

KIC 009752982

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})
009752982-01	OBS	3871.01	0.716707	132.053128	477.2	0.523	33.4	73.9	2.74	5173	7.87	22565.96
009752982-02	OBS	No	1.436331	132.587750	21.8	3.043	8.5	2.3	2.74	5173	1.47	8931.06
009752982-03	OBS	No	100.774175	157.694458	477.5	2.259	7.7	6.6	2.74	5173	6.56	30.86

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009752982-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—CENT_KIC_POS
009752982-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
009752982-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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.

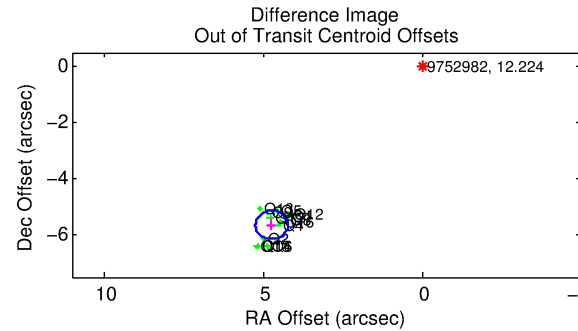
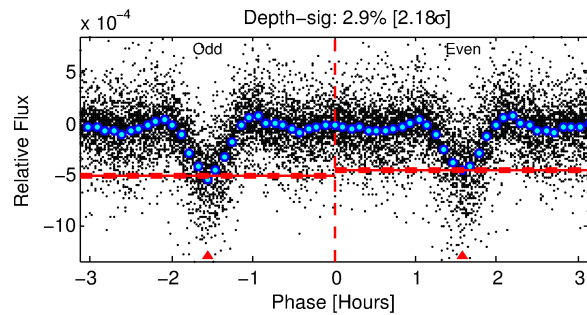
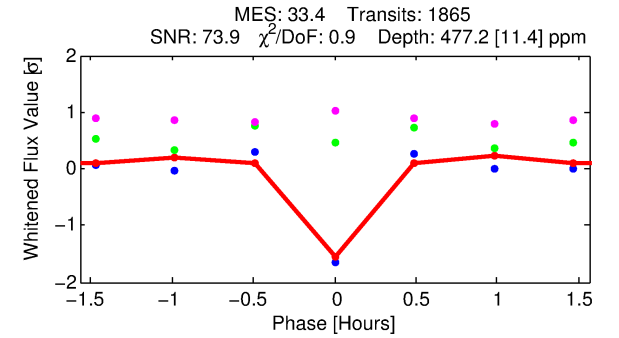
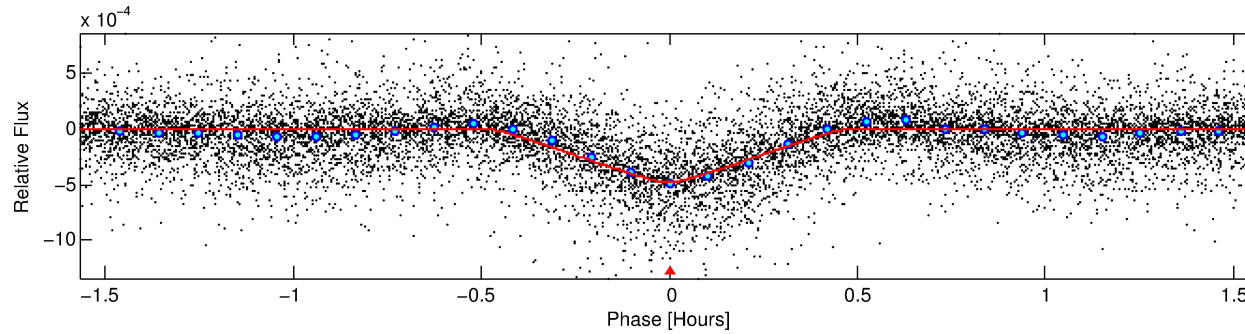
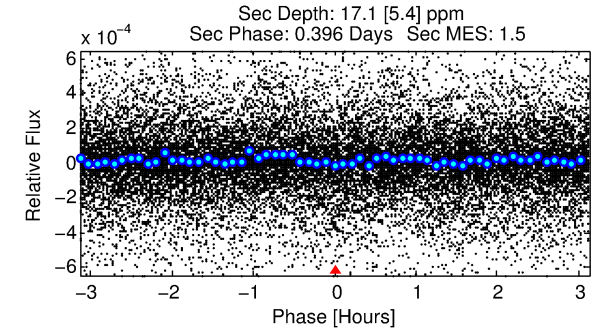
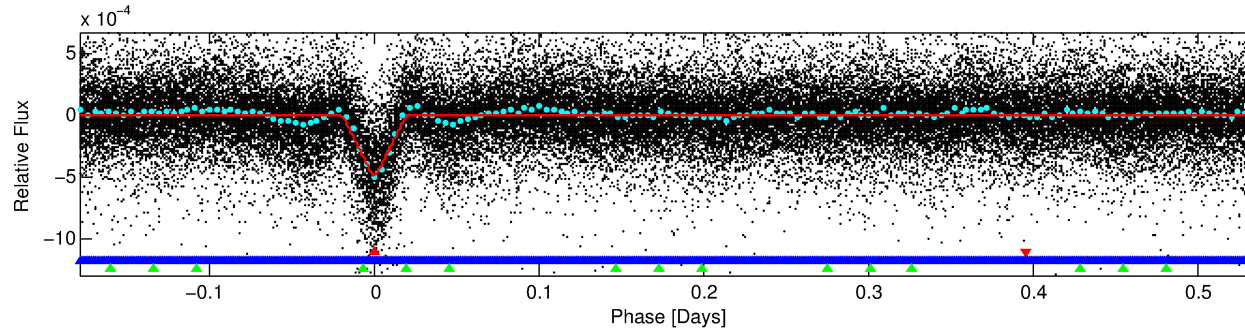
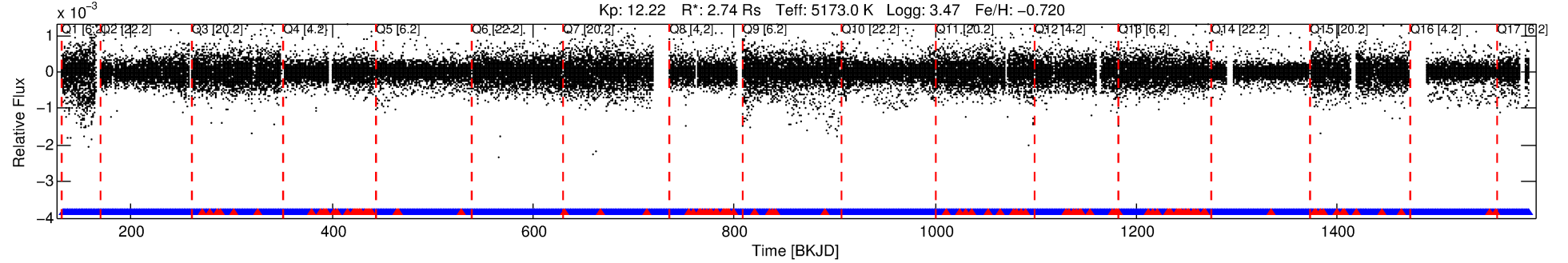
Ephemeris Match Information For 009752982-01

No Significant Match Found

DV One-Page Summary

KIC: 9752982 Candidate: 1 of 3 Period: 0.717 d
KOI: K03871.01 Corr: 0.809

Kp: 12.22 R*: 2.74 Rs Teff: 5173.0 K Logg: 3.47 Fe/H: -0.720



DV Fit Results:

Period = 0.71671 [0.00000] d
Epoch = 132.0531 [0.0001] BKJD
Rp/R* = 0.0263 [0.0026]
a/R* = 5.14 [2.11]
b = 0.91 [0.09]
Seff = 22565.96 [44862.14]
Teff = 3125 [1553] K
Rp = 7.87 [6.43] Re
a = 0.0146 [0.0160] AU
Ag = 0.03 [0.07] [-14.77σ]
Teffp = 2052 [214] K [-0.68σ]

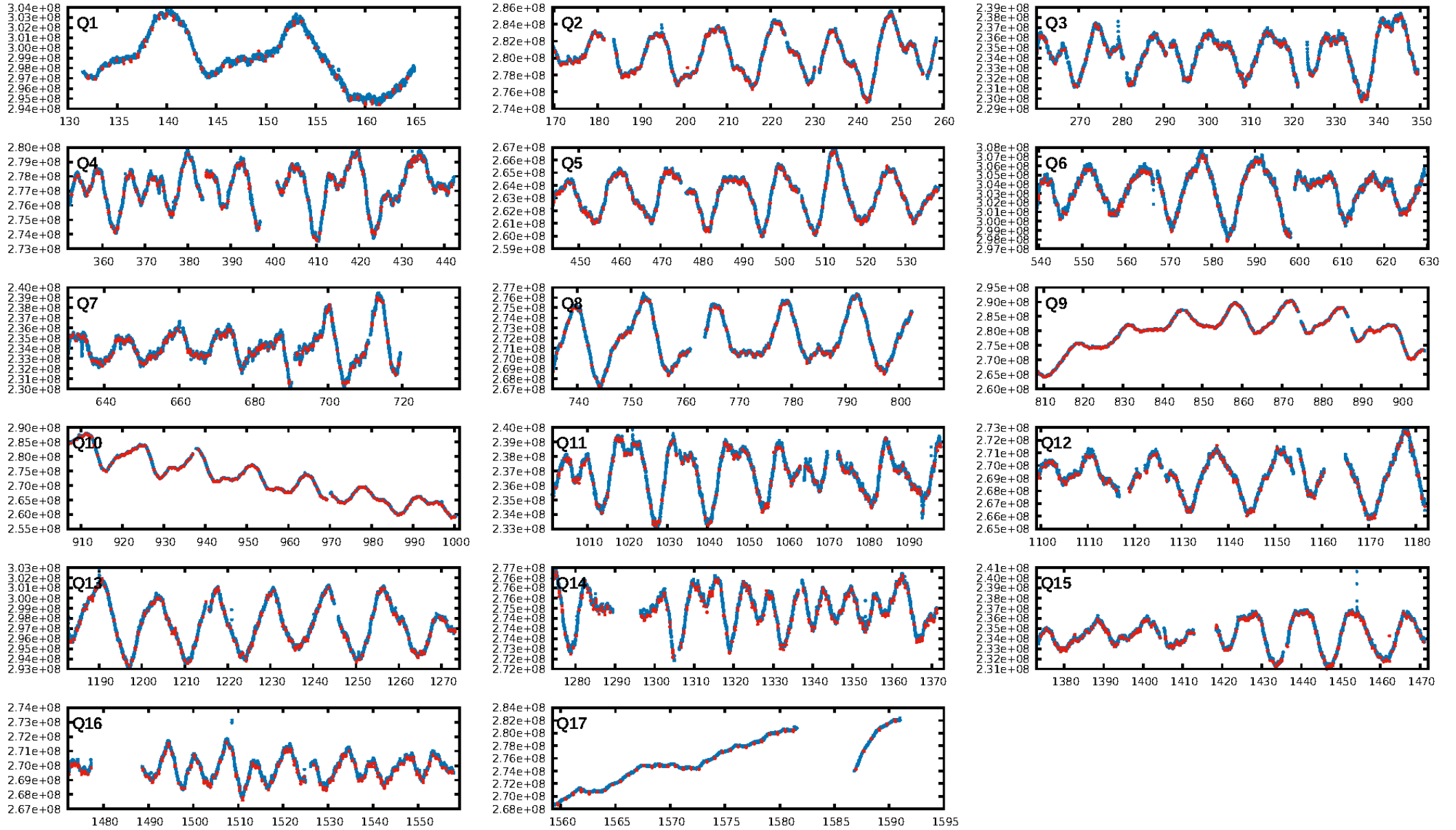
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [5.59σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.93 [1665/1781]
GhostDiagnostic-chr: 0.5372
Centroid-sig: 0.0%
Centroid-so: 1.929 arcsec [25.07σ]
OotOffset-rm: 7.373 arcsec [43.21σ]
KicOffset-rm: 0.186 arcsec [2.37σ]
OotOffset-st: 4/0/4/5 [13]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

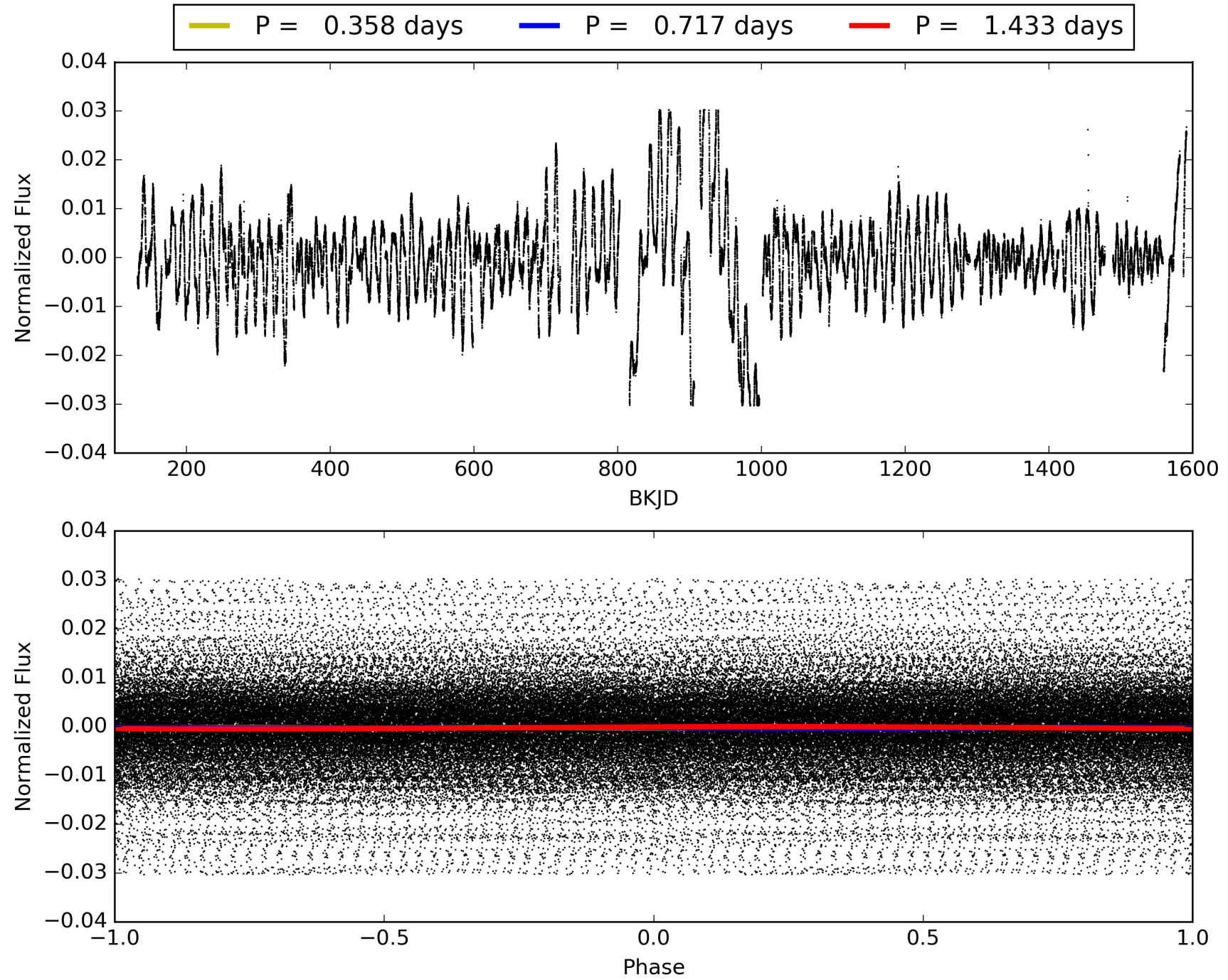
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:45:36 Z

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

TCE 009752982-01, PDC Light Curves

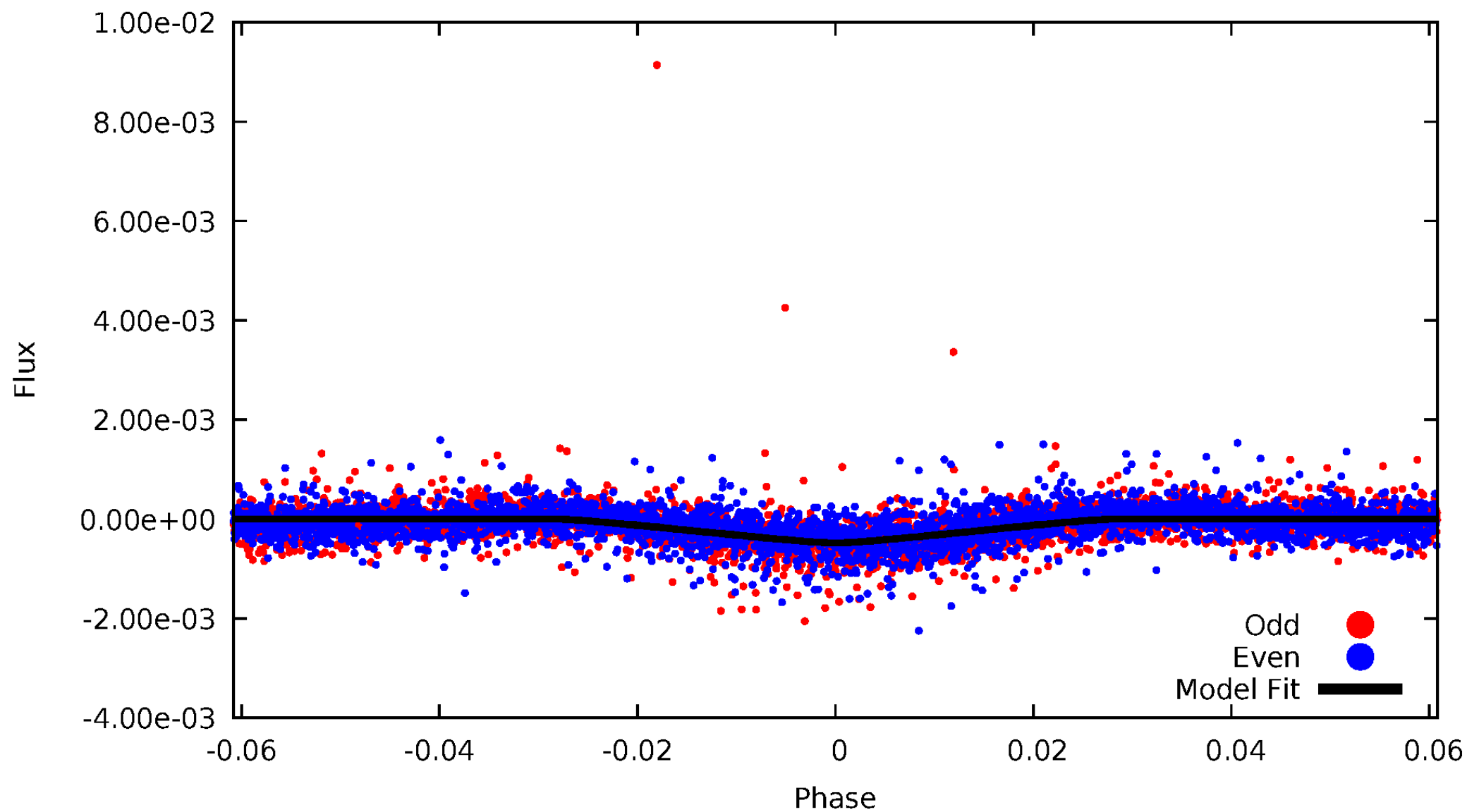


TCE 009752982-01



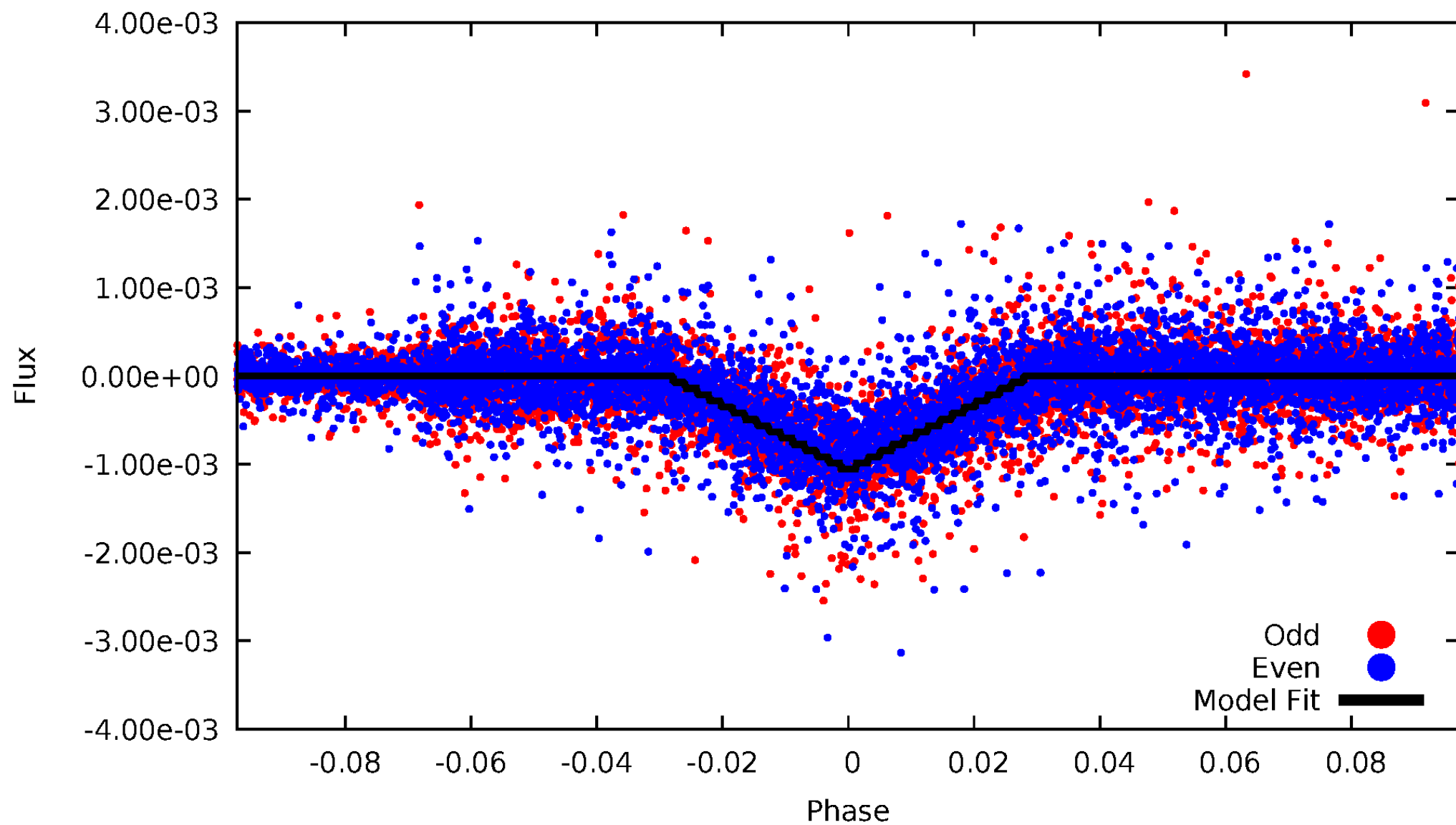
DV Odd/Even

TCE 009752982-01



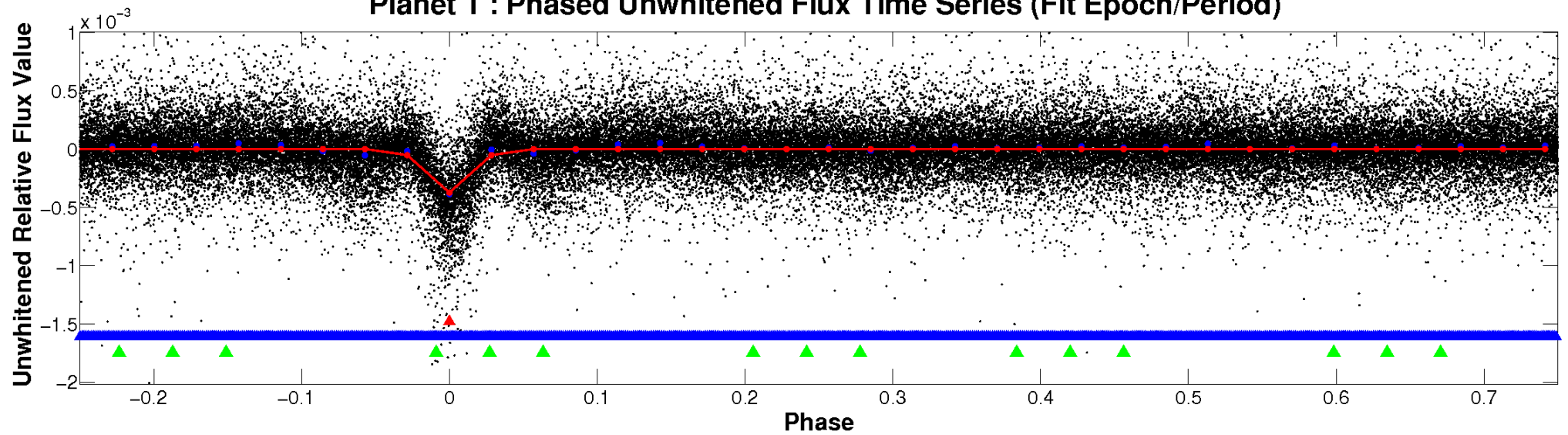
ALT Odd/Even

TCE 009752982-01

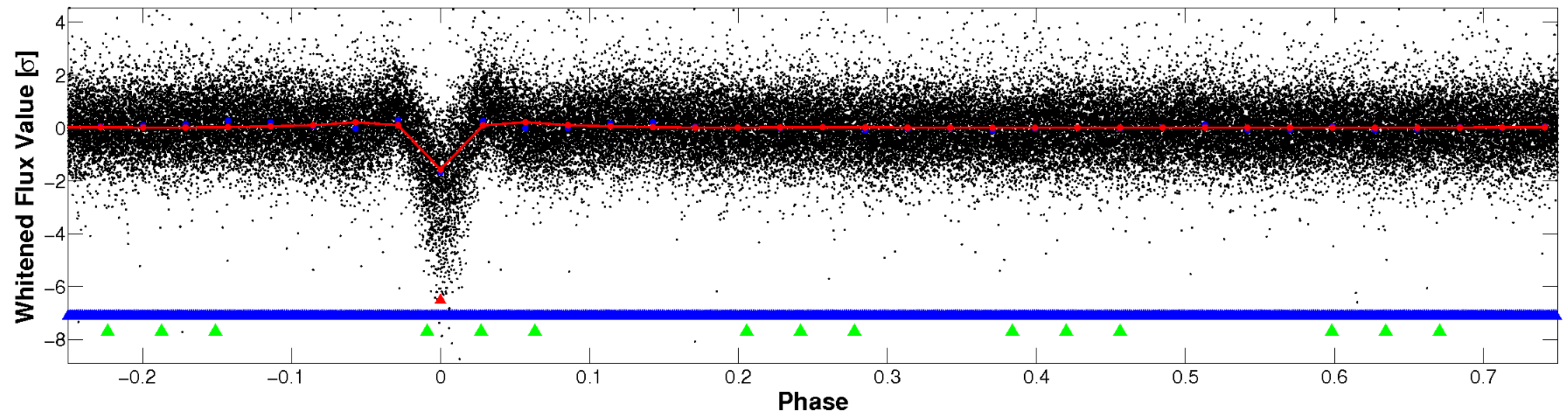


Non-Whitened Vs. Whitened Light Curve

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

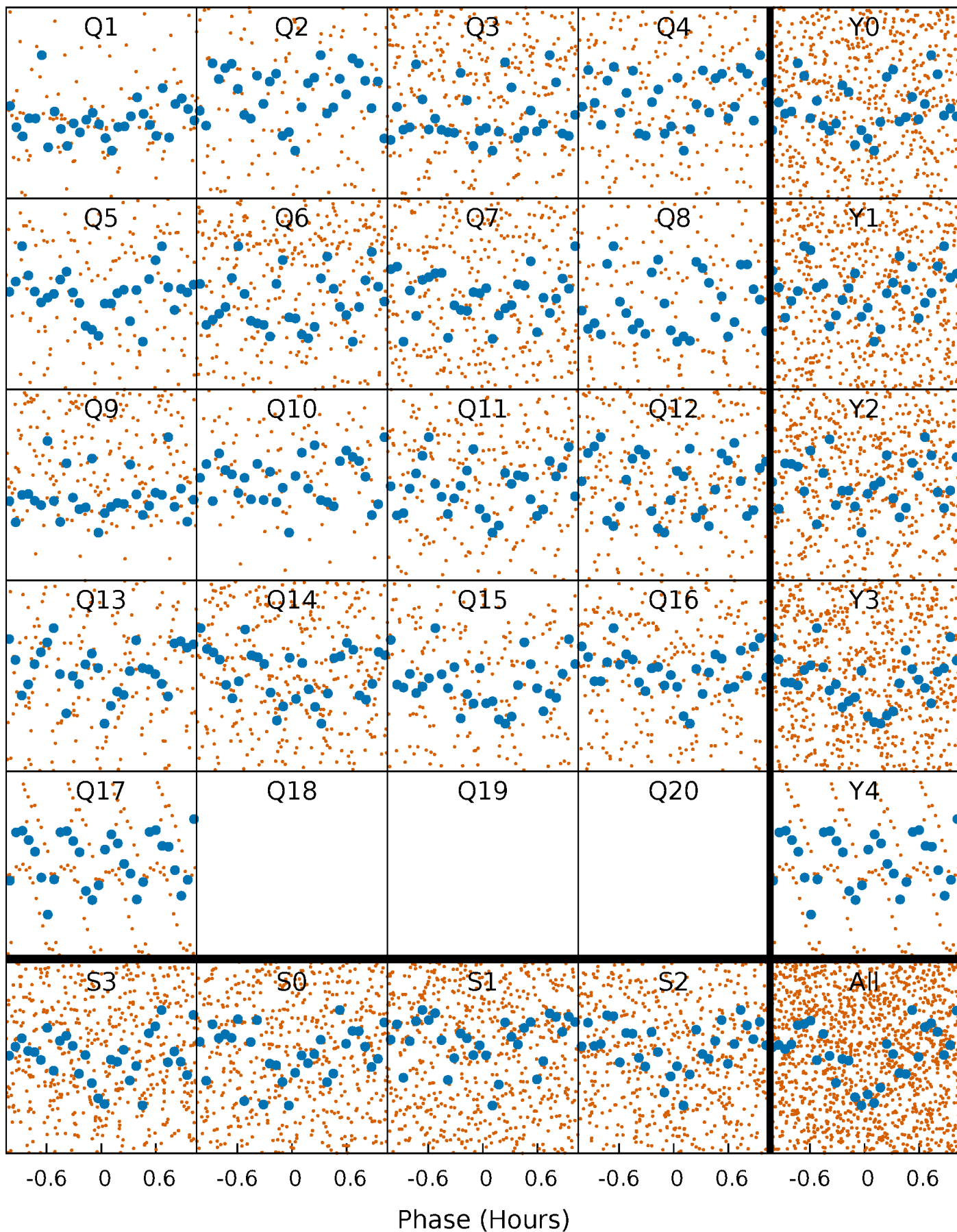


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



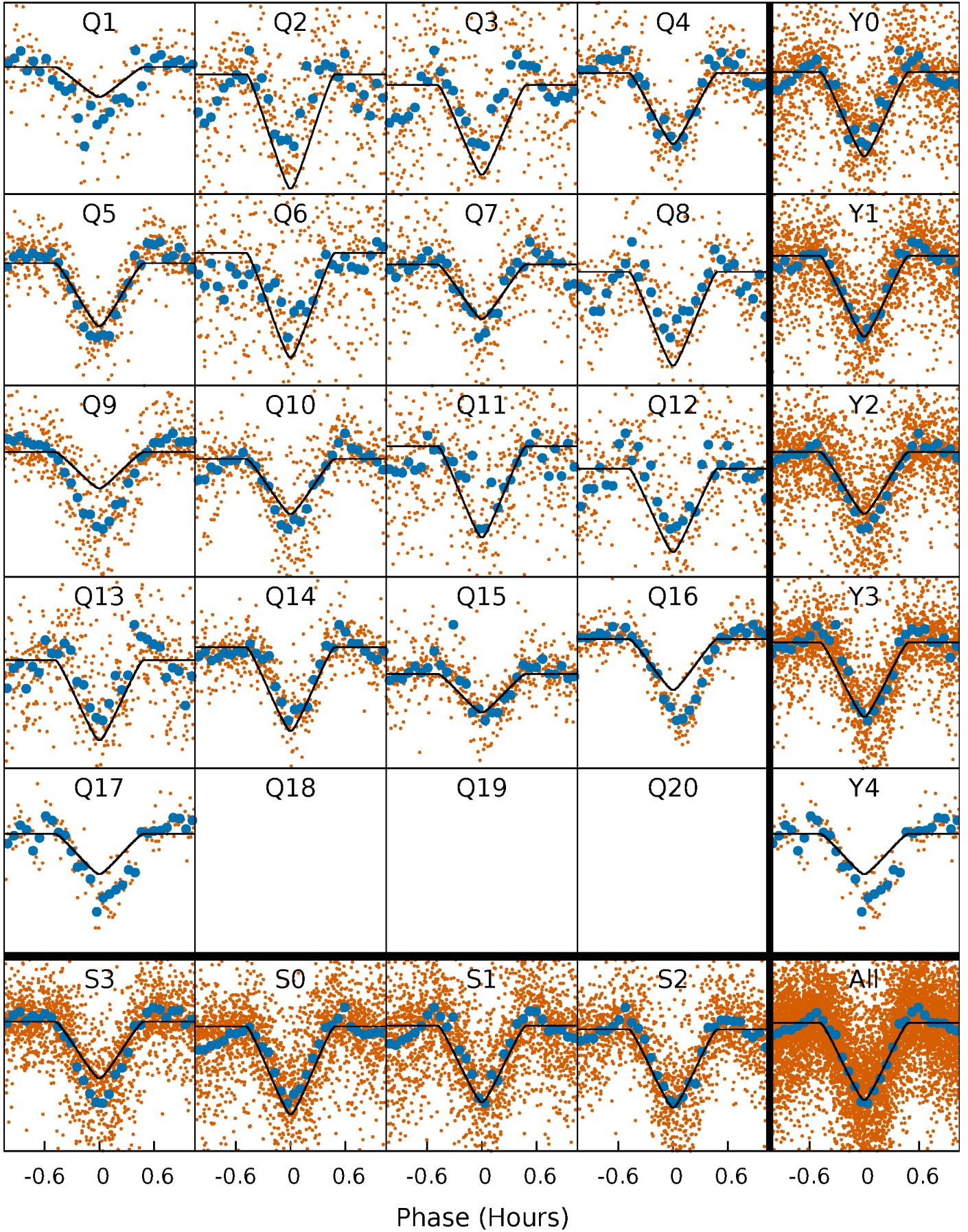
PDC Quarter-Phased Transit Curves

TCE 009752982-01 P= 0.716707 Days $T_0=132.053128$ (BKJD)



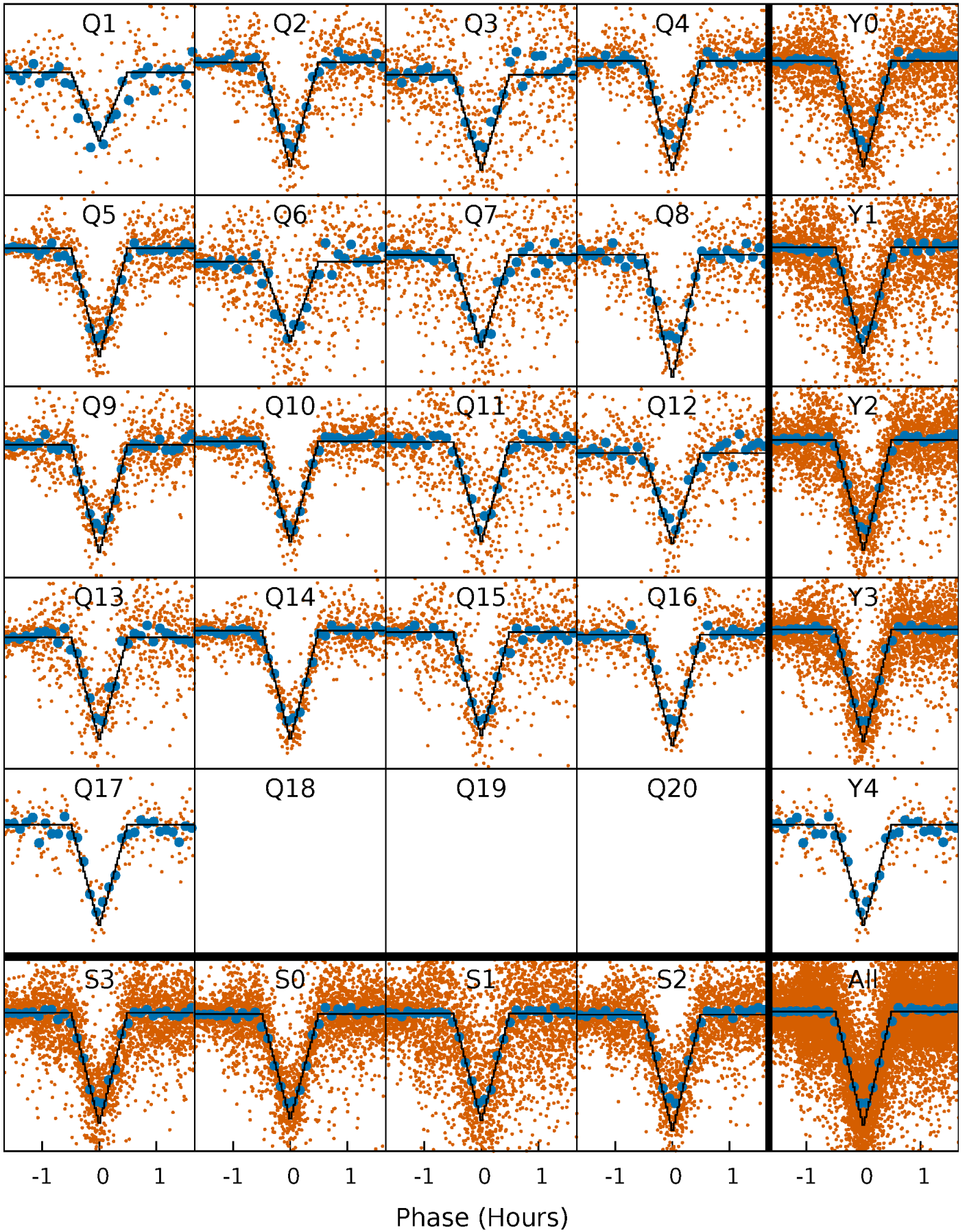
DV Quarter-Phased Transit Curves

TCE 009752982-01 P= 0.716707 Days $T_0=132.053128$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

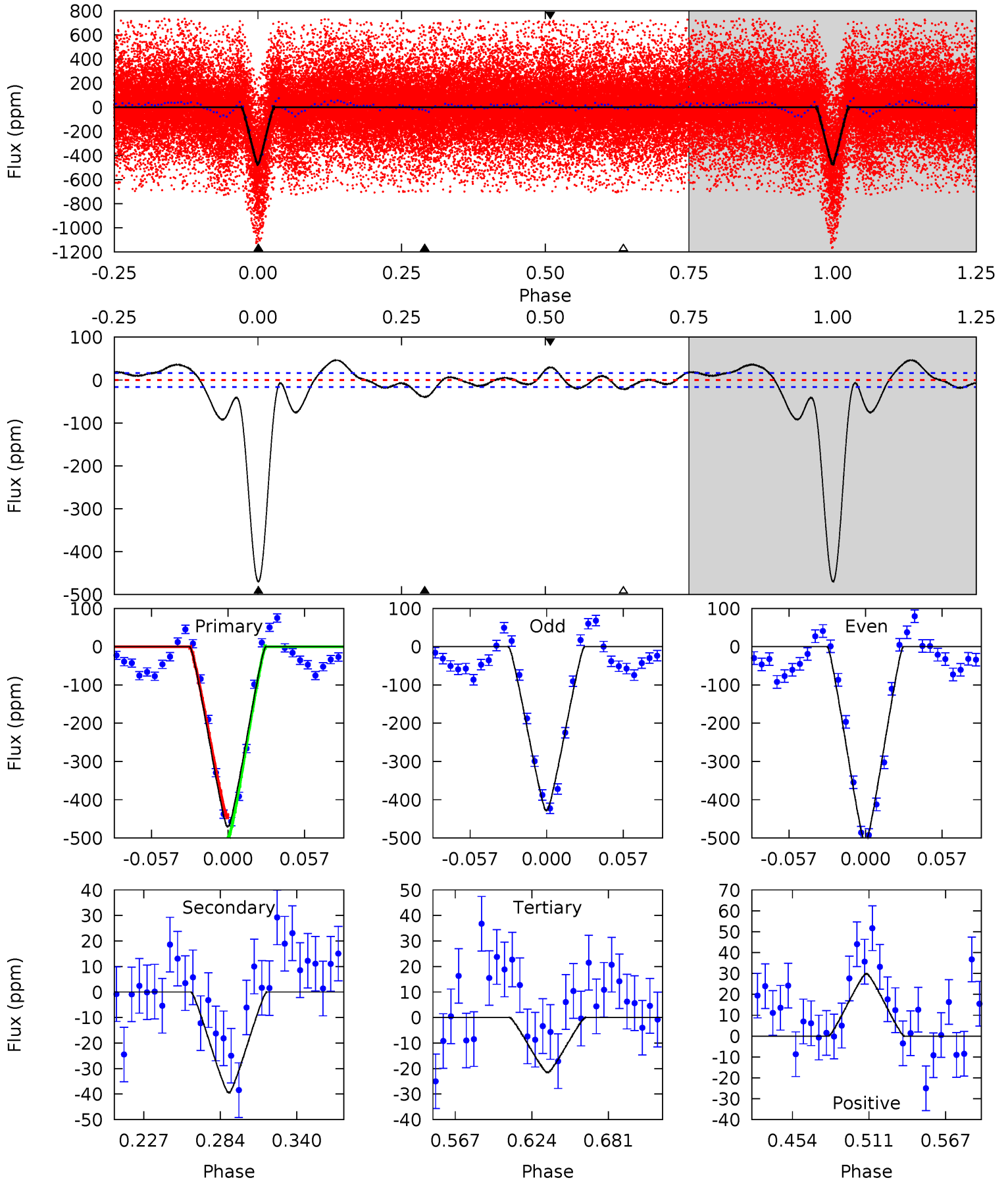
TCE 009752982-01 P= 0.716709 Days $T_0=132.051670$ (BKJD)



DV Model-Shift Uniqueness Test

009752982-01, P = 0.716707 Days, E = 131.336421 Days

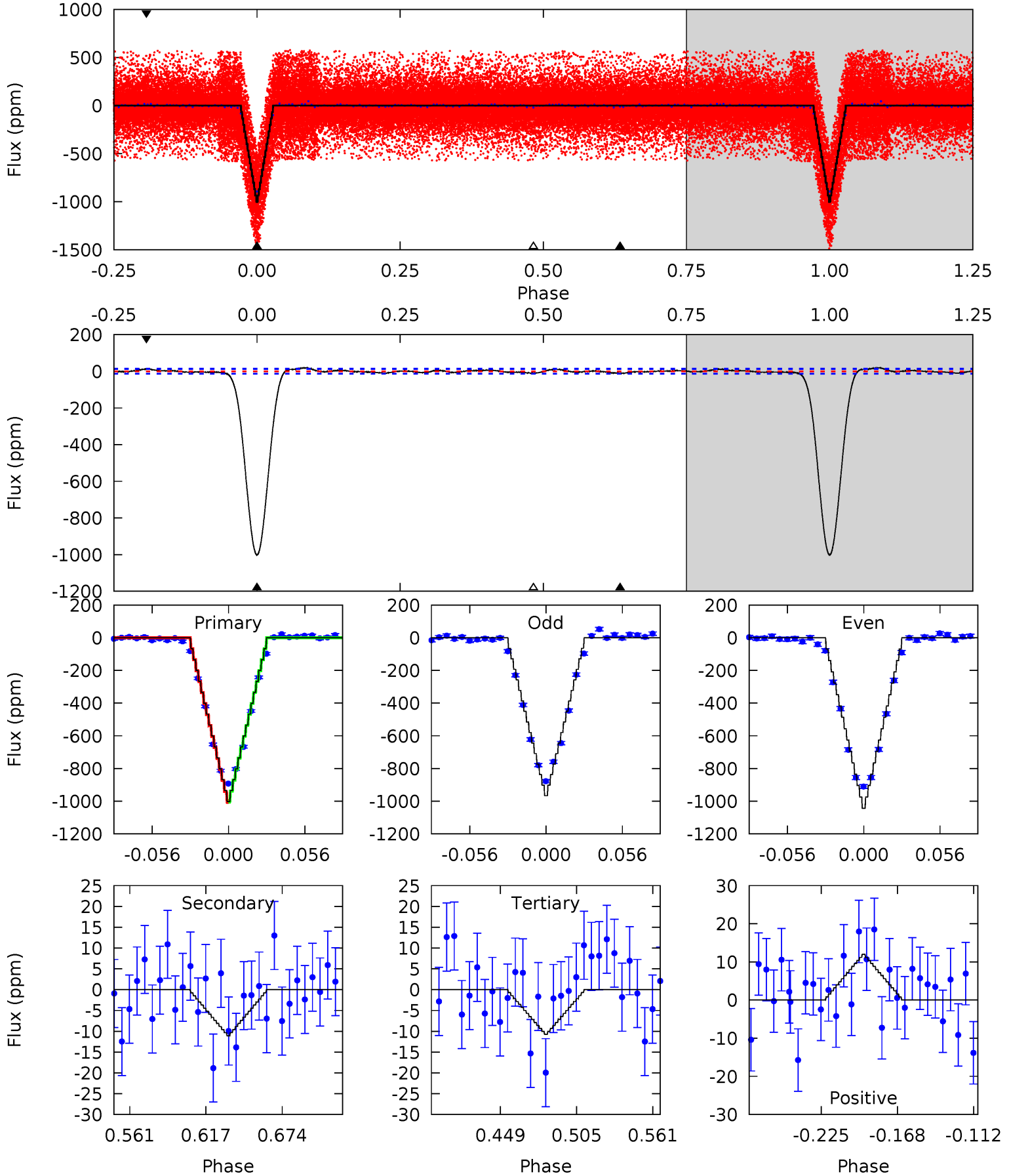
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
135.5	11.3	6.19	8.59	4.68	1.91	7.44	129.3	126.9	5.16	2.76	12.1	1.06	0.09	7.92



Alt Model-Shift Uniqueness Test

009752982-01, P = 0.716709 Days, E = 131.334961 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
352.9	3.90	3.77	4.22	4.68	1.91	2.05	349.1	348.6	0.13	-0.32	13.7	1.01	0.02	0.42



Stellar Parameters For KIC 009752982

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5173^{+106}_{-247}	$3.471^{+1.240}_{-0.310}$	$-0.720^{+0.250}_{-0.450}$	$2.742^{+1.483}_{-2.225}$	$0.811^{+0.209}_{-0.209}$	$0.055^{+4.057}_{-0.047}$
	+2%/-5%	+36%/-9%	+35%/-62%	+54%/-81%	+26%/-26%	+7319%/-86%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009752982-01 / KOI 3871.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-39 ± 3	$7.45^{+2.73}_{-3.26}$	4211^{+608}_{-1037}	-3600^{+1217}_{-430}	$0.085^{+0.180}_{-0.038}$
Alt.	-11 ± 3	$9.06^{+3.62}_{-4.03}$	4152^{+694}_{-981}	-3713^{+624}_{-454}	$0.016^{+0.029}_{-0.009}$

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

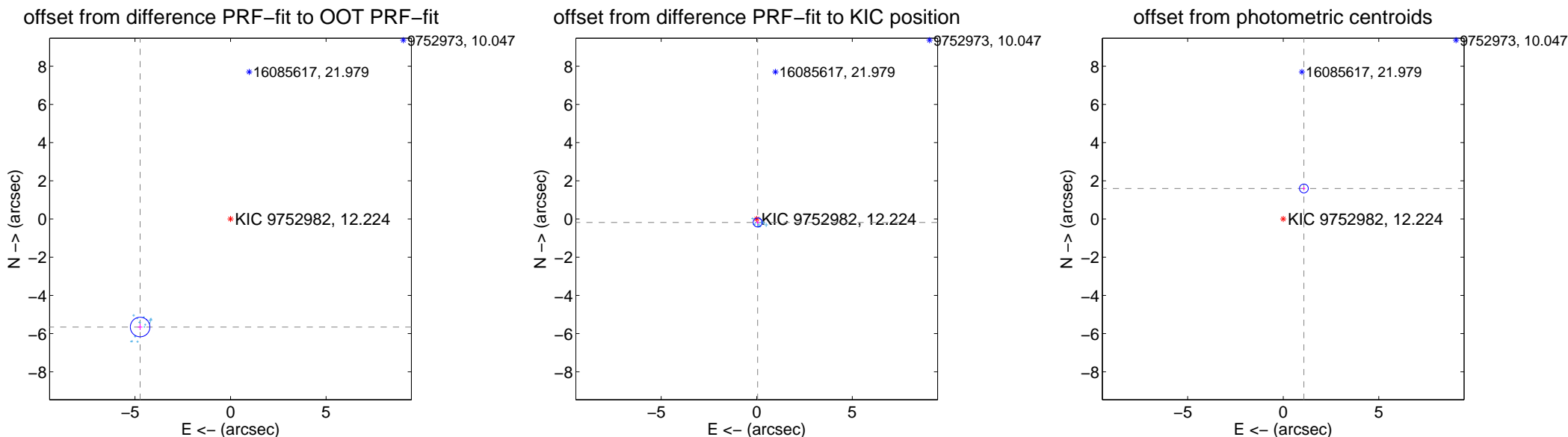
DV Centroid Data

Supplemental centroid analysis for 009752982-01. Kepler magnitude: 12.22. Transit SNR 73.92

There are 17 quarters with good PRF difference image offsets

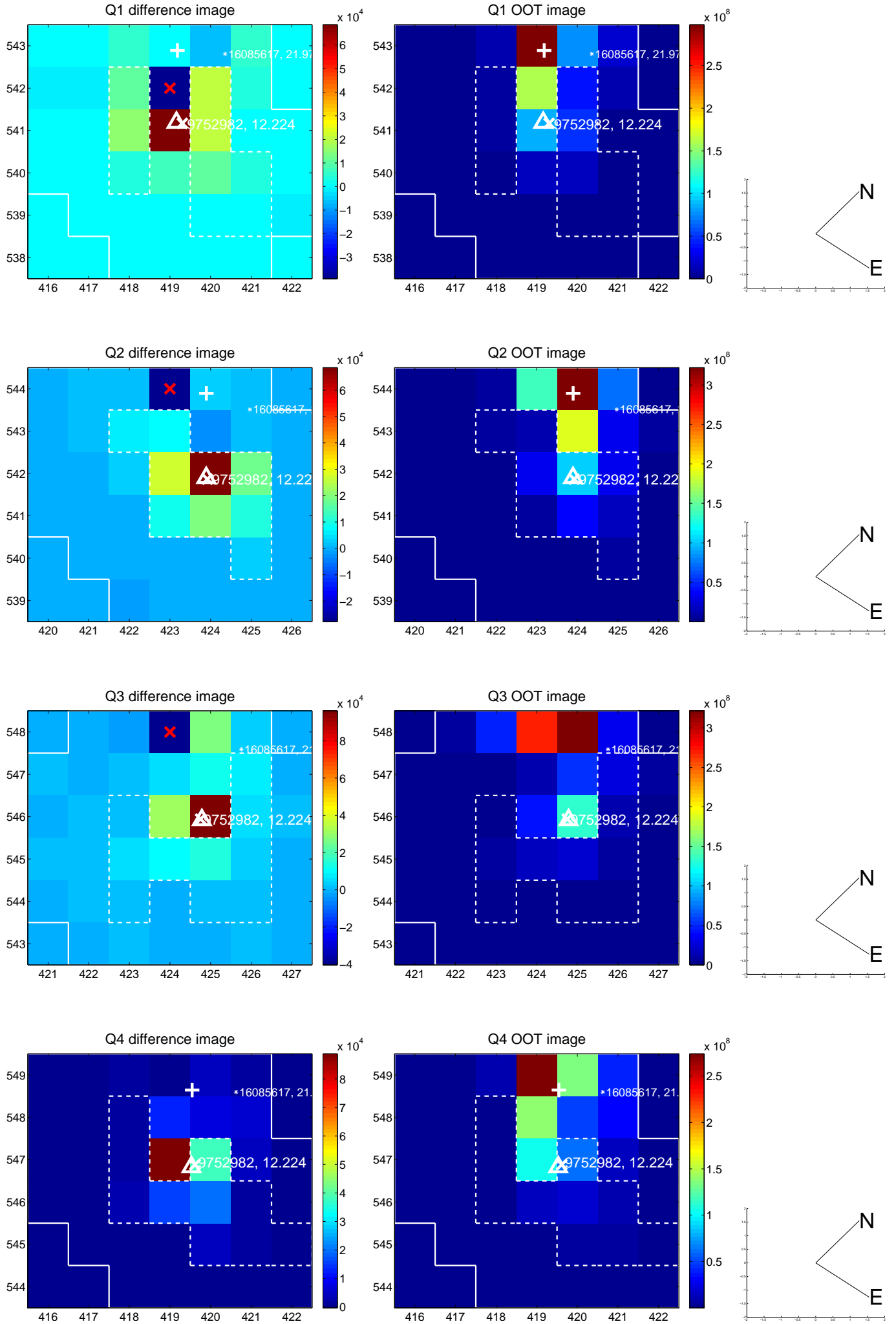
The OOT PRF centroid is offset from the target star catalog position by about 6.98 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.373 ± 0.171	43.21	4.730 ± 0.120	-5.655 ± 0.159
PRF-fit source offset from KIC position	0.186 ± 0.079	2.37	-0.048 ± 0.084	-0.180 ± 0.076
photometric centroid source offset	1.93 ± 0.08	25.07	-1.08 ± 0.07	1.60 ± 0.08

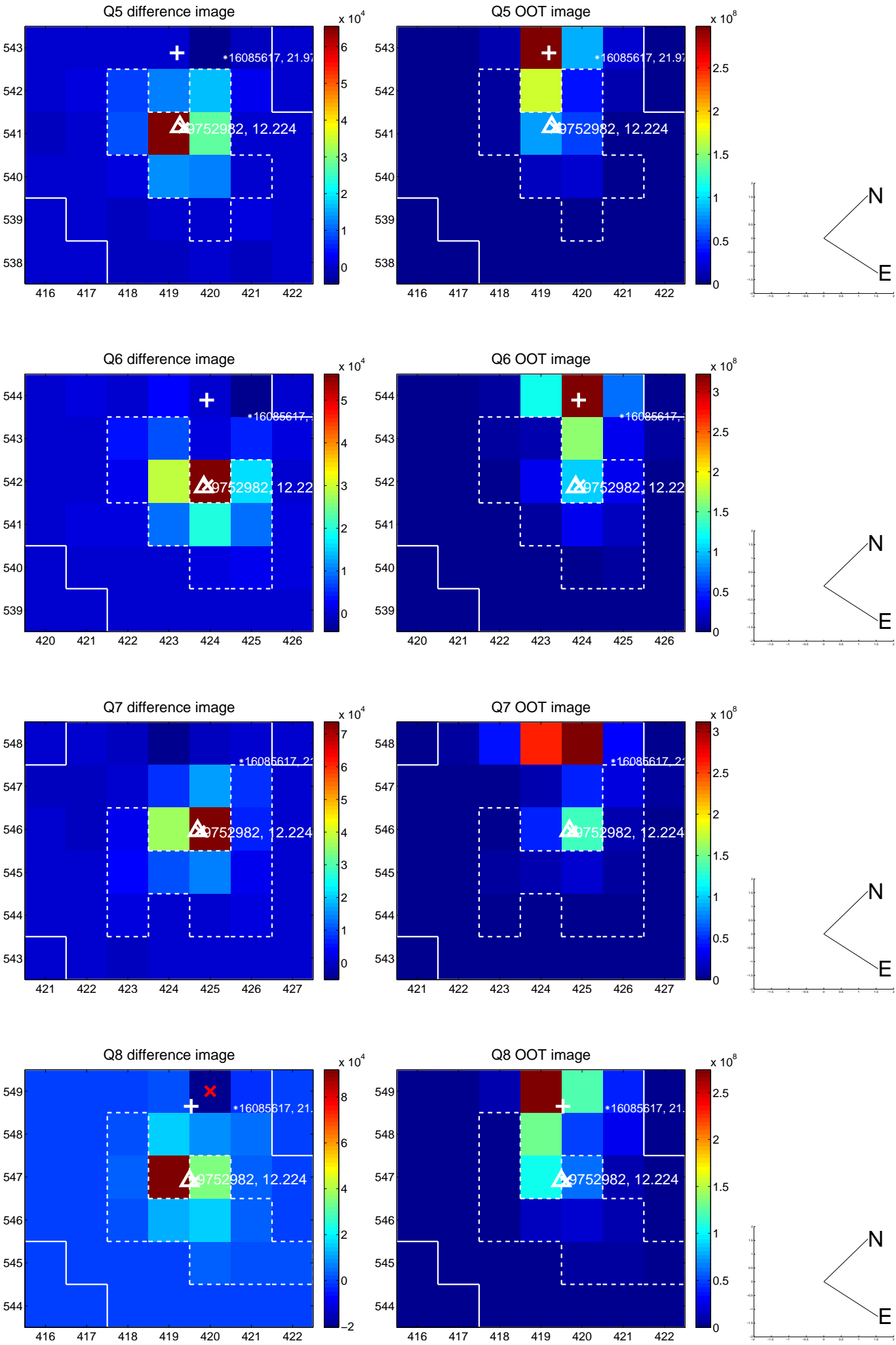


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

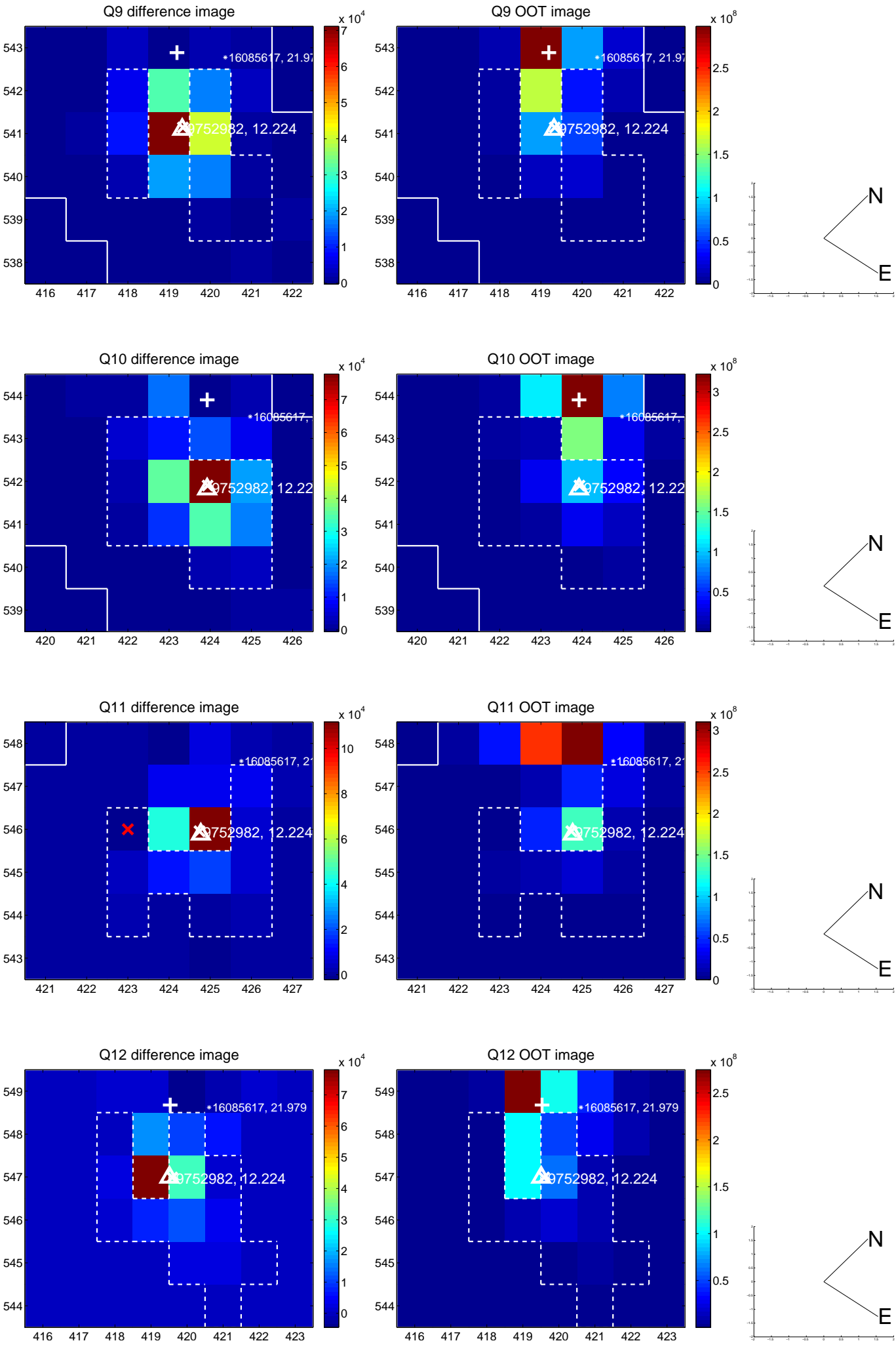
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



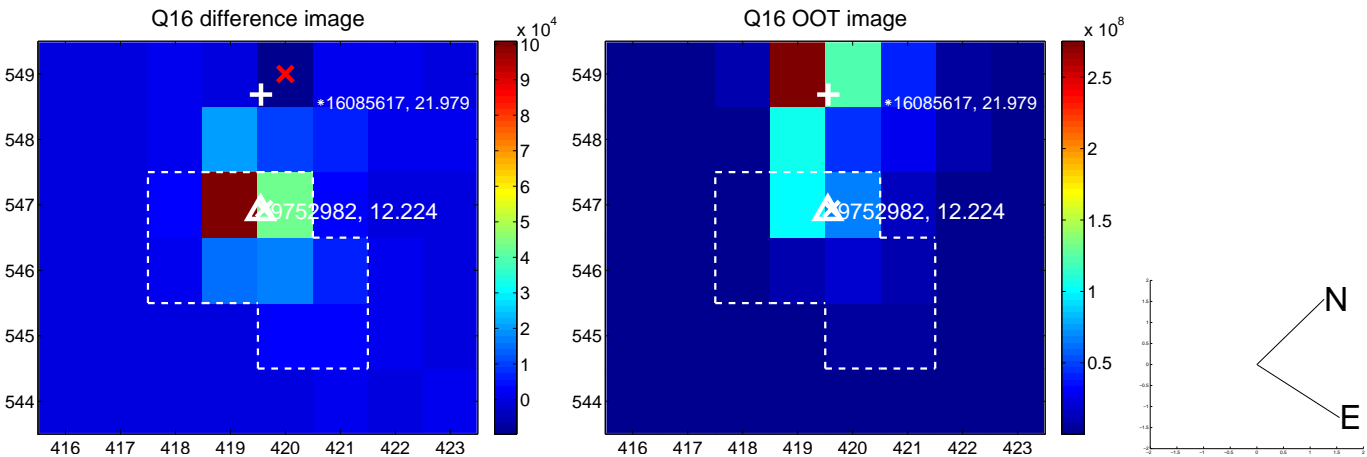
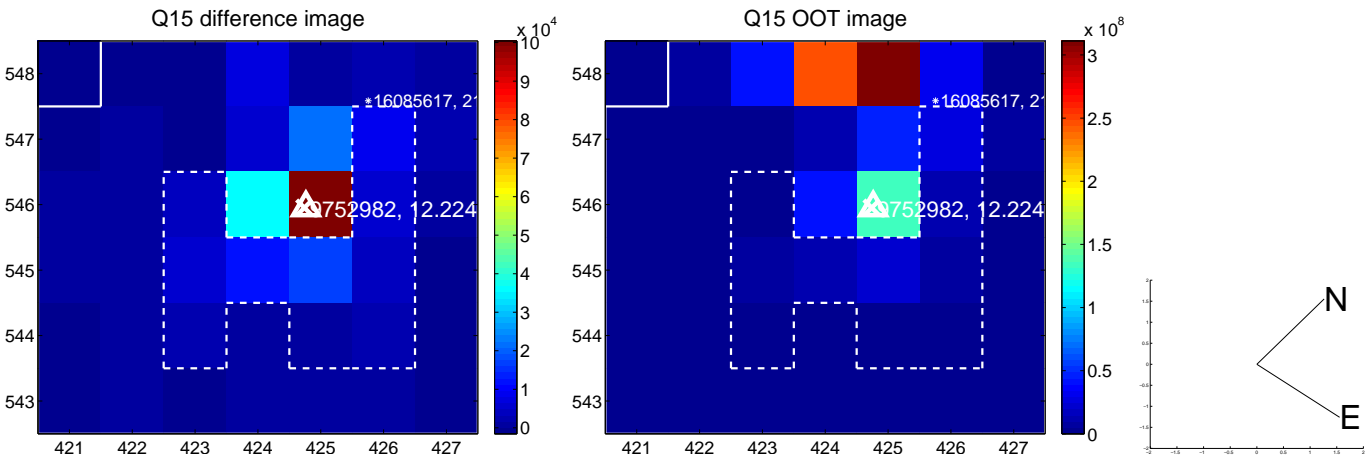
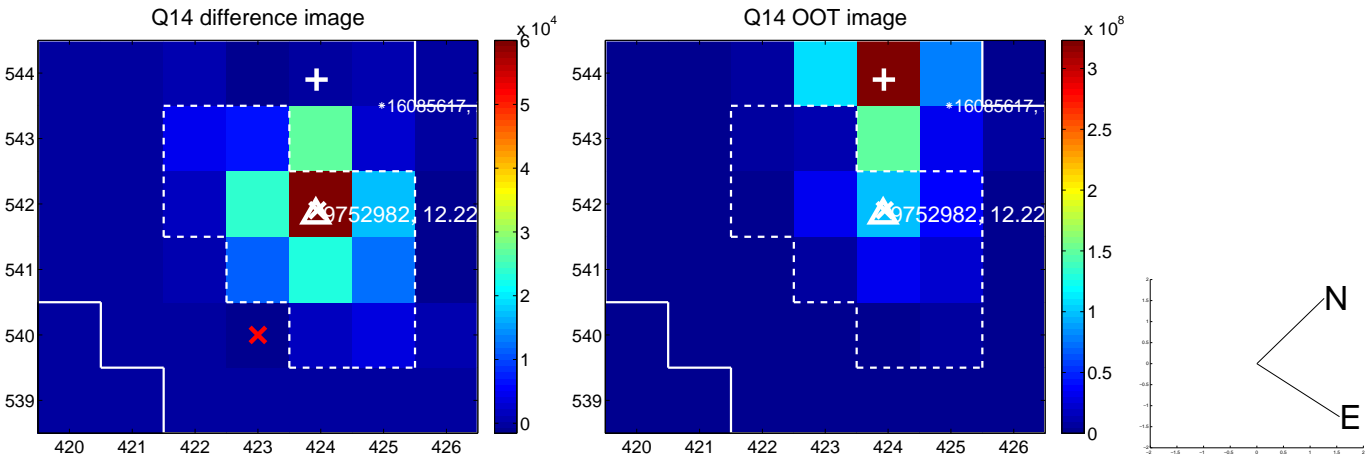
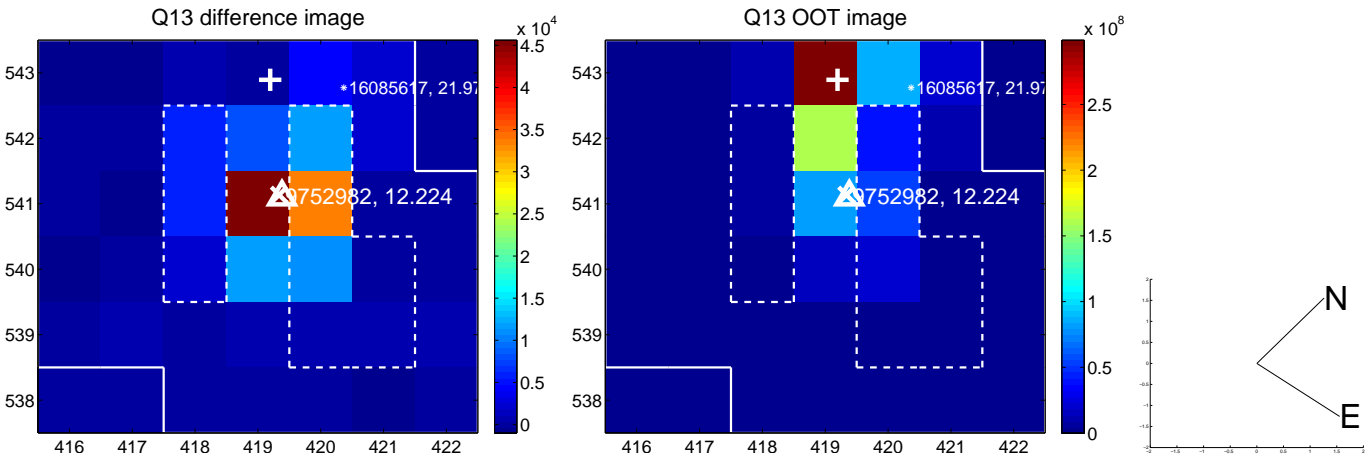
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



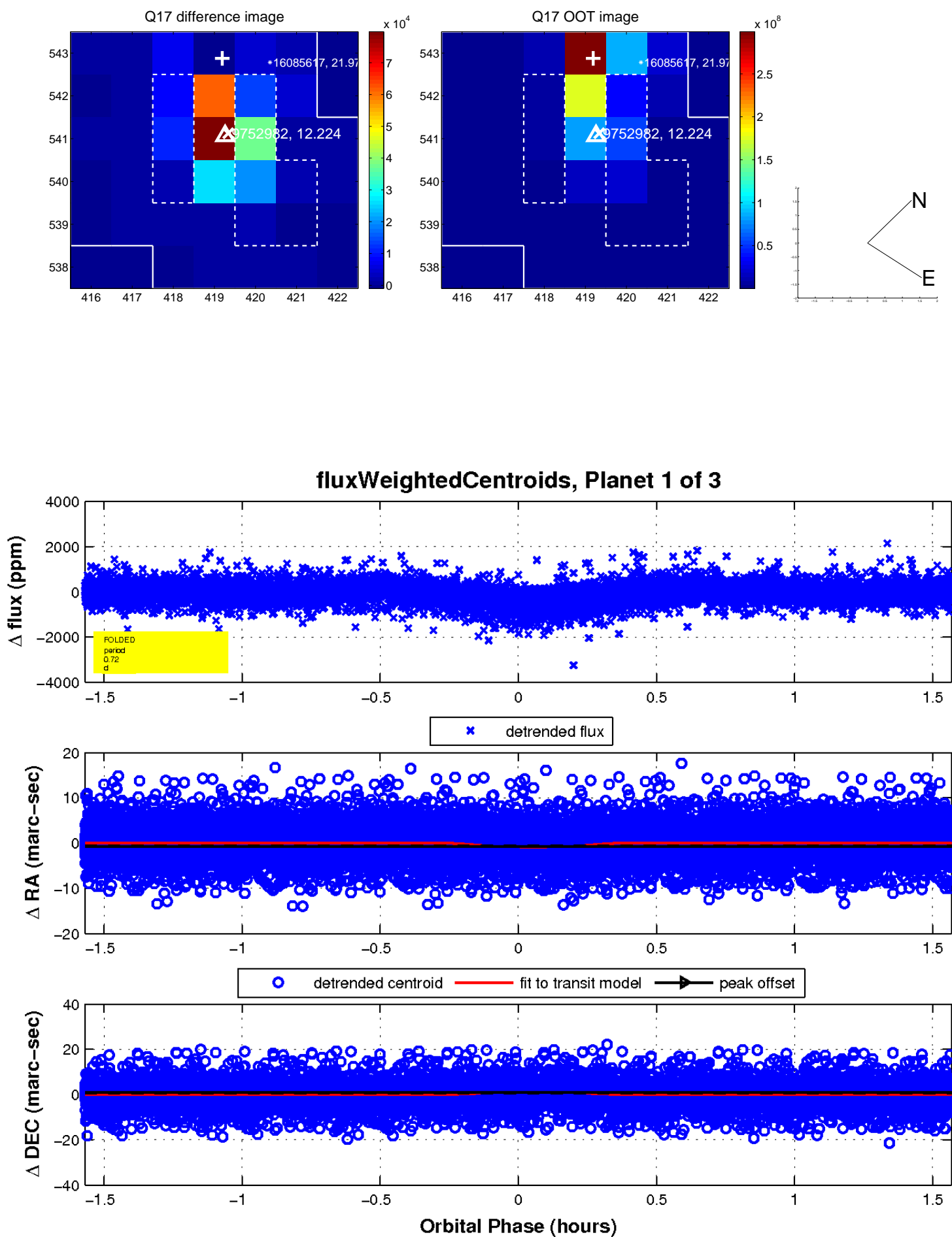
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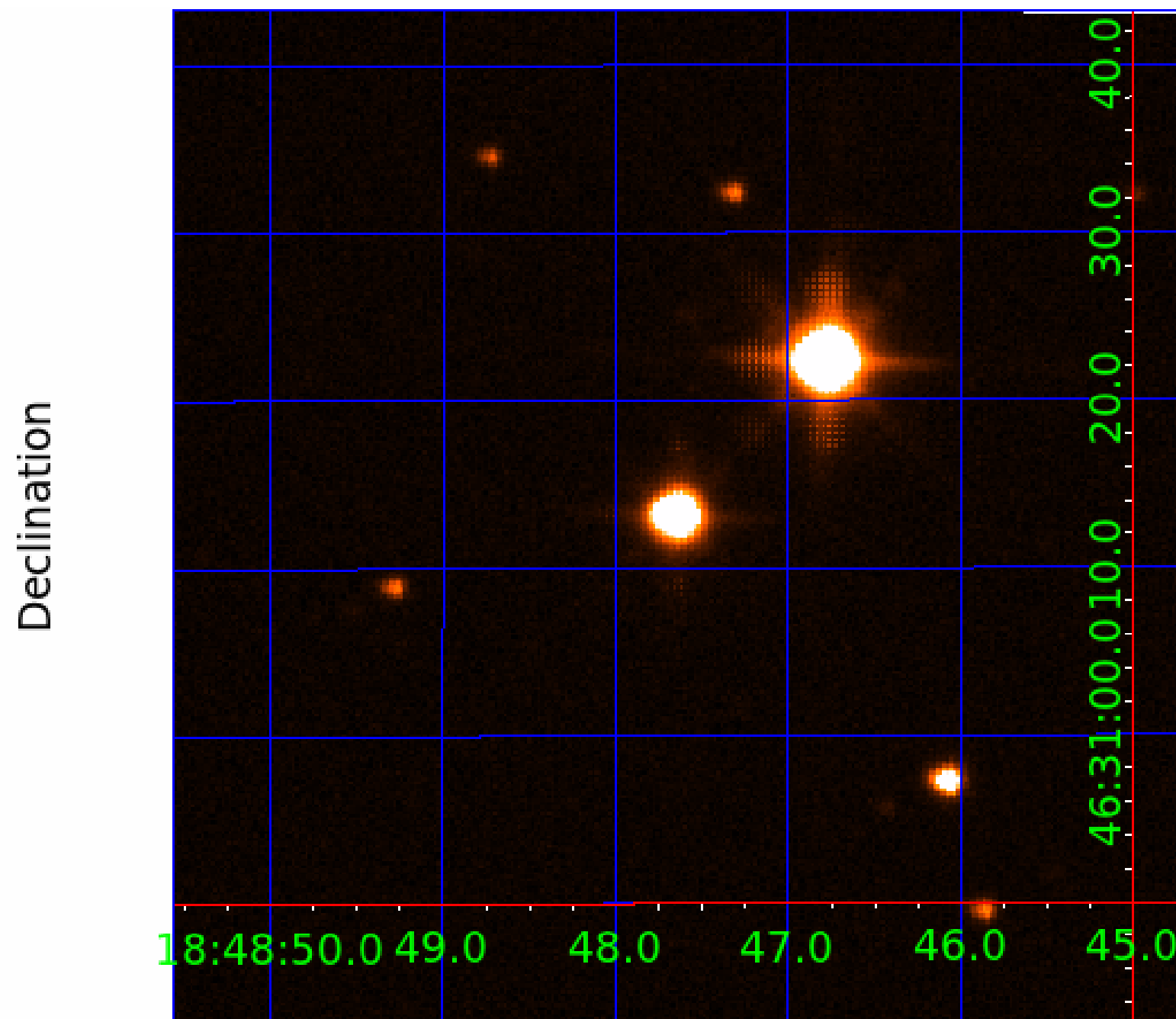
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image



KIC 009752982

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})
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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009752982-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
009752982-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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.

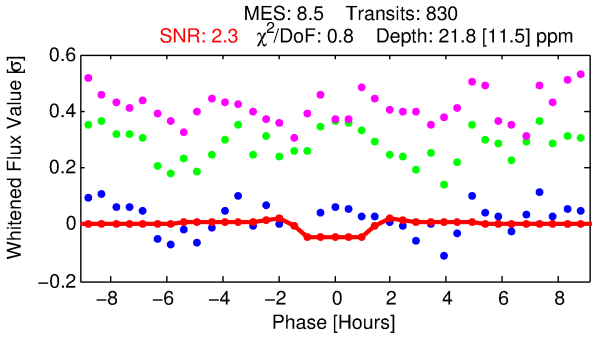
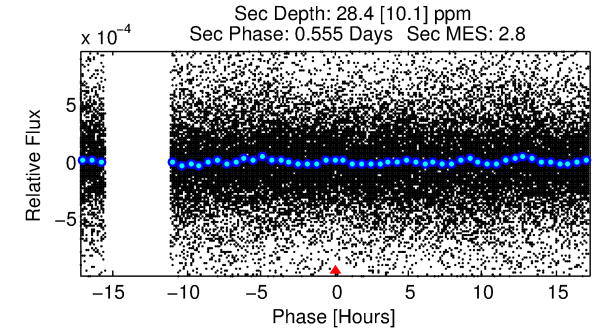
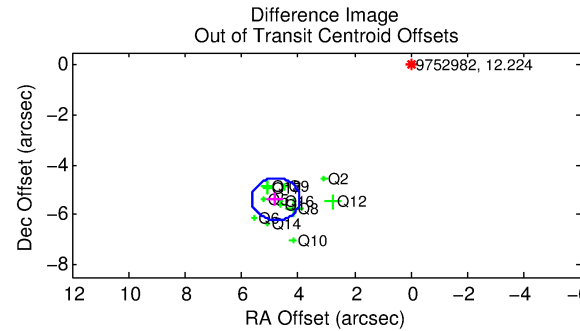
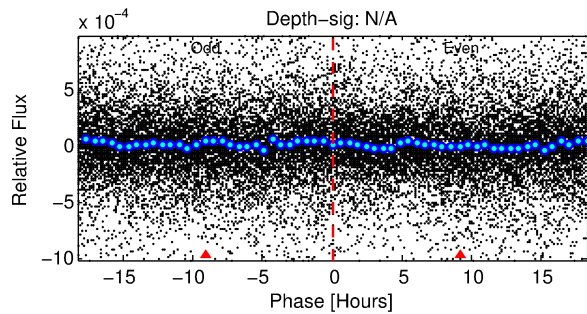
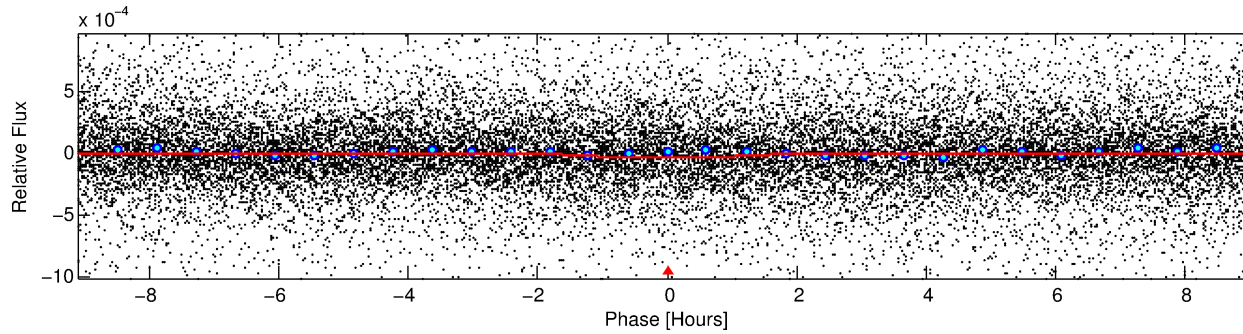
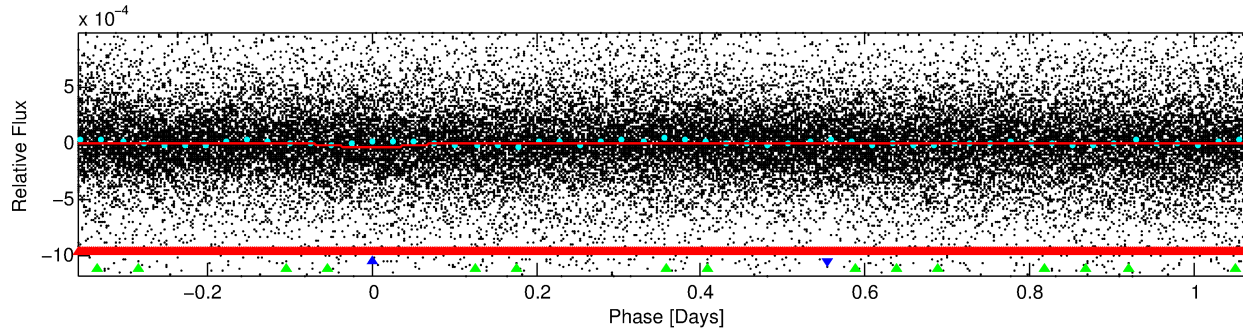
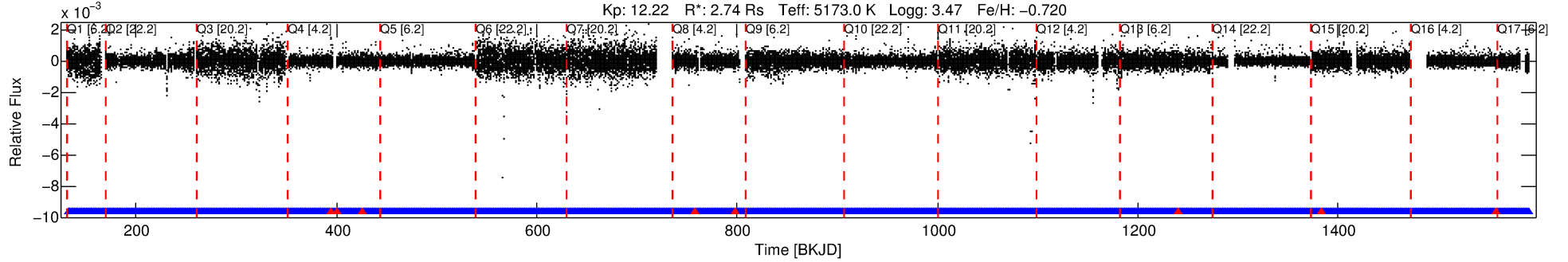
Ephemeris Match Information For 009752982-02

No Significant Match Found

DV One-Page Summary

KIC: 9752982 Candidate: 2 of 3 Period: 1.436 d
KOI: K03871 Corr: No Ephemeris Match

Kp: 12.22 R*: 2.74 Rs Teff: 5173.0 K Logg: 3.47 Fe/H: -0.720



DV Fit Results:

Period = 1.43633 [0.00005] d
Epoch = 132.5877 [0.0107] BKJD
Rp/R* = 0.0049 [0.0057]
a/R* = 2.13 [8.23]
b = 0.85 [1.63]
Seff = 8931.06 [17755.35]
Teq = 2479 [1232] K
Rp = 1.47 [2.08] Re
a = 0.0232 [0.0254] AU
Ag = 3.90 [11.97] [0.24σ]
Teffp = 5385 [3172] K [0.85σ]

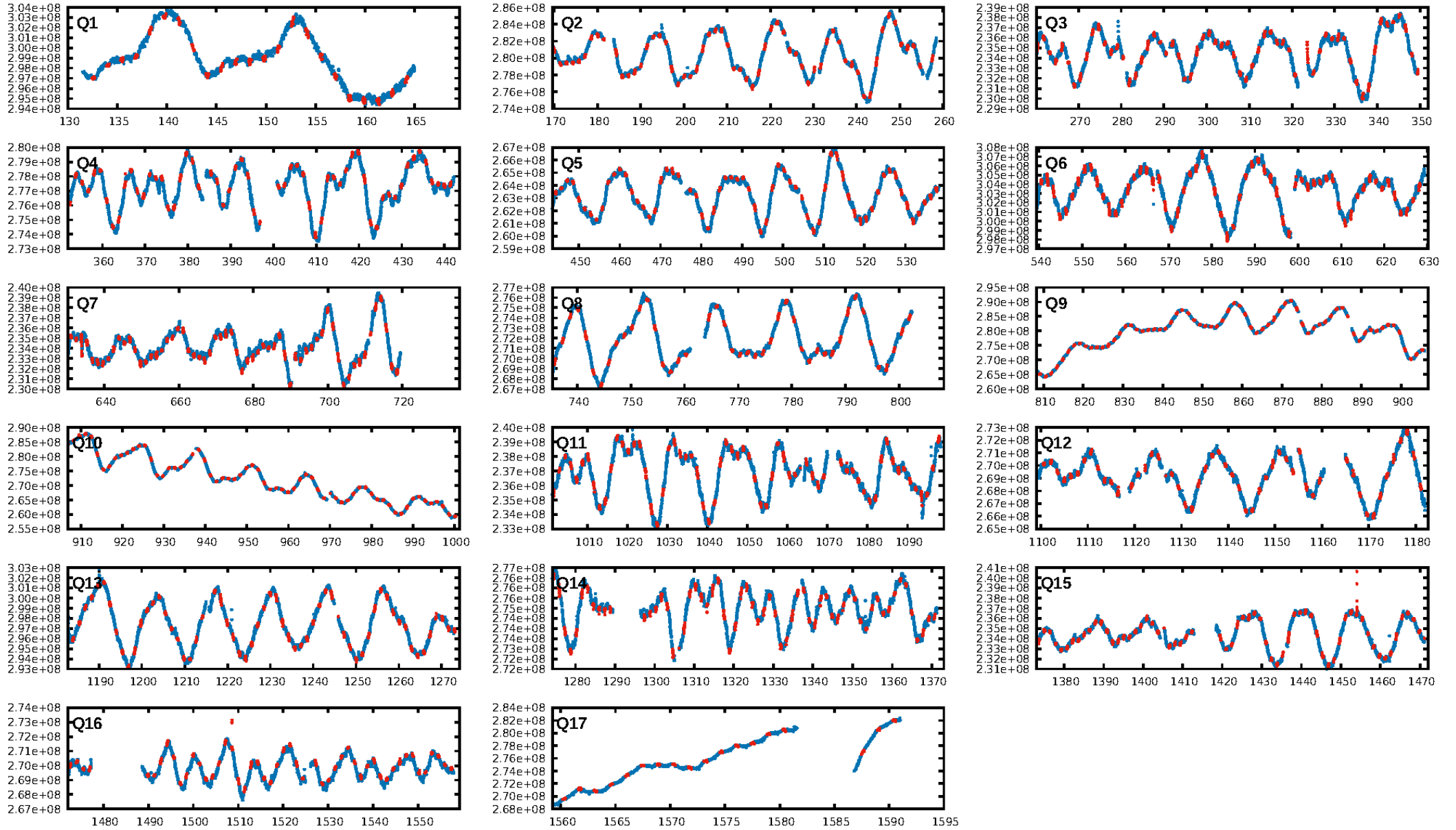
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.59σ]
LongPeriod-sig: 100.0% [629.09σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [781/789]
GhostDiagnostic-chr: -3.351
Centroid-sig: 21.8%
Centroid-so: 5.865 arcsec [3.61σ]
OotOffset-rm: 7.204 arcsec [25.56σ]
KicOffset-rm: 0.131 arcsec [0.79σ]
OotOffset-st: 4/0/3/5 [12]
KicOffset-st: 4/3/3/5 [15]
DiffImageQuality-fgm: 0.33 [5/15]
DiffImageOverlap-fno: 0.24 [4/17]

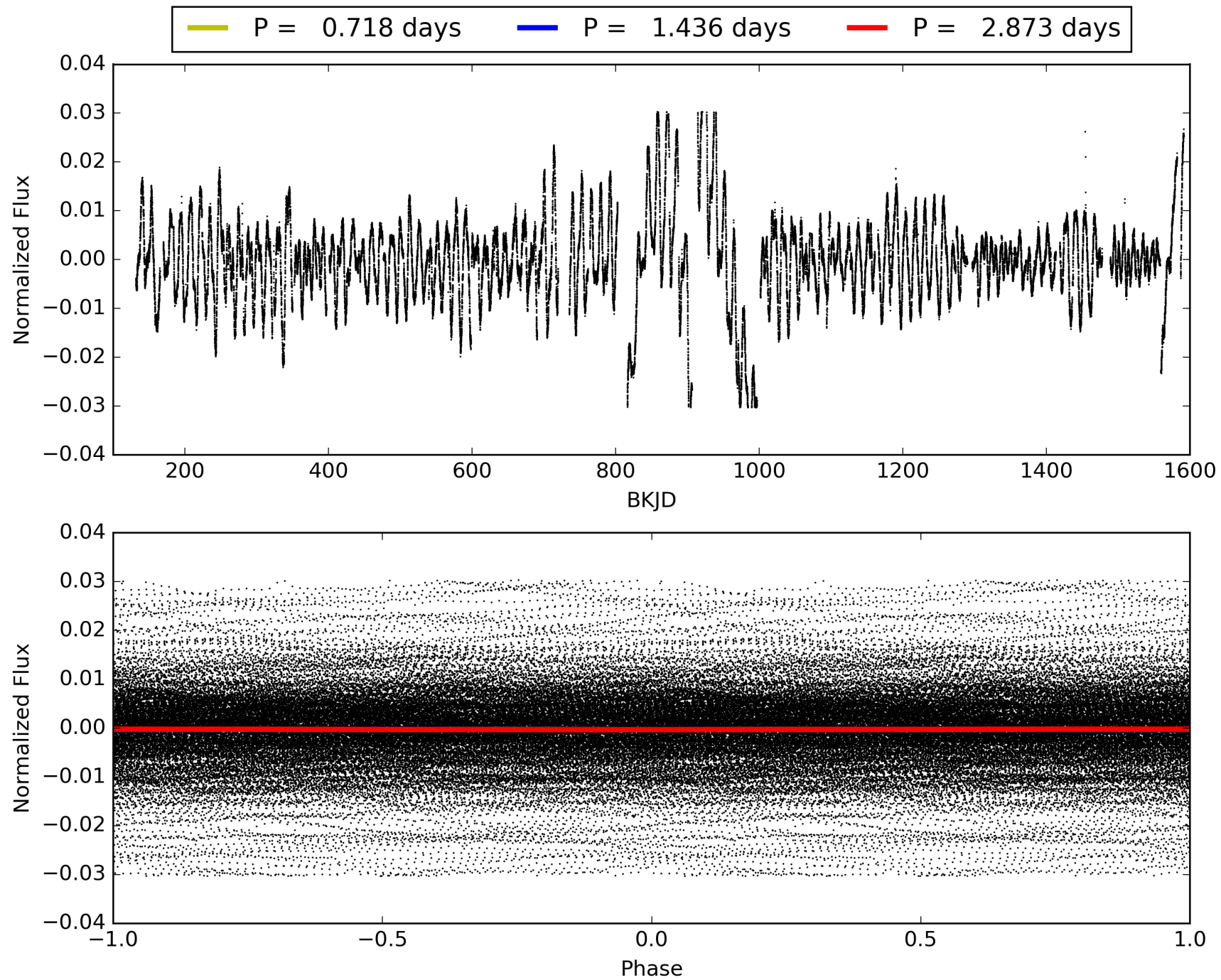
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:45:45 Z

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

TCE 009752982-02, PDC Light Curves

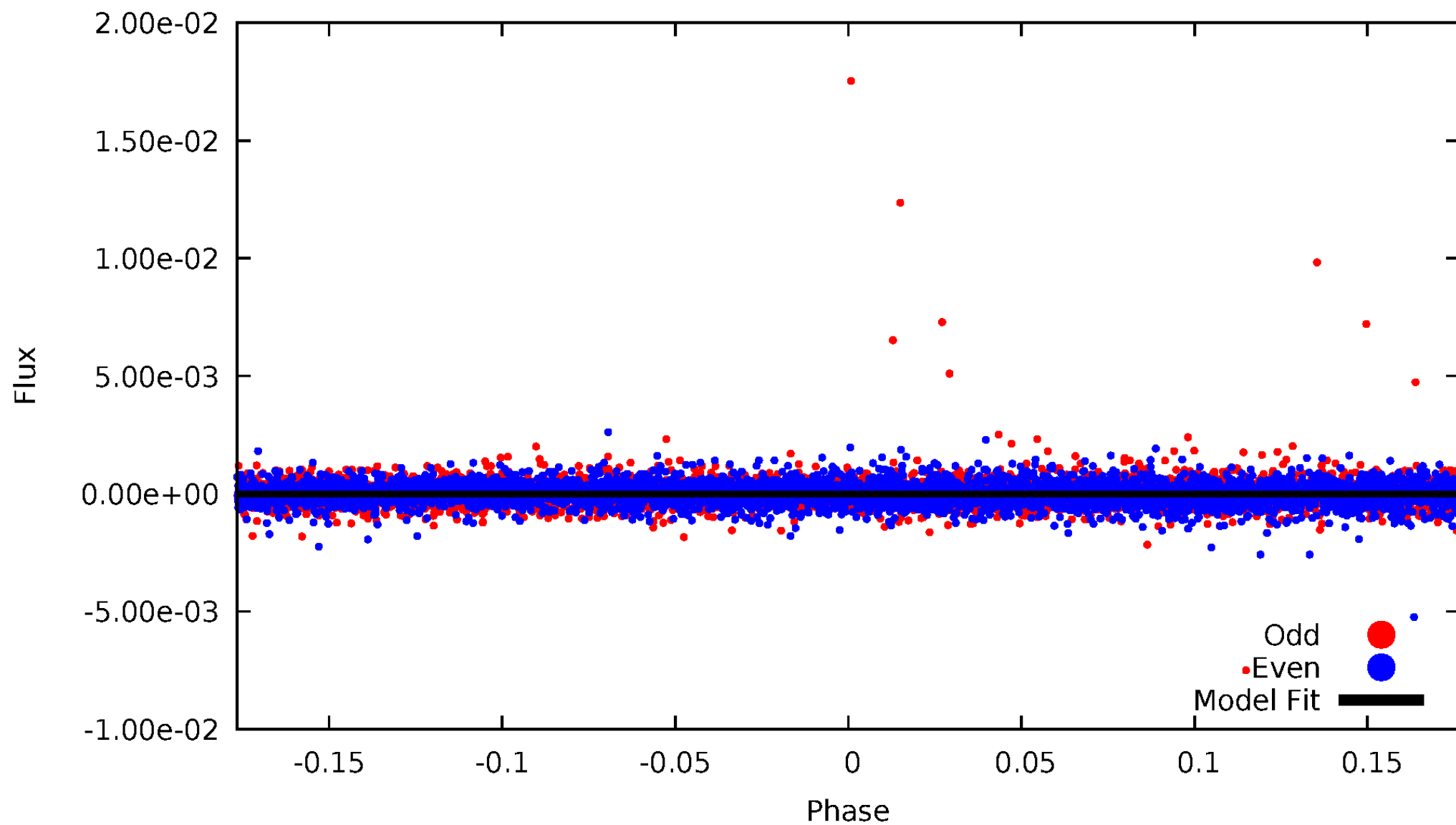


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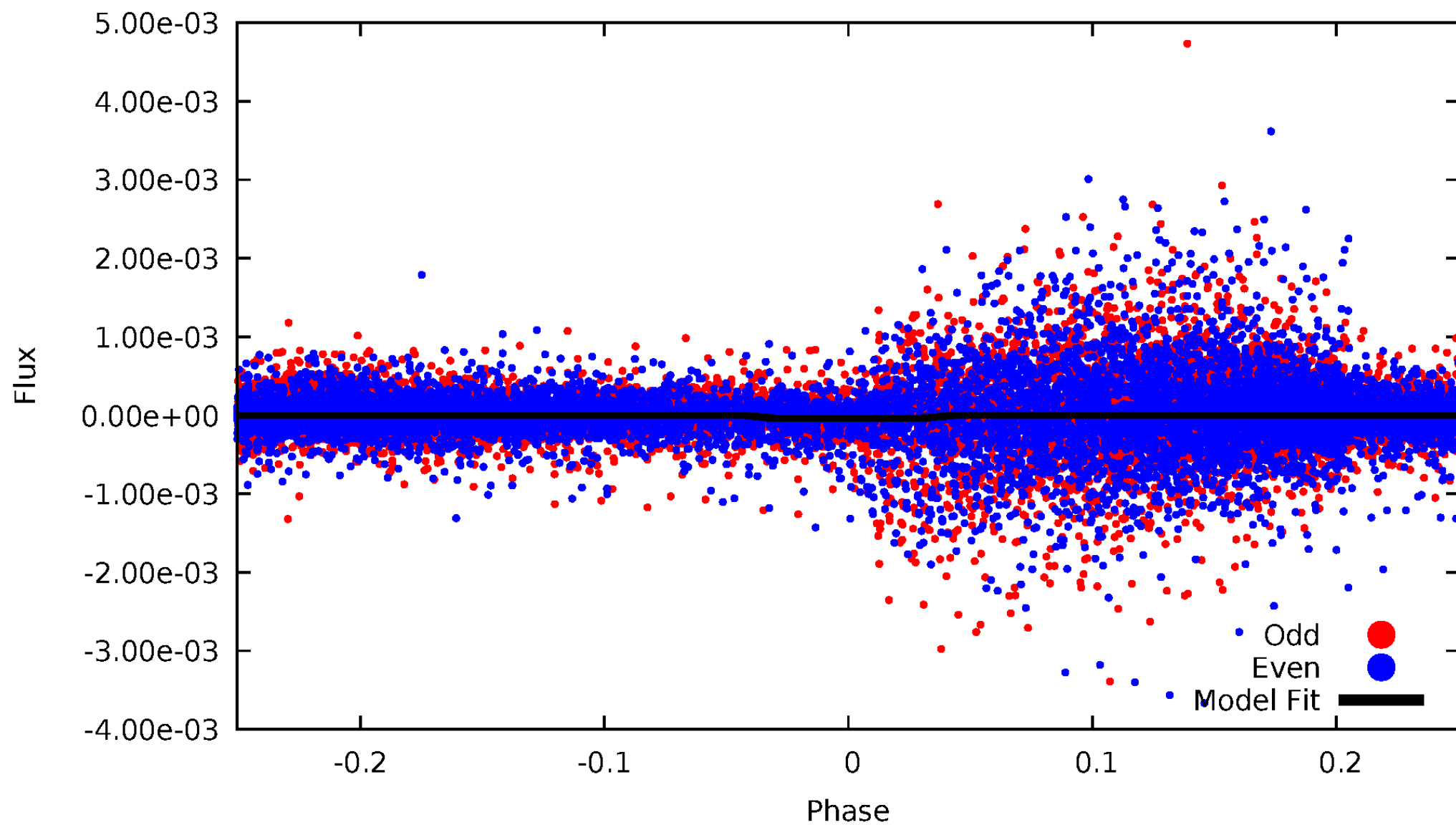
DV Odd/Even

TCE 009752982-02



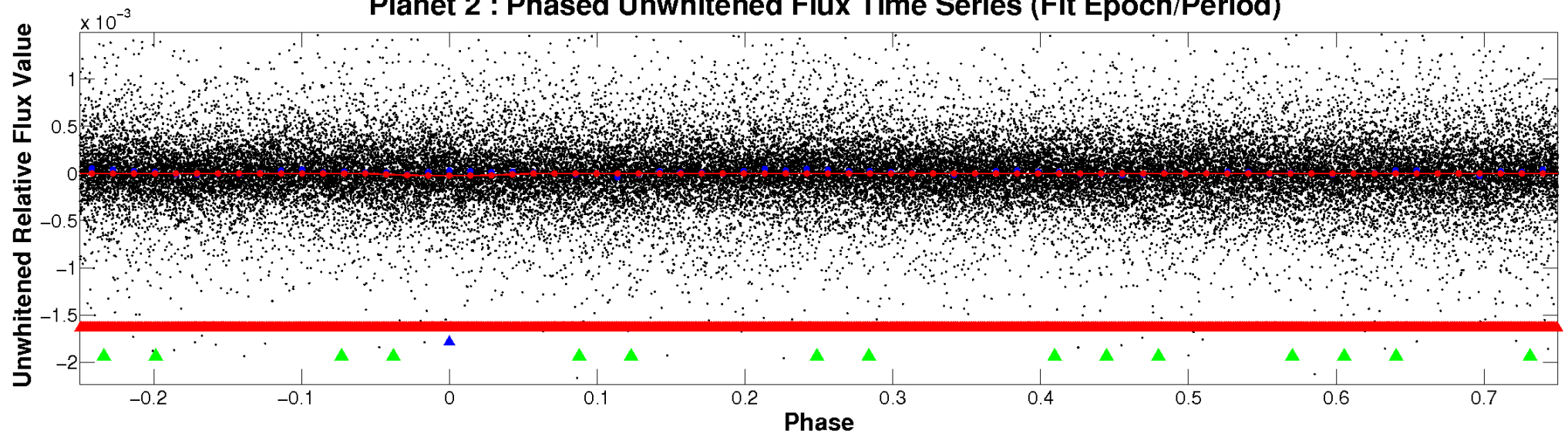
ALT Odd/Even

TCE 009752982-02

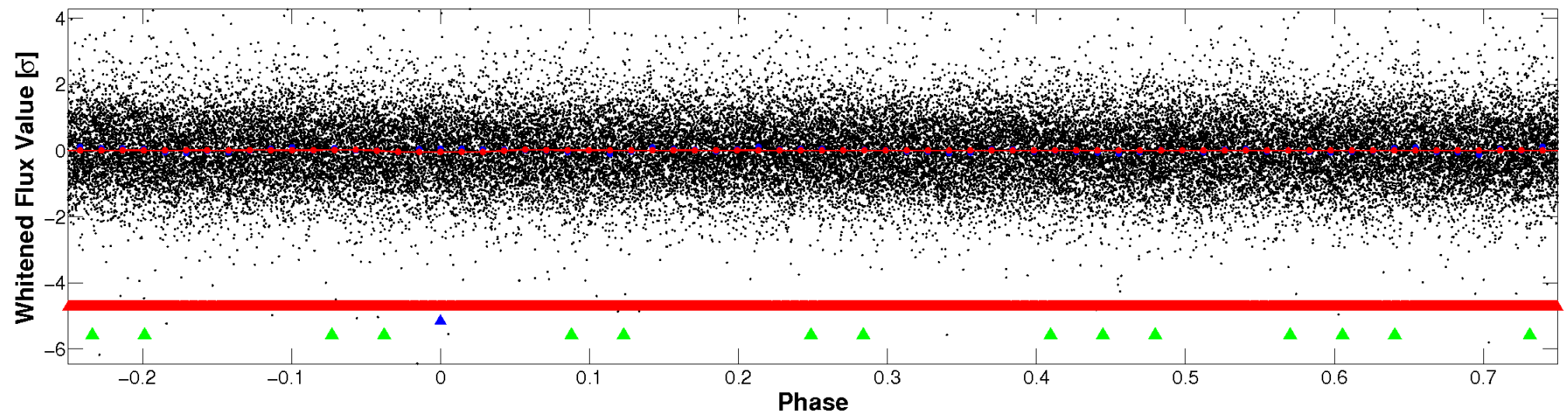


Non-Whitened Vs. Whitened Light Curve

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

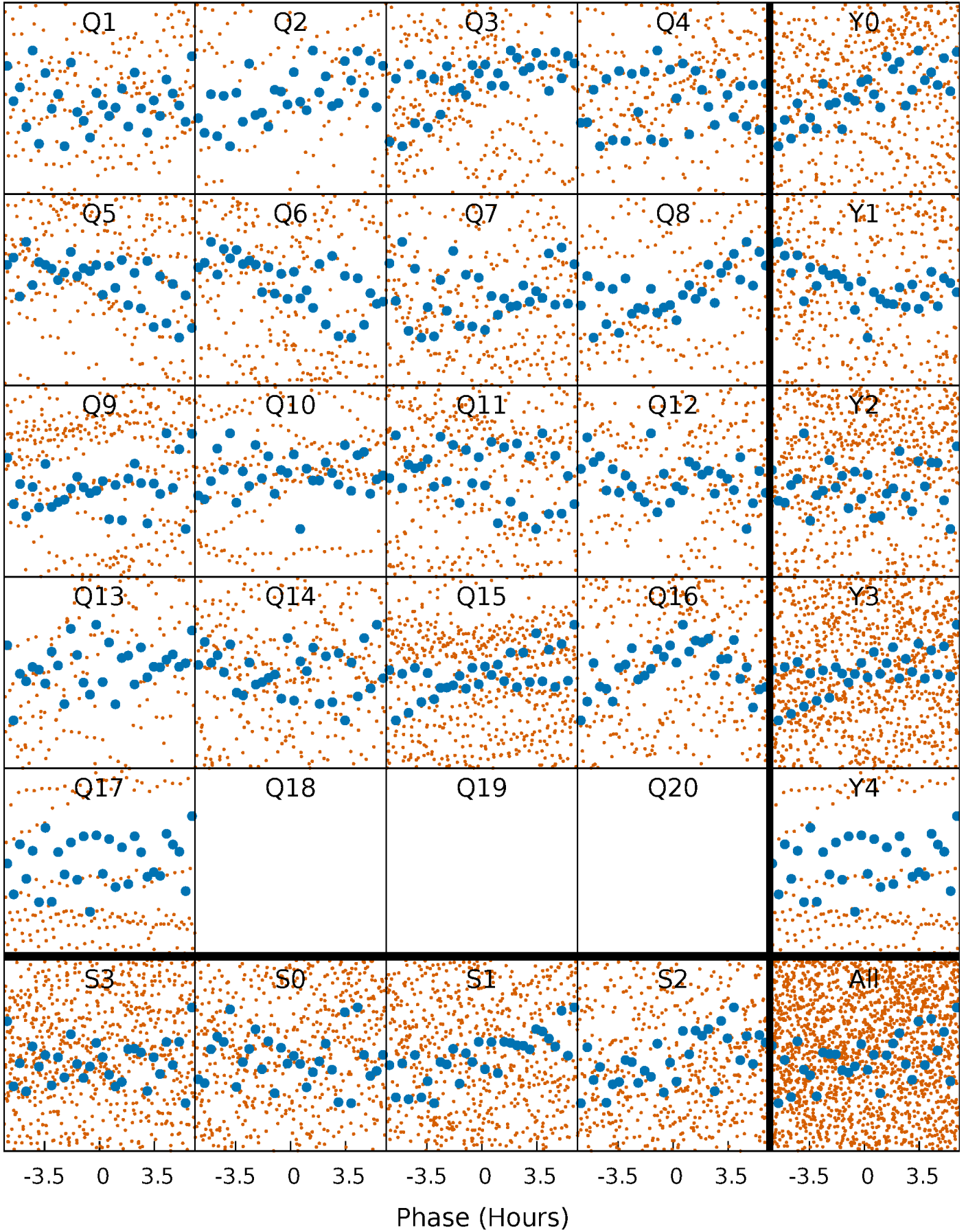


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



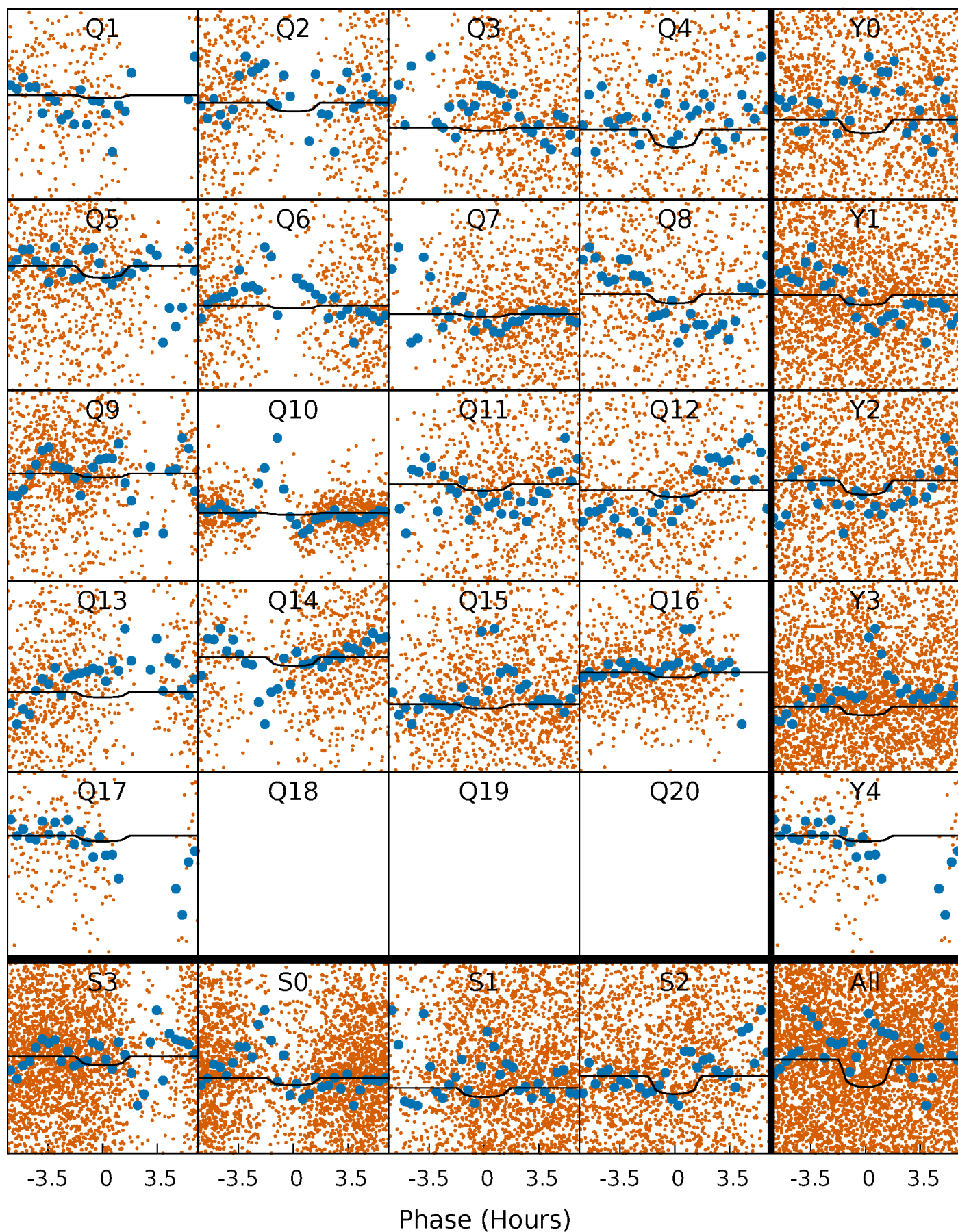
PDC Quarter-Phased Transit Curves

TCE 009752982-02 P= 1.436331 Days $T_0=132.587750$ (BKJD)



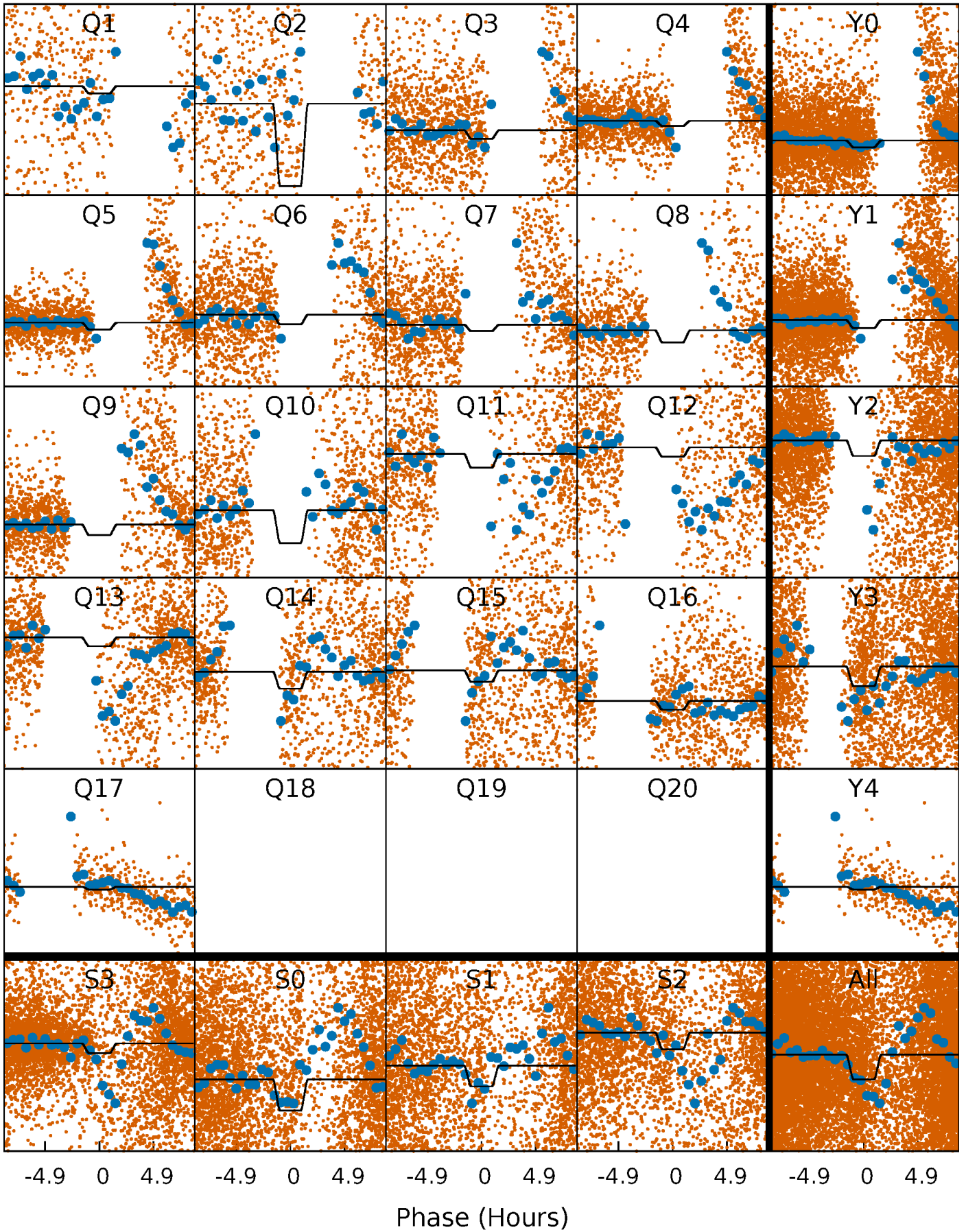
DV Quarter-Phased Transit Curves

TCE 009752982-02 P= 1.436331 Days $T_0=132.587750$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

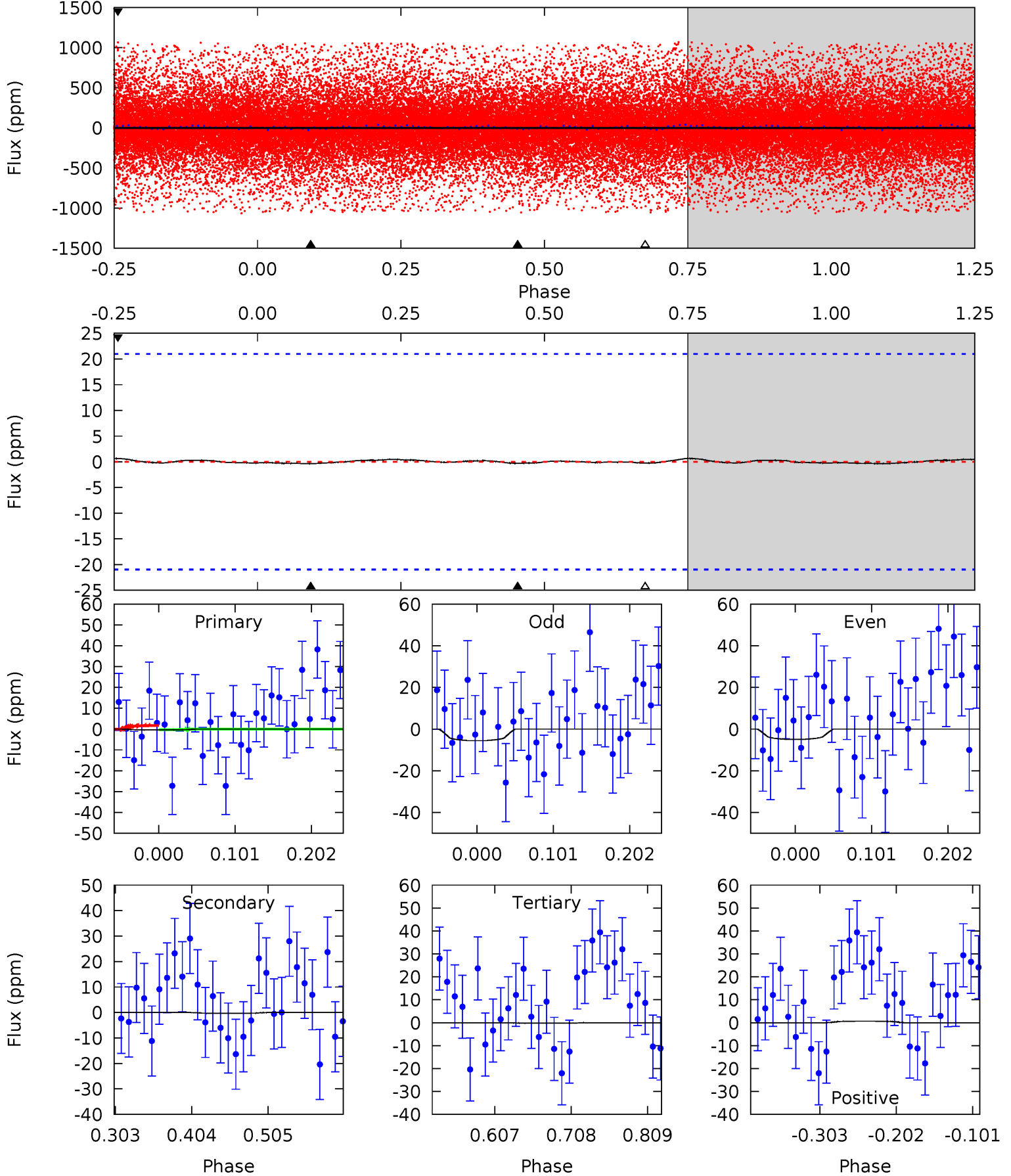
TCE 009752982-02 P= 1.433774 Days $T_0=132.605172$ (BKJD)



DV Model-Shift Uniqueness Test

009752982-02, P = 1.436331 Days, E = 131.151419 Days

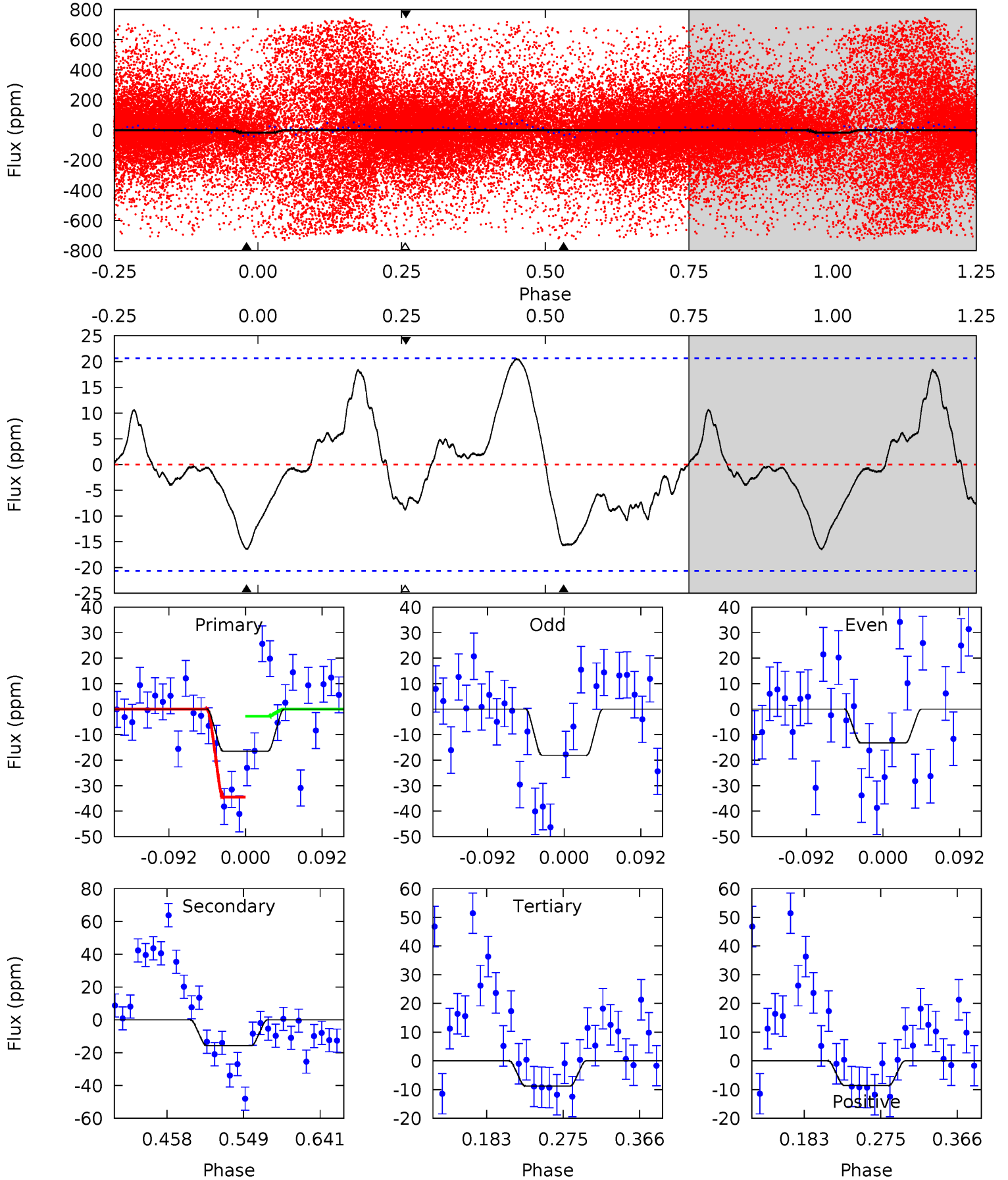
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.08	0.07	0.05	0.14	4.56	1.64	0.05	0.03	-0.06	0.01	-0.07	0.07	-2.86	0.64	0.16



Alt Model-Shift Uniqueness Test

009752982-02, P = 1.433774 Days, E = 131.171398 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.65	3.48	1.95	-1.90	4.58	1.69	1.52	1.70	5.55	1.53	5.38	0.54	5.30	0.55	3.80



Stellar Parameters For KIC 009752982

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5173^{+106}_{-247}	$3.471^{+1.240}_{-0.310}$	$-0.720^{+0.250}_{-0.450}$	$2.742^{+1.483}_{-2.225}$	$0.811^{+0.209}_{-0.209}$	$0.055^{+4.057}_{-0.047}$
	+2%/-5%	+36%/-9%	+35%/-62%	+54%/-81%	+26%/-26%	+7319%/-86%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009752982-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-0 ± 5	$1.56^{+1.75}_{-1.06}$	3335^{+511}_{-796}	-3247^{+6701}_{-757}	$0.017^{+1.055}_{-0.942}$
Alt.	-16 ± 5	$1.84^{+1.78}_{-1.24}$	3354^{+506}_{-803}	3777^{+2217}_{-1223}	$1.380^{+10.248}_{-1.036}$

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 $A_{obs} \gg 1.0$

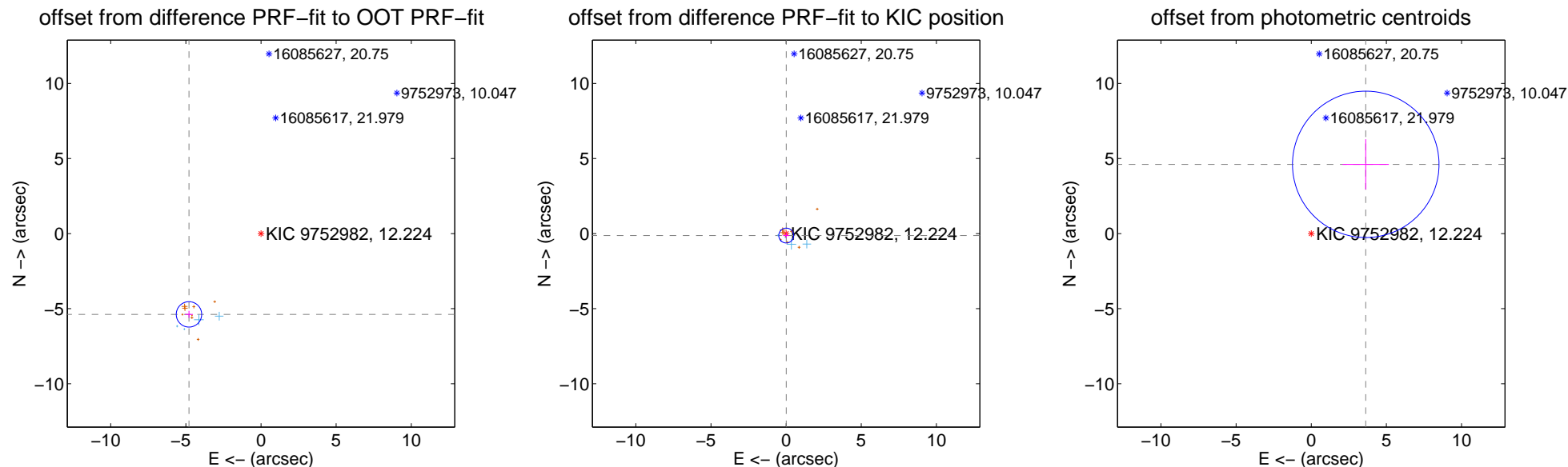
DV Centroid Data

Supplemental centroid analysis for 009752982-02. Kepler magnitude: 12.22. Transit SNR 2.29

There are 5 quarters with good PRF difference image offsets

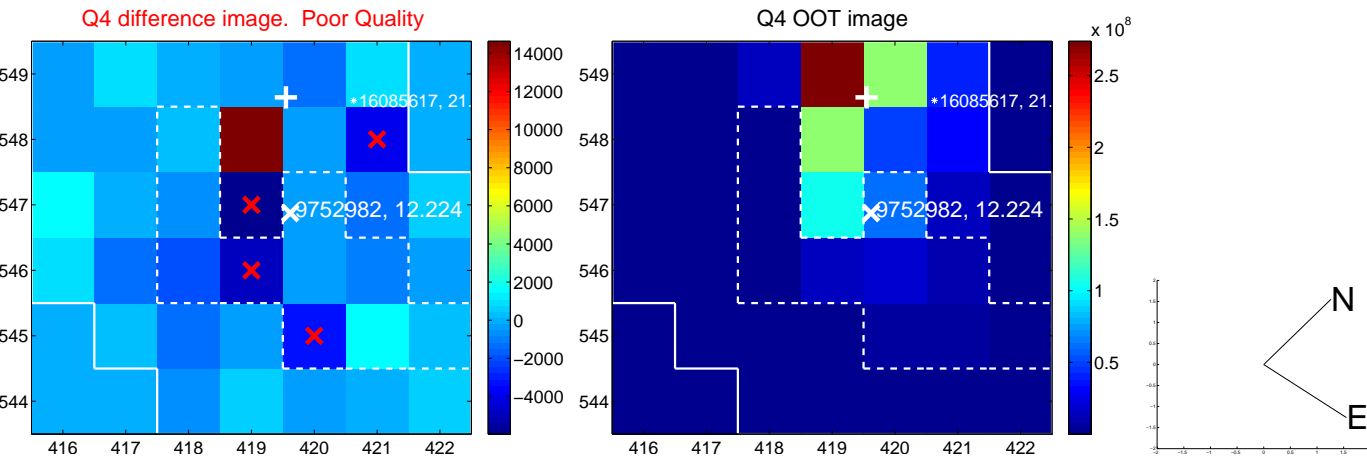
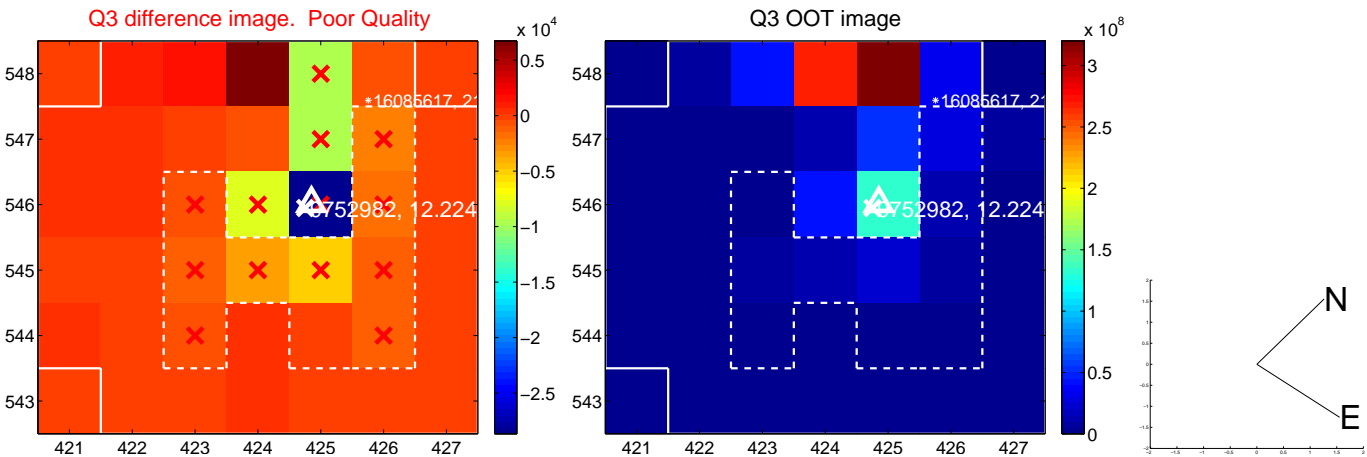
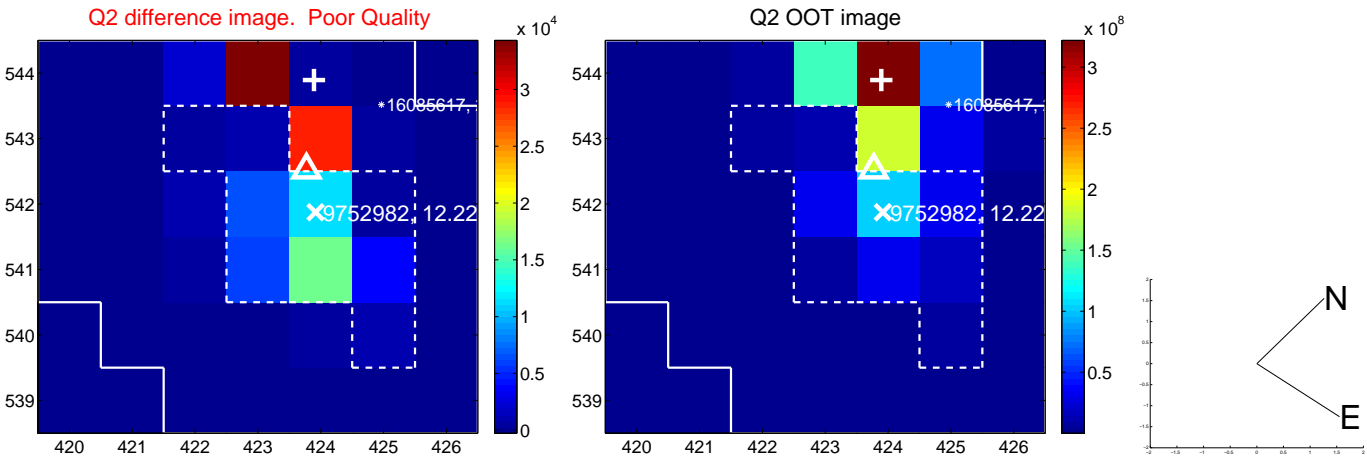
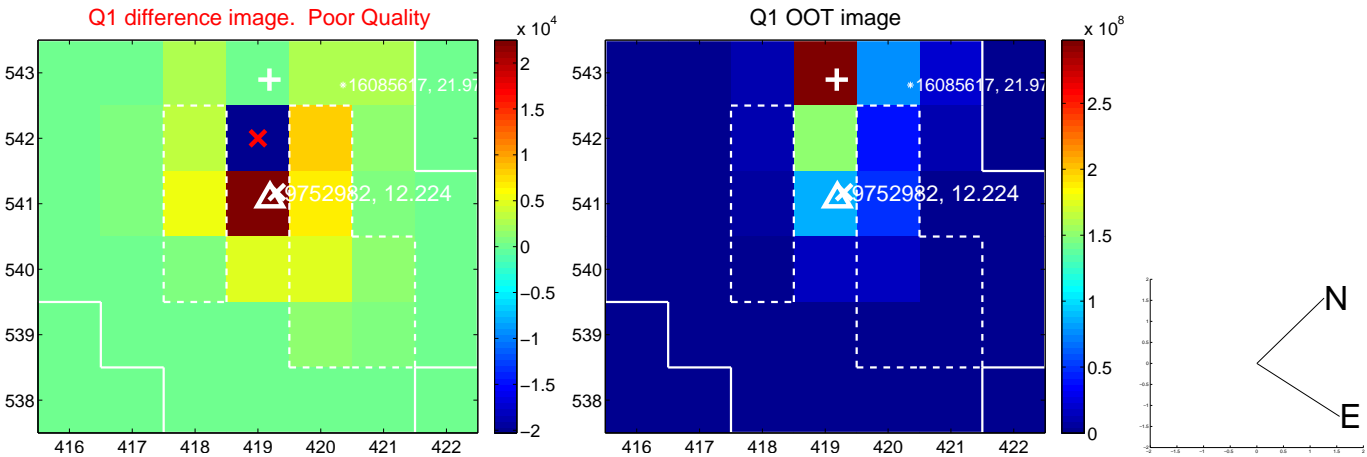
The OOT PRF centroid is offset from the target star catalog position by about 6.98 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.204 ± 0.282	25.56	4.791 ± 0.264	-5.380 ± 0.236
PRF-fit source offset from KIC position	0.131 ± 0.165	0.79	-0.008 ± 0.199	-0.131 ± 0.169
photometric centroid source offset	5.86 ± 1.62	3.61	-3.63 ± 1.54	4.61 ± 1.68

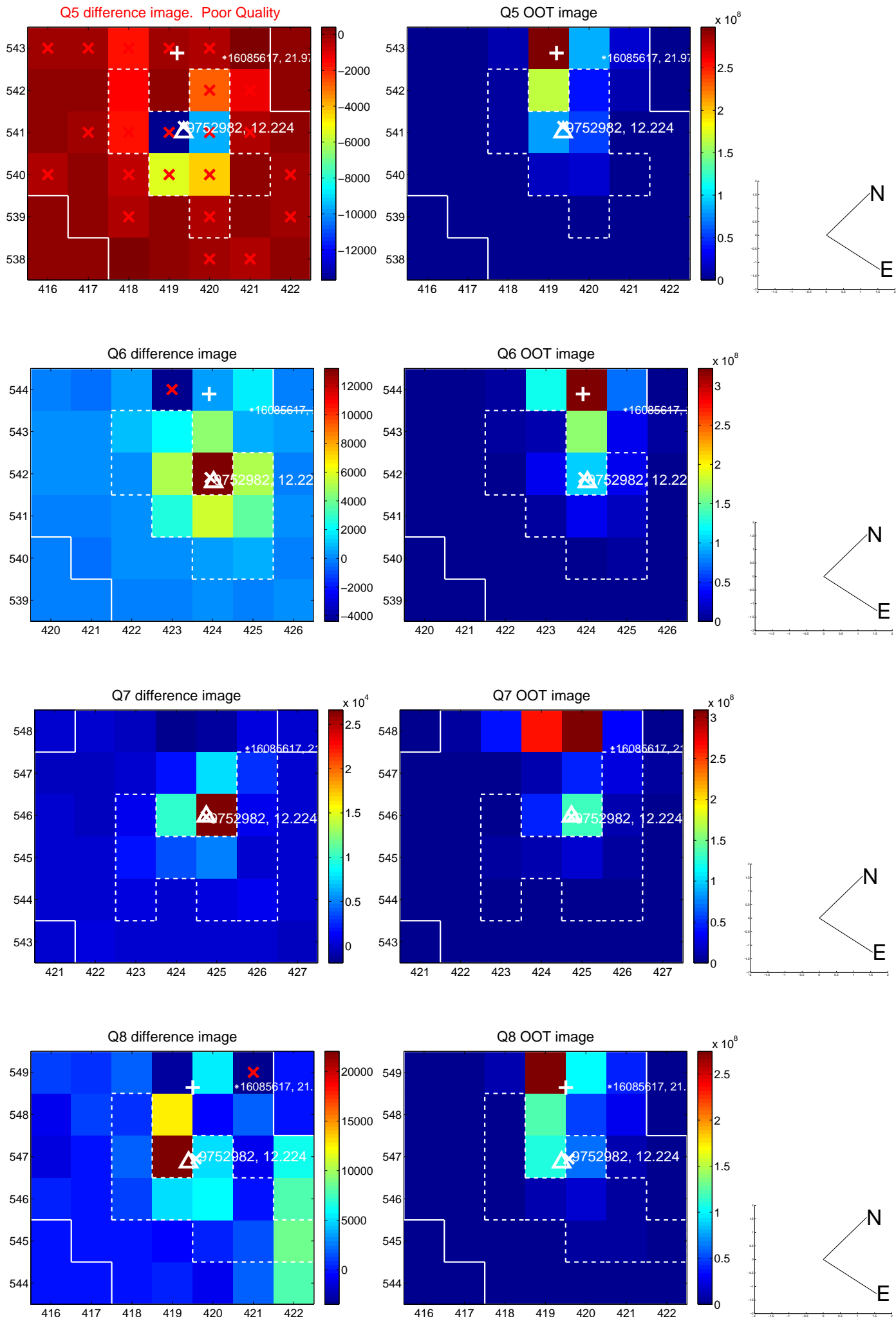


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

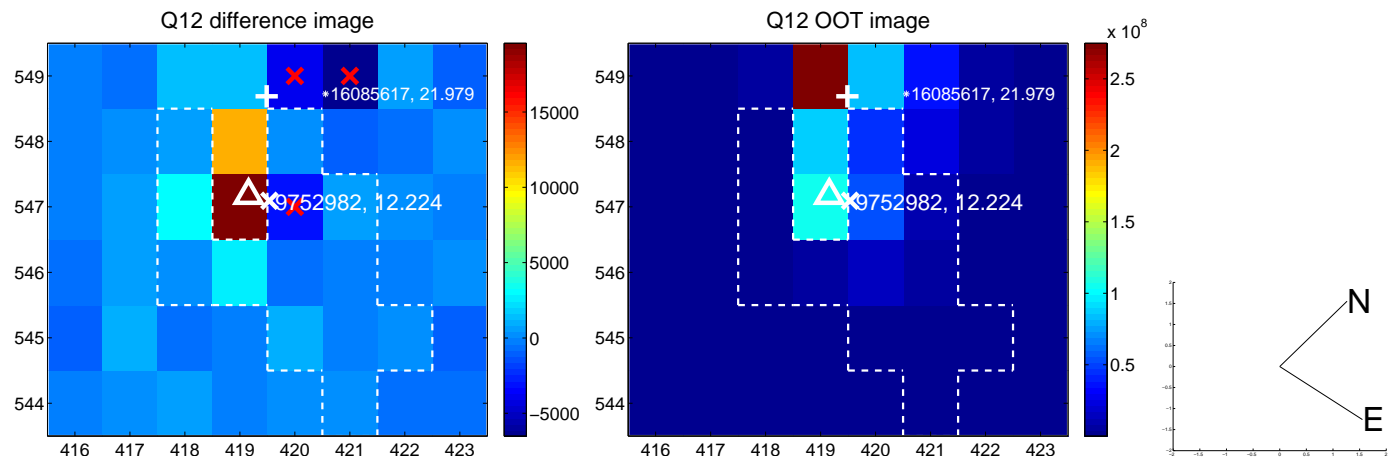
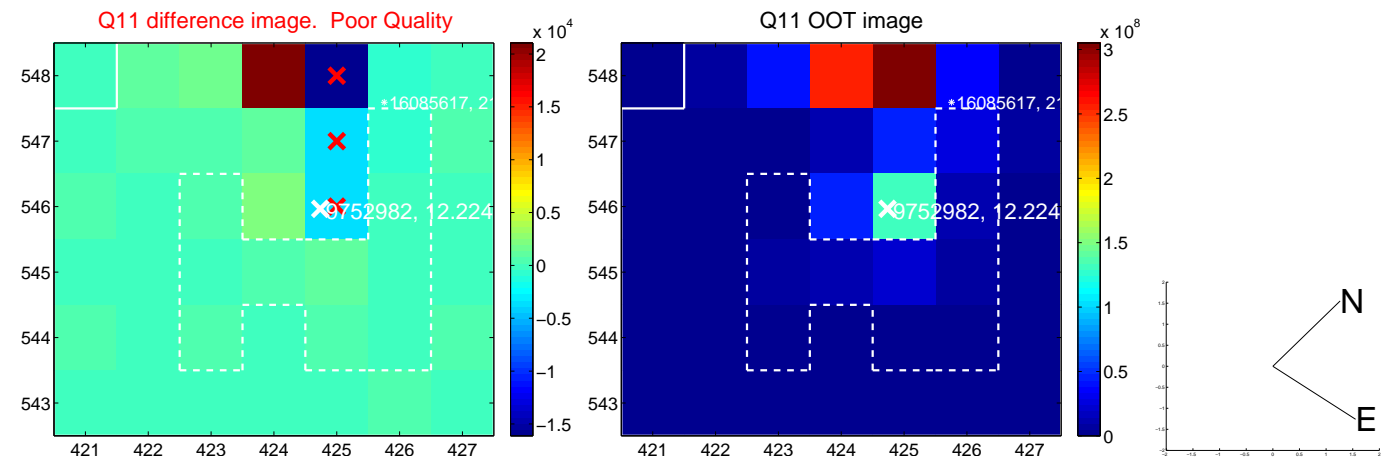
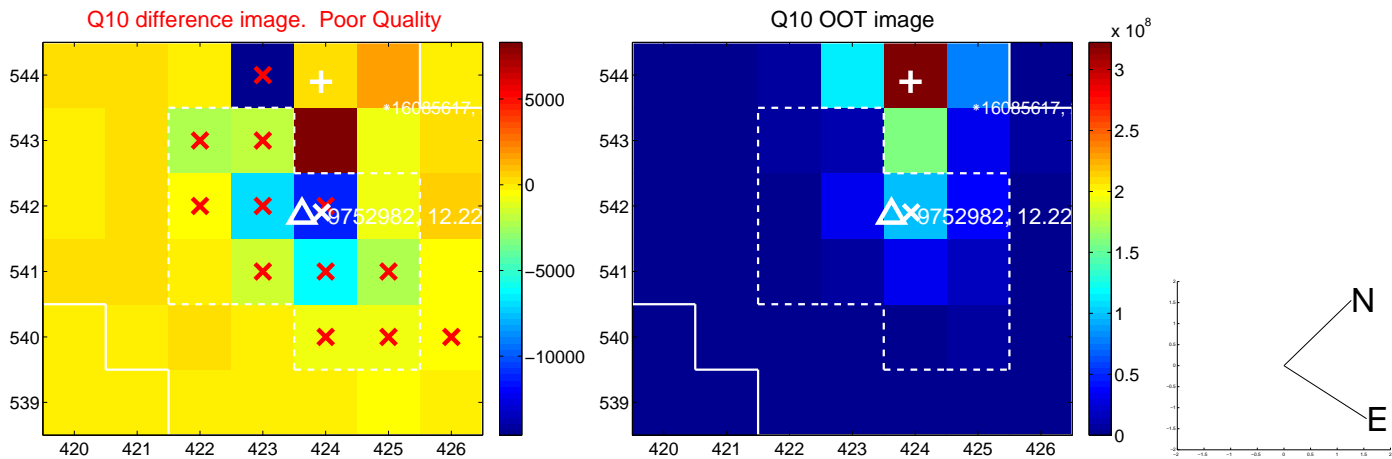
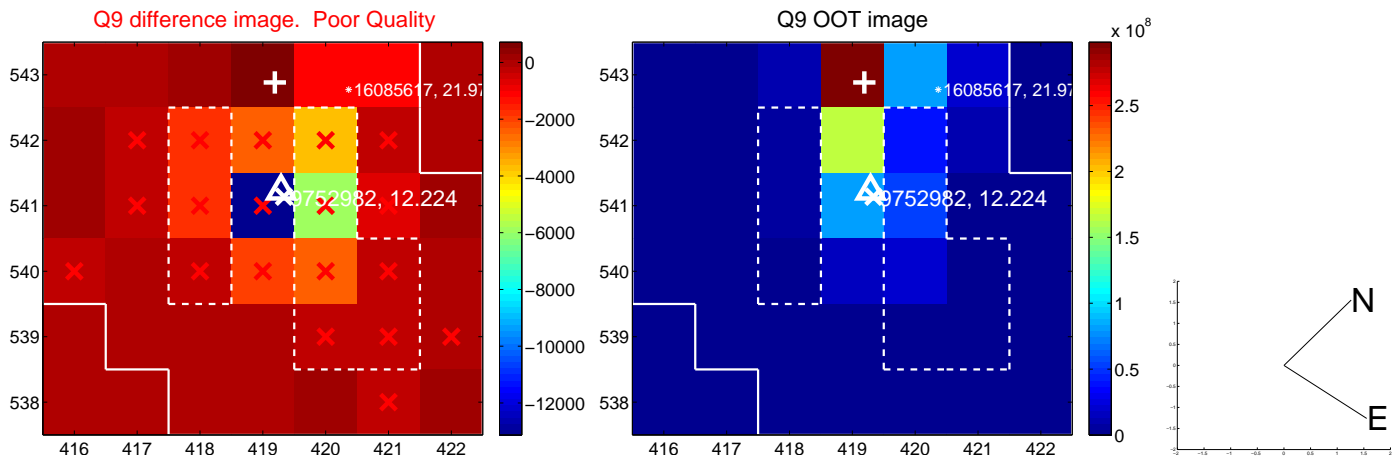
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



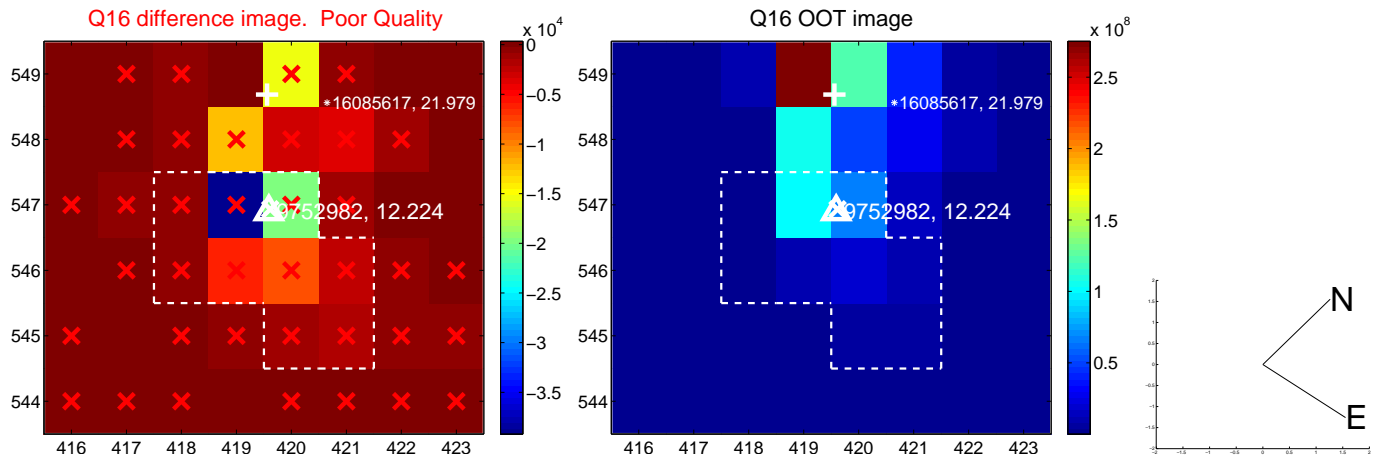
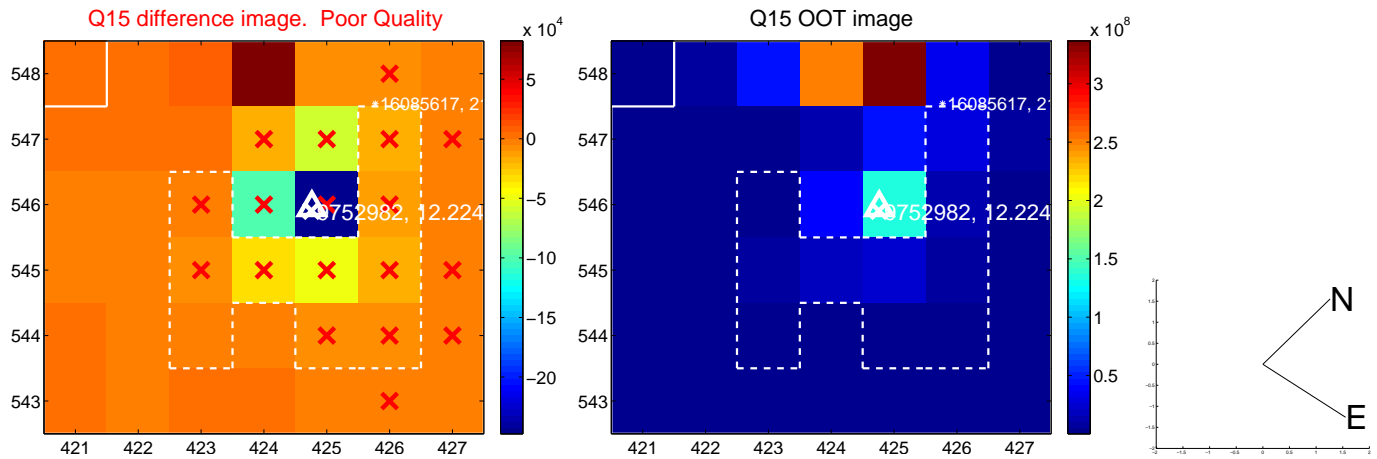
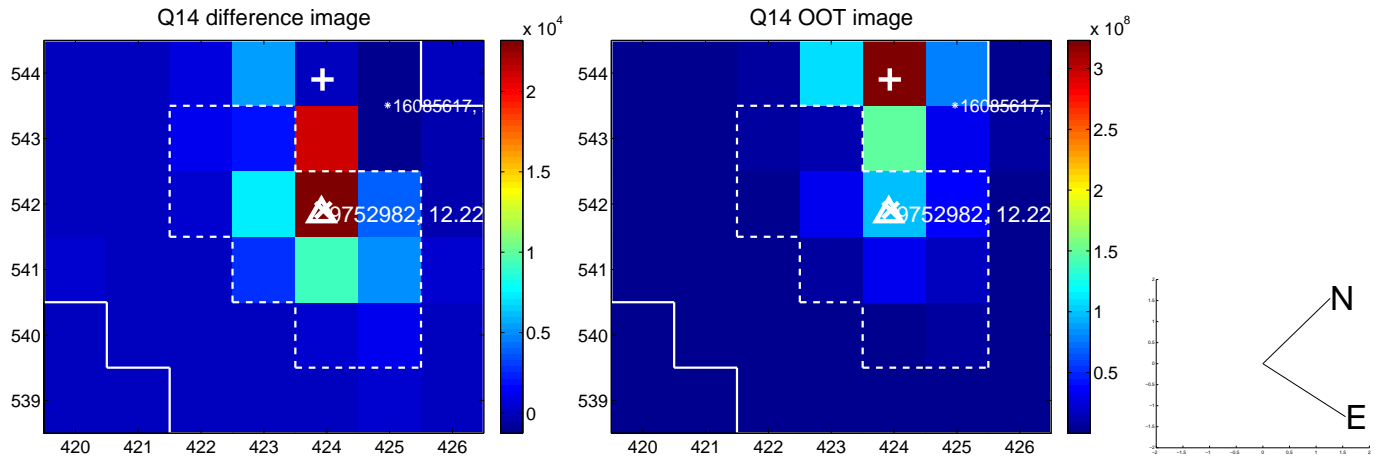
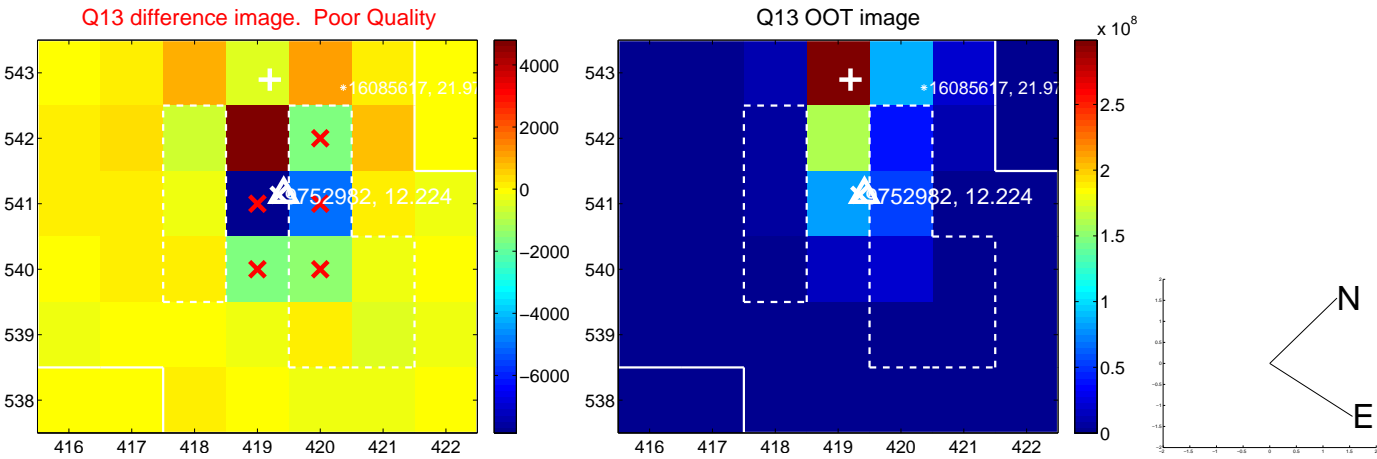
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



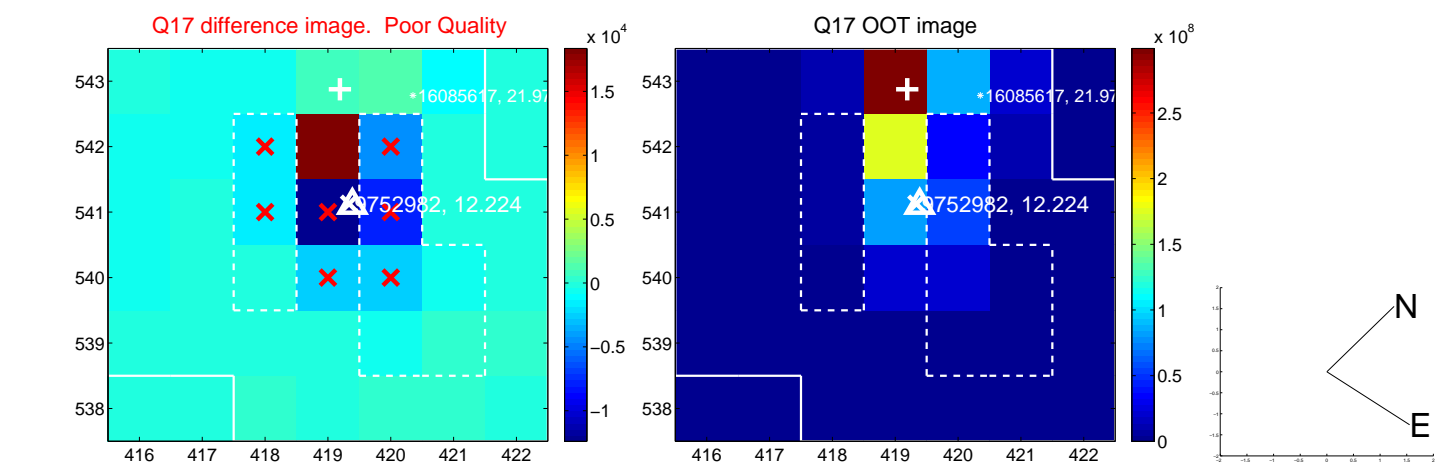
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



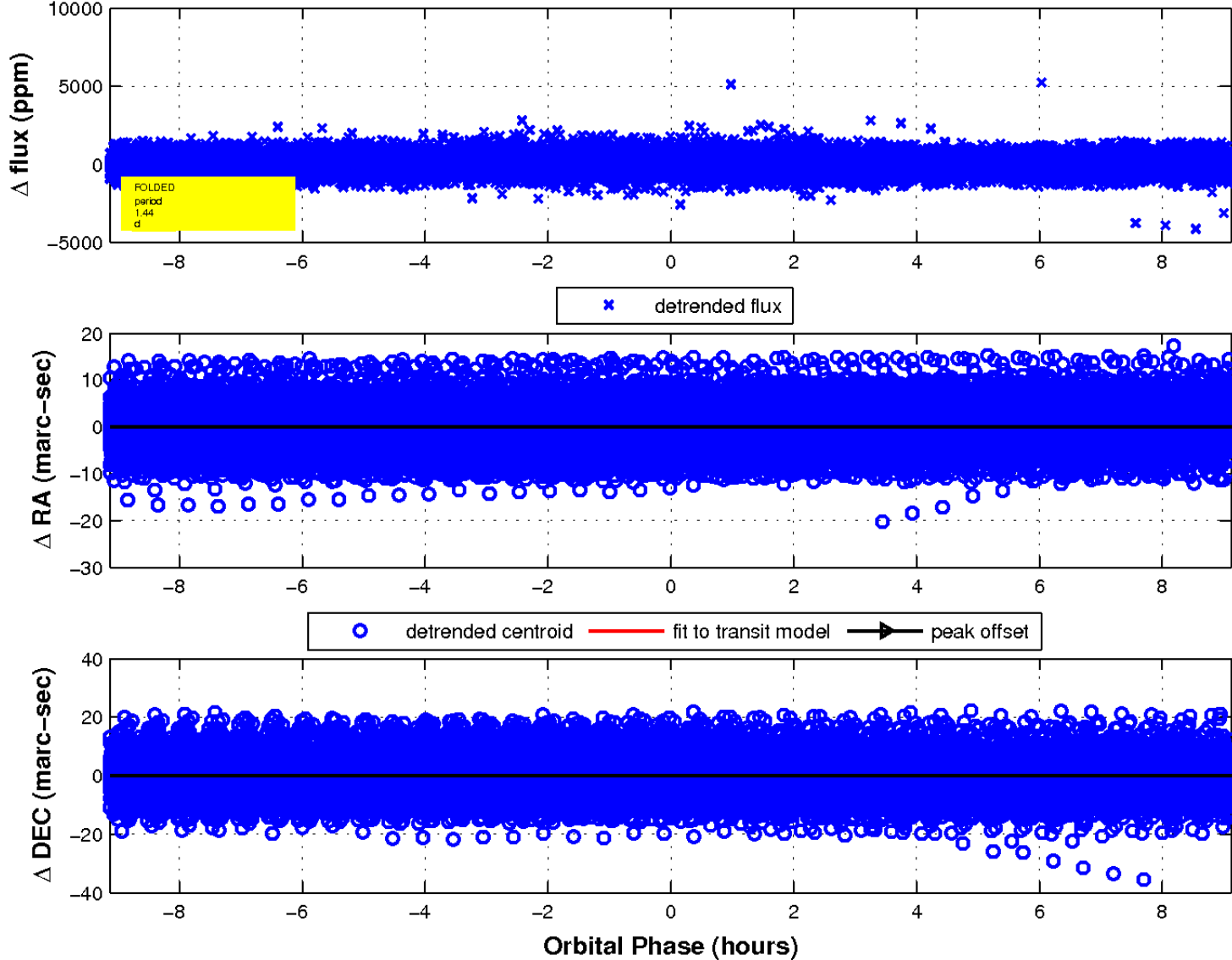
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



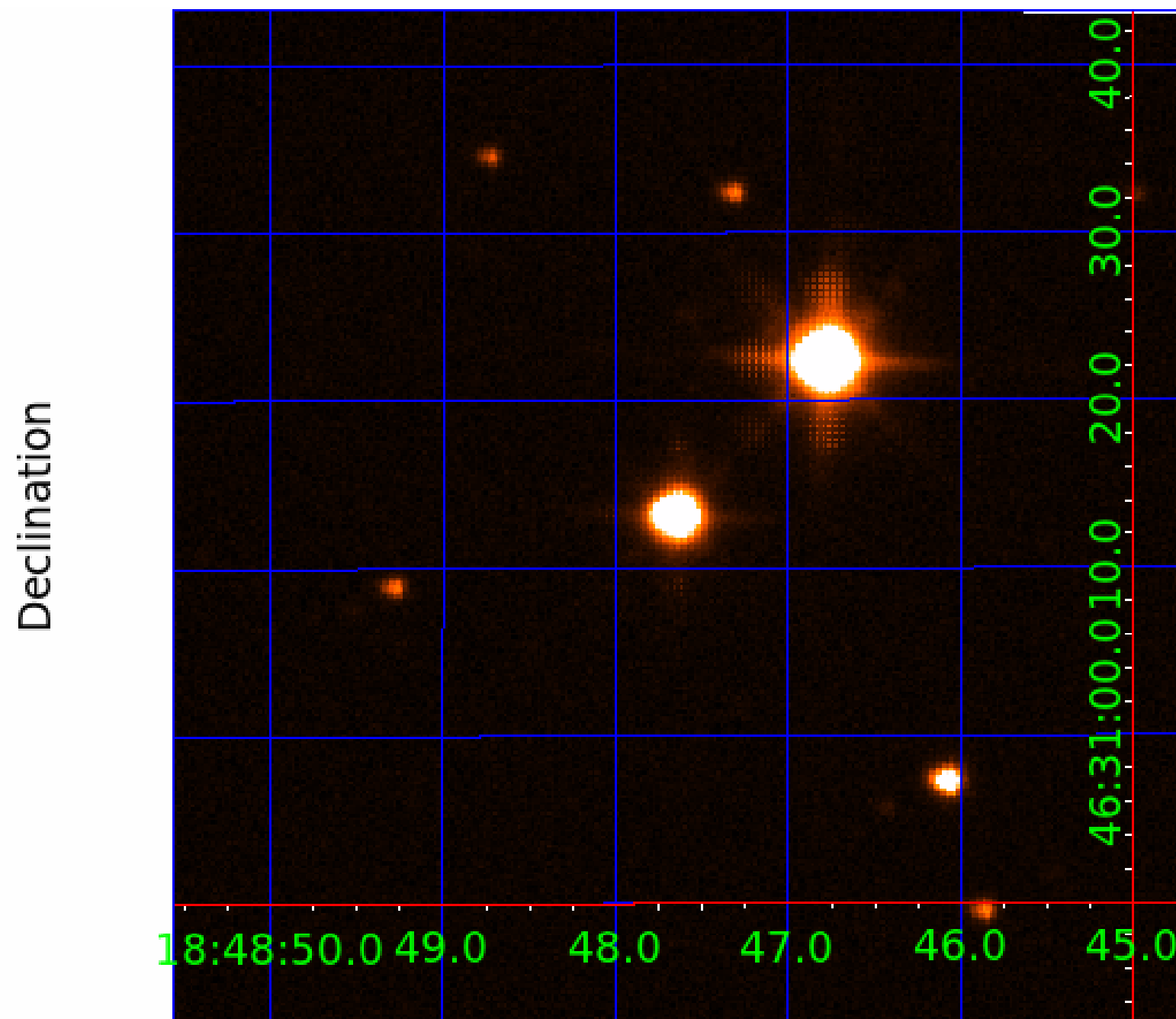
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 2 of 3



UKIRT Image



KIC 009752982

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})
009752982-01	OBS	3871.01	0.716707	132.053128	477.2	0.523	33.4	73.9	2.74	5173	7.87	22565.96
009752982-02	OBS	No	1.436331	132.587750	21.8	3.043	8.5	2.3	2.74	5173	1.47	8931.06
009752982-03	OBS	No	100.774175	157.694458	477.5	2.259	7.7	6.6	2.74	5173	6.56	30.86

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009752982-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—CENT_KIC_POS
009752982-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
009752982-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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.

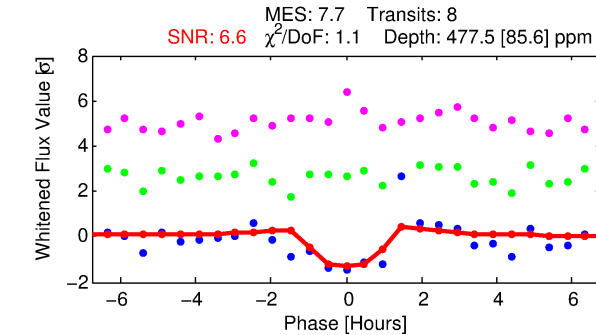
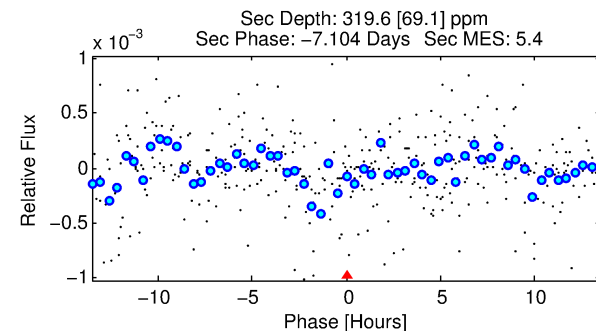
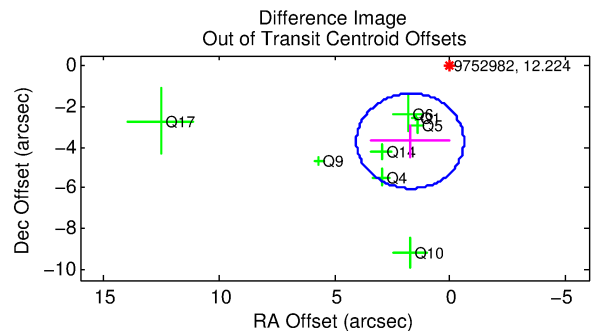
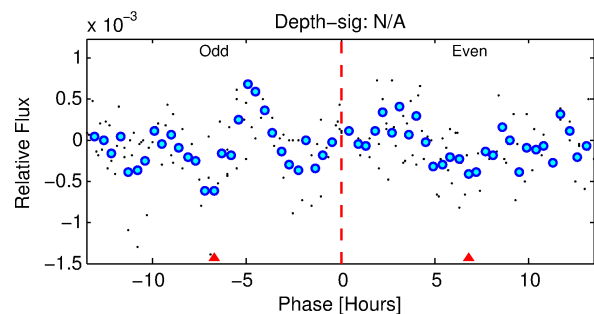
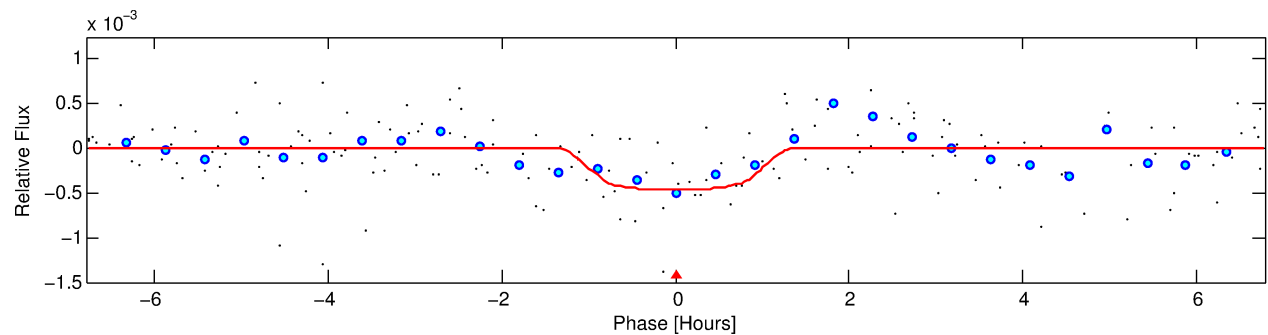
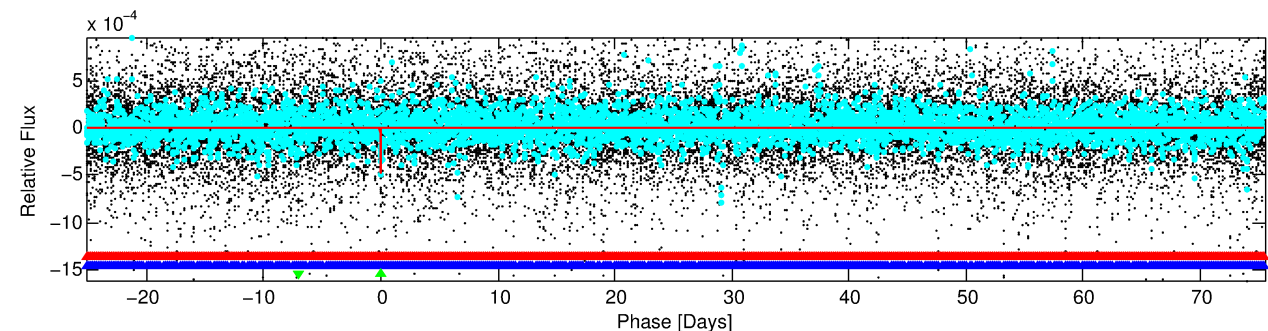
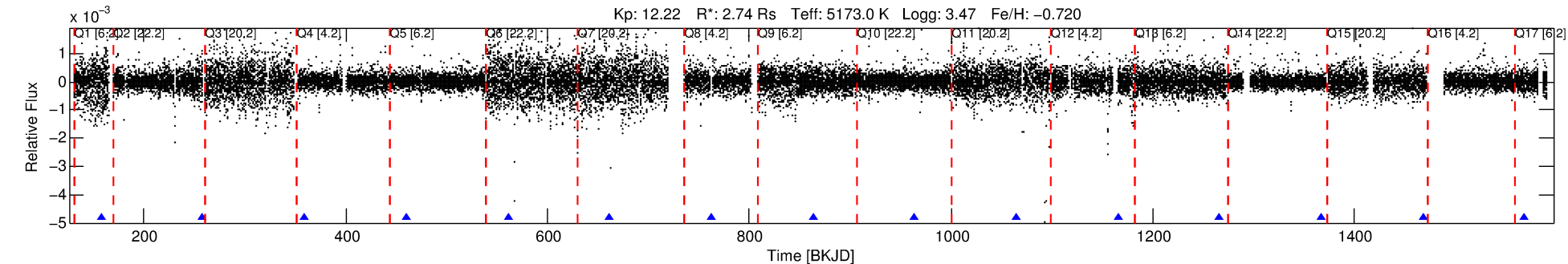
Ephemeris Match Information For 009752982-03

No Significant Match Found

DV One-Page Summary

KIC: 9752982 Candidate: 3 of 3 Period: 100.774 d
KOI: K03871 Corr: No Ephemeris Match

Kp: 12.22 R*: 2.74 Rs Teff: 5173.0 K Logg: 3.47 Fe/H: -0.720



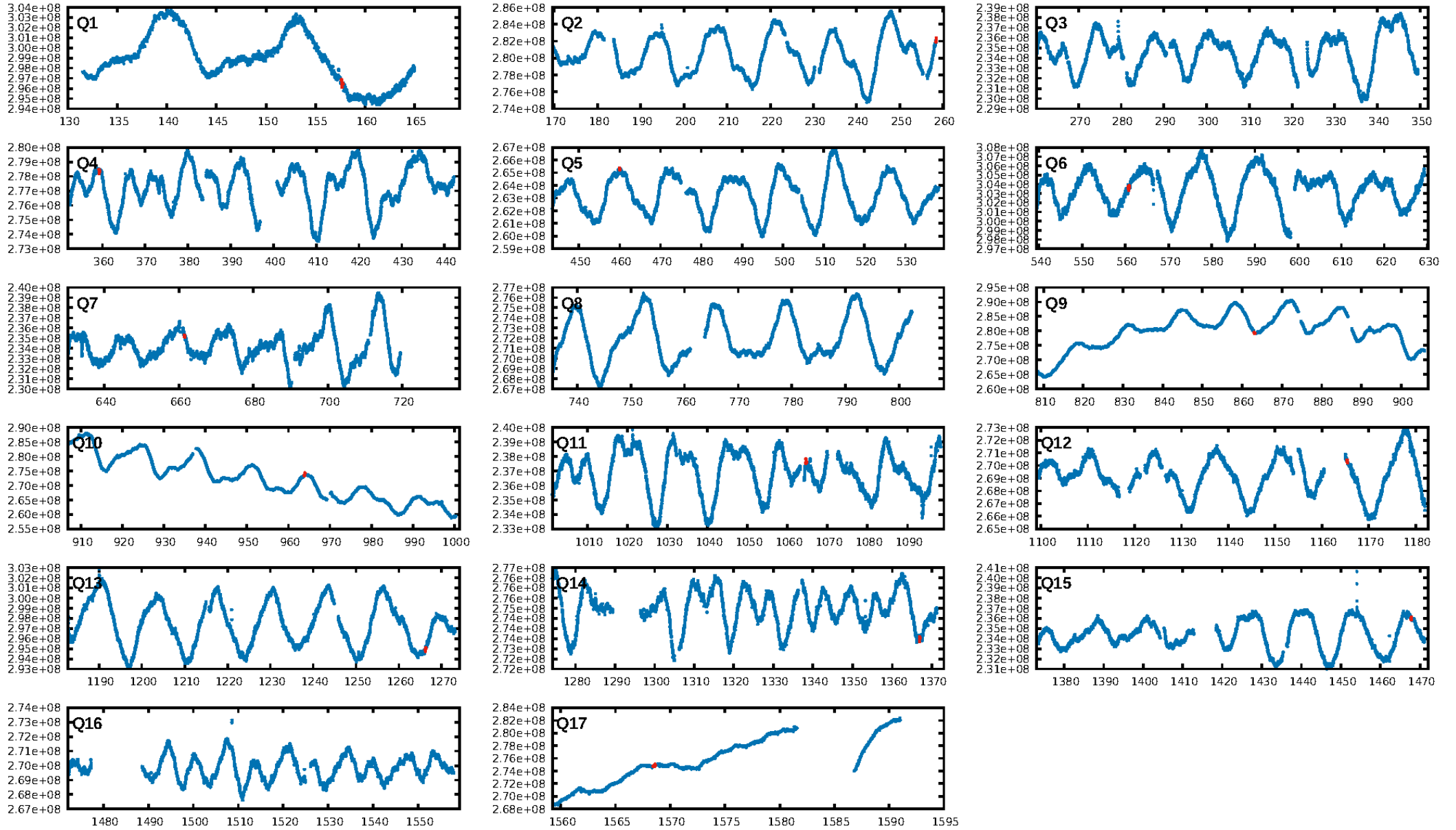
DV Fit Results:

Period = 100.77417 [0.00109] d
Epoch = 157.6945 [0.0117] BKJD
Rp/R* = 0.0219 [0.0516]
a/R* = 231.80 [2283.87]
b = 0.76 [5.49]
Seff = 30.86 [61.36]
Teq = 601 [299] K
Rp = 6.56 [16.34] Re
a = 0.3953 [0.4328] AU
Ag = 639.22 [3268.97] [0.20σ]
Teffp = 4672 [5513] K [0.74σ]

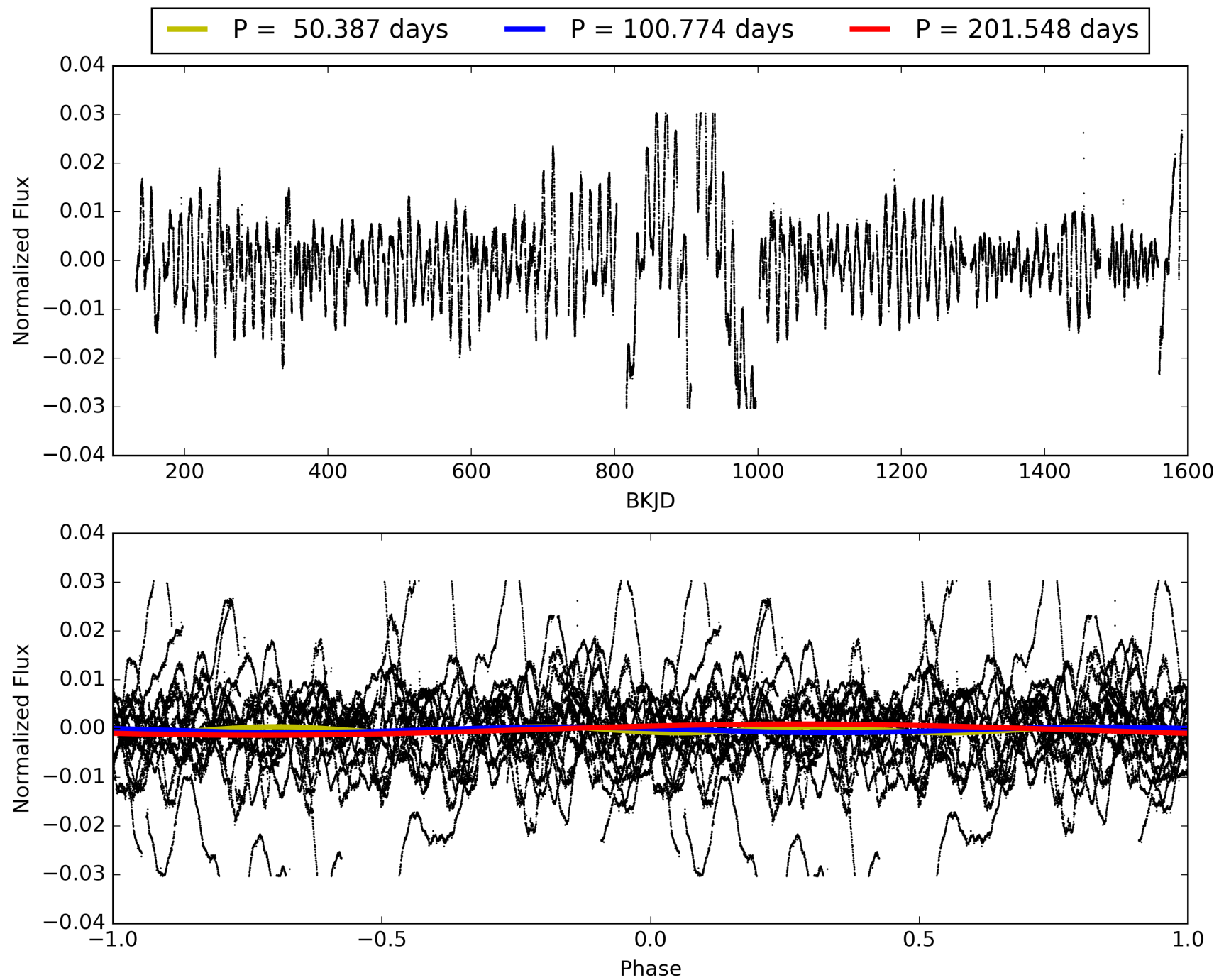
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [629.09σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 81.2%
ModelChiSquareGof-sig: 99.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 3.958
Centroid-sig: 10.3%
Centroid-so: 4.962 arcsec [8.04σ]
OotOffset-rm: 4.078 arcsec [5.27σ]
KicOffset-rm: 3.387 arcsec [3.35σ]
OotOffset-st: 3/0/1/4 [8]
KicOffset-st: 3/0/1/5 [9]
DiffImageQuality-fgm: 0.33 [3/9]
DiffImageOverlap-fno: 0.09 [1/11]

TCE 009752982-03, PDC Light Curves

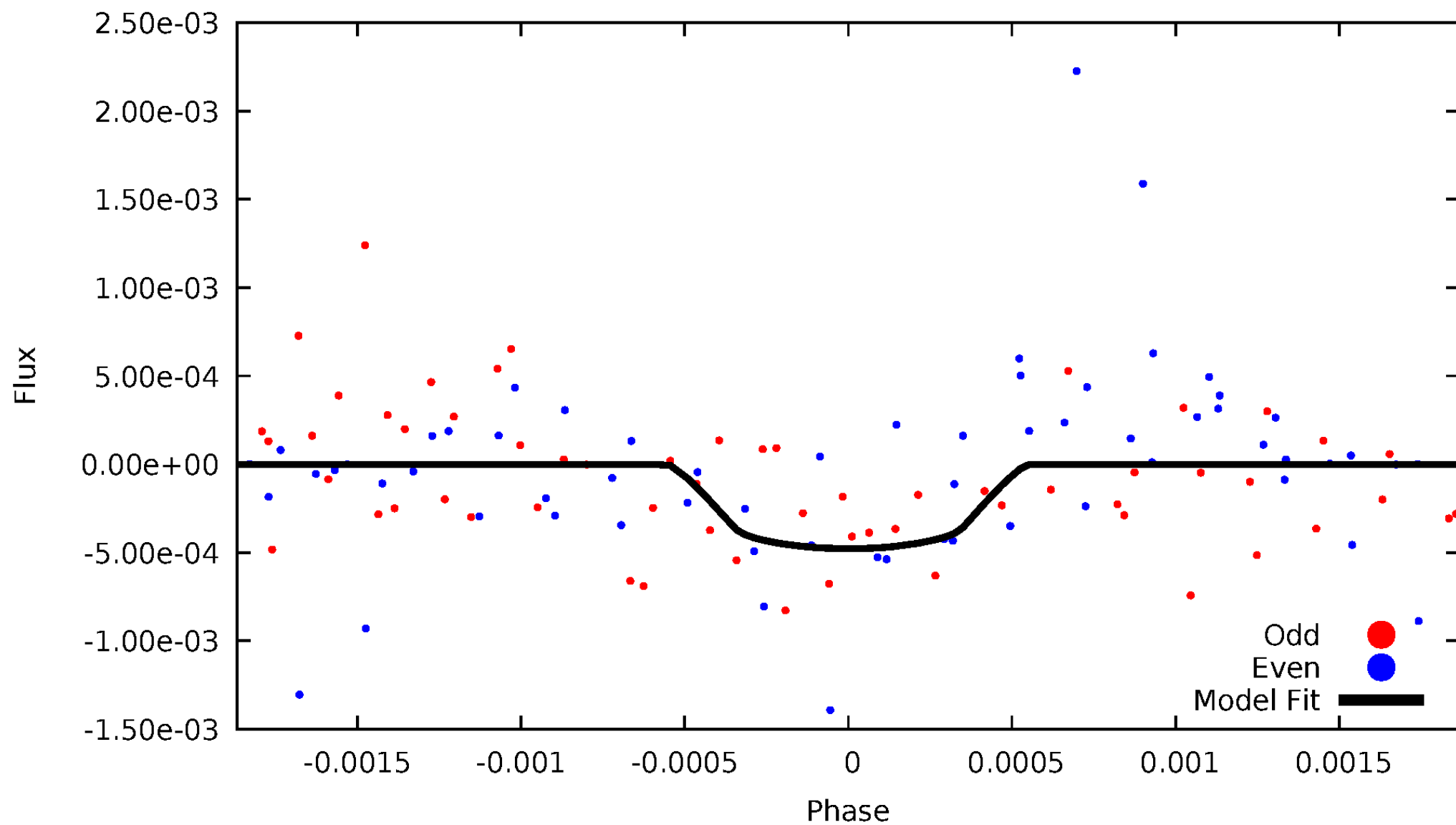


TCE 009752982-03



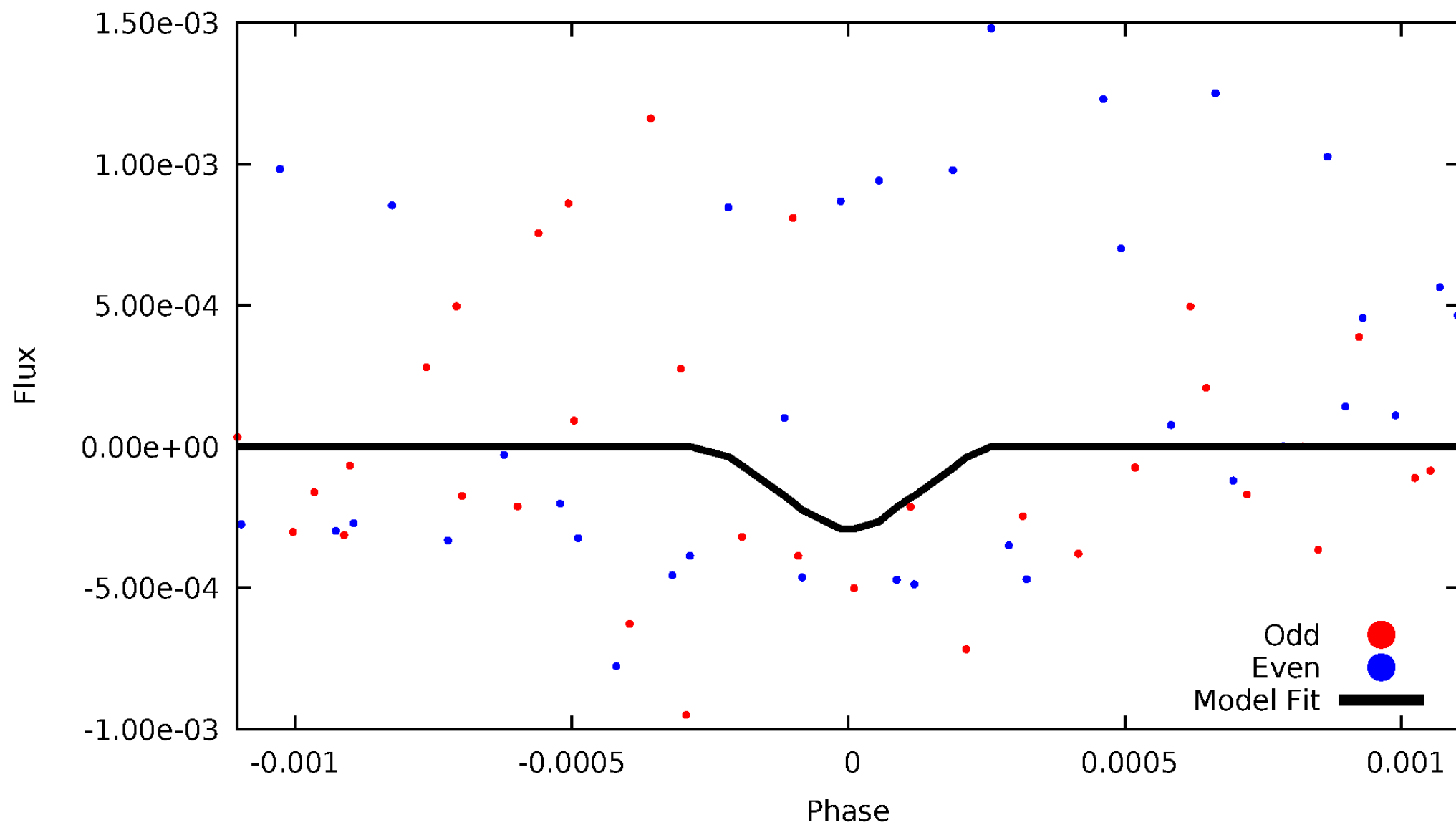
DV Odd/Even

TCE 009752982-03



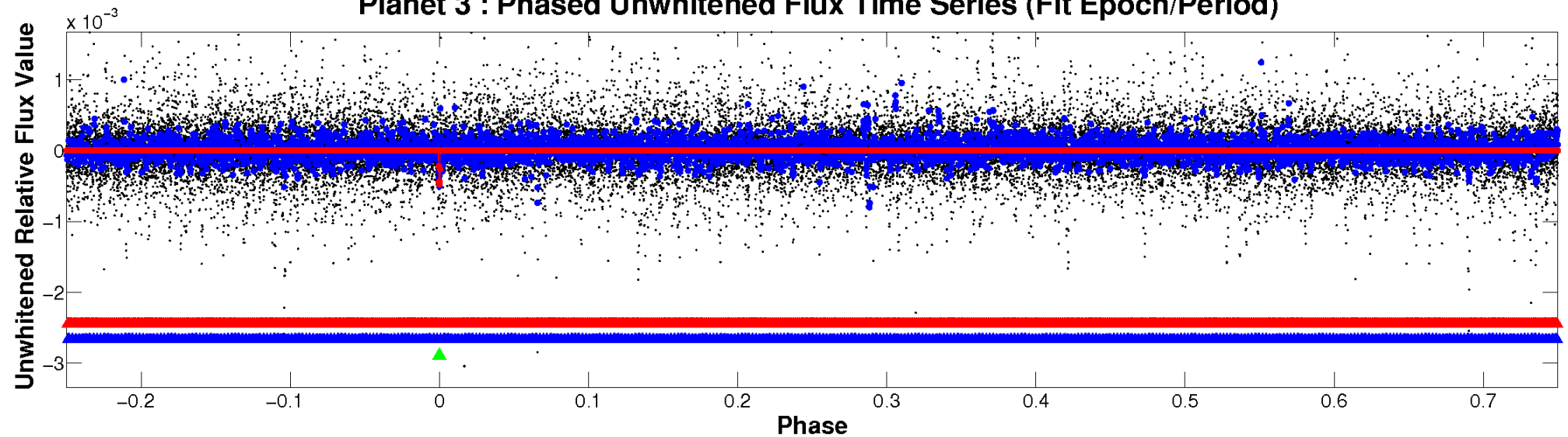
ALT Odd/Even

TCE 009752982-03

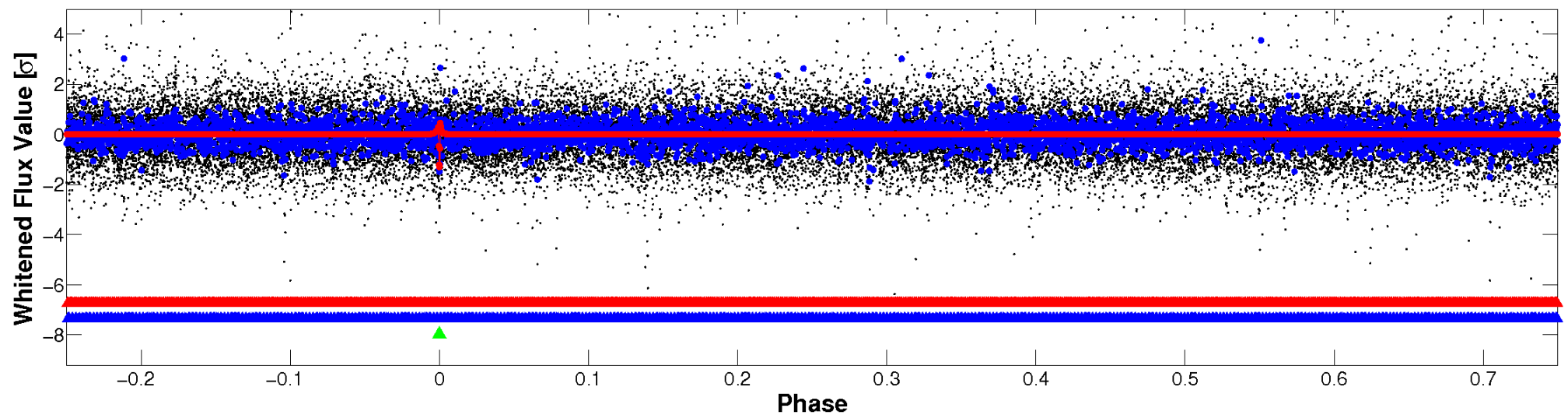


Non-Whitened Vs. Whitened Light Curve

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

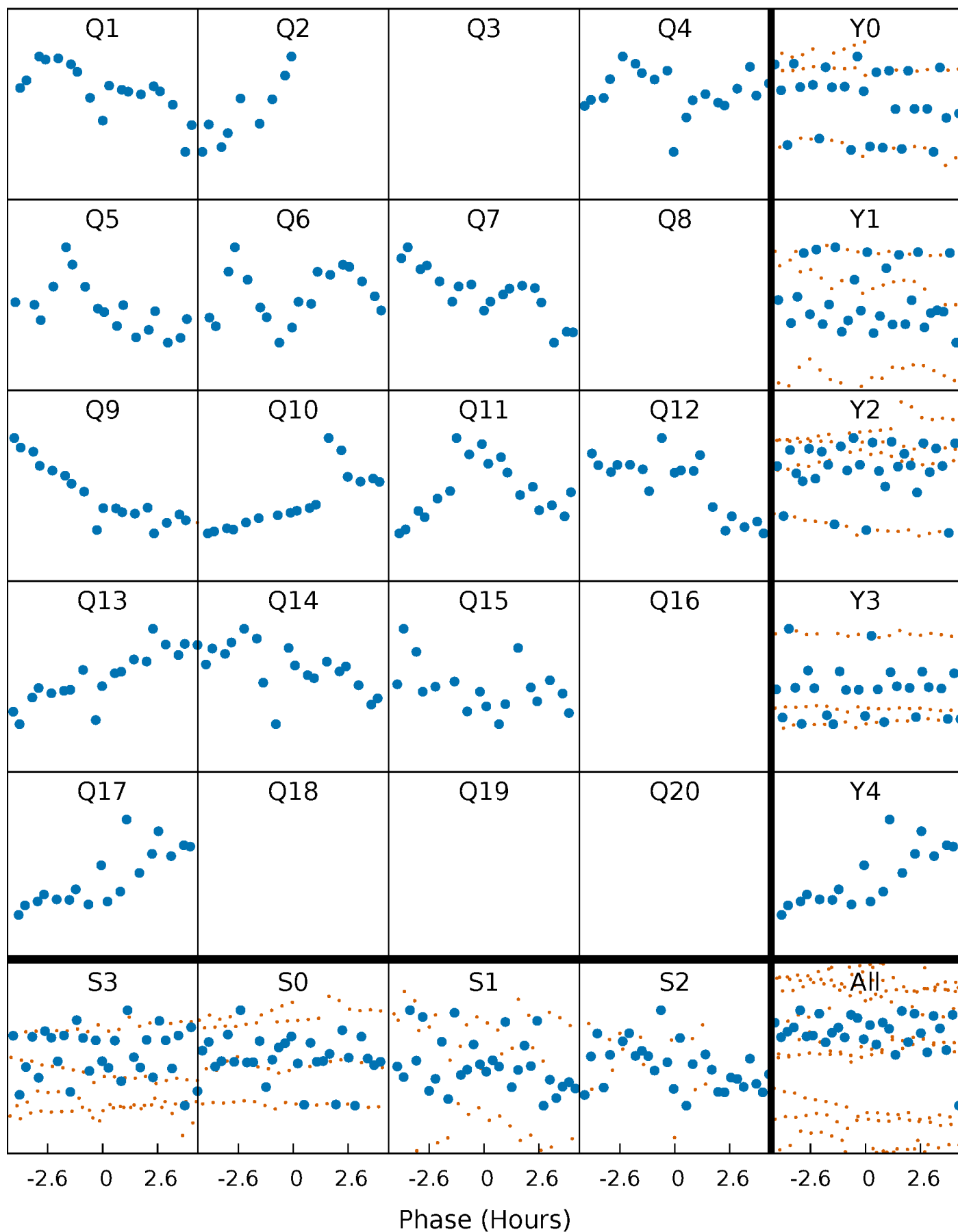


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



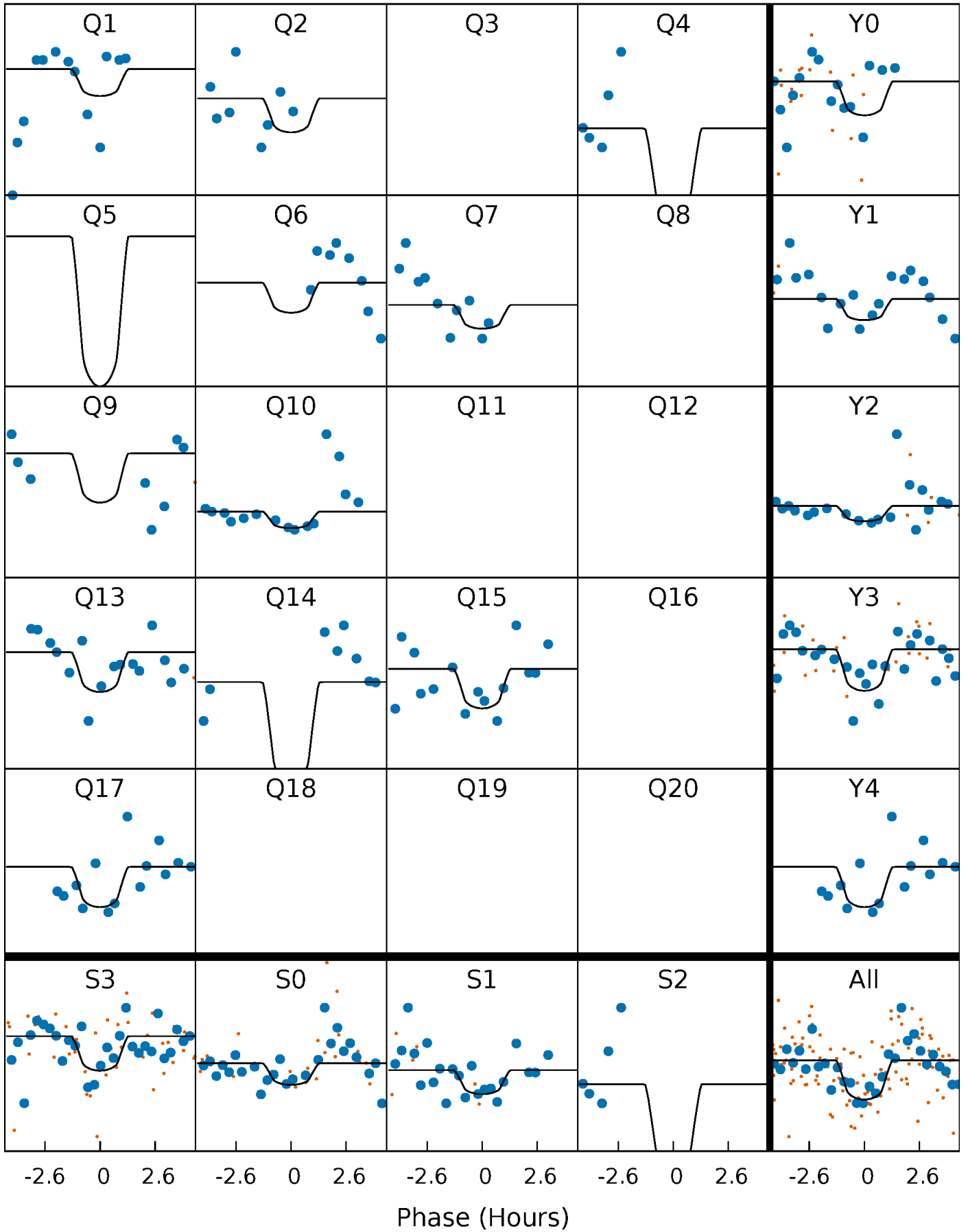
PDC Quarter-Phased Transit Curves

TCE 009752982-03 $P=100.774175$ Days $T_0=157.694458$ (BKJD)



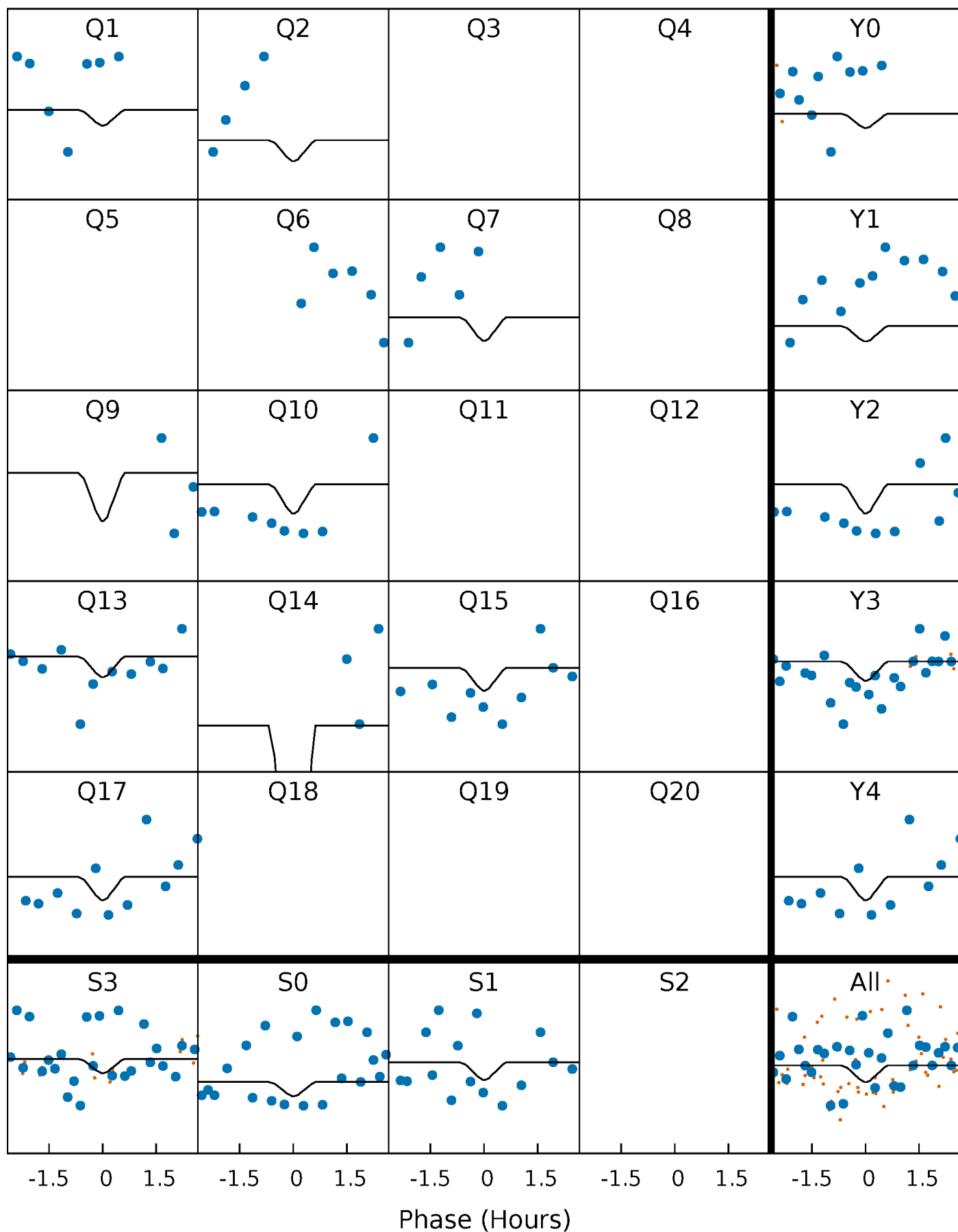
DV Quarter-Phased Transit Curves

TCE 009752982-03 P=100.774175 Days $T_0=157.694458$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

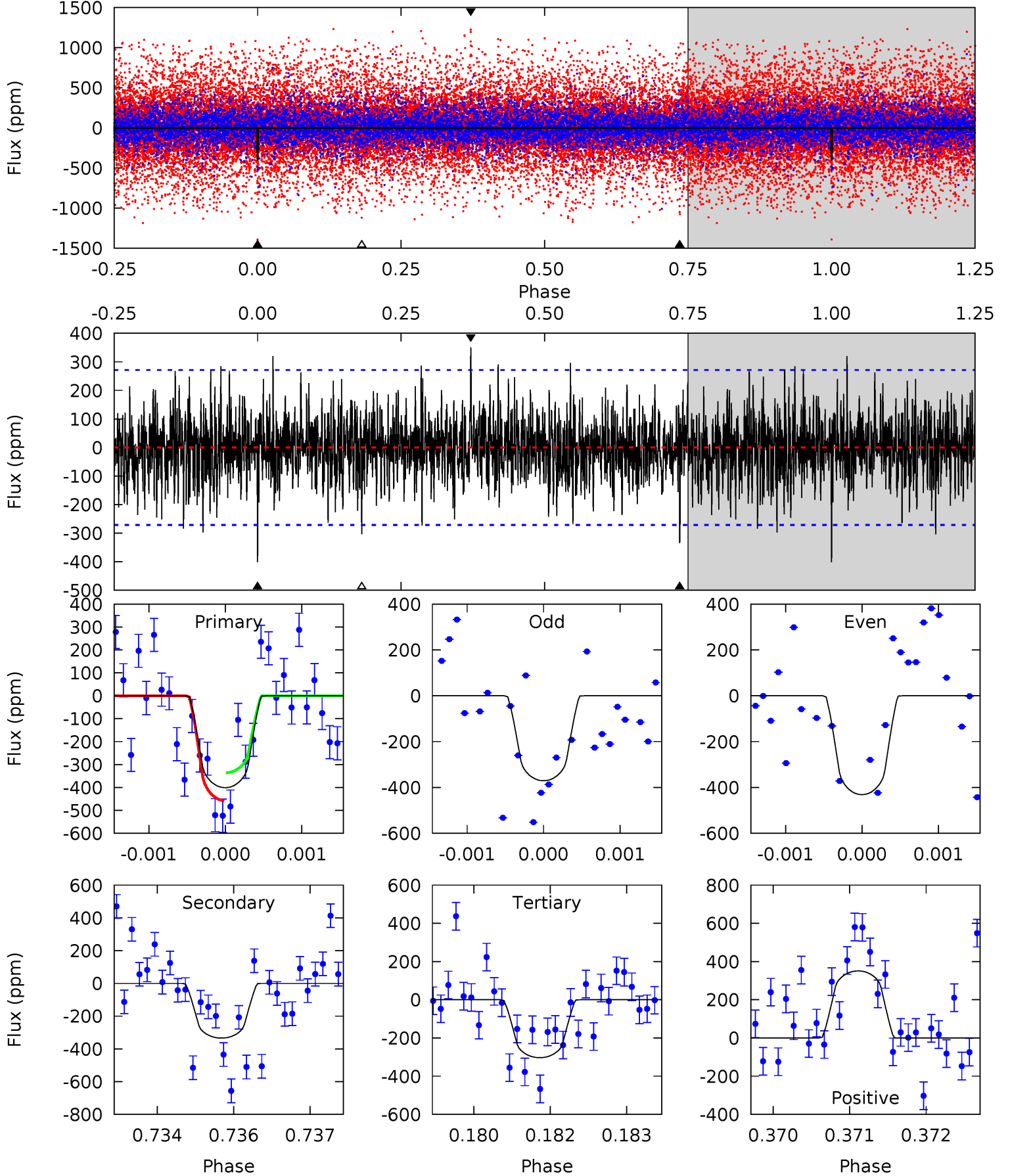
TCE 009752982-03 P=100.771767 Days $T_0=157.731137$ (BKJD)



DV Model-Shift Uniqueness Test

009752982-03, P = 100.774175 Days, E = 56.920283 Days

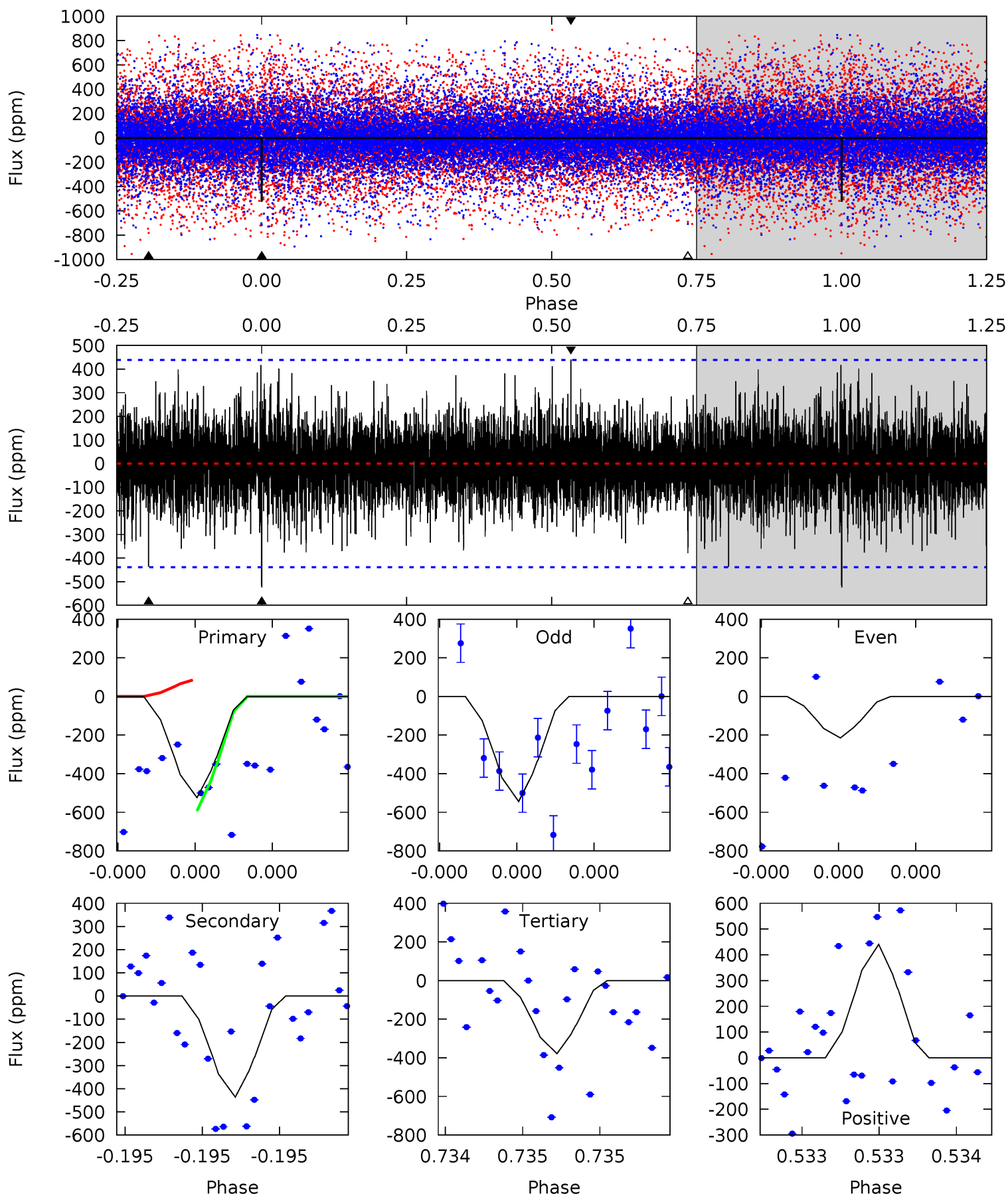
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.03	6.68	6.07	7.02	5.42	3.25	1.73	1.96	1.00	0.62	-0.34	0.60	0.91	0.47	1.23



Alt Model-Shift Uniqueness Test

009752982-03, $P = 100.771767$ Days, $E = 56.959370$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.69	5.57	4.84	5.62	5.60	3.52	1.28	1.86	1.07	0.73	-0.05	2.29	0.42	0.46	3.46



Stellar Parameters For KIC 009752982

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5173^{+106}_{-247}	$3.471^{+1.240}_{-0.310}$	$-0.720^{+0.250}_{-0.450}$	$2.742^{+1.483}_{-2.225}$	$0.811^{+0.209}_{-0.209}$	$0.055^{+4.057}_{-0.047}$
	+2%/-5%	+36%/-9%	+35%/-62%	+54%/-81%	+26%/-26%	+7319%/-86%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009752982-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-334 ± 50	$10.13^{+14.11}_{-7.09}$	797^{+133}_{-194}	3697^{+2094}_{-706}	291^{+2936}_{-243}
Alt.	-436 ± 78	$10.86^{+12.55}_{-7.80}$	809^{+117}_{-205}	3885^{+2104}_{-729}	329^{+3828}_{-256}

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

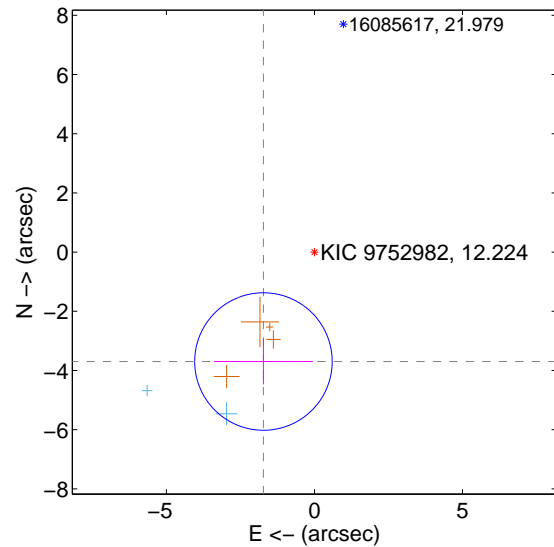
Supplemental centroid analysis for 009752982-03. Kepler magnitude: 12.22. Transit SNR 6.63

There are 3 quarters with good PRF difference image offsets

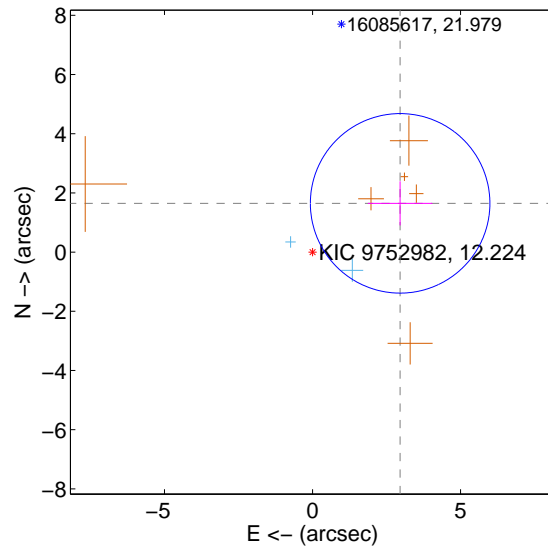
The OOT PRF centroid is offset from the target star catalog position by about 6.96 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.078 ± 0.774	5.27	1.723 ± 1.671	-3.697 ± 0.776
PRF-fit source offset from KIC position	3.387 ± 1.011	3.35	-2.959 ± 1.089	1.647 ± 0.745
photometric centroid source offset	4.96 ± 0.62	8.04	-3.02 ± 0.59	3.93 ± 0.64

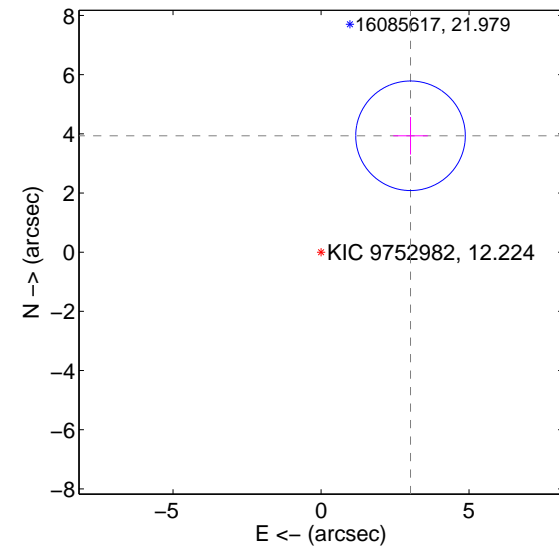
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

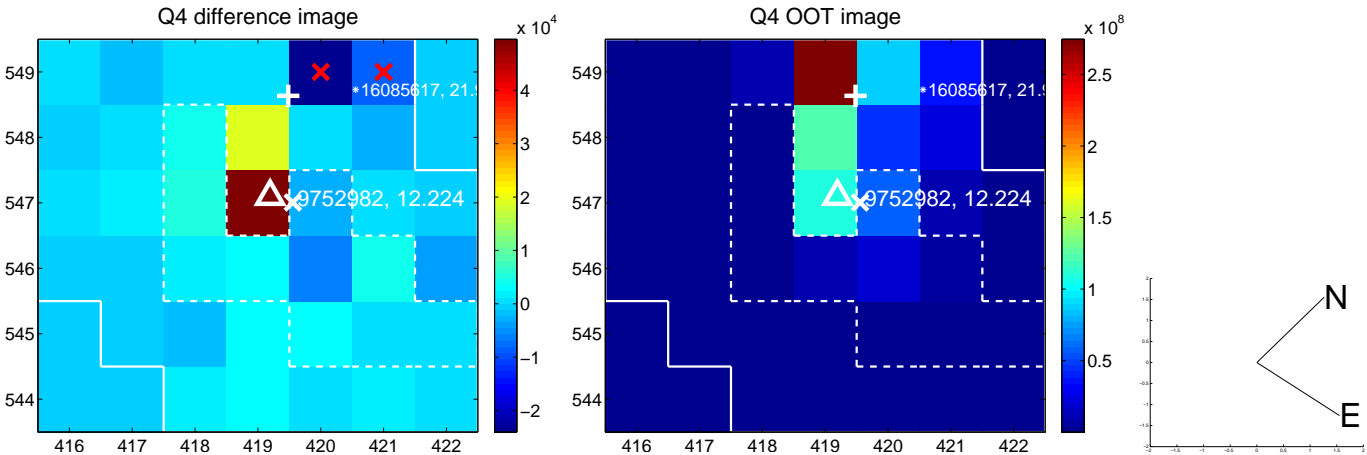
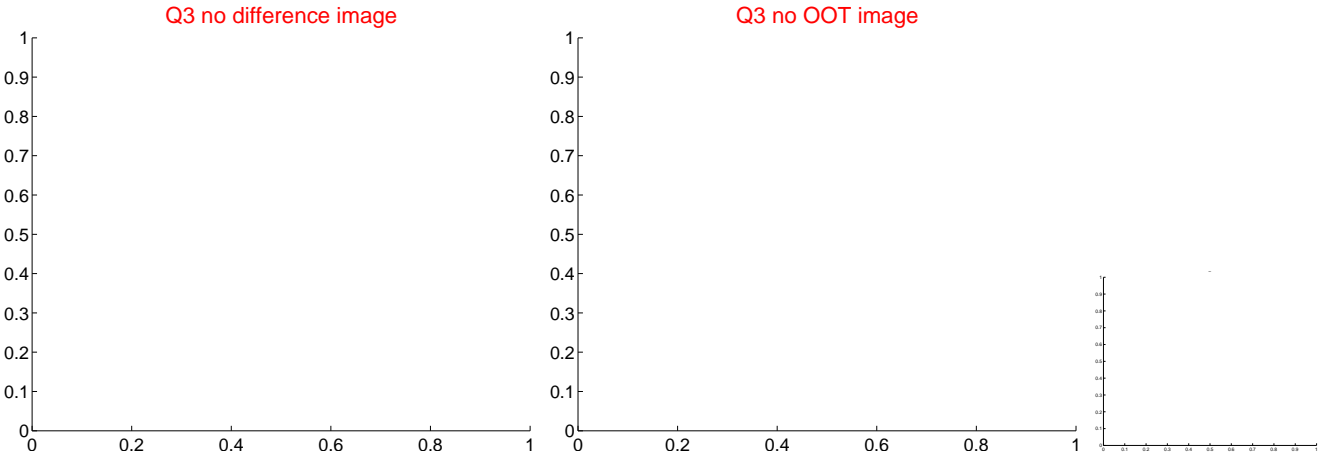
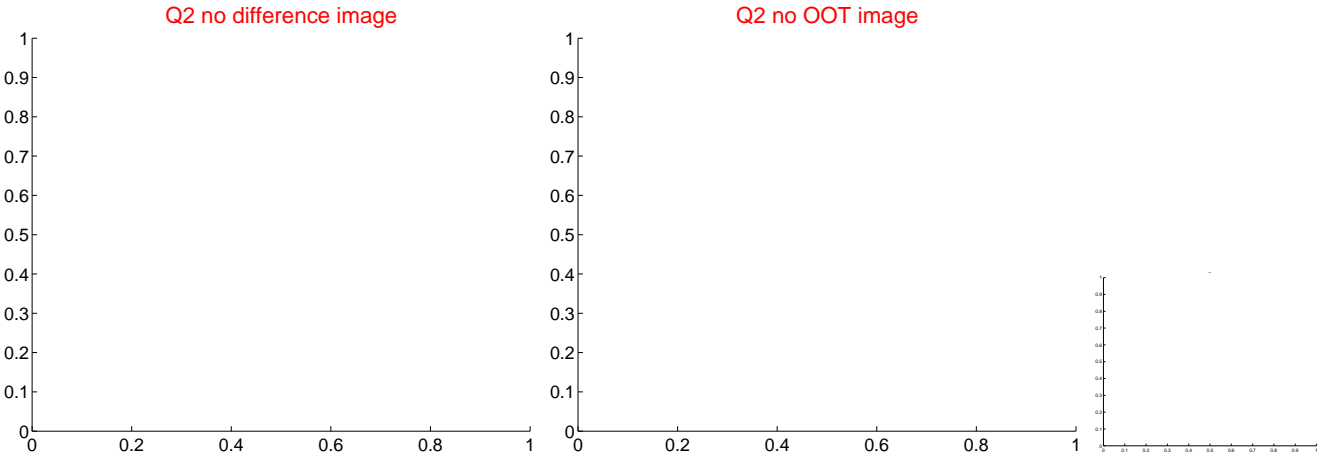
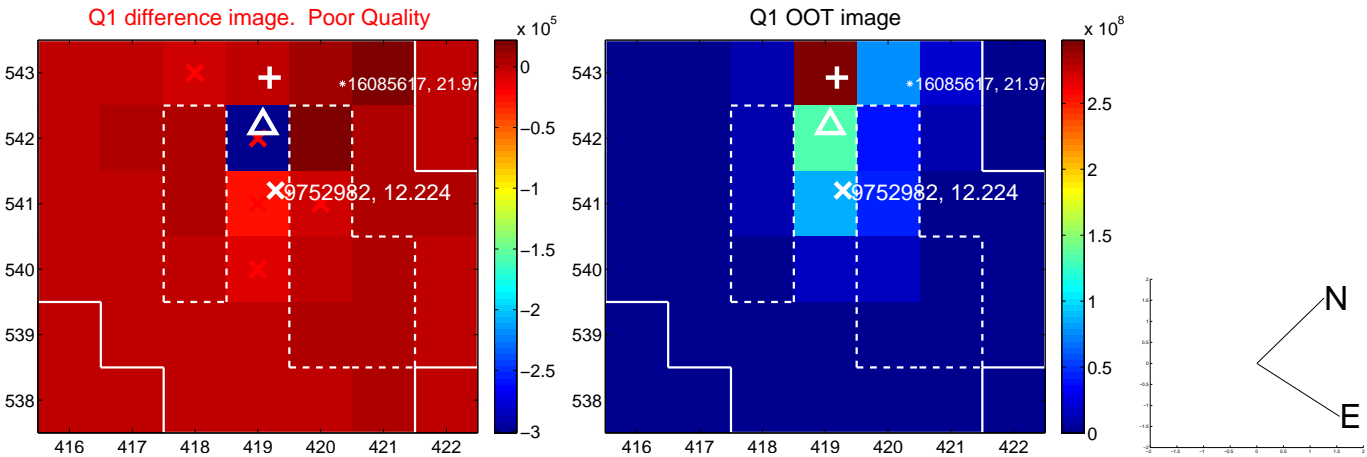


offset from photometric centroids

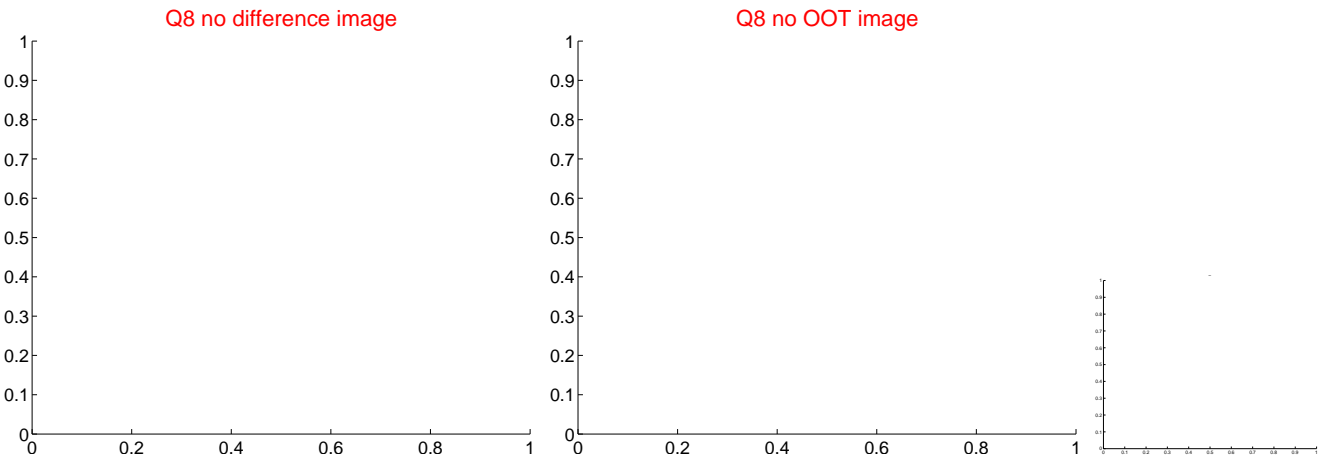
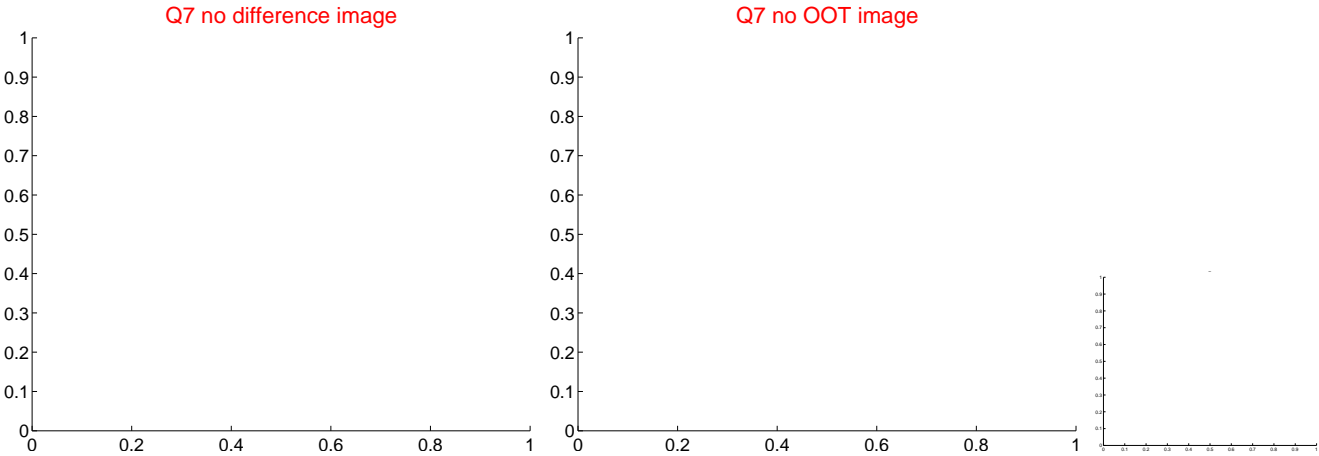
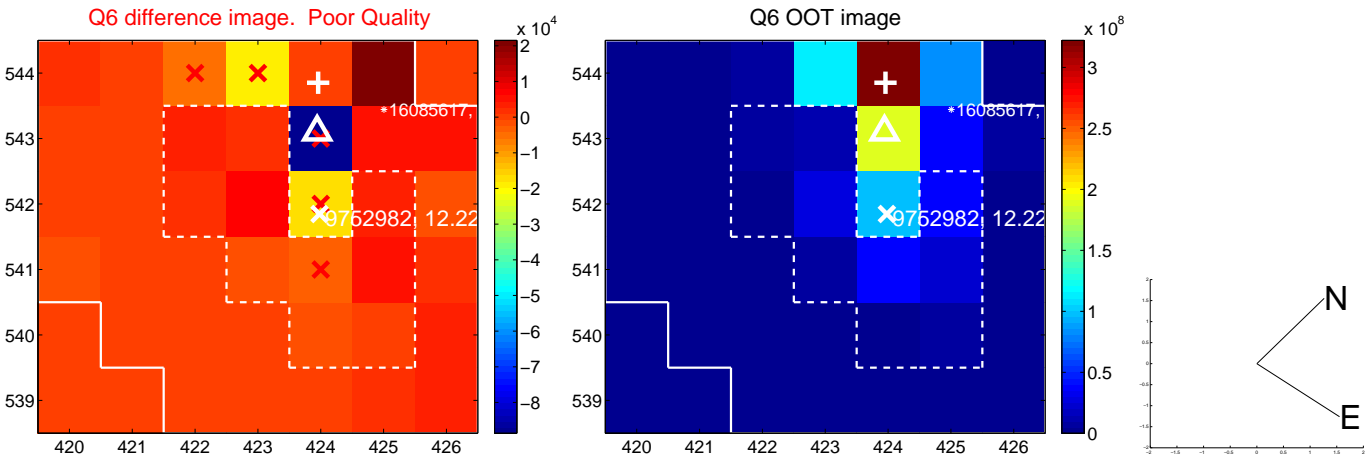
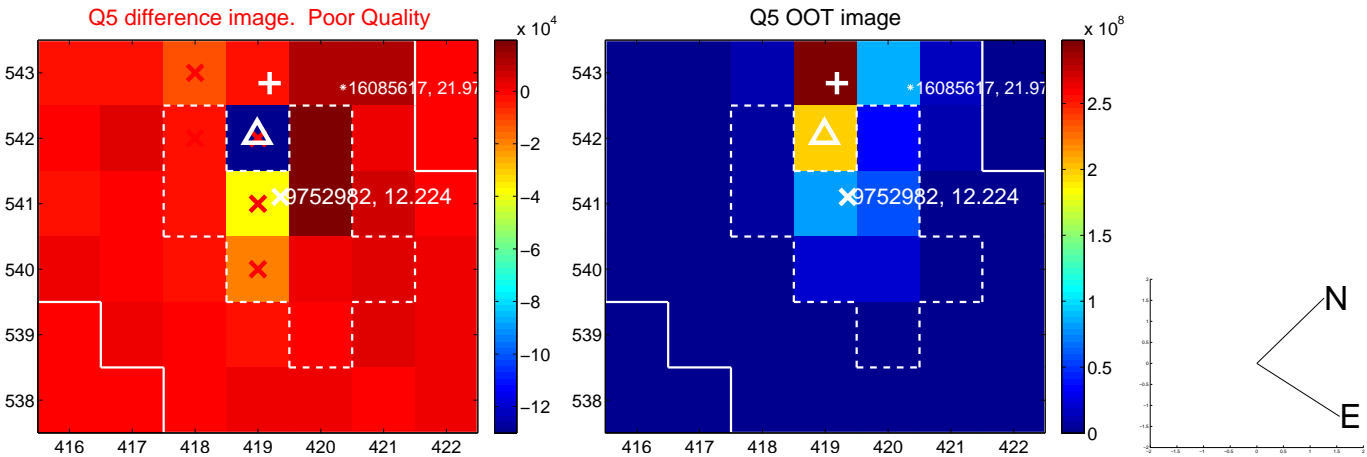


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

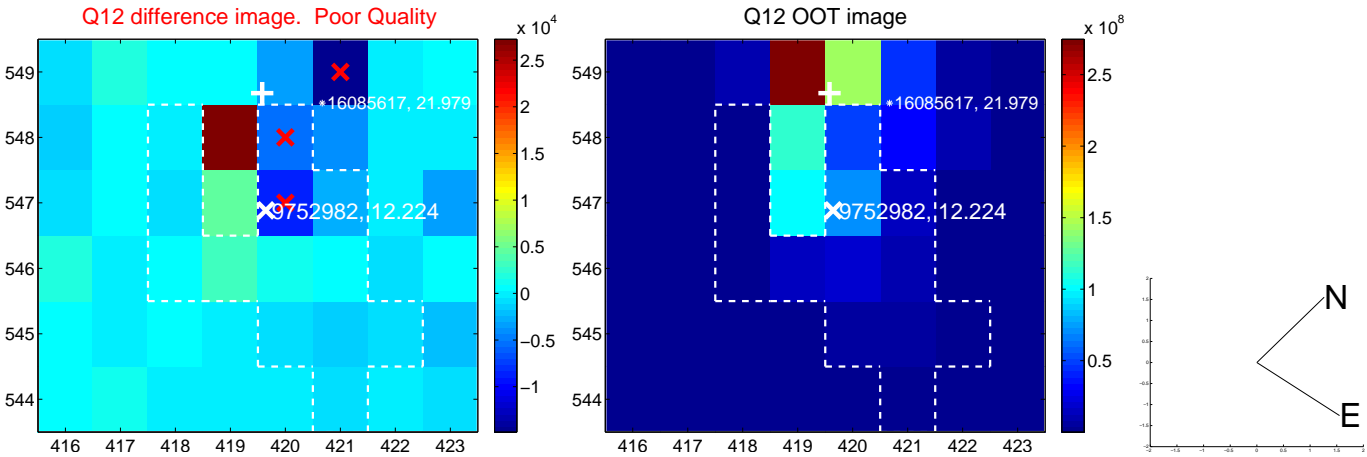
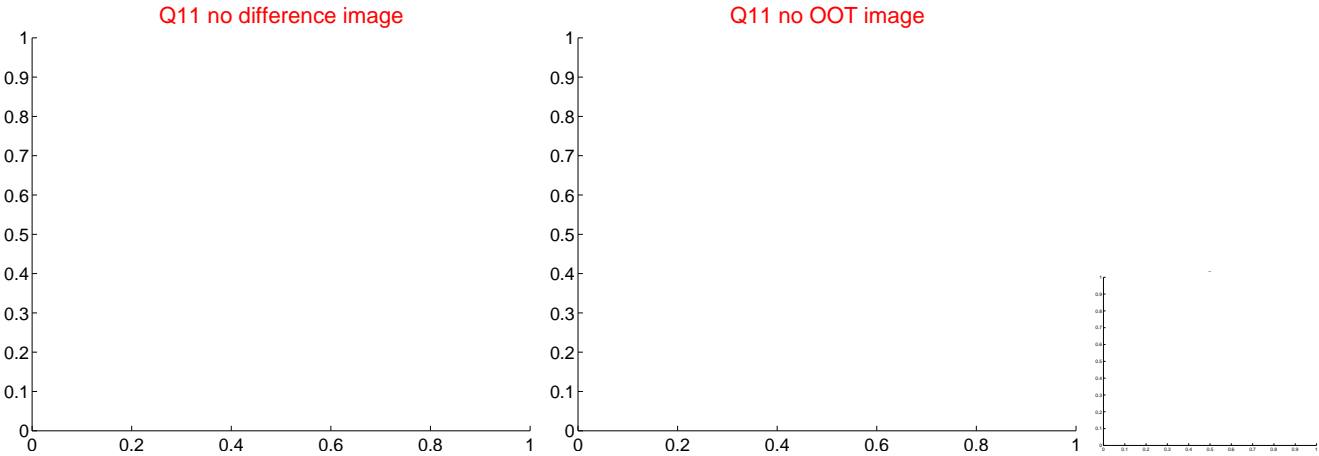
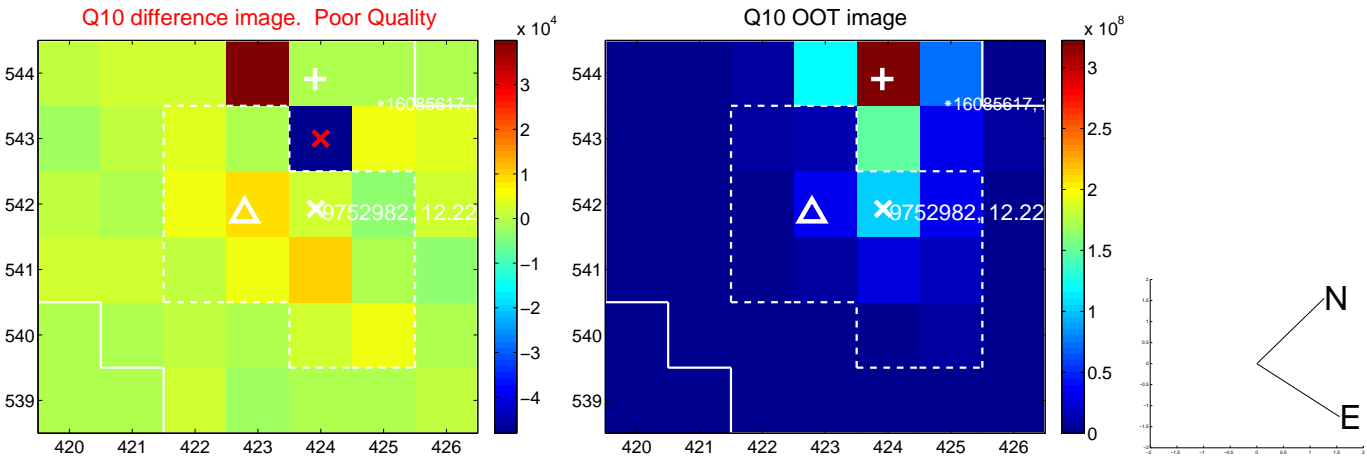
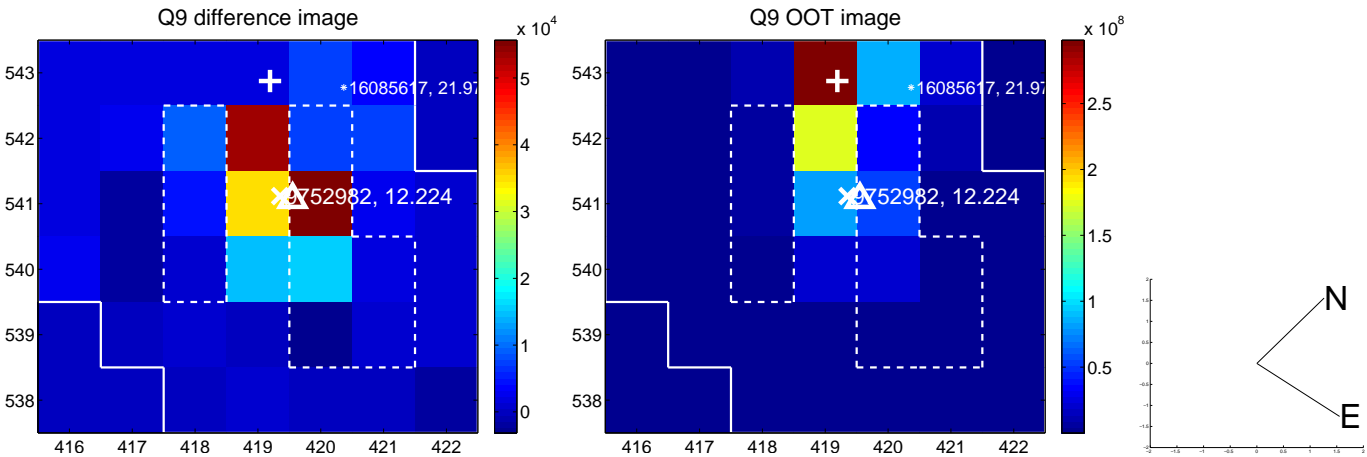
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



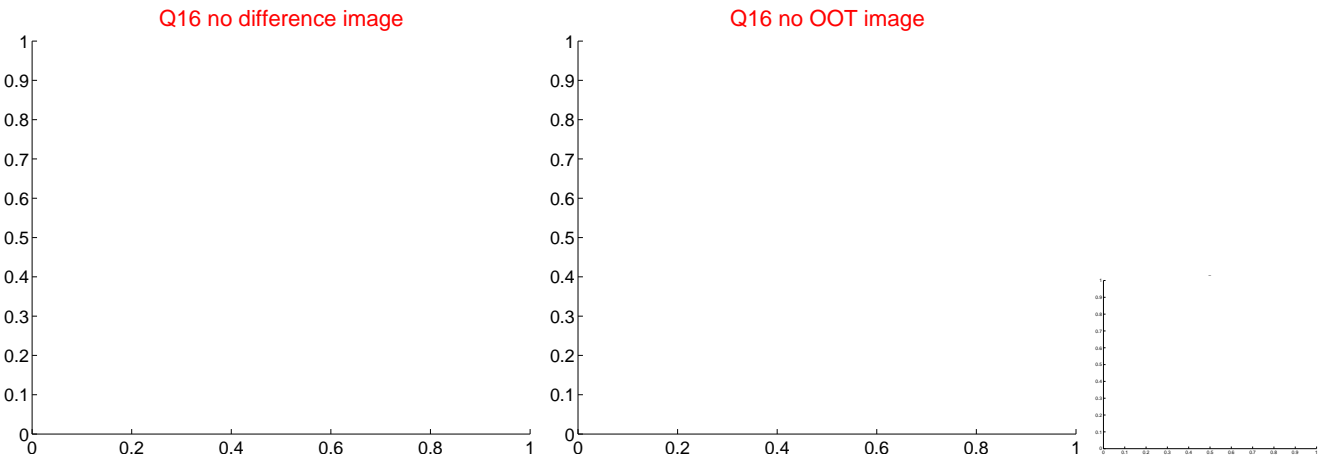
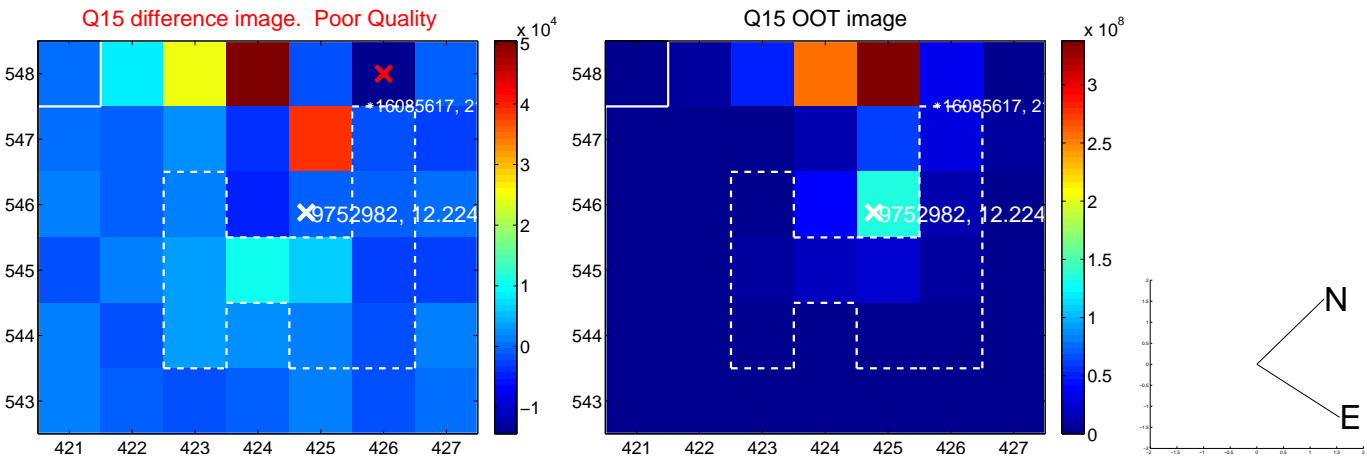
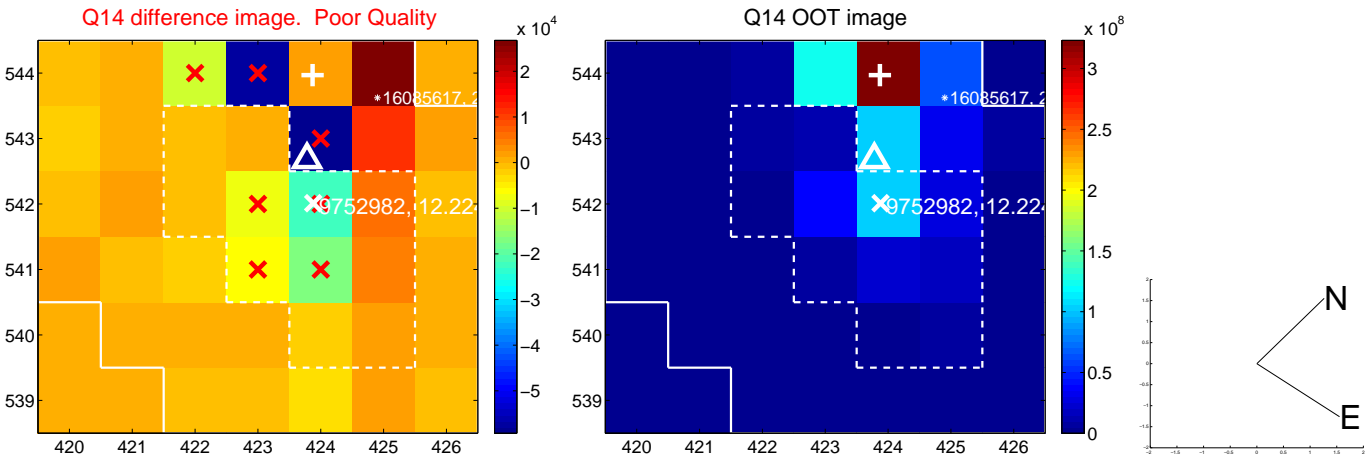
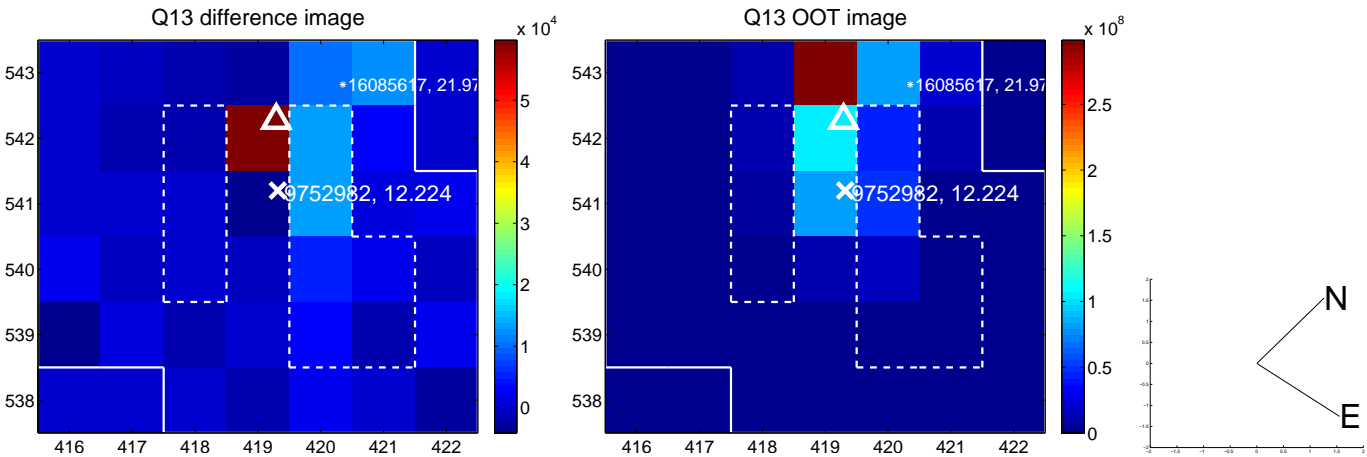
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



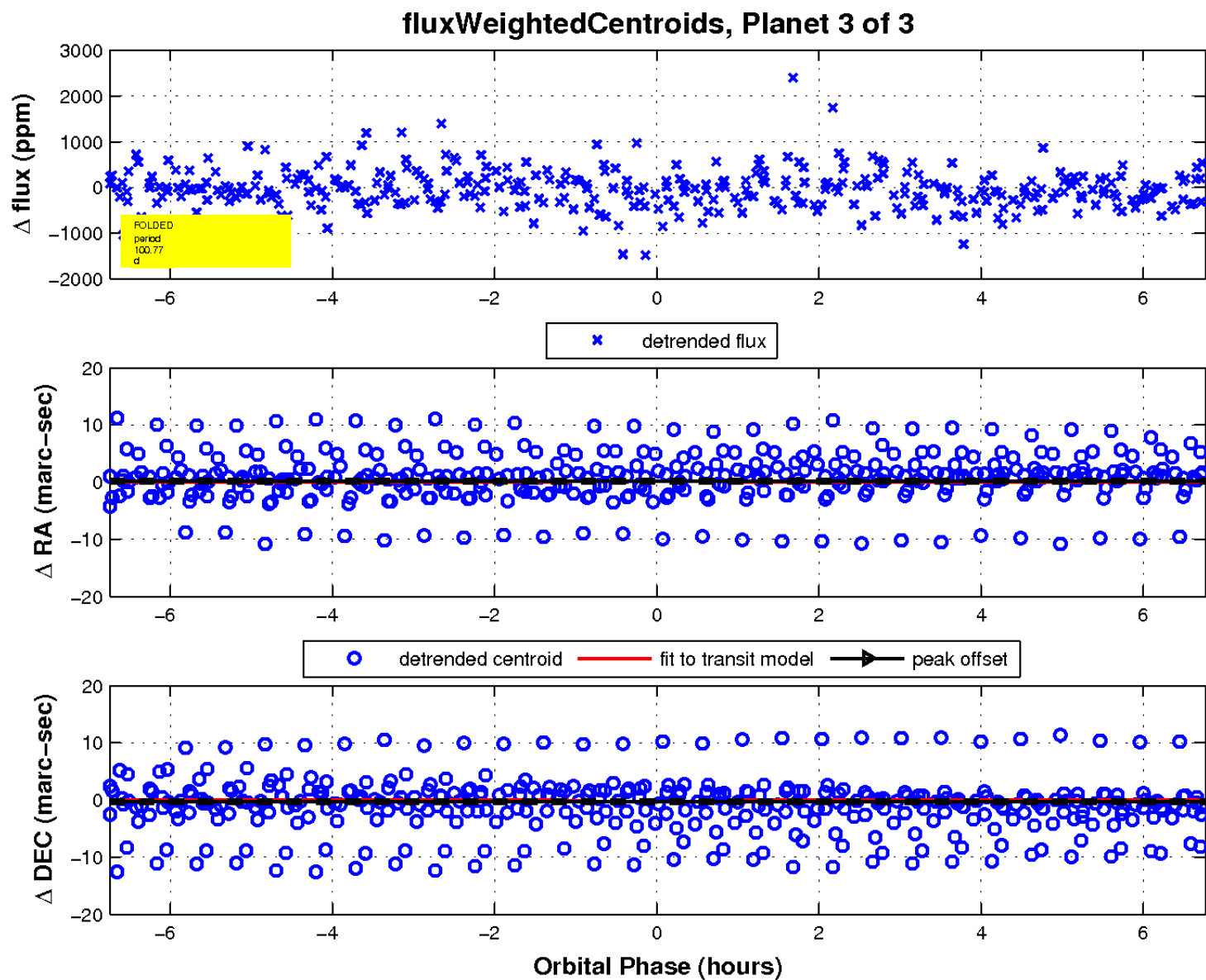
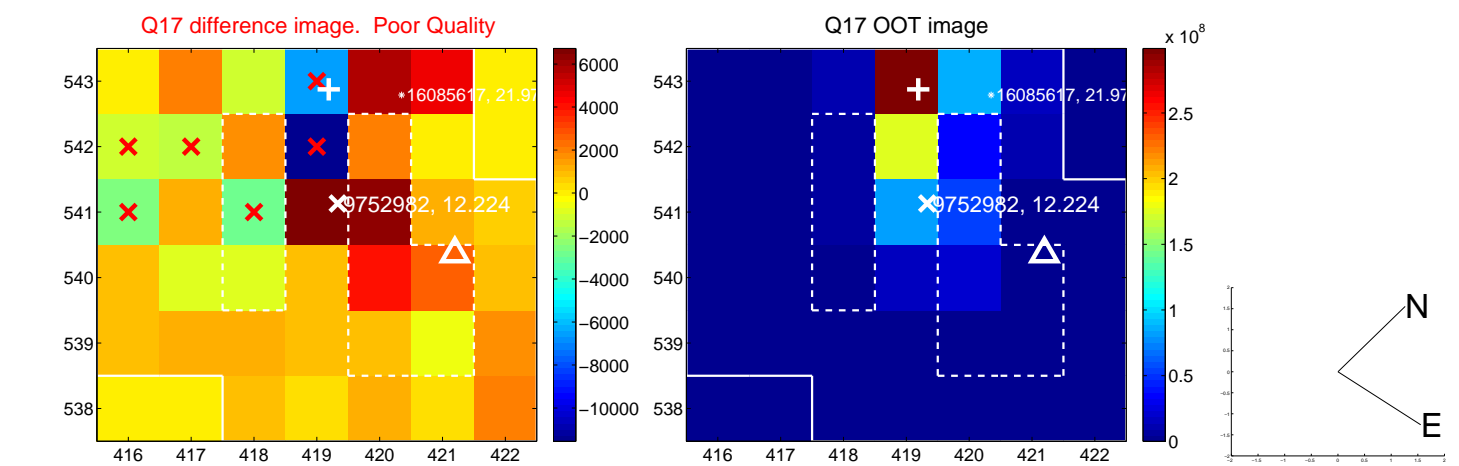
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

