

KIC 004948991

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})
004948991-01	OBS	No	0.624118	131.797522	15.6	3.904	8.5	8.9	2.62	6450	1.21	42070.71
004948991-03	OBS	No	95.893093	225.582084	584.4	3.342	9.8	7.5	2.62	6450	6.88	51.12

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004948991-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET
004948991-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—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.

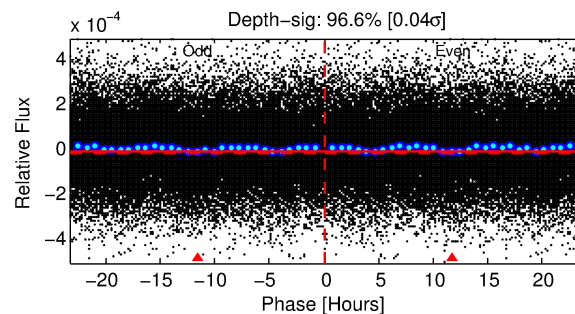
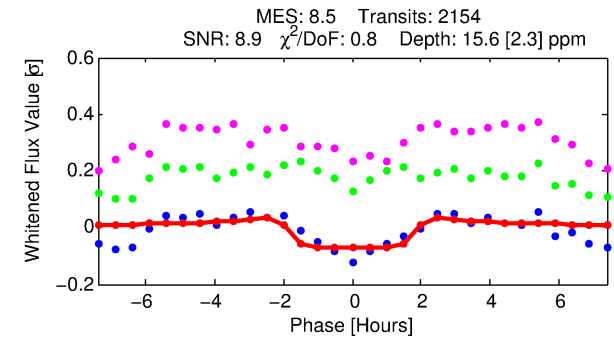
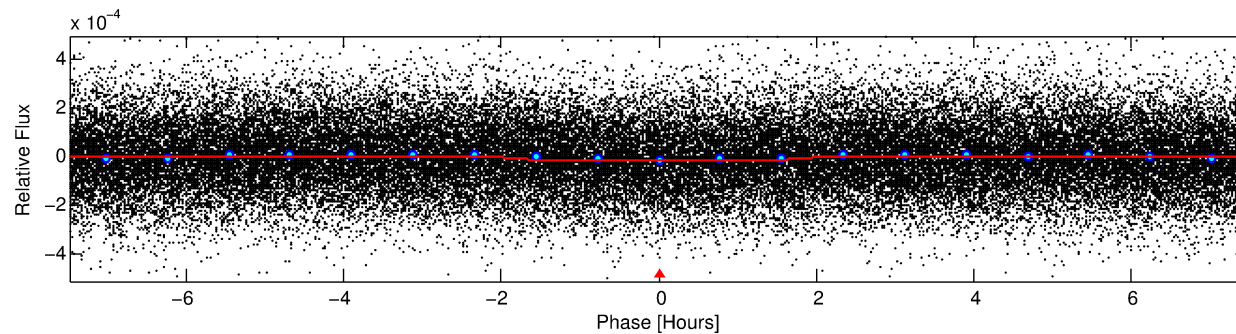
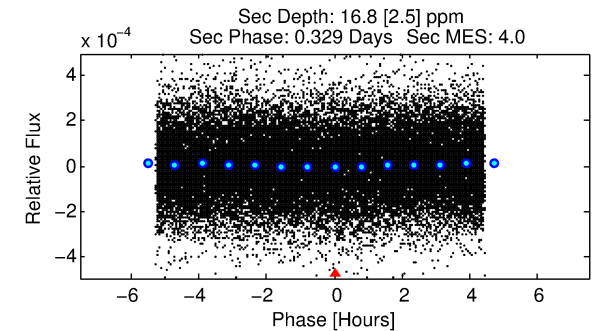
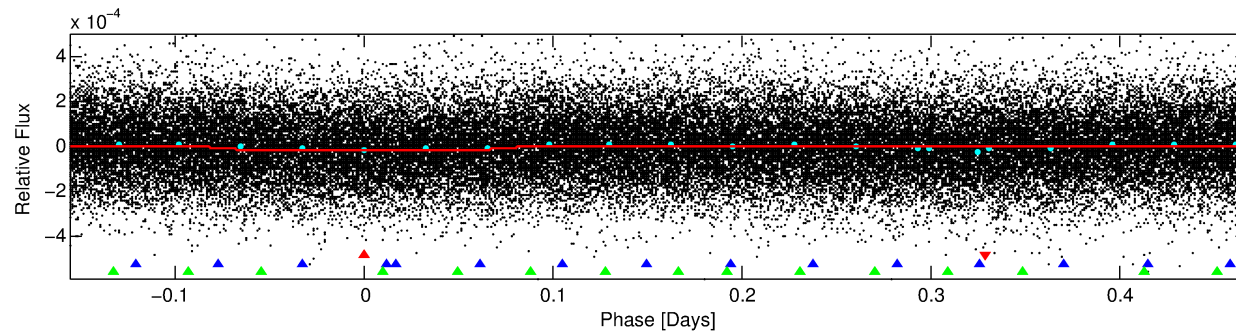
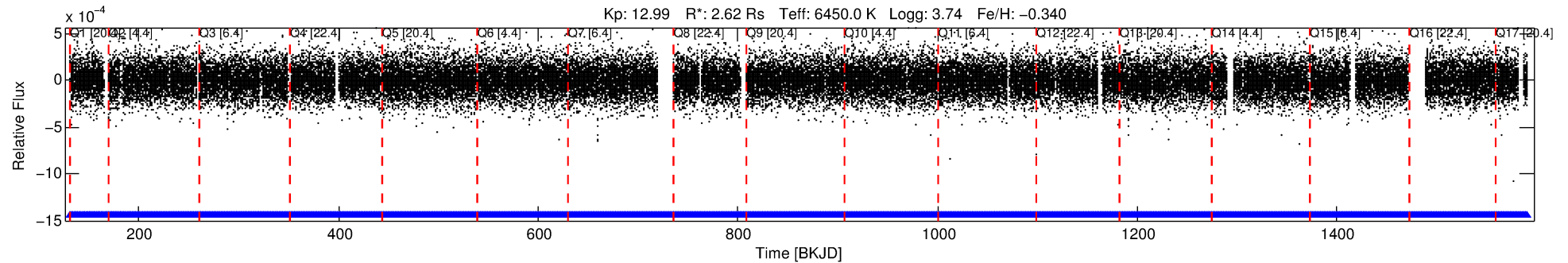
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004948991-01

No Significant Match Found

DV One-Page Summary

KIC: 4948991 Candidate: 1 of 3 Period: 0.624 d



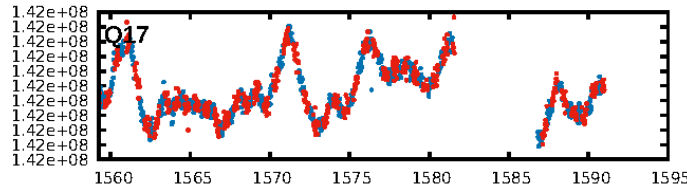
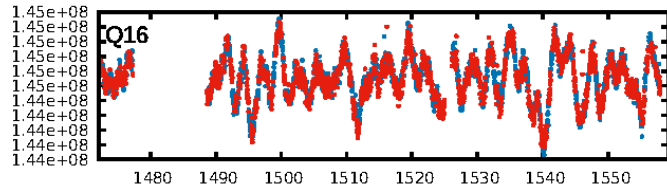
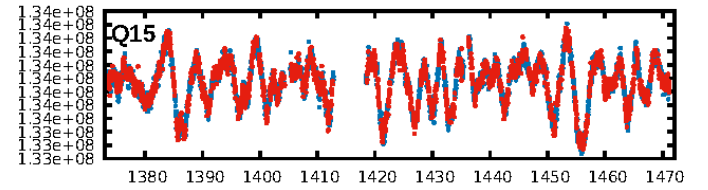
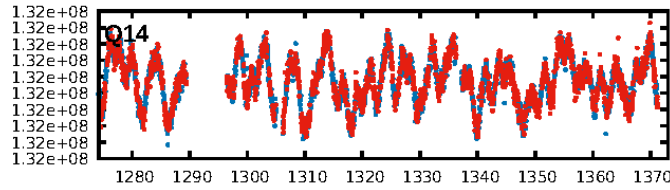
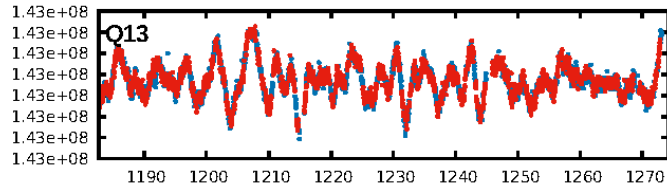
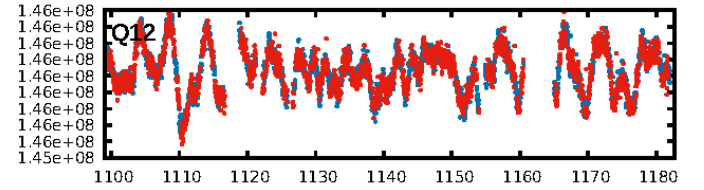
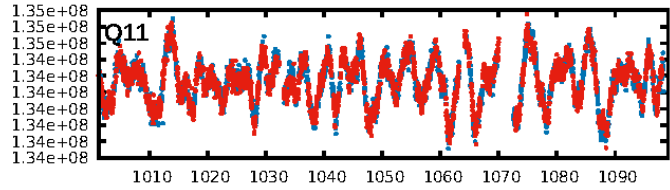
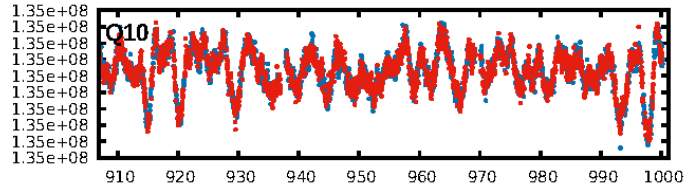
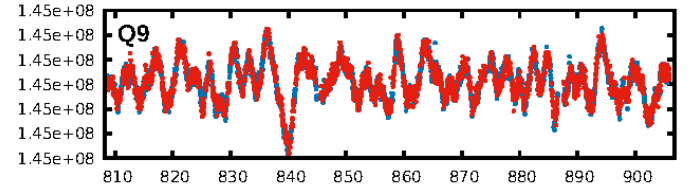
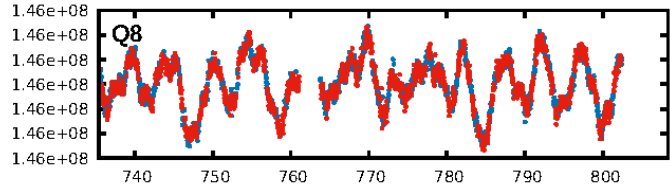
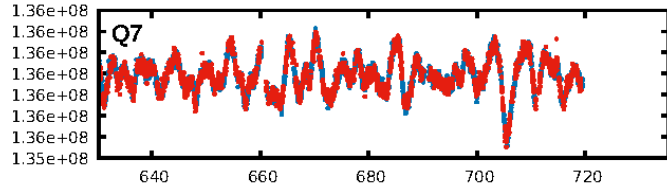
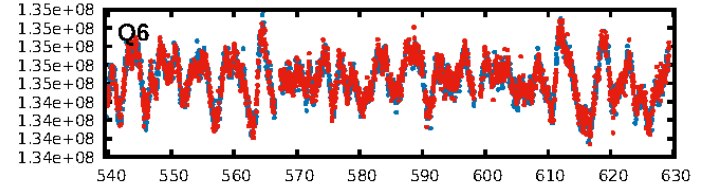
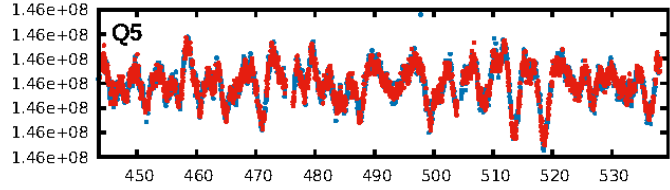
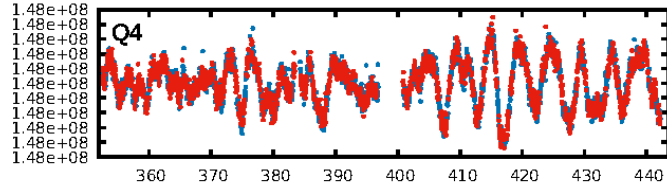
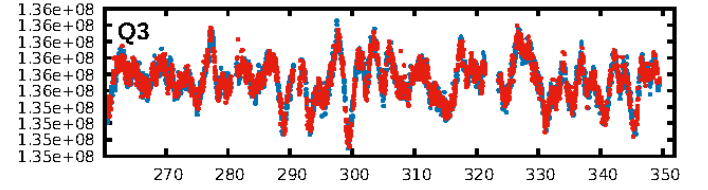
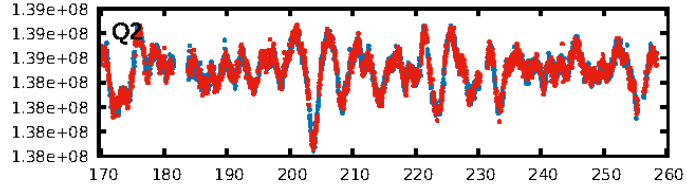
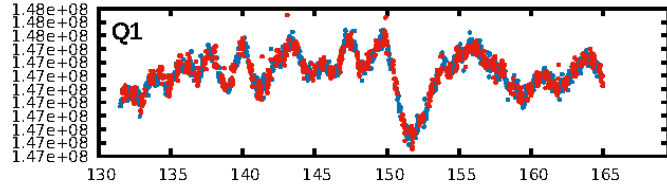
DV Fit Results:

Period = 0.62412 [0.00001] d
Epoch = 131.7975 [0.0034] BKJD
Rp/R* = 0.0042 [0.0023]
a/R* = 1.08 [0.51]
b = 0.90 [0.65]
Seff = 42070.71 [23523.59]
Teff = 3652 [510] K
Rp = 1.21 [0.79] Re
a = 0.0159 [0.0055] AU
Ag = 1.59 [1.94] [0.31σ]
Teffp = 6345 [1733] K [1.49σ]

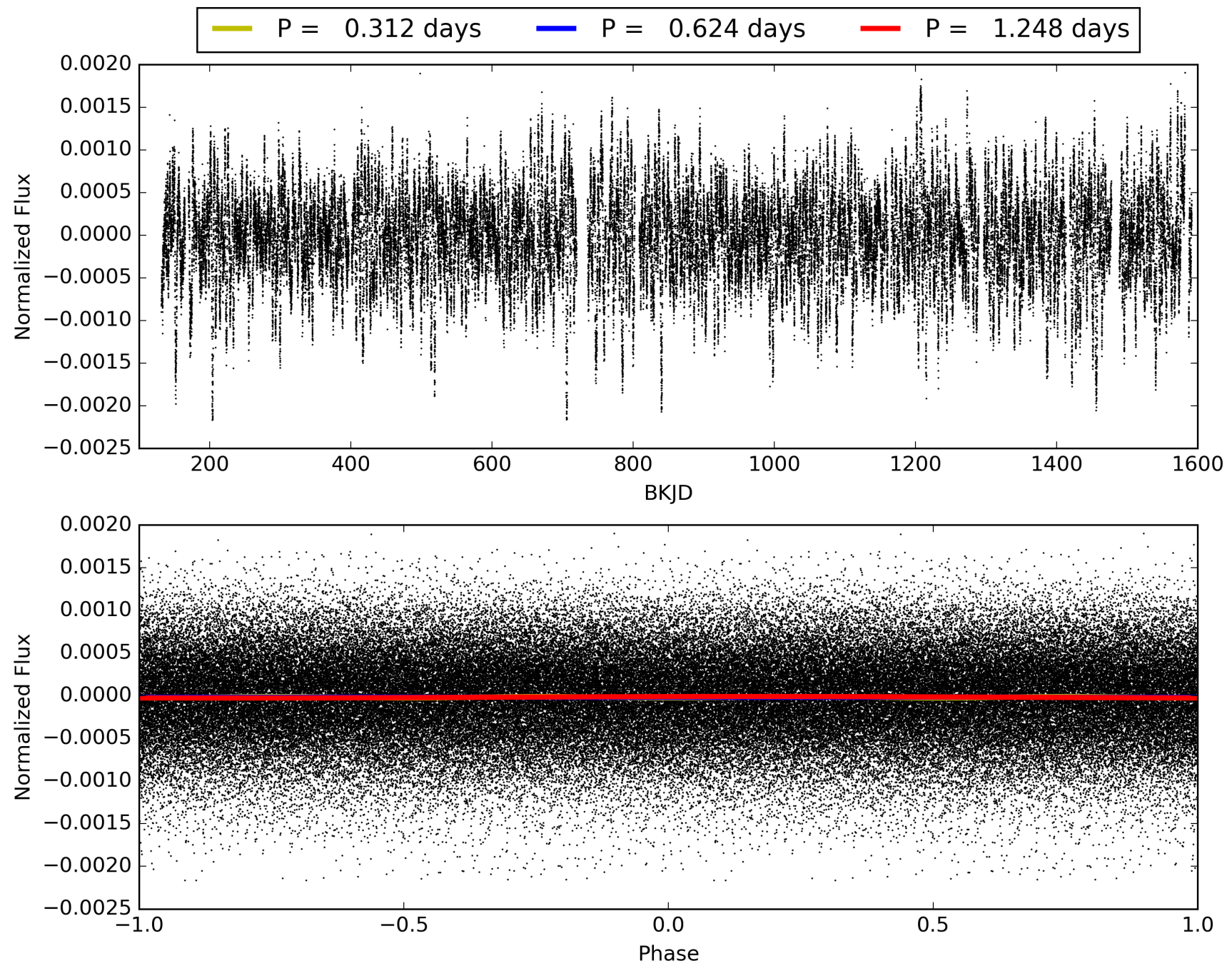
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [164.25σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.59e-13
RollingBand-fgt: 1.00 [2056/2056]
GhostDiagnostic-chr: -1.061
Centroid-sig: N/A
Centroid-so: 8.382 arcsec [7.37σ]
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 [17/17]

TCE 004948991-01, PDC Light Curves

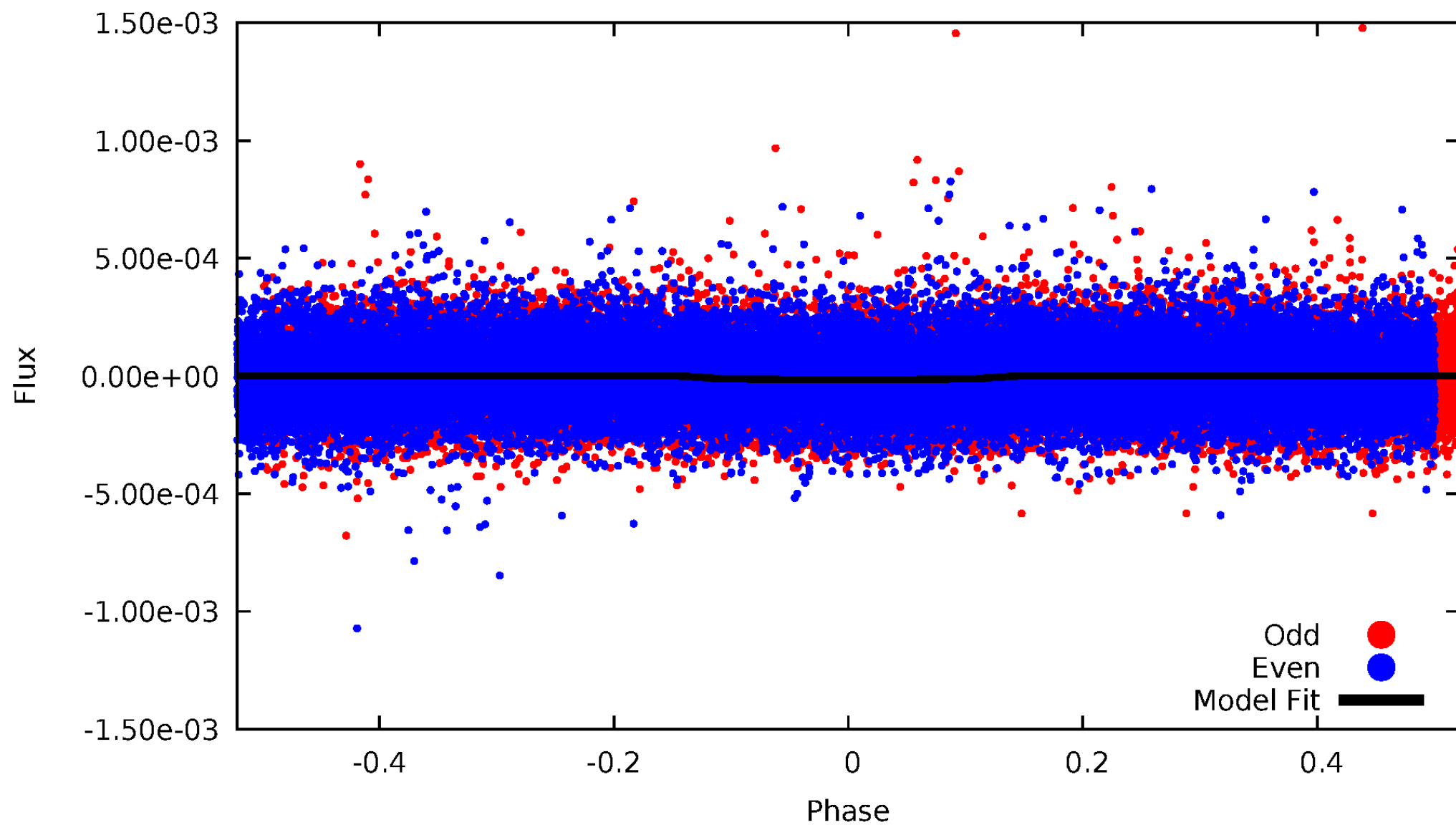


TCE 004948991-01



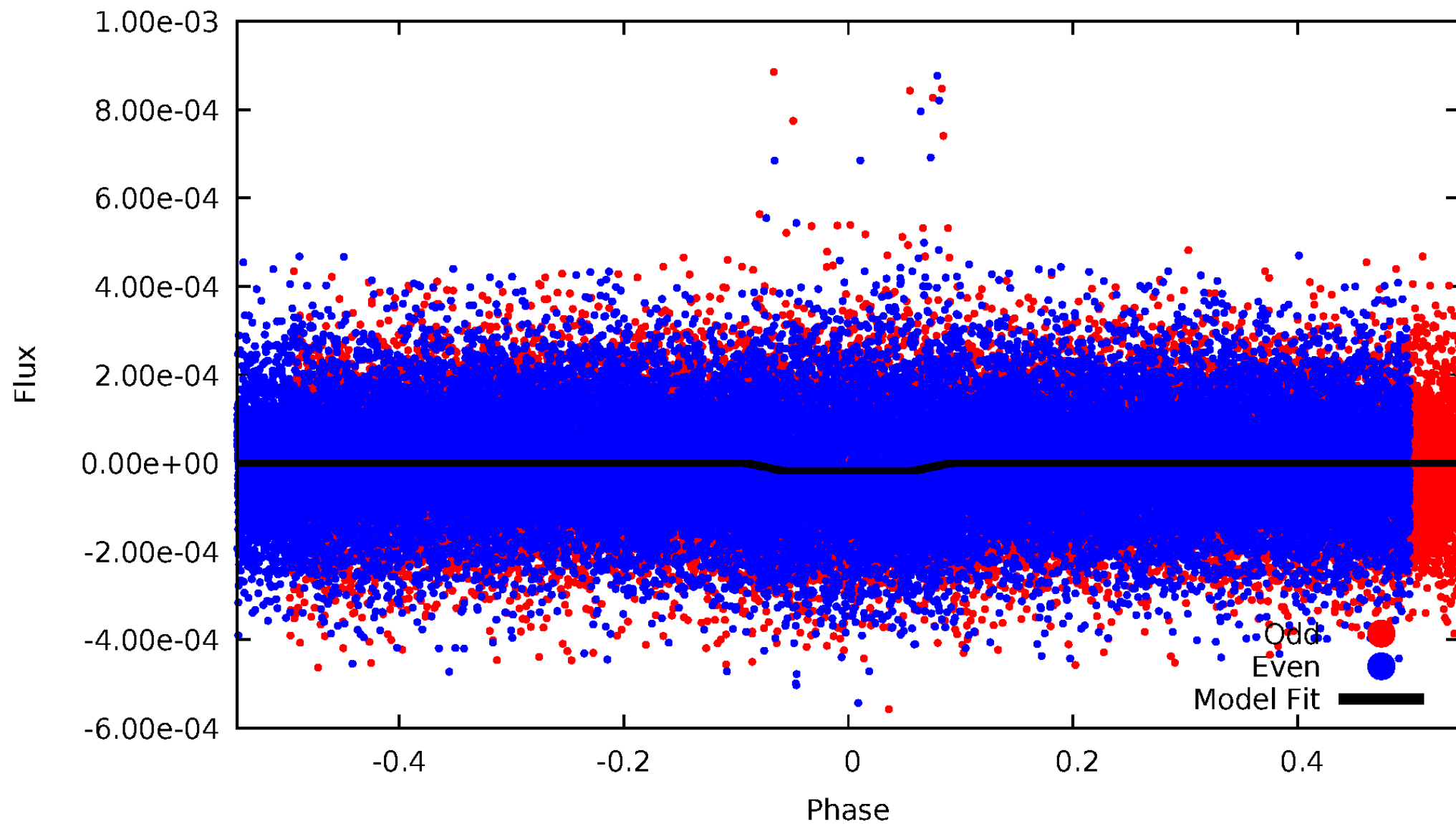
DV Odd/Even

TCE 004948991-01

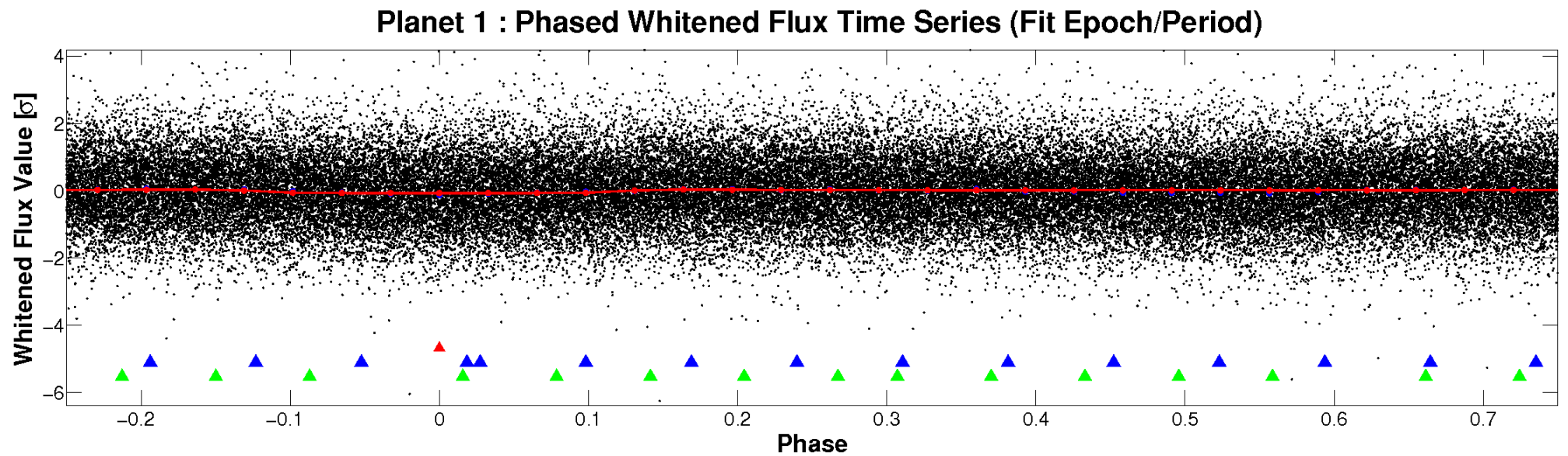
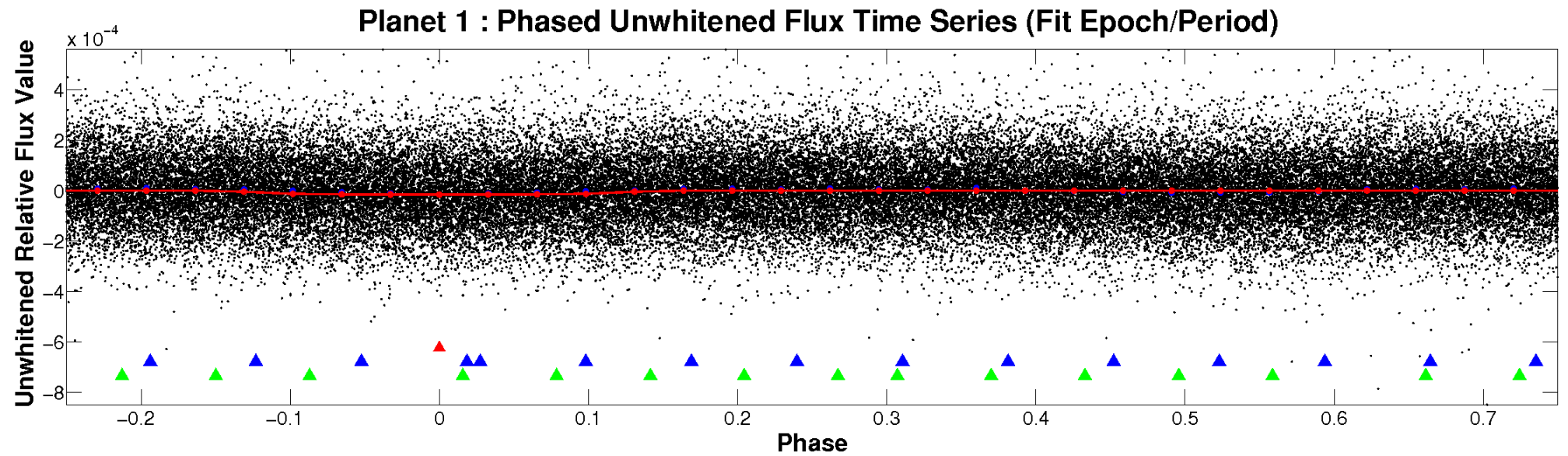


ALT Odd/Even

TCE 004948991-01

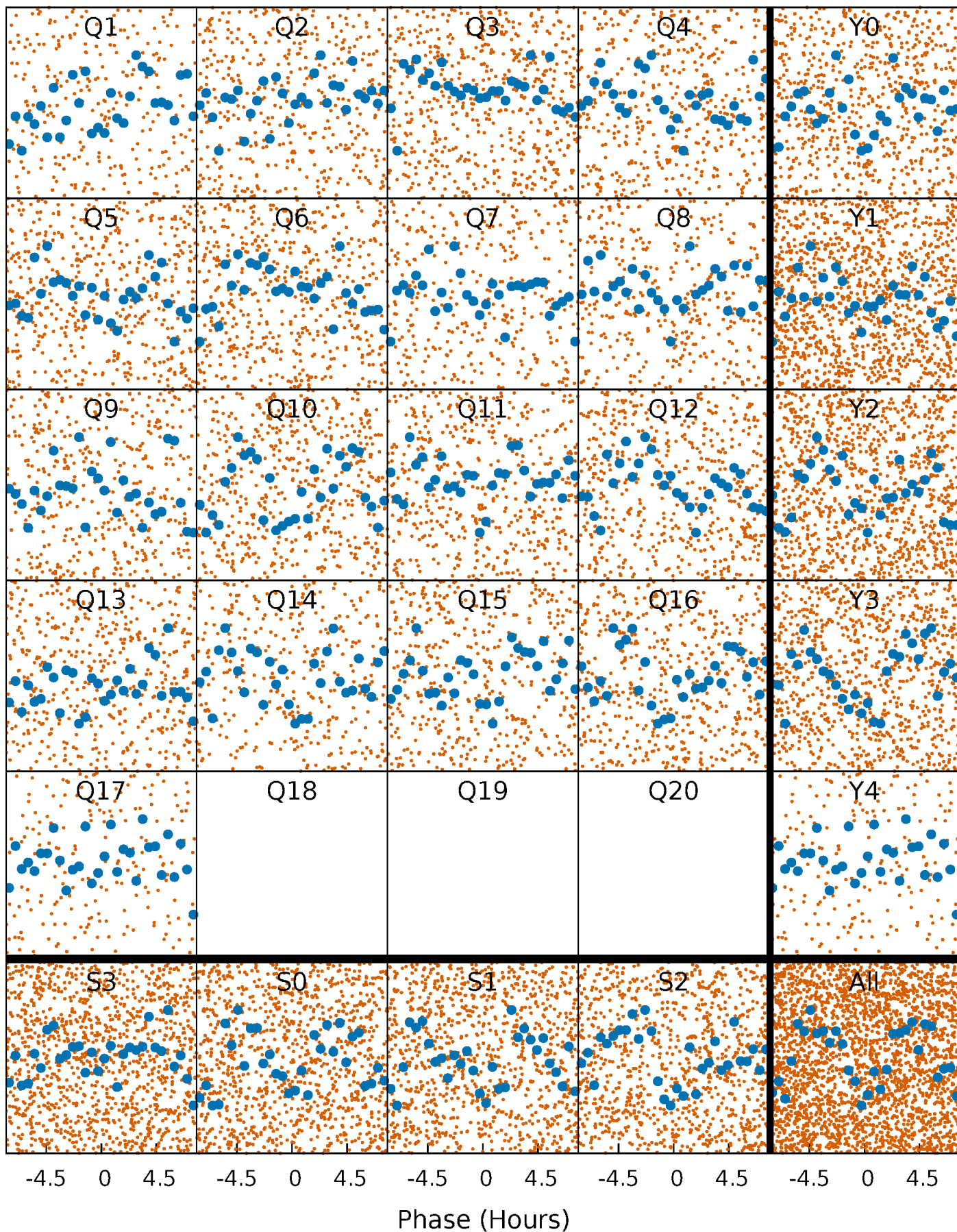


Non-Whitened Vs. Whitened Light Curve



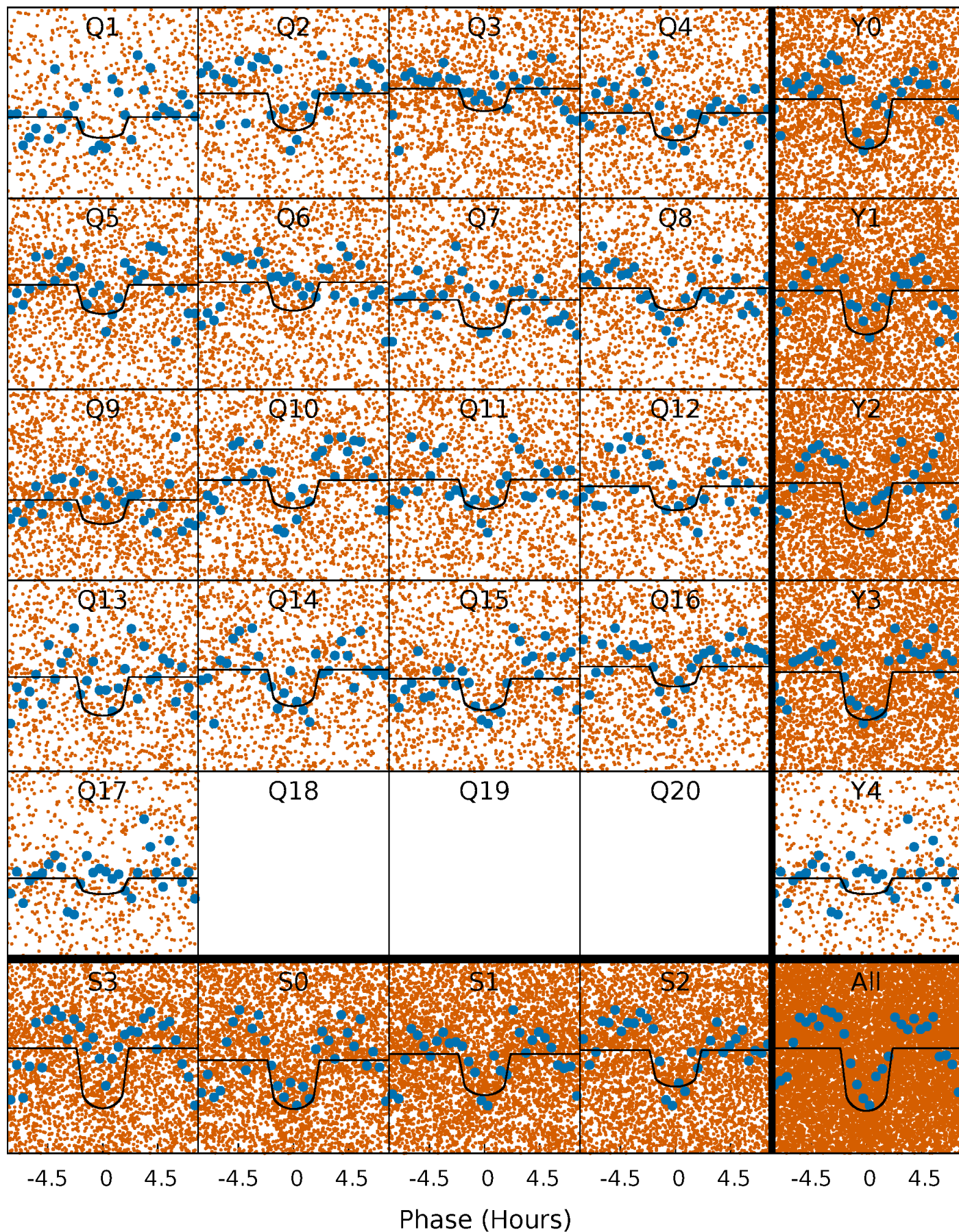
PDC Quarter-Phased Transit Curves

TCE 004948991-01 P= 0.624118 Days $T_0=131.797522$ (BKJD)



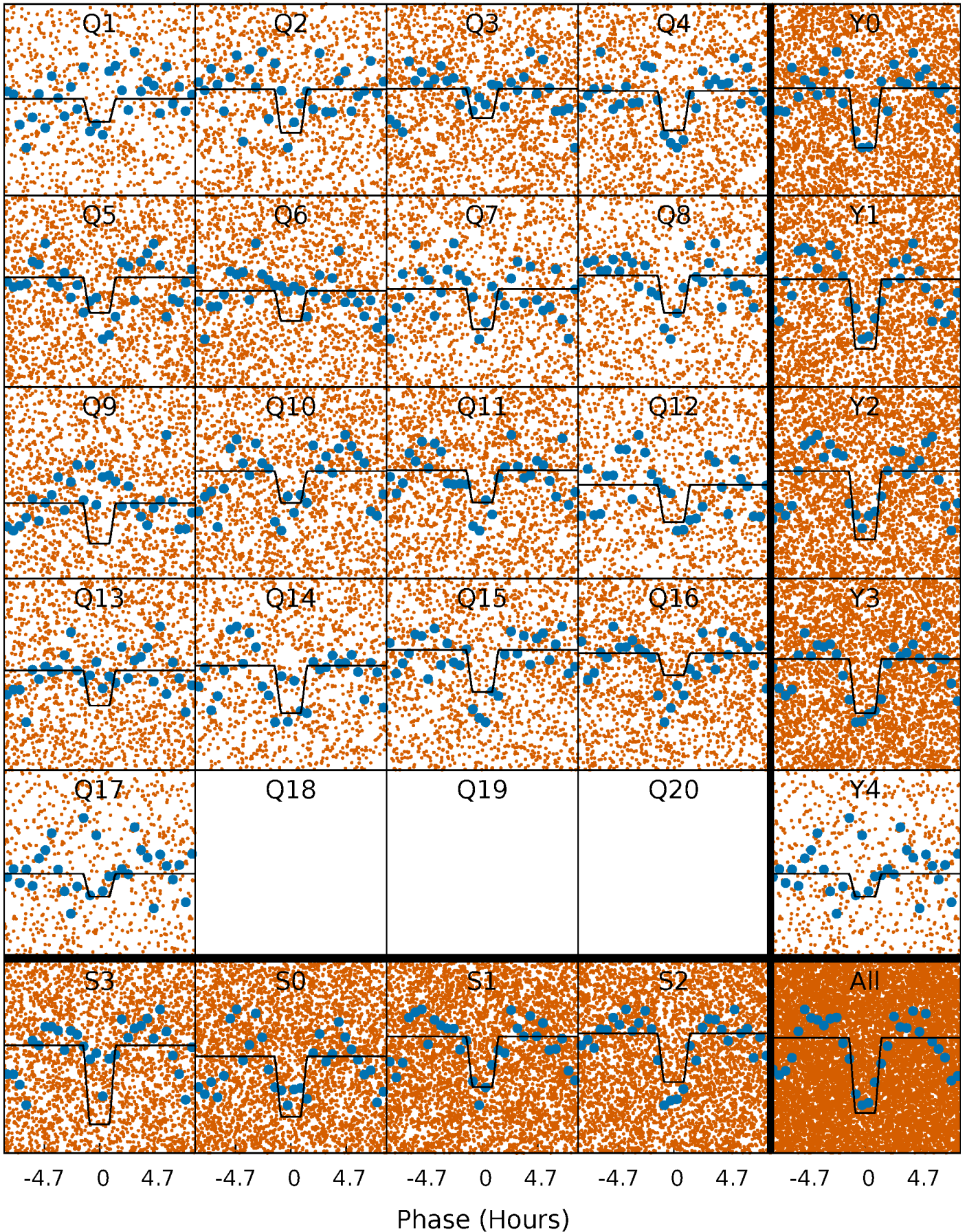
DV Quarter-Phased Transit Curves

TCE 004948991-01 P= 0.624118 Days $T_0=131.797522$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

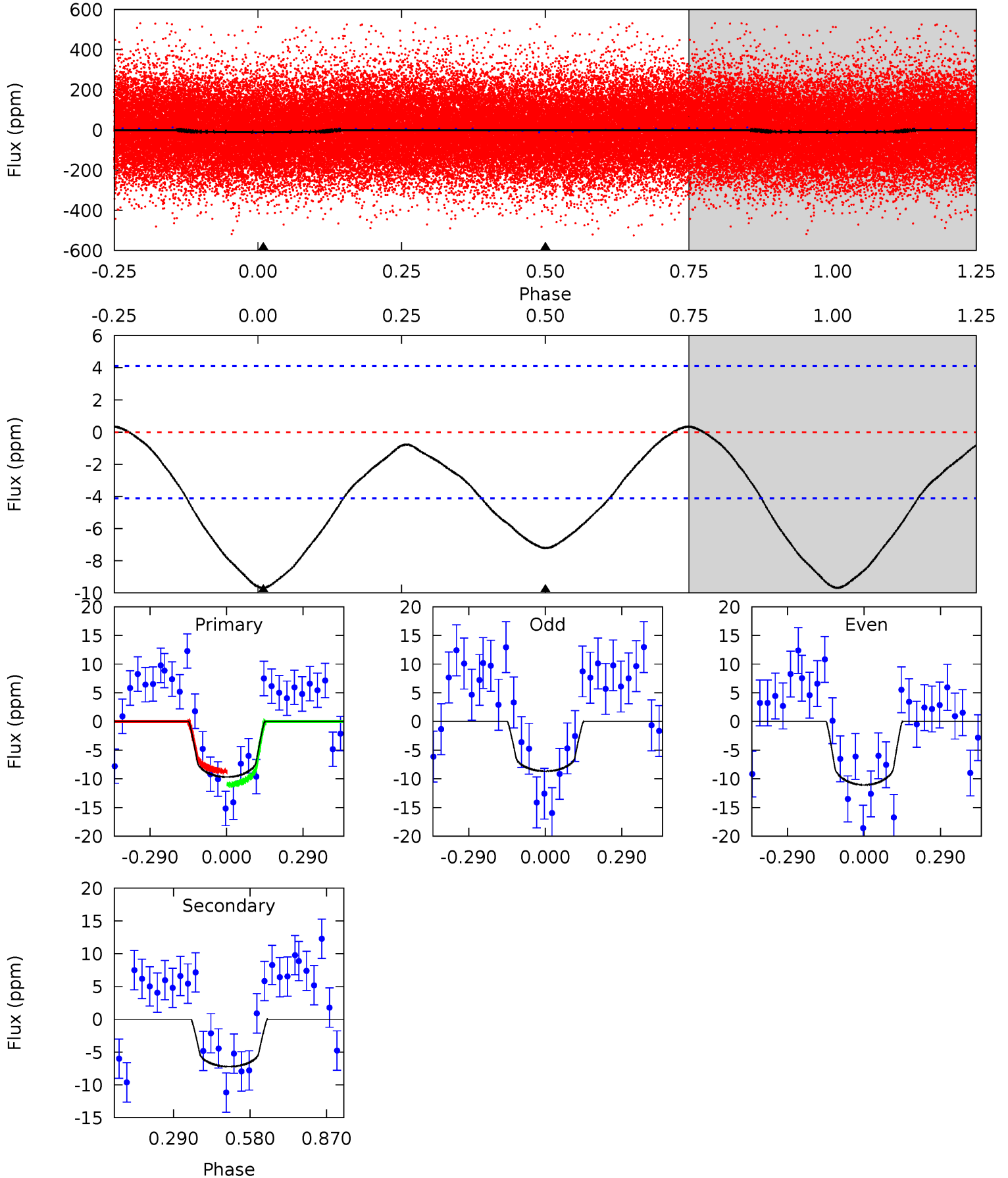
TCE 004948991-01 P= 0.624122 Days $T_0=131.797049$ (BKJD)



DV Model-Shift Uniqueness Test

004948991-01, P = 0.624118 Days, E = 131.173404 Days

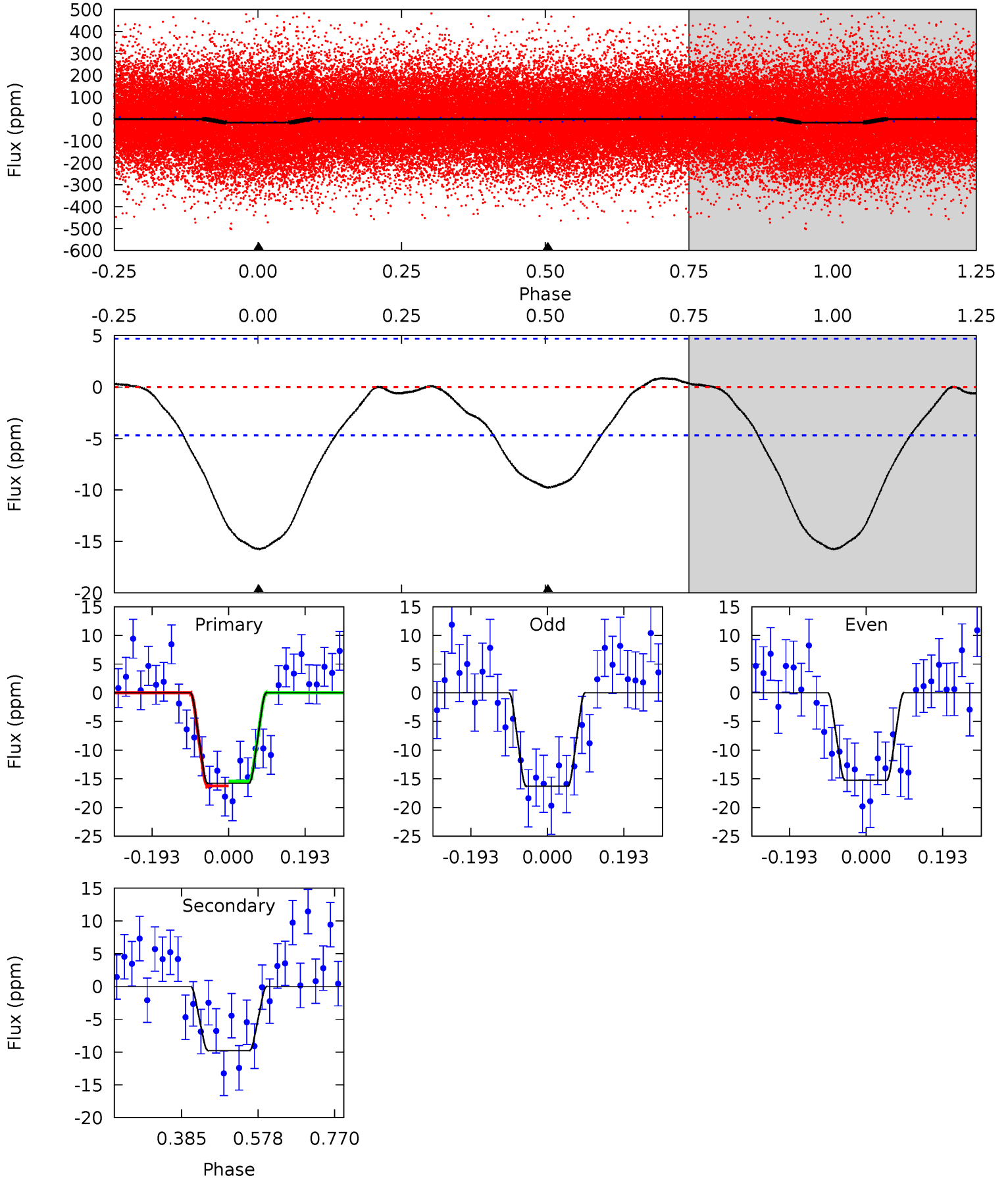
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	7.60	0	0	4.34	1.06	0.58	10.2	10.2	7.60	7.60	1.26	1.01	0.03	1.24



Alt Model-Shift Uniqueness Test

004948991-01, P = 0.624122 Days, E = 131.172927 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.9	9.21	0	0	4.43	1.30	0.41	14.9	14.9	9.21	9.21	0.49	1.01	0.05	0.38



Stellar Parameters For KIC 004948991

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6450^{+176}_{-176}	$3.740^{+0.320}_{-0.080}$	$-0.340^{+0.350}_{-0.250}$	$2.617^{+0.410}_{-0.957}$	$1.374^{+0.235}_{-0.287}$	$0.108^{+0.253}_{-0.034}$
	+3%/-3%	+9%/-2%	+103%/-74%	+16%/-37%	+17%/-21%	+235%/-31%
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 004948991-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-7 ± 1	$1.15^{+0.67}_{-0.58}$	4991^{+282}_{-418}	4664^{+2340}_{-2004}	$0.777^{+2.436}_{-0.466}$
Alt.	-10 ± 1	$1.18^{+0.68}_{-0.60}$	5005^{+276}_{-451}	4992^{+2696}_{-1431}	$0.978^{+3.053}_{-0.578}$

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

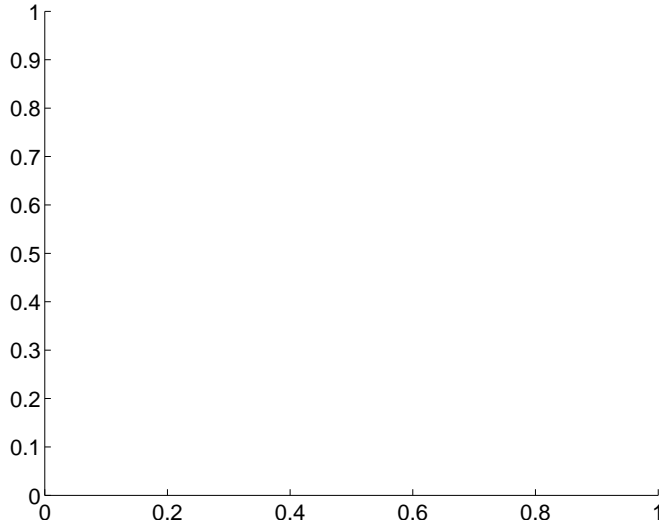
Supplemental centroid analysis for 004948991-01. Kepler magnitude: 12.99. Transit SNR 8.92

There are 0 quarters with good PRF difference image offsets

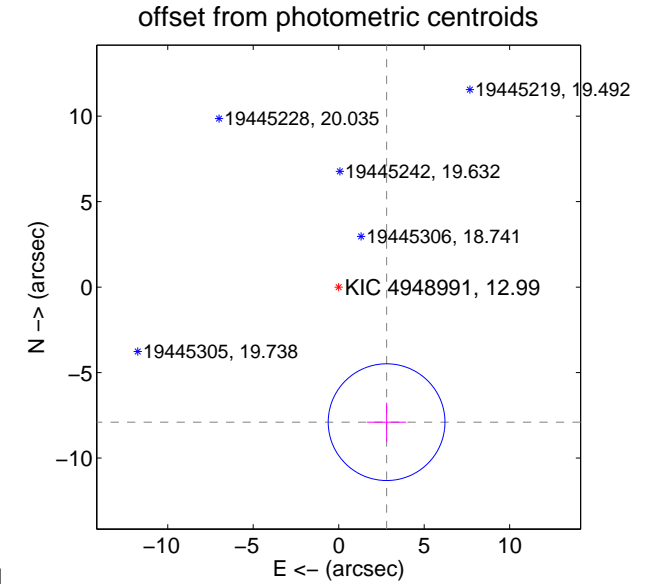
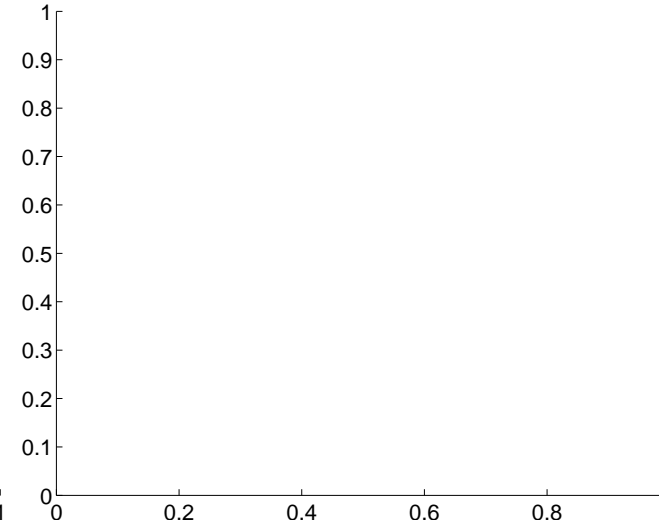
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	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	8.38 ± 1.14	7.37	-2.80 ± 1.14	-7.90 ± 1.14

There is no PRF-fit offset from OOT-fit

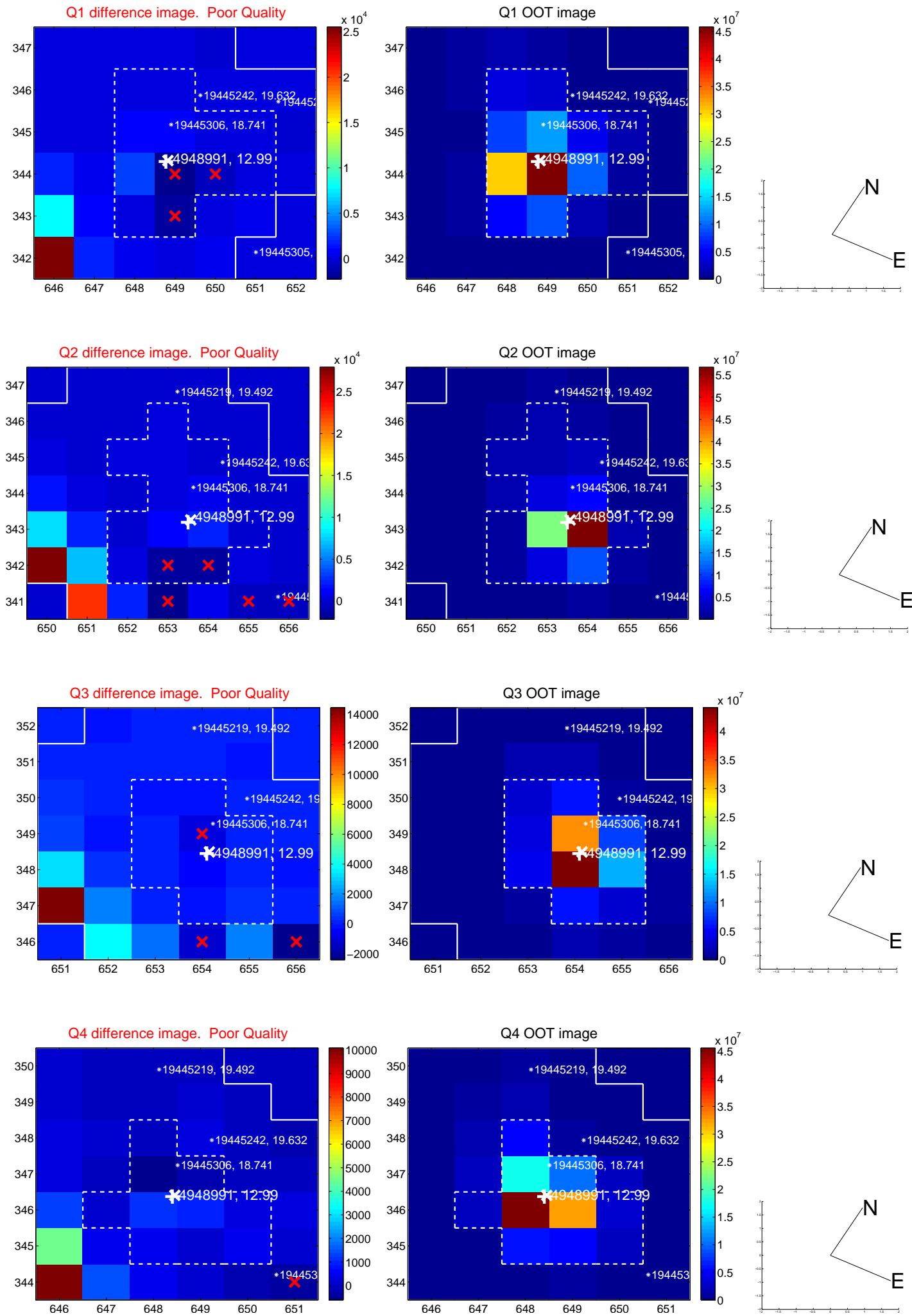


There is no PRF-fit offset from KIC

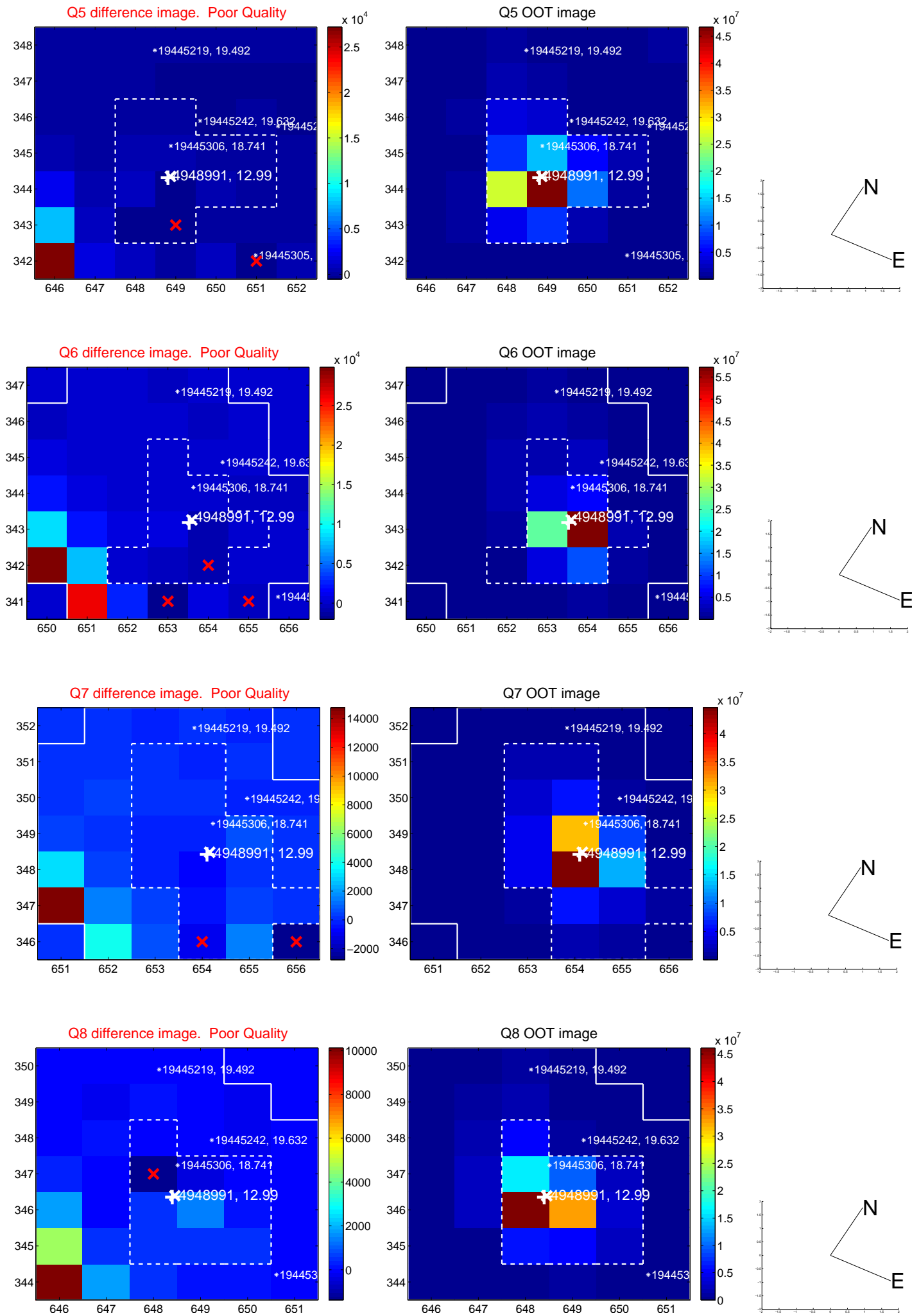


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

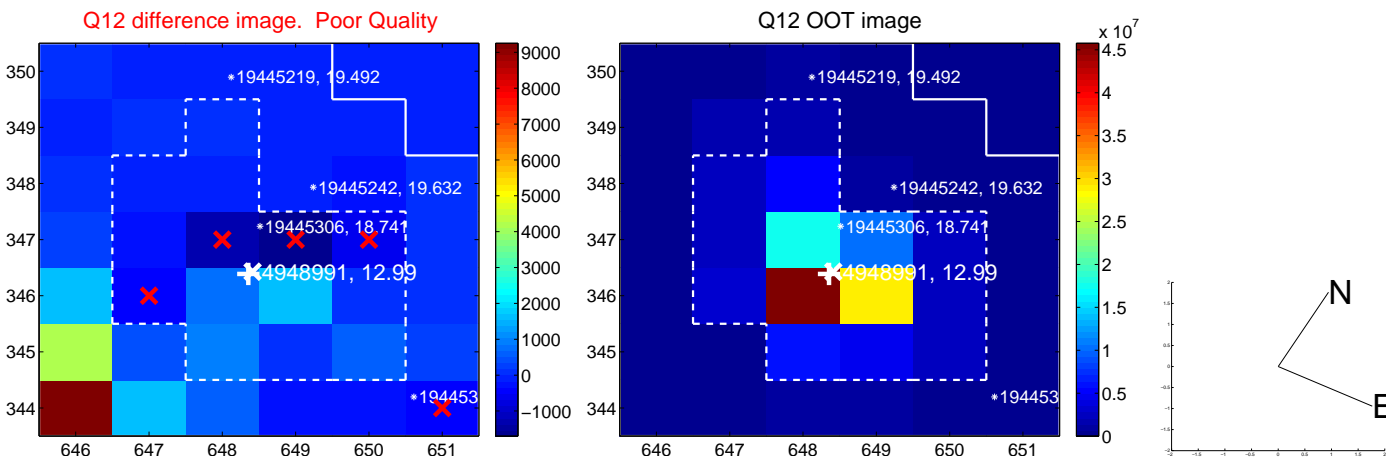
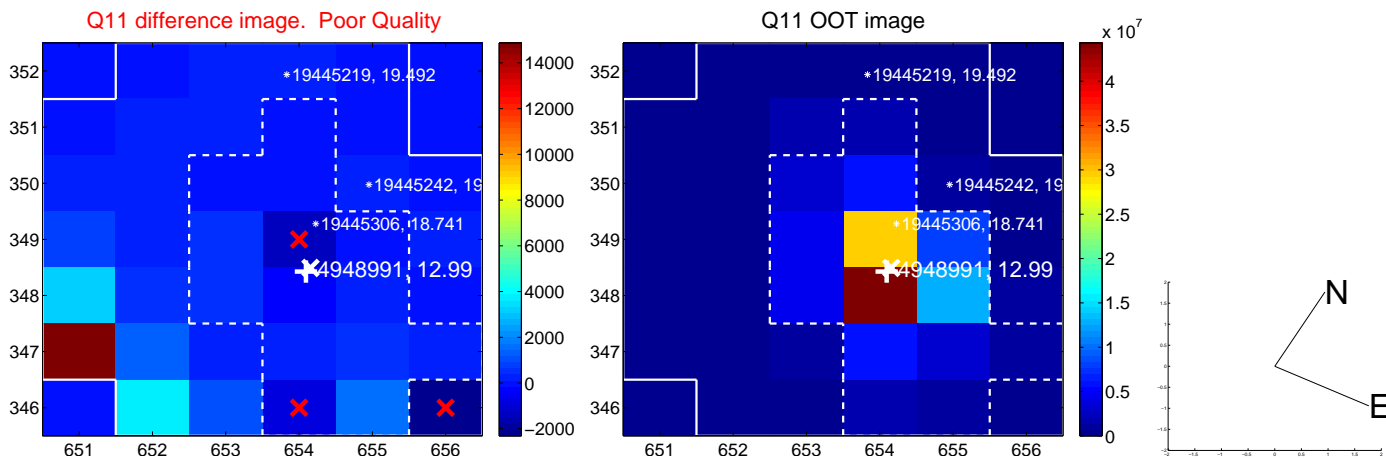
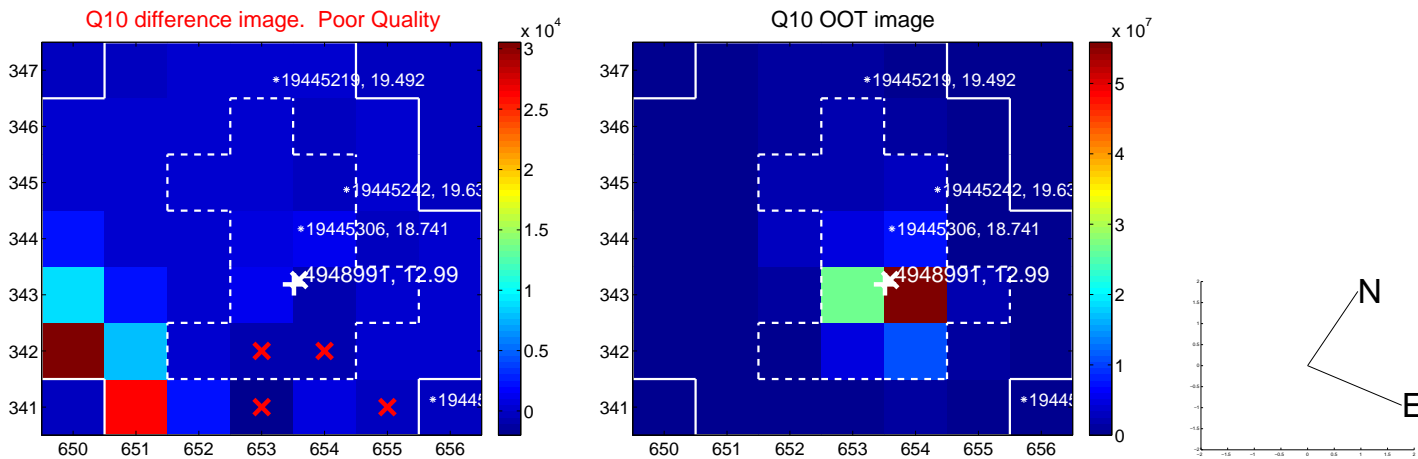
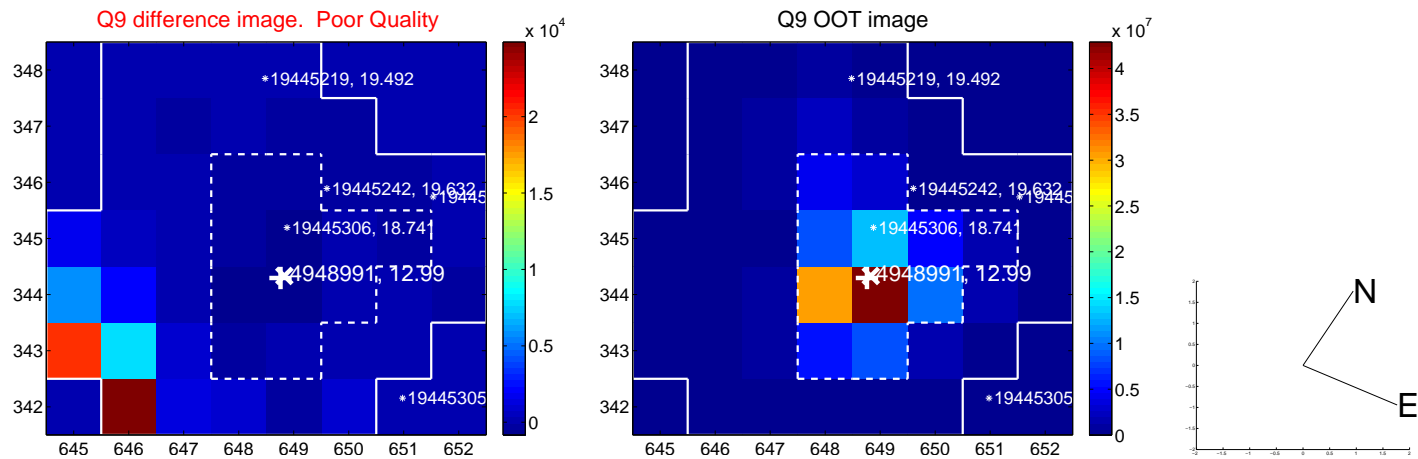
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



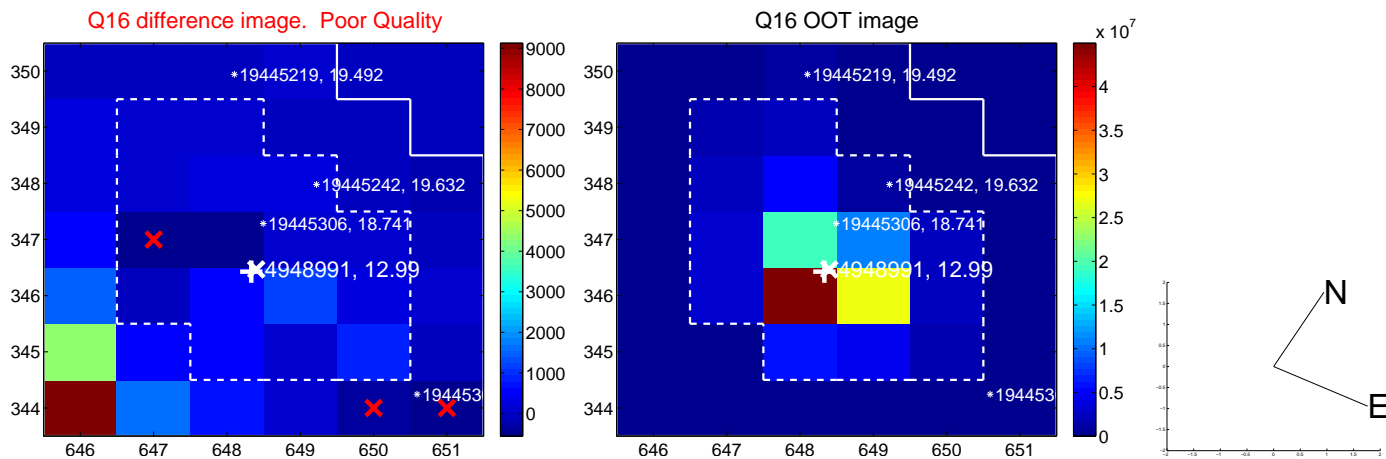
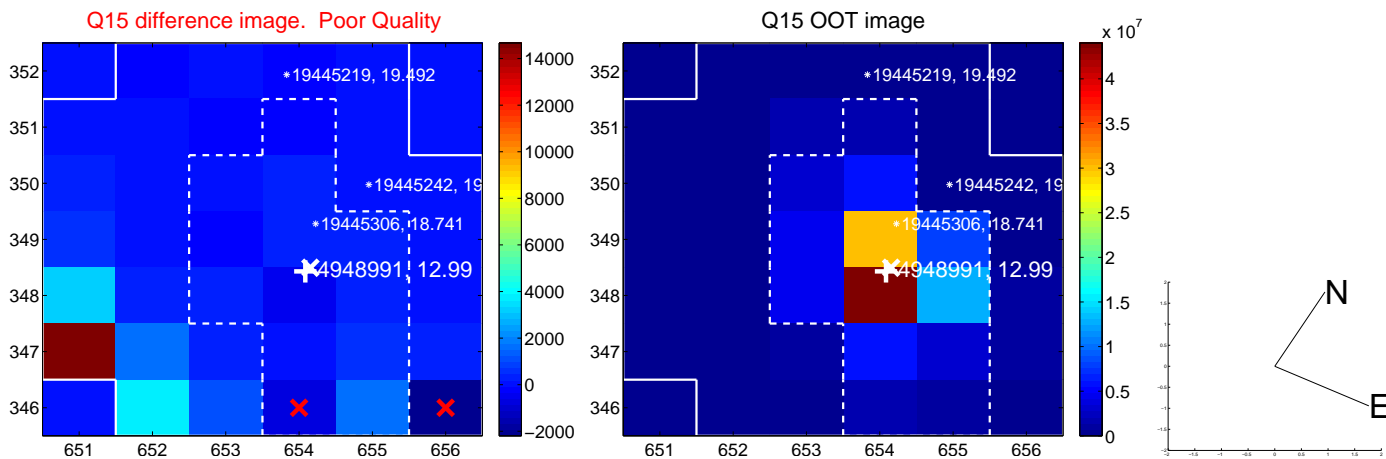
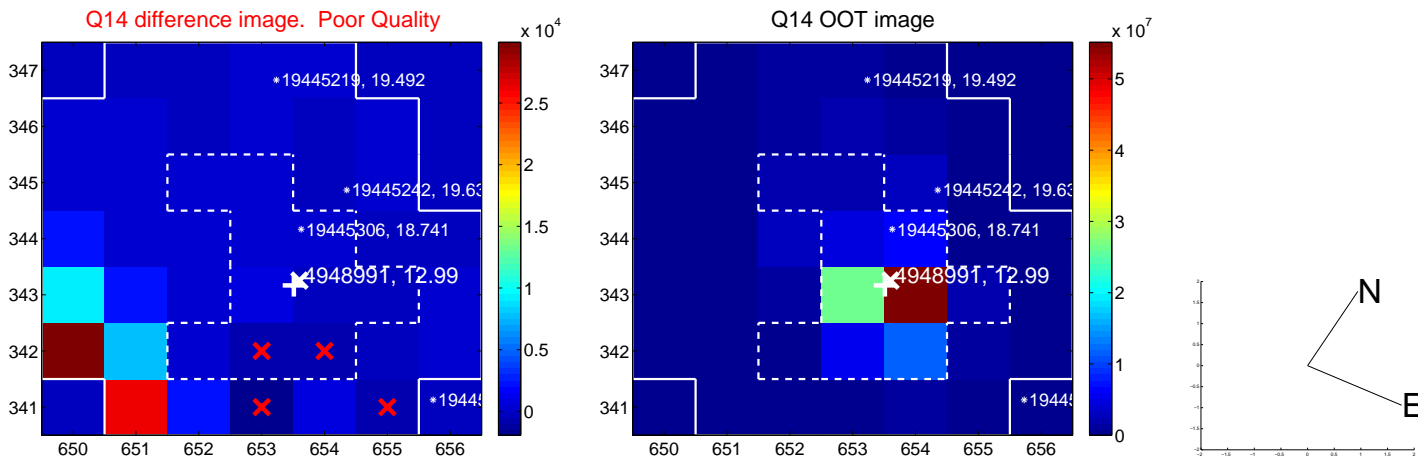
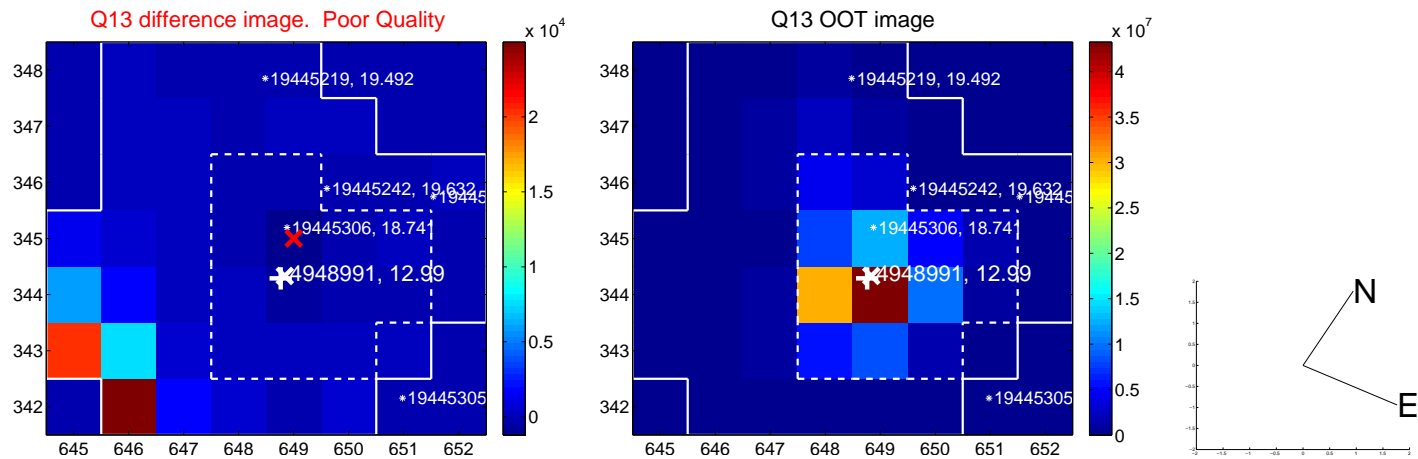
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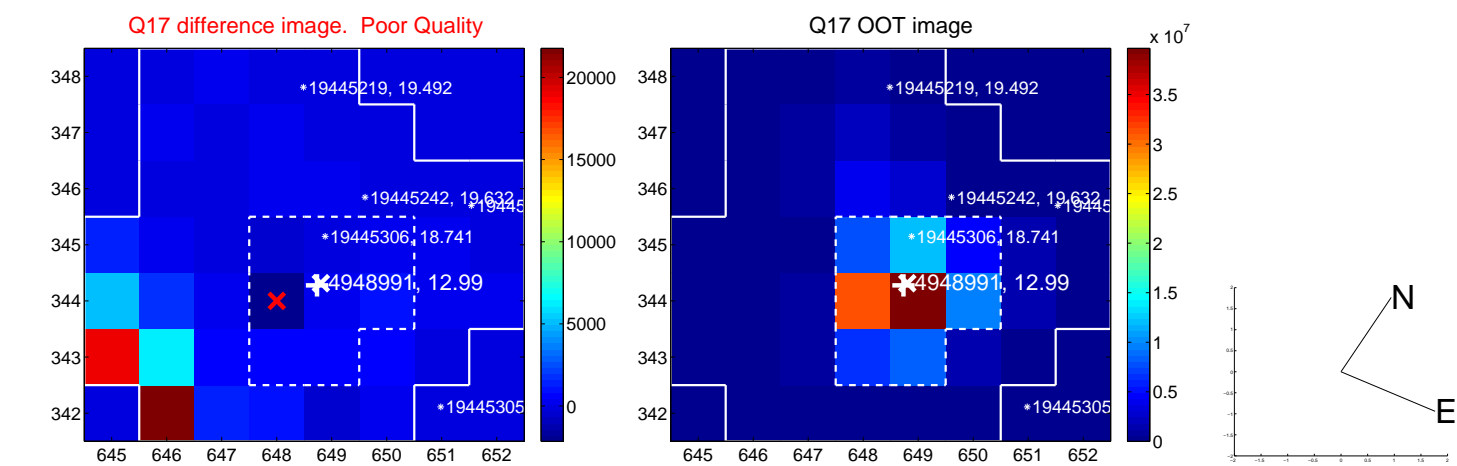
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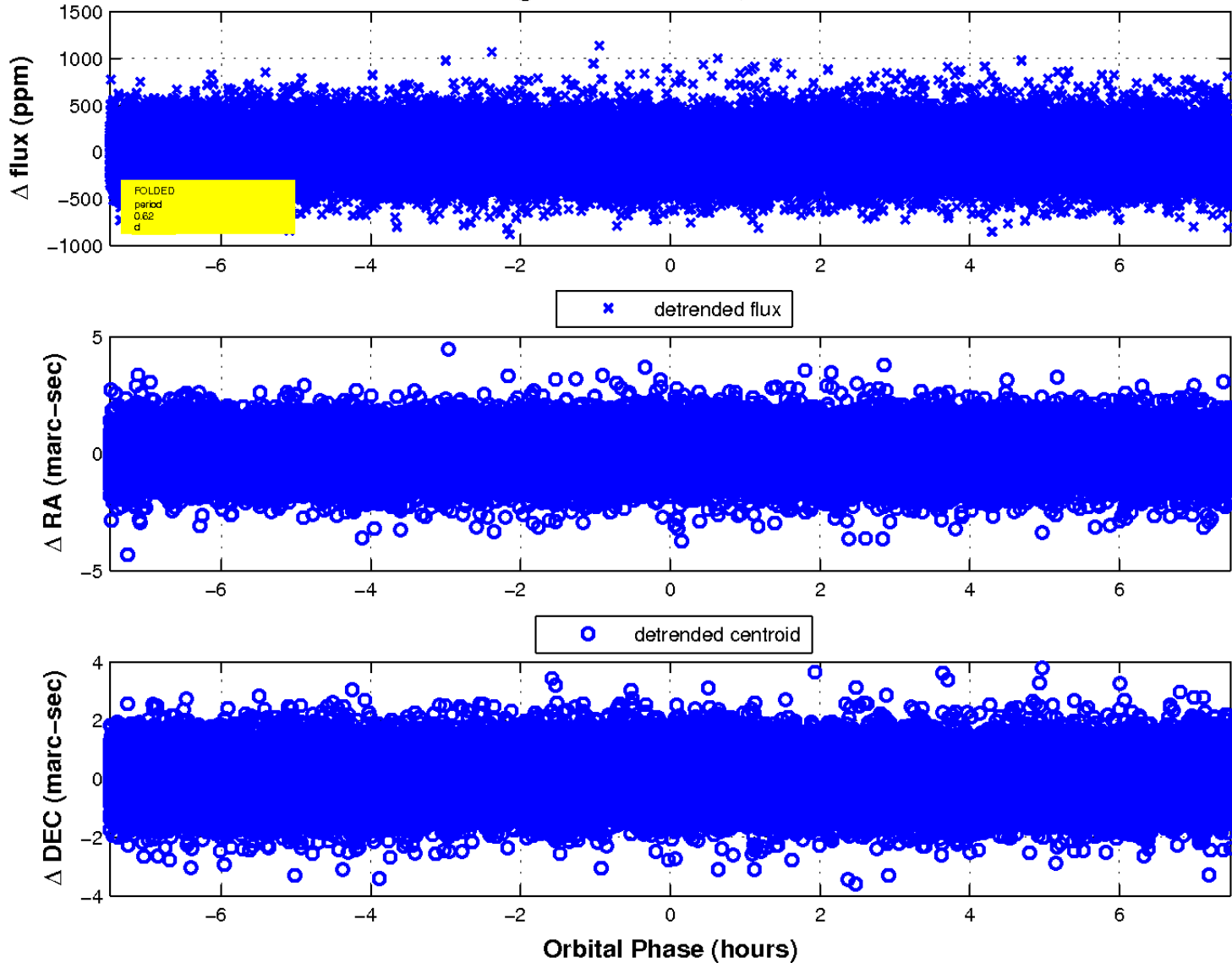
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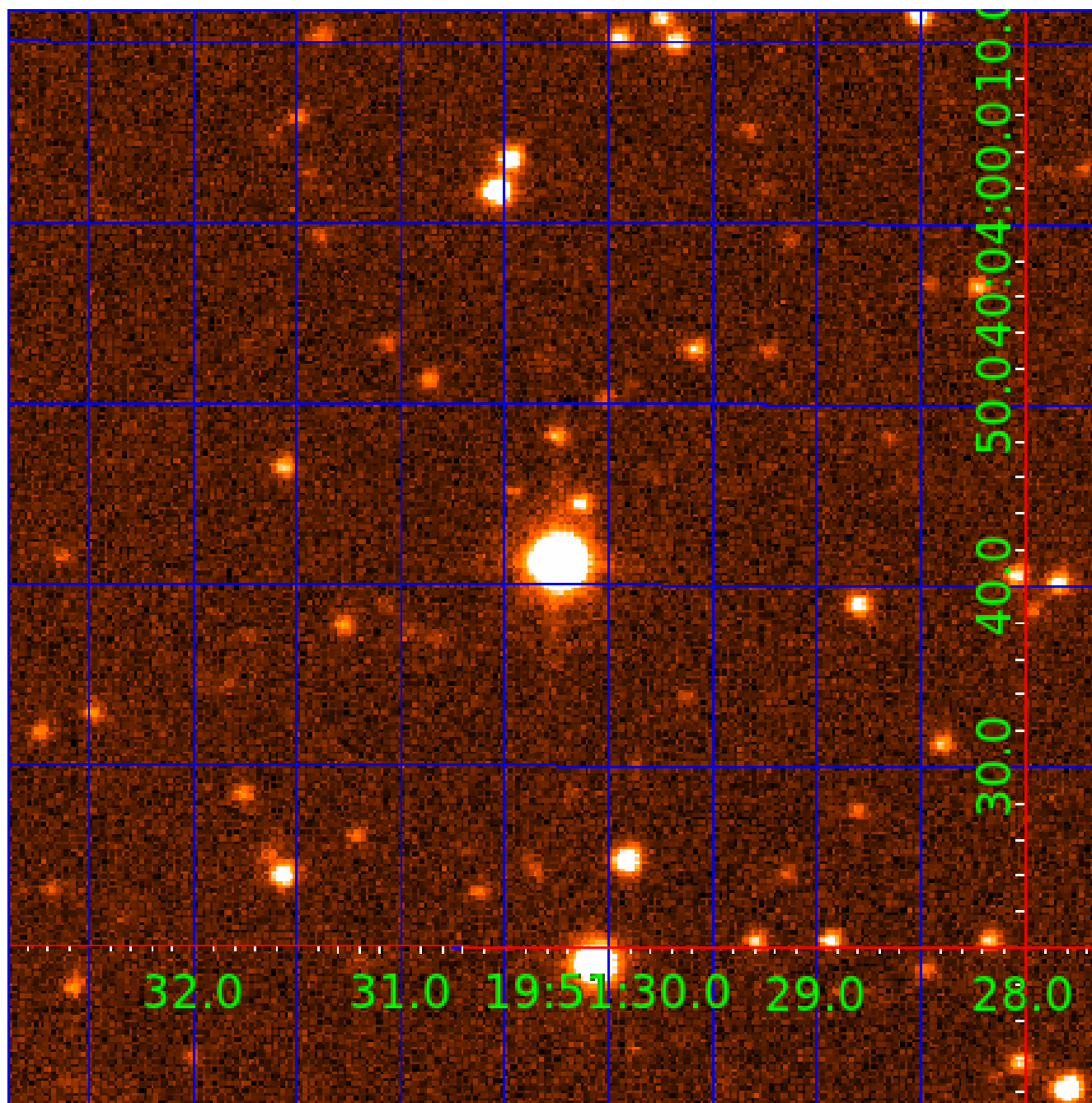


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 004948991

Q1-17 DR25 TCE Parameters

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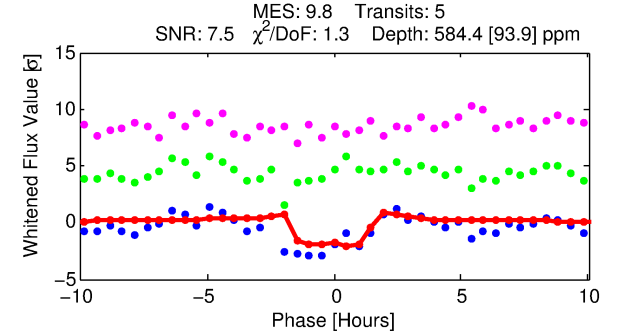
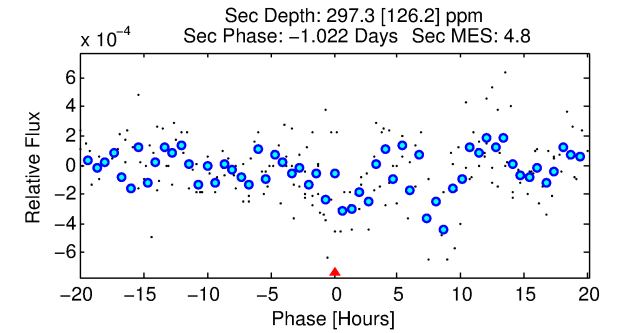
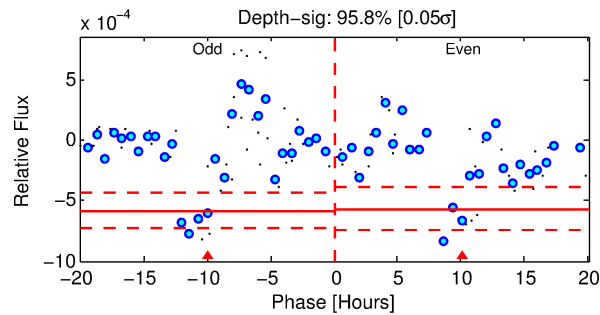
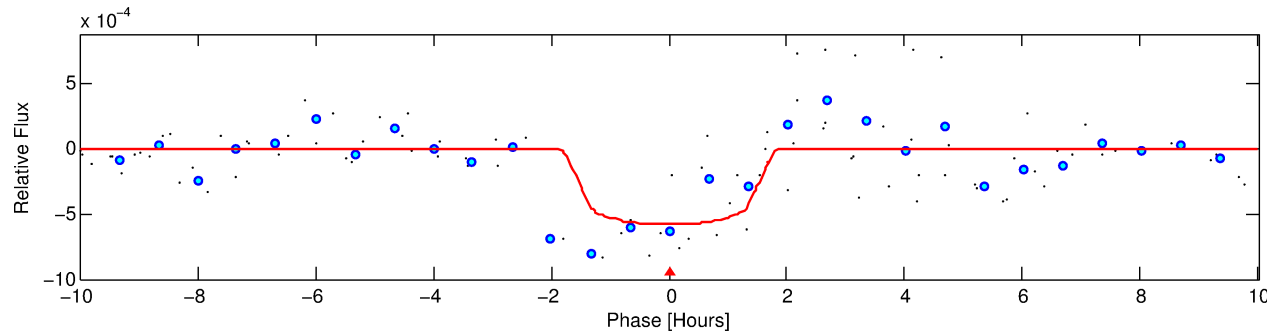
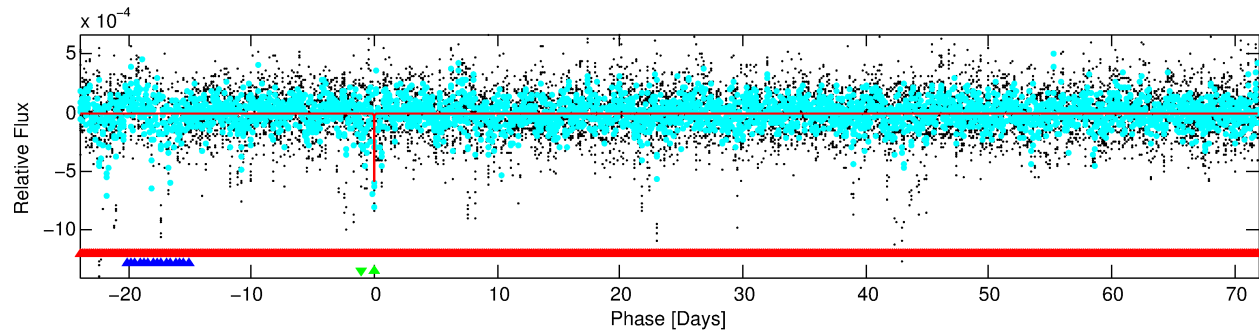
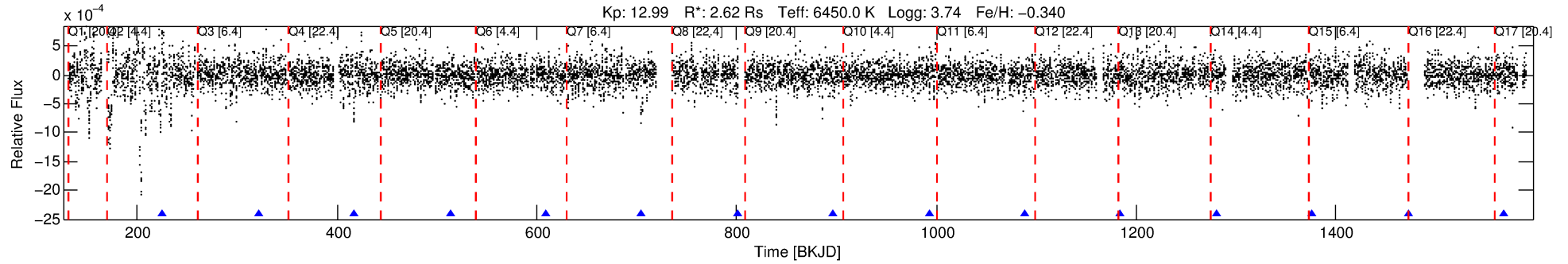
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004948991-03

No Significant Match Found

DV One-Page Summary

KIC: 4948991 Candidate: 3 of 3 Period: 95.893 d



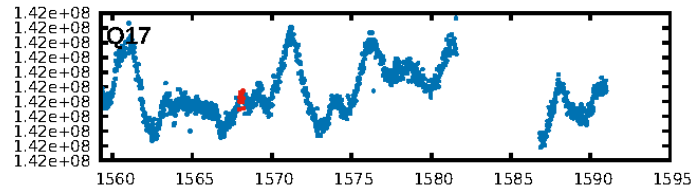
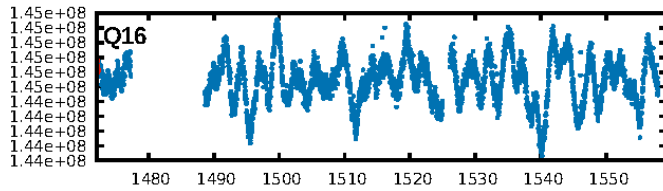
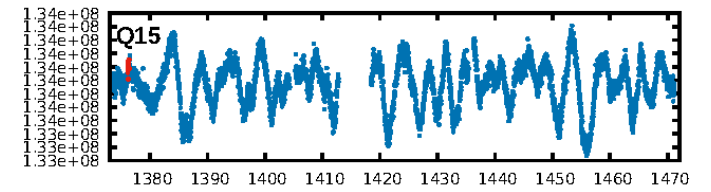
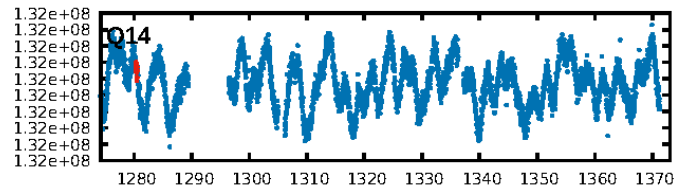
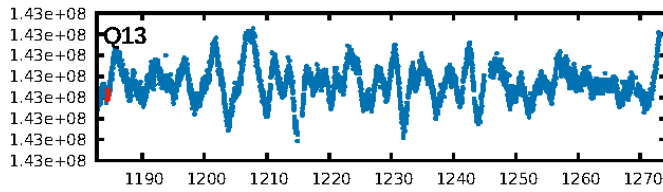
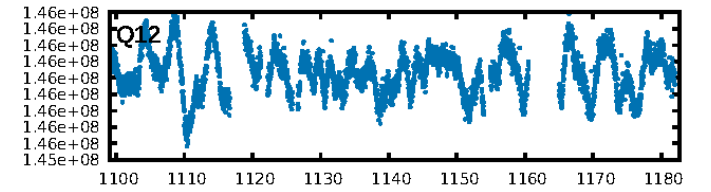
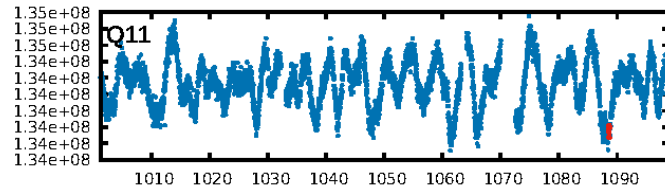
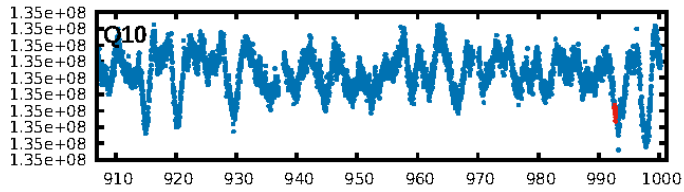
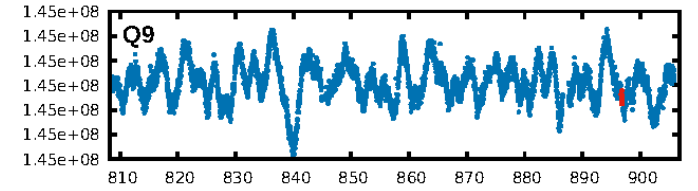
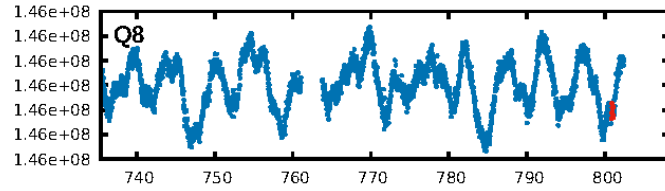
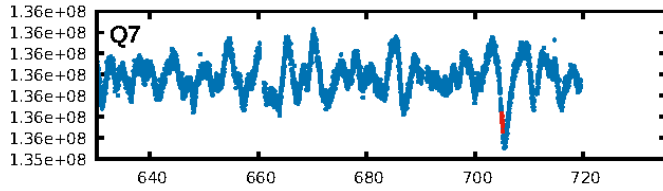
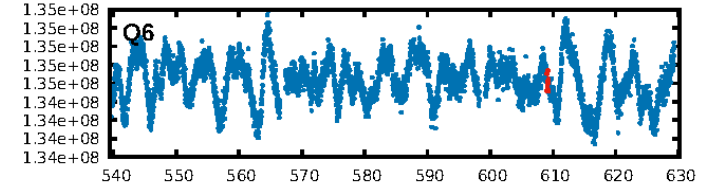
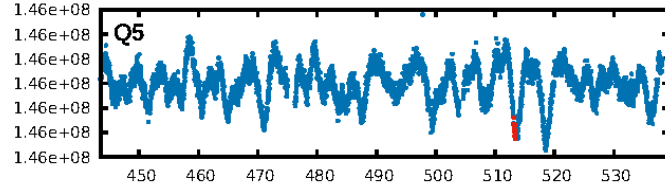
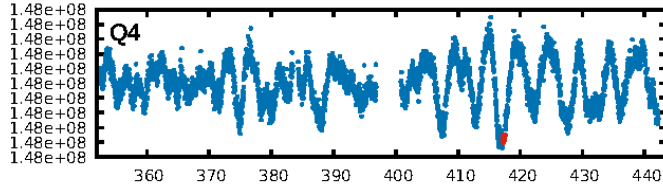
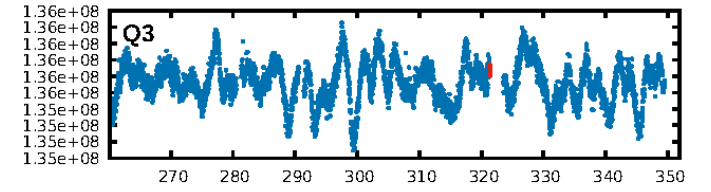
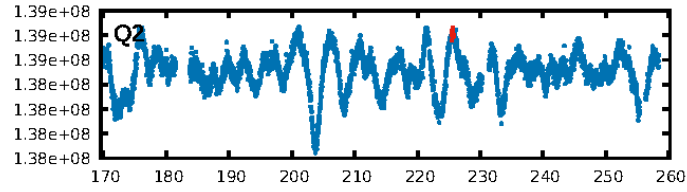
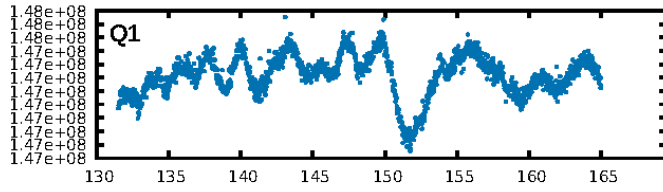
DV Fit Results:

Period = 95.89309 [0.00171] d
Epoch = 225.5821 [0.0130] BKJD
Rp/R* = 0.0241 [0.0158]
a/R* = 151.72 [538.86]
b = 0.75 [2.05]
Seff = 51.12 [28.59]
Teq = 682 [95] K
Rp = 6.88 [5.17] Re
a = 0.4558 [0.1577] AU
Ag = 717.65 [1065.46] [0.67 σ]
Teffp = 5456 [1888] K [2.53 σ]

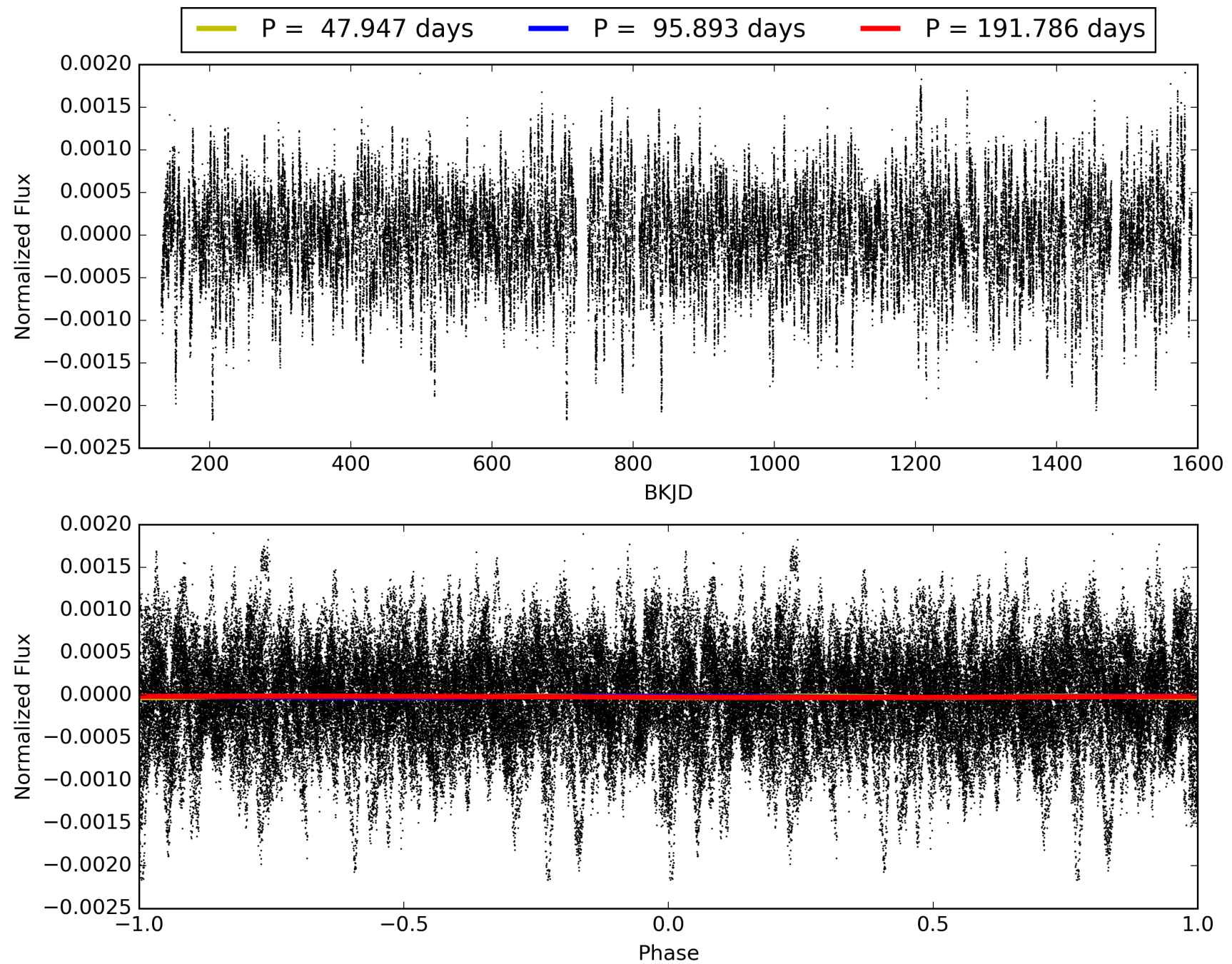
DV Diagnostic Results:

ShortPeriod-sig: 47.0% [0.63 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.8%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 1.39e-13
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -2.983
Centroid-sig: N/A
Centroid-so: 0.372 arcsec [0.92 σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 0.00 [0/13]

TCE 004948991-03, PDC Light Curves

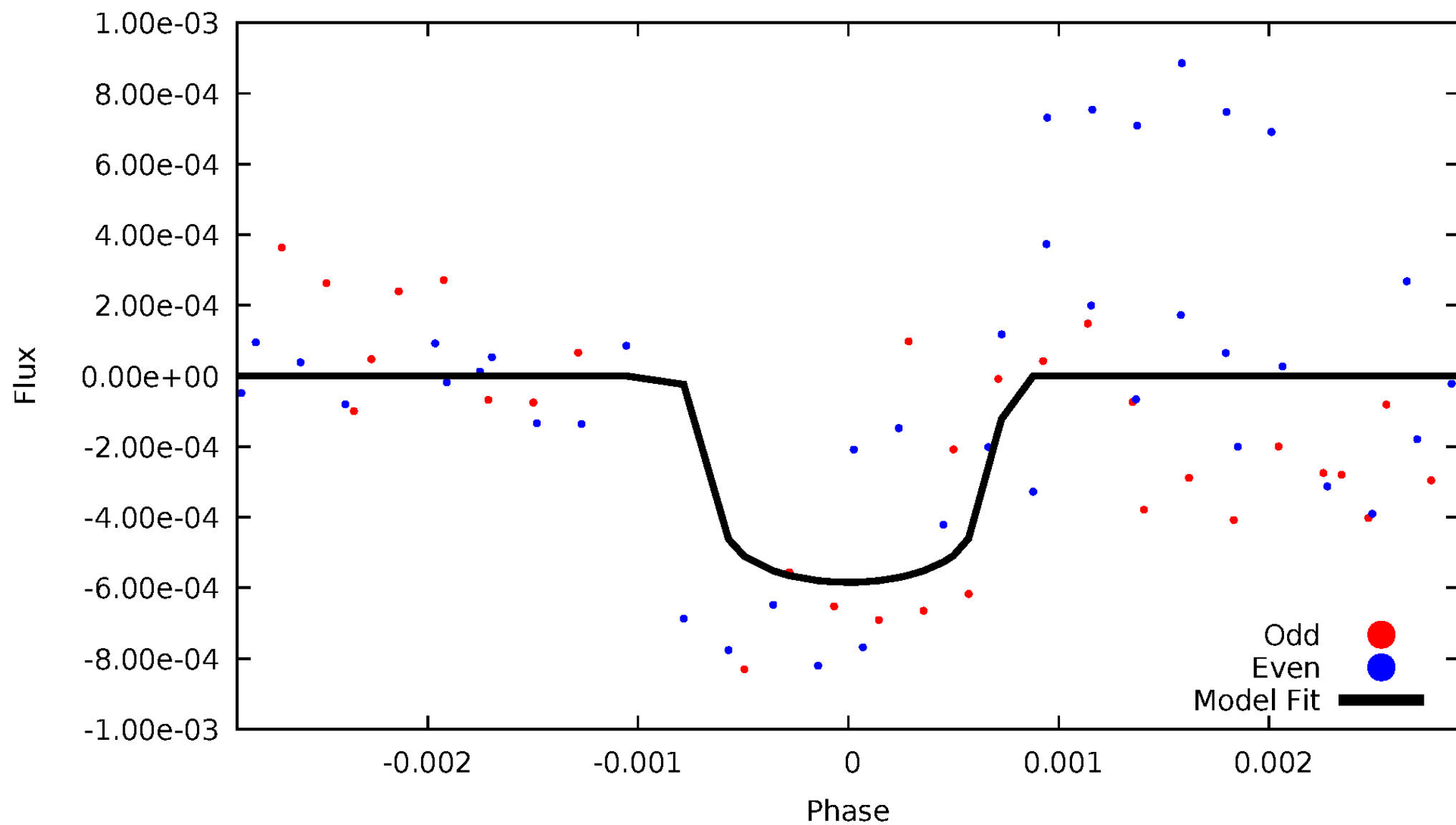


TCE 004948991-03



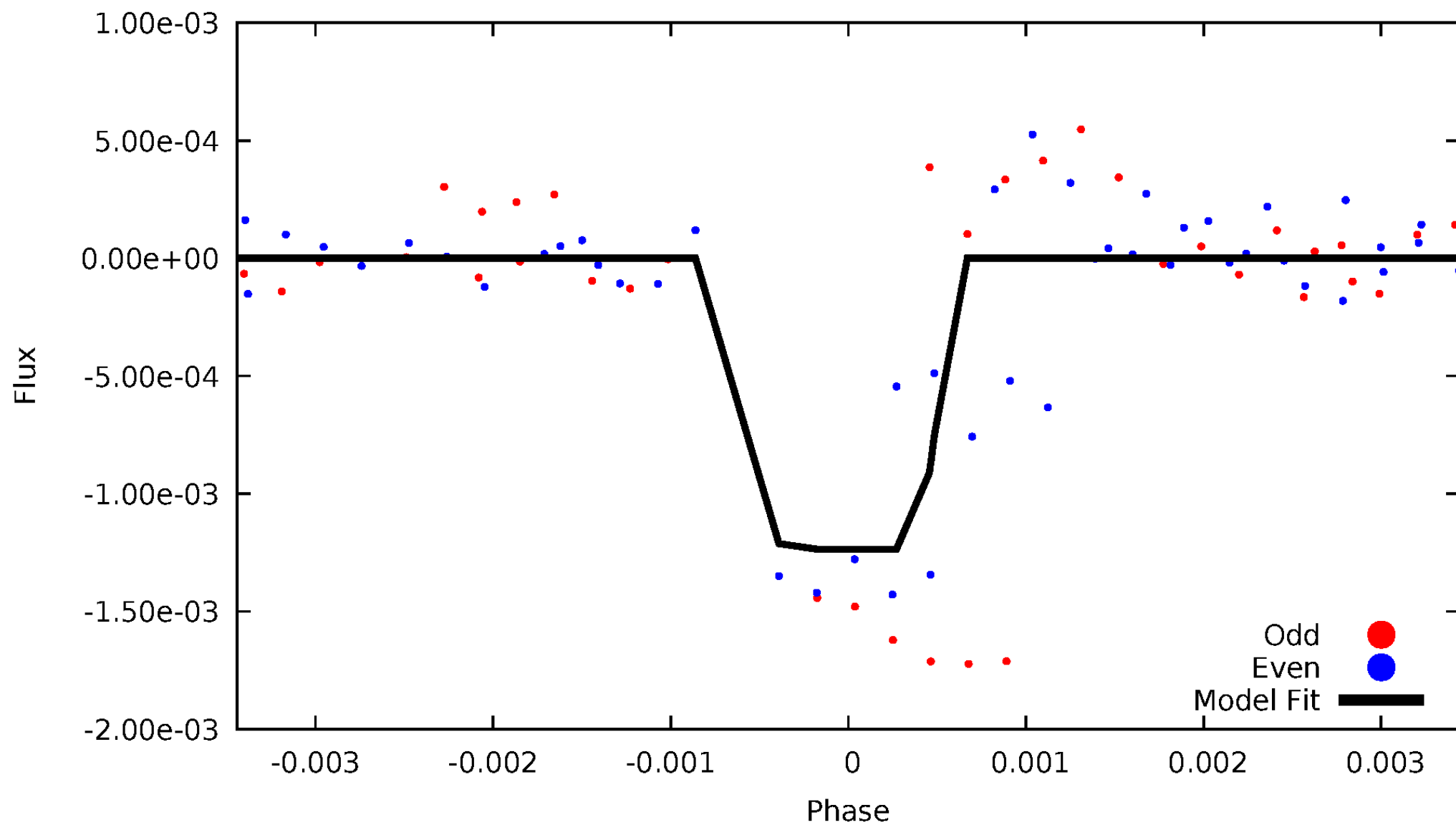
DV Odd/Even

TCE 004948991-03



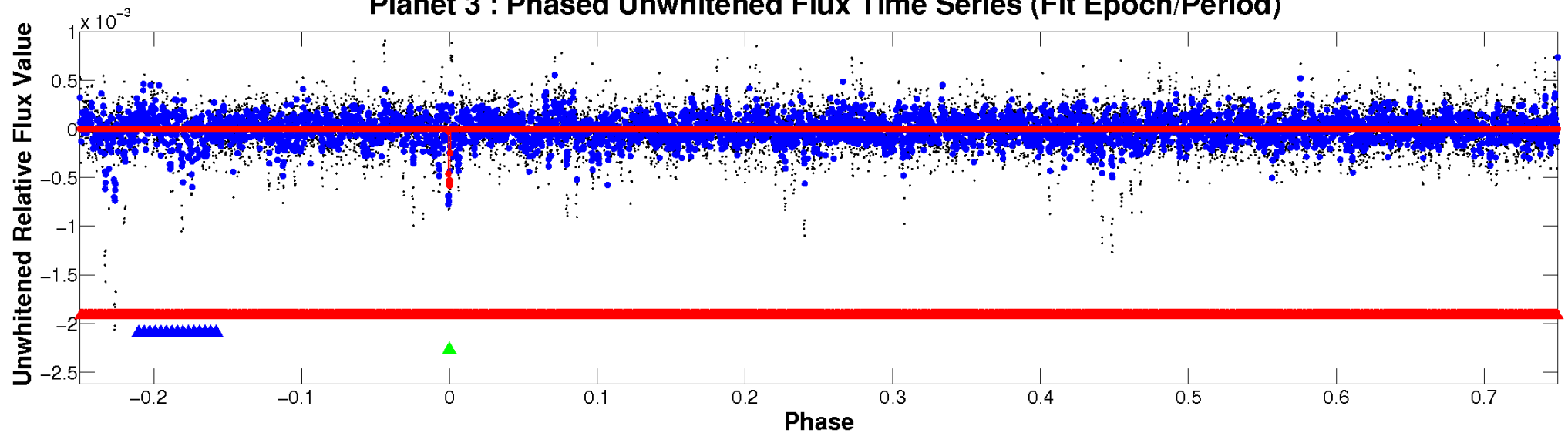
ALT Odd/Even

TCE 004948991-03

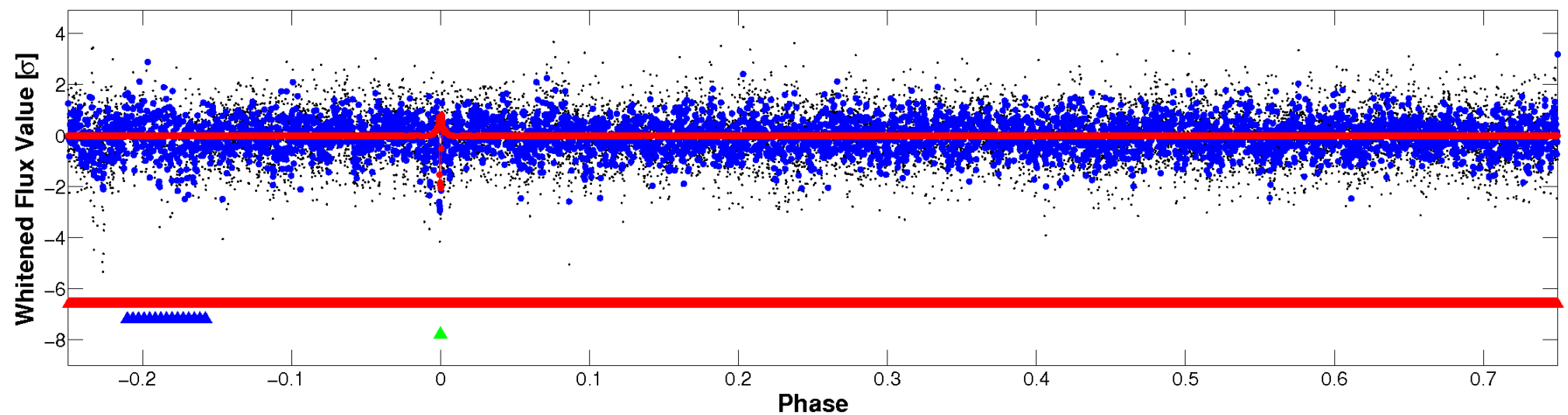


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

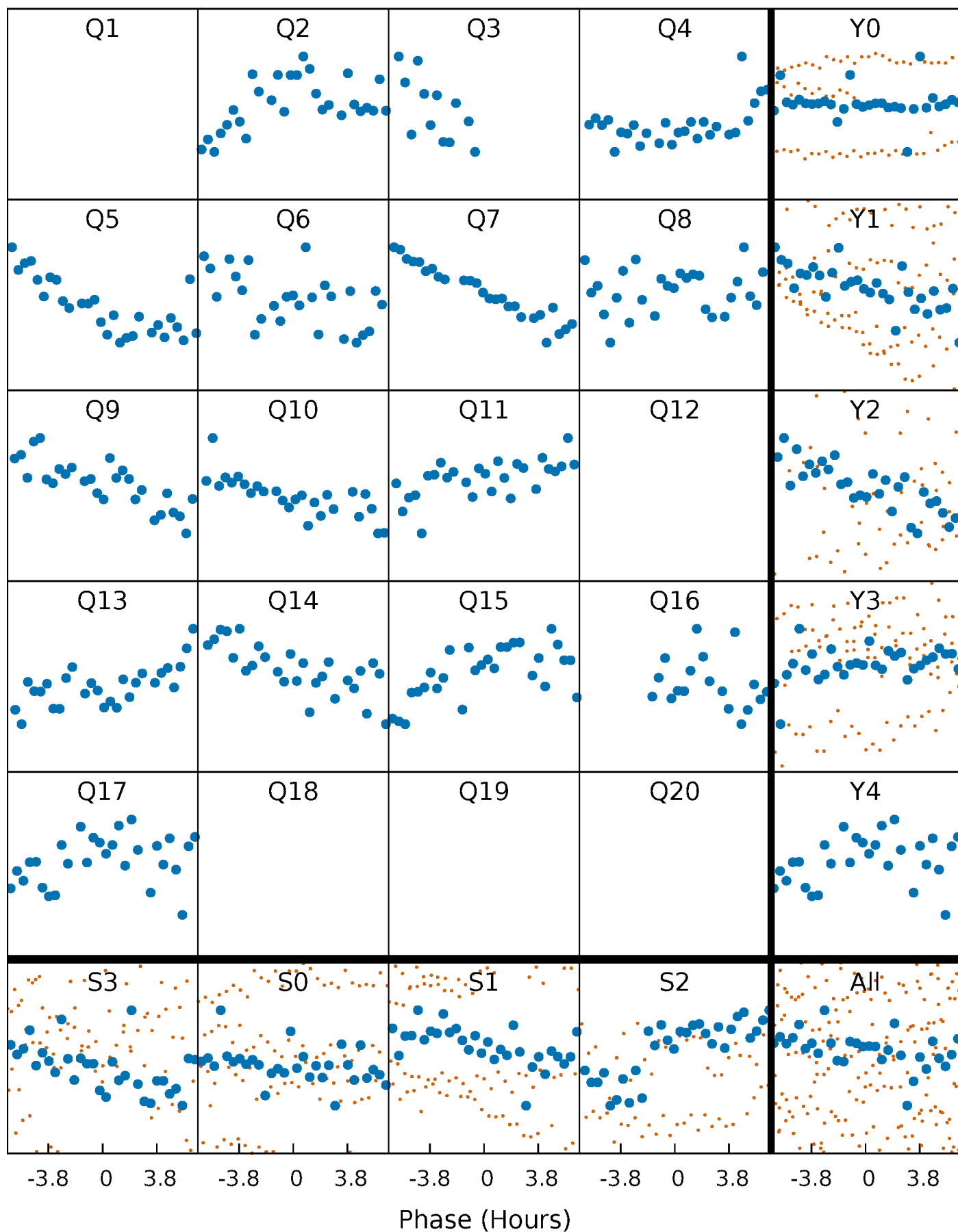


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



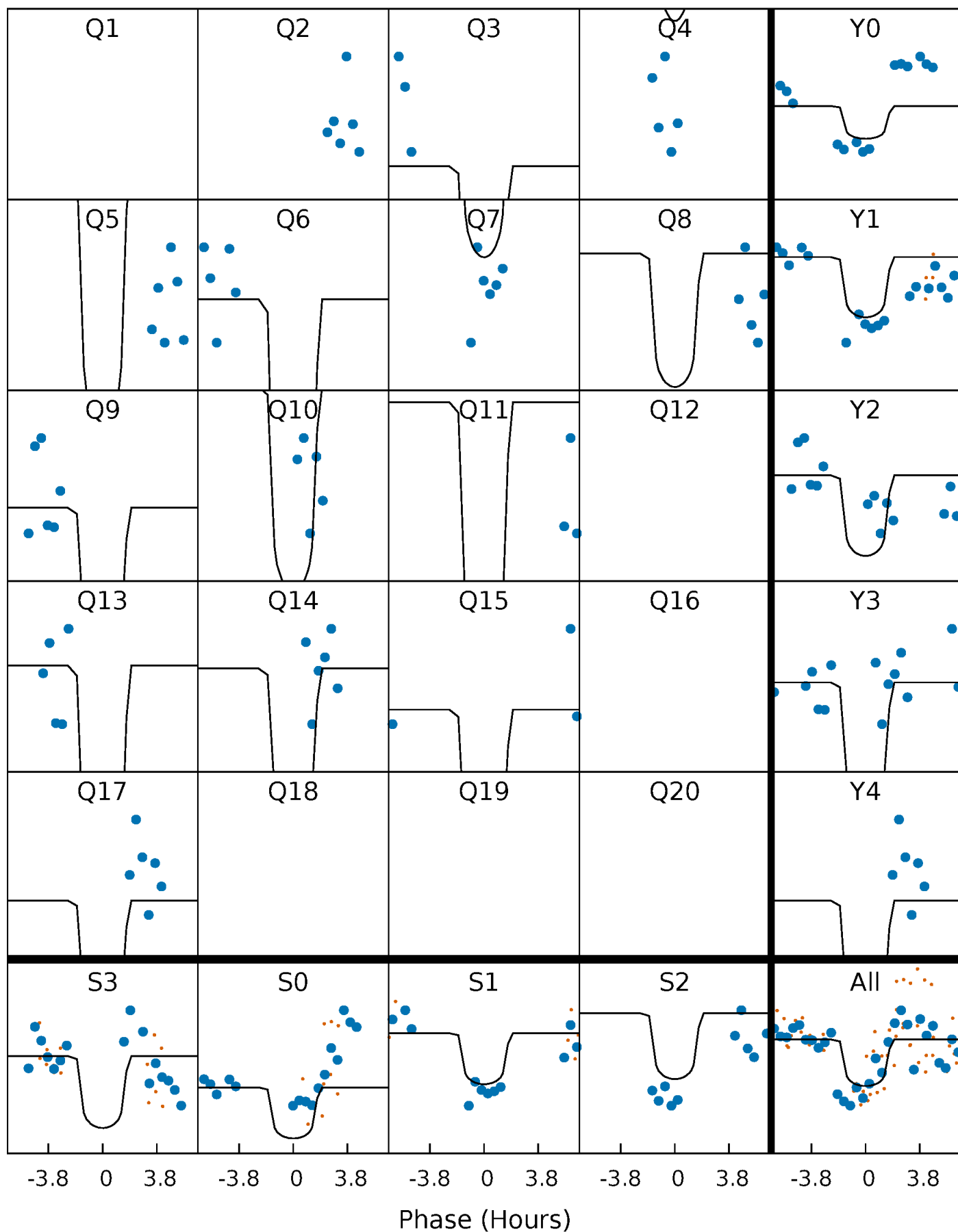
PDC Quarter-Phased Transit Curves

TCE 004948991-03 P= 95.893093 Days $T_0=225.582084$ (BKJD)



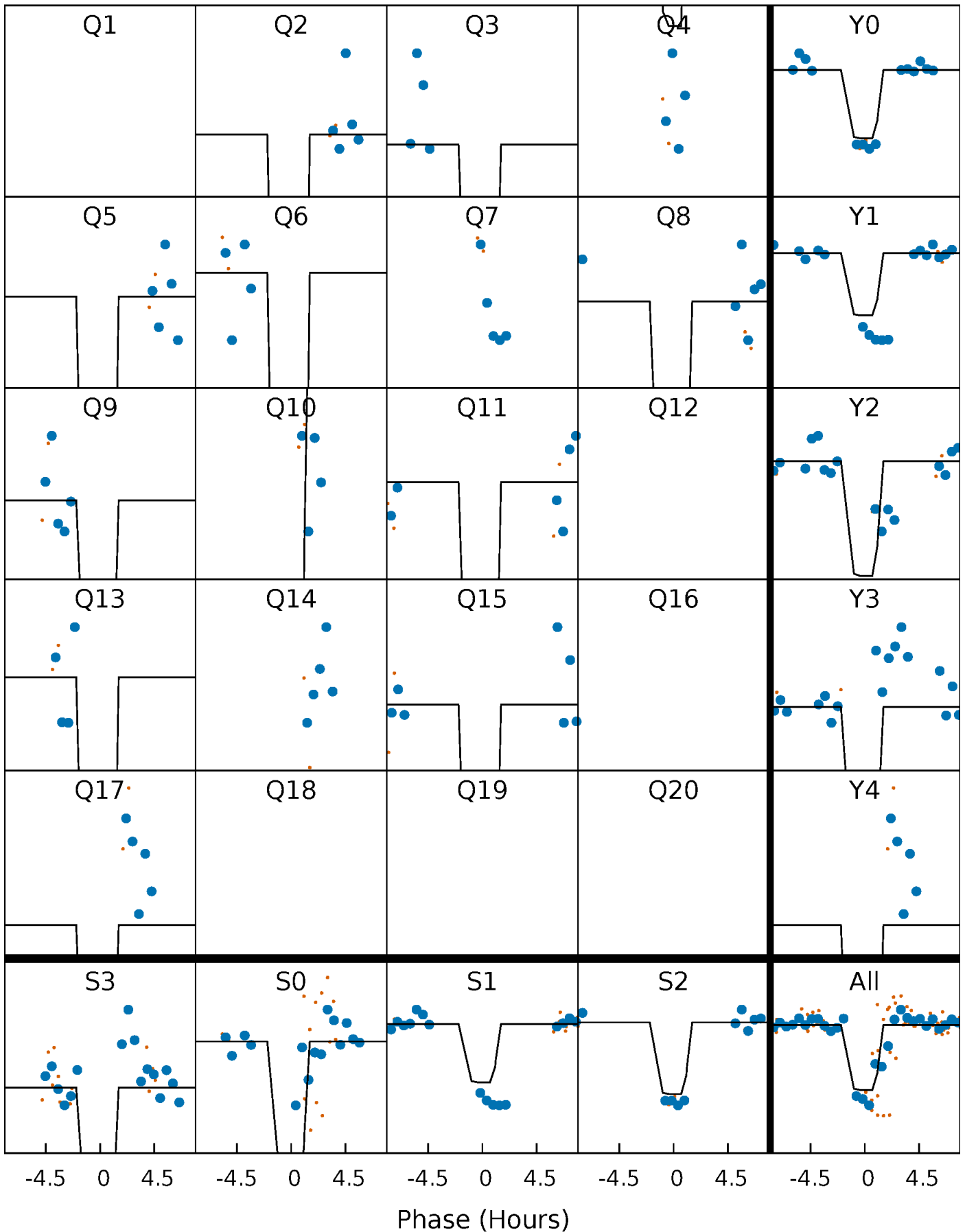
DV Quarter-Phased Transit Curves

TCE 004948991-03 P= 95.893093 Days $T_0=225.582084$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

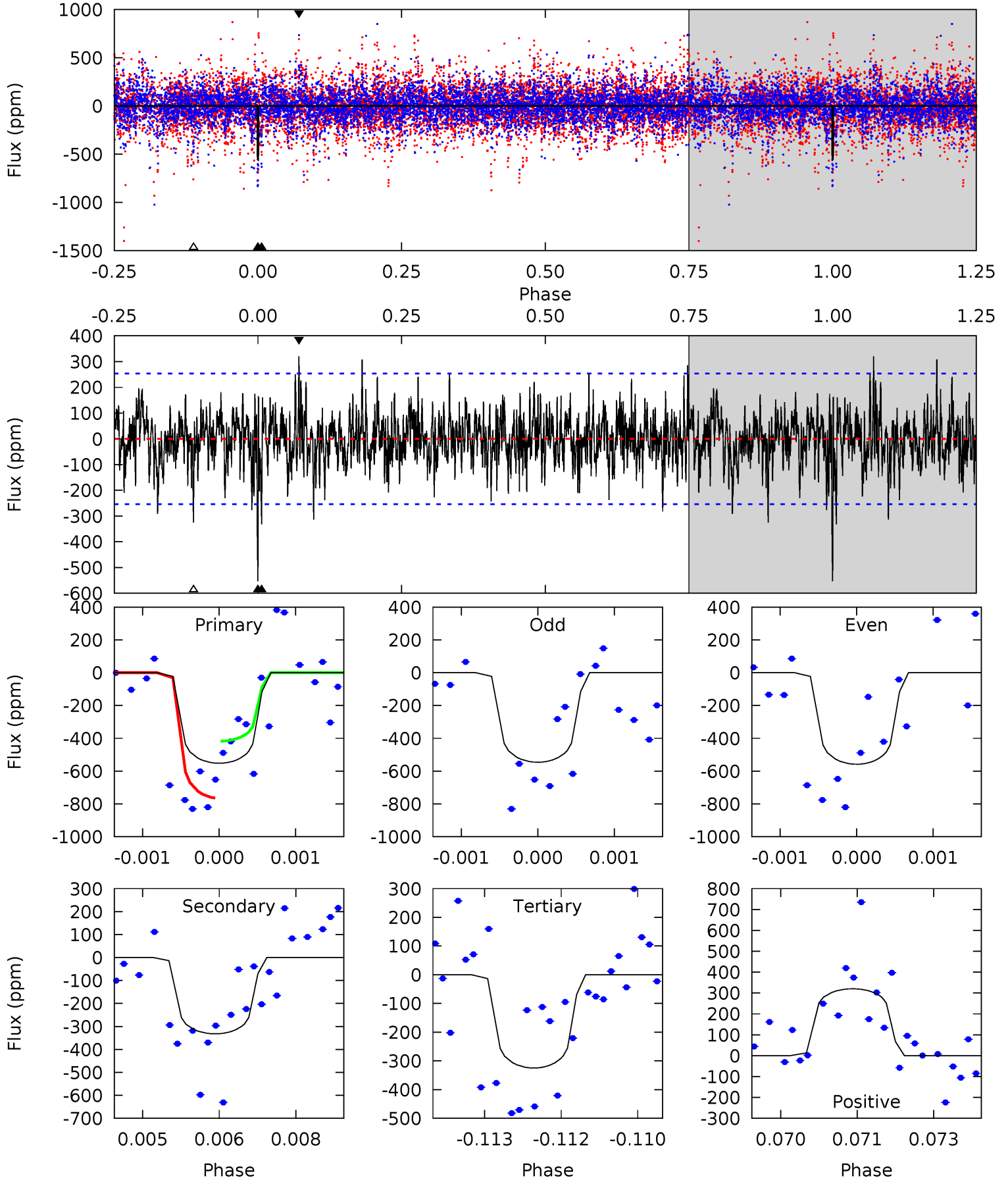
TCE 004948991-03 P= 95.895464 Days $T_0=225.539673$ (BKJD)



DV Model-Shift Uniqueness Test

004948991-03, P = 95.893093 Days, E = 129.688991 Days

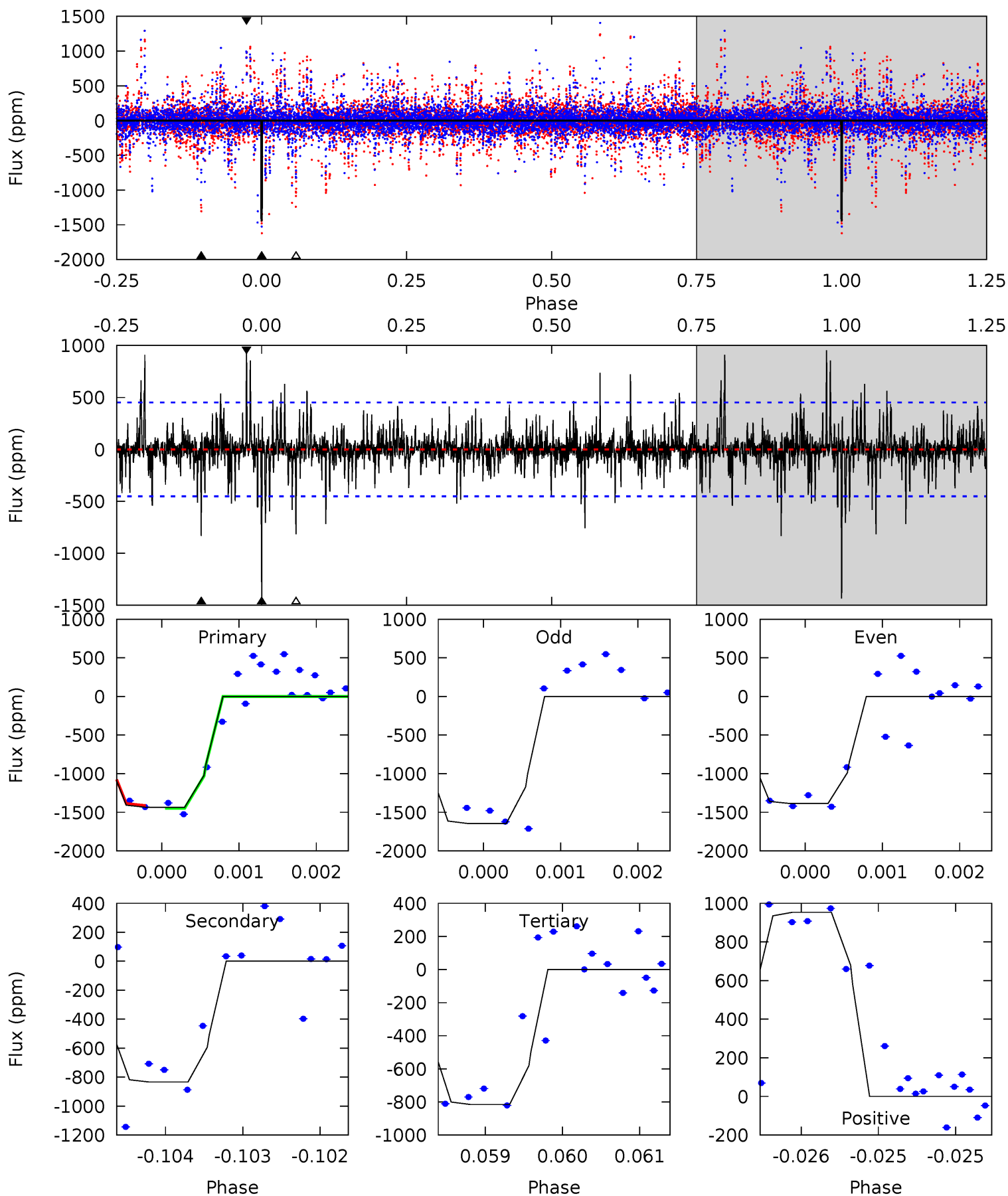
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	7.08	6.92	6.82	5.40	3.22	1.74	4.85	4.94	0.16	0.25	0.13	0.93	0.37	3.45



Alt Model-Shift Uniqueness Test

004948991-03, P = 95.895464 Days, E = 129.644209 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.4	10.1	9.91	11.6	5.48	3.34	1.59	7.52	5.85	0.22	-1.45	1.51	0.86	0.40	0.15



Stellar Parameters For KIC 004948991

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6450^{+176}_{-176}	$3.740^{+0.320}_{-0.080}$	$-0.340^{+0.350}_{-0.250}$	$2.617^{+0.410}_{-0.957}$	$1.374^{+0.235}_{-0.287}$	$0.108^{+0.253}_{-0.034}$
	+3%/-3%	+9%/-2%	+103%/-74%	+16%/-37%	+17%/-21%	+235%/-31%
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 004948991-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-332 ± 47	$6.61^{+4.44}_{-3.52}$	933^{+56}_{-87}	5531^{+2792}_{-1036}	882^{+2906}_{-563}
Alt.	-834 ± 82	$9.16^{+4.92}_{-3.99}$	931^{+55}_{-77}	5856^{+2080}_{-891}	1127^{+2425}_{-636}

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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

DV Centroid Data

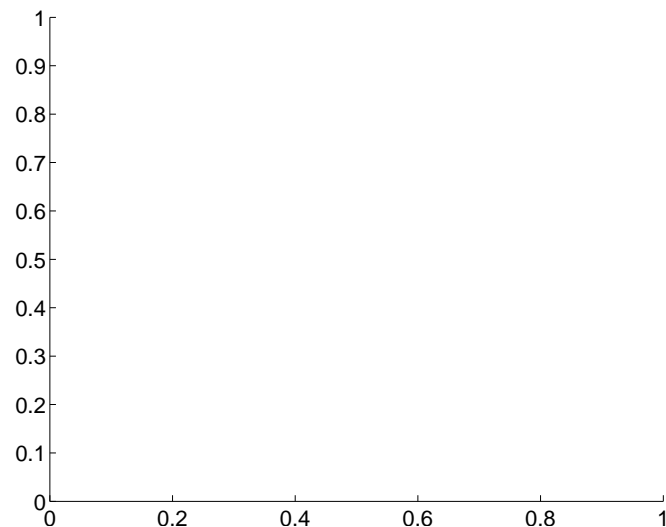
Supplemental centroid analysis for 004948991-03. Kepler magnitude: 12.99. Transit SNR 7.51

There are 0 quarters with good PRF difference image offsets

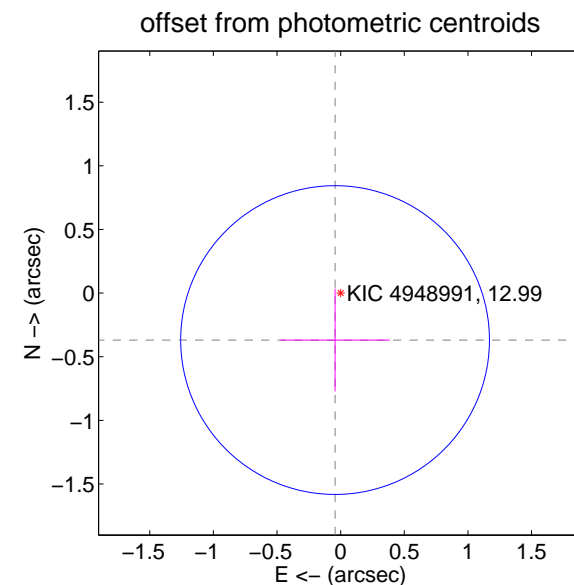
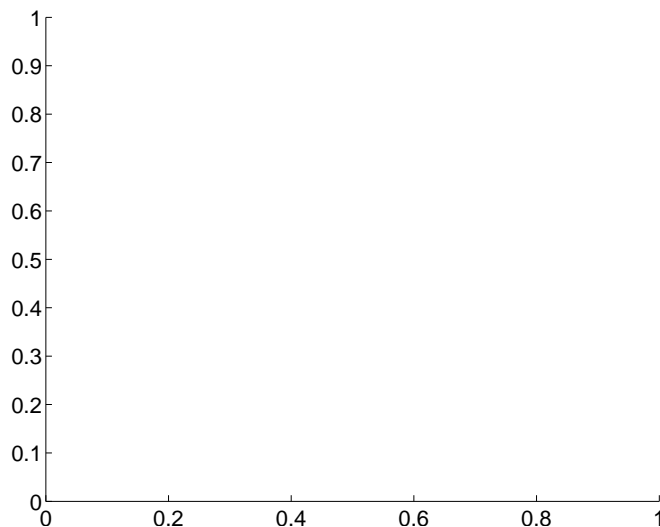
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	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	0.37 ± 0.40	0.92	0.04 ± 0.43	-0.37 ± 0.40

There is no PRF-fit offset from OOT-fit

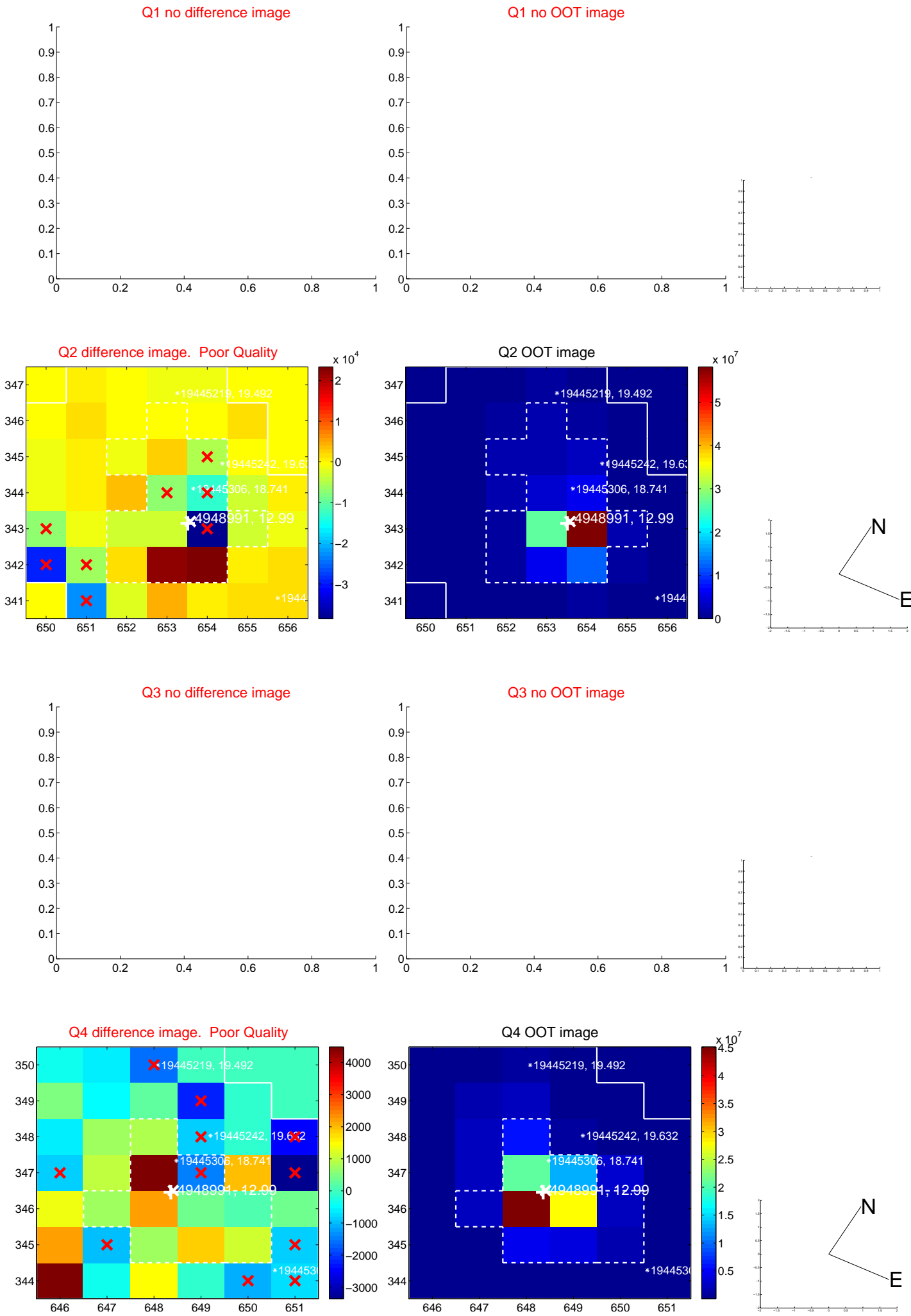


There is no PRF-fit offset from KIC

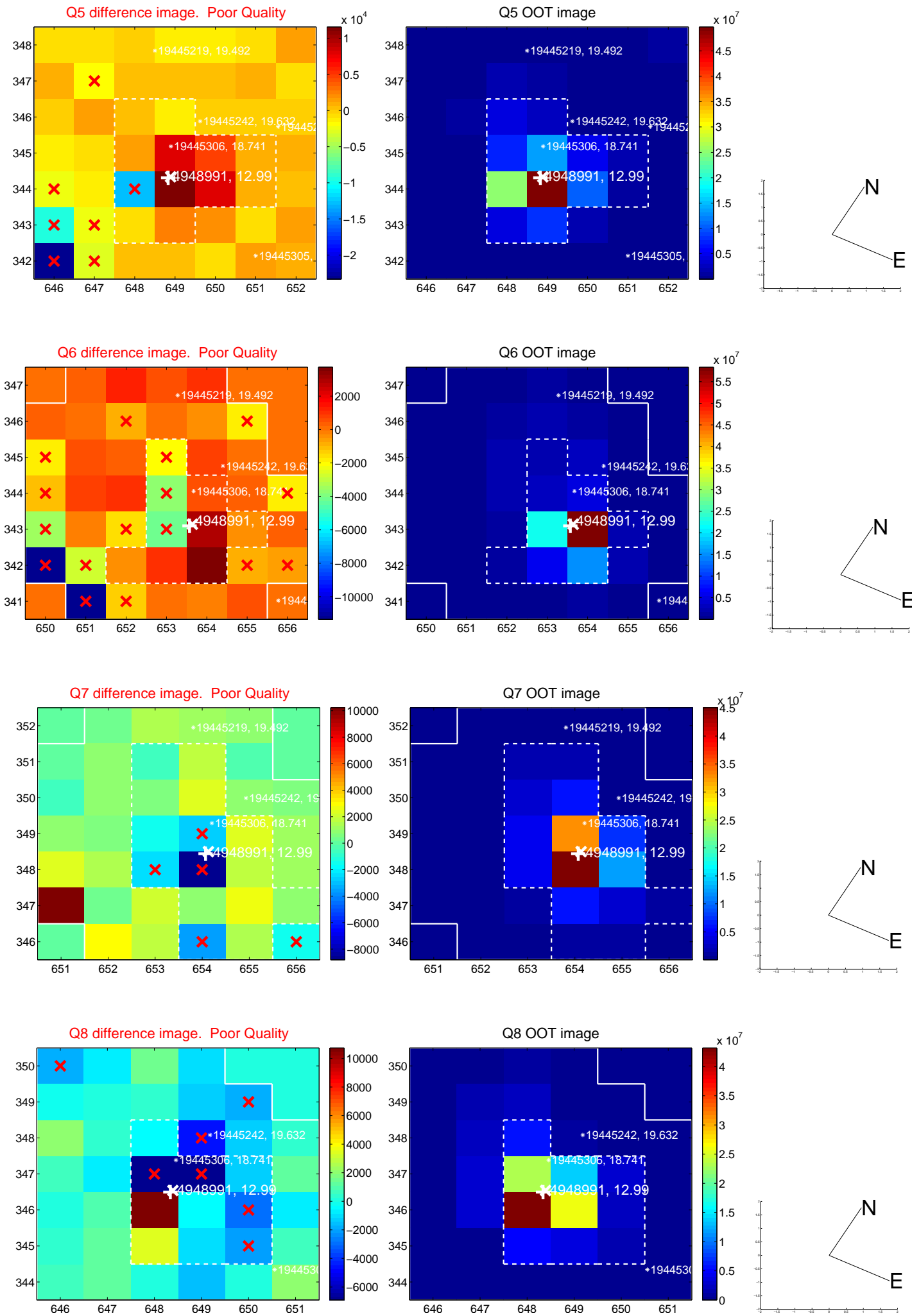


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

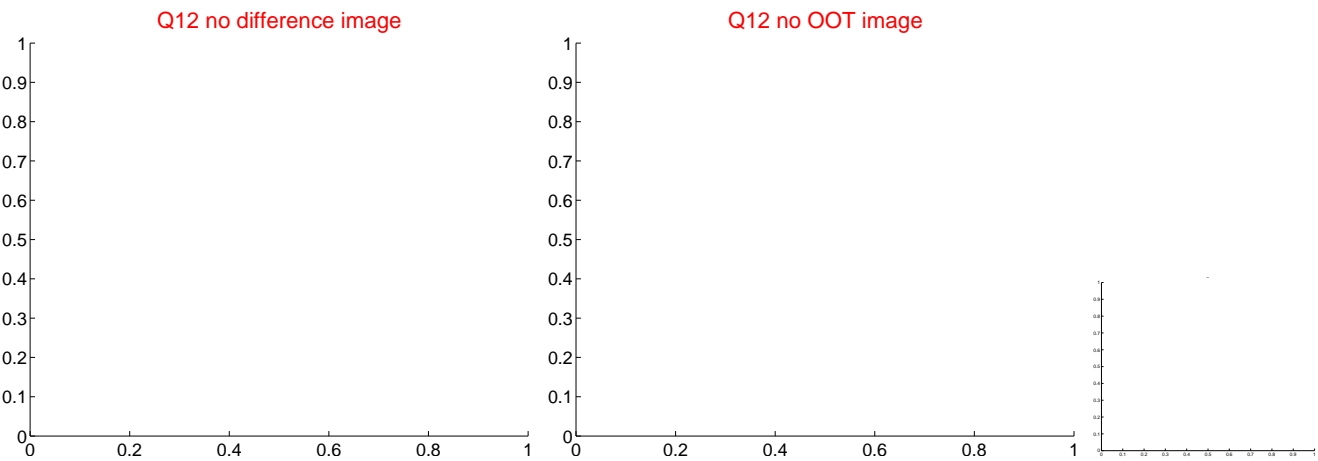
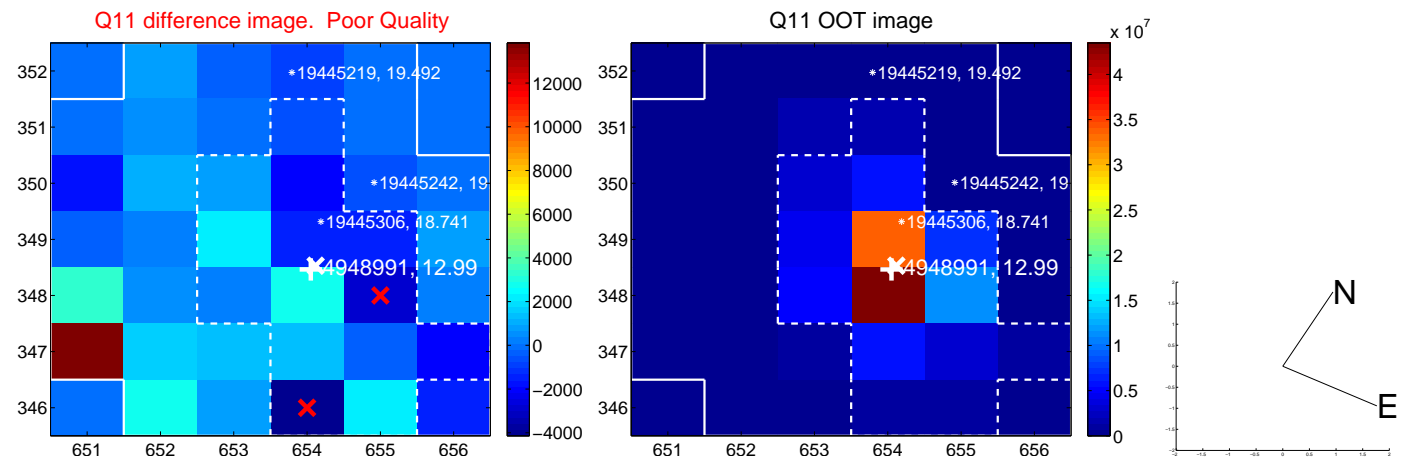
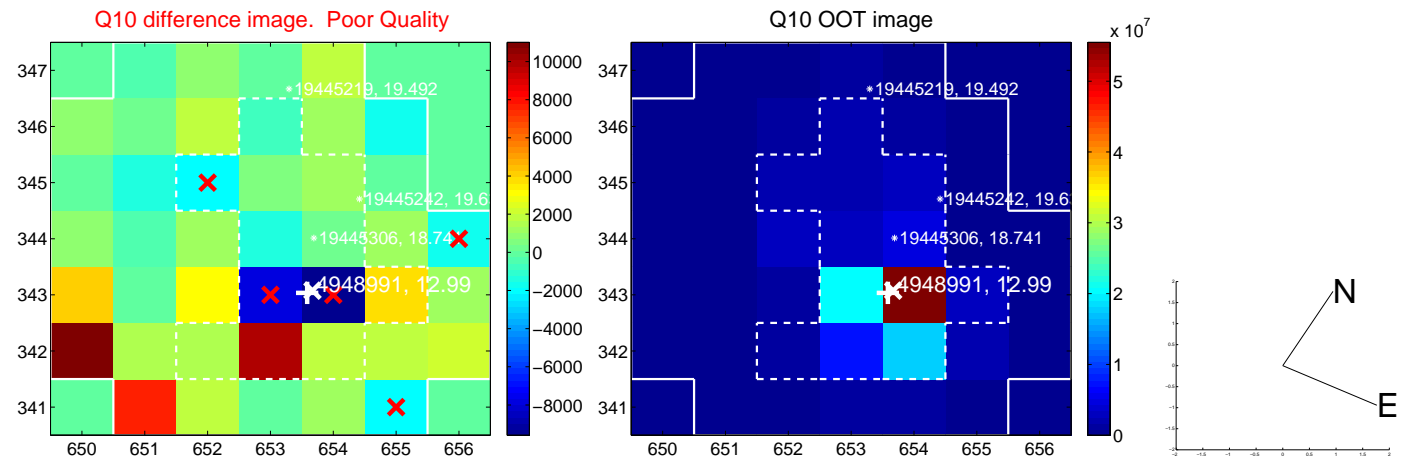
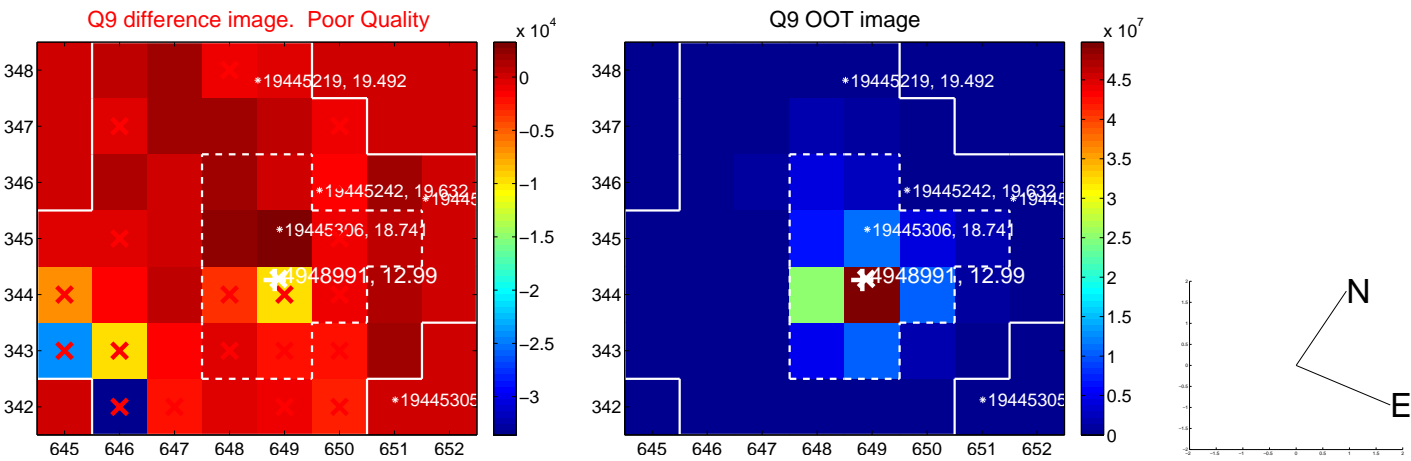
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



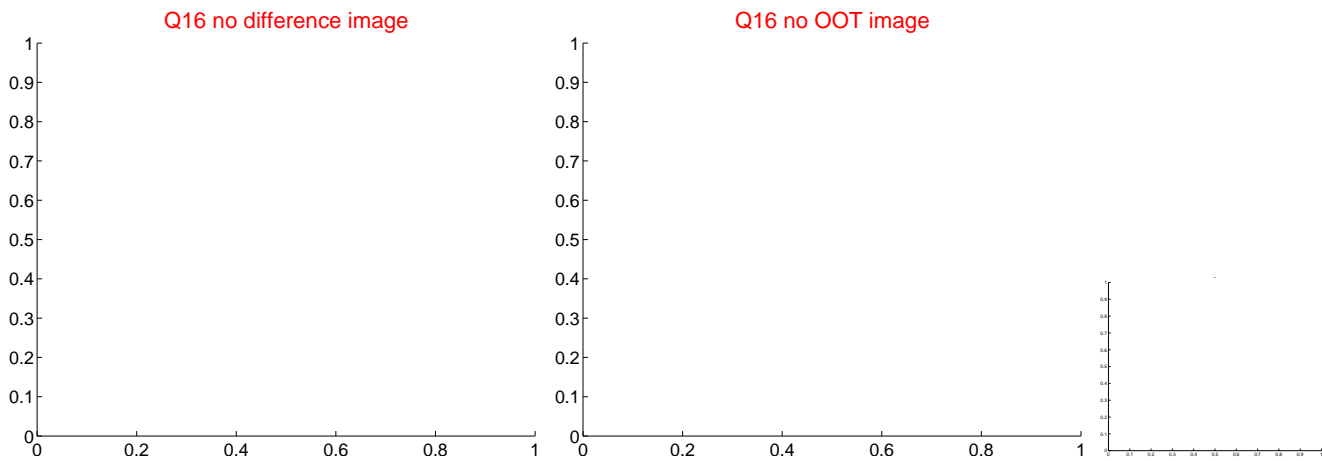
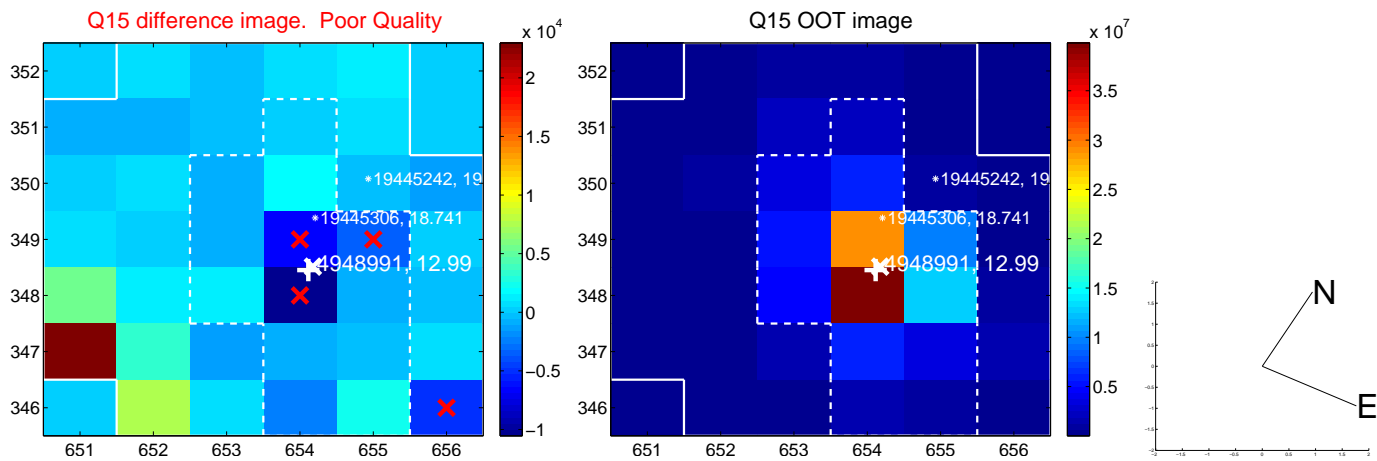
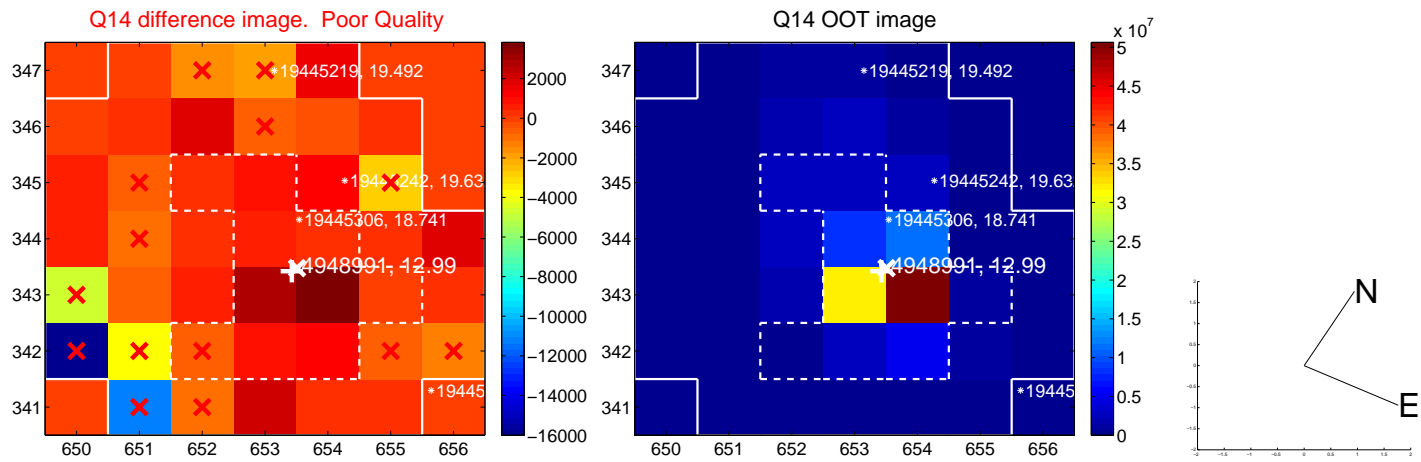
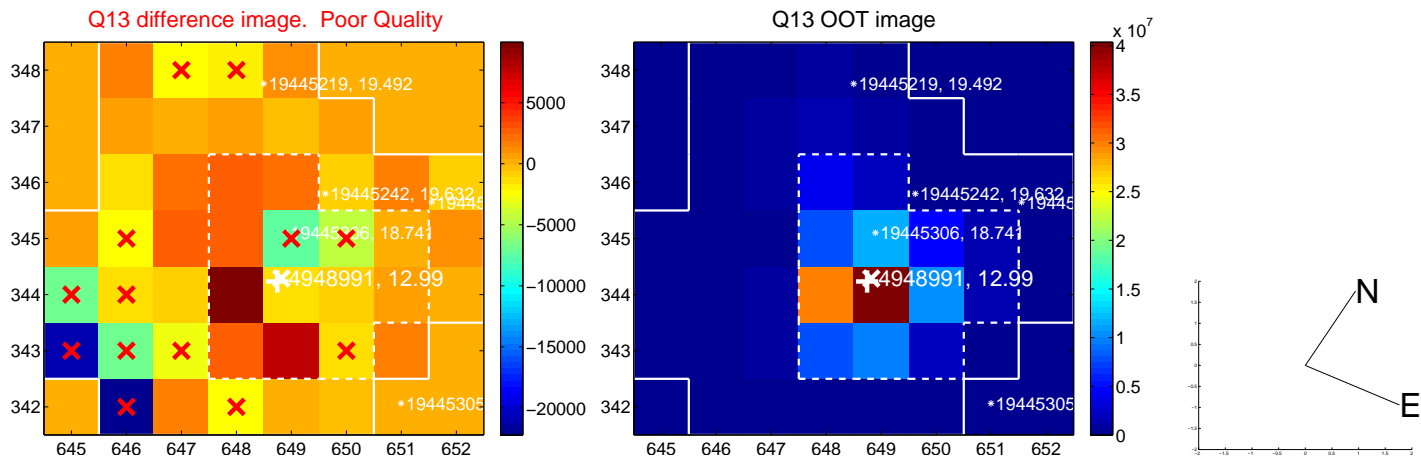
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



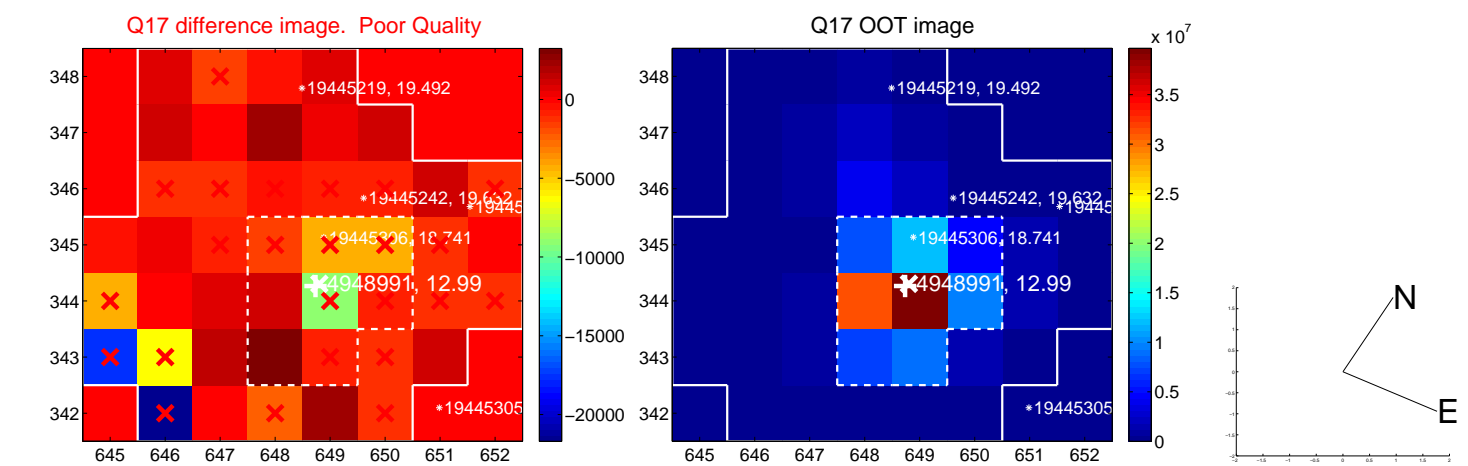
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



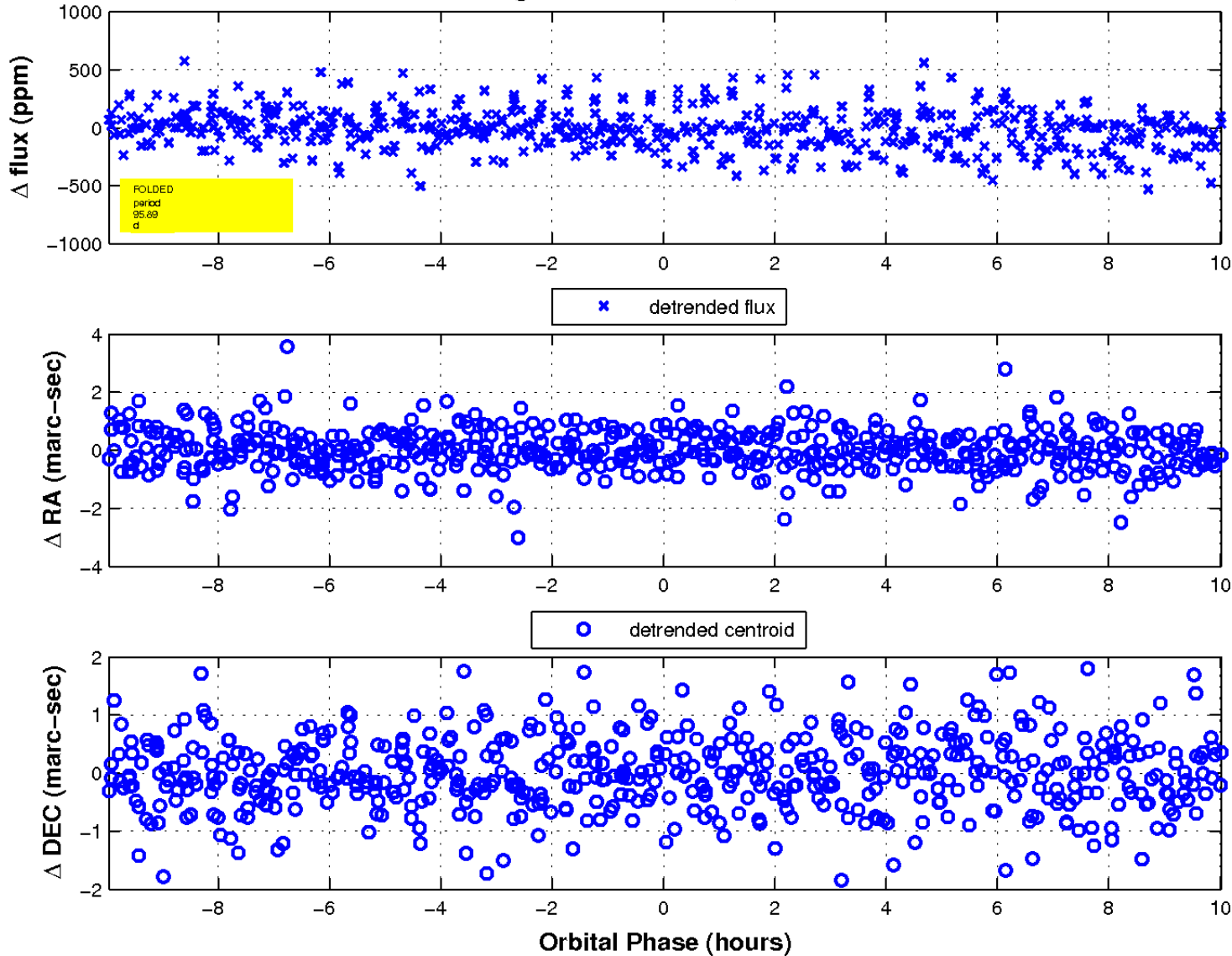
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

