

KIC 007102500

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})
007102500-01	OBS	No	378.183513	224.332673	1865.5	15.372	12.6	8.6	0.22	3274	0.95	0.01
007102500-02	OBS	No	347.064983	355.567755	1312.3	15.188	8.1	7.5	0.22	3274	0.82	0.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007102500-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007102500-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—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.

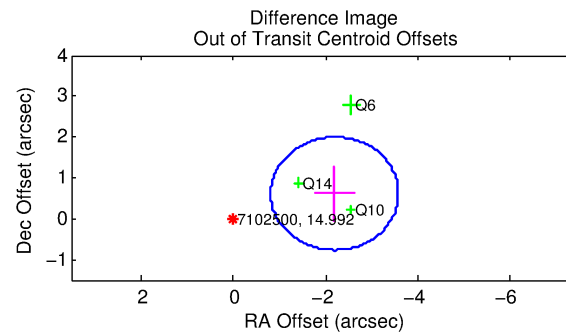
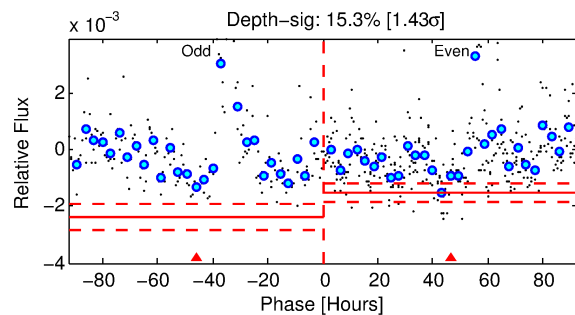
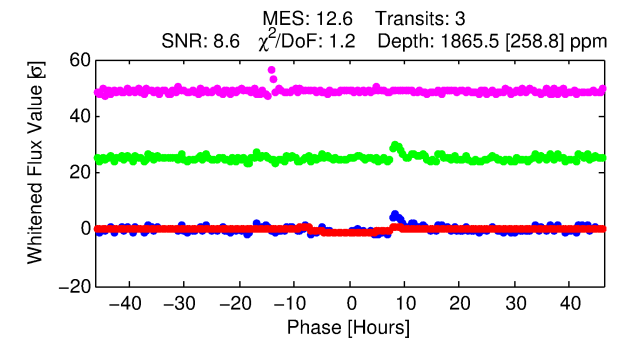
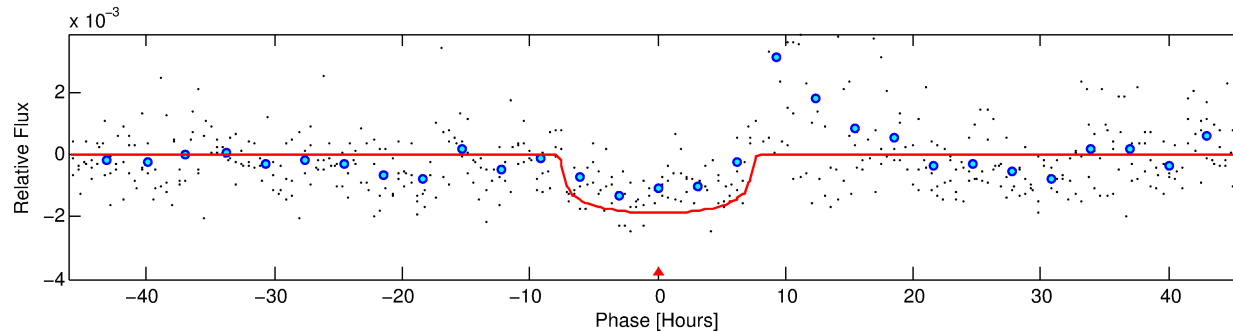
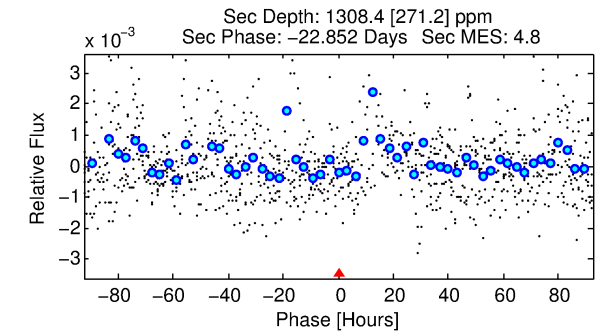
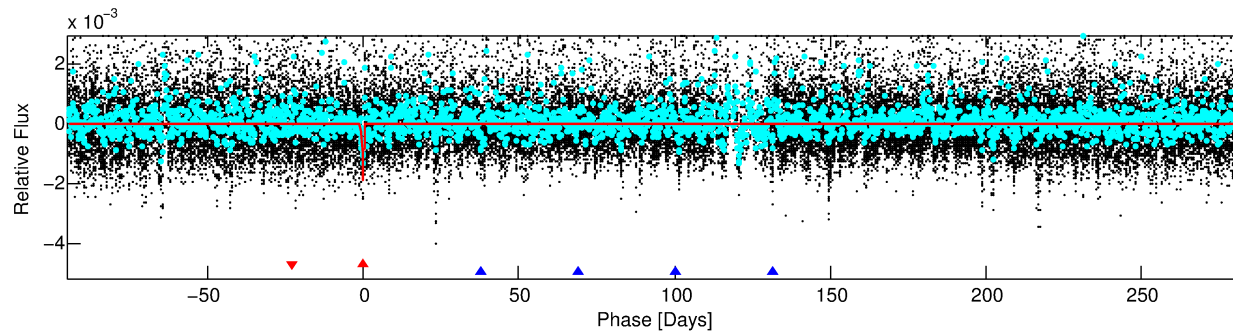
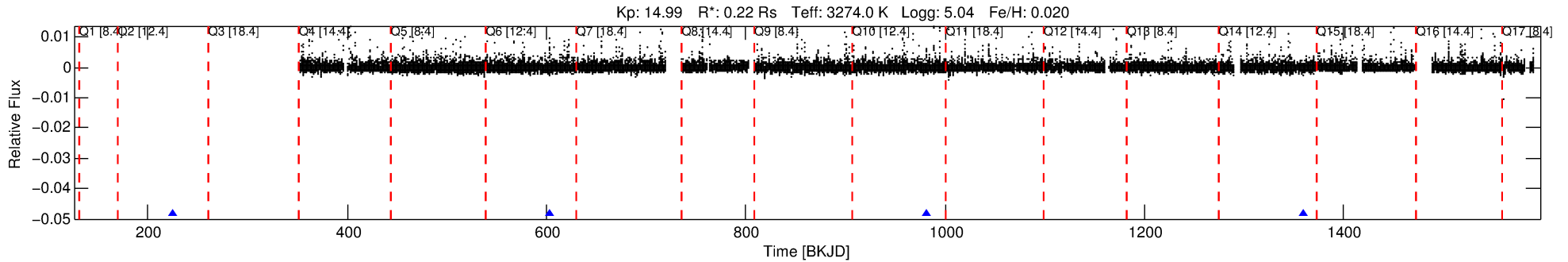
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007102500-01

No Significant Match Found

DV One-Page Summary

KIC: 7102500 Candidate: 1 of 2 Period: 378.184 d



DV Fit Results:

Period = 378.18351 [0.01037] d
Epoch = 224.3327 [0.0236] BKJD
Rp/R* = 0.0390 [0.0114]
a/R* = 194.75 [232.37]
b = 0.08 [15.60]
Seff = 0.01 [0.00]
Teq = 88 [3] K
Rp = 0.95 [0.31] Re
a = 0.6012 [0.0607] AU
Ag = 285781.77 [180804.73] [1.58σ]
Teffp = 3152 [492] K [6.23σ]

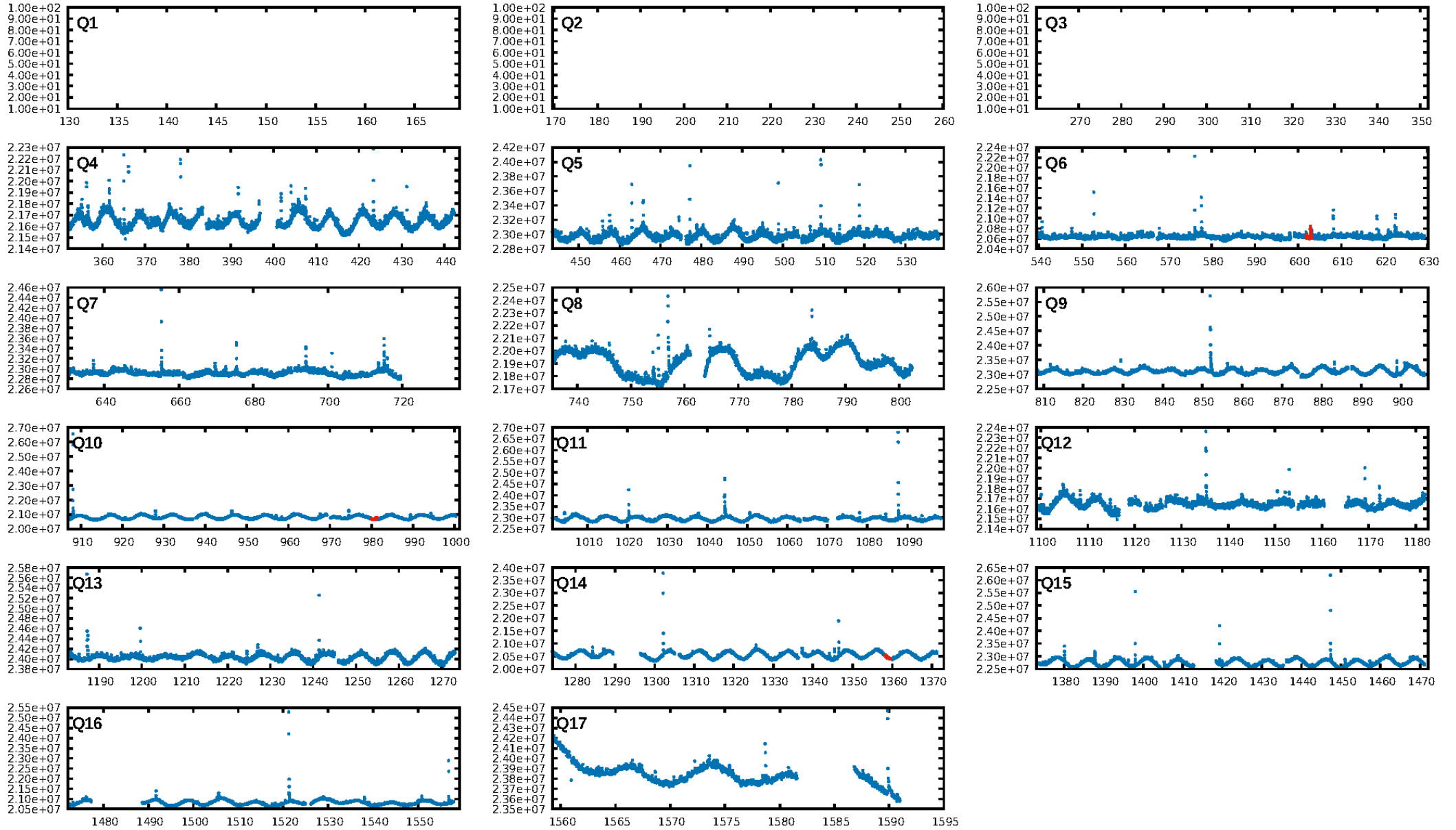
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [34.56σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 9.9%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 2.87e-17
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 18.31
Centroid-sig: 0.0%
Centroid-so: 2.758 arcsec [8.85σ]
OotOffset-rm: 2.280 arcsec [4.95σ]
KicOffset-rm: 2.103 arcsec [2.68σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

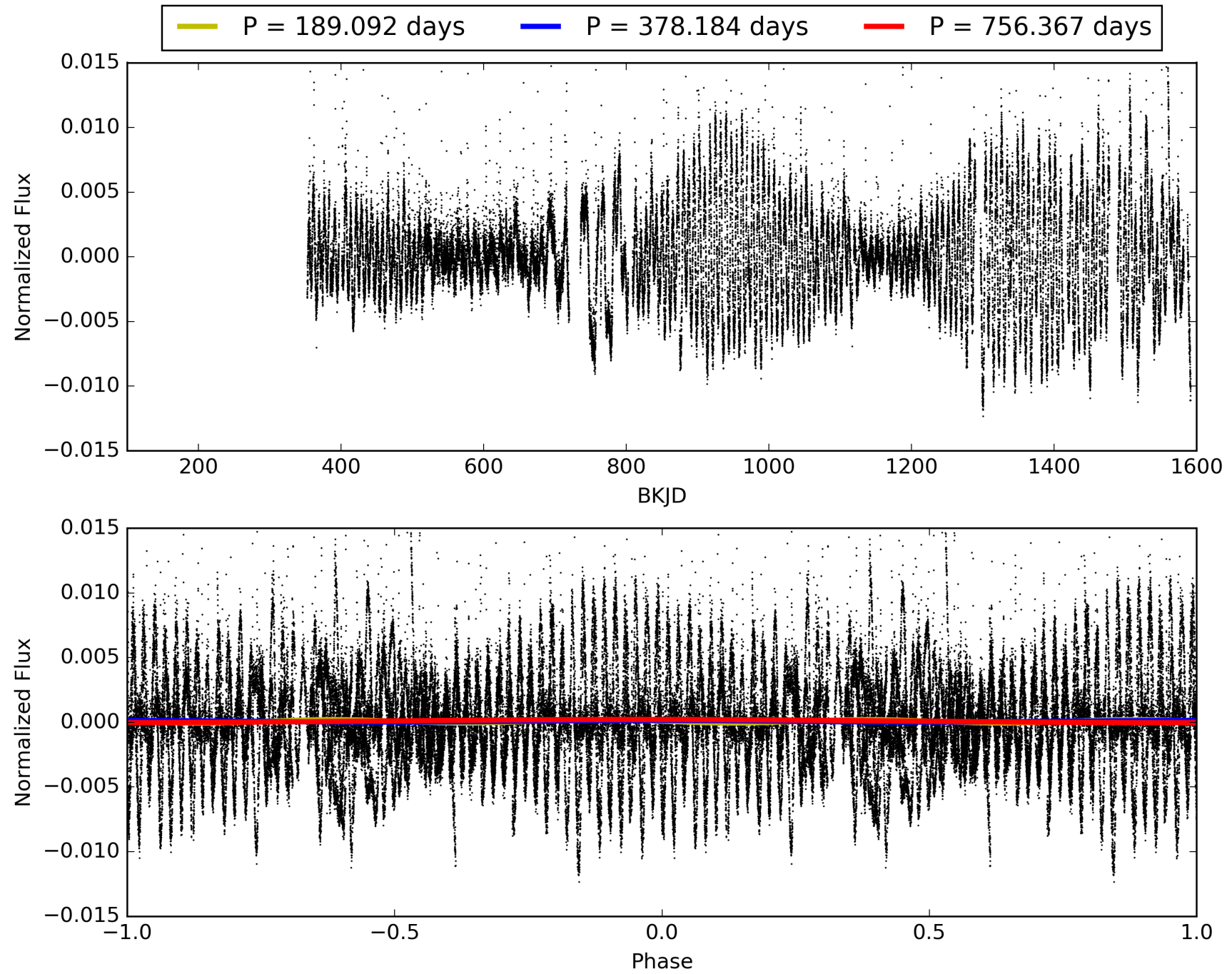
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 03:31:15 Z

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

TCE 007102500-01, PDC Light Curves

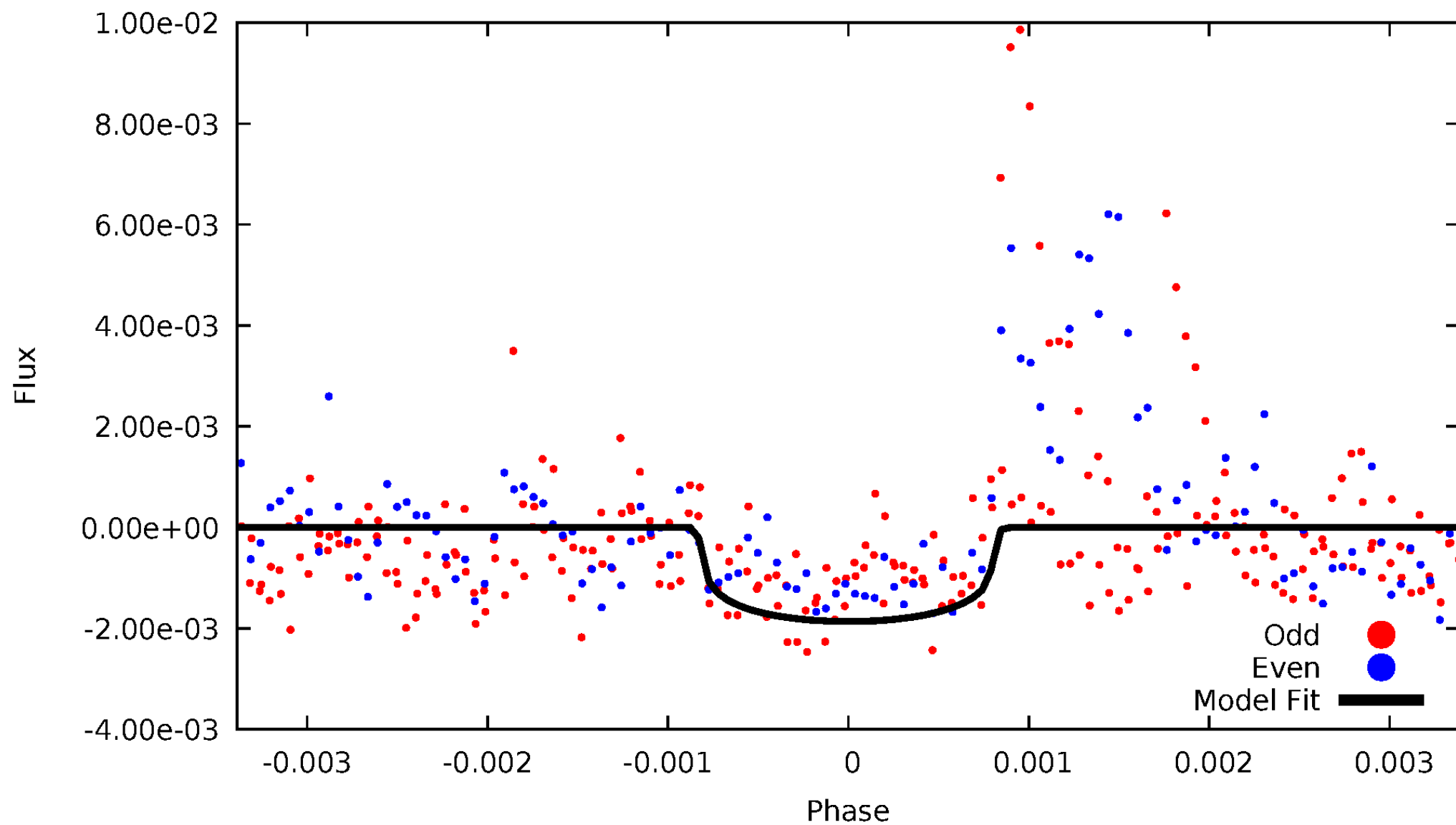


TCE 007102500-01



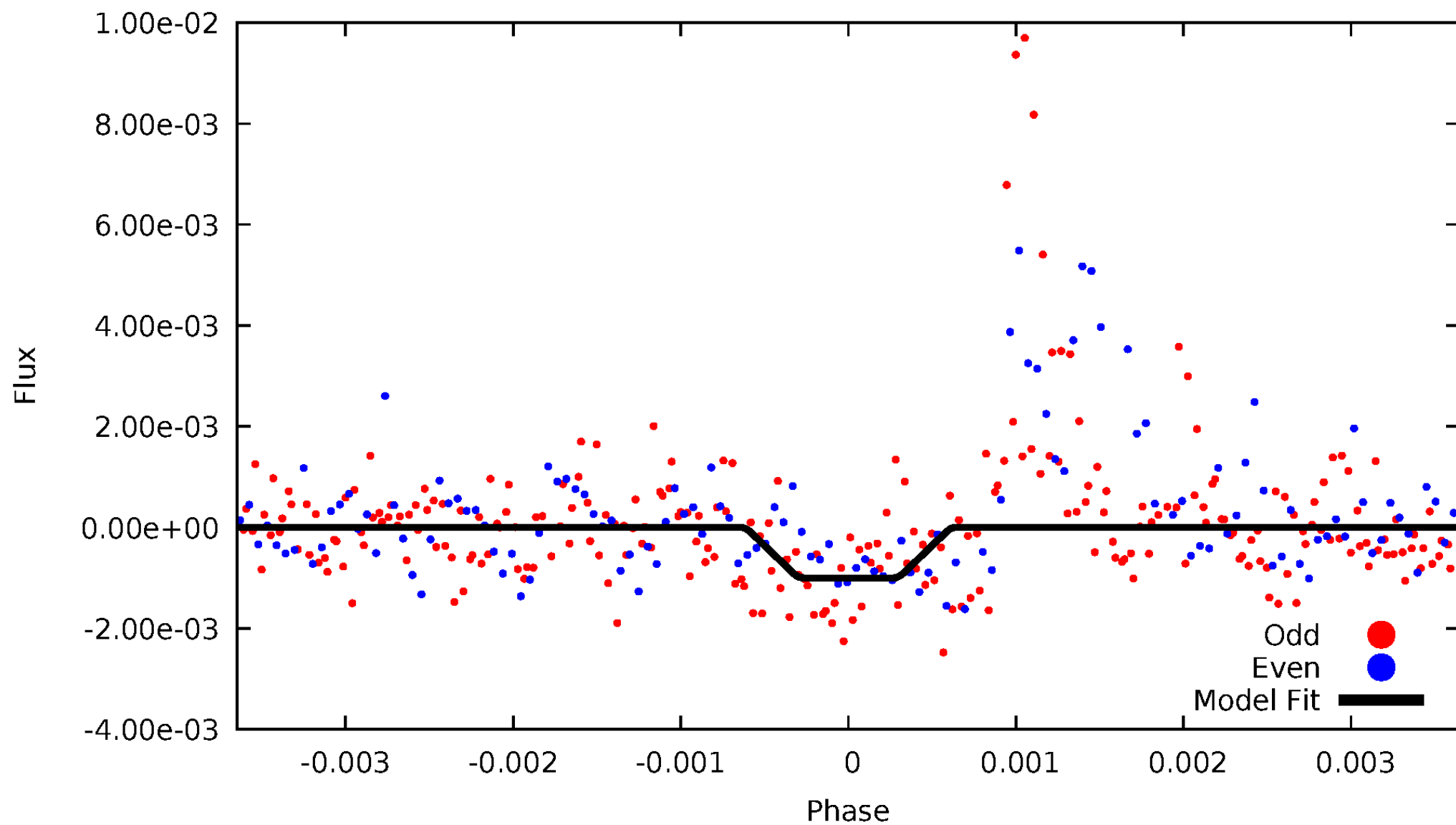
DV Odd/Even

TCE 007102500-01



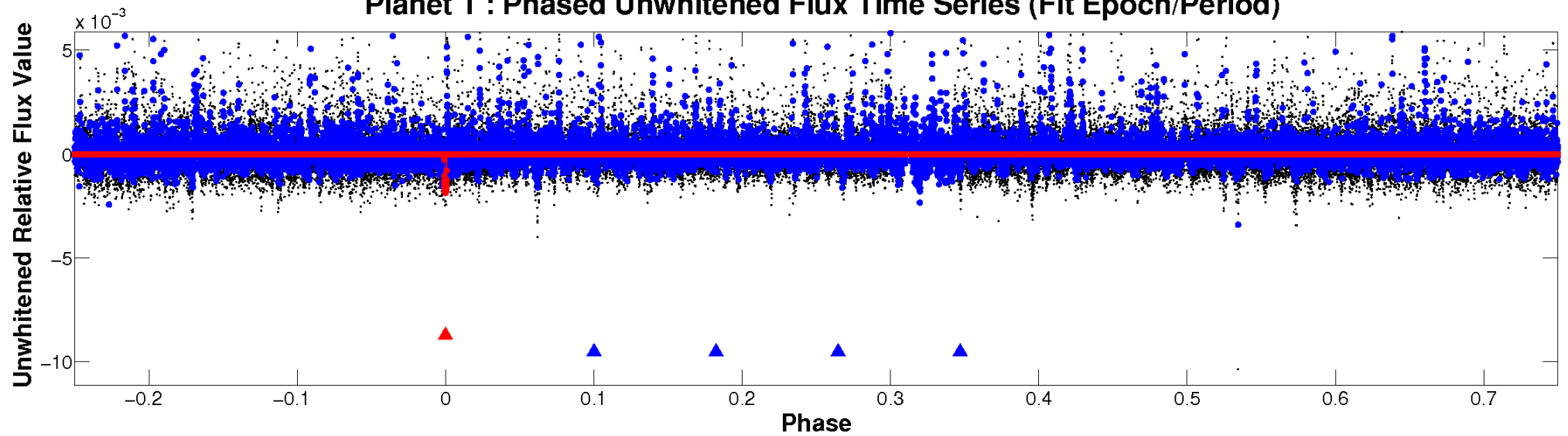
ALT Odd/Even

TCE 007102500-01

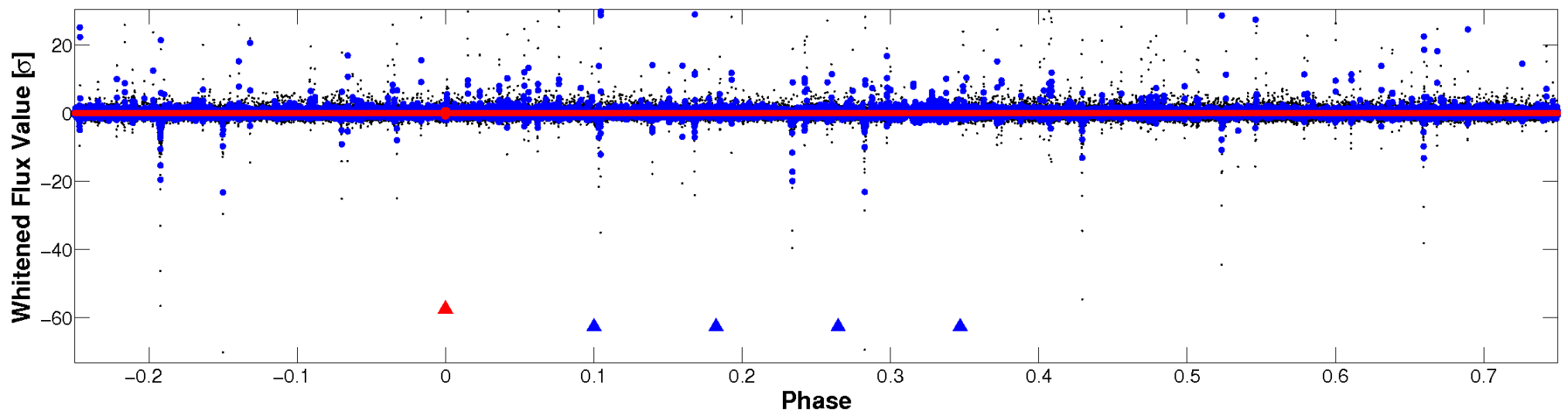


Non-Whitened Vs. Whitened Light Curve

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

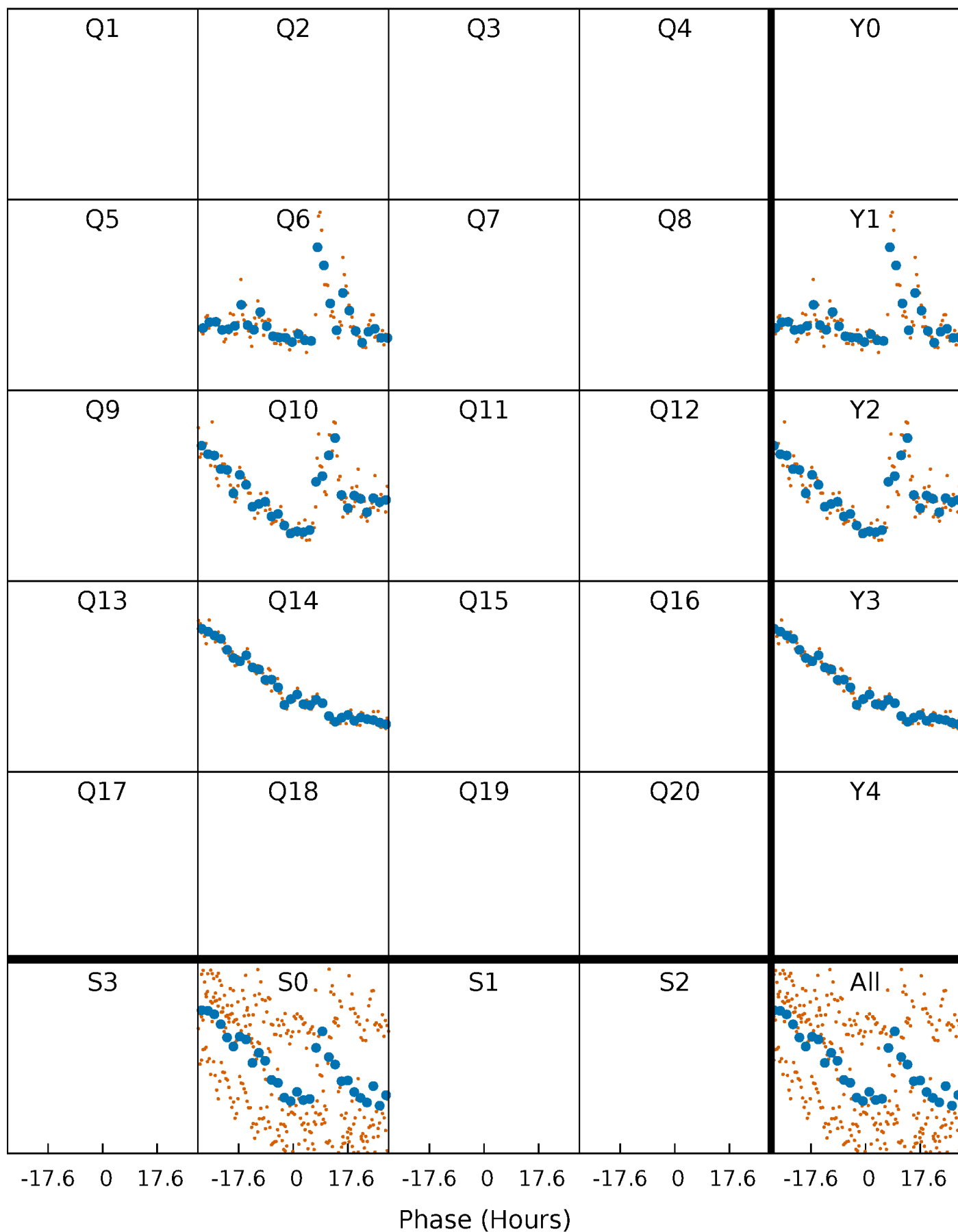


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



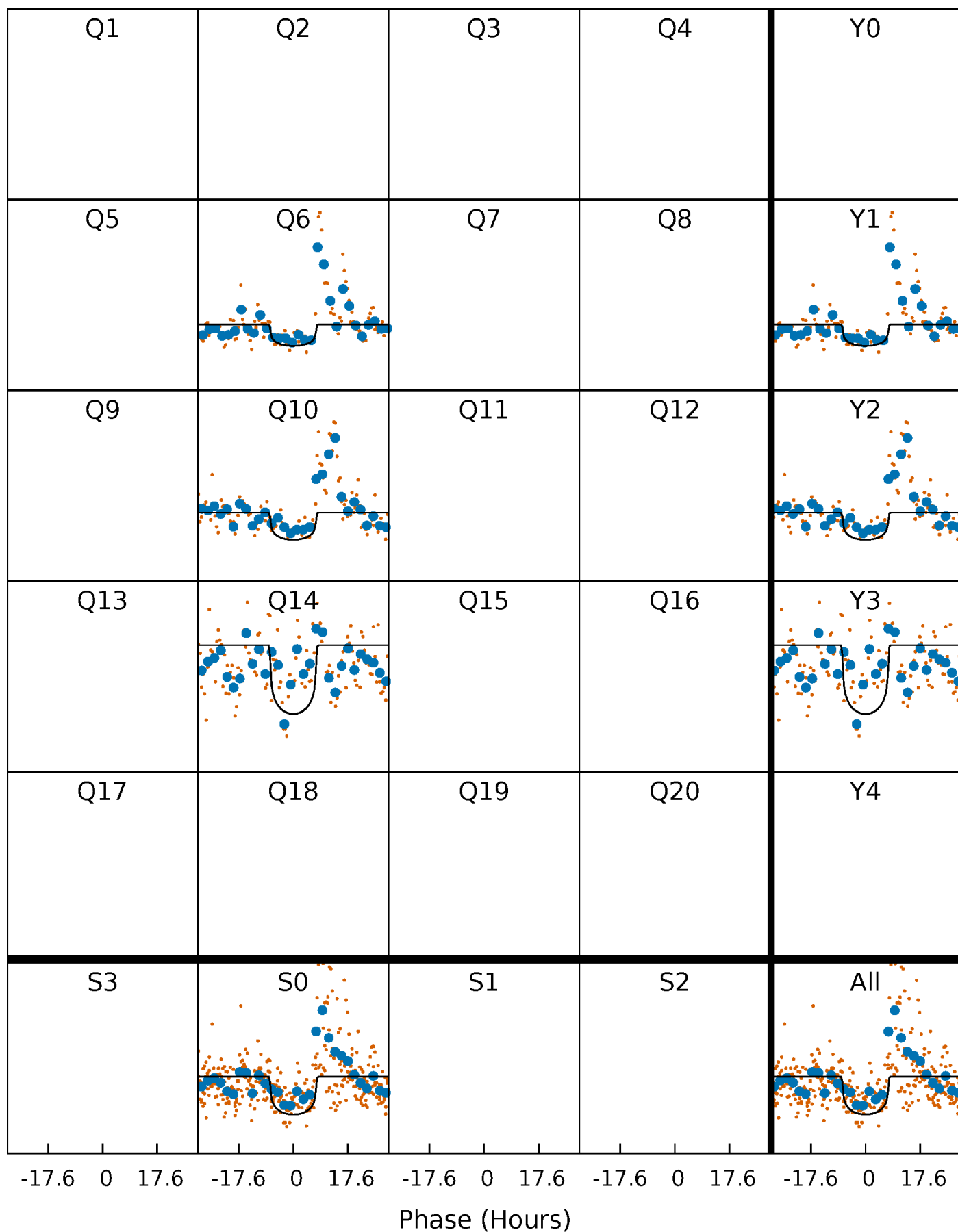
PDC Quarter-Phased Transit Curves

TCE 007102500-01 P=378.183513 Days $T_0=224.332673$ (BKJD)



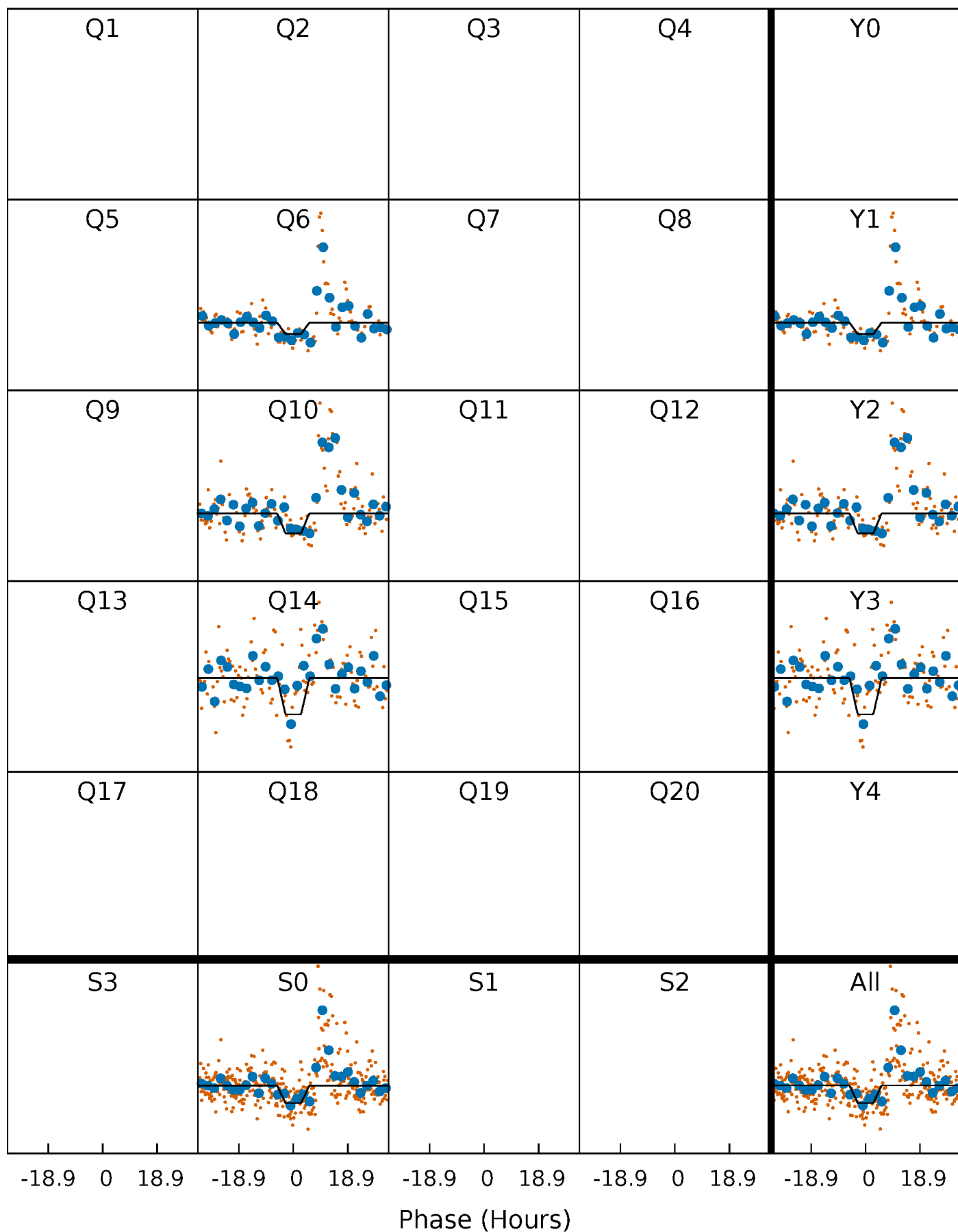
DV Quarter-Phased Transit Curves

TCE 007102500-01 P=378.183513 Days $T_0=224.332673$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

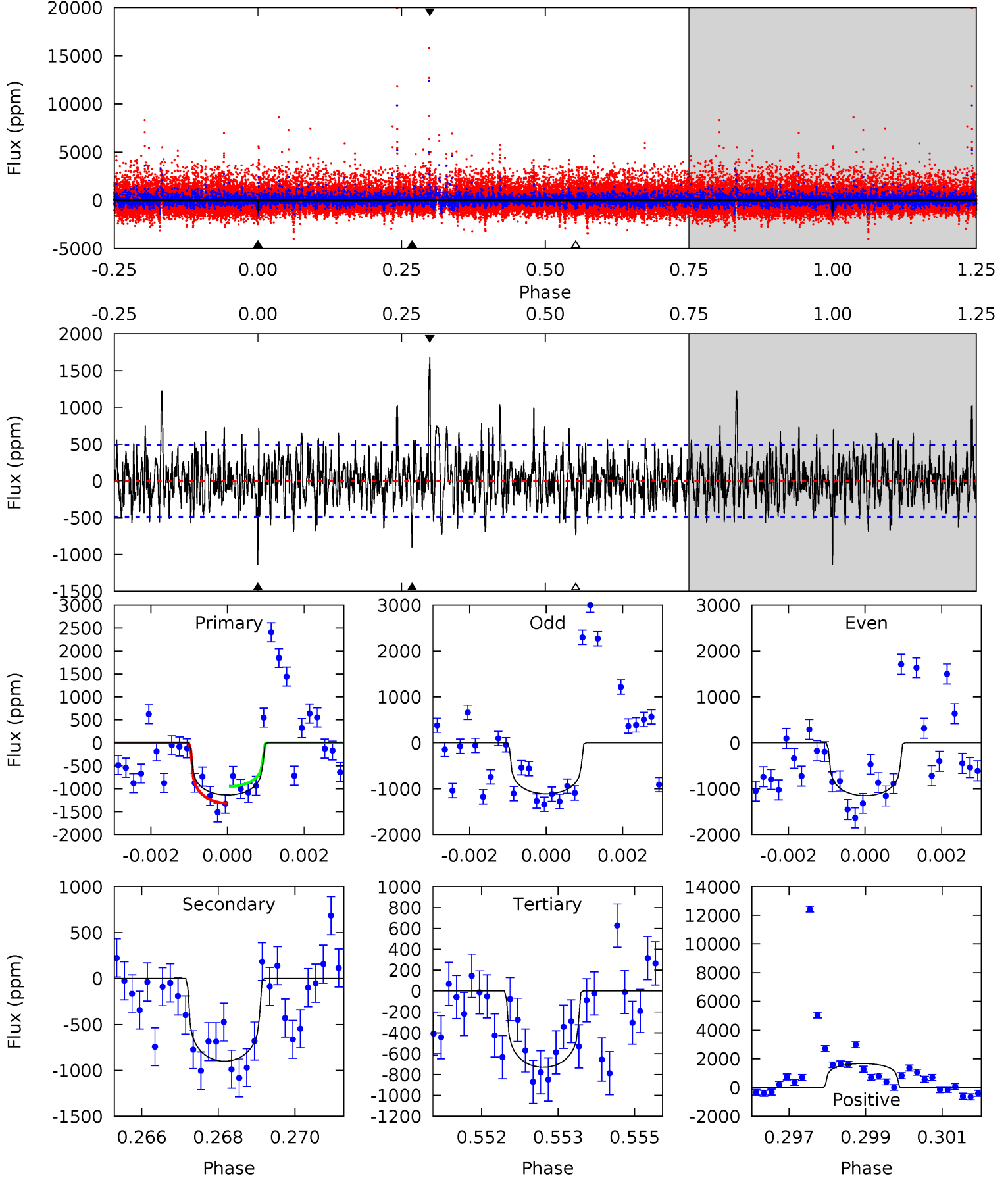
TCE 007102500-01 P=378.177517 Days $T_0=224.300547$ (BKJD)



DV Model-Shift Uniqueness Test

007102500-01, P = 378.183513 Days, E = 224.332673 Days

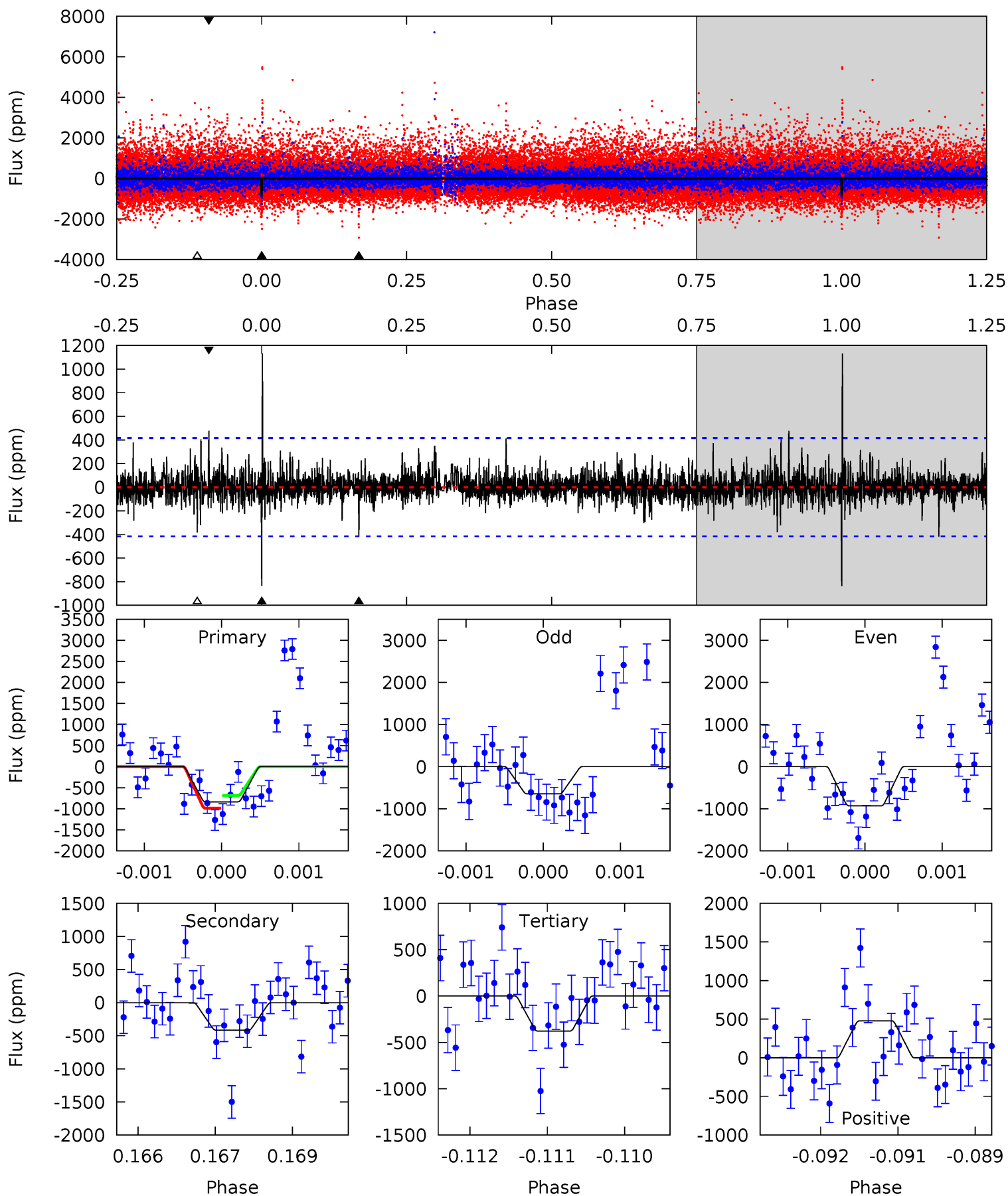
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.4	9.85	7.99	18.3	5.35	3.13	2.83	4.46	-5.87	1.86	-8.46	0.08	1.02	0.60	1.99



Alt Model-Shift Uniqueness Test

007102500-01, P = 378.177517 Days, E = 224.300547 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	5.41	4.91	6.21	5.41	3.22	1.10	5.93	4.63	0.50	-0.79	1.61	1.29	0.58	1.99



Stellar Parameters For KIC 007102500

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3274^{+42}_{-32}	$5.044^{+0.044}_{-0.044}$	$0.020^{+0.100}_{-0.100}$	$0.224^{+0.032}_{-0.026}$	$0.202^{+0.042}_{-0.026}$	$25.440^{+6.603}_{-5.245}$
	+1%/-1%	+1%/-1%	+500%/-500%	+14%/-12%	+21%/-13%	+26%/-21%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 007102500-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-901 ± 91	$0.97^{+0.29}_{-0.30}$	123^{+3}_{-3}	3026^{+345}_{-216}	$189890^{+199167}_{-76219}$
Alt.	-417 ± 77	$0.79^{+0.28}_{-0.29}$	124^{+3}_{-3}	2882^{+407}_{-244}	$134943^{+203298}_{-66005}$

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

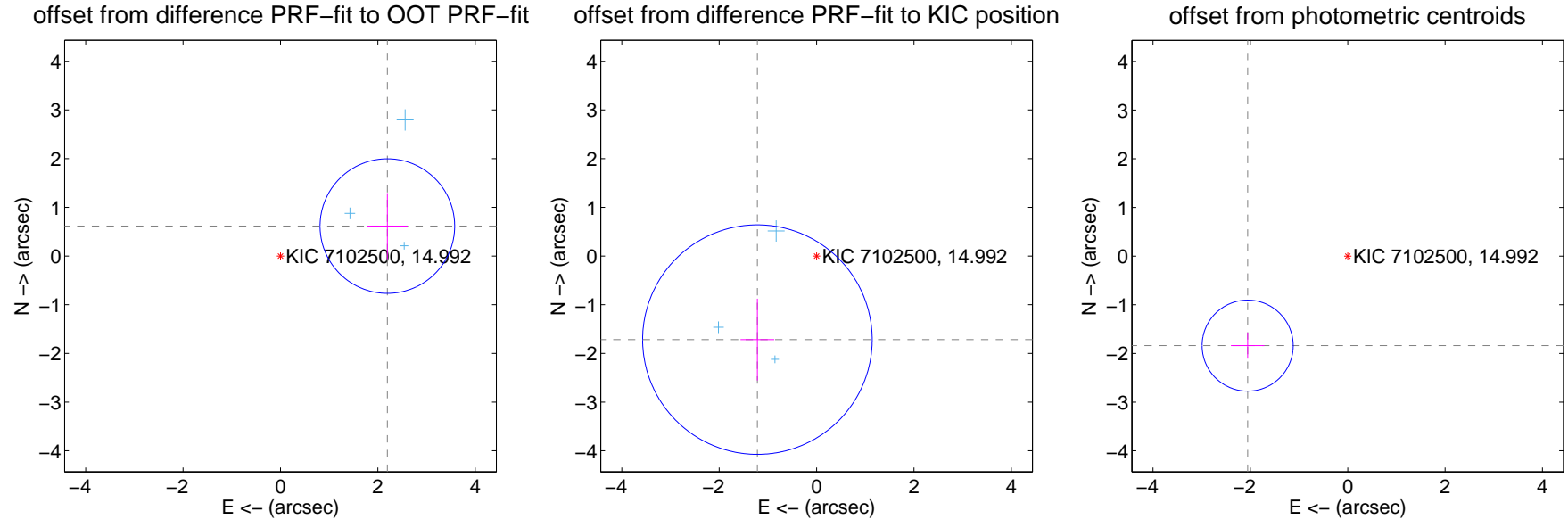
DV Centroid Data

Supplemental centroid analysis for 007102500-01. Kepler magnitude: 14.99. Transit SNR 8.63

There are 3 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 4.16 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.280 ± 0.461	4.95	-2.195 ± 0.414	0.615 ± 0.678
PRF-fit source offset from KIC position	2.103 ± 0.786	2.68	1.215 ± 0.346	-1.717 ± 0.840
photometric centroid source offset	2.76 ± 0.31	8.85	2.06 ± 0.34	-1.84 ± 0.27

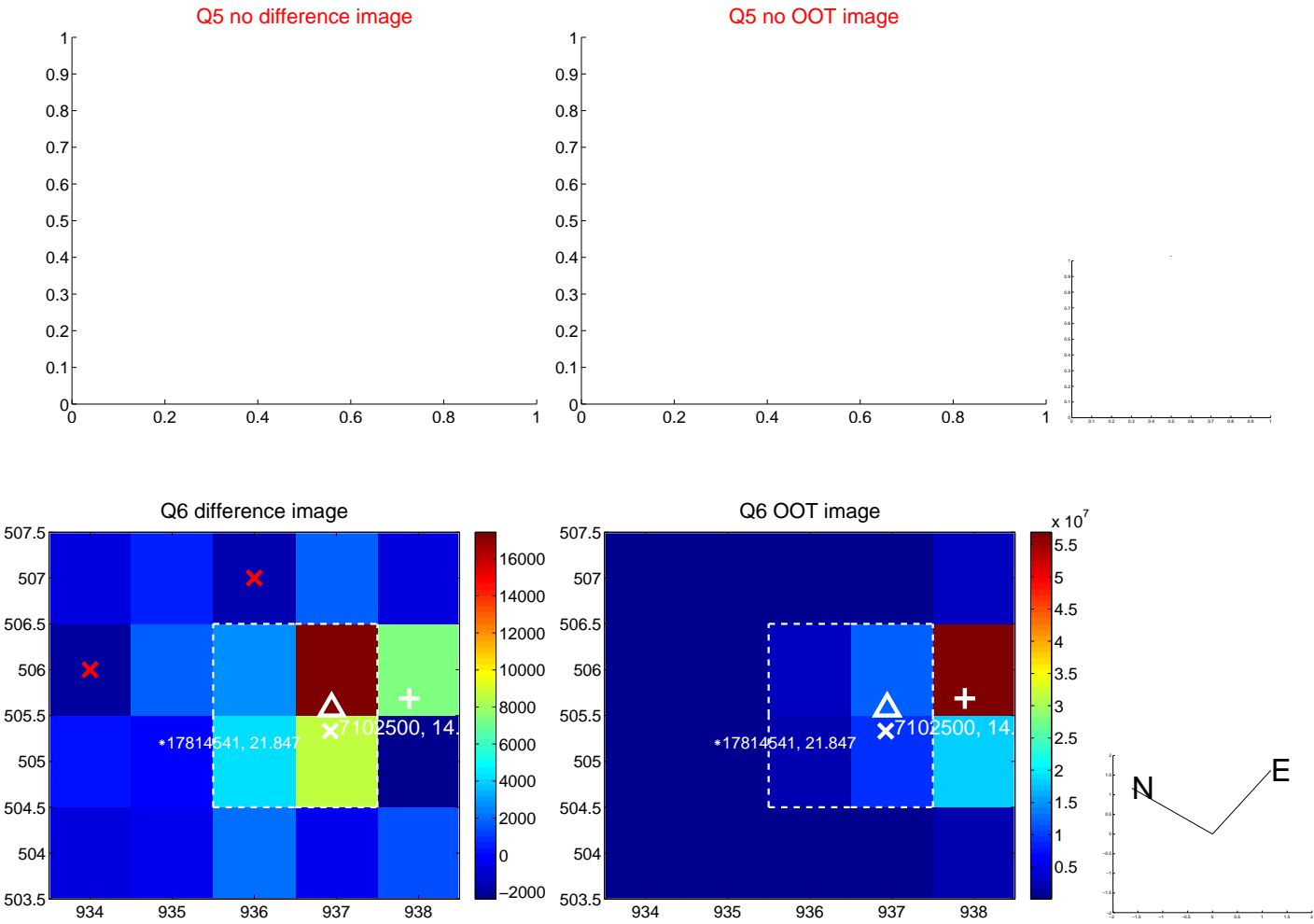


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

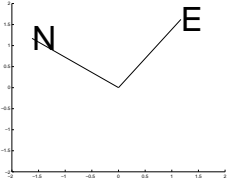
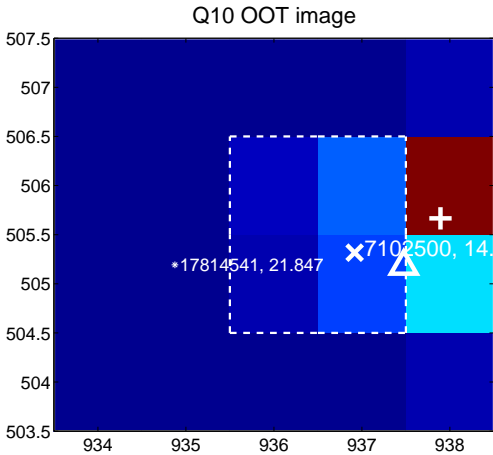
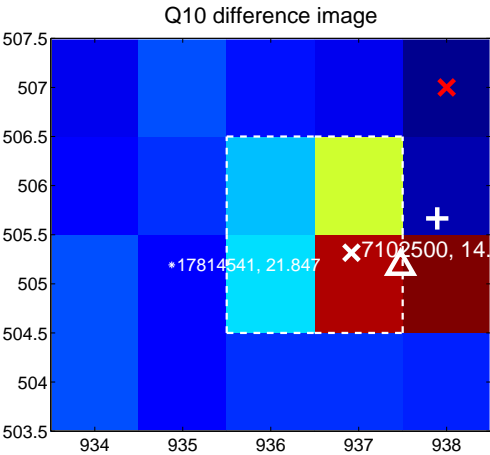


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

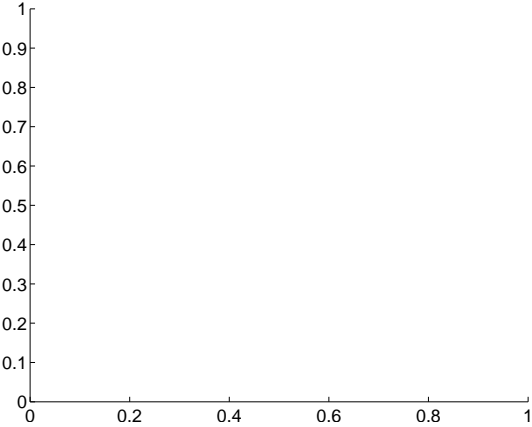
Q9 no difference image



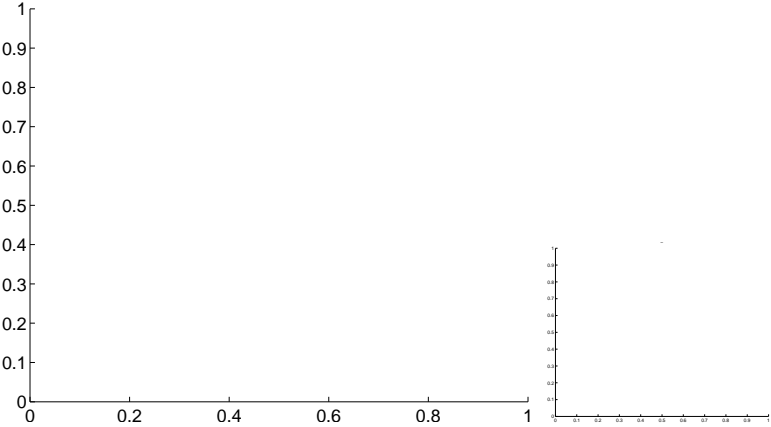
Q9 no OOT image



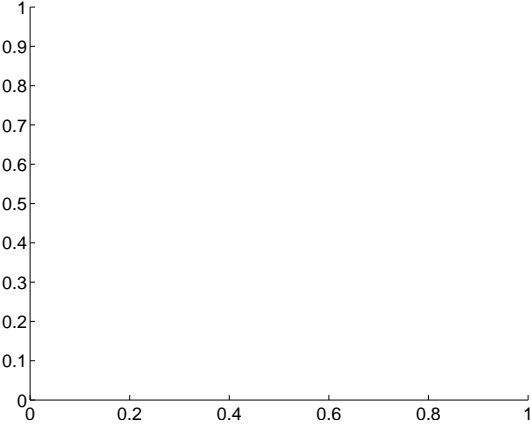
Q11 no difference image



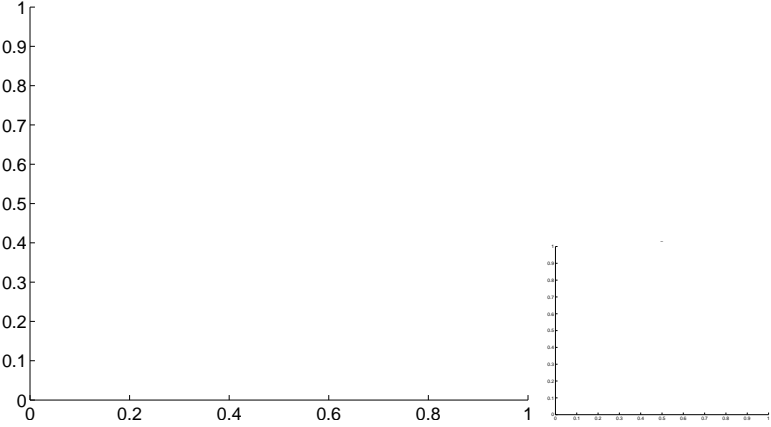
Q11 no OOT image



Q12 no difference image



Q12 no OOT image



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

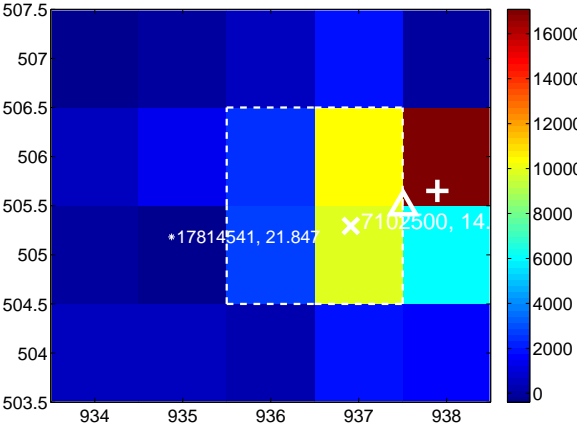
Q13 no difference image



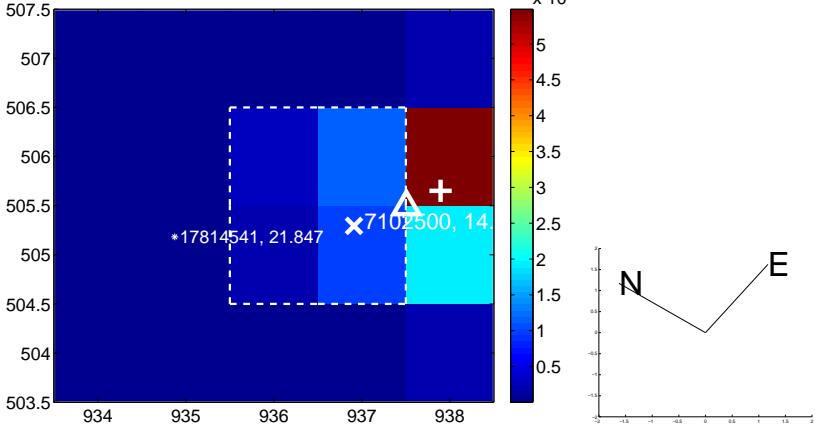
Q13 no OOT image



Q14 difference image



Q14 OOT image



Q15 no difference image



Q15 no OOT image



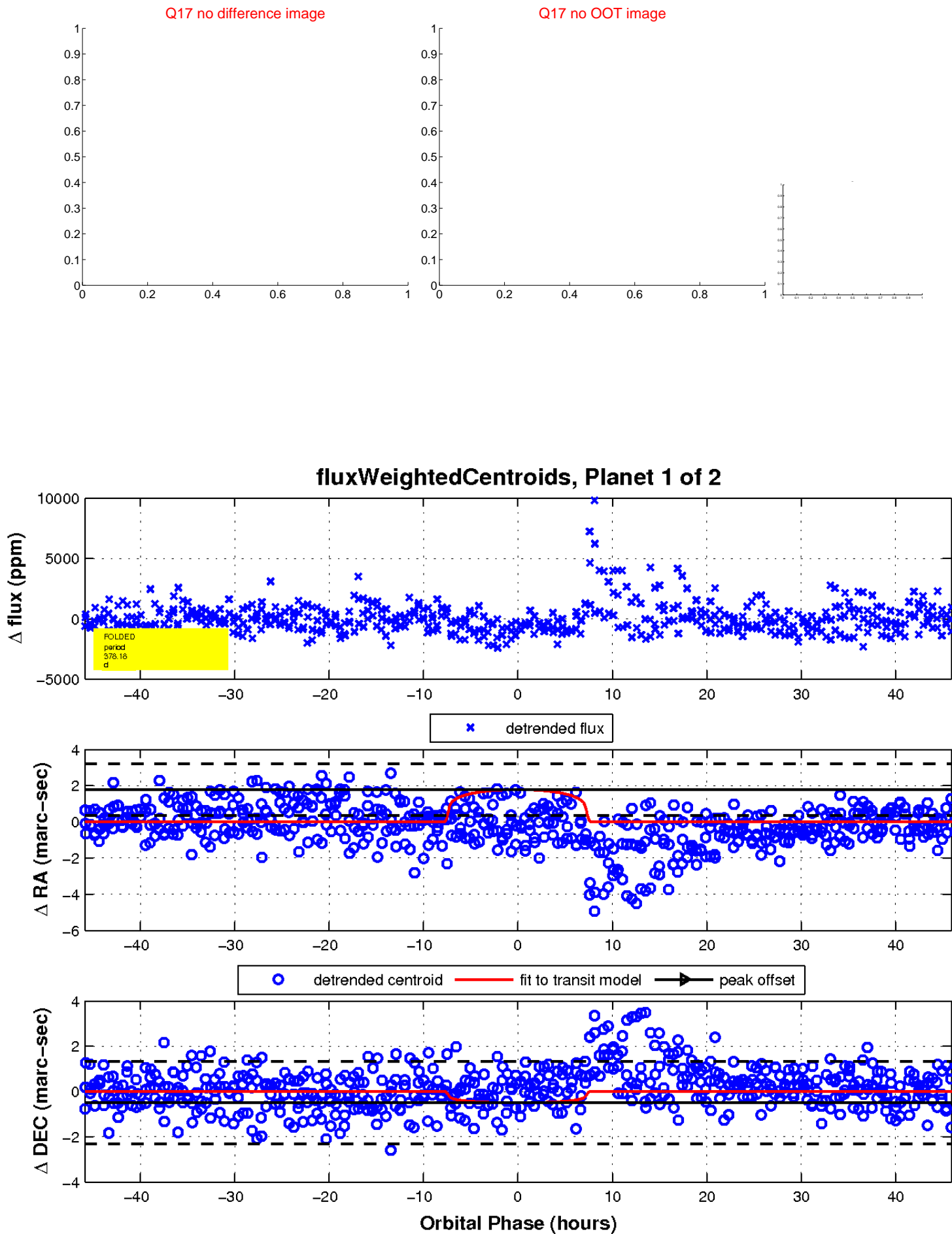
Q16 no difference image



Q16 no OOT image

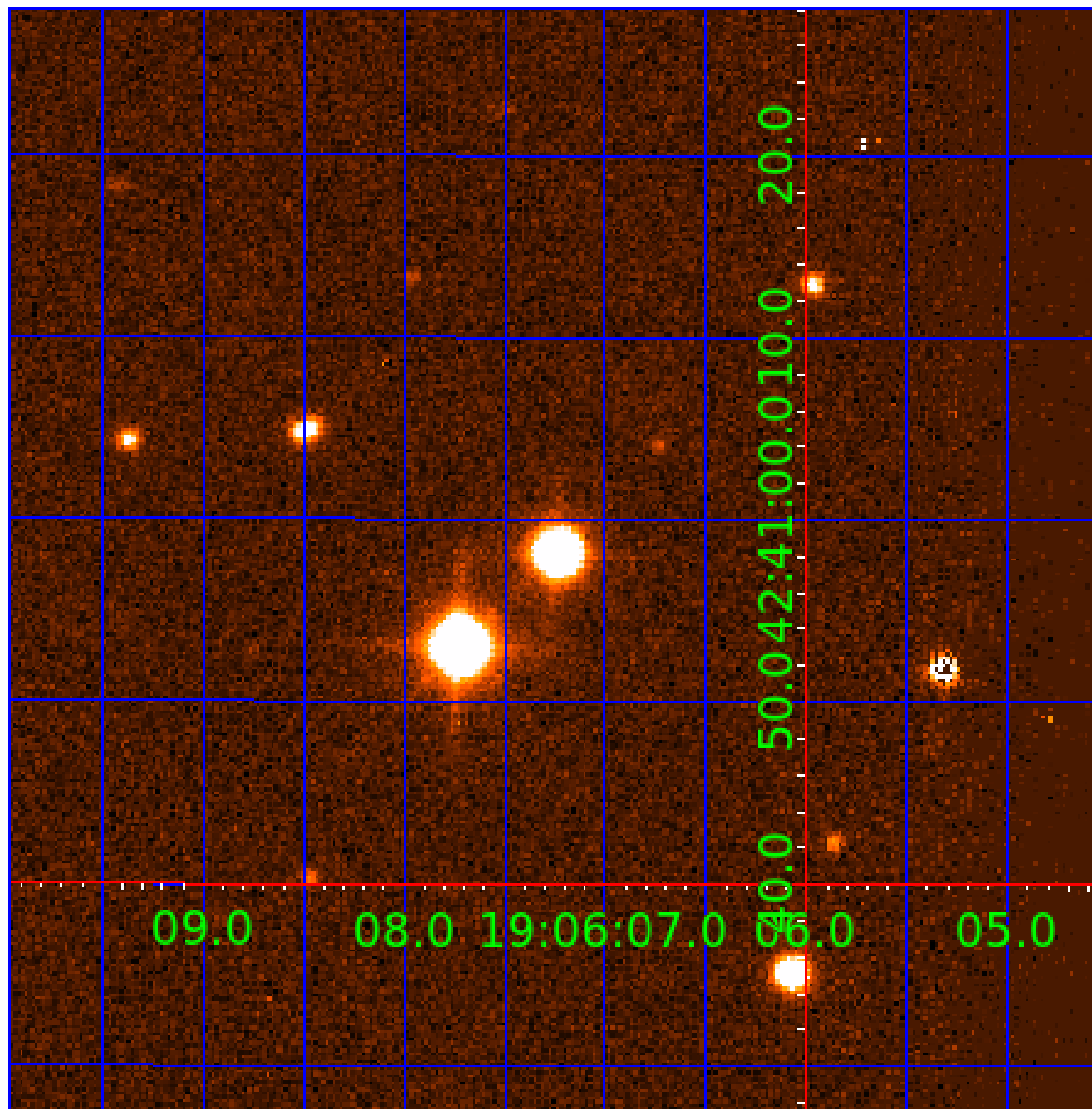


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007102500

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})
007102500-01	OBS	No	378.183513	224.332673	1865.5	15.372	12.6	8.6	0.22	3274	0.95	0.01
007102500-02	OBS	No	347.064983	355.567755	1312.3	15.188	8.1	7.5	0.22	3274	0.82	0.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007102500-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007102500-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—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.

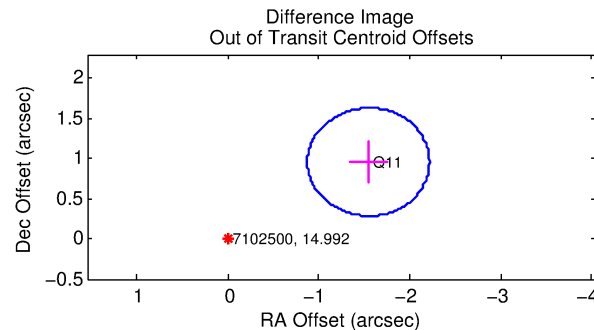
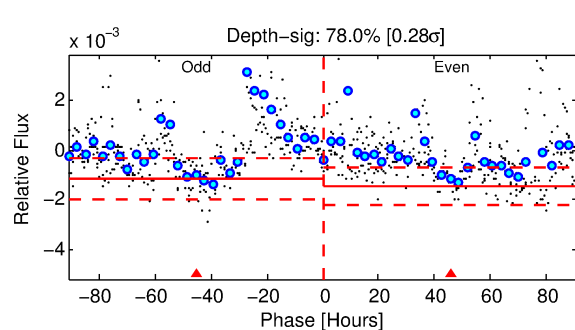
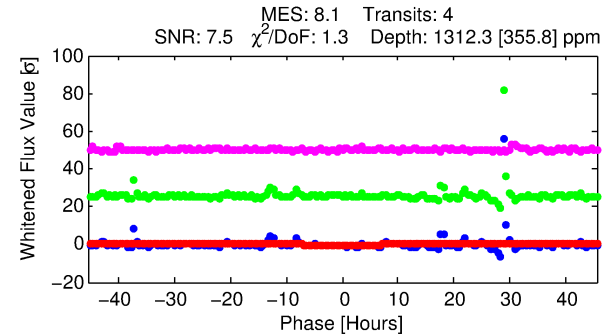
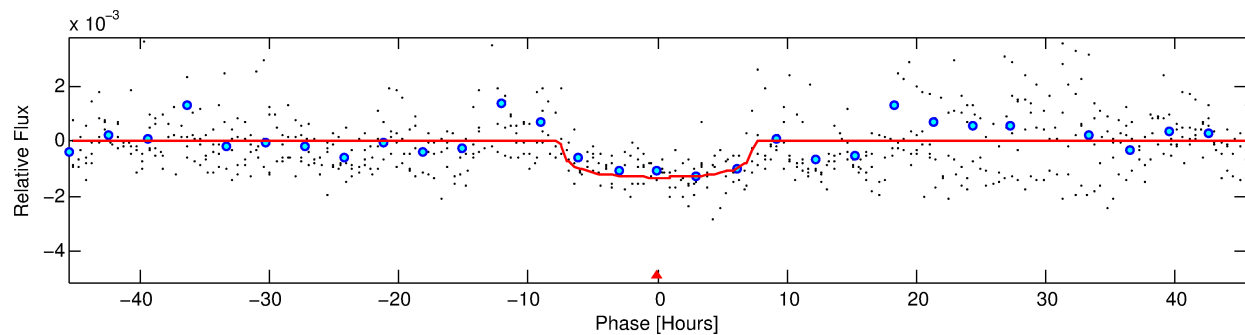
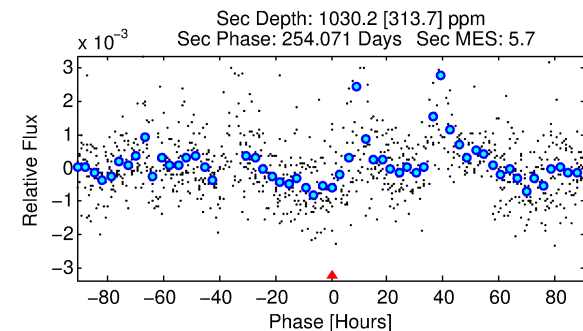
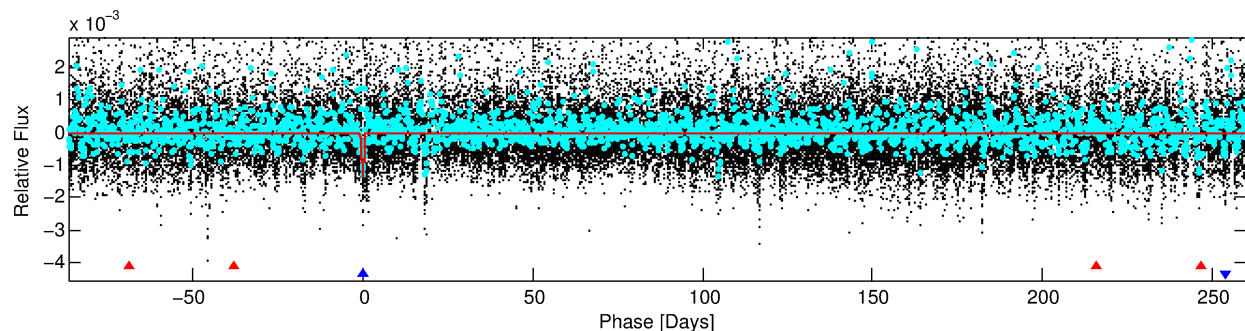
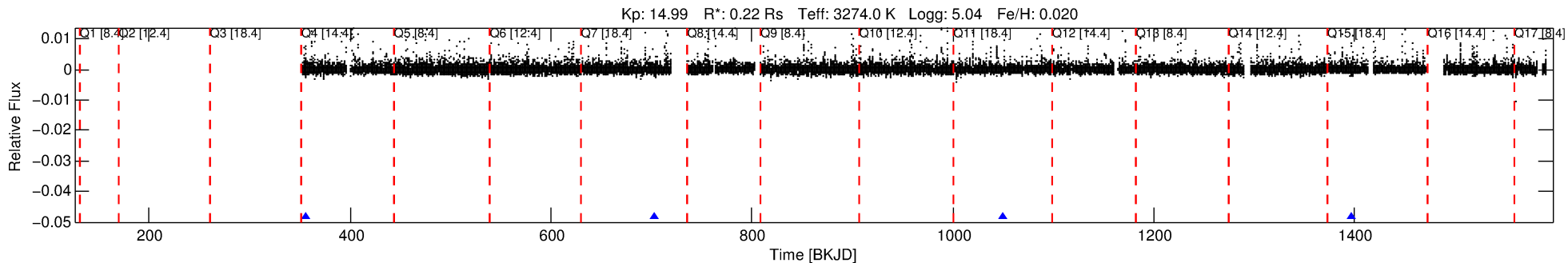
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007102500-02

No Significant Match Found

DV One-Page Summary

KIC: 7102500 Candidate: 2 of 2 Period: 347.065 d



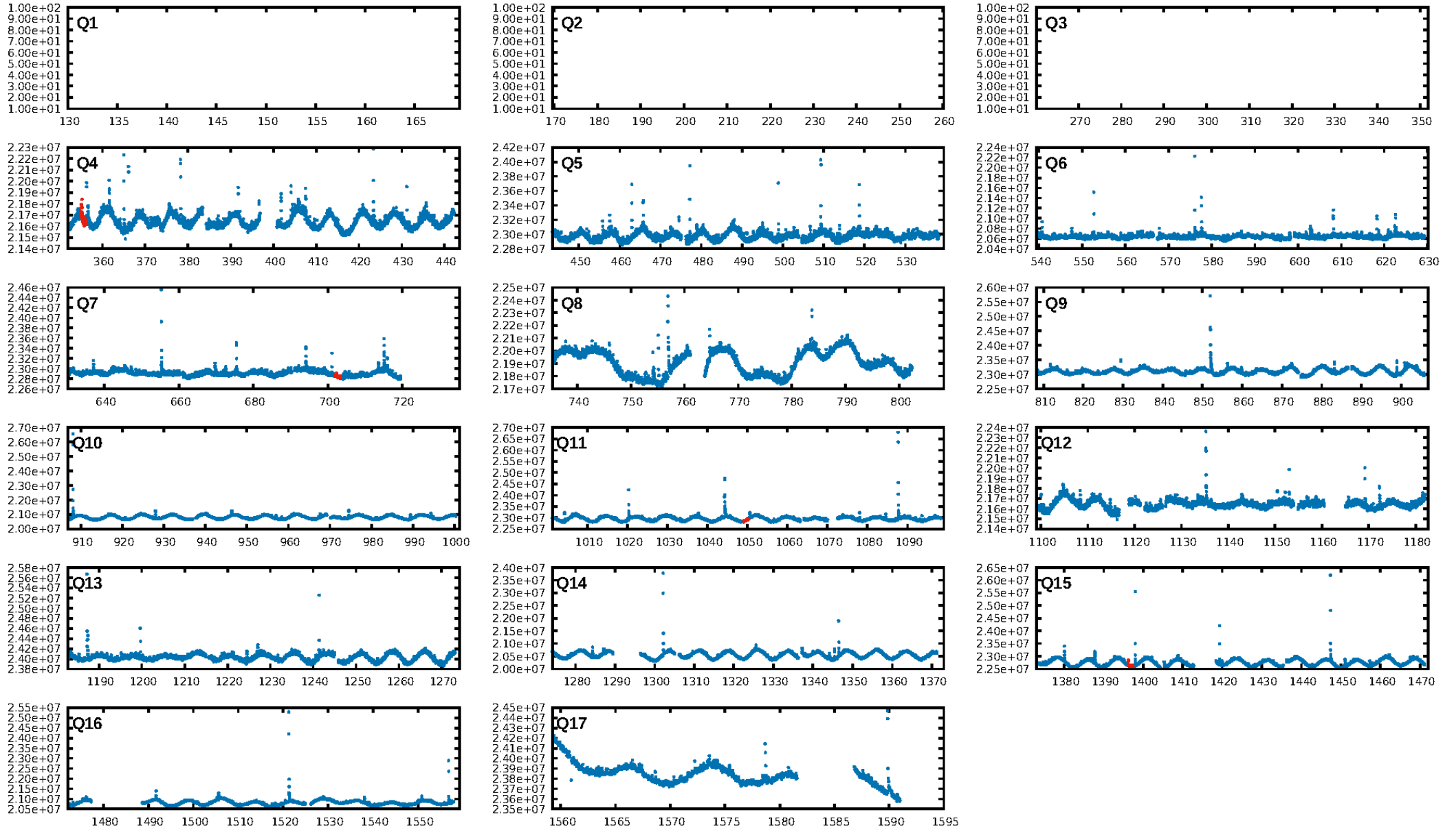
DV Fit Results:

Period = 347.06498 [0.01276] d
Epoch = 355.5678 [0.0249] BKJD
Rp/R* = 0.0336 [0.0154]
a/R* = 162.33 [288.72]
b = 0.45 [3.17]
Seff = 0.02 [0.00]
Teq = 91 [3] K
Rp = 0.82 [0.39] Re
a = 0.5677 [0.0574] AU
Ag = 271201.99 [263504.71] [1.03σ]
Teffp = 3201 [773] K [4.02σ]

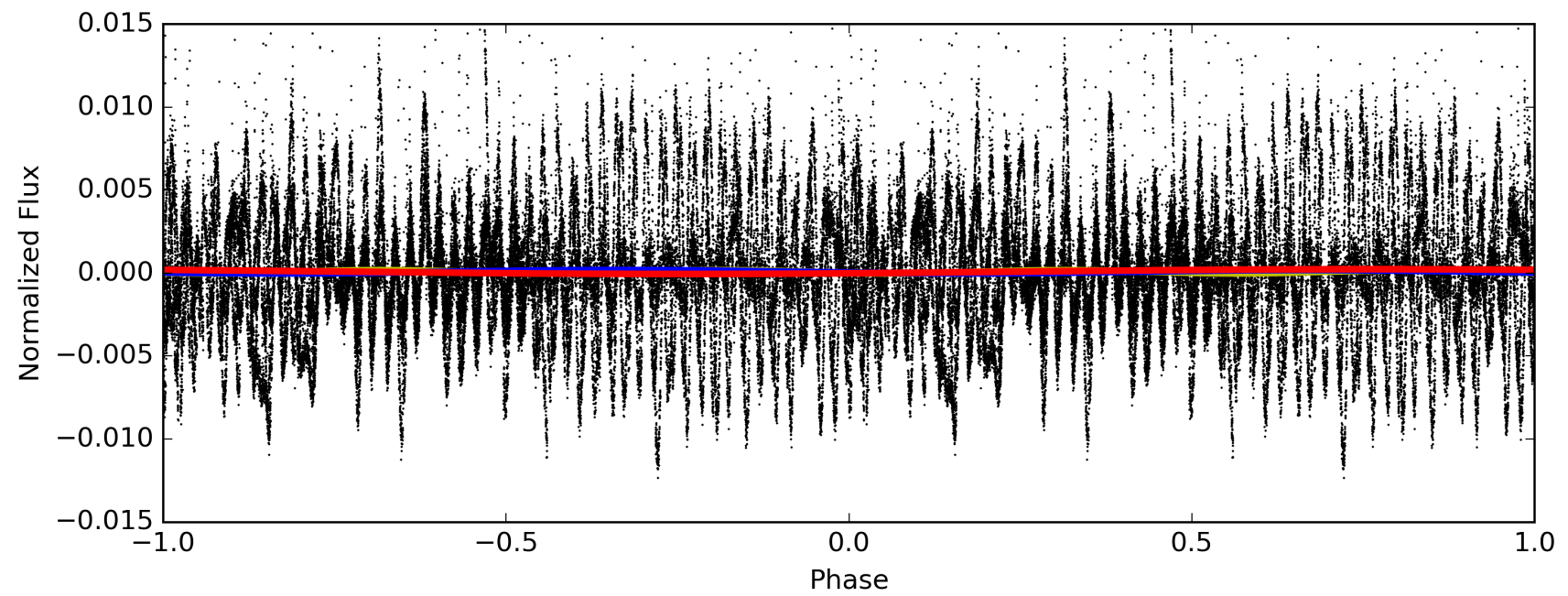
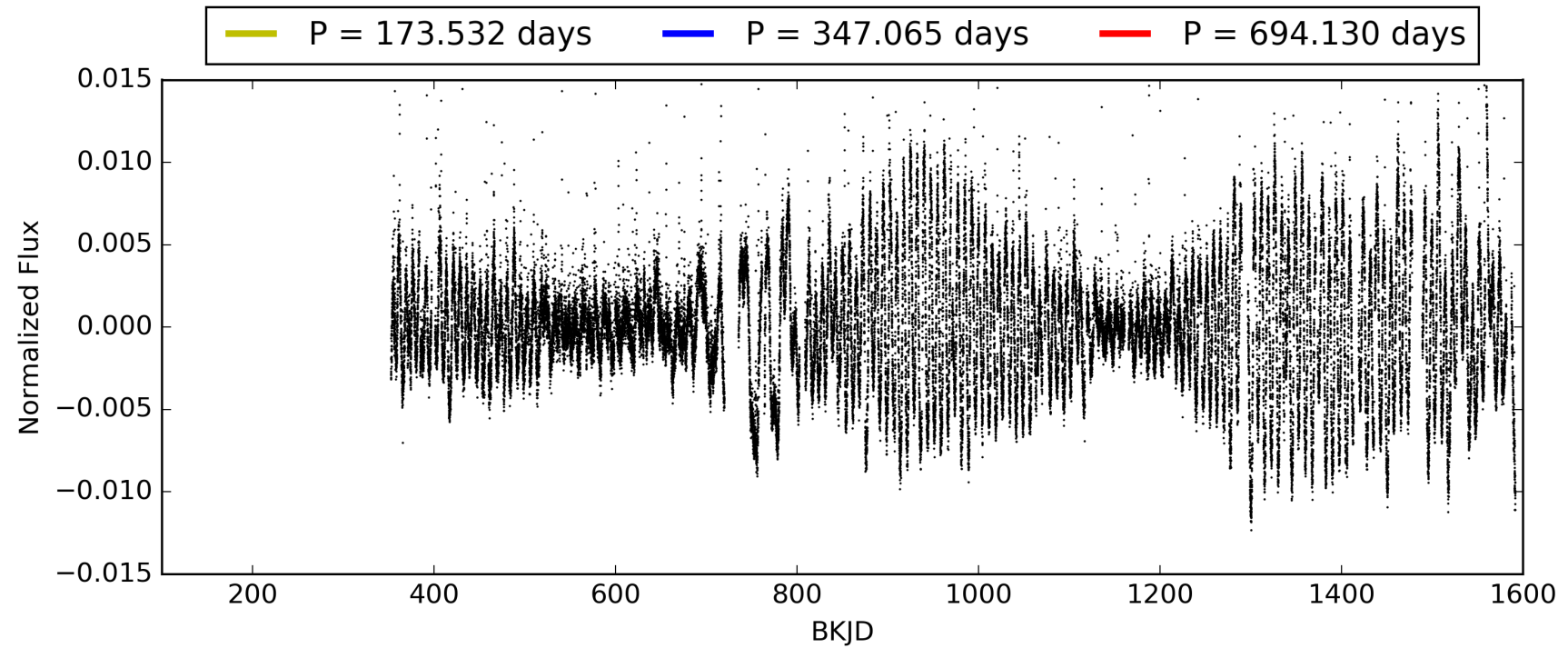
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [34.56σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 5.29e-09
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.486
Centroid-sig: 31.0%
Centroid-so: 3.307 arcsec [9.03σ]
OotOffset-rm: 1.820 arcsec [8.12σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-rm: 0.541 arcsec [2.15σ]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 007102500-02, PDC Light Curves

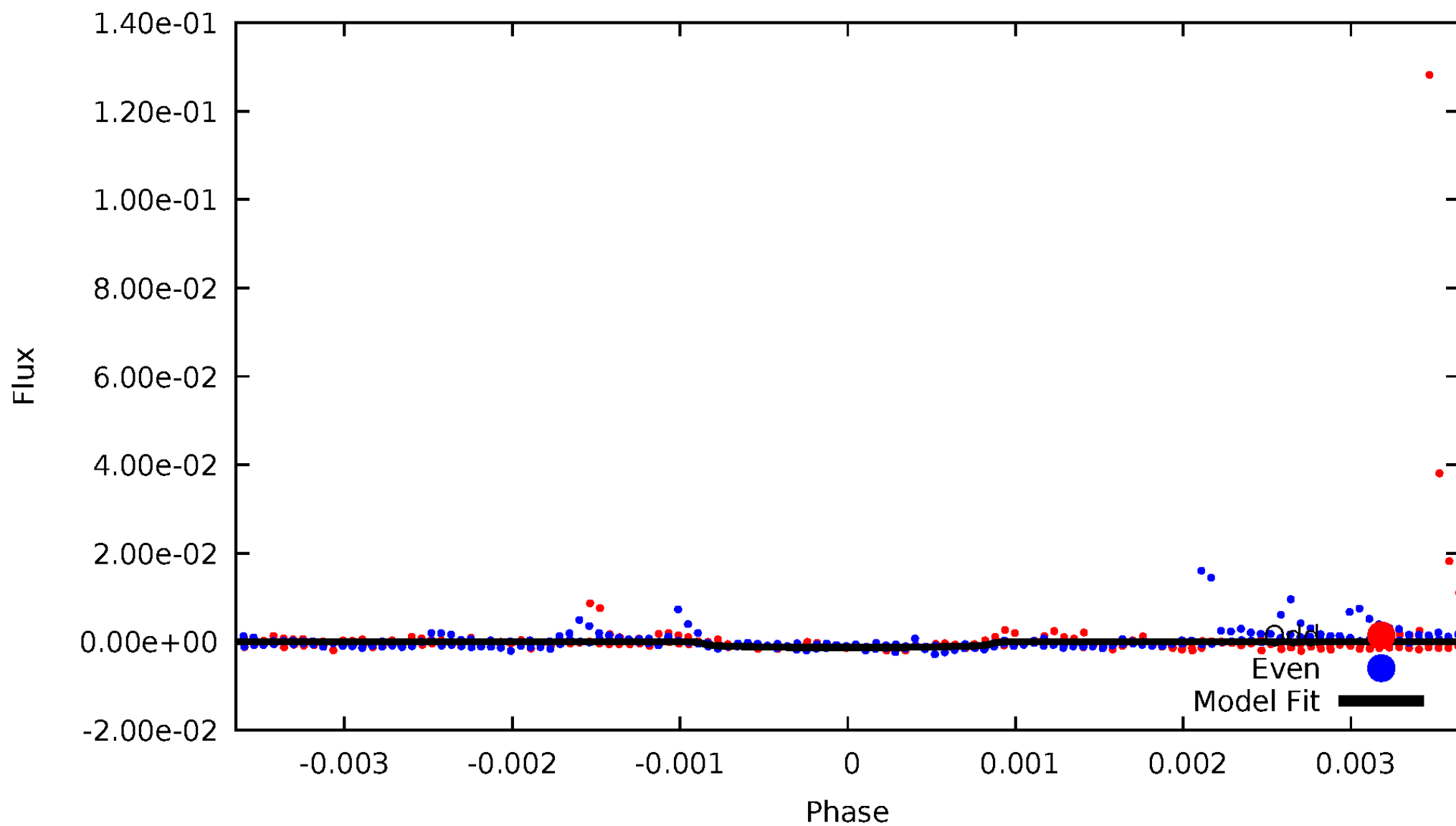


TCE 007102500-02



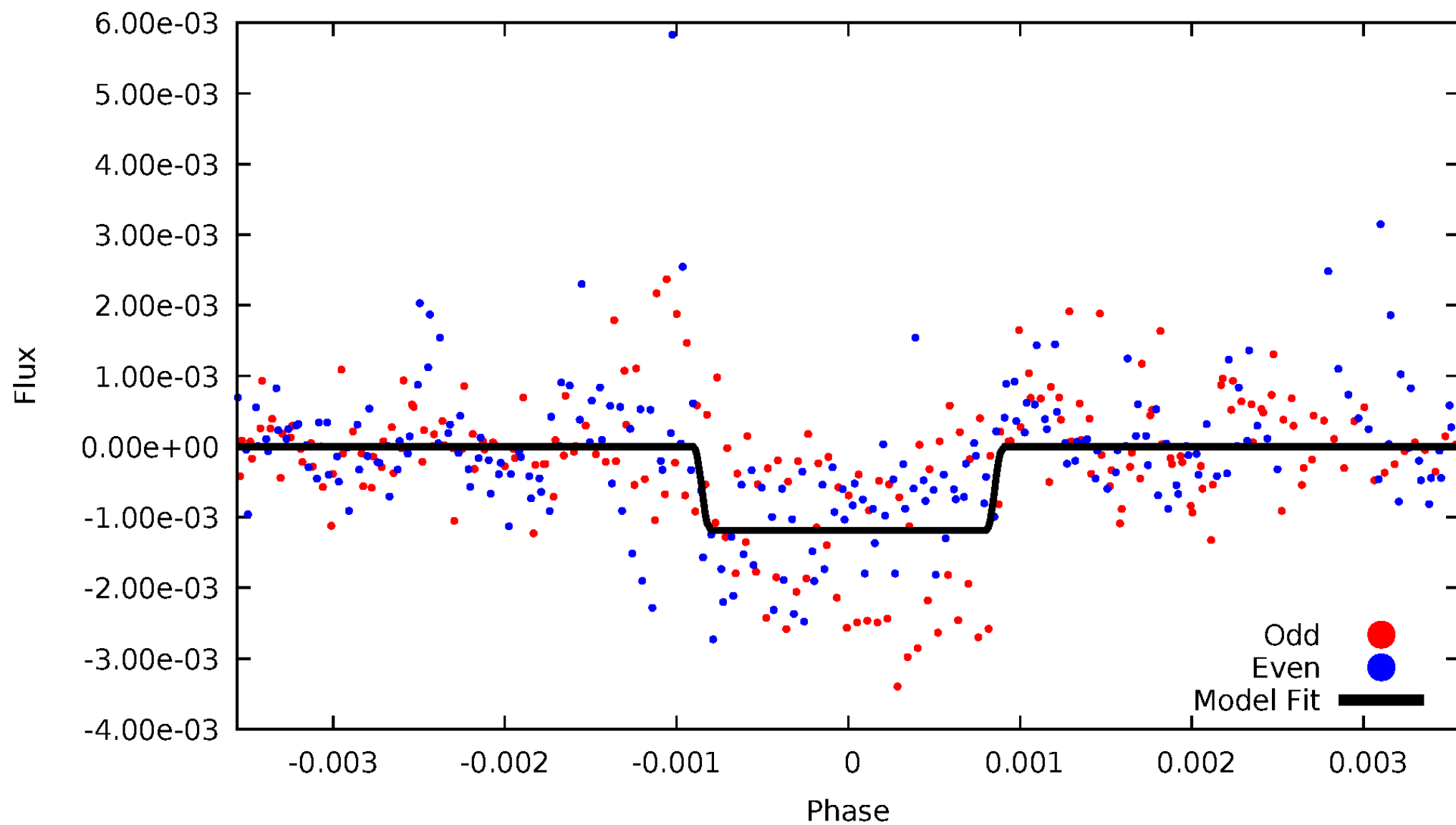
DV Odd/Even

TCE 007102500-02



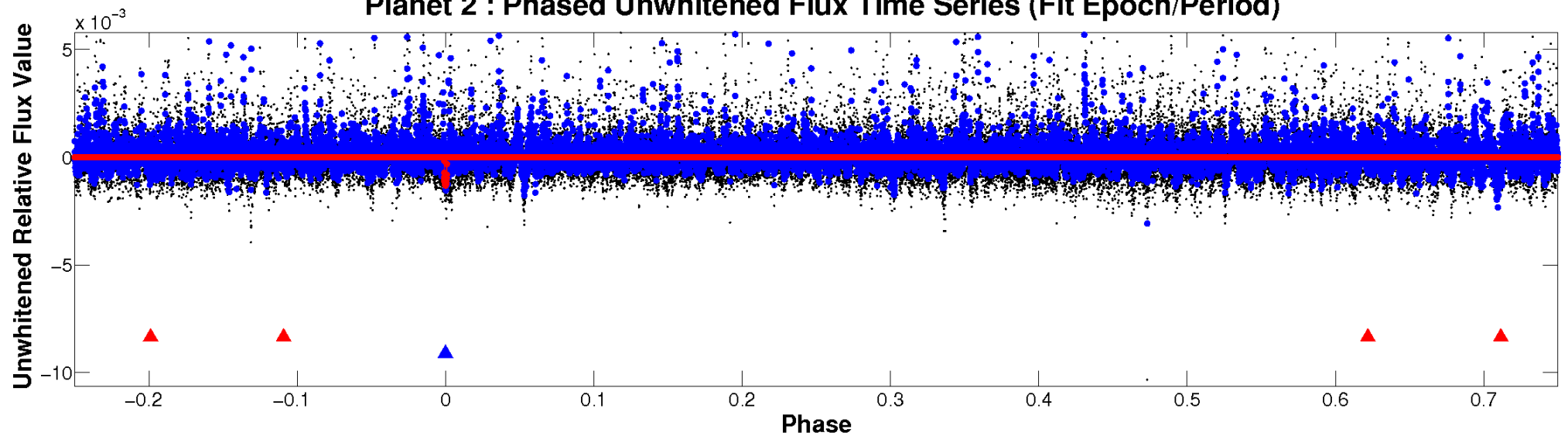
ALT Odd/Even

TCE 007102500-02

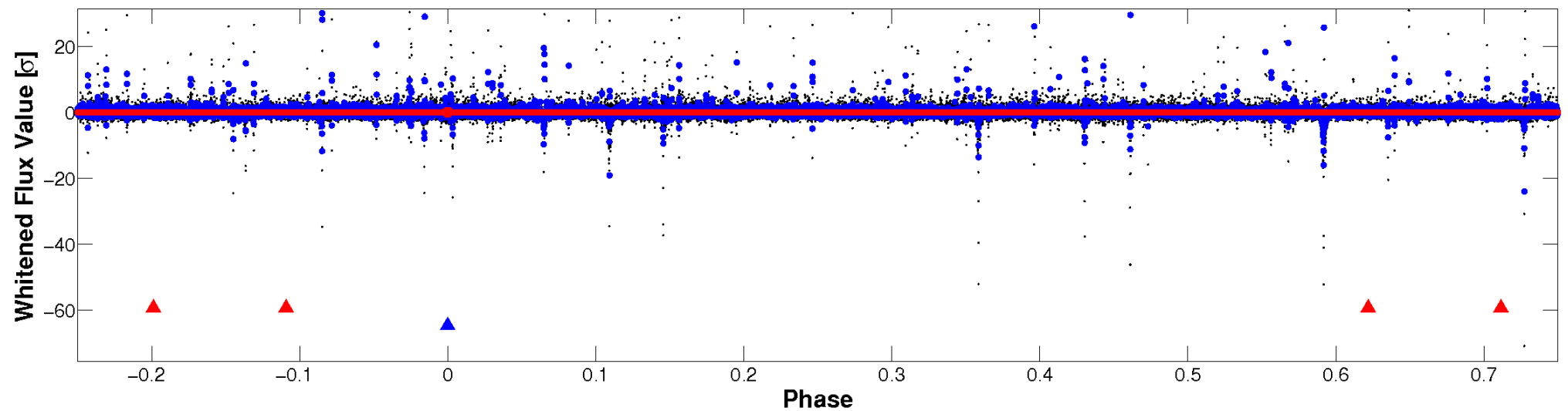


Non-Whitened Vs. Whitened Light Curve

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

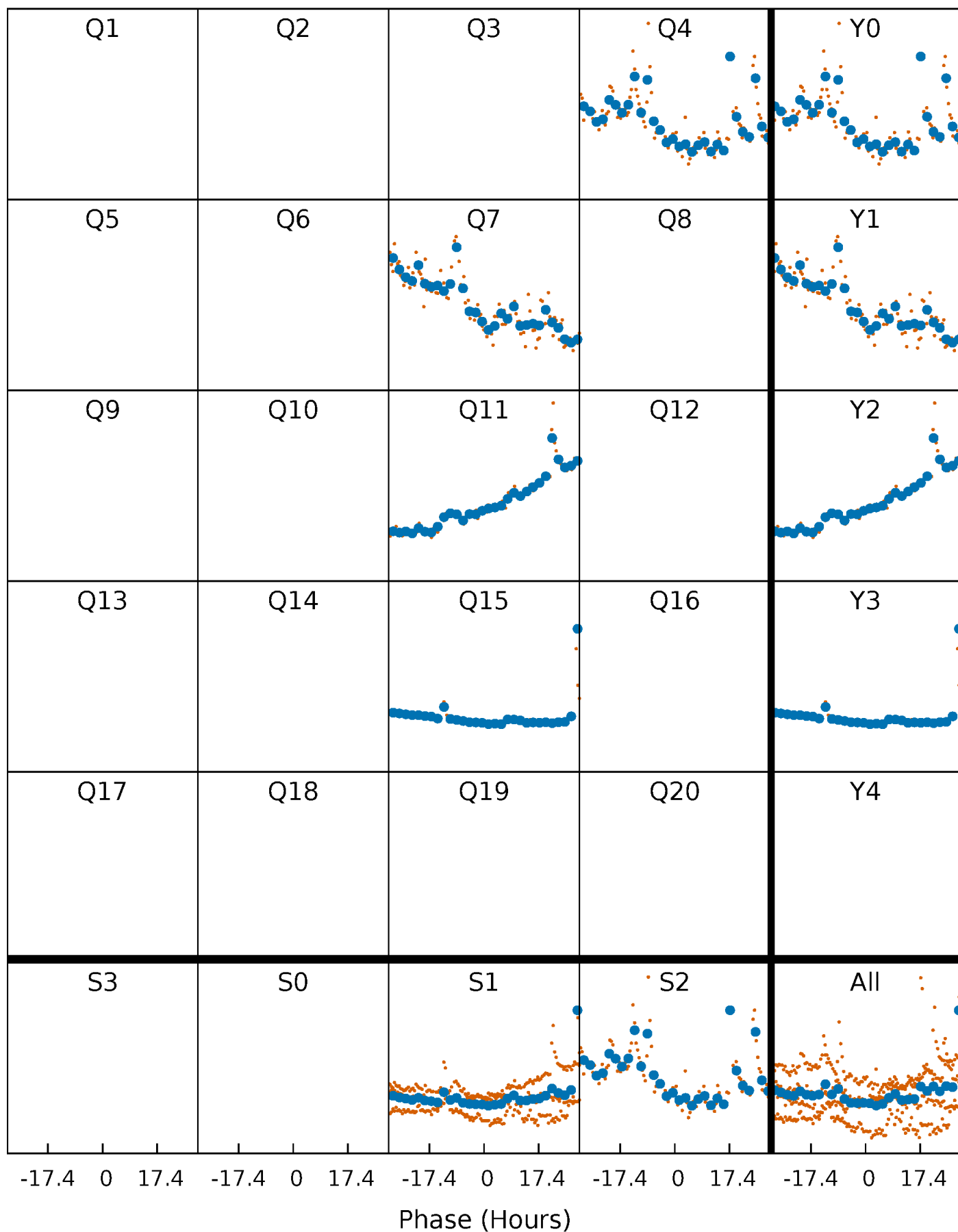


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



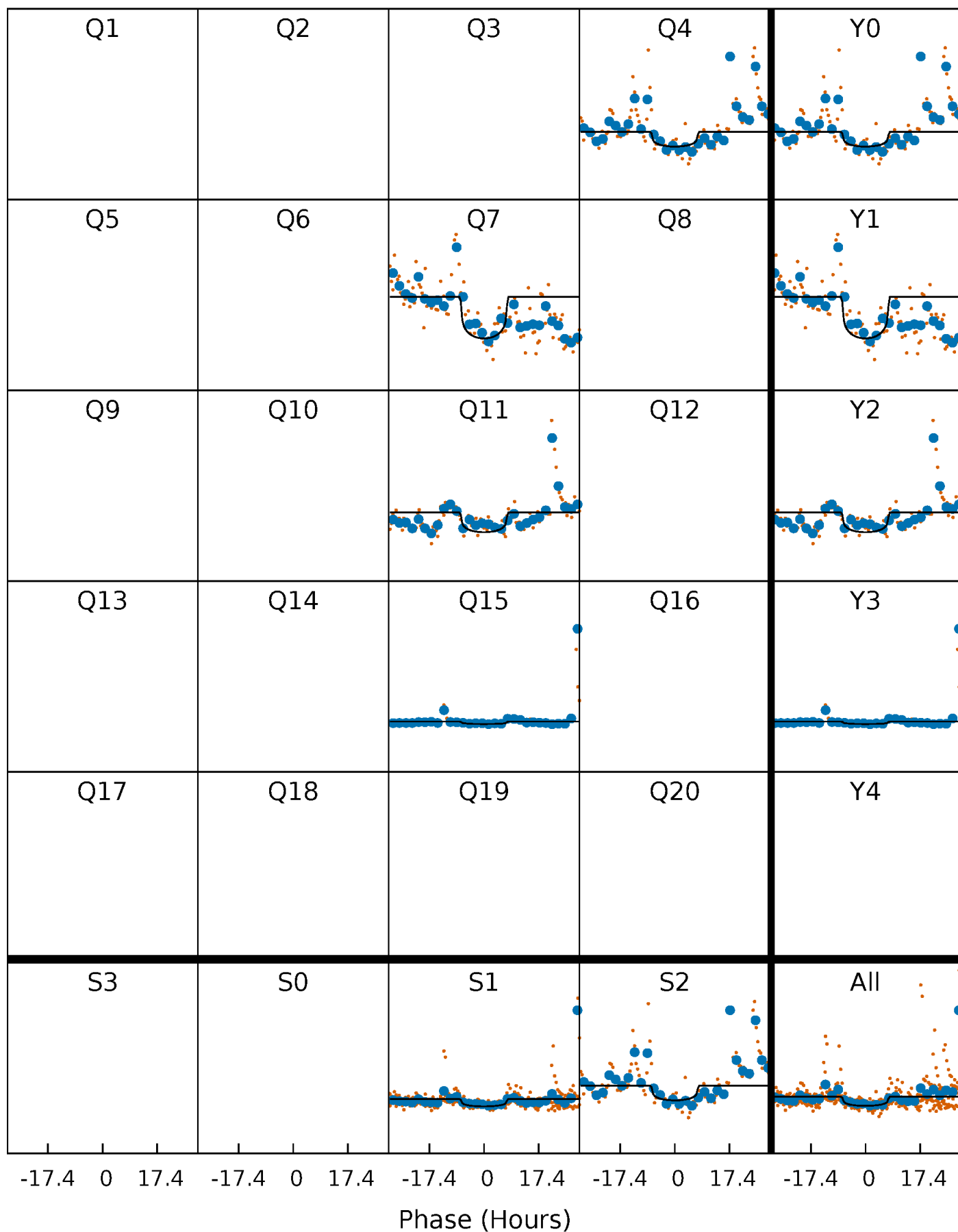
PDC Quarter-Phased Transit Curves

TCE 007102500-02 $P=347.064983$ Days $T_0=355.567755$ (BKJD)



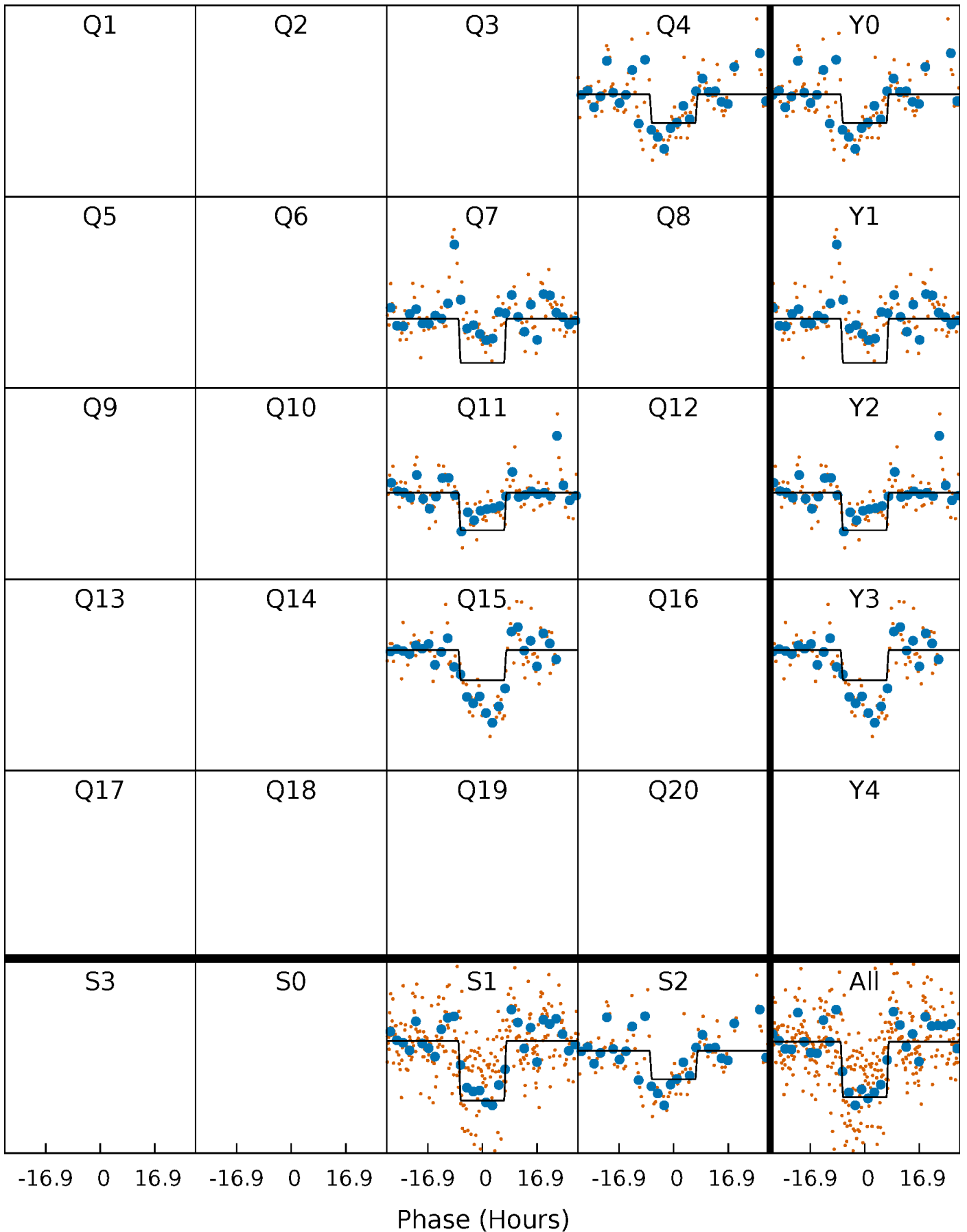
DV Quarter-Phased Transit Curves

TCE 007102500-02 $P=347.064983$ Days $T_0=355.567755$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

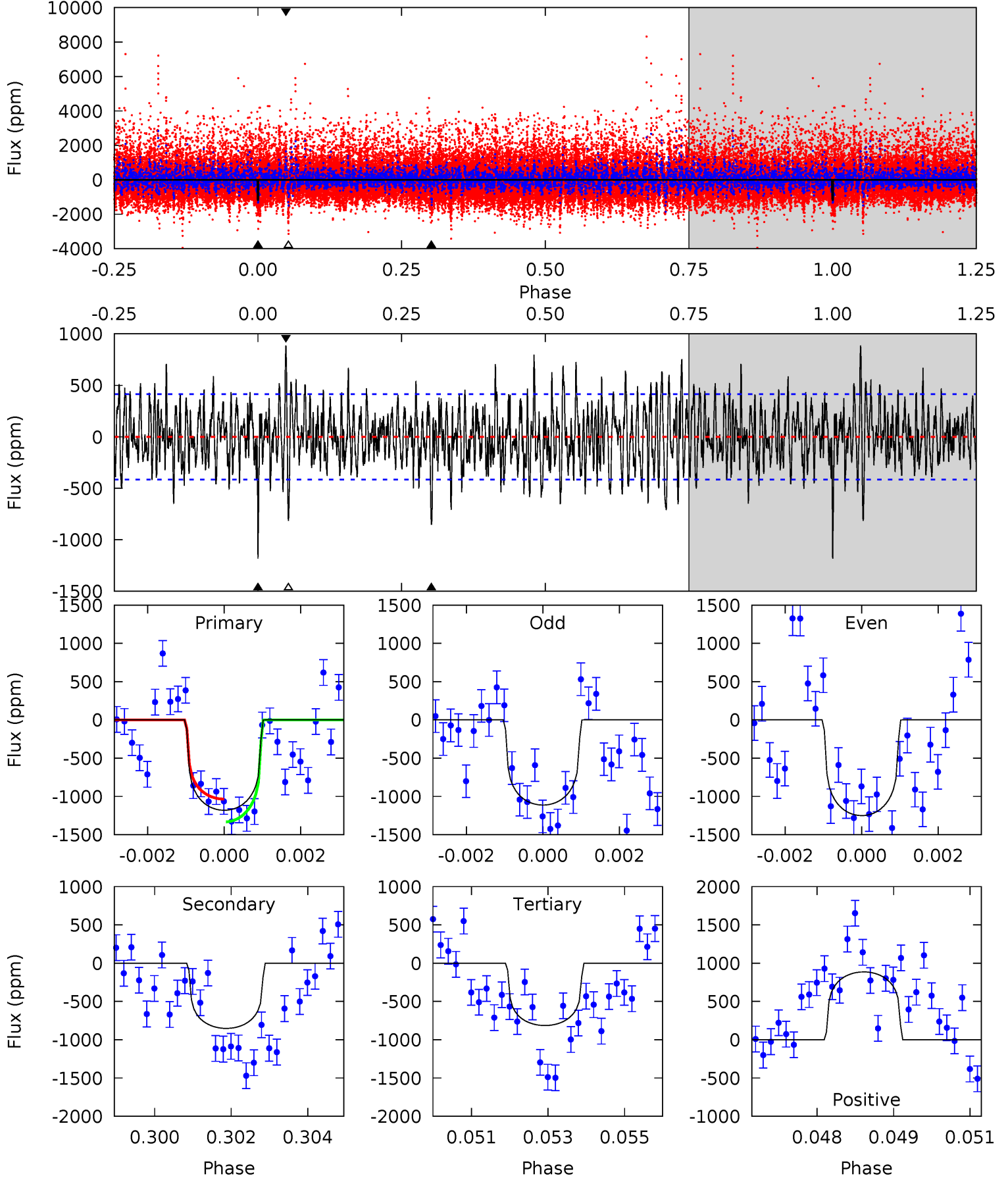
TCE 007102500-02 $P=347.057205$ Days $T_0=355.571742$ (BKJD)



DV Model-Shift Uniqueness Test

007102500-02, P = 347.064983 Days, E = 8.502772 Days

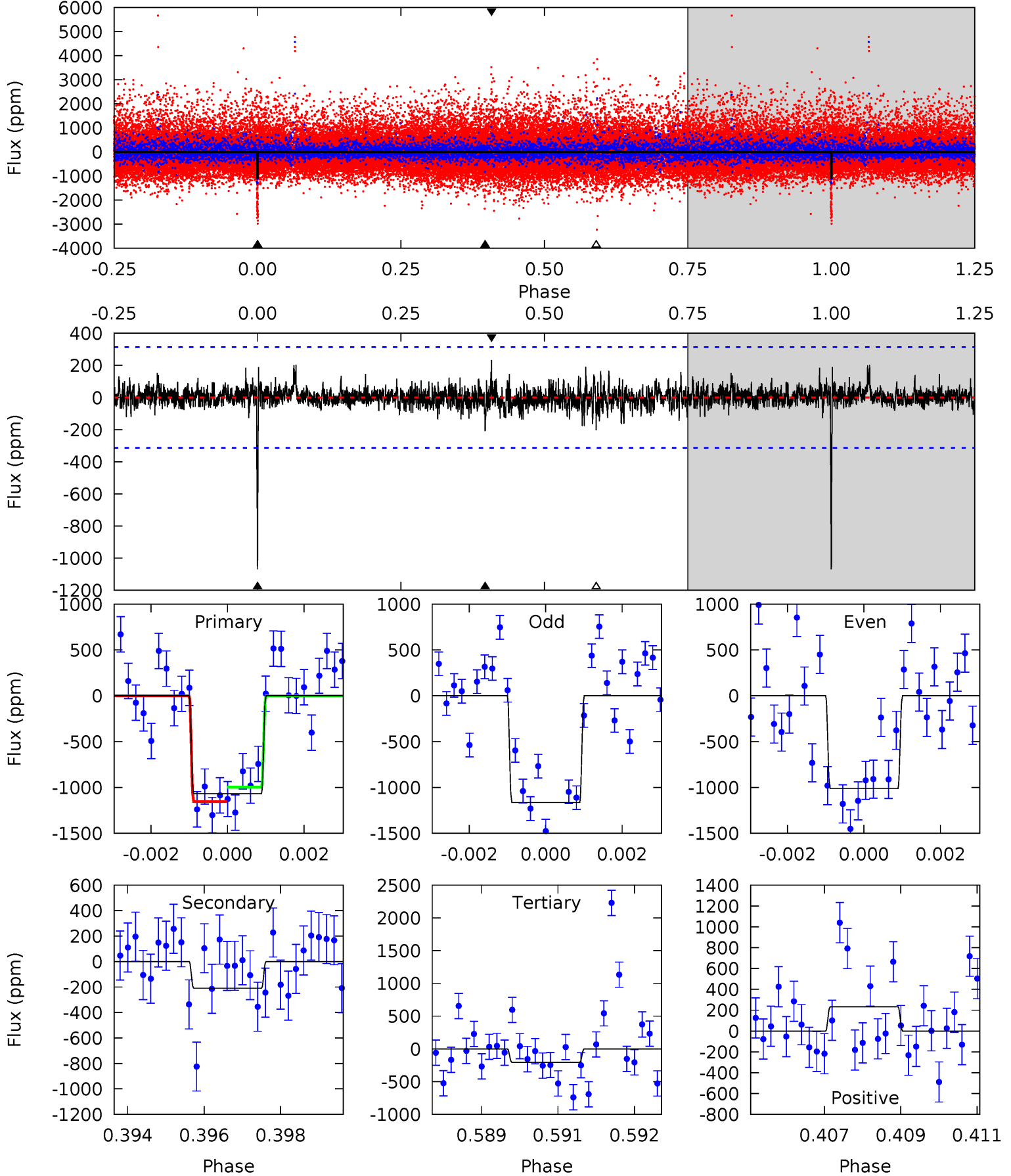
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.2	11.0	10.5	11.4	5.34	3.12	3.20	4.73	3.81	0.48	-0.44	0.44	1.06	0.43	1.92



Alt Model-Shift Uniqueness Test

007102500-02, P = 347.057205 Days, E = 8.514537 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.2	3.56	3.48	3.97	5.35	3.12	0.75	14.7	14.2	0.08	-0.40	1.24	1.07	0.18	1.34



Stellar Parameters For KIC 007102500

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3274^{+42}_{-32}	$5.044^{+0.044}_{-0.044}$	$0.020^{+0.100}_{-0.100}$	$0.224^{+0.032}_{-0.026}$	$0.202^{+0.042}_{-0.026}$	$25.440^{+6.603}_{-5.245}$
	+1%/-1%	+1%/-1%	+500%/-500%	+14%/-12%	+21%/-13%	+26%/-21%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 007102500-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-852 ± 78	$0.82^{+0.41}_{-0.35}$	127^{+3}_{-3}	3138^{+607}_{-311}	$225684^{+459003}_{-120063}$
Alt.	-209 ± 59	$0.85^{+0.39}_{-0.38}$	127^{+3}_{-3}	2571^{+462}_{-235}	$50690^{+118879}_{-28128}$

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

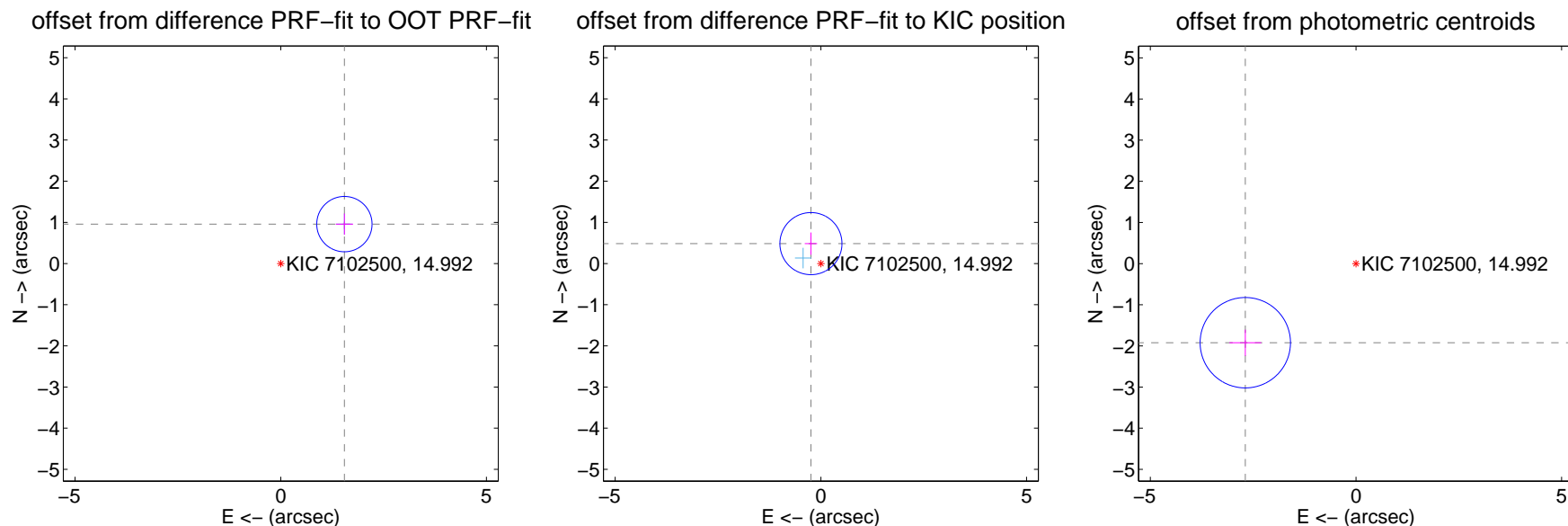
DV Centroid Data

Supplemental centroid analysis for 007102500-02. Kepler magnitude: 14.99. Transit SNR 7.52

There are 1 quarters with good PRF difference image offsets

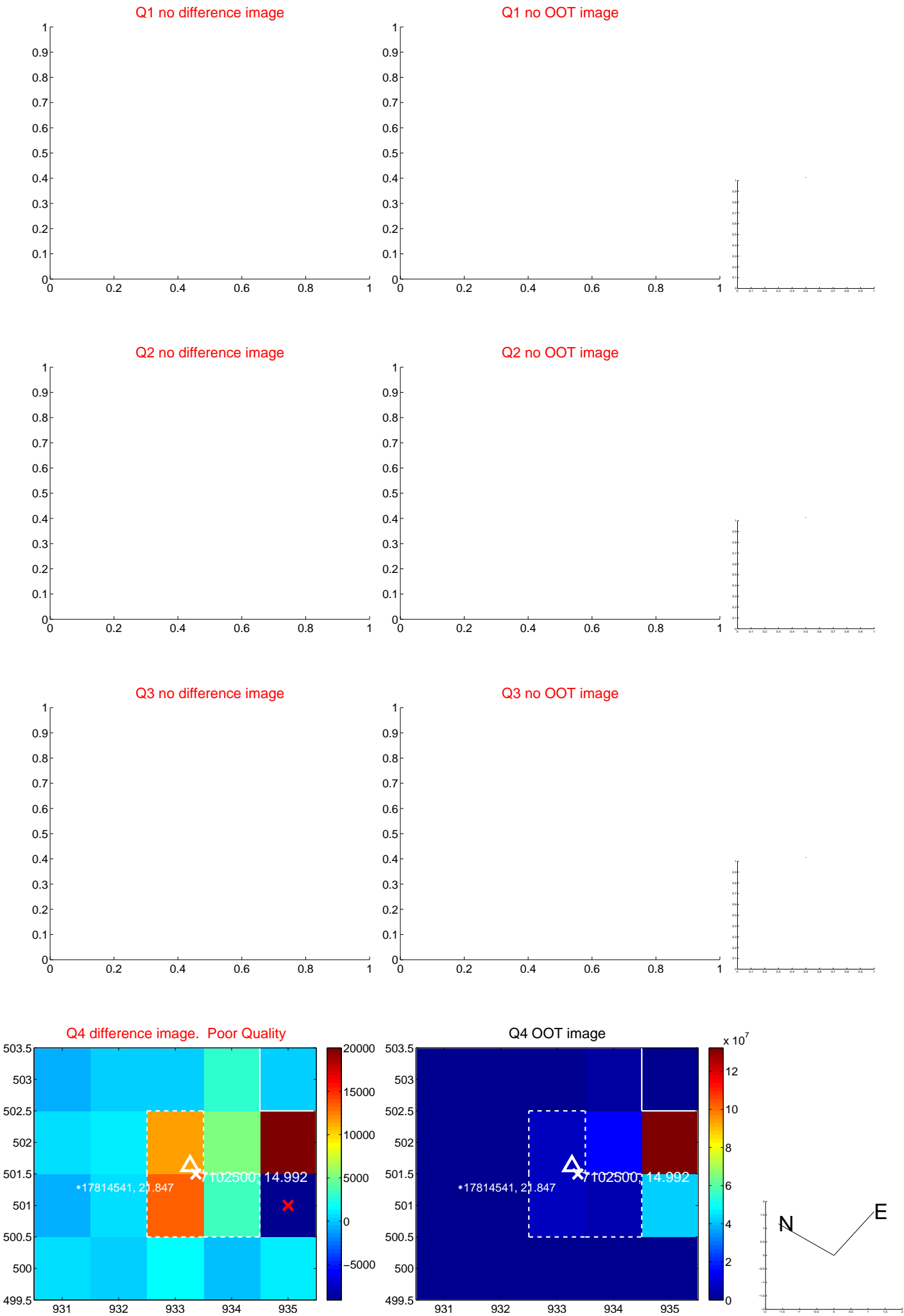
The OOT PRF centroid is offset from the target star catalog position by about 2.14 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.820 ± 0.224	8.12	-1.547 ± 0.210	0.958 ± 0.258
PRF-fit source offset from KIC position	0.541 ± 0.251	2.15	0.242 ± 0.151	0.484 ± 0.271
photometric centroid source offset	3.31 ± 0.37	9.03	2.69 ± 0.39	-1.92 ± 0.32



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.

Q5 no difference image



Q5 no OOT image



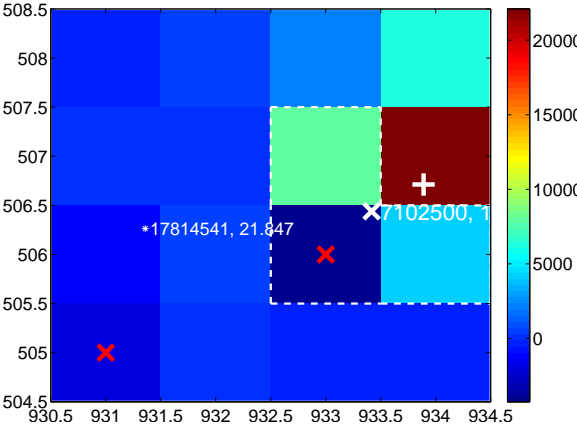
Q6 no difference image



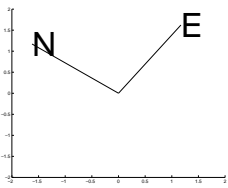
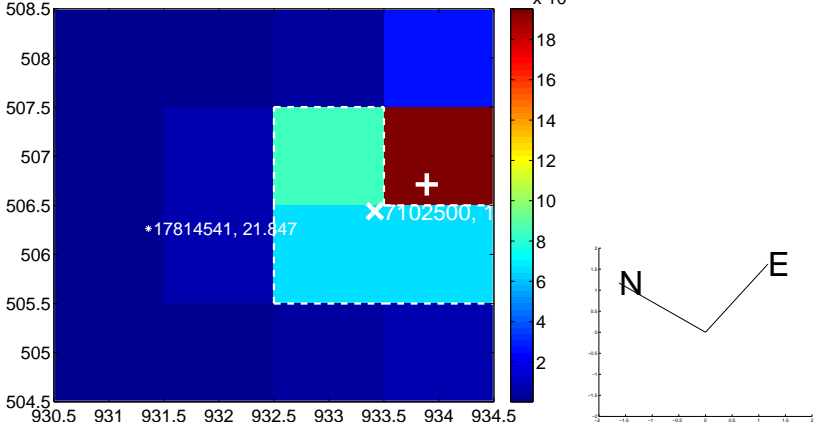
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



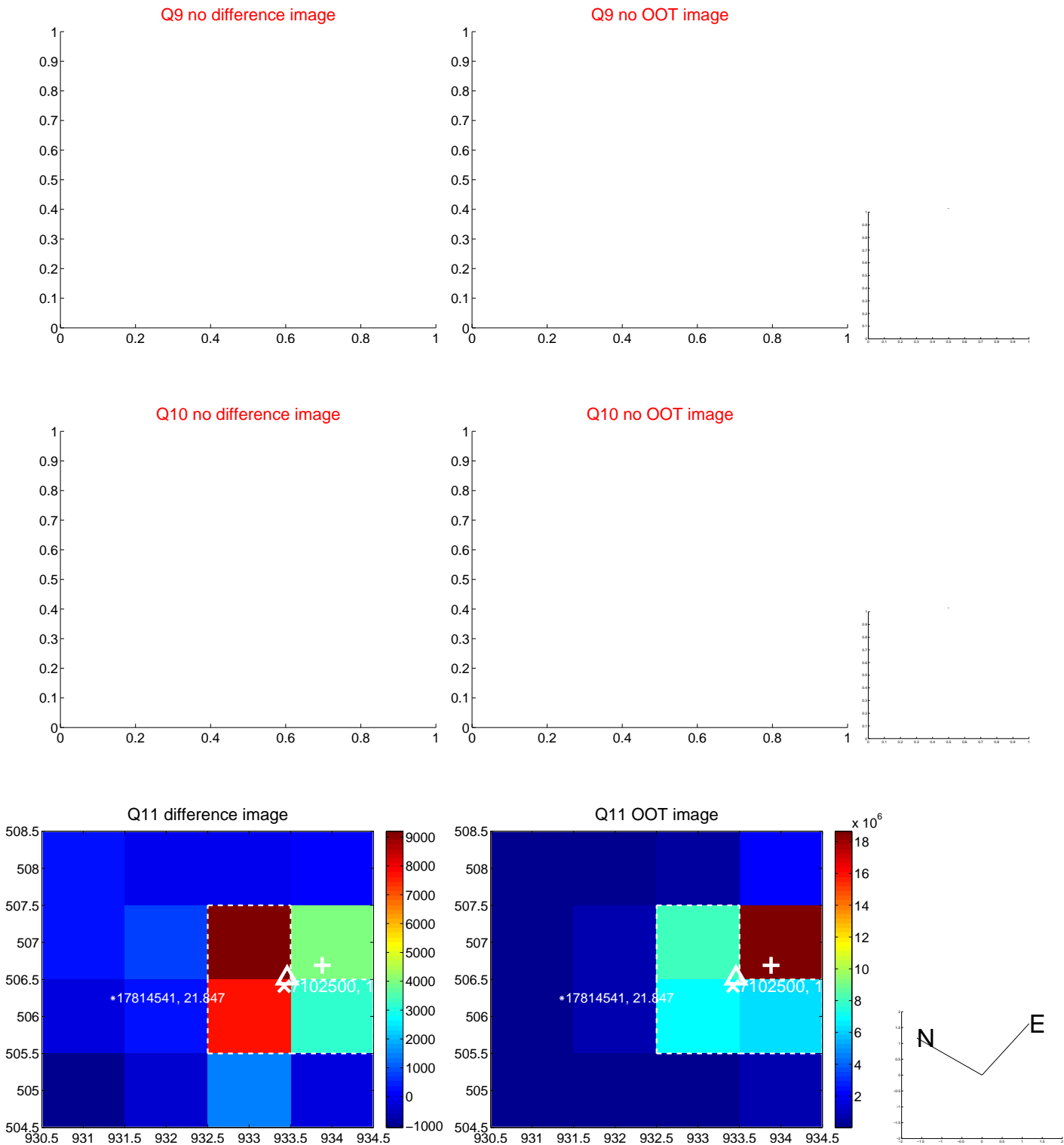
Q8 no difference image



Q8 no OOT image



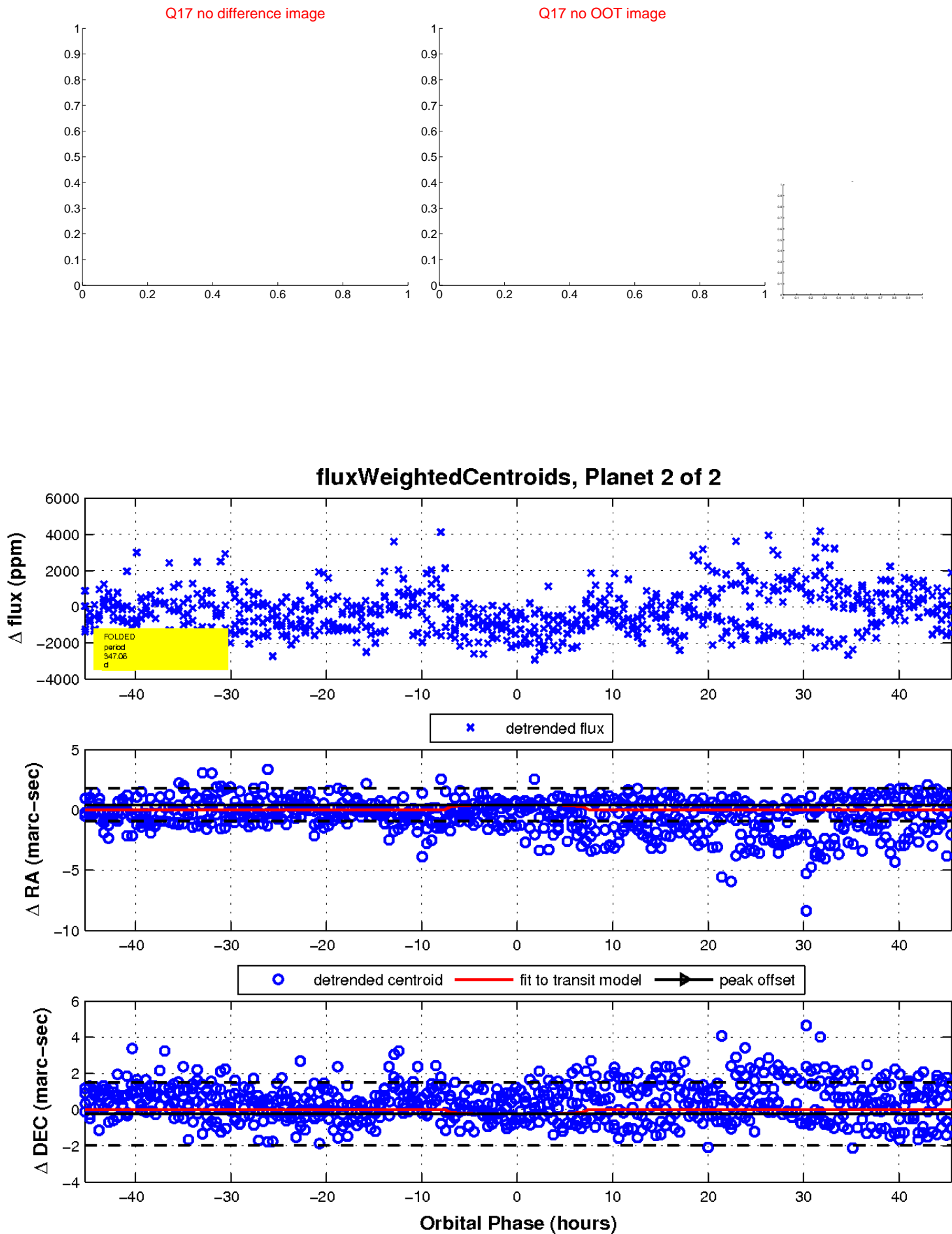
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

