

KIC 006866092

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})
006866092-01	OBS	No	505.186898	520.158291	773.8	3.538	8.5	6.2	0.90	5302	2.77	0.43
006866092-02	OBS	No	484.539755	480.008462	648.7	10.470	10.4	6.8	0.90	5302	2.50	0.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006866092-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
006866092-02	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.

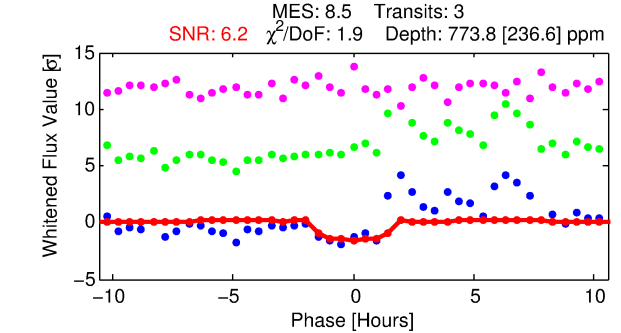
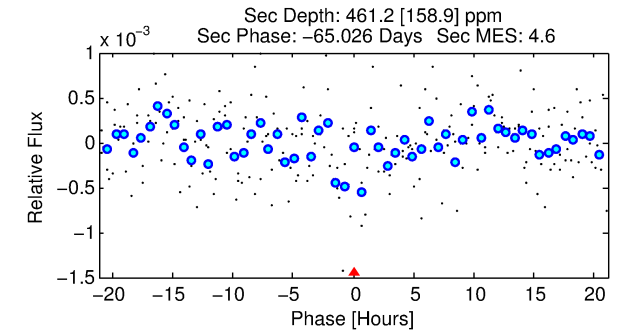
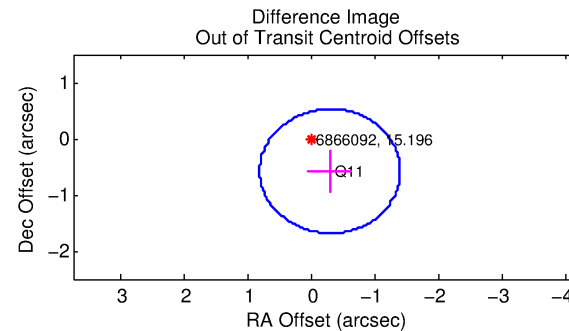
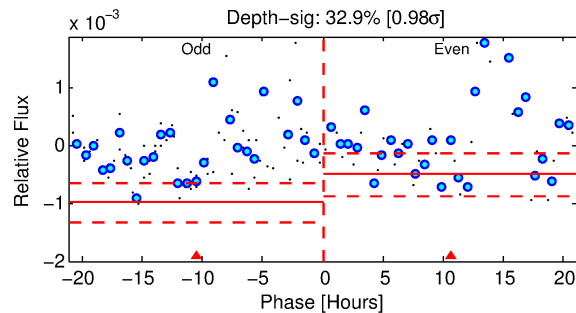
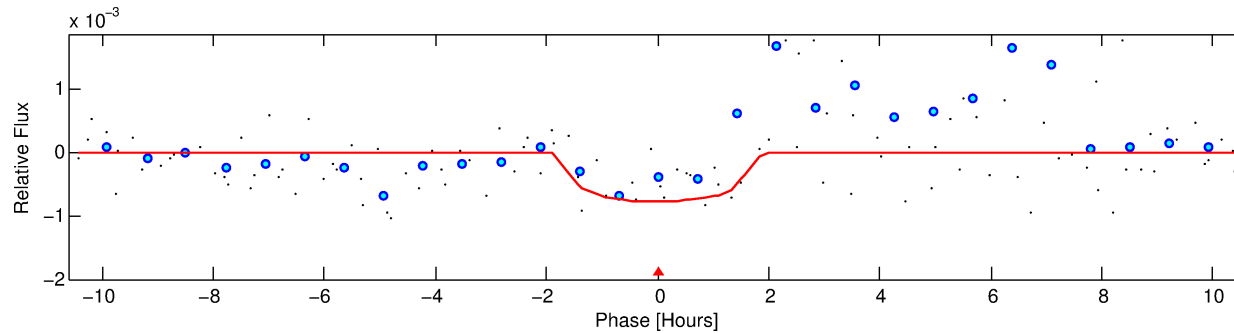
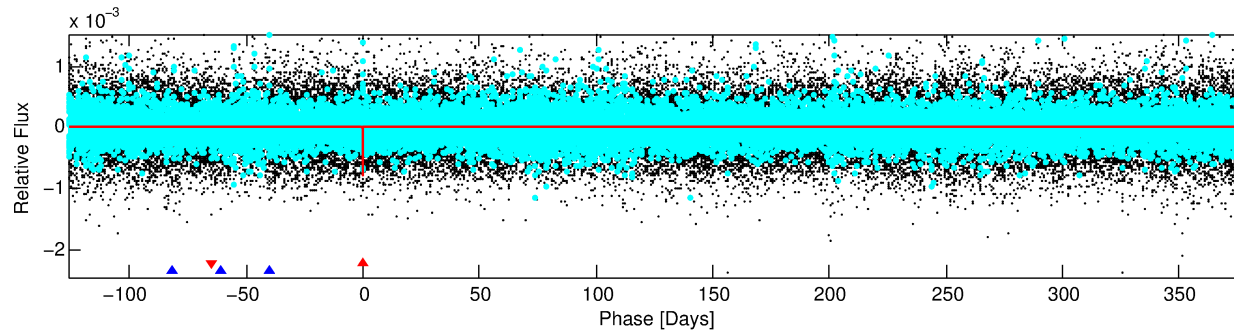
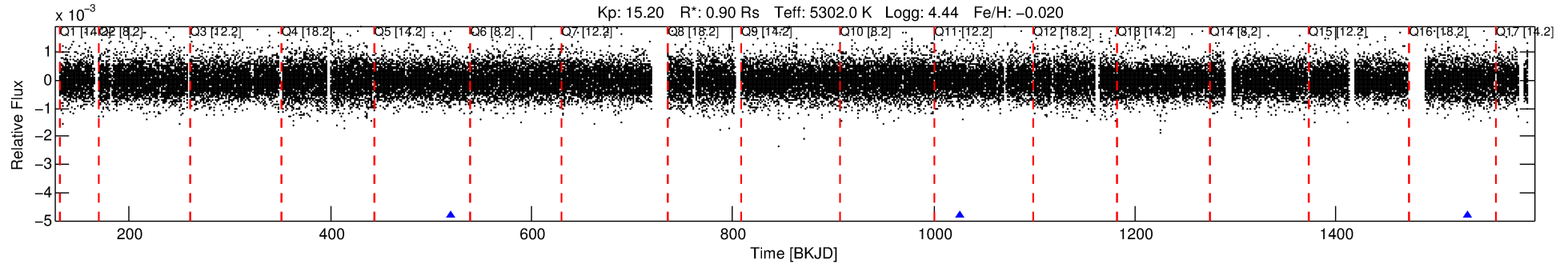
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006866092-01

No Significant Match Found

DV One-Page Summary

KIC: 6866092 Candidate: 1 of 2 Period: 505.187 d



DV Fit Results:

Period = 505.18690 [0.01332] d
Epoch = 520.1583 [0.0170] BKJD
Rp/R* = 0.0281 [0.0584]
a/R* = 732.54 [5825.00]
b = 0.78 [4.11]
Seff = 0.43 [0.17]
Teq = 206 [20] K
Rp = 2.77 [5.78] Re
a = 1.1574 [0.2744] AU
Ag = 44412.78 [185597.55] [0.24σ]
Teffp = 4632 [4823] K [0.92σ]

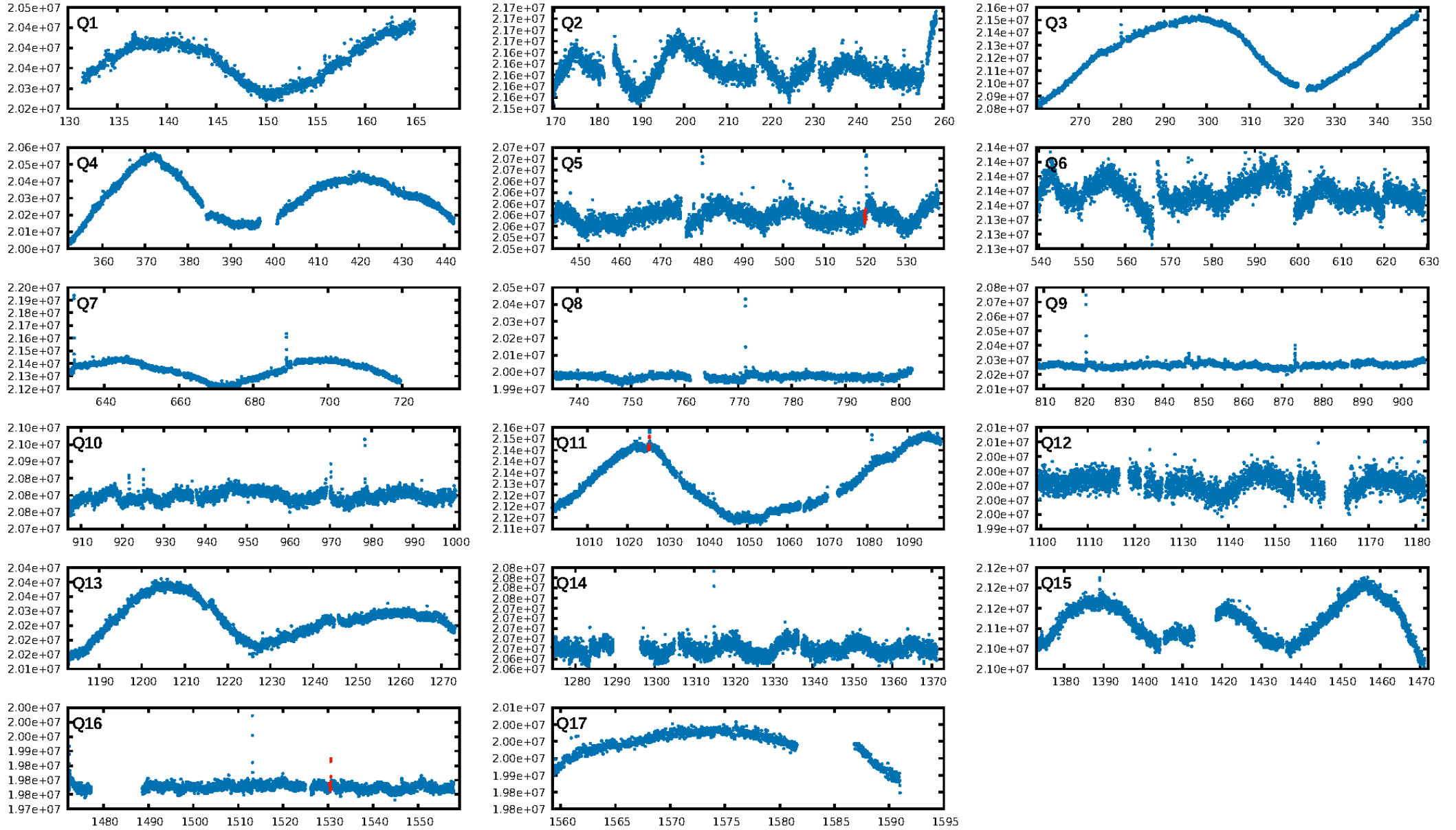
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [44.84σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 11.5%
ModelChiSquareGof-sig: 96.9%
Bootstrap-pfa: 7.08e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.626
Centroid-sig: 43.9%
Centroid-so: 0.865 arcsec [0.45σ]
OotOffset-rm: 0.648 arcsec [1.76σ]
KicOffset-rm: 0.631 arcsec [1.71σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

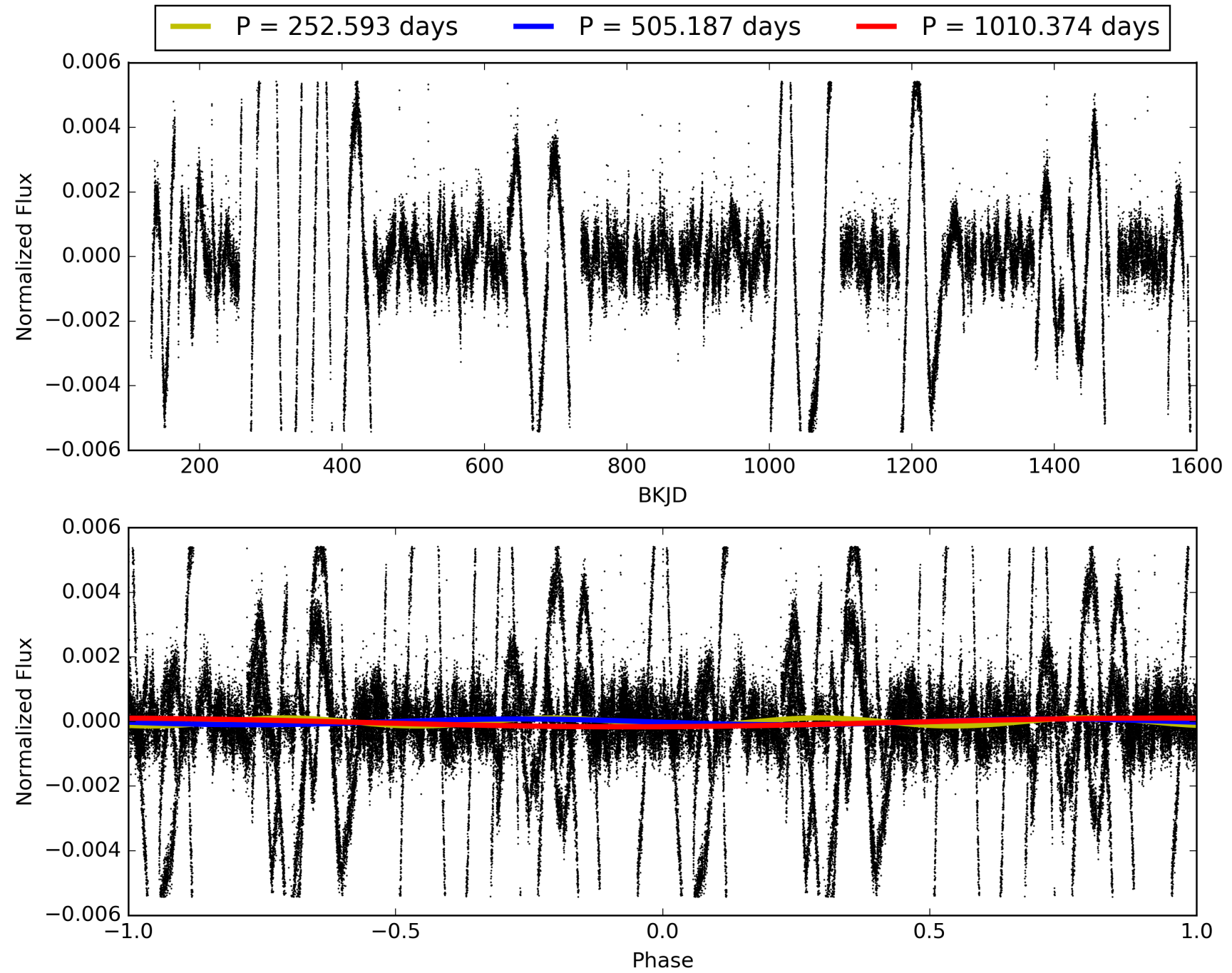
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:48:29 Z

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

TCE 006866092-01, PDC Light Curves

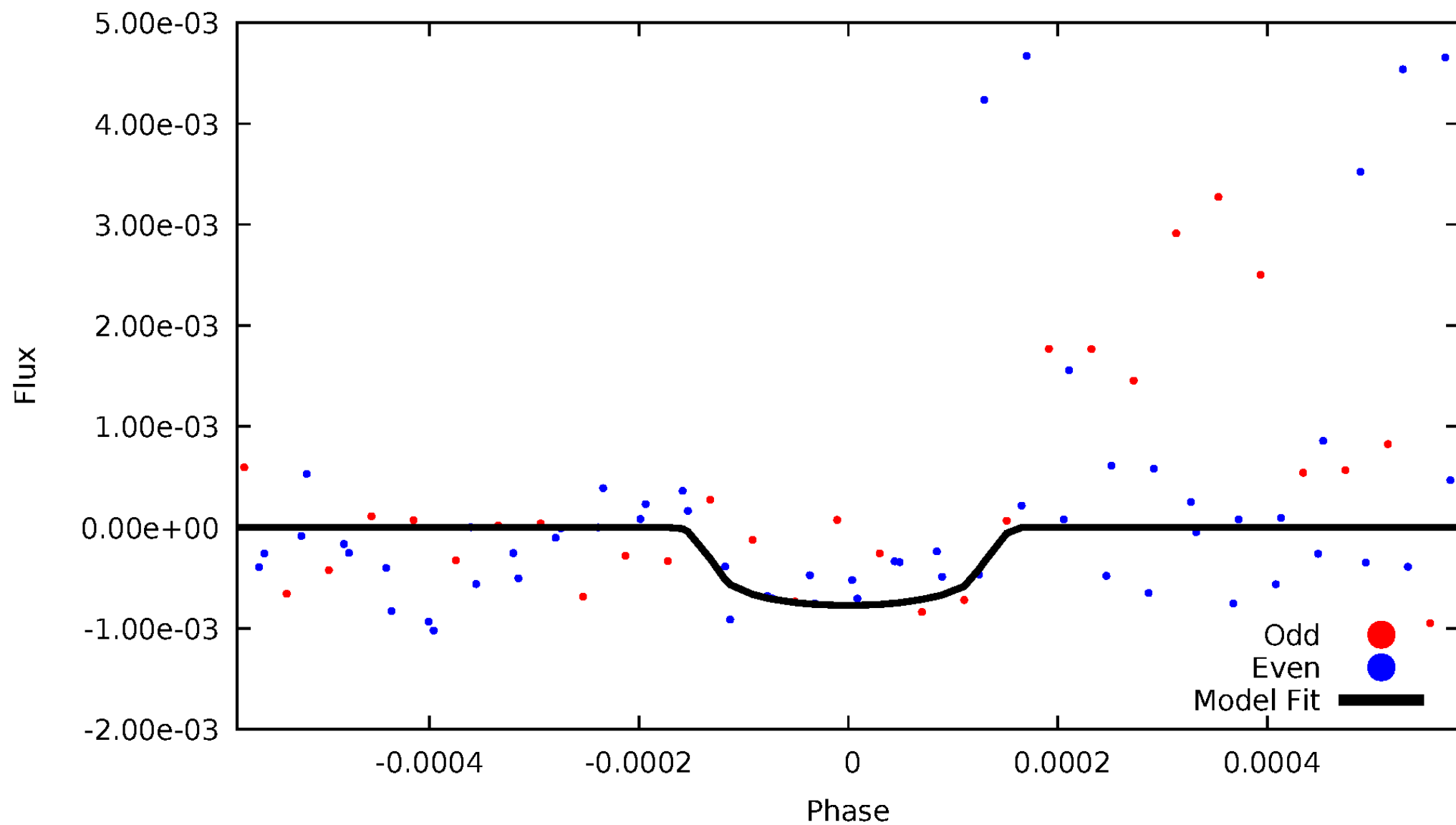


TCE 006866092-01



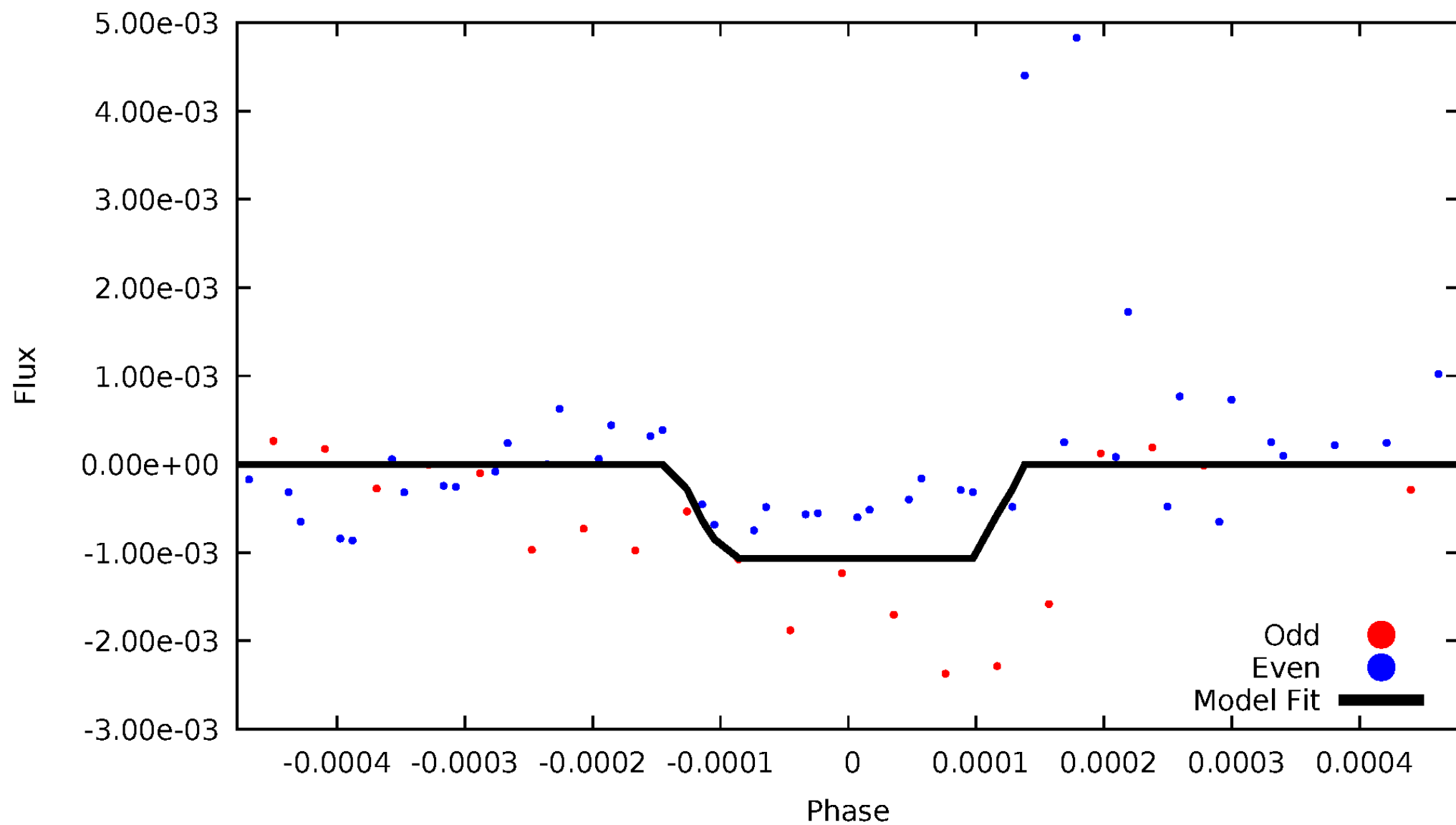
DV Odd/Even

TCE 006866092-01



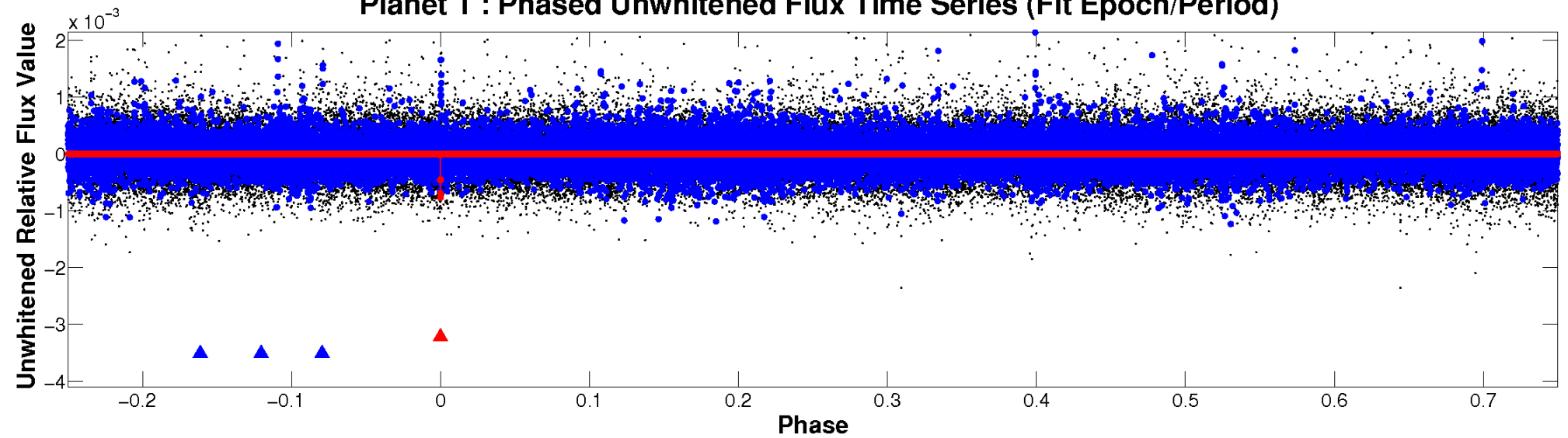
ALT Odd/Even

TCE 006866092-01

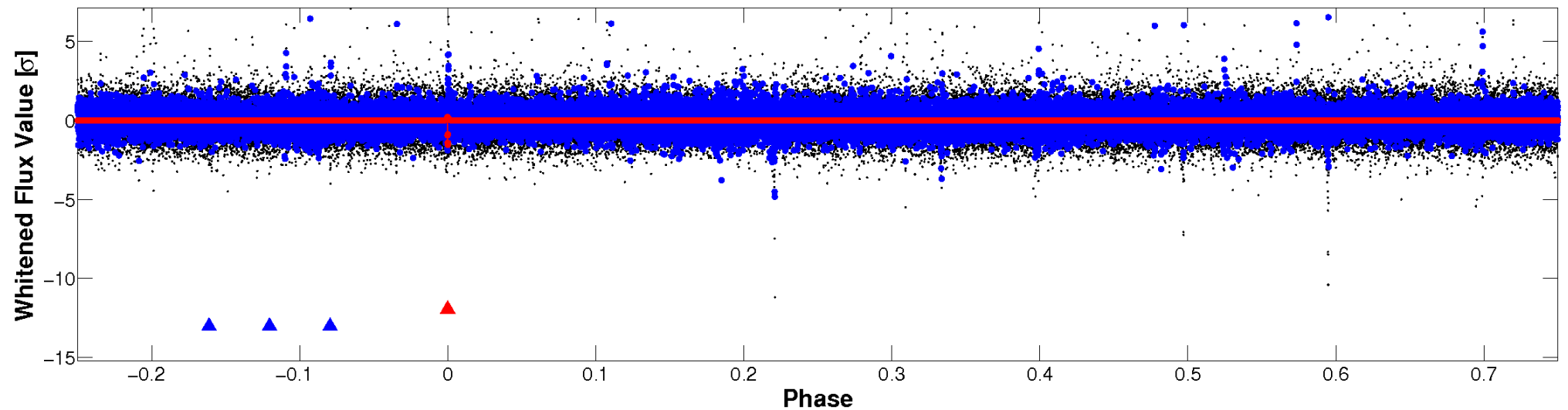


Non-Whitened Vs. Whitened Light Curve

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

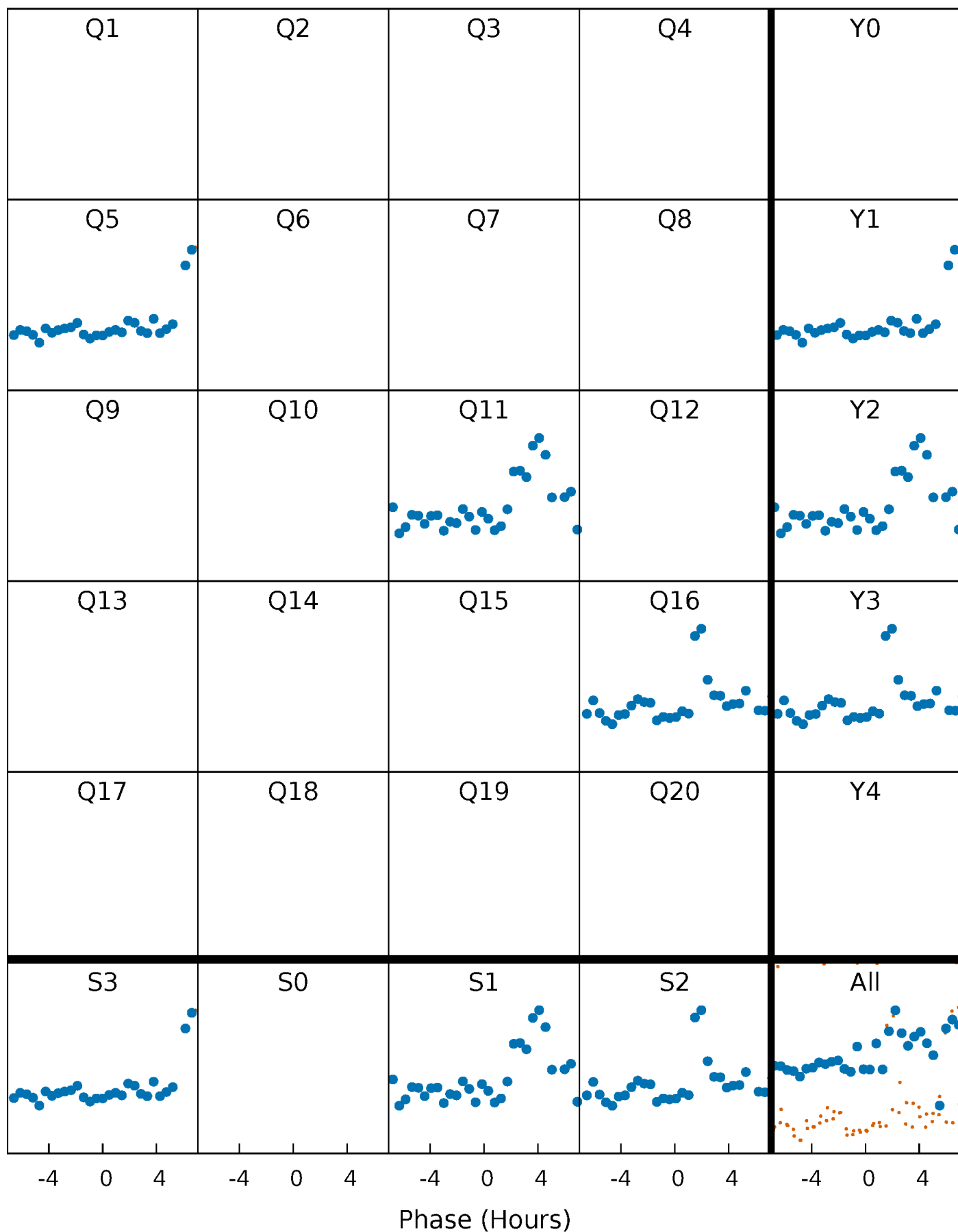


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



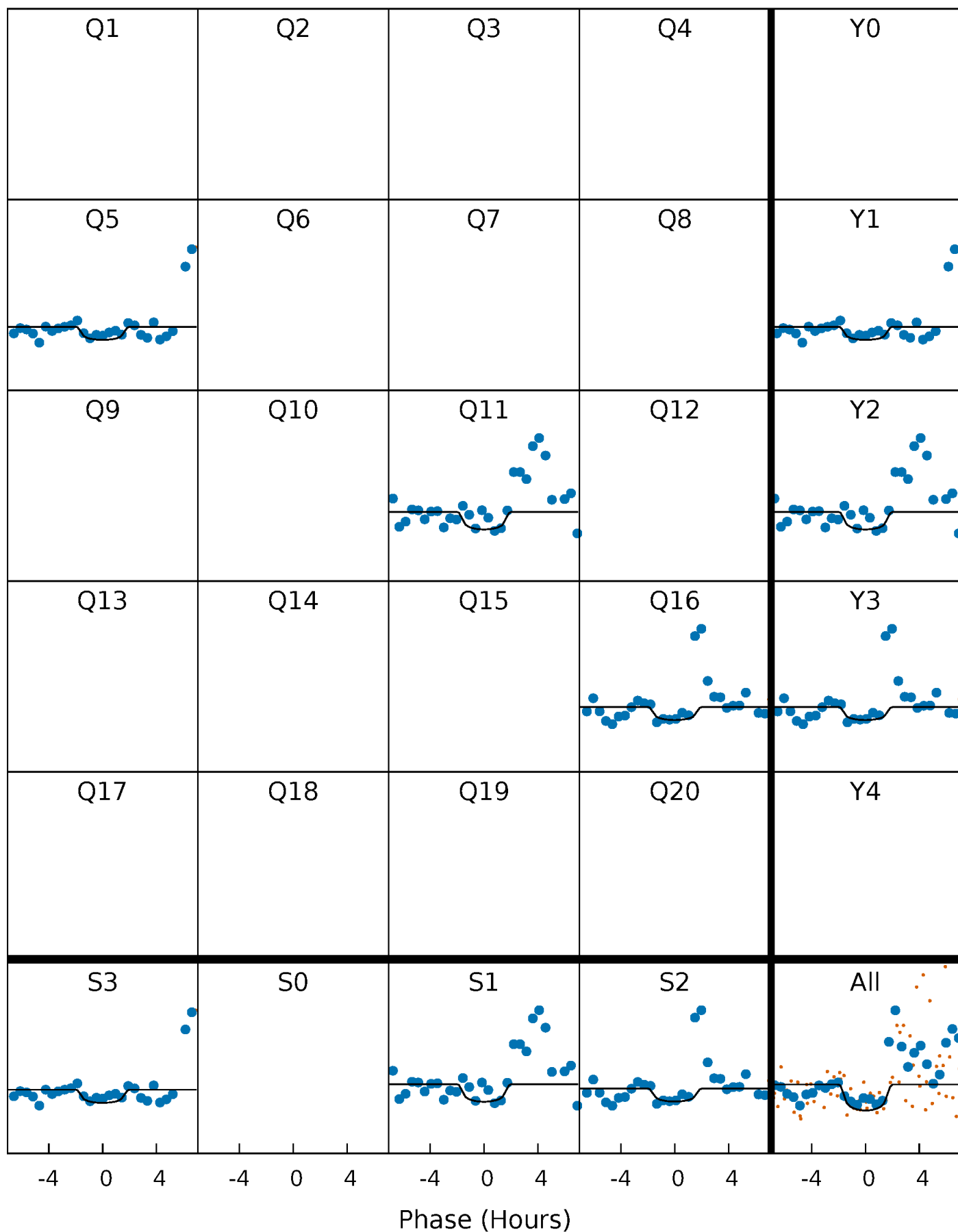
PDC Quarter-Phased Transit Curves

TCE 006866092-01 P=505.186898 Days $T_0=520.158291$ (BKJD)



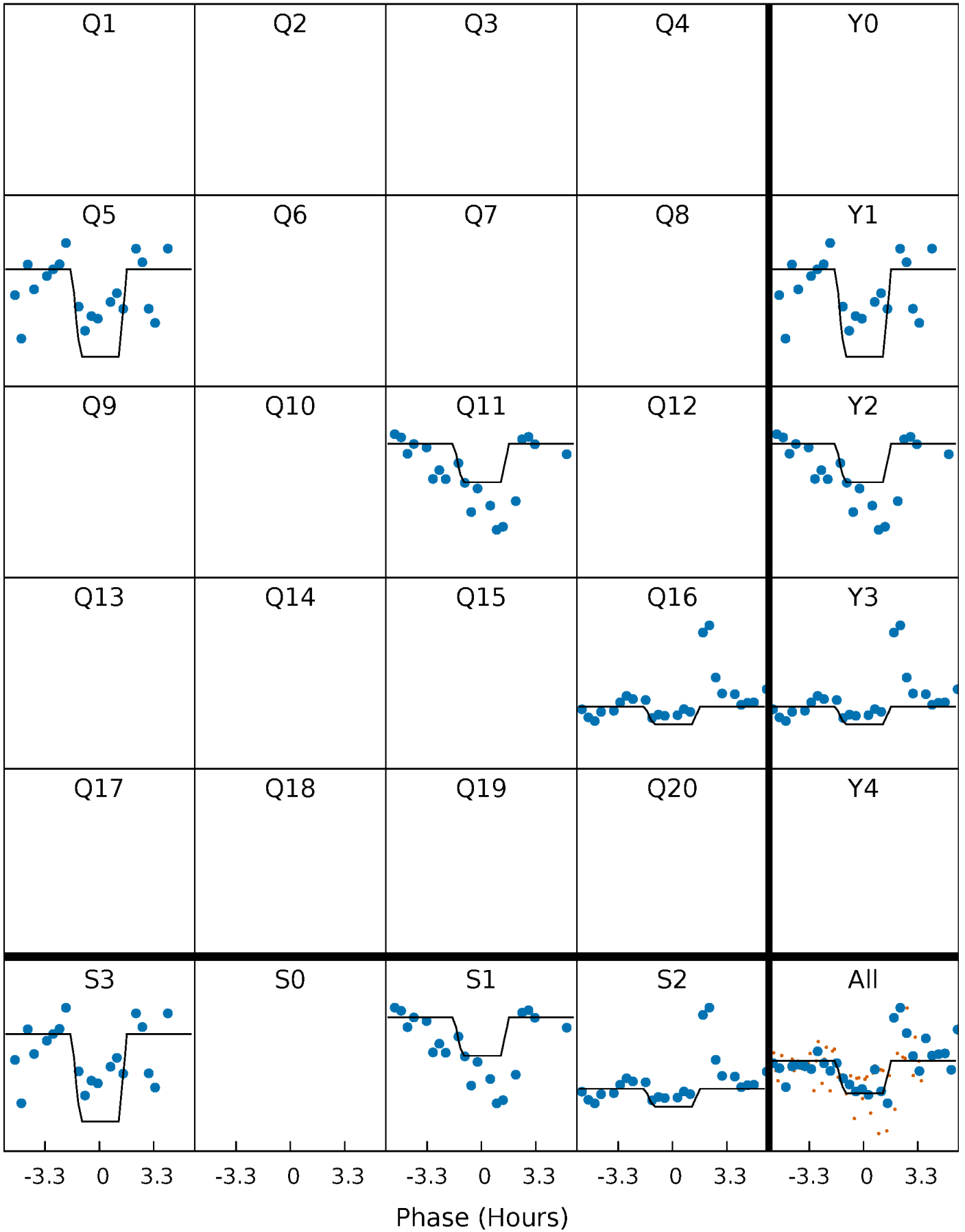
DV Quarter-Phased Transit Curves

TCE 006866092-01 P=505.186898 Days $T_0=520.158291$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

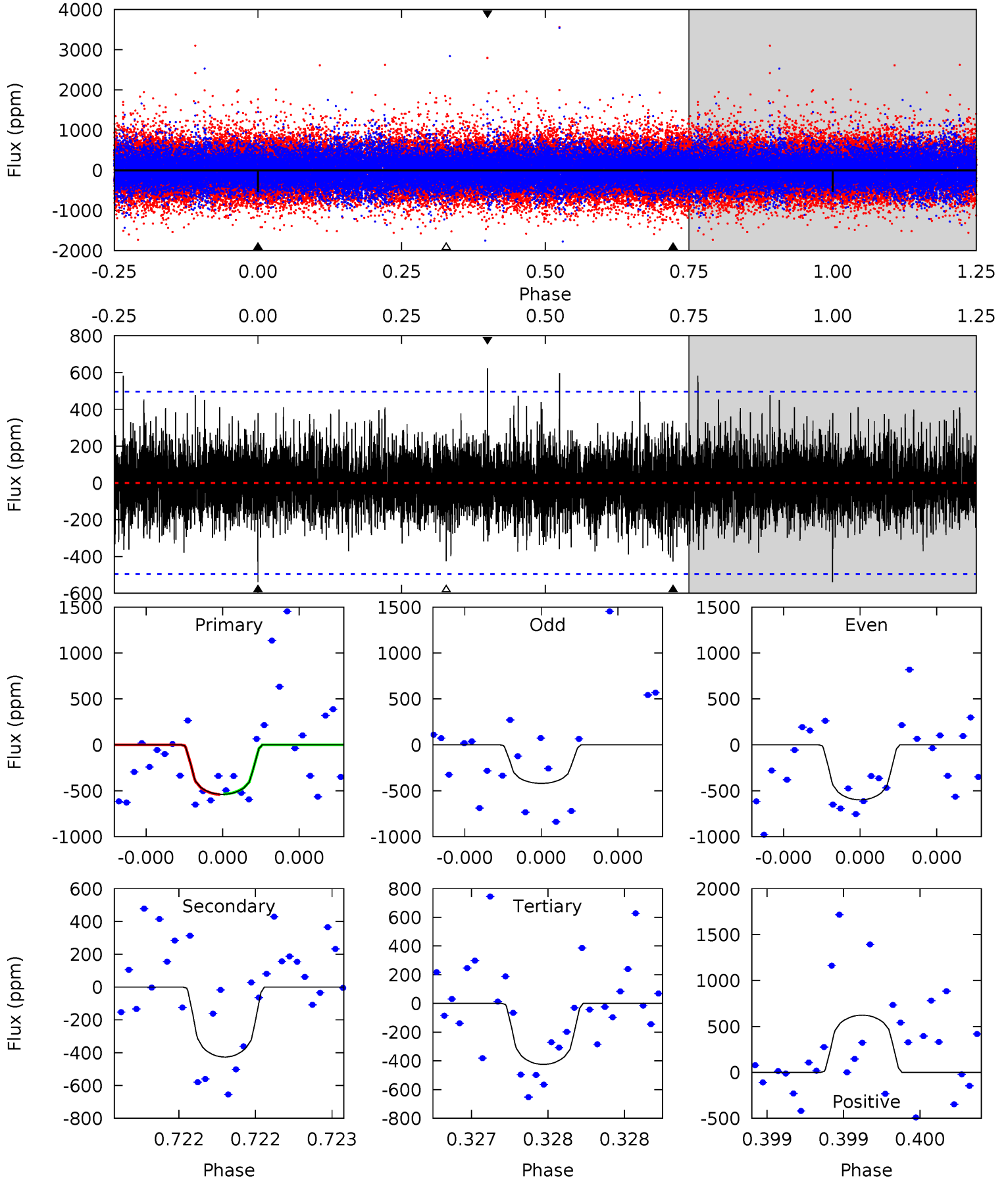
TCE 006866092-01 P=505.185715 Days $T_0=520.156596$ (BKJD)



DV Model-Shift Uniqueness Test

006866092-01, P = 505.186898 Days, E = 14.971393 Days

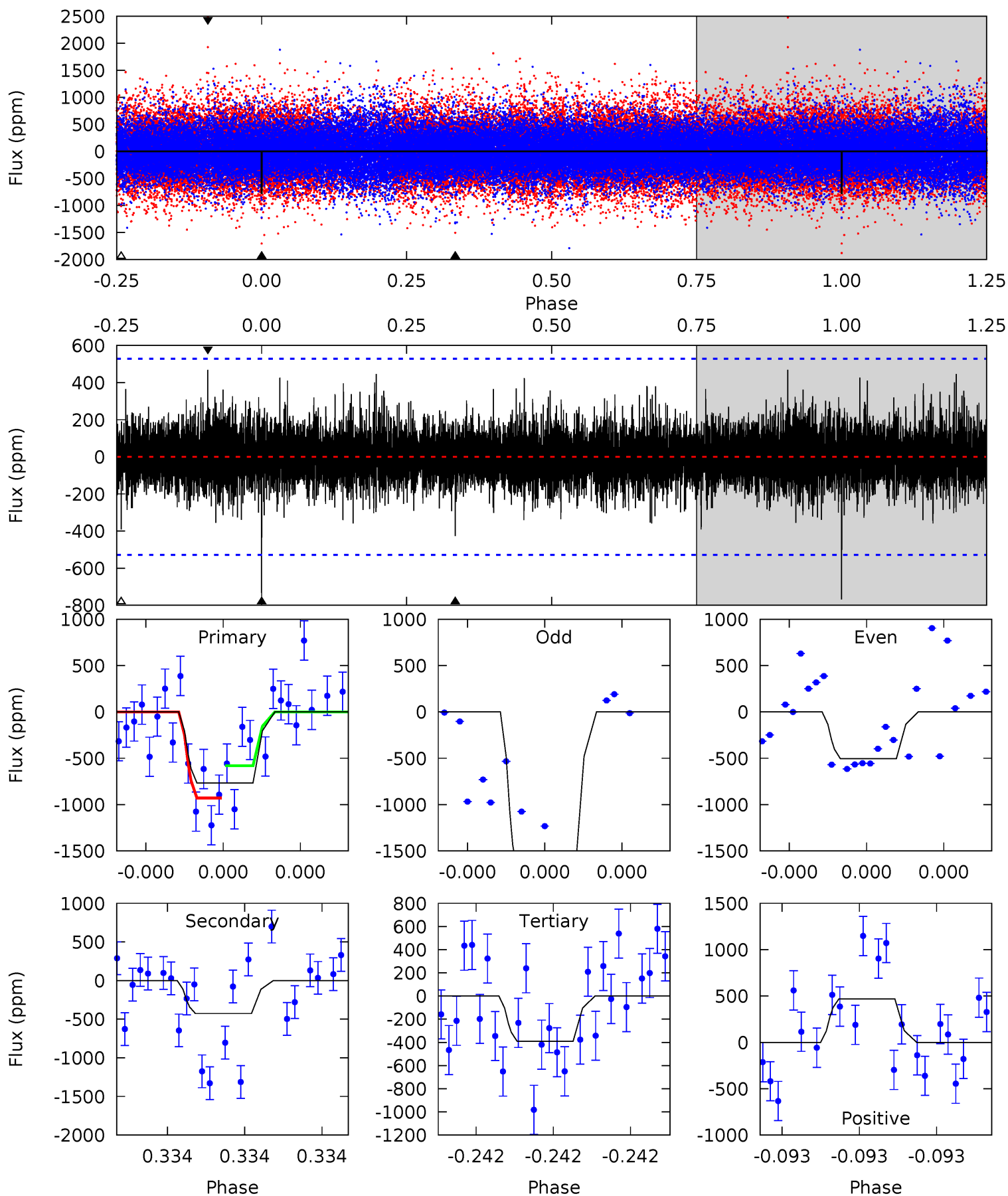
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.14	4.86	4.84	7.09	5.65	3.60	1.30	1.30	-0.95	0.02	-2.23	0.87	0.98	0.54	0.03



Alt Model-Shift Uniqueness Test

006866092-01, P = 505.185715 Days, E = 14.970881 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.26	4.59	4.20	5.04	5.69	3.66	1.01	4.06	3.22	0.39	-0.44	6.86	1.69	0.38	1.88



Stellar Parameters For KIC 006866092

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5302^{+175}_{-159}	$4.437^{+0.123}_{-0.210}$	$-0.020^{+0.300}_{-0.250}$	$0.901^{+0.235}_{-0.126}$	$0.811^{+0.113}_{-0.061}$	$1.560^{+0.783}_{-0.787}$
	+3%/-3%	+3%/-5%	+1500%/-1250%	+26%/-14%	+14%/-8%	+50%/-50%
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 006866092-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-427 ± 88	$5.26^{+5.17}_{-3.33}$	291^{+21}_{-16}	3705^{+1888}_{-709}	10983^{+74323}_{-8193}
Alt.	-427 ± 93	$5.16^{+5.29}_{-3.54}$	292^{+22}_{-17}	3769^{+2116}_{-771}	$11058^{+102959}_{-8274}$

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 $A_{obs} \gg 1.0$

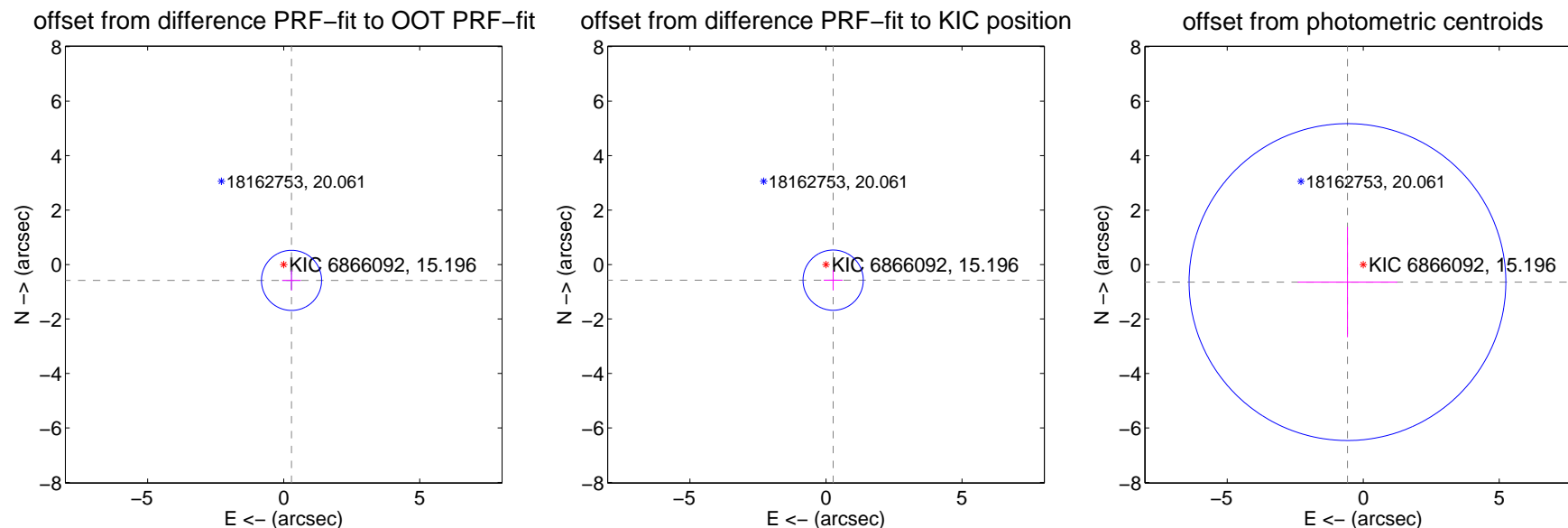
DV Centroid Data

Supplemental centroid analysis for 006866092-01. Kepler magnitude: 15.20. Transit SNR 6.17

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.648 ± 0.368	1.76	-0.288 ± 0.344	-0.581 ± 0.374
PRF-fit source offset from KIC position	0.631 ± 0.369	1.71	-0.264 ± 0.344	-0.573 ± 0.374
photometric centroid source offset	0.86 ± 1.94	0.45	0.58 ± 1.83	-0.64 ± 2.03

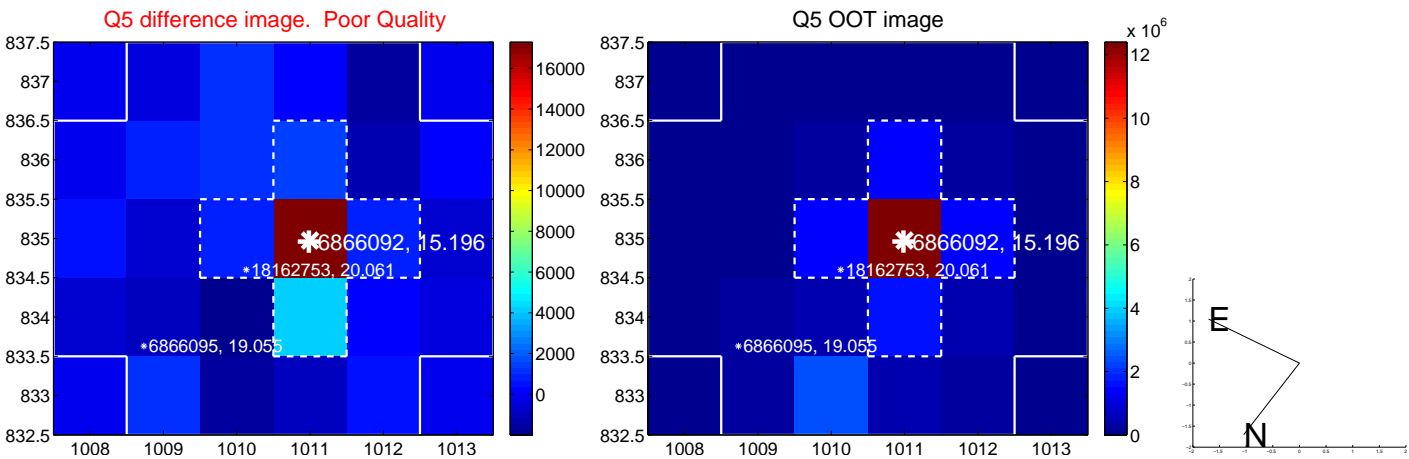


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

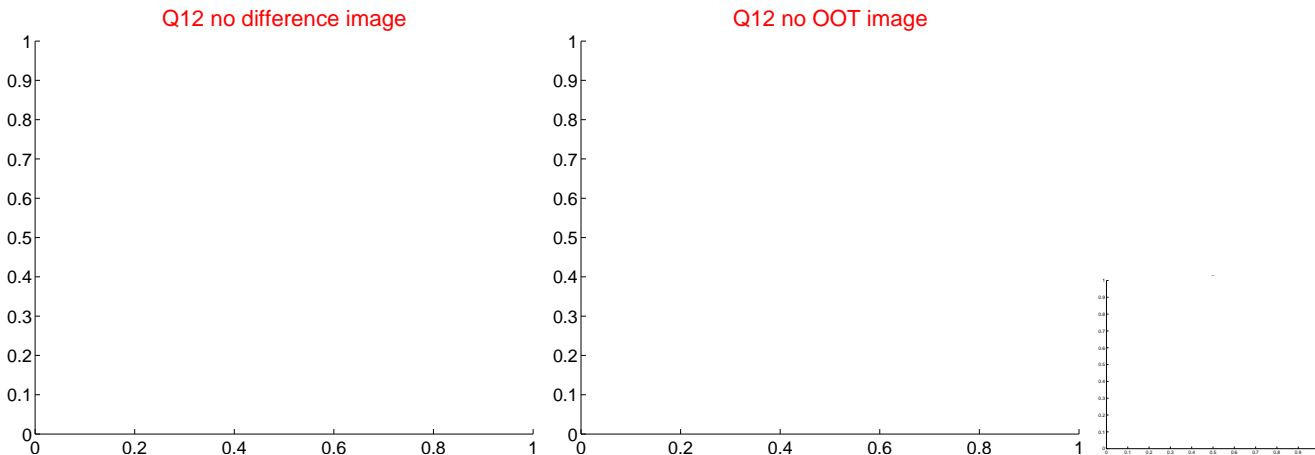
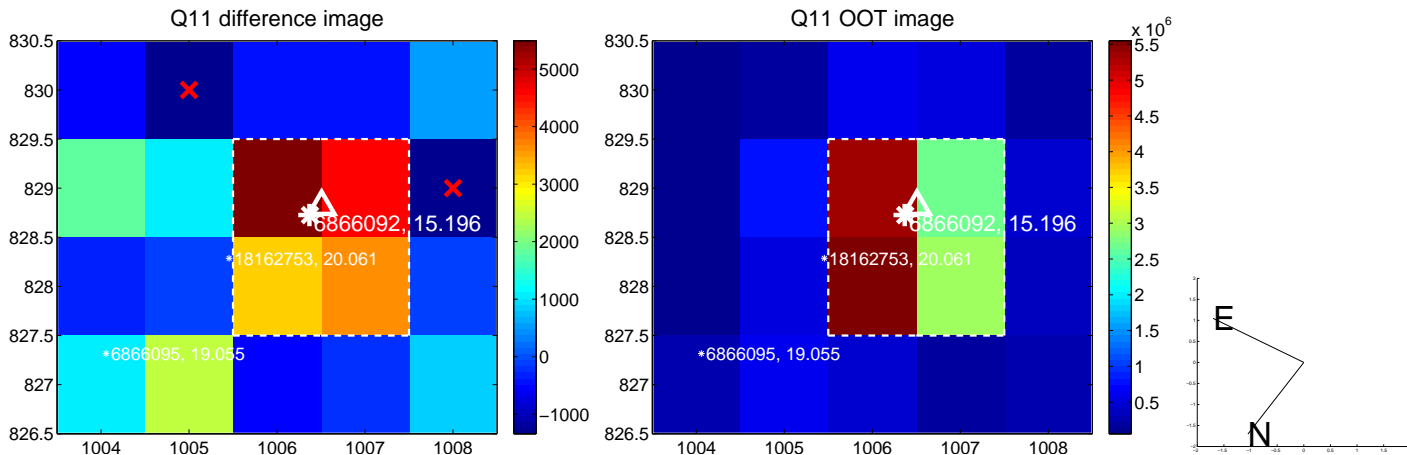
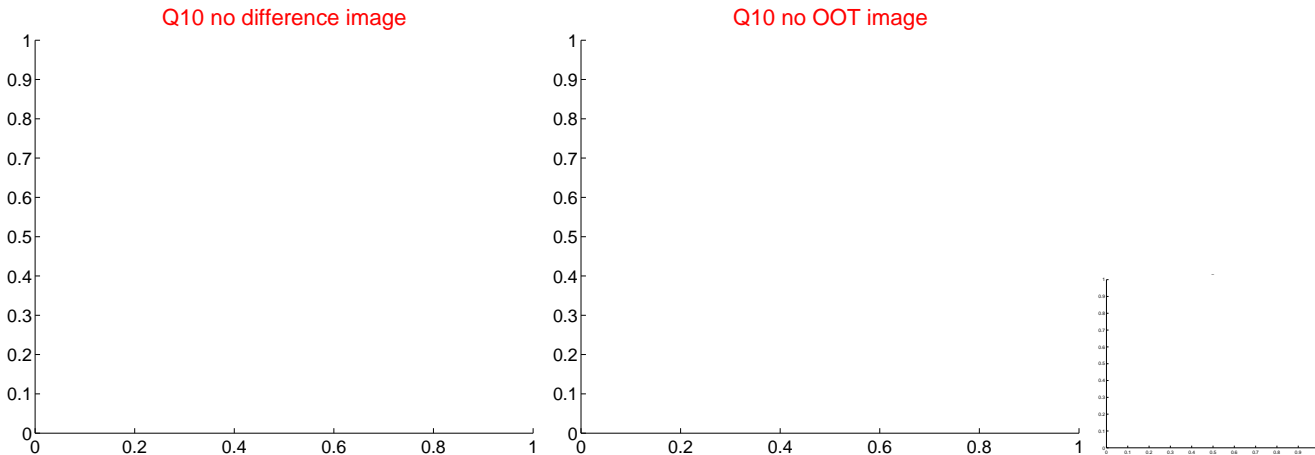
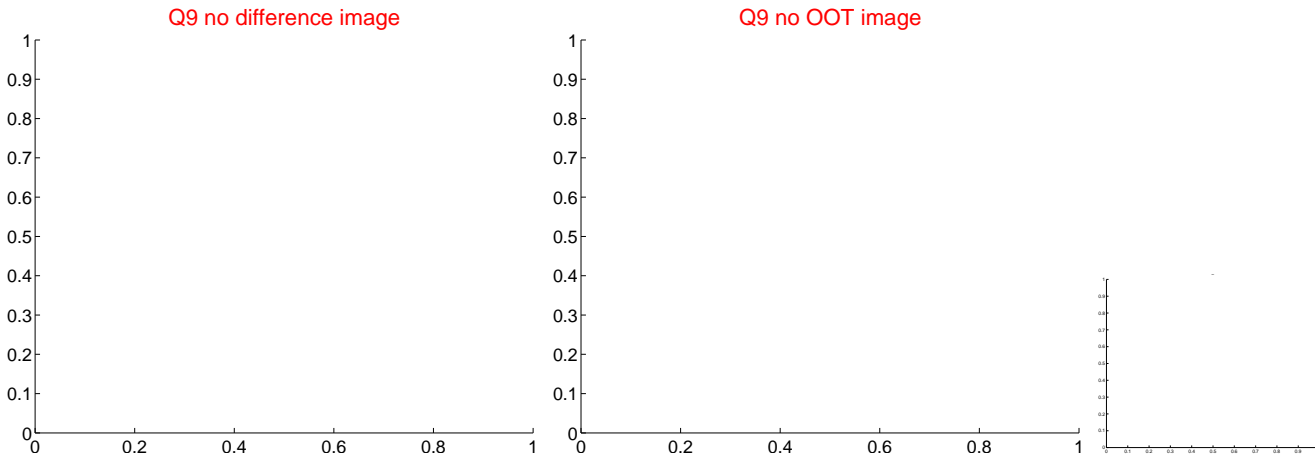
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



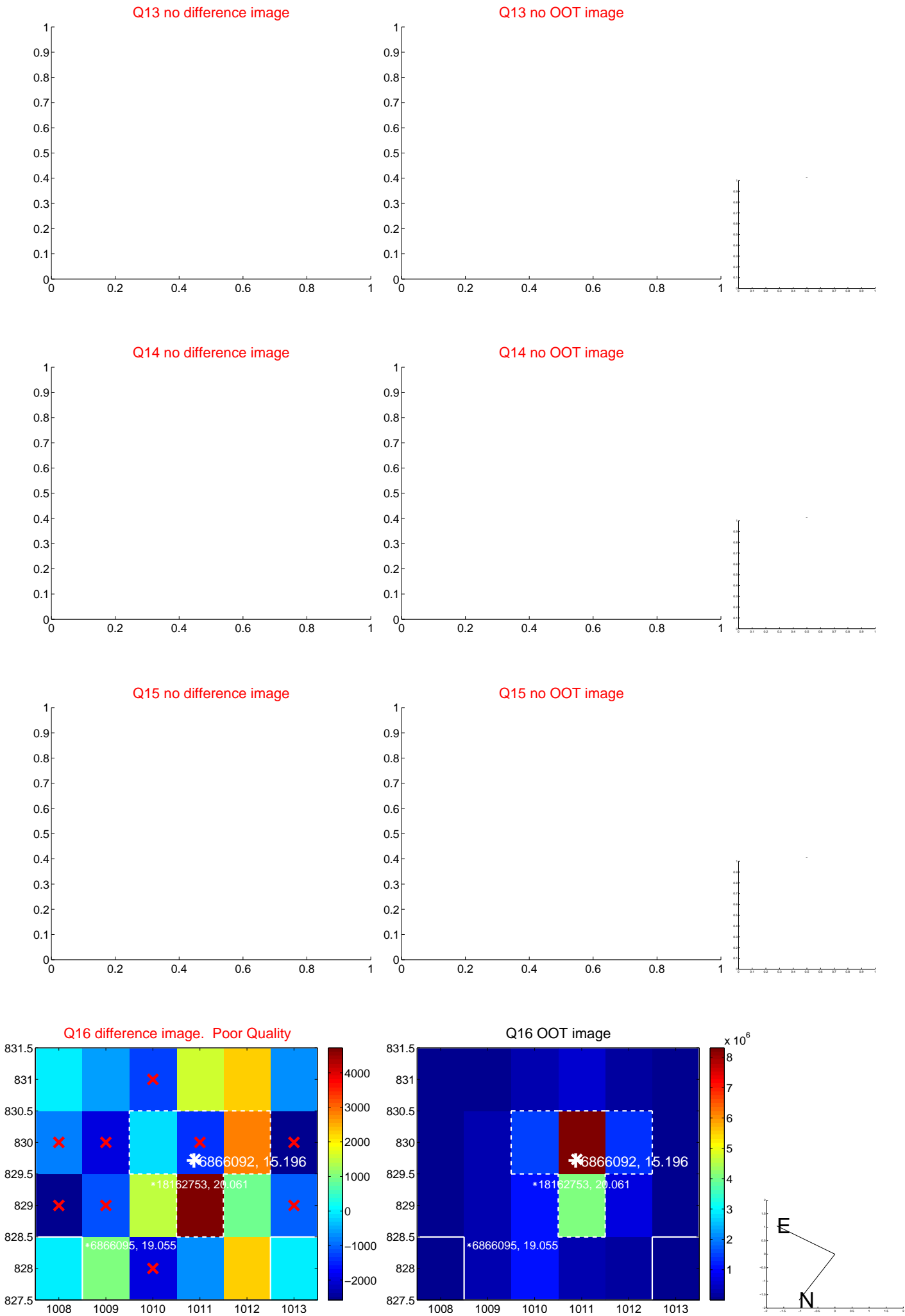
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



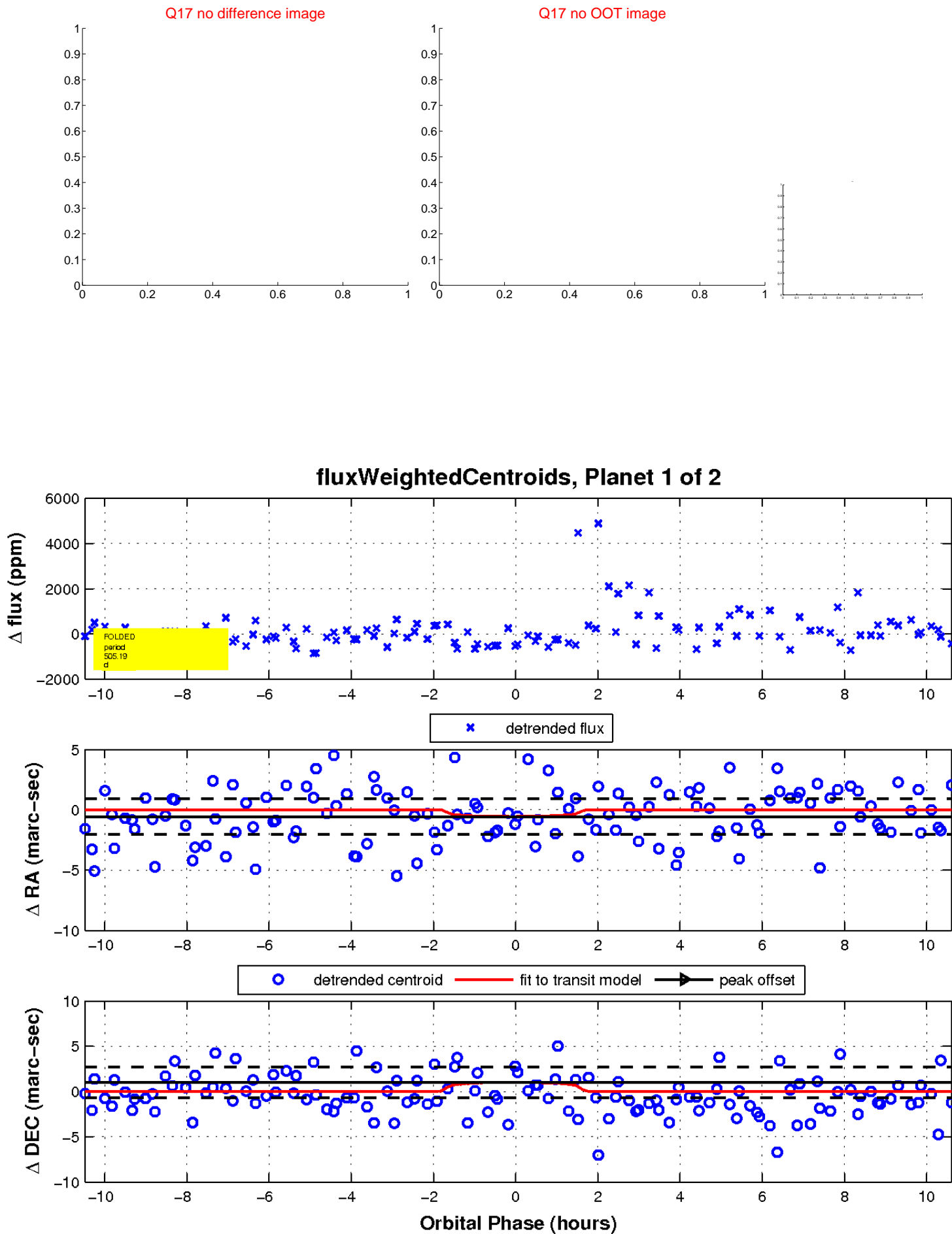
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

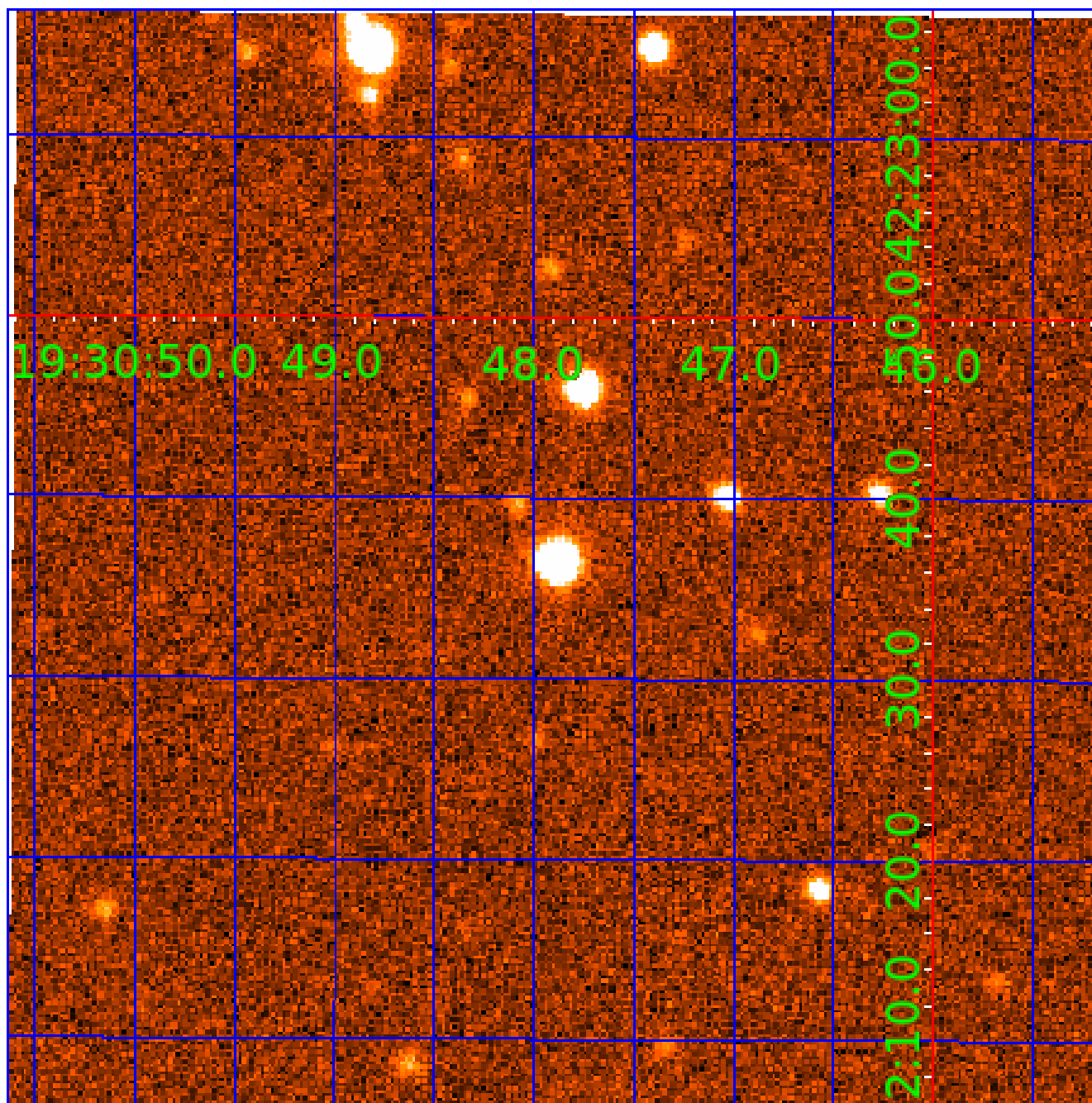


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006866092

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})
006866092-01	OBS	No	505.186898	520.158291	773.8	3.538	8.5	6.2	0.90	5302	2.77	0.43
006866092-02	OBS	No	484.539755	480.008462	648.7	10.470	10.4	6.8	0.90	5302	2.50	0.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006866092-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
006866092-02	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.

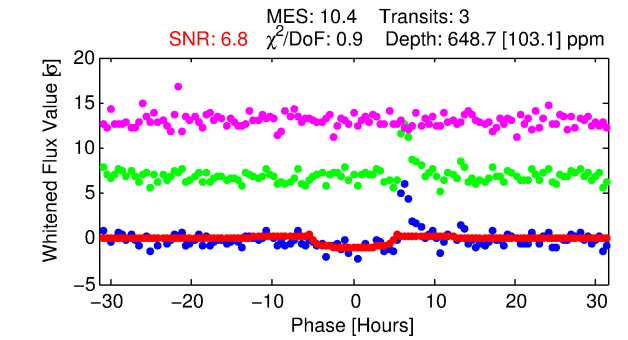
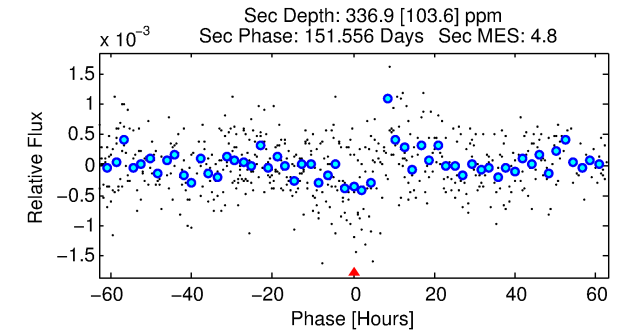
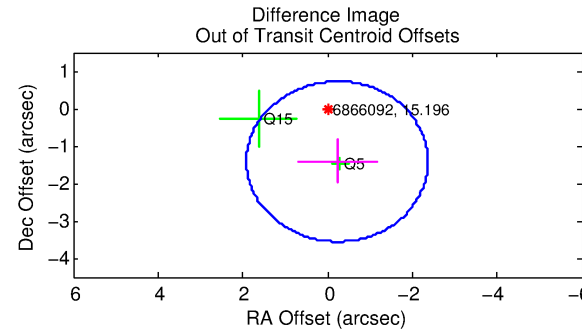
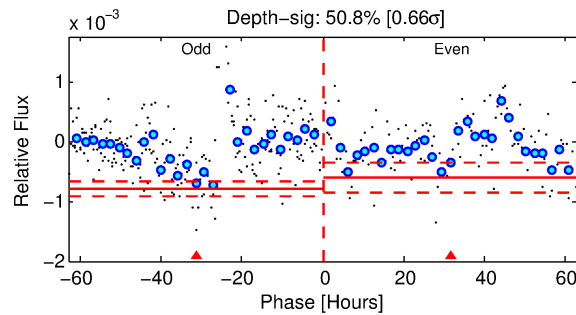
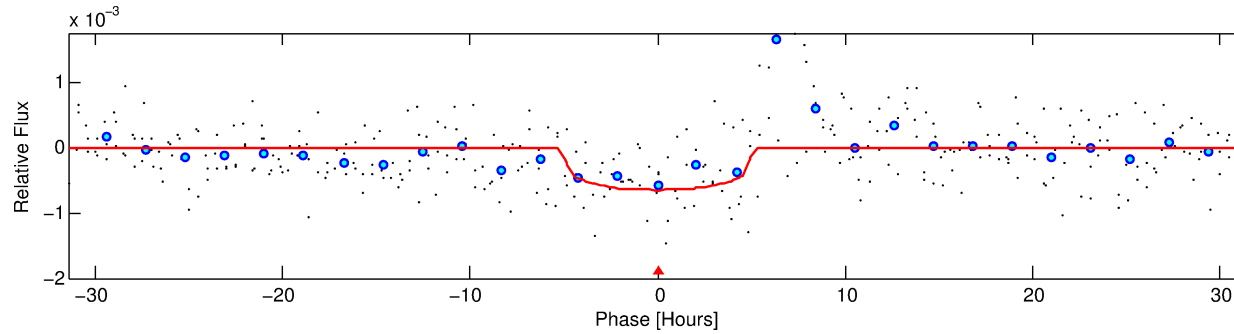
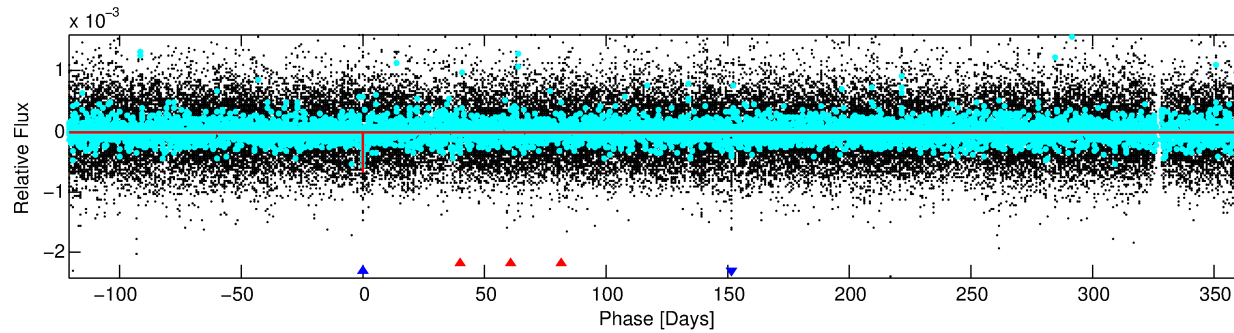
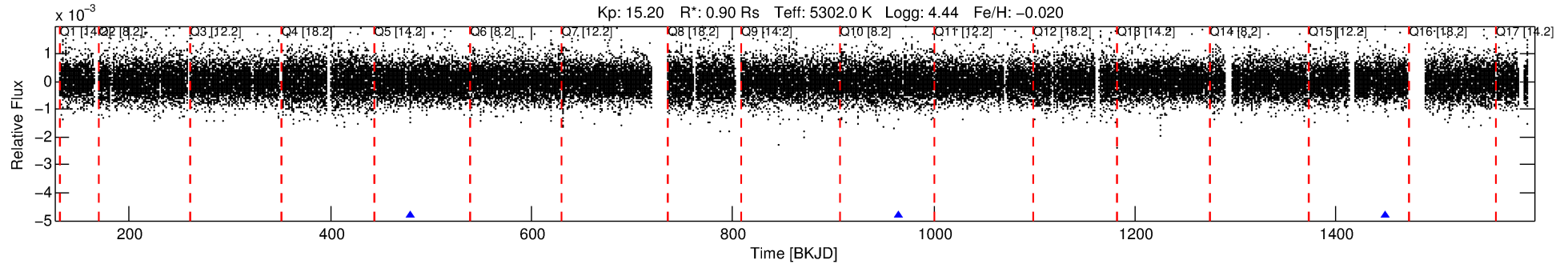
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006866092-02

No Significant Match Found

DV One-Page Summary

KIC: 6866092 Candidate: 2 of 2 Period: 484.540 d



DV Fit Results:

Period = 484.53975 [0.01256] d
Epoch = 480.0085 [0.0162] BKJD
Rp/R* = 0.0255 [0.0161]
a/R* = 244.87 [598.86]
b = 0.76 [1.40]
Seff = 0.45 [0.18]
Teq = 209 [20] K
Rp = 2.50 [1.72] Re
a = 1.1256 [0.2669] AU
Ag = 37474.33 [50765.62] [0.74σ]
Teffp = 44502 [1475] K [2.91σ]

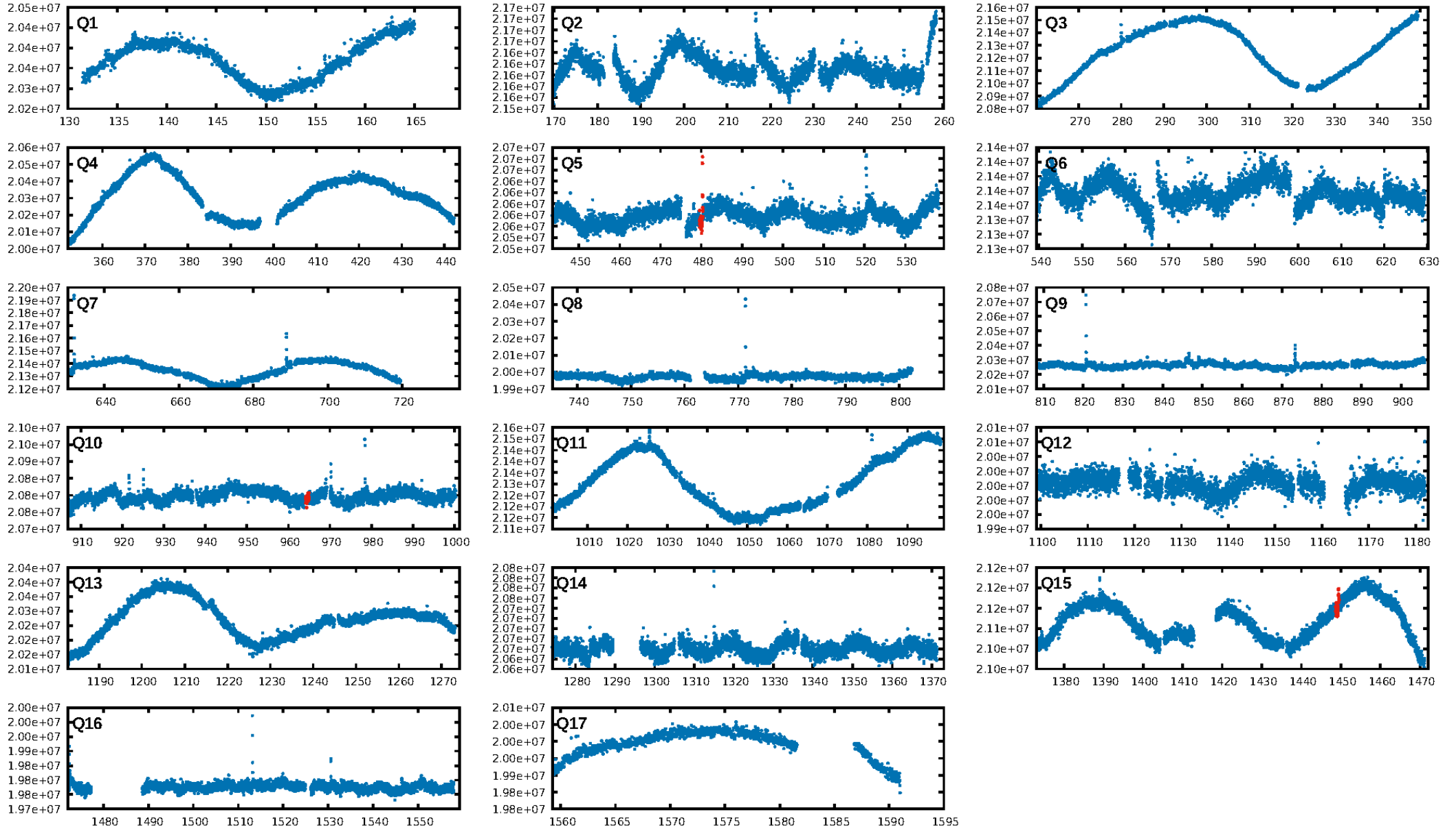
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [44.84σ]
ModelChiSquare2-sig: 6.6%
ModelChiSquareGof-sig: 99.3%
Bootstrap-pfa: 3.26e-15
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.318
Centroid-sig: 94.5%
Centroid-so: 0.453 arcsec [0.34σ]
OotOffset-rm: 1.435 arcsec [2.01σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-rm: 1.375 arcsec [1.81σ]
KicOffset-st: 0/1/0/1 [2]
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DiffImageOverlap-fno: 1.00 [3/3]

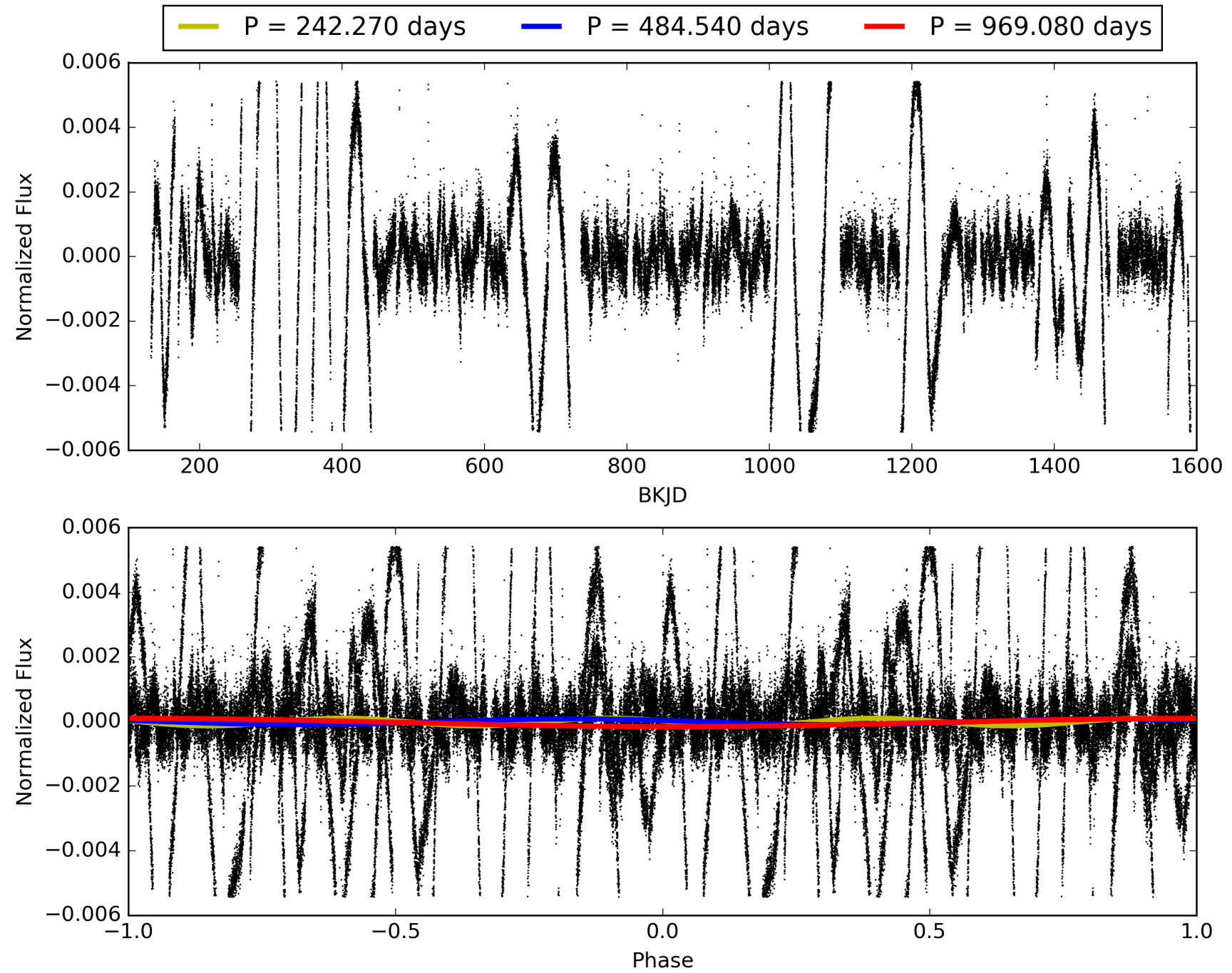
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:48:40 Z

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

TCE 006866092-02, PDC Light Curves

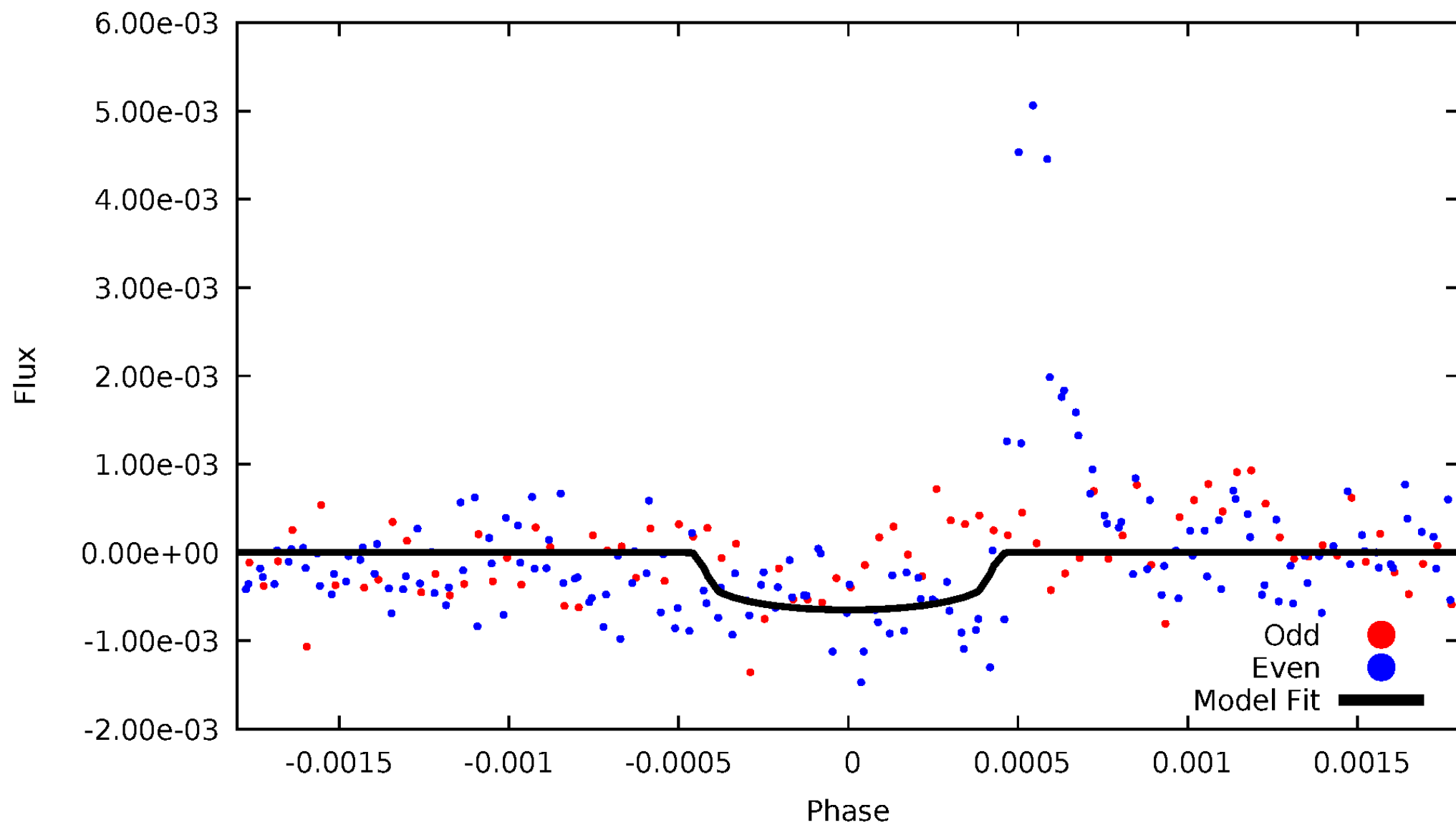


TCE 006866092-02



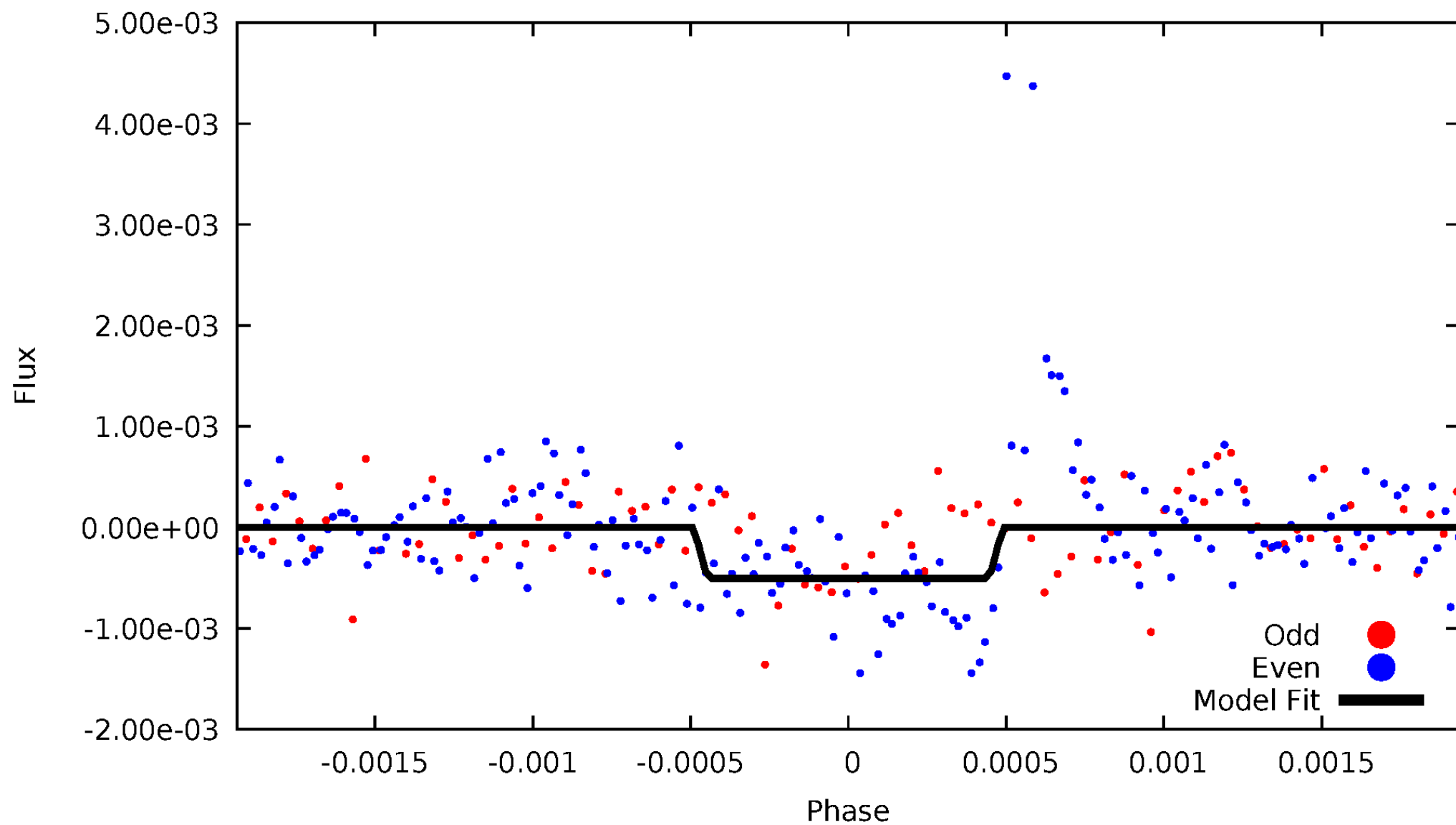
DV Odd/Even

TCE 006866092-02



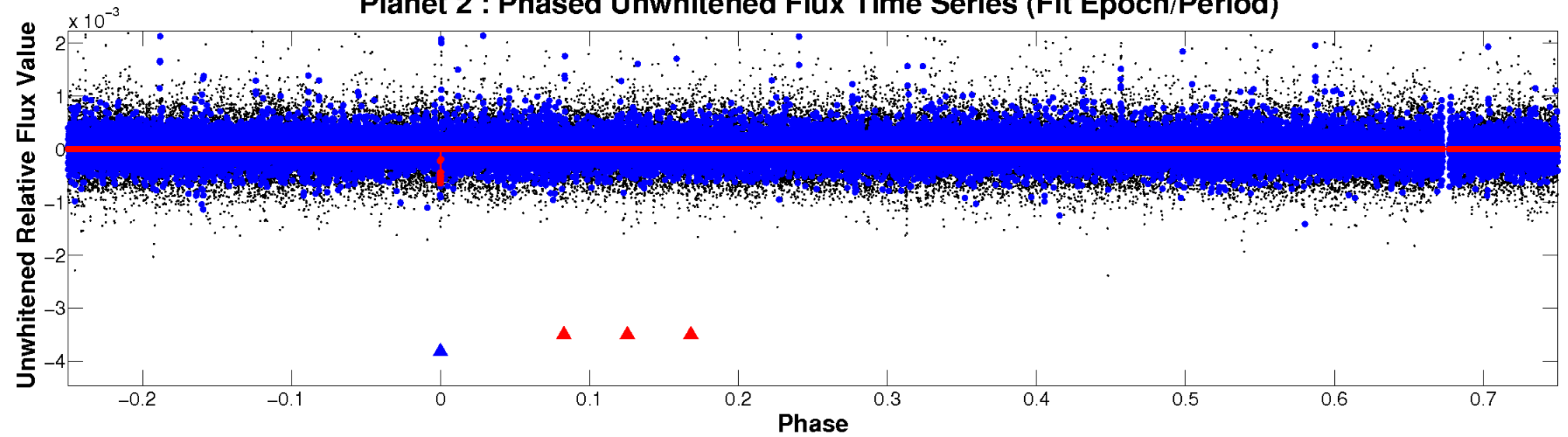
ALT Odd/Even

TCE 006866092-02

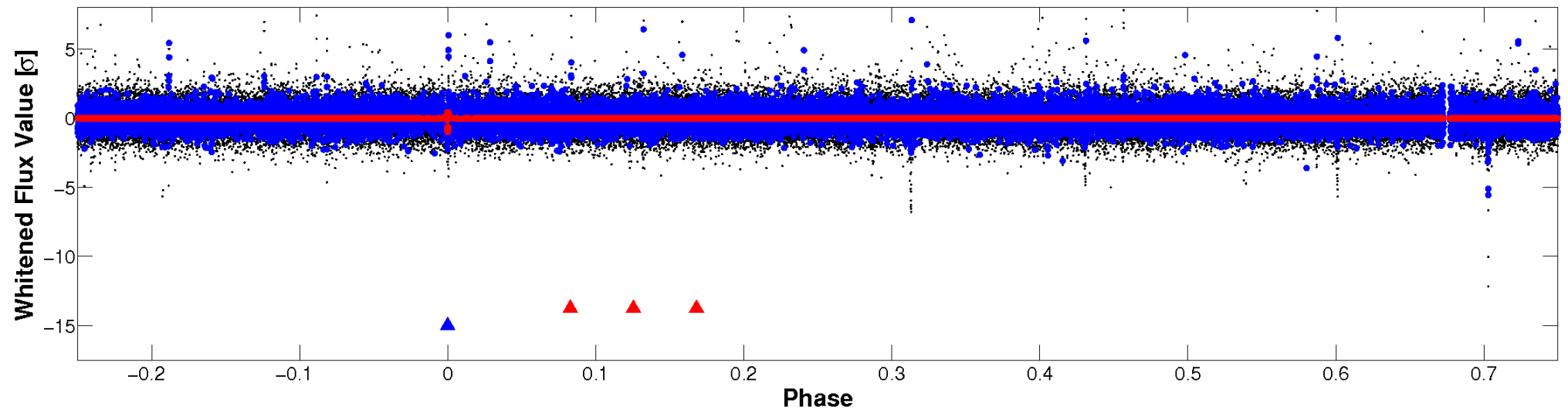


Non-Whitened Vs. Whitened Light Curve

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

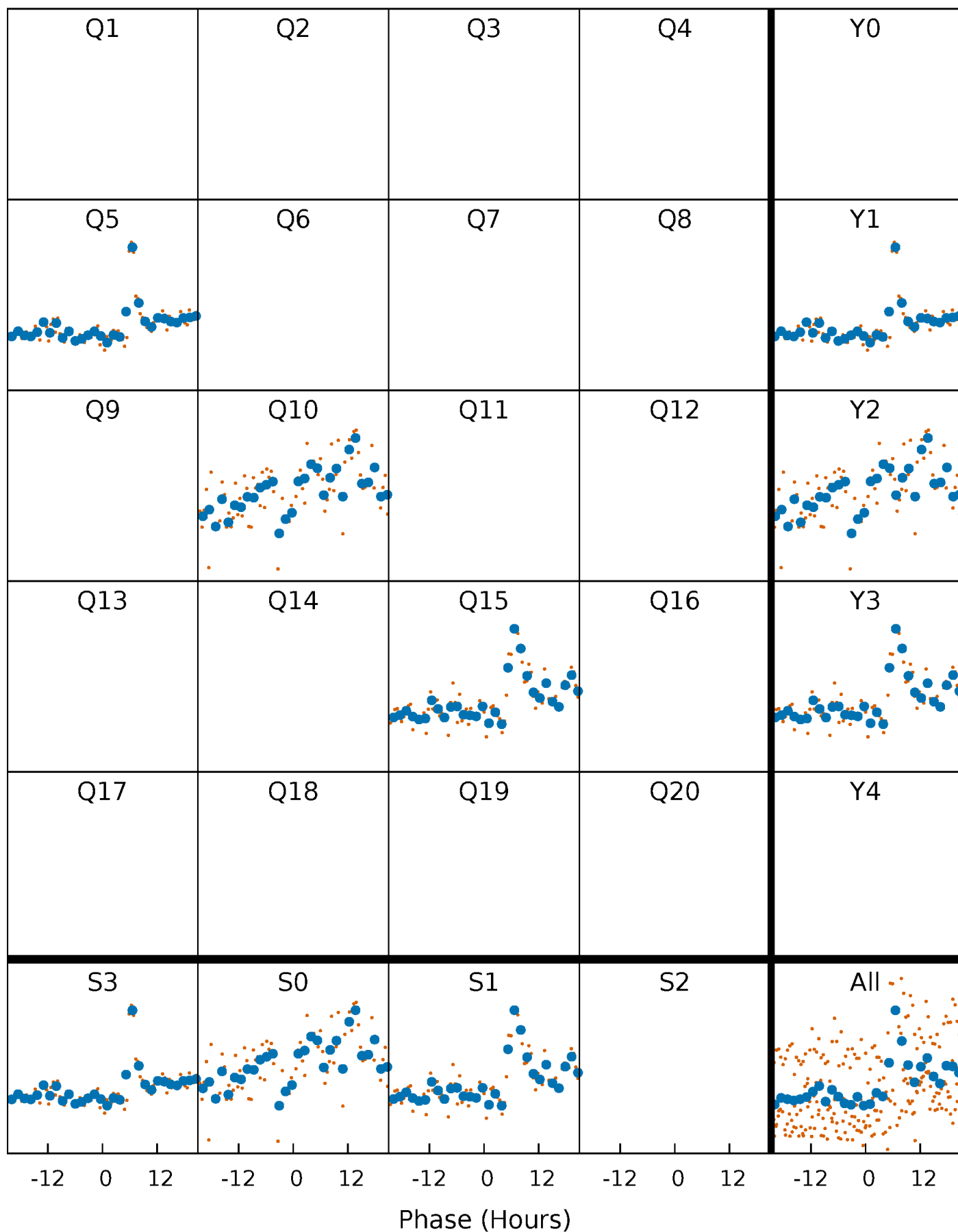


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



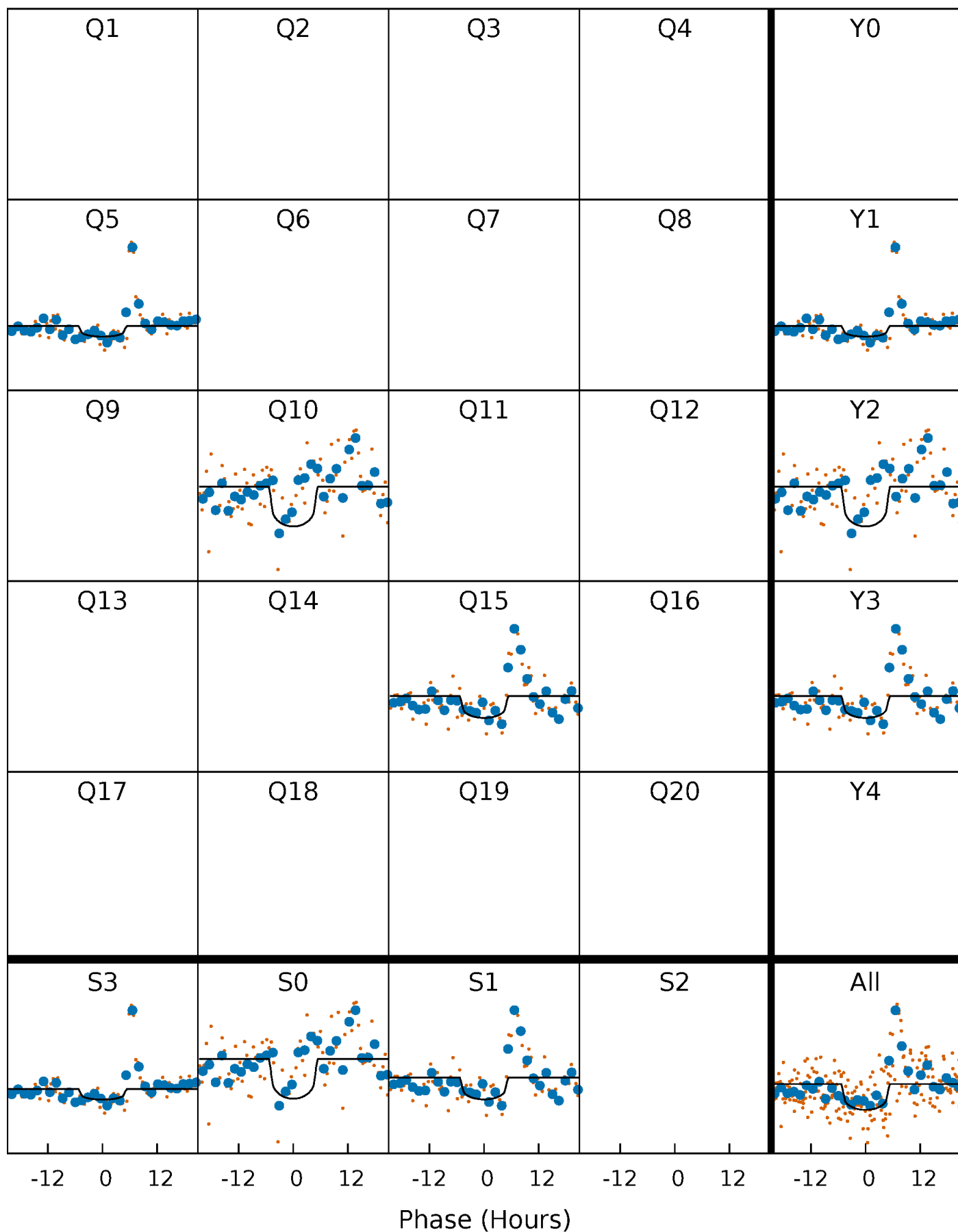
PDC Quarter-Phased Transit Curves

TCE 006866092-02 $P=484.539755$ Days $T_0=480.008462$ (BKJD)



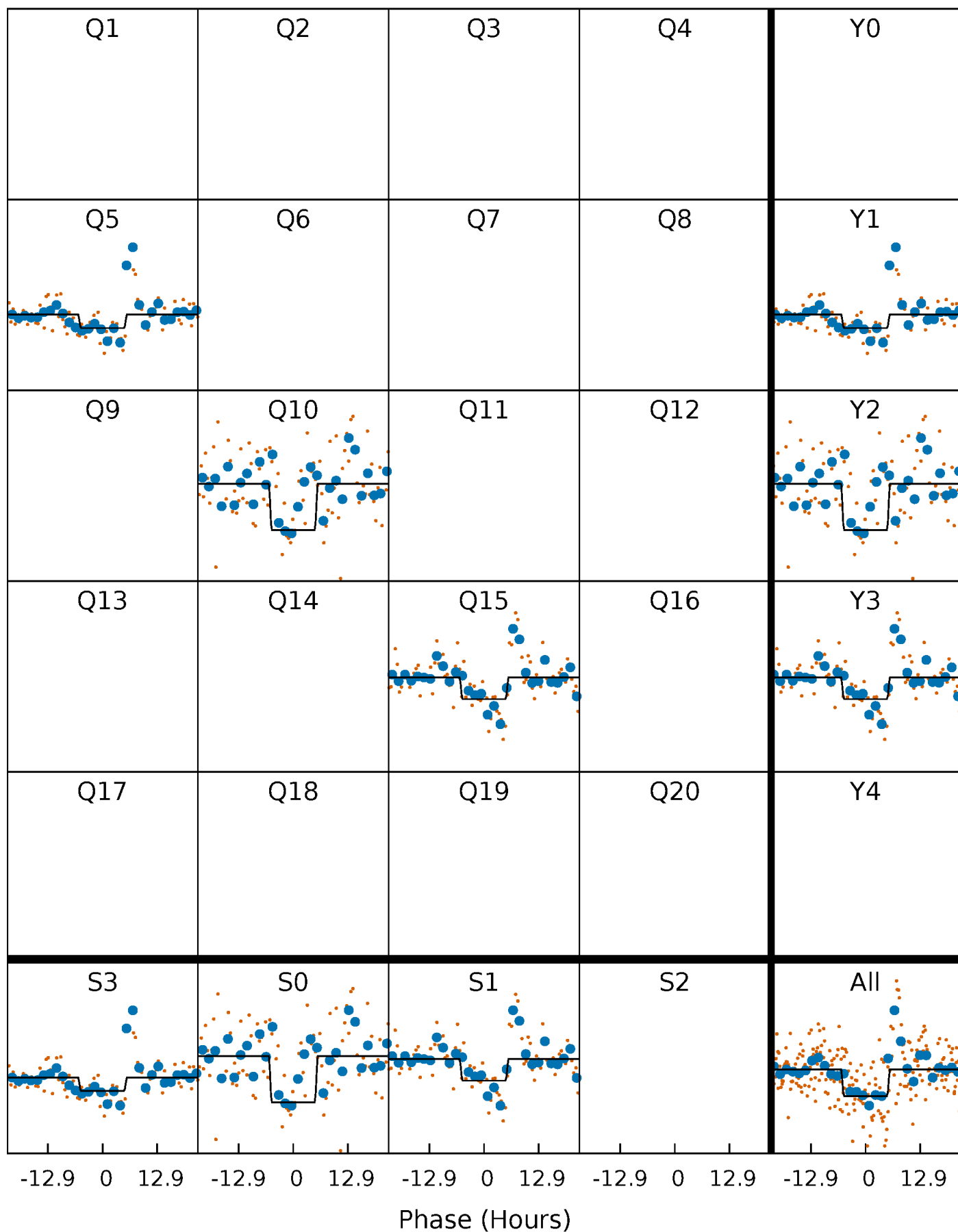
DV Quarter-Phased Transit Curves

TCE 006866092-02 $P=484.539755$ Days $T_0=480.008462$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

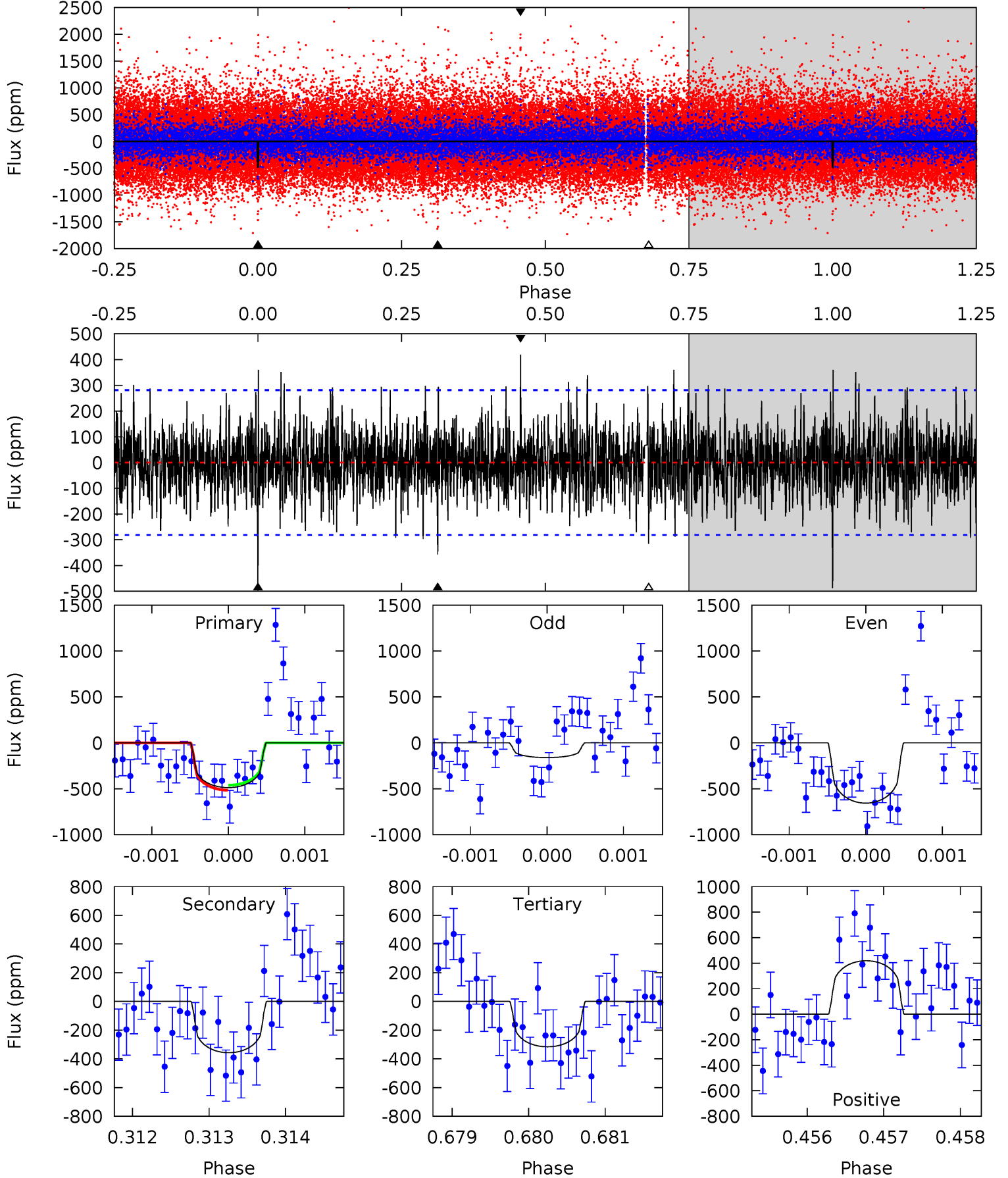
TCE 006866092-02 $P=484.527386$ Days $T_0=480.008813$ (BKJD)



DV Model-Shift Uniqueness Test

006866092-02, P = 484.539755 Days, E = 480.008462 Days

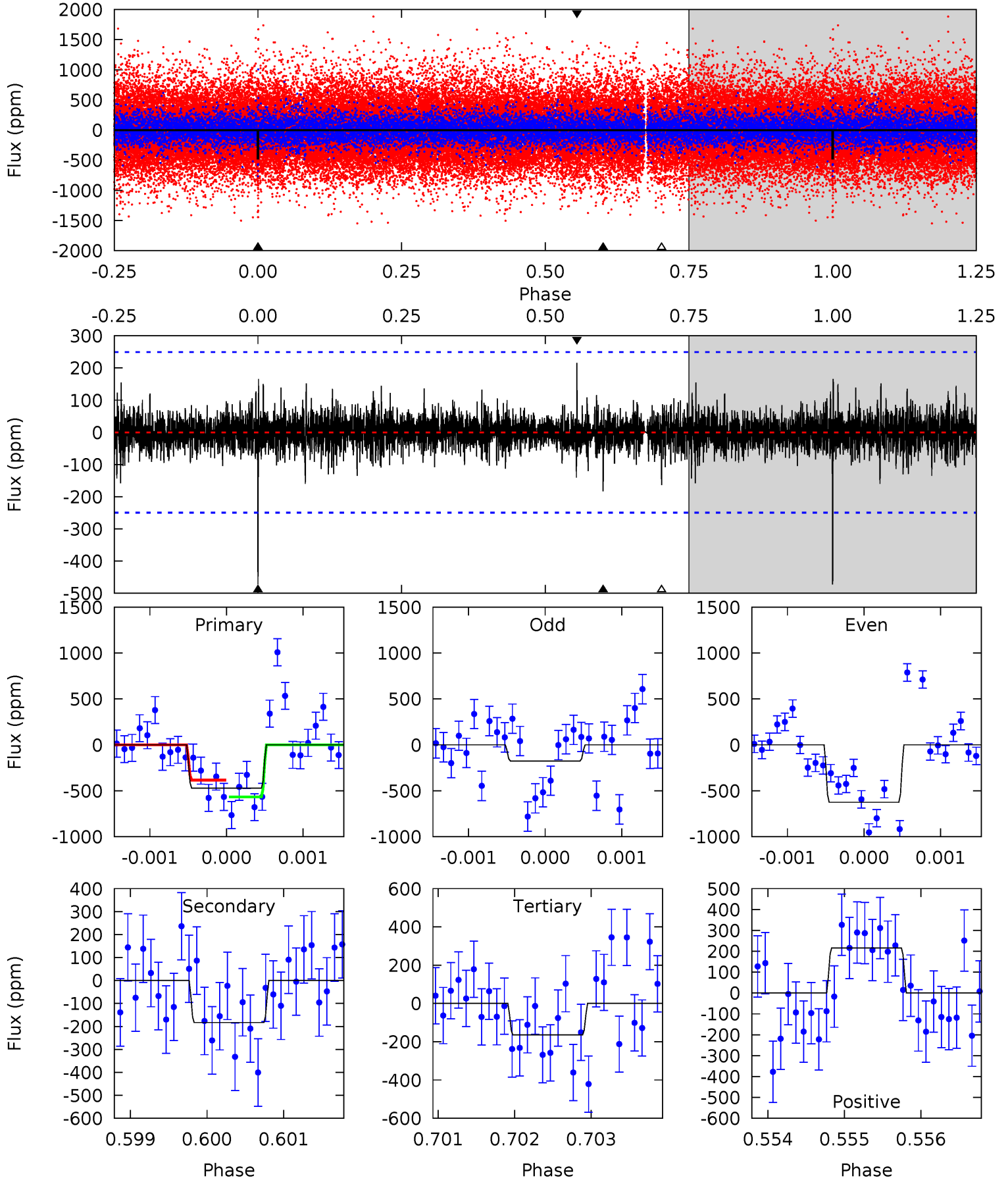
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.46	6.93	6.13	8.14	5.46	3.31	1.78	3.33	1.33	0.80	-1.20	3.96	0.86	0.46	0.52



Alt Model-Shift Uniqueness Test

006866092-02, P = 484.527386 Days, E = 480.008813 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	4.01	3.59	4.72	5.46	3.30	0.79	6.76	5.63	0.42	-0.71	4.54	0.81	0.31	1.99



Stellar Parameters For KIC 006866092

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5302^{+175}_{-159}	$4.437^{+0.123}_{-0.210}$	$-0.020^{+0.300}_{-0.250}$	$0.901^{+0.235}_{-0.126}$	$0.811^{+0.113}_{-0.061}$	$1.560^{+0.783}_{-0.787}$
	+3%/-3%	+3%/-5%	+1500%/-1250%	+26%/-14%	+14%/-8%	+50%/-50%
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 006866092-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-357 ± 51	$2.73^{+1.72}_{-1.38}$	297^{+22}_{-18}	4560^{+1713}_{-728}	33343^{+95861}_{-21174}
Alt.	-183 ± 46	$2.38^{+1.61}_{-1.47}$	295^{+22}_{-17}	4218^{+2100}_{-729}	$22421^{+122636}_{-15002}$

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 $A_{obs} \gg 1.0$

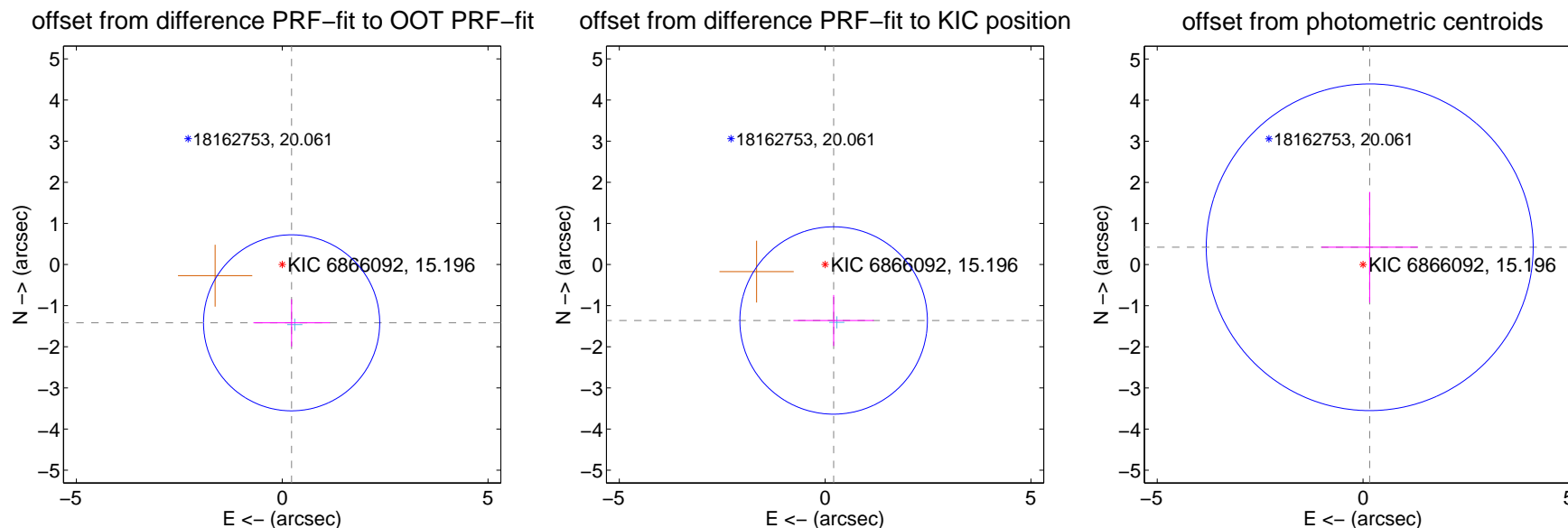
DV Centroid Data

Supplemental centroid analysis for 006866092-02. Kepler magnitude: 15.20. Transit SNR 6.79

There are 1 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.435 ± 0.713	2.01	-0.228 ± 0.929	-1.417 ± 0.574
PRF-fit source offset from KIC position	1.375 ± 0.759	1.81	-0.207 ± 0.977	-1.360 ± 0.620
photometric centroid source offset	0.45 ± 1.32	0.34	-0.16 ± 1.17	0.42 ± 1.35

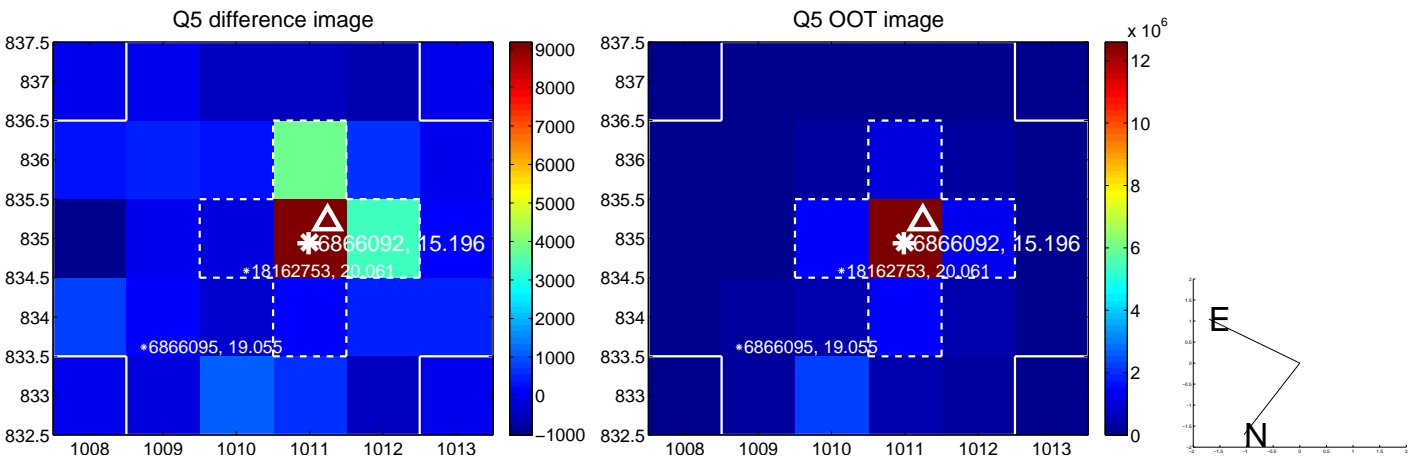


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

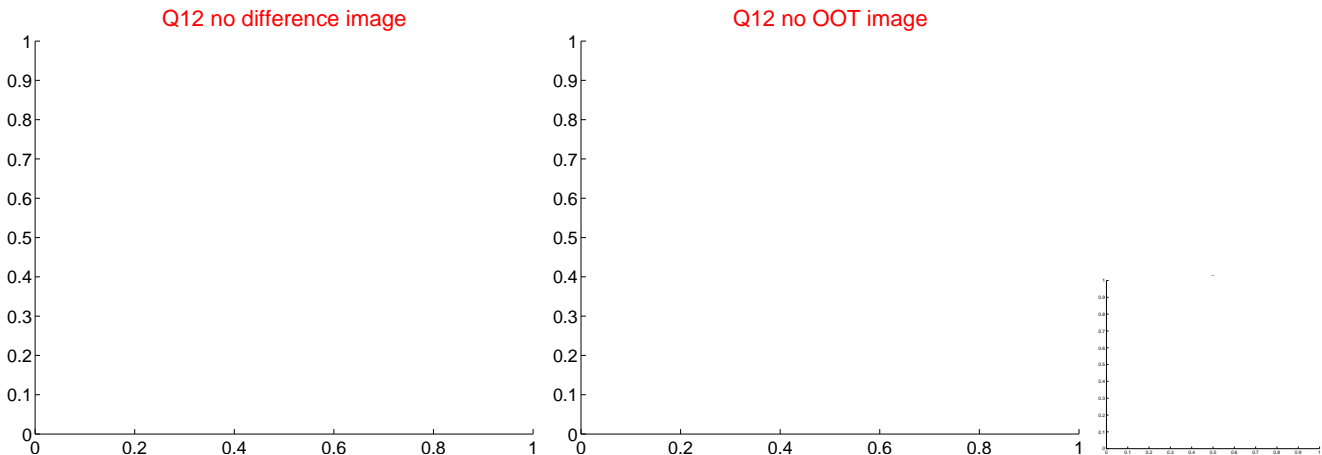
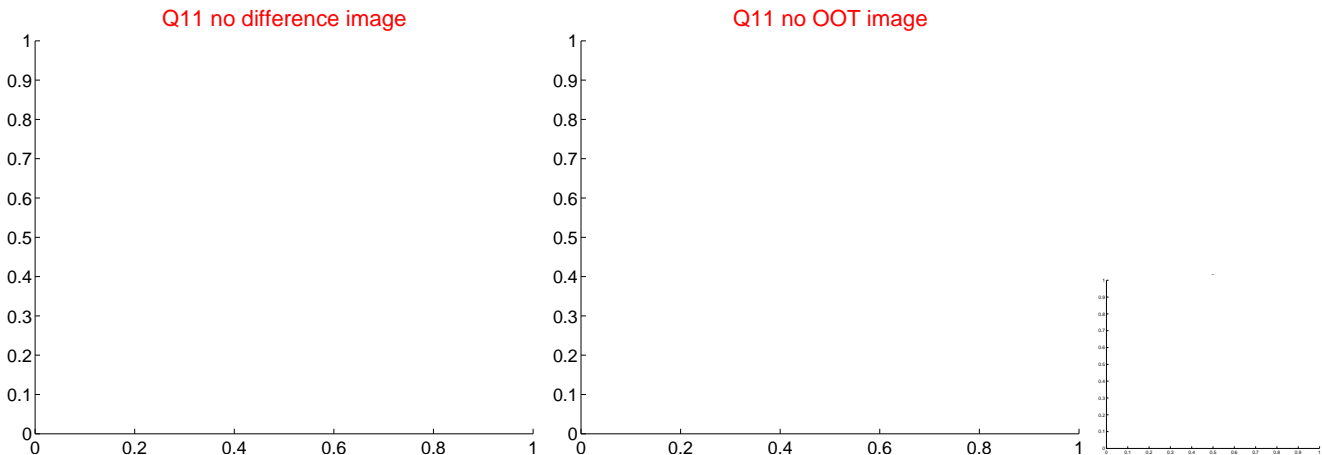
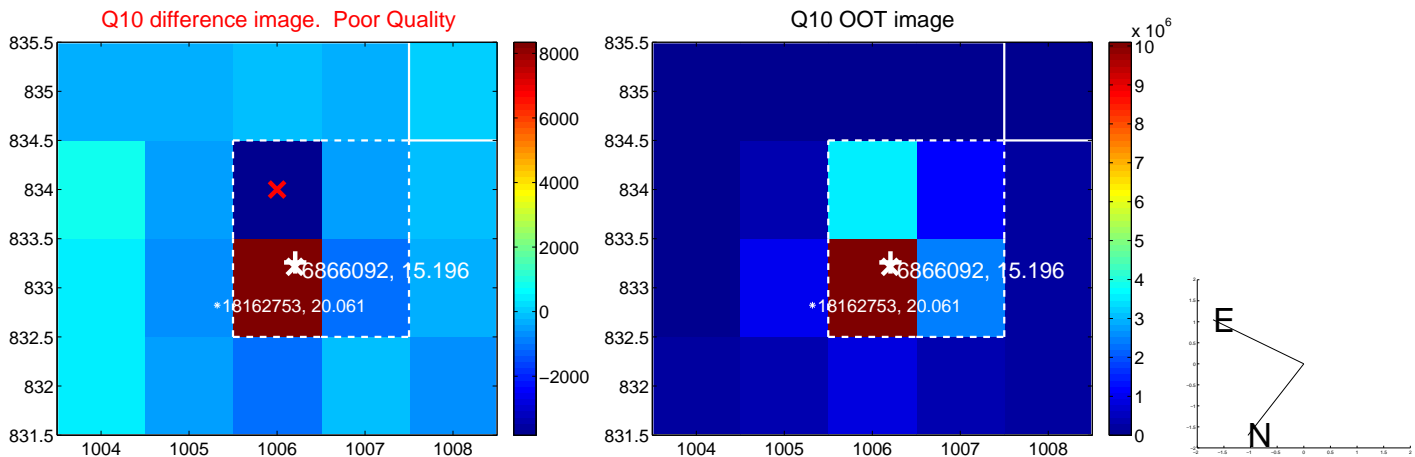
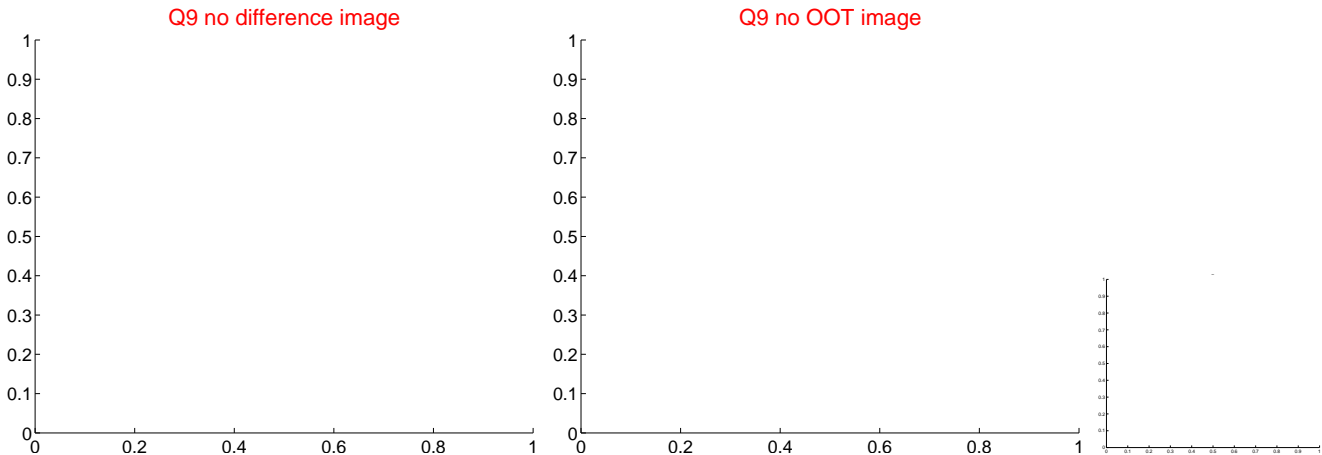
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



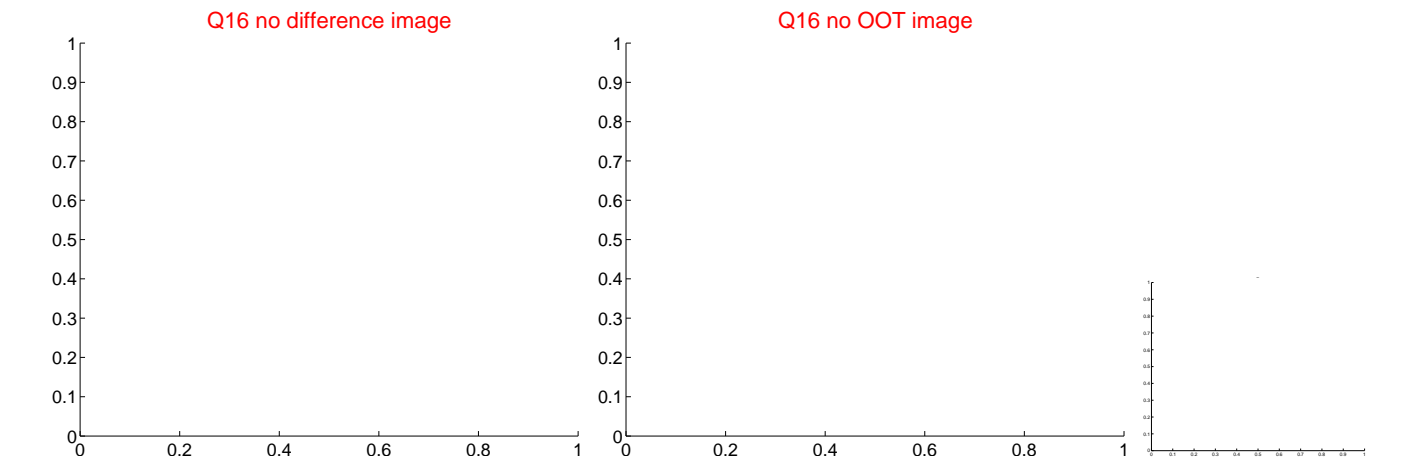
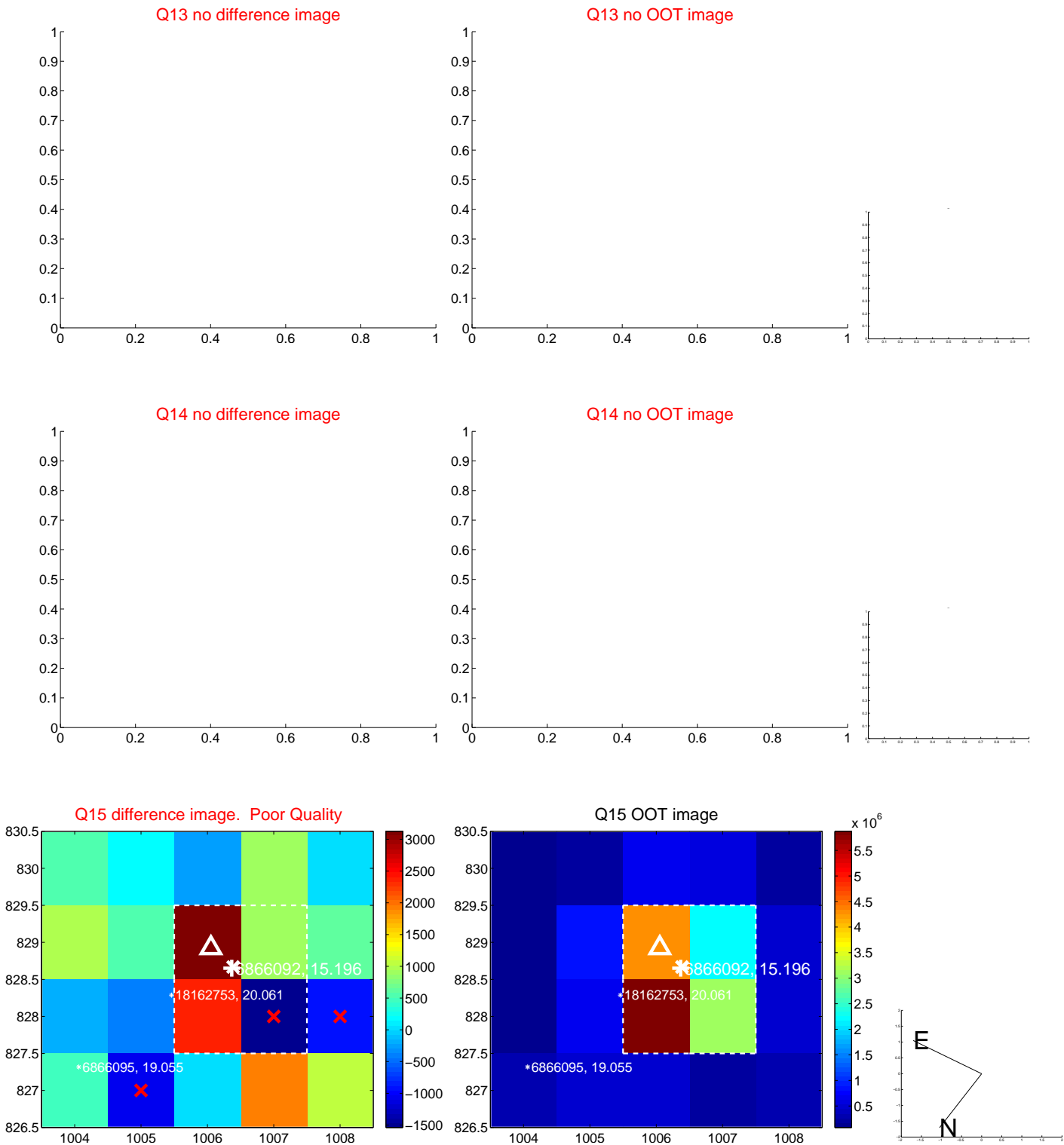
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



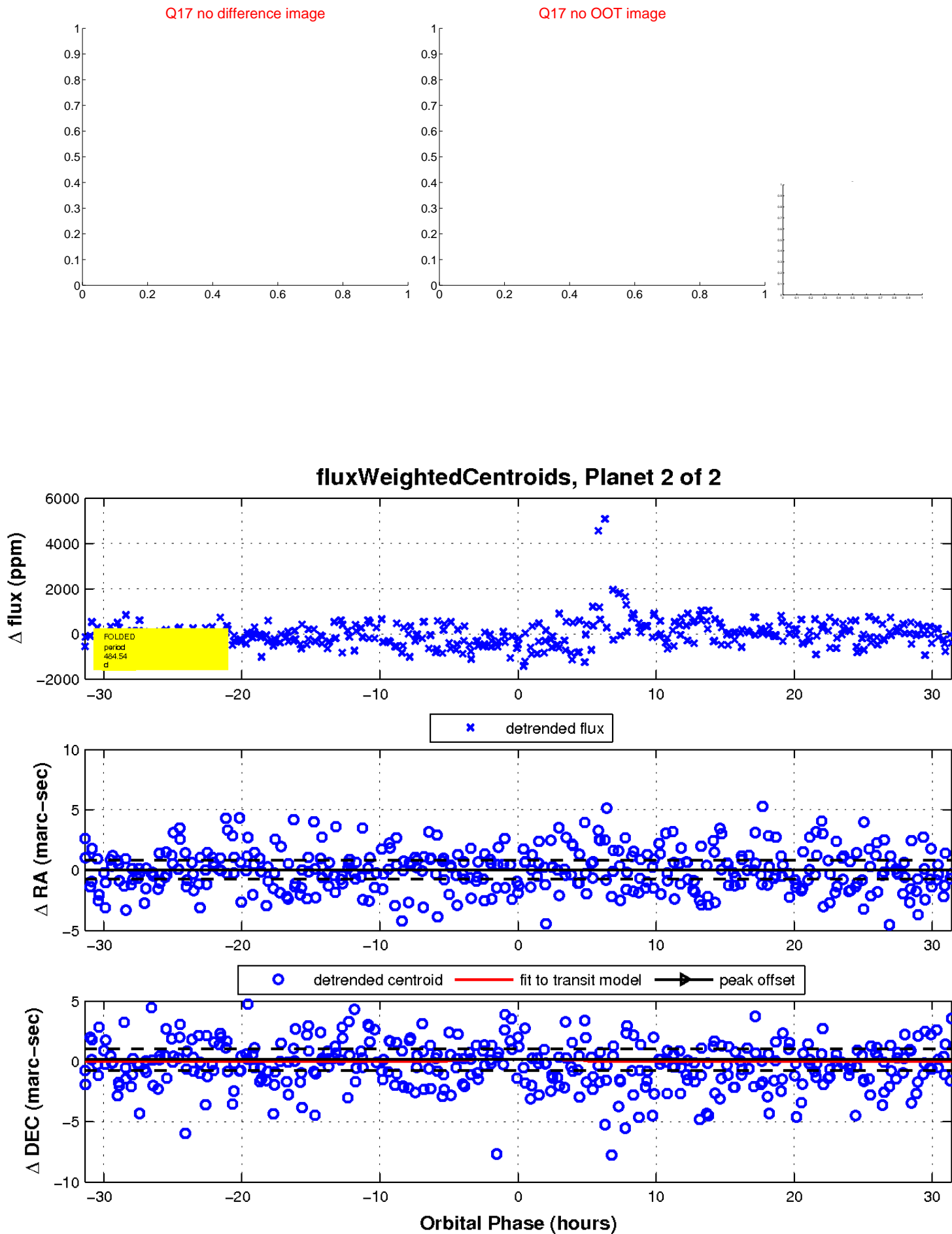
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

Declination

