

KIC 007108433

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})
007108433-01	OBS	6153.01	1.519159	131.925777	486480.6	3.000	5719.6	-1.0	1.70	7426	67.57	9500.25
007108433-02	OBS	No	0.759685	131.800455	135175.4	5.857	617.3	177.4	1.70	7426	91.63	23934.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007108433-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
007108433-02	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 007108433-01

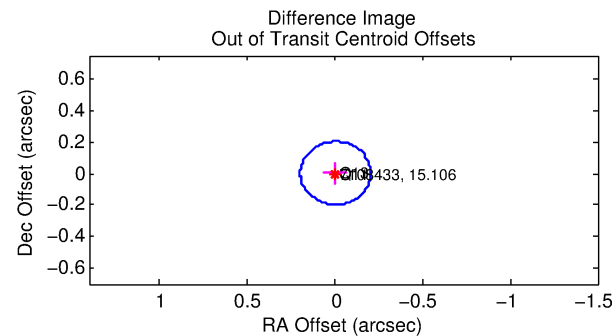
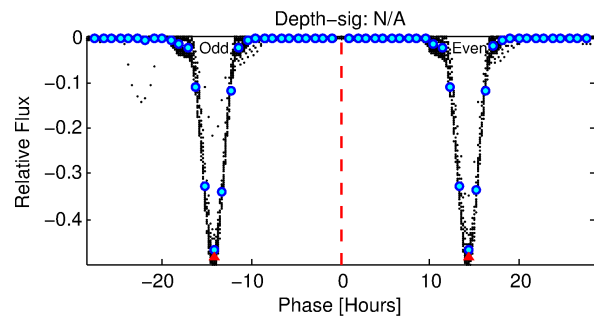
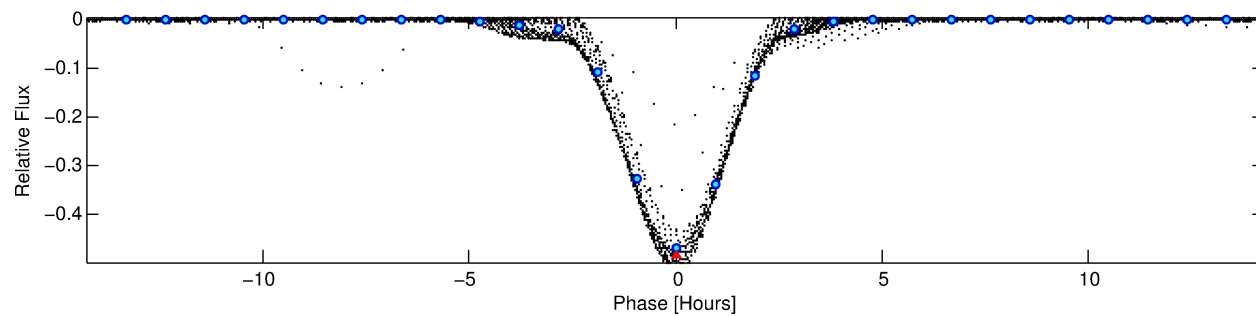
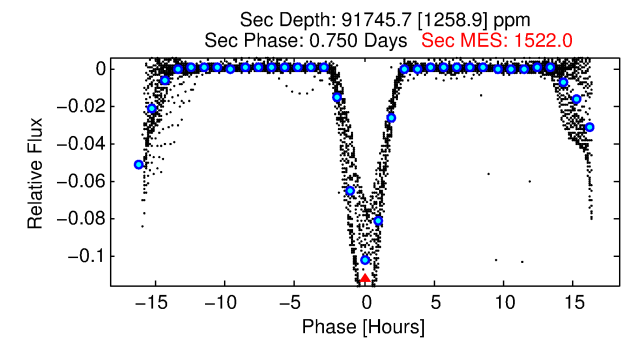
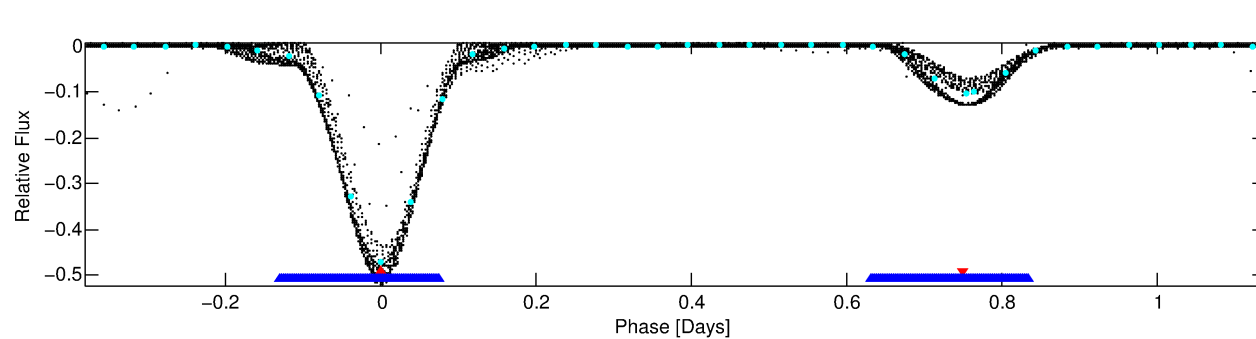
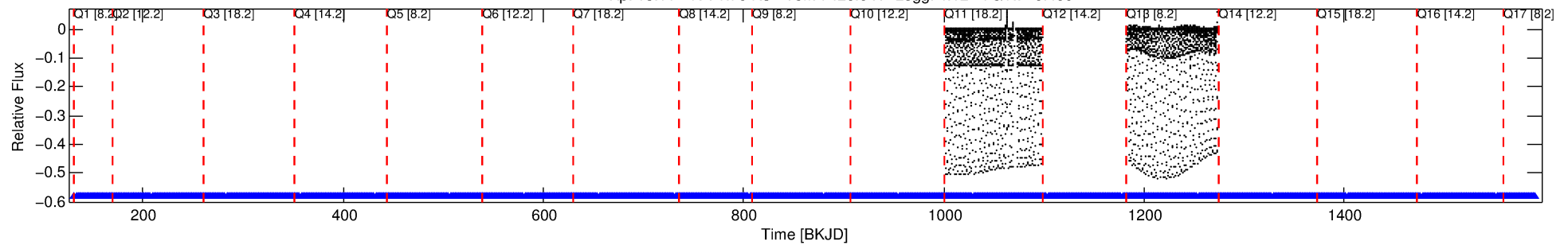
No Significant Match Found

DV One-Page Summary

KIC: 7108433 Candidate: 1 of 2 Period: 1.519 d

KOI: K06153 Corr: No Ephemeris Match

Kp: 15.11 R*: 1.70 Rs Teff: 7426.0 K Logg: 4.12 Fe/H: -0.460



TPS TCE Results:

Period = 1.51916 d
Epoch = 131.9258 BKJD

DV fit results are unavailable

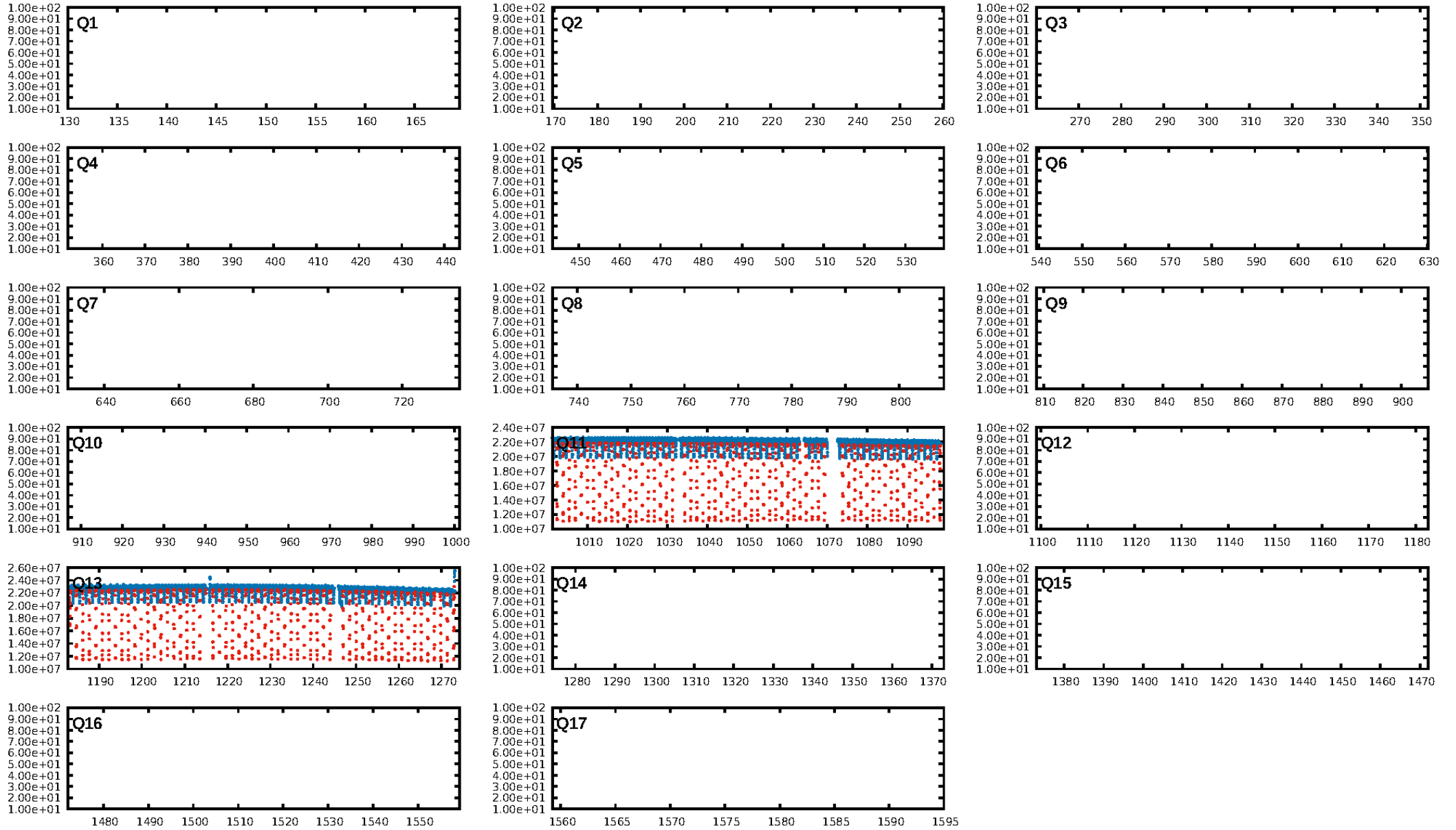
DV Diagnostic Results:

ShortPeriod-sig: 99.4% [2.77 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [119/119]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 0.109 arcsec [71.44 σ]
OotOffset-rm: 0.006 arcsec [0.09 σ]
KicOffset-rm: 0.060 arcsec [0.80 σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.00 [0/2]

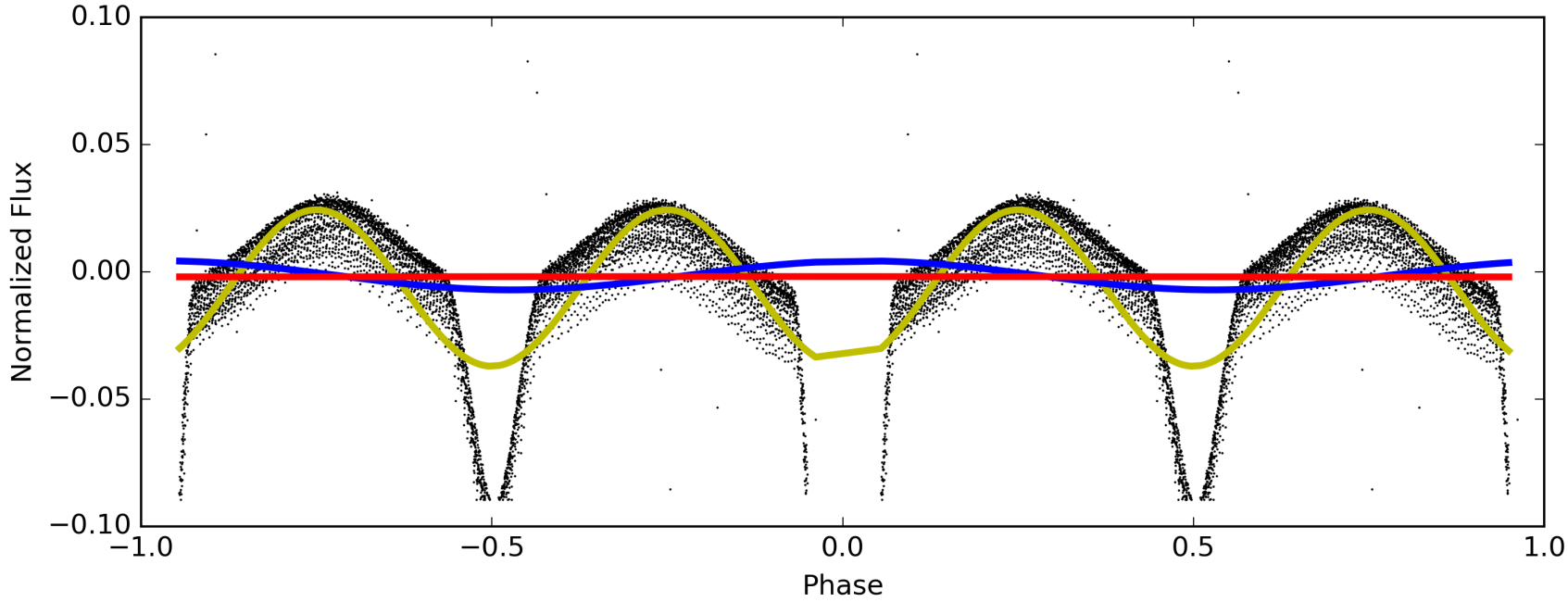
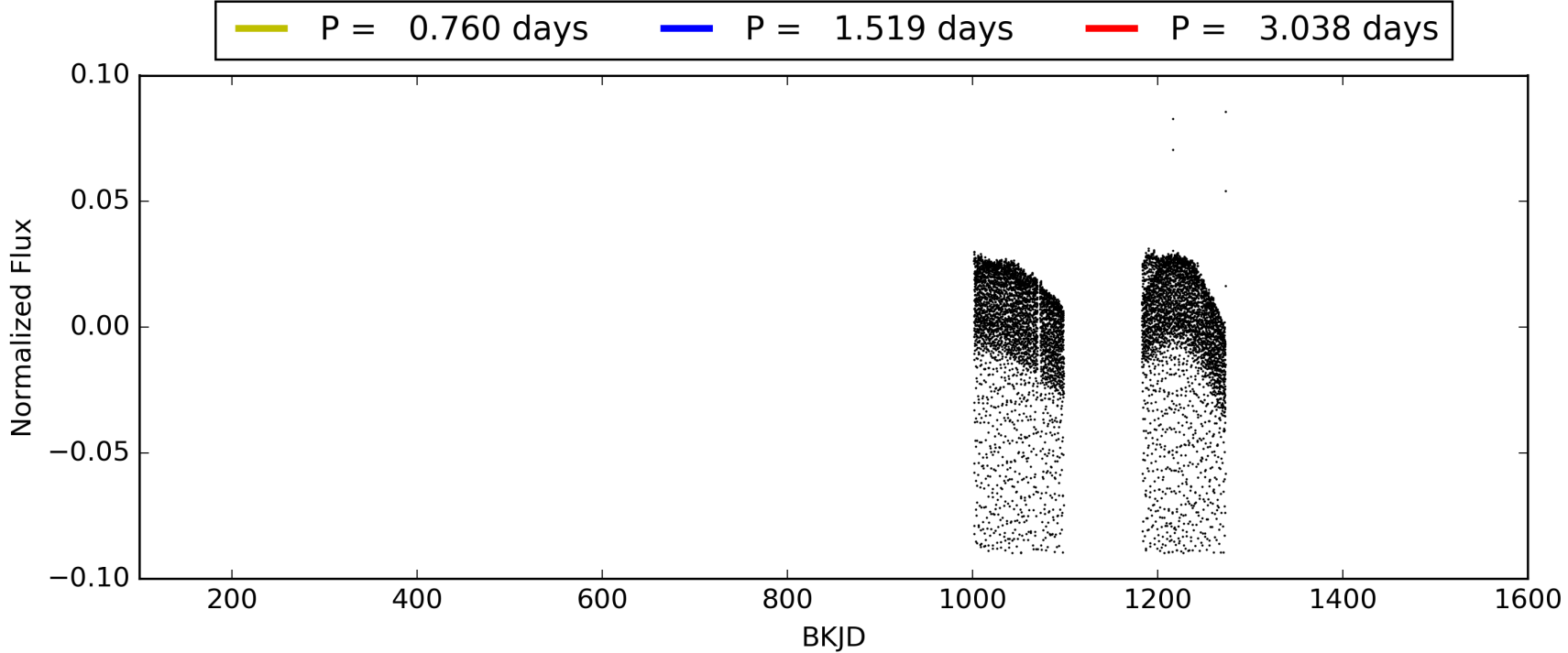
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 09:39:34 Z

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

TCE 007108433-01, PDC Light Curves

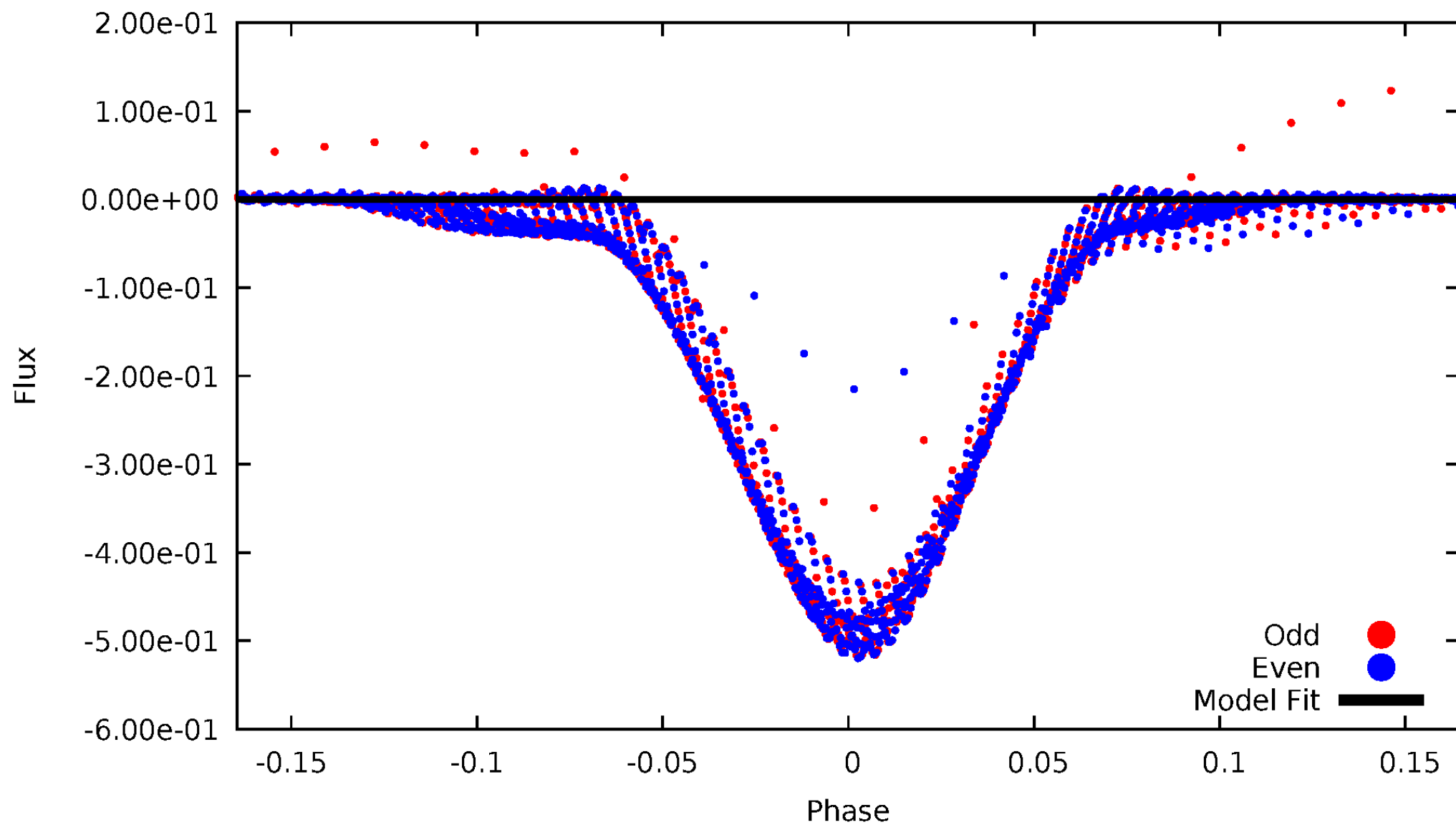


TCE 007108433-01



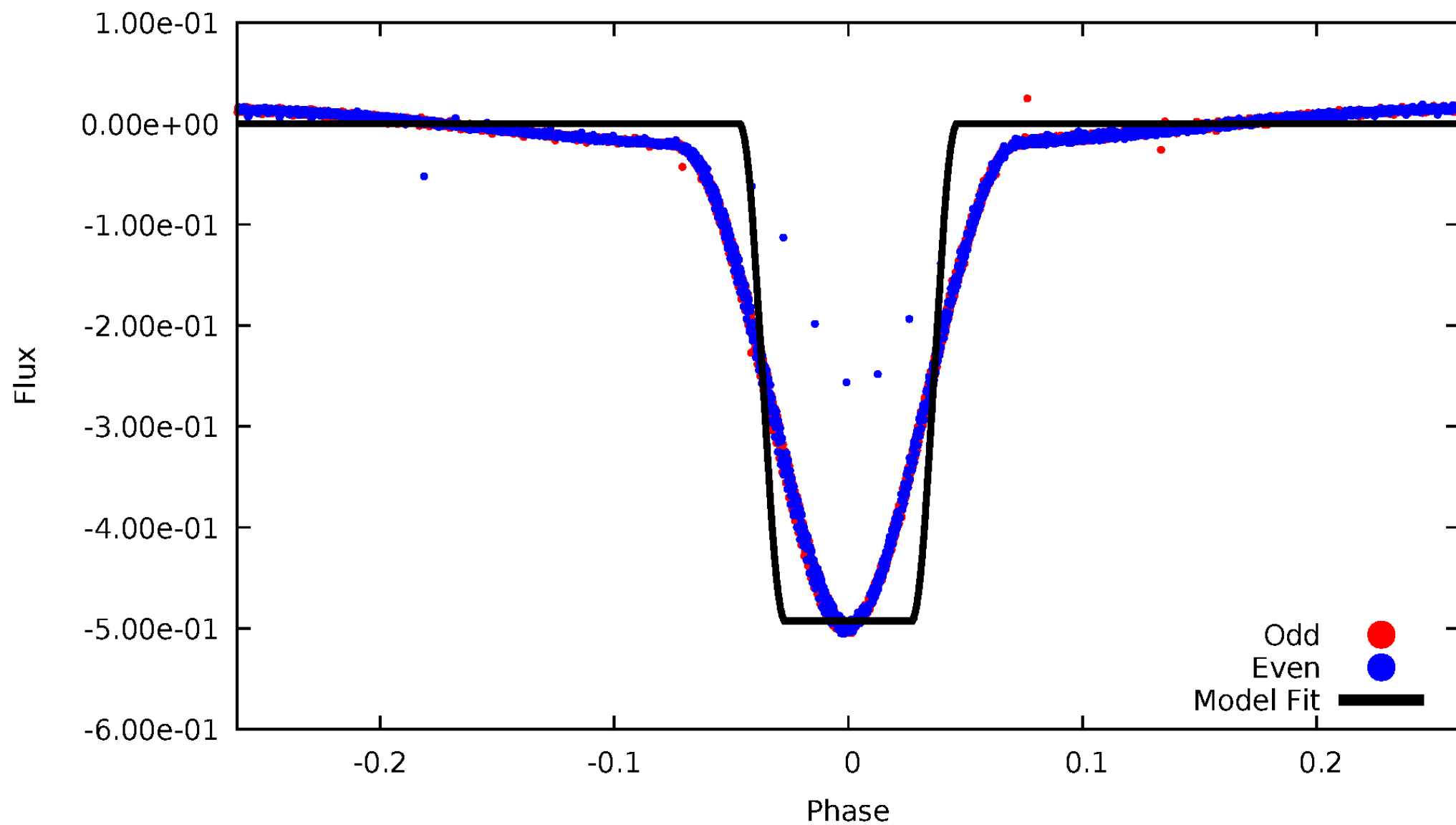
DV Odd/Even

TCE 007108433-01



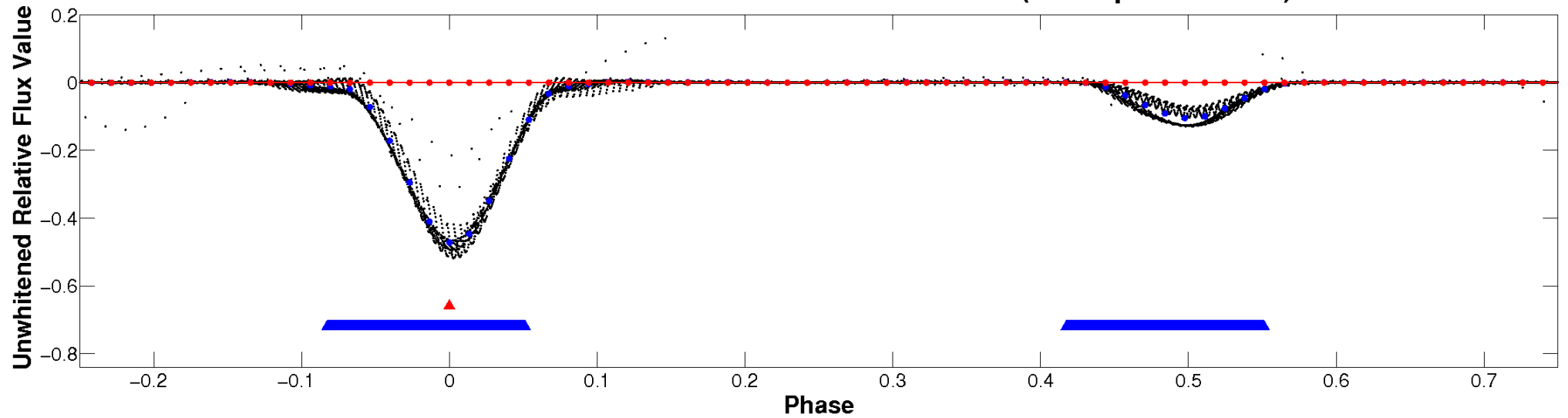
ALT Odd/Even

TCE 007108433-01

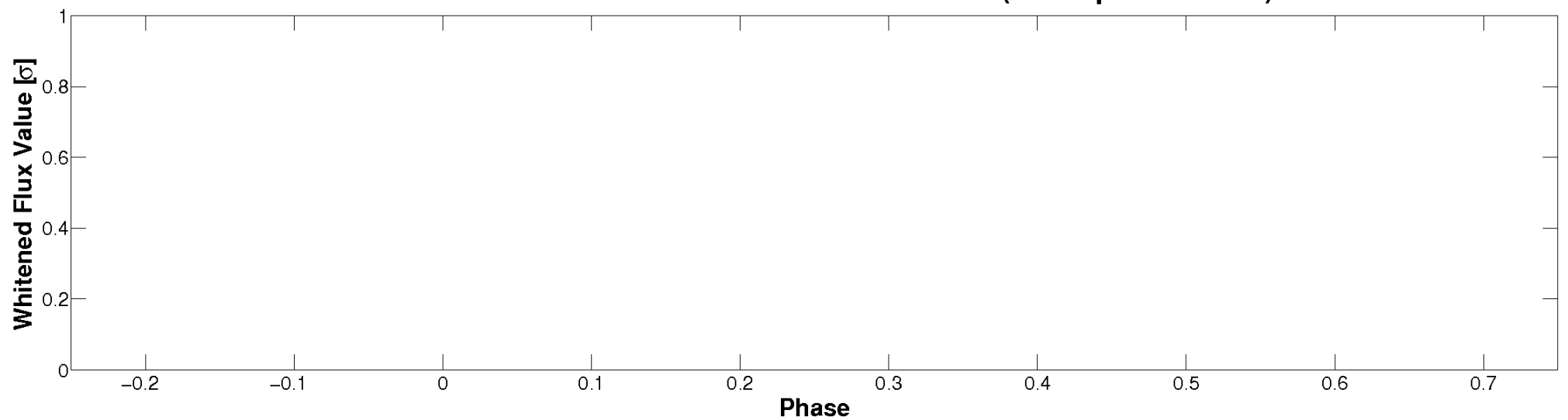


Non-Whitened Vs. Whitened Light Curve

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

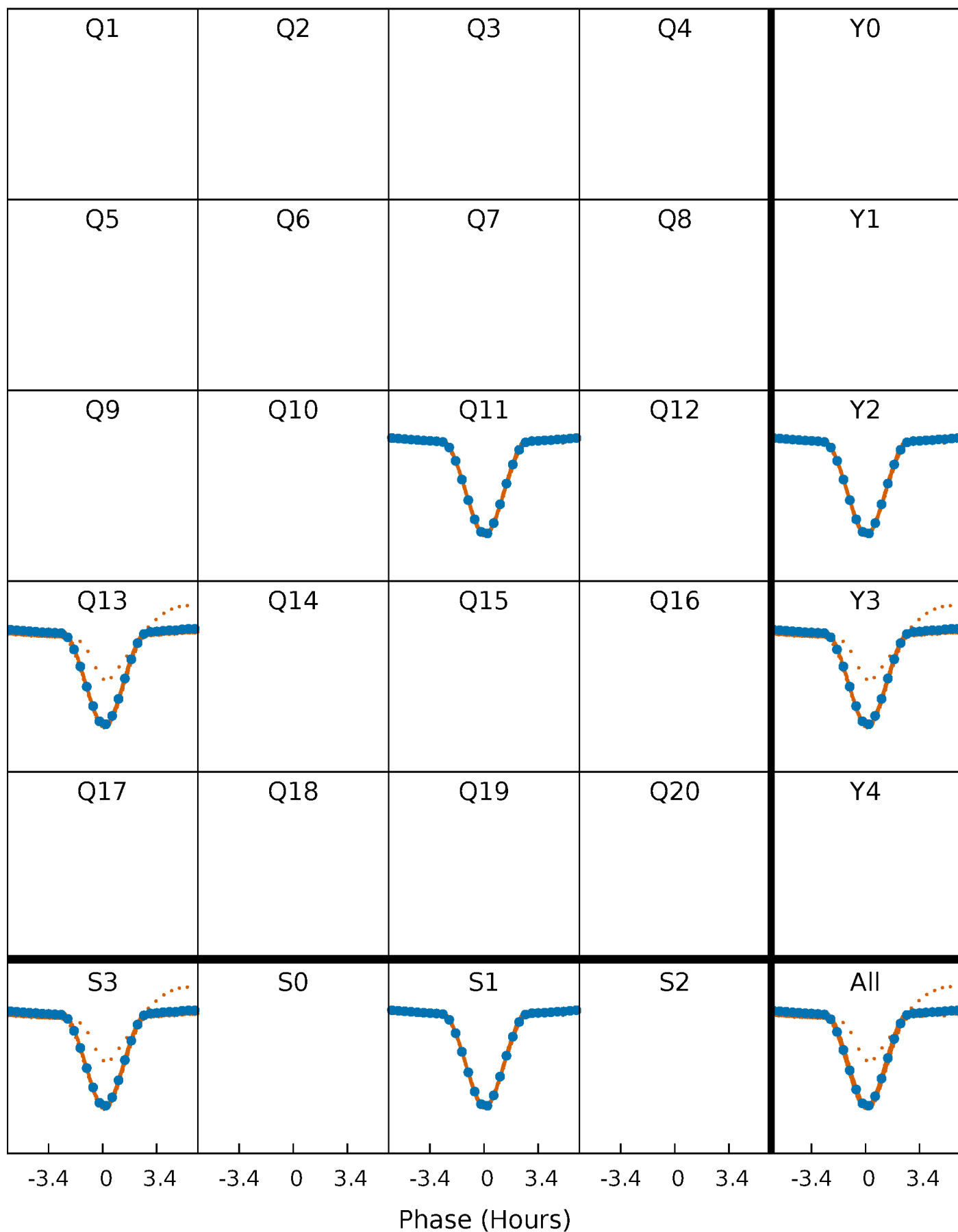


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



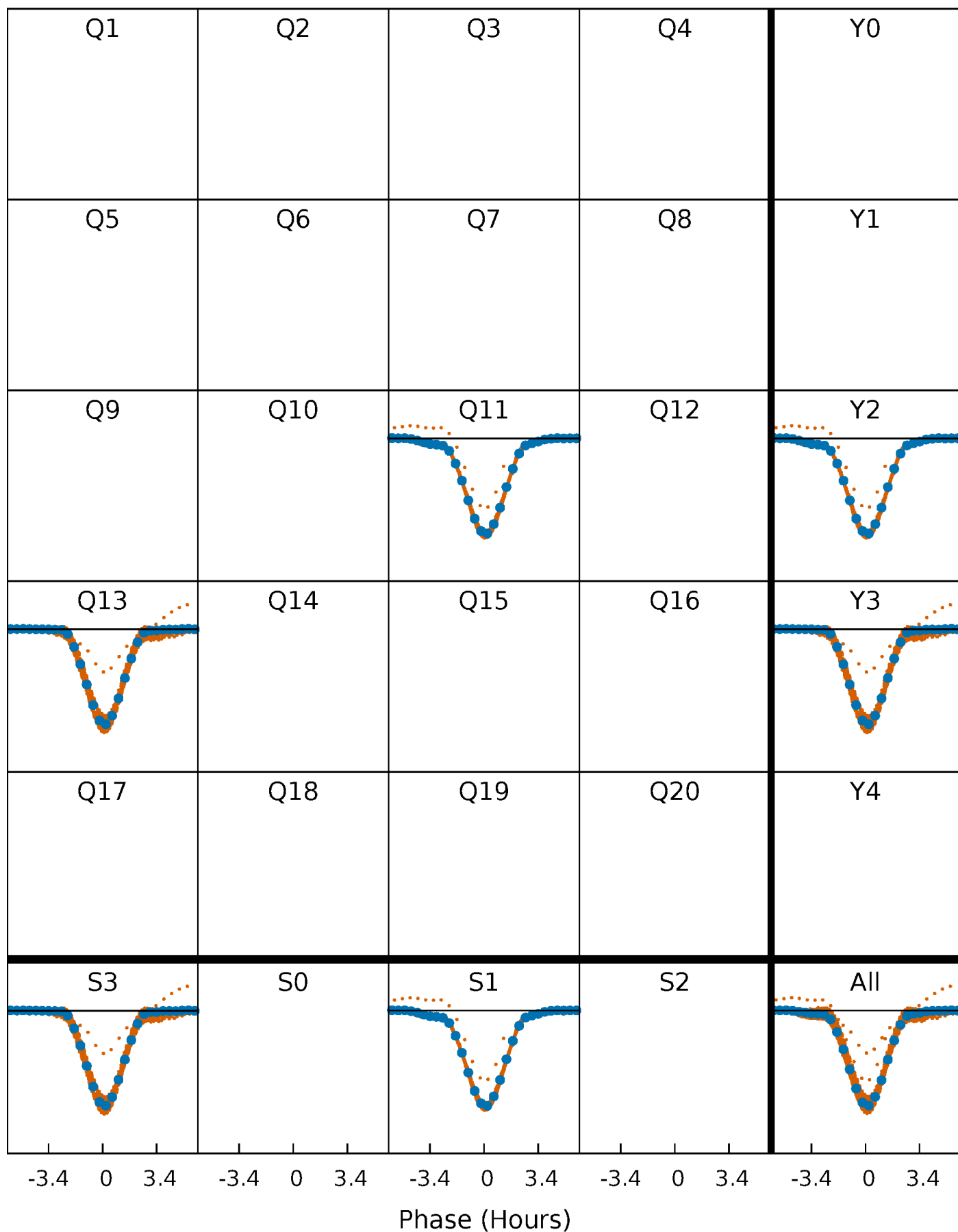
PDC Quarter-Phased Transit Curves

TCE 007108433-01 P= 1.519159 Days $T_0=131.925777$ (BKJD)



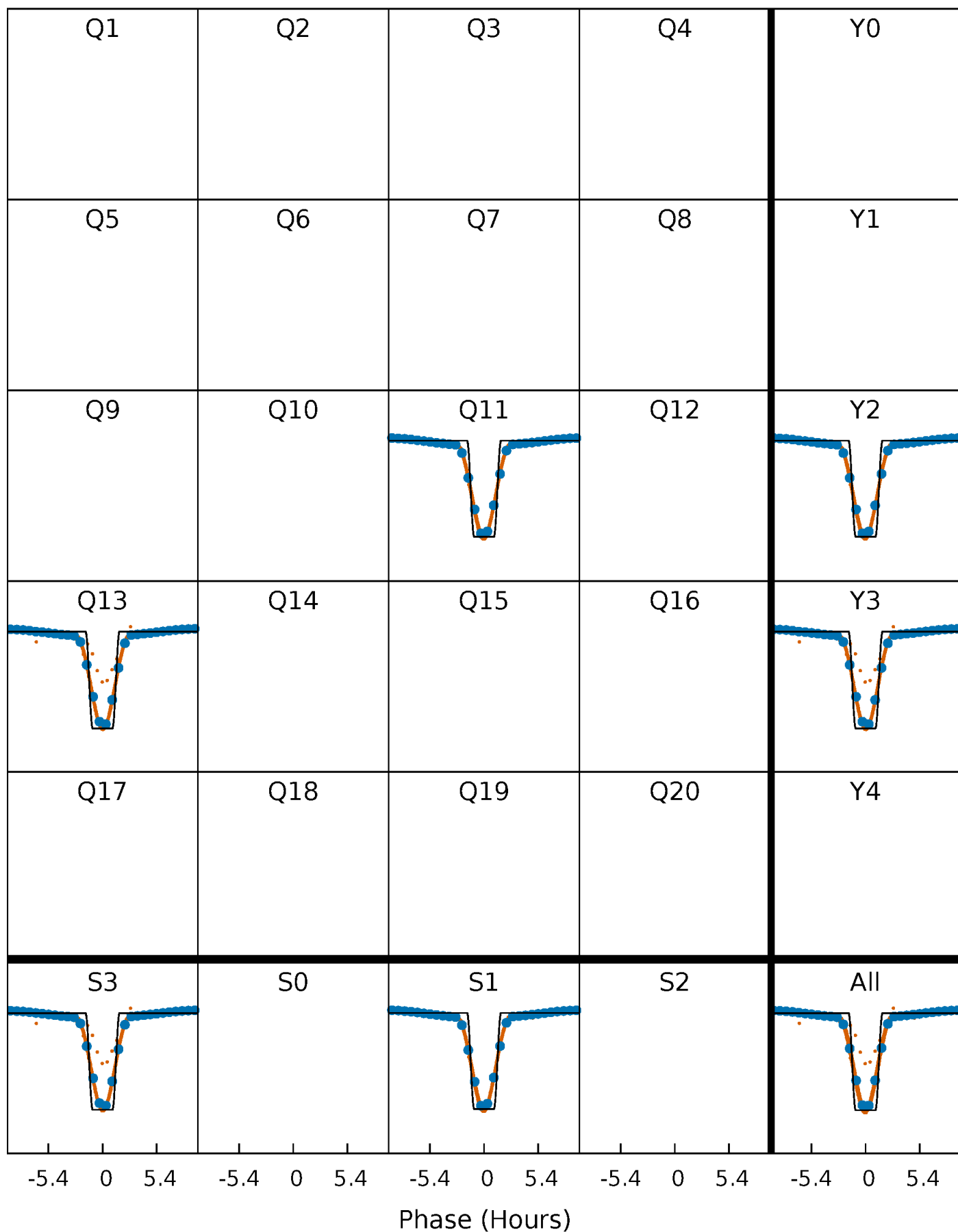
DV Quarter-Phased Transit Curves

TCE 007108433-01 P= 1.519159 Days $T_0=131.925777$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

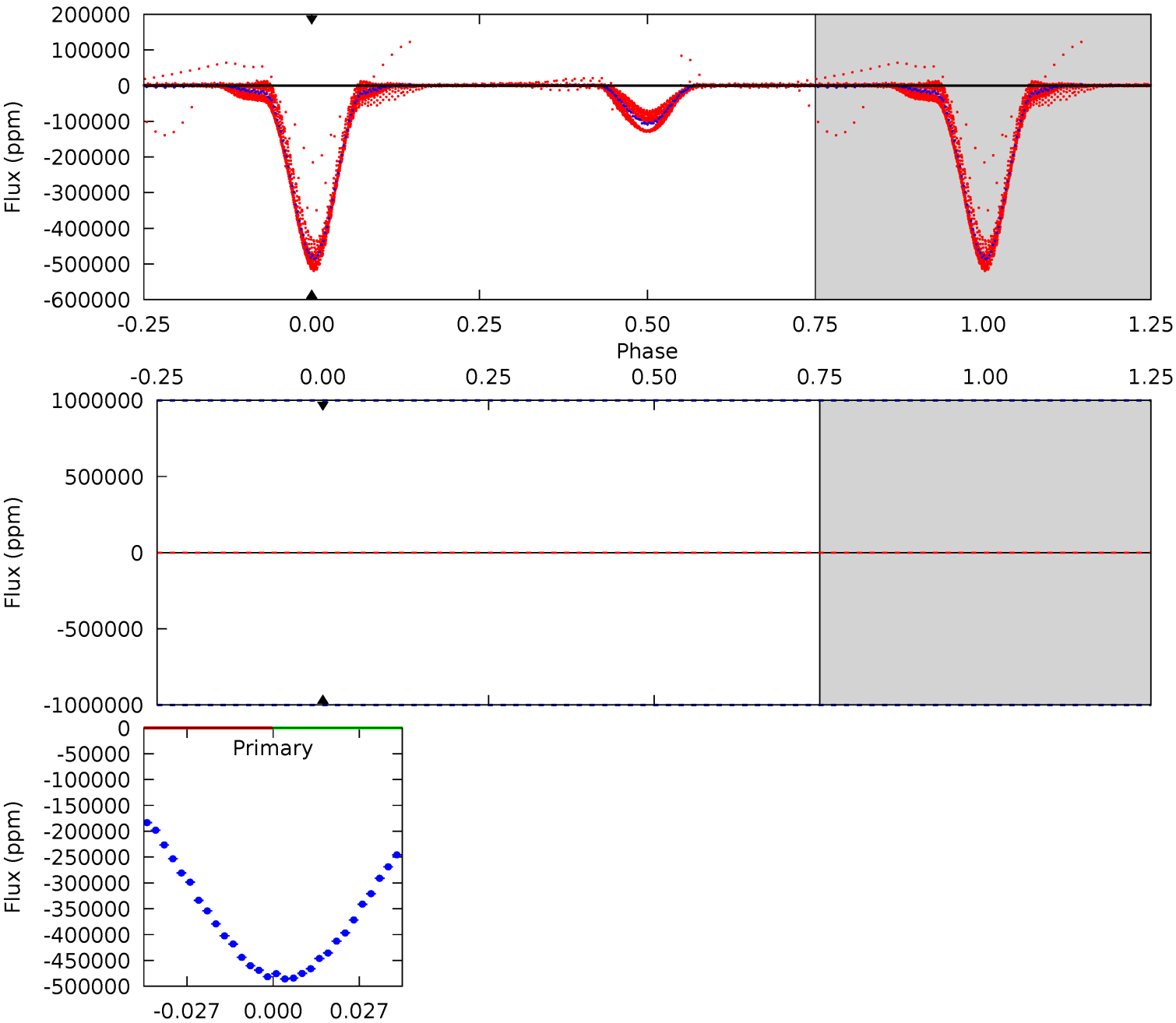
TCE 007108433-01 P= 1.519159 Days $T_0=131.929464$ (BKJD)



DV Model-Shift Uniqueness Test

007108433-01, P = 1.519159 Days, E = 131.925777 Days

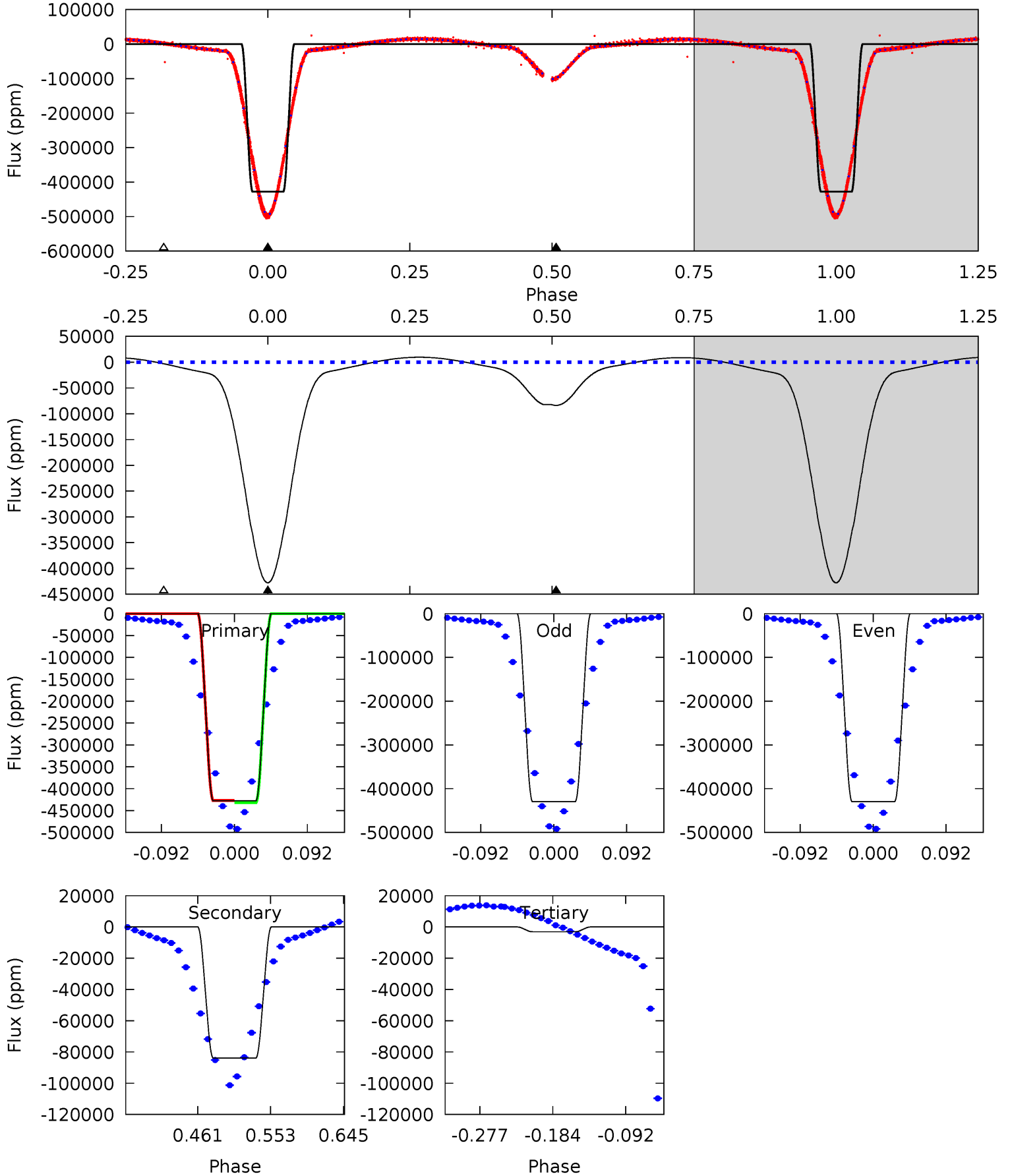
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007108433-01, P = 1.519159 Days, E = 131.929464 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1201	235.4	8.64	0	4.58	1.68	26.5	1192	1201	226.7	235.4	0.61	1.00	0.02	6.73



Stellar Parameters For KIC 007108433

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7426^{+233}_{-311}	$4.116^{+0.198}_{-0.162}$	$-0.460^{+0.300}_{-0.300}$	$1.698^{+0.458}_{-0.458}$	$1.373^{+0.198}_{-0.220}$	$0.395^{+0.446}_{-0.184}$
	+3%/-4%	+5%/-4%	+65%/-65%	+27%/-27%	+14%/-16%	+113%/-47%
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 007108433-01 / KOI 6153.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$66.37^{+20.93}_{-19.16}$	3493^{+268}_{-273}	3196^{+4157}_{-9957}	$0.549^{+13.208}_{-10.398}$
Alt.	-83860 ± 356	$129.23^{+28.65}_{-25.35}$	3496^{+287}_{-267}	4758^{+407}_{-330}	$2.510^{+1.247}_{-0.838}$

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 $A_{obs} \gg 1.0$

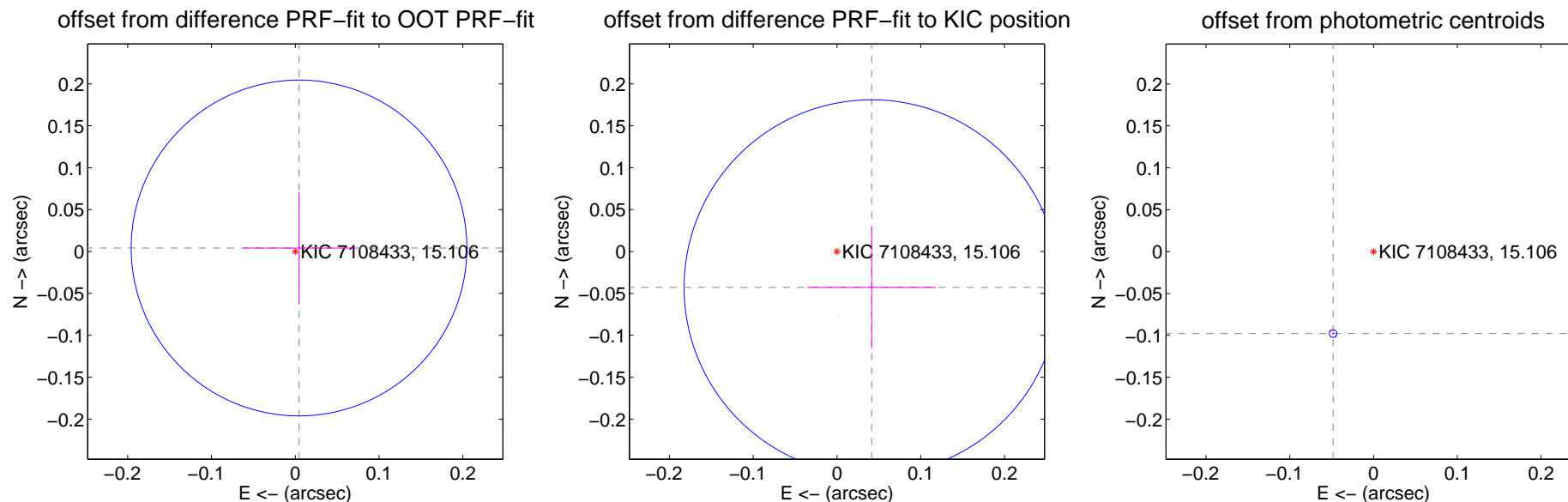
DV Centroid Data

Supplemental centroid analysis for 007108433-01. Kepler magnitude: 15.11. 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 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.006 ± 0.067	0.09	-0.004 ± 0.067	0.004 ± 0.067
PRF-fit source offset from KIC position	0.060 ± 0.075	0.80	-0.041 ± 0.077	-0.043 ± 0.073
photometric centroid source offset	0.11 ± 0.00	71.44	0.05 ± 0.00	-0.10 ± 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.

Q9 no difference image



Q9 no OOT image



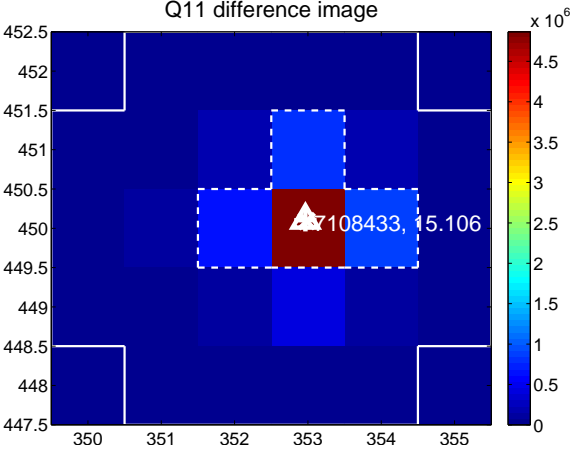
Q10 no difference image



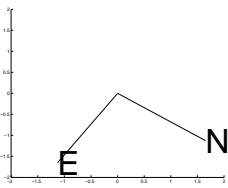
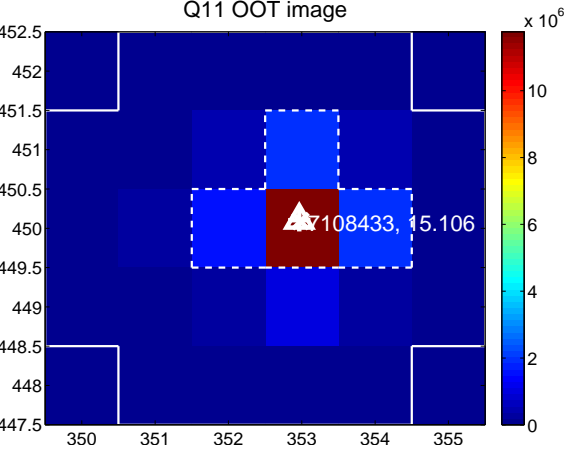
Q10 no OOT image



Q11 difference image



Q11 OOT image



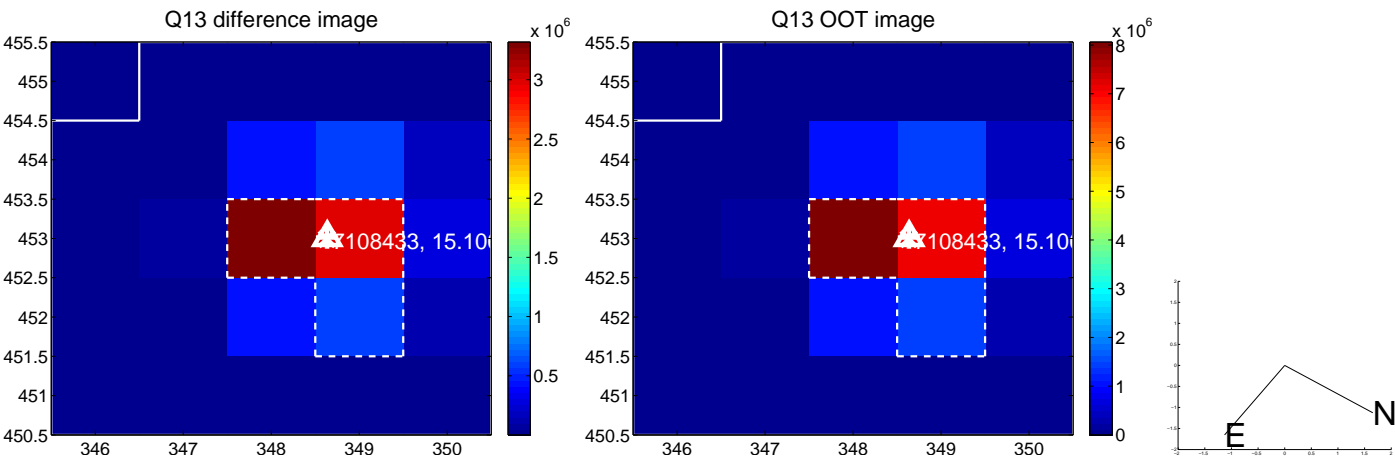
Q12 no difference image



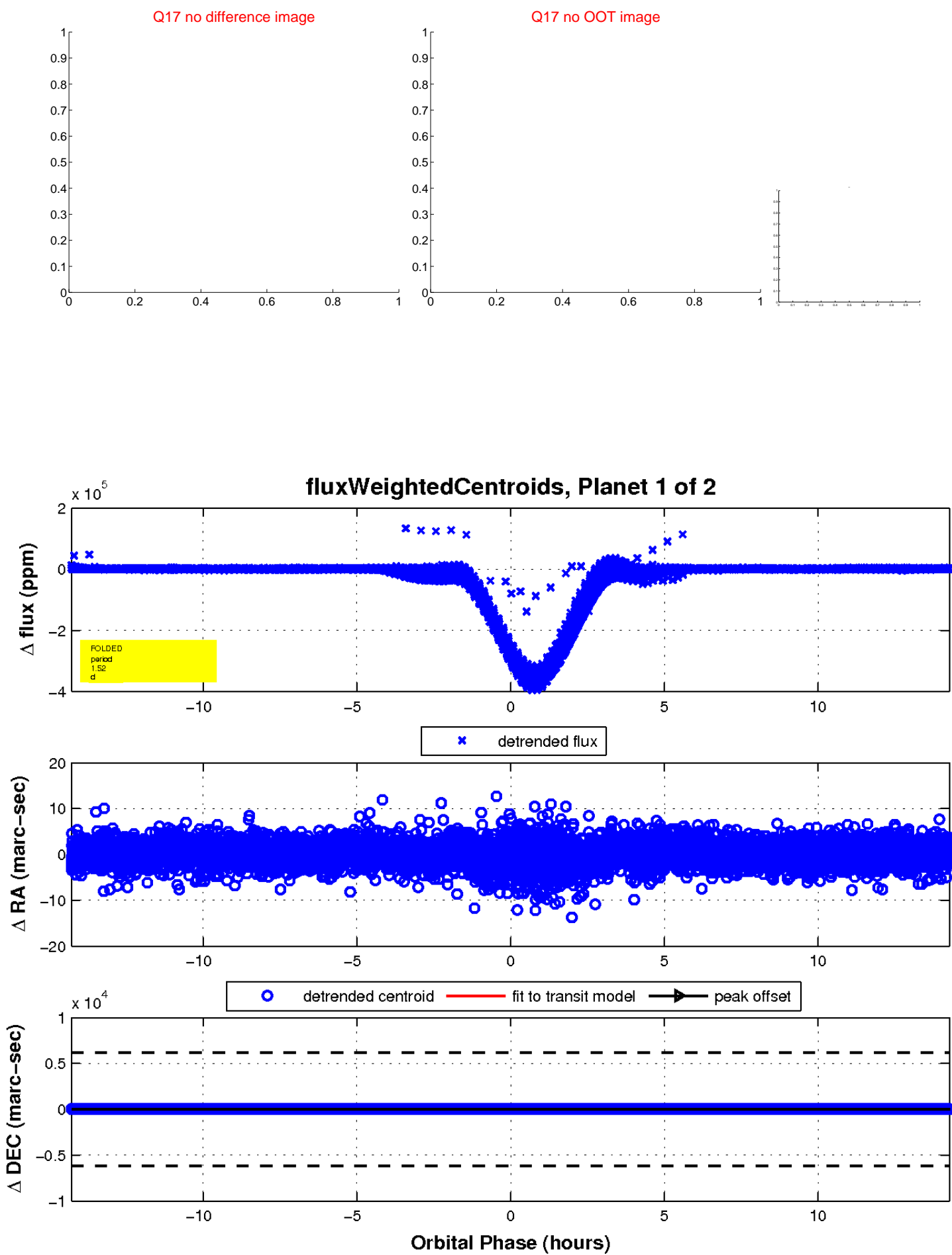
Q12 no OOT image



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

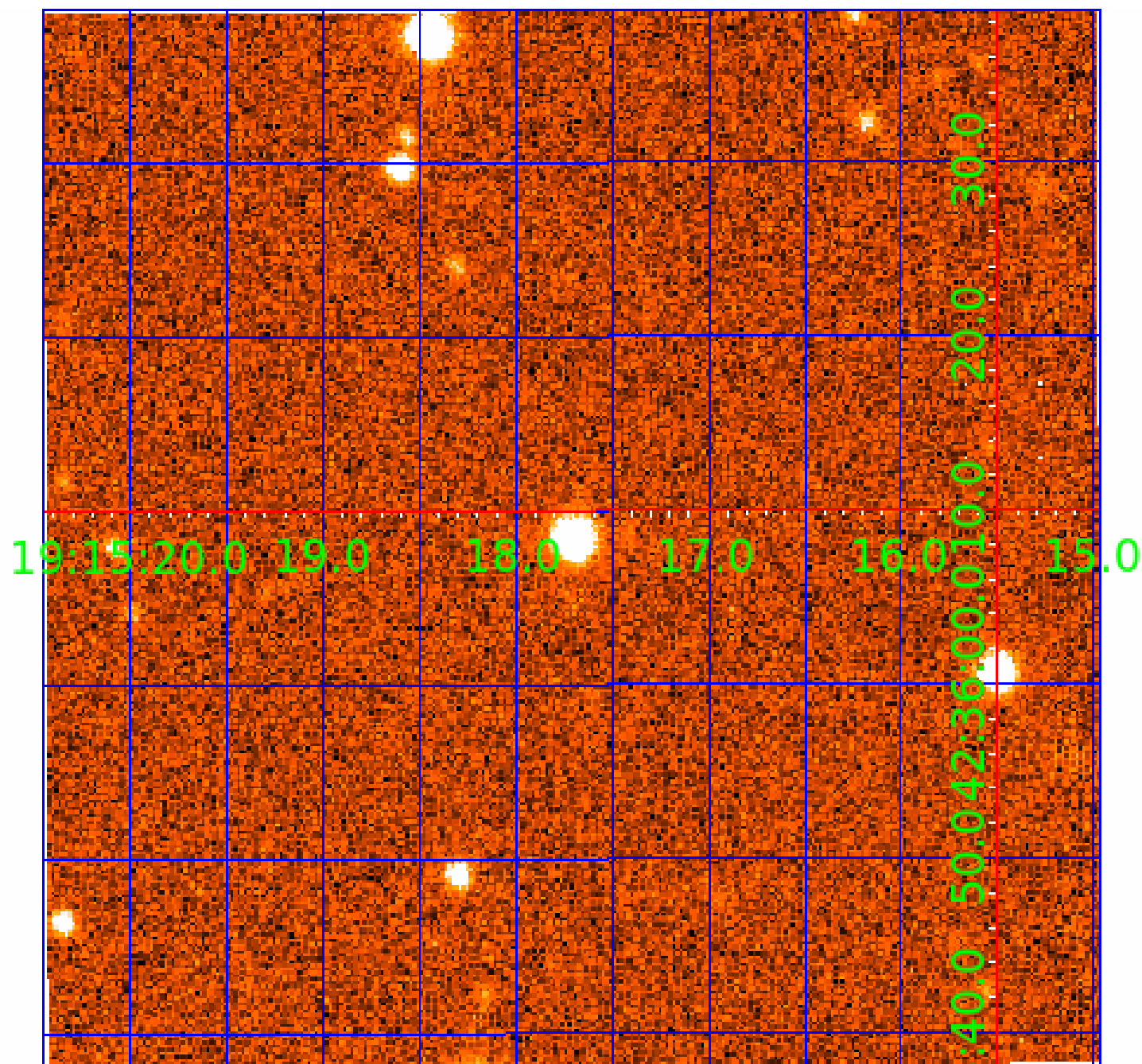


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007108433

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})
007108433-01	OBS	6153.01	1.519159	131.925777	486480.6	3.000	5719.6	-1.0	1.70	7426	67.57	9500.25
007108433-02	OBS	No	0.759685	131.800455	135175.4	5.857	617.3	177.4	1.70	7426	91.63	23934.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007108433-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
007108433-02	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.

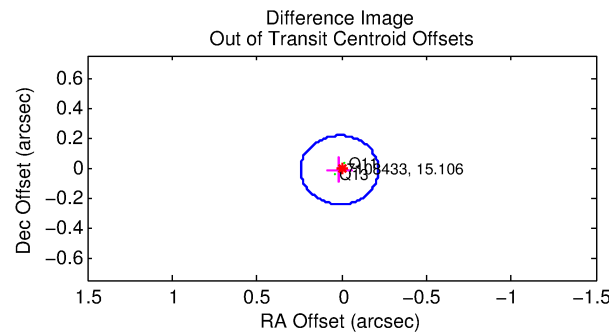
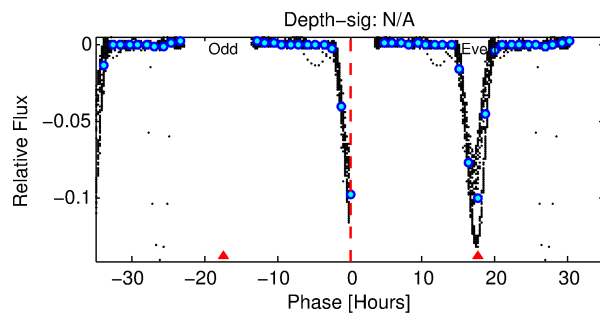
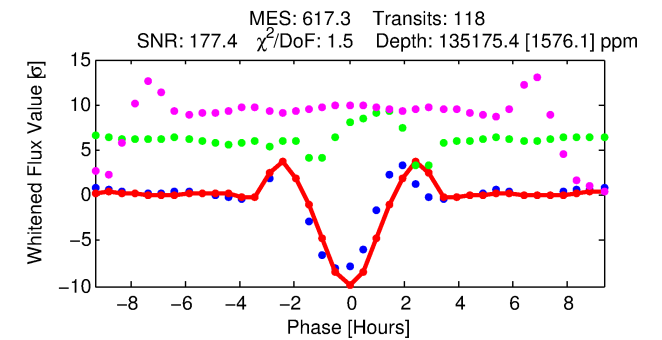
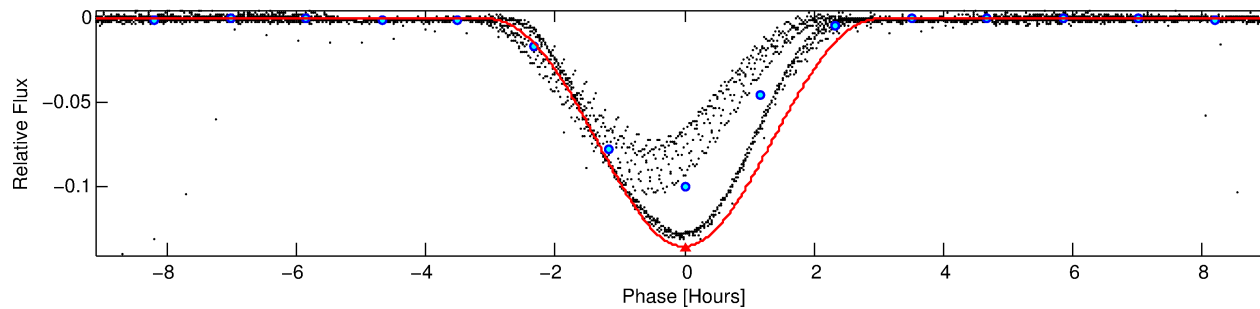
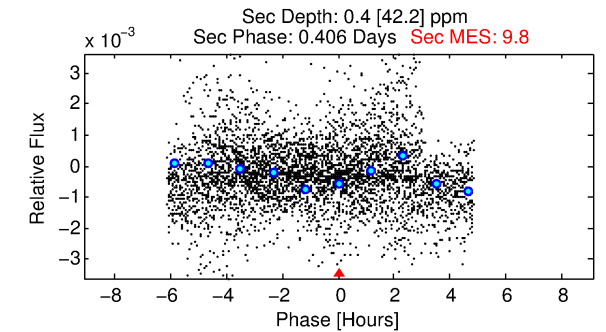
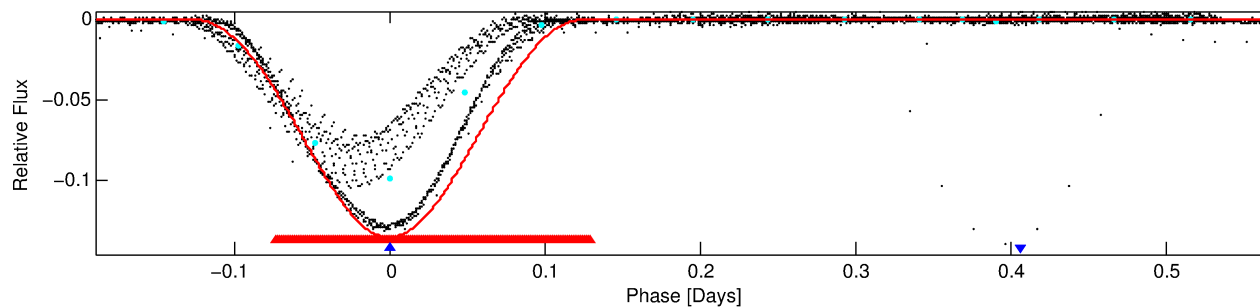
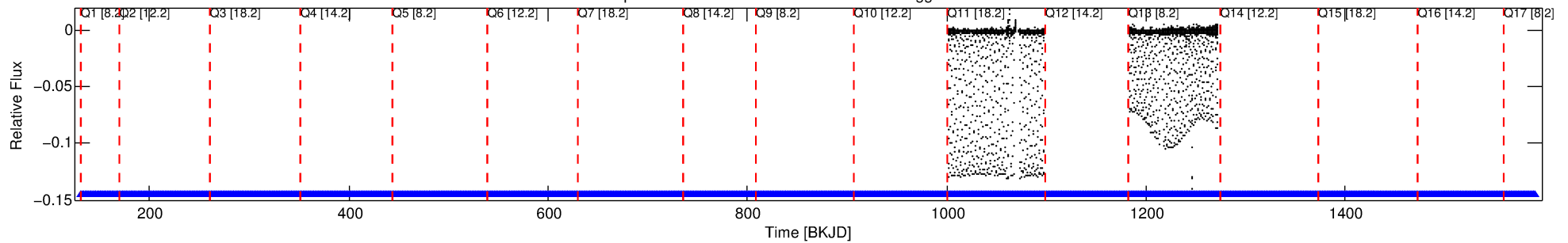
Ephemeris Match Information For 007108433-02

No Significant Match Found

DV One-Page Summary

KIC: 7108433 Candidate: 2 of 2 Period: 0.760 d
KOI: K06153 Corr: No Ephemeris Match

Kp: 15.11 R*: 1.70 Rs Teff: 7426.0 K Logg: 4.12 Fe/H: -0.460



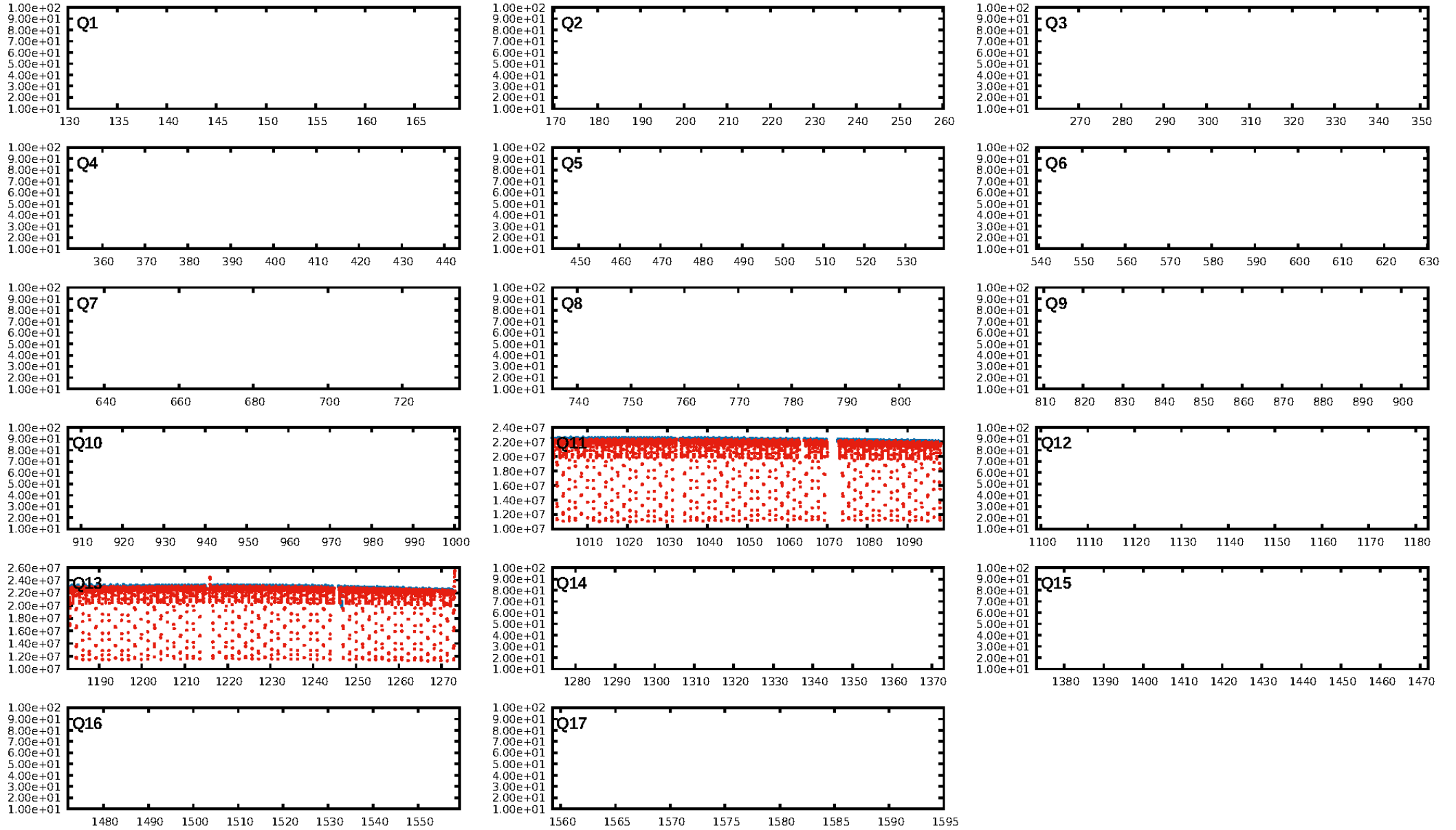
DV Fit Results:

Period = 0.75969 [0.00000] d
Epoch = 131.8005 [0.0002] BKJD
Rp/R* = 0.4945 [0.1051]
a/R* = 1.67 [0.10]
b = 0.90 [0.15]
Seff = 23934.68 [9355.31]
Teq = 3172 [310] K
Rp = 91.63 [31.47] Re
a = 0.0181 [0.0043] AU
Ag = 0.00 [0.00] [-1101.99σ]
Teffp = 269 [6755] K [-0.43σ]

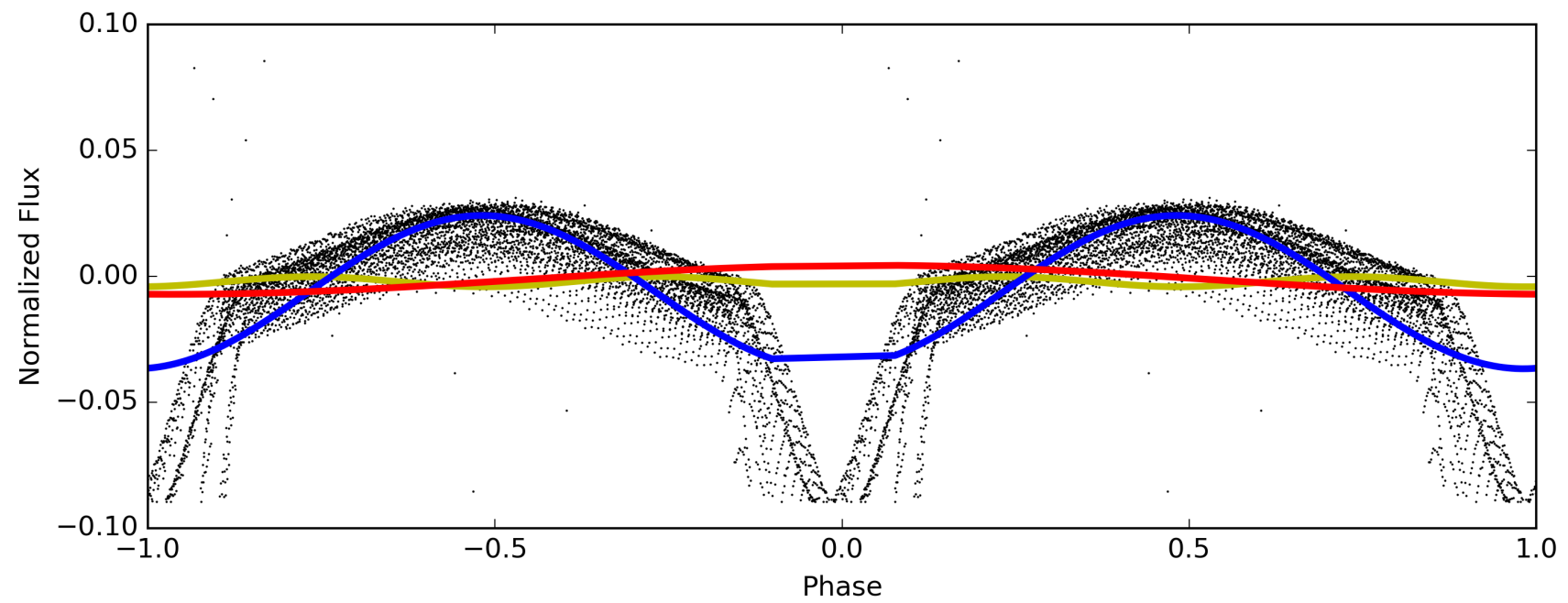
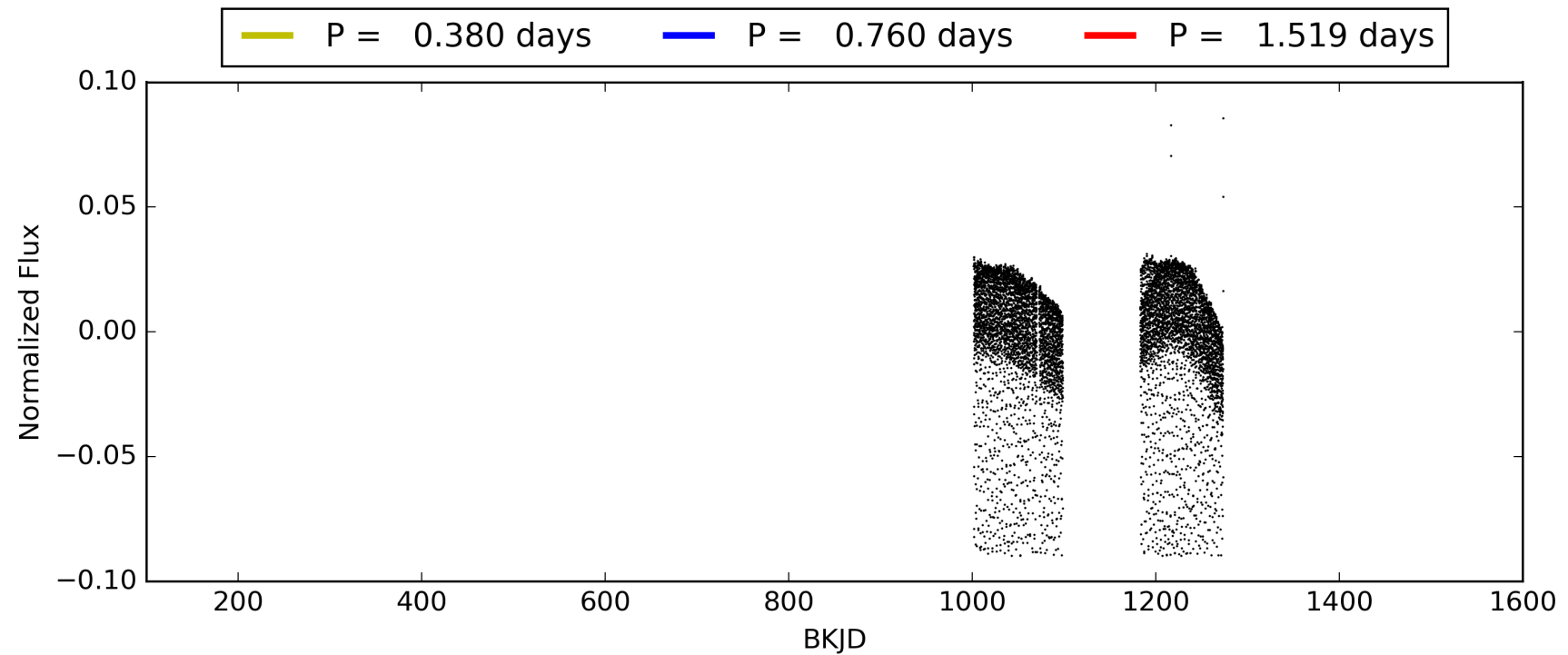
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 99.4% [2.77σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [118/118]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 0.122 arcsec [52.91σ]
OotOffset-rm: 0.019 arcsec [0.25σ]
KicOffset-rm: 0.070 arcsec [1.03σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
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TCE 007108433-02, PDC Light Curves

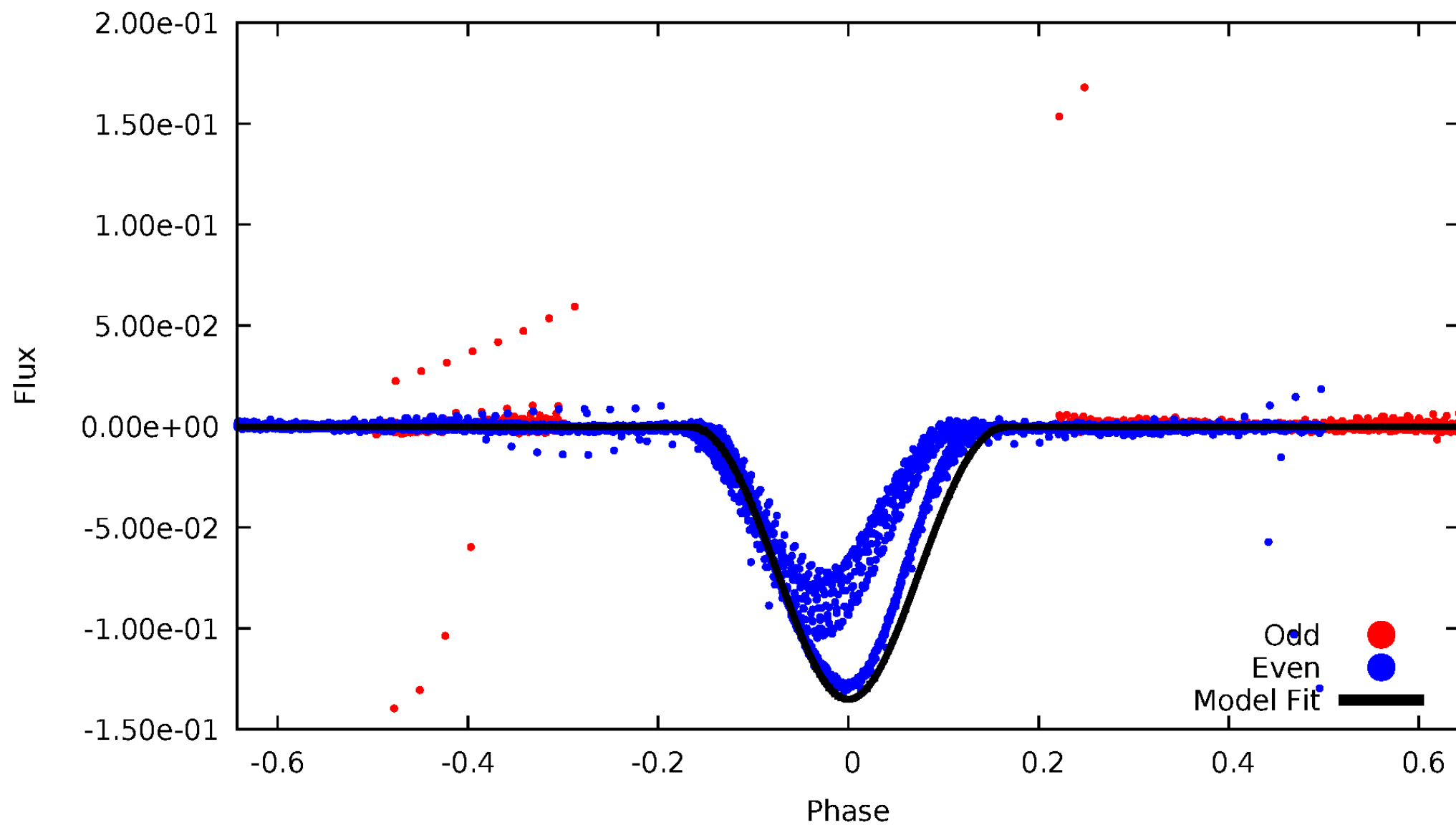


TCE 007108433-02



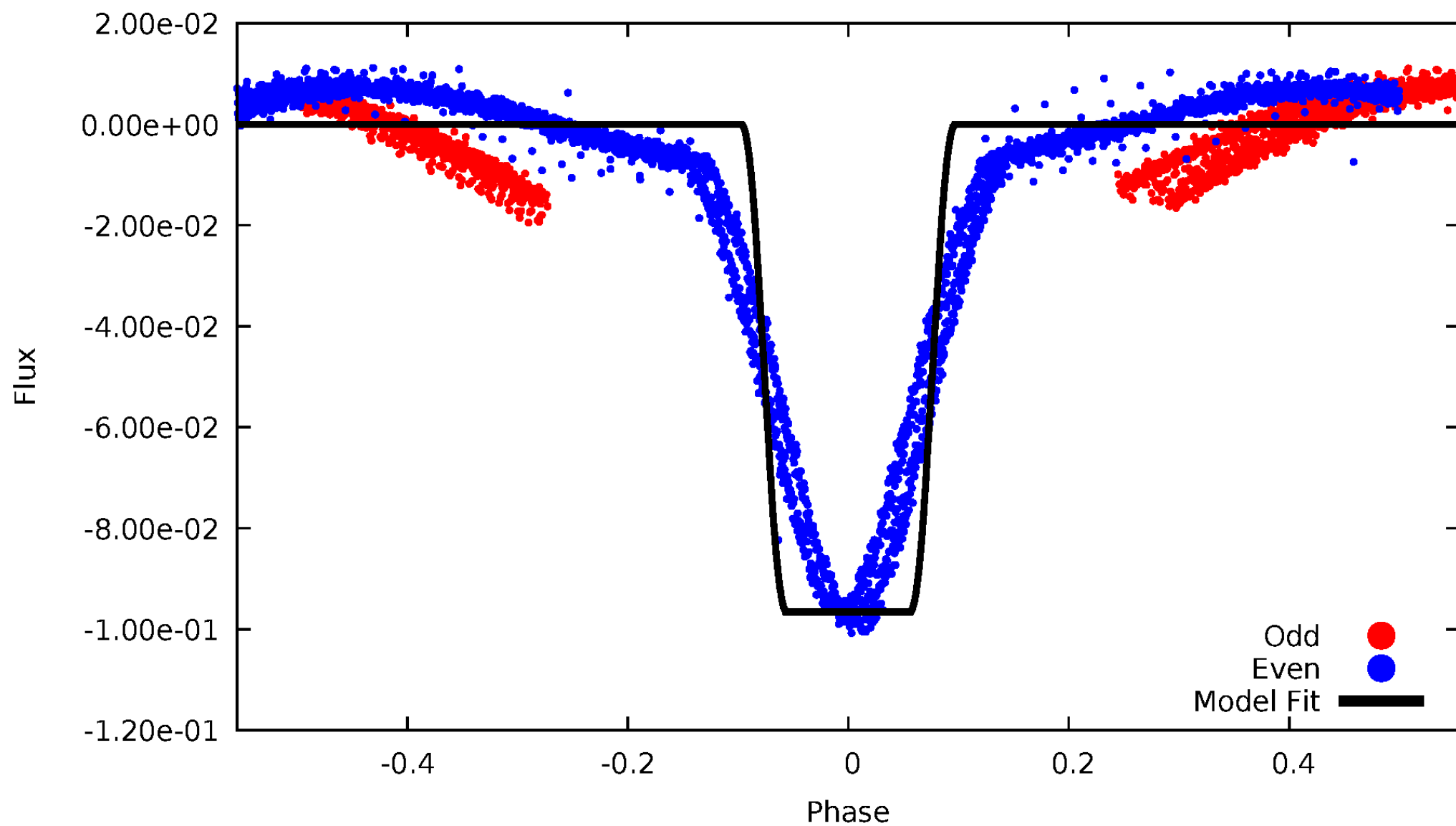
DV Odd/Even

TCE 007108433-02



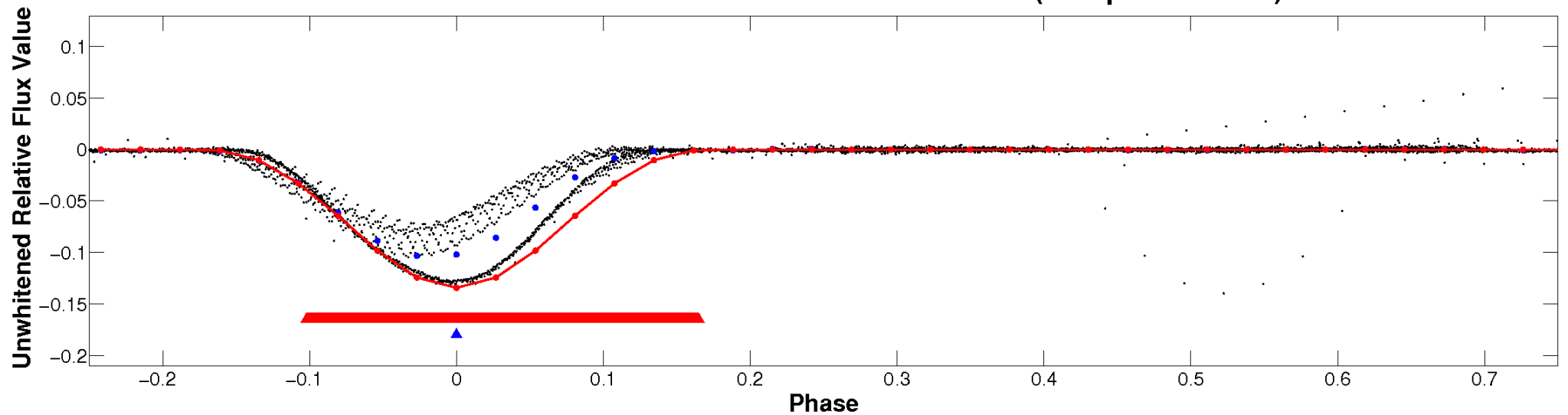
ALT Odd/Even

TCE 007108433-02

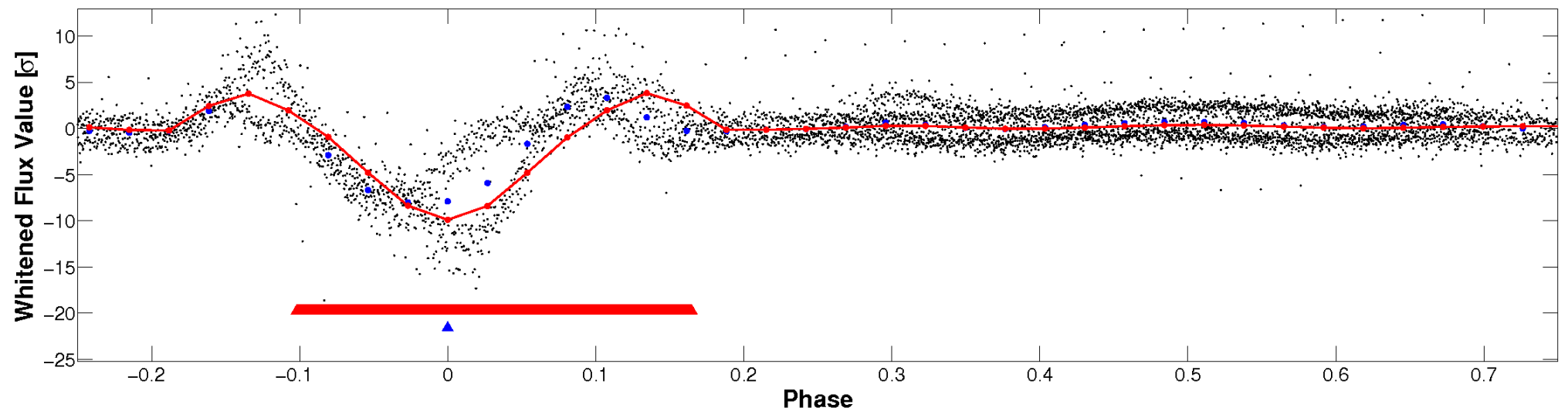


Non-Whitened Vs. Whitened Light Curve

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

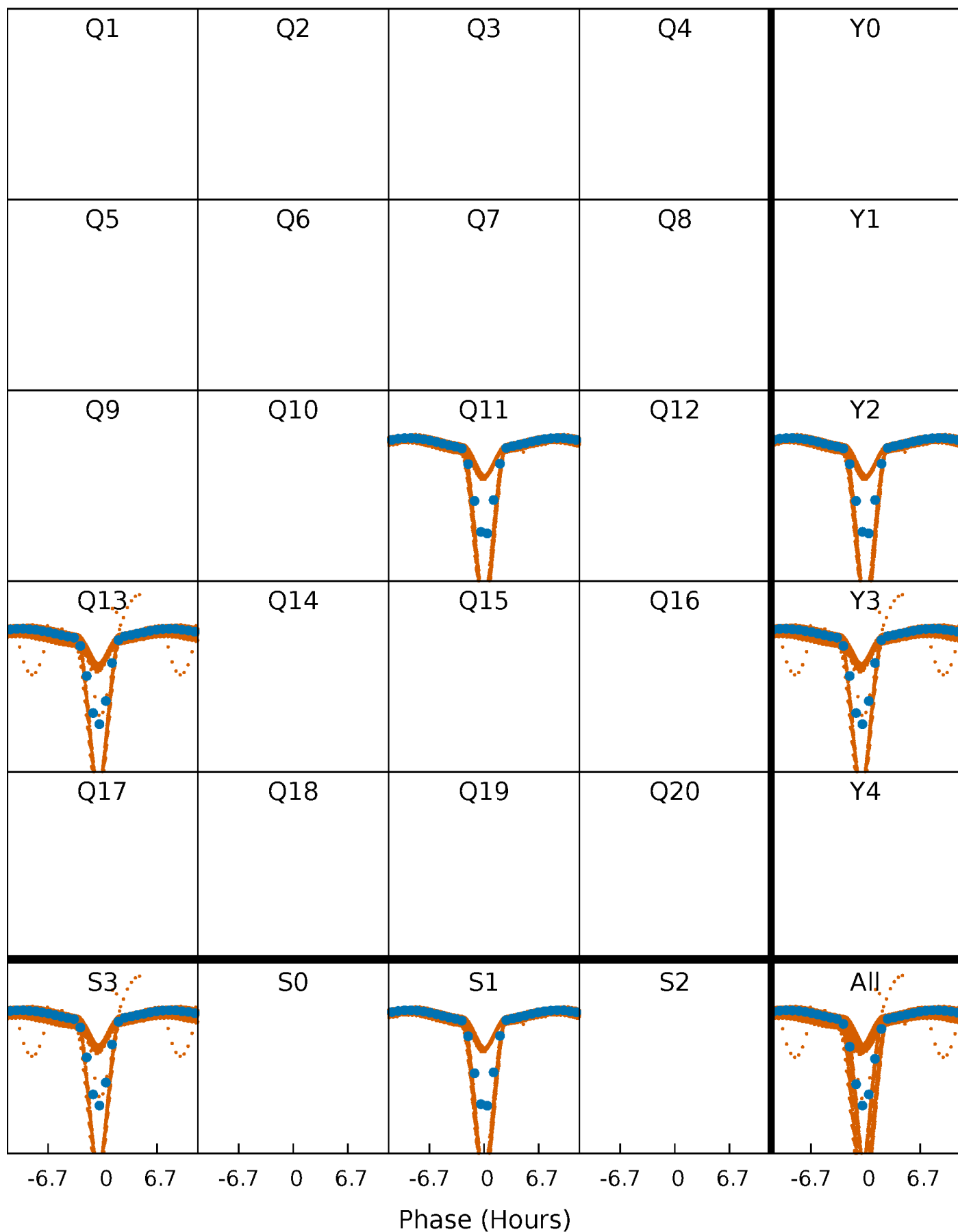


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



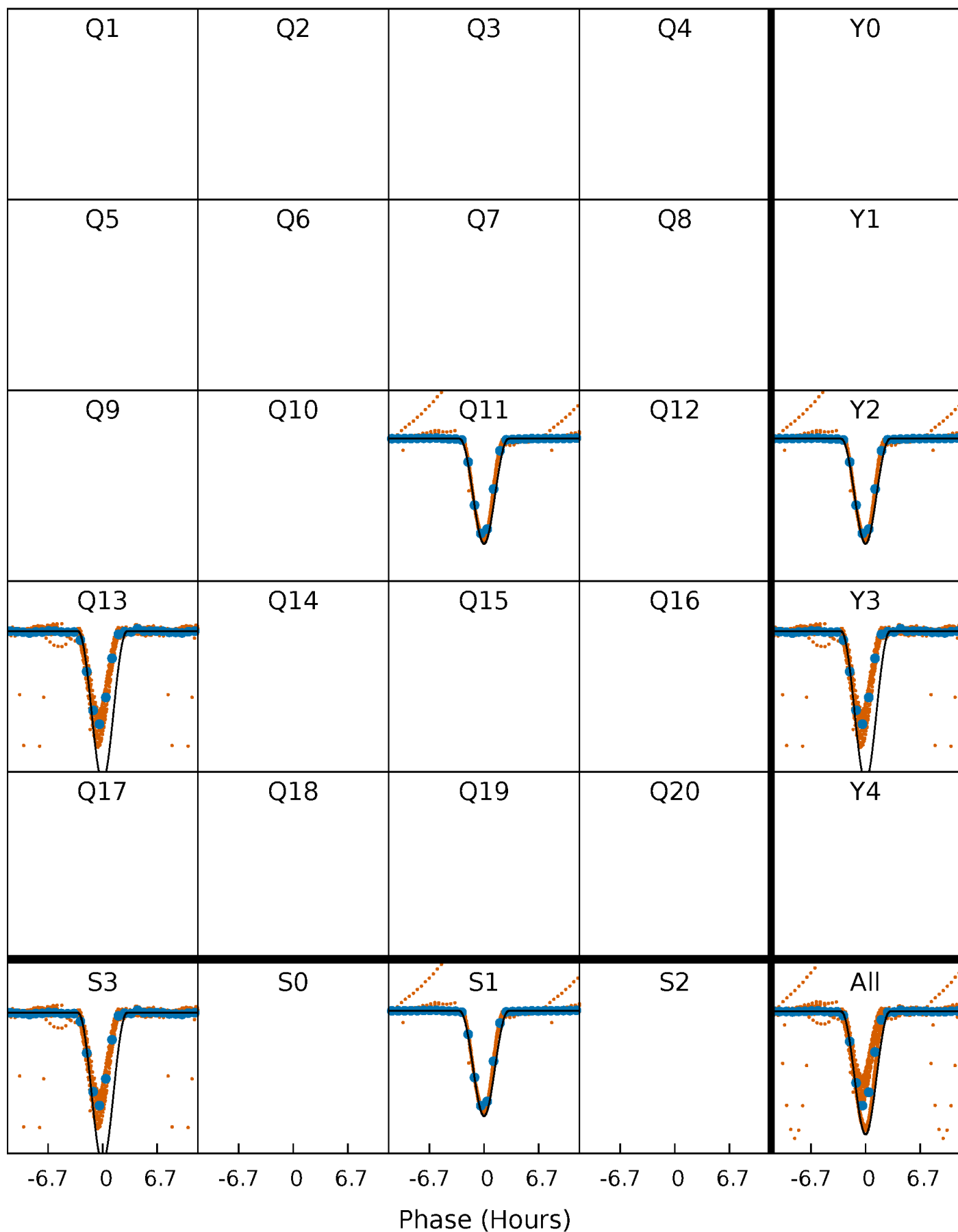
PDC Quarter-Phased Transit Curves

TCE 007108433-02 P= 0.759685 Days $T_0=131.800455$ (BKJD)



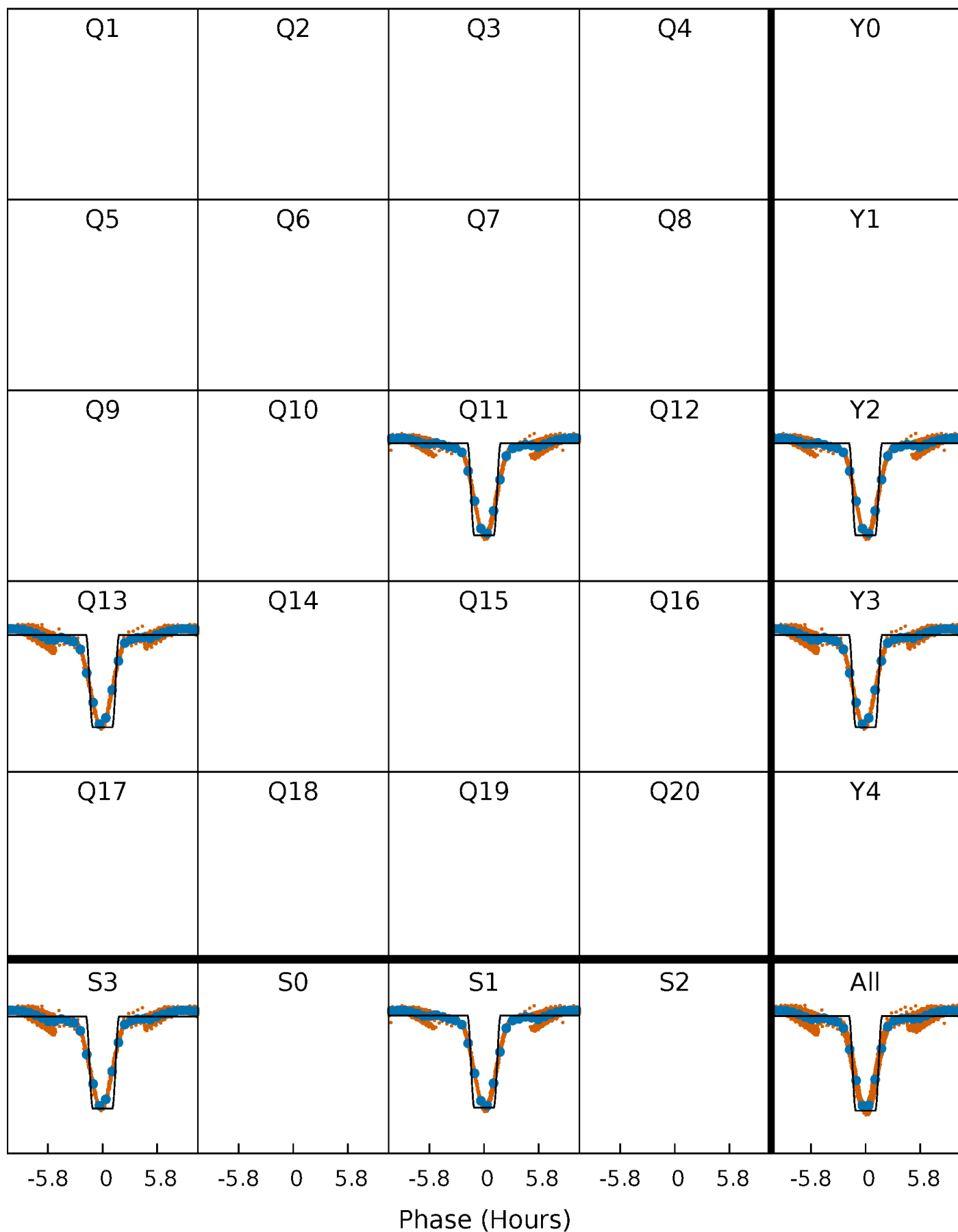
DV Quarter-Phased Transit Curves

TCE 007108433-02 $P = 0.759685$ Days $T_0 = 131.800455$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

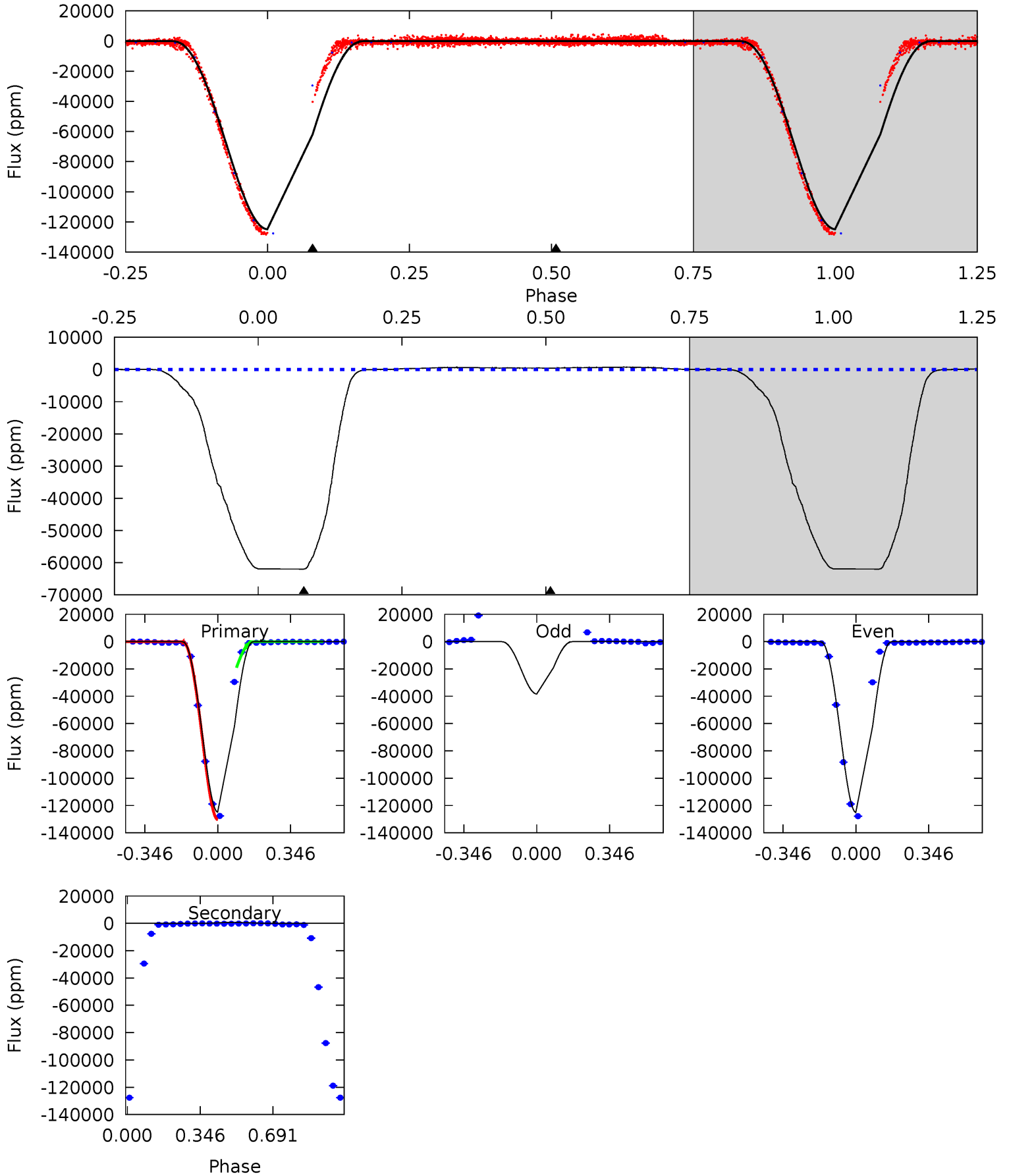
TCE 007108433-02 P= 0.759636 Days $T_0=131.855084$ (BKJD)



DV Model-Shift Uniqueness Test

007108433-02, P = 0.759685 Days, E = 131.800455 Days

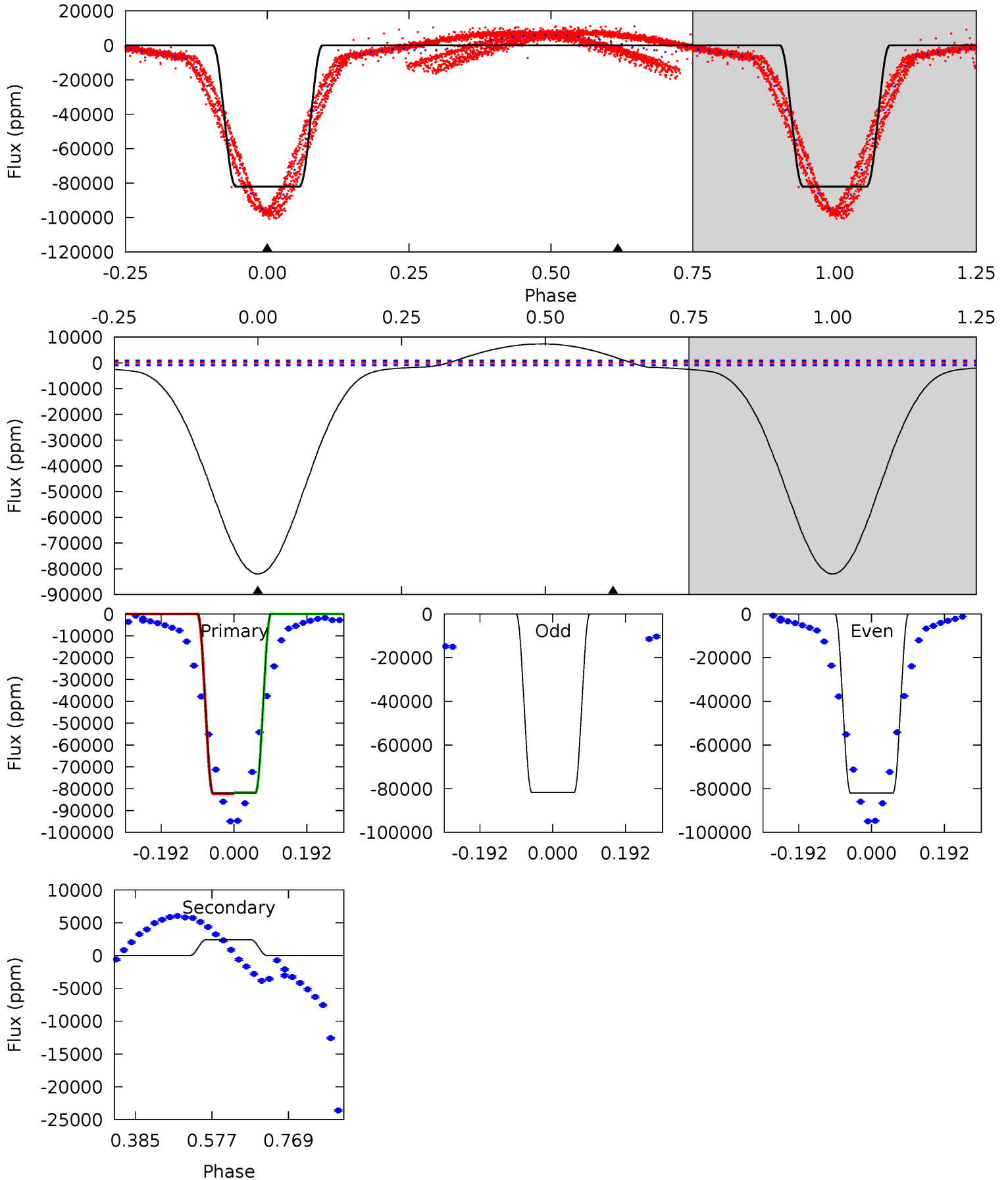
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1126	-6.98	0	0	4.30	0.94	13.9	1126	1126	-6.98	-6.98	487.9	0.83	0.01	0



Alt Model-Shift Uniqueness Test

007108433-02, P = 0.759636 Days, E = 131.855084 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
423.2	-12.5	0	0	4.43	1.30	14.9	423.2	423.2	-12.5	-12.5	0.87	1.00	0.08	1.39



Stellar Parameters For KIC 007108433

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7426^{+233}_{-311}	$4.116^{+0.198}_{-0.162}$	$-0.460^{+0.300}_{-0.300}$	$1.698^{+0.458}_{-0.458}$	$1.373^{+0.198}_{-0.220}$	$0.395^{+0.446}_{-0.184}$
	+3%/-4%	+5%/-4%	+65%/-65%	+27%/-27%	+14%/-16%	+113%/-47%
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 007108433-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	384 ± 55	$90.51^{+26.28}_{-22.36}$	4397^{+349}_{-338}	-3928^{+201}_{-208}	$-0.008^{+0.004}_{-0.007}$
Alt.	2415 ± 194	$58.66^{+24.32}_{-20.39}$	4417^{+333}_{-345}	-4214^{+236}_{-310}	$-0.125^{+0.061}_{-0.170}$

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 $A_{obs} \gg 1.0$

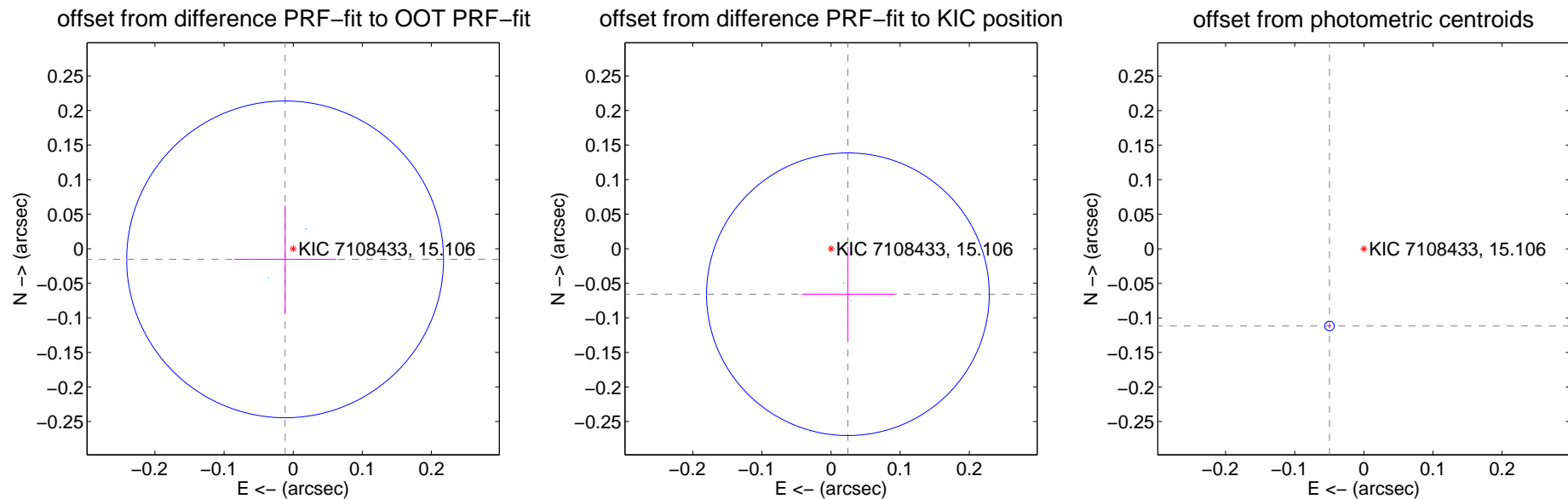
DV Centroid Data

Supplemental centroid analysis for 007108433-02. Kepler magnitude: 15.11. Transit SNR 177.36

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.019 ± 0.076	0.25	0.012 ± 0.074	-0.015 ± 0.078
PRF-fit source offset from KIC position	0.070 ± 0.068	1.03	-0.024 ± 0.067	-0.066 ± 0.068
photometric centroid source offset	0.12 ± 0.00	52.91	0.05 ± 0.00	-0.11 ± 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.

Q9 no difference image



Q9 no OOT image



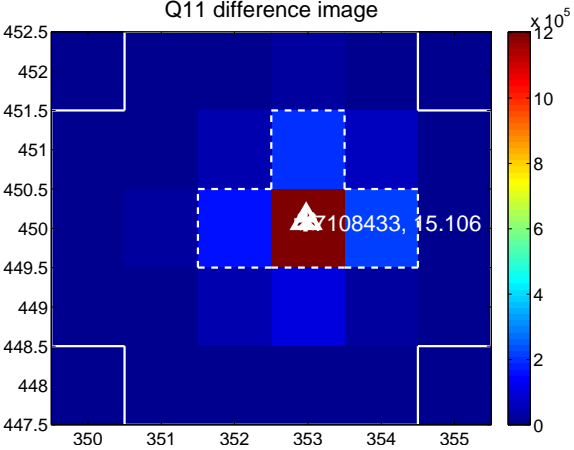
Q10 no difference image



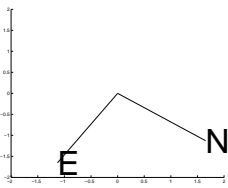
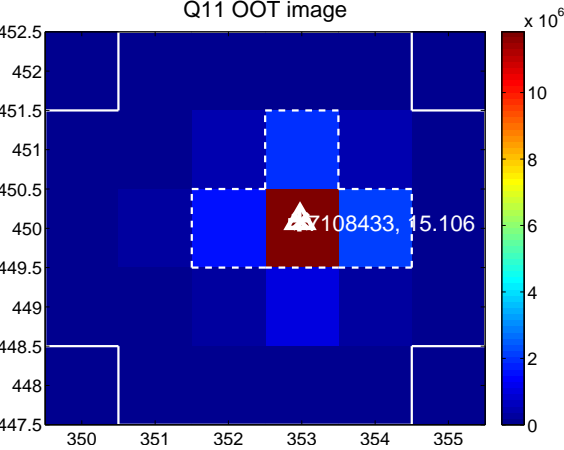
Q10 no OOT image



Q11 difference image



Q11 OOT image



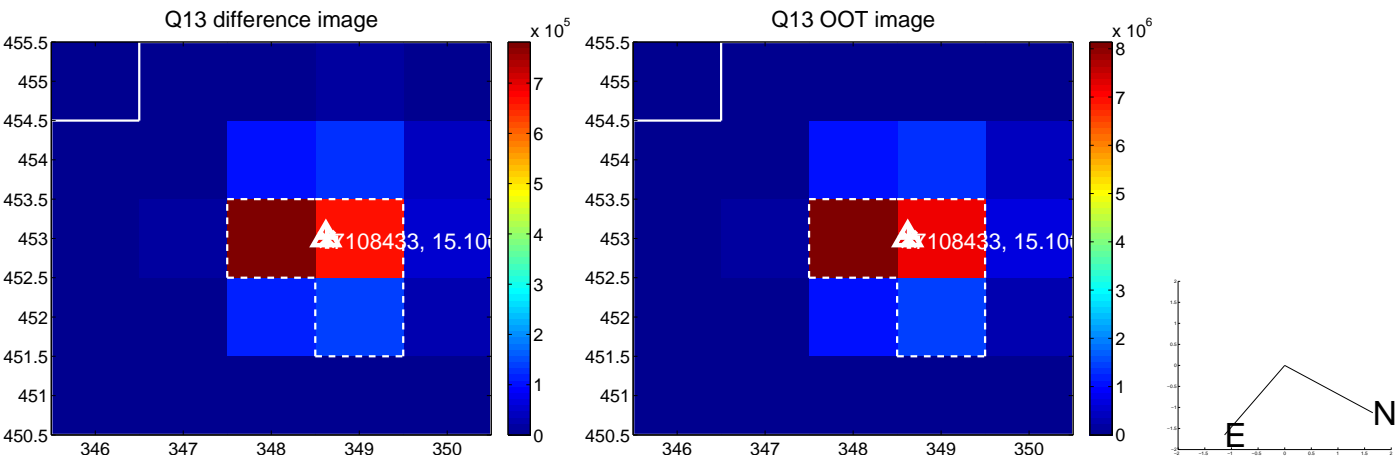
Q12 no difference image



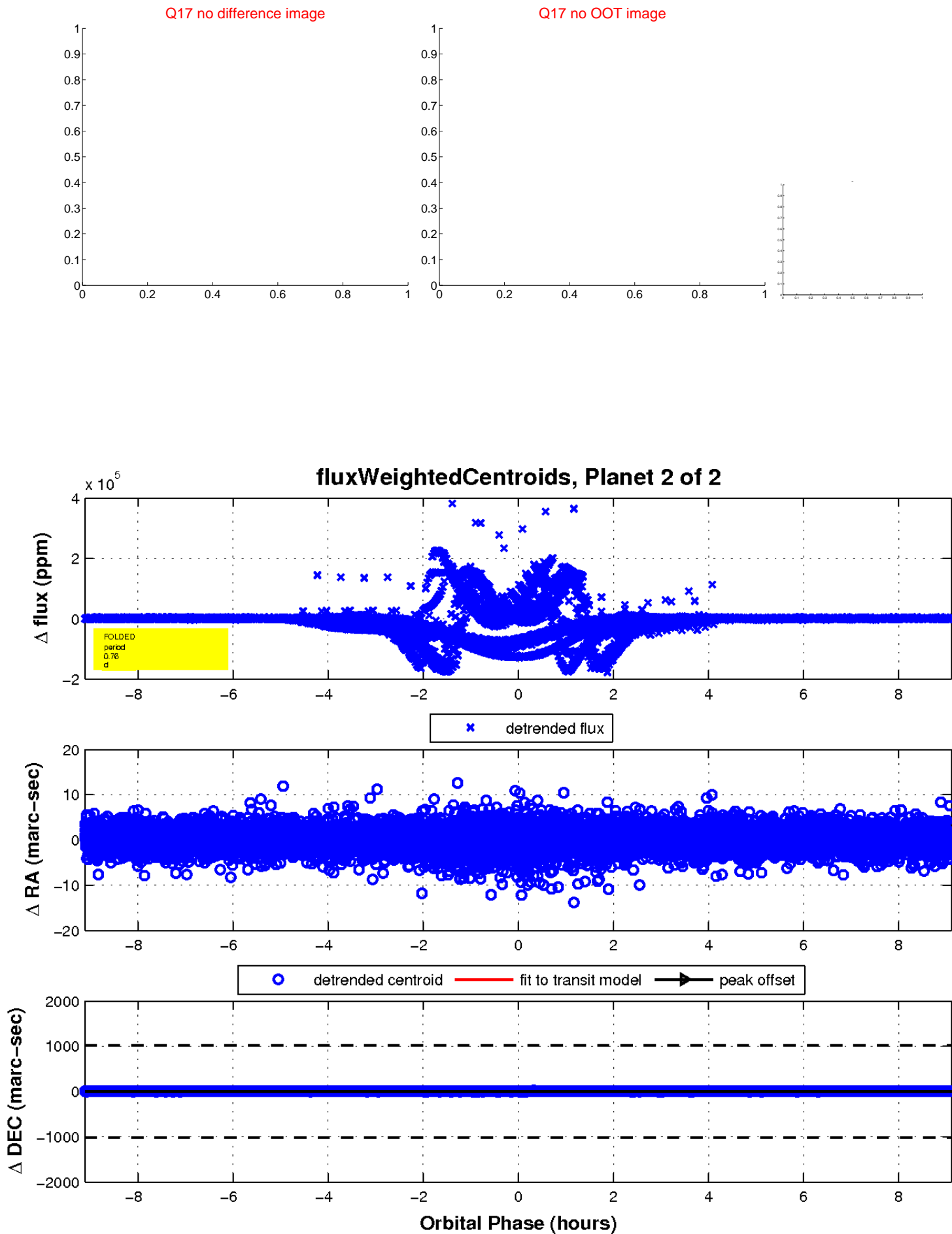
Q12 no OOT image



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

