

KIC 003733363

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})
003733363-01	OBS	No	0.683191	132.672473	111.0	3.349	1273.2	46.2	14.09	6070	14.81	0.00
003733363-02	OBS	No	190.727059	212.767773	329.7	9.269	13.7	5.7	14.09	6070	27.45	249.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003733363-01	OBS	FP	0.00	1	0	1	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET
003733363-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET

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

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

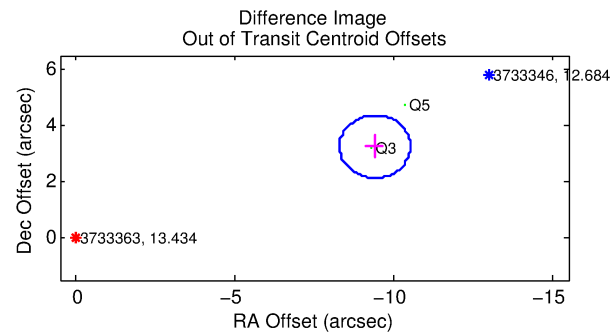
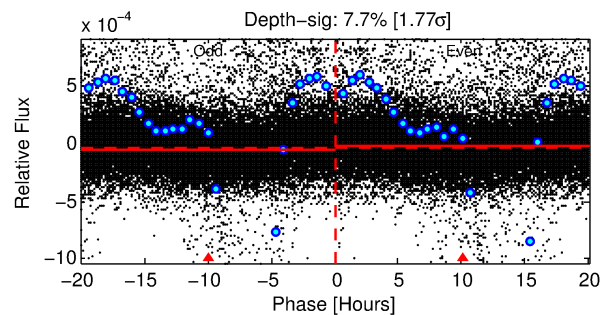
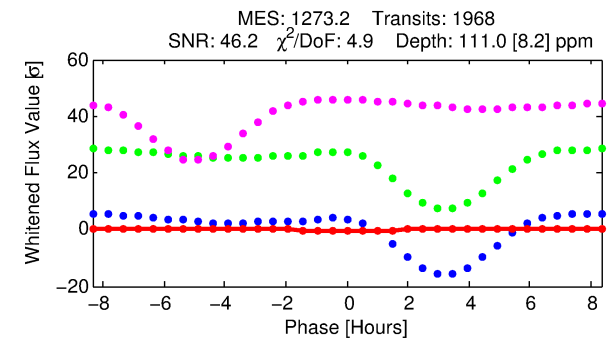
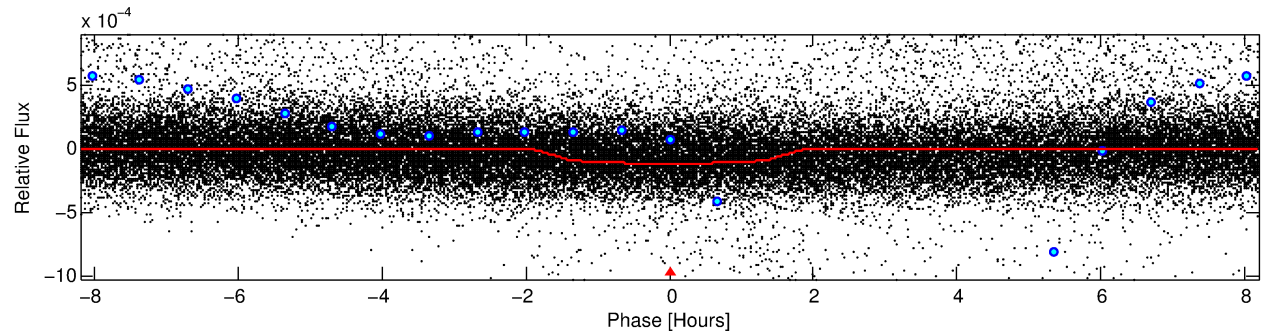
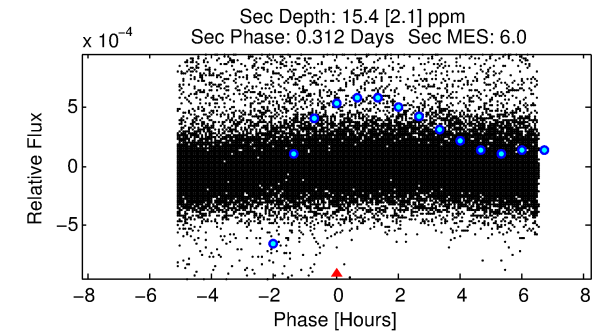
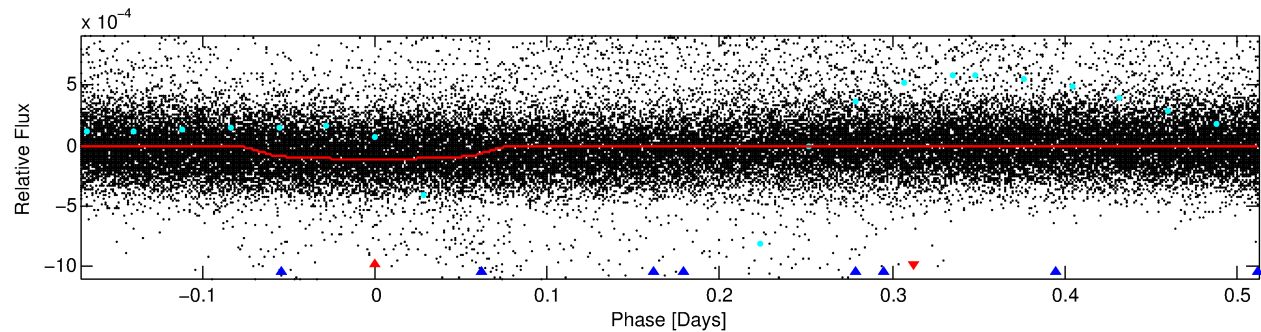
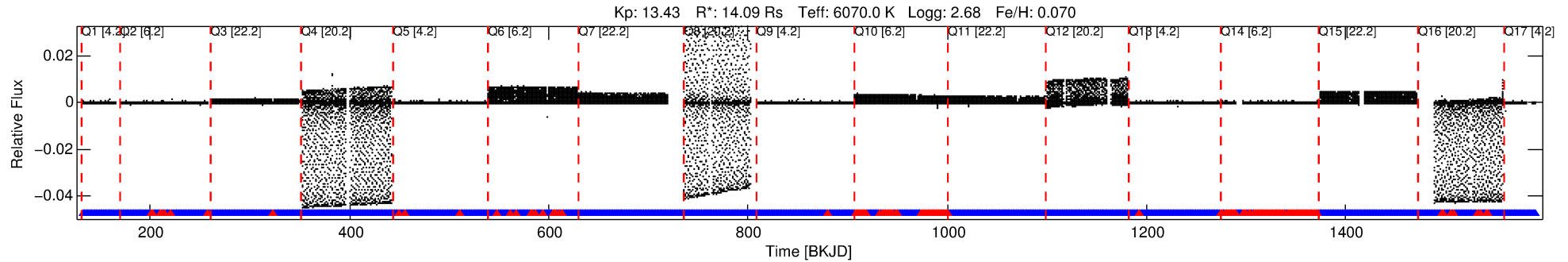
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003733363-01

No Significant Match Found

DV One-Page Summary

KIC: 3733363 Candidate: 1 of 2 Period: 0.683 d



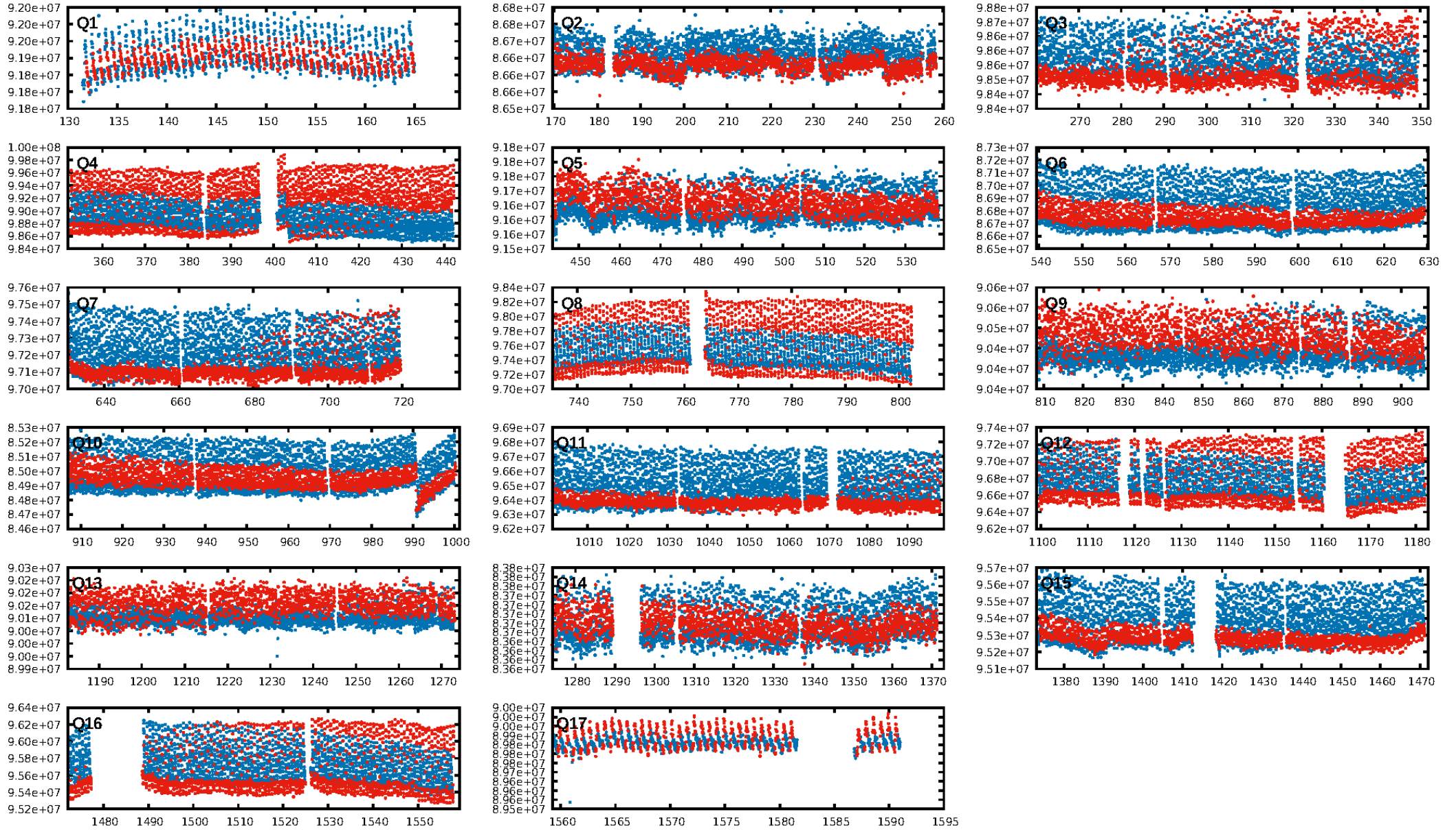
DV Fit Results:

Period = 0.68319 [0.00001] d
Epoch = 132.6725 [0.0018] BKJD
Rp/R* = 0.0096 [0.0047]
a/R* = 1.69 [2.53]
b = 0.00 [999.74]
Seff = N/A
Teq = N/A
Rp = 14.82 [11.32] Re
a = N/A
Ag = N/A
Teffp = N/A

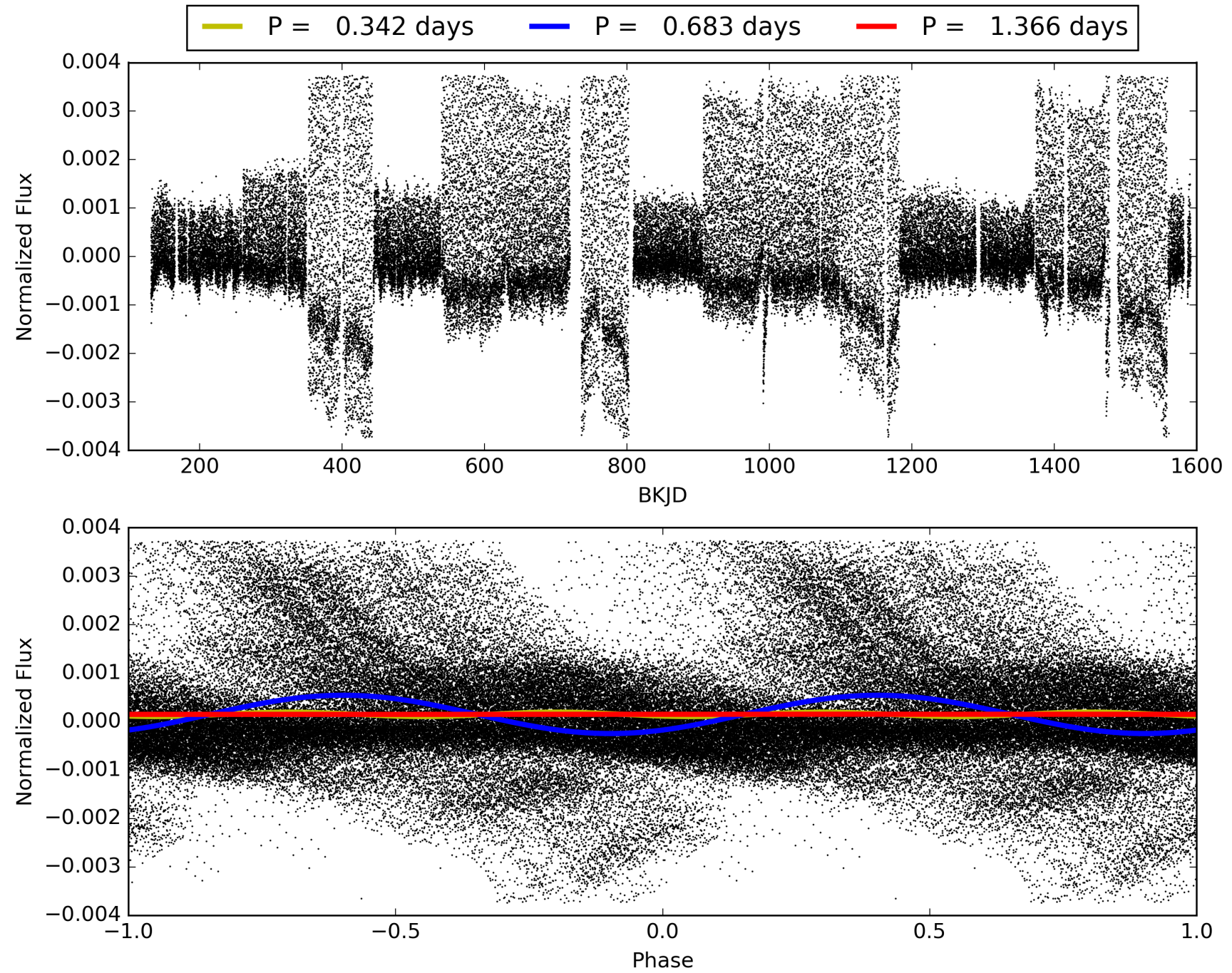
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [462.79σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.89 [1675/1880]
GhostDiagnostic-chr: -1.222
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 9.951 arcsec [26.78σ]
KicOffset-rm: 9.883 arcsec [16.08σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 003733363-01, PDC Light Curves

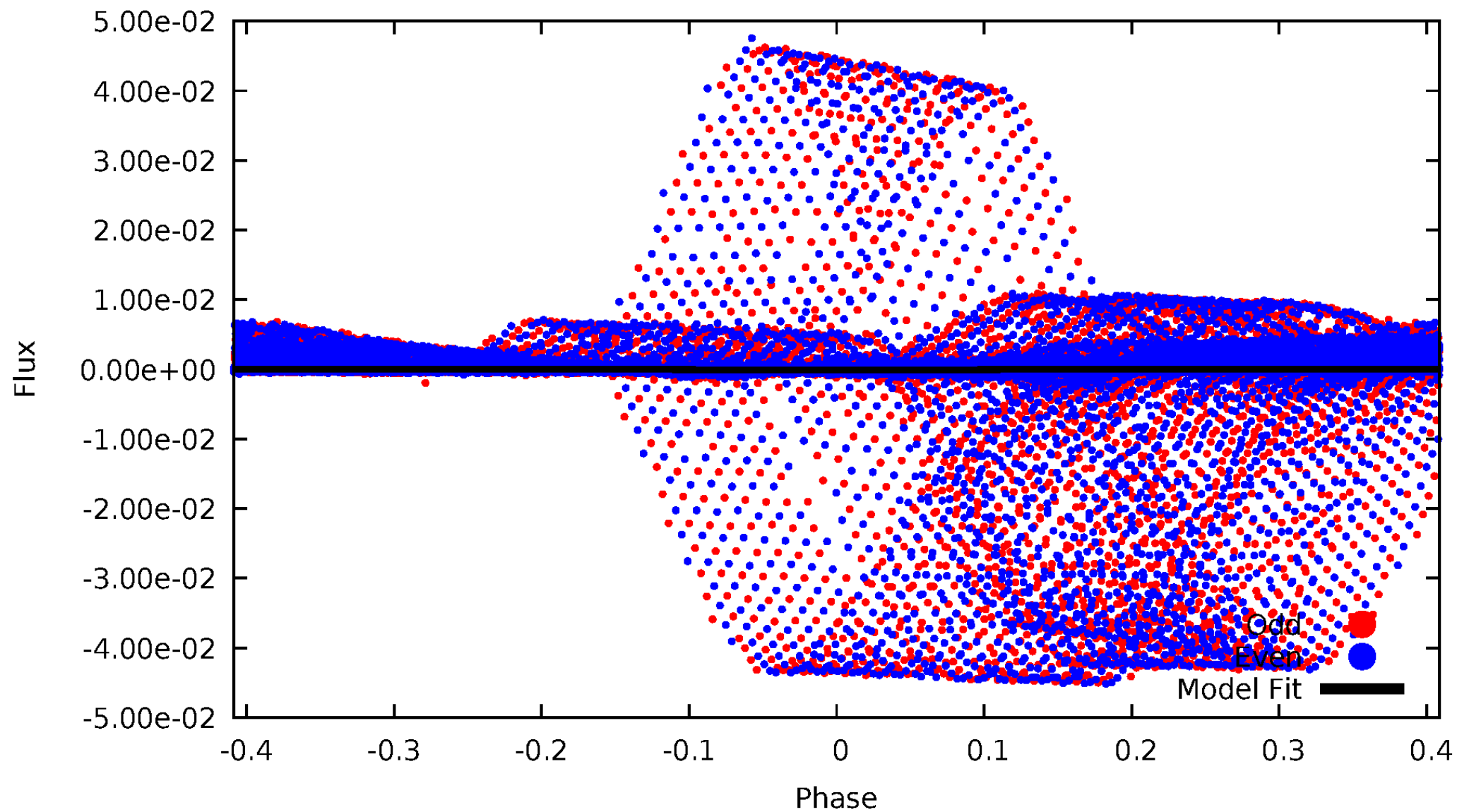


TCE 003733363-01



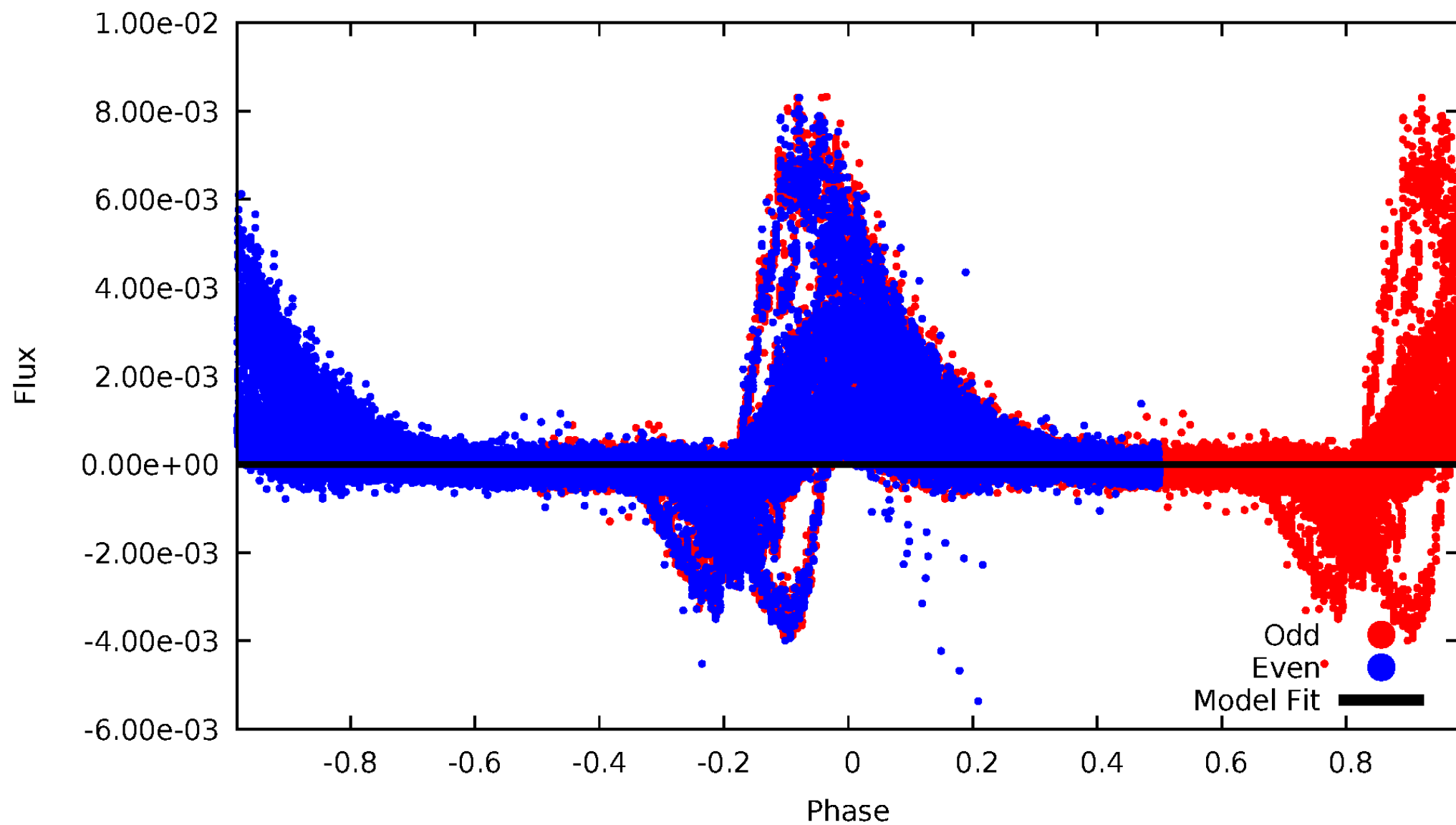
DV Odd/Even

TCE 003733363-01



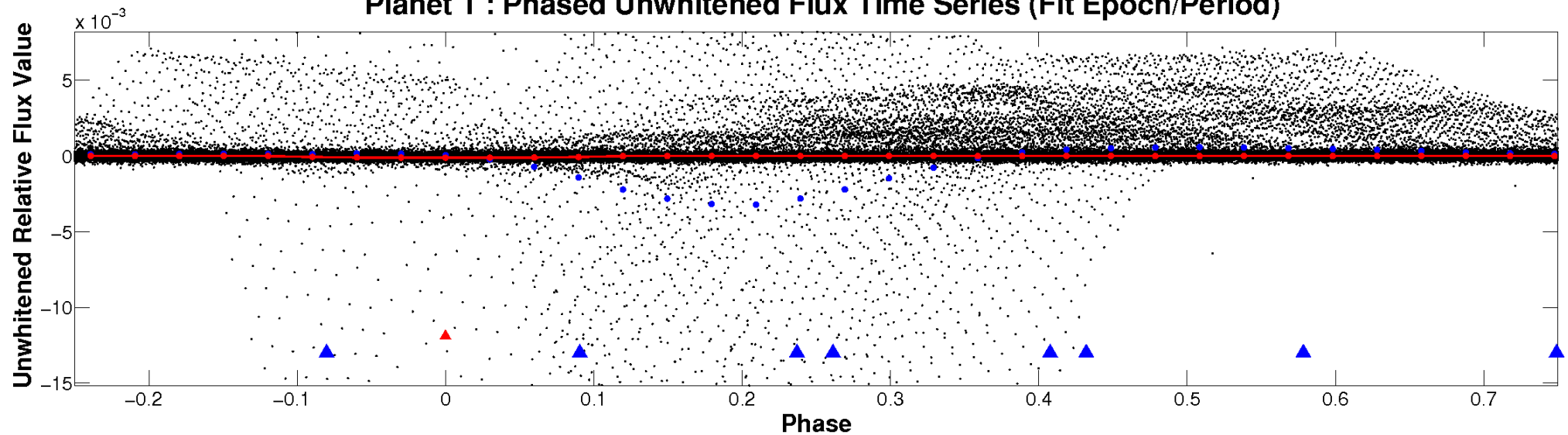
ALT Odd/Even

TCE 003733363-01

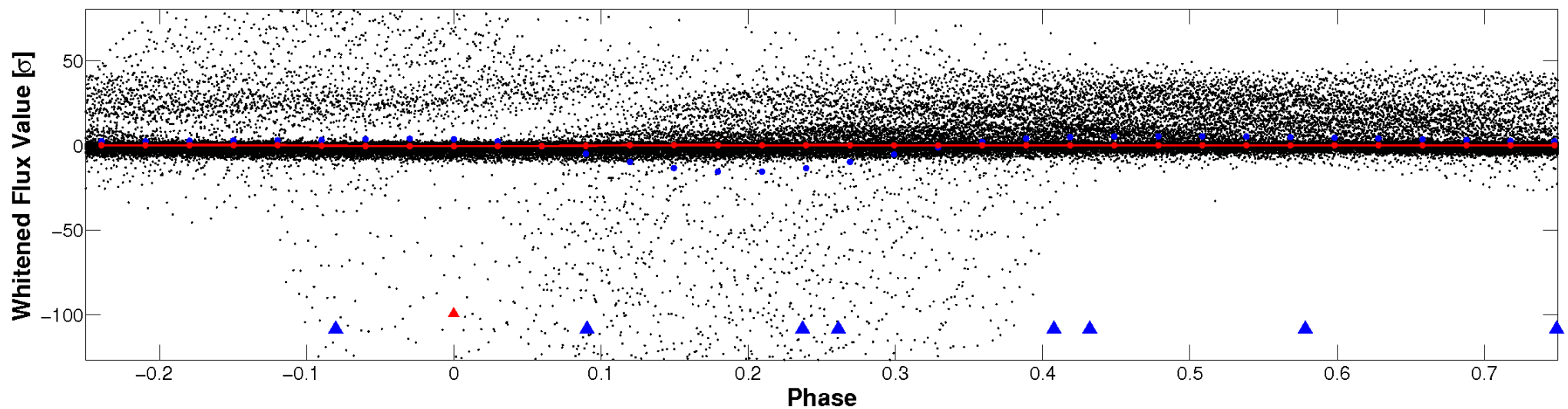


Non-Whitened Vs. Whitened Light Curve

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

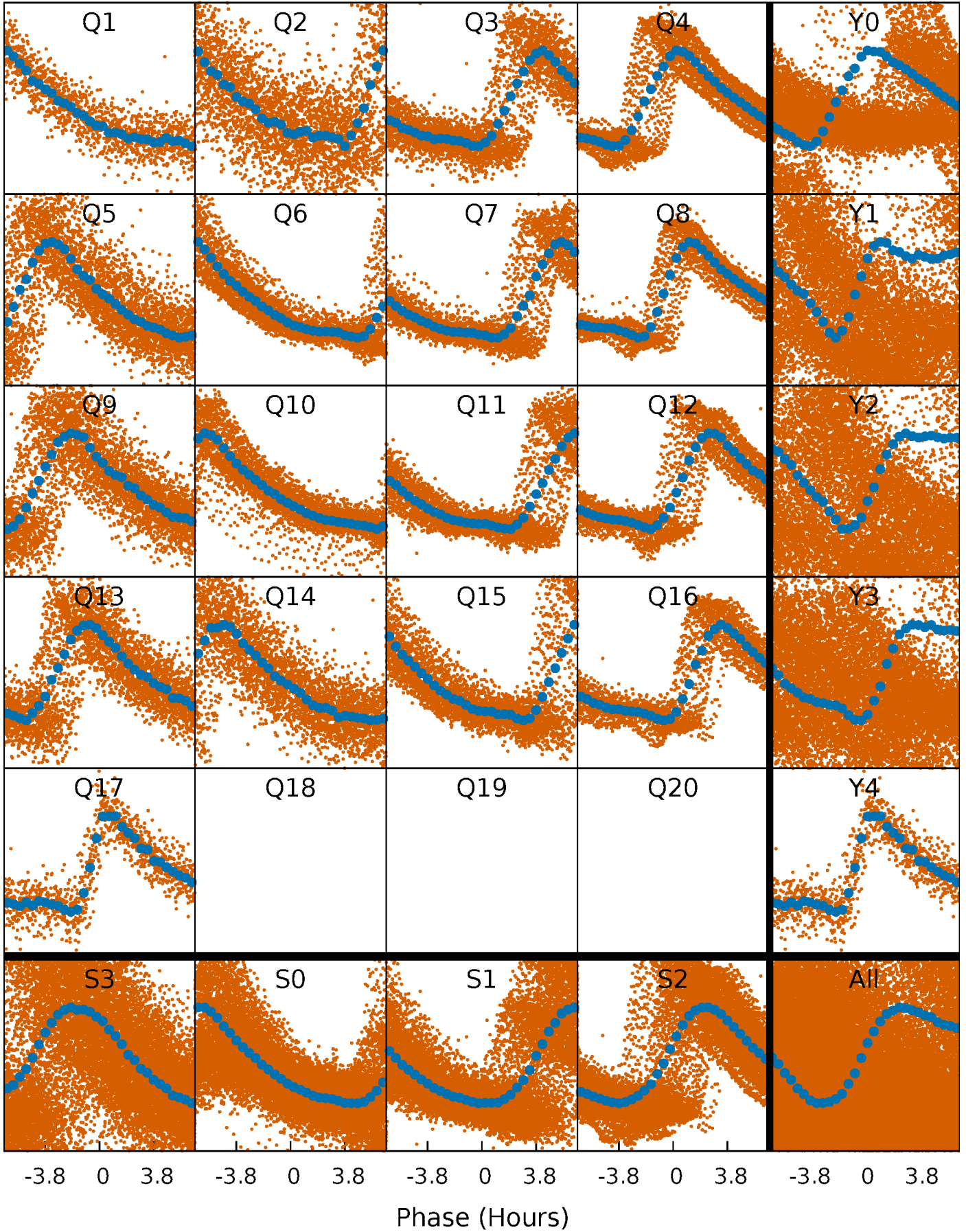


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



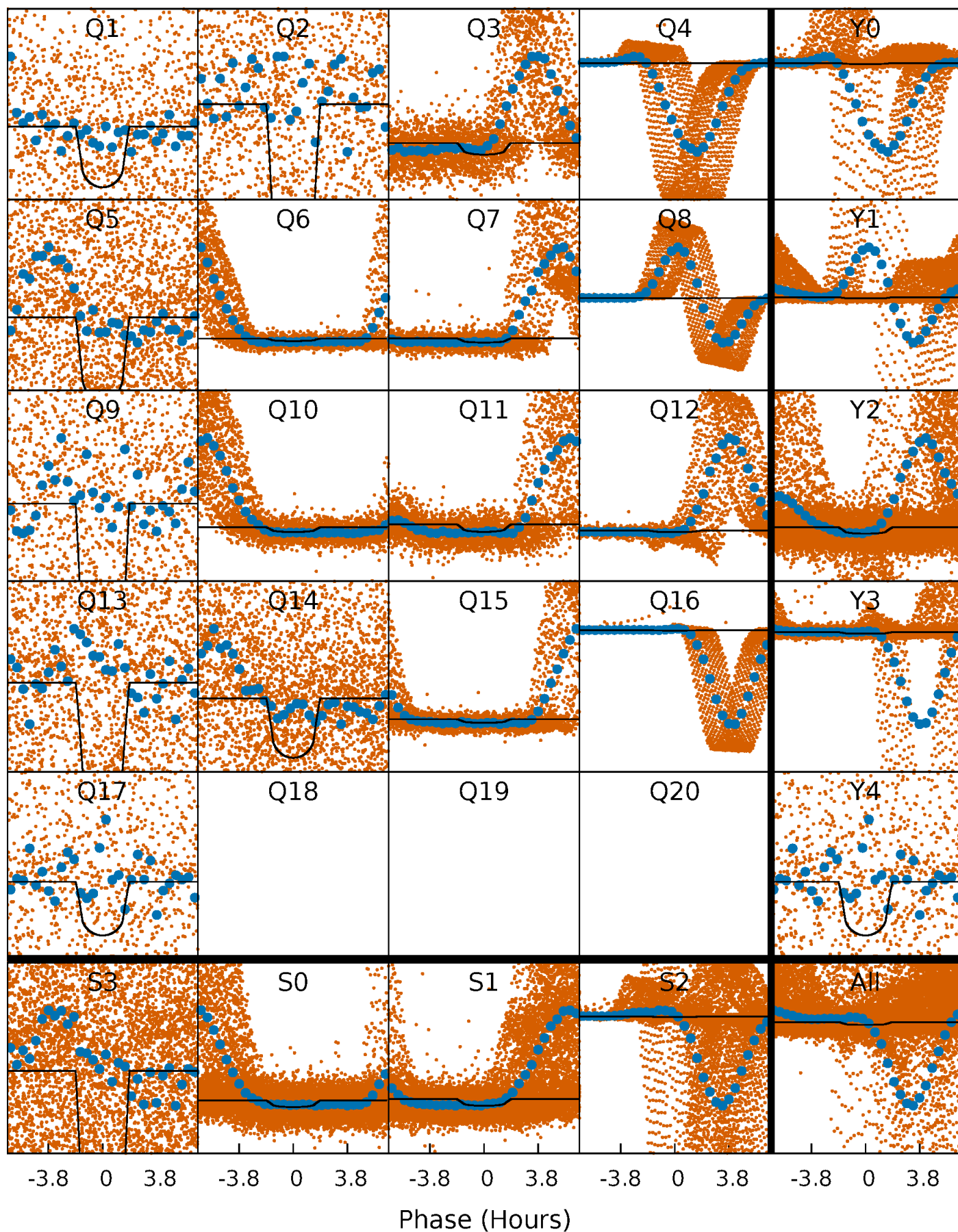
PDC Quarter-Phased Transit Curves

TCE 003733363-01 P= 0.683191 Days $T_0=132.672473$ (BKJD)



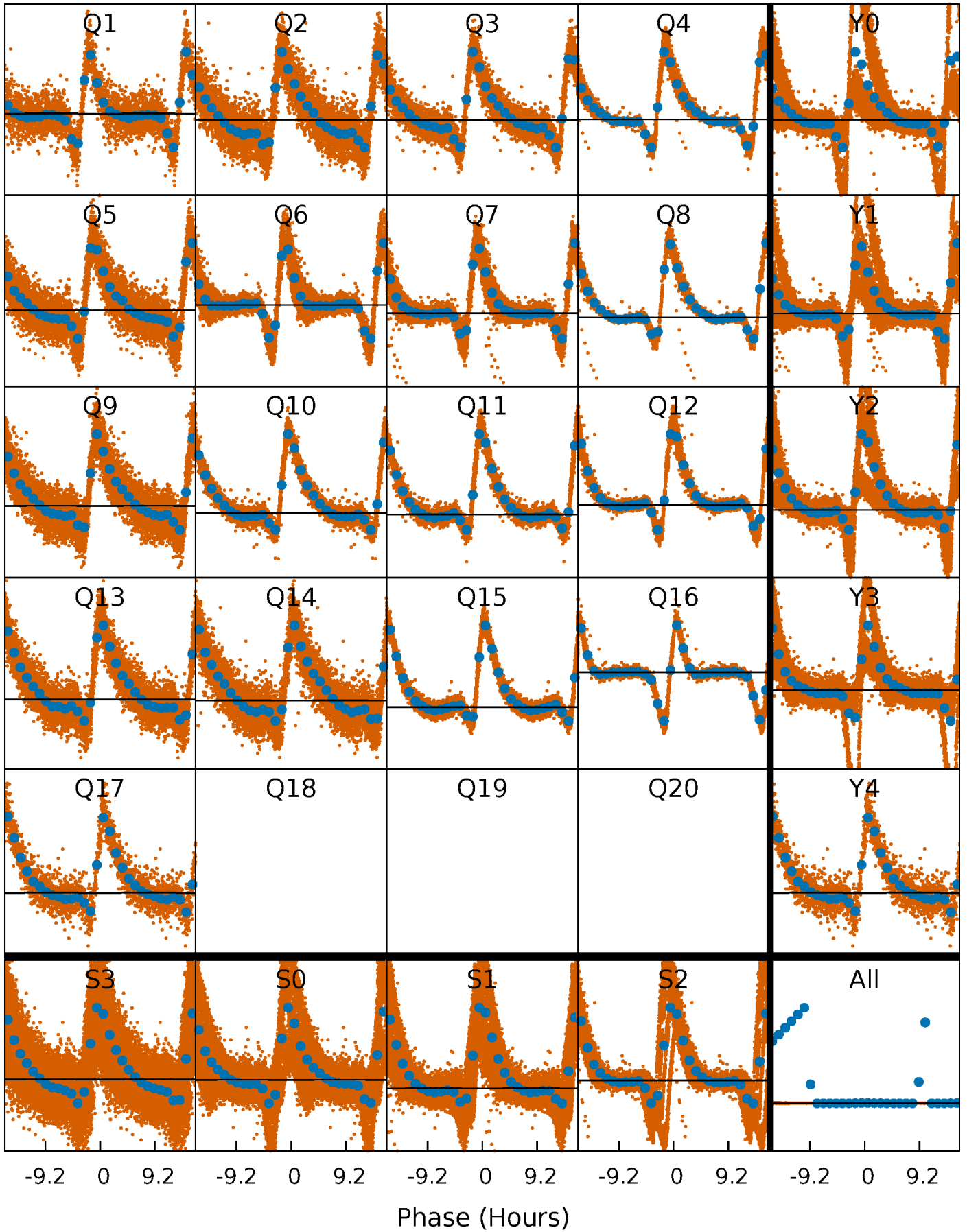
DV Quarter-Phased Transit Curves

TCE 003733363-01 P= 0.683191 Days $T_0=132.672473$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

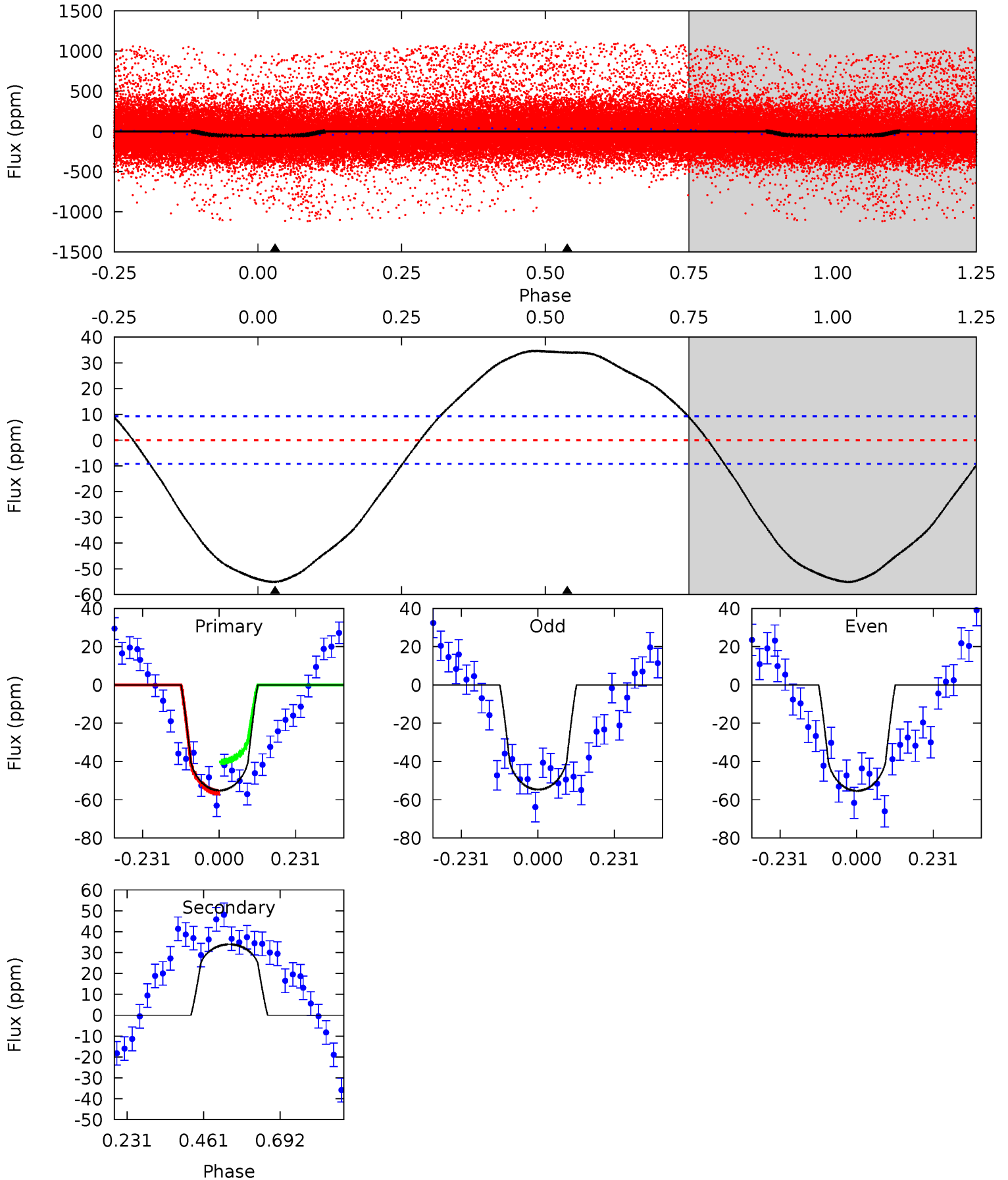
TCE 003733363-01 P= 0.681978 Days $T_0=131.818403$ (BKJD)



DV Model-Shift Uniqueness Test

003733363-01, P = 0.683191 Days, E = 131.306091 Days

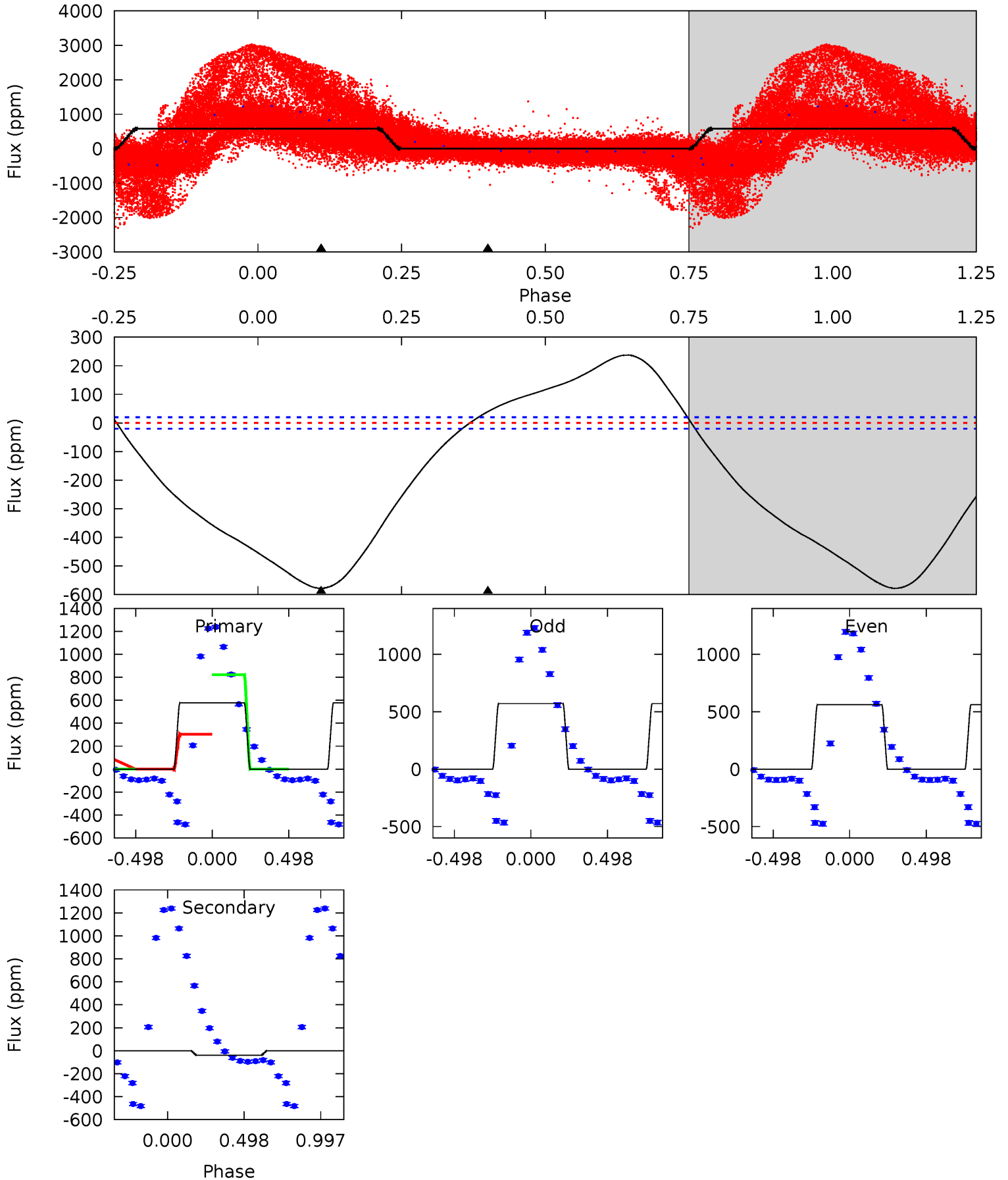
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.2	-16.1	0	0	4.39	1.20	2.15	26.2	26.2	-16.1	-16.1	0.17	3.83	0.39	2.75



Alt Model-Shift Uniqueness Test

003733363-01, P = 0.681978 Days, E = 131.136425 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
123.0	-8.38	0	0	4.22	0.68	18.1	123.0	123.0	-8.38	-8.38	1.13	1.65	0.29	0



Stellar Parameters For KIC 003733363

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6070^{+145}_{-236}	$2.682^{+0.544}_{-0.136}$	$0.070^{+0.250}_{-0.450}$	$14.088^{+1.455}_{-8.247}$	$3.480^{+0.070}_{-1.390}$	$0.002^{+0.014}_{-0.001}$
	+2%/-4%	+20%/-5%	+357%/-643%	+10%/-59%	+2%/-40%	+797%/-30%
Source	PHO1	FLK73	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 003733363-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	34 ± 2	$12.76^{+7.65}_{-6.57}$	9046^{+652}_{-1337}	-8040^{+1136}_{-925}	$-0.057^{+0.034}_{-0.170}$
Alt.	39 ± 5	$5.38^{+5.71}_{-3.87}$	9108^{+554}_{-1235}	-9739^{+1726}_{-12048}	$-0.380^{+0.293}_{-4.101}$

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 $A_{obs} \gg 1.0$

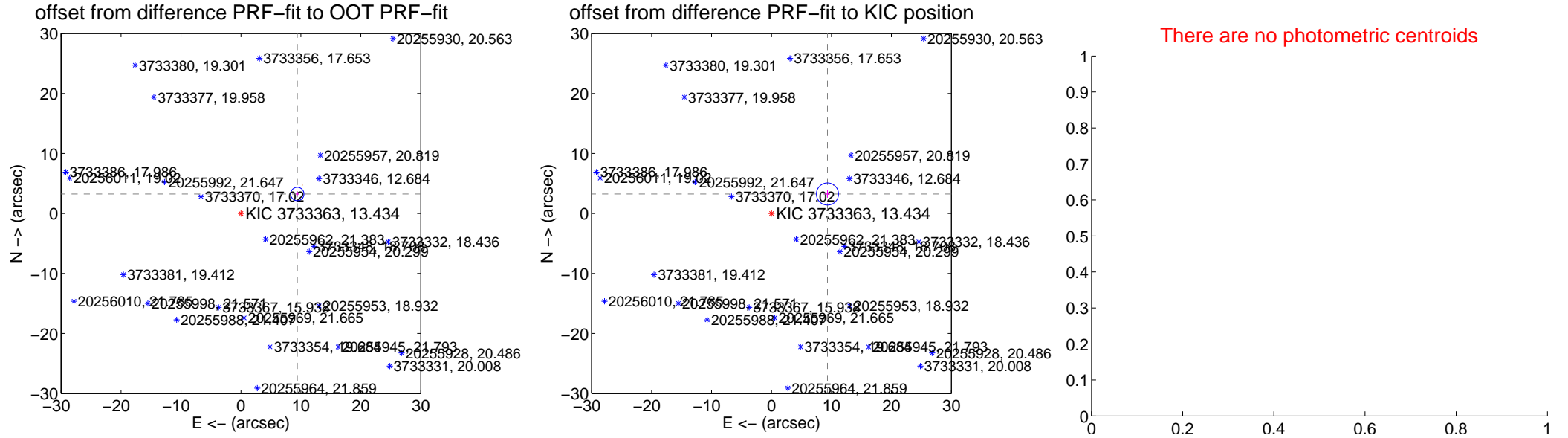
DV Centroid Data

Supplemental centroid analysis for 003733363-01. Kepler magnitude: 13.43. Transit SNR 46.17

There are 1 quarters with good PRF difference image offsets

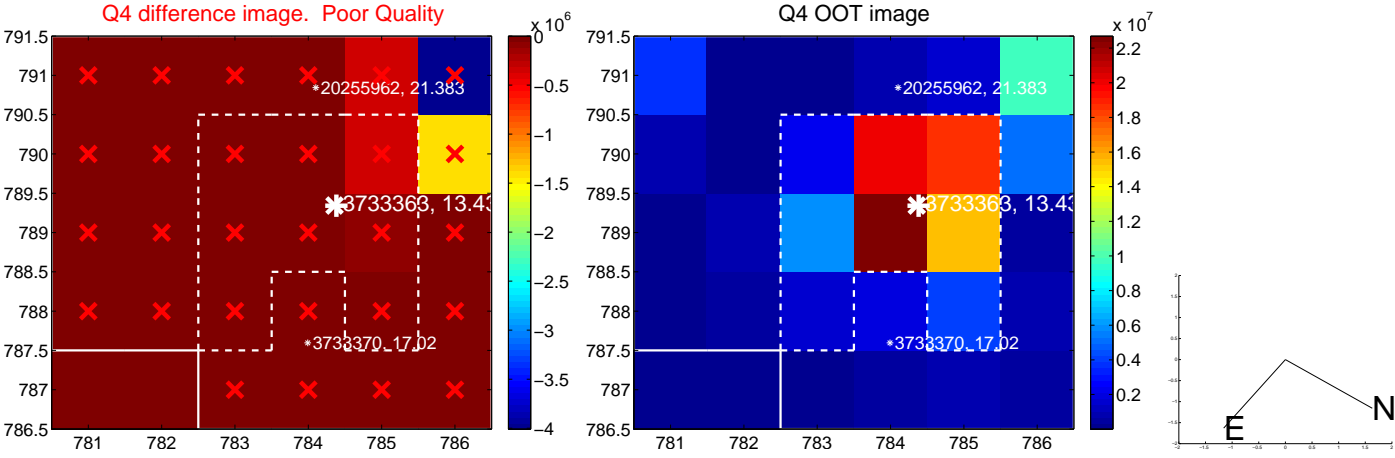
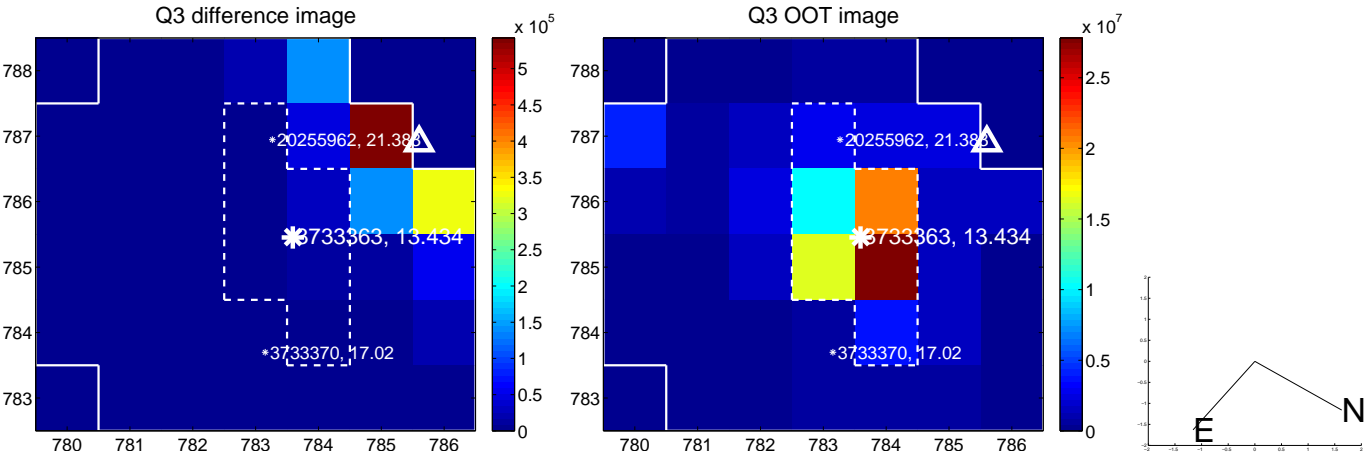
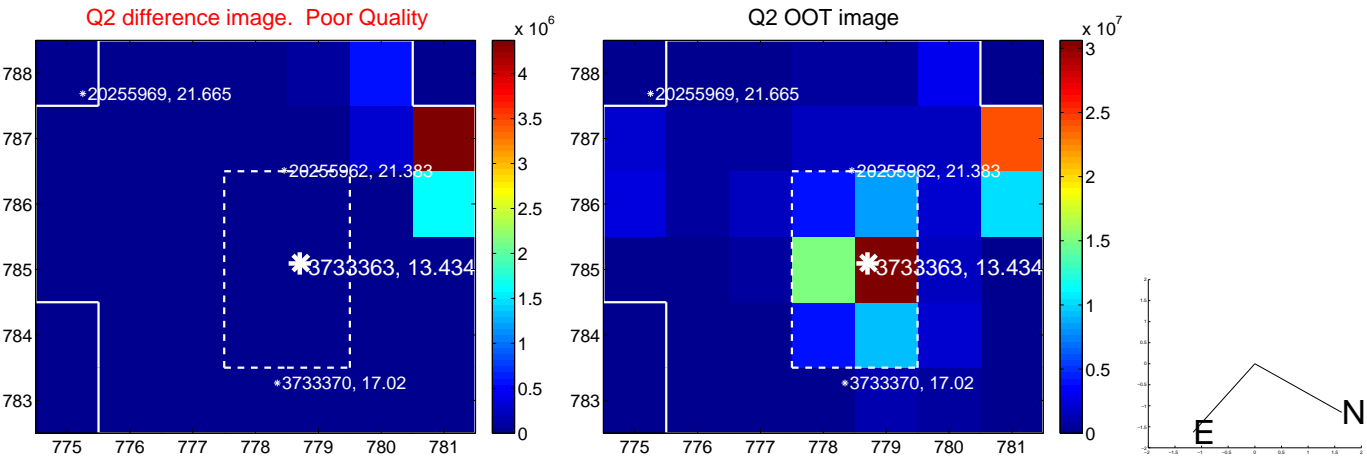
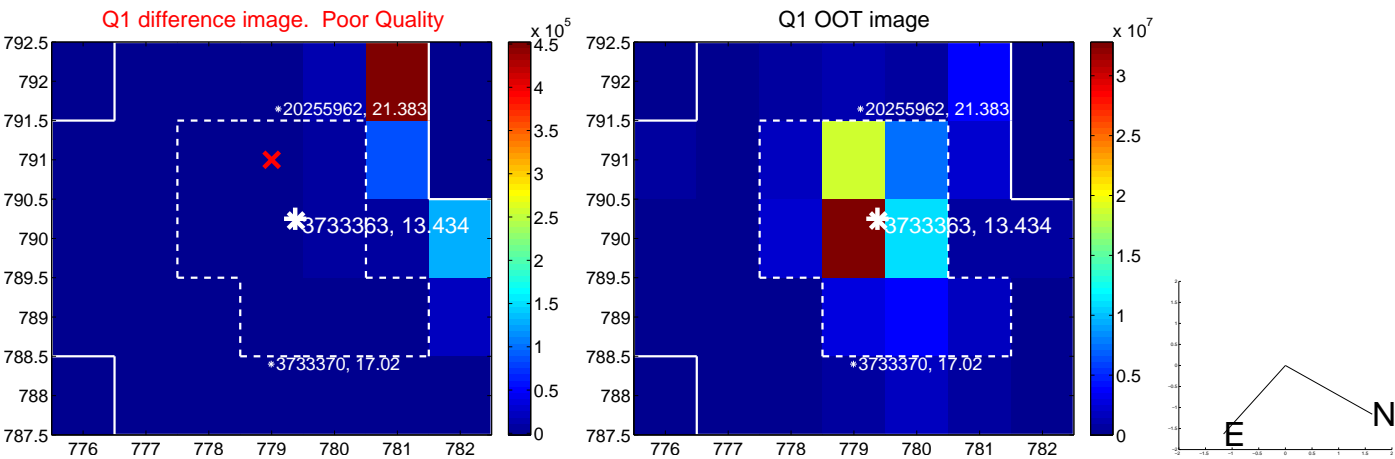
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	9.951 \pm 0.372	26.78	-9.405 \pm 0.262	3.251 \pm 0.391
PRF-fit source offset from KIC position	9.883 \pm 0.615	16.08	-9.335 \pm 0.442	3.245 \pm 0.607
photometric centroid source offset	—	—	—	—

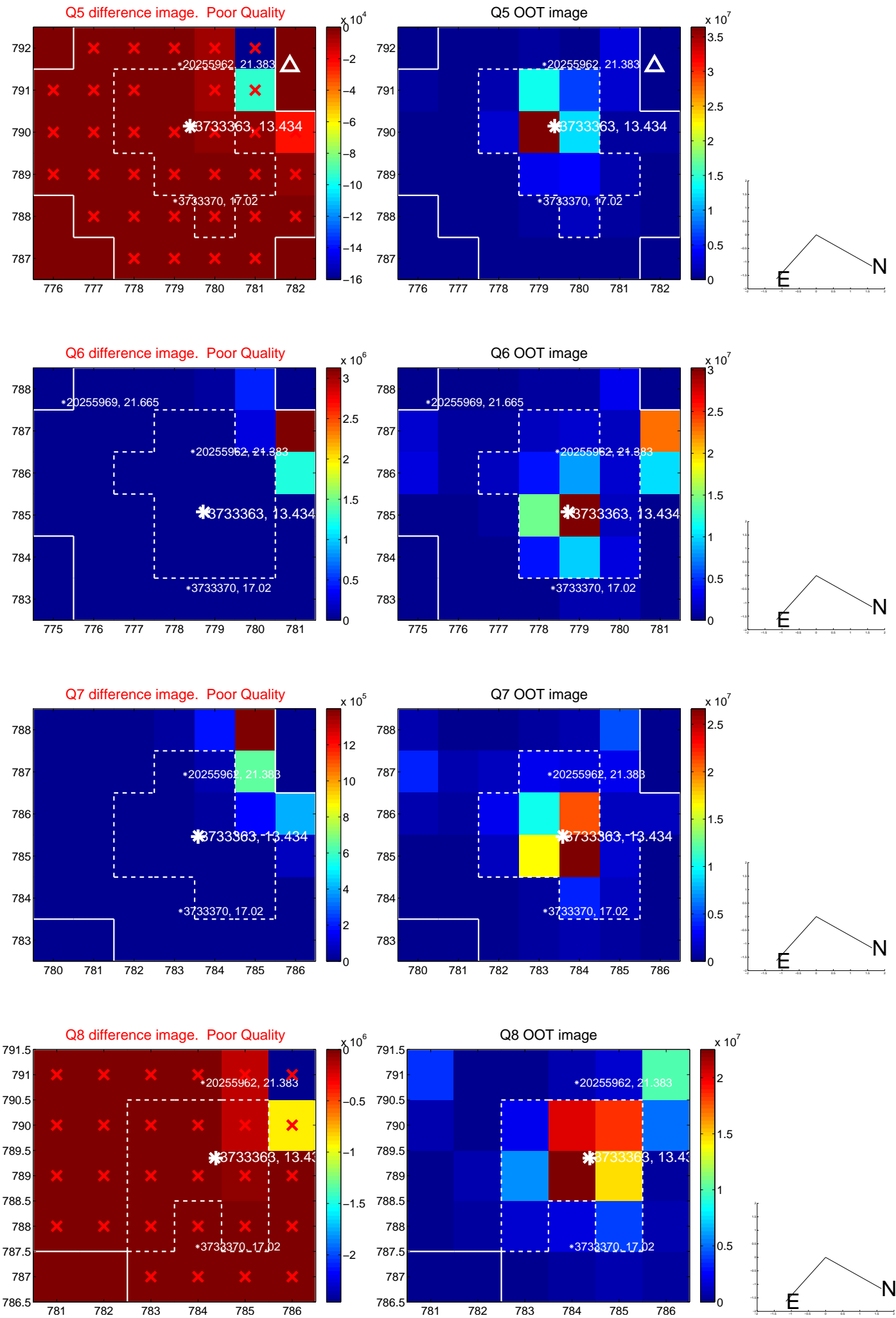


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

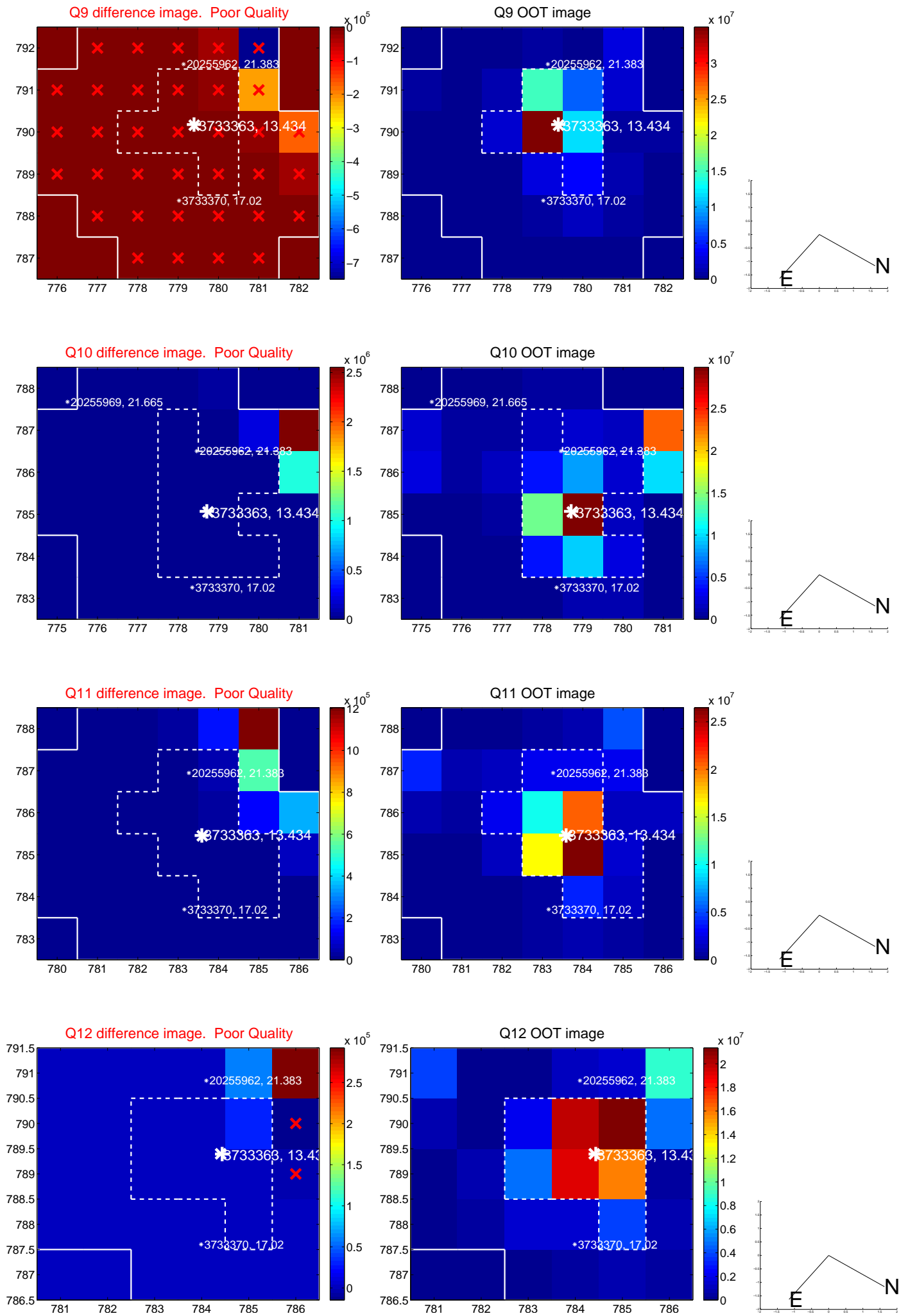
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



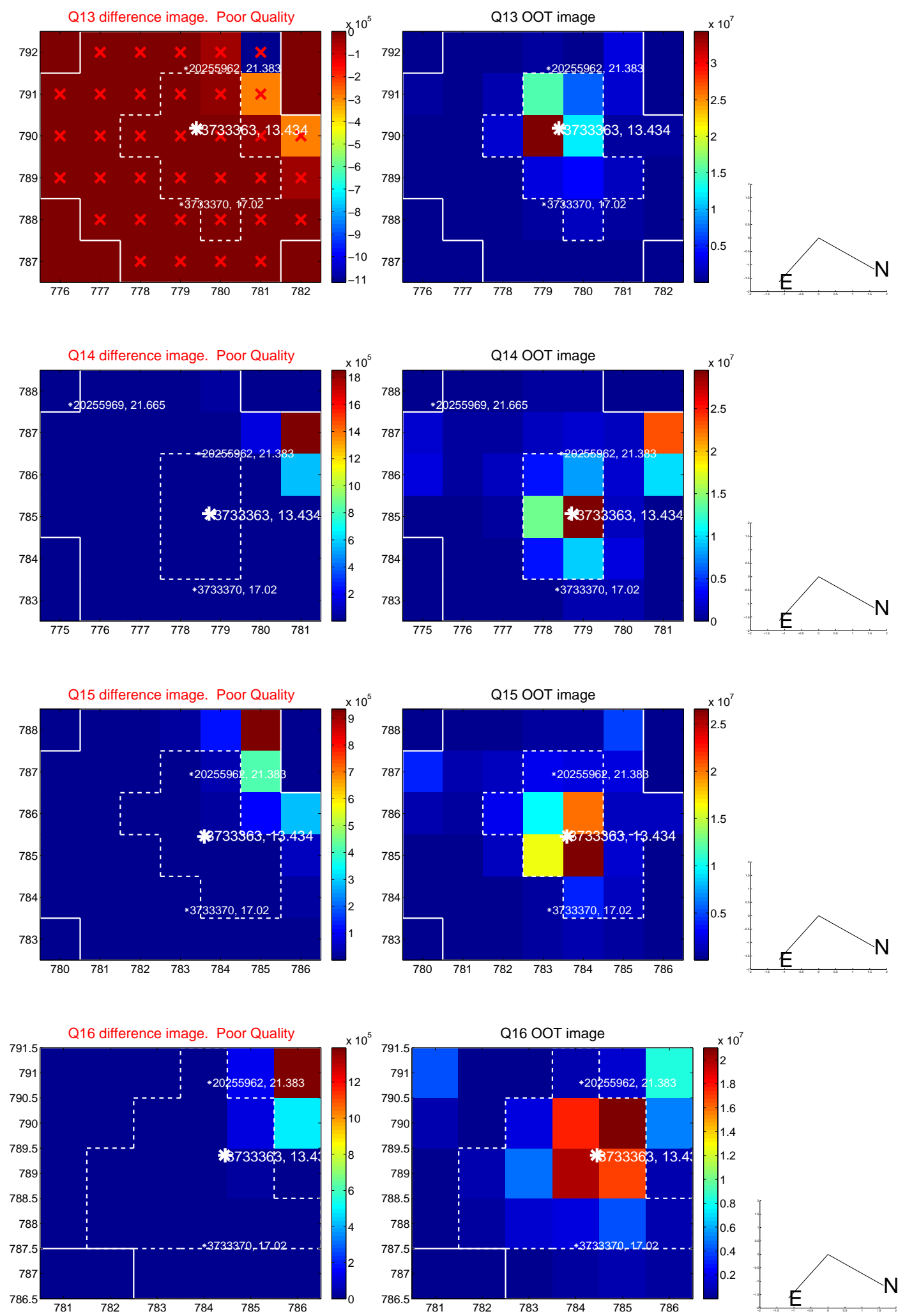
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



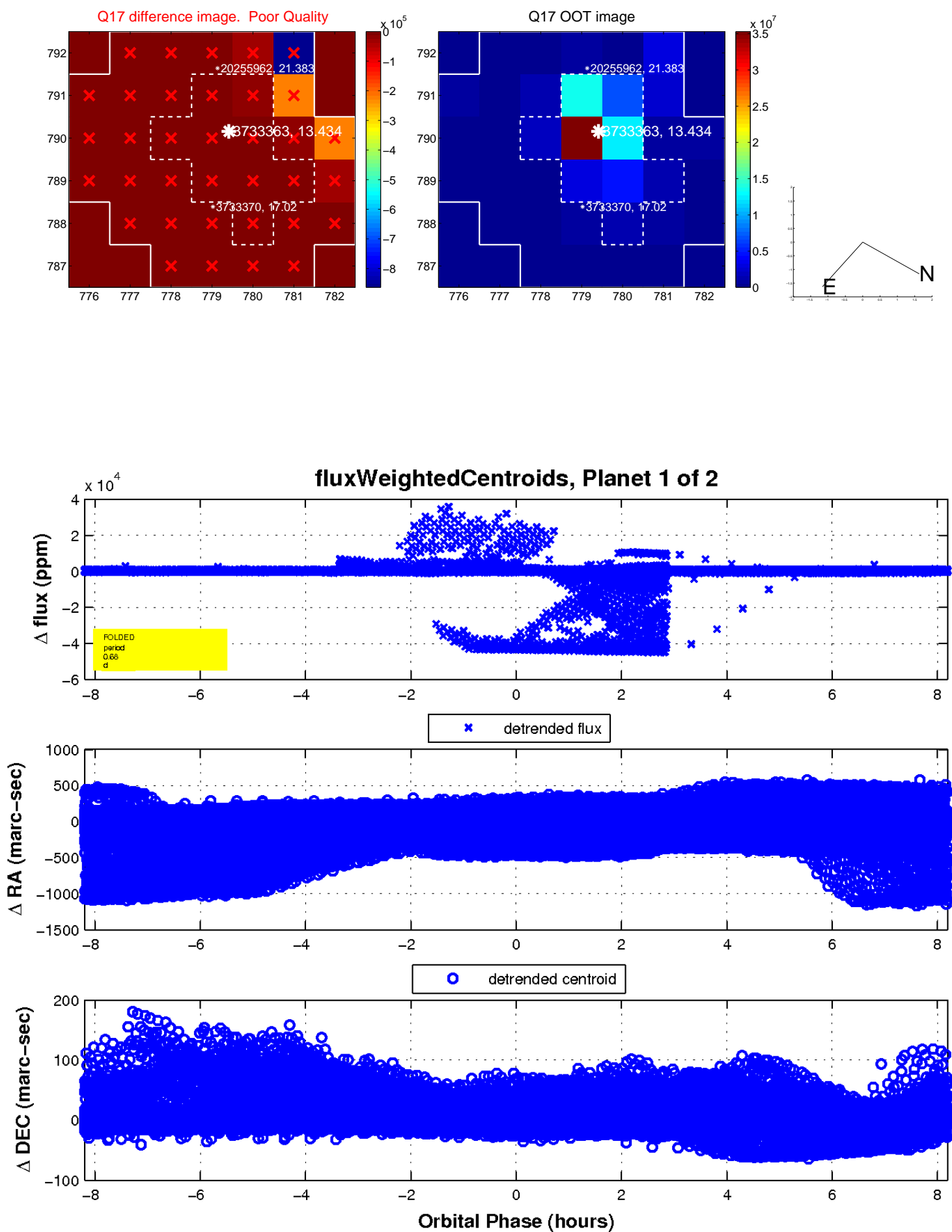
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

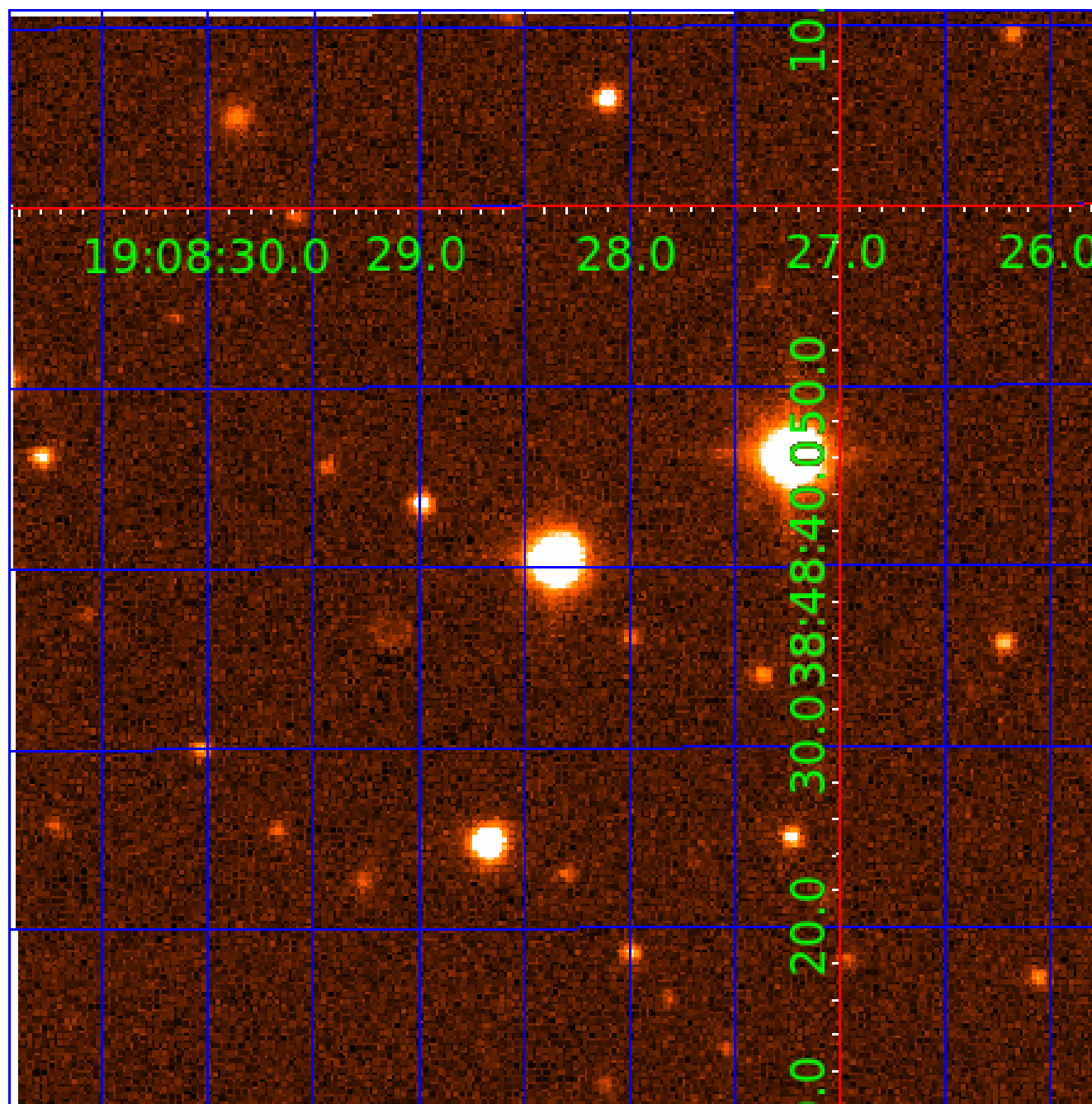


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003733363

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})
003733363-01	OBS	No	0.683191	132.672473	111.0	3.349	1273.2	46.2	14.09	6070	14.81	0.00
003733363-02	OBS	No	190.727059	212.767773	329.7	9.269	13.7	5.7	14.09	6070	27.45	249.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003733363-01	OBS	FP	0.00	1	0	1	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET
003733363-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET

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

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

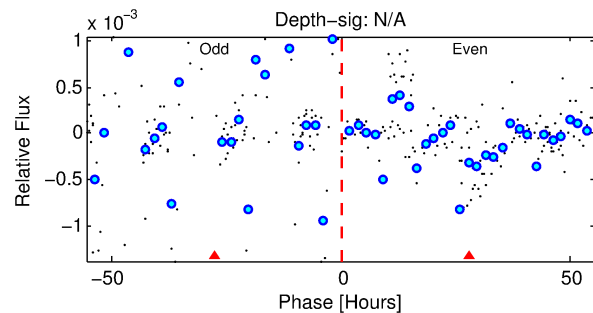
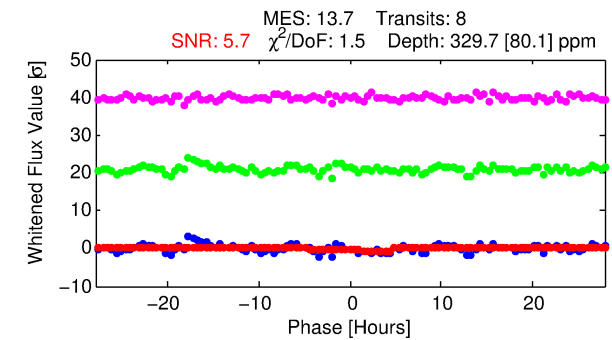
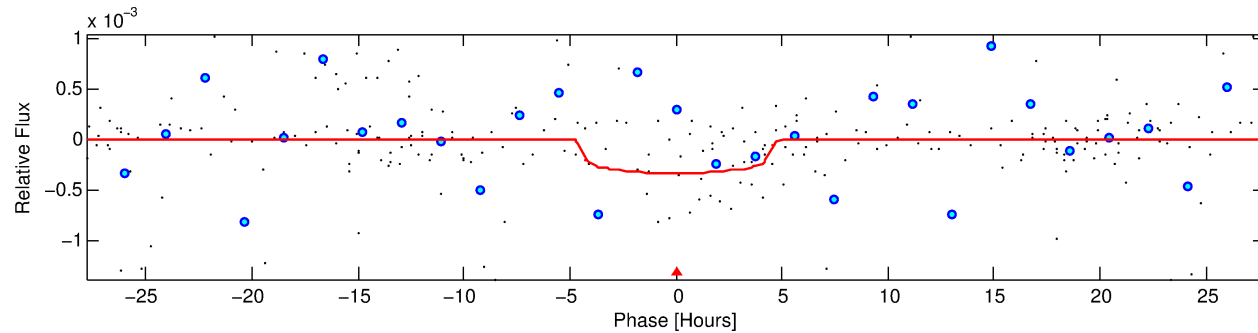
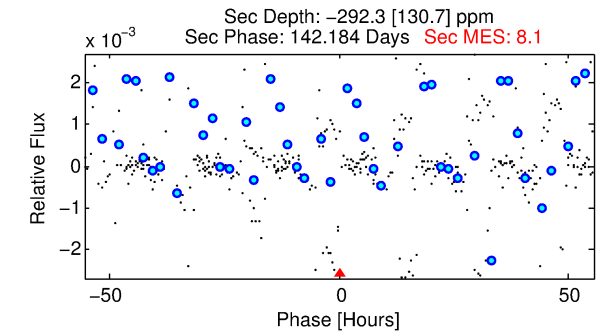
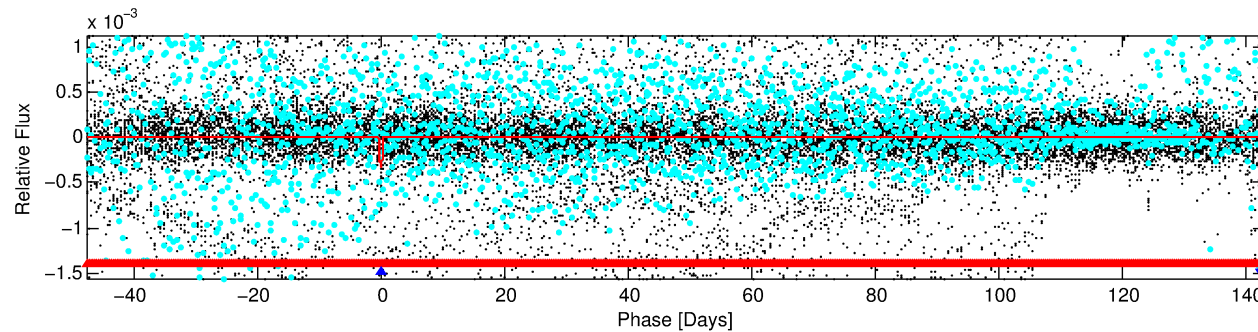
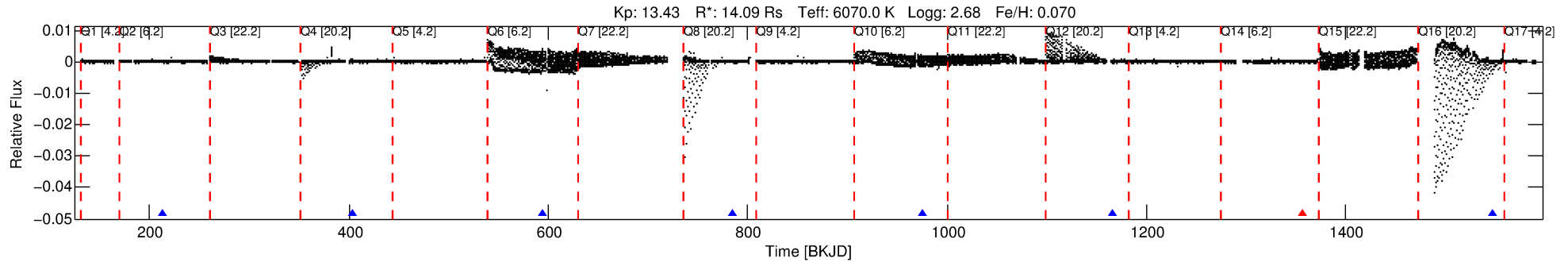
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003733363-02

No Significant Match Found

DV One-Page Summary

KIC: 3733363 Candidate: 2 of 2 Period: 190.727 d



DV Fit Results:

Period = 190.72706 [0.00585] d
Epoch = 212.7678 [0.0339] BKJD
Rp/R* = 0.0179 [0.0124]
a/R* = 114.43 [391.24]
b = 0.71 [2.35]
Seff = 249.84 [233.55]
Teq = 1014 [237] K
Rp = 27.45 [24.89] Re
a = 0.9830 [0.5618] AU
Ag = N/A
Teffp = N/A

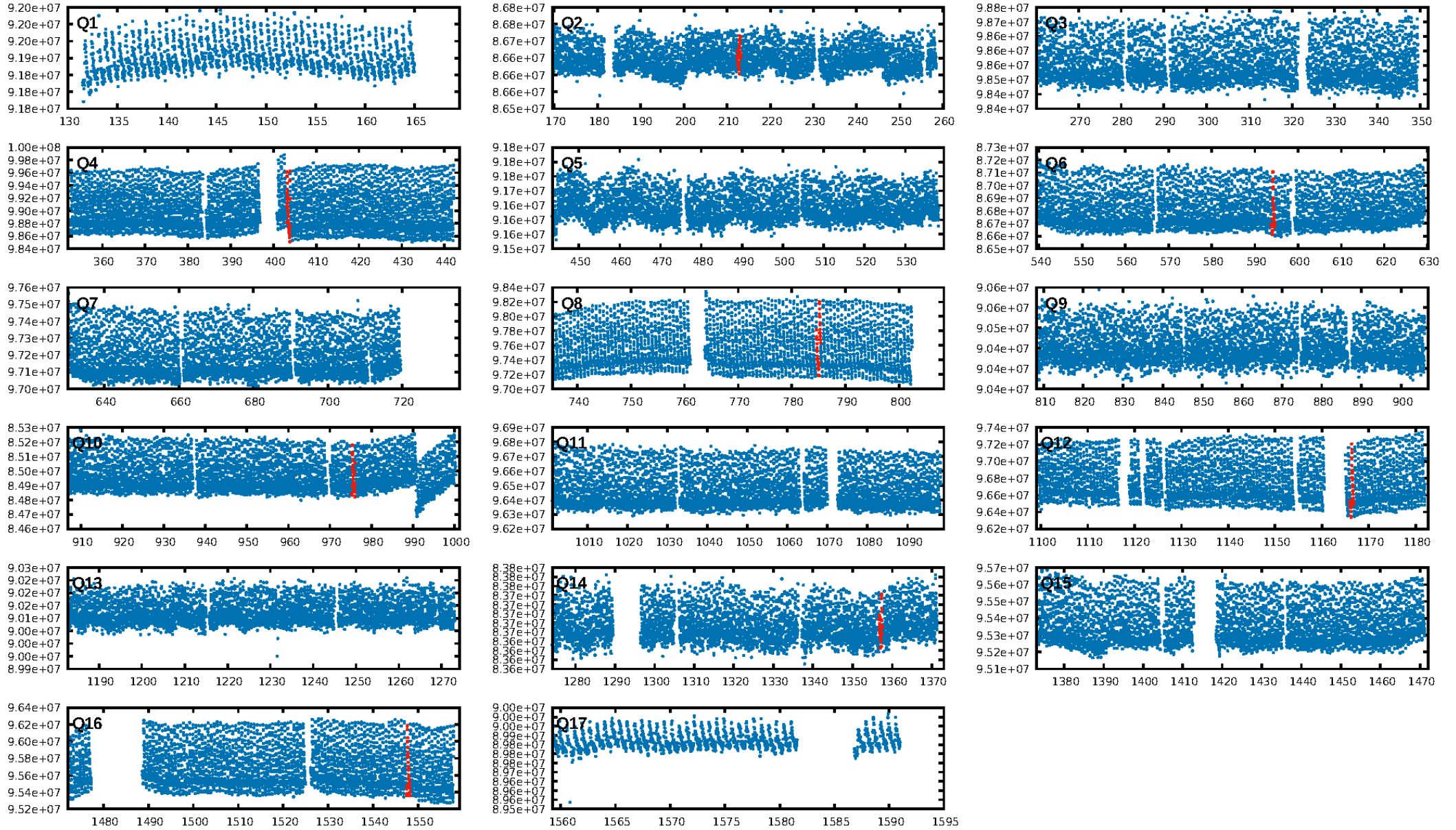
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [462.79σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.88 [7/8]
GhostDiagnostic-chr: -1.1
Centroid-sig: N/A
Centroid-so: 8.017 arcsec [0.60σ]
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: 0.00 [0/7]

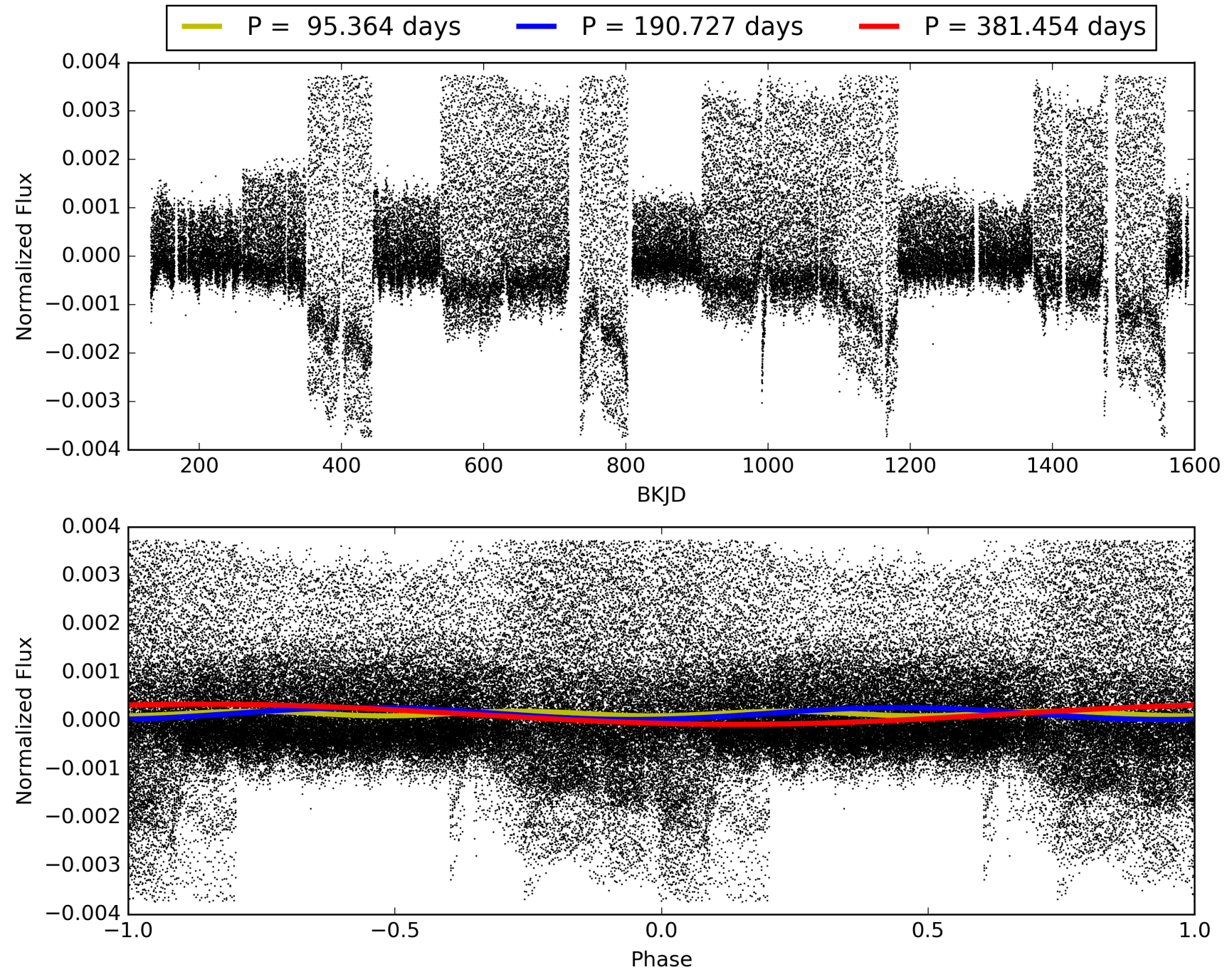
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 03:21:50 Z

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

TCE 003733363-02, PDC Light Curves

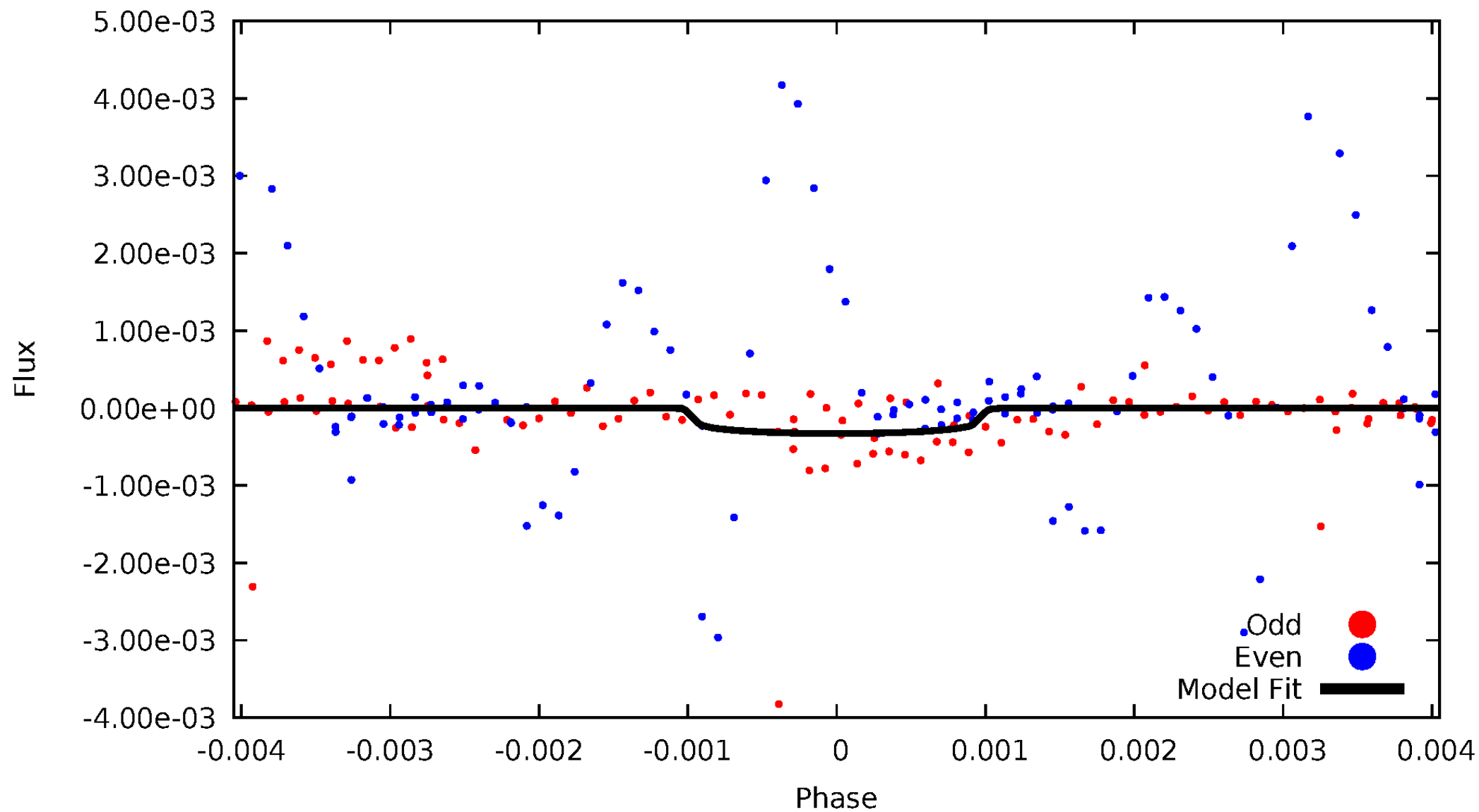


TCE 003733363-02



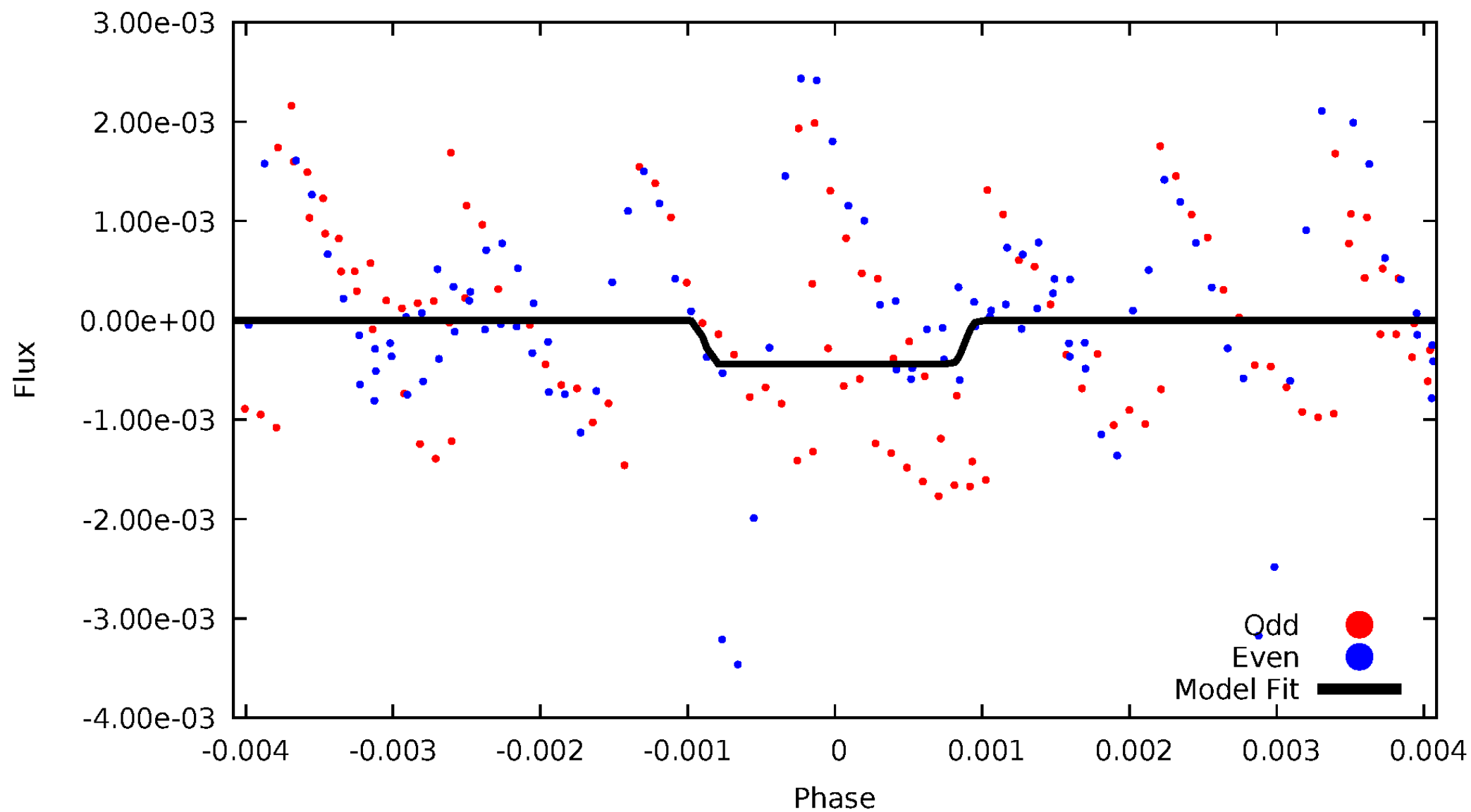
DV Odd/Even

TCE 003733363-02



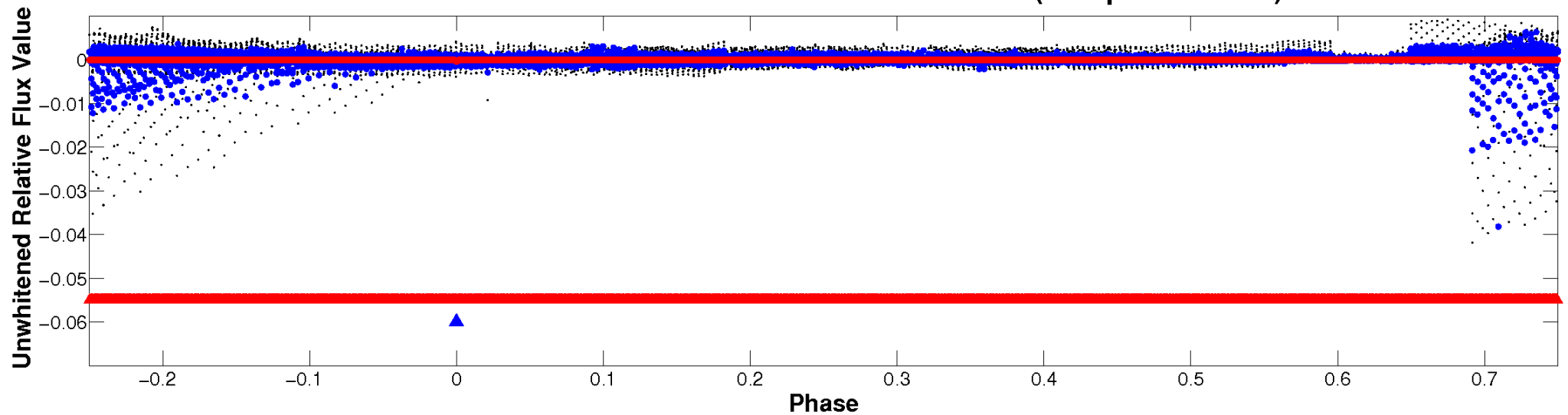
ALT Odd/Even

TCE 003733363-02

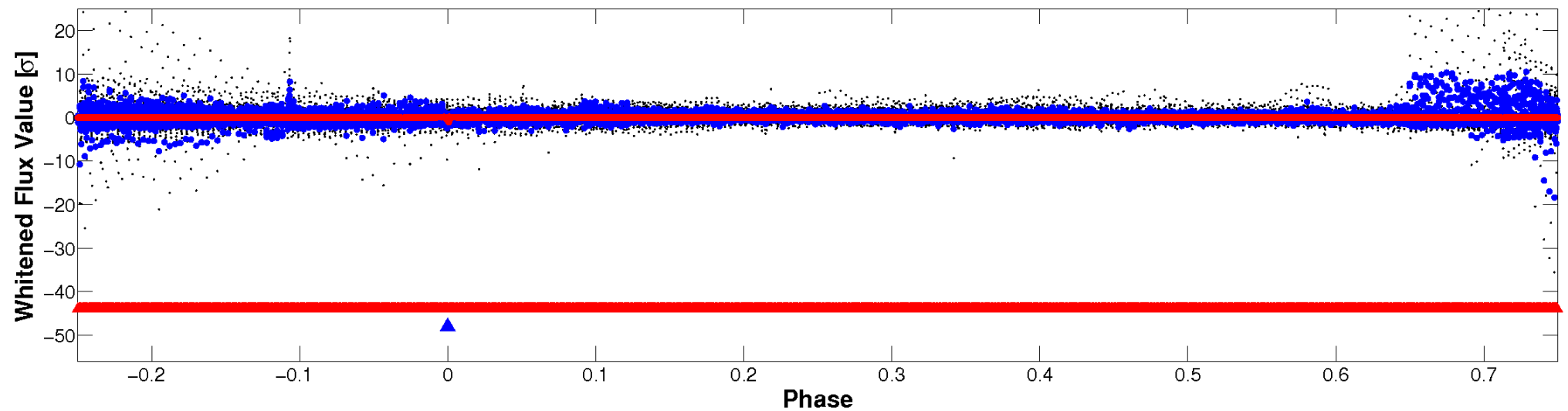


Non-Whitened Vs. Whitened Light Curve

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

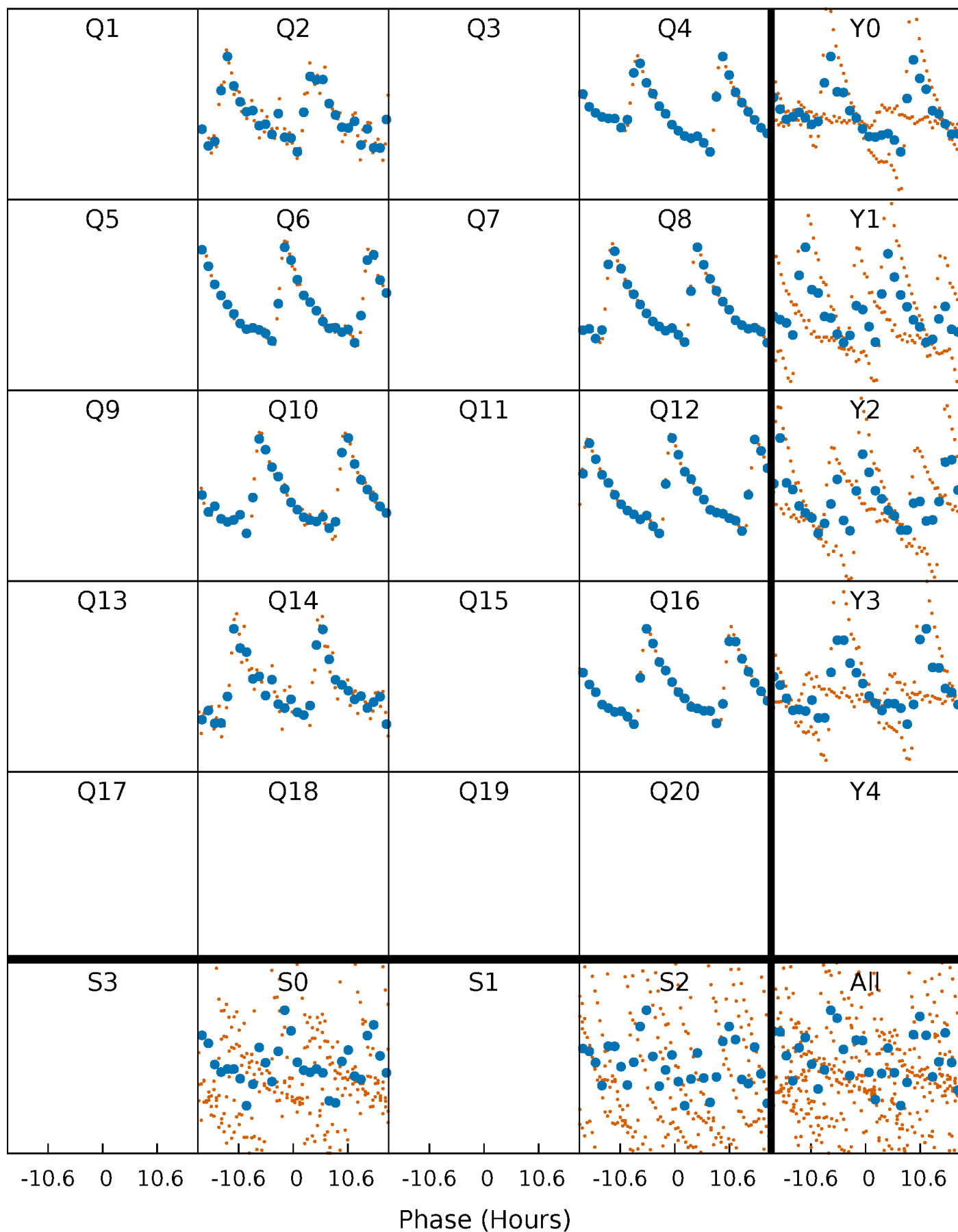


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



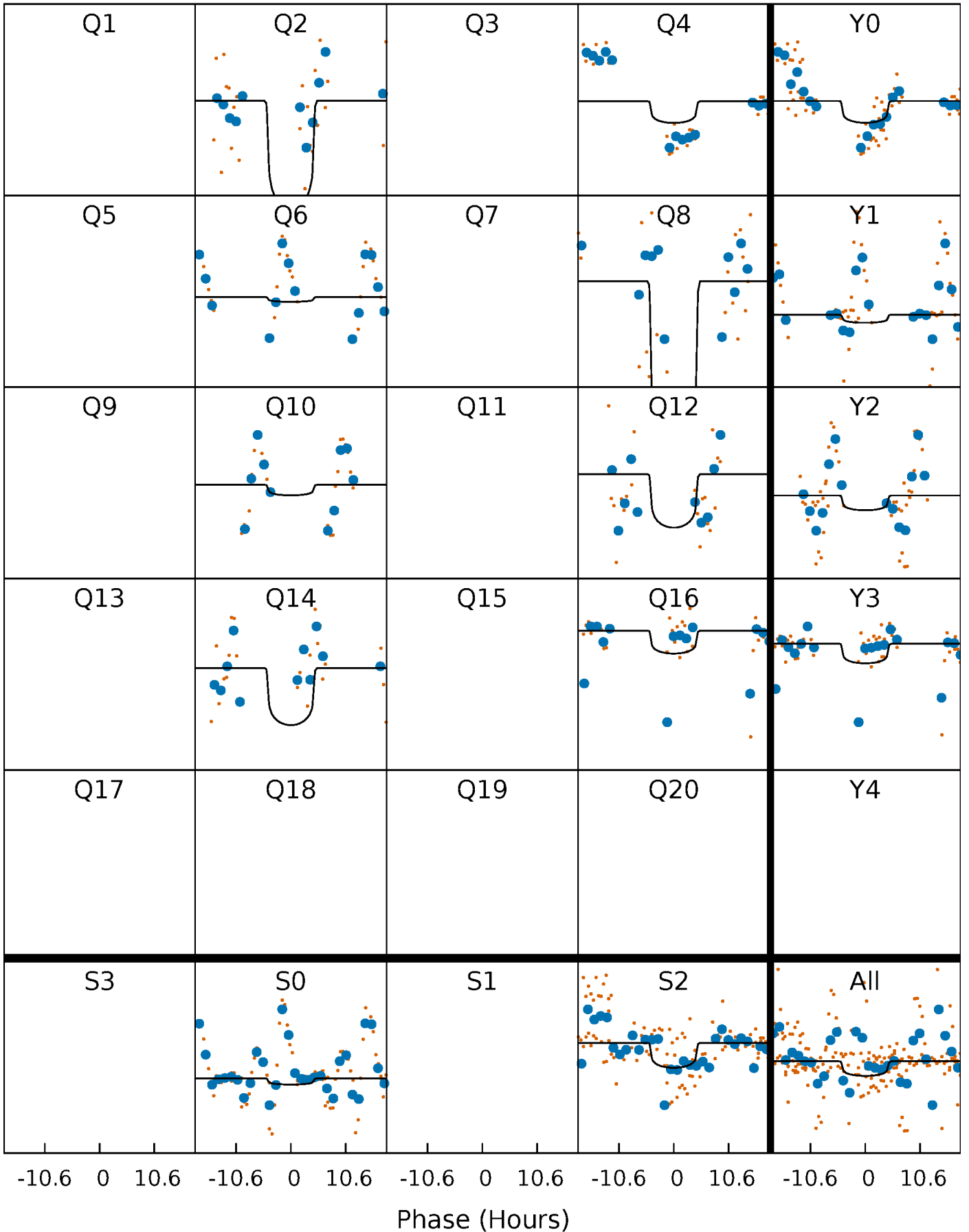
PDC Quarter-Phased Transit Curves

TCE 003733363-02 P=190.727059 Days $T_0=212.767773$ (BKJD)



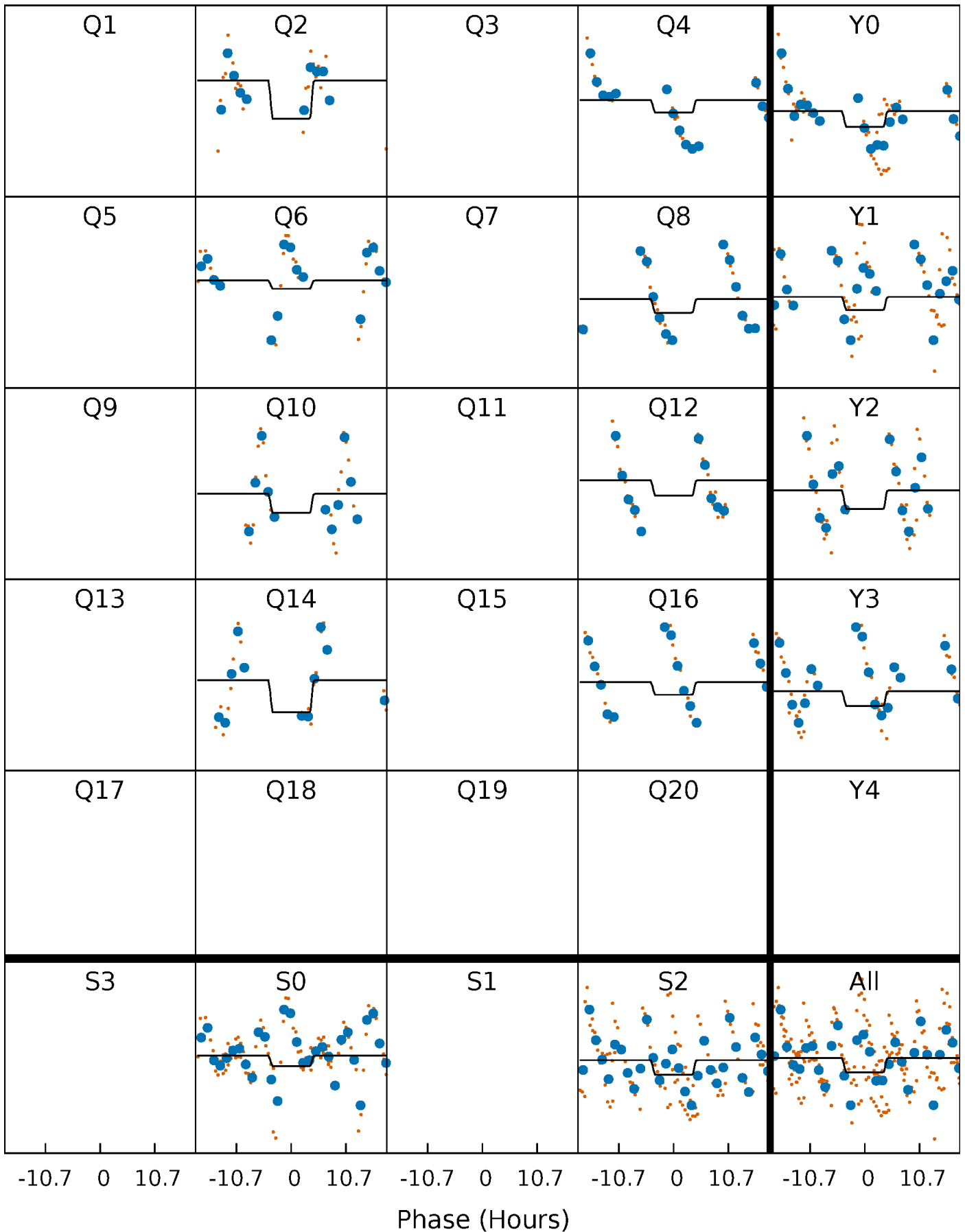
DV Quarter-Phased Transit Curves

TCE 003733363-02 P=190.727059 Days $T_0=212.767773$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

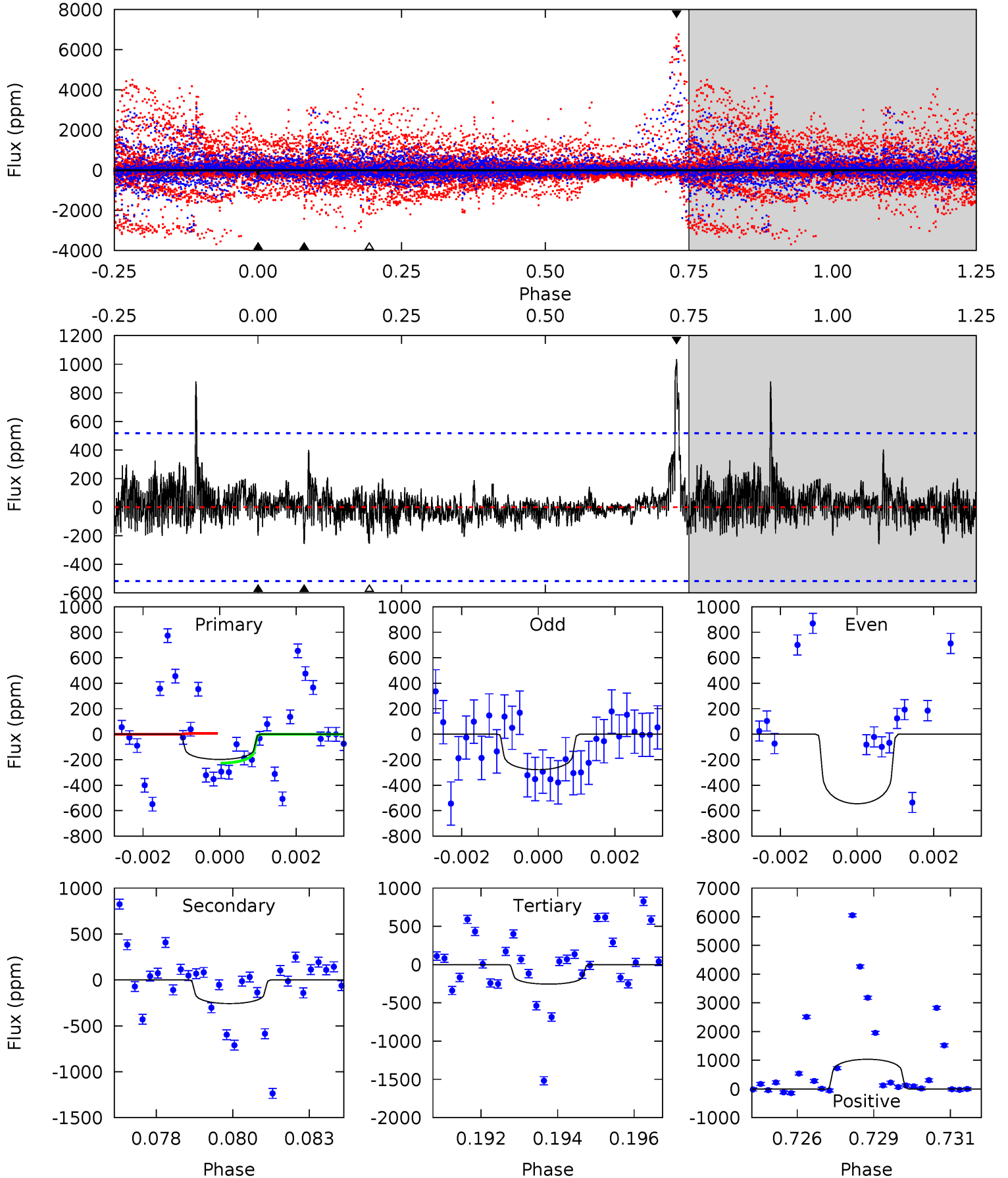
TCE 003733363-02 P=190.726849 Days $T_0=212.741773$ (BKJD)



DV Model-Shift Uniqueness Test

003733363-02, $P = 190.727059$ Days, $E = 22.040714$ Days

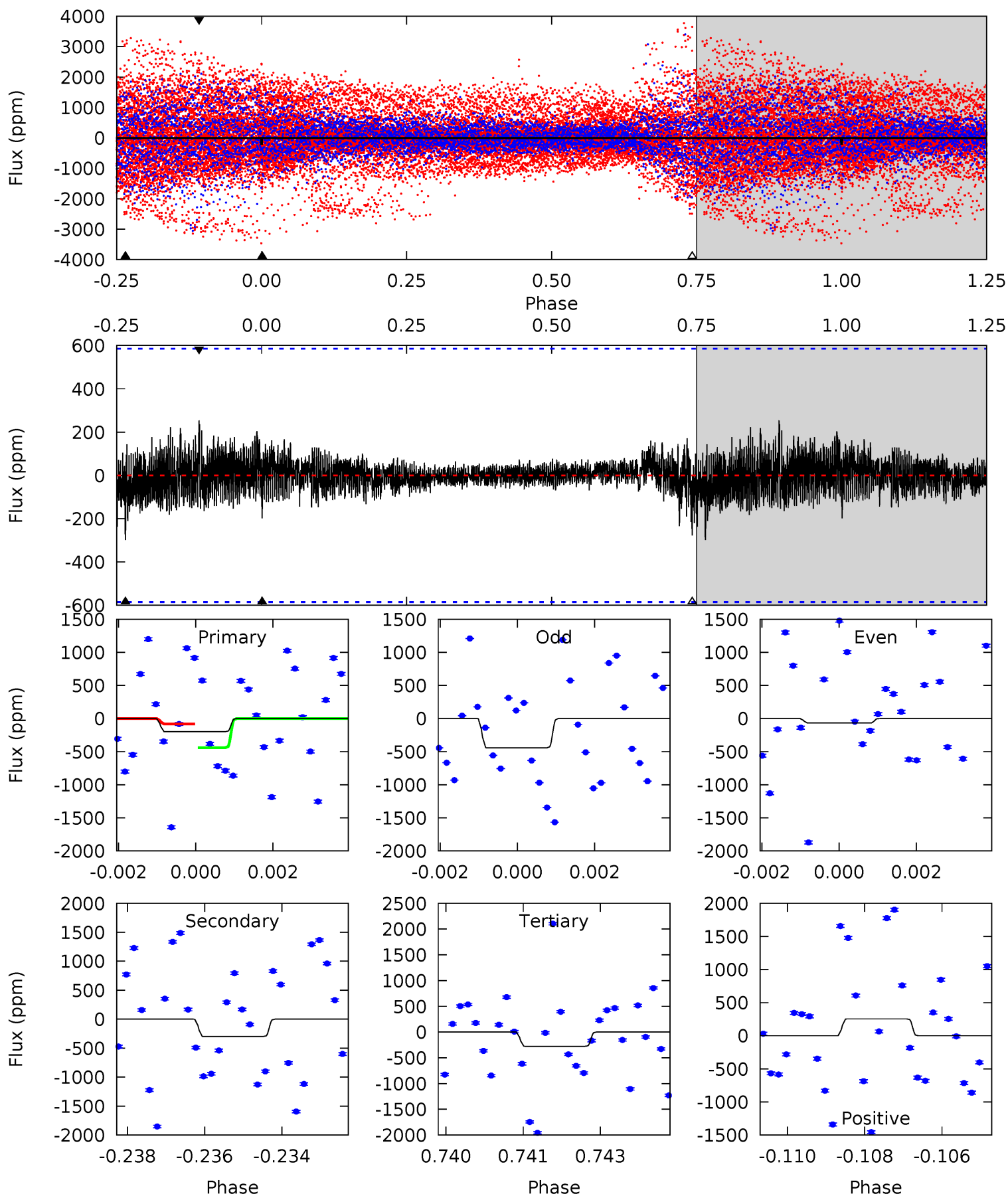
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.04	2.65	2.63	10.7	5.32	3.08	1.09	-0.59	-8.62	0.03	-8.00	0.91	0.43	0.80	1.07



Alt Model-Shift Uniqueness Test

003733363-02, P = 190.726849 Days, E = 22.014924 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.80	2.72	2.52	2.31	5.33	3.10	0.52	-0.72	-0.51	0.20	0.40	1.65	0.71	0.46	1.60



Stellar Parameters For KIC 003733363

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6070^{+145}_{-236}	$2.682^{+0.544}_{-0.136}$	$0.070^{+0.250}_{-0.450}$	$14.088^{+1.455}_{-8.247}$	$3.480^{+0.070}_{-1.390}$	$0.002^{+0.014}_{-0.001}$
	+2%/-4%	+20%/-5%	+357%/-643%	+10%/-59%	+2%/-40%	+797%/-30%
Source	PHO1	FLK73	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 003733363-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-258 ± 97	$26.55^{+17.79}_{-15.98}$	1400^{+85}_{-191}	5436^{+3128}_{-1079}	172^{+896}_{-115}
Alt.	-298 ± 110	$30.74^{+20.21}_{-16.83}$	1399^{+84}_{-188}	5247^{+2493}_{-923}	145^{+617}_{-93}

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 $A_{obs} \gg 1.0$

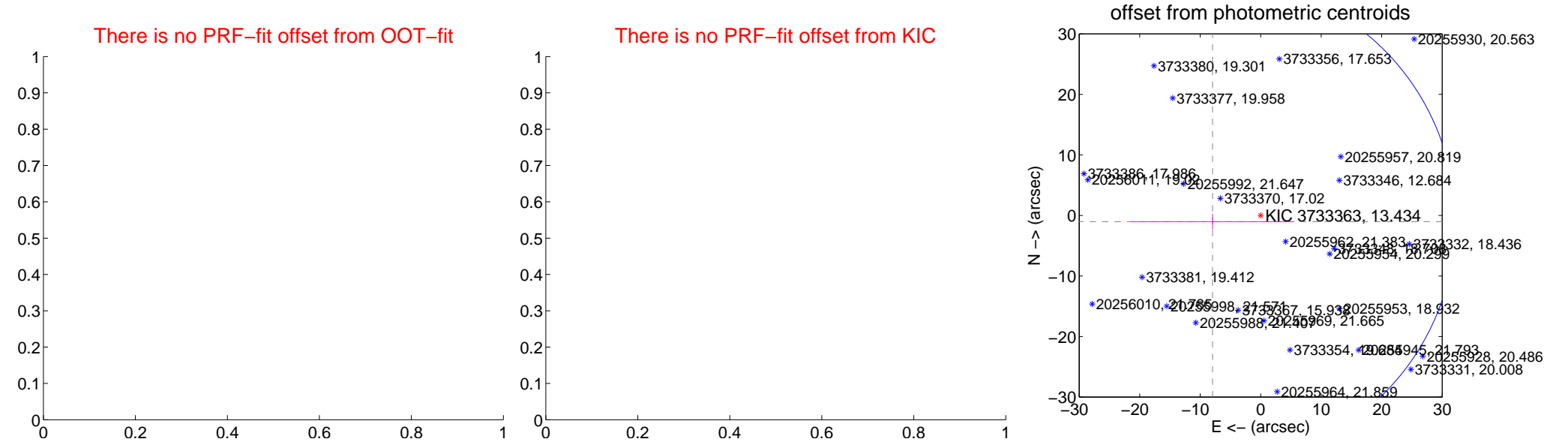
DV Centroid Data

Supplemental centroid analysis for 003733363-02. Kepler magnitude: 13.43. Transit SNR 5.66

There are 0 quarters with good PRF difference image offsets

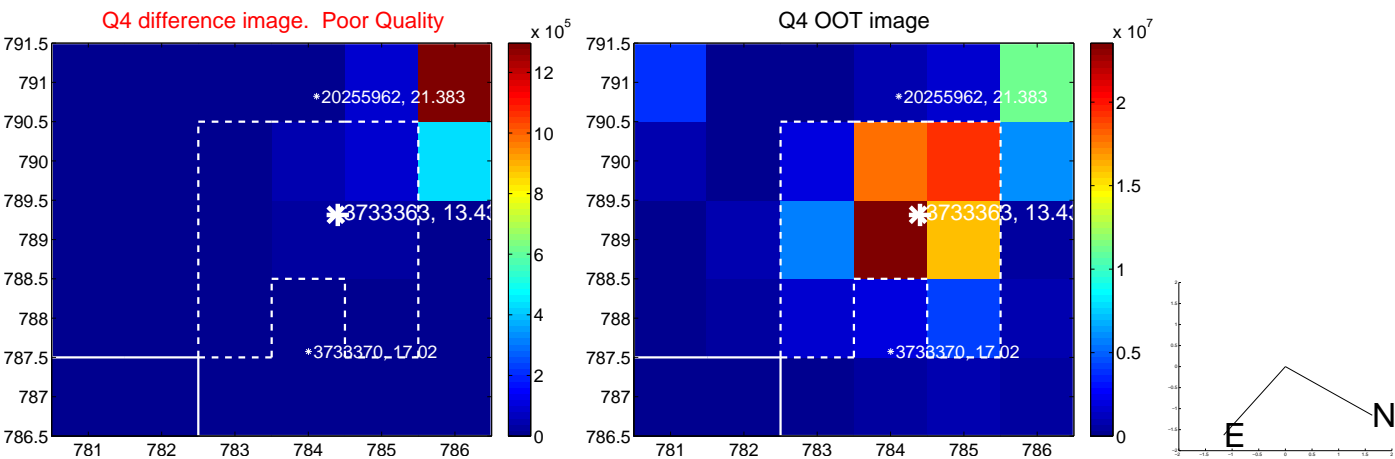
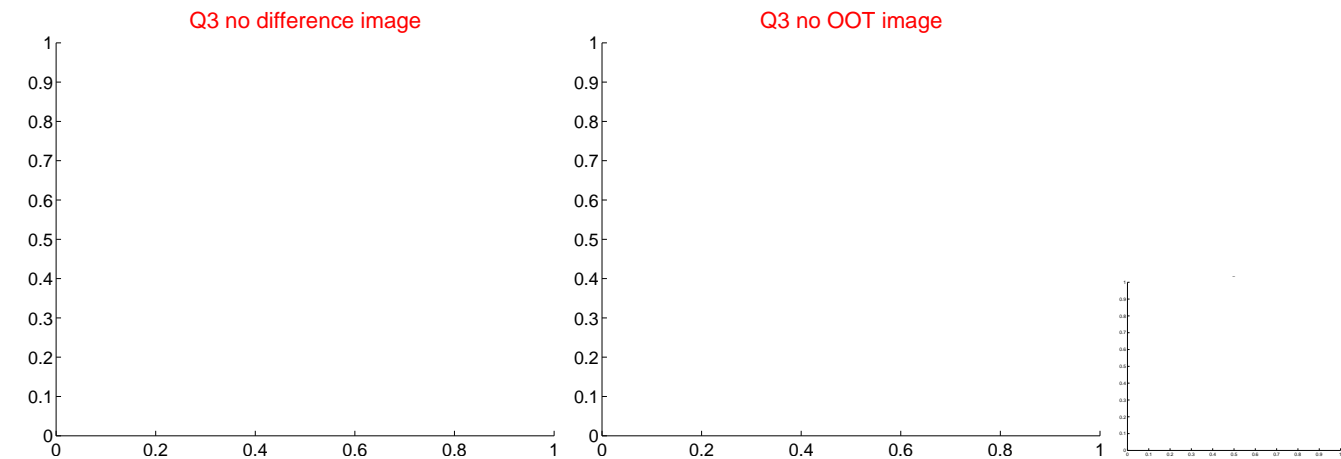
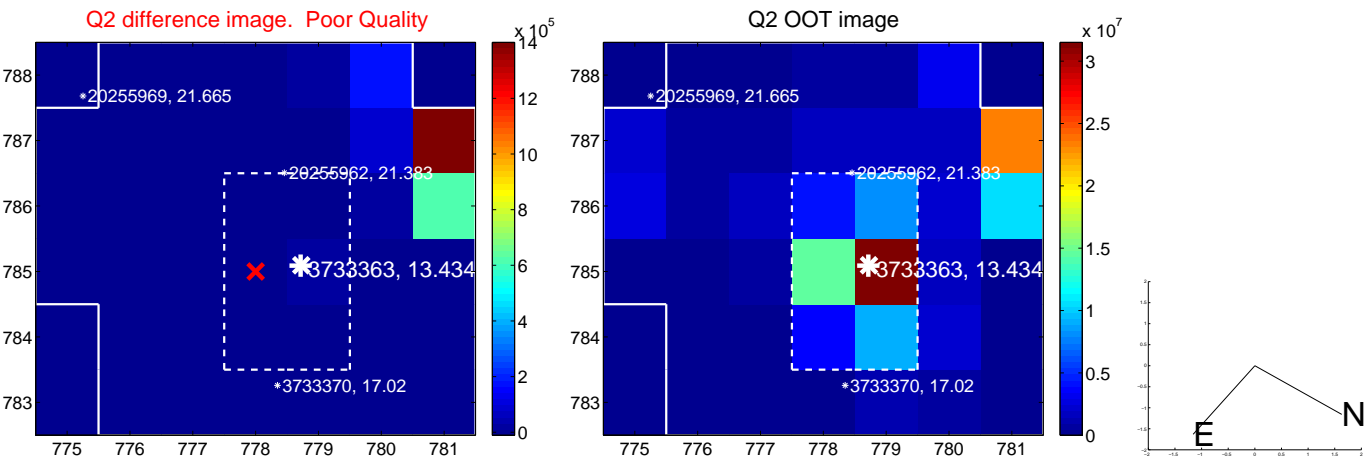
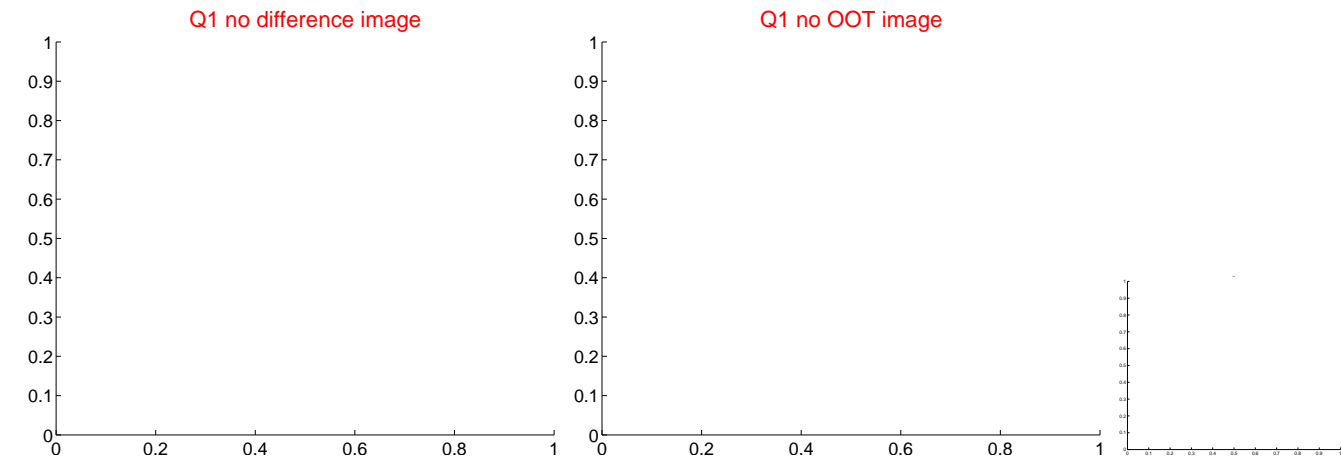
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	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	8.02 ± 13.37	0.60	7.95 ± 13.48	-1.03 ± 1.31



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.

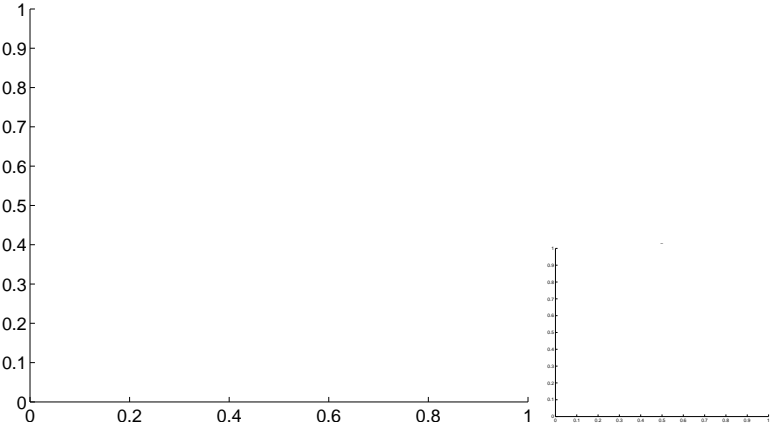


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

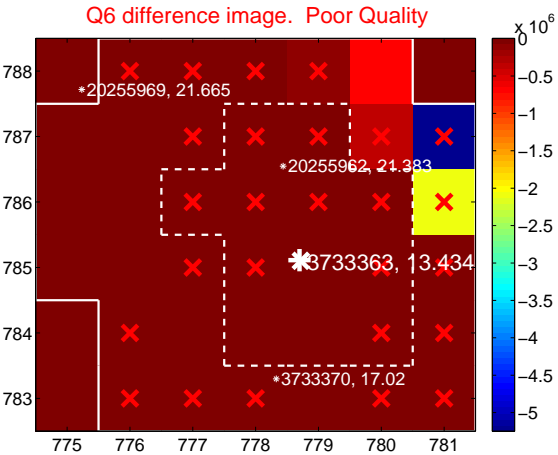
Q5 no difference image



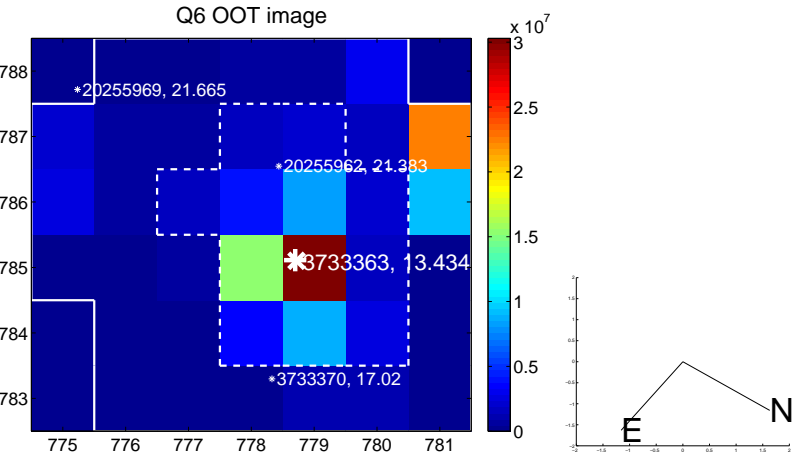
Q5 no OOT image



Q6 difference image. Poor Quality



Q6 OOT image



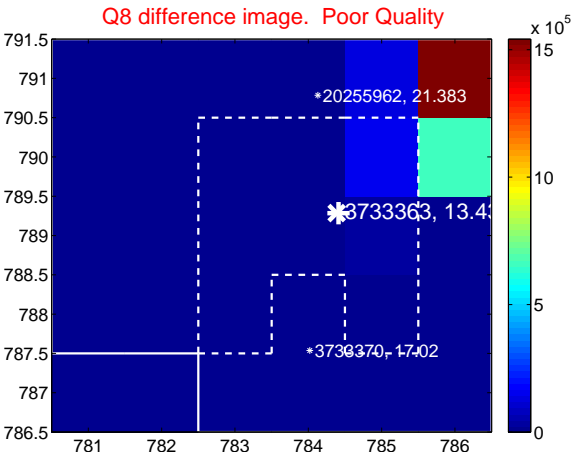
Q7 no difference image



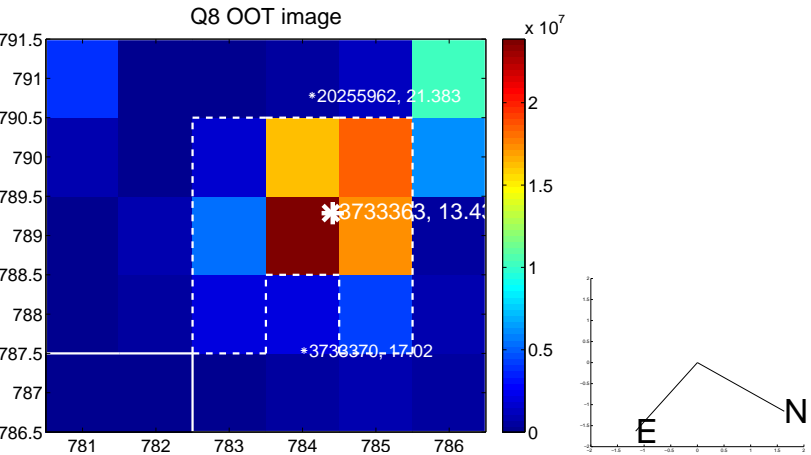
Q7 no OOT image



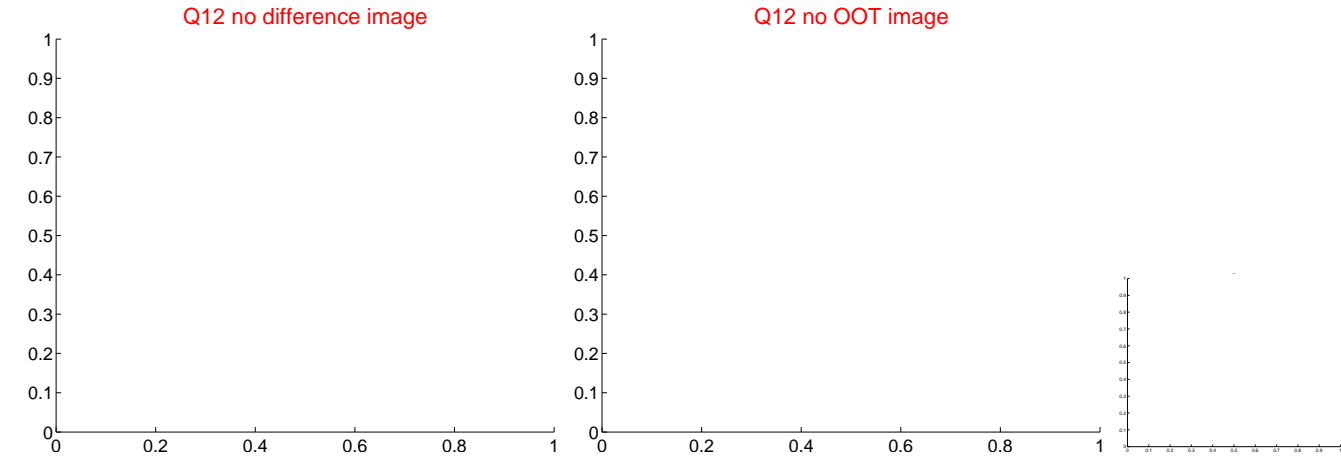
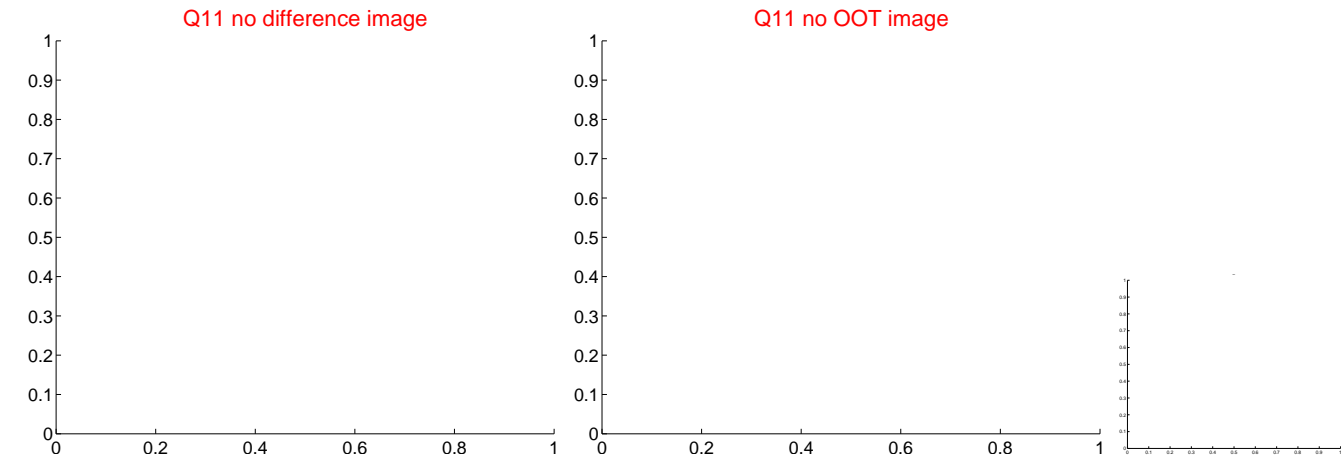
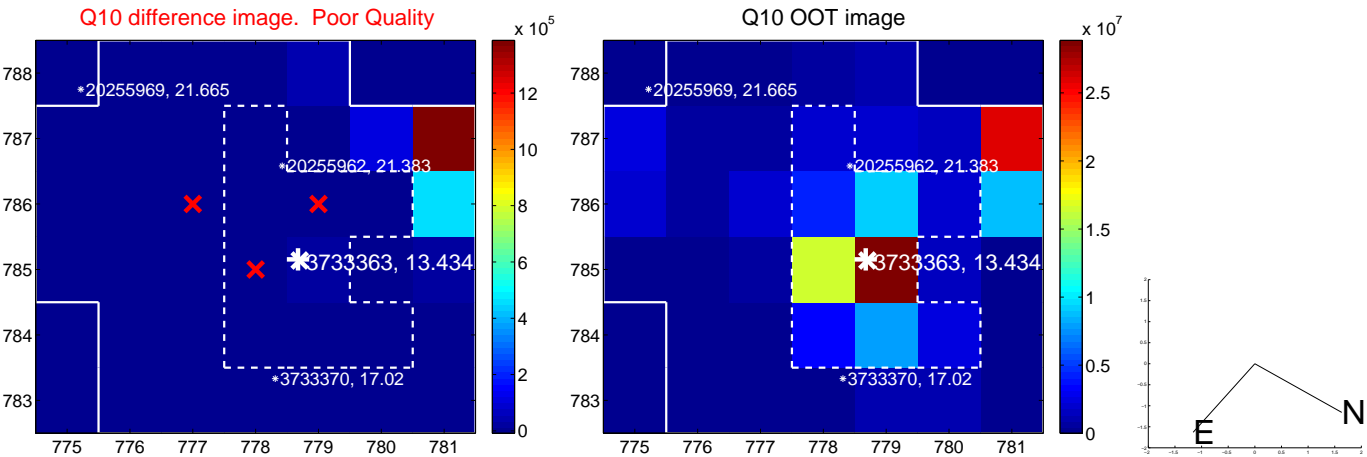
Q8 difference image. Poor Quality



Q8 OOT image



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



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

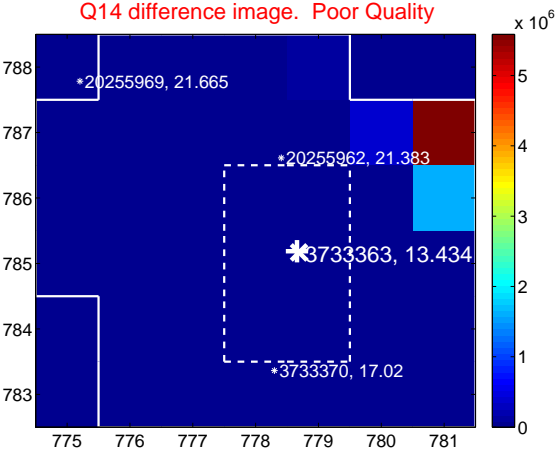
Q13 no difference image



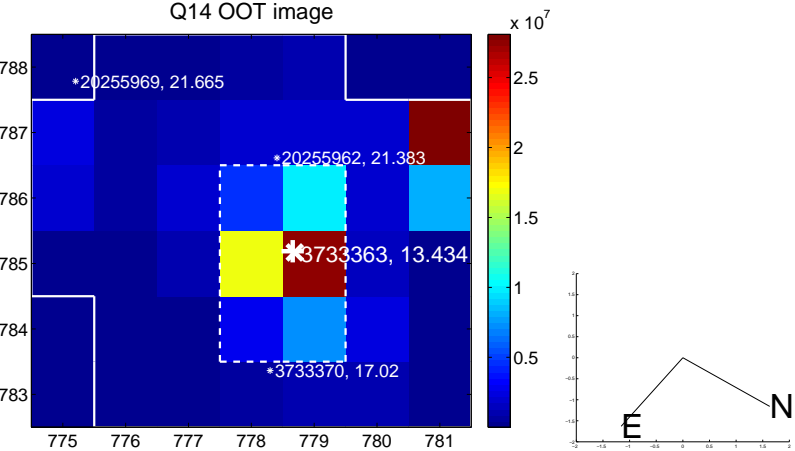
Q13 no OOT image



Q14 difference image. Poor Quality



Q14 OOT image



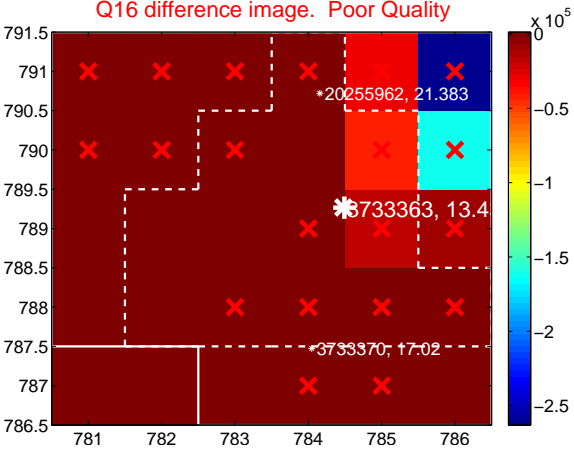
Q15 no difference image



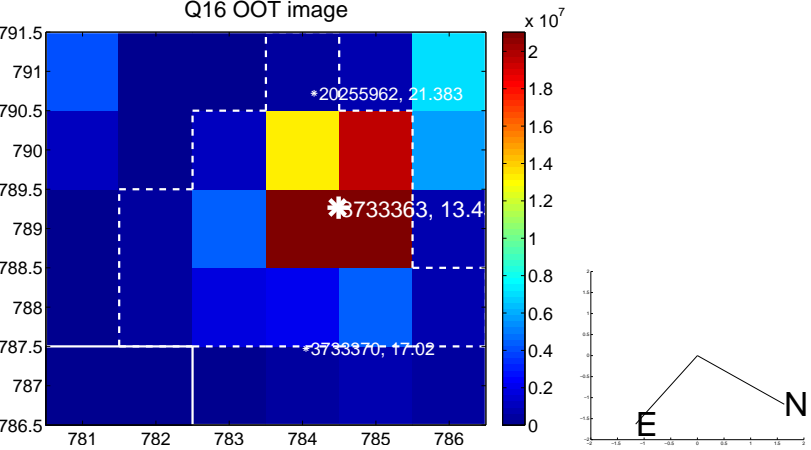
Q15 no OOT image



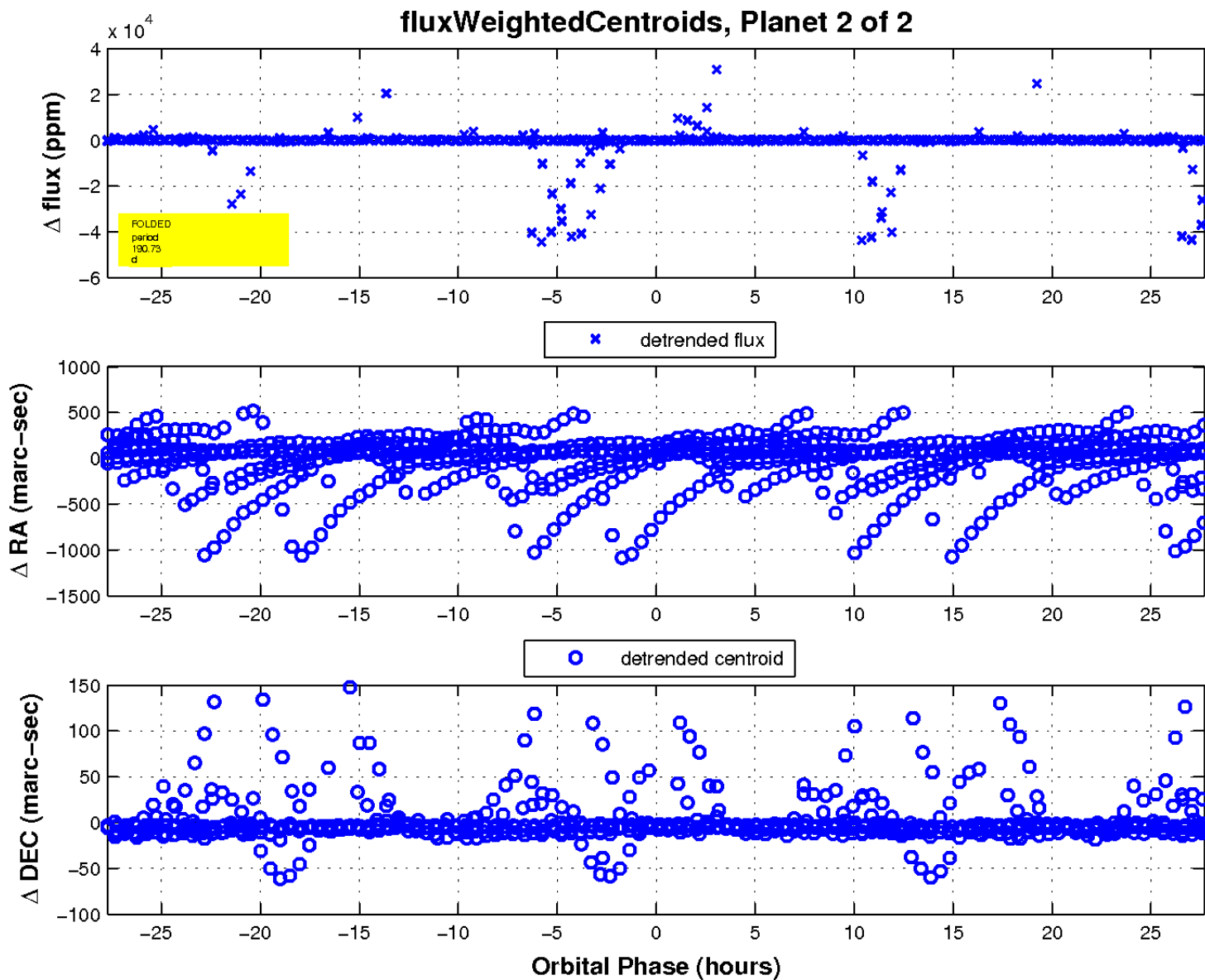
Q16 difference image. Poor Quality



Q16 OOT image



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



UKIRT Image

Declination

