

KIC 009697208

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})
009697208-01	OBS	No	336.954547	310.338173	663.0	6.660	9.5	6.9	1.00	6096	2.73	1.35
009697208-02	OBS	No	386.389825	146.594825	684.8	8.801	9.1	6.4	1.00	6096	2.81	1.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009697208-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL
009697208-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_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.

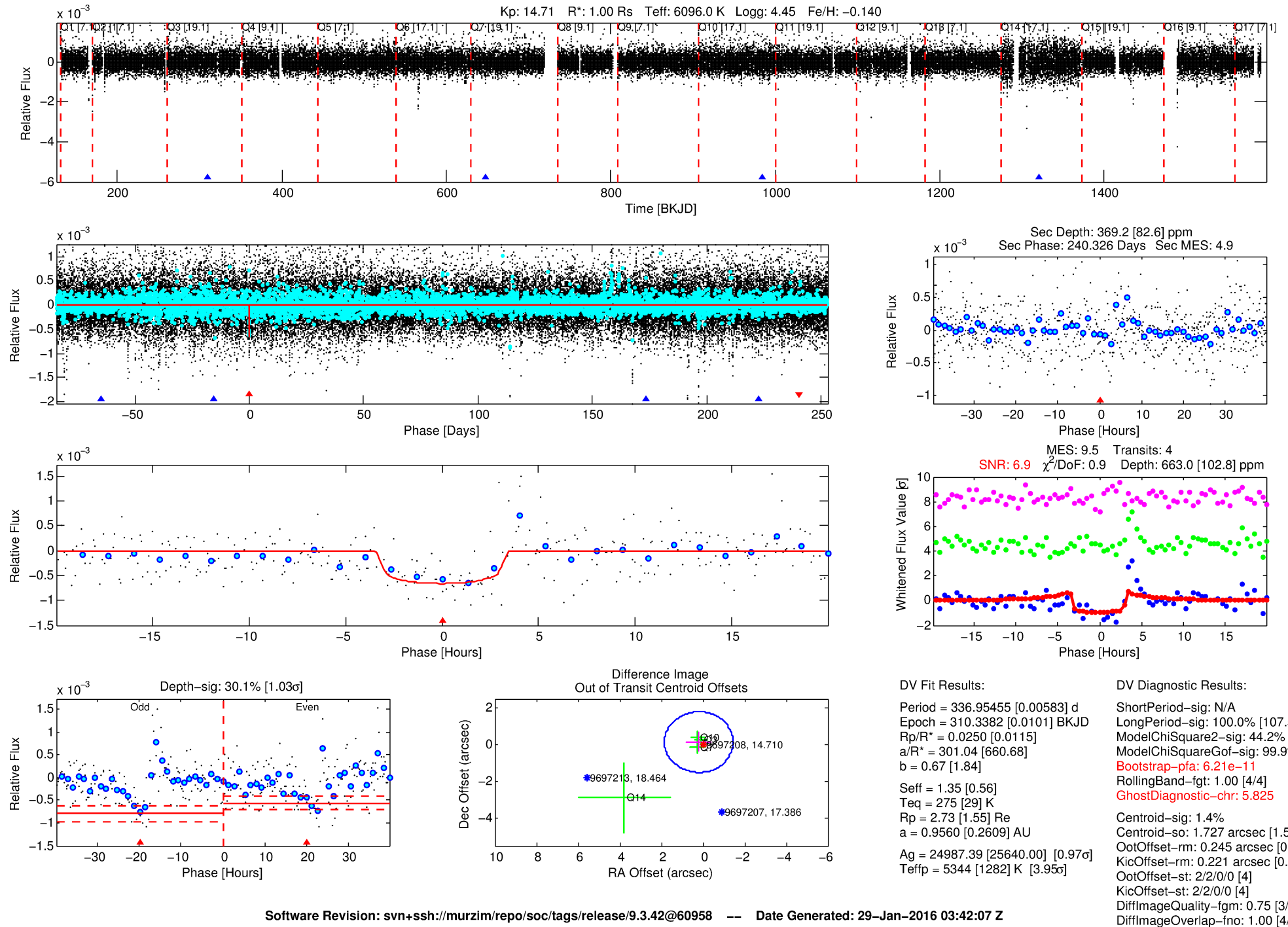
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009697208-01

No Significant Match Found

DV One-Page Summary

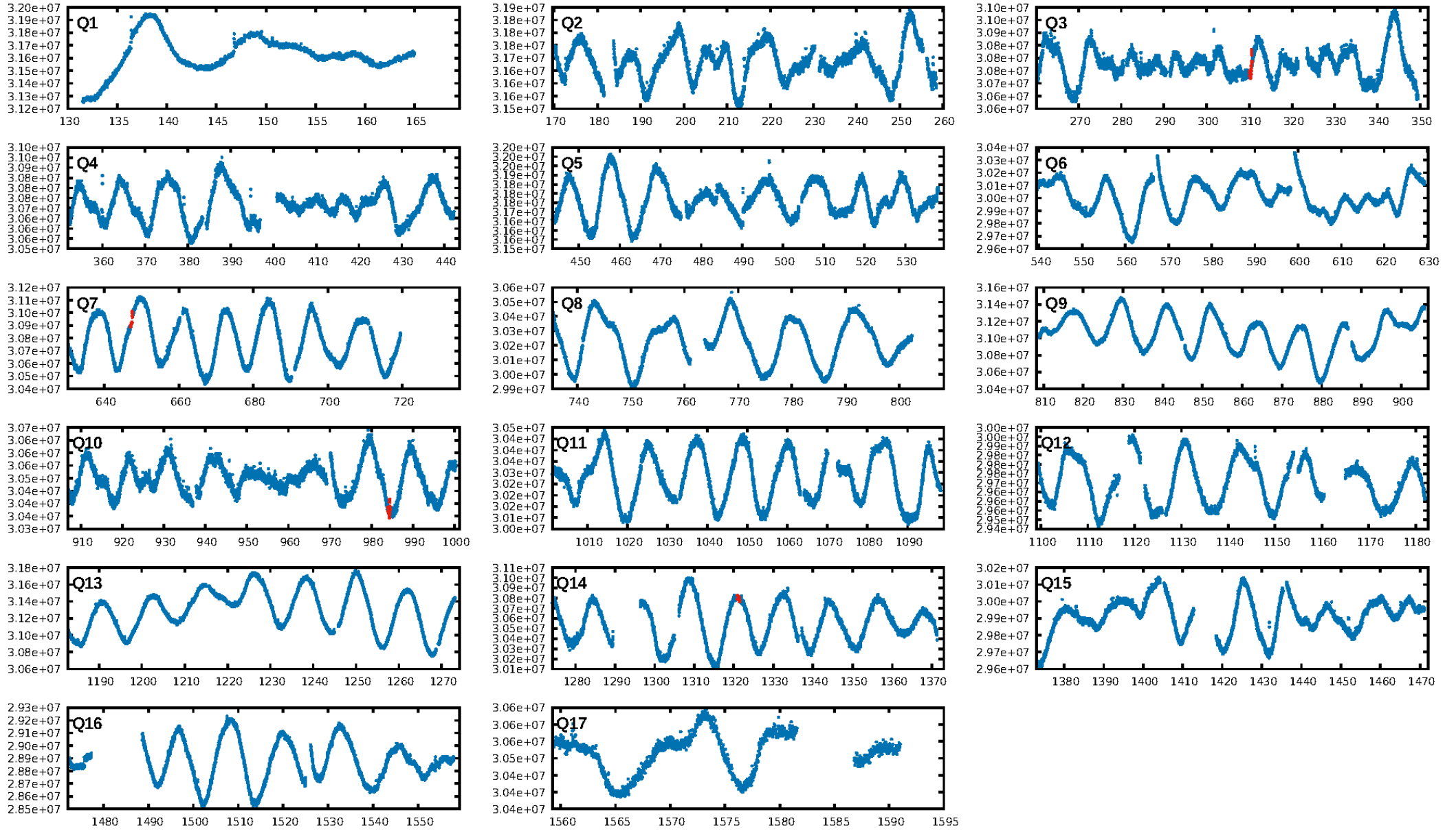
KIC: 9697208 Candidate: 1 of 2 Period: 336.955 d



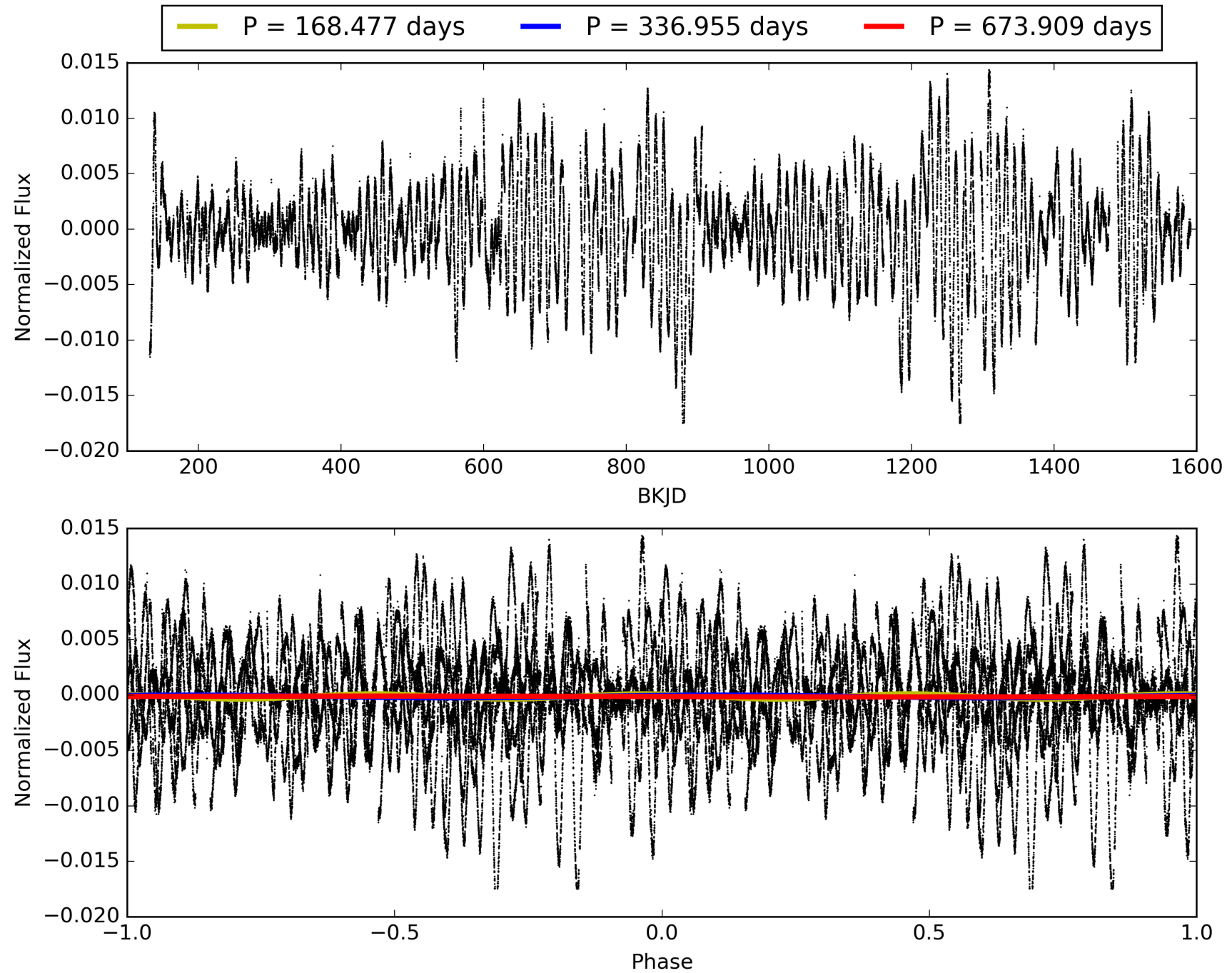
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 03:42:07 Z

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

TCE 009697208-01, PDC Light Curves

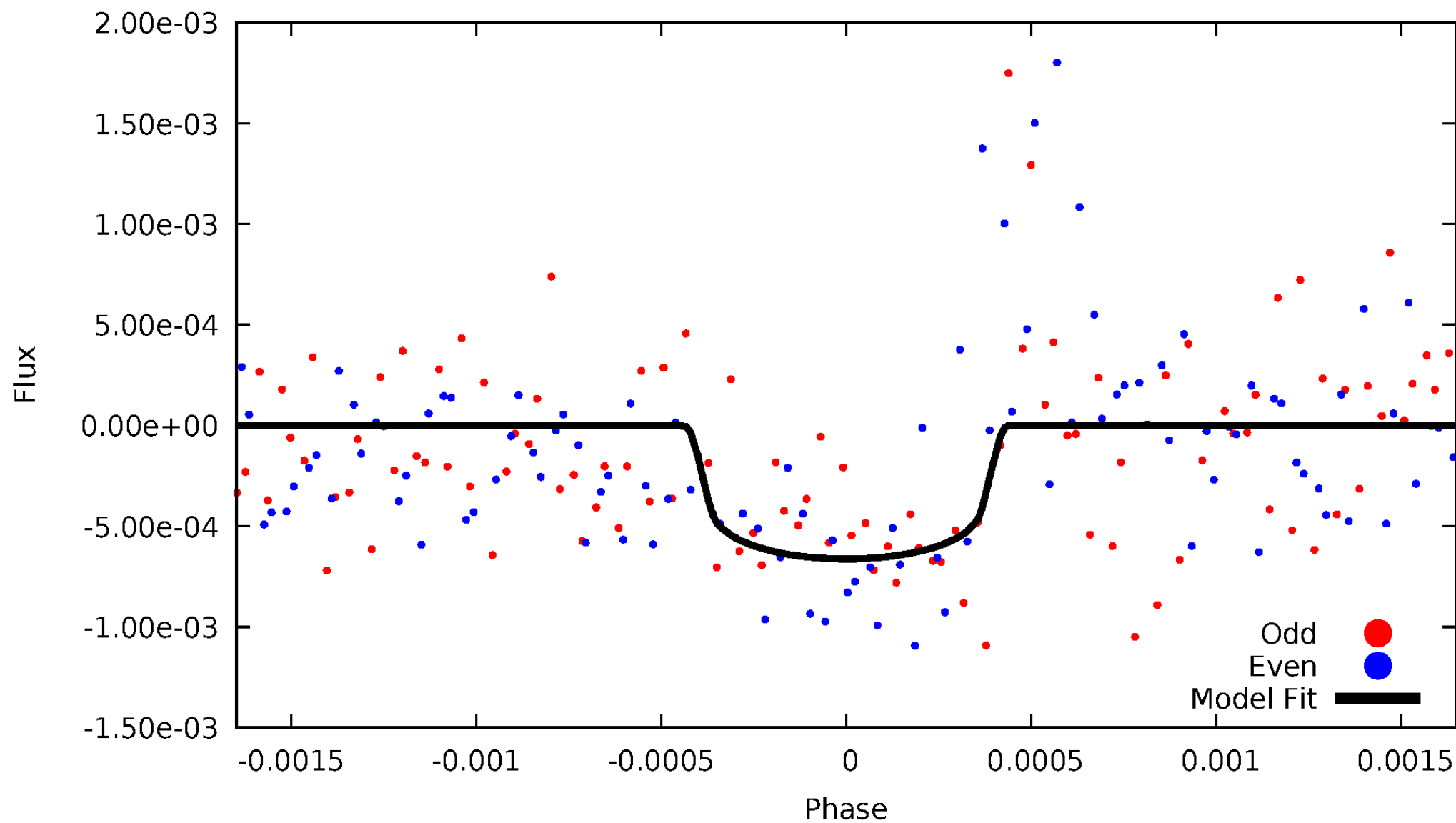


TCE 009697208-01



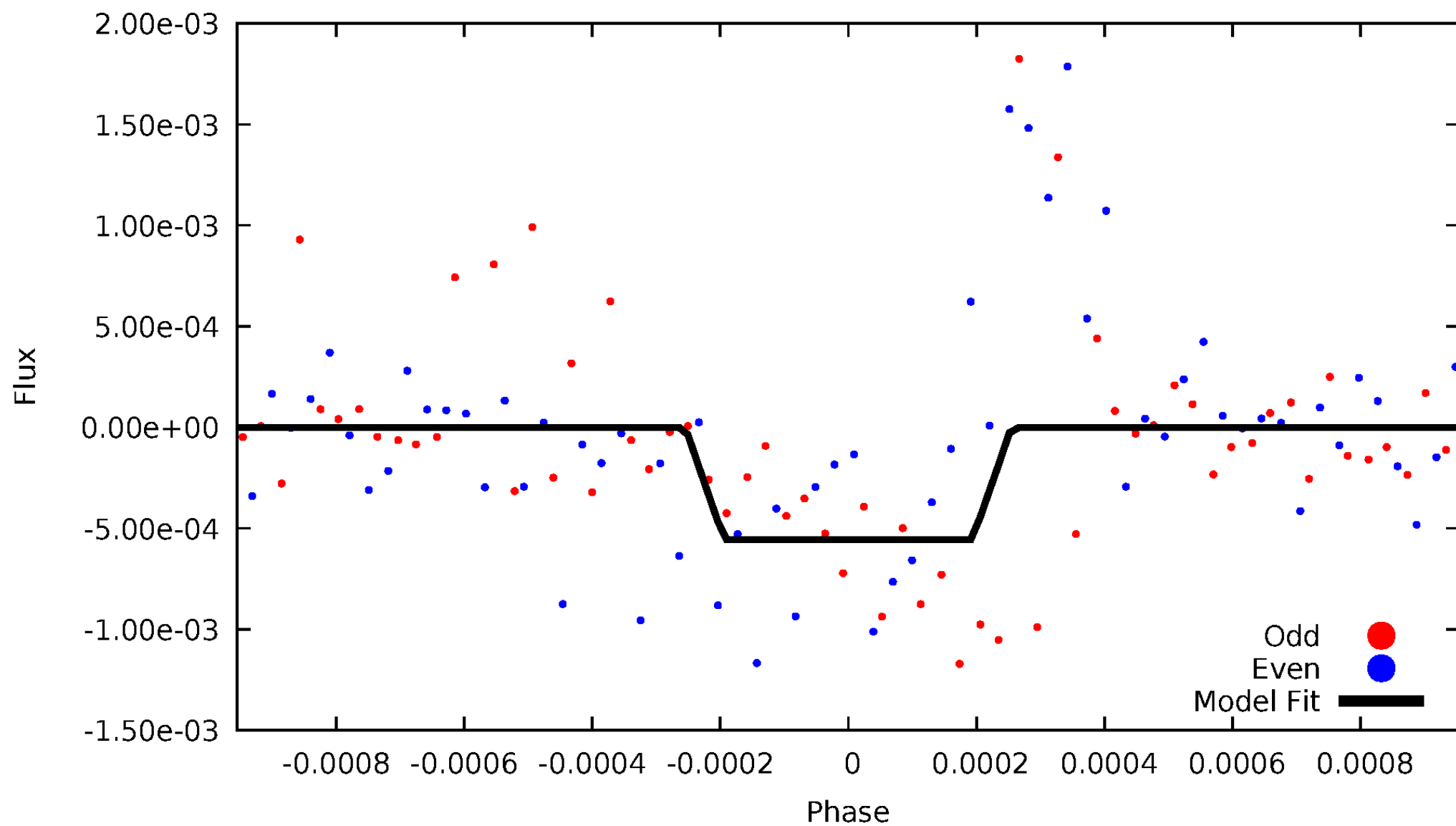
DV Odd/Even

TCE 009697208-01



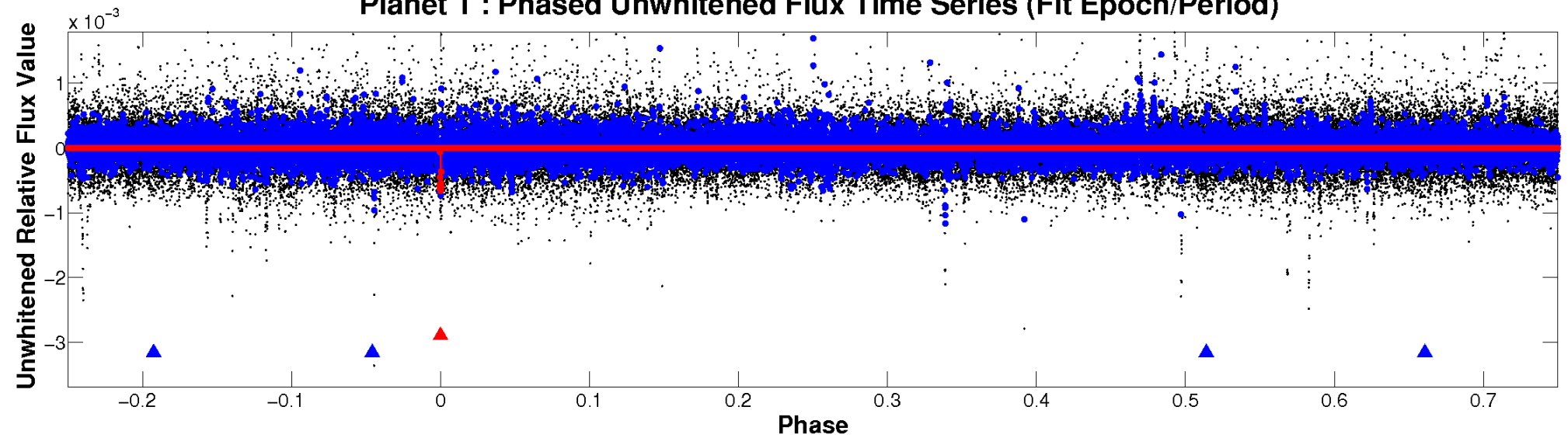
ALT Odd/Even

TCE 009697208-01

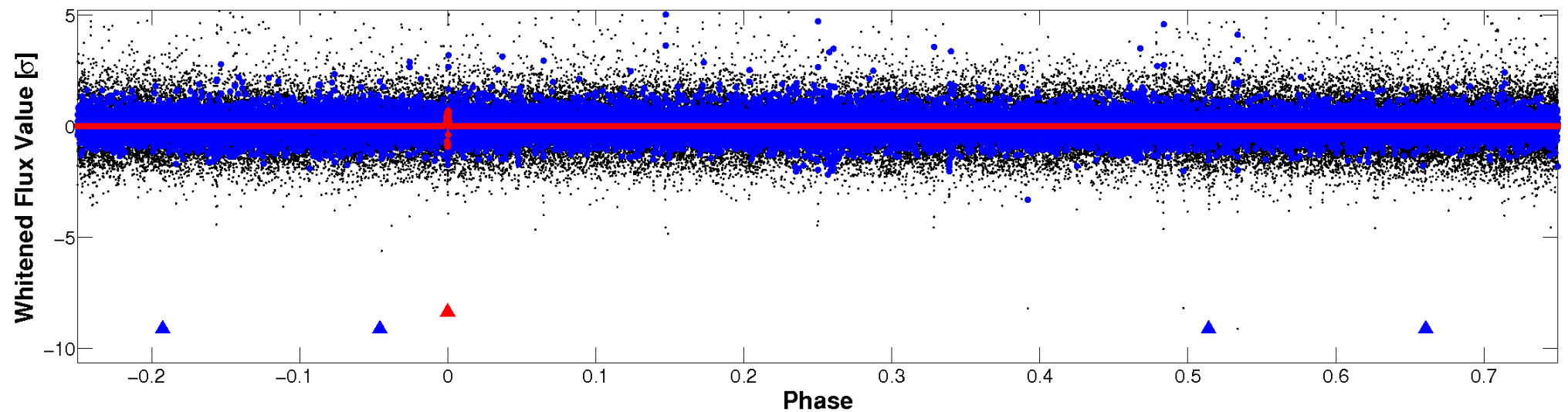


Non-Whitened Vs. Whitened Light Curve

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

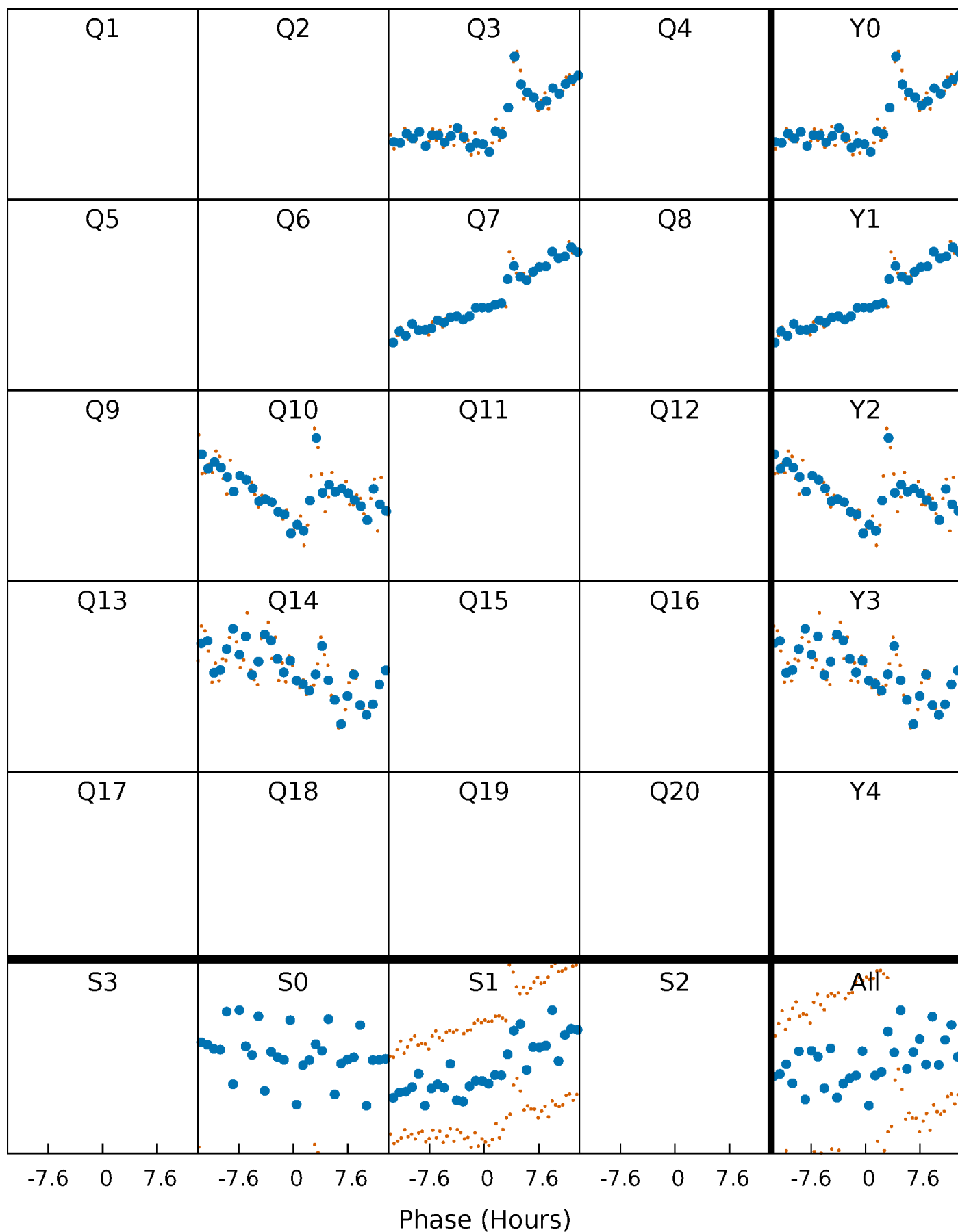


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



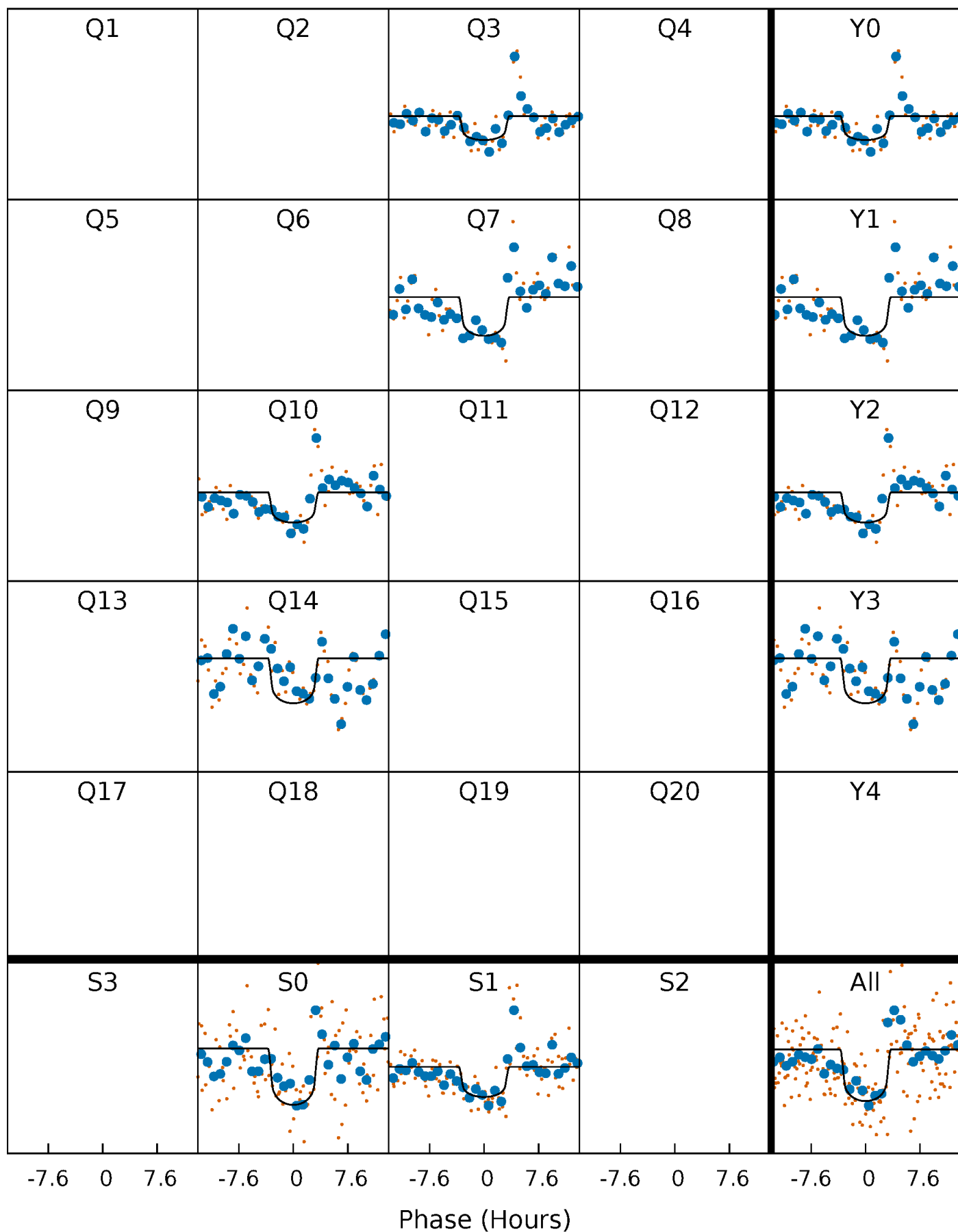
PDC Quarter-Phased Transit Curves

TCE 009697208-01 P=336.954547 Days $T_0=310.338173$ (BKJD)



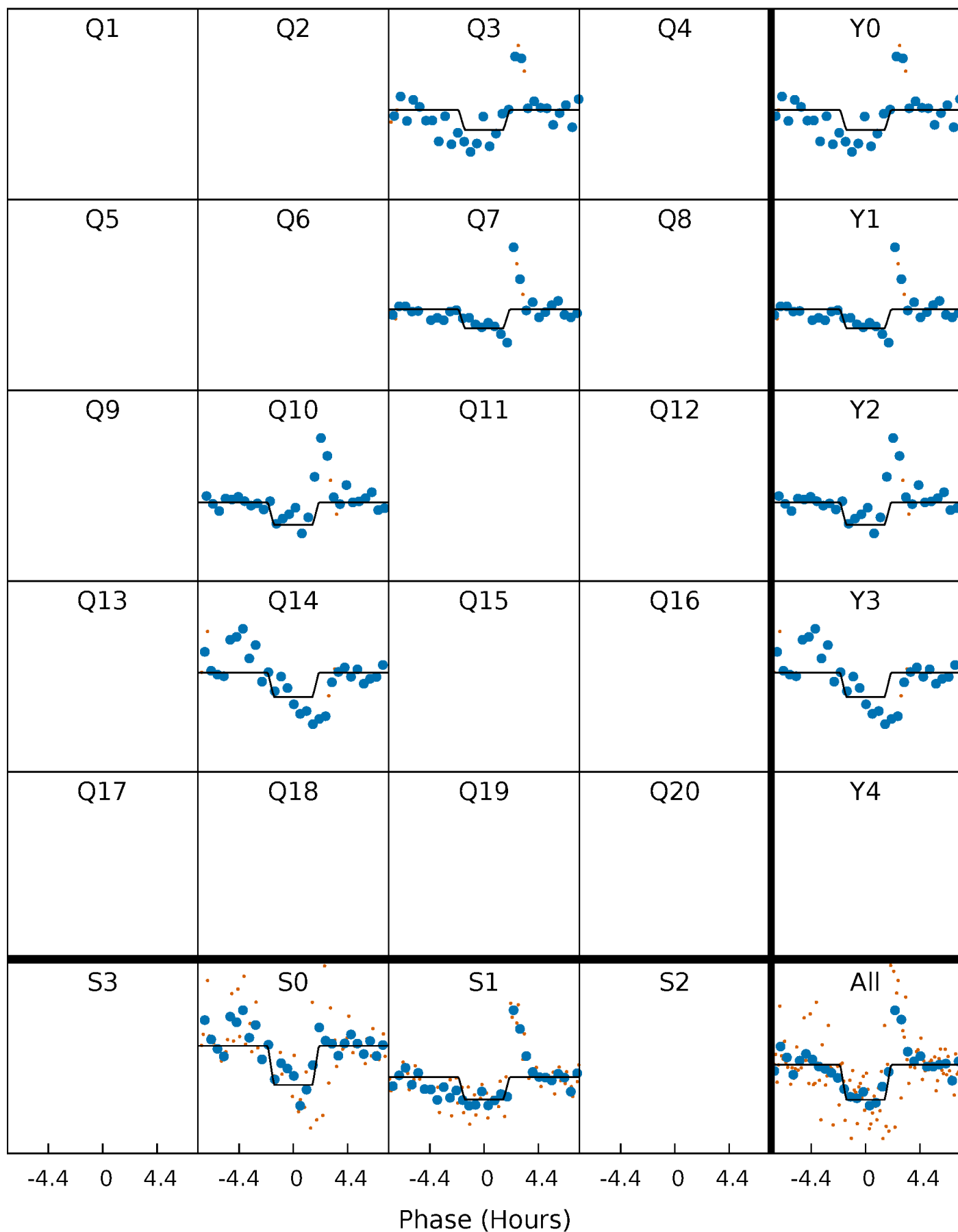
DV Quarter-Phased Transit Curves

TCE 009697208-01 P=336.954547 Days $T_0=310.338173$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

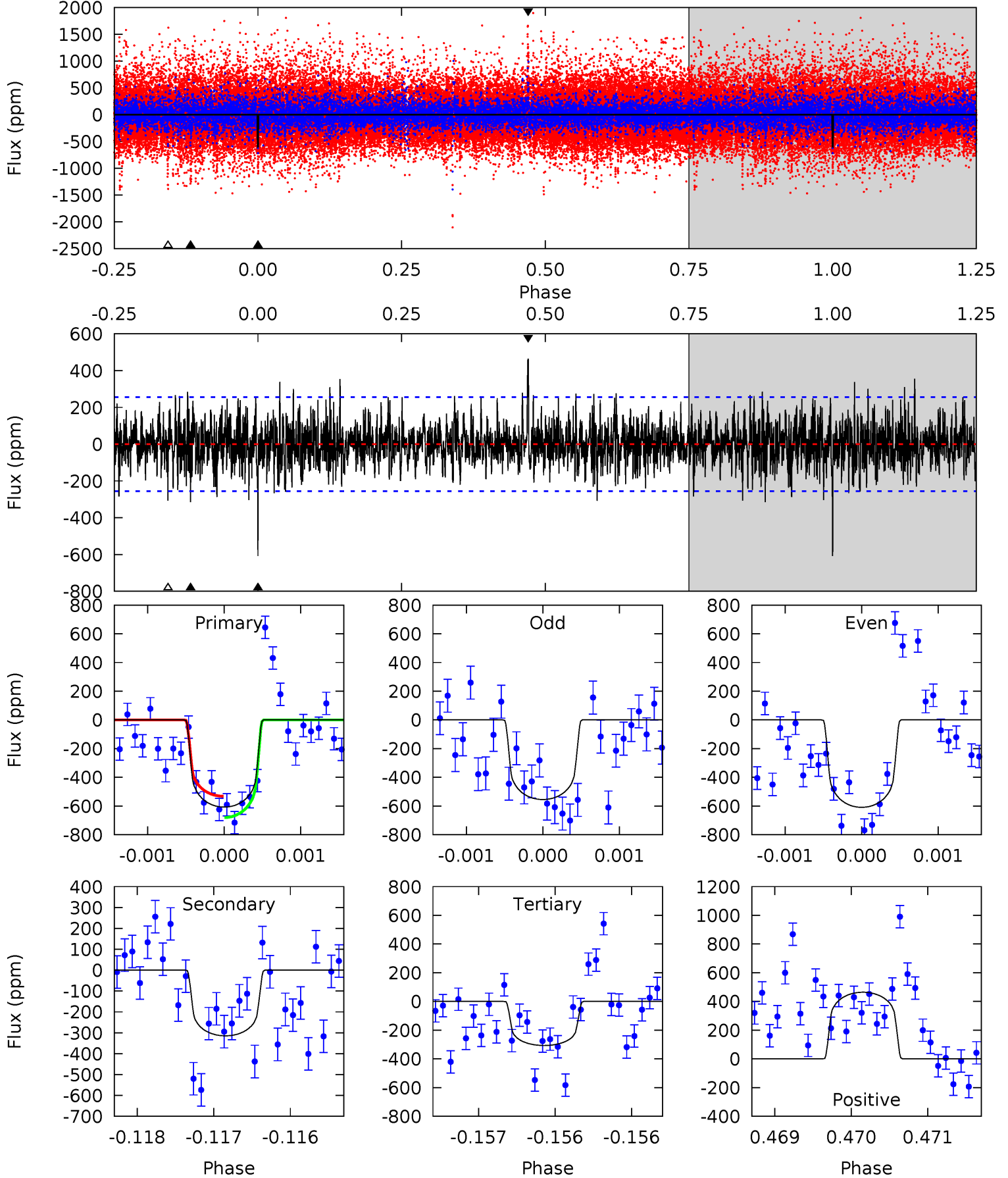
TCE 009697208-01 P=336.935782 Days $T_0=310.414769$ (BKJD)



DV Model-Shift Uniqueness Test

009697208-01, P = 336.954547 Days, E = 310.338173 Days

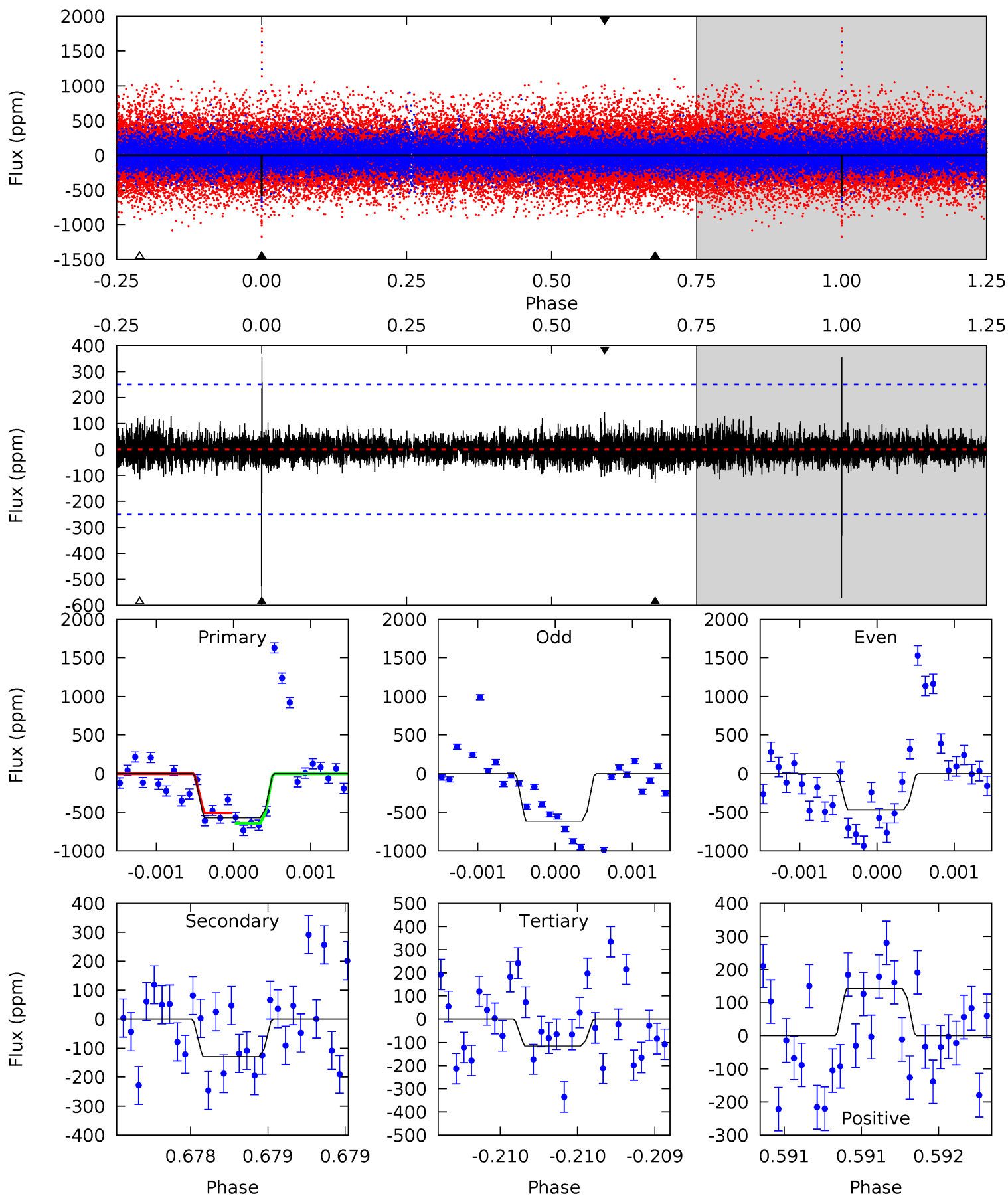
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	6.73	6.56	9.93	5.48	3.33	1.88	6.43	3.06	0.17	-3.20	0.58	0.96	0.43	1.59



Alt Model-Shift Uniqueness Test

009697208-01, P = 336.935782 Days, E = 310.414769 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.8	2.89	2.57	3.16	5.57	3.48	0.66	10.2	9.59	0.31	-0.27	1.74	0.89	0.38	1.53



Stellar Parameters For KIC 009697208

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6096^{+180}_{-217}	$4.450^{+0.070}_{-0.210}$	$-0.140^{+0.250}_{-0.350}$	$0.999^{+0.330}_{-0.110}$	$1.020^{+0.153}_{-0.126}$	$1.442^{+0.430}_{-0.787}$
	+3%/-4%	+2%/-5%	+179%/-250%	+33%/-11%	+15%/-12%	+30%/-55%
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 009697208-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-315 ± 47	$2.84^{+1.47}_{-1.17}$	391^{+29}_{-21}	5177^{+1637}_{-776}	19789^{+40292}_{-11592}
Alt.	-130 ± 45	$2.66^{+1.40}_{-1.27}$	390^{+27}_{-21}	4400^{+1528}_{-630}	8965^{+23237}_{-5296}

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 $A_{obs} \gg 1.0$

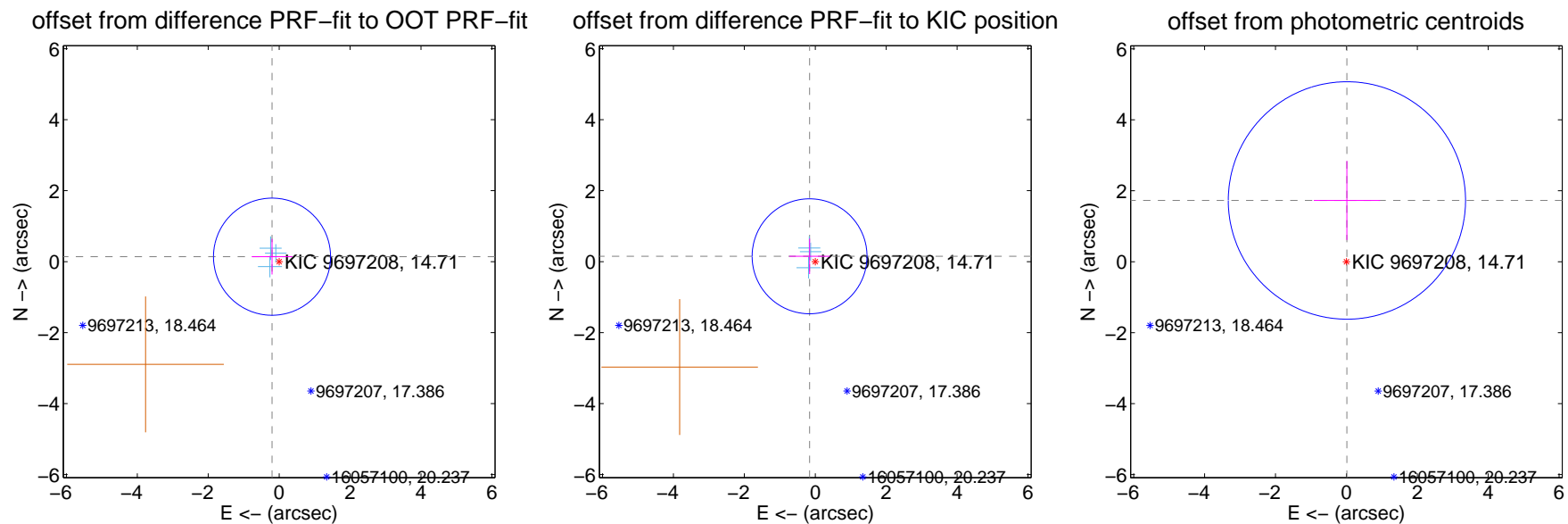
DV Centroid Data

Supplemental centroid analysis for 009697208-01. Kepler magnitude: 14.71. Transit SNR 6.95

There are 3 quarters with good PRF difference image offsets

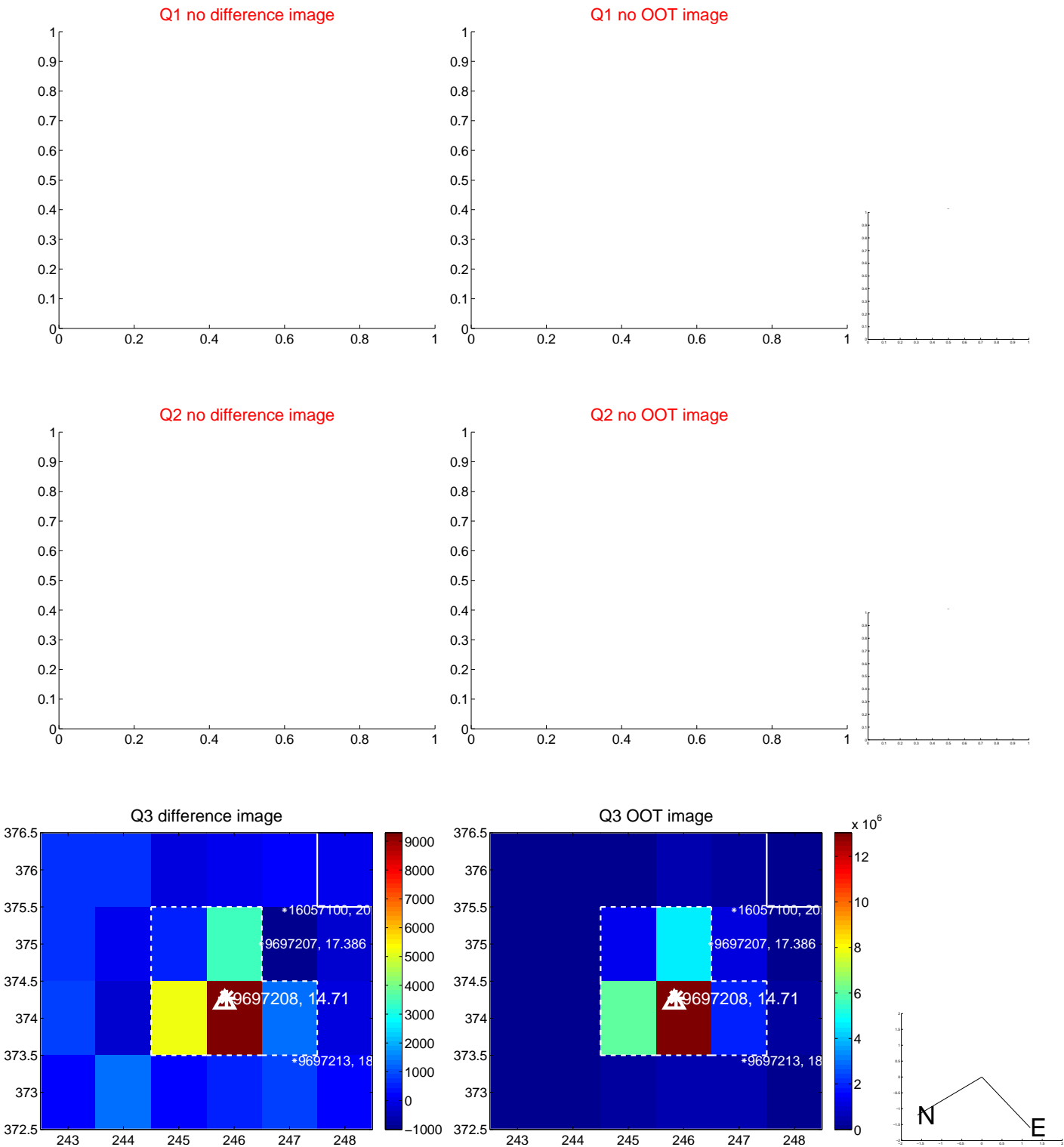
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.245 ± 0.550	0.44	0.201 ± 0.573	0.140 ± 0.500
PRF-fit source offset from KIC position	0.221 ± 0.540	0.41	0.161 ± 0.573	0.151 ± 0.500
photometric centroid source offset	1.73 ± 1.12	1.55	-0.01 ± 0.93	1.73 ± 1.12



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



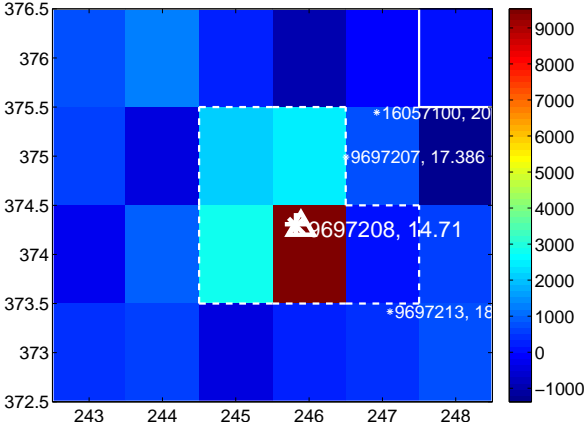
Q6 no difference image



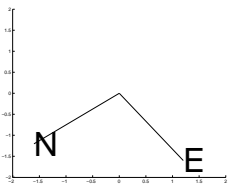
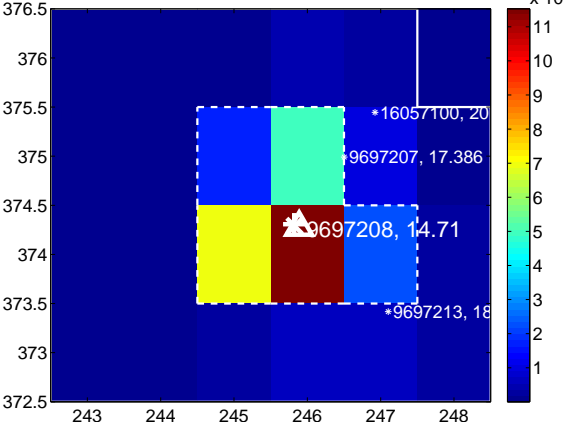
Q6 no OOT image



Q7 difference image



Q7 OOT image



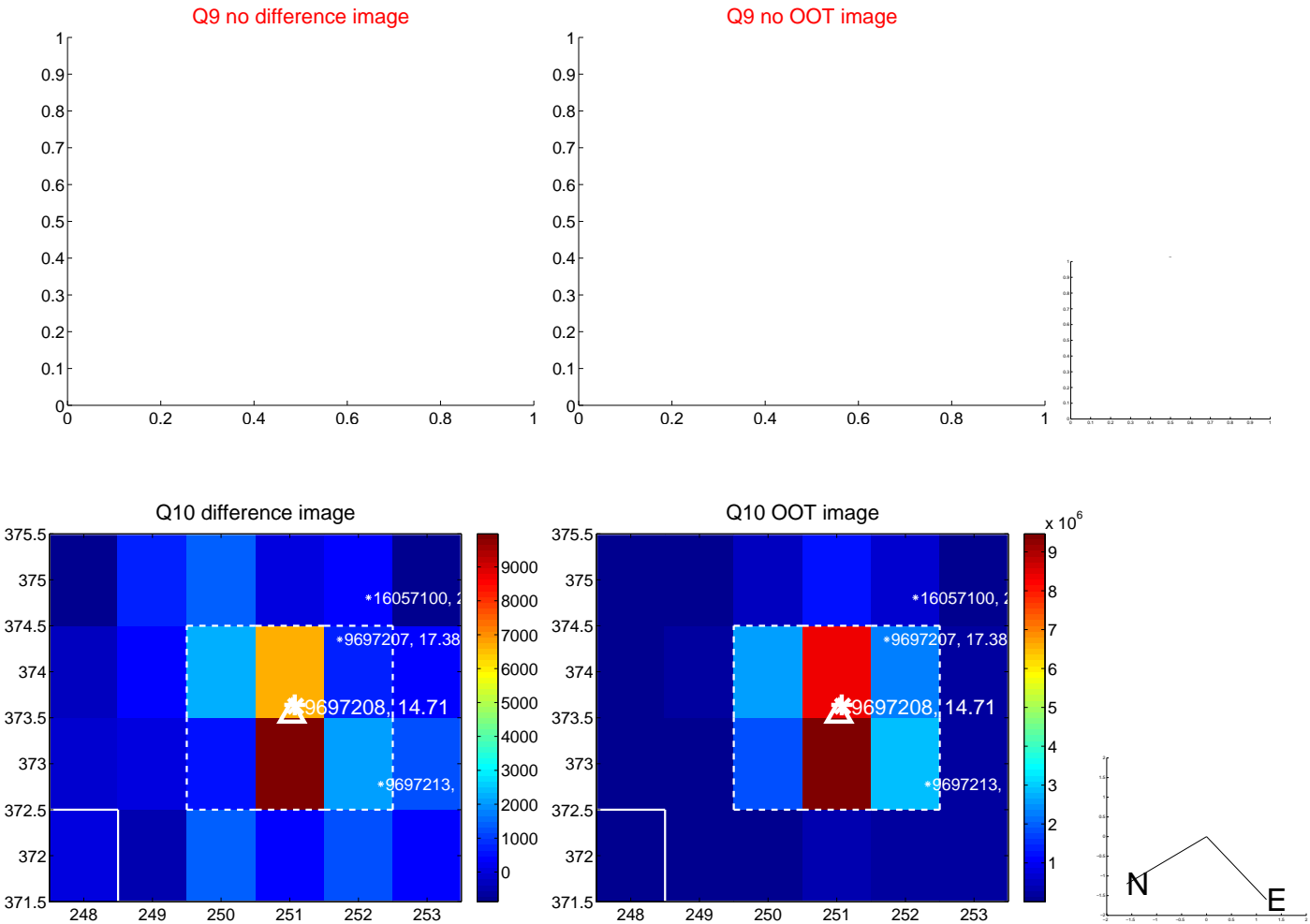
Q8 no difference image



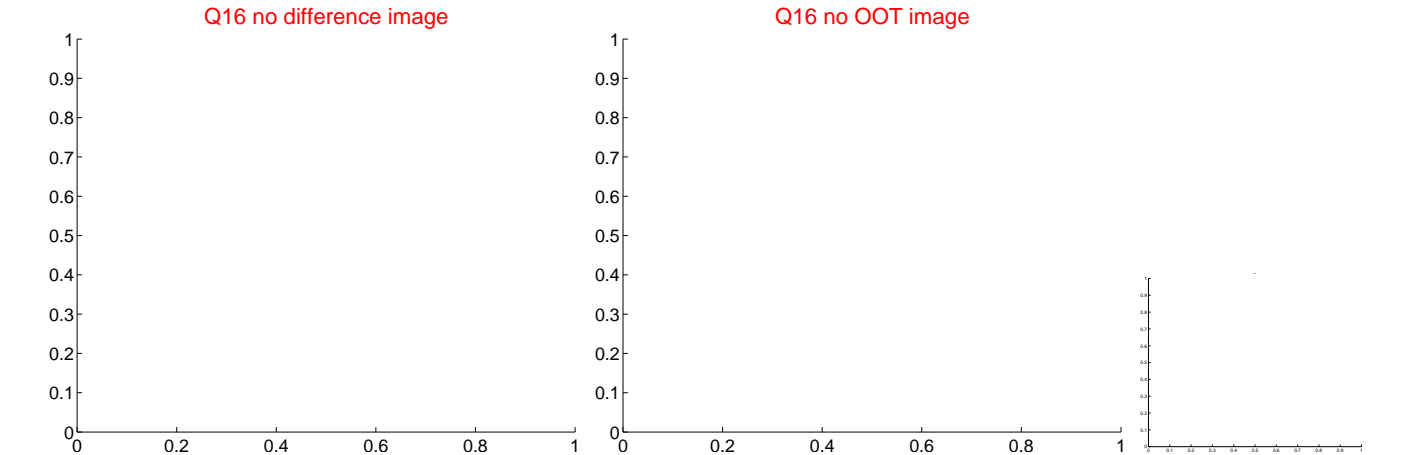
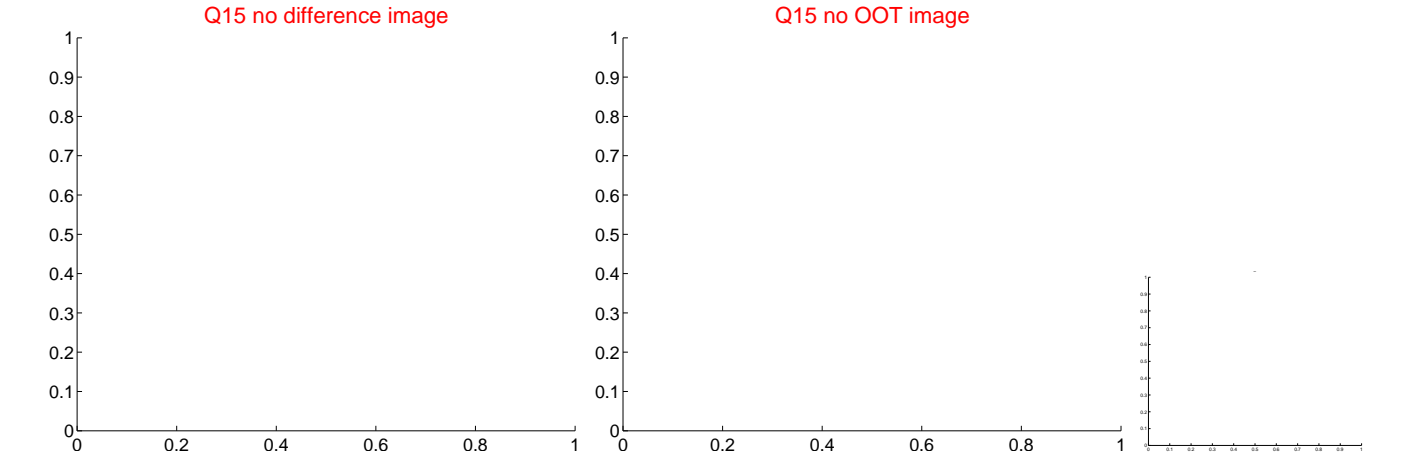
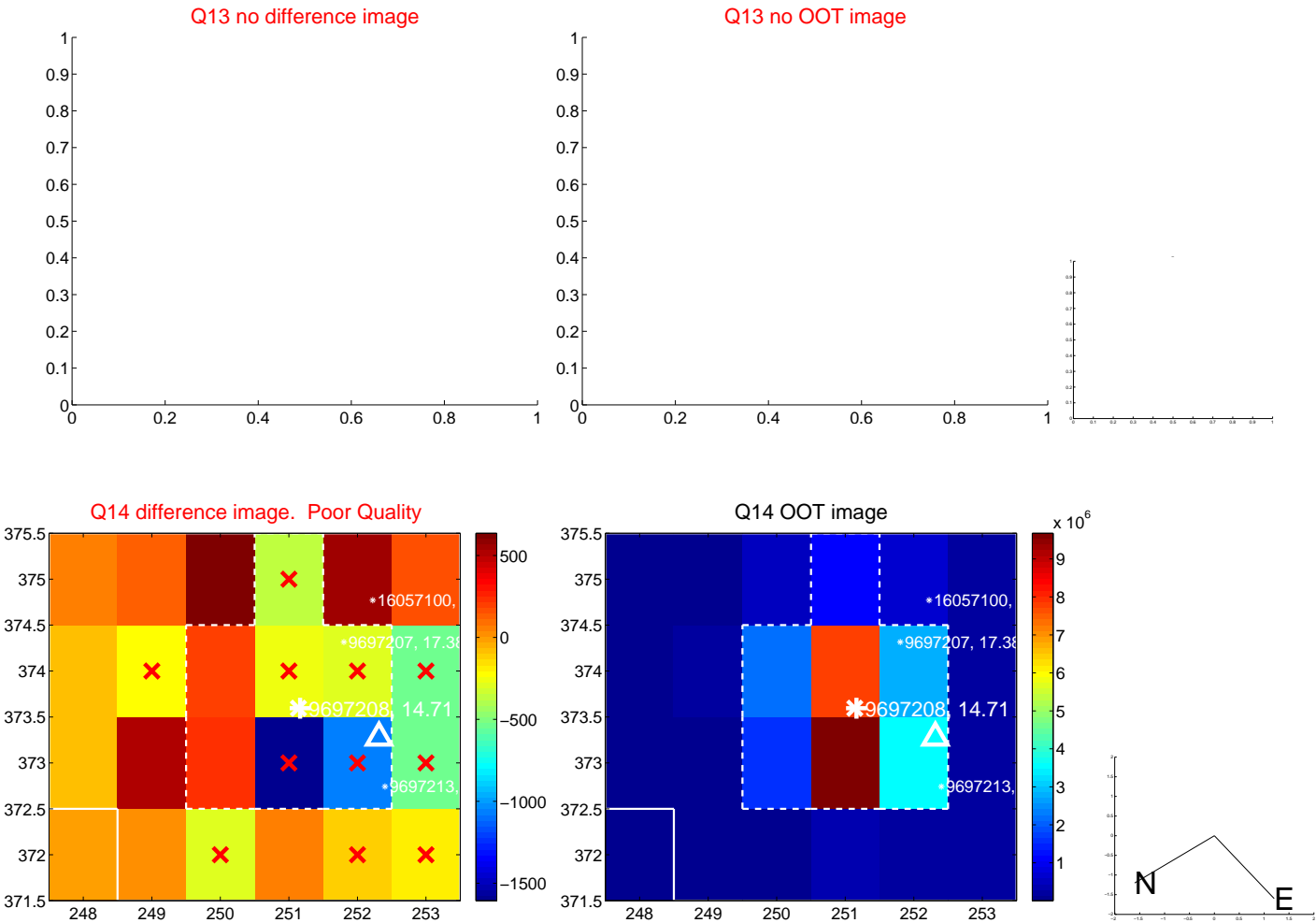
Q8 no OOT image



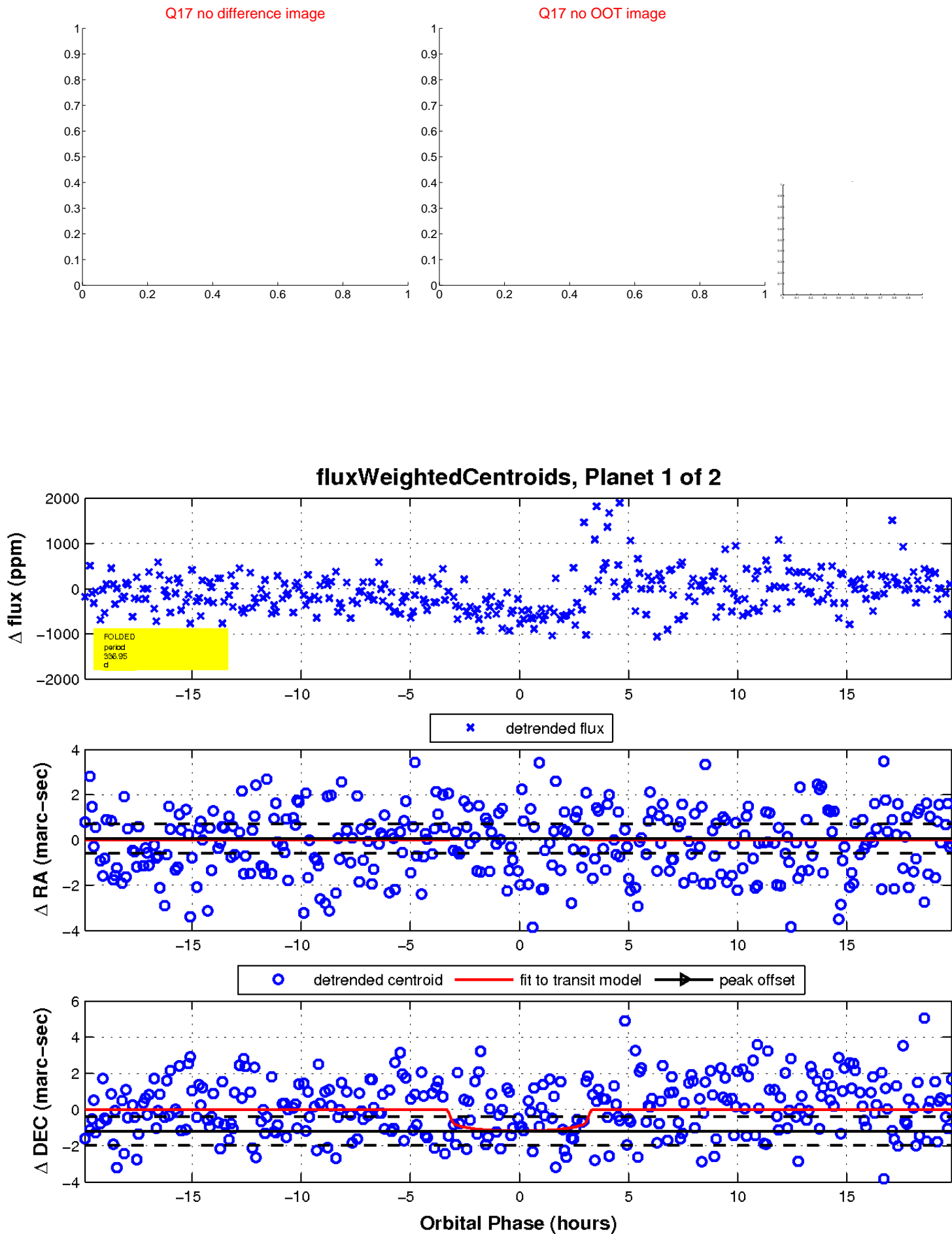
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

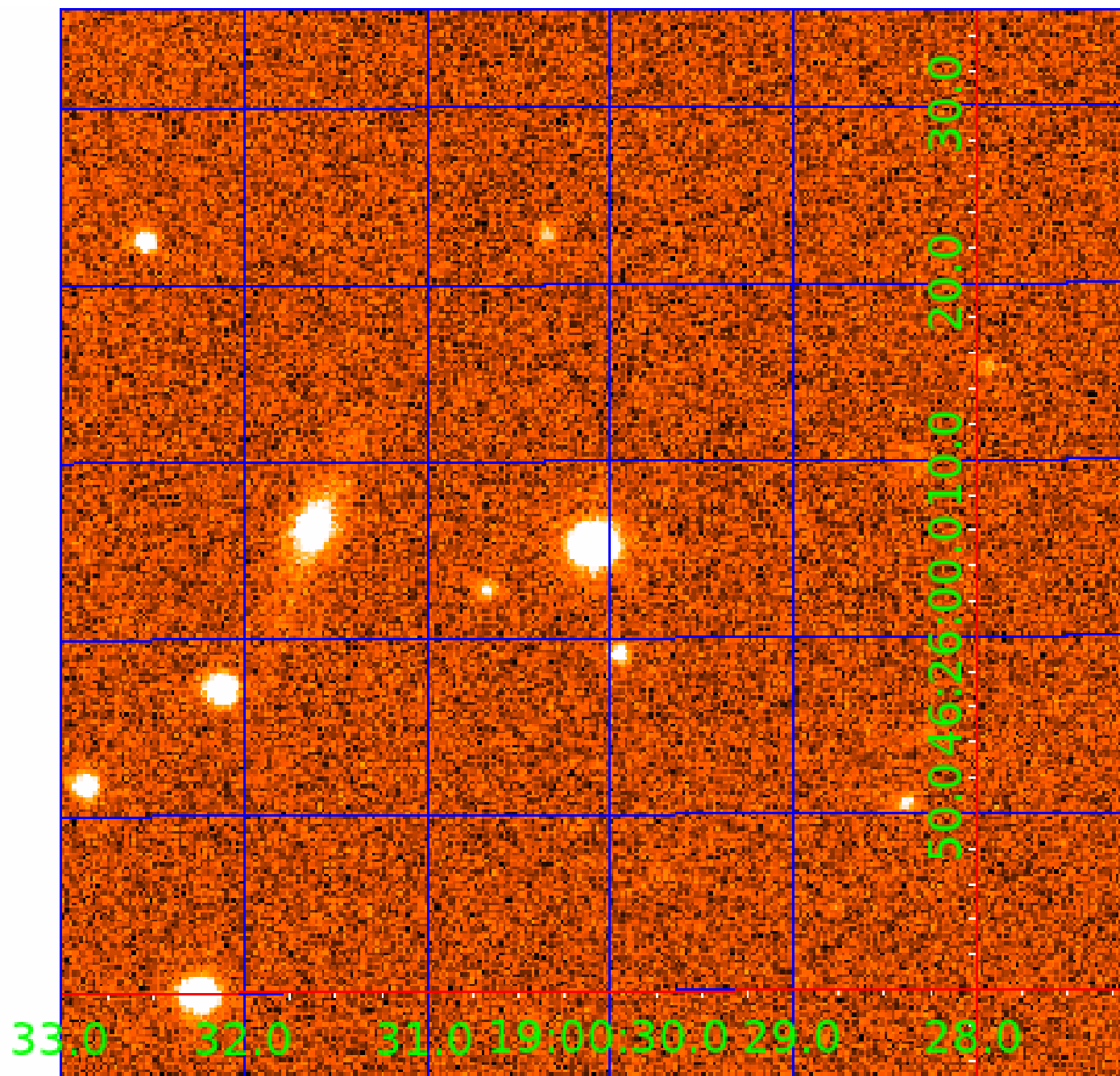


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009697208

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})
009697208-01	OBS	No	336.954547	310.338173	663.0	6.660	9.5	6.9	1.00	6096	2.73	1.35
009697208-02	OBS	No	386.389825	146.594825	684.8	8.801	9.1	6.4	1.00	6096	2.81	1.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009697208-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL
009697208-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_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.

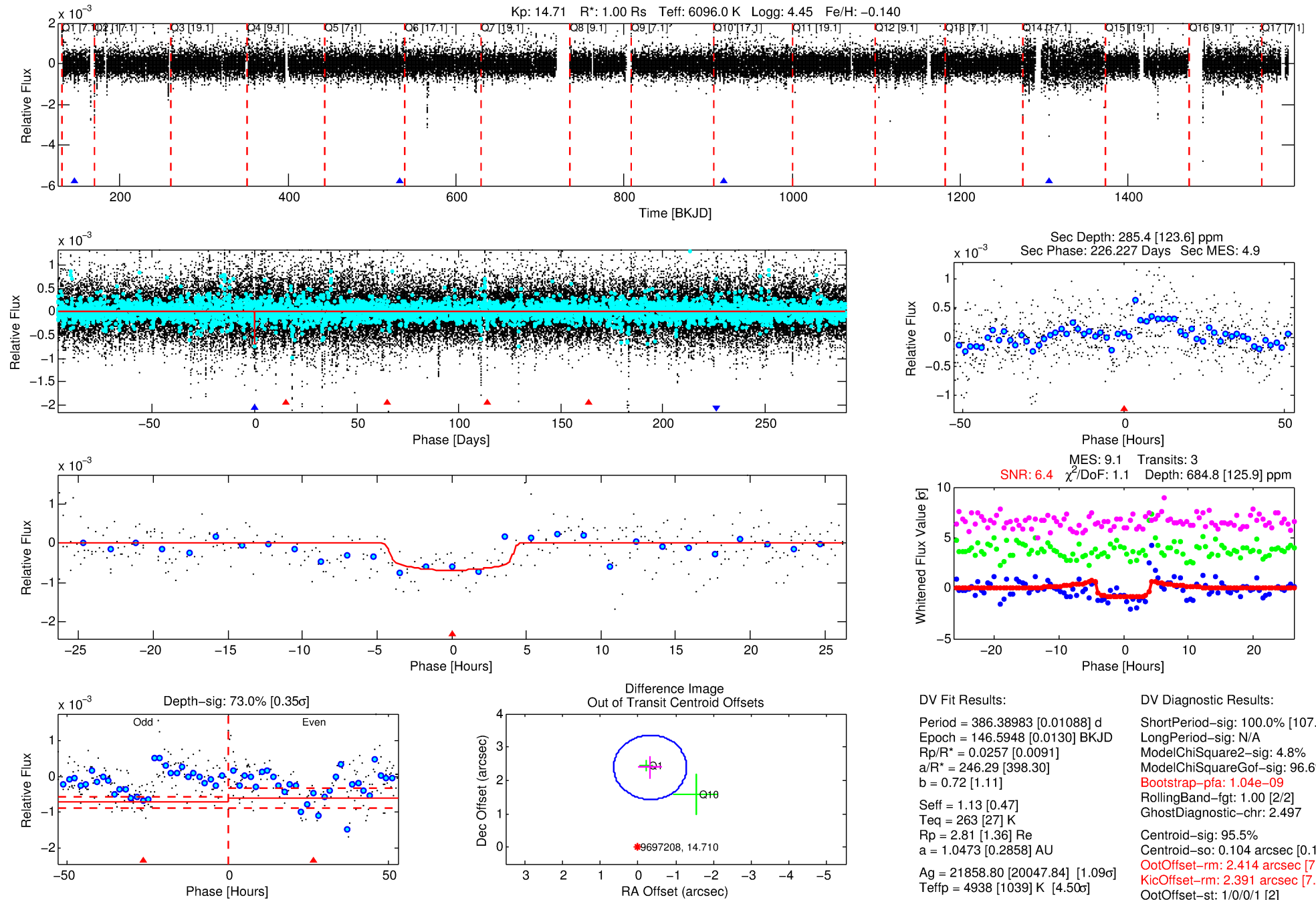
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009697208-02

No Significant Match Found

DV One-Page Summary

KIC: 9697208 Candidate: 2 of 2 Period: 386.390 d



DV Fit Results:

Period = 386.38983 [0.01088] d
Epoch = 146.5948 [0.0130] BKJD
Rp/R* = 0.0257 [0.0091]
a/R* = 246.29 [398.30]
b = 0.72 [1.11]
Seff = 1.13 [0.47]
Teq = 263 [27] K
Rp = 2.81 [1.36] Re
a = 1.0473 [0.2858] AU
Ag = 21858.80 [20047.84] [1.09 σ]
Teff = 4938 [1039] K [4.50 σ]

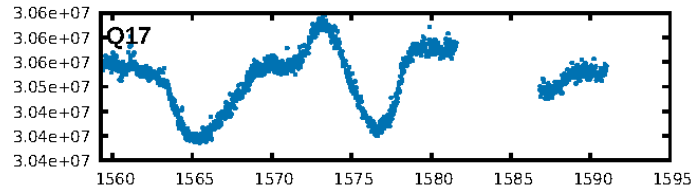
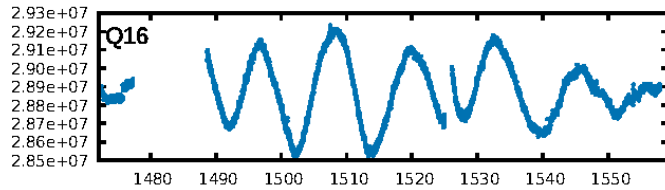
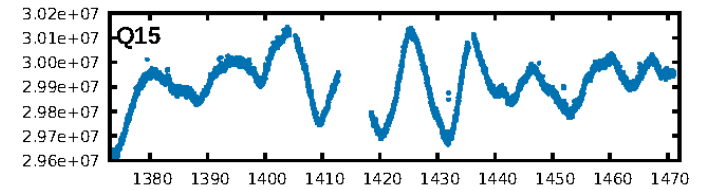
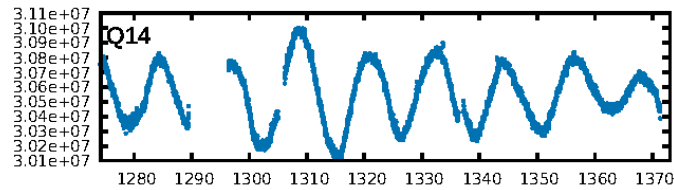
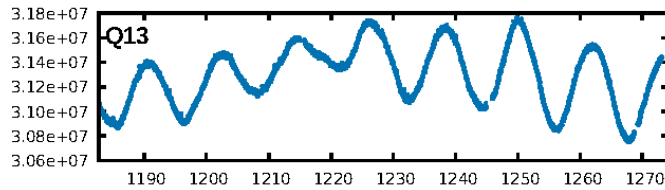
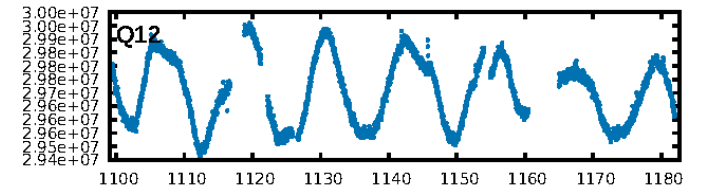
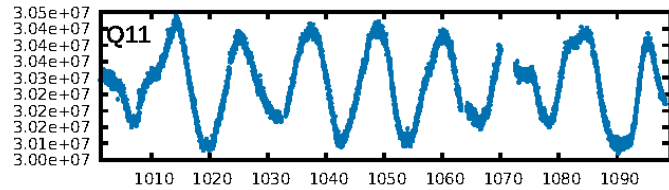
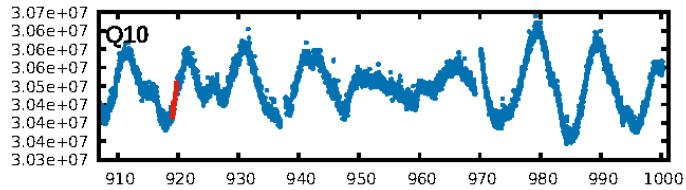
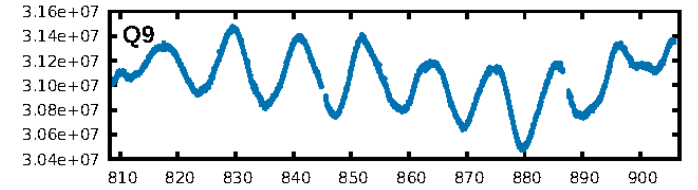
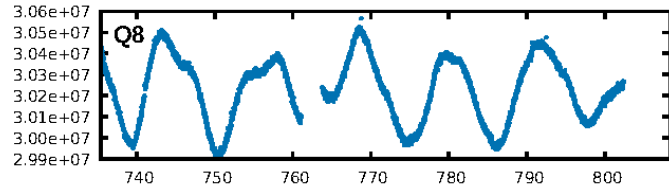
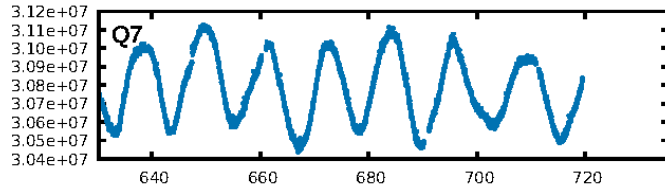
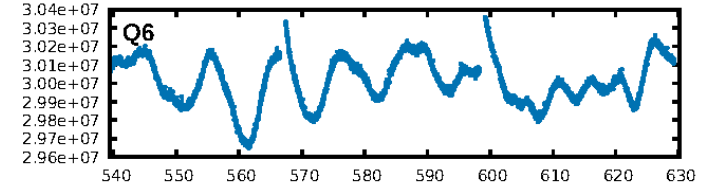
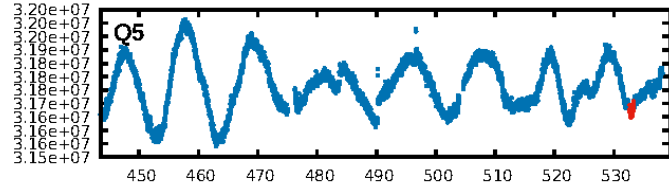
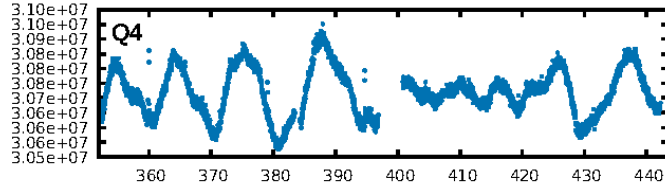
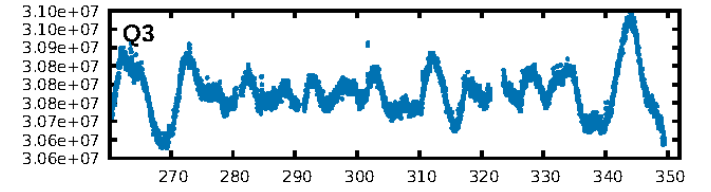
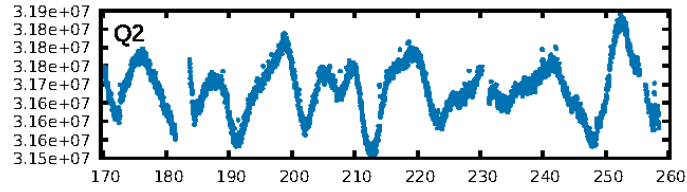
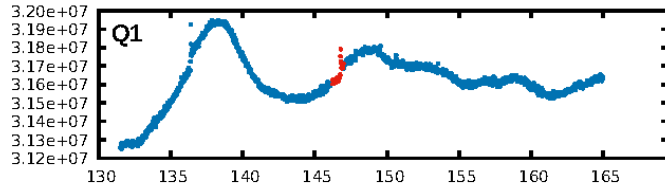
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [107.50 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 4.8%
ModelChiSquareGof-sig: 96.6%
Bootstrap-pfa: 1.04e-09
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 2.497
Centroid-sig: 95.5%
Centroid-so: 0.104 arcsec [0.12 σ]
OotOffset-rm: 2.414 arcsec [7.52 σ]
KicOffset-rm: 2.391 arcsec [7.45 σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [3/3]

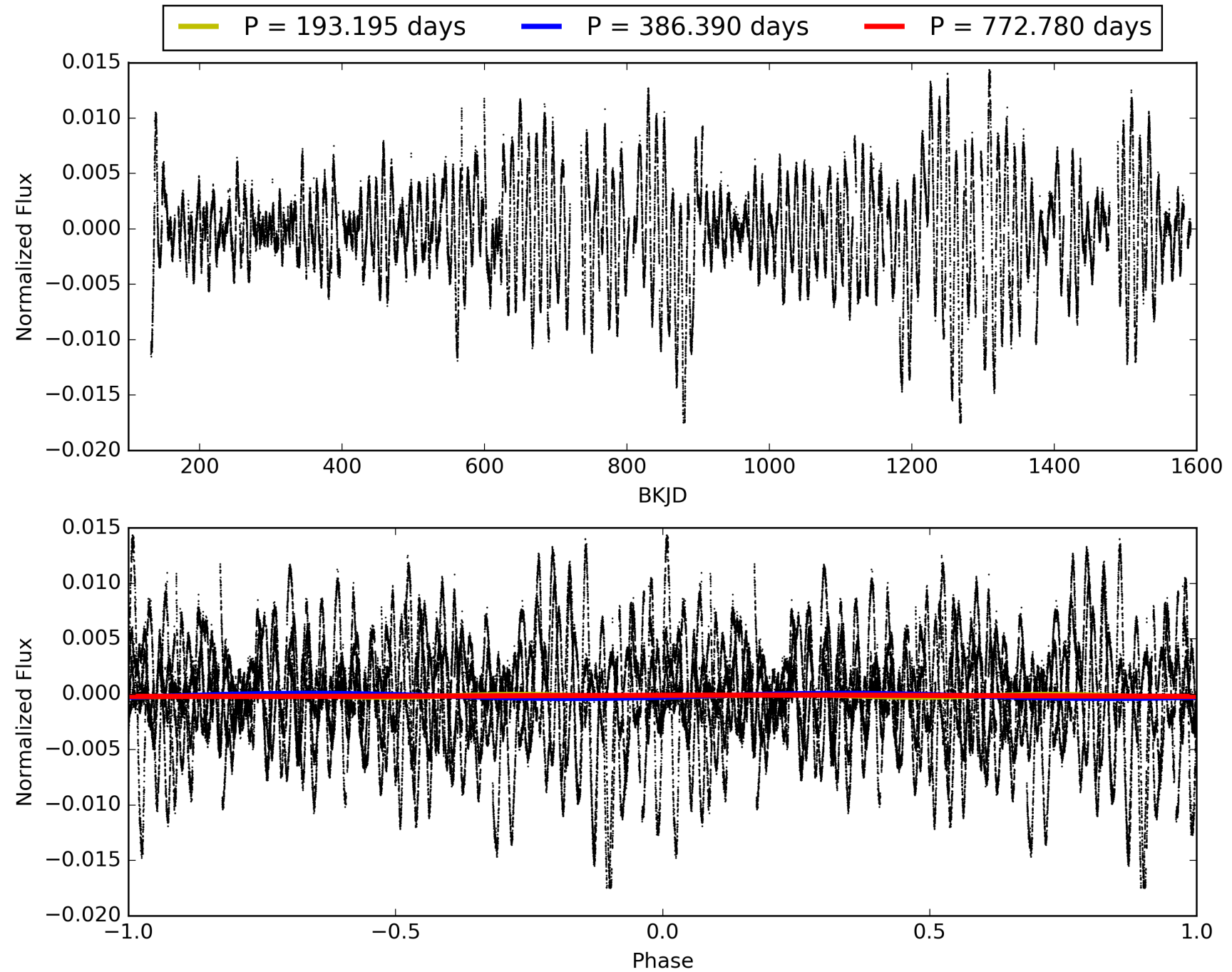
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 03:42:18 Z

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

TCE 009697208-02, PDC Light Curves

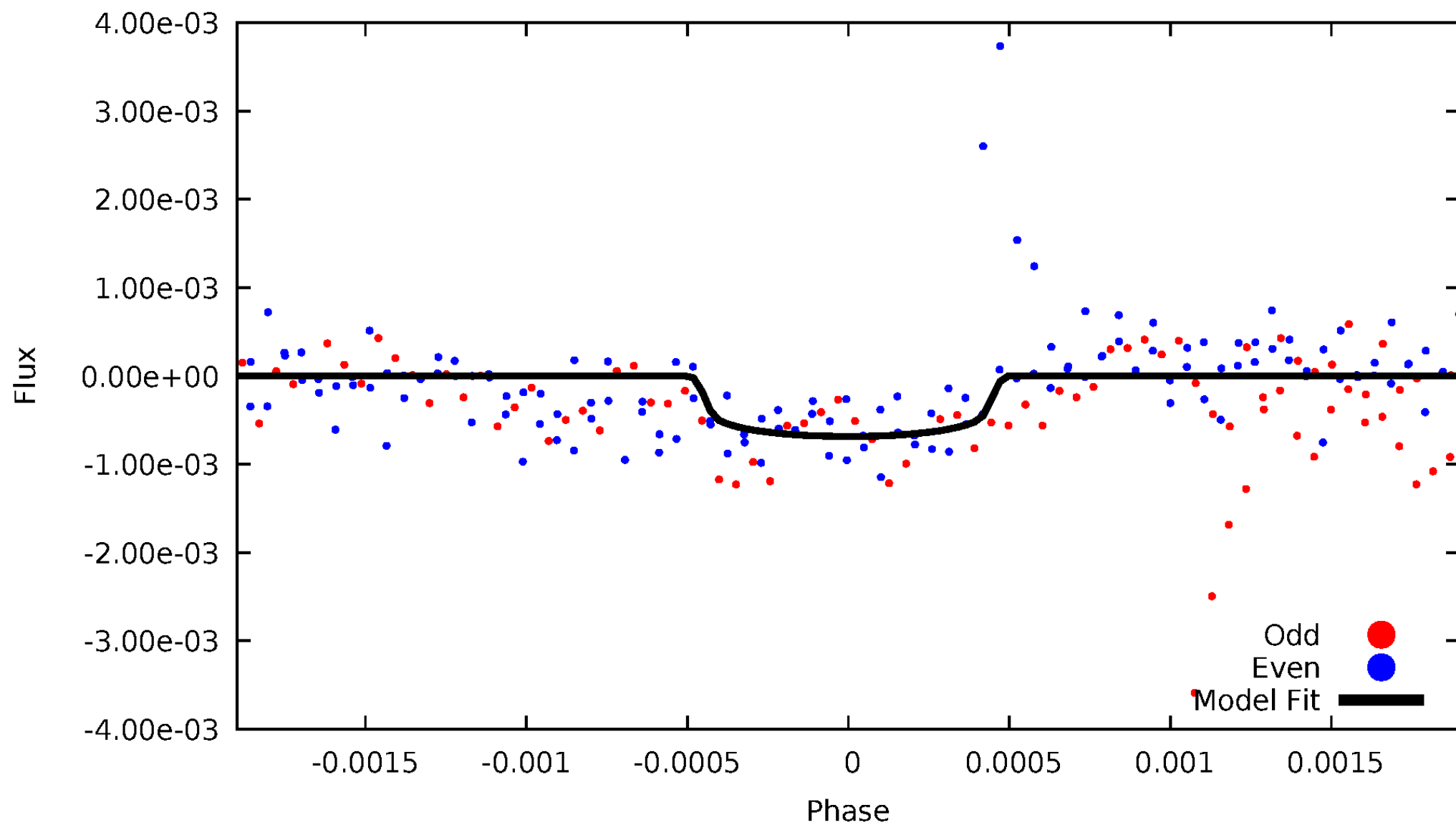


TCE 009697208-02



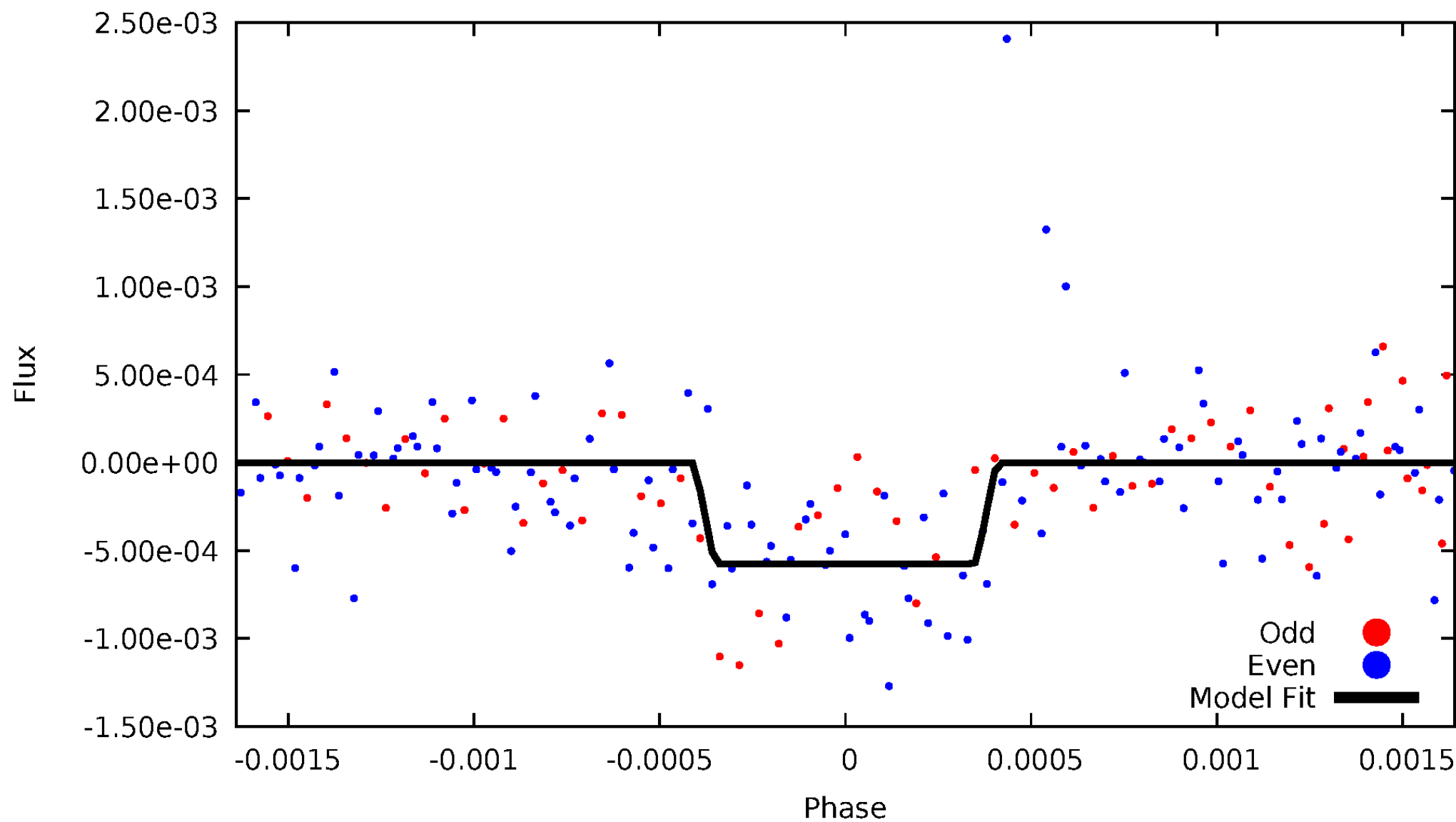
DV Odd/Even

TCE 009697208-02



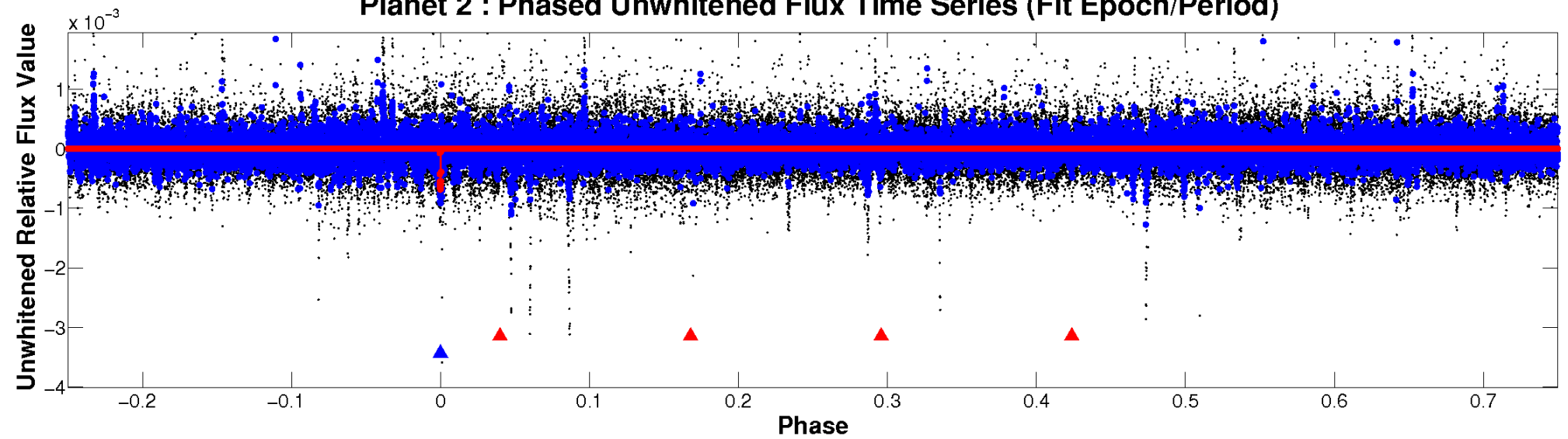
ALT Odd/Even

TCE 009697208-02

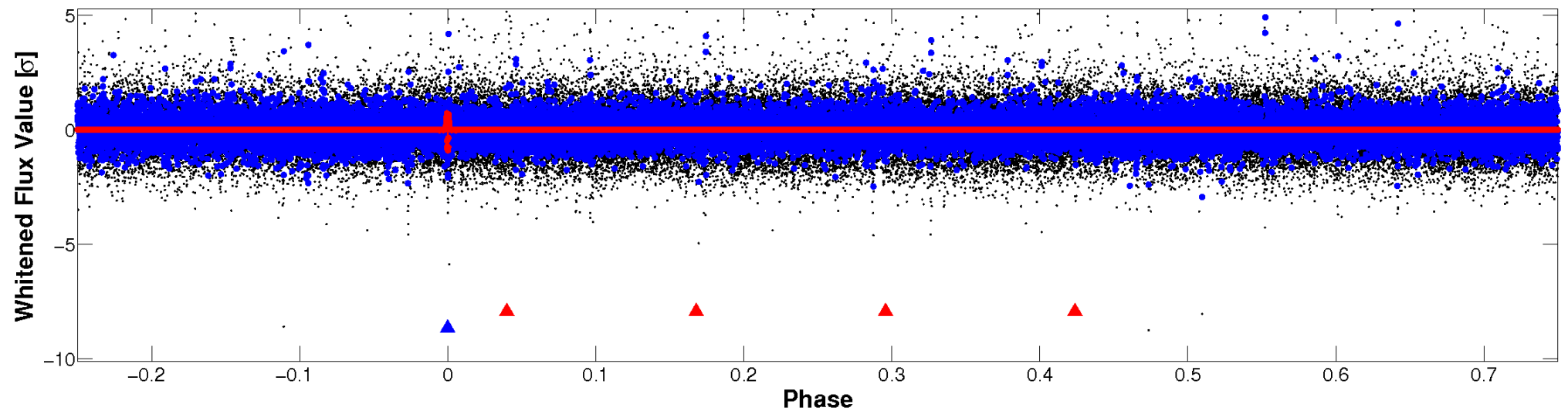


Non-Whitened Vs. Whitened Light Curve

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

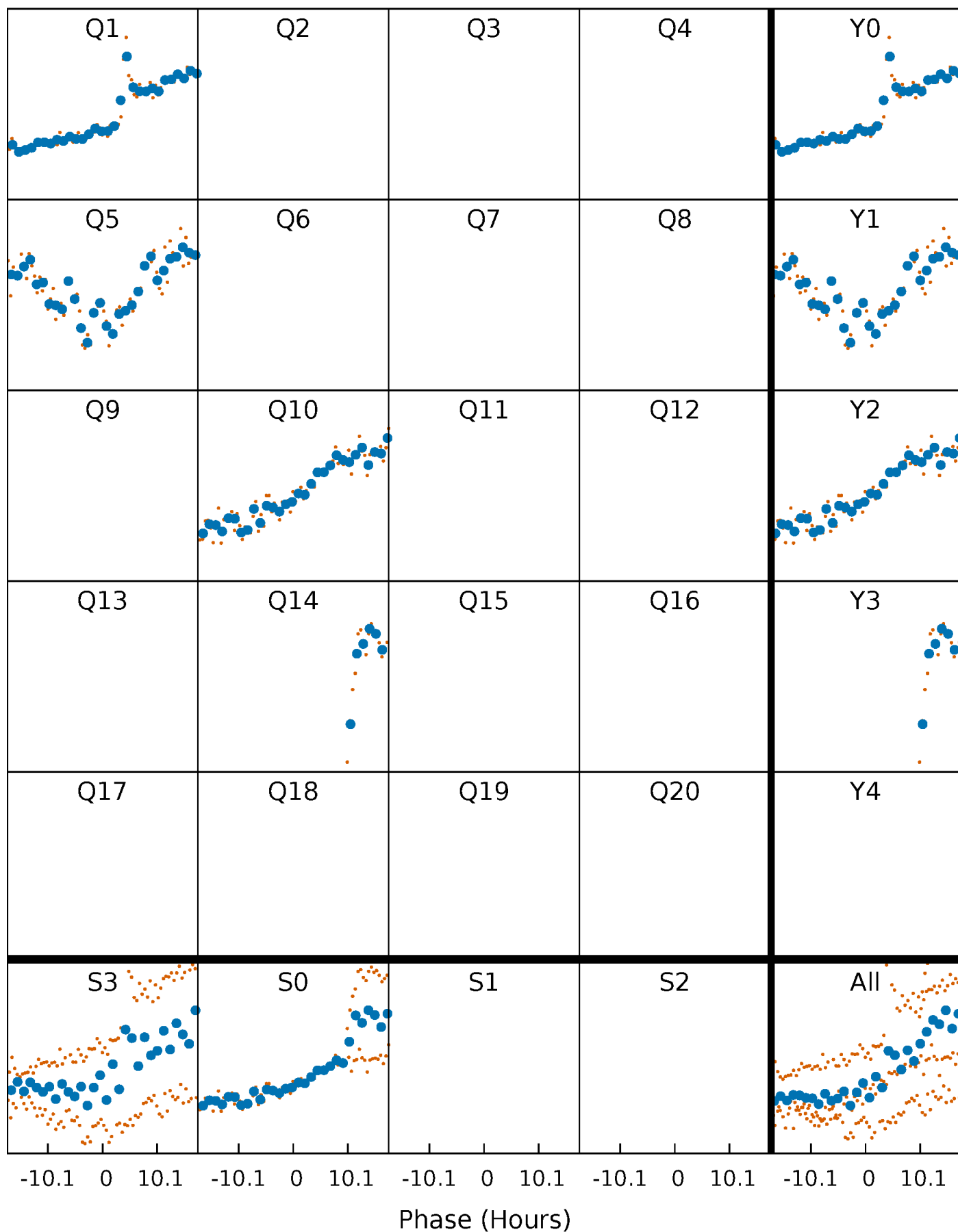


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



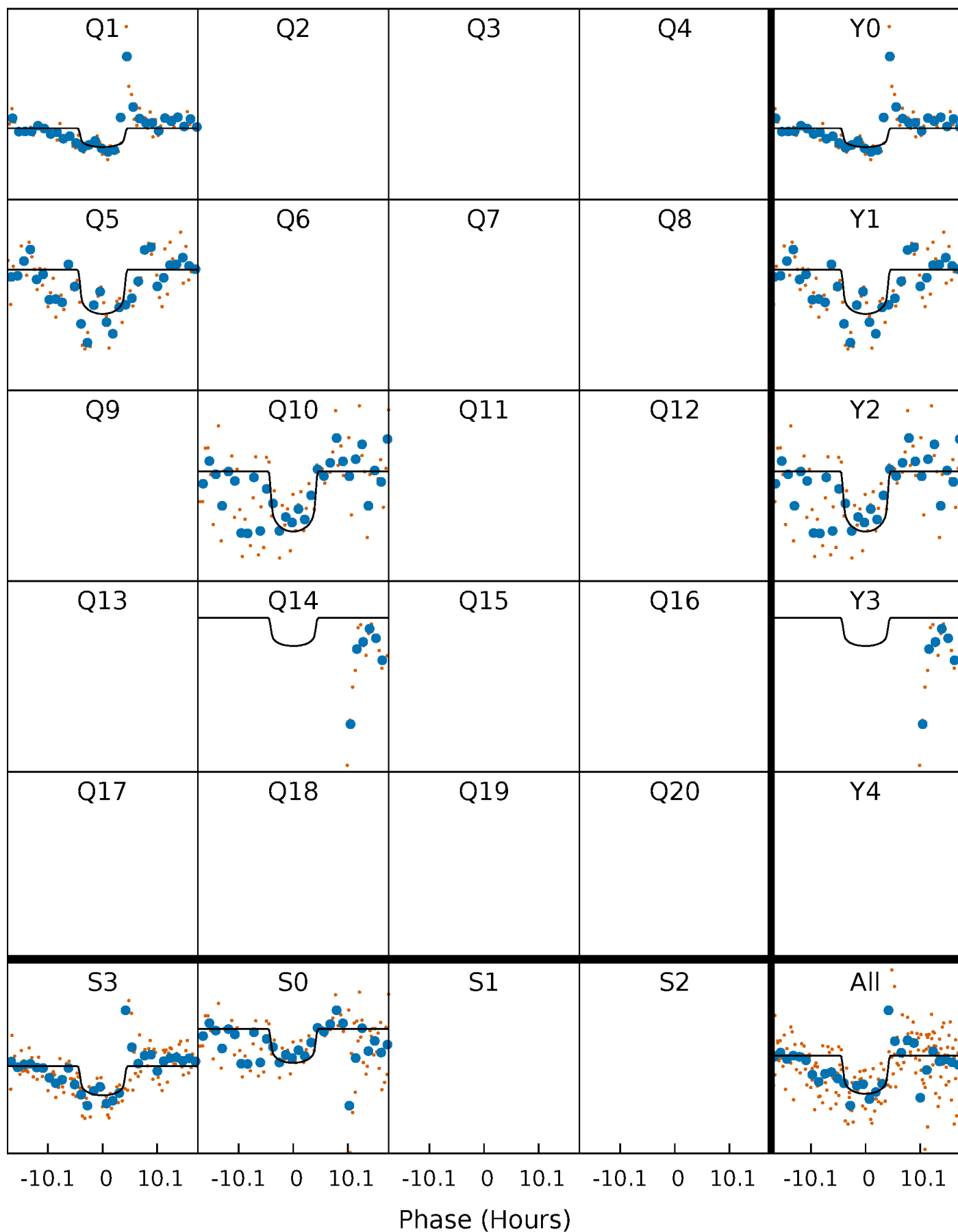
PDC Quarter-Phased Transit Curves

TCE 009697208-02 $P=386.389825$ Days $T_0=146.594825$ (BKJD)



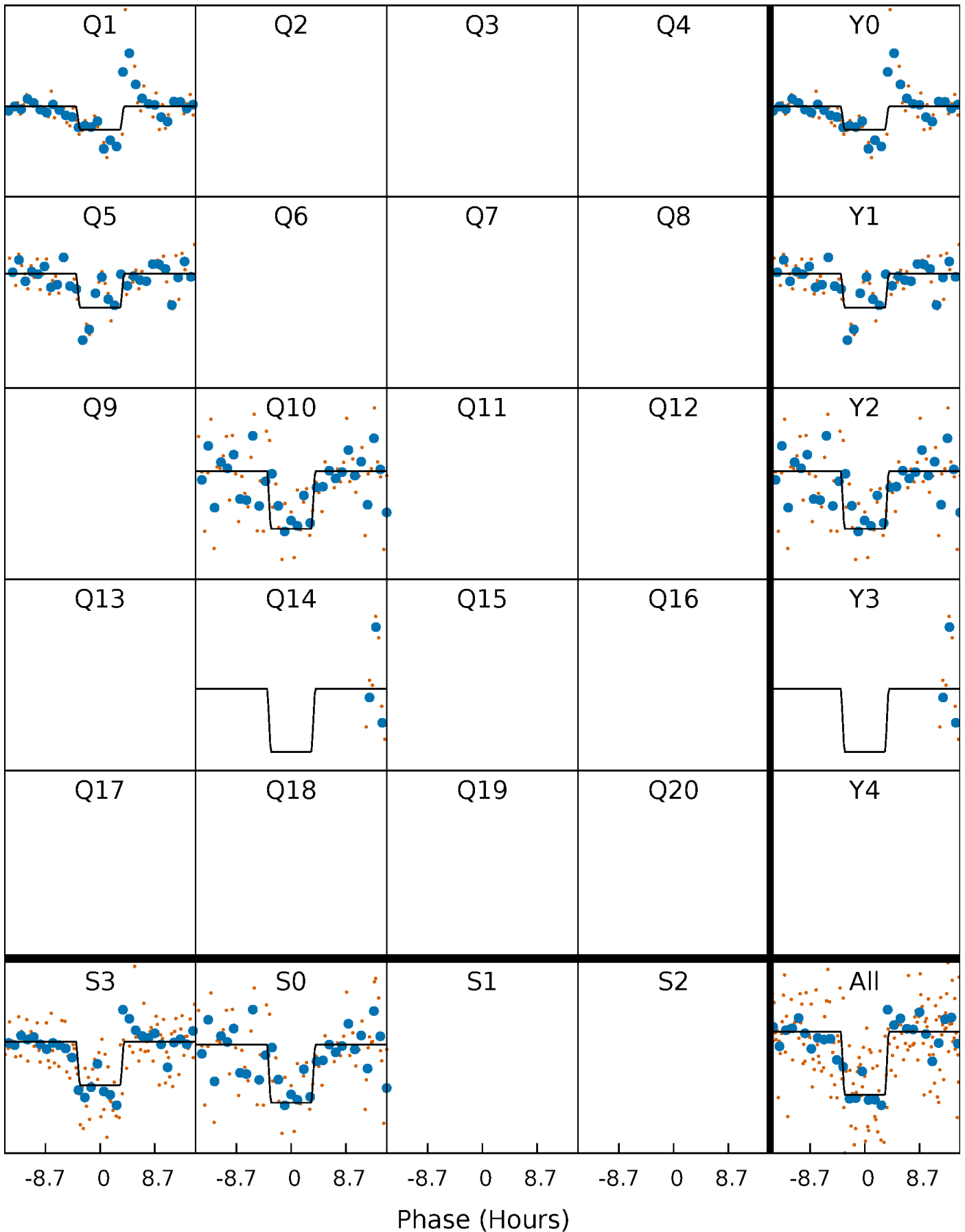
DV Quarter-Phased Transit Curves

TCE 009697208-02 $P=386.389825$ Days $T_0=146.594825$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

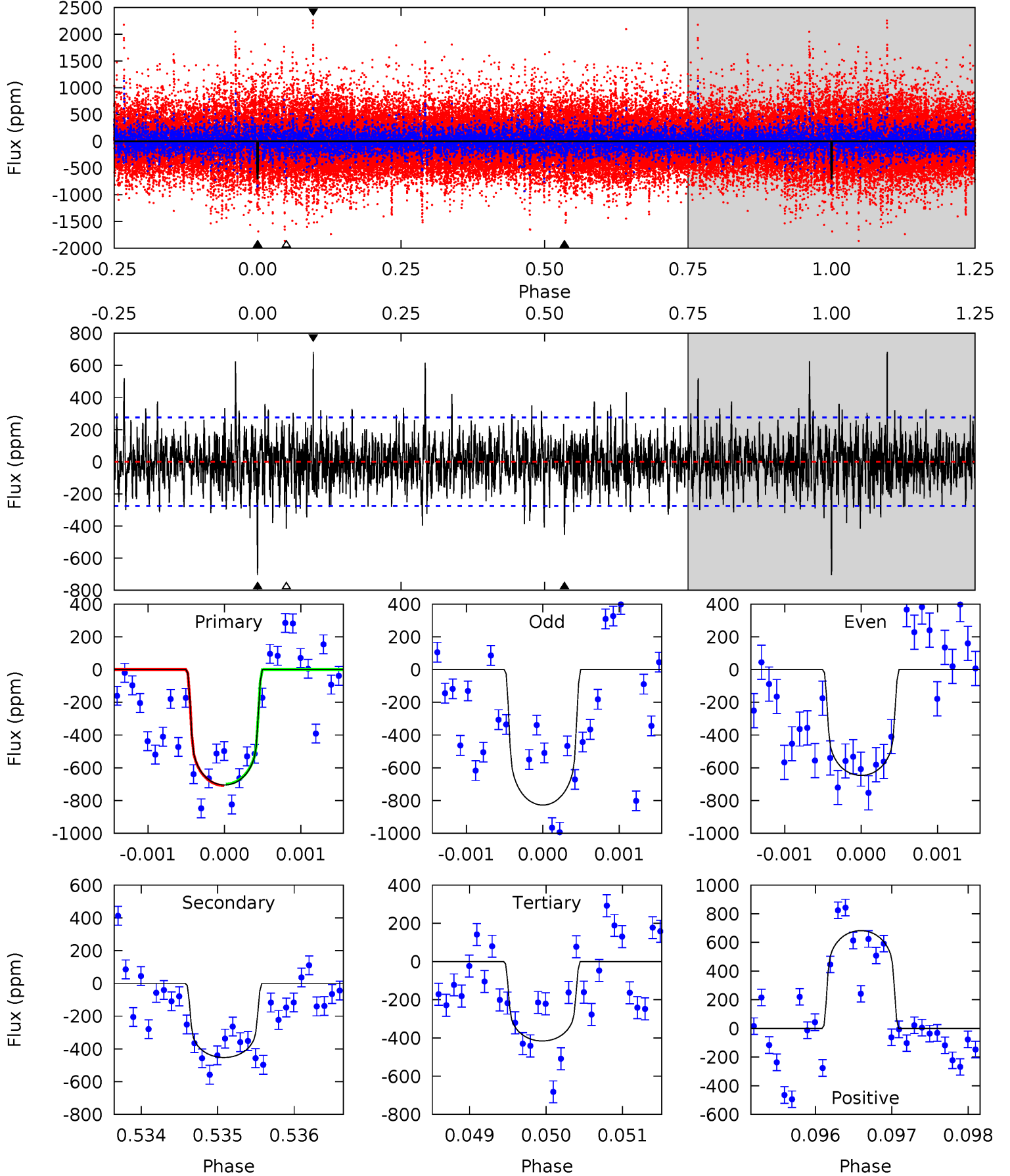
TCE 009697208-02 P=386.371375 Days $T_0=146.588643$ (BKJD)



DV Model-Shift Uniqueness Test

009697208-02, P = 386.389825 Days, E = 146.594825 Days

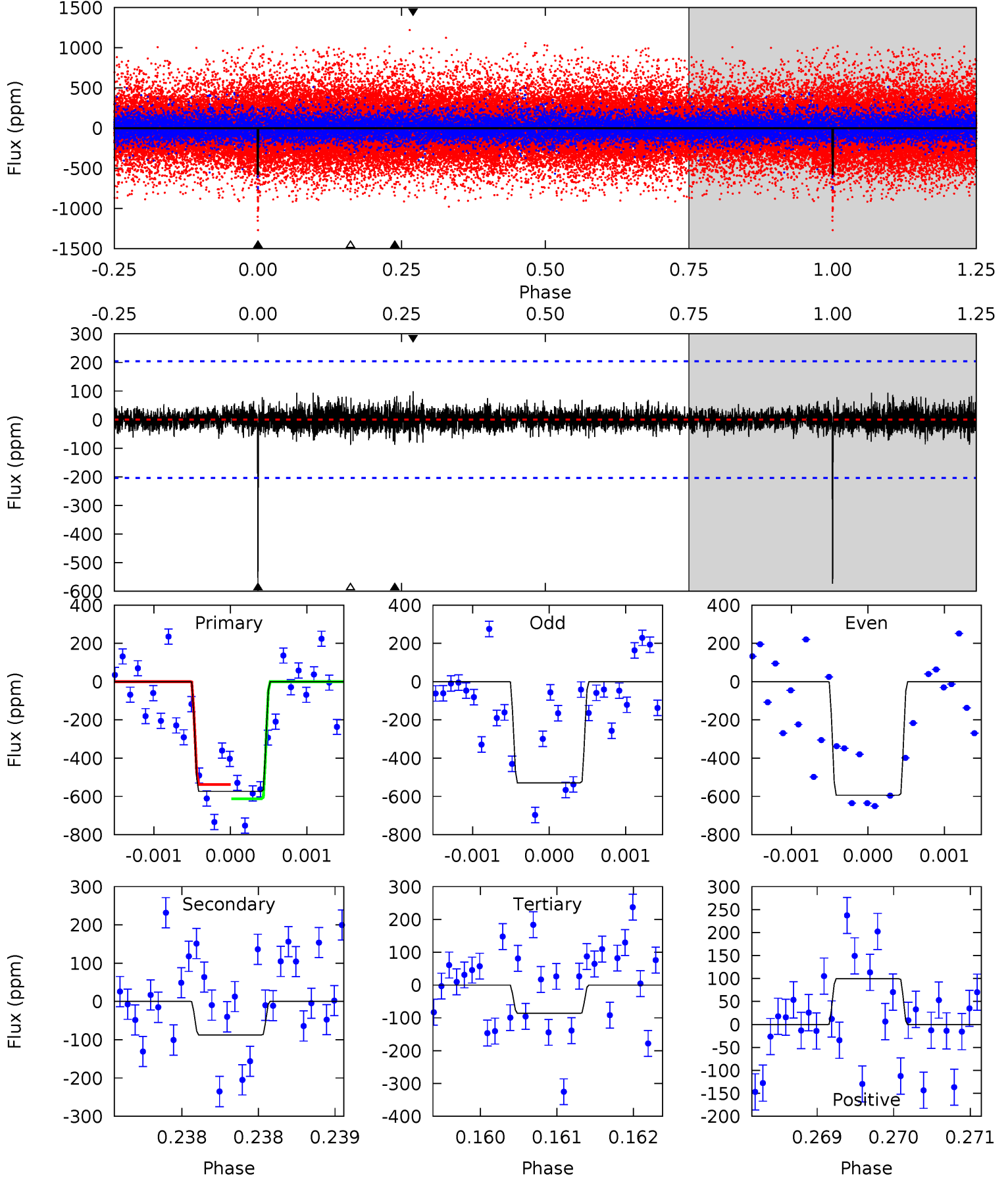
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.9	8.94	8.21	13.5	5.45	3.29	2.28	5.71	0.45	0.73	-4.53	1.65	1.10	0.49	0.08



Alt Model-Shift Uniqueness Test

009697208-02, P = 386.371375 Days, E = 146.588643 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.4	2.35	2.31	2.67	5.49	3.35	0.54	13.1	12.7	0.04	-0.32	0.83	1.08	0.15	1.01



Stellar Parameters For KIC 009697208

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6096^{+180}_{-217}	$4.450^{+0.070}_{-0.210}$	$-0.140^{+0.250}_{-0.350}$	$0.999^{+0.330}_{-0.110}$	$1.020^{+0.153}_{-0.126}$	$1.442^{+0.430}_{-0.787}$
	+3%/-4%	+2%/-5%	+179%/-250%	+33%/-11%	+15%/-12%	+30%/-55%
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 009697208-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-453 ± 51	$2.93^{+1.16}_{-1.06}$	373^{+28}_{-20}	5516^{+1503}_{-757}	31492^{+45787}_{-15774}
Alt.	-87 ± 37	$2.70^{+1.17}_{-0.97}$	372^{+31}_{-20}	4062^{+818}_{-535}	6594^{+11114}_{-3844}

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 $A_{obs} \gg 1.0$

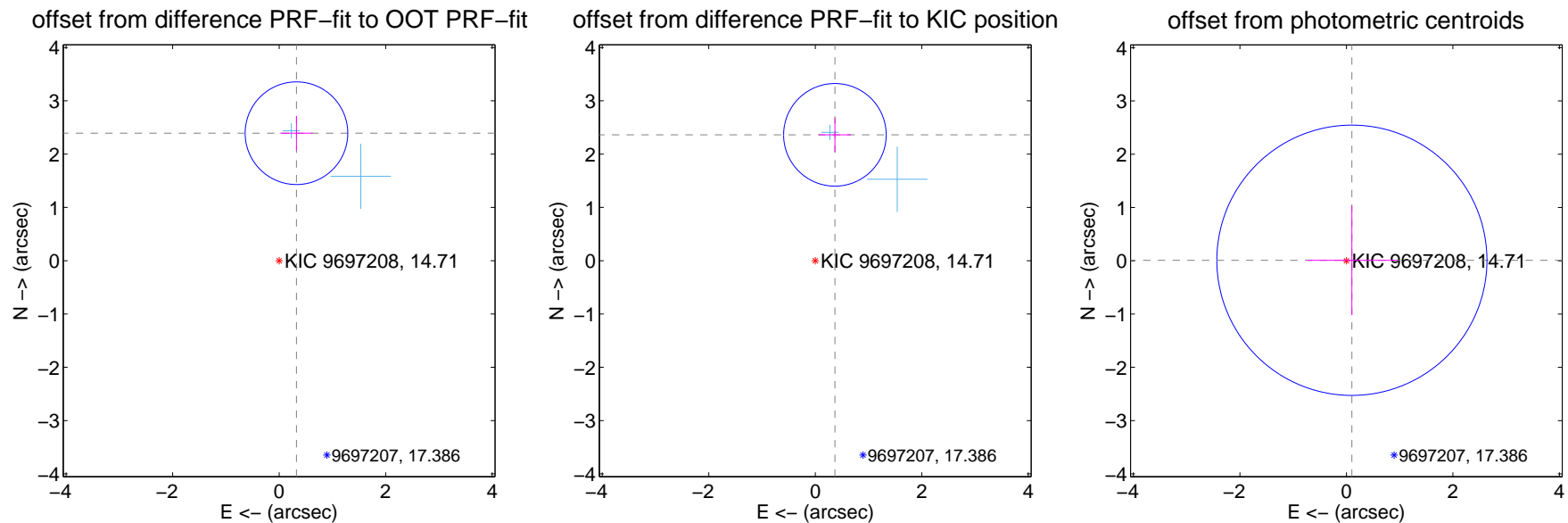
DV Centroid Data

Supplemental centroid analysis for 009697208-02. Kepler magnitude: 14.71. Transit SNR 6.42

There are 2 quarters with good PRF difference image offsets

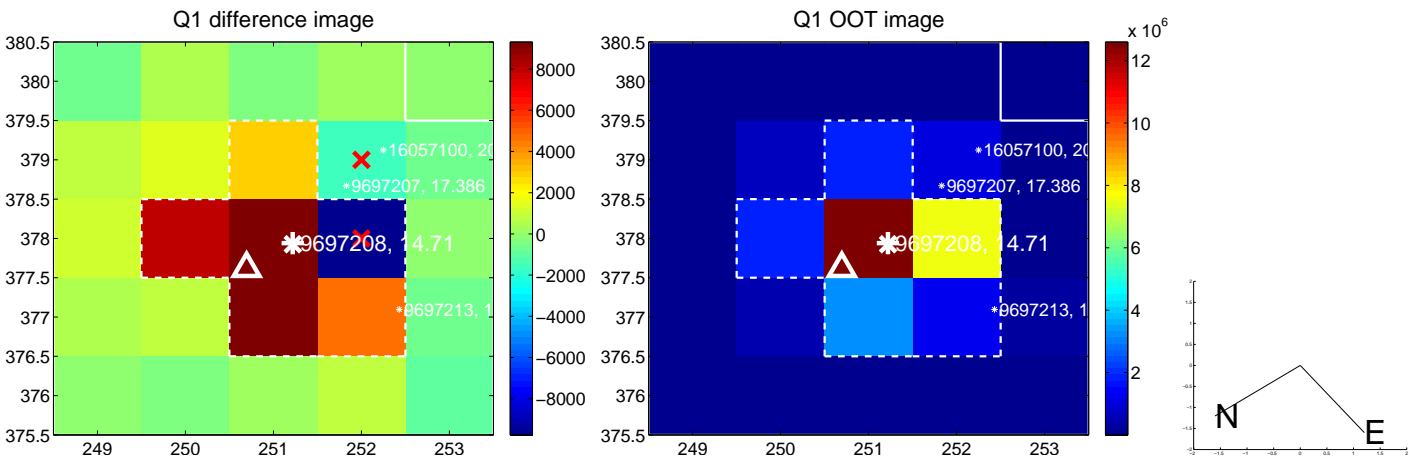
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.414 ± 0.321	7.52	-0.325 ± 0.303	2.392 ± 0.321
PRF-fit source offset from KIC position	2.391 ± 0.321	7.45	-0.369 ± 0.303	2.362 ± 0.321
photometric centroid source offset	0.10 ± 0.85	0.12	-0.10 ± 0.84	0.01 ± 1.03

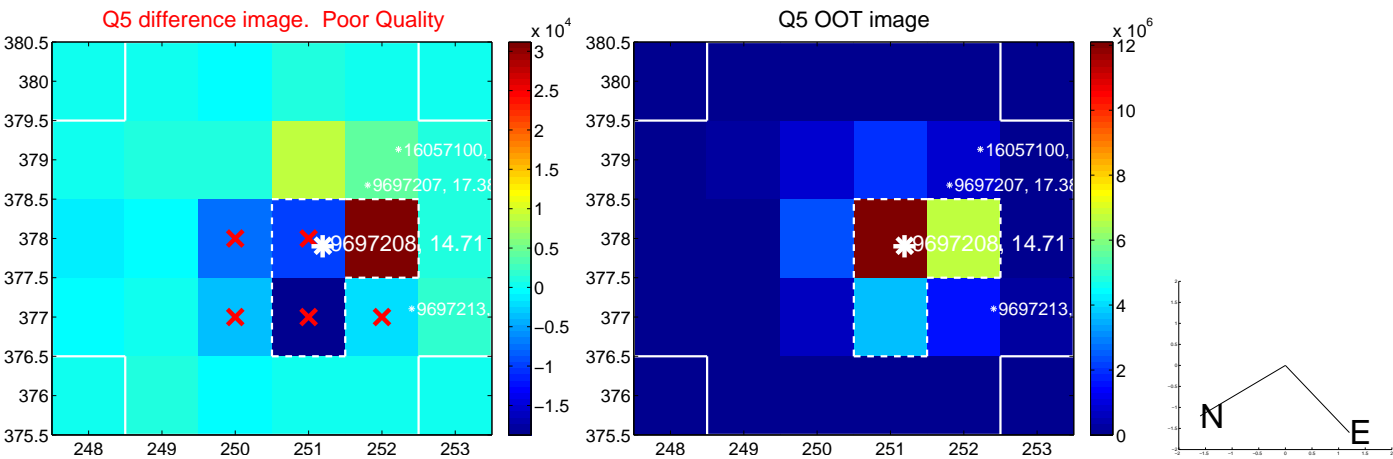


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

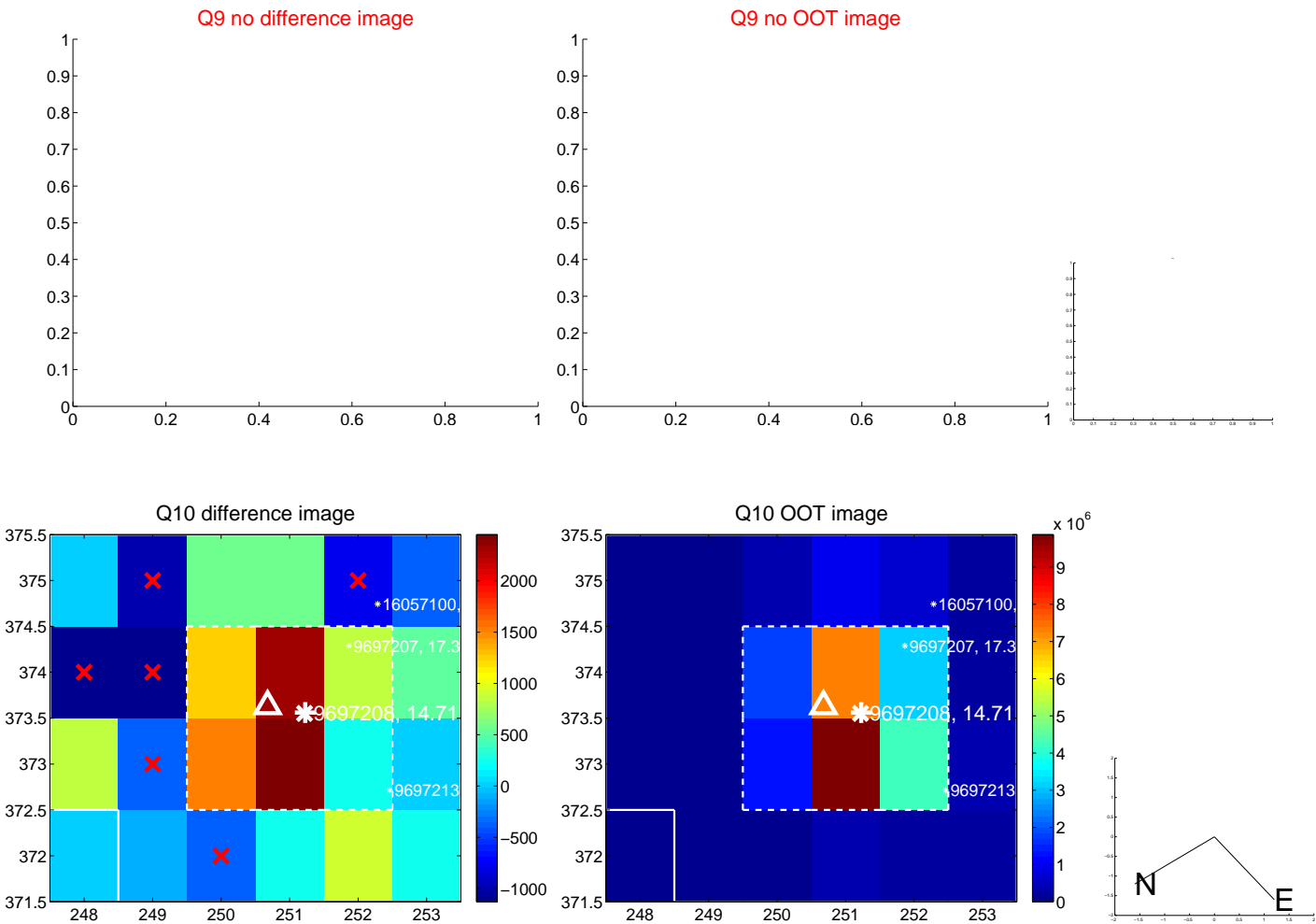
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



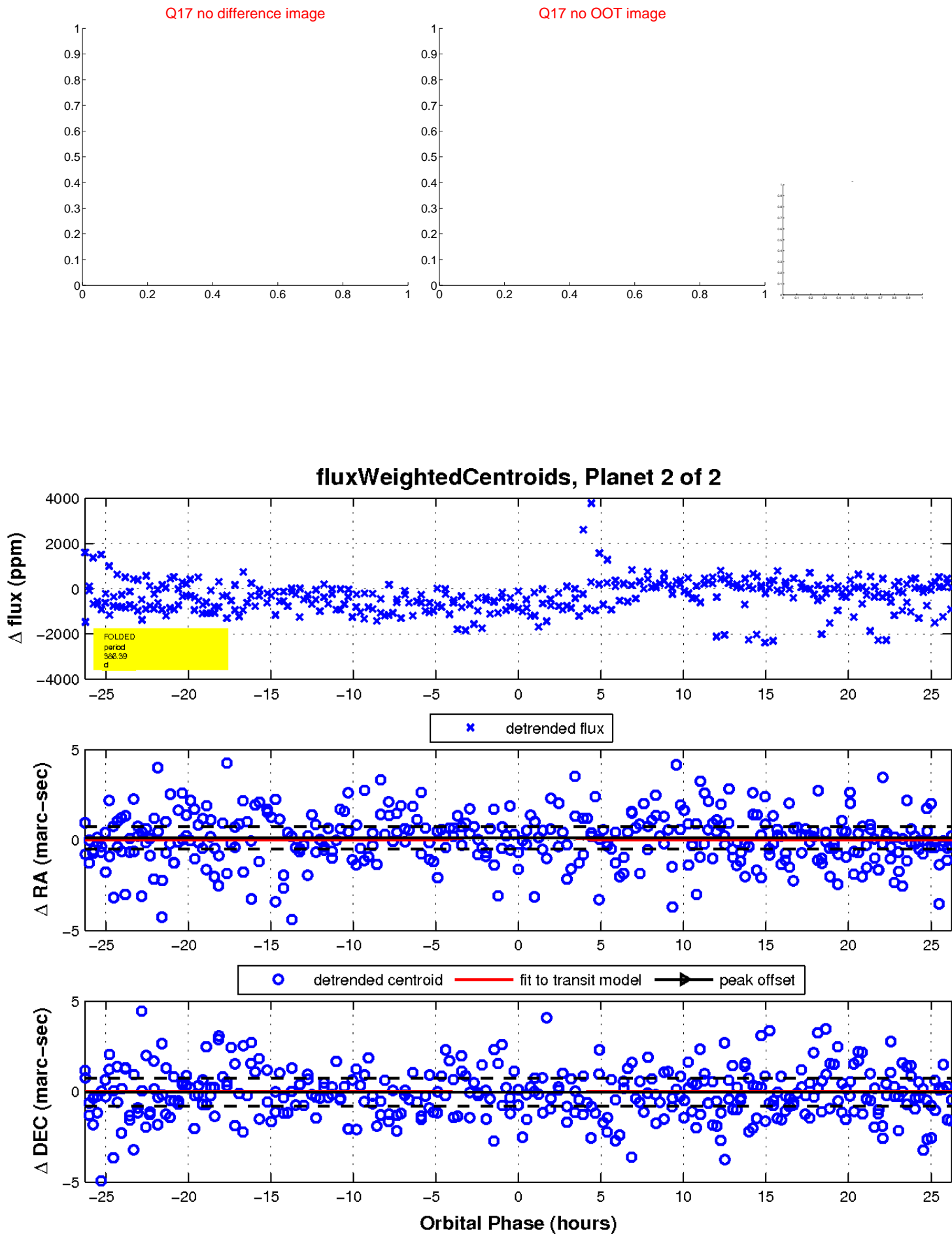
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

