

KIC 004078743

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})
004078743-01	OBS	No	0.502071	131.790307	3.2	1.858	9.7	1.2	2.68	9164	0.49	192101.15
004078743-02	OBS	No	0.502928	131.597073	0.0	4.027	9.6	0.0	2.68	9164	0.03	191664.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004078743-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
004078743-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_SATURATED

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

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

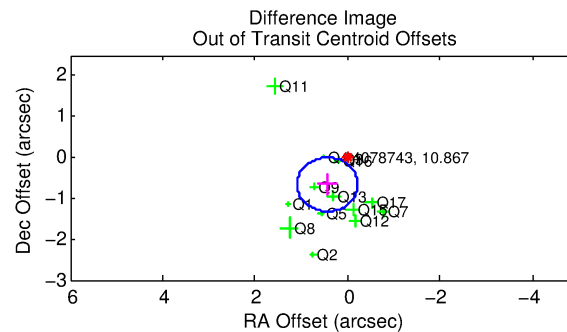
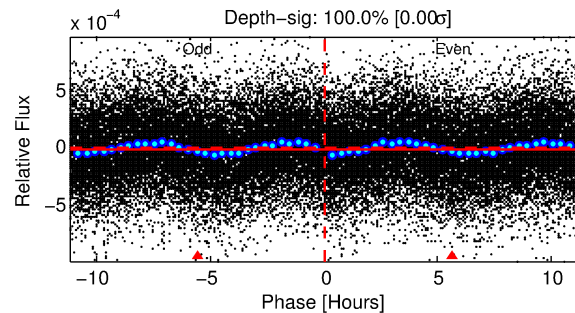
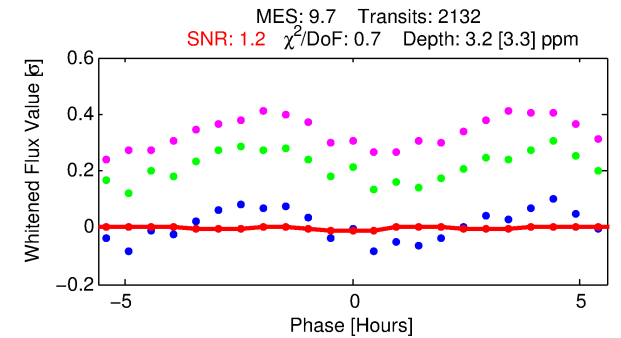
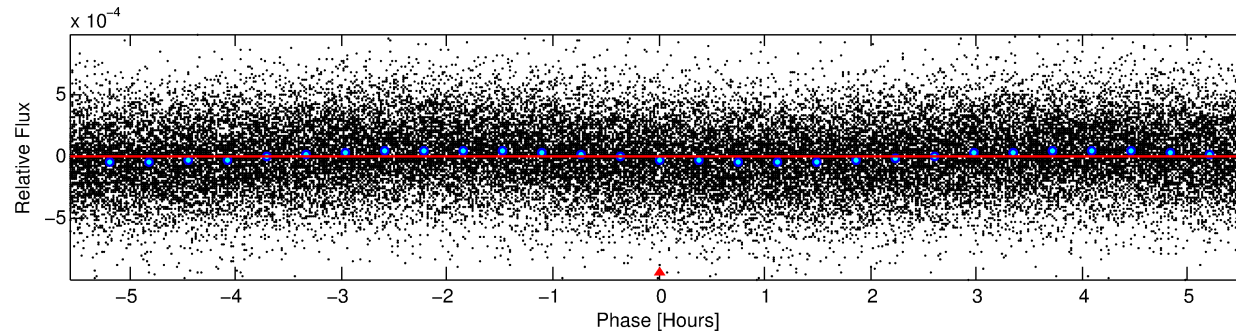
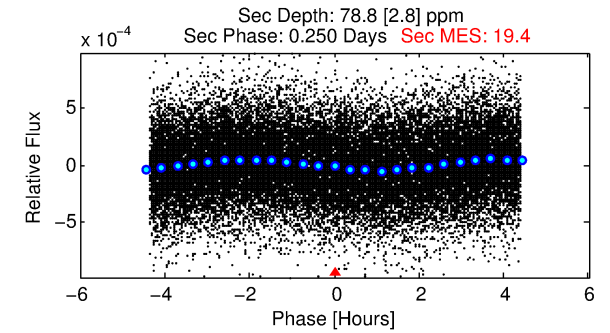
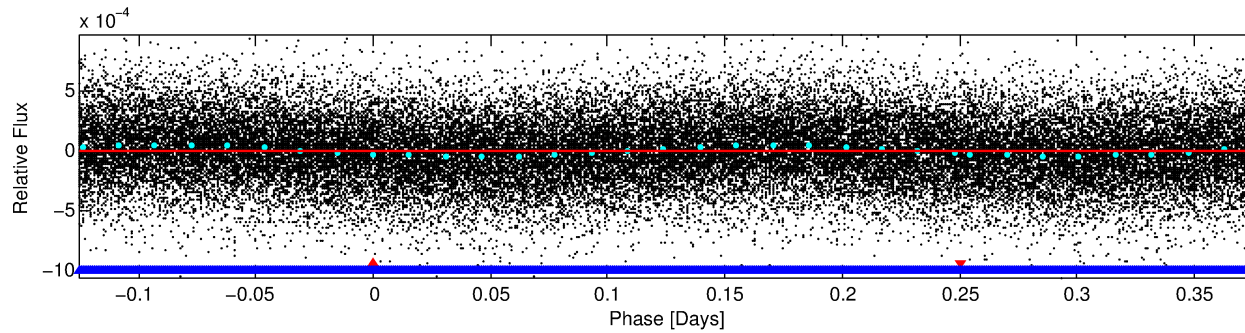
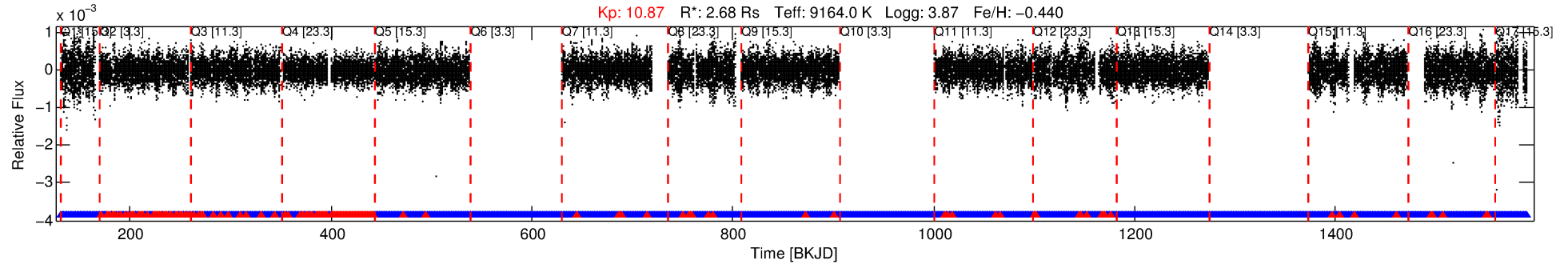
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004078743-01

No Significant Match Found

DV One-Page Summary

KIC: 4078743 Candidate: 1 of 2 Period: 0.502 d



DV Fit Results:

Period = 0.50207 [0.00009] d
Epoch = 131.7903 [0.0153] BKJD
Rp/R* = 0.0017 [0.0018]
a/R* = 2.07 [9.77]
b = 0.30 [18.66]
Seff = 192101.15 [139796.30]
Teq = 5338 [971] K
Rp = 0.49 [0.56] Re
a = 0.0154 [0.0060] AU
Ag = 42.30 [94.01] [0.44σ]
Teffp = 21049 [11364] K [1.38σ]

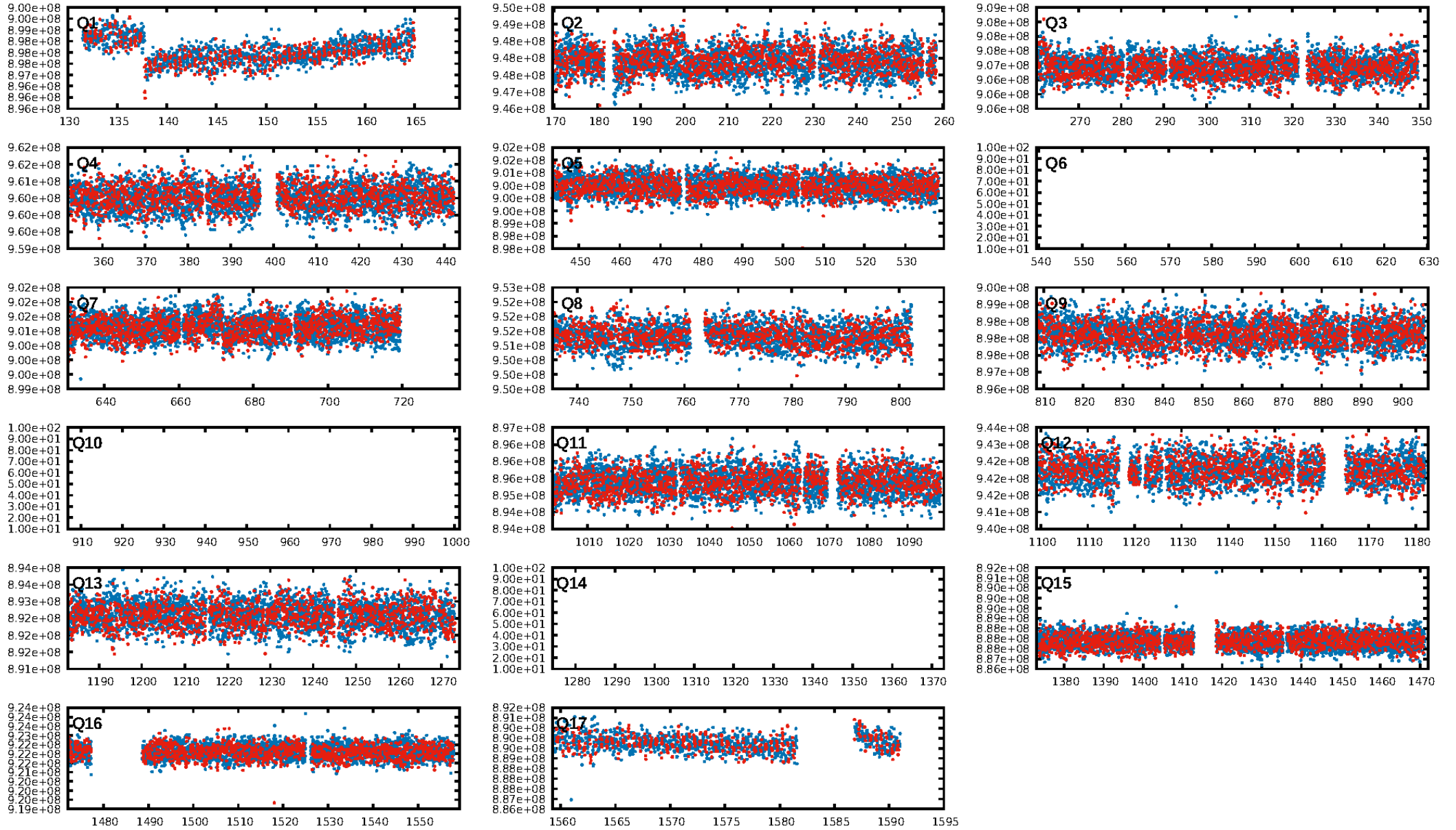
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.4% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.90 [1814/2012]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.799 arcsec [3.65σ]
KicOffset-rm: 0.932 arcsec [4.21σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 0.64 [9/14]
DiffImageOverlap-fno: 0.00 [0/14]

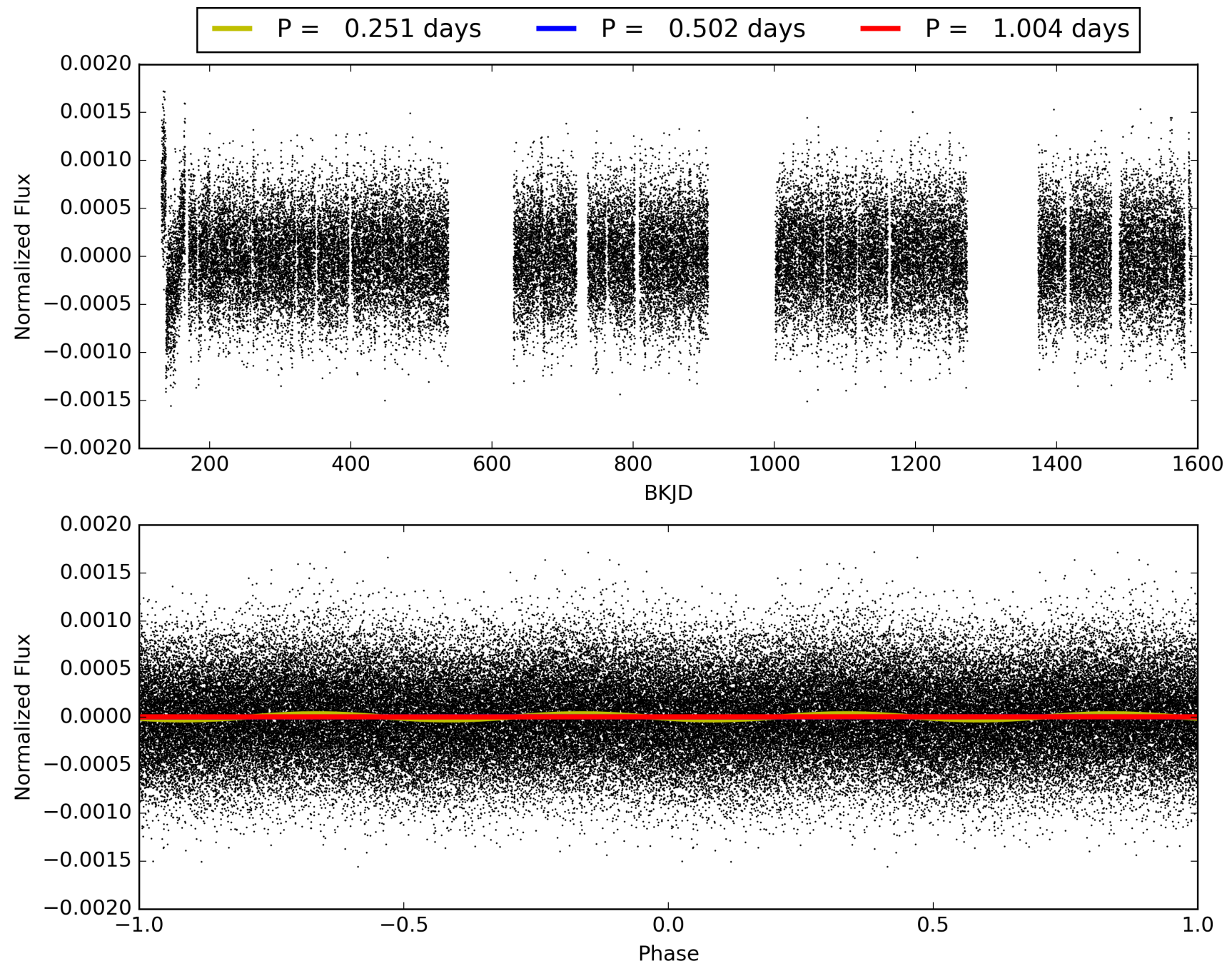
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:10:21 Z

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

TCE 004078743-01, PDC Light Curves

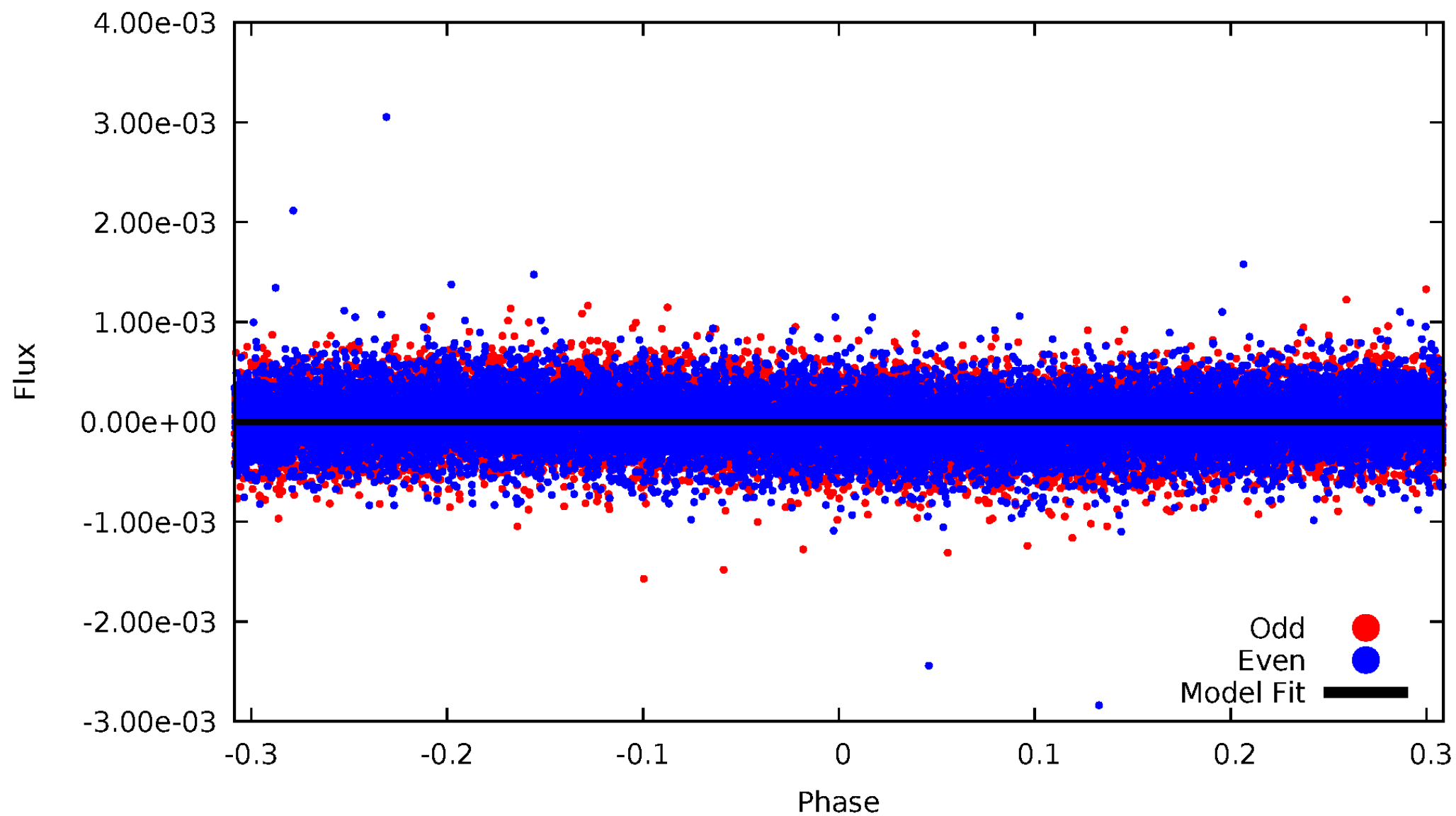


TCE 004078743-01



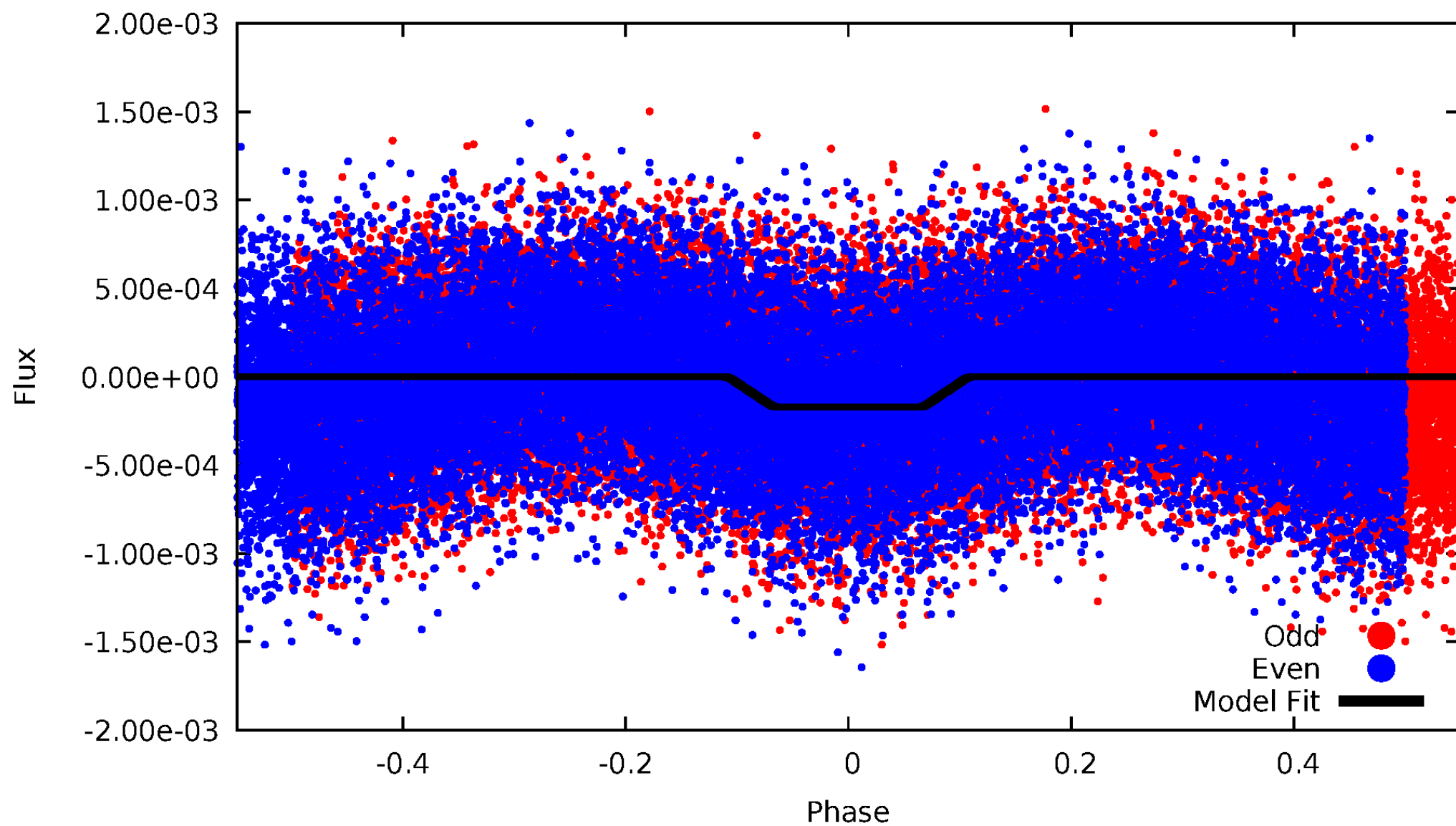
DV Odd/Even

TCE 004078743-01

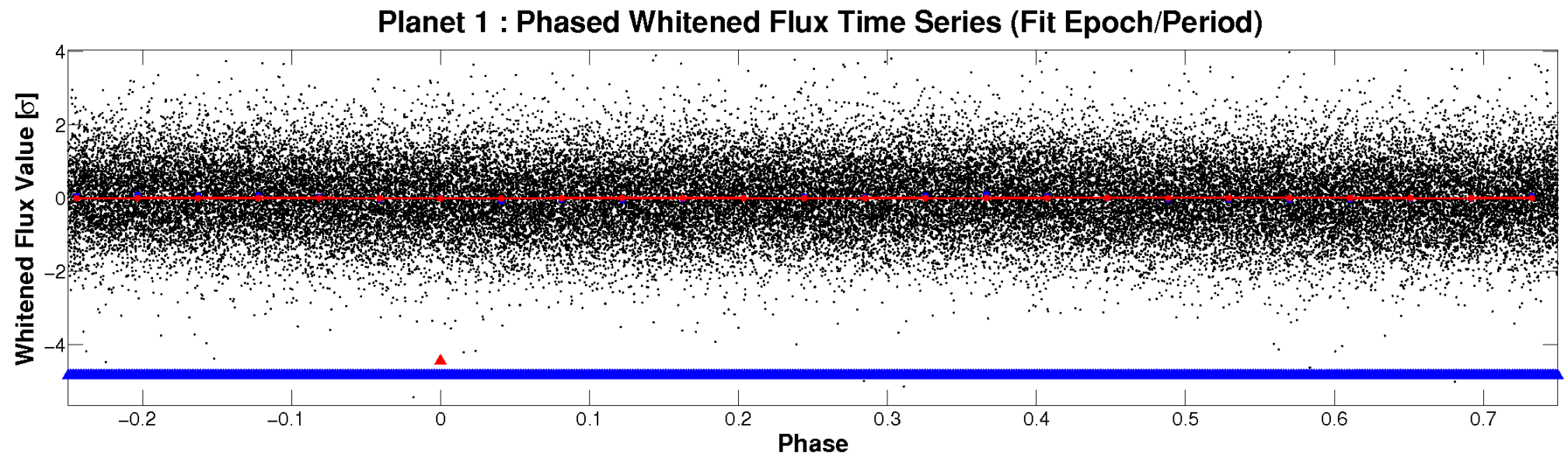
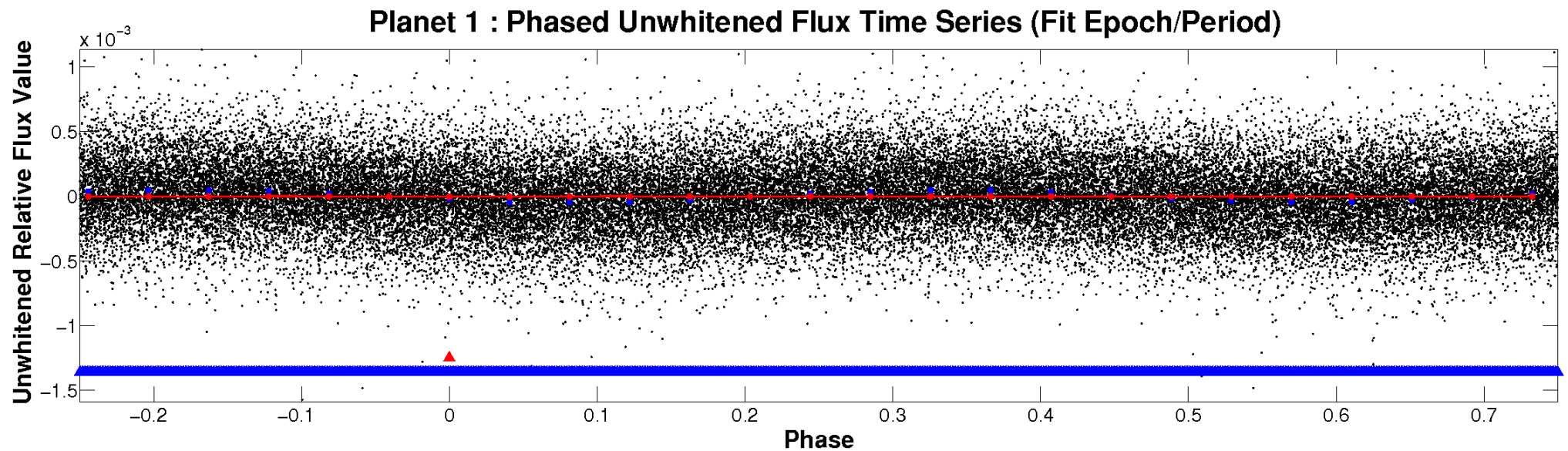


ALT Odd/Even

TCE 004078743-01

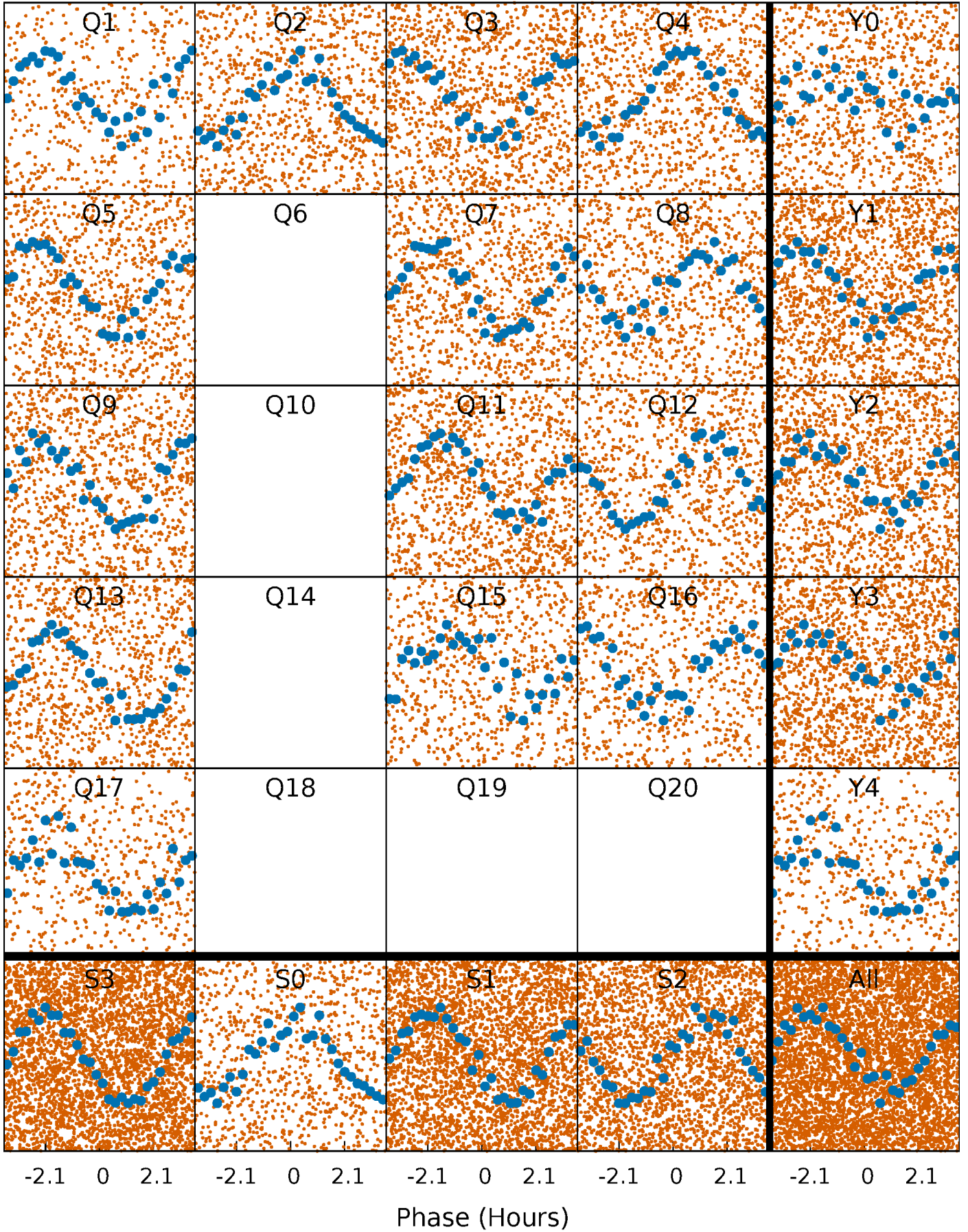


Non-Whitened Vs. Whitened Light Curve



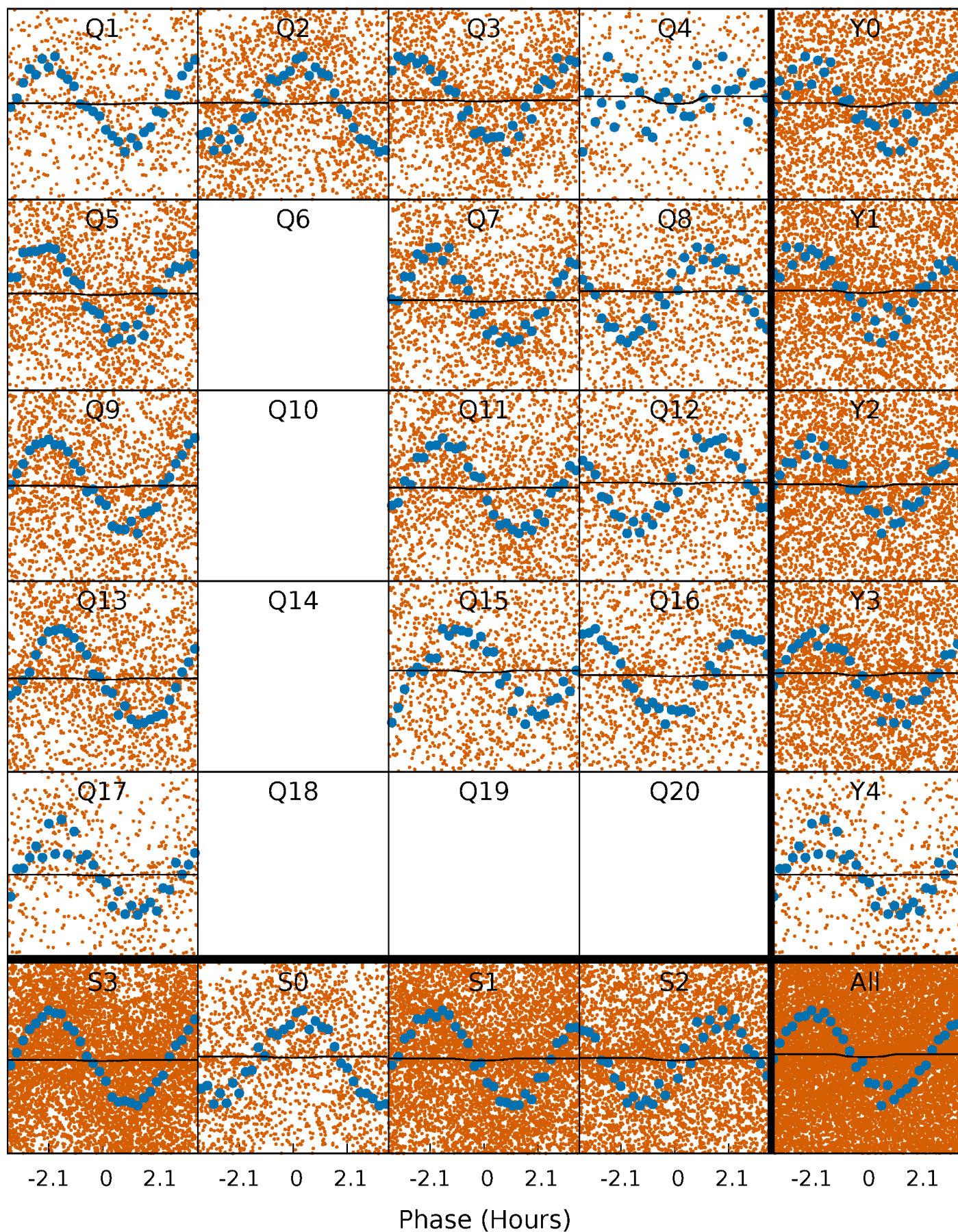
PDC Quarter-Phased Transit Curves

TCE 004078743-01 P= 0.502071 Days $T_0=131.790307$ (BKJD)



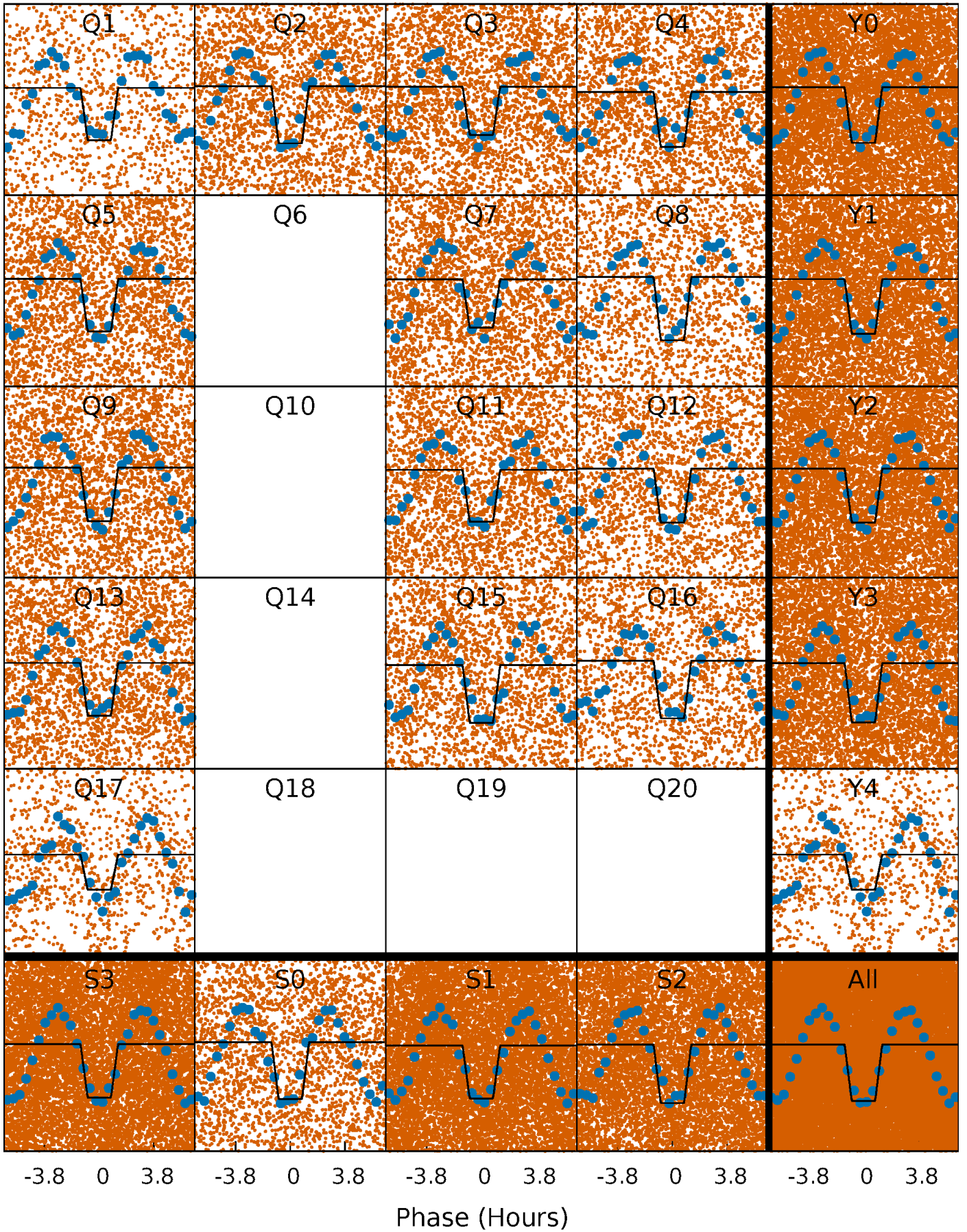
DV Quarter-Phased Transit Curves

TCE 004078743-01 P= 0.502071 Days $T_0=131.790307$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

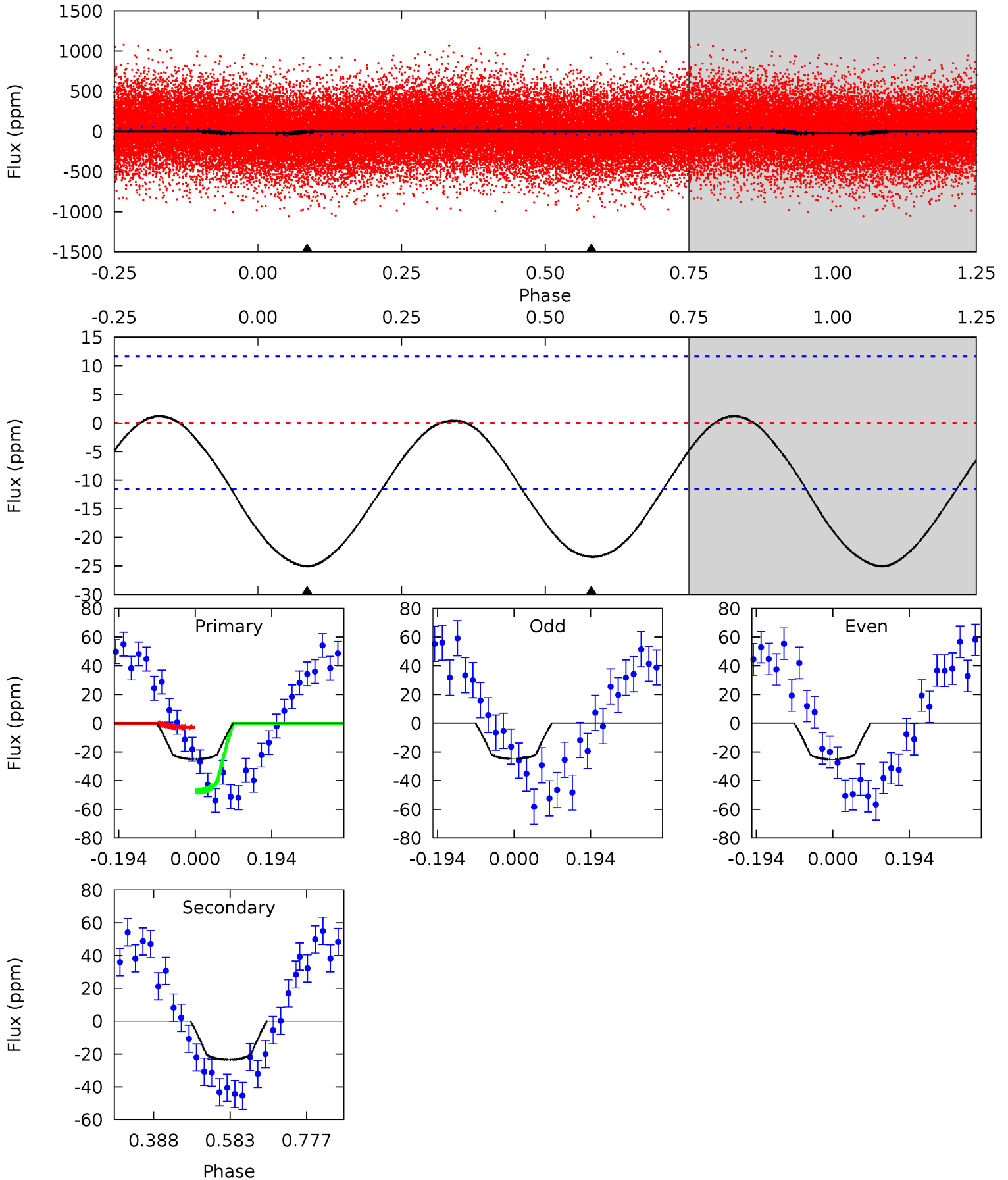
TCE 004078743-01 P= 0.502778 Days $T_0=131.561232$ (BKJD)



DV Model-Shift Uniqueness Test

004078743-01, P = 0.502071 Days, E = 131.288236 Days

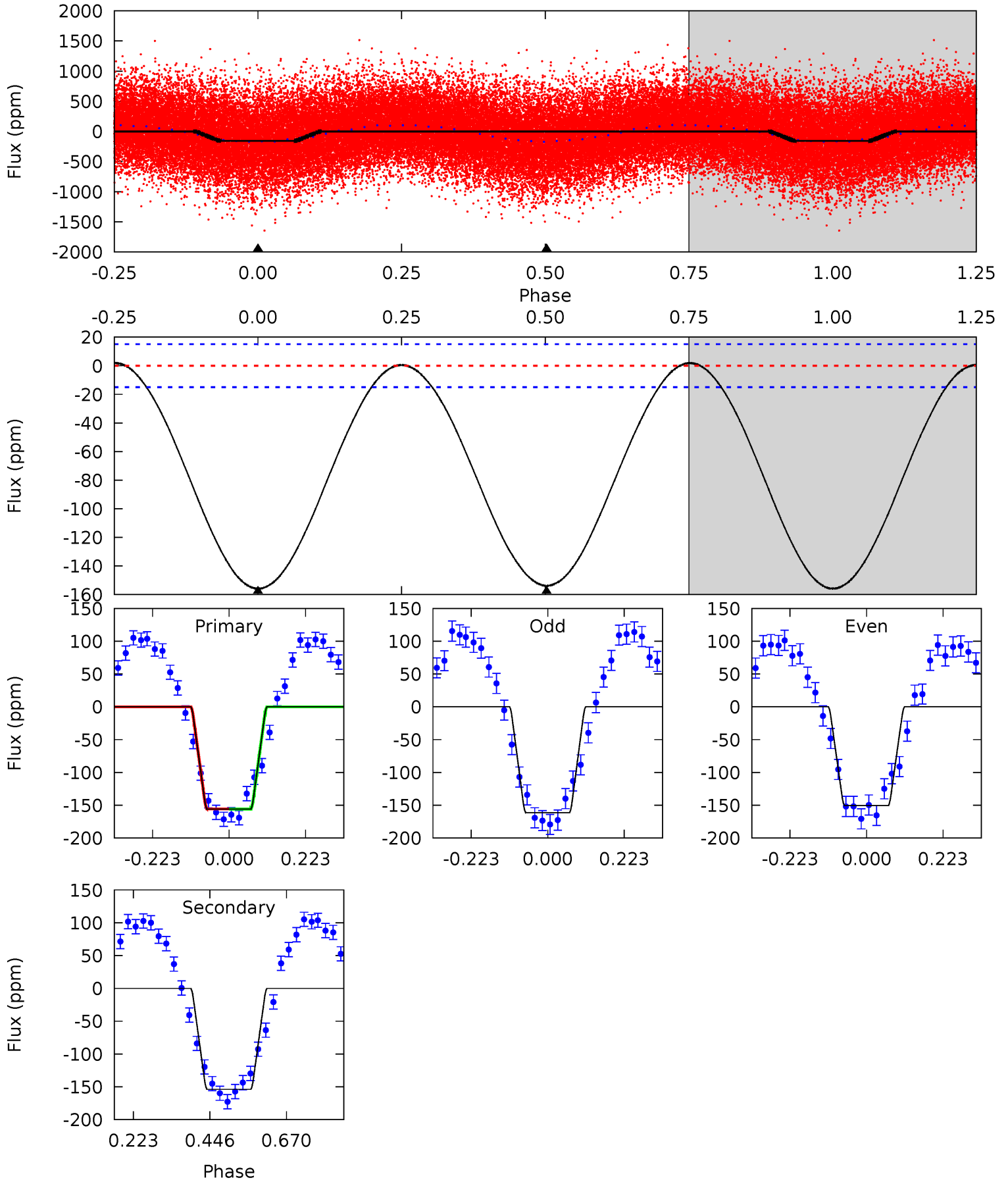
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.56	8.94	0	0	4.42	1.30	0.38	9.56	9.56	8.94	8.94	0.06	1.18	0.05	8.51



Alt Model-Shift Uniqueness Test

004078743-01, P = 0.502778 Days, E = 131.058454 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
45.6	45.0	0	0	4.39	1.22	0.44	45.6	45.6	45.0	45.0	1.58	1.01	0.01	0.05



Stellar Parameters For KIC 004078743

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	9164^{+502}_{-816}	$3.865^{+0.376}_{-0.094}$	$-0.440^{+0.100}_{-0.100}$	$2.679^{+0.454}_{-1.060}$	$1.919^{+0.239}_{-0.359}$	$0.141^{+0.454}_{-0.043}$
	+5%/-9%	+10%/-2%	+23%/-23%	+17%/-40%	+12%/-19%	+323%/-31%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 004078743-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-23 ± 3	$0.56^{+0.47}_{-0.36}$	7177^{+666}_{-914}	17407^{+56572}_{-7010}	$9.494^{+62.810}_{-6.620}$
Alt.	-154 ± 3	$3.63^{+0.72}_{-0.74}$	7163^{+700}_{-854}	8129^{+1068}_{-955}	$1.517^{+0.874}_{-0.430}$

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 $A_{\text{obs}} \gg 1.0$

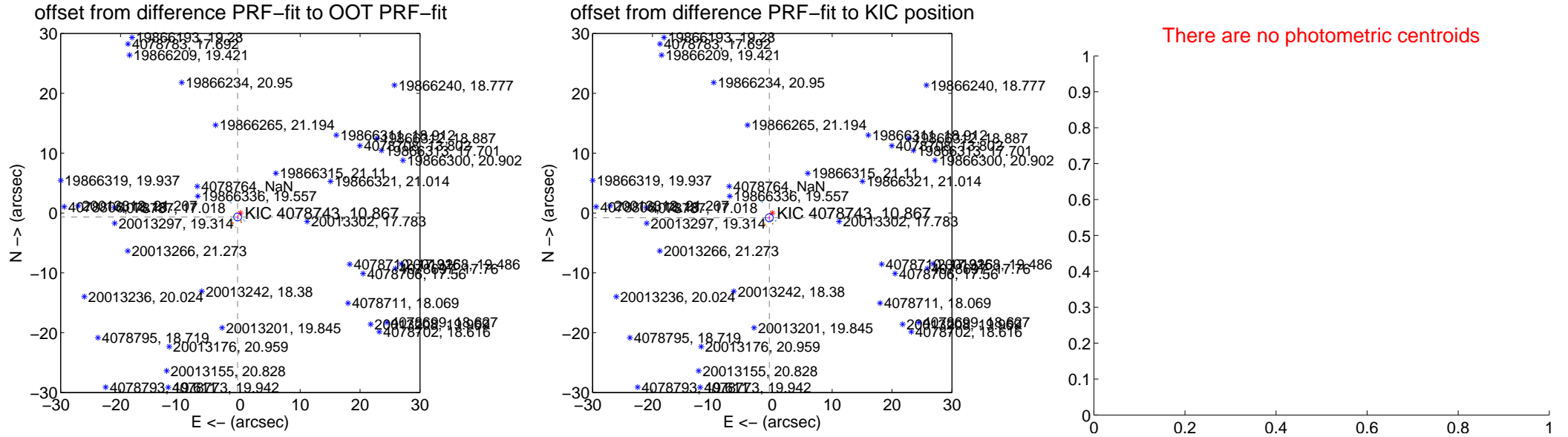
DV Centroid Data

Supplemental centroid analysis for 004078743-01. **Kepler magnitude: 10.87.** Transit SNR 1.17

There are 9 quarters with good PRF difference image offsets

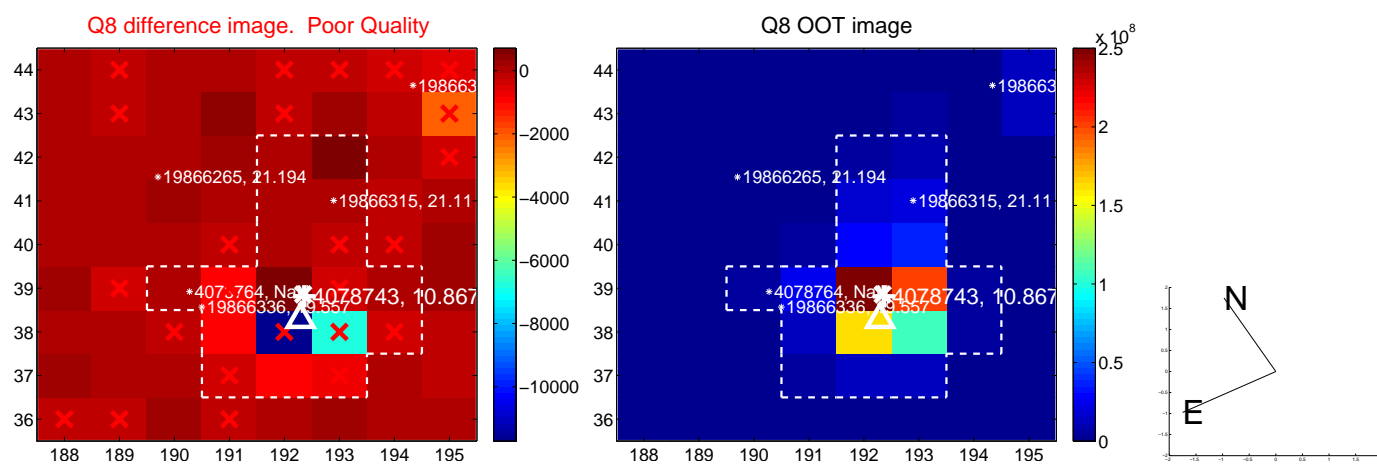
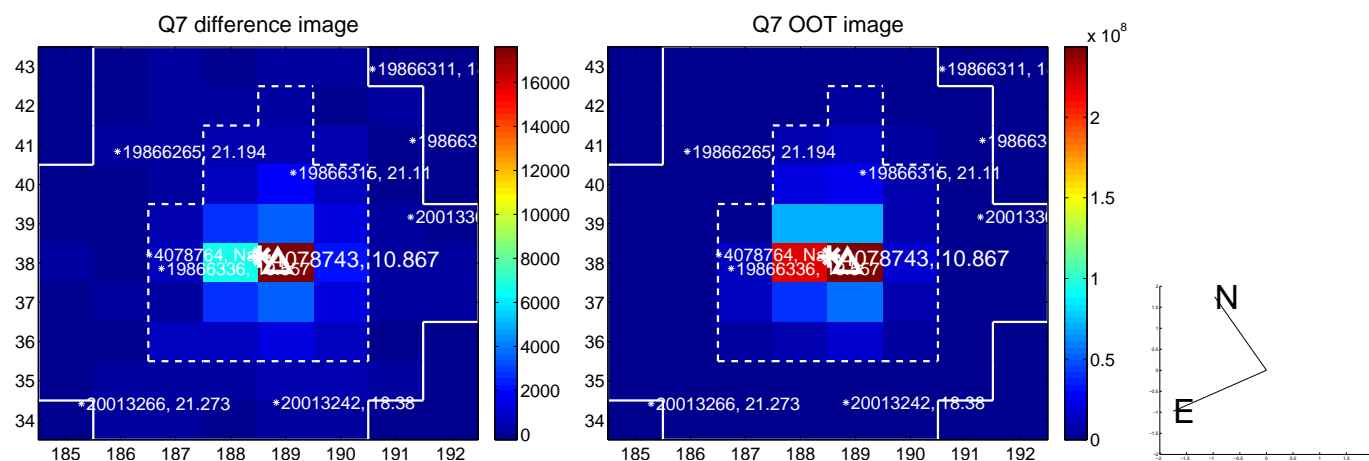
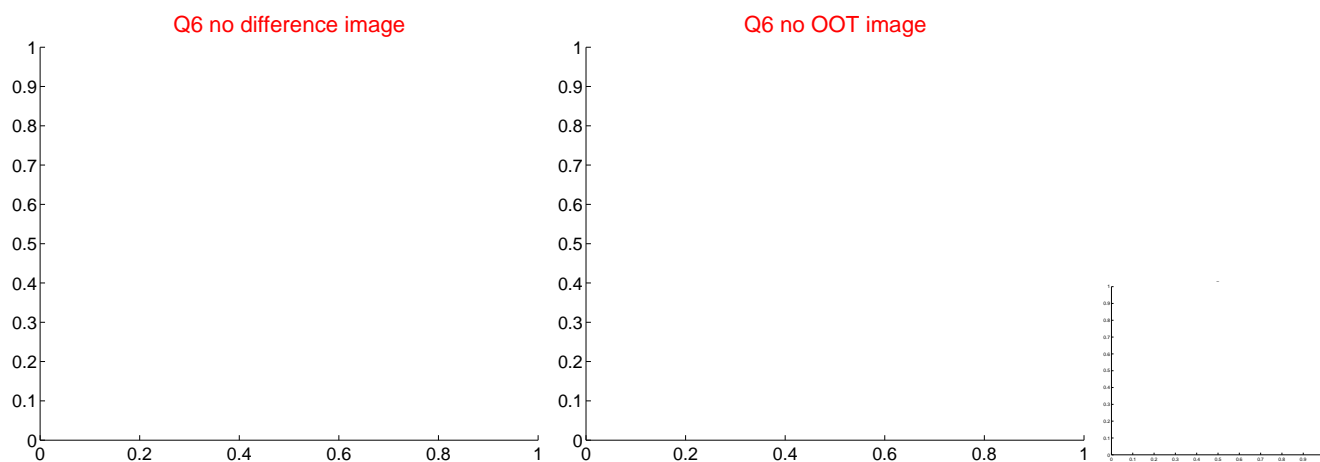
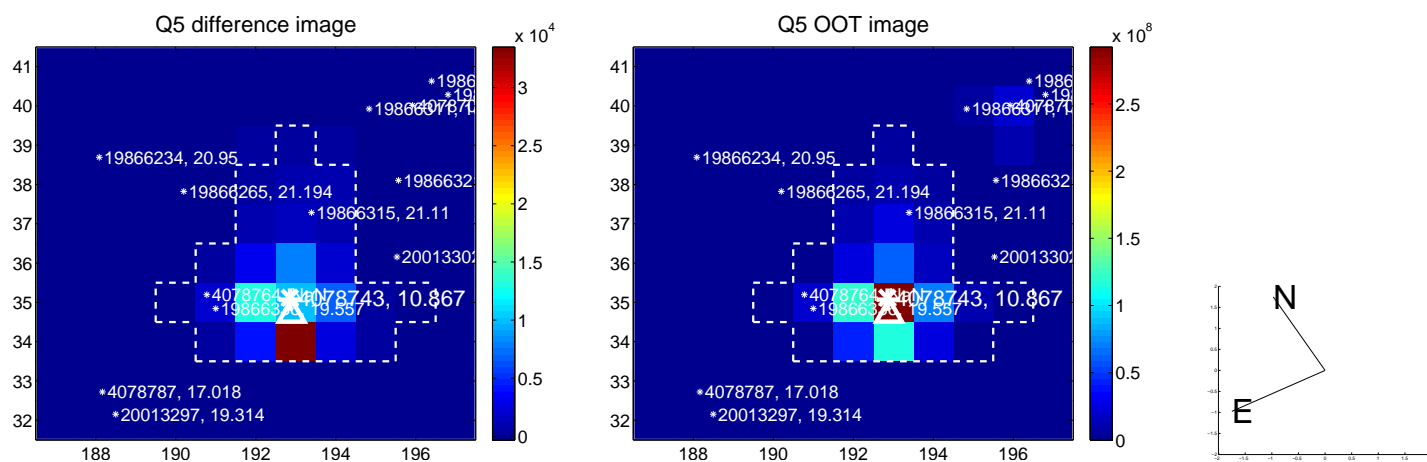
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.799 ± 0.219	3.65	0.446 ± 0.191	-0.662 ± 0.261
PRF-fit source offset from KIC position	0.932 ± 0.221	4.21	0.493 ± 0.183	-0.792 ± 0.269
photometric centroid source offset	—	—	—	—

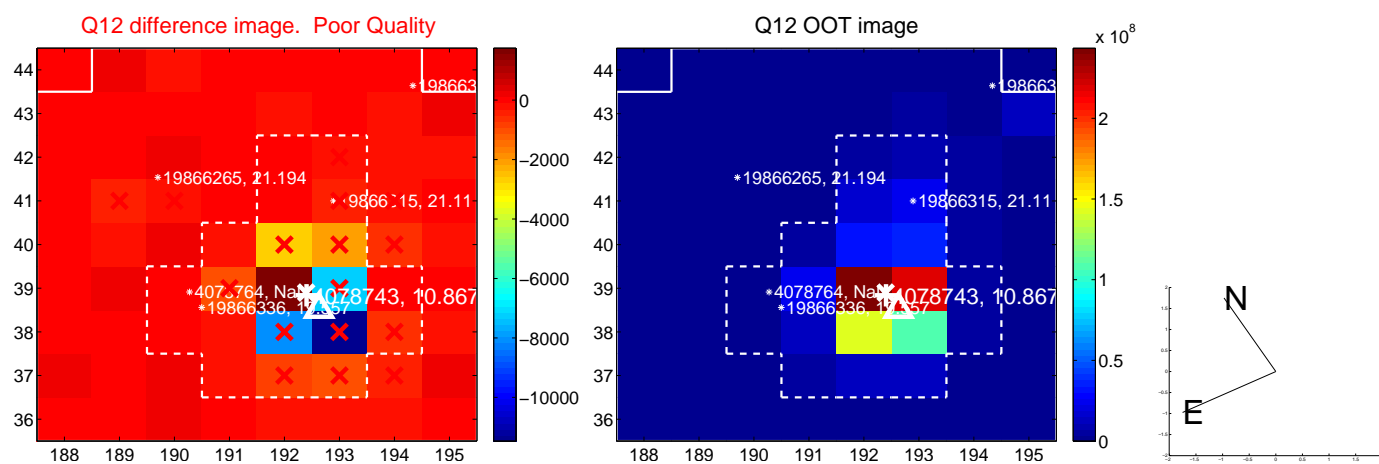
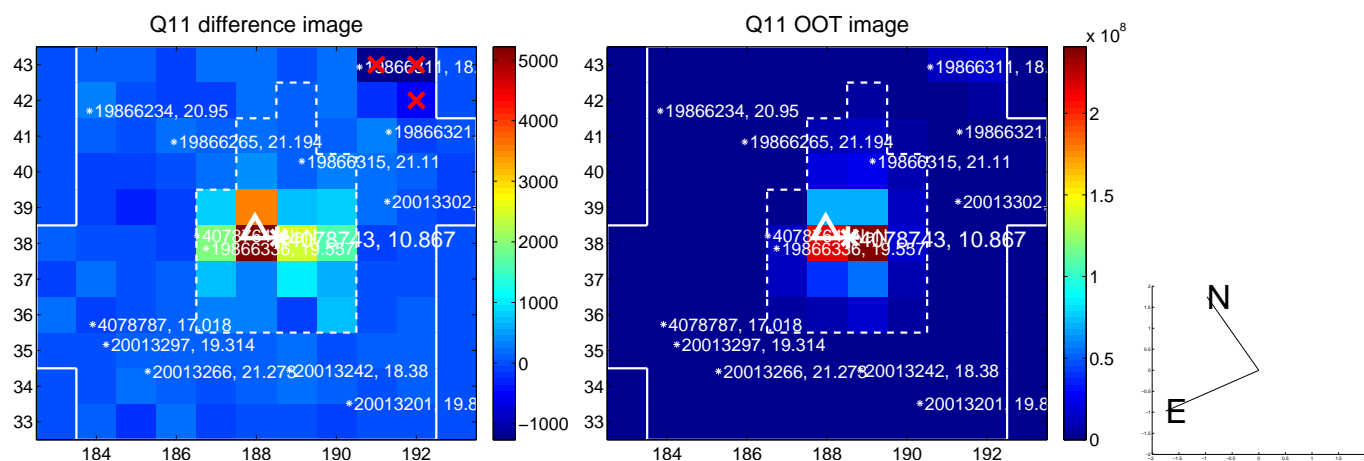
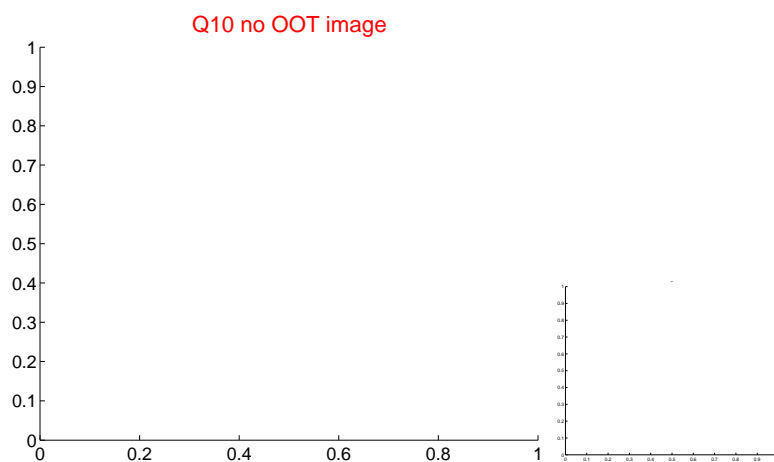
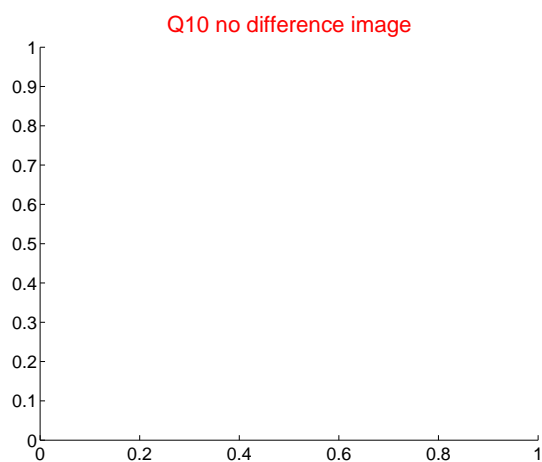
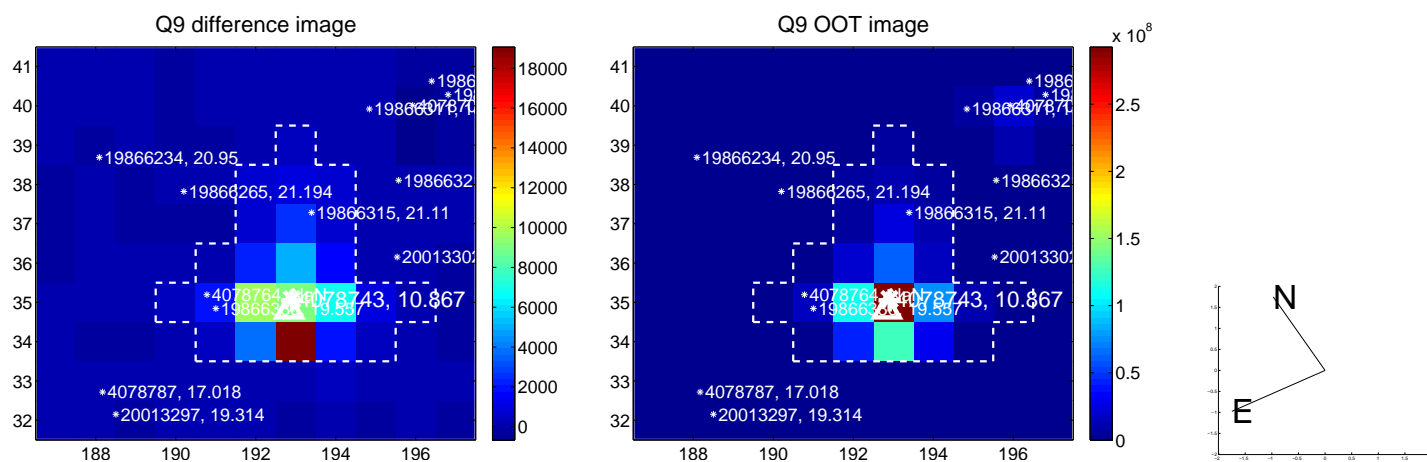


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

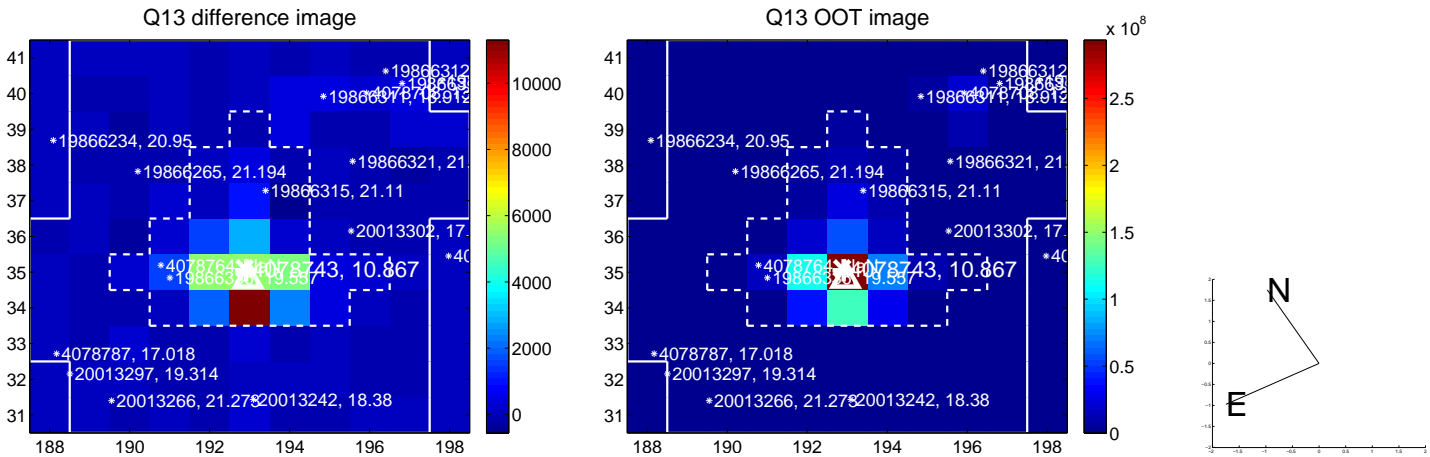
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



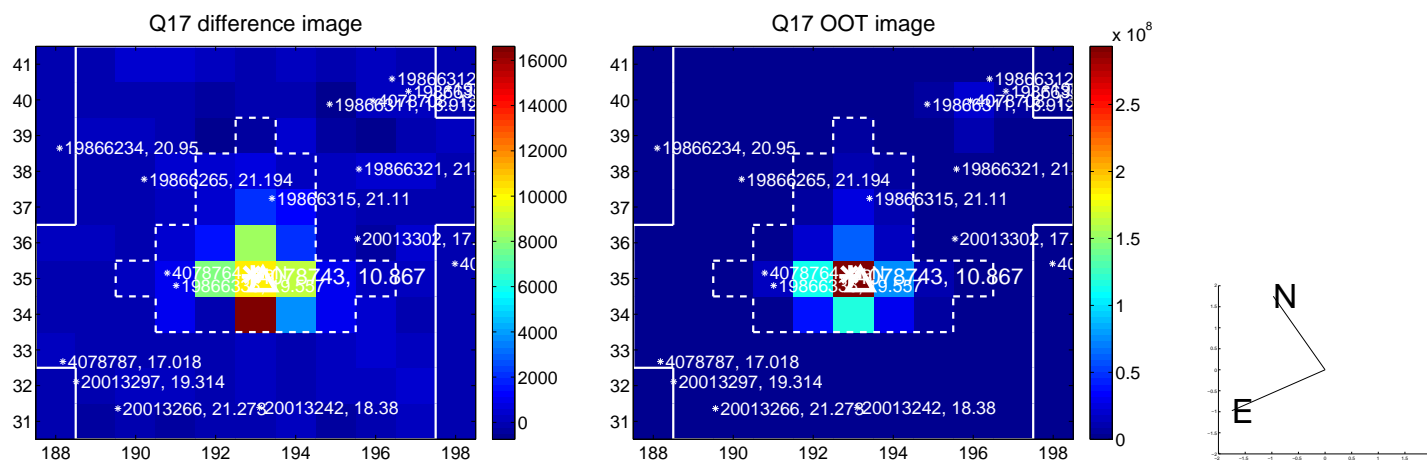
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



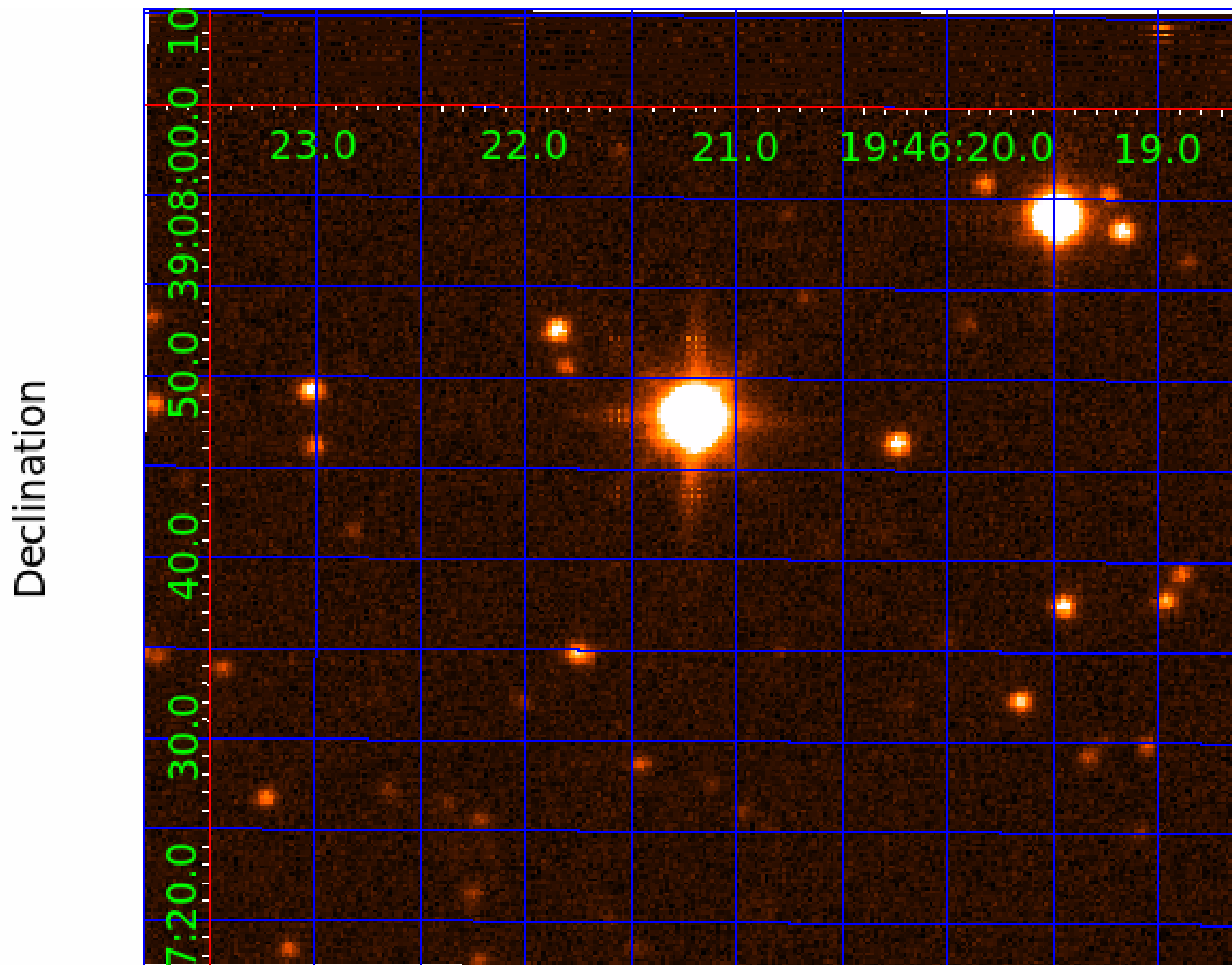
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.



UKIRT Image



KIC 004078743

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})
004078743-01	OBS	No	0.502071	131.790307	3.2	1.858	9.7	1.2	2.68	9164	0.49	192101.15
004078743-02	OBS	No	0.502928	131.597073	0.0	4.027	9.6	0.0	2.68	9164	0.03	191664.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004078743-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
004078743-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_SATURATED

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

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

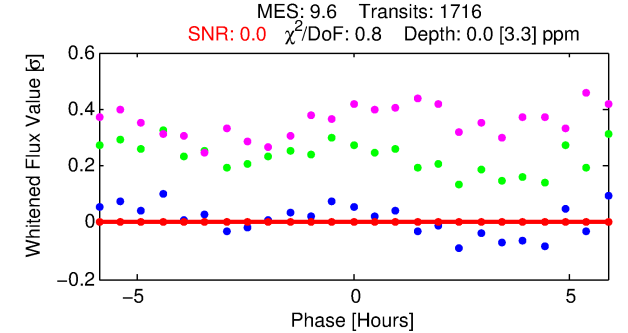
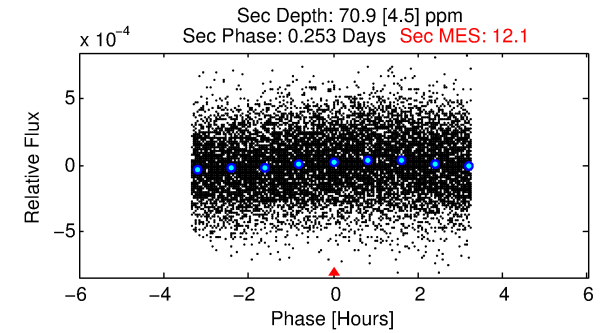
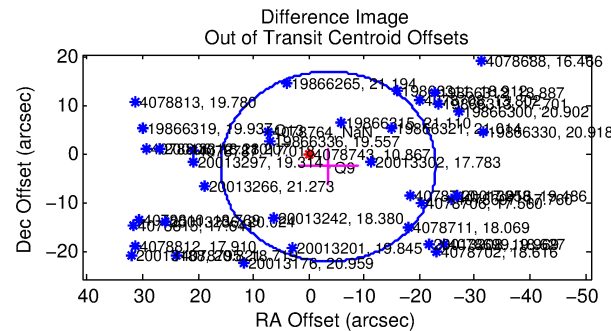
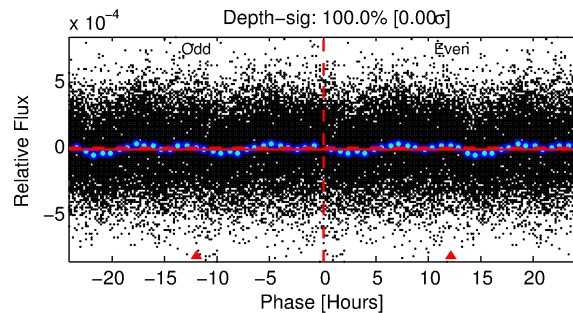
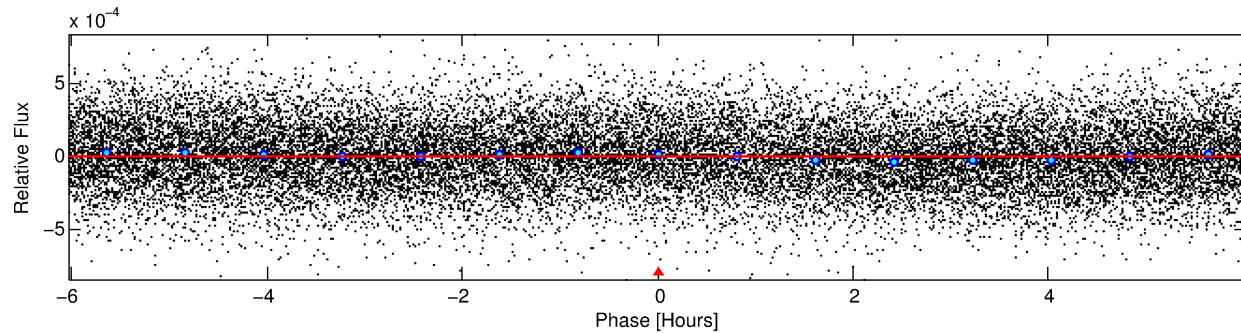
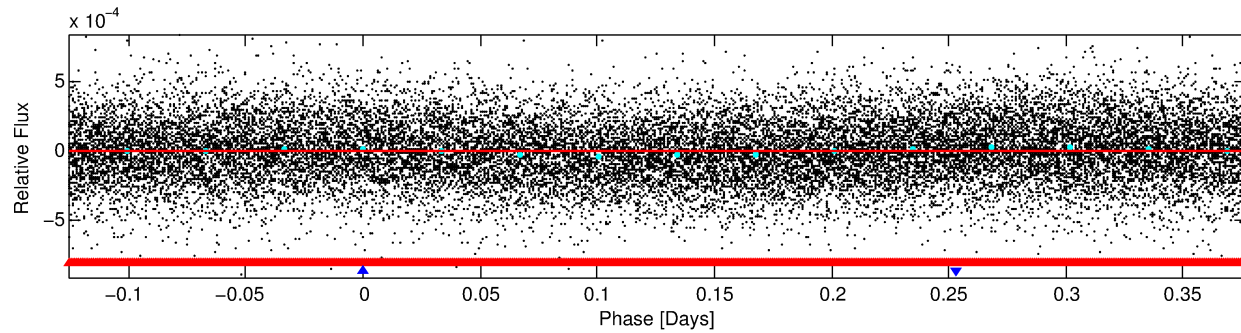
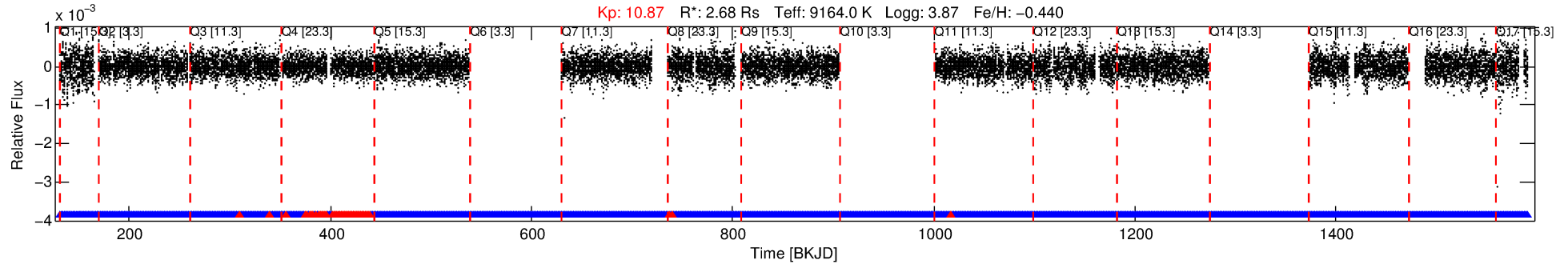
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004078743-02

No Significant Match Found

DV One-Page Summary

KIC: 4078743 Candidate: 2 of 2 Period: 0.503 d



DV Fit Results:

Period = 0.50293 [0.02292] d
Epoch = 131.5971 [6.8838] BKJD
Rp/R* = 0.0001 [0.0144]
a/R* = 1.11 [37.91]
b = 0.52 [241.78]
Seff = 191664.89 [139964.09]
Teq = 5335 [974] K
Rp = 0.03 [4.21] Re
a = 0.0154 [0.0060] AU
Ag = 9325.17 [2494351.92] [0.00 σ]
Teffp = 81062 [5421374] K [0.01 σ]

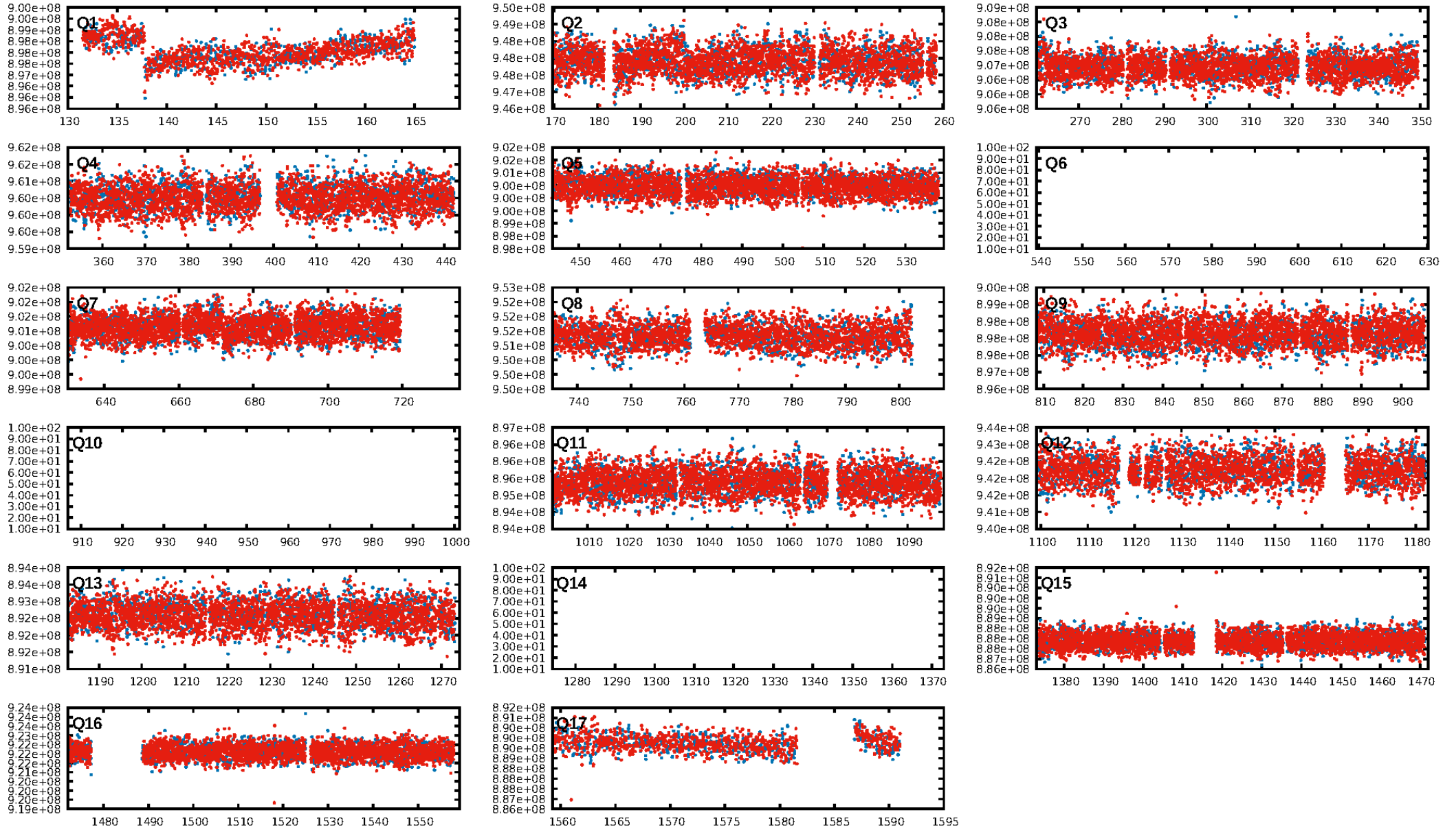
DV Diagnostic Results:

ShortPeriod-sig: 0.4% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.94 [1504/1595]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 4.319 arcsec [0.67 σ]
KicOffset-rm: 4.351 arcsec [0.83 σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-st: 0/0/0/2 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 0.00 [0/14]

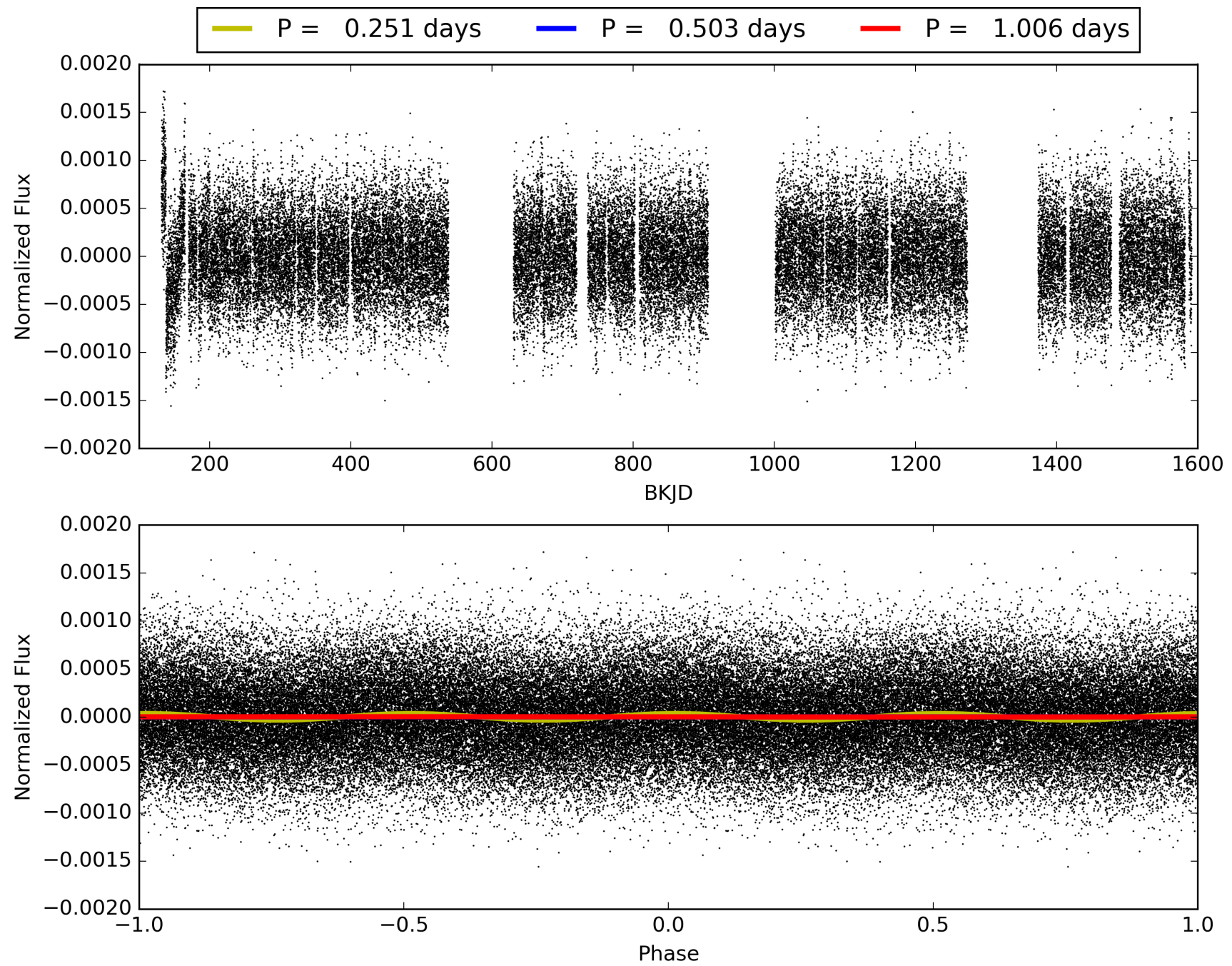
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:10:35 Z

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

TCE 004078743-02, PDC Light Curves

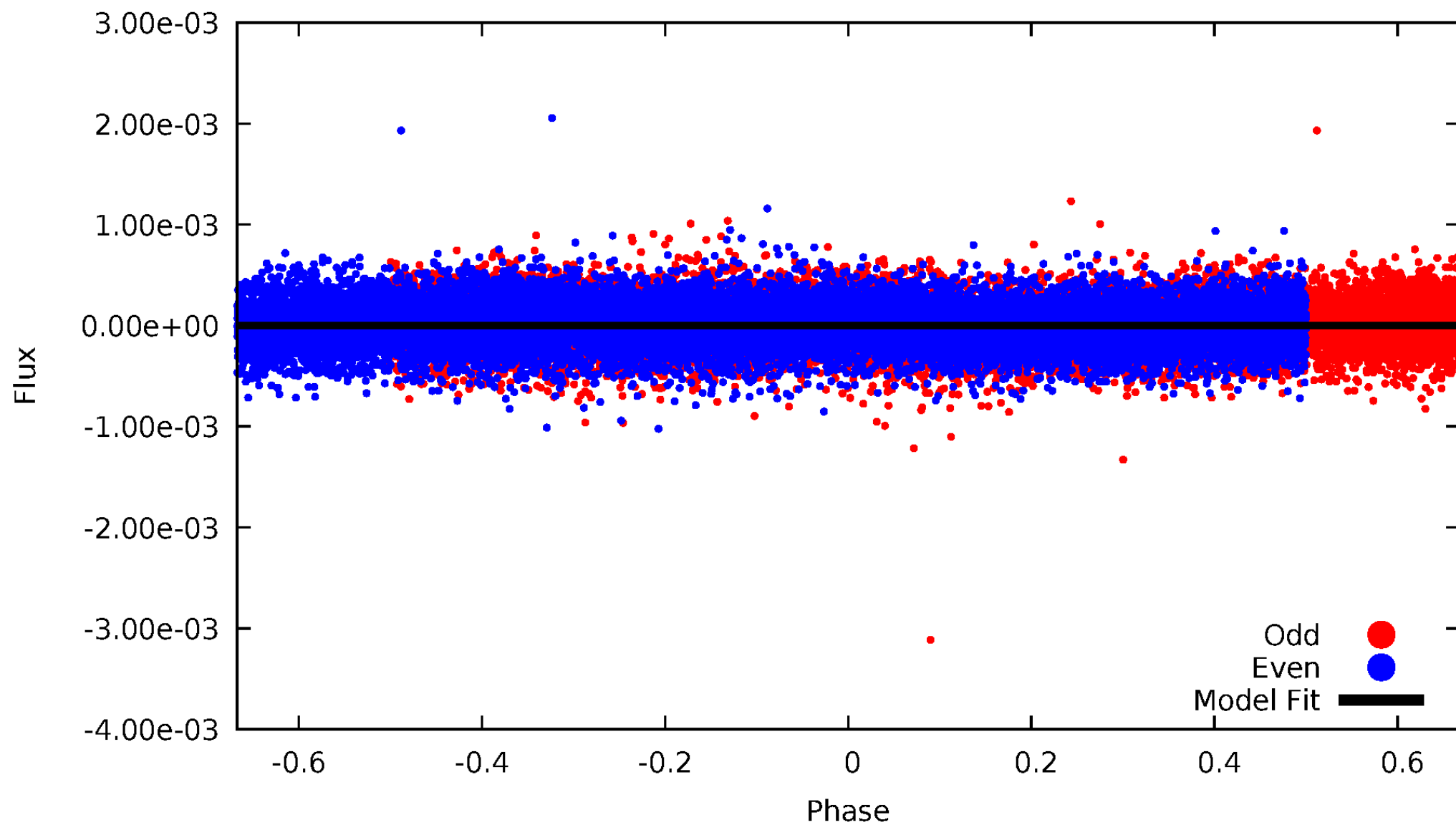


TCE 004078743-02



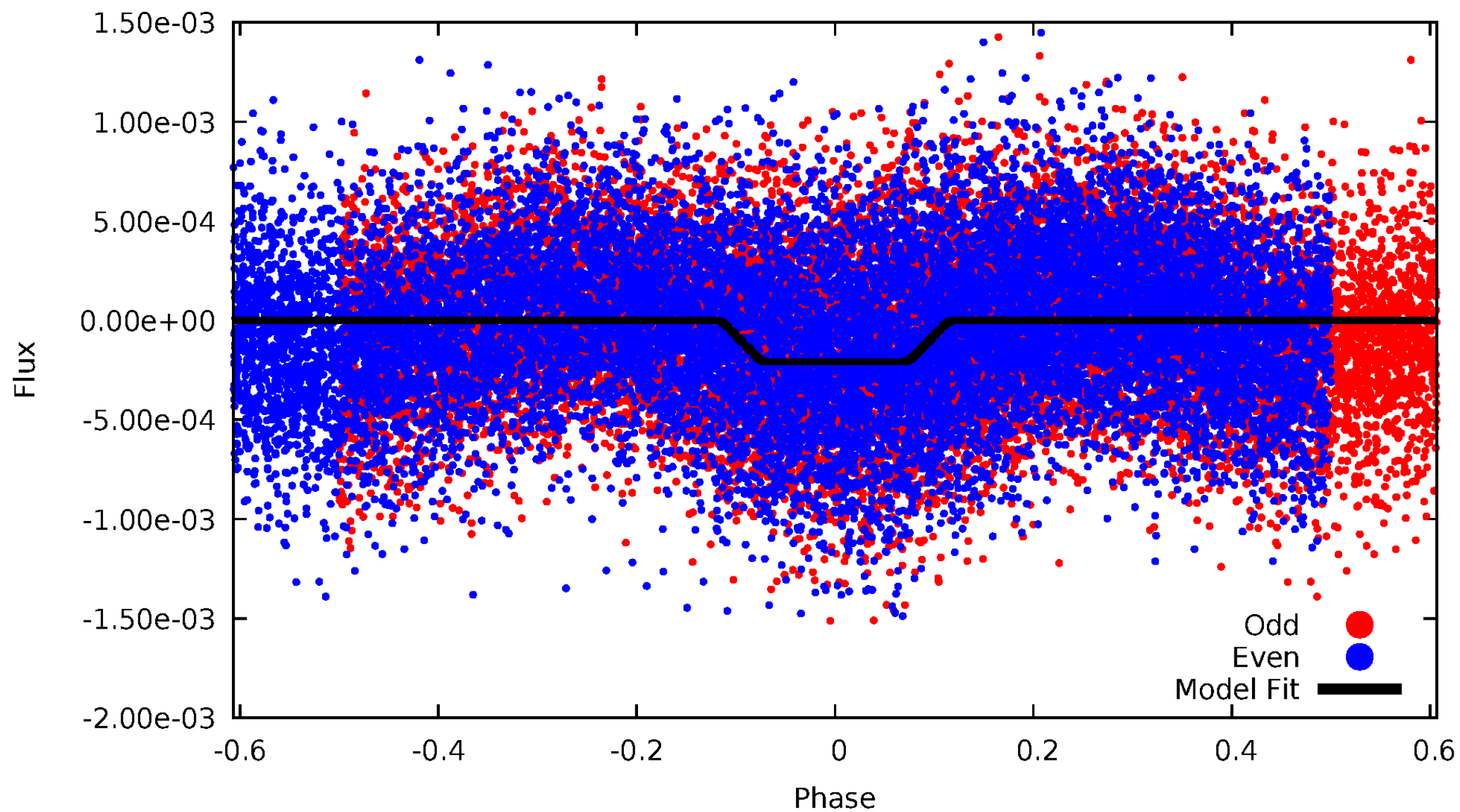
DV Odd/Even

TCE 004078743-02



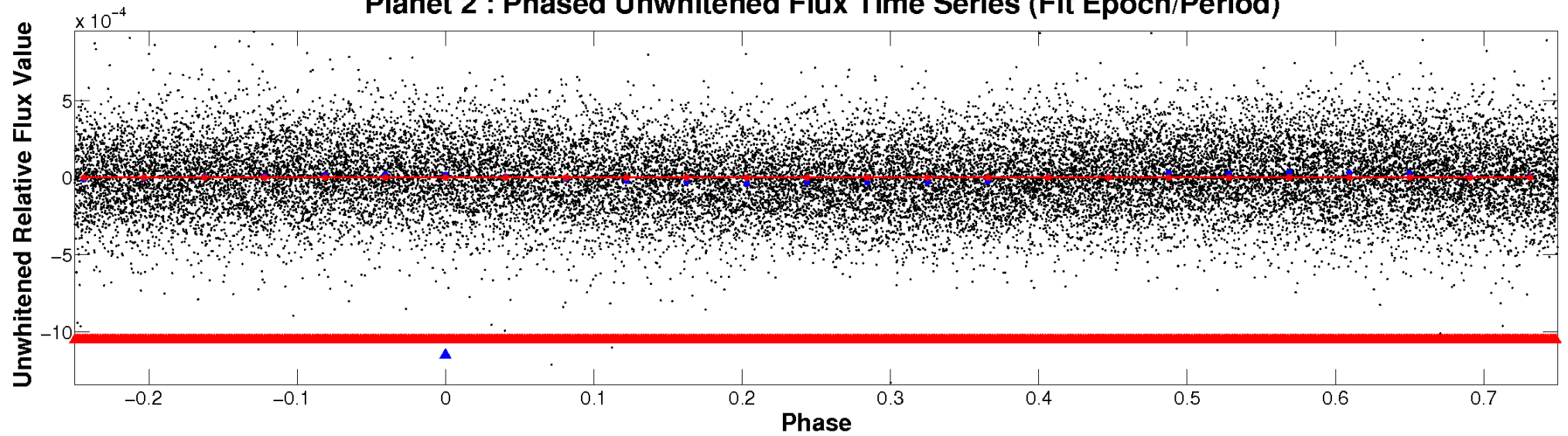
ALT Odd/Even

TCE 004078743-02

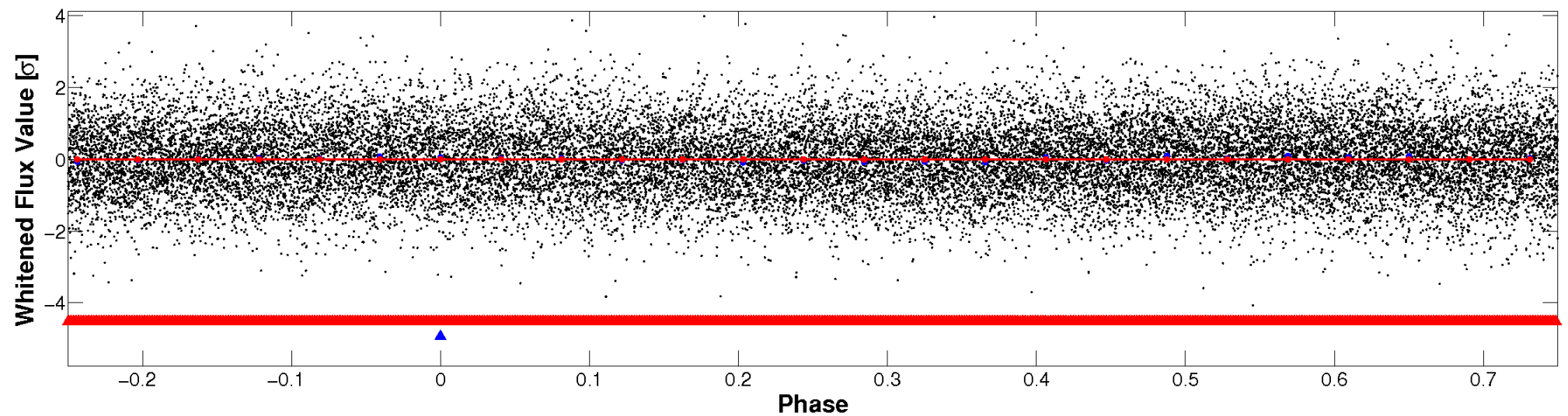


Non-Whitened Vs. Whitened Light Curve

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

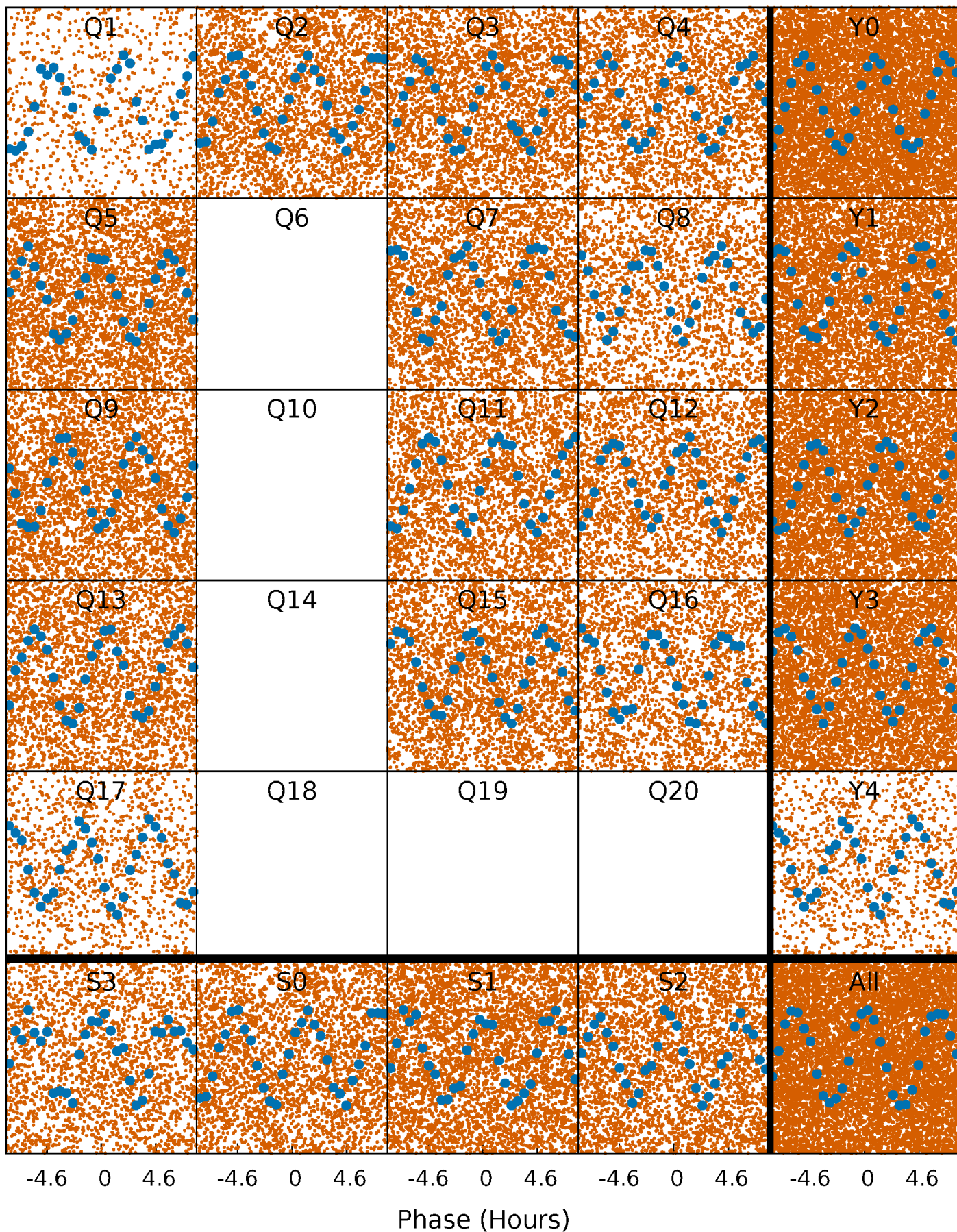


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



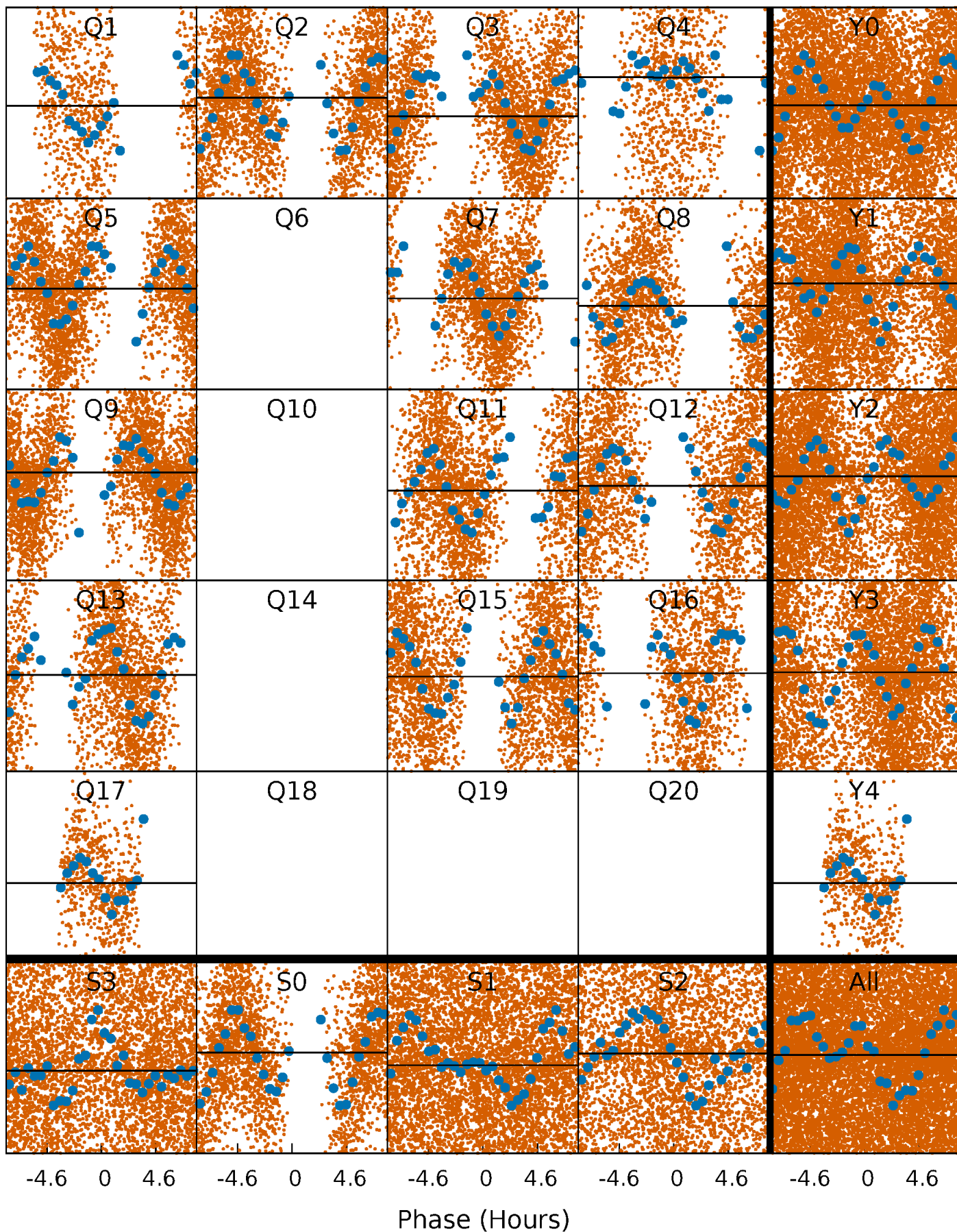
PDC Quarter-Phased Transit Curves

TCE 004078743-02 P= 0.502928 Days $T_0=131.597072$ (BKJD)



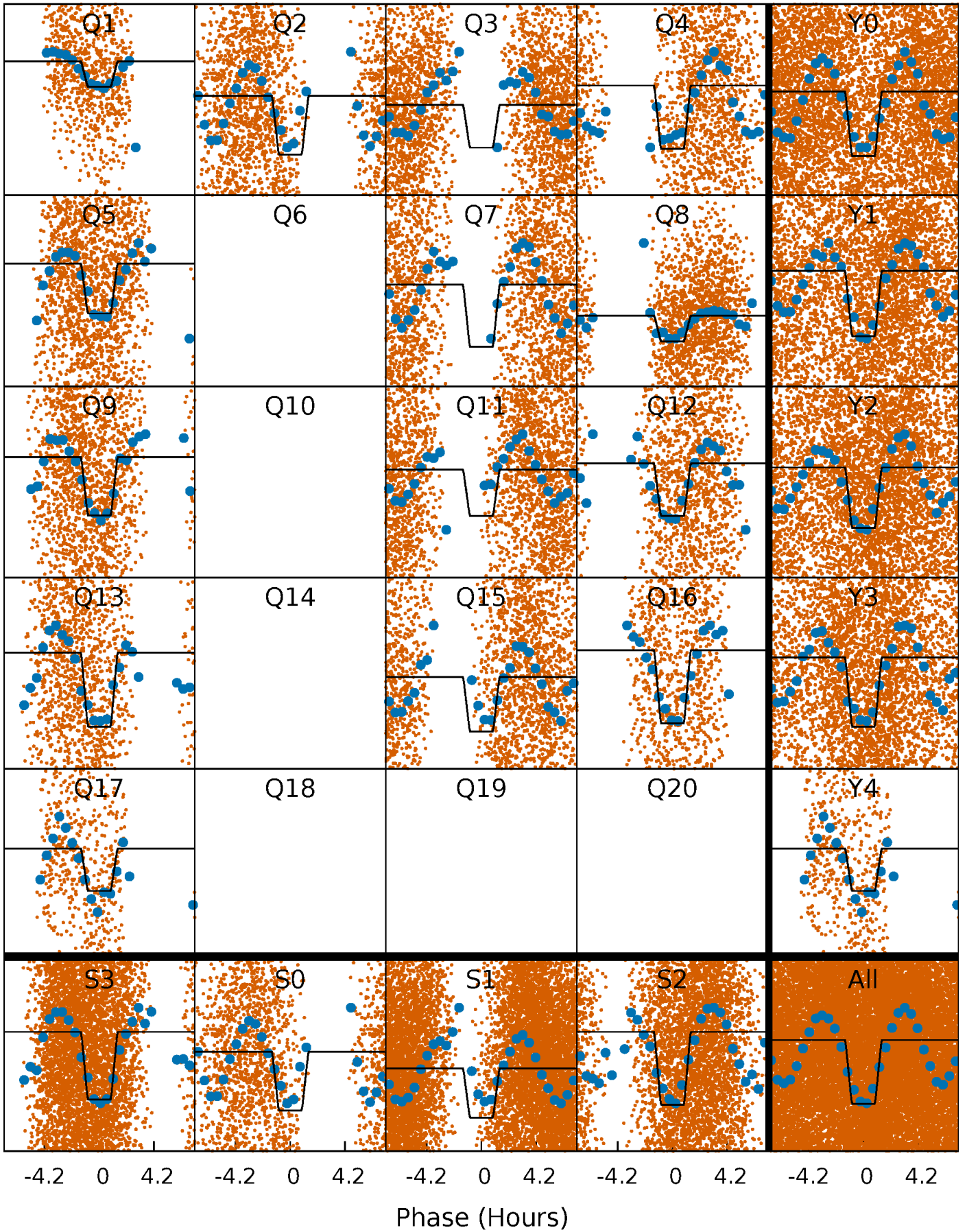
DV Quarter-Phased Transit Curves

TCE 004078743-02 $P = 0.502928$ Days $T_0 = 131.597072$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

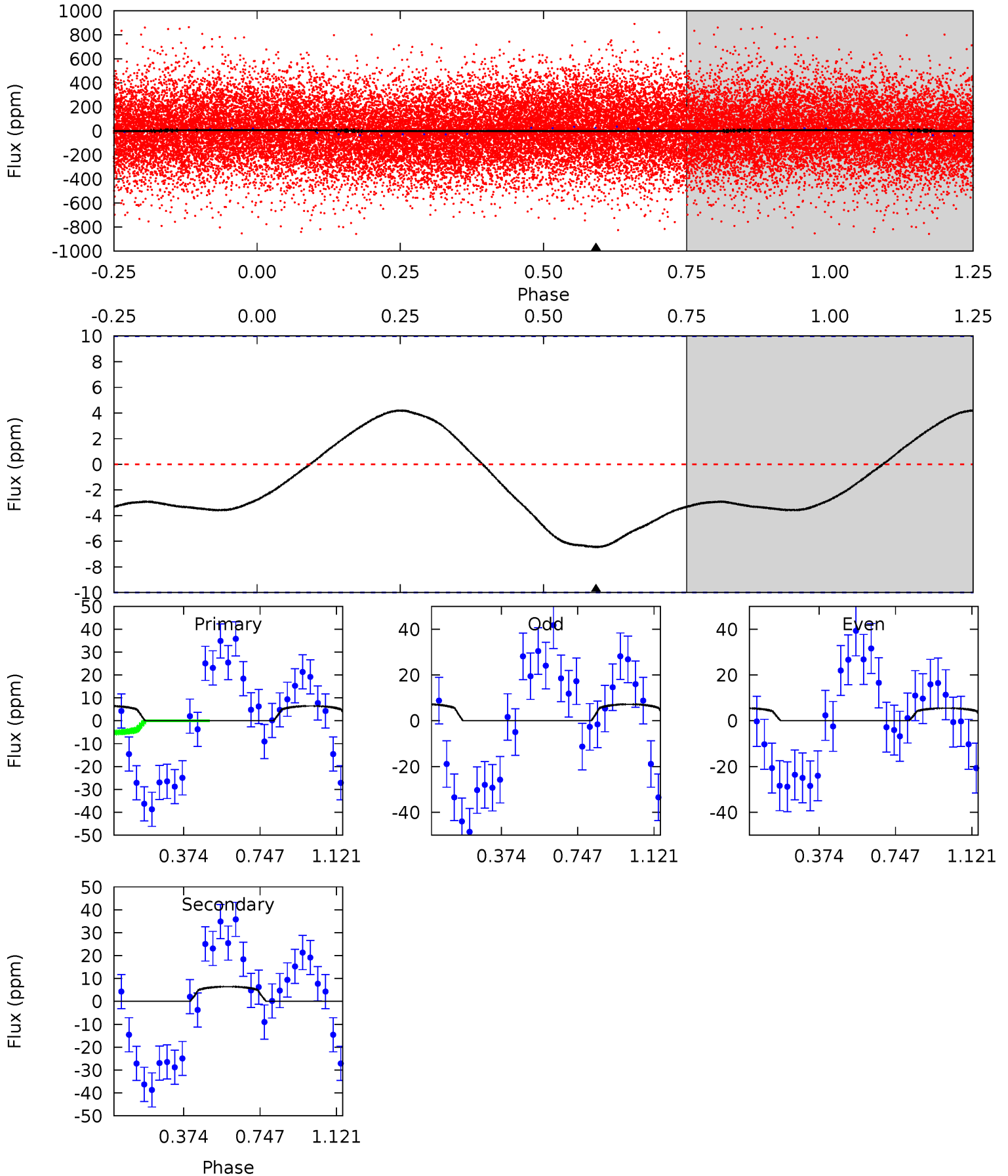
TCE 004078743-02 P= 0.502786 Days $T_0=131.549271$ (BKJD)



DV Model-Shift Uniqueness Test

004078743-02, P = 0.502928 Days, E = 131.094144 Days

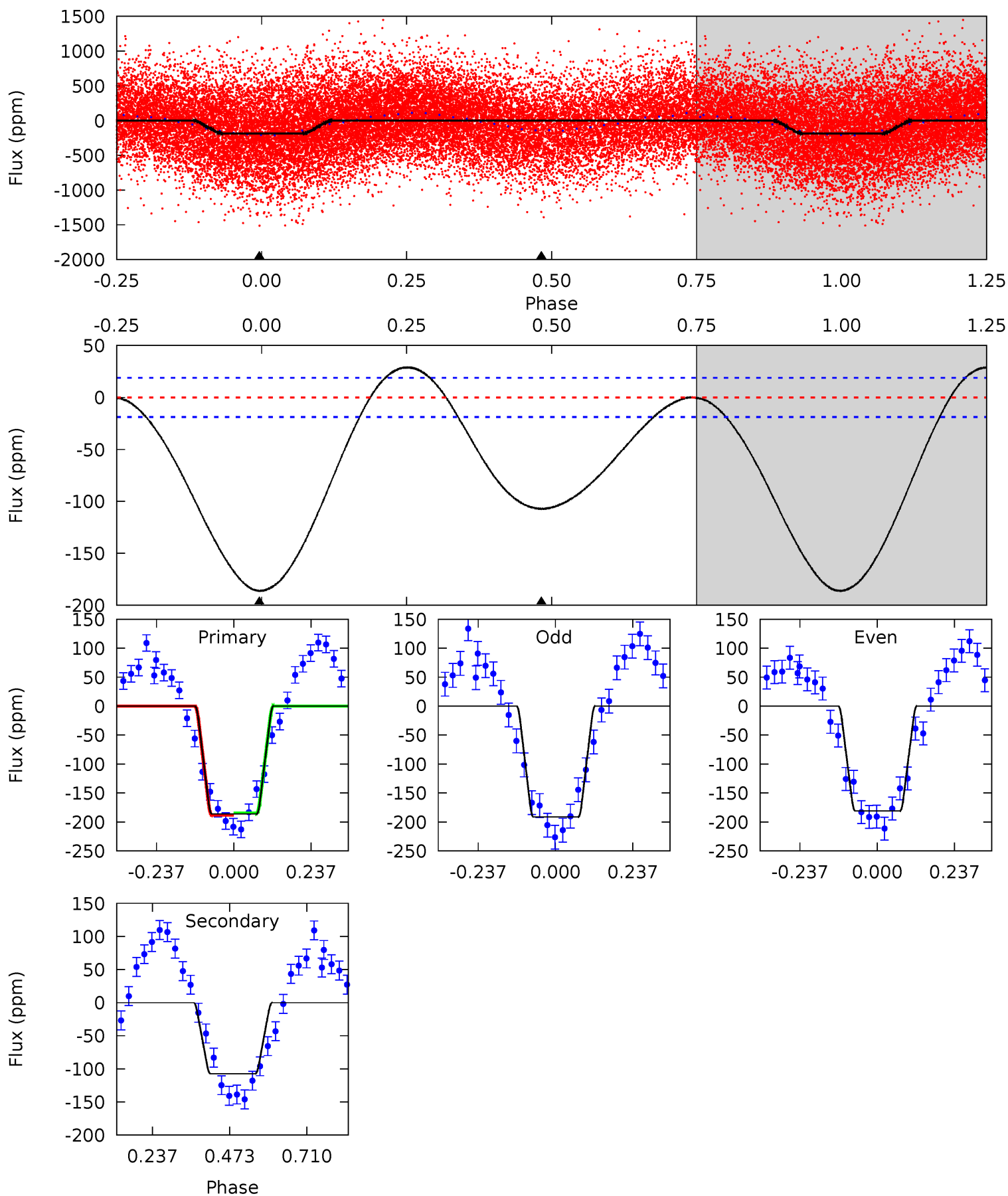
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.77	2.77	0	0	4.28	0.89	0.98	2.77	2.77	2.77	2.77	0.37	0.85	0.39	2.76



Alt Model-Shift Uniqueness Test

004078743-02, P = 0.502786 Days, E = 131.046485 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
43.2	24.9	0	0	4.38	1.18	3.37	43.2	43.2	24.9	24.9	1.23	0.98	0.13	0.40



Stellar Parameters For KIC 004078743

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9164^{+502}_{-816}	$3.865^{+0.376}_{-0.094}$	$-0.440^{+0.100}_{-0.100}$	$2.679^{+0.454}_{-1.060}$	$1.919^{+0.239}_{-0.359}$	$0.141^{+0.454}_{-0.043}$
	+5%/-9%	+10%/-2%	+23%/-23%	+17%/-40%	+12%/-19%	+323%/-31%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 004078743-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-6 ± 2	$2.68^{+3.11}_{-1.91}$	7134^{+710}_{-886}	-4795^{+12206}_{-882}	$0.110^{+1.188}_{-0.088}$
Alt.	-107 ± 4	$4.54^{+3.82}_{-2.84}$	7170^{+670}_{-909}	5807^{+6961}_{-10253}	$0.685^{+4.126}_{-0.486}$

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 $A_{obs} \gg 1.0$

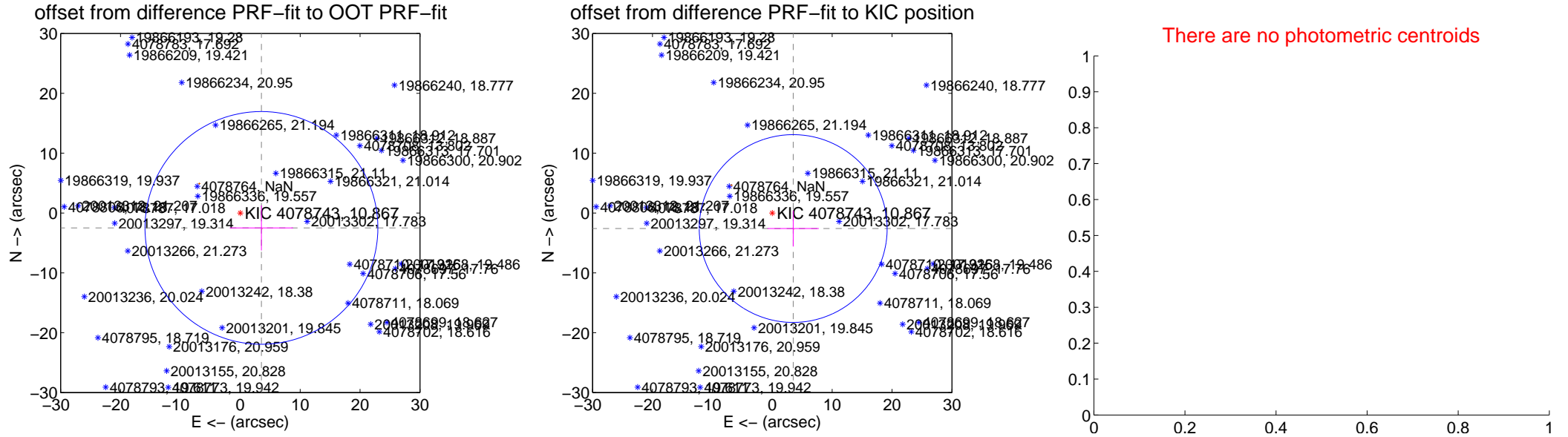
DV Centroid Data

Supplemental centroid analysis for 004078743-02. **Kepler magnitude: 10.87.** Transit SNR 0.00

There are 0 quarters with good PRF difference image offsets

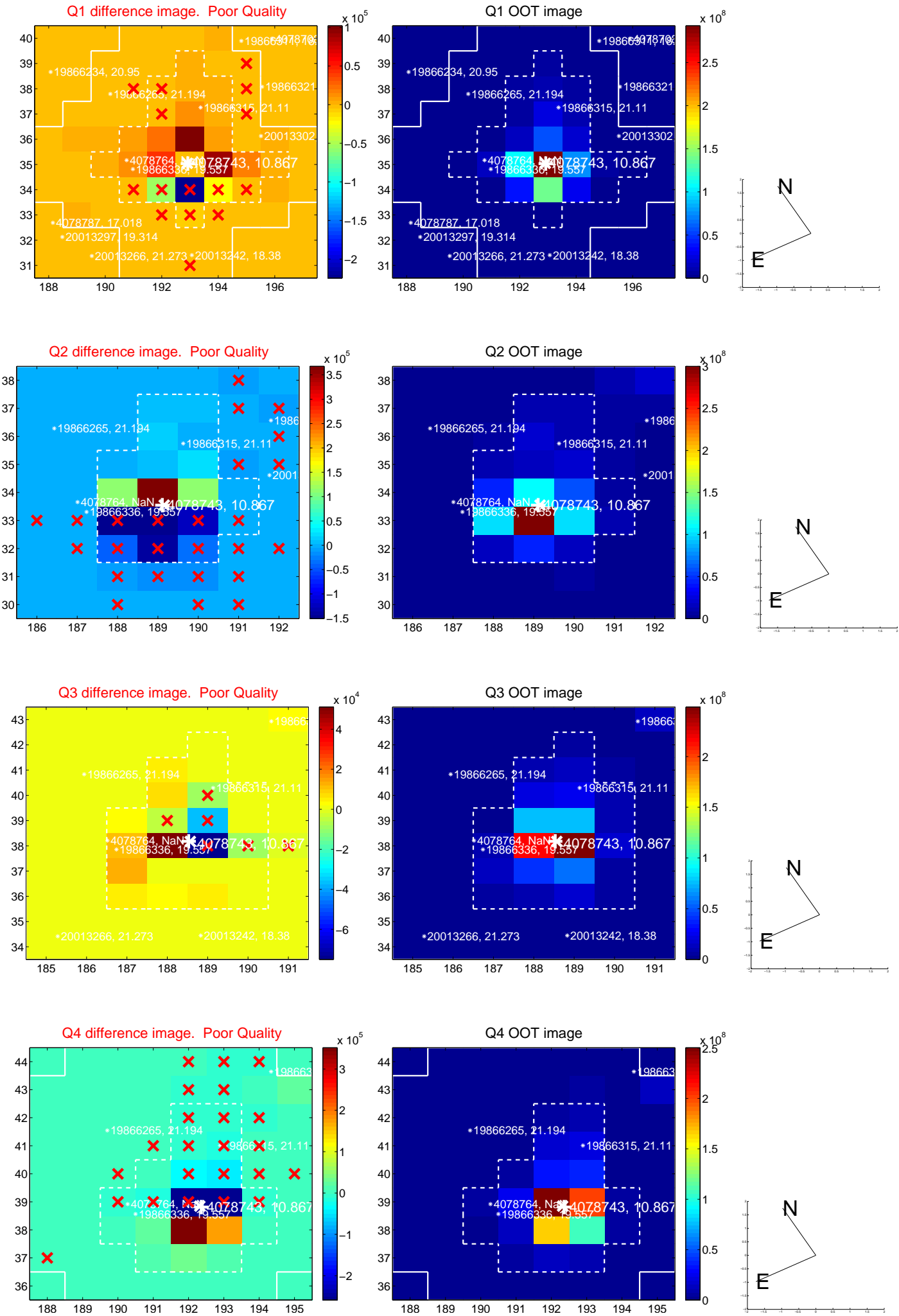
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.319 ± 6.480	0.67	-3.531 ± 5.278	-2.487 ± 3.761
PRF-fit source offset from KIC position	4.351 ± 5.229	0.83	-3.493 ± 4.282	-2.594 ± 3.005
photometric centroid source offset	—	—	—	—

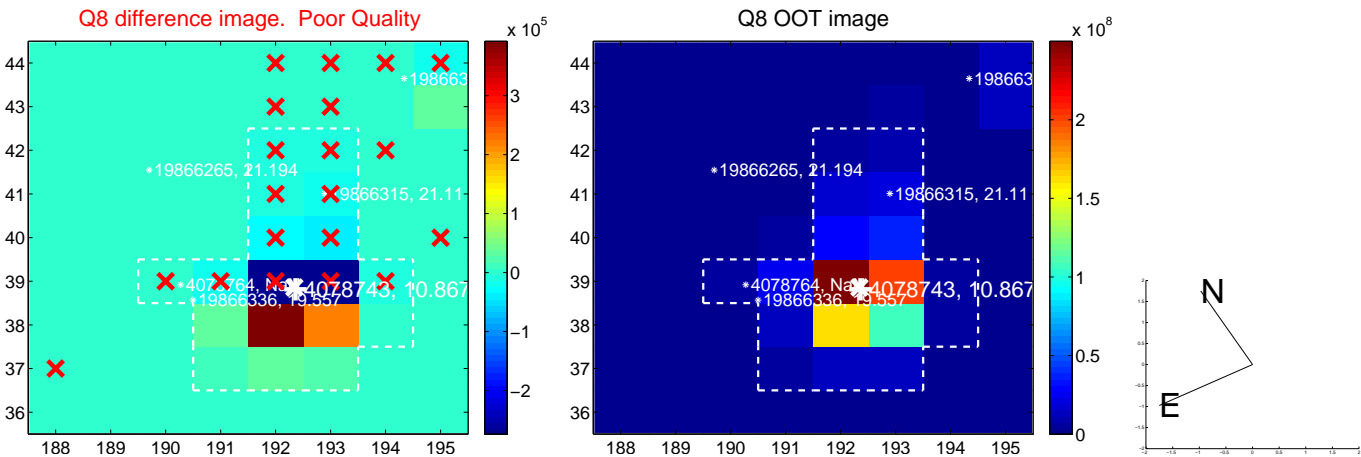
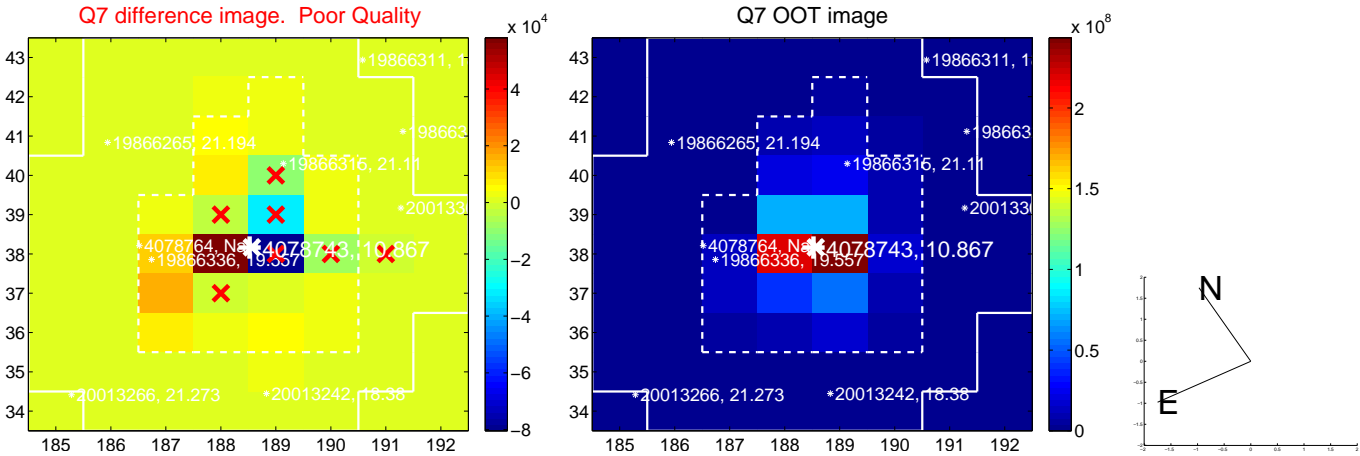
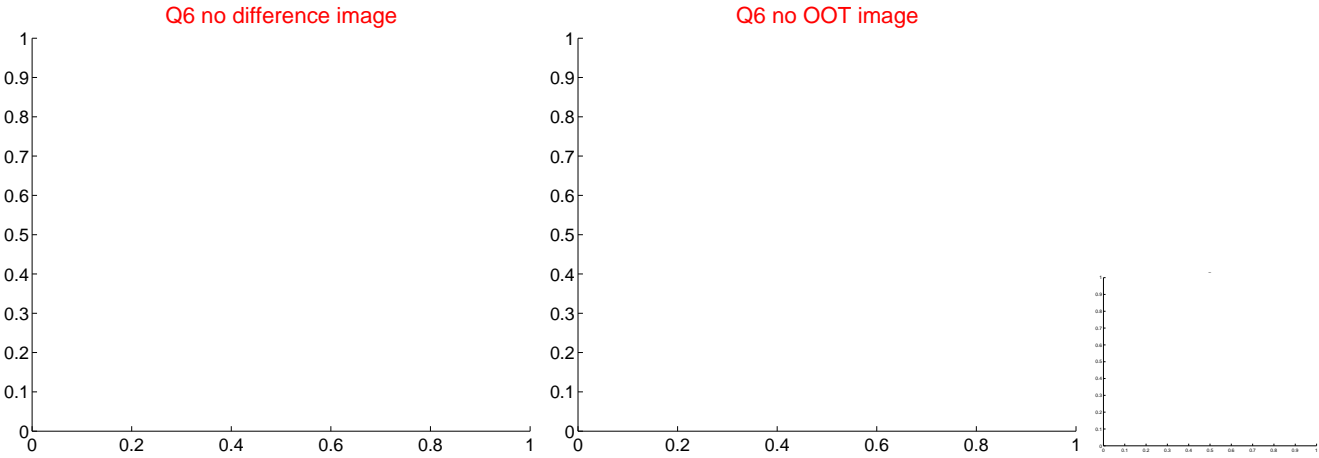
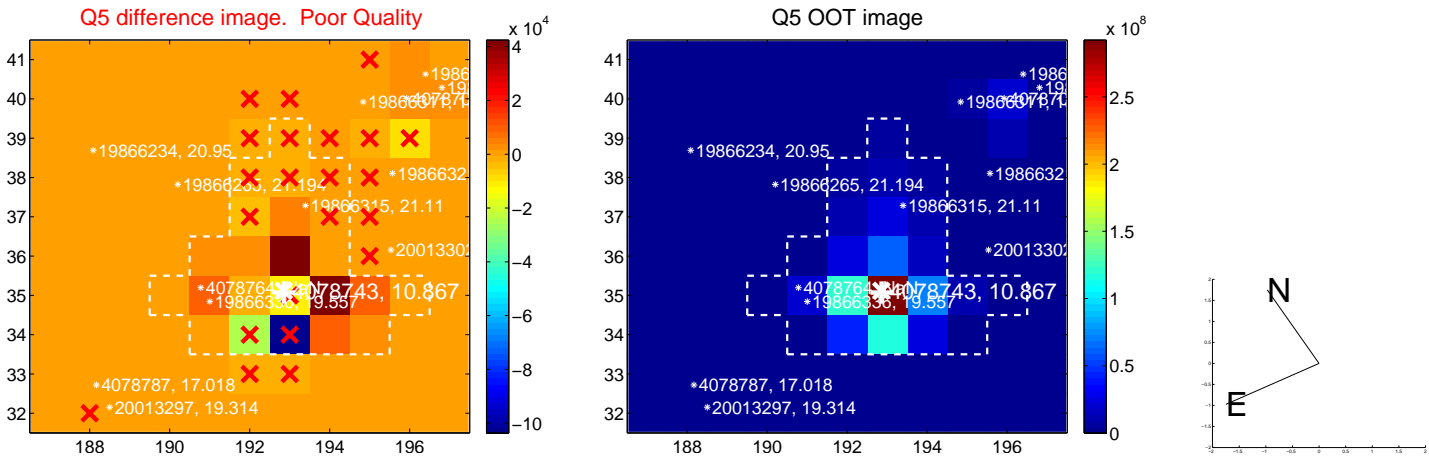


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

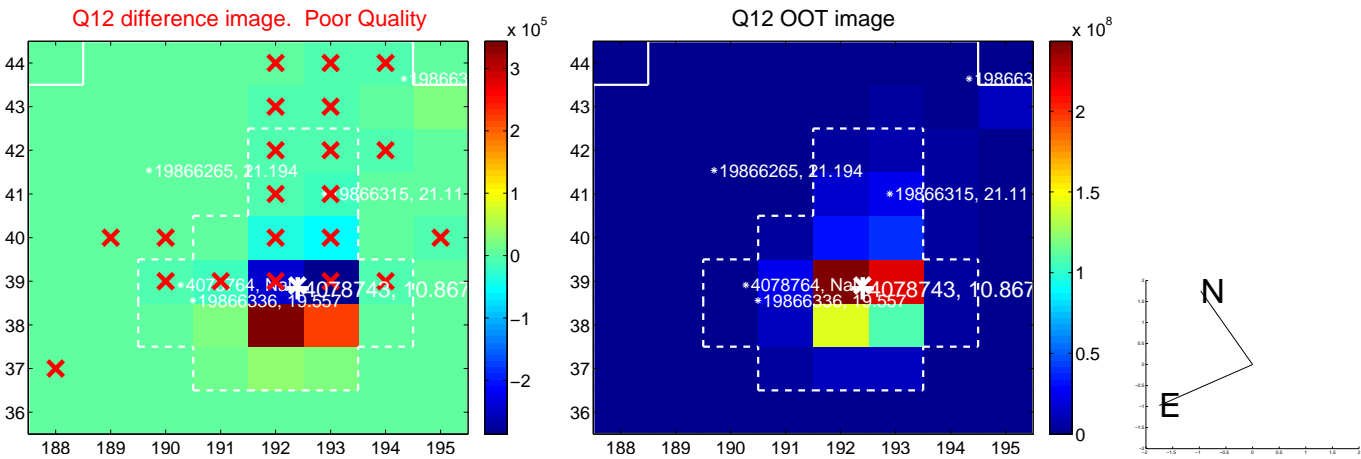
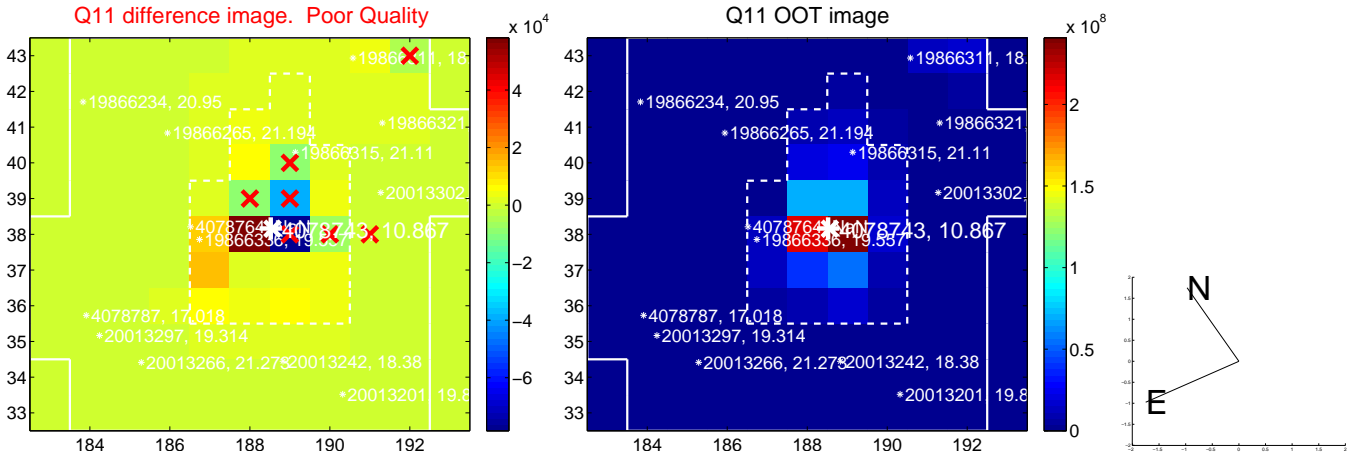
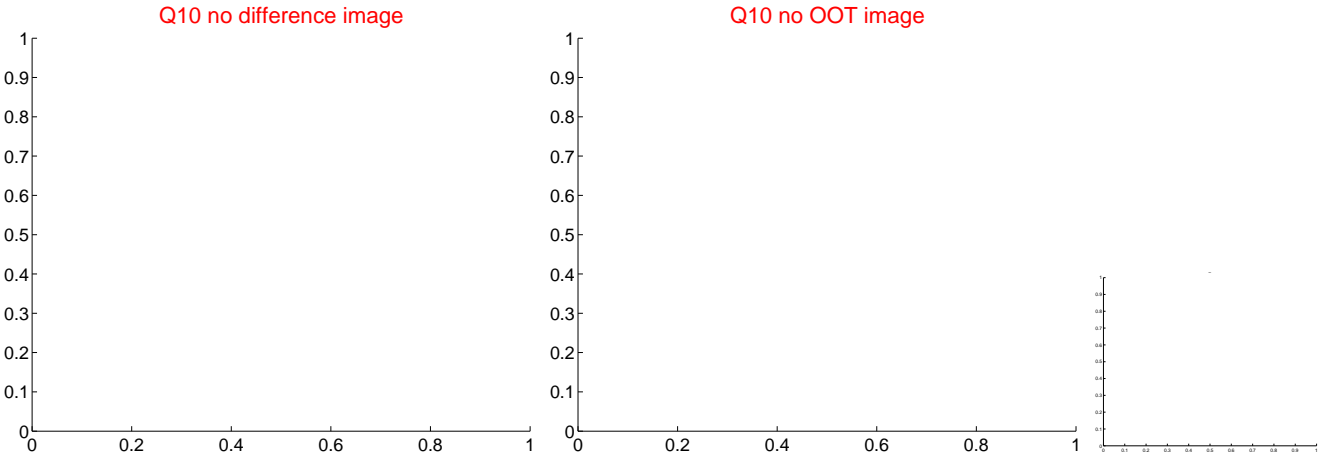
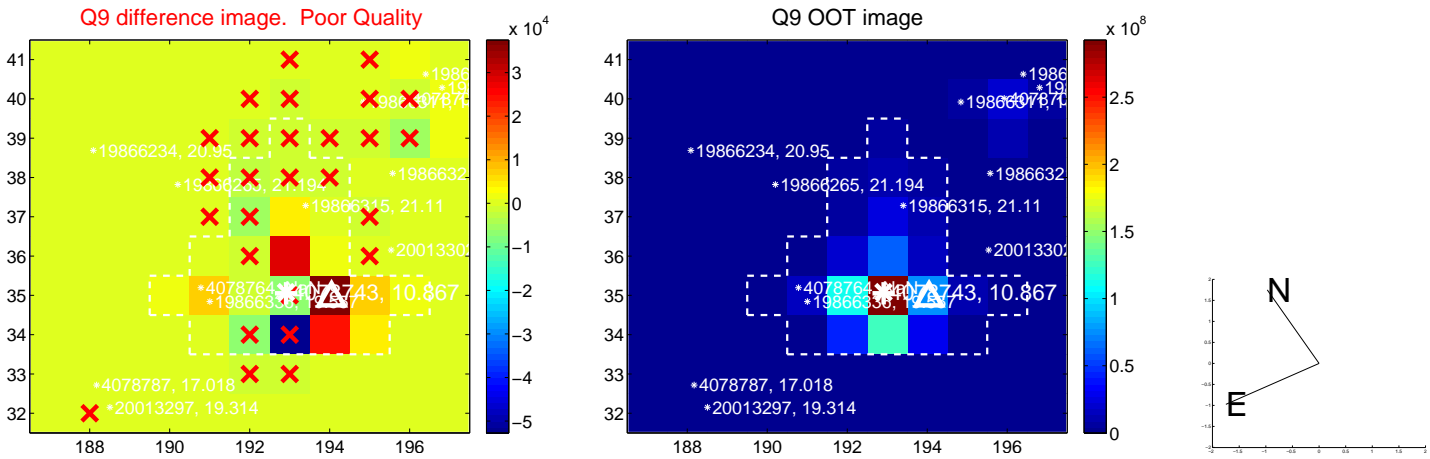
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



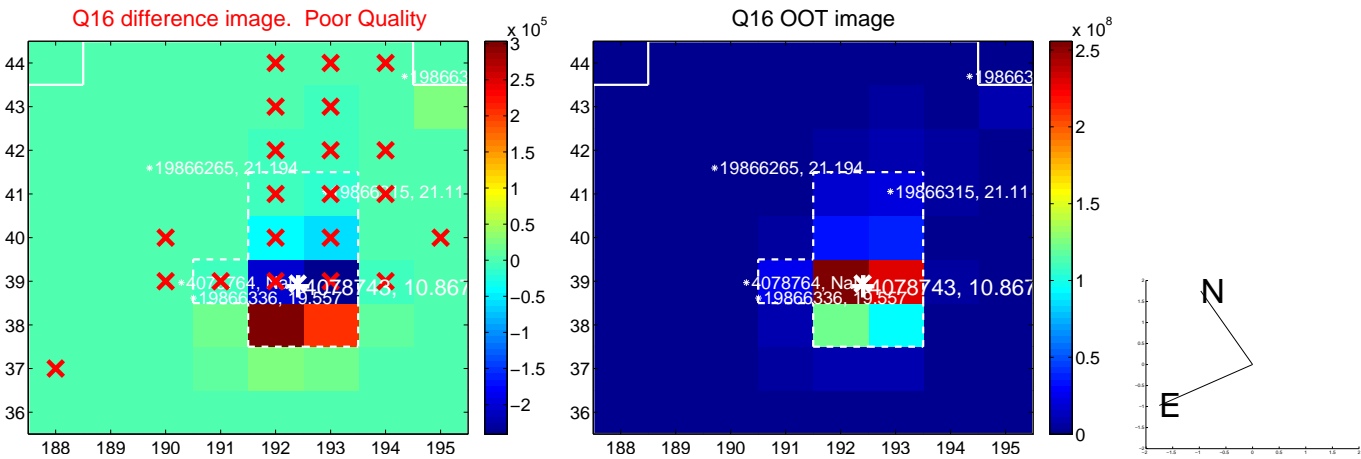
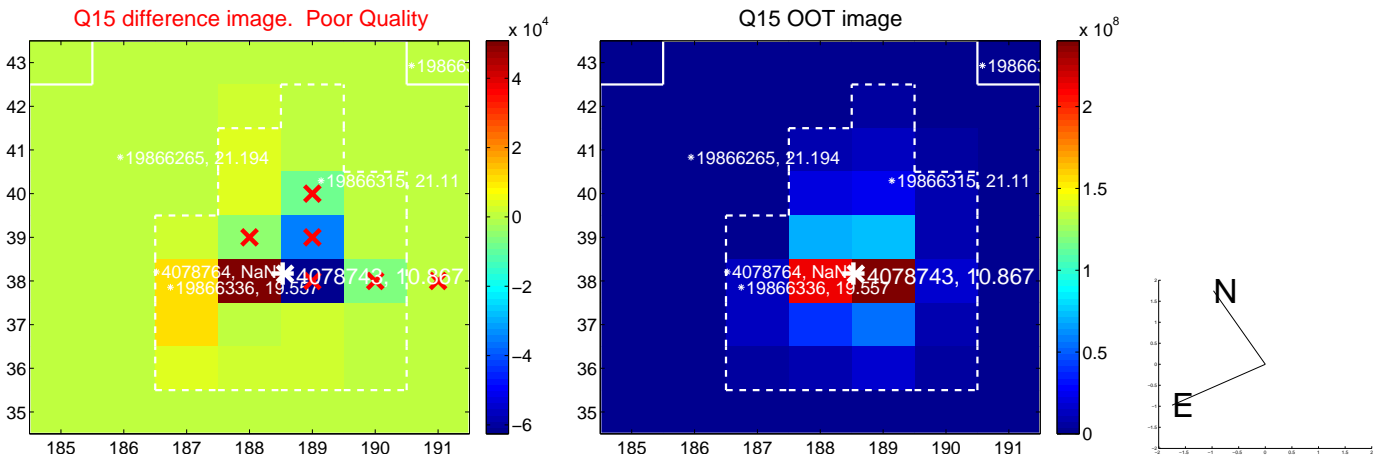
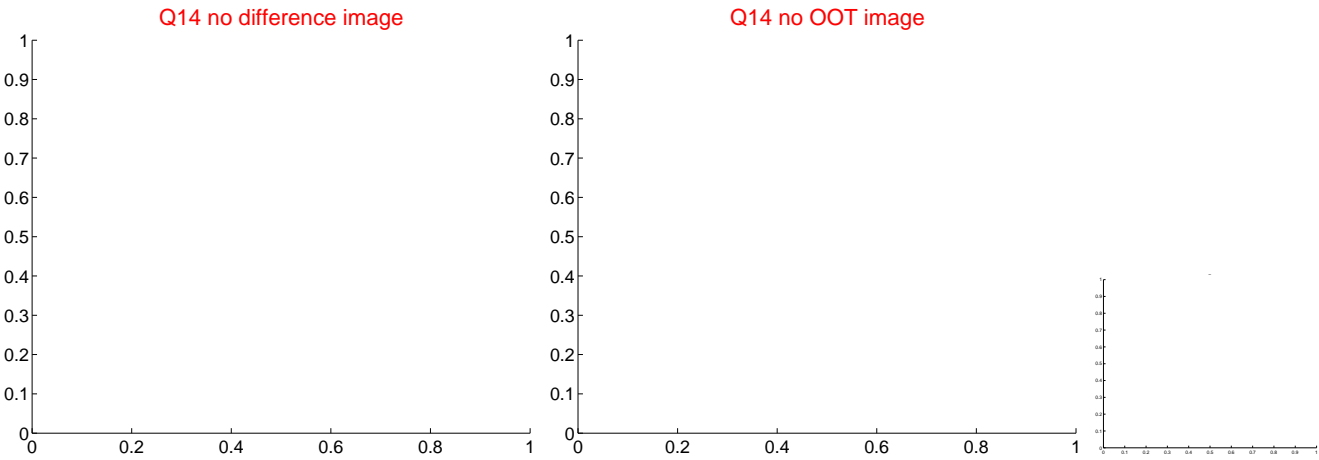
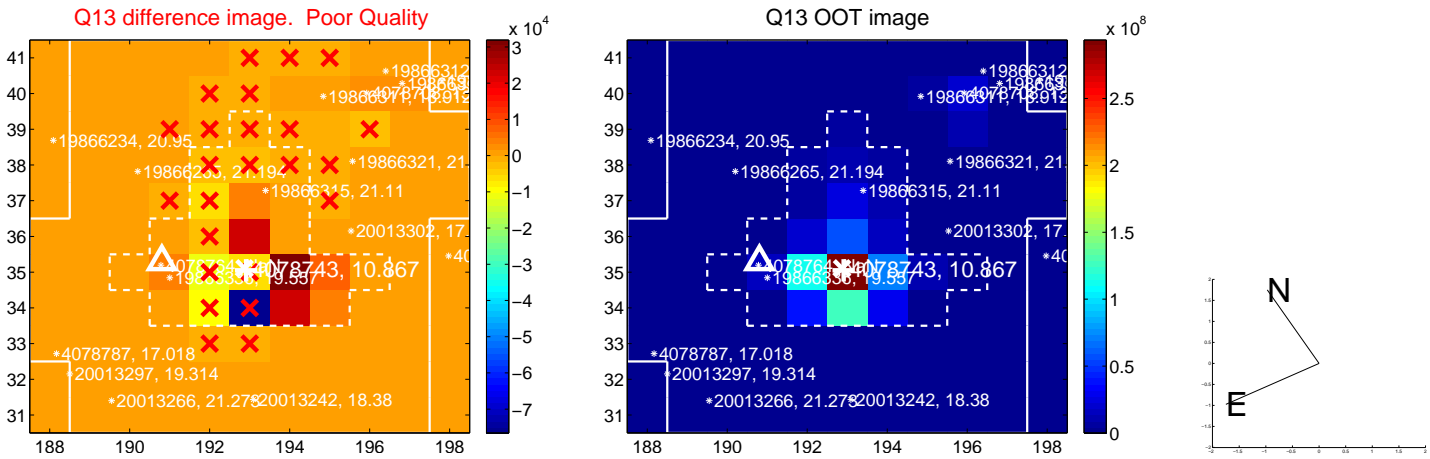
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



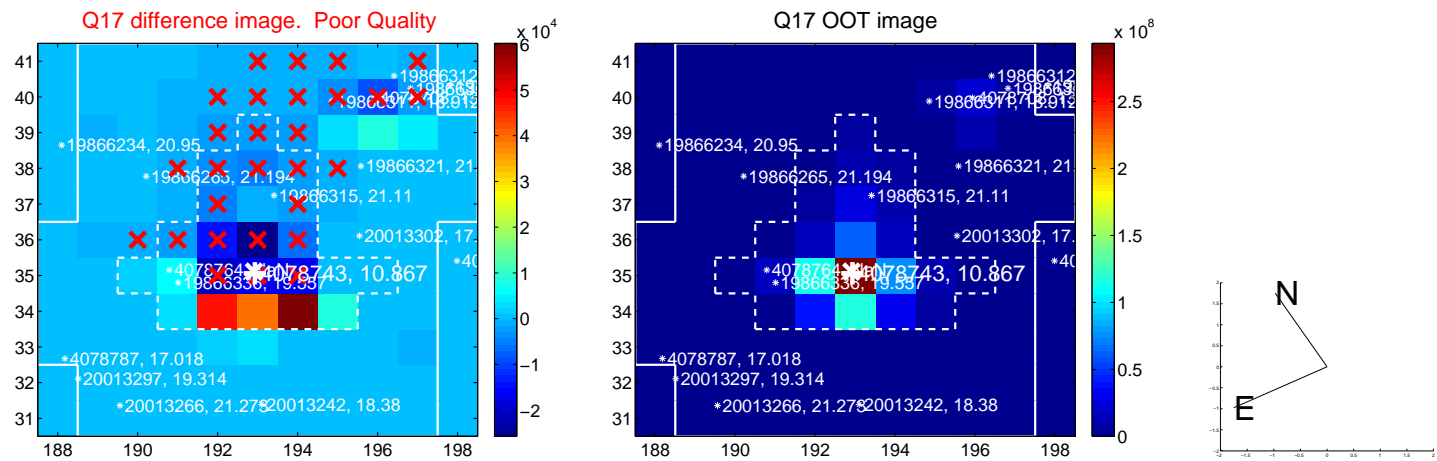
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



folded centroid time series figure for this object.

UKIRT Image

