

KIC 001028246

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})
001028246-01	OBS	No	105.276022	147.315878	1652.3	2.875	17.8	4.6	9.10	5443	37.12	236.80
001028246-02	OBS	No	192.927330	212.183651	319.4	2.958	14.7	1.0	9.10	5443	17.31	105.59

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001028246-01	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_DIFFS
001028246-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—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.

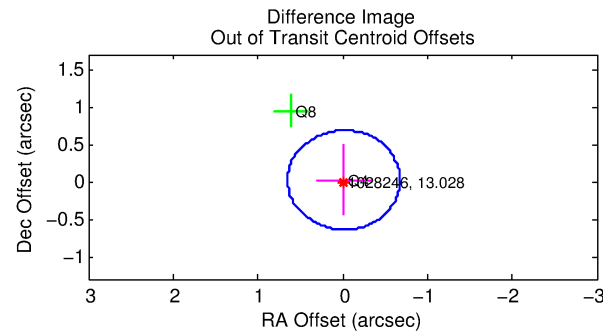
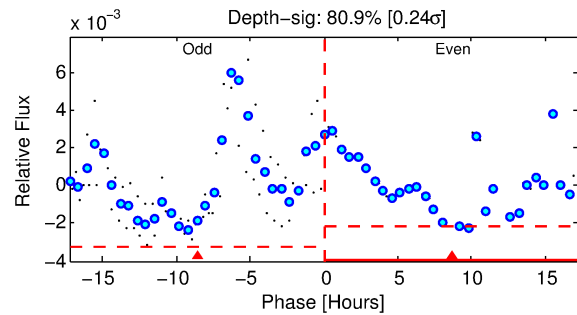
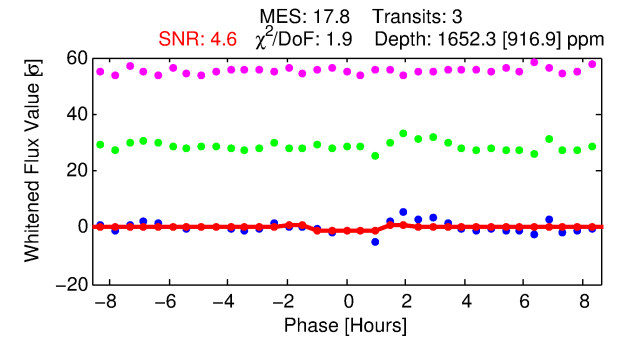
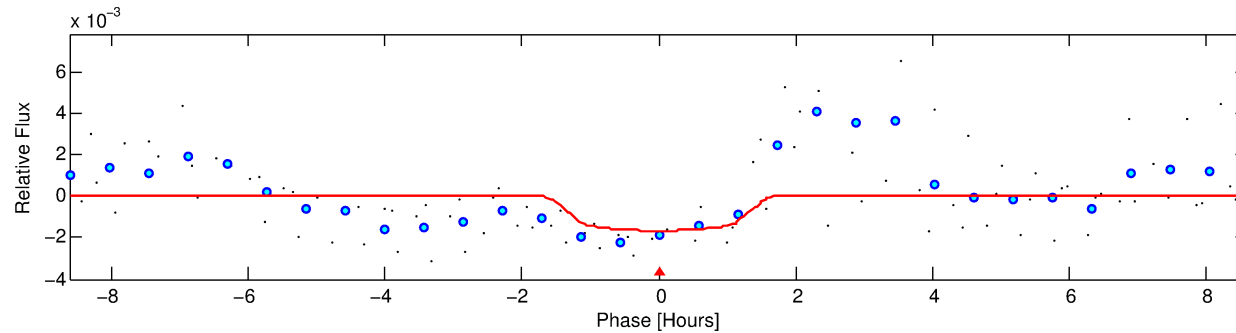
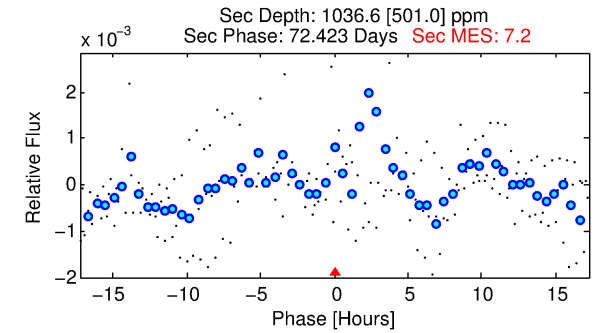
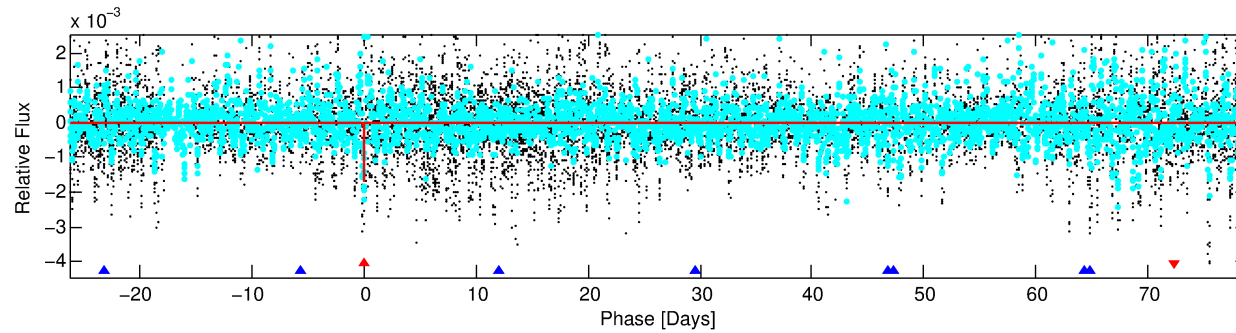
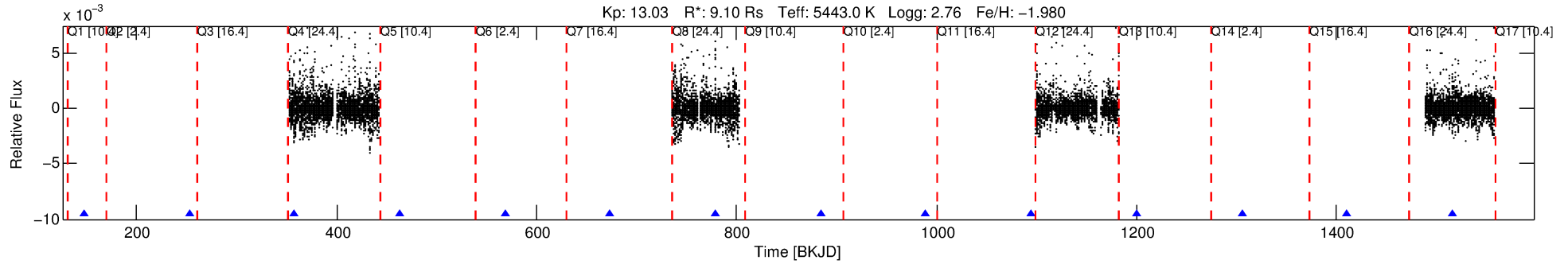
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 001028246-01

No Significant Match Found

DV One-Page Summary

KIC: 1028246 Candidate: 1 of 2 Period: 105.276 d



DV Fit Results:

Period = 105.27602 [0.00142] d
Epoch = 147.3159 [0.0140] BKJD
Rp/R* = 0.0374 [0.0619]
a/R* = 284.57 [2313.32]
b = 0.20 [38.86]
Seff = 236.80 [146.25]
Teq = 1000 [154] K
Rp = 37.12 [63.82] Re
a = 0.5242 [0.2133] AU
Ag = 113.75 [386.79] [0.29 σ]
Teffp = 5051 [4226] K [0.96 σ]

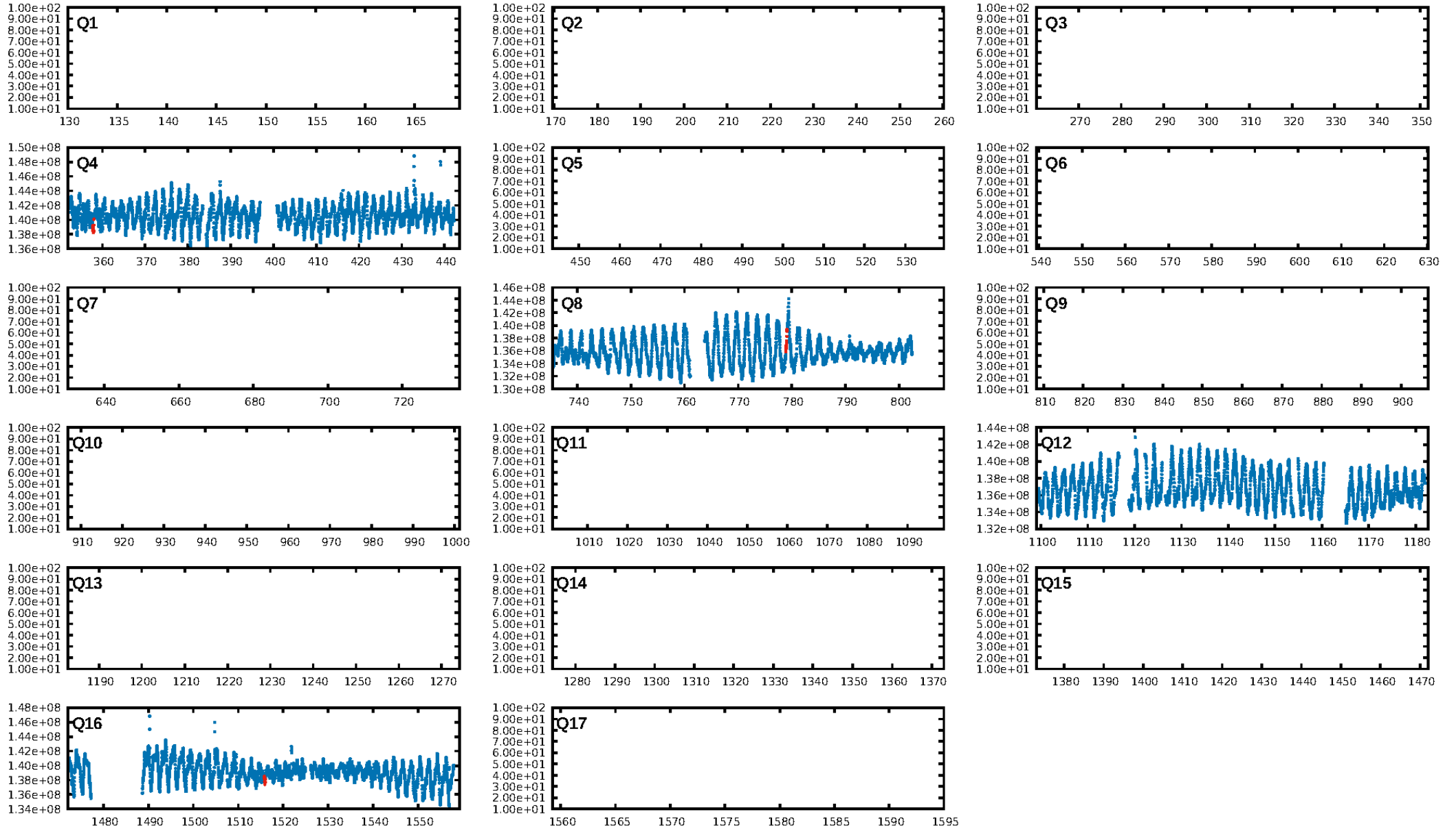
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [509.91 σ]
ModelChiSquare2-sig: 62.1%
ModelChiSquareGof-sig: 75.9%
Bootstrap-pfa: 3.78e-18
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.272
Centroid-sig: 13.6%
Centroid-so: 0.803 arcsec [1.40 σ]
OotOffset-rm: 0.026 arcsec [0.12 σ]
OotOffset-st: 0/0/2/0 [2]
KicOffset-rm: 0.168 arcsec [0.26 σ]
KicOffset-st: 0/0/2/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

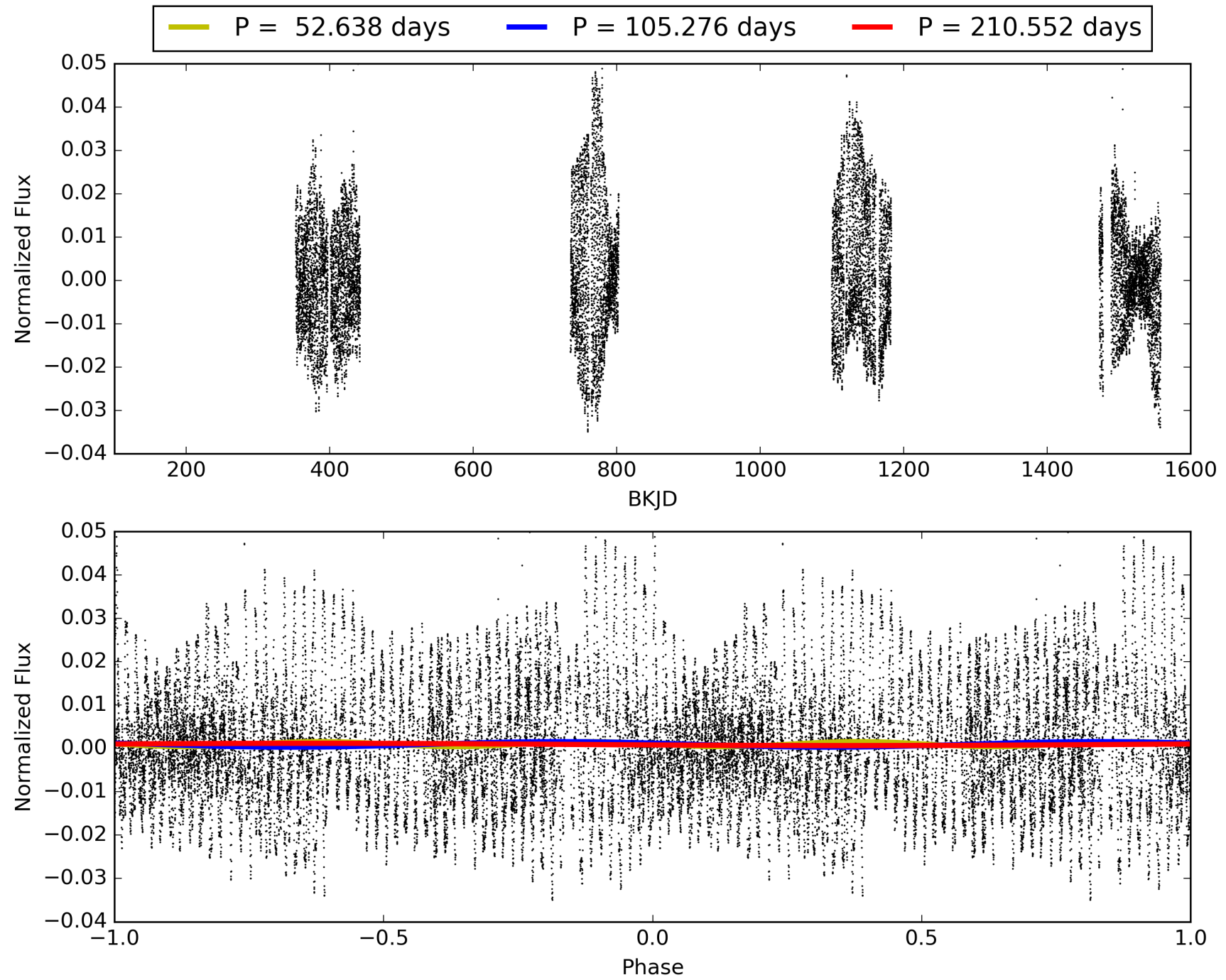
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 18:45:57 Z

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

TCE 001028246-01, PDC Light Curves

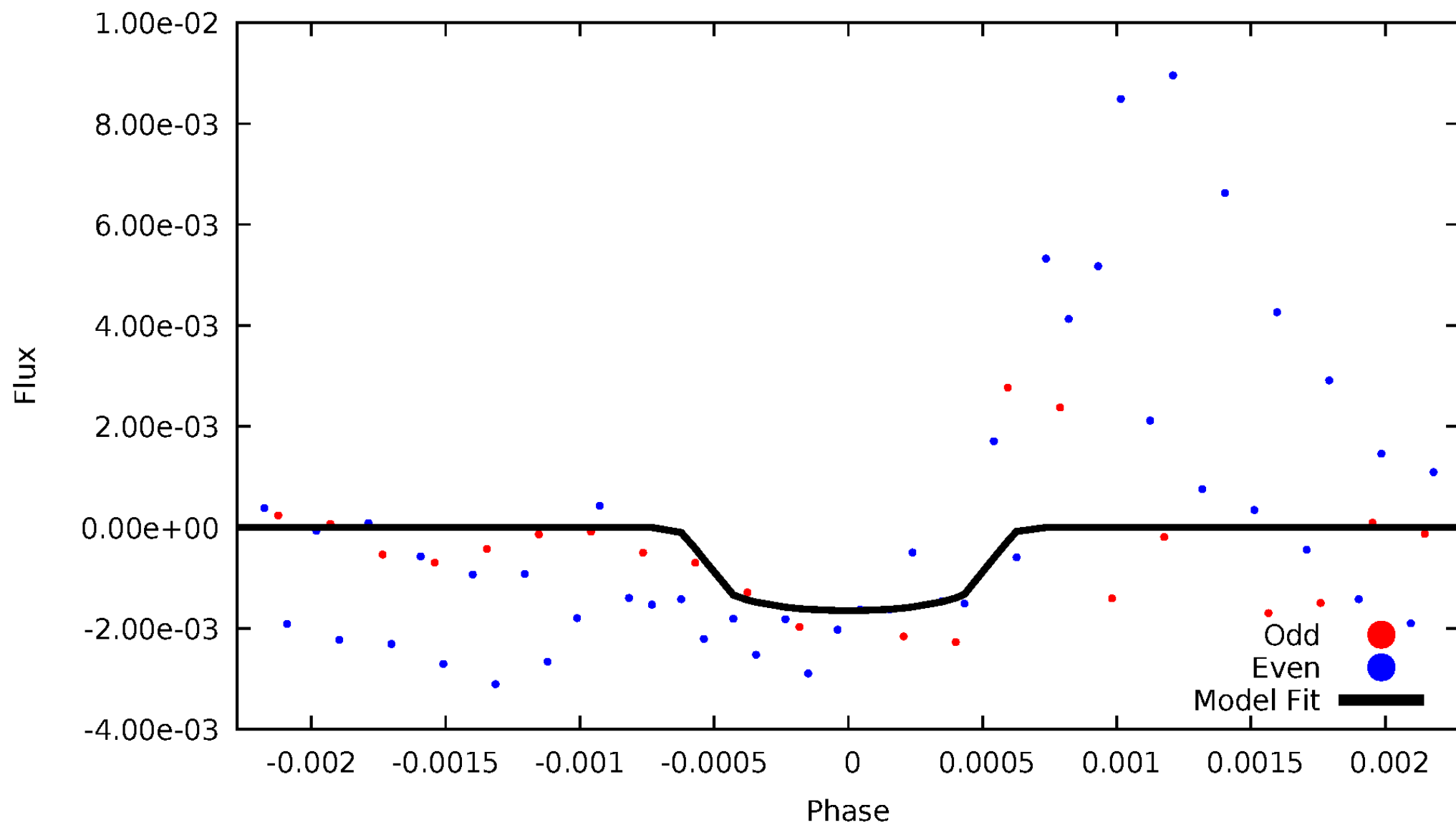


TCE 001028246-01



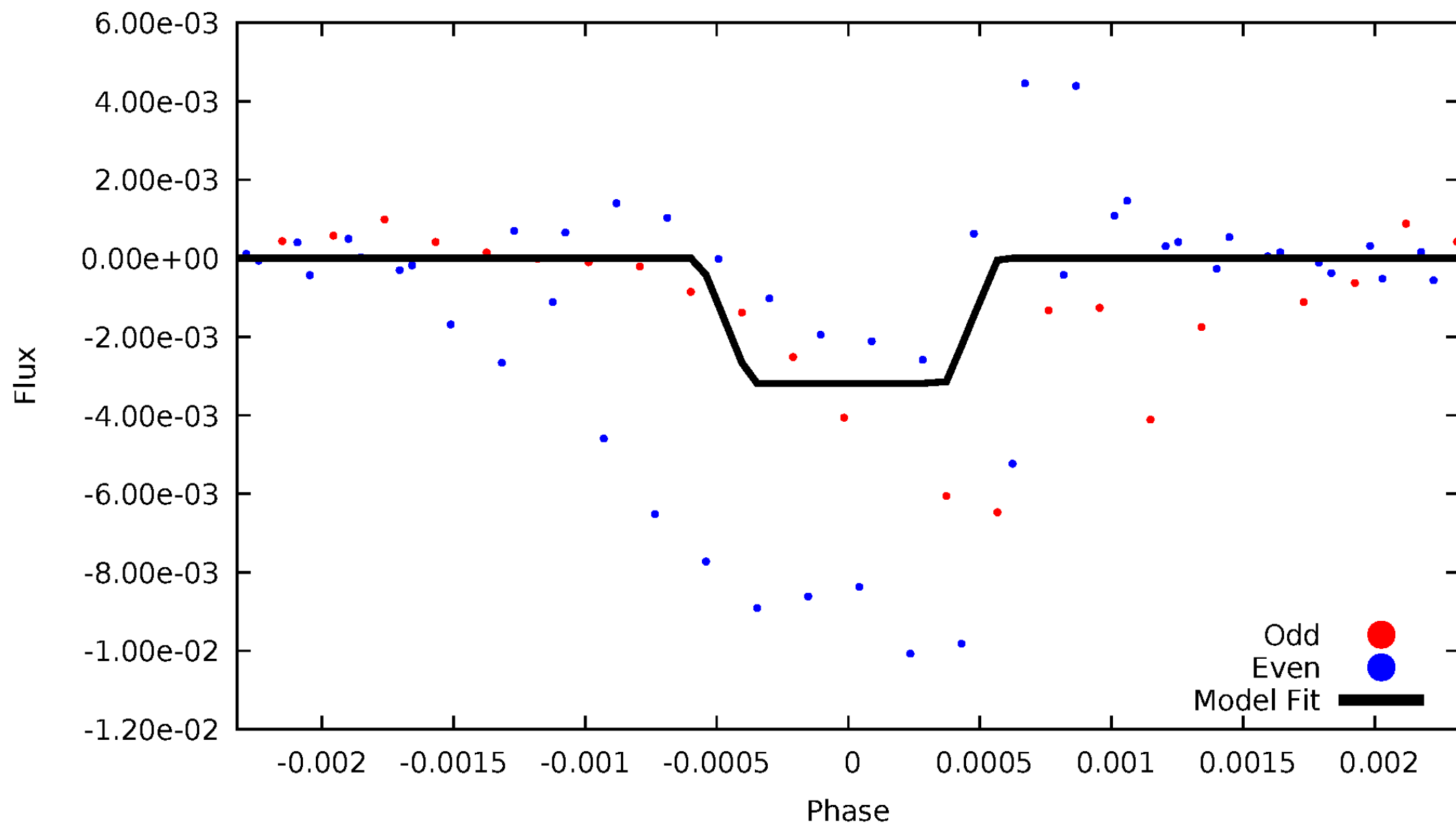
DV Odd/Even

TCE 001028246-01



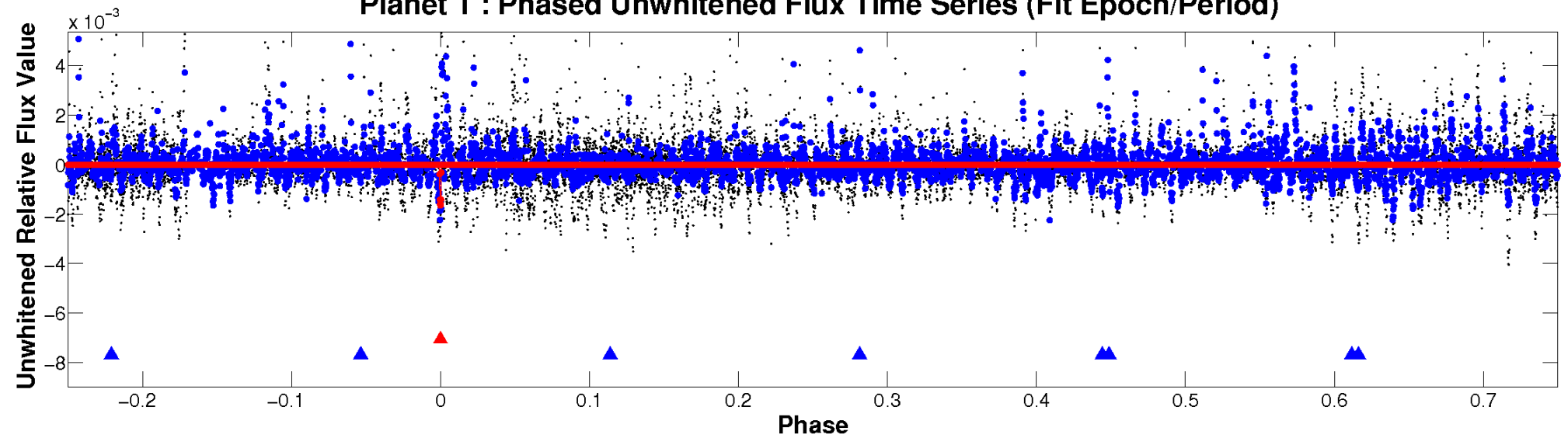
ALT Odd/Even

TCE 001028246-01

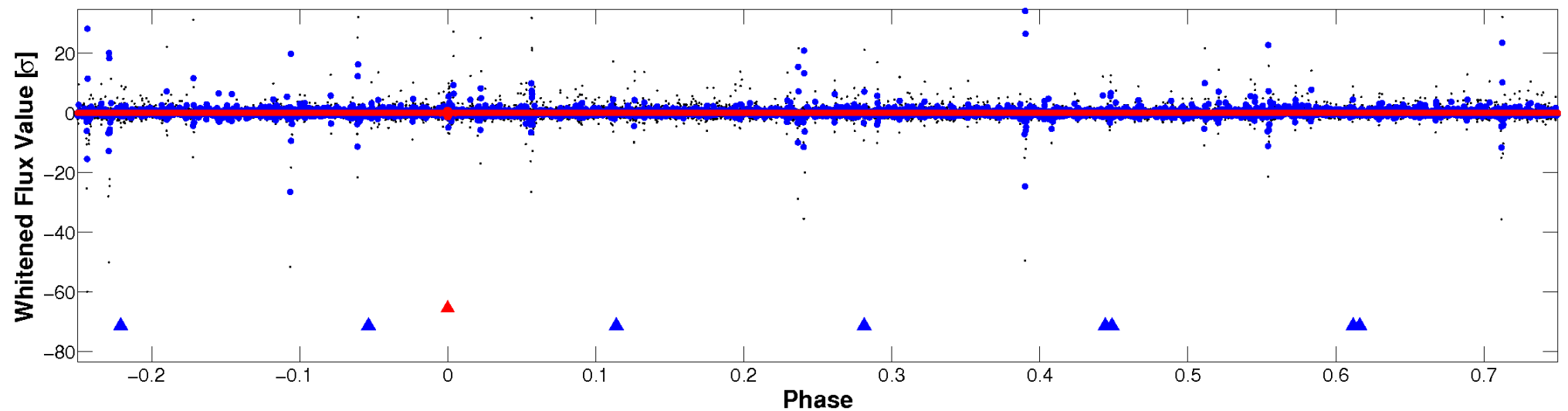


Non-Whitened Vs. Whitened Light Curve

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

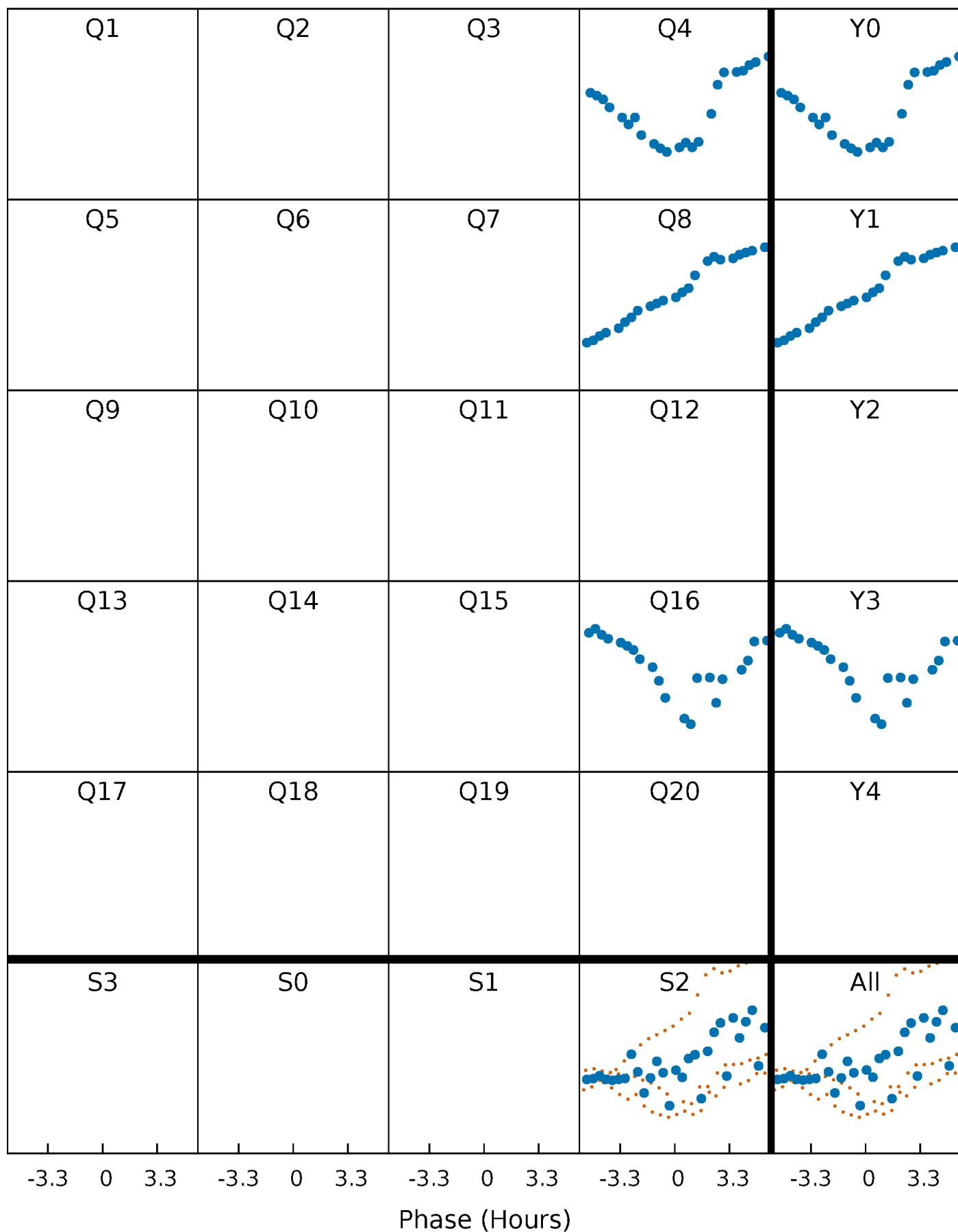


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



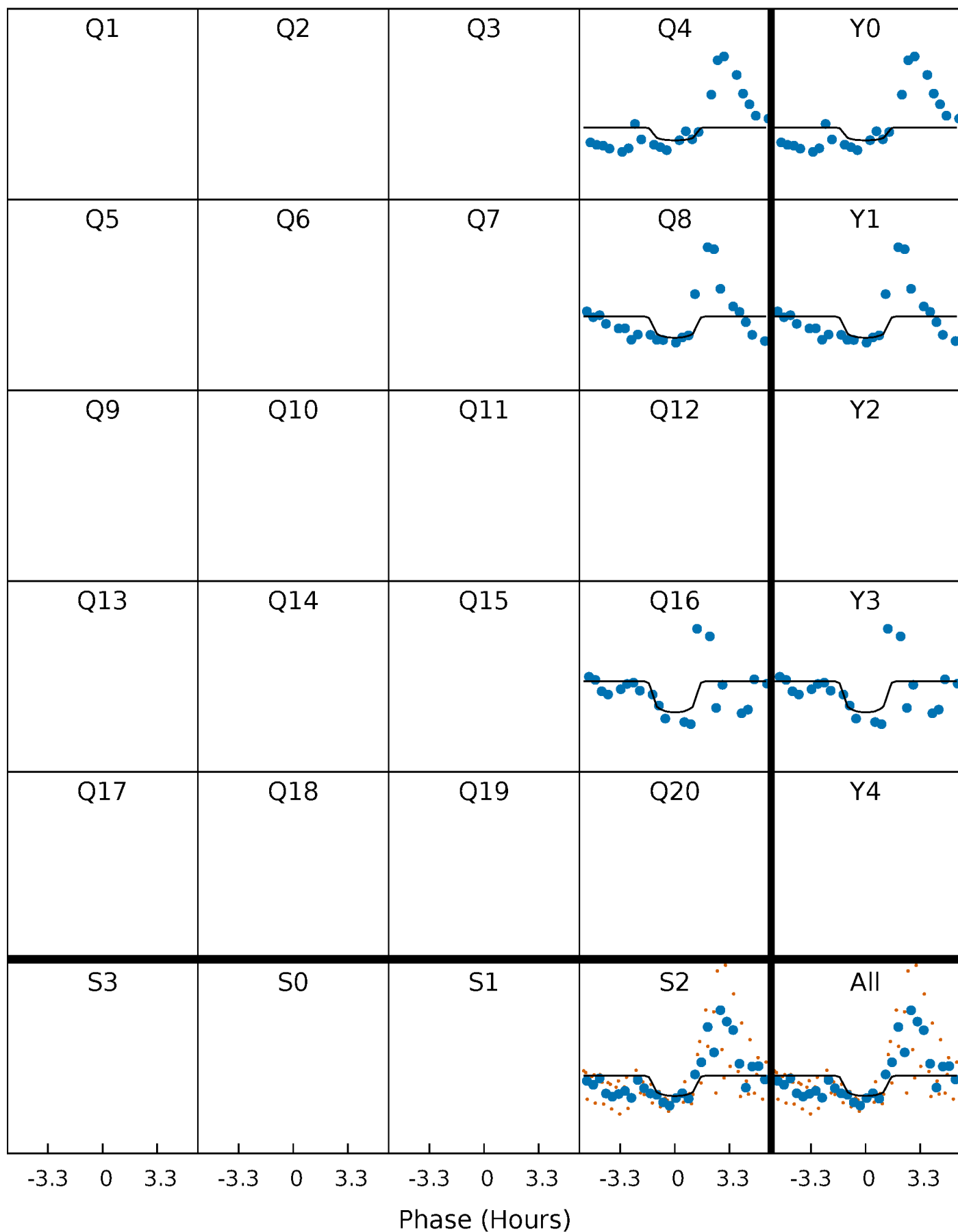
PDC Quarter-Phased Transit Curves

TCE 001028246-01 P=105.276022 Days $T_0=147.315878$ (BKJD)



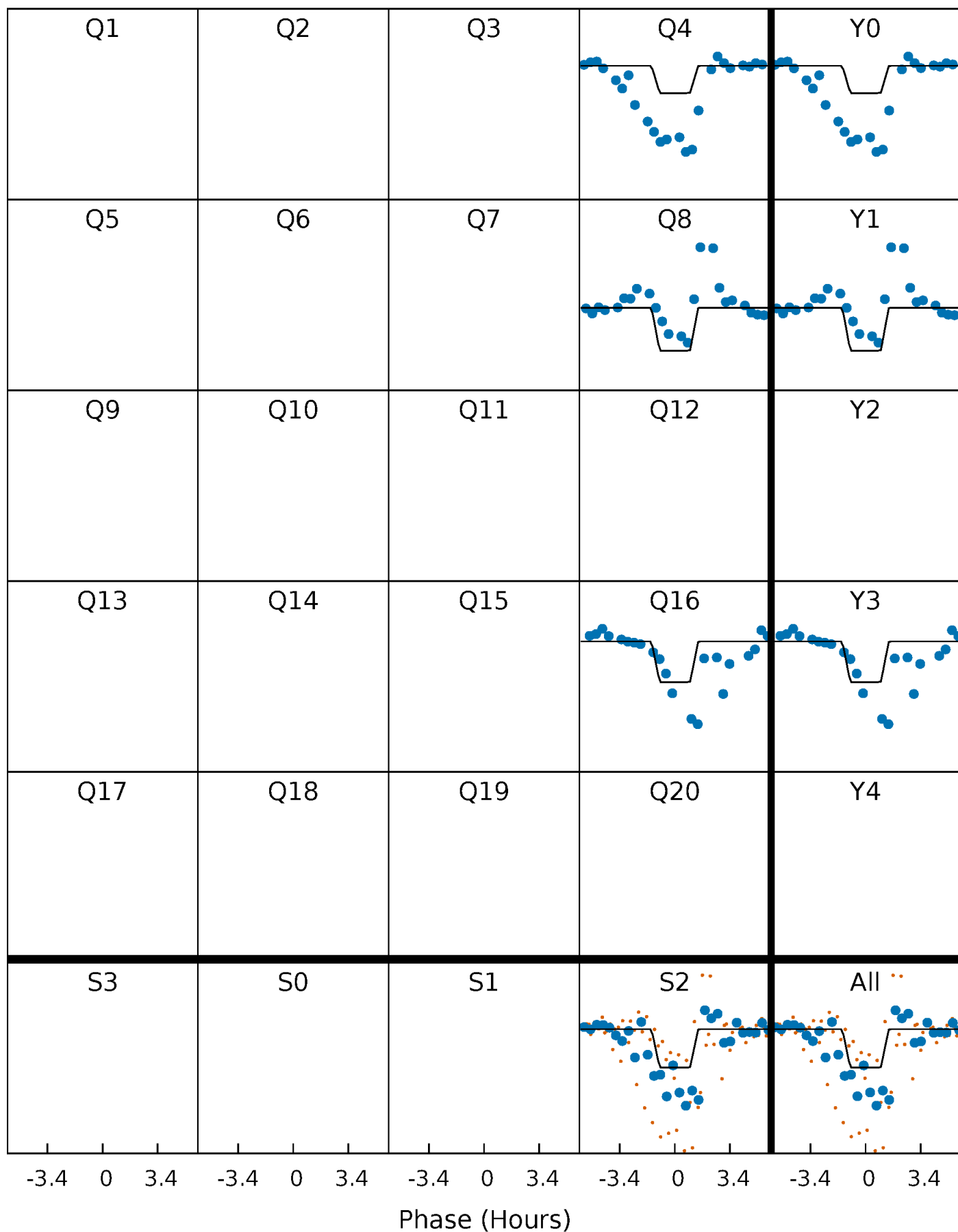
DV Quarter-Phased Transit Curves

TCE 001028246-01 P=105.276022 Days $T_0=147.315878$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

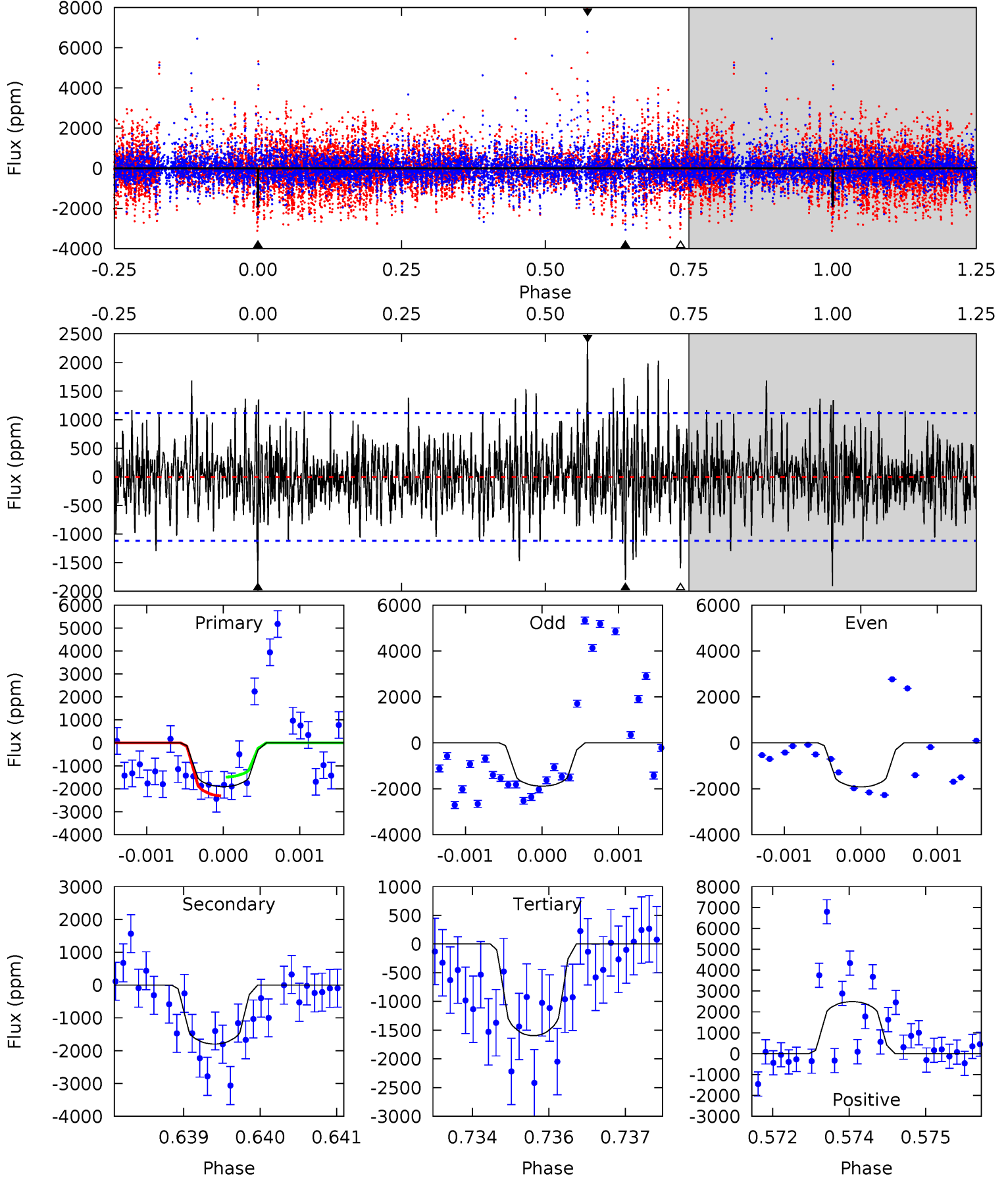
TCE 001028246-01 P=105.272545 Days $T_0=147.343585$ (BKJD)



DV Model-Shift Uniqueness Test

001028246-01, P = 105.276022 Days, E = 147.315878 Days

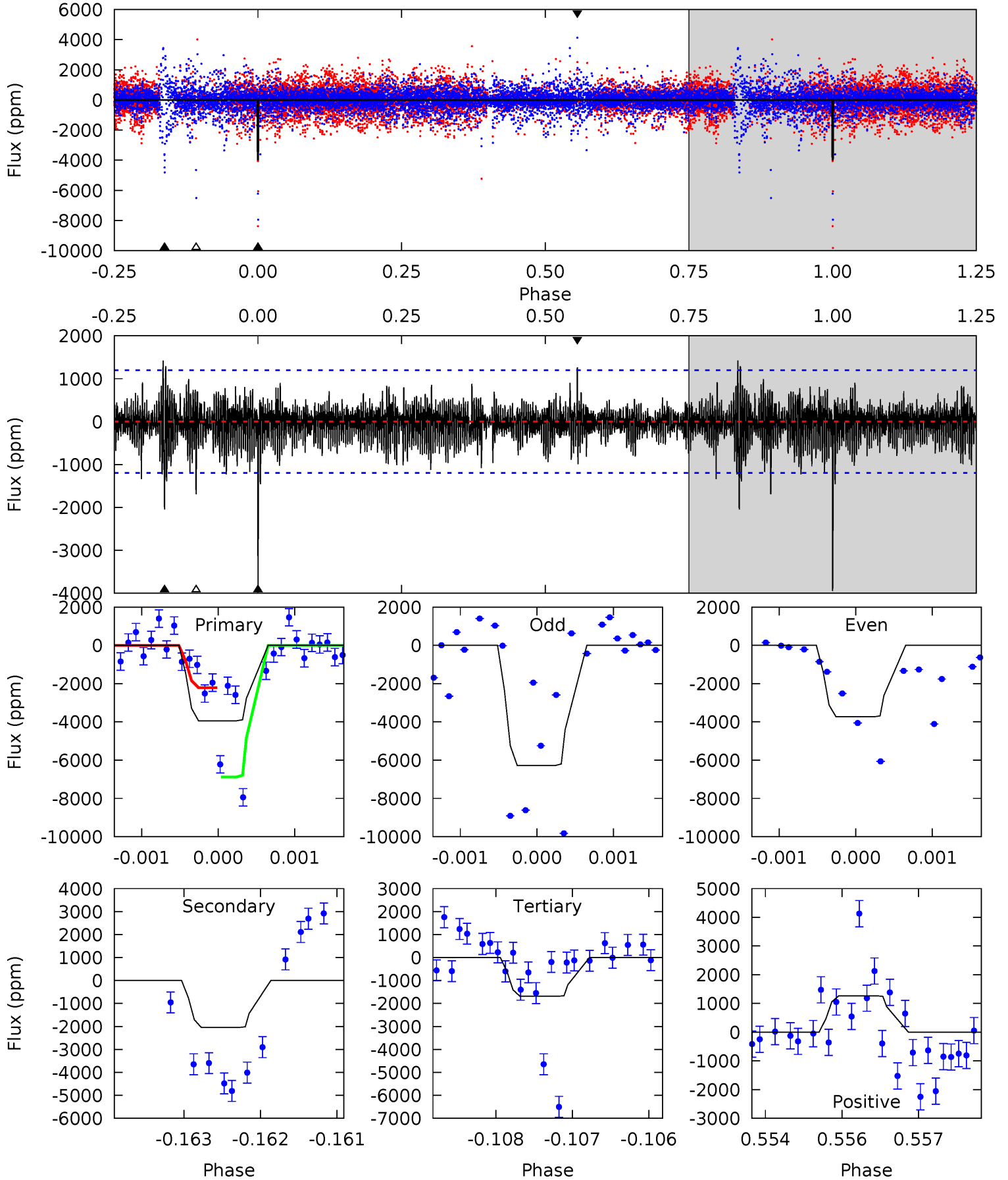
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.24	8.71	7.73	12.1	5.40	3.21	2.17	1.51	-2.84	0.97	-3.37	0.06	0.97	0.57	1.99



Alt Model-Shift Uniqueness Test

001028246-01, P = 105.272545 Days, E = 147.343585 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.9	9.26	7.65	5.73	5.42	3.25	1.43	10.2	12.1	1.61	3.53	5.09	1.35	0.27	9.93



Stellar Parameters For KIC 001028246

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5443^{+87}_{-130}	$2.759^{+0.342}_{-0.228}$	$-1.980^{+0.150}_{-0.050}$	$9.096^{+2.285}_{-4.243}$	$1.732^{+0.560}_{-0.861}$	$0.003^{+0.011}_{-0.002}$
	+2%/-2%	+12%/-8%	+8%/-3%	+25%/-47%	+32%/-50%	+340%/-52%
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 001028246-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1798 ± 206	$58.79^{+57.63}_{-39.34}$	1405^{+114}_{-144}	4675^{+2986}_{-988}	79^{+563}_{-59}
Alt.	-2043 ± 221	$73.73^{+60.75}_{-47.00}$	1406^{+113}_{-144}	4428^{+2450}_{-838}	58^{+361}_{-40}

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

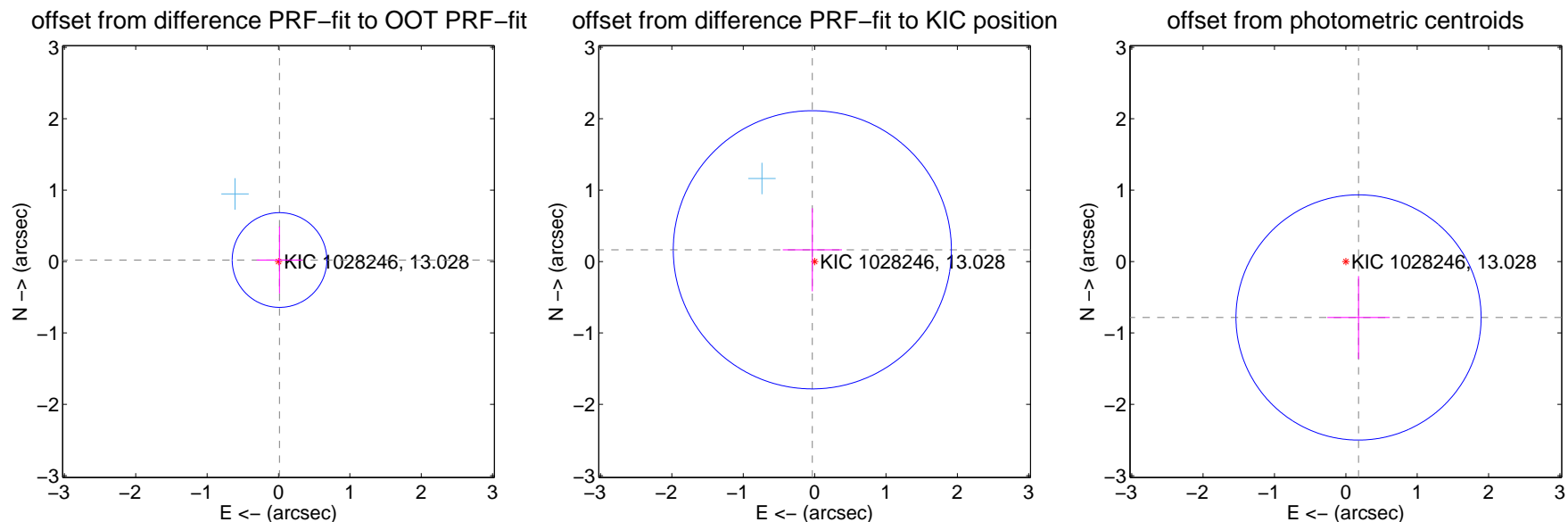
DV Centroid Data

Supplemental centroid analysis for 001028246-01. Kepler magnitude: 13.03. Transit SNR 4.62

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.026 ± 0.221	0.12	-0.014 ± 0.320	0.021 ± 0.469
PRF-fit source offset from KIC position	0.168 ± 0.649	0.26	0.032 ± 0.415	0.164 ± 0.582
photometric centroid source offset	0.80 ± 0.57	1.40	-0.18 ± 0.44	-0.78 ± 0.58



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



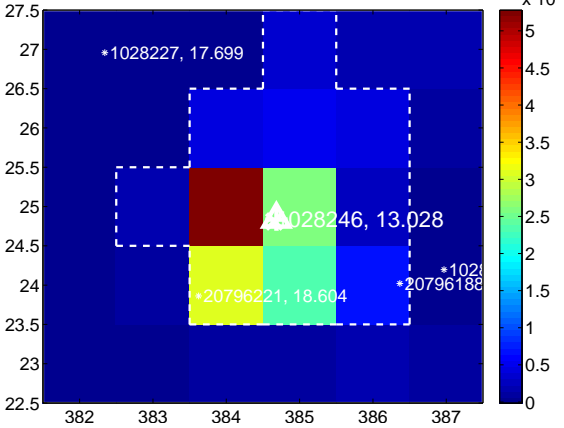
Q3 no difference image



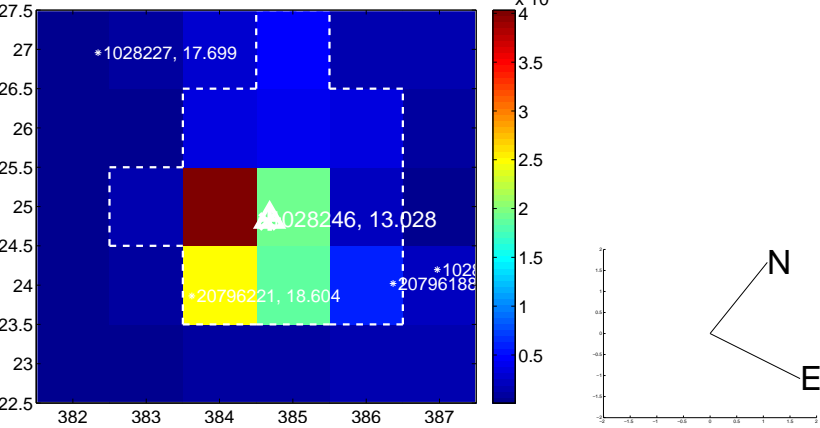
Q3 no OOT image



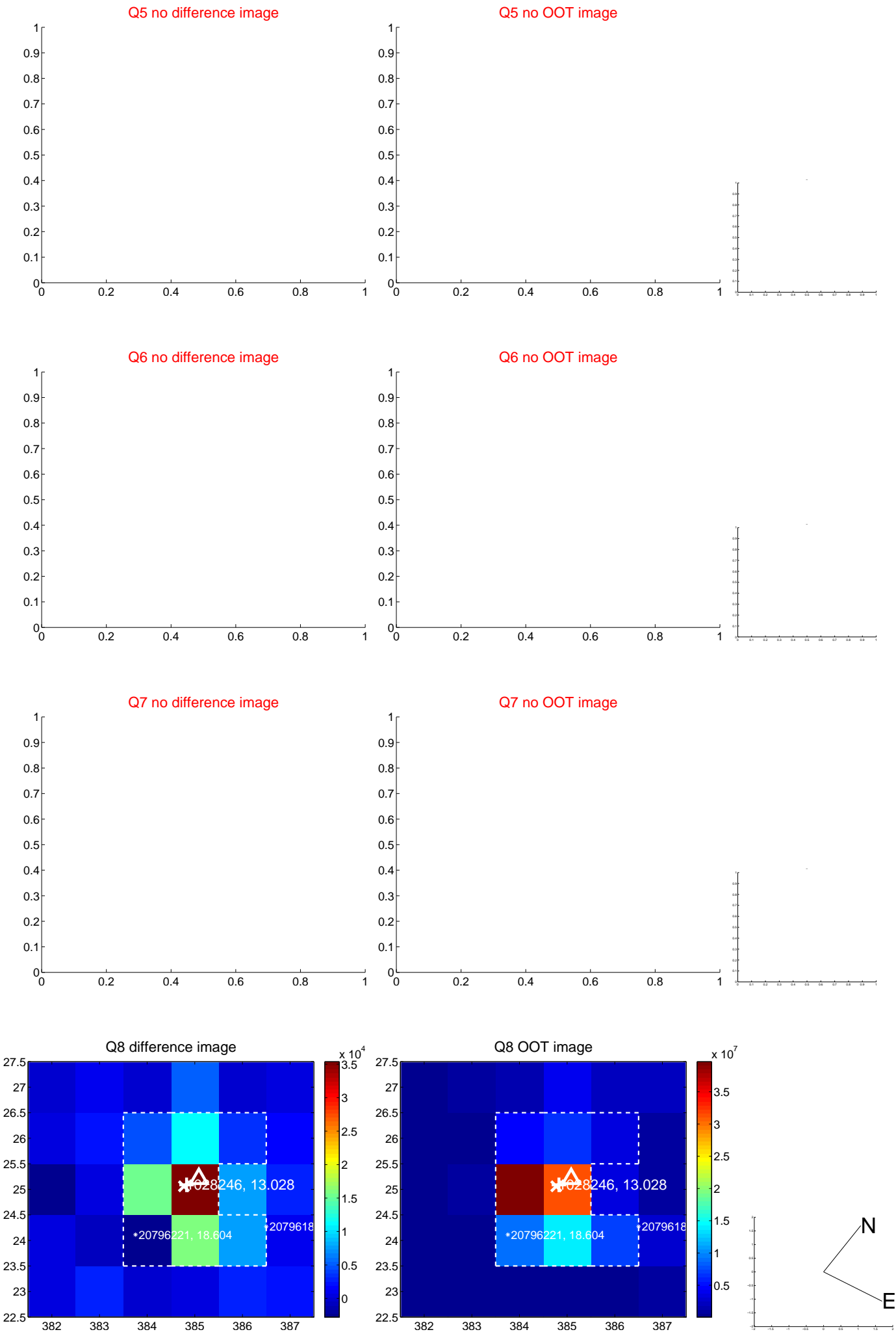
Q4 difference image



Q4 OOT image



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



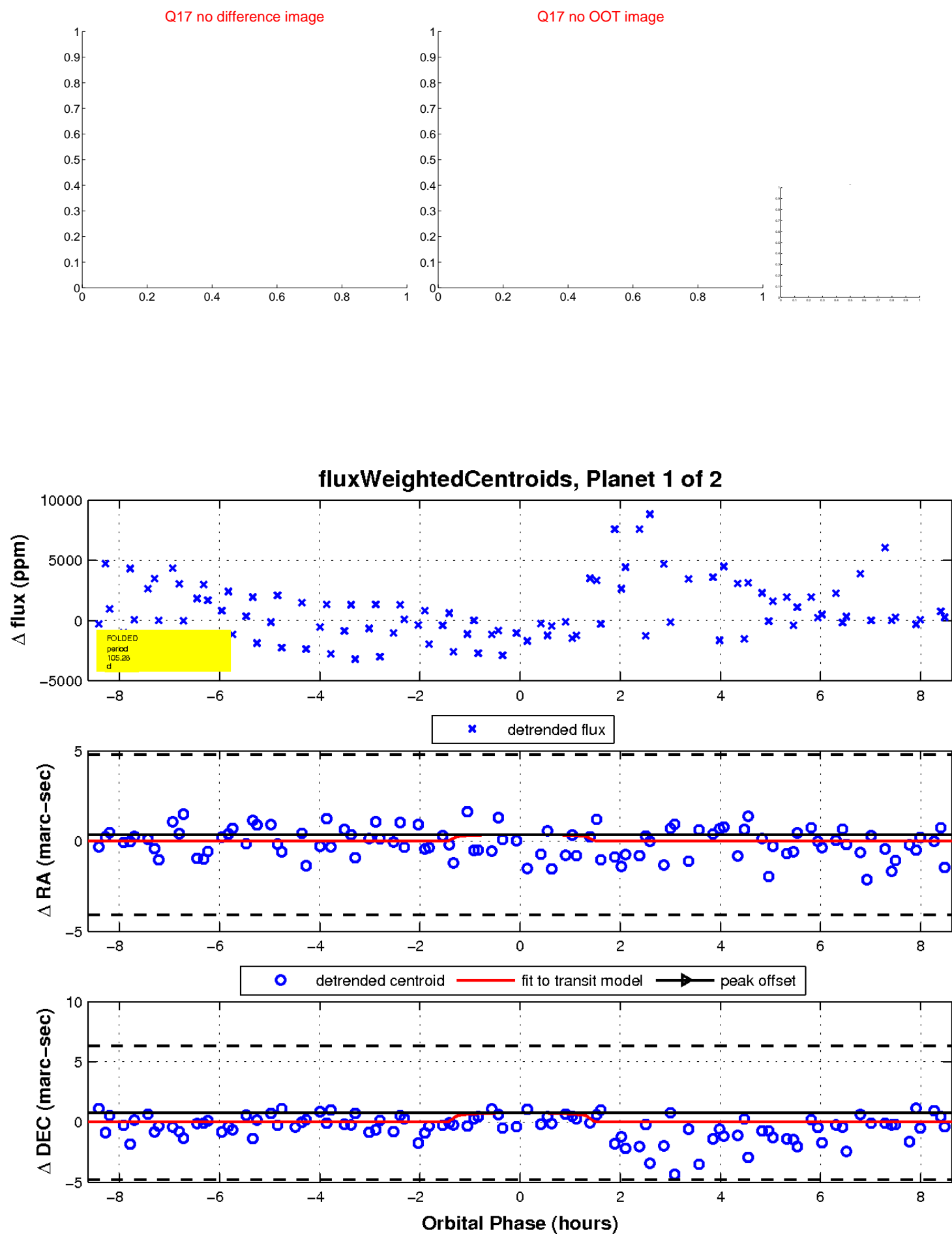
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

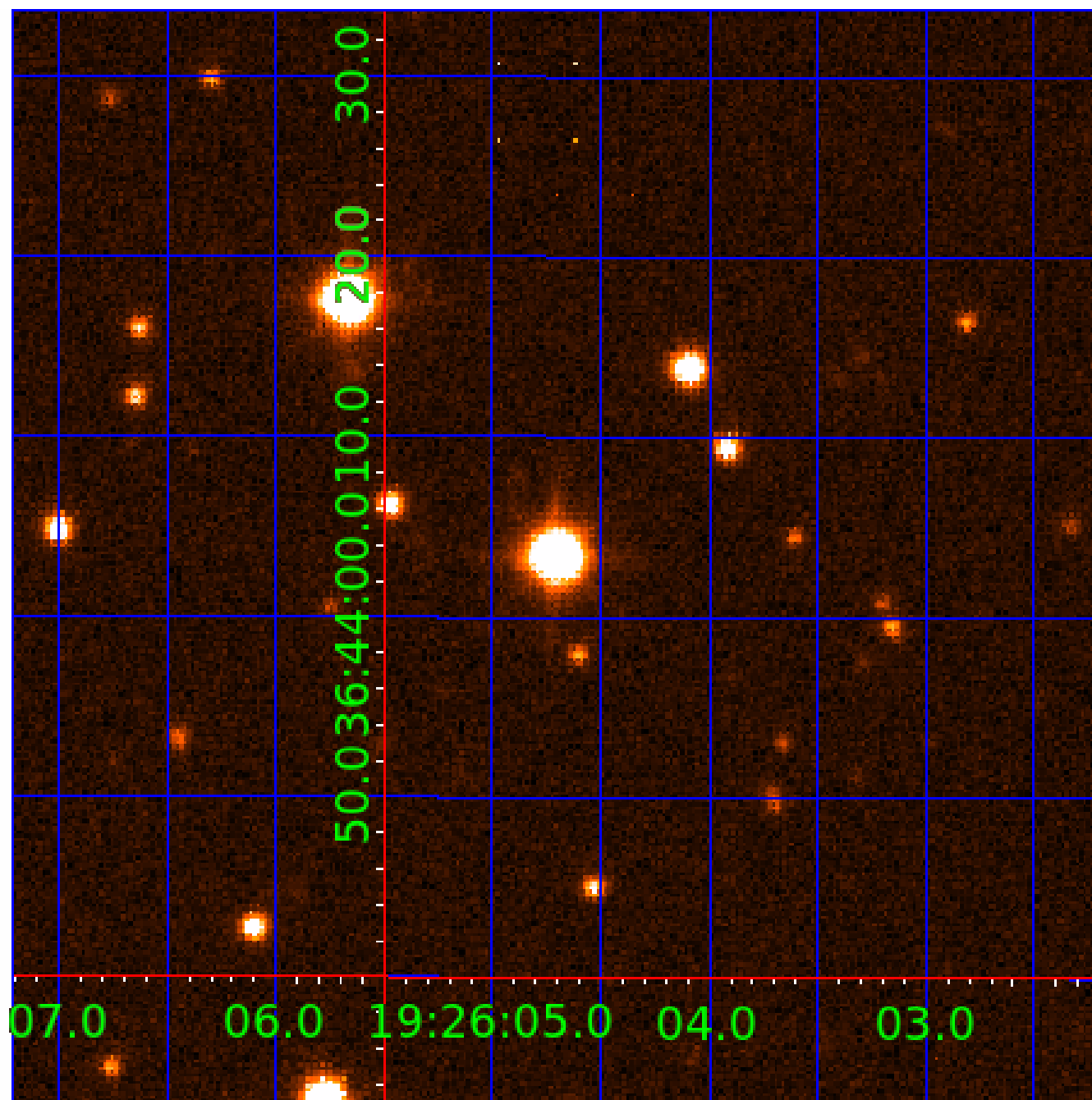


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 001028246

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})
001028246-01	OBS	No	105.276022	147.315878	1652.3	2.875	17.8	4.6	9.10	5443	37.12	236.80
001028246-02	OBS	No	192.927330	212.183651	319.4	2.958	14.7	1.0	9.10	5443	17.31	105.59

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001028246-01	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_DIFFS
001028246-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—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.

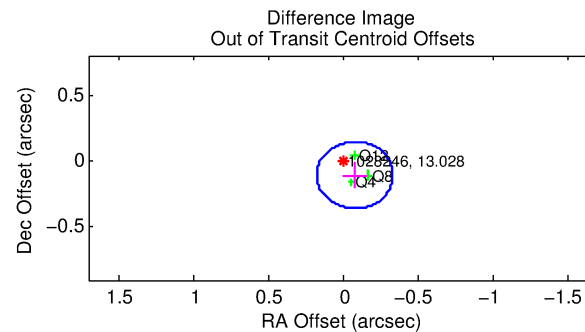
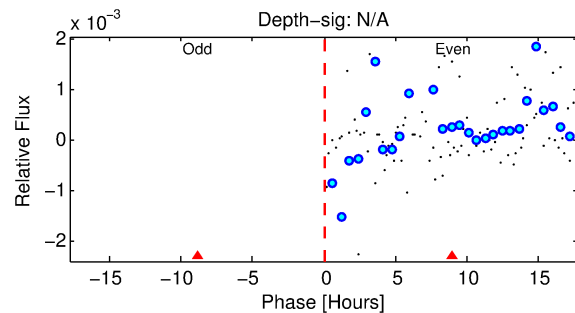
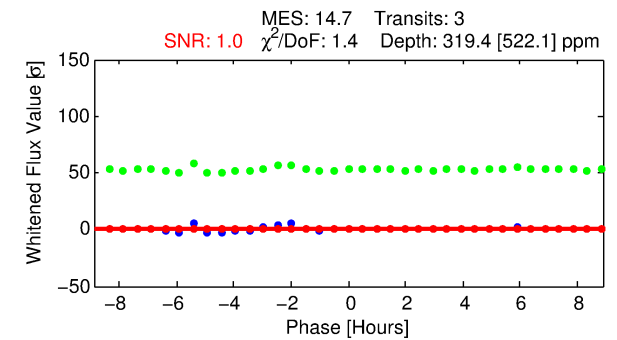
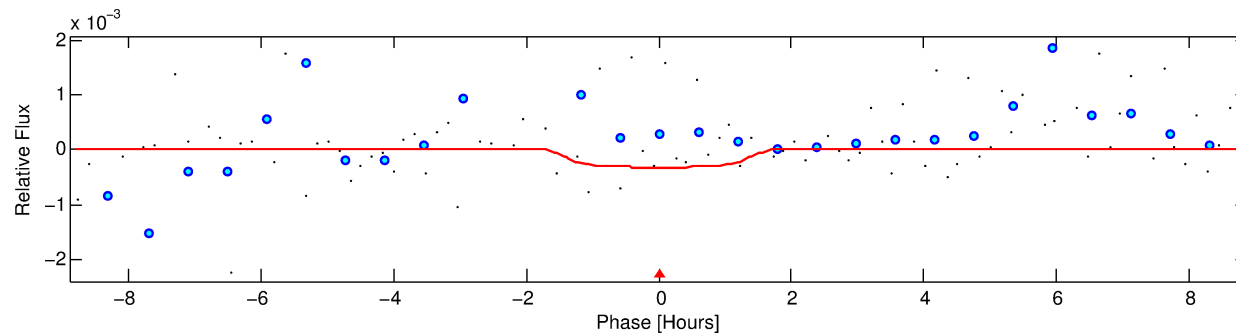
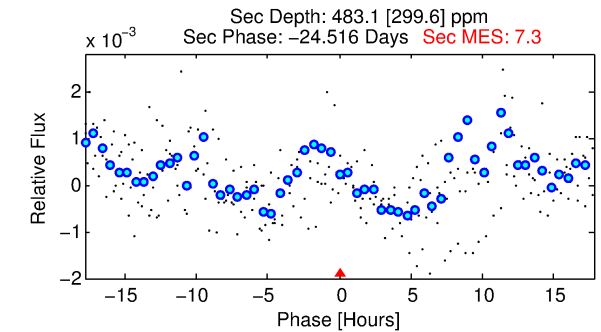
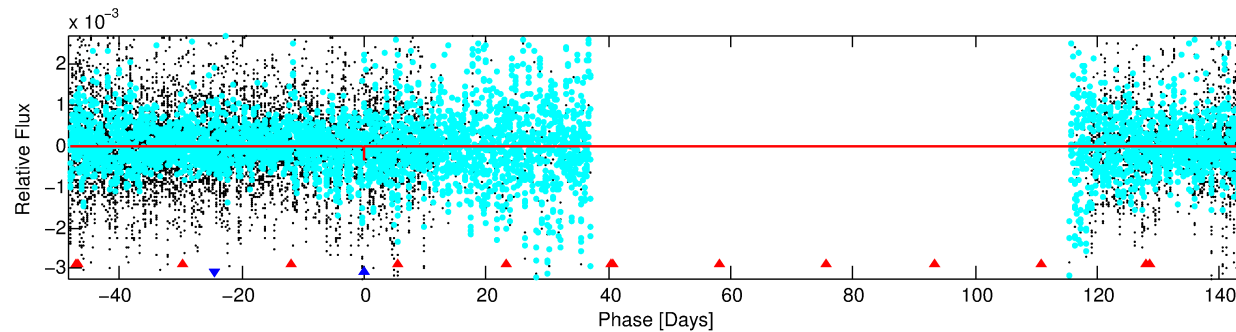
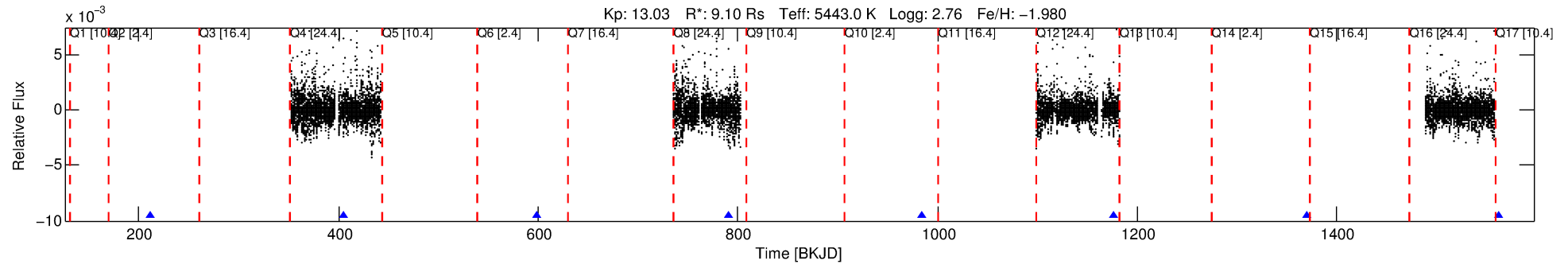
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 001028246-02

No Significant Match Found

DV One-Page Summary

KIC: 1028246 Candidate: 2 of 2 Period: 192.927 d



DV Fit Results:

Period = 192.92733 [0.02155] d
Epoch = 212.1837 [0.0912] BKJD
Rp/R* = 0.0174 [0.2115]
a/R* = 377.97 [23560.43]
b = 0.68 [49.89]
Seff = 105.59 [65.21]
Teq = 817 [126] K
Rp = 17.31 [210.09] Re
a = 0.7850 [0.3195] AU
Ag = 546.30 [13256.87] [0.04] σ
Teffp = 6110 [37055] K [0.14] σ

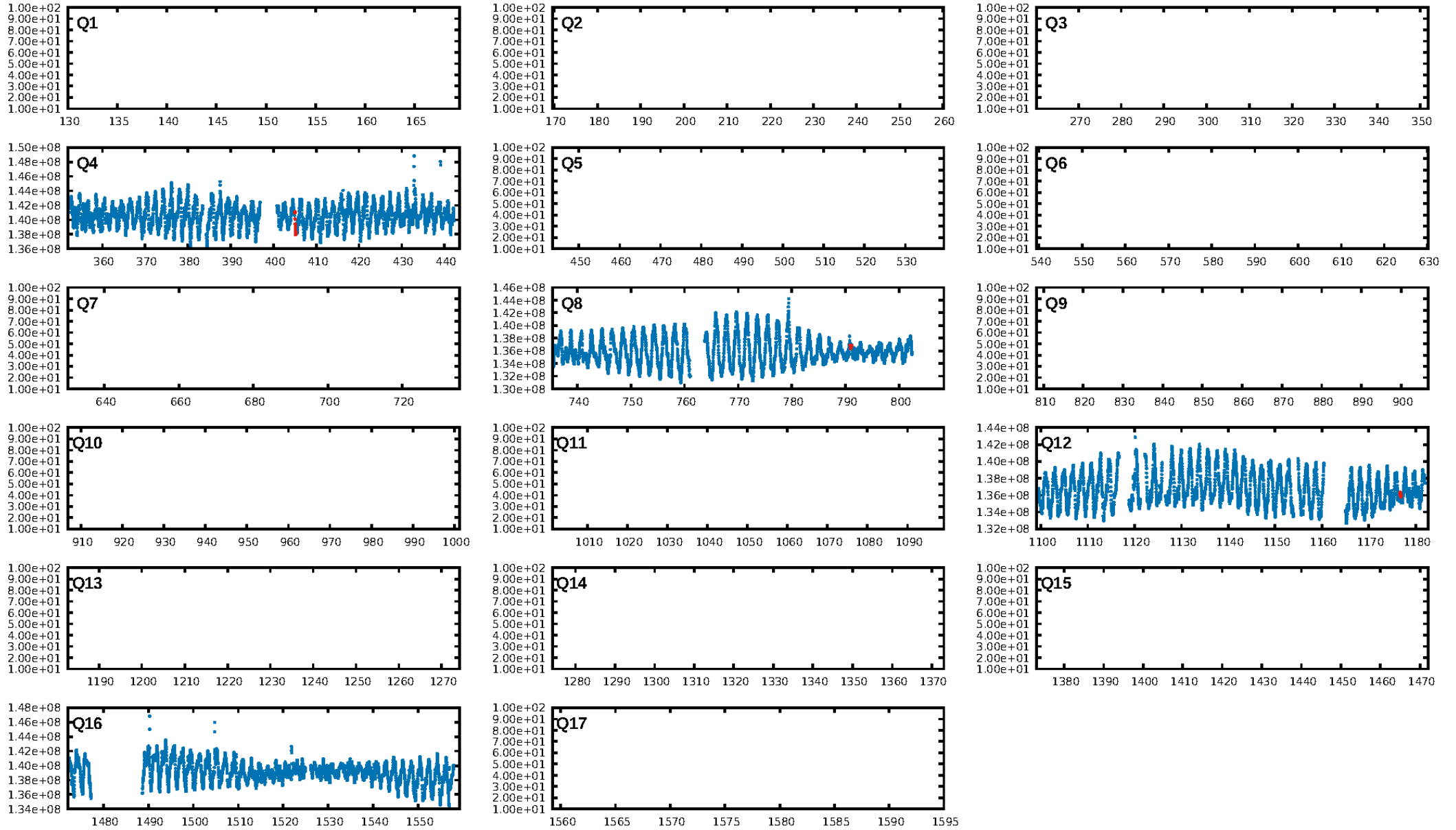
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [509.91] σ
LongPeriod-sig: N/A
ModelChiSquare2-sig: 20.6%
ModelChiSquareGof-sig: 98.9%
Bootstrap-pfa: 3.92e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -4.347
Centroid-sig: 27.0%
Centroid-so: 2.126 arcsec [0.81] σ
OotOffset-rm: 0.134 arcsec [1.59] σ
KicOffset-rm: 0.058 arcsec [0.75] σ
OotOffset-st: 0/0/3/0 [3]
KicOffset-st: 0/0/3/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

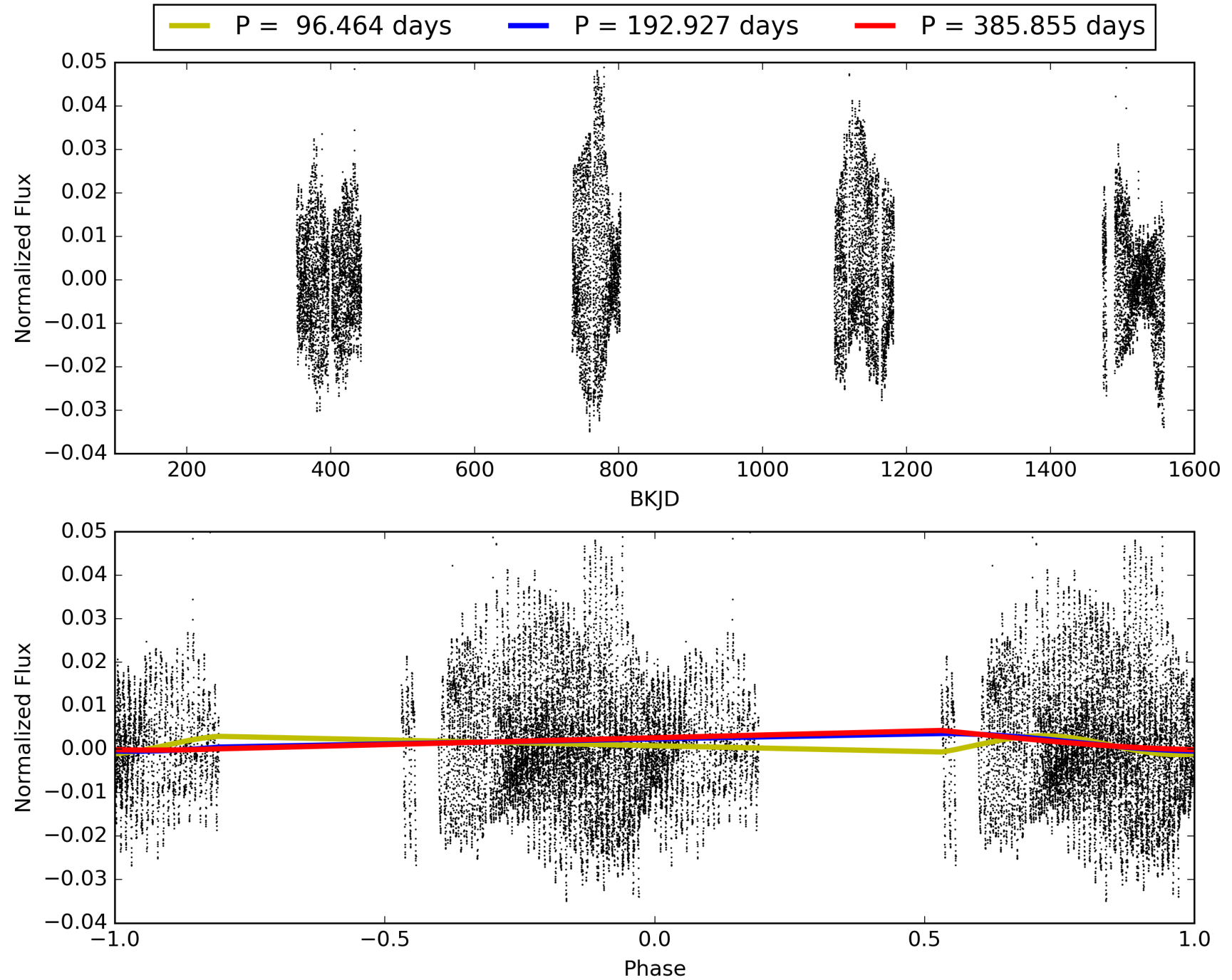
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 18:46:03 Z

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

TCE 001028246-02, PDC Light Curves

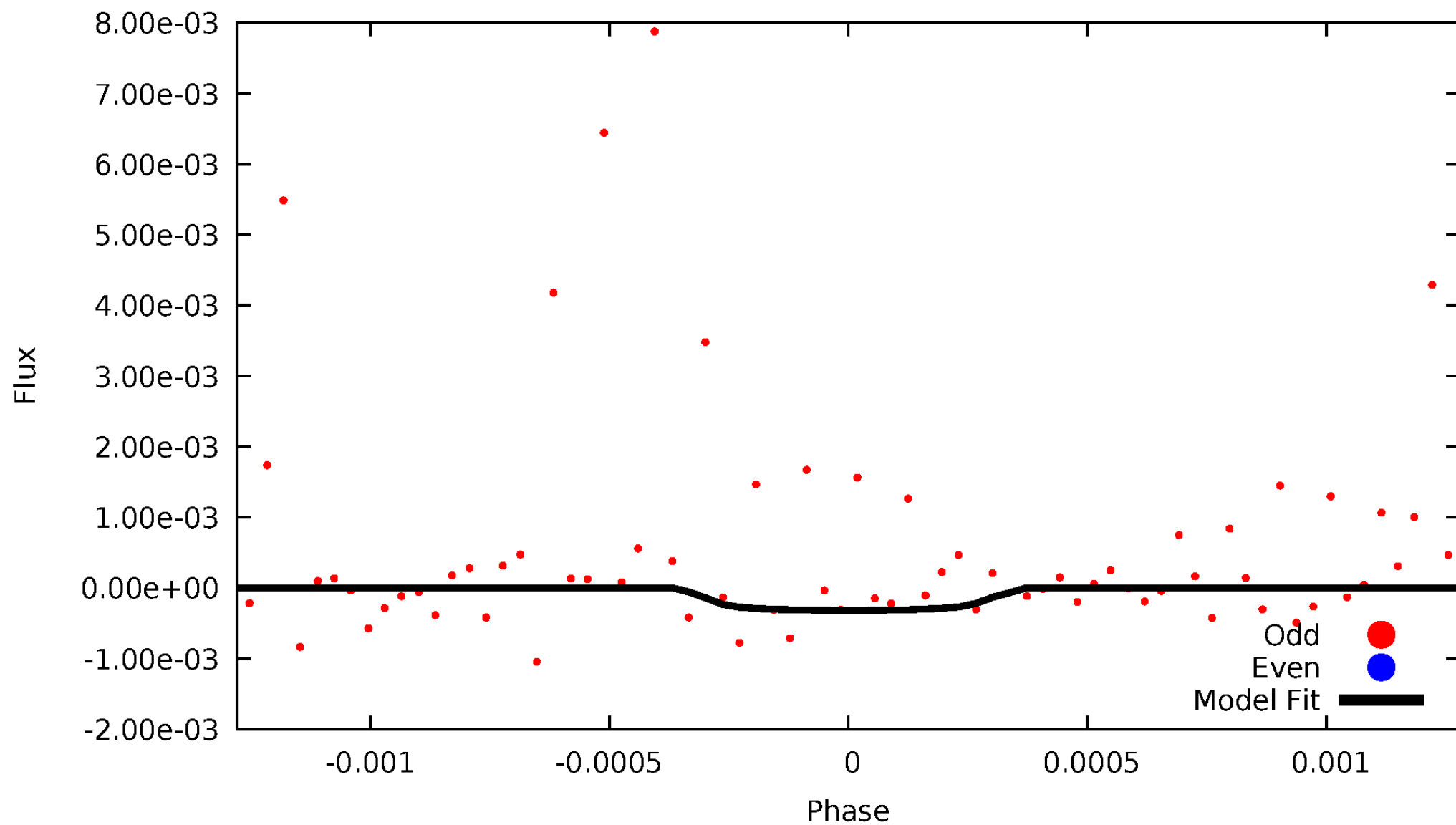


TCE 001028246-02



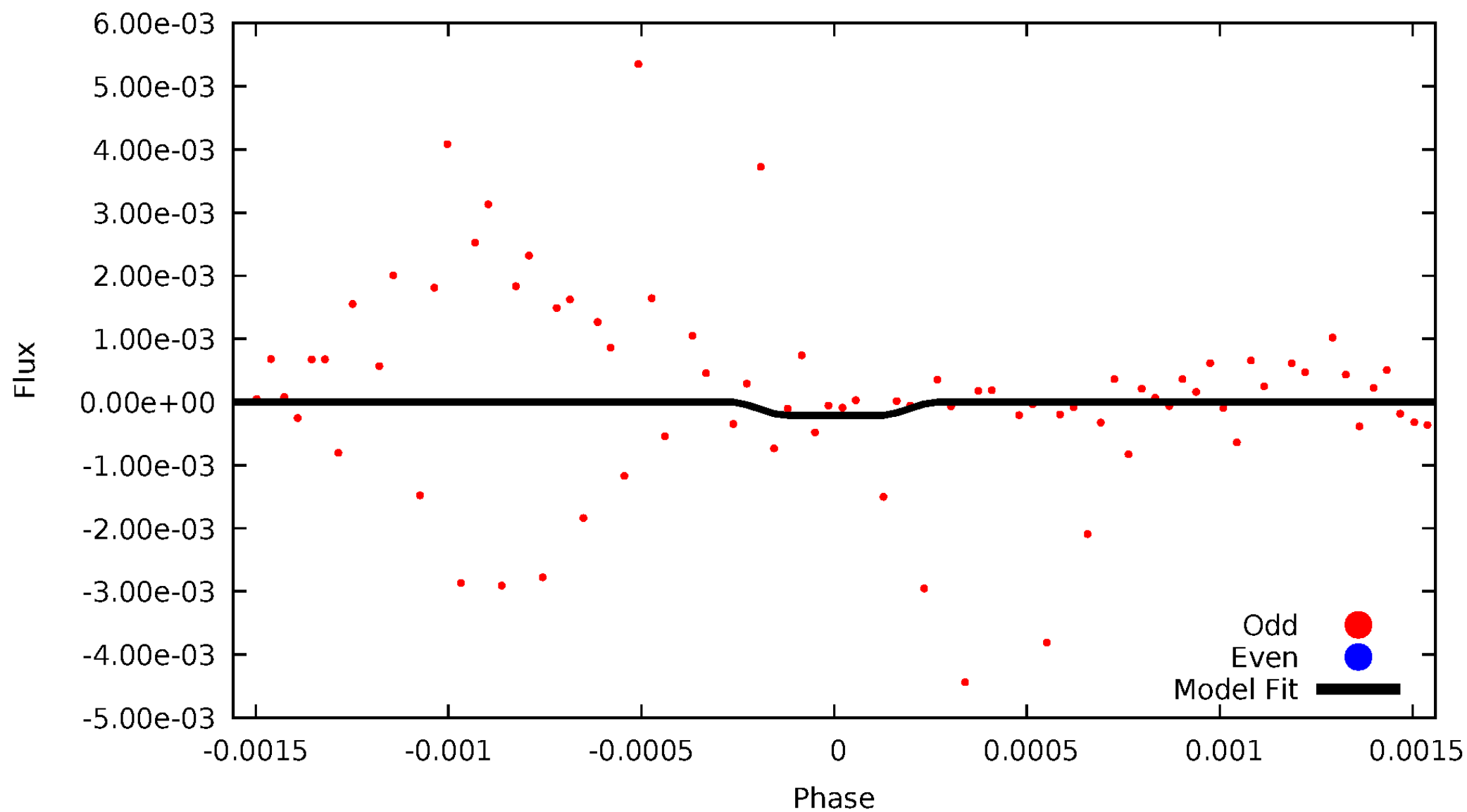
DV Odd/Even

TCE 001028246-02



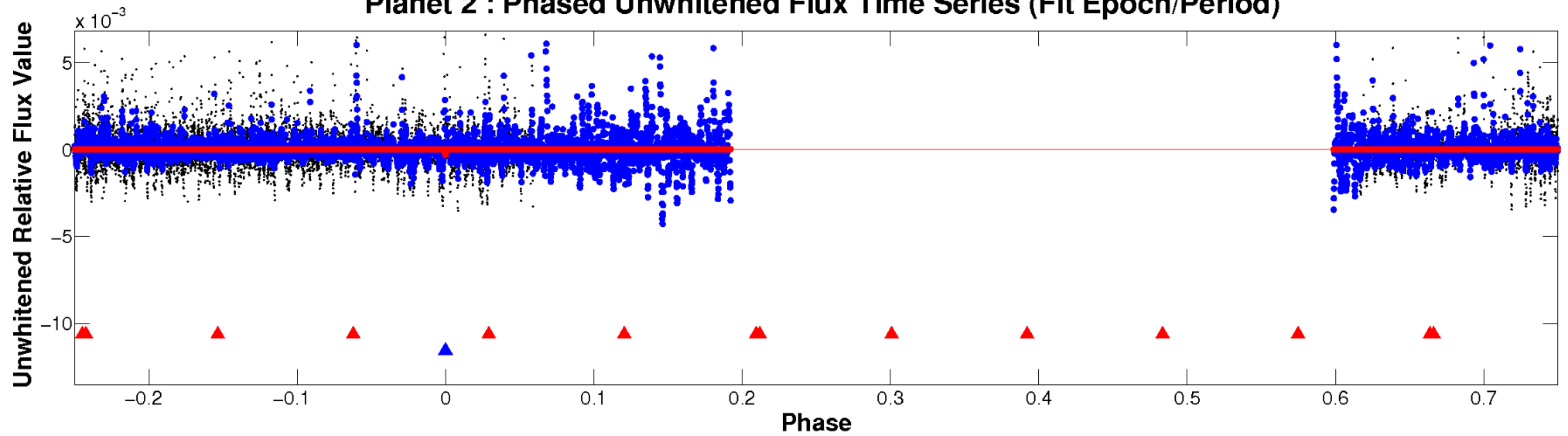
ALT Odd/Even

TCE 001028246-02

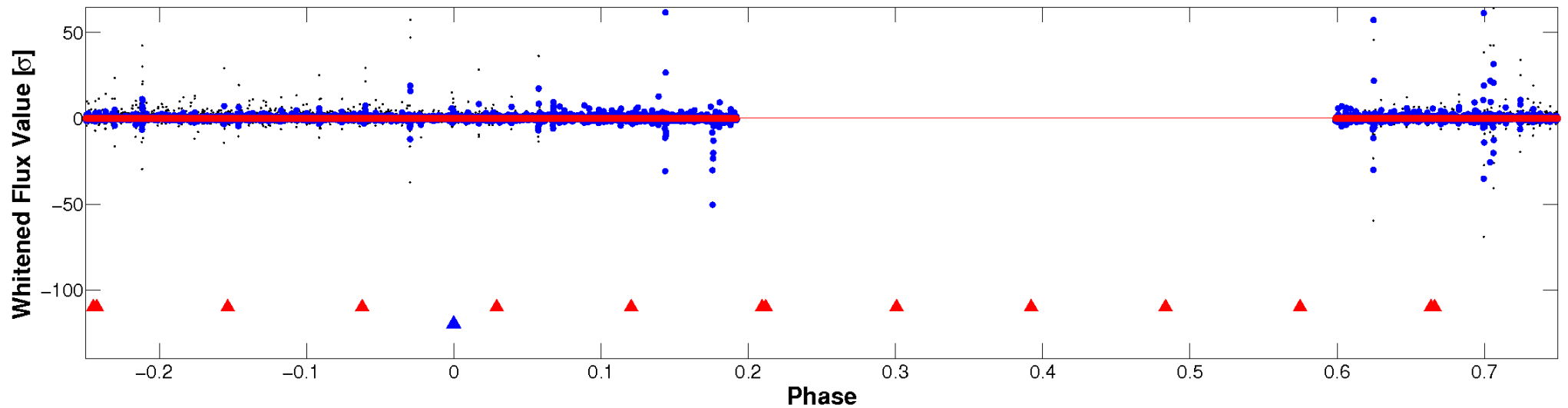


Non-Whitened Vs. Whitened Light Curve

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

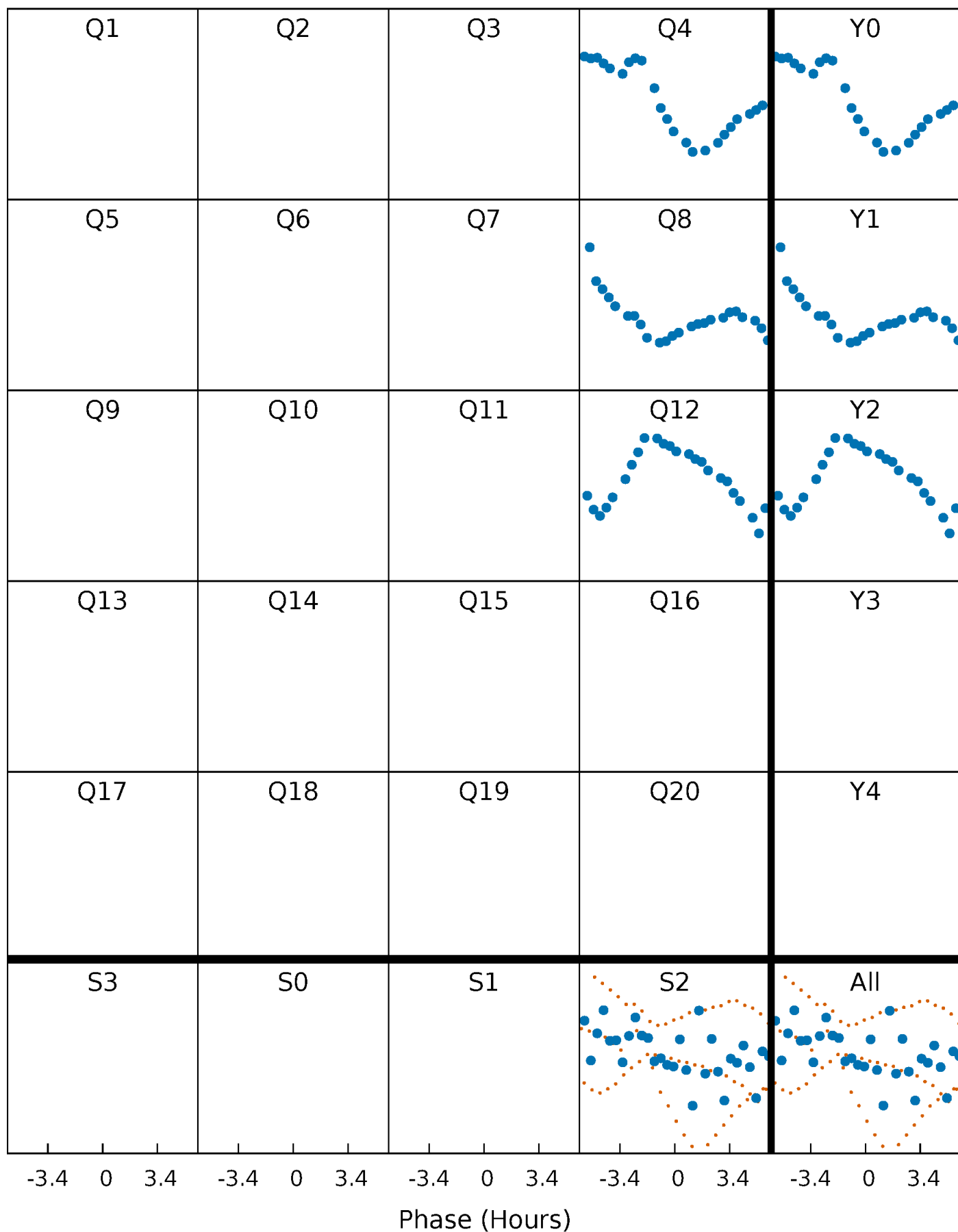


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



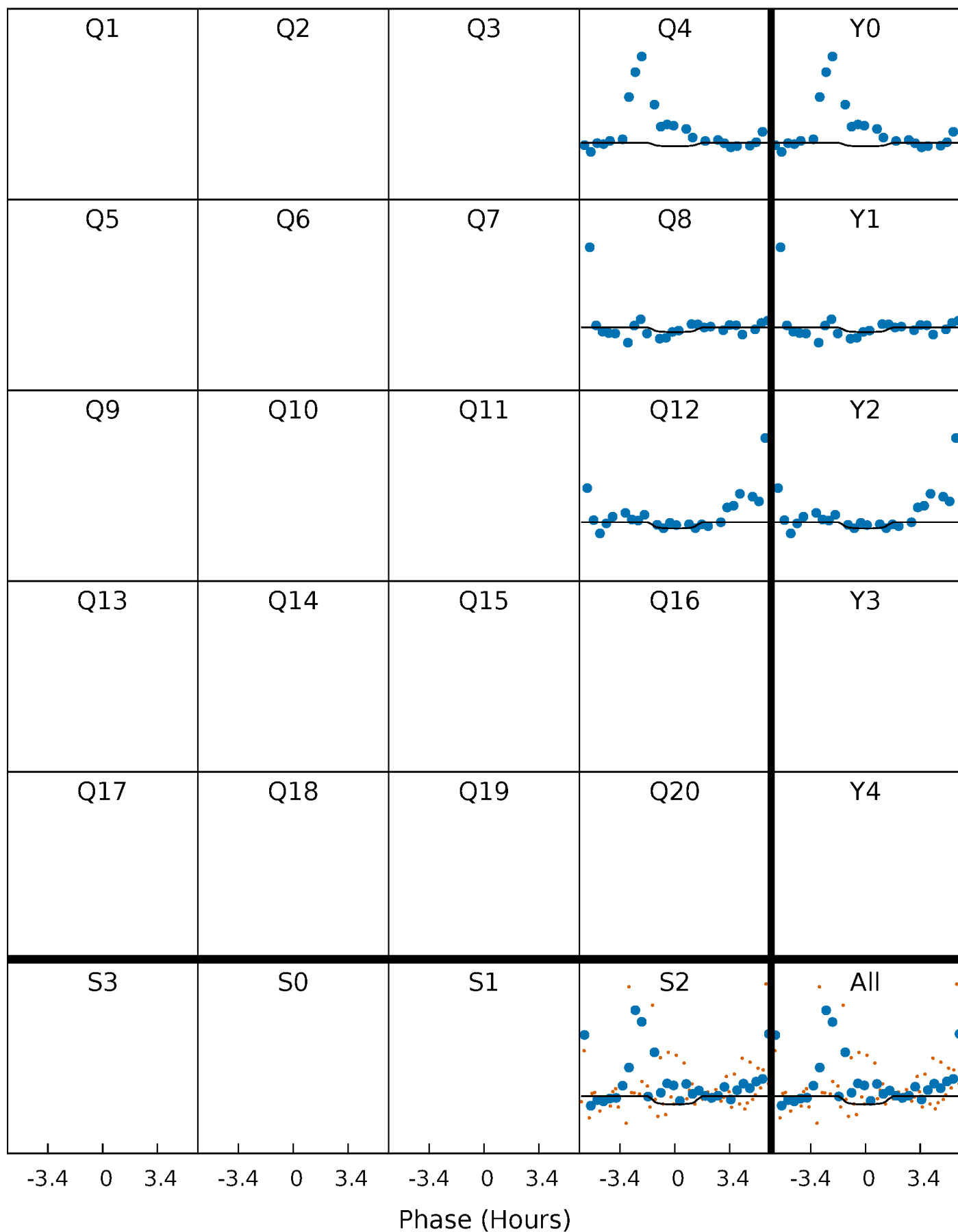
PDC Quarter-Phased Transit Curves

TCE 001028246-02 P=192.927330 Days $T_0=212.183651$ (BKJD)



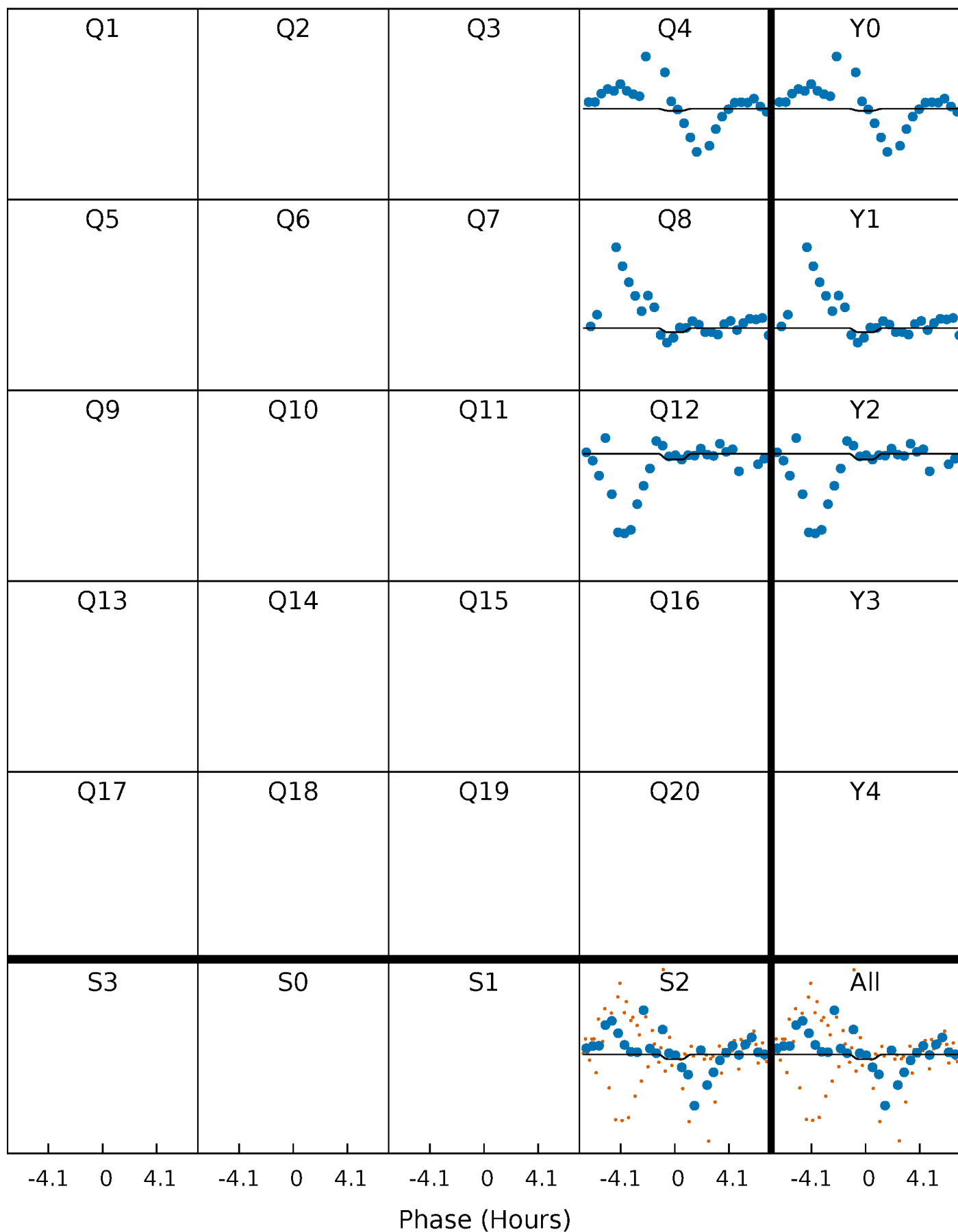
DV Quarter-Phased Transit Curves

TCE 001028246-02 $P=192.927330$ Days $T_0=212.183651$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

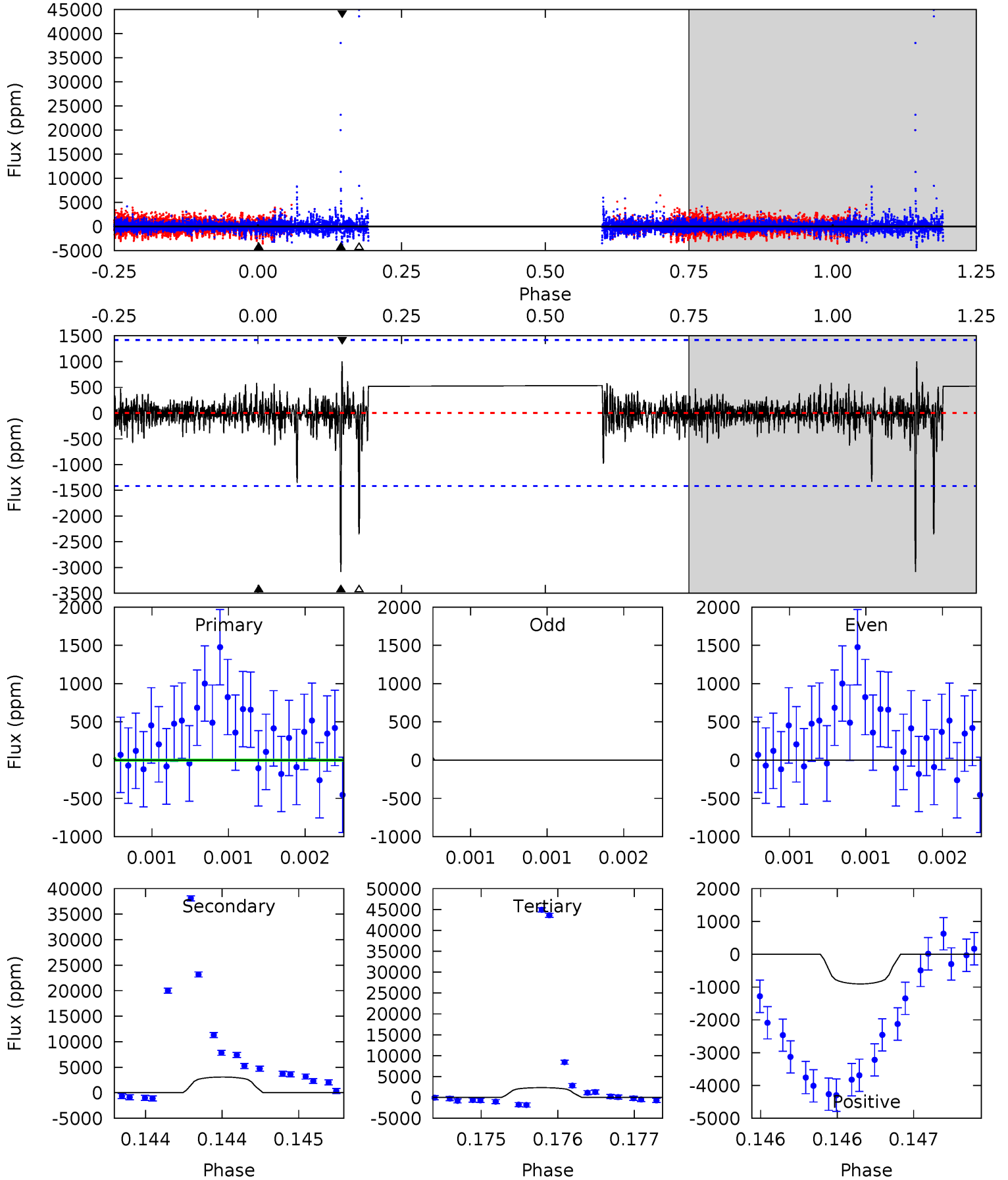
TCE 001028246-02 P=192.930864 Days $T_0=212.159131$ (BKJD)



DV Model-Shift Uniqueness Test

001028246-02, P = 192.927330 Days, E = 212.183651 Days

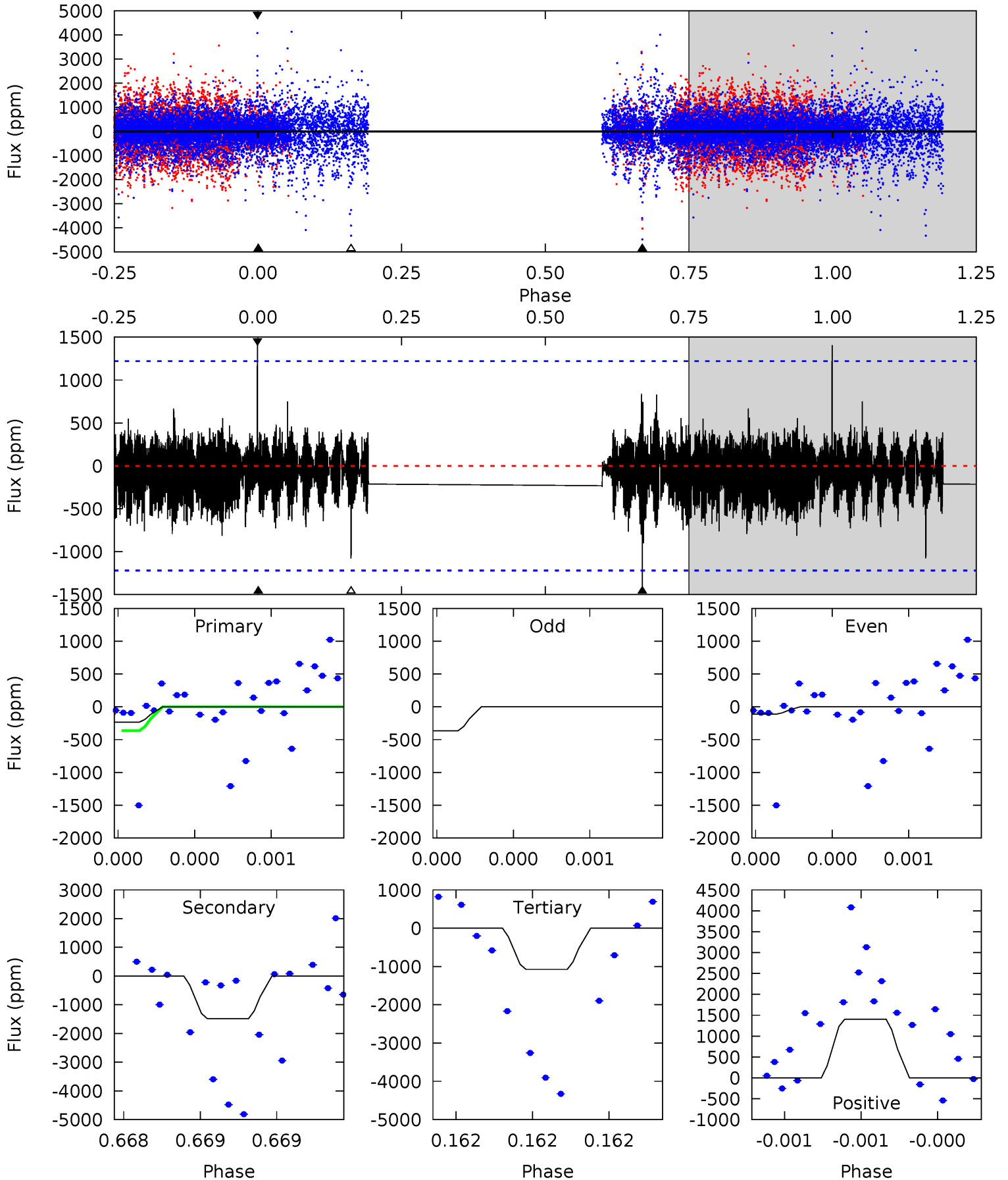
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.01	12.0	9.09	3.52	5.51	3.39	0.79	-8.07	-2.51	2.90	8.47	0.54	-2.00	0.25	0.45



Alt Model-Shift Uniqueness Test

001028246-02, P = 192.930864 Days, E = 212.159131 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.07	6.79	4.93	6.44	5.59	3.50	1.12	-3.85	-5.36	1.86	0.35	0.70	0.59	0.49	0.59



Stellar Parameters For KIC 001028246

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5443^{+87}_{-130}	$2.759^{+0.342}_{-0.228}$	$-1.980^{+0.150}_{-0.050}$	$9.096^{+2.285}_{-4.243}$	$1.732^{+0.560}_{-0.861}$	$0.003^{+0.011}_{-0.002}$
	+2%/-2%	+12%/-8%	+8%/-3%	+25%/-47%	+32%/-50%	+340%/-52%
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 001028246-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-3083 ± 257	$144.84^{+173.71}_{-104.70}$	1152^{+84}_{-122}	3744^{+2321}_{-780}	51^{+510}_{-41}
Alt.	-1483 ± 218	$144.95^{+167.71}_{-101.33}$	1152^{+83}_{-121}	3325^{+1747}_{-642}	24^{+223}_{-19}

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

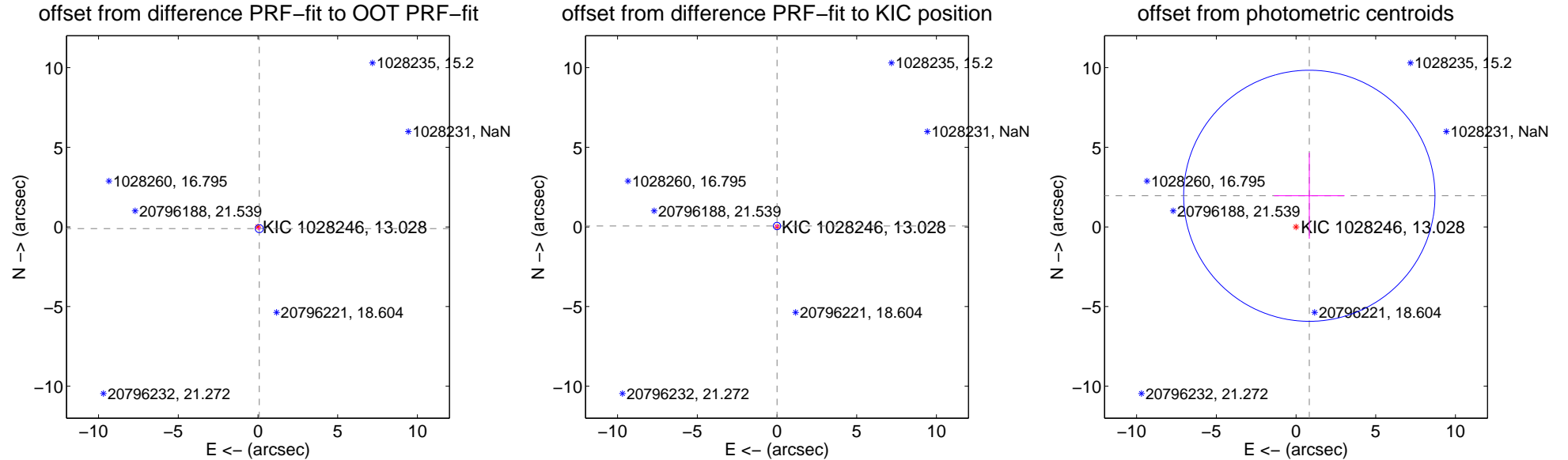
DV Centroid Data

Supplemental centroid analysis for 001028246-02. Kepler magnitude: 13.03. Transit SNR 0.98

There are 2 quarters with good PRF difference image offsets

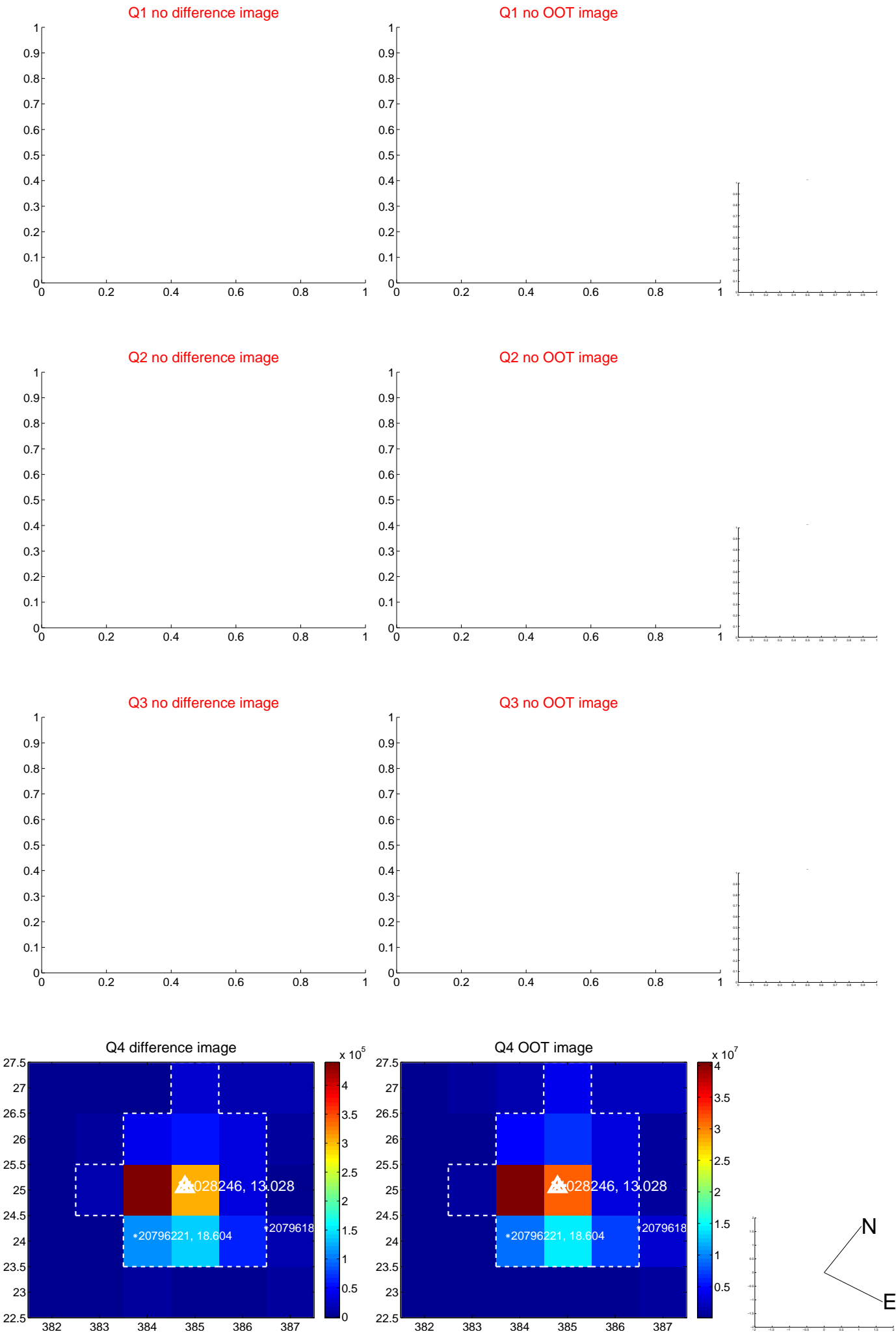
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.134 ± 0.085	1.59	-0.082 ± 0.074	-0.107 ± 0.090
PRF-fit source offset from KIC position	0.058 ± 0.077	0.75	-0.000 ± 0.077	0.058 ± 0.077
photometric centroid source offset	2.13 ± 2.63	0.81	-0.83 ± 2.21	1.96 ± 2.70

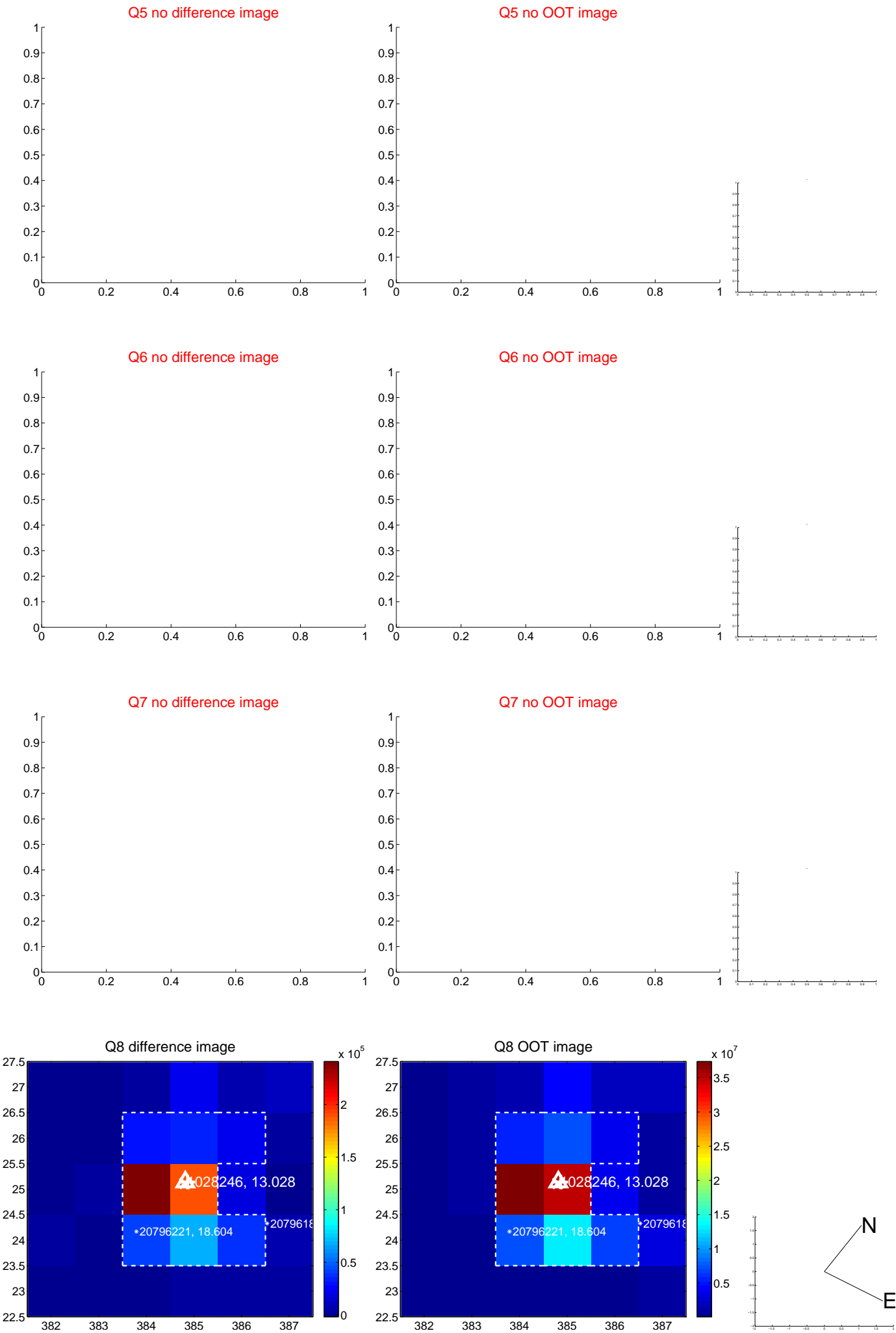


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

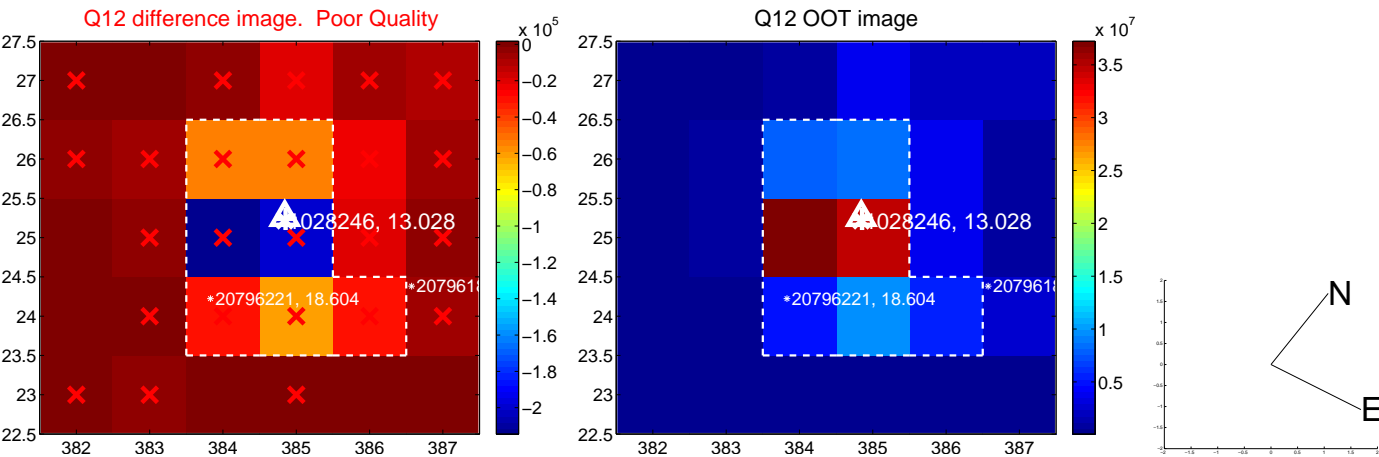
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



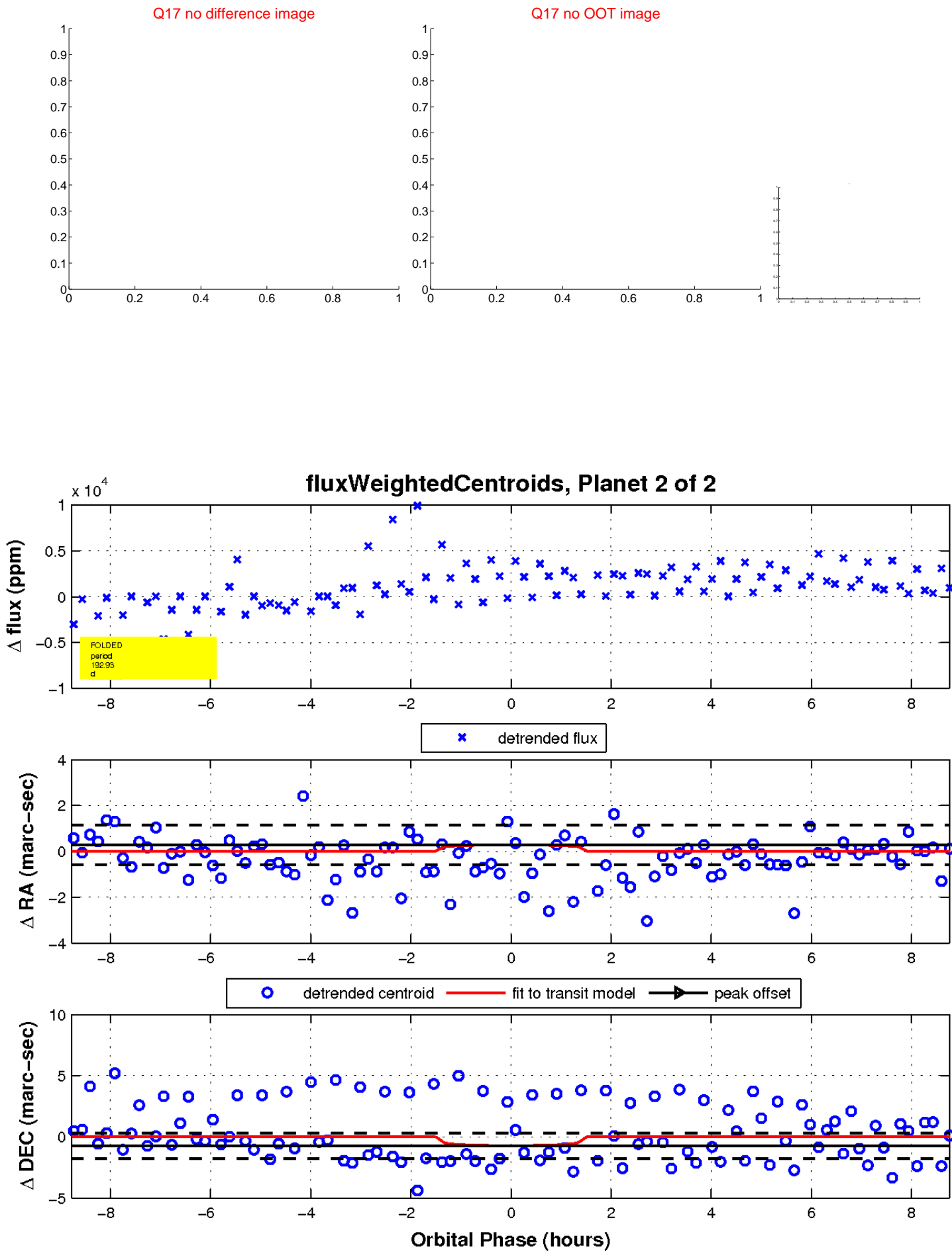
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

