

KIC 010337064

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})
010337064-01	OBS	No	411.928574	187.021498	1536.8	30.942	9.1	11.7	0.88	5799	4.33	0.68
010337064-02	OBS	No	374.581246	140.755820	829.7	17.849	7.7	7.6	0.88	5799	3.06	0.77

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010337064-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010337064-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

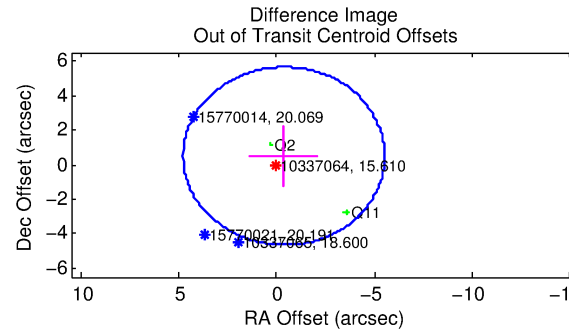
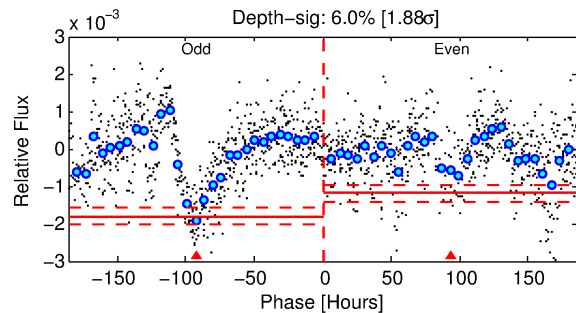
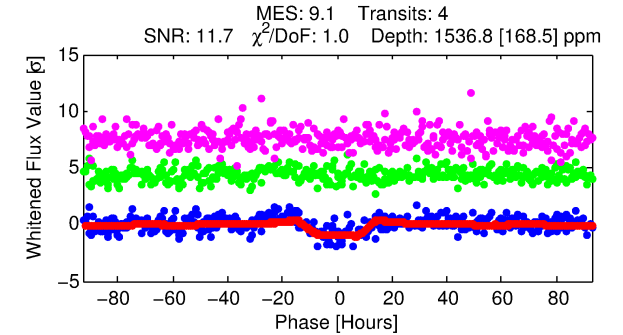
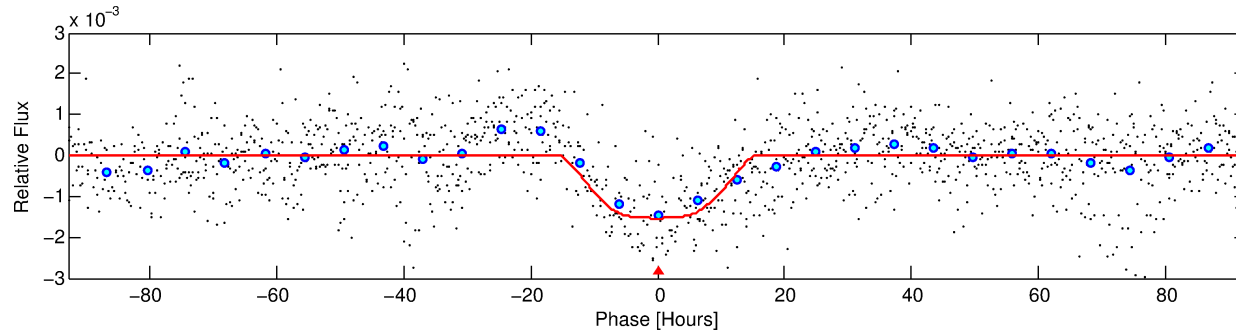
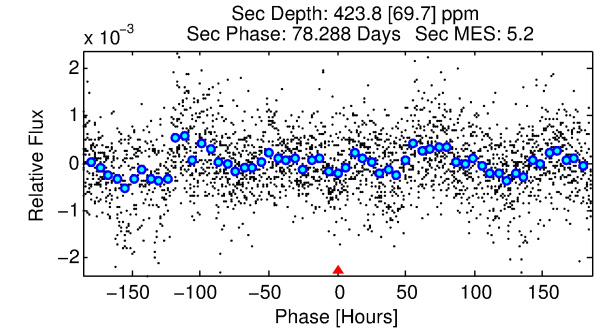
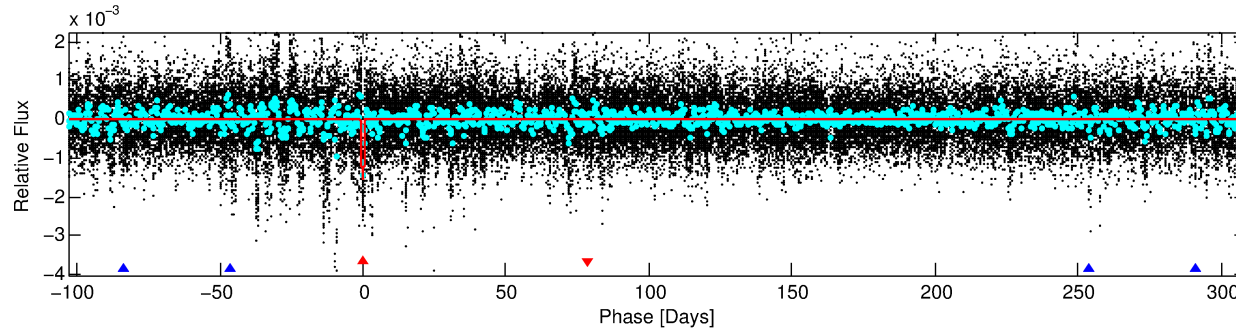
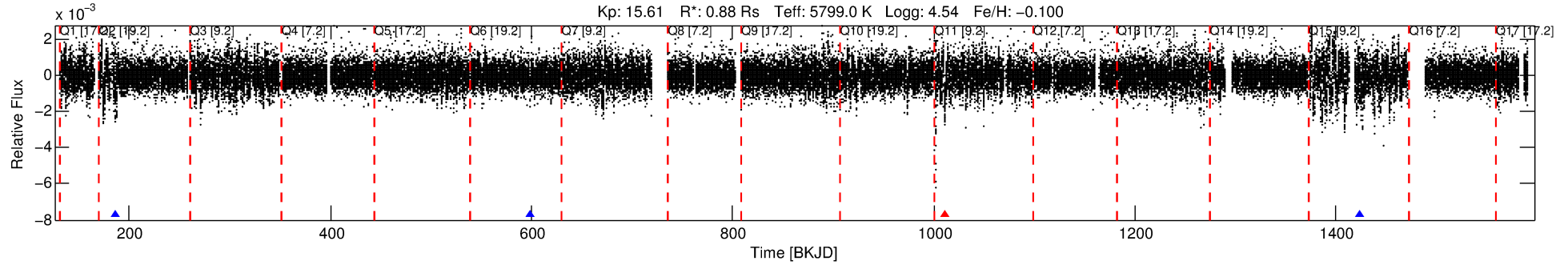
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010337064-01

No Significant Match Found

DV One-Page Summary

KIC: 10337064 Candidate: 1 of 2 Period: 411.929 d



DV Fit Results:

Period = 411.92857 [0.02307] d
Epoch = 187.0215 [0.0328] BKJD
Rp/R* = 0.0452 [0.0032]
a/R* = 45.78 [4.92]
b = 0.94 [0.02]
Seff = 0.68 [0.23]
Teq = 231 [20] K
Rp = 4.33 [1.18] Re
a = 1.0738 [0.2371] AU
Ag = 14337.74 [5564.71] [2.58σ]
Teffp = 3914 [242] K [15.14σ]

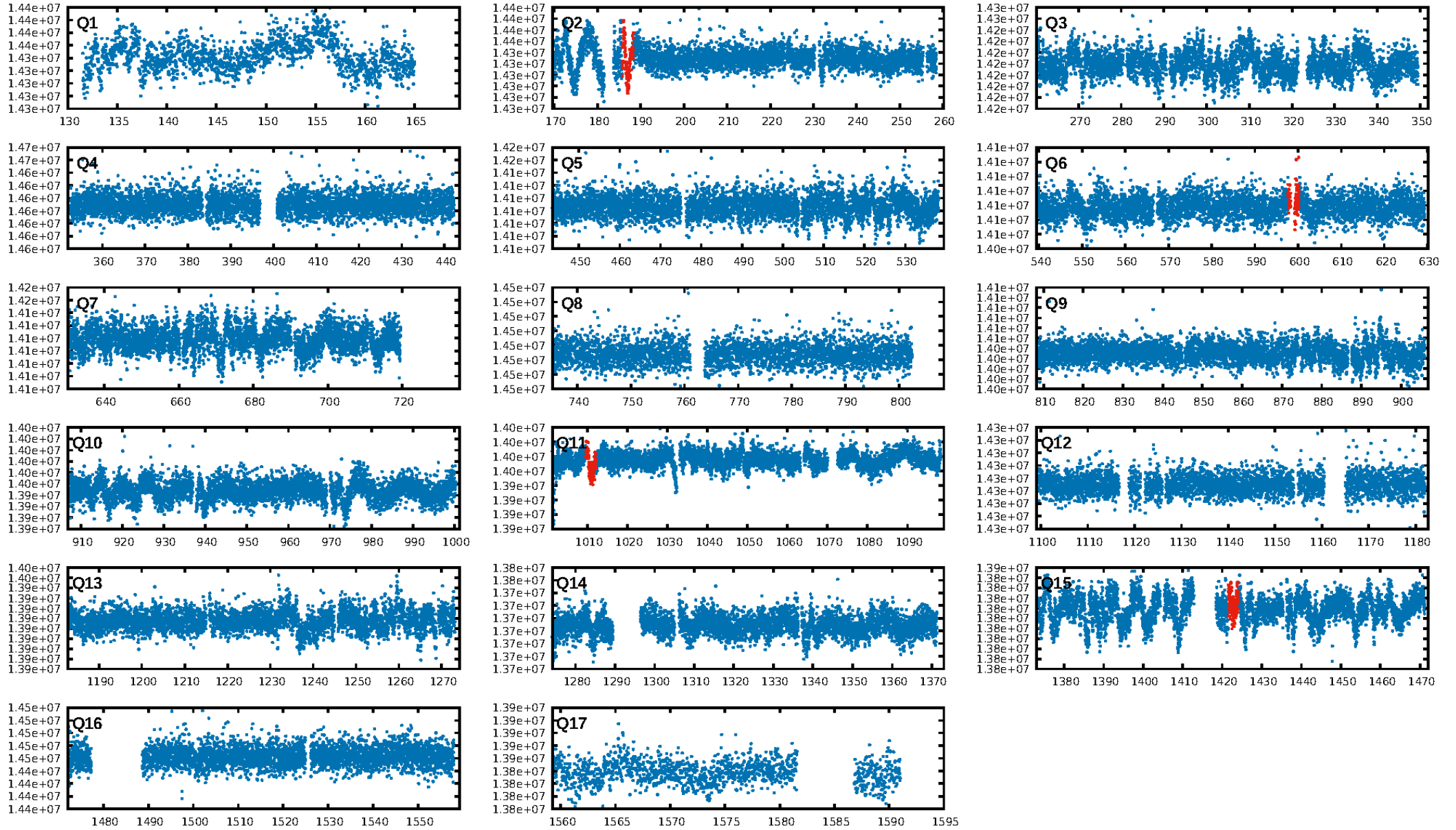
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [25.09σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 24.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 9.81e-12
RollingBand-fgt: 0.75 [3/4]
GhostDiagnostic-chr: 1.317
Centroid-sig: 0.1%
Centroid-so: 4.672 arcsec [3.03σ]
OotOffset-rm: 0.623 arcsec [0.36σ]
KicOffset-rm: 0.889 arcsec [0.52σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

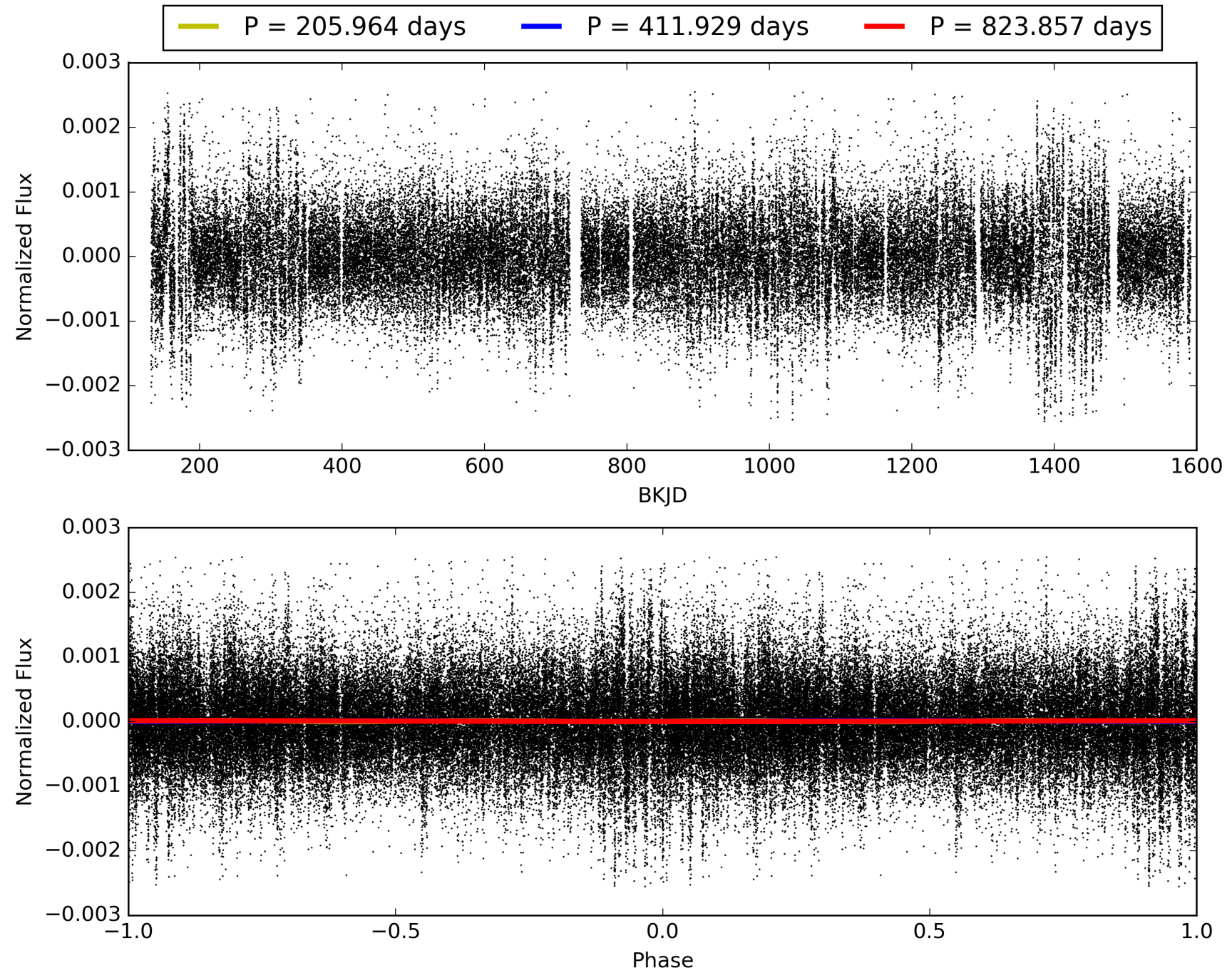
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:41:50 Z

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

TCE 010337064-01, PDC Light Curves

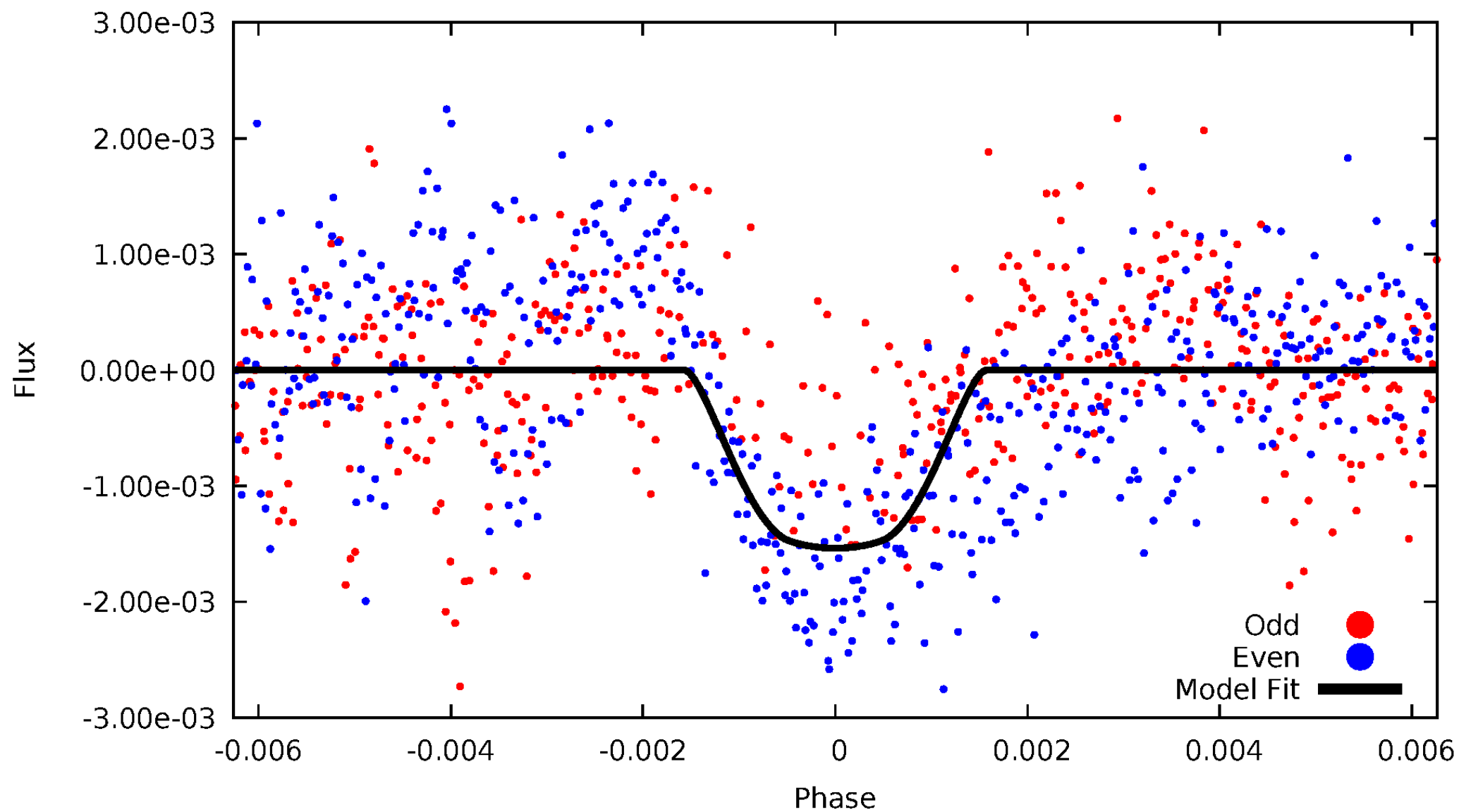


TCE 010337064-01



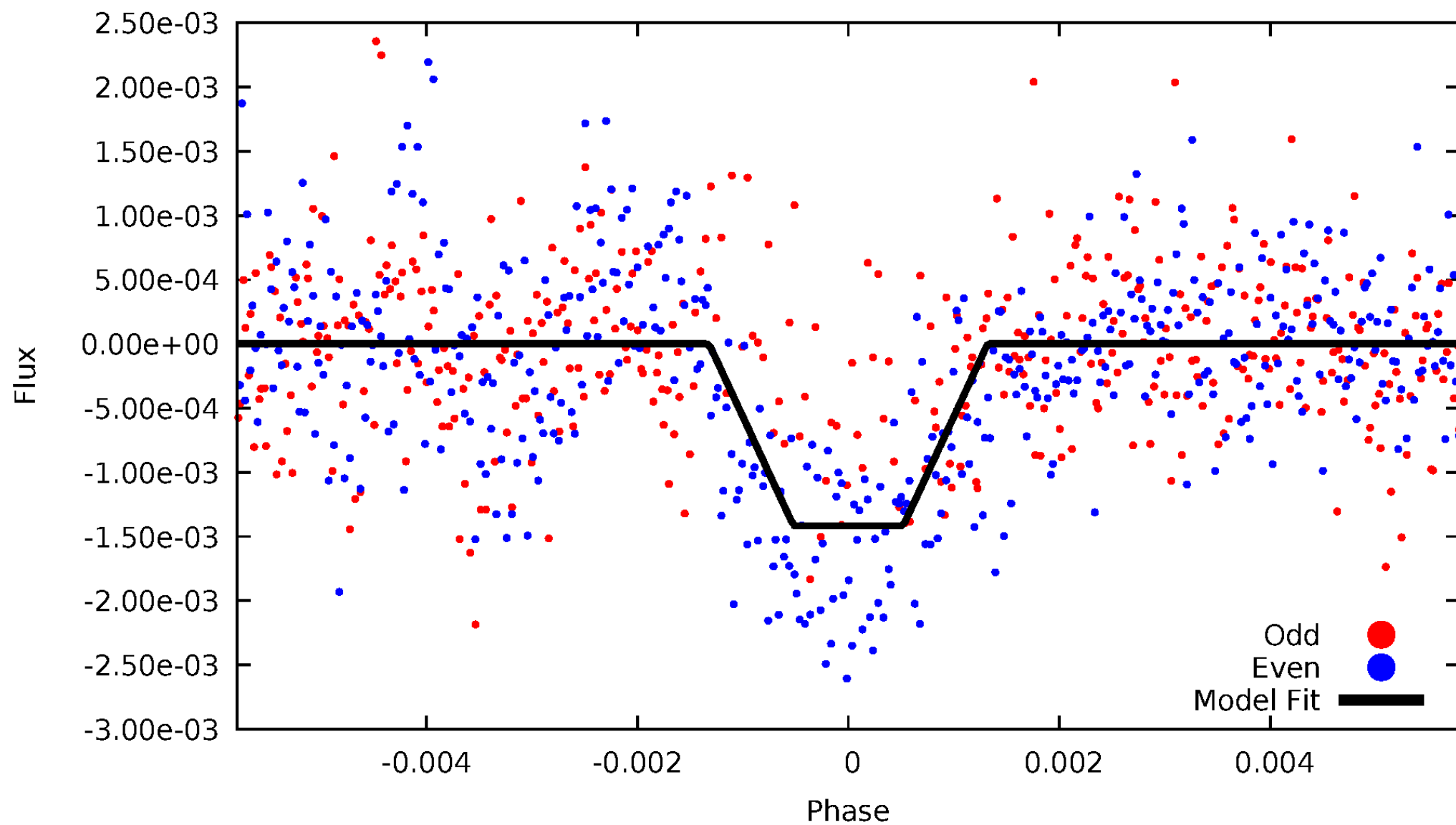
DV Odd/Even

TCE 010337064-01



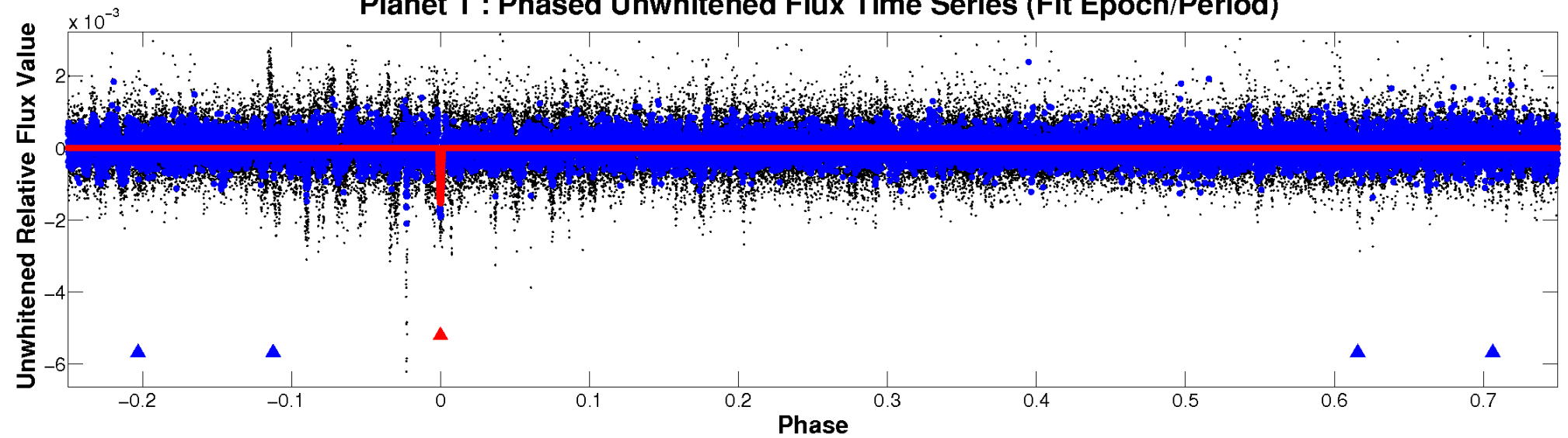
ALT Odd/Even

TCE 010337064-01

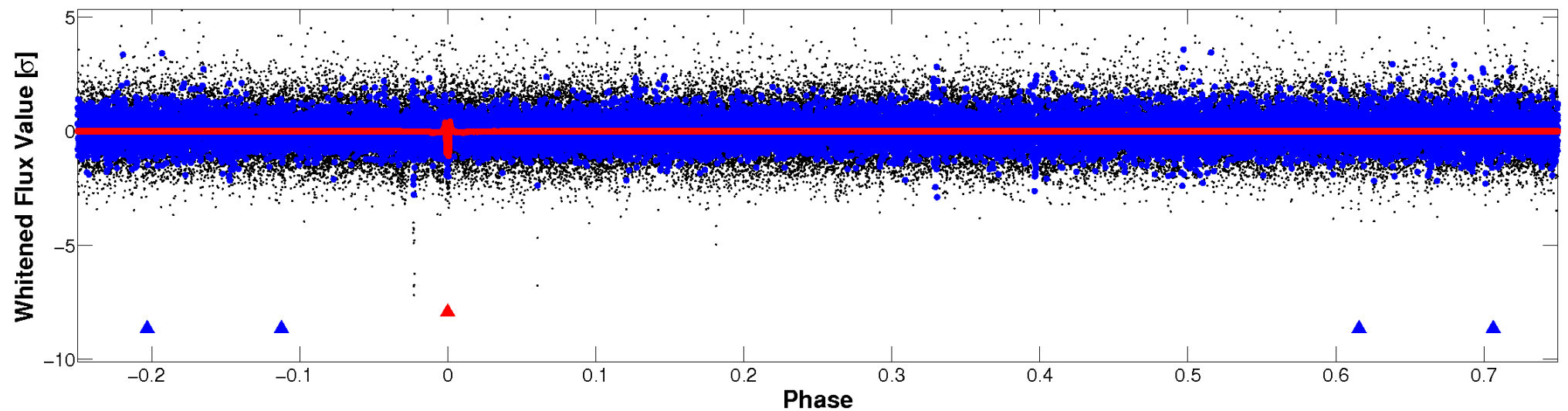


Non-Whitened Vs. Whitened Light Curve

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

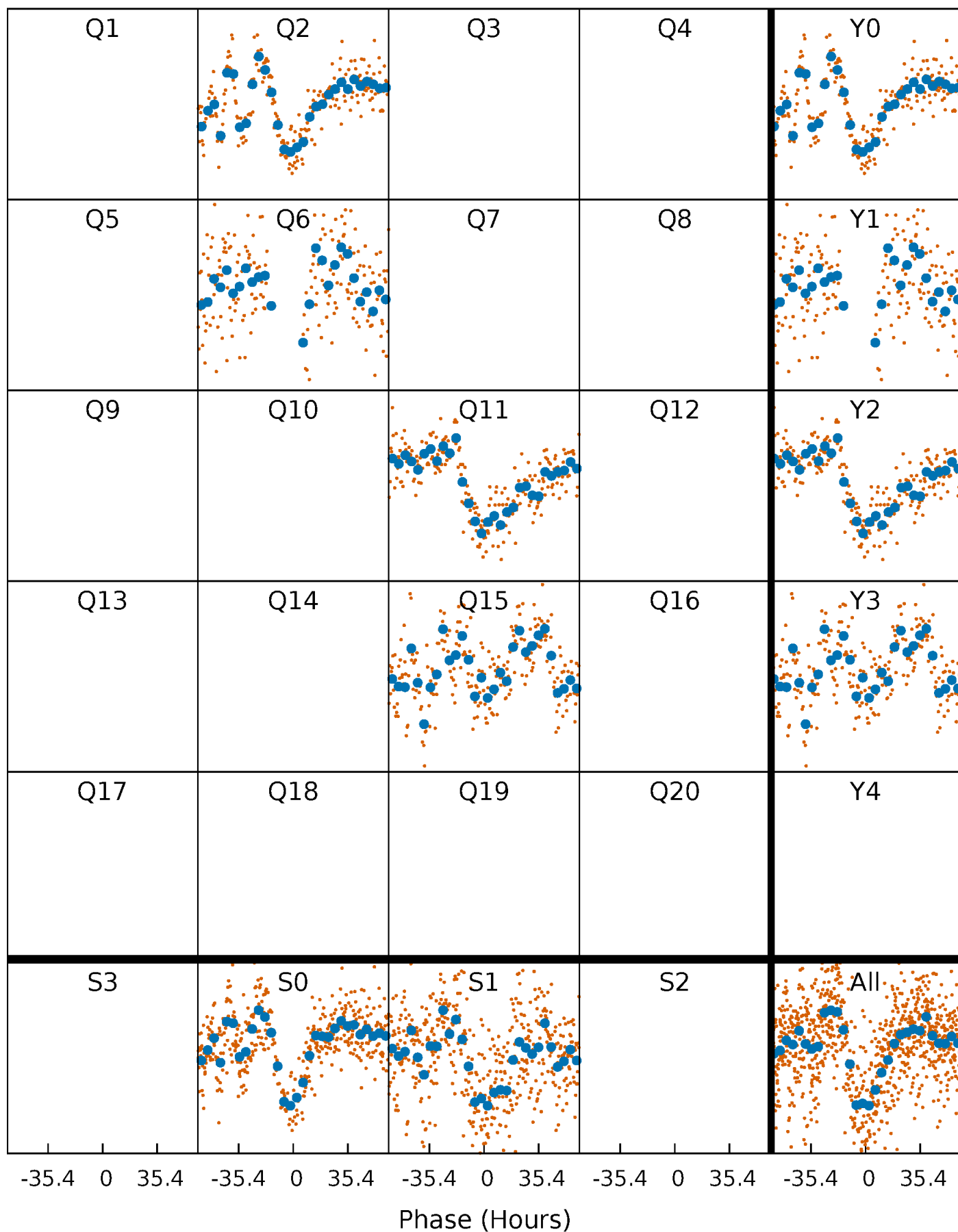


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



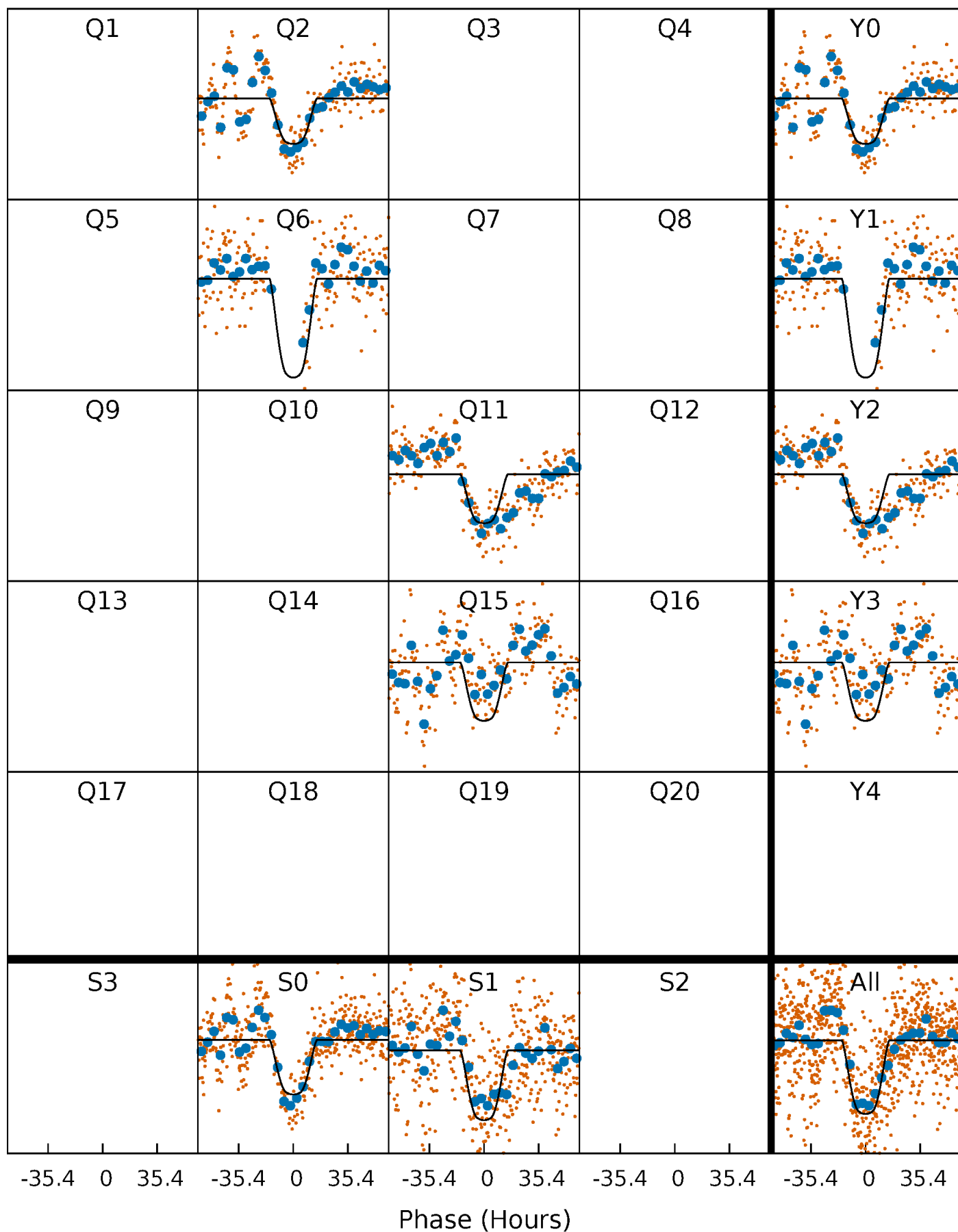
PDC Quarter-Phased Transit Curves

TCE 010337064-01 P=411.928574 Days $T_0=187.021498$ (BKJD)



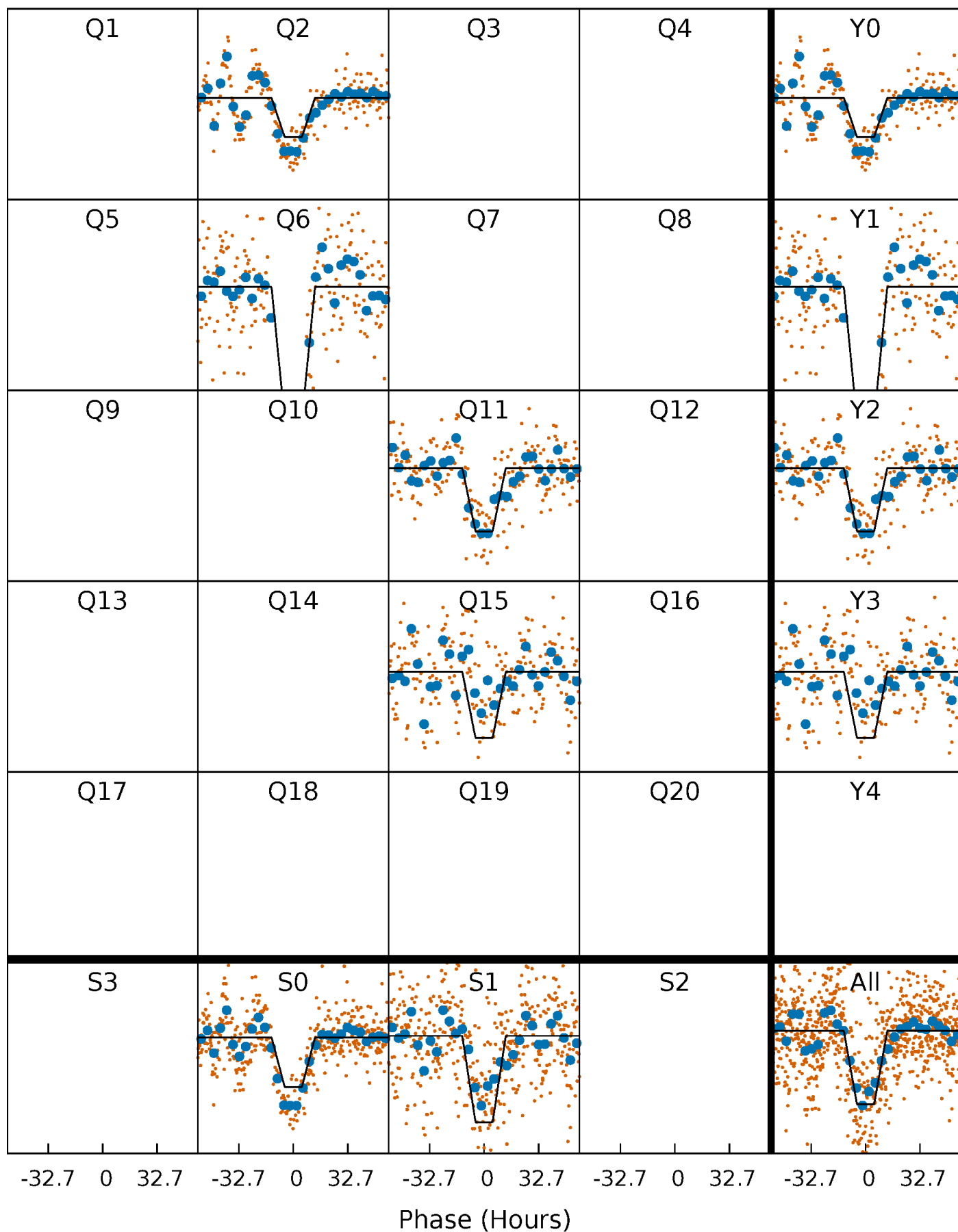
DV Quarter-Phased Transit Curves

TCE 010337064-01 $P=411.928574$ Days $T_0=187.021498$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

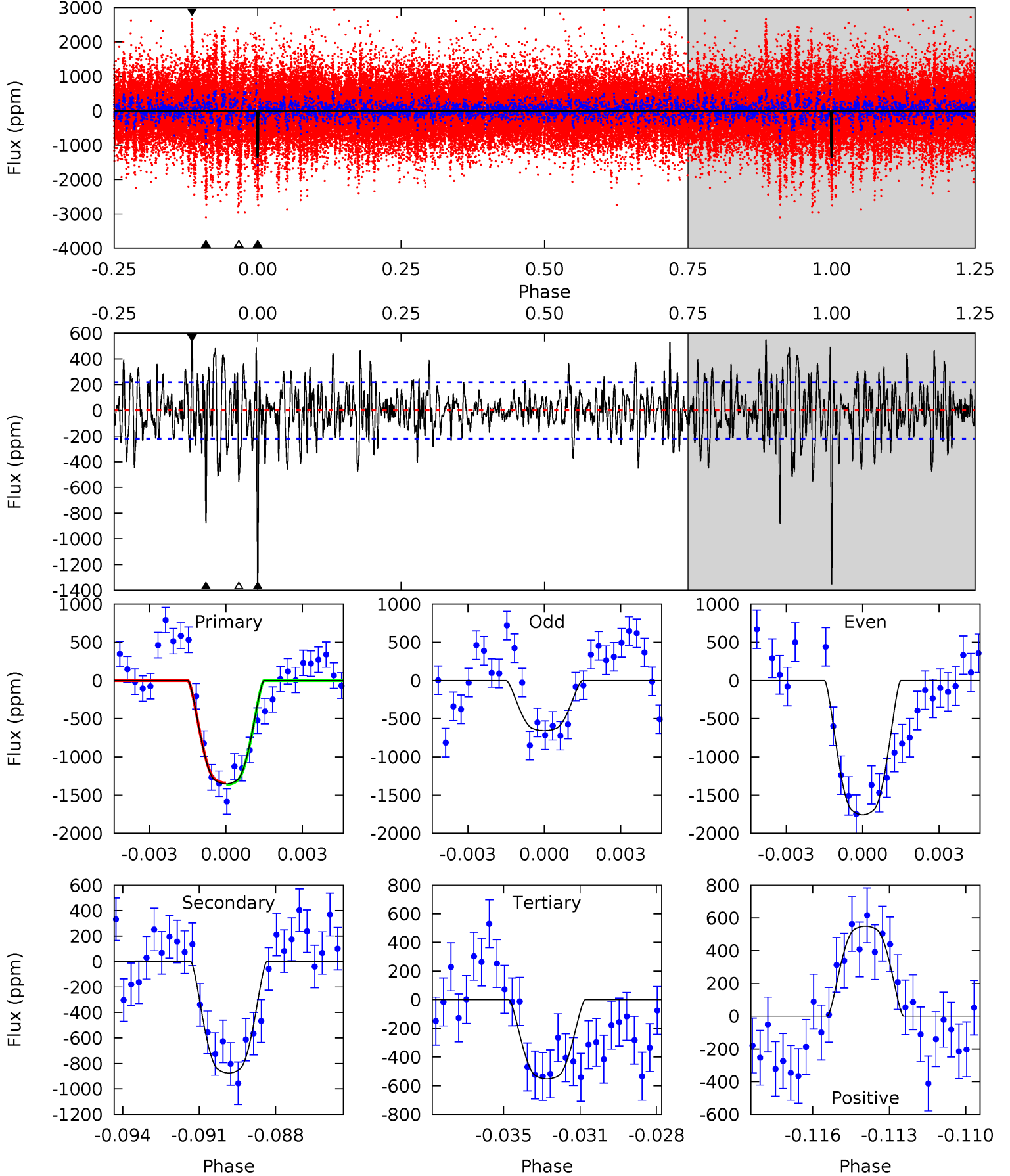
TCE 010337064-01 P=411.886080 Days $T_0=186.996906$ (BKJD)



DV Model-Shift Uniqueness Test

010337064-01, P = 411.928574 Days, E = 187.021498 Days

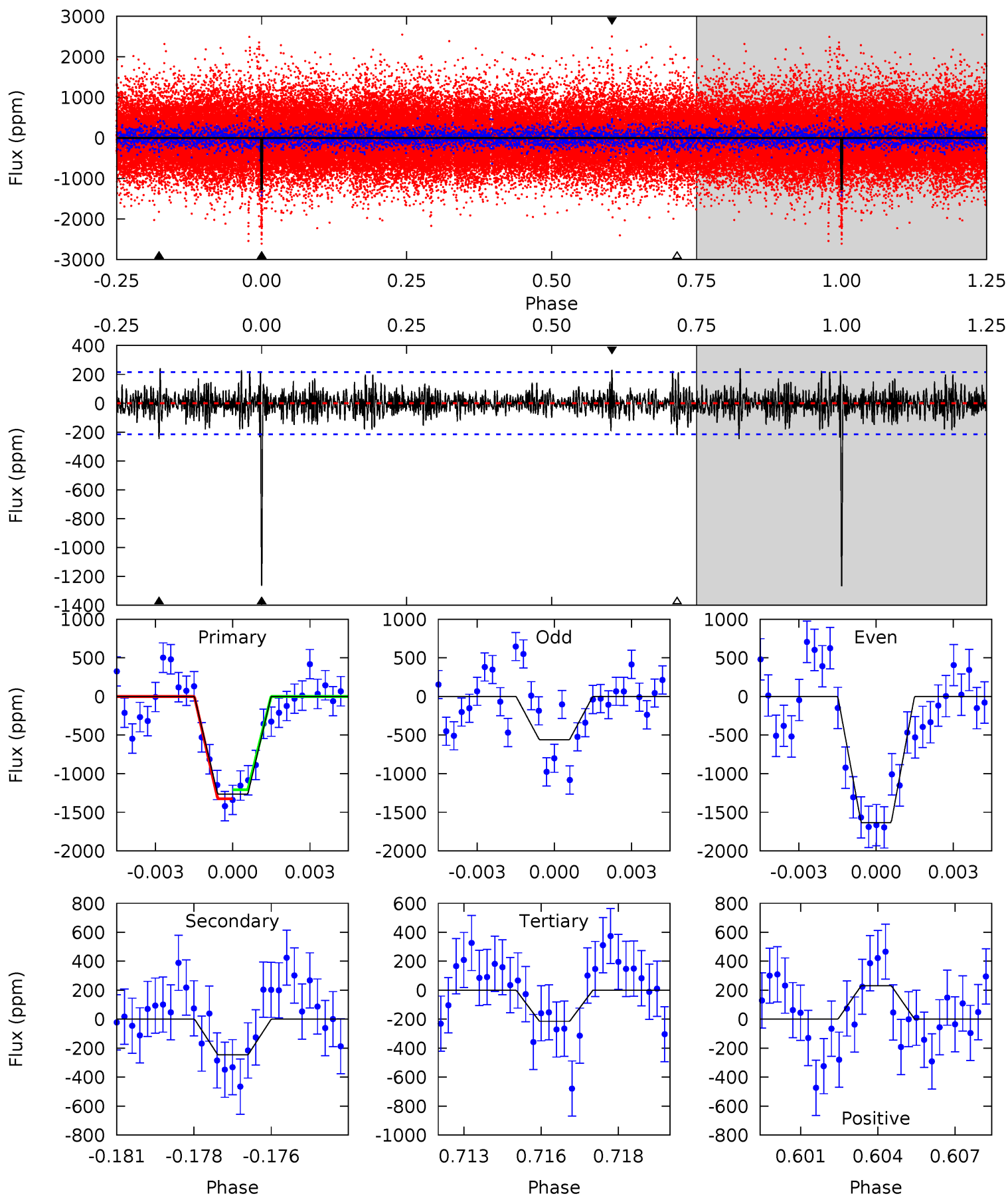
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.4	20.9	13.2	13.1	5.24	2.95	3.91	19.2	19.2	7.73	7.79	12.8	0.91	0.29	0.26



Alt Model-Shift Uniqueness Test

010337064-01, P = 411.886080 Days, E = 186.996906 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.0	6.04	5.27	5.65	5.27	3.00	1.44	25.7	25.4	0.78	0.39	12.8	0.95	0.16	1.41



Stellar Parameters For KIC 010337064

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5799^{+156}_{-173}	$4.539^{+0.044}_{-0.176}$	$-0.100^{+0.250}_{-0.300}$	$0.878^{+0.230}_{-0.077}$	$0.975^{+0.102}_{-0.125}$	$2.026^{+0.370}_{-0.995}$
	+3%/-3%	+1%/-4%	+250%/-300%	+26%/-9%	+10%/-13%	+18%/-49%
Source	PHO1	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 010337064-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-875 ± 42	$4.46^{+0.64}_{-0.44}$	330^{+19}_{-15}	4810^{+204}_{-186}	27358^{+6497}_{-6041}
Alt.	-247 ± 41	$3.69^{+0.63}_{-0.42}$	329^{+22}_{-14}	4040^{+217}_{-176}	11038^{+3766}_{-3348}

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 $A_{obs} \gg 1.0$

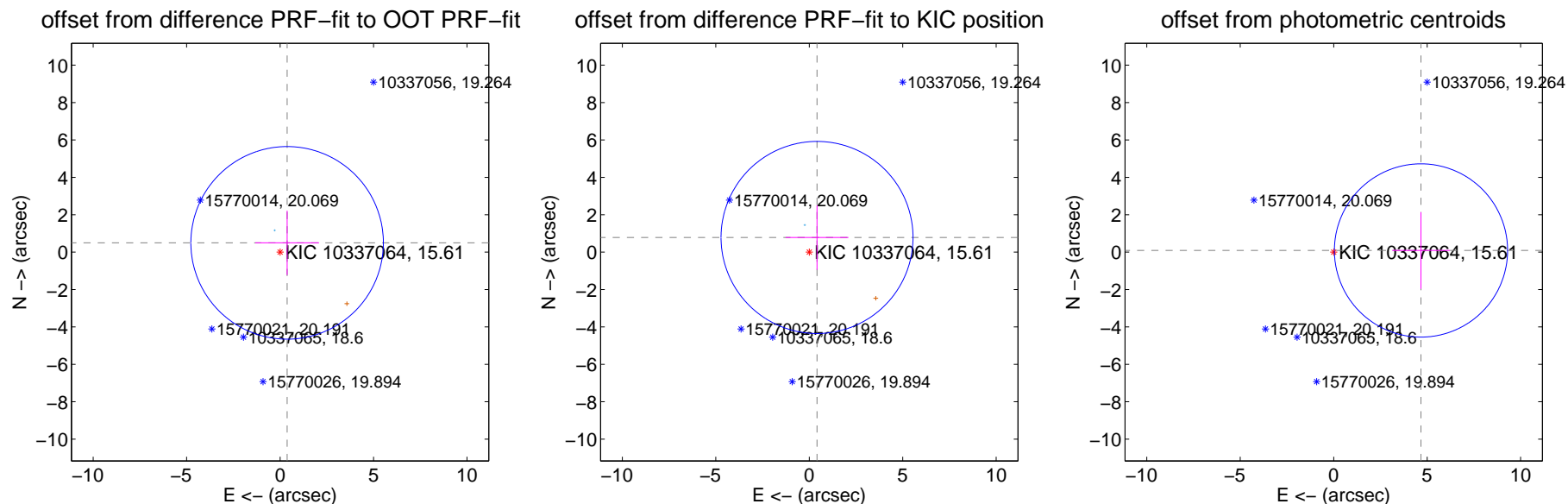
DV Centroid Data

Supplemental centroid analysis for 010337064-01. Kepler magnitude: 15.61. Transit SNR 11.68

There are 1 quarters with good PRF difference image offsets

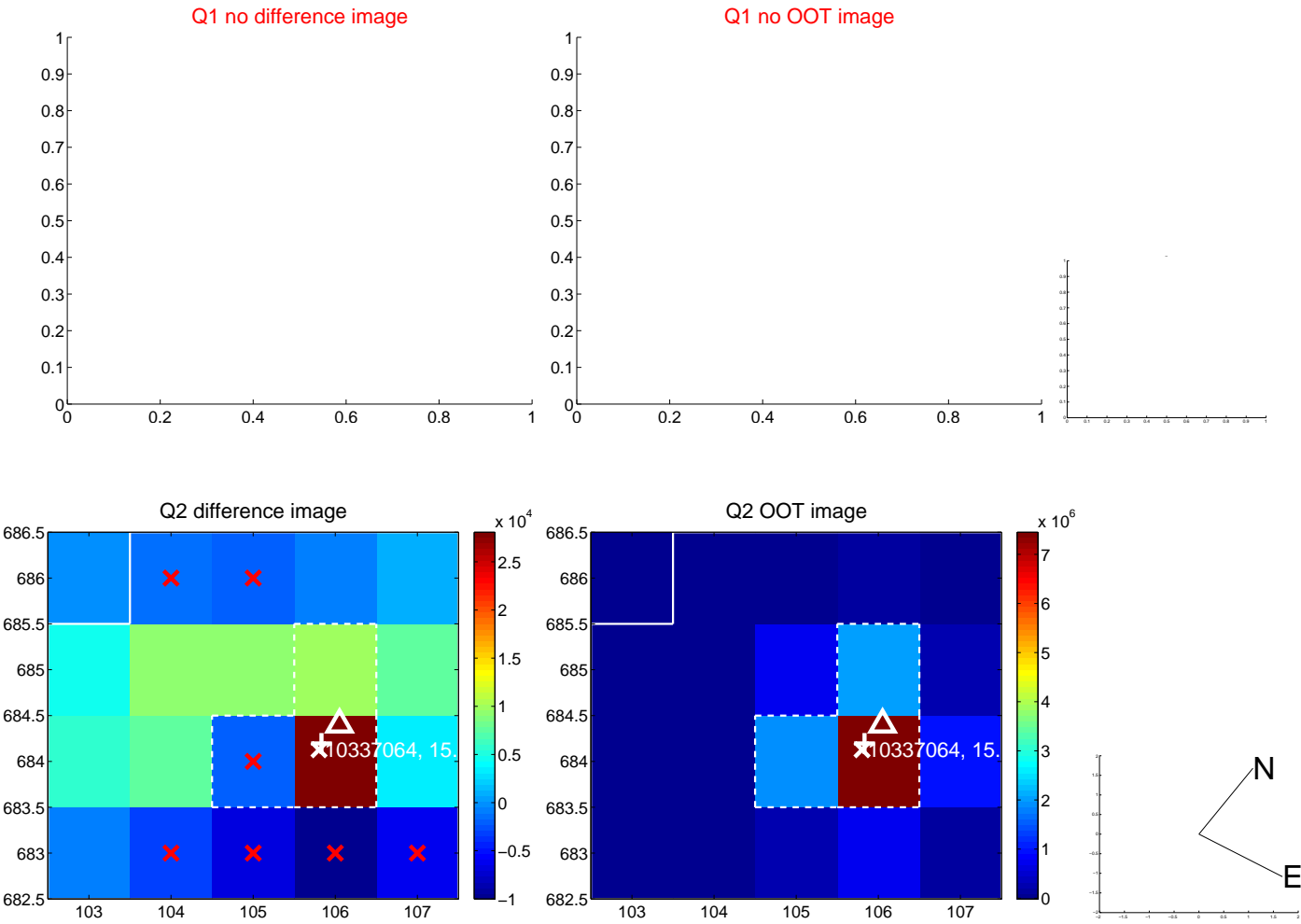
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.623 ± 1.717	0.36	-0.377 ± 1.707	0.497 ± 1.722
PRF-fit source offset from KIC position	0.889 ± 1.712	0.52	-0.415 ± 1.679	0.786 ± 1.721
photometric centroid source offset	4.67 ± 1.54	3.03	-4.67 ± 1.54	0.09 ± 2.05



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.

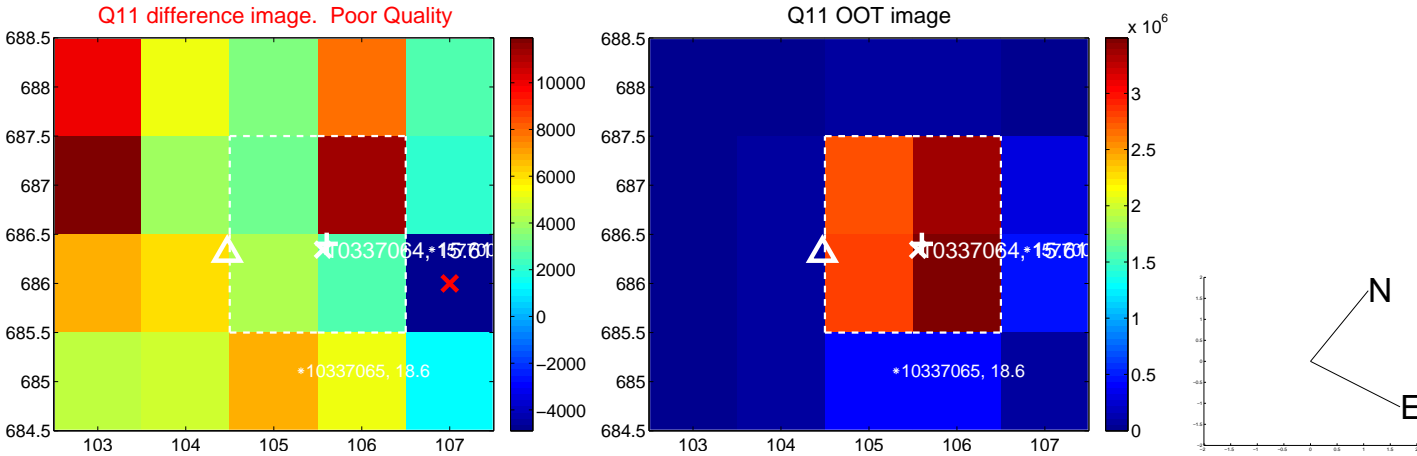
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



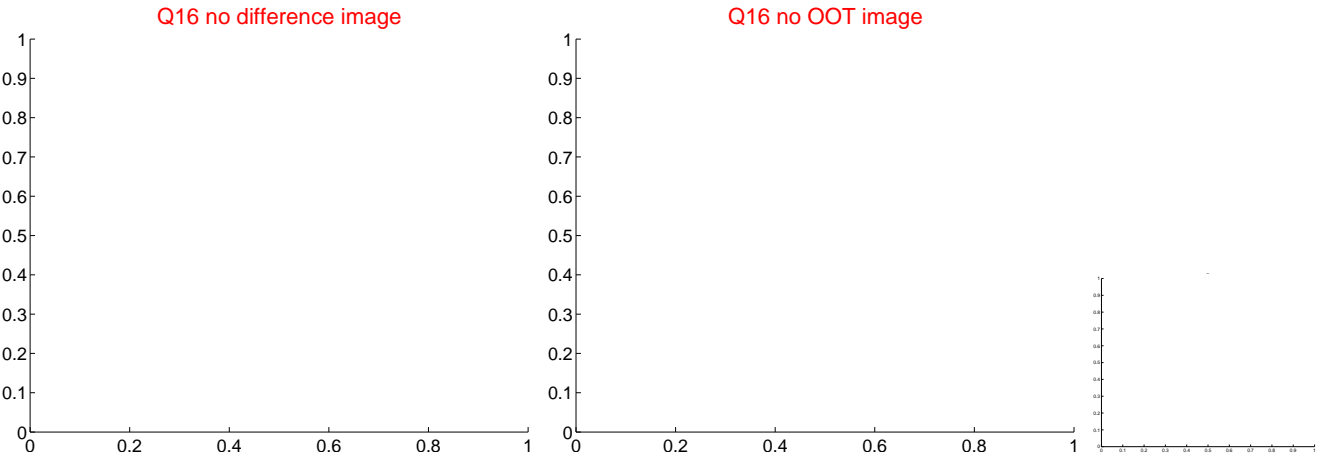
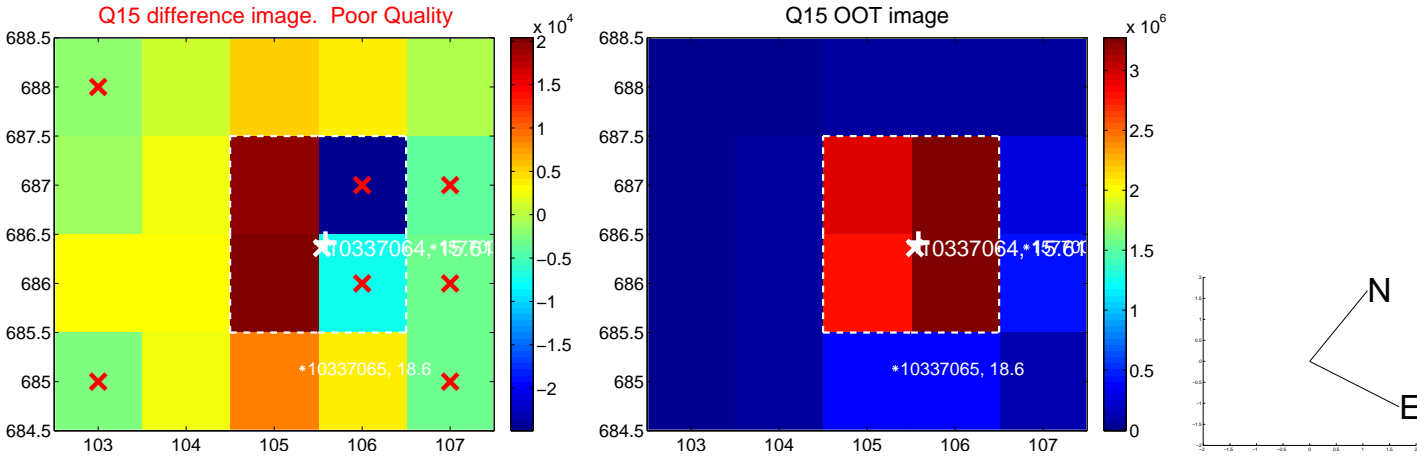
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



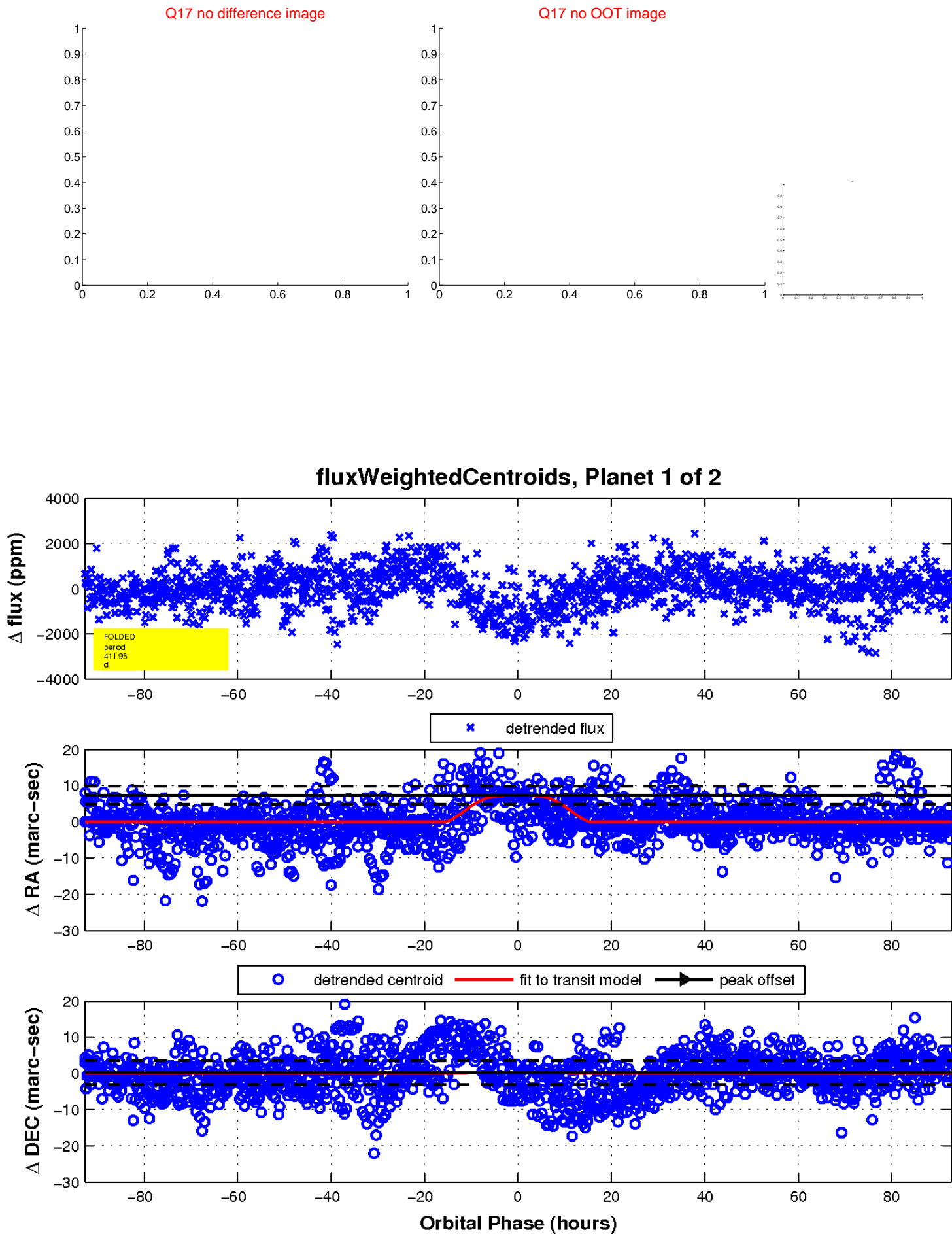
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

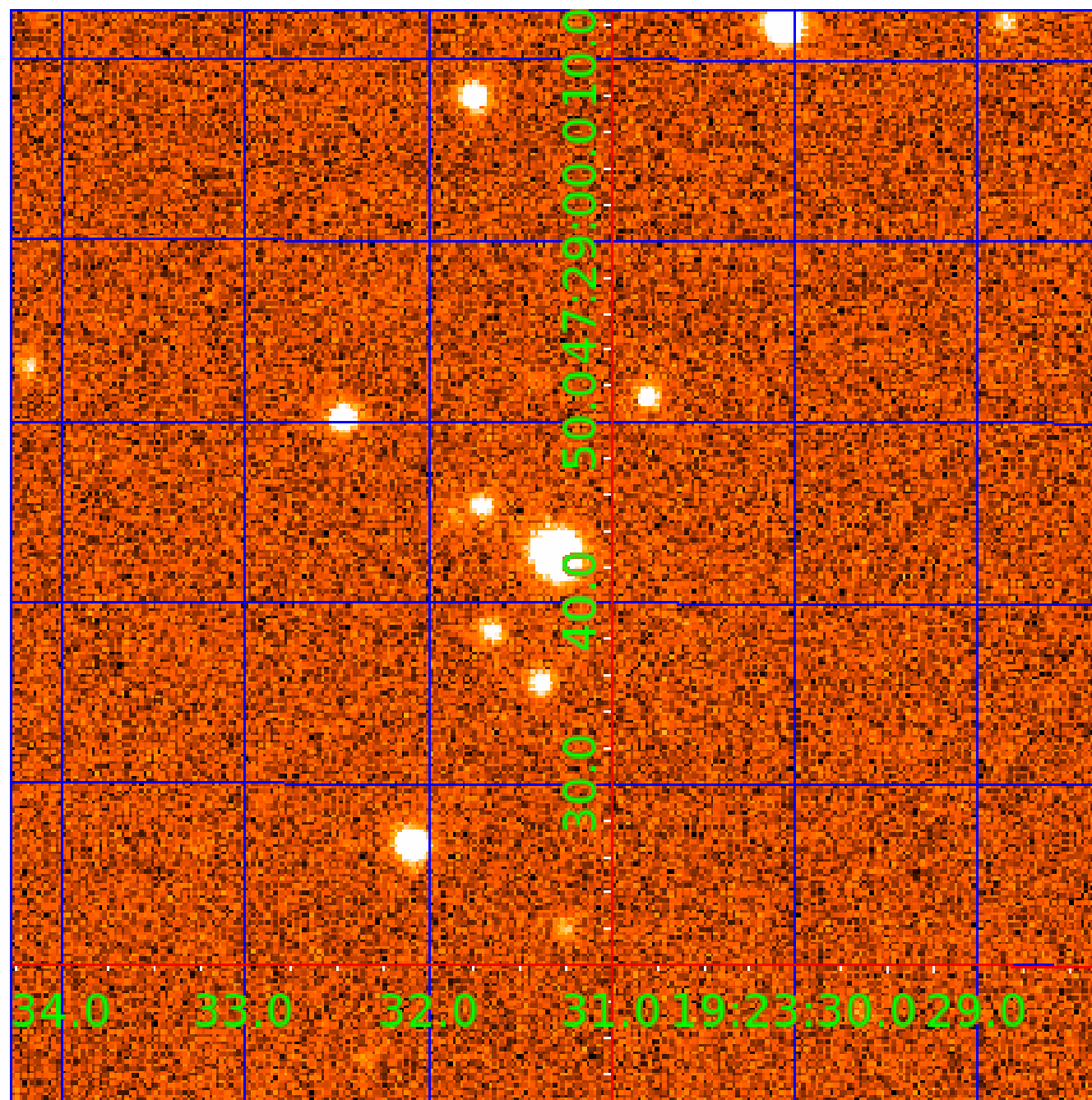


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010337064

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})
010337064-01	OBS	No	411.928574	187.021498	1536.8	30.942	9.1	11.7	0.88	5799	4.33	0.68
010337064-02	OBS	No	374.581246	140.755820	829.7	17.849	7.7	7.6	0.88	5799	3.06	0.77

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010337064-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010337064-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

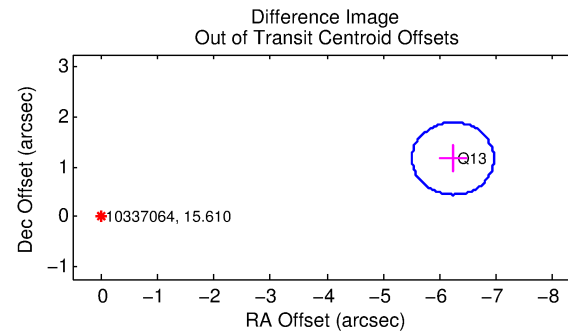
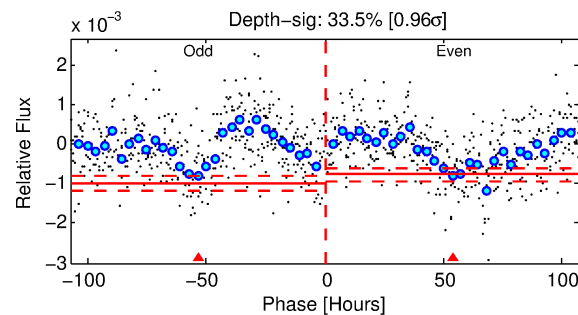
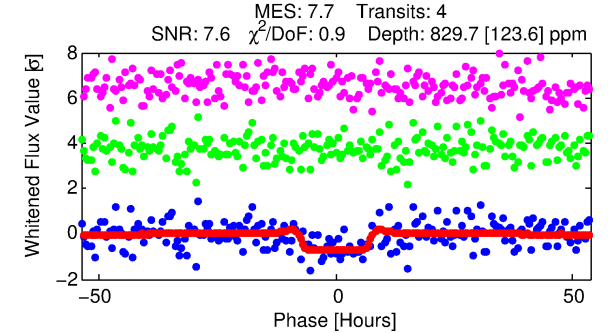
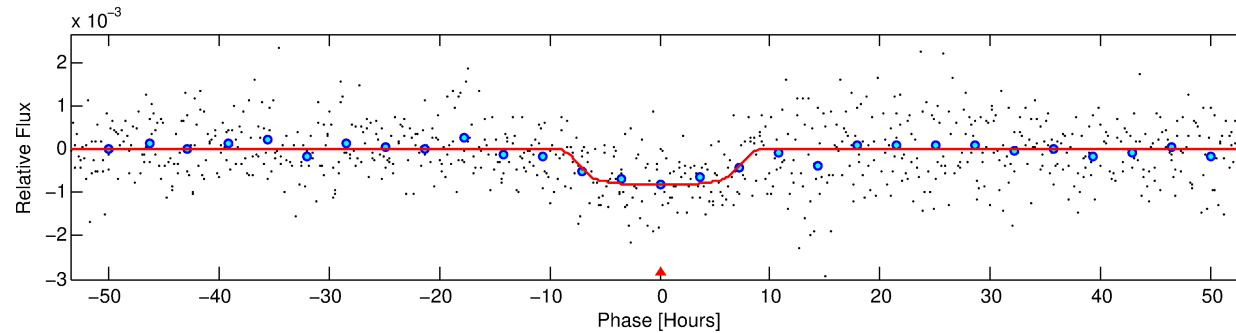
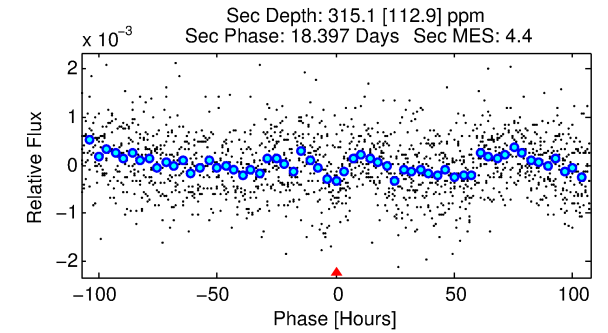
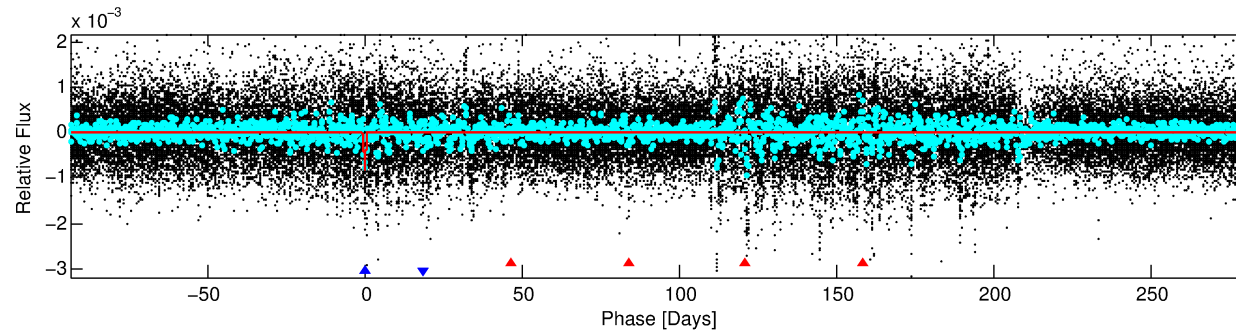
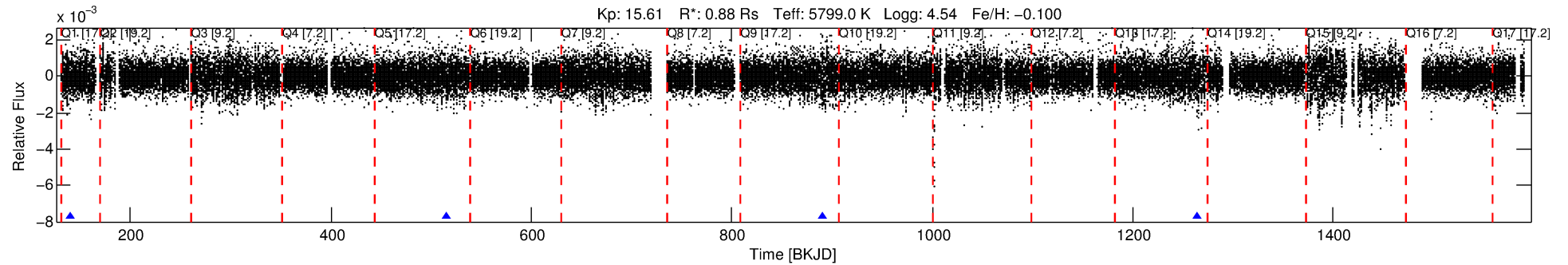
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010337064-02

No Significant Match Found

DV One-Page Summary

KIC: 10337064 Candidate: 2 of 2 Period: 374.581 d



DV Fit Results:

Period = 374.58125 [0.01927] d
Epoch = 140.7558 [0.0339] BKJD
Rp/R* = 0.0319 [0.0034]
a/R* = 75.90 [24.18]
b = 0.92 [0.06]
Seff = 0.77 [0.26]
Teq = 239 [20] K
Rp = 3.06 [0.87] Re
a = 1.0078 [0.2225] AU
Ag = 18857.37 [9949.04] [1.90σ]
Teff = 4326 [470] K [8.68σ]

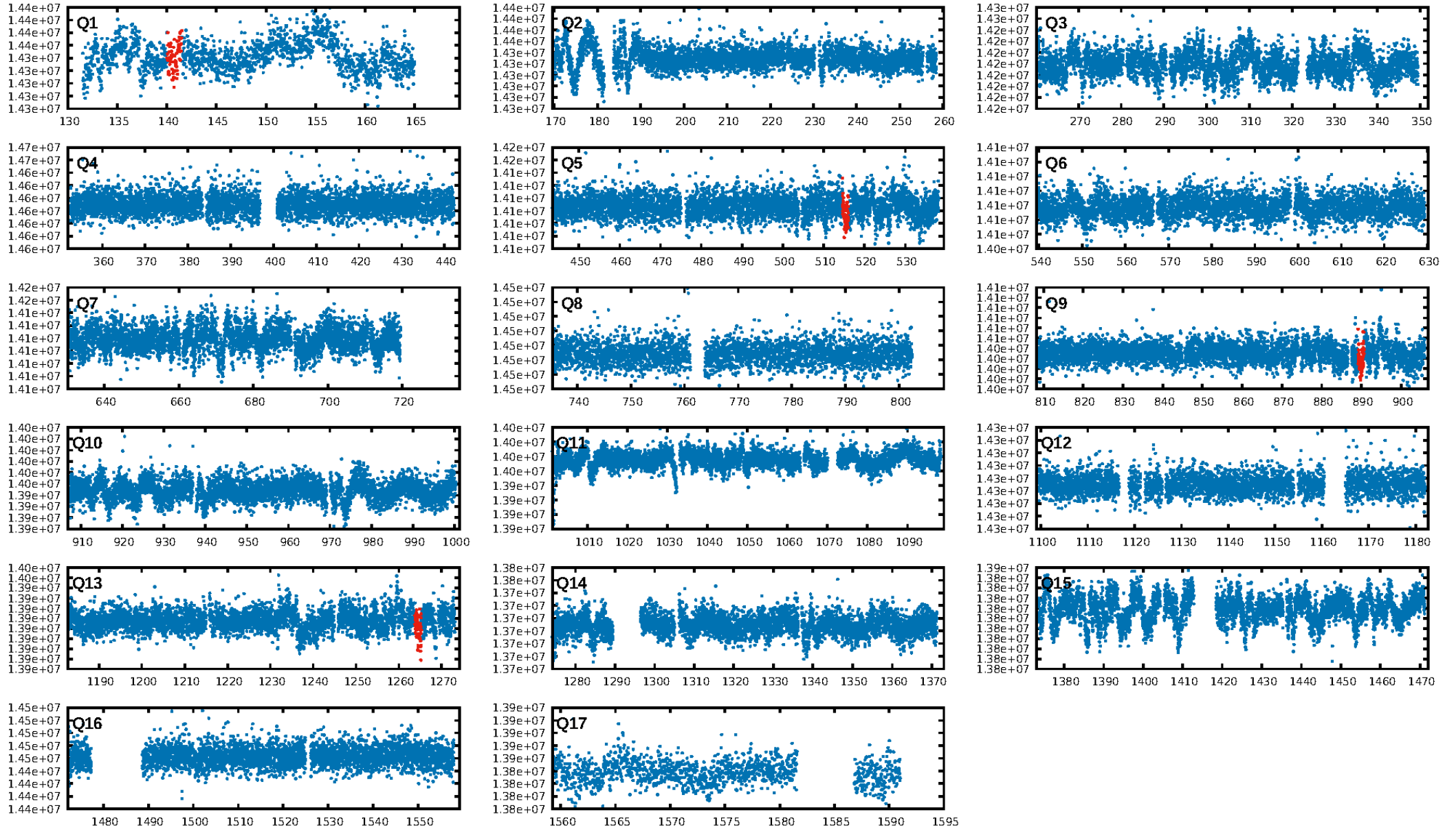
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [25.09σ]
ModelChiSquare2-sig: 64.9%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 4.97e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.2544
Centroid-sig: 18.6%
Centroid-so: 3.287 arcsec [1.30σ]
OotOffset-rm: 6.336 arcsec [26.24σ]
KicOffset-rm: 6.329 arcsec [26.14σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [4/4]

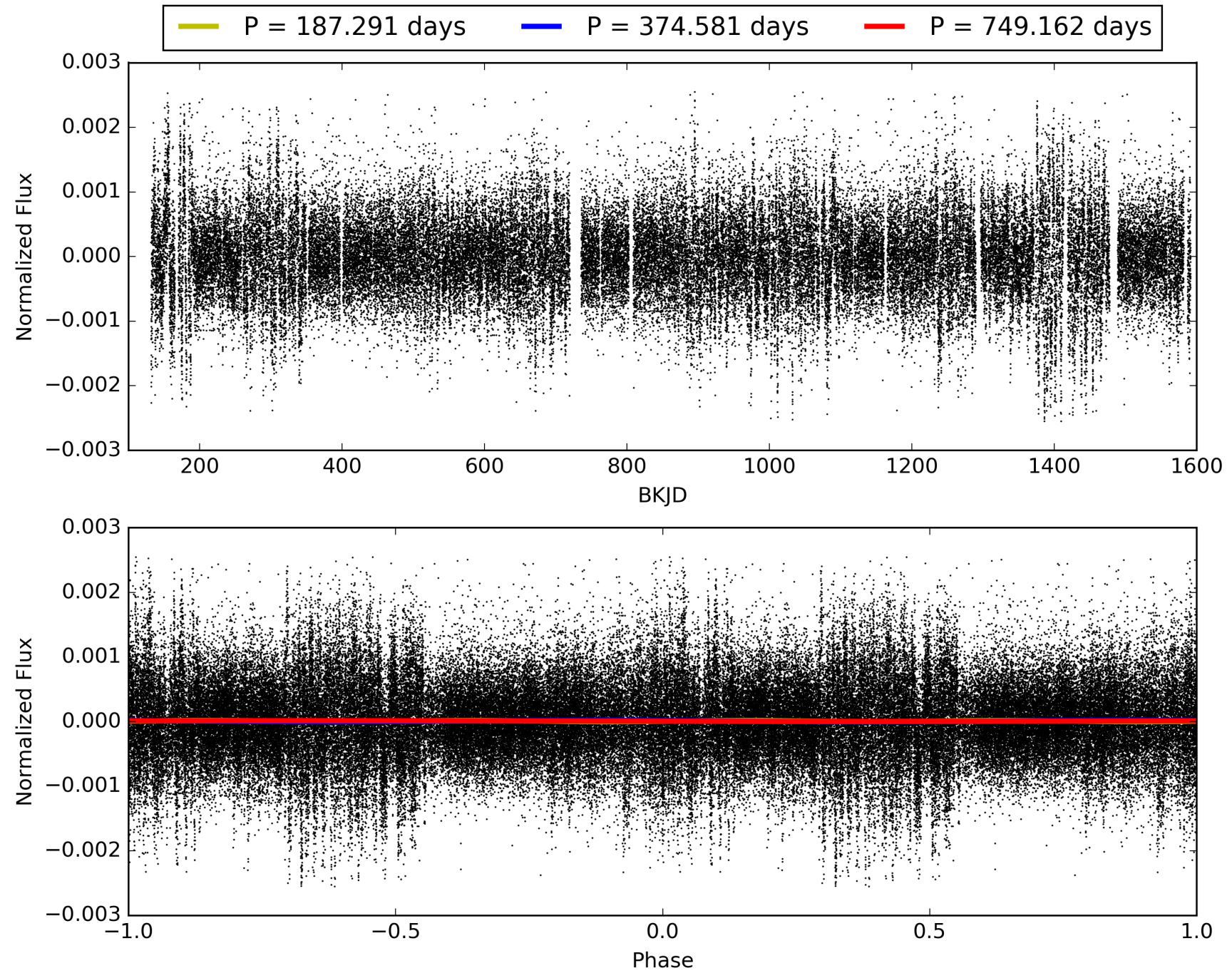
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:42:03 Z

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

TCE 010337064-02, PDC Light Curves

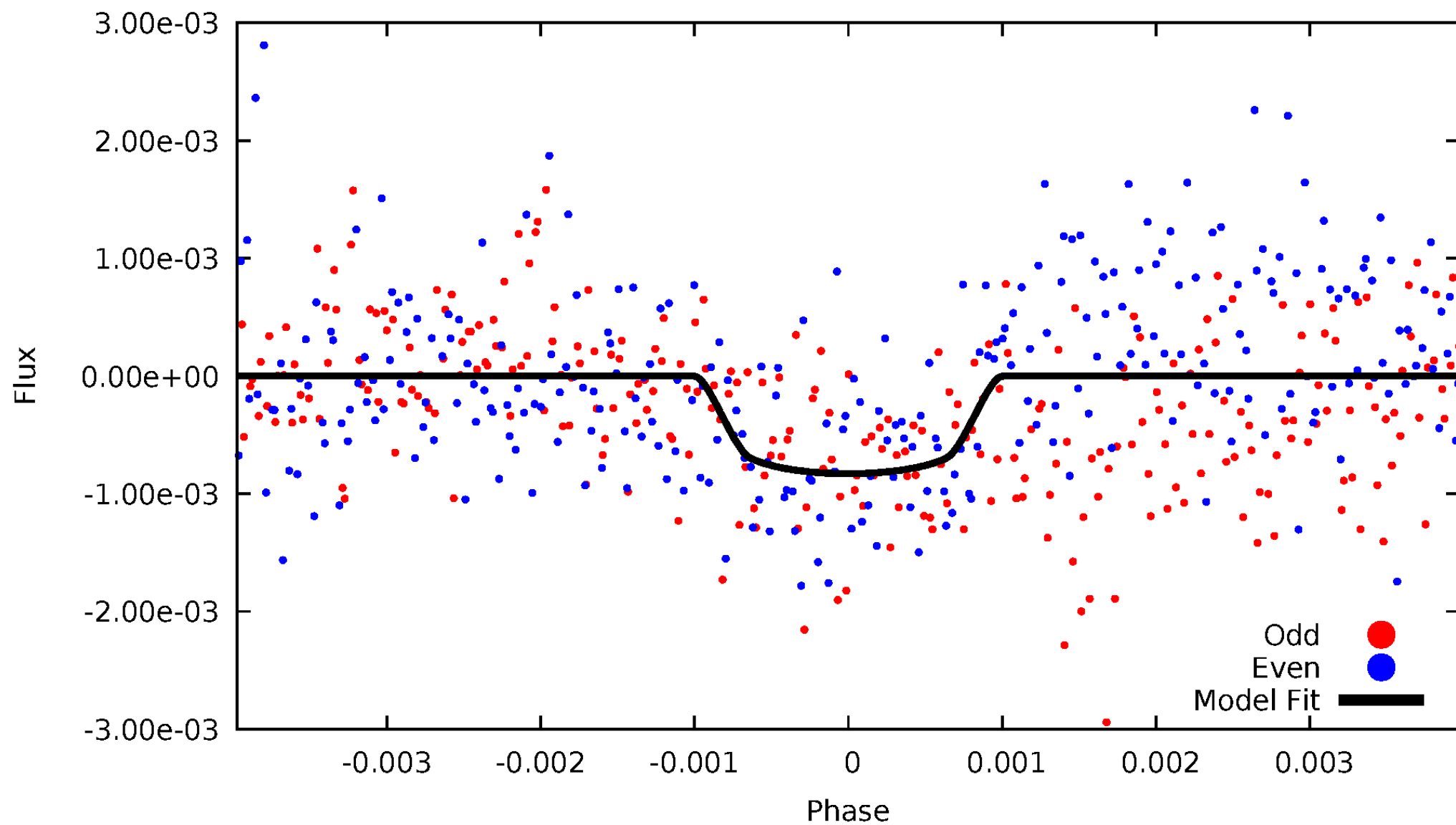


TCE 010337064-02



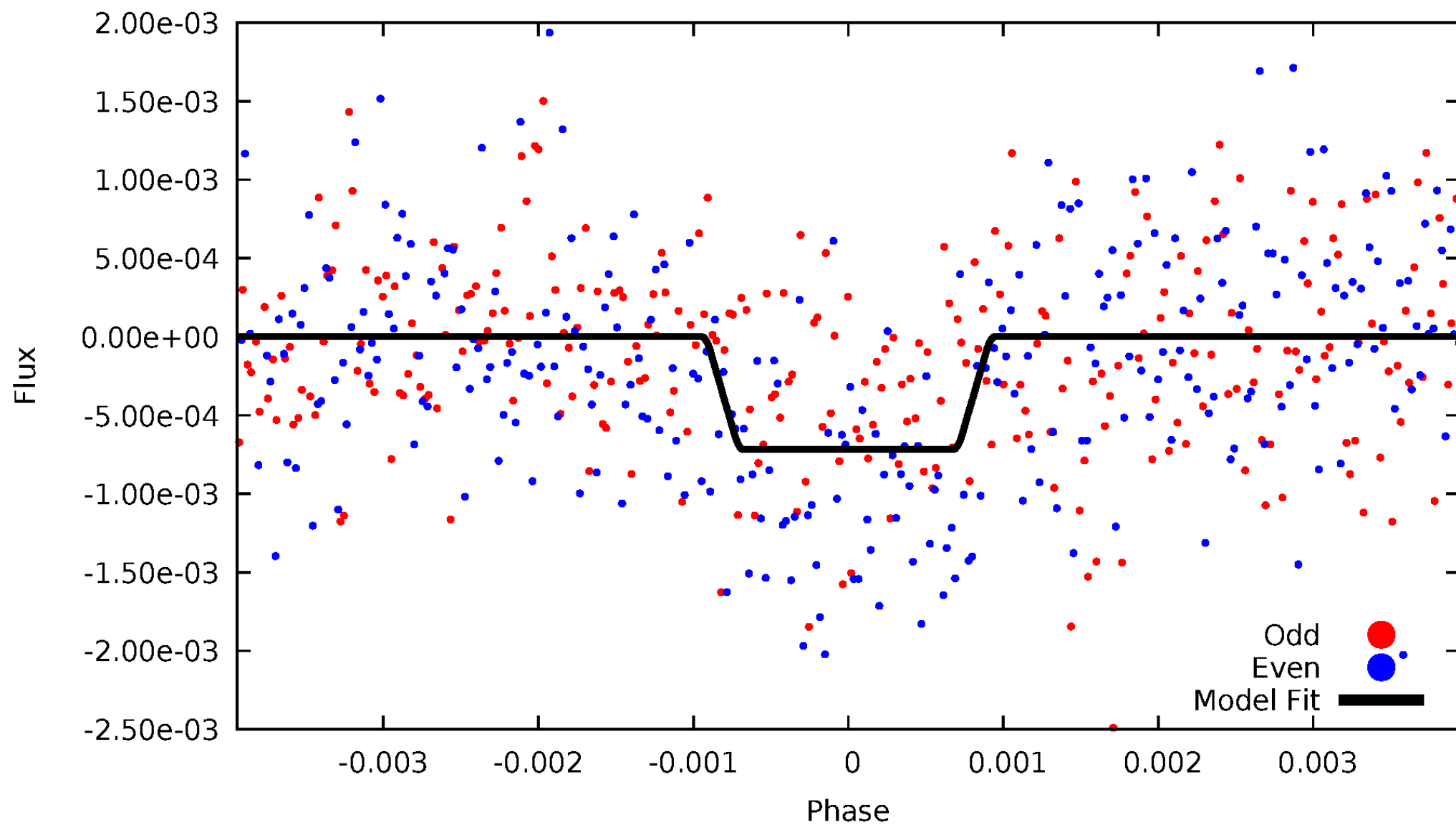
DV Odd/Even

TCE 010337064-02



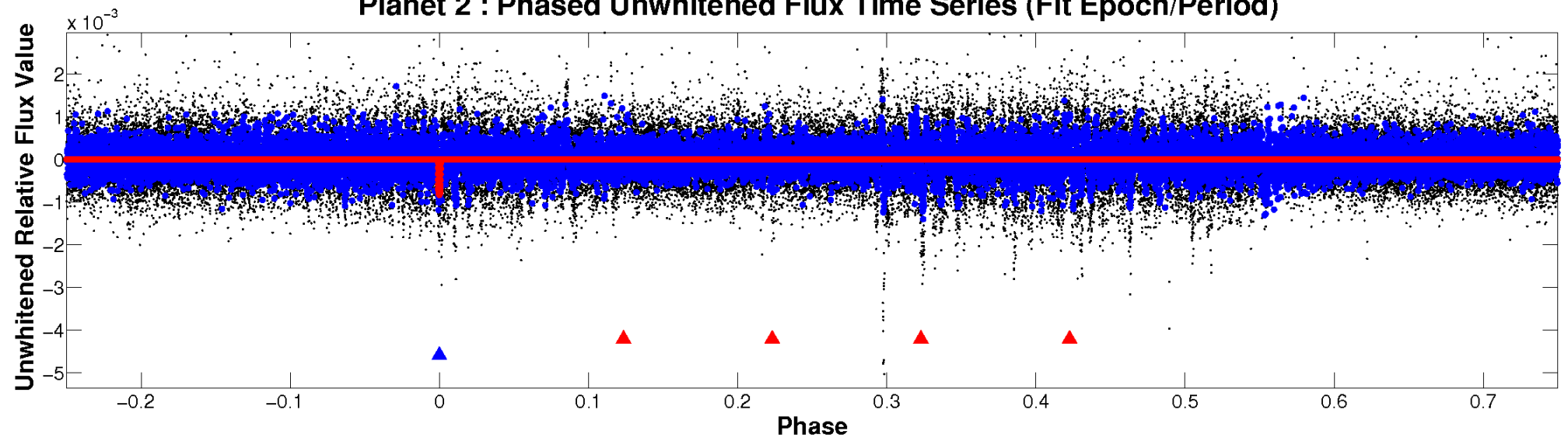
ALT Odd/Even

TCE 010337064-02

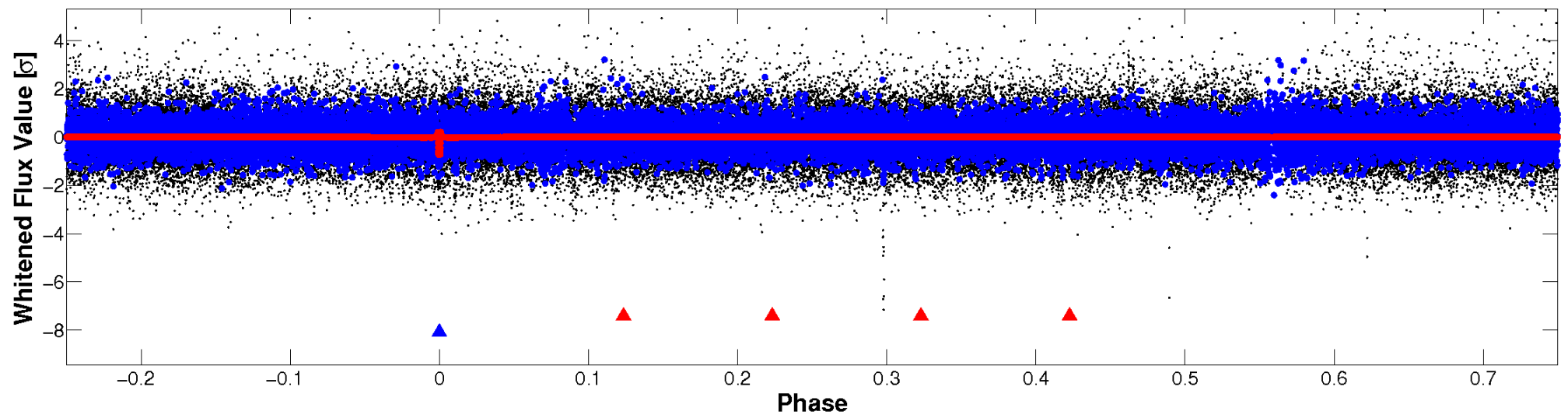


Non-Whitened Vs. Whitened Light Curve

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

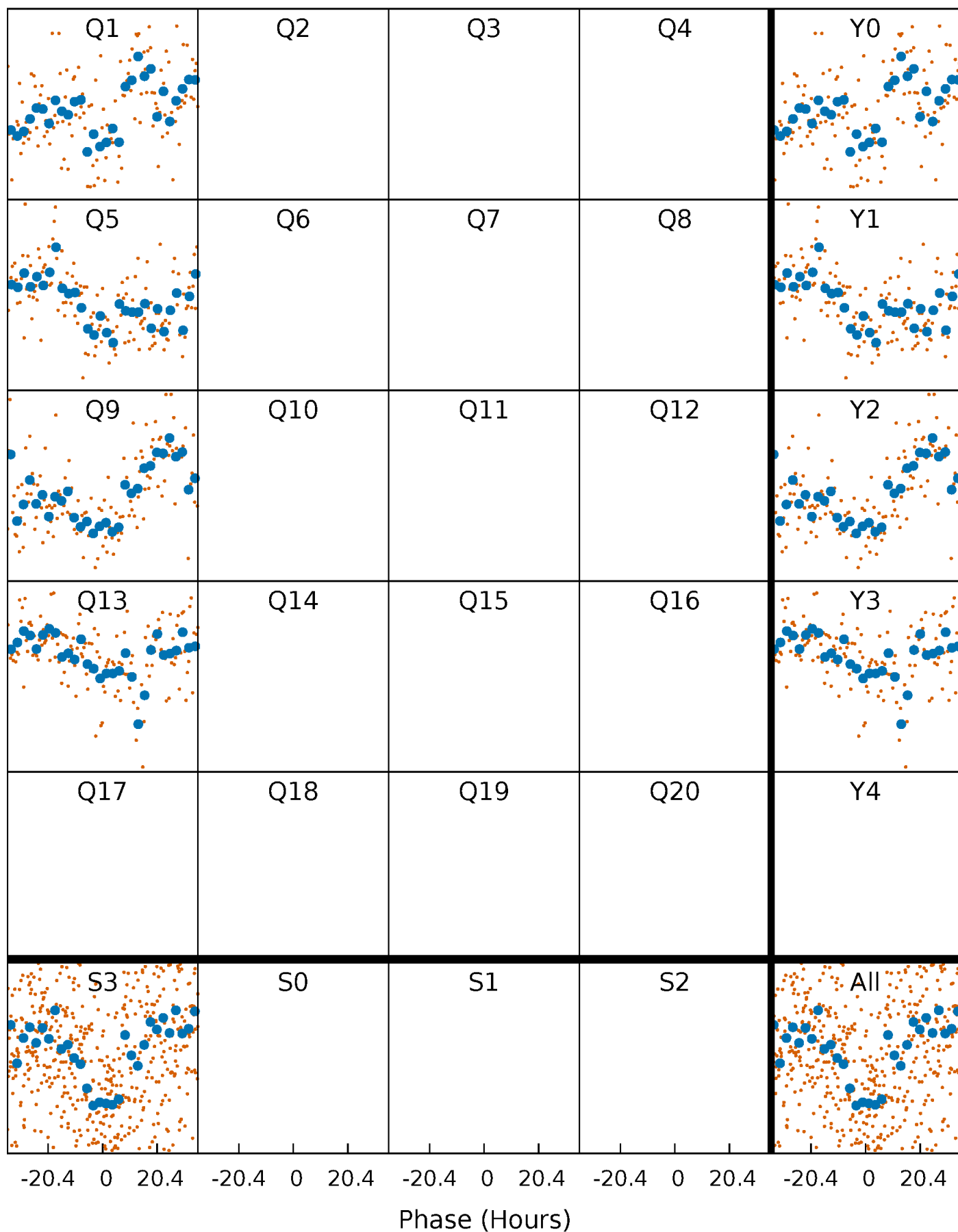


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



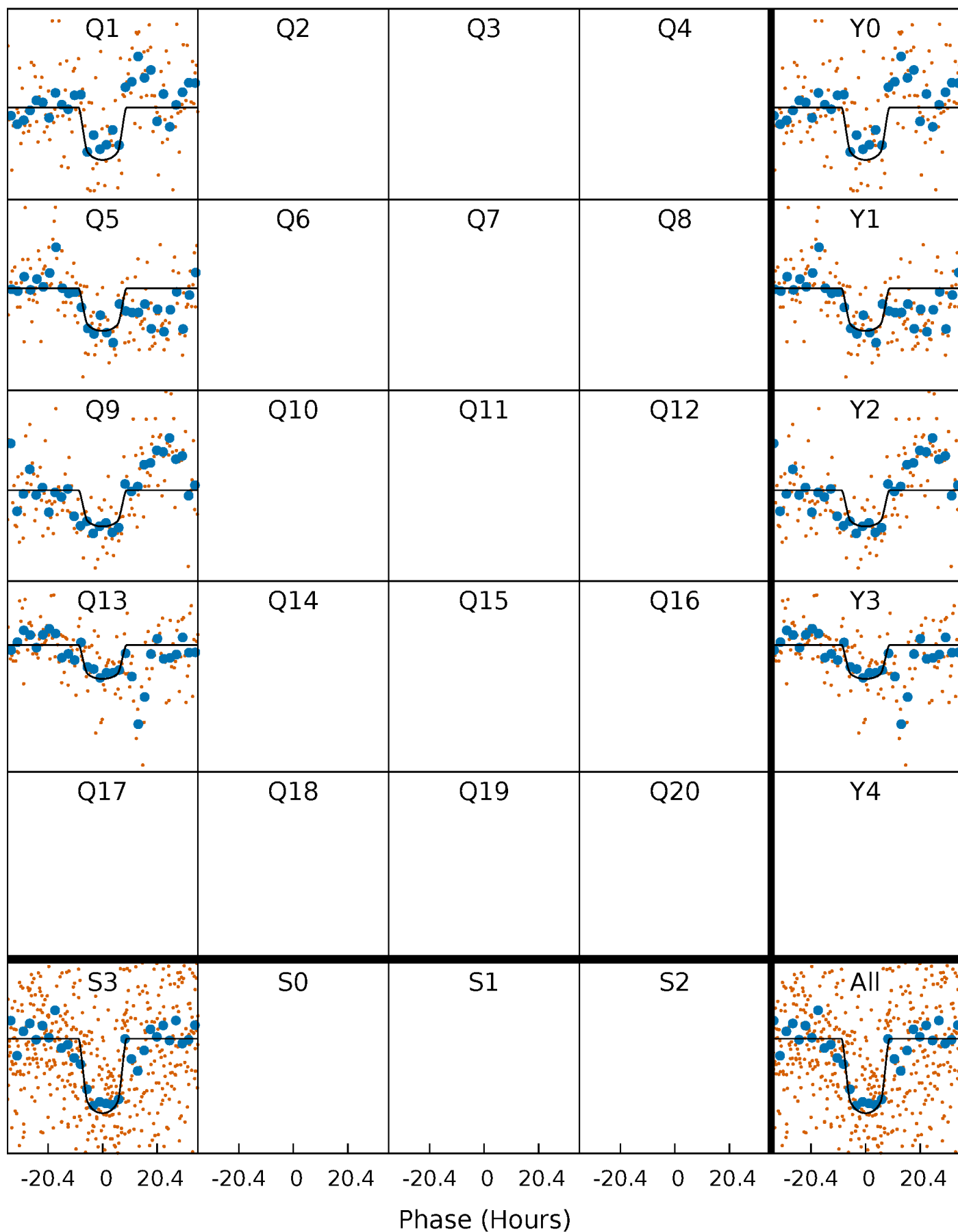
PDC Quarter-Phased Transit Curves

TCE 010337064-02 $P=374.581247$ Days $T_0=140.755820$ (BKJD)



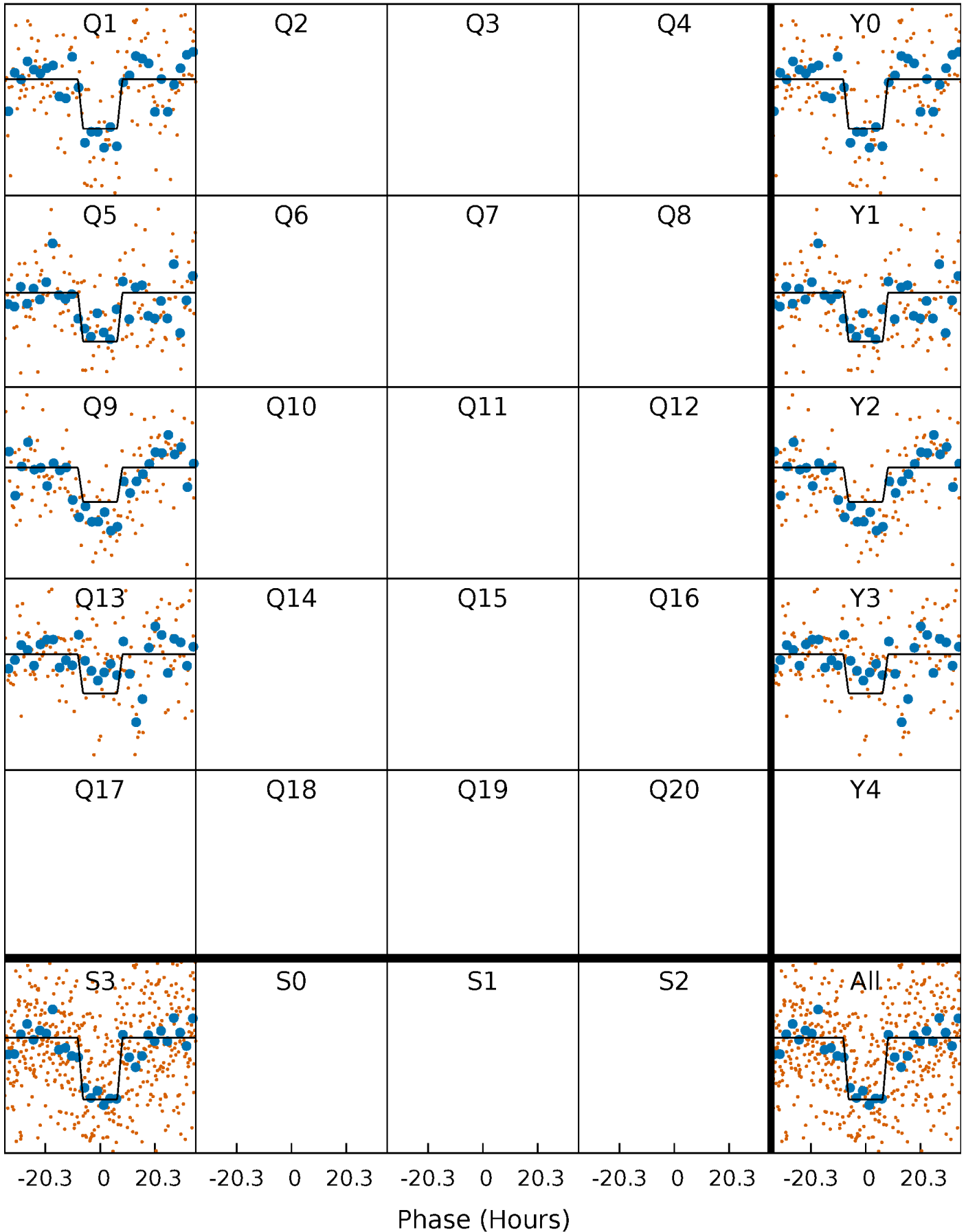
DV Quarter-Phased Transit Curves

TCE 010337064-02 $P=374.581247$ Days $T_0=140.755820$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

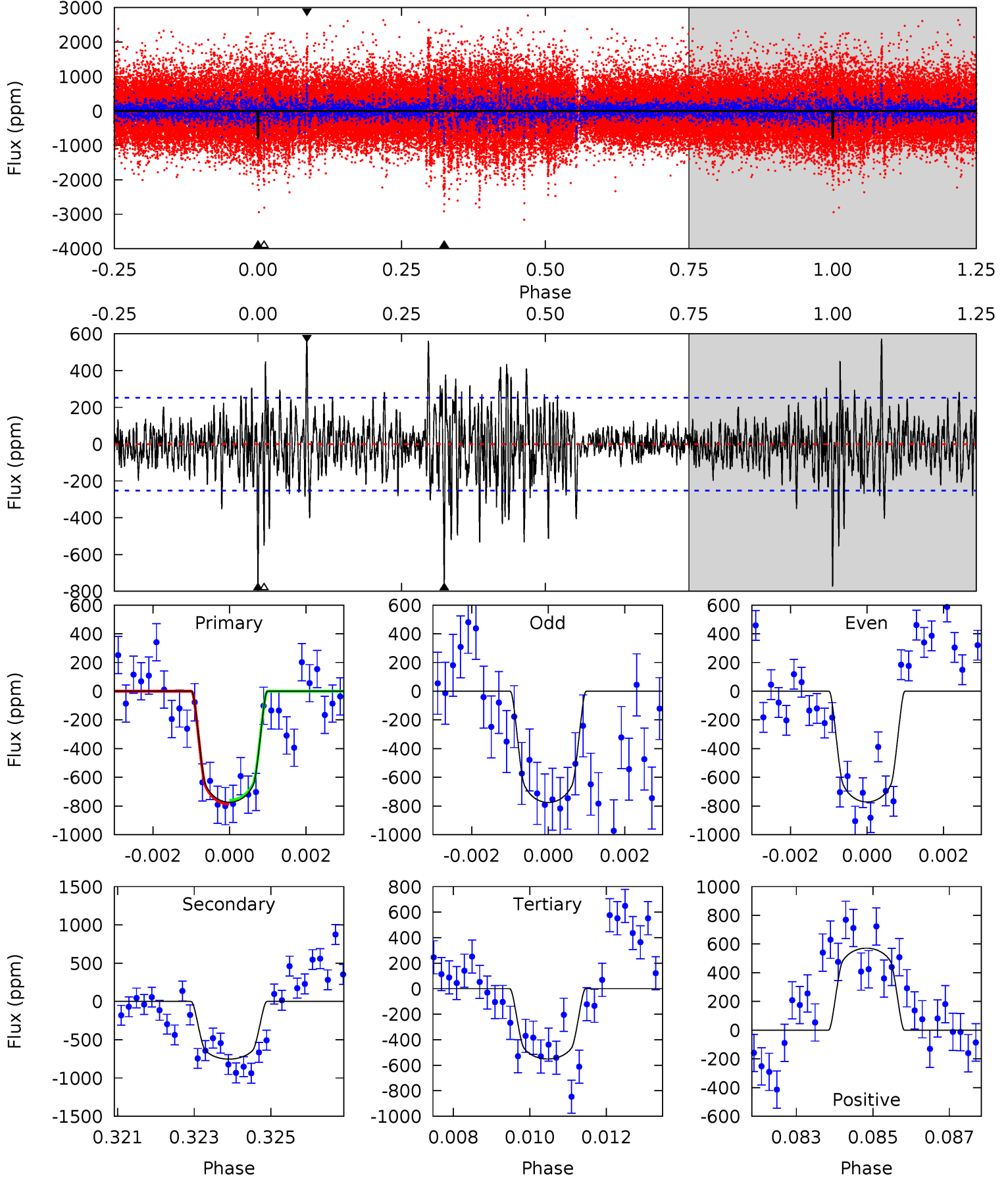
TCE 010337064-02 $P=374.574400$ Days $T_0=140.764190$ (BKJD)



DV Model-Shift Uniqueness Test

010337064-02, P = 374.581247 Days, E = 140.755820 Days

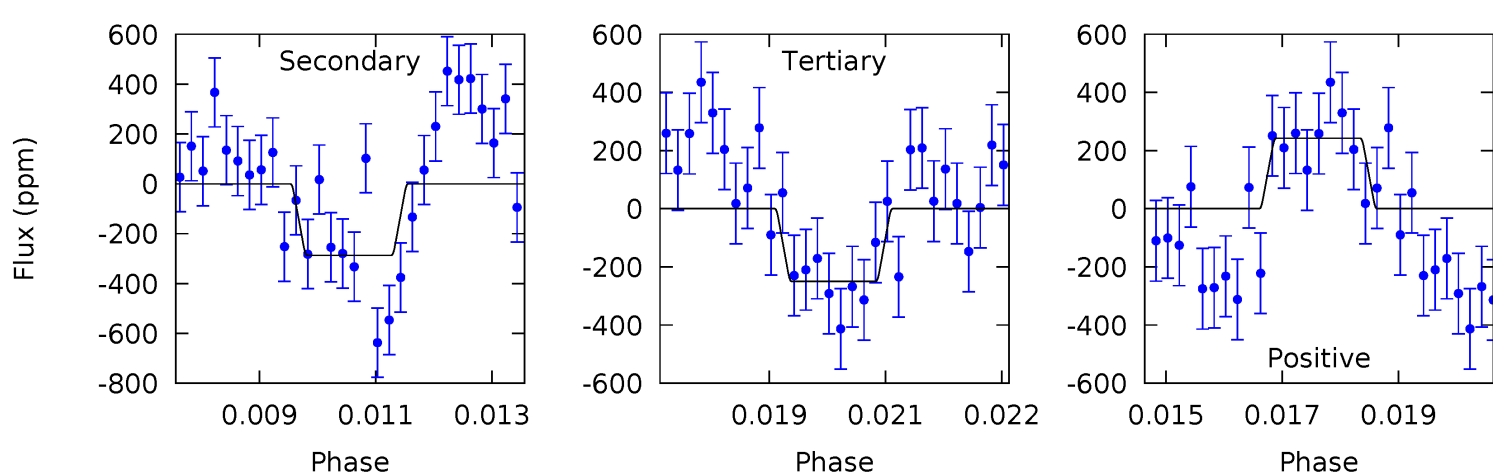
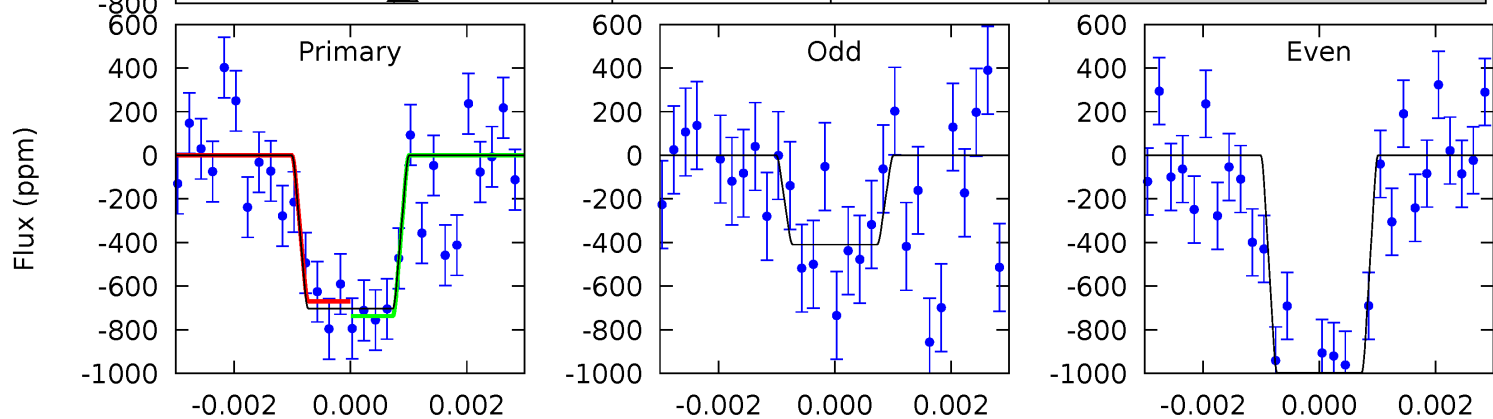
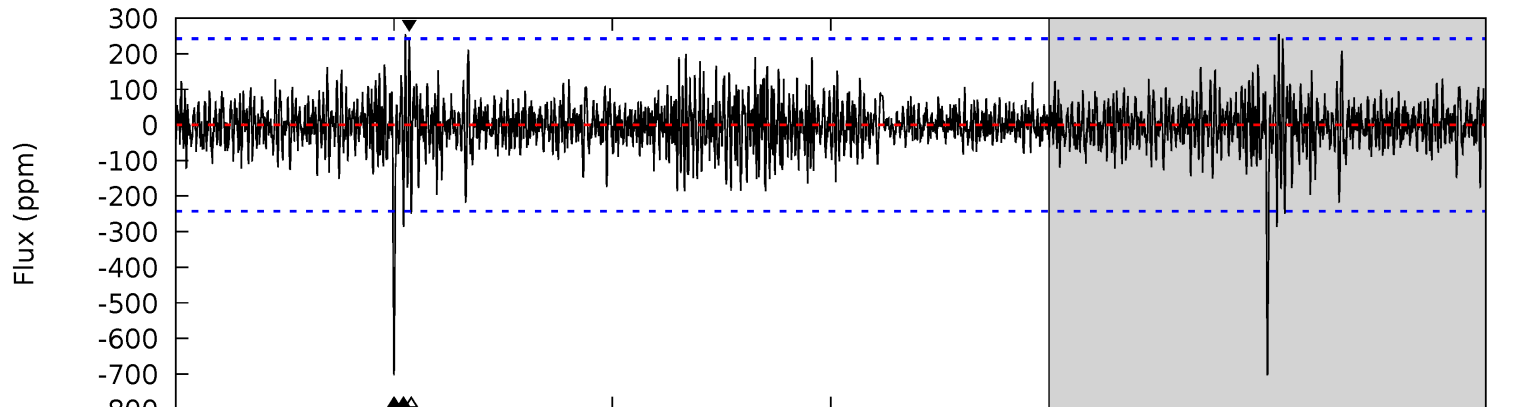
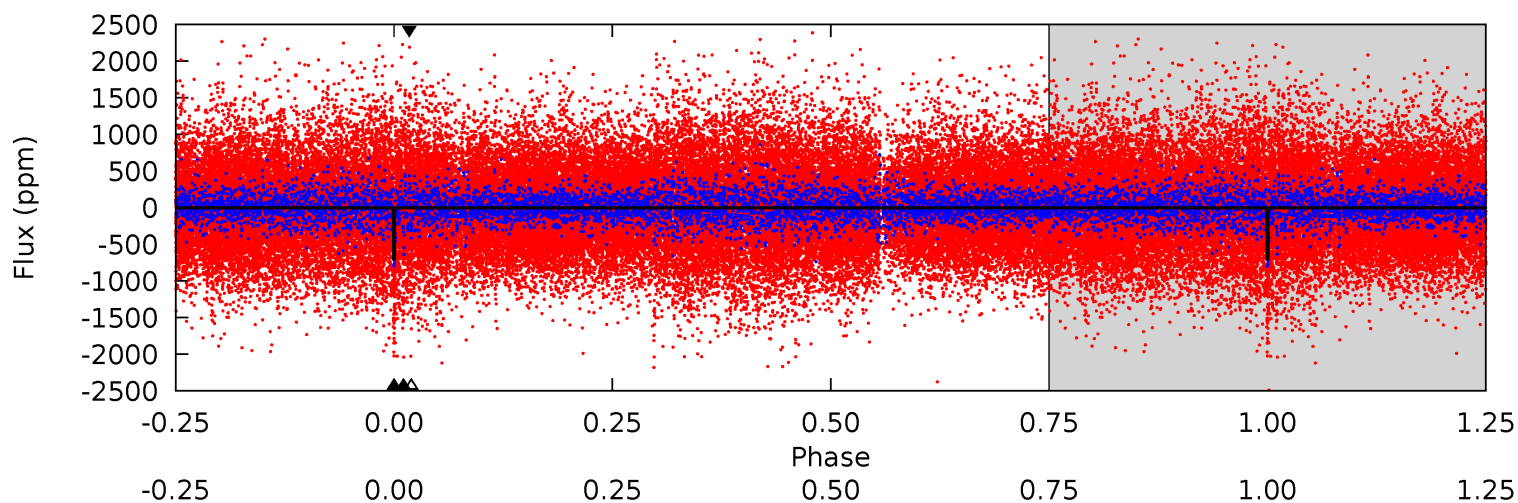
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.3	15.9	11.6	12.1	5.32	3.09	2.77	4.71	4.28	4.27	3.84	0.04	1.00	0.42	0.28



Alt Model-Shift Uniqueness Test

010337064-02, P = 374.574400 Days, E = 140.764190 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	6.32	5.50	5.33	5.34	3.11	1.24	9.99	10.2	0.82	0.98	6.48	1.02	0.27	0.74



Stellar Parameters For KIC 010337064

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5799^{+156}_{-173}	$4.539^{+0.044}_{-0.176}$	$-0.100^{+0.250}_{-0.300}$	$0.878^{+0.230}_{-0.077}$	$0.975^{+0.102}_{-0.125}$	$2.026^{+0.370}_{-0.995}$
	+3%/-3%	+1%/-4%	+250%/-300%	+26%/-9%	+10%/-13%	+18%/-49%
Source	PHO1	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 010337064-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-753 ± 47	$3.18^{+0.49}_{-0.42}$	341^{+20}_{-15}	5404^{+329}_{-294}	41253^{+12794}_{-10638}
Alt.	-287 ± 45	$2.63^{+0.50}_{-0.37}$	340^{+21}_{-15}	4758^{+320}_{-293}	22410^{+9352}_{-6810}

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

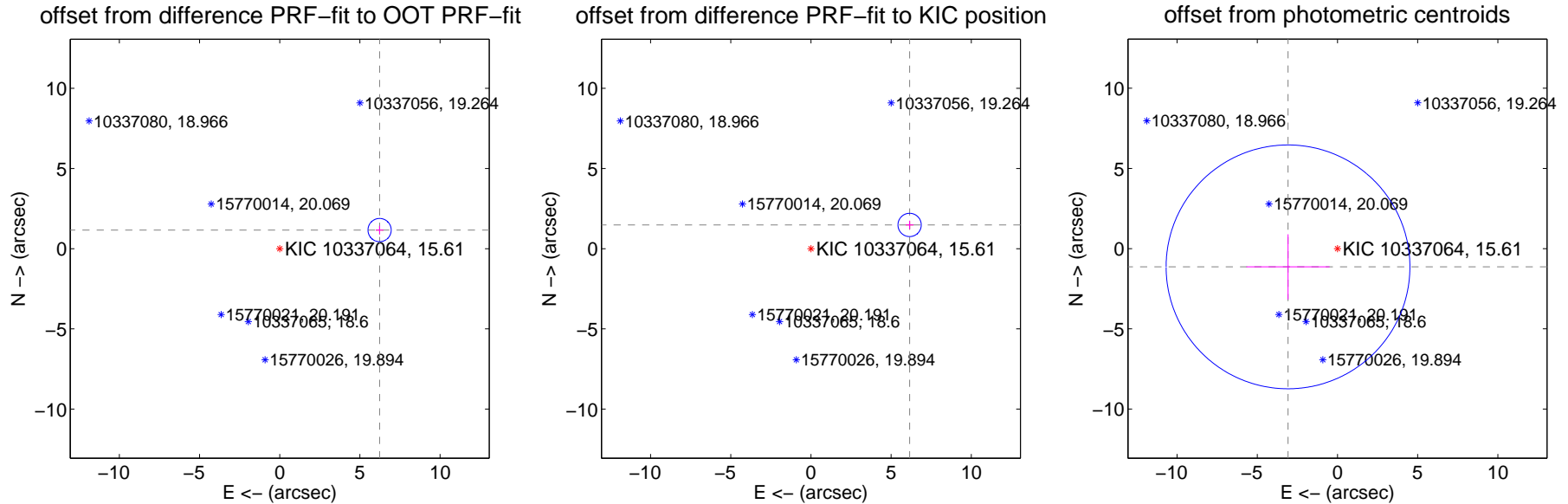
DV Centroid Data

Supplemental centroid analysis for 010337064-02. Kepler magnitude: 15.61. Transit SNR 7.56

There are 0 quarters with good PRF difference image offsets

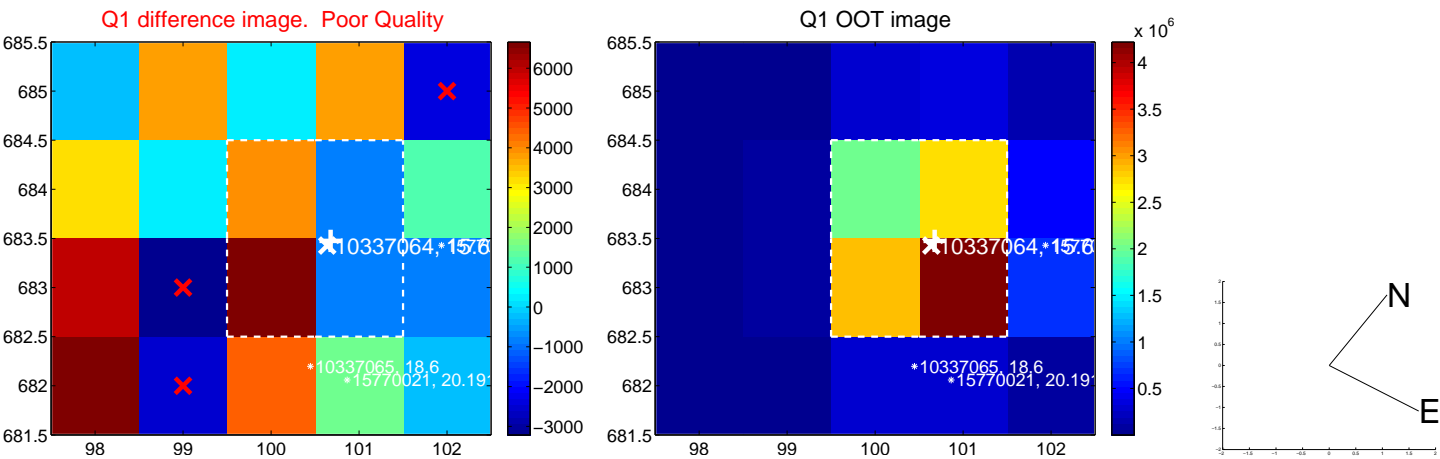
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.336 ± 0.241	26.24	-6.229 ± 0.241	1.162 ± 0.268
PRF-fit source offset from KIC position	6.329 ± 0.242	26.14	-6.153 ± 0.240	1.481 ± 0.268
photometric centroid source offset	3.29 ± 2.53	1.30	3.08 ± 2.59	-1.14 ± 2.03

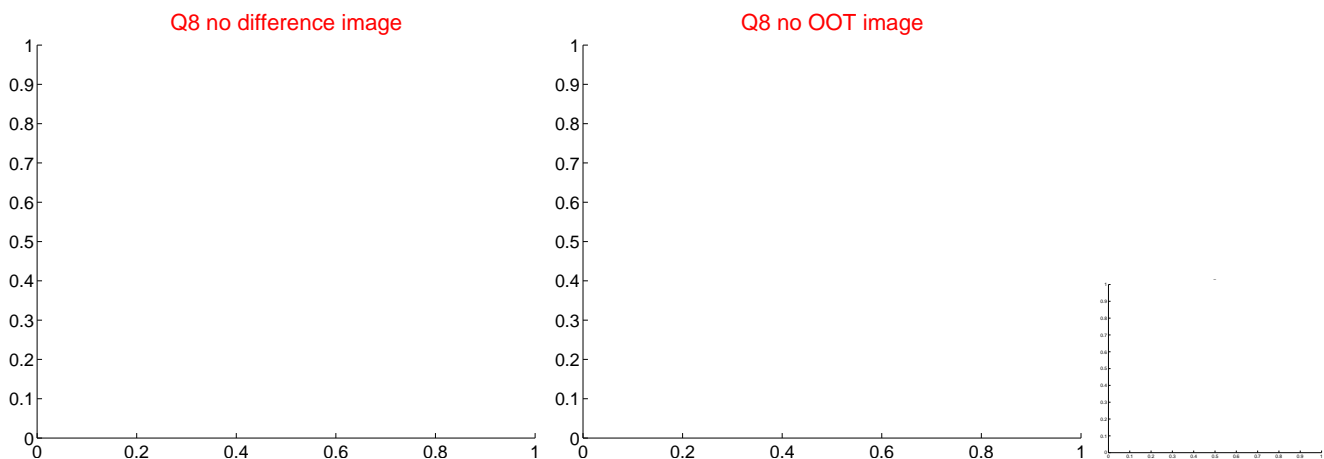
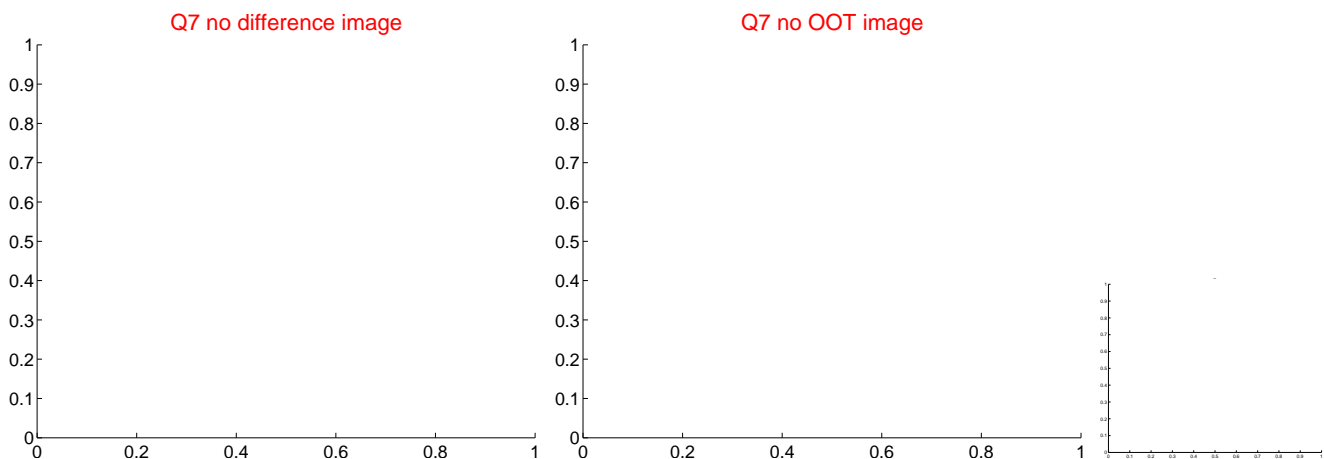
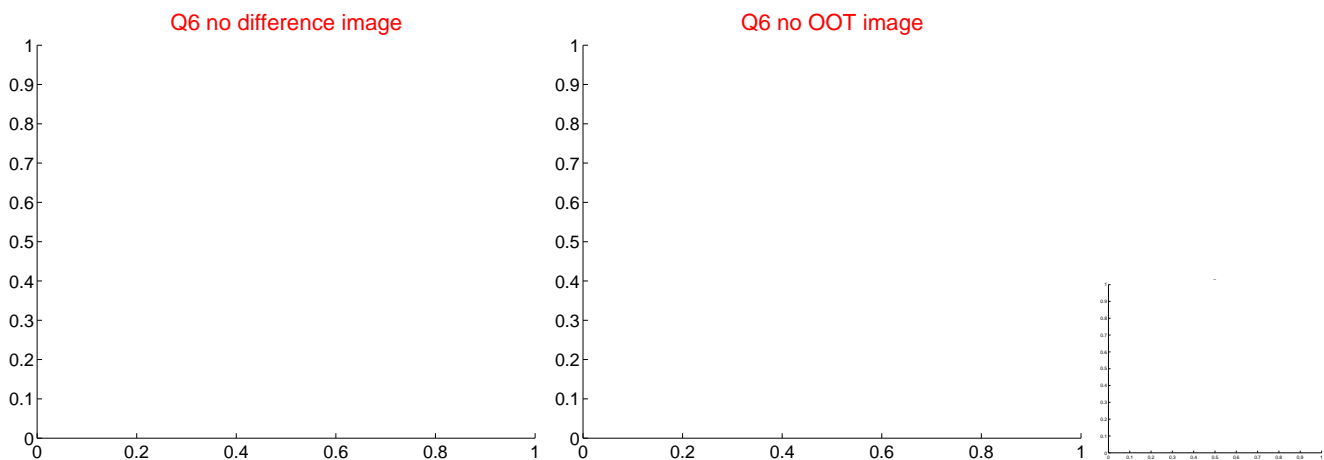
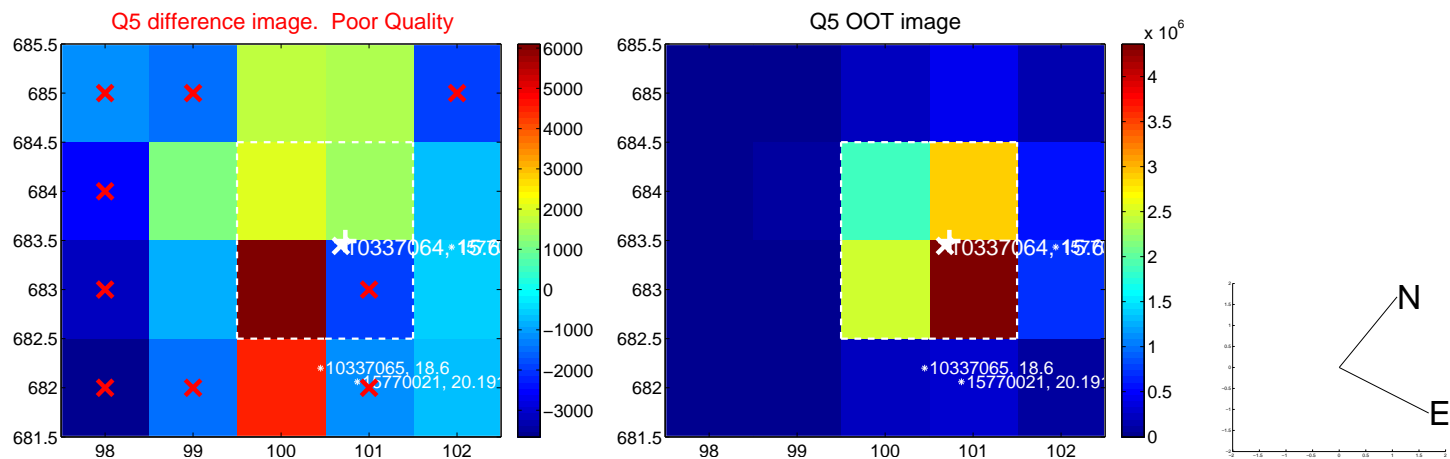


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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.

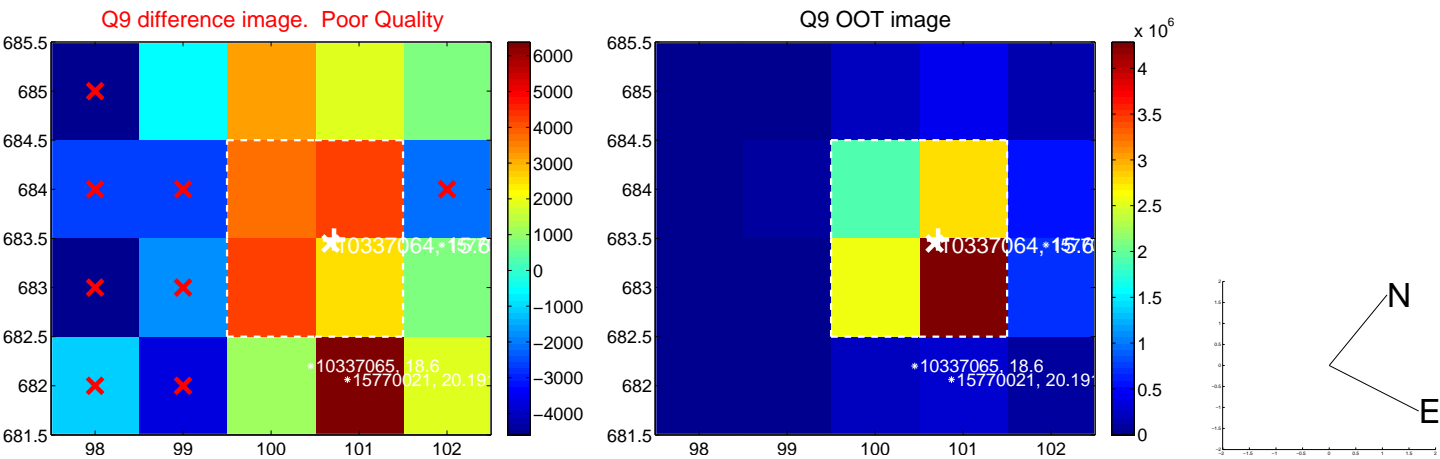
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



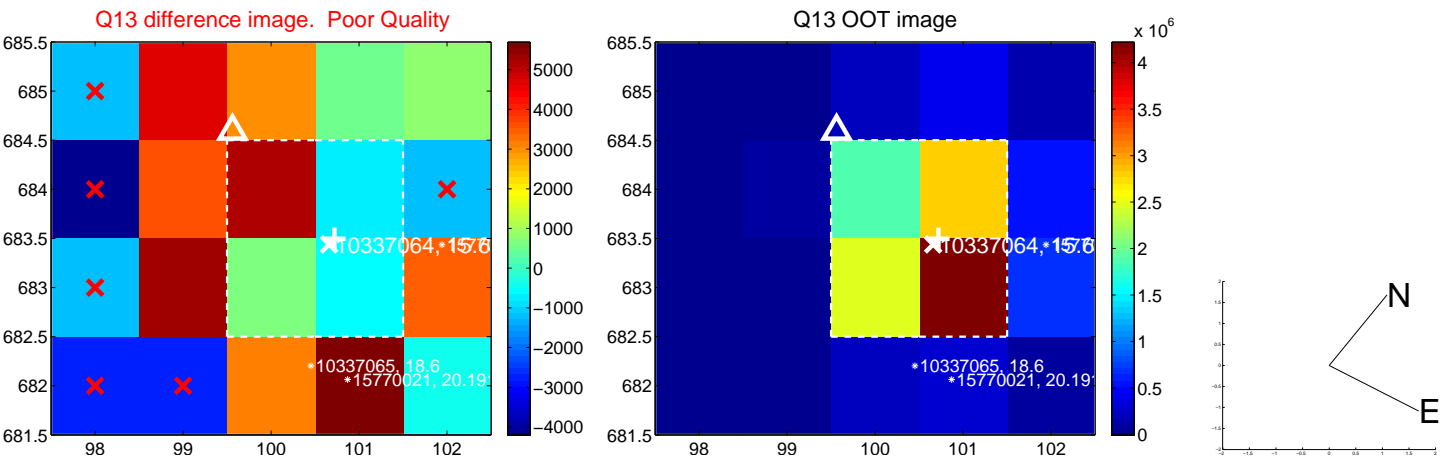
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



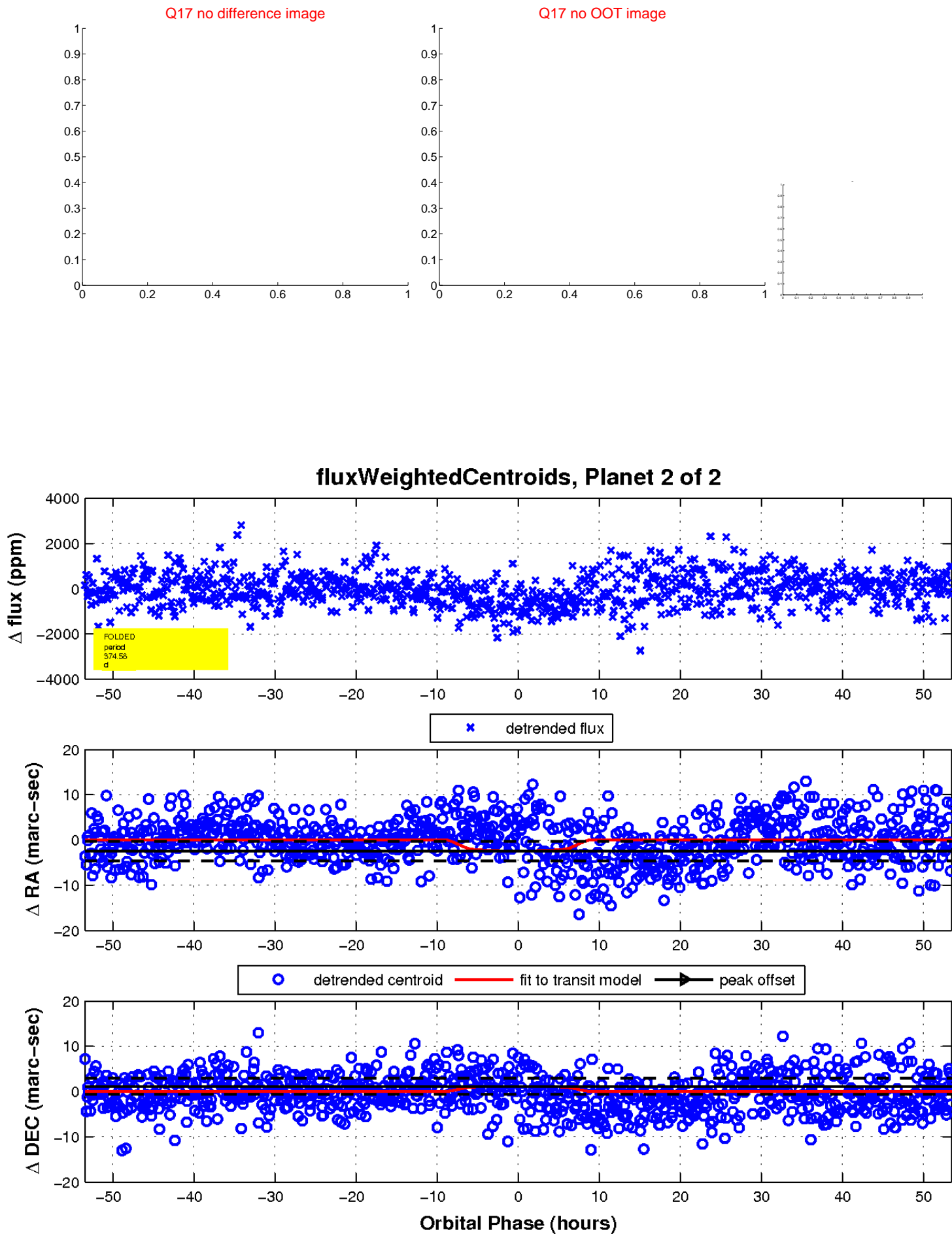
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



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



UKIRT Image

Declination

