

KIC 007902303

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})
007902303-01	OBS	No	458.878177	367.779054	778.6	13.205	8.2	8.0	0.91	5864	2.90	0.67
007902303-02	OBS	No	370.415071	231.975141	1533.7	21.972	7.7	10.1	0.91	5864	5.71	0.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007902303-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007902303-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

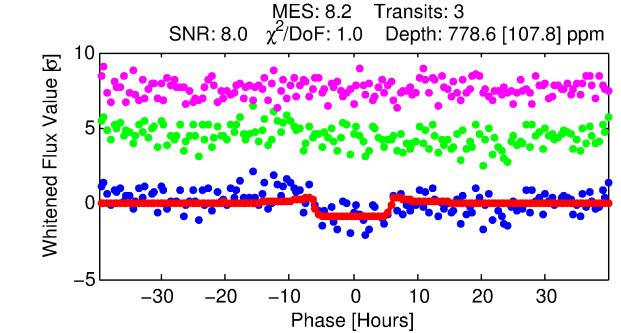
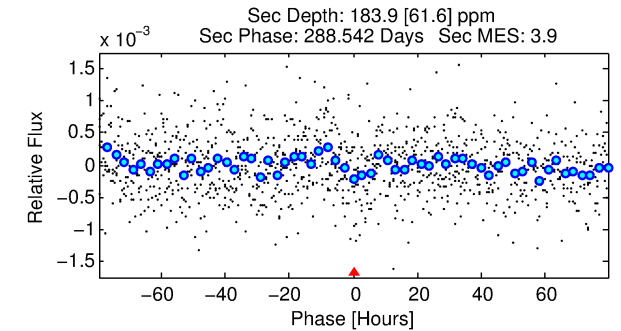
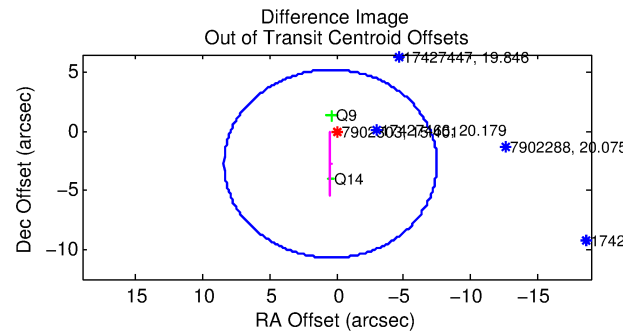
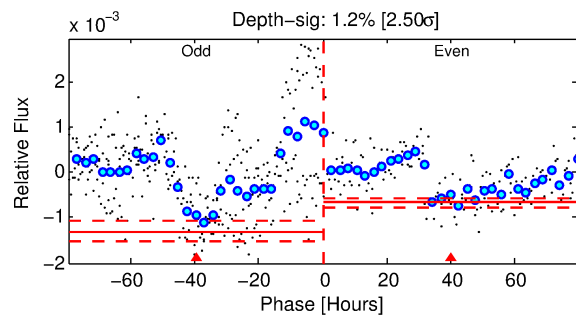
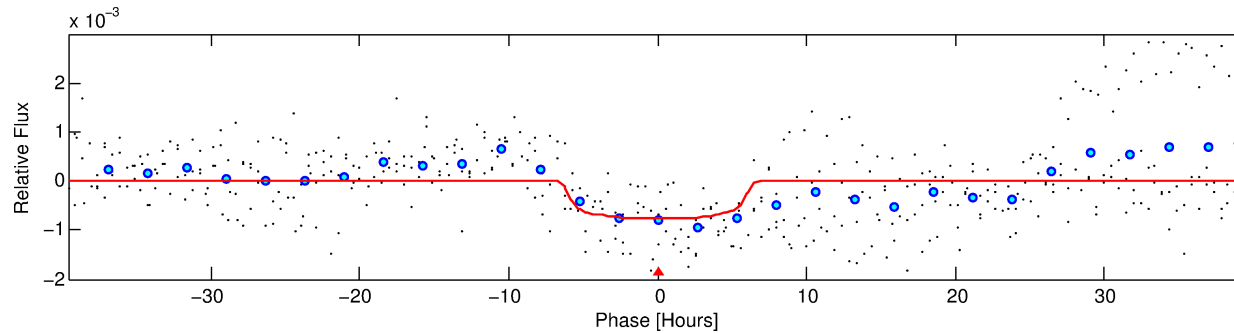
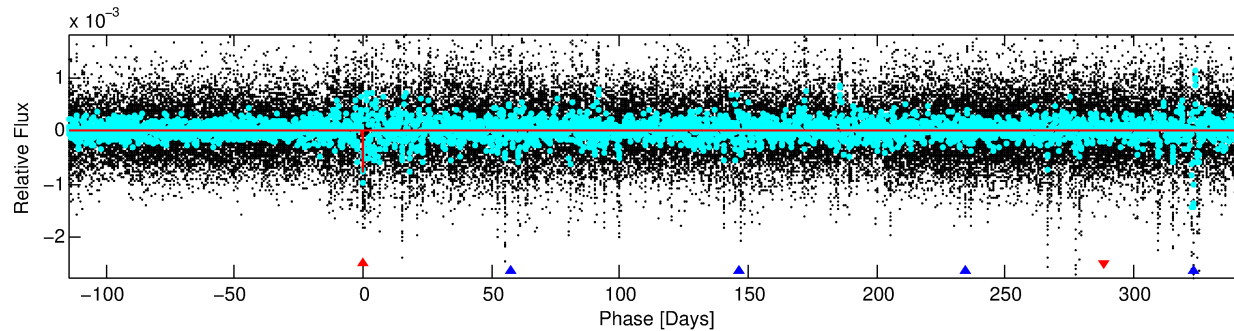
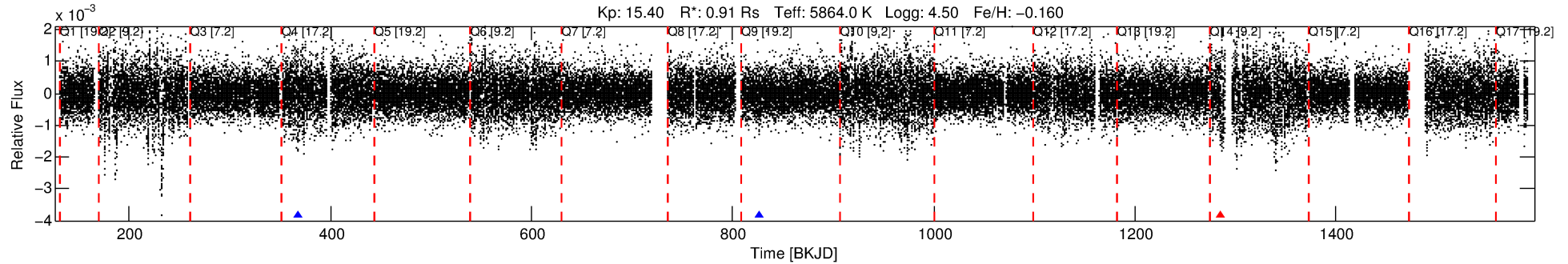
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007902303-01

No Significant Match Found

DV One-Page Summary

KIC: 7902303 Candidate: 1 of 2 Period: 458.878 d



DV Fit Results:

Period = 458.87818 [0.01680] d
Epoch = 367.7791 [0.0211] BKJD
Rp/R* = 0.0291 [0.0045]
a/R* = 155.24 [95.57]
b = 0.85 [0.21]
Seff = 0.67 [0.26]
Teq = 231 [22] K
Rp = 2.90 [0.98] Re
a = 1.1485 [0.2870] AU
Ag = 15916.86 [9225.21] [1.73 σ]
Teff = 4006 [474] K [7.96 σ]

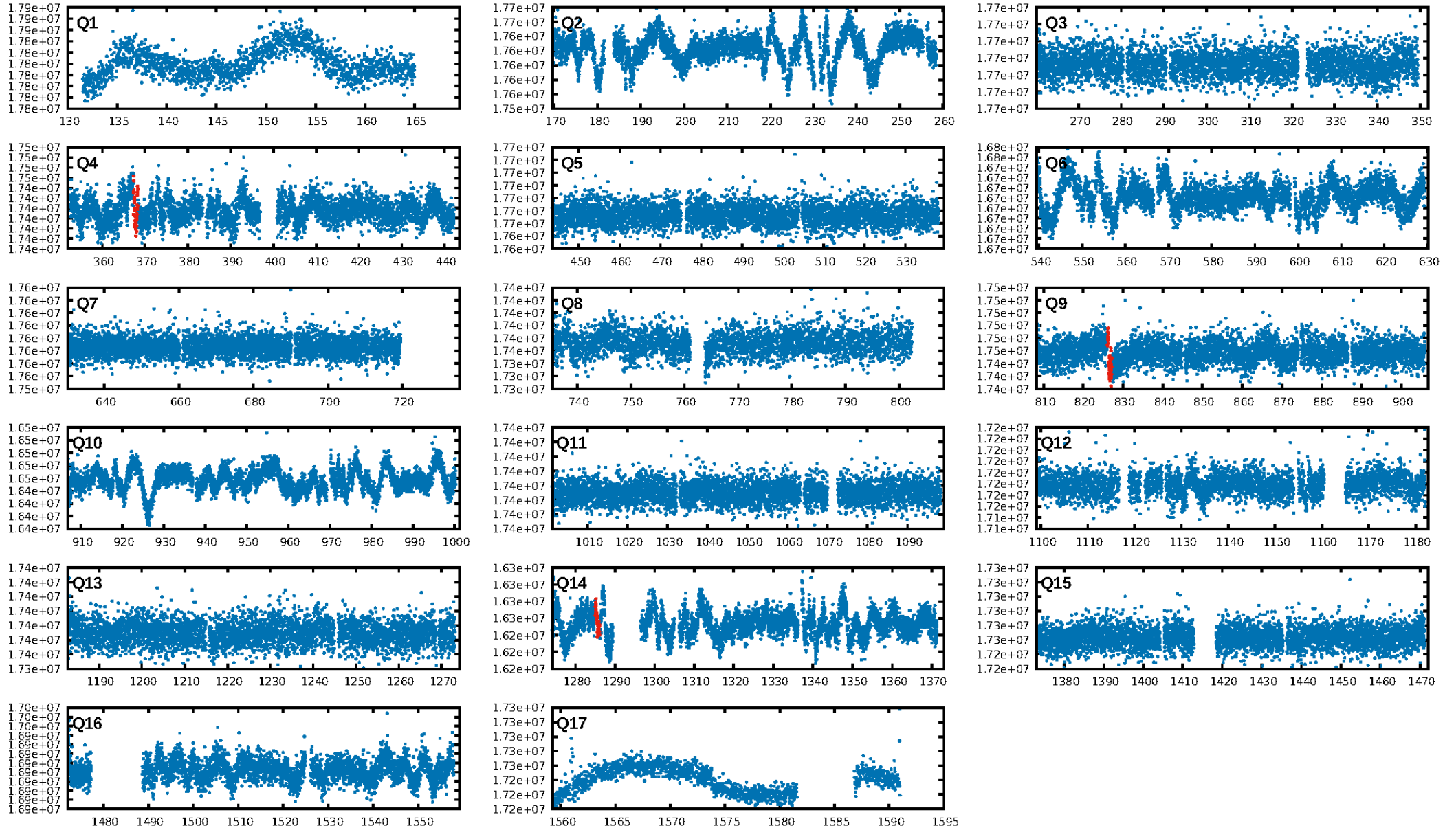
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [82.82 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 12.5%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 6.59e-09
RollingBand-fgt: 0.67 [2/3]
GhostDiagnostic-chr: -4.258
Centroid-sig: N/A
Centroid-so: 3.094 arcsec [1.45 σ]
OotOffset-rm: 2.789 arcsec [1.05 σ]
KicOffset-rm: 2.864 arcsec [1.07 σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

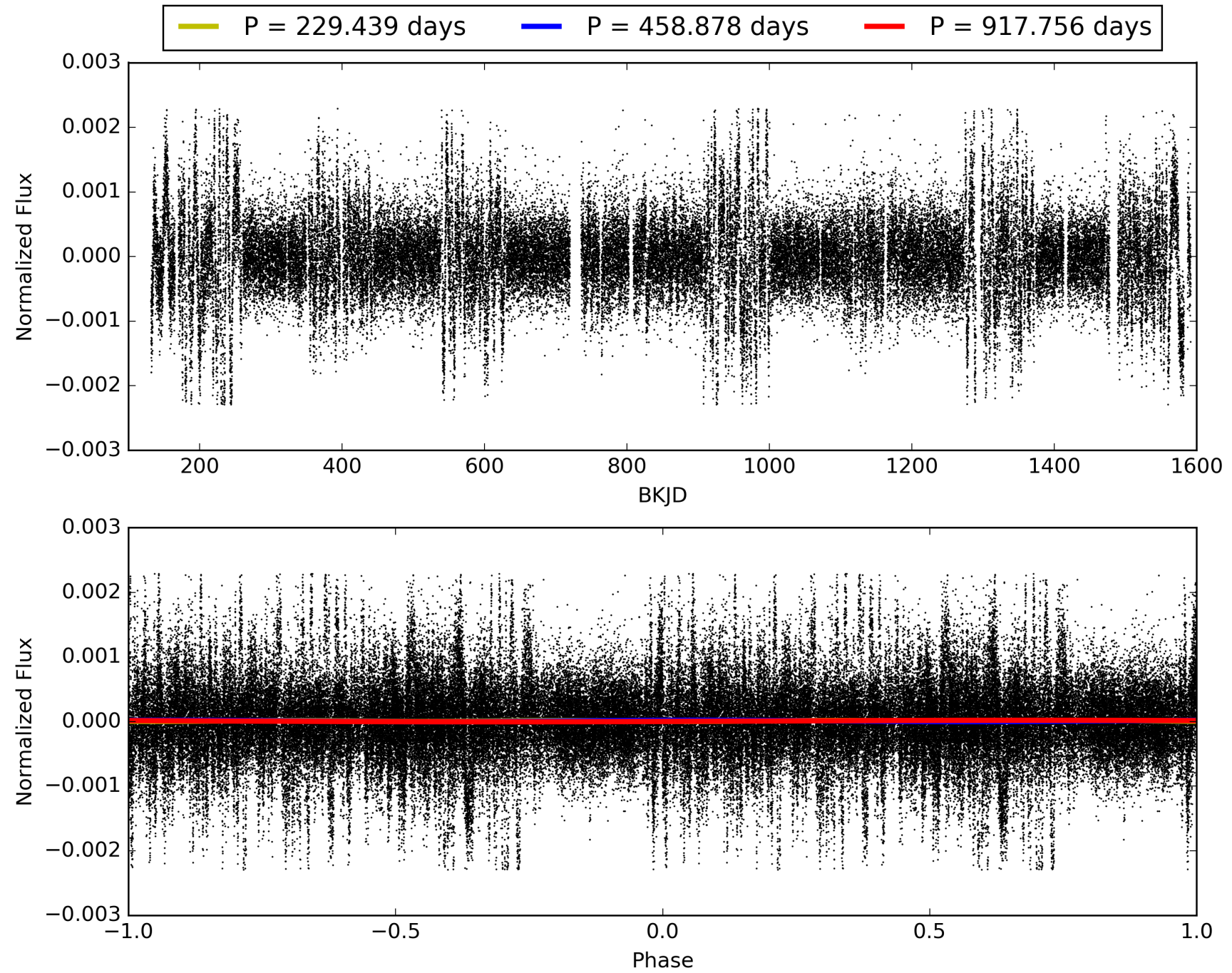
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 05:37:16 Z

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

TCE 007902303-01, PDC Light Curves

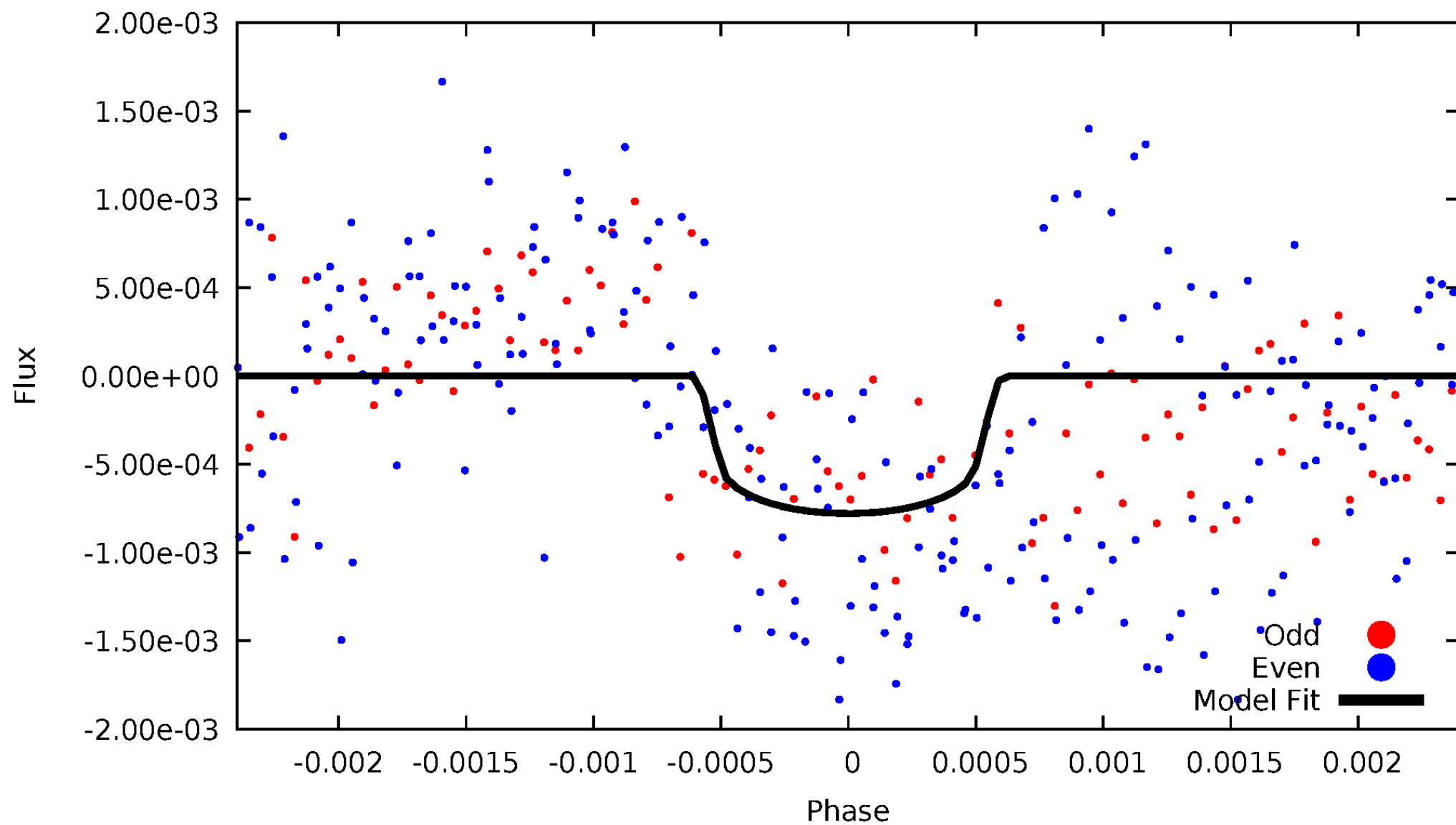


TCE 007902303-01



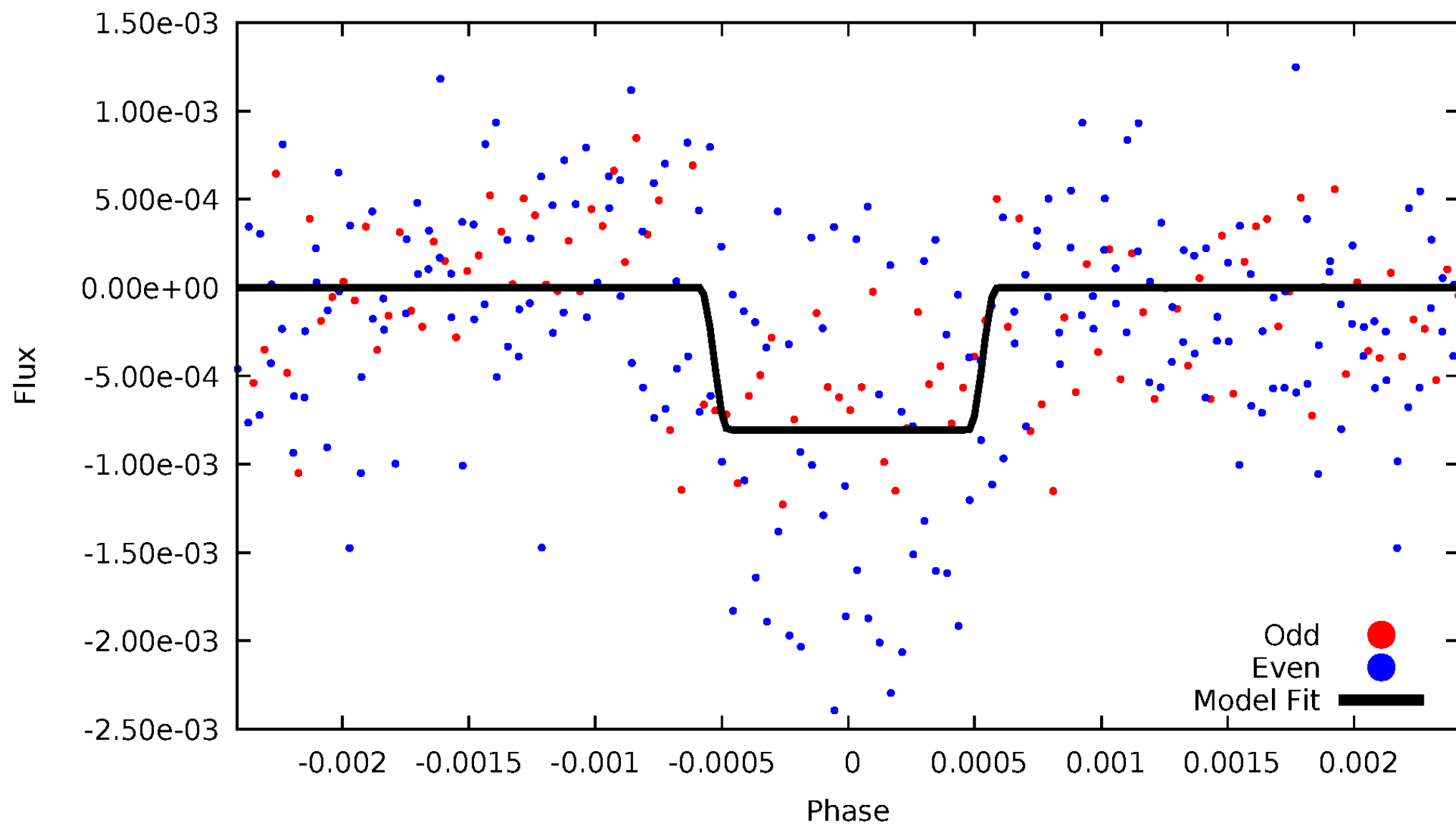
DV Odd/Even

TCE 007902303-01

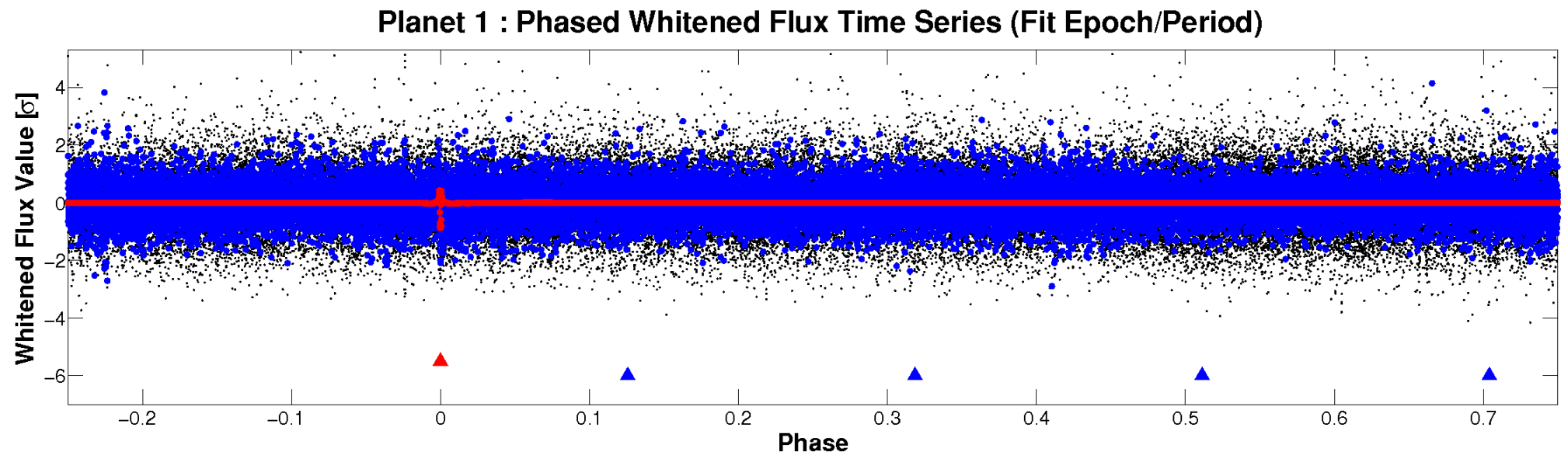
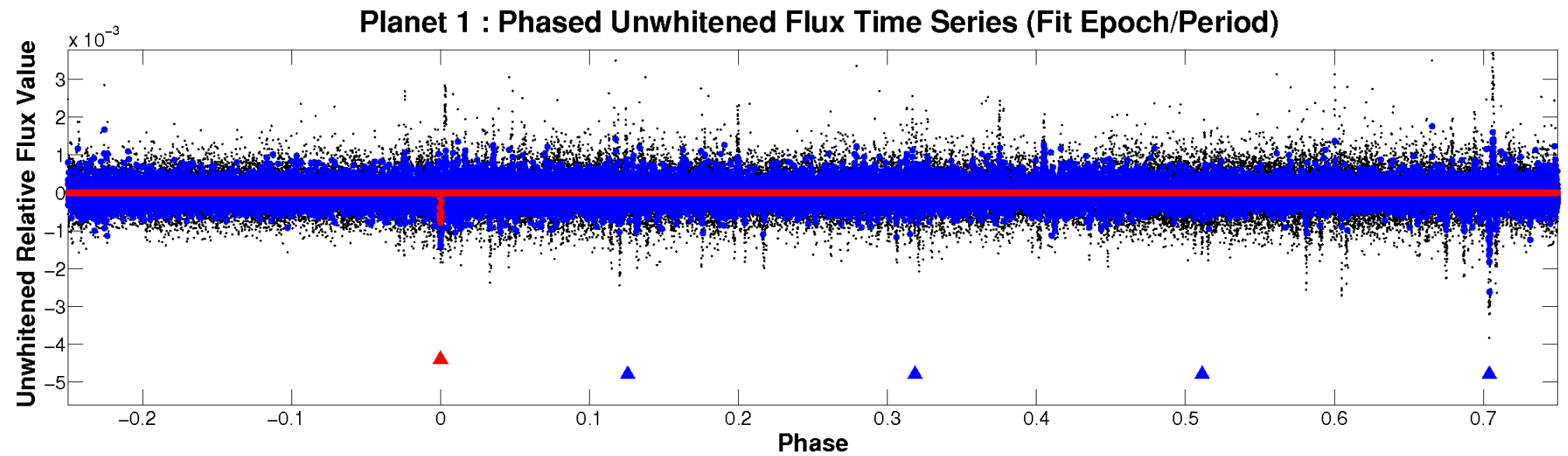


ALT Odd/Even

TCE 007902303-01

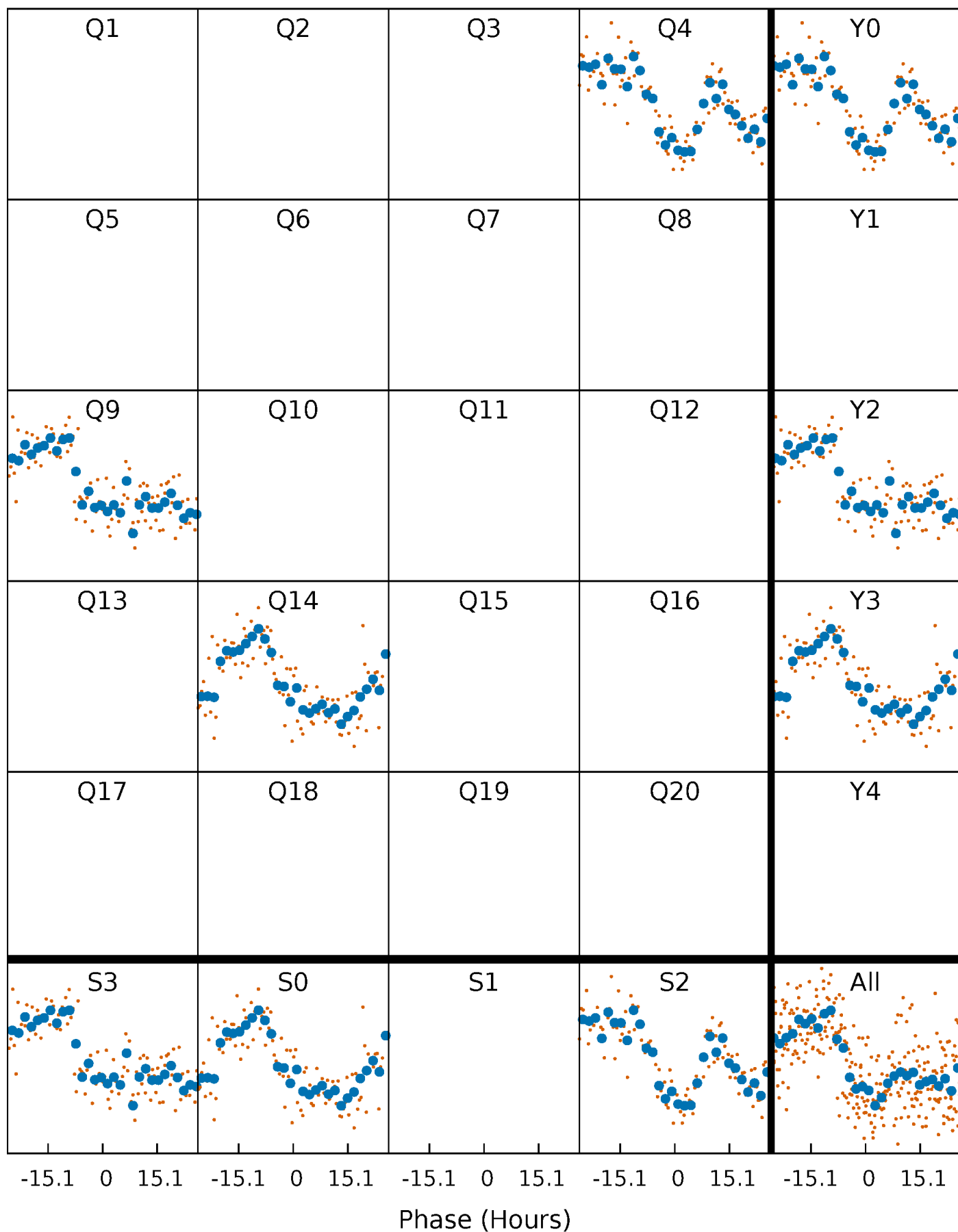


Non-Whitened Vs. Whitened Light Curve



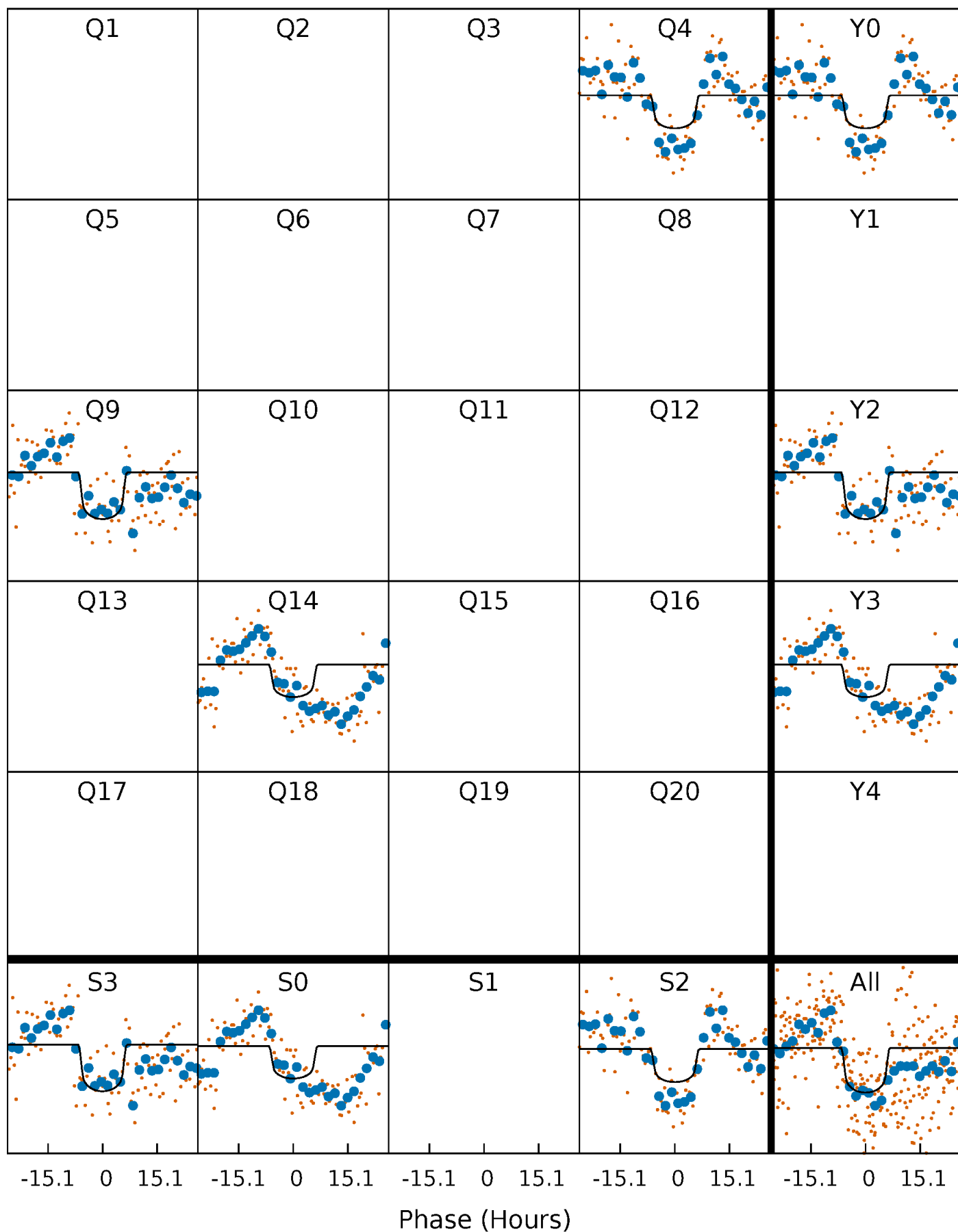
PDC Quarter-Phased Transit Curves

TCE 007902303-01 P=458.878177 Days $T_0=367.779054$ (BKJD)



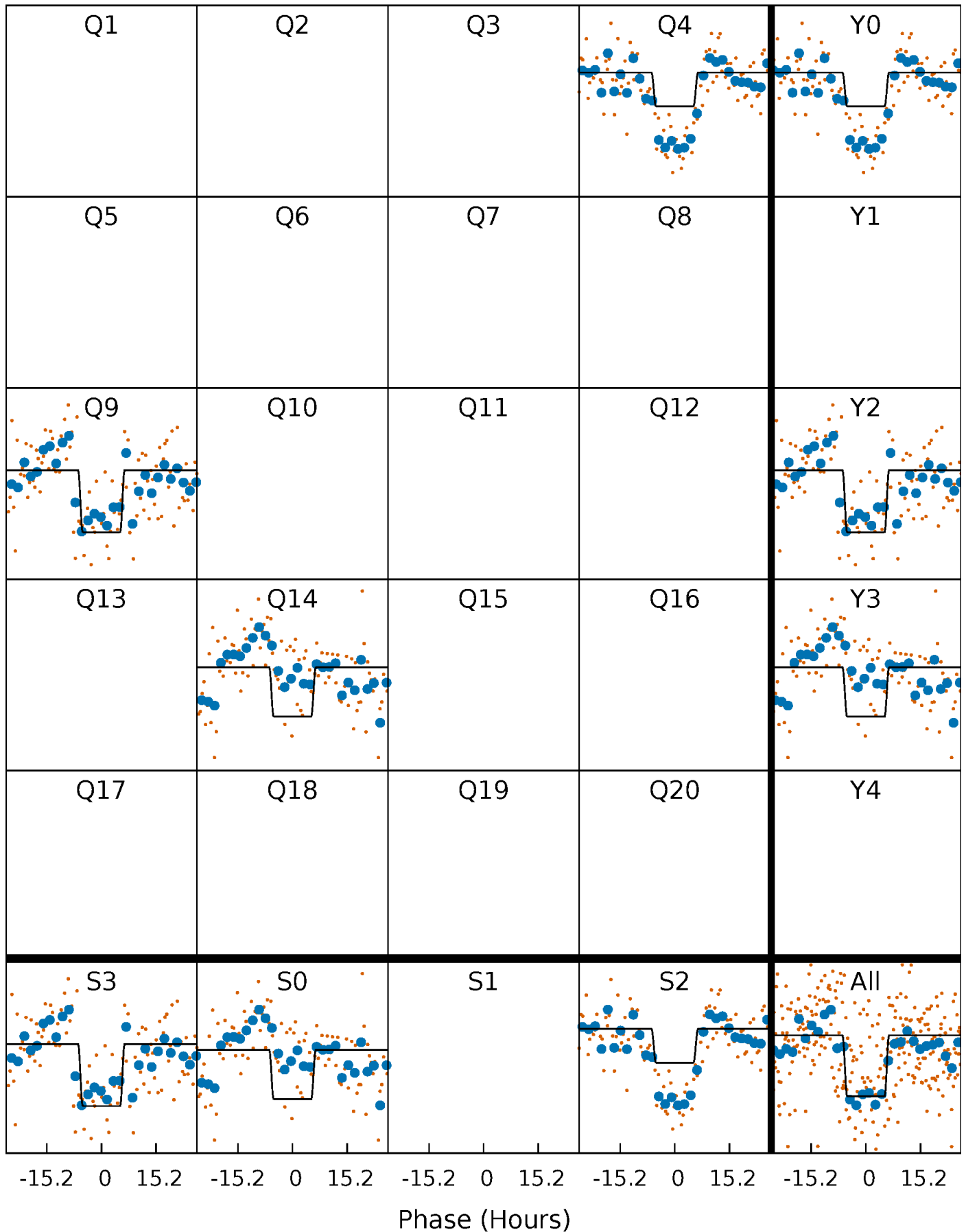
DV Quarter-Phased Transit Curves

TCE 007902303-01 P=458.878177 Days $T_0=367.779054$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

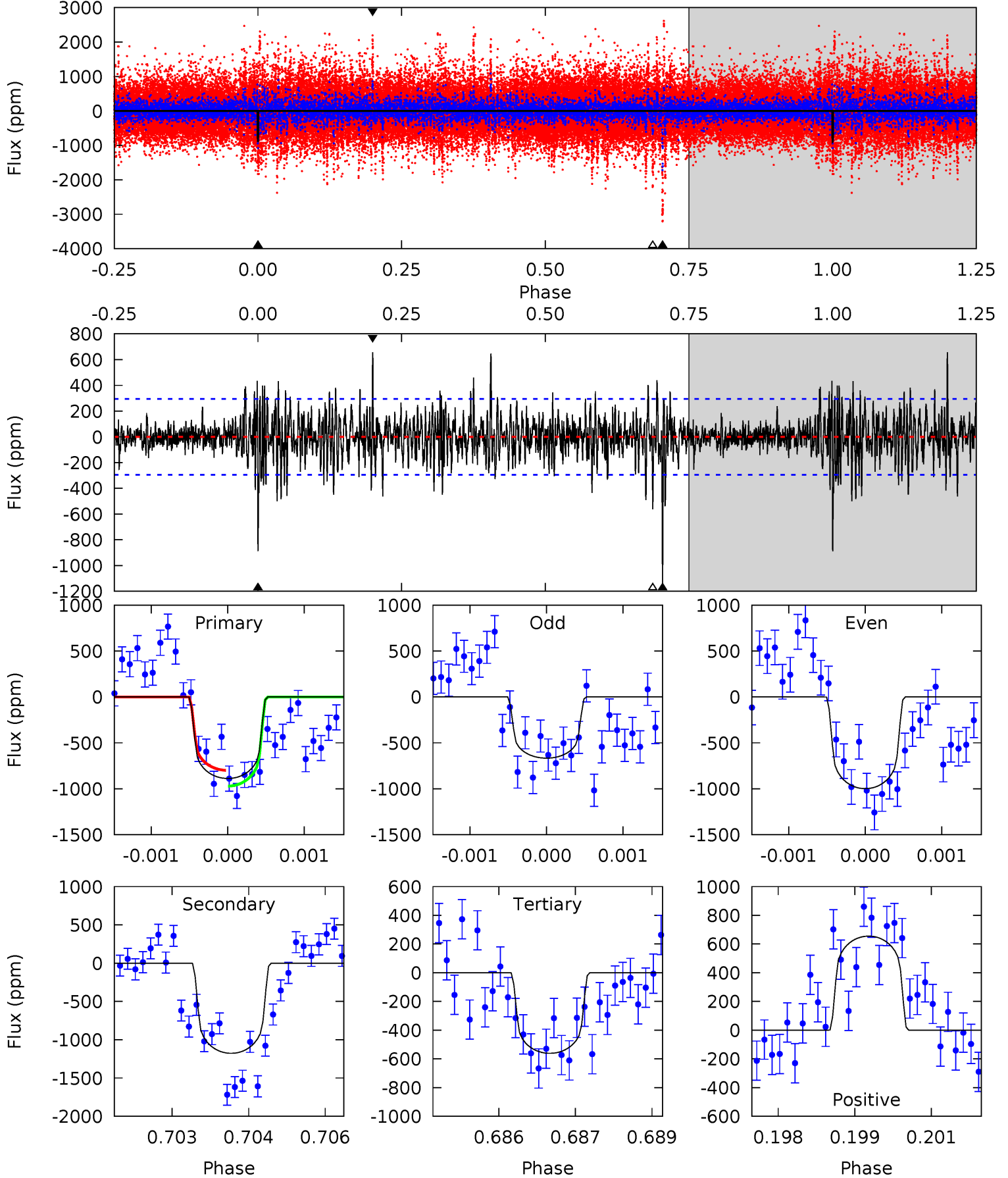
TCE 007902303-01 P=458.869646 Days $T_0=367.787893$ (BKJD)



DV Model-Shift Uniqueness Test

007902303-01, P = 458.878177 Days, E = 367.779054 Days

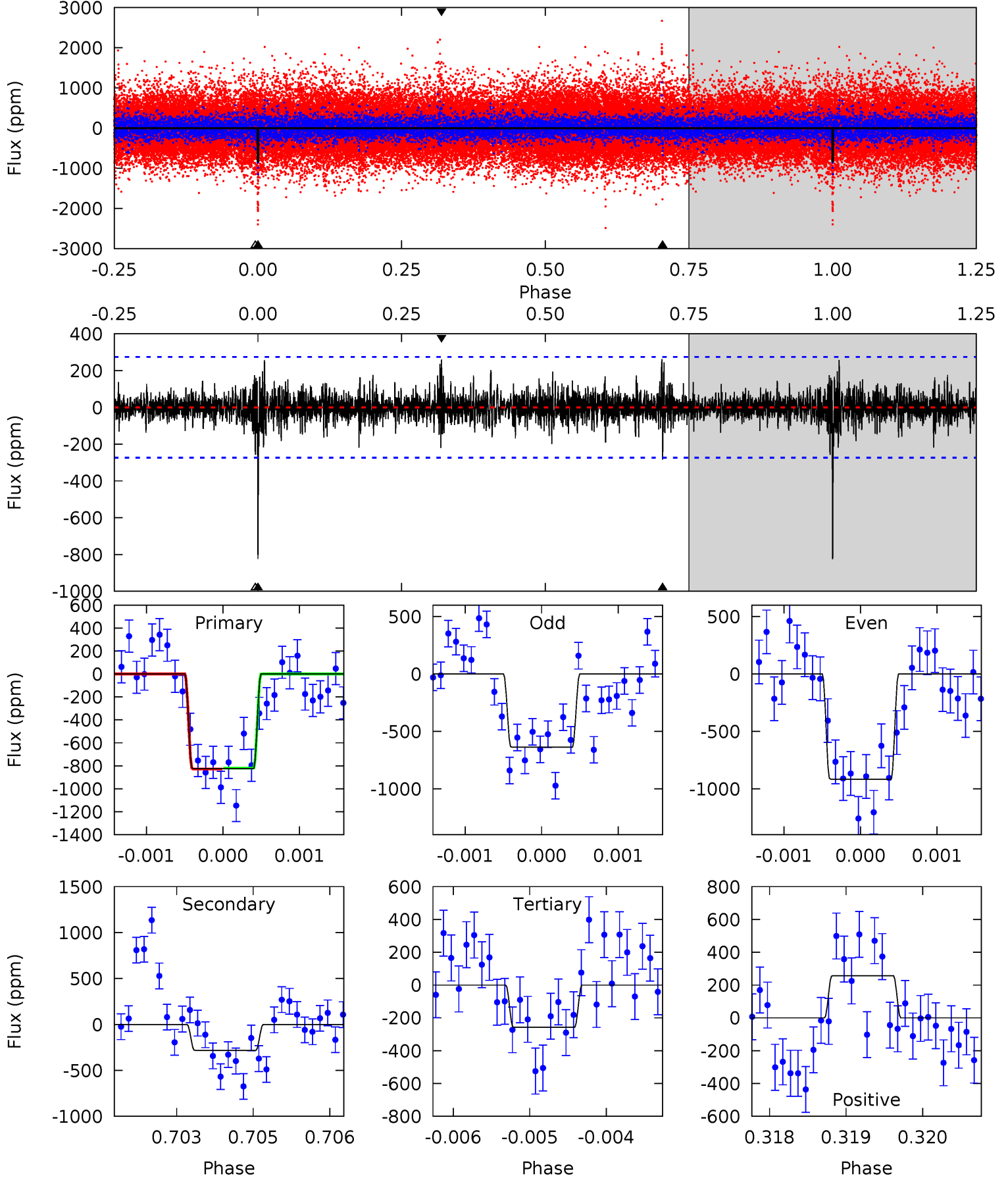
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.3	21.6	10.3	12.0	5.42	3.24	2.42	6.00	4.28	11.3	9.60	2.89	1.18	0.36	1.58



Alt Model-Shift Uniqueness Test

007902303-01, P = 458.869646 Days, E = 367.787893 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	5.60	5.10	5.09	5.42	3.24	1.07	11.2	11.2	0.50	0.50	2.63	1.29	0.24	0.08



Stellar Parameters For KIC 007902303

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5864^{+159}_{-194}	$4.499^{+0.065}_{-0.195}$	$-0.160^{+0.300}_{-0.300}$	$0.913^{+0.274}_{-0.091}$	$0.960^{+0.120}_{-0.108}$	$1.774^{+0.478}_{-0.902}$
	+3%/-3%	+1%/-4%	+188%/-188%	+30%/-10%	+12%/-11%	+27%/-51%
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 007902303-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1177 ± 54	$2.96^{+0.65}_{-0.50}$	327^{+21}_{-15}	6371^{+643}_{-485}	96667^{+41738}_{-30800}
Alt.	-283 ± 51	$2.89^{+0.67}_{-0.53}$	327^{+26}_{-17}	4676^{+393}_{-334}	23517^{+13033}_{-8024}

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 $A_{obs} \gg 1.0$

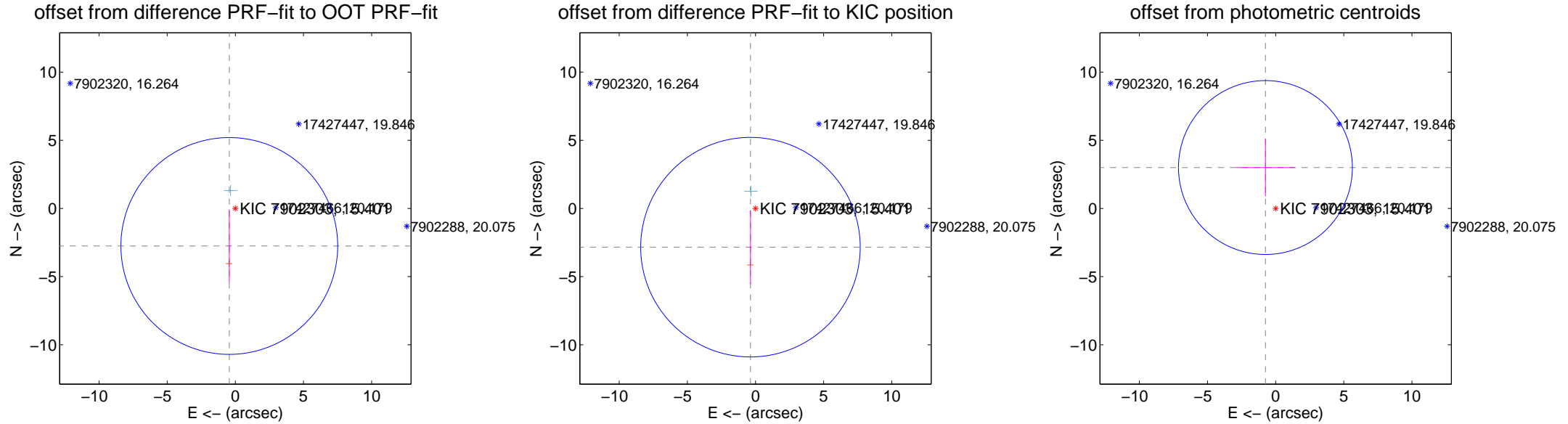
DV Centroid Data

Supplemental centroid analysis for 007902303-01. Kepler magnitude: 15.40. Transit SNR 7.99

There are 1 quarters with good PRF difference image offsets

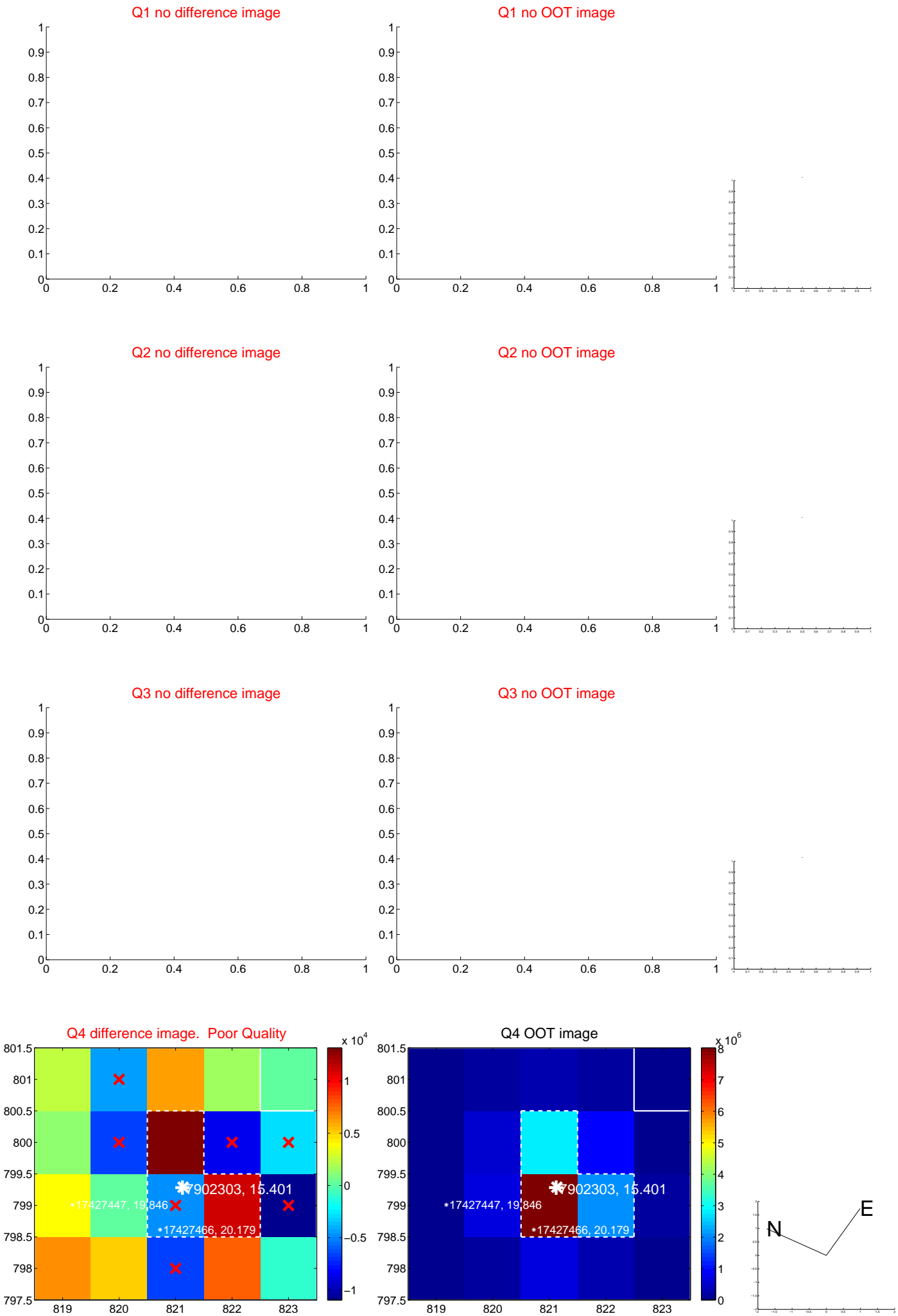
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.789 ± 2.651	1.05	0.443 ± 0.084	-2.753 ± 2.685
PRF-fit source offset from KIC position	2.864 ± 2.685	1.07	0.370 ± 0.070	-2.840 ± 2.707
photometric centroid source offset	3.09 ± 2.13	1.45	0.75 ± 2.16	3.00 ± 2.12



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.

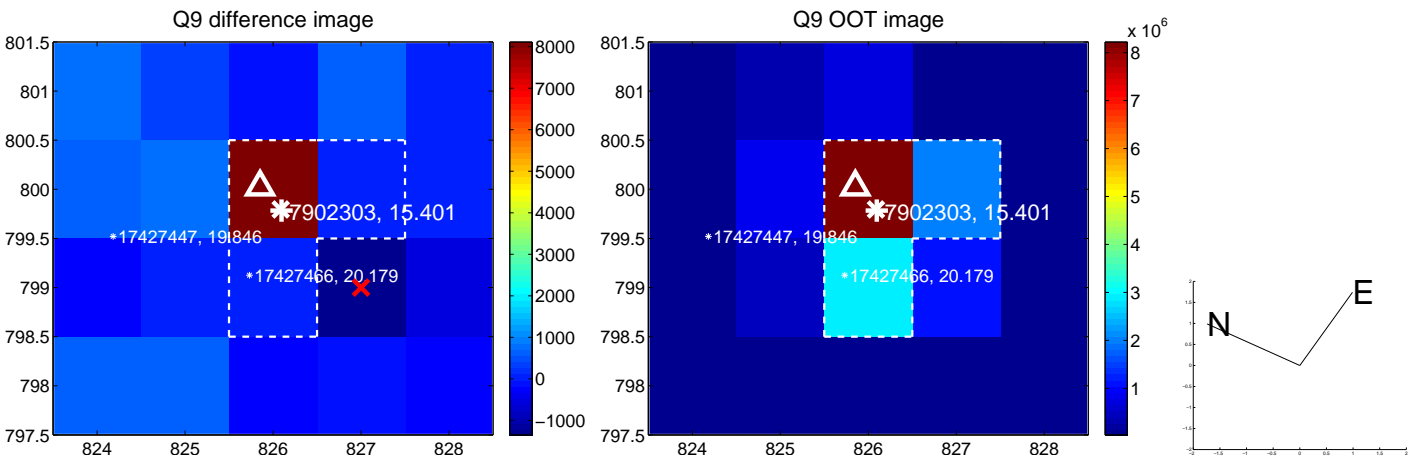
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



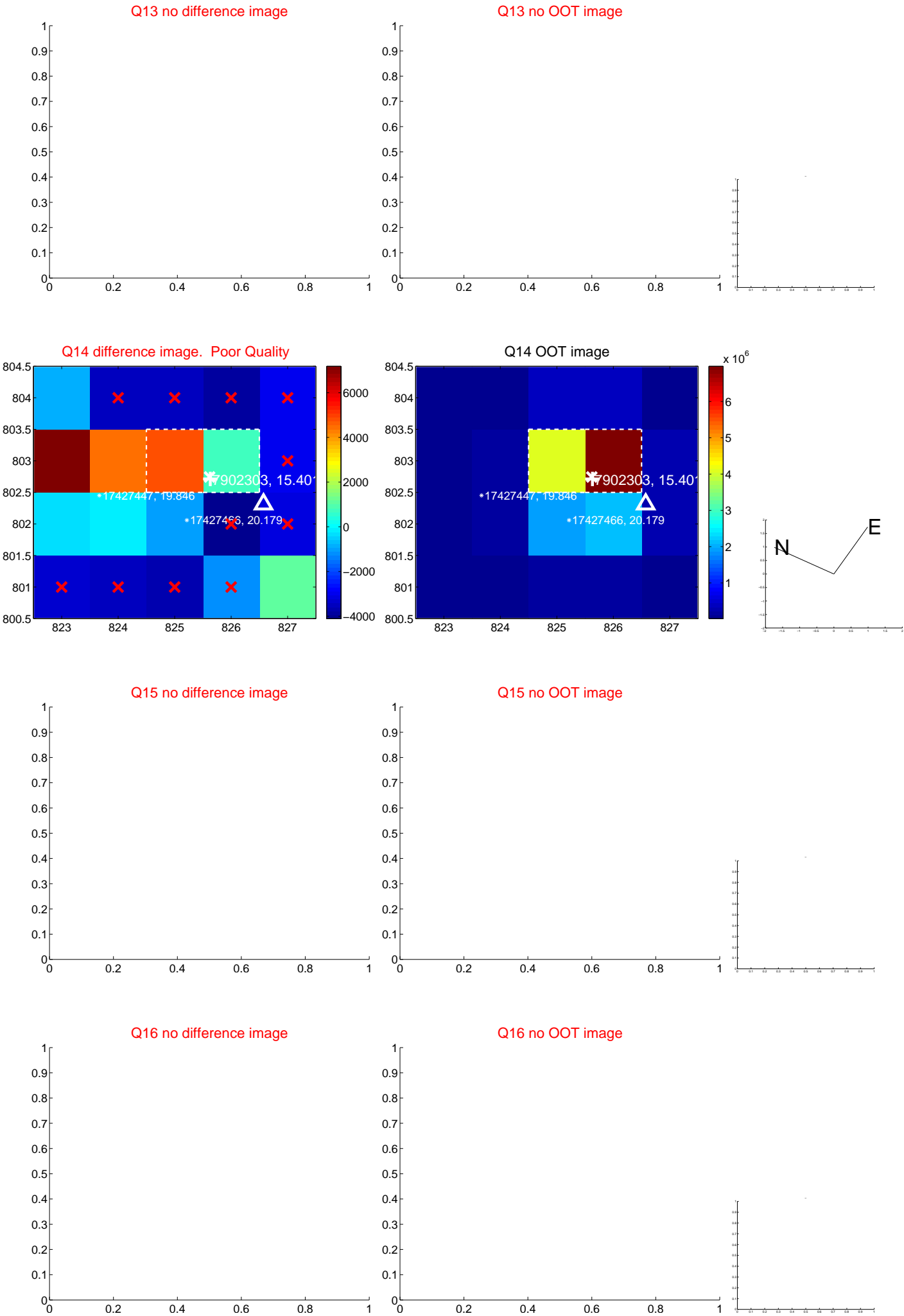
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



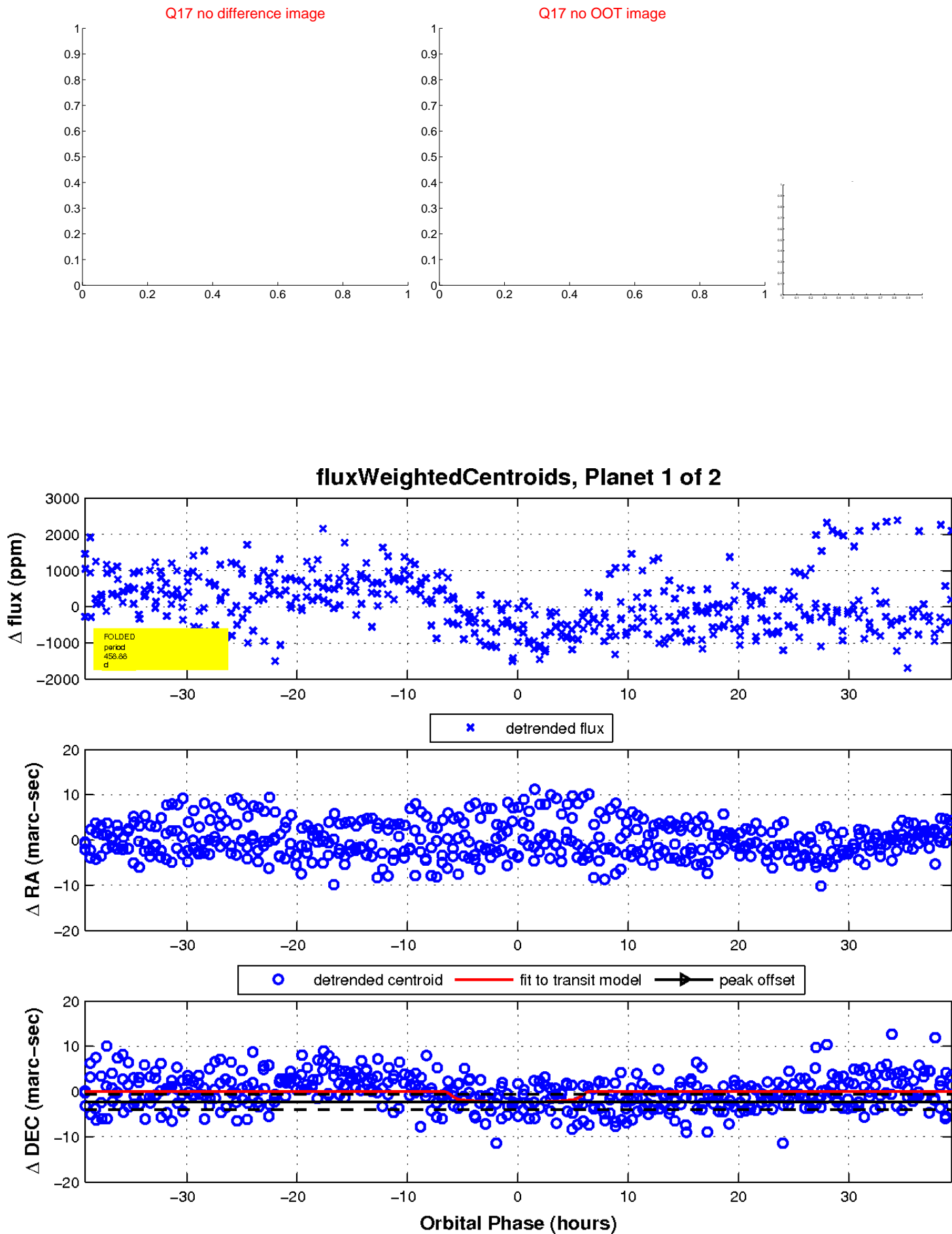
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



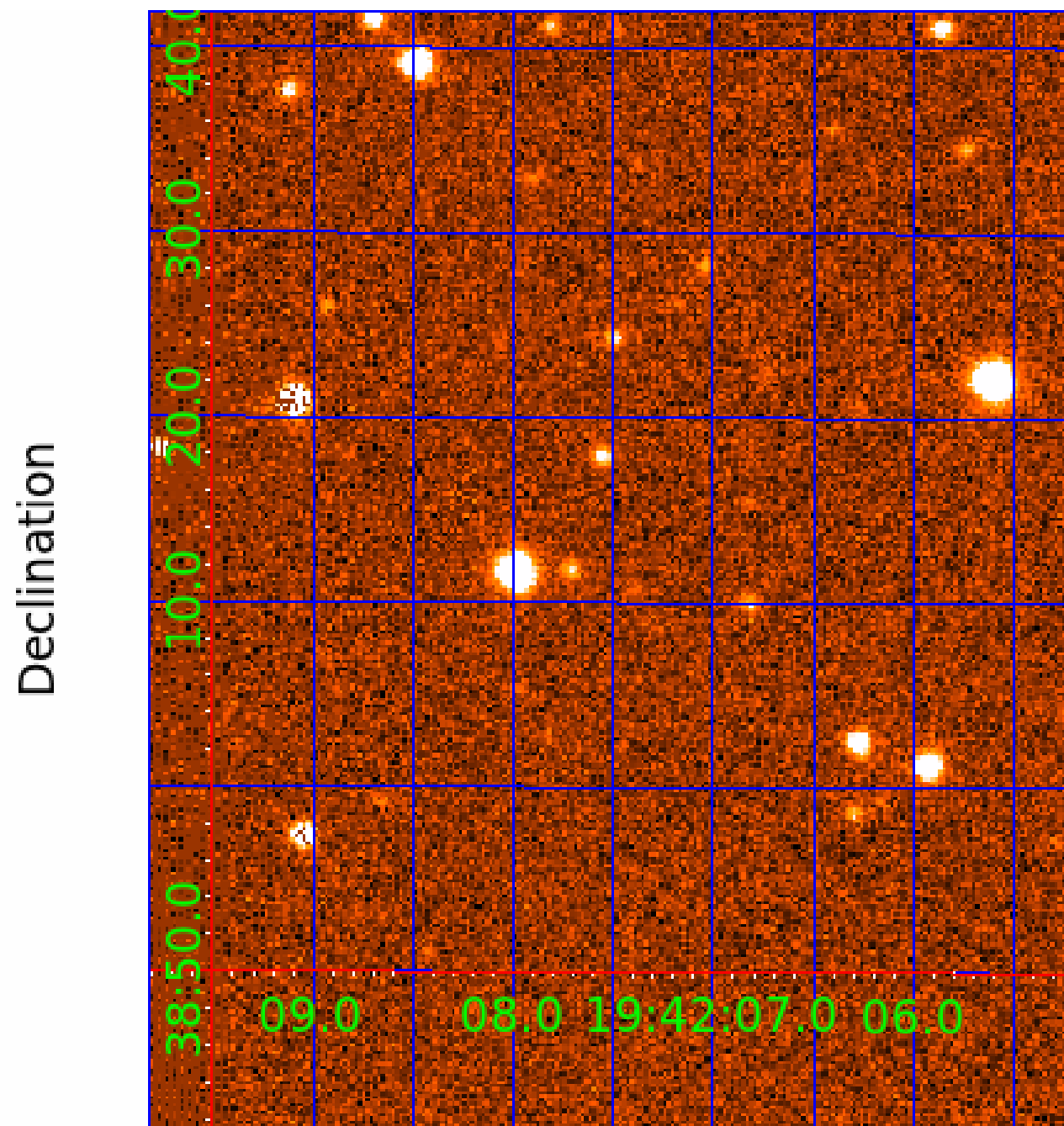
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



UKIRT Image



KIC 007902303

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})
007902303-01	OBS	No	458.878177	367.779054	778.6	13.205	8.2	8.0	0.91	5864	2.90	0.67
007902303-02	OBS	No	370.415071	231.975141	1533.7	21.972	7.7	10.1	0.91	5864	5.71	0.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007902303-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007902303-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

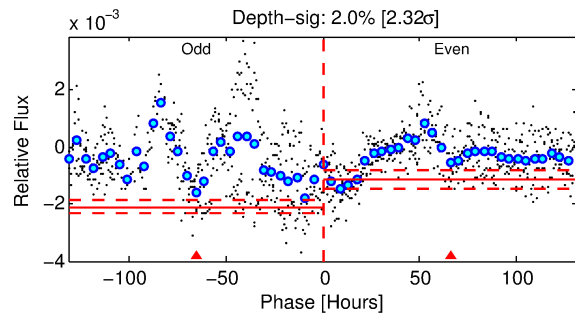
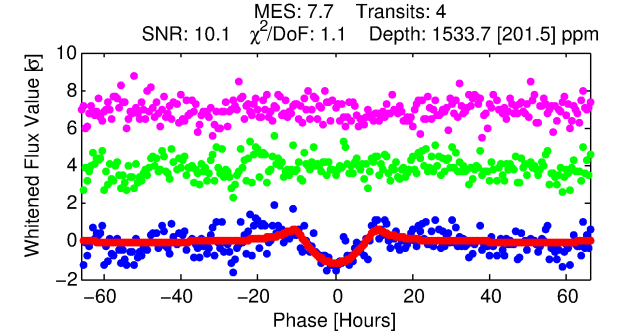
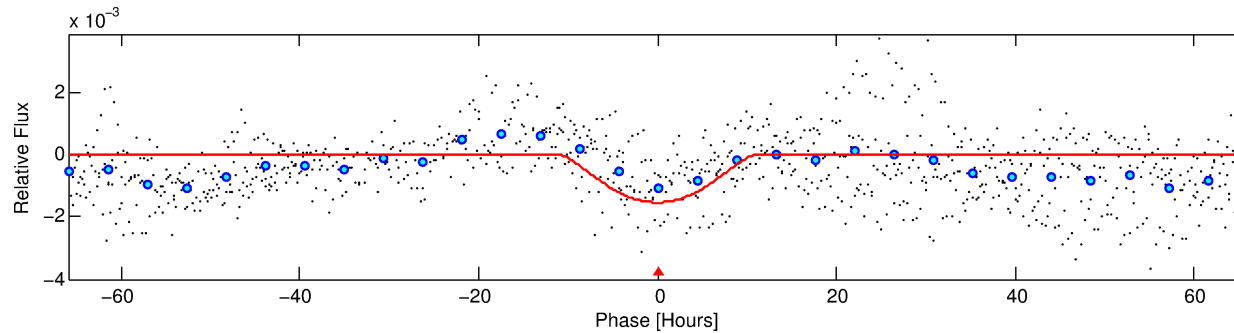
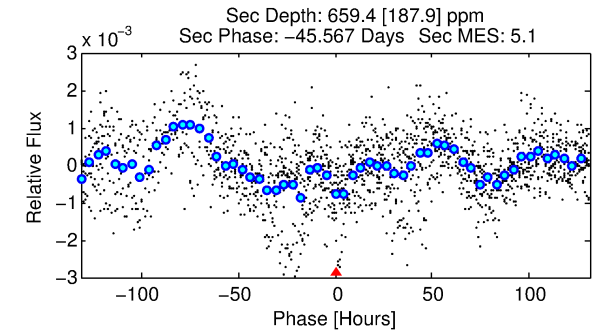
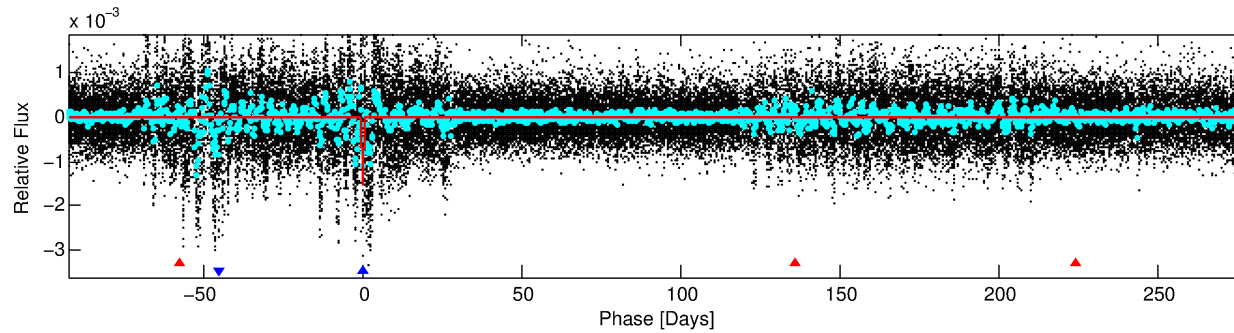
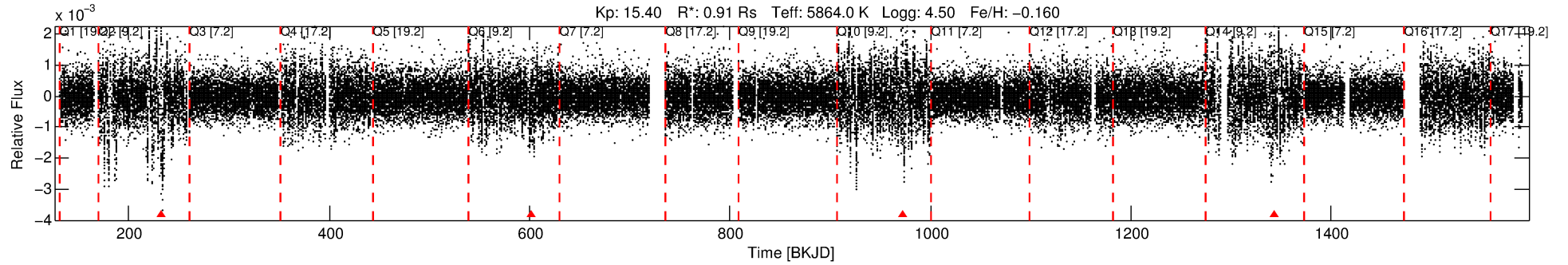
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007902303-02

No Significant Match Found

DV One-Page Summary

KIC: 7902303 Candidate: 2 of 2 Period: 370.415 d



DV Fit Results:

Period = 370.41507 [0.01800] d
Epoch = 231.9751 [0.0326] BKJD
Rp/R* = 0.0573 [0.0590]
a/R* = 50.43 [16.40]
b = 0.98 [0.10]
Seff = 0.89 [0.34]
Teq = 248 [24] K
Rp = 5.71 [6.12] Re
a = 0.9957 [0.2488] AU
Ag = 11048.29 [23328.37] [0.47σ]
Teffp = 3927 [2047] K [1.80σ]

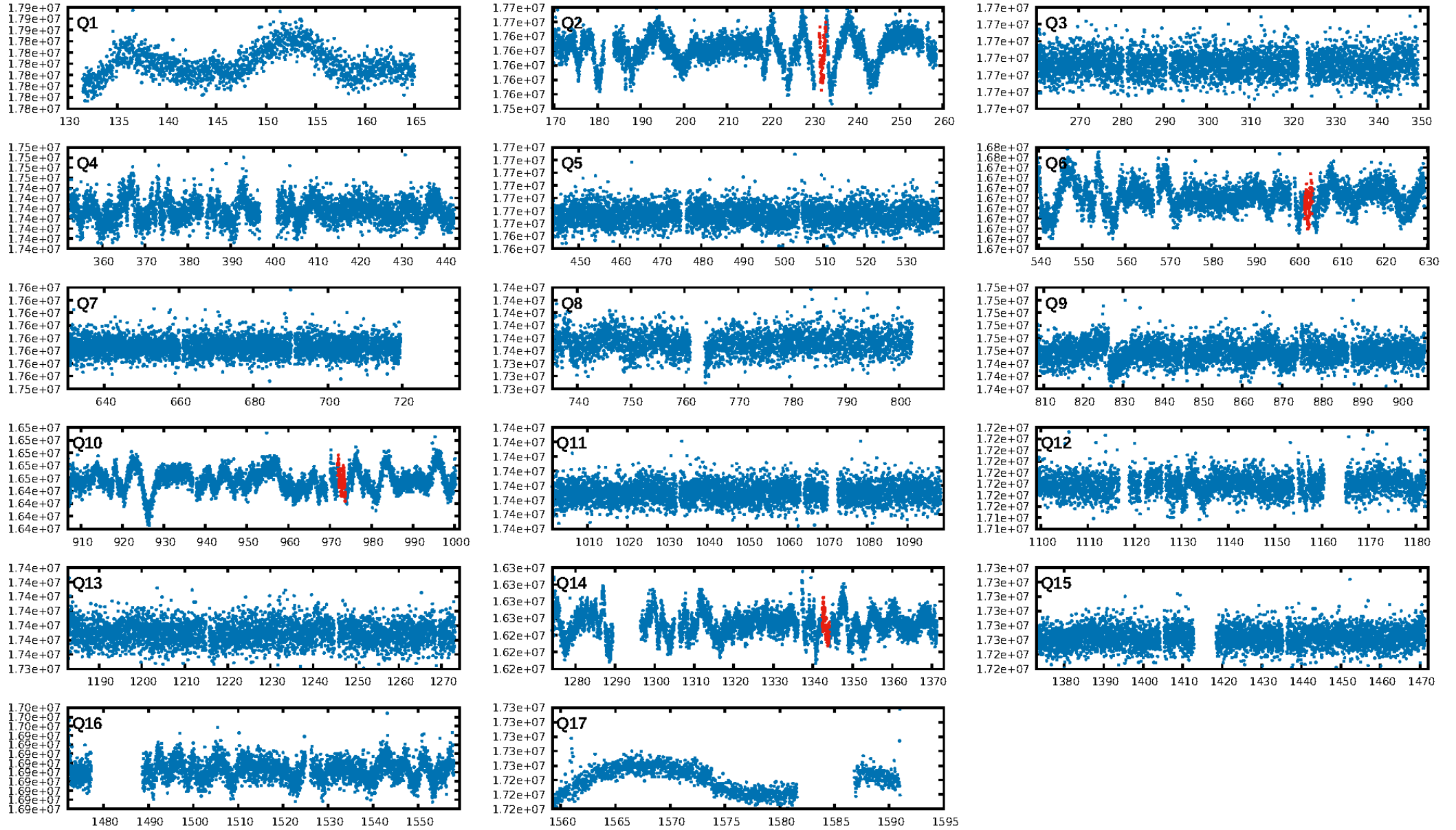
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [82.82σ]
ModelChiSquare2-sig: 0.8%
ModelChiSquareGof-sig: 98.4%
Bootstrap-pfa: 6.67e-10
RollingBand-fgt: 0.00 [0/4]
GhostDiagnostic-chr: -1.896
Centroid-sig: N/A
Centroid-so: 2.856 arcsec [1.94σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [3/3]

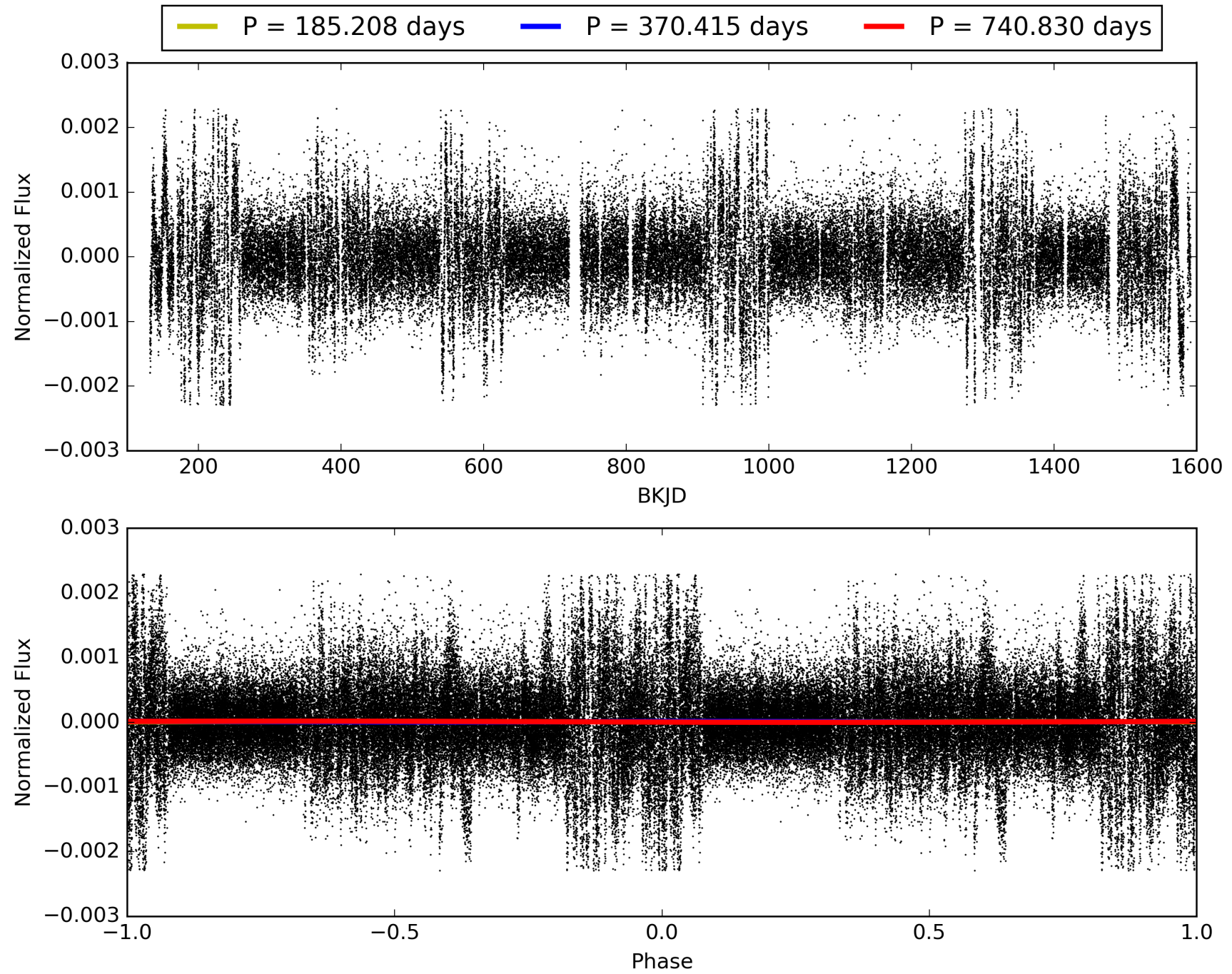
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 05:37:24 Z

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

TCE 007902303-02, PDC Light Curves

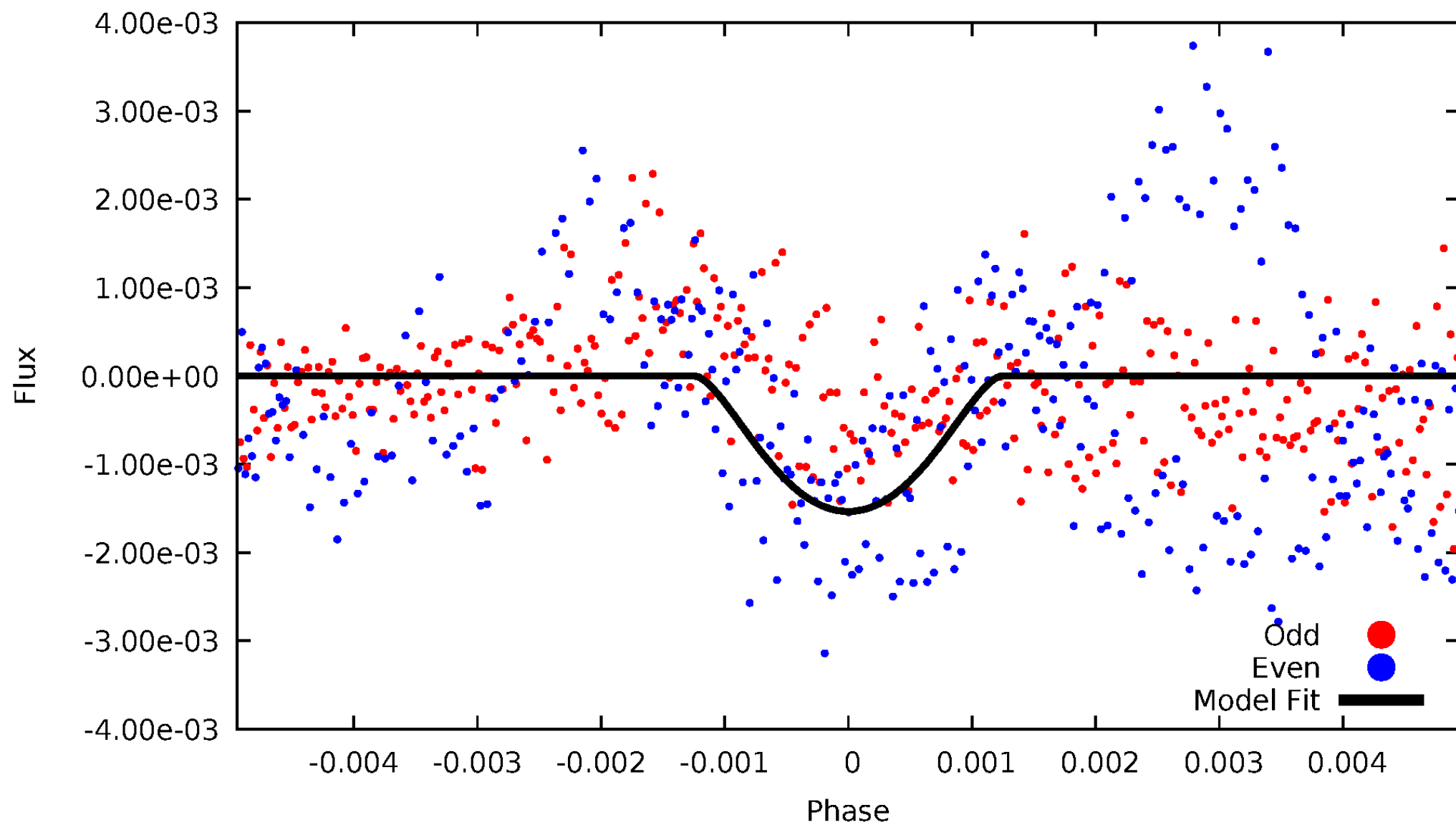


TCE 007902303-02



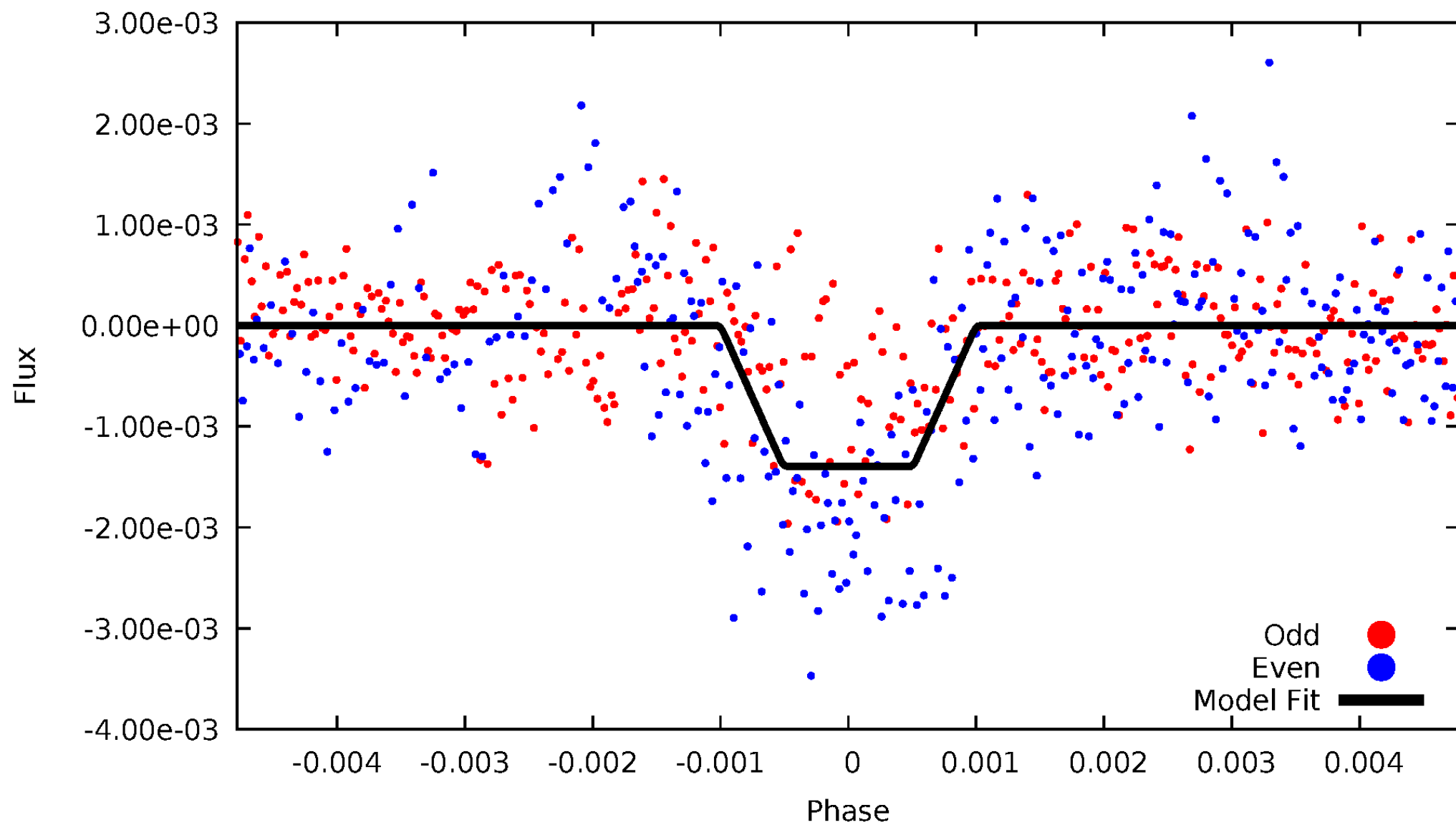
DV Odd/Even

TCE 007902303-02



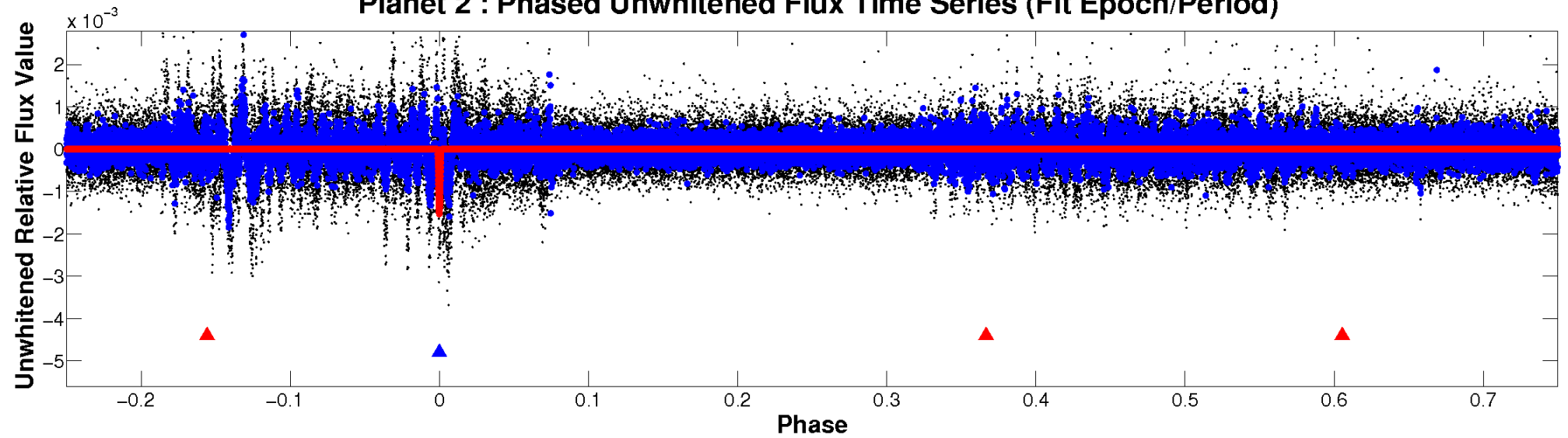
ALT Odd/Even

TCE 007902303-02

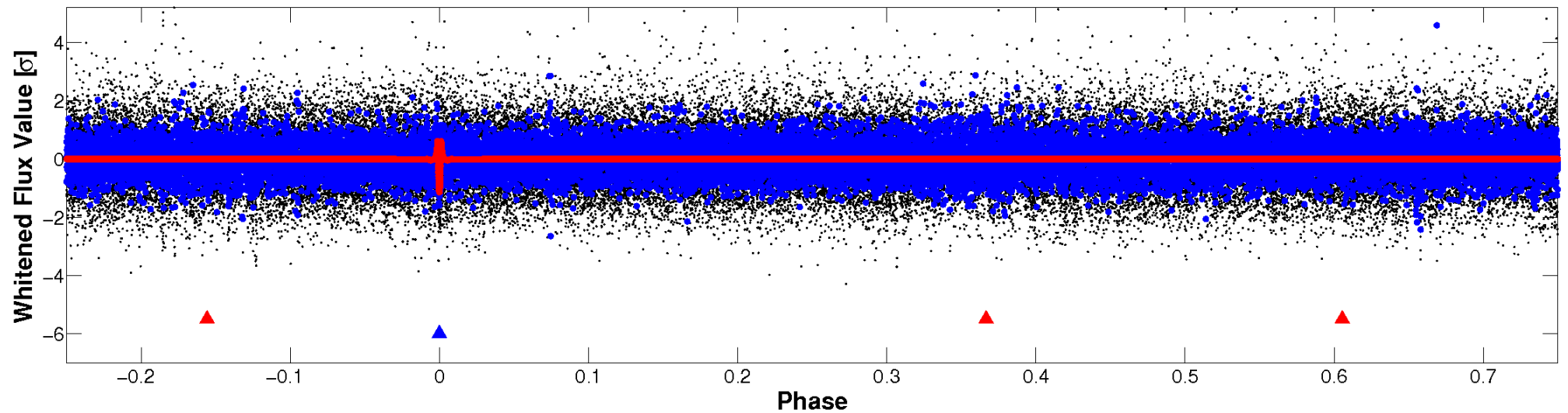


Non-Whitened Vs. Whitened Light Curve

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

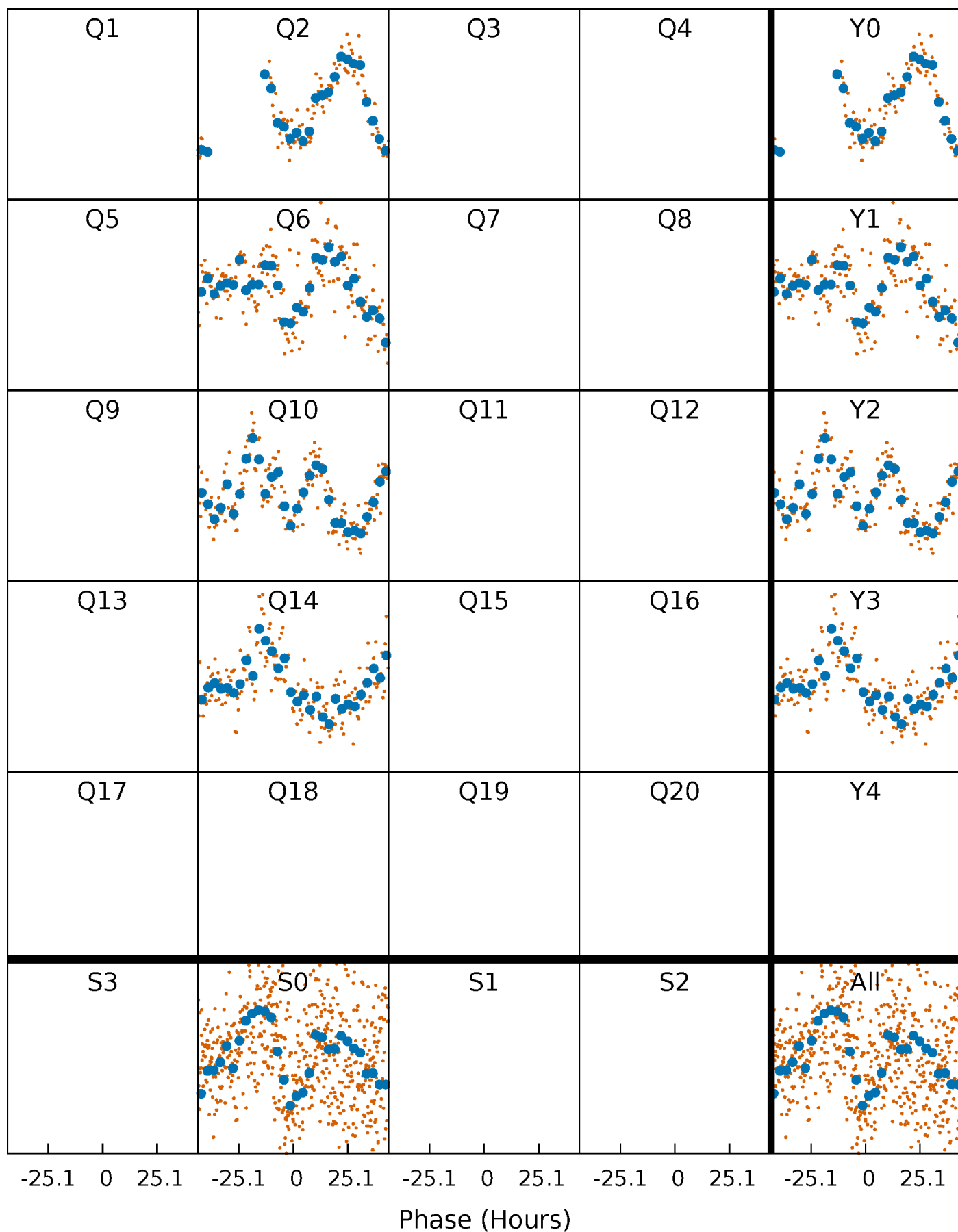


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



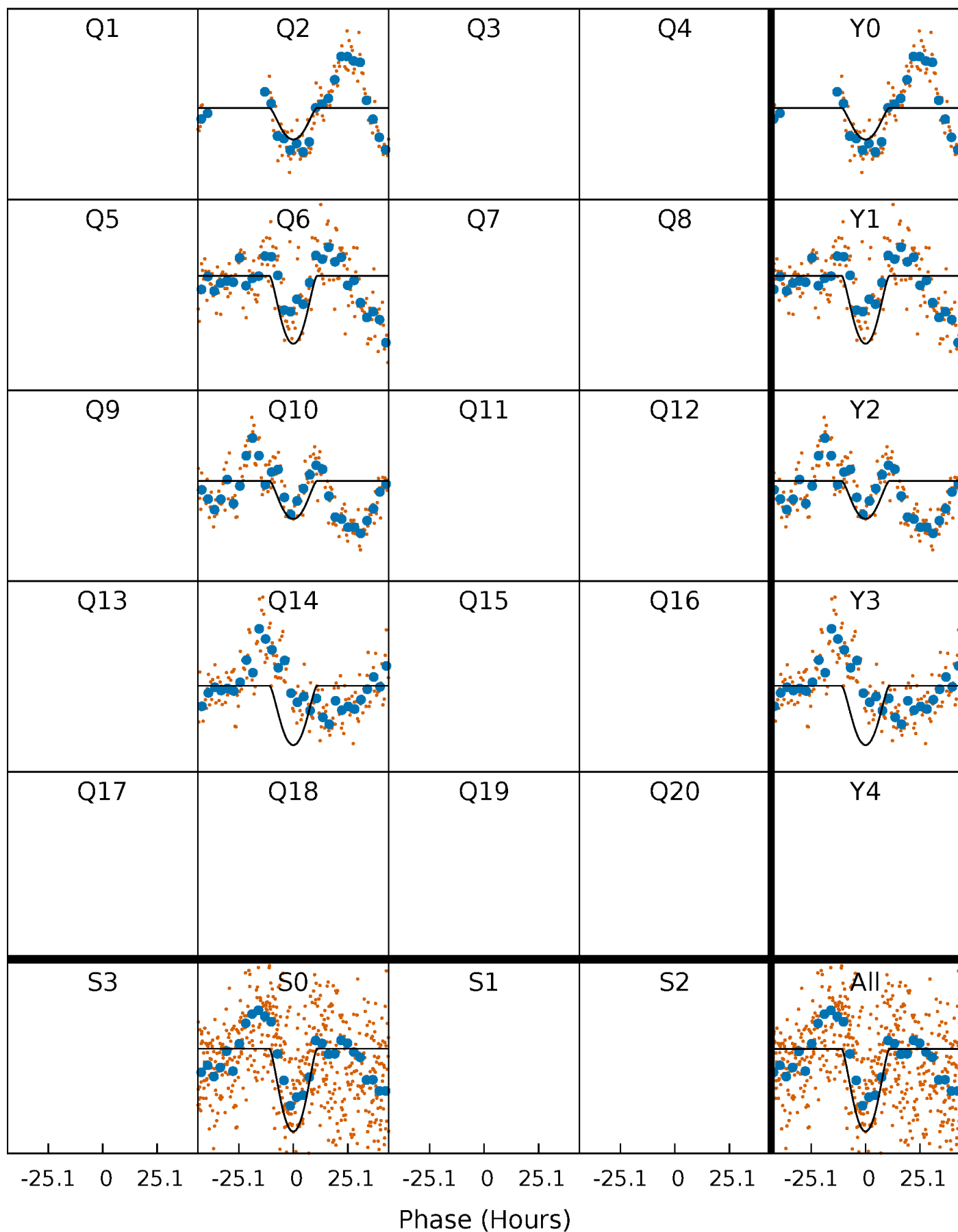
PDC Quarter-Phased Transit Curves

TCE 007902303-02 P=370.415071 Days $T_0=231.975141$ (BKJD)



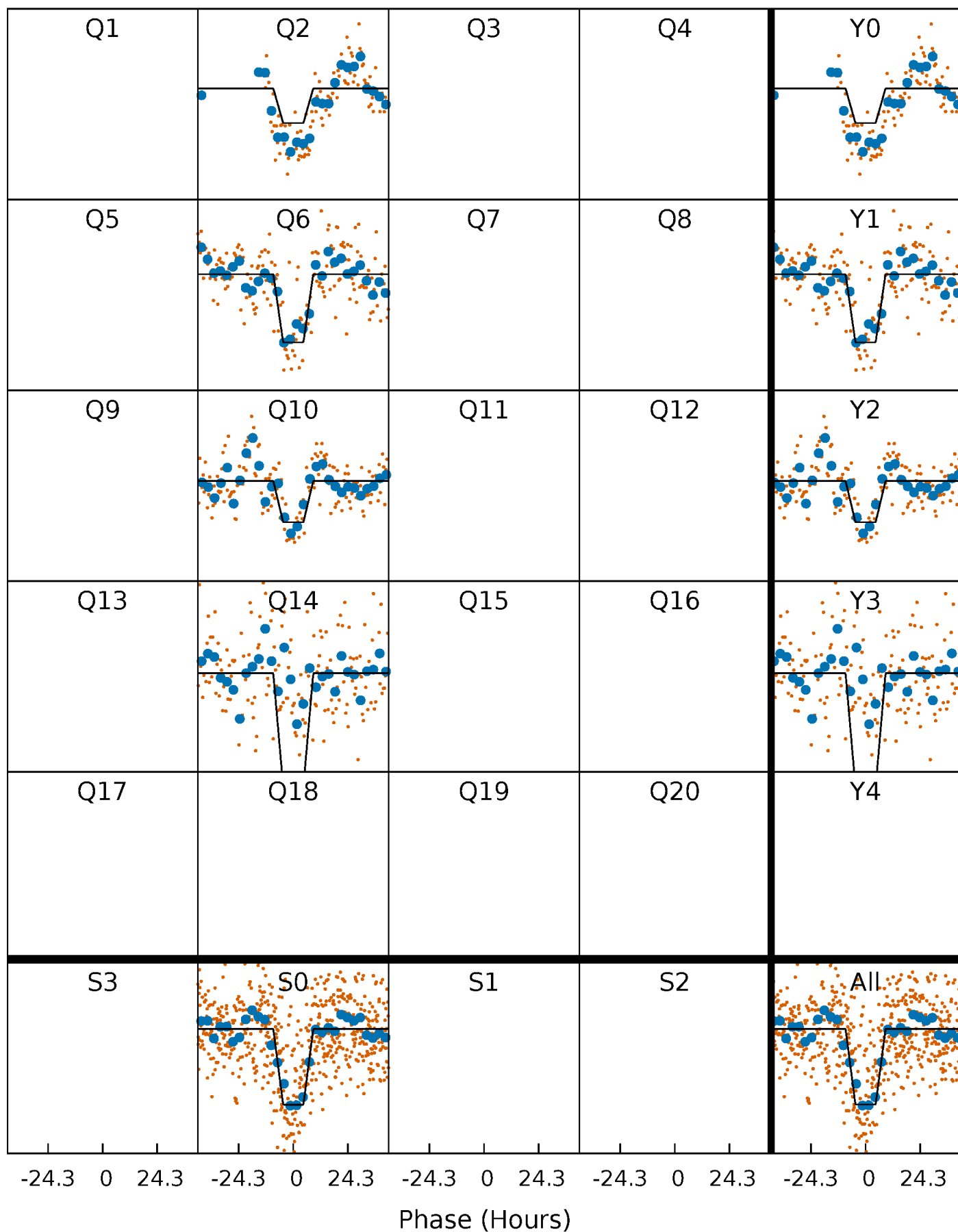
DV Quarter-Phased Transit Curves

TCE 007902303-02 P=370.415071 Days $T_0=231.975141$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

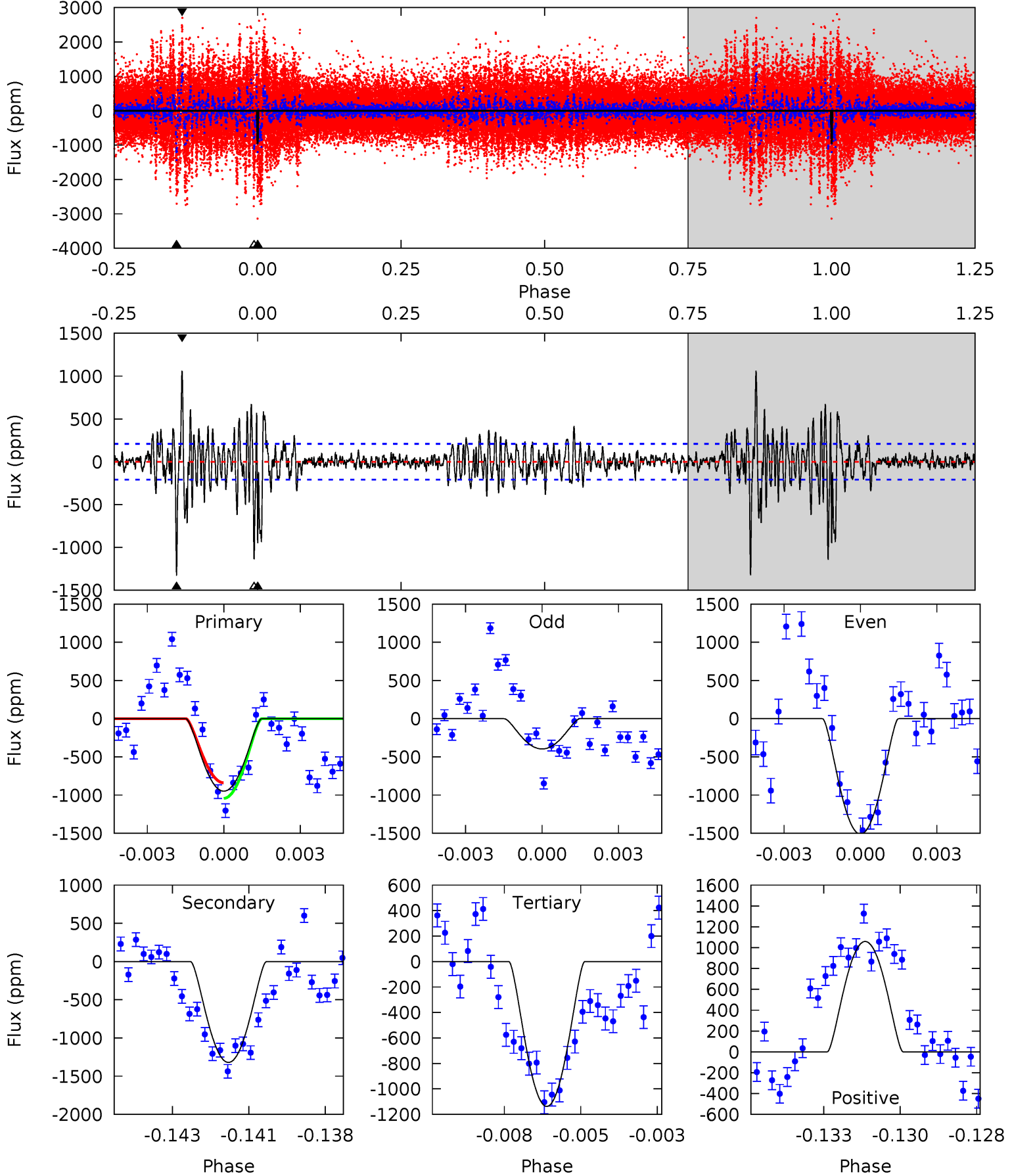
TCE 007902303-02 P=370.385520 Days $T_0=232.012694$ (BKJD)



DV Model-Shift Uniqueness Test

007902303-02, P = 370.415071 Days, E = 231.975141 Days

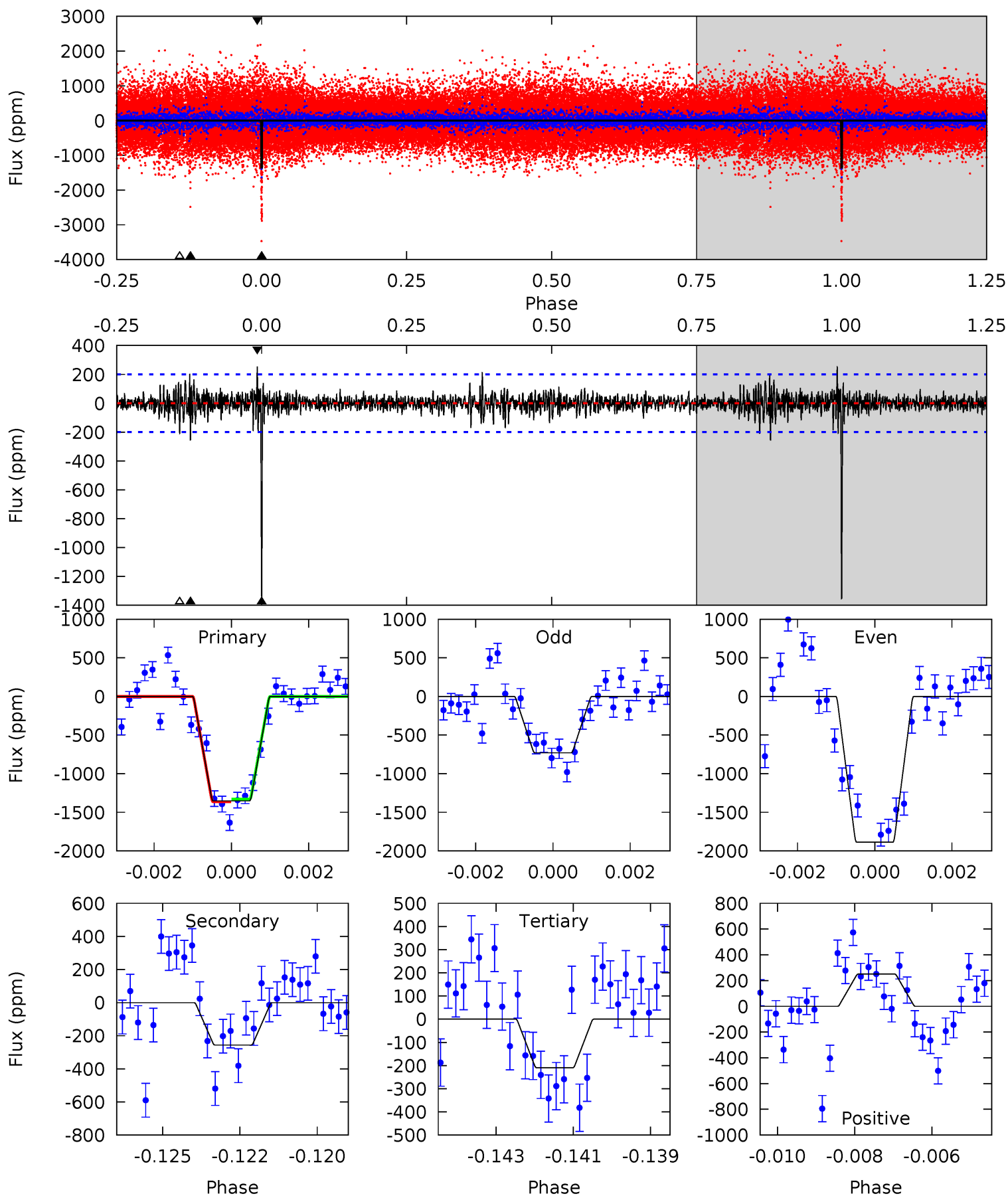
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.0	33.4	28.8	26.8	5.29	3.02	4.40	-4.77	-2.79	4.62	6.59	14.0	1.30	0.45	2.60



Alt Model-Shift Uniqueness Test

007902303-02, P = 370.385520 Days, E = 232.012694 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.0	6.81	5.57	6.66	5.32	3.08	1.13	30.4	29.3	1.24	0.15	15.7	1.03	0.16	0.40



Stellar Parameters For KIC 007902303

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5864^{+159}_{-194}	$4.499^{+0.065}_{-0.195}$	$-0.160^{+0.300}_{-0.300}$	$0.913^{+0.274}_{-0.091}$	$0.960^{+0.120}_{-0.108}$	$1.774^{+0.478}_{-0.902}$
	+3%/-3%	+1%/-4%	+188%/-188%	+30%/-10%	+12%/-11%	+27%/-51%
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 007902303-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1320 ± 40	$7.14^{+6.08}_{-4.47}$	352^{+25}_{-17}	4457^{+2561}_{-852}	14034^{+87200}_{-9929}
Alt.	-256 ± 38	$5.86^{+5.20}_{-3.87}$	351^{+25}_{-17}	3551^{+1799}_{-624}	4093^{+32049}_{-2998}

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

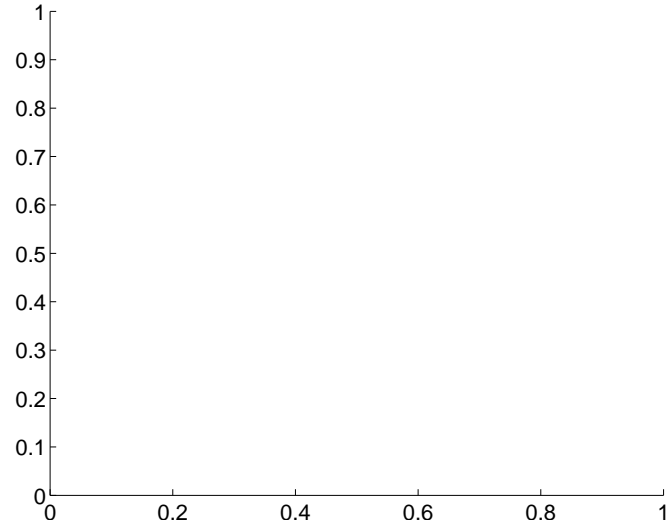
Supplemental centroid analysis for 007902303-02. Kepler magnitude: 15.40. Transit SNR 10.07

There are 0 quarters with good PRF difference image offsets

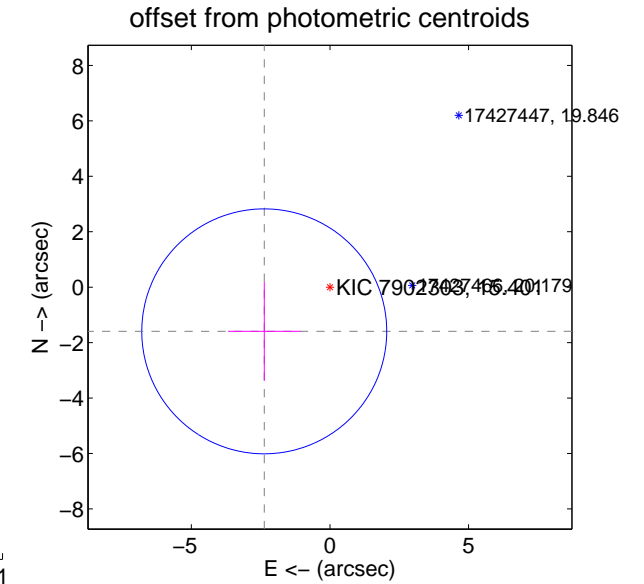
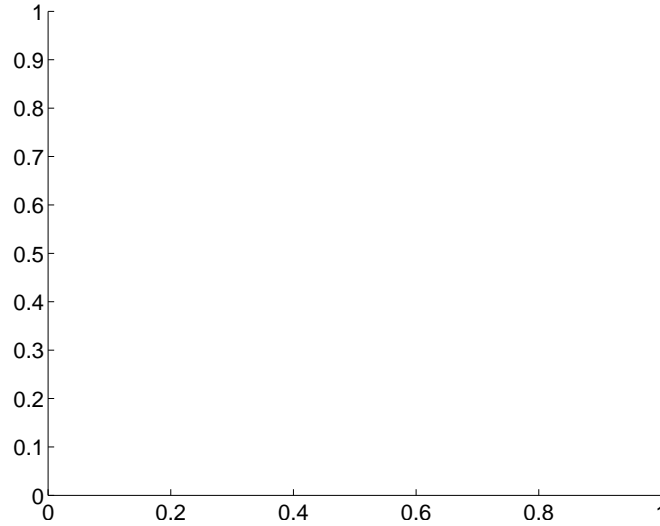
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	2.86 ± 1.47	1.94	2.37 ± 1.31	-1.59 ± 1.78

There is no PRF-fit offset from OOT-fit



There is no PRF-fit offset from KIC

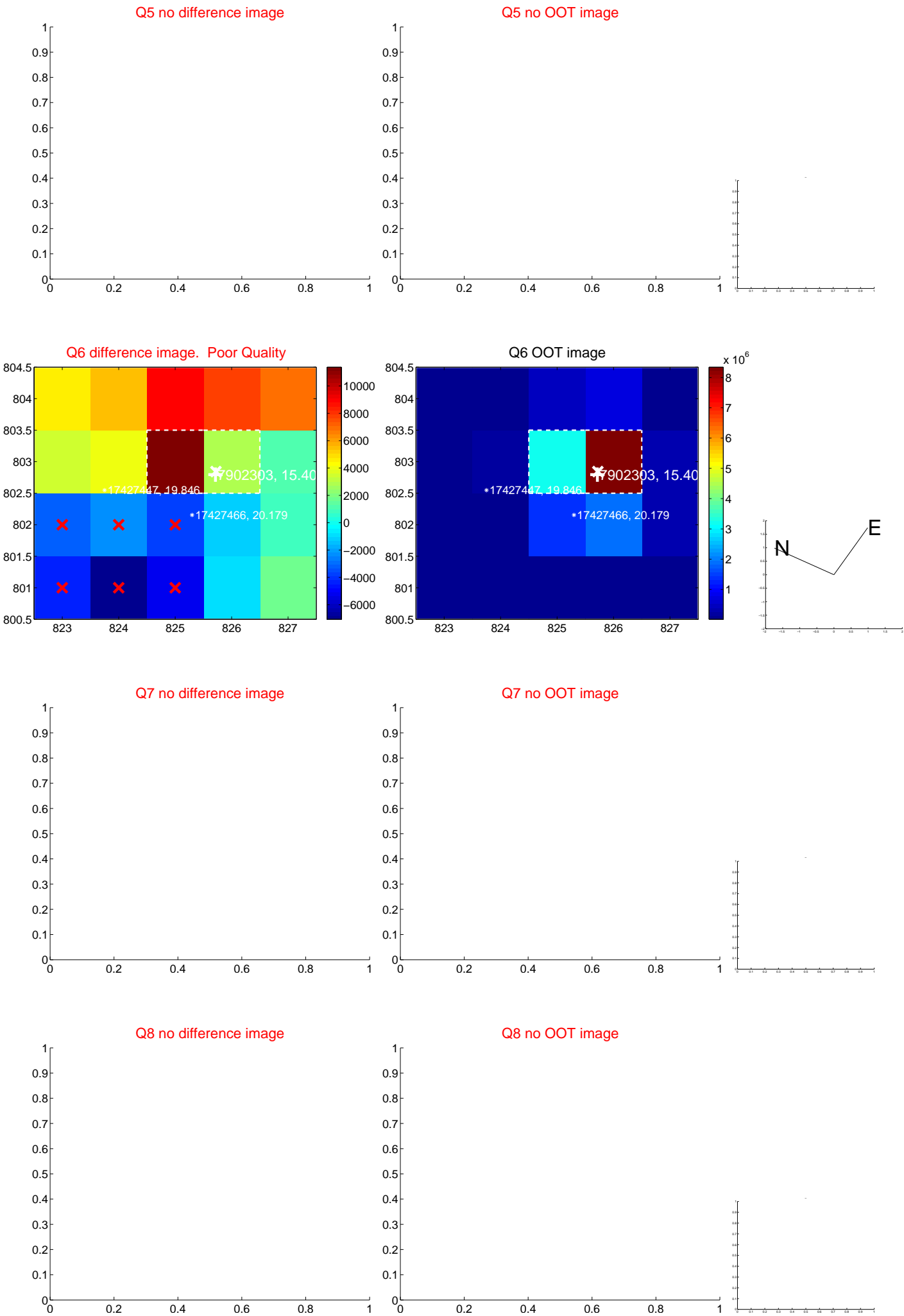


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

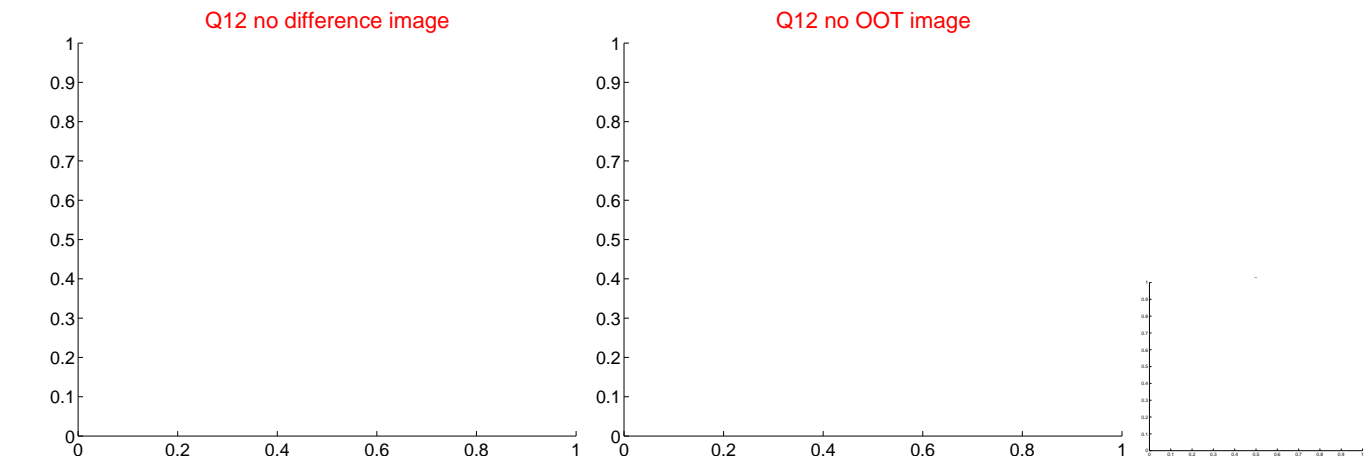
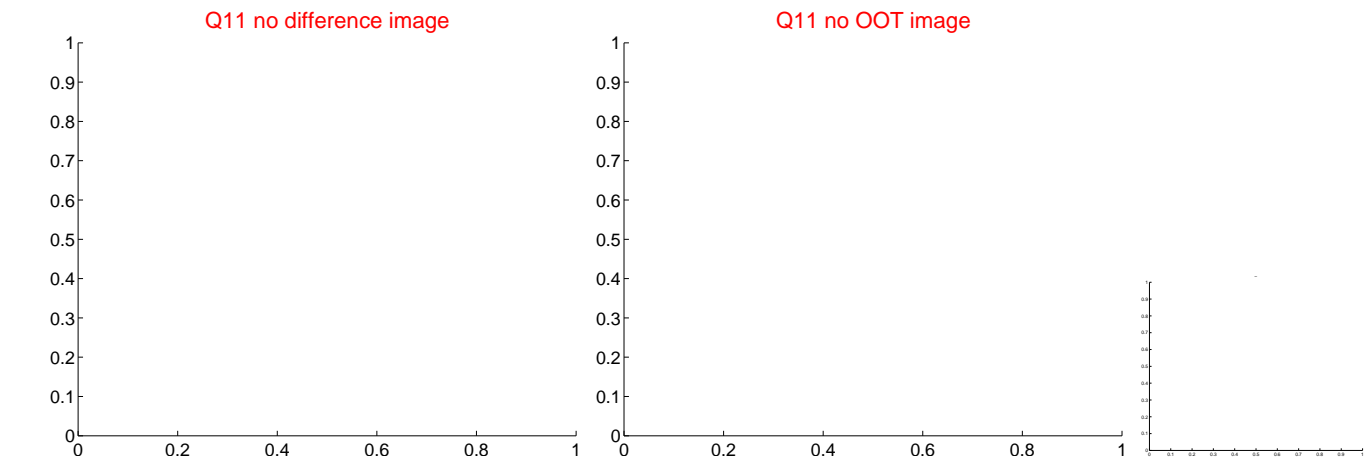
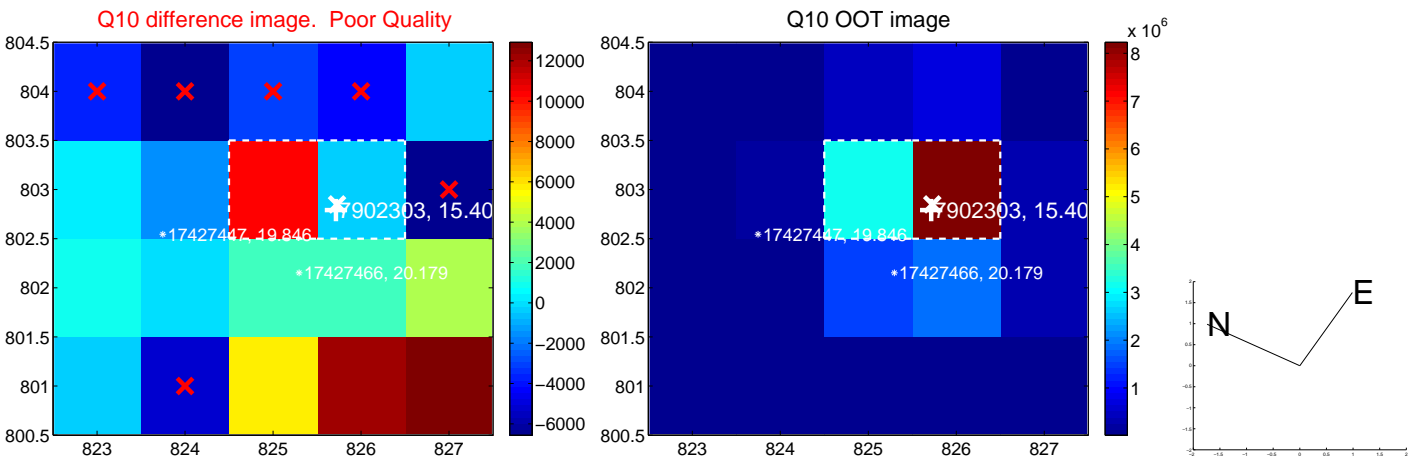
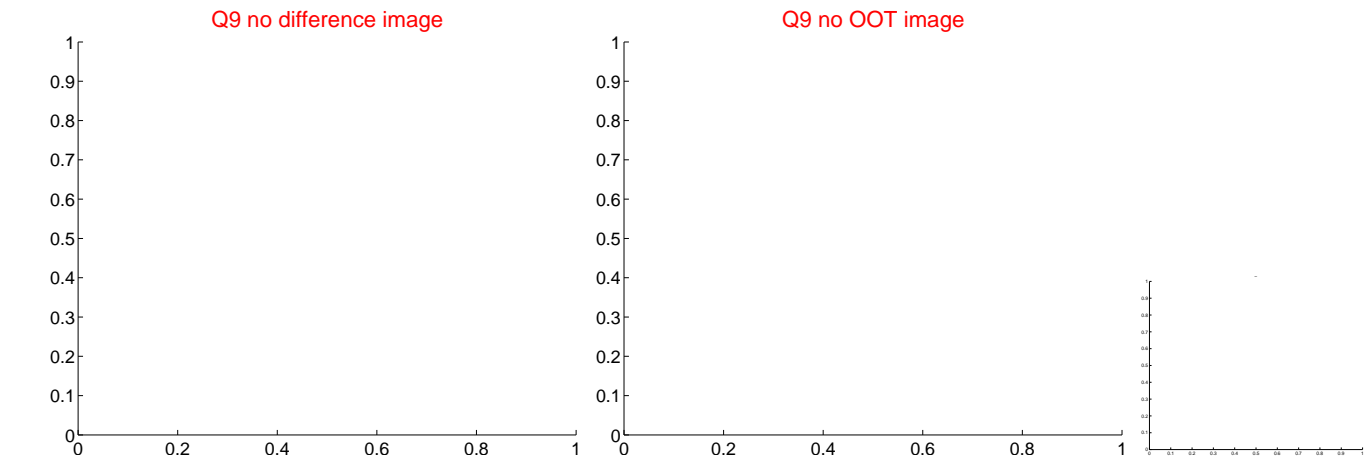
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



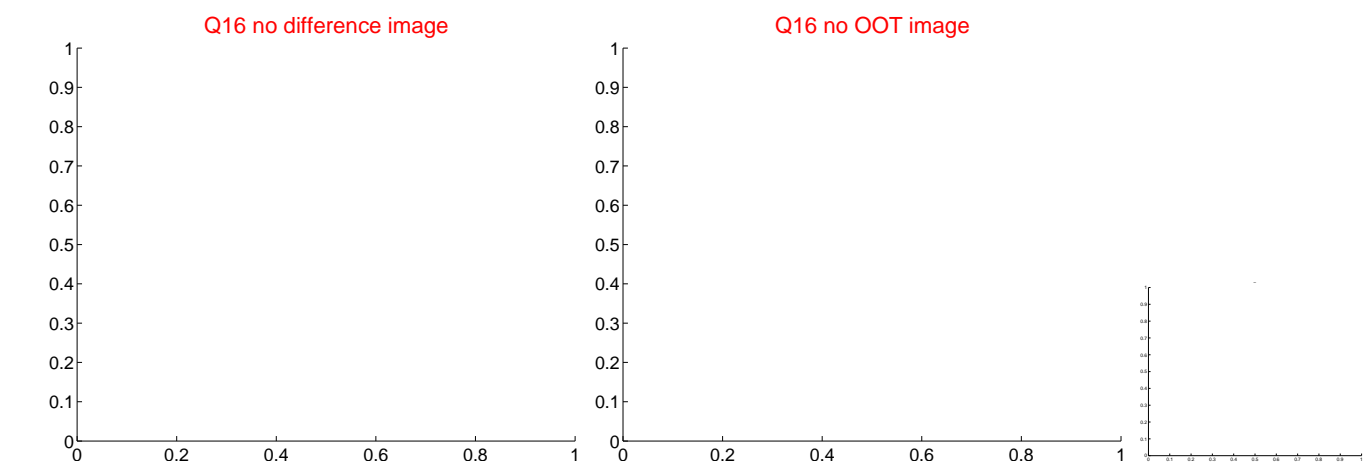
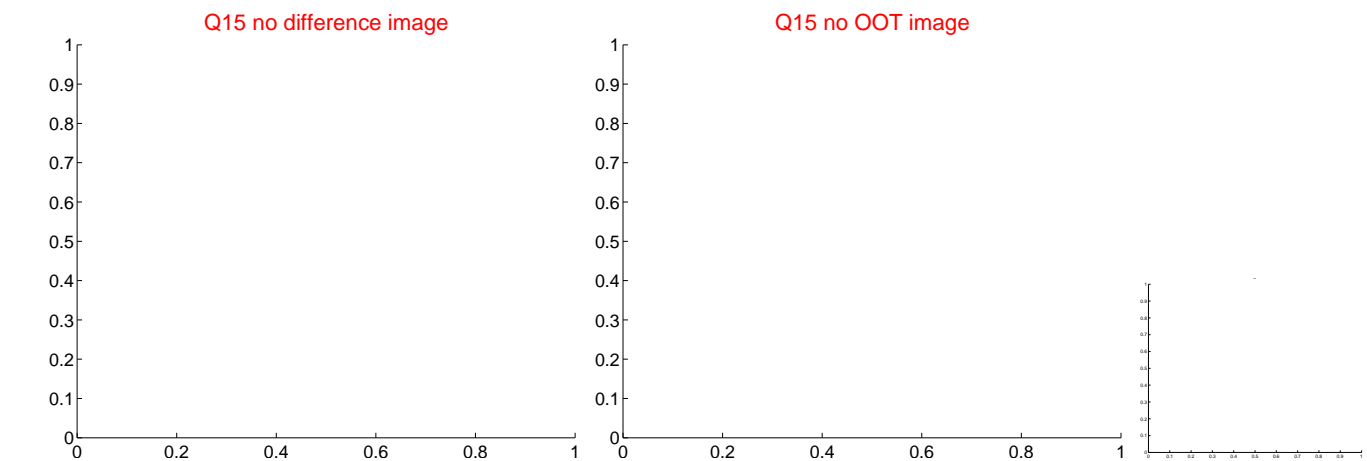
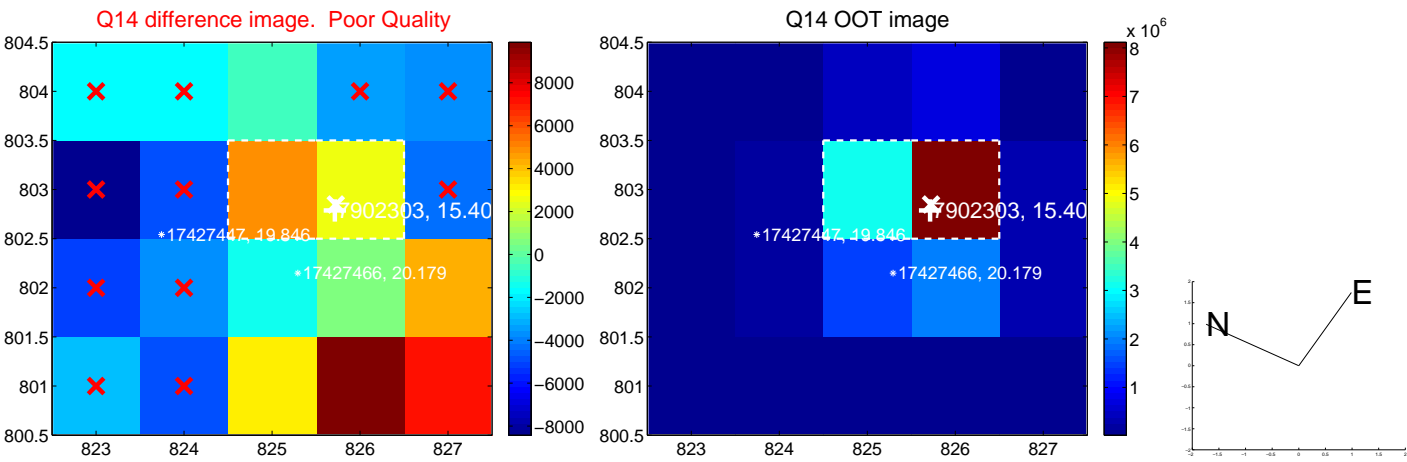
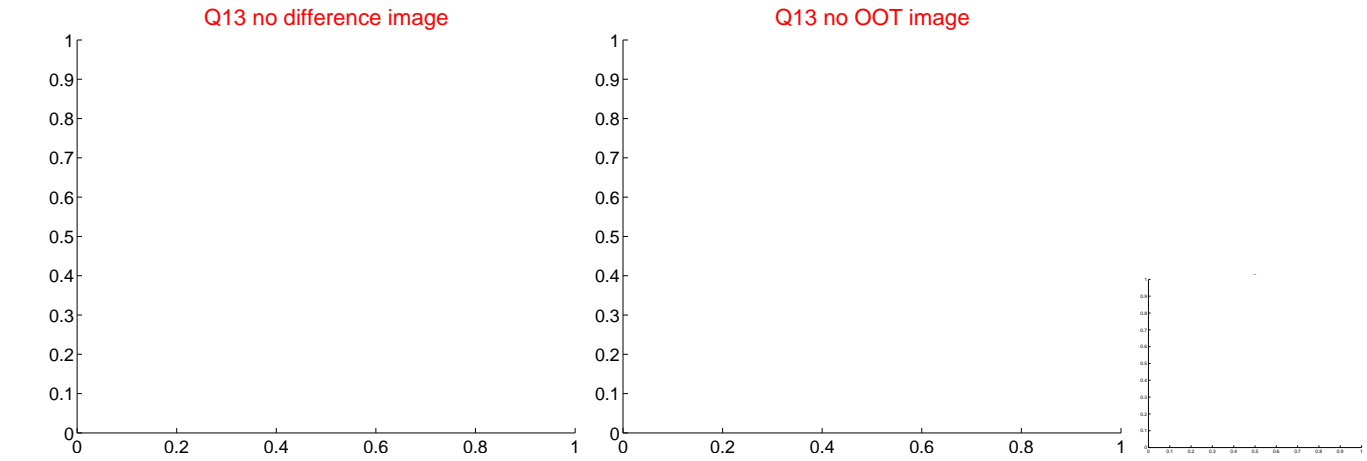
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



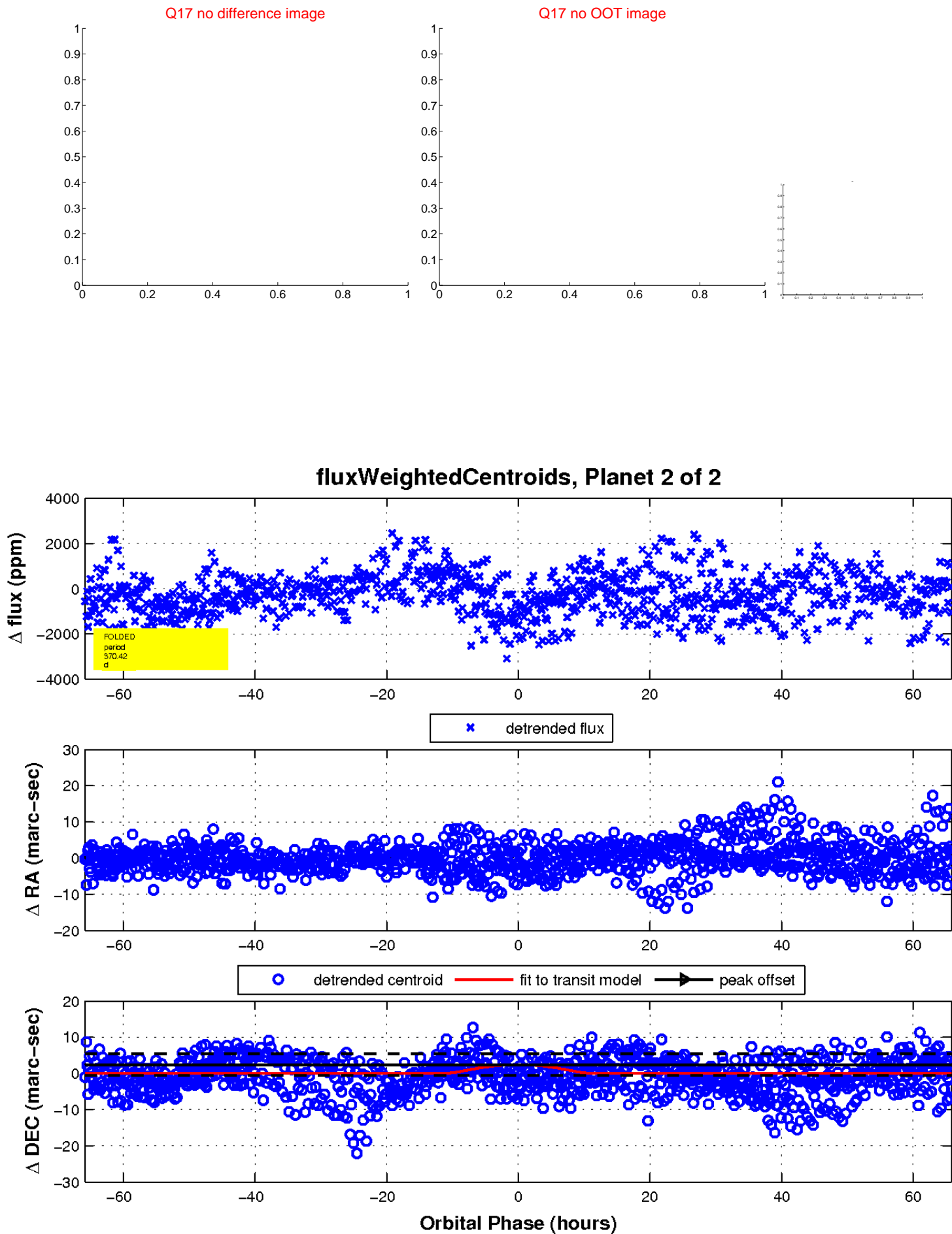
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

