

KIC 012691831

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})
012691831-01	OBS	No	0.786167	132.005082	87.3	2.657	10.0	10.8	3.60	7389	3.91	77520.97
012691831-02	OBS	No	0.709479	132.013152	79.9	4.126	10.5	8.6	3.60	7389	3.29	88890.01
012691831-03	OBS	No	99.916368	163.752273	1572.9	3.011	10.3	11.1	3.60	7389	15.10	121.32
012691831-04	OBS	No	93.728386	141.493204	1316.9	3.820	9.7	10.4	3.60	7389	23.34	132.11
012691831-05	OBS	No	27.246642	146.046741	662.9	3.037	8.1	7.4	3.60	7389	10.30	686.05

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012691831-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
012691831-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
012691831-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
012691831-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
012691831-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

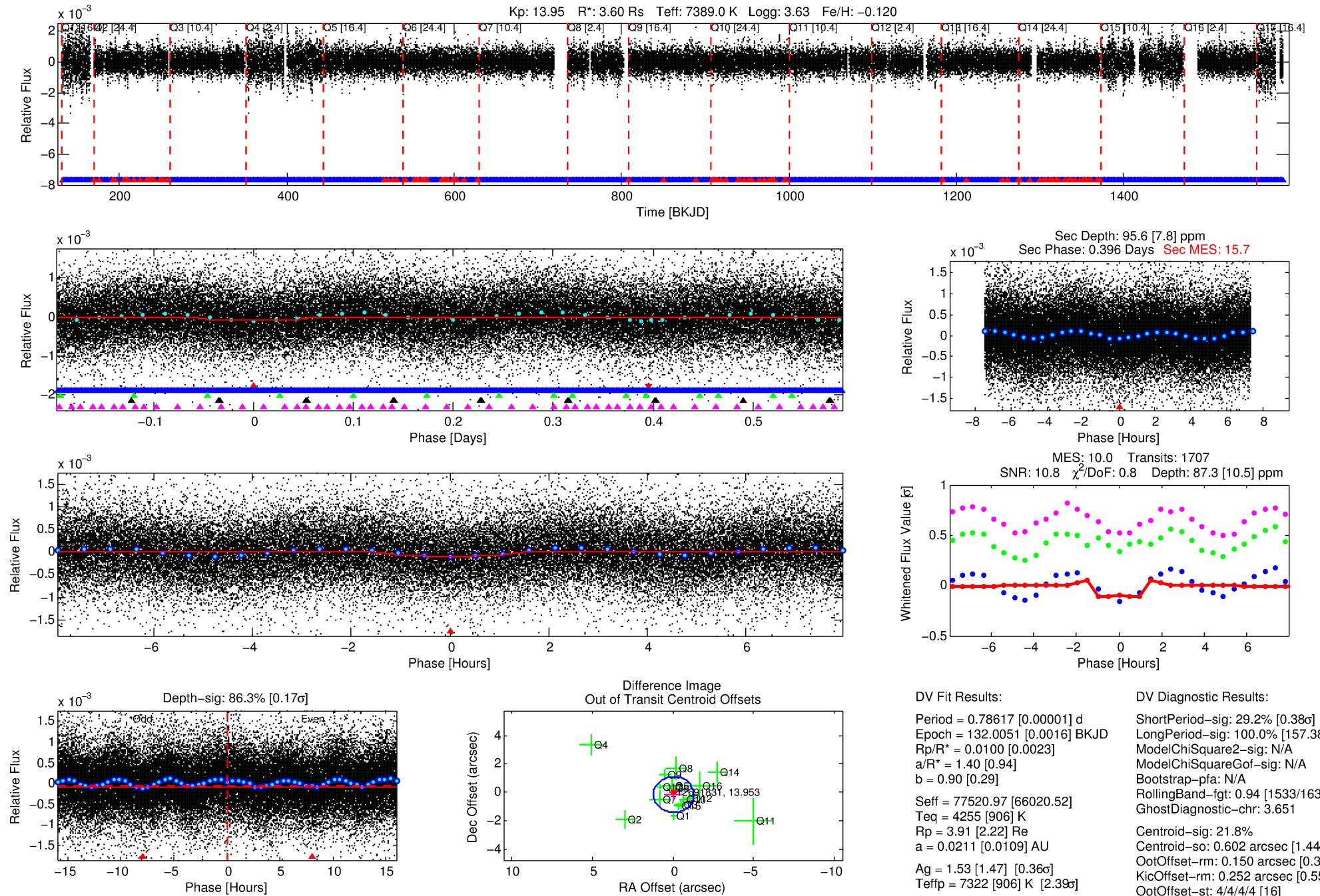
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012691831-01

No Significant Match Found

DV One-Page Summary

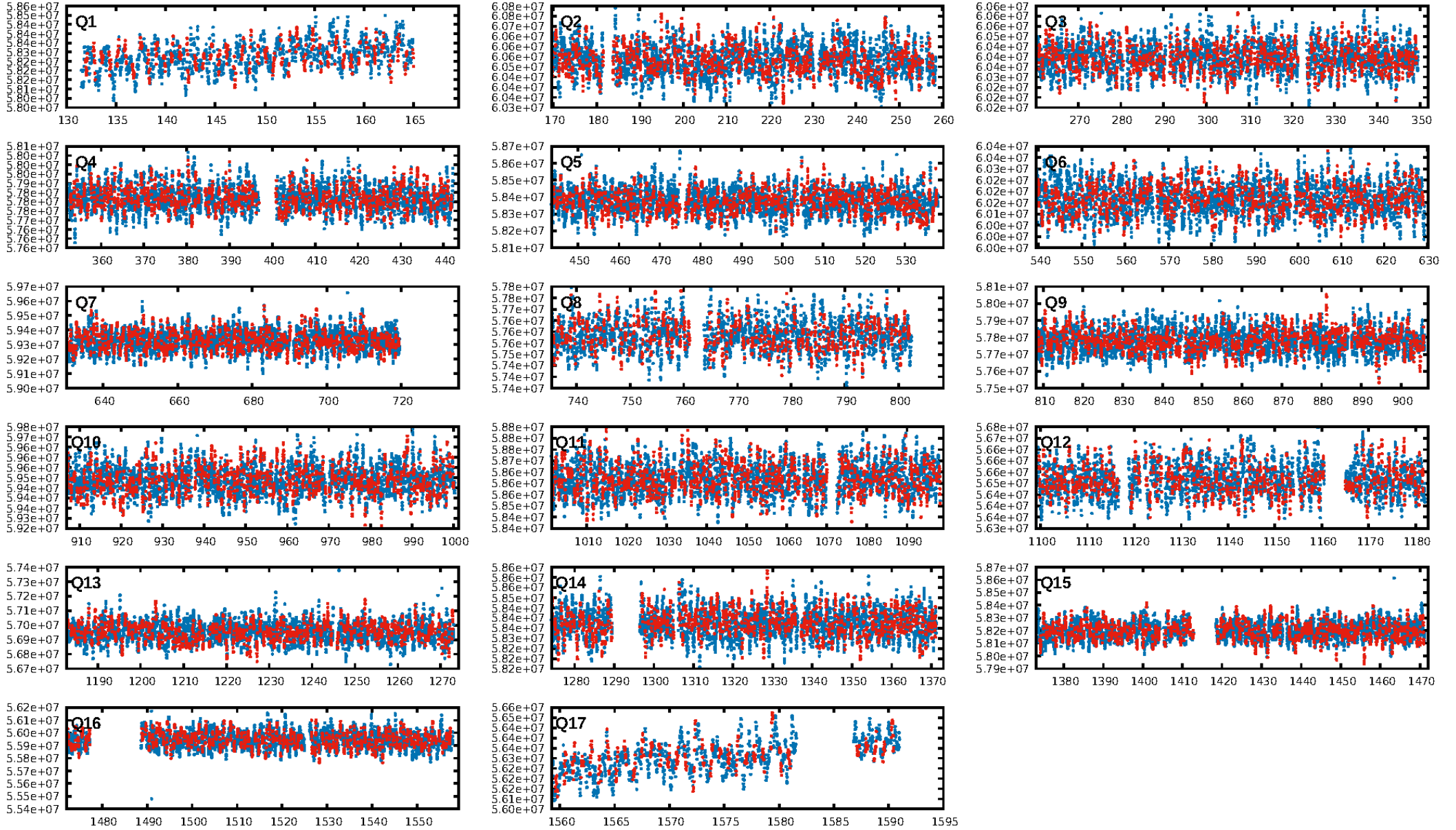
KIC: 12691831 Candidate: 1 of 5 Period: 0.786 d



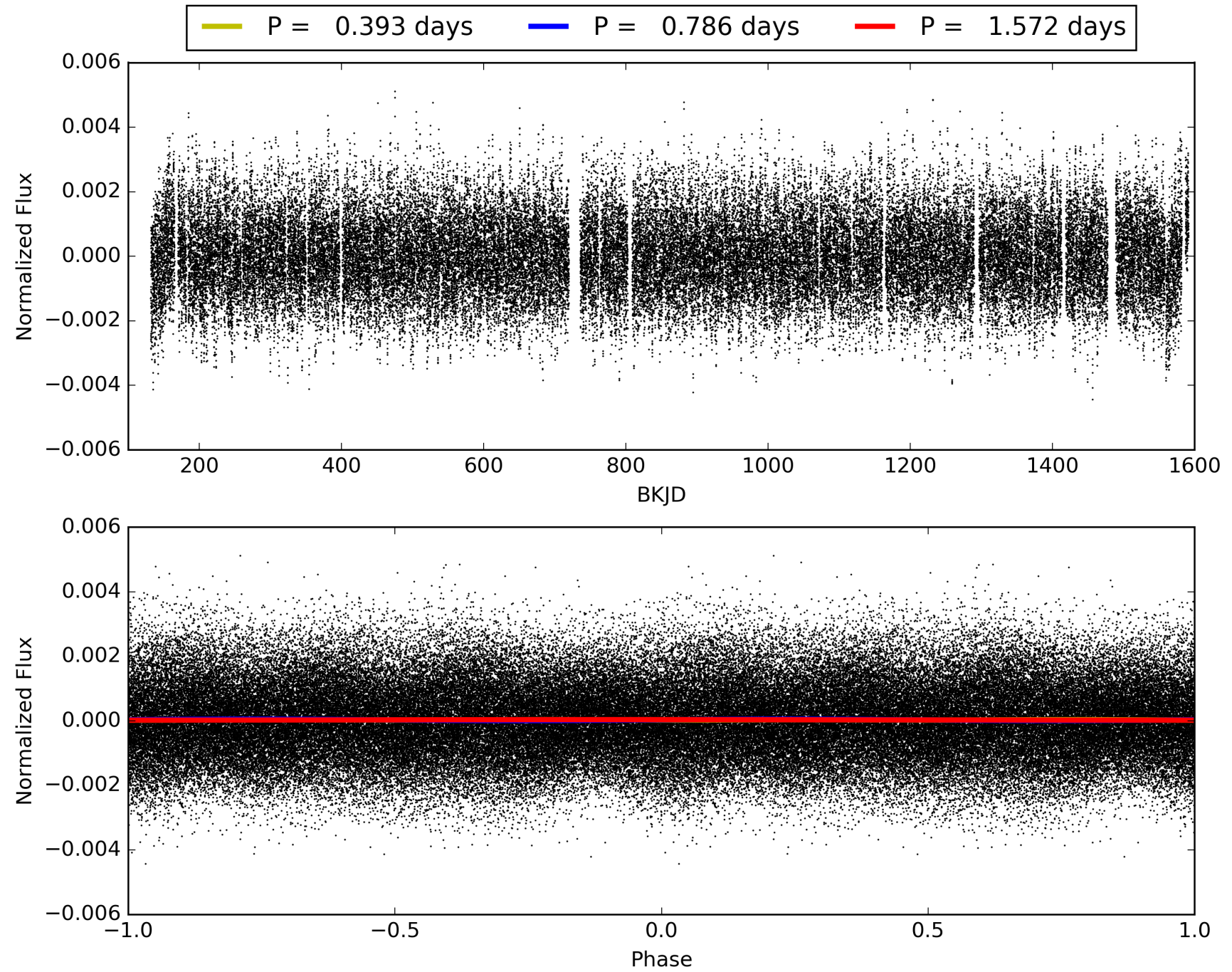
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:57:03 Z

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

TCE 012691831-01, PDC Light Curves

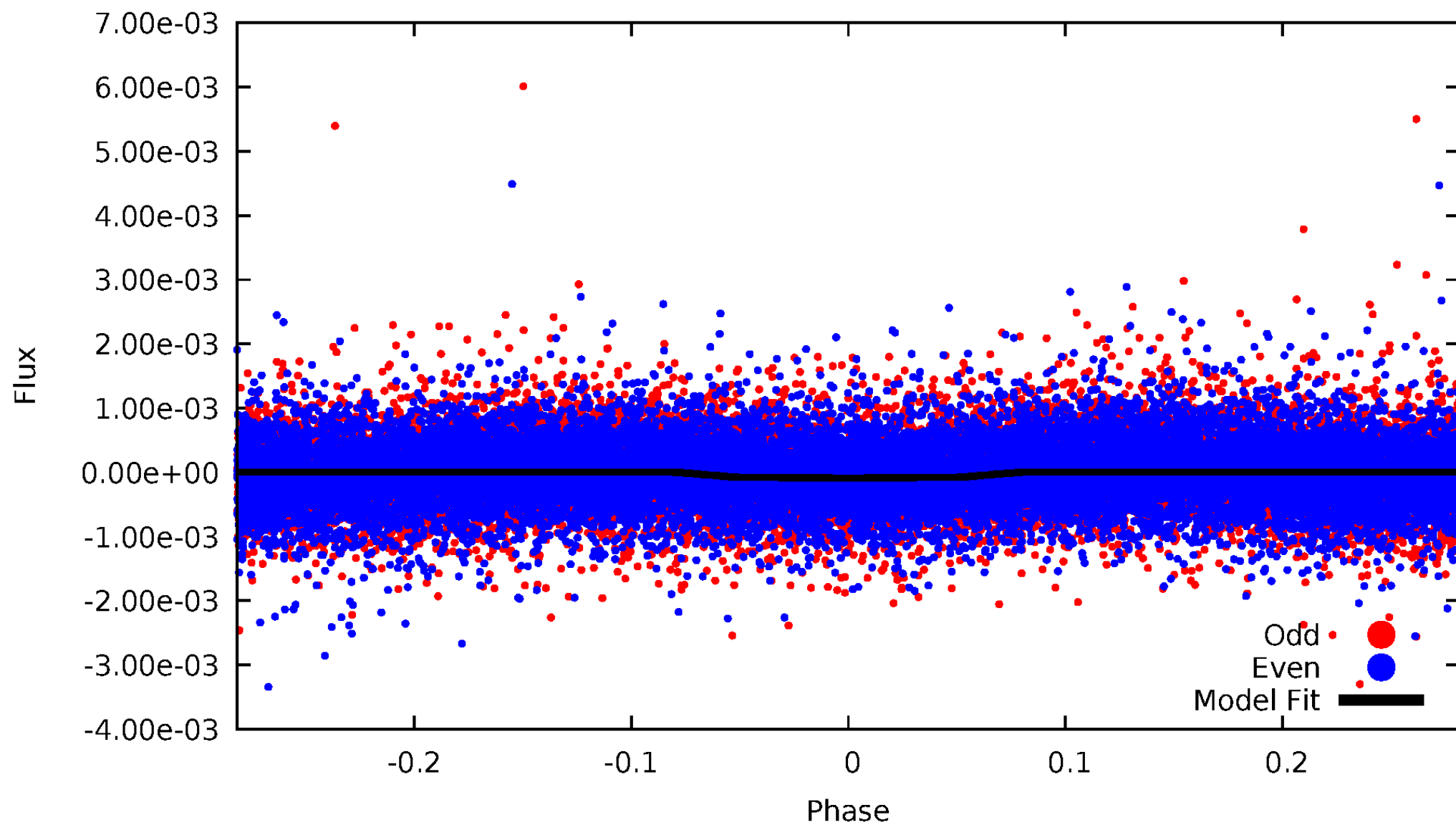


TCE 012691831-01



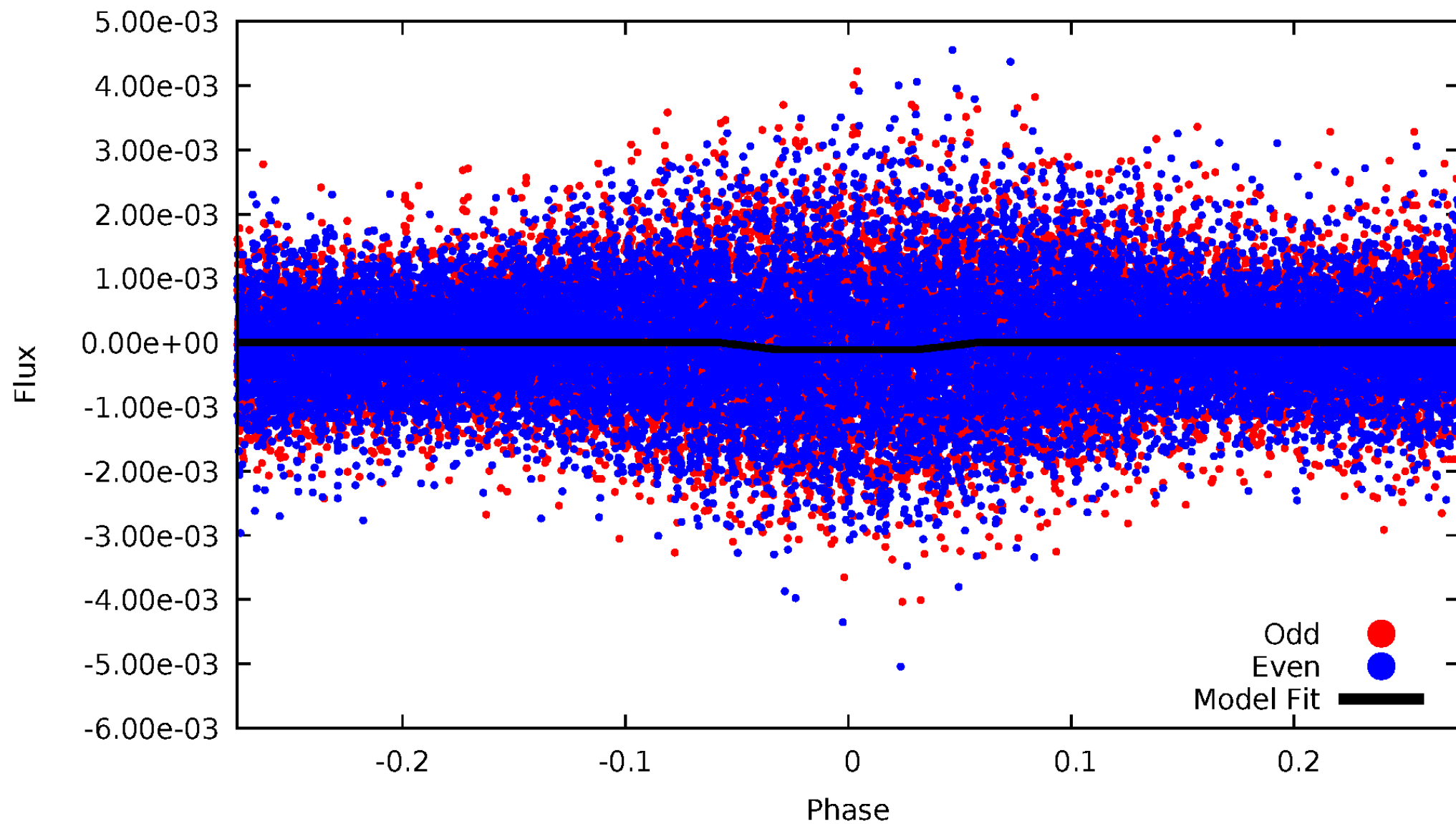
DV Odd/Even

TCE 012691831-01



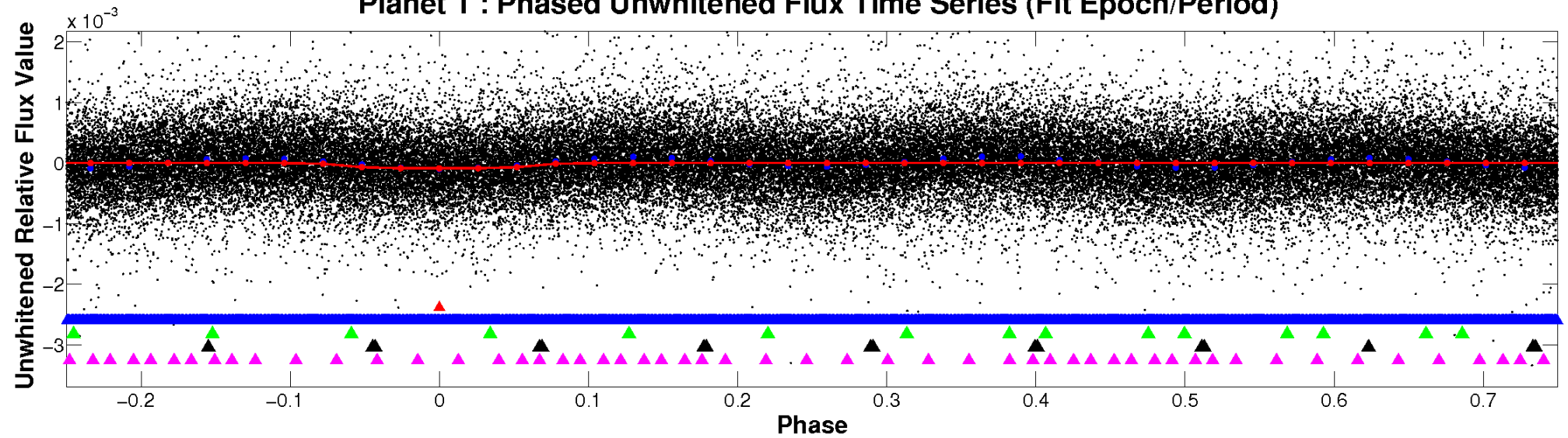
ALT Odd/Even

TCE 012691831-01

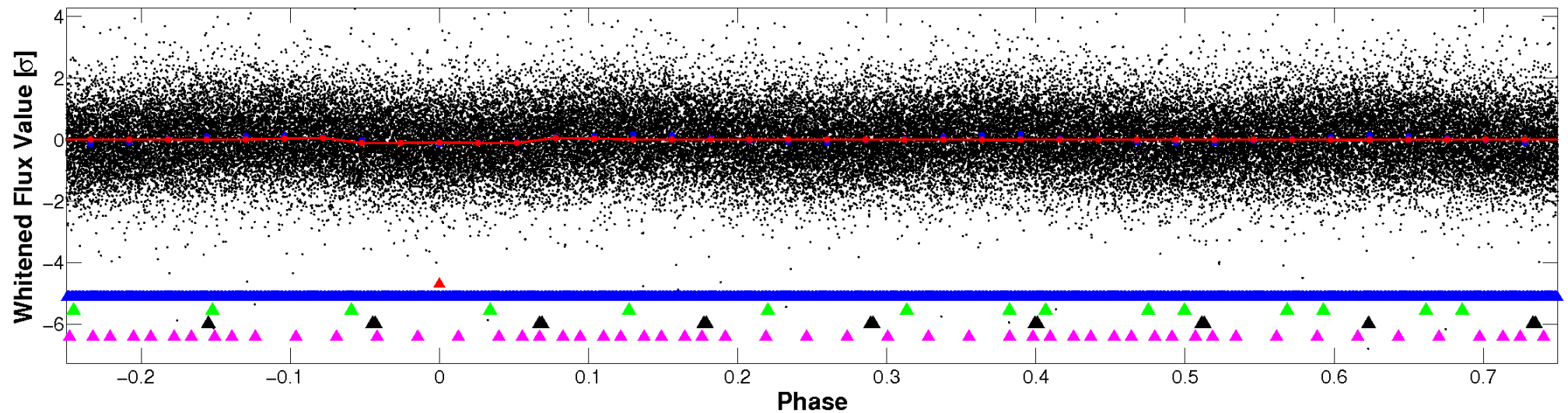


Non-Whitened Vs. Whitened Light Curve

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

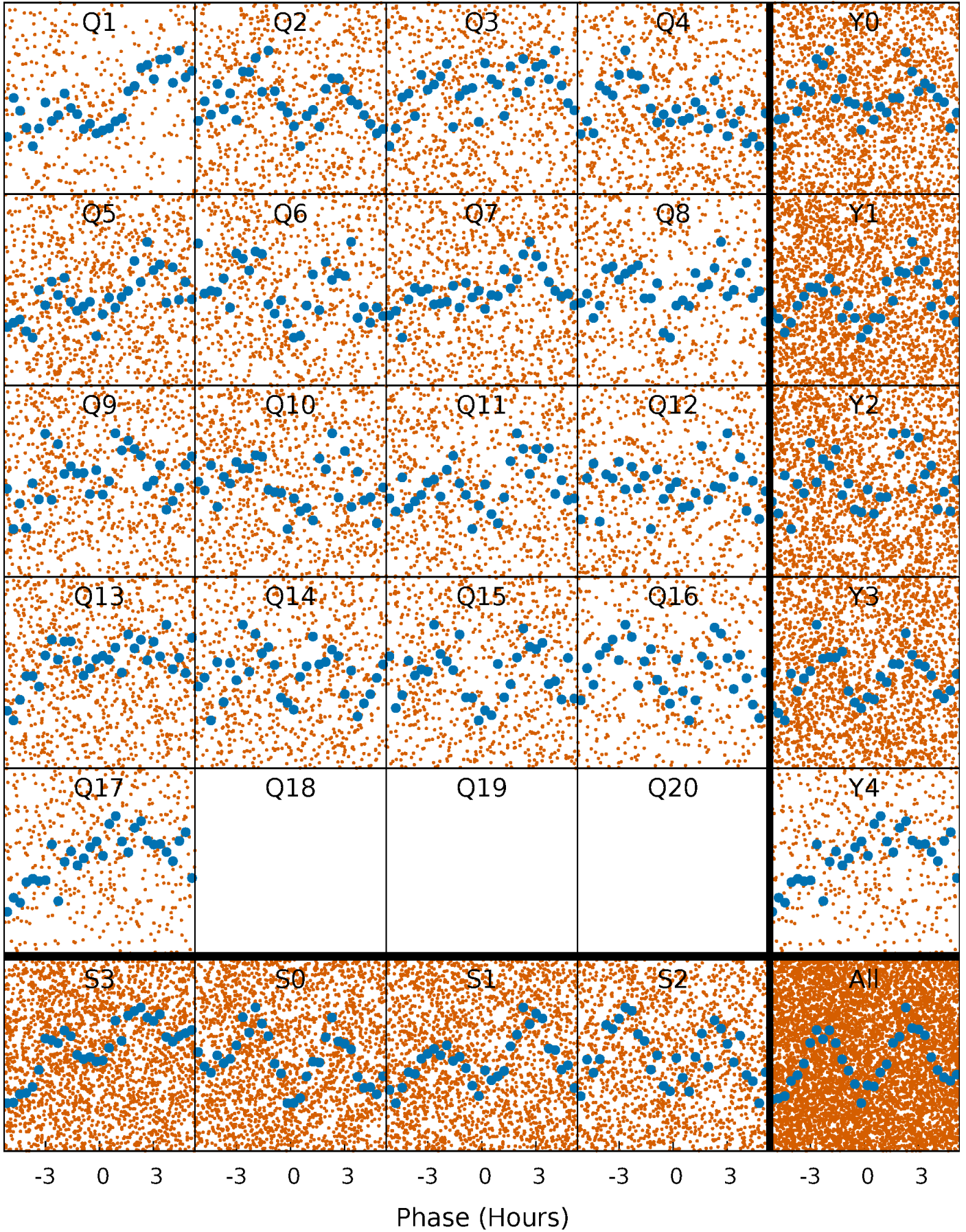


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



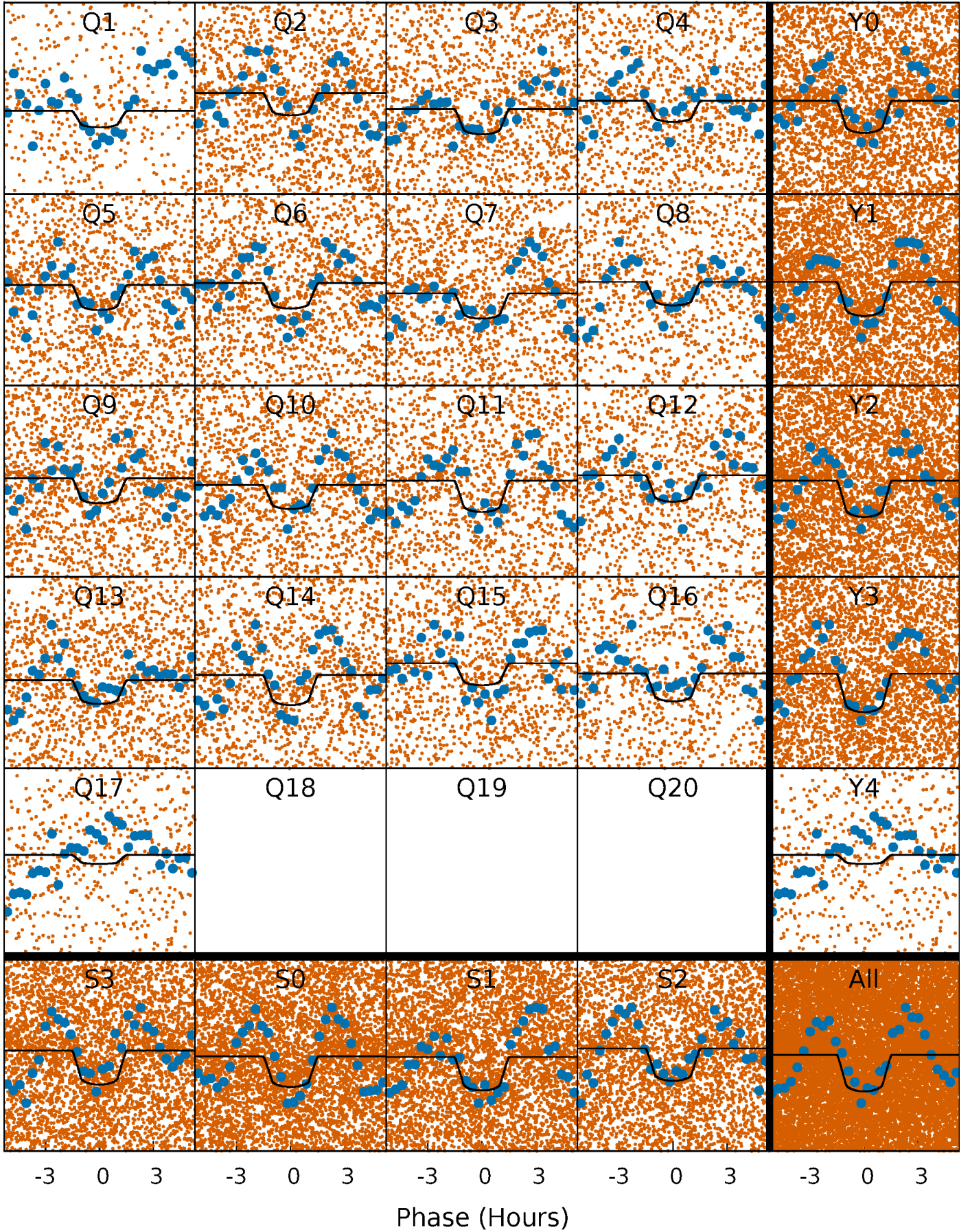
PDC Quarter-Phased Transit Curves

TCE 012691831-01 P= 0.786167 Days $T_0=132.005082$ (BKJD)



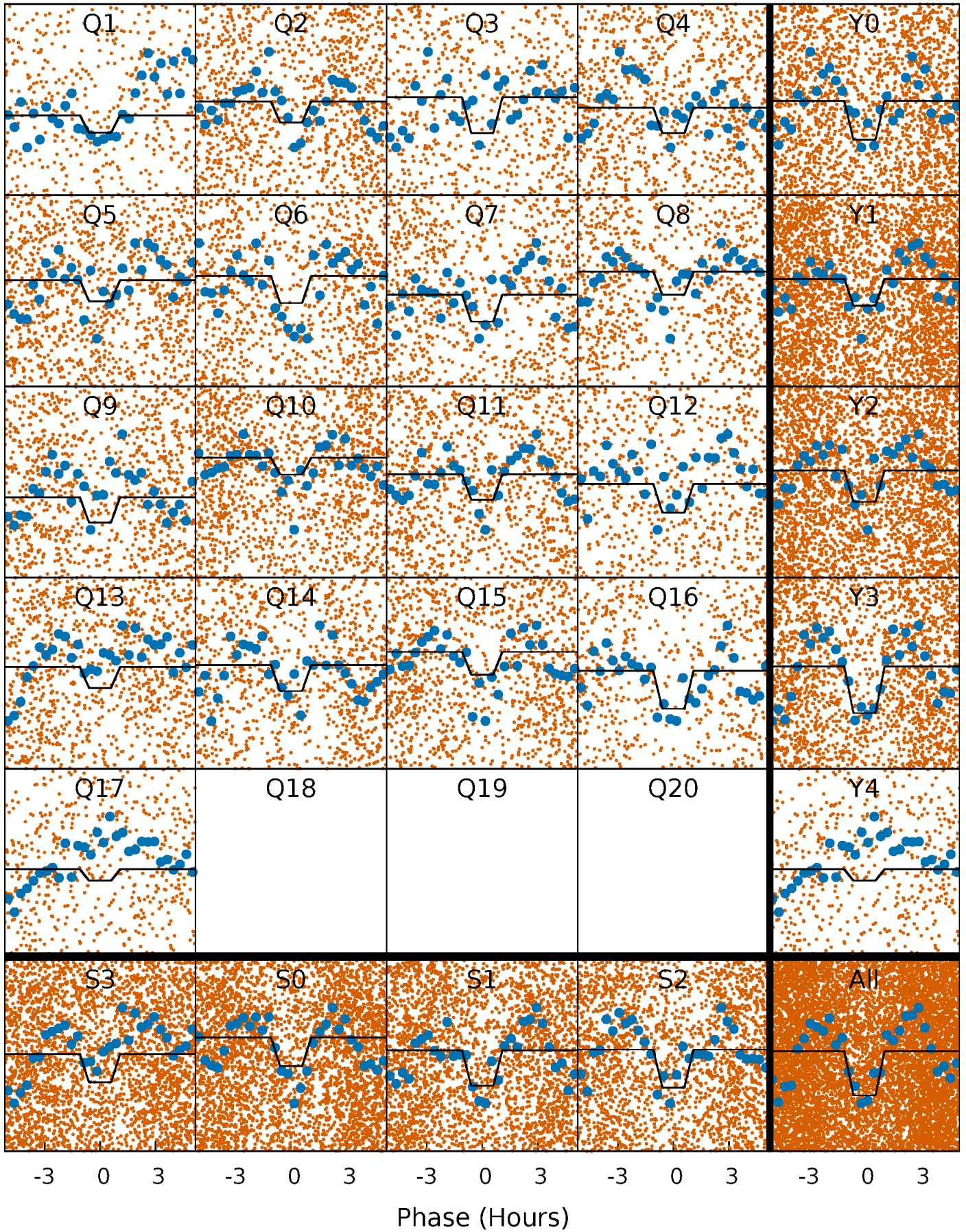
DV Quarter-Phased Transit Curves

TCE 012691831-01 P= 0.786167 Days $T_0=132.005082$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

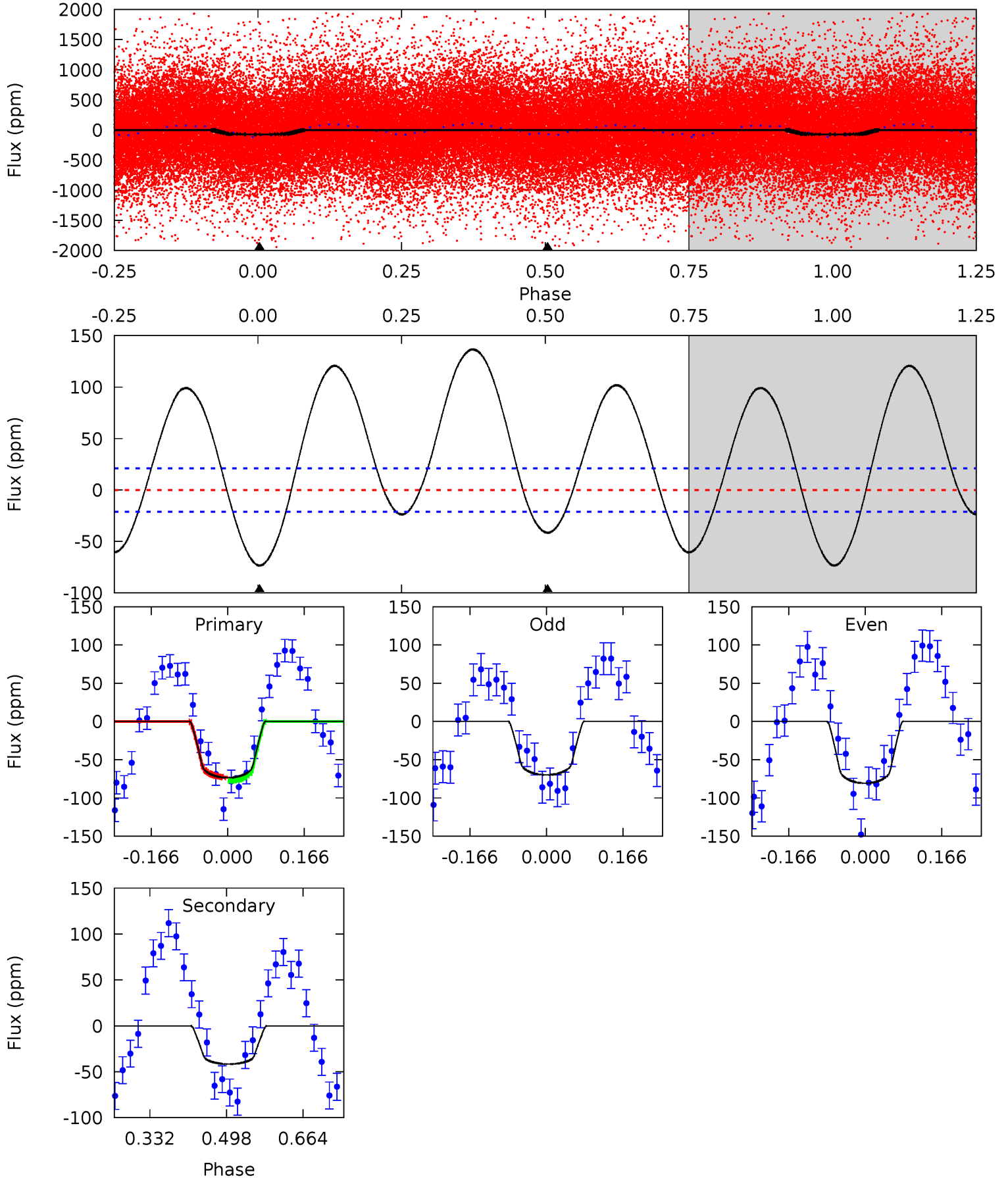
TCE 012691831-01 P= 0.786171 Days $T_0=132.004160$ (BKJD)



DV Model-Shift Uniqueness Test

012691831-01, P = 0.786167 Days, E = 131.218915 Days

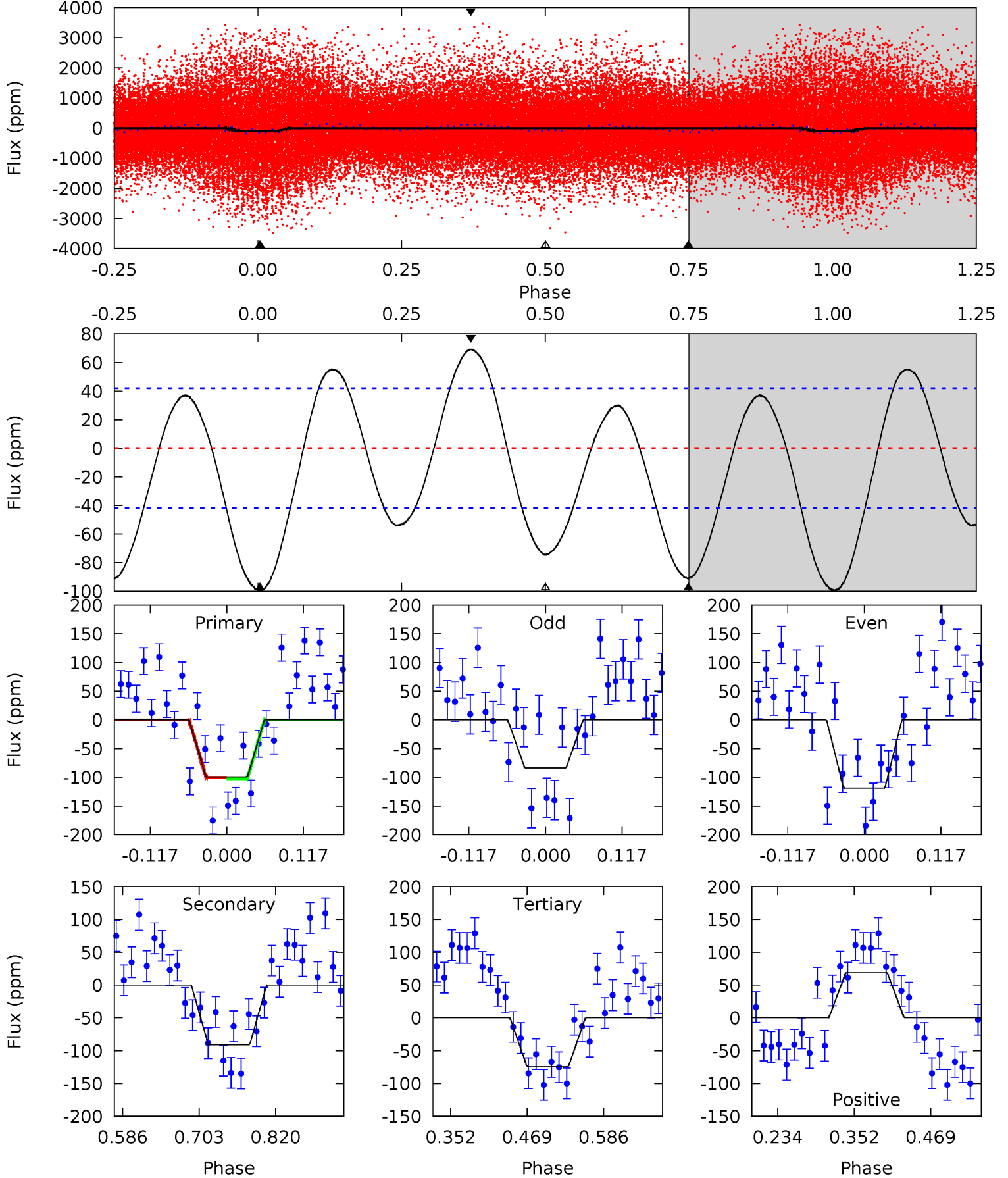
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	8.81	0	0	4.46	1.38	9.08	15.5	15.5	8.81	8.81	1.15	0.96	0.65	0.49



Alt Model-Shift Uniqueness Test

012691831-01, P = 0.786171 Days, E = 131.217989 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	9.82	8.04	7.45	4.53	1.57	4.77	2.71	3.29	1.78	2.37	1.91	0.72	0.41	0.12



Stellar Parameters For KIC 012691831

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7389^{+230}_{-307}	$3.634^{+0.495}_{-0.055}$	$-0.120^{+0.250}_{-0.300}$	$3.600^{+0.331}_{-1.873}$	$2.034^{+0.151}_{-0.604}$	$0.061^{+0.315}_{-0.012}$
	+3%/-4%	+14%/-2%	+208%/-250%	+9%/-52%	+7%/-30%	+513%/-20%
Source	KIC0	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 012691831-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-42 ± 5	$3.40^{+1.09}_{-1.00}$	5689^{+409}_{-690}	5301^{+1027}_{-884}	$0.869^{+0.834}_{-0.378}$
Alt.	-91 ± 9	$3.53^{+1.19}_{-1.08}$	5703^{+380}_{-677}	6740^{+1191}_{-952}	$1.797^{+1.729}_{-0.784}$

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 $A_{obs} \gg 1.0$

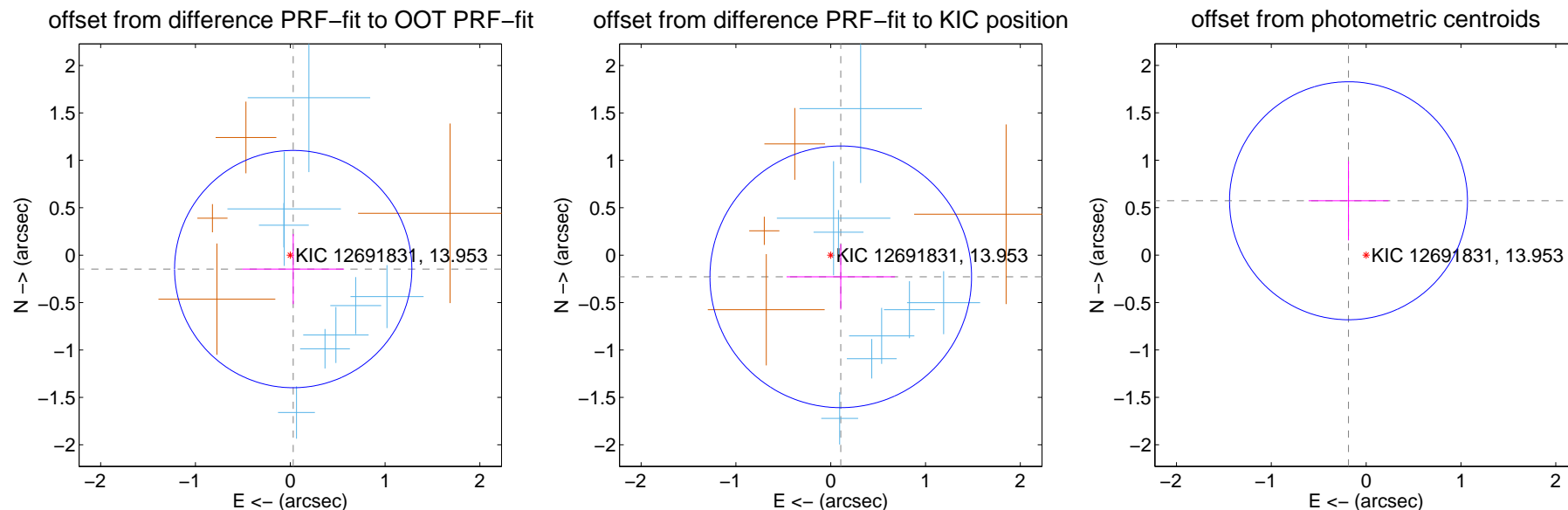
DV Centroid Data

Supplemental centroid analysis for 012691831-01. Kepler magnitude: 13.95. Transit SNR 10.75

There are 9 quarters with good PRF difference image offsets

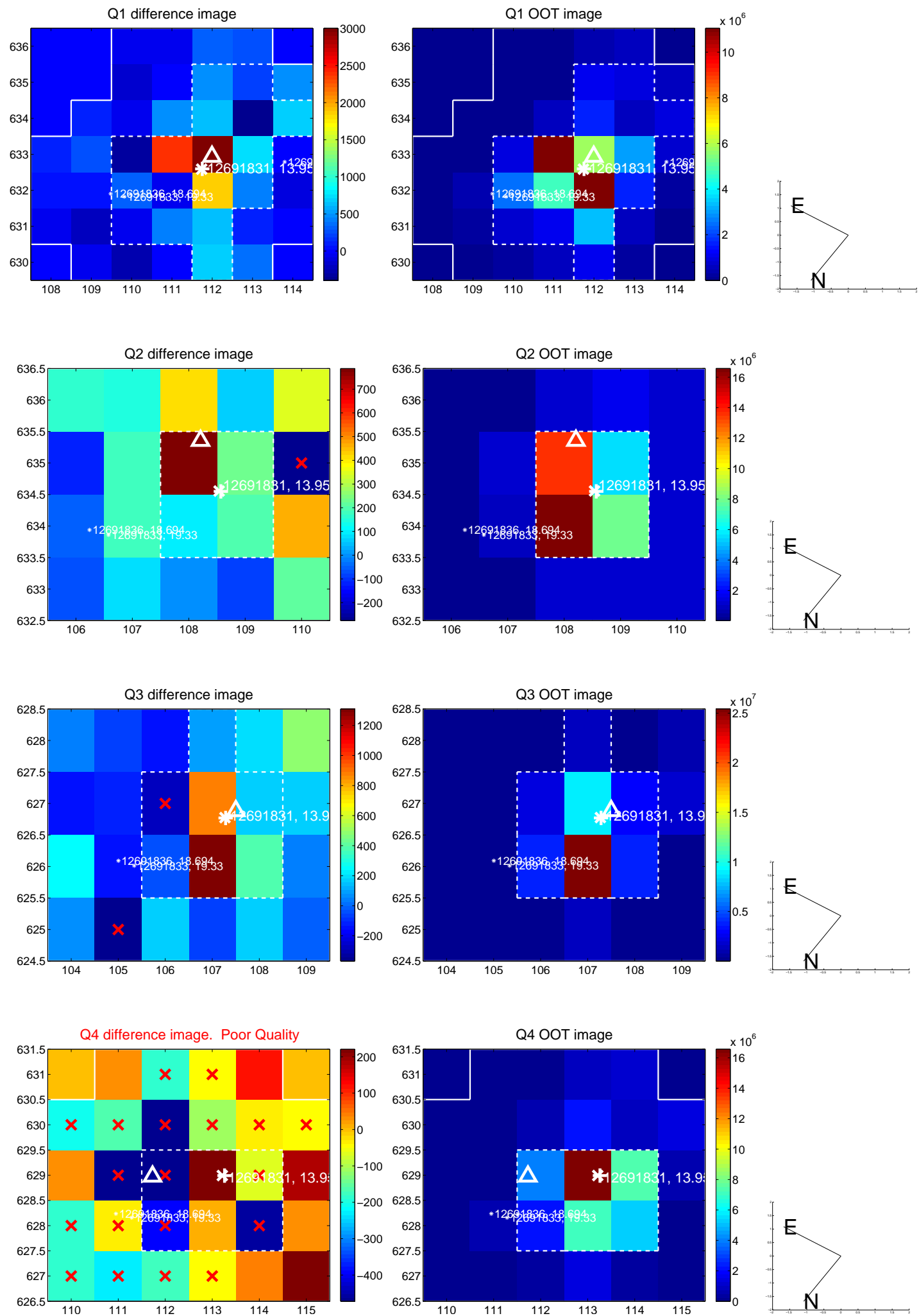
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.150 ± 0.417	0.36	-0.031 ± 0.537	-0.147 ± 0.370
PRF-fit source offset from KIC position	0.252 ± 0.460	0.55	-0.106 ± 0.572	-0.228 ± 0.344
photometric centroid source offset	0.60 ± 0.42	1.44	0.19 ± 0.42	0.57 ± 0.42

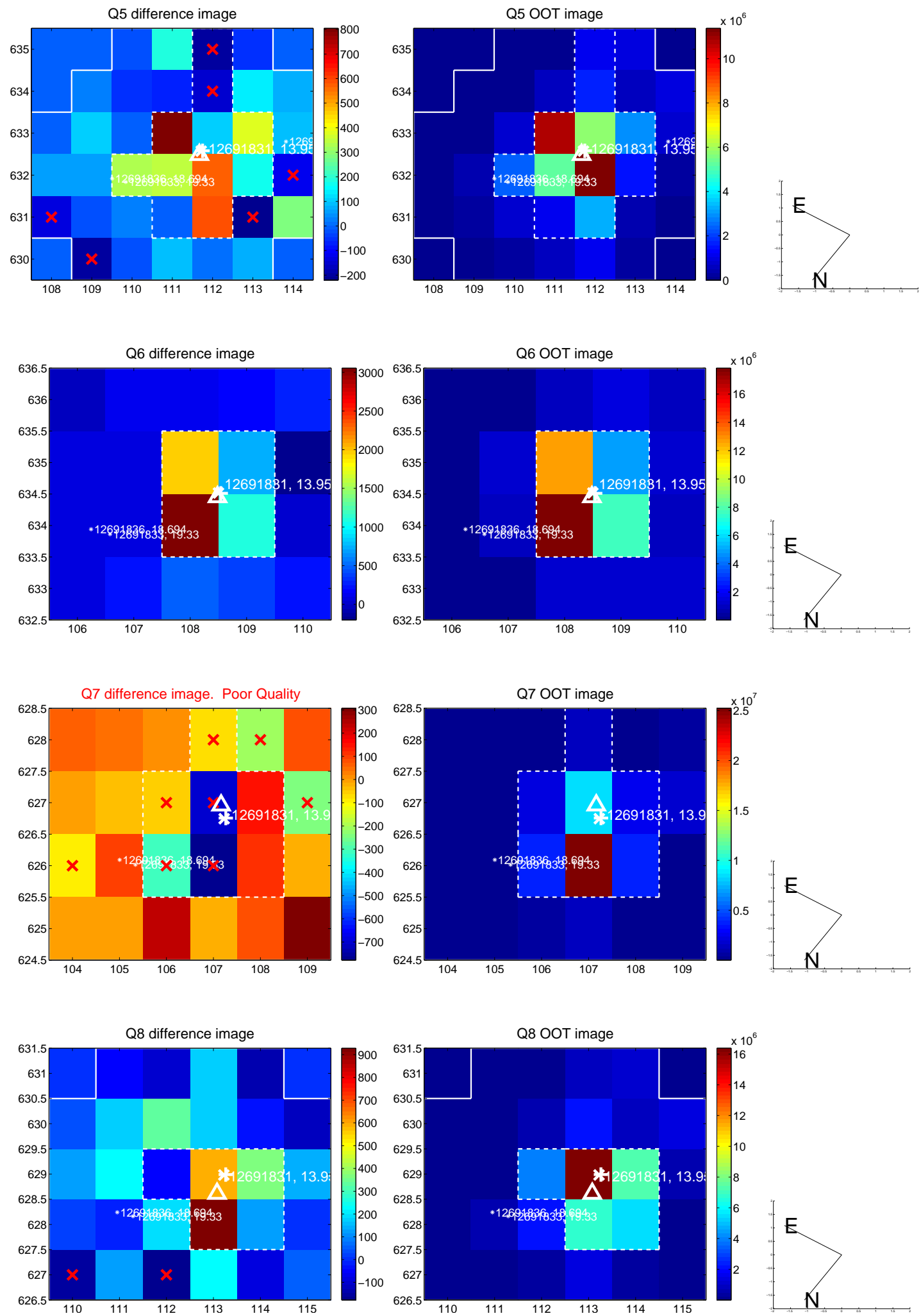


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

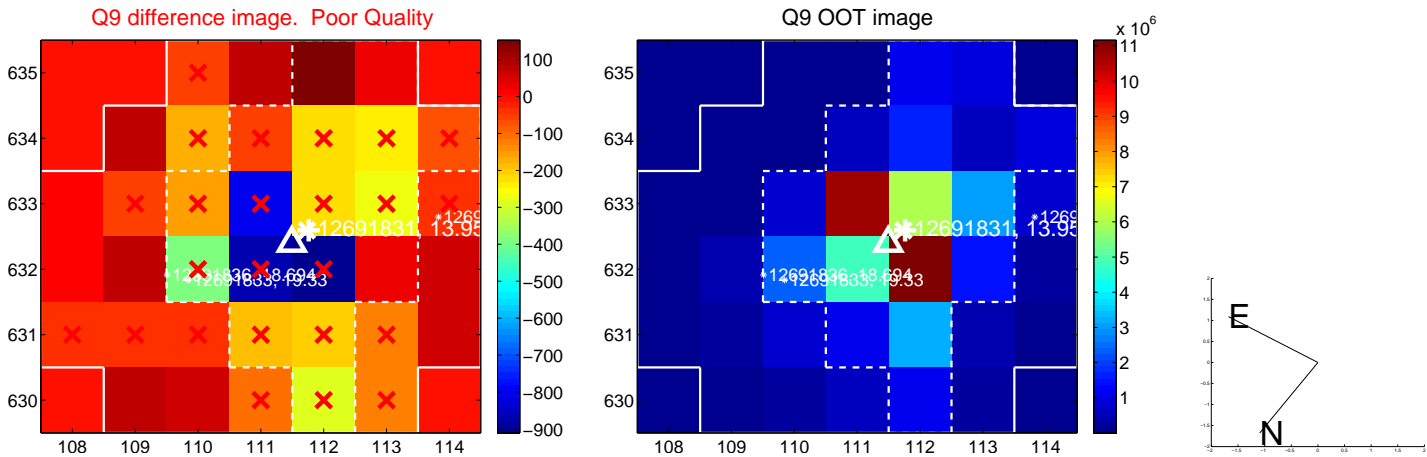
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



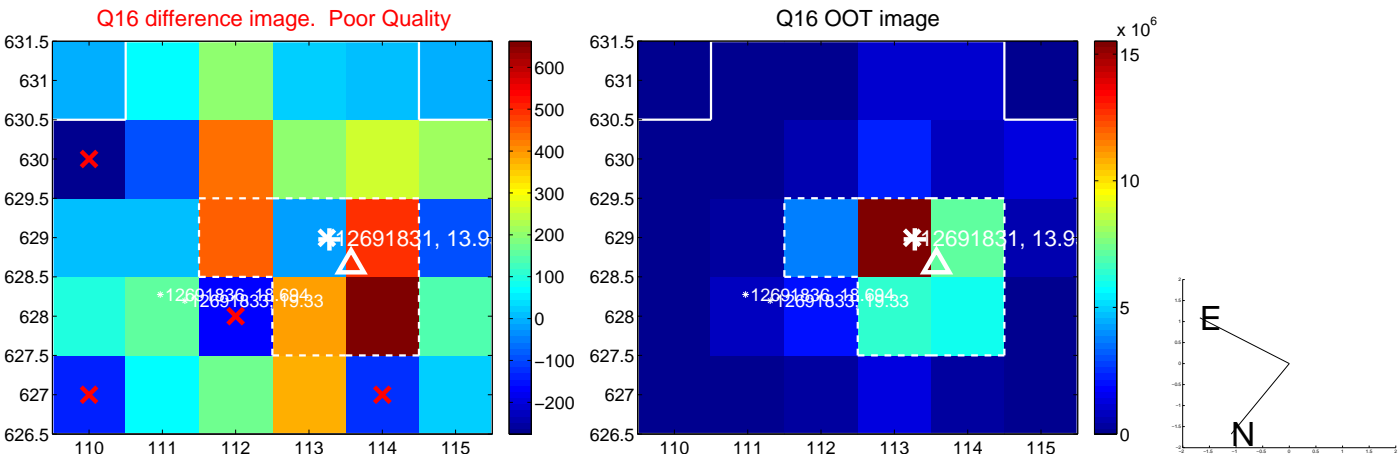
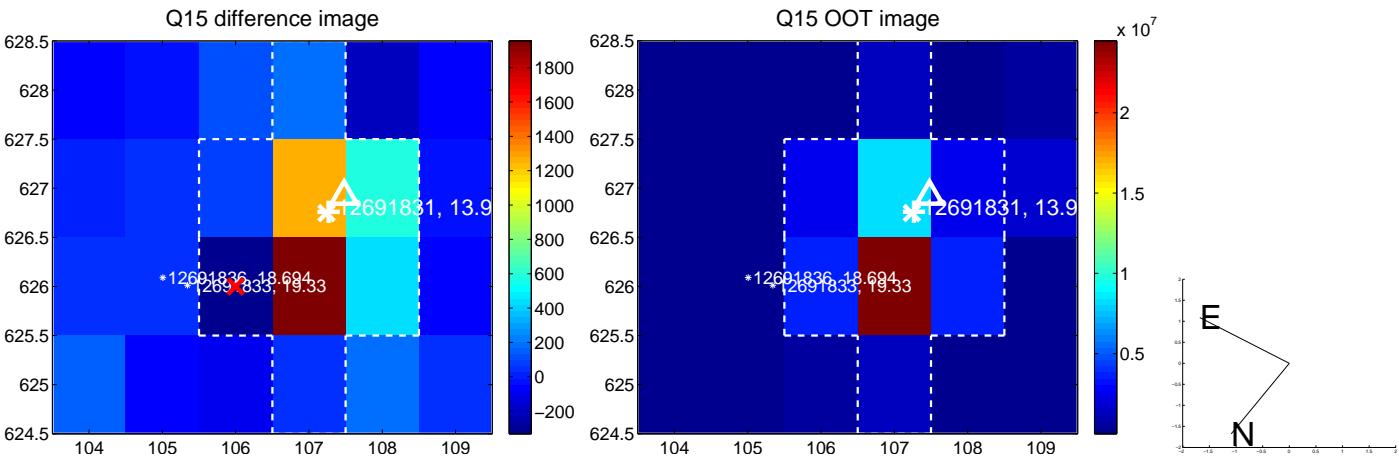
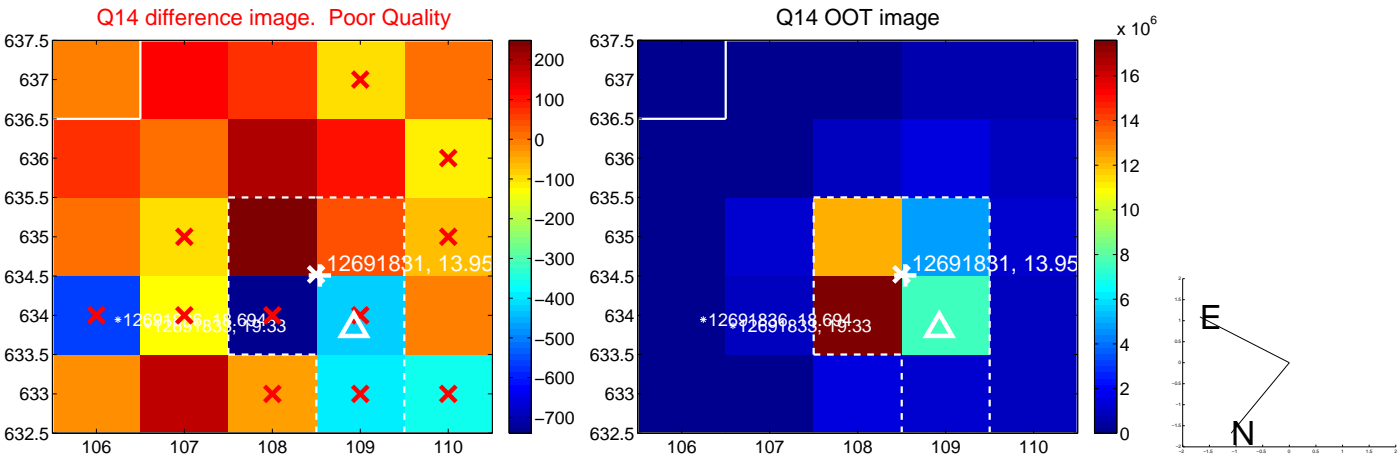
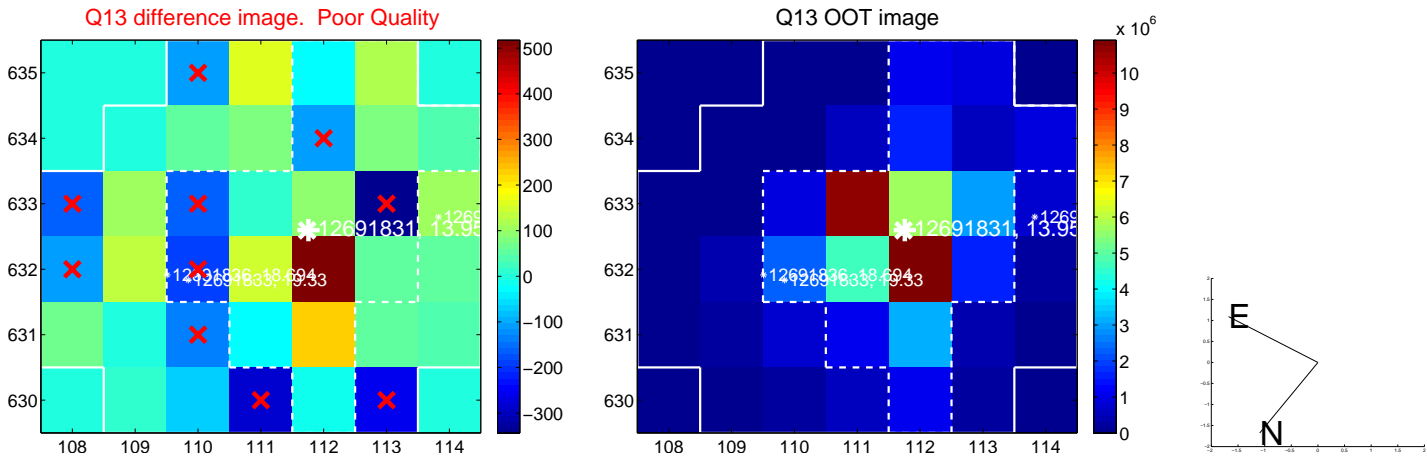
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



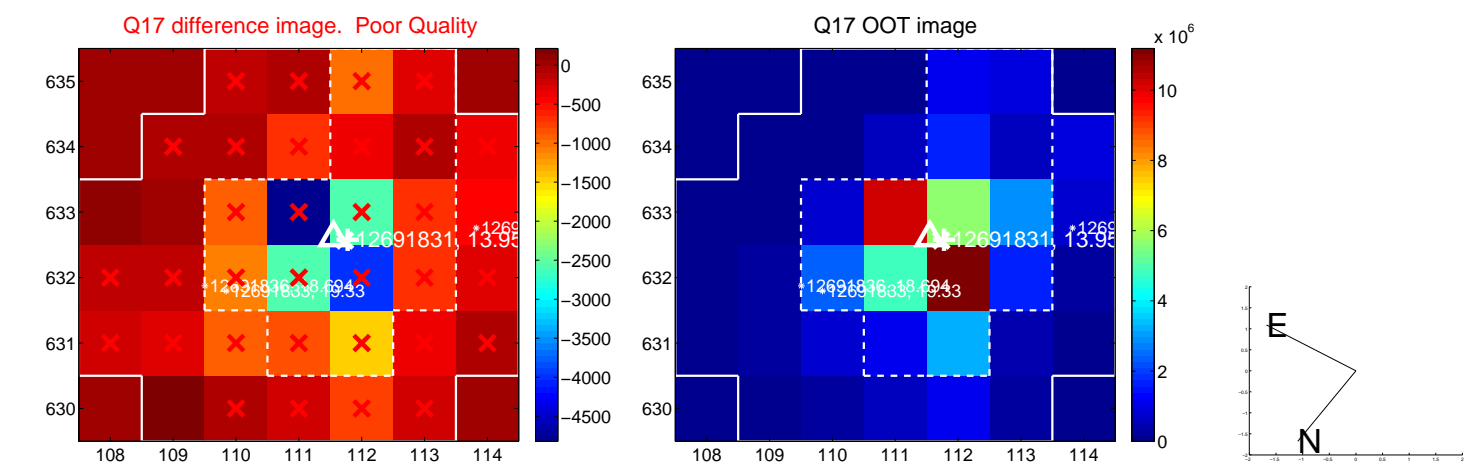
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



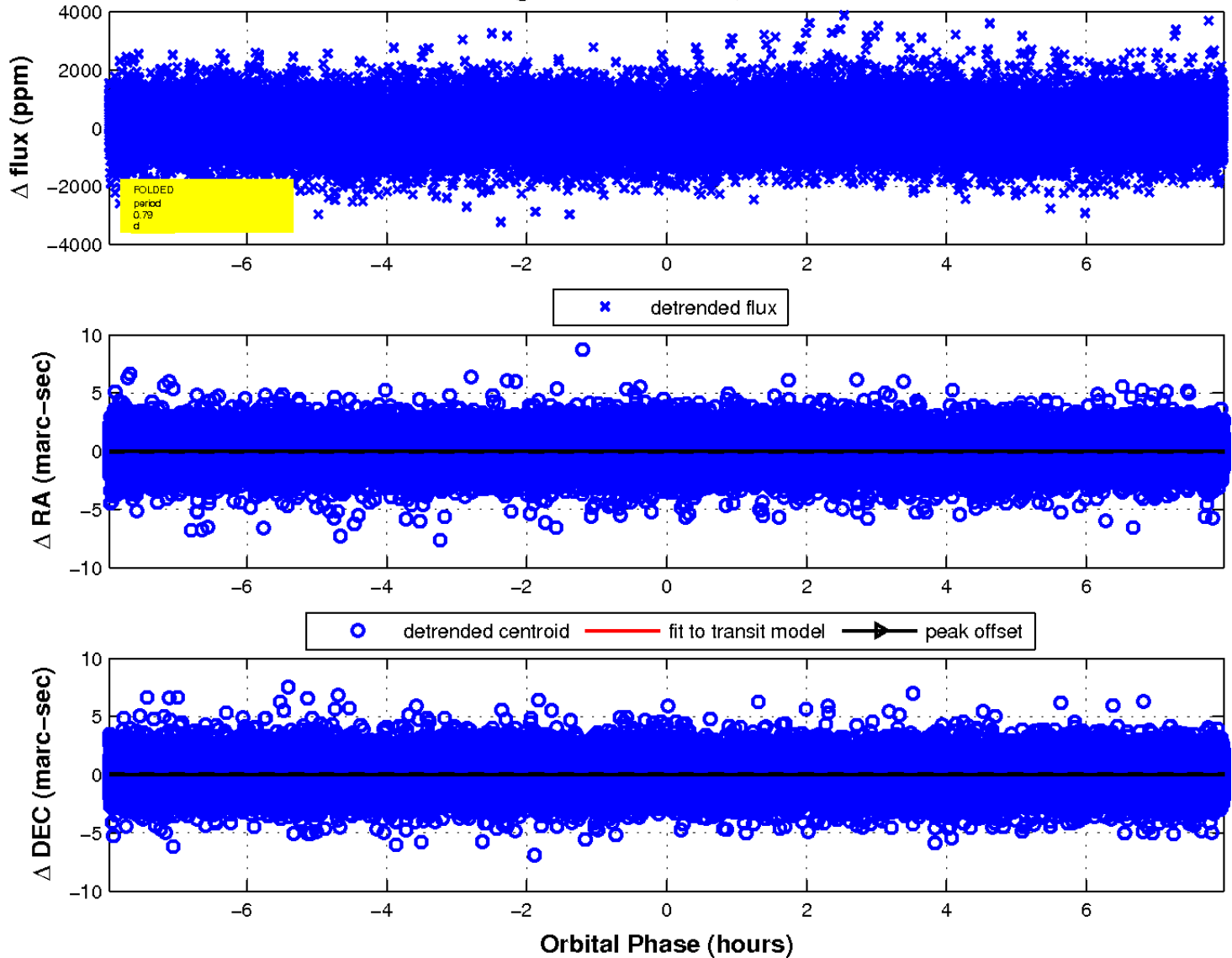
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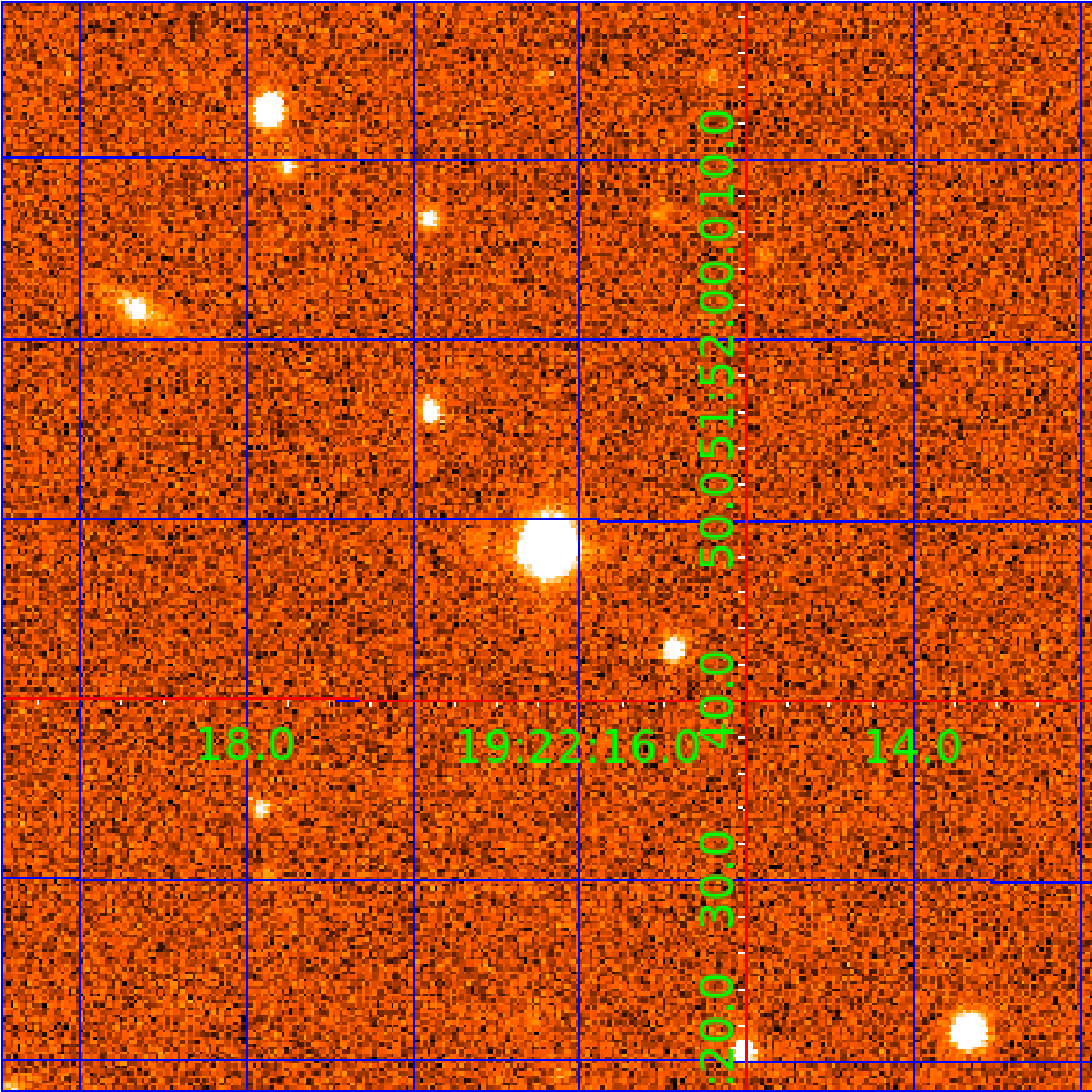


fluxWeightedCentroids, Planet 1 of 5



UKIRT Image

Declination



KIC 012691831

Q1-17 DR25 TCE Parameters

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Robovetter Results

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012691831-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
012691831-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
012691831-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
012691831-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

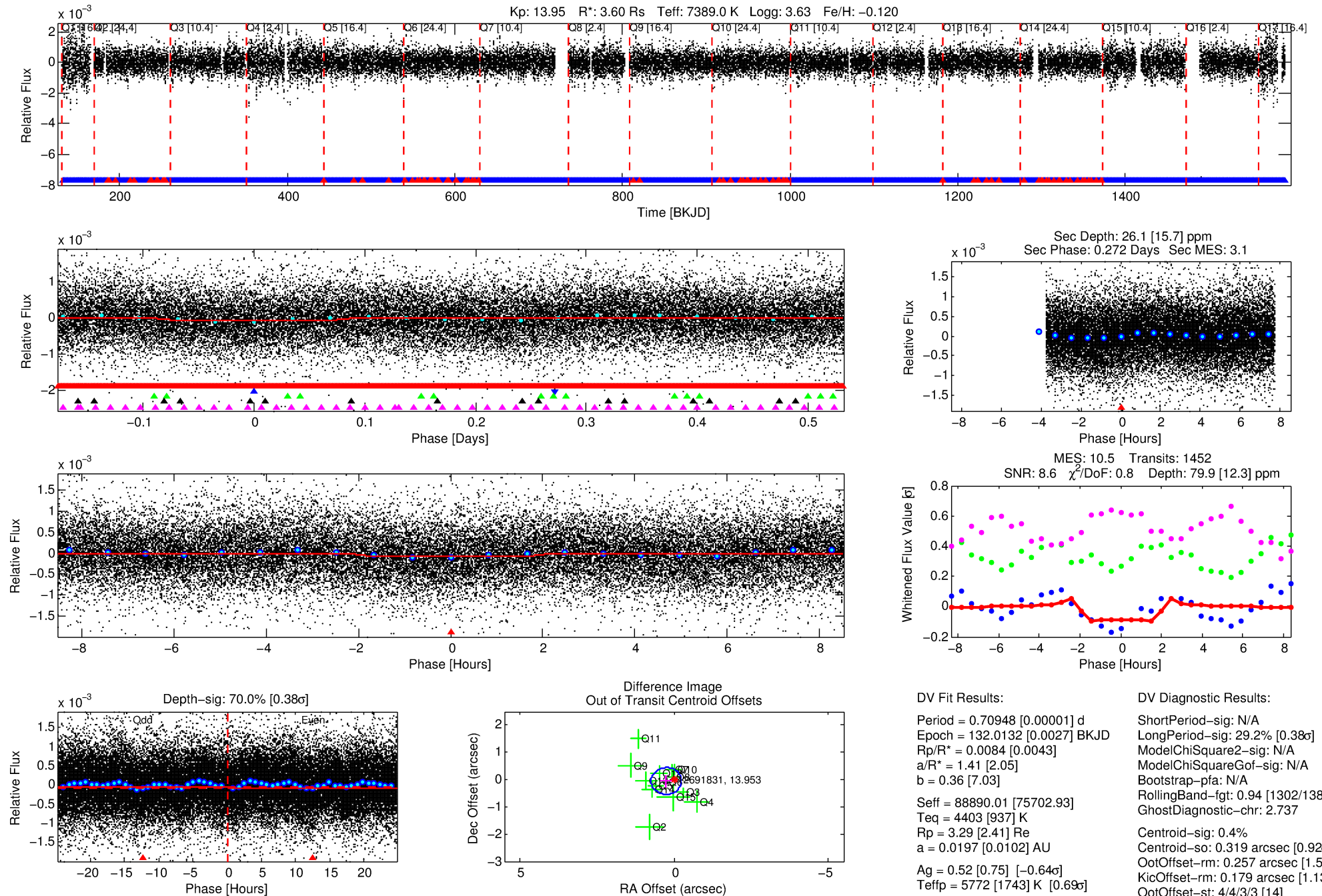
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012691831-02

No Significant Match Found

DV One-Page Summary

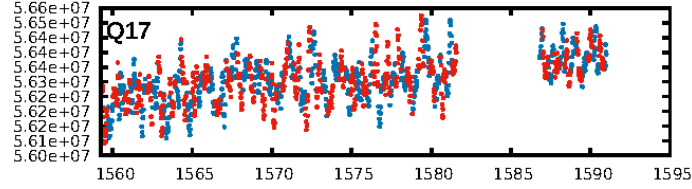
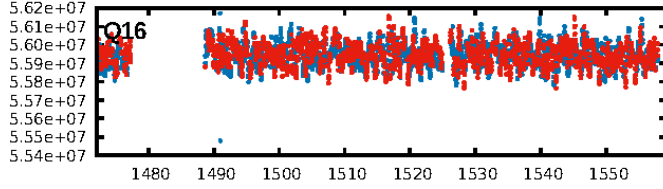
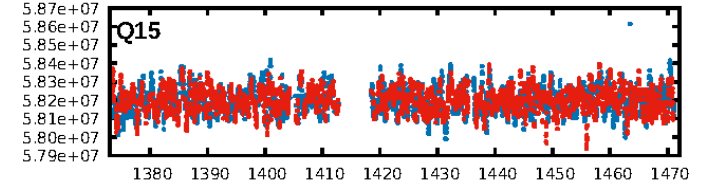
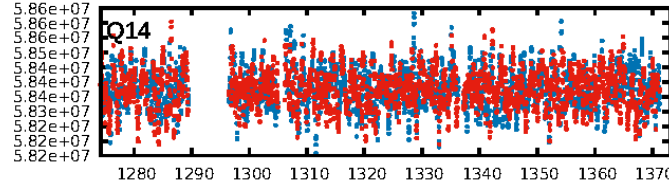
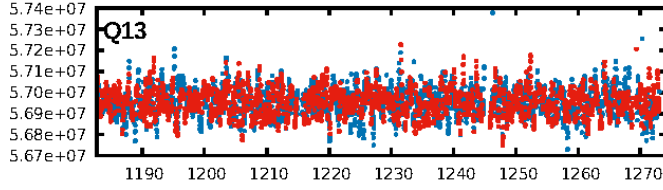
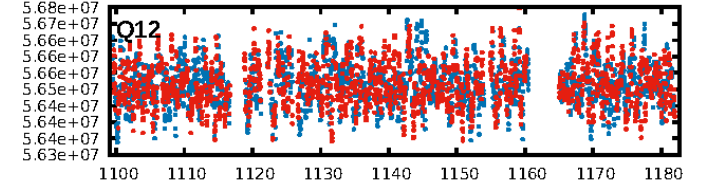
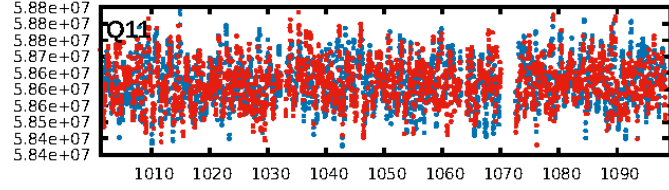
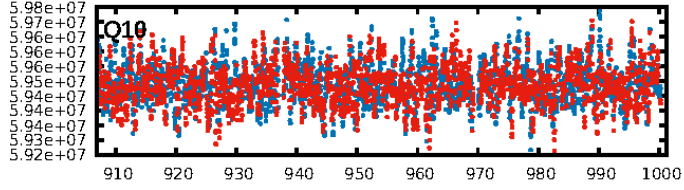
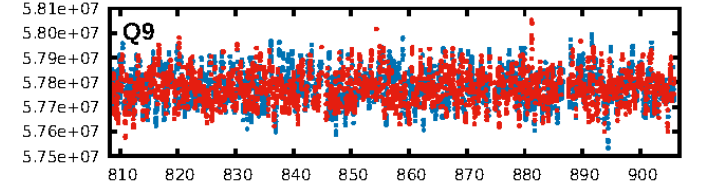
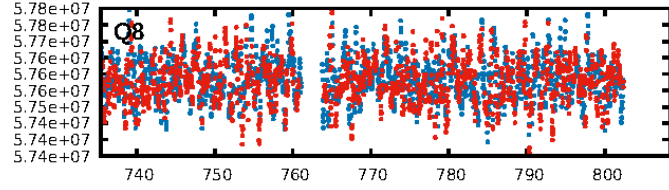
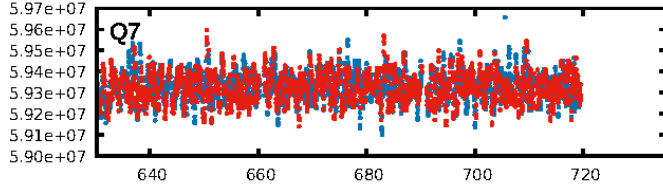
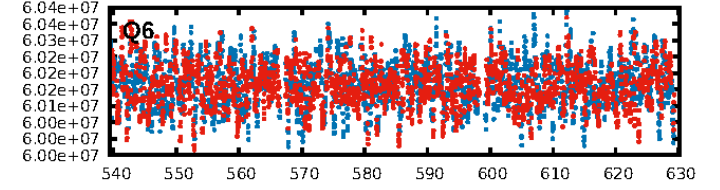
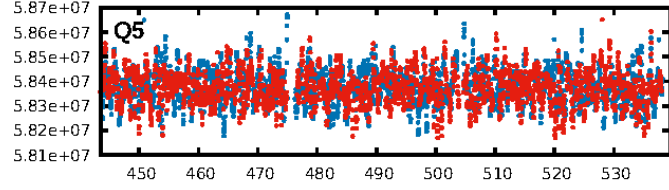
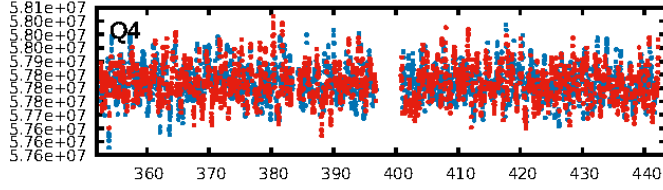
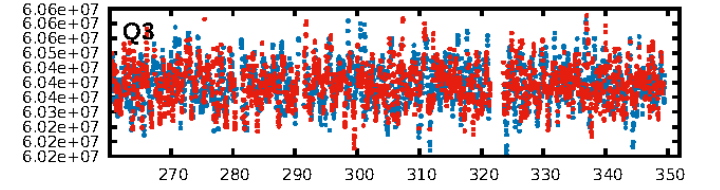
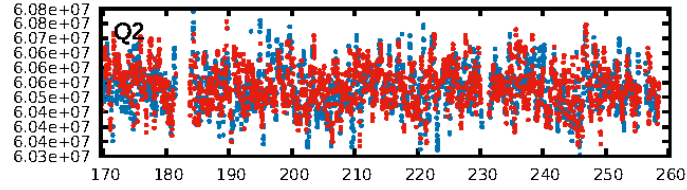
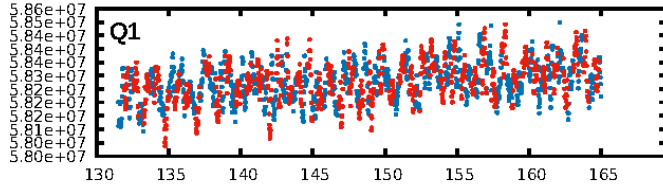
KIC: 12691831 Candidate: 2 of 5 Period: 0.709 d



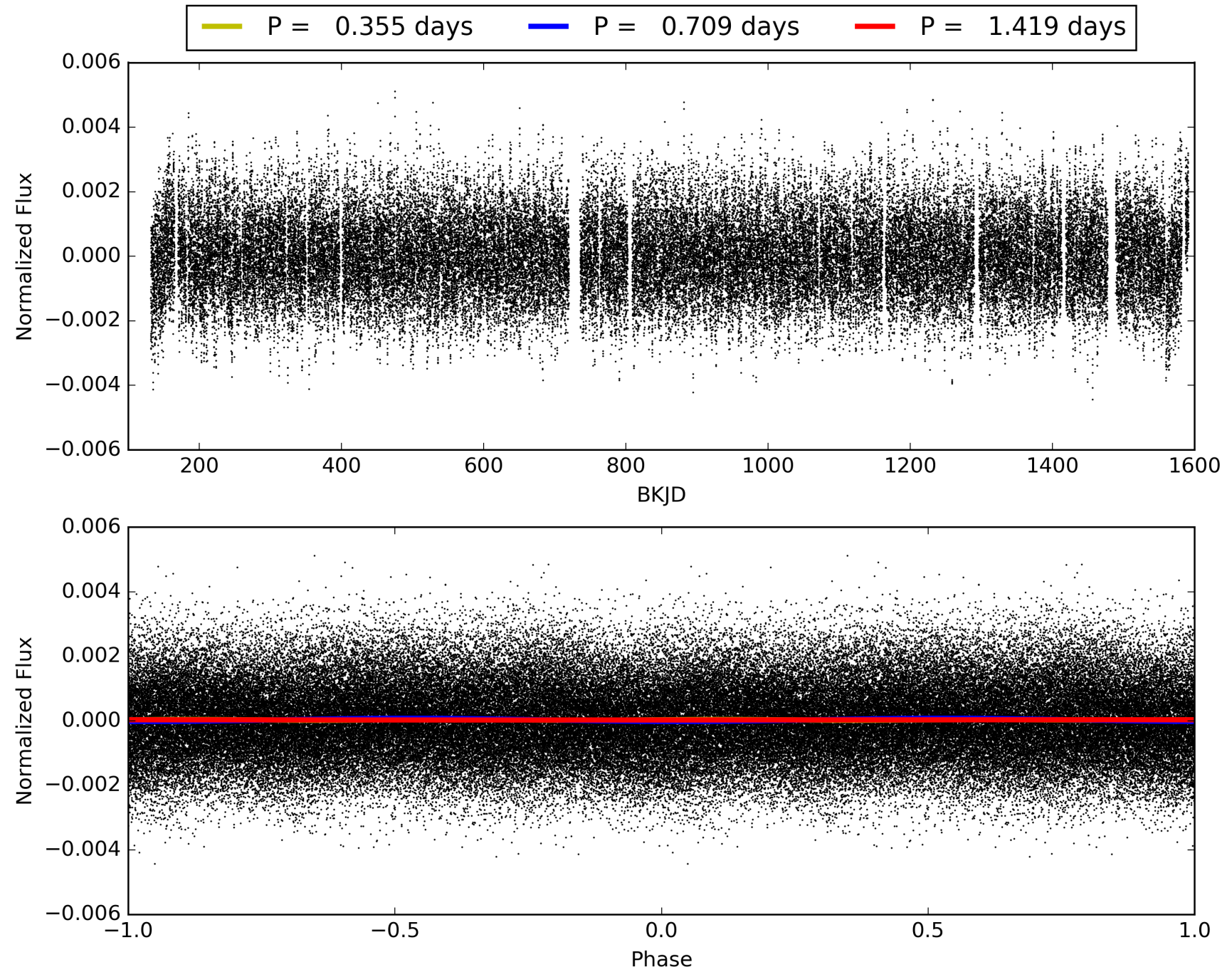
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:57:16 Z

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

TCE 012691831-02, PDC Light Curves

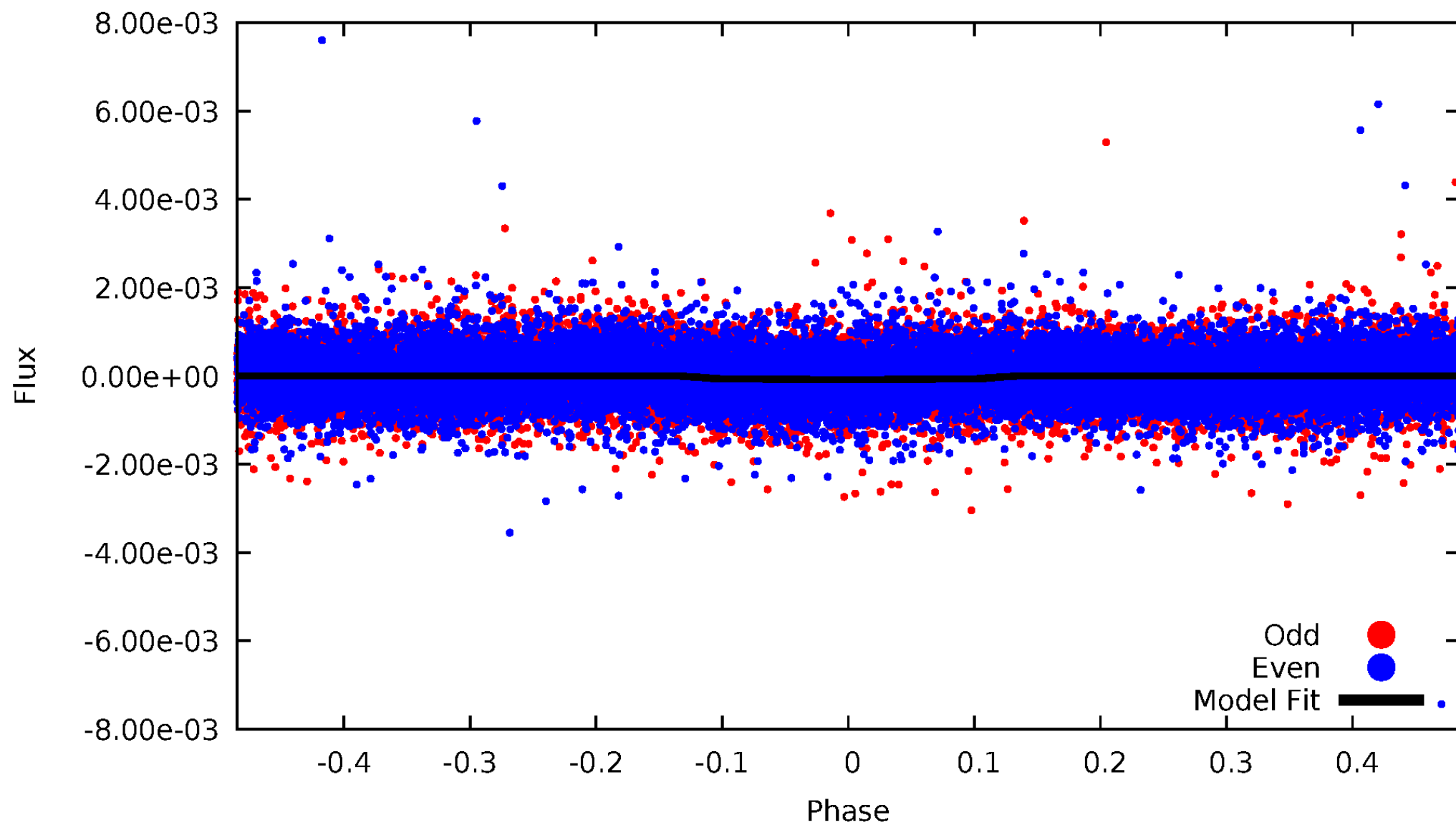


TCE 012691831-02



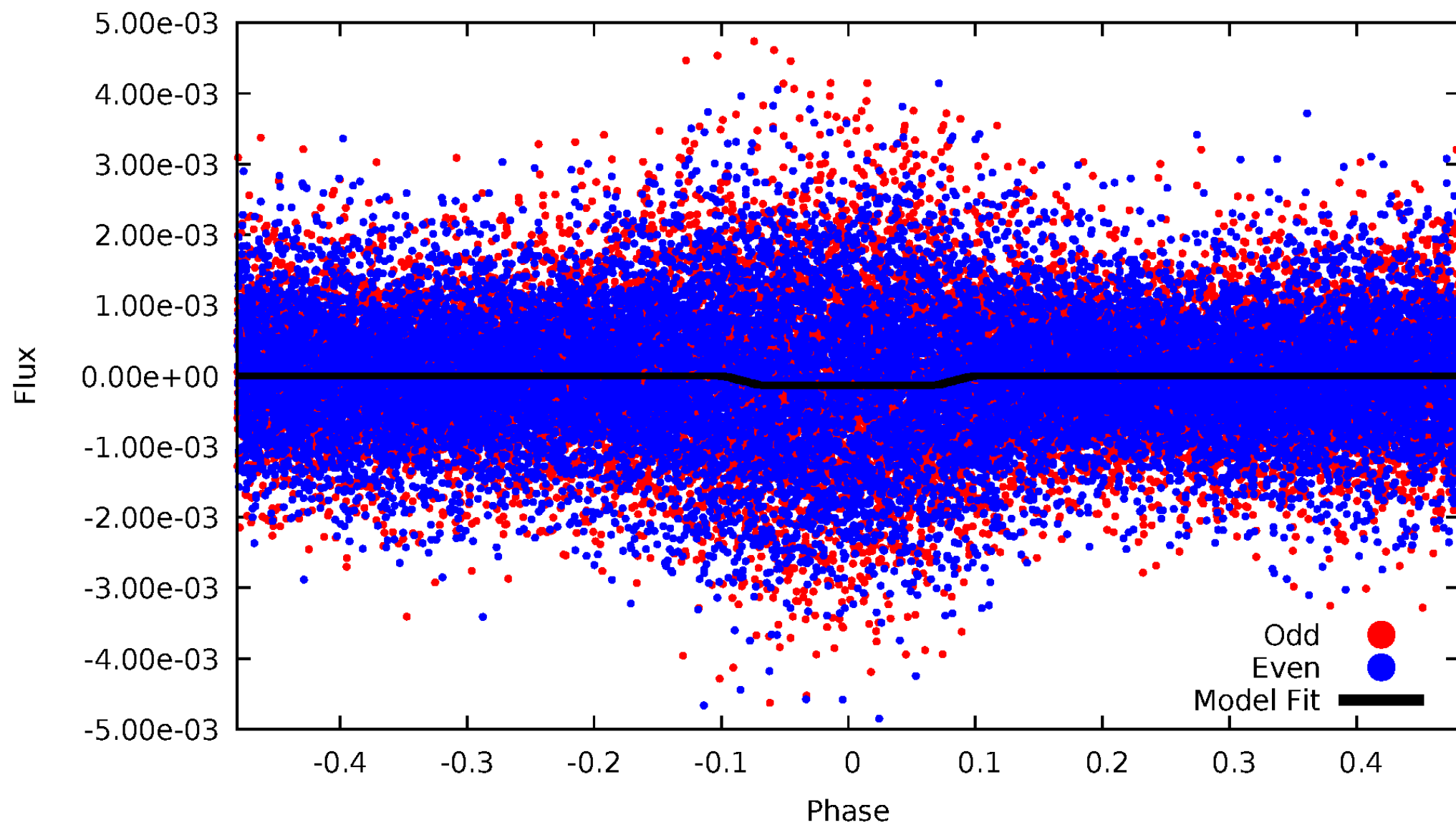
DV Odd/Even

TCE 012691831-02



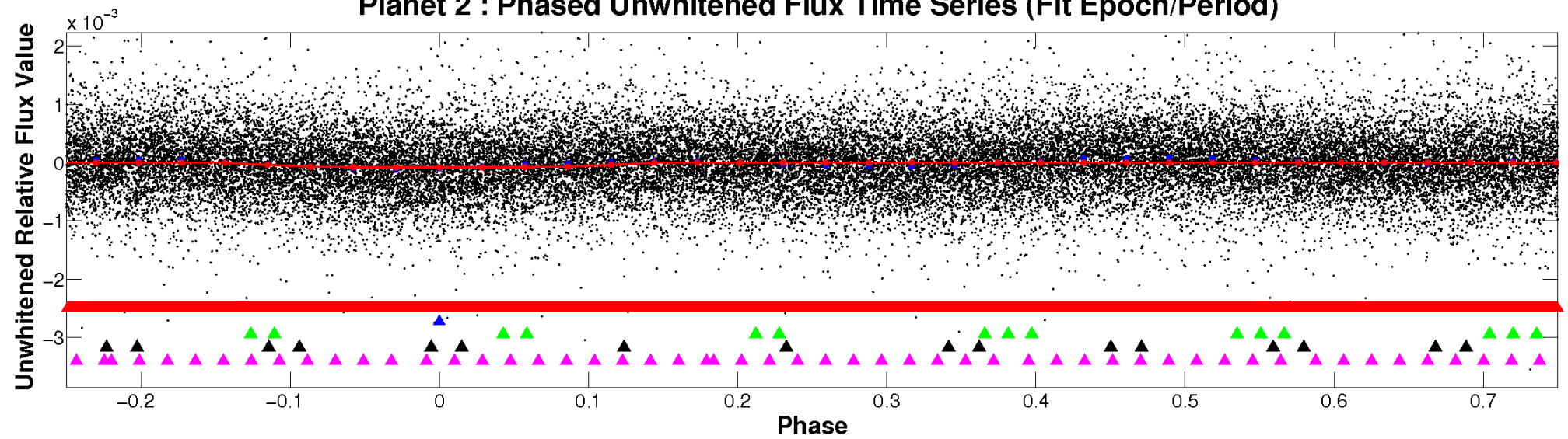
ALT Odd/Even

TCE 012691831-02

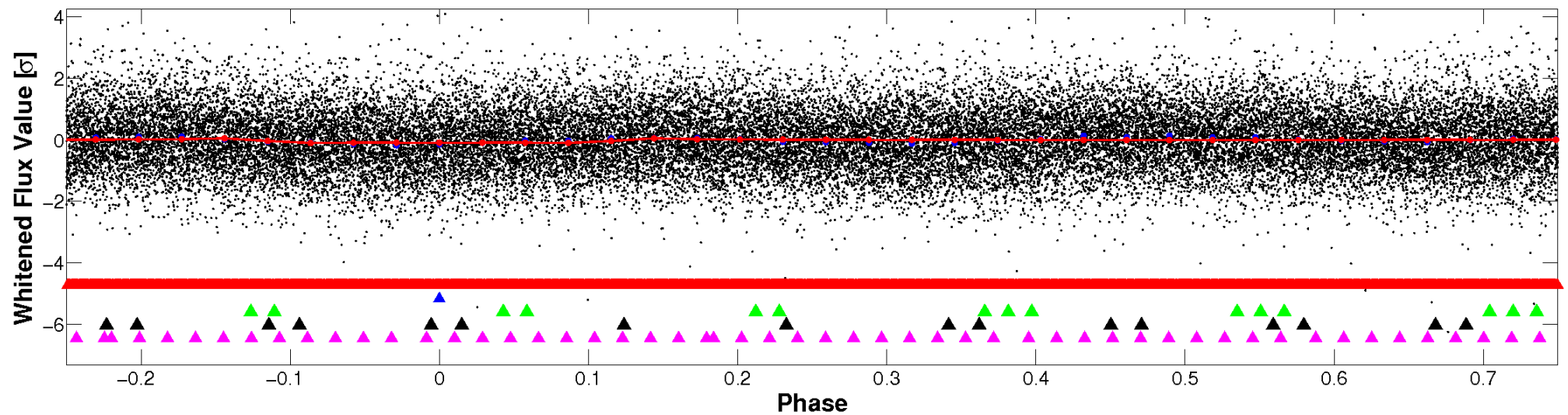


Non-Whitened Vs. Whitened Light Curve

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

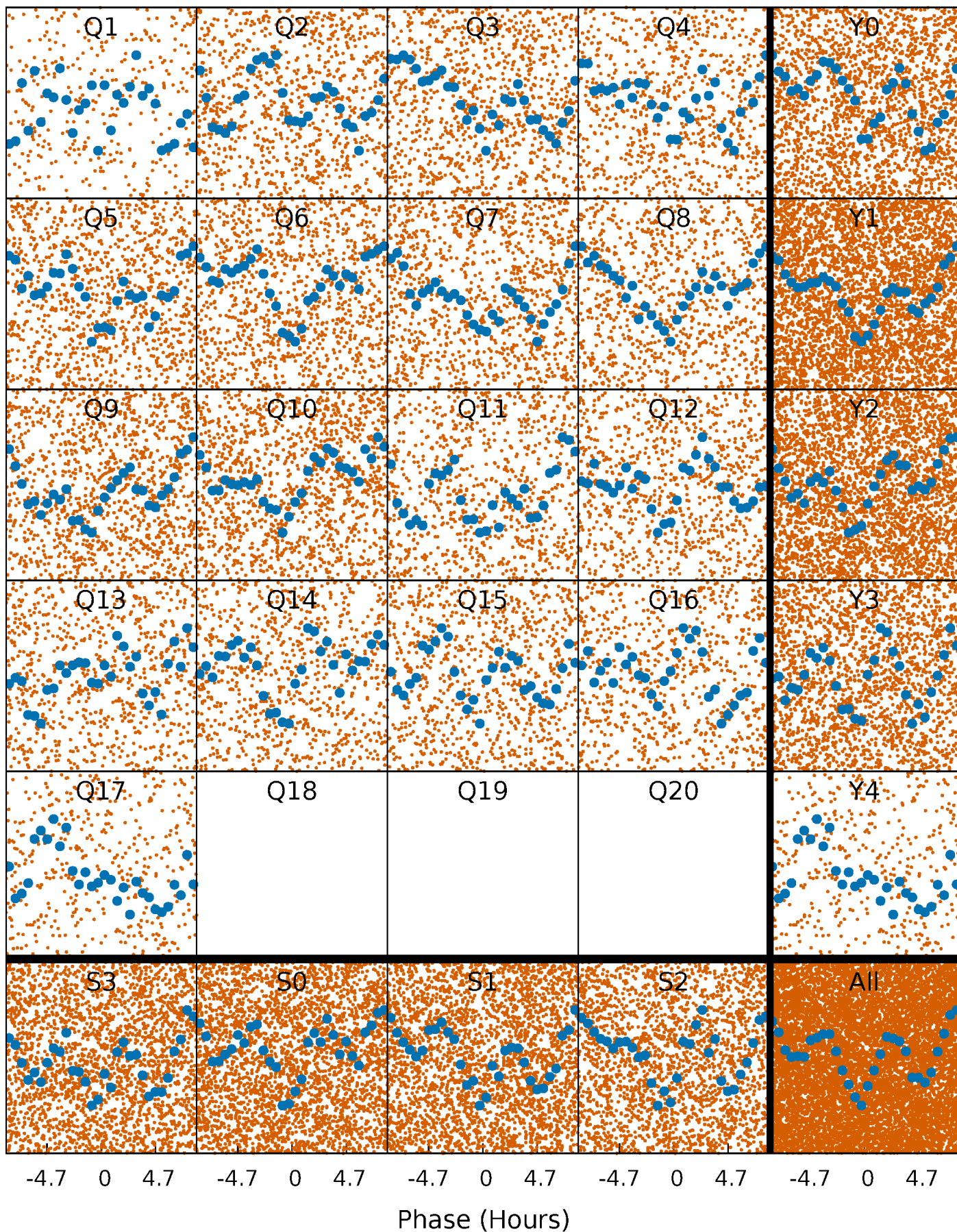


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



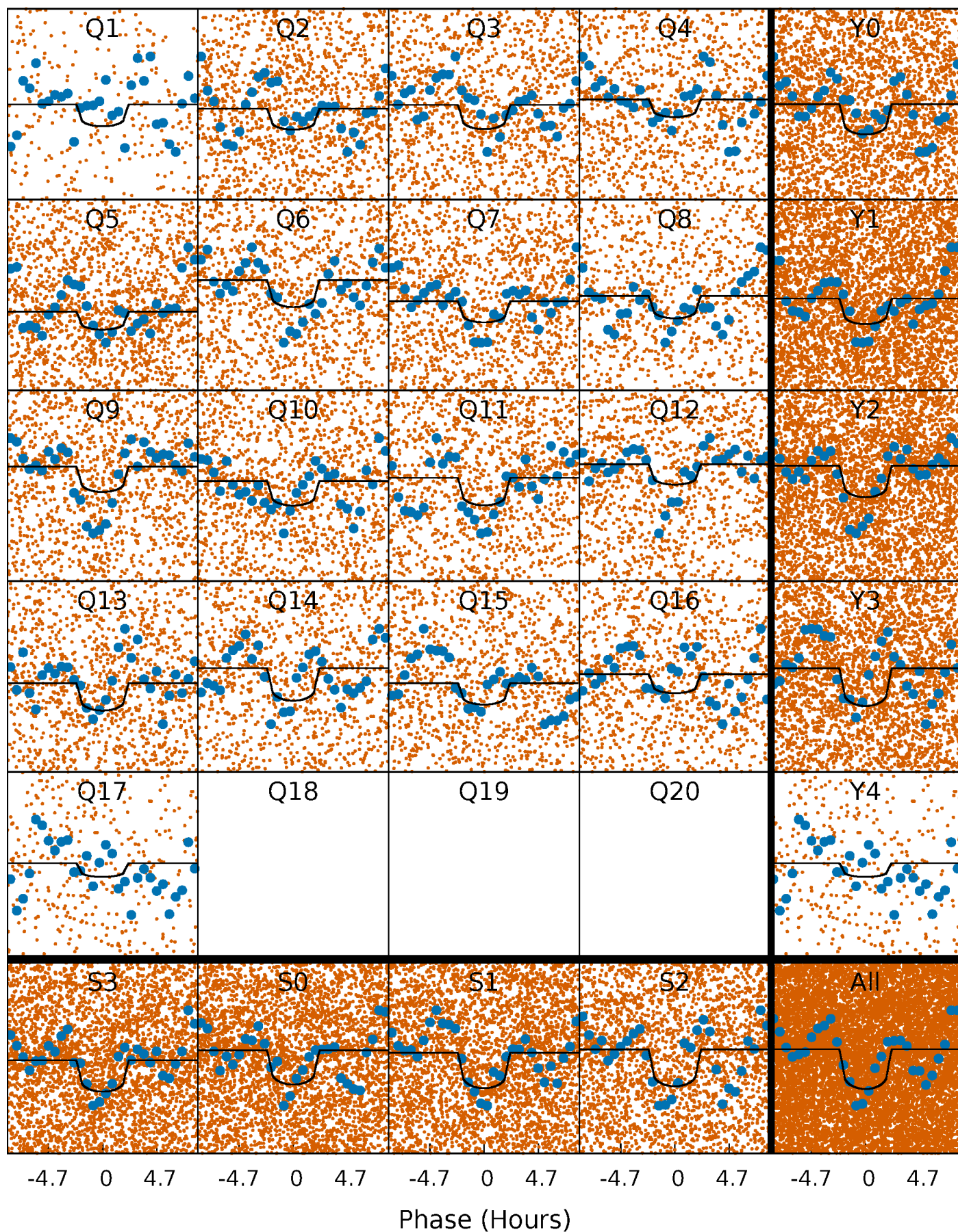
PDC Quarter-Phased Transit Curves

TCE 012691831-02 P= 0.709479 Days $T_0=132.013152$ (BKJD)



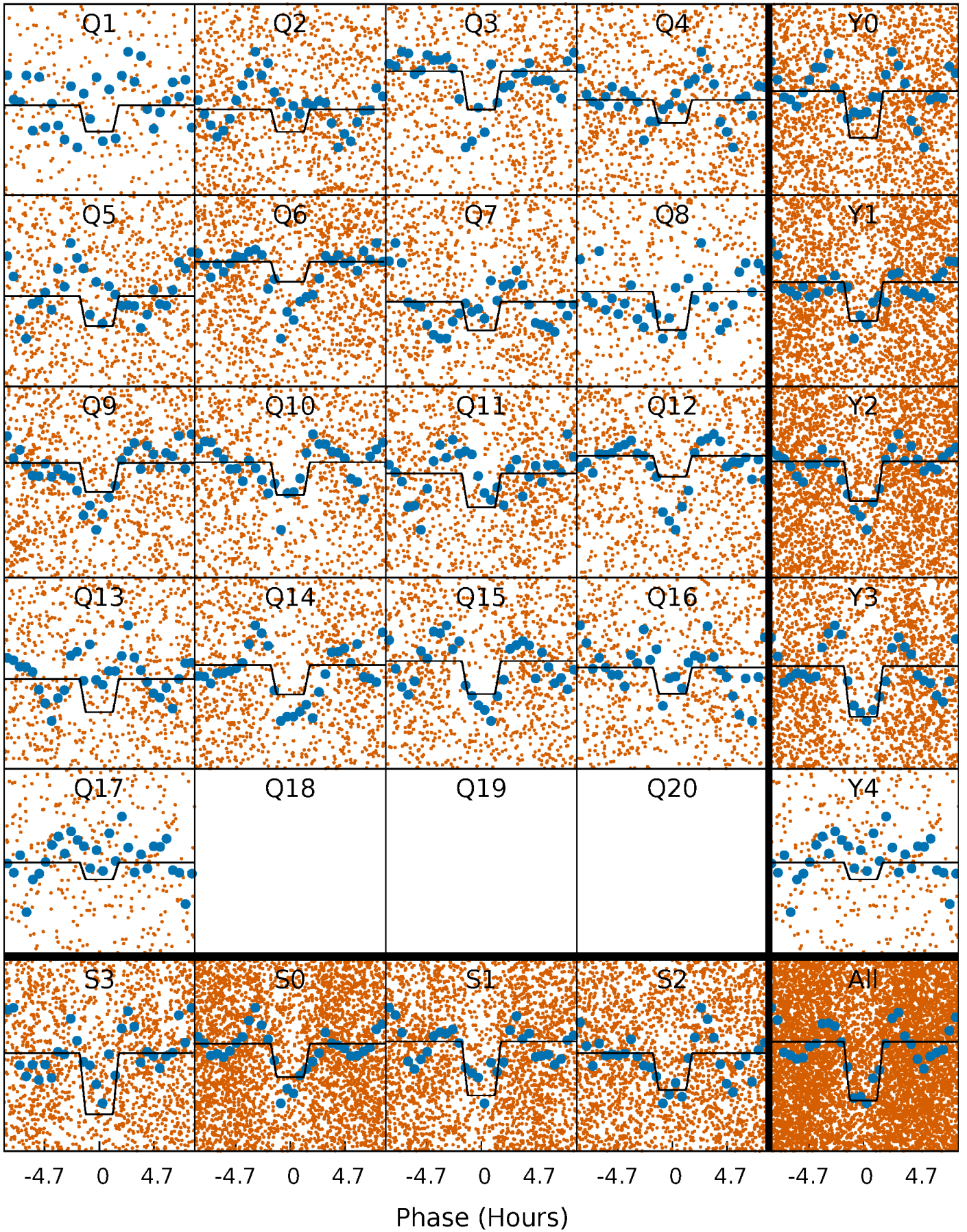
DV Quarter-Phased Transit Curves

TCE 012691831-02 P= 0.709479 Days $T_0=132.013152$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

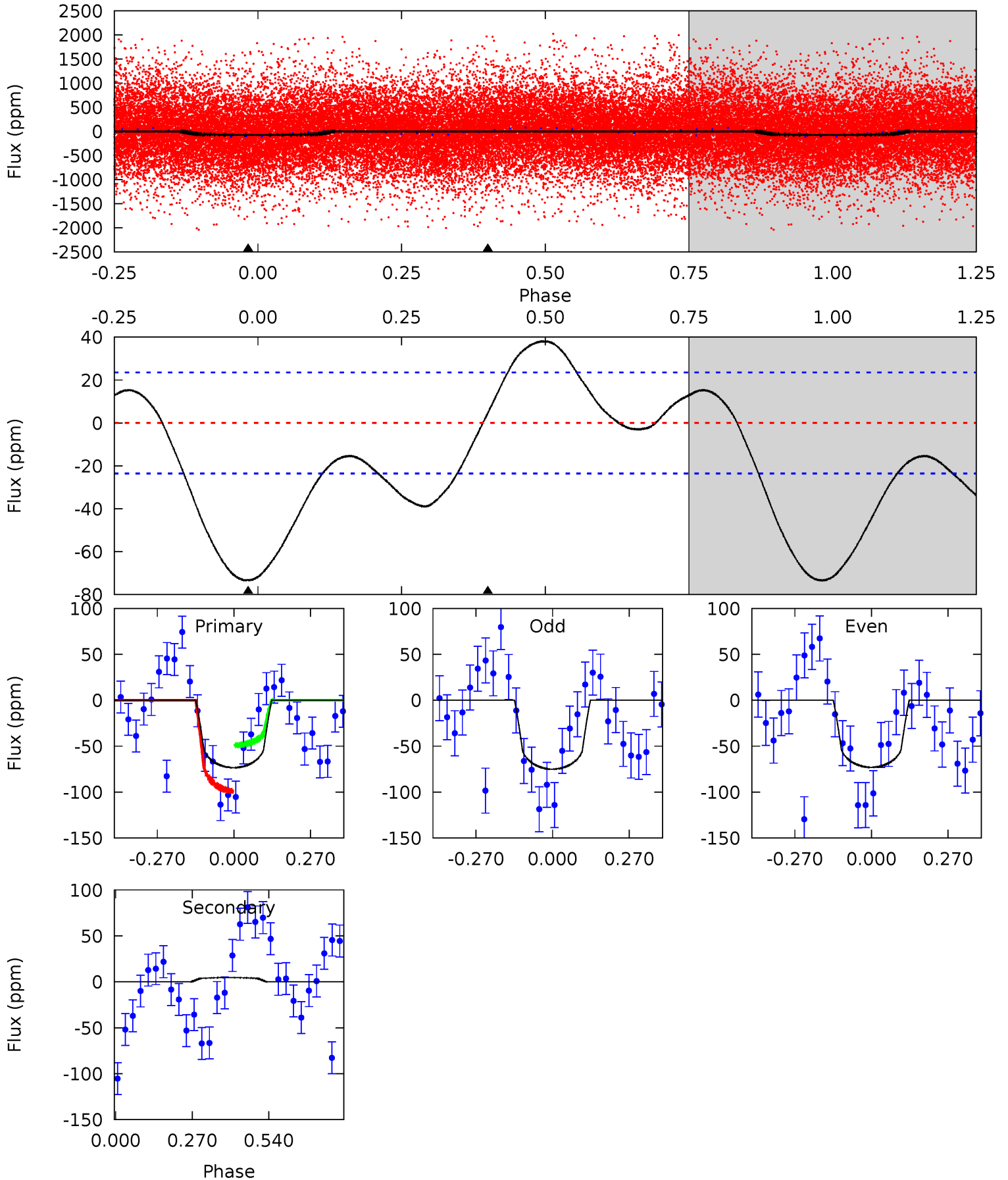
TCE 012691831-02 P= 0.709436 Days $T_0=132.040197$ (BKJD)



DV Model-Shift Uniqueness Test

012691831-02, P = 0.709479 Days, E = 131.303673 Days

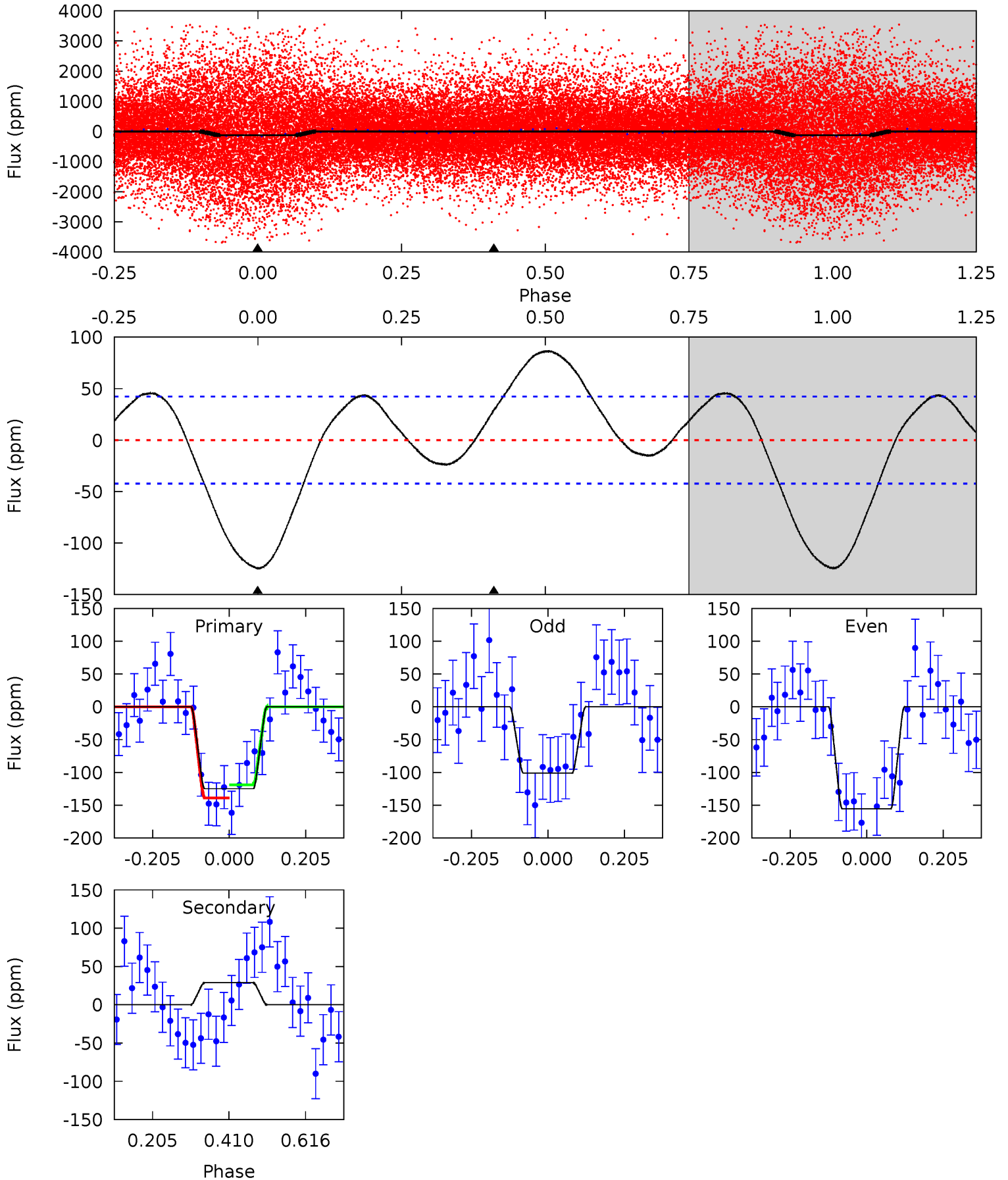
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	-0.85	0	0	4.35	1.10	0.94	13.6	13.6	-0.85	-0.85	0.18	1.10	0.34	4.62



Alt Model-Shift Uniqueness Test

012691831-02, P = 0.709436 Days, E = 131.330761 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	-3.01	0	0	4.41	1.27	1.88	13.0	13.0	-3.01	-3.01	2.87	0.86	0.41	1.08



Stellar Parameters For KIC 012691831

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7389^{+230}_{-307}	$3.634^{+0.495}_{-0.055}$	$-0.120^{+0.250}_{-0.300}$	$3.600^{+0.331}_{-1.873}$	$2.034^{+0.151}_{-0.604}$	$0.061^{+0.315}_{-0.012}$
	+3%/-4%	+14%/-2%	+208%/-250%	+9%/-52%	+7%/-30%	+513%/-20%
Source	KIC0	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 012691831-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	5 ± 5	$2.89^{+1.73}_{-1.48}$	5941^{+368}_{-730}	-5207^{+634}_{-750}	$-0.099^{+0.116}_{-0.367}$
Alt.	29 ± 10	$3.87^{+1.91}_{-1.50}$	5937^{+382}_{-727}	-5774^{+535}_{-1063}	$-0.383^{+0.217}_{-0.696}$

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 $A_{obs} \gg 1.0$

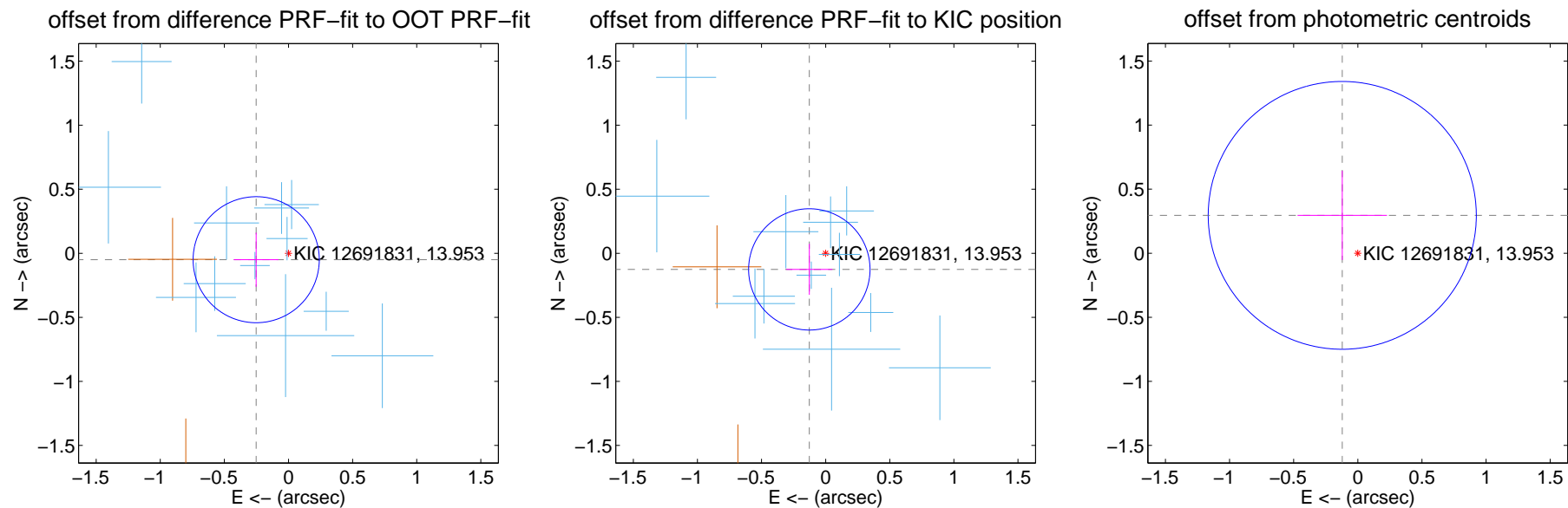
DV Centroid Data

Supplemental centroid analysis for 012691831-02. Kepler magnitude: 13.95. Transit SNR 8.57

There are 12 quarters with good PRF difference image offsets

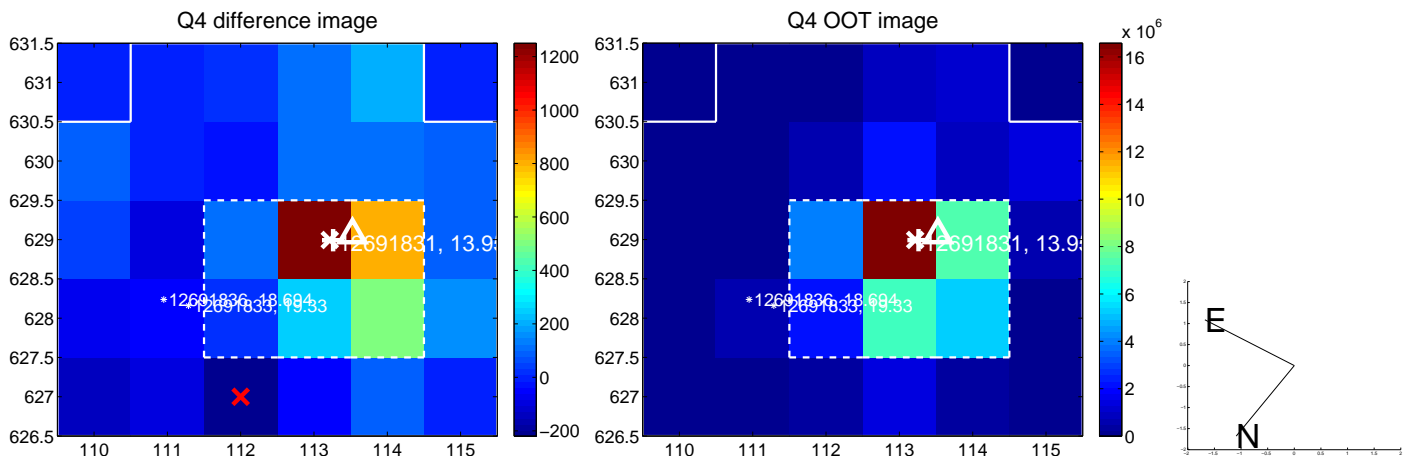
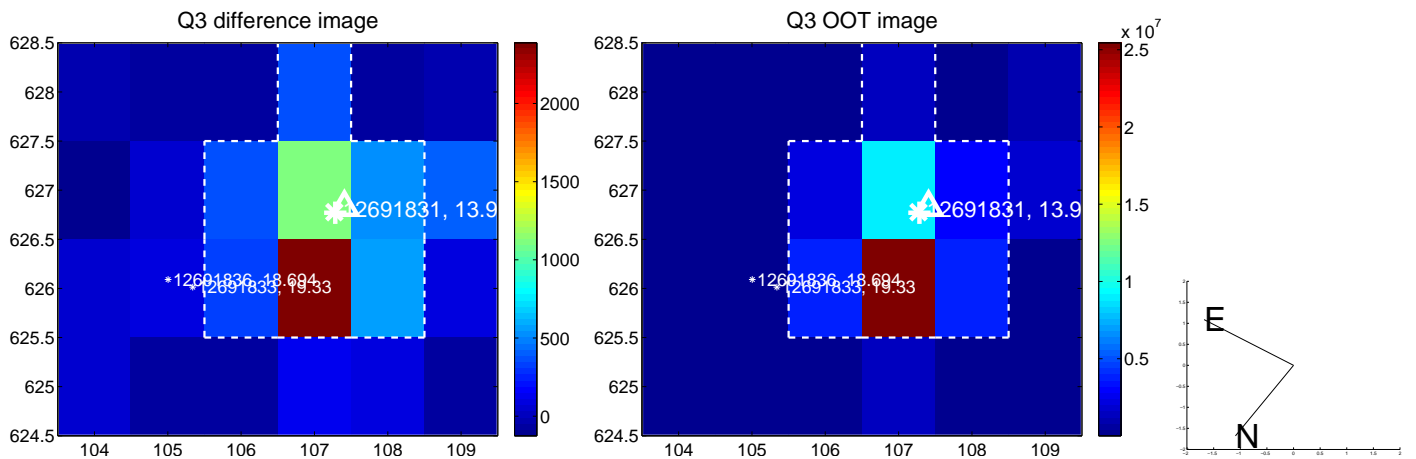
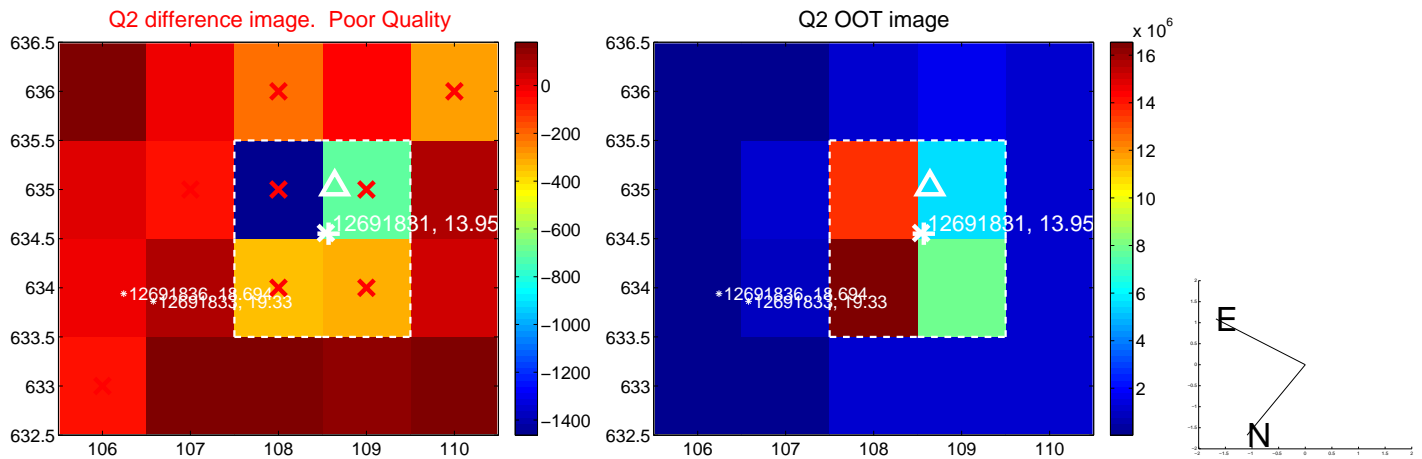
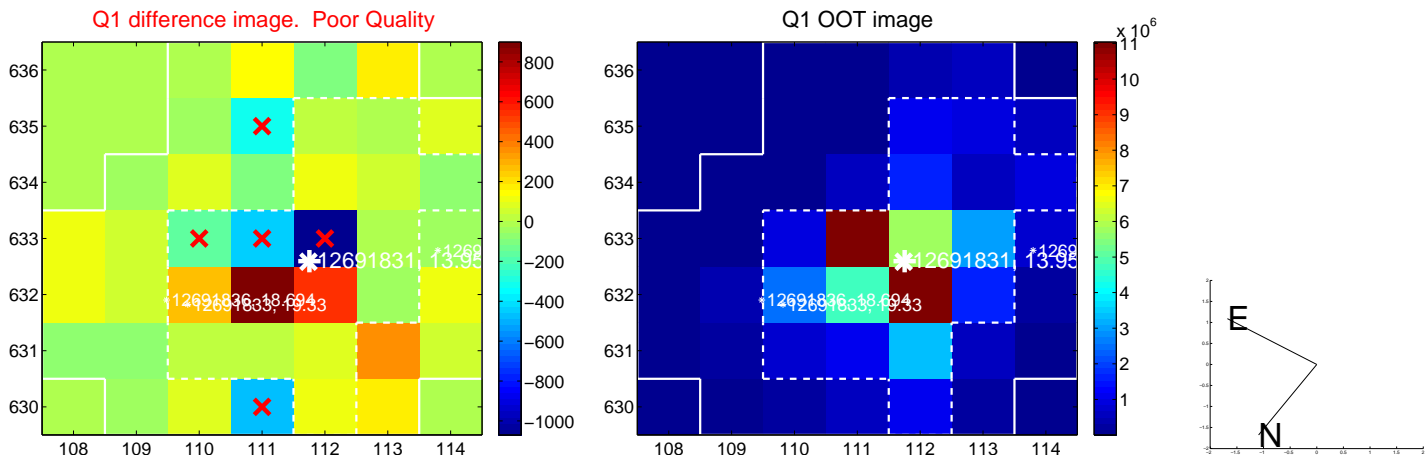
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.257 ± 0.164	1.57	0.252 ± 0.174	-0.050 ± 0.211
PRF-fit source offset from KIC position	0.179 ± 0.158	1.13	0.127 ± 0.180	-0.126 ± 0.199
photometric centroid source offset	0.32 ± 0.35	0.92	0.12 ± 0.35	0.30 ± 0.35

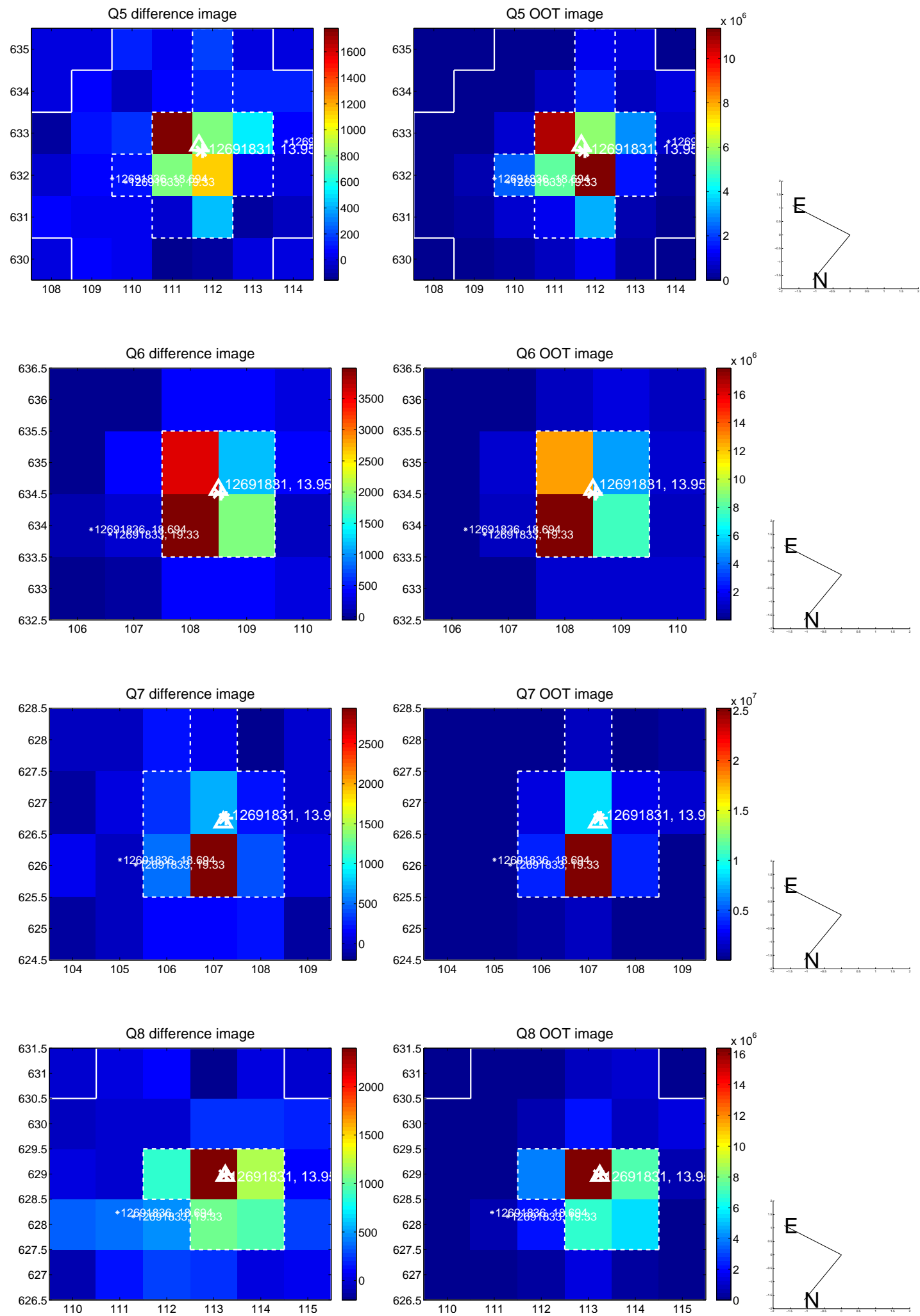


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

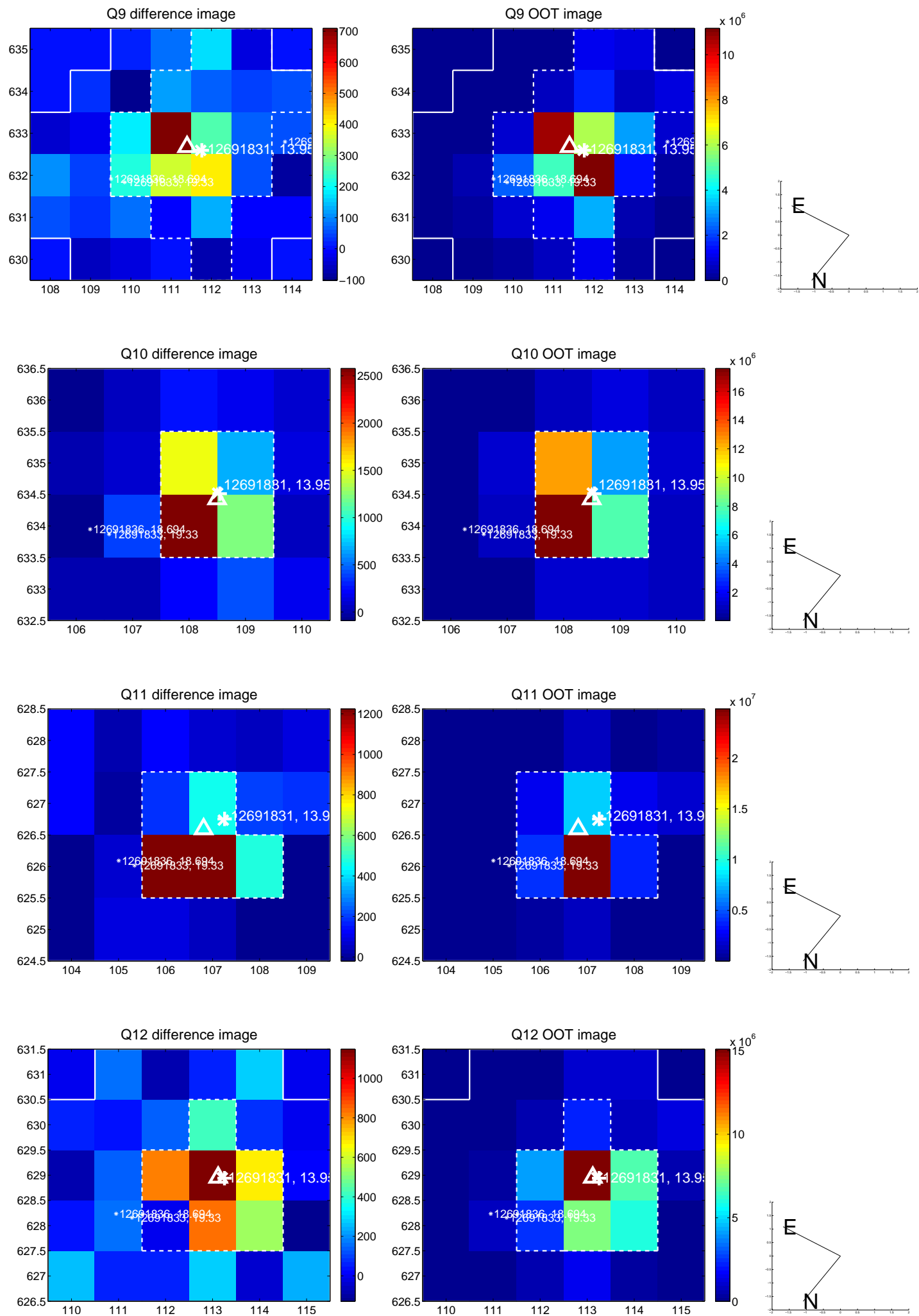
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



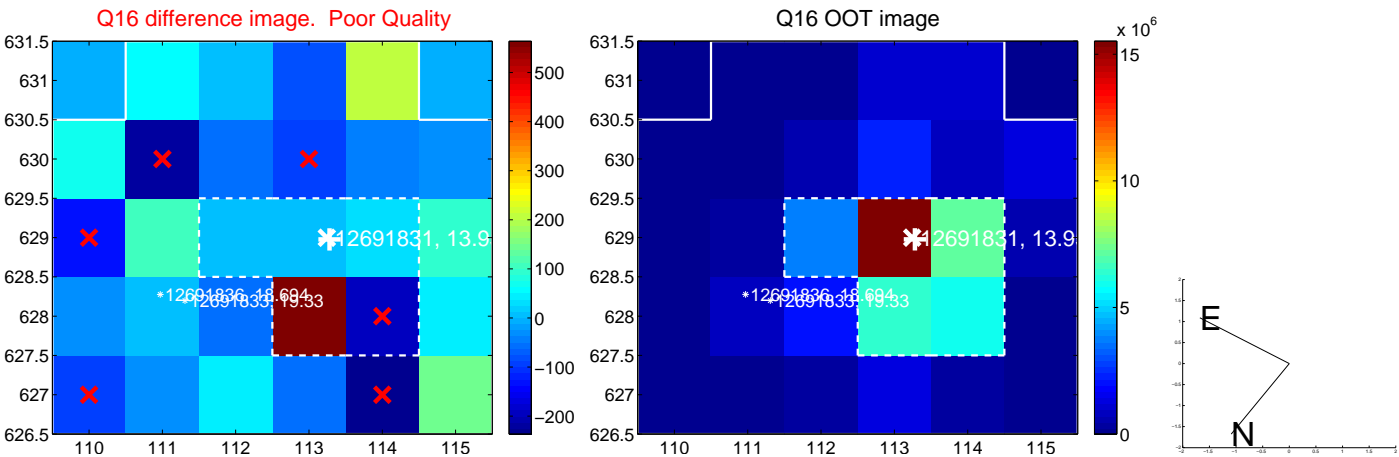
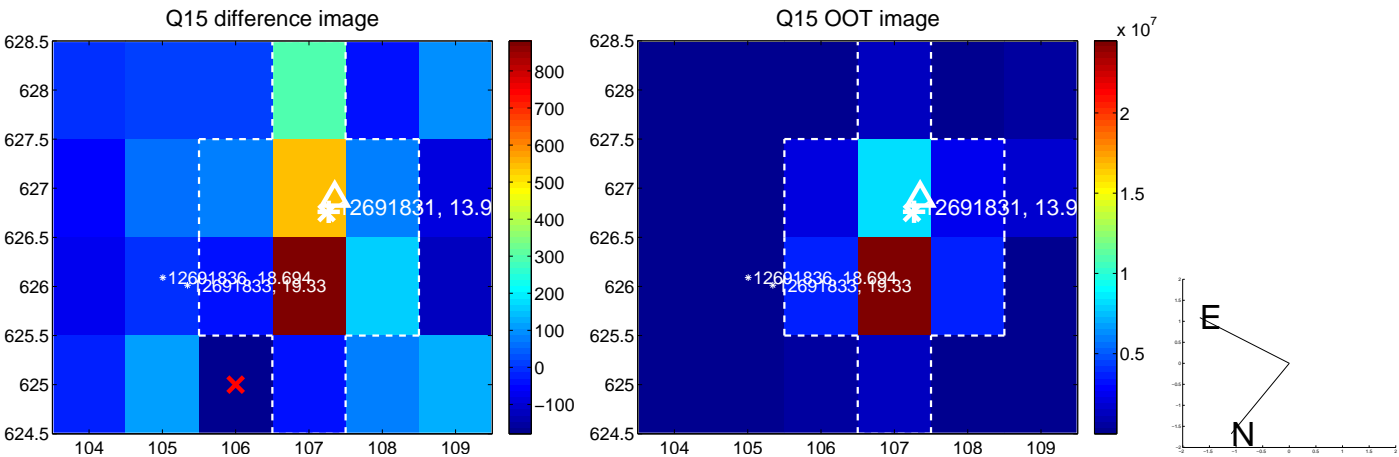
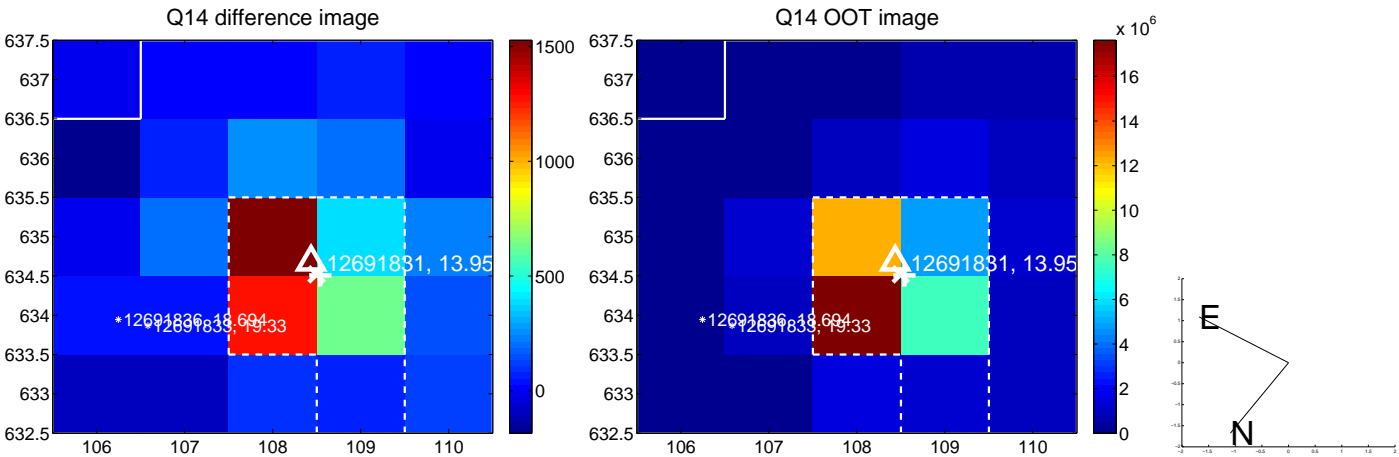
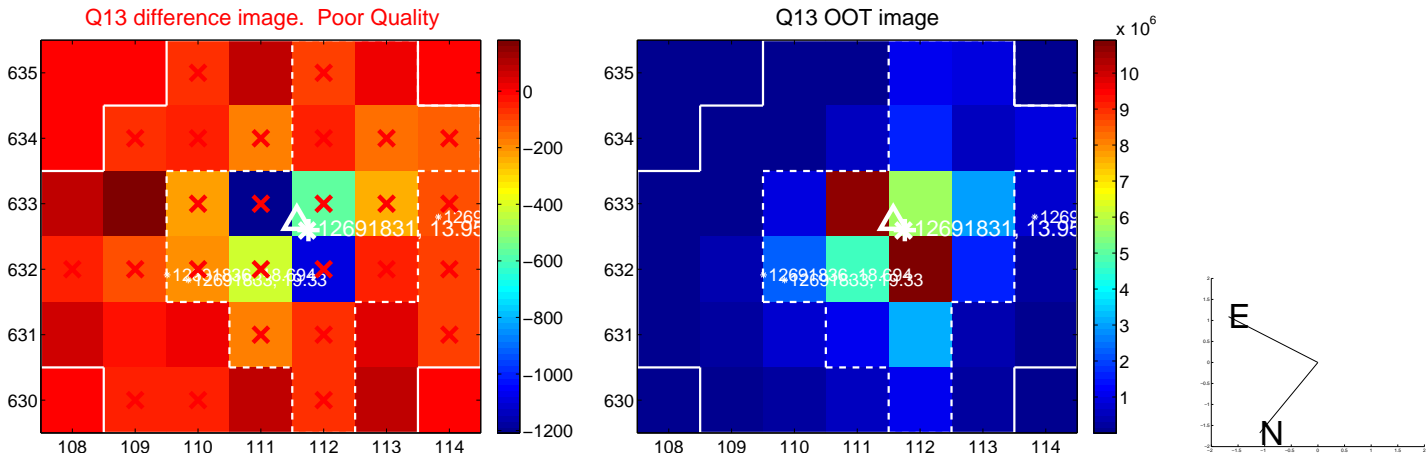
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



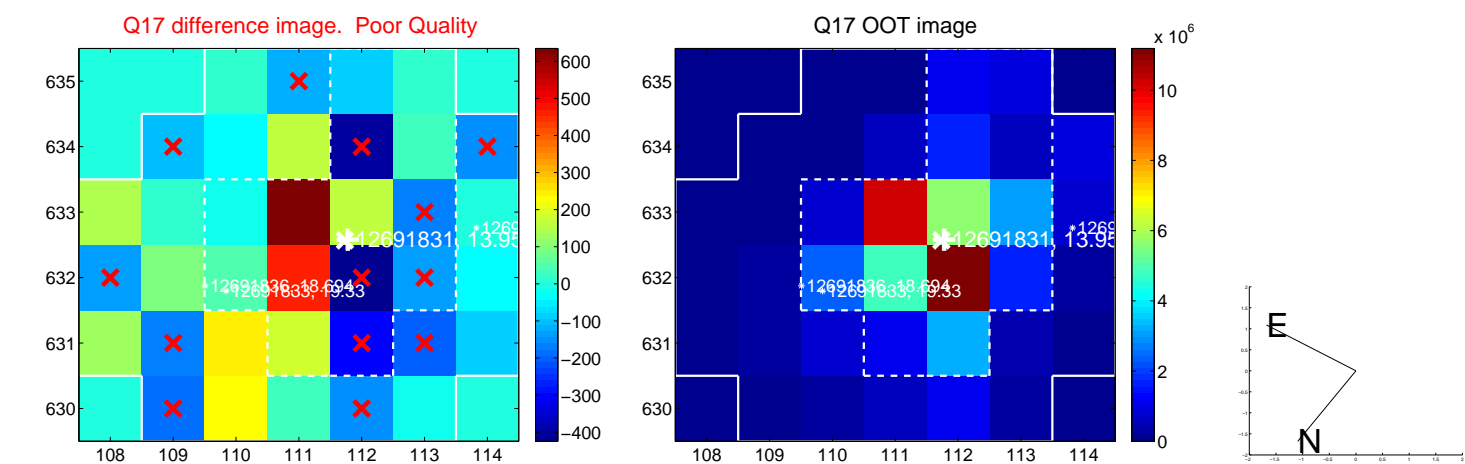
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



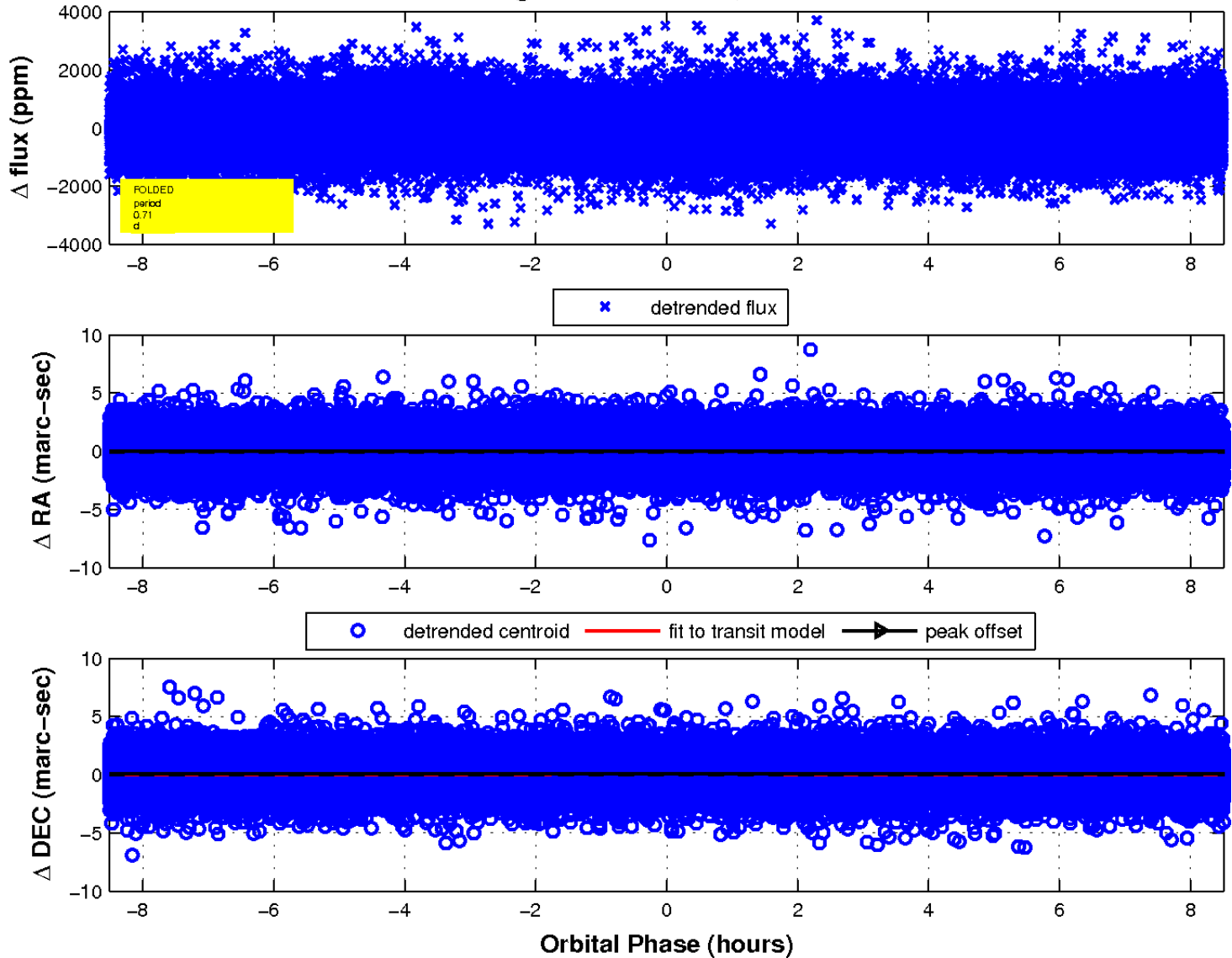
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

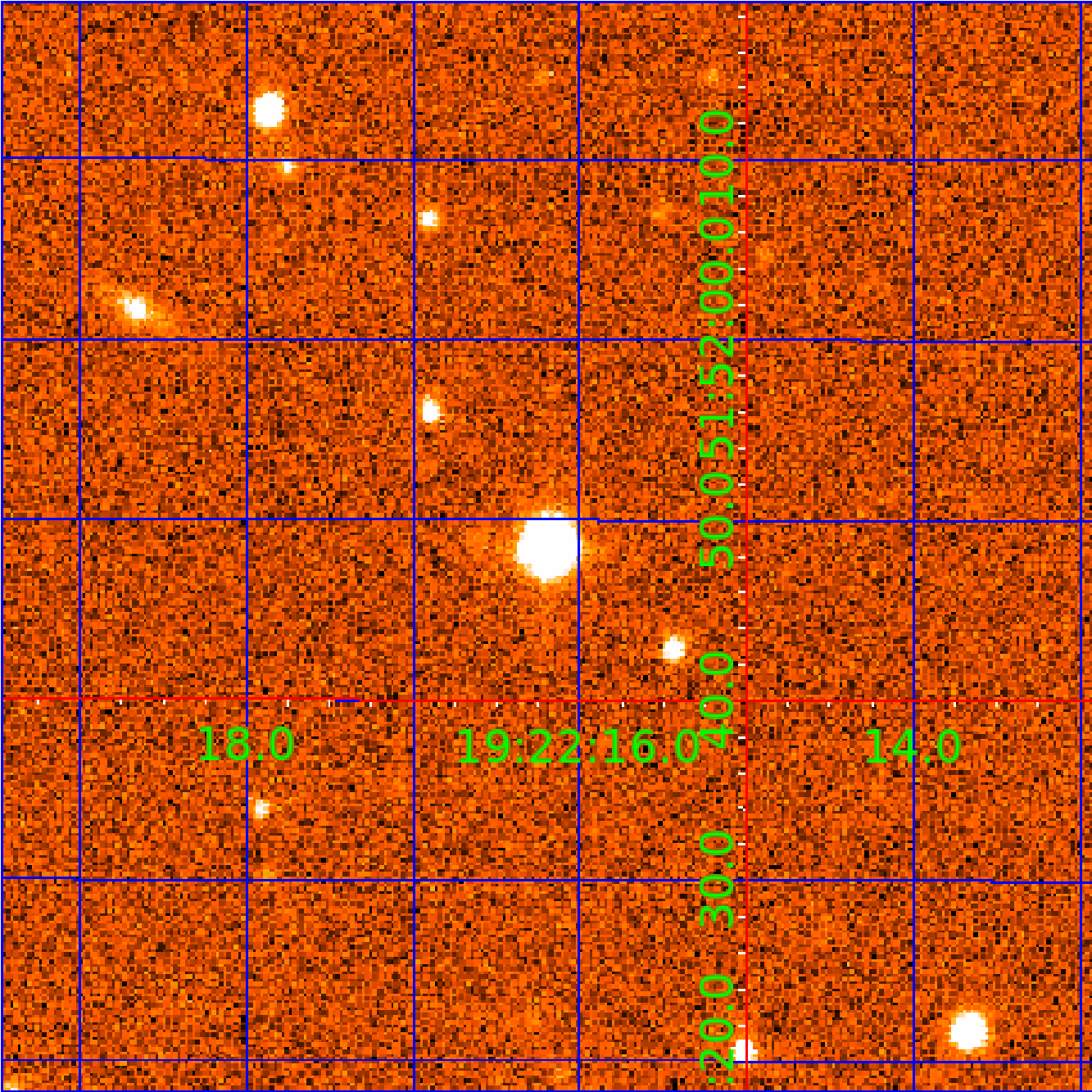


fluxWeightedCentroids, Planet 2 of 5



UKIRT Image

Declination



KIC 012691831

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})
012691831-01	OBS	No	0.786167	132.005082	87.3	2.657	10.0	10.8	3.60	7389	3.91	77520.97
012691831-02	OBS	No	0.709479	132.013152	79.9	4.126	10.5	8.6	3.60	7389	3.29	88890.01
012691831-03	OBS	No	99.916368	163.752273	1572.9	3.011	10.3	11.1	3.60	7389	15.10	121.32
012691831-04	OBS	No	93.728386	141.493204	1316.9	3.820	9.7	10.4	3.60	7389	23.34	132.11
012691831-05	OBS	No	27.246642	146.046741	662.9	3.037	8.1	7.4	3.60	7389	10.30	686.05

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012691831-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
012691831-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
012691831-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
012691831-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
012691831-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

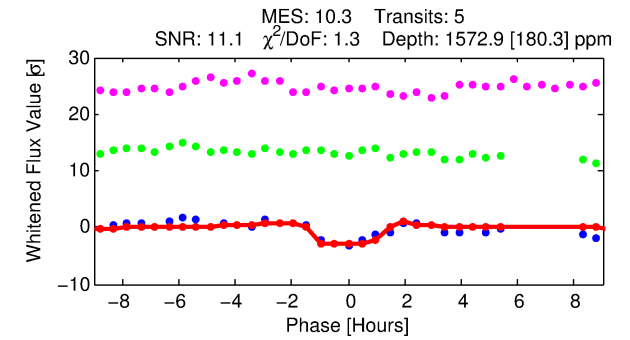
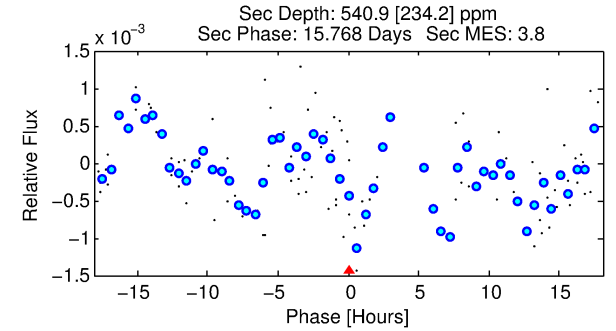
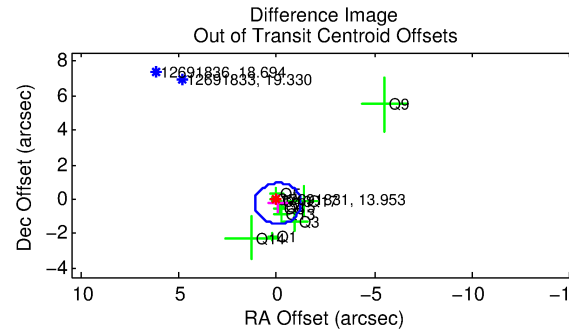
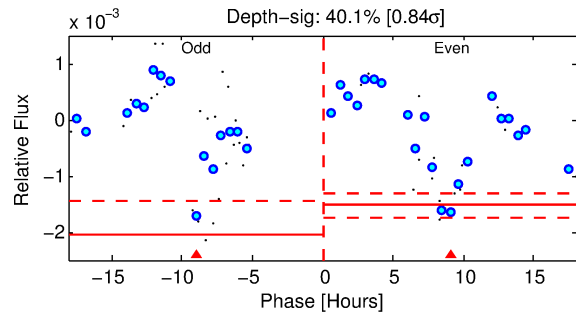
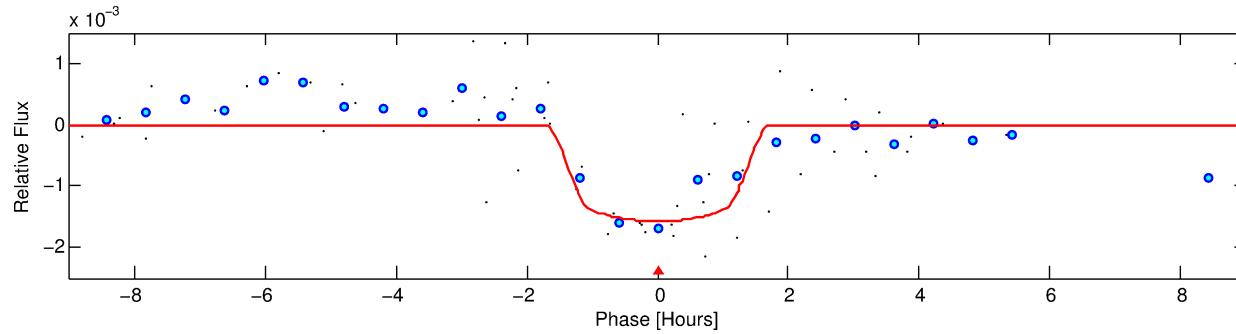
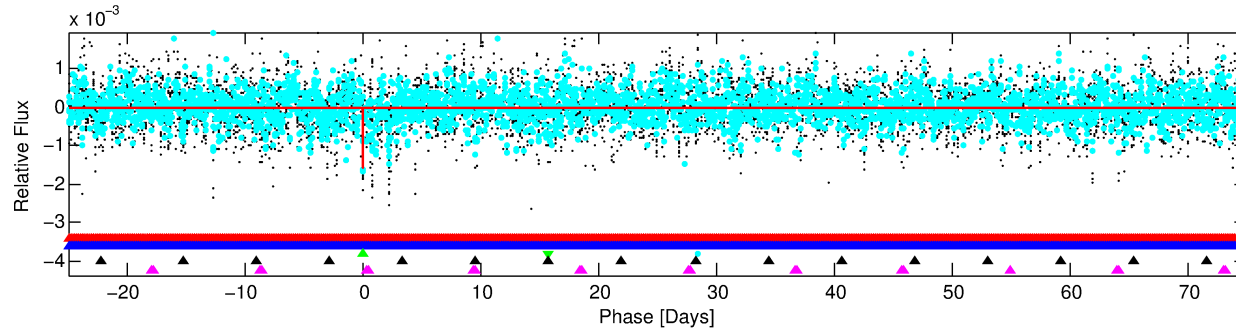
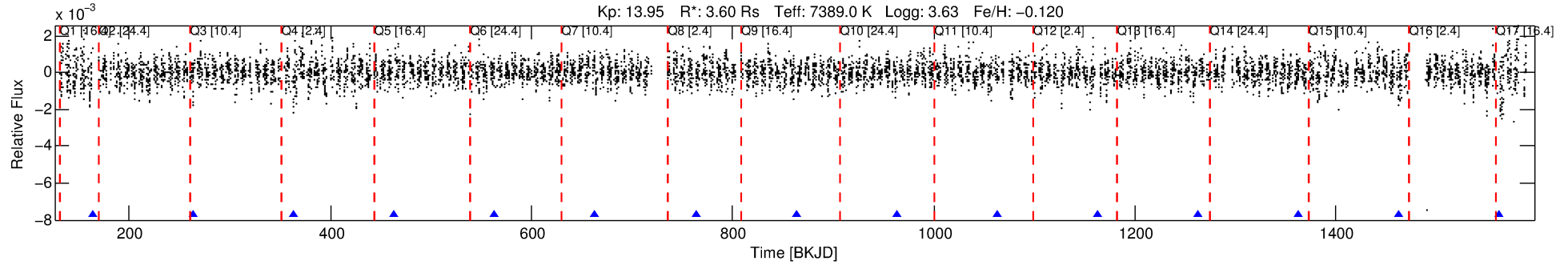
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012691831-03

No Significant Match Found

DV One-Page Summary

KIC: 12691831 Candidate: 3 of 5 Period: 99.916 d



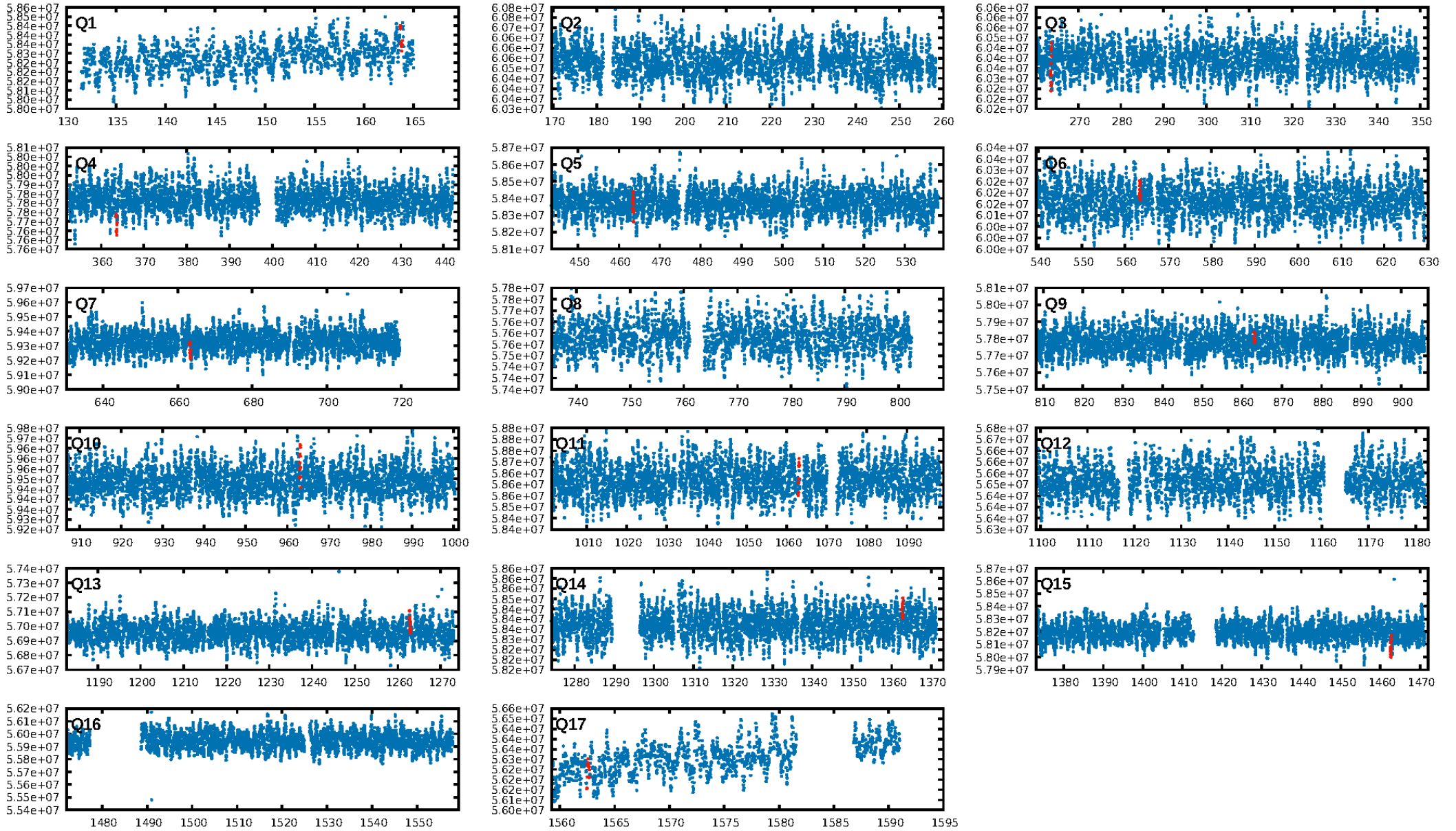
DV Fit Results:

Period = 99.91637 [0.00061] d
Epoch = 163.7523 [0.0058] BKJD
Rp/R* = 0.0384 [0.0179]
a/R* = 208.70 [536.22]
b = 0.63 [2.45]
Seff = 121.32 [103.32]
Teq = 846 [180] K
Rp = 15.10 [10.55] Re
a = 0.5341 [0.2748] AU
Ag = 372.56 [493.72] [0.75 σ]
Teffp = 5748 [1498] K [3.25 σ]

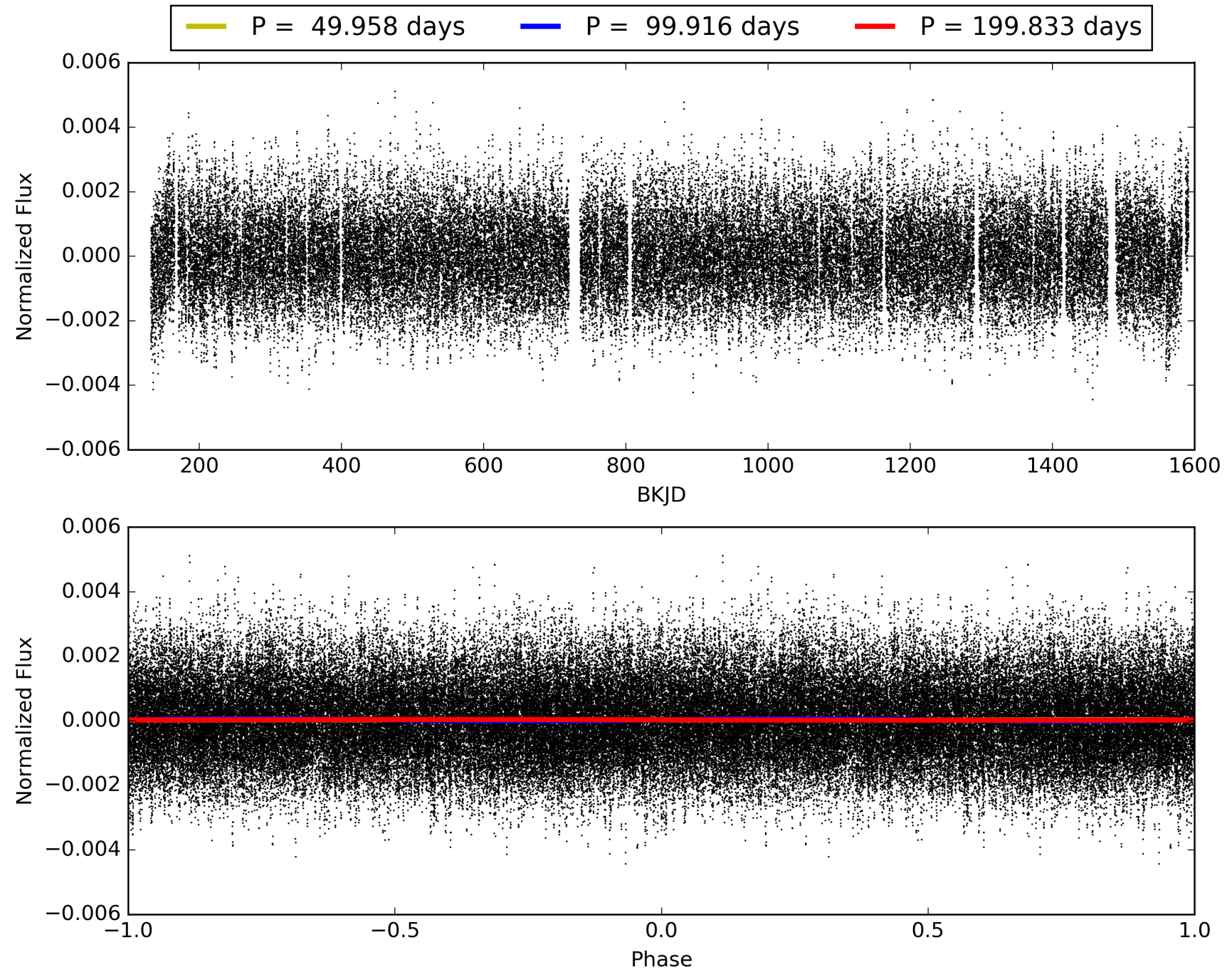
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [30.53 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.6%
ModelChiSquareGof-sig: 99.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.3205
Centroid-sig: 0.3%
Centroid-so: 0.436 arcsec [1.70 σ]
OotOffset-rm: 0.256 arcsec [0.65 σ]
KicOffset-rm: 0.379 arcsec [1.32 σ]
OotOffset-st: 3/3/1/5 [12]
KicOffset-st: 3/3/1/5 [12]
DiffImageQuality-fgm: 0.50 [6/12]
DiffImageOverlap-fno: 0.00 [0/12]

TCE 012691831-03, PDC Light Curves

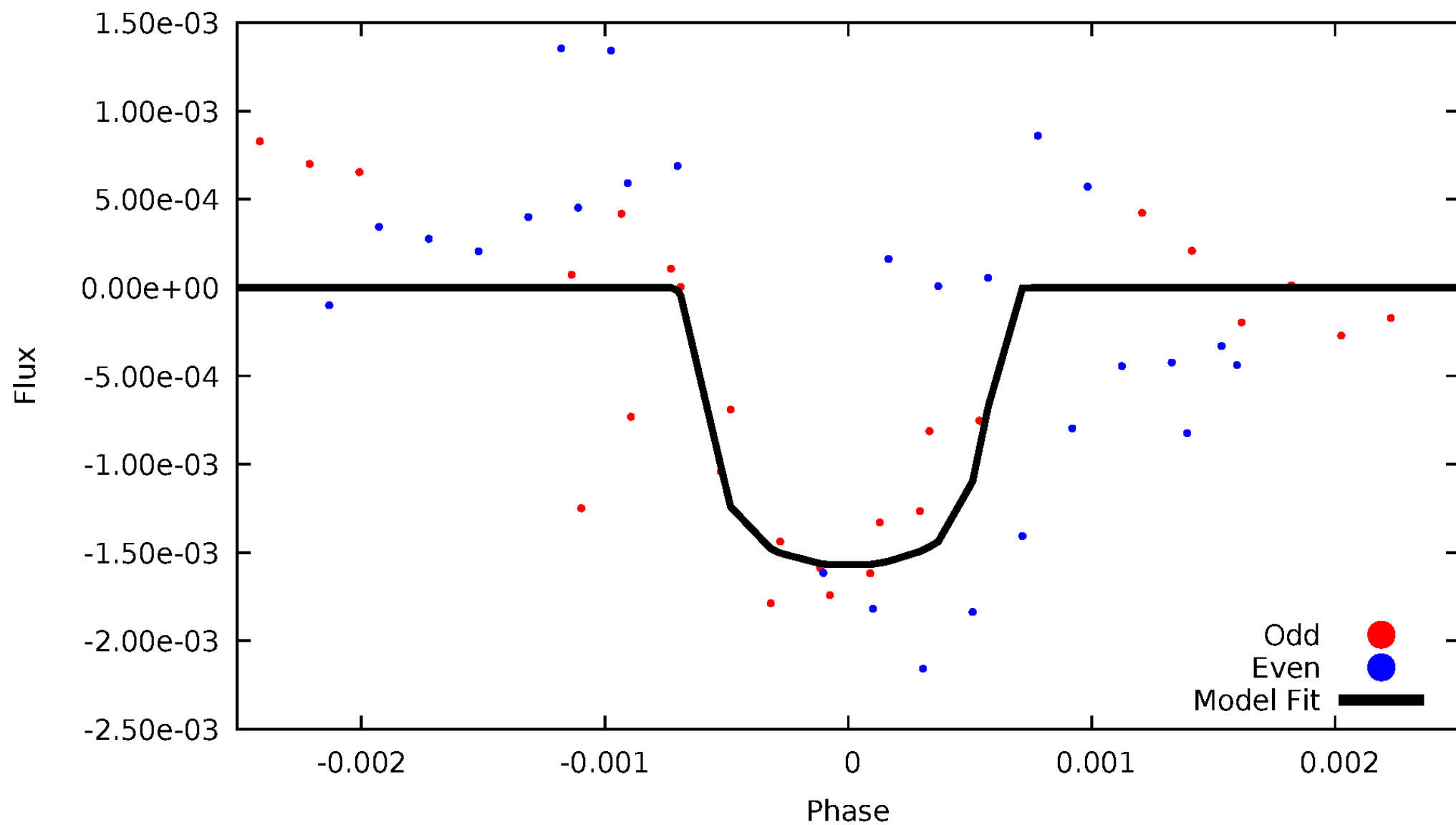


TCE 012691831-03



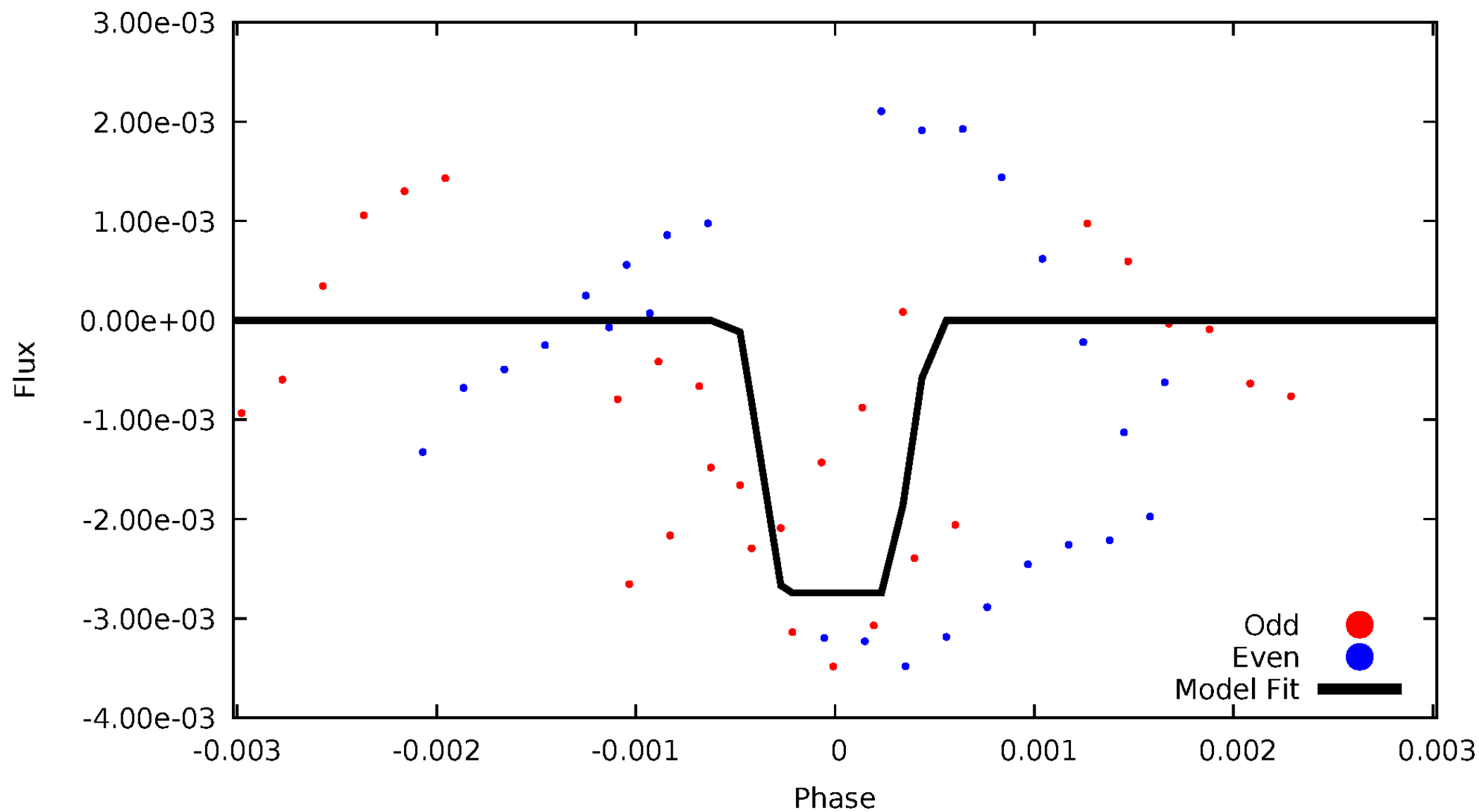
DV Odd/Even

TCE 012691831-03



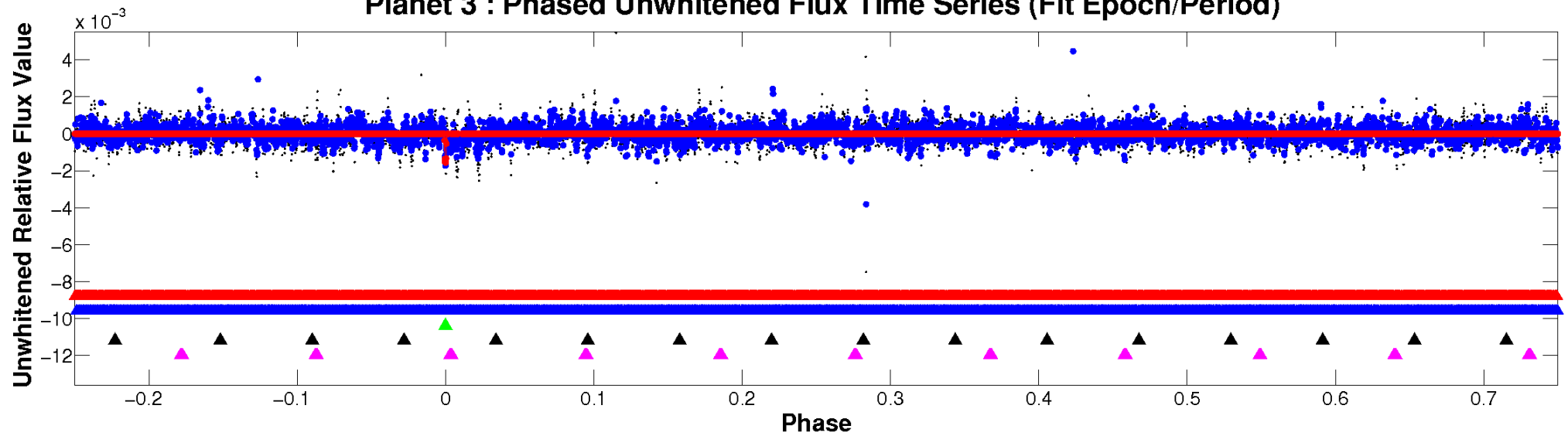
ALT Odd/Even

TCE 012691831-03

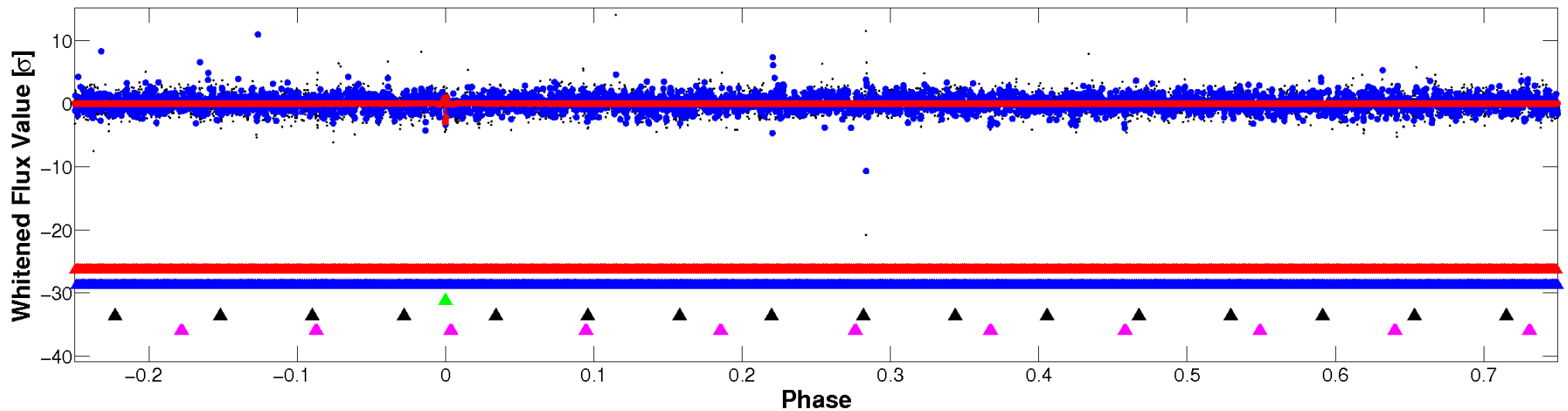


Non-Whitened Vs. Whitened Light Curve

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

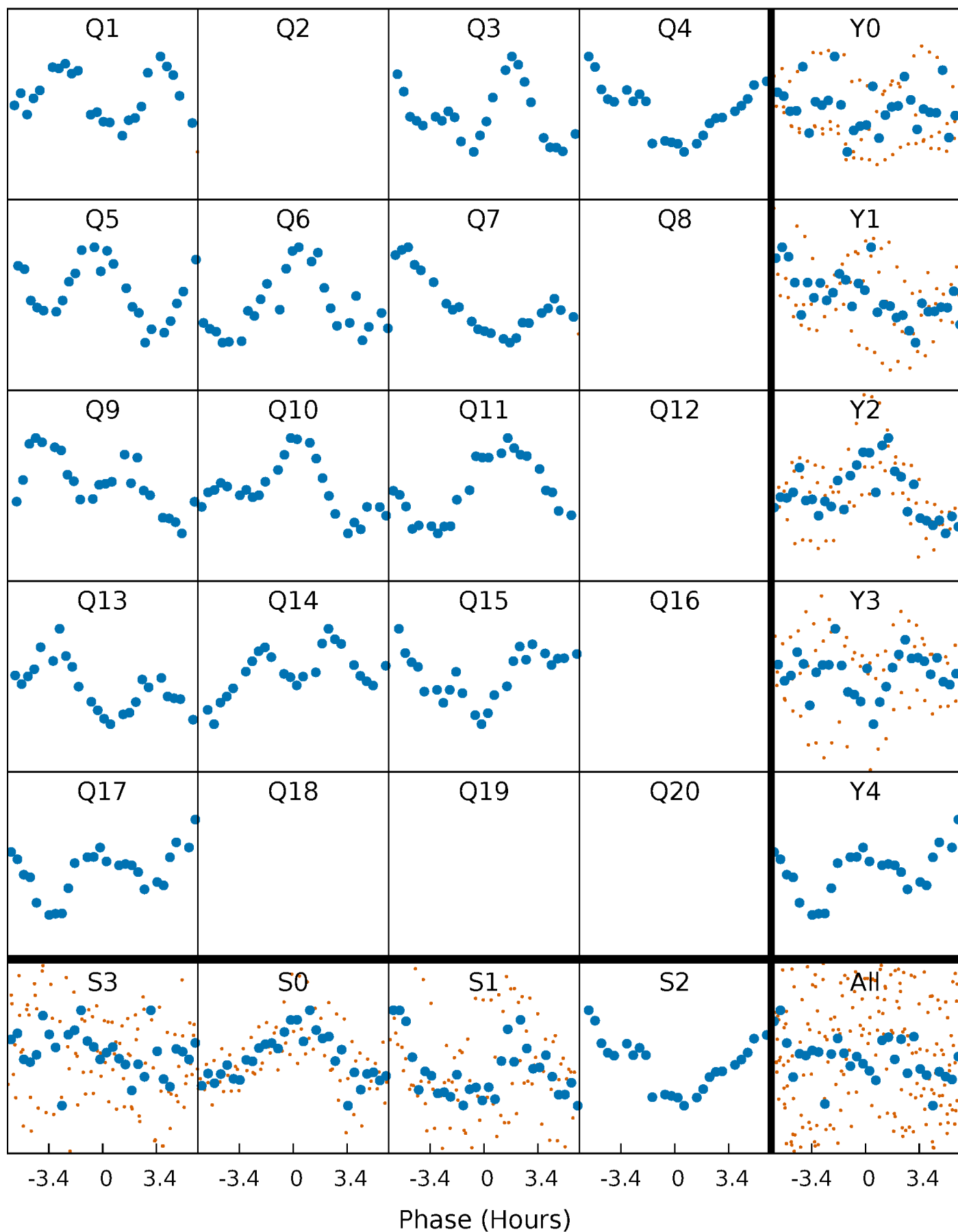


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



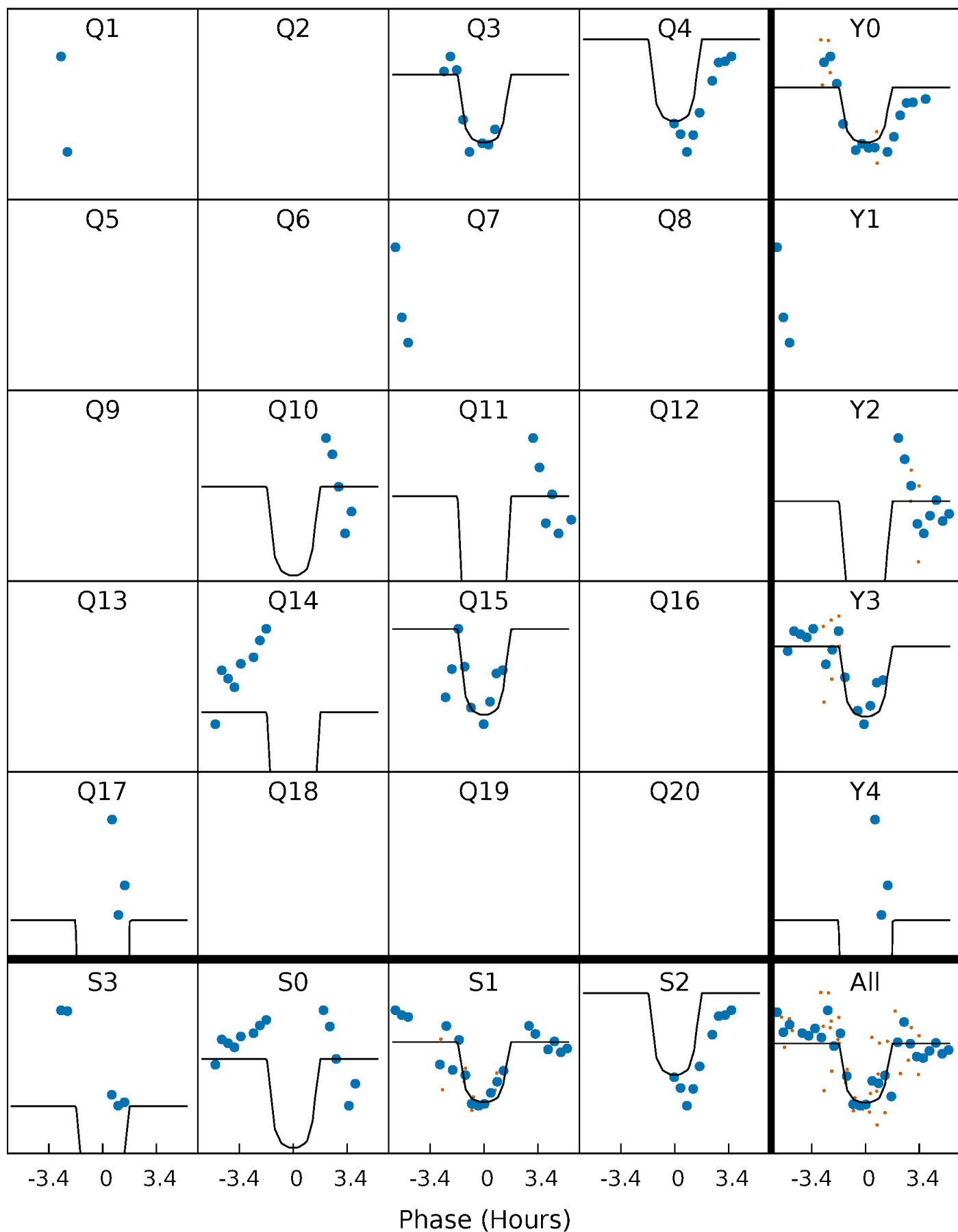
PDC Quarter-Phased Transit Curves

TCE 012691831-03 P= 99.916368 Days $T_0=163.752273$ (BKJD)



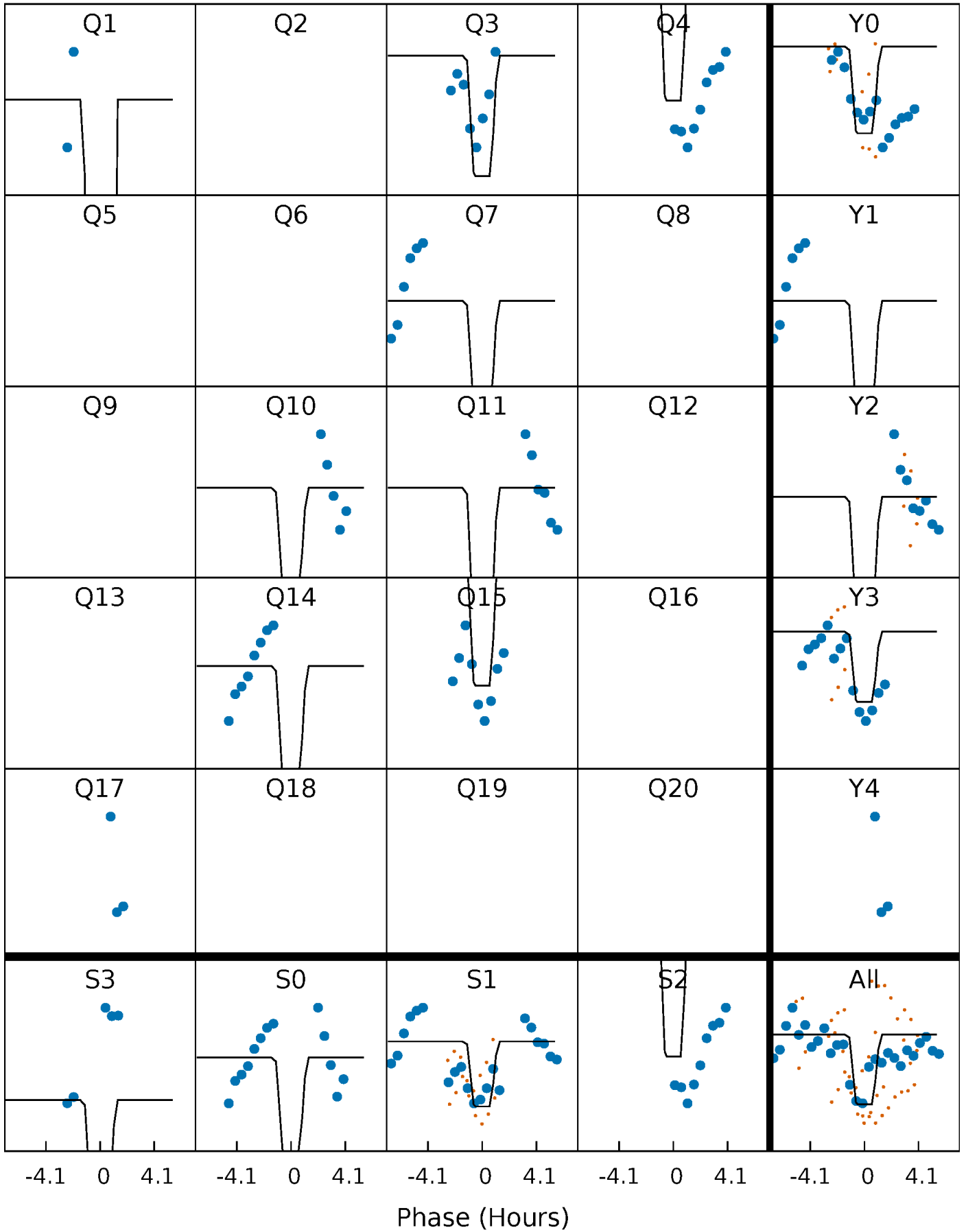
DV Quarter-Phased Transit Curves

TCE 012691831-03 P= 99.916368 Days $T_0=163.752273$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

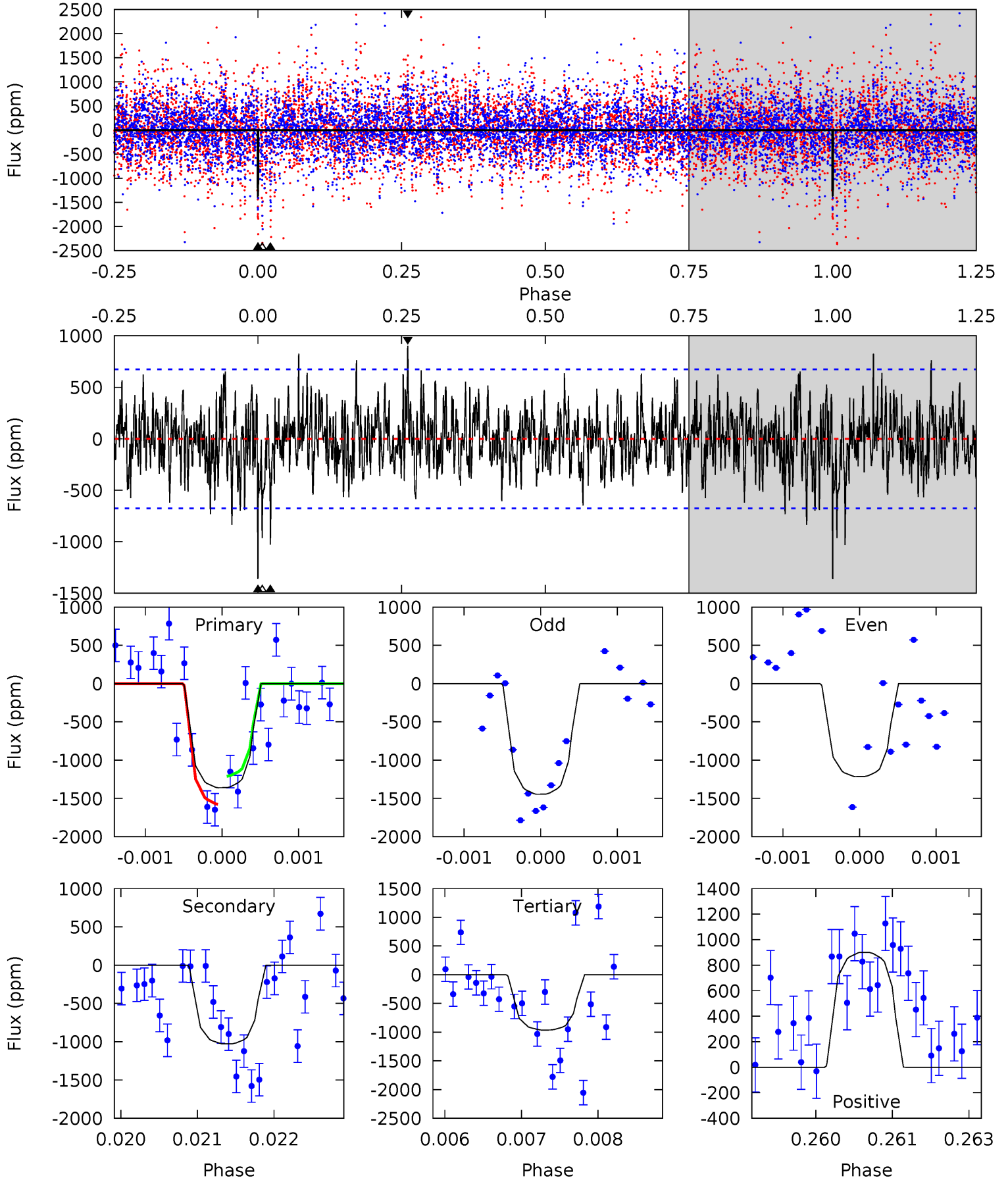
TCE 012691831-03 P= 99.916212 Days $T_0=163.747760$ (BKJD)



DV Model-Shift Uniqueness Test

012691831-03, P = 99.916368 Days, E = 63.835905 Days

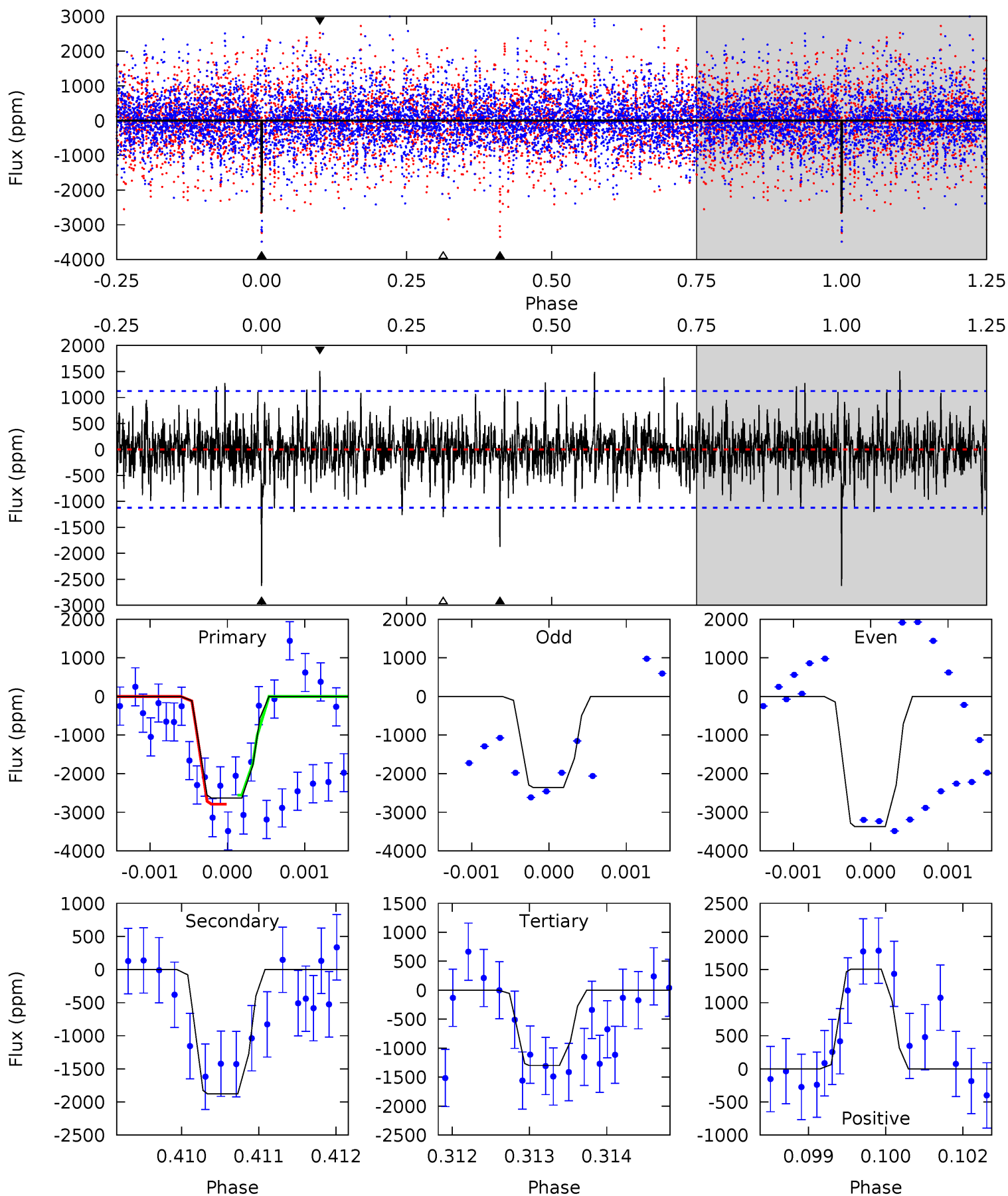
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	8.21	7.69	7.20	5.39	3.19	1.95	3.18	3.67	0.52	1.02	0.88	0.83	0.40	1.43



Alt Model-Shift Uniqueness Test

012691831-03, P = 99.916212 Days, E = 63.831548 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.7	9.10	6.30	7.30	5.45	3.28	1.68	6.44	5.44	2.80	1.80	2.24	0.63	0.36	0.54



Stellar Parameters For KIC 012691831

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7389^{+230}_{-307}	$3.634^{+0.495}_{-0.055}$	$-0.120^{+0.250}_{-0.300}$	$3.600^{+0.331}_{-1.873}$	$2.034^{+0.151}_{-0.604}$	$0.061^{+0.315}_{-0.012}$
	+3%/-4%	+14%/-2%	+208%/-250%	+9%/-52%	+7%/-30%	+513%/-20%
Source	KIC0	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 012691831-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1028 ± 125	$12.97^{+7.93}_{-6.25}$	1139^{+71}_{-131}	6633^{+3168}_{-1155}	943^{+2533}_{-583}
Alt.	-1876 ± 206	$18.04^{+7.69}_{-7.21}$	1138^{+75}_{-140}	6569^{+1974}_{-845}	860^{+1524}_{-410}

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

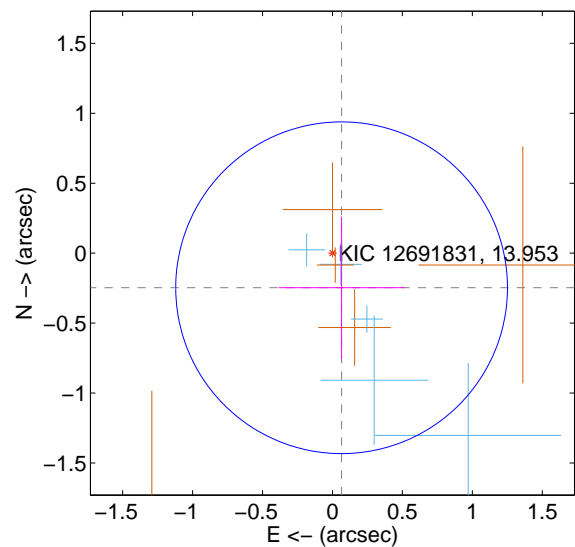
Supplemental centroid analysis for 012691831-03. Kepler magnitude: 13.95. Transit SNR 11.12

There are 6 quarters with good PRF difference image offsets

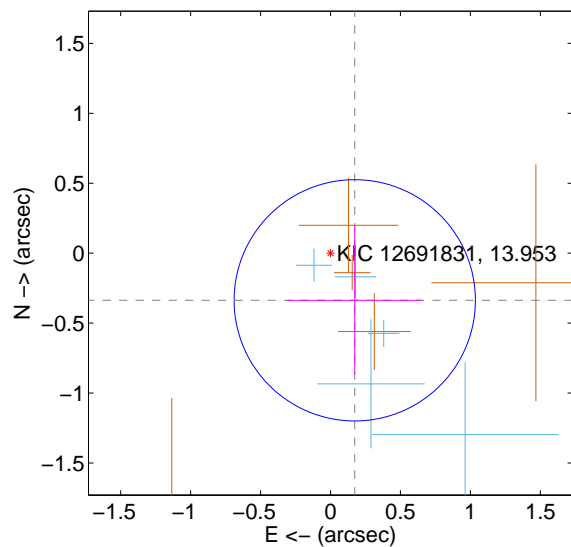
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.256 ± 0.395	0.65	-0.065 ± 0.450	-0.247 ± 0.508
PRF-fit source offset from KIC position	0.379 ± 0.287	1.32	-0.173 ± 0.482	-0.337 ± 0.530
photometric centroid source offset	0.44 ± 0.26	1.70	0.02 ± 0.26	0.44 ± 0.26

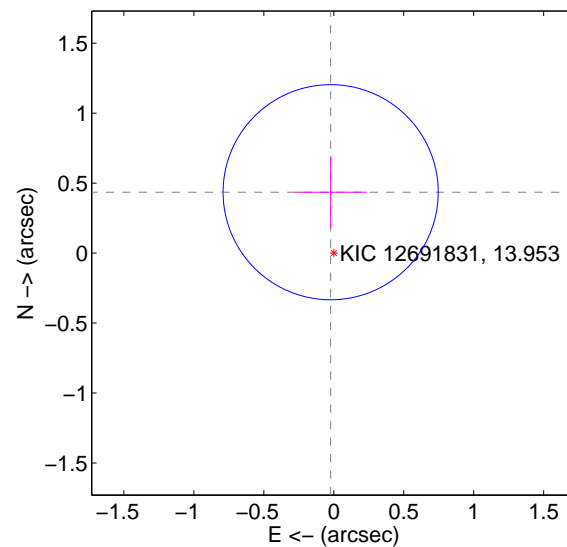
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

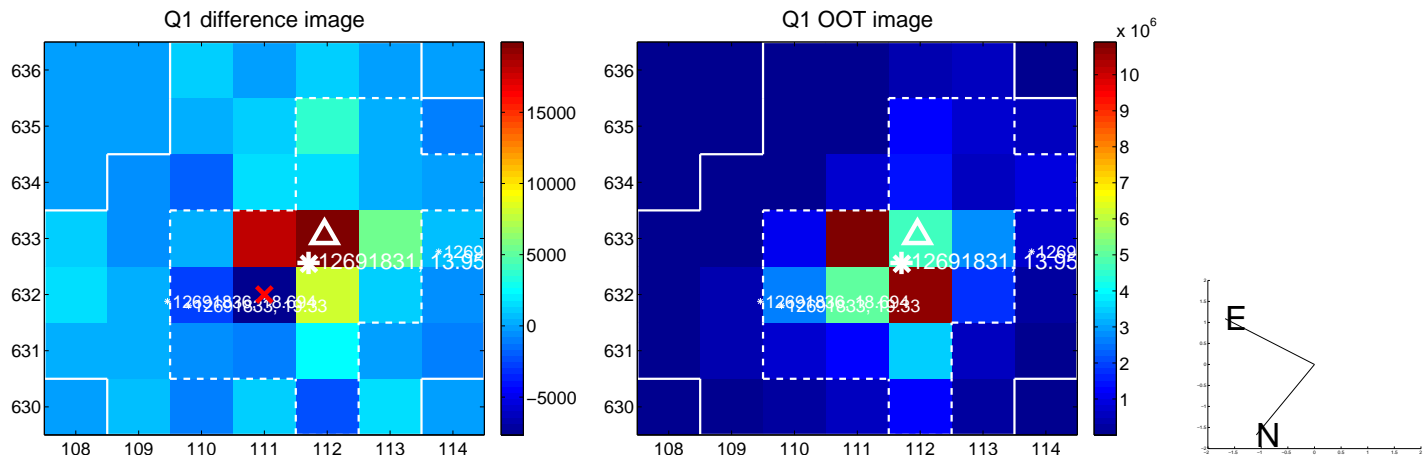


offset from photometric centroids

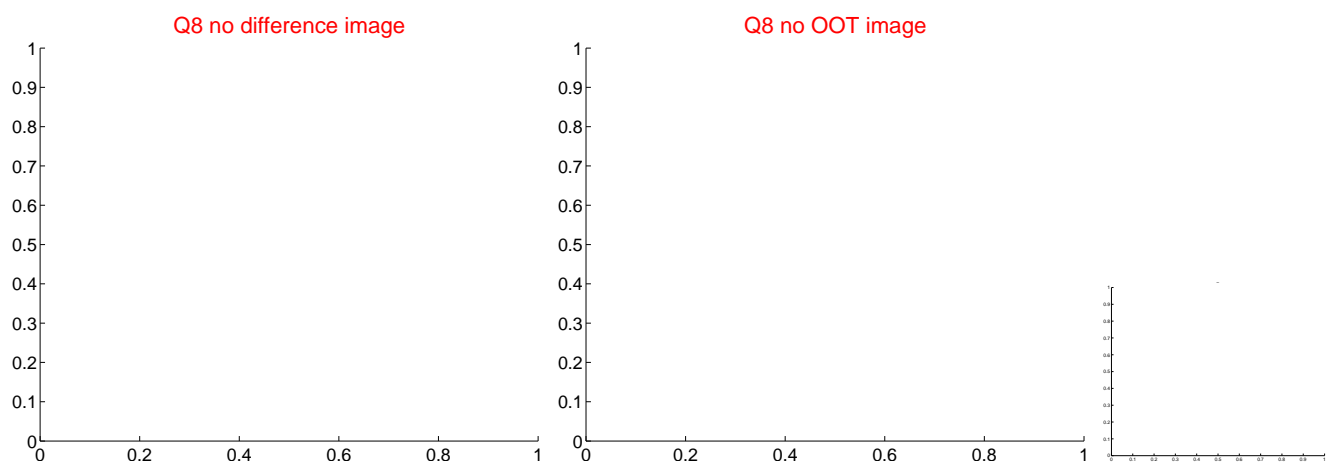
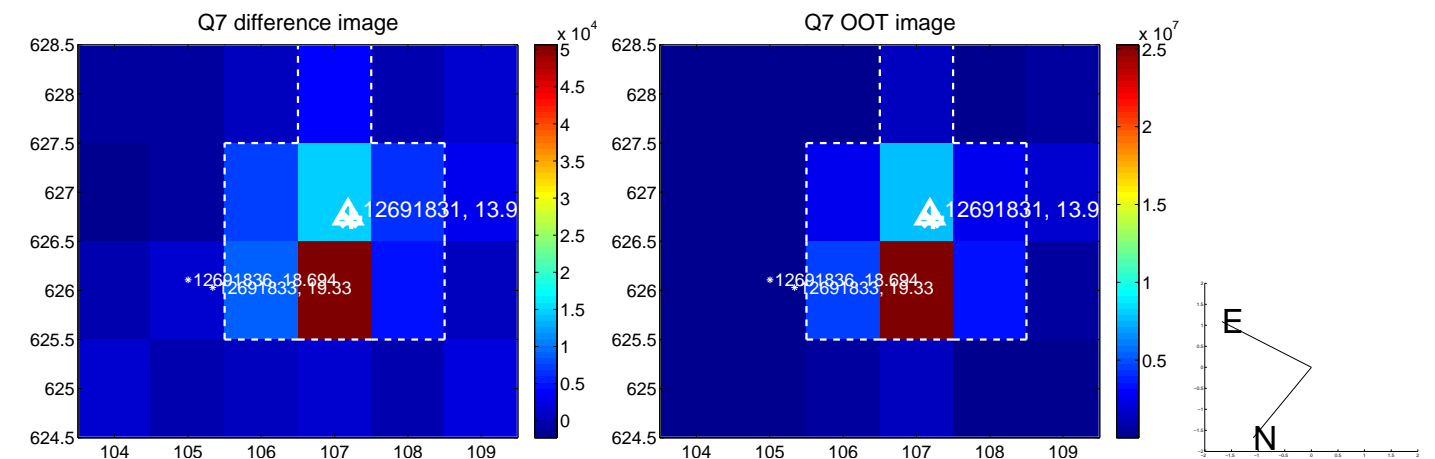
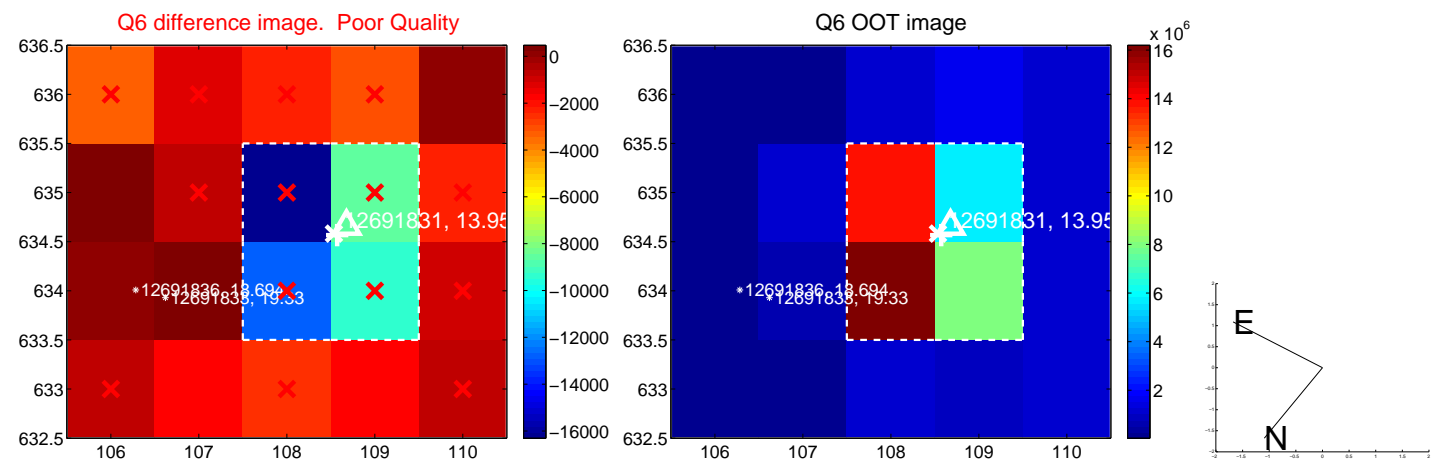
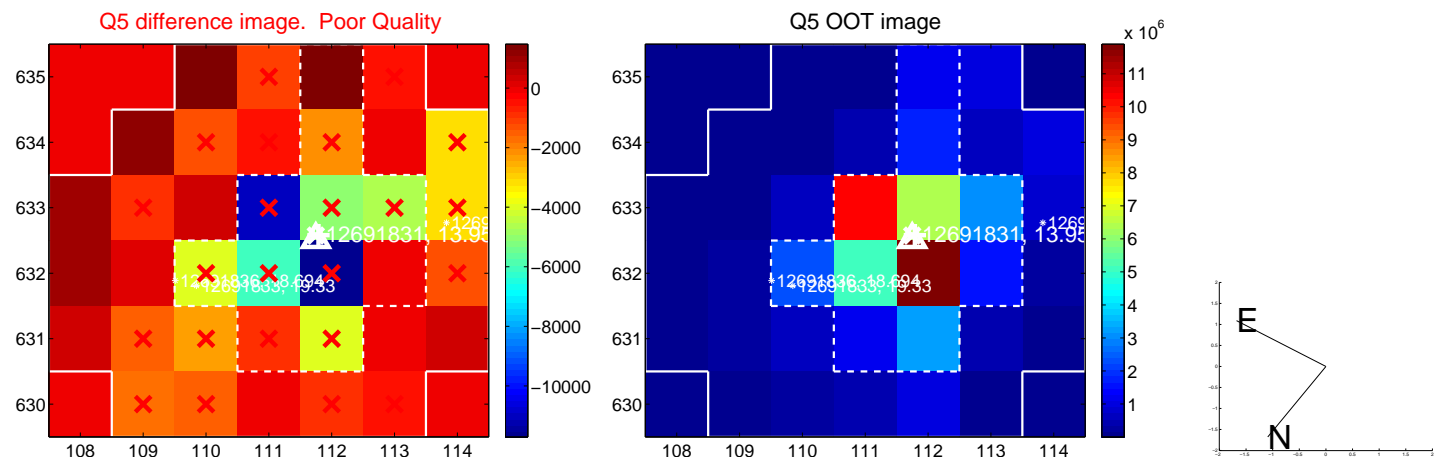


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

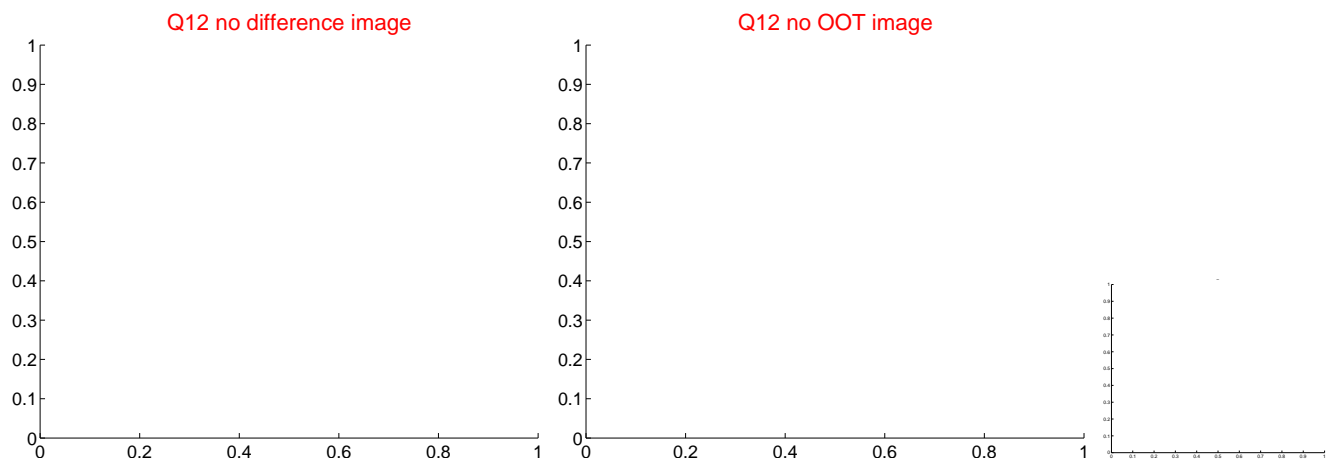
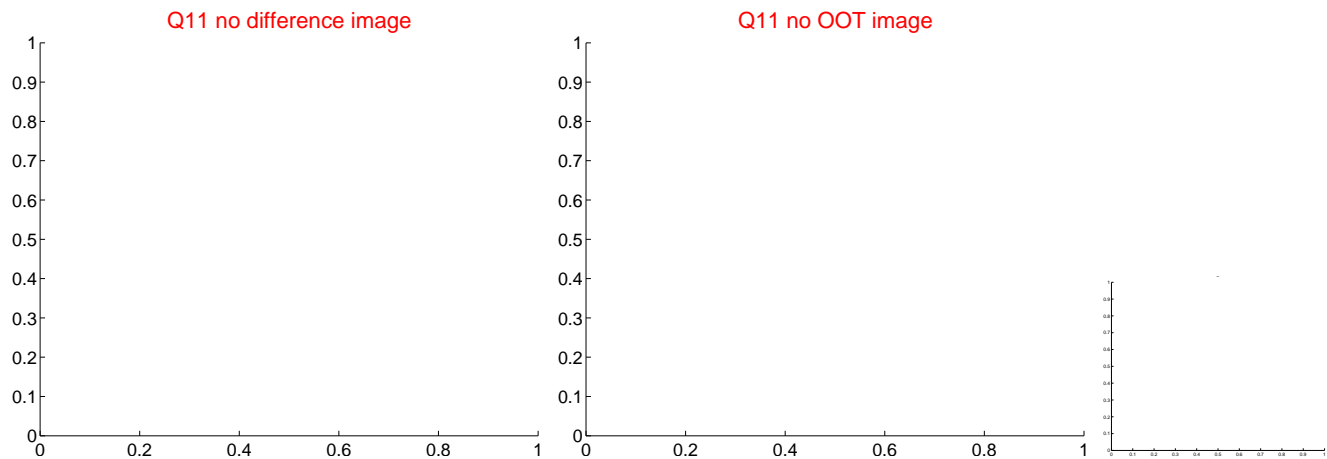
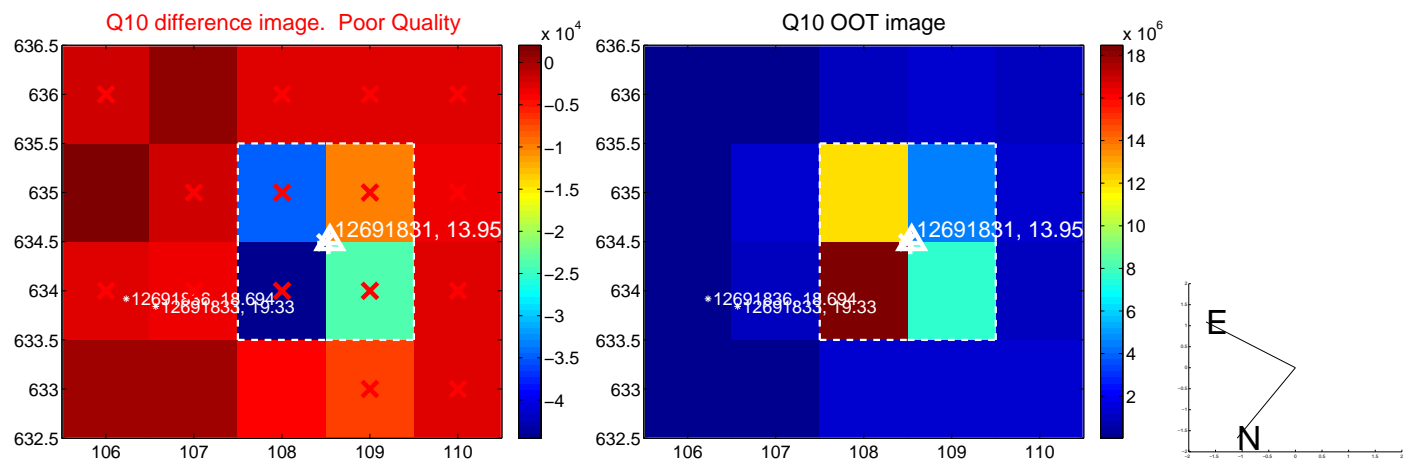
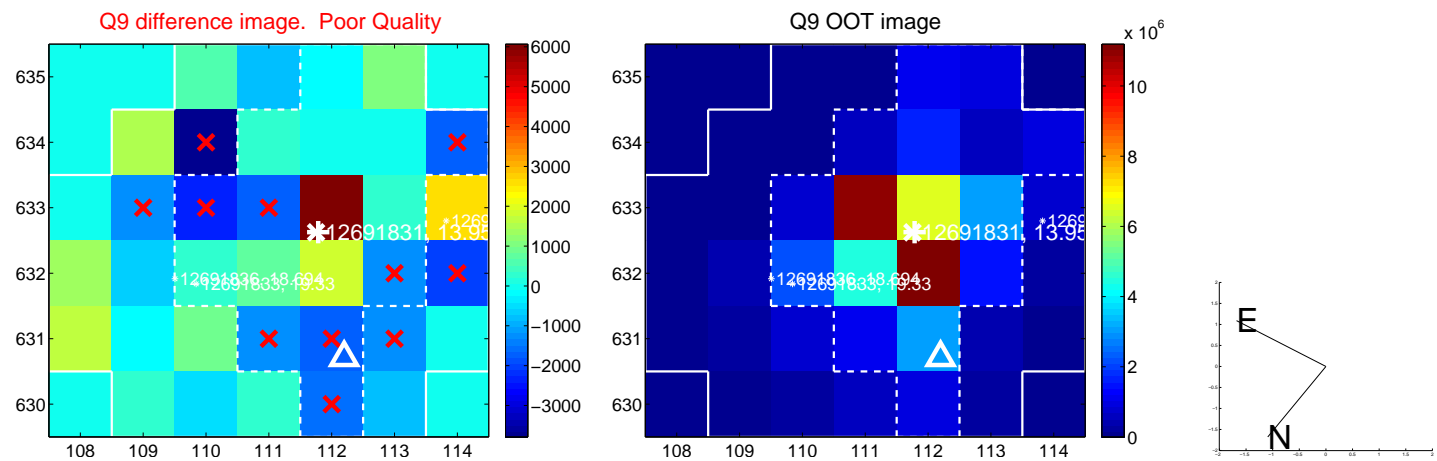
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



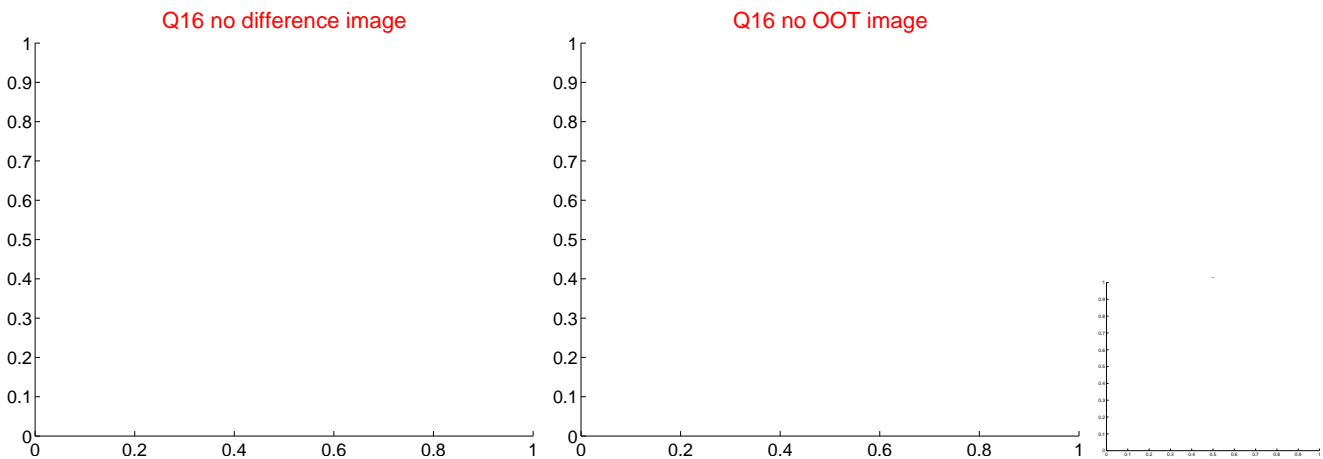
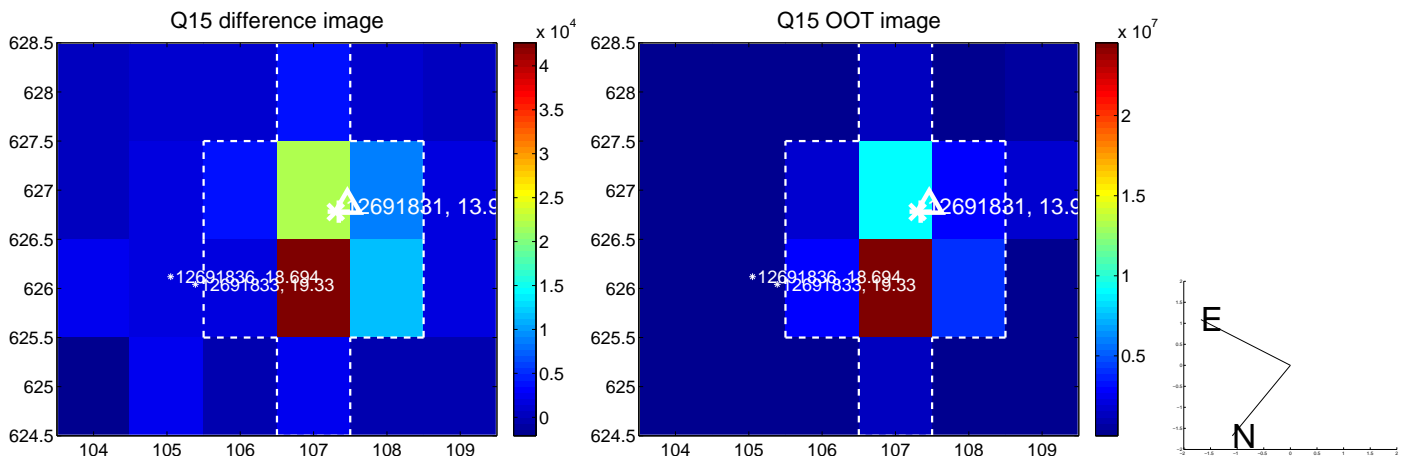
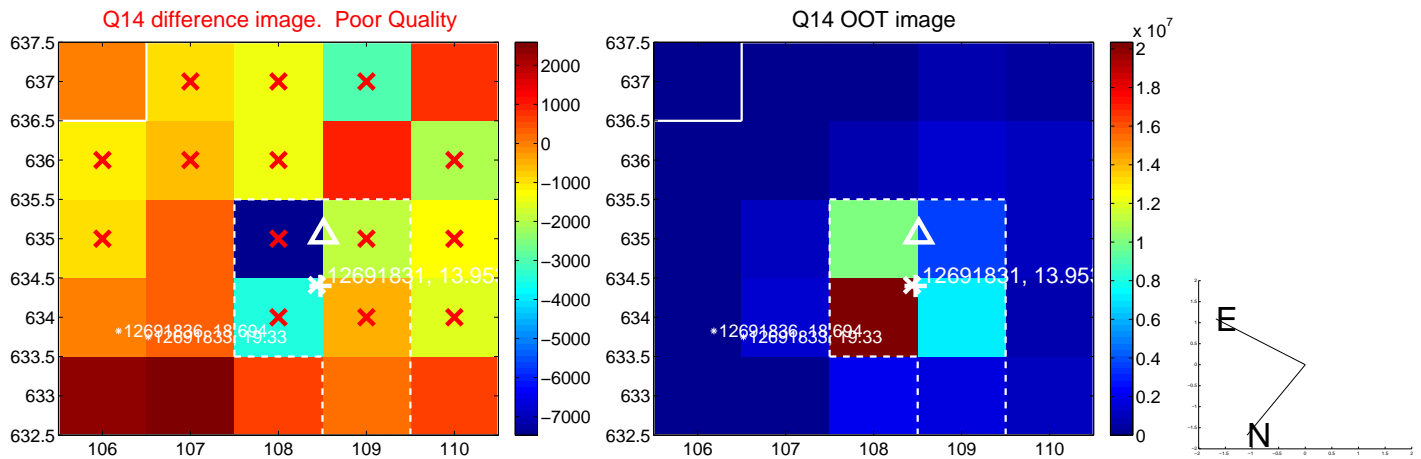
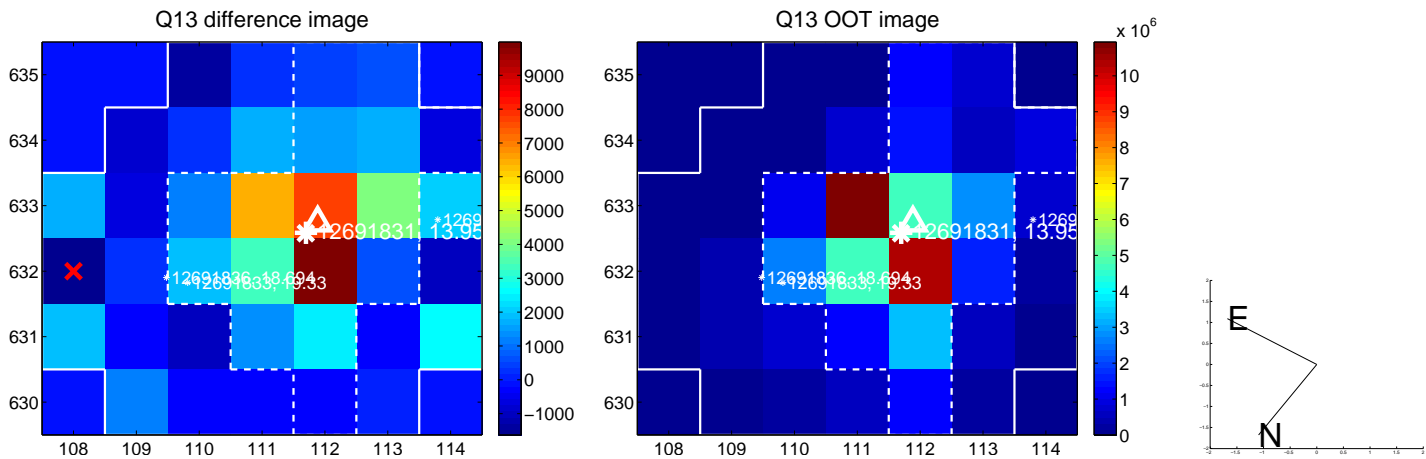
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



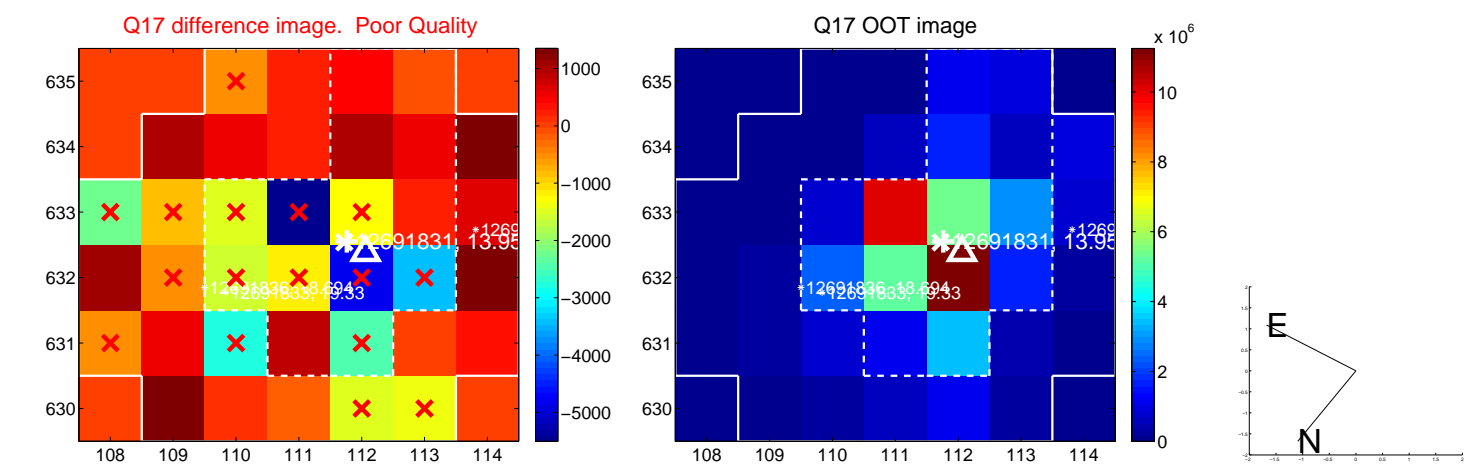
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



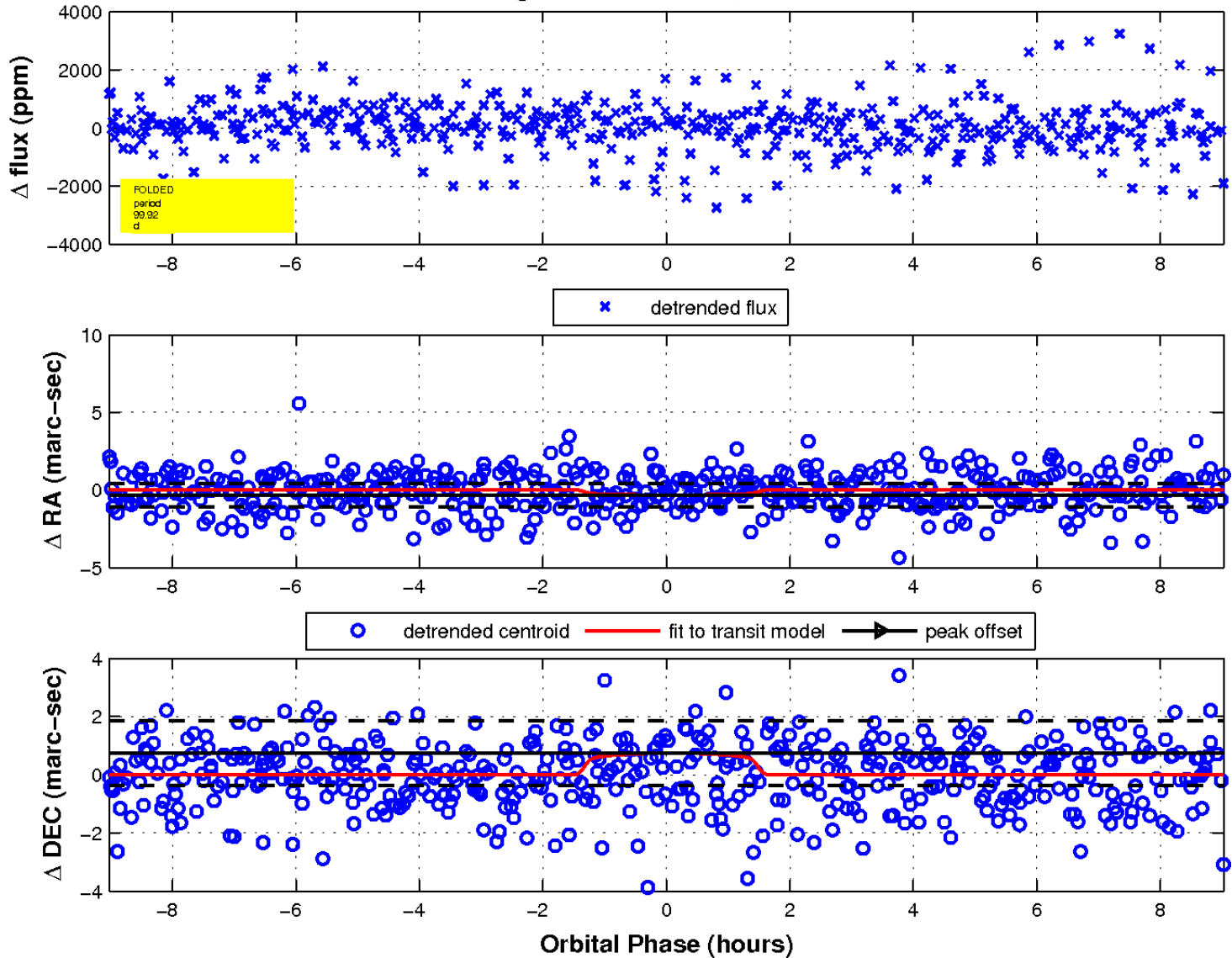
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

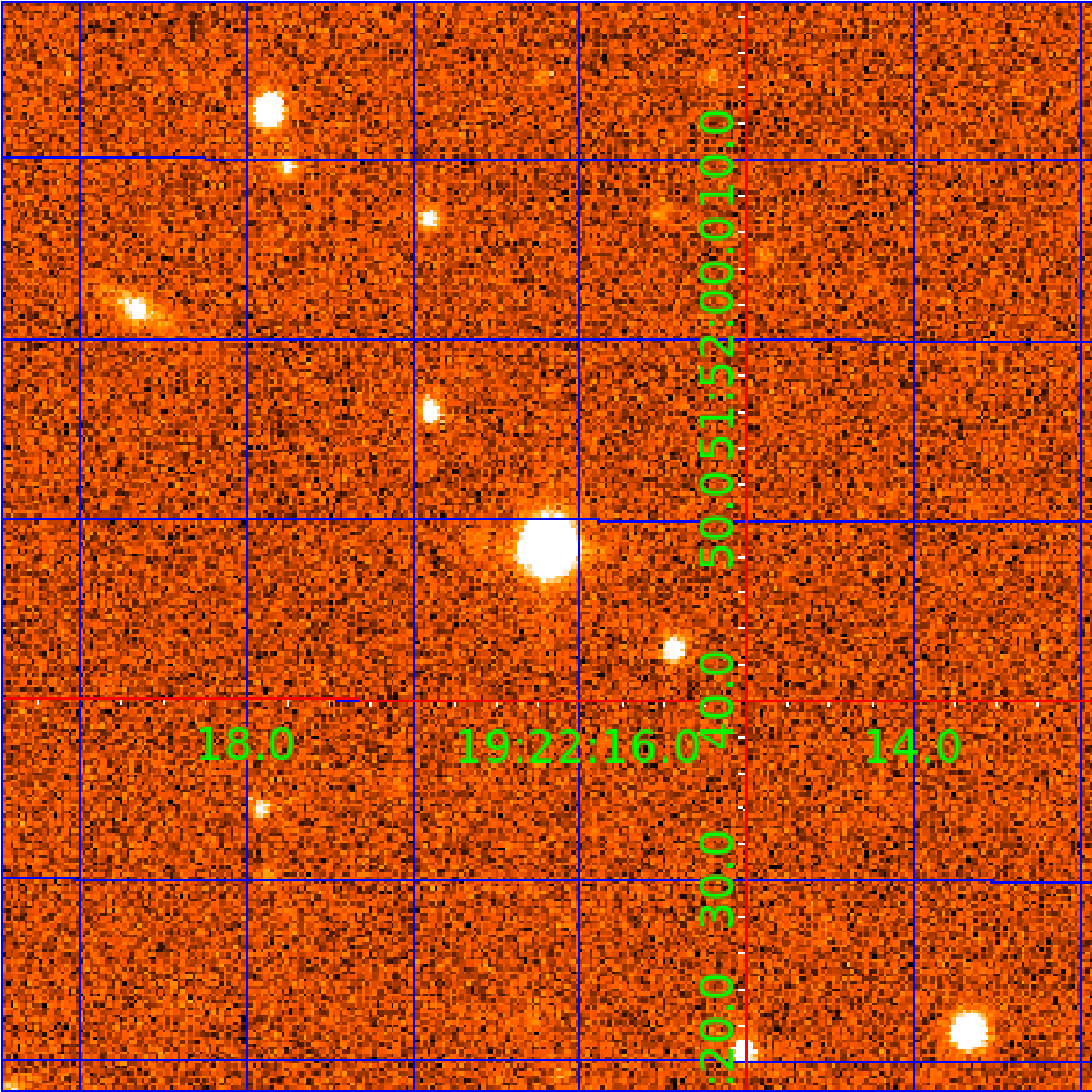


fluxWeightedCentroids, Planet 3 of 5



UKIRT Image

Declination



KIC 012691831

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})
012691831-01	OBS	No	0.786167	132.005082	87.3	2.657	10.0	10.8	3.60	7389	3.91	77520.97
012691831-02	OBS	No	0.709479	132.013152	79.9	4.126	10.5	8.6	3.60	7389	3.29	88890.01
012691831-03	OBS	No	99.916368	163.752273	1572.9	3.011	10.3	11.1	3.60	7389	15.10	121.32
012691831-04	OBS	No	93.728386	141.493204	1316.9	3.820	9.7	10.4	3.60	7389	23.34	132.11
012691831-05	OBS	No	27.246642	146.046741	662.9	3.037	8.1	7.4	3.60	7389	10.30	686.05

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012691831-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
012691831-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
012691831-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
012691831-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
012691831-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

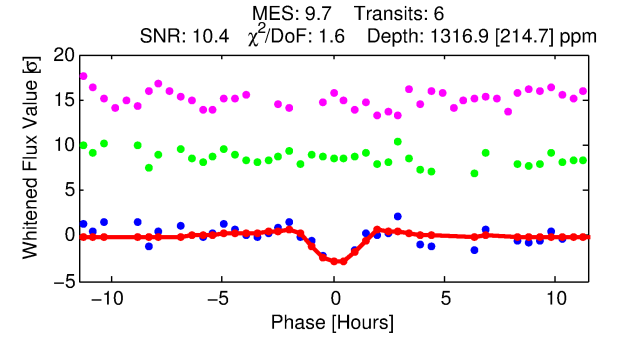
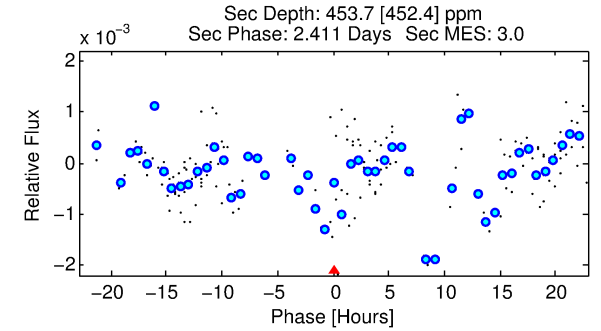
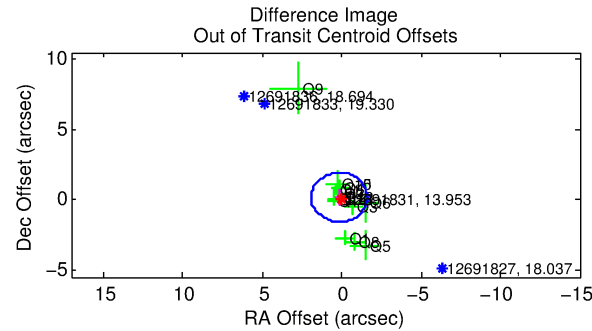
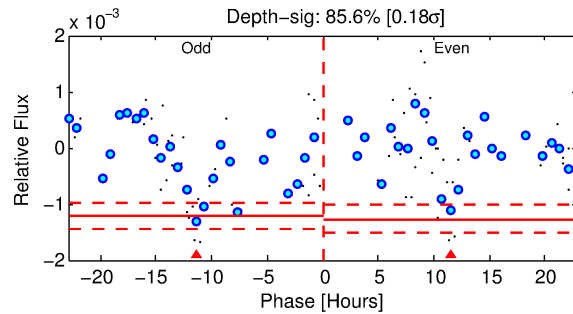
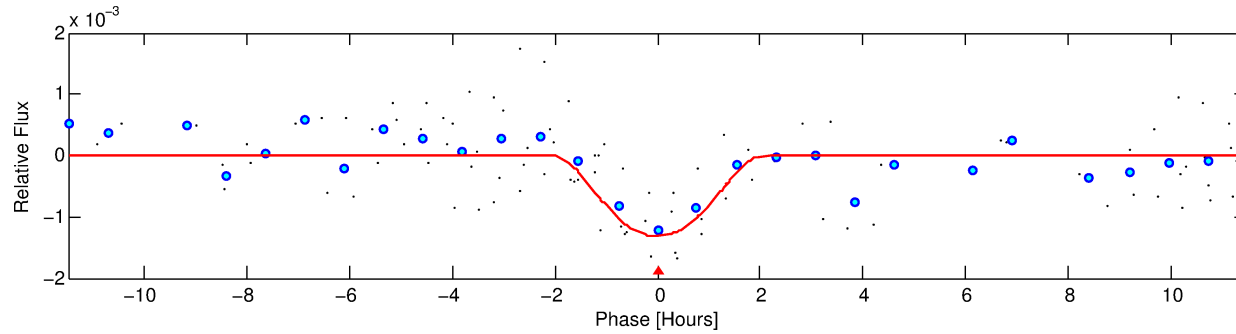
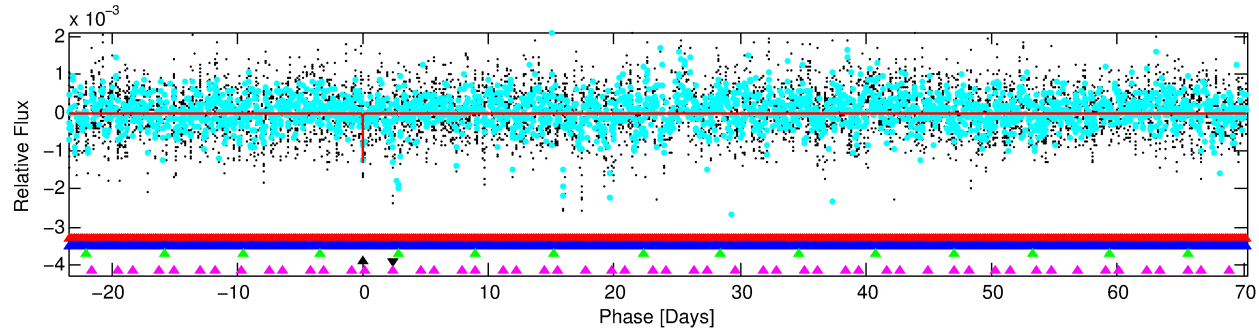
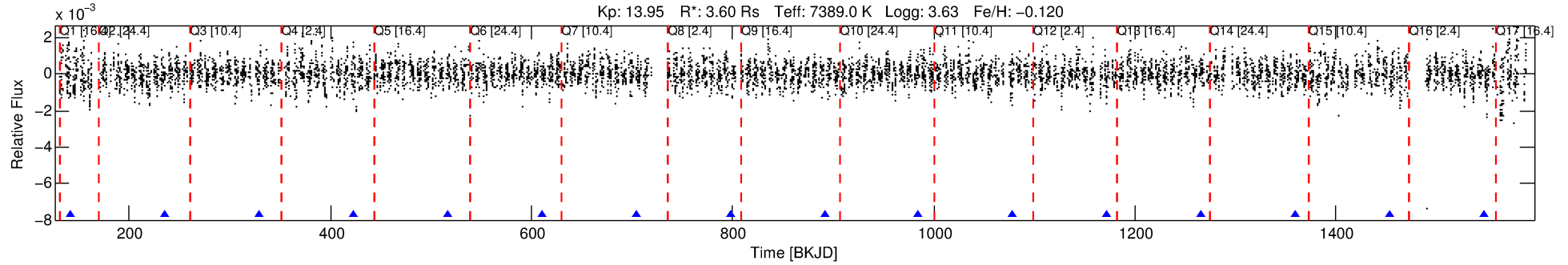
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012691831-04

No Significant Match Found

DV One-Page Summary

KIC: 12691831 Candidate: 4 of 5 Period: 93.728 d



DV Fit Results:

Period = 93.72839 [0.00110] d
Epoch = 141.4932 [0.0094] BKJD
Rp/R* = 0.0594 [0.1907]
a/R* = 67.41 [55.95]
b = 1.00 [0.29]
Seff = 132.11 [112.51]
Teq = 864 [184] K
Rp = 23.34 [75.88] Re
a = 0.5119 [0.2633] AU
Ag = 120.03 [785.94] [0.15 σ]
Teffp = 4424 [7185] K [0.50 σ]

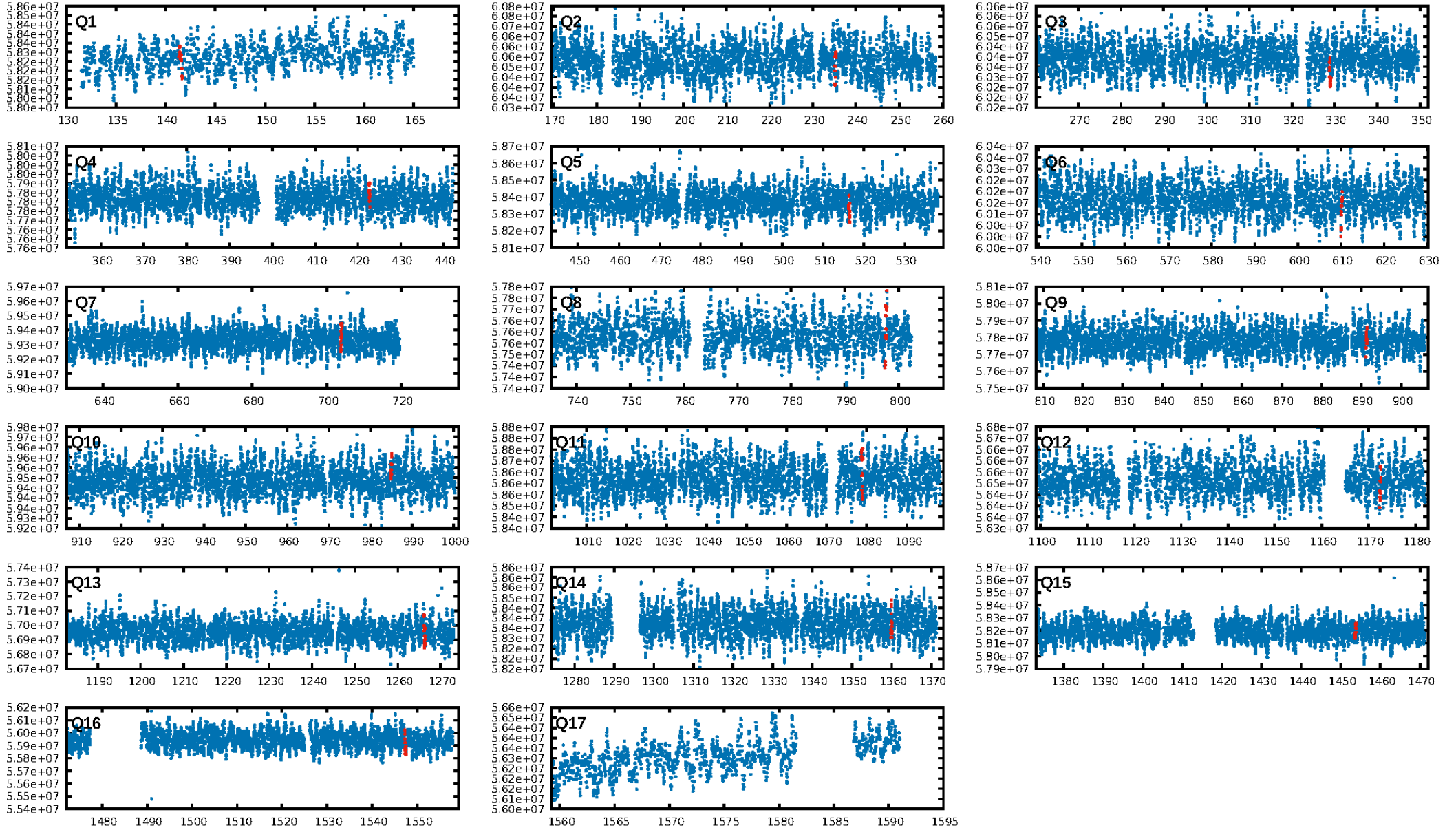
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [326.95 σ]
LongPeriod-sig: 100.0% [30.53 σ]
ModelChiSquare2-sig: 2.1%
ModelChiSquareGof-sig: 99.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -6.995
Centroid-sig: 22.2%
Centroid-so: 0.881 arcsec [2.79 σ]
OotOffset-rm: 0.232 arcsec [0.40 σ]
KicOffset-rm: 0.136 arcsec [0.21 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.50 [8/16]
DiffImageOverlap-fno: 0.00 [0/16]

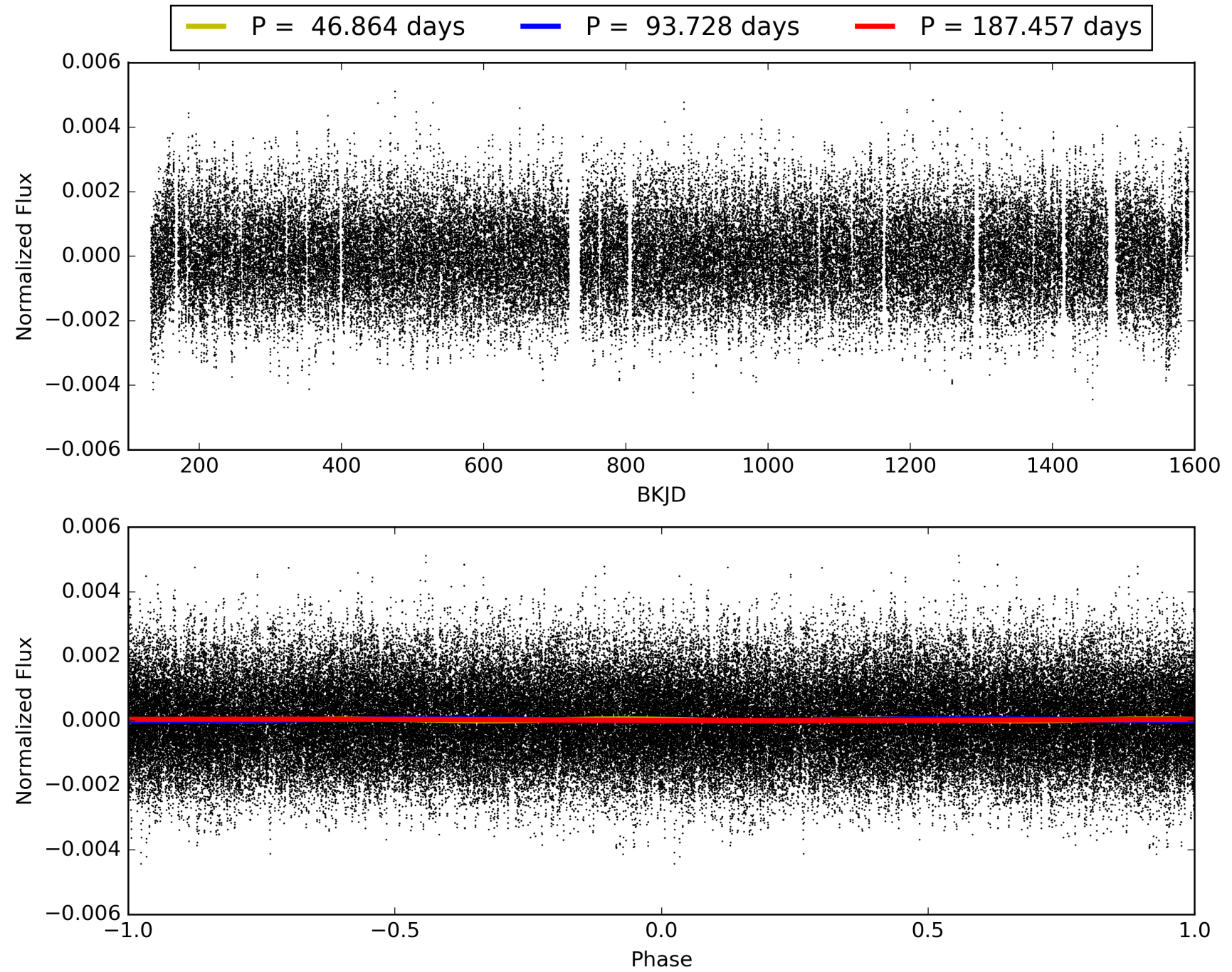
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:57:28 Z

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

TCE 012691831-04, PDC Light Curves

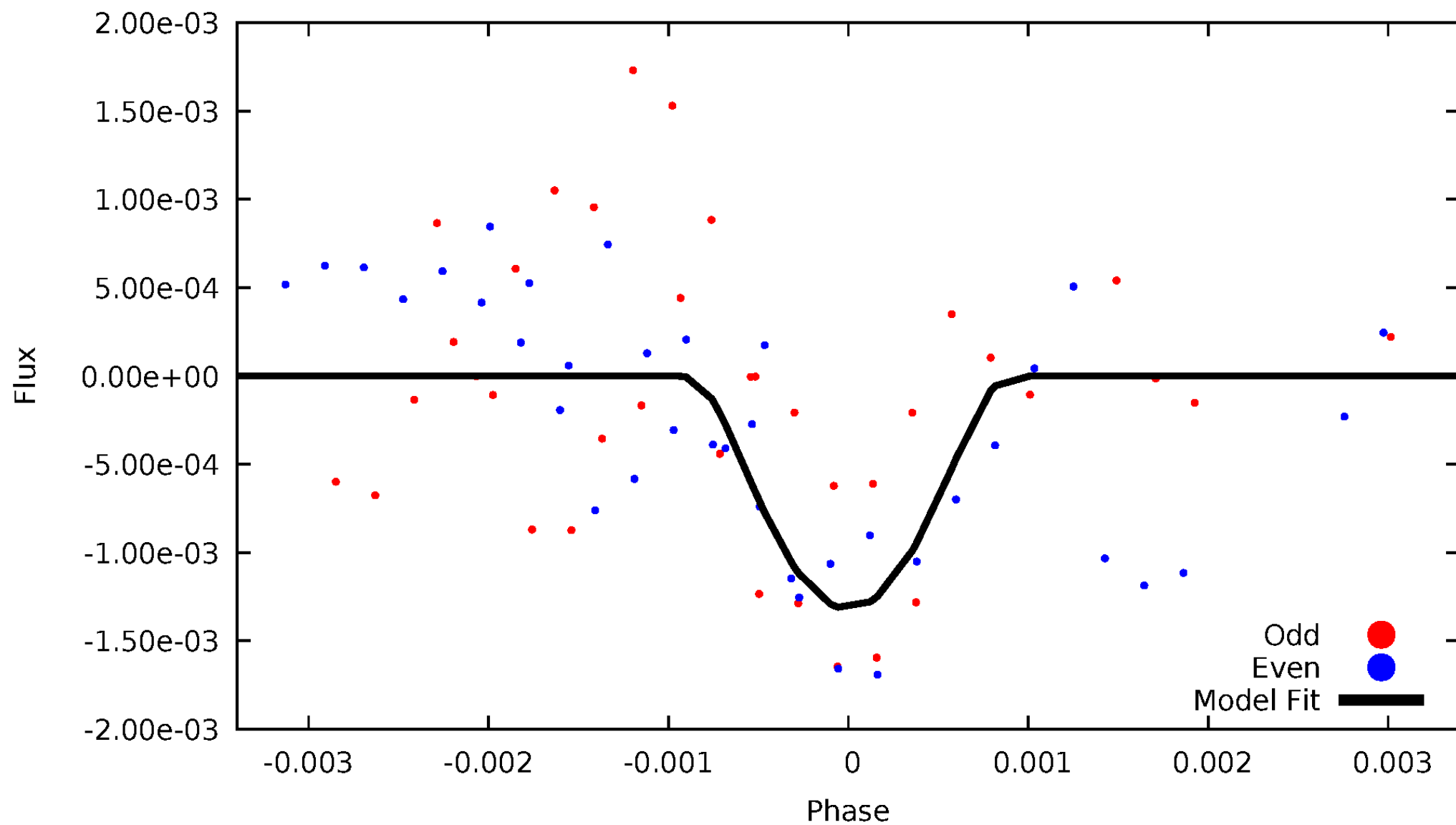


TCE 012691831-04



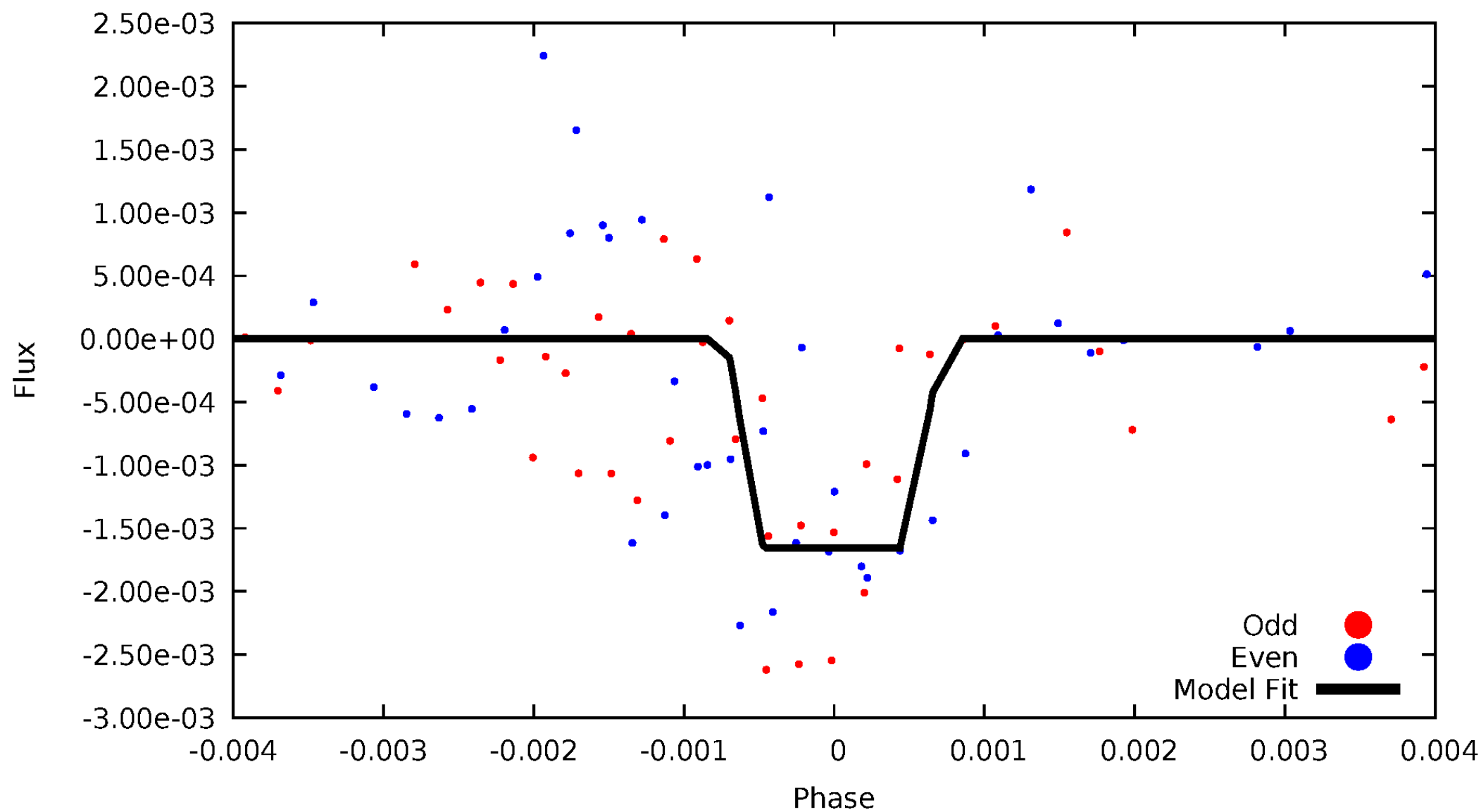
DV Odd/Even

TCE 012691831-04



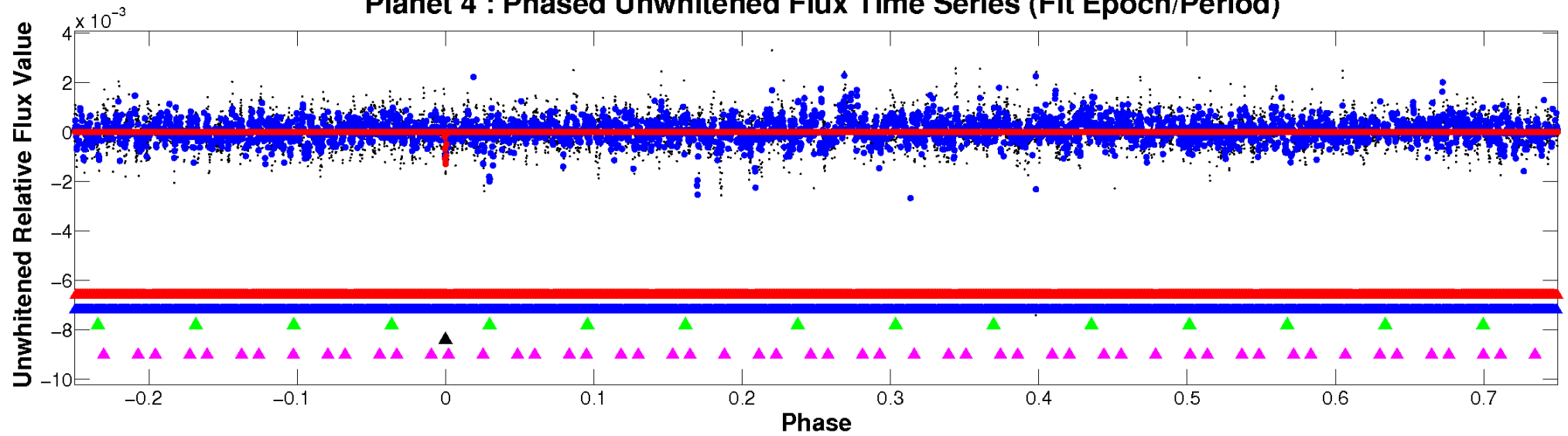
ALT Odd/Even

TCE 012691831-04

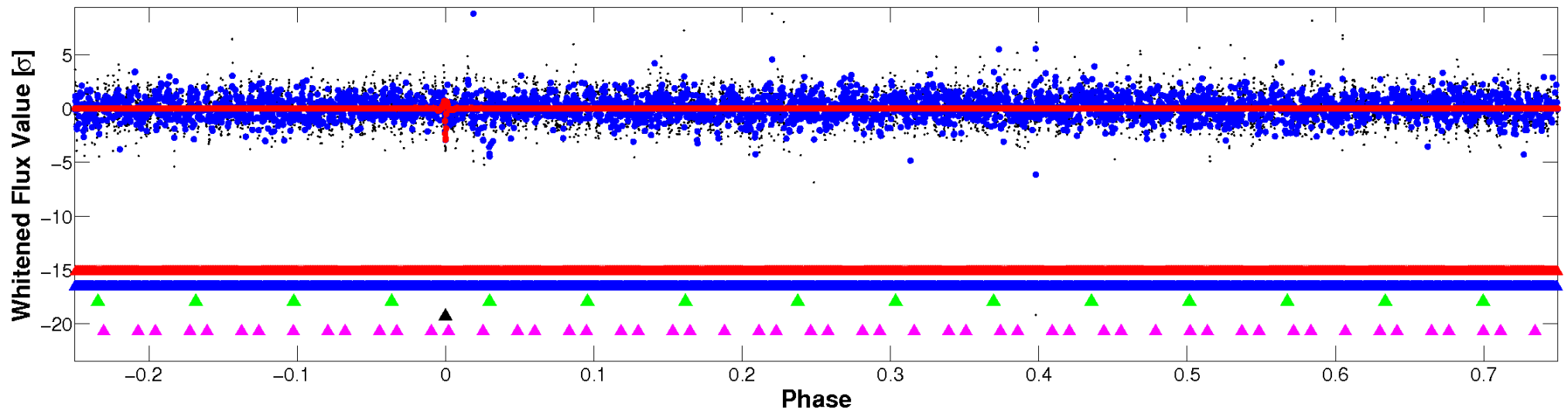


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

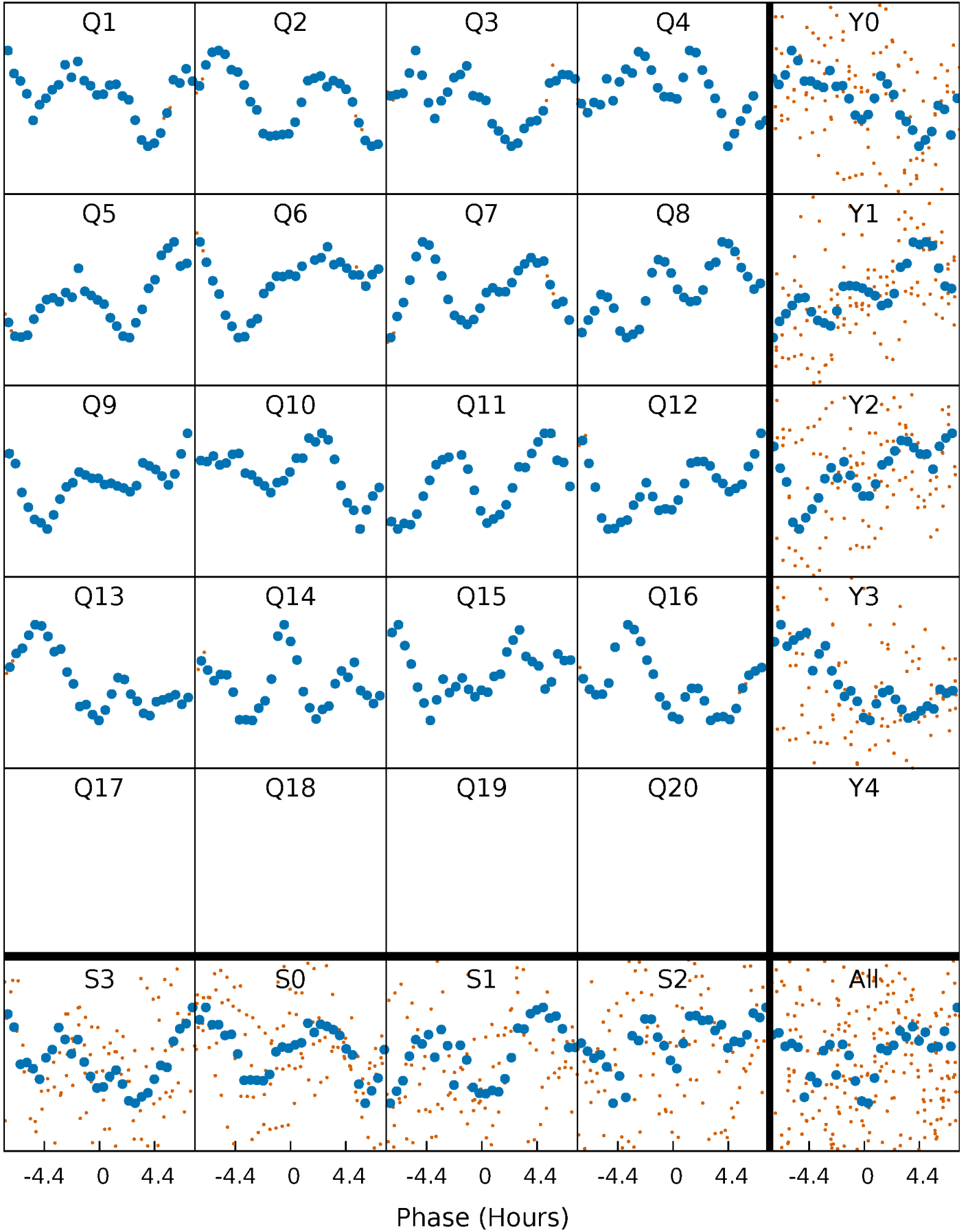


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



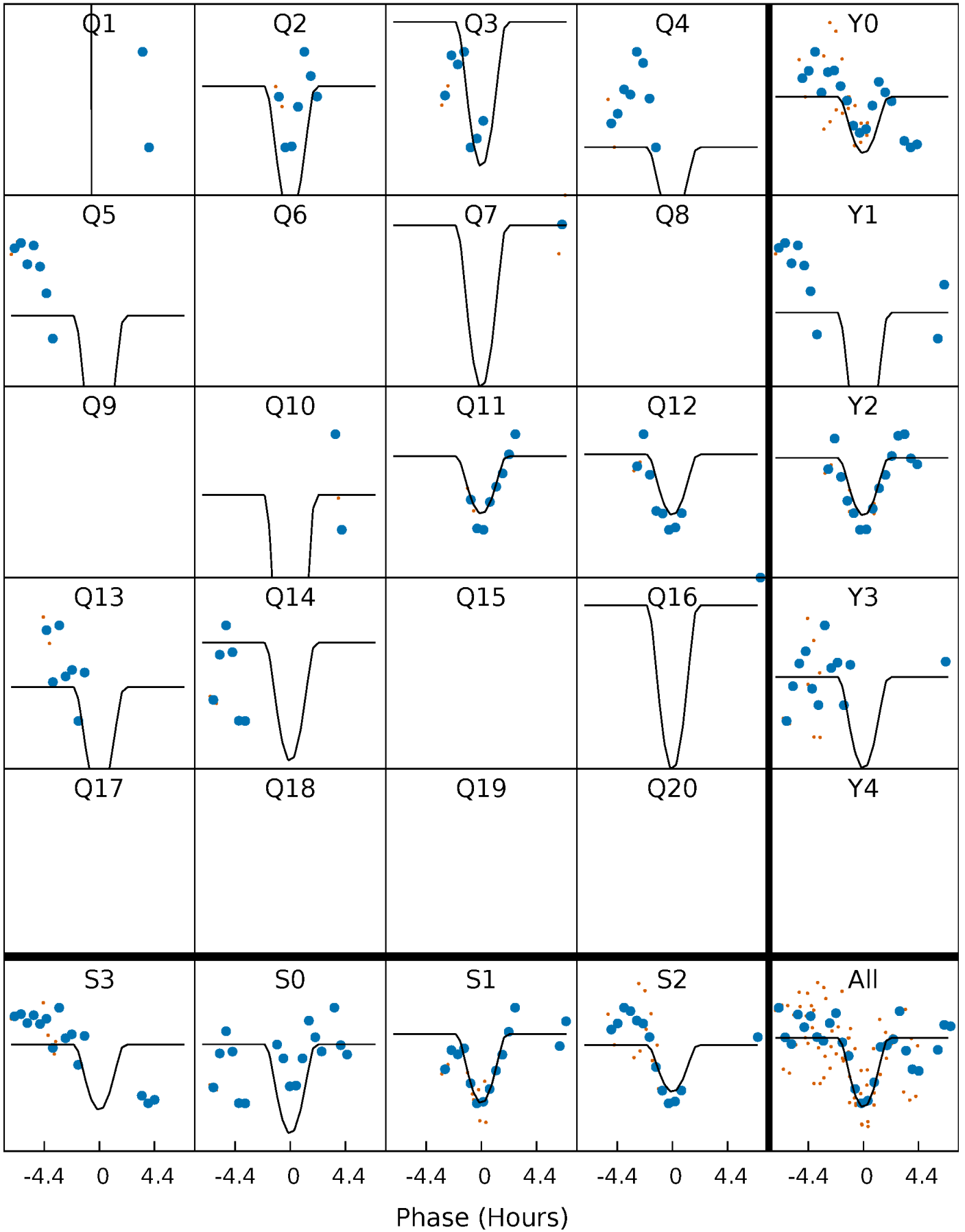
PDC Quarter-Phased Transit Curves

TCE 012691831-04 P= 93.728386 Days $T_0=141.493204$ (BKJD)



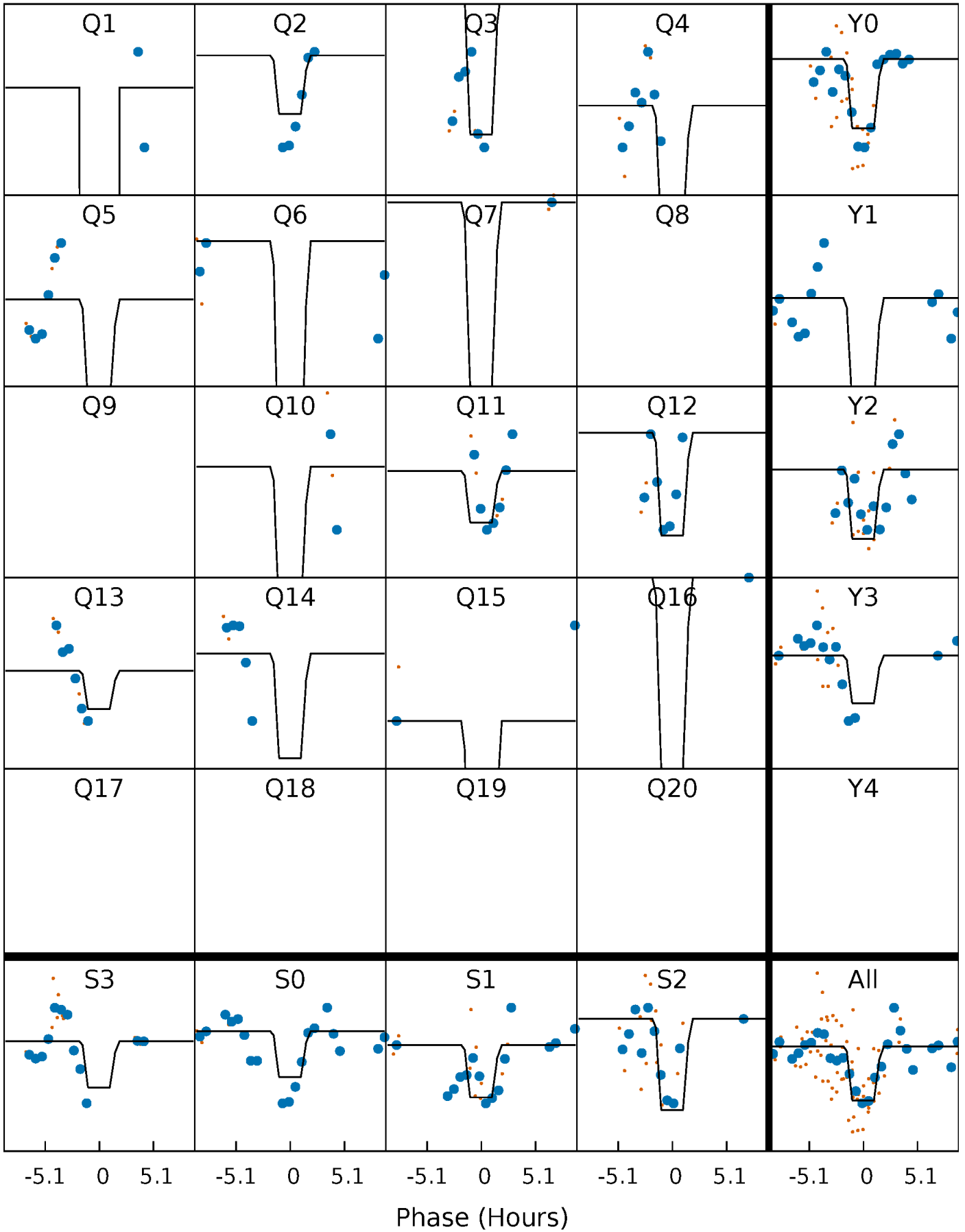
DV Quarter-Phased Transit Curves

TCE 012691831-04 P= 93.728386 Days $T_0=141.493204$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

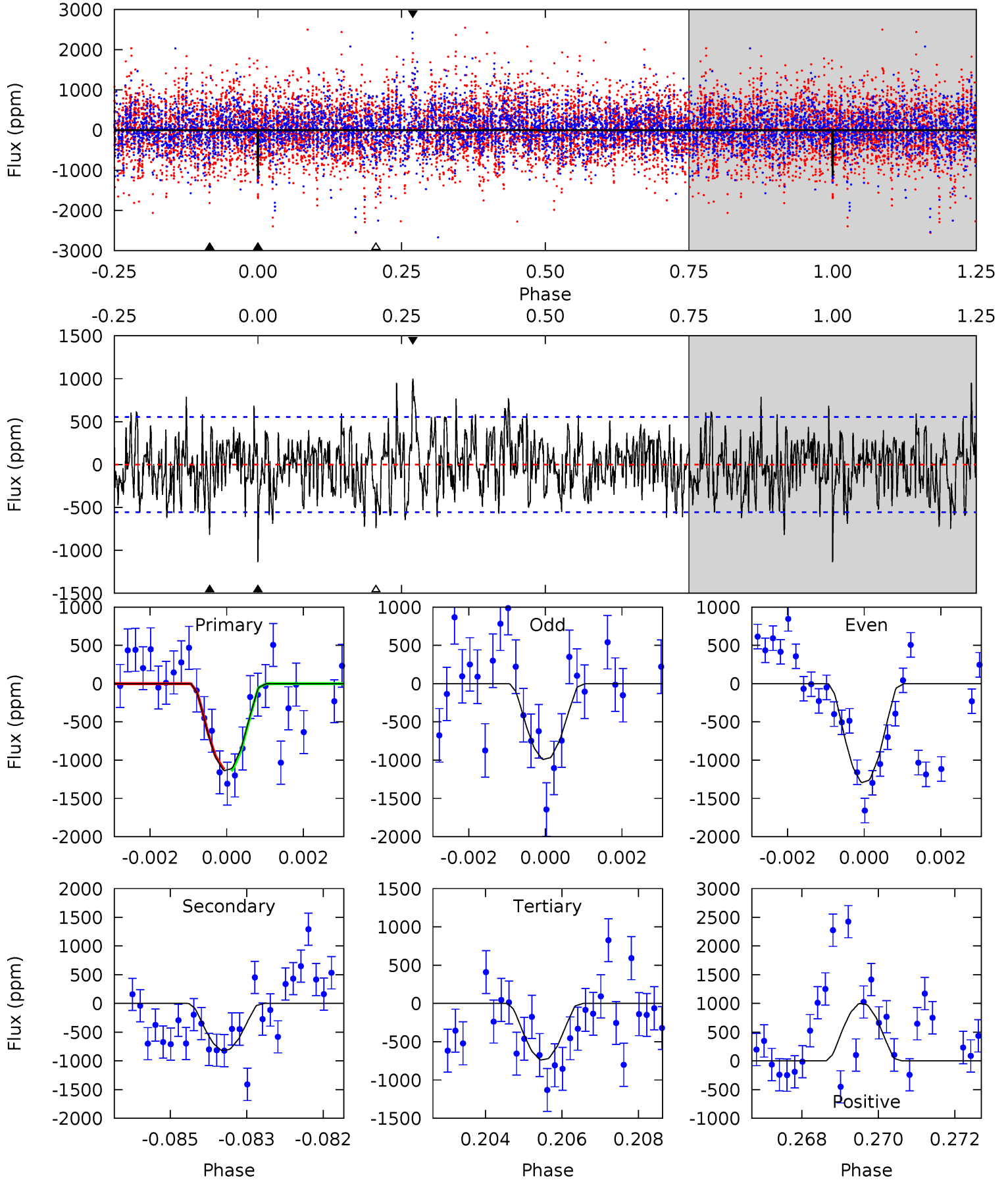
TCE 012691831-04 P= 93.728452 Days $T_0=141.487137$ (BKJD)



DV Model-Shift Uniqueness Test

012691831-04, P = 93.728386 Days, E = 47.764818 Days

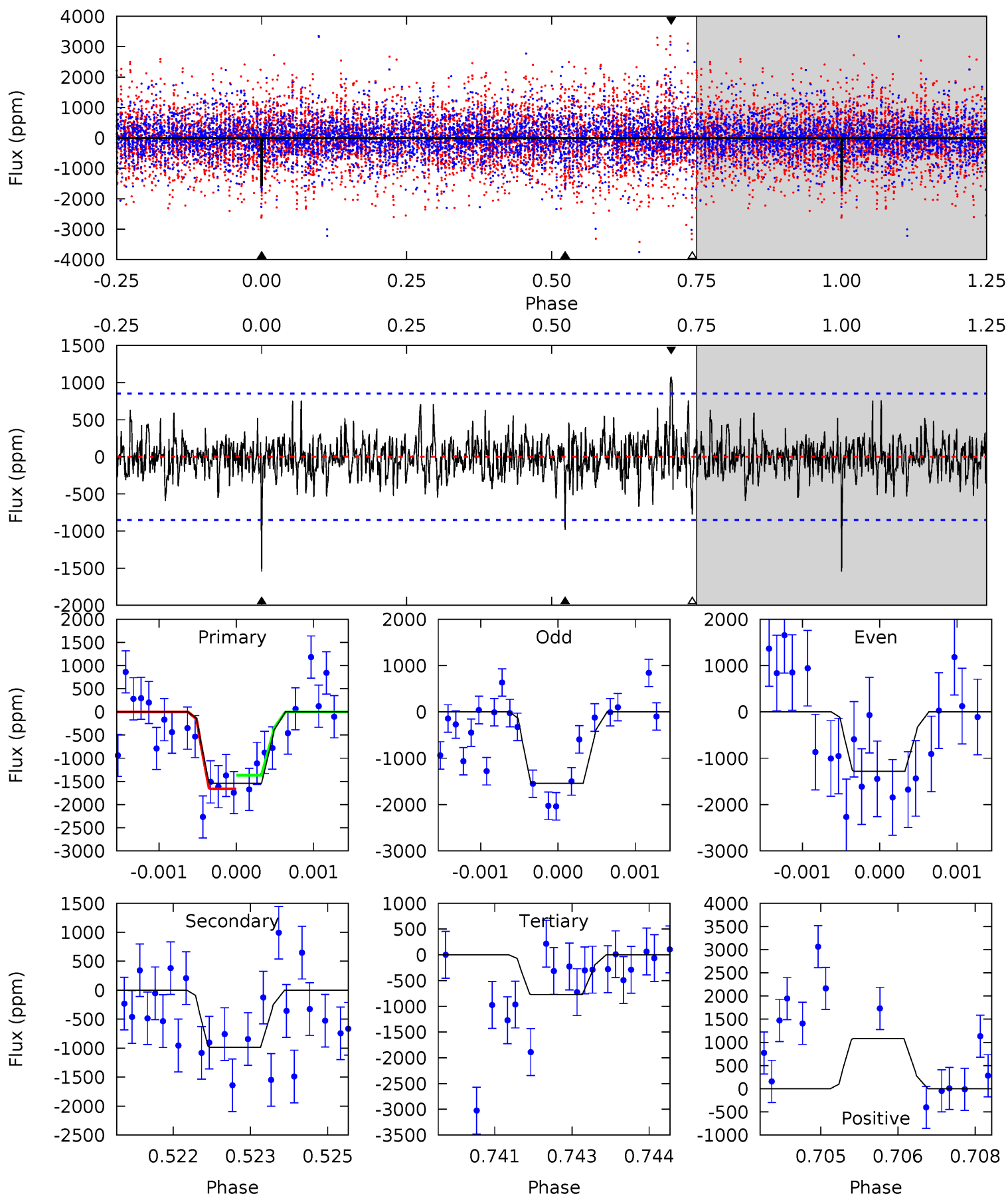
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	7.86	7.09	9.61	5.33	3.10	2.53	3.83	1.31	0.77	-1.74	1.44	0.99	0.47	0.12



Alt Model-Shift Uniqueness Test

012691831-04, P = 93.728452 Days, E = 47.758685 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.77	6.23	4.90	6.83	5.40	3.21	1.35	4.87	2.94	1.33	-0.60	0.84	1.10	0.41	0.93



Stellar Parameters For KIC 012691831

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7389^{+230}_{-307}	$3.634^{+0.495}_{-0.055}$	$-0.120^{+0.250}_{-0.300}$	$3.600^{+0.331}_{-1.873}$	$2.034^{+0.151}_{-0.604}$	$0.061^{+0.315}_{-0.012}$
	+3%/-4%	+14%/-2%	+208%/-250%	+9%/-52%	+7%/-30%	+513%/-20%
Source	KIC0	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 012691831-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-819±104	$47.65^{+57.21}_{-32.32}$	1161^{+77}_{-144}	3677^{+2088}_{-745}	53^{+423}_{-43}
Alt.	-983±158	$48.61^{+57.80}_{-34.09}$	1168^{+76}_{-147}	3752^{+2322}_{-734}	58^{+594}_{-45}

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 $A_{obs} \gg 1.0$

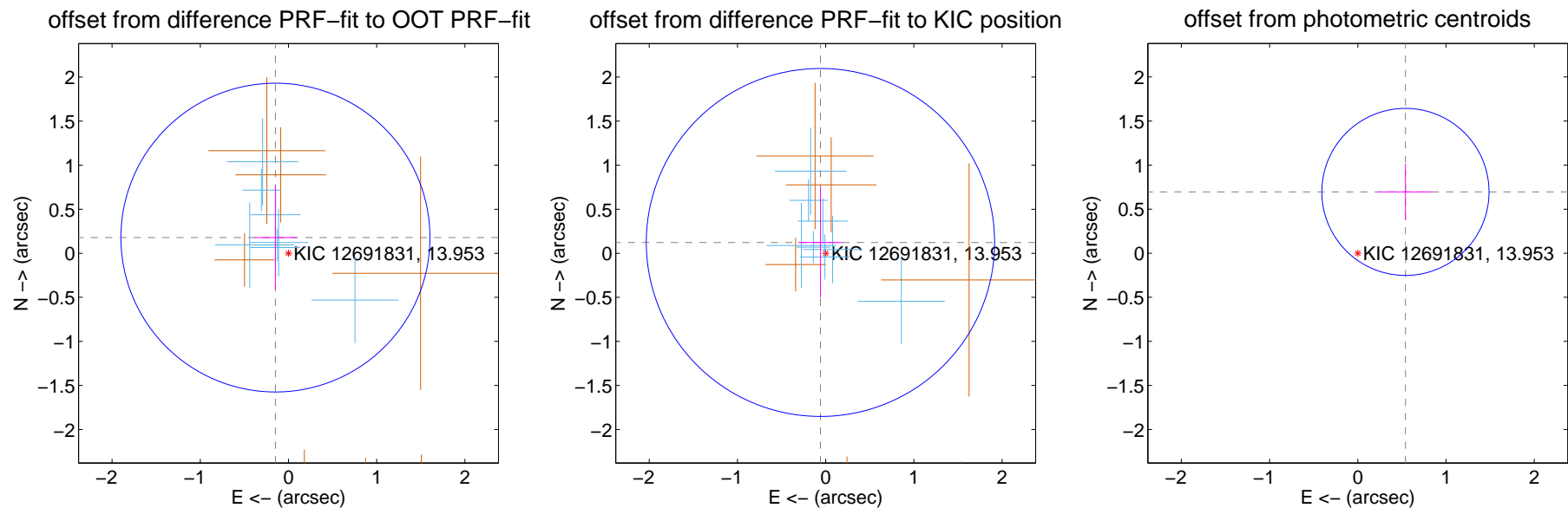
DV Centroid Data

Supplemental centroid analysis for 012691831-04. Kepler magnitude: 13.95. Transit SNR 10.44

There are 8 quarters with good PRF difference image offsets

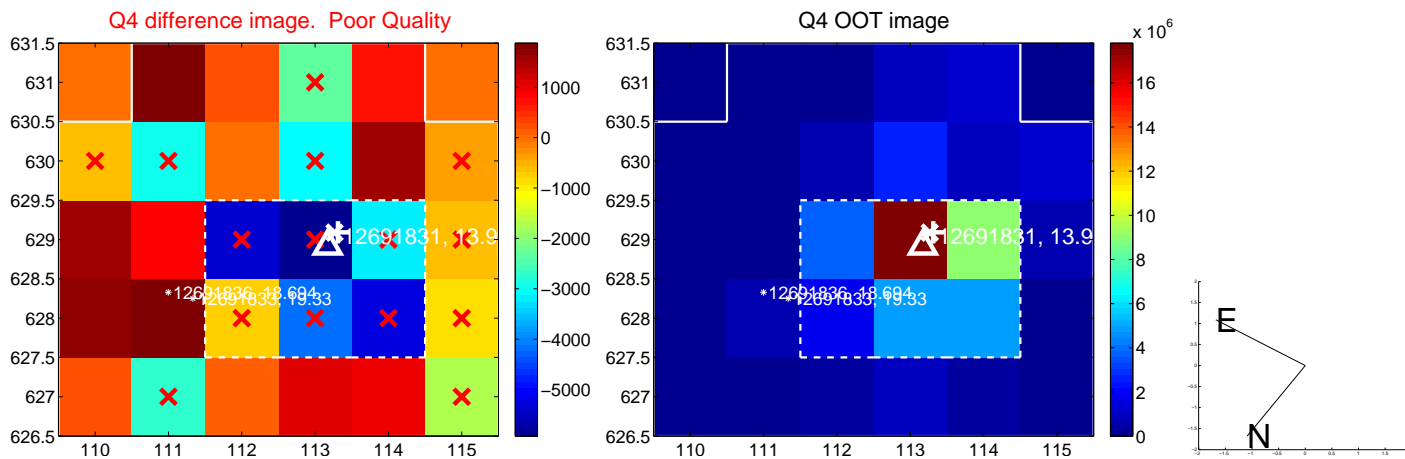
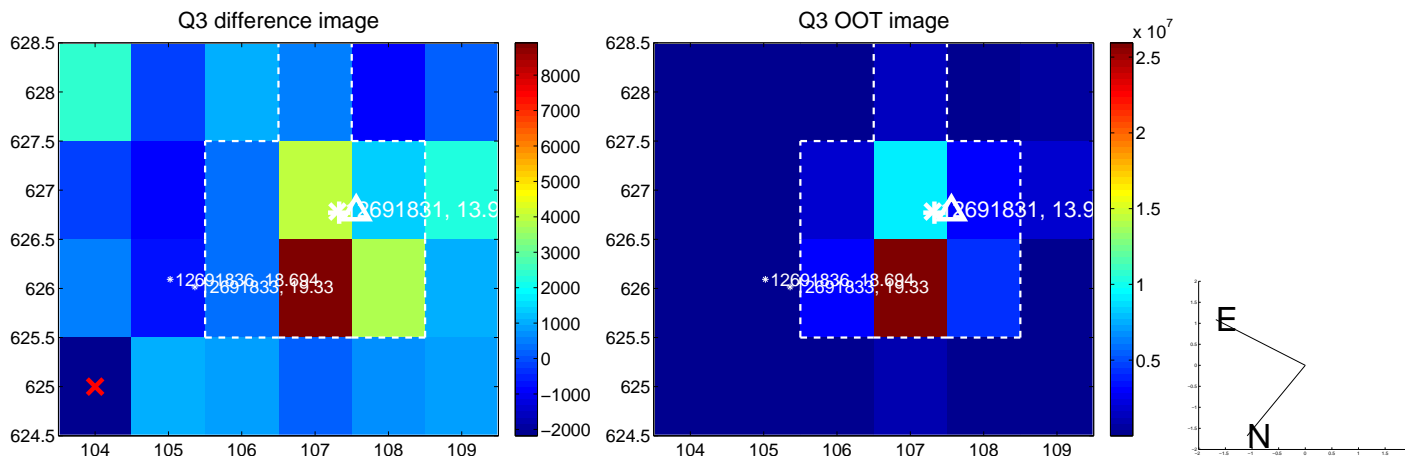
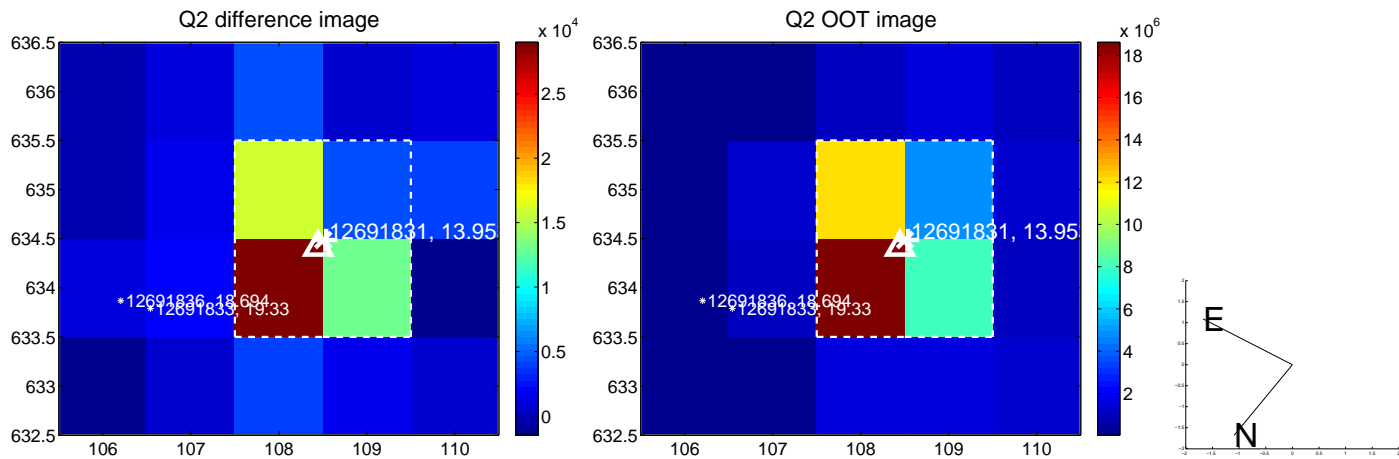
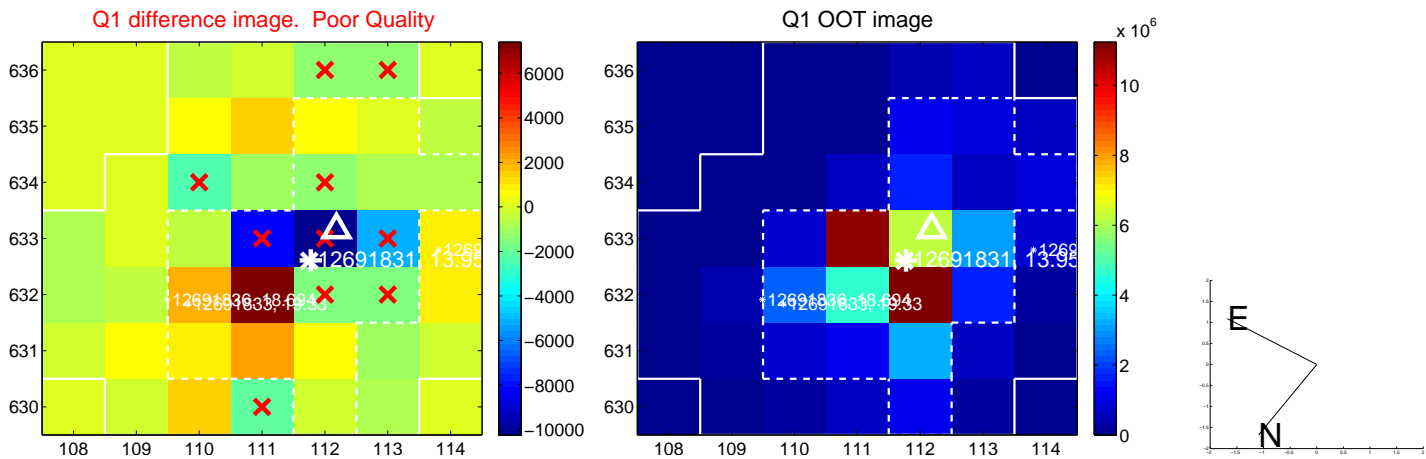
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.232 ± 0.584	0.40	0.148 ± 0.240	0.178 ± 0.587
PRF-fit source offset from KIC position	0.136 ± 0.658	0.21	0.059 ± 0.252	0.123 ± 0.626
photometric centroid source offset	0.88 ± 0.32	2.79	-0.54 ± 0.31	0.70 ± 0.32

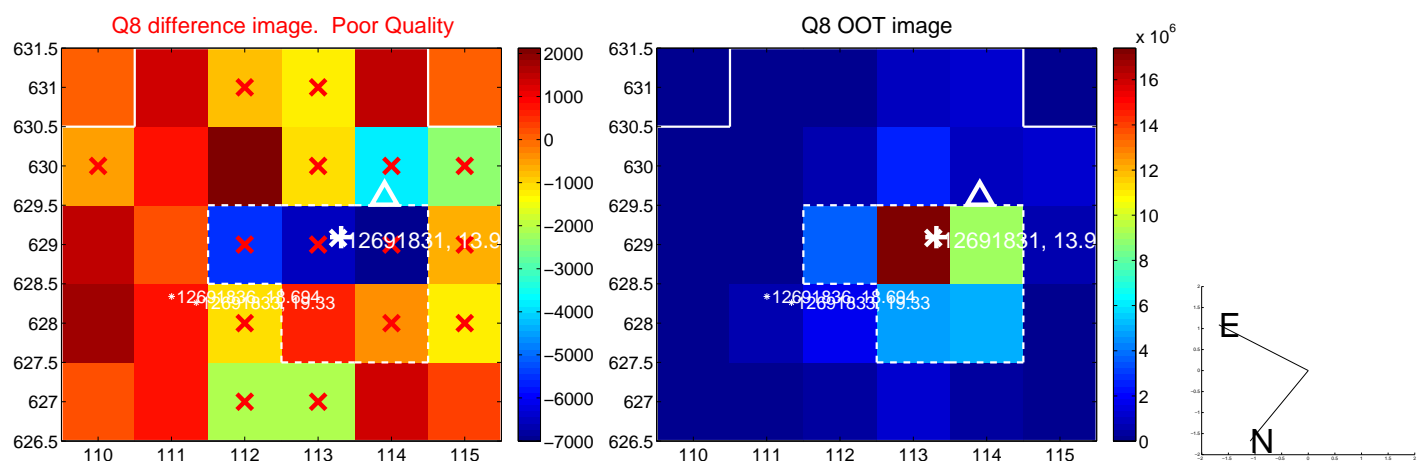
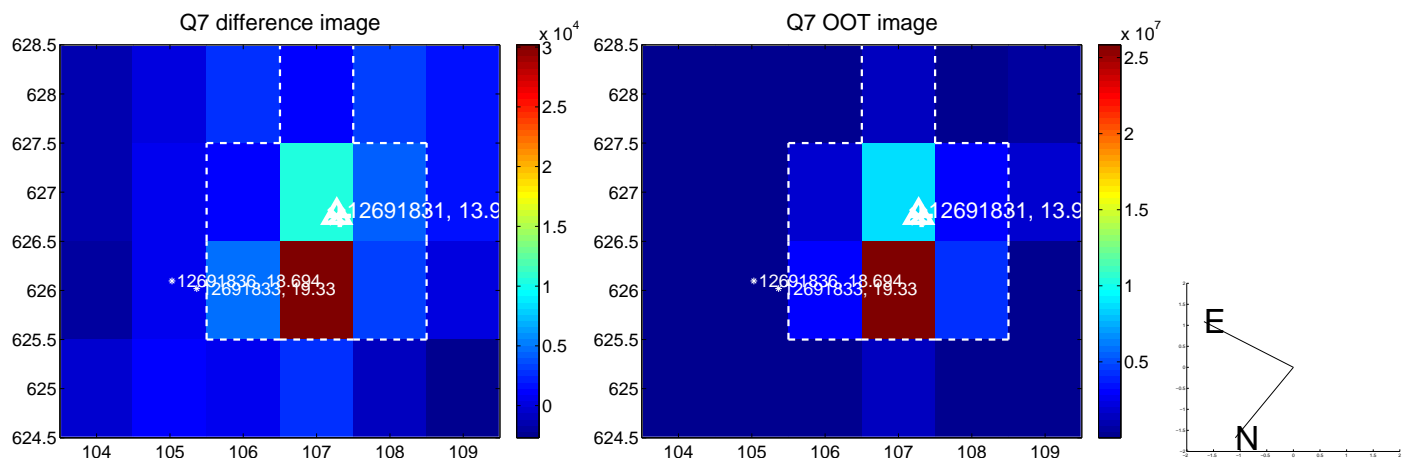
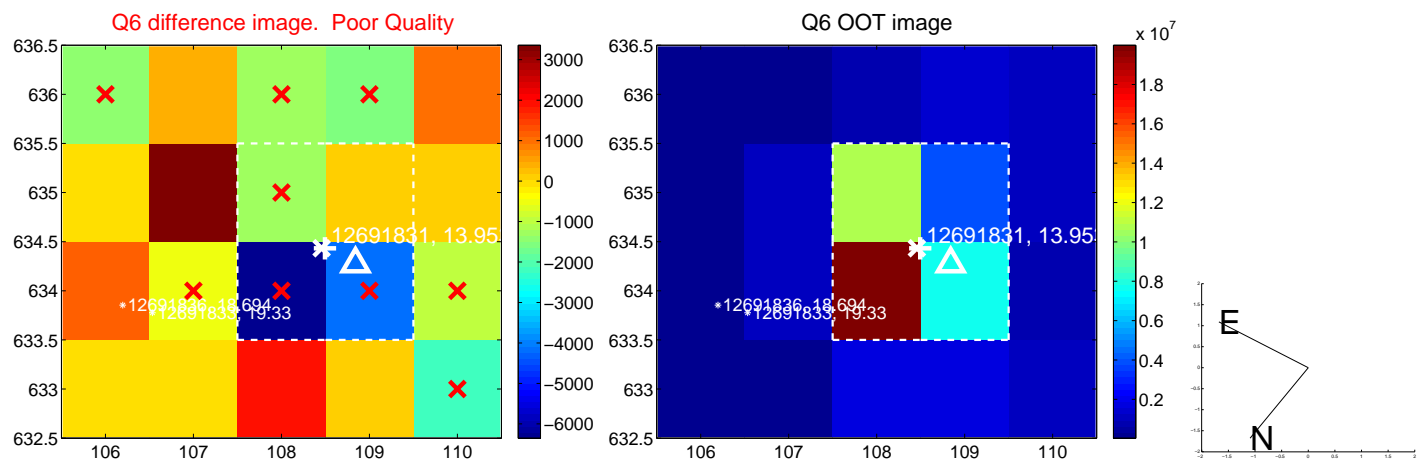
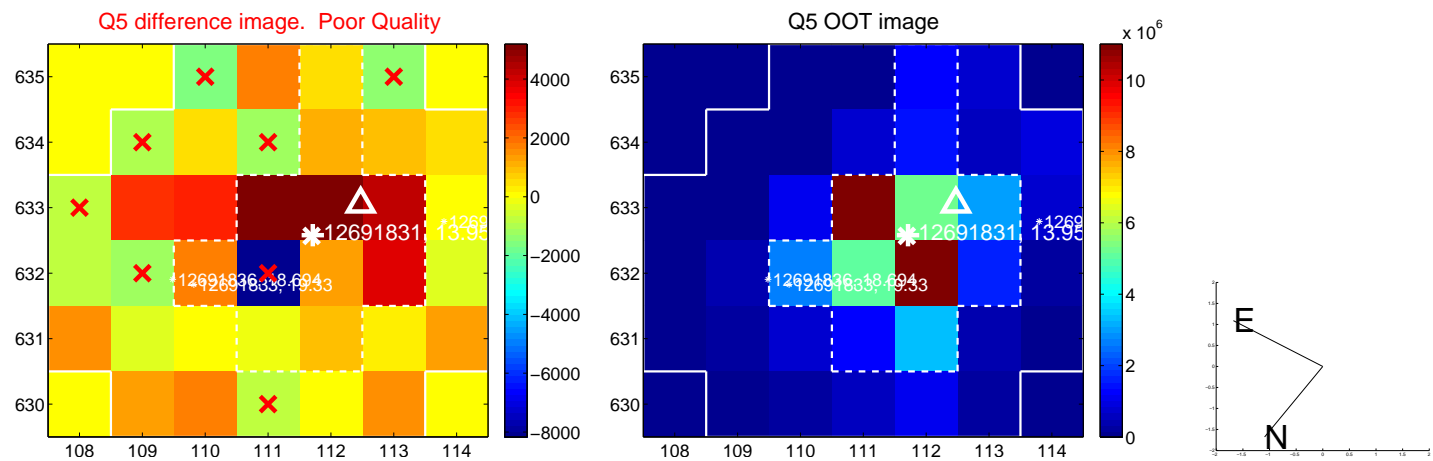


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

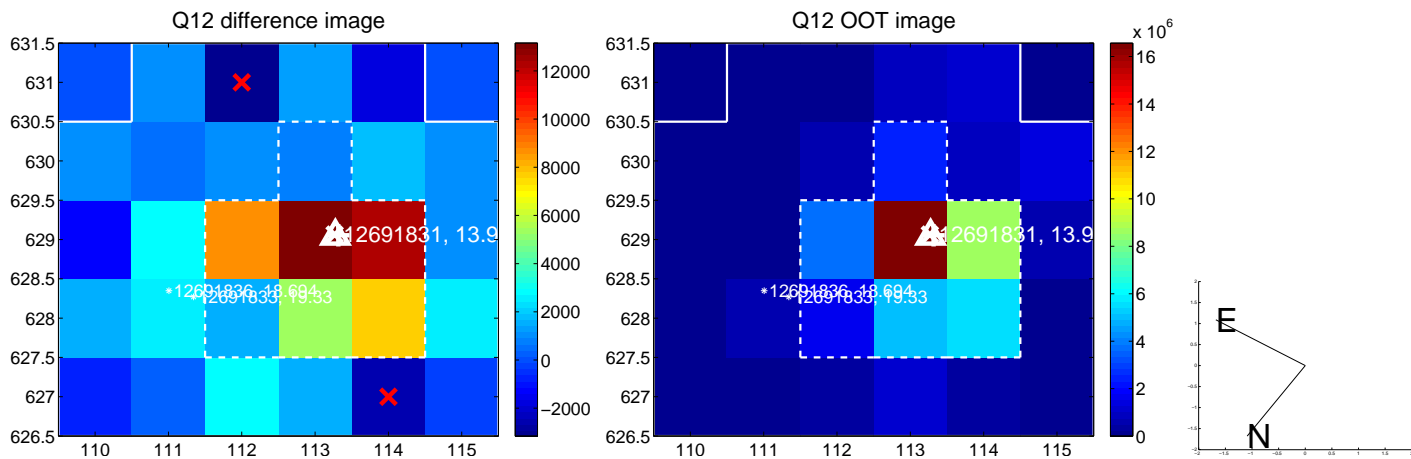
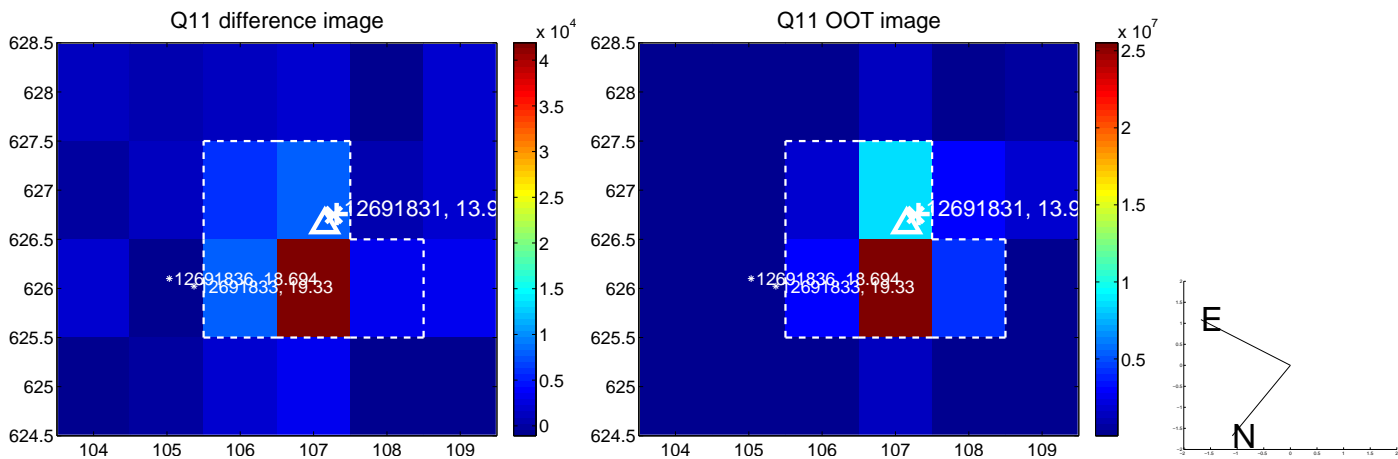
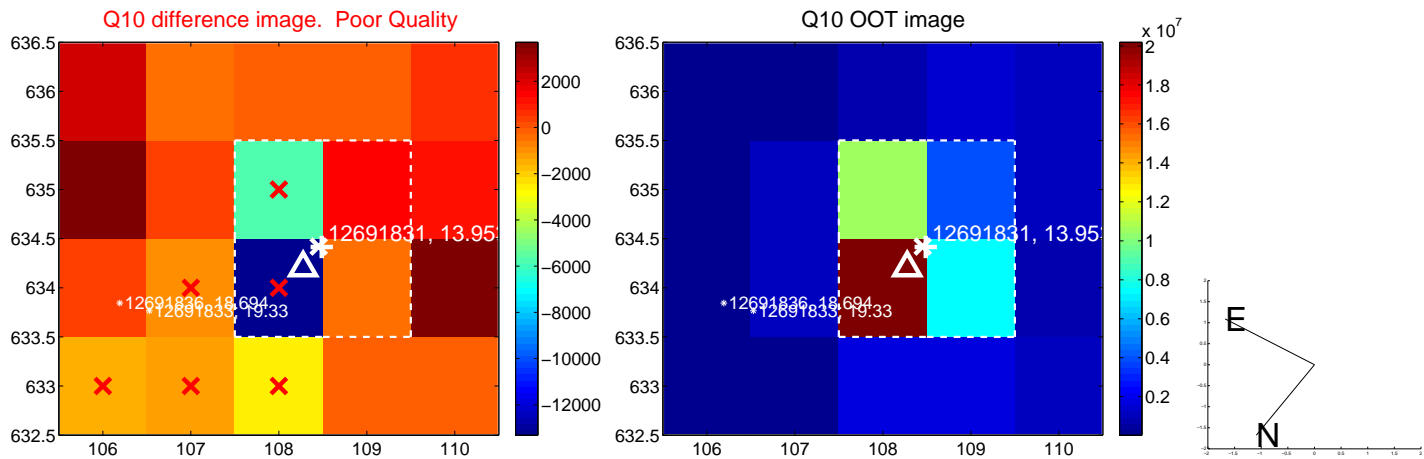
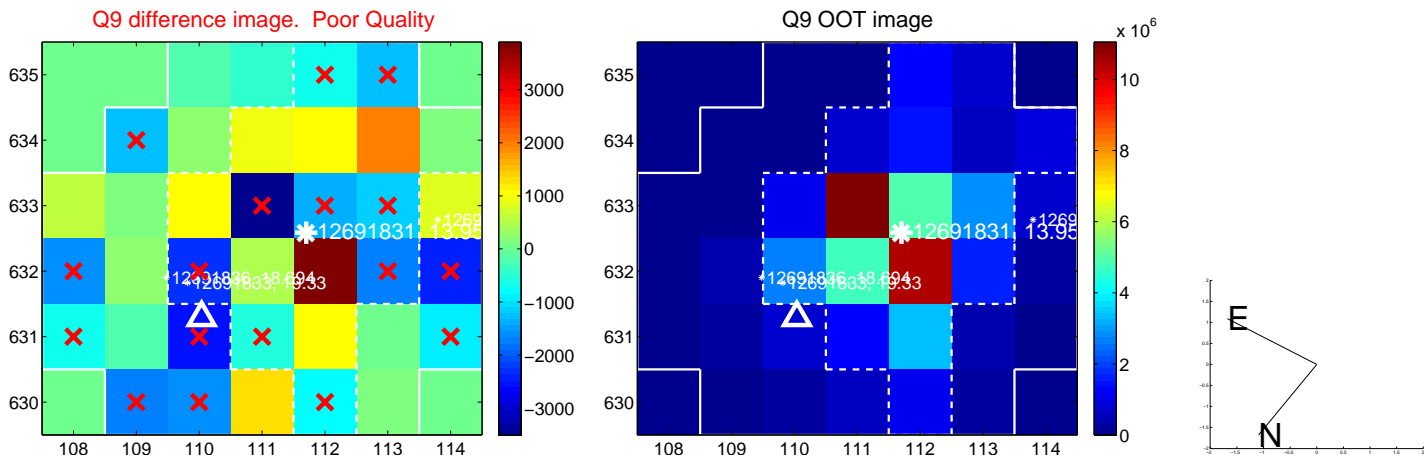
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



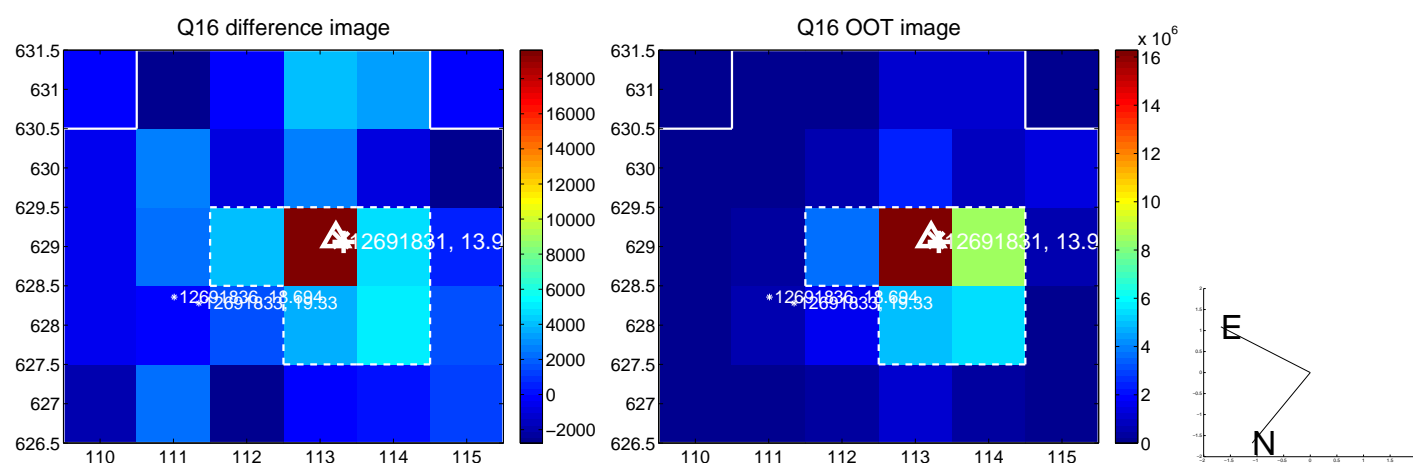
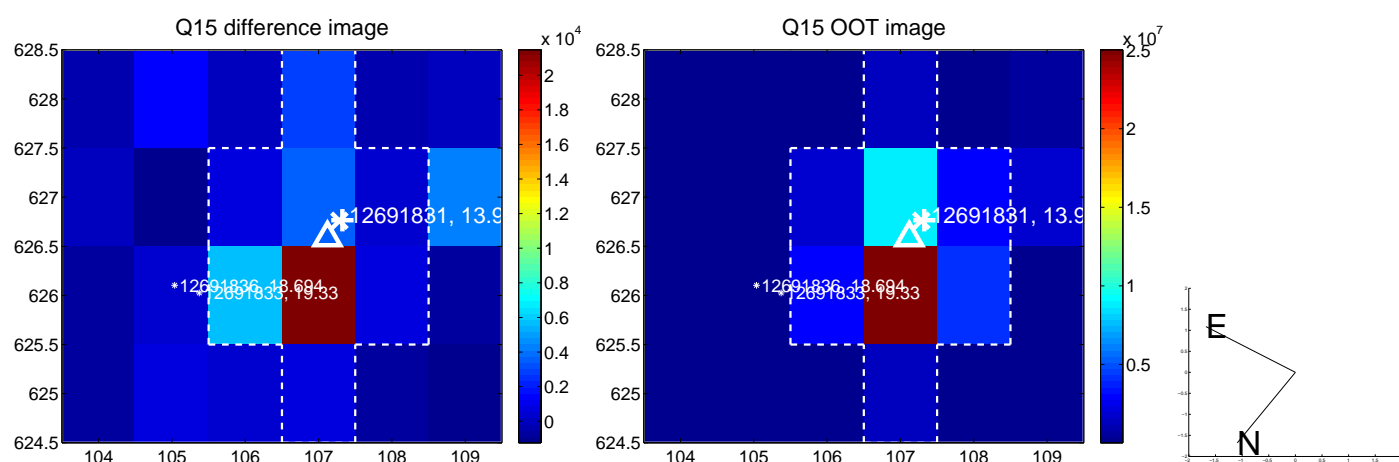
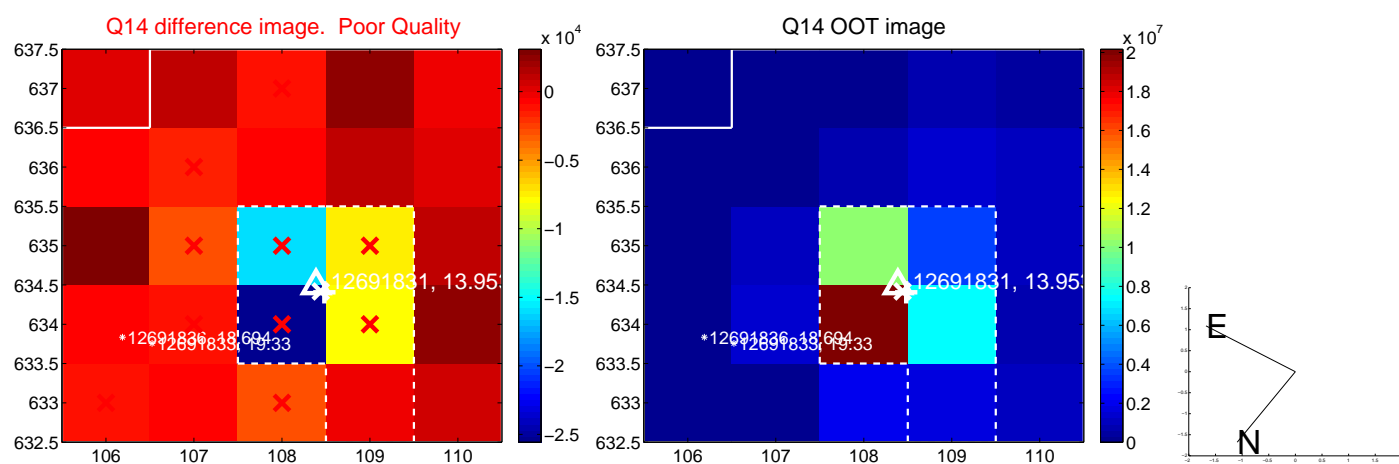
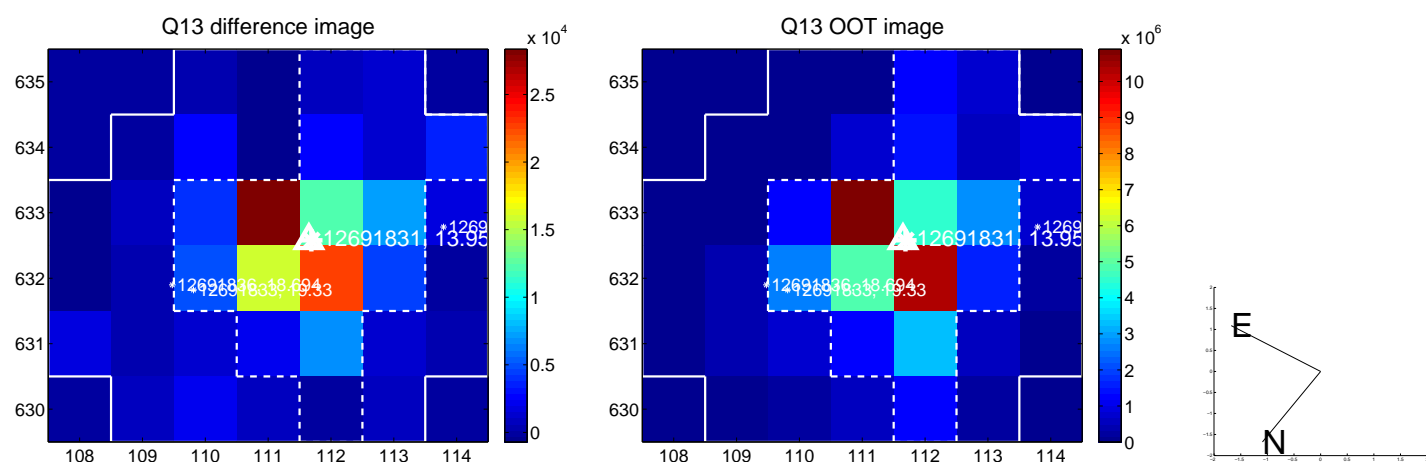
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



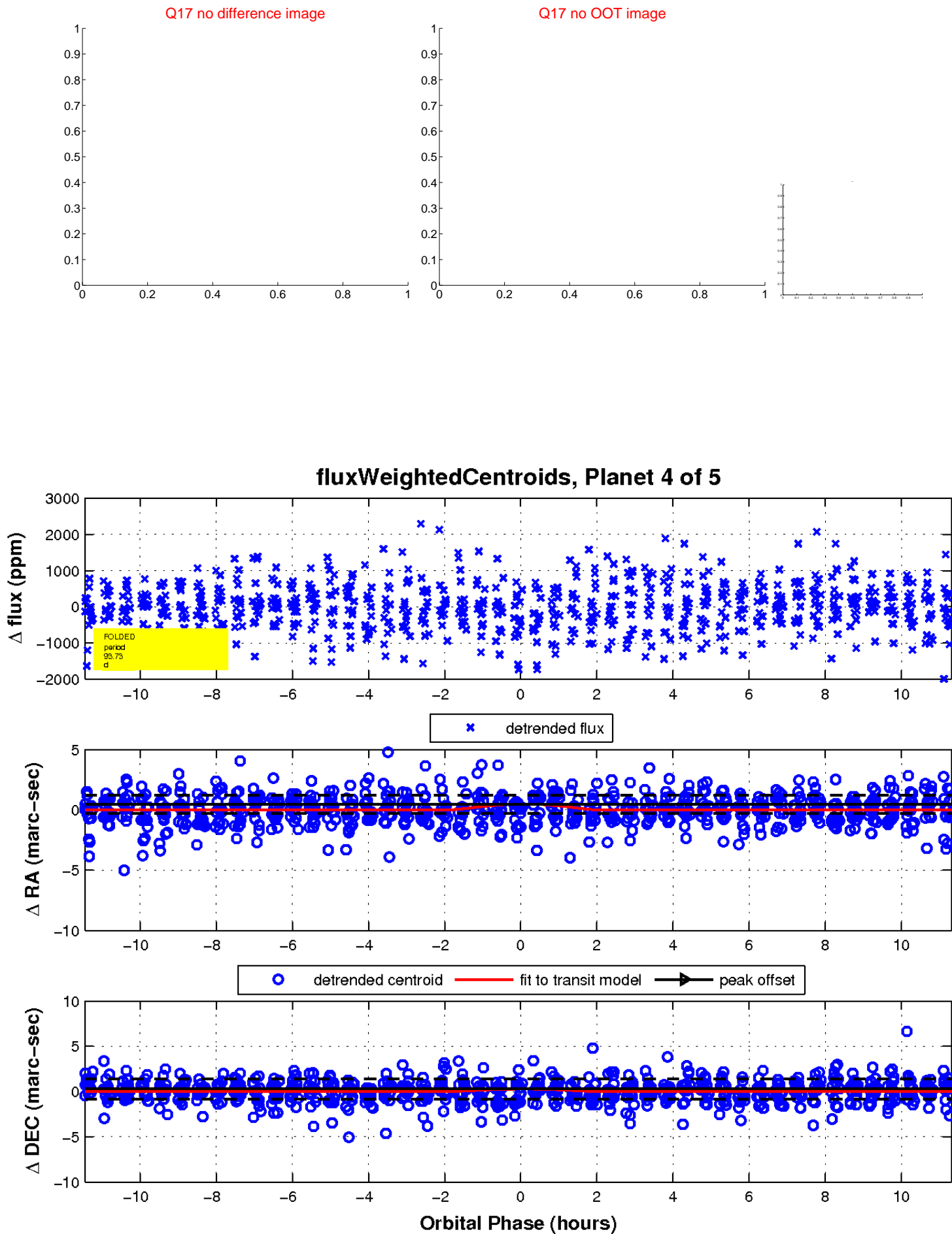
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

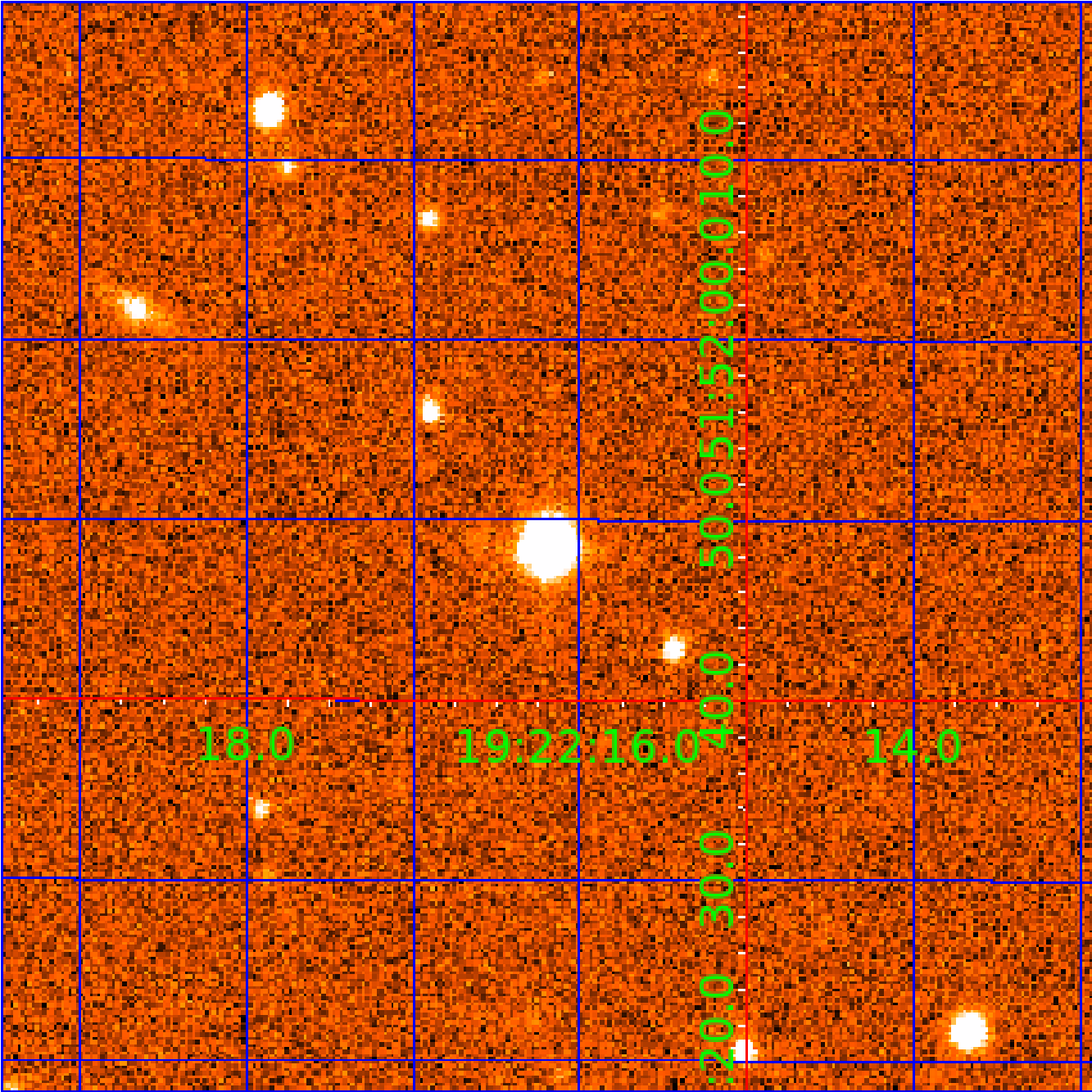


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 012691831

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})
012691831-01	OBS	No	0.786167	132.005082	87.3	2.657	10.0	10.8	3.60	7389	3.91	77520.97
012691831-02	OBS	No	0.709479	132.013152	79.9	4.126	10.5	8.6	3.60	7389	3.29	88890.01
012691831-03	OBS	No	99.916368	163.752273	1572.9	3.011	10.3	11.1	3.60	7389	15.10	121.32
012691831-04	OBS	No	93.728386	141.493204	1316.9	3.820	9.7	10.4	3.60	7389	23.34	132.11
012691831-05	OBS	No	27.246642	146.046741	662.9	3.037	8.1	7.4	3.60	7389	10.30	686.05

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012691831-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
012691831-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
012691831-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
012691831-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
012691831-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

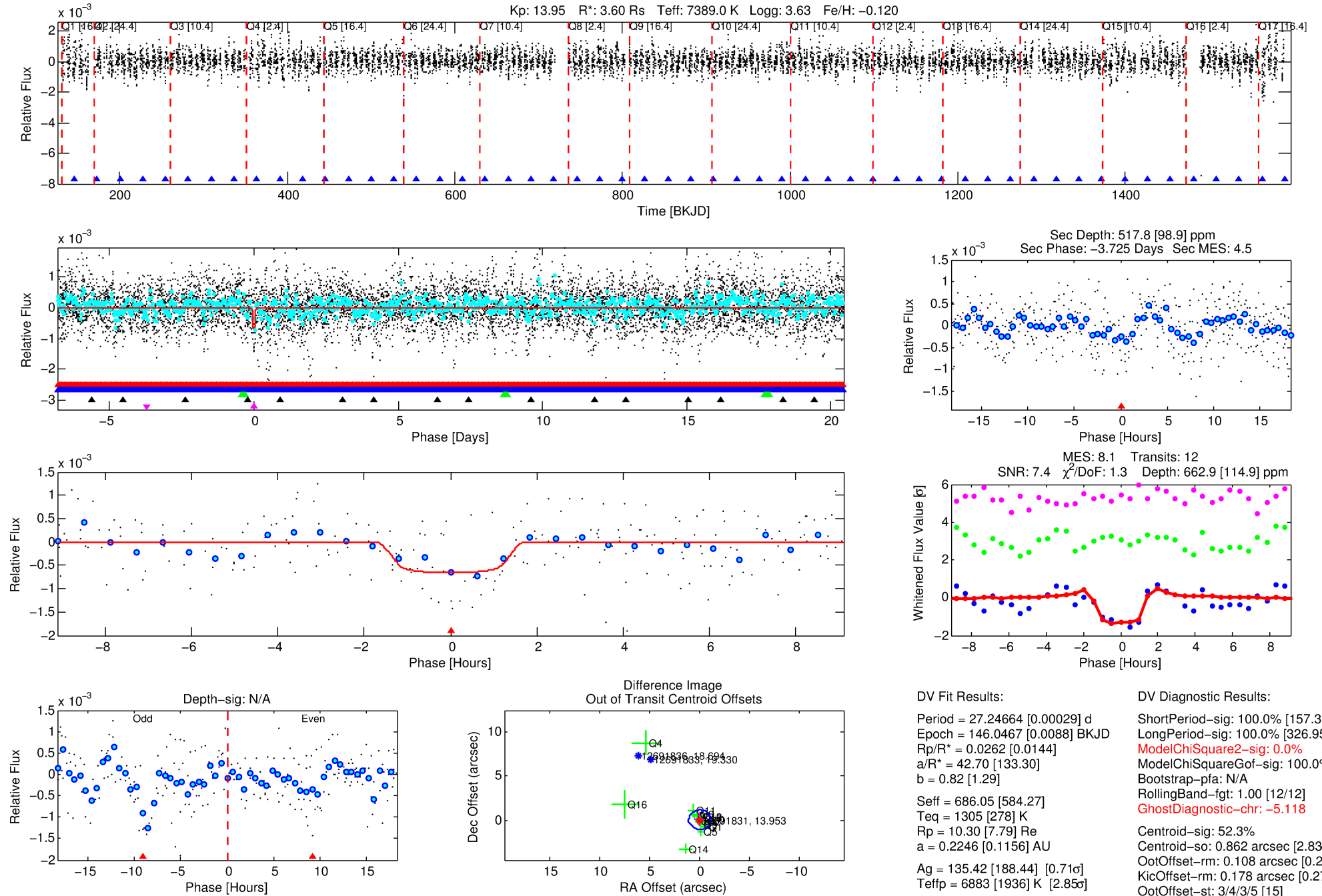
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012691831-05

No Significant Match Found

DV One-Page Summary

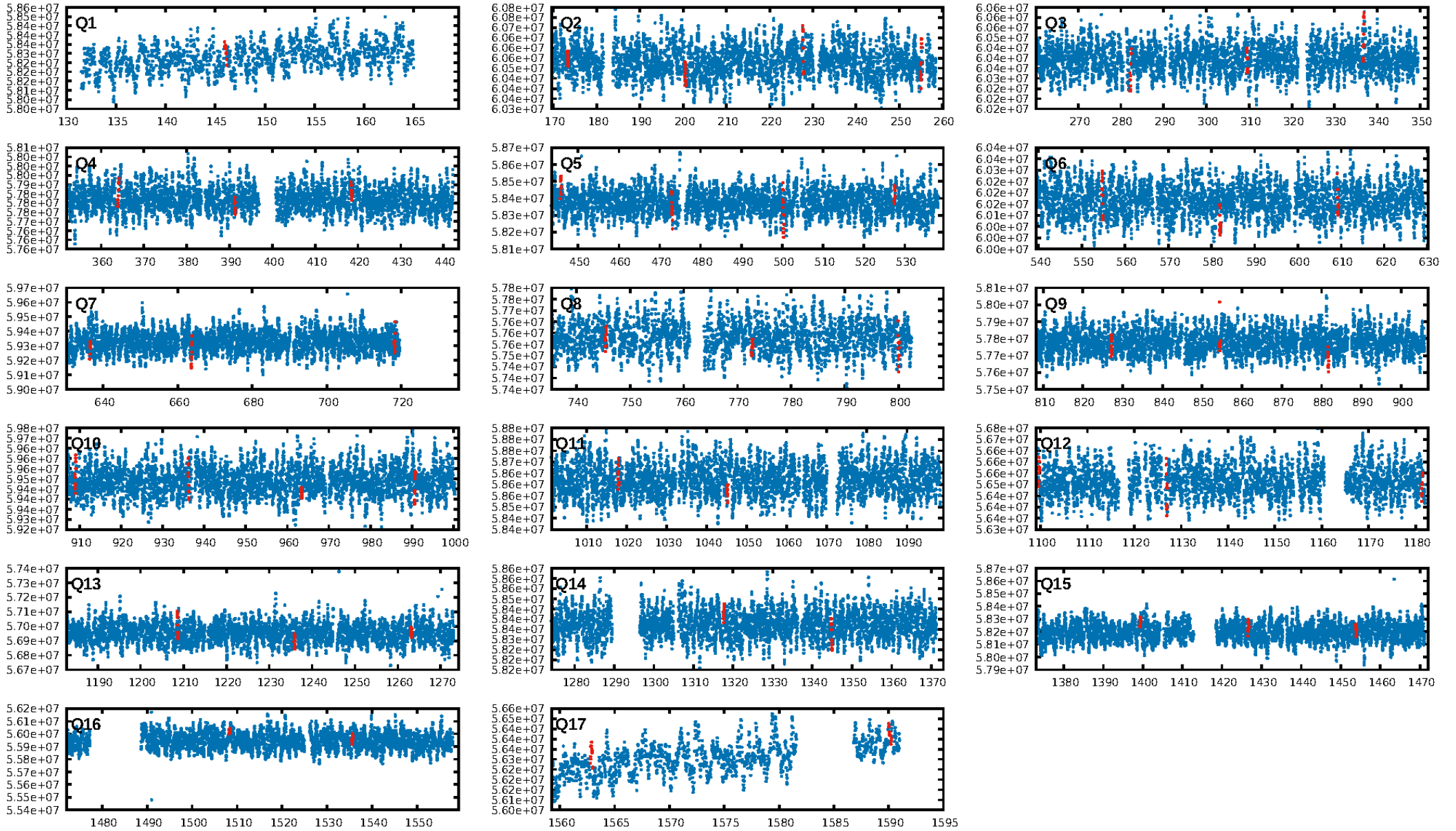
KIC: 12691831 Candidate: 5 of 5 Period: 27.247 d



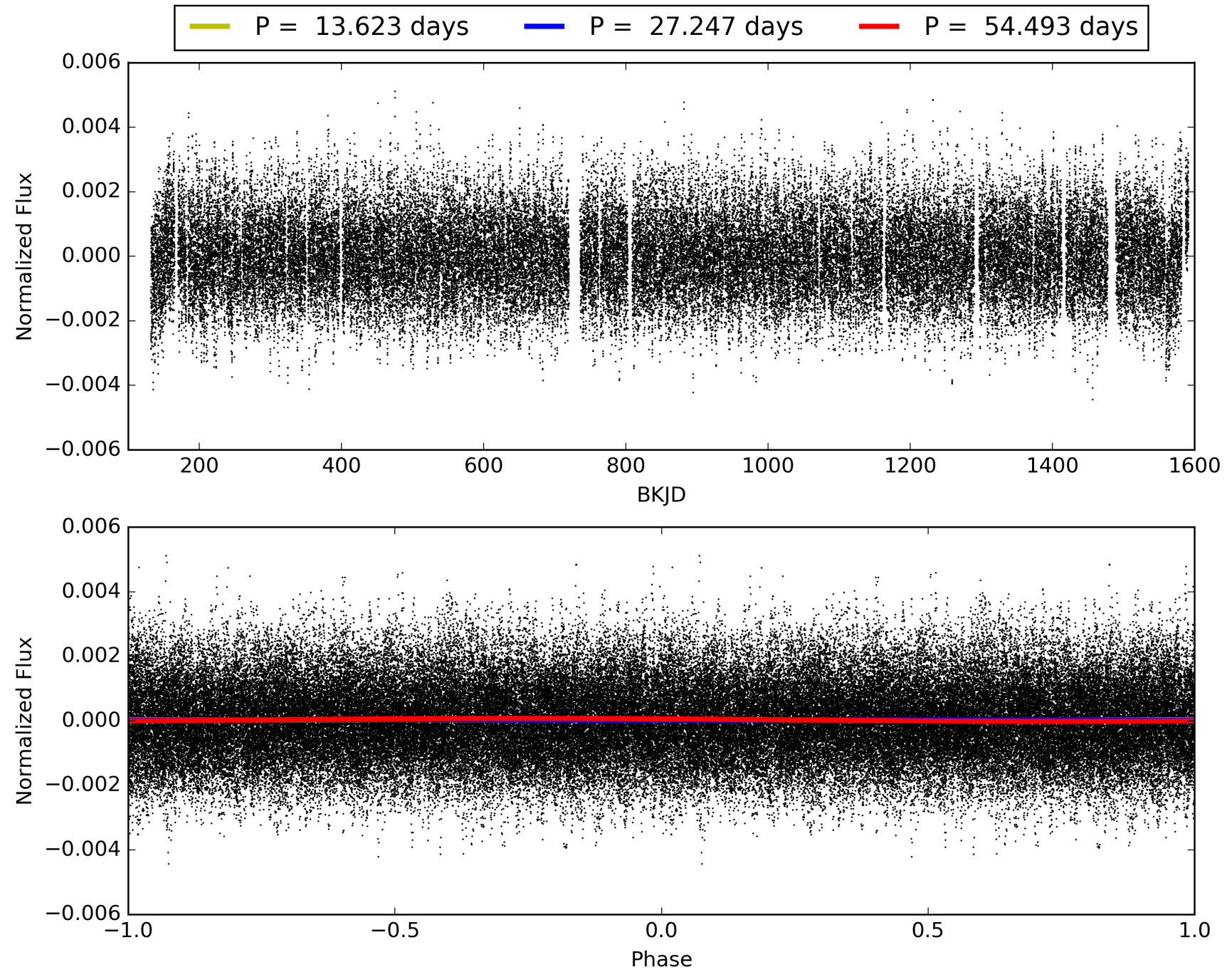
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:57:31 Z

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

TCE 012691831-05, PDC Light Curves

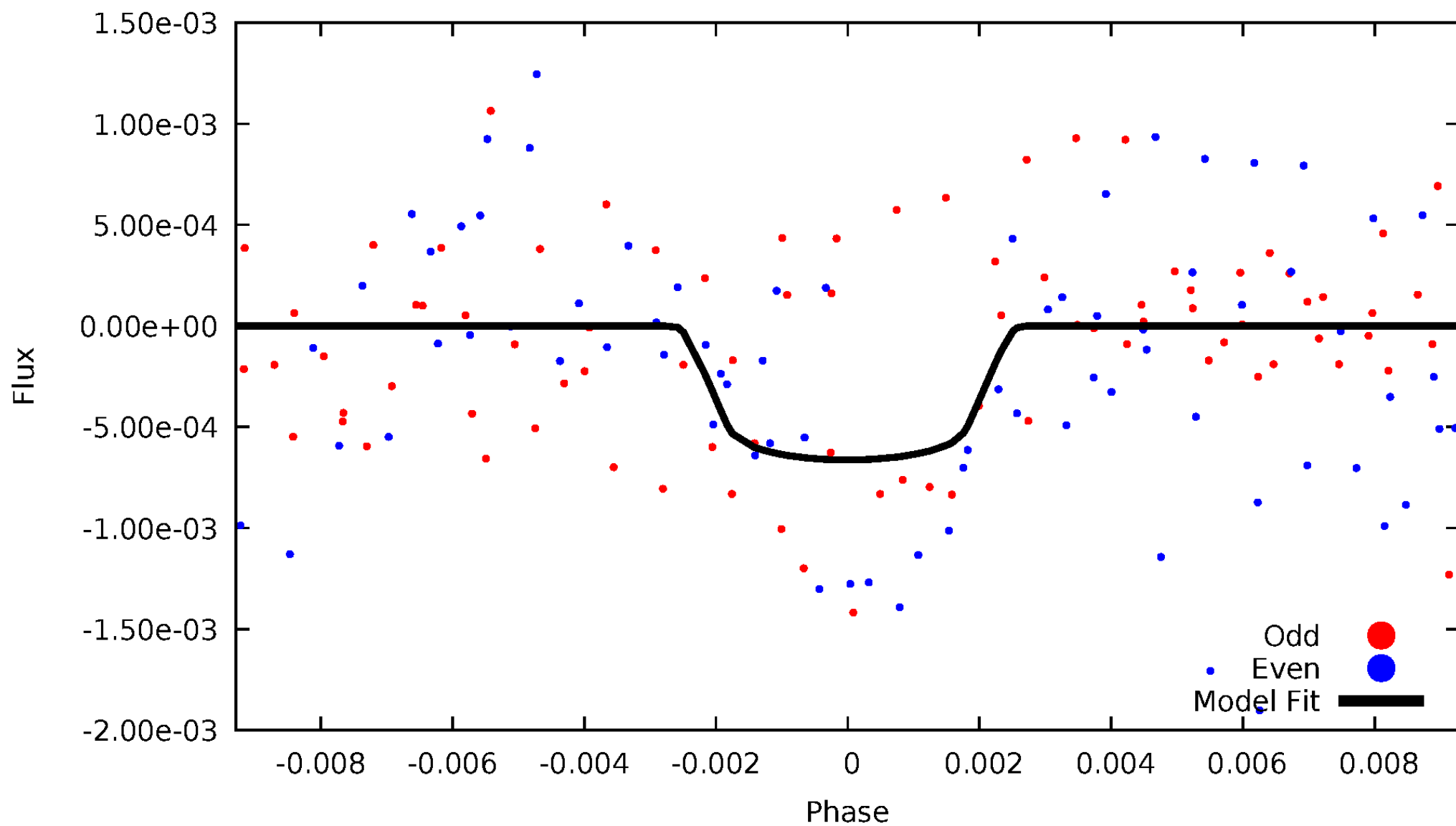


TCE 012691831-05



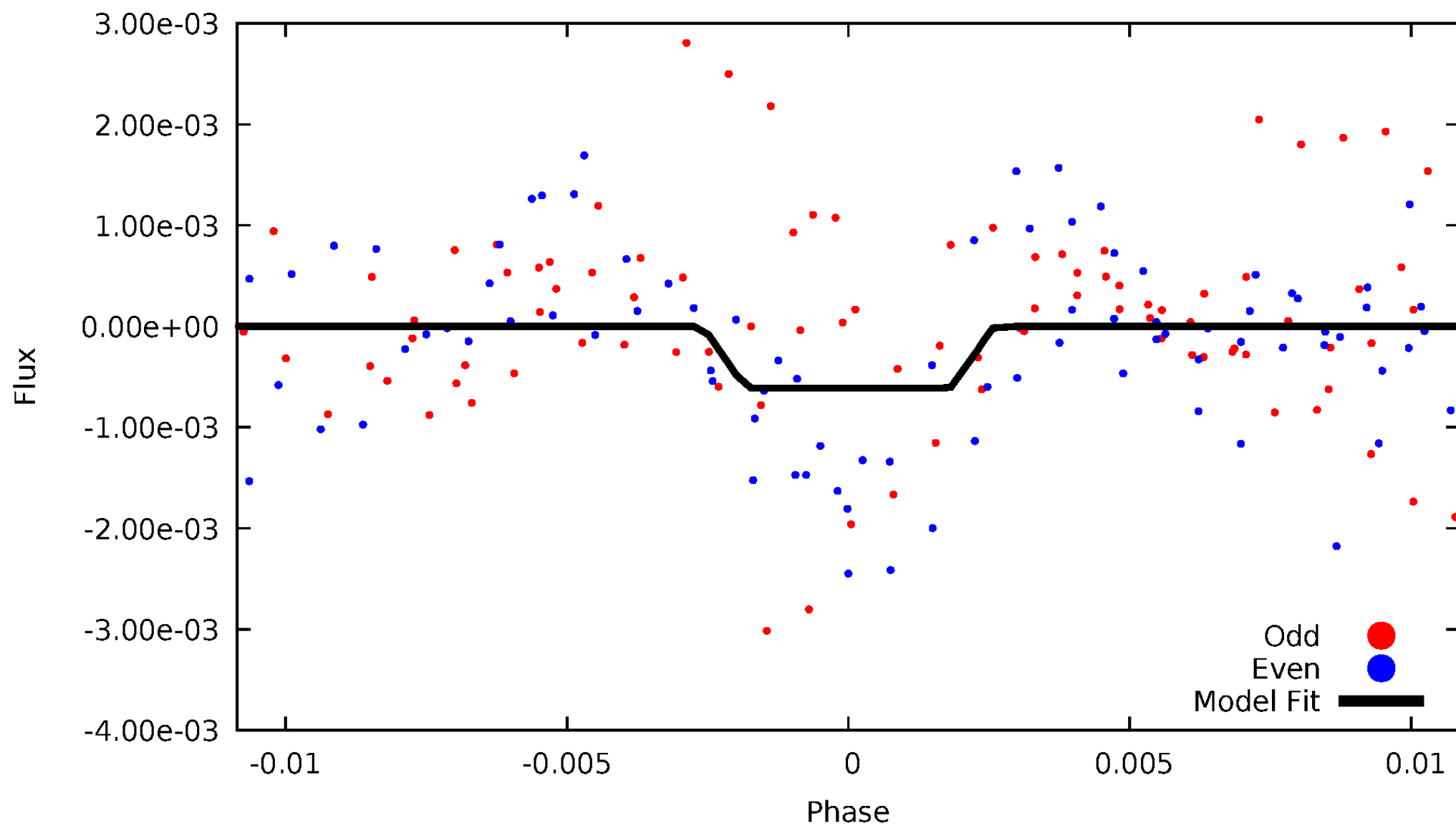
DV Odd/Even

TCE 012691831-05



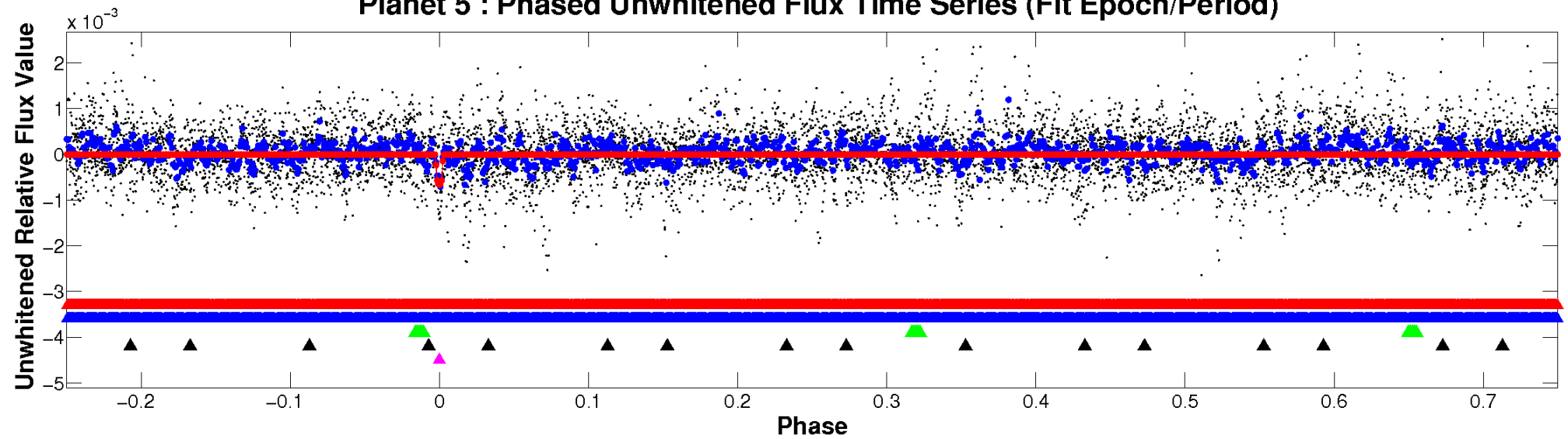
ALT Odd/Even

TCE 012691831-05

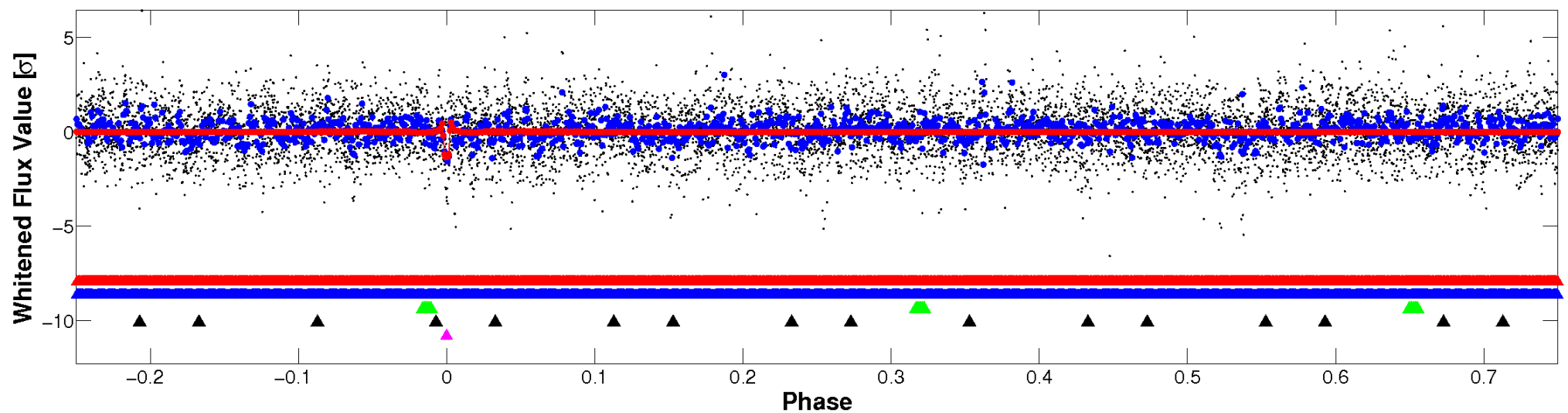


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

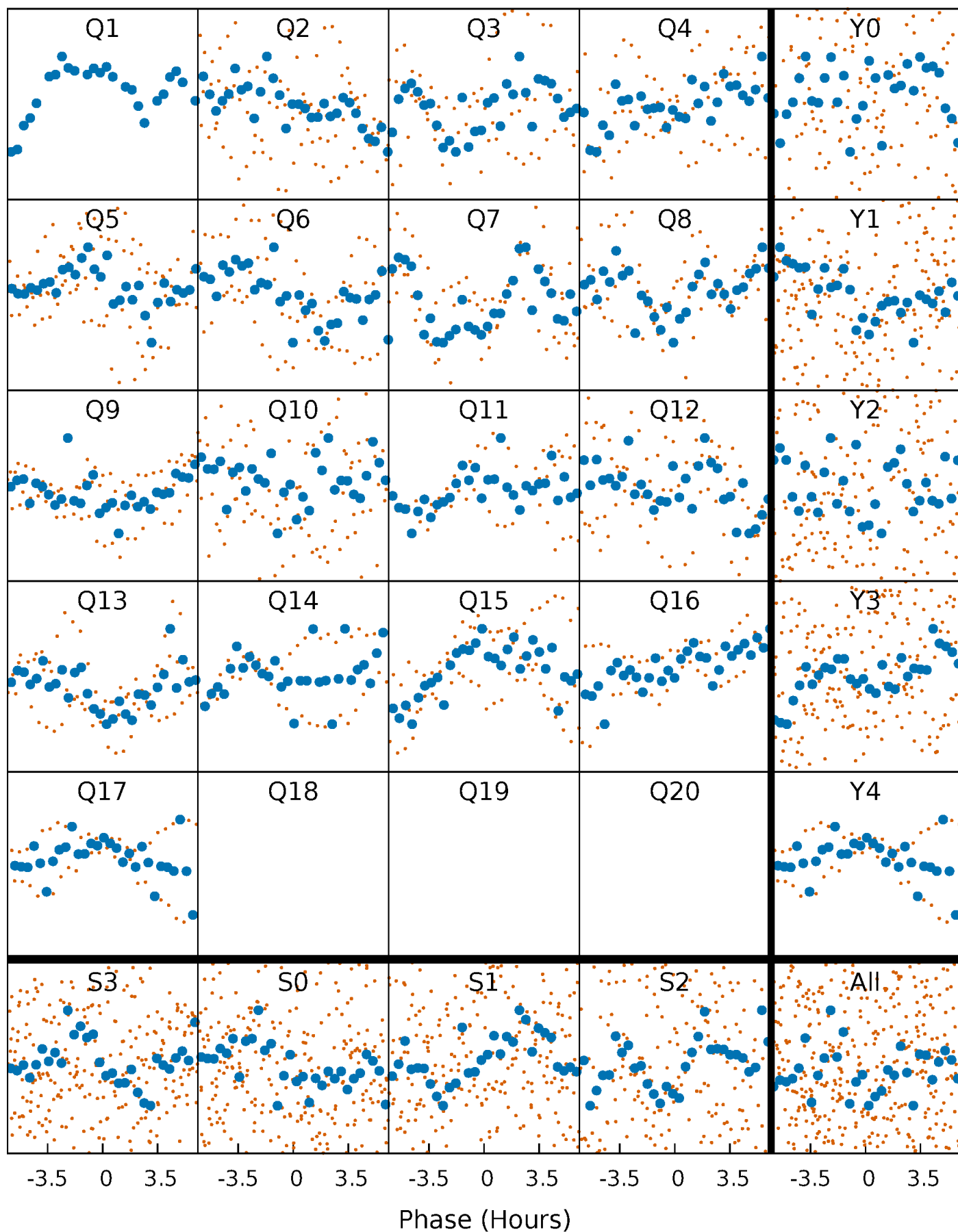


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



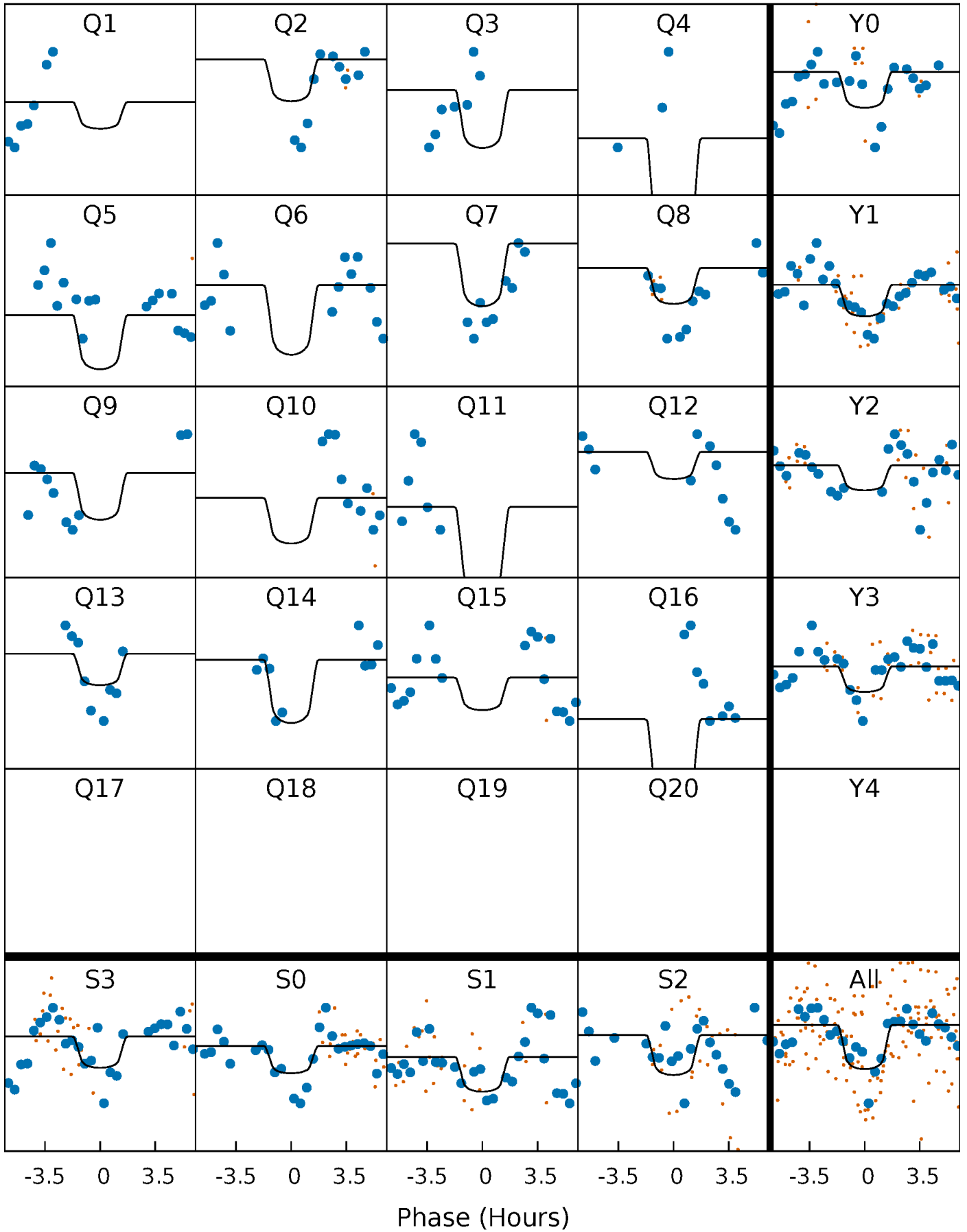
PDC Quarter-Phased Transit Curves

TCE 012691831-05 P= 27.246642 Days $T_0=146.046741$ (BKJD)



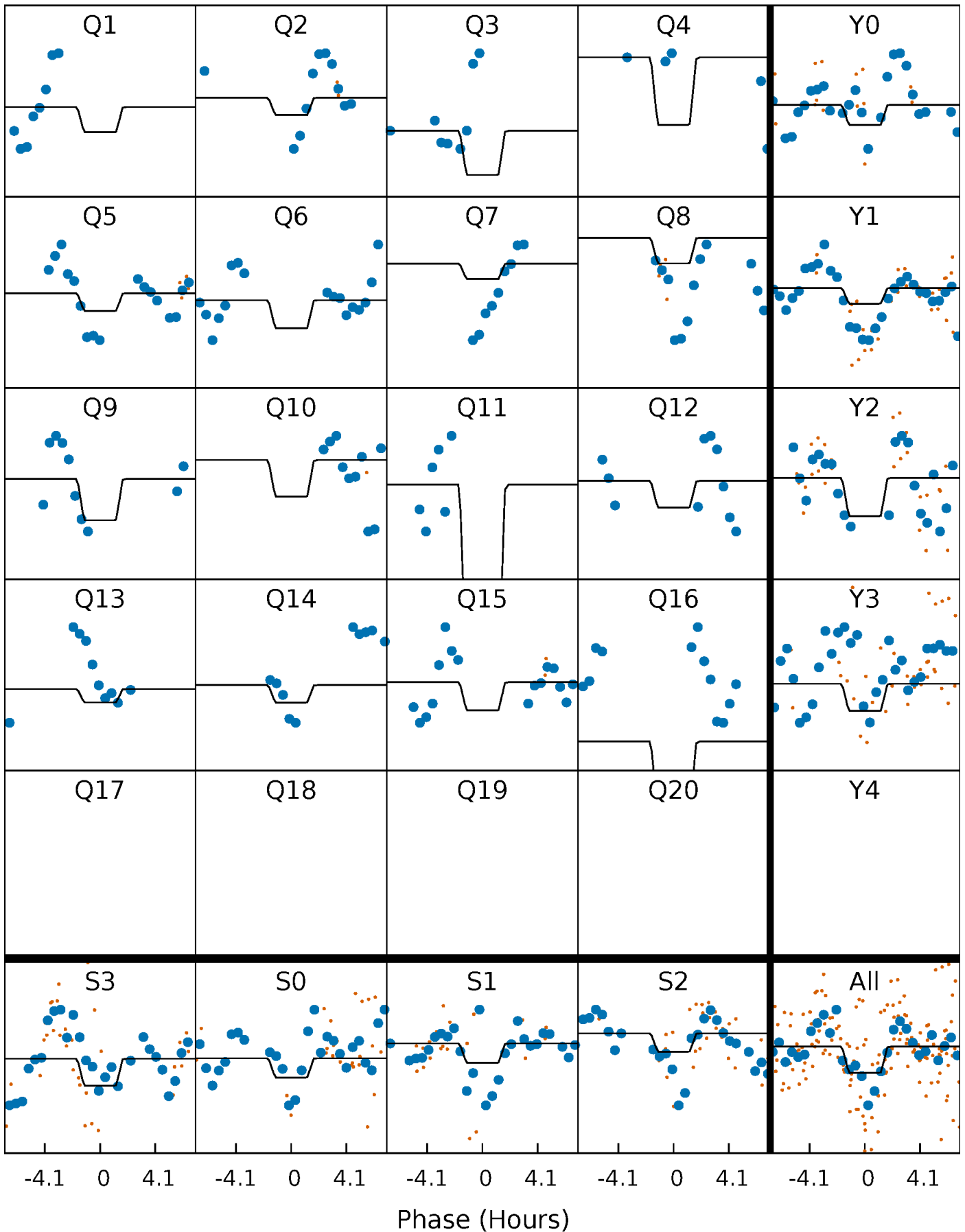
DV Quarter-Phased Transit Curves

TCE 012691831-05 $P = 27.246642$ Days $T_0 = 146.046741$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

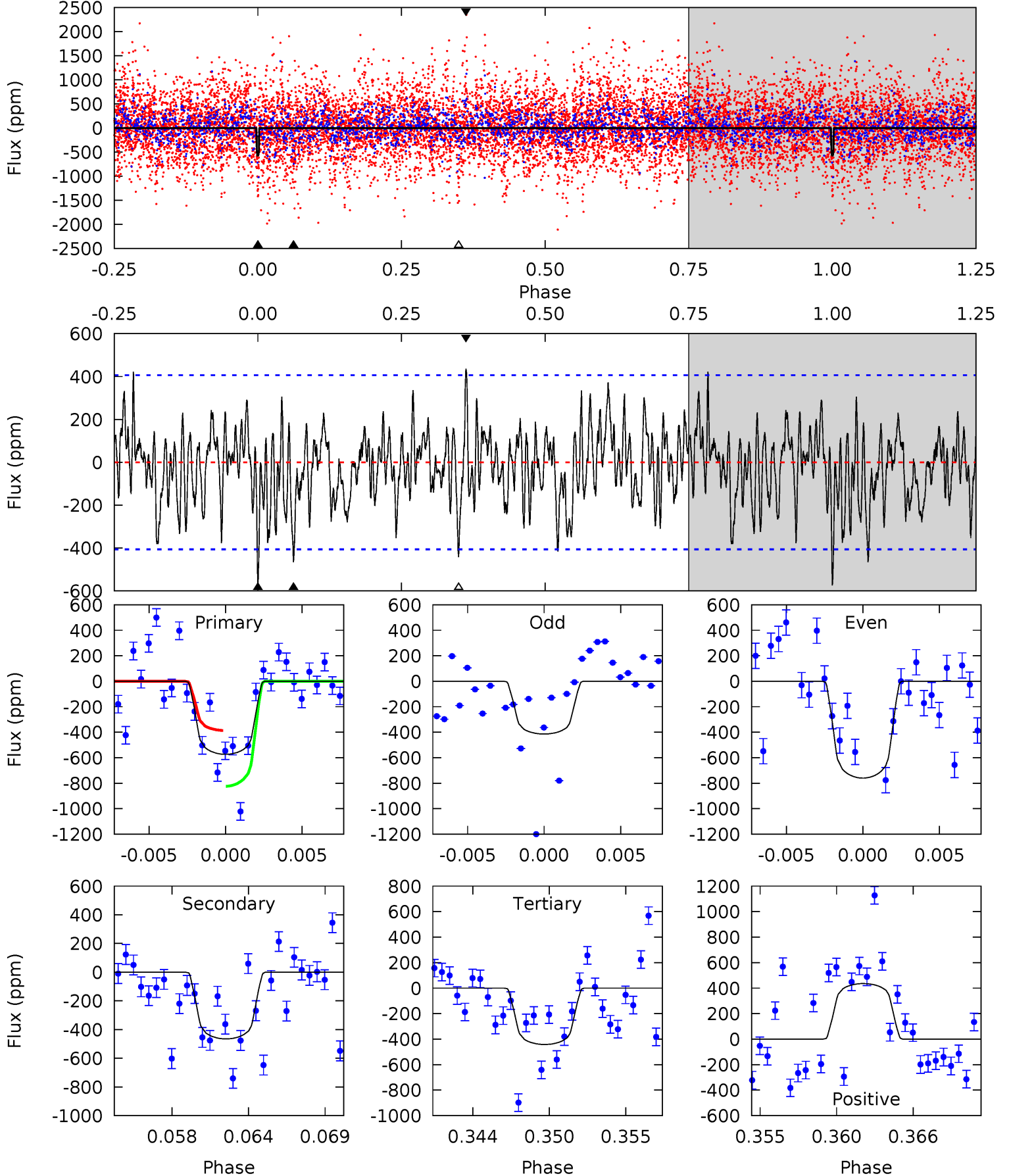
TCE 012691831-05 P= 27.245985 Days $T_0=146.050818$ (BKJD)



DV Model-Shift Uniqueness Test

012691831-05, $P = 27.246642$ Days, $E = 118.800099$ Days

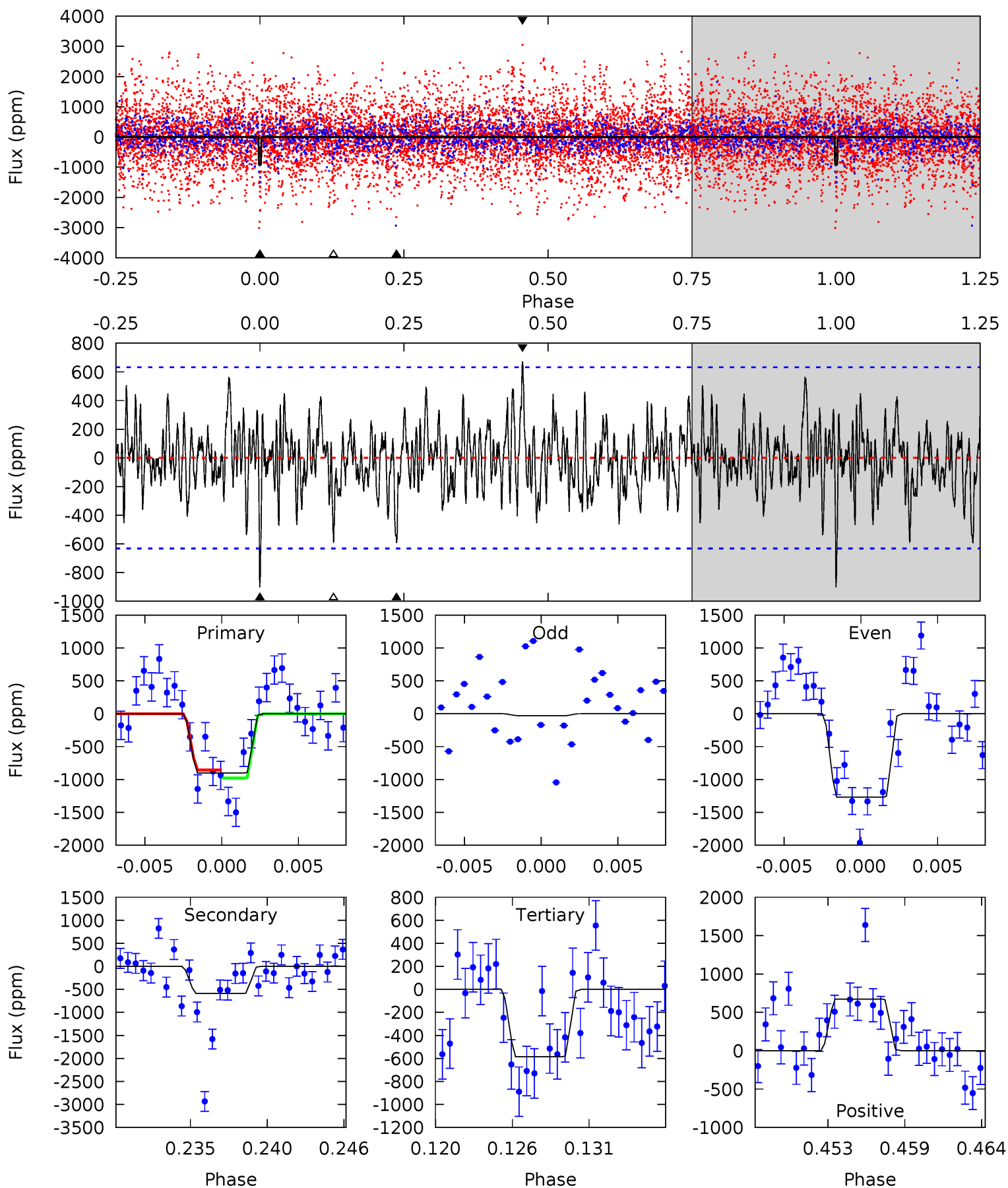
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.27	5.90	5.60	5.52	5.15	2.79	1.86	1.66	1.74	0.29	0.37	2.23	0.72	0.43	2.77



Alt Model-Shift Uniqueness Test

012691831-05, $P = 27.245985$ Days, $E = 118.804833$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.33	4.81	4.76	5.47	5.14	2.78	1.54	2.57	1.86	0.05	-0.66	4.99	0.77	0.43	0.50



Stellar Parameters For KIC 012691831

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7389^{+230}_{-307}	$3.634^{+0.495}_{-0.055}$	$-0.120^{+0.250}_{-0.300}$	$3.600^{+0.331}_{-1.873}$	$2.034^{+0.151}_{-0.604}$	$0.061^{+0.315}_{-0.012}$
	+3%/-4%	+14%/-2%	+208%/-250%	+9%/-52%	+7%/-30%	+513%/-20%
Source	KIC0	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 012691831-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-465 ± 79	$8.86^{+5.78}_{-4.45}$	1765^{+109}_{-204}	6590^{+3509}_{-1254}	162^{+480}_{-104}
Alt.	-592 ± 123	$8.33^{+5.62}_{-4.37}$	1746^{+128}_{-235}	7244^{+4682}_{-1624}	234^{+844}_{-154}

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 $A_{obs} \gg 1.0$

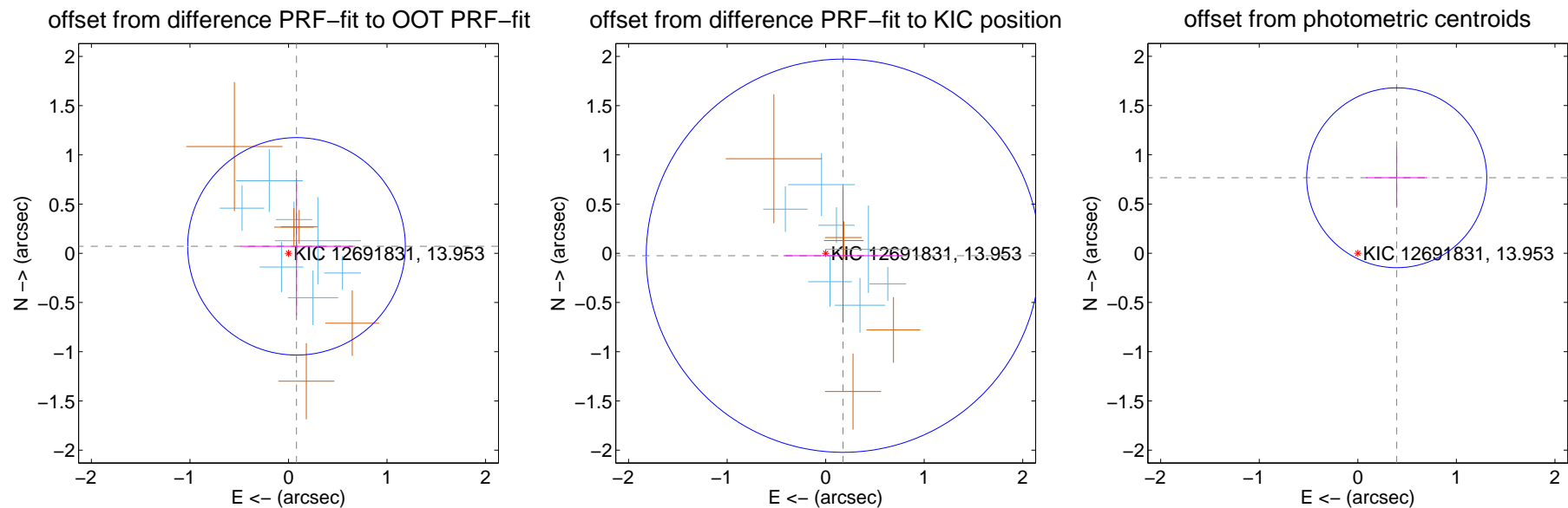
DV Centroid Data

Supplemental centroid analysis for 012691831-05. Kepler magnitude: 13.95. Transit SNR 7.35

There are 8 quarters with good PRF difference image offsets

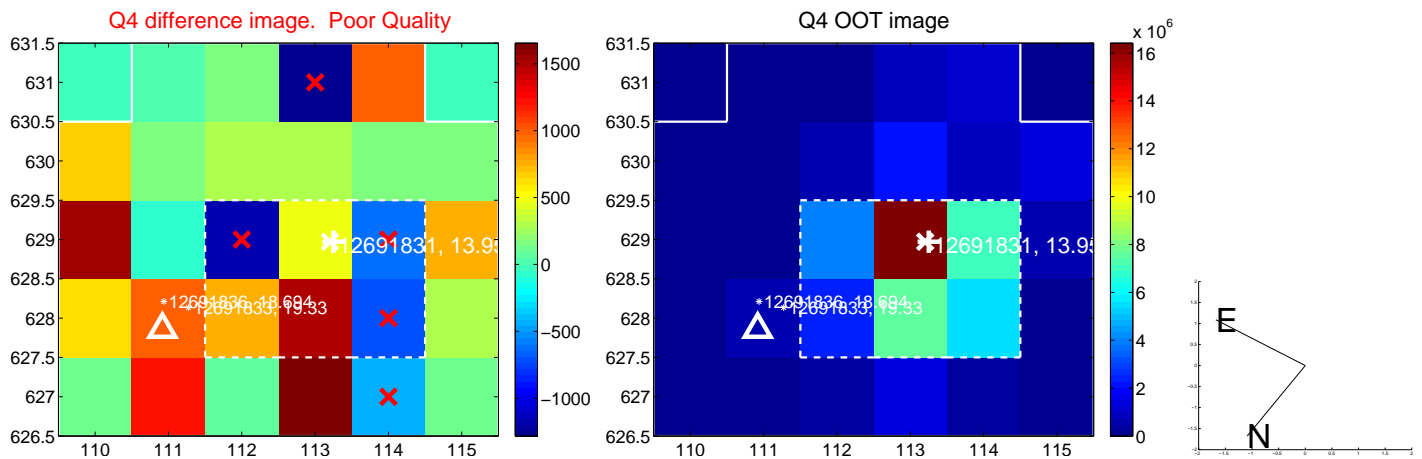
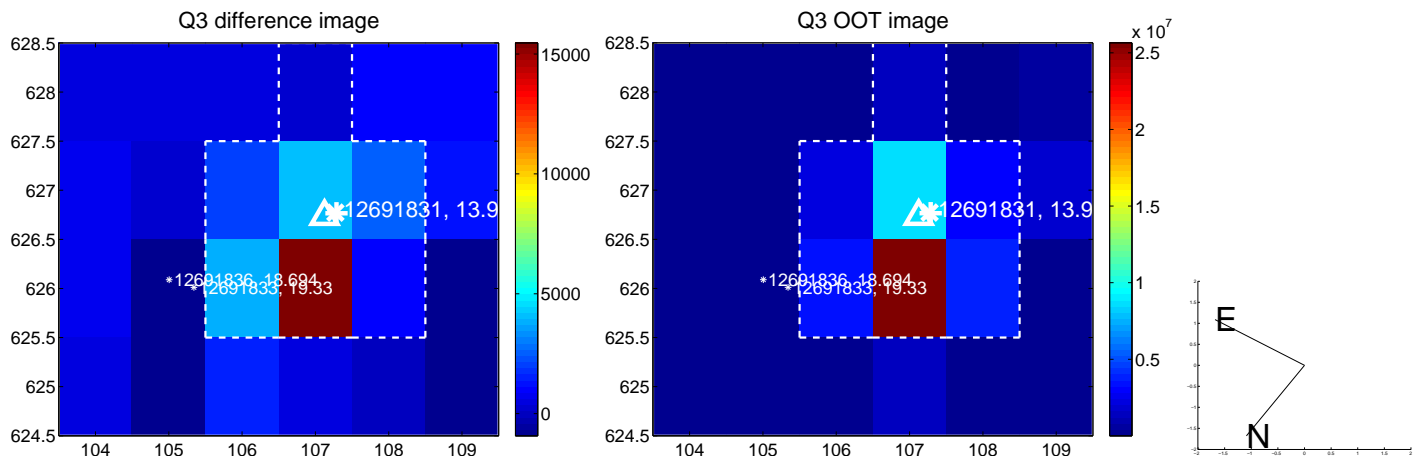
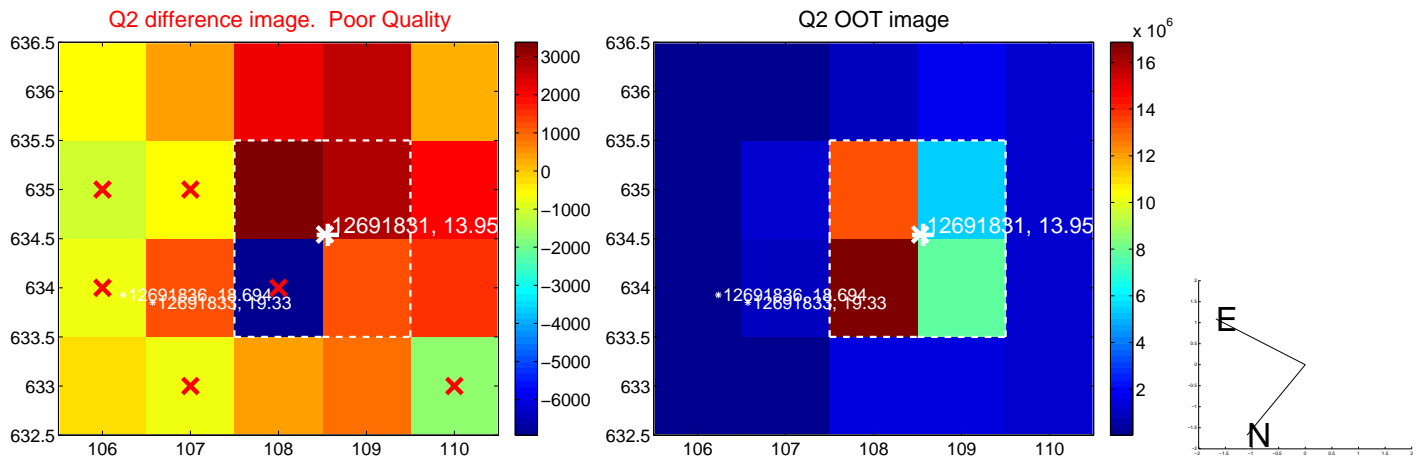
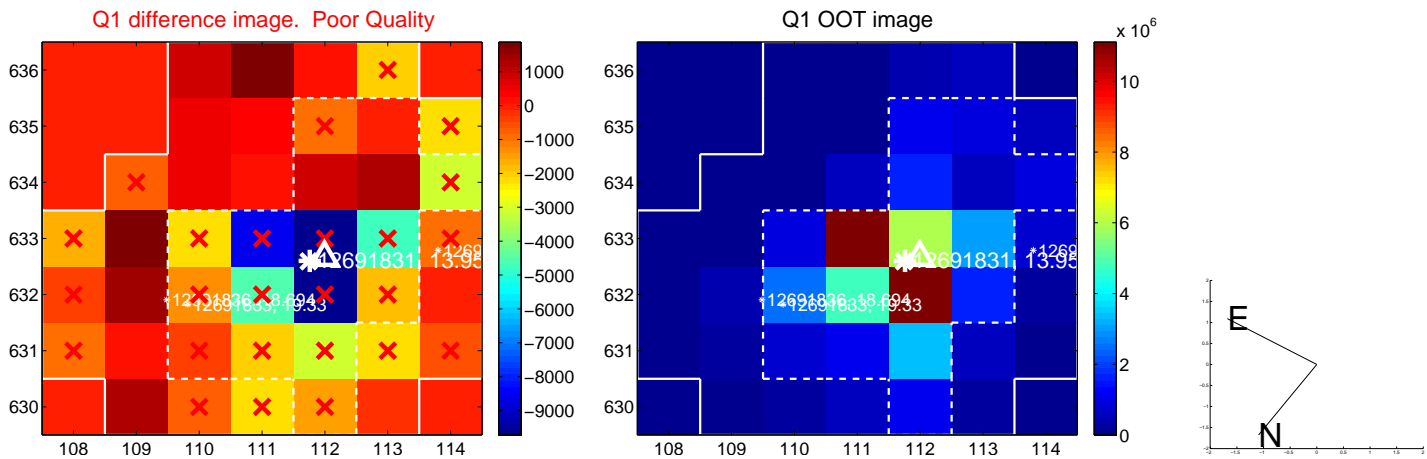
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.108 ± 0.368	0.29	-0.081 ± 0.571	0.071 ± 0.698
PRF-fit source offset from KIC position	0.178 ± 0.666	0.27	-0.176 ± 0.605	-0.025 ± 0.679
photometric centroid source offset	0.86 ± 0.30	2.83	-0.39 ± 0.31	0.77 ± 0.30

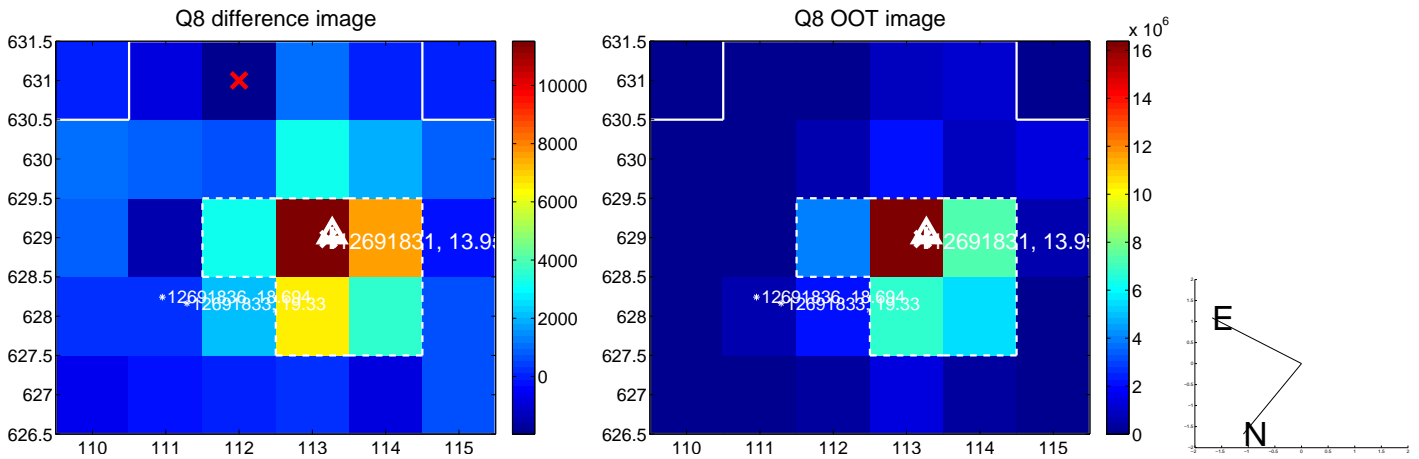
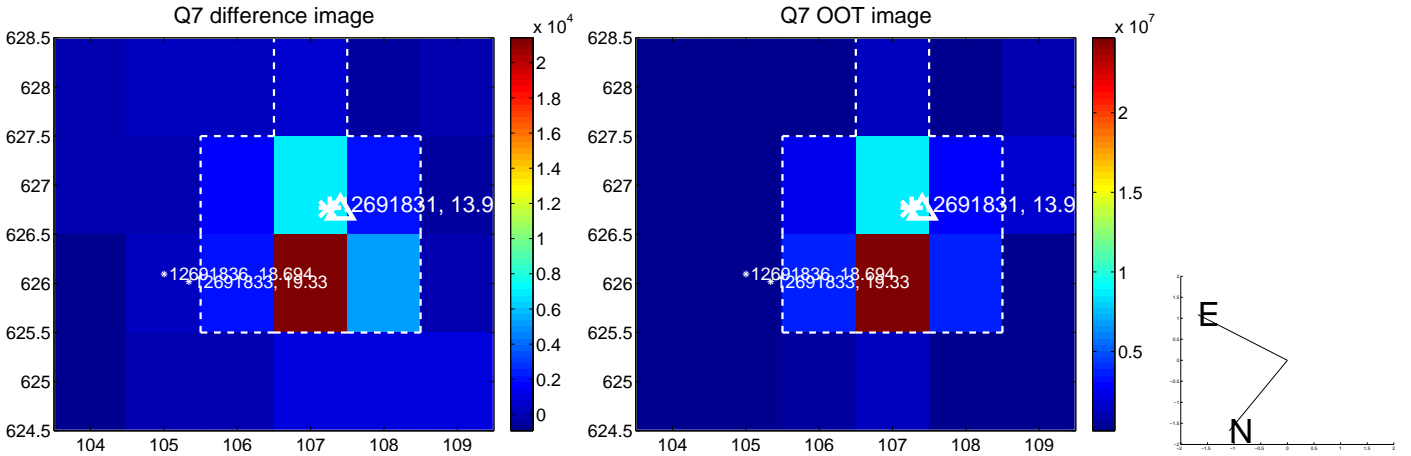
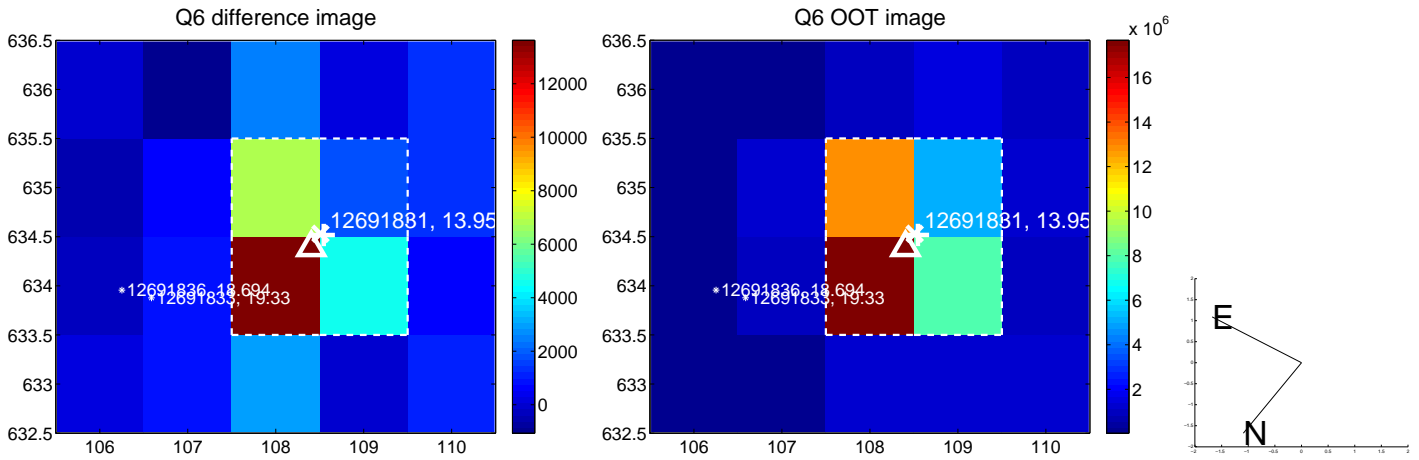
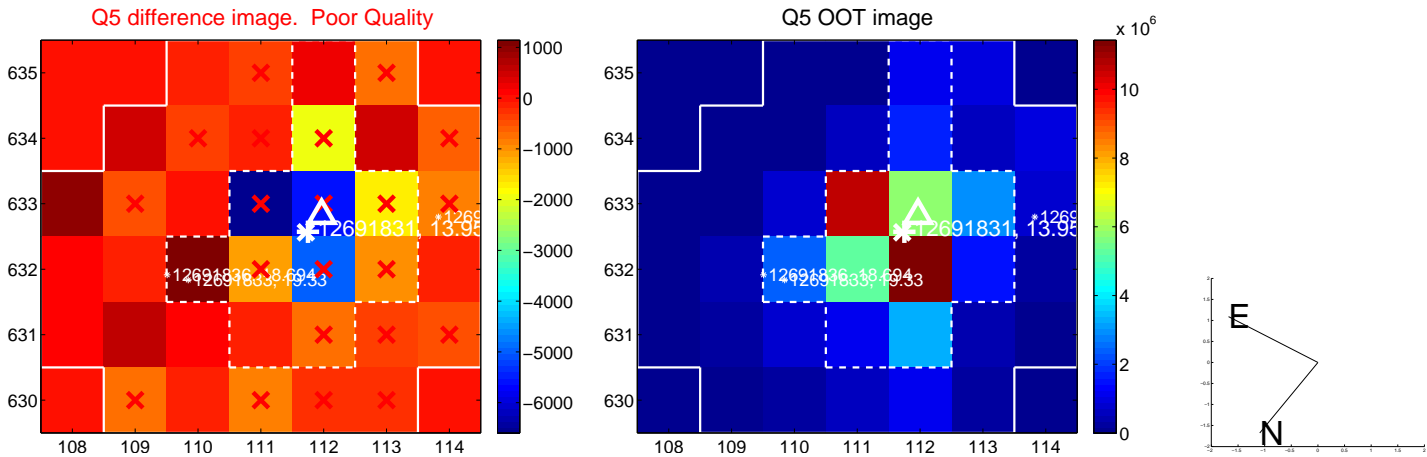


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

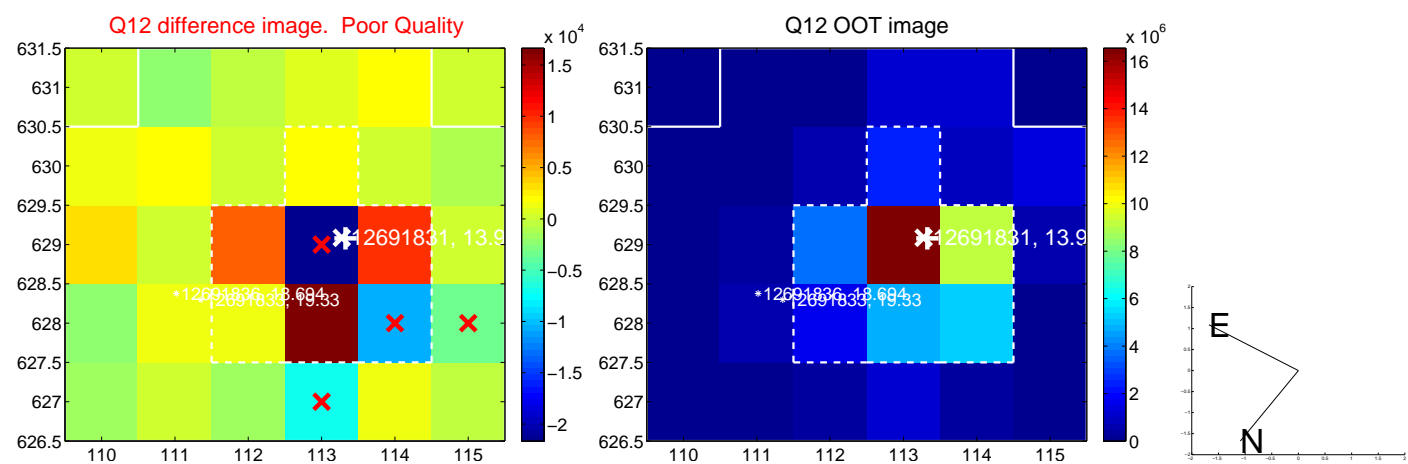
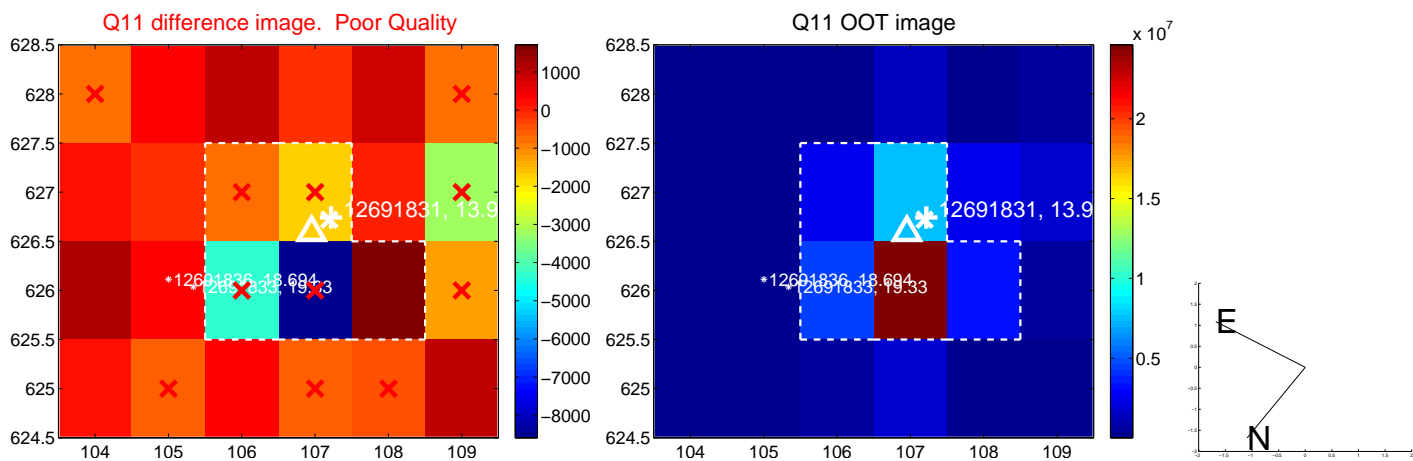
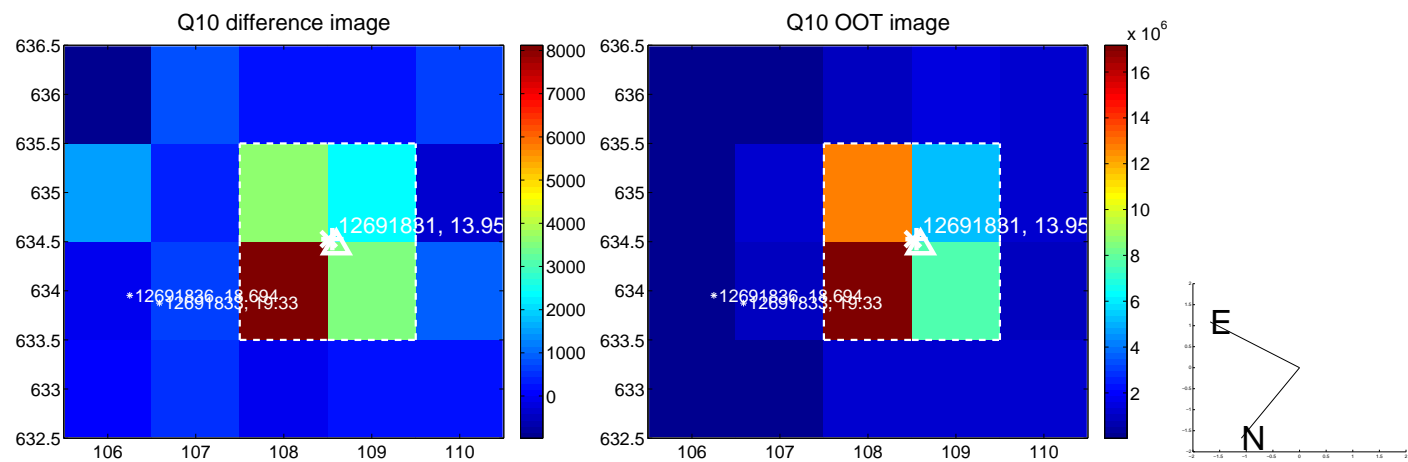
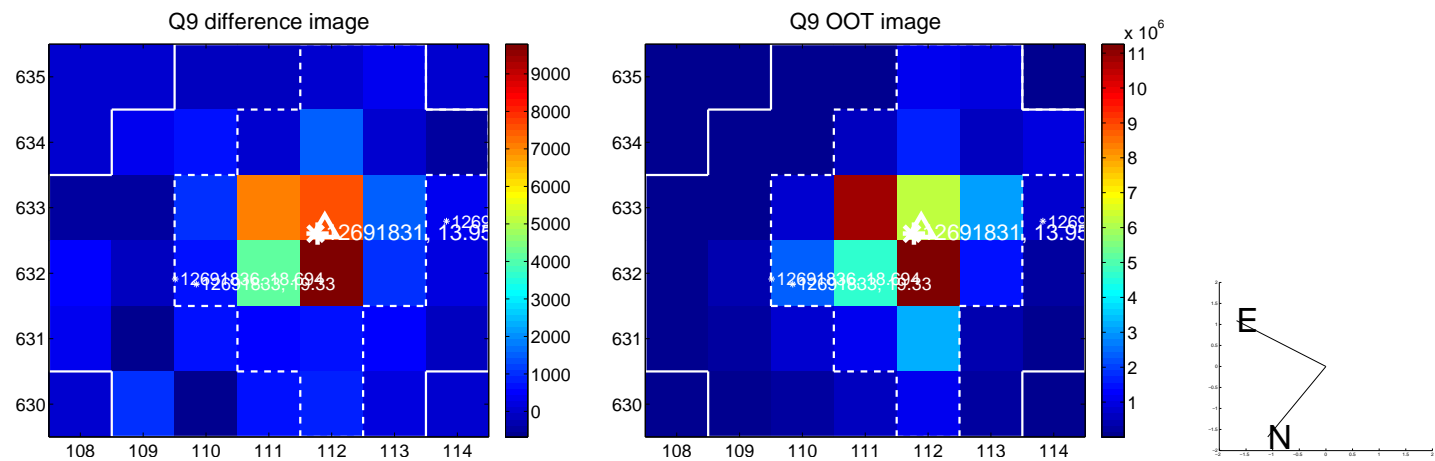
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



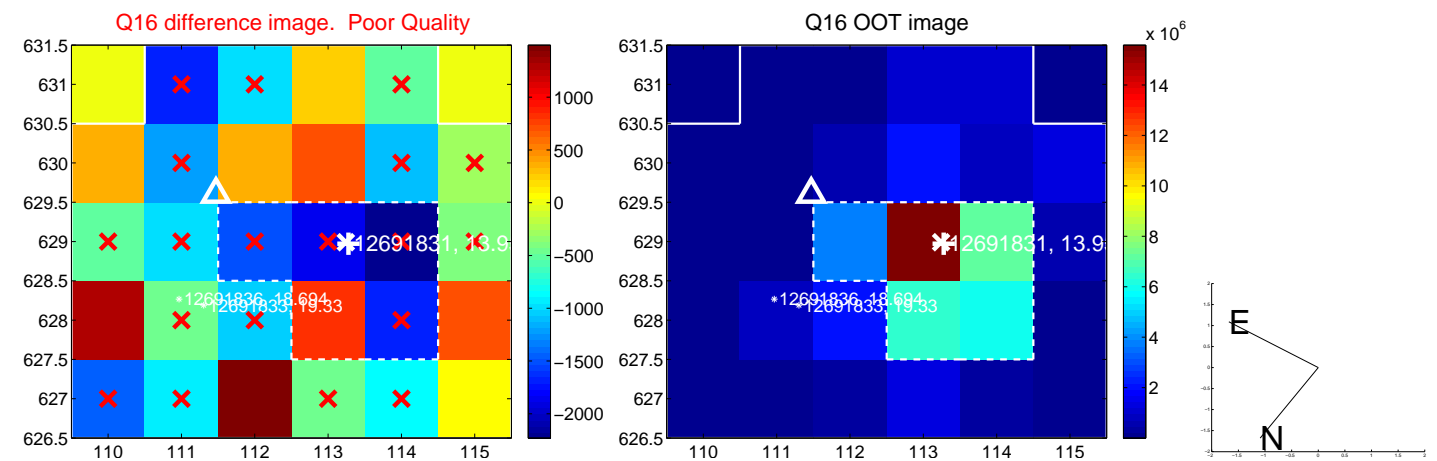
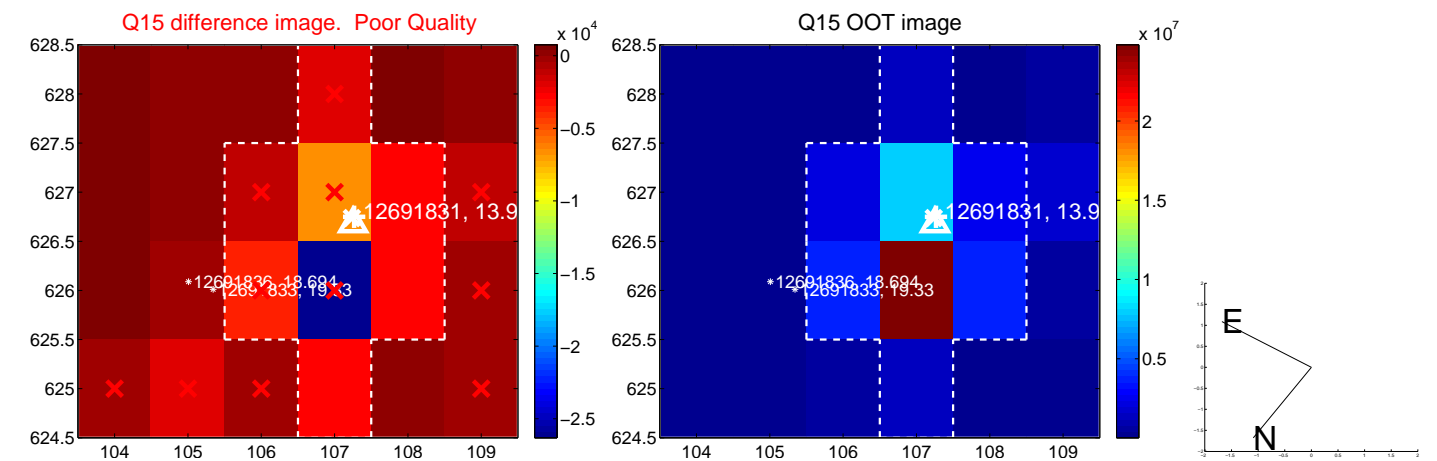
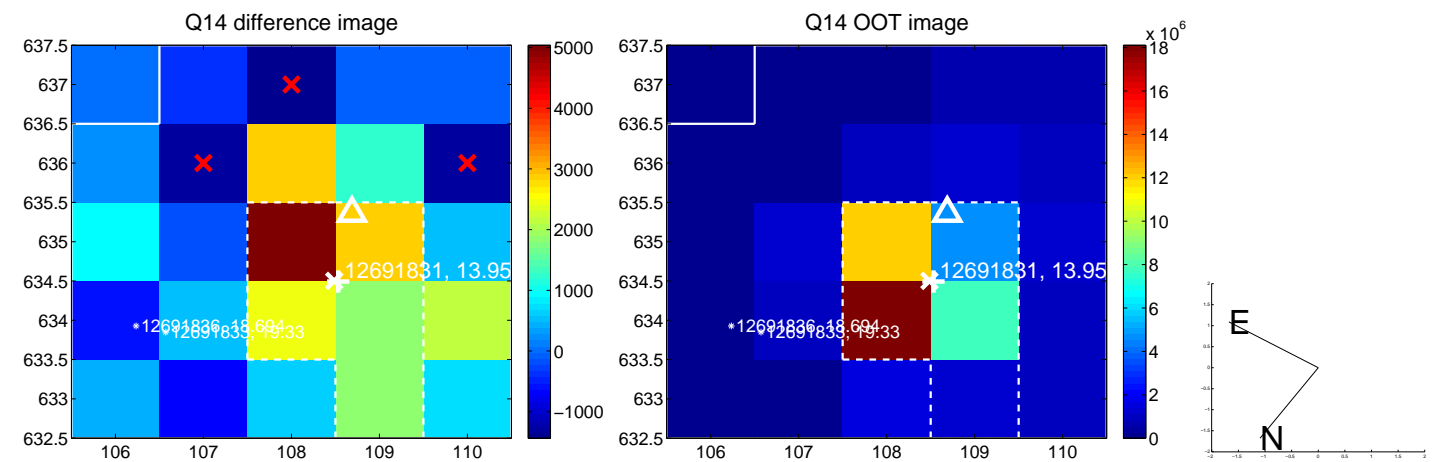
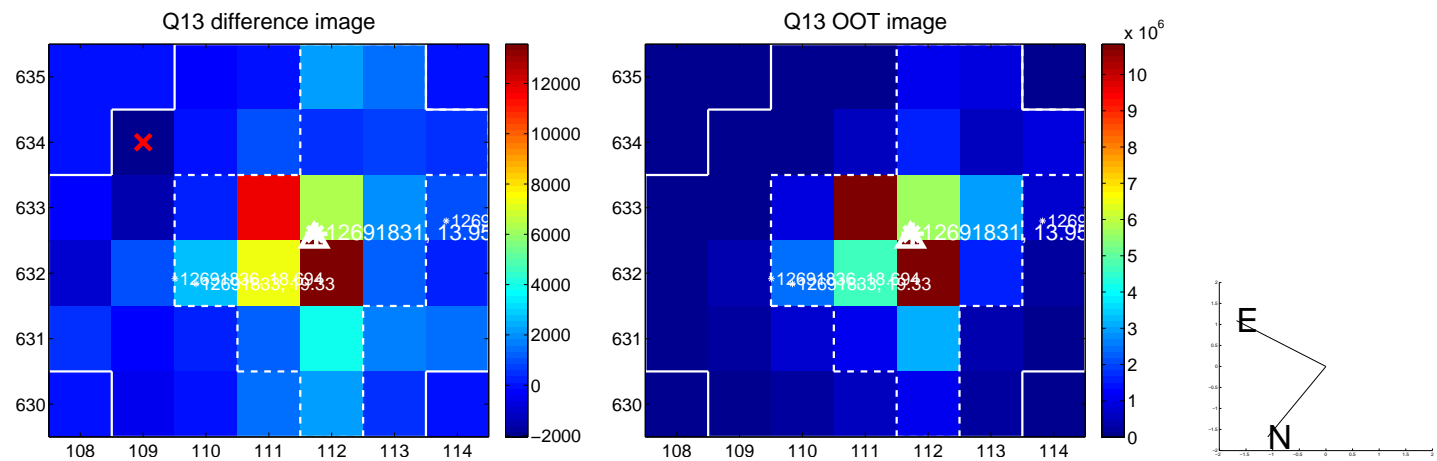
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



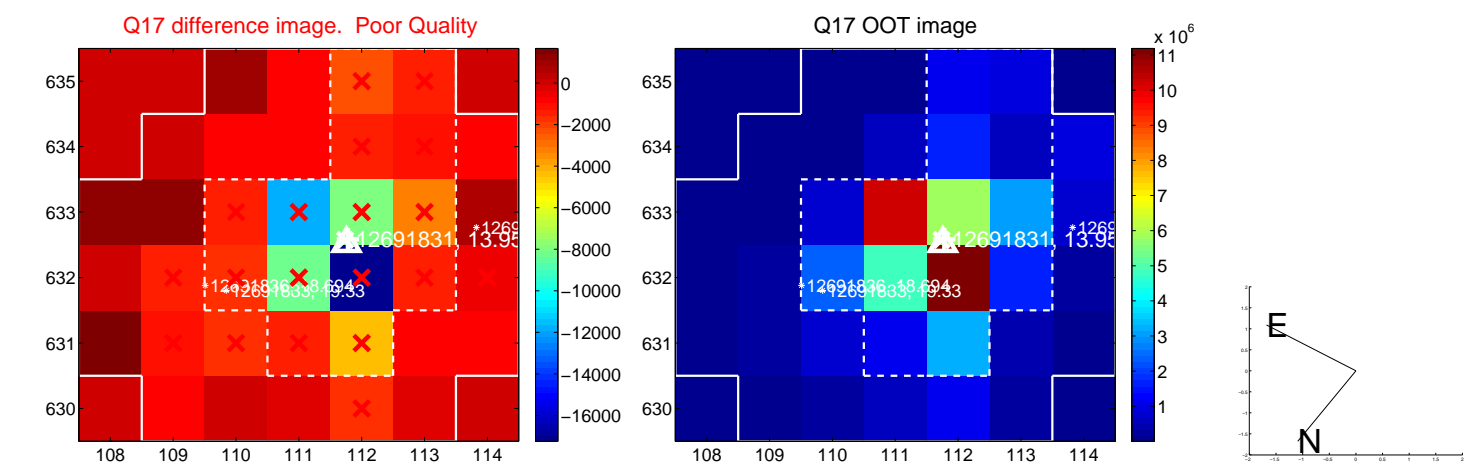
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



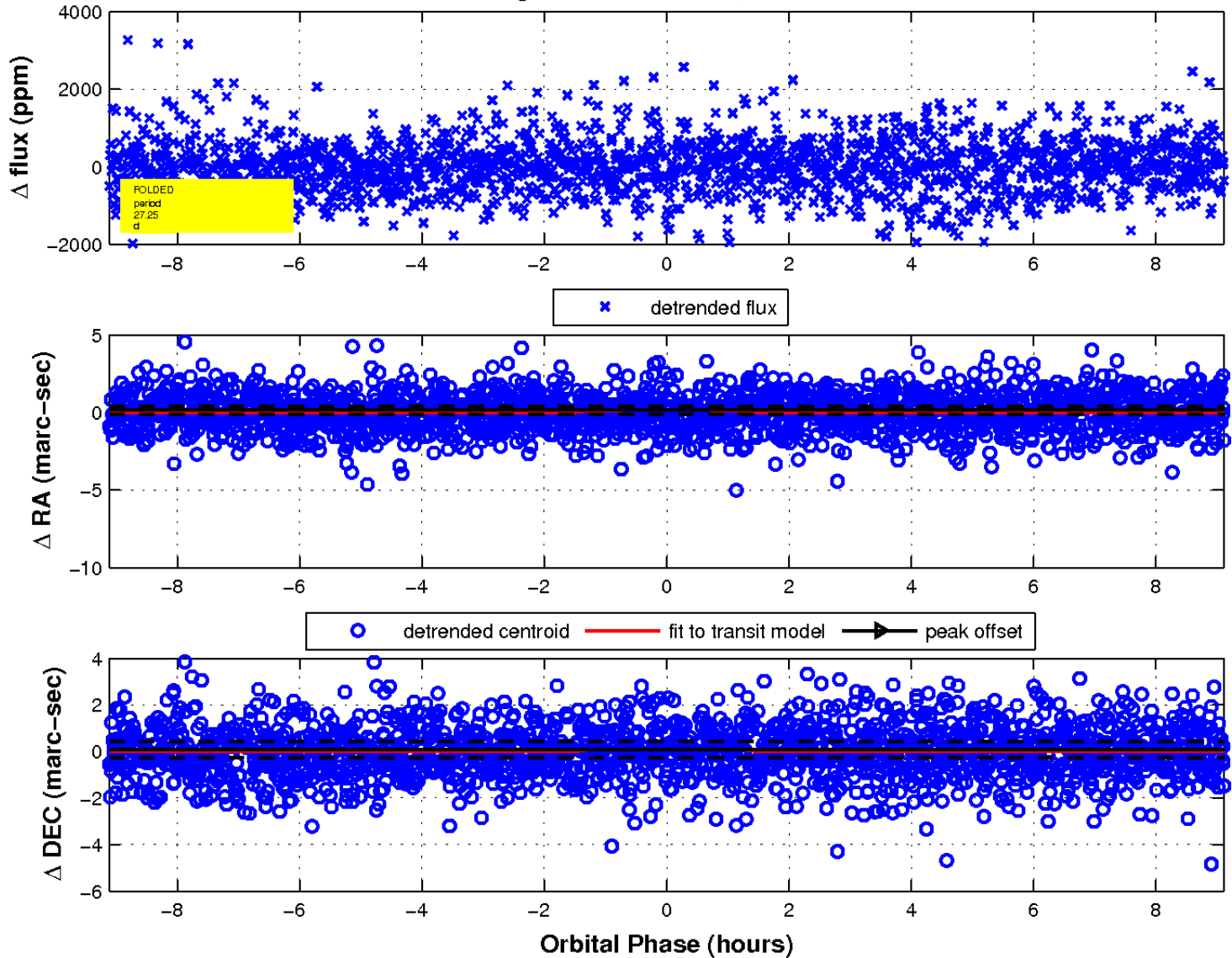
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 5 of 5



UKIRT Image

Declination

