

KIC 008283996

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})
008283996-01	OBS	No	527.511239	174.983608	1348.4	3.561	12.5	7.7	0.59	4873	2.22	0.15
008283996-02	OBS	No	404.415494	458.942028	1125.8	2.932	9.5	8.9	0.59	4873	2.02	0.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008283996-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
008283996-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

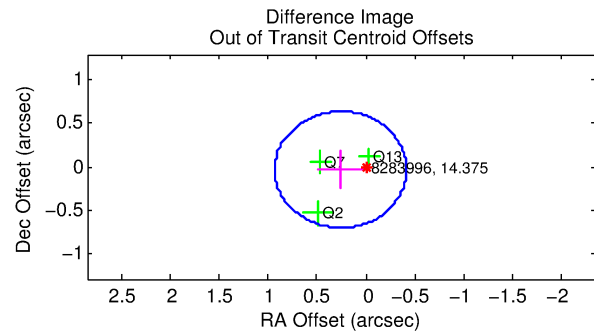
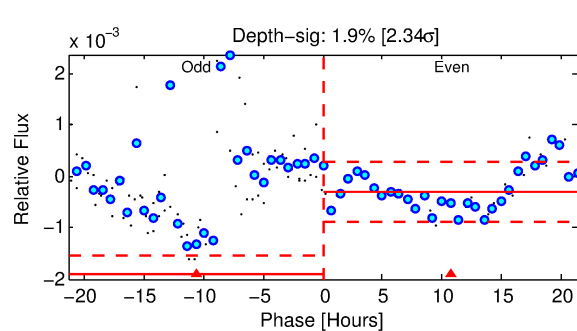
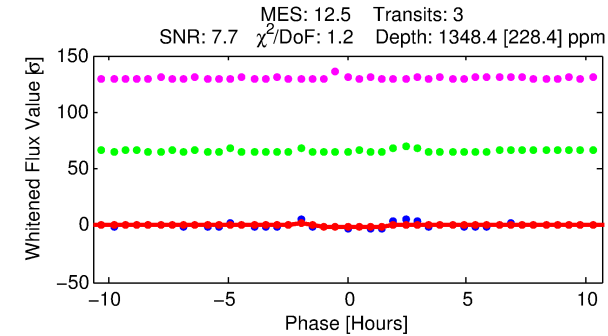
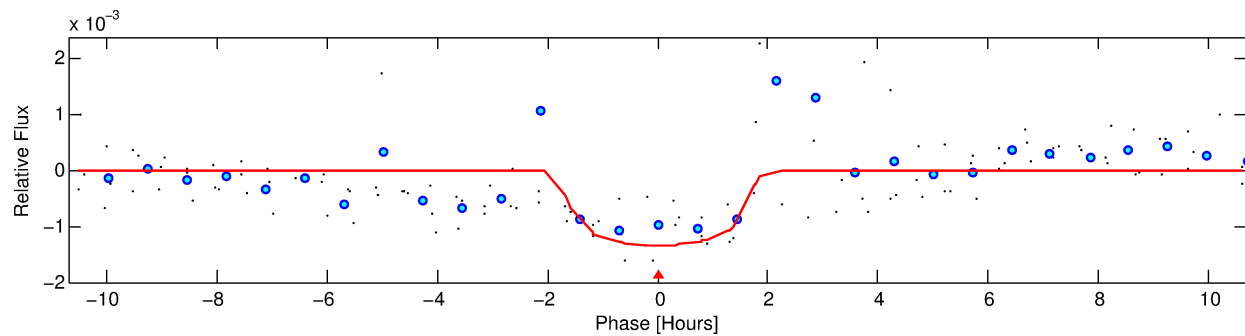
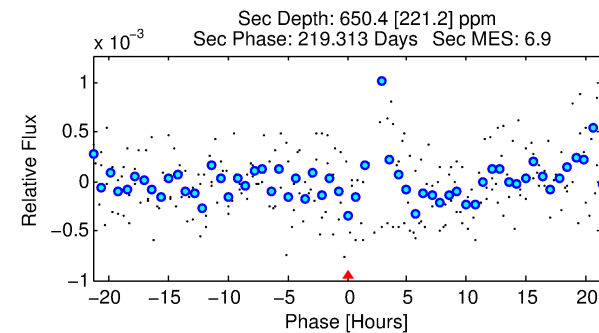
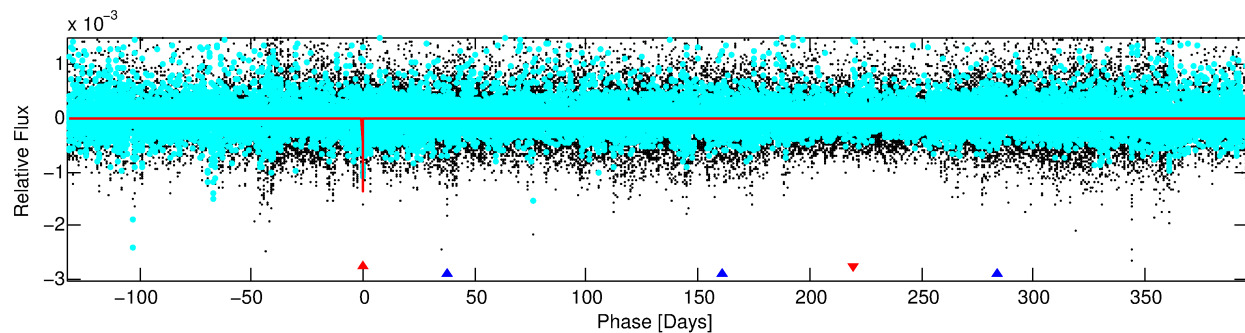
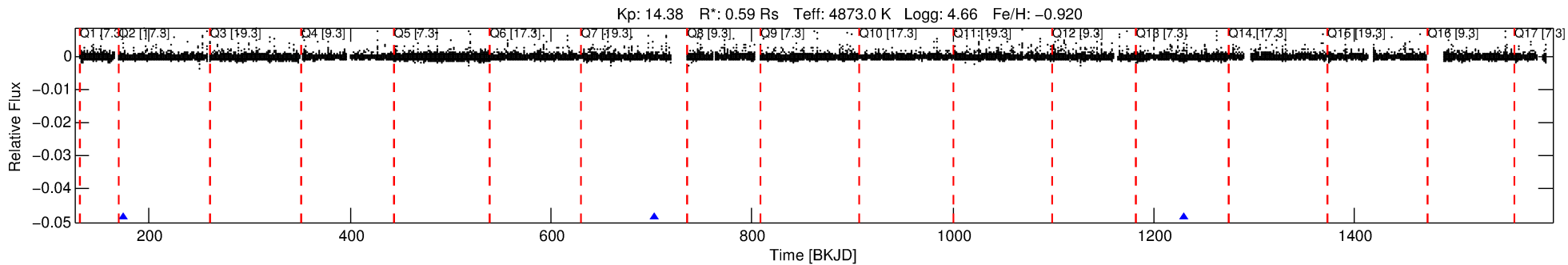
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008283996-01

No Significant Match Found

DV One-Page Summary

KIC: 8283996 Candidate: 1 of 2 Period: 527.511 d



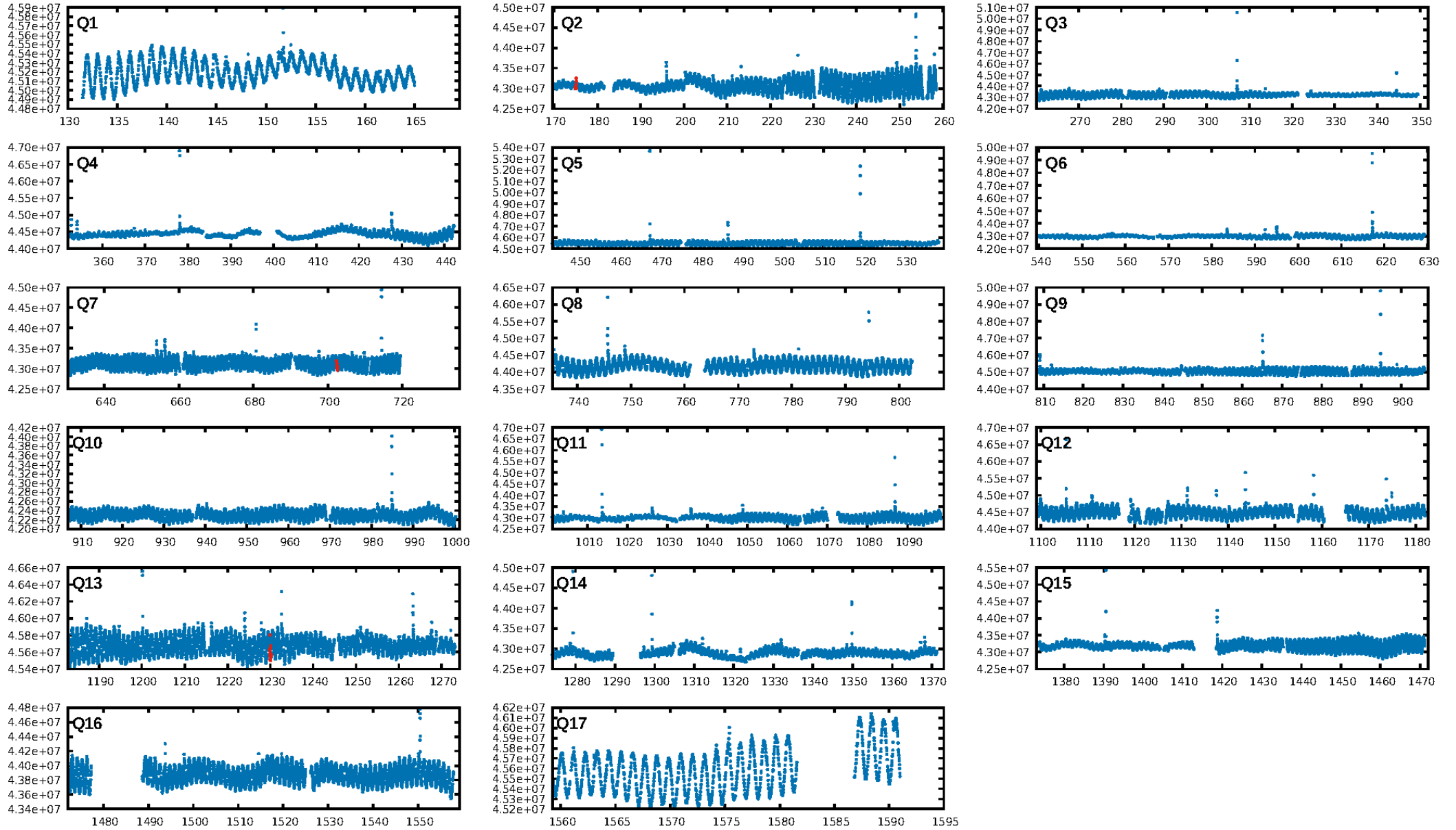
DV Fit Results:

Period = 527.51124 [0.00500] d
Epoch = 174.9836 [0.0059] BKJD
Rp/R* = 0.0344 [0.1693]
a/R* = 998.48 [18433.49]
b = 0.54 [24.56]
Seff = 0.15 [0.02]
Teq = 160 [6] K
Rp = 2.22 [10.92] Re
a = 1.0705 [0.0731] AU
Ag = 83400.07 [821868.09] [0.10σ]
Teffp = 4197 [10340] K [0.39σ]

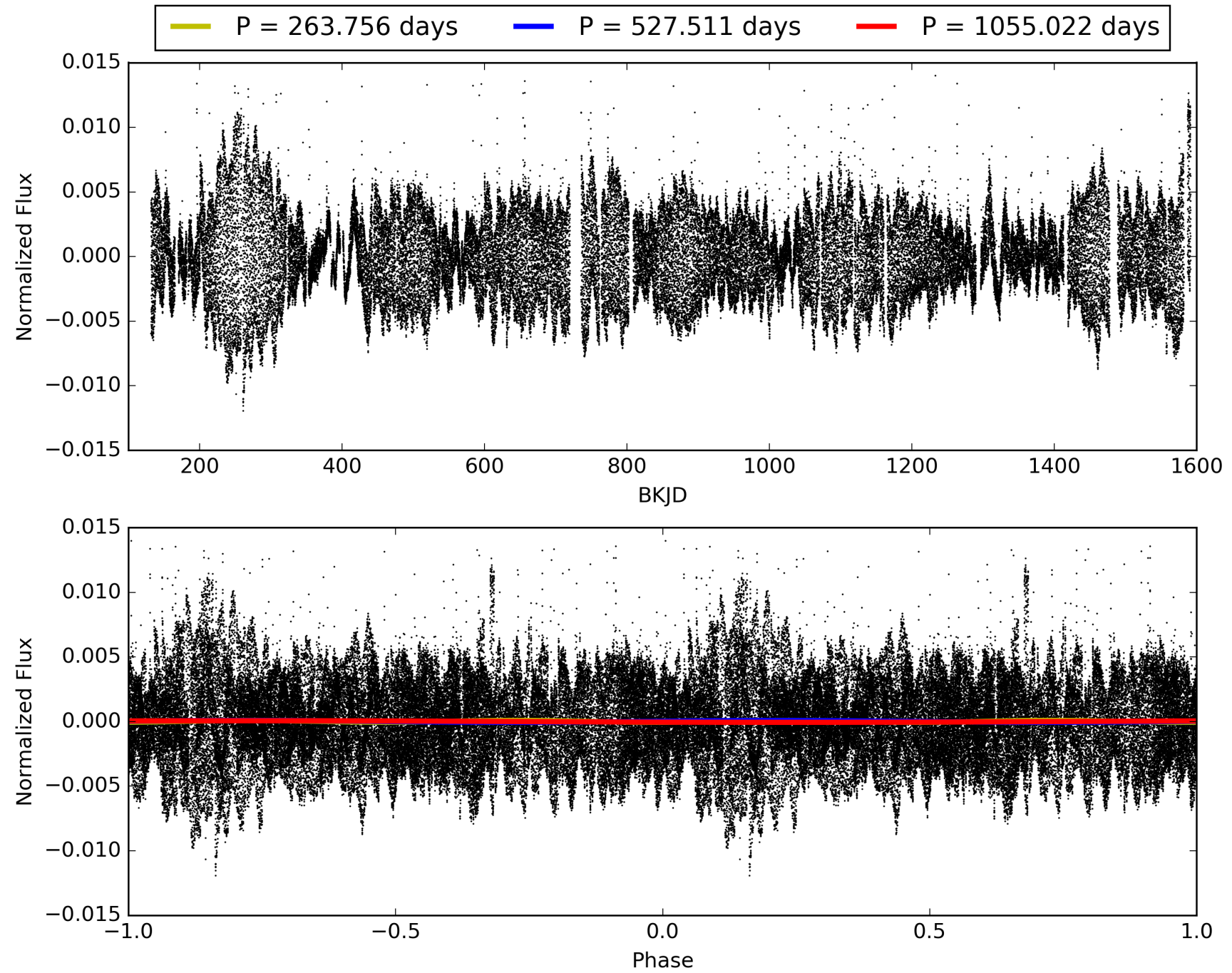
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [640.50σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 54.9%
Bootstrap-pfa: 7.47e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 4.857
Centroid-sig: 95.3%
Centroid-so: 0.072 arcsec [0.13σ]
OotOffset-rm: 0.263 arcsec [1.17σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-rm: 0.276 arcsec [1.26σ]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 008283996-01, PDC Light Curves

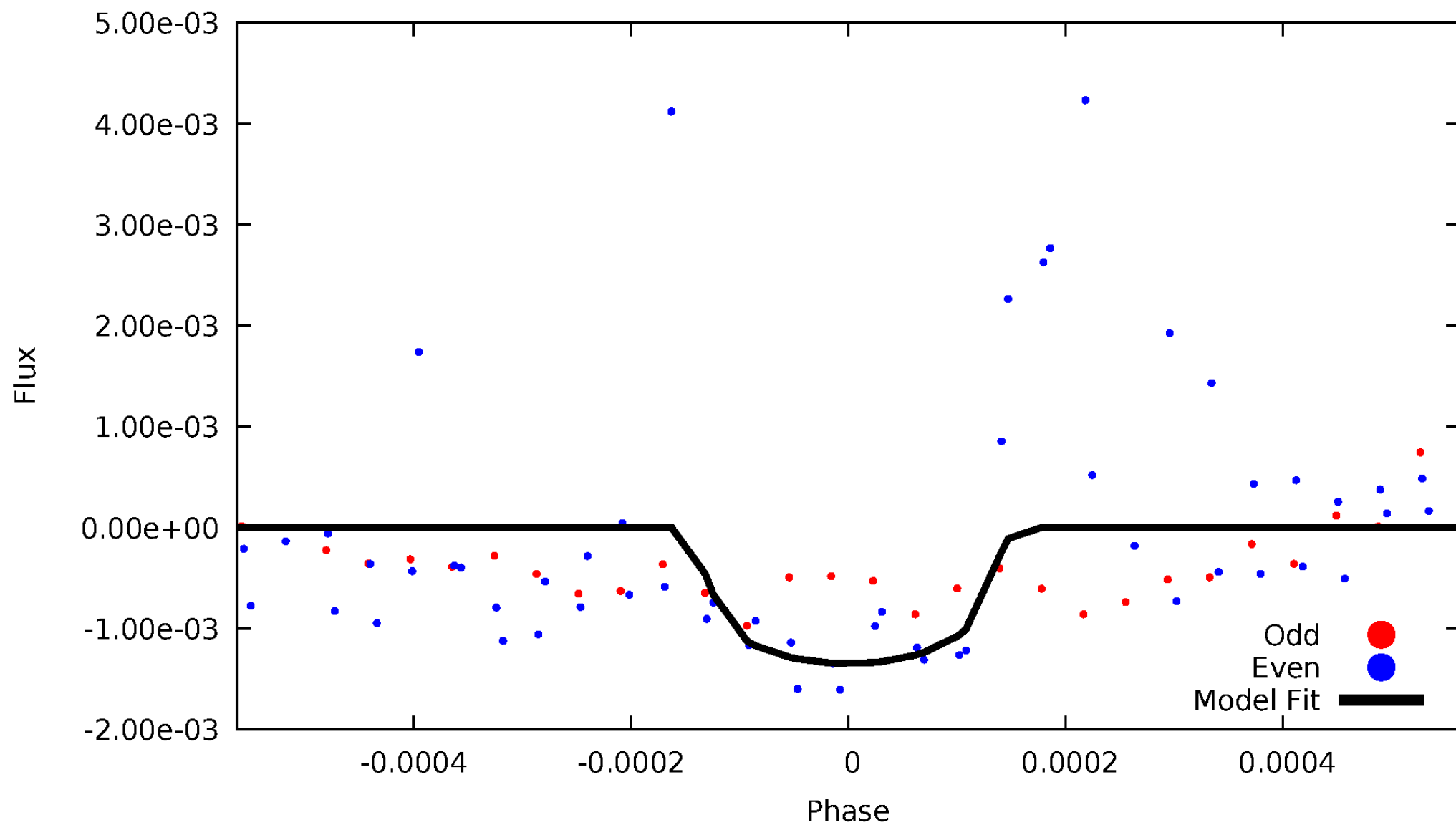


TCE 008283996-01



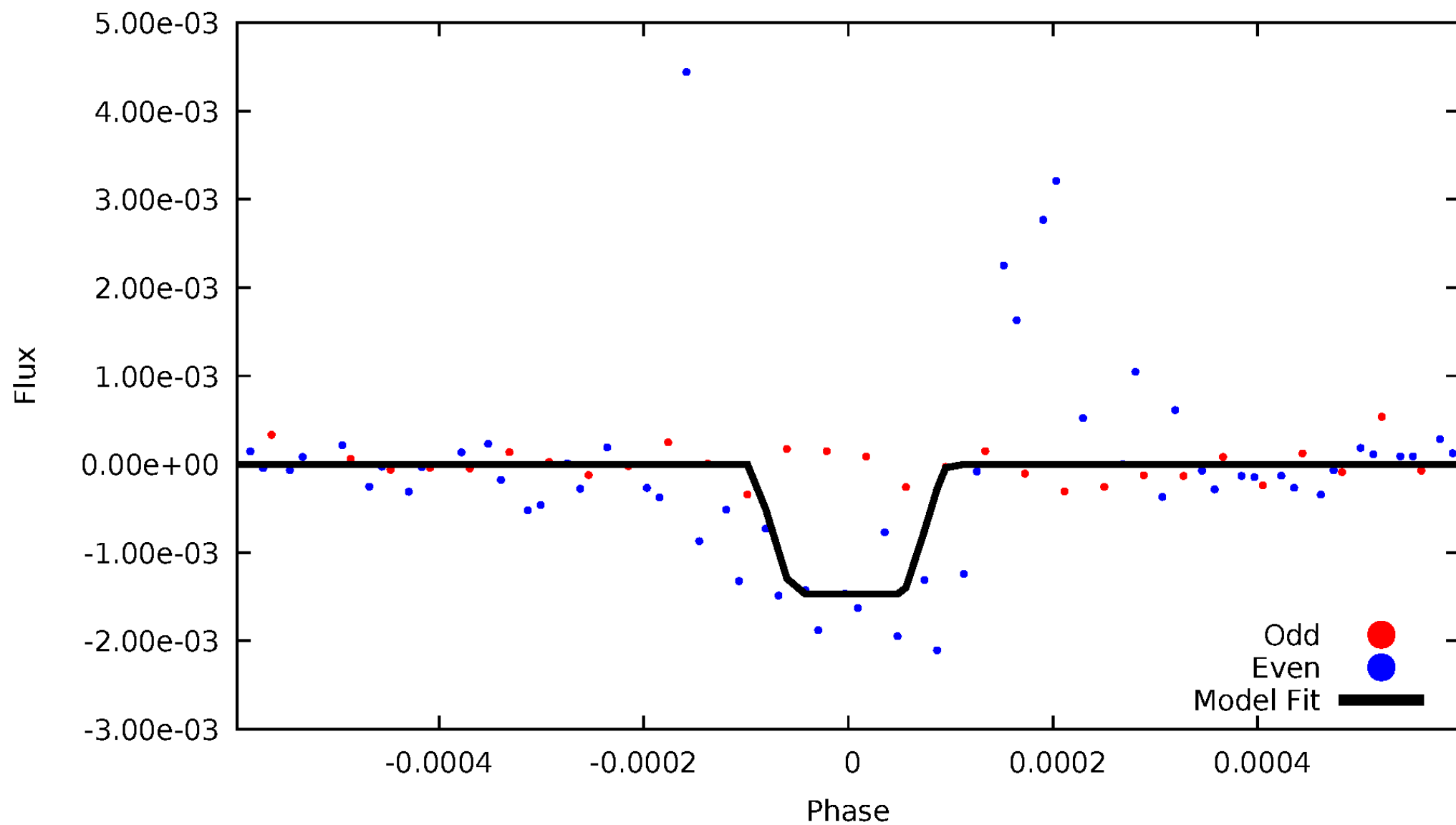
DV Odd/Even

TCE 008283996-01



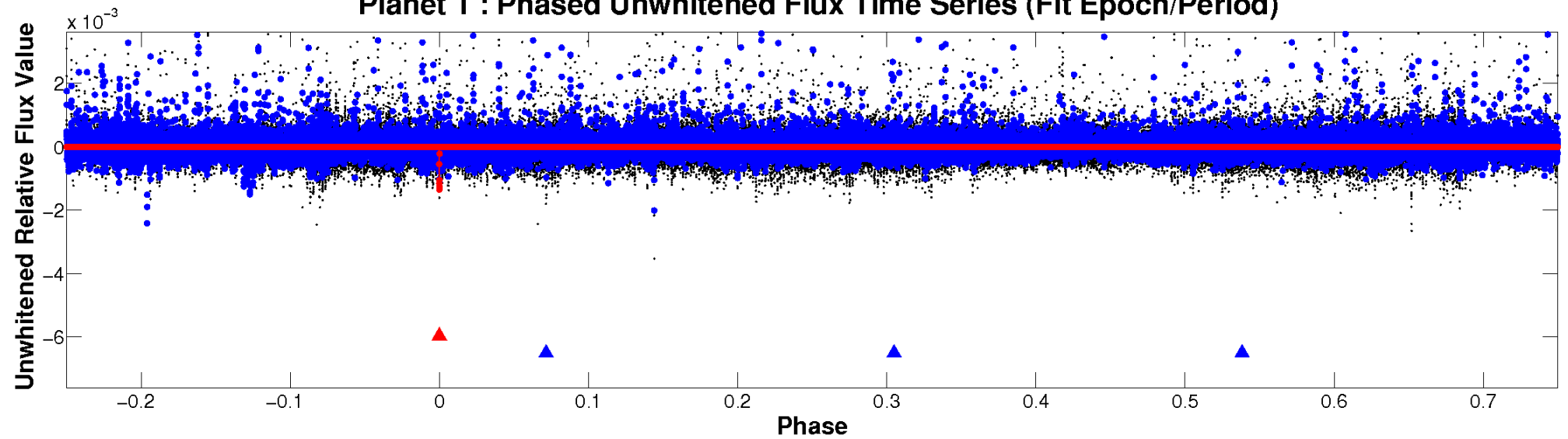
ALT Odd/Even

TCE 008283996-01

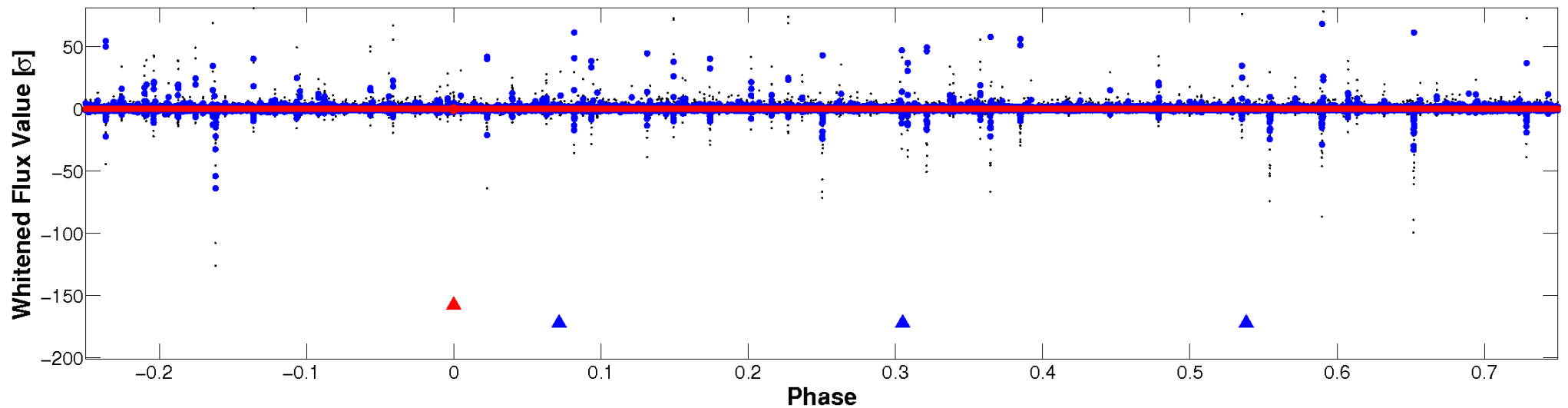


Non-Whitened Vs. Whitened Light Curve

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

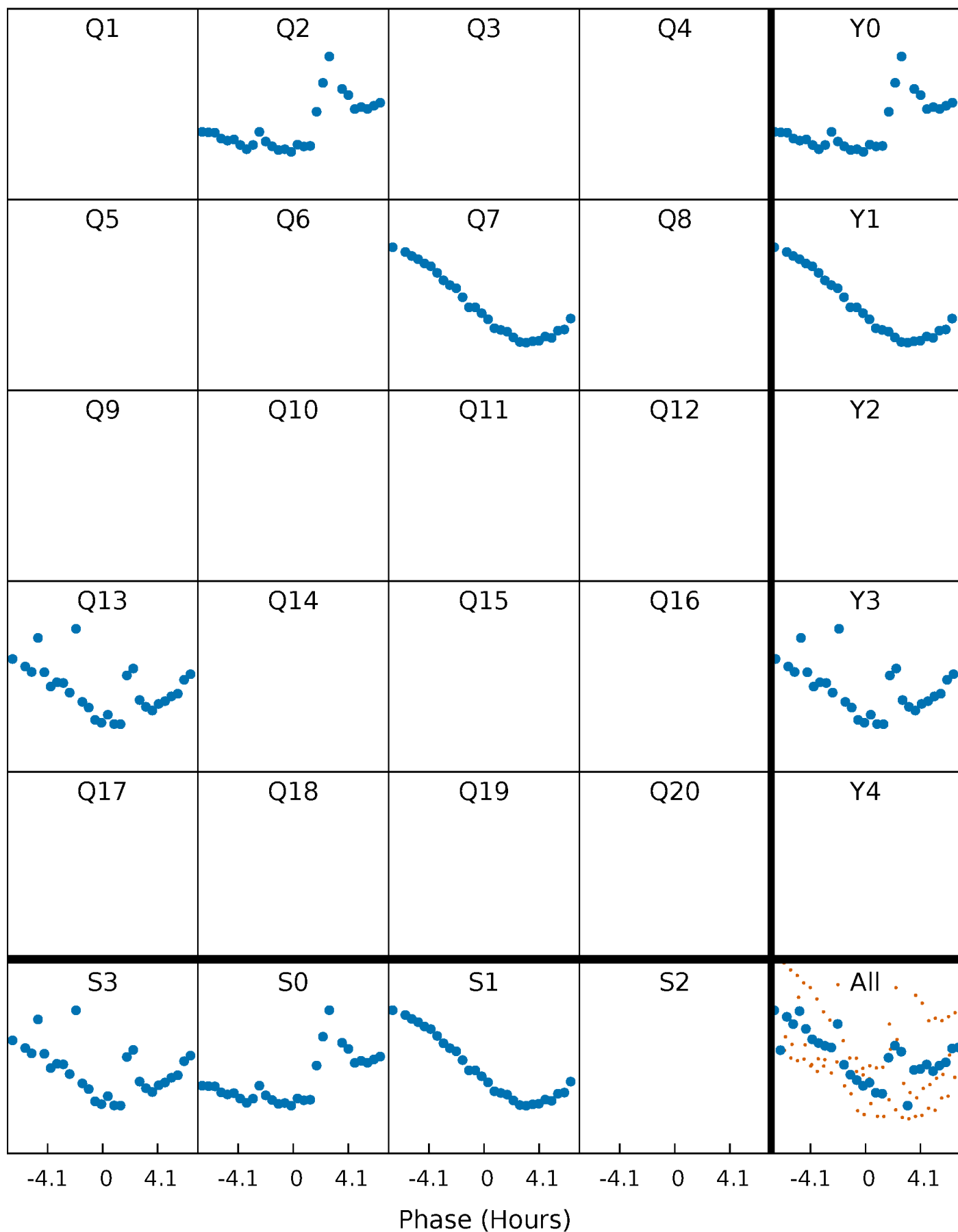


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



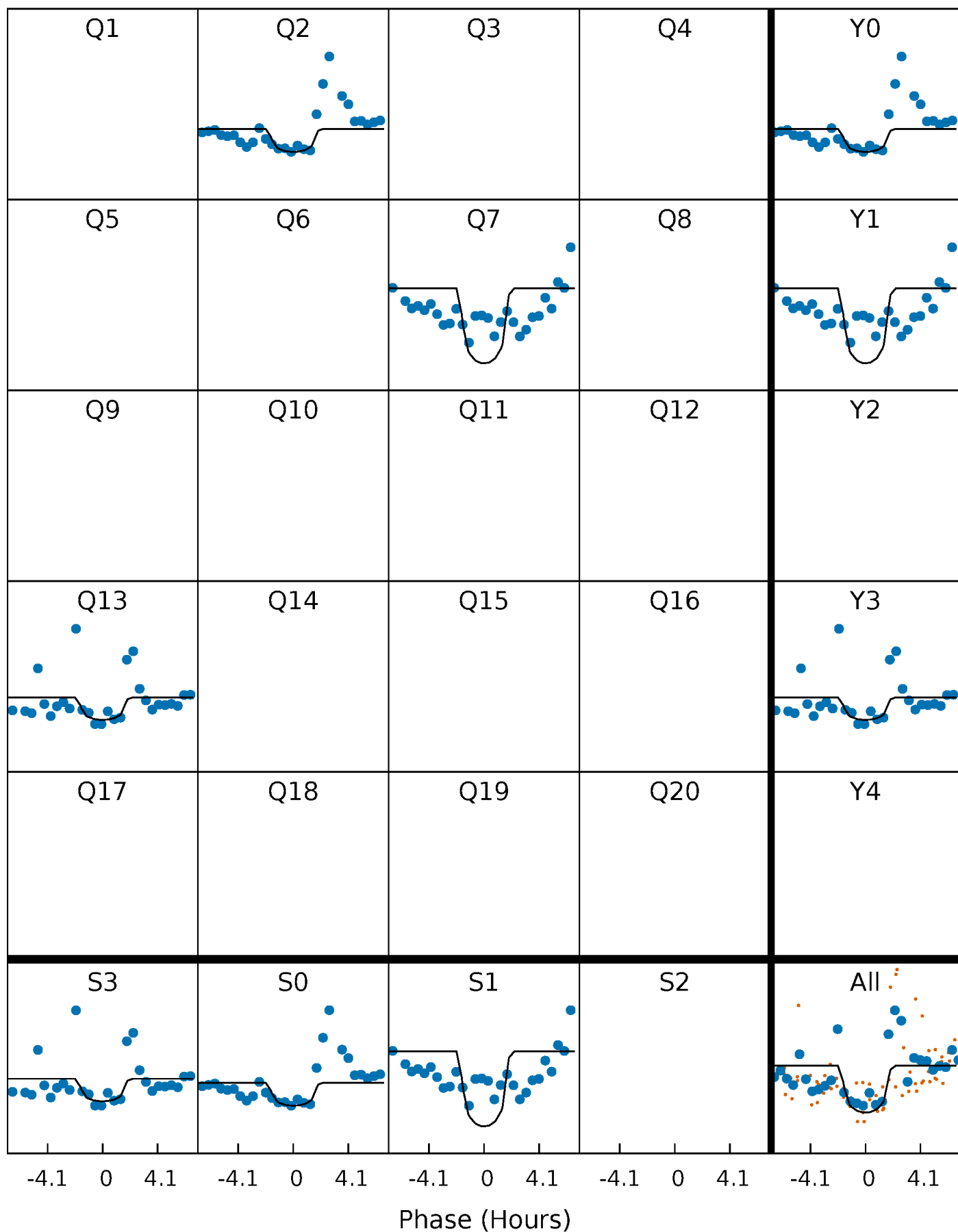
PDC Quarter-Phased Transit Curves

TCE 008283996-01 P=527.511239 Days $T_0=174.983608$ (BKJD)



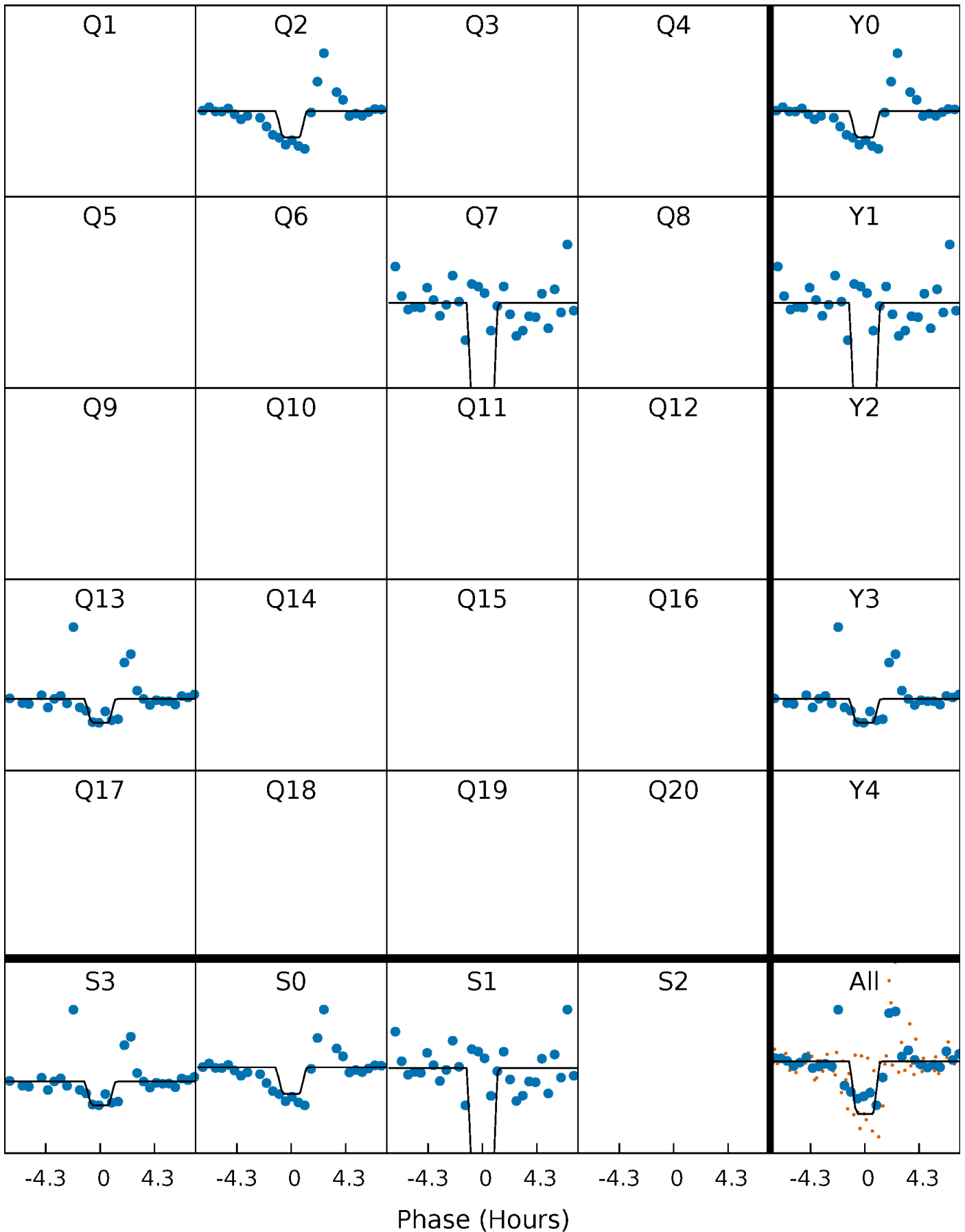
DV Quarter-Phased Transit Curves

TCE 008283996-01 P=527.511239 Days $T_0=174.983608$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

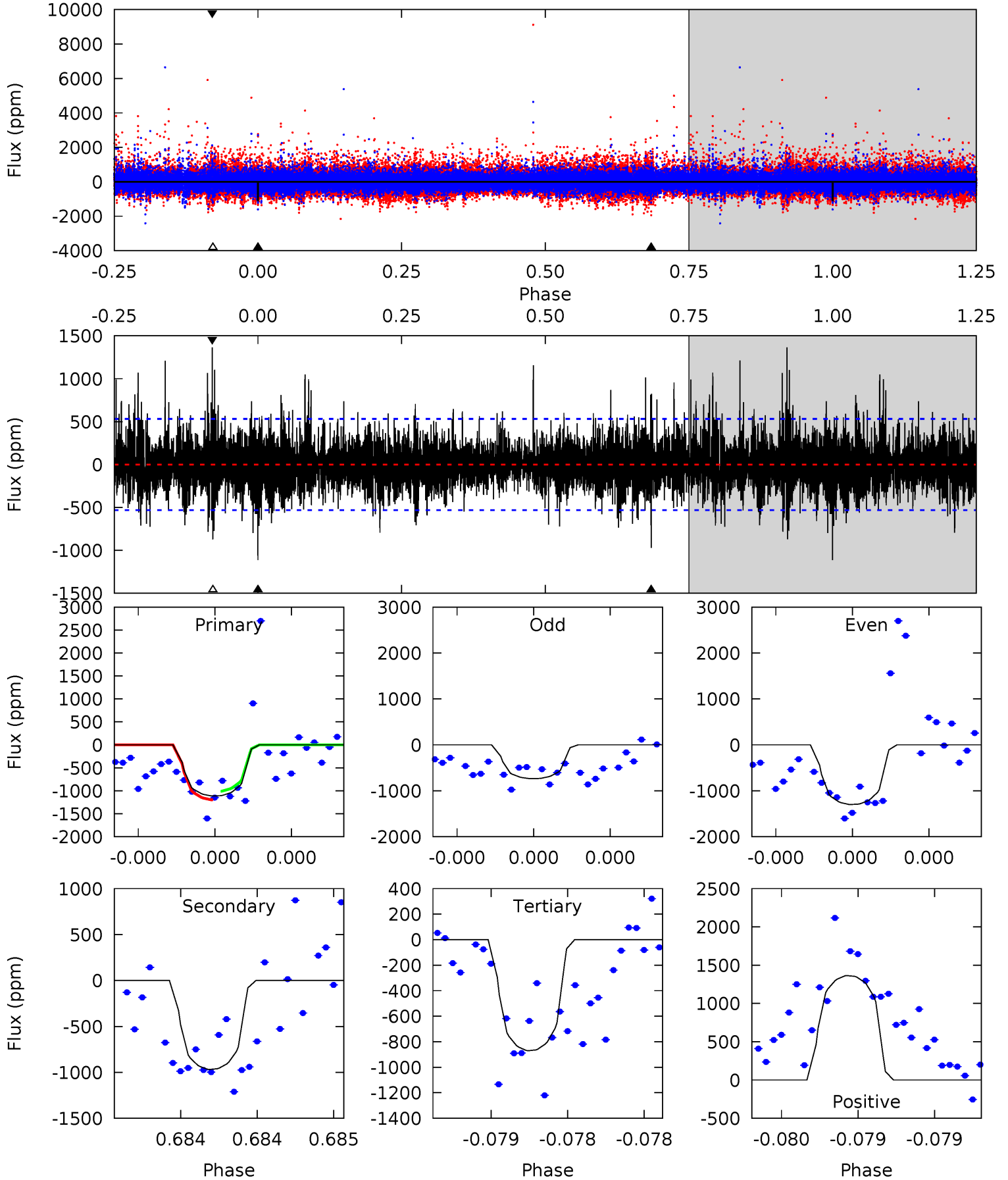
TCE 008283996-01 P=527.505974 Days $T_0=174.991688$ (BKJD)



DV Model-Shift Uniqueness Test

008283996-01, P = 527.511239 Days, E = 174.983608 Days

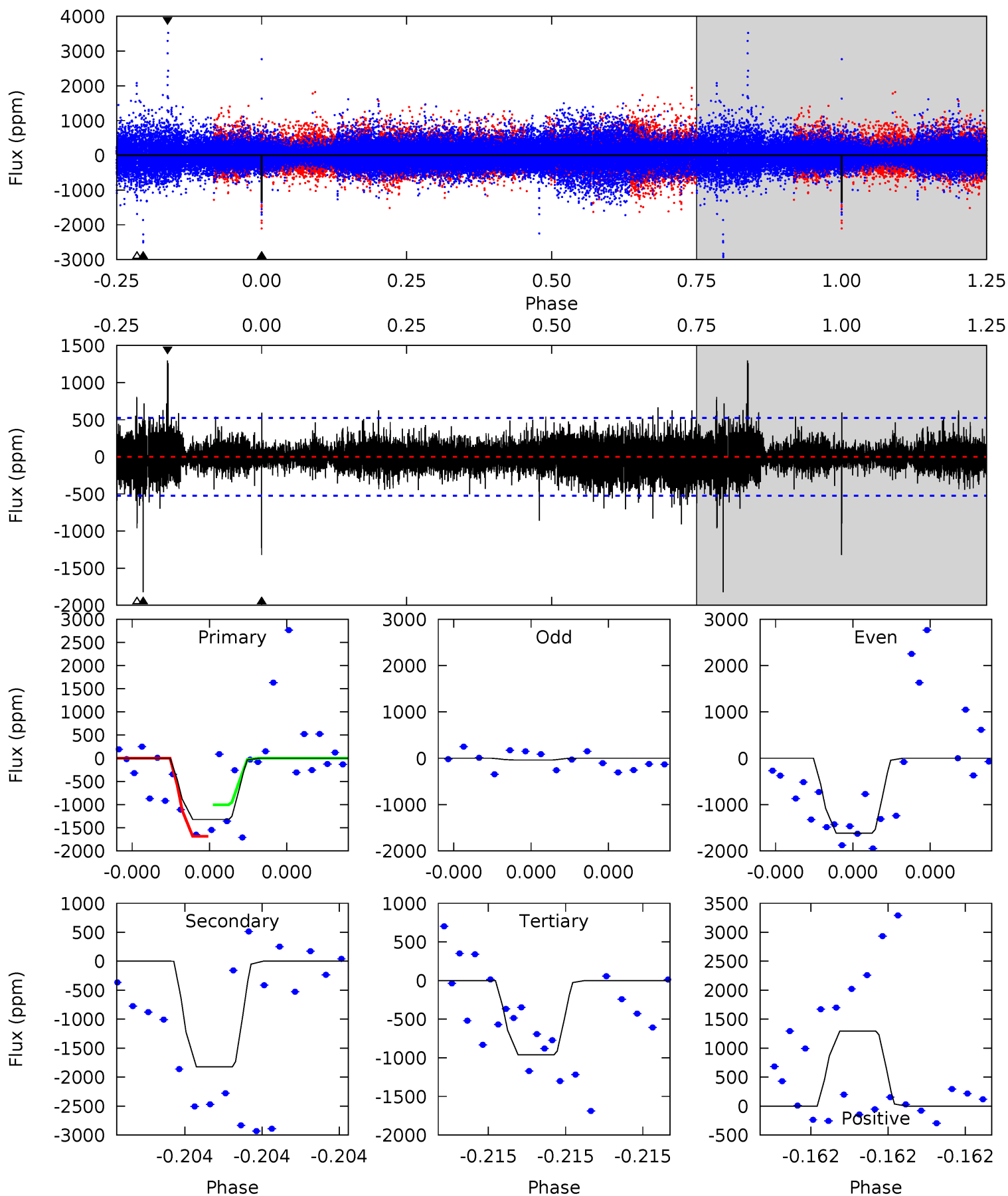
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	10.3	9.26	14.5	5.66	3.61	2.33	2.59	-2.66	1.04	-4.21	1.13	0.88	0.55	0.98



Alt Model-Shift Uniqueness Test

008283996-01, P = 527.505974 Days, E = 174.991688 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	20.0	10.5	14.2	5.74	3.73	1.67	3.95	0.28	9.44	5.77	6.84	0.81	0.42	3.32



Stellar Parameters For KIC 008283996

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4873^{+146}_{-146}	$4.664^{+0.056}_{-0.032}$	$-0.920^{+0.300}_{-0.300}$	$0.591^{+0.047}_{-0.042}$	$0.587^{+0.050}_{-0.025}$	$4.007^{+0.918}_{-0.514}$
	+3%/-3%	+1%/-1%	+33%/-33%	+8%/-7%	+9%/-4%	+23%/-13%
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 008283996-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-968 ± 94	$8.44^{+7.74}_{-5.72}$	221^{+8}_{-7}	2995^{+1250}_{-477}	8885^{+70819}_{-6617}
Alt.	-1824 ± 91	$8.40^{+8.65}_{-6.02}$	222^{+7}_{-8}	3274^{+1870}_{-573}	$16332^{+190432}_{-12281}$

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

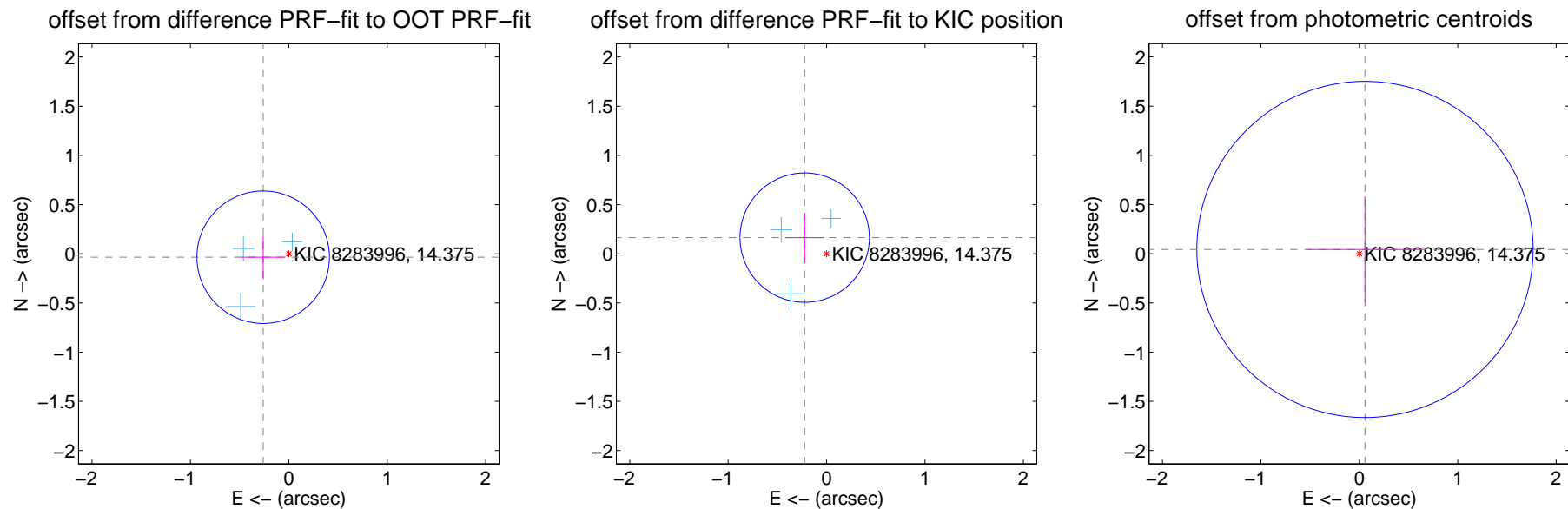
DV Centroid Data

Supplemental centroid analysis for 008283996-01. Kepler magnitude: 14.38. Transit SNR 7.65

There are 3 quarters with good PRF difference image offsets

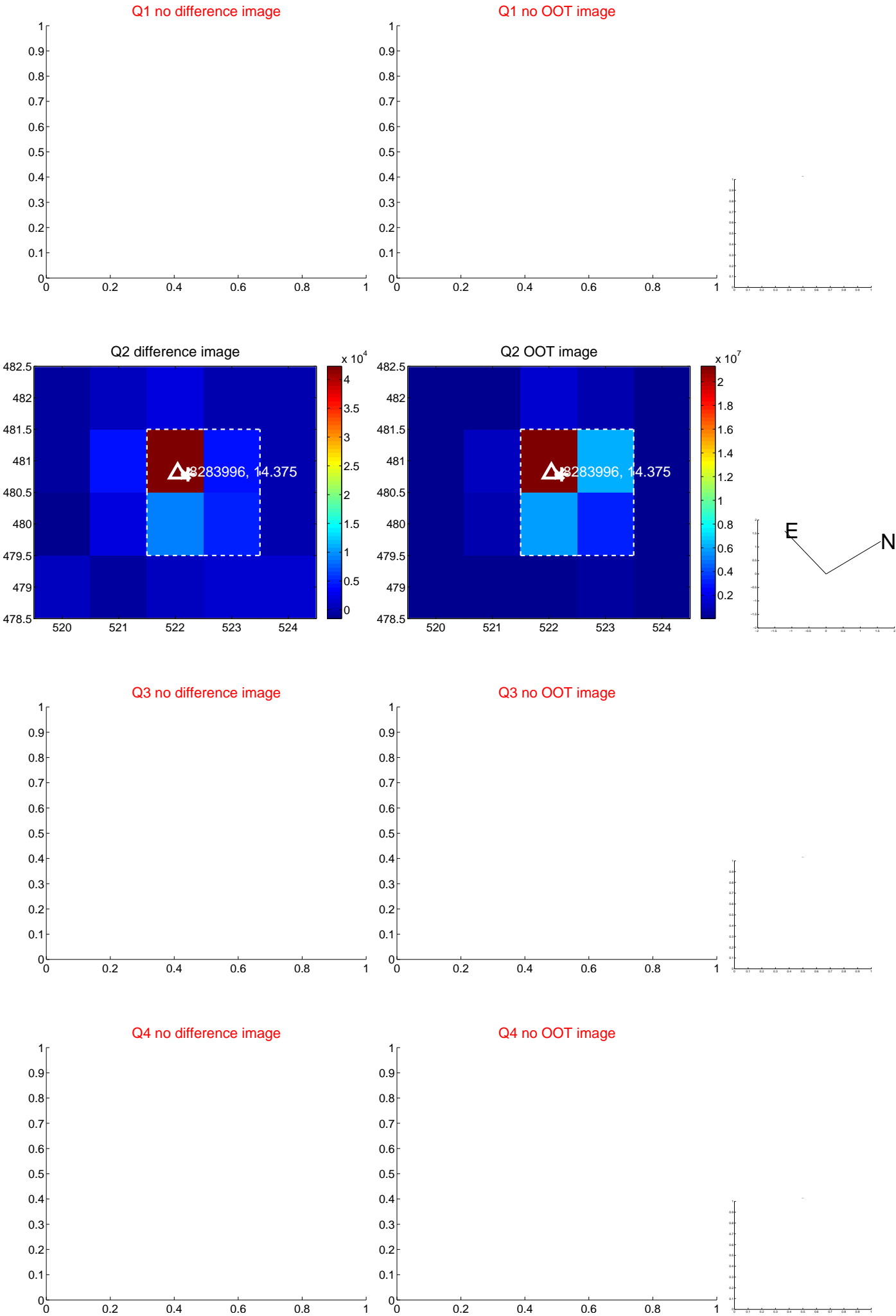
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.263 ± 0.224	1.17	0.261 ± 0.224	-0.035 ± 0.225
PRF-fit source offset from KIC position	0.276 ± 0.219	1.26	0.222 ± 0.199	0.164 ± 0.252
photometric centroid source offset	0.07 ± 0.57	0.13	-0.06 ± 0.59	0.04 ± 0.54

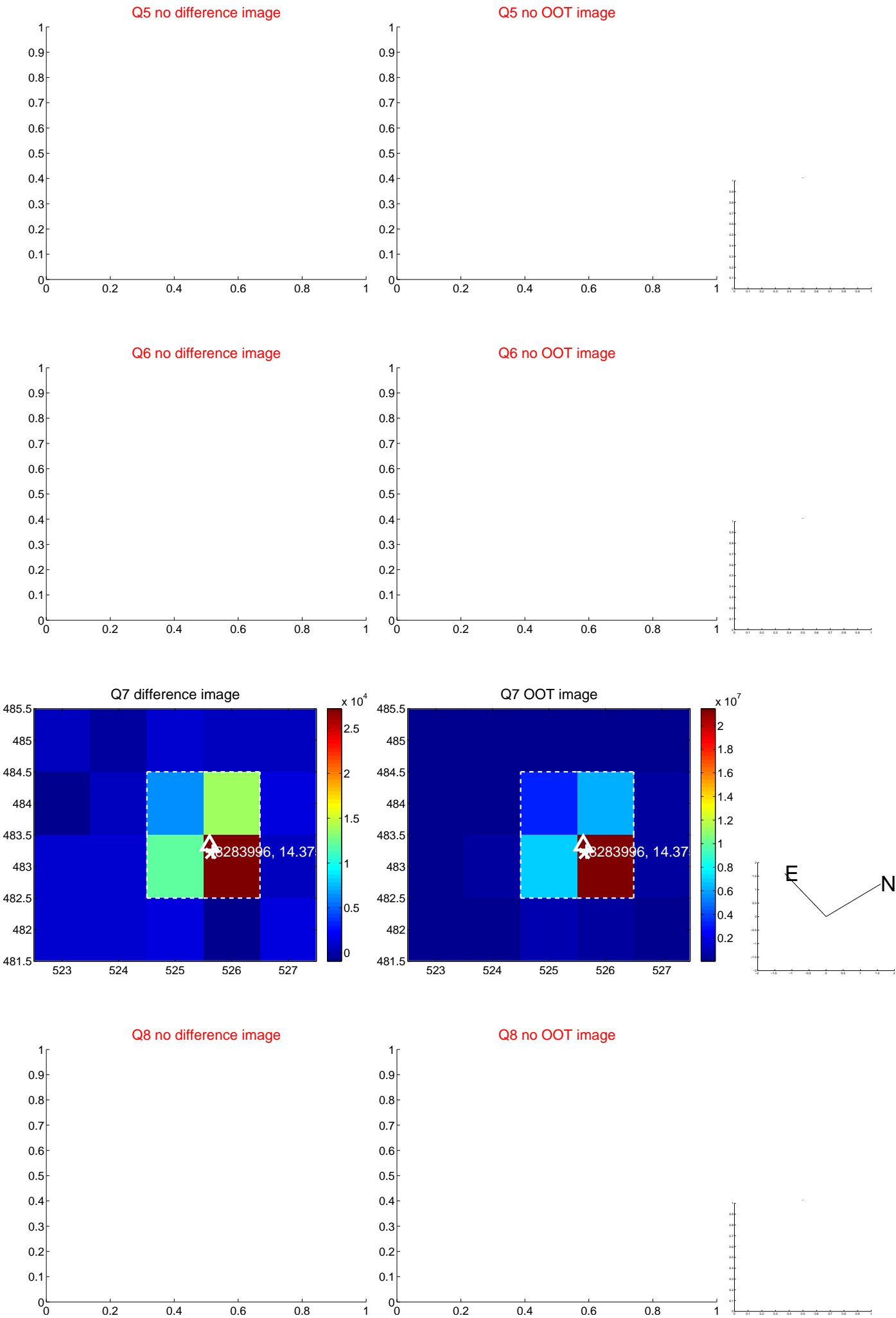


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



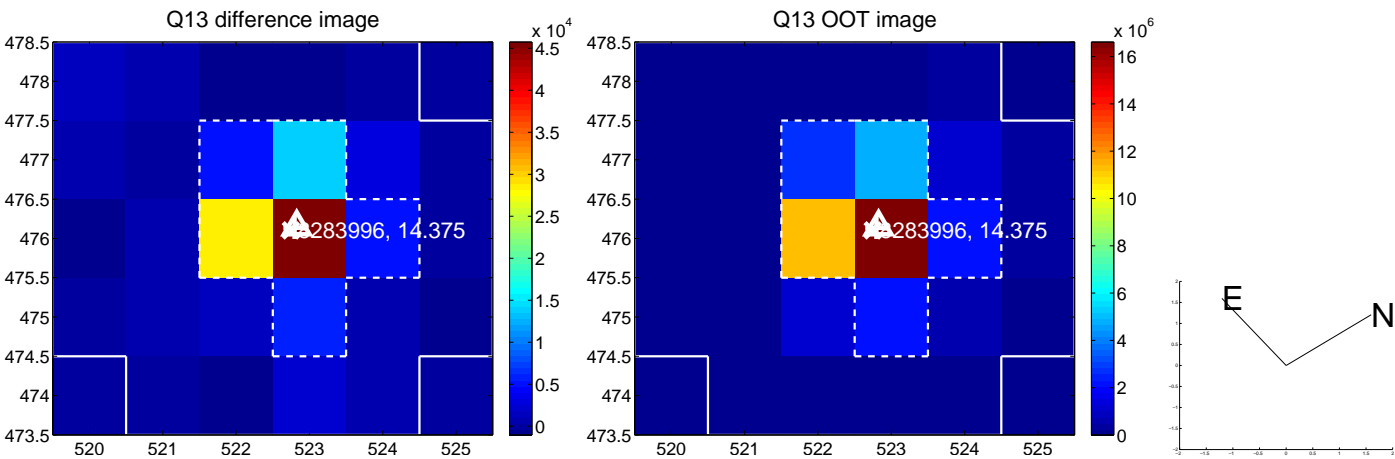
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



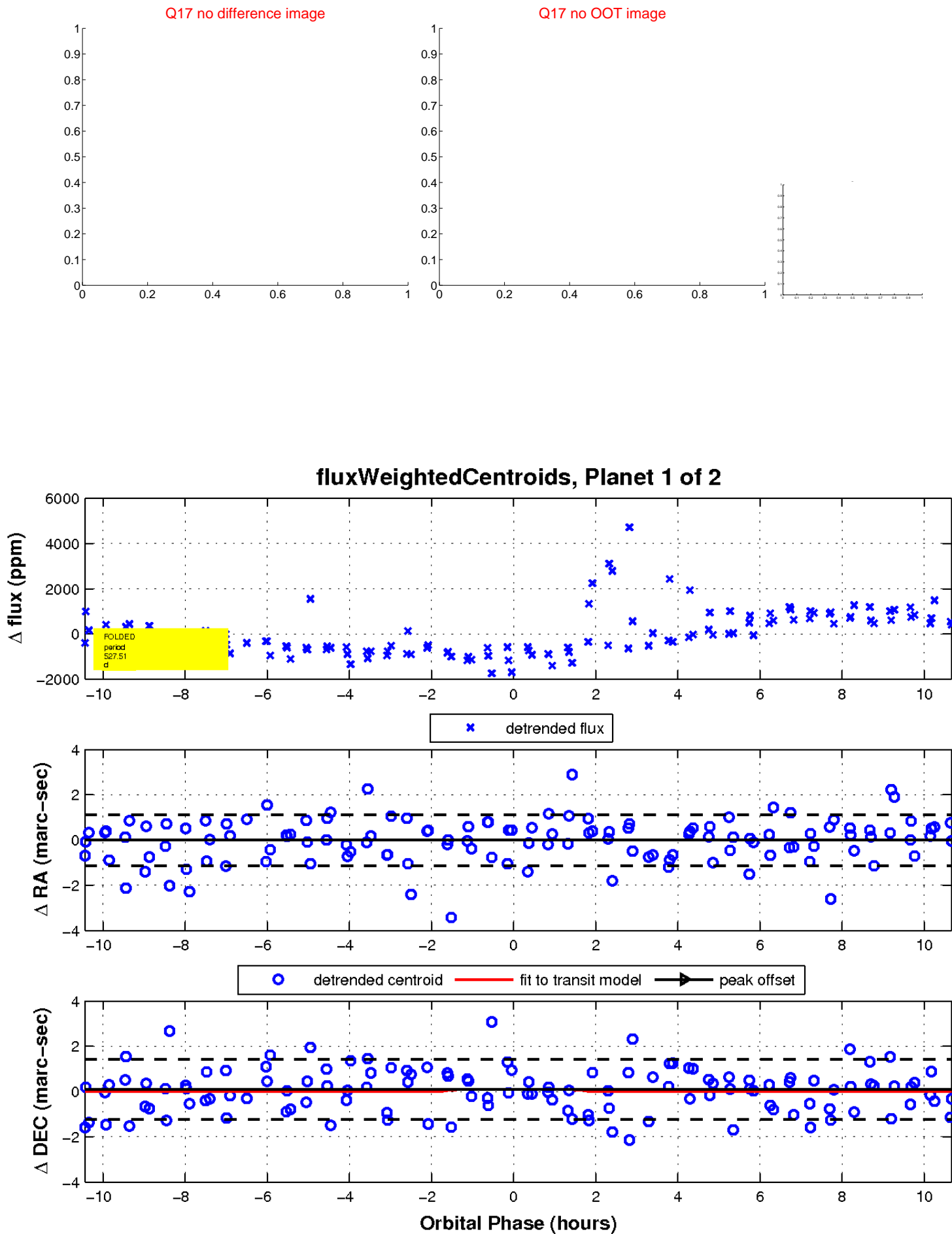
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

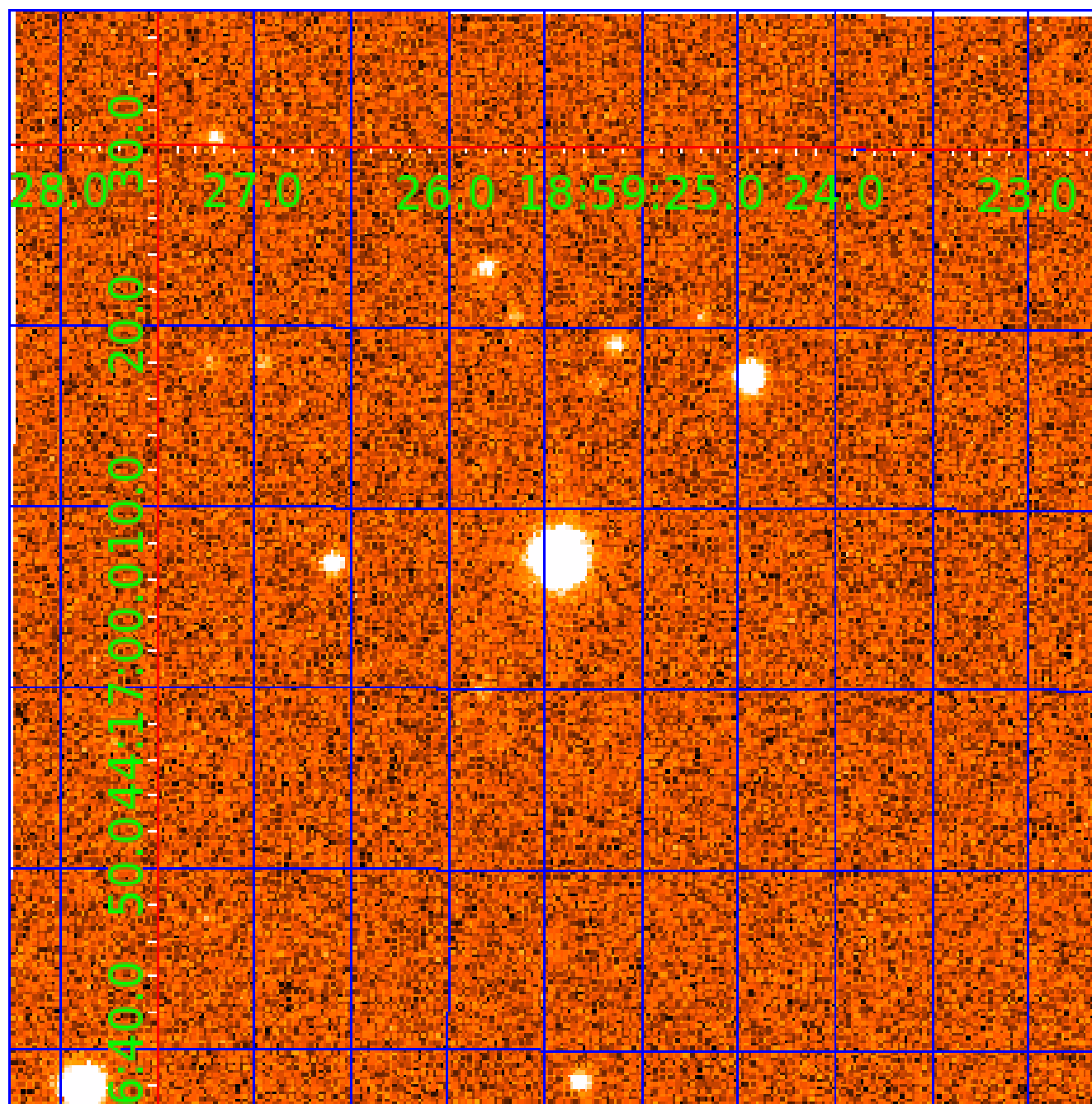


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008283996

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})
008283996-01	OBS	No	527.511239	174.983608	1348.4	3.561	12.5	7.7	0.59	4873	2.22	0.15
008283996-02	OBS	No	404.415494	458.942028	1125.8	2.932	9.5	8.9	0.59	4873	2.02	0.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008283996-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
008283996-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

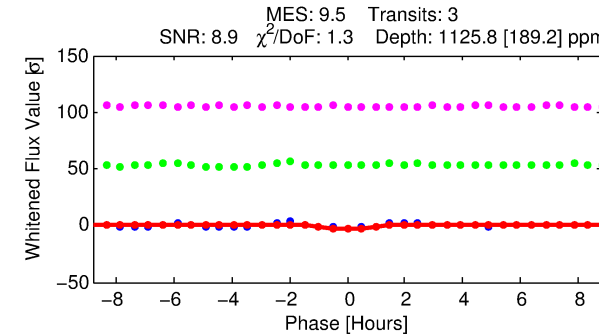
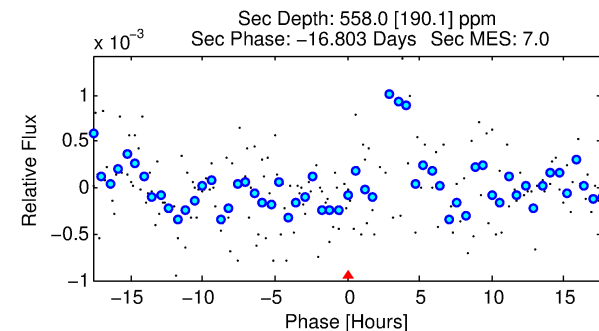
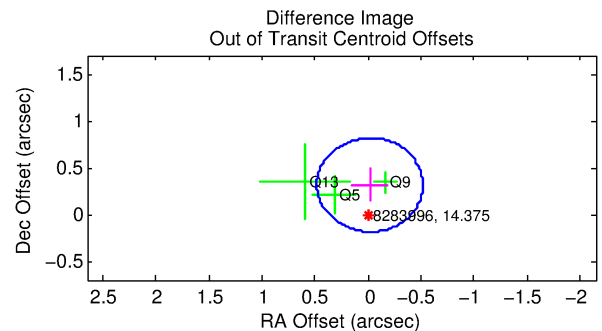
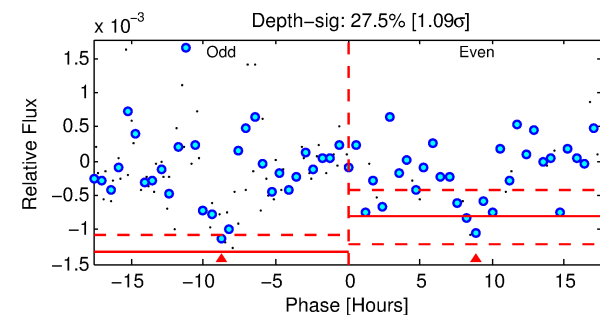
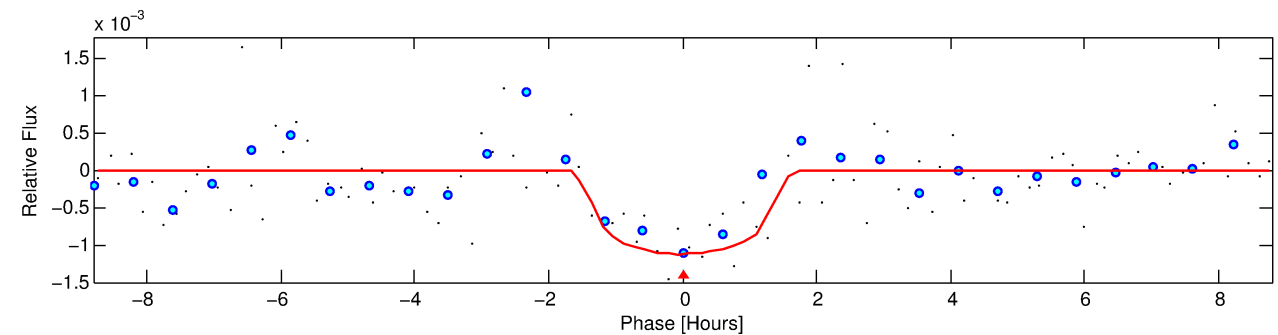
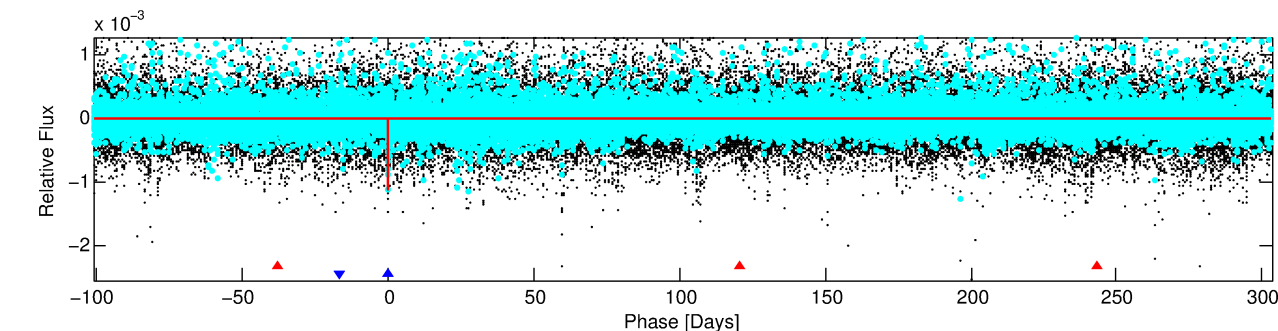
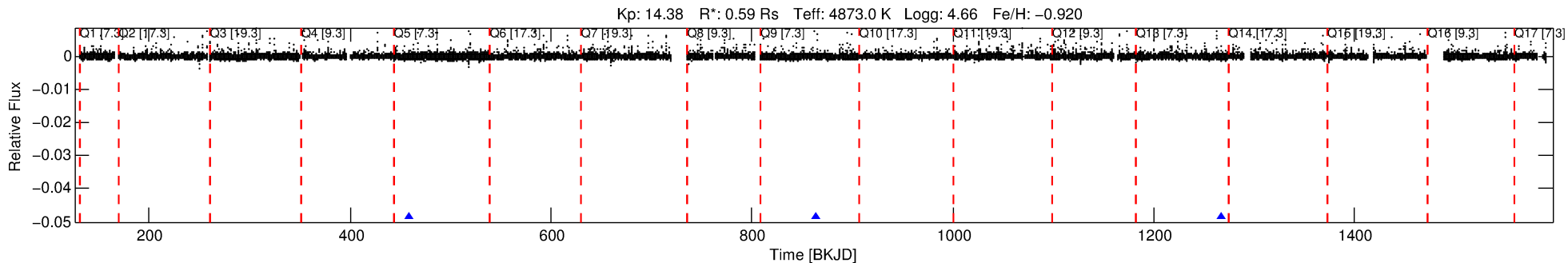
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008283996-02

No Significant Match Found

DV One-Page Summary

KIC: 8283996 Candidate: 2 of 2 Period: 404.415 d



DV Fit Results:

Period = 404.41549 [0.00528] d
Epoch = 458.9420 [0.0064] BKJD
Rp/R* = 0.0313 [0.1029]
a/R* = 936.48 [11495.45]
b = 0.52 [17.26]
Seff = 0.22 [0.03]
Teq = 175 [7] K
Rp = 2.02 [6.64] Re
a = 0.8967 [0.0612] AU
Ag = 60492.71 [398007.28] [0.15 σ]
Teffp = 4232 [6961] K [0.58 σ]

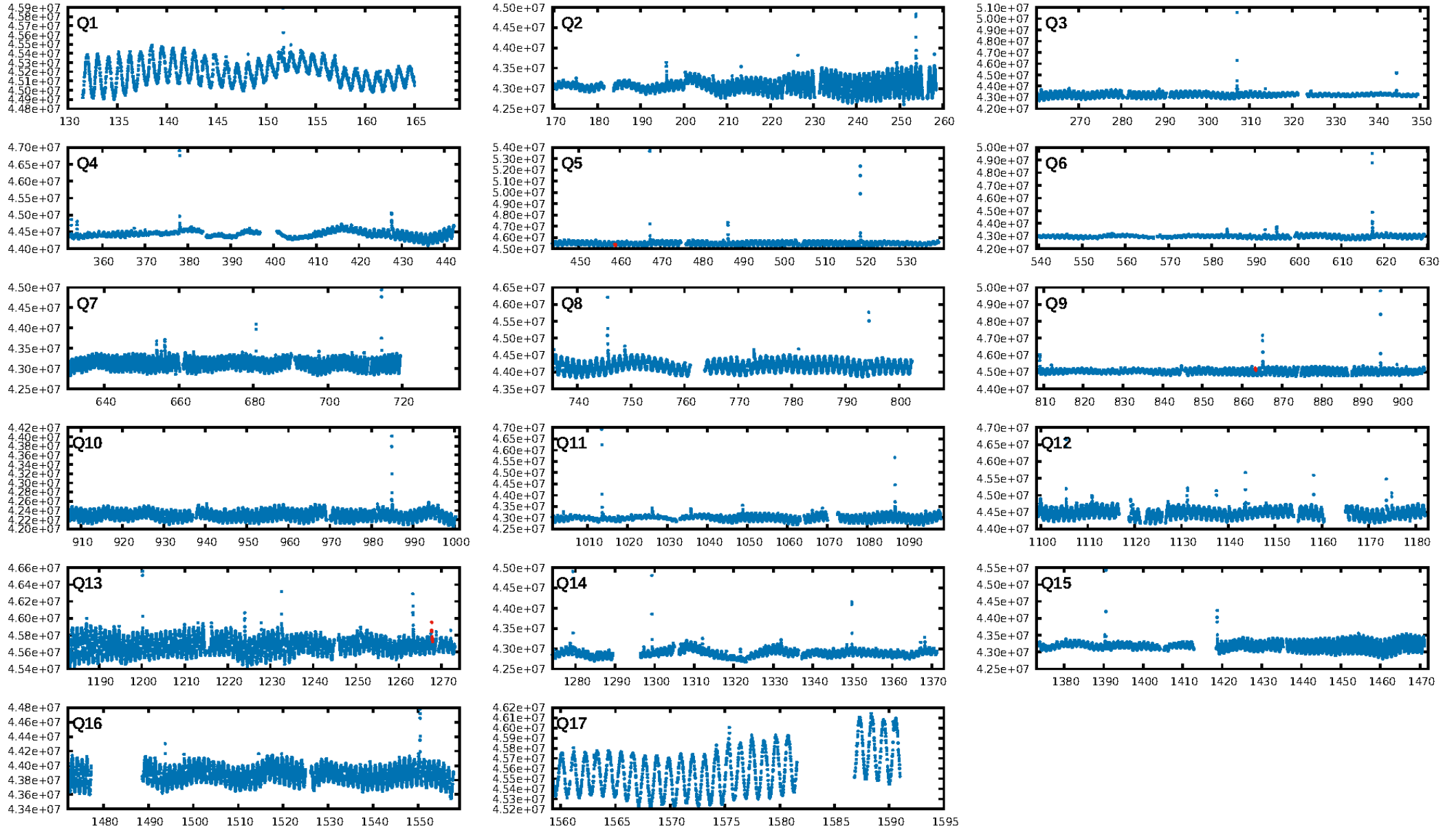
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [640.50 σ]
ModelChiSquare2-sig: 28.2%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 8.36e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.9624
Centroid-sig: 90.6%
Centroid-so: 0.291 arcsec [0.38 σ]
OotOffset-rm: 0.315 arcsec [1.89 σ]
KicOffset-rm: 0.518 arcsec [3.10 σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

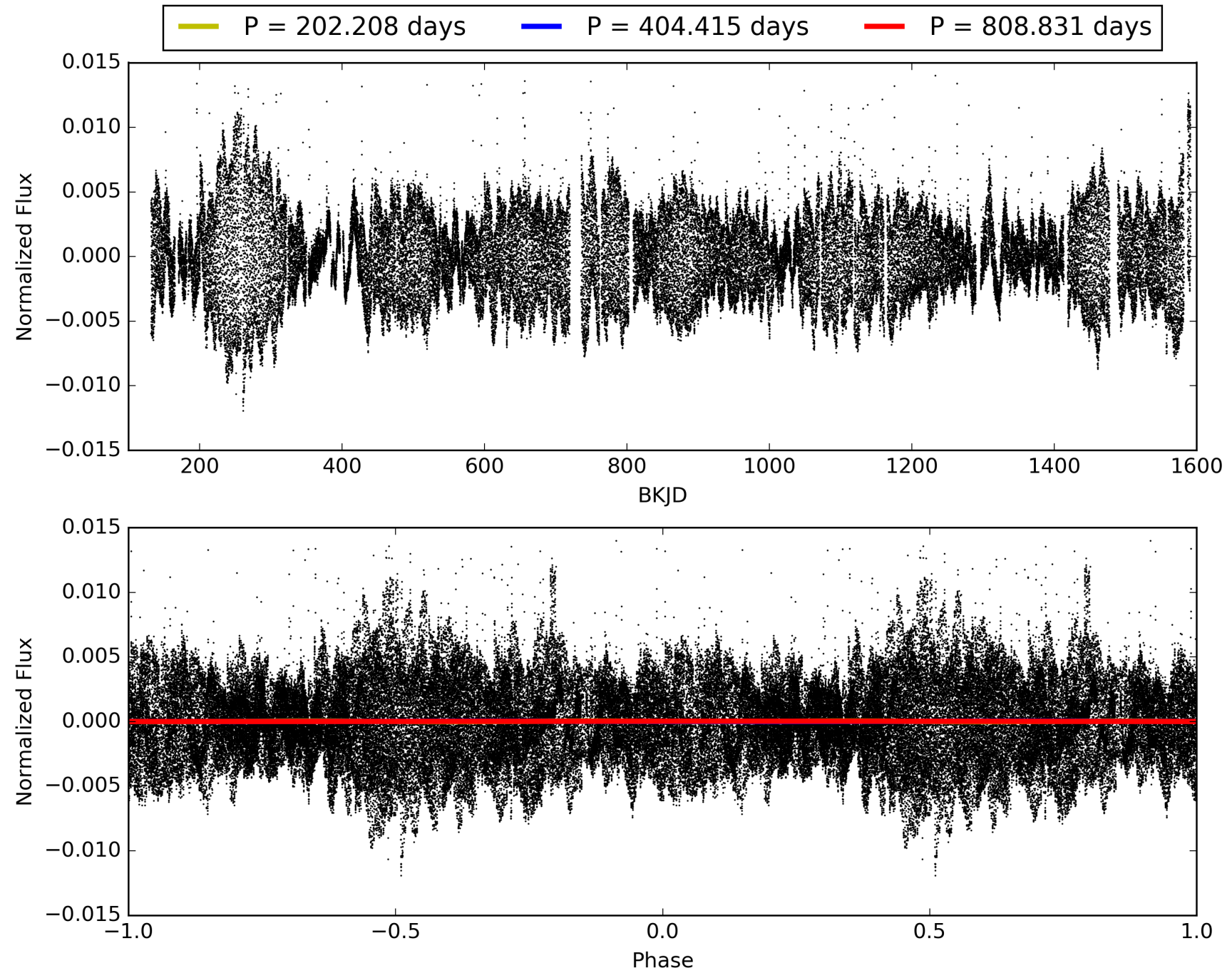
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:25:01 Z

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

TCE 008283996-02, PDC Light Curves

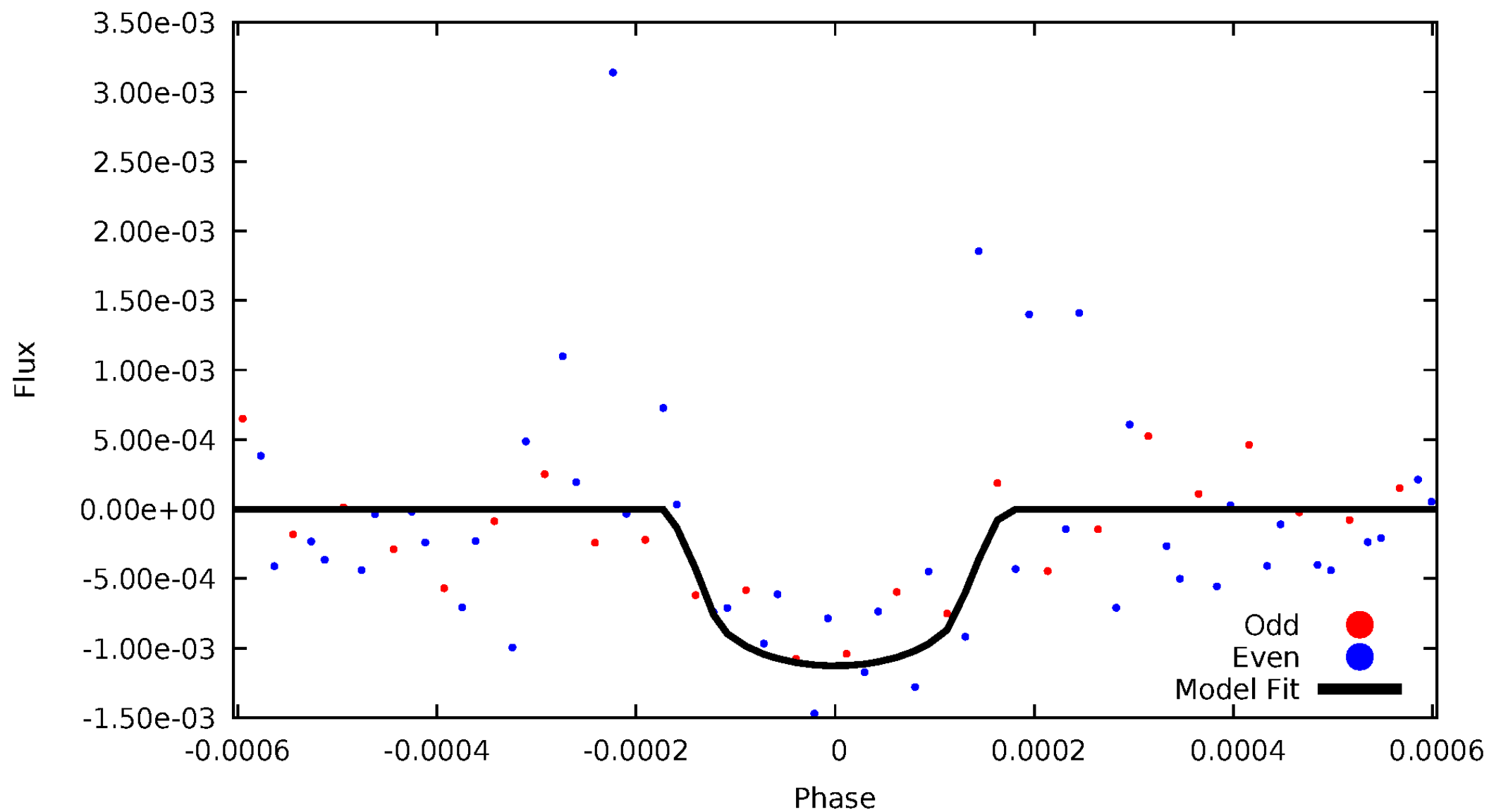


TCE 008283996-02



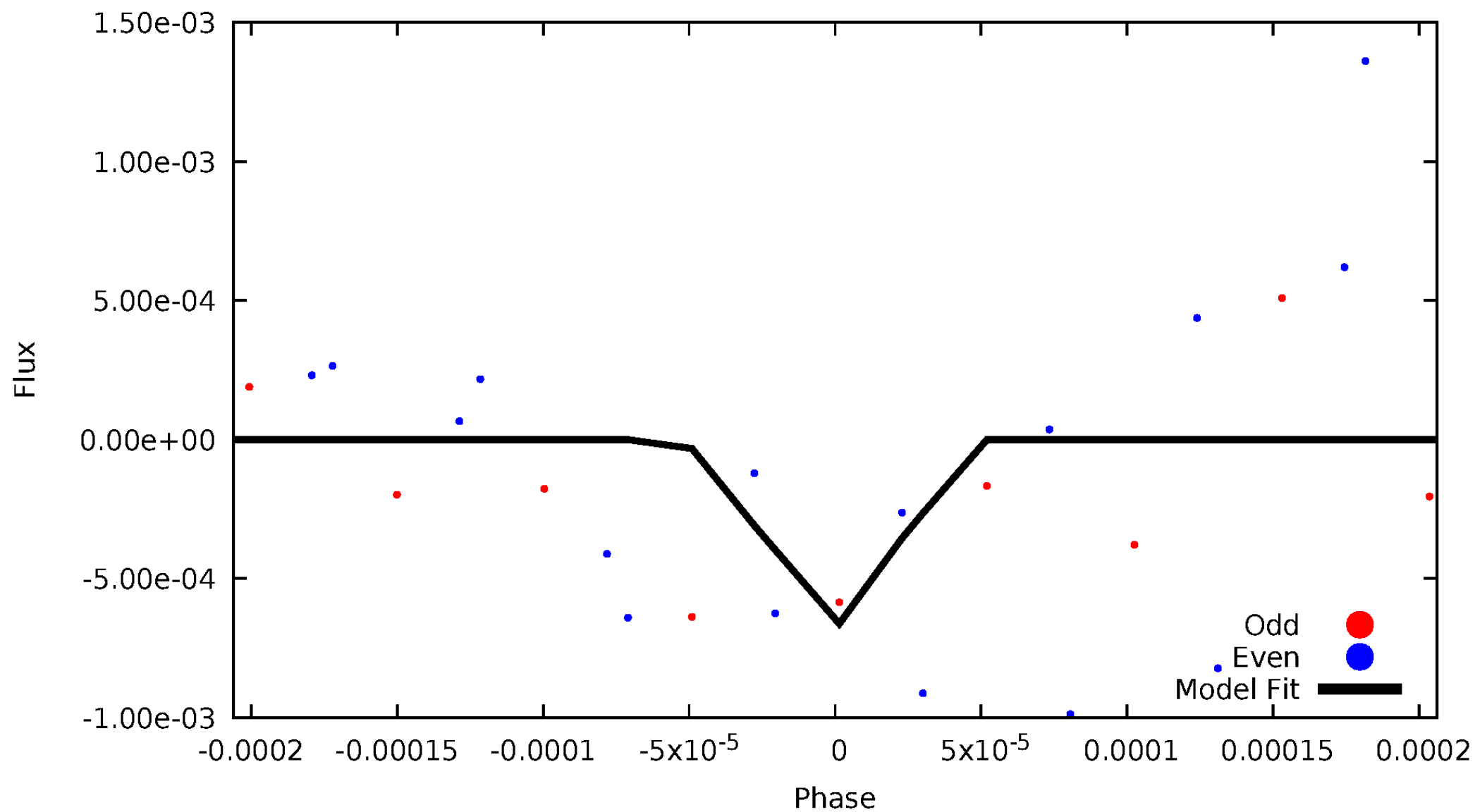
DV Odd/Even

TCE 008283996-02



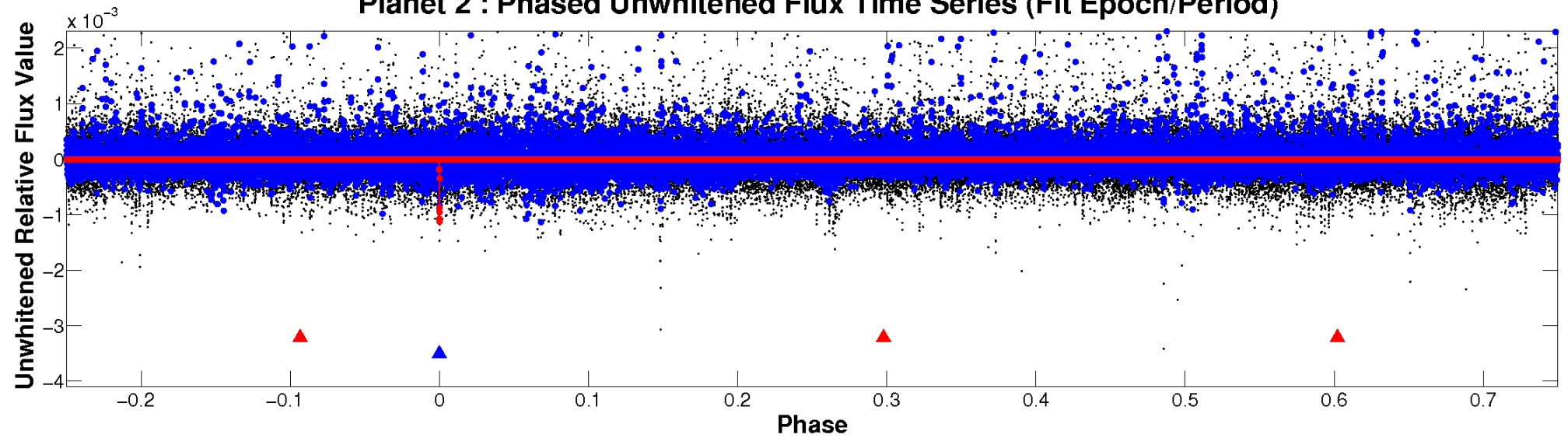
ALT Odd/Even

TCE 008283996-02

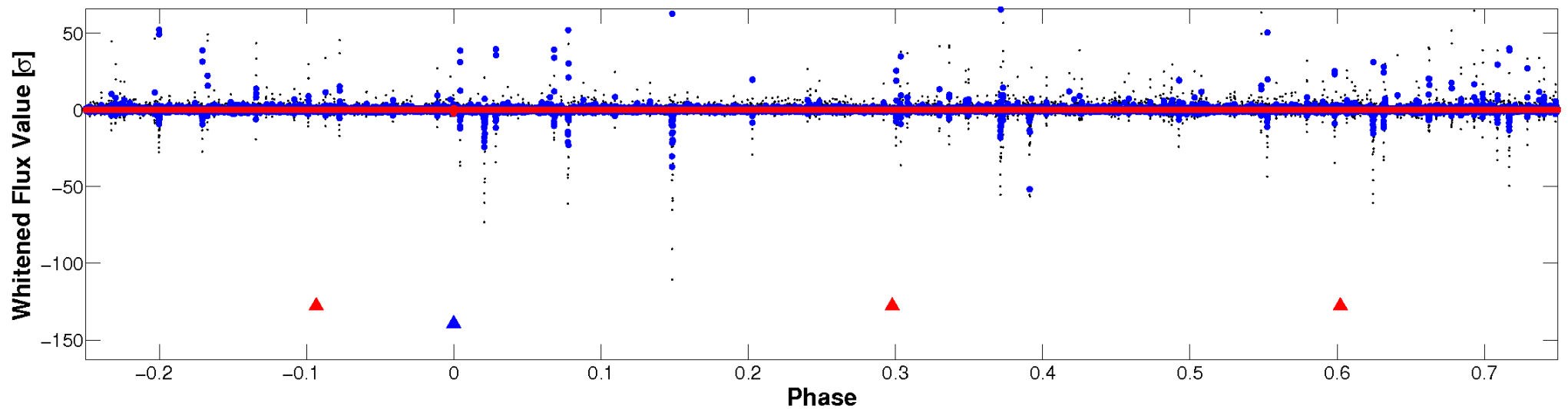


Non-Whitened Vs. Whitened Light Curve

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

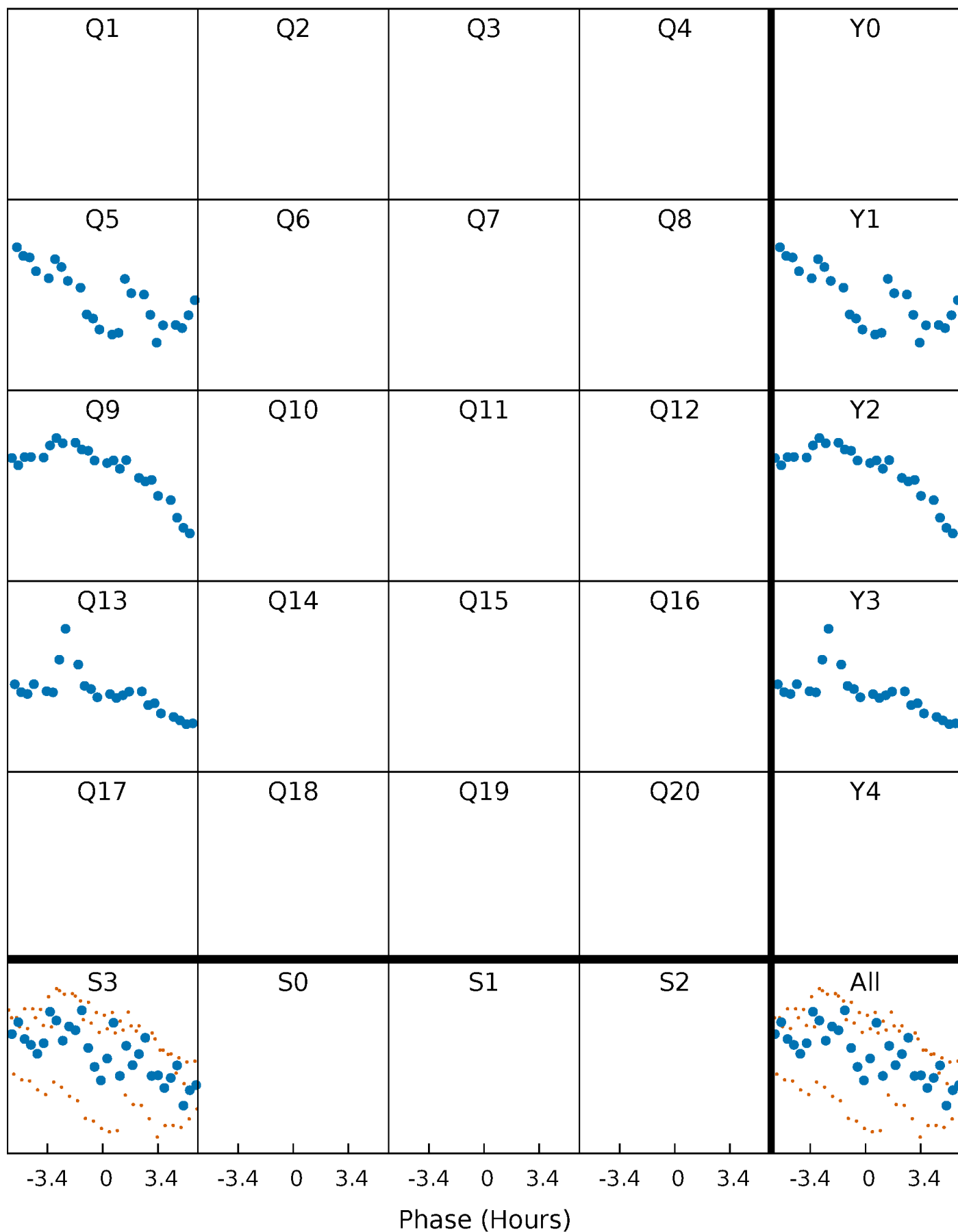


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



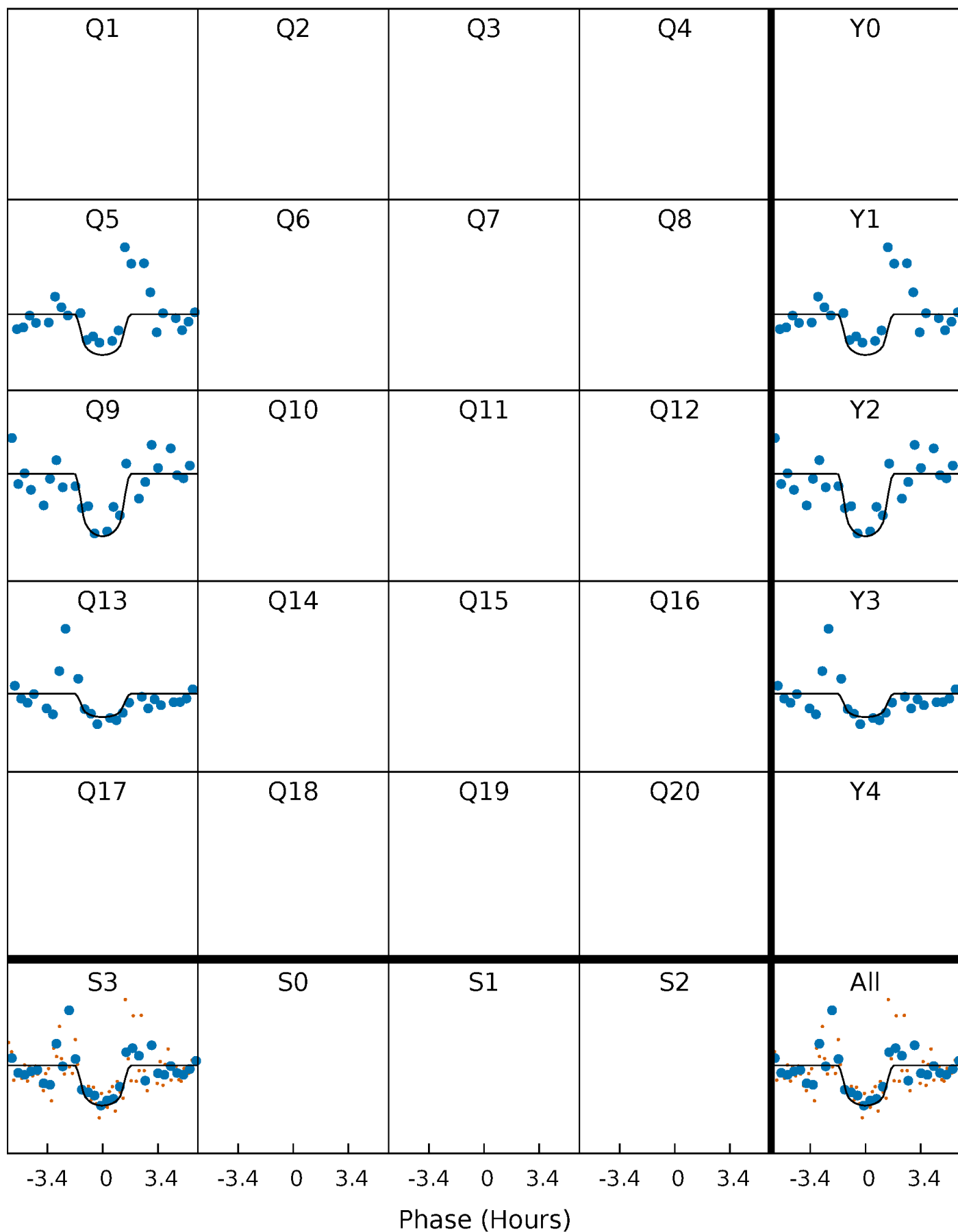
PDC Quarter-Phased Transit Curves

TCE 008283996-02 $P=404.415494$ Days $T_0=458.942028$ (BKJD)



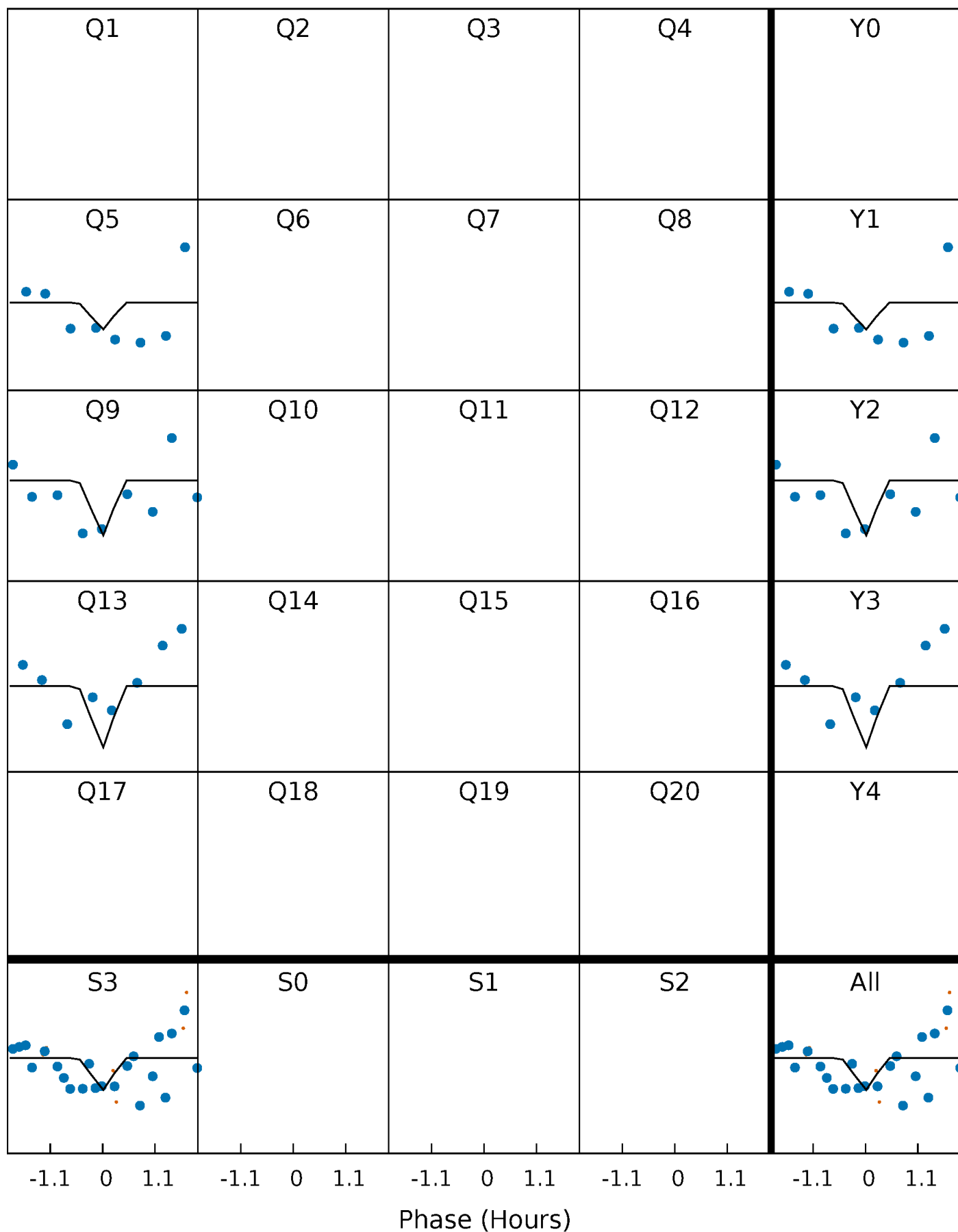
DV Quarter-Phased Transit Curves

TCE 008283996-02 $P=404.415494$ Days $T_0=458.942028$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

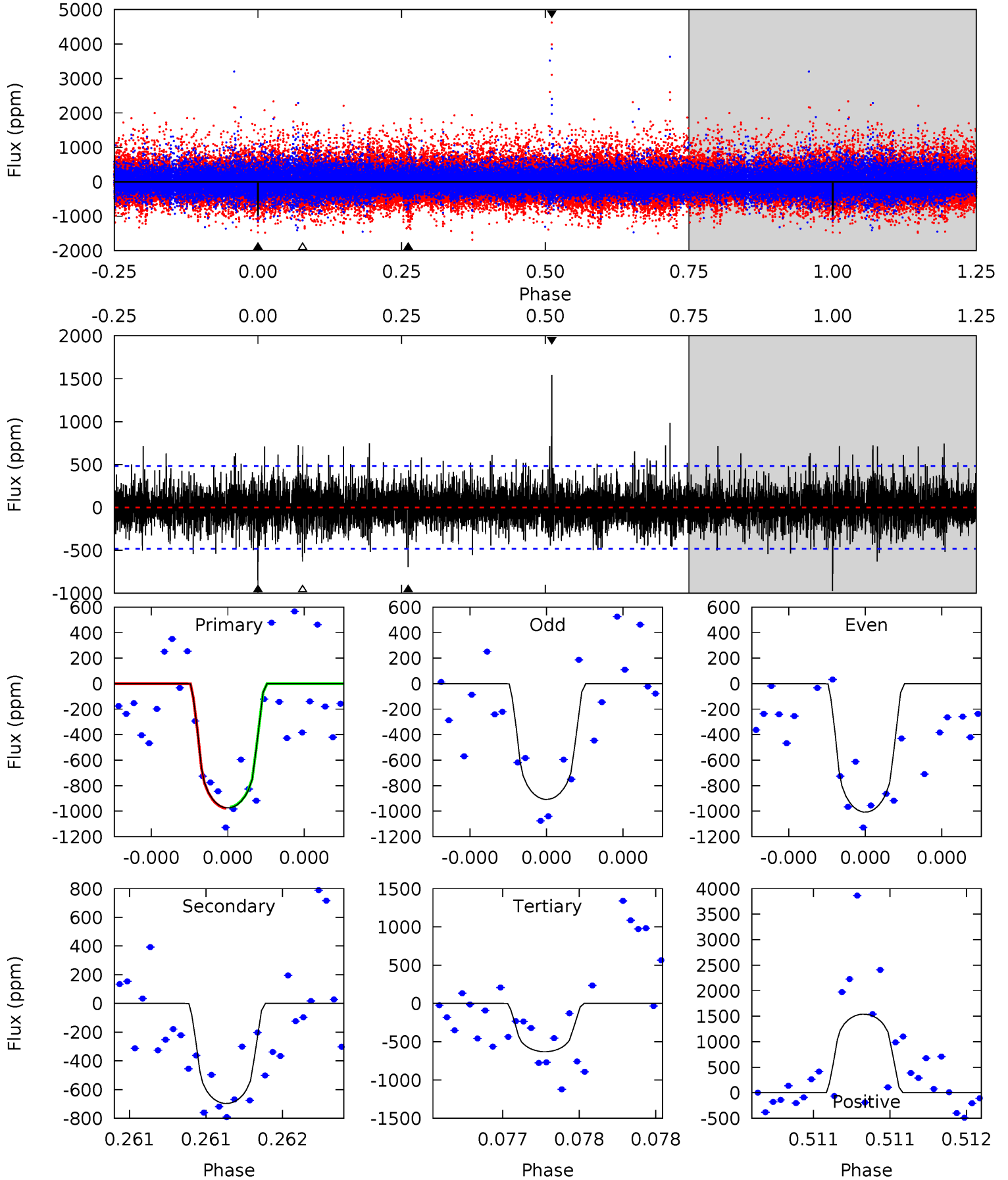
TCE 008283996-02 P=404.434642 Days $T_0=458.926894$ (BKJD)



DV Model-Shift Uniqueness Test

008283996-02, P = 404.415494 Days, E = 54.526534 Days

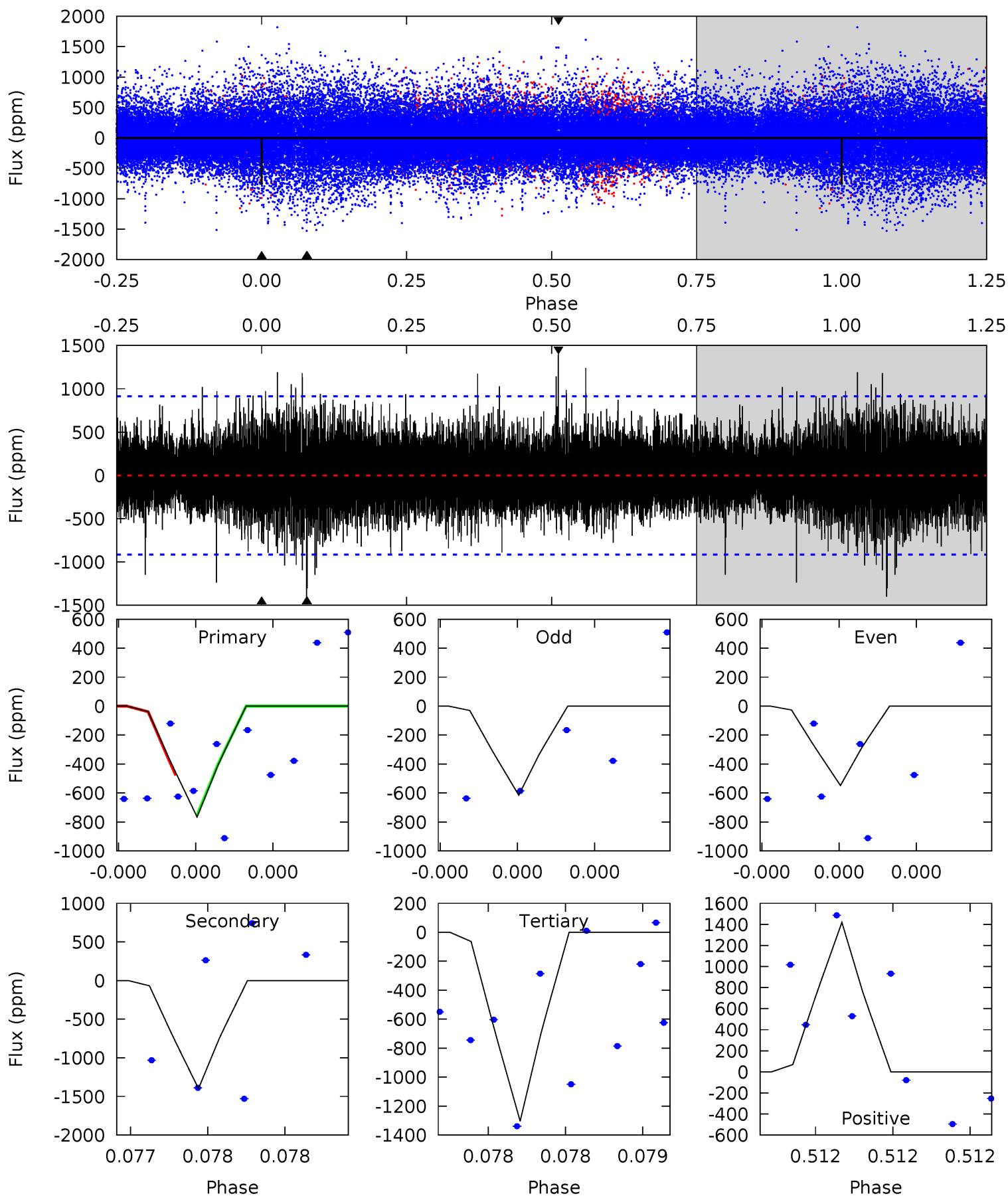
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	8.16	7.37	18.0	5.63	3.57	1.84	4.03	-6.62	0.78	-9.87	0.33	1.01	0.61	0.05



Alt Model-Shift Uniqueness Test

008283996-02, P = 404.434642 Days, E = 54.492252 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.93	9.01	8.40	9.14	5.89	3.95	1.45	-3.47	-4.21	0.61	-0.13	0.18	1.31	0.50	0.80



Stellar Parameters For KIC 008283996

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4873^{+146}_{-146}	$4.664^{+0.056}_{-0.032}$	$-0.920^{+0.300}_{-0.300}$	$0.591^{+0.047}_{-0.042}$	$0.587^{+0.050}_{-0.025}$	$4.007^{+0.918}_{-0.514}$
	+3%/-3%	+1%/-1%	+33%/-33%	+8%/-7%	+9%/-4%	+23%/-13%
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 008283996-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-697 ± 85	$5.26^{+5.09}_{-3.64}$	243^{+8}_{-9}	3277^{+1721}_{-581}	$11446^{+106445}_{-8548}$
Alt.	-1399 ± 155	$4.76^{+5.29}_{-3.45}$	243^{+8}_{-9}	3755^{+2727}_{-767}	$26910^{+338660}_{-20838}$

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

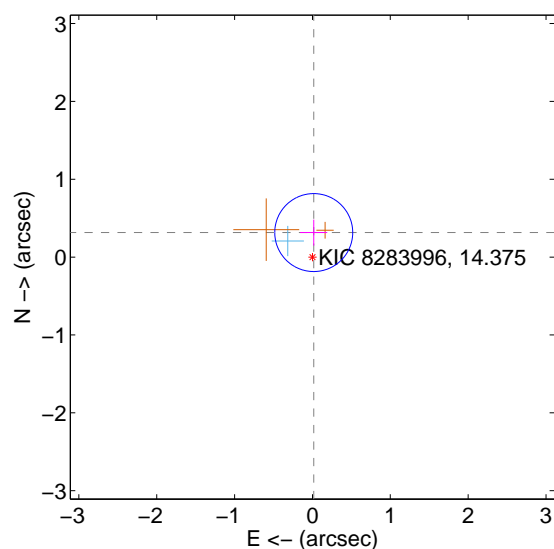
Supplemental centroid analysis for 008283996-02. Kepler magnitude: 14.38. Transit SNR 8.86

There are 1 quarters with good PRF difference image offsets

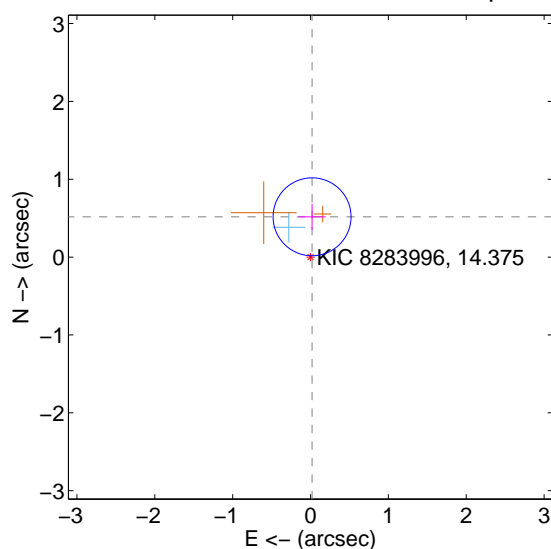
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.315 ± 0.167	1.89	-0.017 ± 0.174	0.315 ± 0.167
PRF-fit source offset from KIC position	0.518 ± 0.167	3.10	-0.020 ± 0.174	0.517 ± 0.167
photometric centroid source offset	0.29 ± 0.77	0.38	-0.08 ± 0.85	0.28 ± 0.76

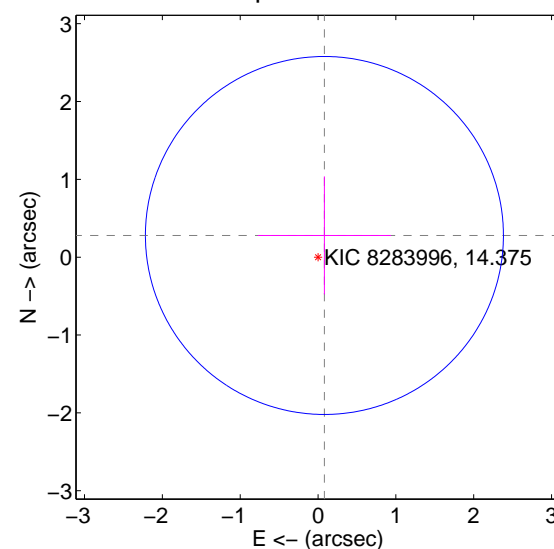
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

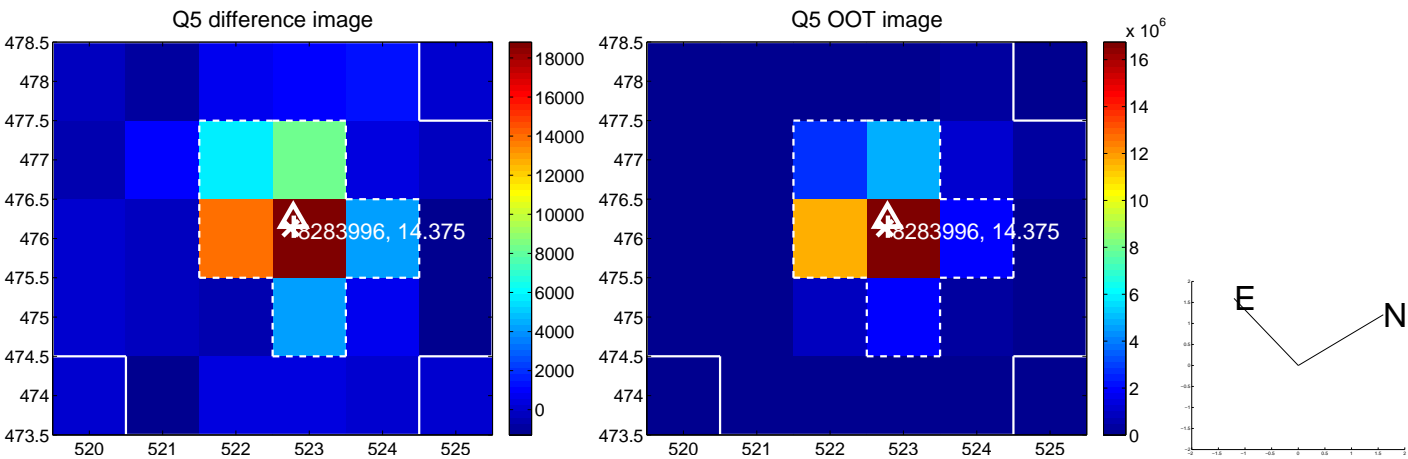


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

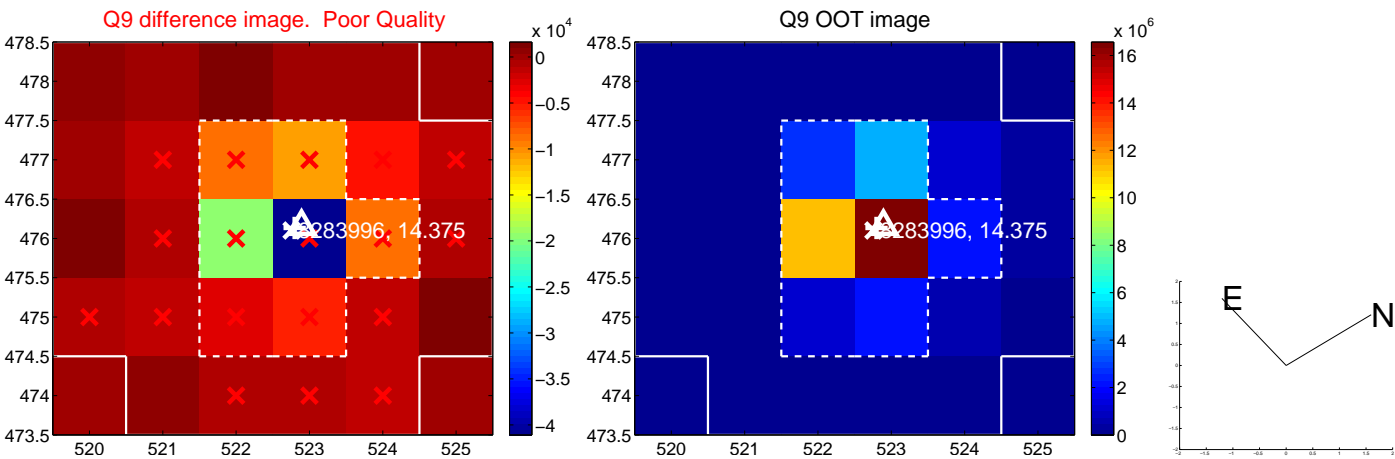
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



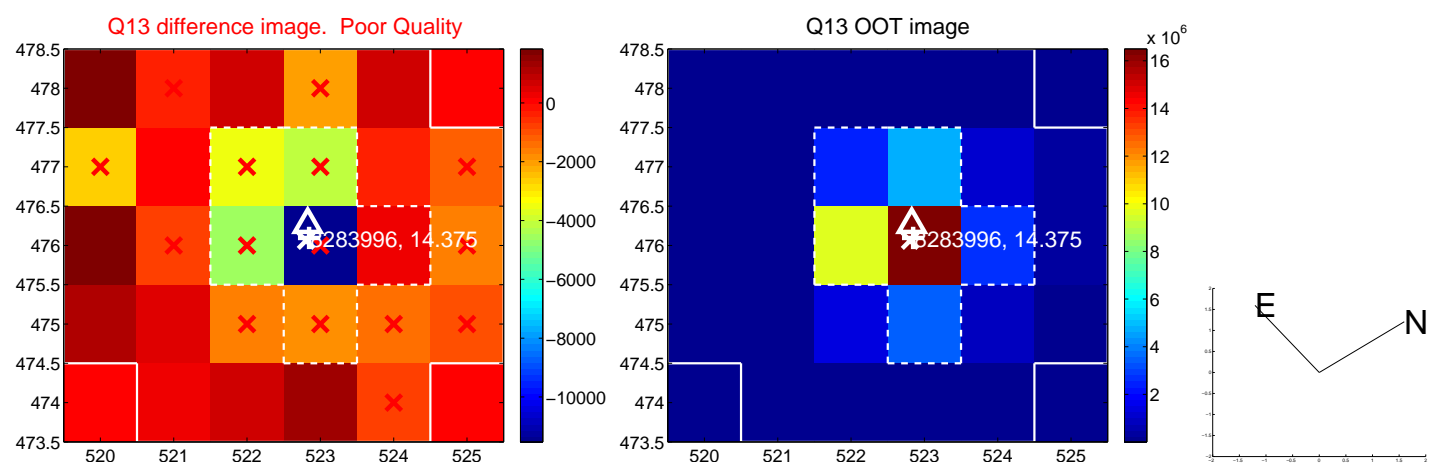
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



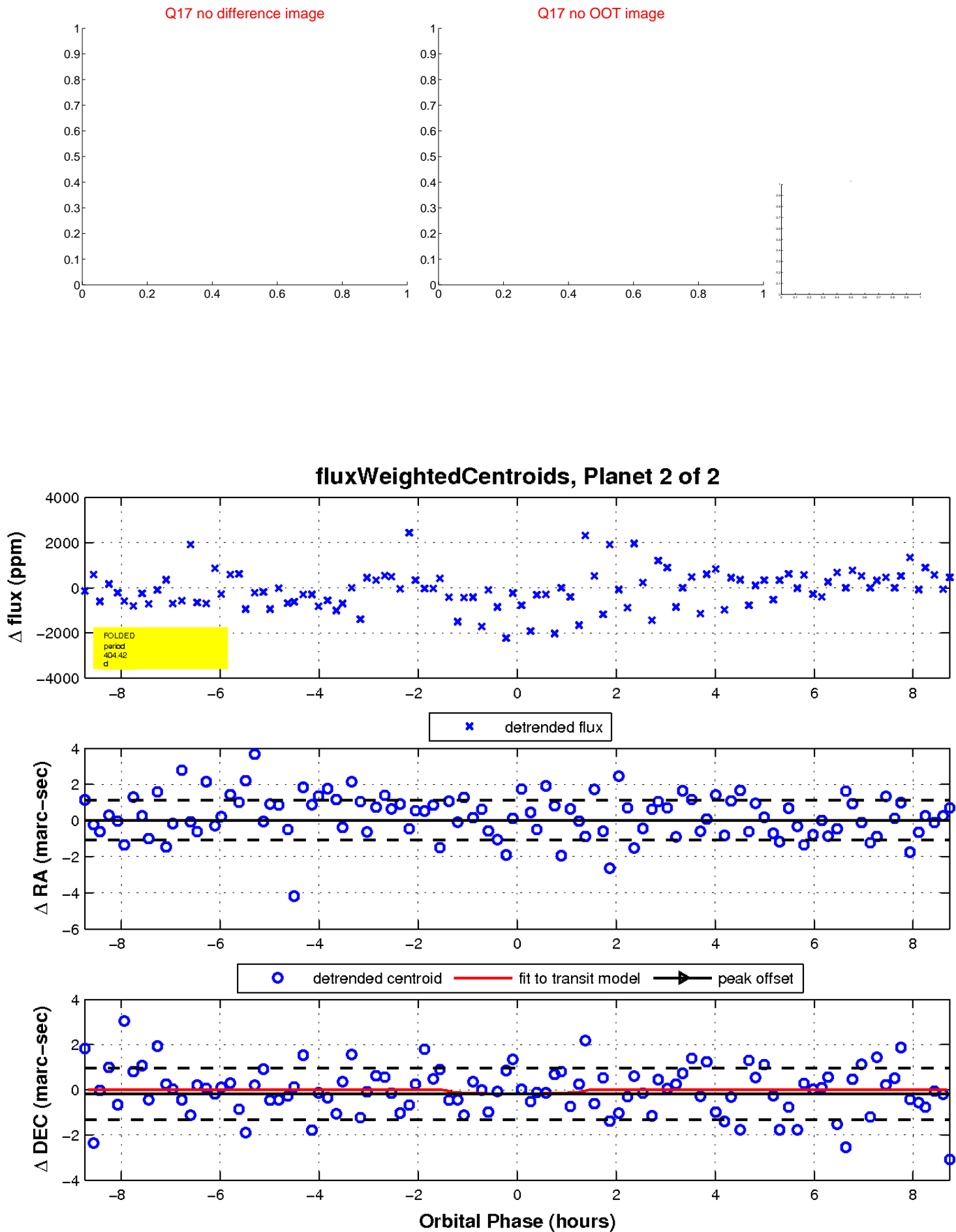
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

