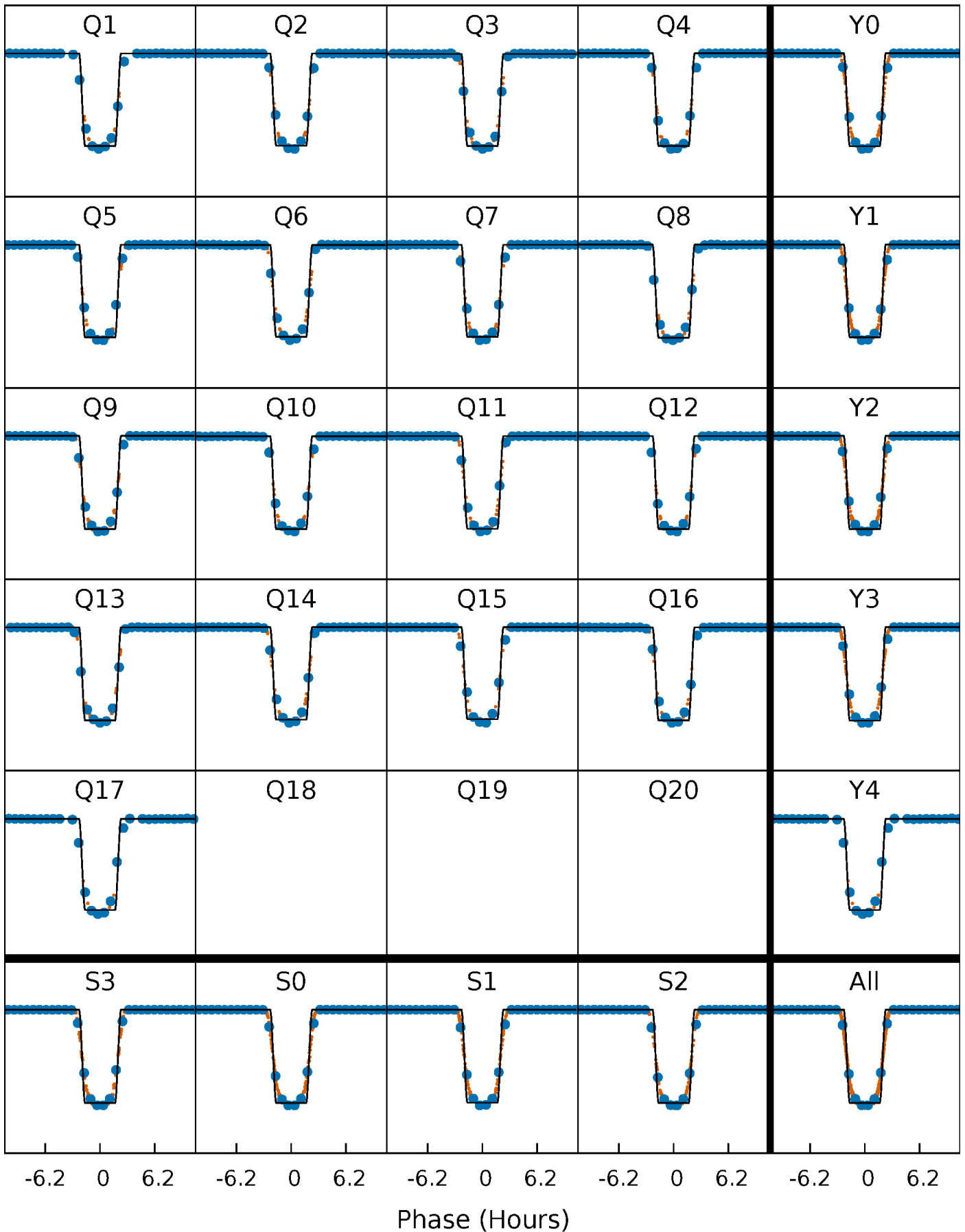
DV Quarter-Phased Transit Curves

TCE 009632895-01 P= 27.322043 Days $T_0=132.425263$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

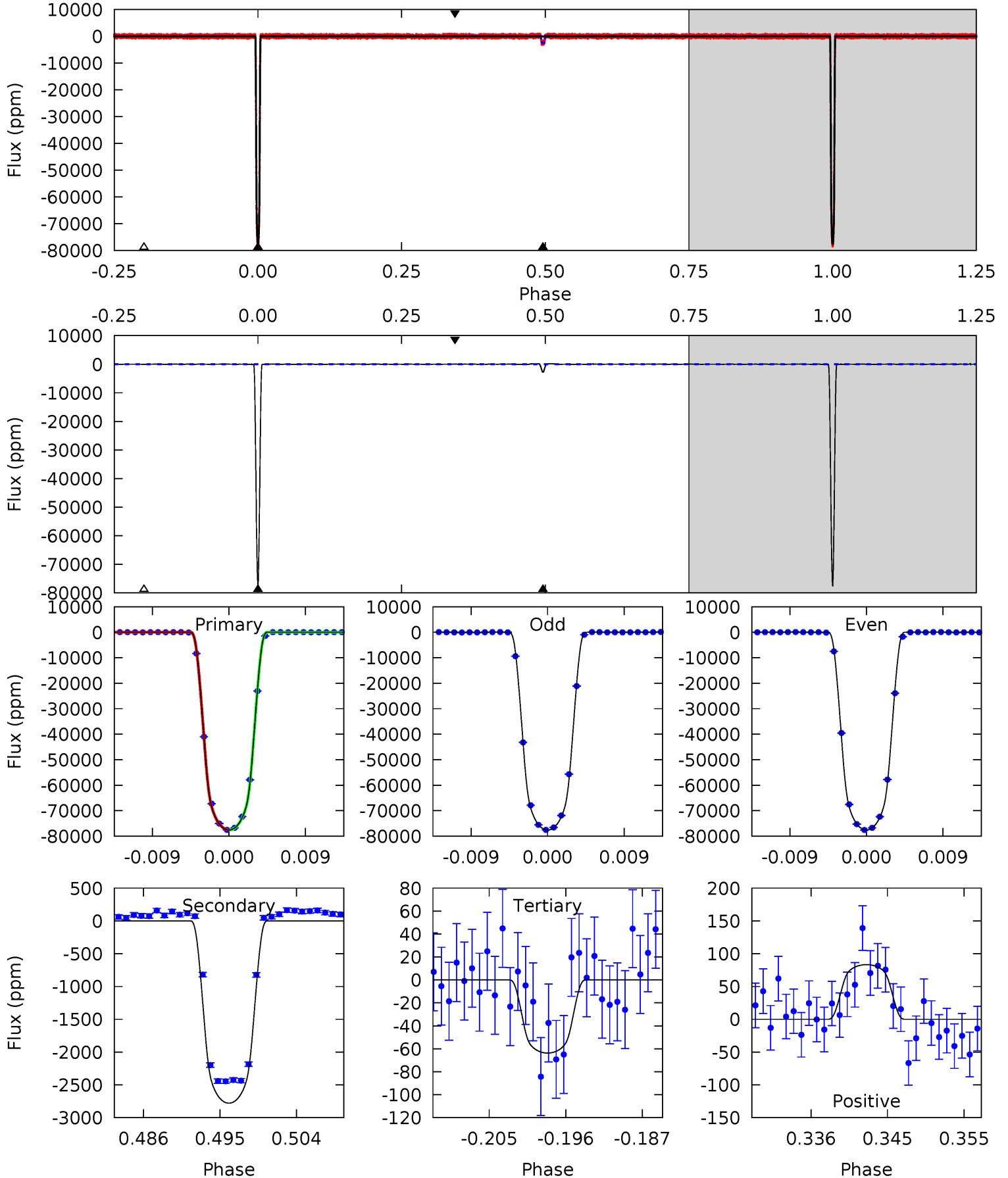
TCE 009632895-01 P= 27.322113 Days $T_0=132.423441$ (BKJD)



DV Model-Shift Uniqueness Test

009632895-01, P = 27.322043 Days, E = 105.103220 Days

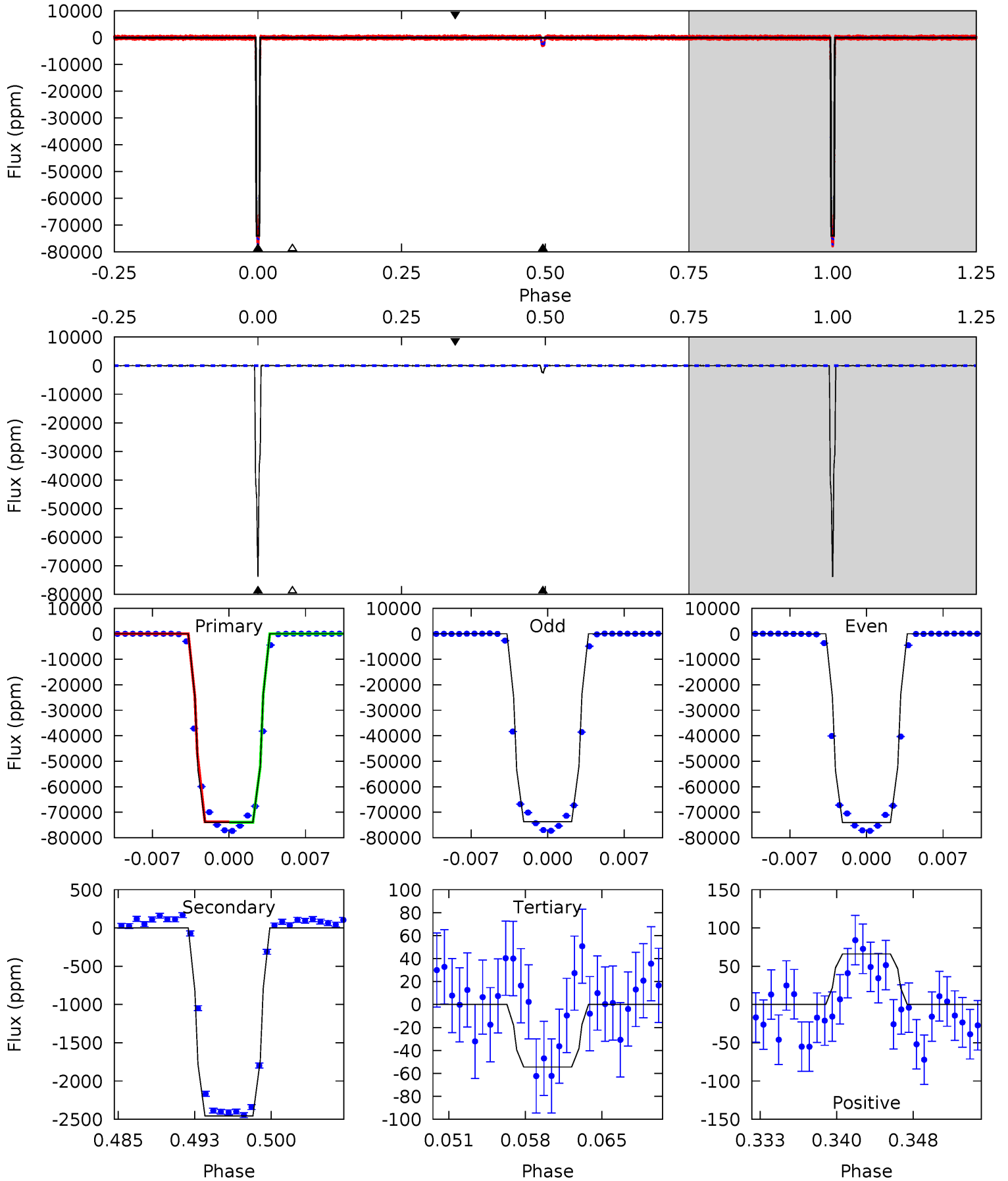
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7444	266.8	6.12	7.99	5.04	2.60	2.84	7438	7436	260.6	258.8	2.13	0.98	0.00	4.23



Alt Model-Shift Uniqueness Test

009632895-01, P = 27.322113 Days, E = 105.101328 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5187	172.4	3.82	4.64	5.09	2.69	1.36	5183	5182	168.6	167.8	11.0	1.00	0.00	4.30



Stellar Parameters For KIC 009632895

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5620^{+152}_{-152}	$4.592^{+0.036}_{-0.135}$	$-0.360^{+0.300}_{-0.300}$	$0.772^{+0.169}_{-0.068}$	$0.863^{+0.078}_{-0.097}$	$2.643^{+0.474}_{-1.028}$
	+3%/-3%	+1%/-3%	+83%/-83%	+22%/-9%	+9%/-11%	+18%/-39%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009632895-01 / KOI 1451.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2779 ± 10	$22.07^{+2.34}_{-1.34}$	755^{+38}_{-29}	3155^{+56}_{-53}	89^{+9}_{-14}
Alt.	-2457 ± 14	$23.67^{+2.67}_{-1.53}$	755^{+37}_{-31}	3036^{+52}_{-49}	68^{+7}_{-12}

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 $A_{obs} \gg 1.0$

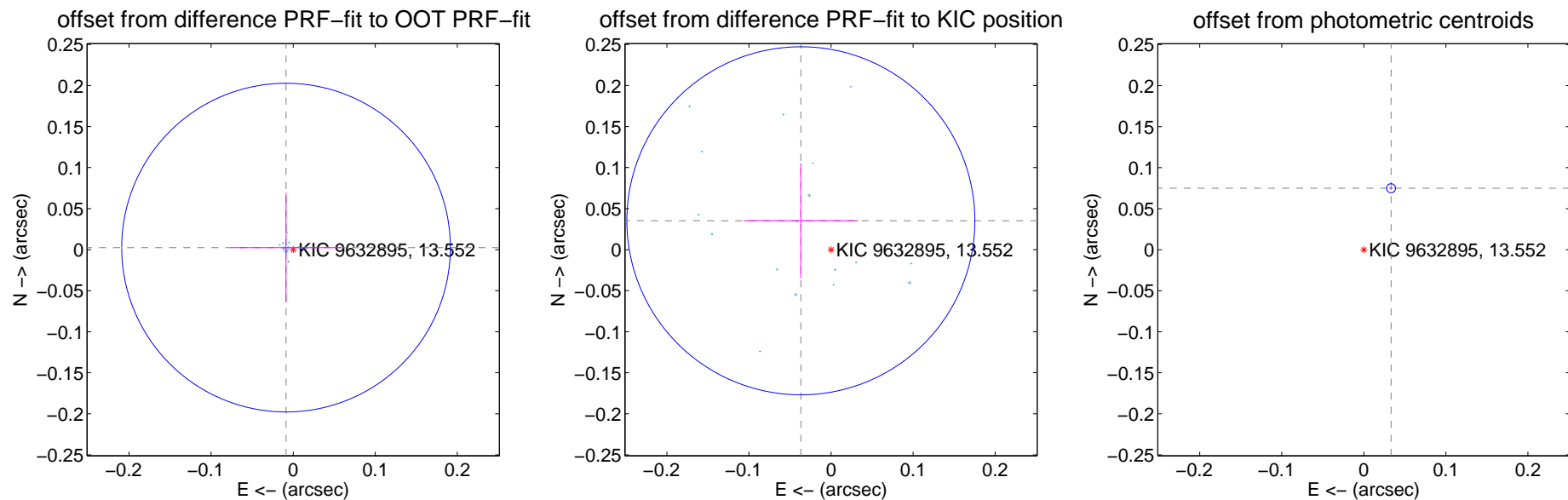
DV Centroid Data

Supplemental centroid analysis for 009632895-01. Kepler magnitude: 13.55. Transit SNR 3318.48

There are 17 quarters with good PRF difference image offsets

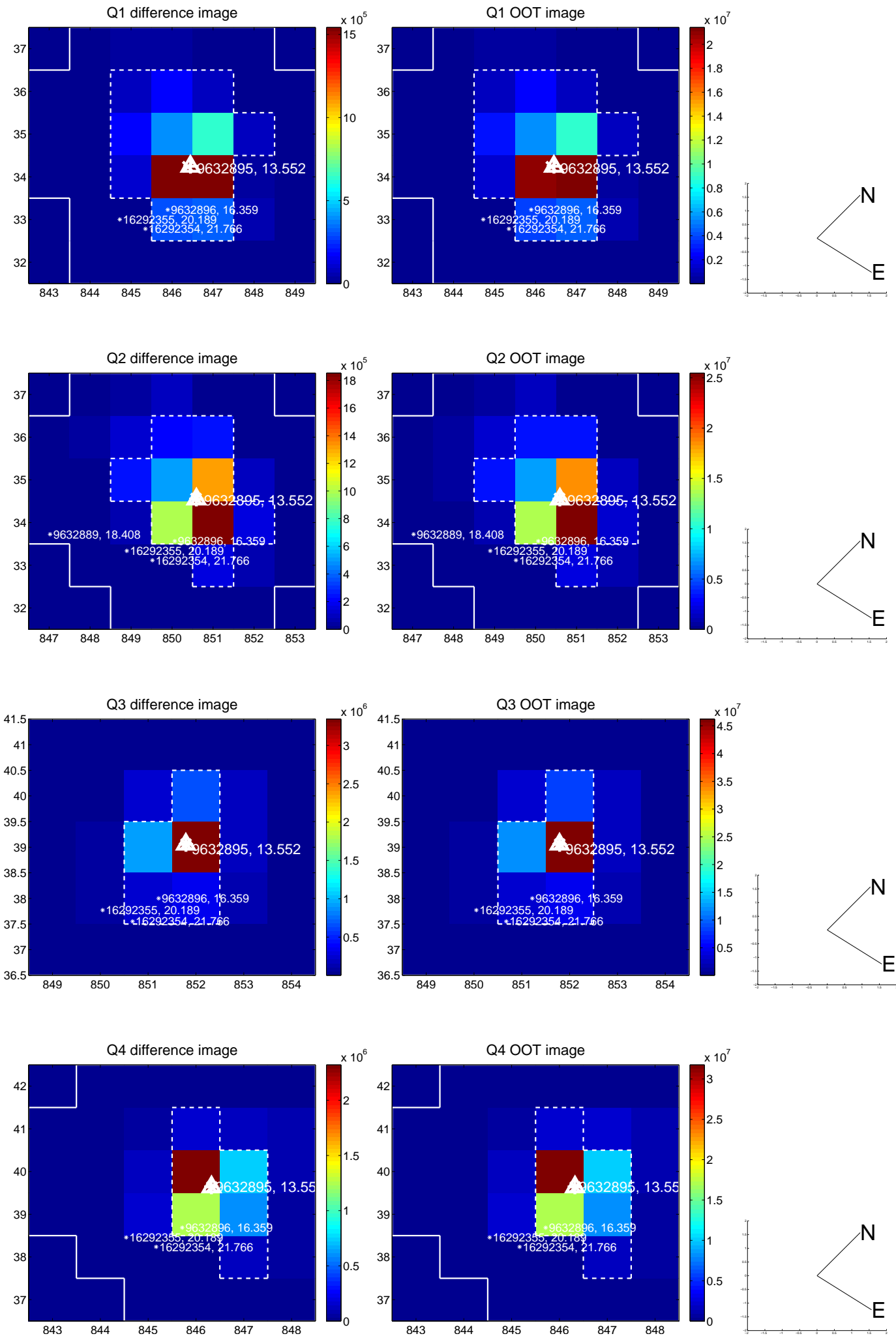
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.009 ± 0.067	0.14	0.009 ± 0.067	0.002 ± 0.067
PRF-fit source offset from KIC position	0.051 ± 0.071	0.72	0.037 ± 0.070	0.035 ± 0.070
photometric centroid source offset	0.08 ± 0.00	44.79	-0.03 ± 0.00	0.07 ± 0.00

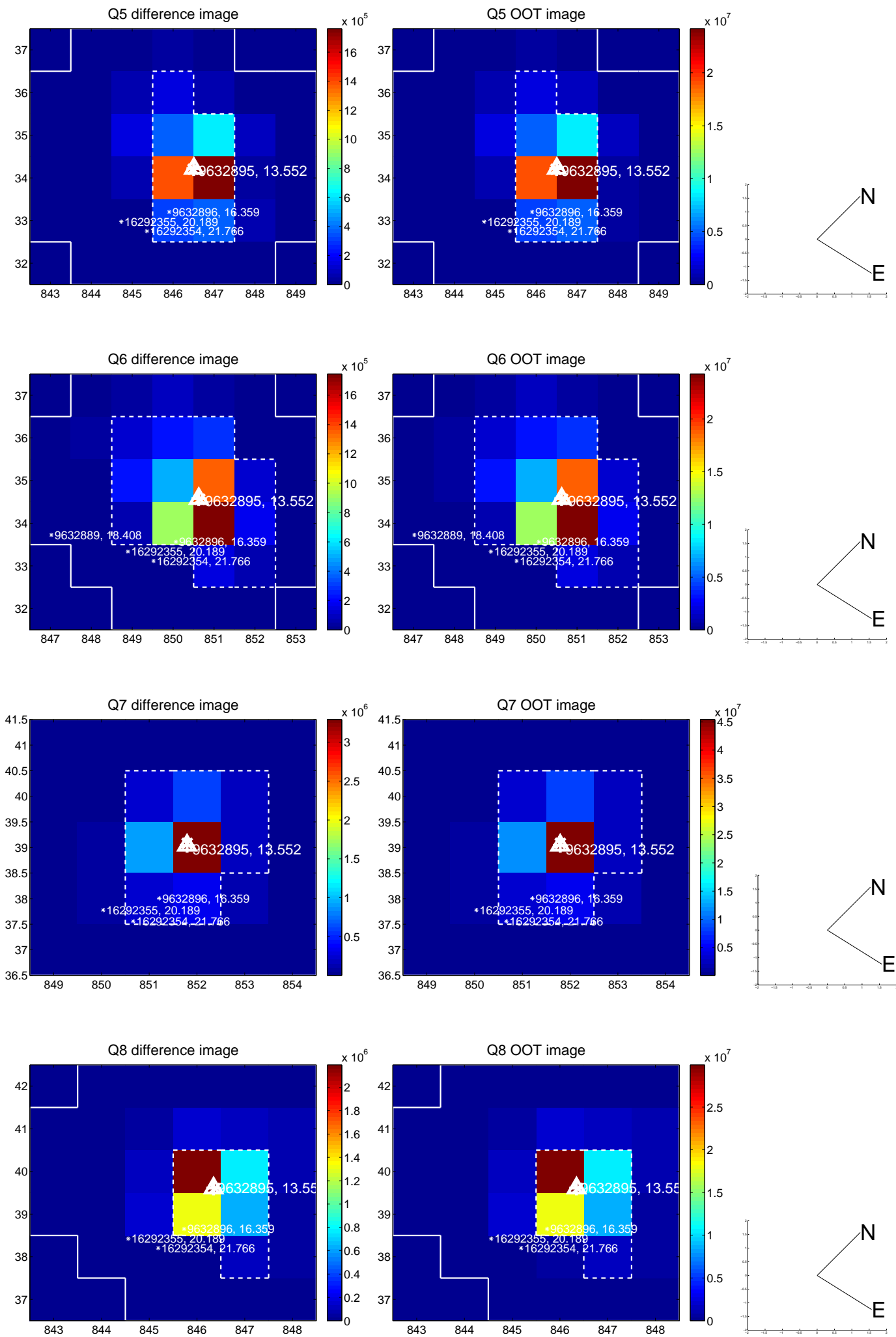


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

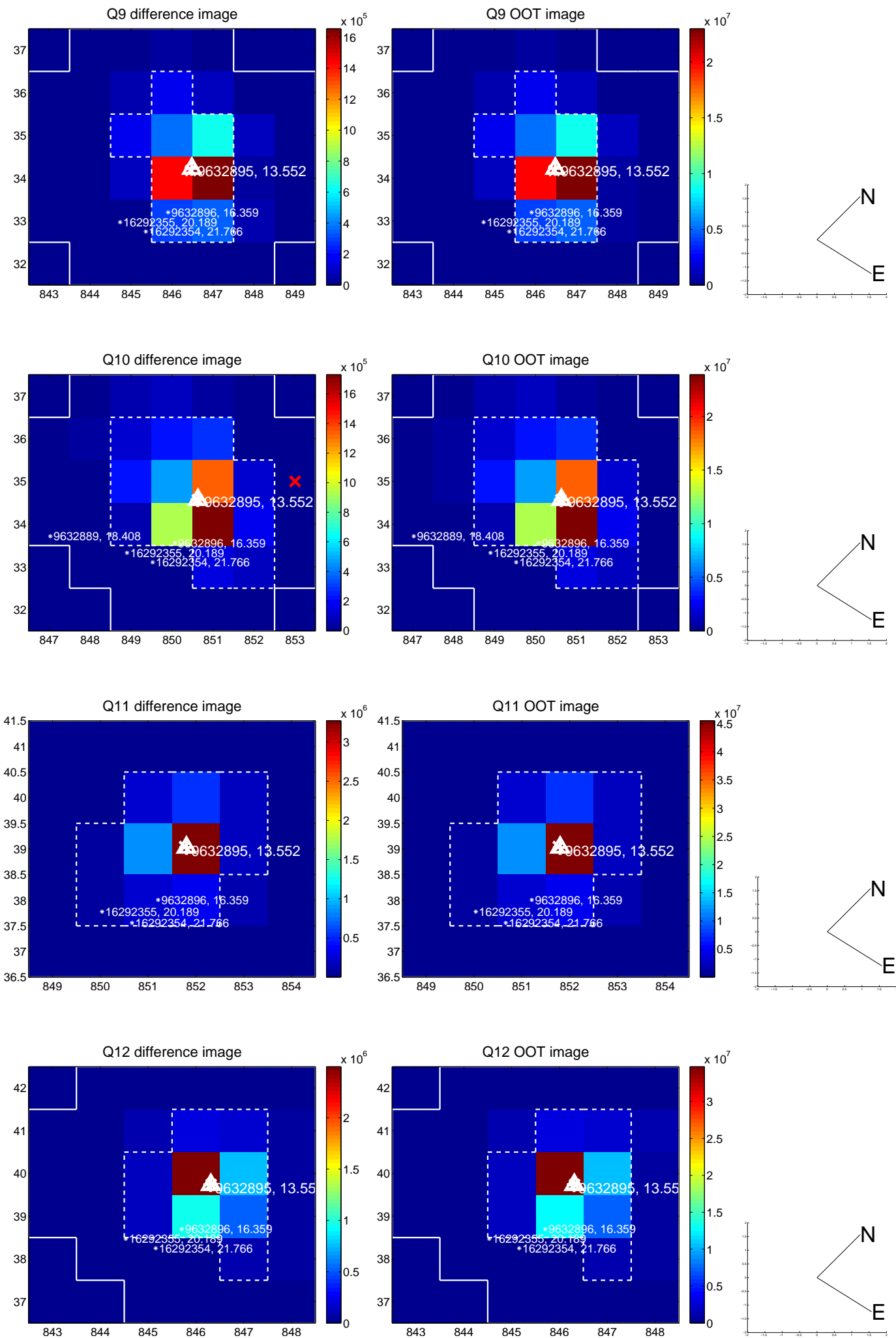
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



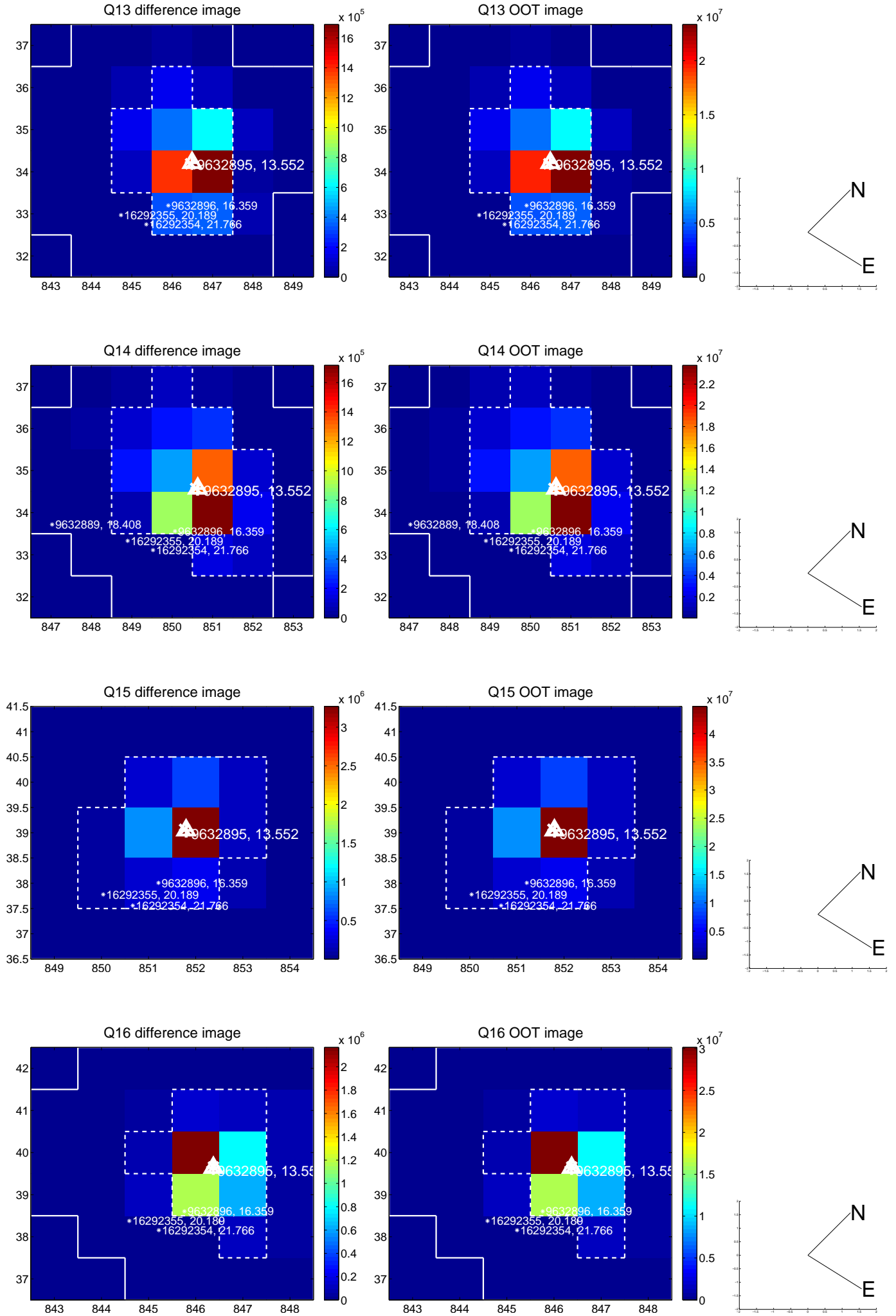
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



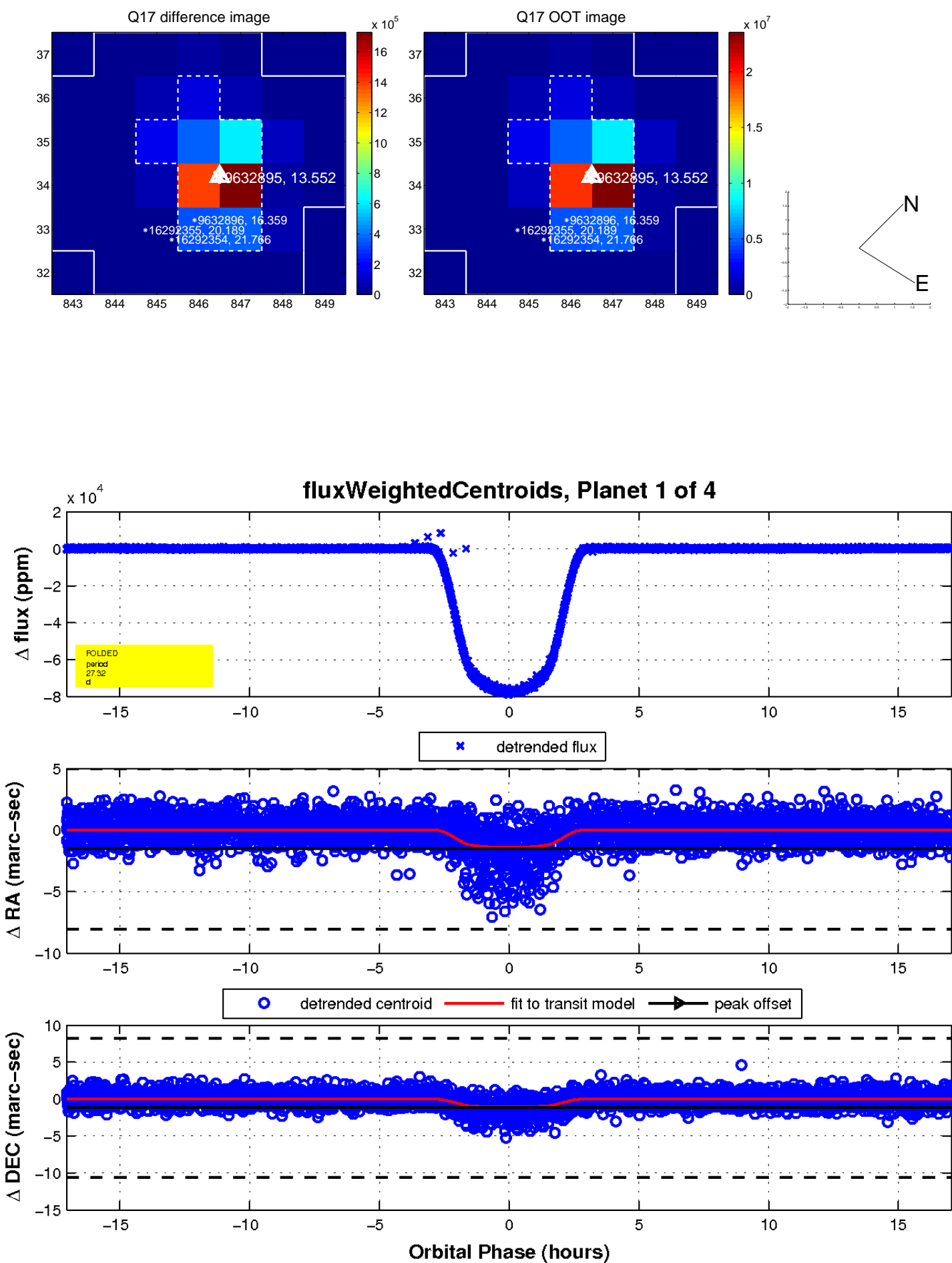
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

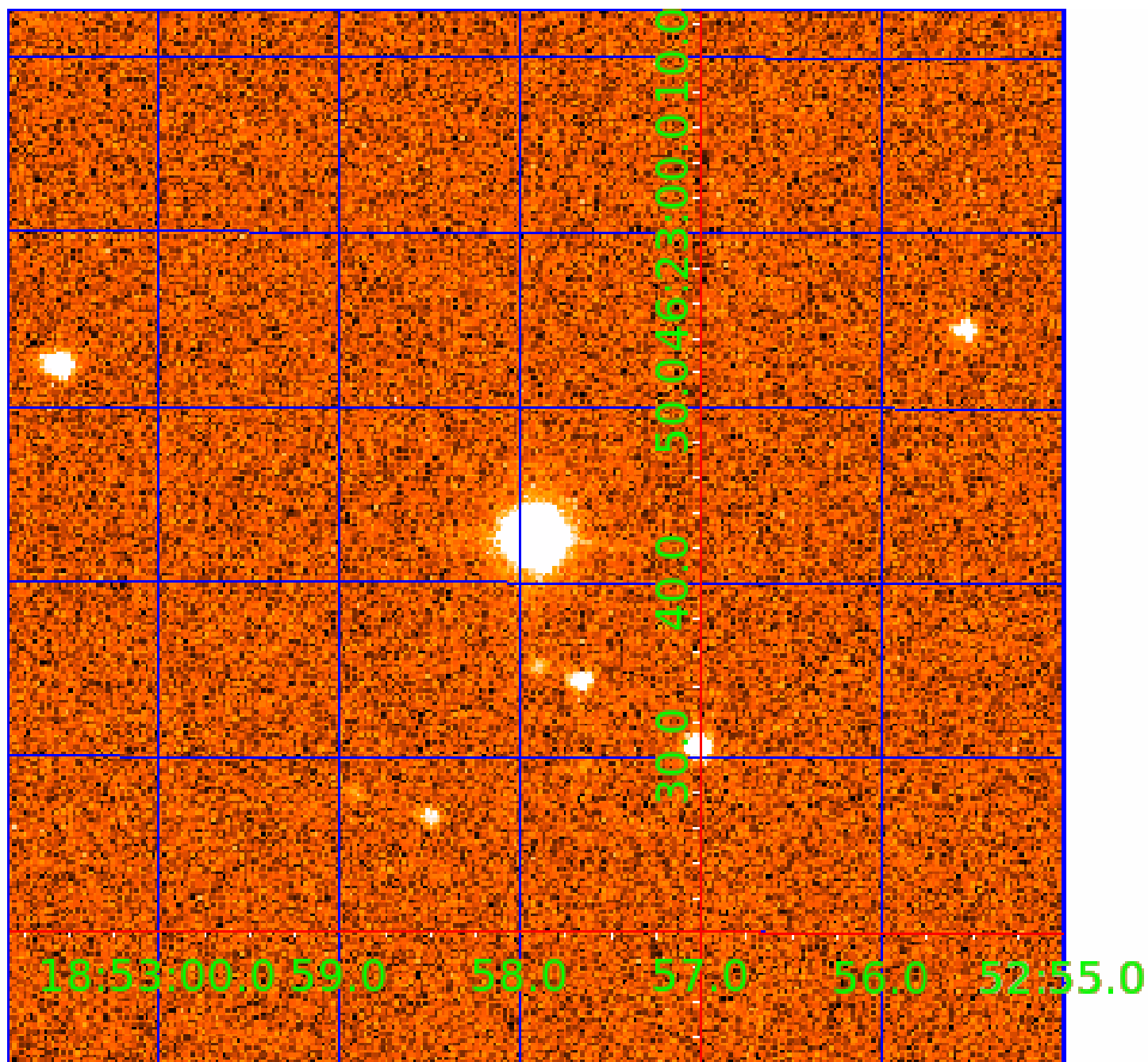


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009632895

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})
009632895-01	OBS	1451.01	27.322043	132.425263	77586.8	5.683	4301.1	3318.5	0.77	5620	21.55	18.83
009632895-02	OBS	No	27.322047	145.977392	2646.0	5.031	150.9	144.9	0.77	5620	4.53	18.83
009632895-03	OBS	No	434.326077	553.079358	4917.4	7.162	64.5	64.0	0.77	5620	5.86	0.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009632895-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
009632895-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
009632895-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

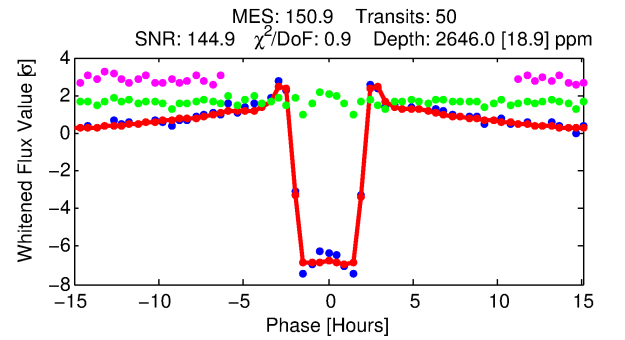
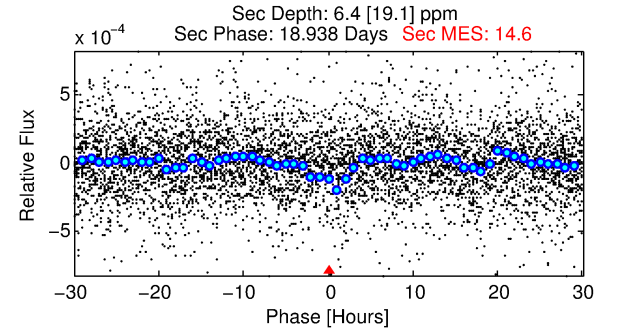
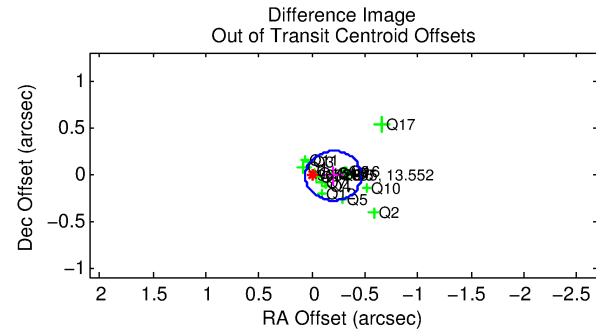
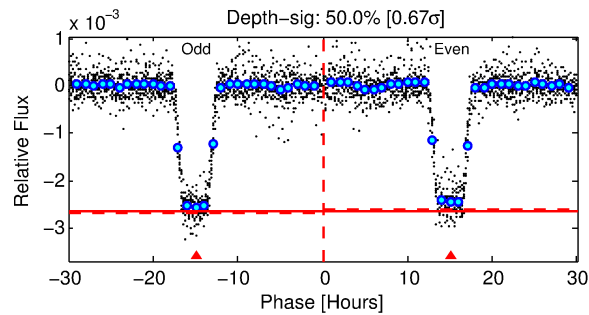
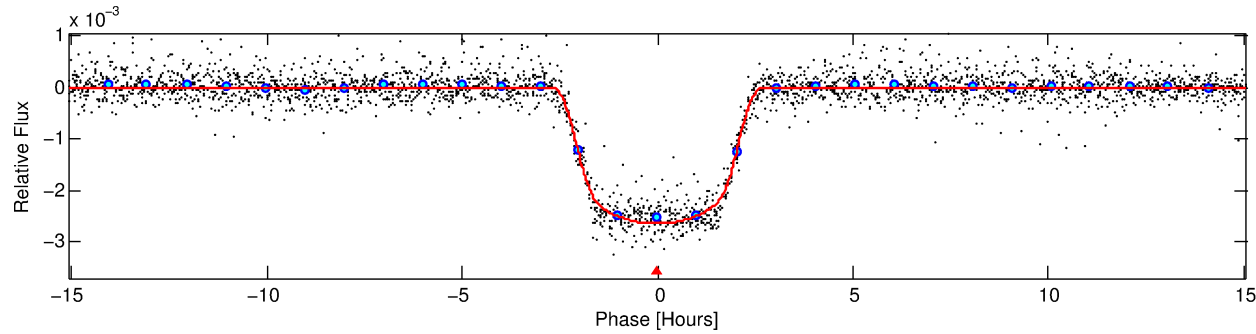
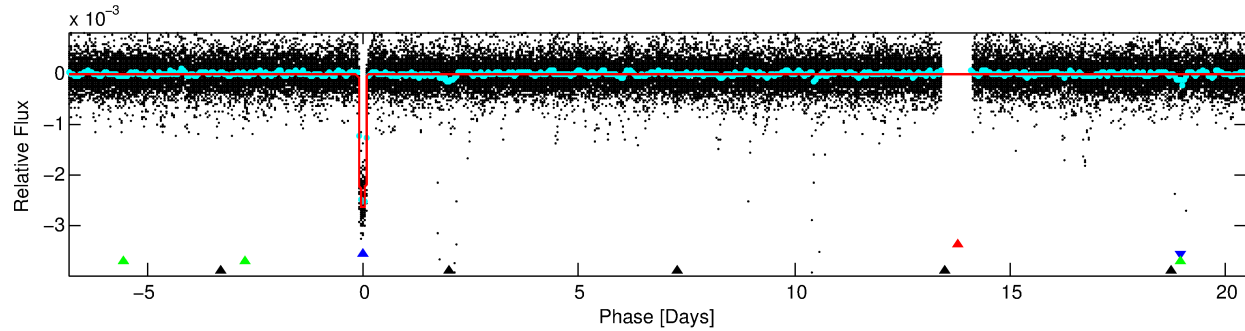
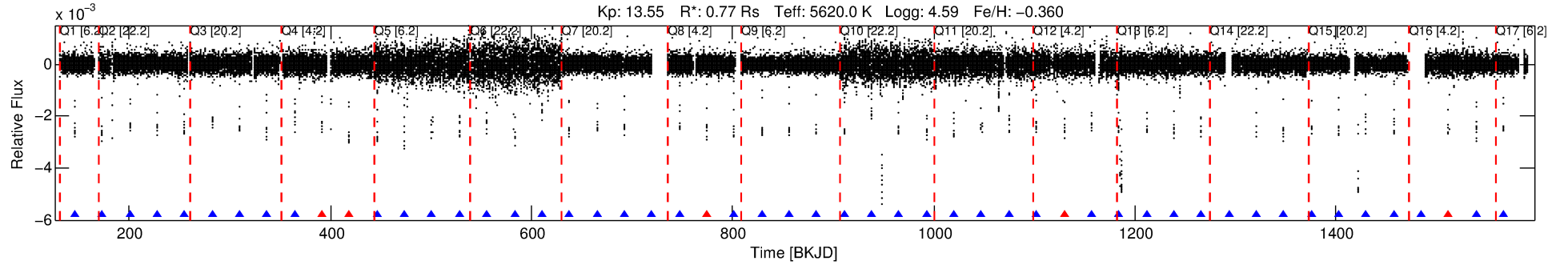
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009632895-02

No Significant Match Found

DV One-Page Summary

KIC: 9632895 Candidate: 2 of 4 Period: 27.322 d
KOI: K01451 Name: Kepler-453 Corr: No Ephemeris Match



DV Fit Results:

Period = 27.32205 [0.00002] d
Epoch = 145.9774 [0.0005] BKJD
Rp/R* = 0.0537 [0.0004]
a/R* = 26.12 [0.57]
b = 0.85 [0.01]
Seff = 18.83 [5.19]
Teq = 531 [37] K
Rp = 4.53 [0.99] Re
a = 0.1682 [0.0301] AU
Ag = 4.83 [14.54] [0.26 σ]
Teffp = 1217 [914] K [0.75 σ]

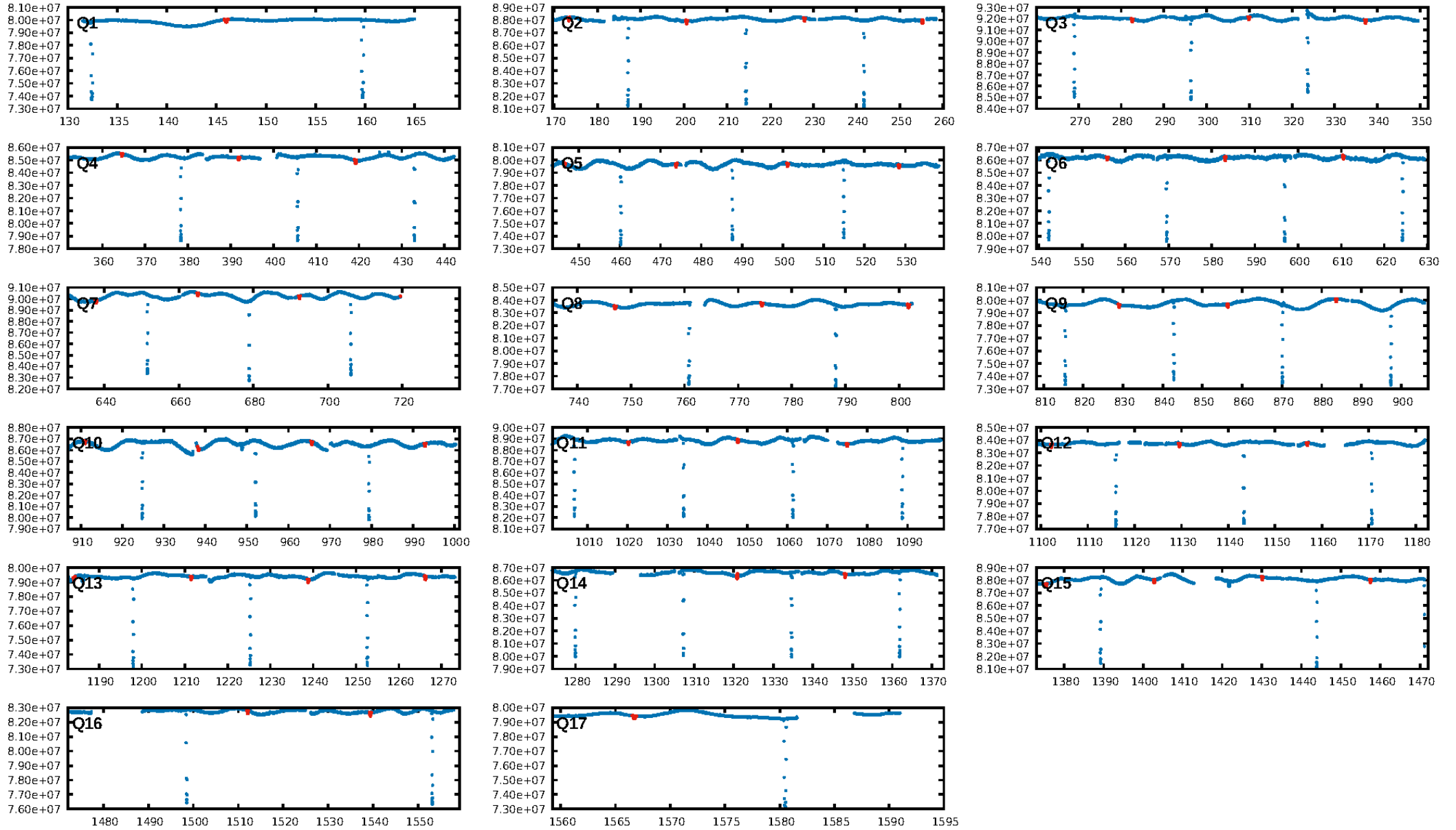
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: 100.0% [401.02 σ]
ModelChiSquare2-sig: 62.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.90 [43/48]
GhostDiagnostic-chr: 3.754
Centroid-sig: 0.1%
Centroid-so: 0.211 arcsec [3.53 σ]
OotOffset-rm: 0.203 arcsec [2.31 σ]
KicOffset-rm: 0.181 arcsec [1.97 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

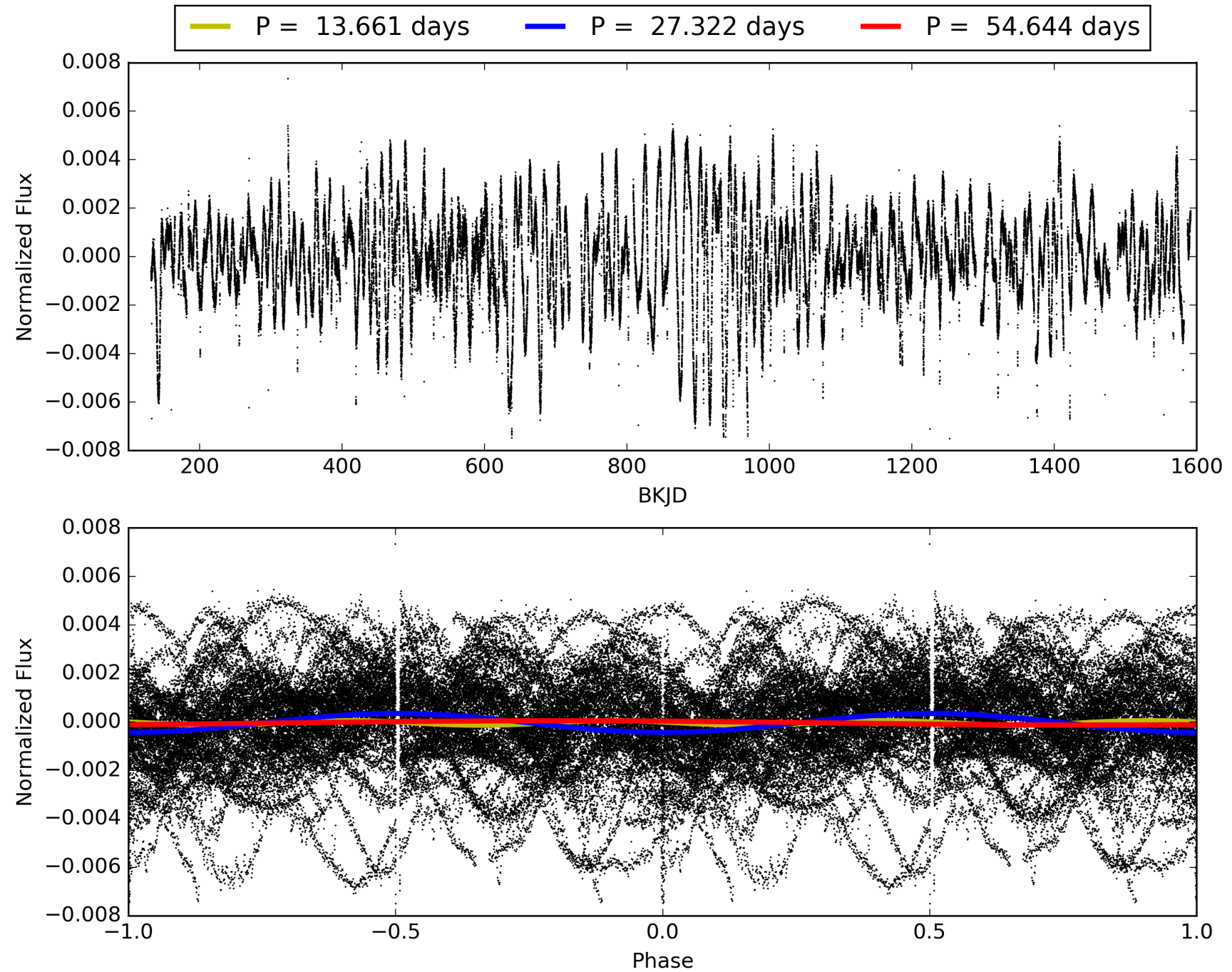
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:05:04 Z

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

TCE 009632895-02, PDC Light Curves

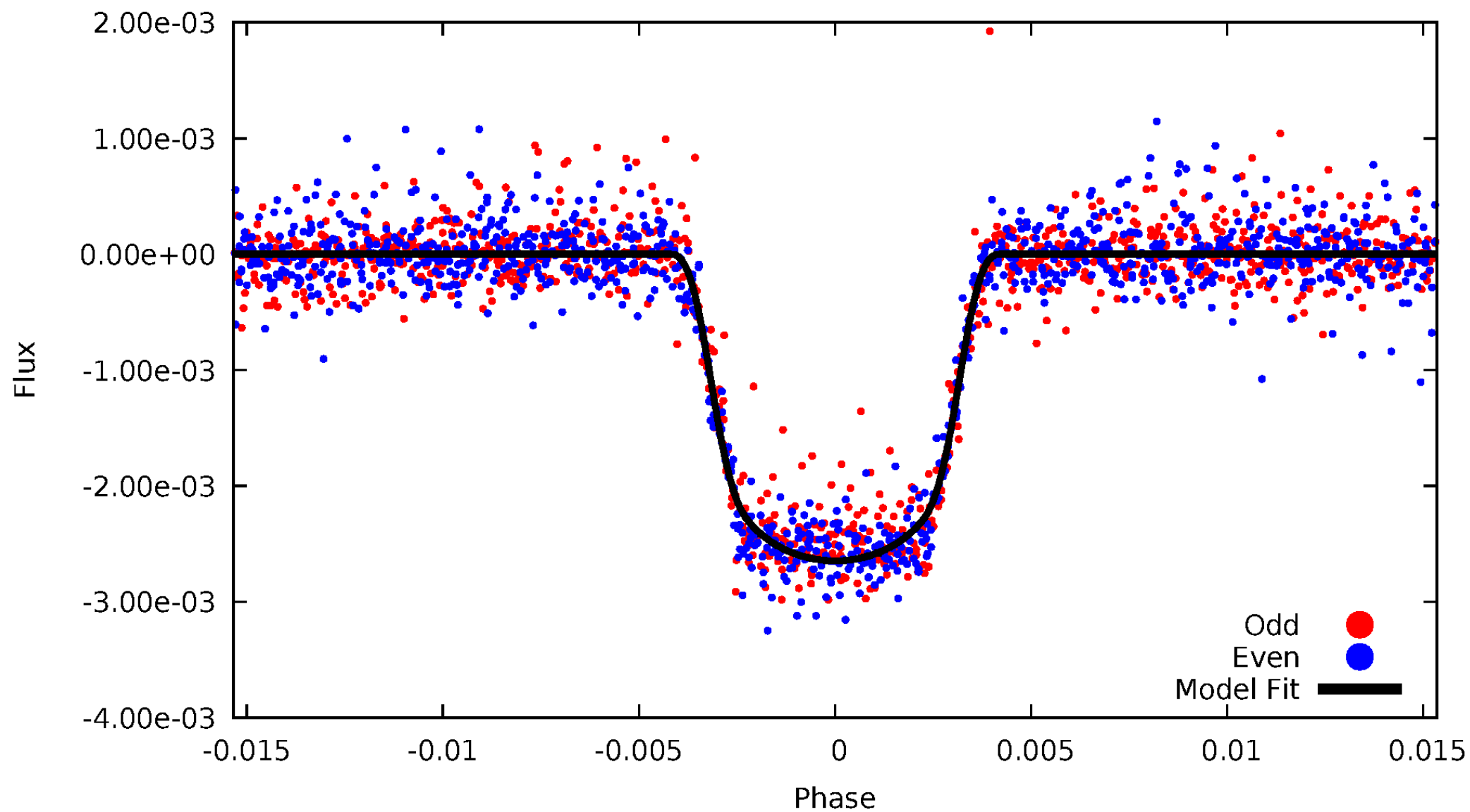


TCE 009632895-02



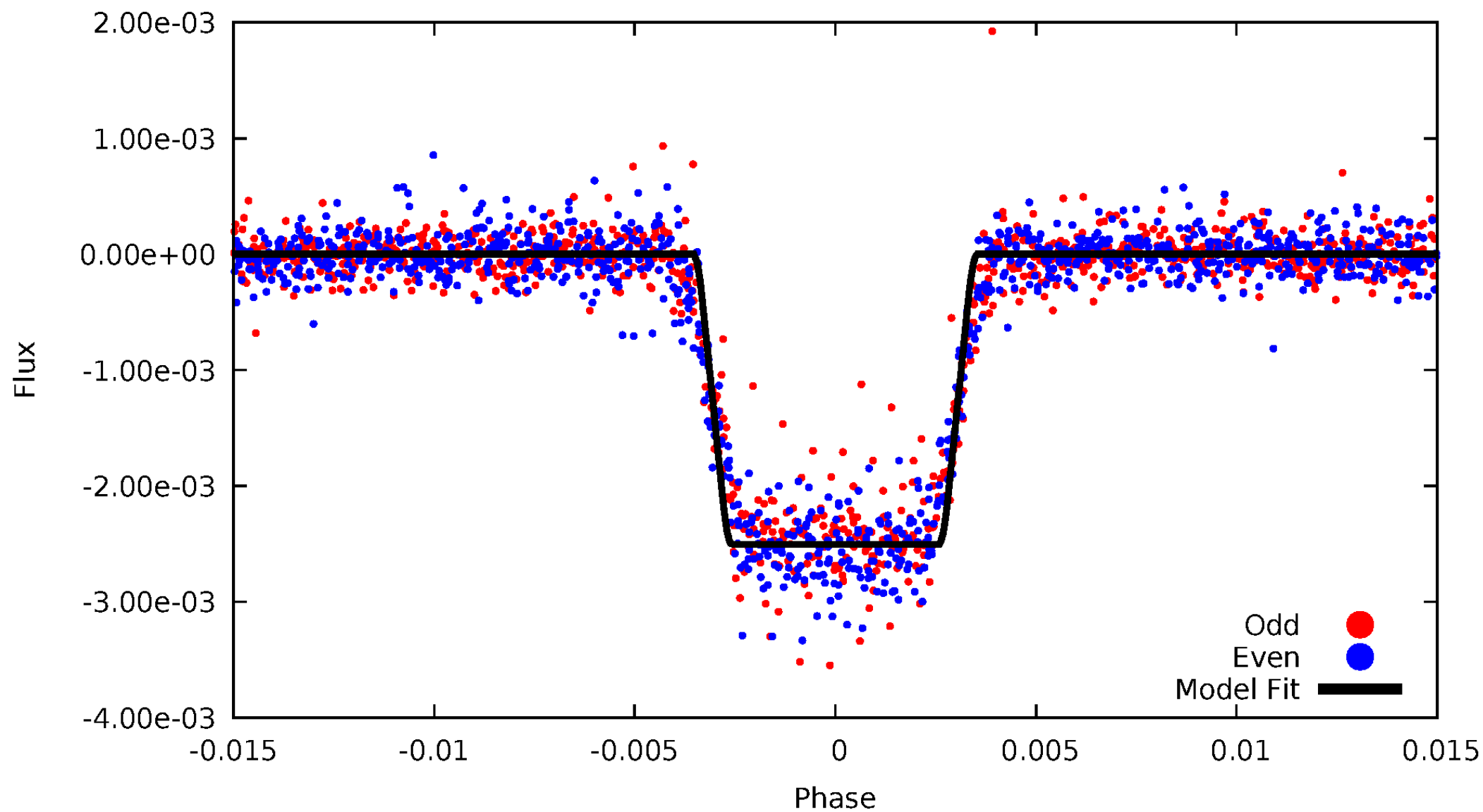
DV Odd/Even

TCE 009632895-02



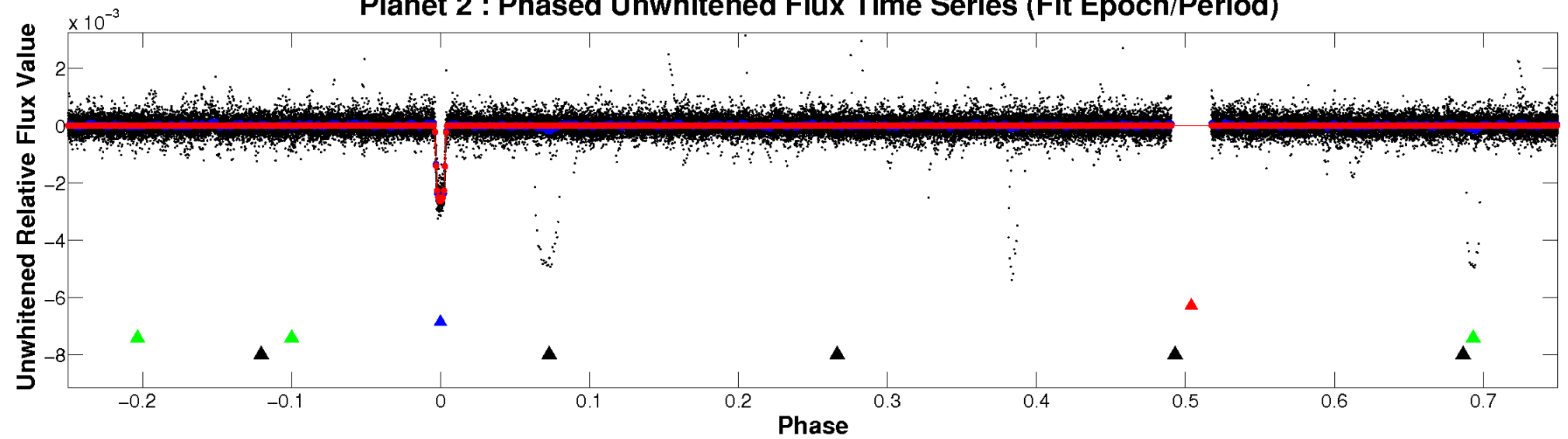
ALT Odd/Even

TCE 009632895-02

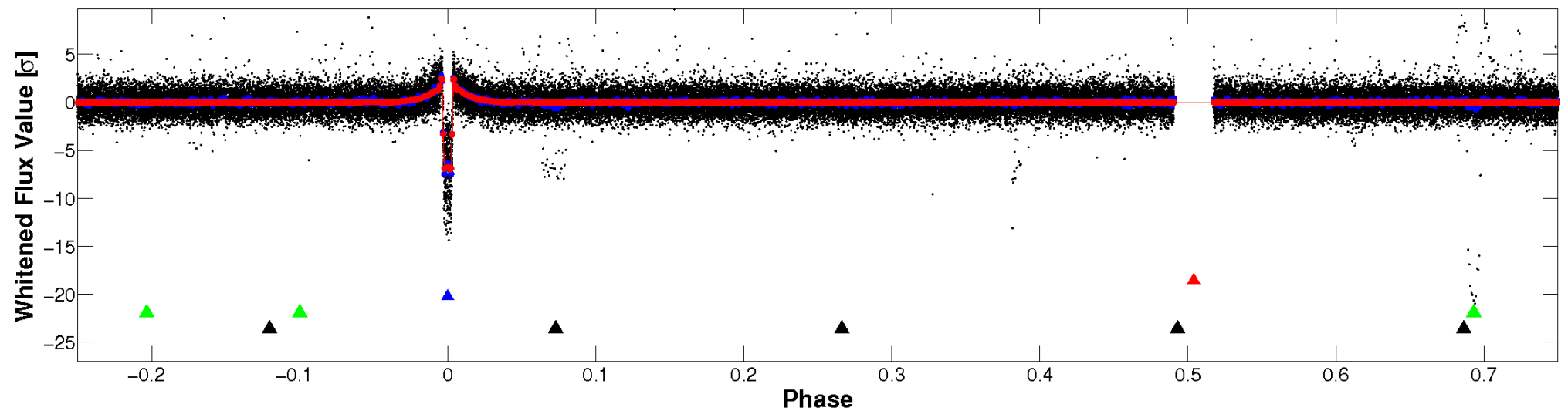


Non-Whitened Vs. Whitened Light Curve

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

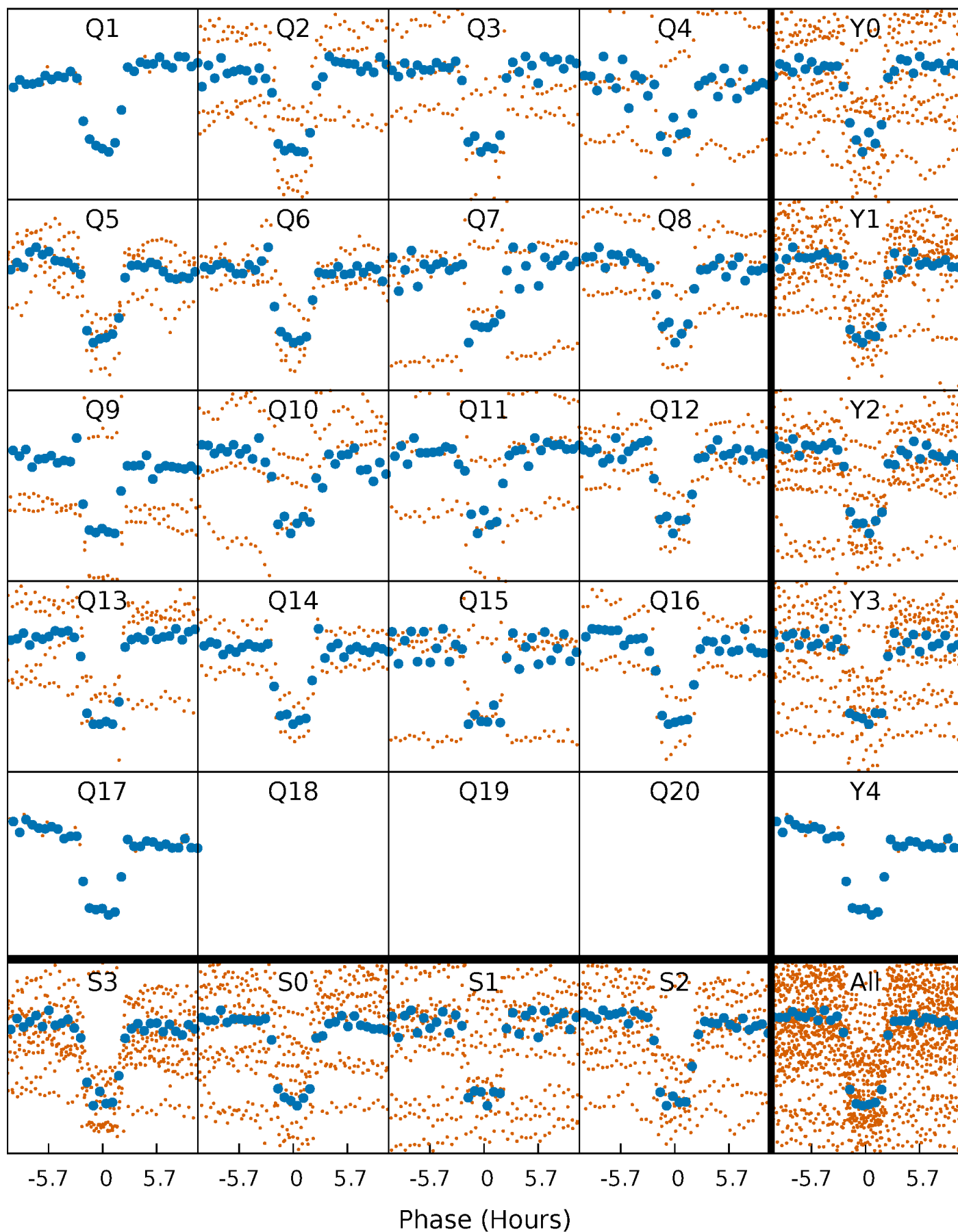


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



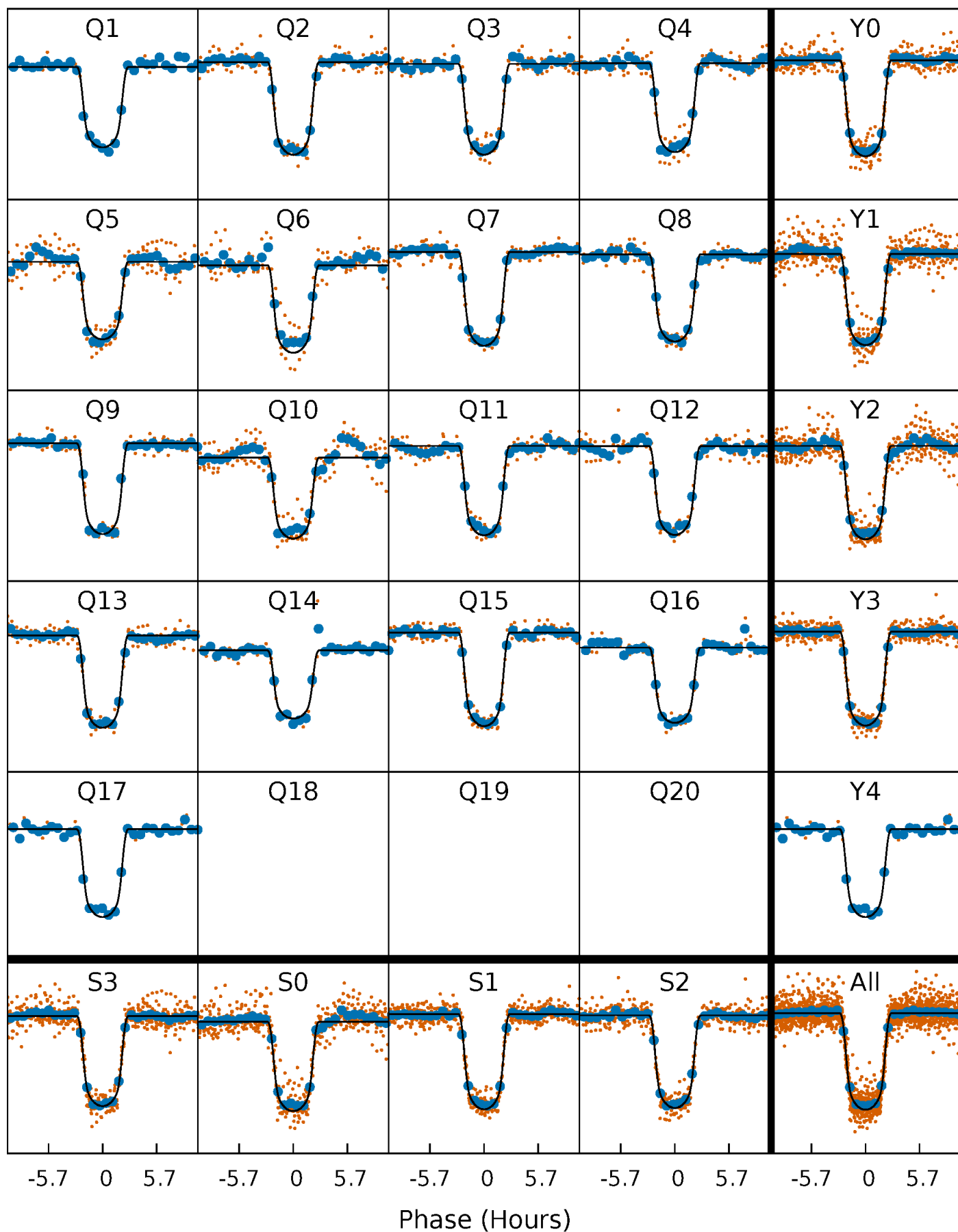
PDC Quarter-Phased Transit Curves

TCE 009632895-02 $P = 27.322047$ Days $T_0 = 145.977392$ (BKJD)



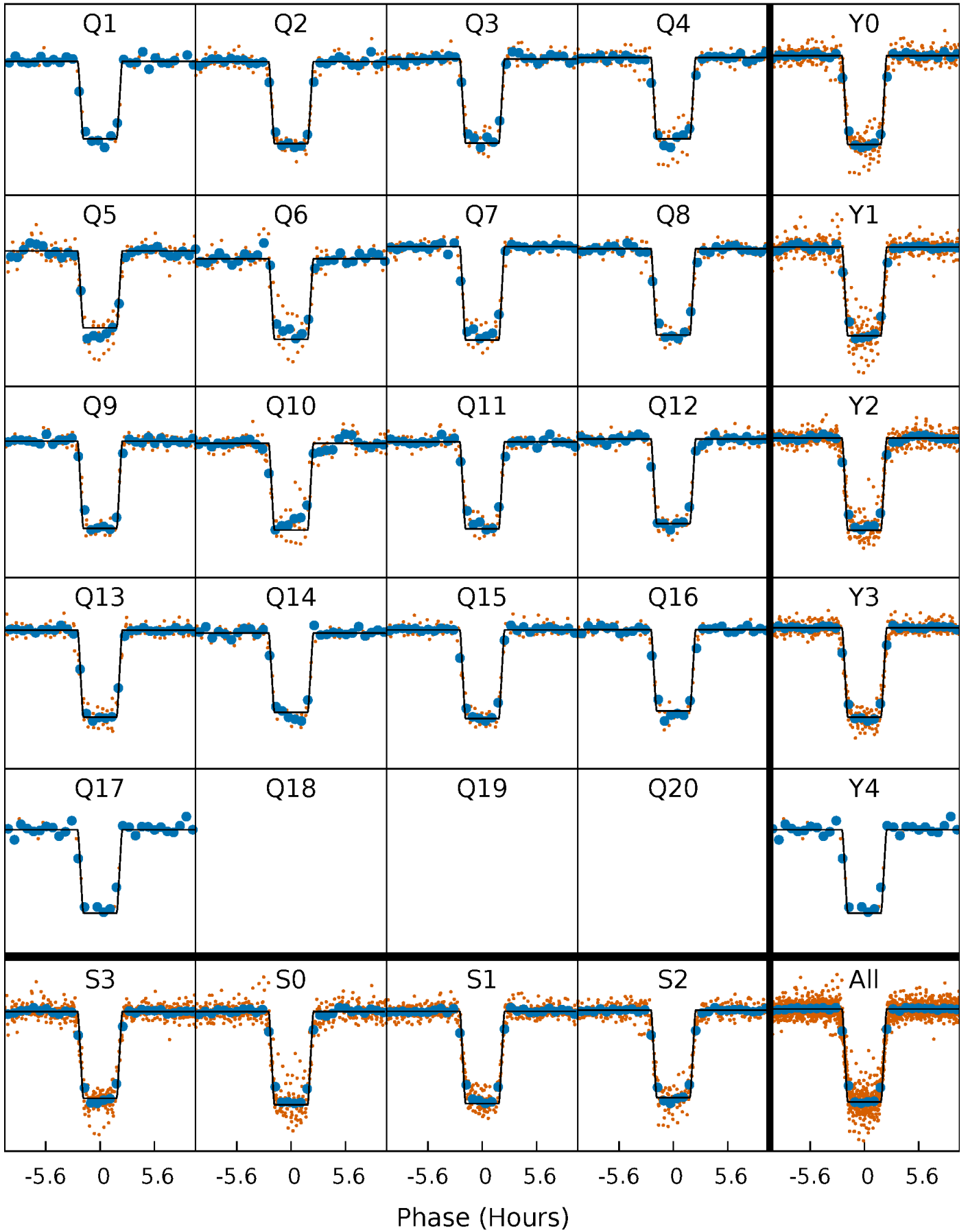
DV Quarter-Phased Transit Curves

TCE 009632895-02 P= 27.322047 Days $T_0=145.977392$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

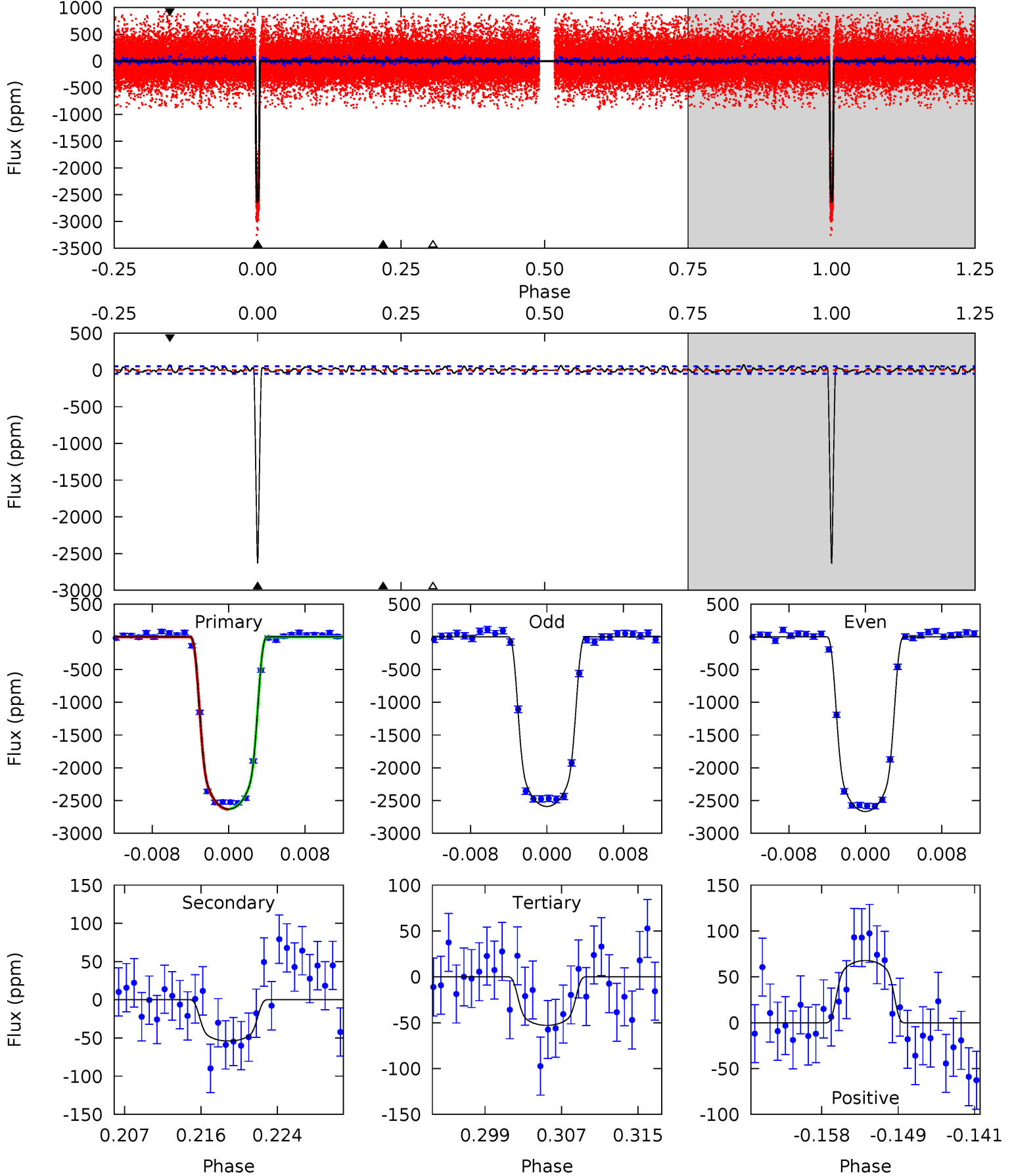
TCE 009632895-02 P= 27.322113 Days $T_0=145.975476$ (BKJD)



DV Model-Shift Uniqueness Test

009632895-02, P = 27.322047 Days, E = 118.655345 Days

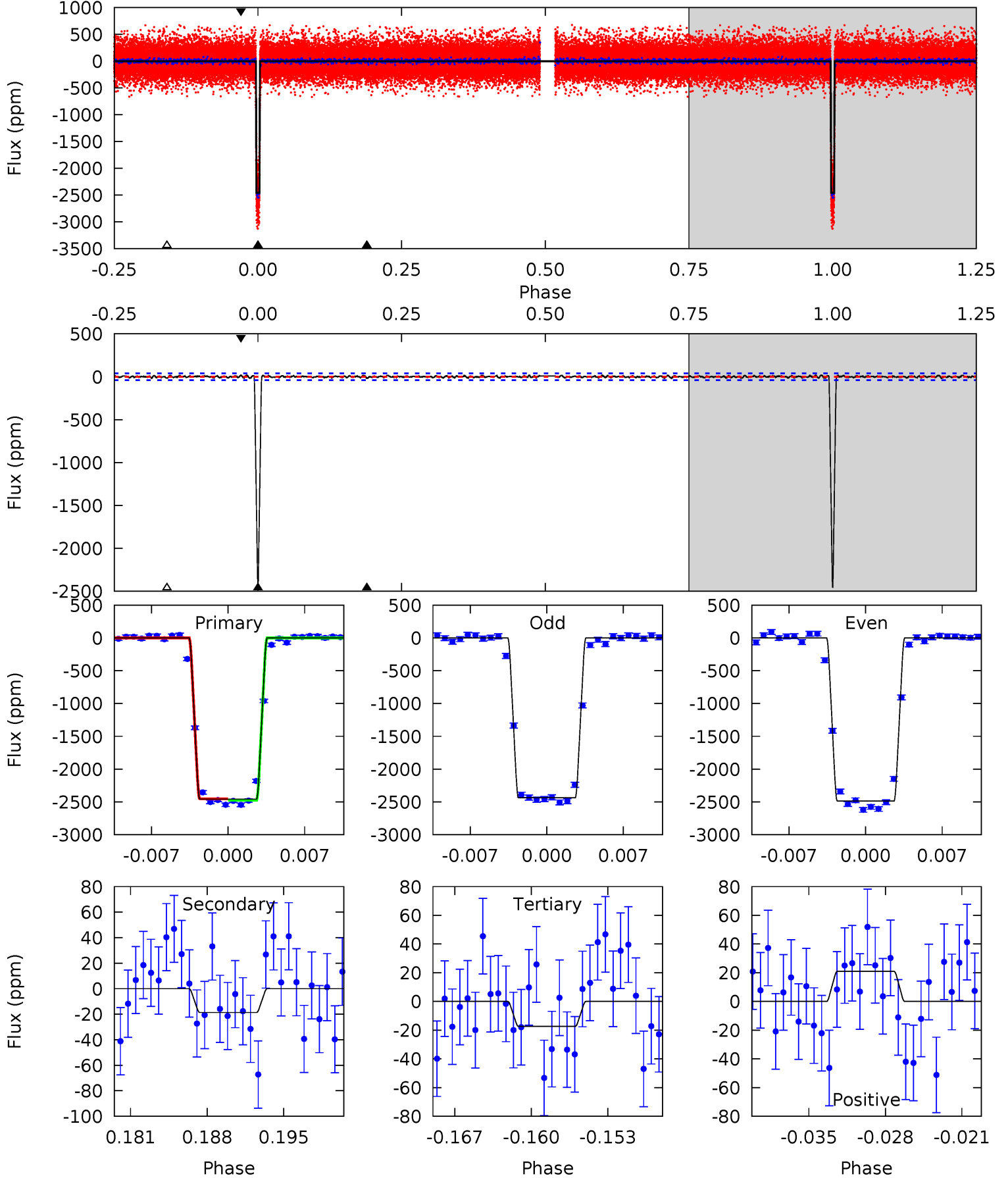
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
262.7	5.40	5.29	6.77	5.06	2.64	2.08	257.4	256.0	0.11	-1.37	3.85	0.99	0.03	0.37



Alt Model-Shift Uniqueness Test

009632895-02, P = 27.322113 Days, E = 118.653363 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
306.8	2.34	2.16	2.62	5.10	2.70	0.80	304.7	304.2	0.17	-0.28	3.15	0.99	0.01	1.26



Stellar Parameters For KIC 009632895

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5620^{+152}_{-152}	$4.592^{+0.036}_{-0.135}$	$-0.360^{+0.300}_{-0.300}$	$0.772^{+0.169}_{-0.068}$	$0.863^{+0.078}_{-0.097}$	$2.643^{+0.474}_{-1.028}$
	+3%/-3%	+1%/-3%	+83%/-83%	+22%/-9%	+9%/-11%	+18%/-39%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009632895-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-54 ± 10	$4.62^{+0.53}_{-0.28}$	754^{+40}_{-31}	2811^{+76}_{-95}	38^{+9}_{-9}
Alt.	-19 ± 8	$4.33^{+0.43}_{-0.28}$	754^{+36}_{-28}	2493^{+120}_{-167}	15^{+7}_{-6}

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

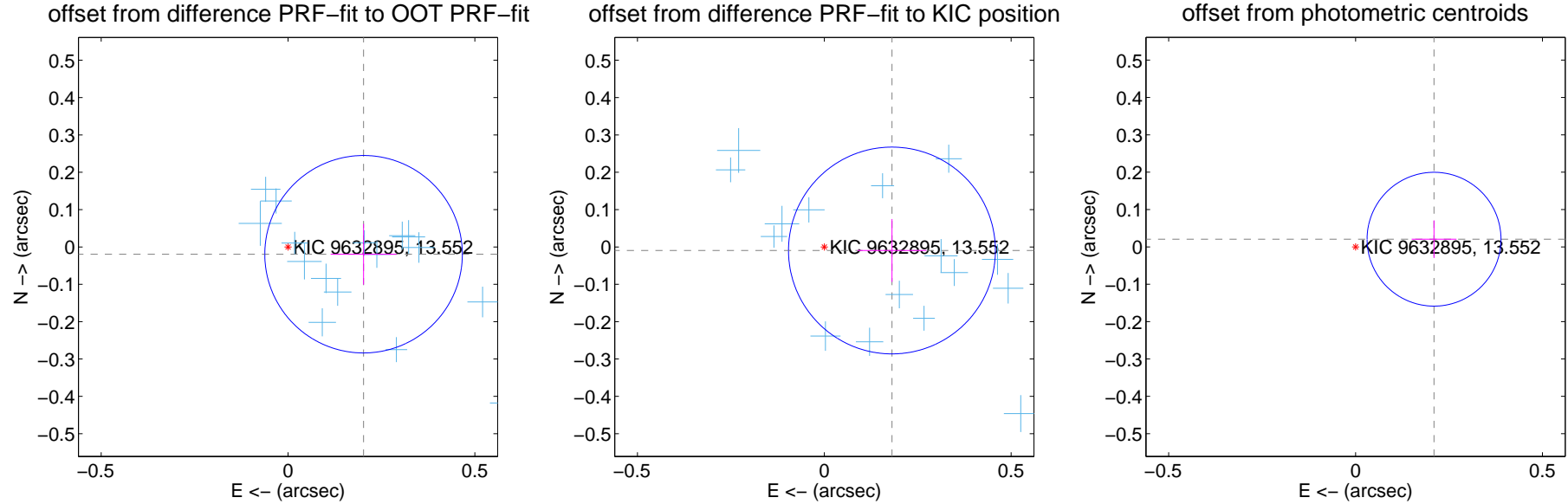
DV Centroid Data

Supplemental centroid analysis for 009632895-02. Kepler magnitude: 13.55. Transit SNR 144.88

There are 17 quarters with good PRF difference image offsets

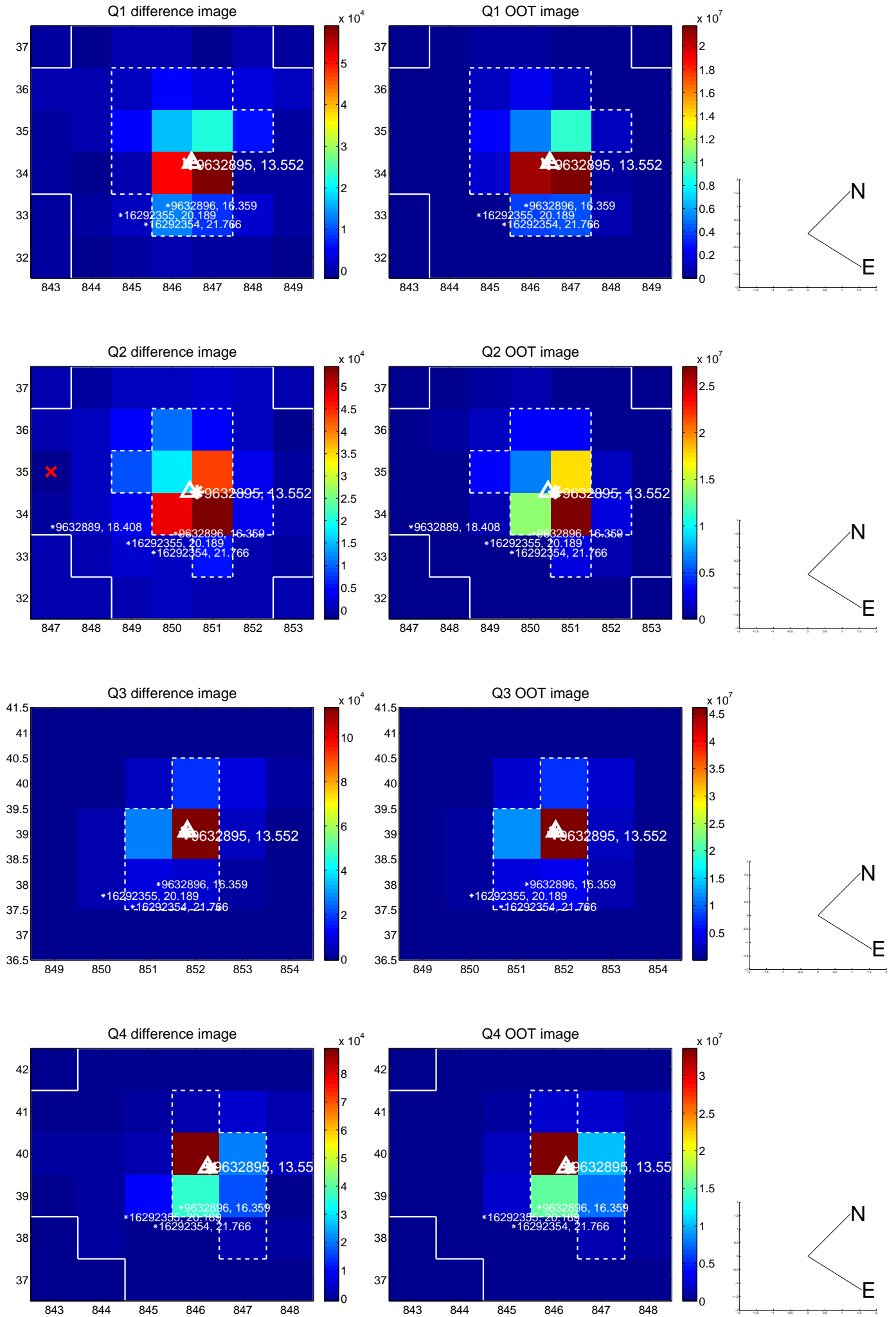
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.203 ± 0.088	2.31	-0.202 ± 0.088	-0.019 ± 0.081
PRF-fit source offset from KIC position	0.181 ± 0.092	1.97	-0.181 ± 0.092	-0.009 ± 0.084
photometric centroid source offset	0.21 ± 0.06	3.53	-0.21 ± 0.06	0.02 ± 0.05

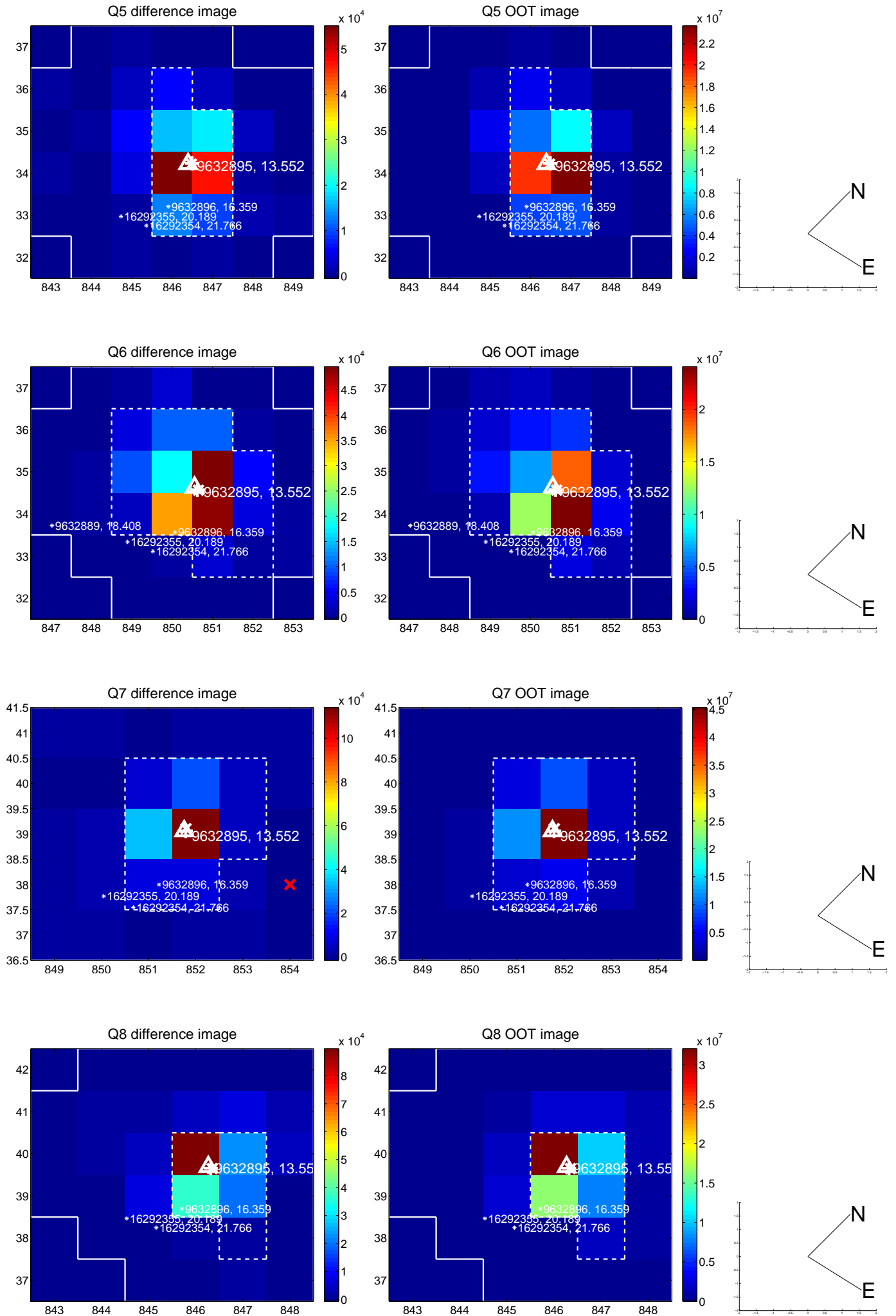


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

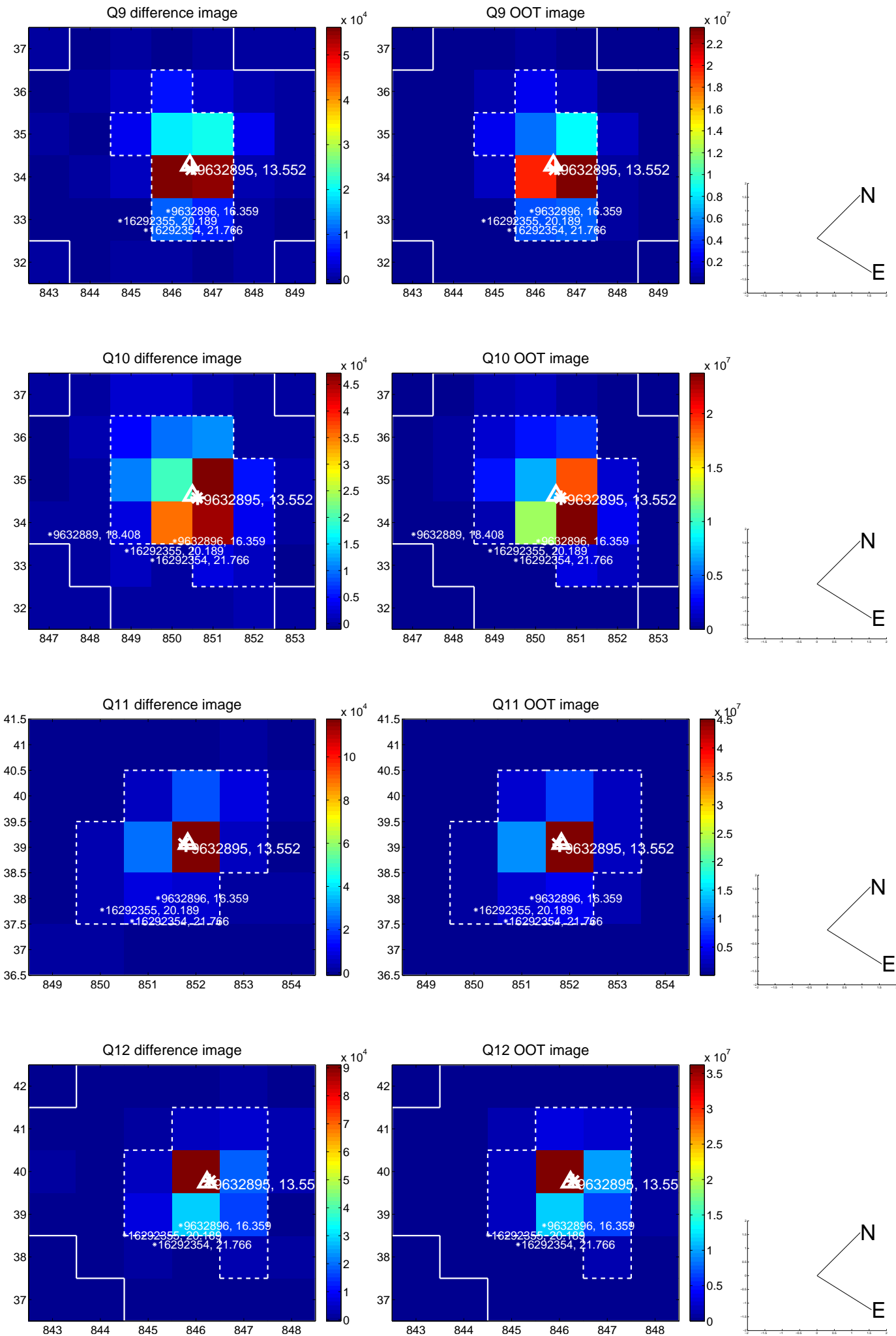
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



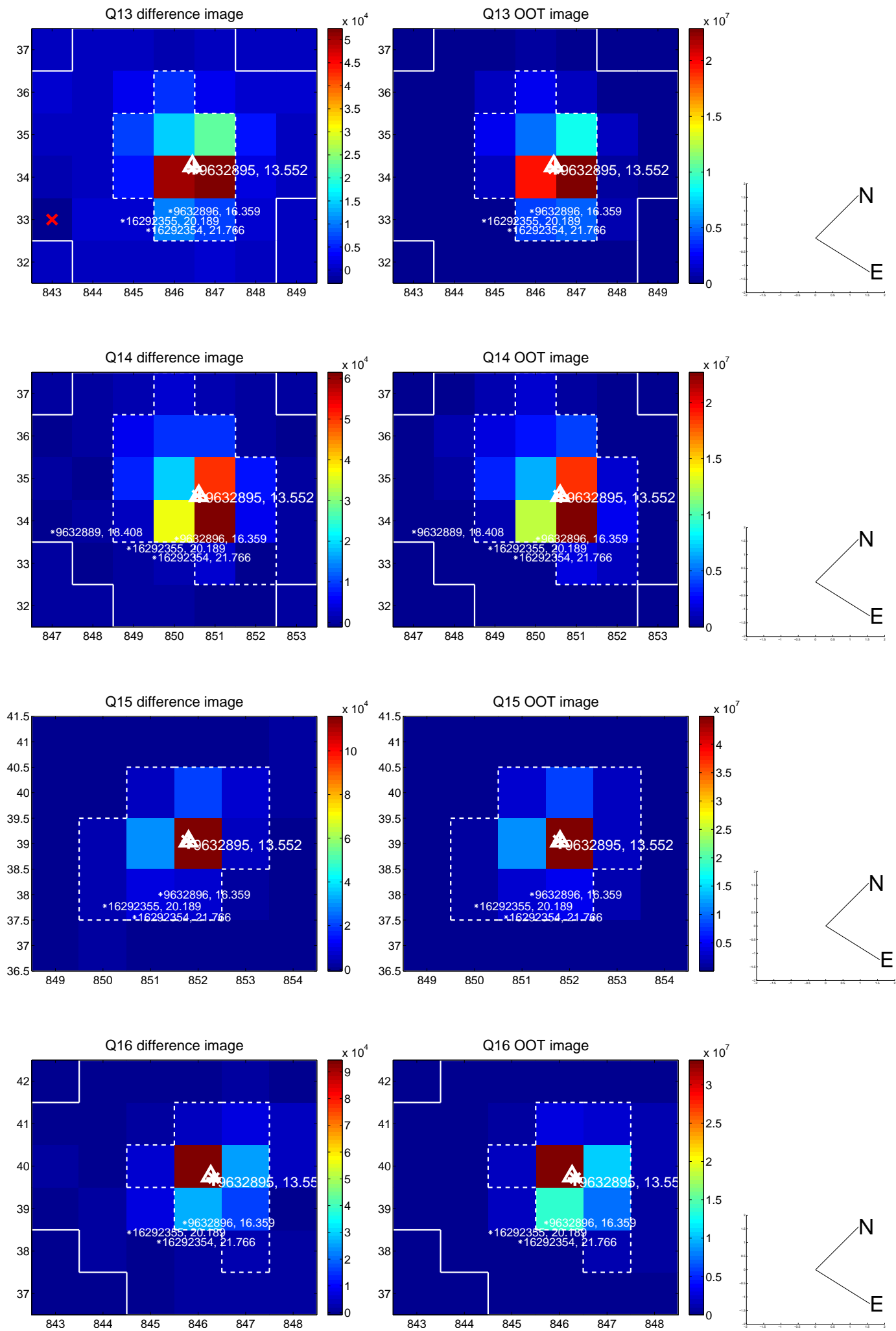
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



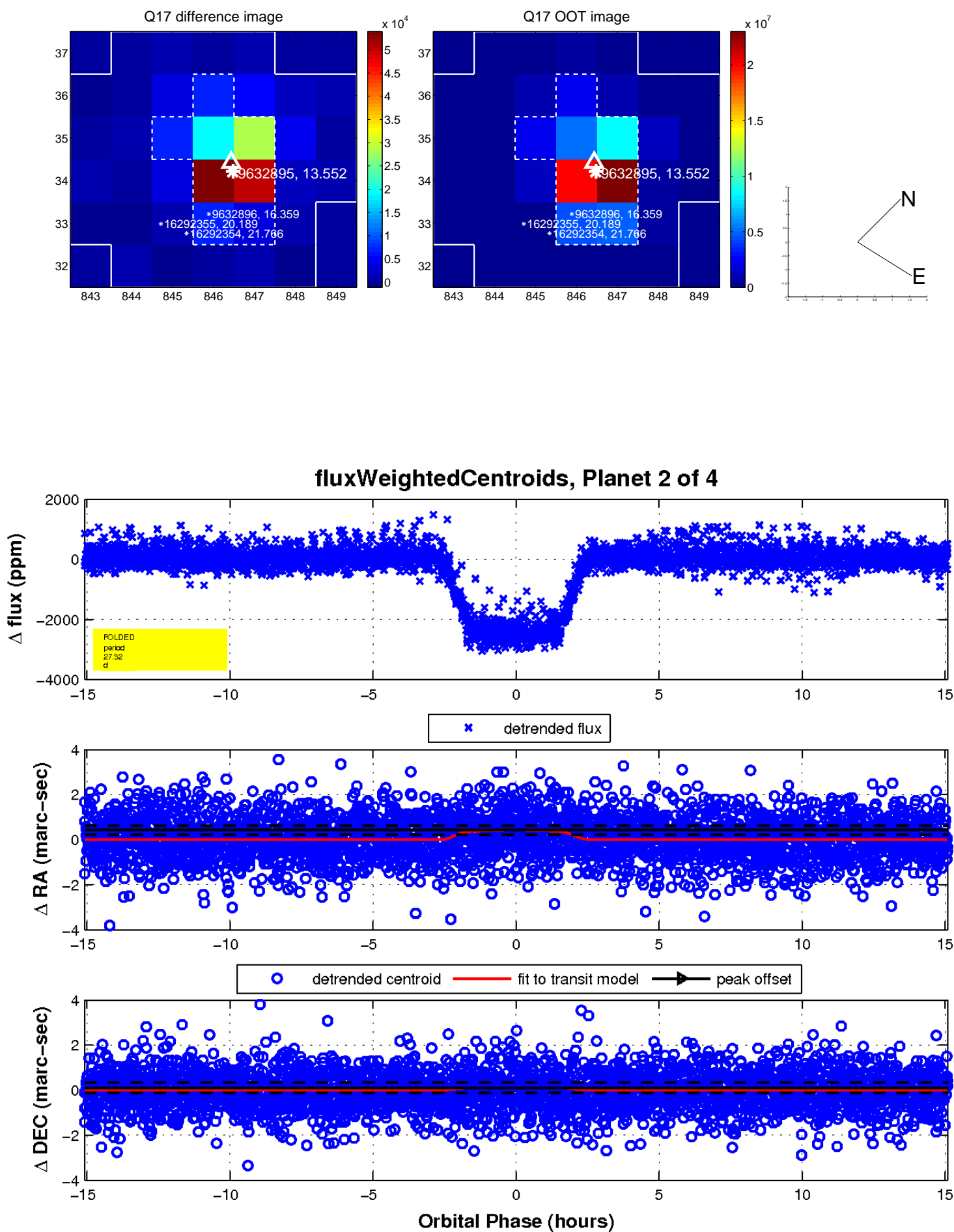
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

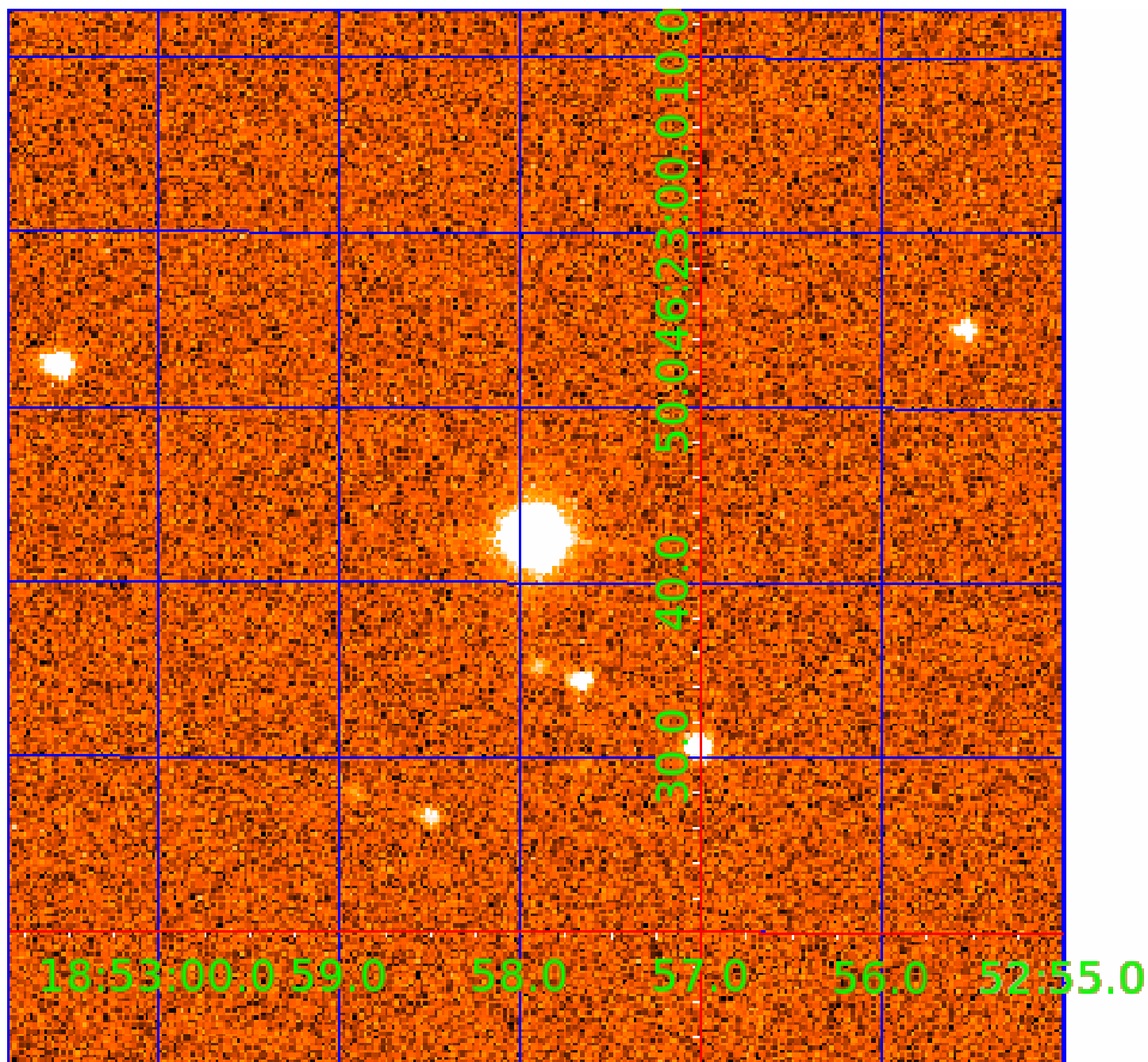


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009632895

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})
009632895-01	OBS	1451.01	27.322043	132.425263	77586.8	5.683	4301.1	3318.5	0.77	5620	21.55	18.83
009632895-02	OBS	No	27.322047	145.977392	2646.0	5.031	150.9	144.9	0.77	5620	4.53	18.83
009632895-03	OBS	No	434.326077	553.079358	4917.4	7.162	64.5	64.0	0.77	5620	5.86	0.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009632895-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
009632895-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
009632895-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

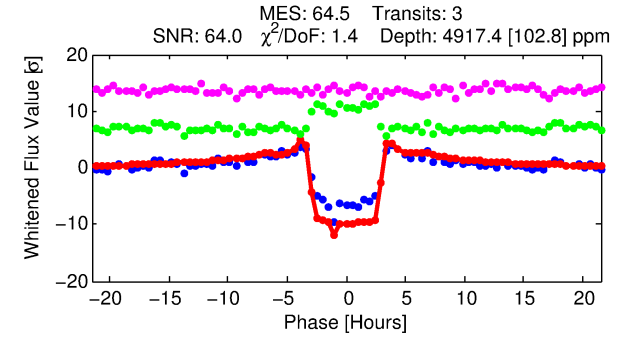
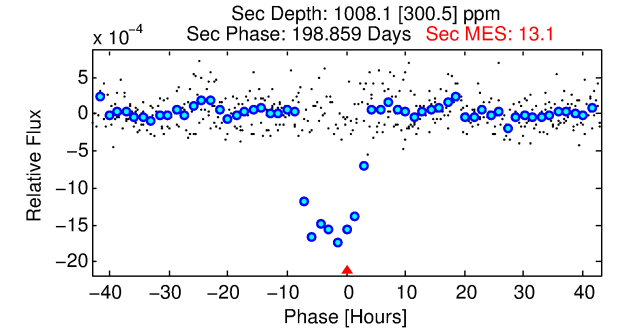
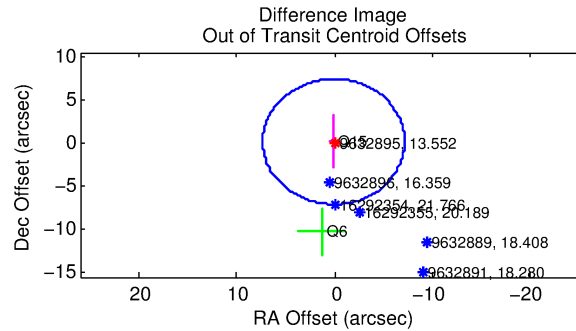
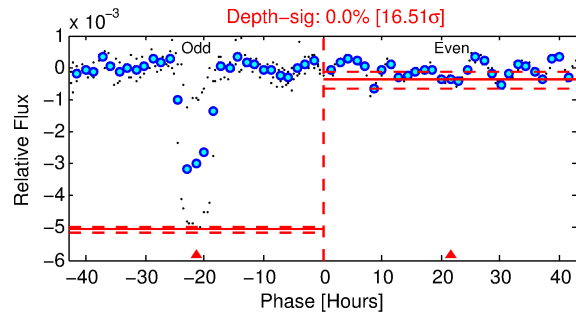
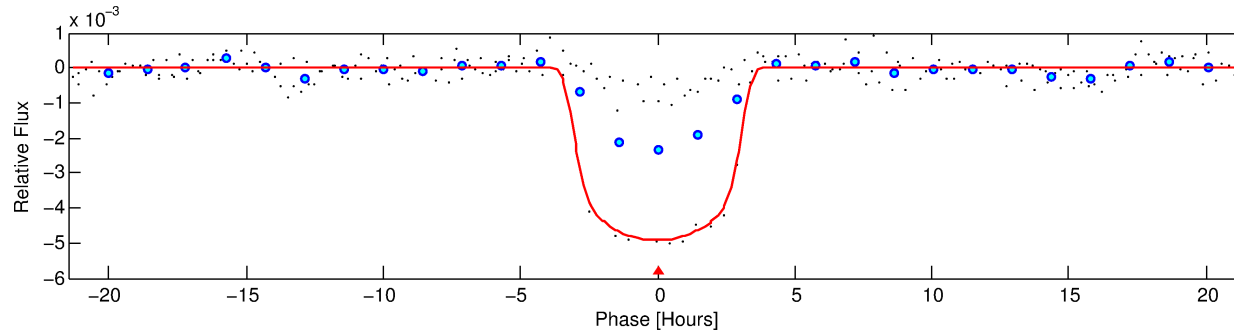
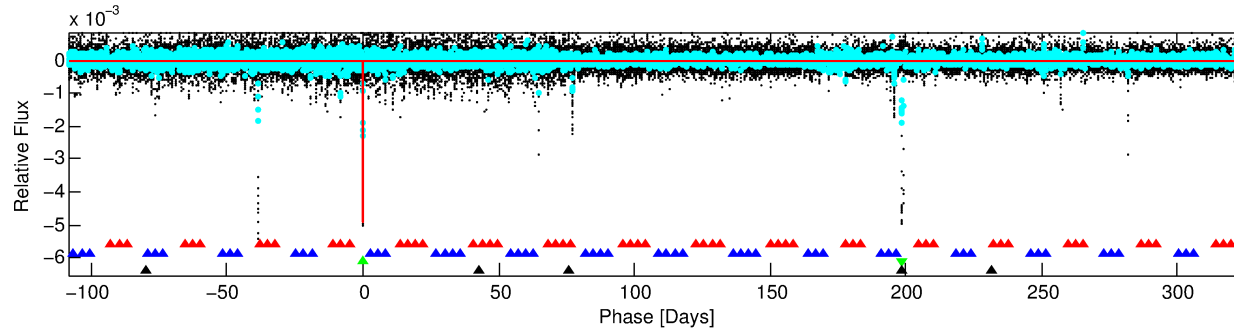
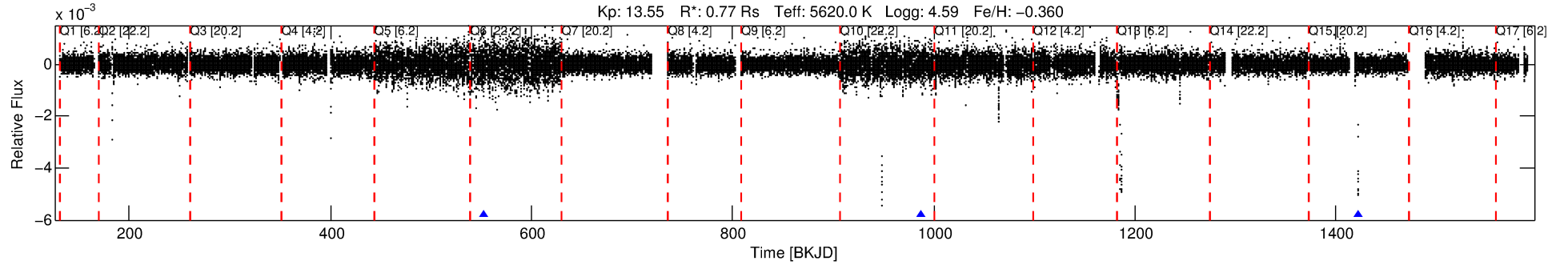
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009632895-03

No Significant Match Found

DV One-Page Summary

KIC: 9632895 Candidate: 3 of 4 Period: 434.326 d
KOI: K01451 Name: Kepler-453 Corr: No Ephemeris Match



DV Fit Results:

Period = 434.32608 [0.00143] d
Epoch = 553.0794 [0.0024] BKJD
Rp/R* = 0.0696 [0.0014]
a/R* = 357.95 [24.55]
b = 0.74 [0.04]
Seff = 0.47 [0.13]
Teq = 211 [15] K
Rp = 5.86 [1.29] Re
a = 1.0633 [0.1903] AU
Ag = 18248.13 [7178.19] [2.54 σ]
Teffp = 3796 [303] K [11.80 σ]

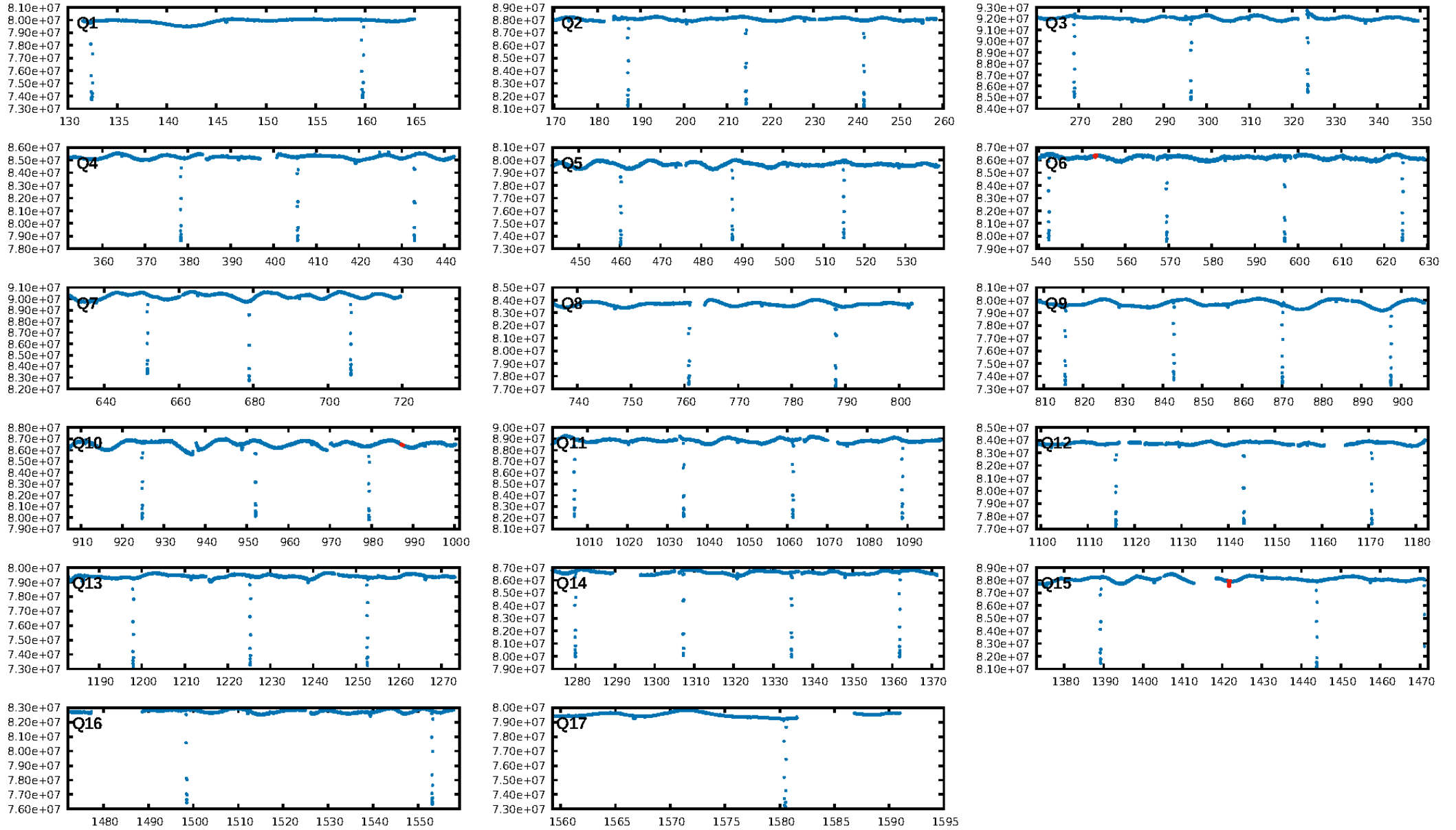
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [235.61 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 84.3%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -3.44
Centroid-sig: 75.8%
Centroid-so: 0.132 arcsec [1.07 σ]
OotOffset-rm: 0.180 arcsec [0.07 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-rm: 0.316 arcsec [0.13 σ]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

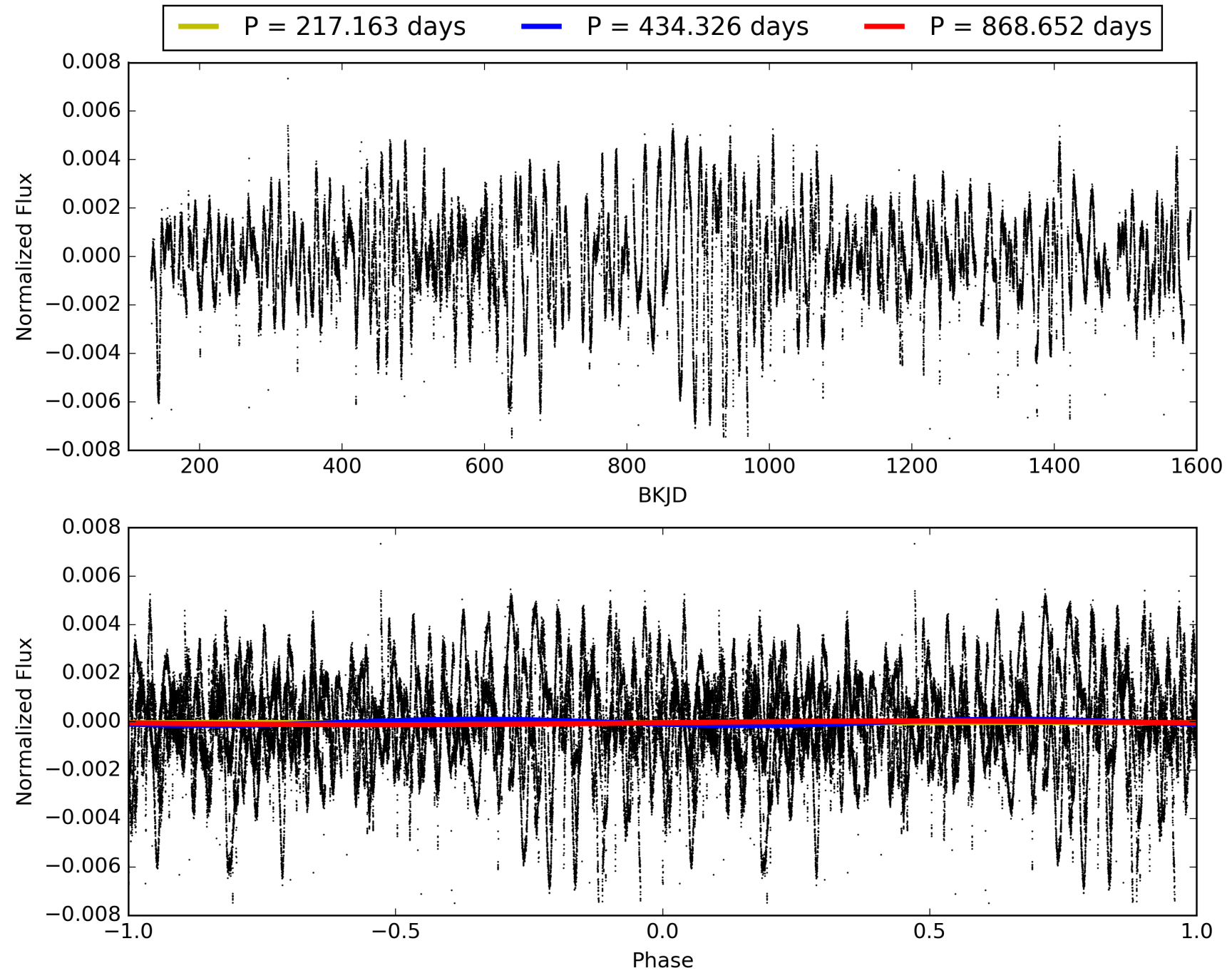
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:05:16 Z

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

TCE 009632895-03, PDC Light Curves

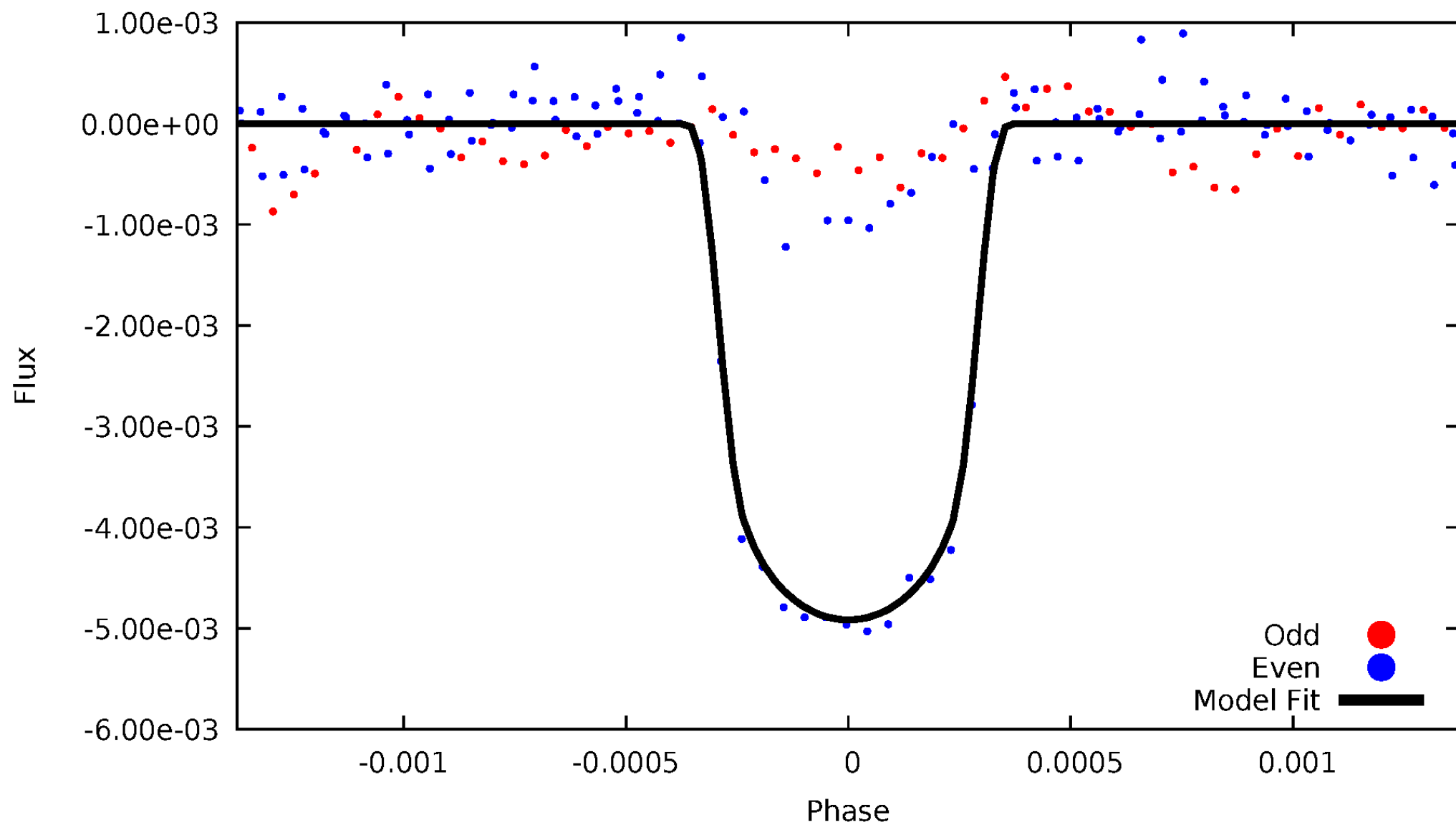


TCE 009632895-03



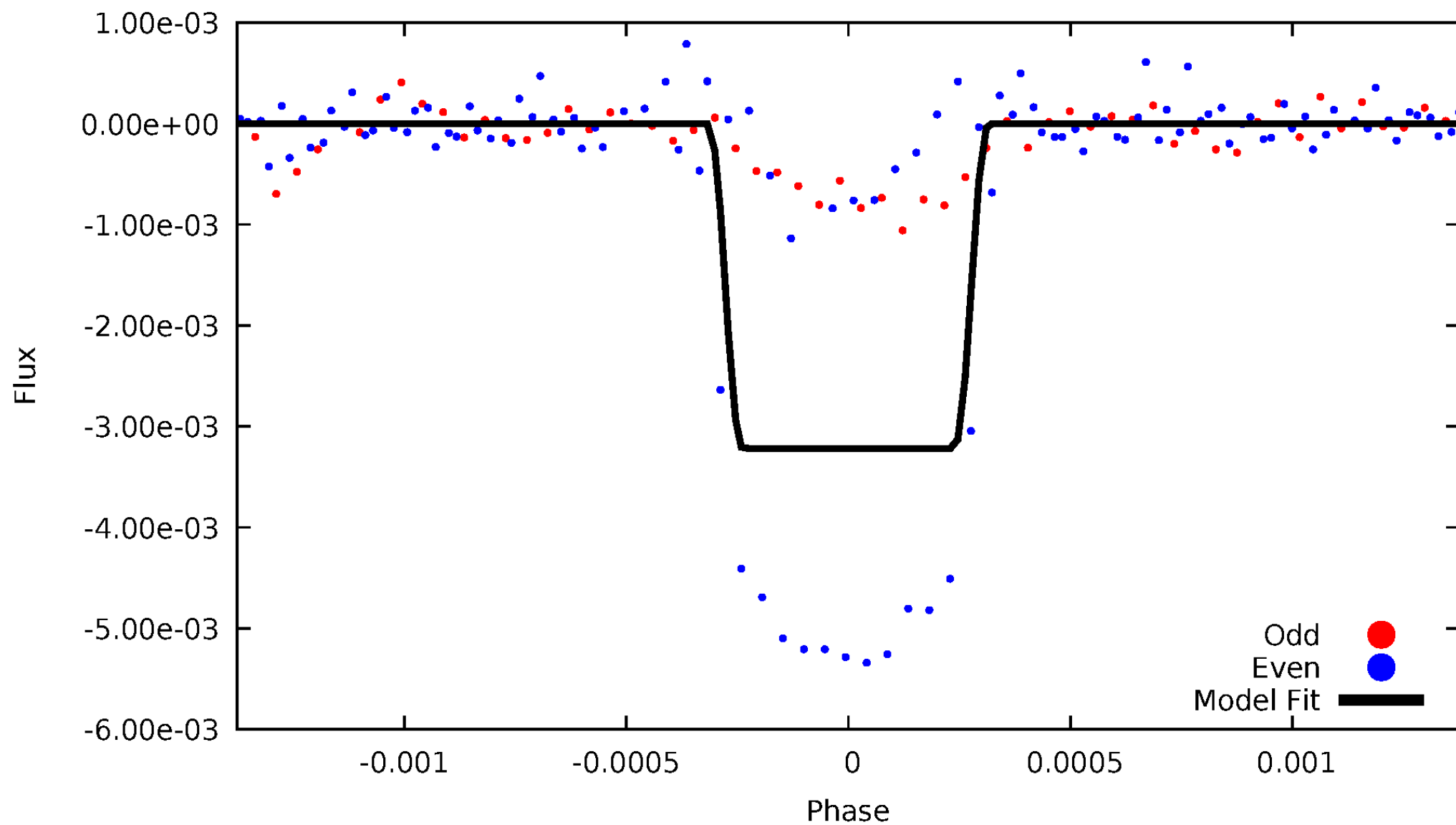
DV Odd/Even

TCE 009632895-03



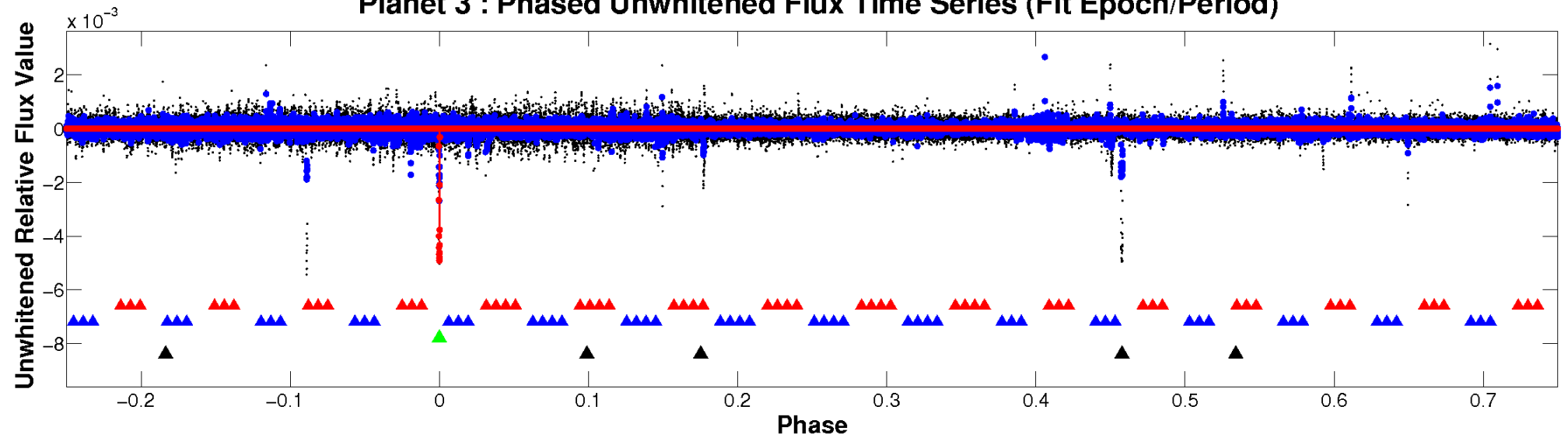
ALT Odd/Even

TCE 009632895-03

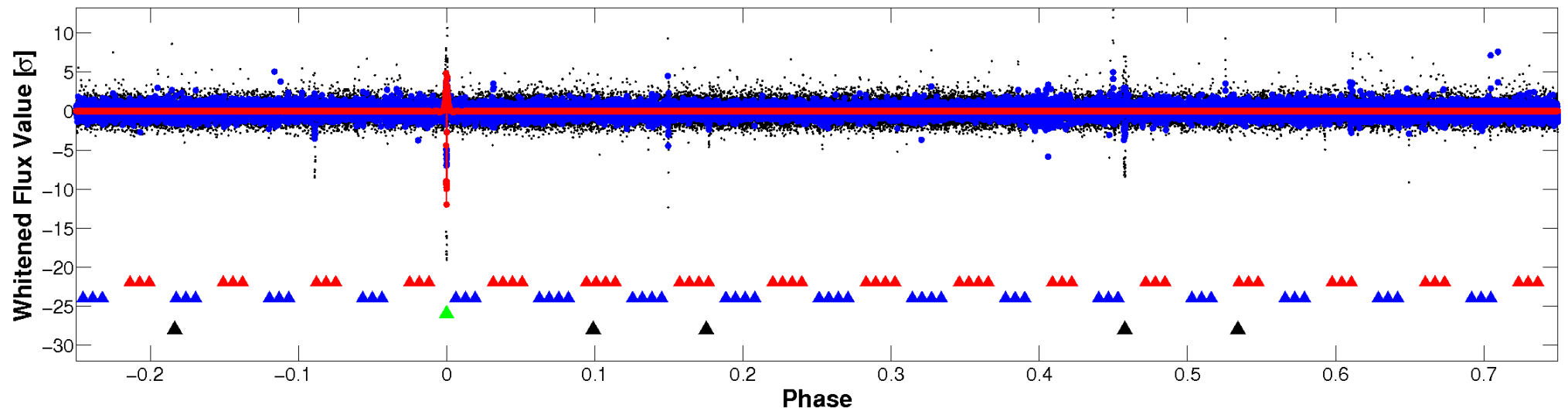


Non-Whitened Vs. Whitened Light Curve

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

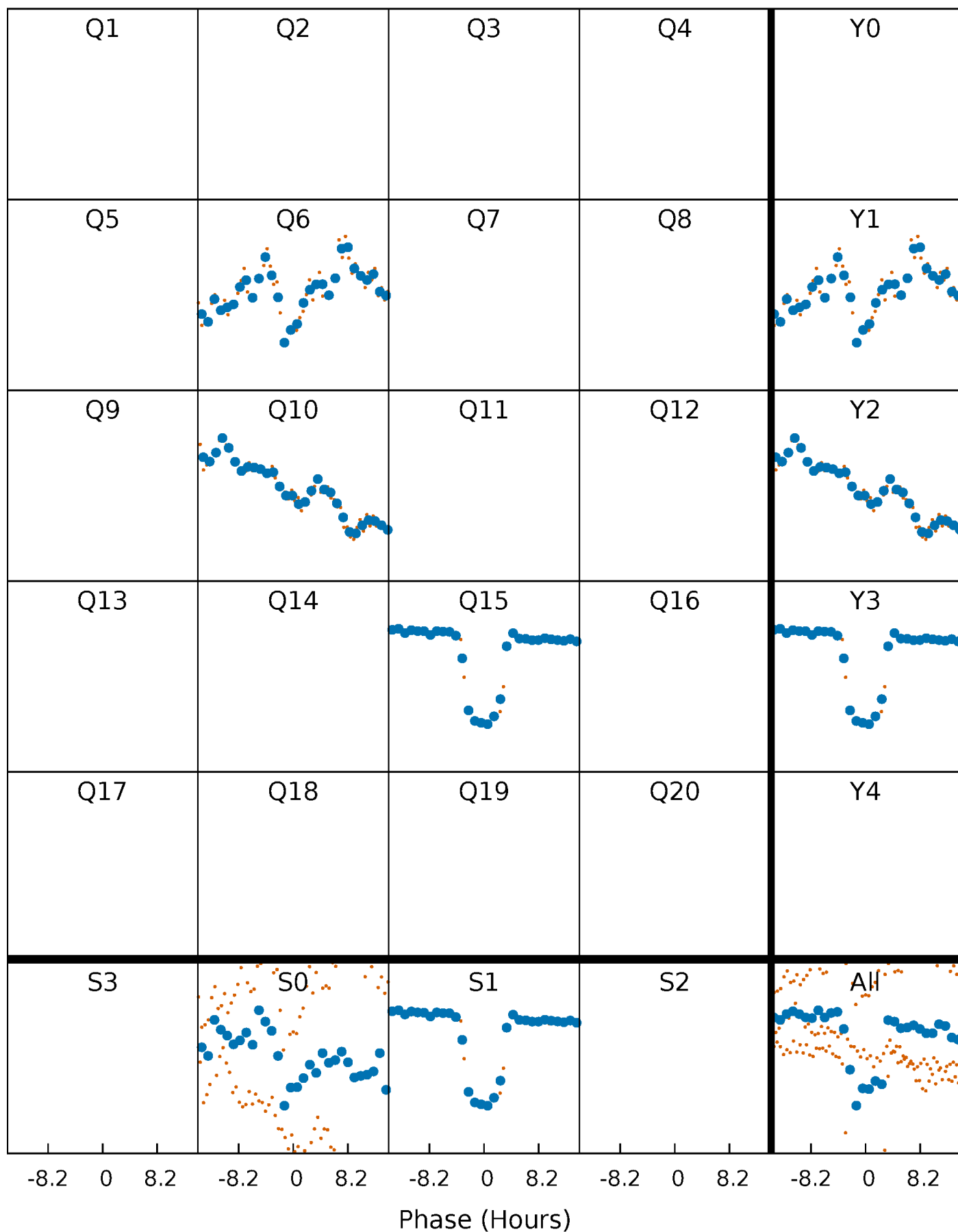


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



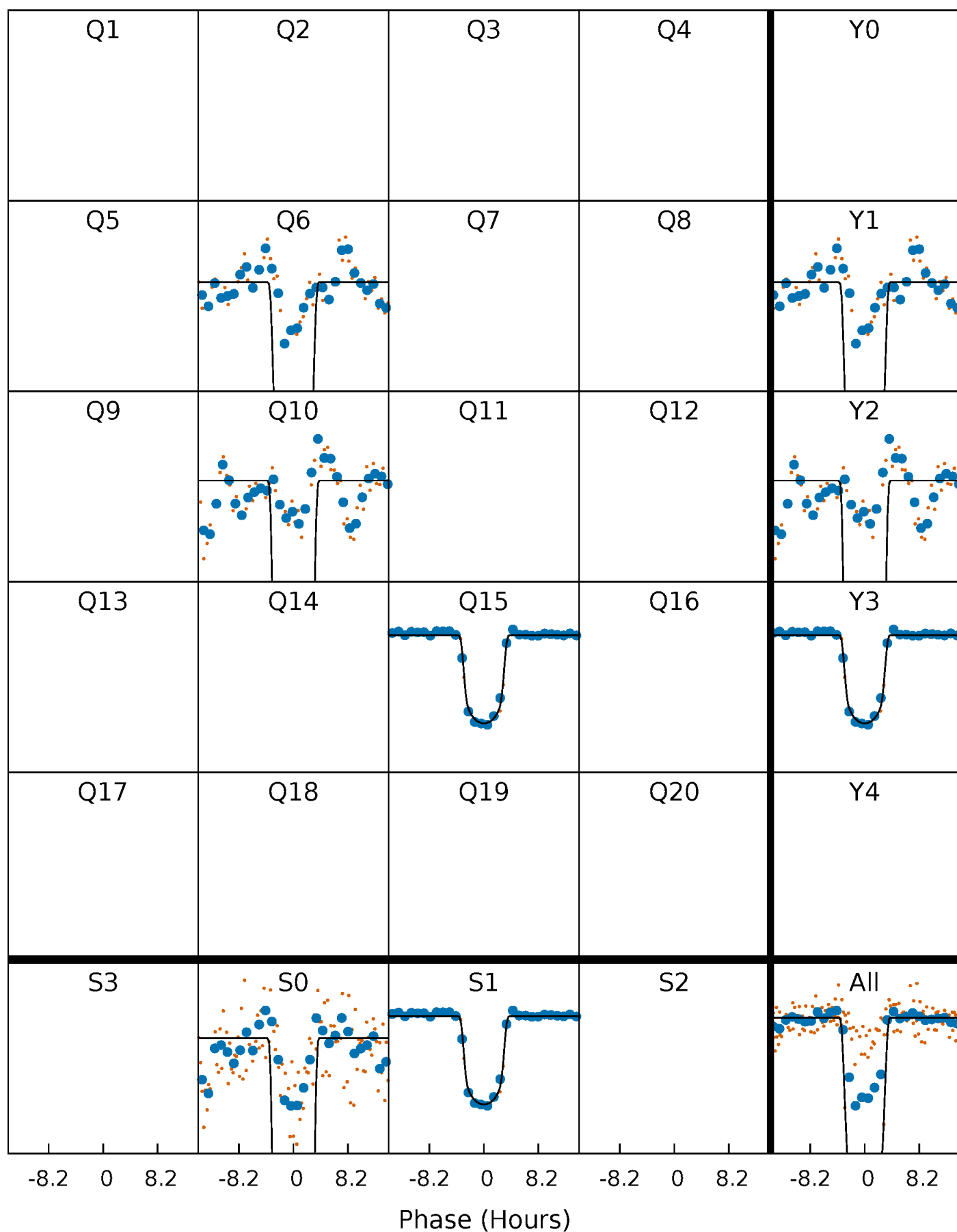
PDC Quarter-Phased Transit Curves

TCE 009632895-03 P=434.326077 Days $T_0=553.079358$ (BKJD)



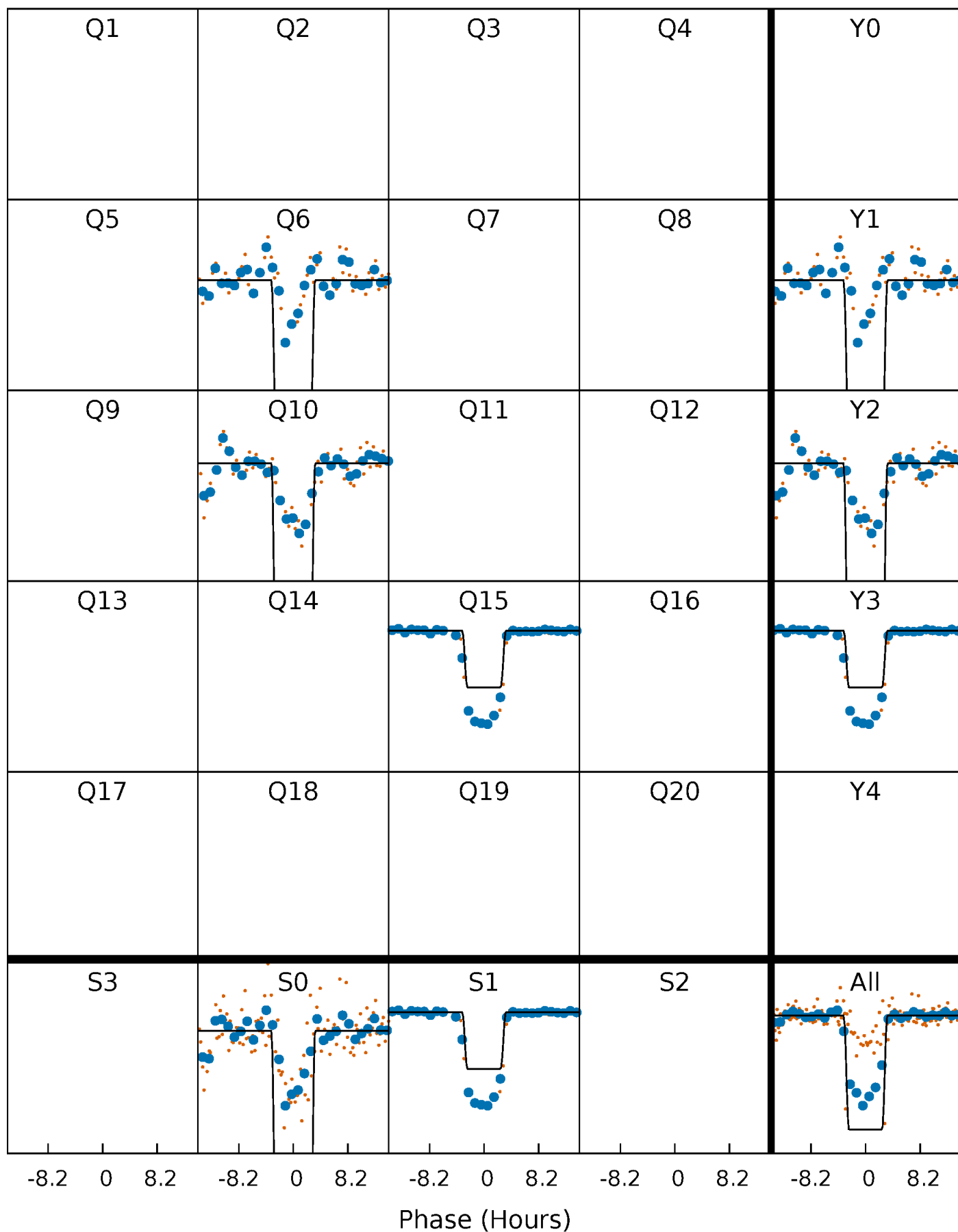
DV Quarter-Phased Transit Curves

TCE 009632895-03 $P=434.326077$ Days $T_0=553.079358$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

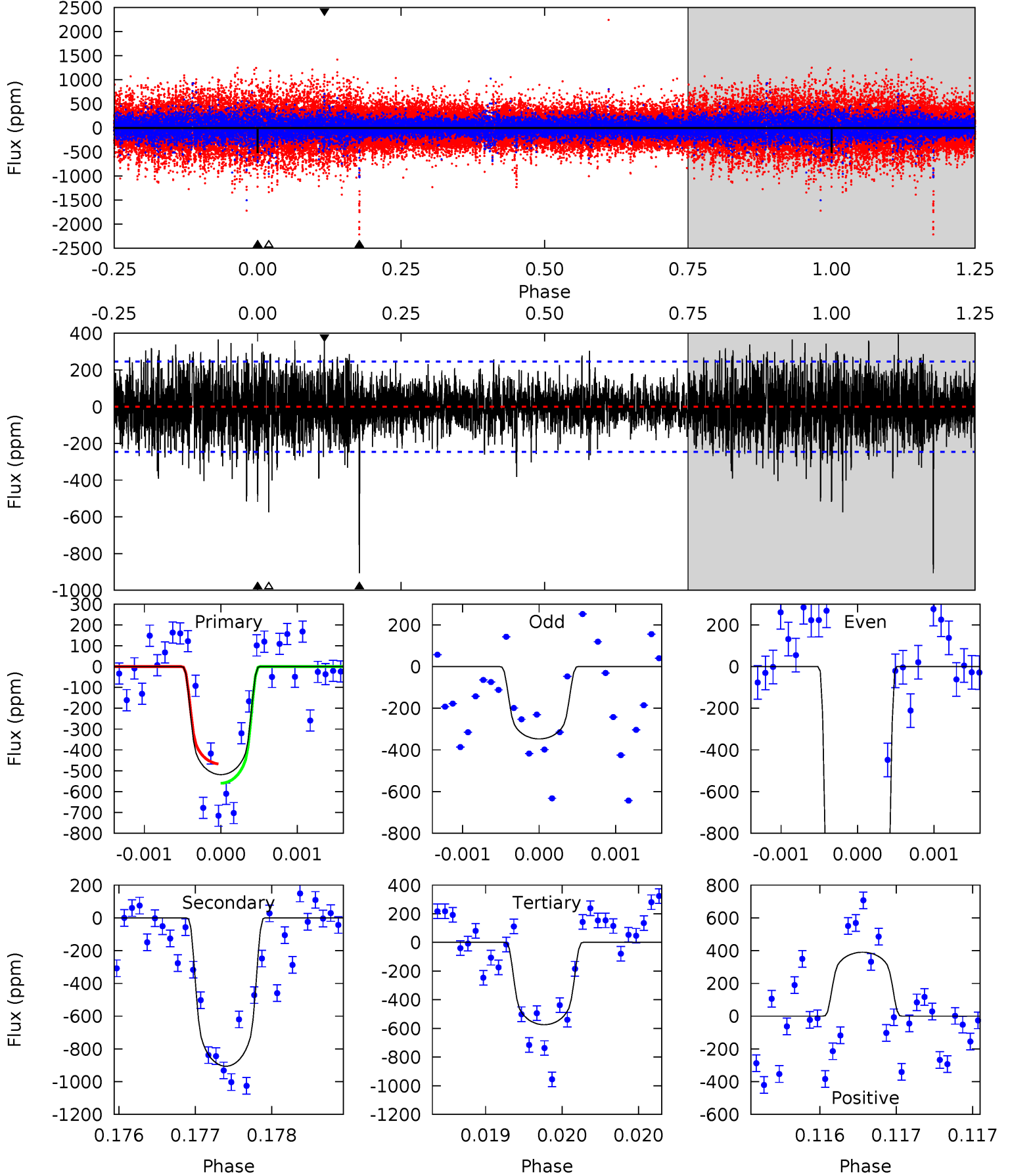
TCE 009632895-03 $P=434.328940$ Days $T_0=553.074342$ (BKJD)



DV Model-Shift Uniqueness Test

009632895-03, P = 434.326077 Days, E = 118.753281 Days

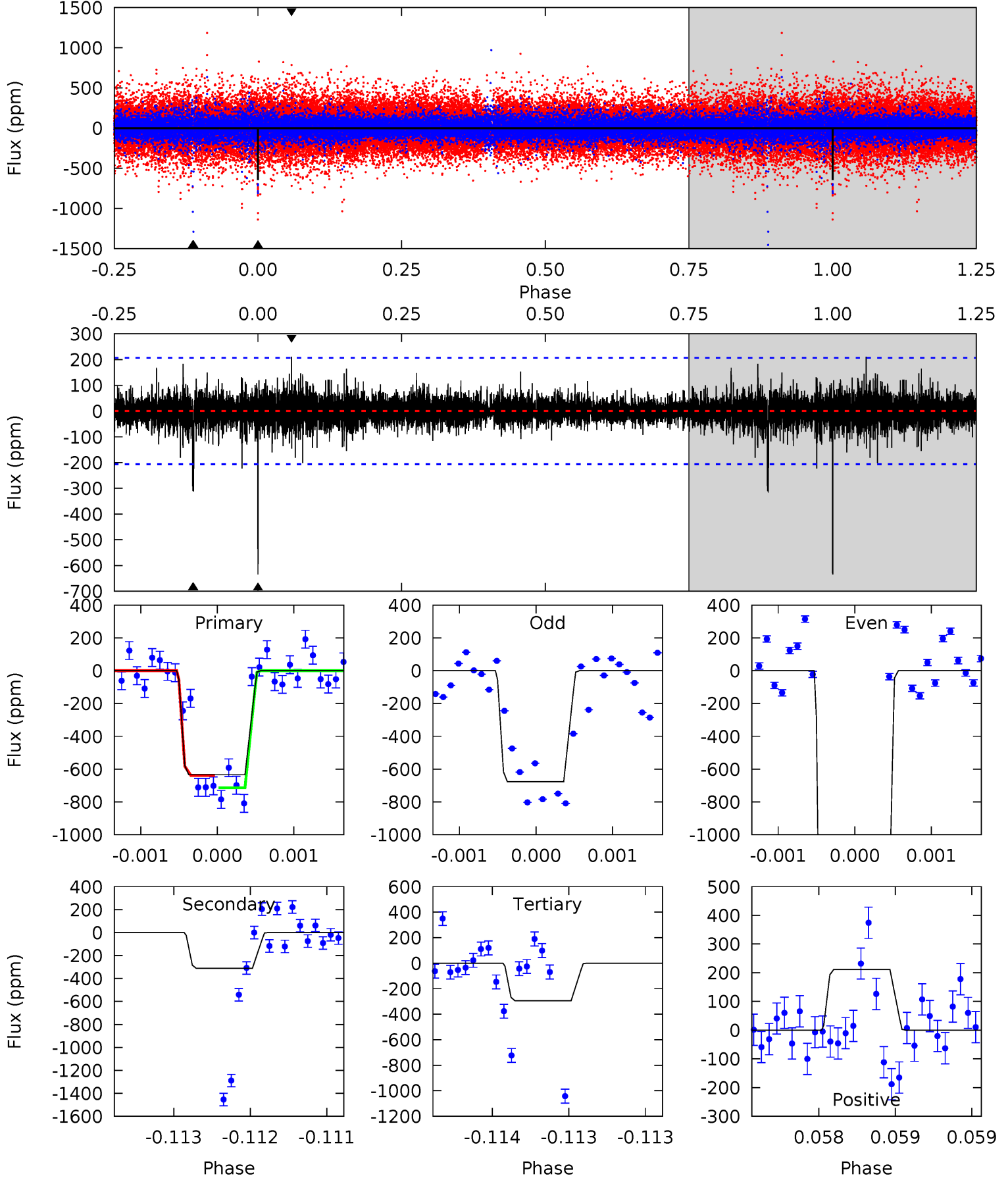
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.6	20.3	12.9	8.74	5.51	3.38	2.15	-1.25	2.87	7.43	11.5	33.3	2.89	0.30	0



Alt Model-Shift Uniqueness Test

009632895-03, P = 434.328940 Days, E = 118.745402 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.0	8.34	7.87	5.67	5.54	3.43	0.90	9.12	11.3	0.47	2.68	43.0	3.00	0.25	0



Stellar Parameters For KIC 009632895

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5620^{+152}_{-152}	$4.592^{+0.036}_{-0.135}$	$-0.360^{+0.300}_{-0.300}$	$0.772^{+0.169}_{-0.068}$	$0.863^{+0.078}_{-0.097}$	$2.643^{+0.474}_{-1.028}$
	+3%/-3%	+1%/-3%	+83%/-83%	+22%/-9%	+9%/-11%	+18%/-39%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009632895-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-906 ± 45	$6.06^{+0.59}_{-0.43}$	301^{+14}_{-12}	4007^{+98}_{-94}	15176^{+2136}_{-2342}
Alt.	-311 ± 37	$4.91^{+0.52}_{-0.34}$	299^{+15}_{-11}	3574^{+106}_{-107}	7819^{+1477}_{-1423}

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 $A_{obs} \gg 1.0$

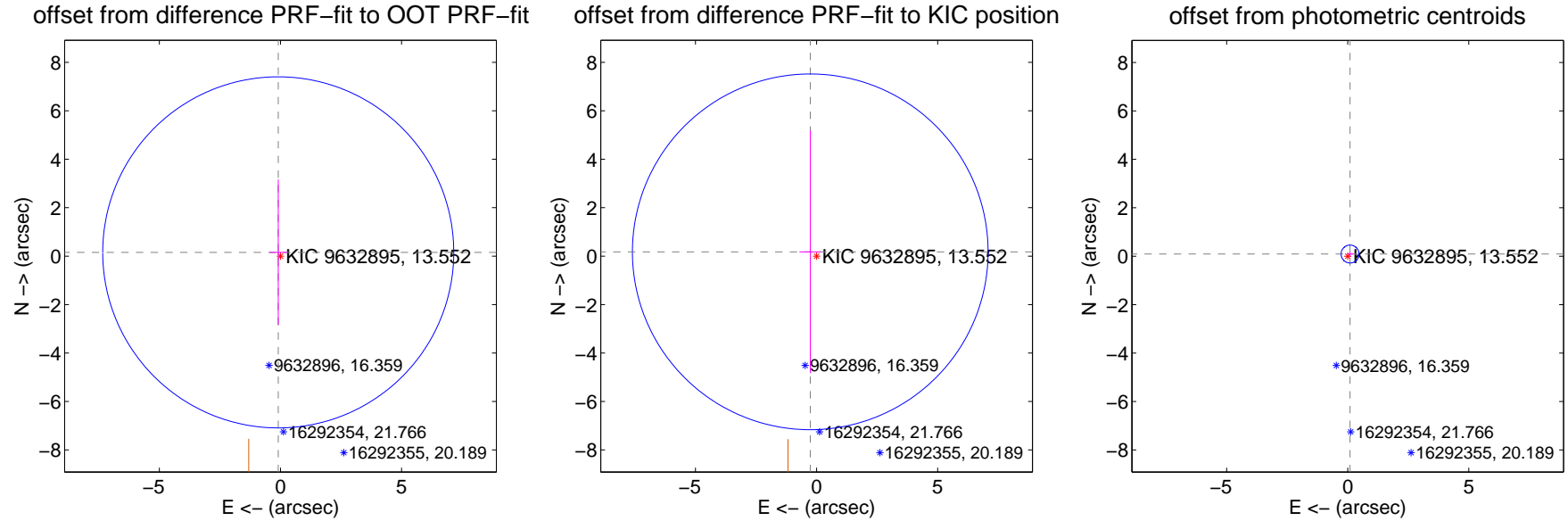
DV Centroid Data

Supplemental centroid analysis for 009632895-03. Kepler magnitude: 13.55. Transit SNR 63.96

There are 1 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.180 ± 2.416	0.07	0.091 ± 0.358	0.156 ± 3.010
PRF-fit source offset from KIC position	0.316 ± 2.448	0.13	0.261 ± 0.444	0.177 ± 5.011
photometric centroid source offset	0.13 ± 0.12	1.07	-0.10 ± 0.13	0.09 ± 0.11



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.

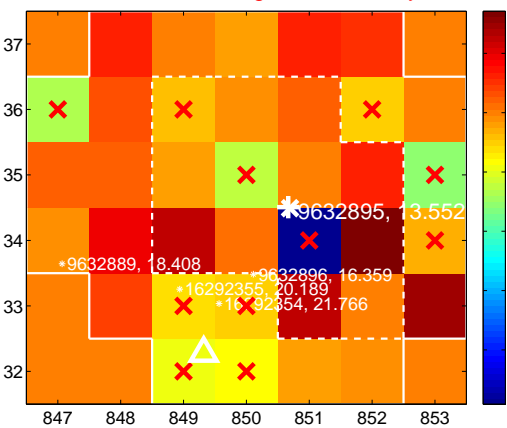
Q5 no difference image



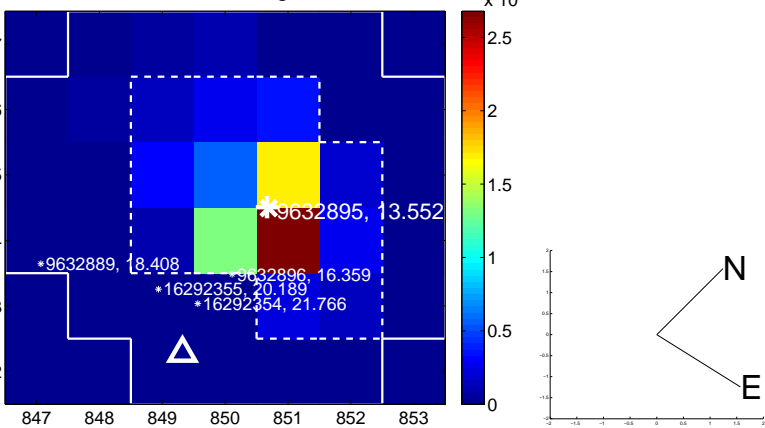
Q5 no OOT image



Q6 difference image. Poor Quality



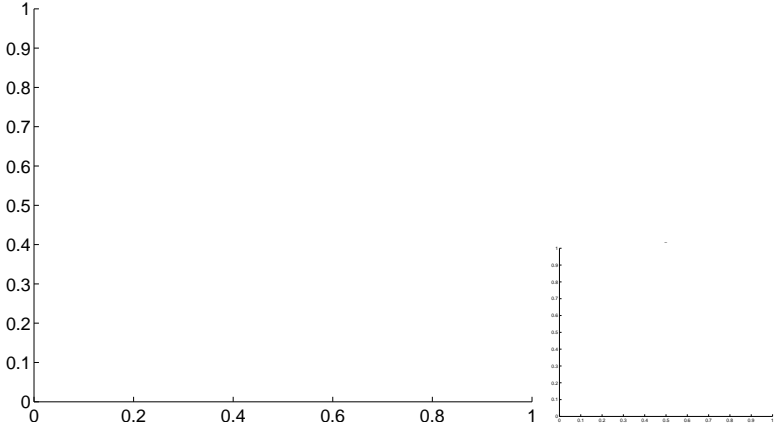
Q6 OOT image



Q7 no difference image



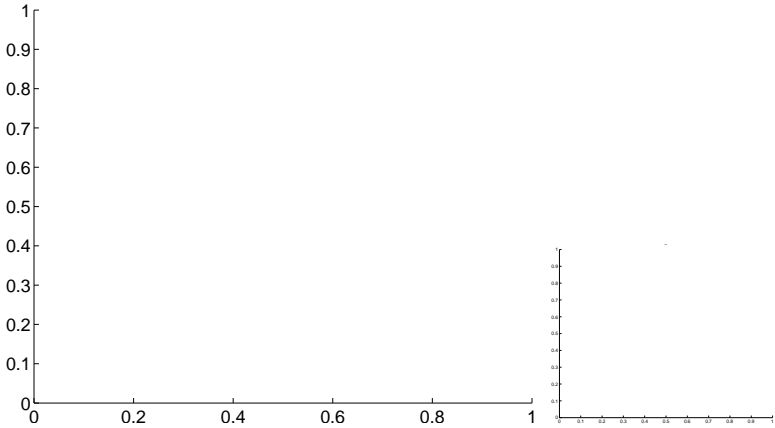
Q7 no OOT image



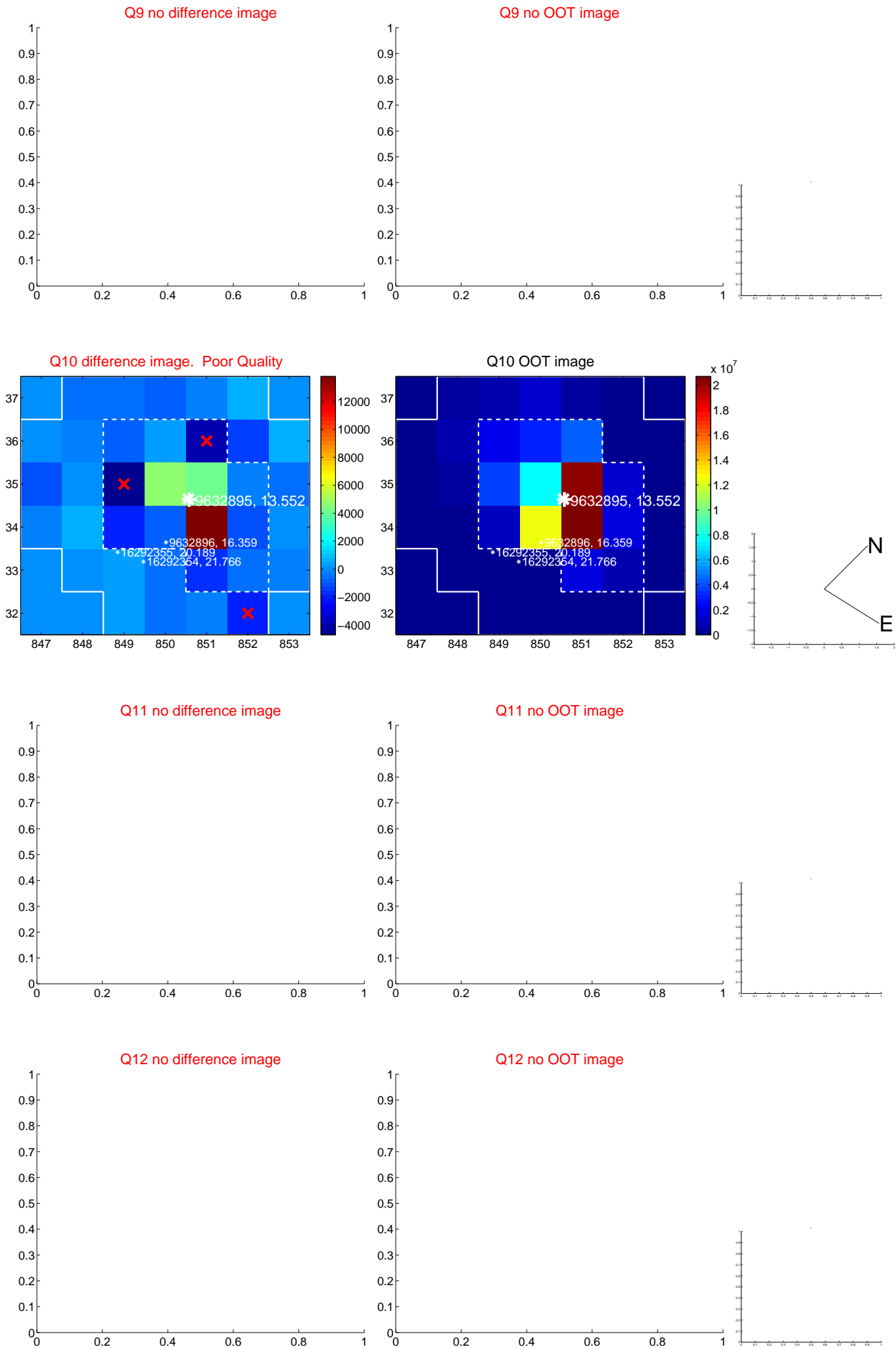
Q8 no difference image



Q8 no OOT image



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



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

Q13 no difference image



Q13 no OOT image



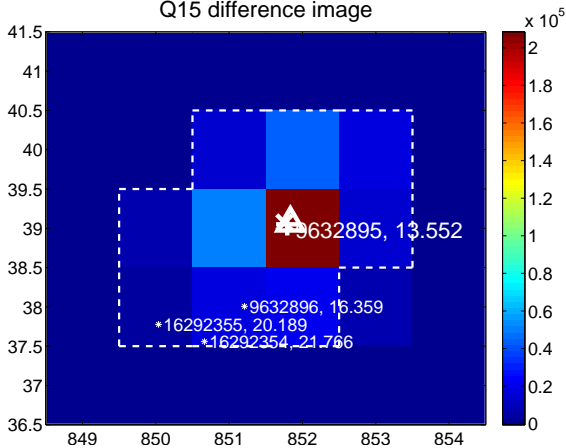
Q14 no difference image



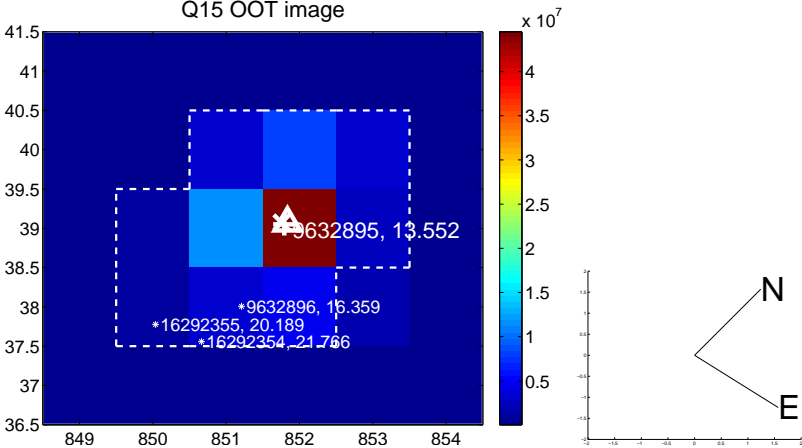
Q14 no OOT image



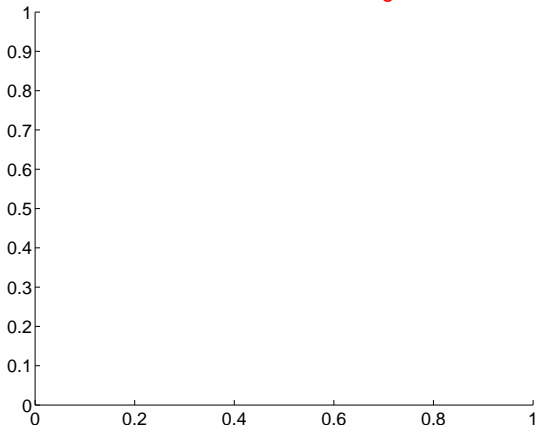
Q15 difference image



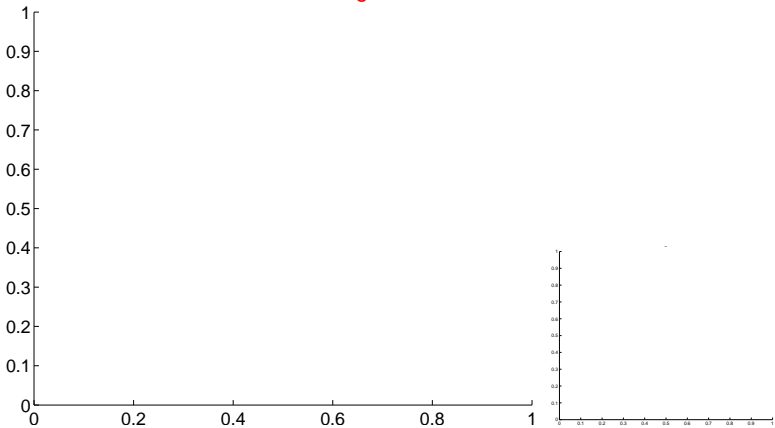
Q15 OOT image



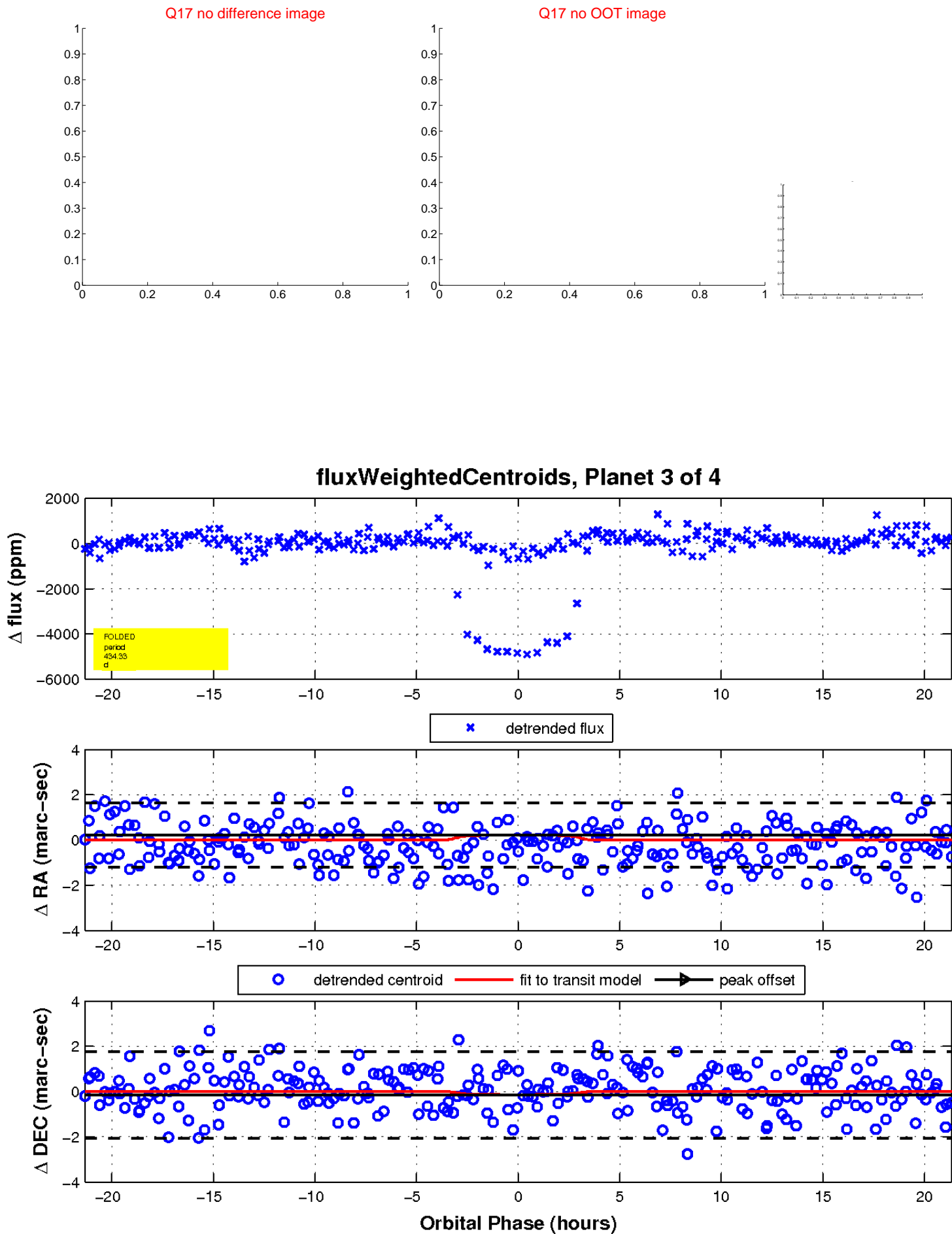
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

