

KIC 006102716

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})
006102716-01	OBS	No	0.648738	131.848303	149572.6	1.409	450.6	263.5	1.70	5650	75.08	11698.54
006102716-02	OBS	No	0.648749	132.145369	15893.9	1.500	552.3	-1.0	1.70	5650	21.27	11698.27

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006102716-01	OBS	FP	0.00	1	0	0	0	LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
006102716-02	OBS	FP	0.00	1	0	0	0	LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

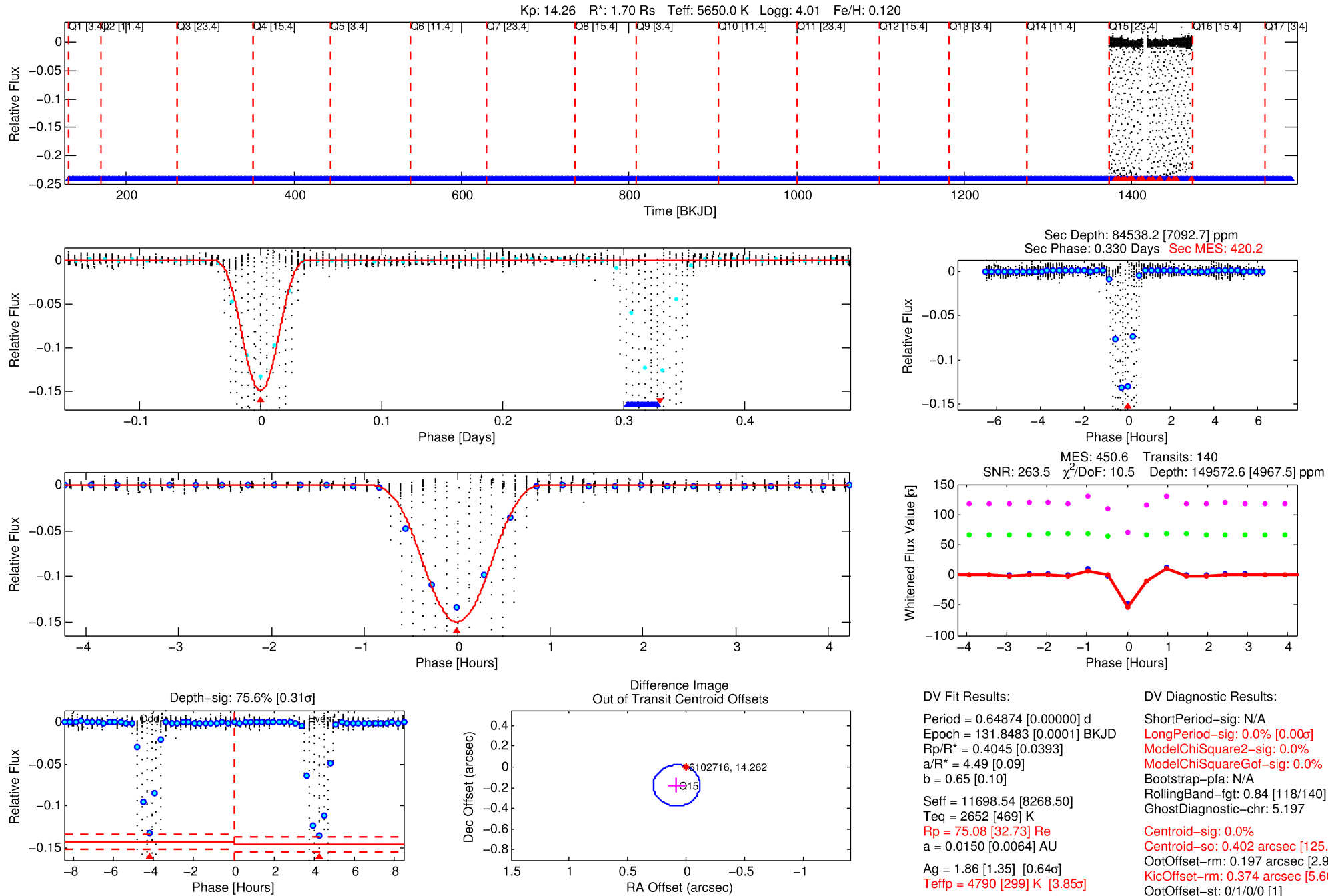
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006102716-01

No Significant Match Found

DV One-Page Summary

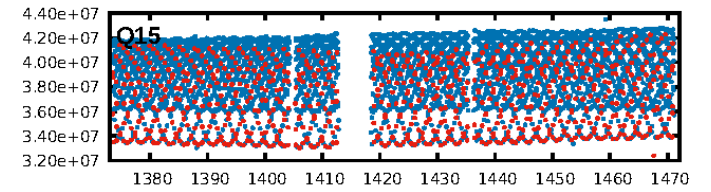
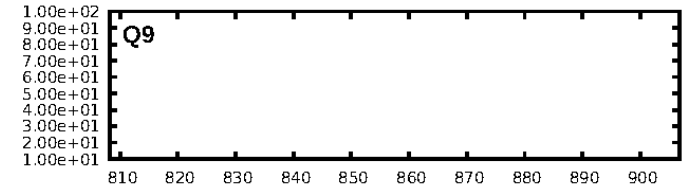
KIC: 6102716 Candidate: 1 of 2 Period: 0.649 d



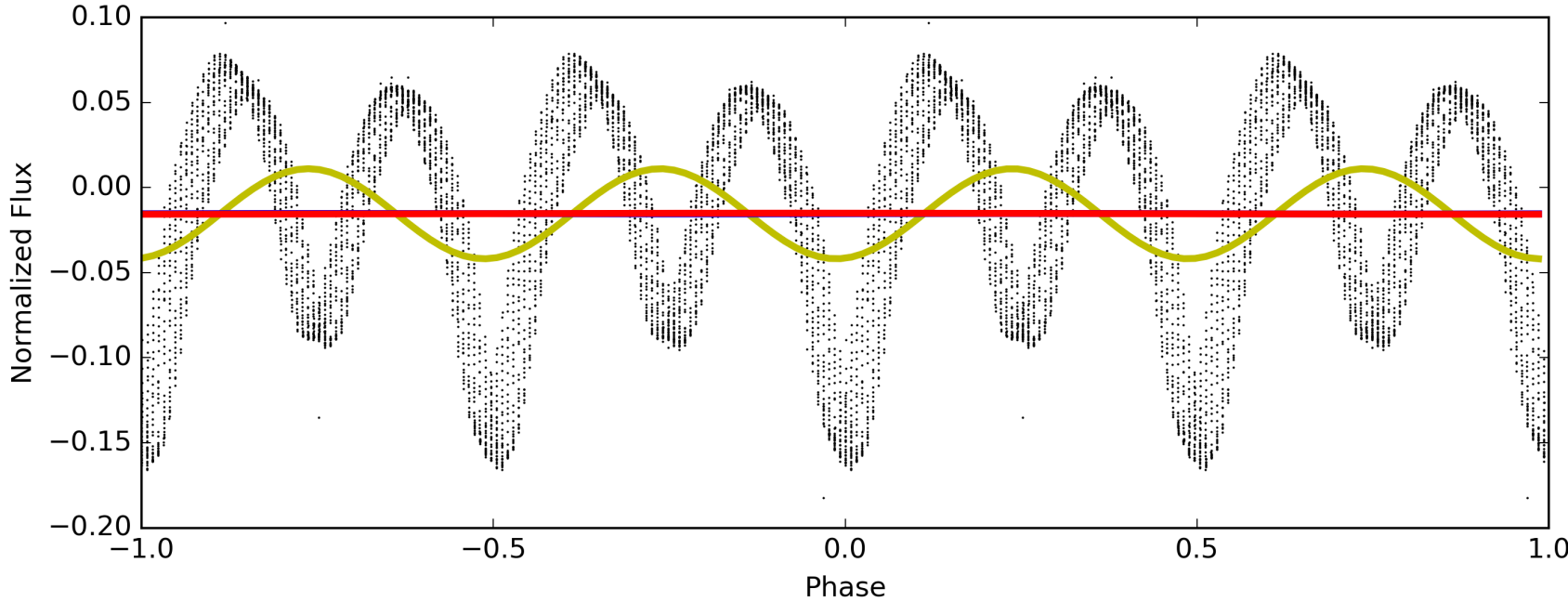
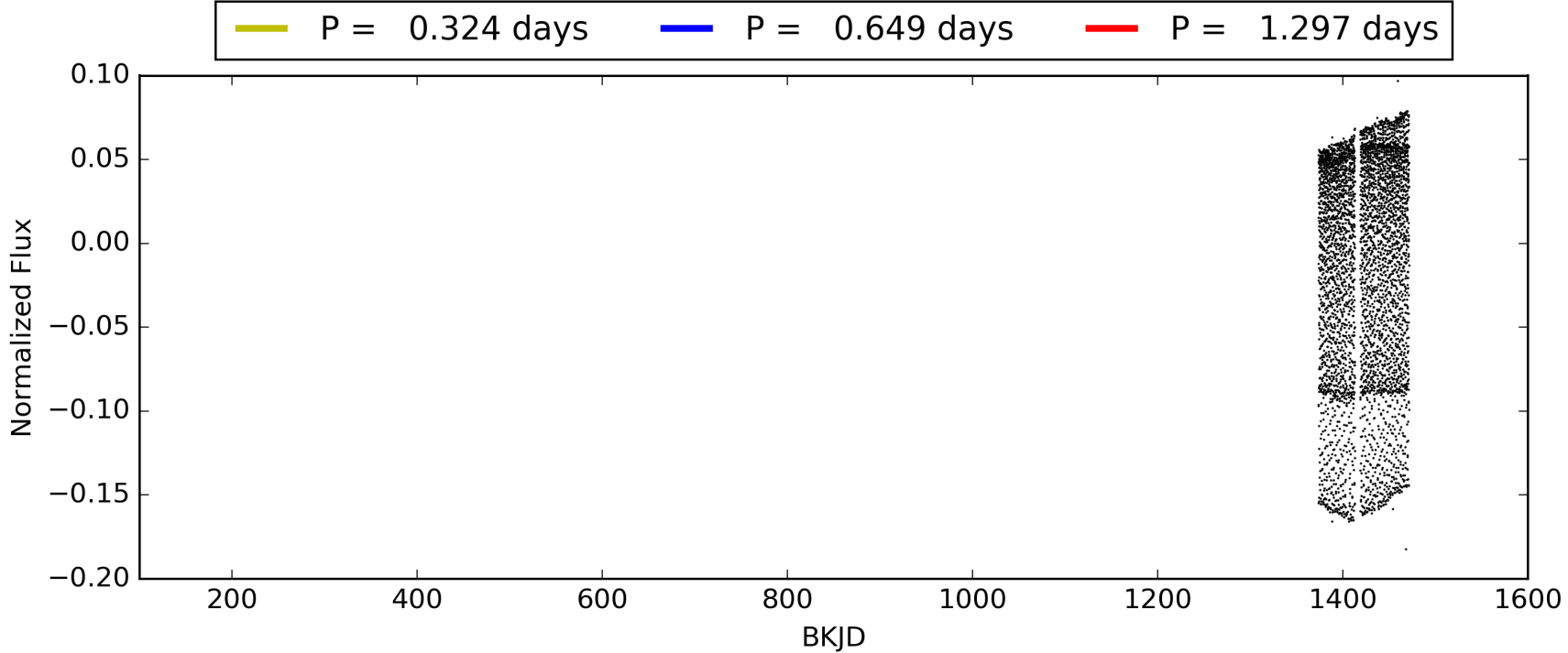
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 08:38:22 Z

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

TCE 006102716-01, PDC Light Curves

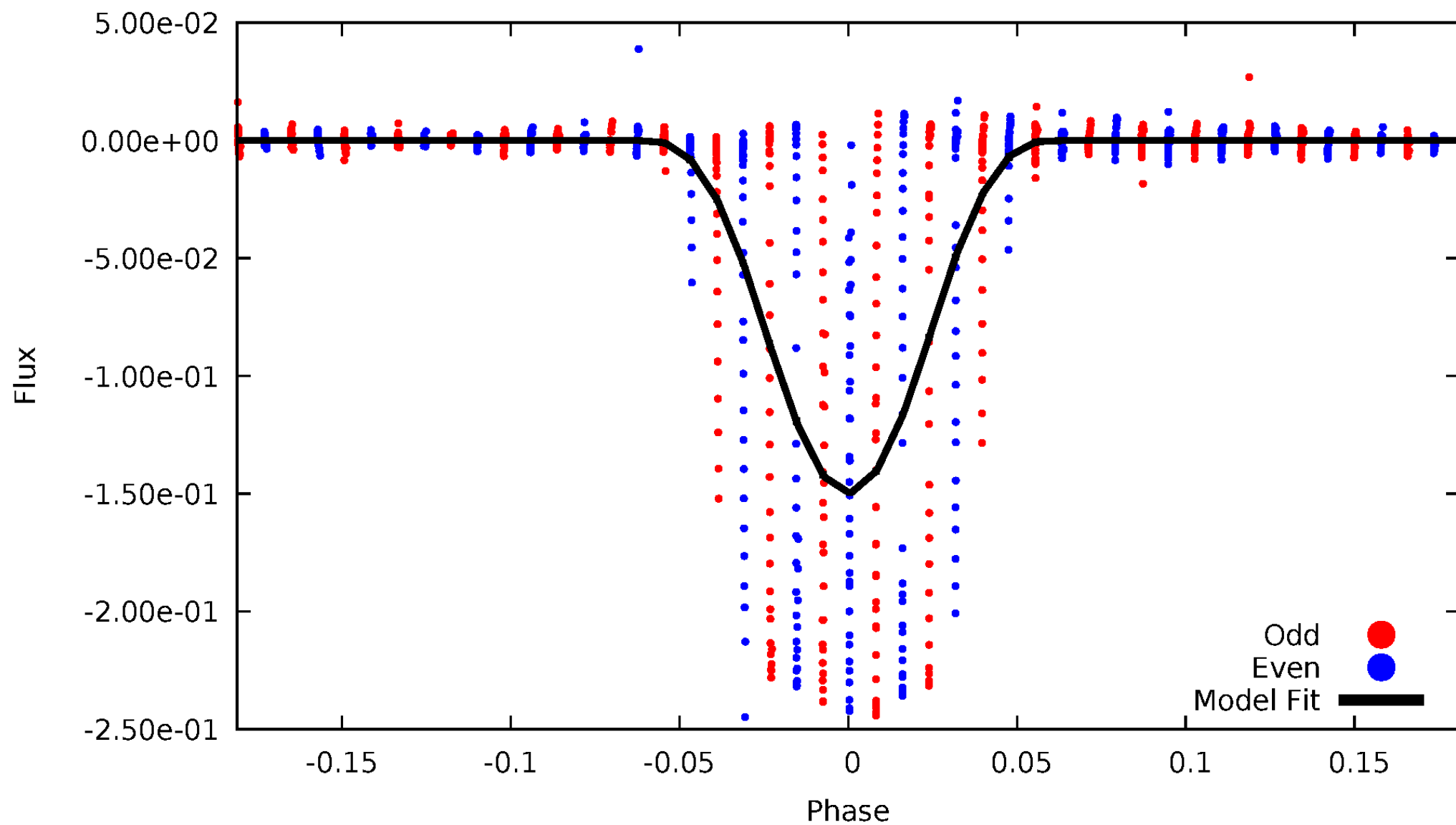


TCE 006102716-01



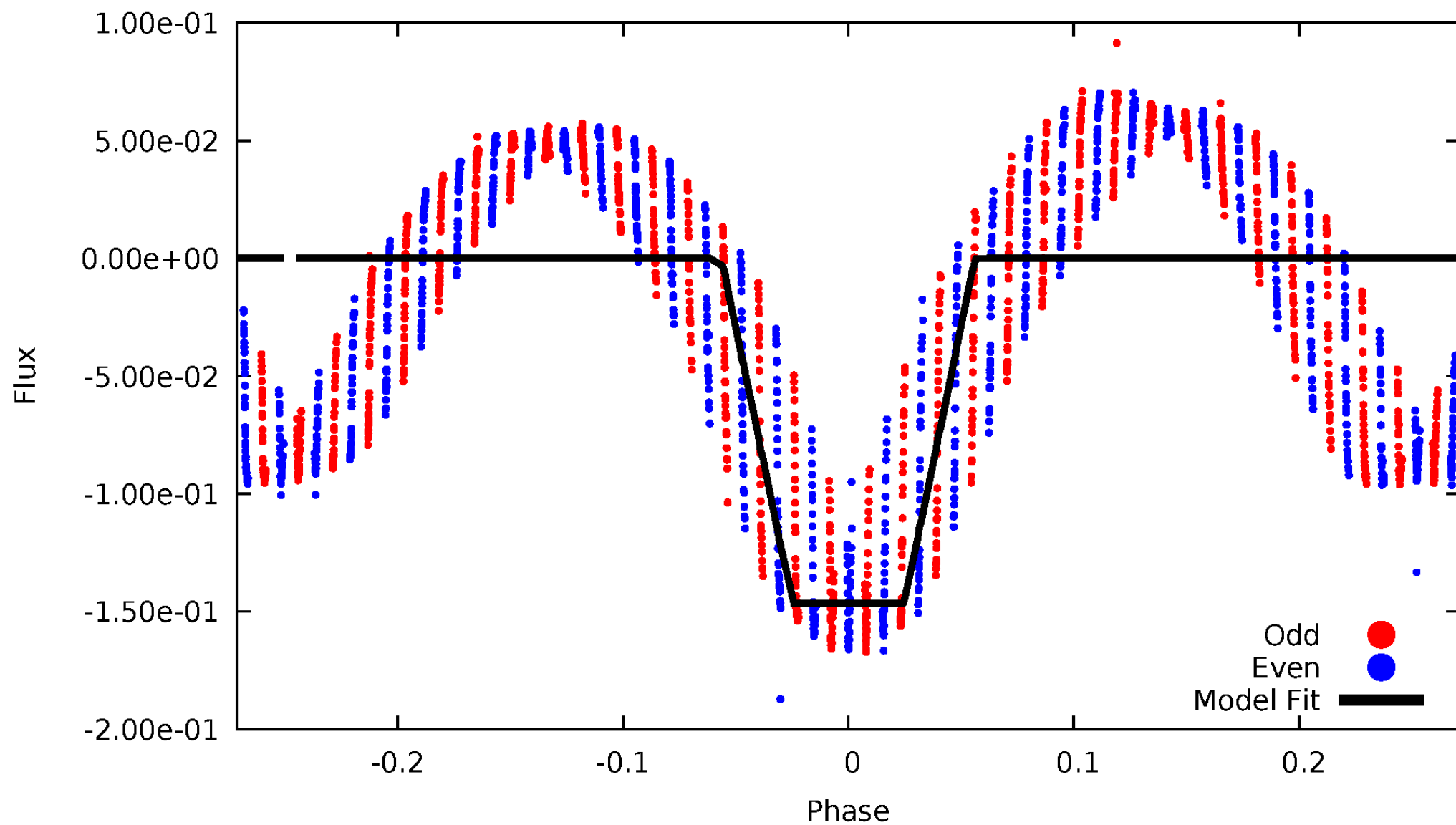
DV Odd/Even

TCE 006102716-01



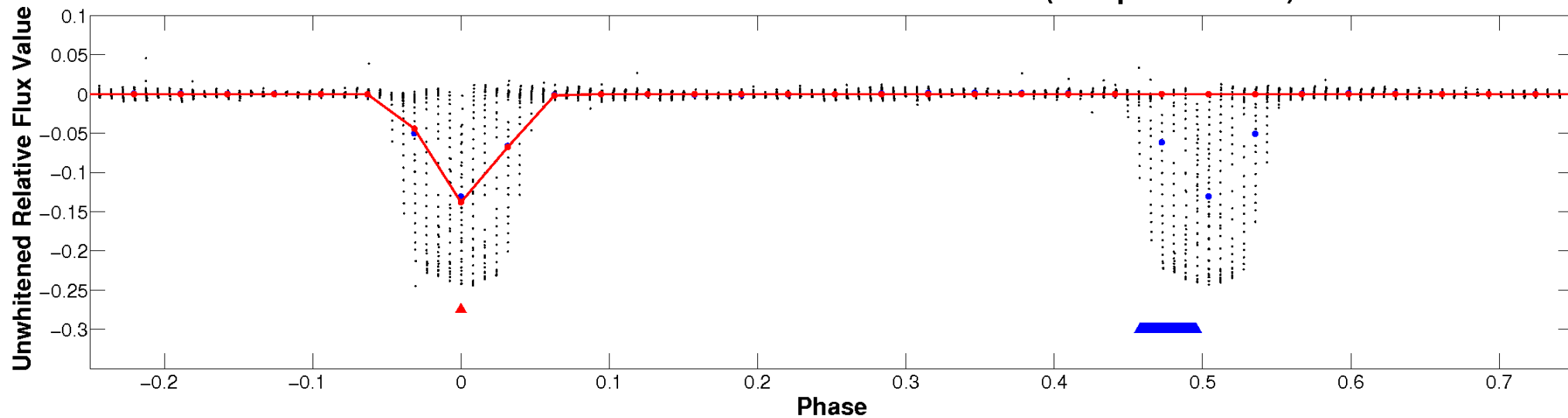
ALT Odd/Even

TCE 006102716-01

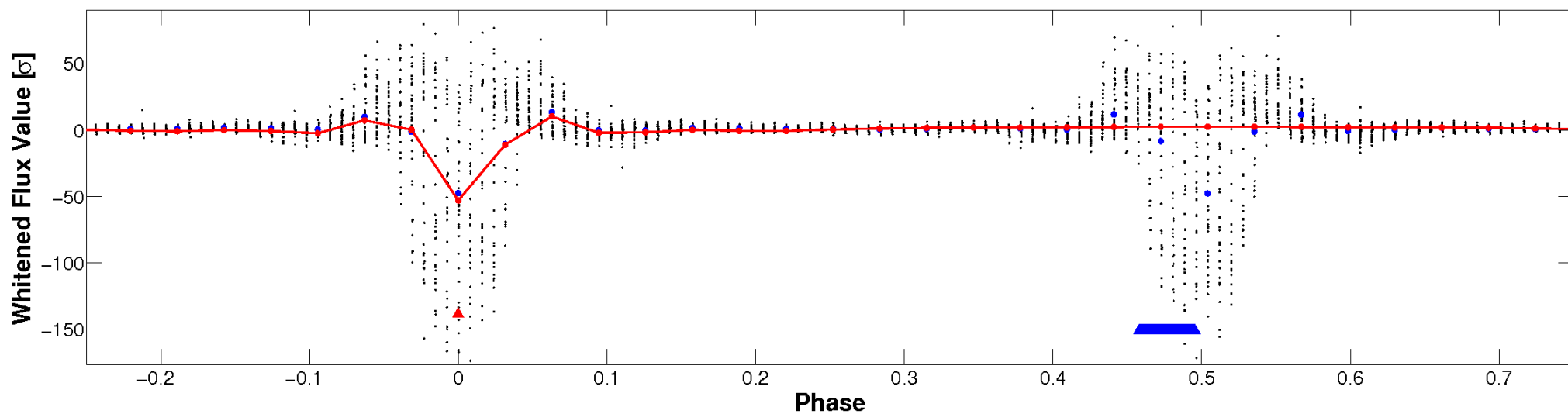


Non-Whitened Vs. Whitened Light Curve

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

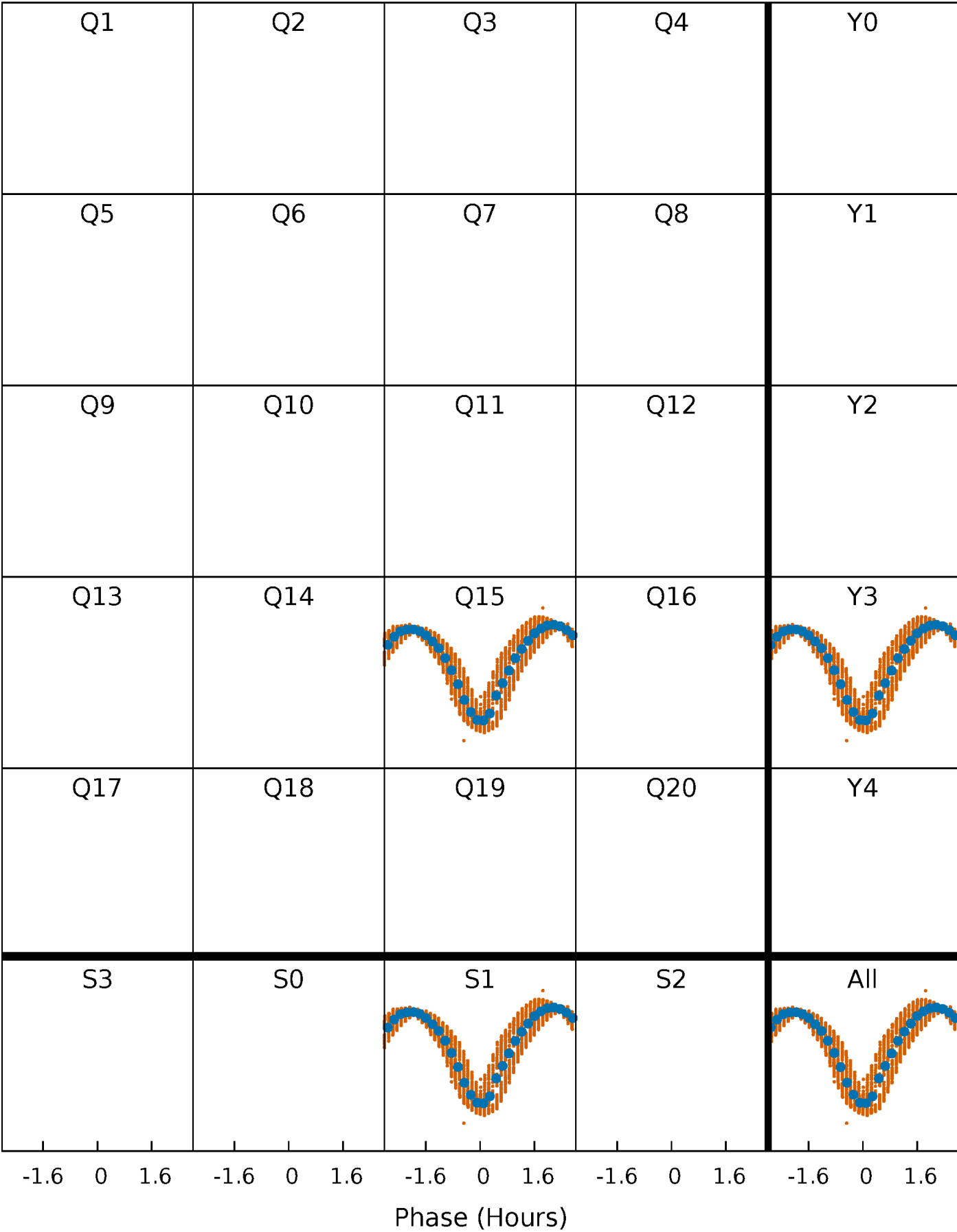


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



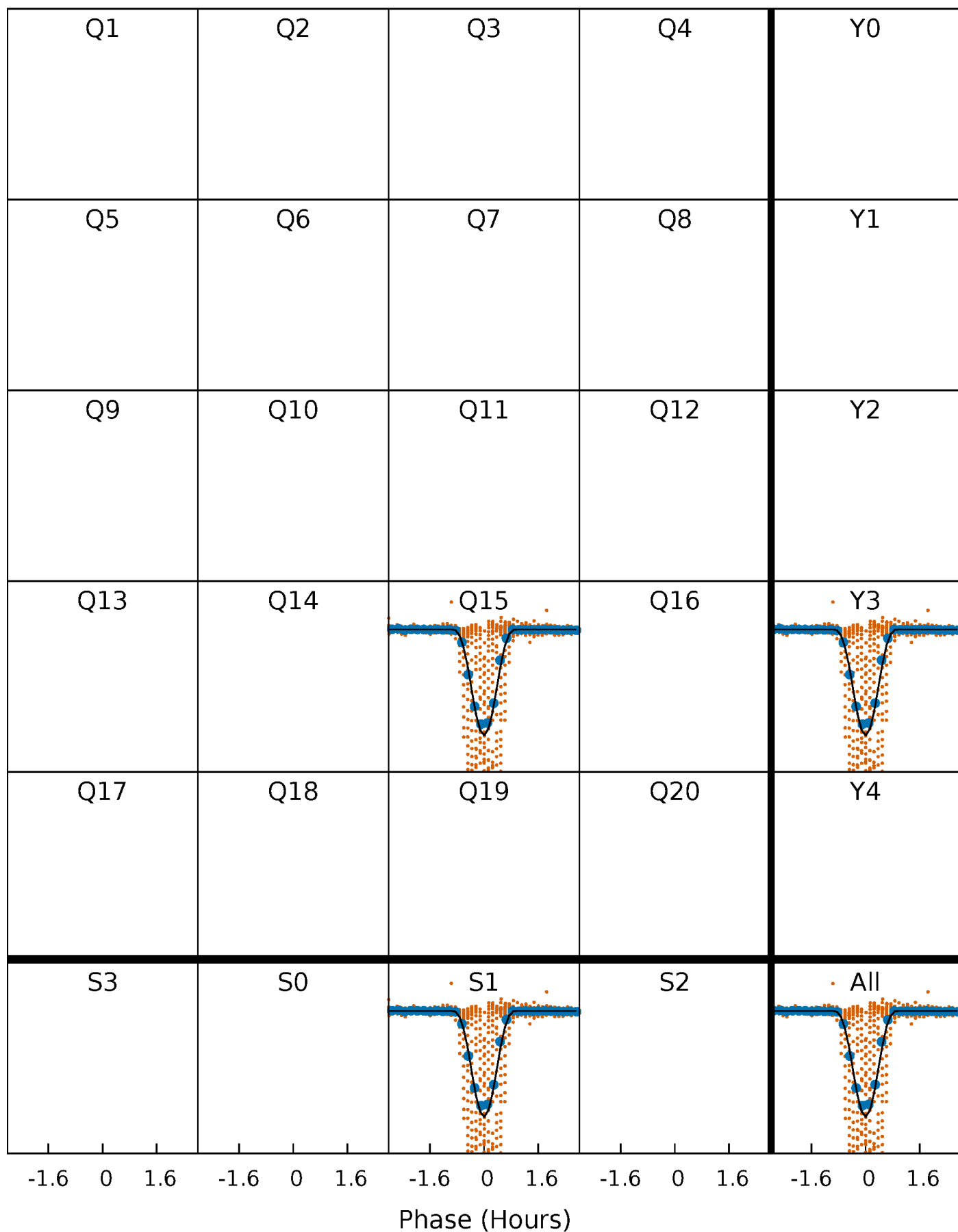
PDC Quarter-Phased Transit Curves

TCE 006102716-01 P= 0.648738 Days T₀=131.848303 (BKJD)



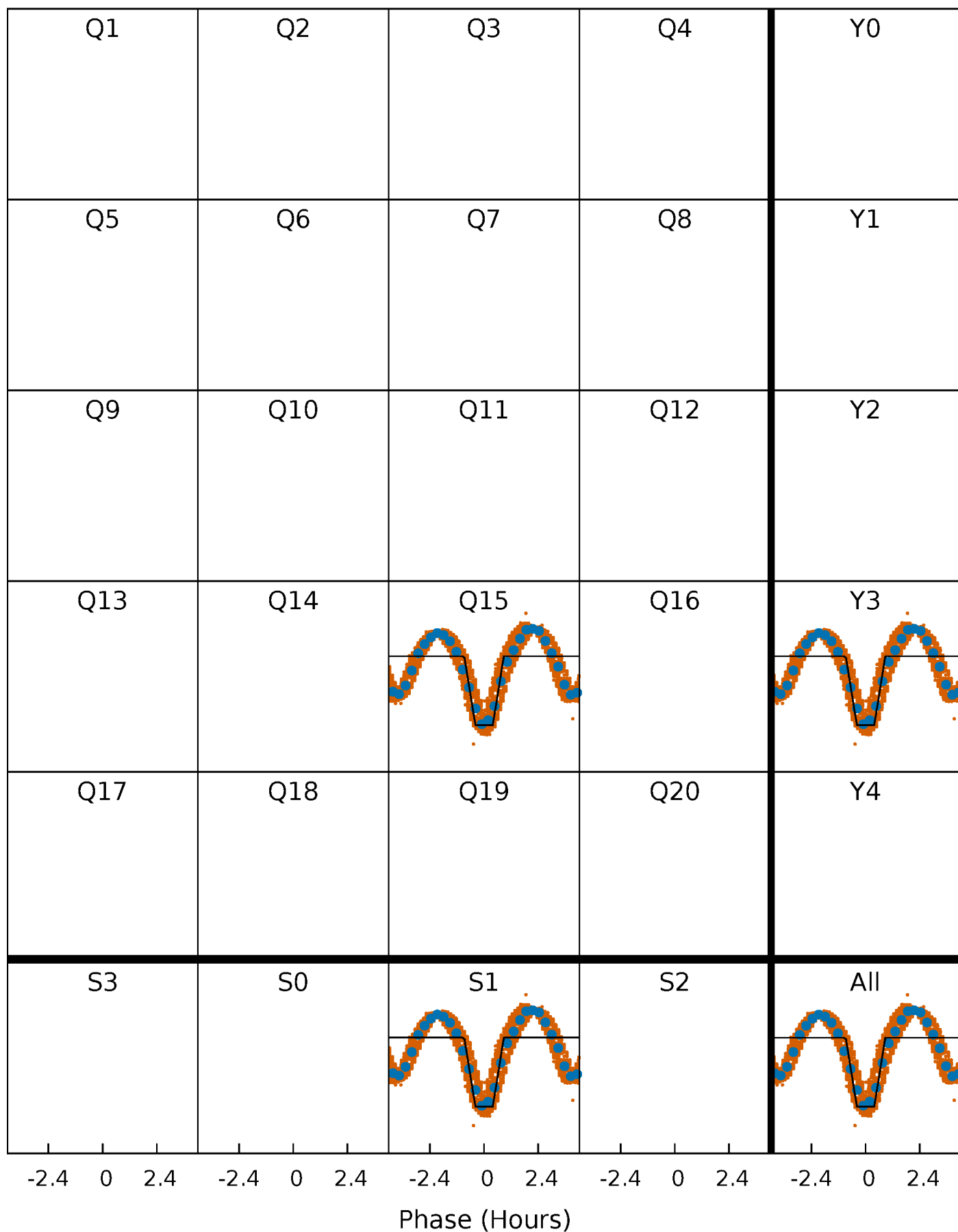
DV Quarter-Phased Transit Curves

TCE 006102716-01 P= 0.648738 Days $T_0=131.848303$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

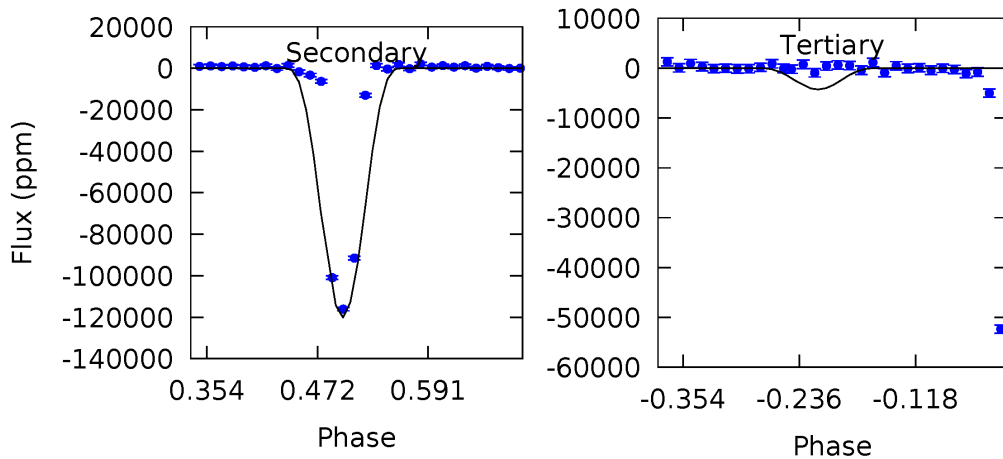
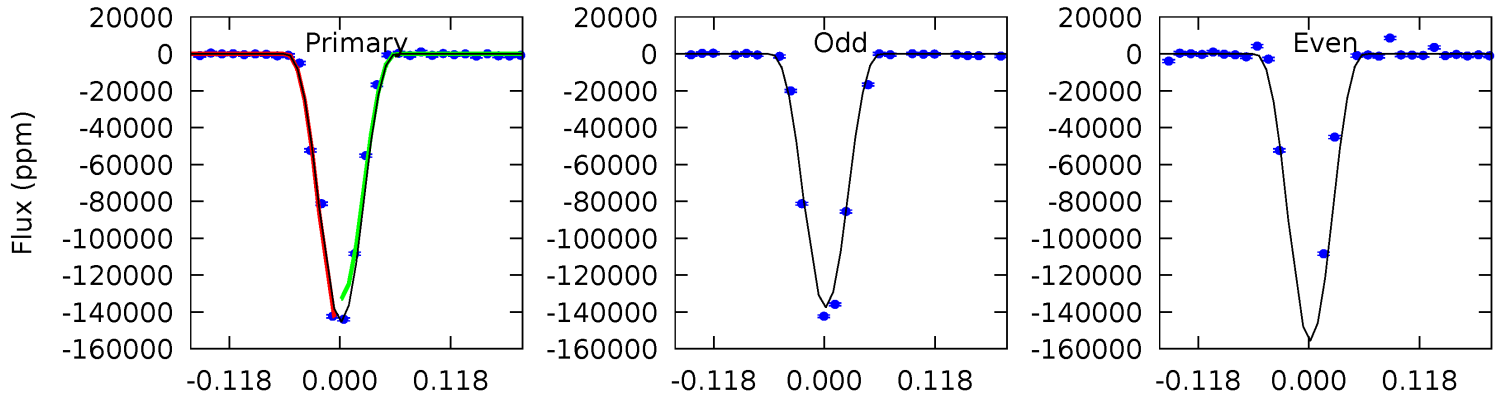
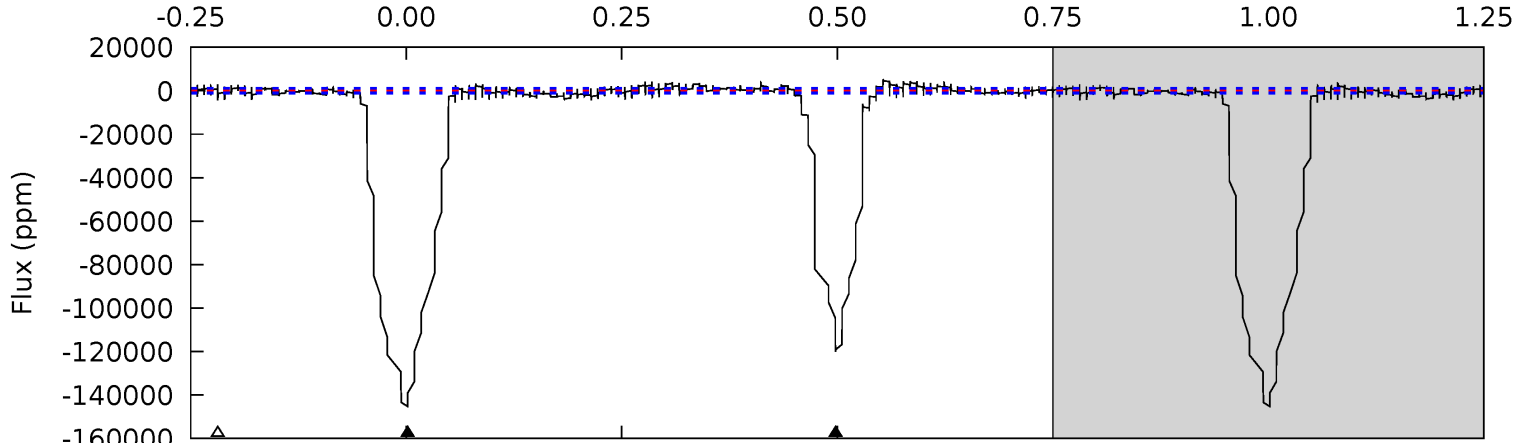
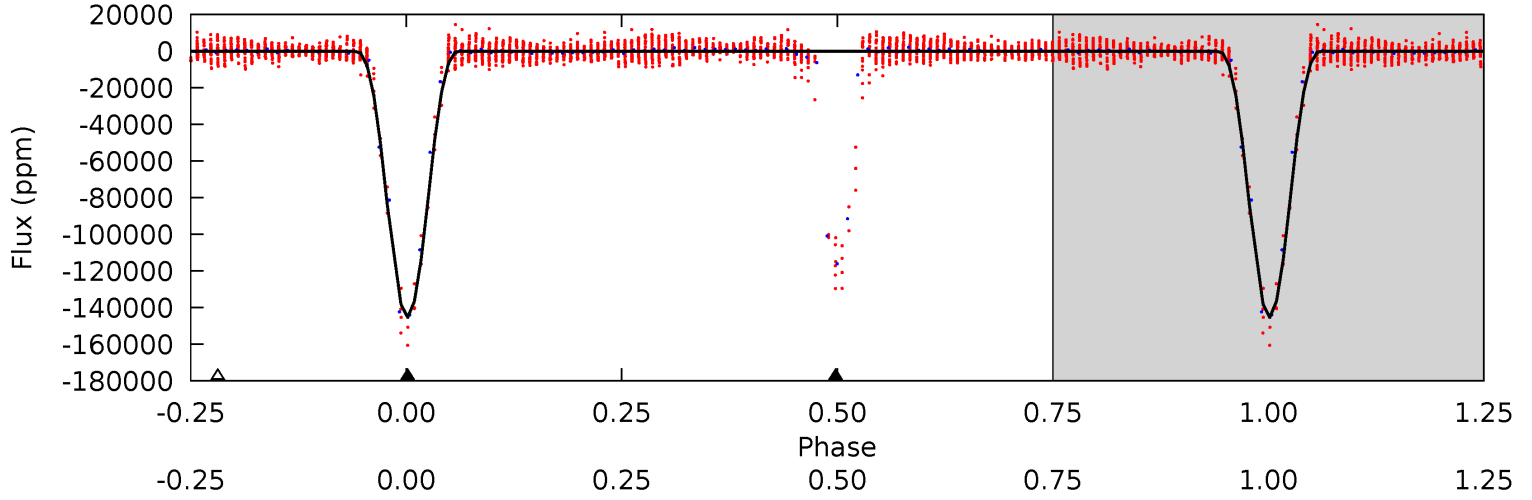
TCE 006102716-01 P= 0.648733 Days $T_0=131.859934$ (BKJD)



DV Model-Shift Uniqueness Test

006102716-01, P = 0.648738 Days, E = 131.848303 Days

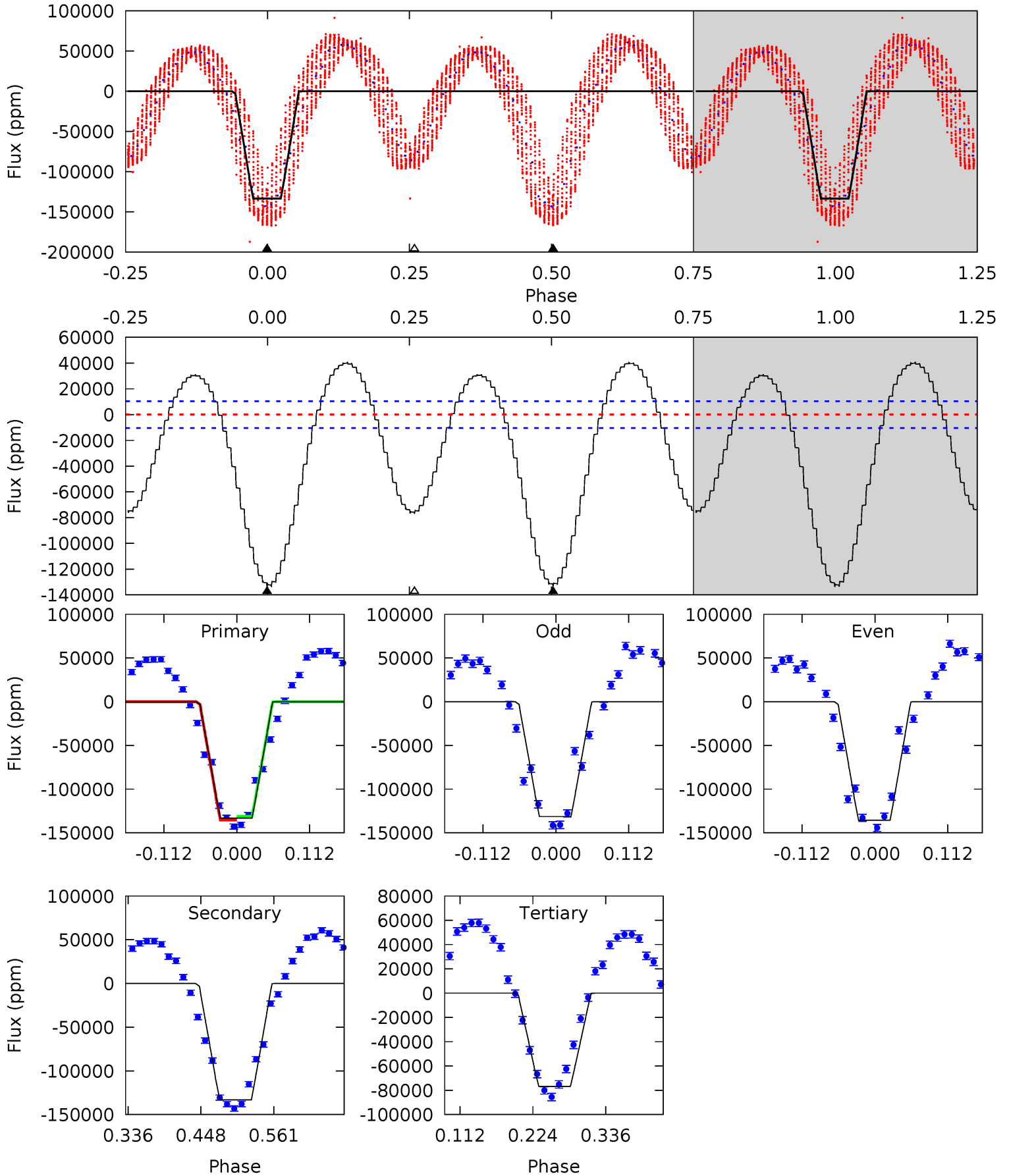
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
592.8	490.0	17.5	0	4.53	1.56	6.56	575.3	592.8	472.5	490.0	36.4	0.98	0.03	0



Alt Model-Shift Uniqueness Test

006102716-01, P = 0.648733 Days, E = 131.859934 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
58.1	58.0	33.4	0	4.54	1.59	17.8	24.6	58.1	24.5	58.0	0.92	0.99	0.23	0.92



Stellar Parameters For KIC 006102716

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5650^{+186}_{-169}	$4.008^{+0.413}_{-0.138}$	$0.120^{+0.250}_{-0.250}$	$1.701^{+0.389}_{-0.723}$	$1.074^{+0.134}_{-0.164}$	$0.307^{+1.070}_{-0.122}$
	+3%/-3%	+10%/-3%	+208%/-208%	+23%/-43%	+12%/-15%	+348%/-40%
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 006102716-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-120095 ± 245	$71.91^{+13.72}_{-16.21}$	3641^{+299}_{-380}	5309^{+327}_{-273}	$3.295^{+1.978}_{-0.951}$
Alt.	-133202 ± 2297	$67.91^{+13.94}_{-15.17}$	3628^{+309}_{-387}	5595^{+377}_{-312}	$4.161^{+2.577}_{-1.290}$

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 $A_{obs} \gg 1.0$

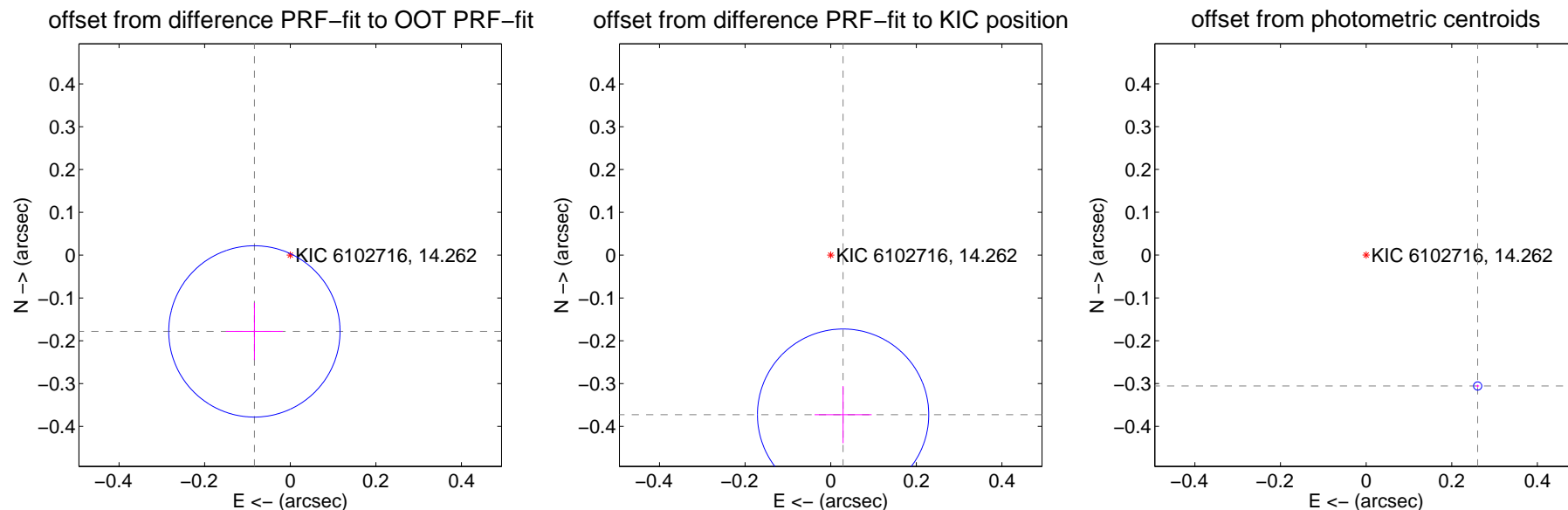
DV Centroid Data

Supplemental centroid analysis for 006102716-01. Kepler magnitude: 14.26. Transit SNR 263.51

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	0.197 ± 0.067	2.95	0.084 ± 0.067	-0.178 ± 0.067
PRF-fit source offset from KIC position	0.374 ± 0.067	5.60	-0.029 ± 0.067	-0.373 ± 0.067
photometric centroid source offset	0.40 ± 0.00	125.48	-0.26 ± 0.00	-0.31 ± 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.

Q13 no difference image



Q13 no OOT image



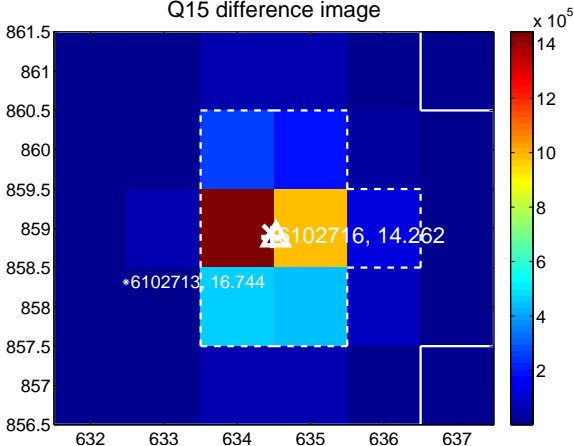
Q14 no difference image



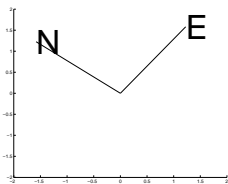
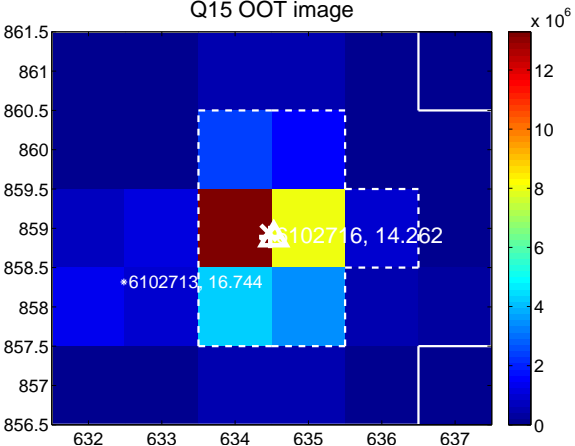
Q14 no OOT image



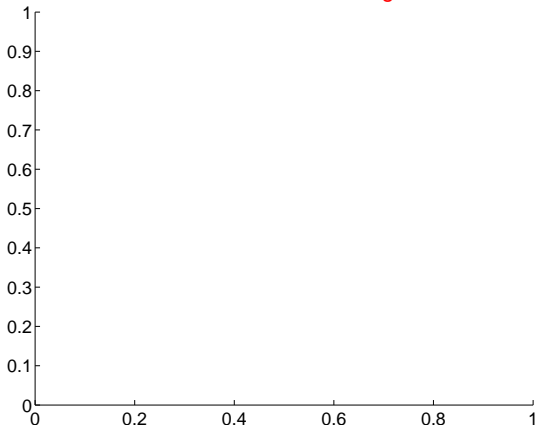
Q15 difference image



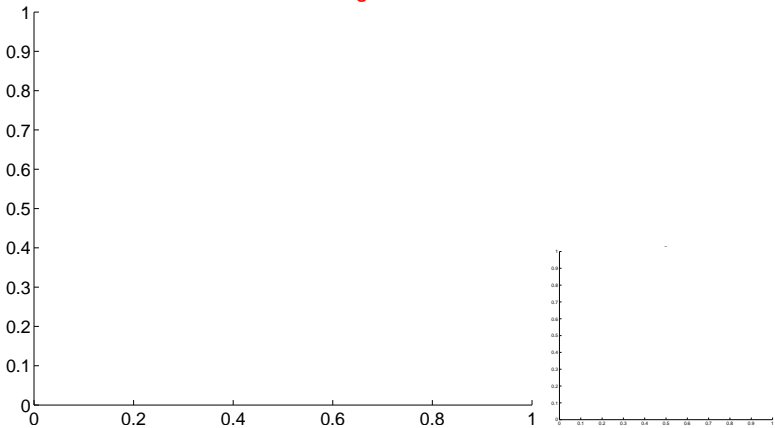
Q15 OOT image



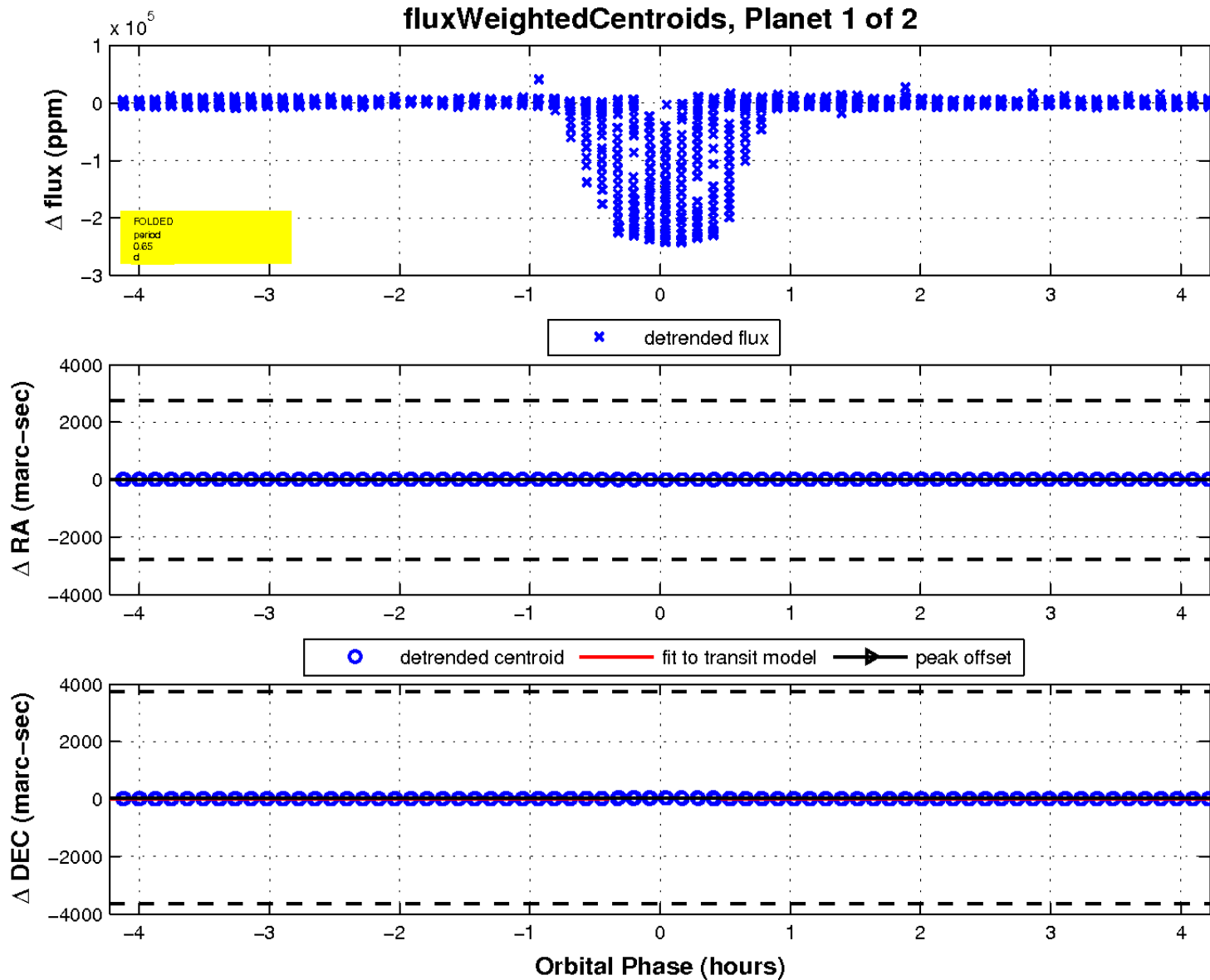
Q16 no difference image



Q16 no OOT image

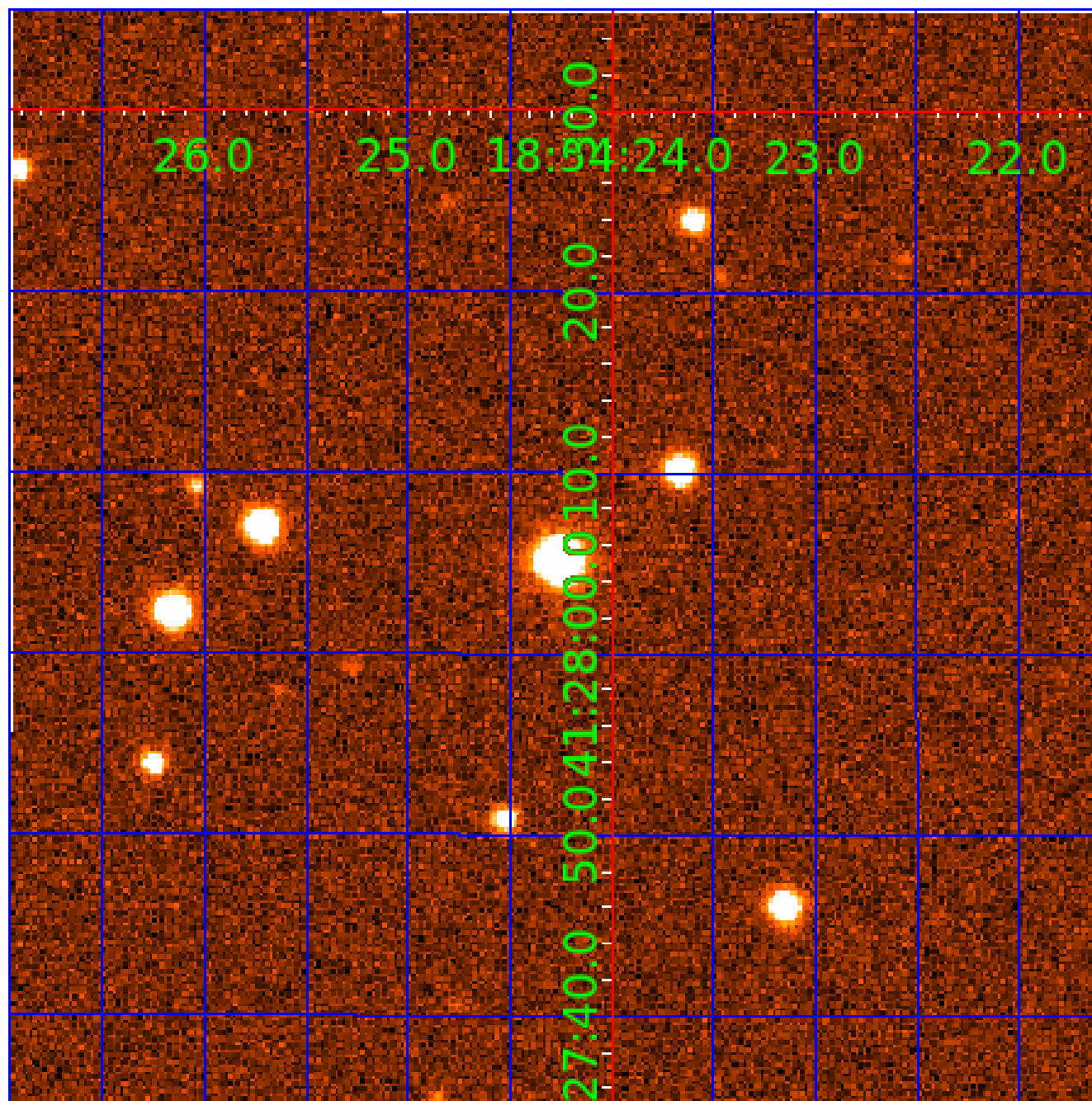


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006102716

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})
006102716-01	OBS	No	0.648738	131.848303	149572.6	1.409	450.6	263.5	1.70	5650	75.08	11698.54
006102716-02	OBS	No	0.648749	132.145369	15893.9	1.500	552.3	-1.0	1.70	5650	21.27	11698.27

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006102716-01	OBS	FP	0.00	1	0	0	0	LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
006102716-02	OBS	FP	0.00	1	0	0	0	LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

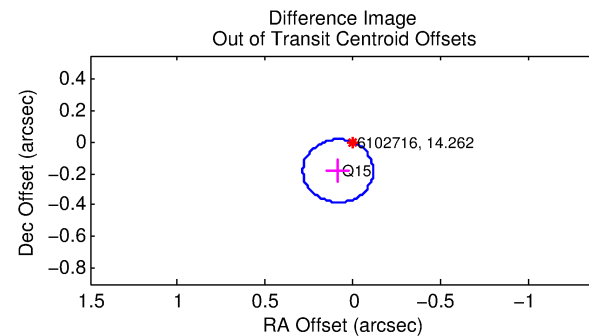
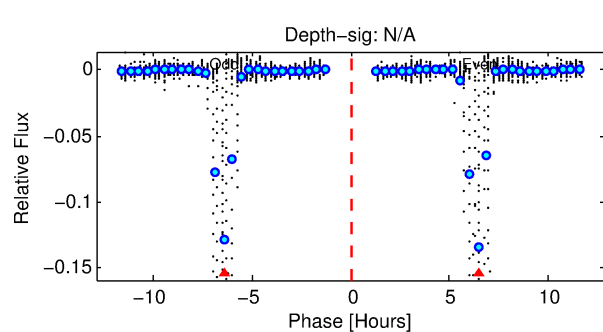
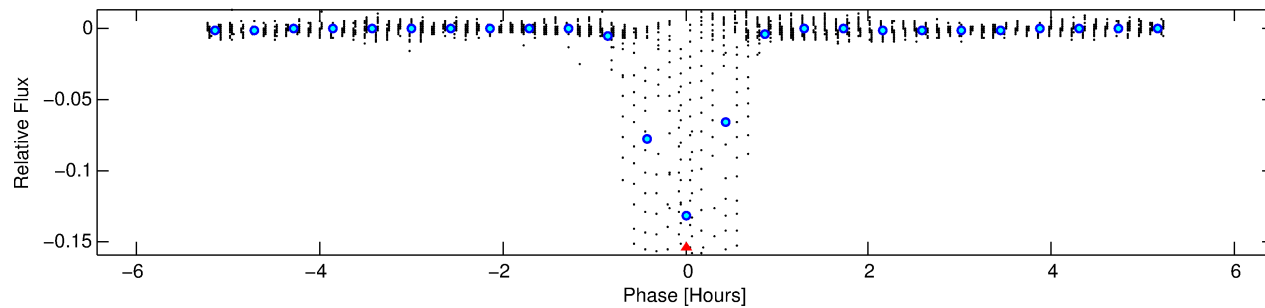
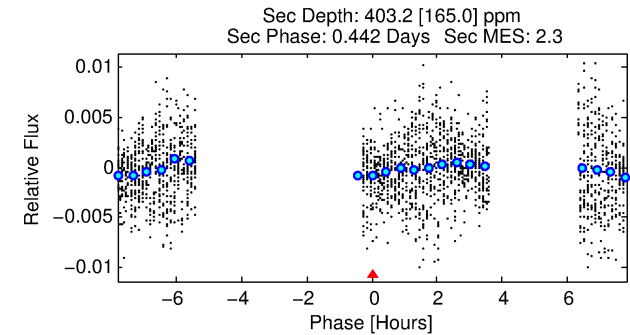
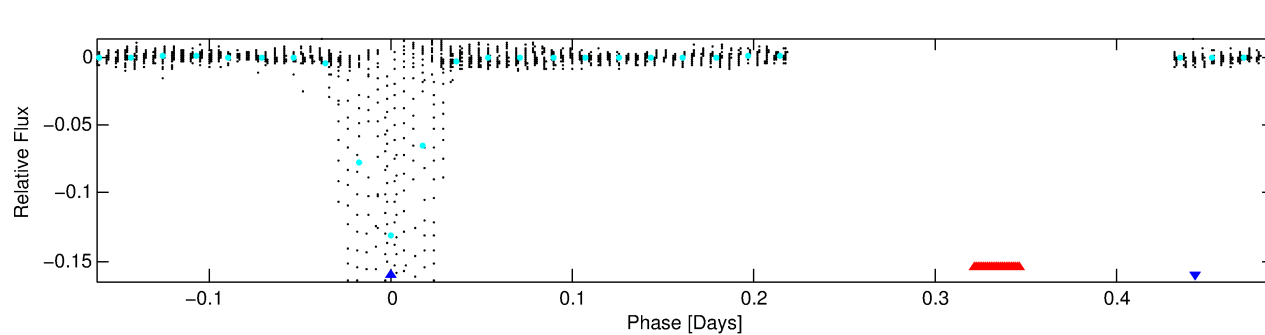
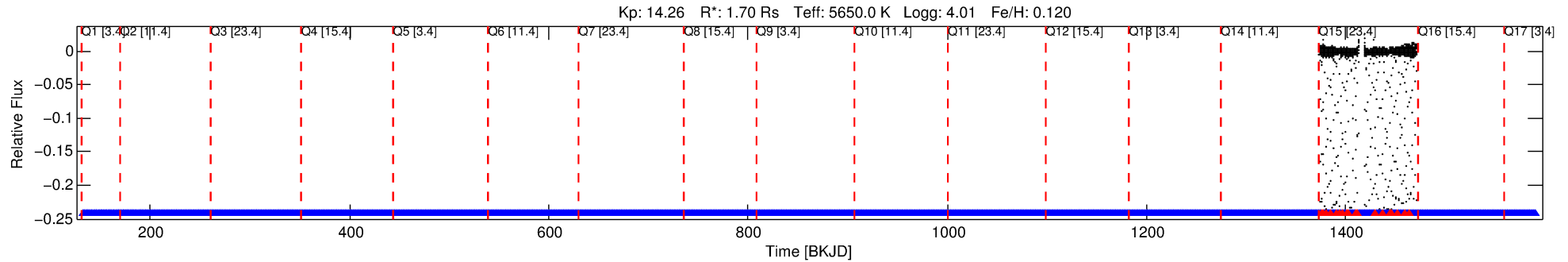
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006102716-02

No Significant Match Found

DV One-Page Summary

KIC: 6102716 Candidate: 2 of 2 Period: 0.649 d



TPS TCE Results:

Period = 0.64875 d
Epoch = 132.1454 BKJD

DV fit results are unavailable

DV Diagnostic Results:

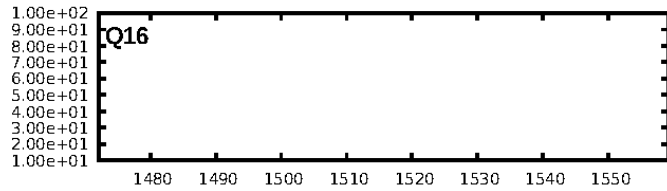
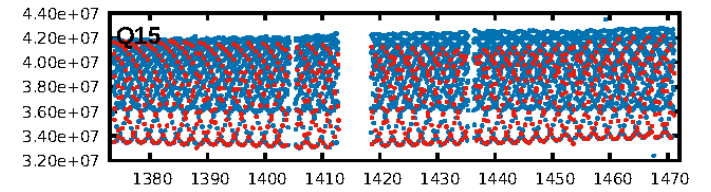
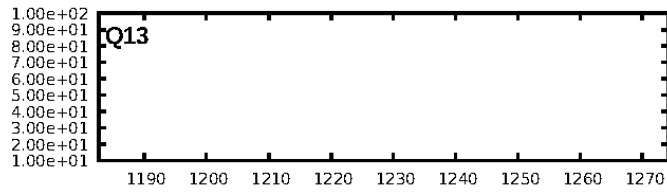
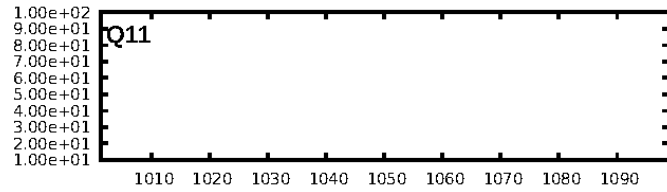
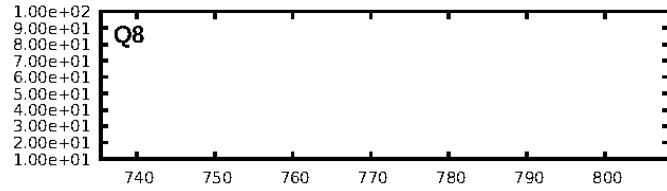
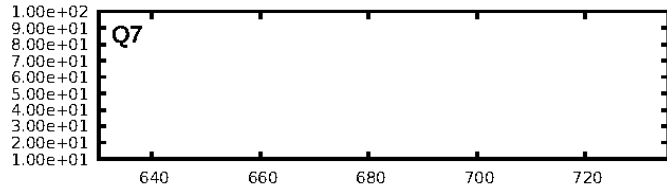
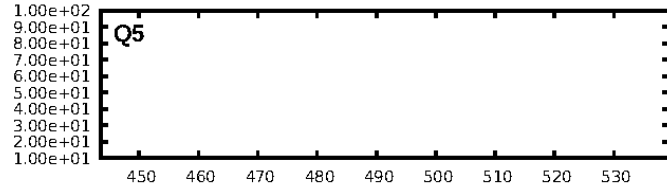
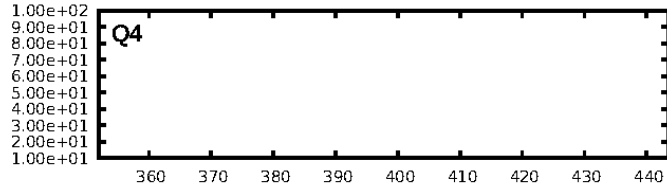
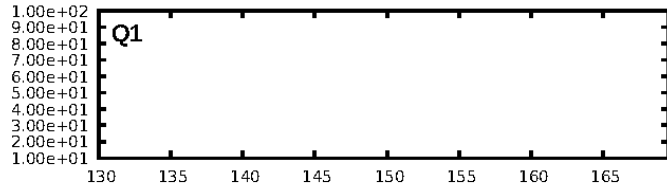
ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.87 [122/140]
GhostDiagnostic-chr: 14.1

Centroid-sig: 0.0%
Centroid-so: 0.347 arcsec [123.67 σ]
OotOffset-rm: 0.201 arcsec [3.01 σ]
KicOffset-rm: 0.374 arcsec [5.61 σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [1/1]

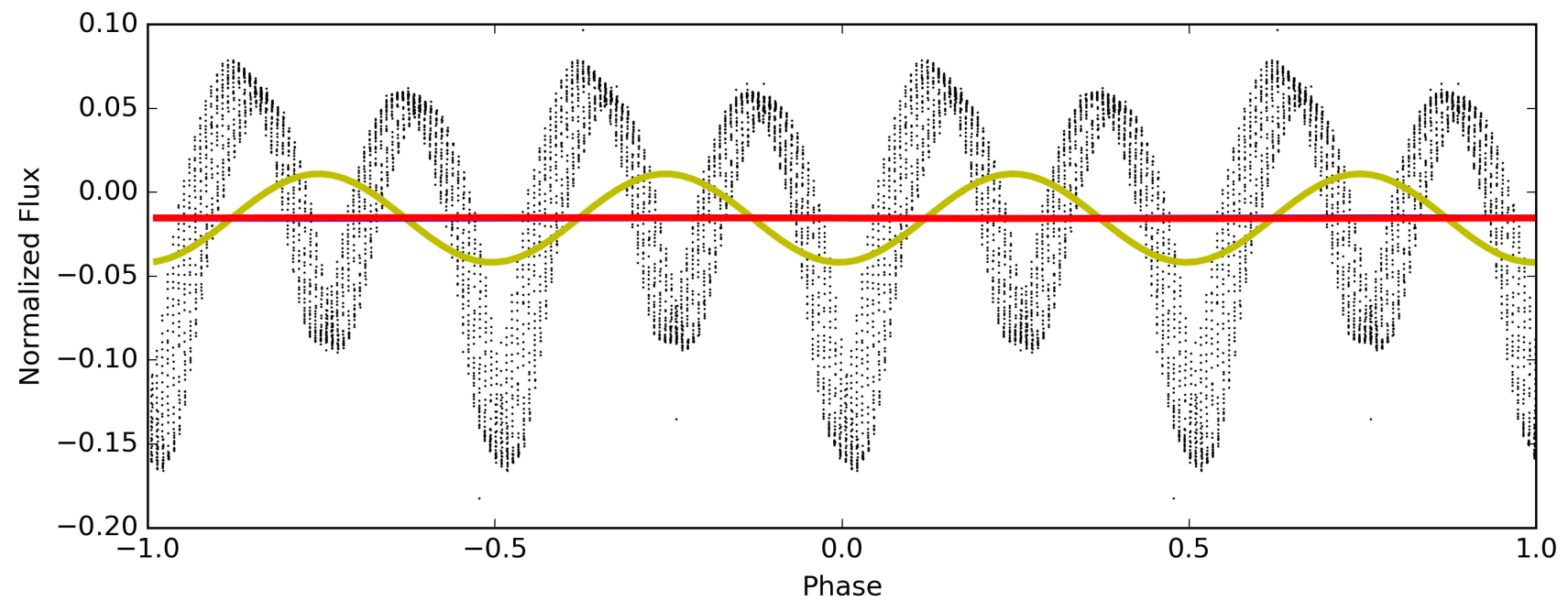
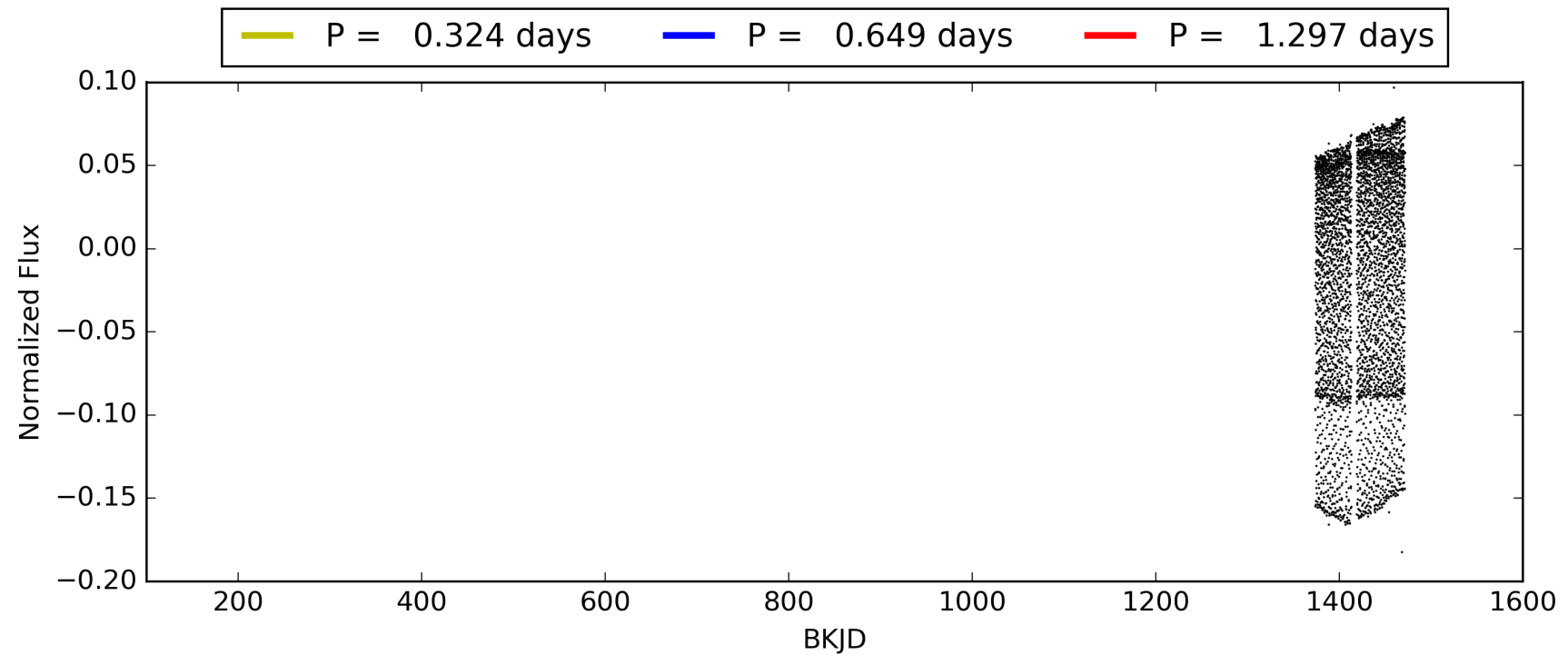
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 08:38:26 Z

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

TCE 006102716-02, PDC Light Curves

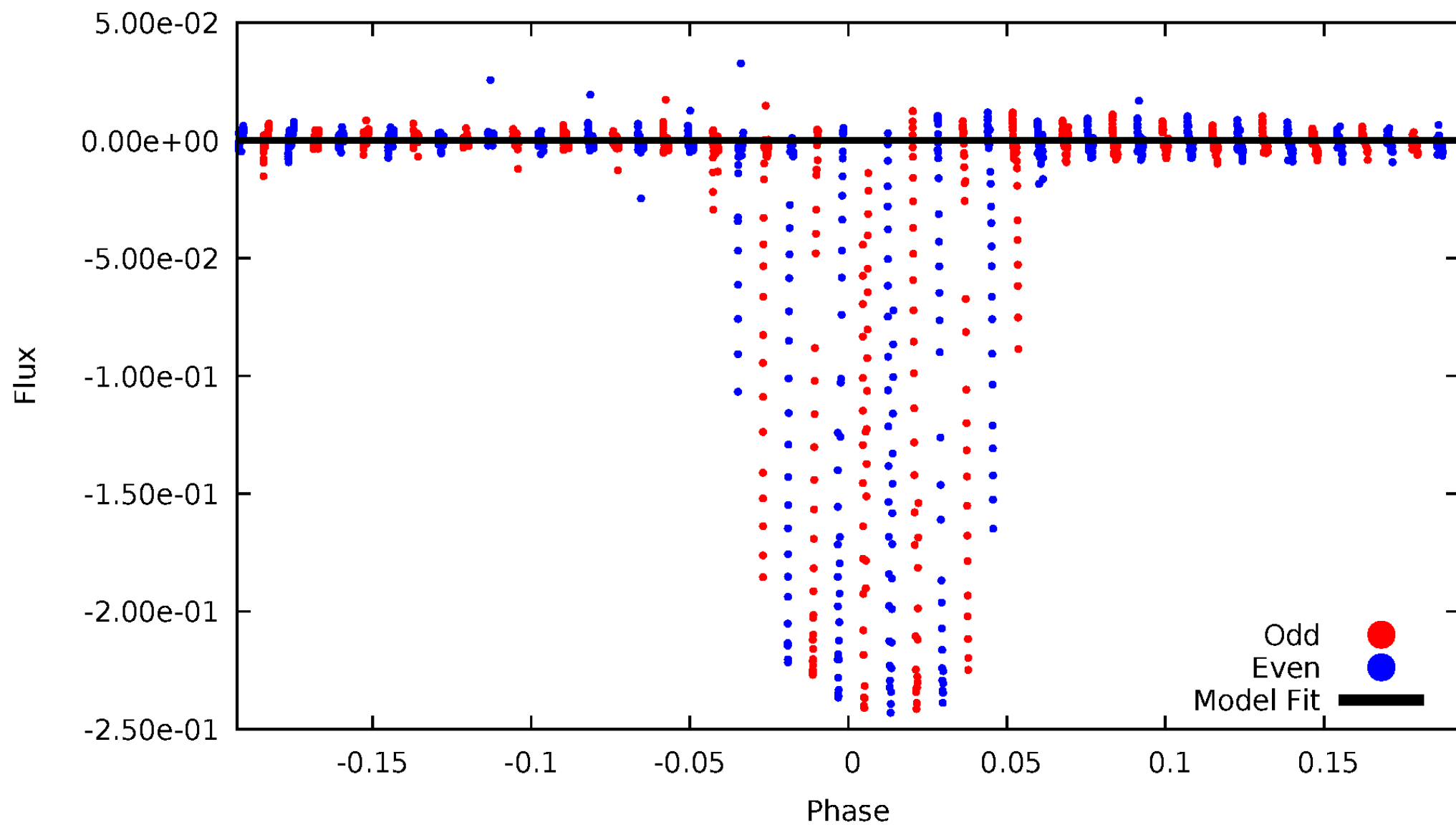


TCE 006102716-02



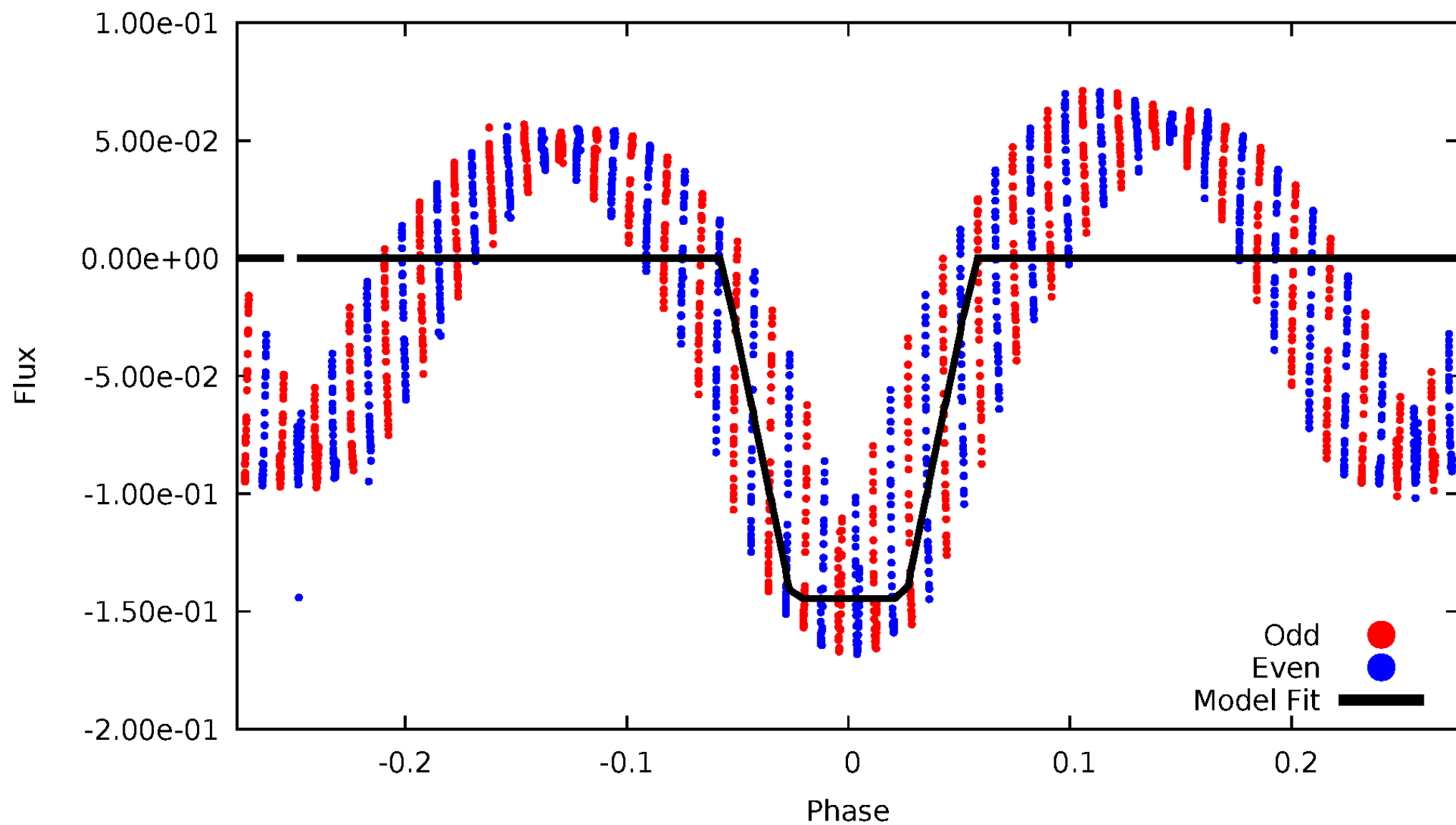
DV Odd/Even

TCE 006102716-02



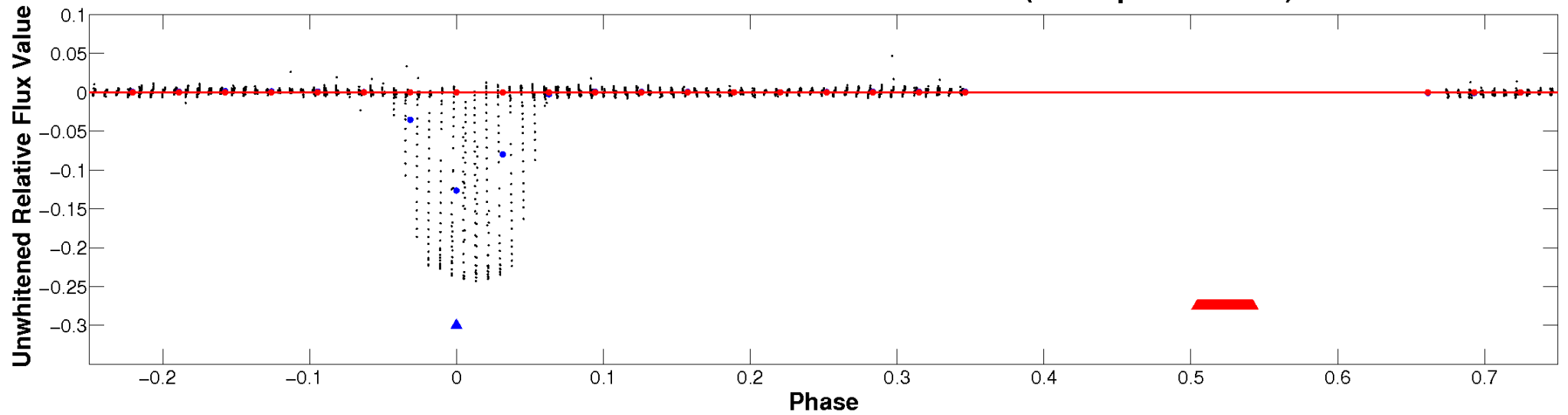
ALT Odd/Even

TCE 006102716-02

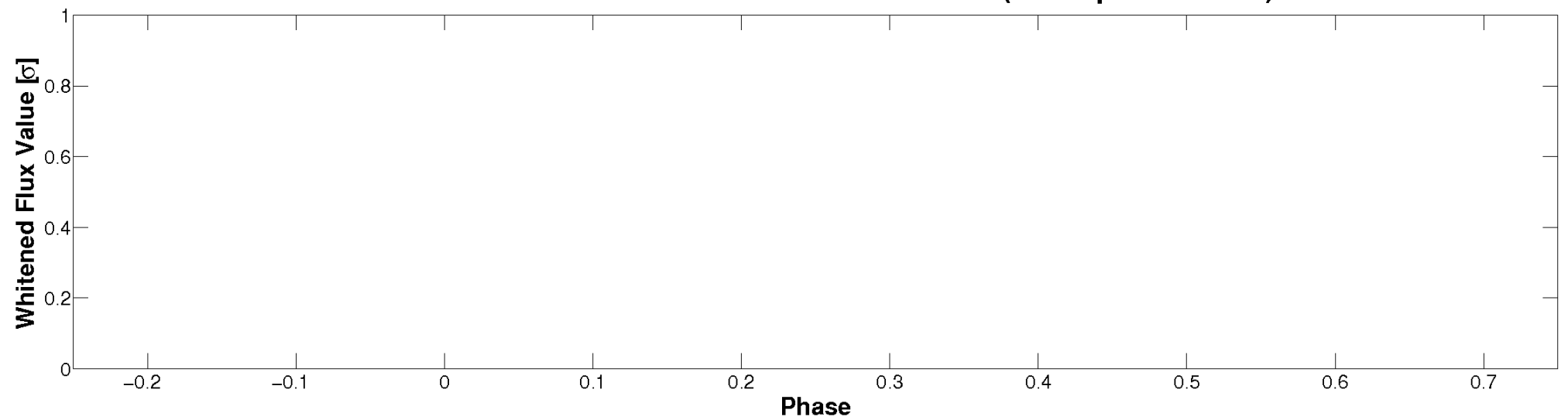


Non-Whitened Vs. Whitened Light Curve

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

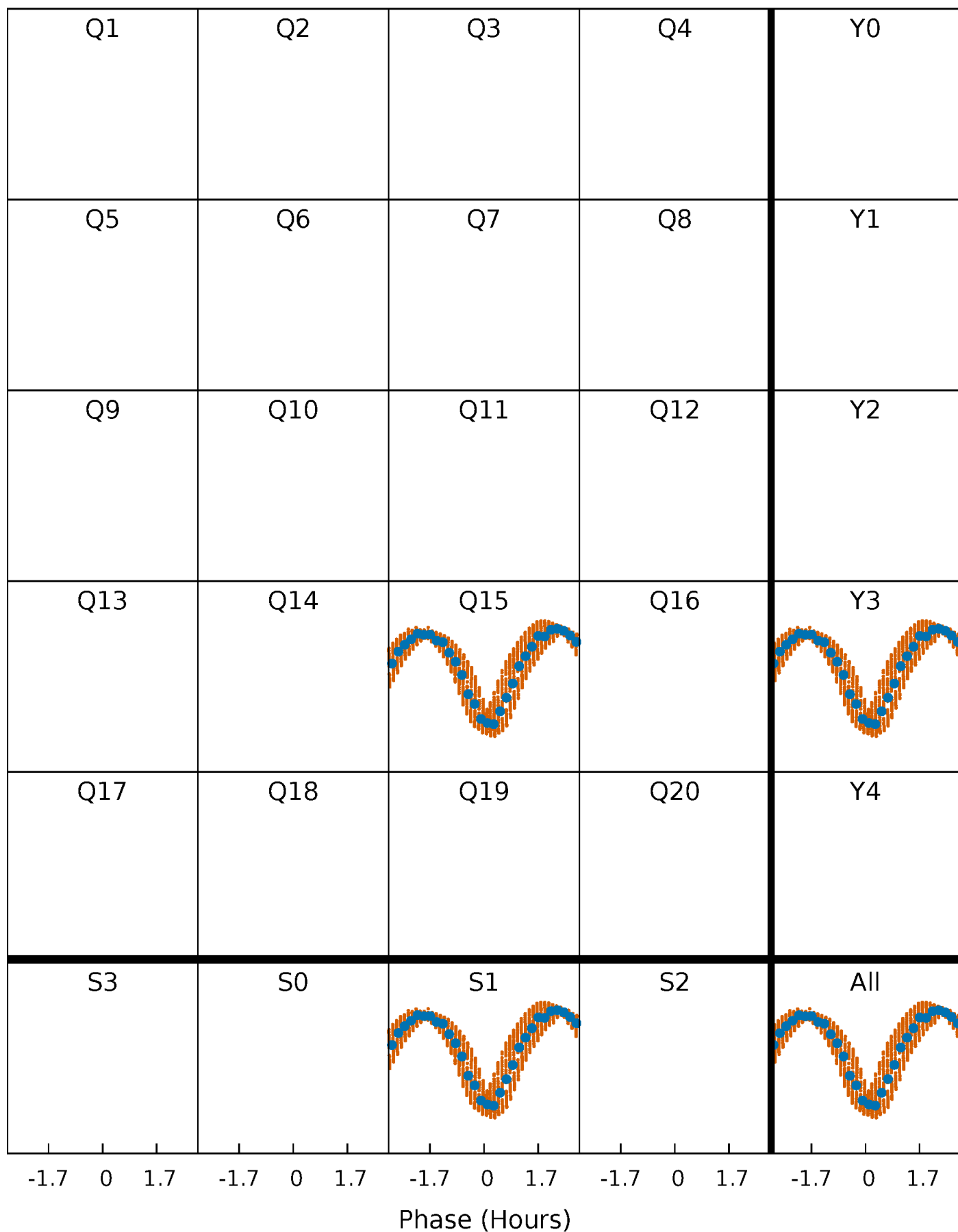


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



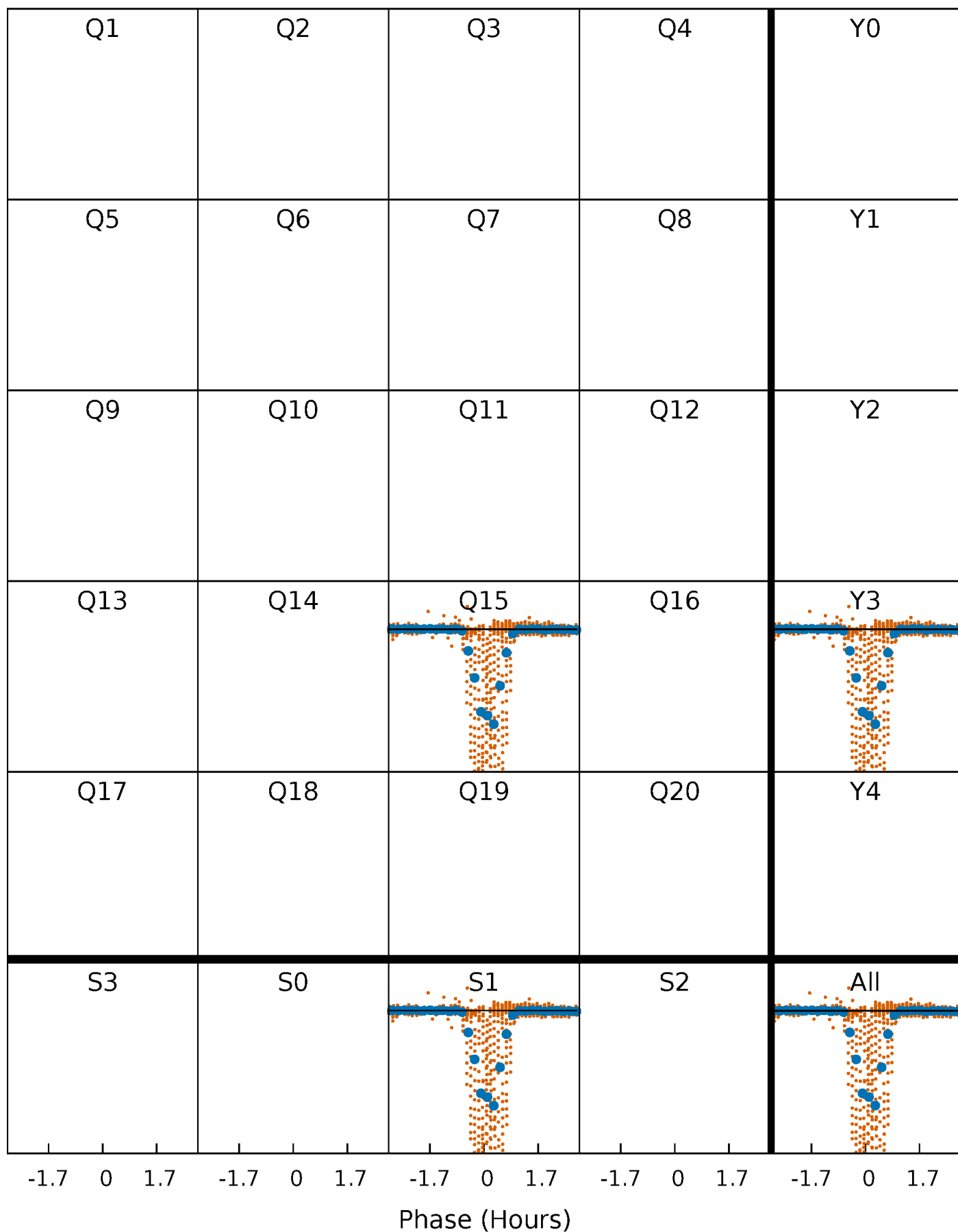
PDC Quarter-Phased Transit Curves

TCE 006102716-02 P= 0.648749 Days $T_0=132.145369$ (BKJD)



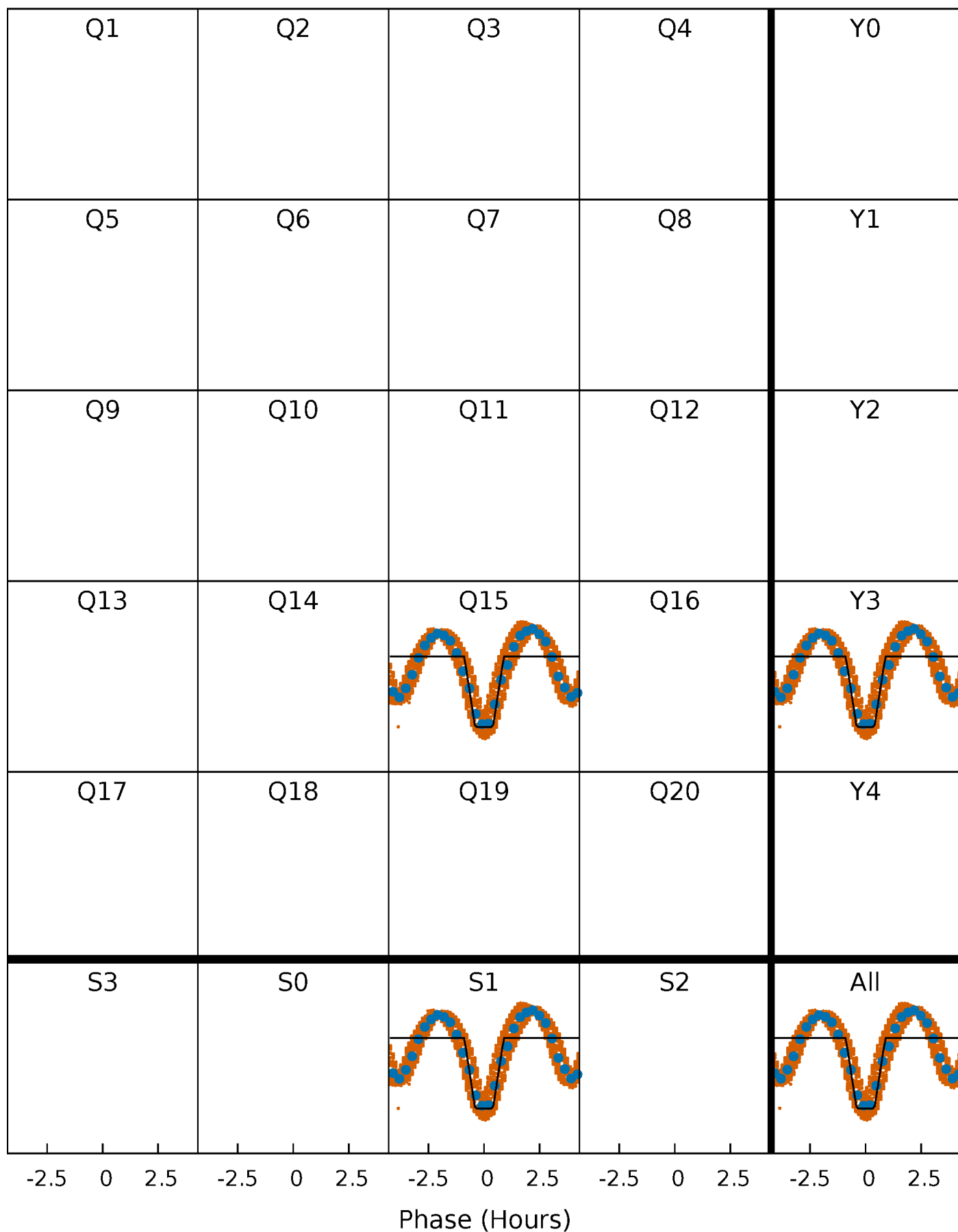
DV Quarter-Phased Transit Curves

TCE 006102716-02 P= 0.648749 Days $T_0=132.145369$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

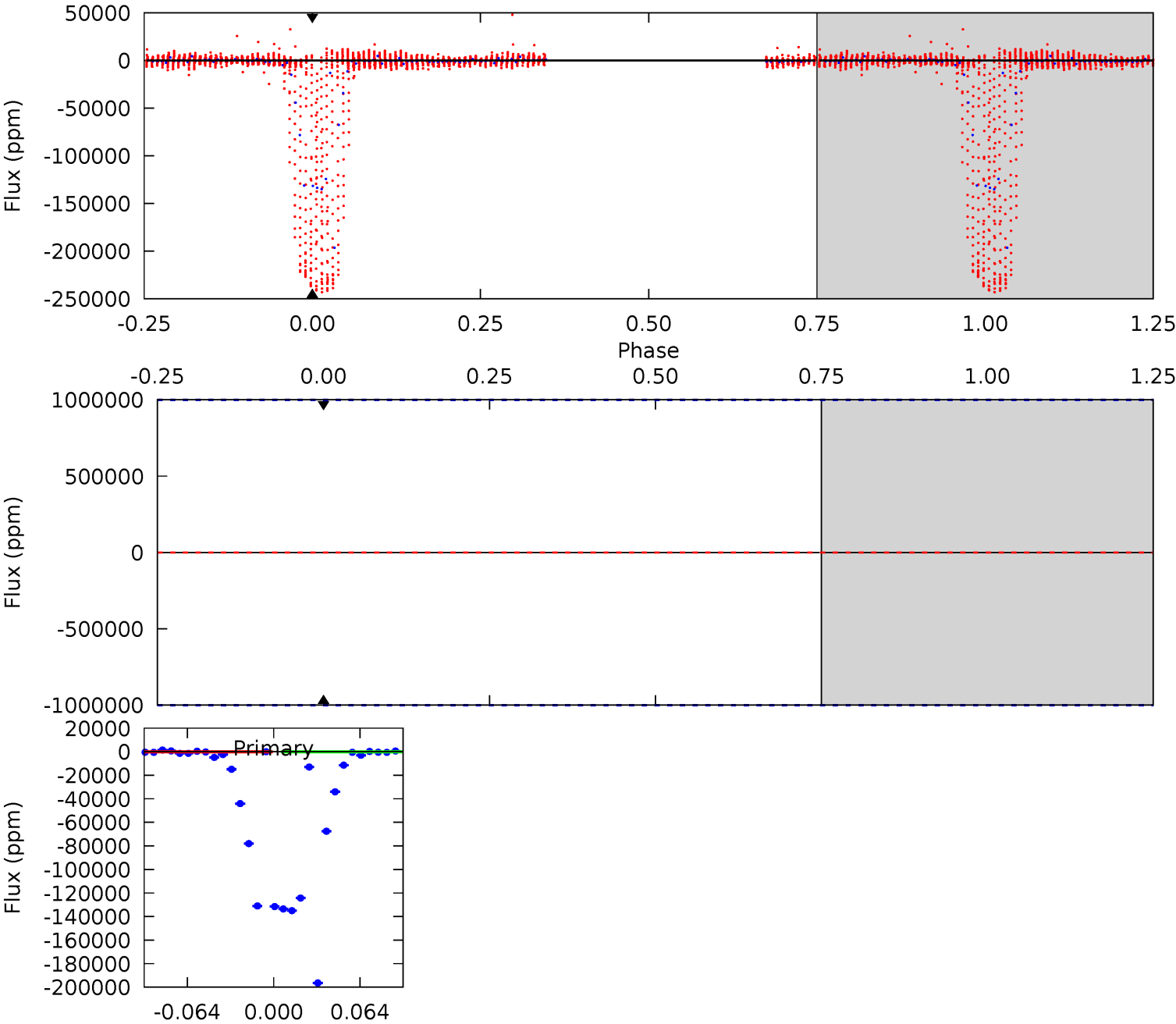
TCE 006102716-02 $P = 0.648749$ Days $T_0 = 132.151298$ (BKJD)



DV Model-Shift Uniqueness Test

006102716-02, P = 0.648749 Days, E = 132.145369 Days

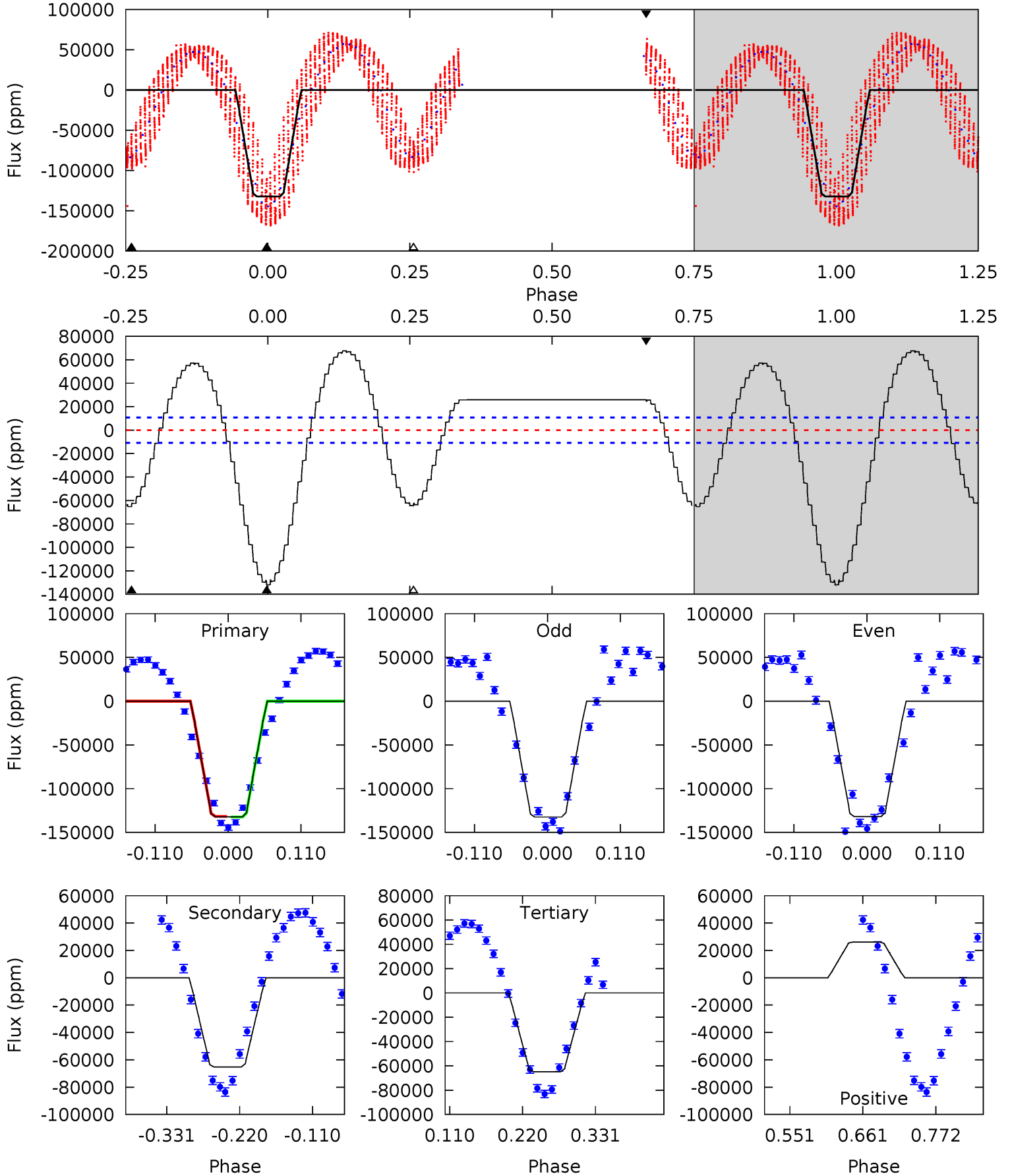
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

006102716-02, P = 0.648749 Days, E = 132.151298 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
55.2	27.3	27.1	10.9	4.54	1.60	17.9	28.1	44.3	0.19	16.4	0.13	1.00	0.34	0.16



Stellar Parameters For KIC 006102716

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5650^{+186}_{-169}	$4.008^{+0.413}_{-0.138}$	$0.120^{+0.250}_{-0.250}$	$1.701^{+0.389}_{-0.723}$	$1.074^{+0.134}_{-0.164}$	$0.307^{+1.070}_{-0.122}$
	+3%/-3%	+10%/-3%	+208%/-208%	+23%/-43%	+12%/-15%	+348%/-40%
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 006102716-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$21.62^{+18.41}_{-13.59}$	3637^{+285}_{-387}	3564^{+8241}_{-14387}	$0.607^{+47.076}_{-36.467}$
Alt.	-65288 ± 2391	$65.84^{+21.68}_{-20.83}$	3631^{+286}_{-382}	4631^{+759}_{-485}	$1.995^{+2.321}_{-0.861}$

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

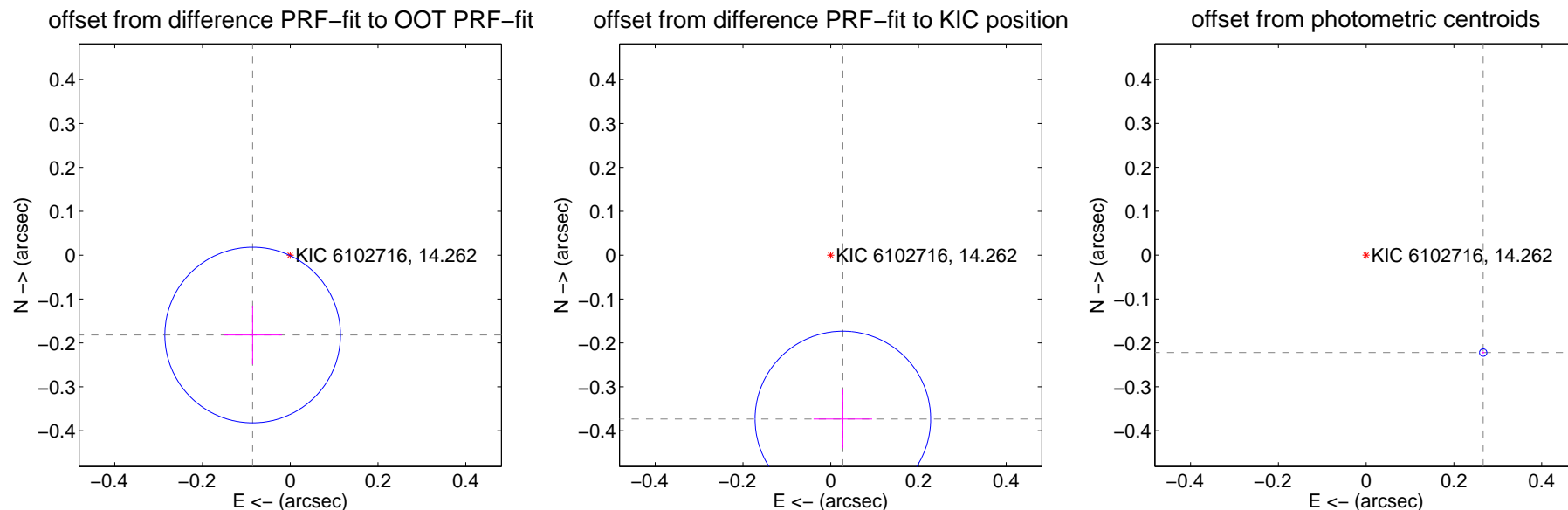
DV Centroid Data

Supplemental centroid analysis for 006102716-02. Kepler magnitude: 14.26. Transit SNR -1.00

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	0.201 ± 0.067	3.01	0.086 ± 0.067	-0.182 ± 0.067
PRF-fit source offset from KIC position	0.374 ± 0.067	5.61	-0.028 ± 0.067	-0.373 ± 0.067
photometric centroid source offset	0.35 ± 0.00	123.67	-0.27 ± 0.00	-0.22 ± 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.

Q13 no difference image



Q13 no OOT image



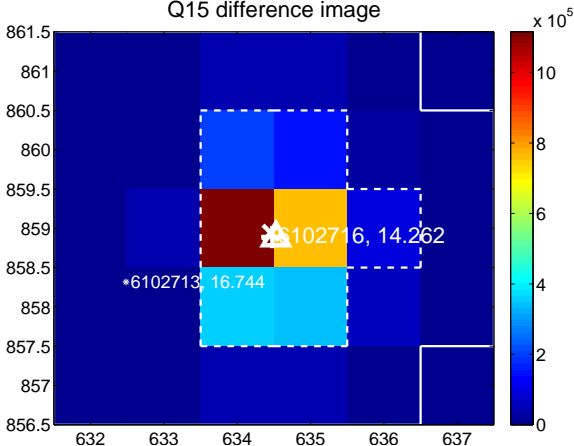
Q14 no difference image



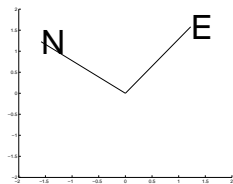
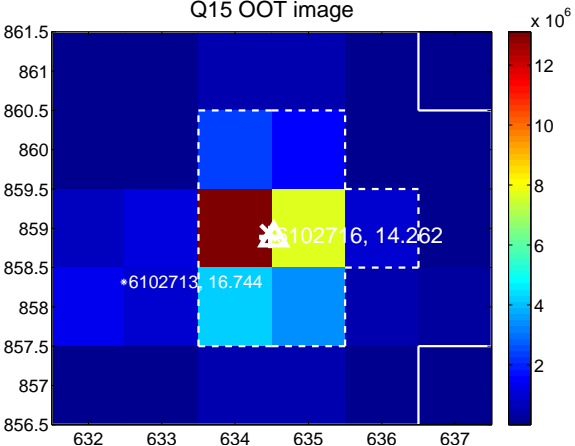
Q14 no OOT image



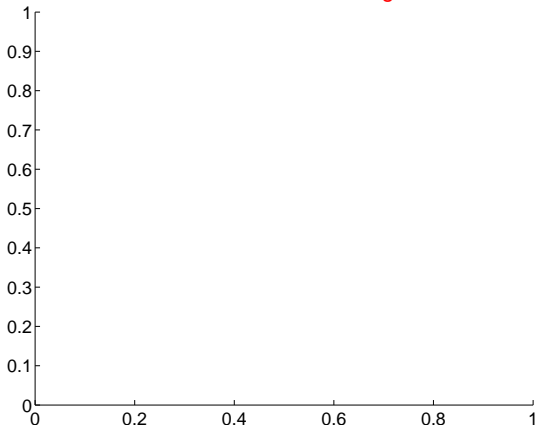
Q15 difference image



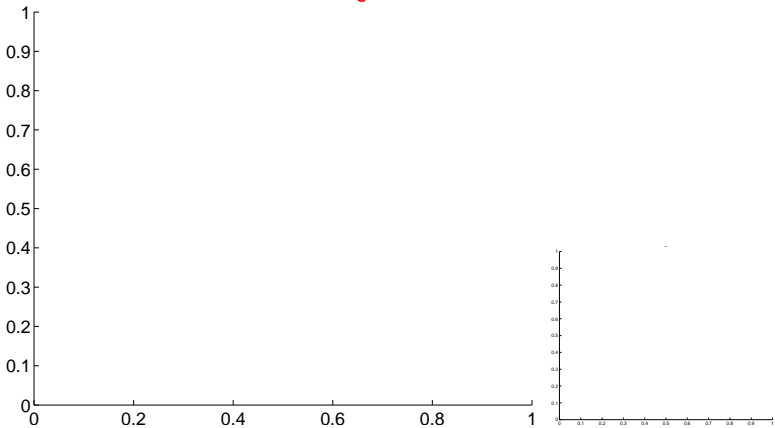
Q15 OOT image



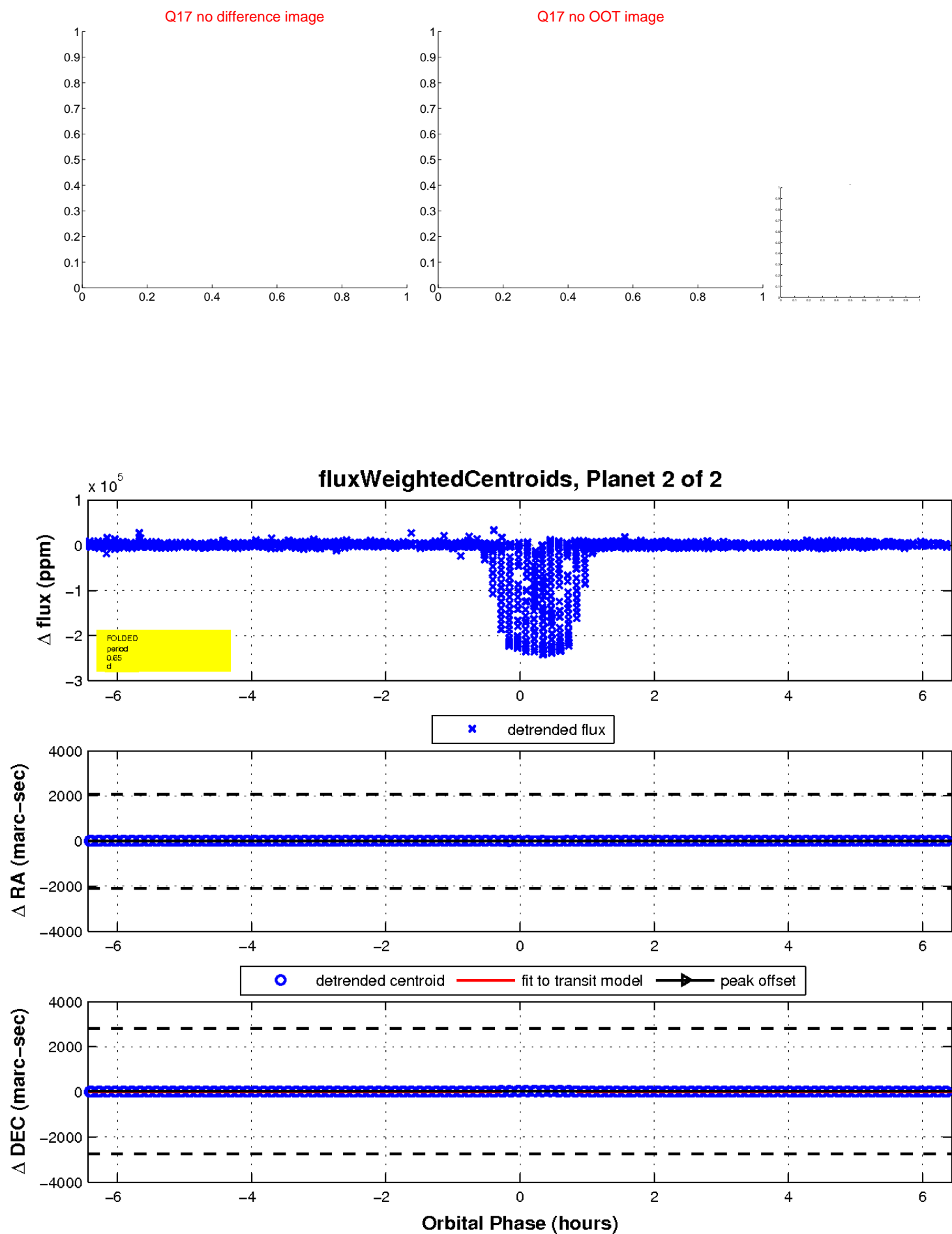
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

