

KIC 011668623

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})
011668623-01	OBS	No	0.534967	131.721562	42263.3	3.651	45.4	31.6	1.00	5780	20.62	6009.48
011668623-02	OBS	No	0.550904	131.817943	18892.1	6.611	12.6	7.0	1.00	5780	15.24	5778.79

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011668623-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_DIFFS
011668623-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST

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

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

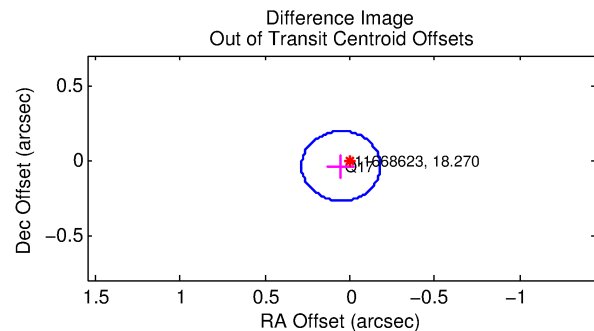
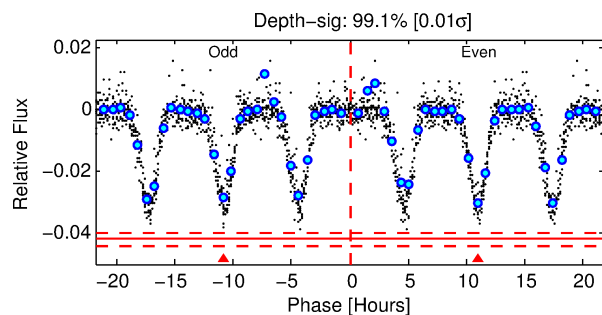
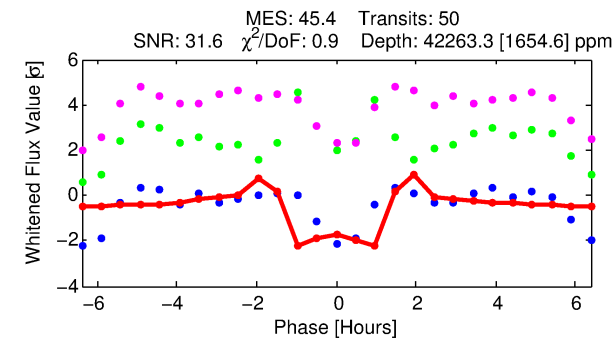
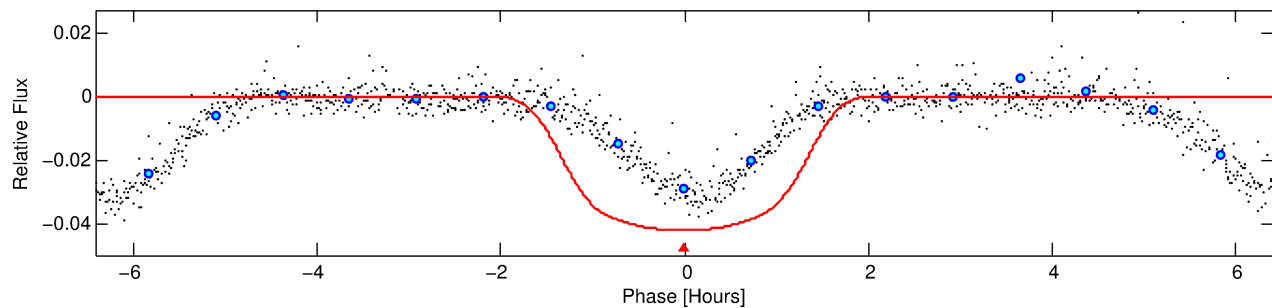
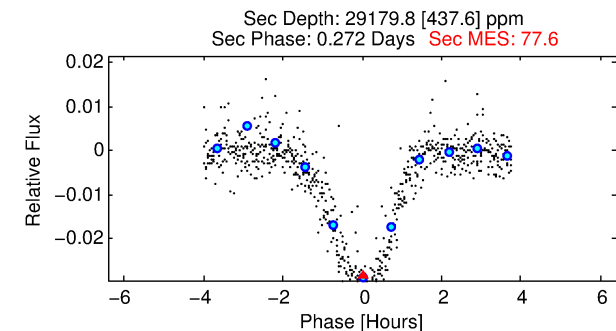
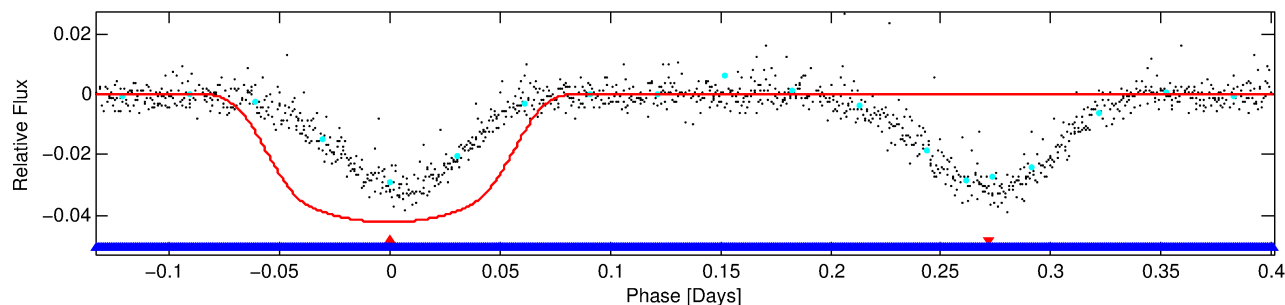
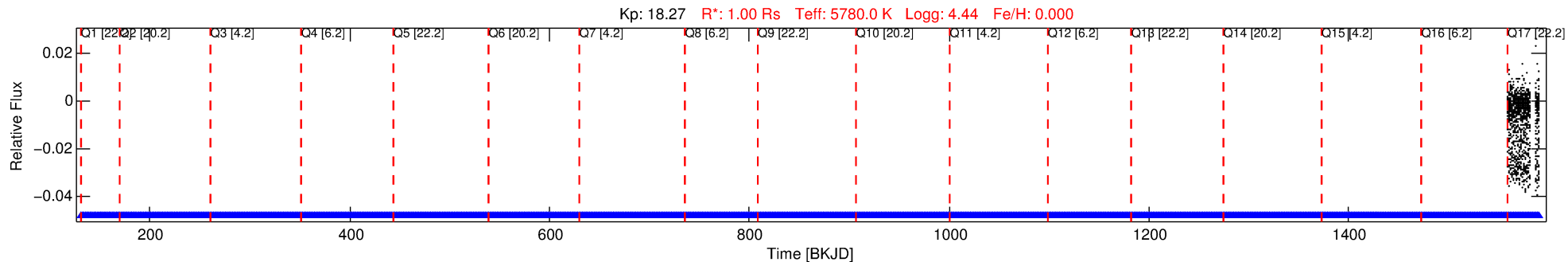
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011668623-01

No Significant Match Found

DV One-Page Summary

KIC: 11668623 Candidate: 1 of 2 Period: 0.535 d



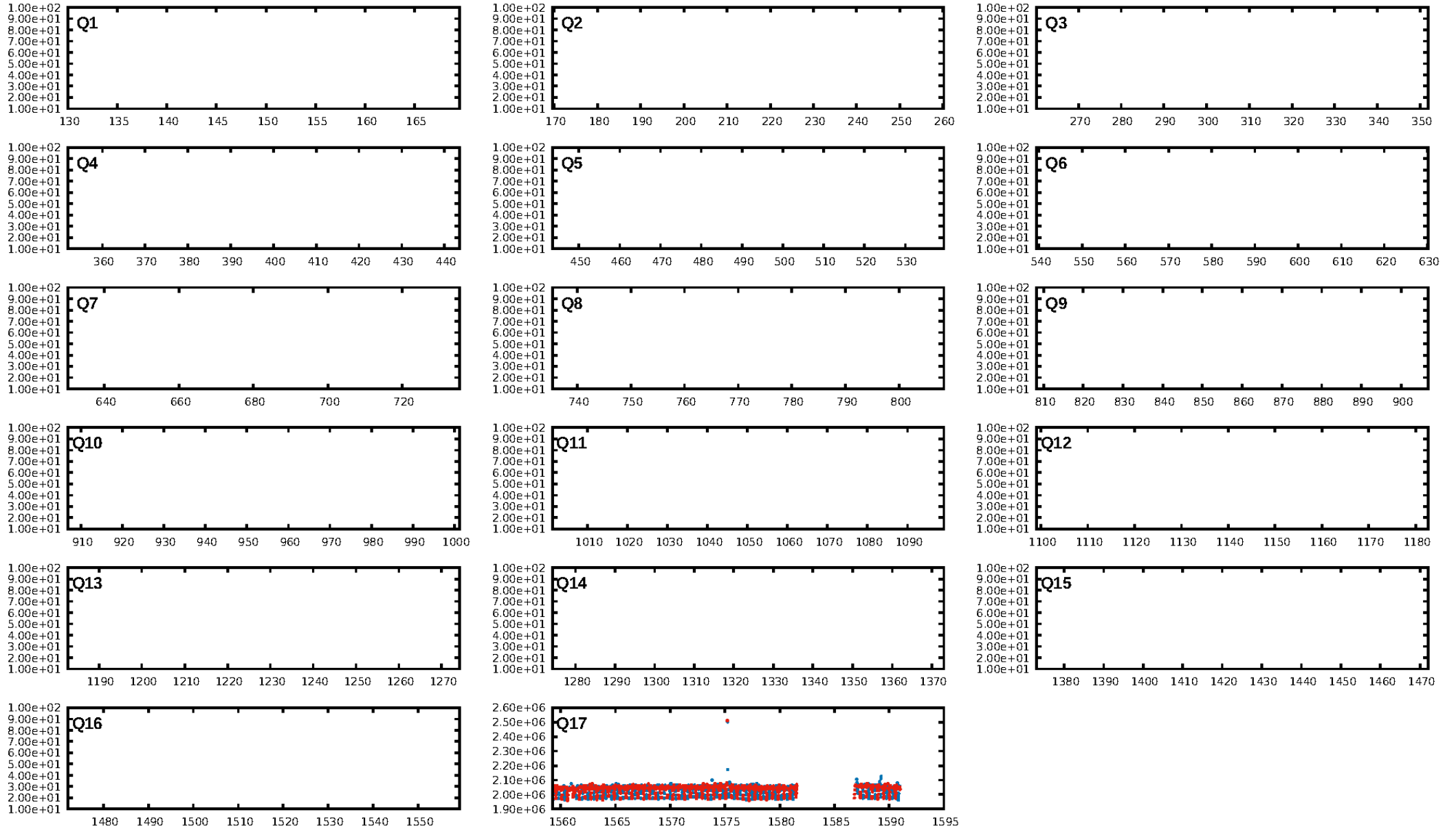
DV Fit Results:

Period = 0.53497 [0.00000] d
Epoch = 131.7216 [0.0006] BKJD
Rp/R* = 0.1890 [0.0045]
a/R* = 1.51 [0.04]
b = 0.30 [0.14]
Seff = 6009.48 [0.05]
Teq = 2245 [0] K
Rp = 20.62 [0.49] Re
a = 0.0129 [0.0000] AU
Ag = 6.28 [0.31] [16.77σ]
Teffp = 5495 [69] K [47.19σ]

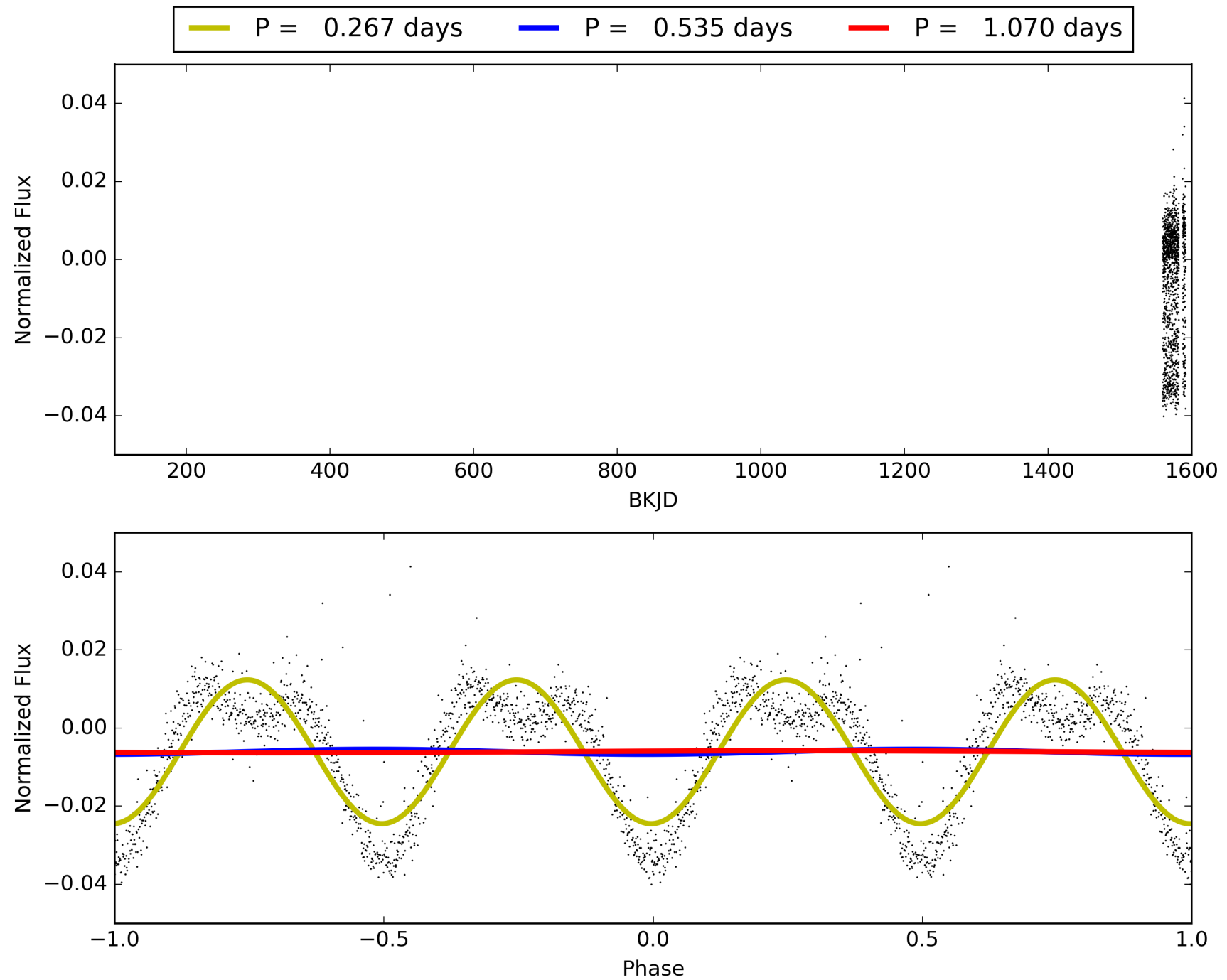
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 4.0% [0.05σ]
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: N/A
GhostDiagnostic-chr: -7.953
Centroid-sig: 0.7%
Centroid-so: 0.813 arcsec [11.29σ]
OotOffset-rm: 0.067 arcsec [0.86σ]
KicOffset-rm: 0.722 arcsec [9.68σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 0.00 [0/1]

TCE 011668623-01, PDC Light Curves

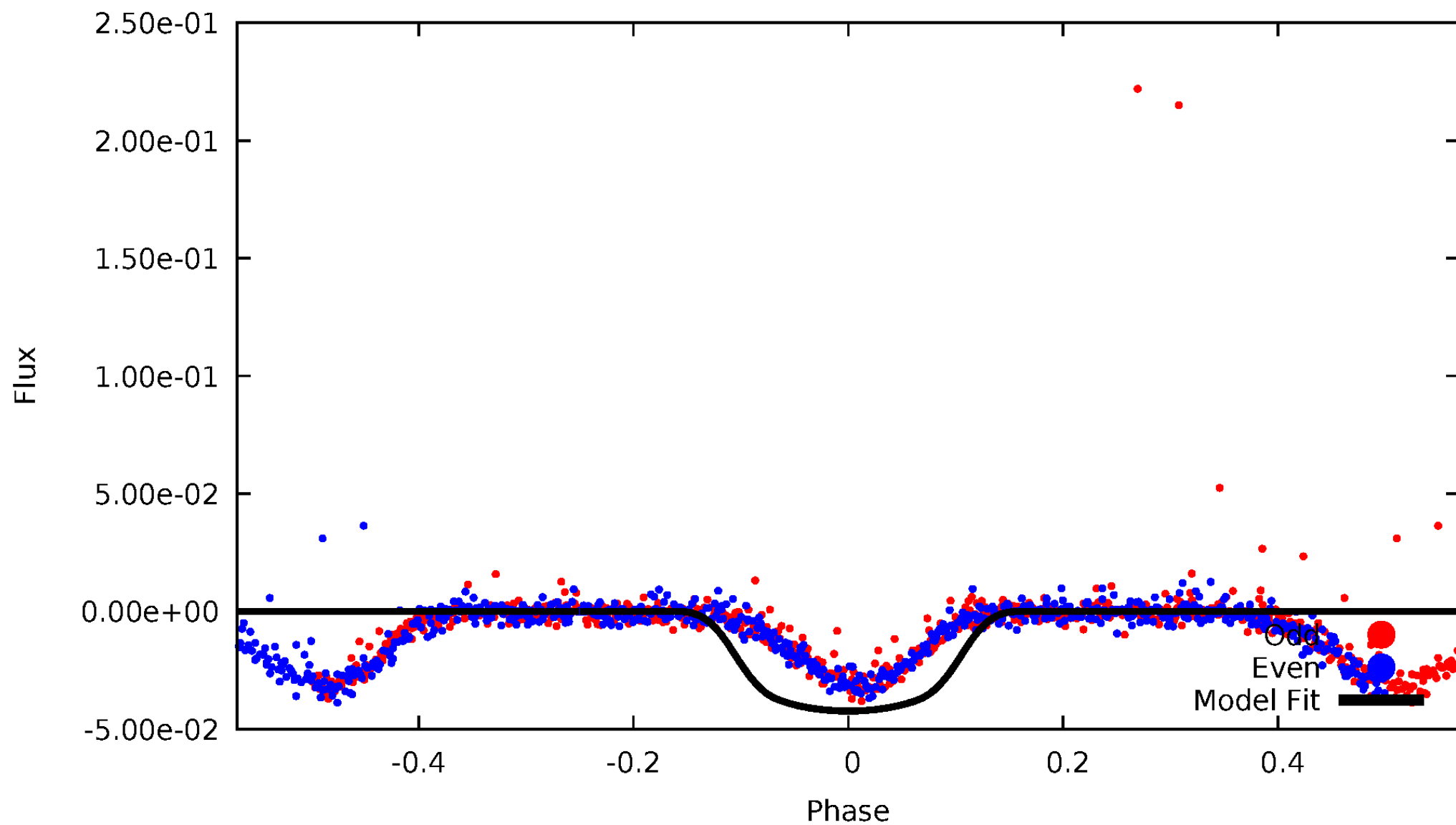


TCE 011668623-01



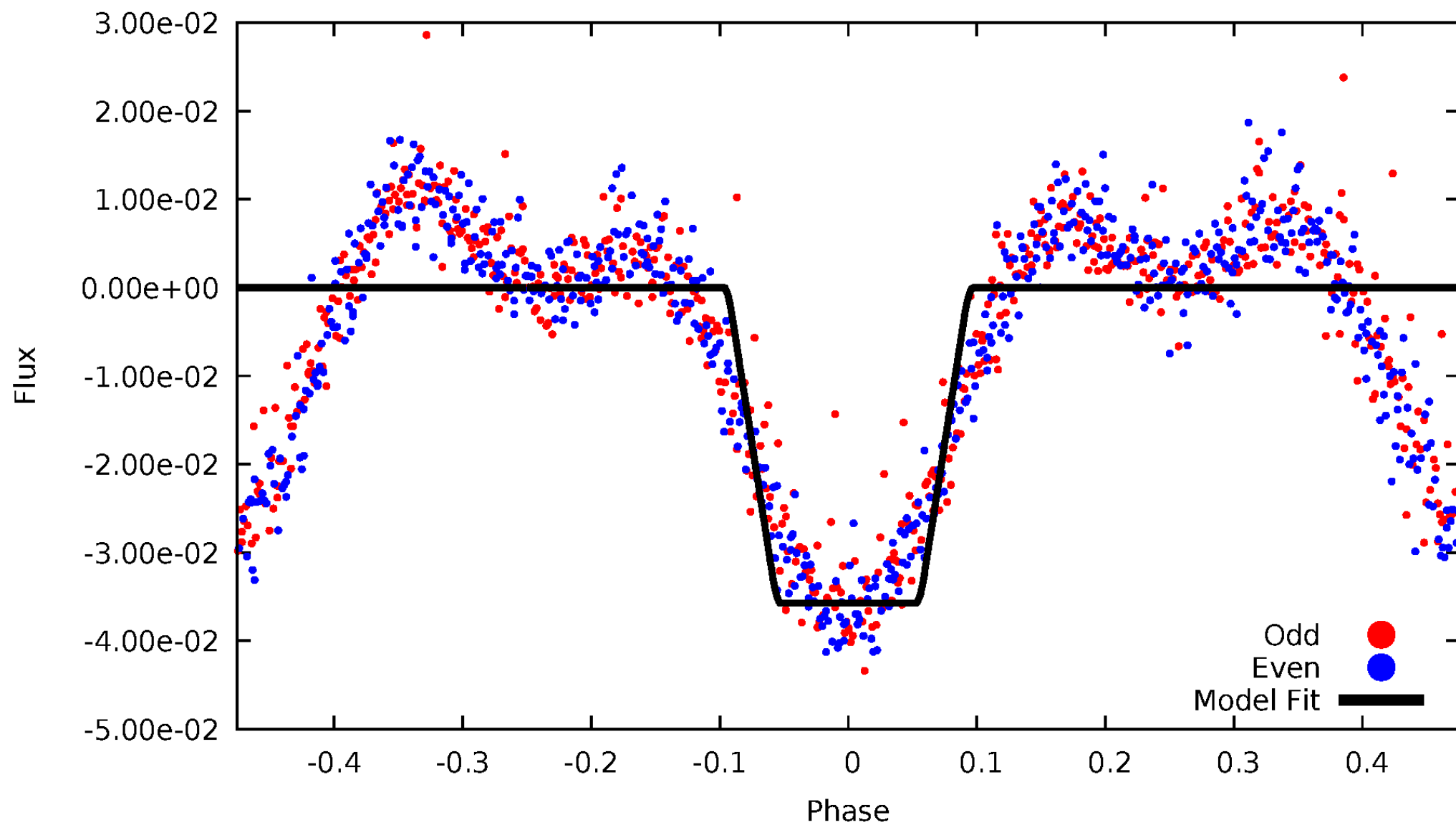
DV Odd/Even

TCE 011668623-01



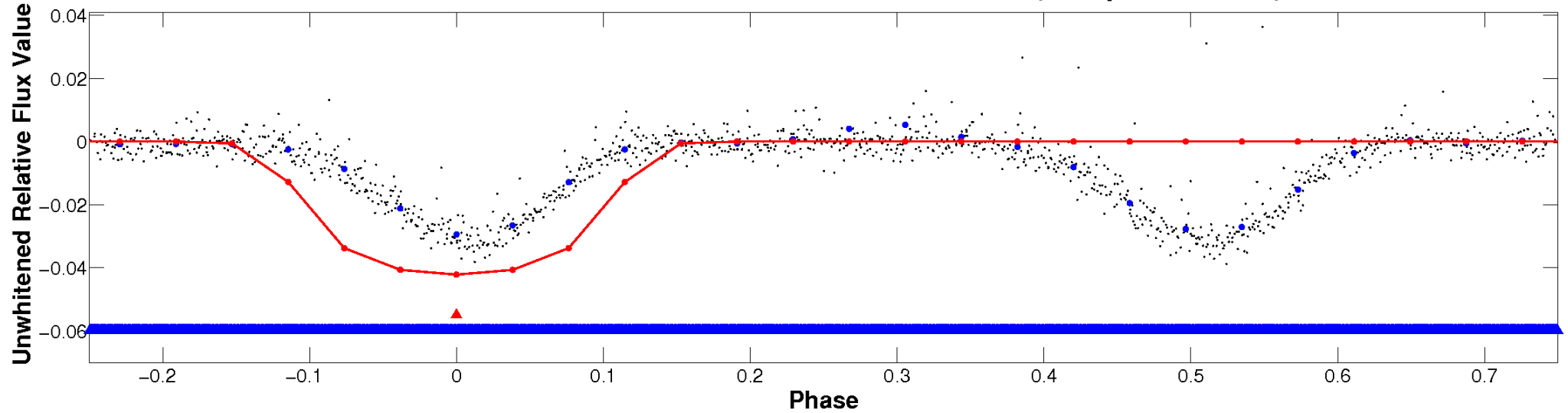
ALT Odd/Even

TCE 011668623-01

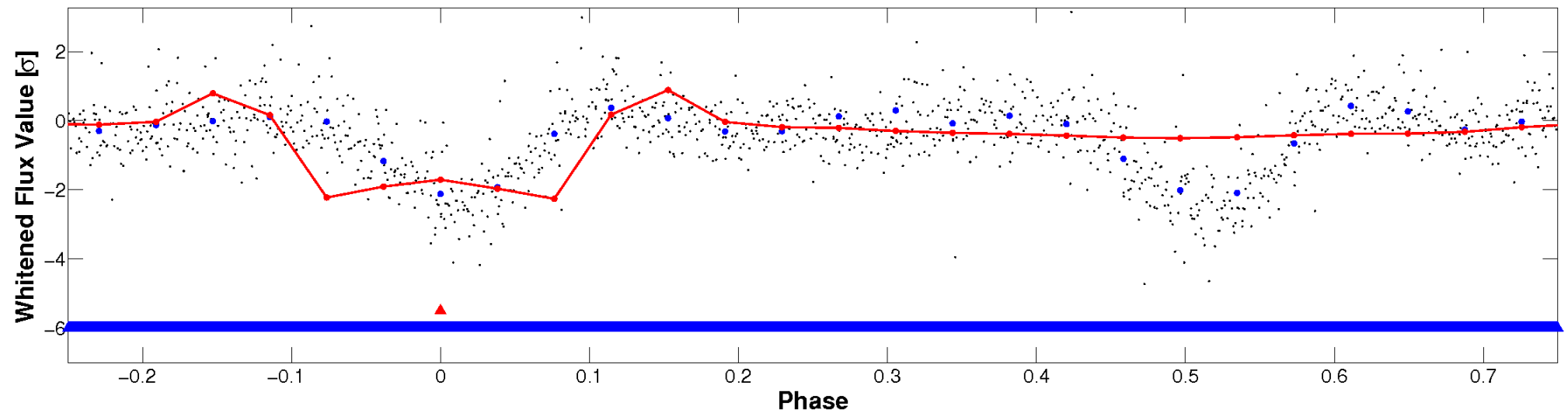


Non-Whitened Vs. Whitened Light Curve

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

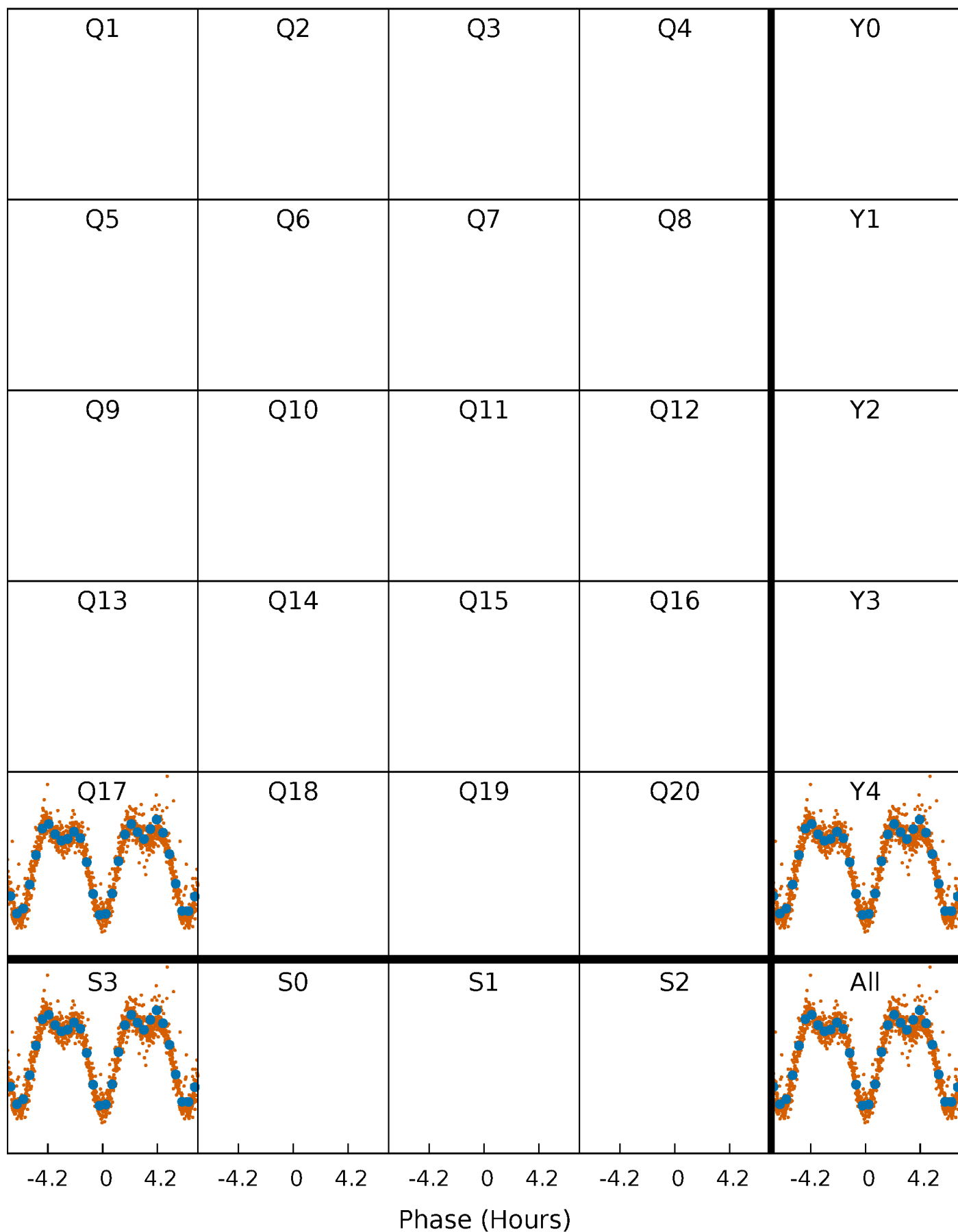


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



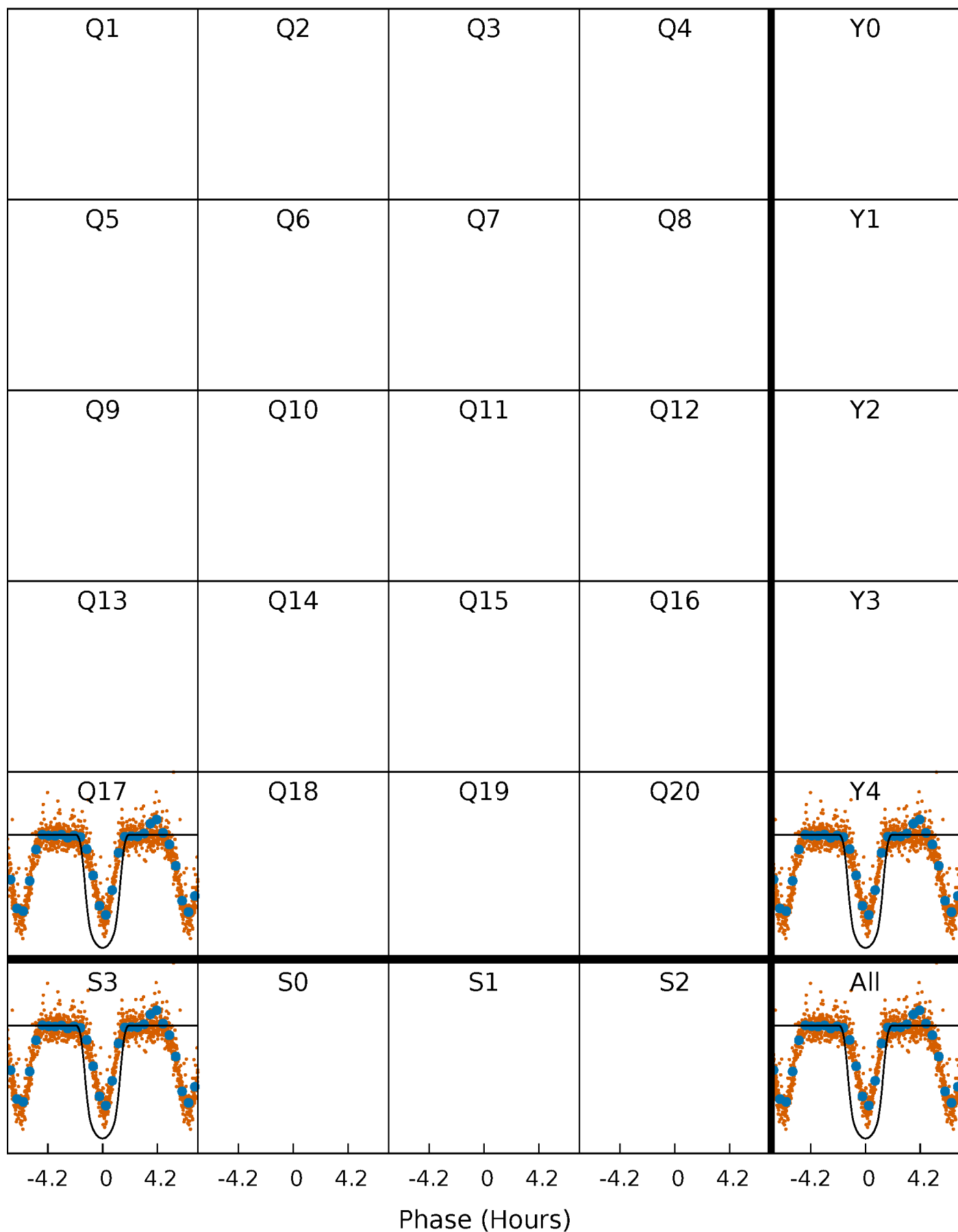
PDC Quarter-Phased Transit Curves

TCE 011668623-01 P= 0.534967 Days $T_0=131.721562$ (BKJD)



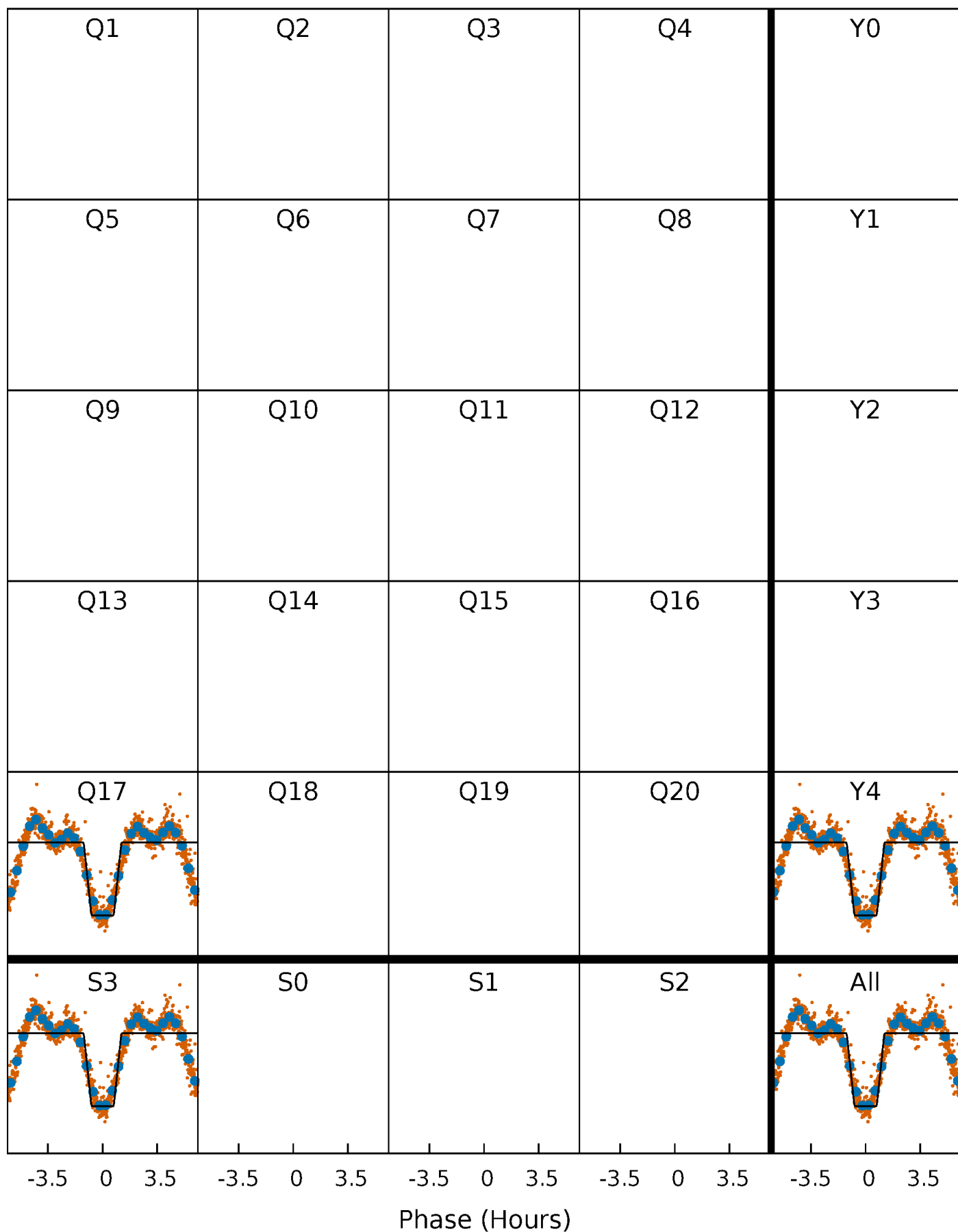
DV Quarter-Phased Transit Curves

TCE 011668623-01 P= 0.534967 Days $T_0=131.721562$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

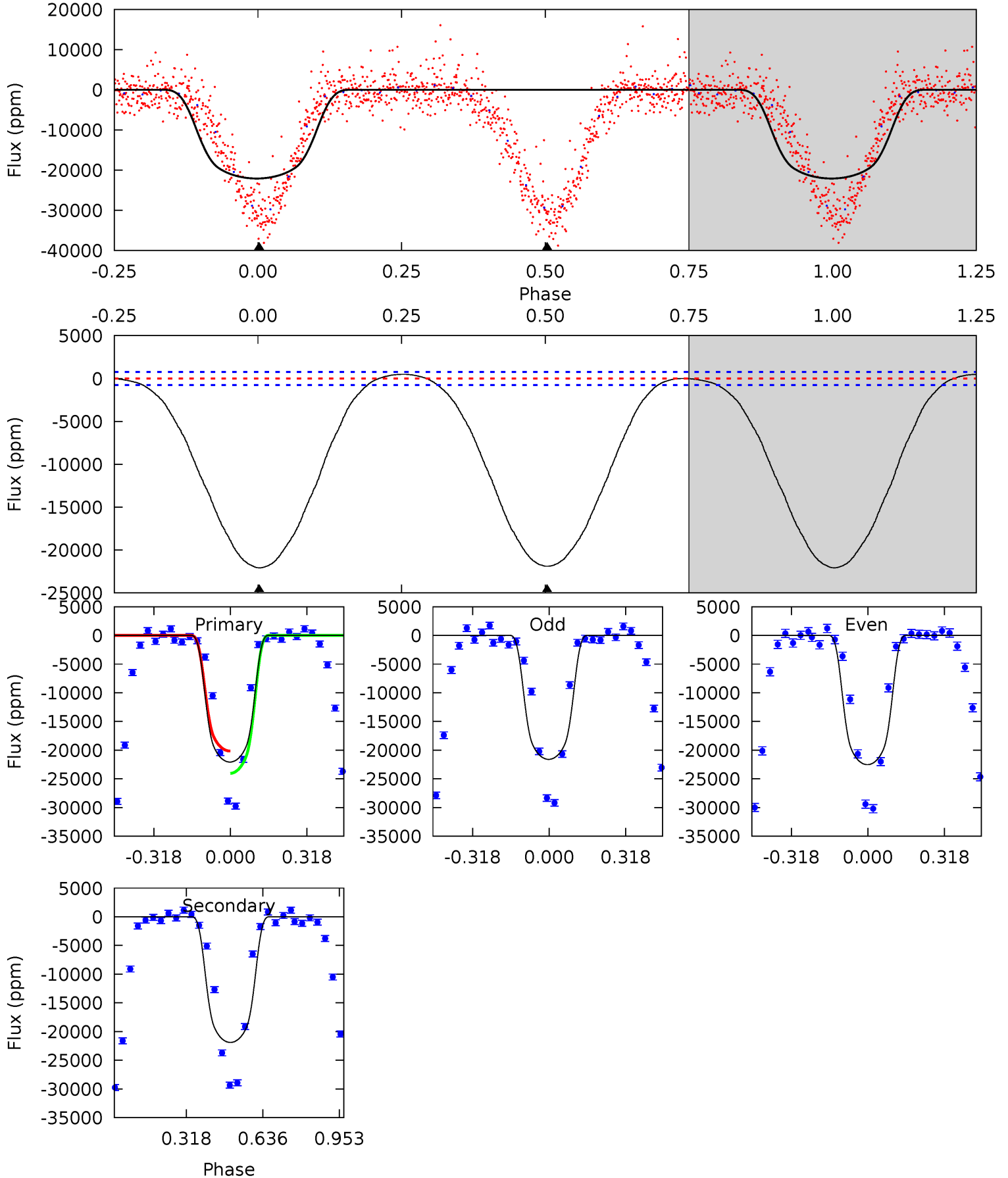
TCE 011668623-01 P= 0.534967 Days $T_0=131.721562$ (BKJD)



DV Model-Shift Uniqueness Test

011668623-01, P = 0.534967 Days, E = 131.721562 Days

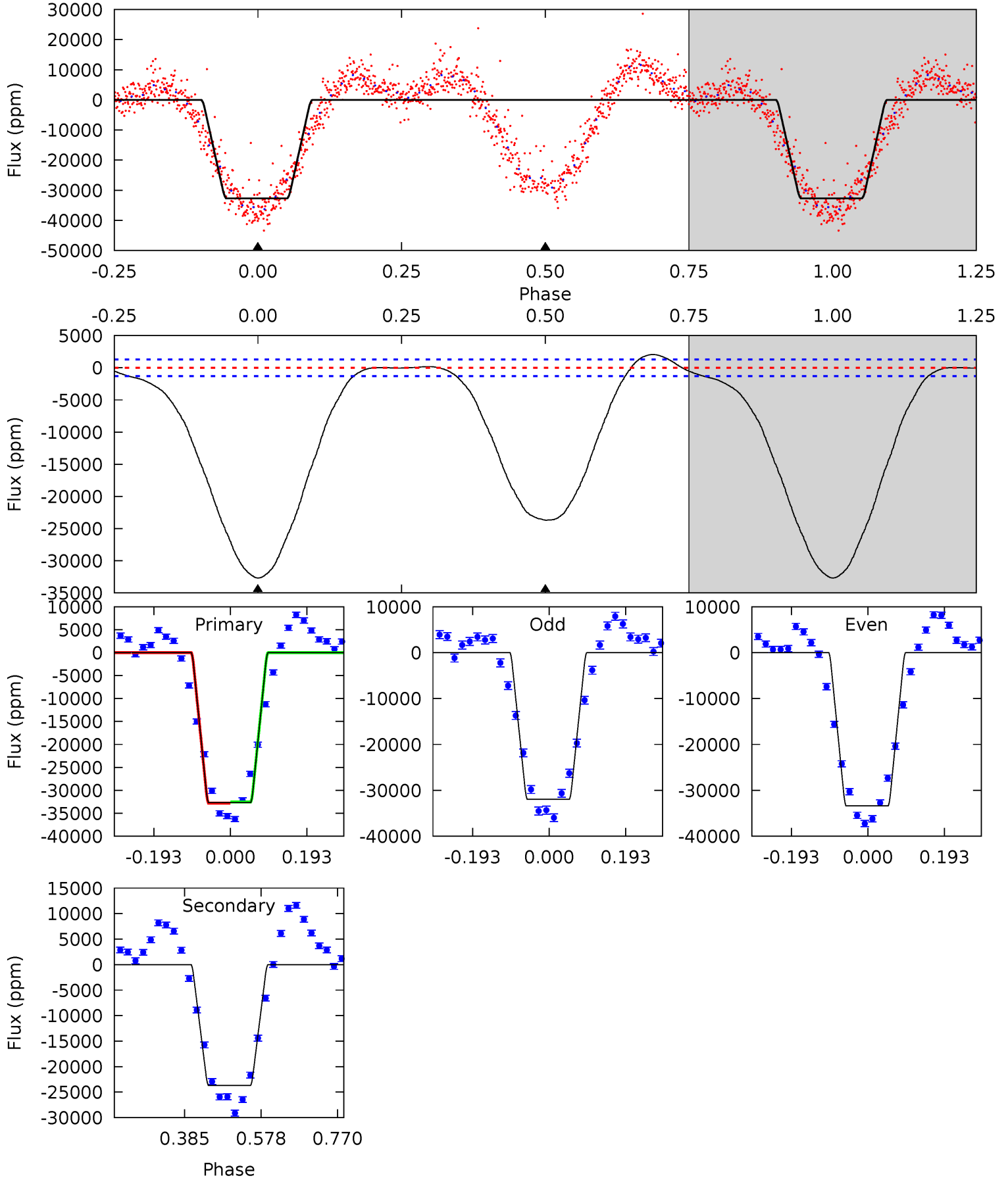
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
124.8	123.8	0	0	4.32	1.00	1.43	124.8	124.8	123.8	123.8	1.86	0.99	0.02	5.78



Alt Model-Shift Uniqueness Test

011668623-01, P = 0.534967 Days, E = 131.721562 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
111.9	81.1	0	0	4.43	1.30	3.19	111.9	111.9	81.1	81.1	2.38	0.99	0.06	0.50



Stellar Parameters For KIC 011668623

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5780^{+1}_{-1}	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

Secondary Eclipse Parameters for KIC 011668623-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-21893 ± 177	$20.66^{+1.58}_{-1.45}$	3140^{+134}_{-158}	5124^{+159}_{-174}	$4.798^{+0.742}_{-0.584}$
Alt.	-23680 ± 292	$20.77^{+1.52}_{-1.57}$	3151^{+152}_{-157}	5226^{+182}_{-173}	$5.177^{+0.743}_{-0.684}$

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 $A_{obs} \gg 1.0$

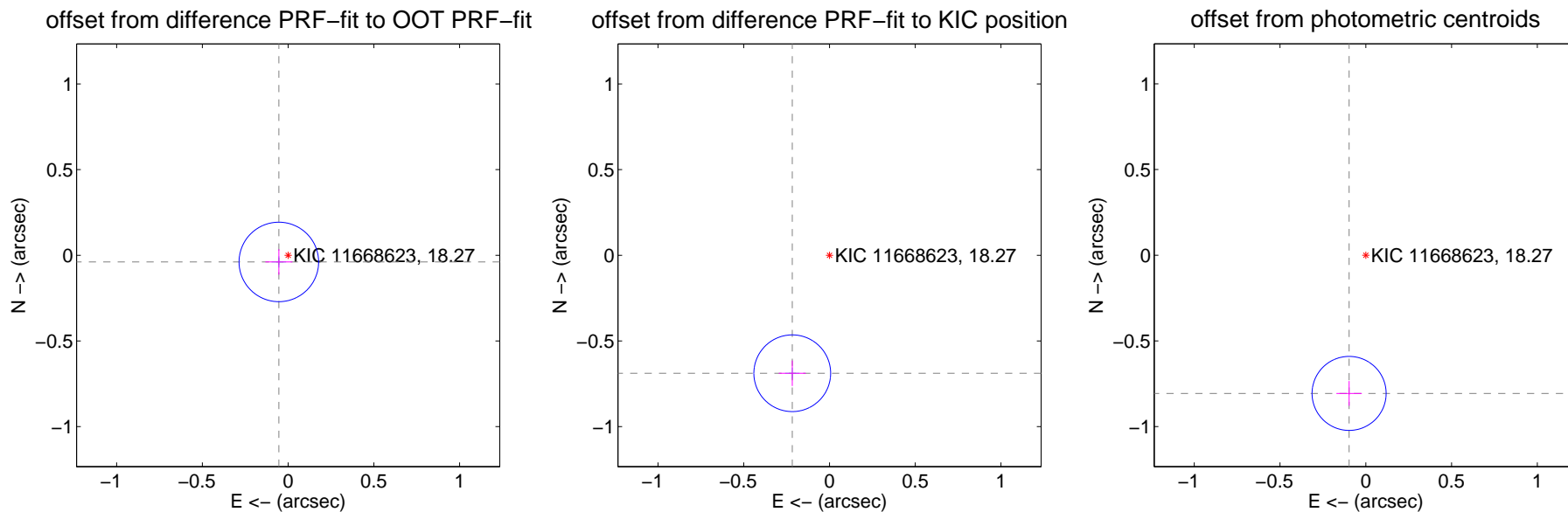
DV Centroid Data

Supplemental centroid analysis for 011668623-01. Kepler magnitude: 18.27. Transit SNR 31.64

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.67 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.067 ± 0.077	0.86	0.054 ± 0.079	-0.039 ± 0.074
PRF-fit source offset from KIC position	0.722 ± 0.075	9.68	0.217 ± 0.079	-0.689 ± 0.074
photometric centroid source offset	0.81 ± 0.07	11.29	0.10 ± 0.07	-0.81 ± 0.07



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.



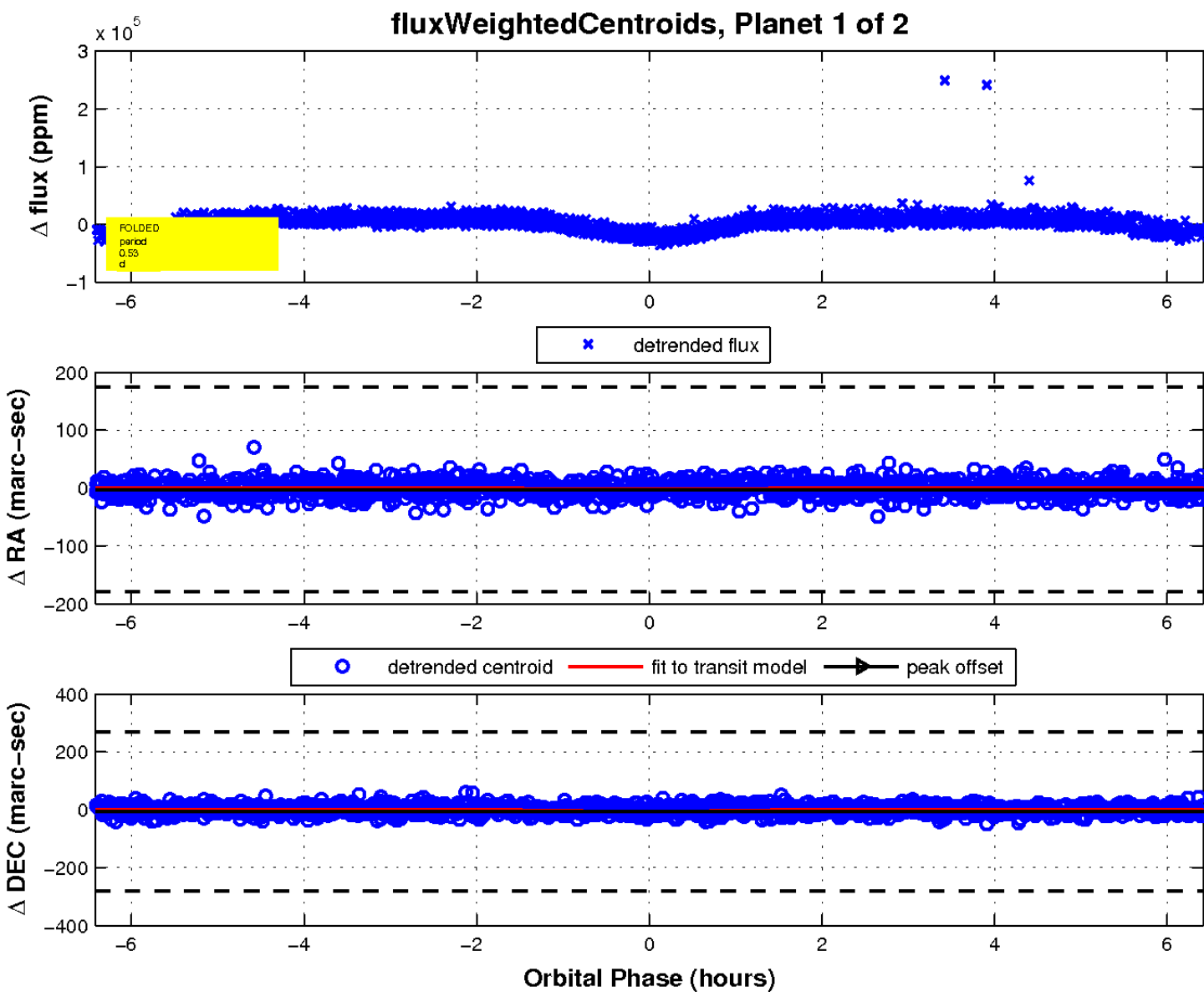
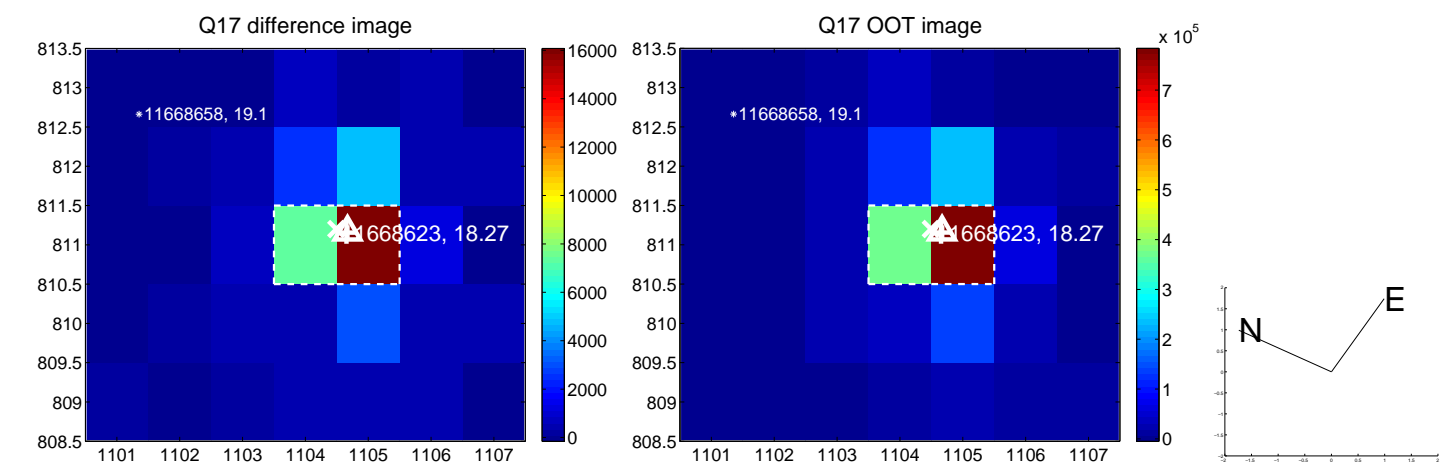
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

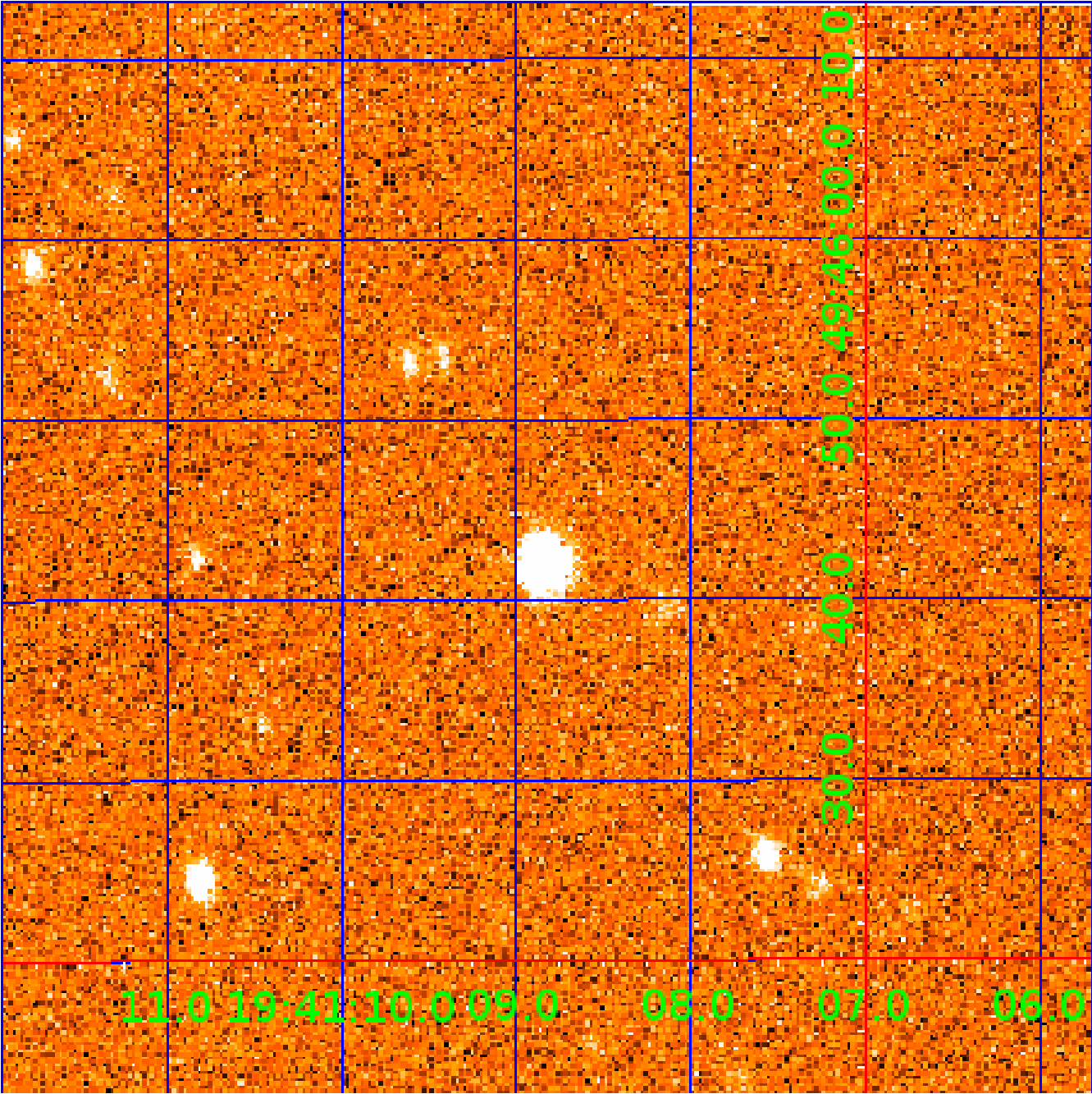


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011668623

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})
011668623-01	OBS	No	0.534967	131.721562	42263.3	3.651	45.4	31.6	1.00	5780	20.62	6009.48
011668623-02	OBS	No	0.550904	131.817943	18892.1	6.611	12.6	7.0	1.00	5780	15.24	5778.79

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011668623-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_DIFFS
011668623-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST

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

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

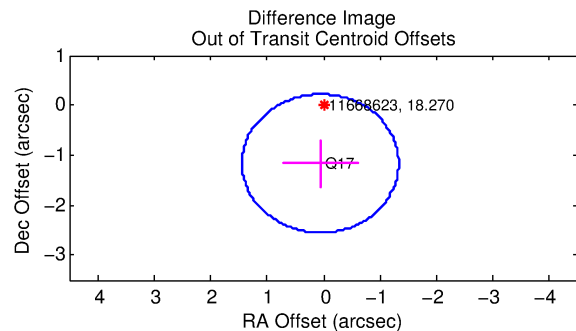
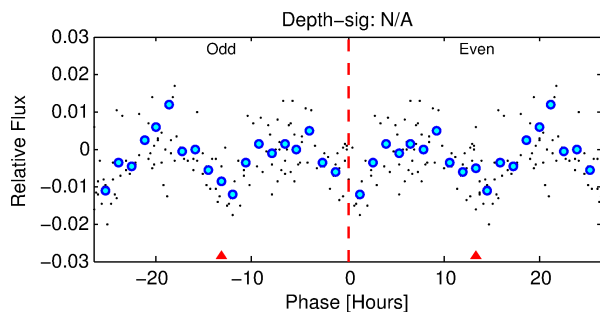
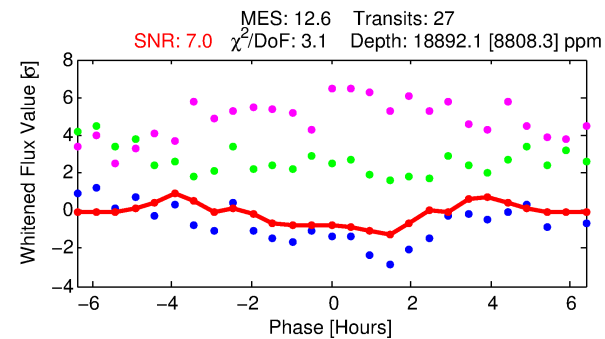
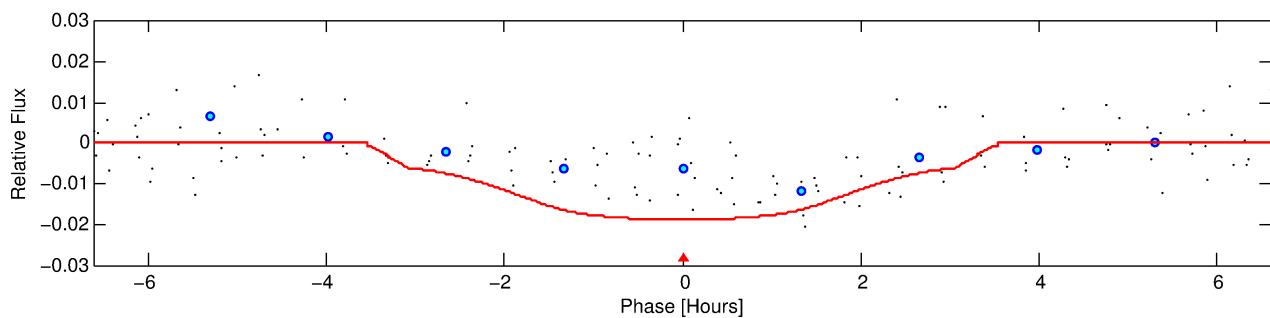
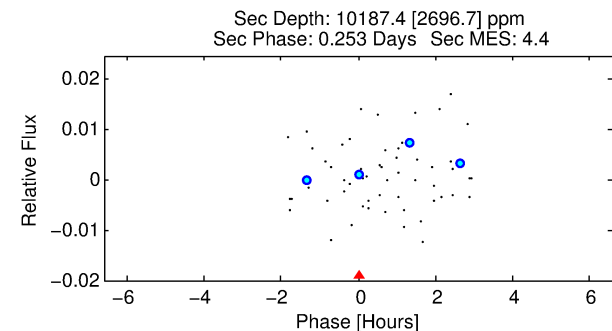
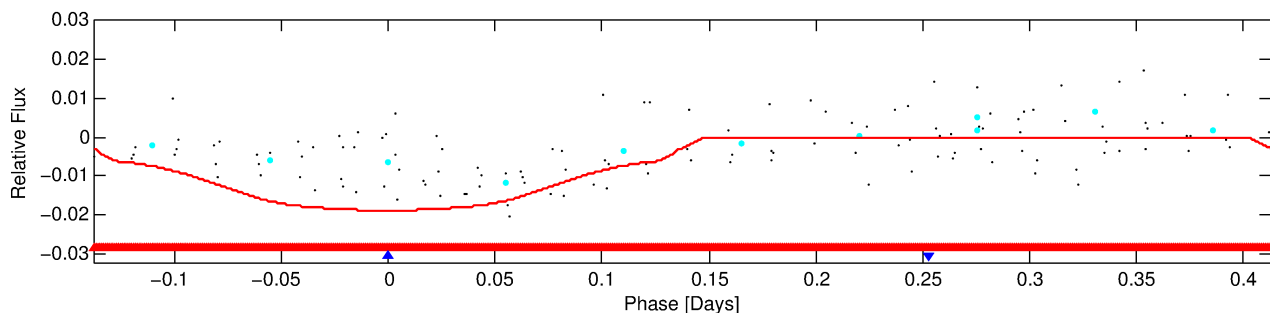
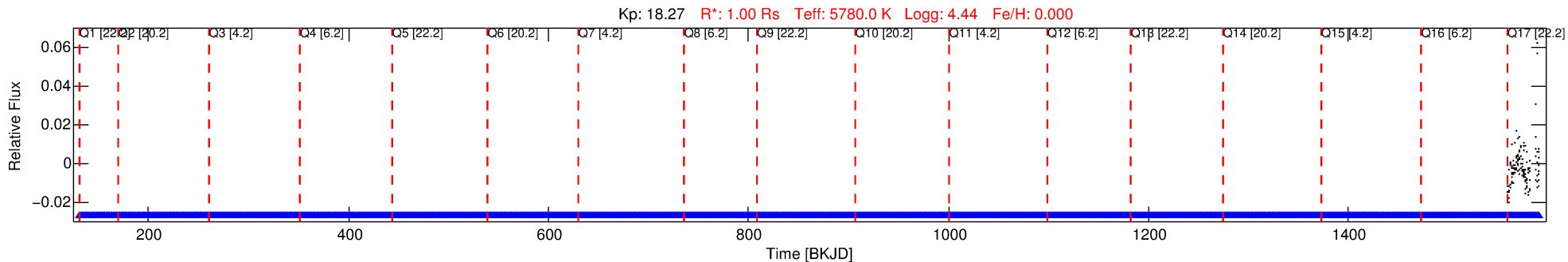
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011668623-02

No Significant Match Found

DV One-Page Summary

KIC: 11668623 Candidate: 2 of 2 Period: 0.551 d



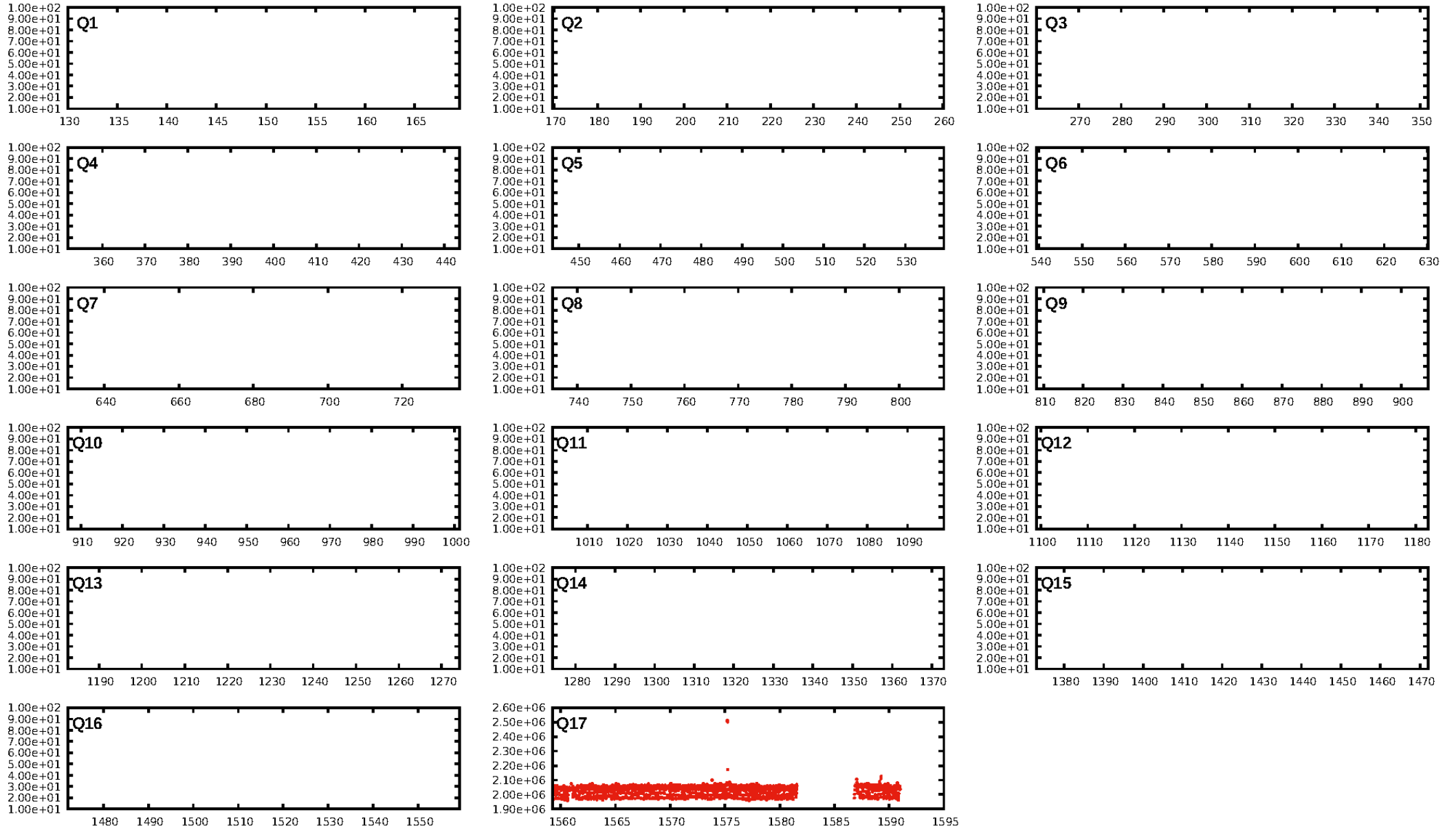
DV Fit Results:

Period = 0.55090 [0.00004] d
Epoch = 131.8179 [0.0088] BKJD
Rp/R* = 0.1397 [0.0325]
a/R* = 1.01 [0.04]
b = 0.78 [0.12]
Seff = 5778.79 [0.55]
Teq = 2223 [0] K
Rp = 15.24 [3.55] Re
a = 0.0132 [0.0000] AU
Ag = 4.18 [2.24] [1.42σ]
Teffp = 4914 [658] K [4.09σ]

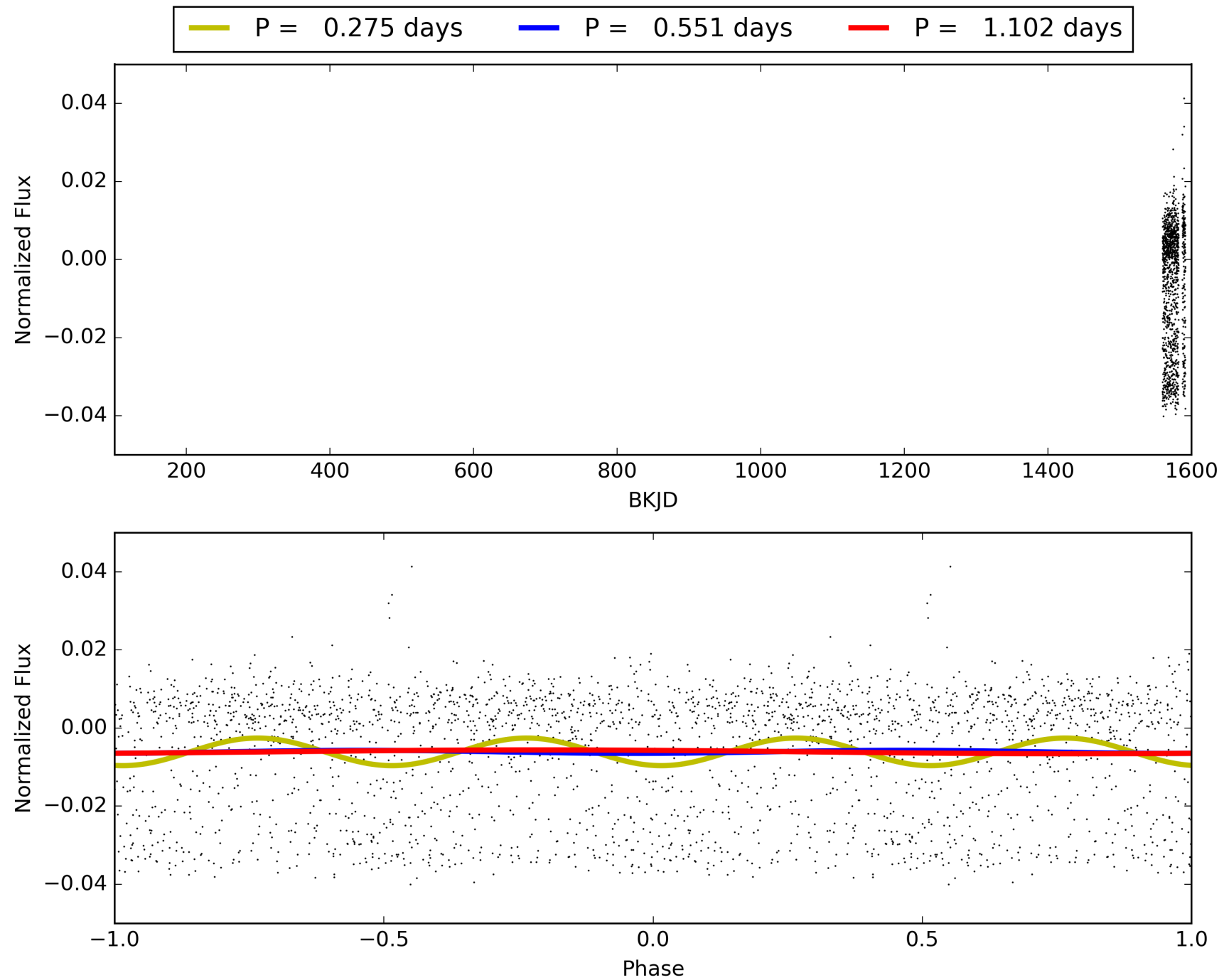
DV Diagnostic Results:

ShortPeriod-sig: 4.0% [0.05σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 28.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: N/A
GhostDiagnostic-chr: -0.1128
Centroid-sig: 33.1%
Centroid-so: 0.973 arcsec [7.81σ]
OotOffset-rm: 1.168 arcsec [2.53σ]
KicOffset-rm: 1.828 arcsec [3.93σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 0.00 [0/1]

TCE 011668623-02, PDC Light Curves

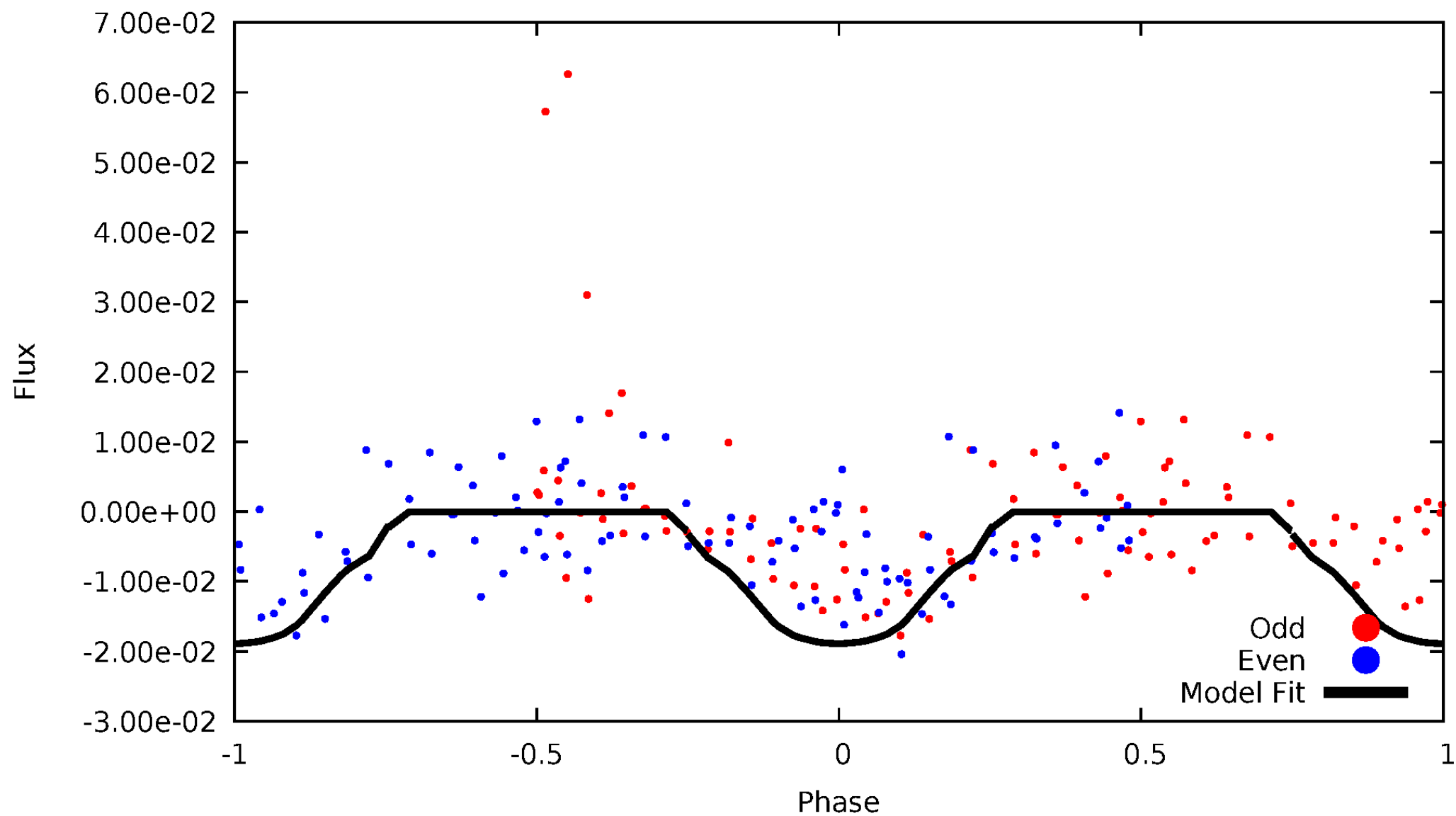


TCE 011668623-02



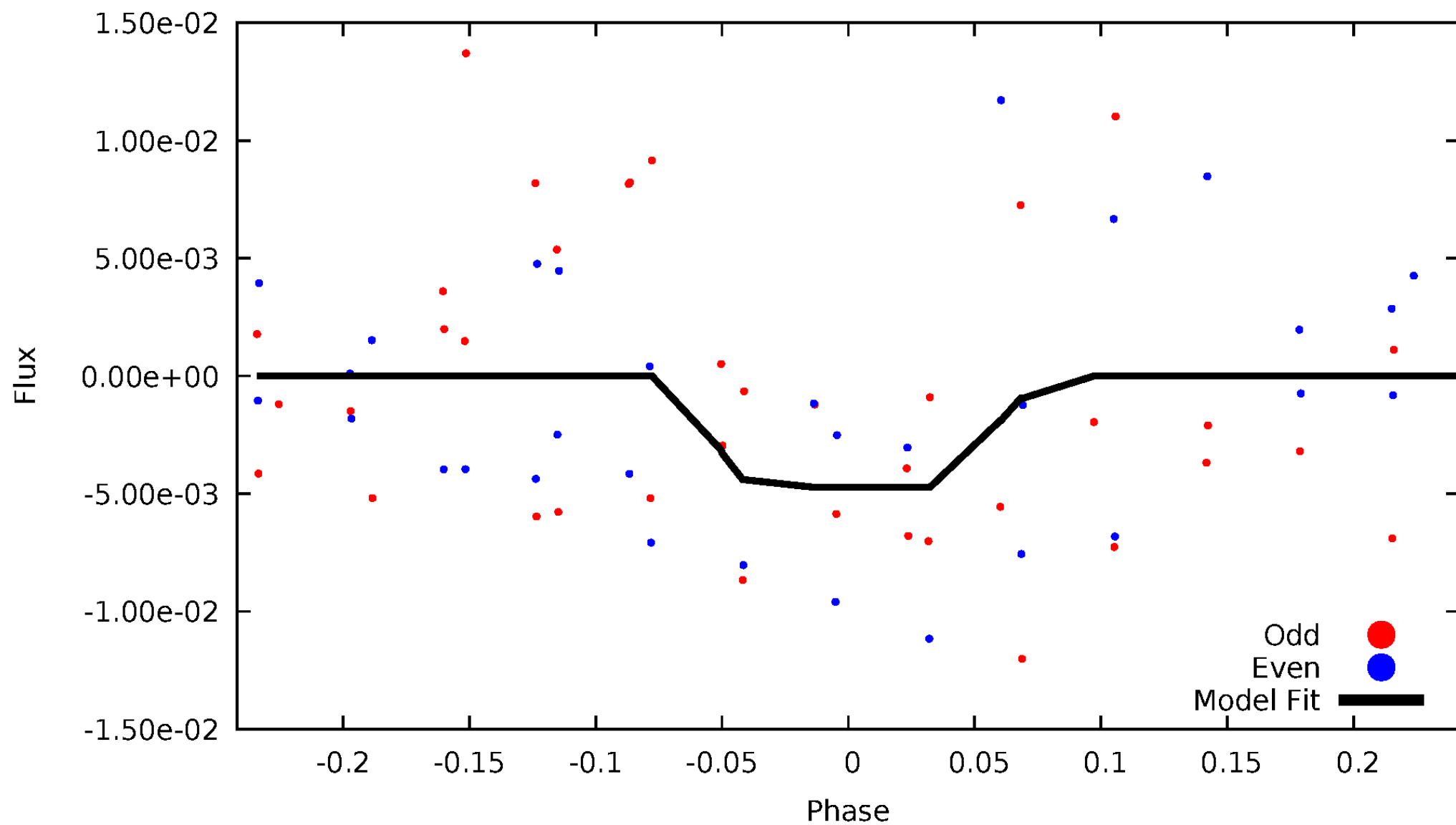
DV Odd/Even

TCE 011668623-02



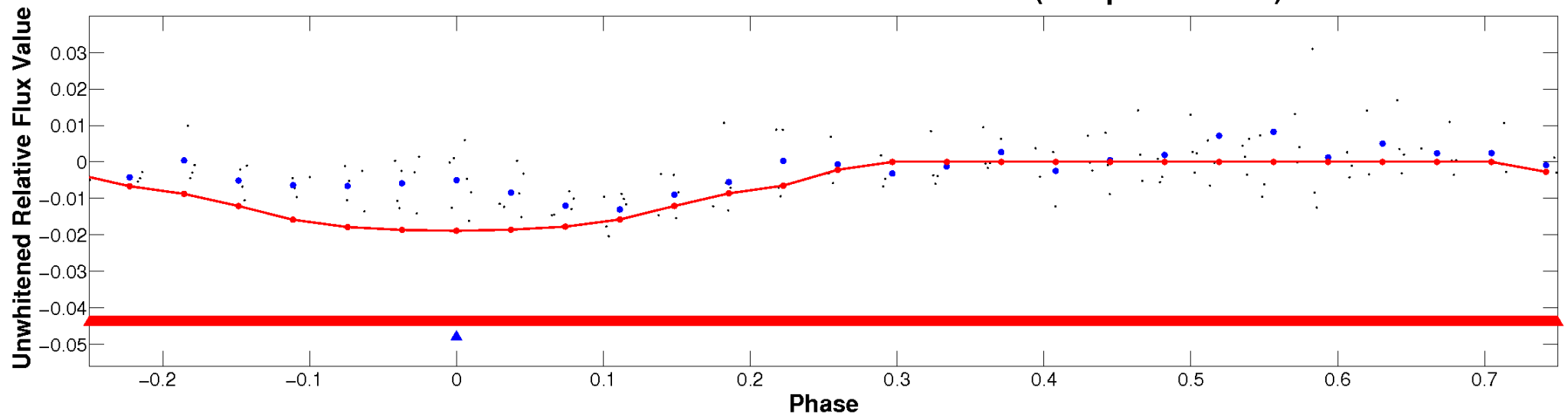
ALT Odd/Even

TCE 011668623-02

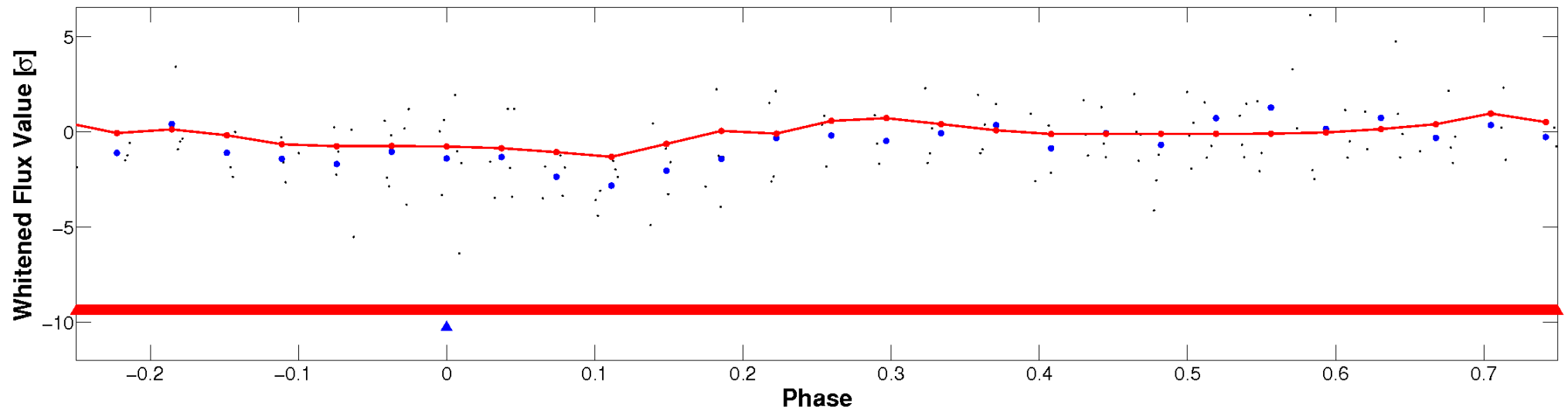


Non-Whitened Vs. Whitened Light Curve

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

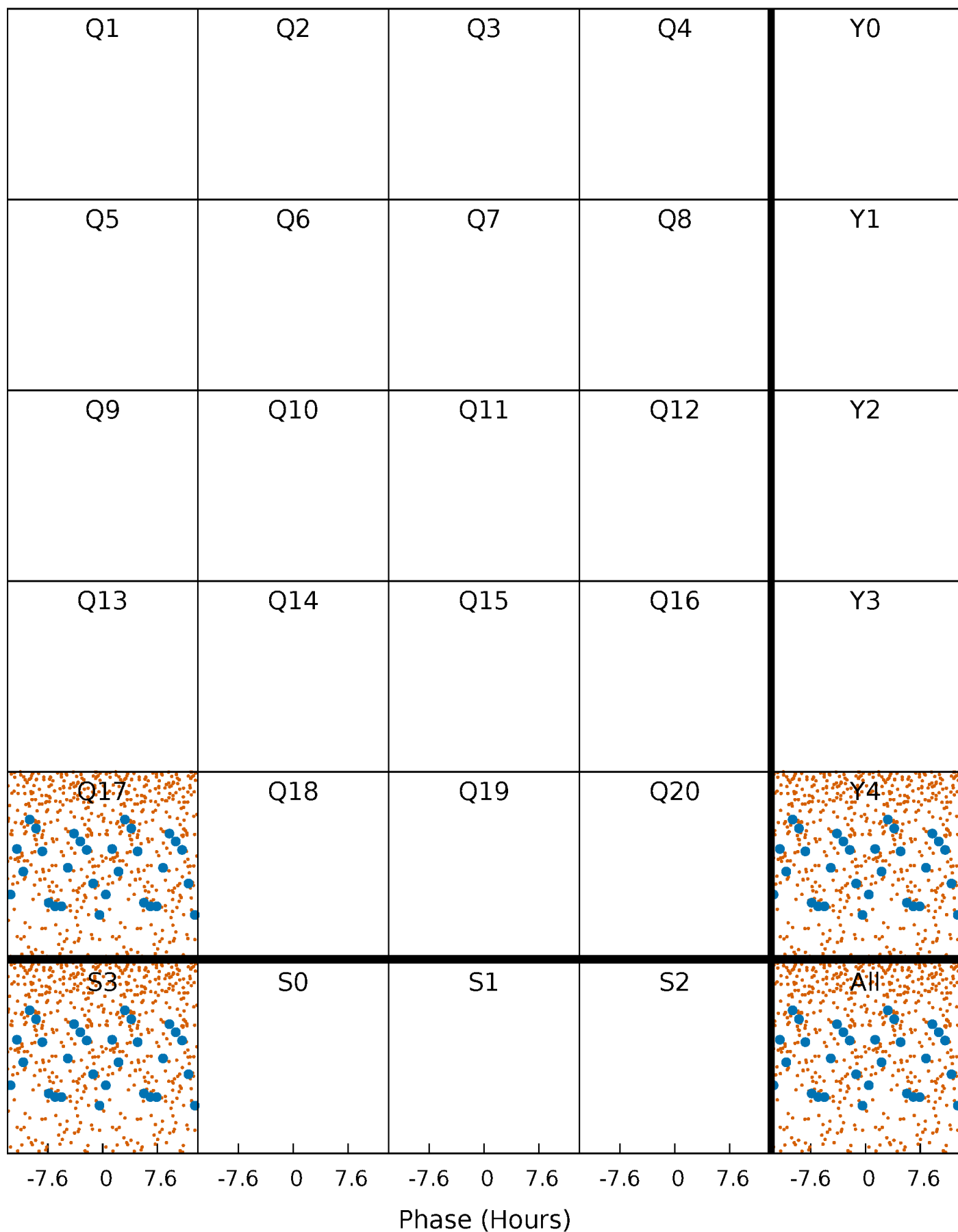


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



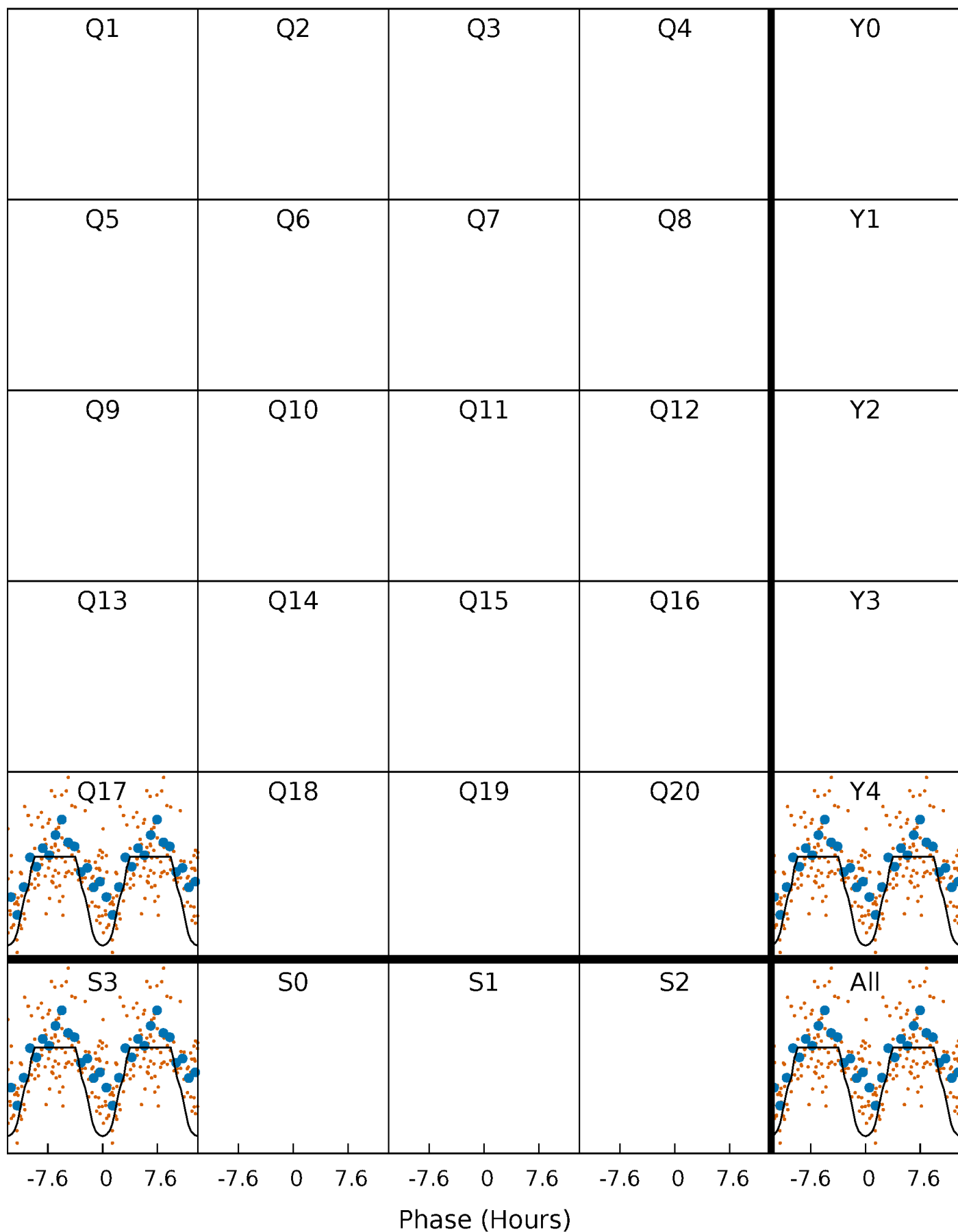
PDC Quarter-Phased Transit Curves

TCE 011668623-02 P= 0.550904 Days $T_0=131.817943$ (BKJD)



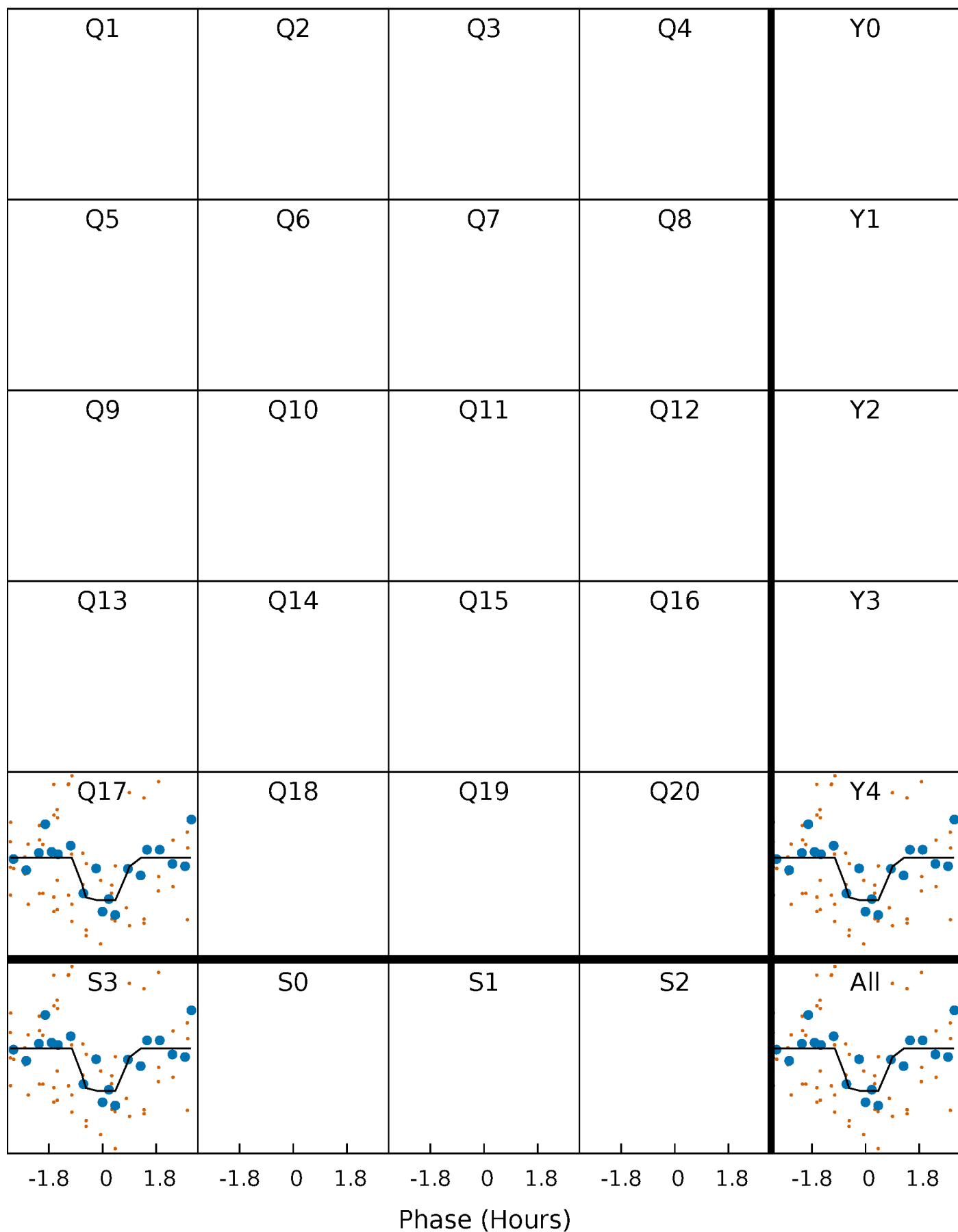
DV Quarter-Phased Transit Curves

TCE 011668623-02 P= 0.550904 Days $T_0=131.817943$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

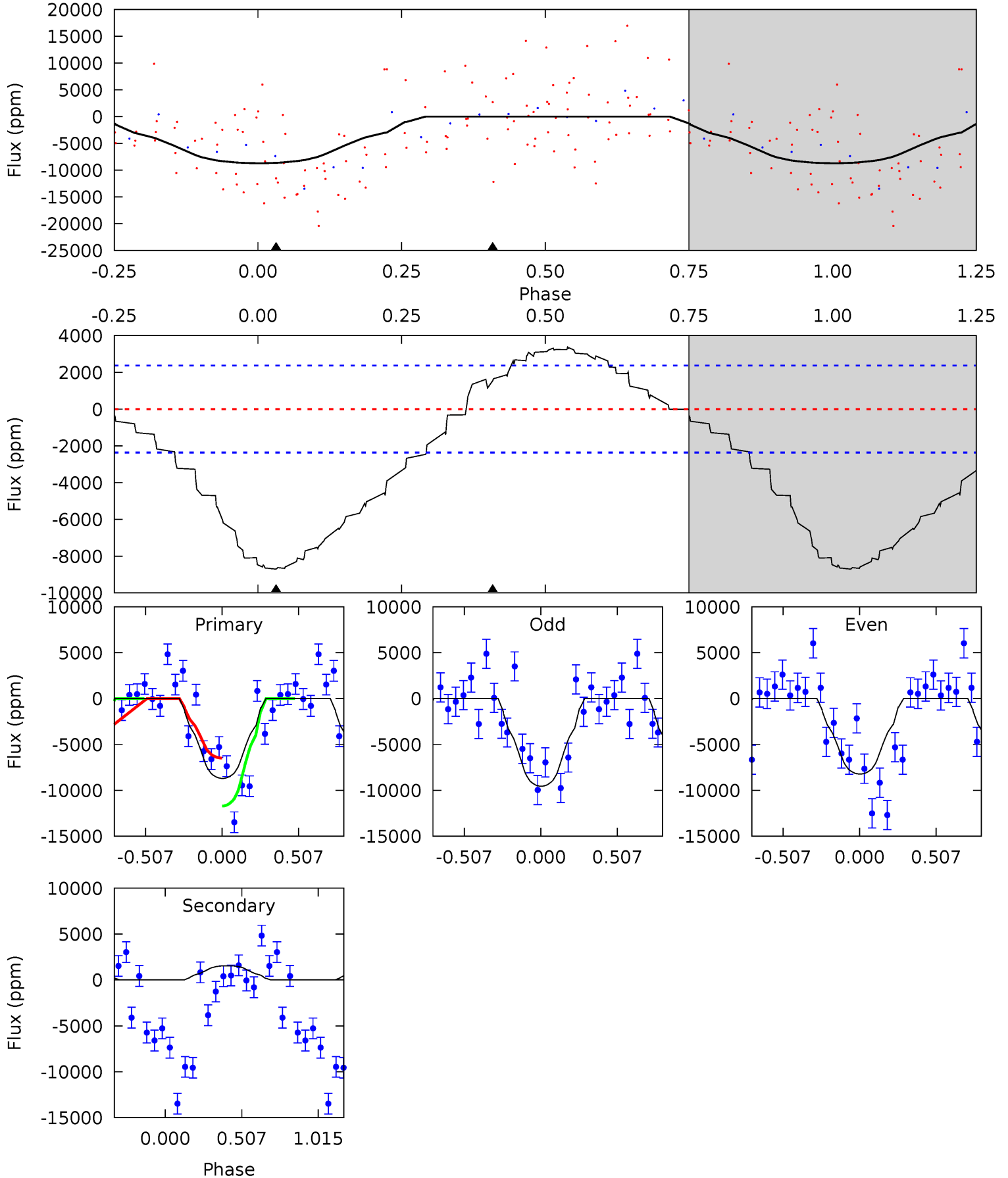
TCE 011668623-02 P= 0.551573 Days $T_0=131.783648$ (BKJD)



DV Model-Shift Uniqueness Test

011668623-02, P = 0.550904 Days, E = 131.817943 Days

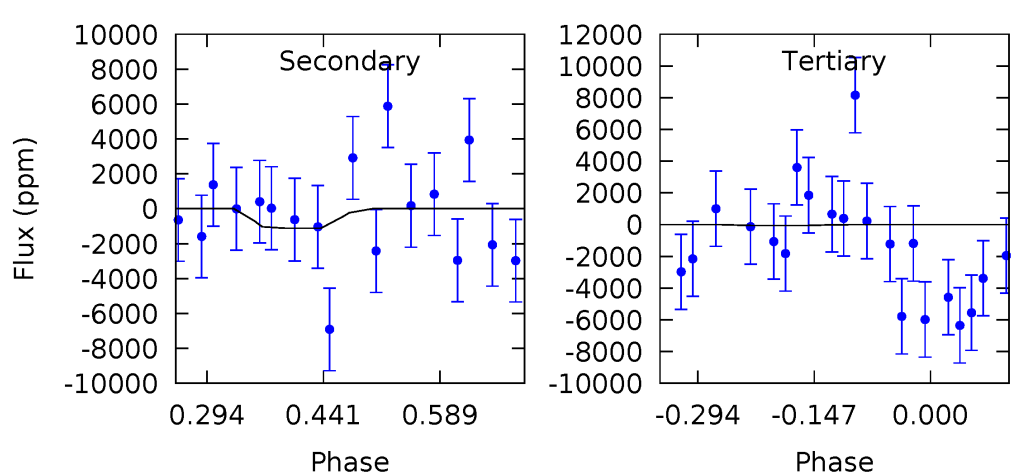
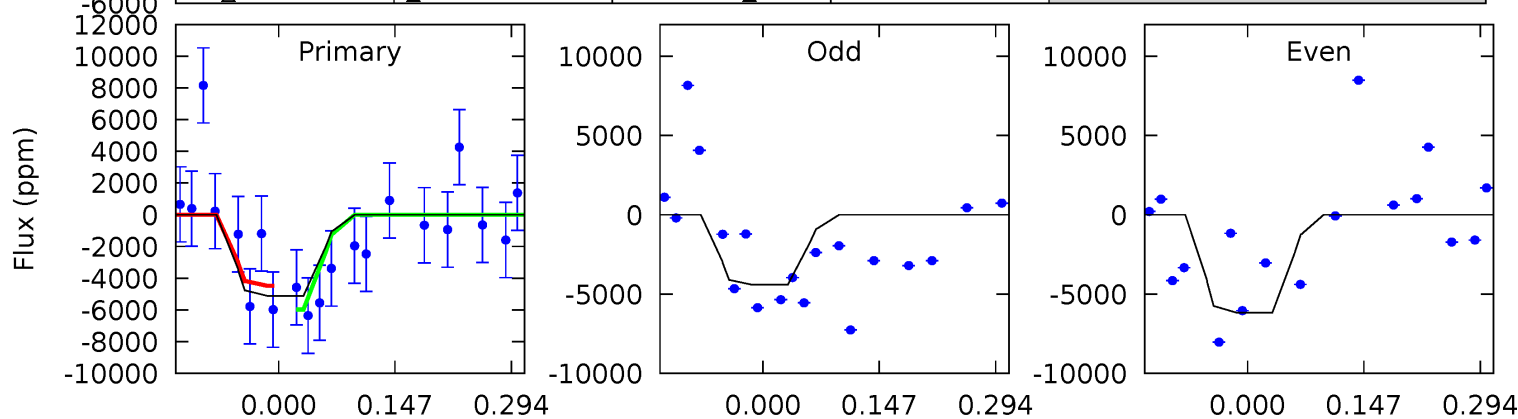
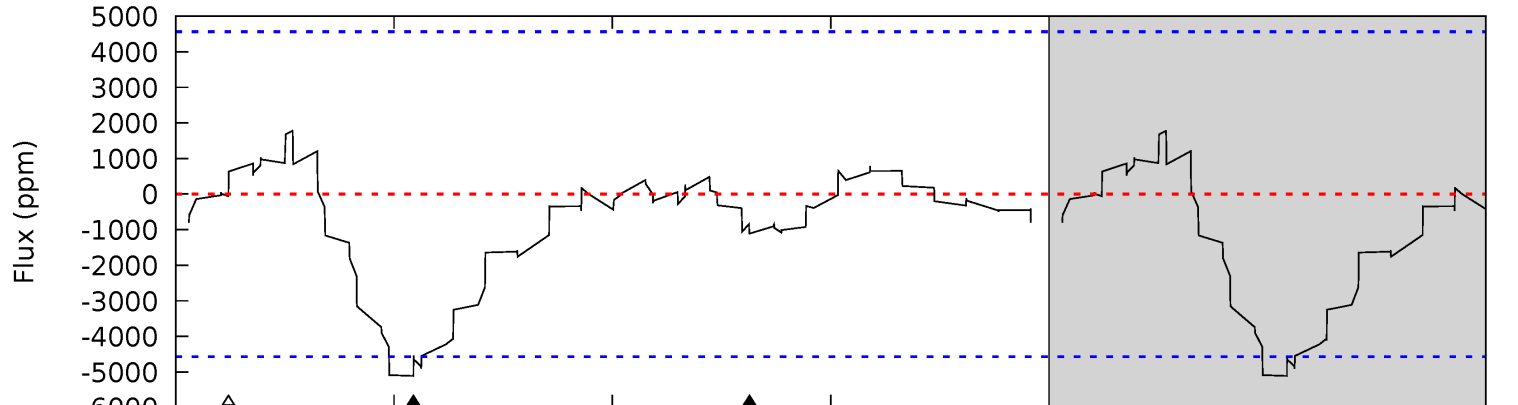
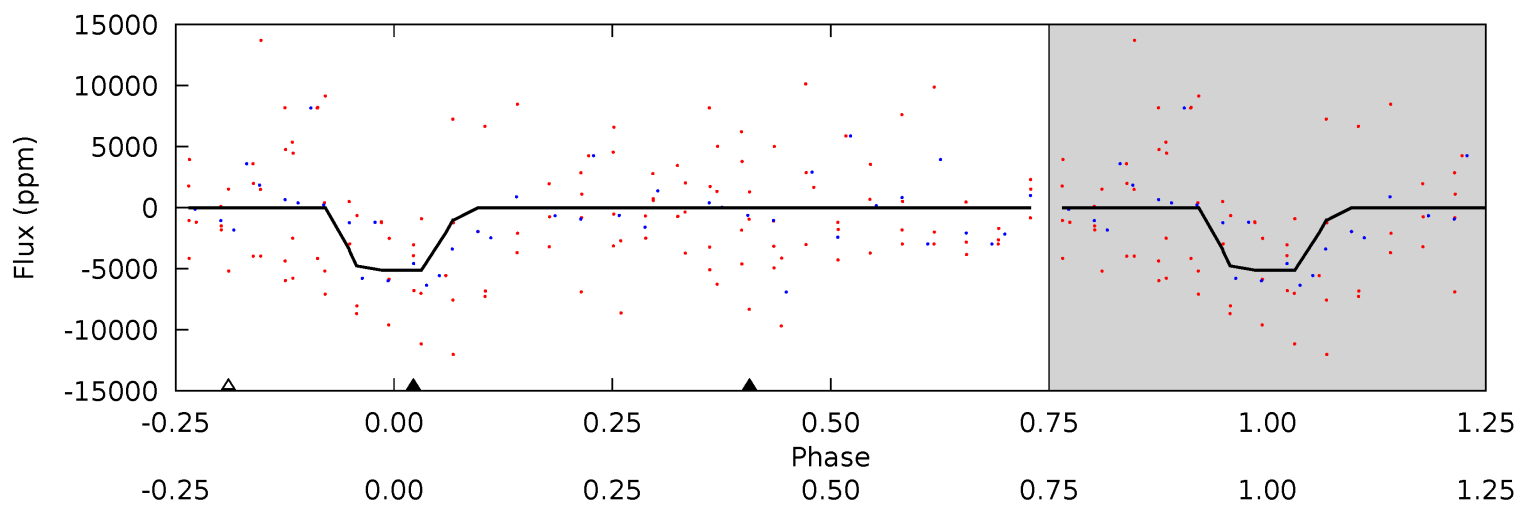
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	-2.75	0	0	4.21	0.66	1.34	15.5	15.5	-2.75	-2.75	0.94	1.01	0.28	5.34



Alt Model-Shift Uniqueness Test

011668623-02, P = 0.551573 Days, E = 131.783648 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.02	1.09	0.06	0	4.48	1.45	0.67	4.96	5.02	1.03	1.09	0.83	1.03	0.26	0.75



Stellar Parameters For KIC 011668623

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5780^{+1}_{-1}	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

Secondary Eclipse Parameters for KIC 011668623-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	1544 ± 562	$15.11^{+3.60}_{-3.38}$	3106^{+140}_{-139}	-3757^{+227}_{-323}	$-0.609^{+0.272}_{-0.546}$
Alt.	-1113 ± 1019	$7.37^{+3.66}_{-3.32}$	3100^{+156}_{-138}	3953^{+1441}_{-7083}	$1.558^{+4.490}_{-1.527}$

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

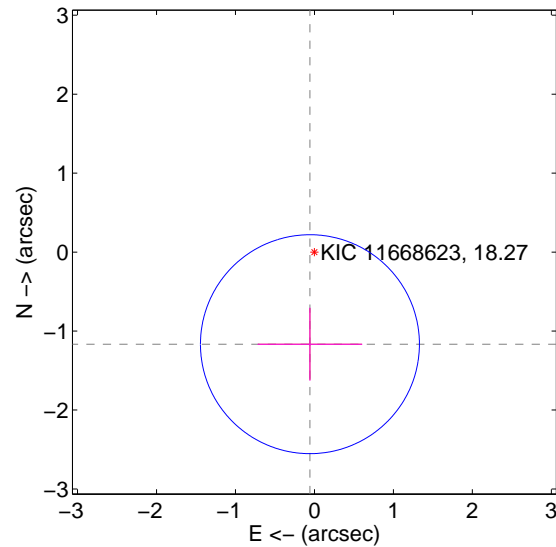
Supplemental centroid analysis for 011668623-02. Kepler magnitude: 18.27. Transit SNR 6.99

There are 0 quarters with good PRF difference image offsets

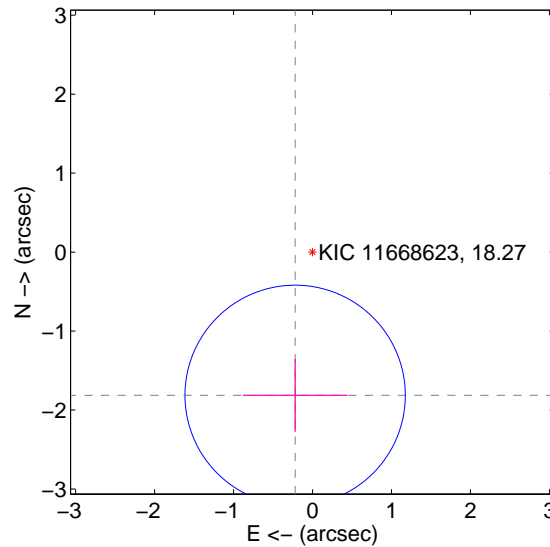
The direct PRF centroid is offset from the target star catalog position by about 0.67 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.168 ± 0.462	2.53	0.057 ± 0.663	-1.166 ± 0.462
PRF-fit source offset from KIC position	1.828 ± 0.465	3.93	0.220 ± 0.663	-1.814 ± 0.462
photometric centroid source offset	0.97 ± 0.12	7.81	-0.07 ± 0.12	-0.97 ± 0.12

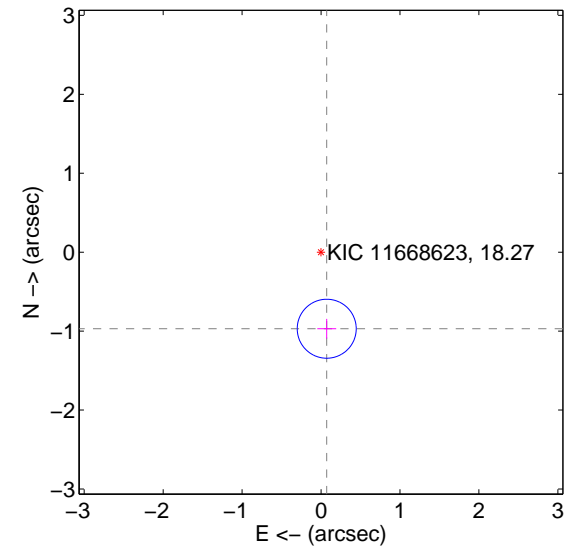
offset from difference PRF-fit to OOT PRF-fit



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.



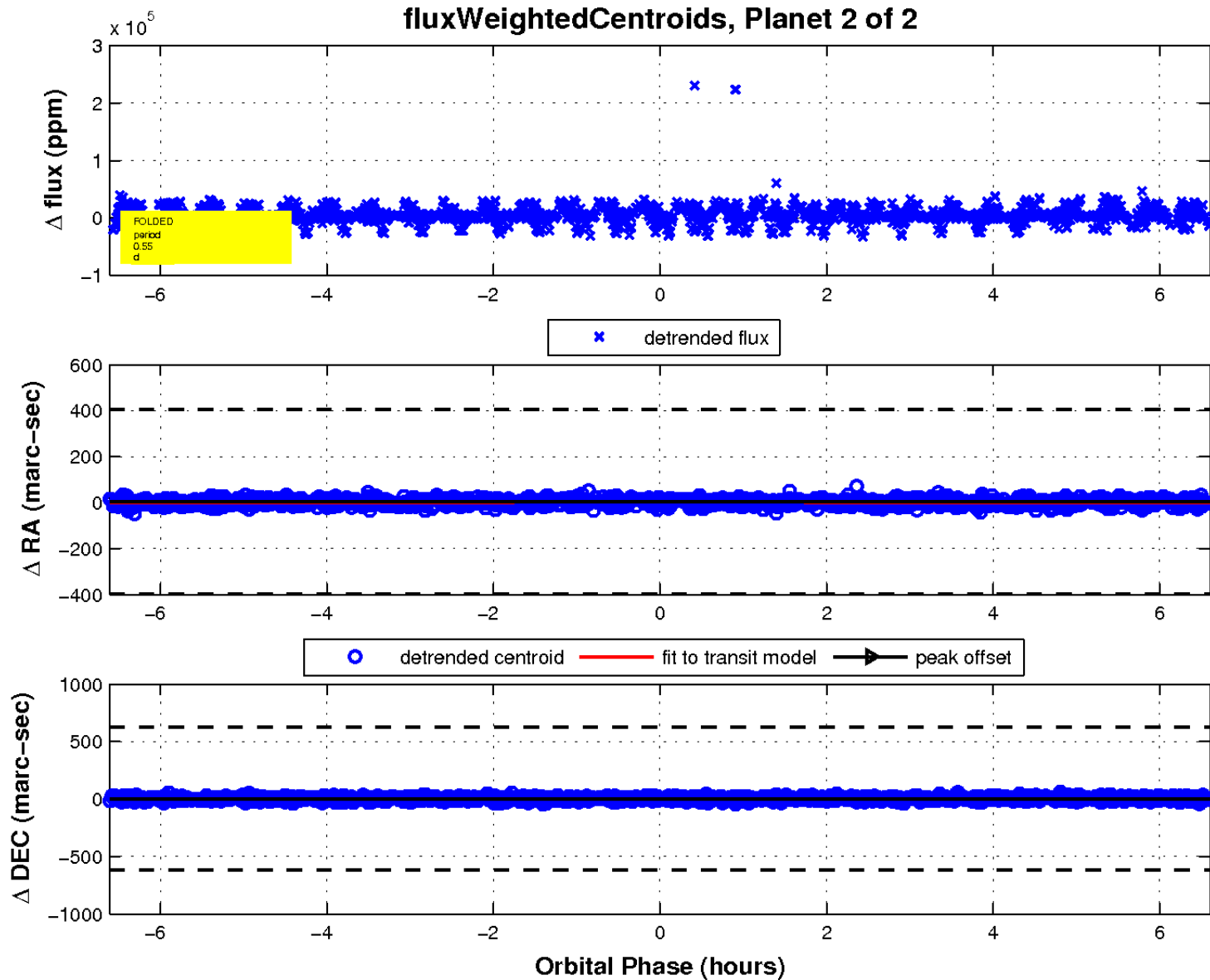
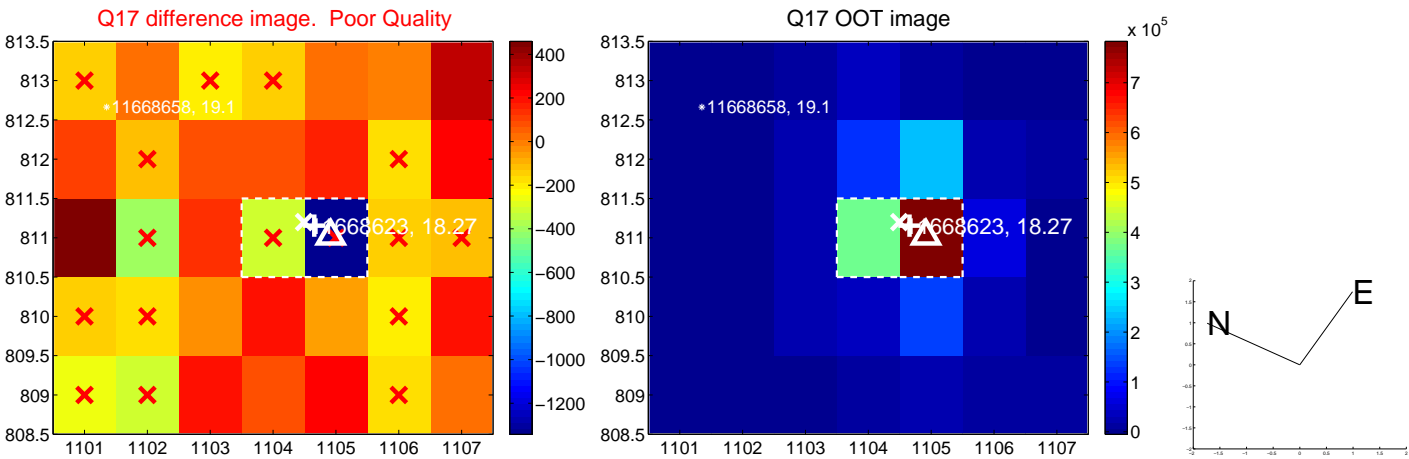
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

