

KIC 004064484

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})
004064484-01	OBS	No	223.966423	289.492944	8552.3	3.369	35.3	9.3	2.88	7292	27.24	29.75
004064484-02	OBS	No	382.434509	328.248715	919.0	12.000	16.4	-1.0	2.88	7292	8.82	14.57

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004064484-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004064484-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

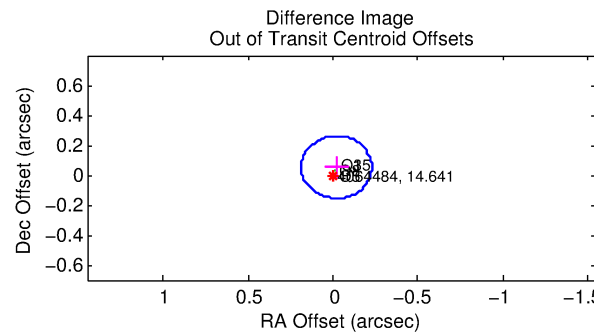
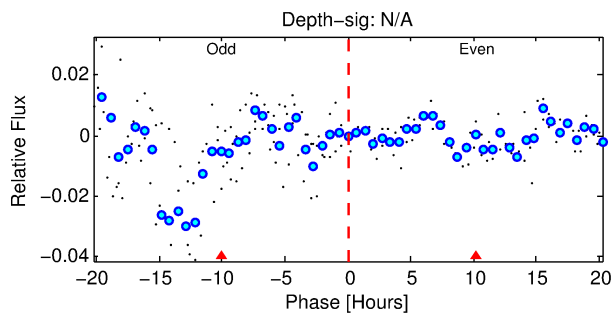
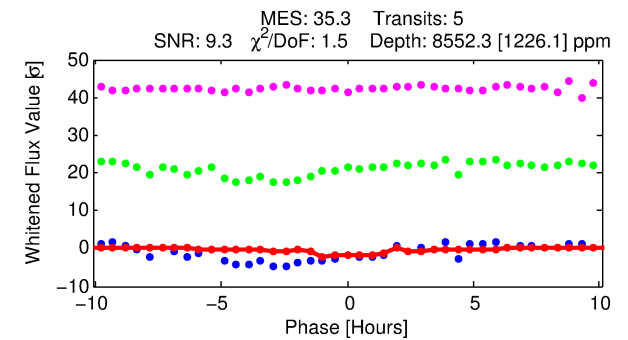
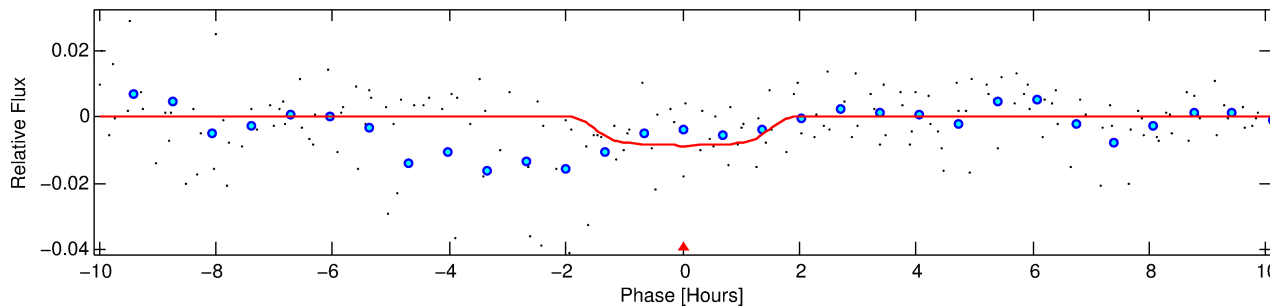
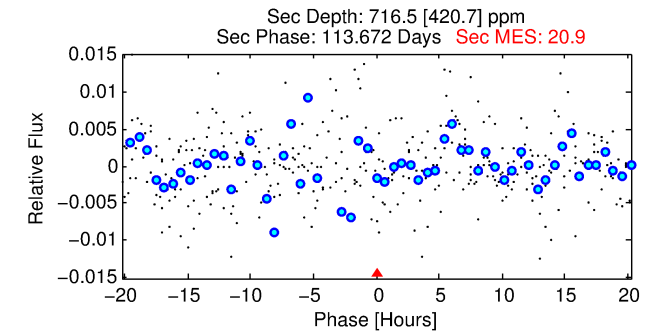
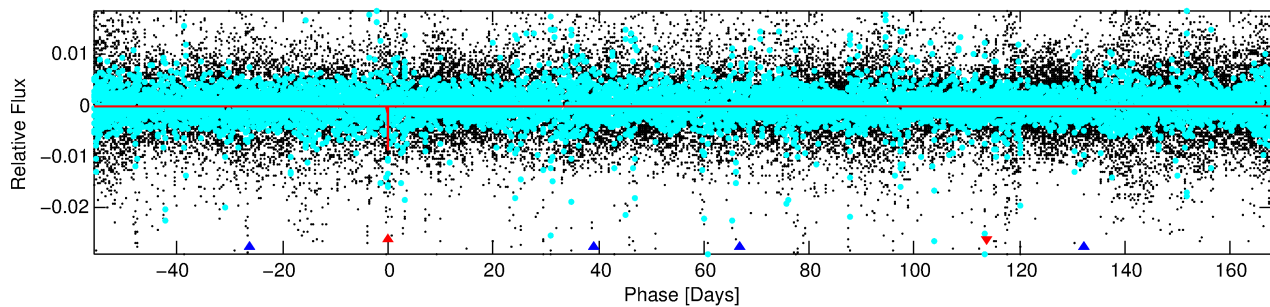
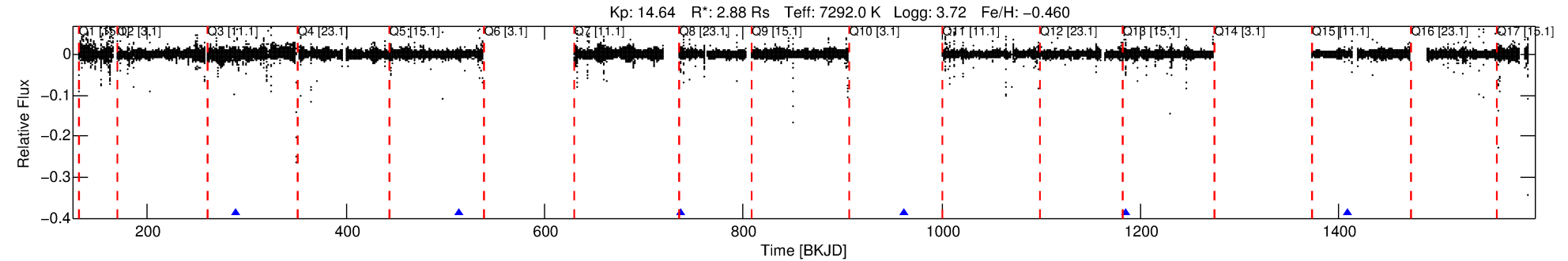
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004064484-01

No Significant Match Found

DV One-Page Summary

KIC: 4064484 Candidate: 1 of 2 Period: 223.966 d



DV Fit Results:

Period = 223.96642 [0.00209] d
Epoch = 289.4929 [0.0080] BKJD
Rp/R* = 0.0867 [0.0335]
a/R* = 522.13 [1085.33]
b = 0.35 [5.19]
Seff = 29.75 [26.81]
Teq = 596 [134] K
Rp = 27.24 [17.60] Re
a = 0.8399 [0.4487] AU
Ag = 374.66 [492.02] [0.76σ]
Teffp = 4051 [997] K [3.43σ]

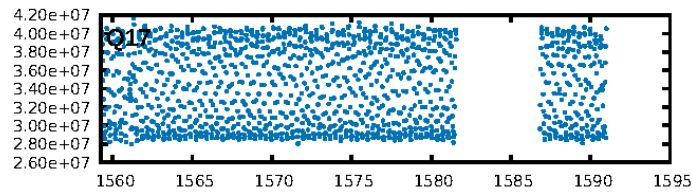
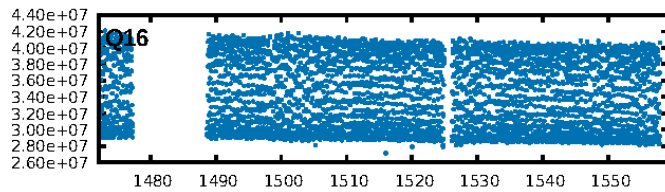
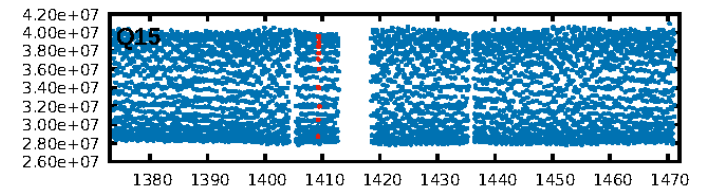
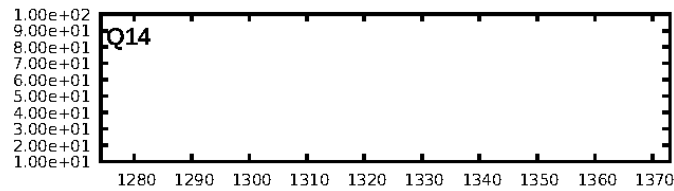
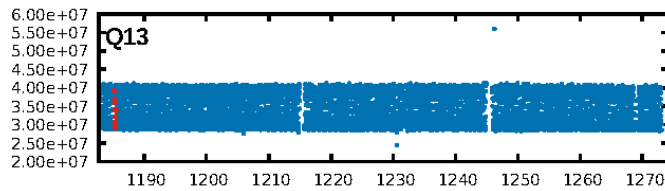
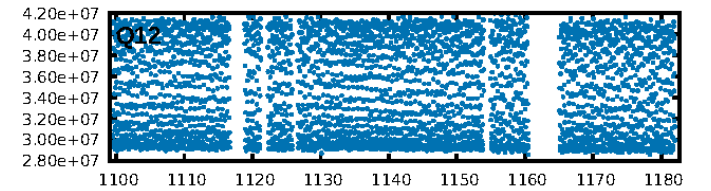
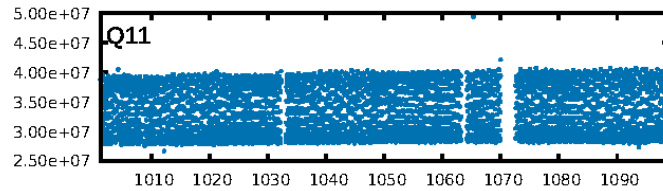
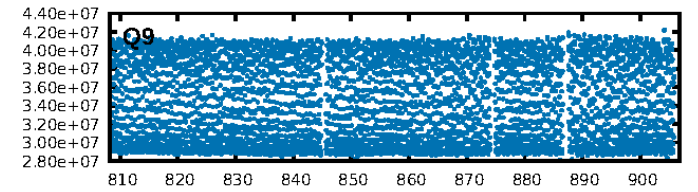
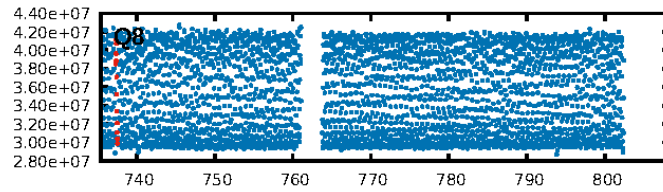
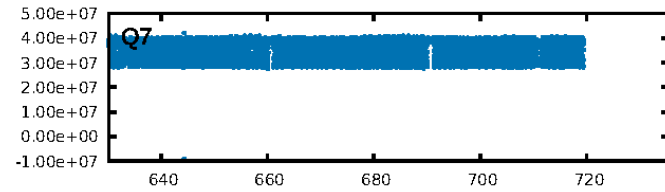
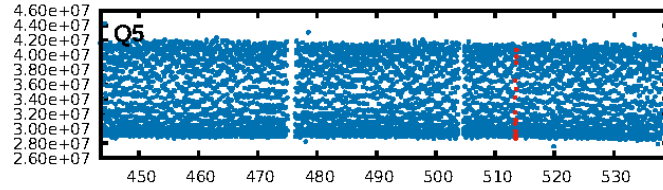
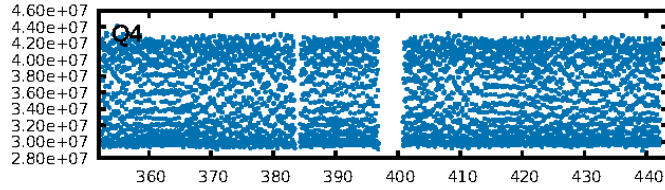
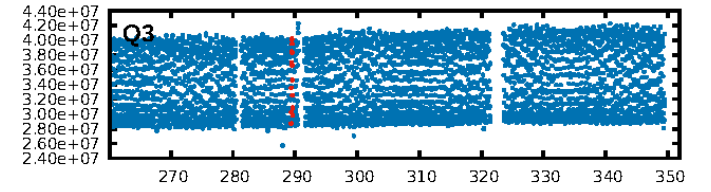
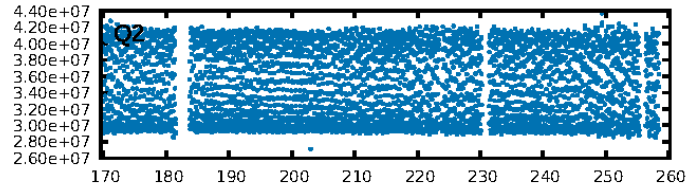
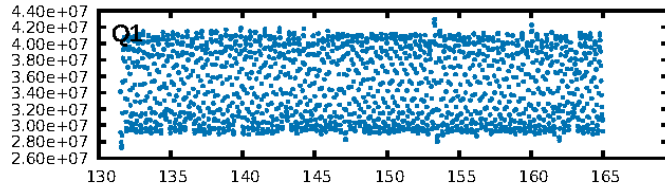
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [305.14σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 27.1%
Bootstrap-pfa: 8.53e-12
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 1.094
Centroid-sig: 16.0%
Centroid-so: 0.132 arcsec [0.79σ]
OotOffset-rm: 0.057 arcsec [0.82σ]
KicOffset-rm: 0.151 arcsec [1.66σ]
OotOffset-st: 0/2/1/1 [4]
KicOffset-st: 0/2/1/1 [4]
DiffImageQuality-fgm: 0.25 [1/4]
DiffImageOverlap-fno: 1.00 [4/4]

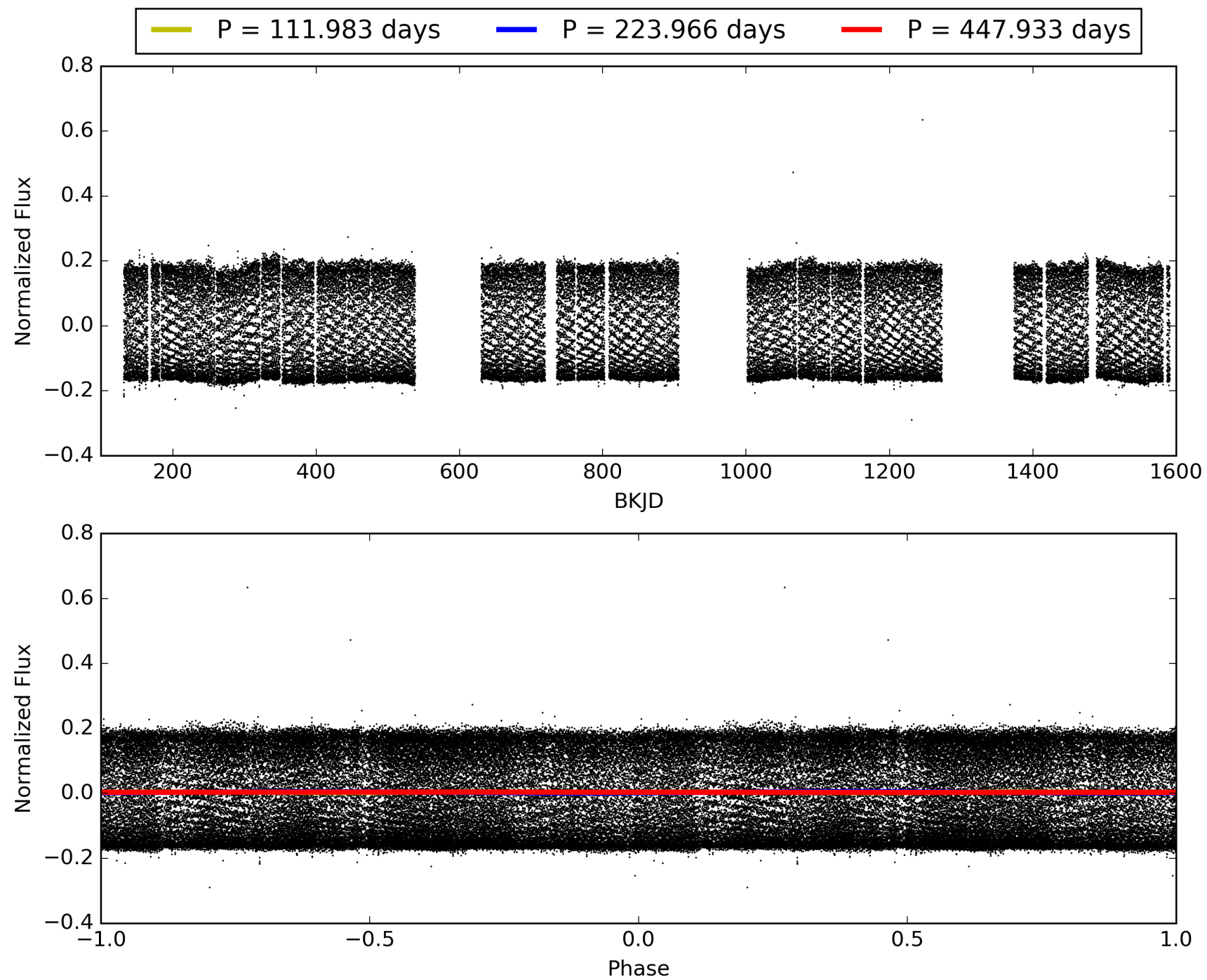
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 07:25:14 Z

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

TCE 004064484-01, PDC Light Curves

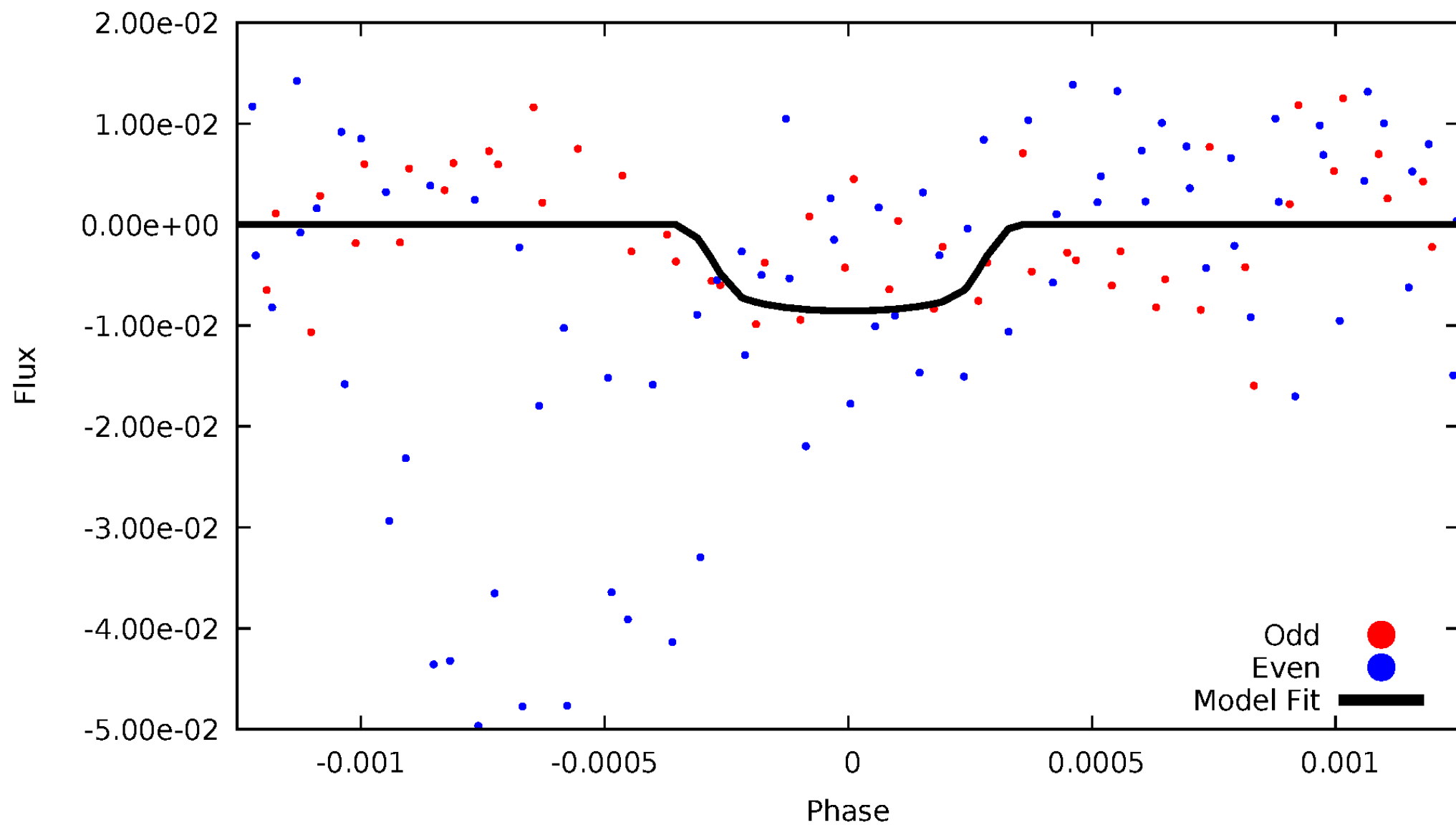


TCE 004064484-01



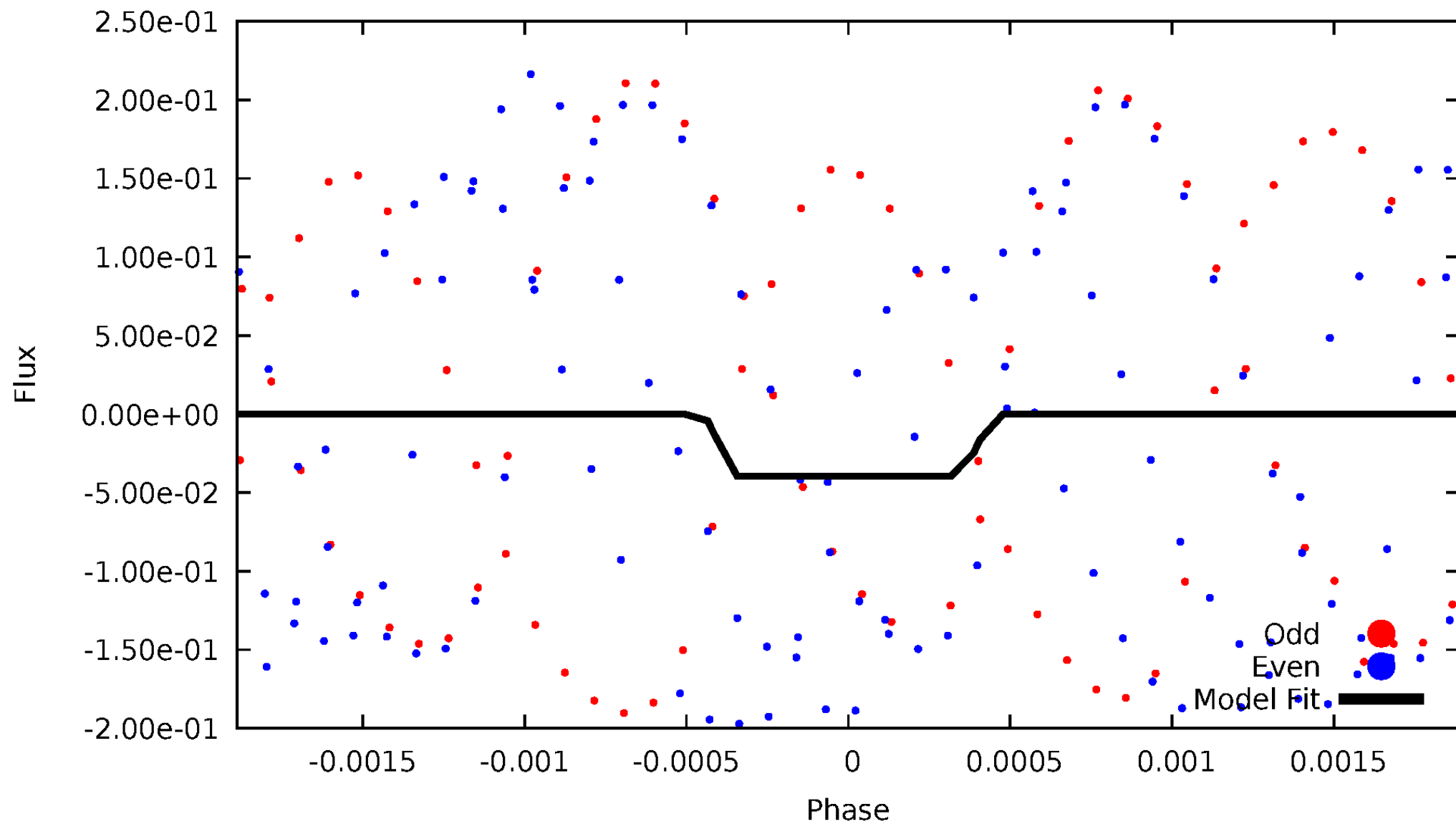
DV Odd/Even

TCE 004064484-01



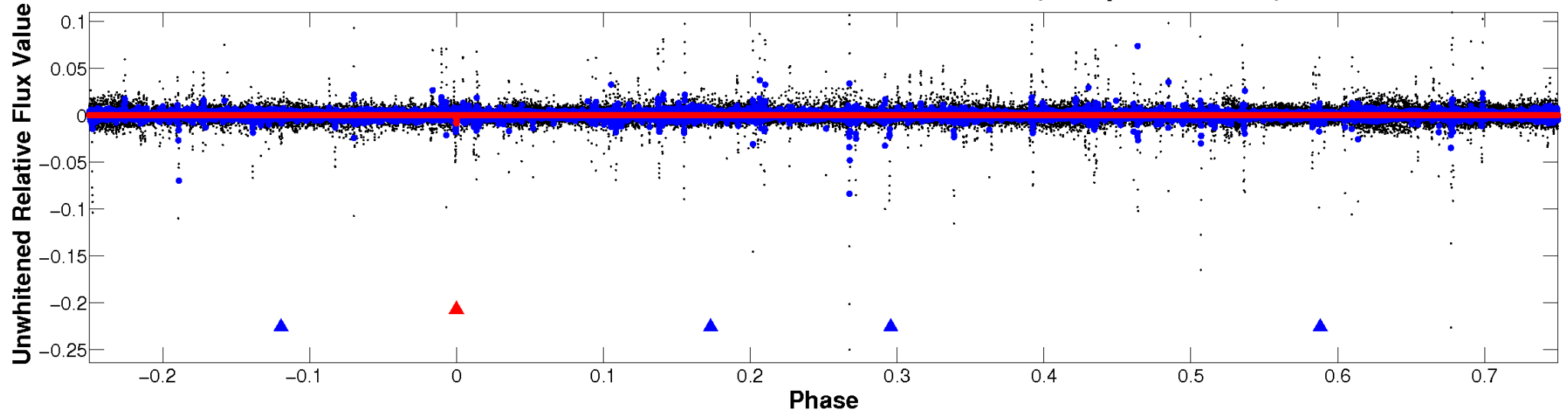
ALT Odd/Even

TCE 004064484-01

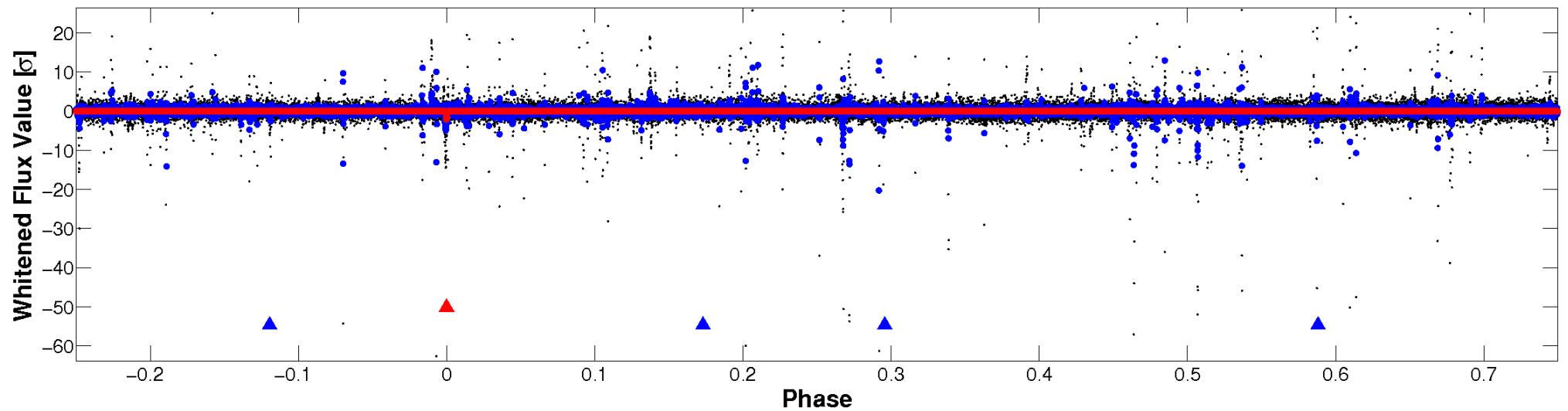


Non-Whitened Vs. Whitened Light Curve

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

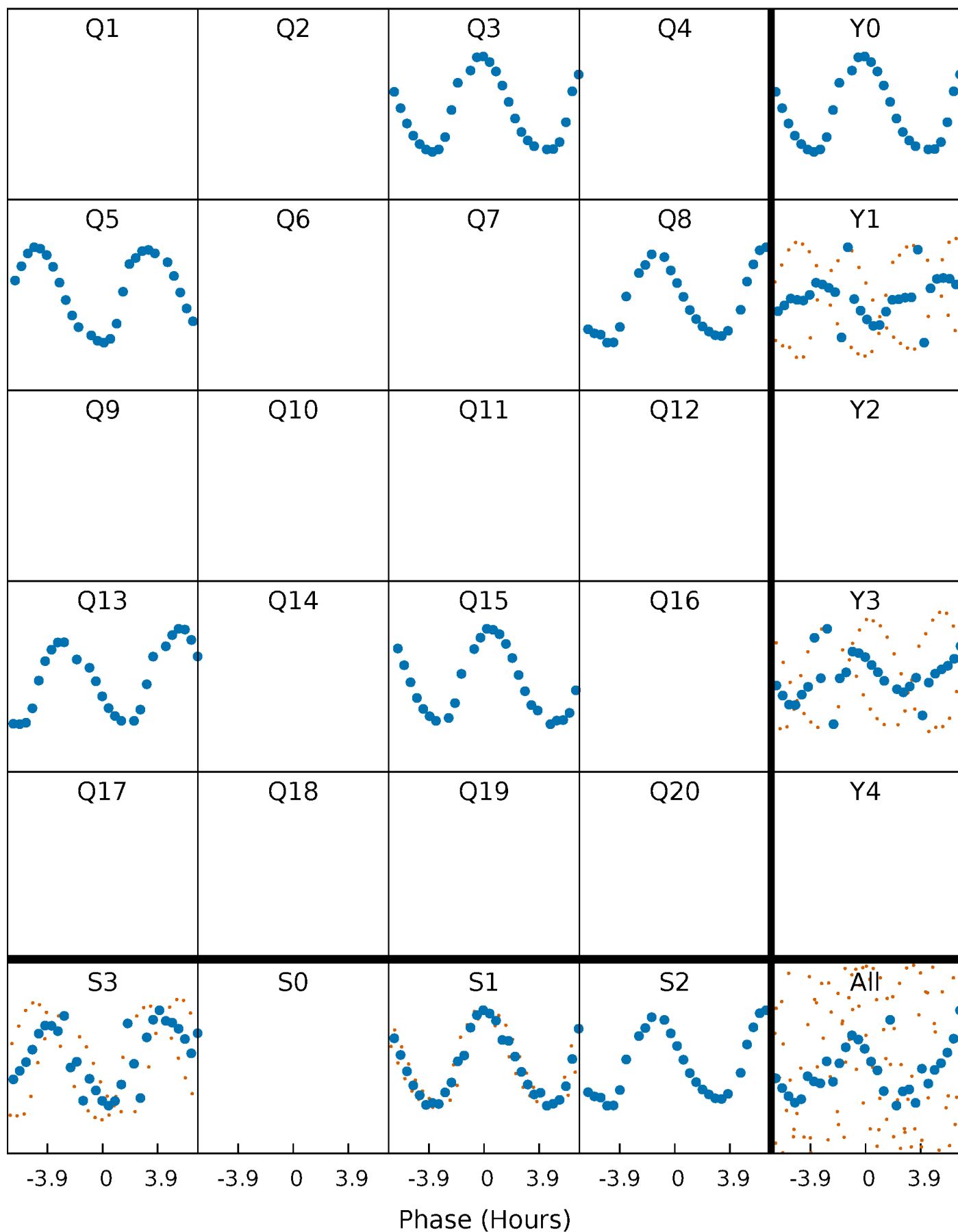


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



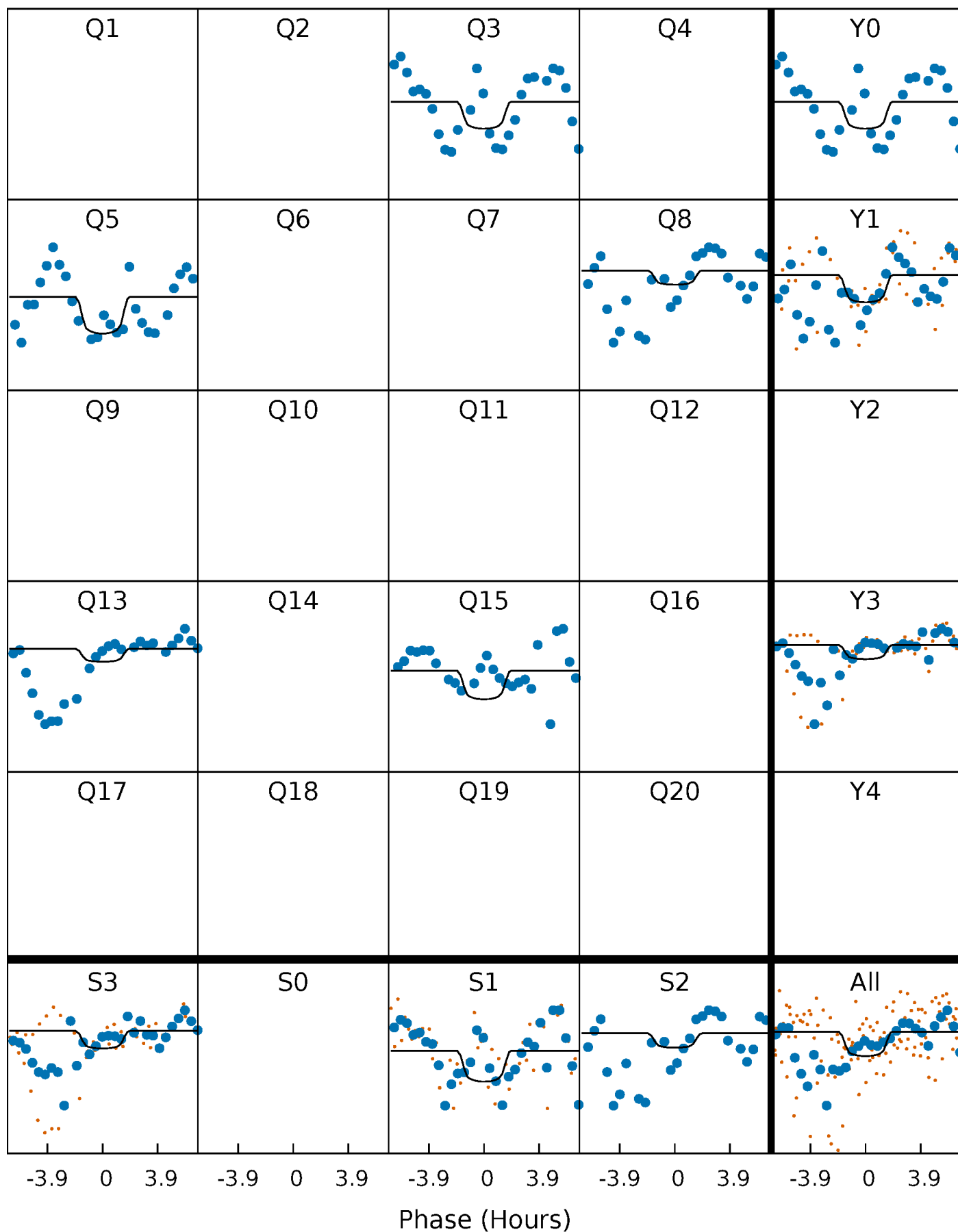
PDC Quarter-Phased Transit Curves

TCE 004064484-01 P=223.966423 Days $T_0=289.492945$ (BKJD)



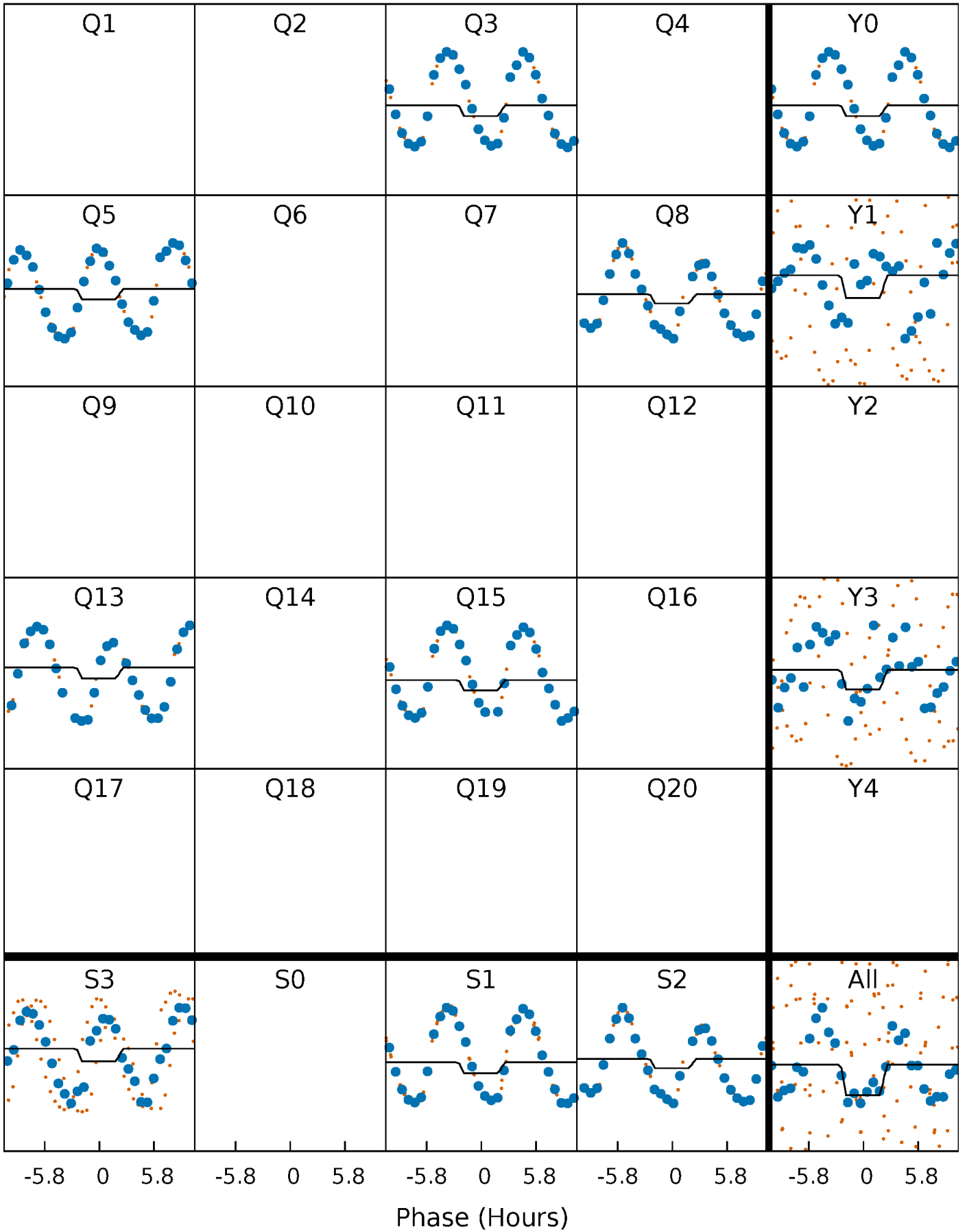
DV Quarter-Phased Transit Curves

TCE 004064484-01 $P=223.966423$ Days $T_0=289.492945$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

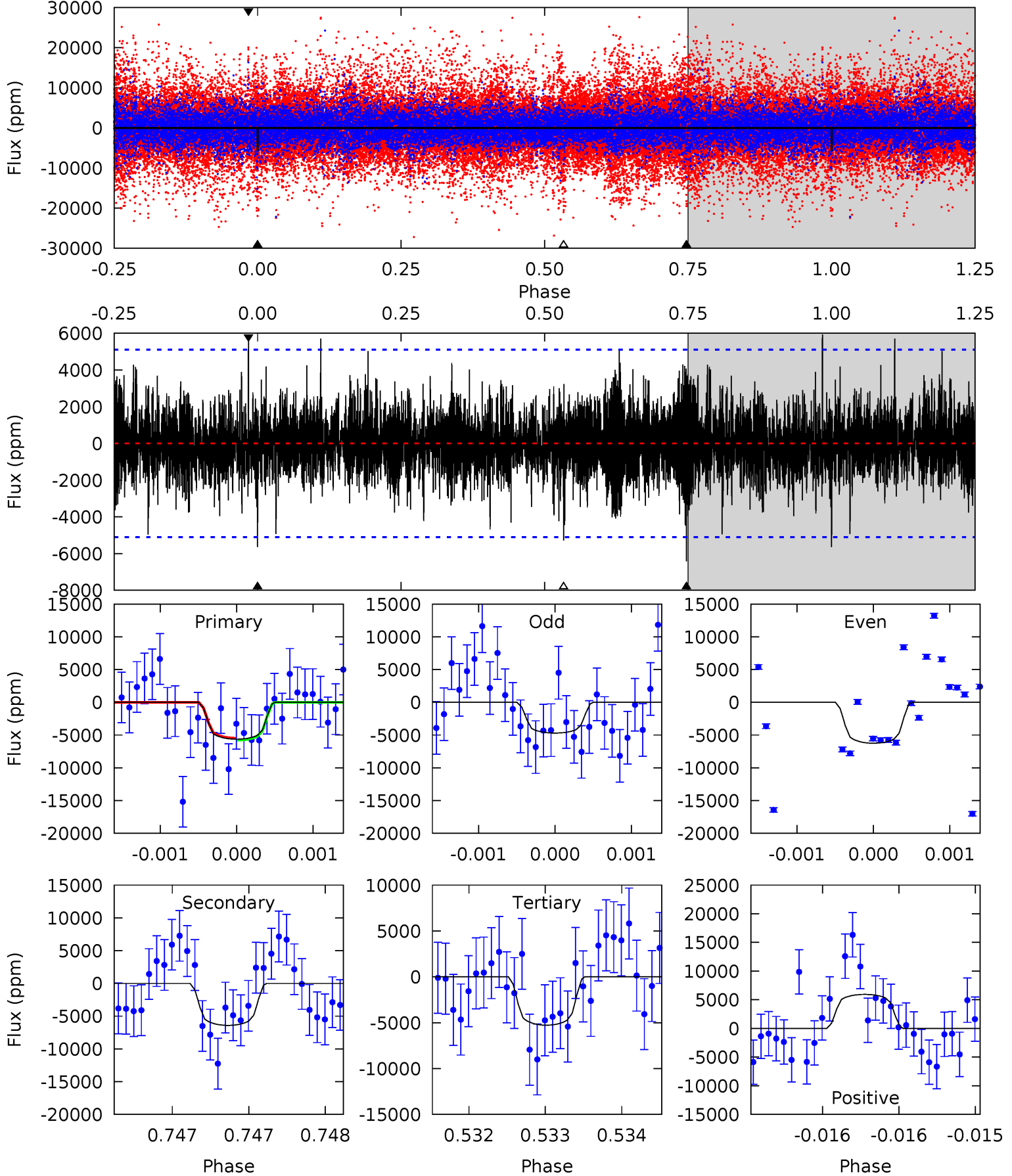
TCE 004064484-01 P=223.972251 Days $T_0=289.293426$ (BKJD)



DV Model-Shift Uniqueness Test

004064484-01, P = 223.966423 Days, E = 65.526522 Days

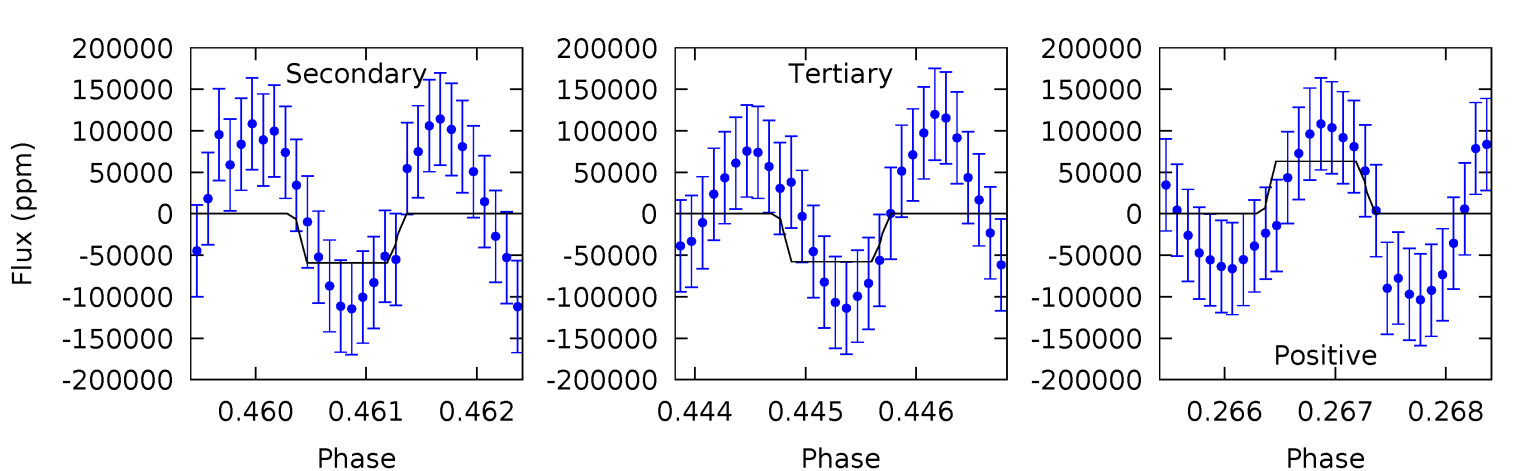
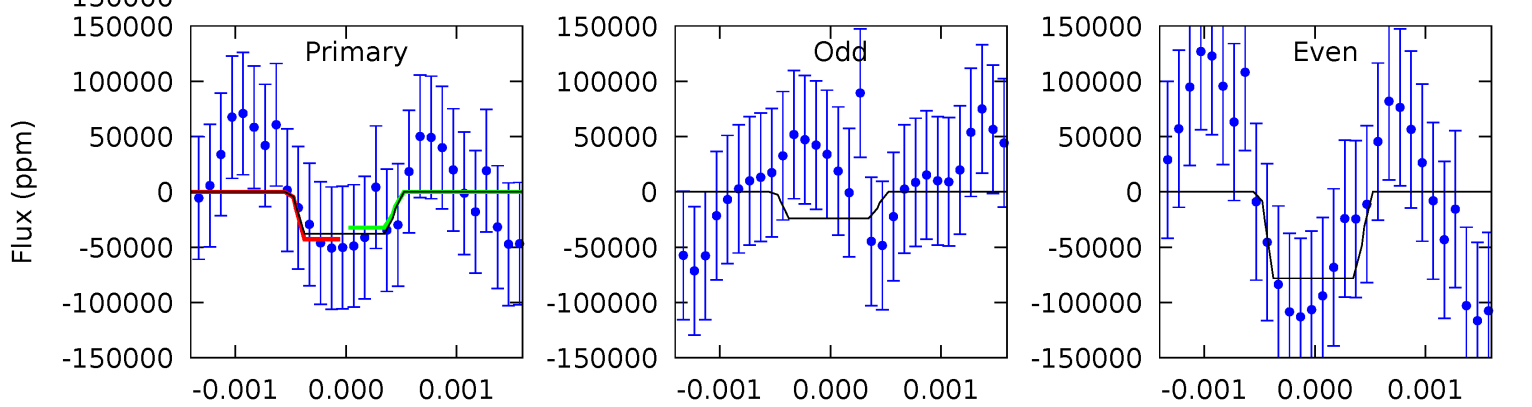
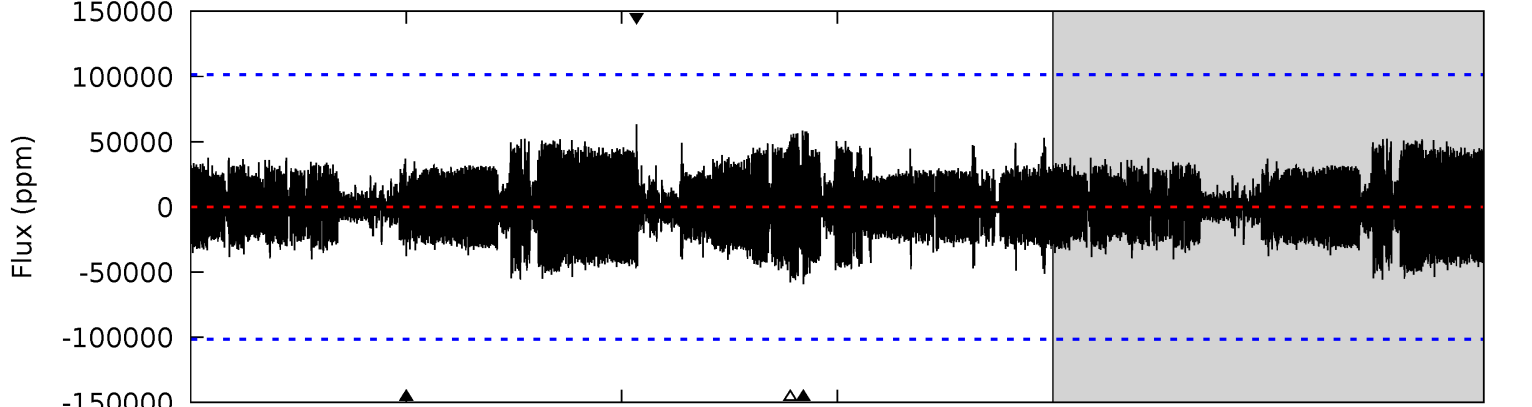
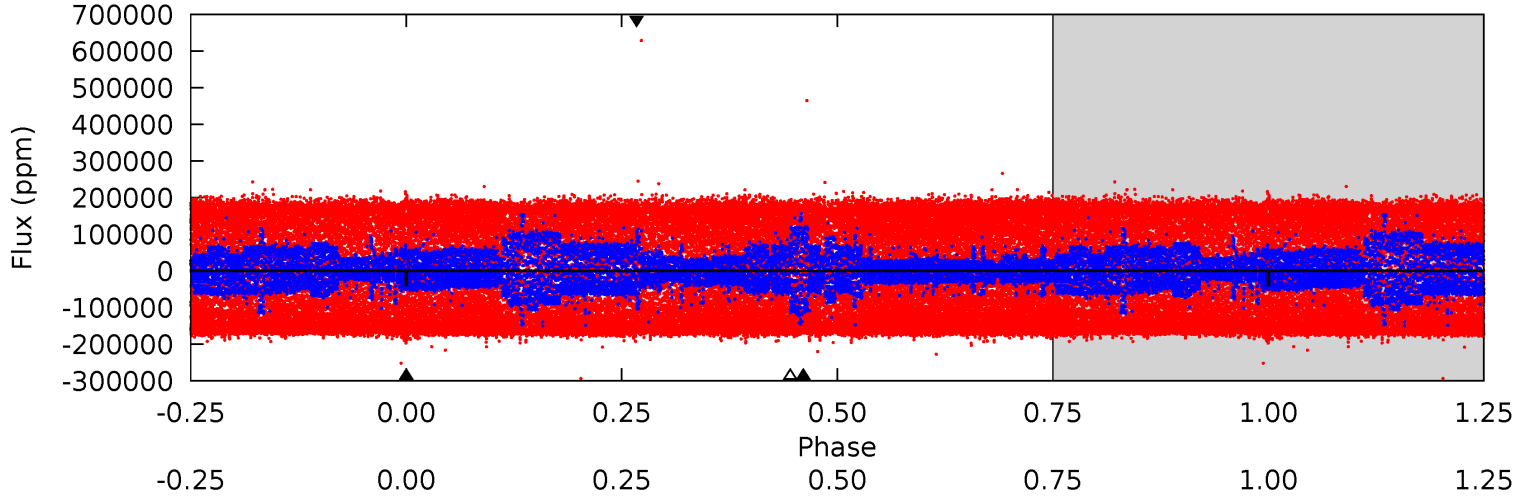
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.08	6.93	5.70	6.41	5.51	3.39	1.47	0.39	-0.33	1.23	0.51	0.79	1.13	0.48	0.15



Alt Model-Shift Uniqueness Test

004064484-01, P = 223.972251 Days, E = 65.321175 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.03	3.20	3.12	3.41	5.47	3.32	1.13	-1.08	-1.37	0.08	-0.21	1.45	0.73	0.52	0.28



Stellar Parameters For KIC 004064484

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7292^{+230}_{-307}	$3.717^{+0.531}_{-0.089}$	$-0.460^{+0.300}_{-0.300}$	$2.878^{+0.373}_{-1.491}$	$1.573^{+0.208}_{-0.386}$	$0.093^{+0.499}_{-0.025}$
	+3%/-4%	+14%/-2%	+65%/-65%	+13%/-52%	+13%/-25%	+537%/-27%
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 004064484-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-6416 ± 926	$23.68^{+12.33}_{-10.30}$	798^{+64}_{-109}	6952^{+2559}_{-1133}	4268^{+9894}_{-2373}
Alt.	-59324 ± 18552	$56.75^{+15.22}_{-16.36}$	800^{+63}_{-111}	8341^{+1463}_{-1305}	7670^{+7529}_{-3694}

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 $A_{obs} \gg 1.0$

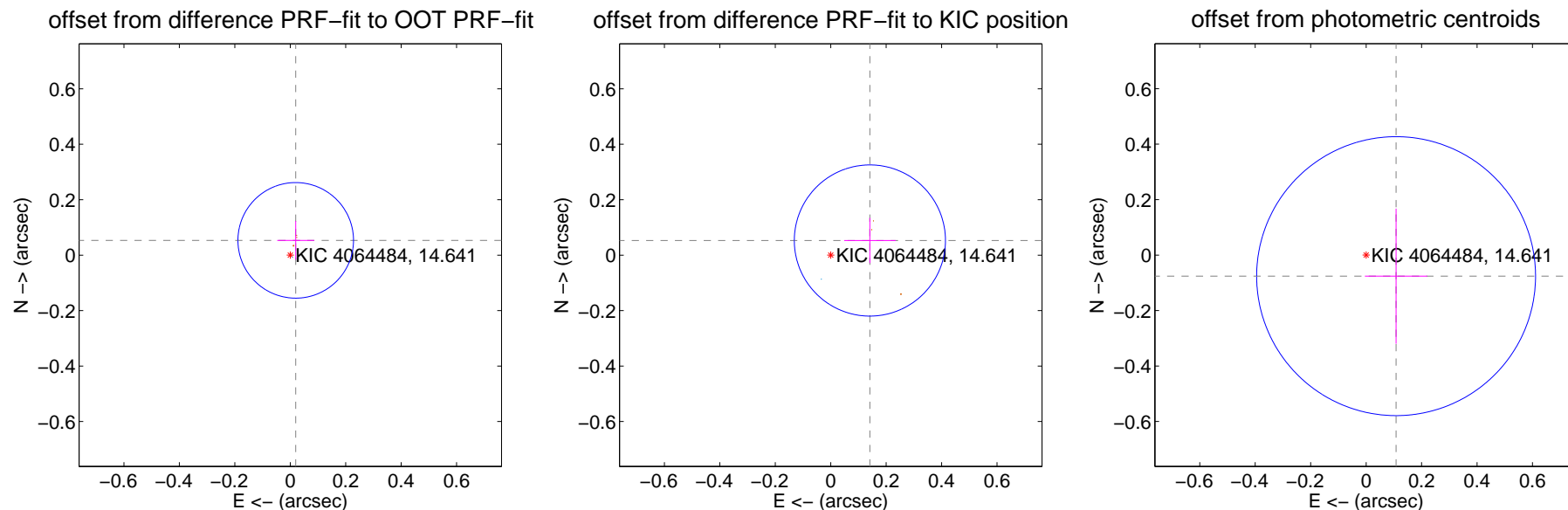
DV Centroid Data

Supplemental centroid analysis for 004064484-01. Kepler magnitude: 14.64. Transit SNR 9.33

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.057 ± 0.069	0.82	-0.020 ± 0.067	0.053 ± 0.070
PRF-fit source offset from KIC position	0.151 ± 0.091	1.66	-0.141 ± 0.093	0.053 ± 0.081
photometric centroid source offset	0.13 ± 0.17	0.79	-0.11 ± 0.11	-0.08 ± 0.24



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

Q1 no difference image



Q1 no OOT image



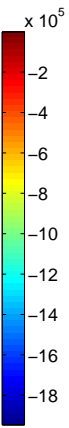
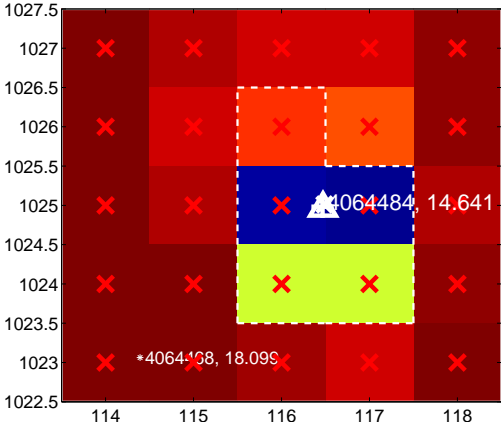
Q2 no difference image



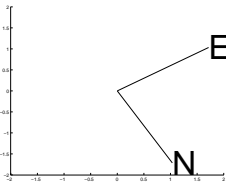
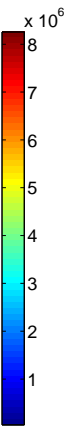
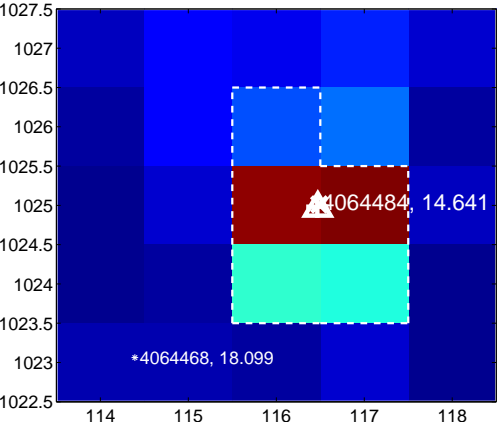
Q2 no OOT image



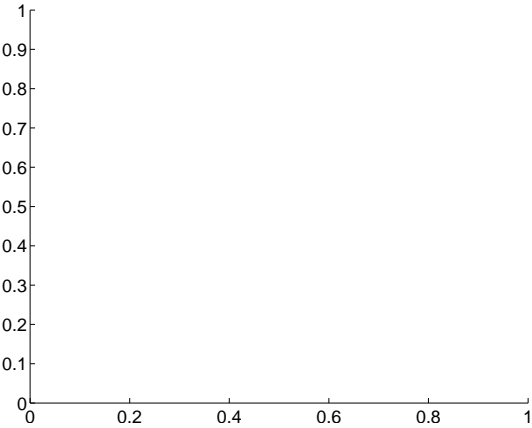
Q3 difference image. Poor Quality



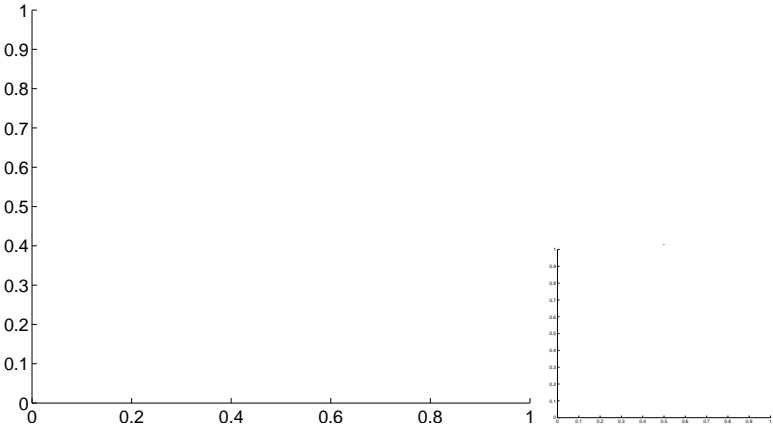
Q3 OOT image



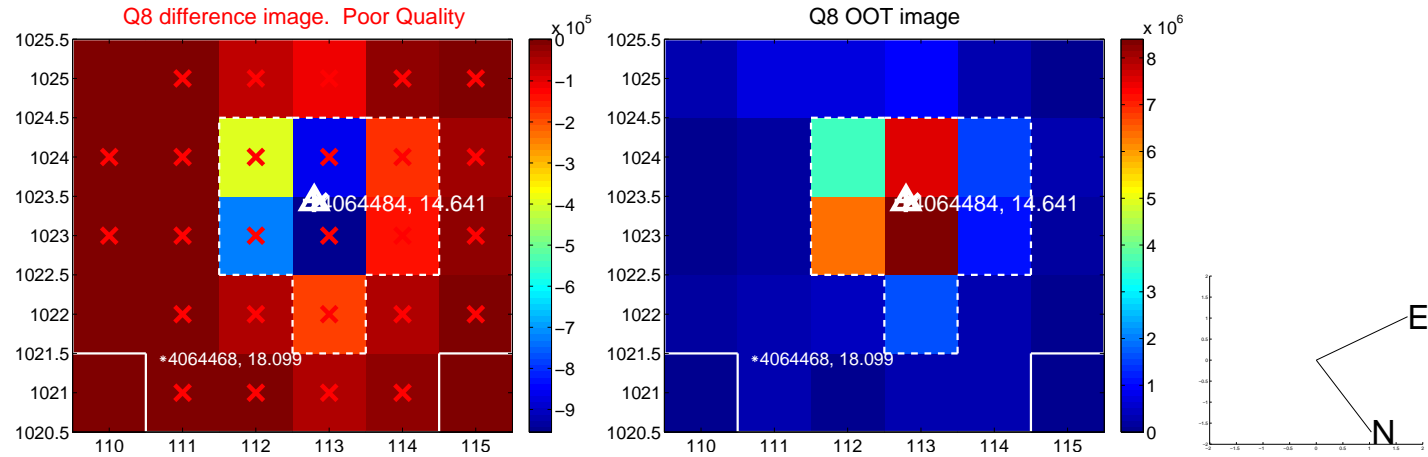
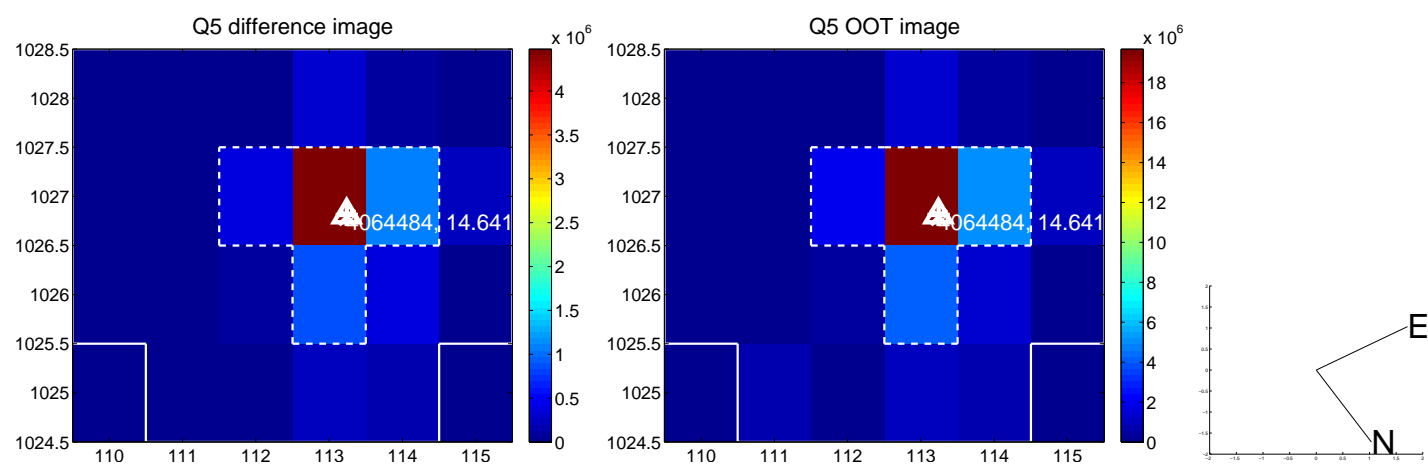
Q4 no difference image



Q4 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.



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

Q13 no difference image



Q13 no OOT image



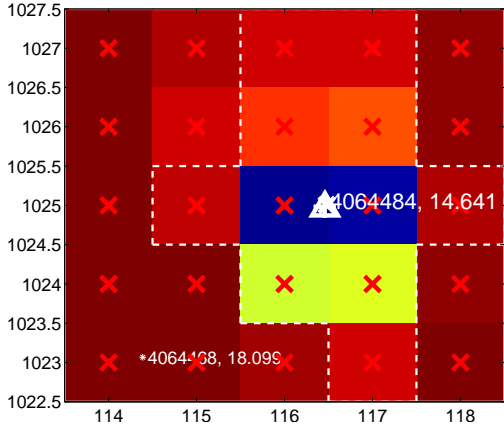
Q14 no difference image



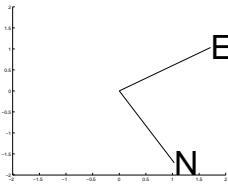
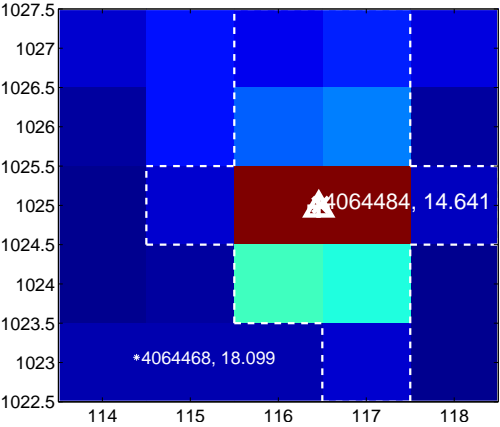
Q14 no OOT image



Q15 difference image. Poor Quality



Q15 OOT image



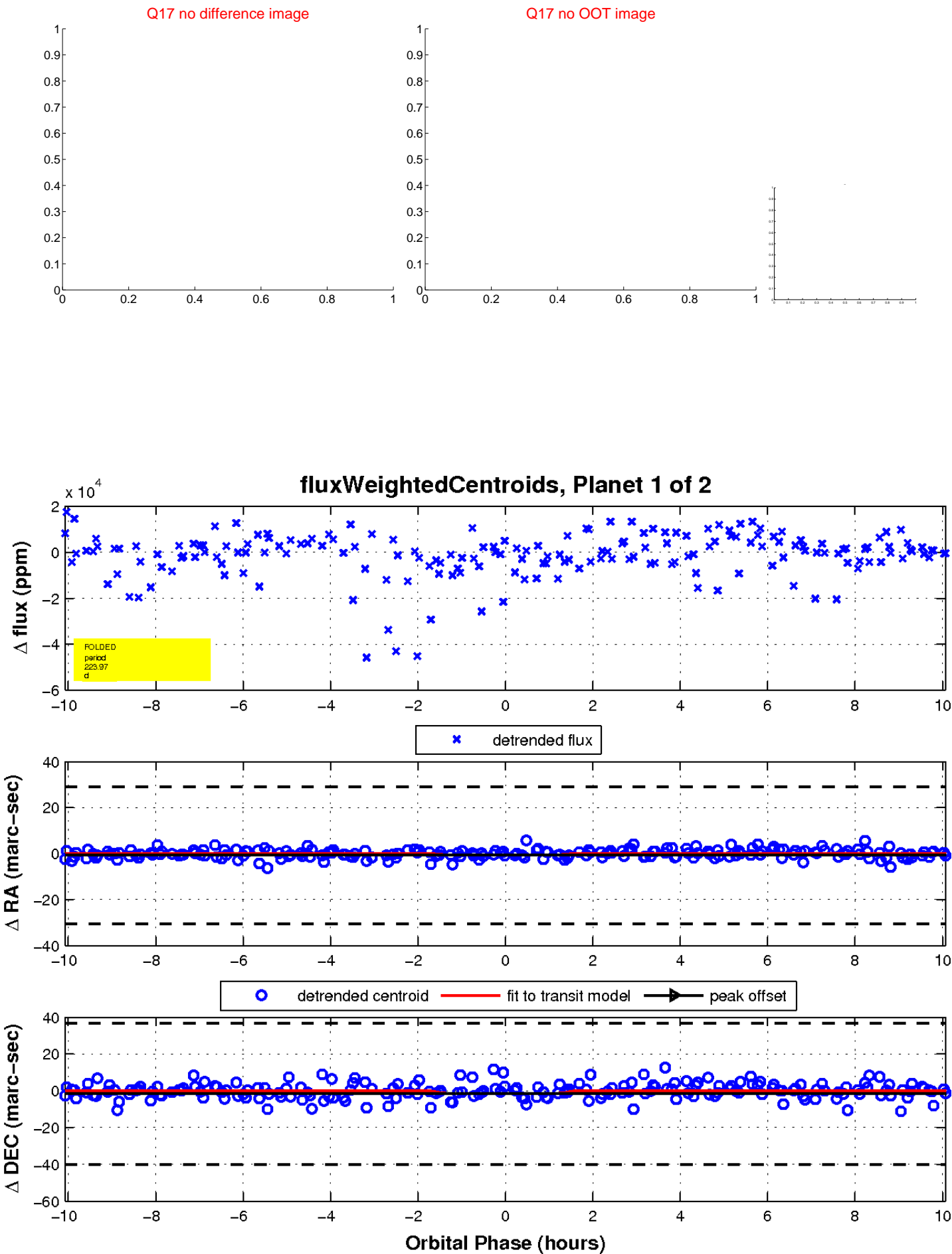
Q16 no difference image



Q16 no OOT image

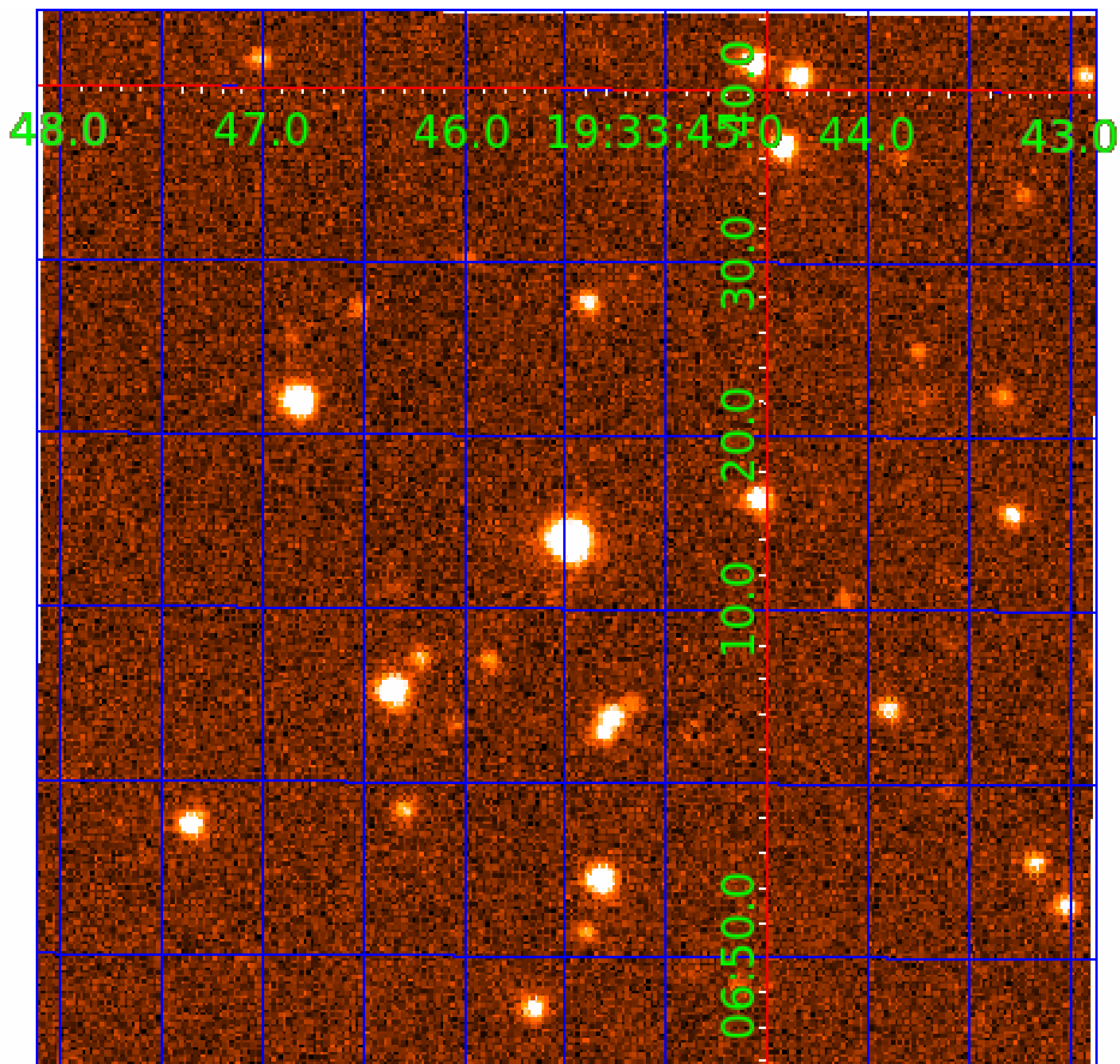


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004064484

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})
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004064484-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004064484-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

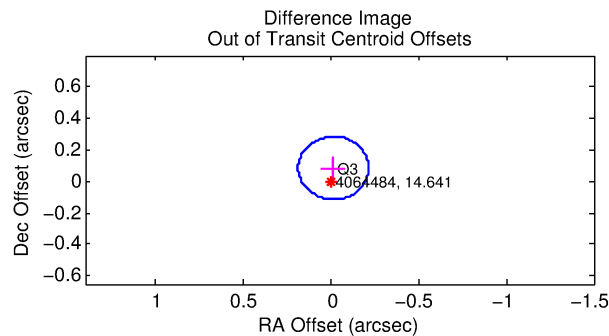
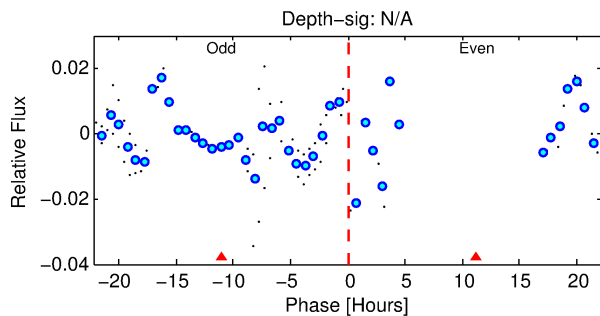
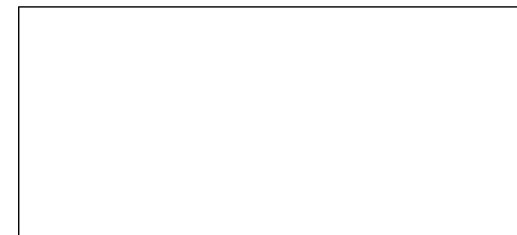
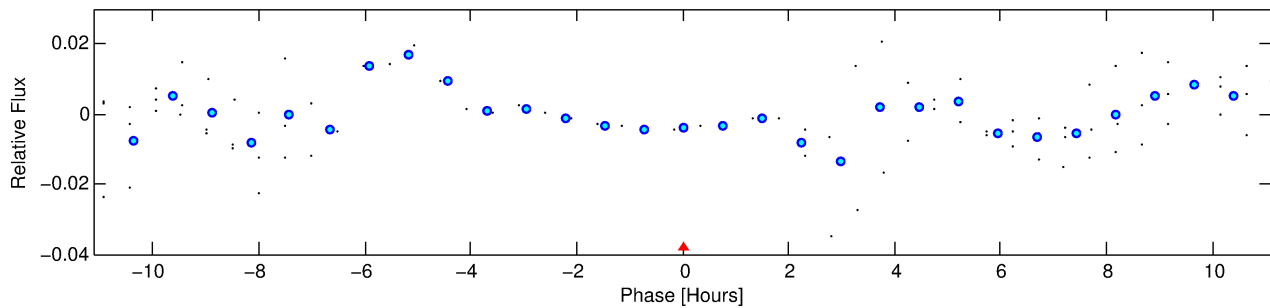
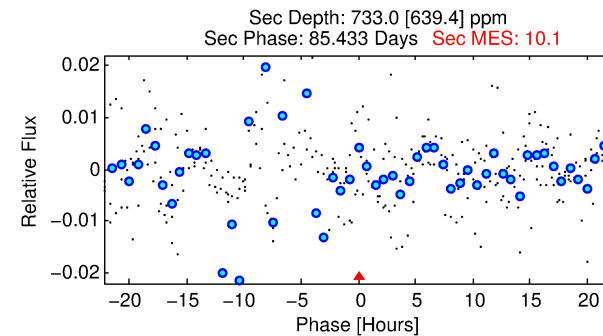
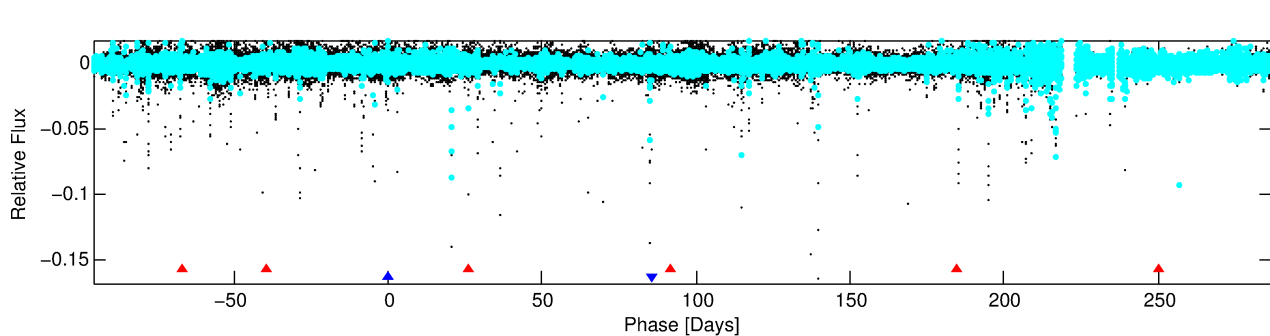
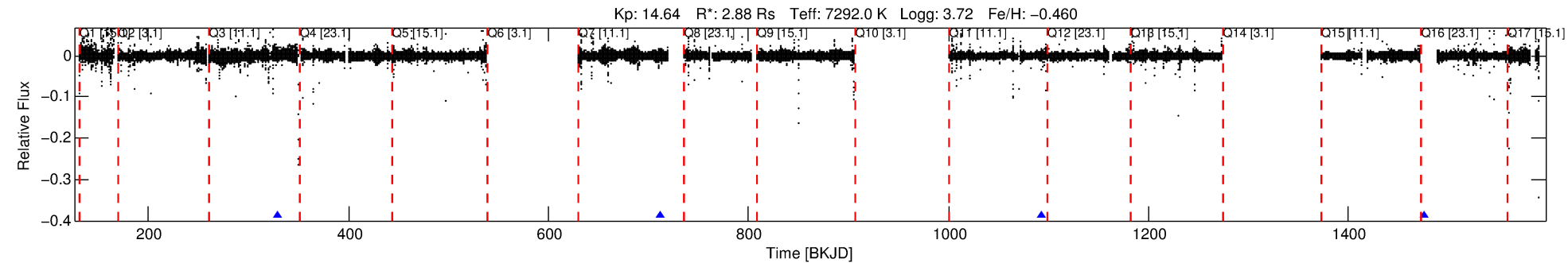
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004064484-02

No Significant Match Found

DV One-Page Summary

KIC: 4064484 Candidate: 2 of 2 Period: 382.435 d



TPS TCE Results:

Period = 382.43451 d
Epoch = 328.2487 BKJD

DV fit results are unavailable

DV Diagnostic Results:

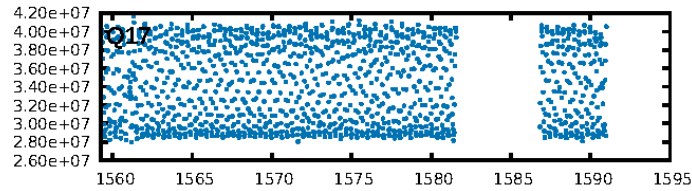
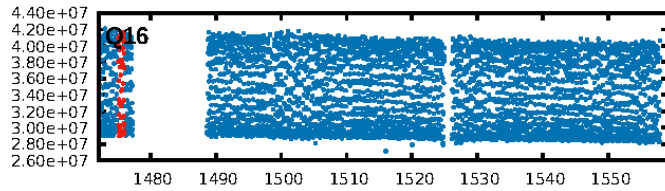
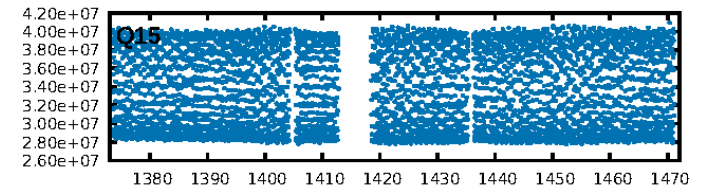
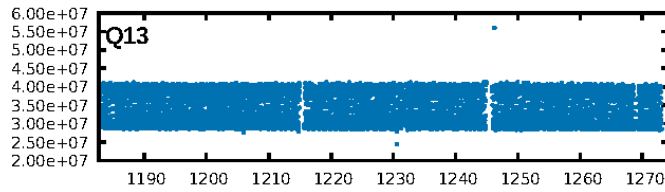
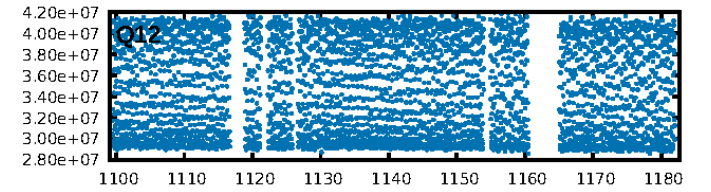
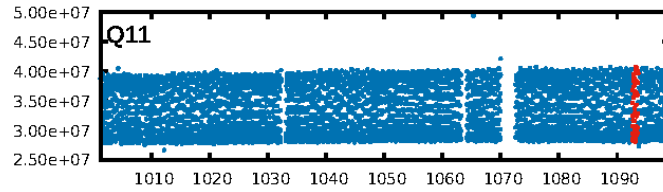
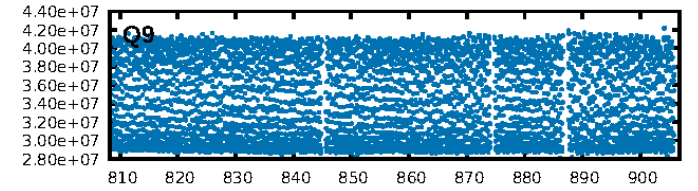
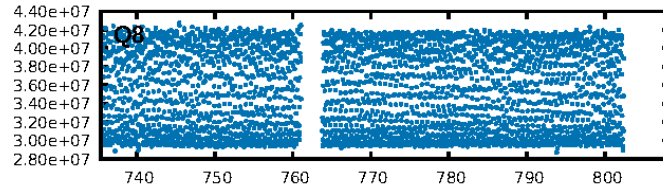
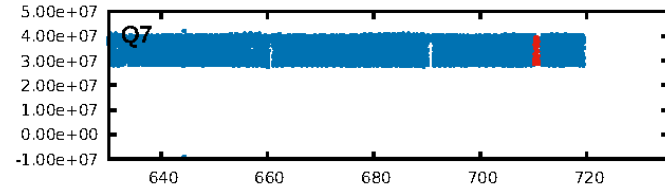
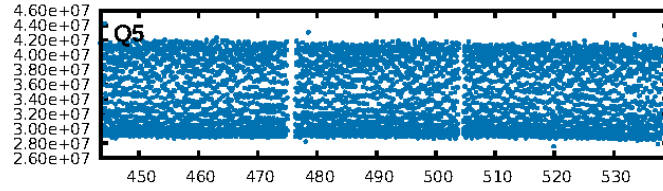
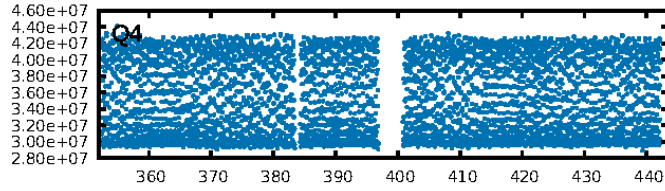
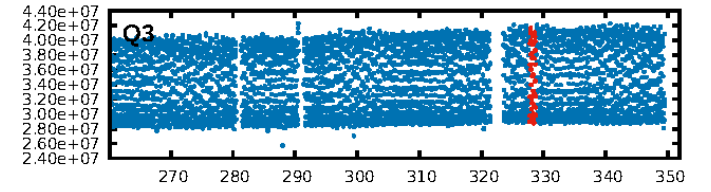
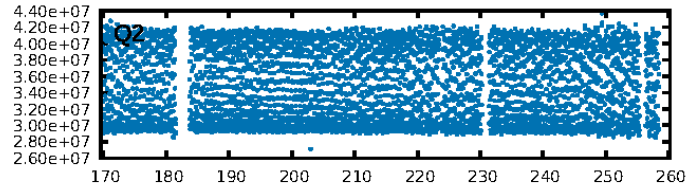
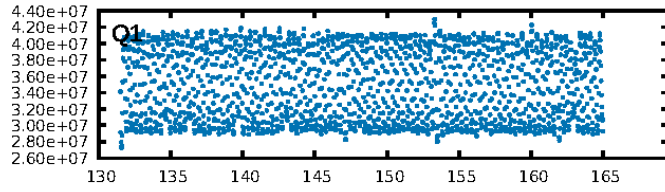
ShortPeriod-sig: 100.0% [305.14 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.84e-05
RollingBand-fgt: 1.00 [1/1]
GhostDiagnostic-chr: 0.9431

Centroid-sig: 69.2%
Centroid-so: 0.339 arcsec [8.21 σ]
OotOffset-rm: 0.087 arcsec [1.30 σ]
KicOffset-rm: 0.208 arcsec [3.12 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]

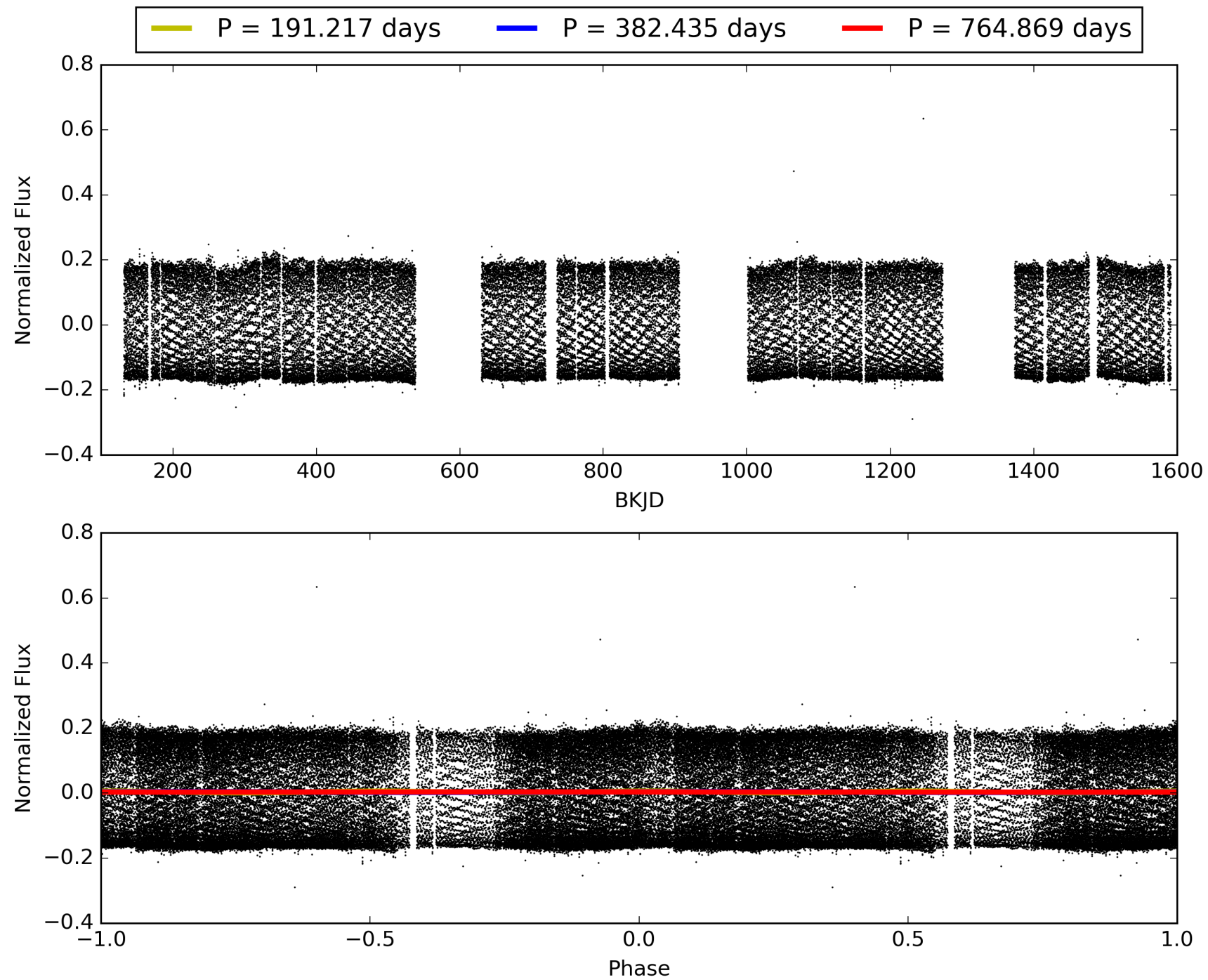
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 07:25:27 Z

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

TCE 004064484-02, PDC Light Curves

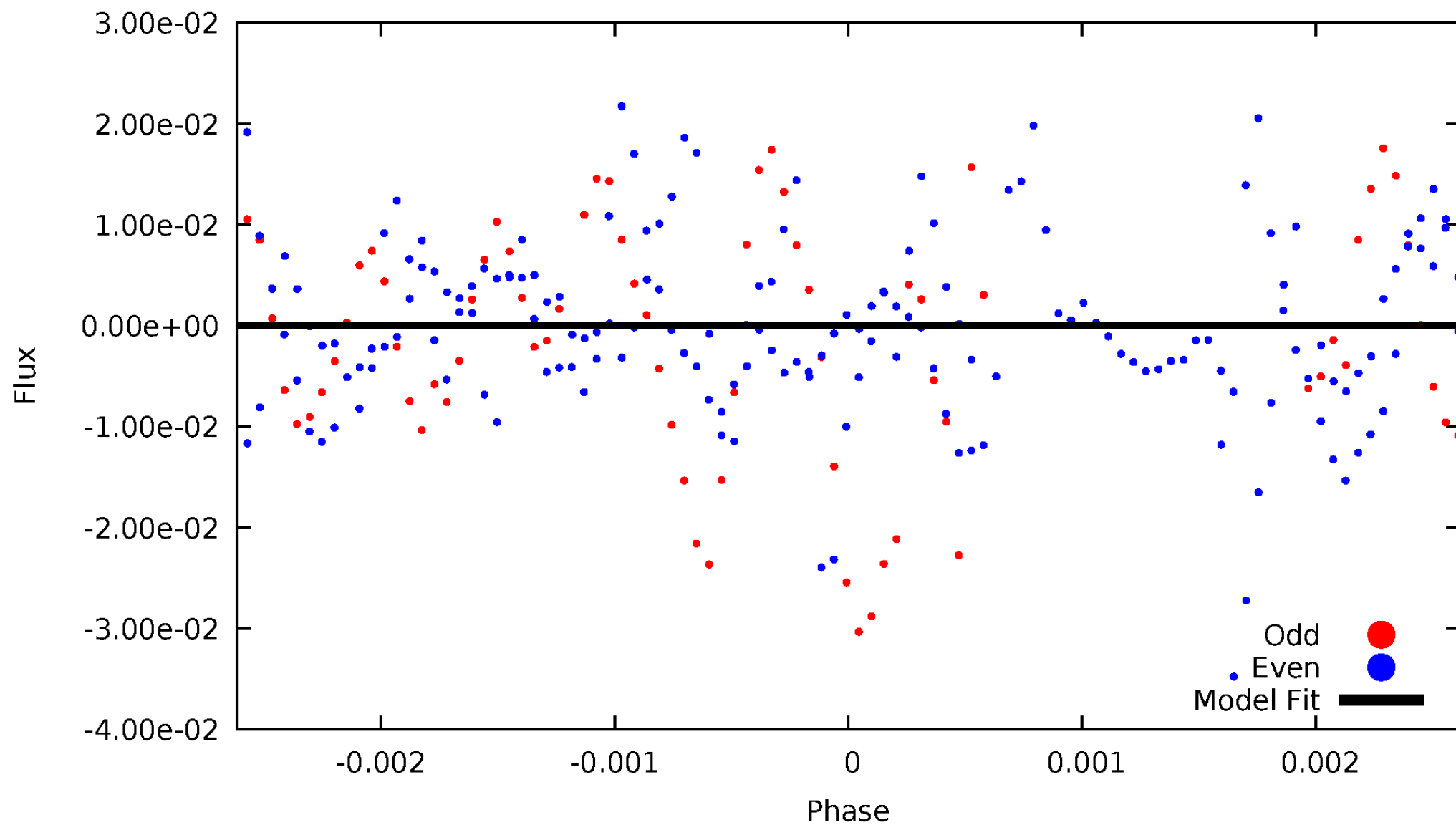


TCE 004064484-02



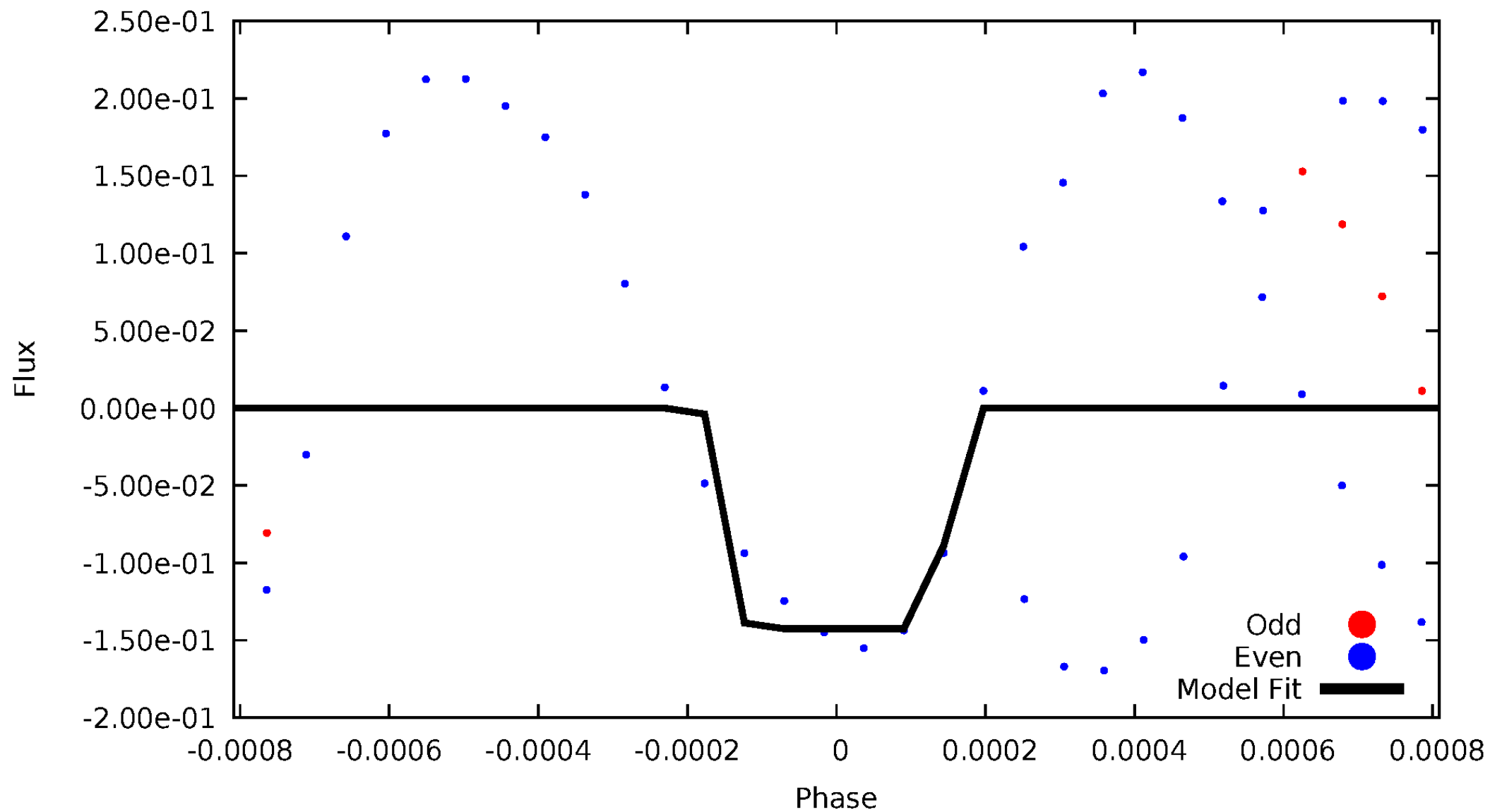
DV Odd/Even

TCE 004064484-02



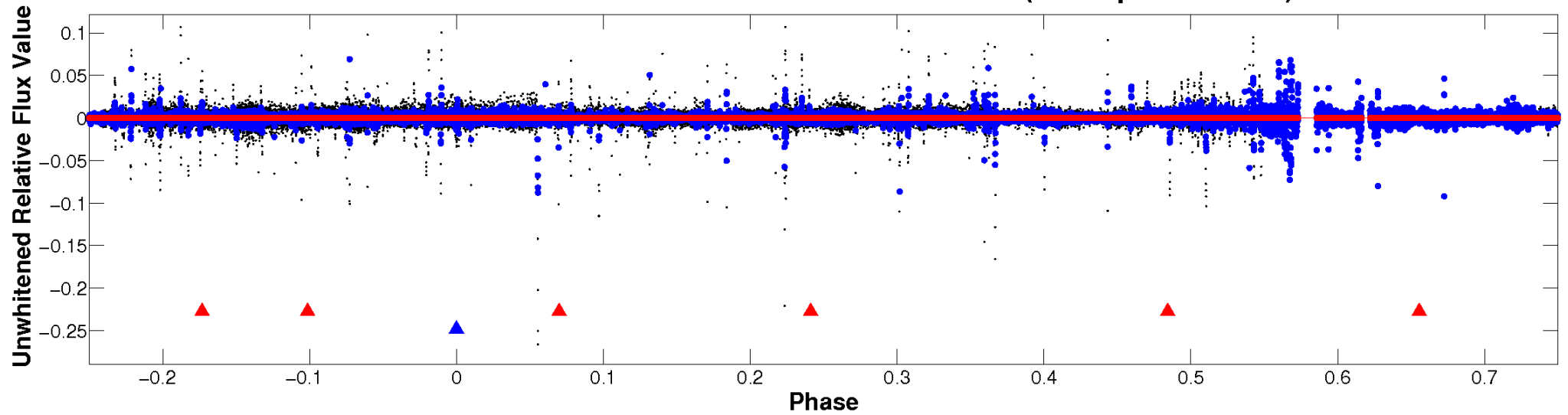
ALT Odd/Even

TCE 004064484-02



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)



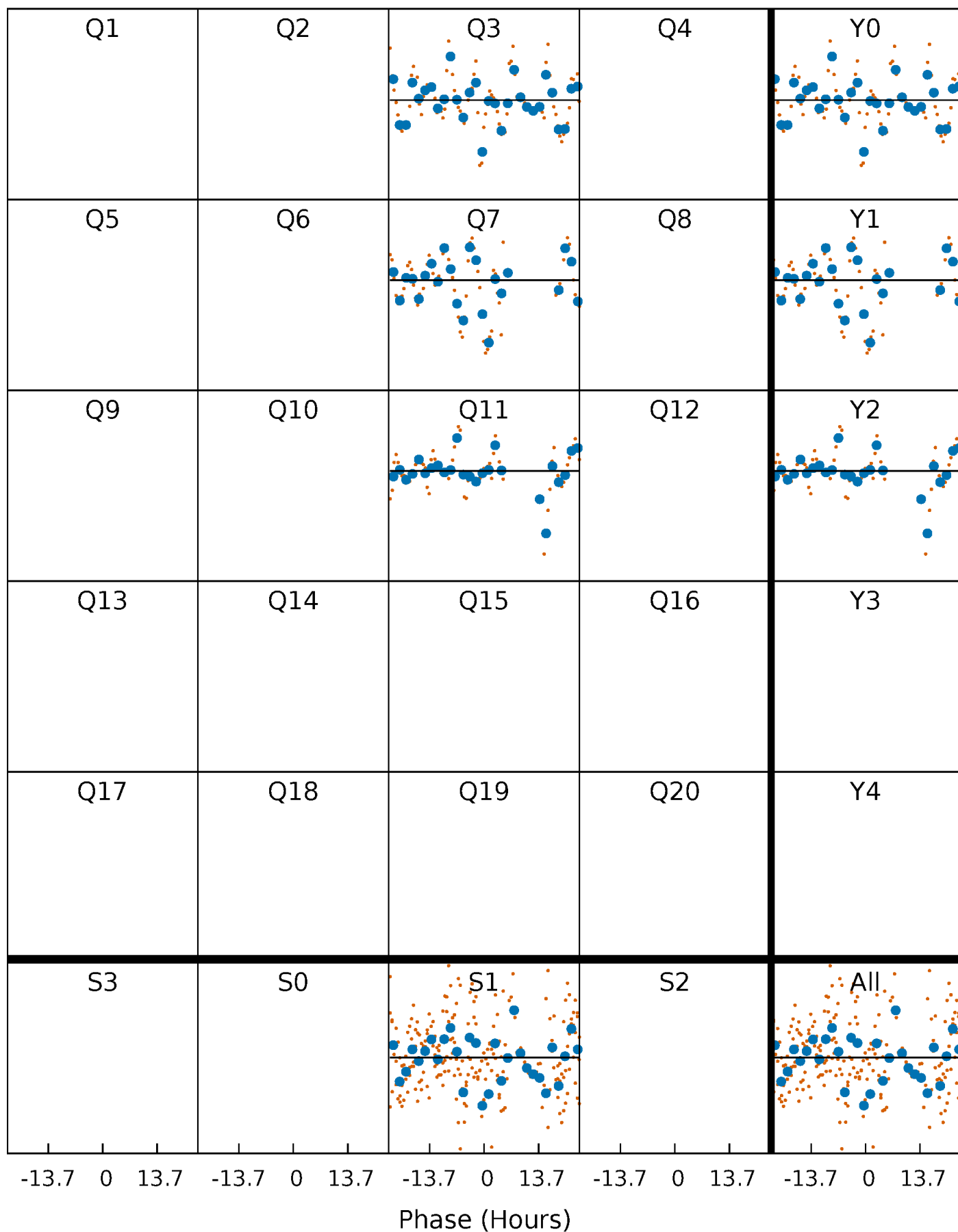
PDC Quarter-Phased Transit Curves

TCE 004064484-02 $P=382.434509$ Days $T_0=328.248715$ (BKJD)



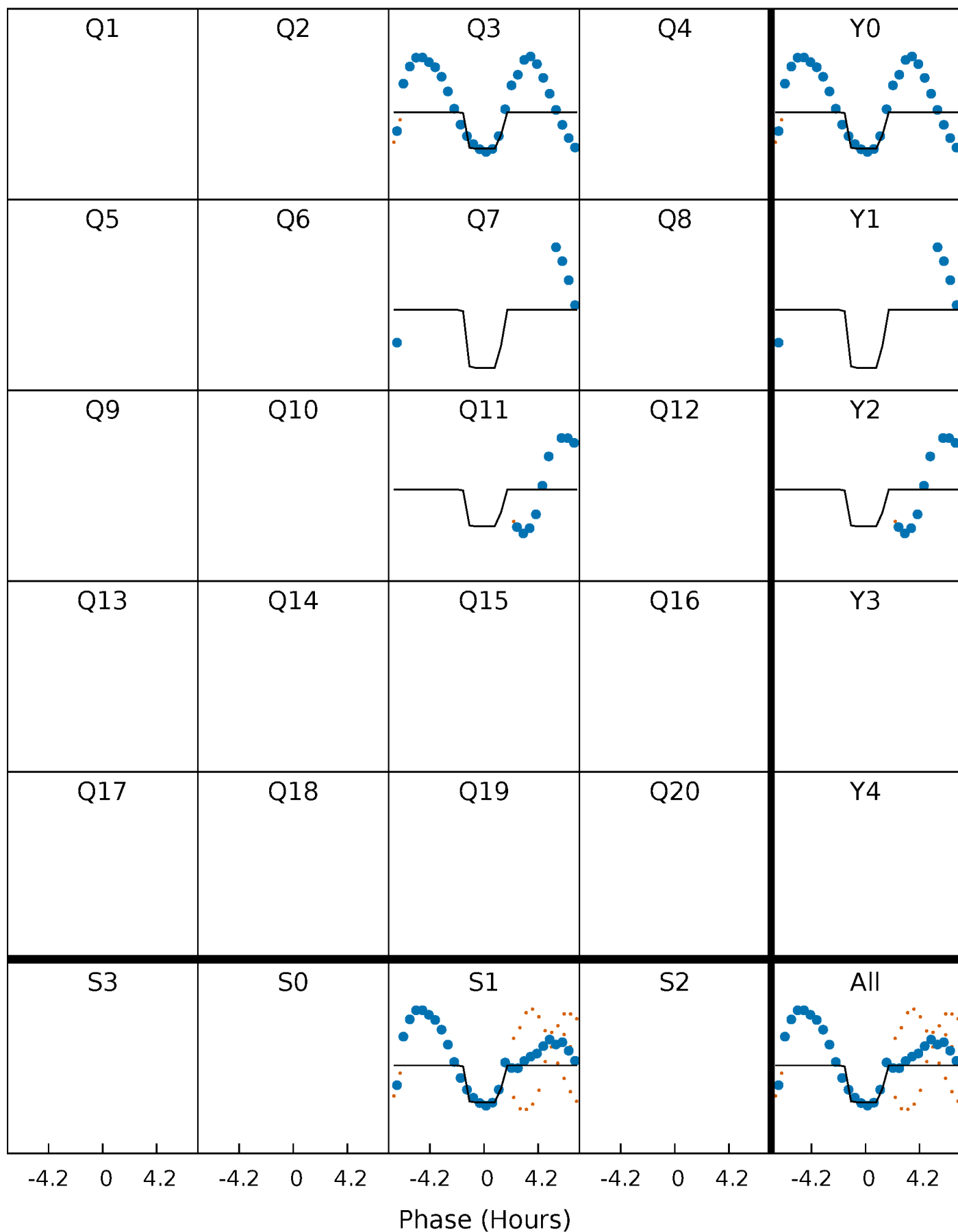
DV Quarter-Phased Transit Curves

TCE 004064484-02 $P=382.434509$ Days $T_0=328.248715$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

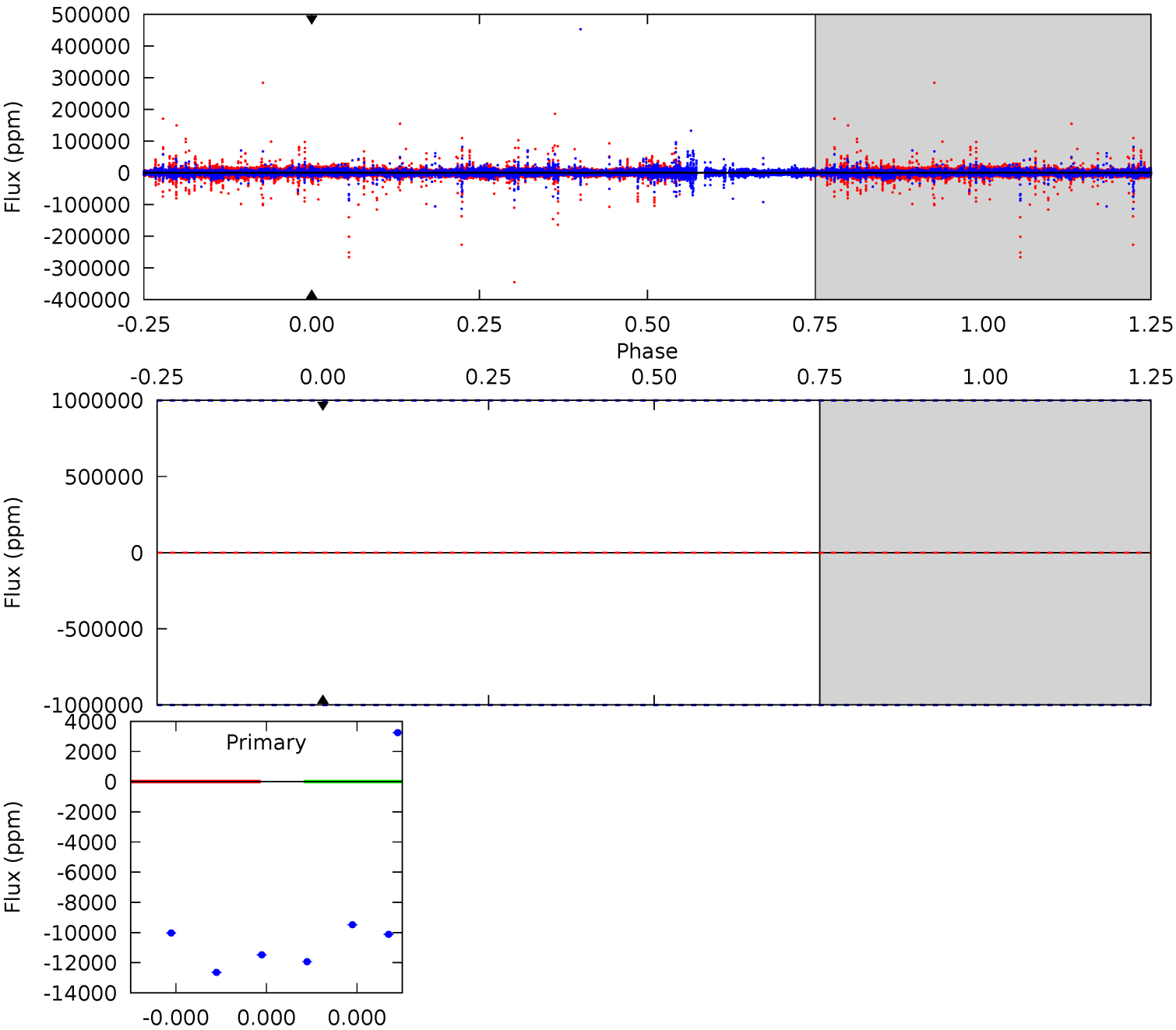
TCE 004064484-02 P=382.434509 Days $T_0=328.762546$ (BKJD)



DV Model-Shift Uniqueness Test

004064484-02, P = 382.434509 Days, E = 328.248715 Days

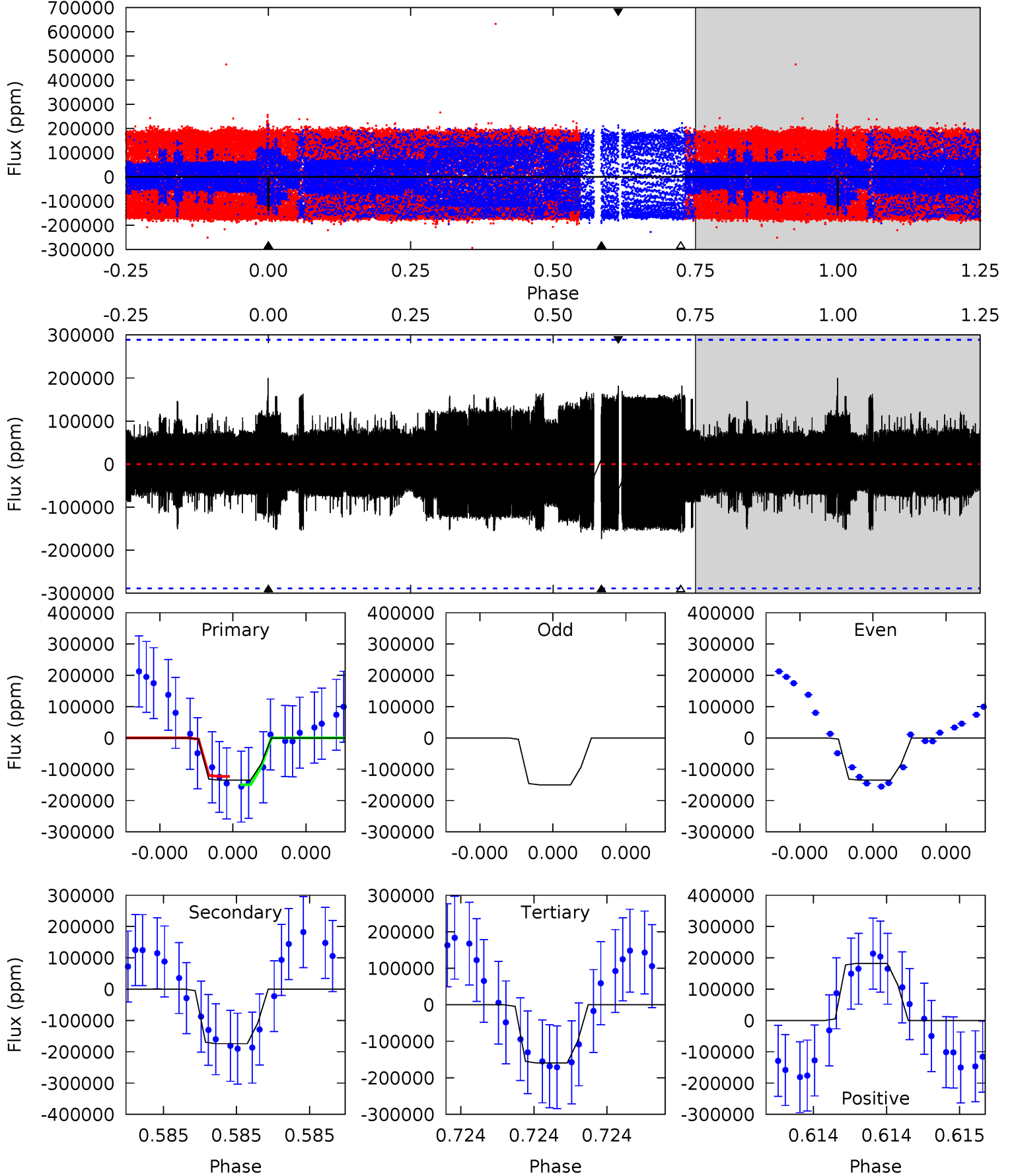
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

004064484-02, P = 382.434509 Days, E = 328.762546 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.62	3.39	3.10	3.55	5.62	3.56	1.16	-0.47	-0.92	0.29	-0.16	0.17	1.00	0.53	0.26



Stellar Parameters For KIC 004064484

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7292^{+230}_{-307}	$3.717^{+0.531}_{-0.089}$	$-0.460^{+0.300}_{-0.300}$	$2.878^{+0.373}_{-1.491}$	$1.573^{+0.208}_{-0.386}$	$0.093^{+0.499}_{-0.025}$
	+3%/-4%	+14%/-2%	+65%/-65%	+13%/-52%	+13%/-25%	+537%/-27%
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 004064484-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$21.34^{+23.36}_{-14.80}$	670^{+51}_{-91}	6019^{+26652}_{-38380}	$4903^{+320026}_{-269691}$
Alt.	-173965 ± 51371	$107.02^{+37.49}_{-34.41}$	672^{+52}_{-84}	8128^{+2074}_{-1316}	14378^{+19264}_{-7311}

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

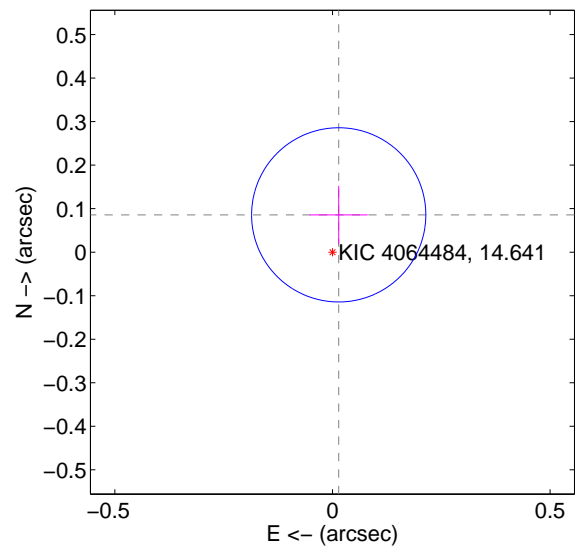
Supplemental centroid analysis for 004064484-02. Kepler magnitude: 14.64. Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

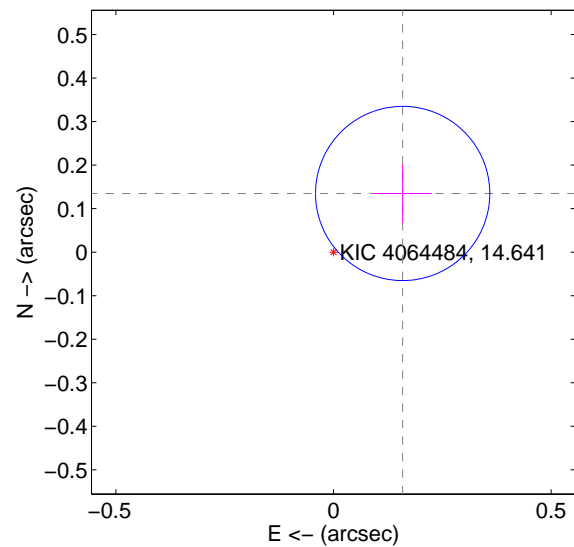
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.087 ± 0.067	1.30	-0.014 ± 0.067	0.086 ± 0.067
PRF-fit source offset from KIC position	0.208 ± 0.067	3.12	-0.159 ± 0.067	0.135 ± 0.067
photometric centroid source offset	0.34 ± 0.04	8.21	-0.18 ± 0.01	-0.29 ± 0.05

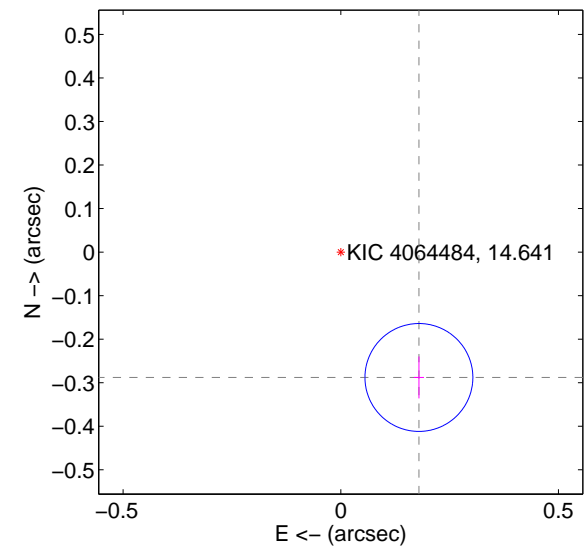
offset from difference PRF-fit to OOT PRF-fit



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.

Q1 no difference image



Q1 no OOT image



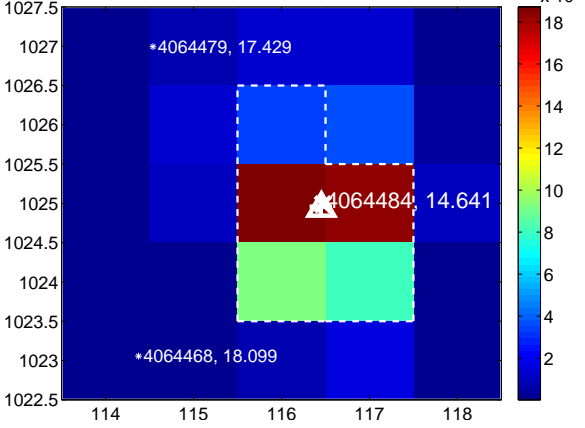
Q2 no difference image



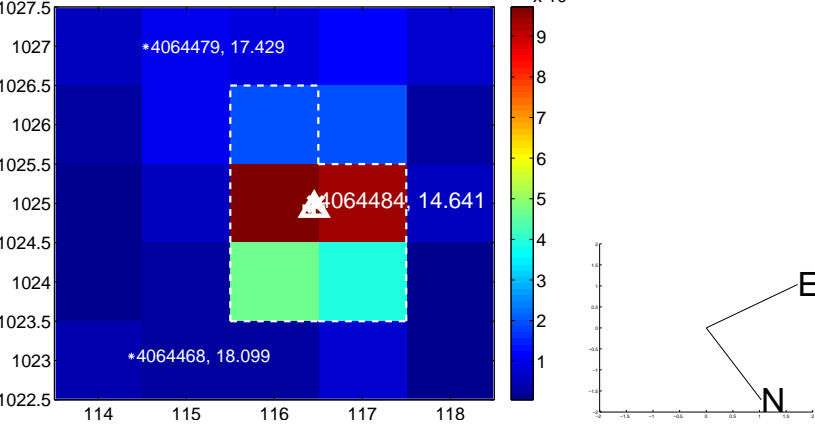
Q2 no OOT image



Q3 difference image



Q3 OOT image



Q4 no difference image



Q4 no OOT image



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



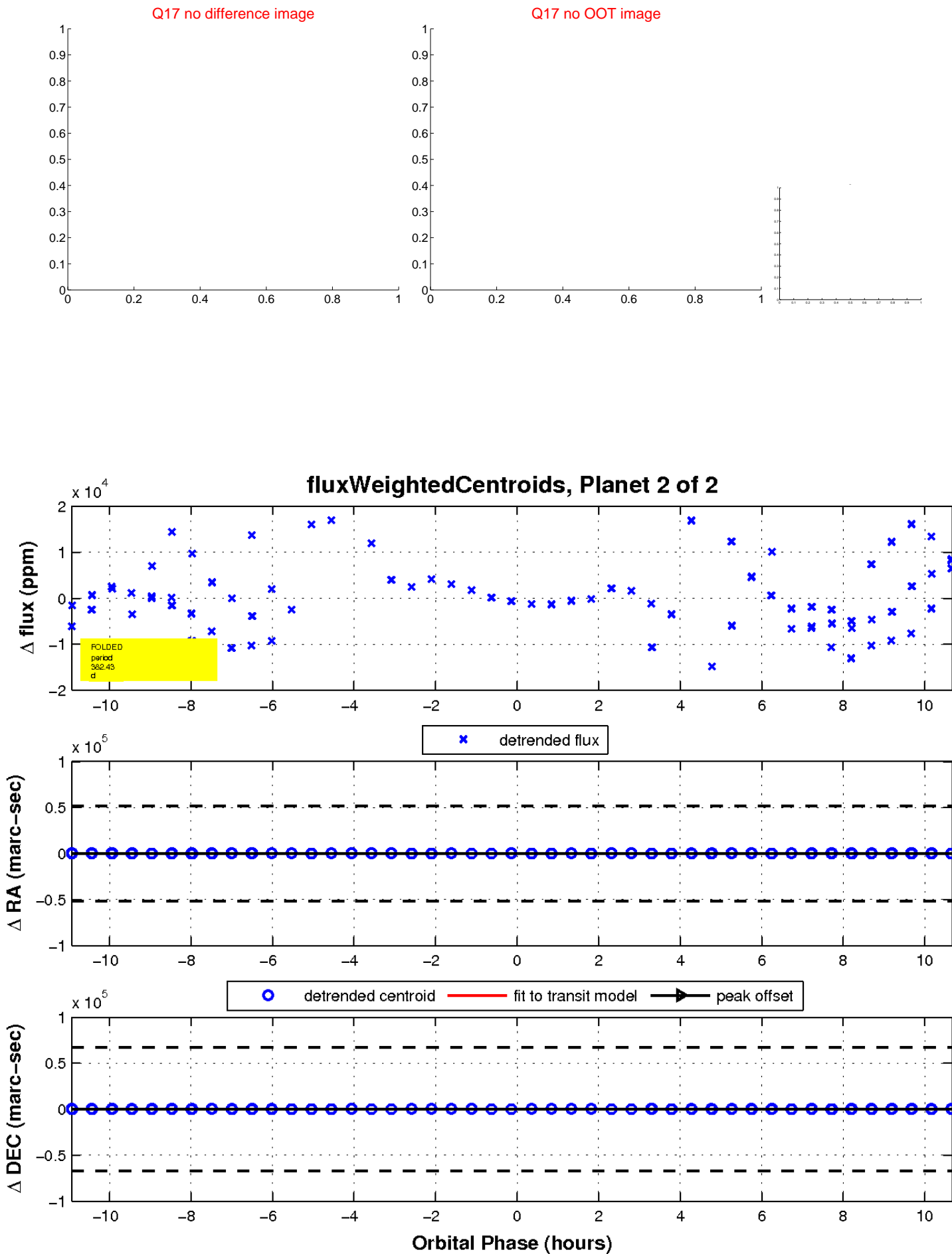
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

