

KIC 008565912

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})
008565912-01	OBS	7898.01	1.012181	131.896411	310151.2	2.500	1472.3	-1.0	1.72	6987	31.74	13285.91
008565912-02	OBS	No	0.506083	131.919589	67074.0	4.202	269.6	186.8	1.72	6987	62.62	33479.08

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008565912-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
008565912-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—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.

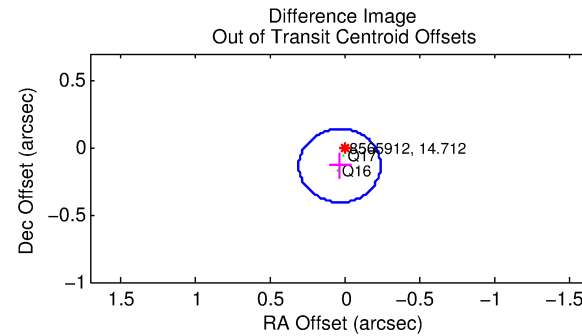
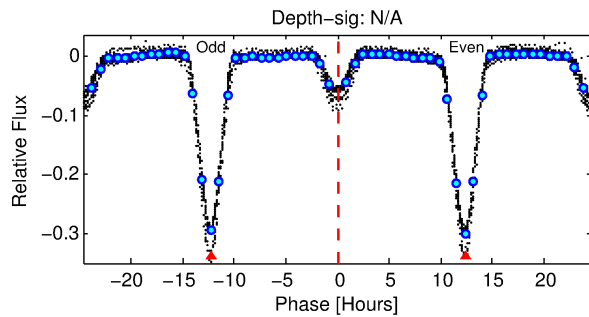
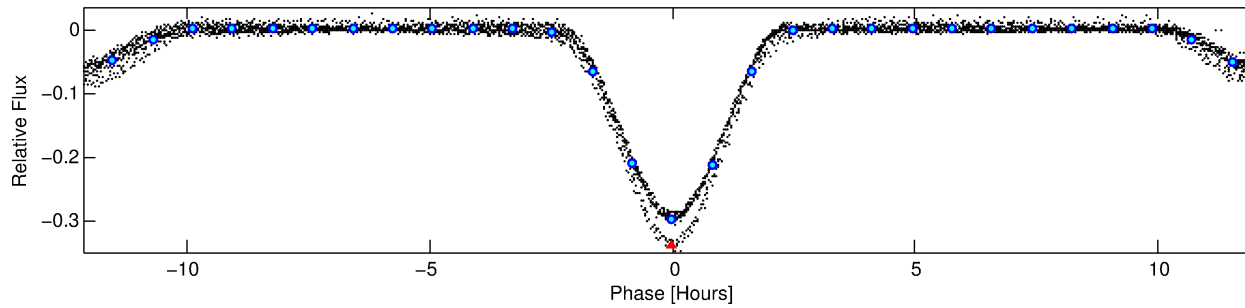
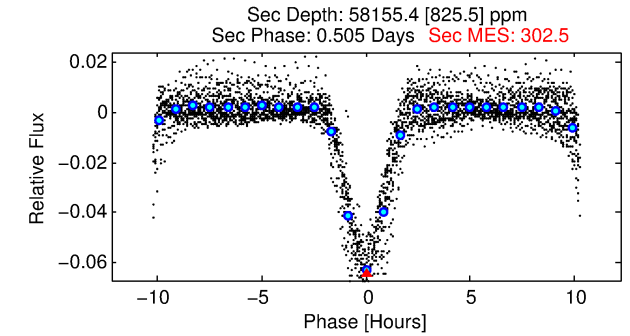
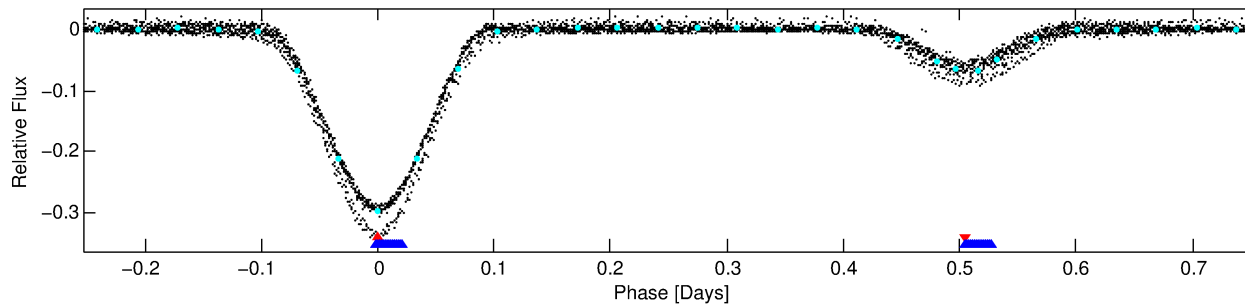
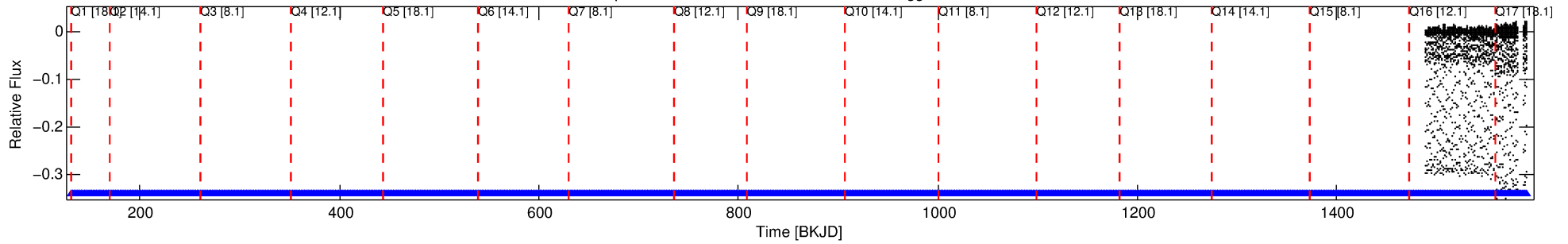
Ephemeris Match Information For 008565912-01

No Significant Match Found

DV One-Page Summary

KIC: 8565912 Candidate: 1 of 2 Period: 1.012 d

Kp: 14.71 R*: 1.72 Rs Teff: 6987.0 K Logg: 4.10 Fe/H: -0.340



TPS TCE Results:

Period = 1.01218 d
Epoch = 131.8964 BKJD

DV fit results are unavailable

DV Diagnostic Results:

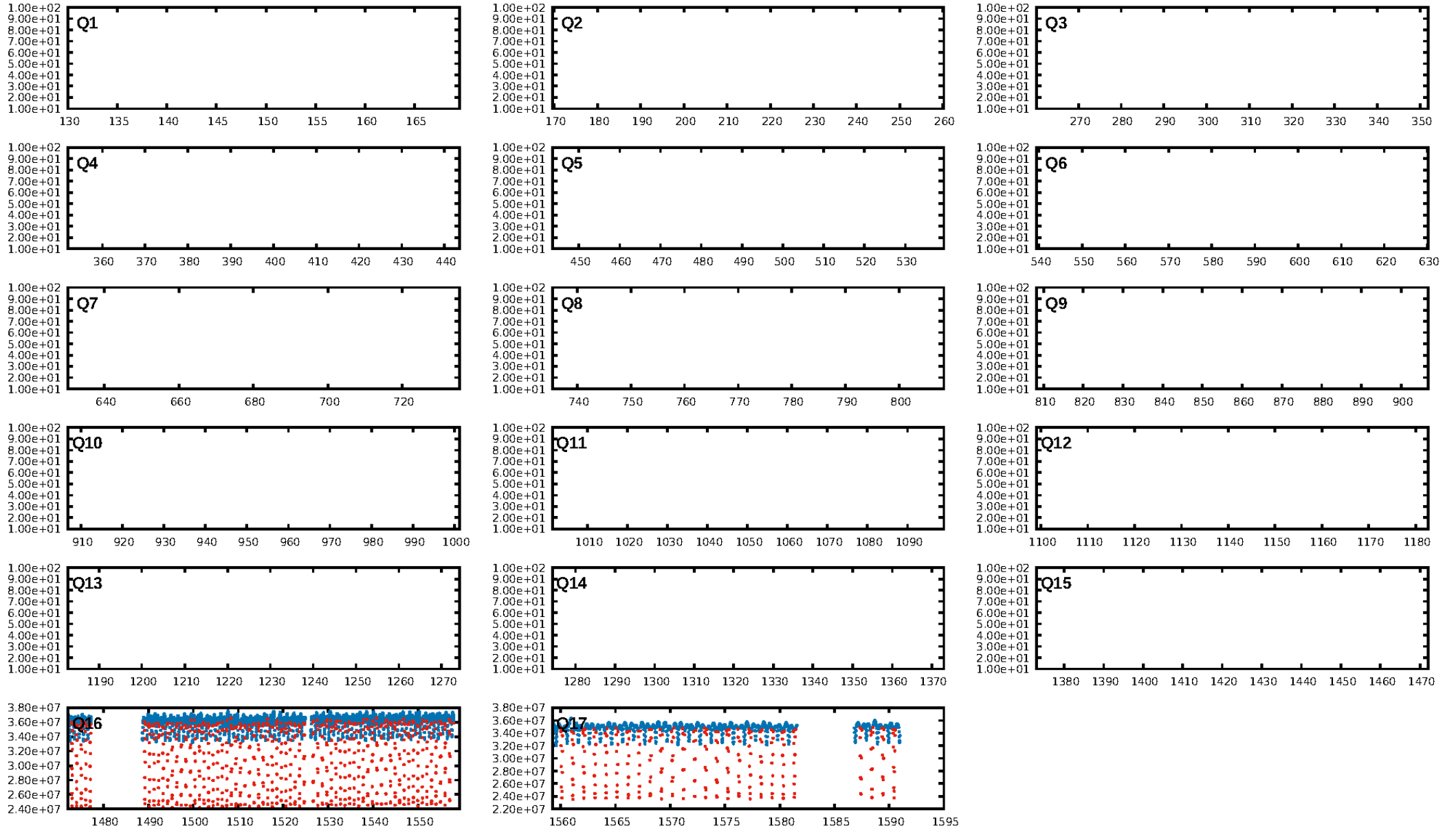
ShortPeriod-sig: 98.7% [2.48 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [67/67]
GhostDiagnostic-chr: 91.37

Centroid-sig: 0.0%
Centroid-so: 0.286 arcsec [149.27 σ]
OotOffset-rm: 0.137 arcsec [1.51 σ]
KicOffset-rm: 0.087 arcsec [1.06 σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.00 [0/2]

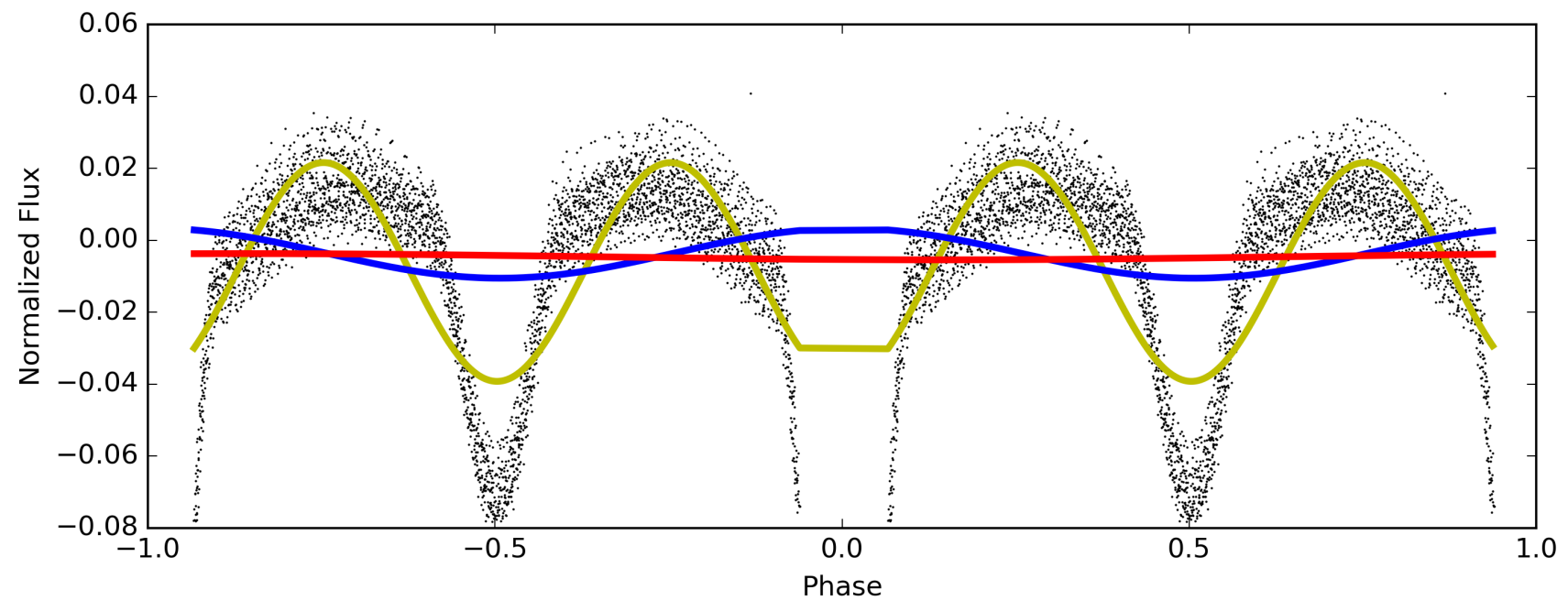
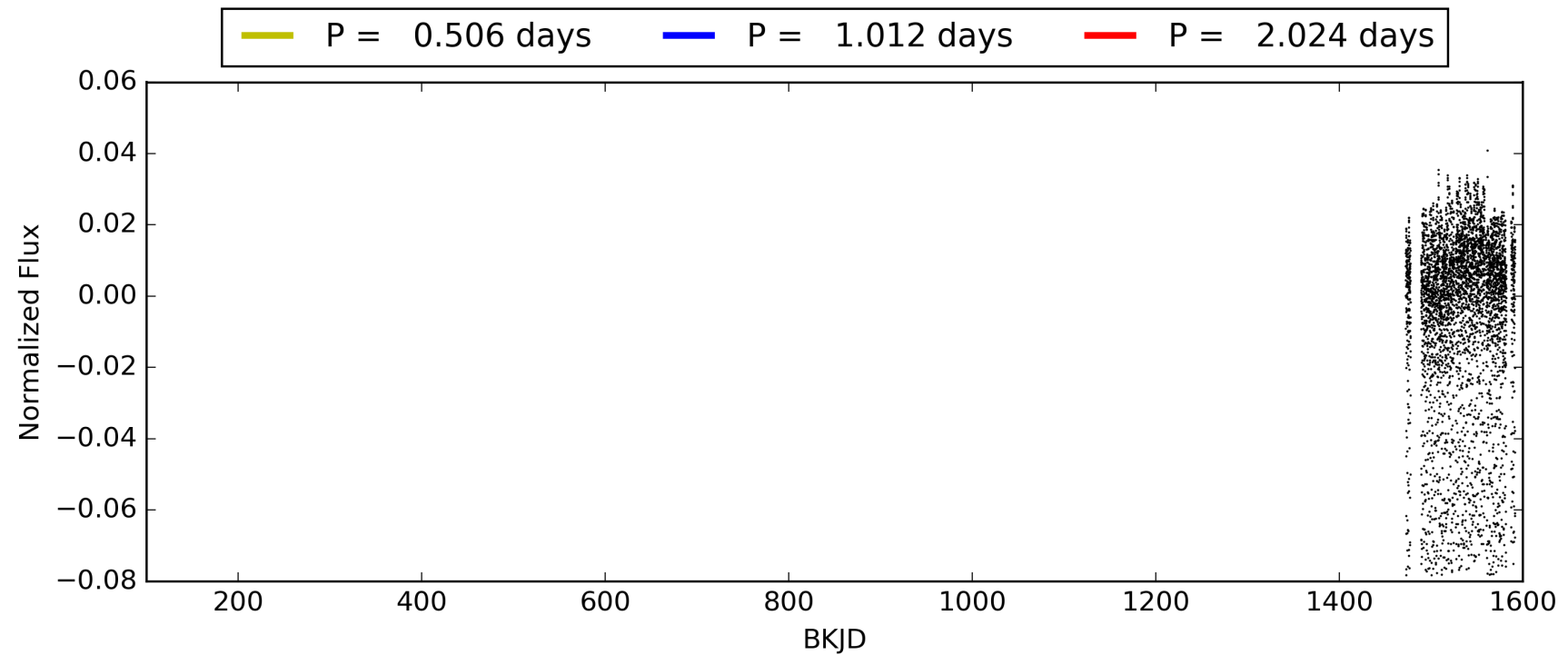
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:51:27 Z

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

TCE 008565912-01, PDC Light Curves

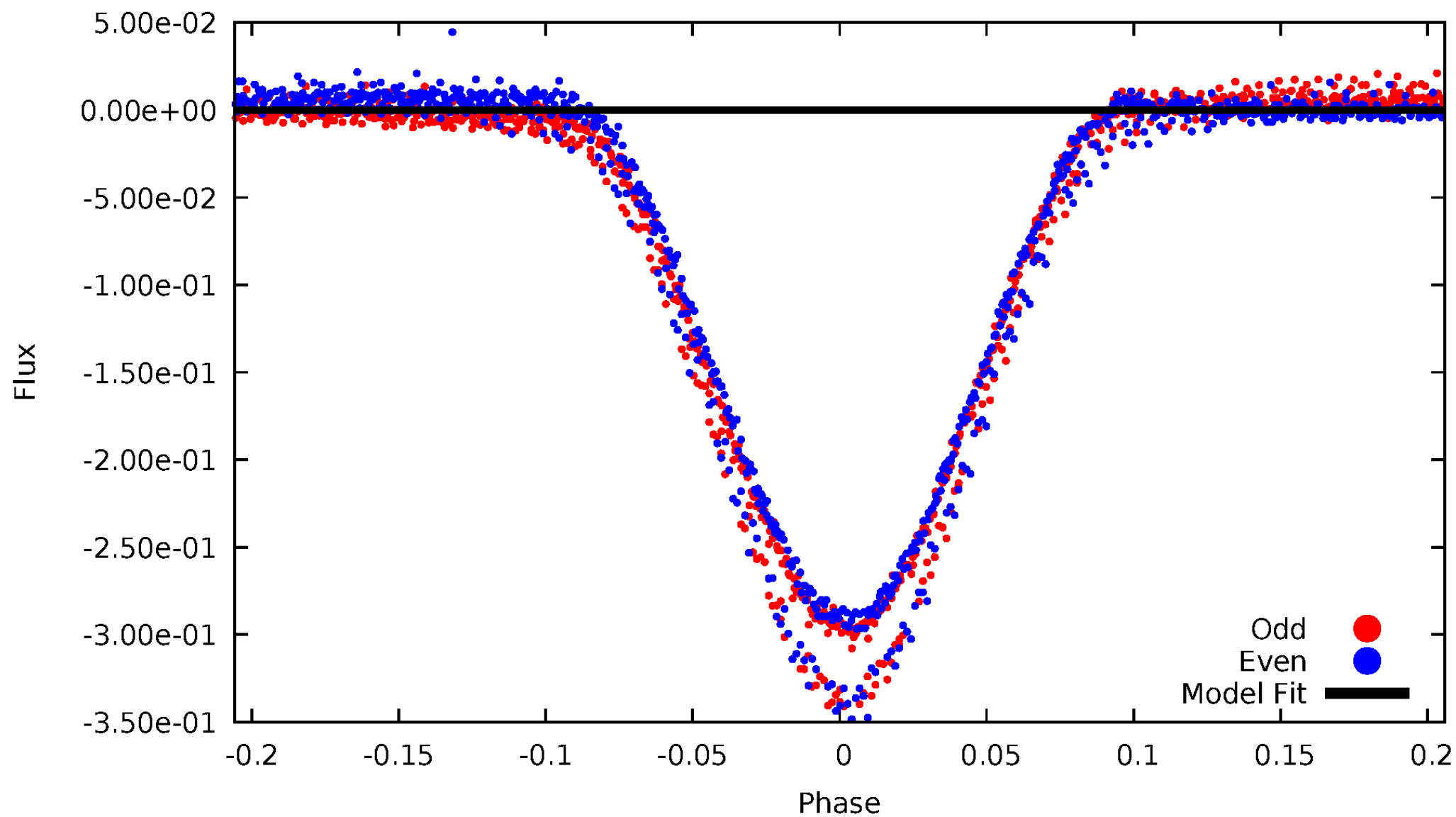


TCE 008565912-01



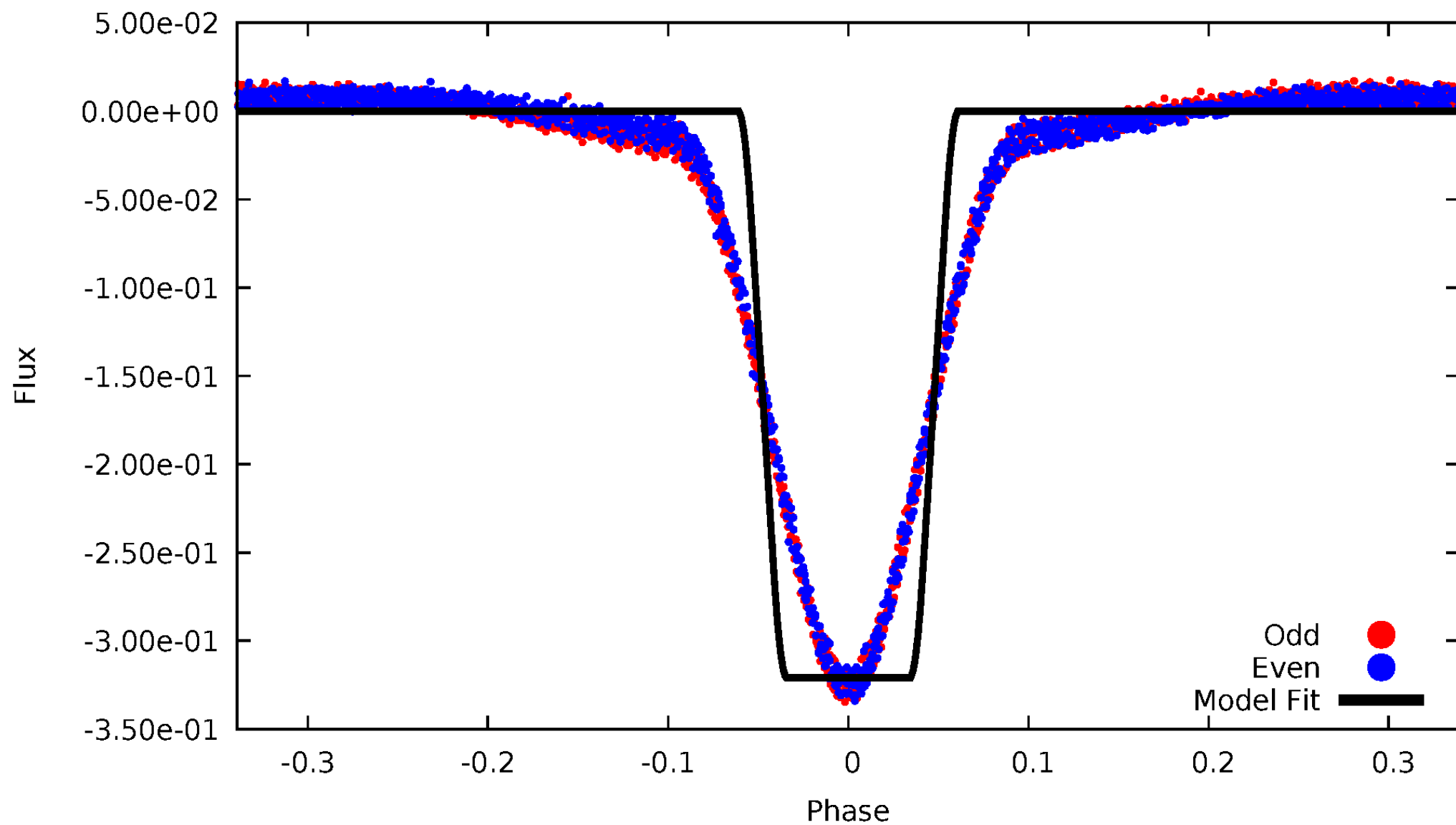
DV Odd/Even

TCE 008565912-01



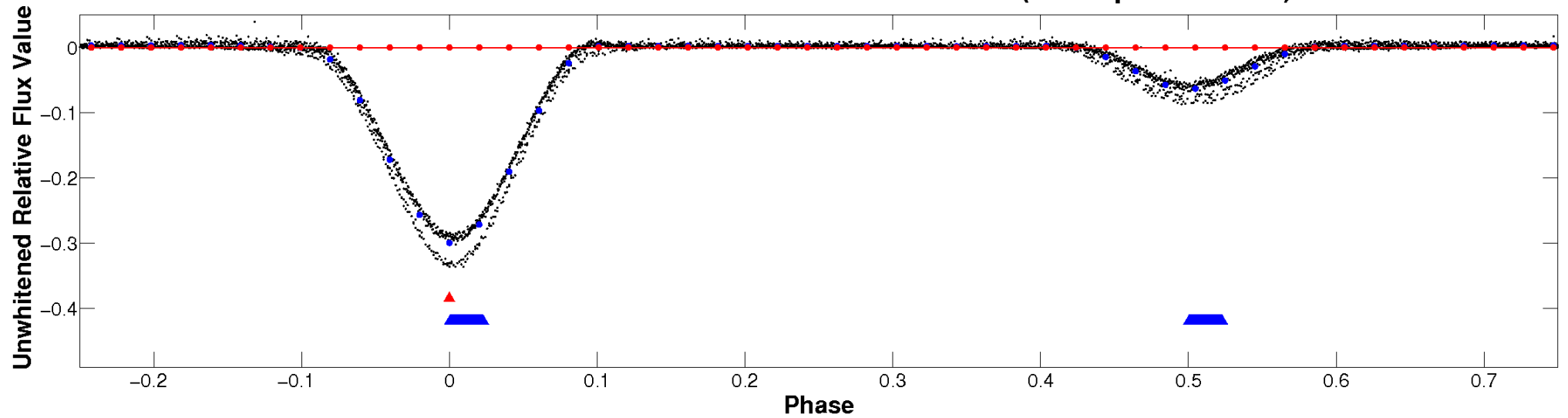
ALT Odd/Even

TCE 008565912-01



Non-Whitened Vs. Whitened Light Curve

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

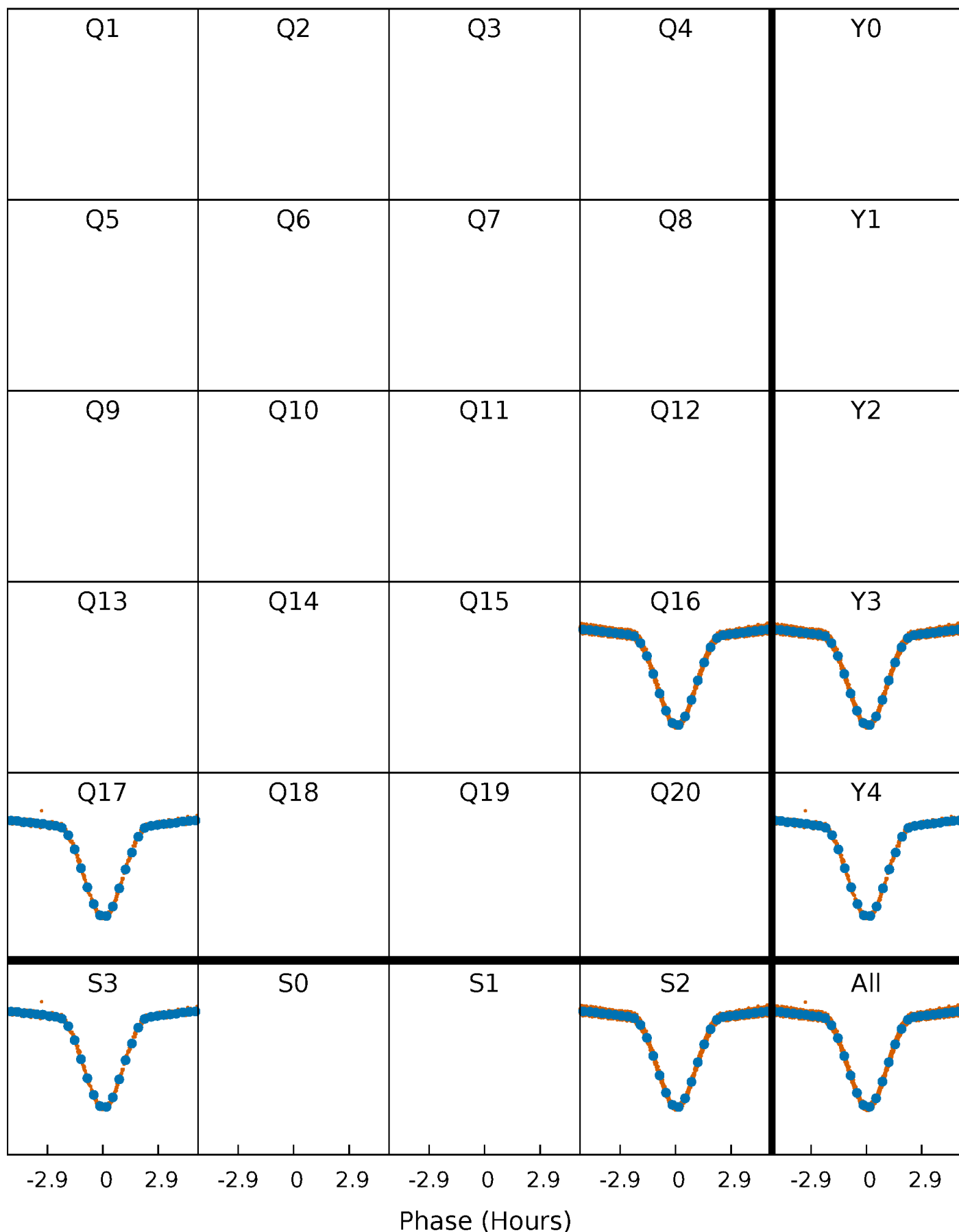


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



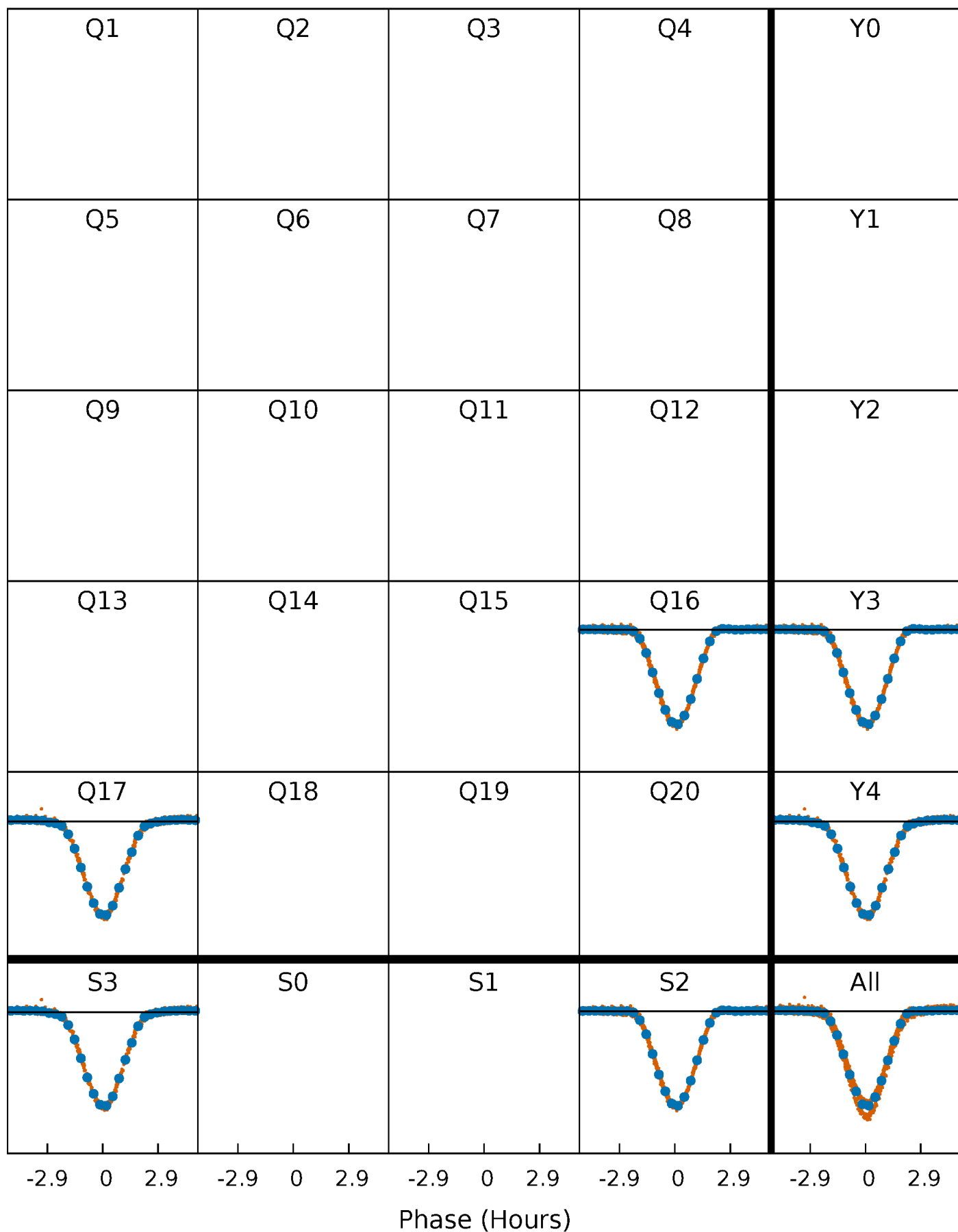
PDC Quarter-Phased Transit Curves

TCE 008565912-01 P= 1.012181 Days $T_0=131.896411$ (BKJD)



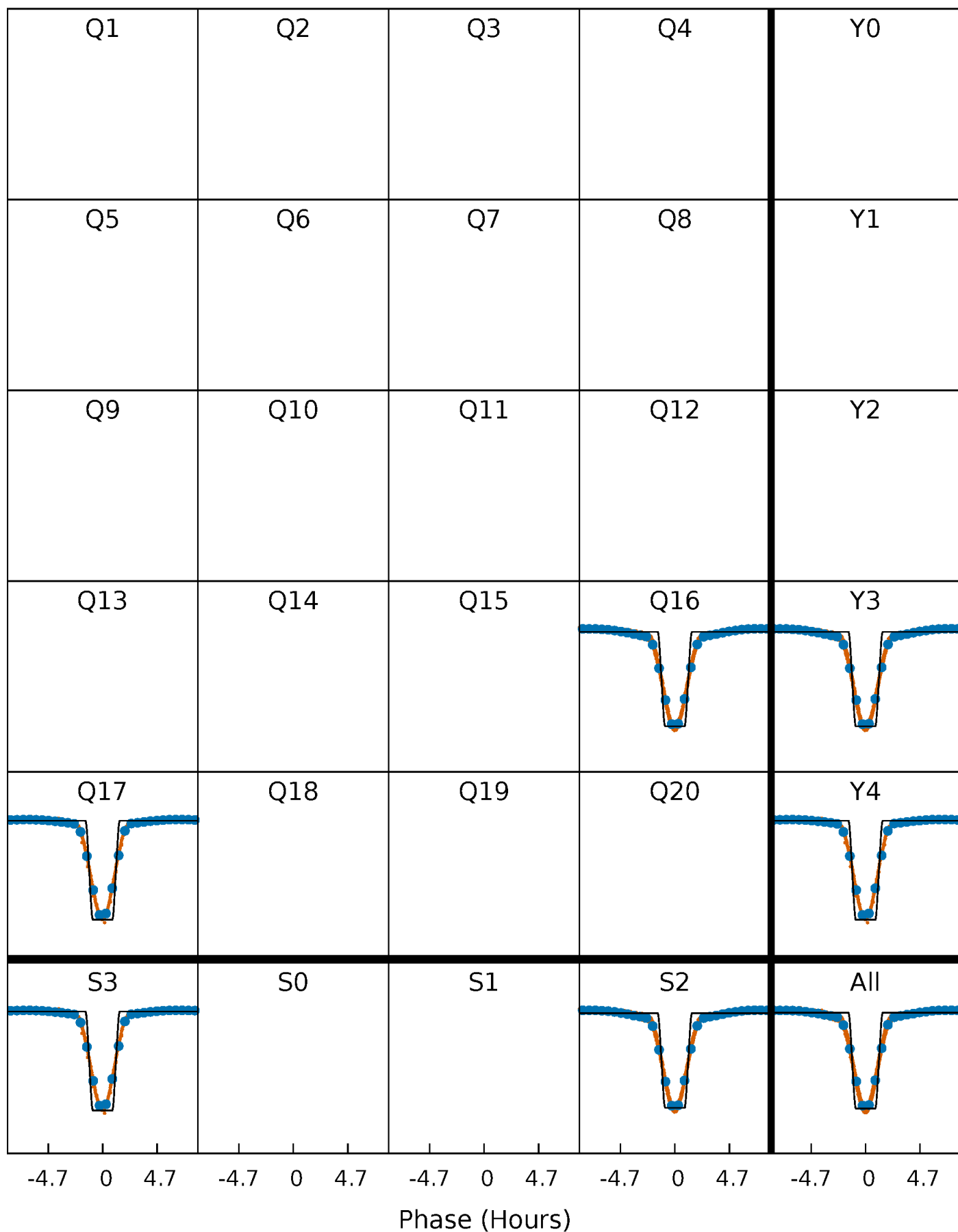
DV Quarter-Phased Transit Curves

TCE 008565912-01 P= 1.012181 Days $T_0=131.896411$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

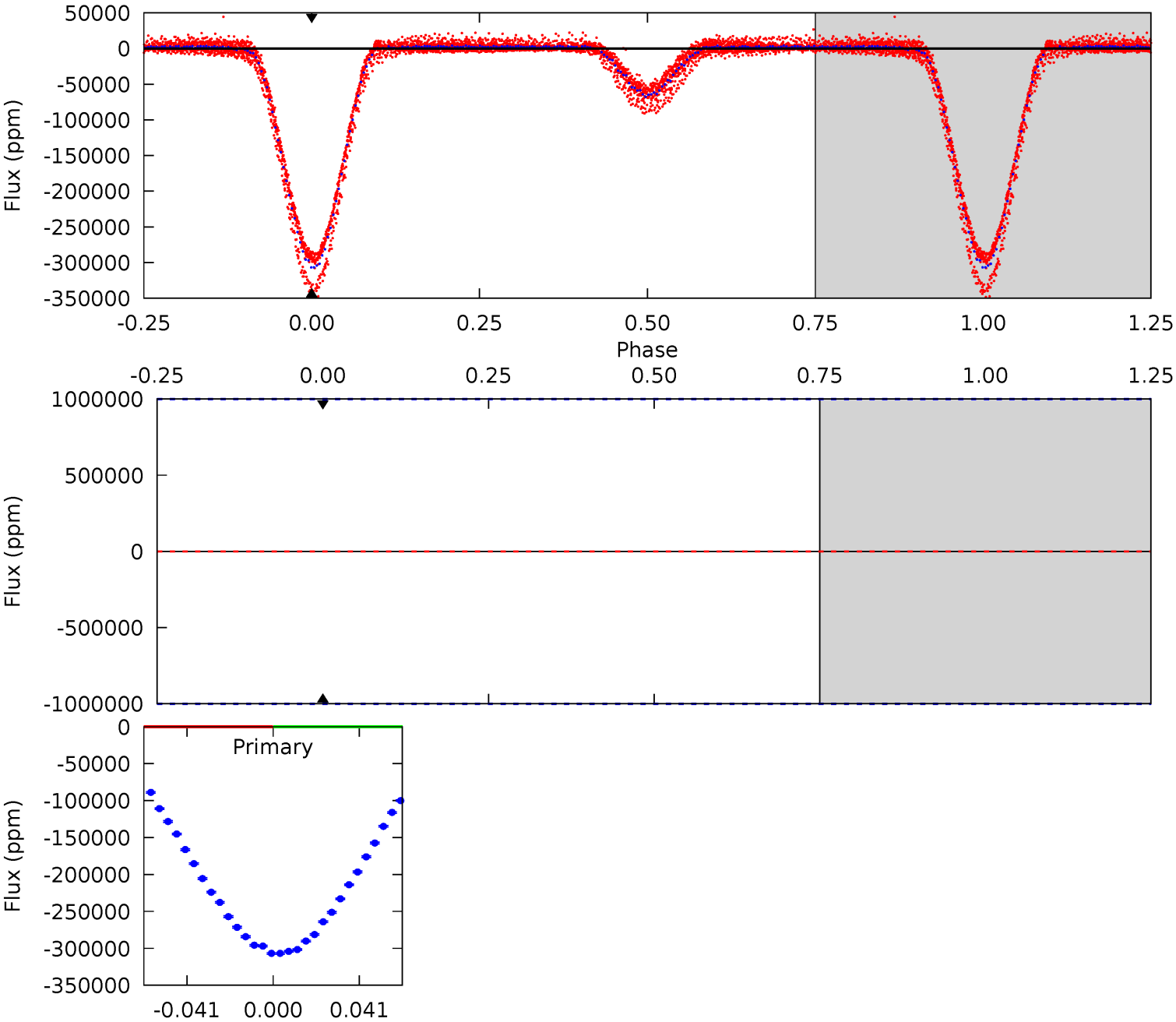
TCE 008565912-01 P= 1.012181 Days $T_0=131.898681$ (BKJD)



DV Model-Shift Uniqueness Test

008565912-01, P = 1.012181 Days, E = 131.896411 Days

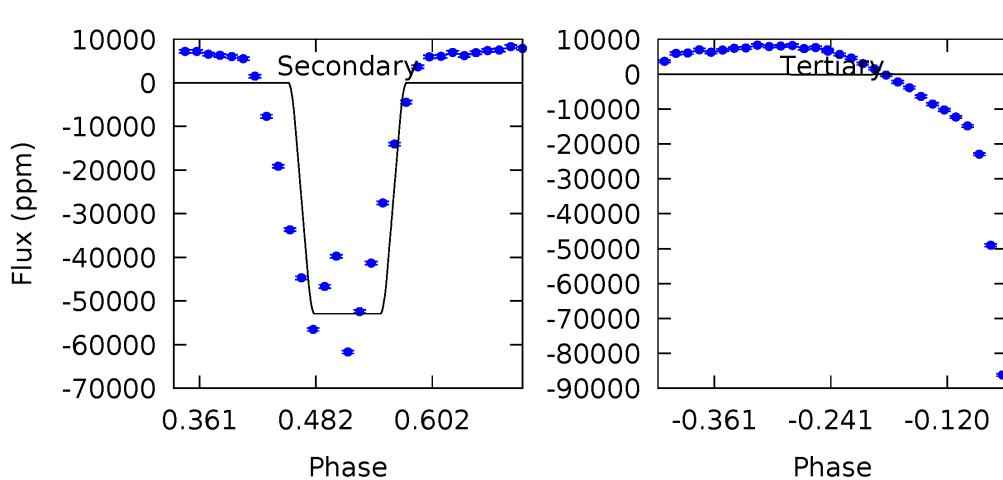
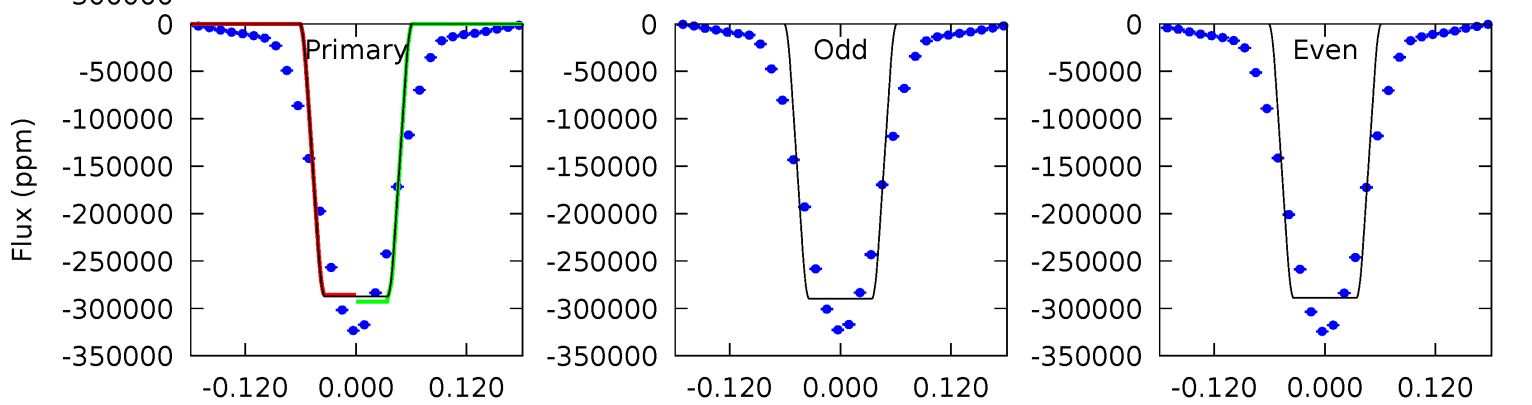
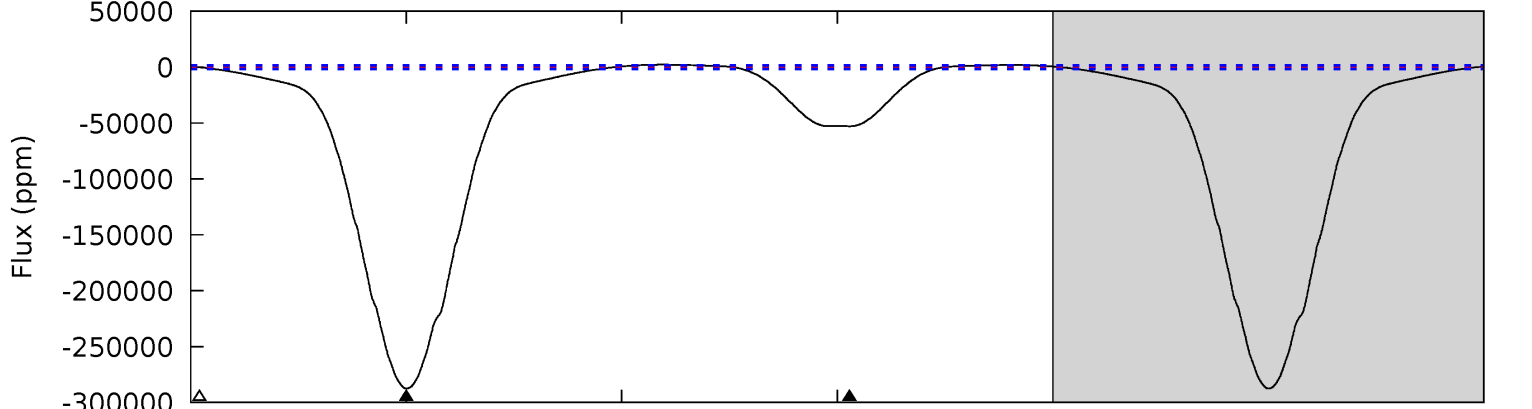
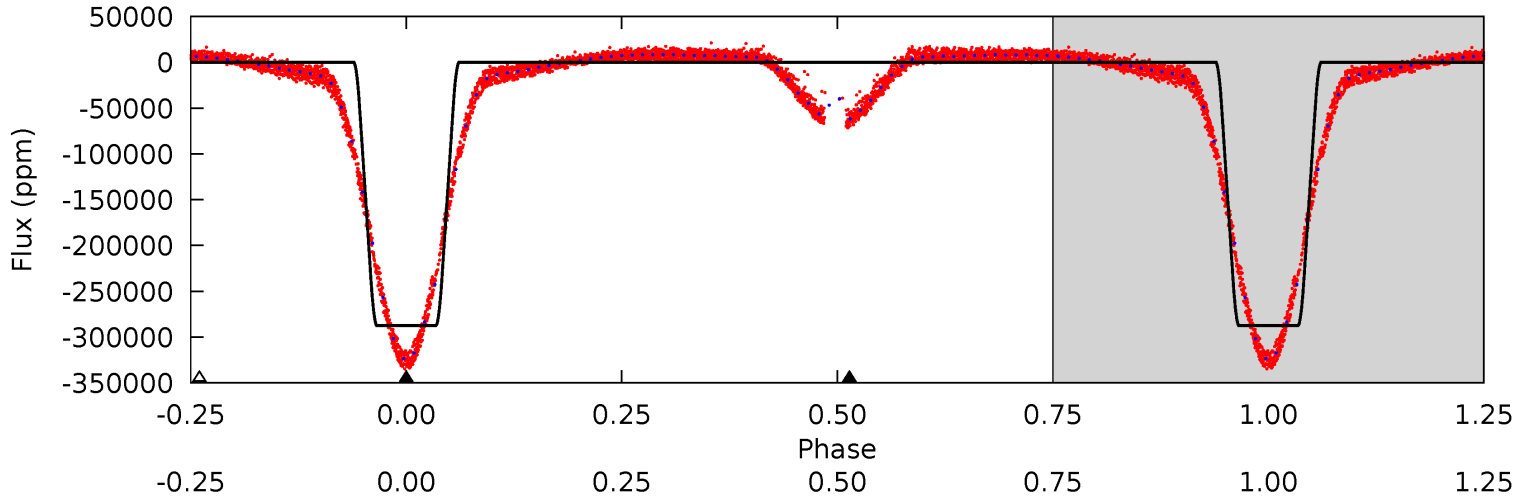
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008565912-01, P = 1.012181 Days, E = 131.898681 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
846.8	155.8	0.38	0	4.53	1.55	18.0	846.4	846.8	155.5	155.8	1.21	1.00	0.01	10.1



Stellar Parameters For KIC 008565912

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6987^{+216}_{-312}	$4.096^{+0.209}_{-0.171}$	$-0.340^{+0.300}_{-0.300}$	$1.716^{+0.478}_{-0.478}$	$1.343^{+0.202}_{-0.224}$	$0.374^{+0.457}_{-0.179}$
	+3%/-4%	+5%/-4%	+88%/-88%	+28%/-28%	+15%/-17%	+122%/-48%
Source	KIC0	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 008565912-01 / KOI 7898.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$32.42^{+18.34}_{-17.17}$	3812^{+283}_{-324}	-4251^{+15850}_{-6416}	$-0.532^{+35.207}_{-26.714}$
Alt.	-52910 ± 340	$104.67^{+25.43}_{-21.89}$	3778^{+318}_{-280}	4385^{+479}_{-379}	$1.330^{+0.831}_{-0.458}$

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

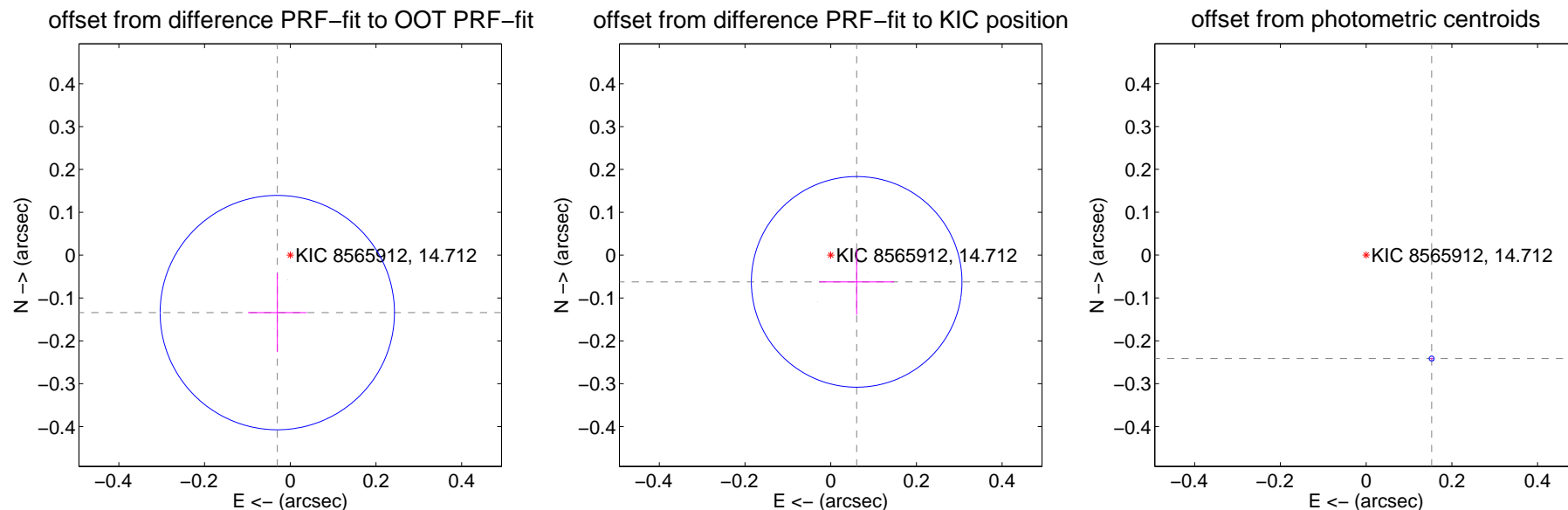
DV Centroid Data

Supplemental centroid analysis for 008565912-01. Kepler magnitude: 14.71. 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 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.137 ± 0.091	1.51	0.030 ± 0.068	-0.134 ± 0.092
PRF-fit source offset from KIC position	0.087 ± 0.082	1.06	-0.061 ± 0.087	-0.062 ± 0.076
photometric centroid source offset	0.29 ± 0.00	149.27	-0.15 ± 0.00	-0.24 ± 0.00



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

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



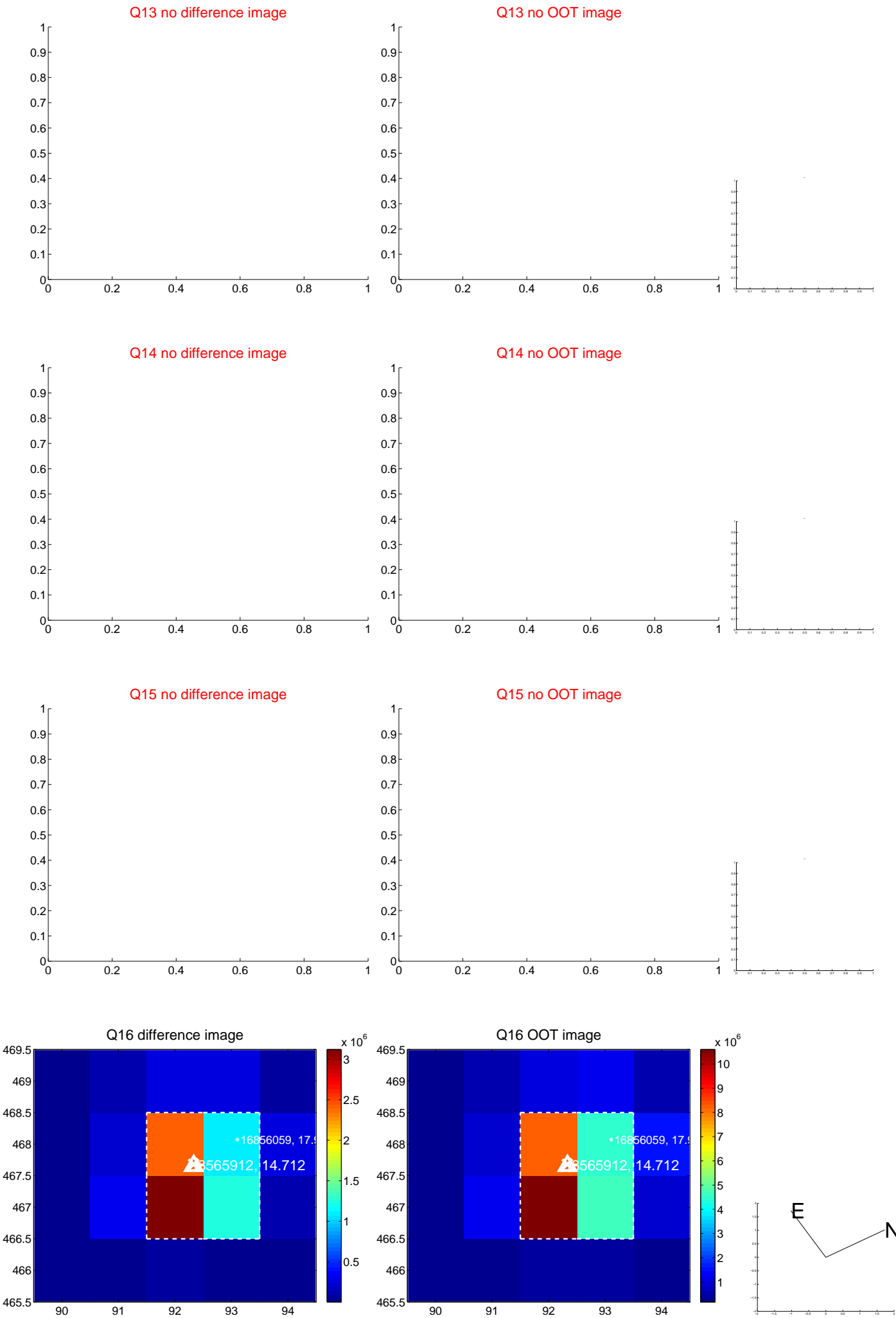
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



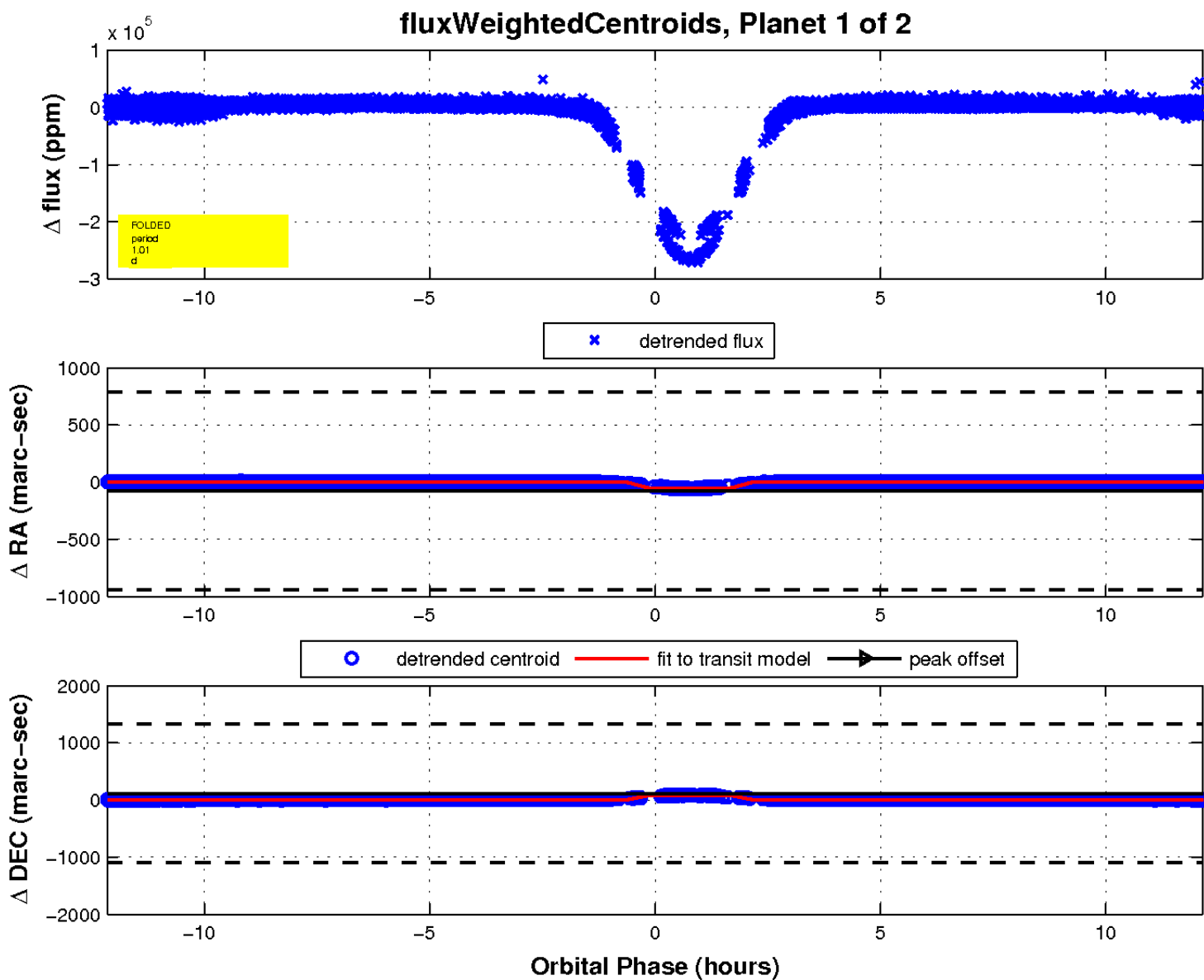
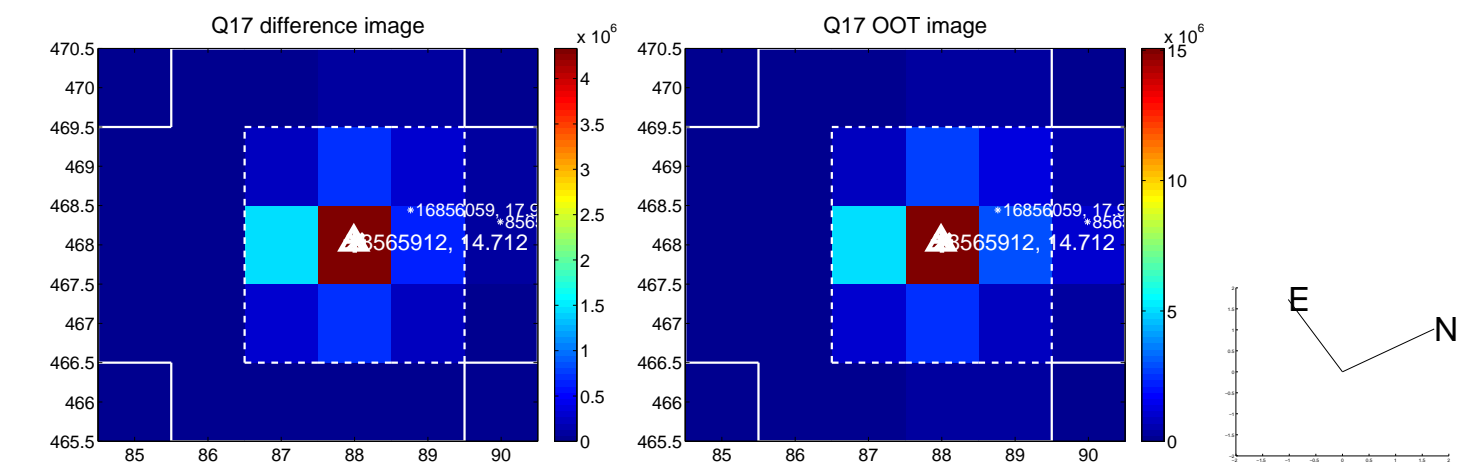
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



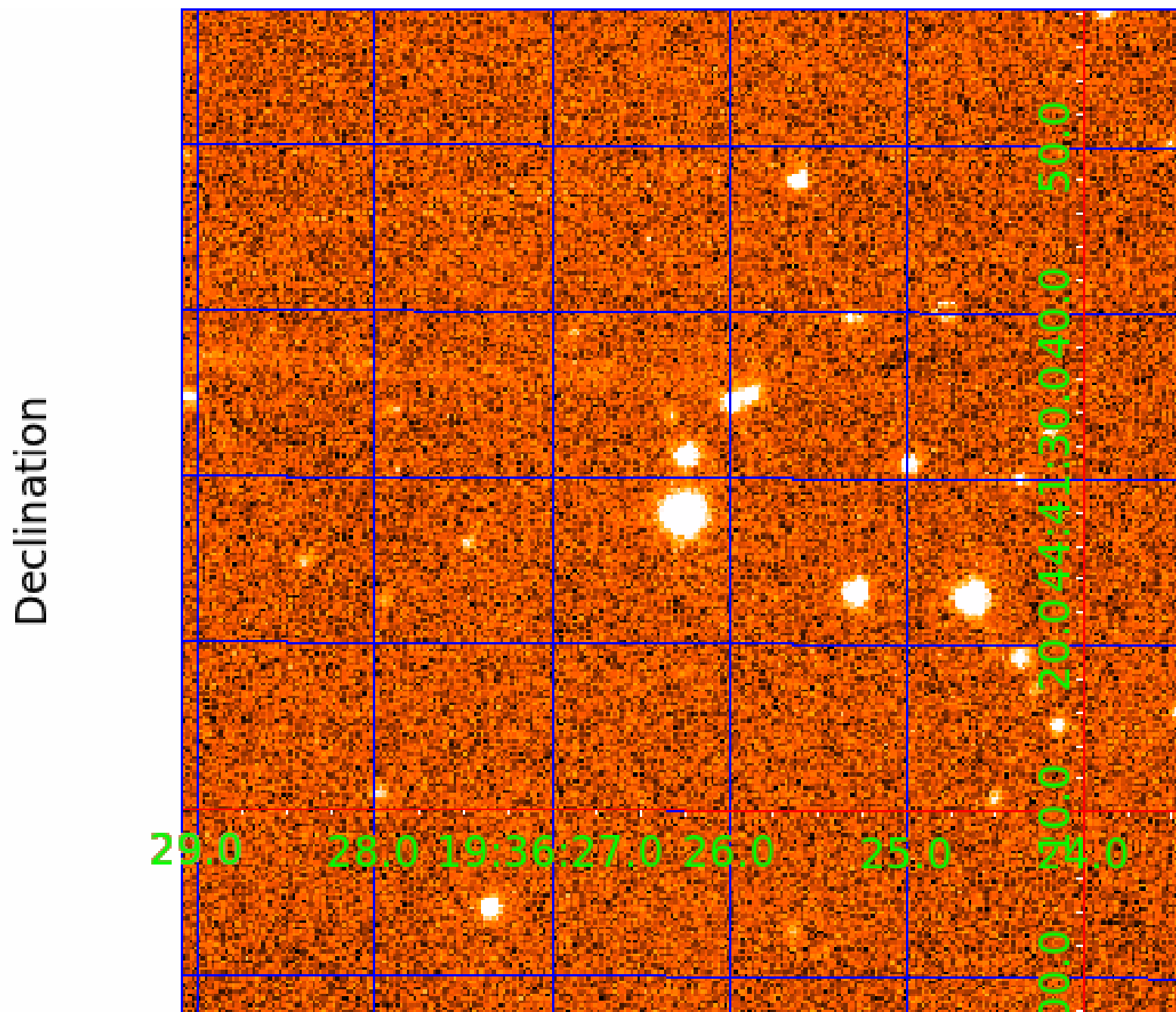
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008565912

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})
008565912-01	OBS	7898.01	1.012181	131.896411	310151.2	2.500	1472.3	-1.0	1.72	6987	31.74	13285.91
008565912-02	OBS	No	0.506083	131.919589	67074.0	4.202	269.6	186.8	1.72	6987	62.62	33479.08

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008565912-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
008565912-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—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.

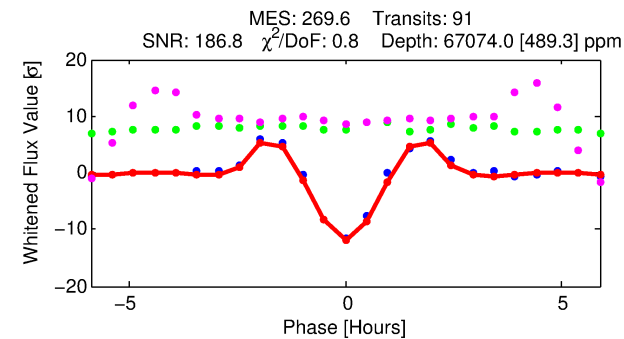
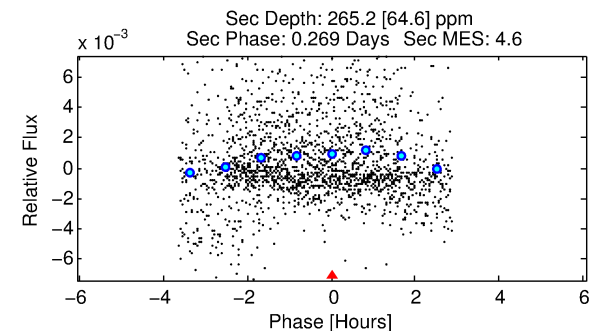
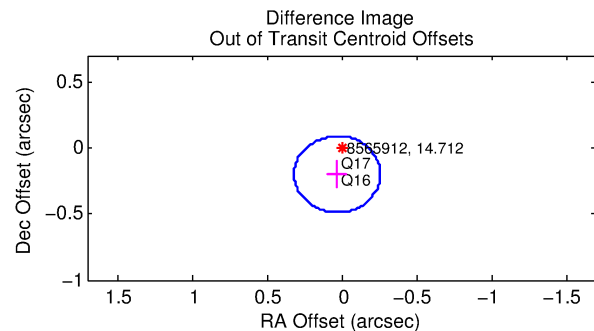
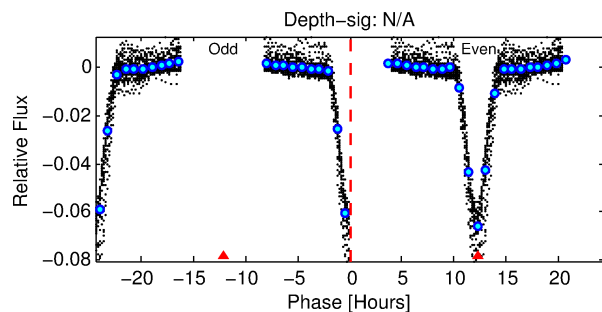
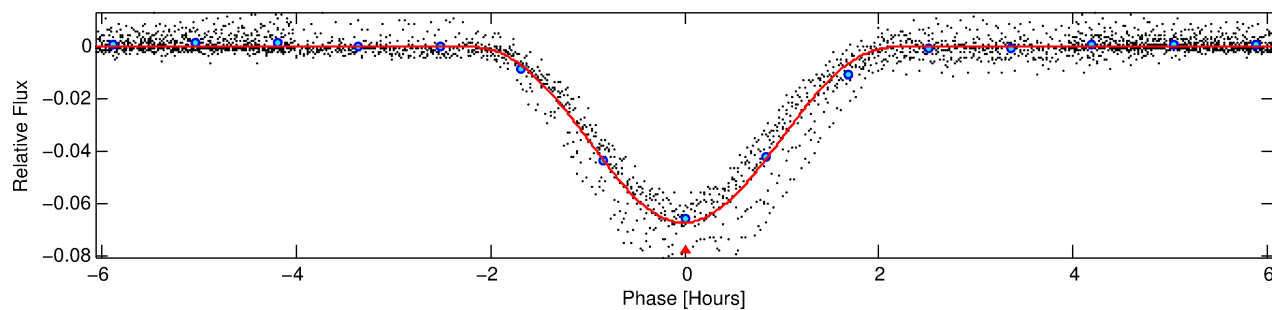
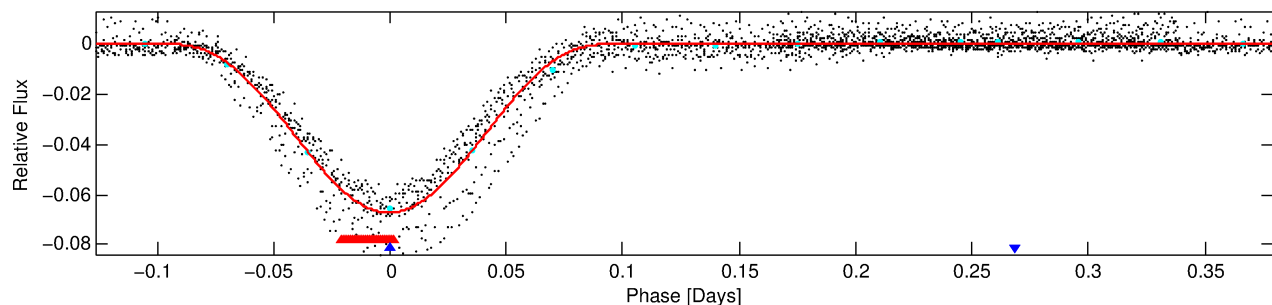
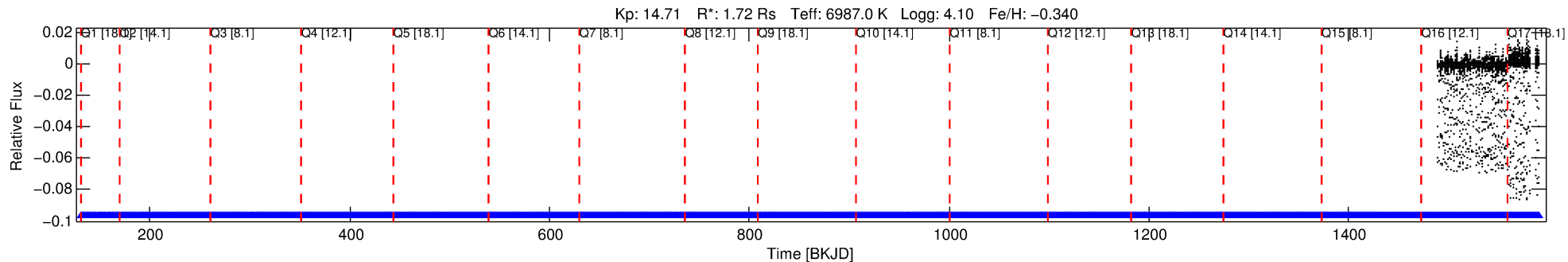
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008565912-02

No Significant Match Found

DV One-Page Summary

KIC: 8565912 Candidate: 2 of 2 Period: 0.506 d



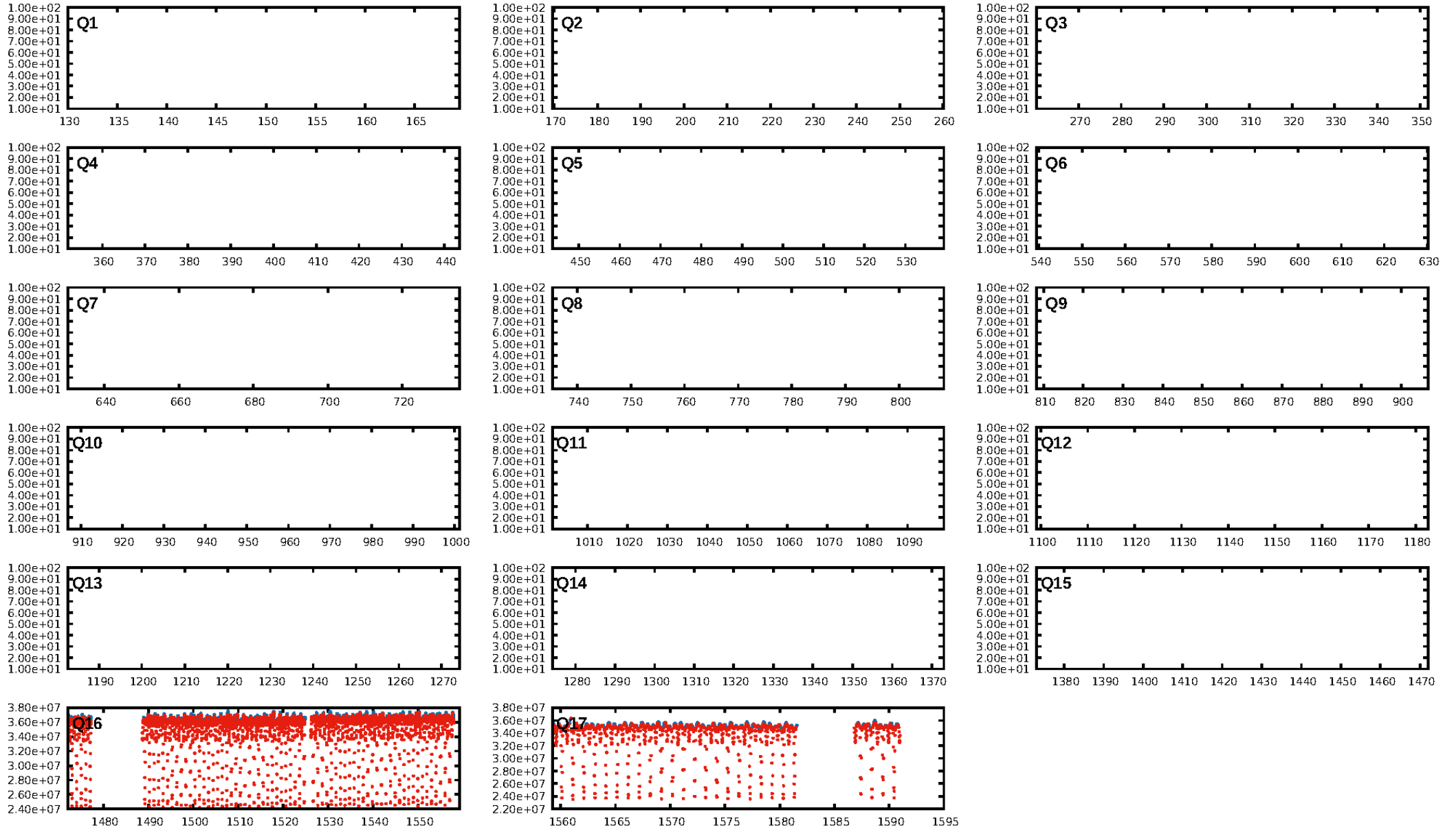
DV Fit Results:

Period = 0.50608 [0.00000] d
Epoch = 131.9196 [0.0001] BKJD
Rp/R* = 0.3344 [0.0138]
a/R* = 1.43 [0.01]
b = 0.90 [0.02]
Seff = 33479.08 [13776.13]
Teq = 3449 [355] K
Rp = 62.62 [17.63] Re
a = 0.0137 [0.0034] AU
Ag = 0.01 [0.00] [-314.93σ]
Teffp = 1542 [121] K [-5.09σ]

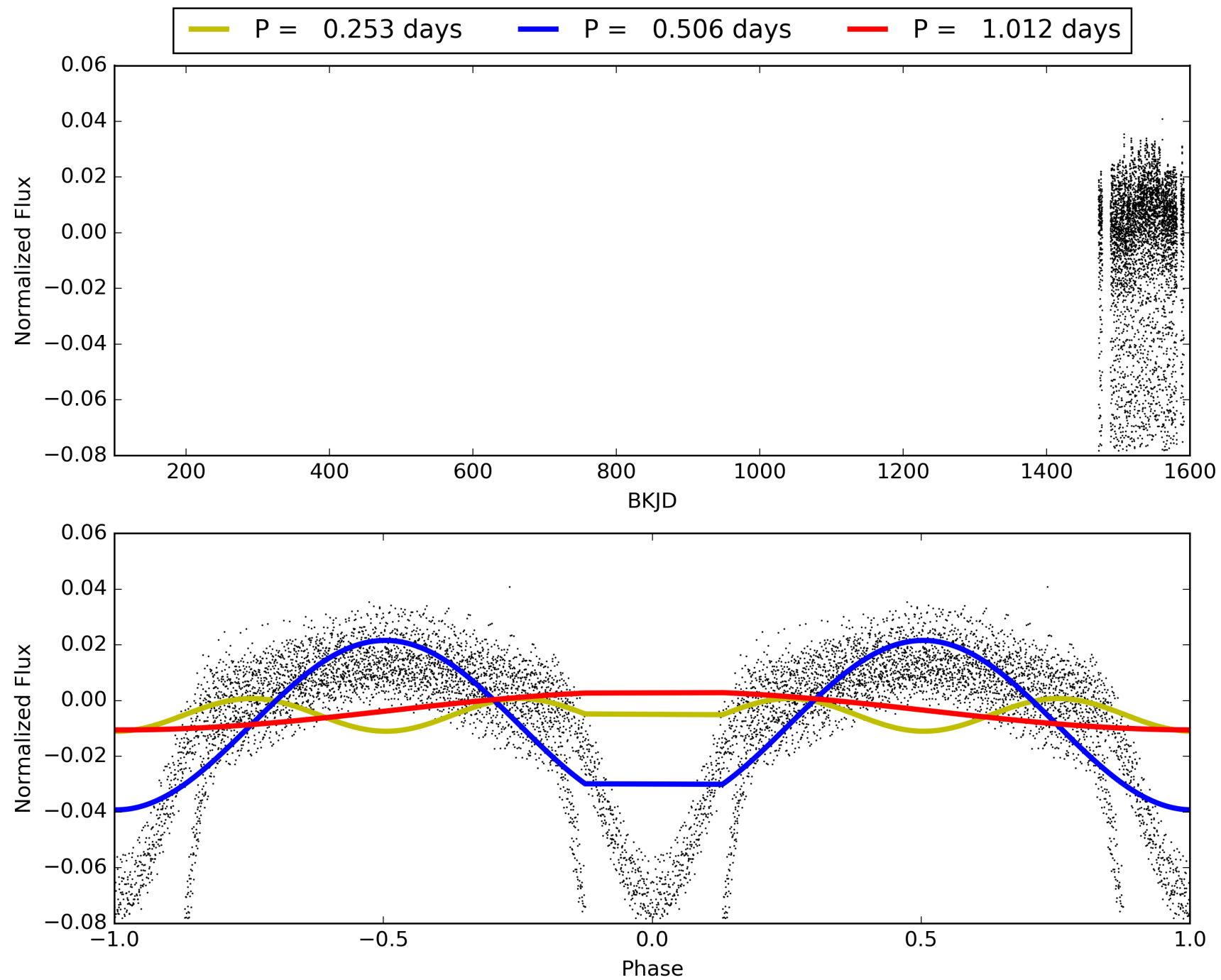
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 98.7% [2.48σ]
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [66/66]
GhostDiagnostic-chr: 1.407
Centroid-sig: 0.0%
Centroid-so: 0.467 arcsec [93.29σ]
OotOffset-rm: 0.202 arcsec [2.11σ]
KicOffset-rm: 0.143 arcsec [1.81σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 008565912-02, PDC Light Curves

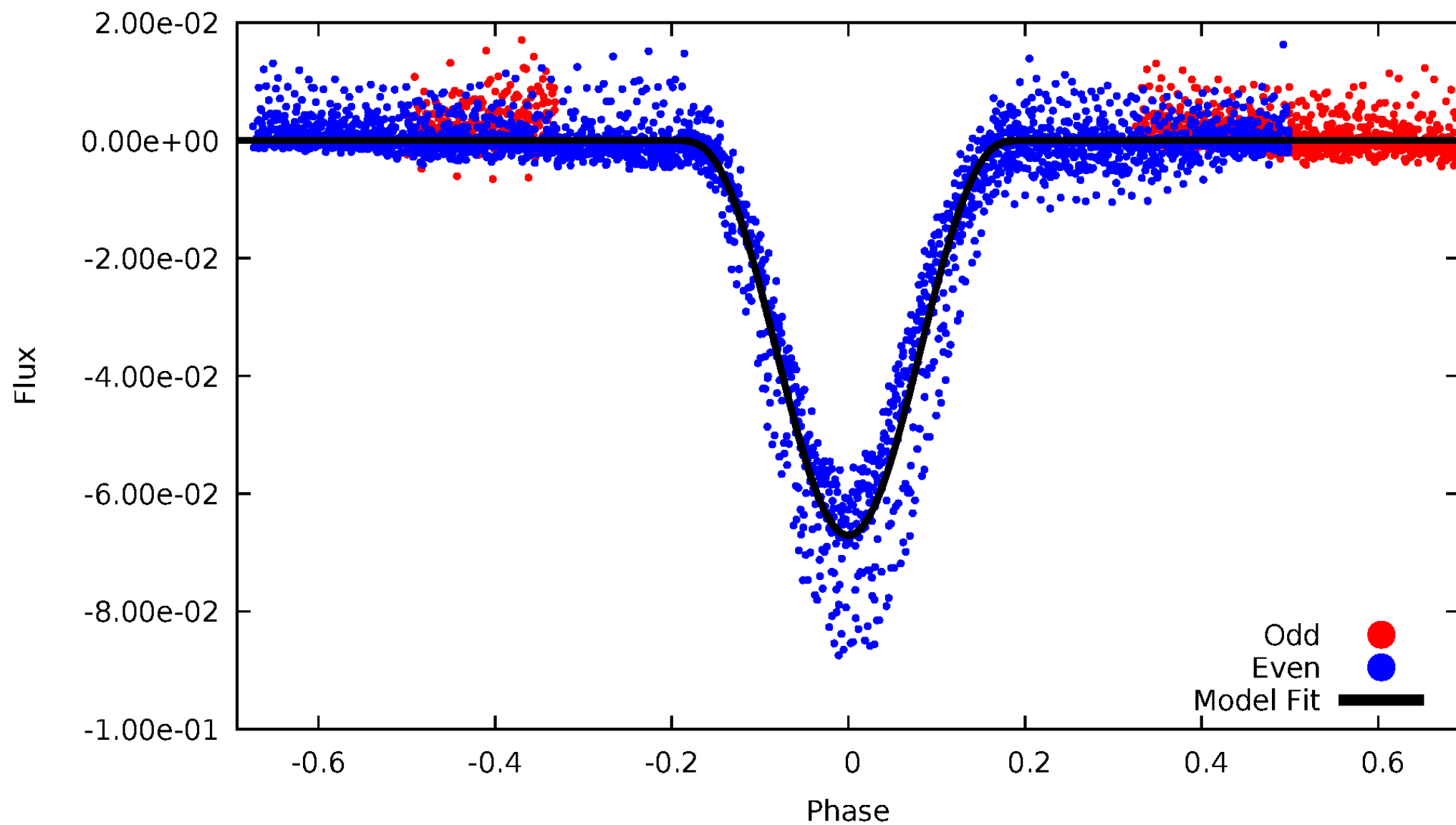


TCE 008565912-02



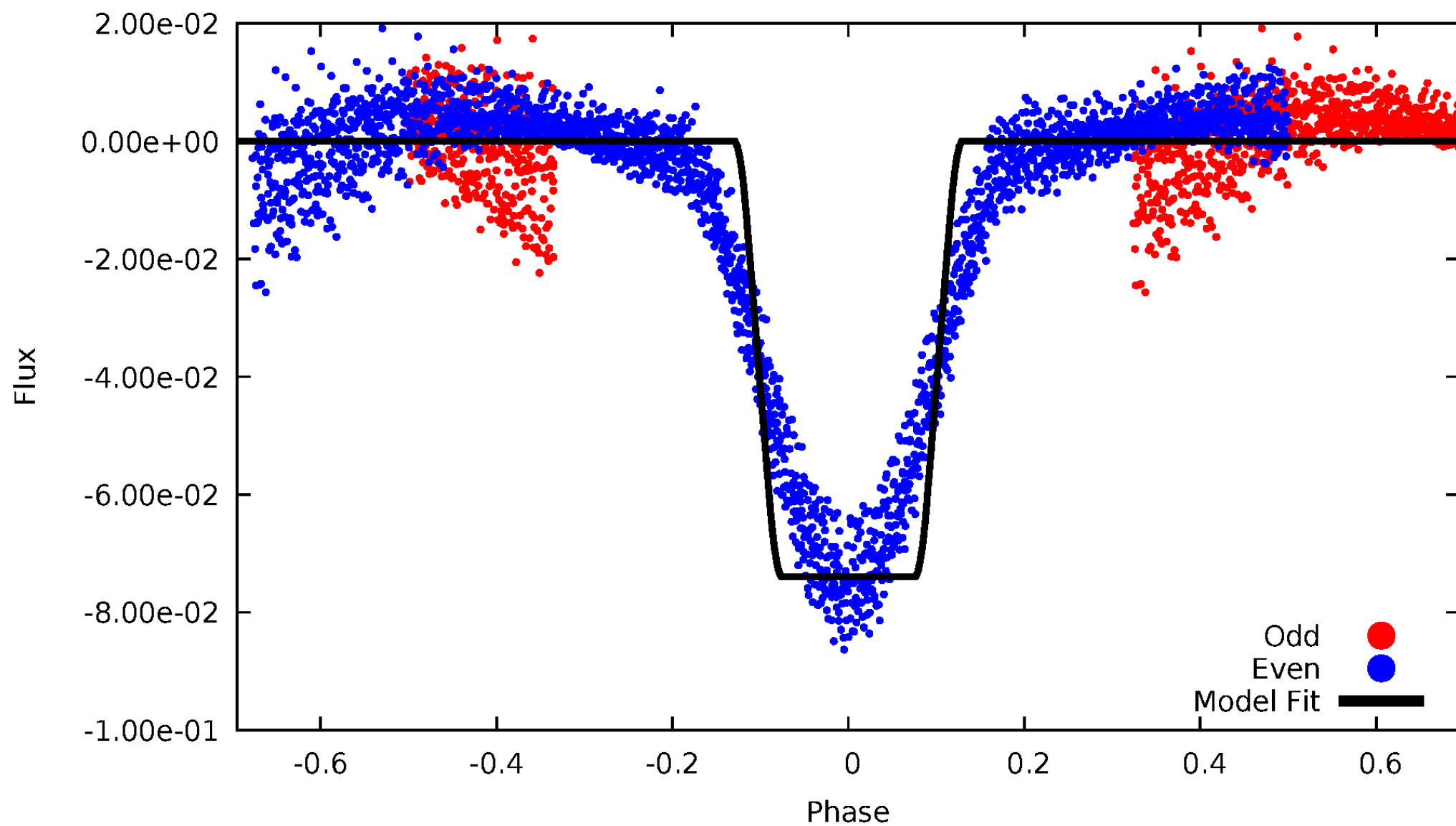
DV Odd/Even

TCE 008565912-02



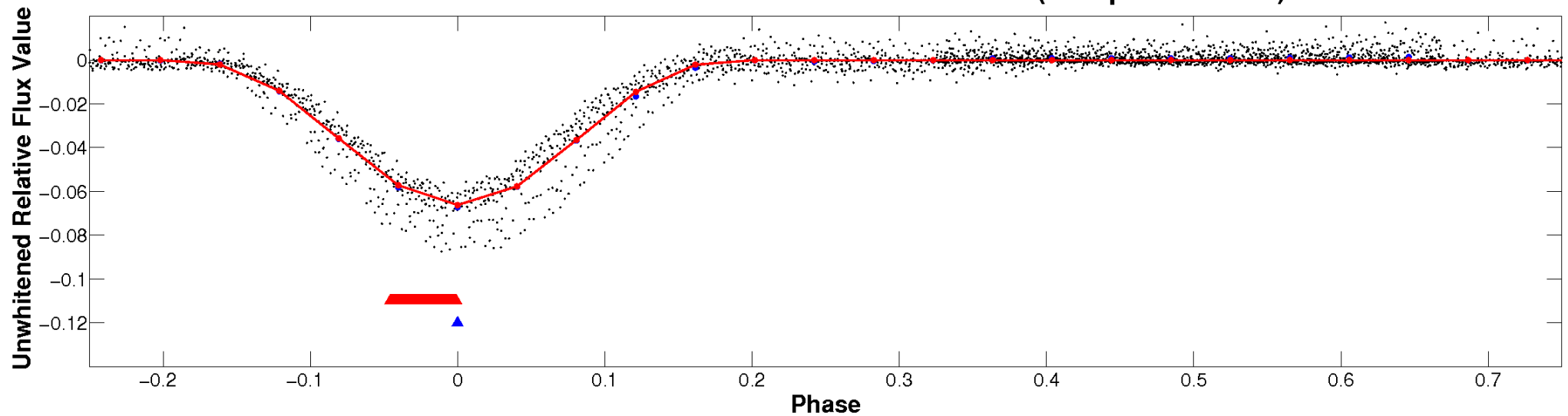
ALT Odd/Even

TCE 008565912-02

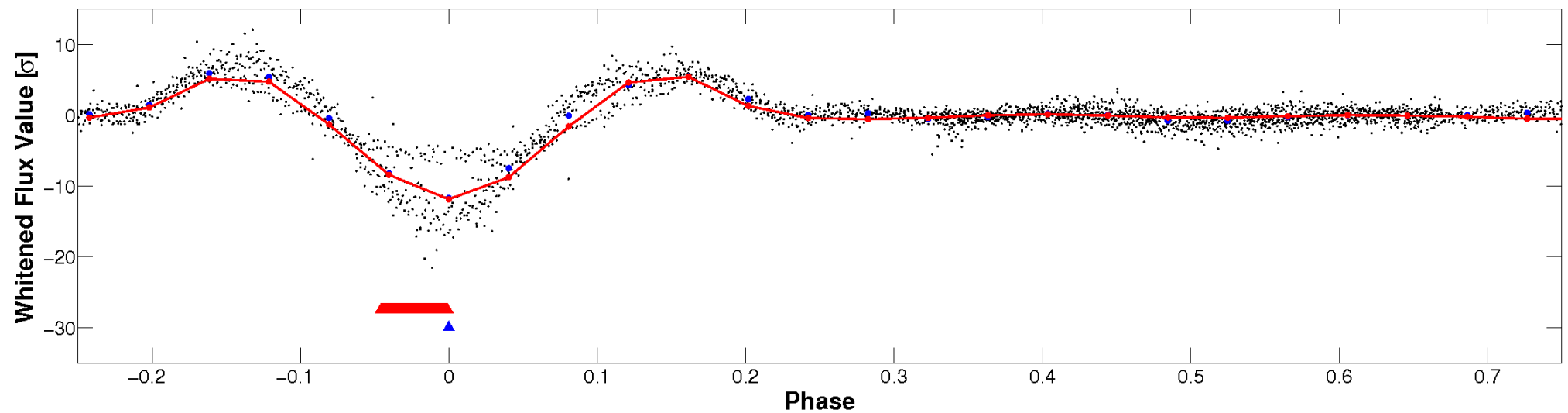


Non-Whitened Vs. Whitened Light Curve

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

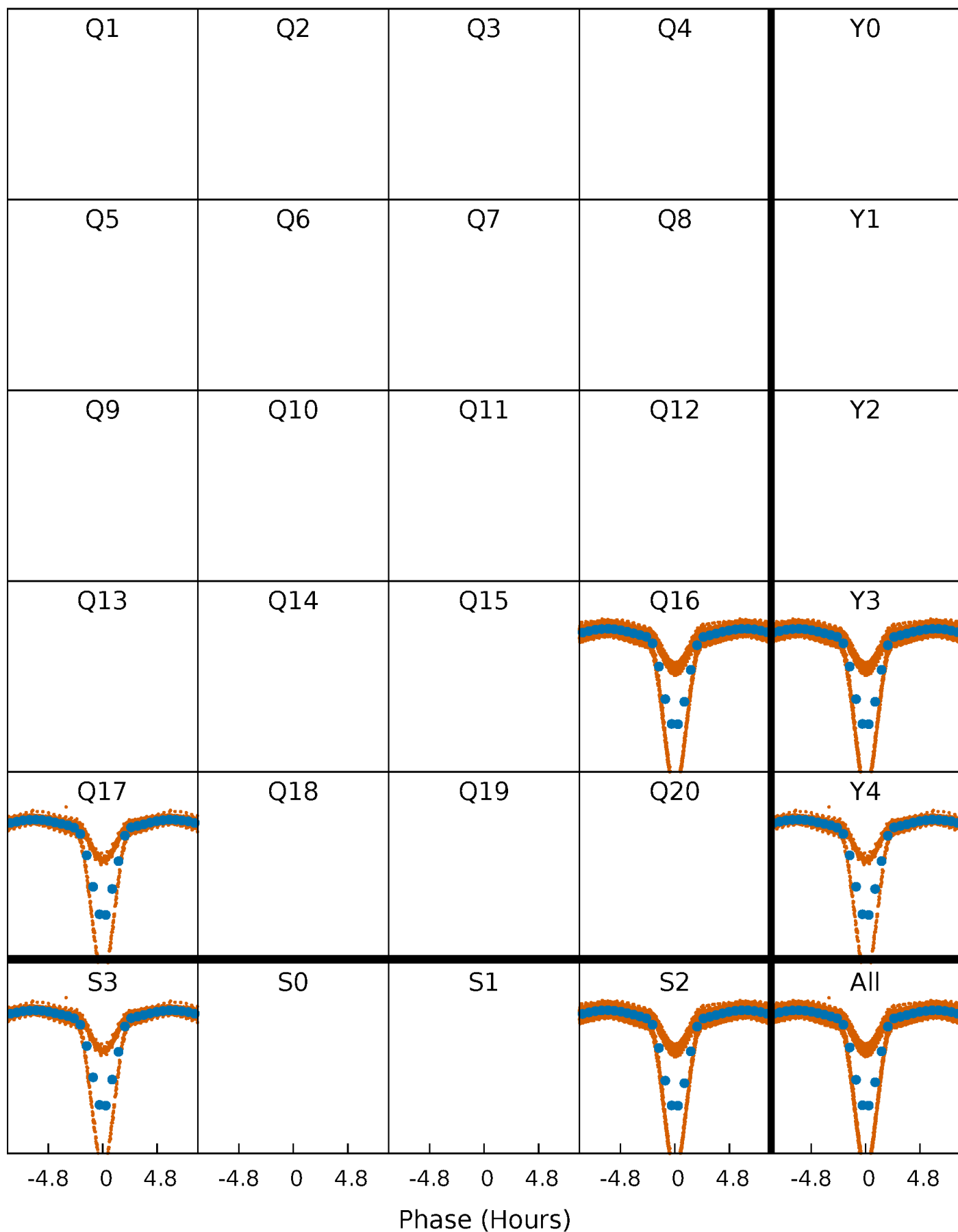


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



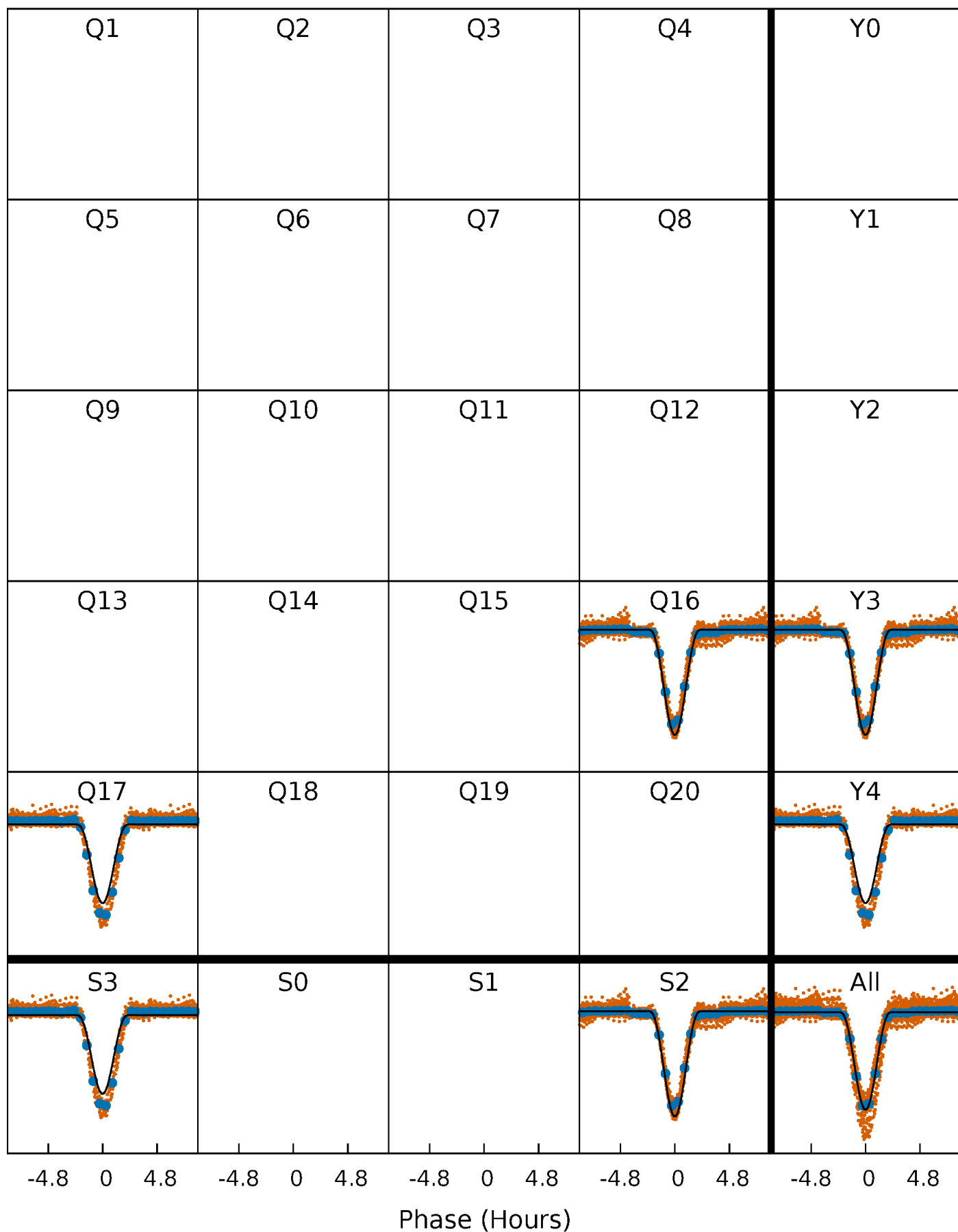
PDC Quarter-Phased Transit Curves

TCE 008565912-02 P= 0.506083 Days $T_0=131.919589$ (BKJD)



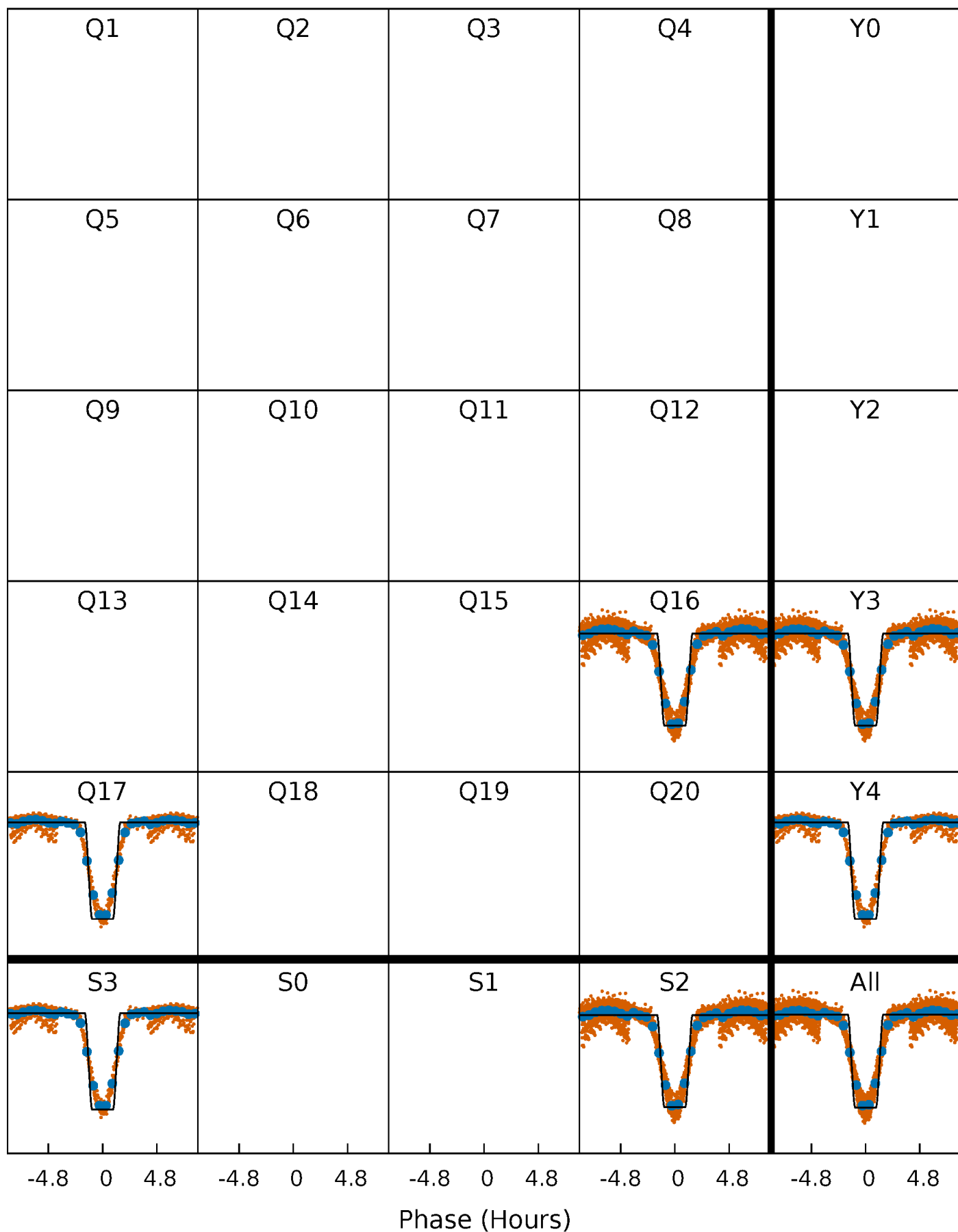
DV Quarter-Phased Transit Curves

TCE 008565912-02 P= 0.506083 Days $T_0=131.919589$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

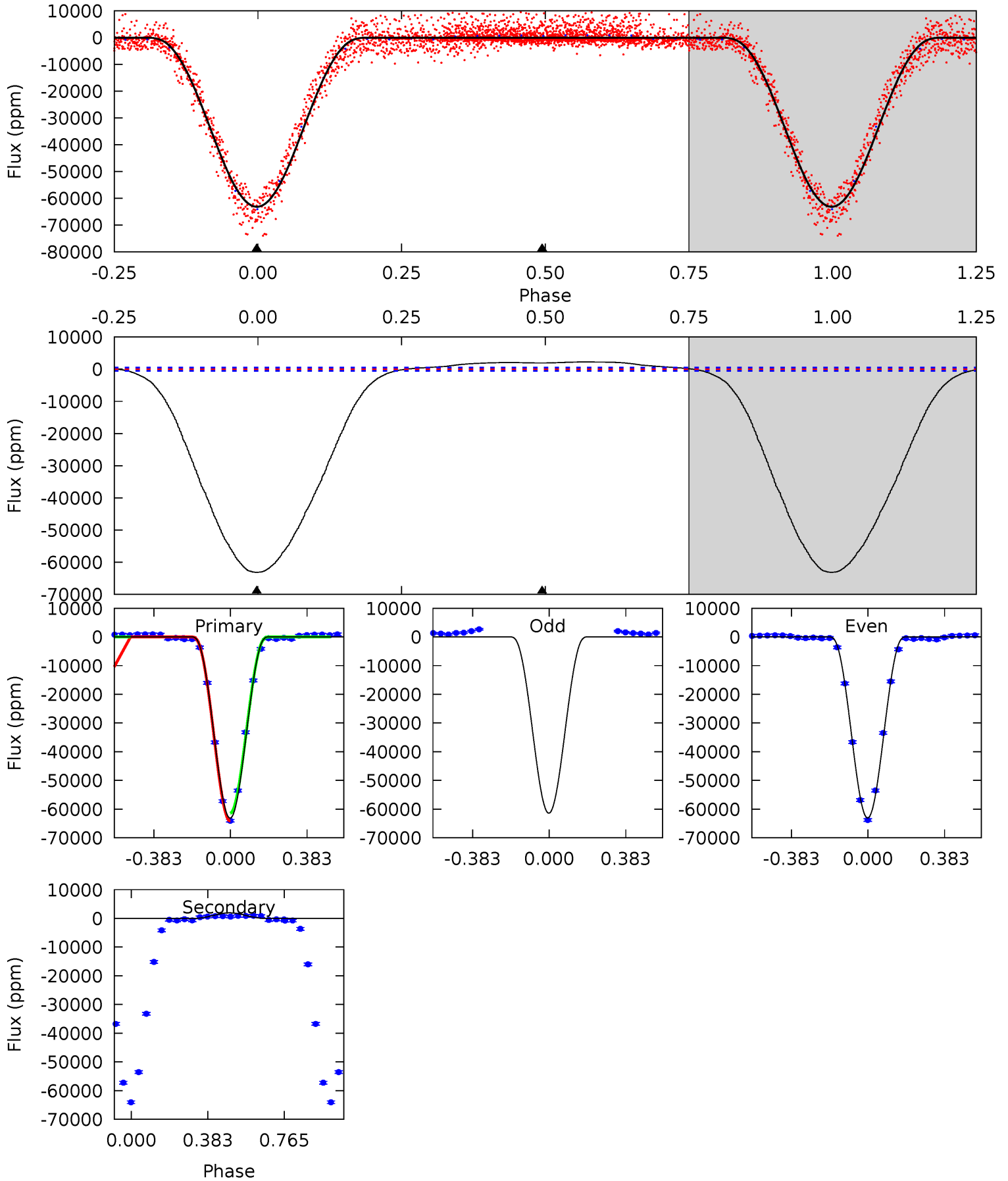
TCE 008565912-02 P= 0.506082 Days $T_0=131.922309$ (BKJD)



DV Model-Shift Uniqueness Test

008565912-02, P = 0.506083 Days, E = 131.919589 Days

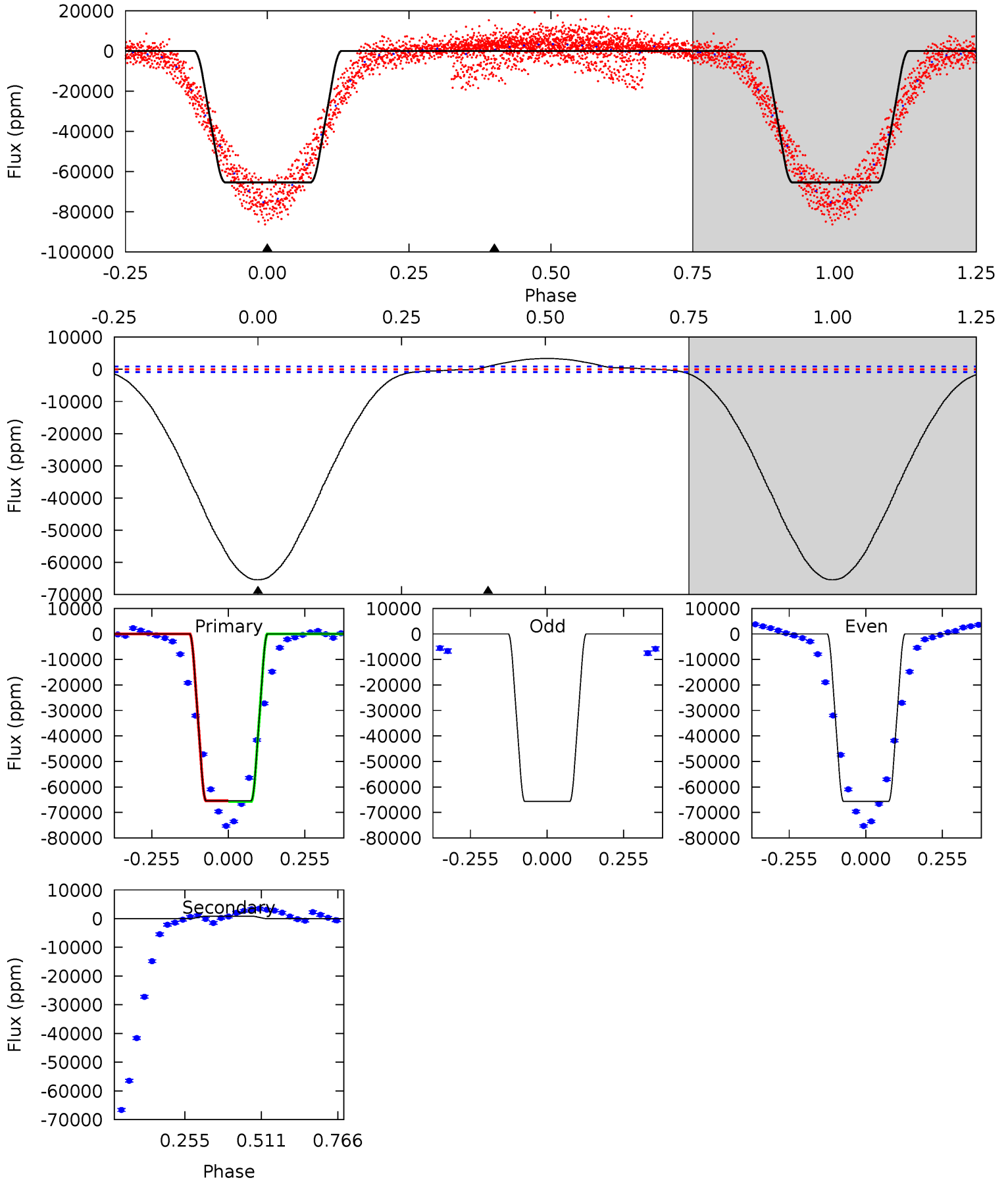
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
533.9	-16.3	0	0	4.27	0.87	6.02	533.9	533.9	-16.3	-16.3	7.42	1.04	0.03	11.5



Alt Model-Shift Uniqueness Test

008565912-02, P = 0.506082 Days, E = 131.922309 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
334.7	-4.49	0	0	4.36	1.14	3.22	334.7	334.7	-4.49	-4.49	0.02	0.99	0.05	0.99



Stellar Parameters For KIC 008565912

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6987^{+216}_{-312}	$4.096^{+0.209}_{-0.171}$	$-0.340^{+0.300}_{-0.300}$	$1.716^{+0.478}_{-0.478}$	$1.343^{+0.202}_{-0.224}$	$0.374^{+0.457}_{-0.179}$
	+3%/-4%	+5%/-4%	+88%/-88%	+28%/-28%	+15%/-17%	+122%/-48%
Source	KIC0	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 008565912-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	1930 ± 118	$62.69^{+10.28}_{-9.36}$	4804^{+371}_{-361}	-4304^{+217}_{-220}	$-0.051^{+0.013}_{-0.017}$
Alt.	877 ± 195	$50.78^{+9.30}_{-7.50}$	4803^{+348}_{-386}	-4265^{+223}_{-216}	$-0.035^{+0.011}_{-0.014}$

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

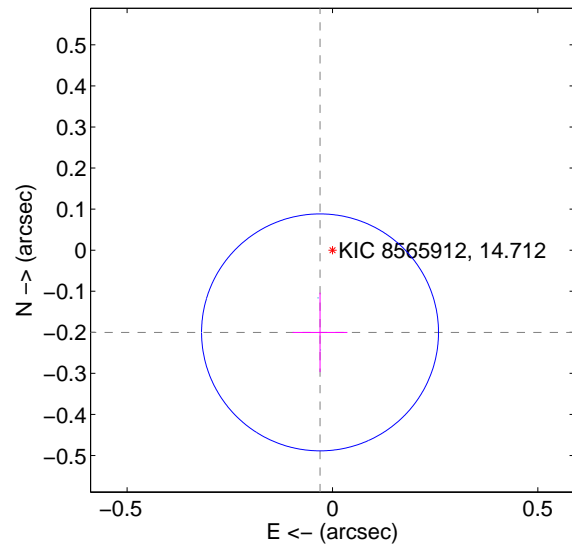
Supplemental centroid analysis for 008565912-02. Kepler magnitude: 14.71. Transit SNR 186.75

There are 2 quarters with good PRF difference image offsets

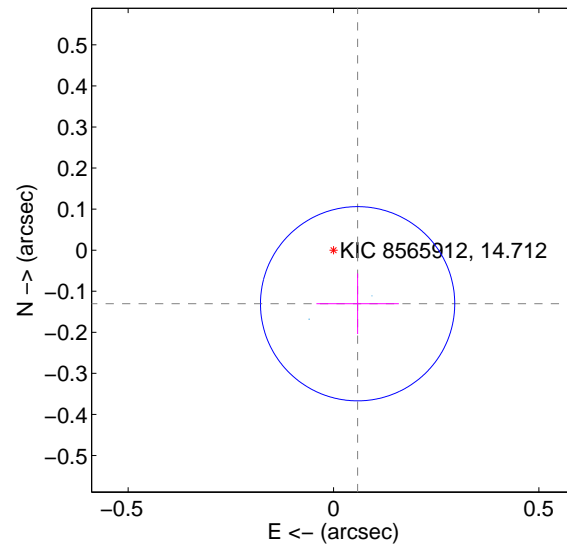
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.202 ± 0.096	2.11	0.030 ± 0.067	-0.200 ± 0.097
PRF-fit source offset from KIC position	0.143 ± 0.079	1.81	-0.059 ± 0.100	-0.130 ± 0.074
photometric centroid source offset	0.47 ± 0.01	93.29	-0.23 ± 0.00	-0.41 ± 0.01

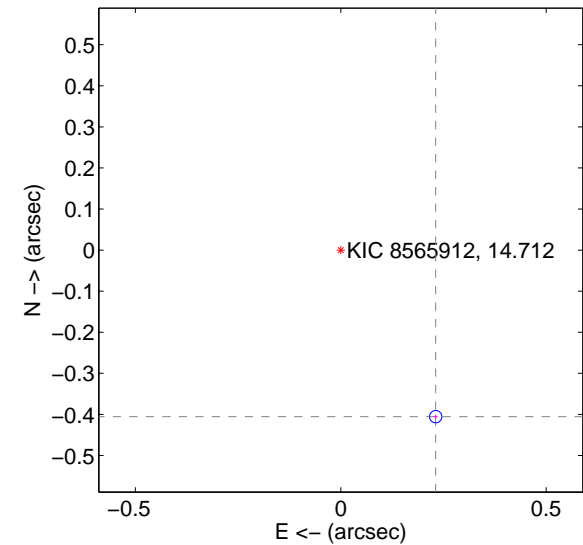
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



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

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



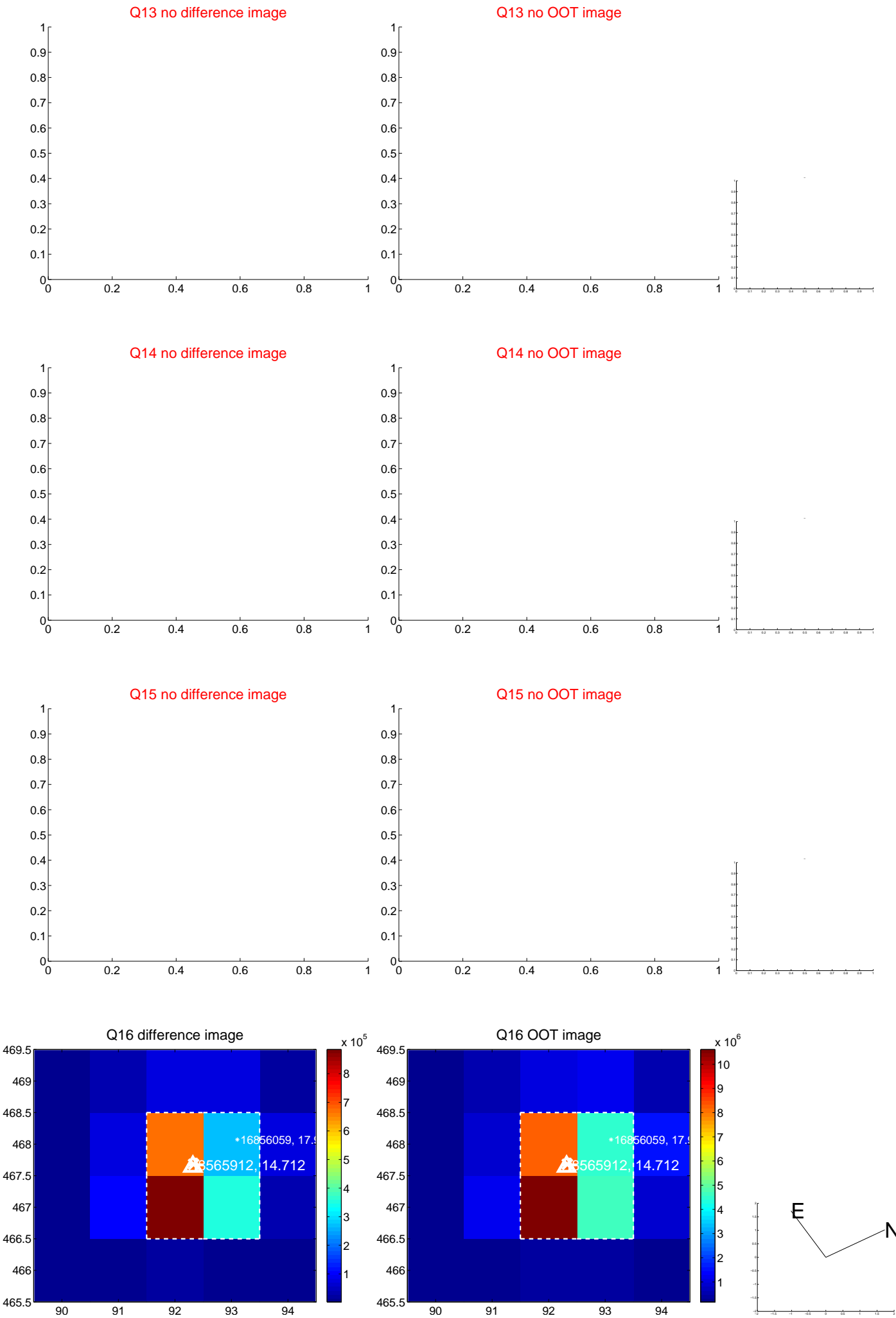
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



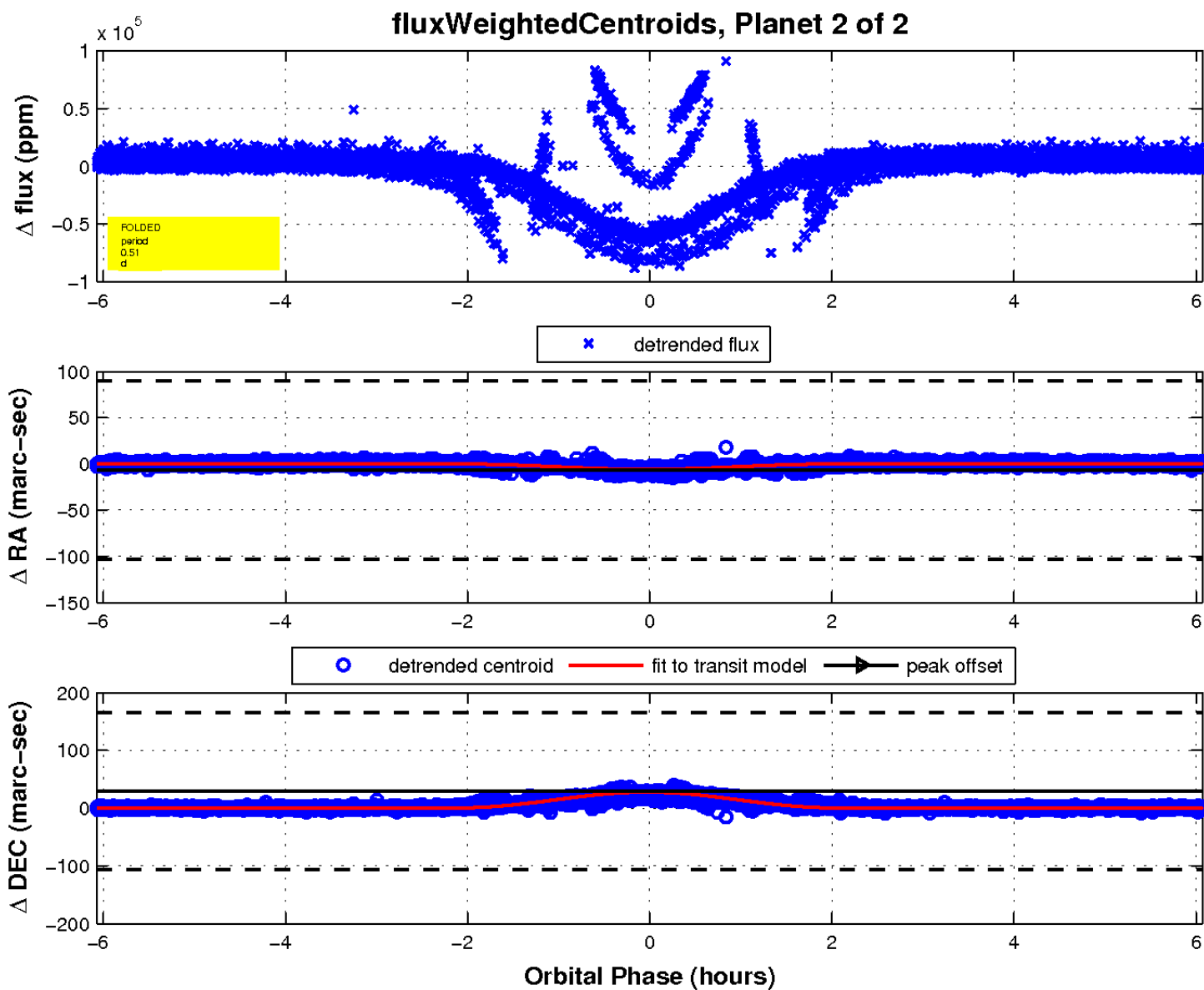
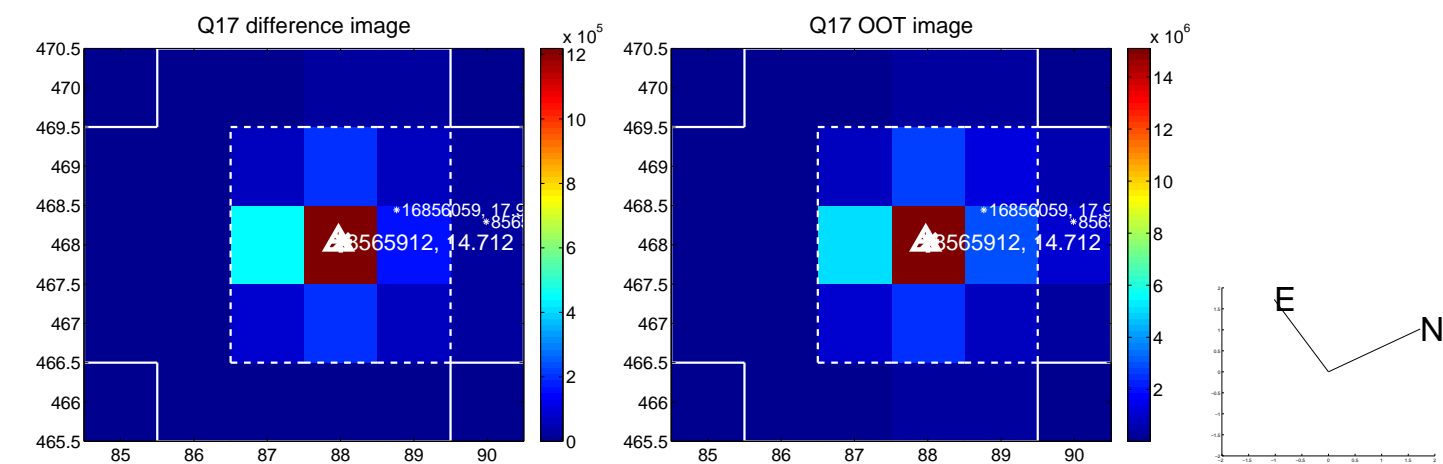
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

