

KIC 009395205

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})
009395205-01	OBS	No	286.159777	168.851454	1022.7	4.551	14.6	5.2	0.52	3827	1.77	0.11
009395205-02	OBS	No	521.989531	224.495212	1689.7	3.121	12.1	7.5	0.52	3827	2.23	0.05
009395205-03	OBS	No	562.825209	186.251164	1203.0	4.478	13.0	5.7	0.52	3827	1.82	0.04
009395205-04	OBS	No	498.385076	389.945788	2309.2	2.791	11.5	10.1	0.52	3827	2.51	0.05
009395205-05	OBS	No	420.216161	390.445066	726.5	7.500	12.3	-1.0	0.52	3827	1.39	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009395205-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009395205-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009395205-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009395205-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV
009395205-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

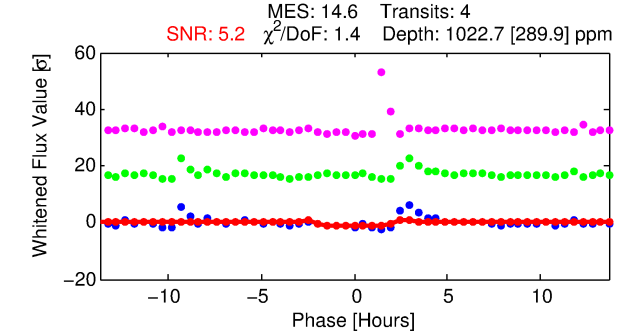
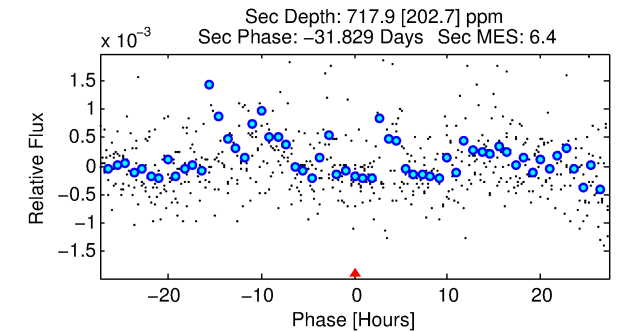
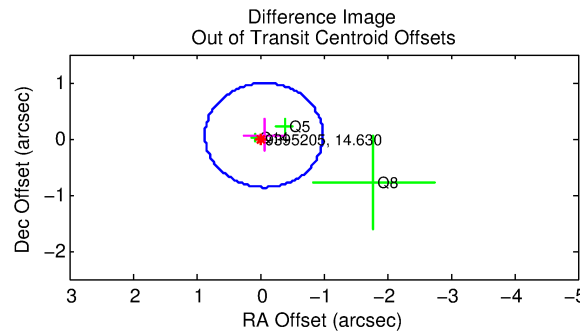
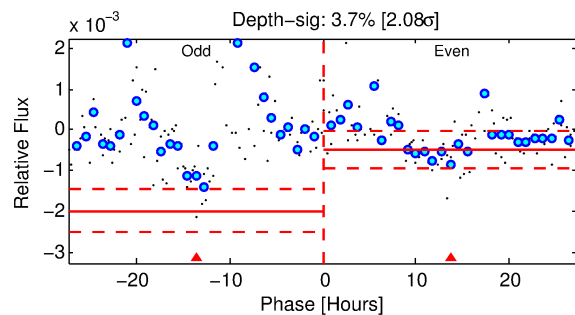
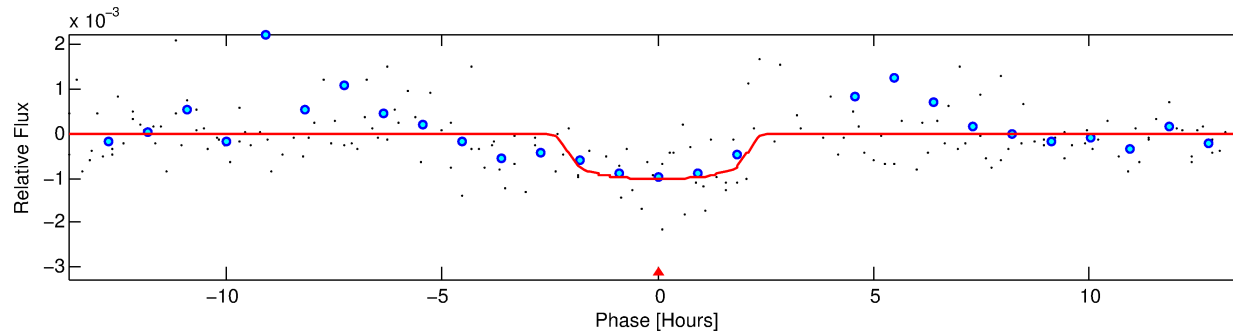
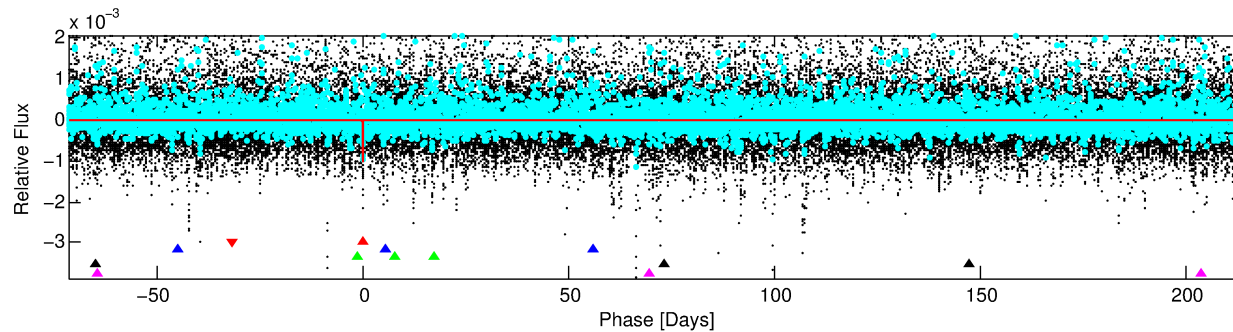
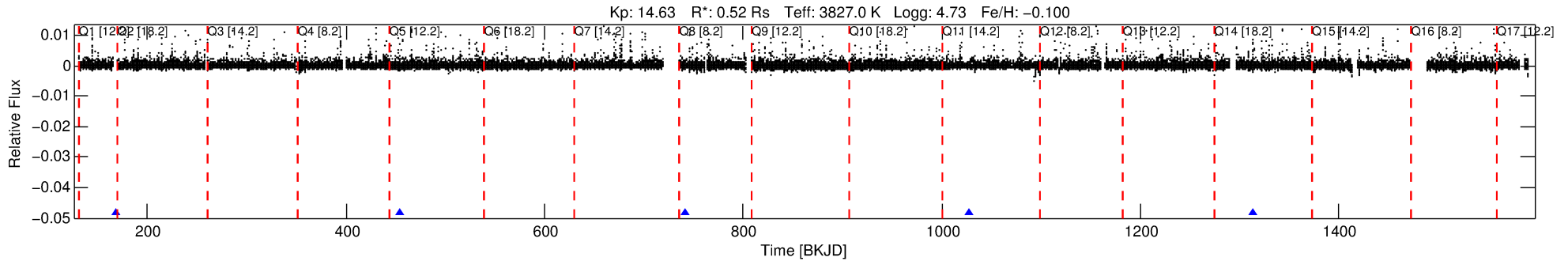
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009395205-01

No Significant Match Found

DV One-Page Summary

KIC: 9395205 Candidate: 1 of 5 Period: 286.160 d



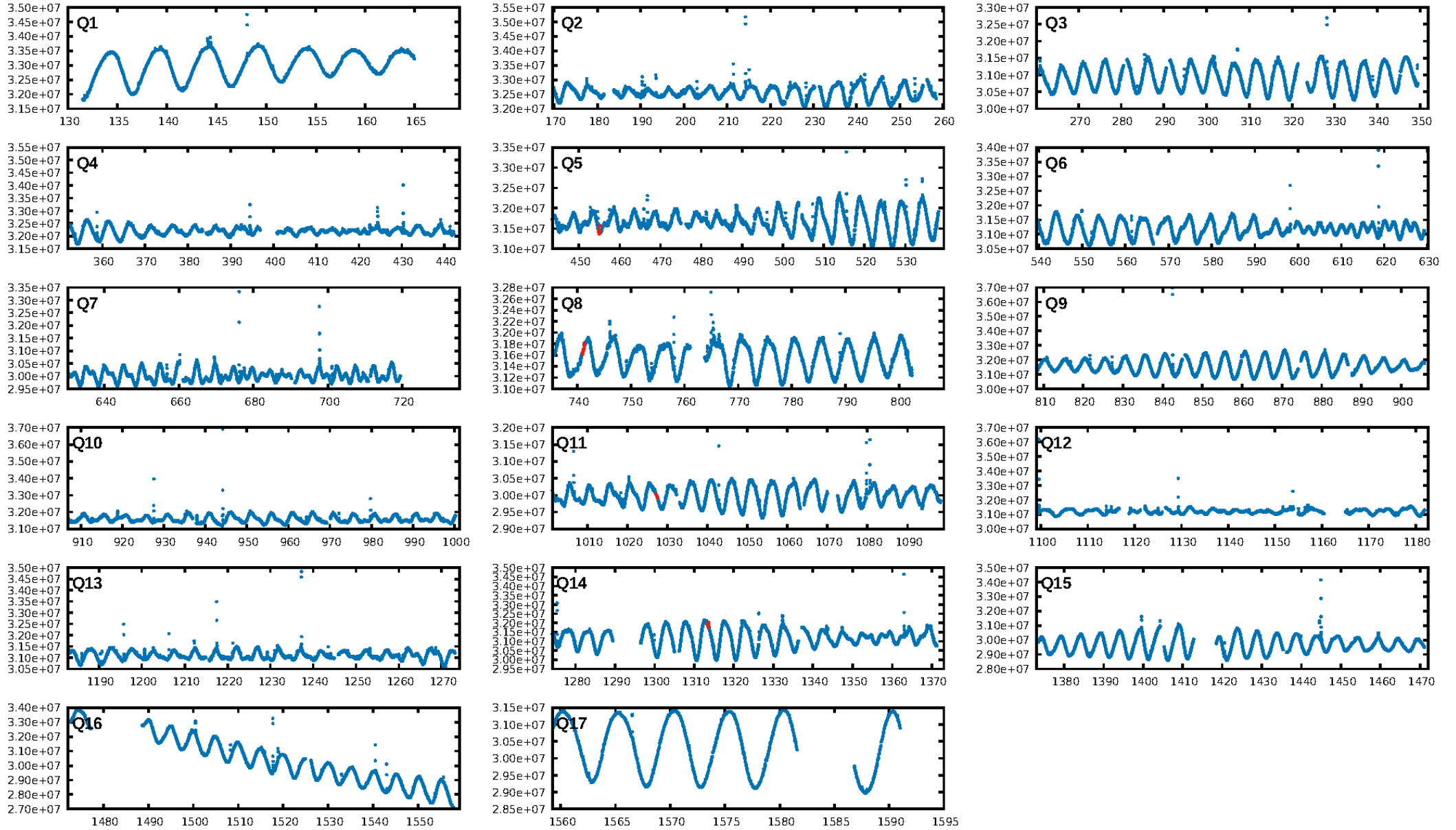
DV Fit Results:

Period = 286.15978 [0.00697] d
Epoch = 168.8515 [0.0188] BKJD
Rp/R* = 0.0312 [0.0292]
a/R* = 365.97 [1451.50]
b = 0.69 [2.98]
Seff = 0.11 [0.02]
Teq = 147 [6] K
Rp = 1.77 [1.67] Re
a = 0.6867 [0.0539] AU
Ag = 59364.66 [112654.30] [0.53σ]
Teffp = 3546 [1682] K [2.02σ]

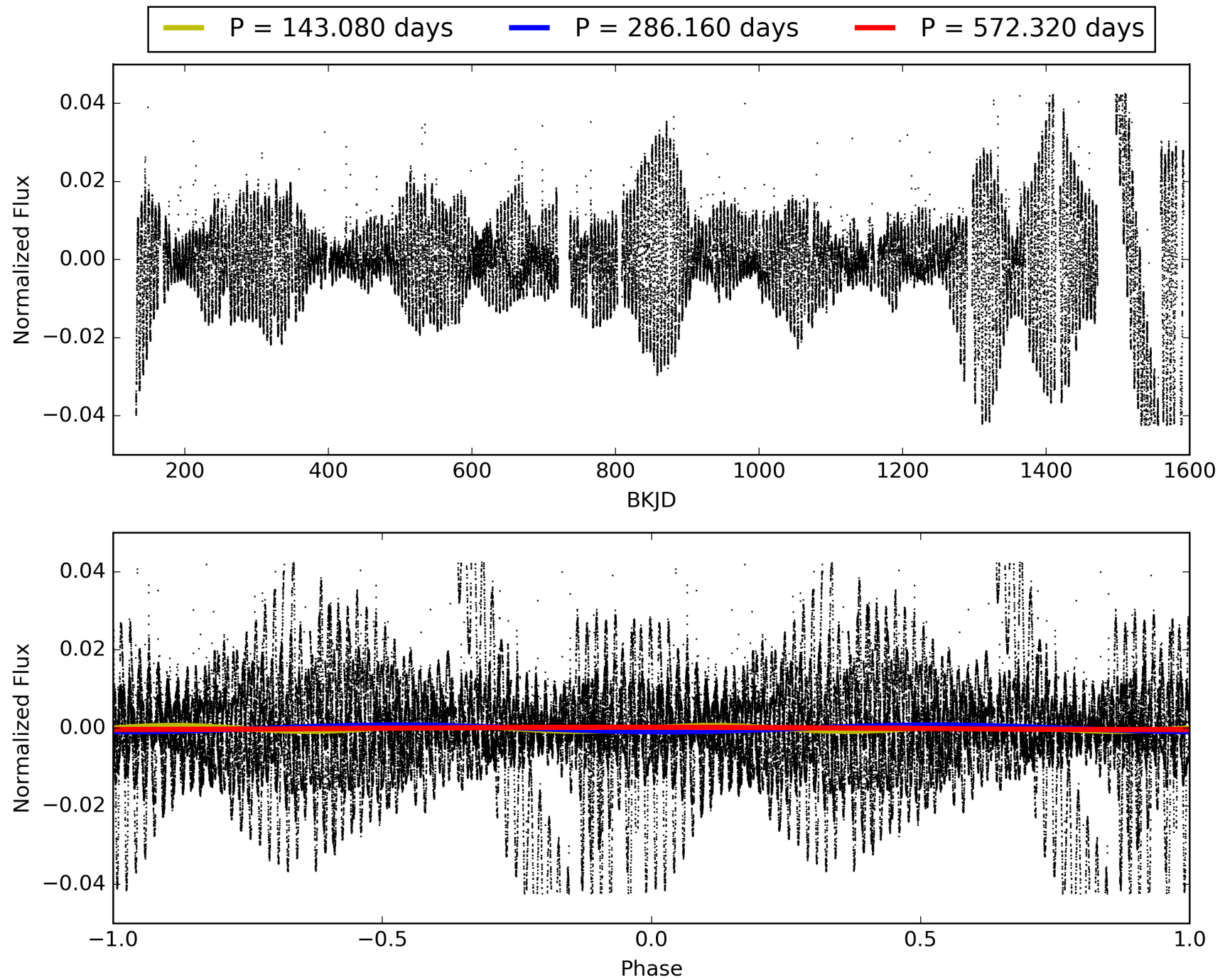
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [366.74σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 38.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.3979
Centroid-sig: 46.6%
Centroid-so: 0.464 arcsec [0.54σ]
OotOffset-rm: 0.087 arcsec [0.28σ]
KicOffset-rm: 0.107 arcsec [0.37σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 009395205-01, PDC Light Curves

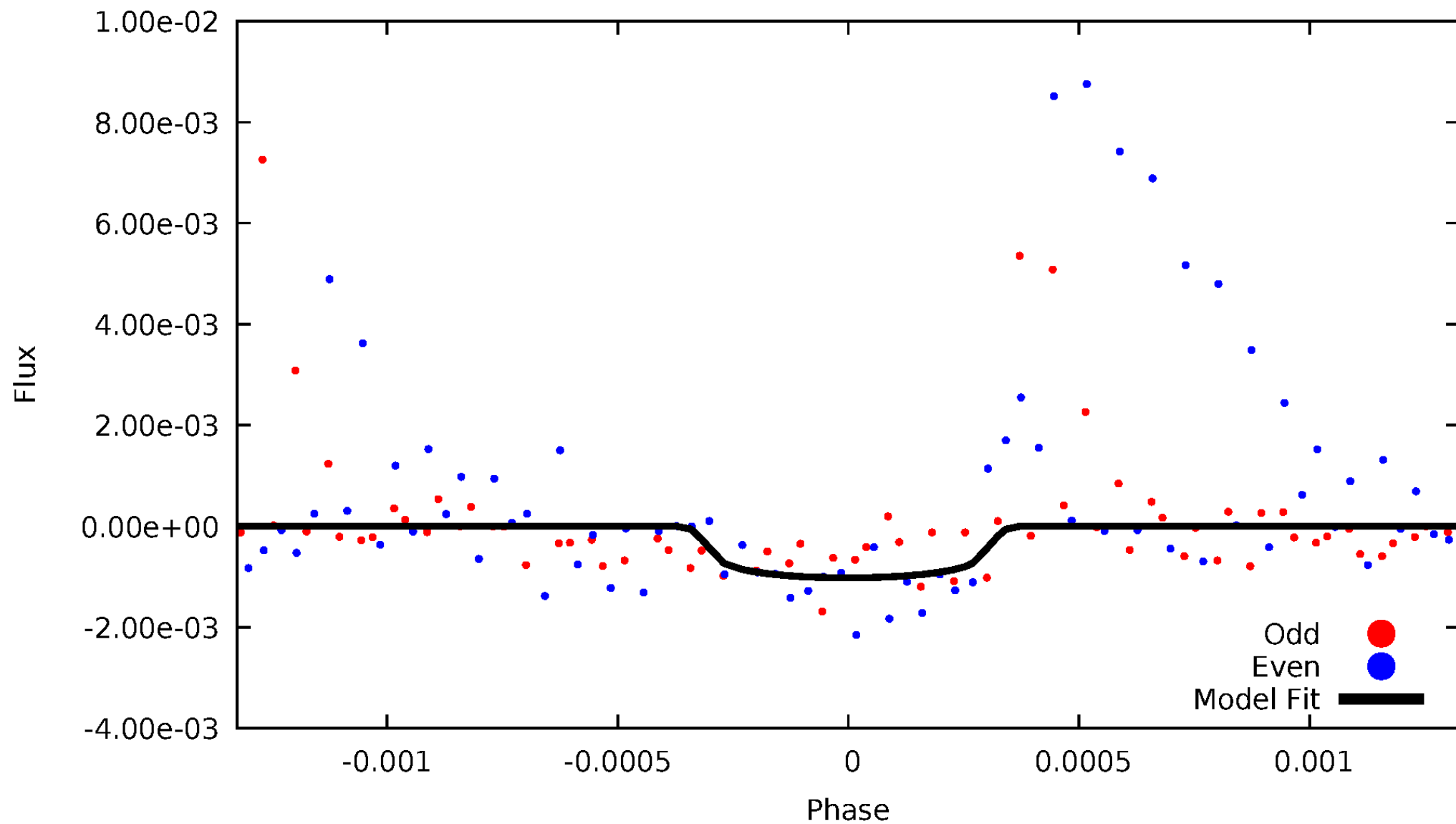


TCE 009395205-01



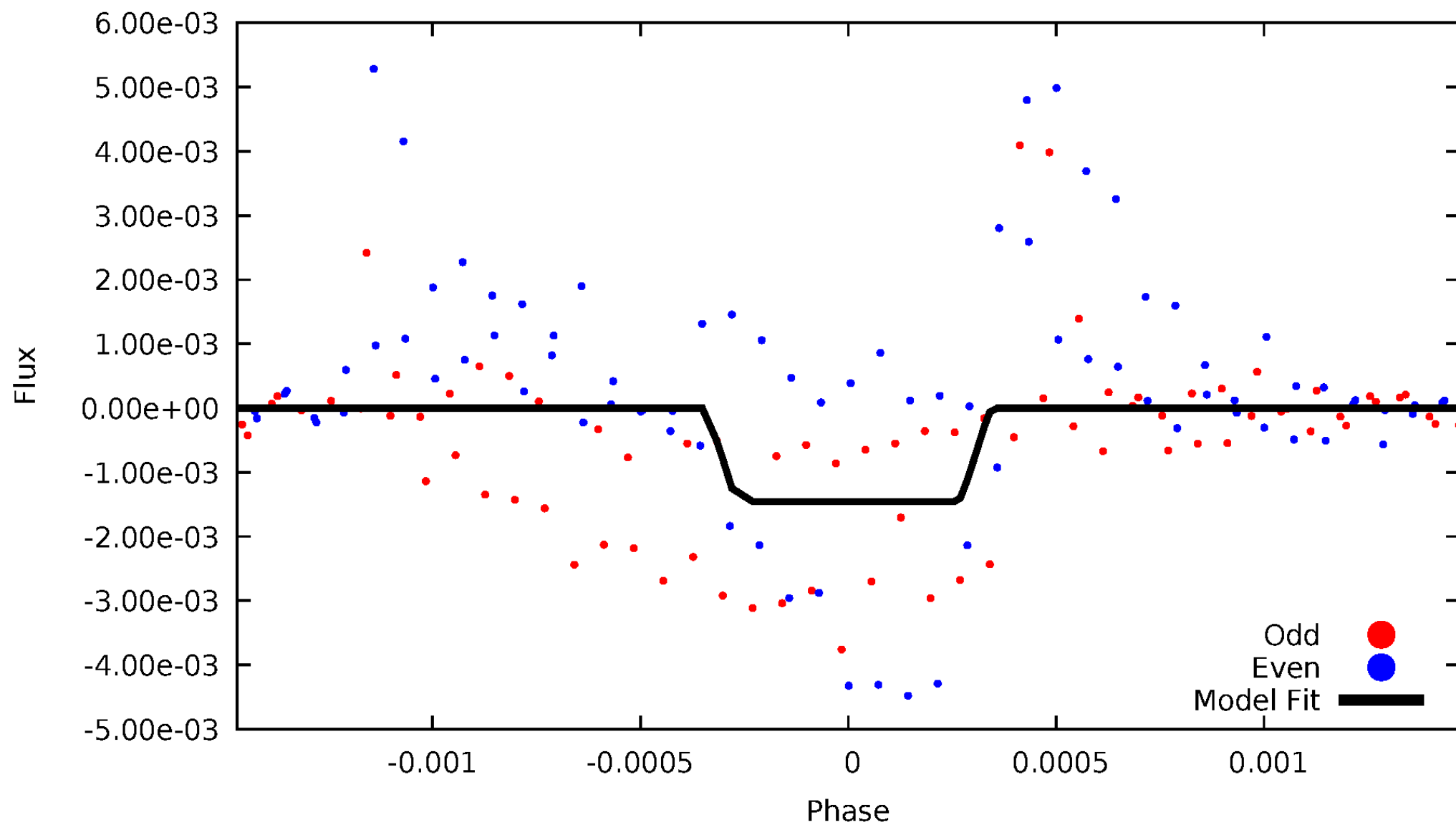
DV Odd/Even

TCE 009395205-01



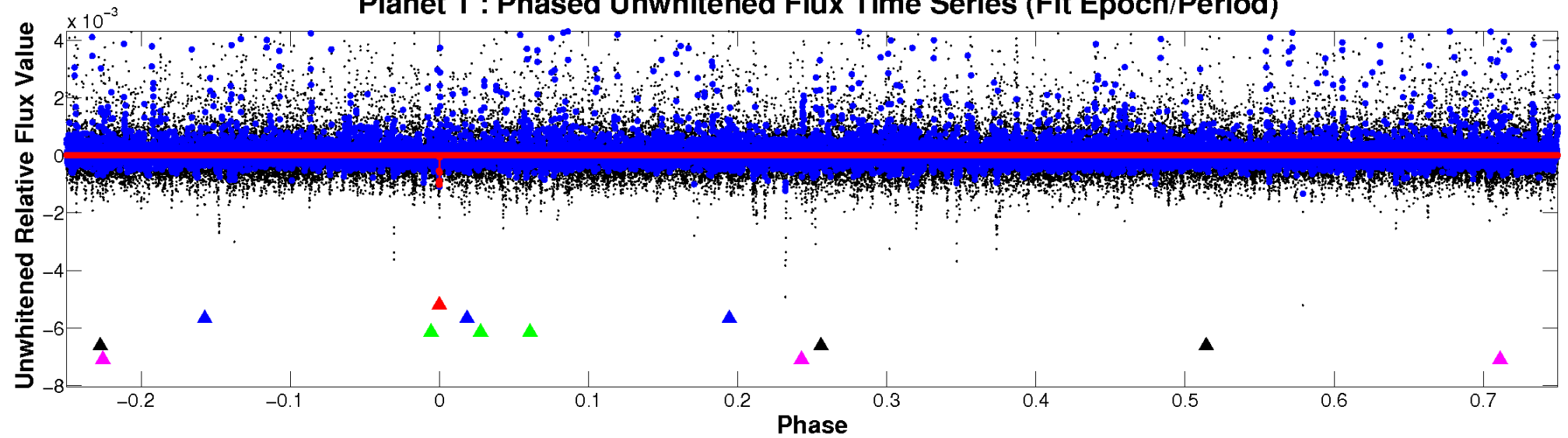
ALT Odd/Even

TCE 009395205-01

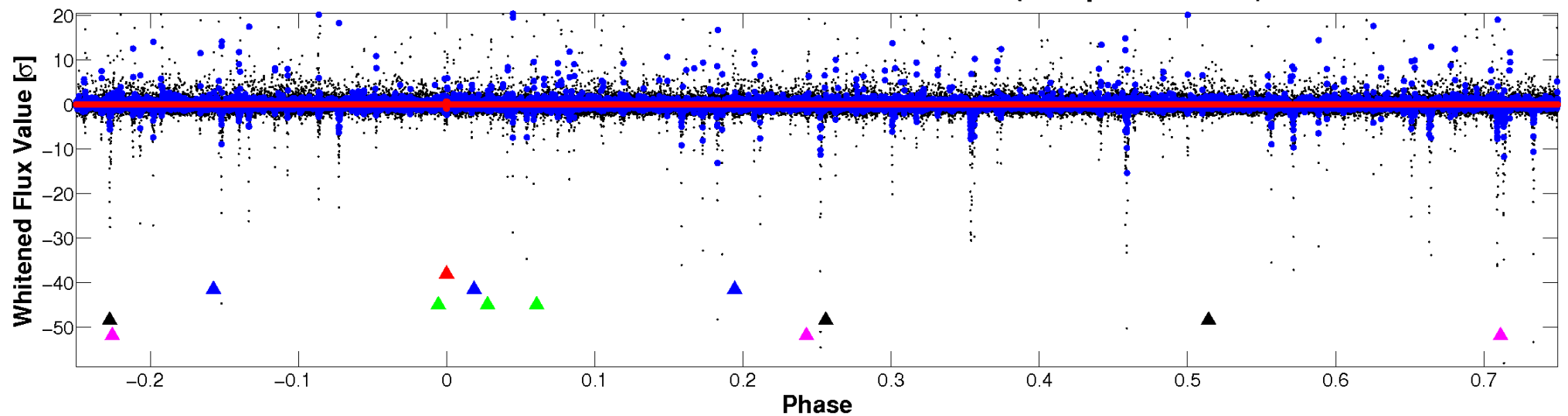


Non-Whitened Vs. Whitened Light Curve

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

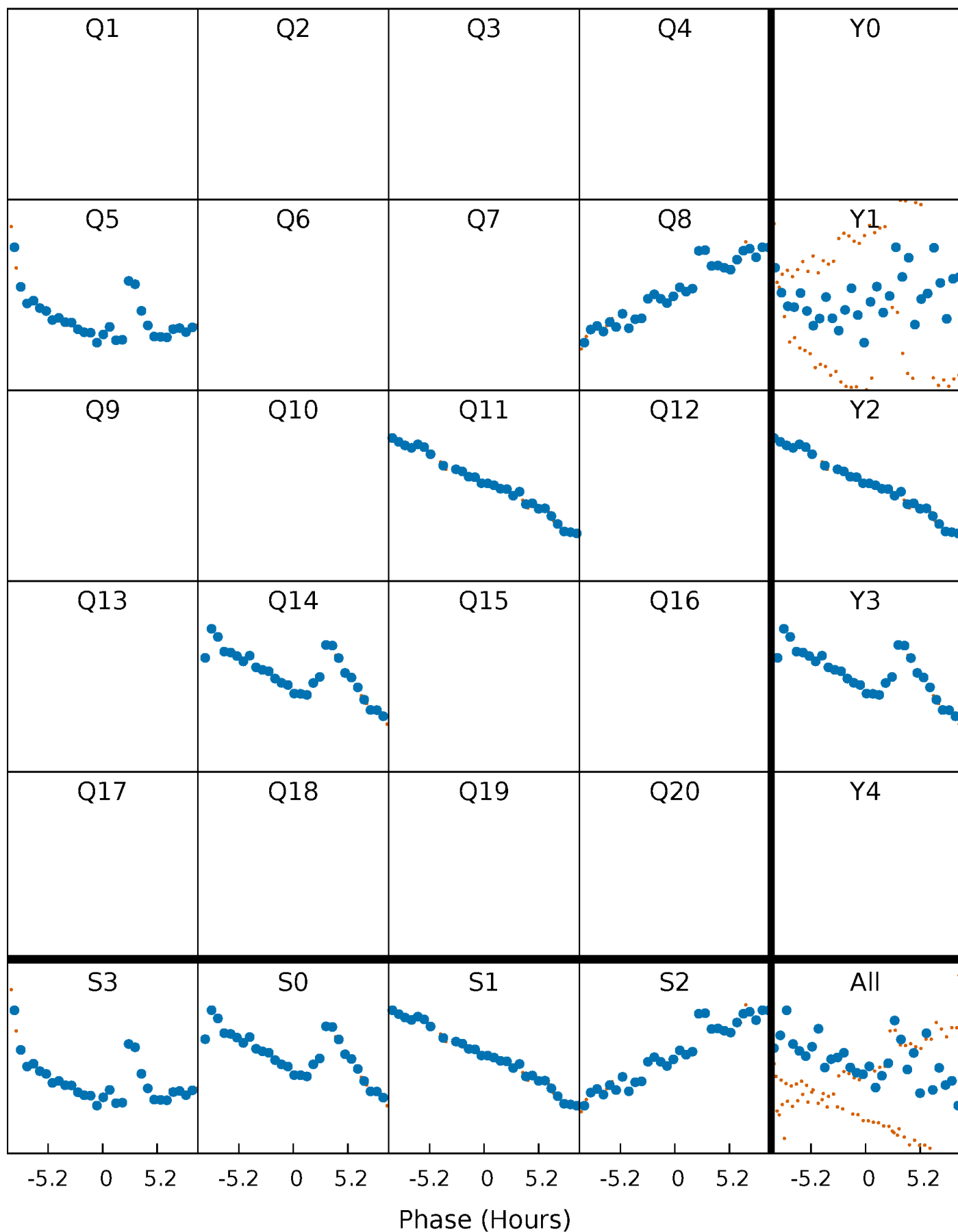


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



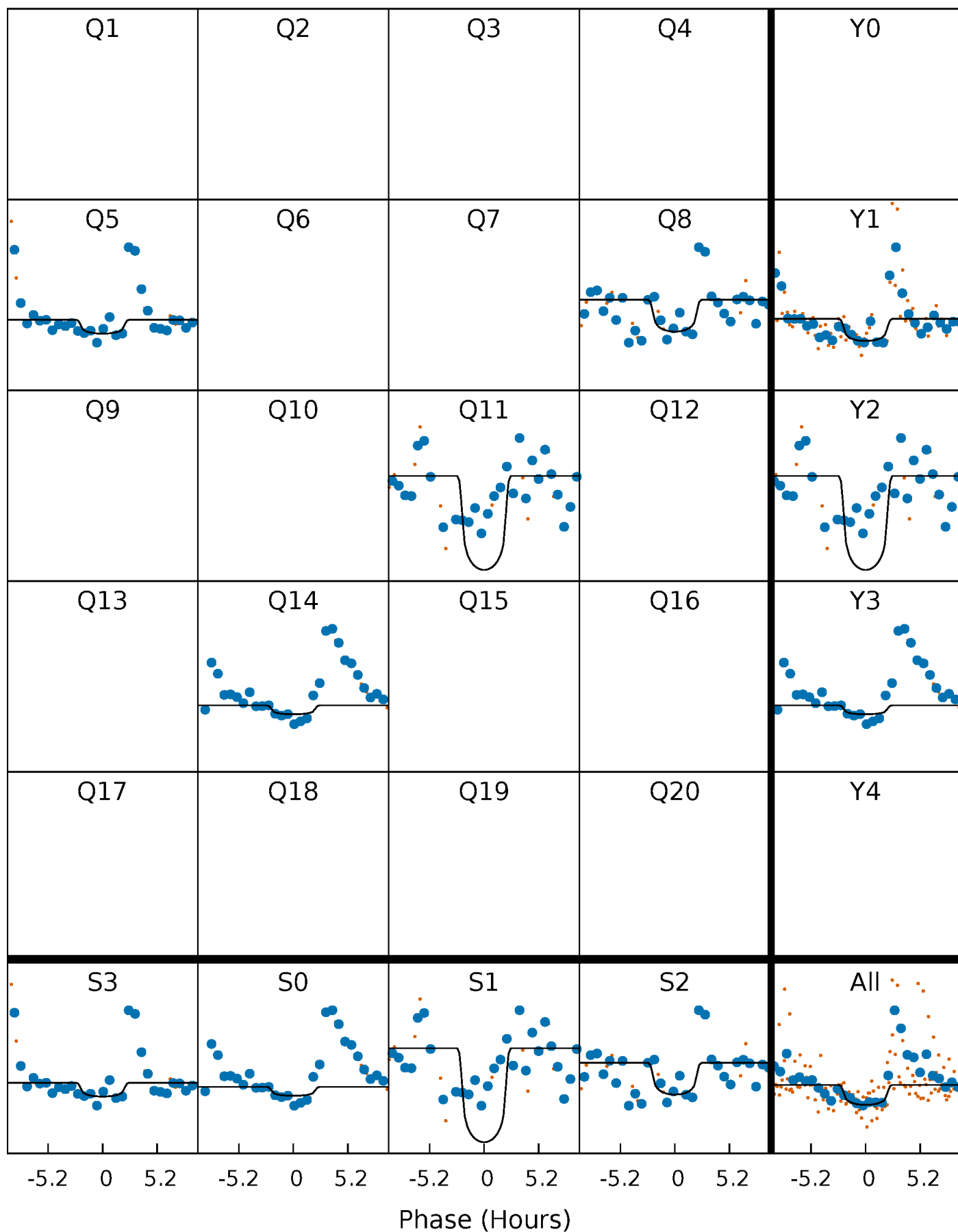
PDC Quarter-Phased Transit Curves

TCE 009395205-01 P=286.159777 Days $T_0=168.851454$ (BKJD)



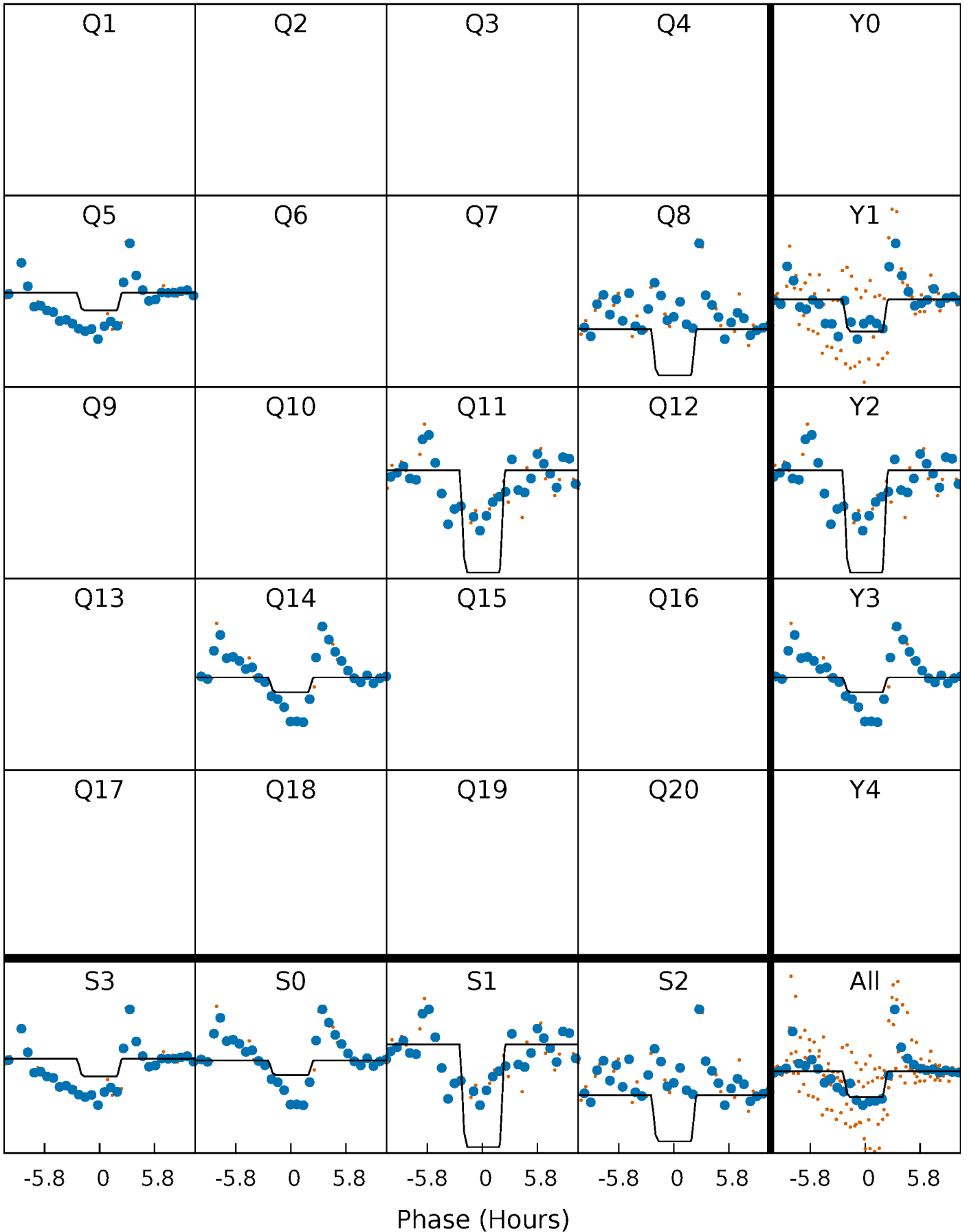
DV Quarter-Phased Transit Curves

TCE 009395205-01 P=286.159777 Days $T_0=168.851454$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

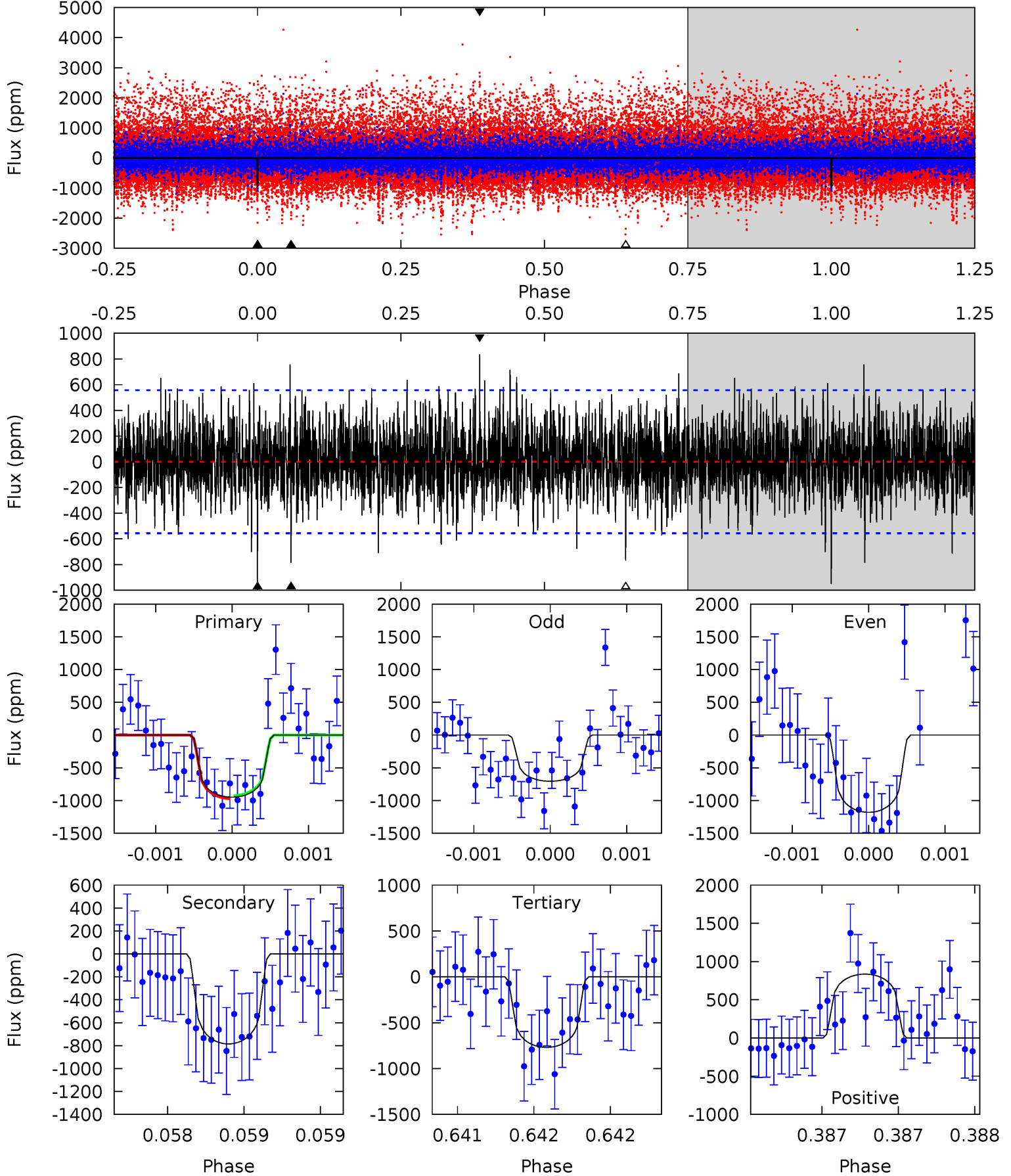
TCE 009395205-01 P=286.165197 Days $T_0=168.834519$ (BKJD)



DV Model-Shift Uniqueness Test

009395205-01, P = 286.159777 Days, E = 168.851454 Days

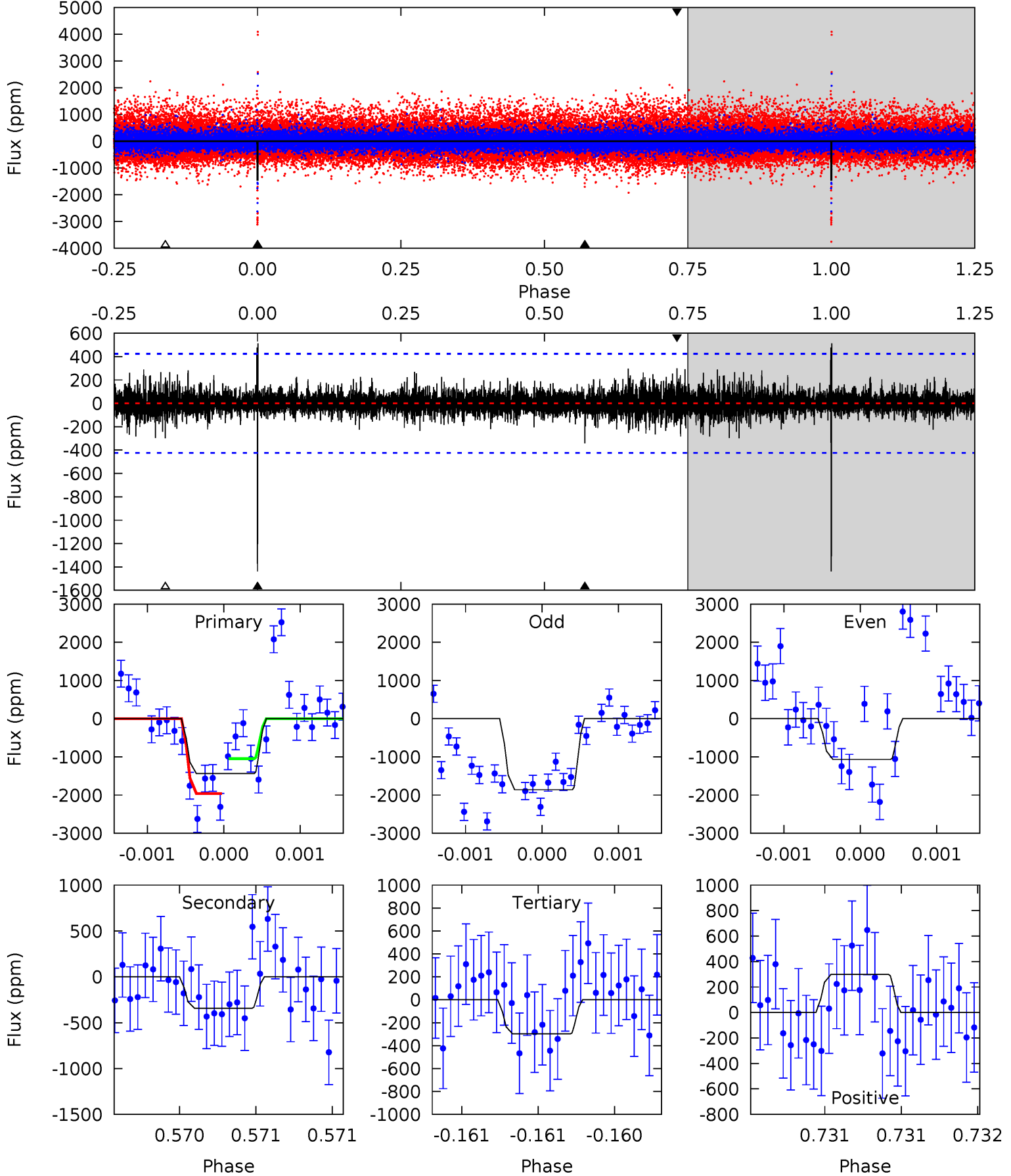
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.40	7.78	7.62	8.27	5.52	3.40	1.94	1.78	1.12	0.16	-0.50	2.04	0.98	0.47	0.23



Alt Model-Shift Uniqueness Test

009395205-01, P = 286.165197 Days, E = 168.834519 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.8	4.46	3.89	3.89	5.53	3.41	0.88	14.9	14.9	0.57	0.57	5.36	0.91	0.26	5.67



Stellar Parameters For KIC 009395205

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3827^{+92}_{-103}	$4.728^{+0.054}_{-0.027}$	$-0.100^{+0.200}_{-0.200}$	$0.520^{+0.038}_{-0.052}$	$0.526^{+0.045}_{-0.050}$	$5.280^{+1.311}_{-0.726}$
	+2%/-3%	+1%/-1%	+200%/-200%	+7%/-10%	+9%/-10%	+25%/-14%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 009395205-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-785 ± 101	$2.12^{+1.50}_{-1.43}$	204^{+6}_{-6}	3457^{+1737}_{-503}	$45602^{+403701}_{-29879}$
Alt.	-342 ± 77	$2.38^{+1.49}_{-1.51}$	204^{+6}_{-6}	2981^{+1077}_{-396}	$16047^{+102436}_{-10486}$

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

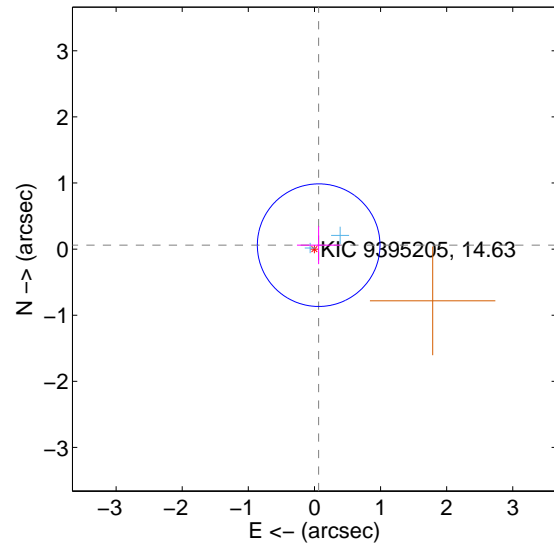
Supplemental centroid analysis for 009395205-01. Kepler magnitude: 14.63. Transit SNR 5.19

There are 2 quarters with good PRF difference image offsets

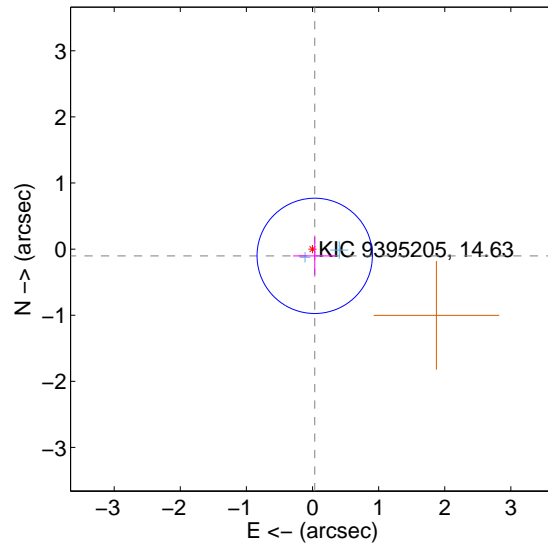
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.087 ± 0.309	0.28	-0.064 ± 0.327	0.059 ± 0.287
PRF-fit source offset from KIC position	0.107 ± 0.291	0.37	-0.033 ± 0.327	-0.102 ± 0.287
photometric centroid source offset	0.46 ± 0.86	0.54	0.36 ± 0.89	0.29 ± 0.81

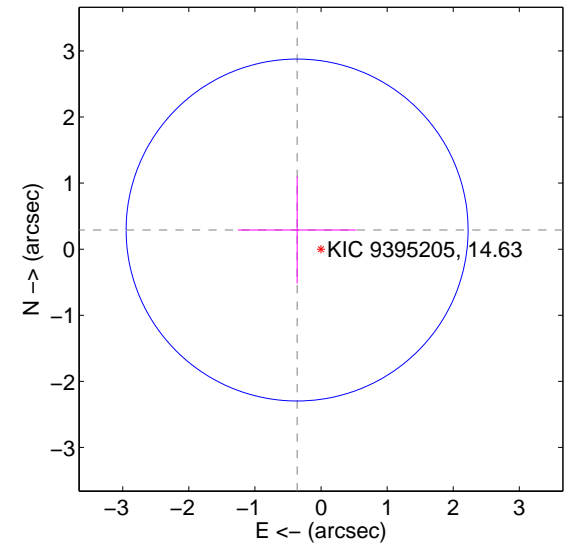
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

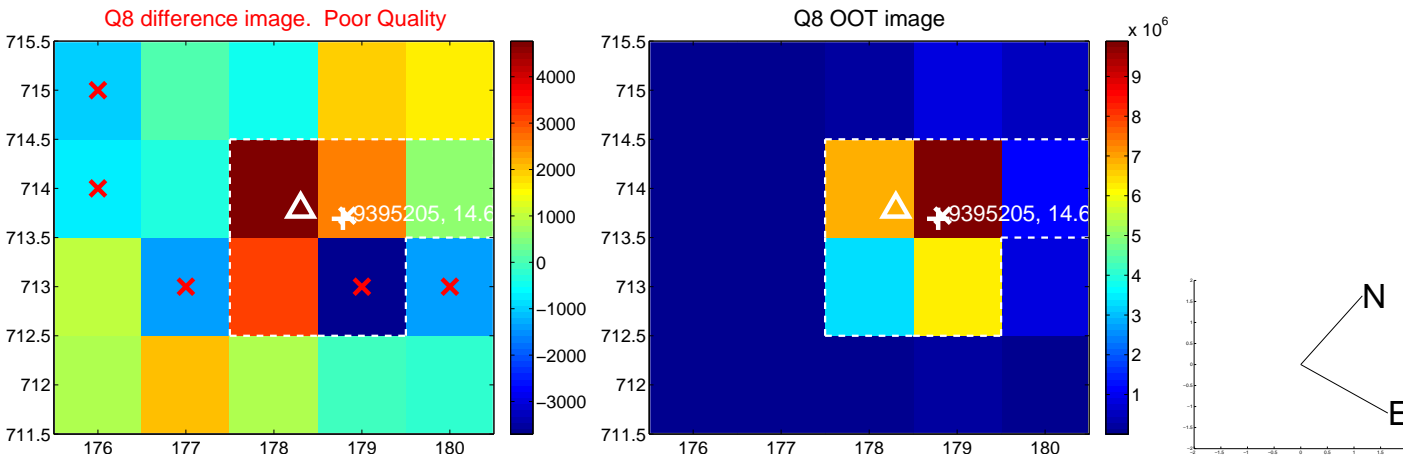
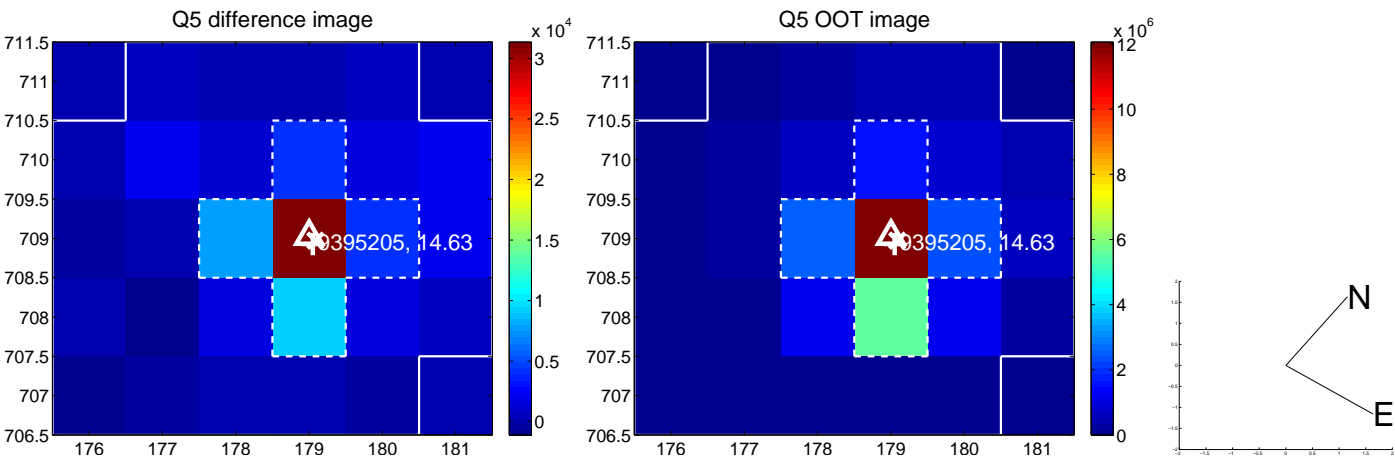


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



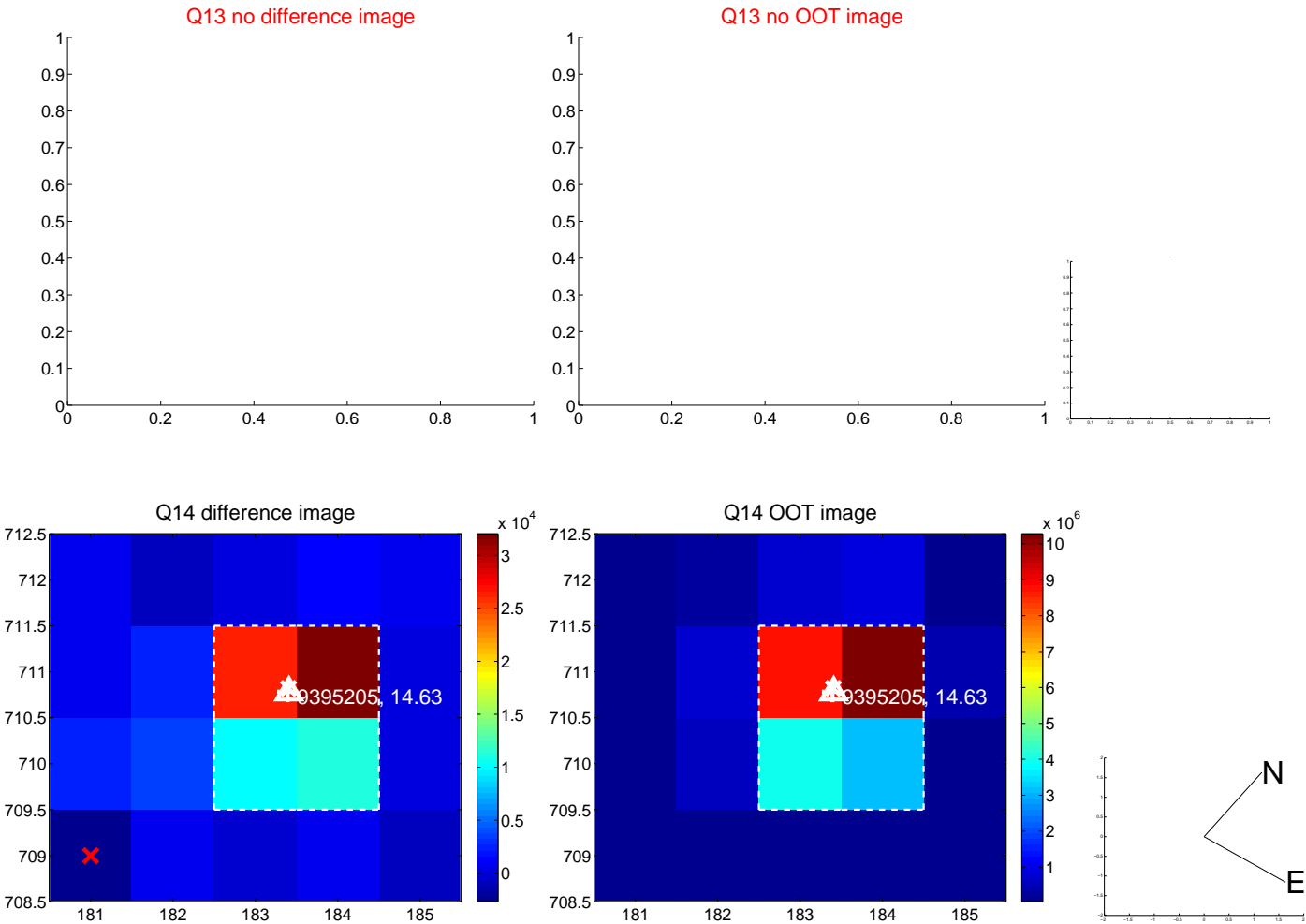
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



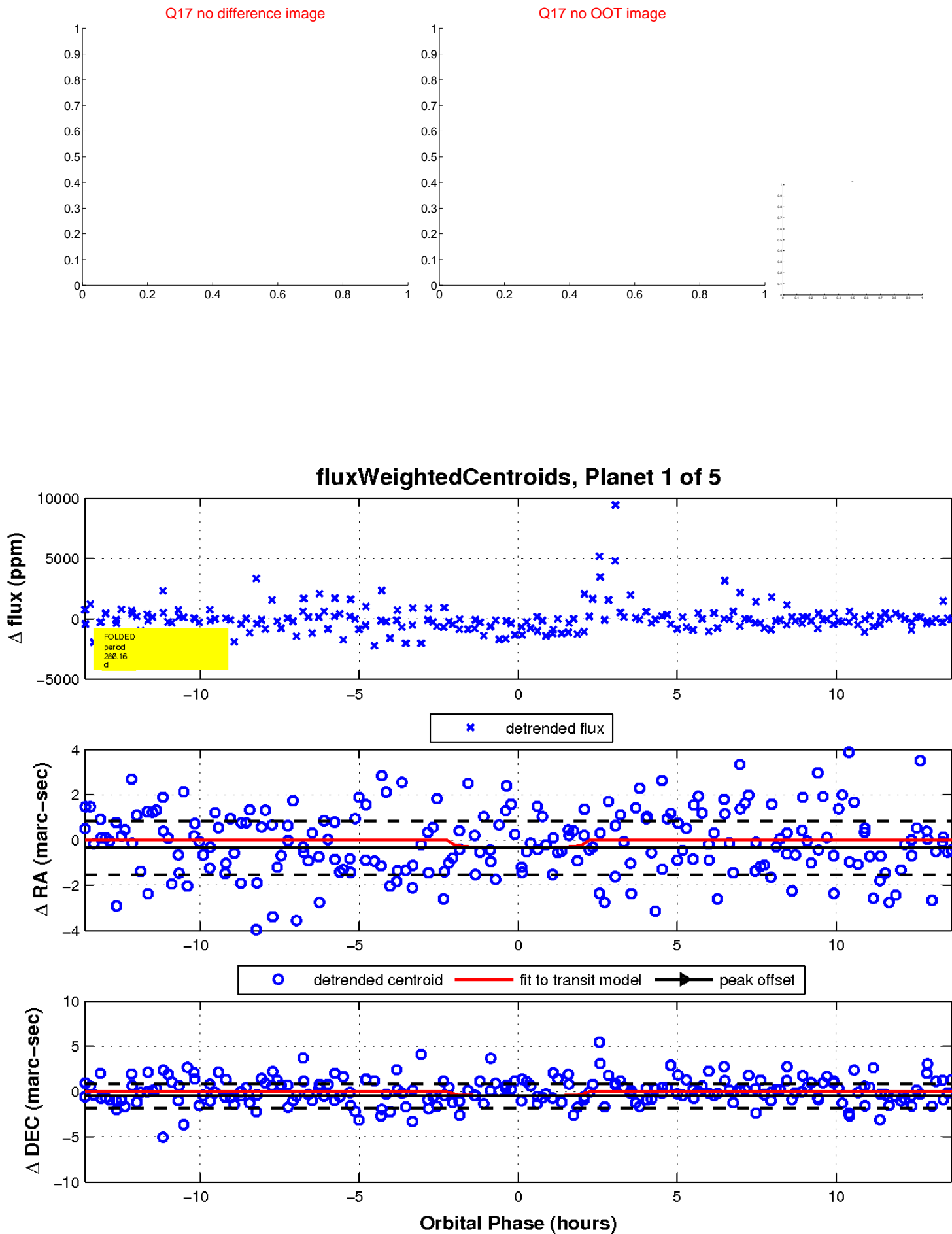
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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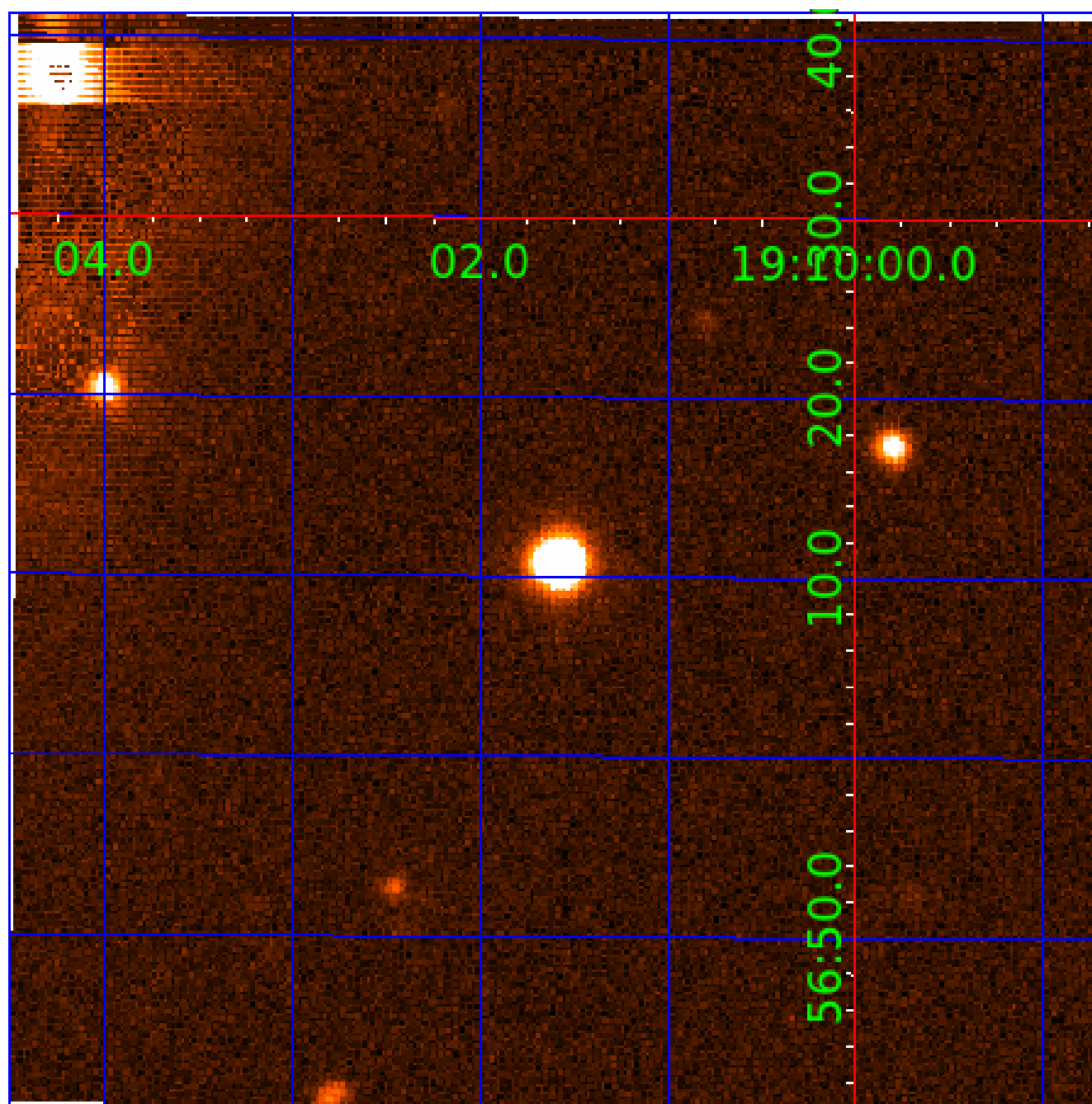


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009395205

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})
009395205-01	OBS	No	286.159777	168.851454	1022.7	4.551	14.6	5.2	0.52	3827	1.77	0.11
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009395205-04	OBS	No	498.385076	389.945788	2309.2	2.791	11.5	10.1	0.52	3827	2.51	0.05
009395205-05	OBS	No	420.216161	390.445066	726.5	7.500	12.3	-1.0	0.52	3827	1.39	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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009395205-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009395205-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009395205-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV
009395205-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

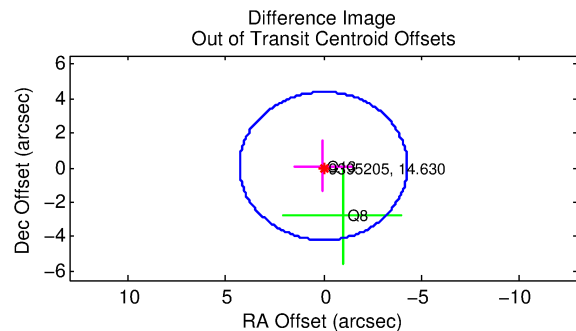
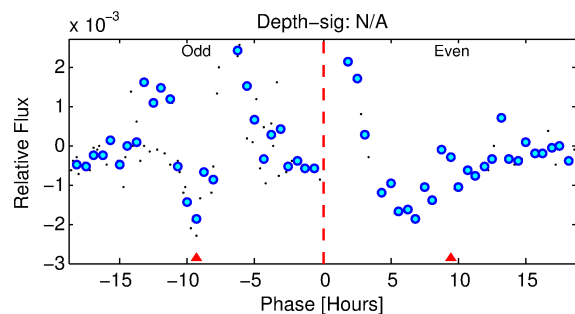
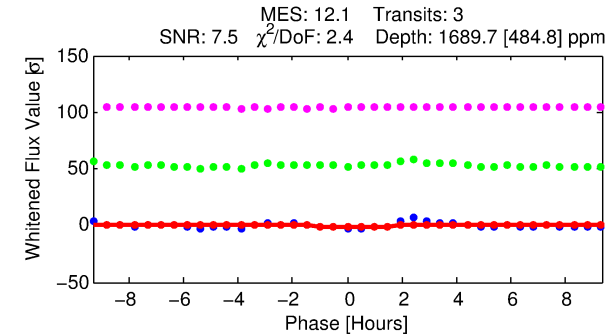
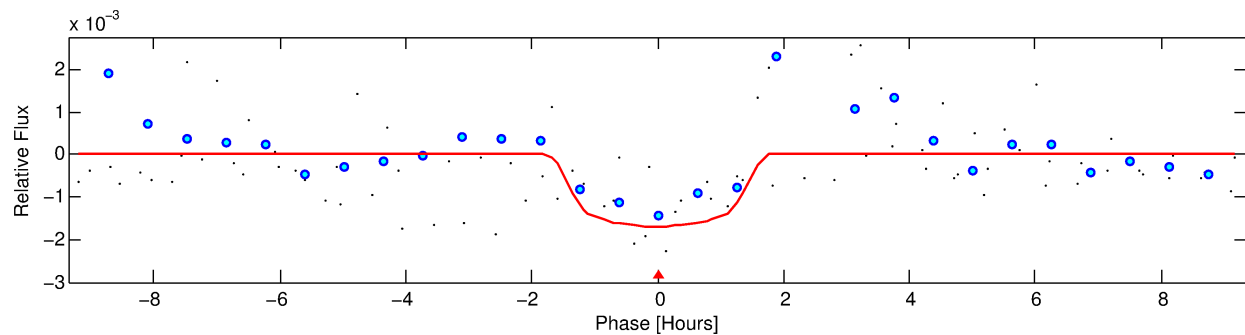
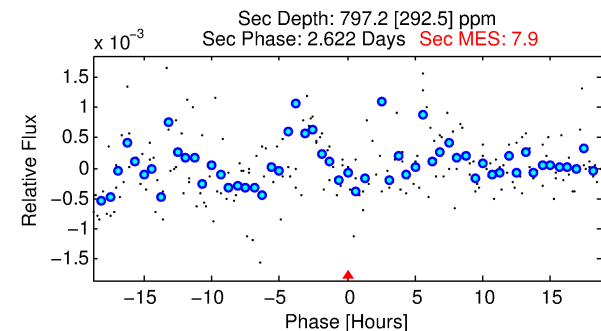
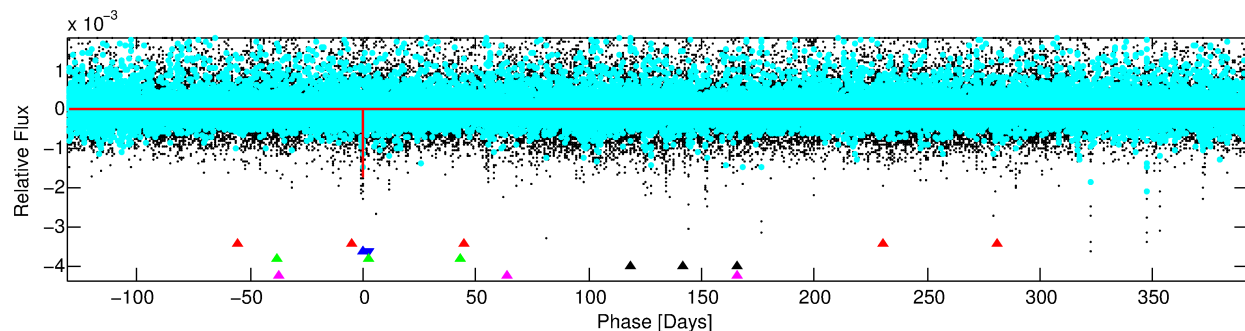
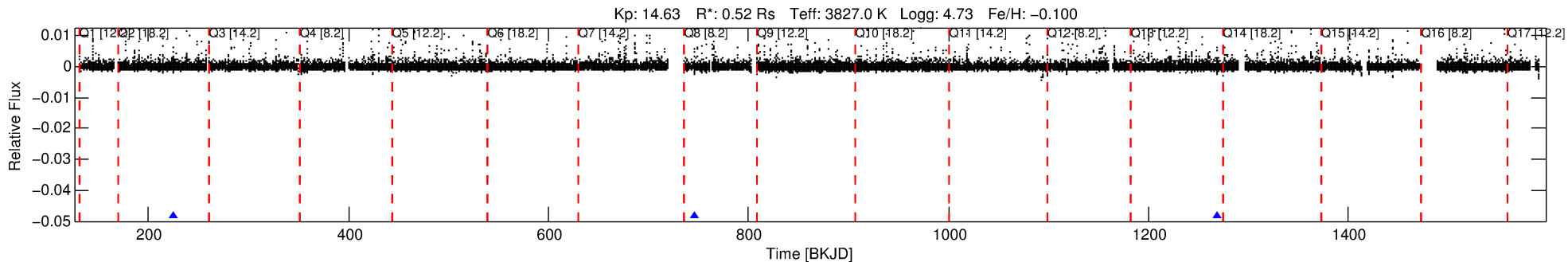
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009395205-02

No Significant Match Found

DV One-Page Summary

KIC: 9395205 Candidate: 2 of 5 Period: 521.990 d



DV Fit Results:

Period = 521.98953 [0.00902] d
Epoch = 224.4952 [0.0119] BKJD
Rp/R* = 0.0393 [0.0609]
a/R* = 1075.20 [7126.43]
b = 0.61 [6.86]
Seff = 0.05 [0.01]
Teq = 120 [5] K
Rp = 2.23 [3.46] Re
a = 1.0252 [0.0805] AU
Ag = 92671.97 [289197.75] [0.32σ]
Teffp = 3244 [2531] K [1.23σ]

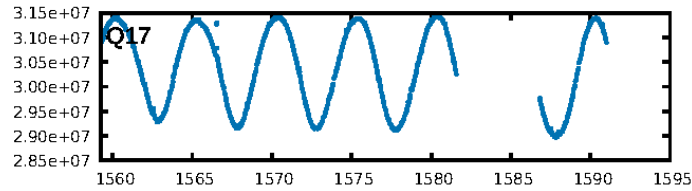
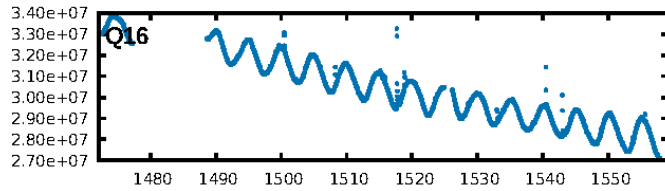
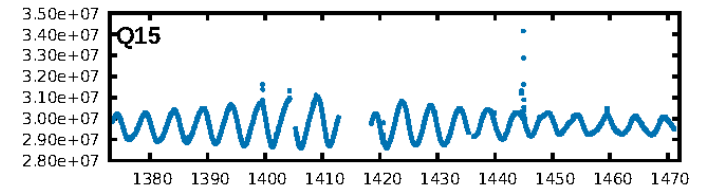
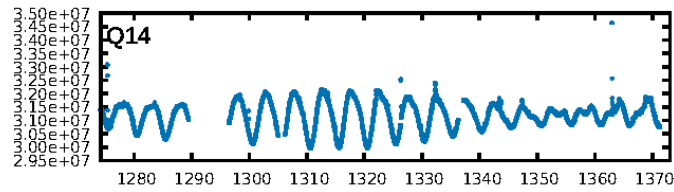
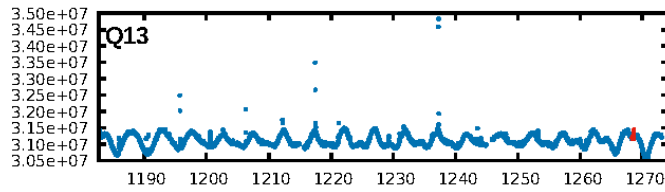
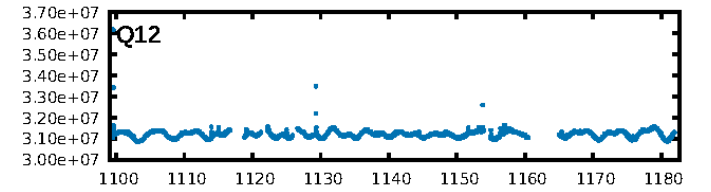
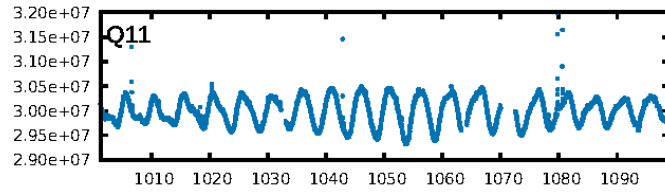
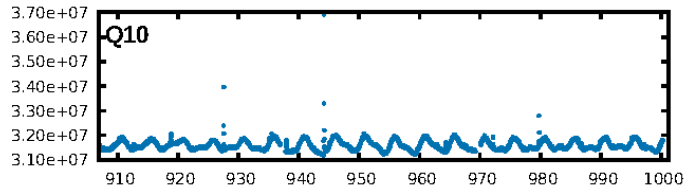
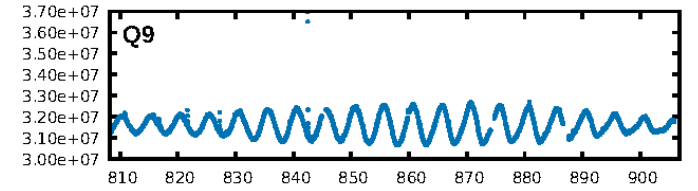
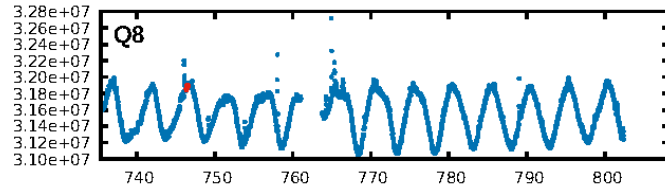
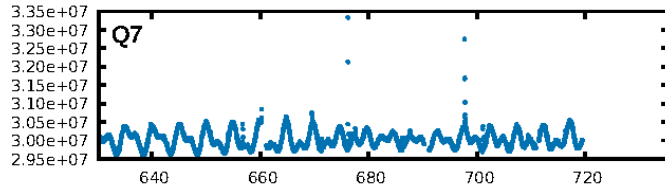
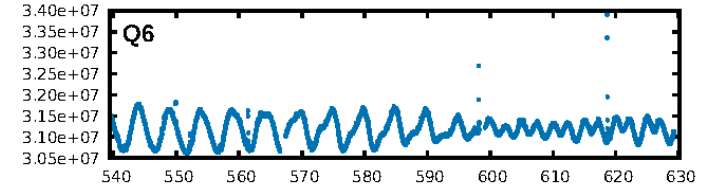
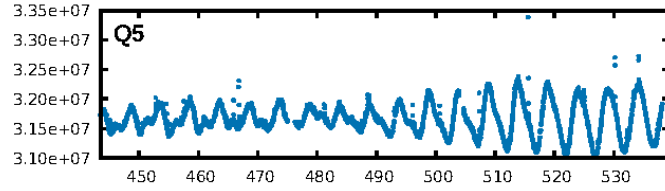
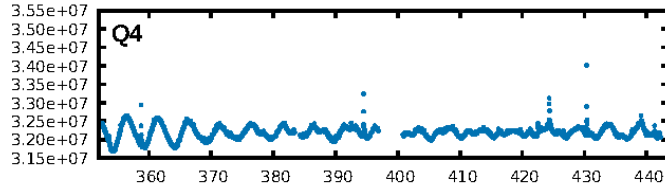
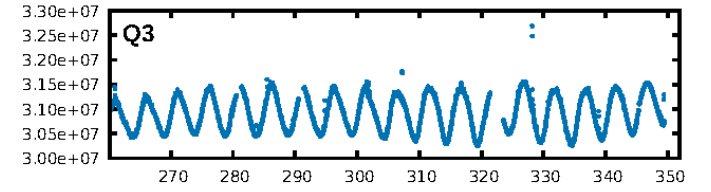
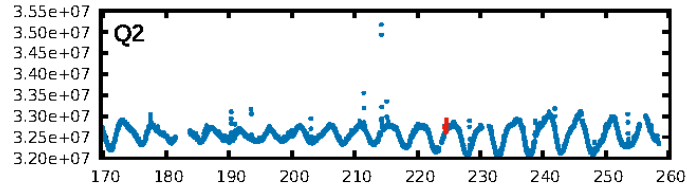
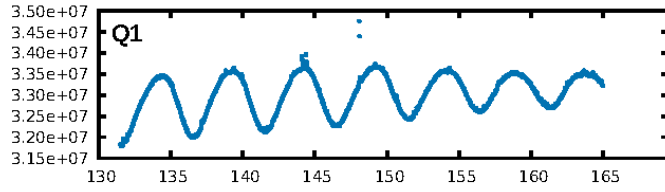
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [135.31σ]
LongPeriod-sig: 100.0% [179.54σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 21.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 5.419
Centroid-sig: 33.6%
Centroid-so: 0.747 arcsec [0.95σ]
OotOffset-rm: 0.093 arcsec [0.07σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-rm: 0.101 arcsec [0.07σ]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

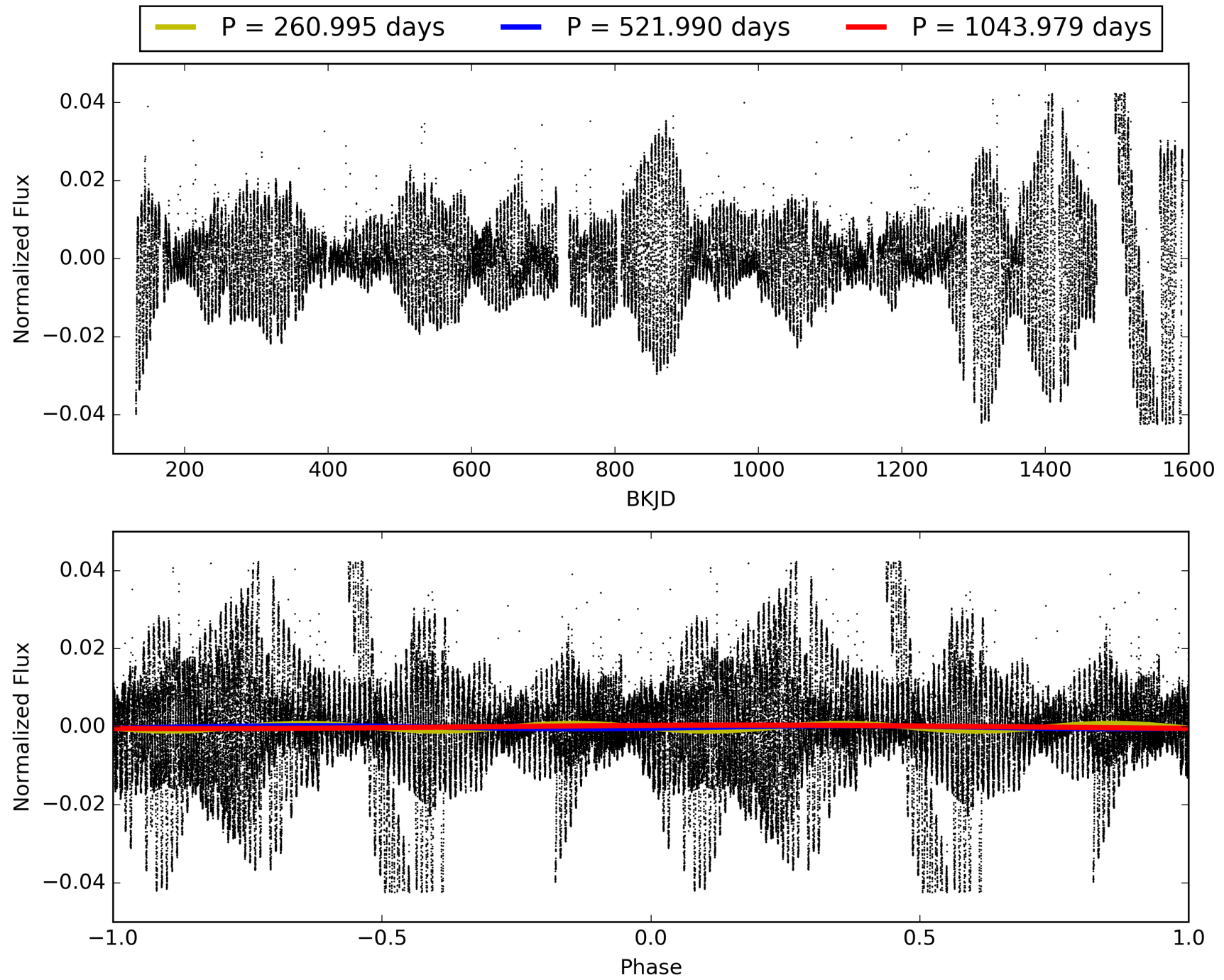
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:52:22 Z

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

TCE 009395205-02, PDC Light Curves

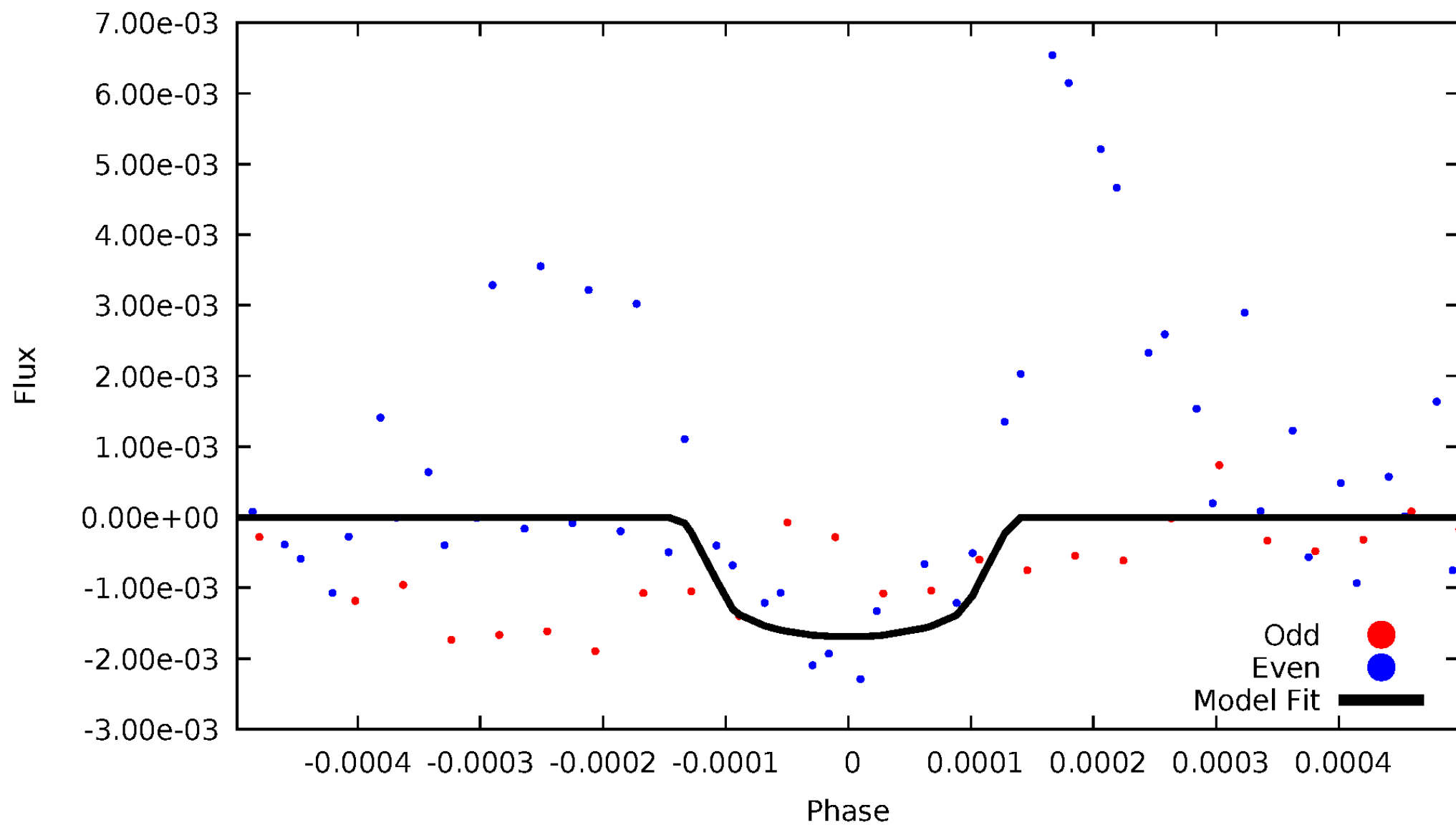


TCE 009395205-02



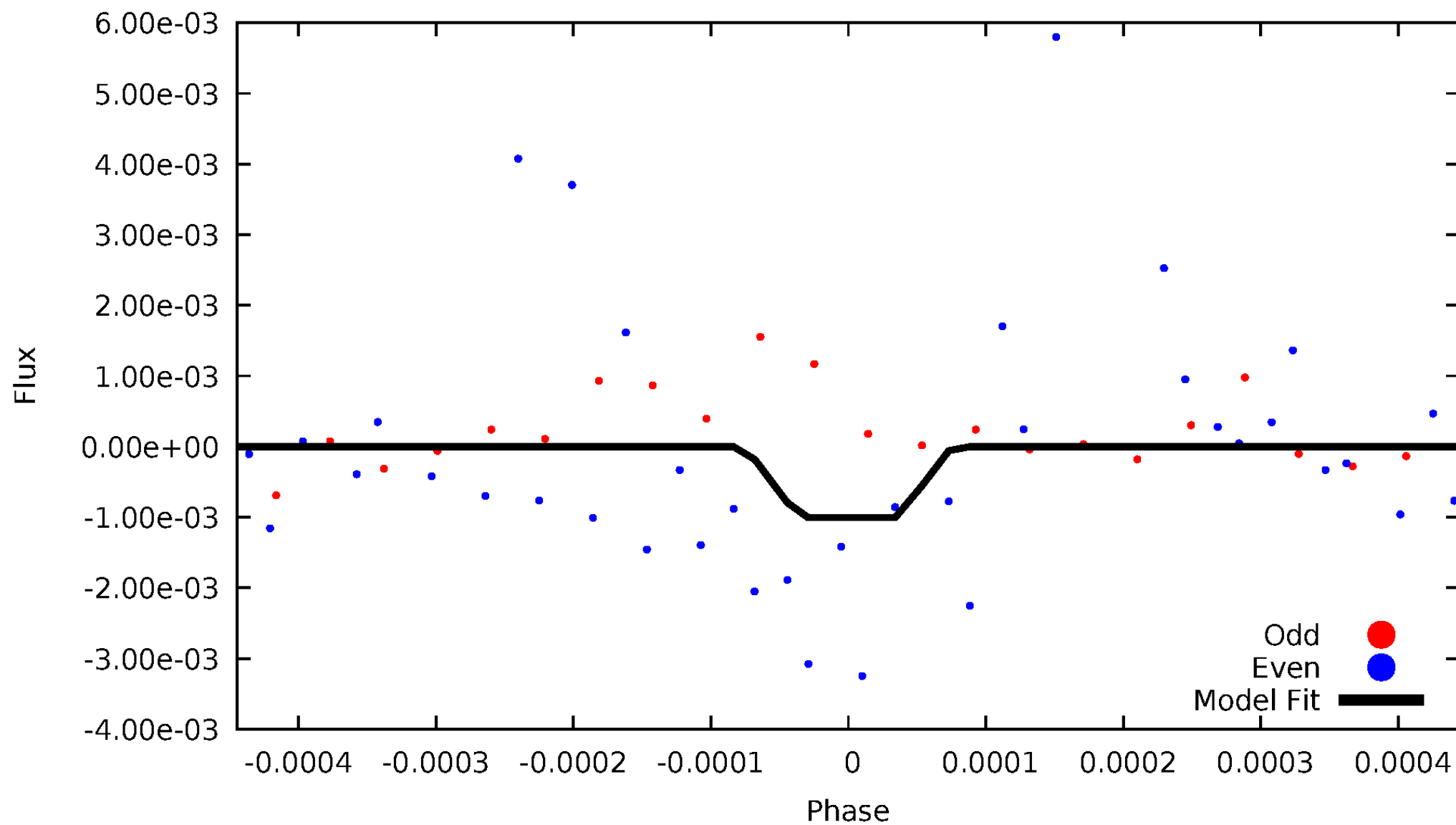
DV Odd/Even

TCE 009395205-02



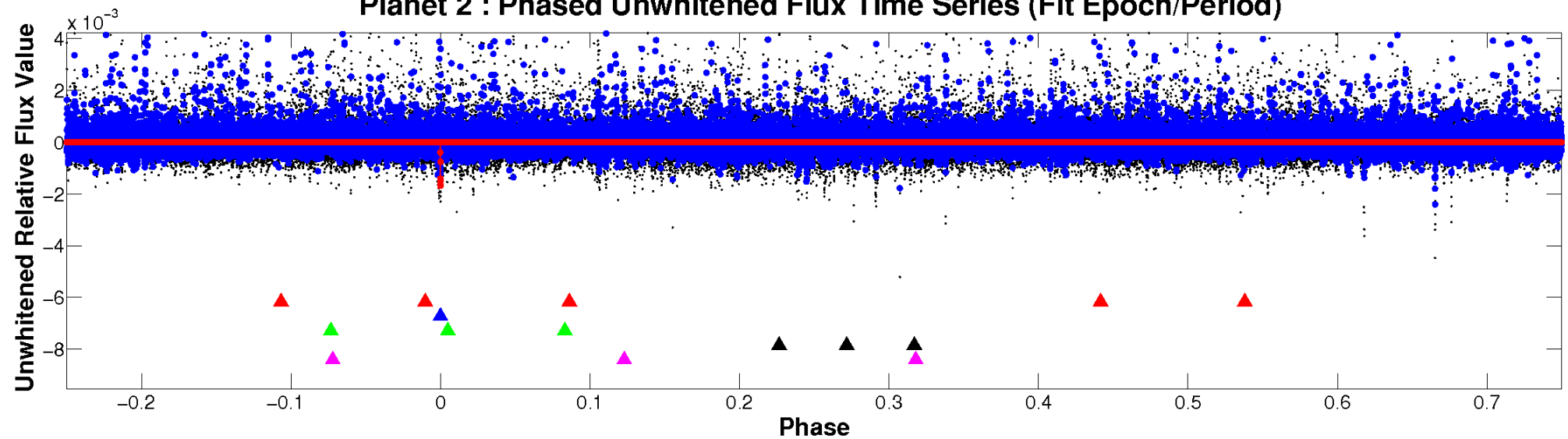
ALT Odd/Even

TCE 009395205-02

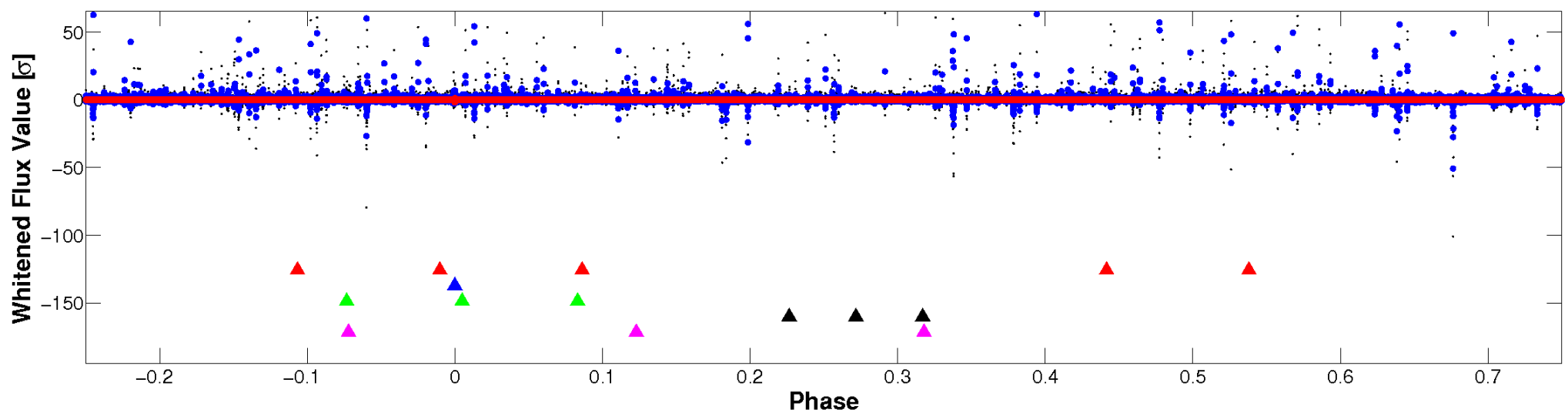


Non-Whitened Vs. Whitened Light Curve

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

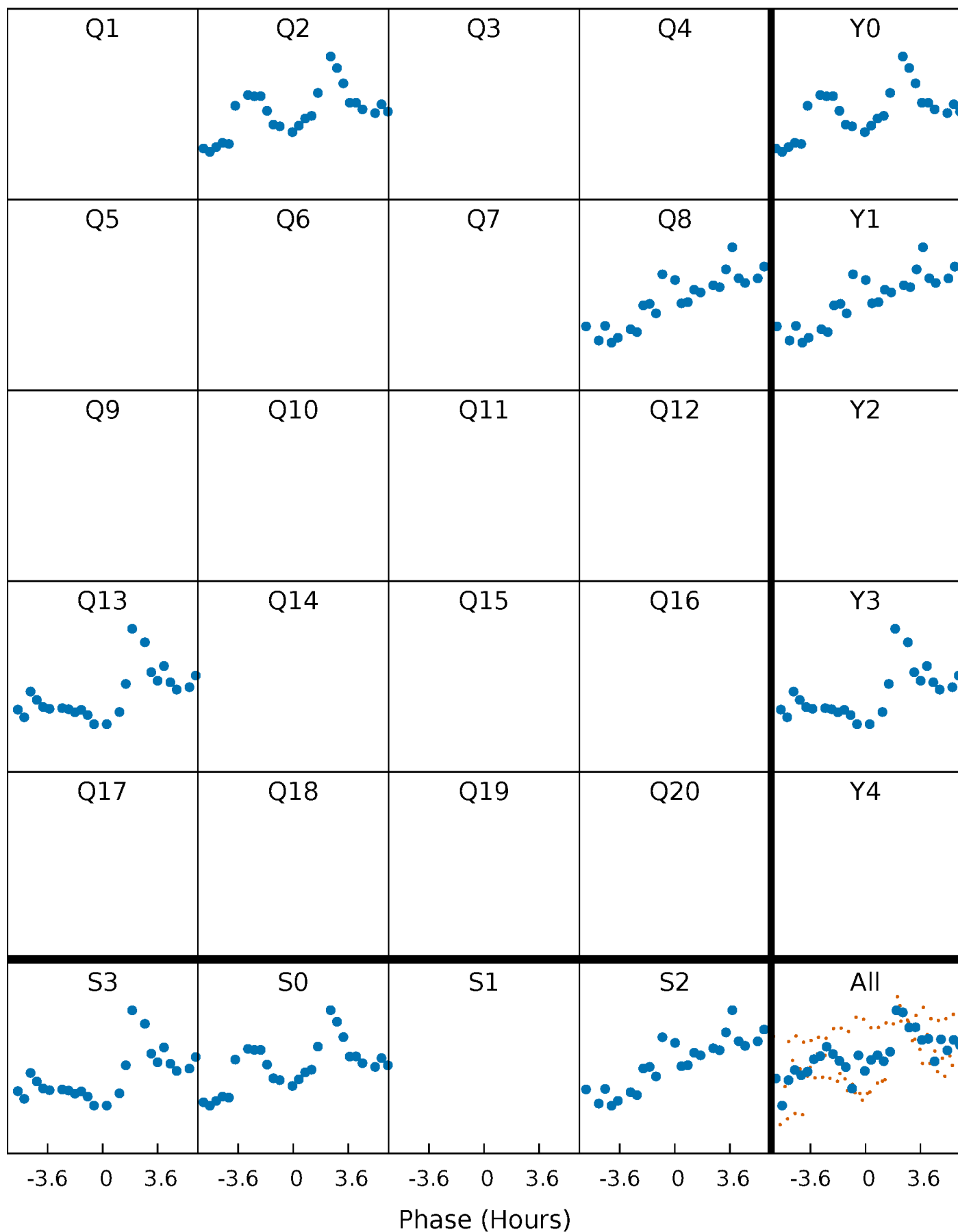


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



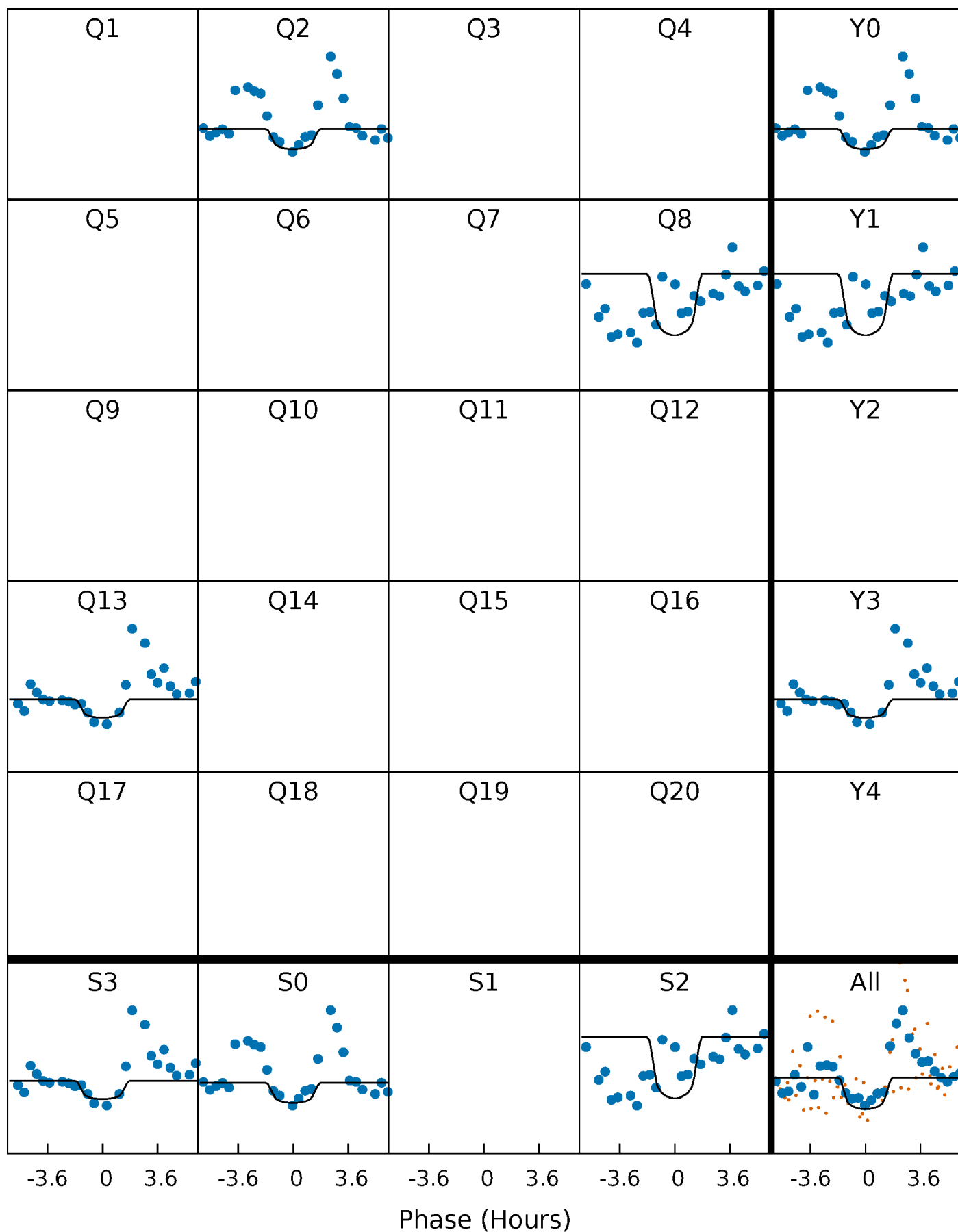
PDC Quarter-Phased Transit Curves

TCE 009395205-02 P=521.989531 Days $T_0=224.495212$ (BKJD)



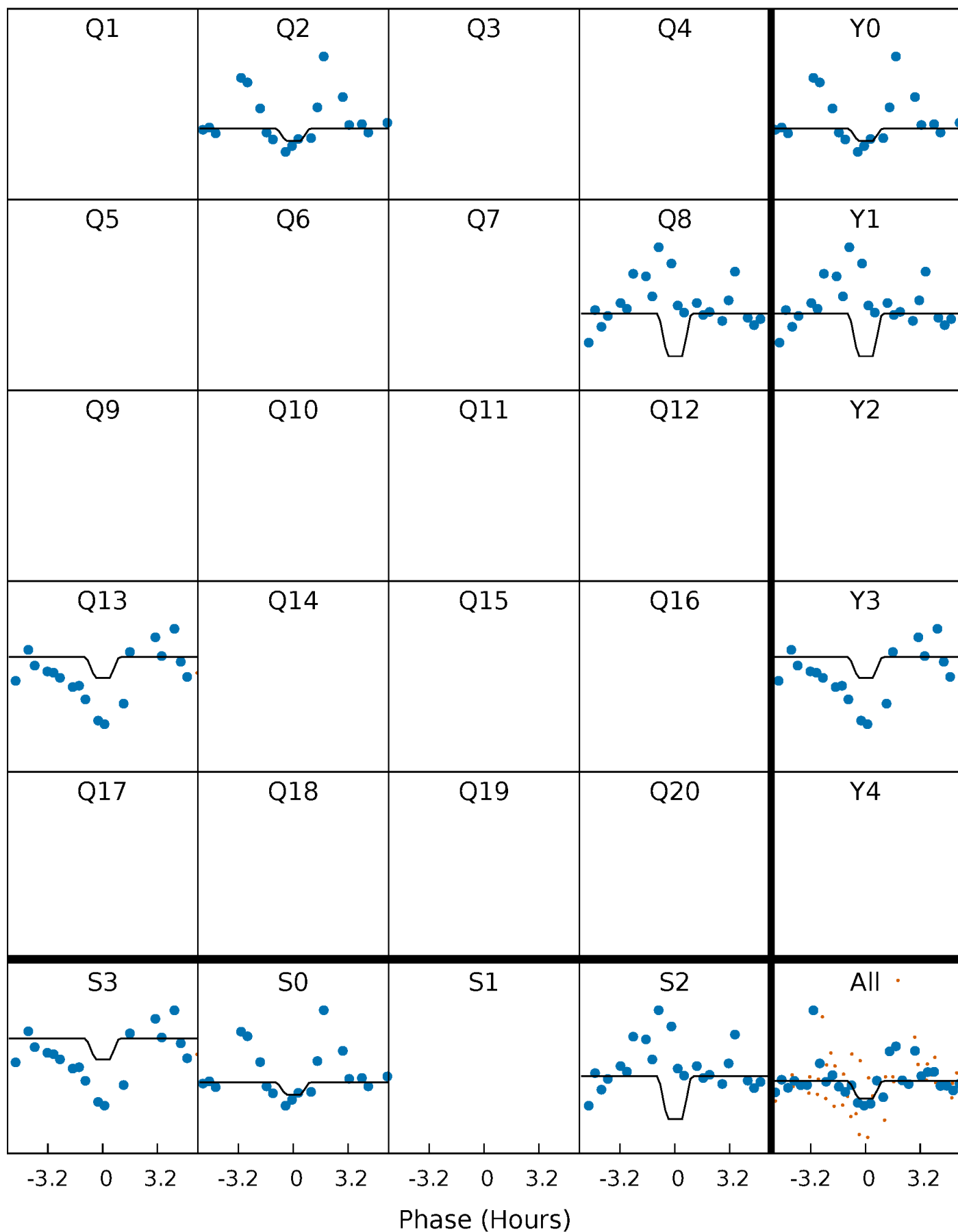
DV Quarter-Phased Transit Curves

TCE 009395205-02 P=521.989531 Days $T_0=224.495212$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

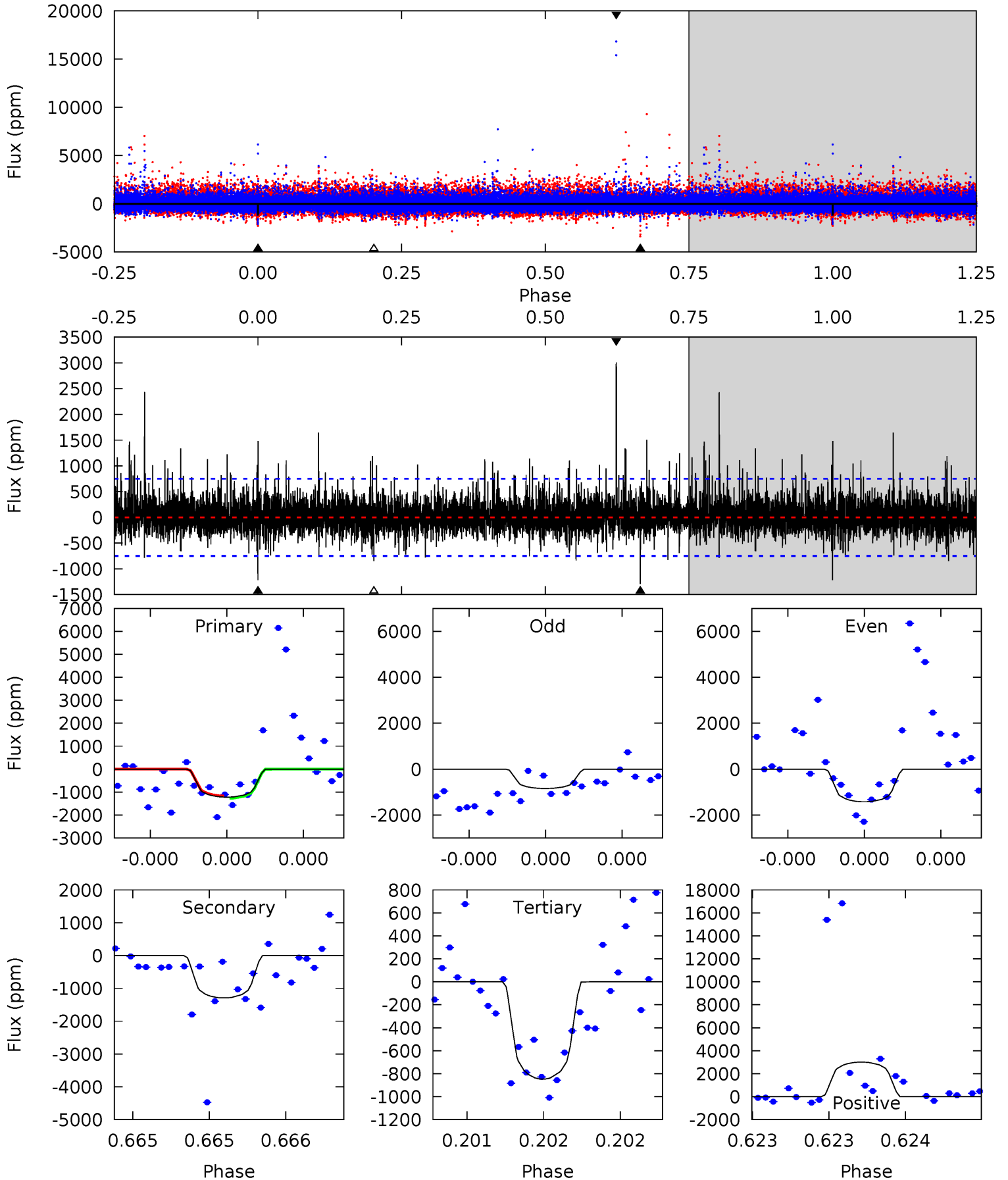
TCE 009395205-02 P=521.982101 Days $T_0=224.510022$ (BKJD)



DV Model-Shift Uniqueness Test

009395205-02, P = 521.989531 Days, E = 224.495212 Days

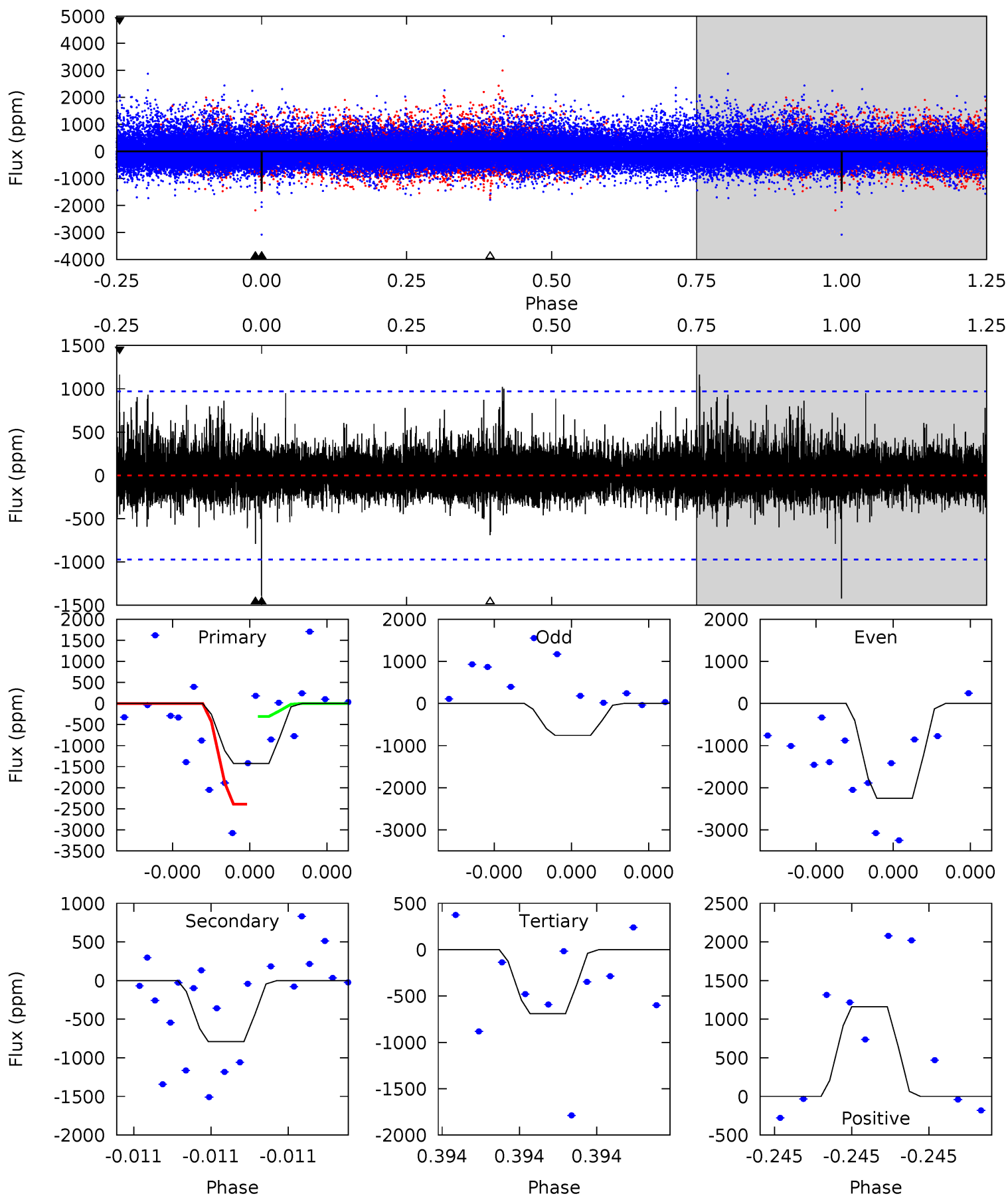
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.20	9.75	6.40	22.7	5.67	3.63	1.80	2.80	-13.5	3.36	-13.0	0.82	1.05	0.70	0.36



Alt Model-Shift Uniqueness Test

009395205-02, P = 521.982101 Days, E = 224.510022 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.49	4.72	4.12	6.93	5.79	3.81	0.89	4.37	1.56	0.60	-2.21	4.74	0.92	0.45	6.26



Stellar Parameters For KIC 009395205

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3827^{+92}_{-103}	$4.728^{+0.054}_{-0.027}$	$-0.100^{+0.200}_{-0.200}$	$0.520^{+0.038}_{-0.052}$	$0.526^{+0.045}_{-0.050}$	$5.280^{+1.311}_{-0.726}$
	+2%/-3%	+1%/-1%	+200%/-200%	+7%/-10%	+9%/-10%	+25%/-14%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 009395205-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1291 ± 132	$3.35^{+2.92}_{-2.21}$	167^{+5}_{-5}	3251^{+1452}_{-521}	$67181^{+519415}_{-48129}$
Alt.	-791 ± 168	$3.13^{+2.69}_{-2.06}$	167^{+5}_{-5}	3085^{+1267}_{-503}	$45710^{+318227}_{-32866}$

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 $A_{obs} \gg 1.0$

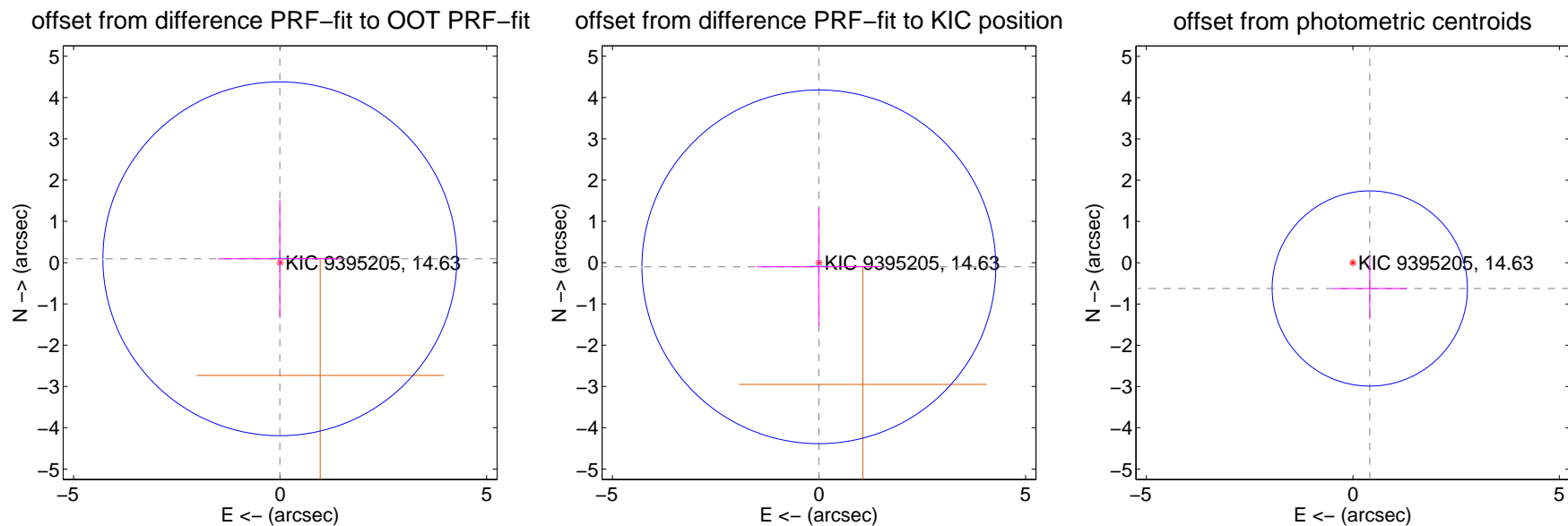
DV Centroid Data

Supplemental centroid analysis for 009395205-02. Kepler magnitude: 14.63. Transit SNR 7.47

There are 1 quarters with good PRF difference image offsets

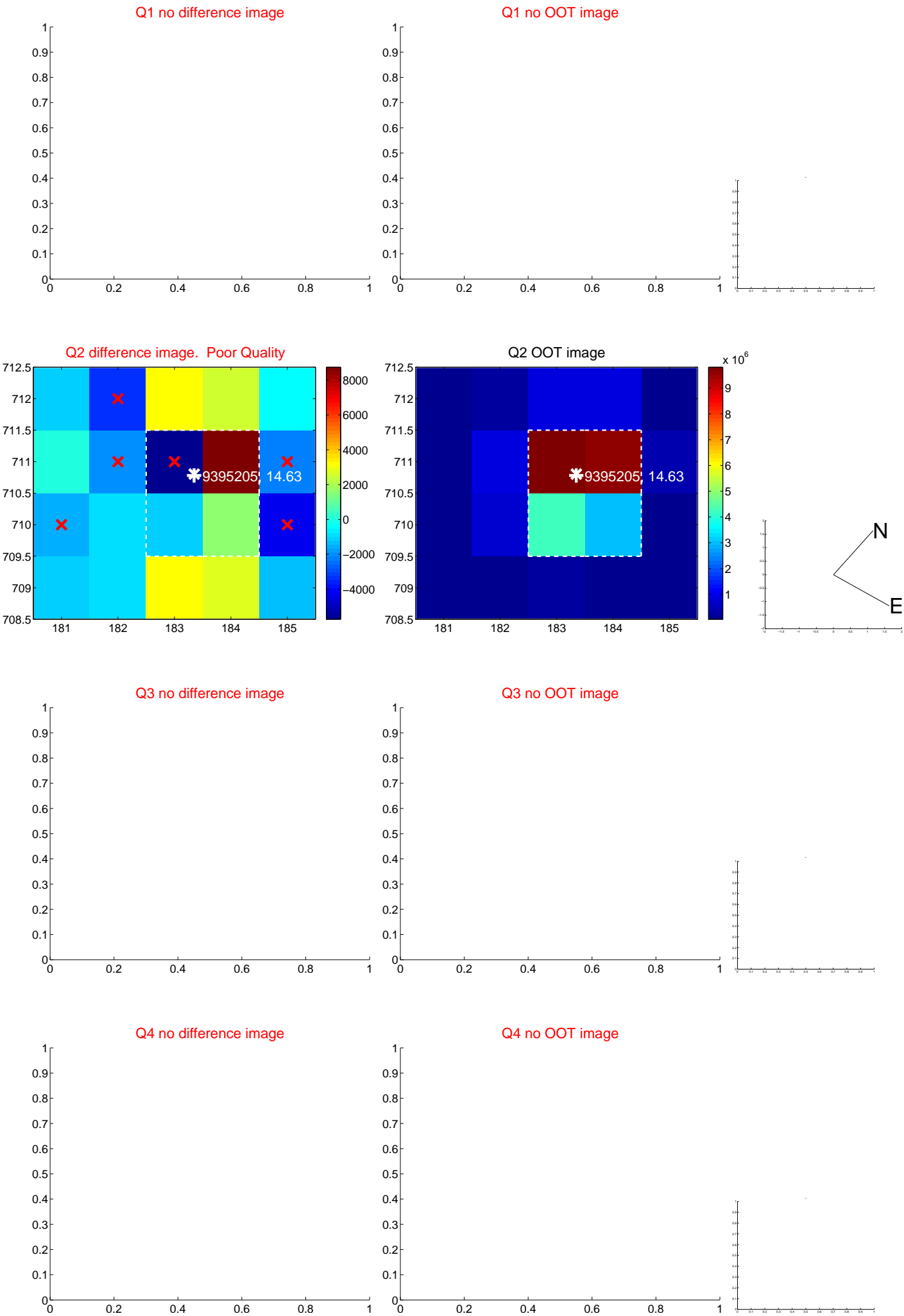
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.093 ± 1.428	0.07	0.006 ± 1.505	0.093 ± 1.428
PRF-fit source offset from KIC position	0.101 ± 1.428	0.07	0.003 ± 1.505	-0.101 ± 1.428
photometric centroid source offset	0.75 ± 0.79	0.95	-0.41 ± 0.90	-0.62 ± 0.74

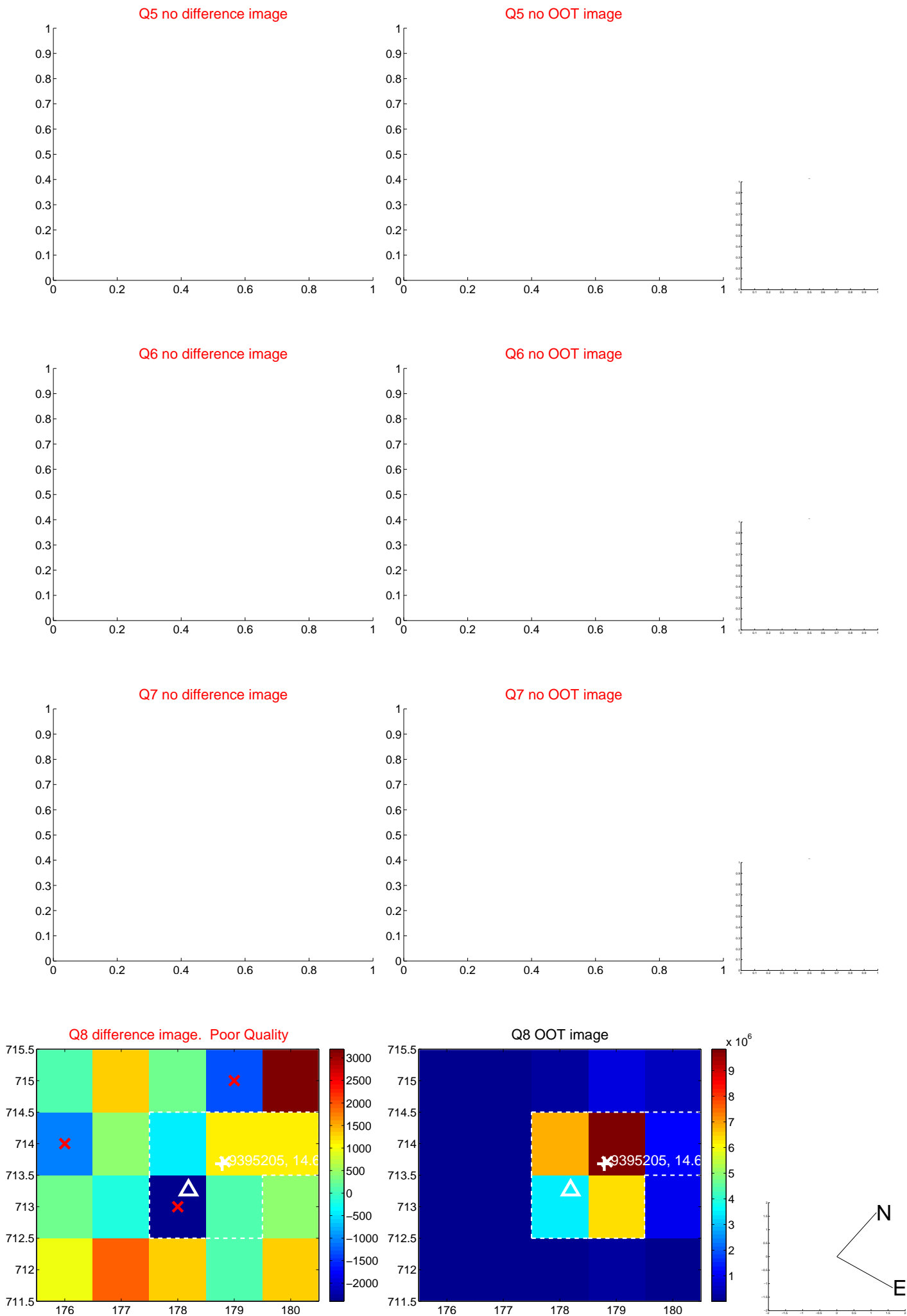


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



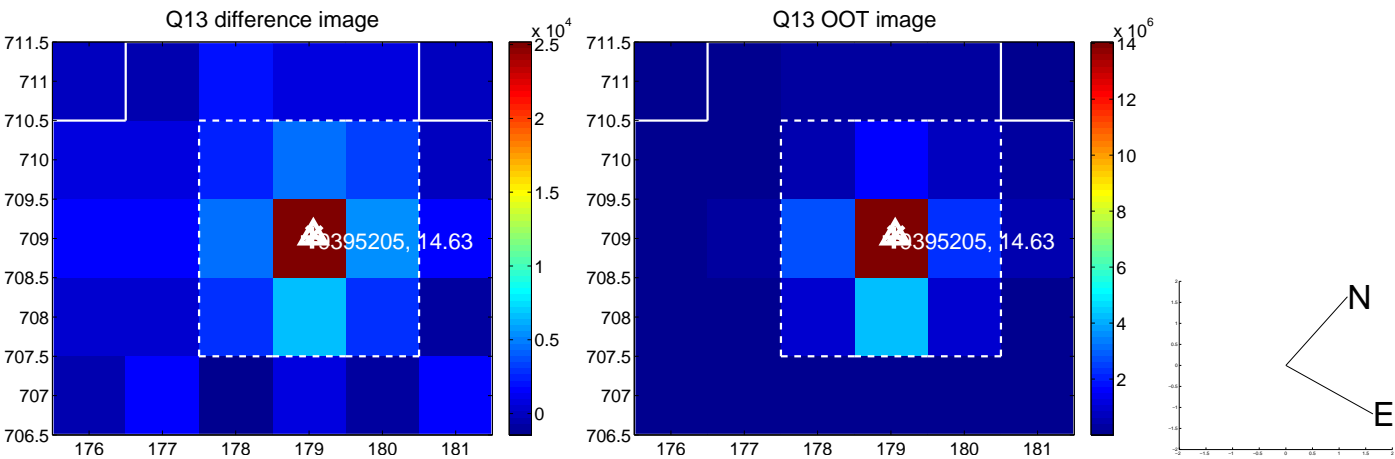
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



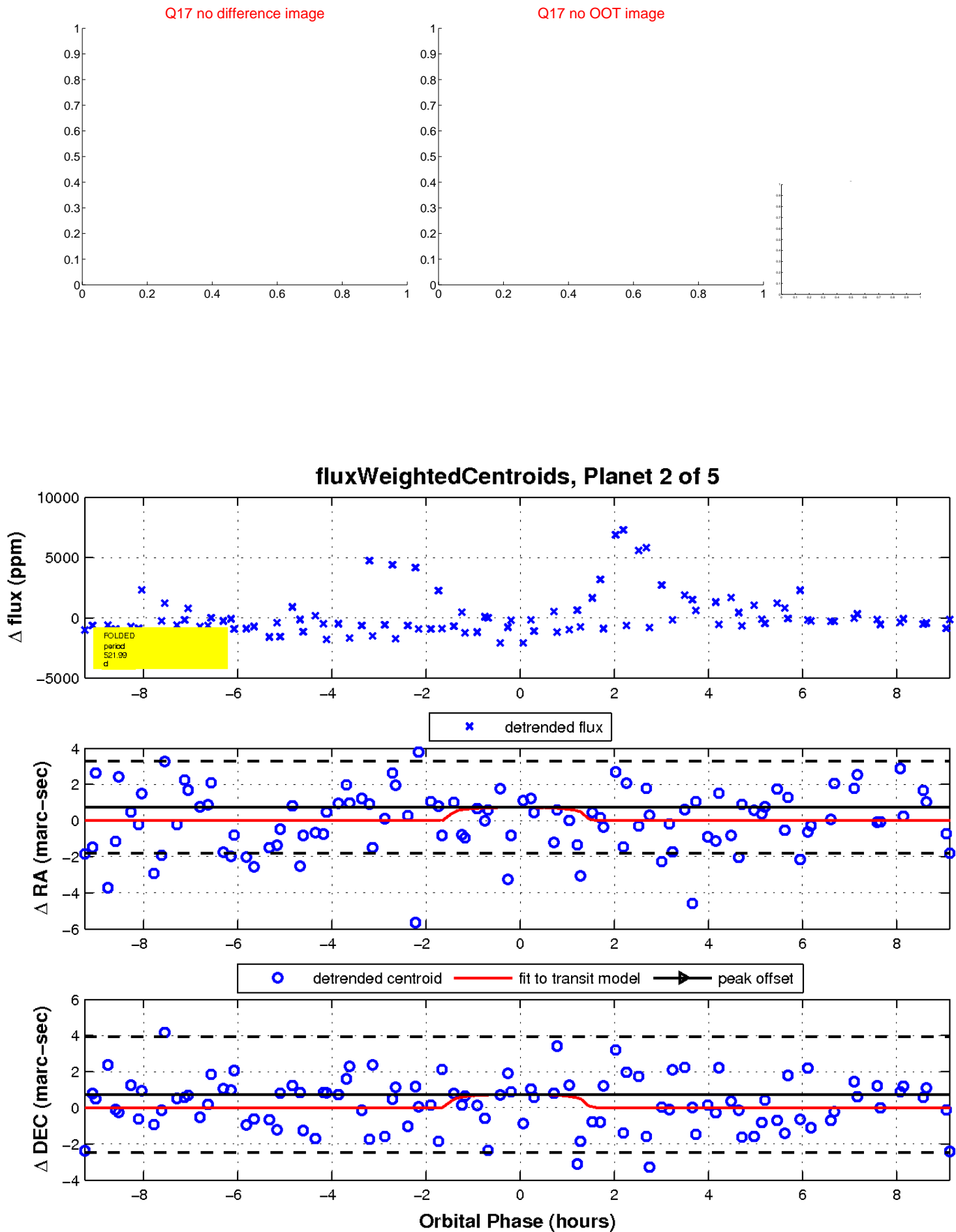
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

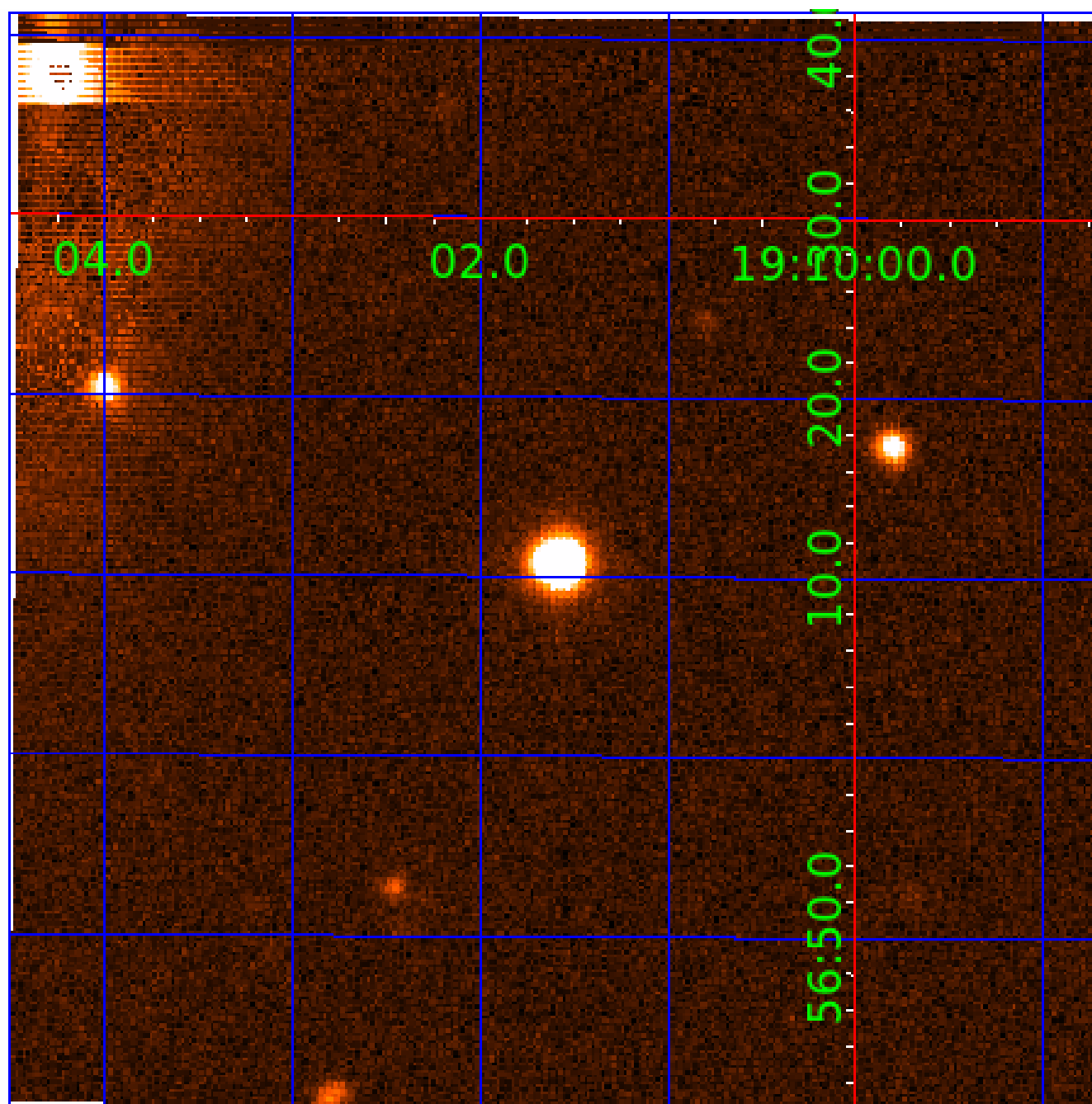


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009395205

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})
009395205-01	OBS	No	286.159777	168.851454	1022.7	4.551	14.6	5.2	0.52	3827	1.77	0.11
009395205-02	OBS	No	521.989531	224.495212	1689.7	3.121	12.1	7.5	0.52	3827	2.23	0.05
009395205-03	OBS	No	562.825209	186.251164	1203.0	4.478	13.0	5.7	0.52	3827	1.82	0.04
009395205-04	OBS	No	498.385076	389.945788	2309.2	2.791	11.5	10.1	0.52	3827	2.51	0.05
009395205-05	OBS	No	420.216161	390.445066	726.5	7.500	12.3	-1.0	0.52	3827	1.39	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009395205-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009395205-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009395205-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009395205-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV
009395205-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

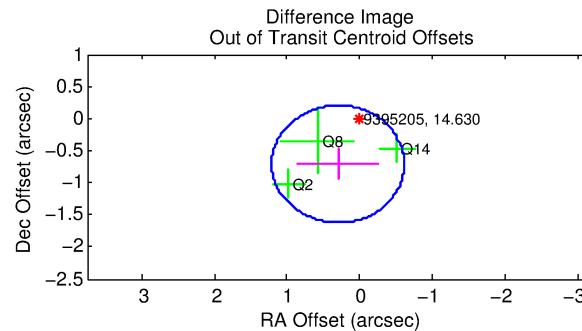
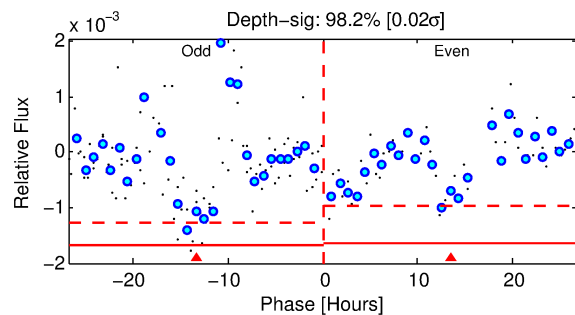
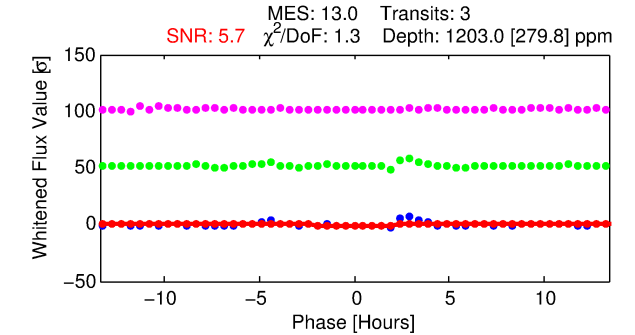
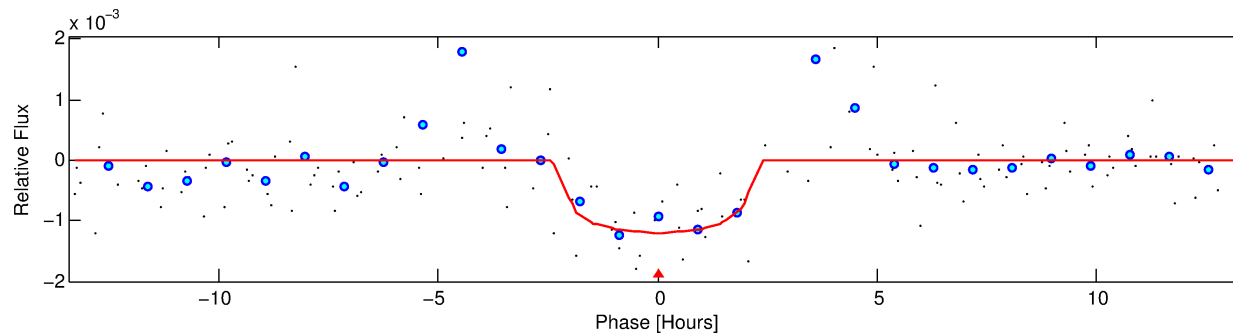
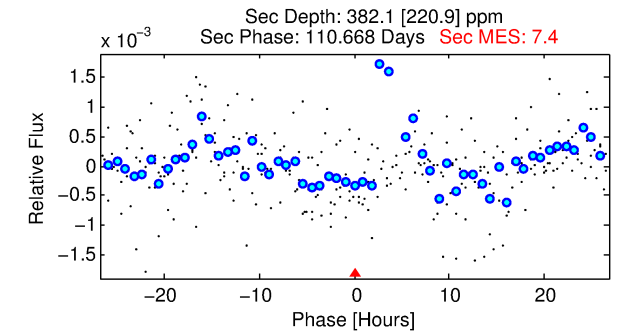
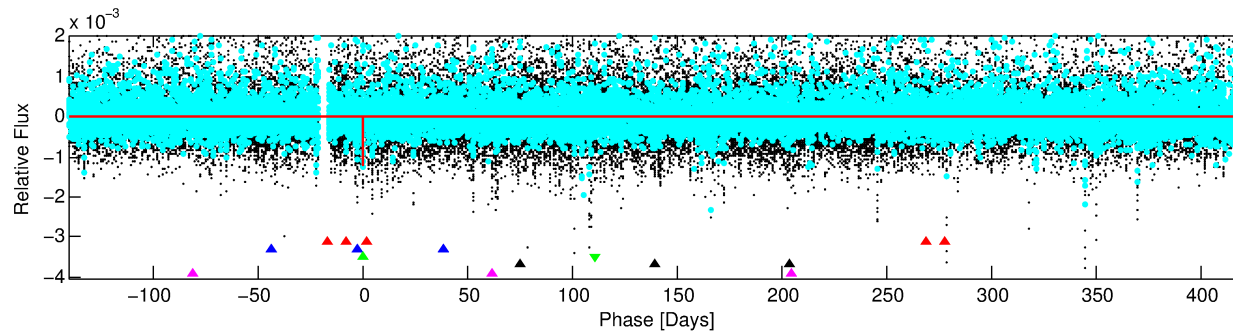
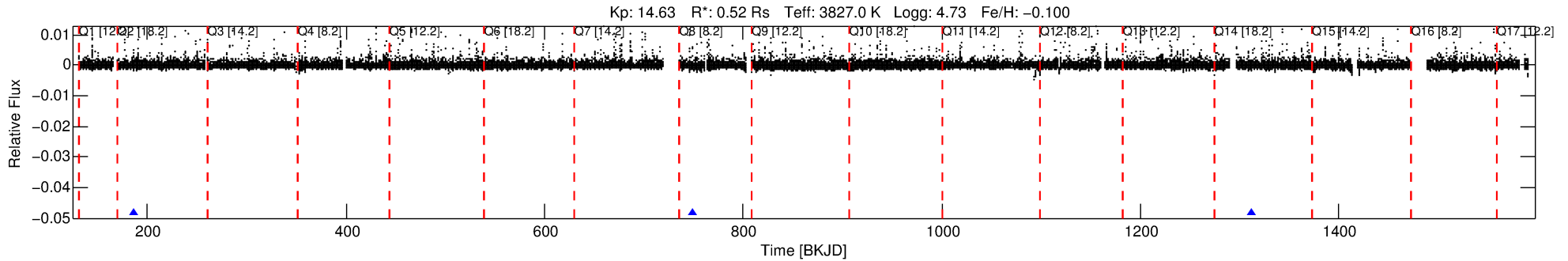
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009395205-03

No Significant Match Found

DV One-Page Summary

KIC: 9395205 Candidate: 3 of 5 Period: 562.825 d



DV Fit Results:

Period = 562.82521 [0.00687] d
Epoch = 186.2512 [0.0097] BKJD
Rp/R* = 0.0320 [0.0472]
a/R* = 917.05 [5810.73]
b = 0.39 [13.77]
Seff = 0.04 [0.01]
Teq = 117 [4] K
Rp = 1.82 [2.69] Re
a = 1.0780 [0.0846] AU
Ag = 74040.28 [222819.22] [0.33σ]
Teffp = 2991 [2250] K [1.28σ]

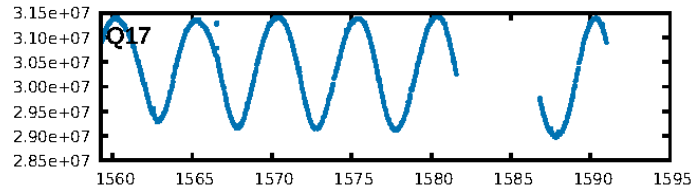
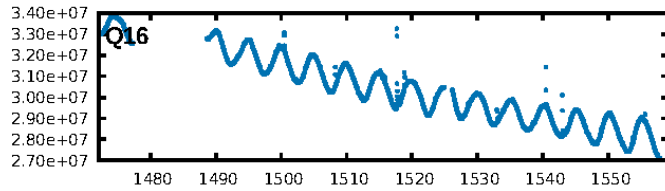
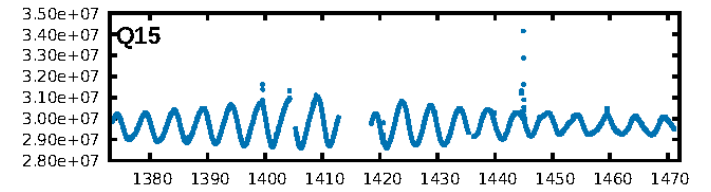
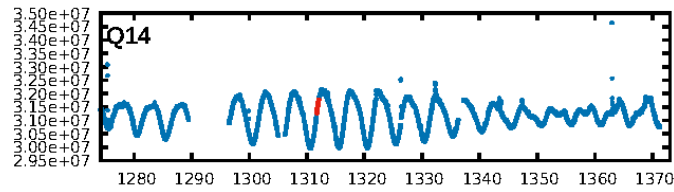
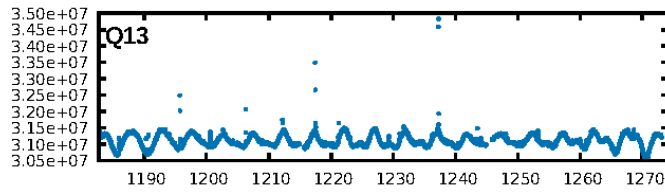
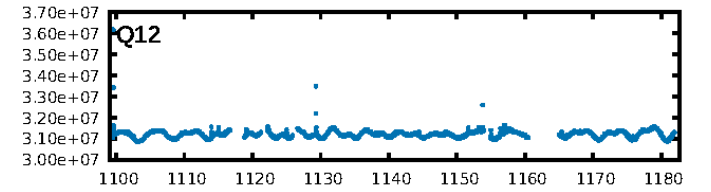
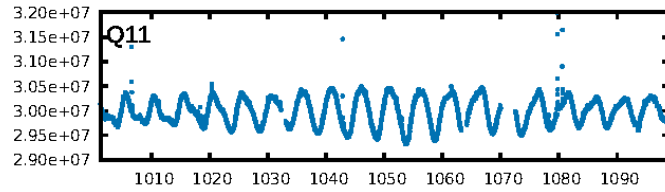
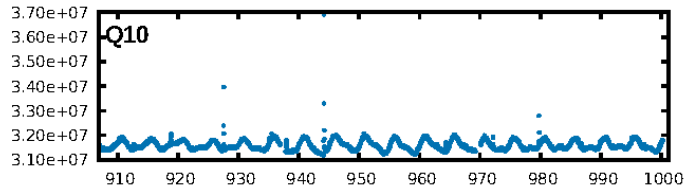
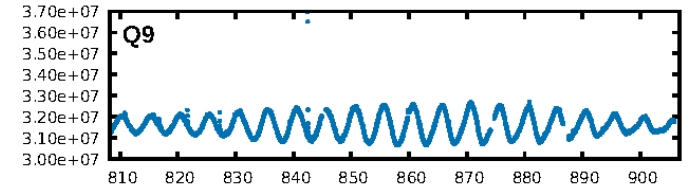
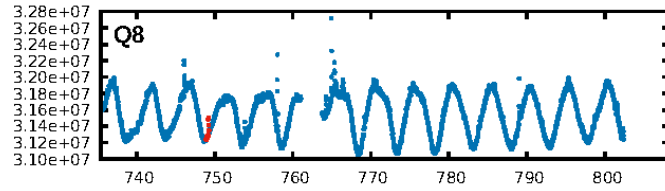
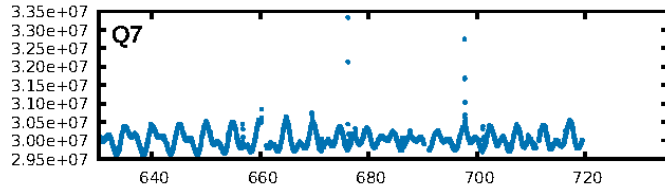
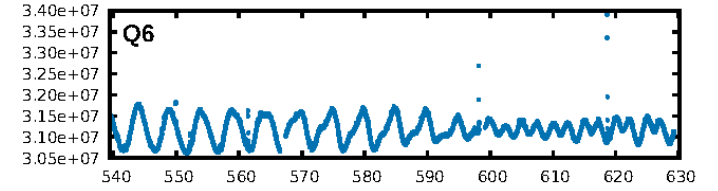
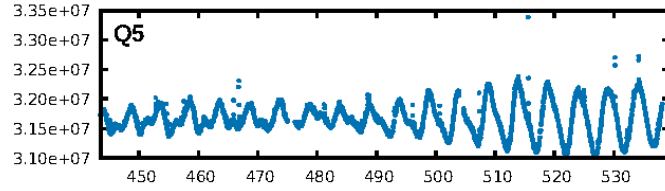
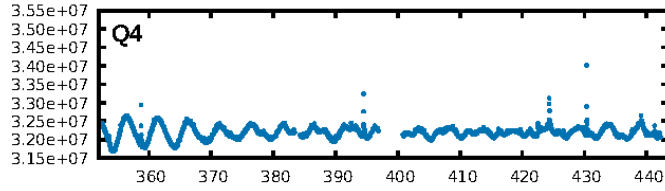
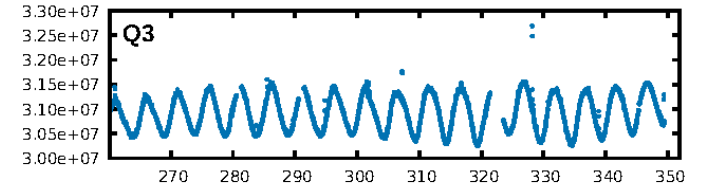
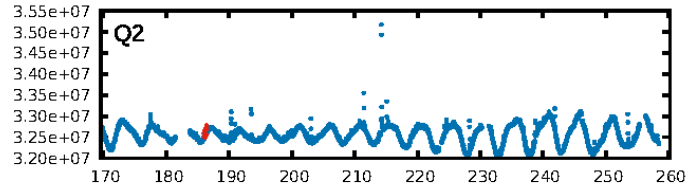
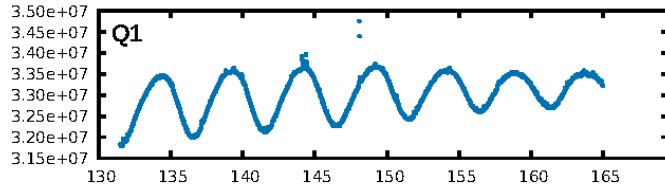
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [179.54σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 97.9%
ModelChiSquareGof-sig: 76.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.306
Centroid-sig: 95.0%
Centroid-so: 0.343 arcsec [0.36σ]
OotOffset-rm: 0.771 arcsec [2.53σ]
OotOffset-st: 2/0/1/0 [3]
KicOffset-rm: 0.897 arcsec [3.25σ]
KicOffset-st: 2/0/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

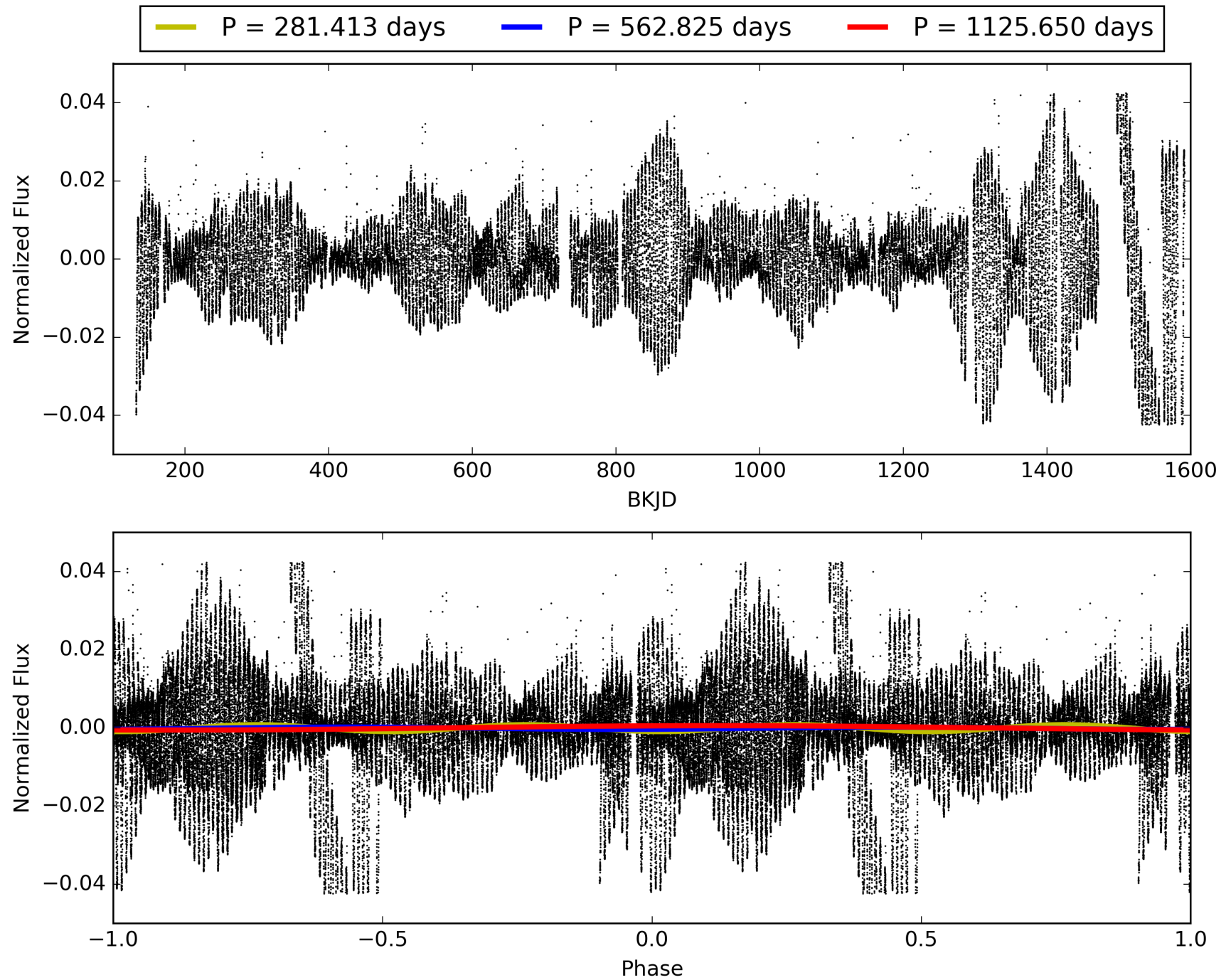
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:52:41 Z

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

TCE 009395205-03, PDC Light Curves

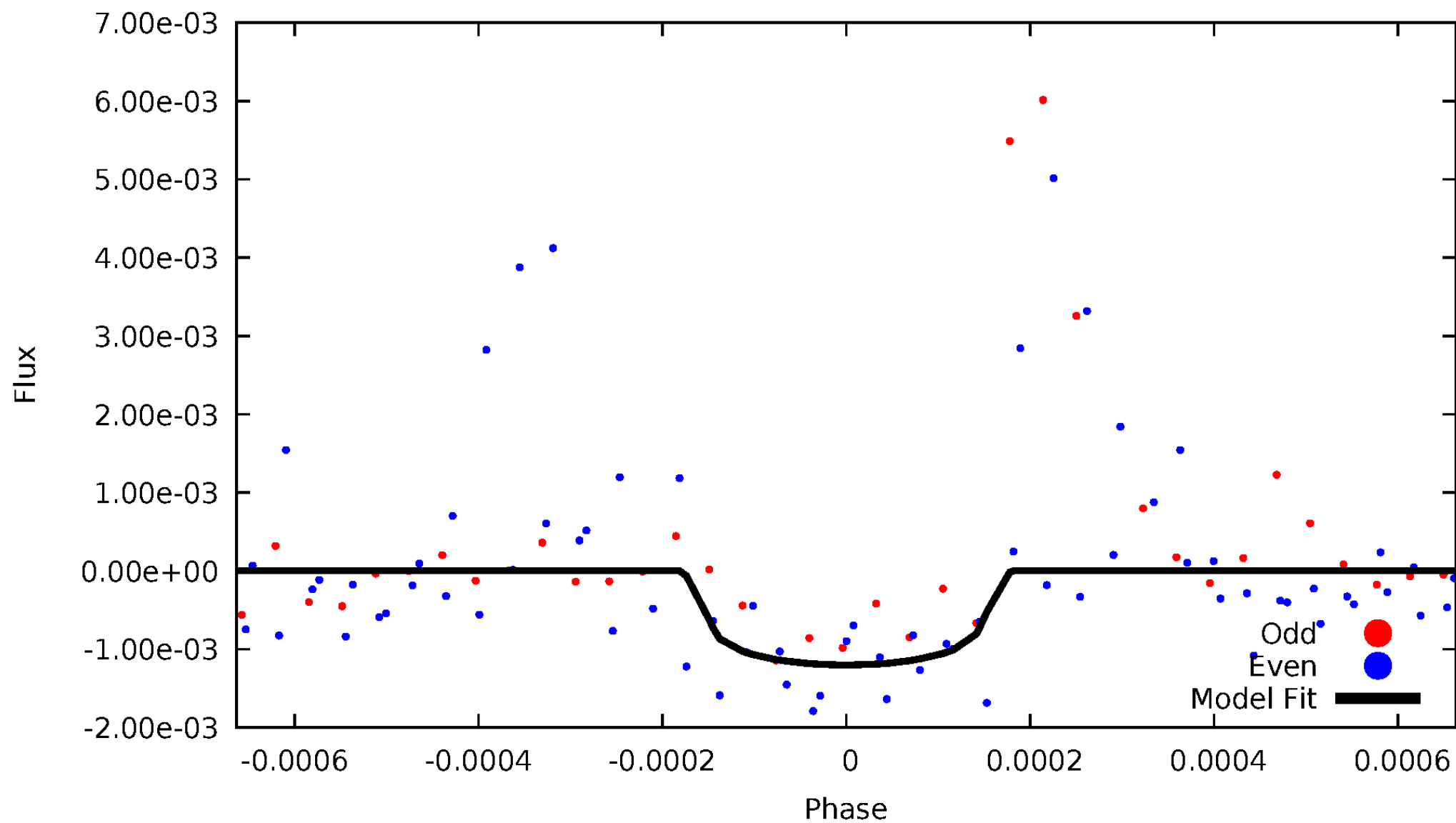


TCE 009395205-03



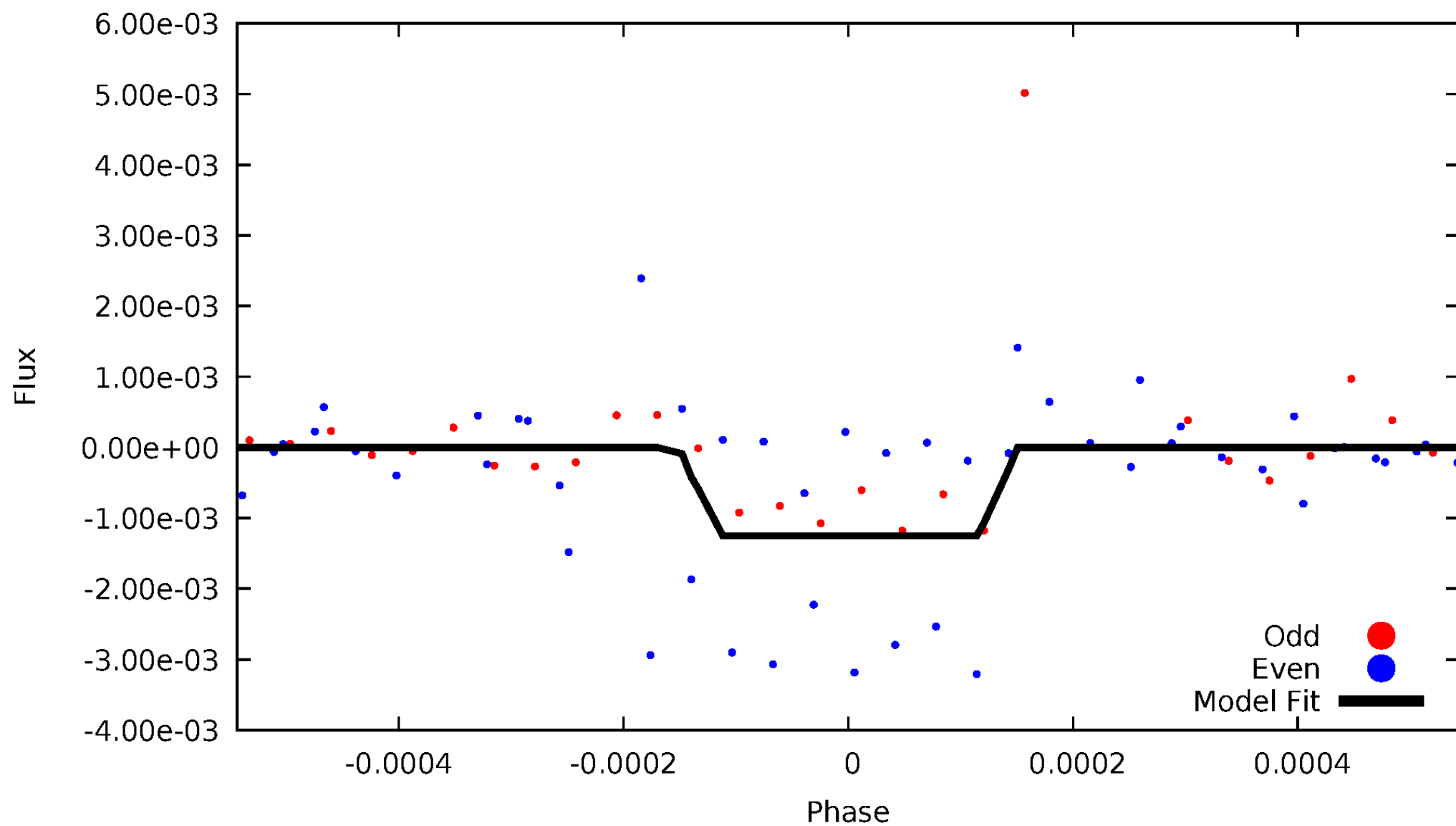
DV Odd/Even

TCE 009395205-03



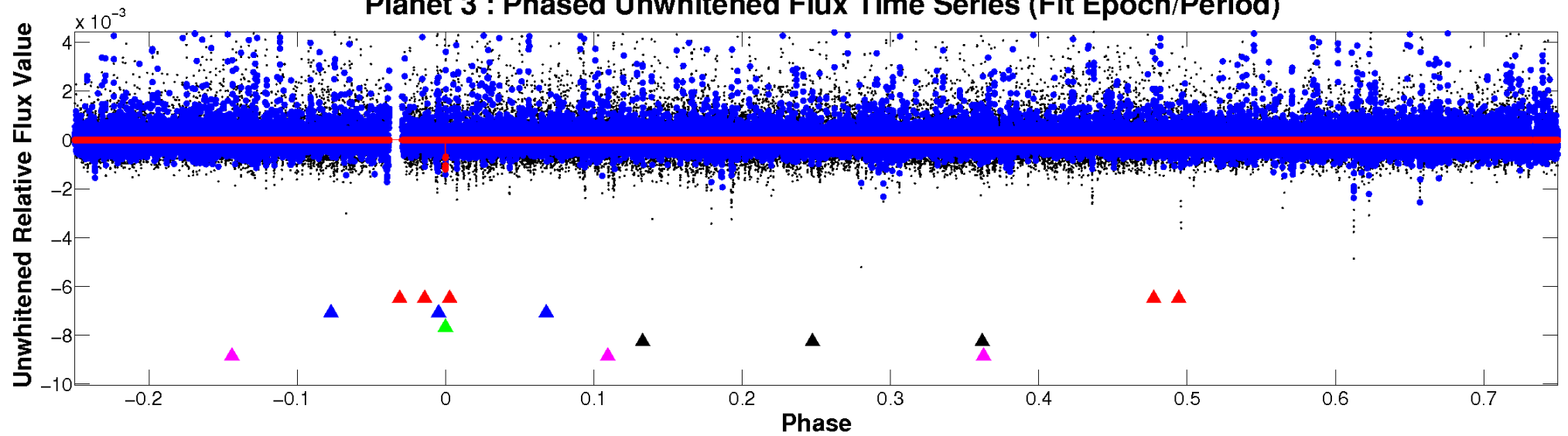
ALT Odd/Even

TCE 009395205-03

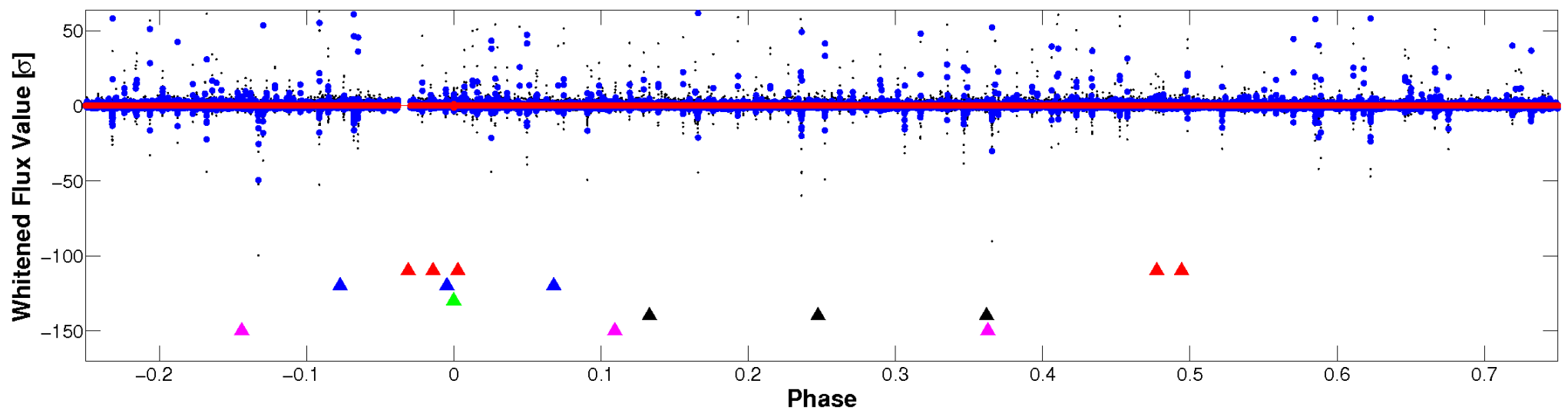


Non-Whitened Vs. Whitened Light Curve

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

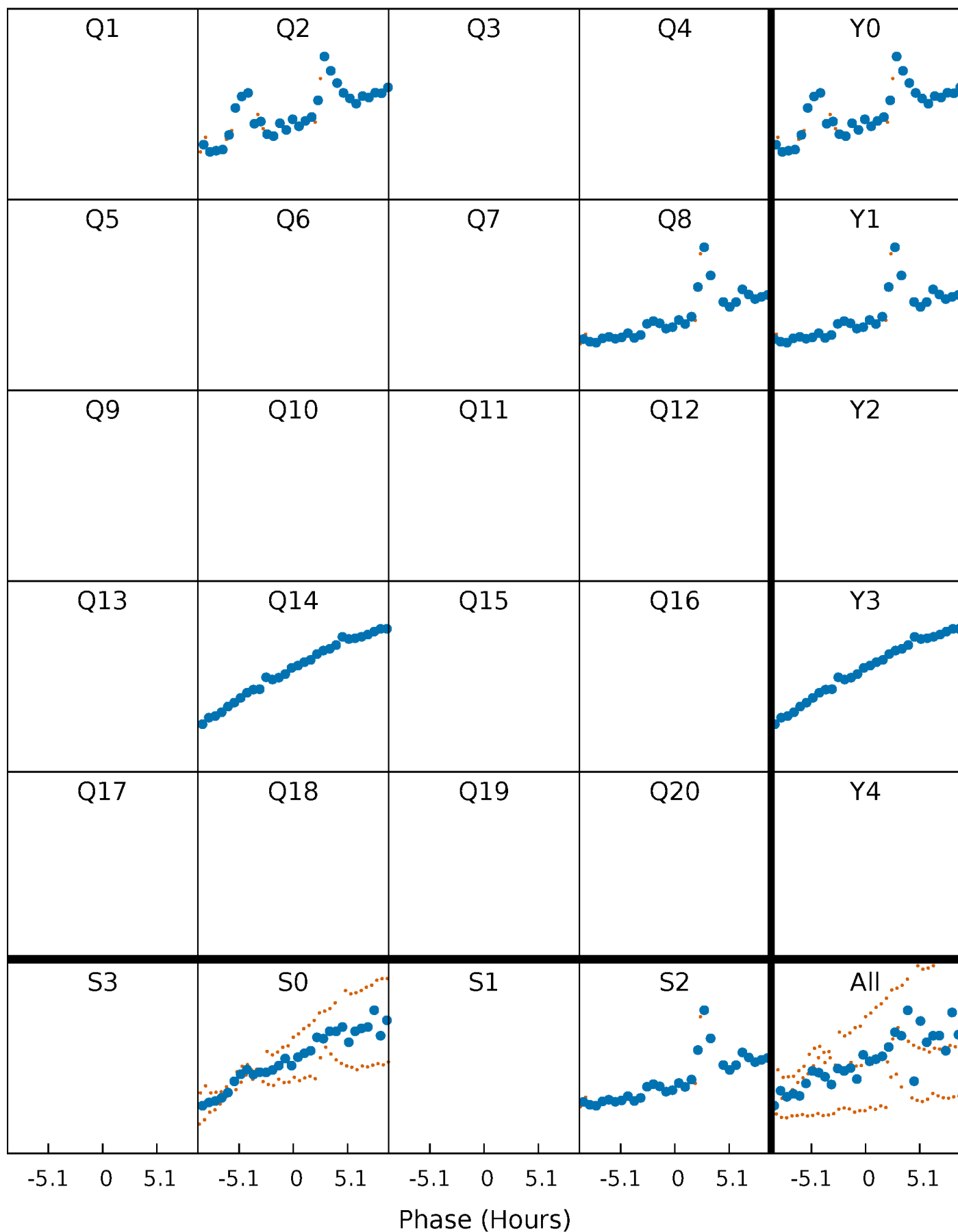


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



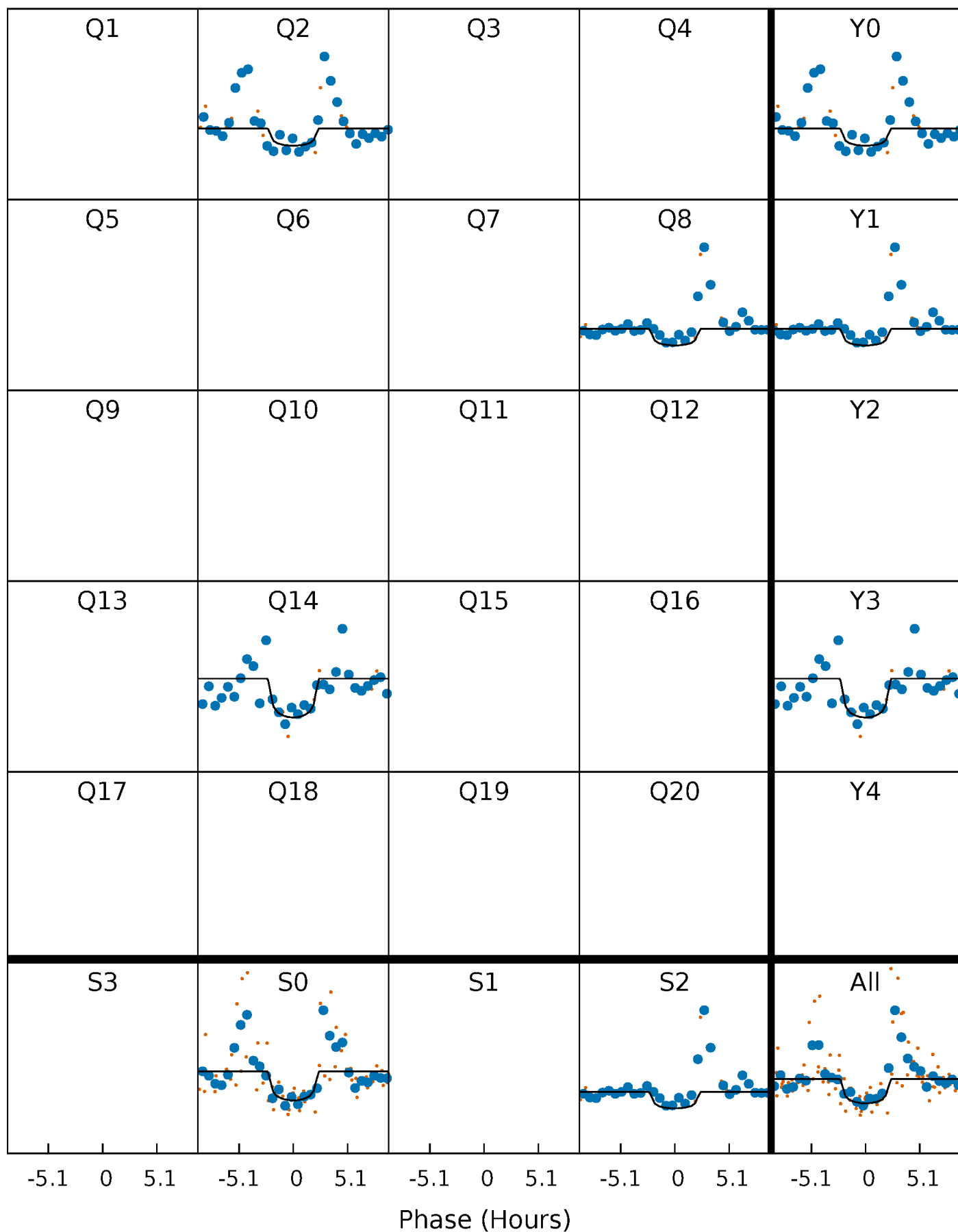
PDC Quarter-Phased Transit Curves

TCE 009395205-03 P=562.825209 Days $T_0=186.251164$ (BKJD)



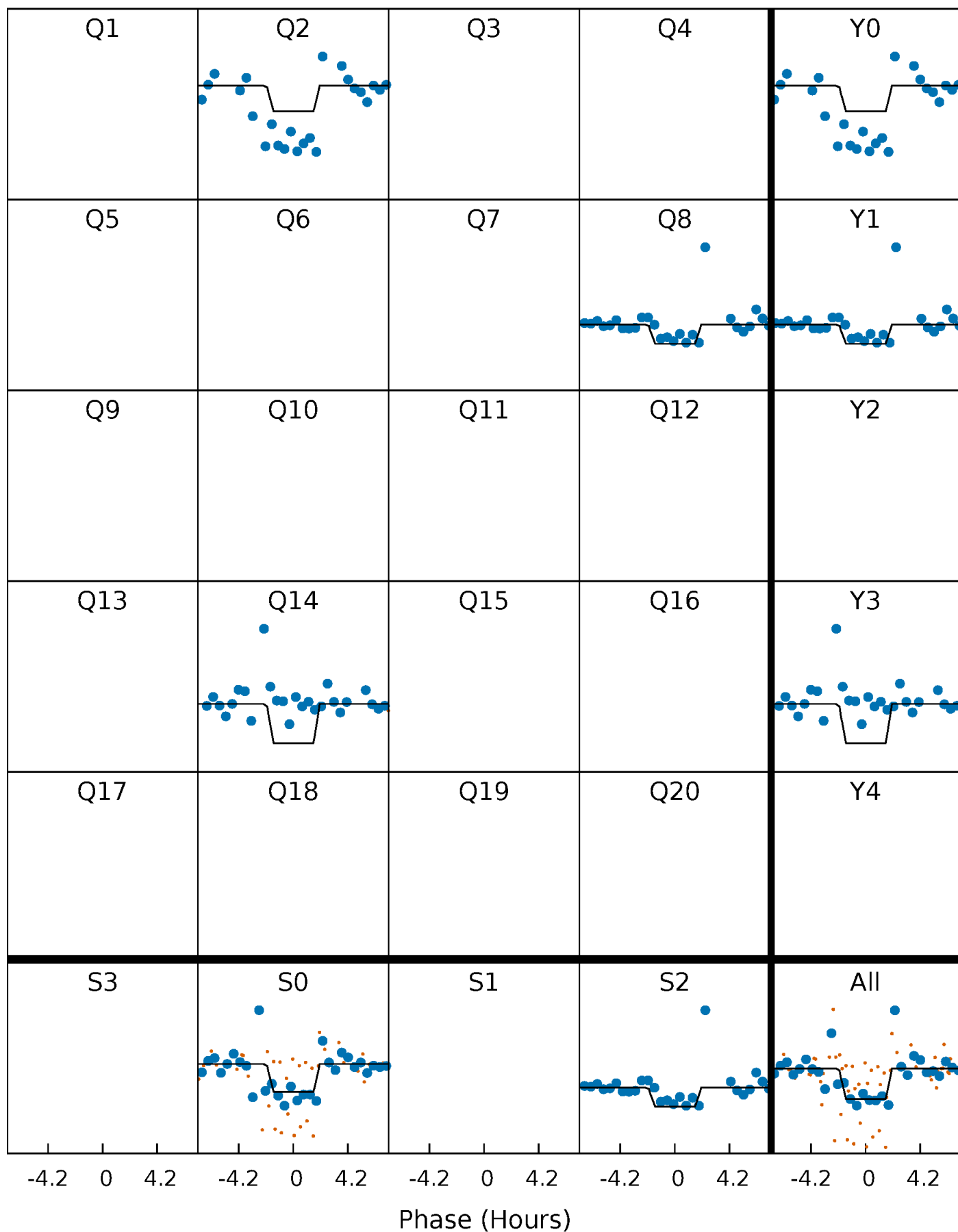
DV Quarter-Phased Transit Curves

TCE 009395205-03 P=562.825209 Days $T_0=186.251164$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

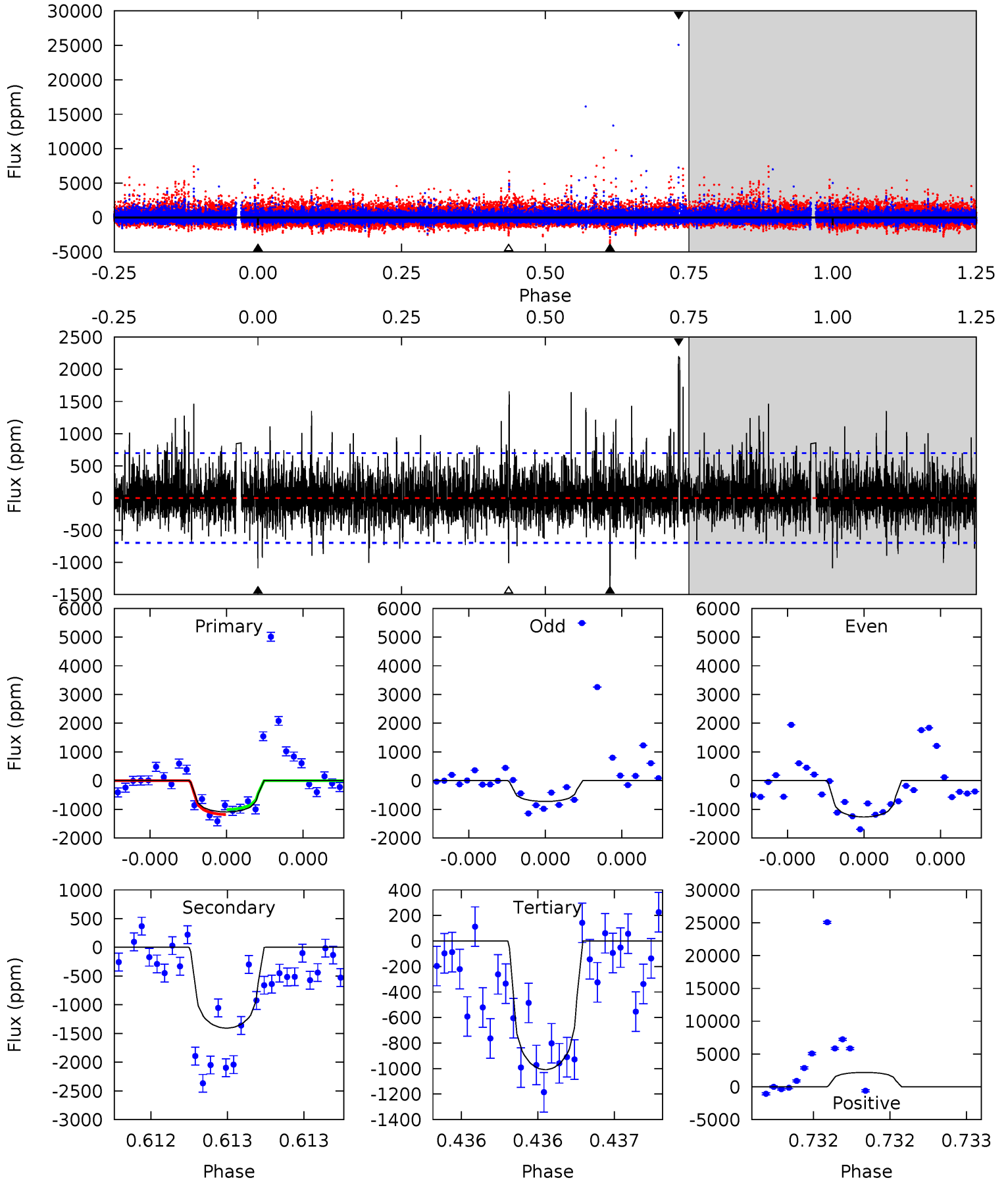
TCE 009395205-03 P=562.815165 Days $T_0=186.272899$ (BKJD)



DV Model-Shift Uniqueness Test

009395205-03, P = 562.825209 Days, E = 186.251164 Days

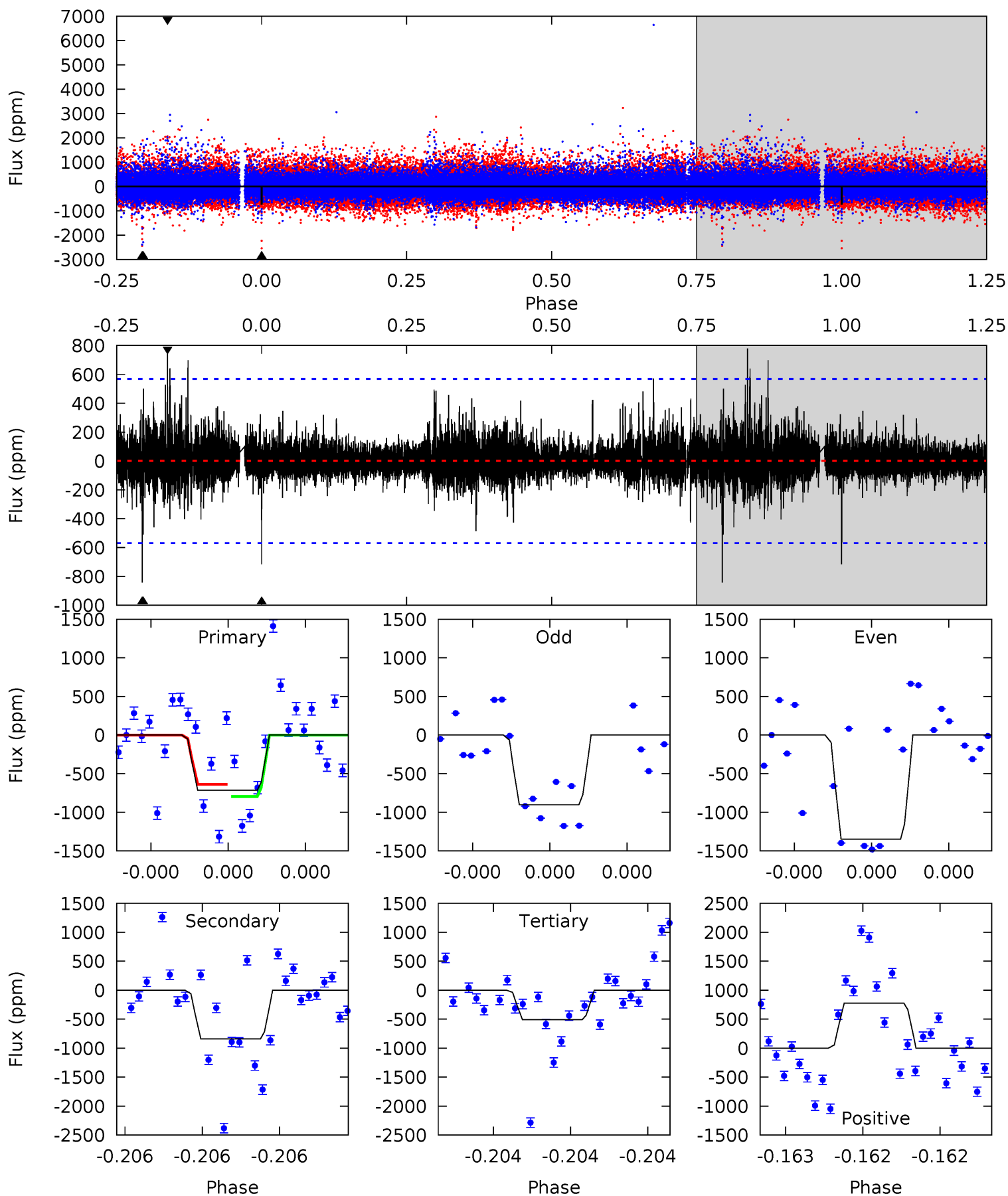
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.80	11.3	8.13	17.7	5.63	3.56	2.09	0.66	-8.87	3.21	-6.33	0.86	0.95	0.61	0.70



Alt Model-Shift Uniqueness Test

009395205-03, P = 562.815165 Days, E = 186.272899 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.14	8.41	5.09	7.77	5.67	3.63	0.87	2.05	-0.63	3.32	0.64	2.06	1.42	0.48	0.79



Stellar Parameters For KIC 009395205

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3827^{+92}_{-103}	$4.728^{+0.054}_{-0.027}$	$-0.100^{+0.200}_{-0.200}$	$0.520^{+0.038}_{-0.052}$	$0.526^{+0.045}_{-0.050}$	$5.280^{+1.311}_{-0.726}$
	+2%/-3%	+1%/-1%	+200%/-200%	+7%/-10%	+9%/-10%	+25%/-14%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 009395205-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1407 ± 124	$2.48^{+2.63}_{-1.62}$	163^{+4}_{-5}	3595^{+1839}_{-677}	$144308^{+1099432}_{-109772}$
Alt.	-842 ± 100	$2.78^{+2.17}_{-1.87}$	163^{+5}_{-6}	3211^{+1438}_{-464}	$69236^{+555082}_{-46464}$

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

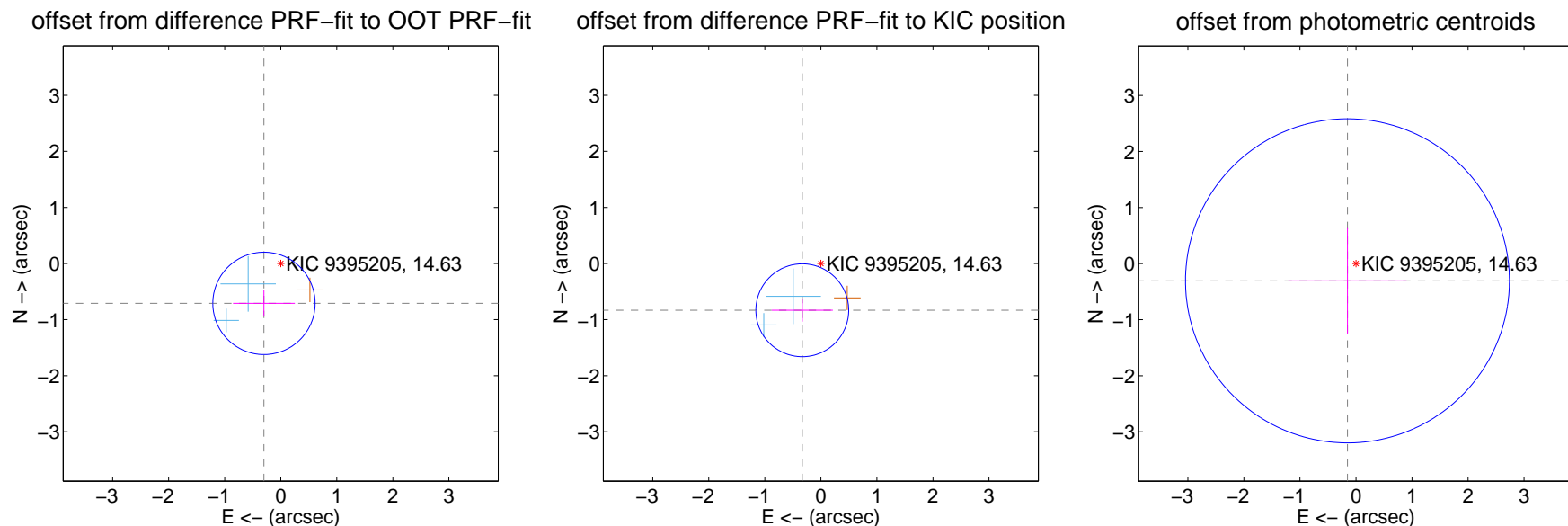
DV Centroid Data

Supplemental centroid analysis for 009395205-03. Kepler magnitude: 14.63. Transit SNR 5.71

There are 2 quarters with good PRF difference image offsets

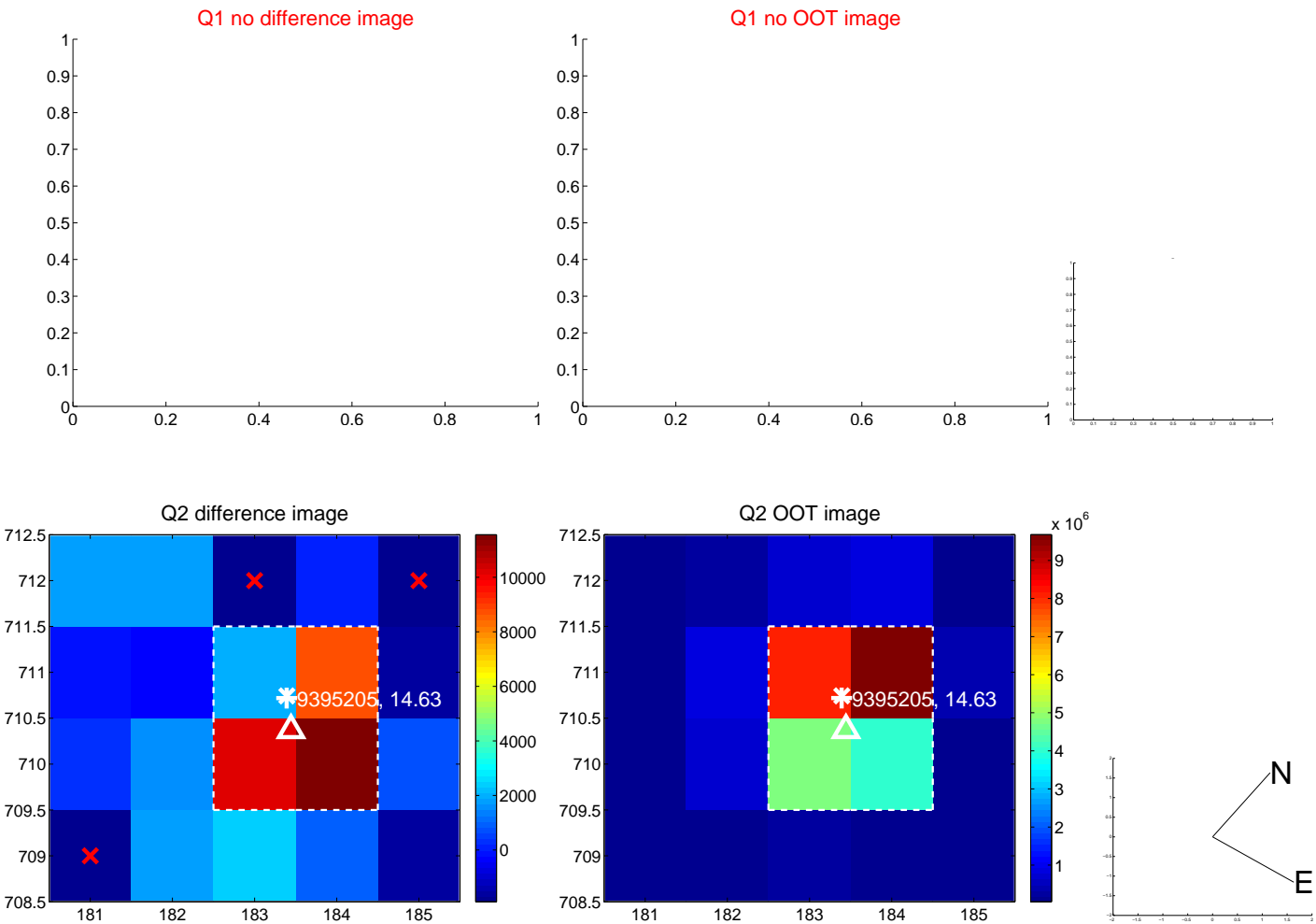
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.771 ± 0.304	2.53	0.299 ± 0.552	-0.710 ± 0.234
PRF-fit source offset from KIC position	0.897 ± 0.276	3.25	0.331 ± 0.546	-0.833 ± 0.203
photometric centroid source offset	0.34 ± 0.96	0.36	0.15 ± 1.06	-0.31 ± 0.94

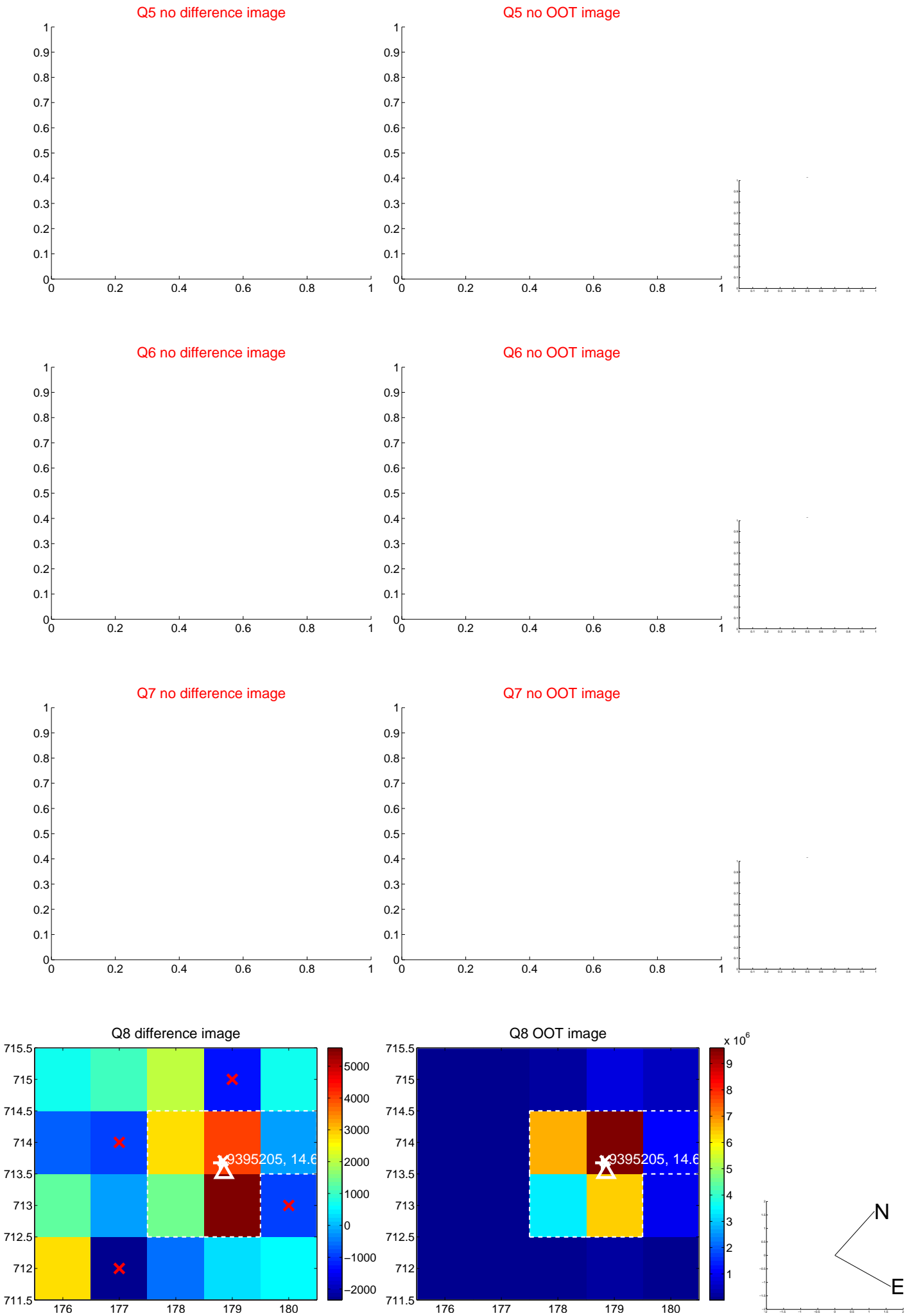


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

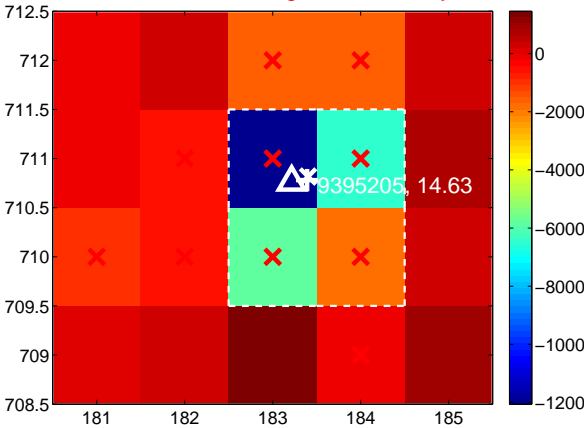
Q13 no difference image



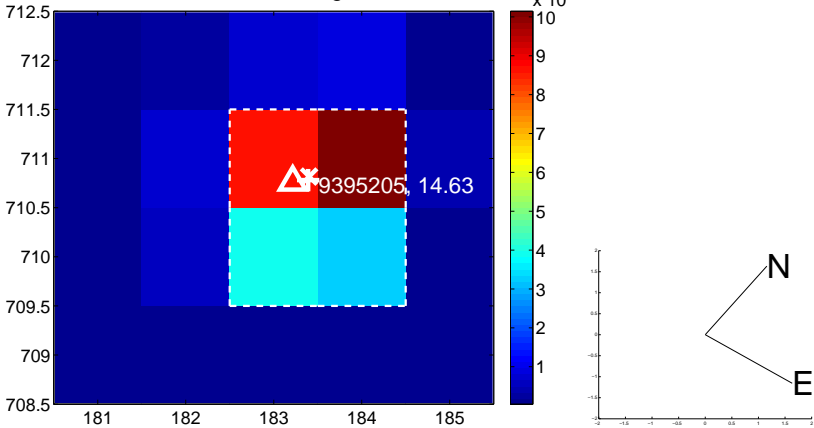
Q13 no OOT image



Q14 difference image. Poor Quality



Q14 OOT image



Q15 no difference image



Q15 no OOT image



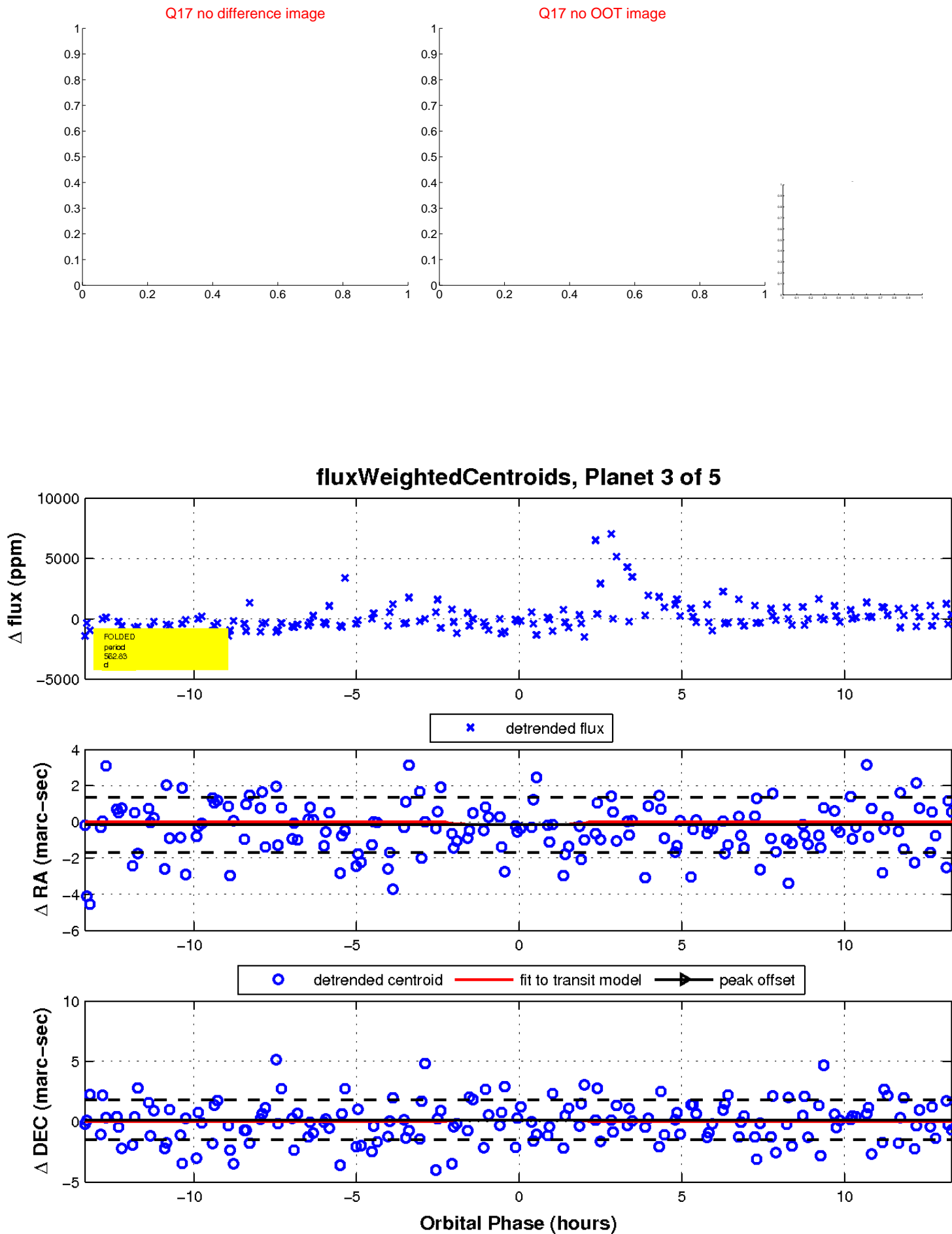
Q16 no difference image



Q16 no OOT image

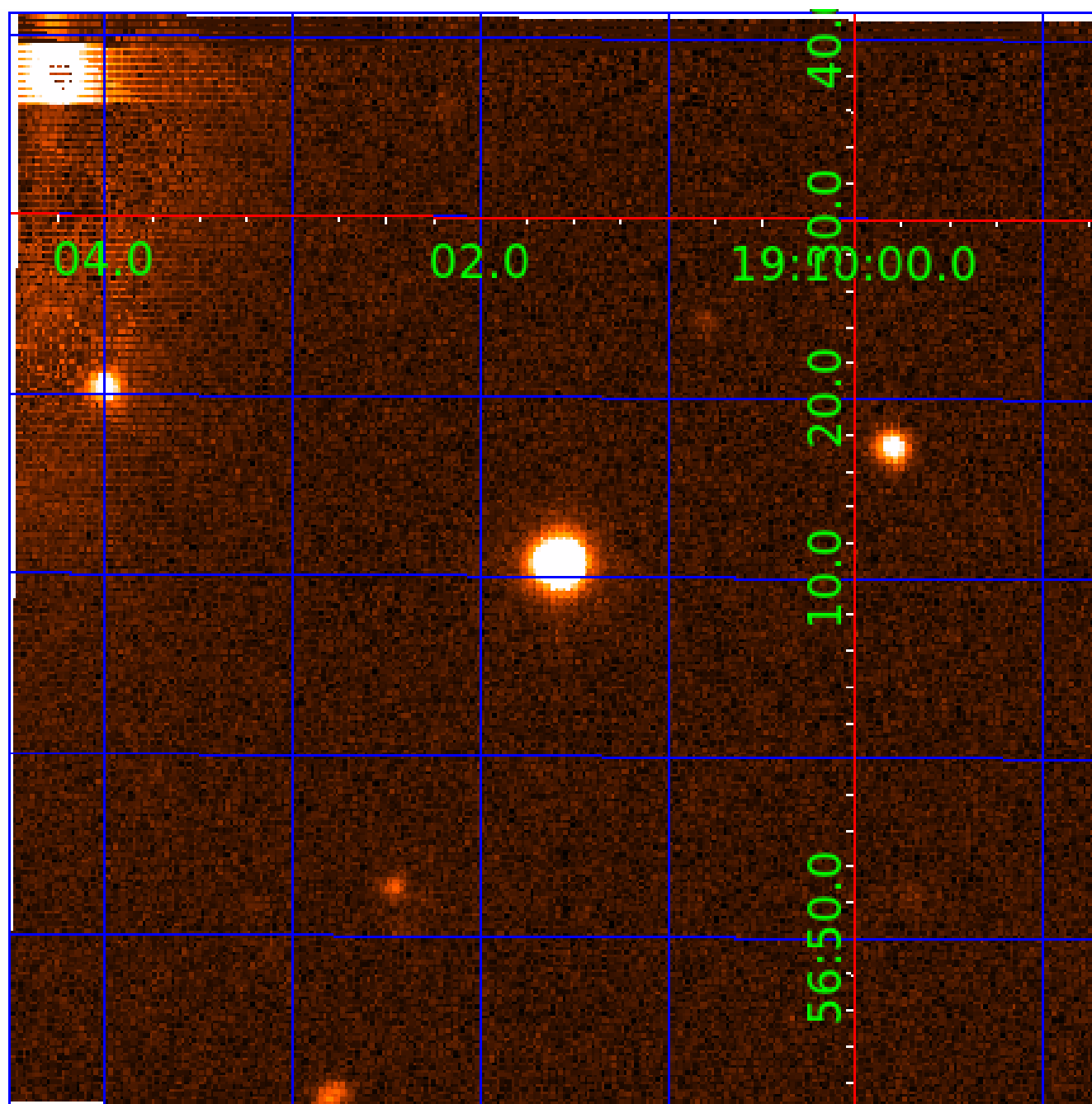


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009395205

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})
009395205-01	OBS	No	286.159777	168.851454	1022.7	4.551	14.6	5.2	0.52	3827	1.77	0.11
009395205-02	OBS	No	521.989531	224.495212	1689.7	3.121	12.1	7.5	0.52	3827	2.23	0.05
009395205-03	OBS	No	562.825209	186.251164	1203.0	4.478	13.0	5.7	0.52	3827	1.82	0.04
009395205-04	OBS	No	498.385076	389.945788	2309.2	2.791	11.5	10.1	0.52	3827	2.51	0.05
009395205-05	OBS	No	420.216161	390.445066	726.5	7.500	12.3	-1.0	0.52	3827	1.39	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009395205-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009395205-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009395205-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009395205-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV
009395205-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

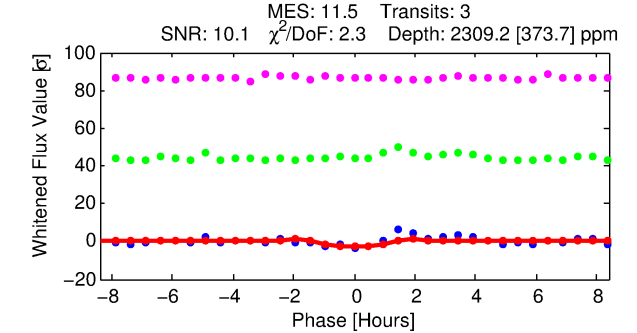
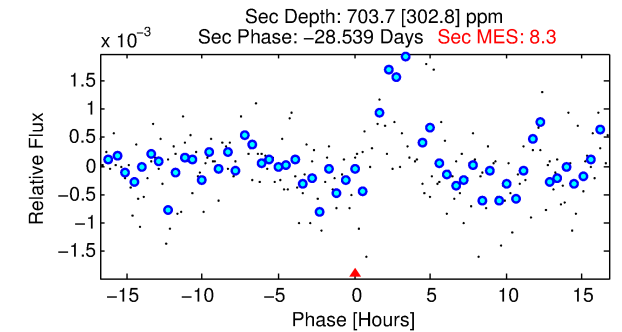
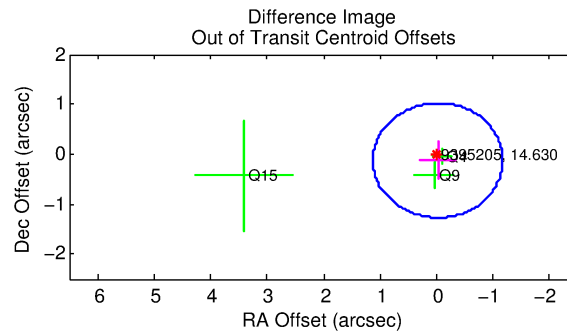
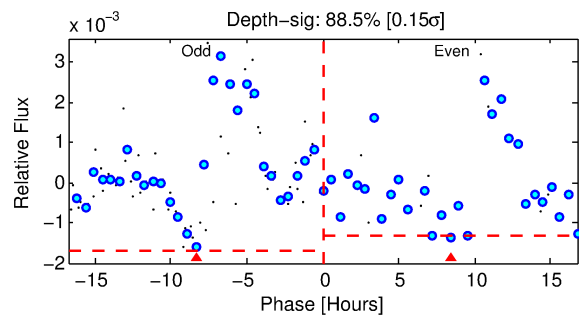
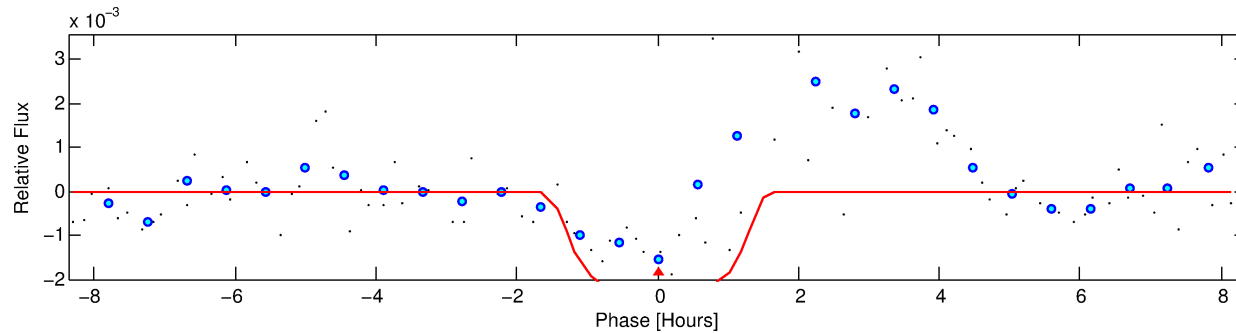
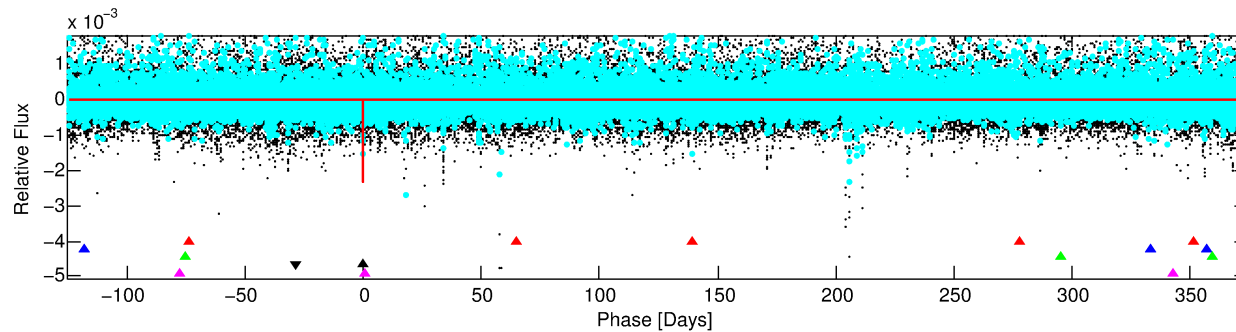
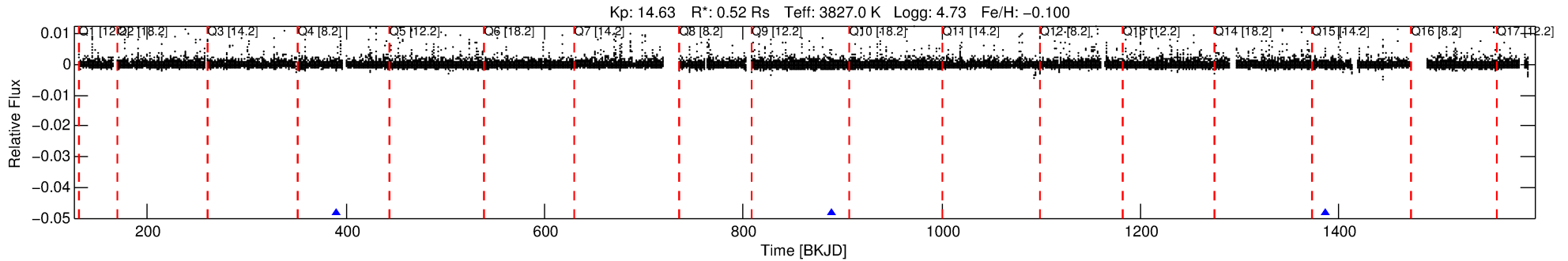
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009395205-04

No Significant Match Found

DV One-Page Summary

KIC: 9395205 Candidate: 4 of 5 Period: 498.385 d



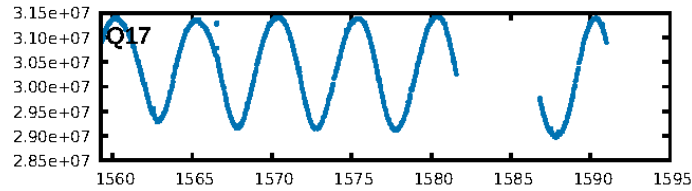
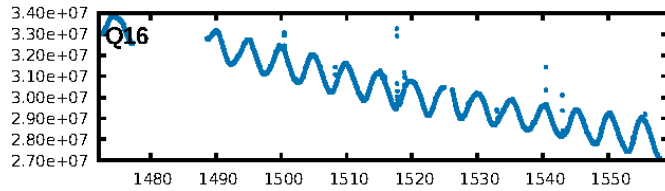
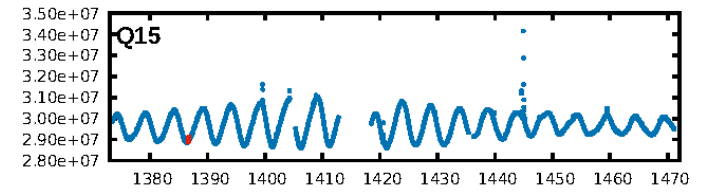
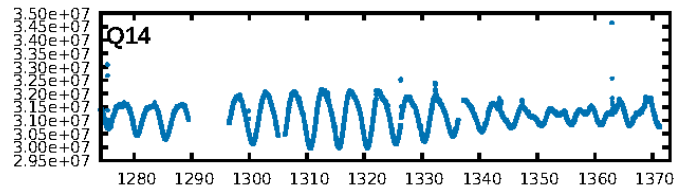
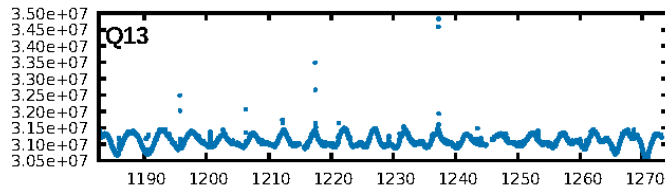
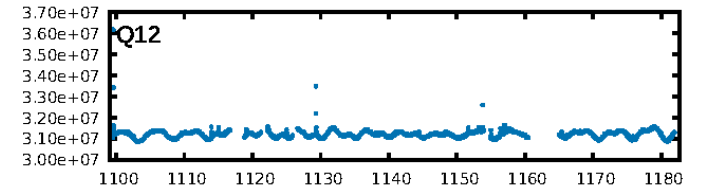
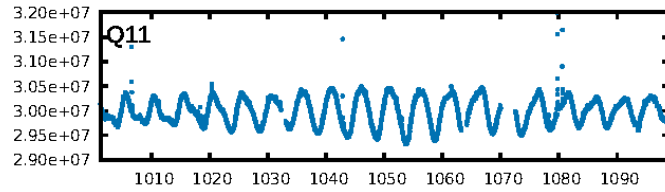
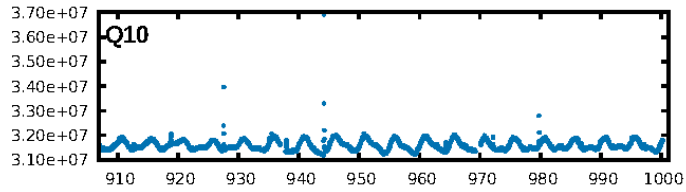
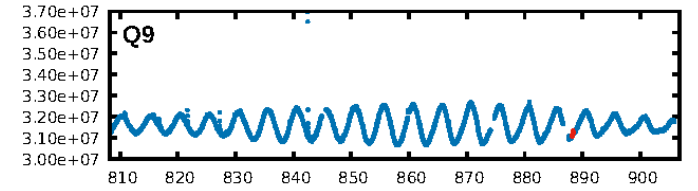
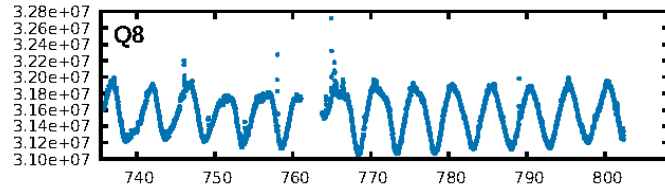
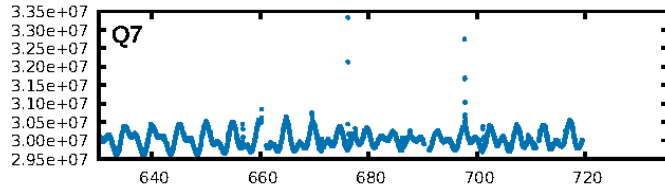
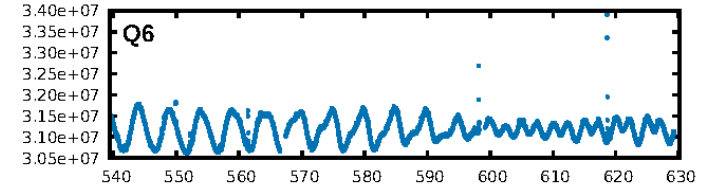
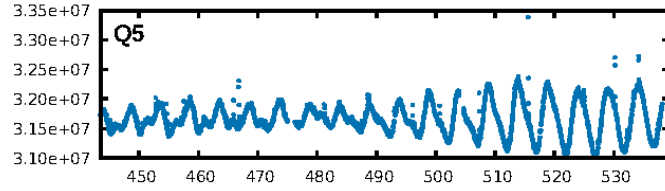
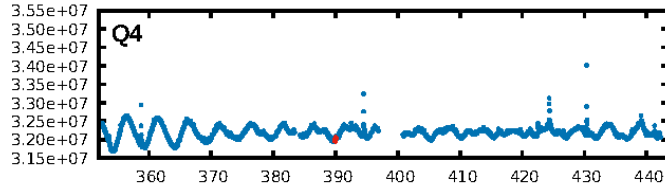
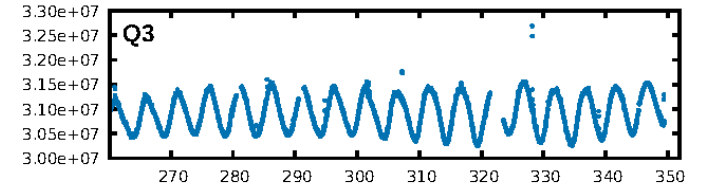
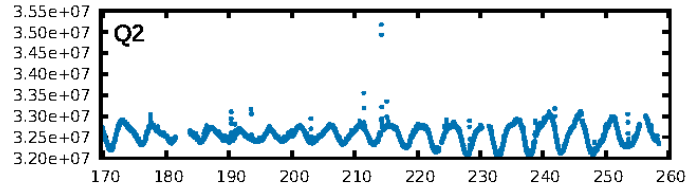
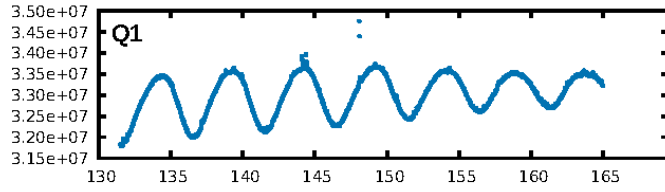
DV Fit Results:

Period = 498.38508 [0.00656] d
Epoch = 389.9458 [0.0076] BKJD
Rp/R* = 0.0442 [0.3994]
a/R* = 1343.59 [52699.38]
b = 0.35 [100.23]
Seff = 0.05 [0.01]
Teq = 122 [5] K
Rp = 2.51 [22.67] Re
a = 0.9941 [0.0780] AU
Ag = 60798.23 [1099084.28] [0.06 σ]
Teffp = 2965 [13398] K [0.21 σ]

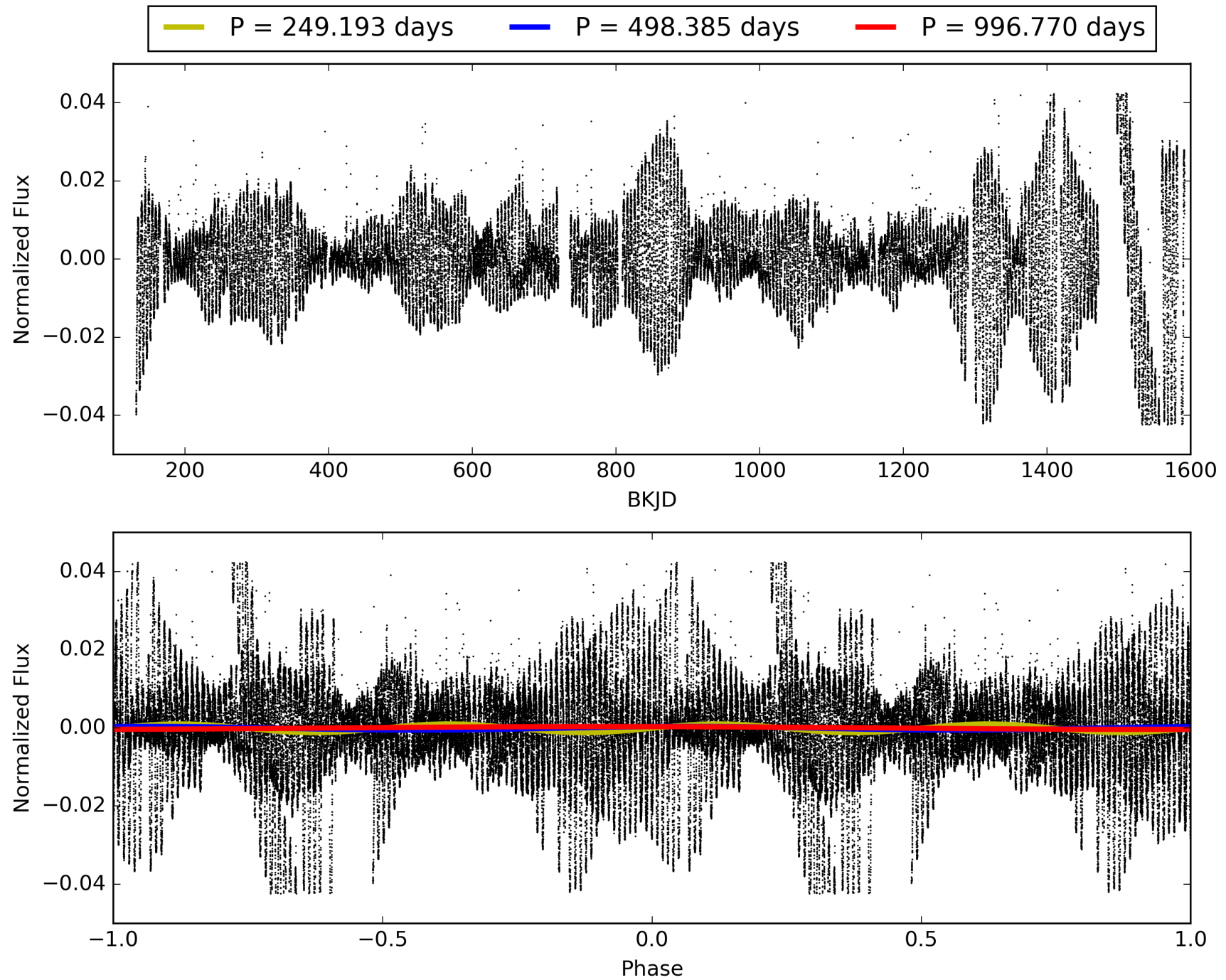
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [234.44 σ]
LongPeriod-sig: 100.0% [135.31 σ]
ModelChiSquare2-sig: 6.6%
ModelChiSquareGof-sig: 79.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -3.146
Centroid-sig: 74.1%
Centroid-so: 0.098 arcsec [0.18 σ]
OotOffset-rm: 0.126 arcsec [0.33 σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-rm: 0.353 arcsec [0.94 σ]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 009395205-04, PDC Light Curves

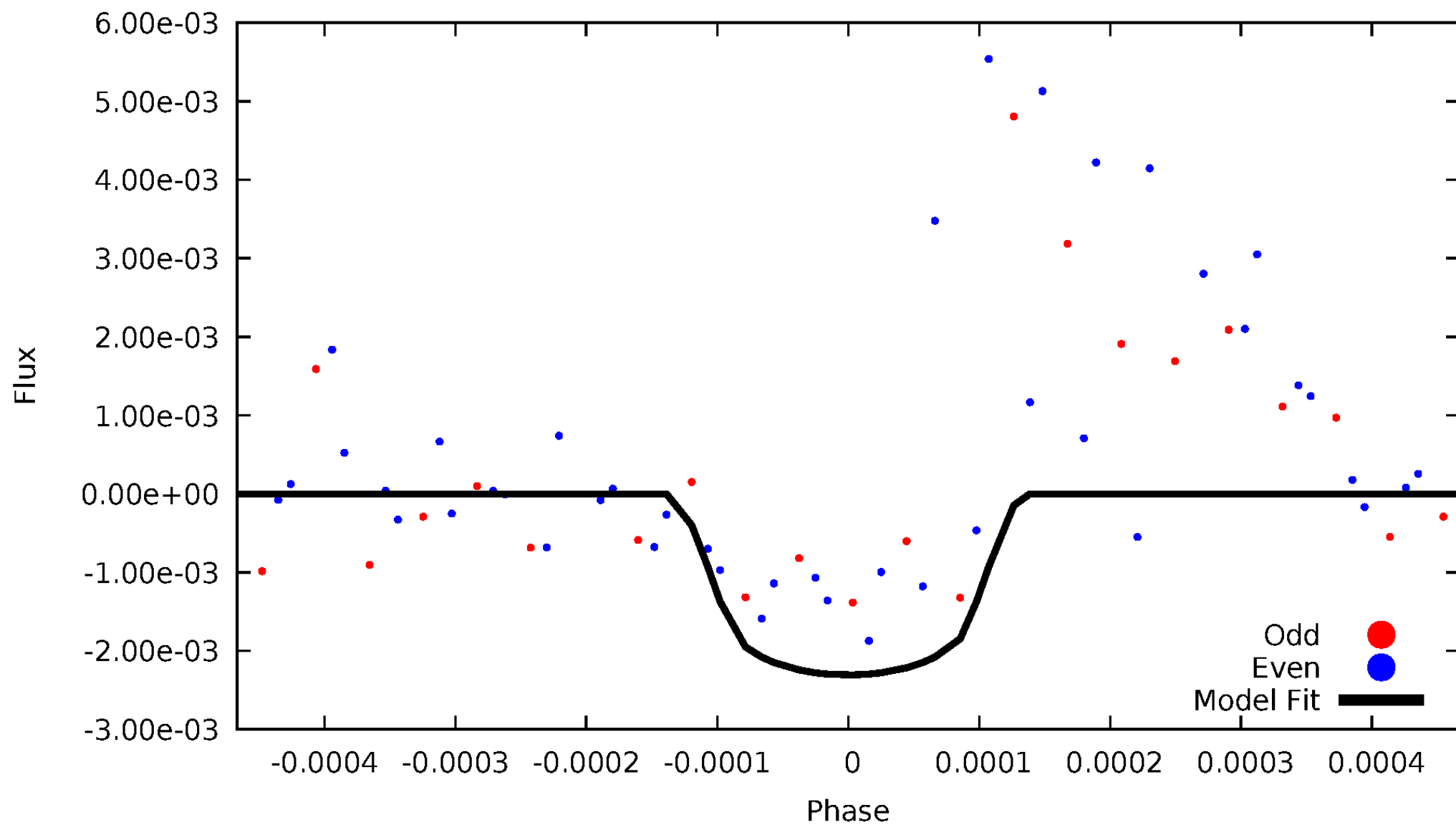


TCE 009395205-04



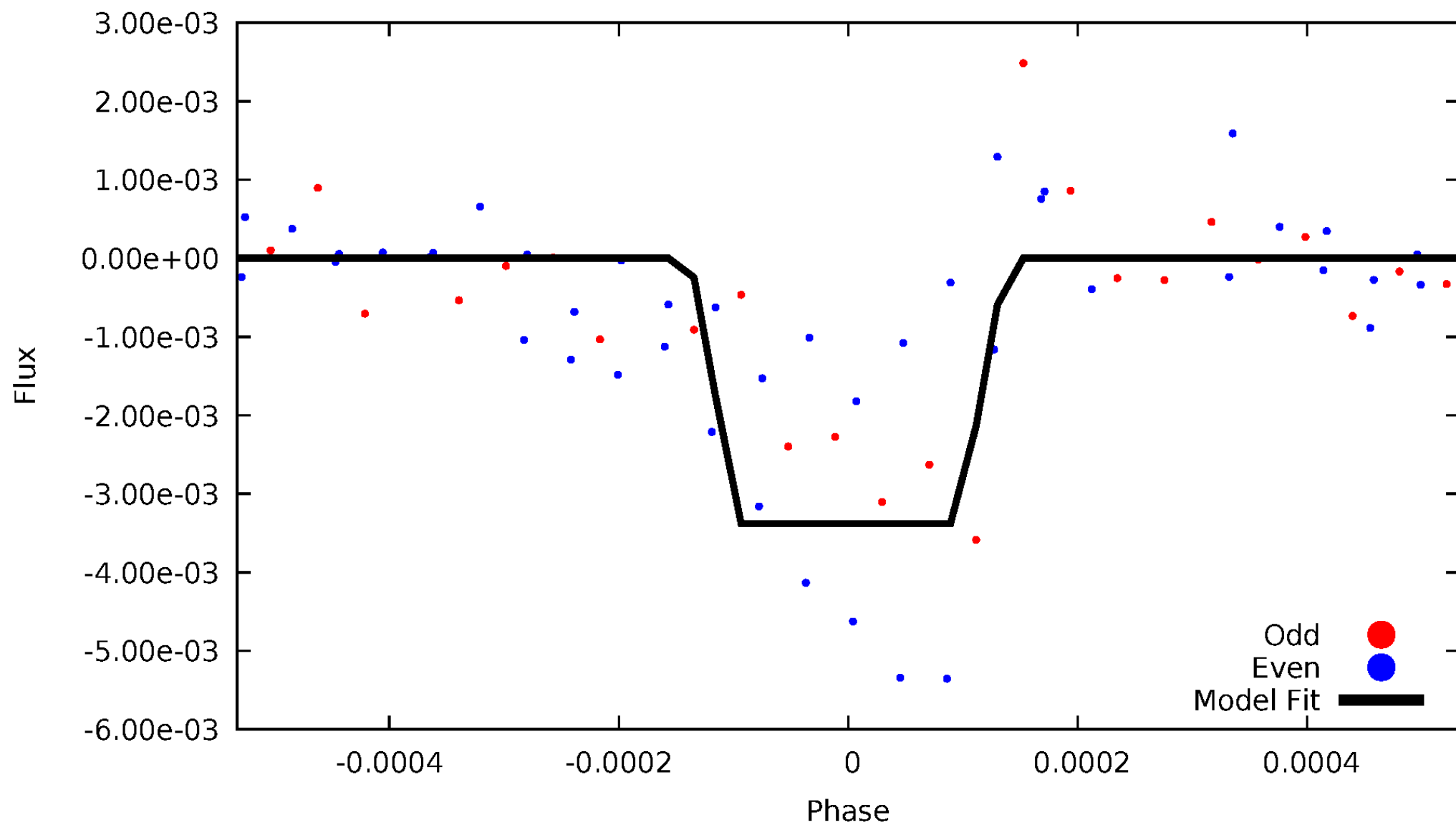
DV Odd/Even

TCE 009395205-04



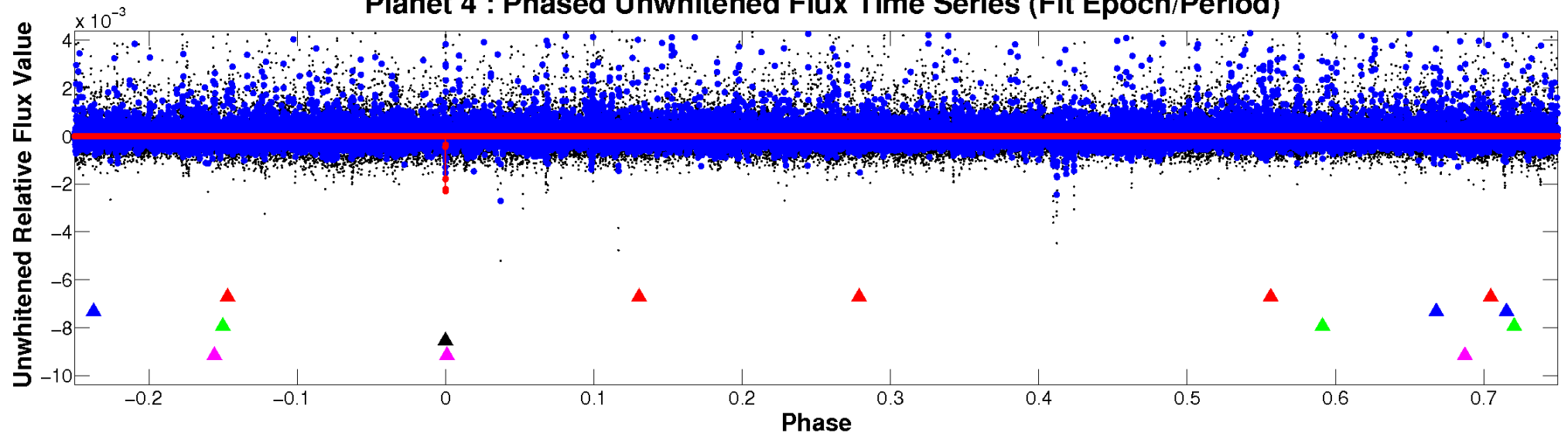
ALT Odd/Even

TCE 009395205-04

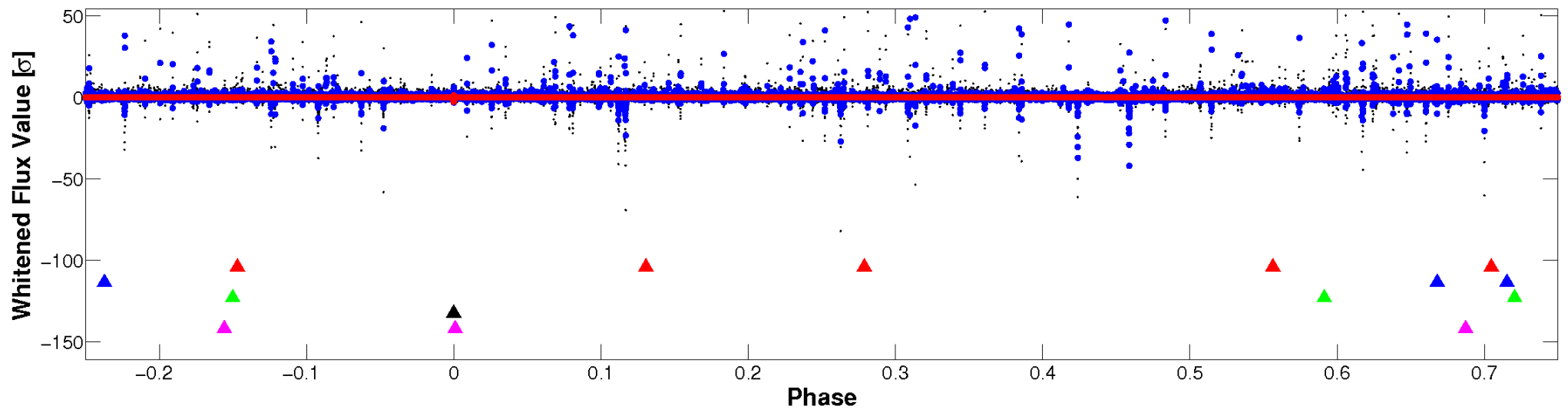


Non-Whitened Vs. Whitened Light Curve

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



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



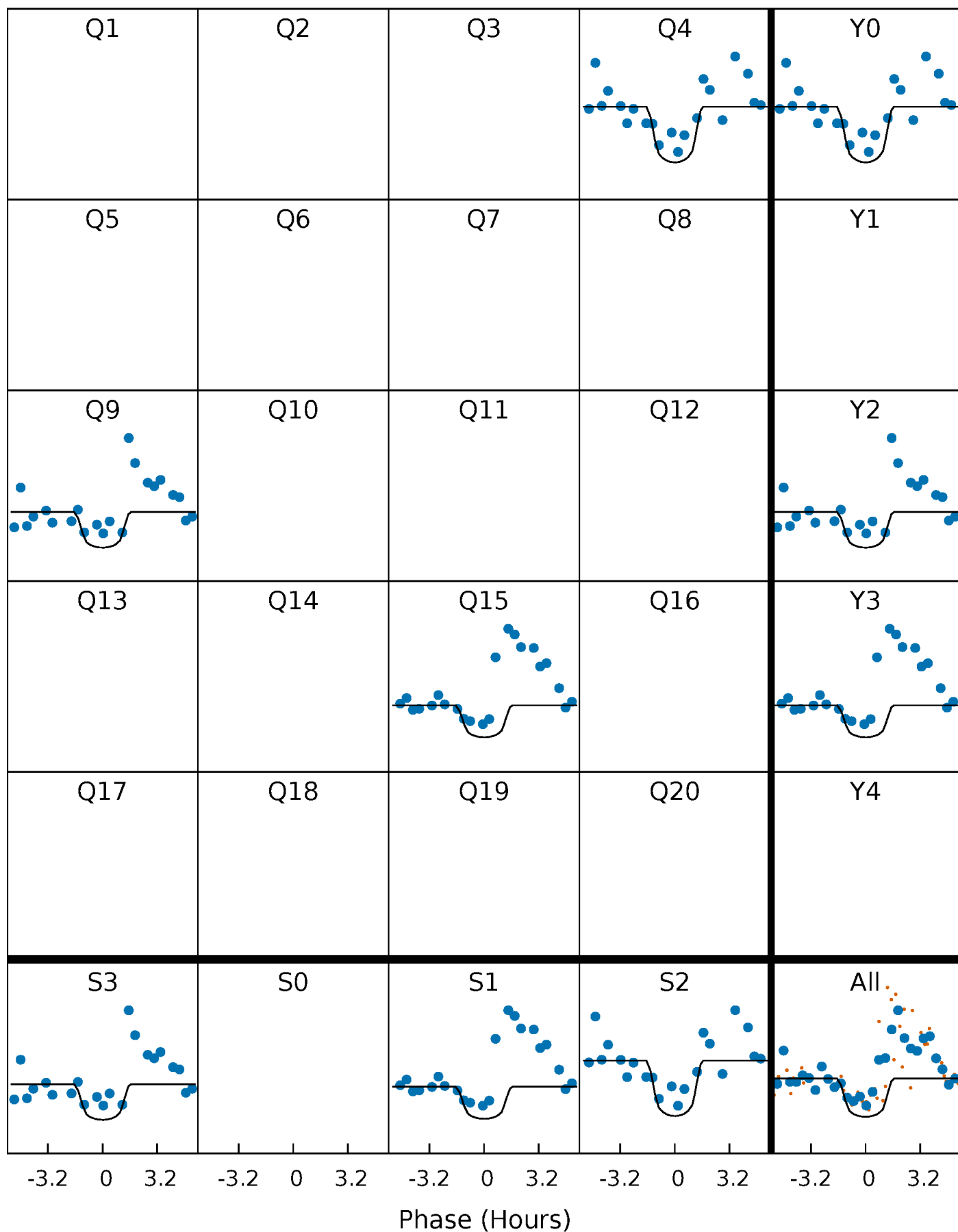
PDC Quarter-Phased Transit Curves

TCE 009395205-04 $P=498.385076$ Days $T_0=389.945788$ (BKJD)



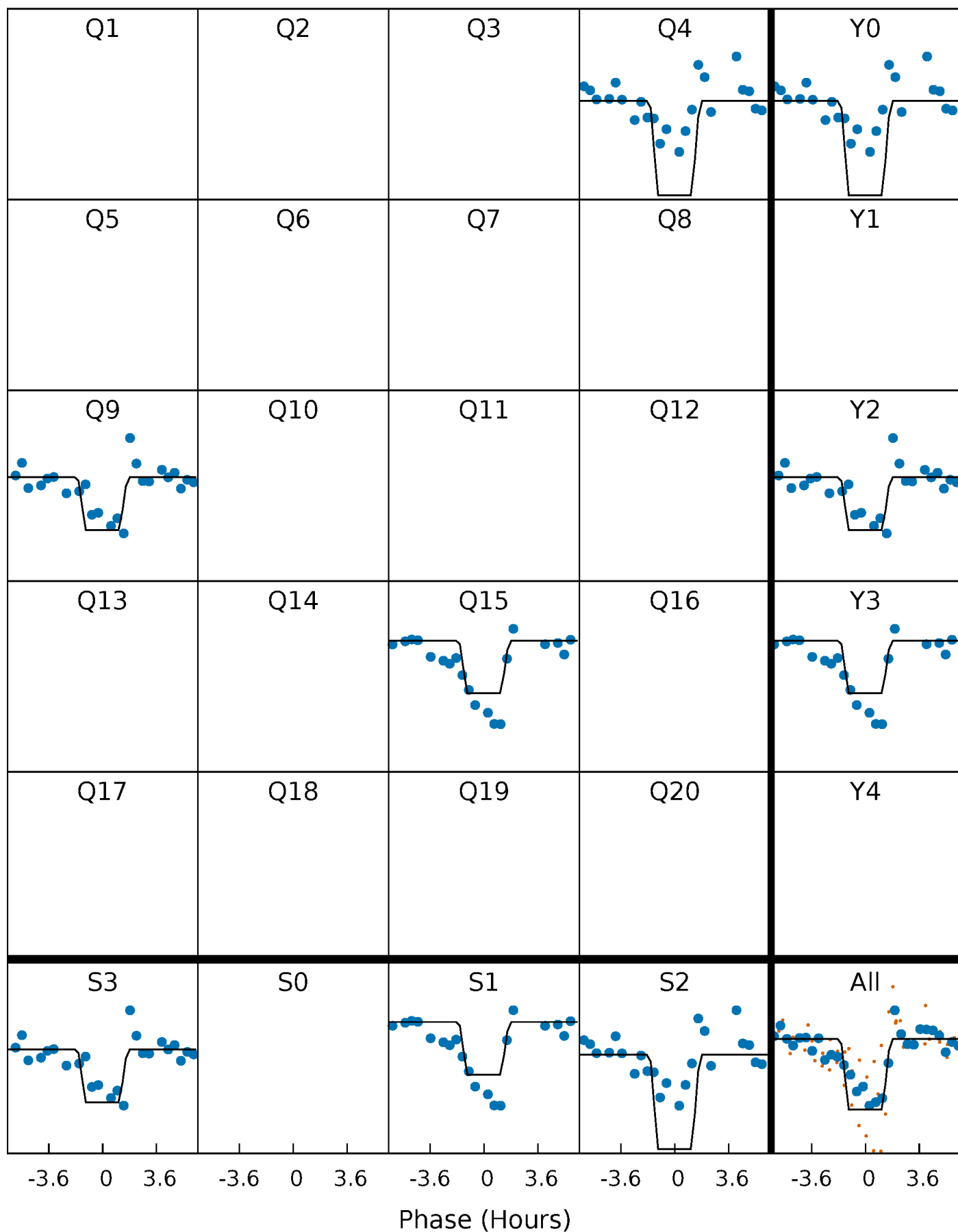
DV Quarter-Phased Transit Curves

TCE 009395205-04 $P=498.385076$ Days $T_0=389.945788$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

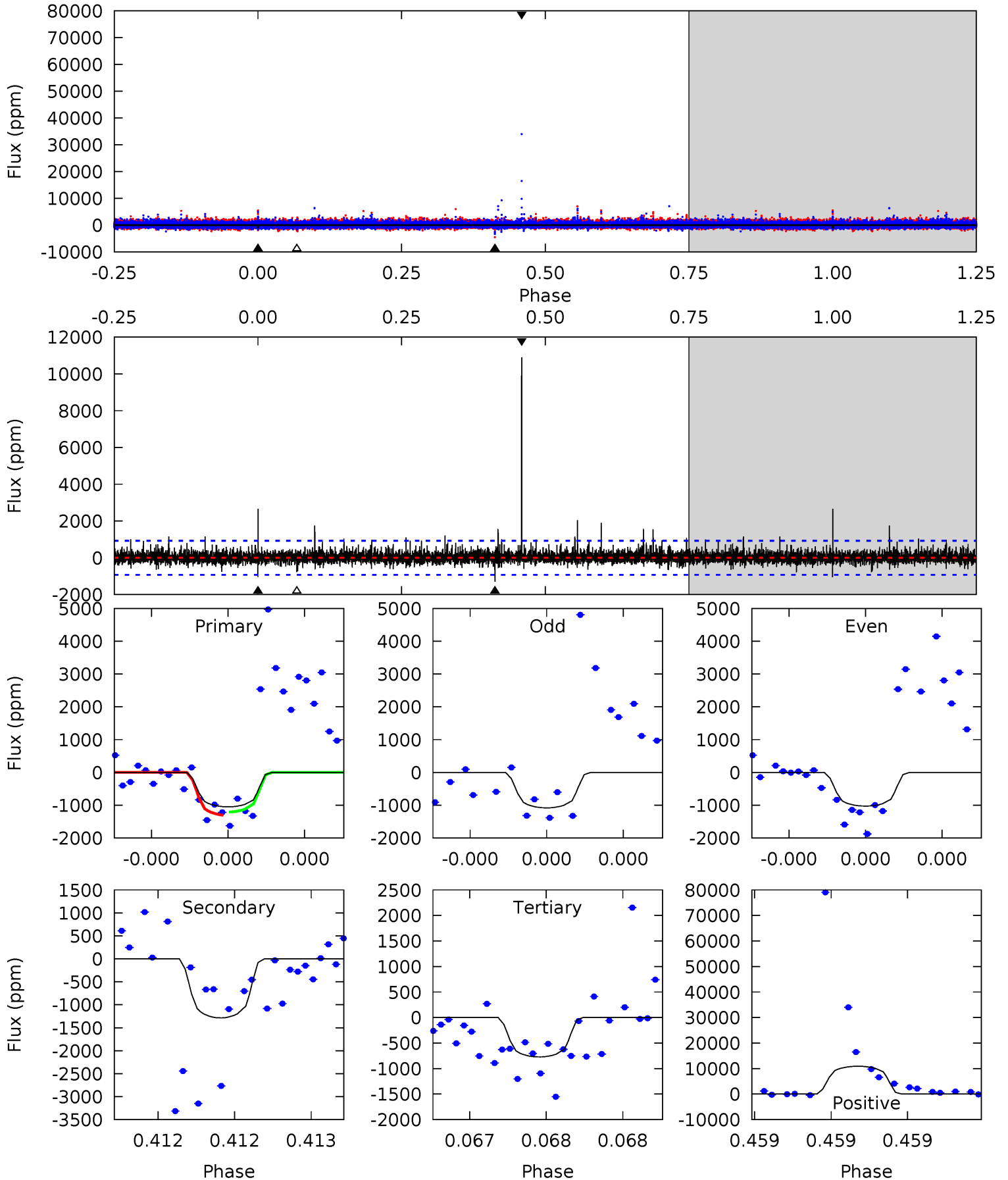
TCE 009395205-04 P=498.367717 Days $T_0=389.950142$ (BKJD)



DV Model-Shift Uniqueness Test

009395205-04, P = 498.385076 Days, E = 389.945788 Days

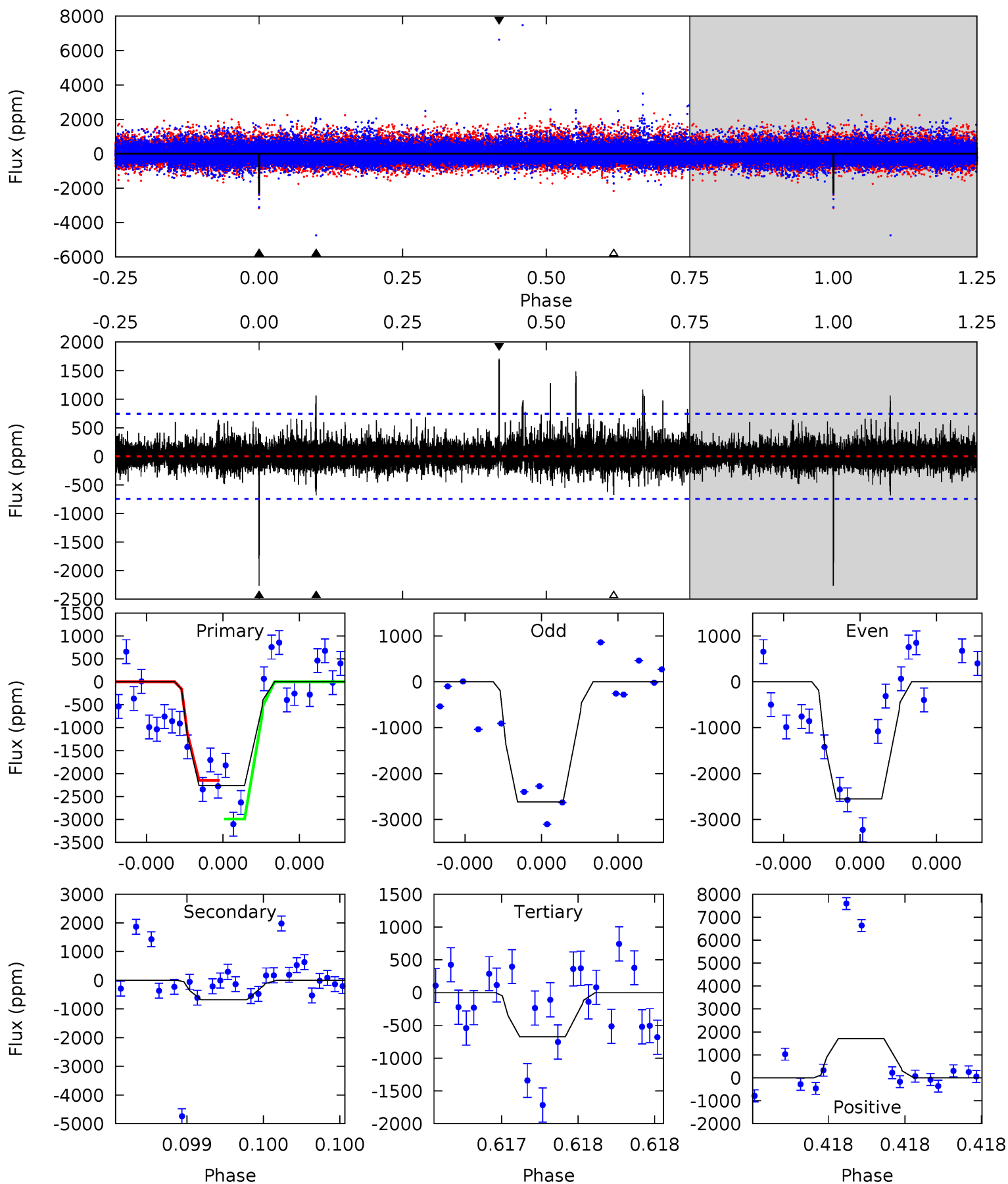
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.42	7.86	4.72	66.6	5.69	3.65	1.56	1.70	-60.2	3.14	-58.8	0.07	0.68	0.89	0.29



Alt Model-Shift Uniqueness Test

009395205-04, P = 498.367717 Days, E = 389.950142 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.3	5.20	5.14	13.0	5.69	3.66	1.09	12.1	4.25	0.06	-7.82	0.22	1.10	0.43	3.39



Stellar Parameters For KIC 009395205

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3827^{+92}_{-103}	$4.728^{+0.054}_{-0.027}$	$-0.100^{+0.200}_{-0.200}$	$0.520^{+0.038}_{-0.052}$	$0.526^{+0.045}_{-0.050}$	$5.280^{+1.311}_{-0.726}$
	+2%/-3%	+1%/-1%	+200%/-200%	+7%/-10%	+9%/-10%	+25%/-14%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 009395205-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1286 ± 164	$15.53^{+17.70}_{-11.08}$	170^{+5}_{-5}	2203^{+784}_{-328}	2926^{+32729}_{-2294}
Alt.	-681 ± 131	$16.51^{+17.28}_{-11.50}$	170^{+5}_{-6}	2028^{+612}_{-275}	1329^{+12641}_{-1021}

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

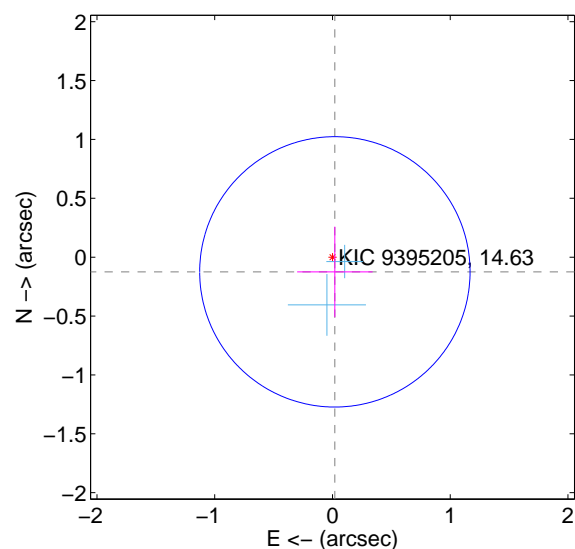
Supplemental centroid analysis for 009395205-04. Kepler magnitude: 14.63. Transit SNR 10.07

There are 3 quarters with good PRF difference image offsets

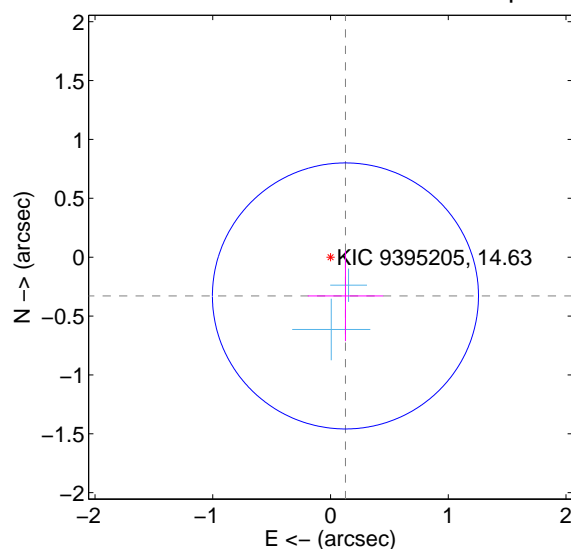
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.126 ± 0.383	0.33	-0.020 ± 0.320	-0.125 ± 0.384
PRF-fit source offset from KIC position	0.353 ± 0.377	0.94	-0.127 ± 0.320	-0.329 ± 0.384
photometric centroid source offset	0.10 ± 0.54	0.18	-0.09 ± 0.54	0.03 ± 0.54

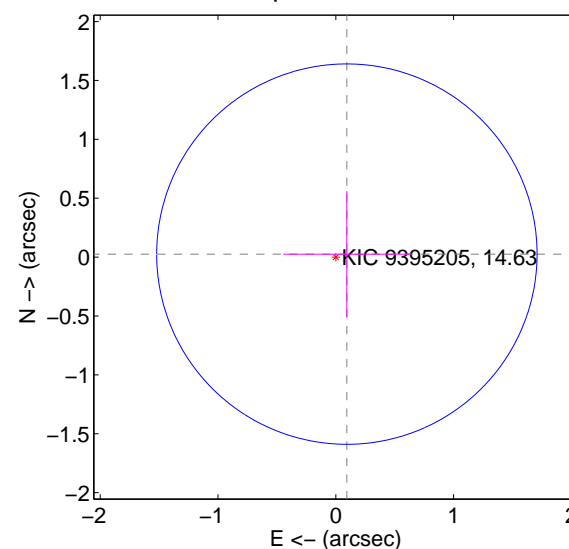
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

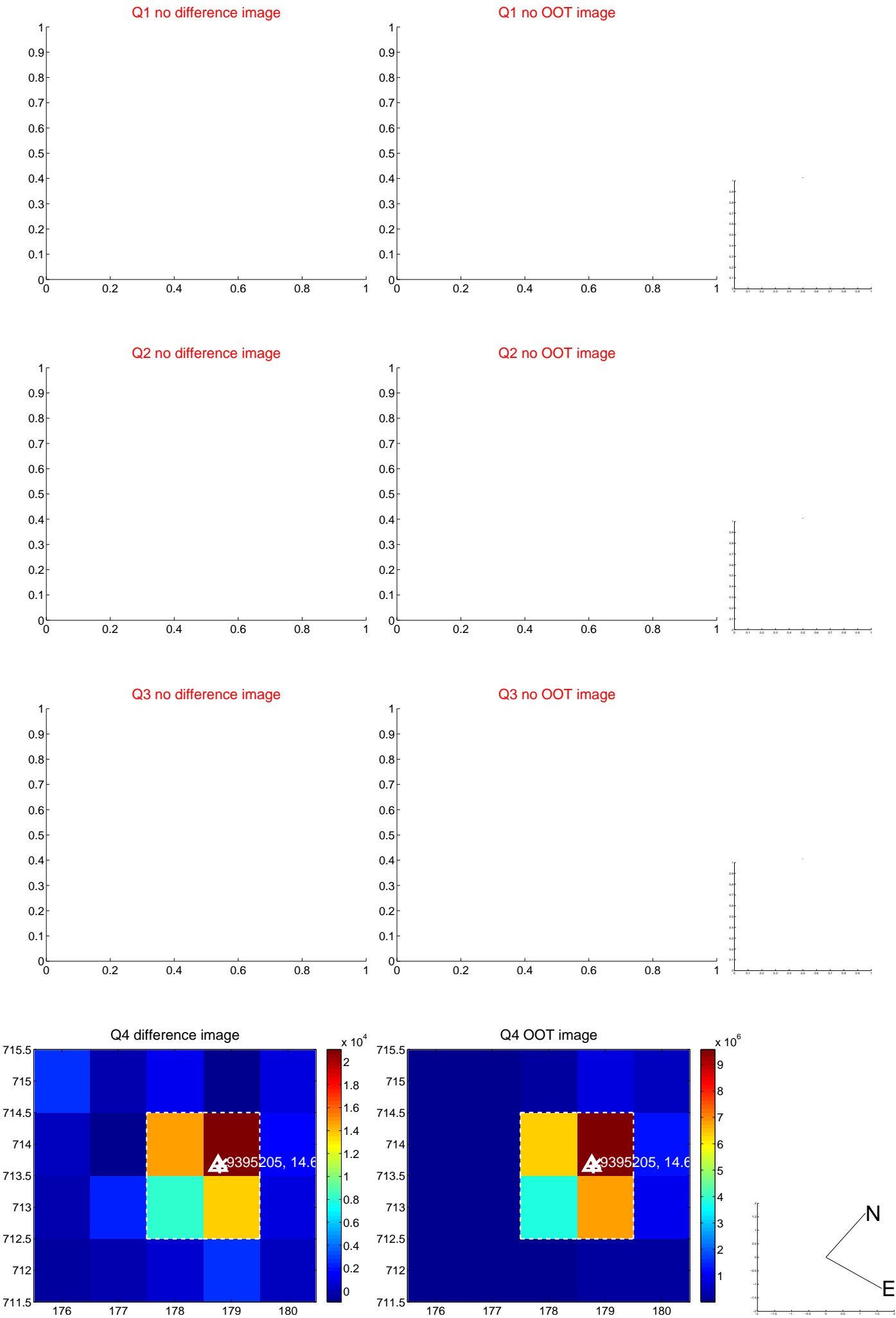


offset from photometric centroids



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.

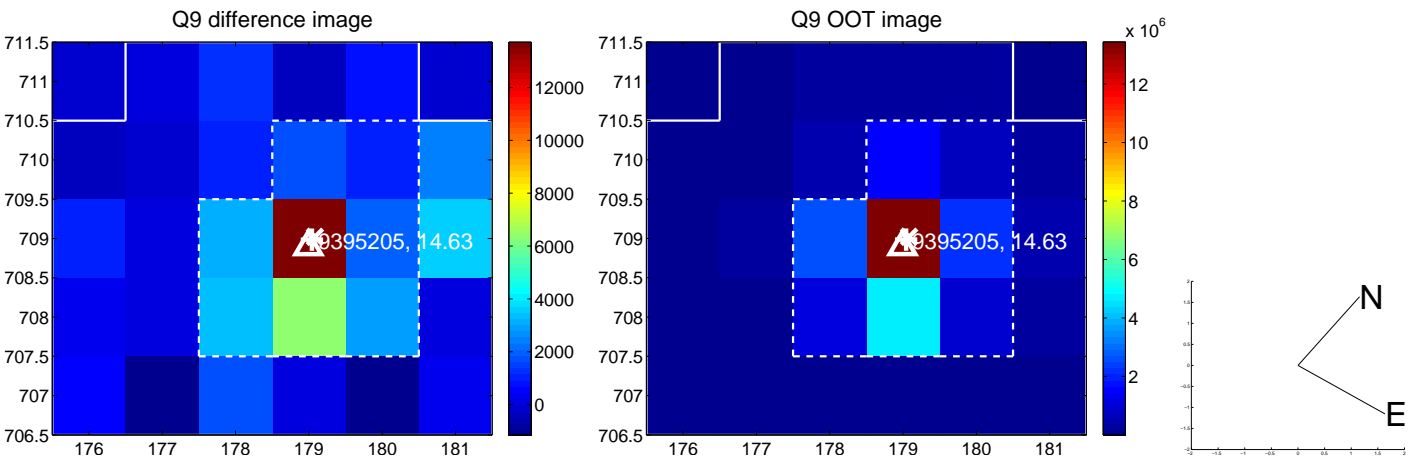
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



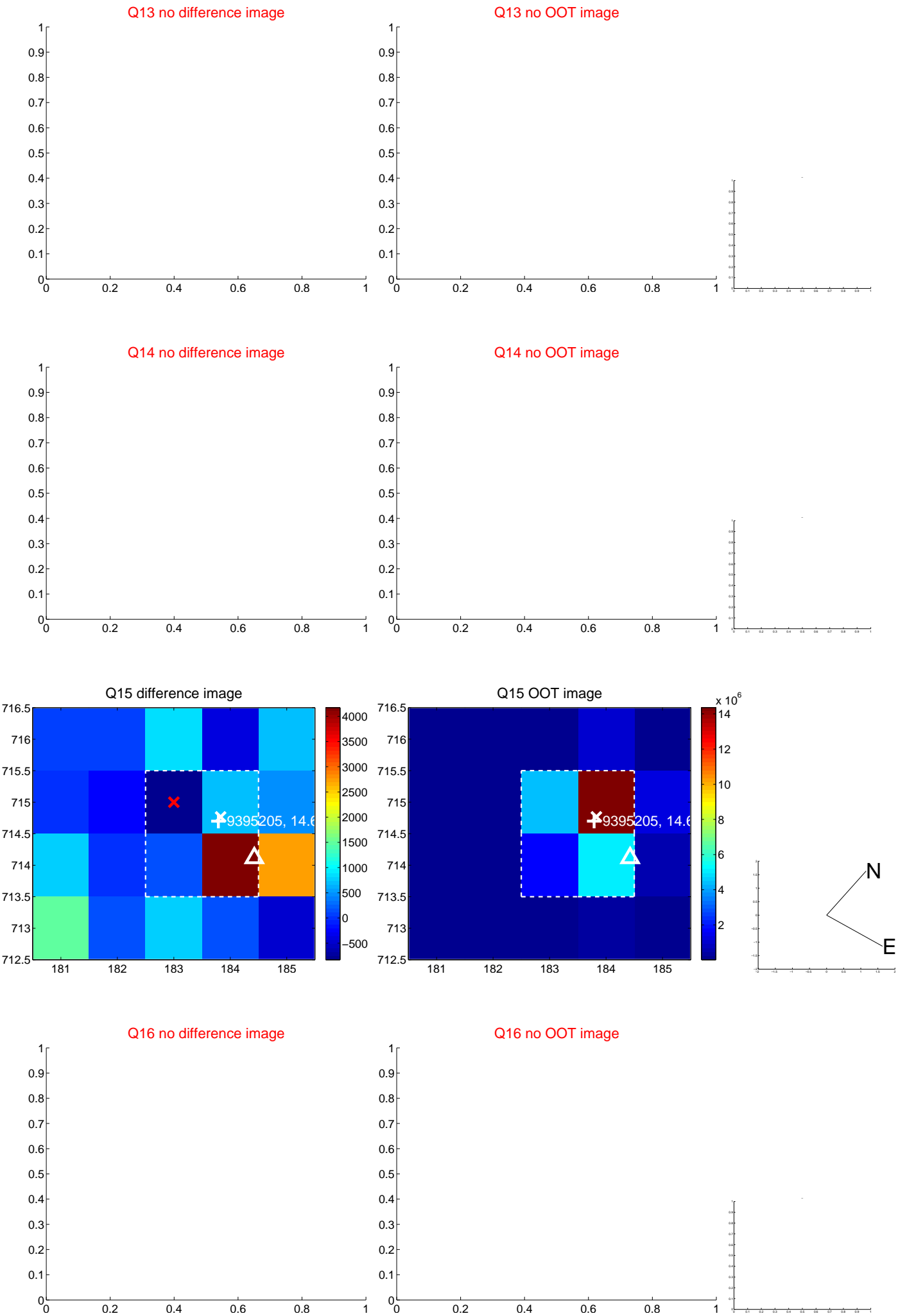
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



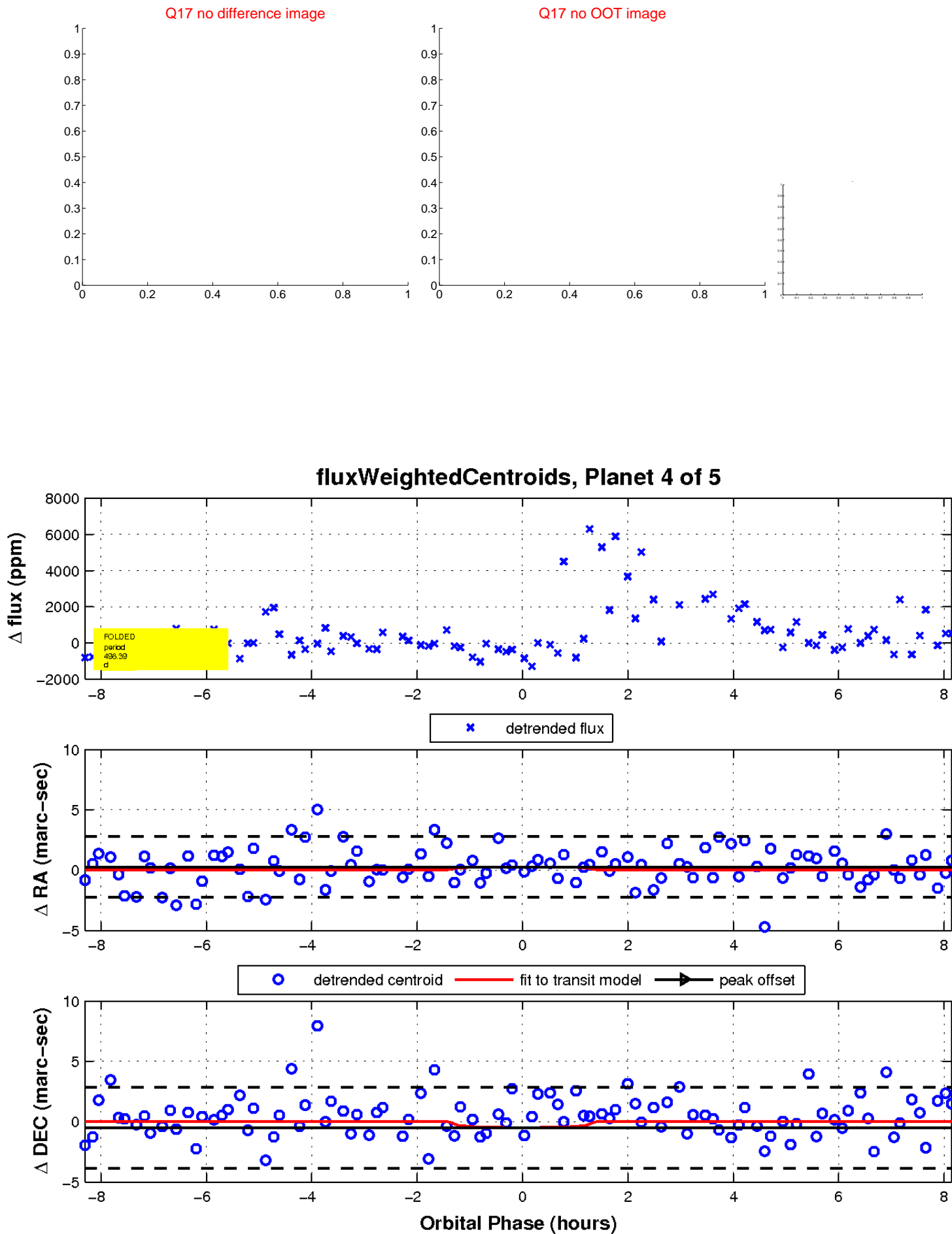
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

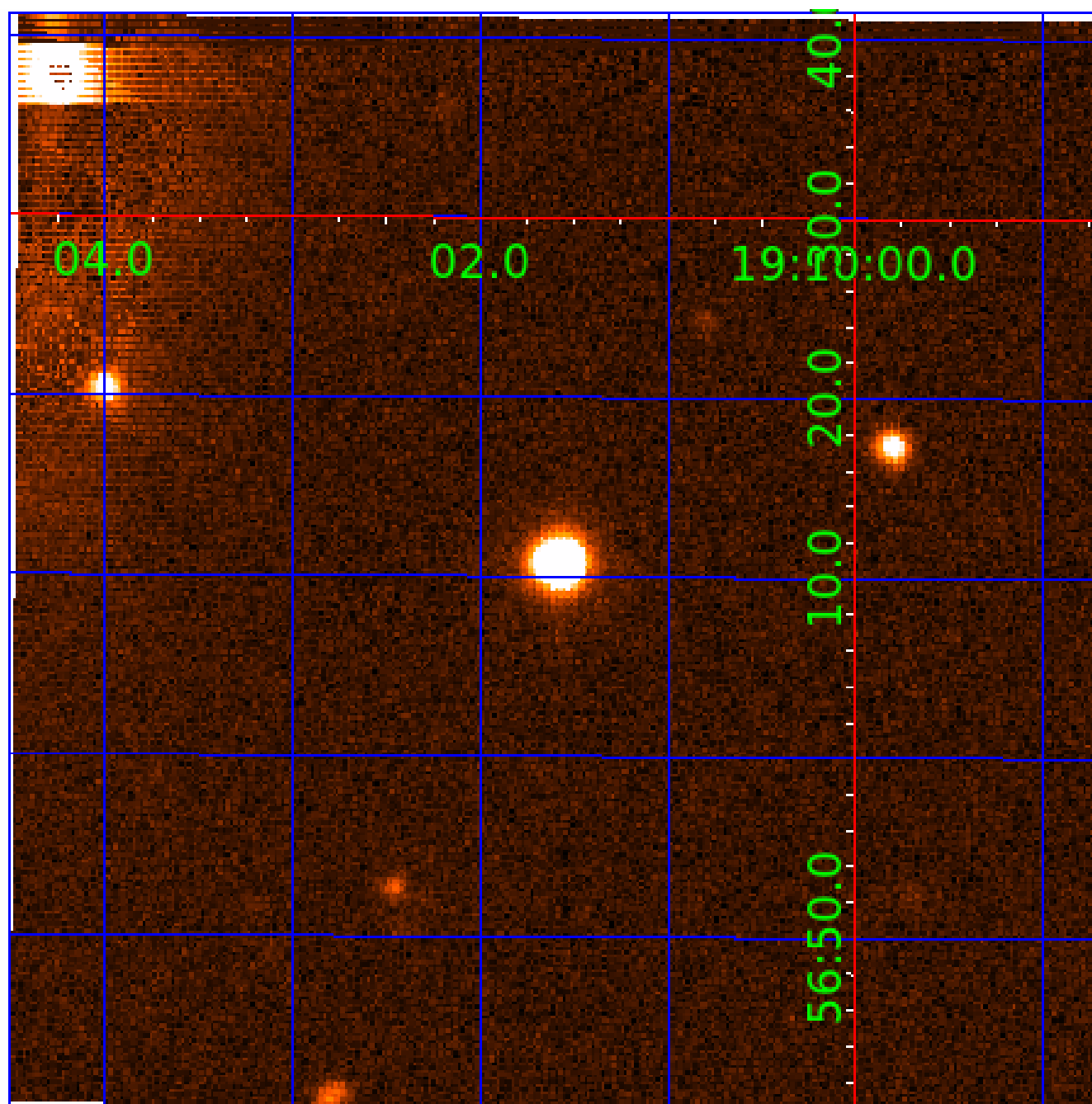


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009395205

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})
009395205-01	OBS	No	286.159777	168.851454	1022.7	4.551	14.6	5.2	0.52	3827	1.77	0.11
009395205-02	OBS	No	521.989531	224.495212	1689.7	3.121	12.1	7.5	0.52	3827	2.23	0.05
009395205-03	OBS	No	562.825209	186.251164	1203.0	4.478	13.0	5.7	0.52	3827	1.82	0.04
009395205-04	OBS	No	498.385076	389.945788	2309.2	2.791	11.5	10.1	0.52	3827	2.51	0.05
009395205-05	OBS	No	420.216161	390.445066	726.5	7.500	12.3	-1.0	0.52	3827	1.39	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009395205-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009395205-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009395205-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009395205-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV
009395205-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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.

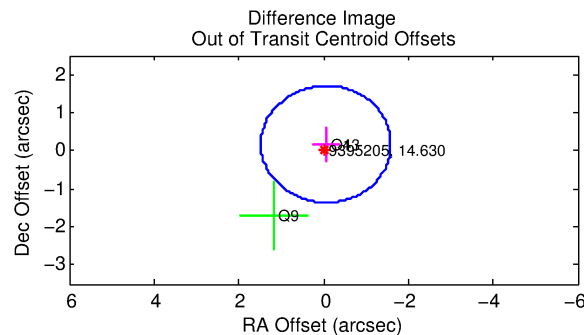
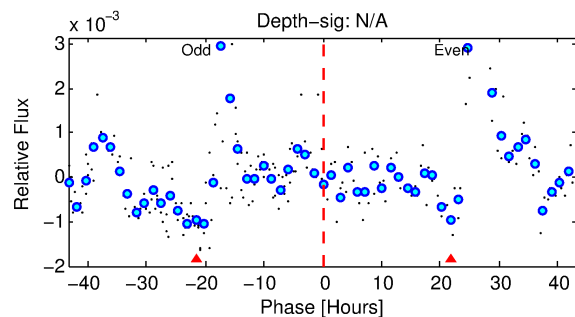
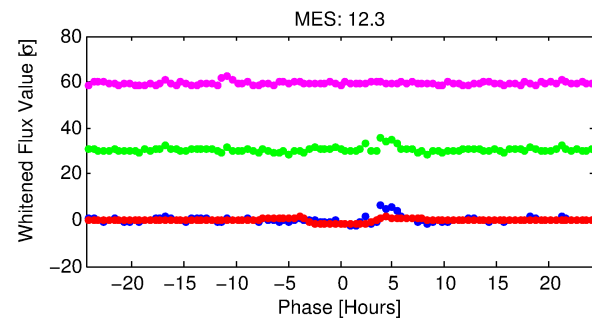
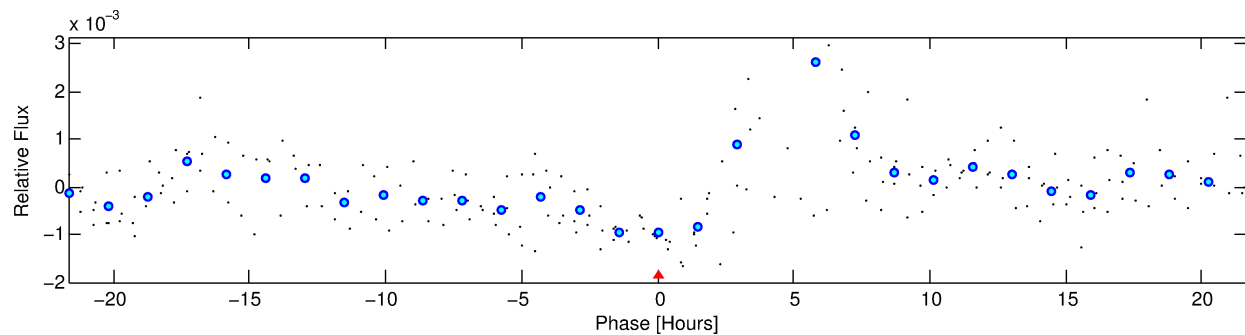
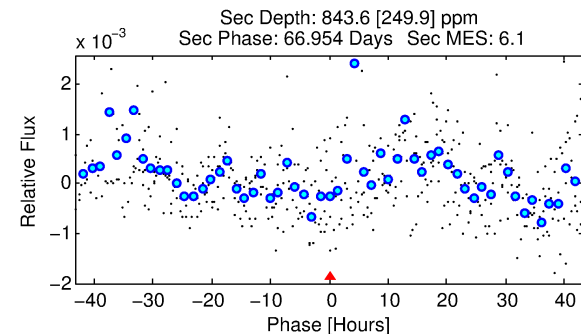
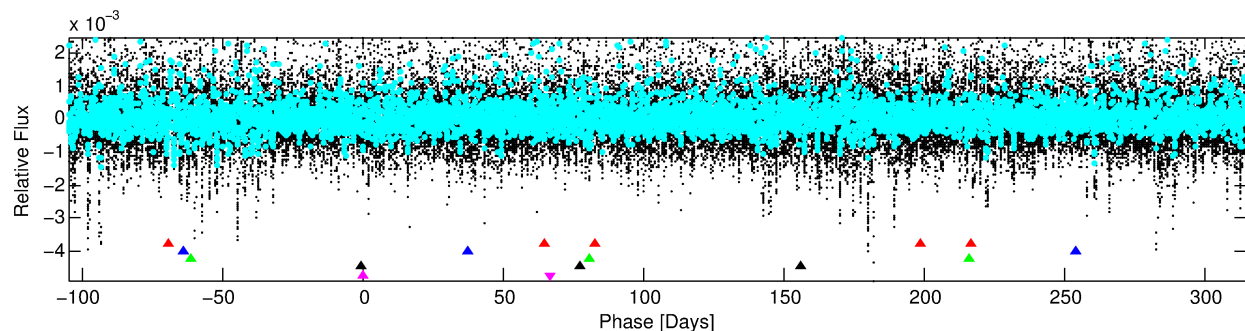
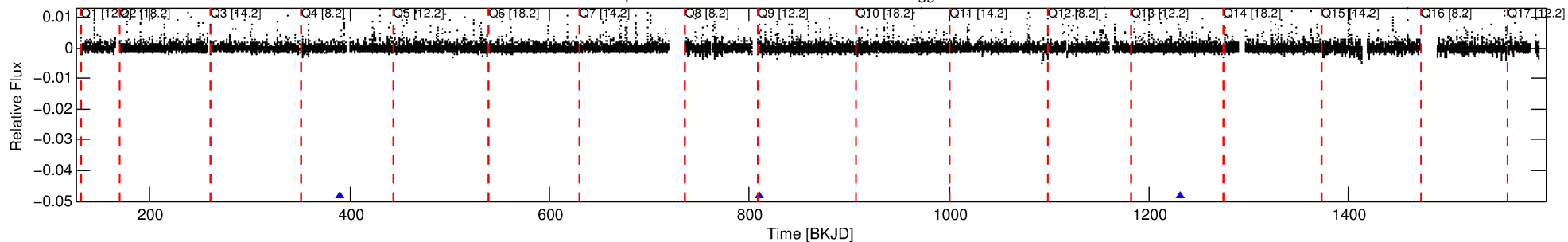
Ephemeris Match Information For 009395205-05

No Significant Match Found

DV One-Page Summary

KIC: 9395205 Candidate: 5 of 5 Period: 420.216 d

Kp: 14.63 R*: 0.52 Rs Teff: 3827.0 K Logg: 4.73 Fe/H: -0.100



TPS TCE Results:

Period = 420.21616 d
Epoch = 390.4451 BKJD

DV fit results are unavailable

DV Diagnostic Results:

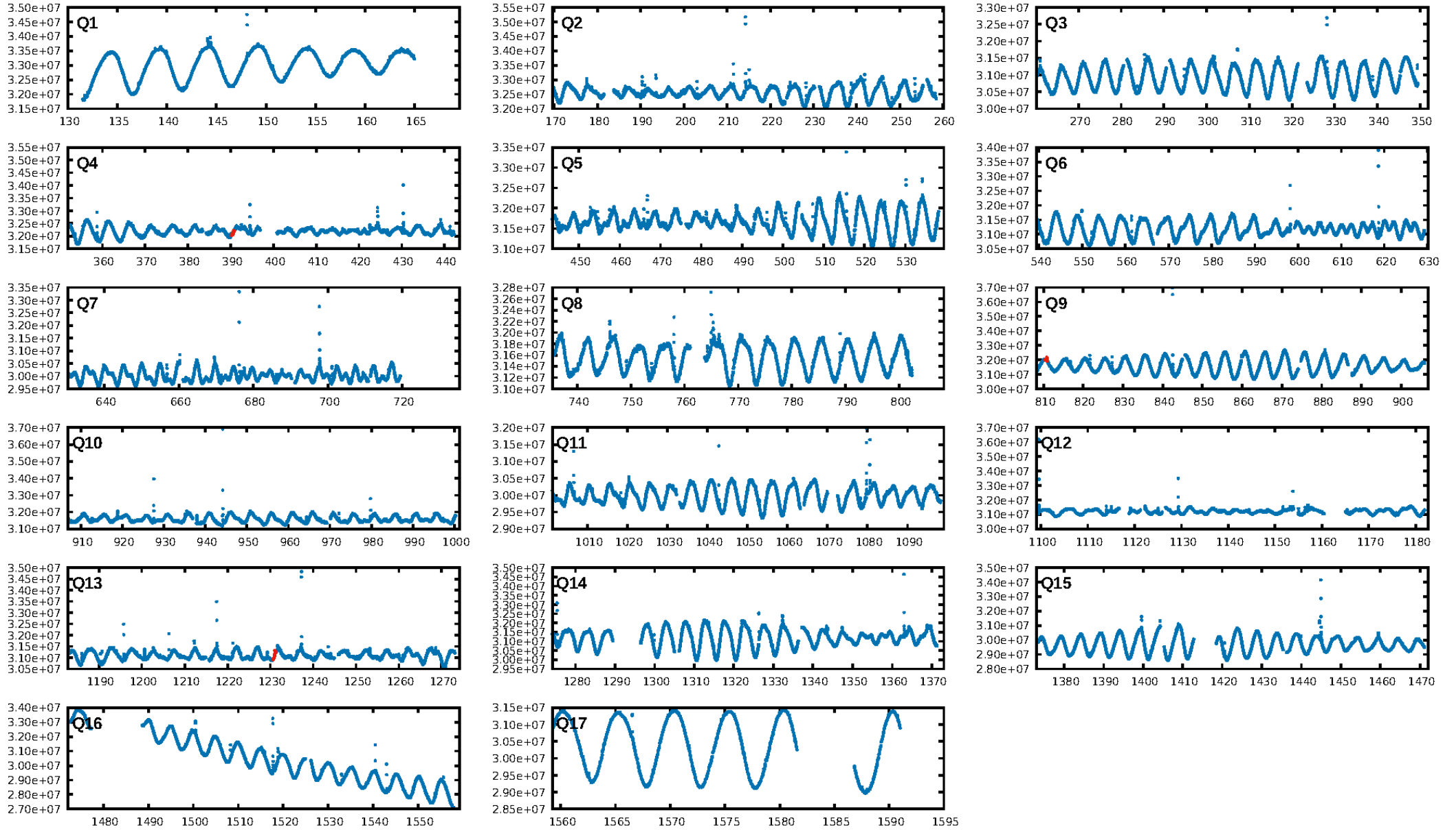
ShortPeriod-sig: 100.0% [366.74σ]
LongPeriod-sig: 100.0% [234.44σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 10.66

Centroid-sig: 28.0%
Centroid-so: 0.846 arcsec [1.24σ]
OotOffset-rm: 0.180 arcsec [0.35σ]
KicOffset-rm: 0.066 arcsec [0.23σ]
OotOffset-st: 0/0/1/2 [3]
KicOffset-st: 0/0/1/2 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.67 [2/3]

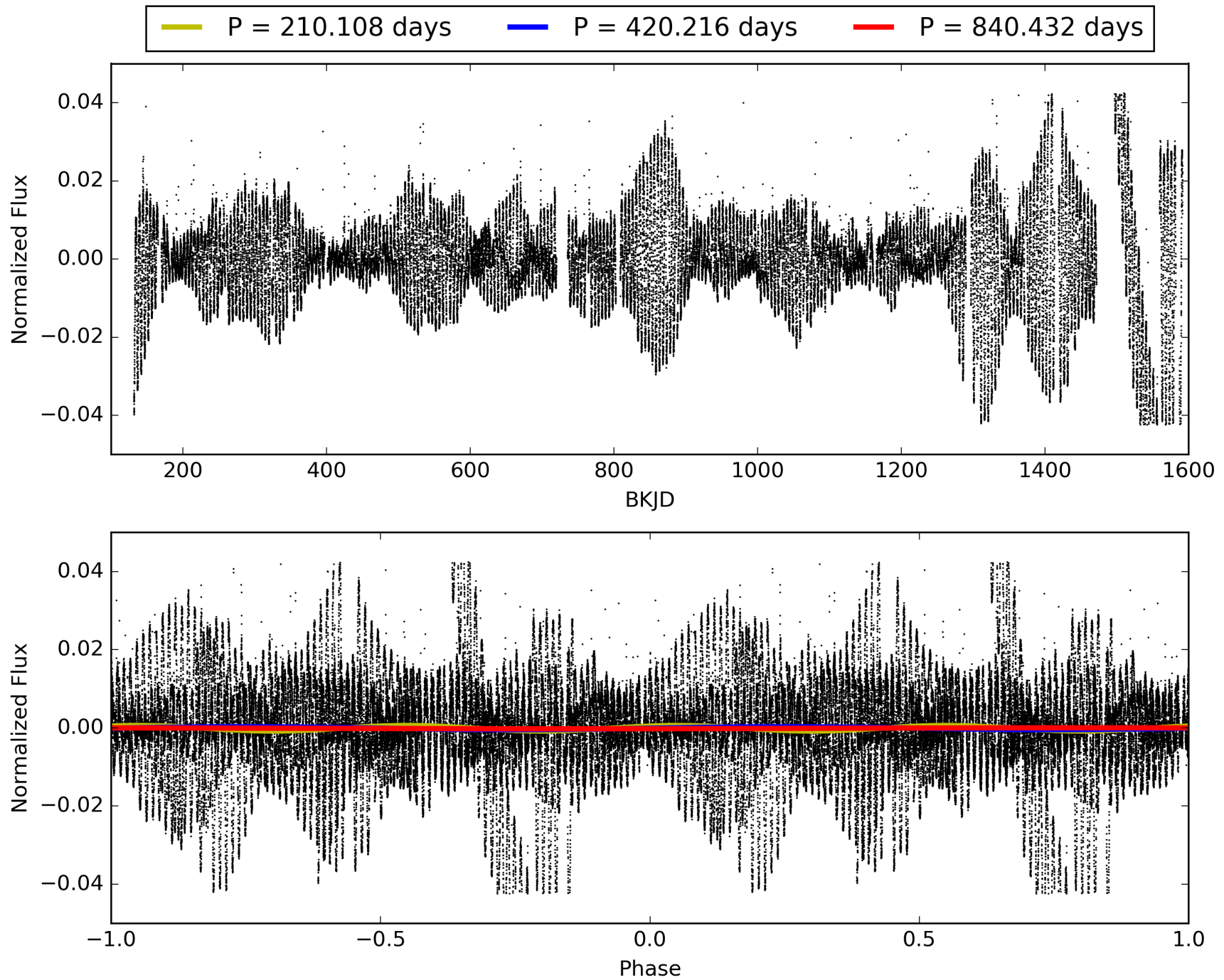
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:53:15 Z

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

TCE 009395205-05, PDC Light Curves

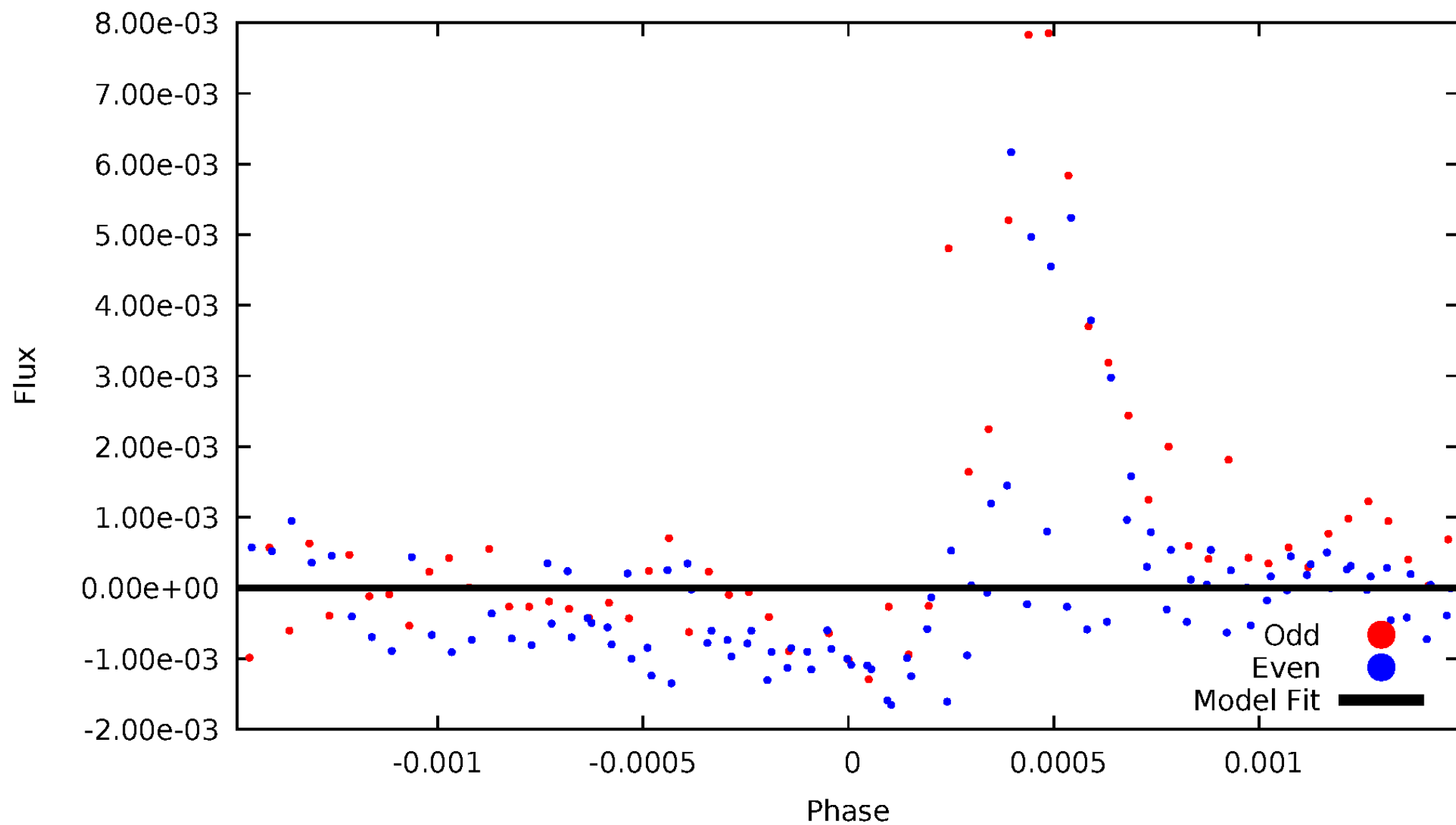


TCE 009395205-05



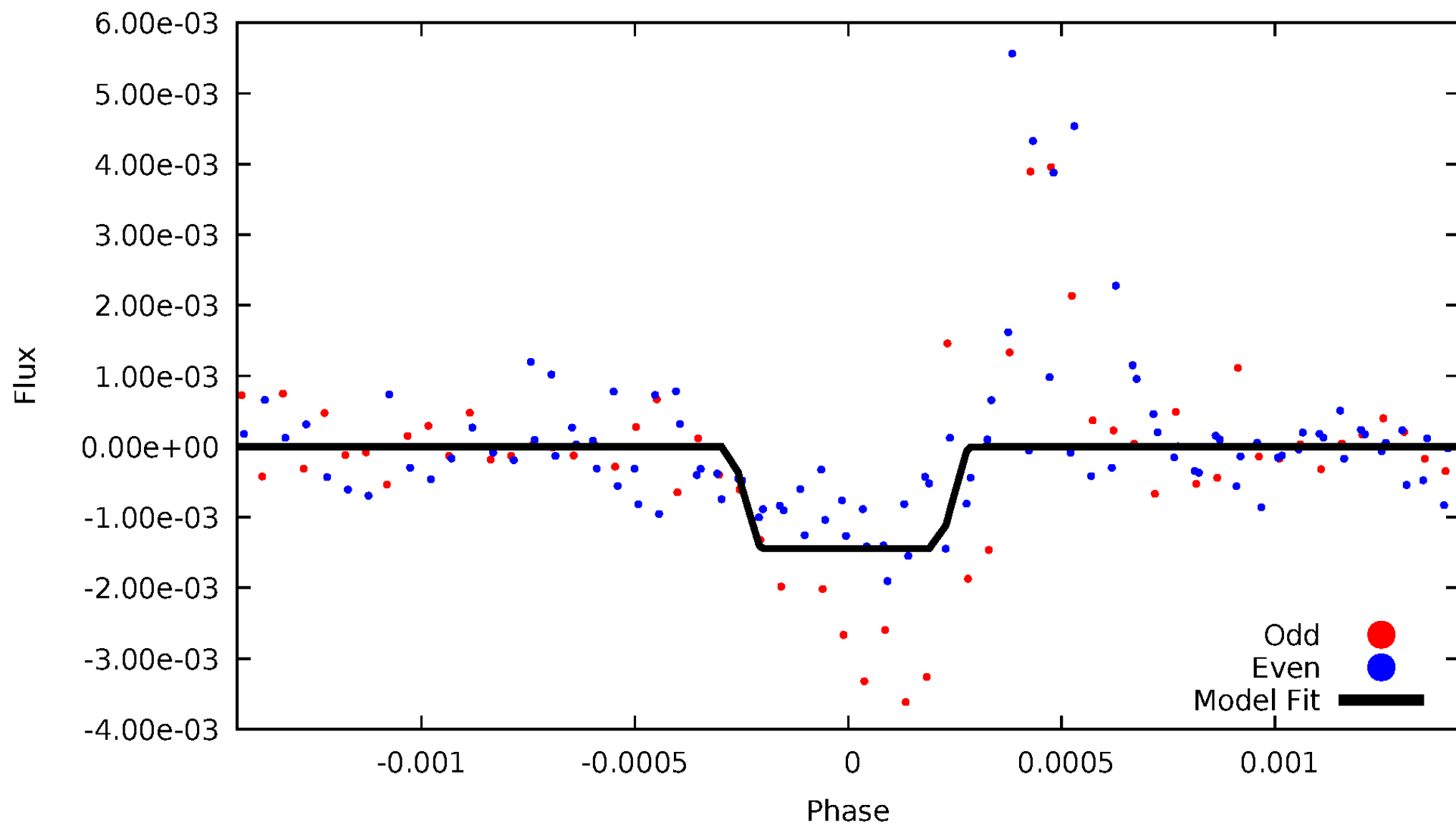
DV Odd/Even

TCE 009395205-05

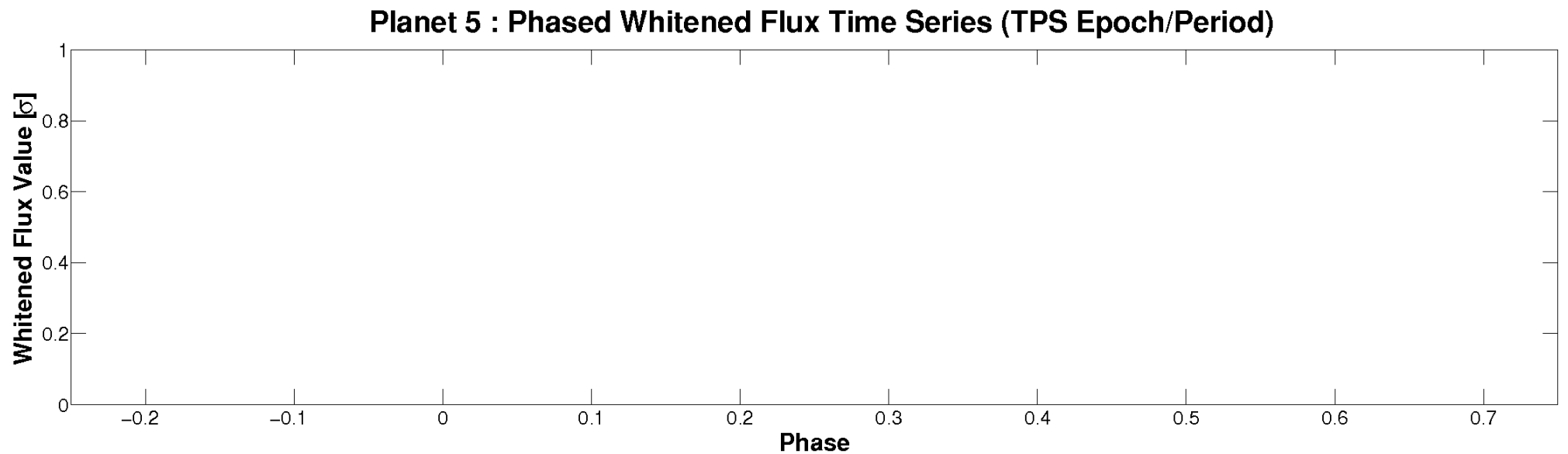
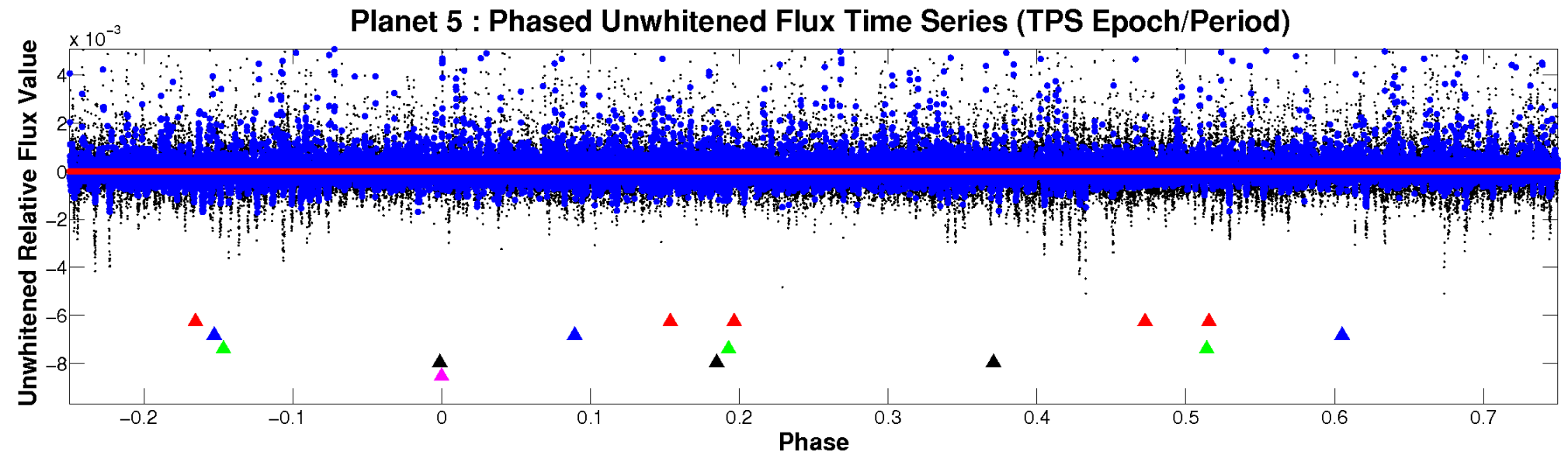


ALT Odd/Even

TCE 009395205-05

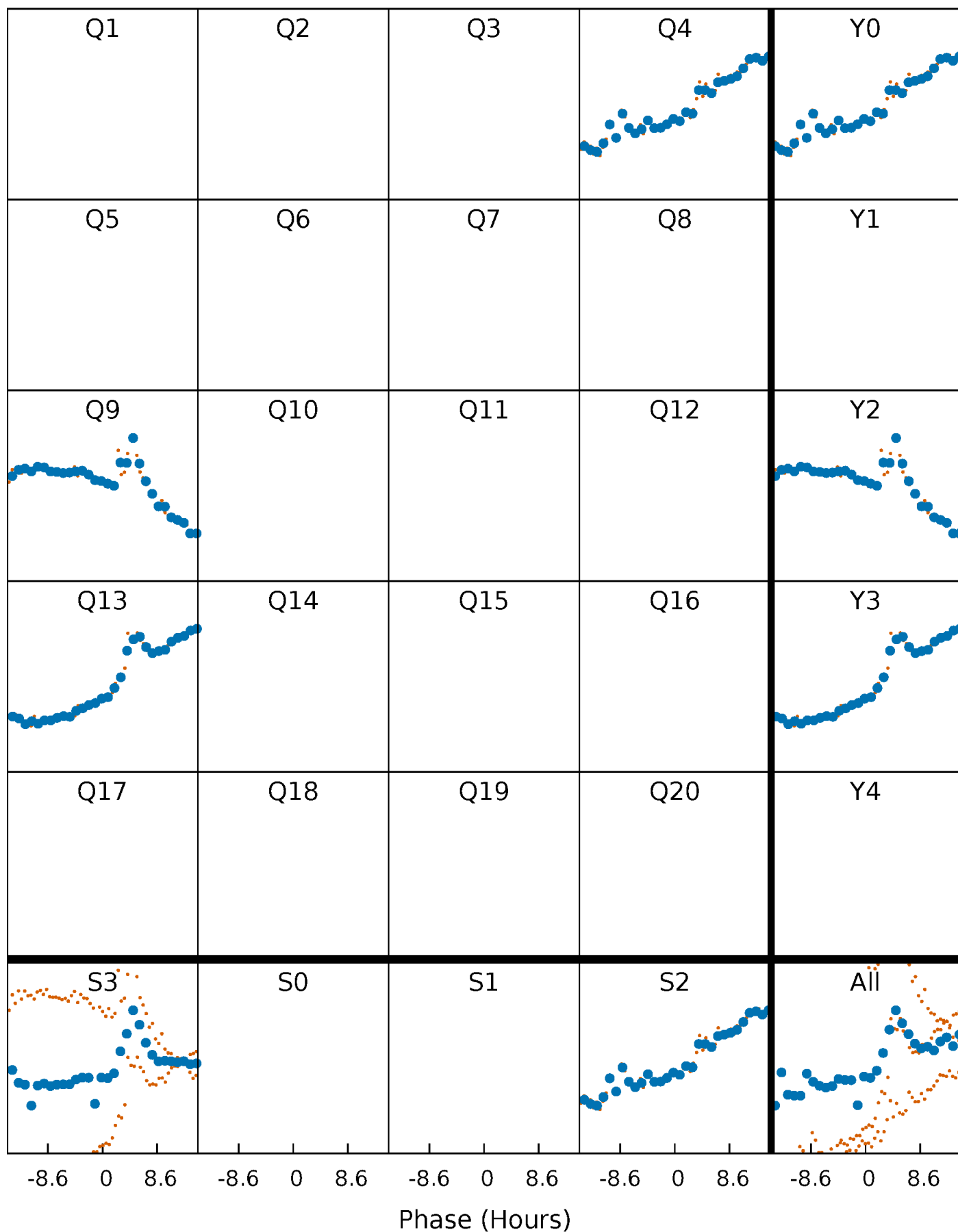


Non-Whitened Vs. Whitened Light Curve



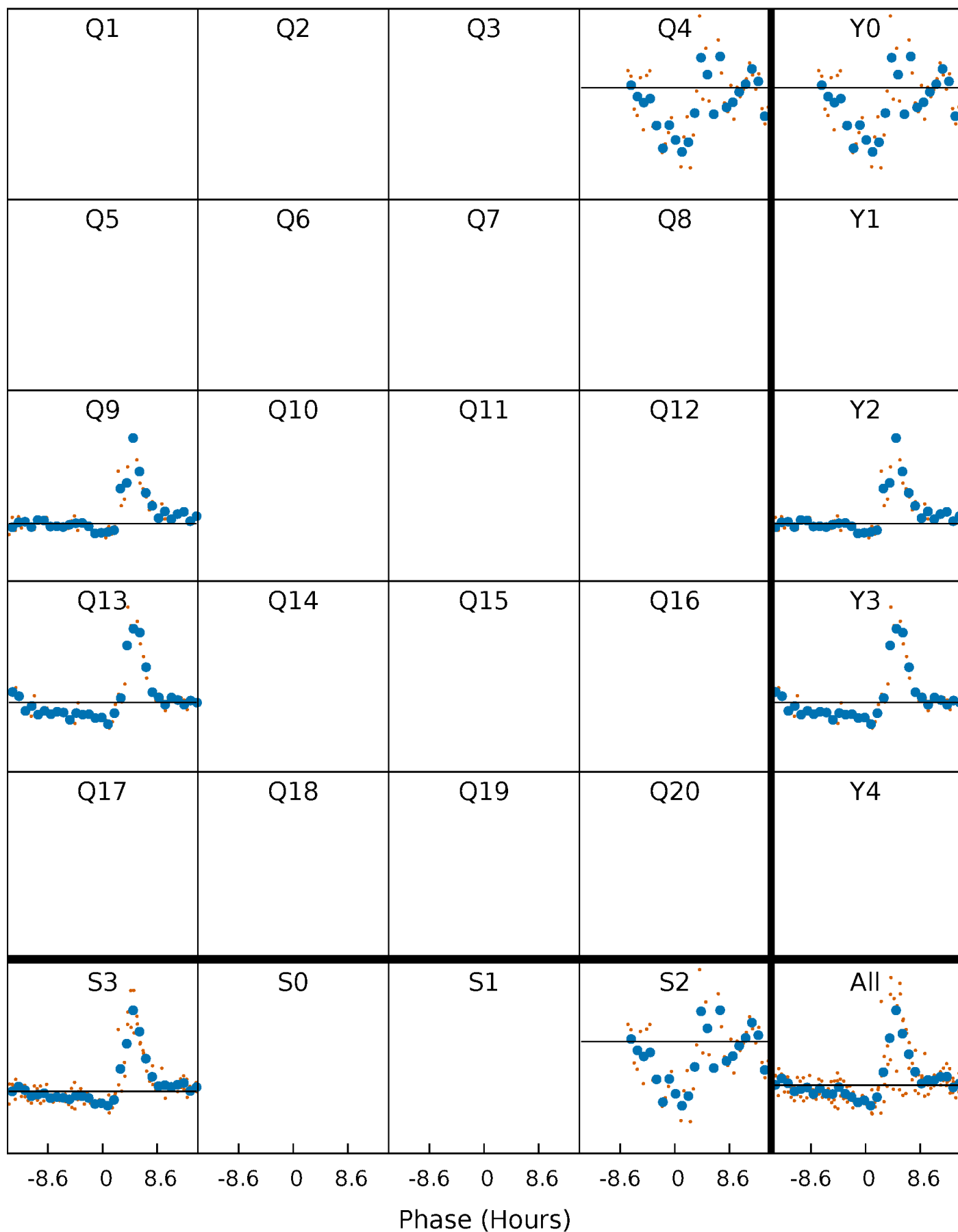
PDC Quarter-Phased Transit Curves

TCE 009395205-05 $P=420.216161$ Days $T_0=390.445066$ (BKJD)



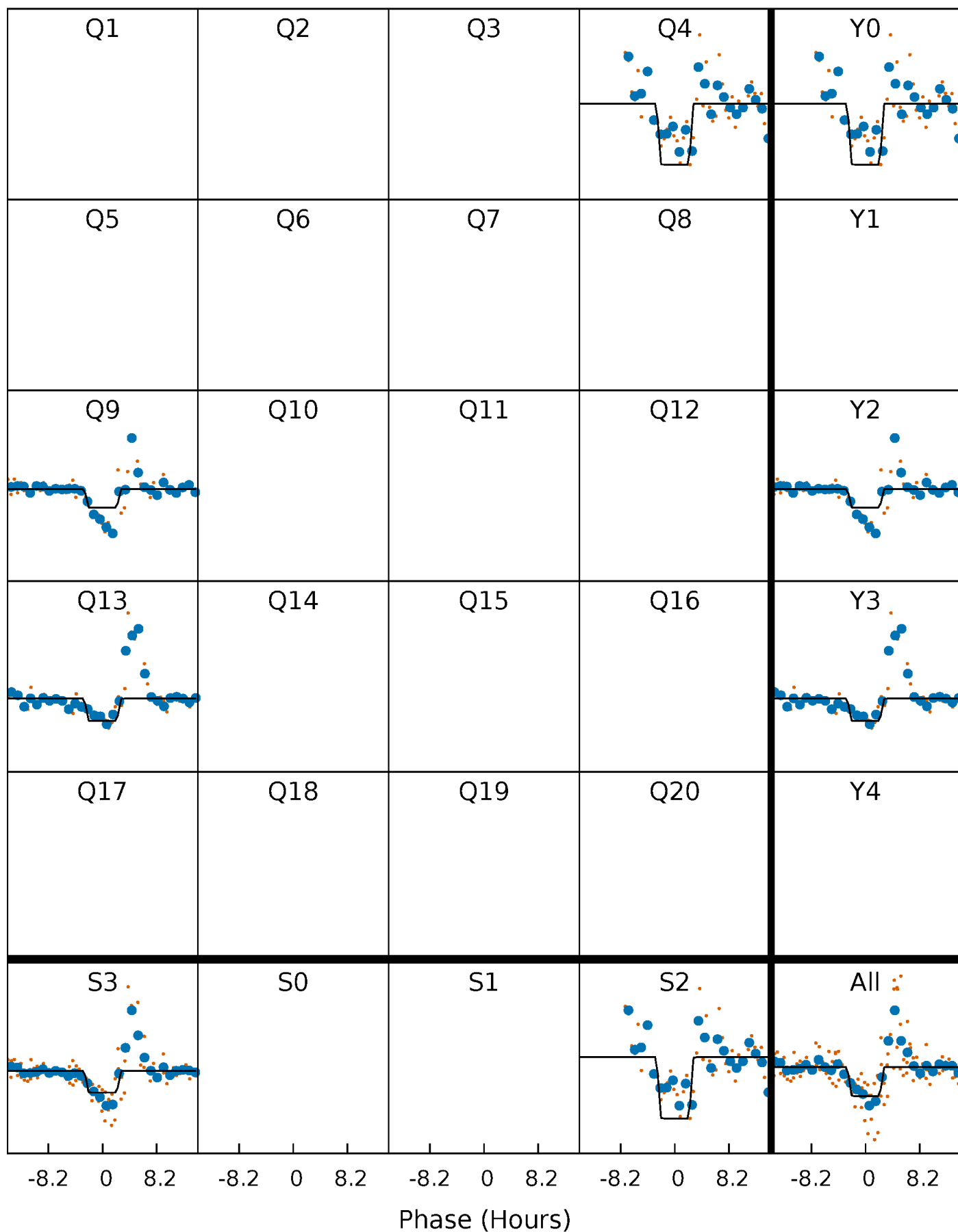
DV Quarter-Phased Transit Curves

TCE 009395205-05 $P=420.216161$ Days $T_0=390.445066$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

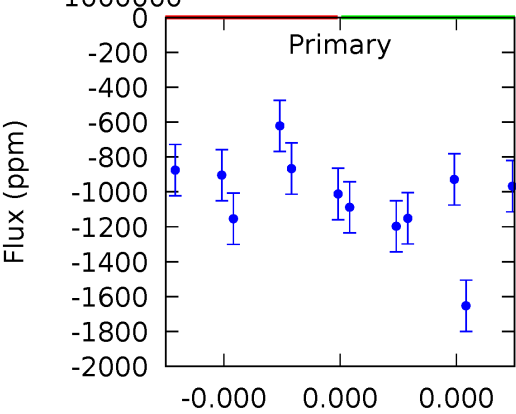
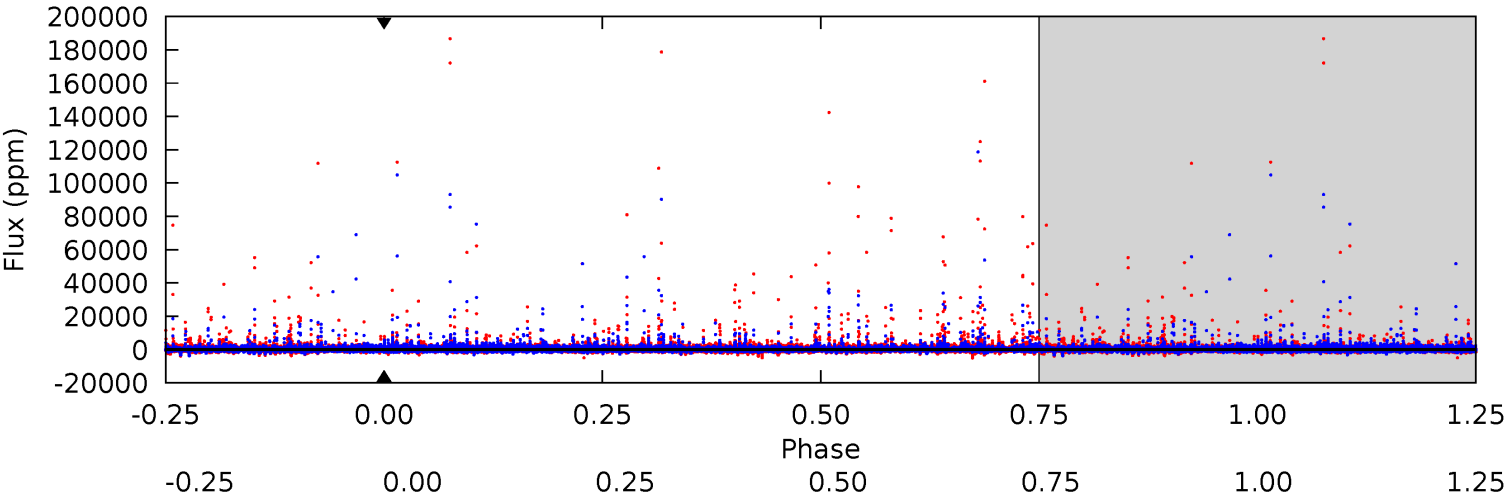
TCE 009395205-05 $P=420.216161$ Days $T_0=390.450311$ (BKJD)



DV Model-Shift Uniqueness Test

009395205-05, P = 420.216161 Days, E = 390.445066 Days

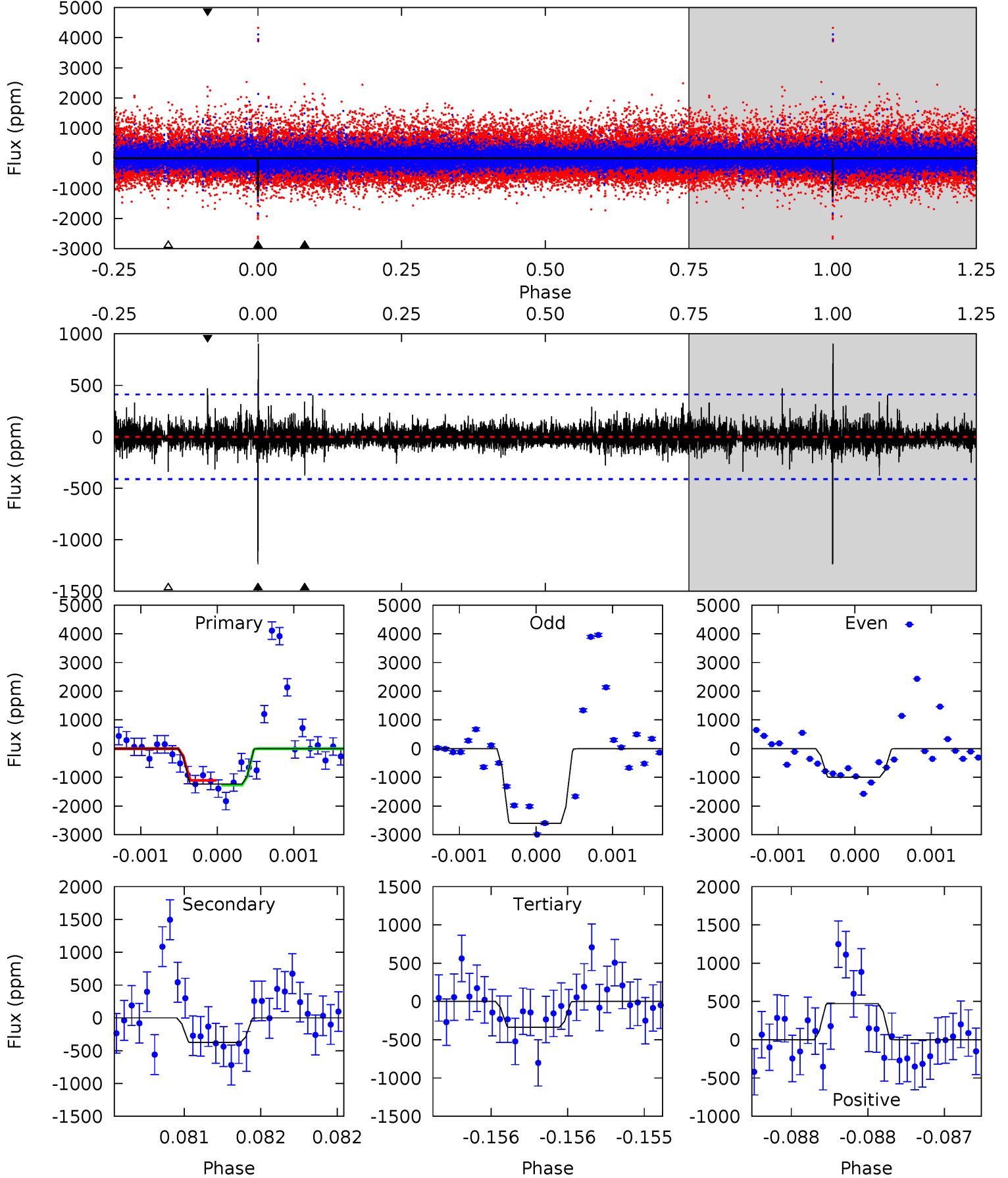
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

009395205-05, P = 420.216161 Days, E = 390.450311 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.7	5.06	4.56	6.37	5.55	3.44	0.89	12.1	10.3	0.50	-1.30	9.65	1.27	0.42	1.06



Stellar Parameters For KIC 009395205

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3827^{+92}_{-103}	$4.728^{+0.054}_{-0.027}$	$-0.100^{+0.200}_{-0.200}$	$0.520^{+0.038}_{-0.052}$	$0.526^{+0.045}_{-0.050}$	$5.280^{+1.311}_{-0.726}$
	+2%/-3%	+1%/-1%	+200%/-200%	+7%/-10%	+9%/-10%	+25%/-14%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 009395205-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$4.42^{+3.96}_{-3.02}$	179^{+5}_{-6}	-3136^{+11278}_{-5026}	$-42783.551^{+3843472.226}_{-4005453.733}$
Alt.	-375 ± 74	$4.49^{+4.75}_{-3.12}$	179^{+6}_{-5}	2537^{+985}_{-395}	8046^{+77557}_{-6178}

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

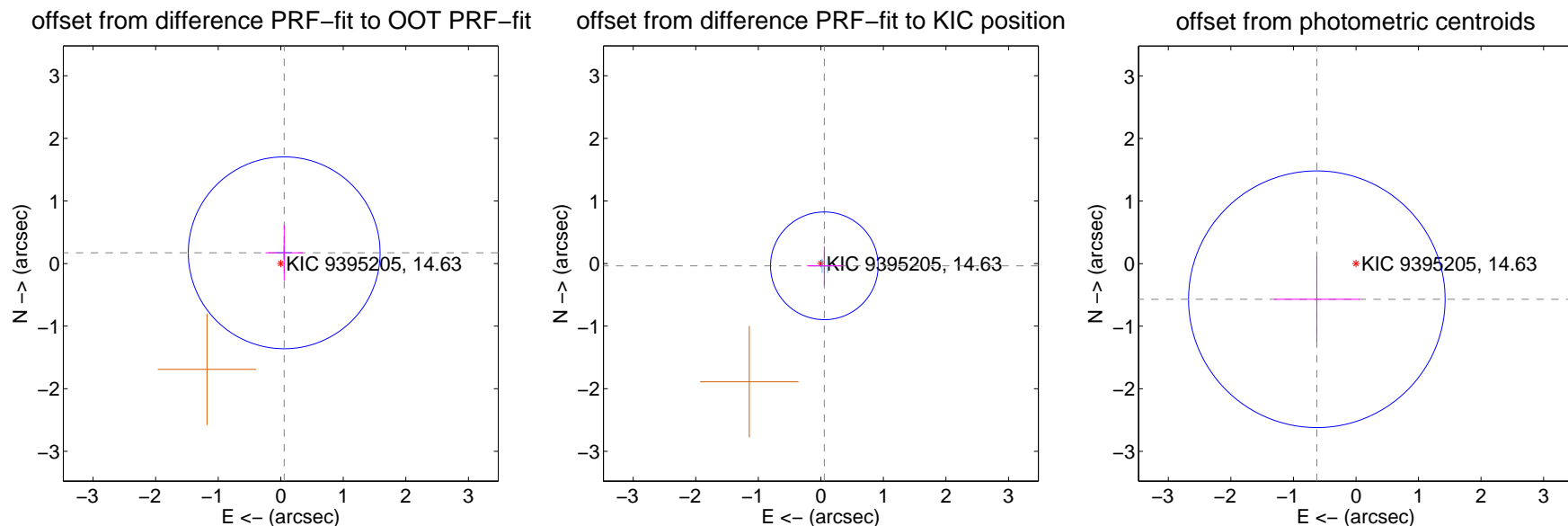
DV Centroid Data

Supplemental centroid analysis for 009395205-05. Kepler magnitude: 14.63. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

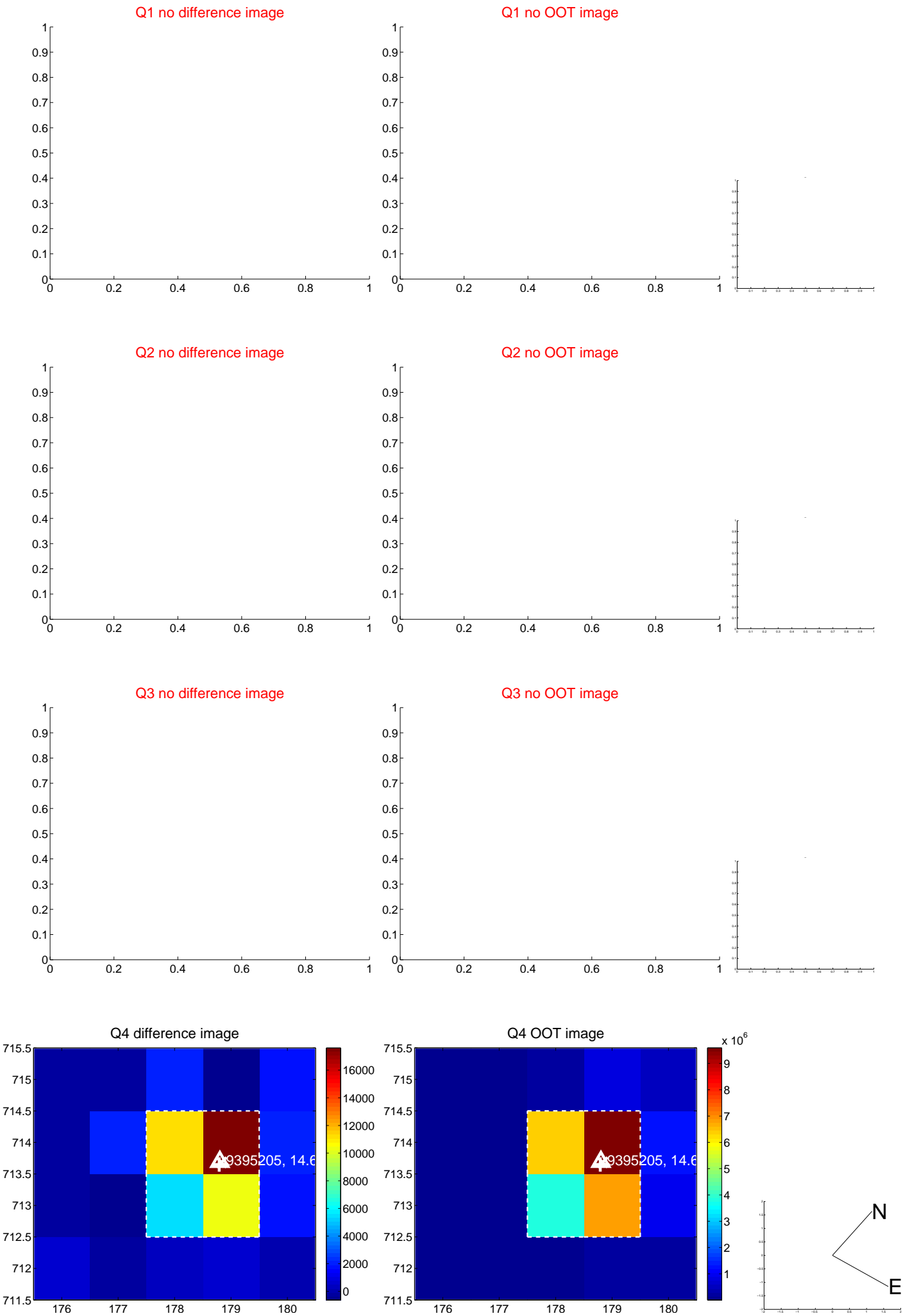
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.180 ± 0.511	0.35	-0.055 ± 0.299	0.171 ± 0.443
PRF-fit source offset from KIC position	0.066 ± 0.287	0.23	-0.056 ± 0.277	-0.036 ± 0.309
photometric centroid source offset	0.85 ± 0.68	1.24	0.63 ± 0.68	-0.57 ± 0.69



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.

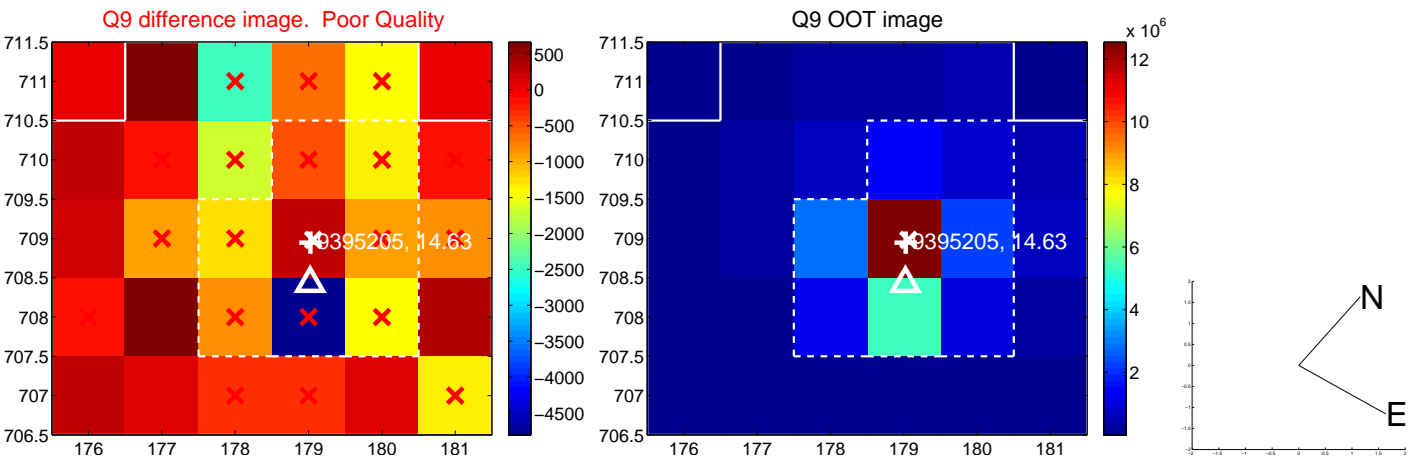
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



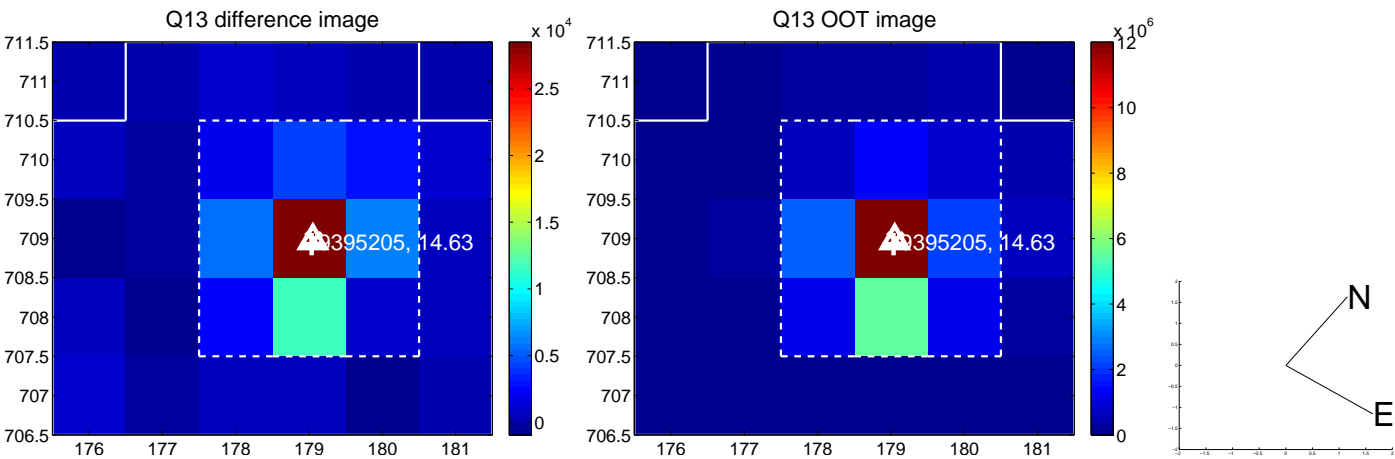
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



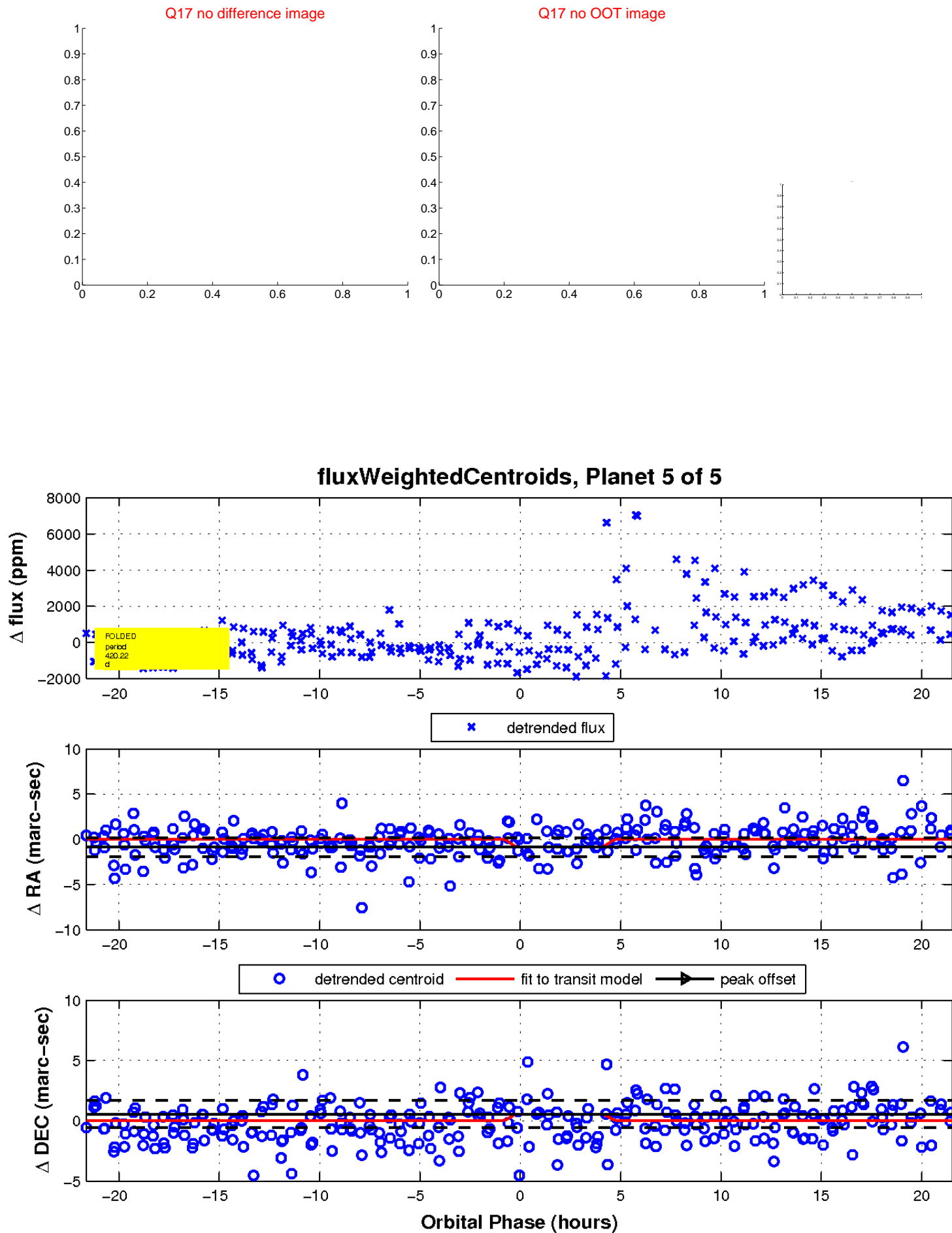
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

