

KIC 010921242

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})
010921242-01	OBS	No	178.400589	309.942789	234.3	1.333	16.0	2.7	0.87	6105	1.63	2.61
010921242-02	OBS	No	337.199045	437.071401	818.4	5.341	16.6	5.8	0.87	6105	2.50	1.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010921242-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
010921242-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

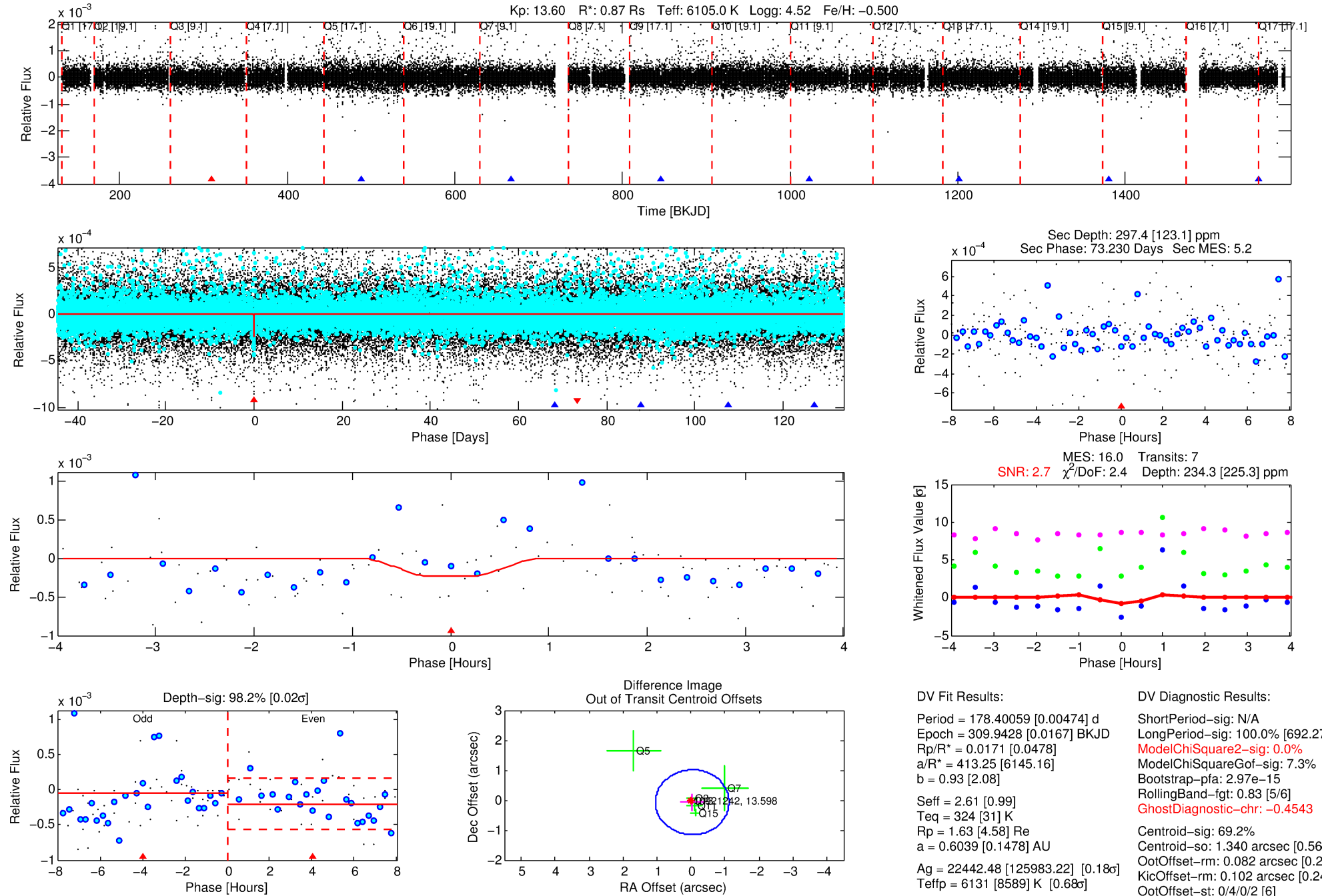
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010921242-01

No Significant Match Found

DV One-Page Summary

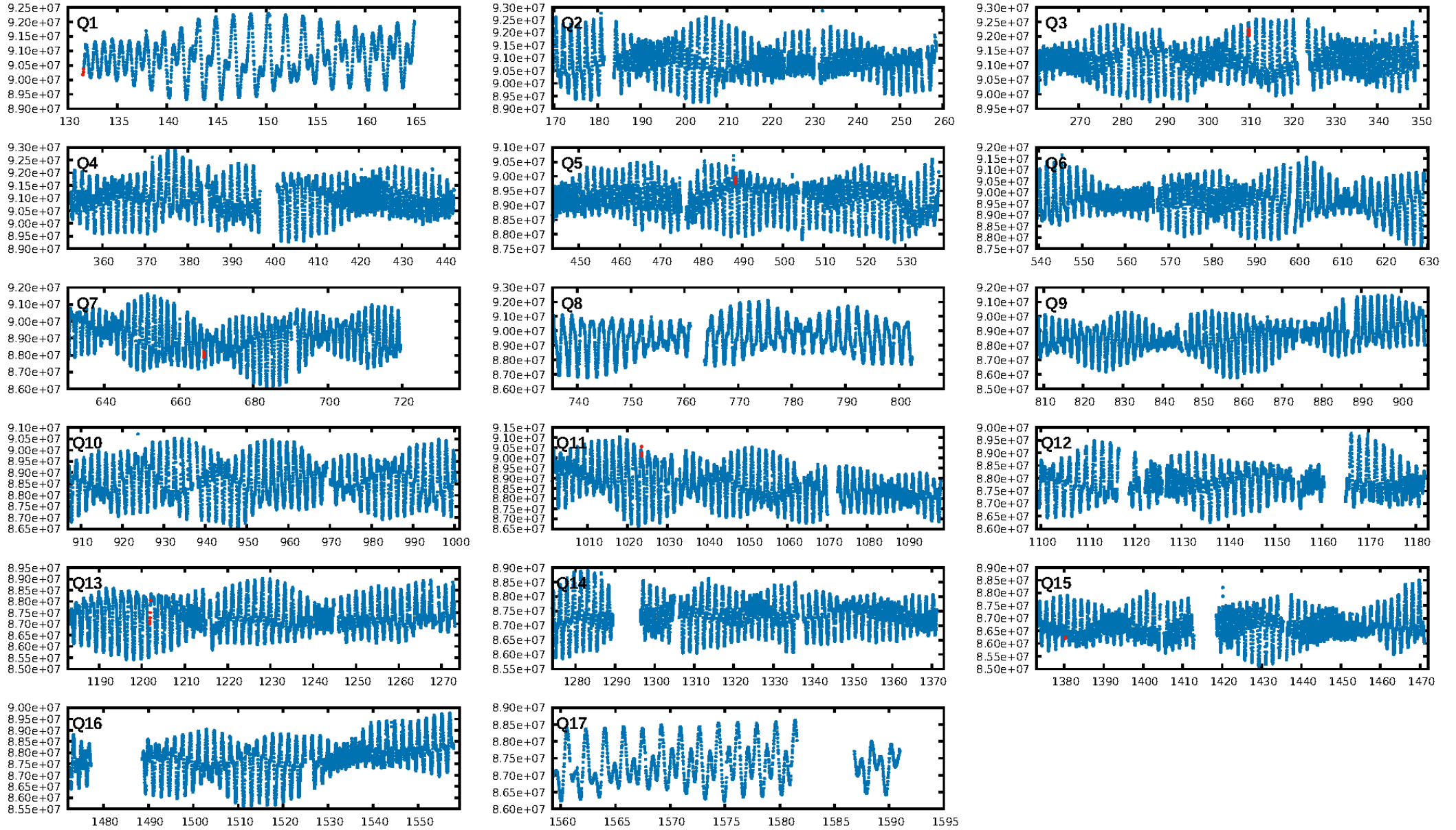
KIC: 10921242 Candidate: 1 of 2 Period: 178.401 d



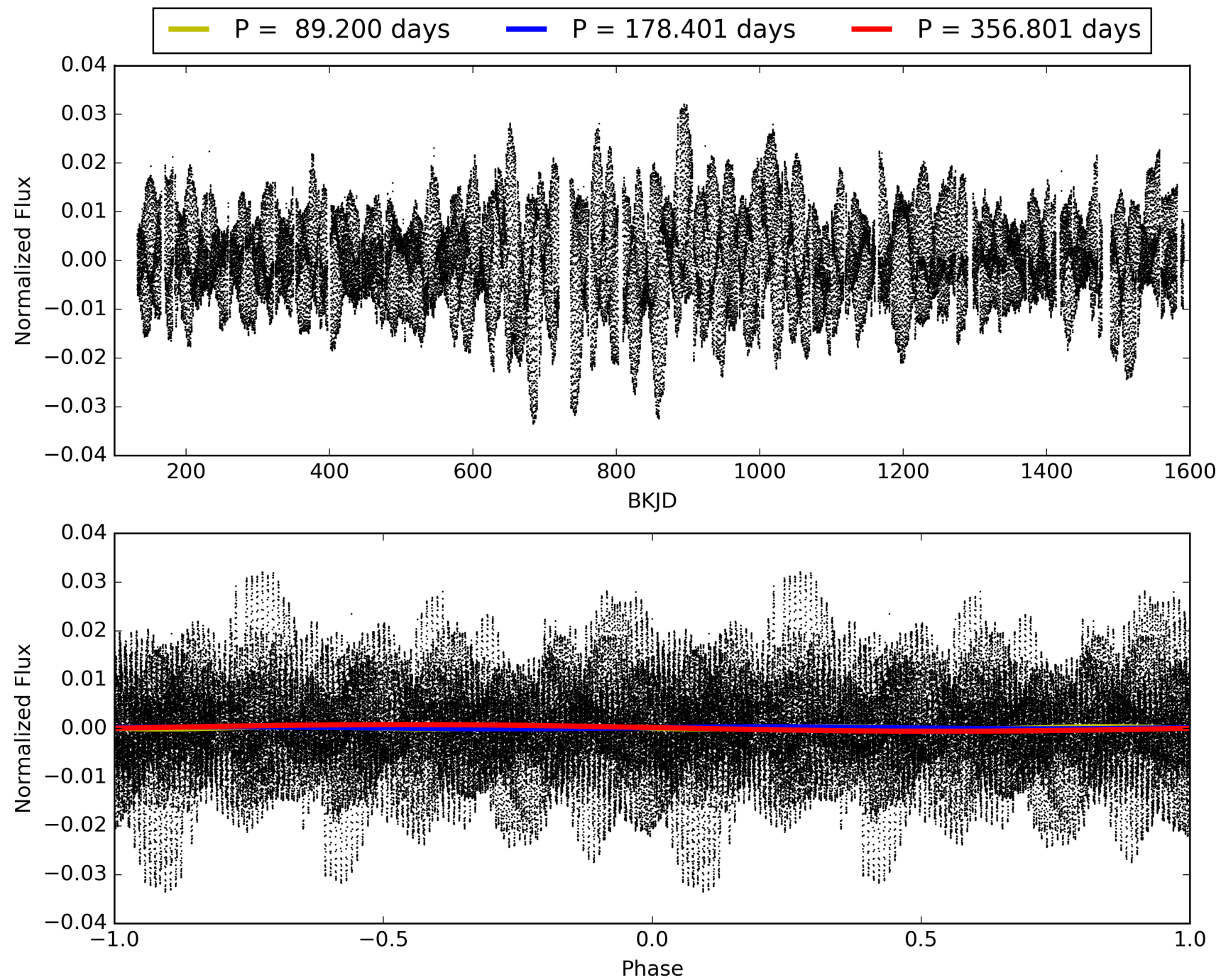
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010921242-01, PDC Light Curves

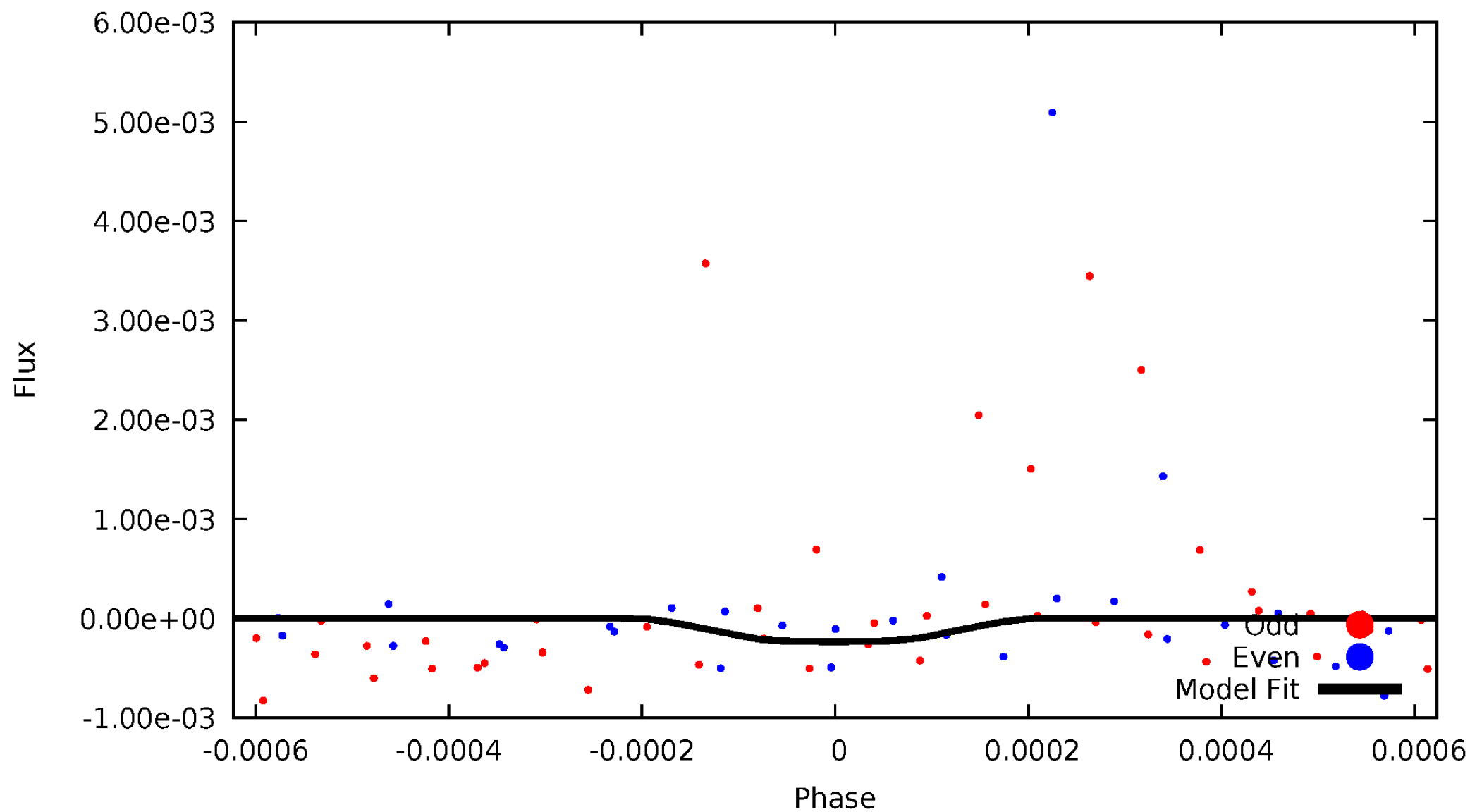


TCE 010921242-01



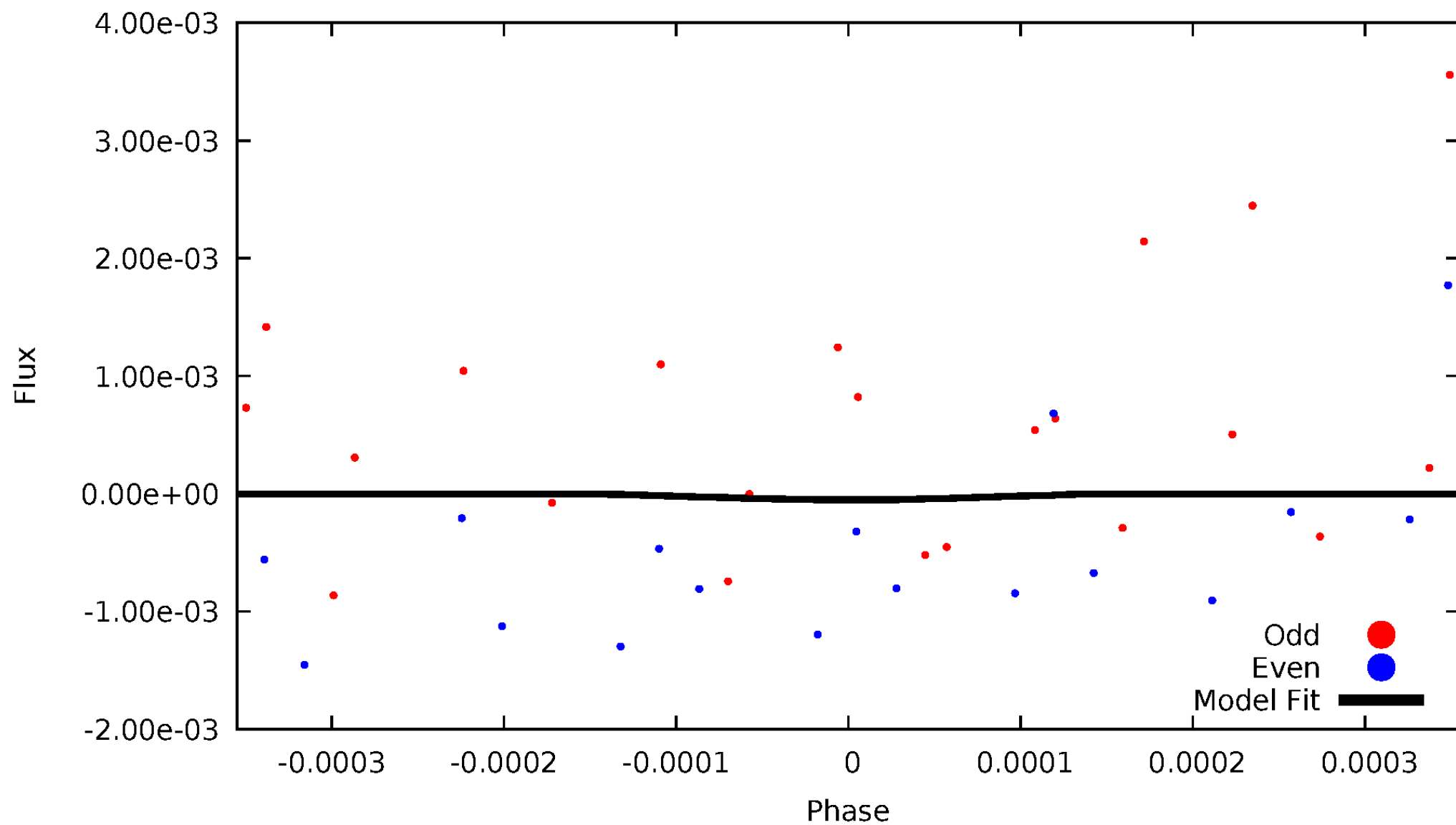
DV Odd/Even

TCE 010921242-01

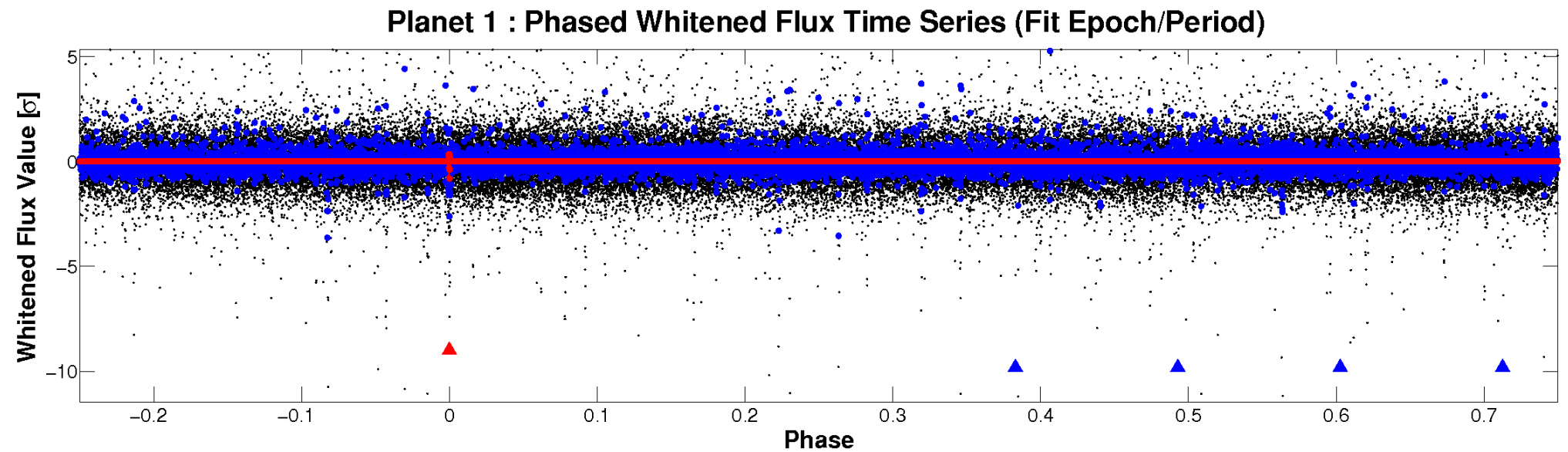
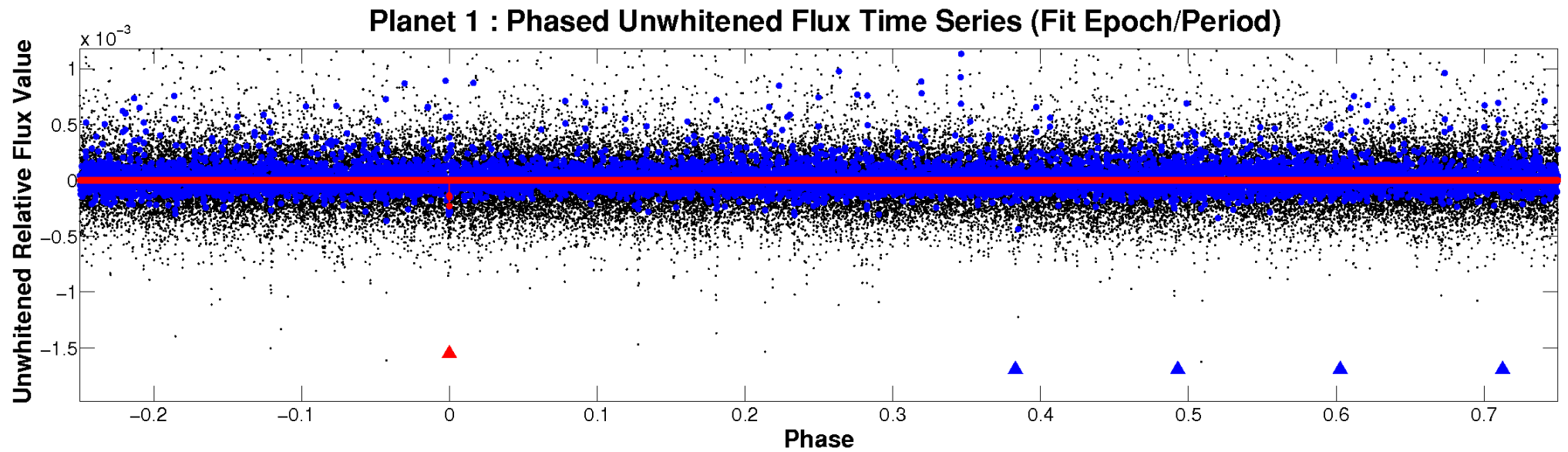


ALT Odd/Even

TCE 010921242-01

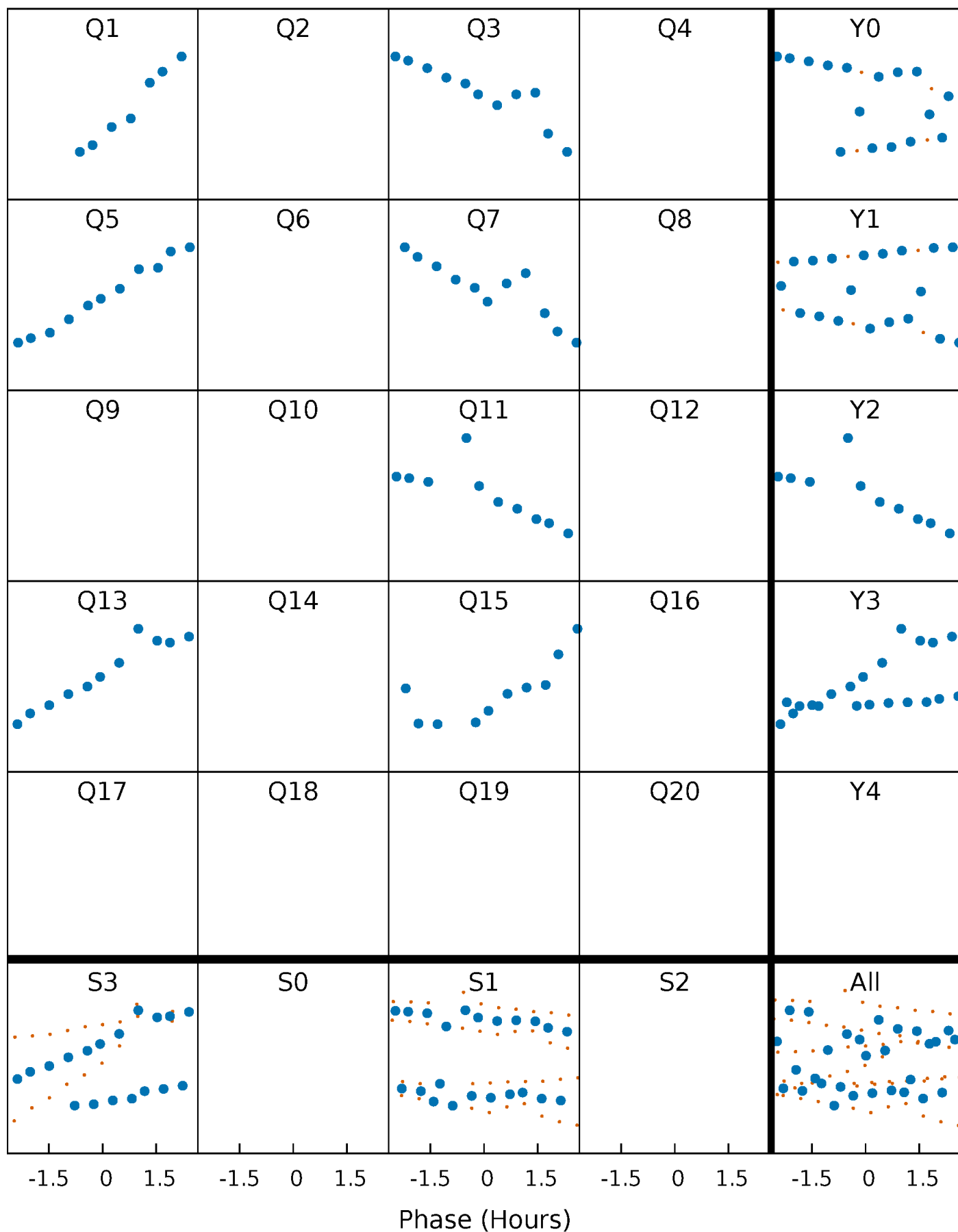


Non-Whitened Vs. Whitened Light Curve



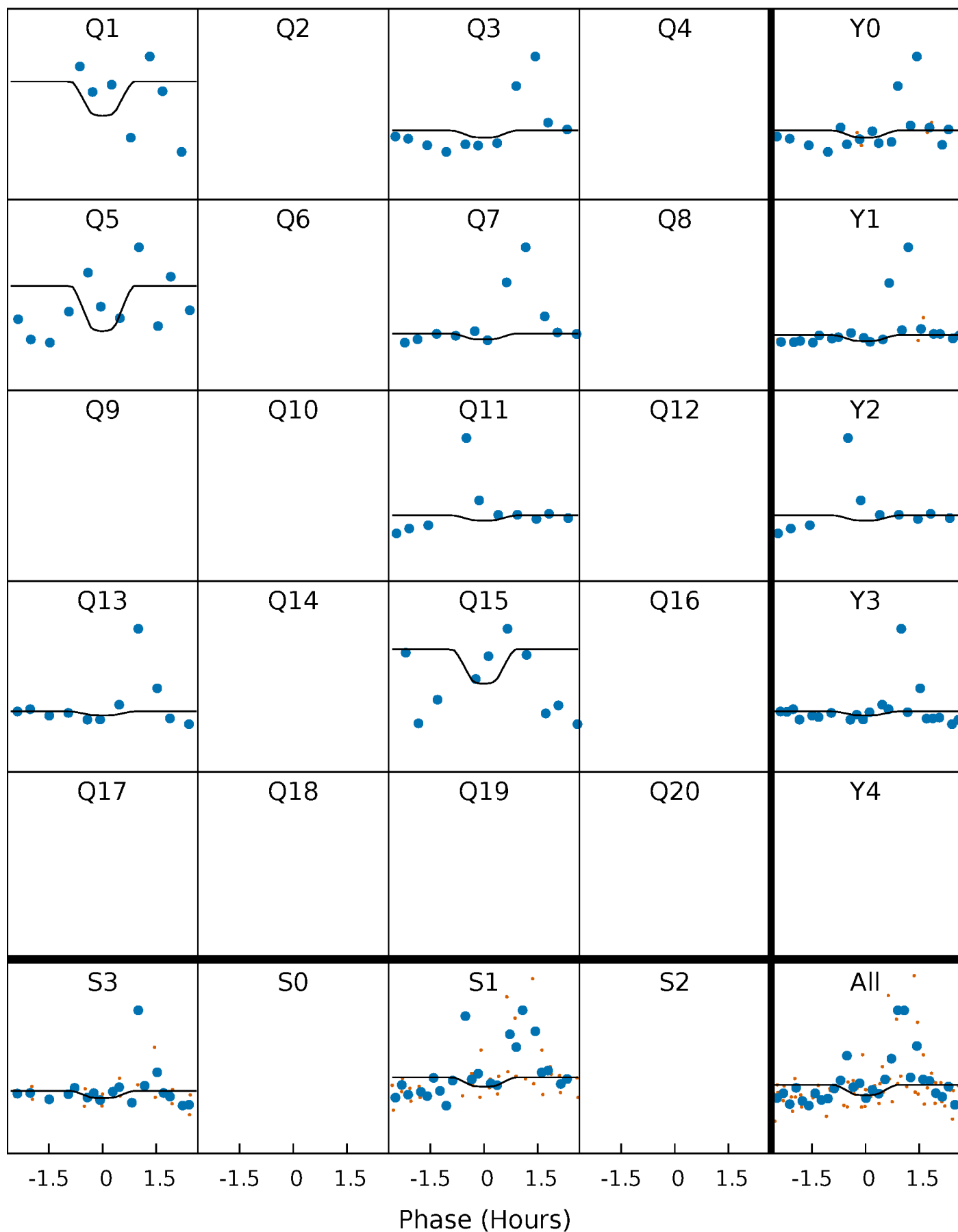
PDC Quarter-Phased Transit Curves

TCE 010921242-01 P=178.400589 Days $T_0=309.942789$ (BKJD)



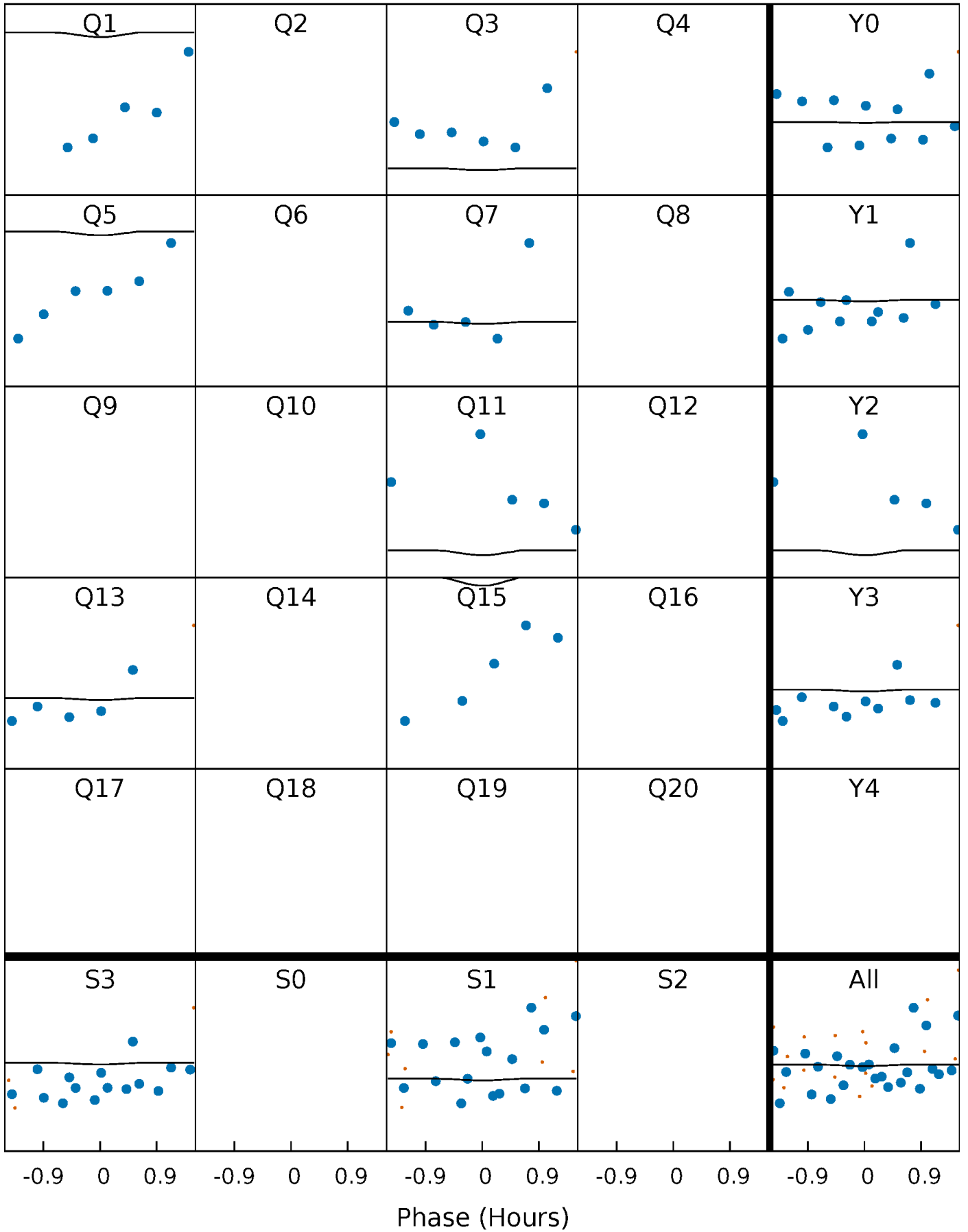
DV Quarter-Phased Transit Curves

TCE 010921242-01 P=178.400589 Days $T_0=309.942789$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

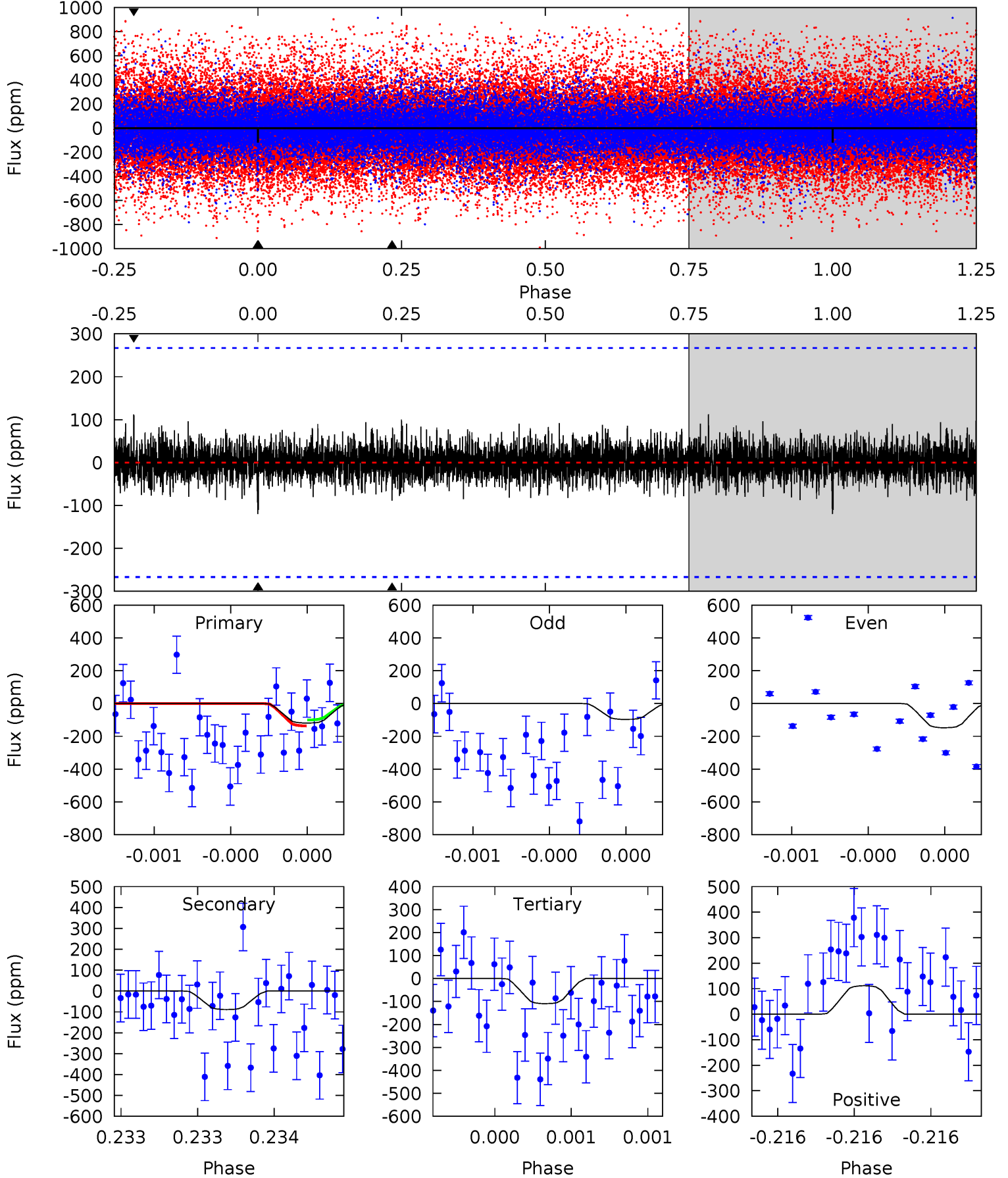
TCE 010921242-01 P=178.401427 Days $T_0=309.937050$ (BKJD)



DV Model-Shift Uniqueness Test

010921242-01, P = 178.400589 Days, E = 131.542200 Days

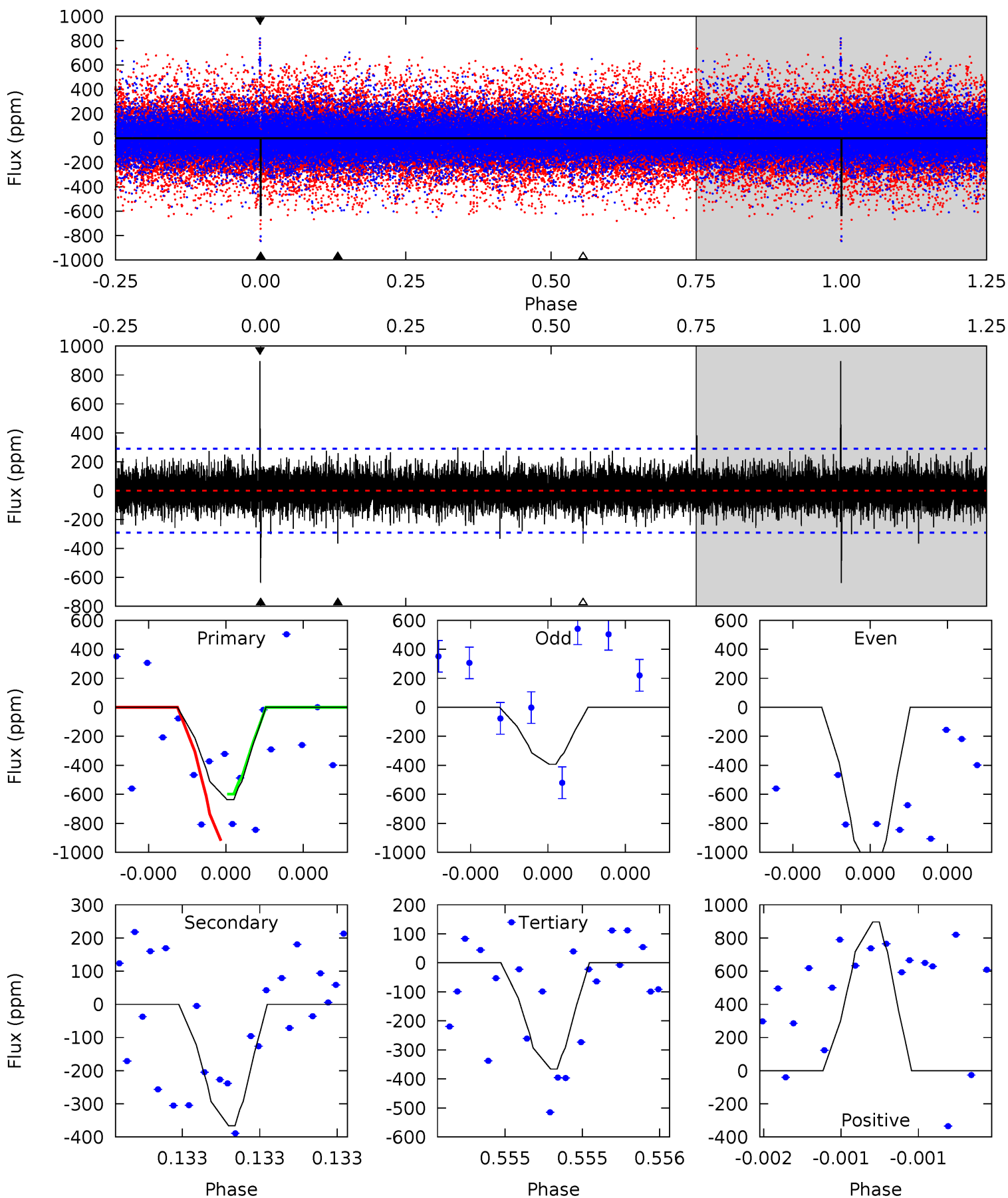
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.51	1.87	2.31	2.35	5.61	3.54	0.55	0.20	0.16	-0.44	-0.48	0.54	-0.67	0.48	0.39



Alt Model-Shift Uniqueness Test

010921242-01, P = 178.401427 Days, E = 131.535623 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	7.16	7.16	17.6	5.68	3.64	1.43	5.32	-5.07	0.00	-10.4	7.62	0.66	0.58	0



Stellar Parameters For KIC 010921242

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6105^{+163}_{-181}	$4.520^{+0.050}_{-0.200}$	$-0.500^{+0.300}_{-0.300}$	$0.874^{+0.250}_{-0.083}$	$0.922^{+0.109}_{-0.109}$	$1.948^{+0.507}_{-1.021}$
	+3%/-3%	+1%/-4%	+60%/-60%	+29%/-9%	+12%/-12%	+26%/-52%
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 010921242-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-89 ± 48	$4.06^{+4.13}_{-2.82}$	462^{+31}_{-22}	3359^{+1985}_{-642}	927^{+10534}_{-728}
Alt.	-366 ± 51	$3.45^{+3.52}_{-2.33}$	461^{+32}_{-20}	4687^{+3656}_{-1061}	6171^{+54684}_{-4740}

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 $A_{obs} \gg 1.0$

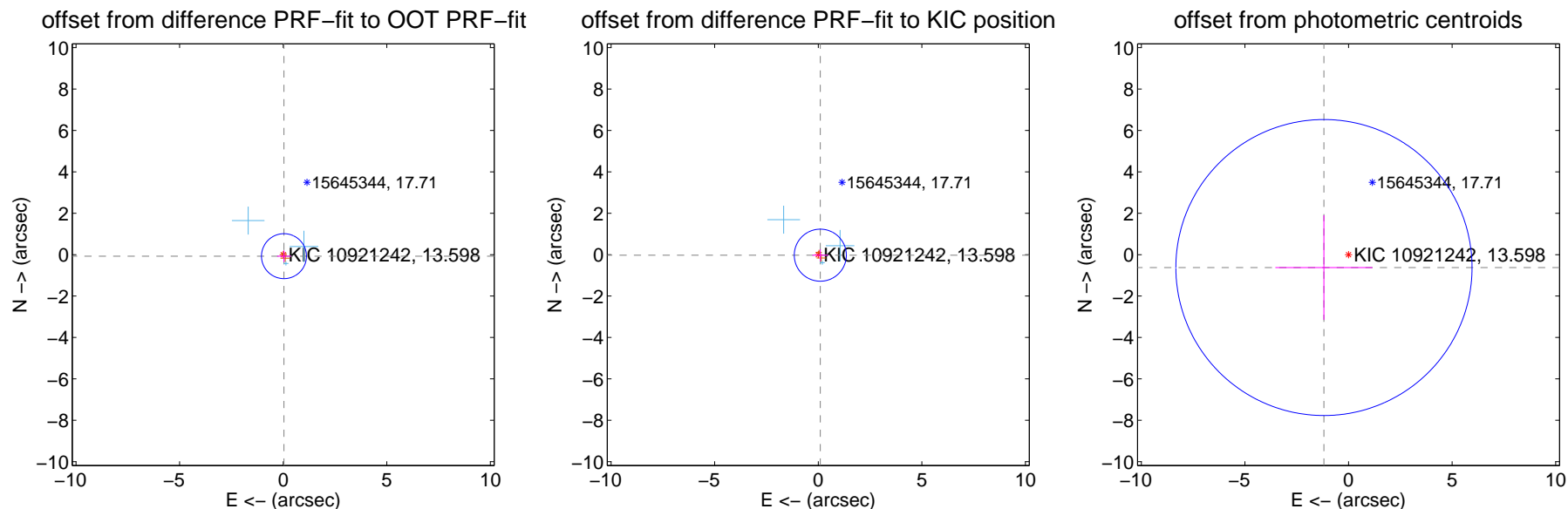
DV Centroid Data

Supplemental centroid analysis for 010921242-01. Kepler magnitude: 13.60. Transit SNR 2.66

There are 3 quarters with good PRF difference image offsets

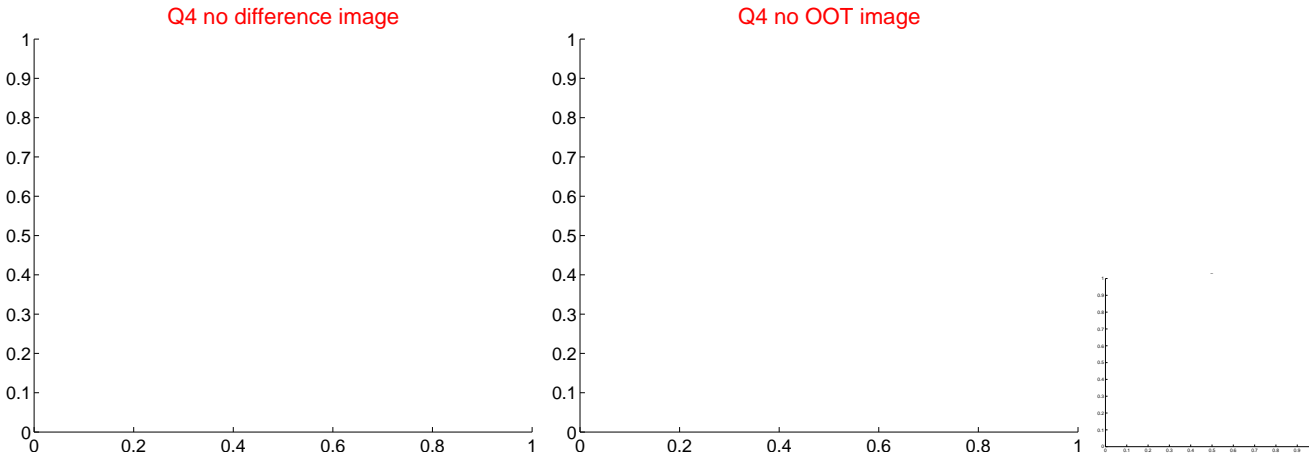
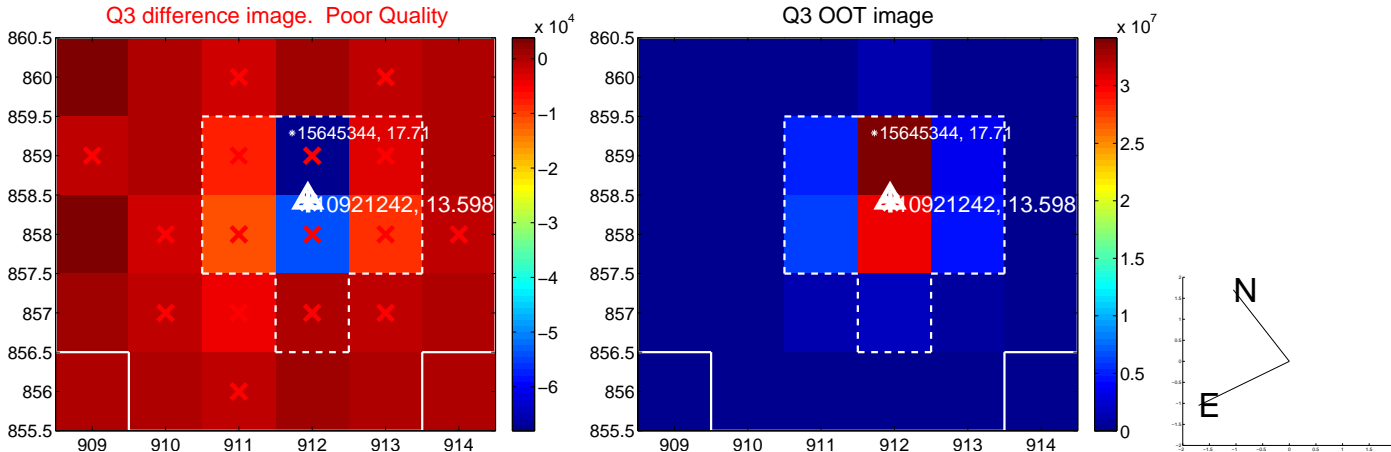
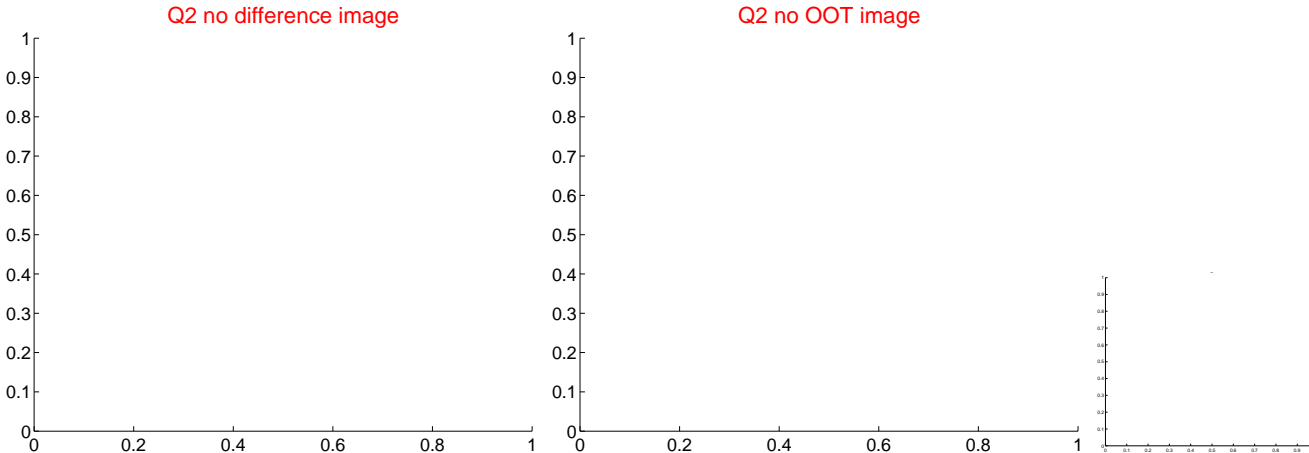
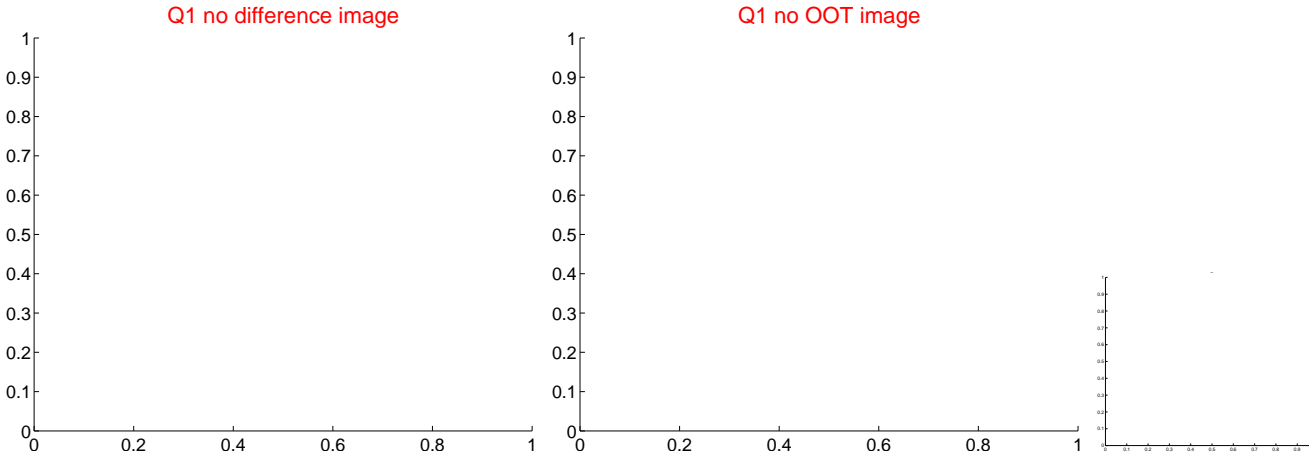
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.082 ± 0.362	0.23	-0.038 ± 0.336	-0.073 ± 0.277
PRF-fit source offset from KIC position	0.102 ± 0.419	0.24	-0.099 ± 0.382	-0.026 ± 0.282
photometric centroid source offset	1.34 ± 2.38	0.56	1.19 ± 2.34	-0.62 ± 2.52

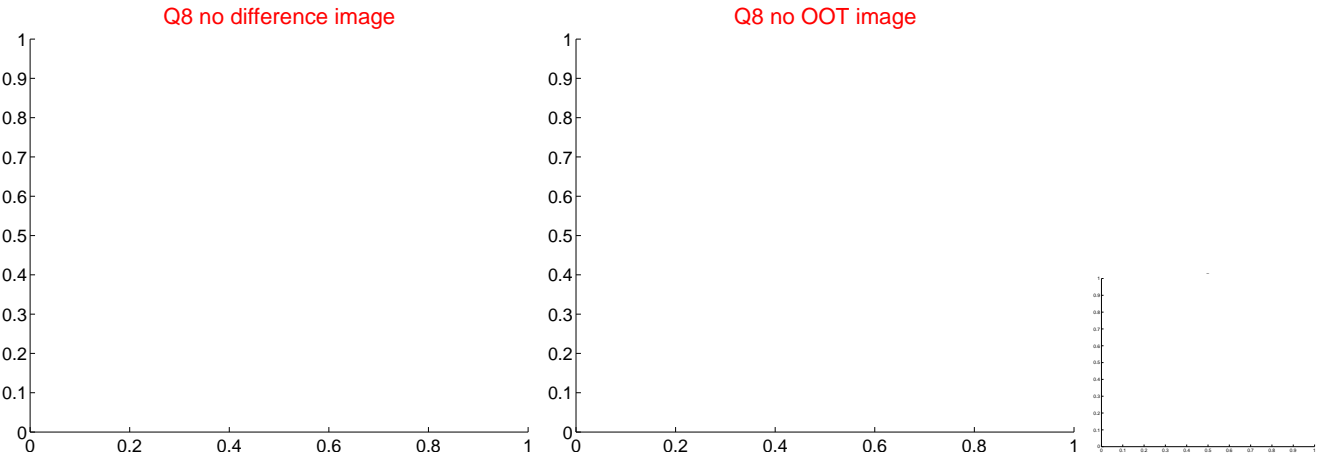
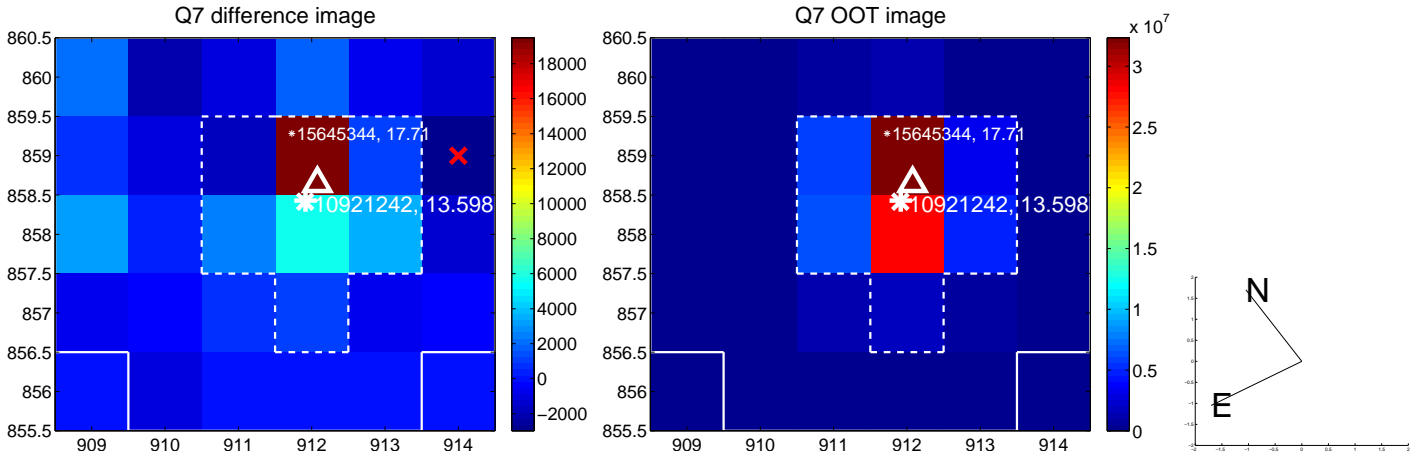
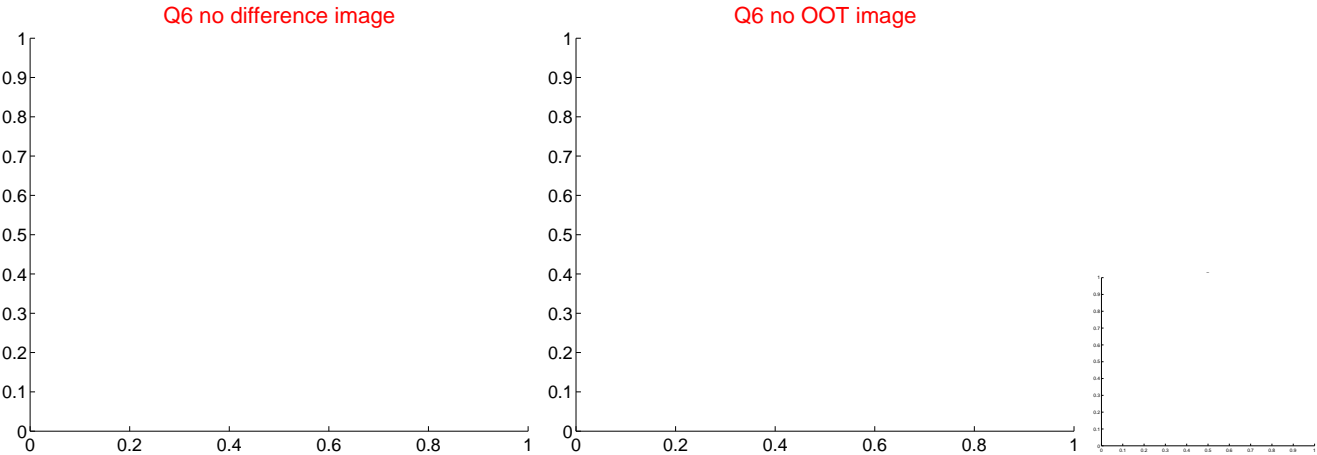
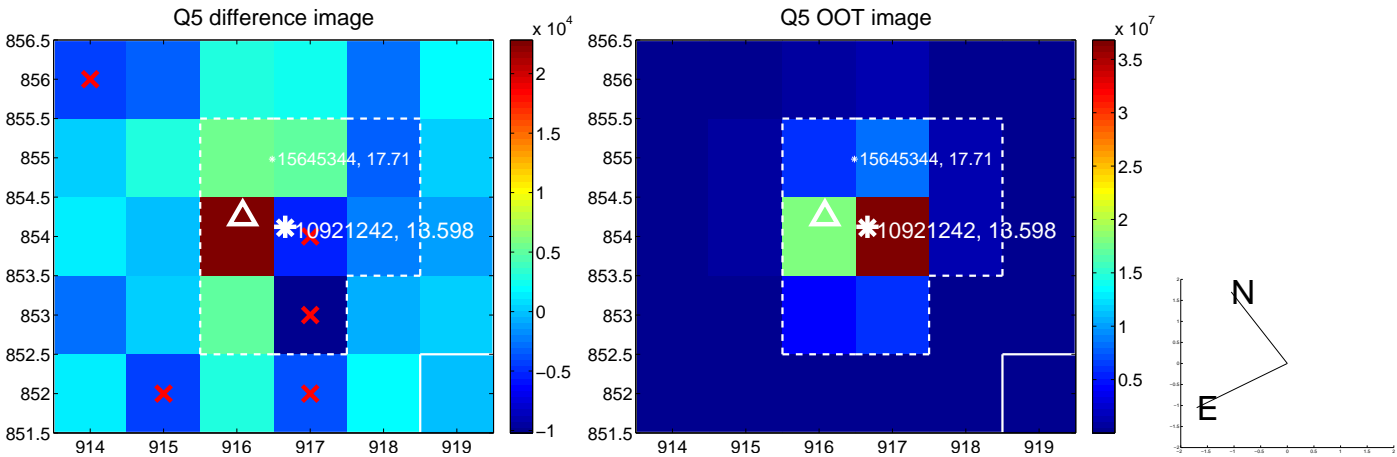


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

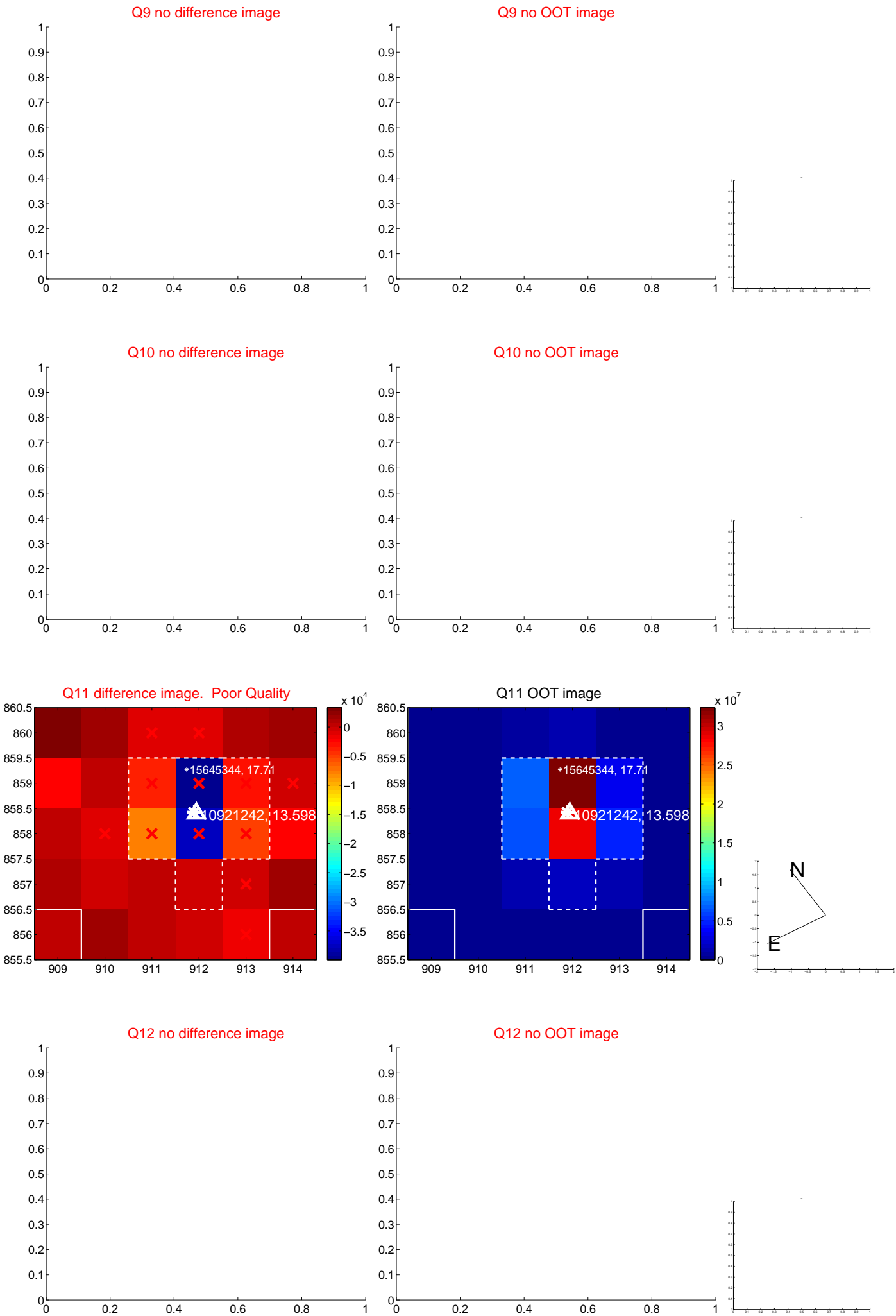
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



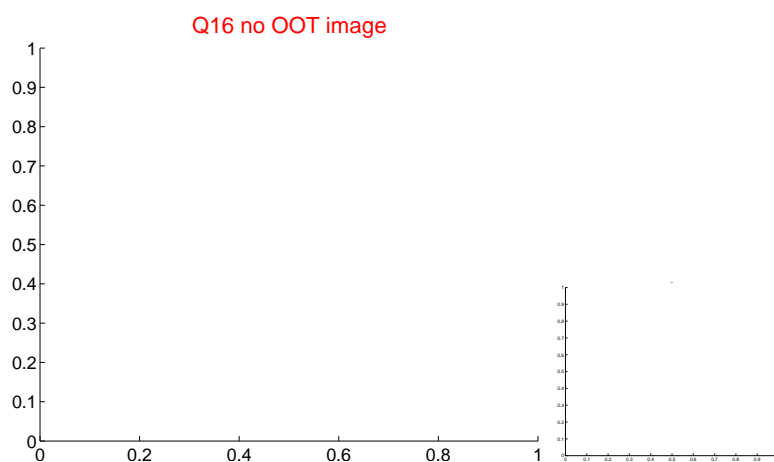
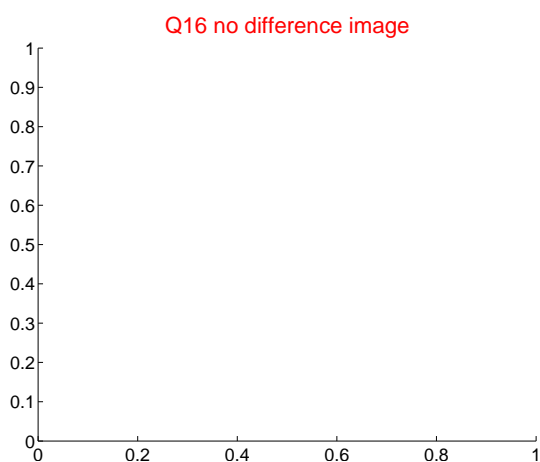
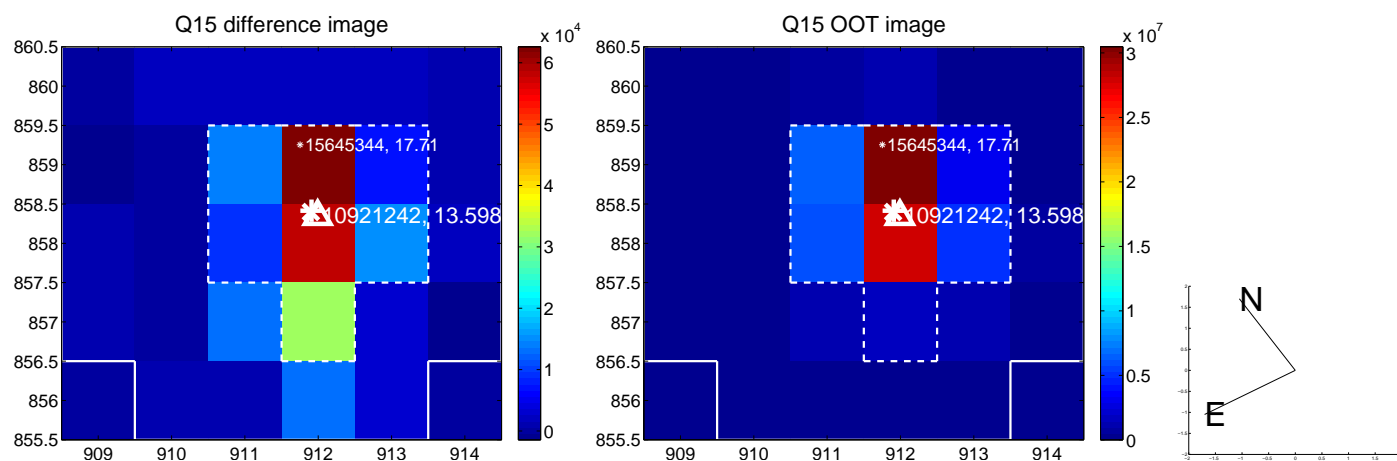
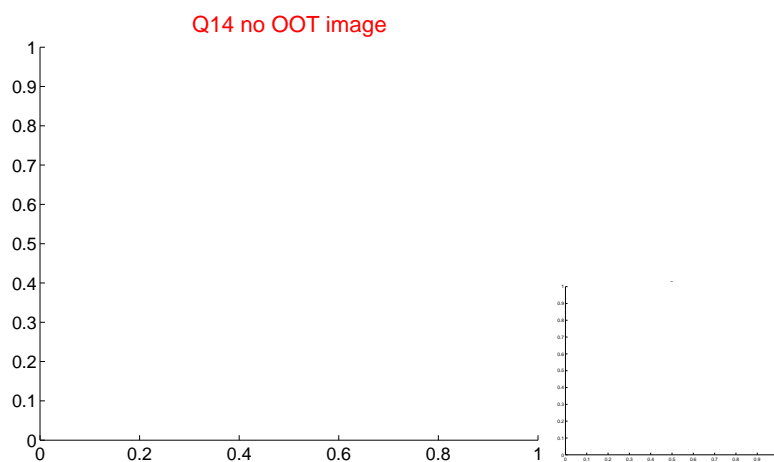
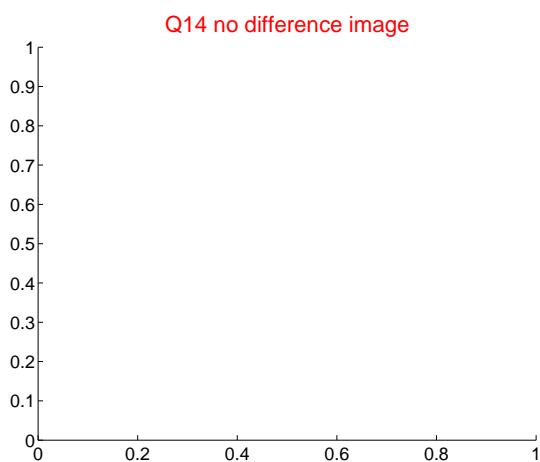
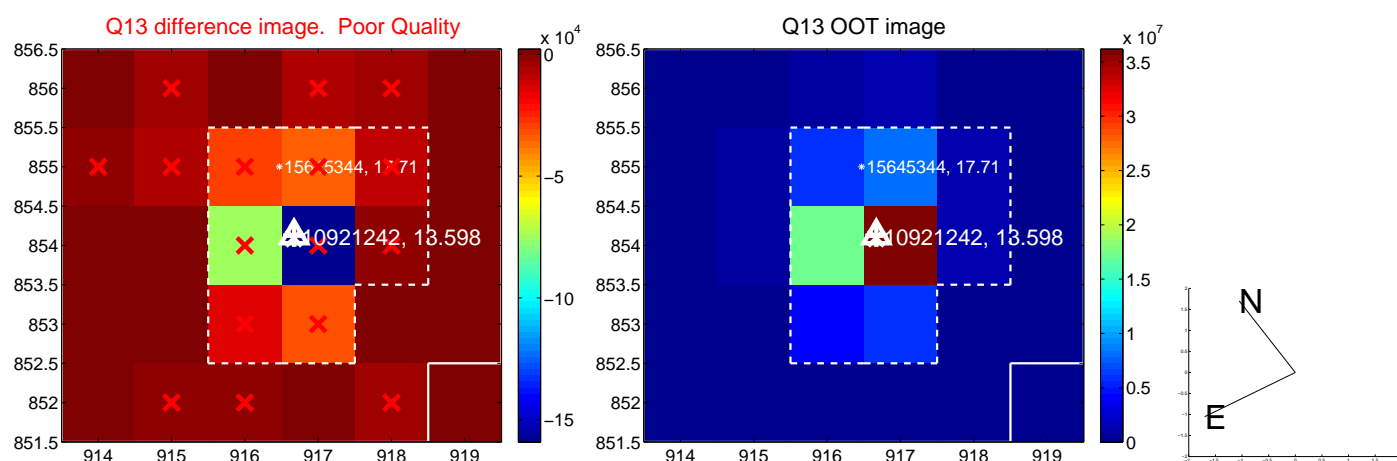
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



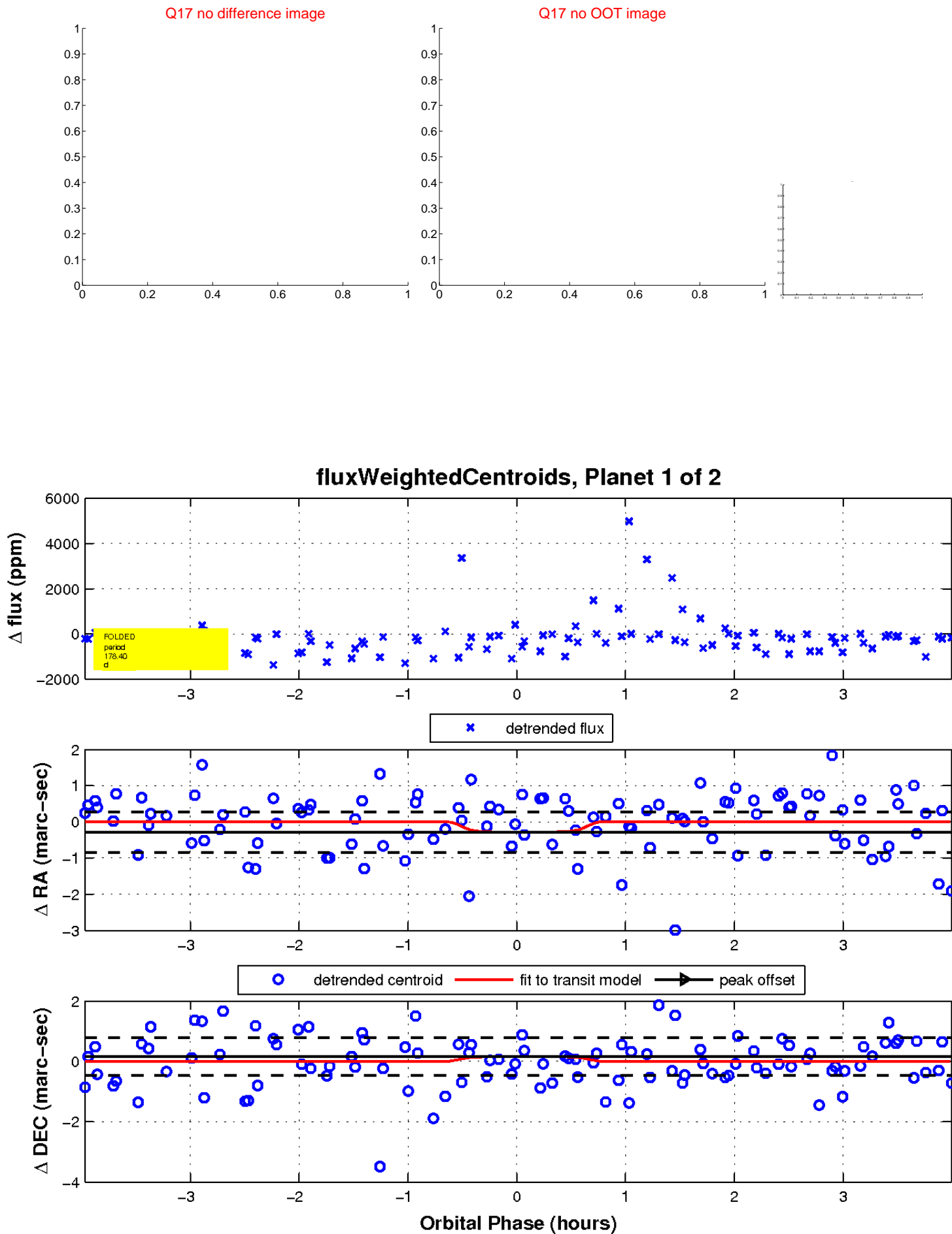
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

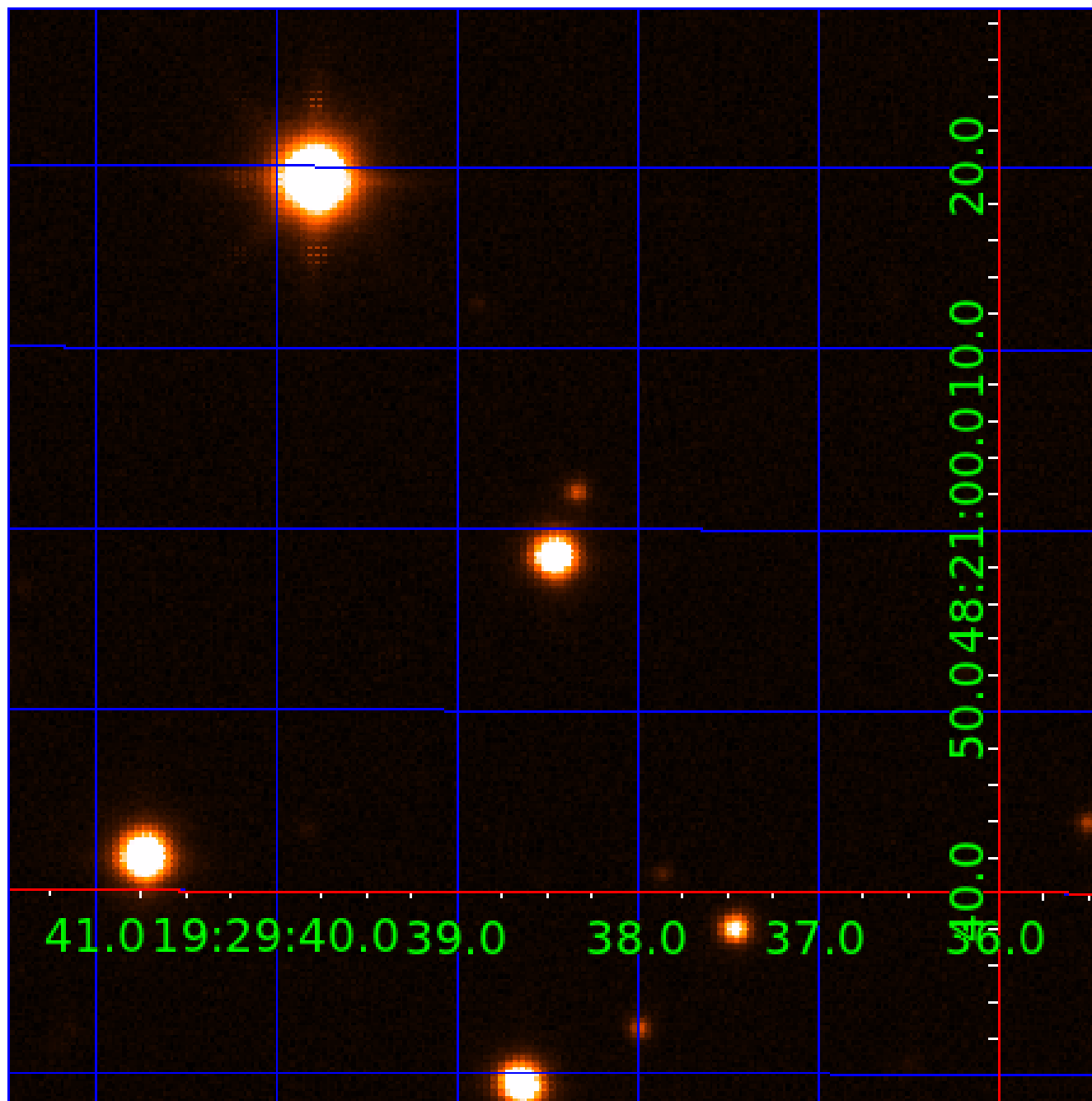


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010921242

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})
010921242-01	OBS	No	178.400589	309.942789	234.3	1.333	16.0	2.7	0.87	6105	1.63	2.61
010921242-02	OBS	No	337.199045	437.071401	818.4	5.341	16.6	5.8	0.87	6105	2.50	1.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010921242-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
010921242-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

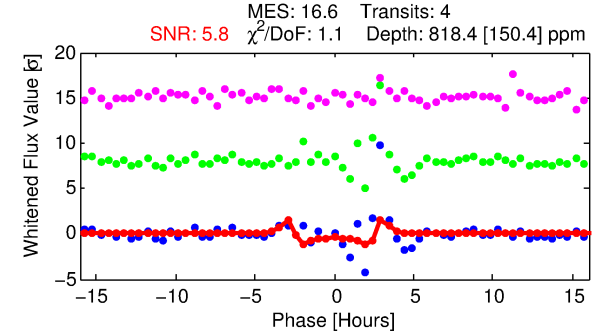
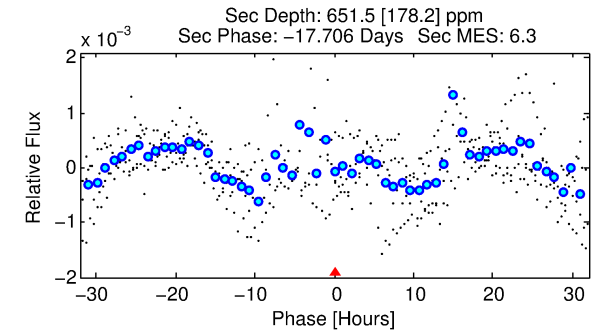
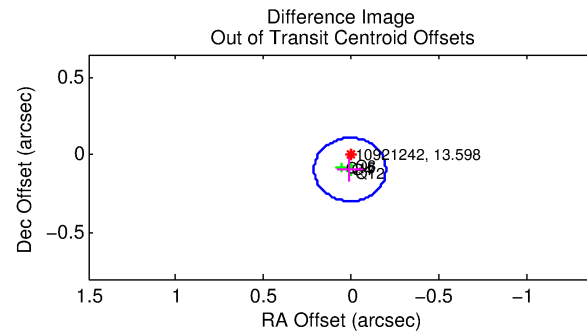
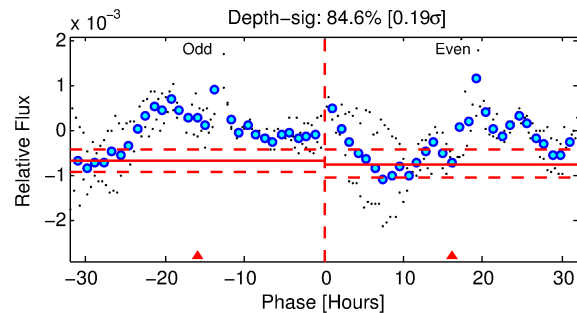
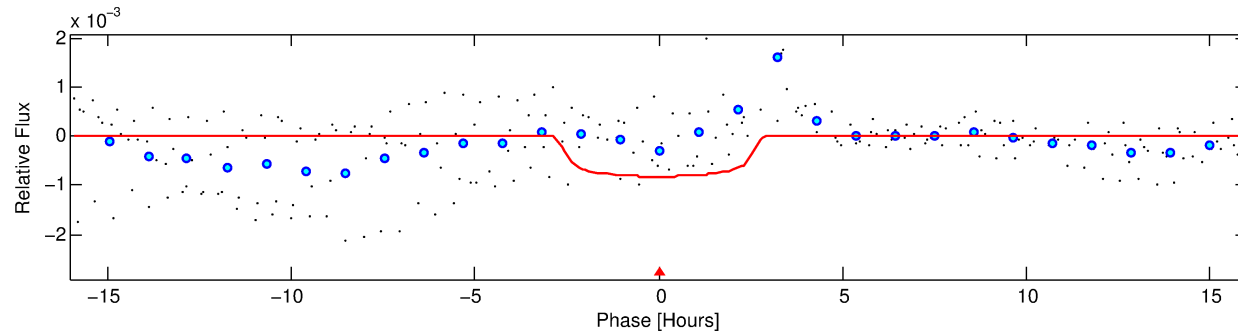
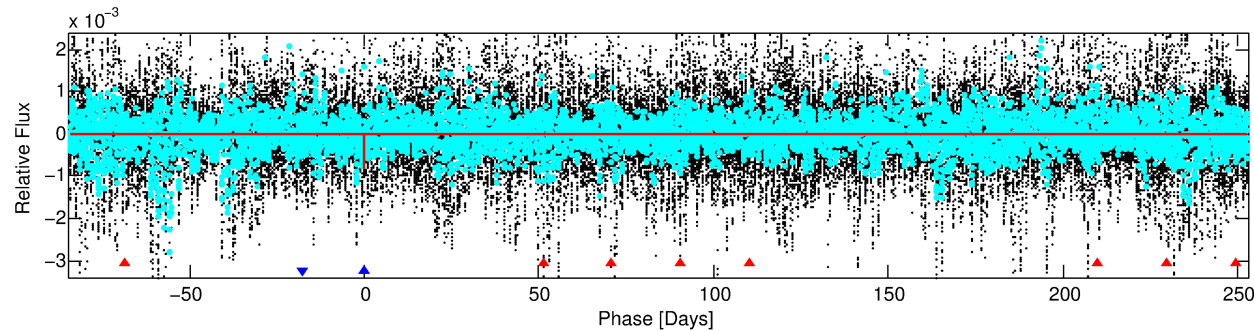
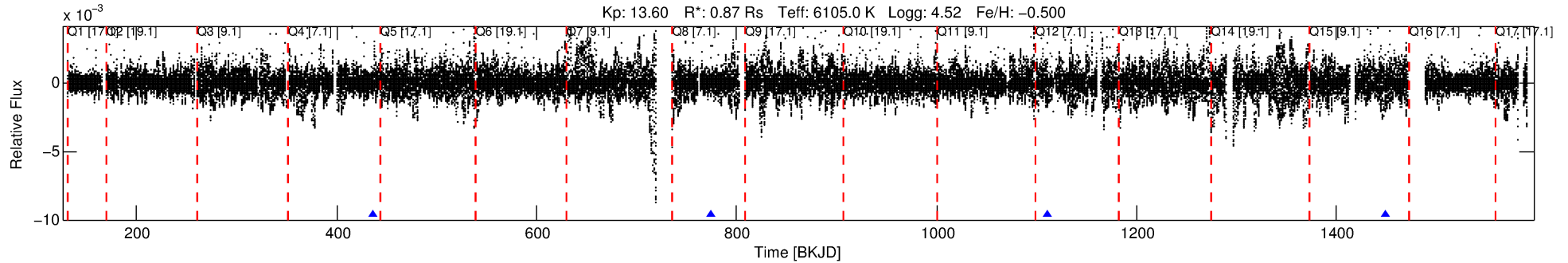
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010921242-02

No Significant Match Found

DV One-Page Summary

KIC: 10921242 Candidate: 2 of 2 Period: 337.199 d



DV Fit Results:

Period = 337.19905 [0.00234] d
Epoch = 437.0714 [0.0038] BKJD
Rp/R* = 0.0263 [0.0245]
a/R* = 494.94 [2308.65]
b = 0.00 [1076.65]
Seff = 1.12 [0.42]
Teq = 262 [25] K
Rp = 2.50 [2.44] Re
a = 0.9232 [0.2260] AU
Ag = 48704.50 [93409.61] [0.52 σ]
Teffp = 6019 [2840] K [2.03 σ]

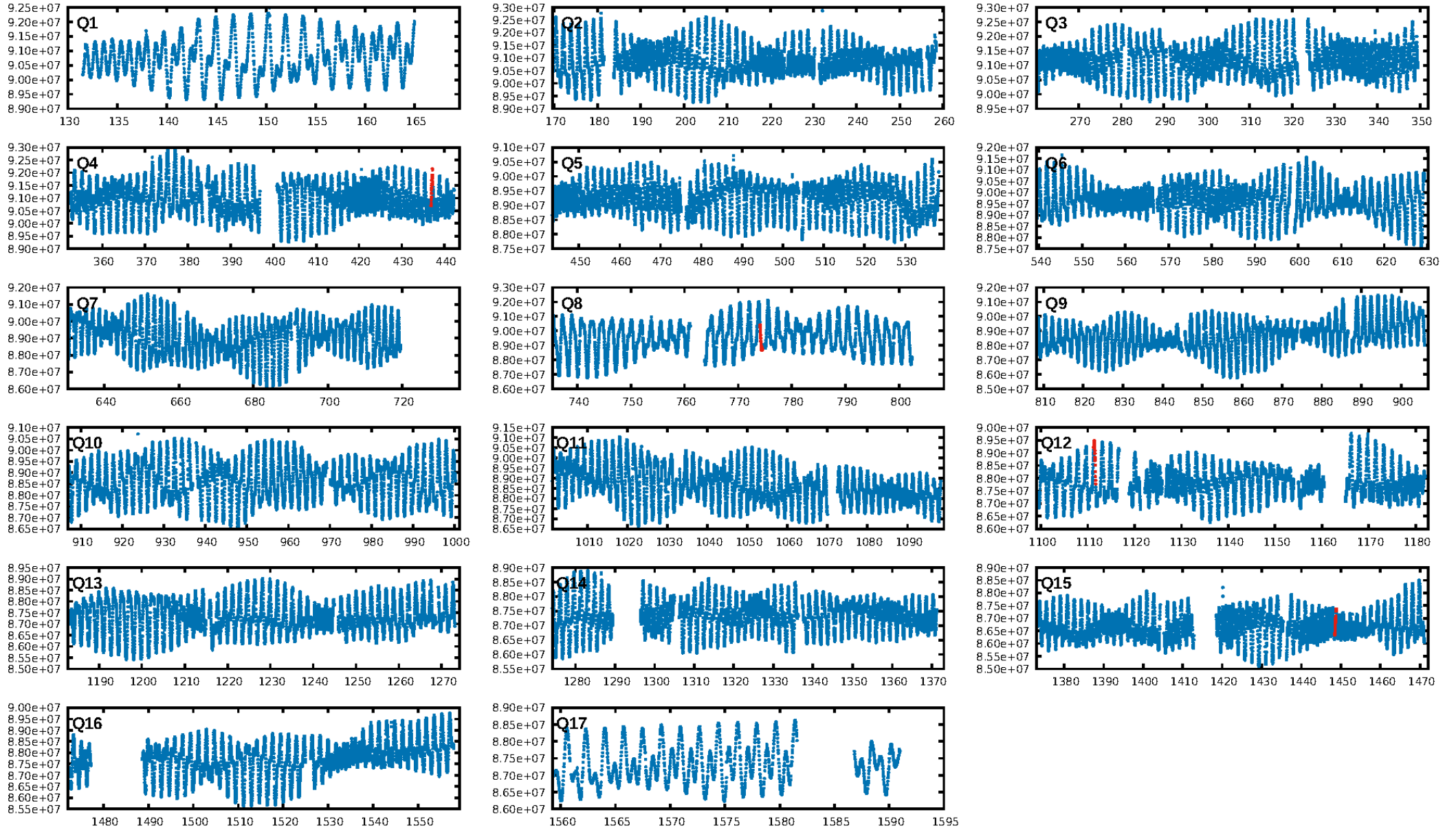
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [692.27 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 21.7%
ModelChiSquareGof-sig: 71.3%
Bootstrap-pfa: 3.14e-13
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.0914
Centroid-sig: 48.1%
Centroid-so: 0.270 arcsec [0.52 σ]
OotOffset-rm: 0.094 arcsec [1.38 σ]
OotOffset-st: 0/1/3/0 [4]
KicOffset-rm: 0.060 arcsec [0.81 σ]
KicOffset-st: 0/1/3/0 [4]
DiffImageQuality-fgm: 0.25 [1/4]
DiffImageOverlap-fno: 1.00 [4/4]

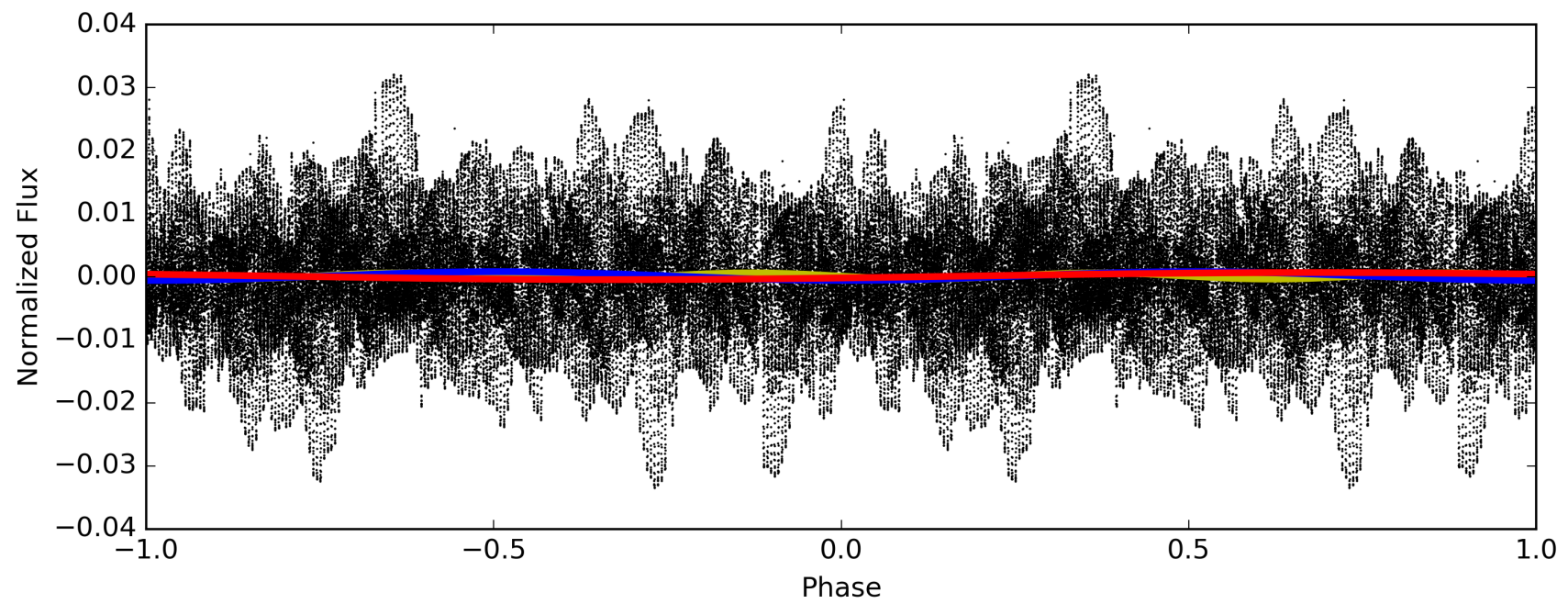
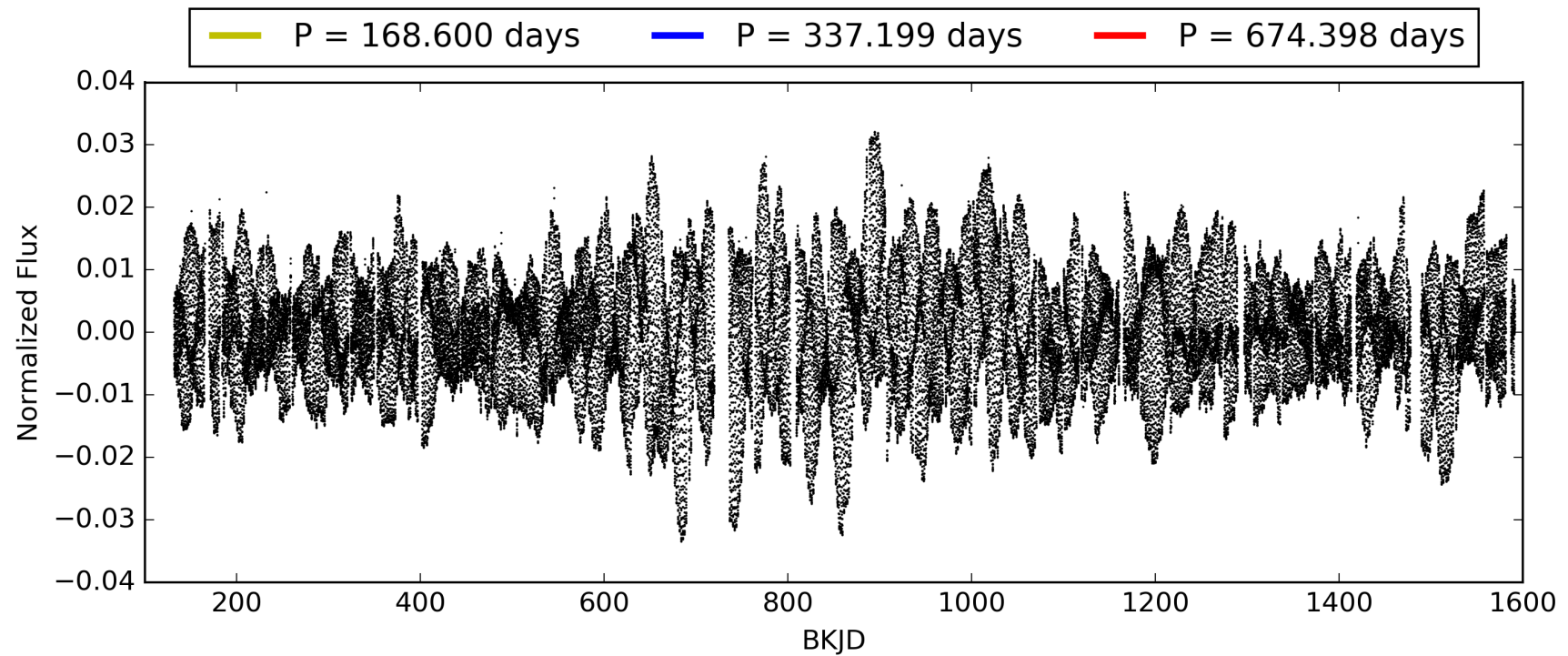
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:31:56 Z

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

TCE 010921242-02, PDC Light Curves

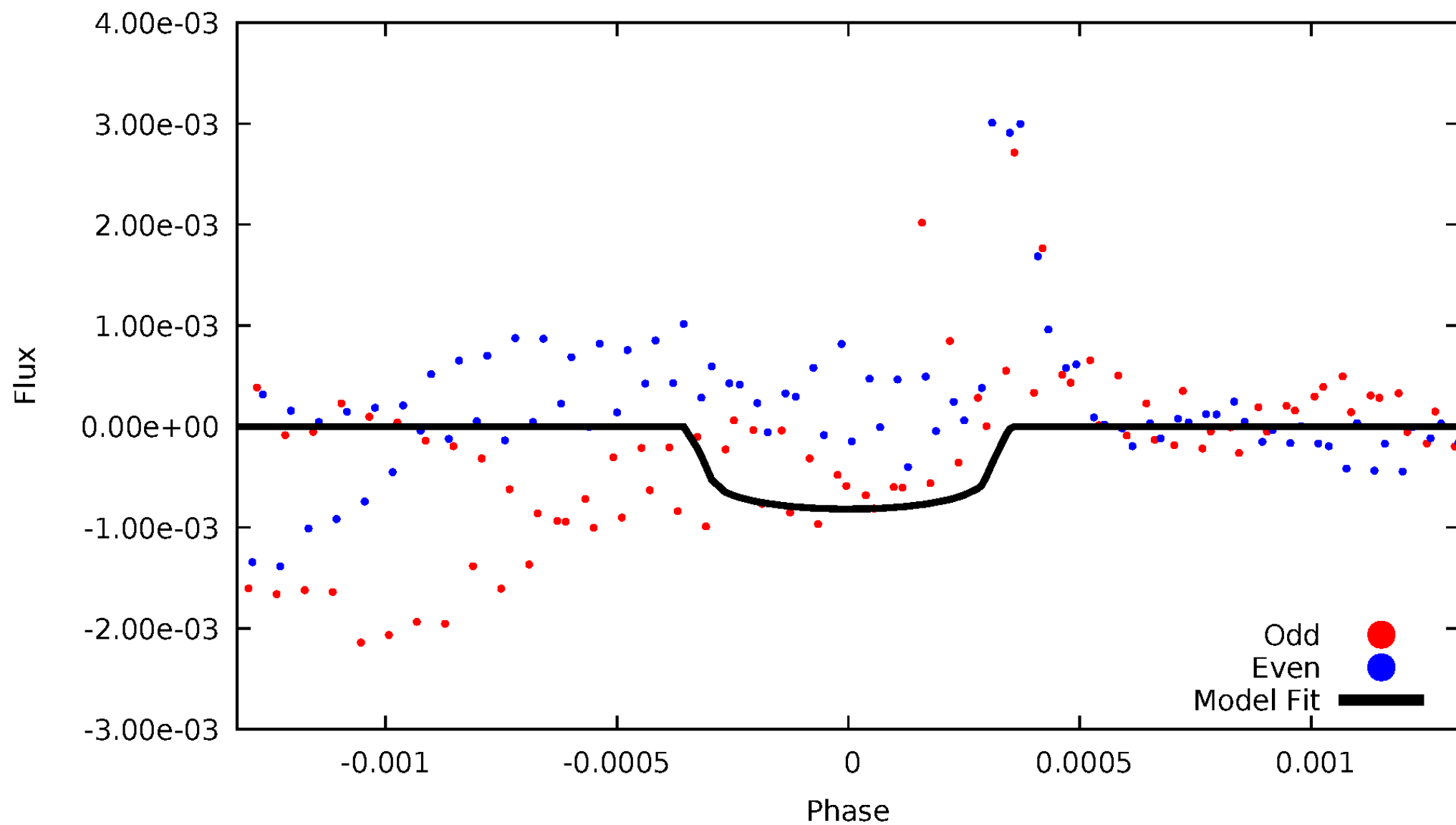


TCE 010921242-02



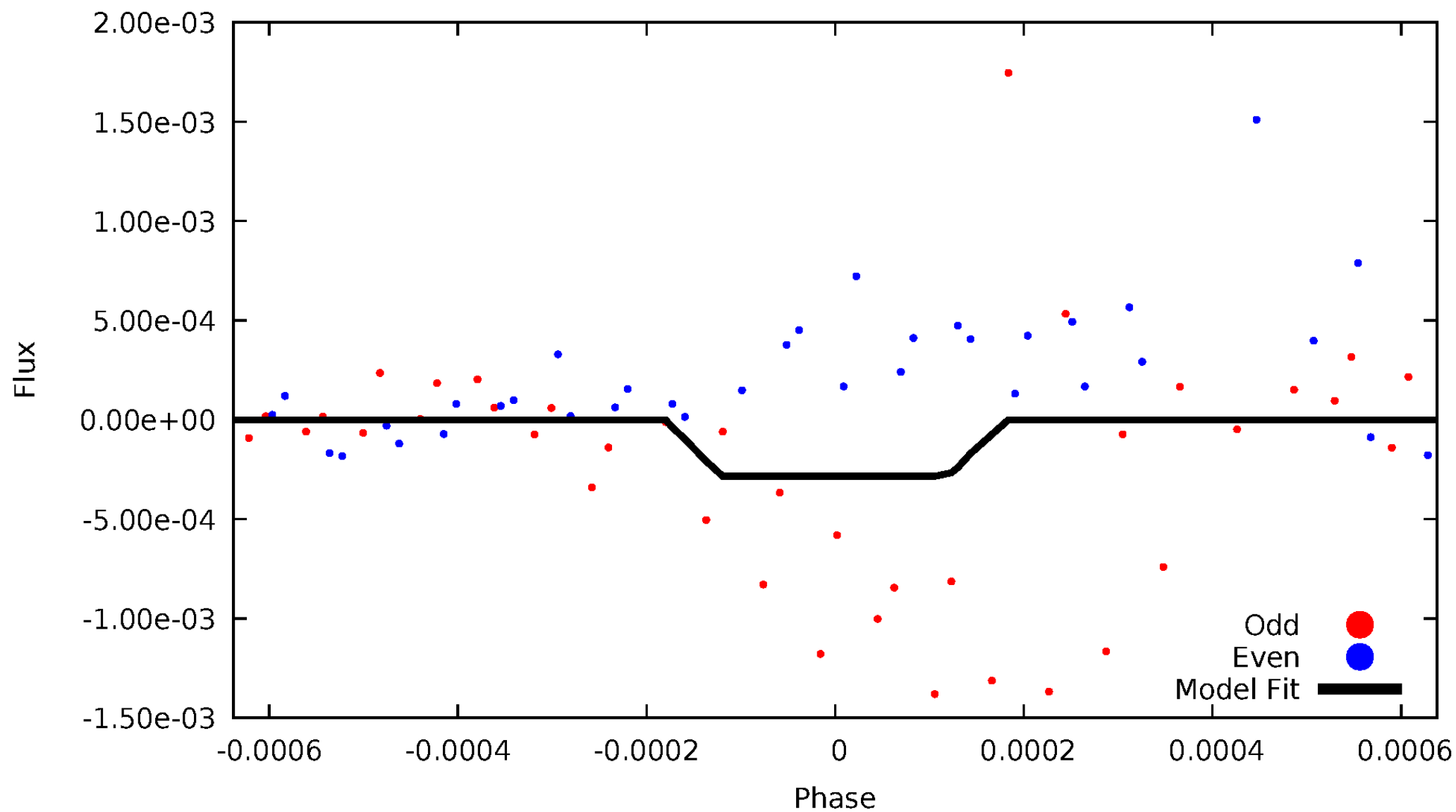
DV Odd/Even

TCE 010921242-02



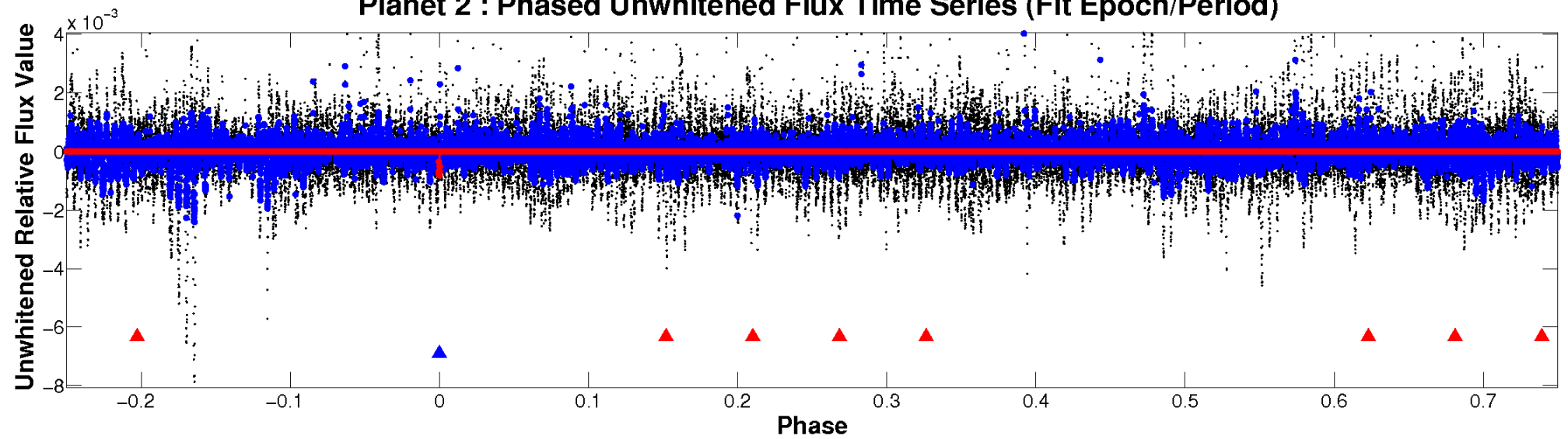
ALT Odd/Even

TCE 010921242-02

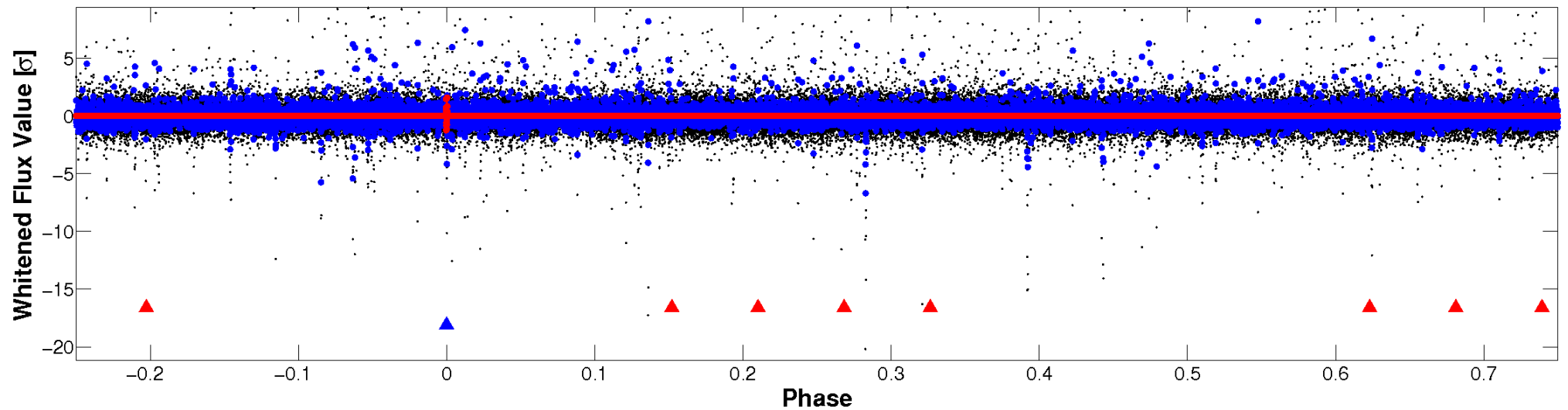


Non-Whitened Vs. Whitened Light Curve

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

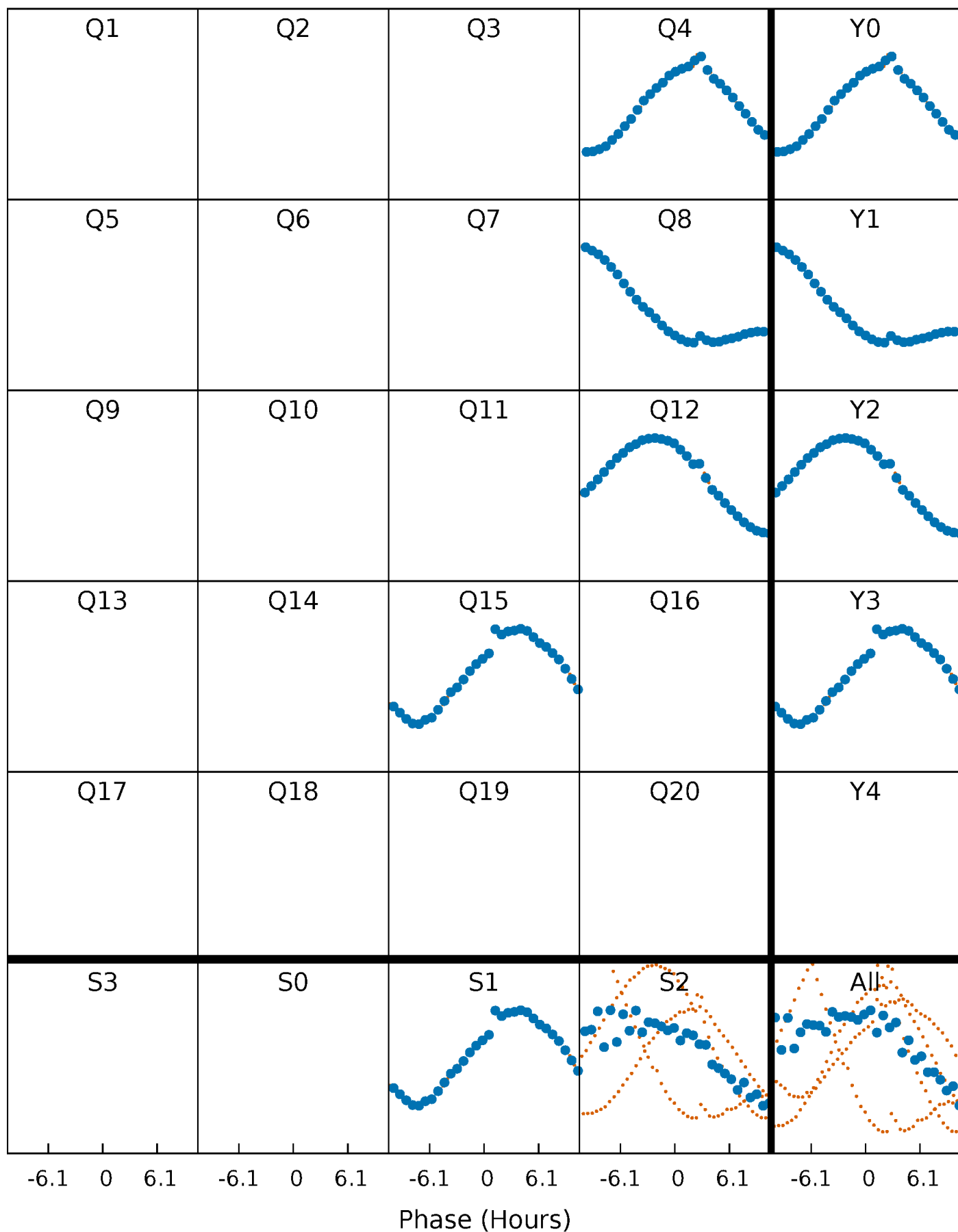


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



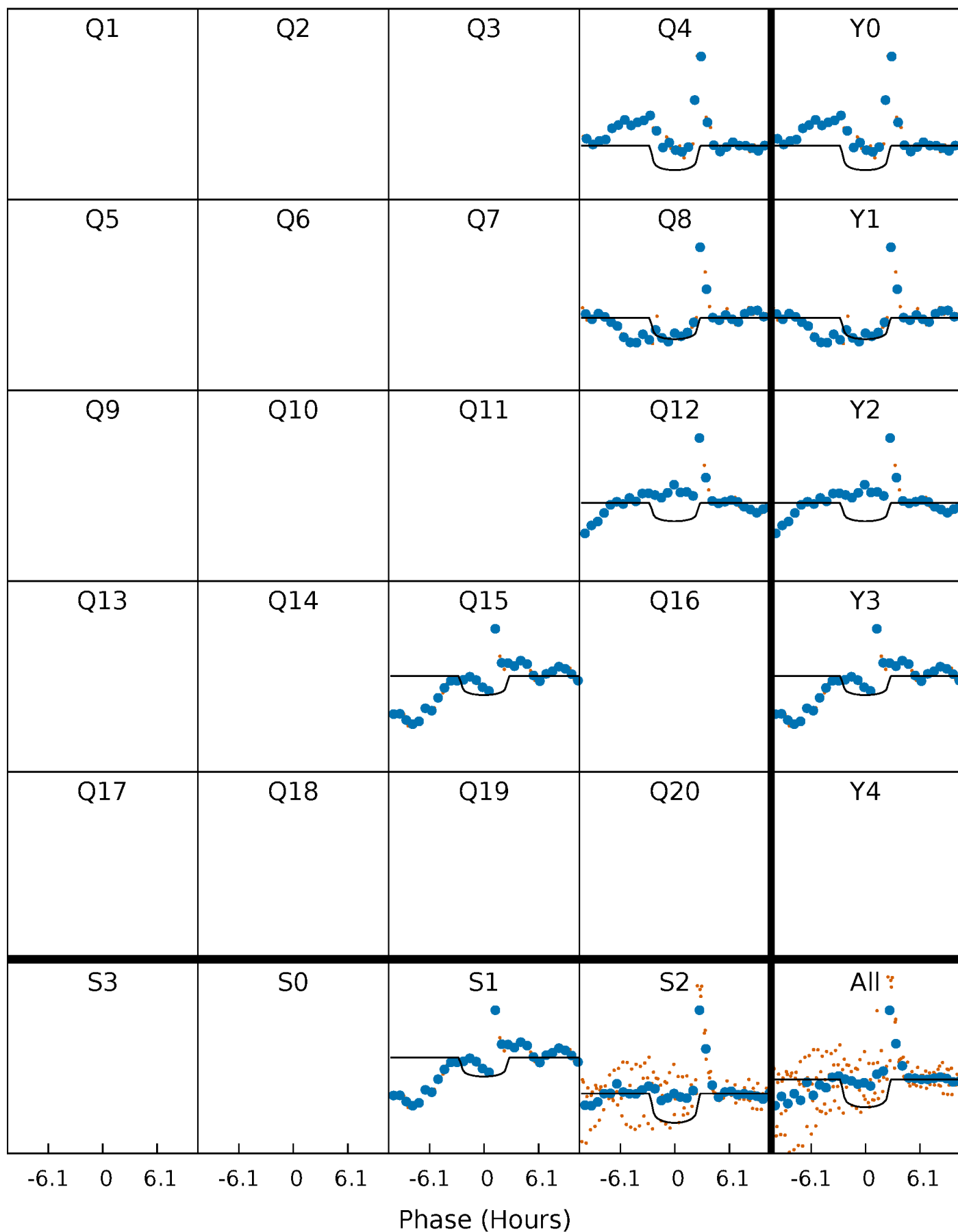
PDC Quarter-Phased Transit Curves

TCE 010921242-02 P=337.199045 Days $T_0=437.071401$ (BKJD)



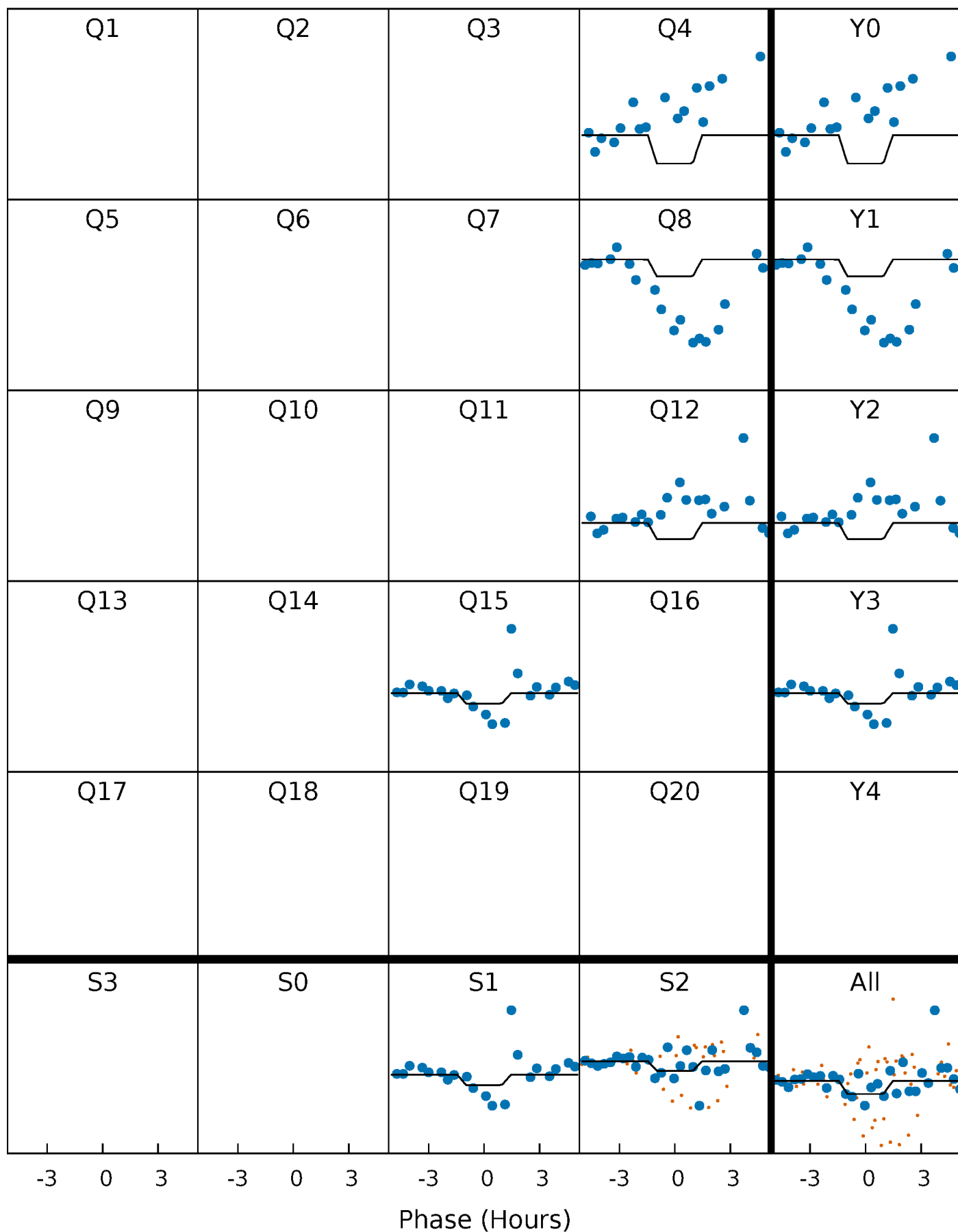
DV Quarter-Phased Transit Curves

TCE 010921242-02 $P=337.199045$ Days $T_0=437.071401$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

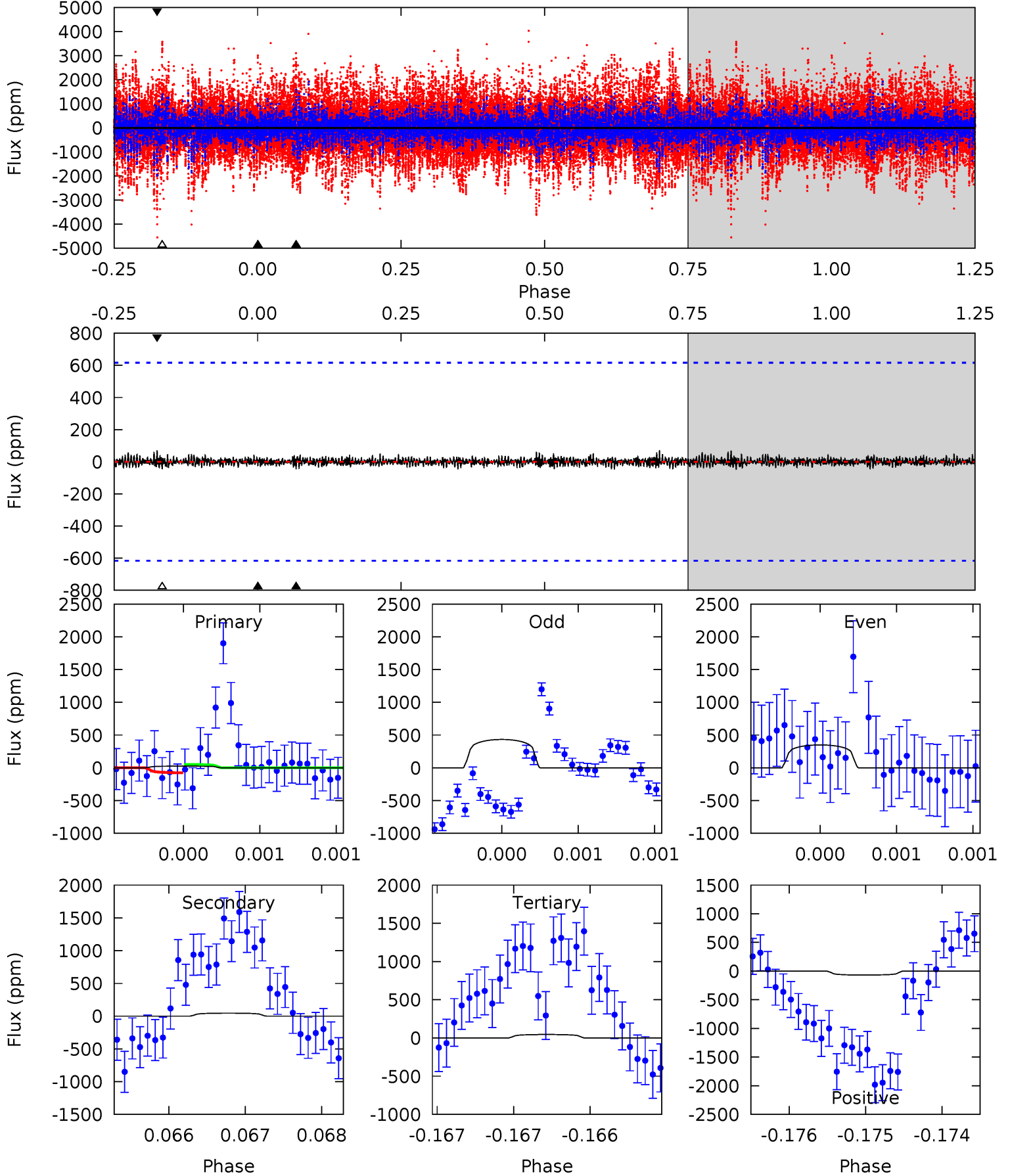
TCE 010921242-02 P=337.203180 Days $T_0=437.050574$ (BKJD)



DV Model-Shift Uniqueness Test

010921242-02, P = 337.199045 Days, E = 99.872356 Days

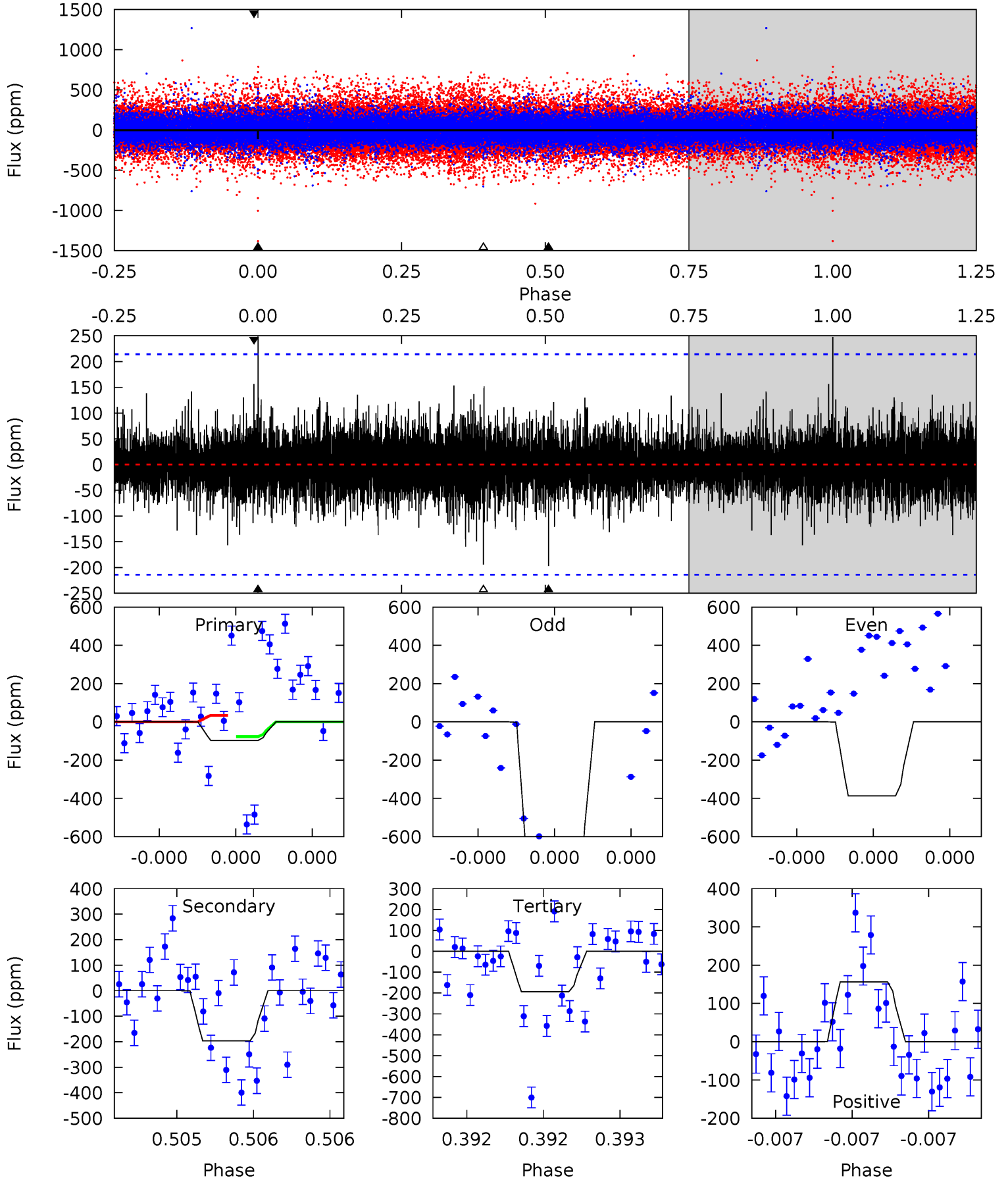
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.23	0.41	0.41	0.62	5.51	3.38	0.13	-0.18	-0.39	0.00	-0.21	0.35	0.19	0.60	0.11



Alt Model-Shift Uniqueness Test

010921242-02, P = 337.203180 Days, E = 99.847394 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.55	5.17	5.11	4.11	5.63	3.57	0.93	-2.56	-1.56	0.07	1.06	7.19	2.05	0.56	0



Stellar Parameters For KIC 010921242

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6105^{+163}_{-181}	$4.520^{+0.050}_{-0.200}$	$-0.500^{+0.300}_{-0.300}$	$0.874^{+0.250}_{-0.083}$	$0.922^{+0.109}_{-0.109}$	$1.948^{+0.507}_{-1.021}$
	+3%/-3%	+1%/-4%	+60%/-60%	+29%/-9%	+12%/-12%	+26%/-52%
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 010921242-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-46 ± 112	$3.19^{+2.25}_{-1.89}$	372^{+27}_{-16}	3174^{+1332}_{-6775}	1366^{+10540}_{-4881}
Alt.	-197 ± 38	$2.52^{+2.15}_{-1.65}$	373^{+26}_{-16}	4640^{+3498}_{-898}	$13402^{+108266}_{-9270}$

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

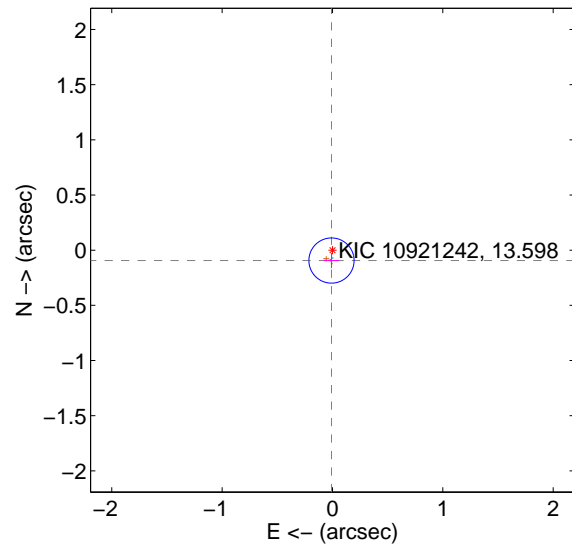
Supplemental centroid analysis for 010921242-02. Kepler magnitude: 13.60. Transit SNR 5.85

There are 1 quarters with good PRF difference image offsets

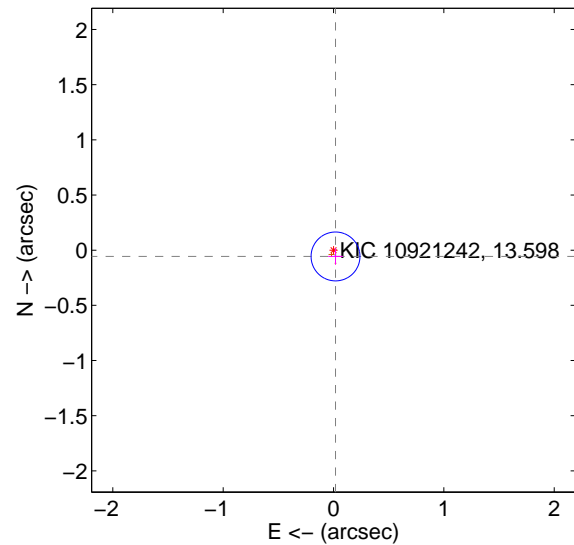
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.094 ± 0.068	1.38	0.009 ± 0.067	-0.094 ± 0.068
PRF-fit source offset from KIC position	0.060 ± 0.074	0.81	-0.018 ± 0.067	-0.057 ± 0.075
photometric centroid source offset	0.27 ± 0.52	0.52	0.09 ± 0.45	-0.26 ± 0.53

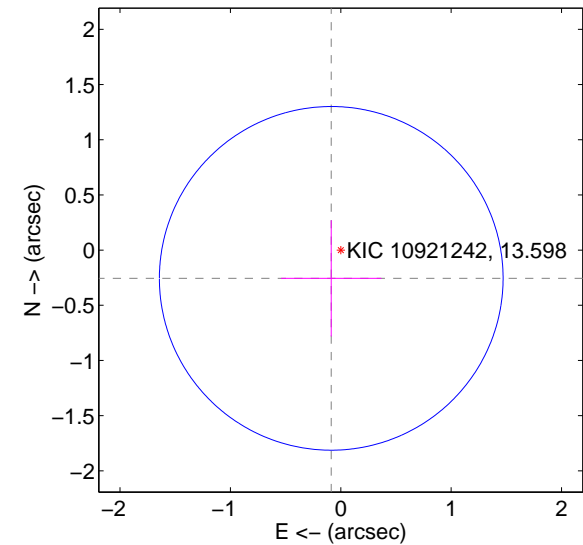
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

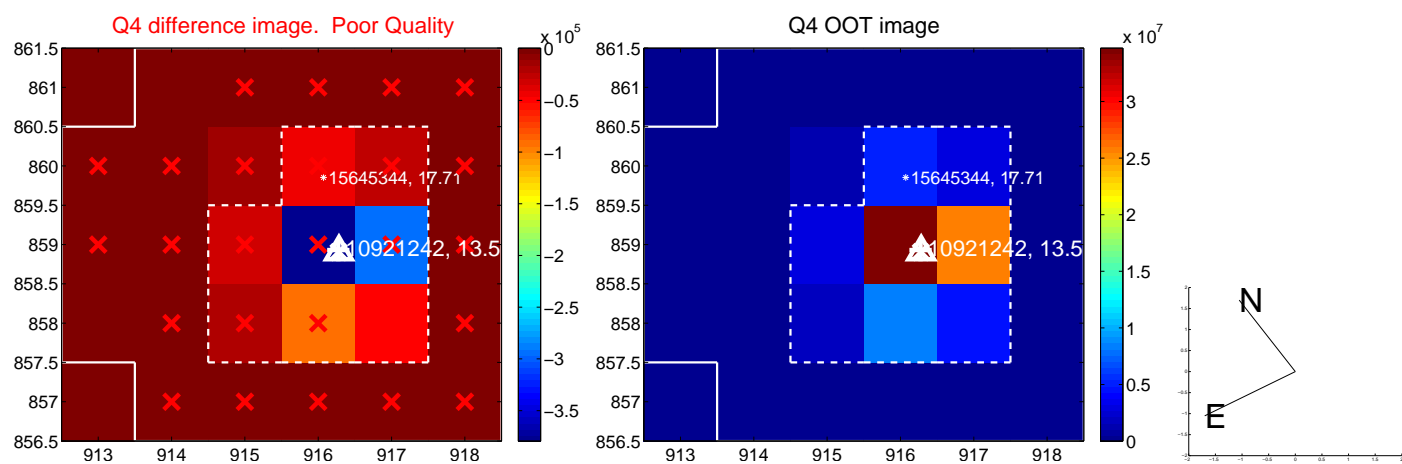
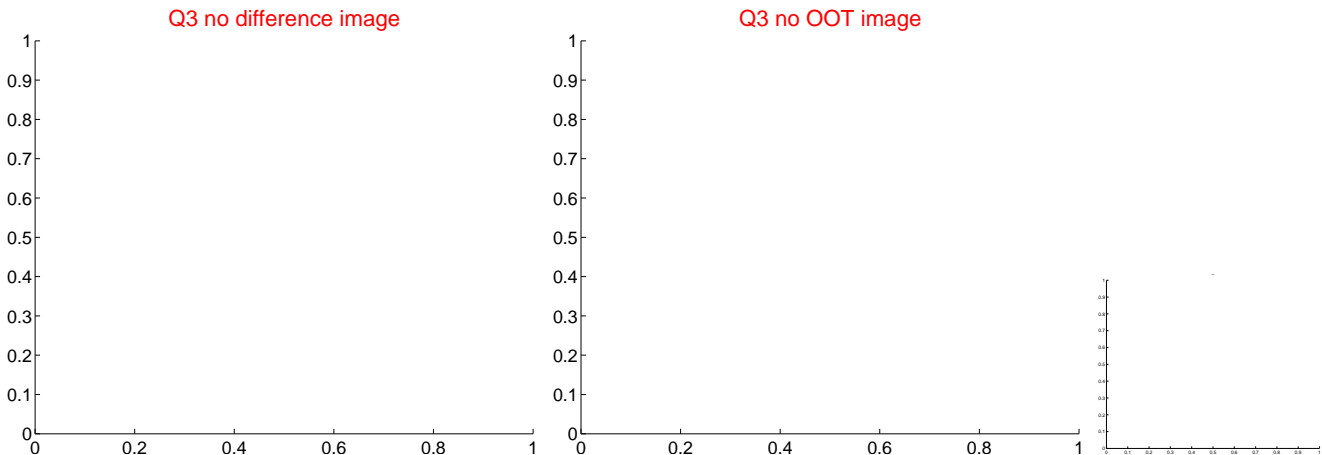
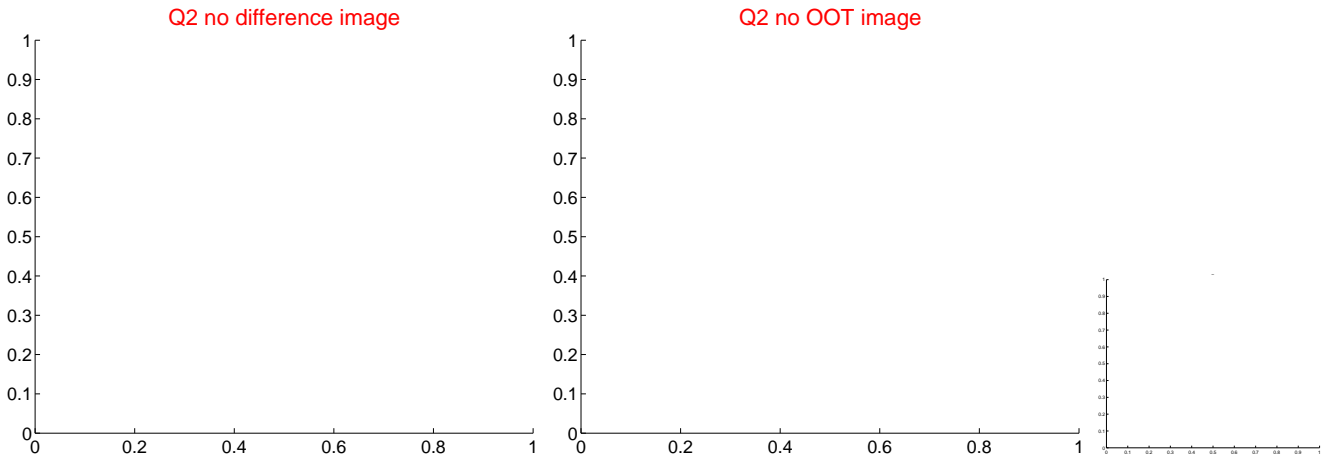
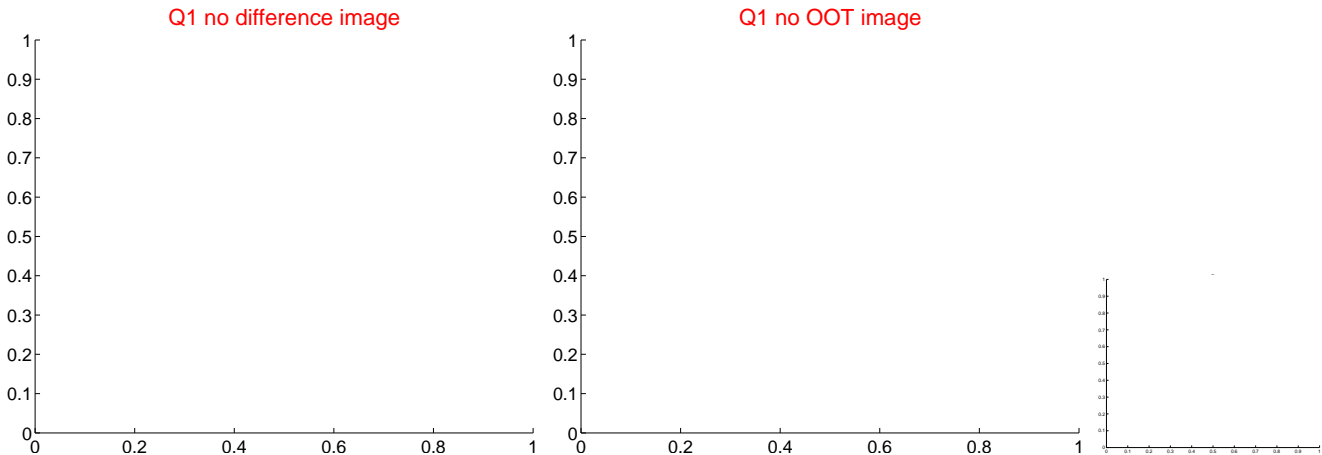


offset from photometric centroids

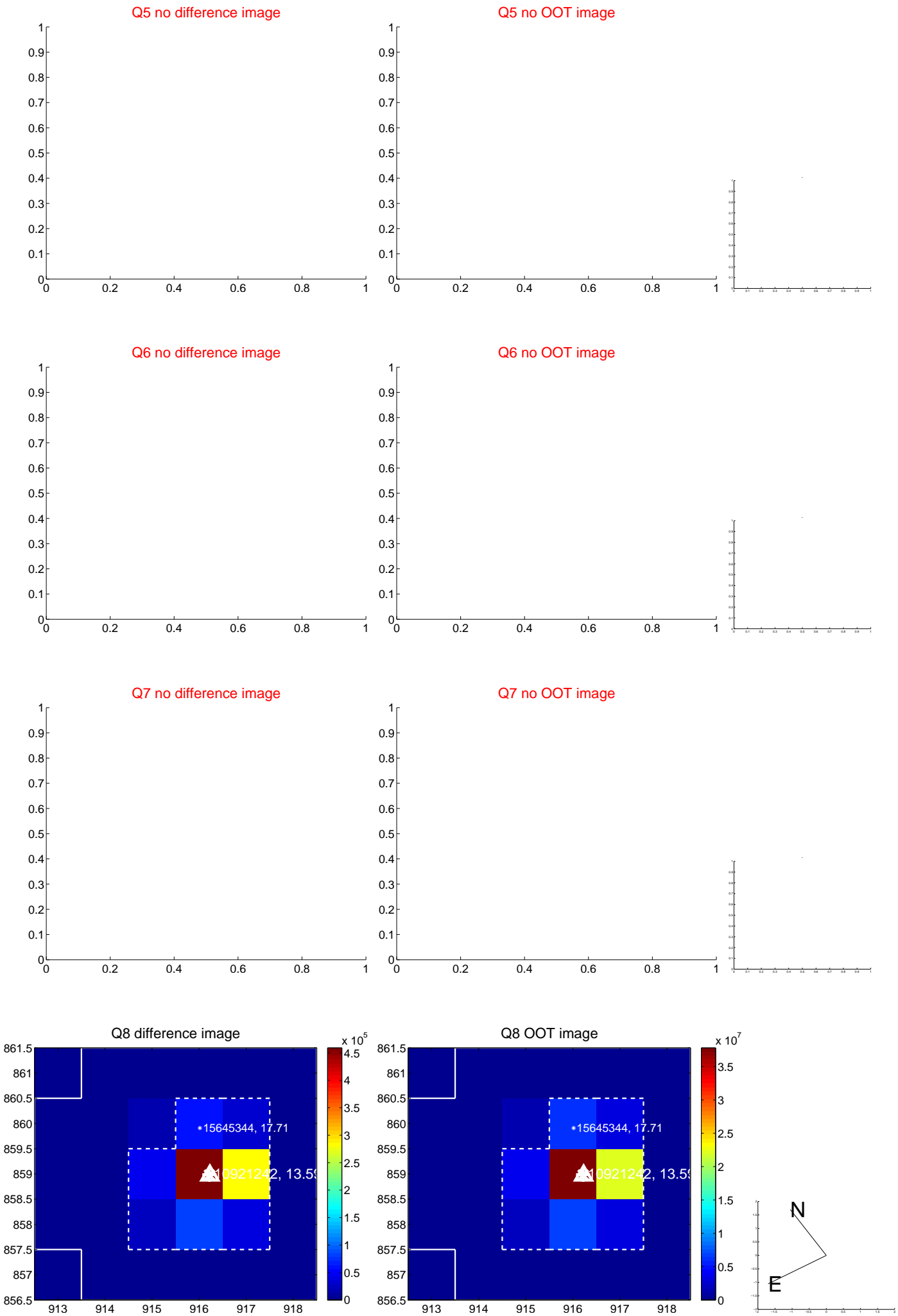


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

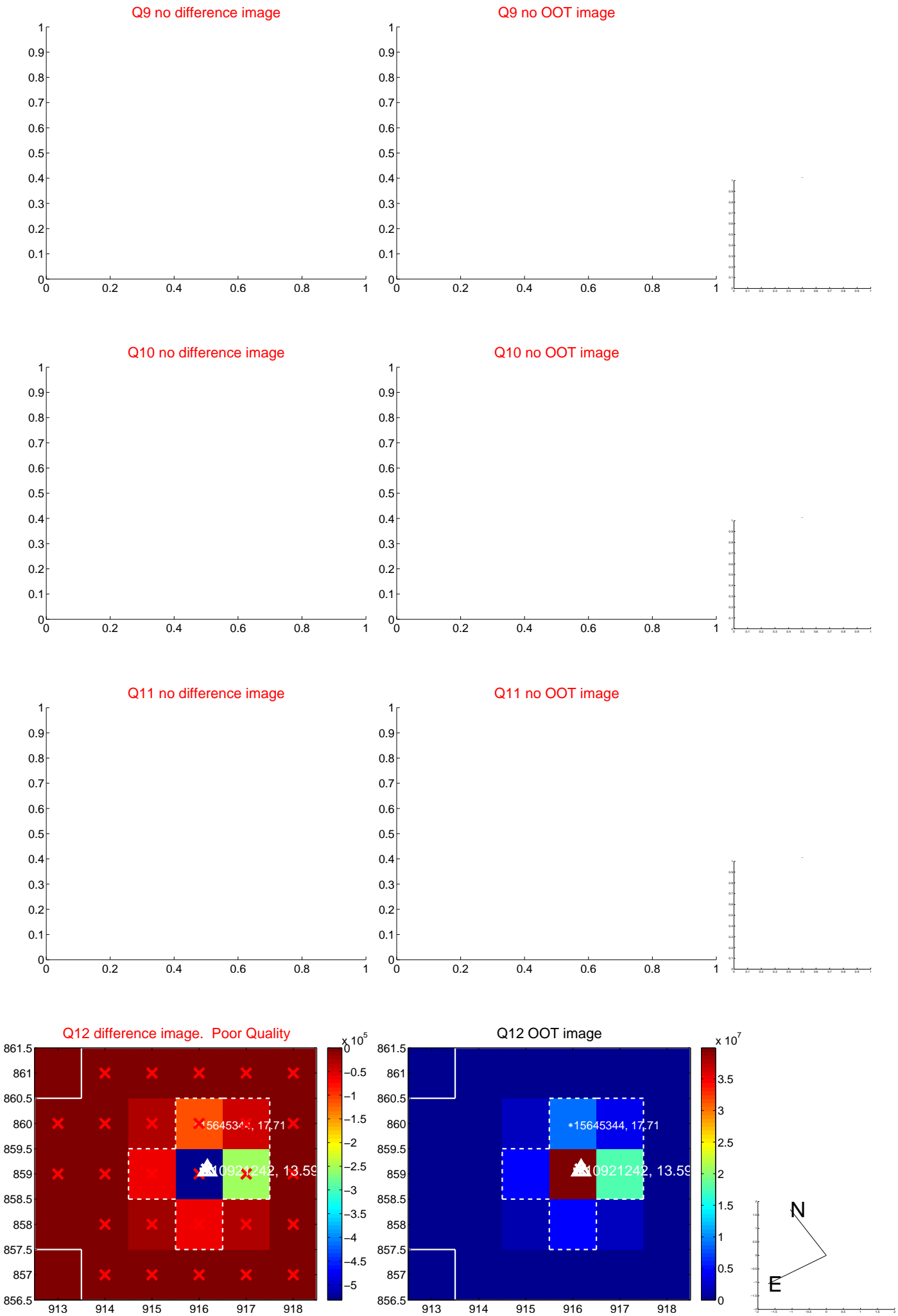
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



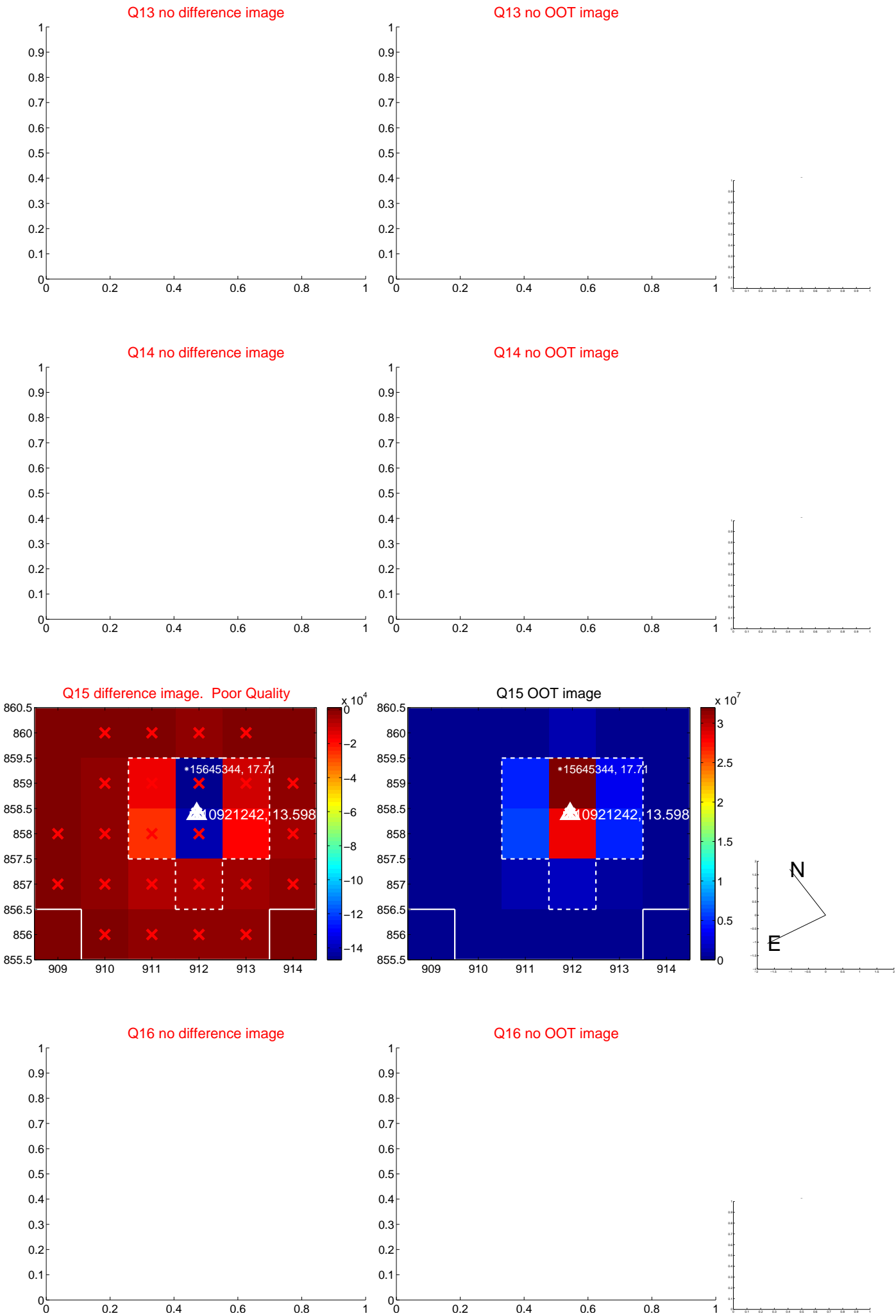
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



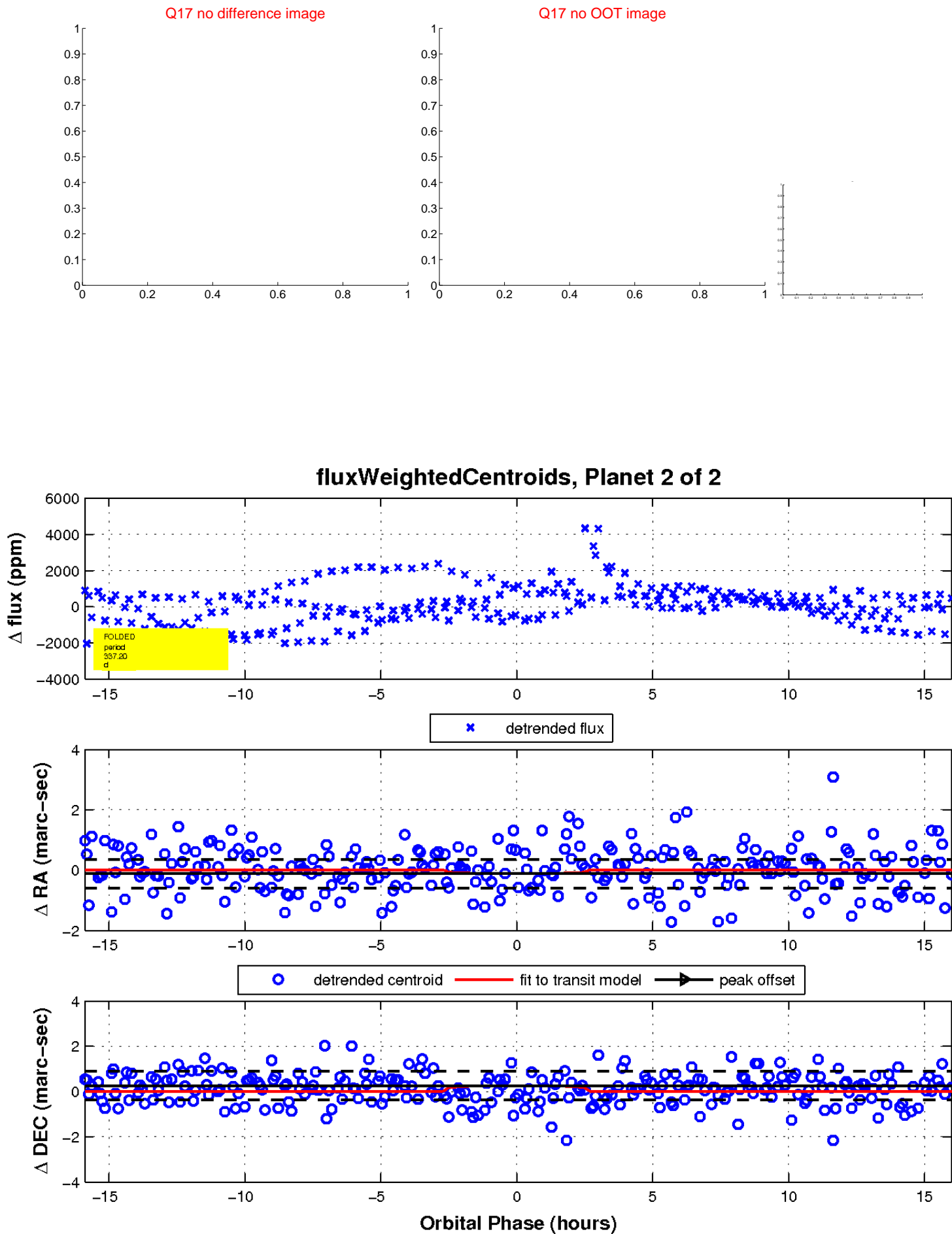
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

