

KIC 003456318

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})
003456318-01	OBS	No	186.663736	244.257891	338.3	18.919	10.5	11.1	1.02	6064	2.23	3.11
003456318-02	OBS	No	501.881924	194.044606	313.3	17.748	9.3	9.2	1.02	6064	1.94	0.83

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003456318-01	OBS	FP	0.00	1	0	0	0	LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003456318-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

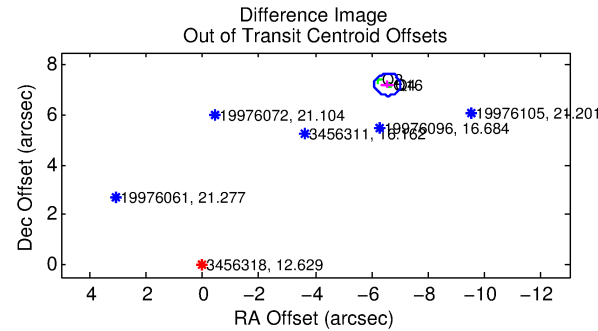
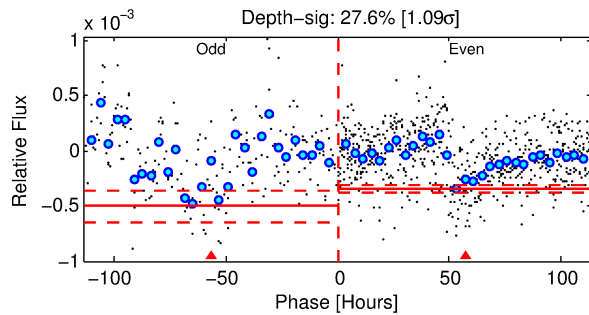
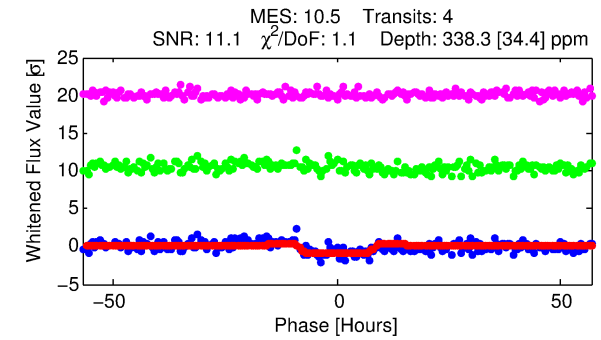
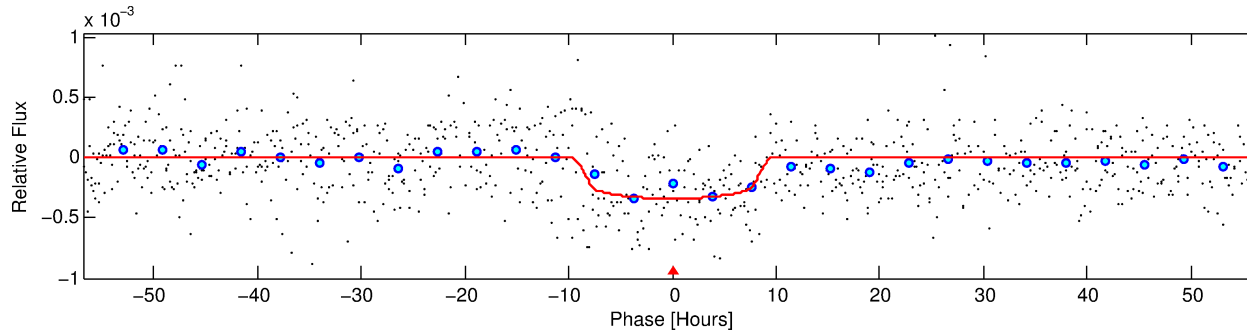
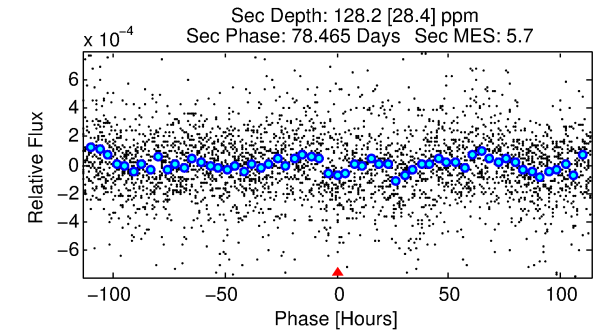
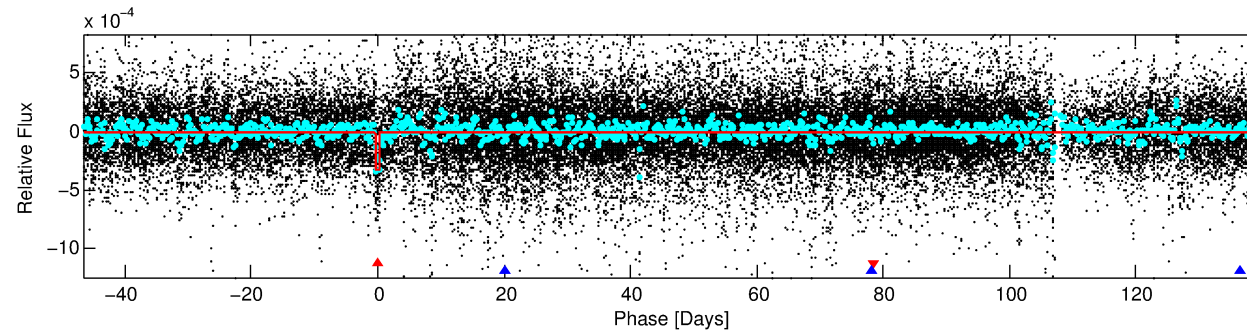
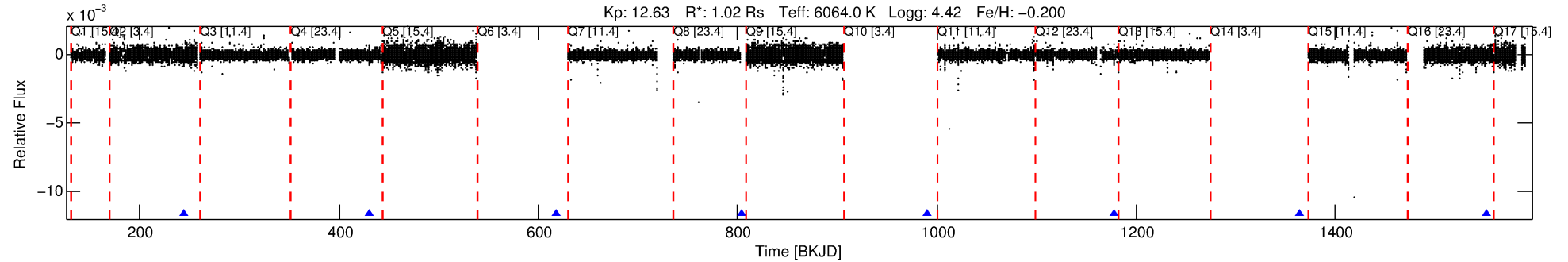
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003456318-01

No Significant Match Found

DV One-Page Summary

KIC: 3456318 Candidate: 1 of 2 Period: 186.664 d



DV Fit Results:

Period = 186.66374 [0.00556] d
Epoch = 244.2579 [0.0242] BKJD
Rp/R* = 0.0200 [0.0018]
a/R* = 35.26 [13.11]
b = 0.91 [0.07]
Seff = 3.11 [1.26]
Teq = 339 [34] K
Rp = 2.23 [0.73] Re
a = 0.6378 [0.1671] AU
Ag = 5793.90 [2739.57] [2.11σ]
Teffp = 4568 [371] K [11.35σ]

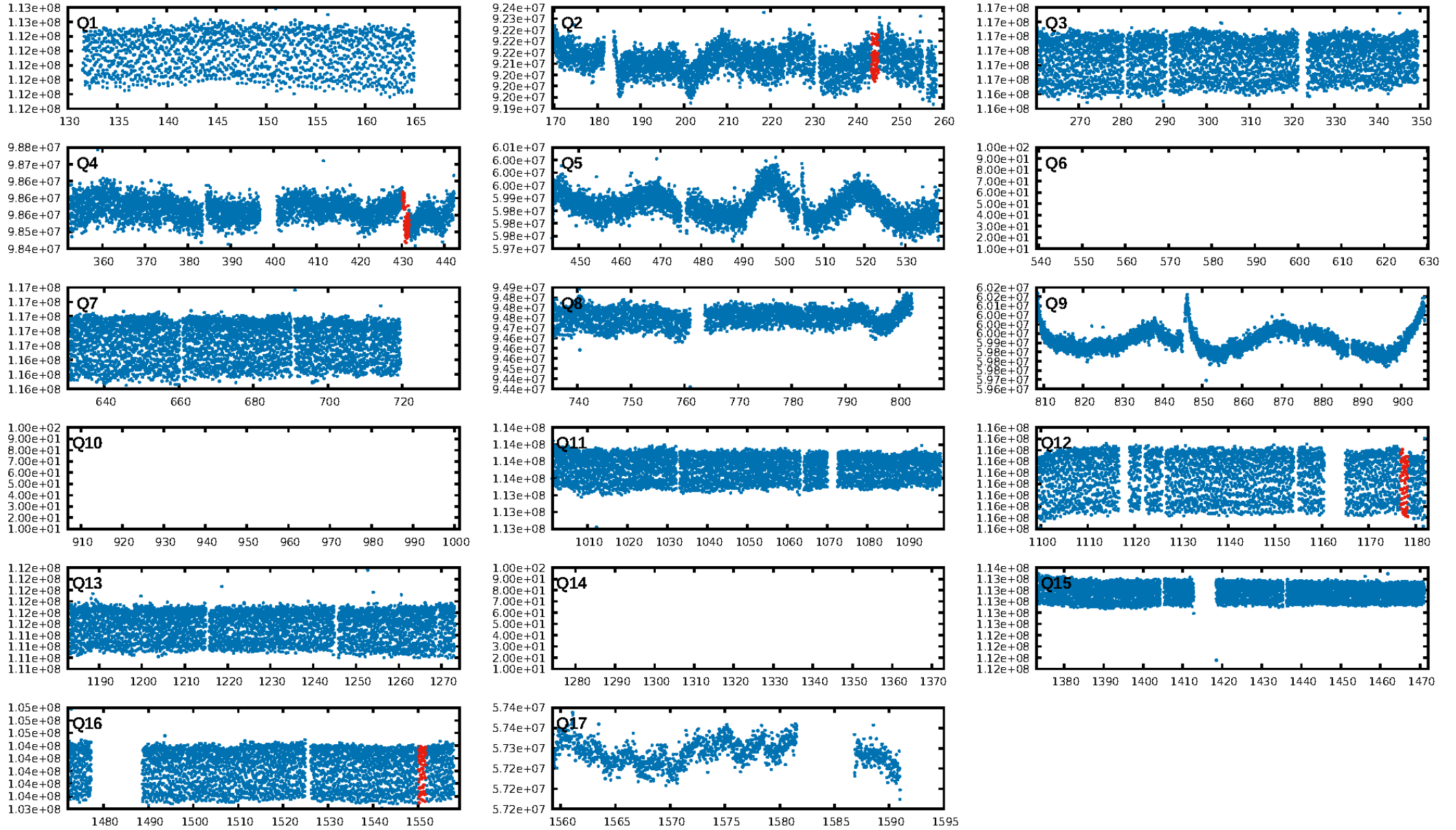
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [291.63σ]
ModelChiSquare2-sig: 4.2%
ModelChiSquareGof-sig: 96.9%
Bootstrap-pfa: 8.45e-12
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 3.672
Centroid-sig: 0.0%
Centroid-so: 4.357 arcsec [2.60σ]
OotOffset-rm: 9.748 arcsec [65.06σ]
KicOffset-rm: 8.235 arcsec [44.56σ]
OotOffset-st: 1/0/2/0 [3]
KicOffset-st: 1/0/2/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

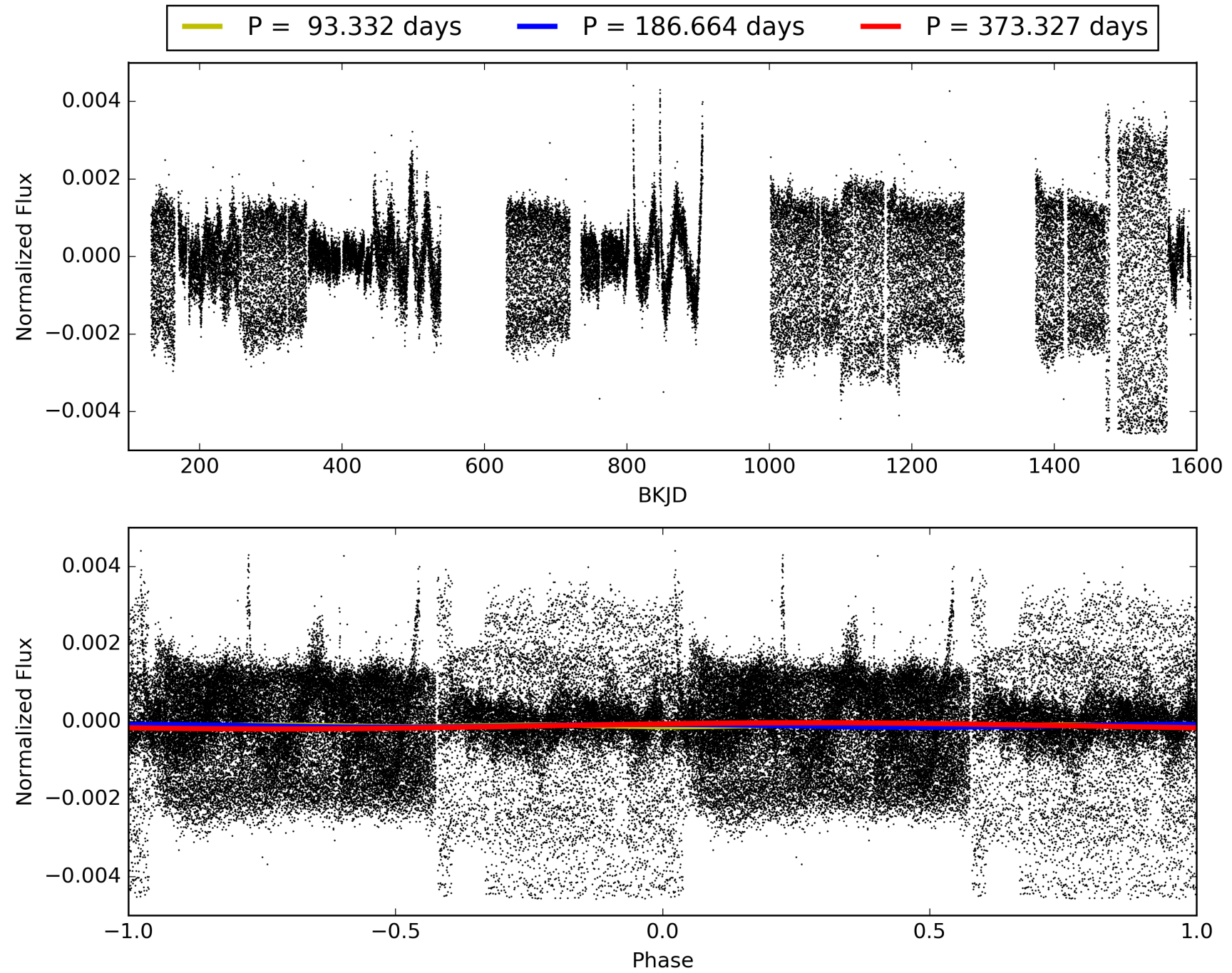
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:24:43 Z

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

TCE 003456318-01, PDC Light Curves

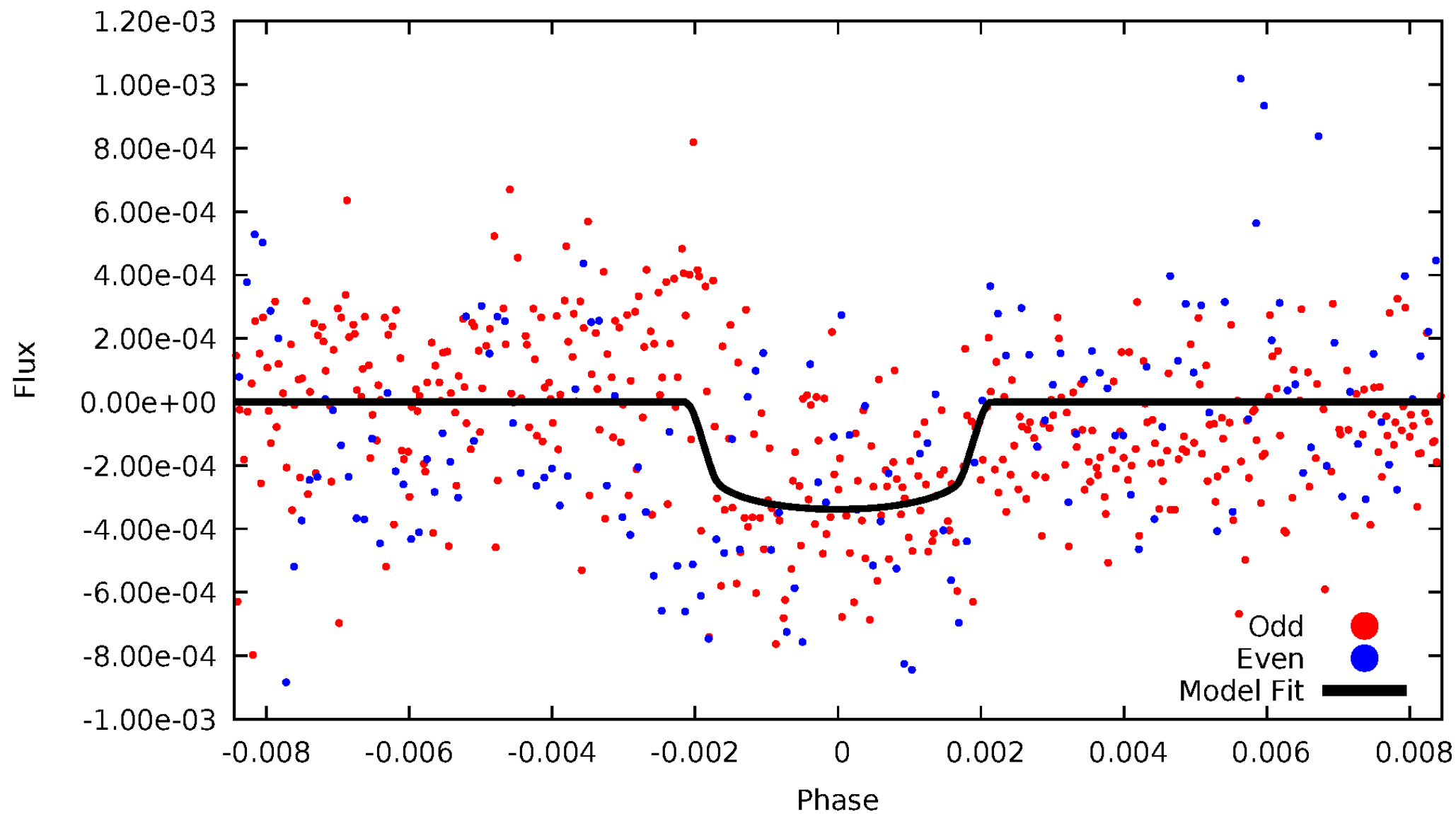


TCE 003456318-01



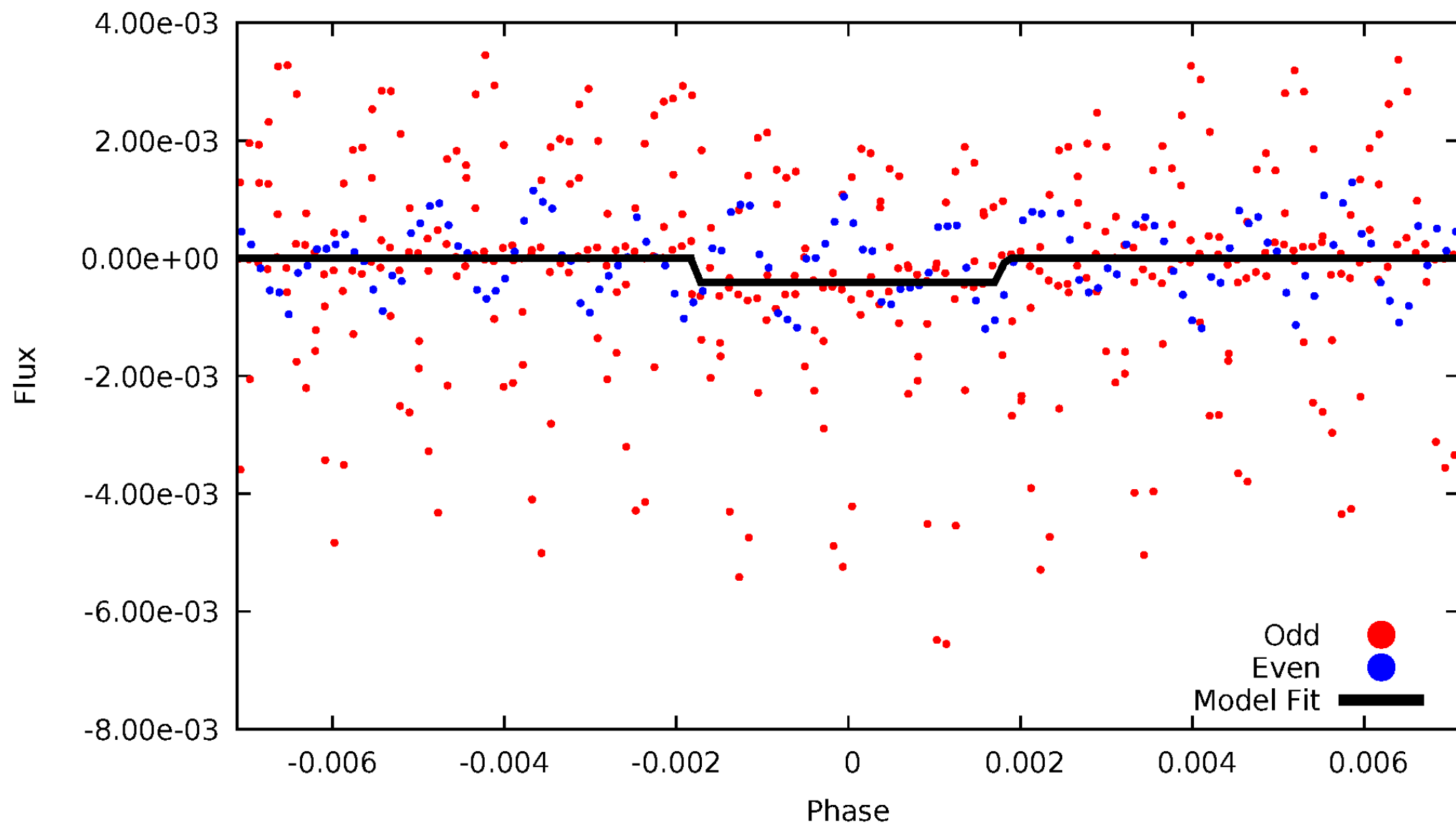
DV Odd/Even

TCE 003456318-01



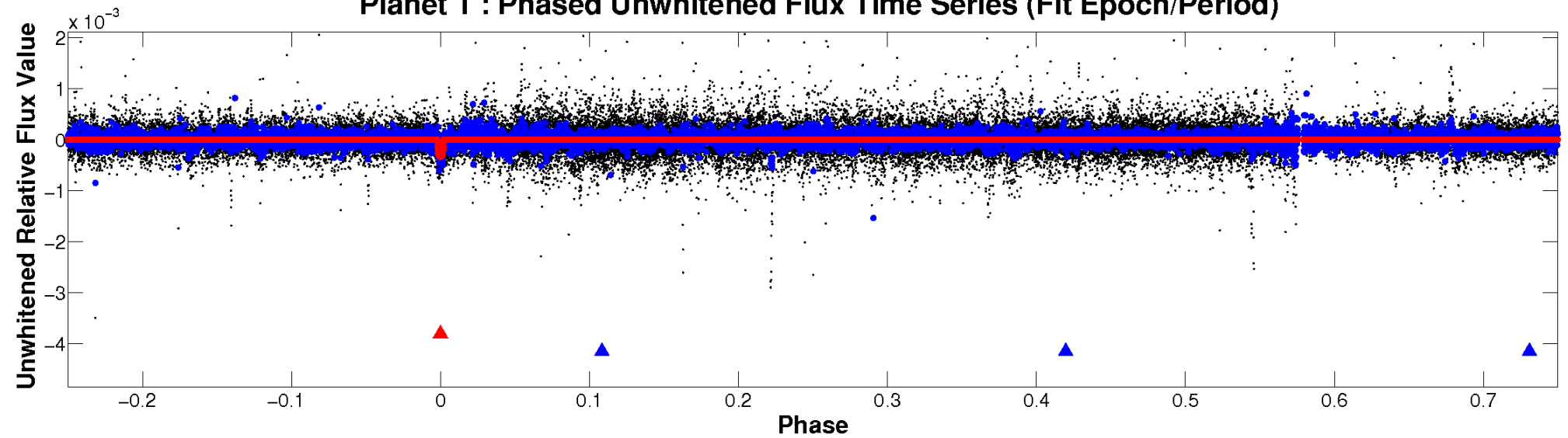
ALT Odd/Even

TCE 003456318-01

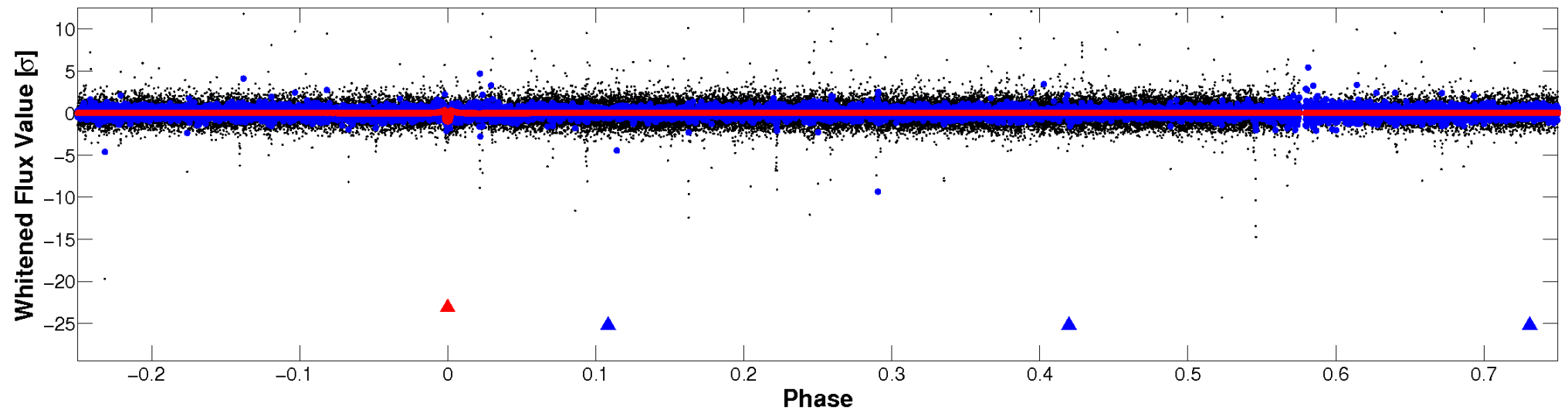


Non-Whitened Vs. Whitened Light Curve

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

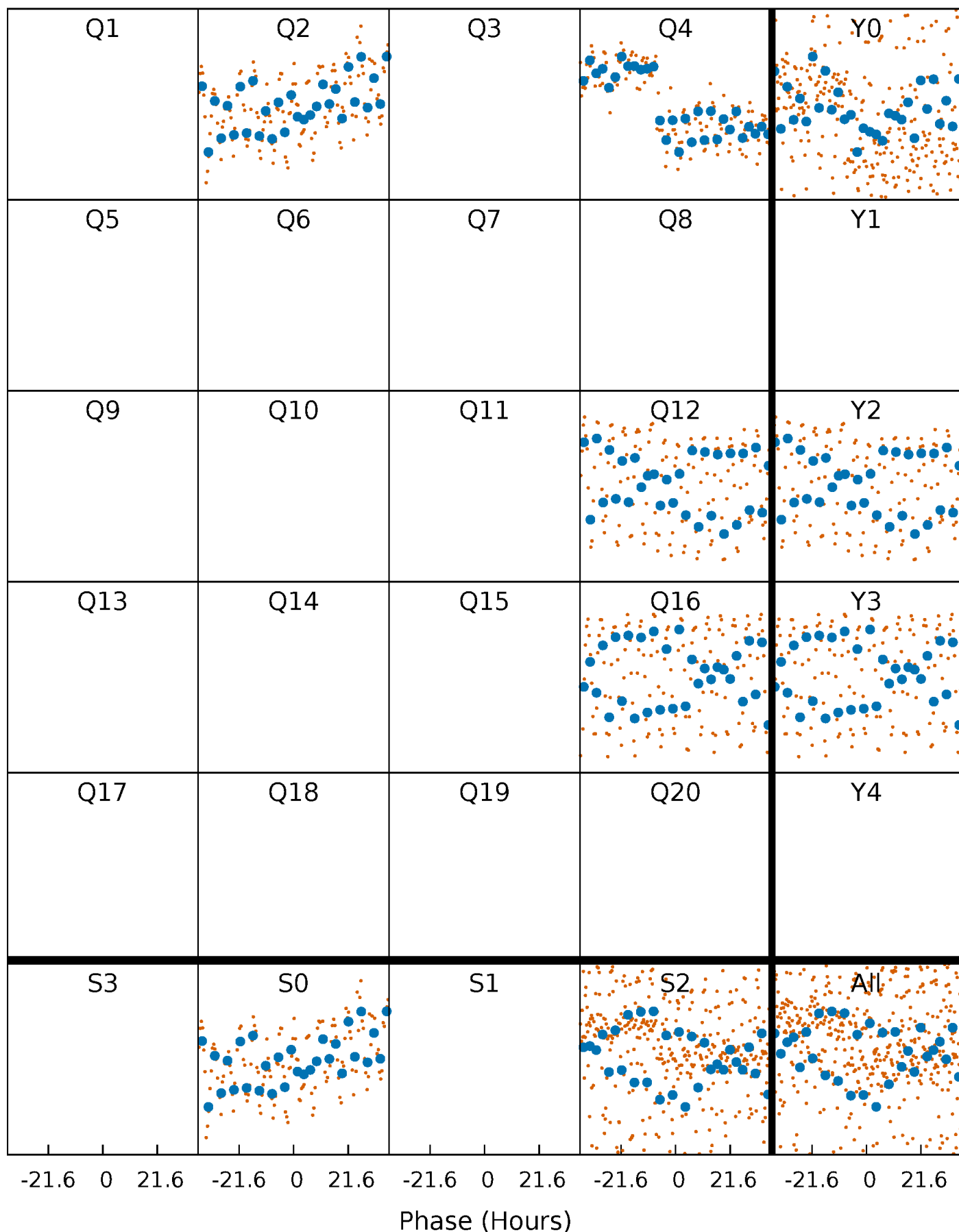


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 003456318-01 P=186.663736 Days $T_0=244.257891$ (BKJD)



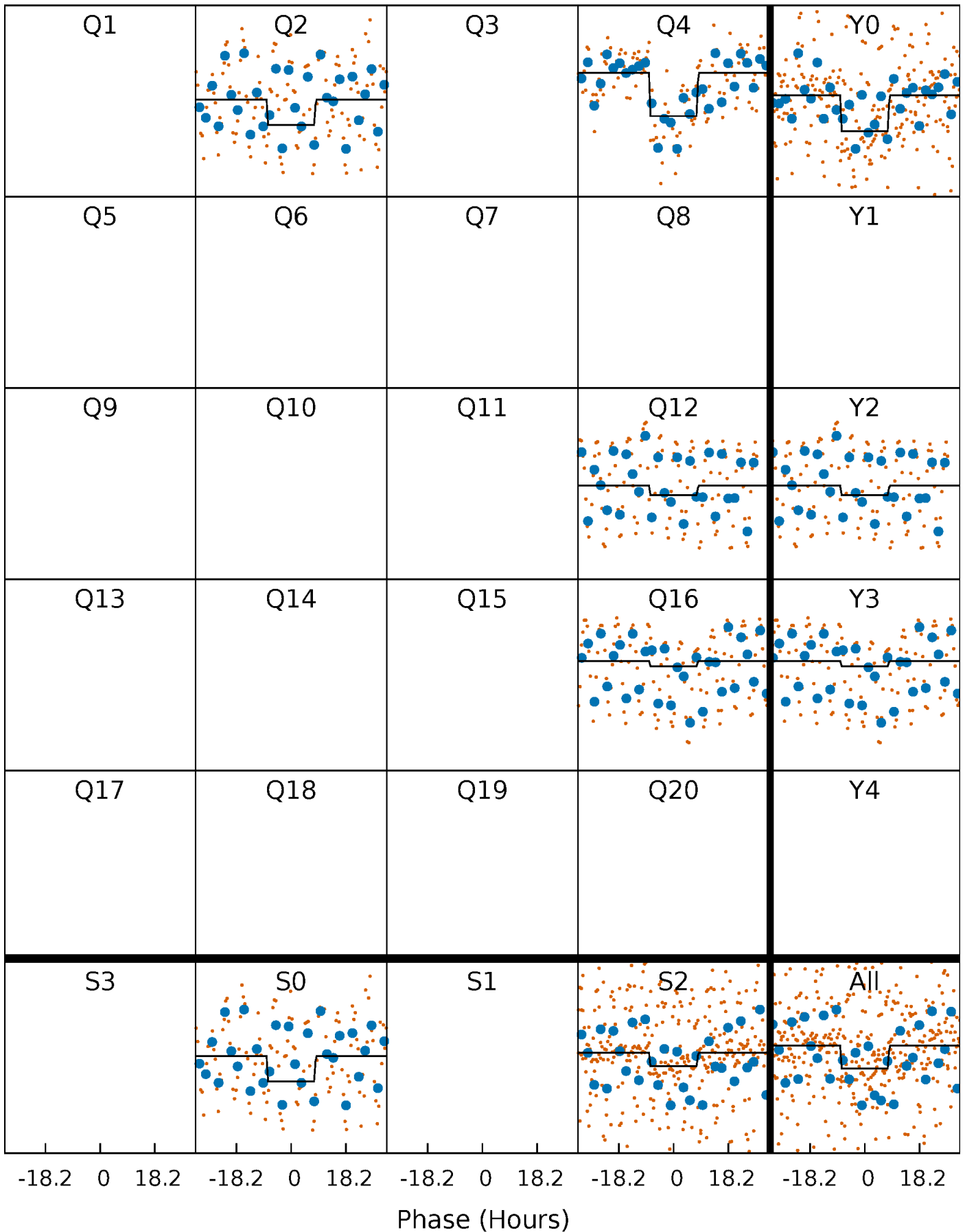
DV Quarter-Phased Transit Curves

TCE 003456318-01 P=186.663736 Days $T_0=244.257891$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

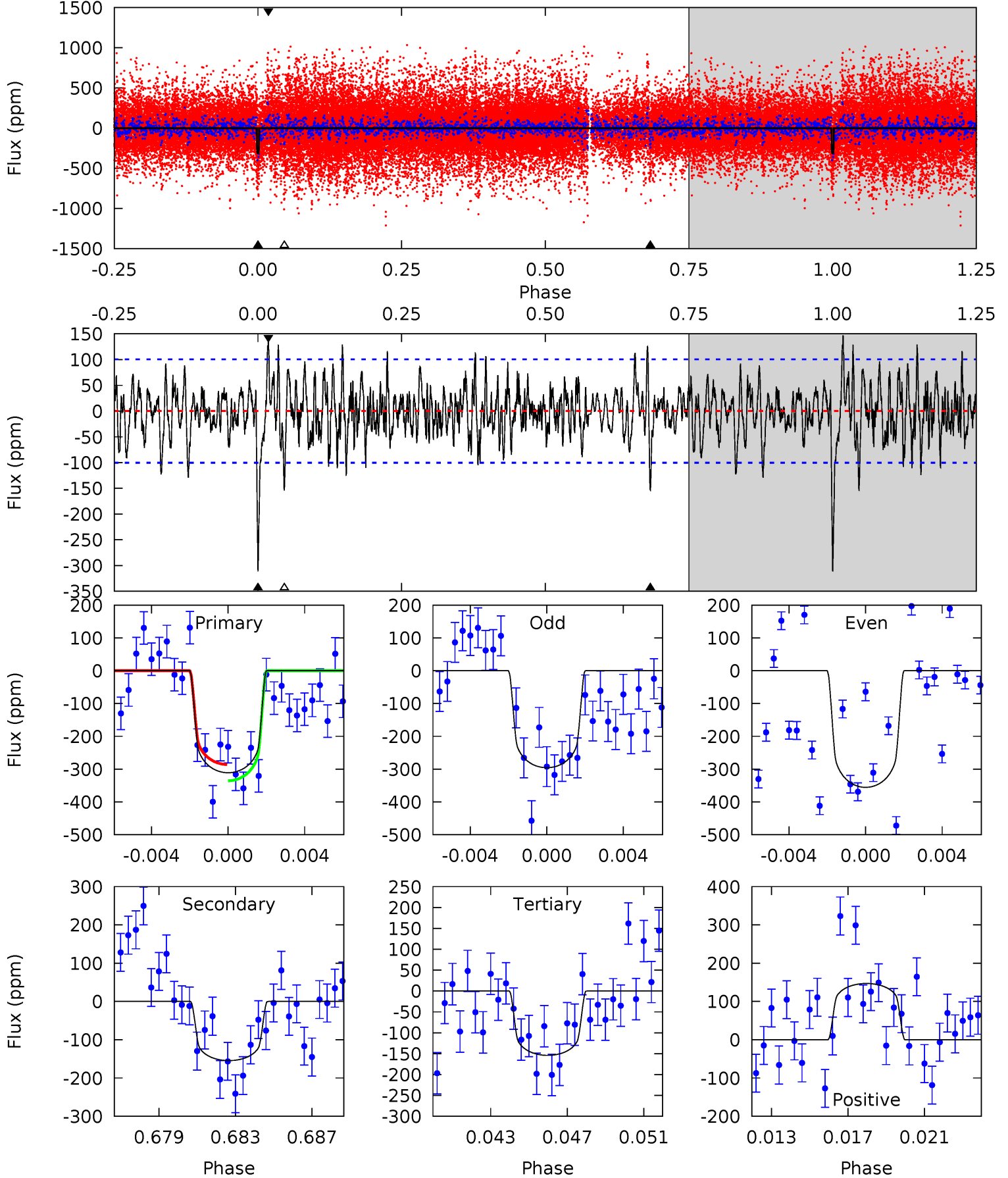
TCE 003456318-01 P=186.660571 Days $T_0=244.276491$ (BKJD)



DV Model-Shift Uniqueness Test

003456318-01, P = 186.663736 Days, E = 57.594155 Days

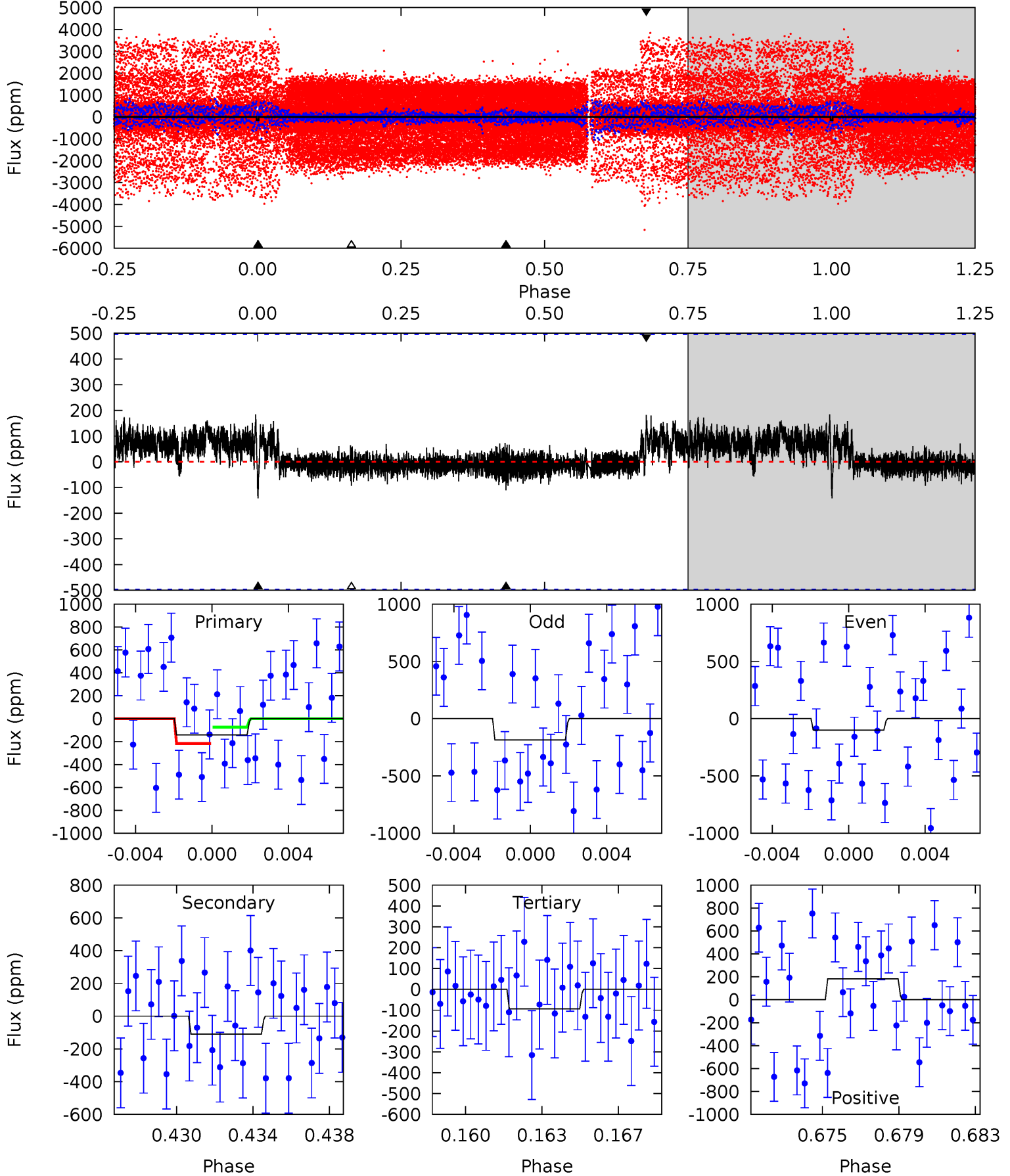
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.1	7.98	7.96	7.59	5.19	2.86	2.10	8.11	8.48	0.02	0.39	1.42	0.86	0.32	1.30



Alt Model-Shift Uniqueness Test

003456318-01, P = 186.660571 Days, E = 57.615920 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.49	1.16	0.98	1.91	5.21	2.90	0.50	0.52	-0.42	0.18	-0.76	0.42	1.81	0.56	0.79



Stellar Parameters For KIC 003456318

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6064^{+211}_{-232}	$4.416^{+0.101}_{-0.203}$	$-0.200^{+0.250}_{-0.300}$	$1.022^{+0.323}_{-0.138}$	$0.992^{+0.143}_{-0.117}$	$1.308^{+0.610}_{-0.669}$
	+3%/-4%	+2%/-5%	+125%/-150%	+32%/-14%	+14%/-12%	+47%/-51%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 003456318-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-154 ± 19	$2.28^{+0.42}_{-0.32}$	478^{+38}_{-27}	4881^{+288}_{-259}	6411^{+2364}_{-1667}
Alt.	-110 ± 95	$2.34^{+0.41}_{-0.32}$	481^{+36}_{-28}	4528^{+675}_{-1725}	4339^{+4466}_{-4092}

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 $A_{obs} \gg 1.0$

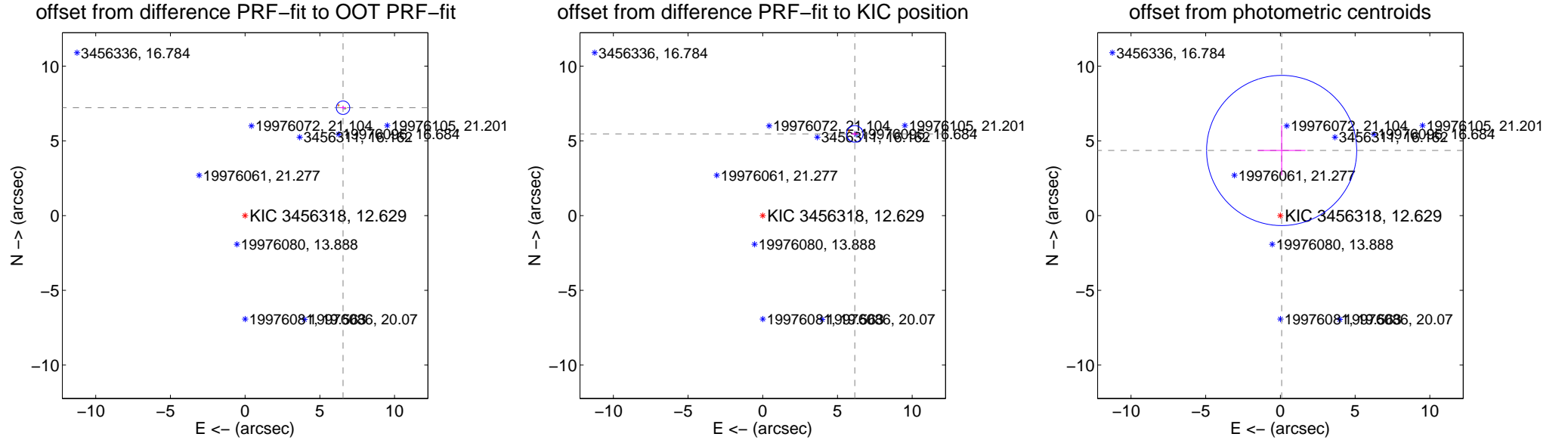
DV Centroid Data

Supplemental centroid analysis for 003456318-01. Kepler magnitude: 12.63. Transit SNR 11.05

There are 1 quarters with good PRF difference image offsets

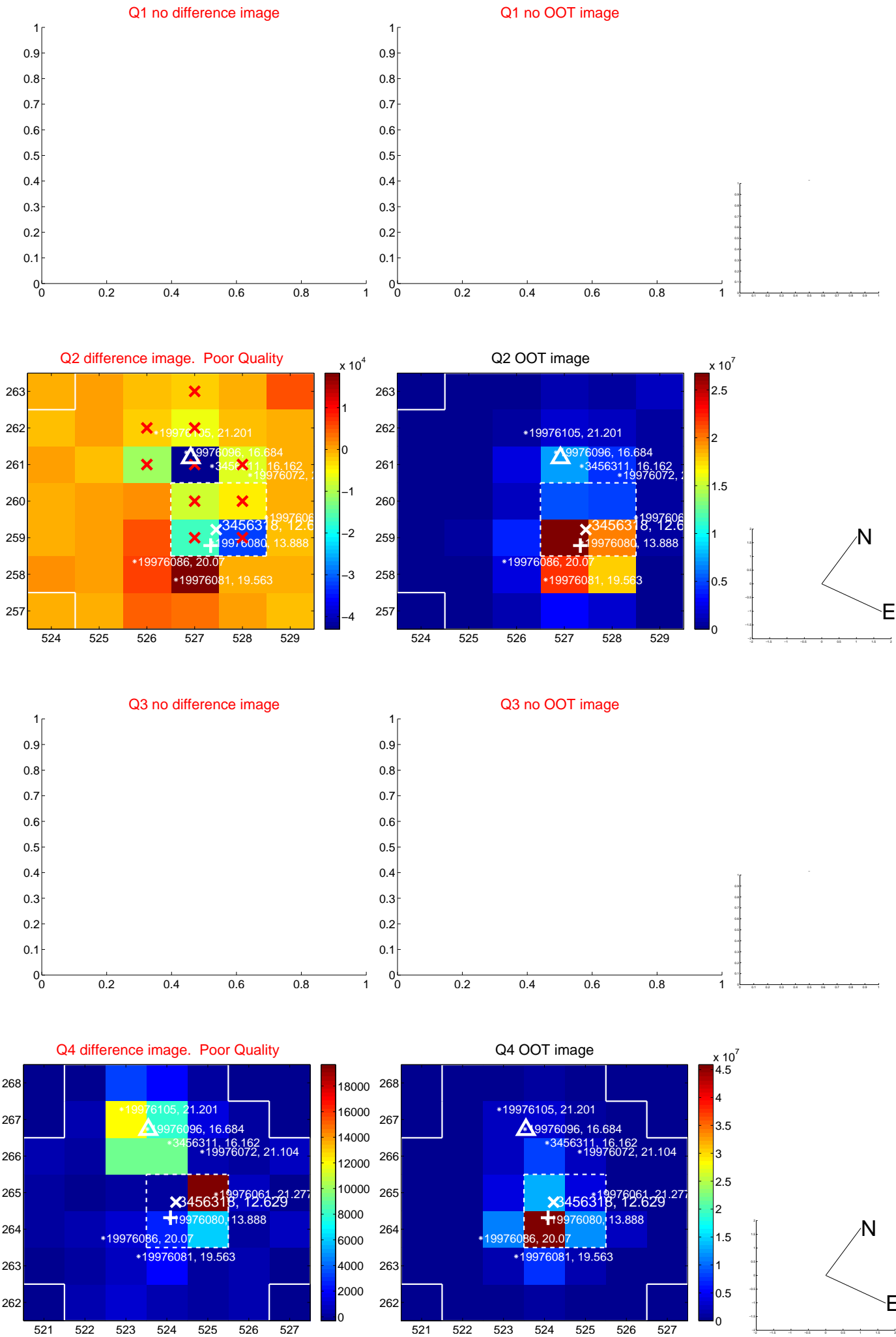
The direct PRF centroid is offset from the target star catalog position by about 1.82 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	9.748 \pm 0.150	65.06	-6.553 \pm 0.189	7.217 \pm 0.107
PRF-fit source offset from KIC position	8.235 \pm 0.185	44.56	-6.159 \pm 0.225	5.467 \pm 0.114
photometric centroid source offset	4.36 \pm 1.67	2.60	-0.08 \pm 1.59	4.36 \pm 1.67



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 are from the UKIRT catalog.

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



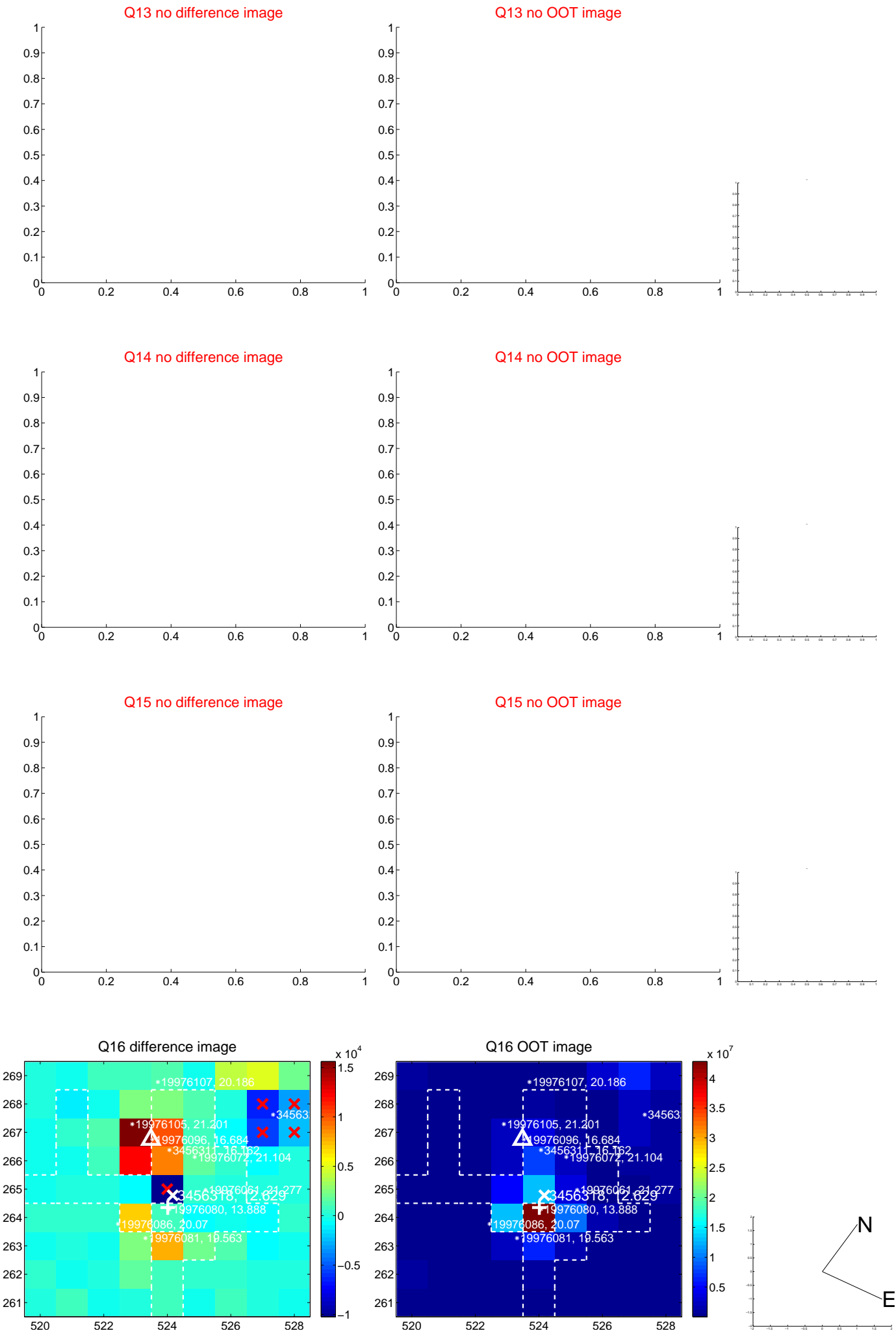
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



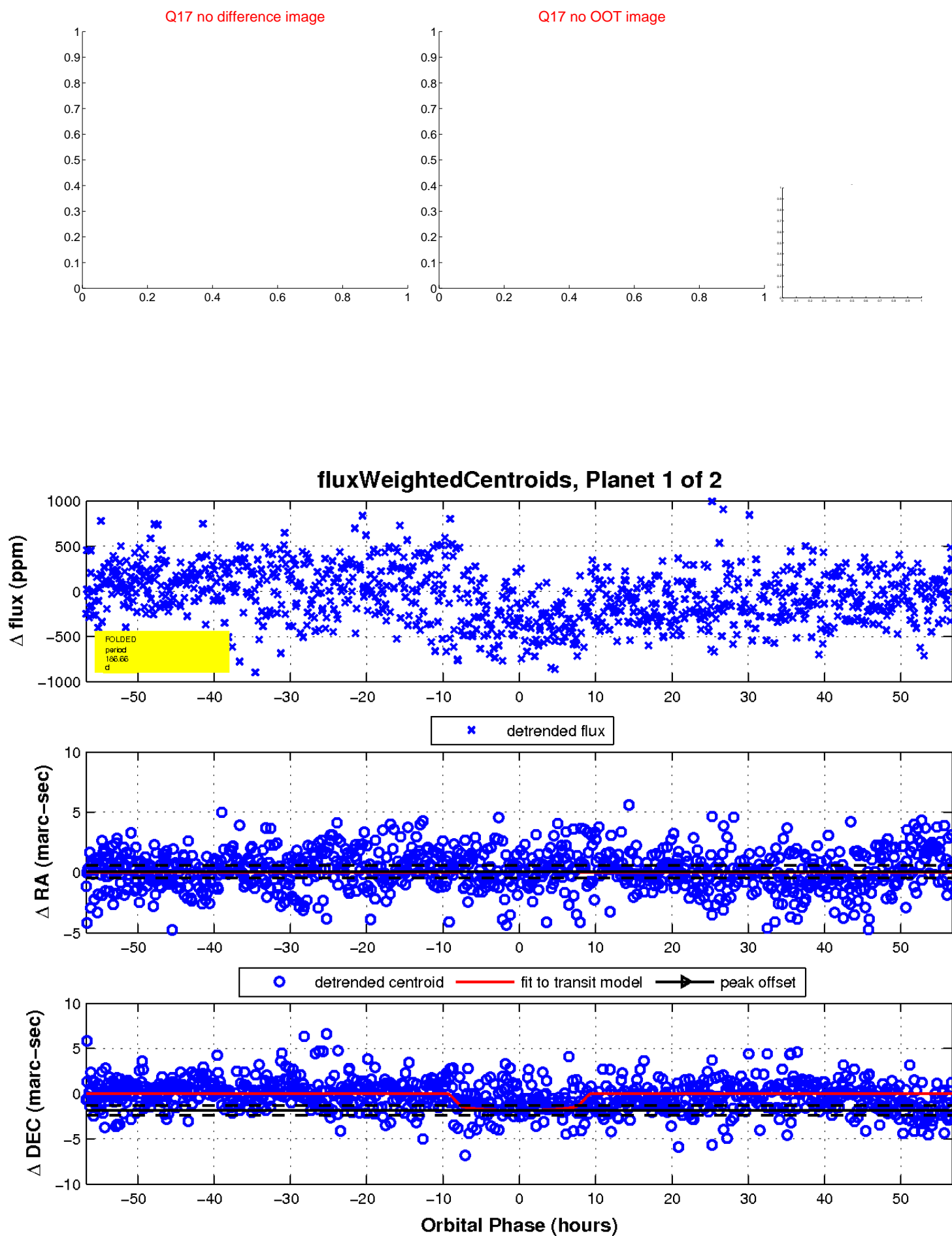
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

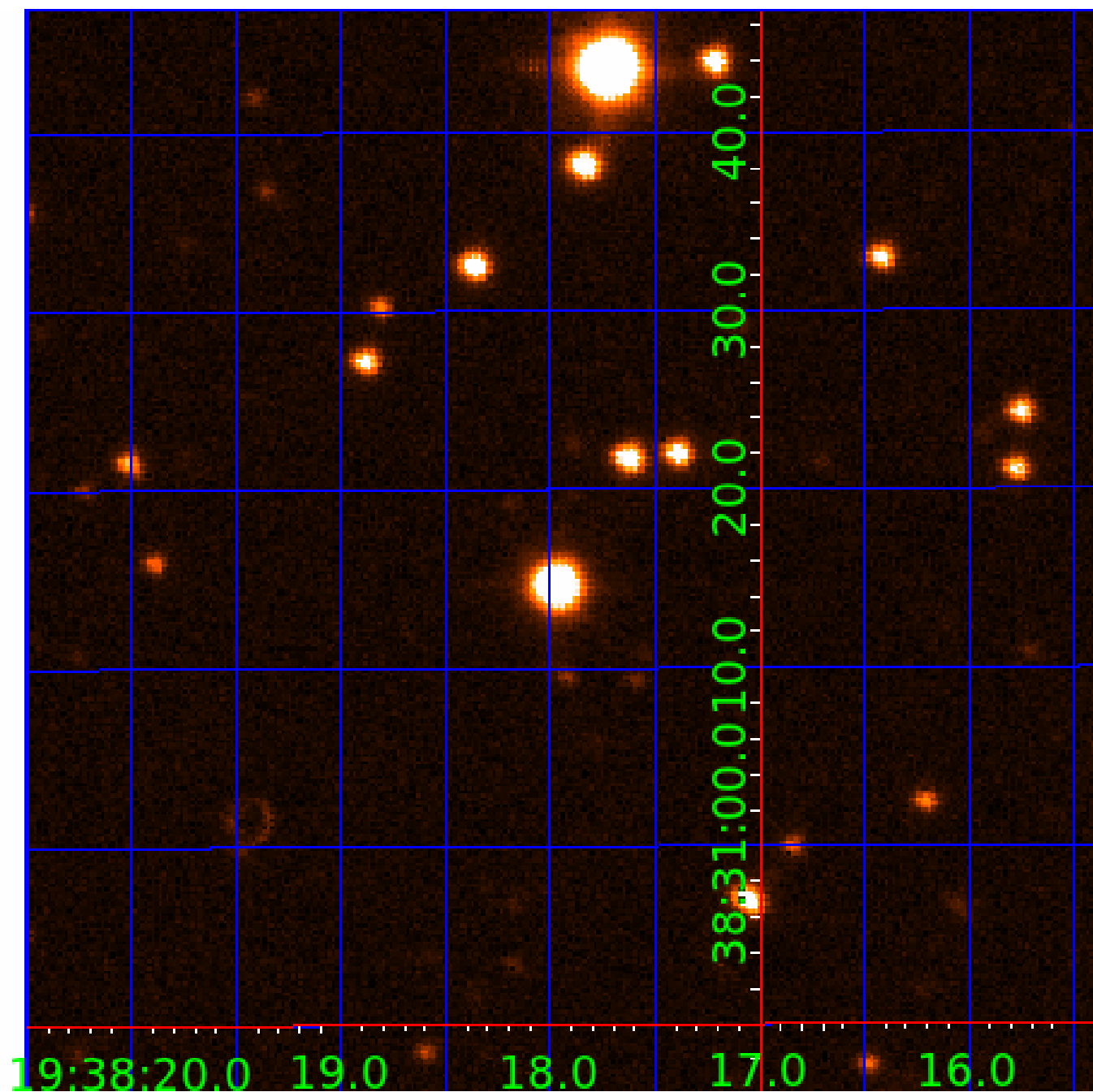


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003456318

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})
003456318-01	OBS	No	186.663736	244.257891	338.3	18.919	10.5	11.1	1.02	6064	2.23	3.11
003456318-02	OBS	No	501.881924	194.044606	313.3	17.748	9.3	9.2	1.02	6064	1.94	0.83

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003456318-01	OBS	FP	0.00	1	0	0	0	LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003456318-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

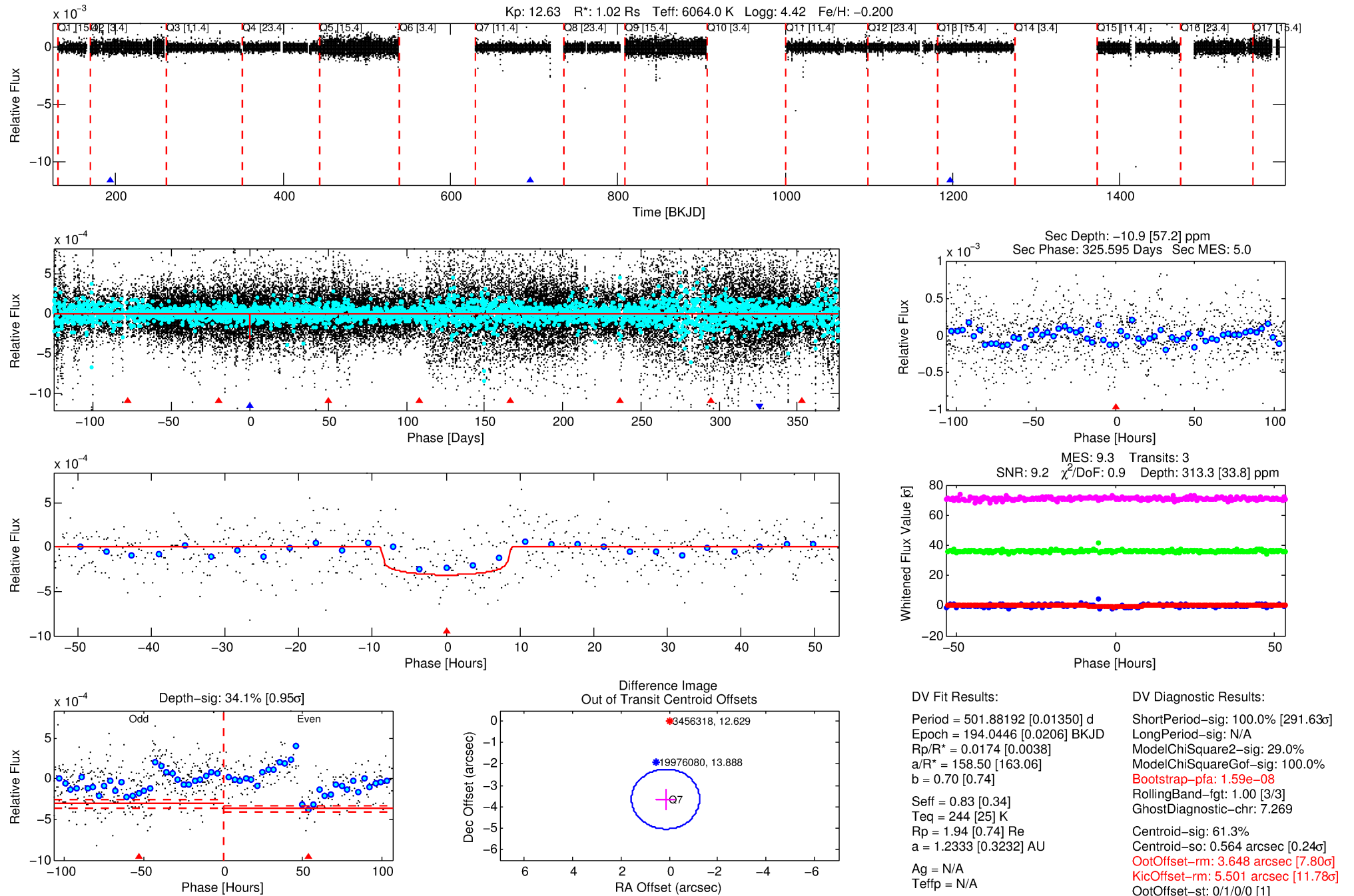
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003456318-02

No Significant Match Found

DV One-Page Summary

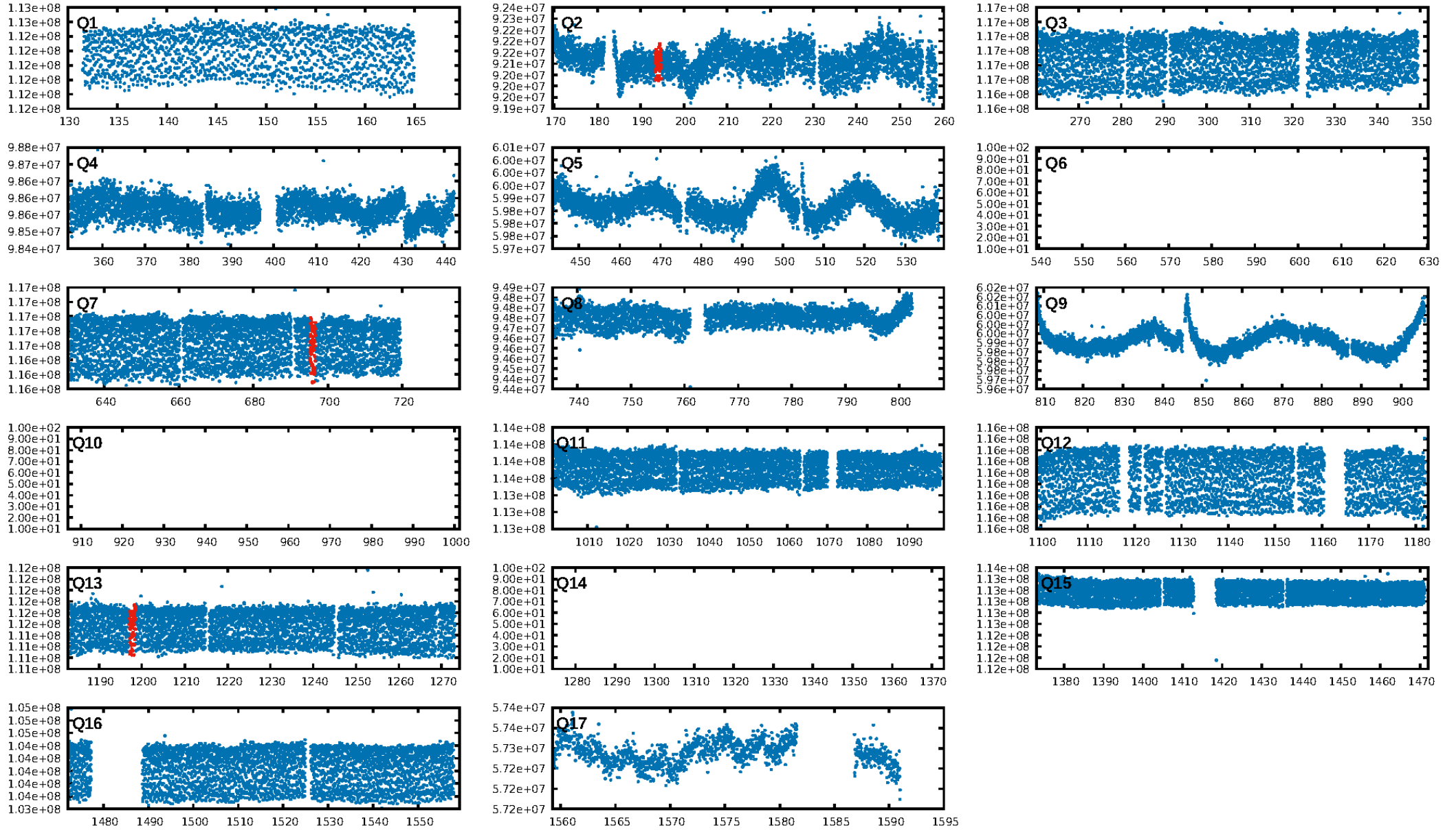
KIC: 3456318 Candidate: 2 of 2 Period: 501.882 d



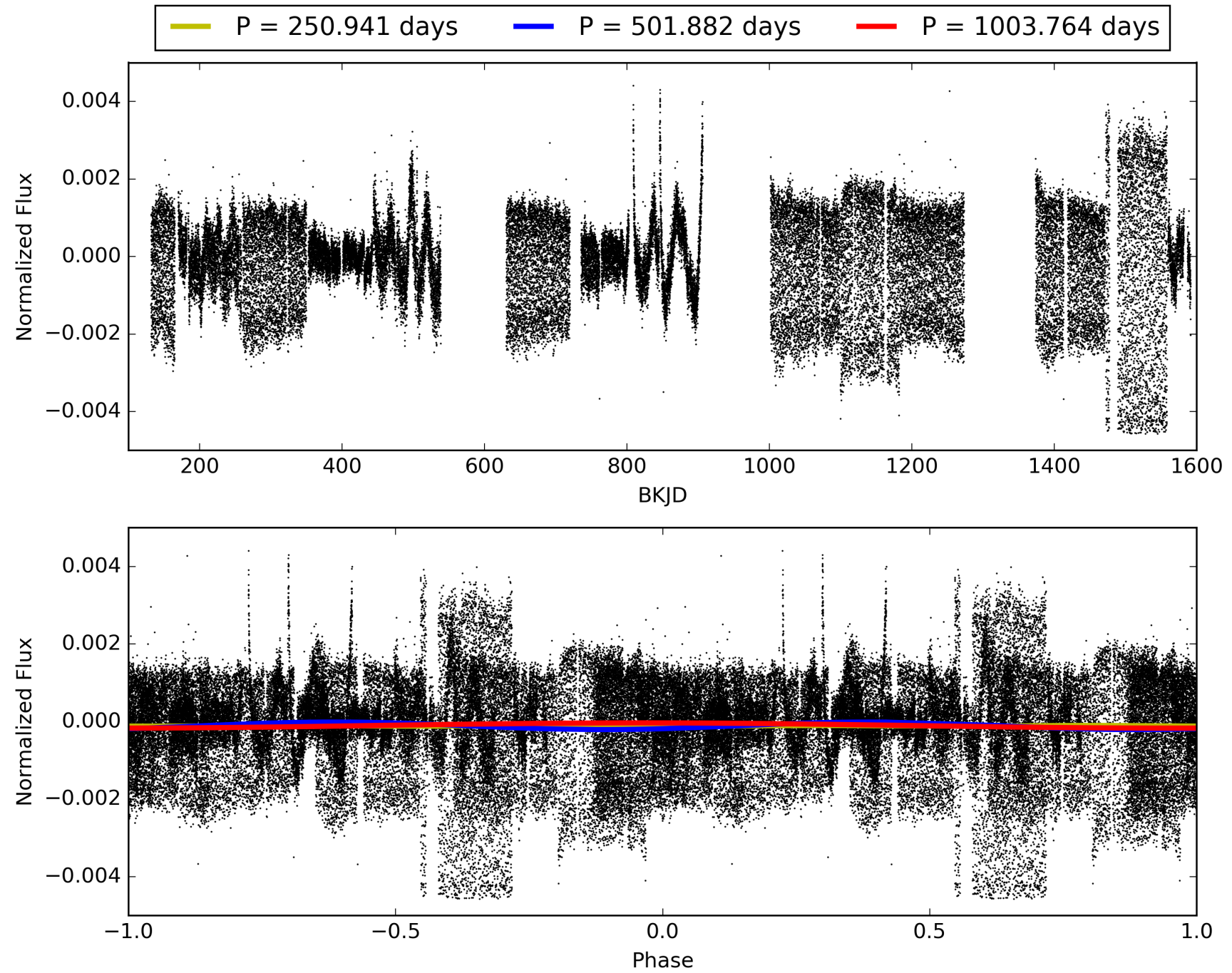
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:24:50 Z

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

TCE 003456318-02, PDC Light Curves

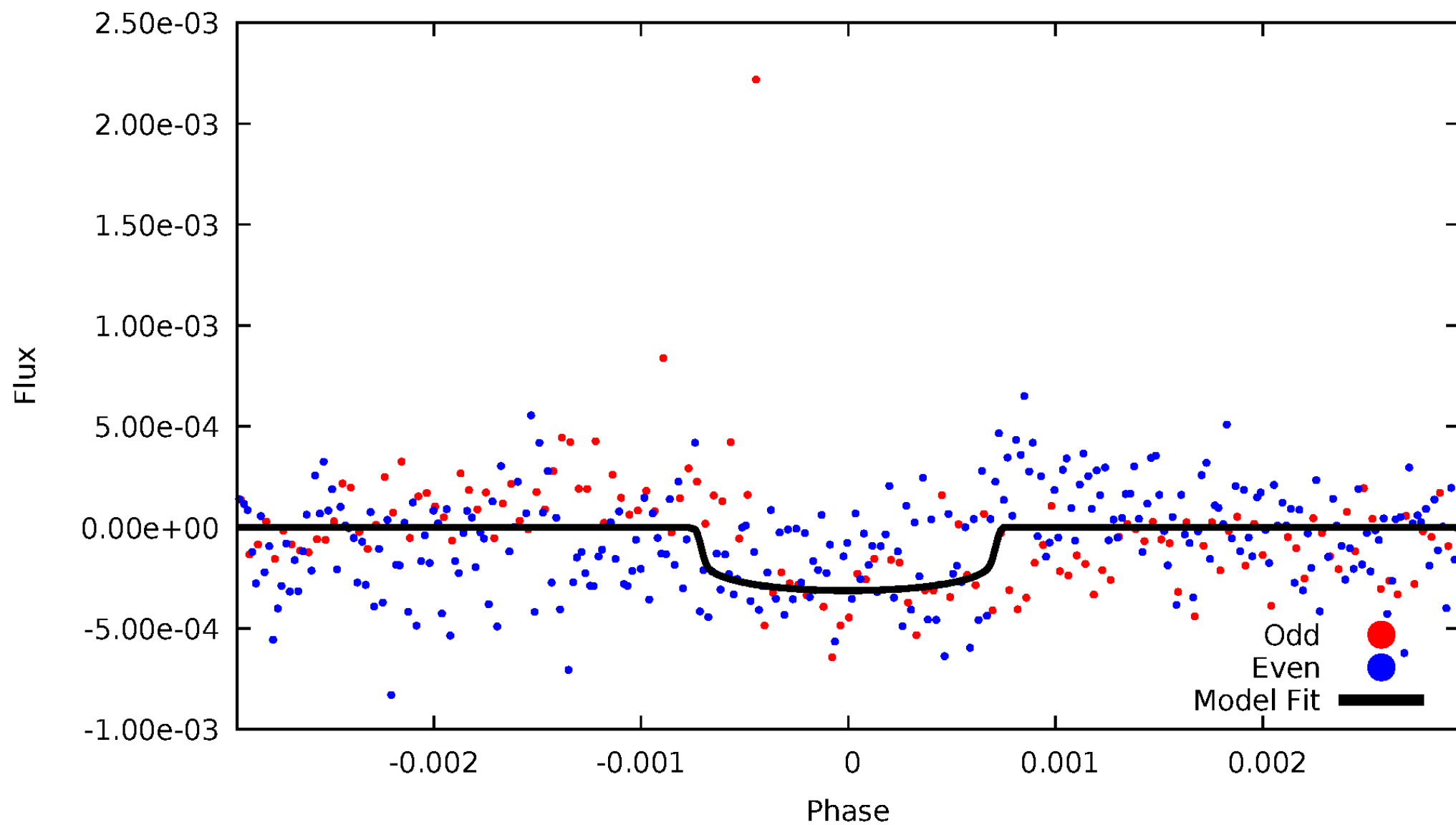


TCE 003456318-02



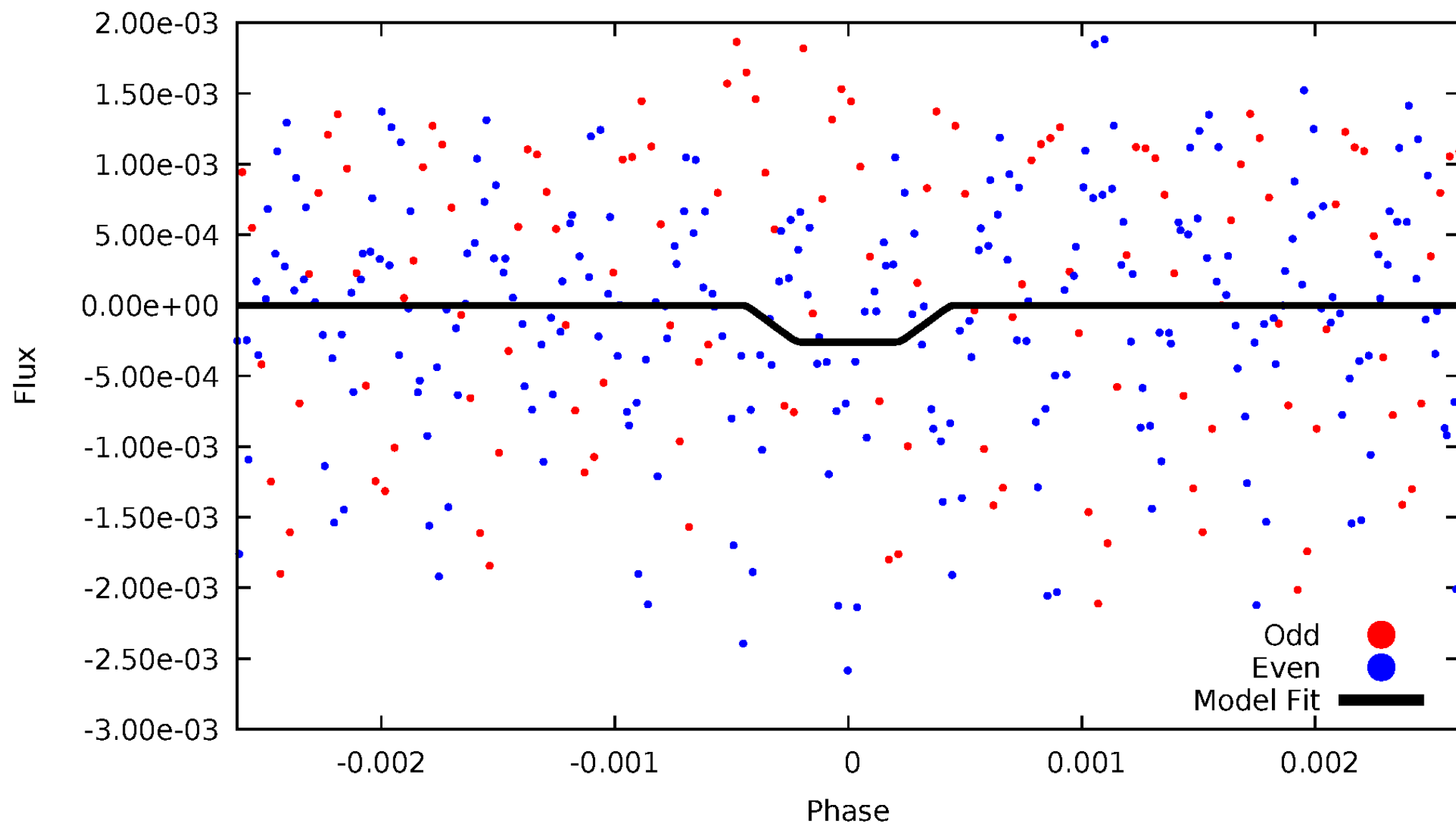
DV Odd/Even

TCE 003456318-02



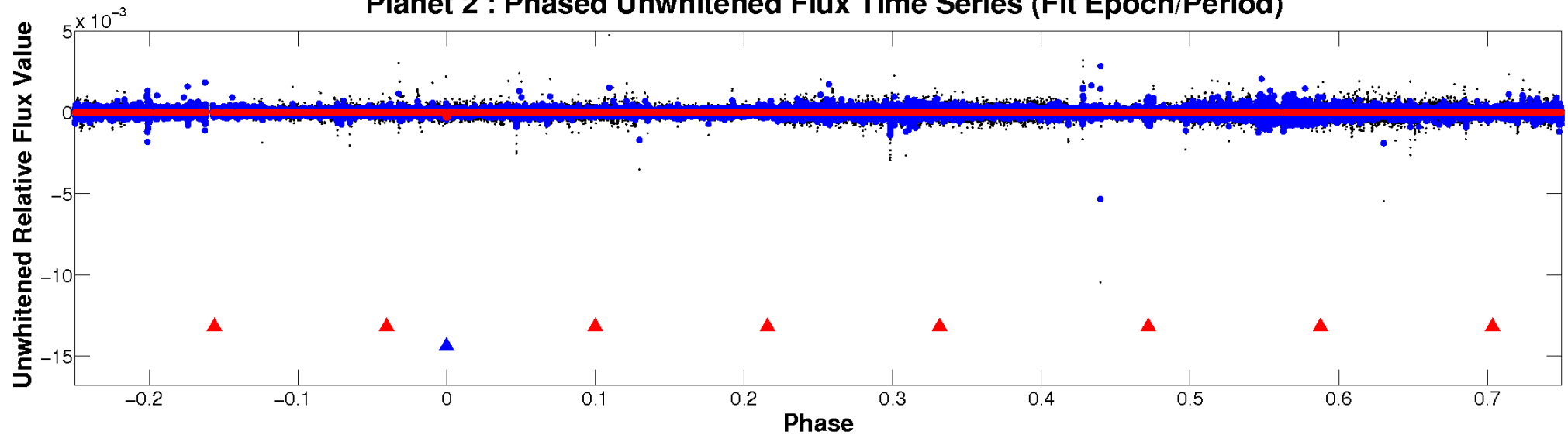
ALT Odd/Even

TCE 003456318-02

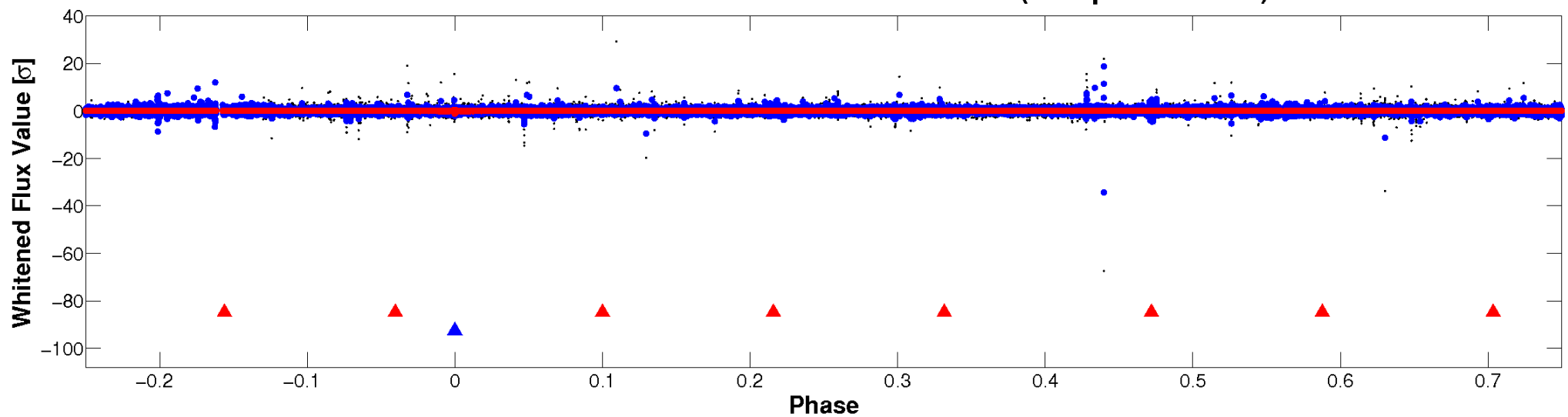


Non-Whitened Vs. Whitened Light Curve

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



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



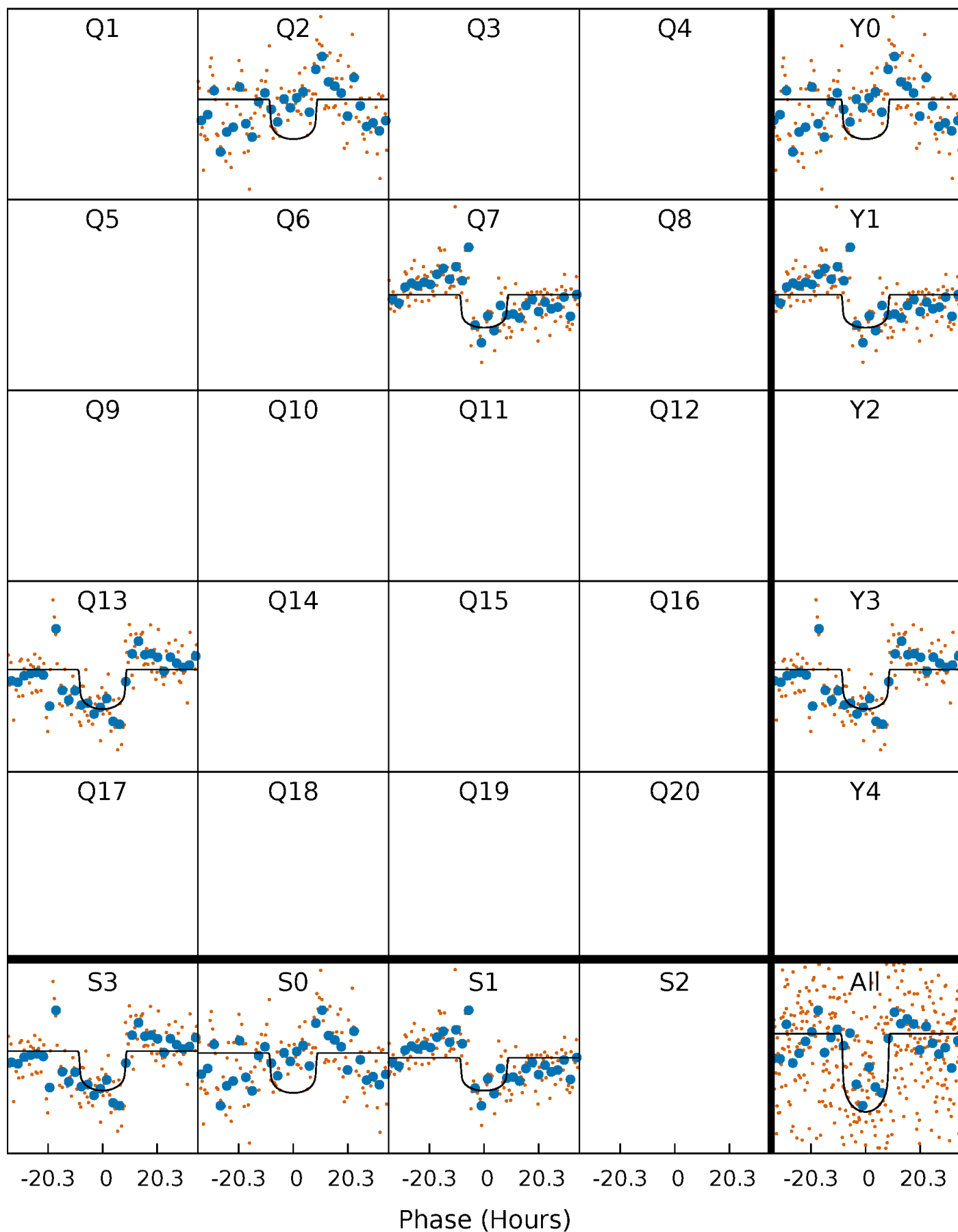
PDC Quarter-Phased Transit Curves

TCE 003456318-02 P=501.881924 Days $T_0=194.044606$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 003456318-02 P=501.881924 Days $T_0=194.044606$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

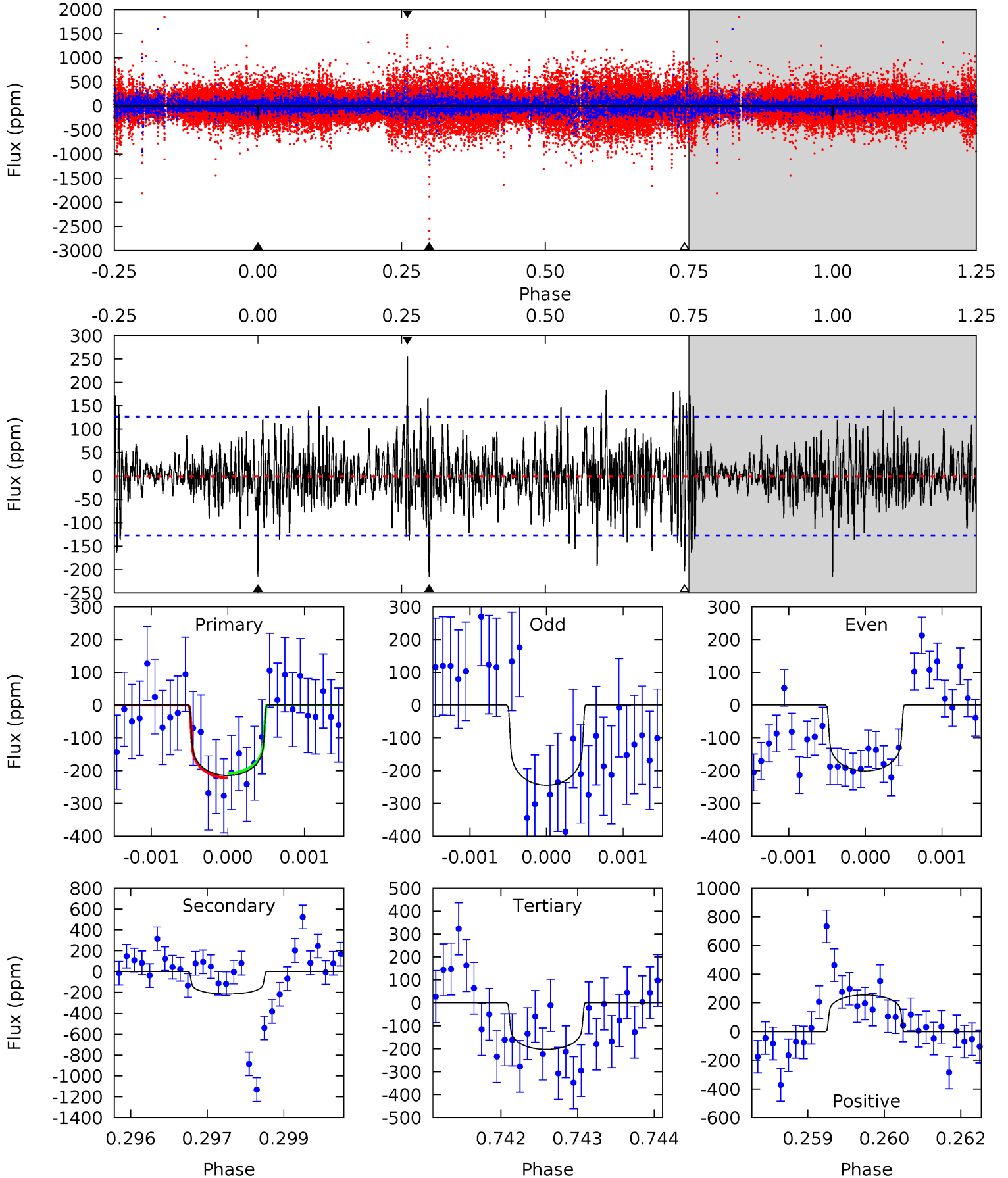
TCE 003456318-02 P=501.895912 Days $T_0=193.903879$ (BKJD)



DV Model-Shift Uniqueness Test

003456318-02, P = 501.881924 Days, E = 194.044606 Days

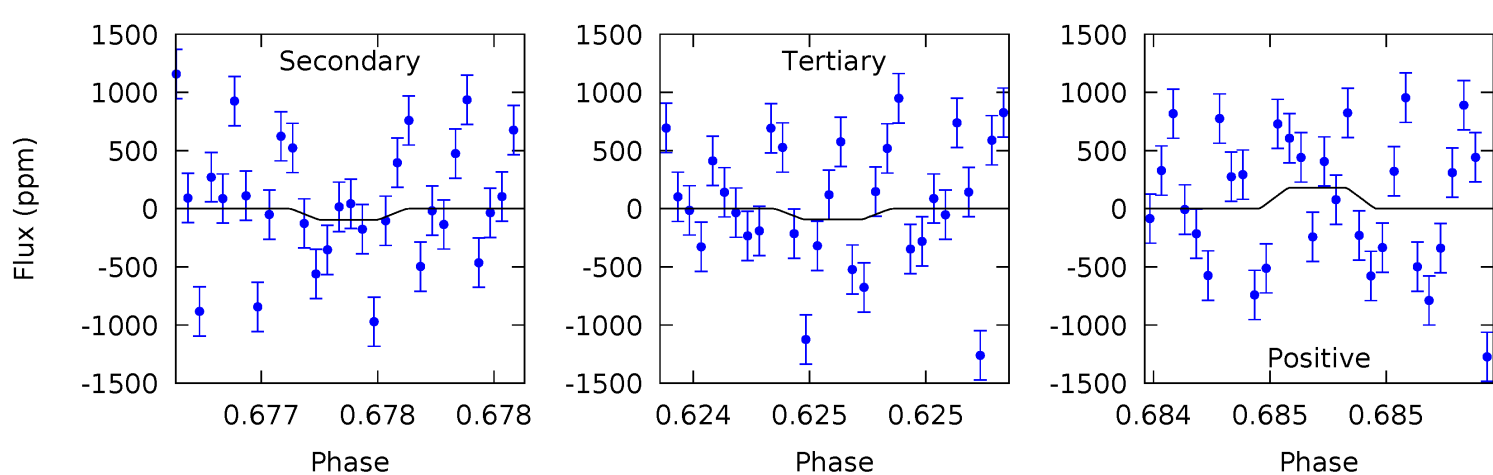
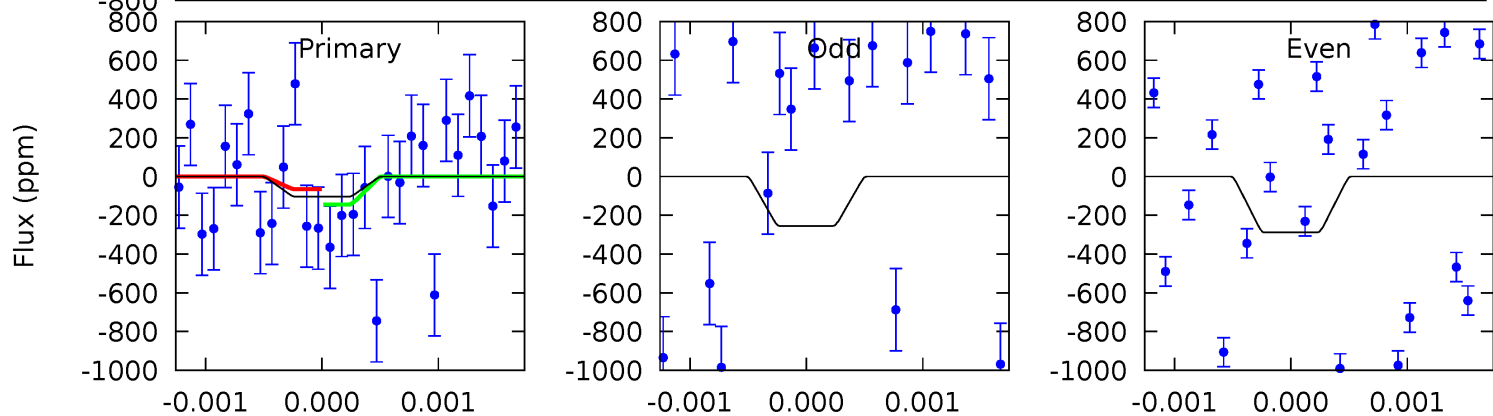
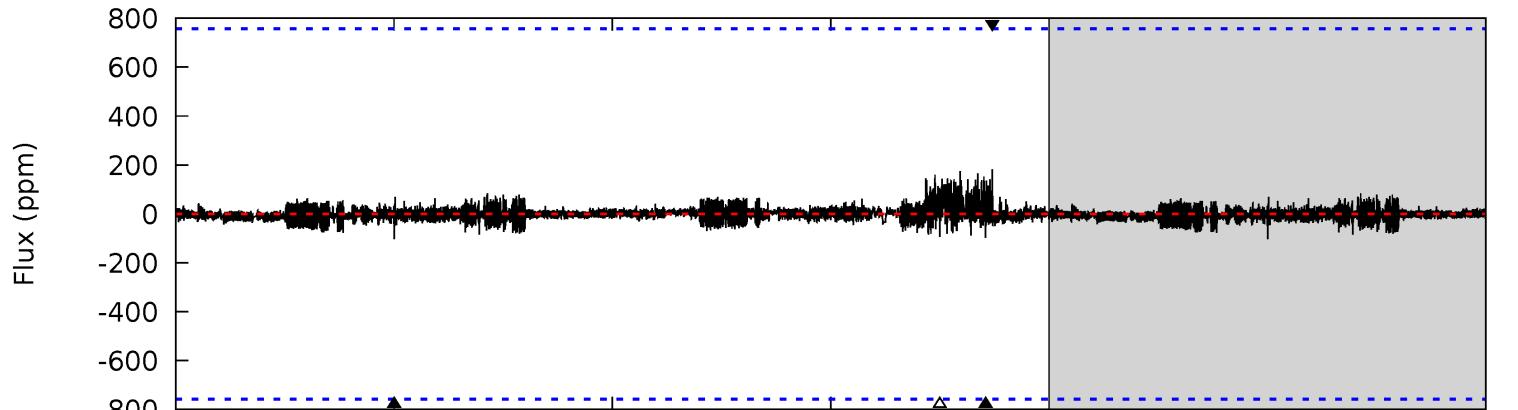
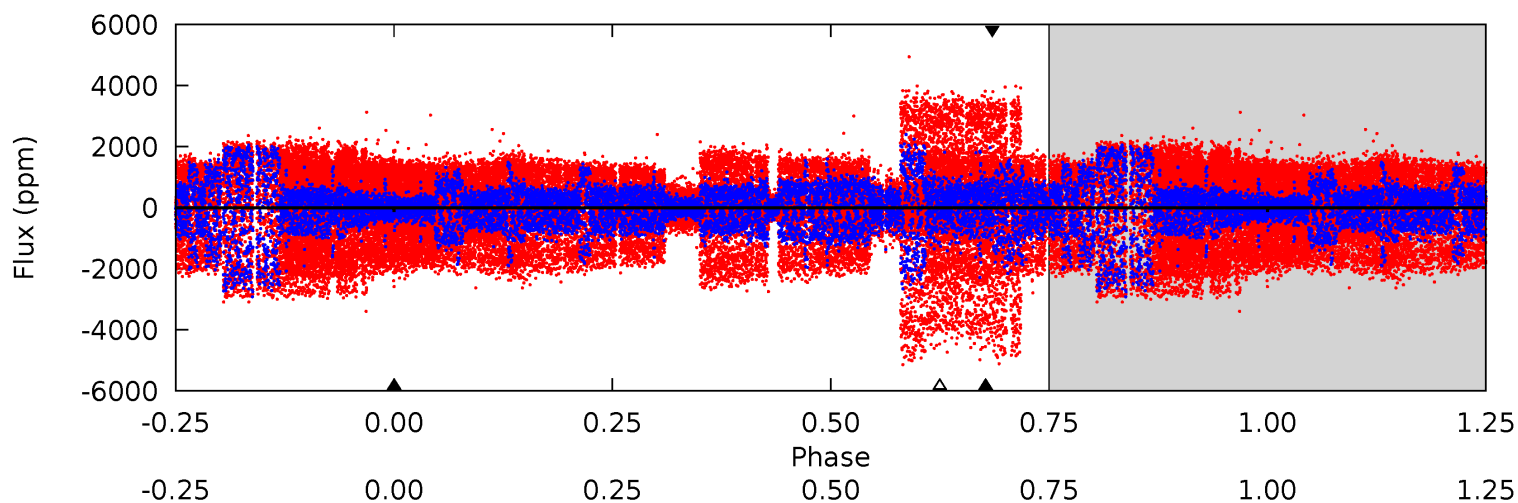
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.10	9.12	8.58	10.8	5.38	3.18	2.09	0.51	-1.68	0.54	-1.66	0.77	1.13	0.54	0.29



Alt Model-Shift Uniqueness Test

003456318-02, P = 501.895912 Days, E = 193.903879 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.75	0.70	0.67	1.31	5.47	3.33	0.20	0.08	-0.56	0.02	-0.61	0.11	0.70	0.64	0.28



Stellar Parameters For KIC 003456318

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6064^{+211}_{-232}	$4.416^{+0.101}_{-0.203}$	$-0.200^{+0.250}_{-0.300}$	$1.022^{+0.323}_{-0.138}$	$0.992^{+0.143}_{-0.117}$	$1.308^{+0.610}_{-0.669}$
	+3%/-4%	+2%/-5%	+125%/-150%	+32%/-14%	+14%/-12%	+47%/-51%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 003456318-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-216 ± 24	$2.01^{+0.53}_{-0.53}$	344^{+27}_{-19}	5586^{+762}_{-548}	44135^{+35466}_{-16287}
Alt.	-97 ± 138	$1.81^{+0.54}_{-0.43}$	344^{+24}_{-20}	4836^{+1343}_{-8954}	23718^{+46816}_{-33915}

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 $A_{obs} \gg 1.0$

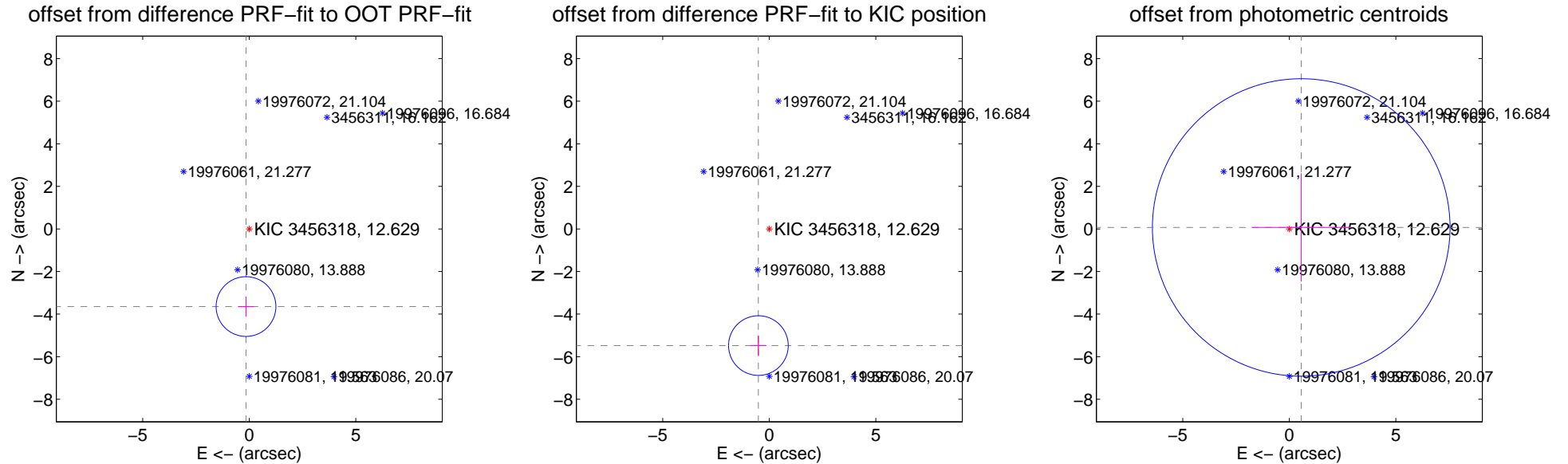
DV Centroid Data

Supplemental centroid analysis for 003456318-02. Kepler magnitude: 12.63. Transit SNR 9.17

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 1.87 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.648 ± 0.468	7.80	0.152 ± 0.373	-3.645 ± 0.468
PRF-fit source offset from KIC position	5.501 ± 0.467	11.78	0.510 ± 0.373	-5.477 ± 0.468
photometric centroid source offset	0.56 ± 2.33	0.24	-0.56 ± 2.33	0.07 ± 2.54



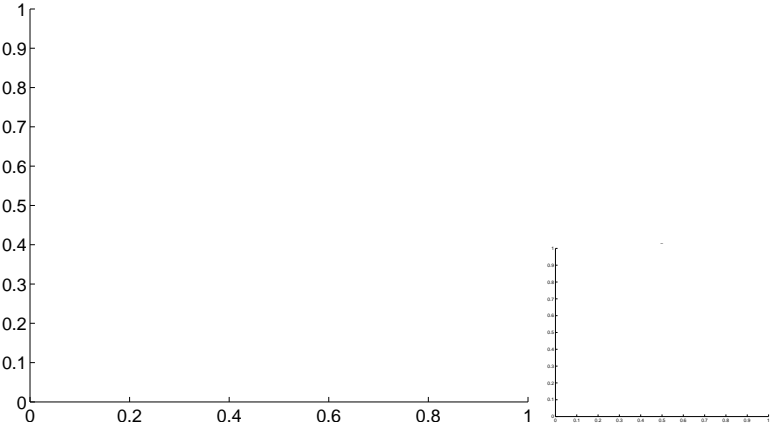
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

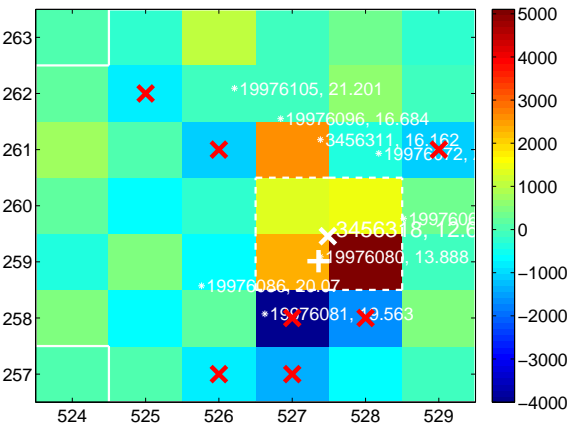
Q1 no difference image



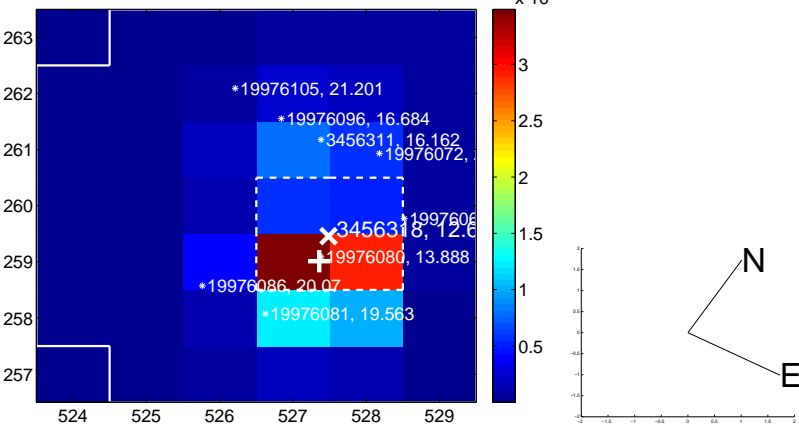
Q1 no OOT image



Q2 difference image. Poor Quality



Q2 OOT image



Q3 no difference image



Q3 no OOT image



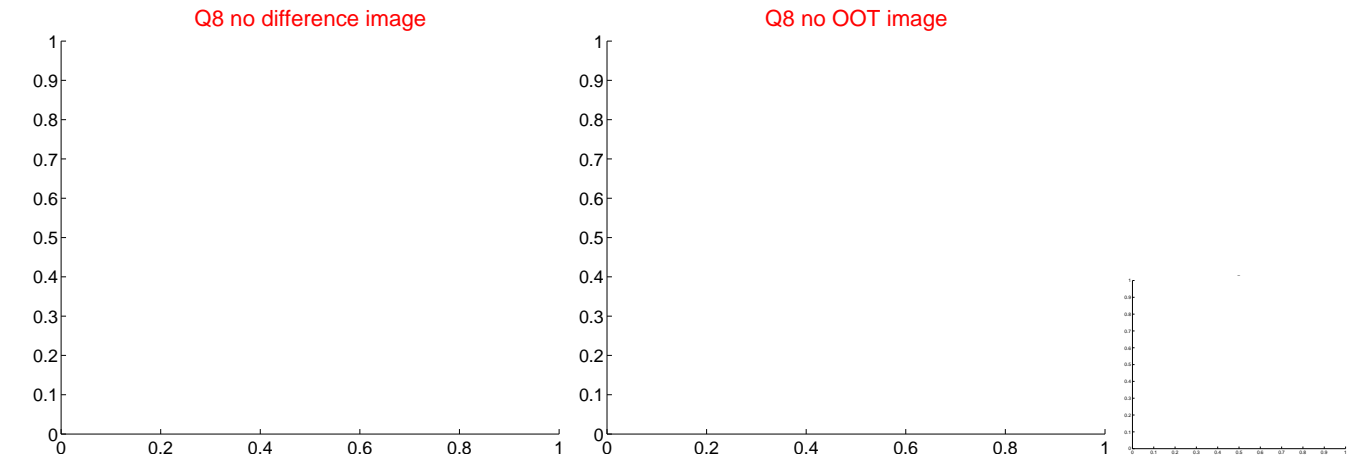
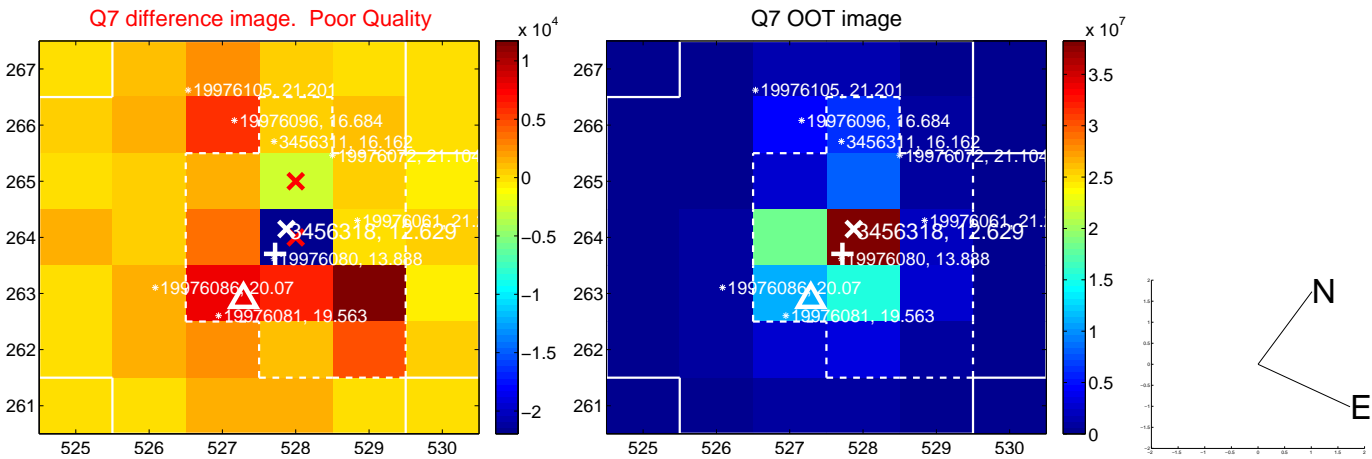
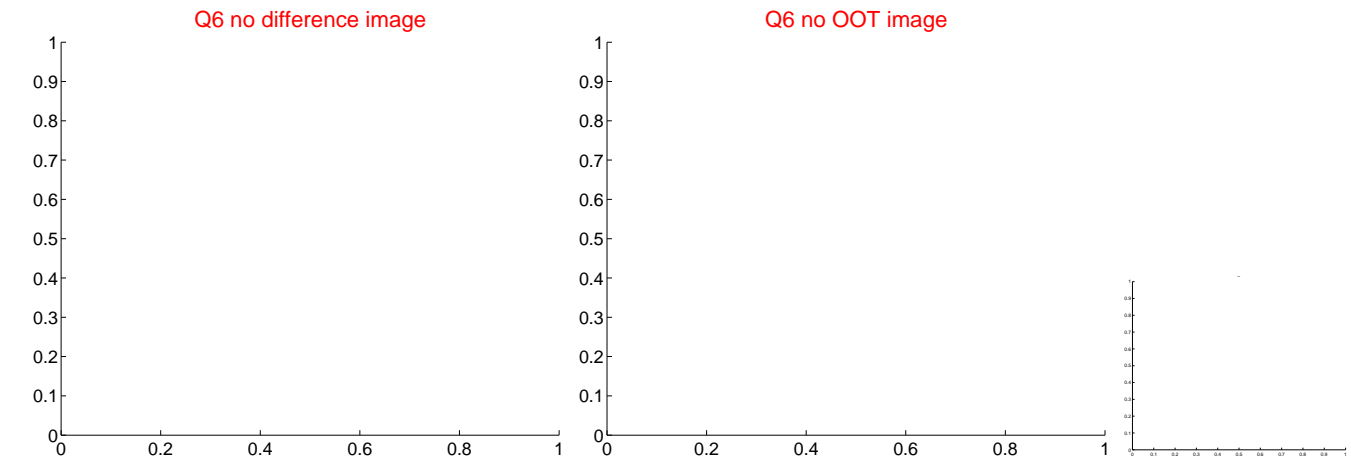
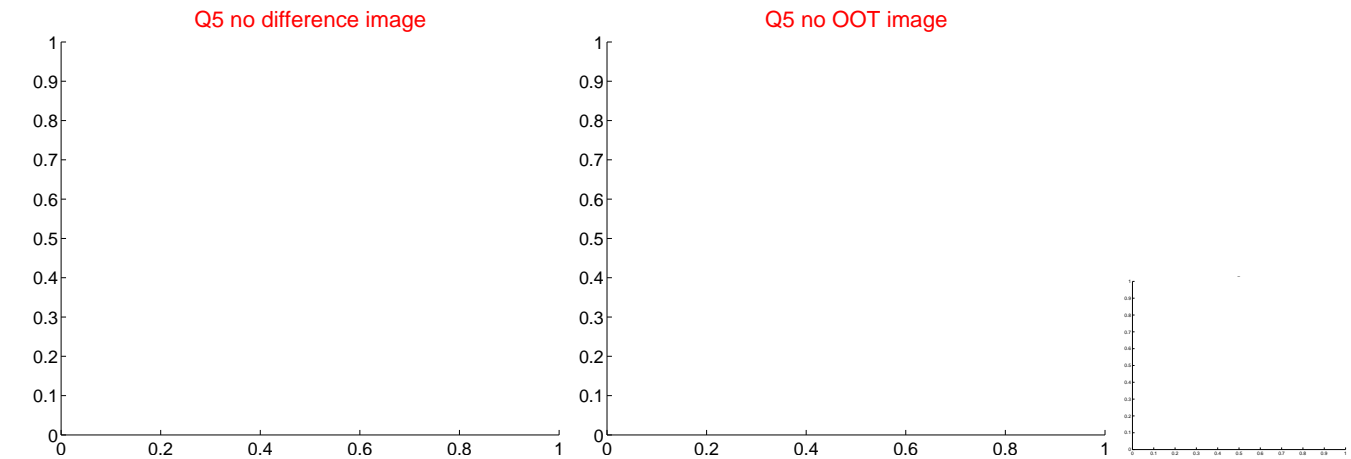
Q4 no difference image



Q4 no OOT image



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



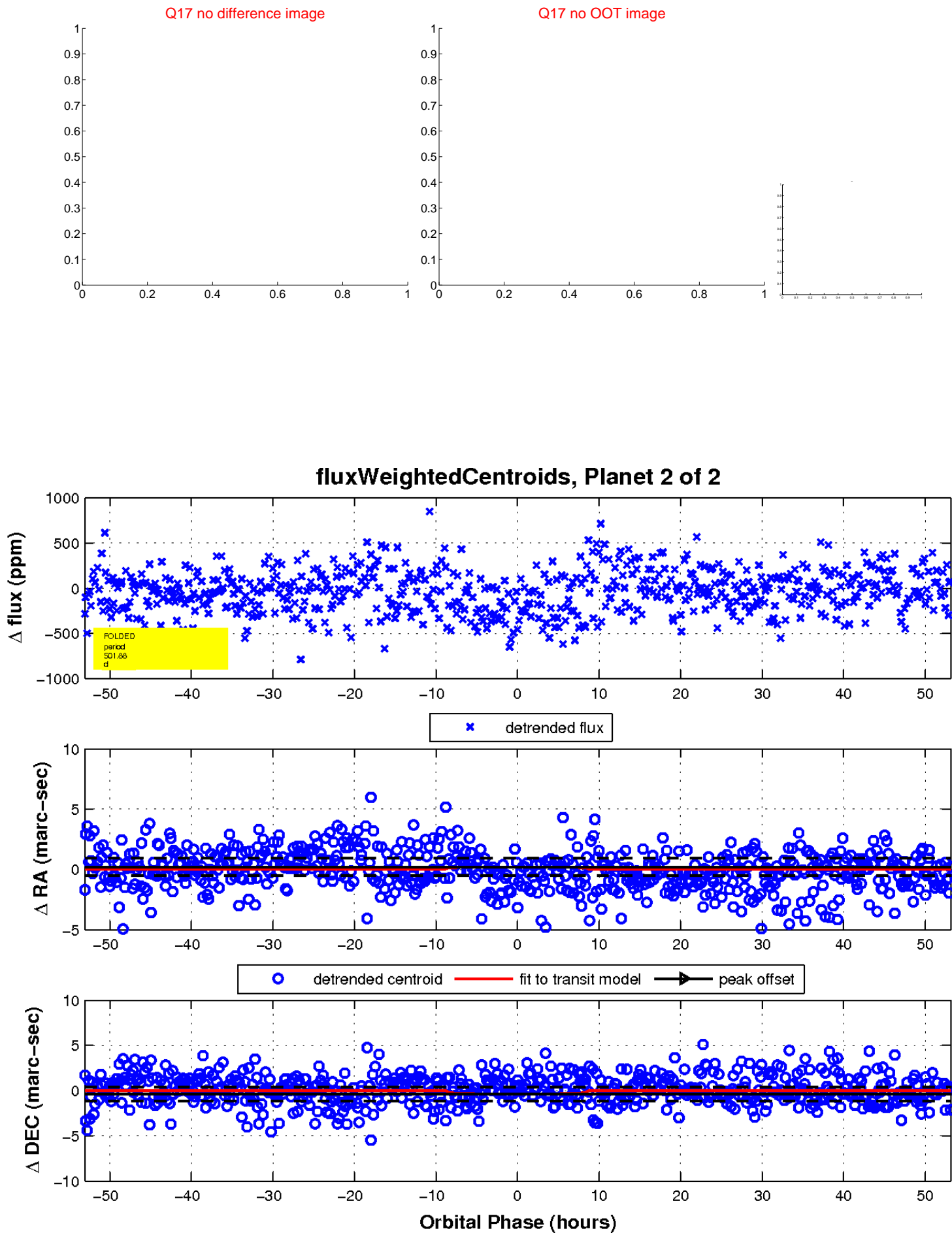
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

