

KIC 010978008

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})
010978008-01	OBS	No	352.083861	202.796873	219.4	7.500	13.8	-1.0	150.65	3291	204.76	2191.03
010978008-02	OBS	No	96.029827	139.774806	764.9	30.046	14.5	11.4	150.65	3291	931.80	0.00
010978008-03	OBS	No	296.647613	294.907956	203.9	9.000	13.9	-1.0	150.65	3291	197.37	2753.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010978008-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
010978008-02	OBS	FP	0.00	1	0	0	0	LPP_DV—INCONSISTENT_TRANS—CENT_SATURATED
010978008-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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

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

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

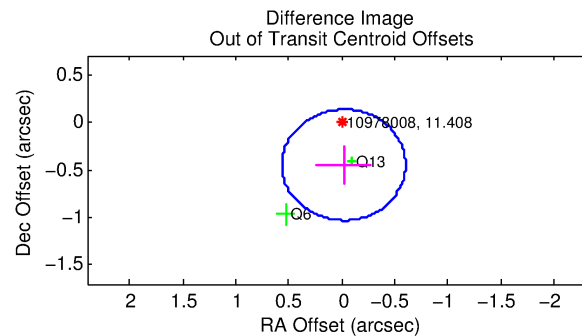
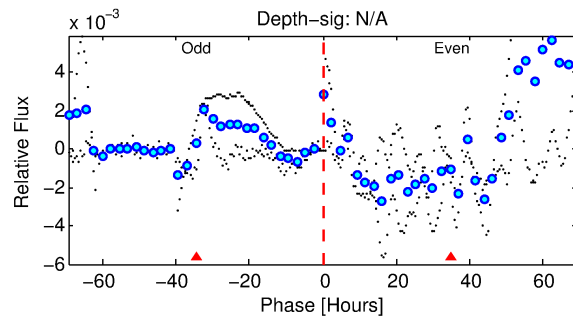
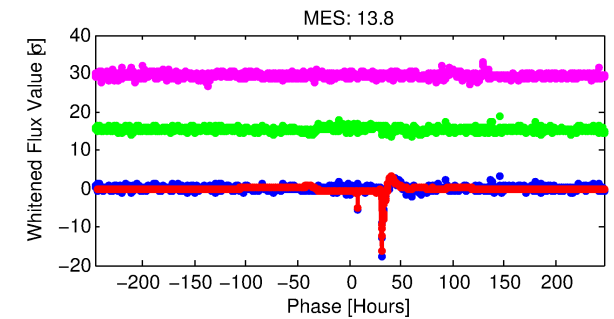
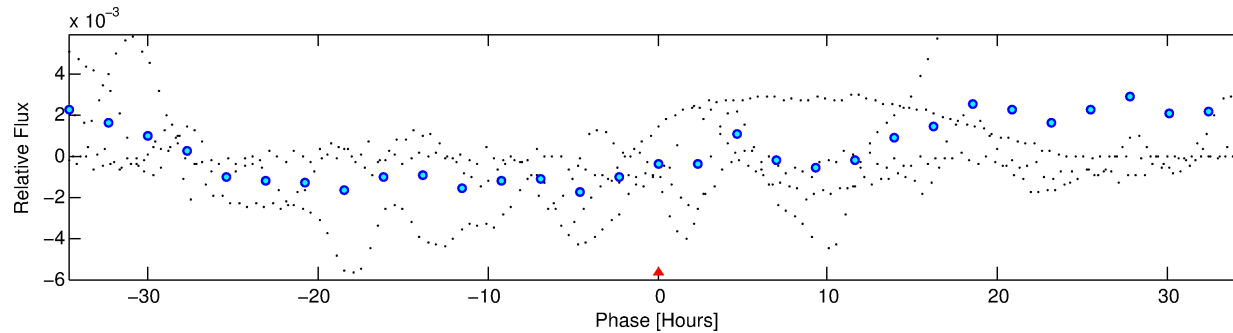
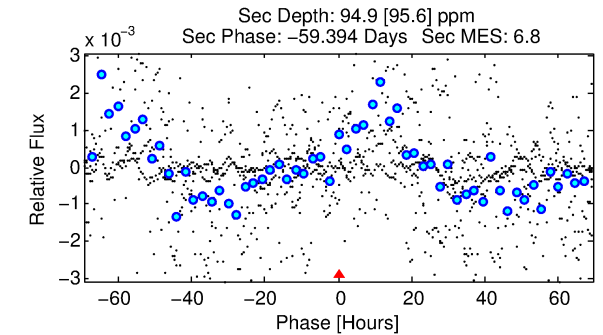
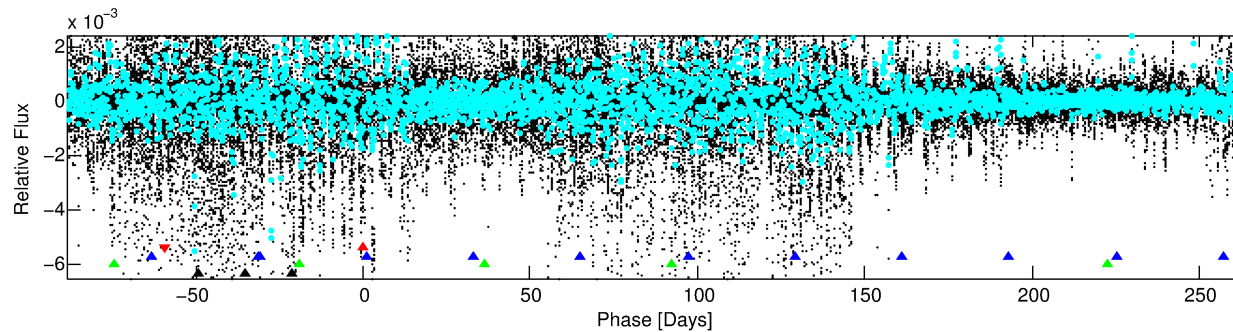
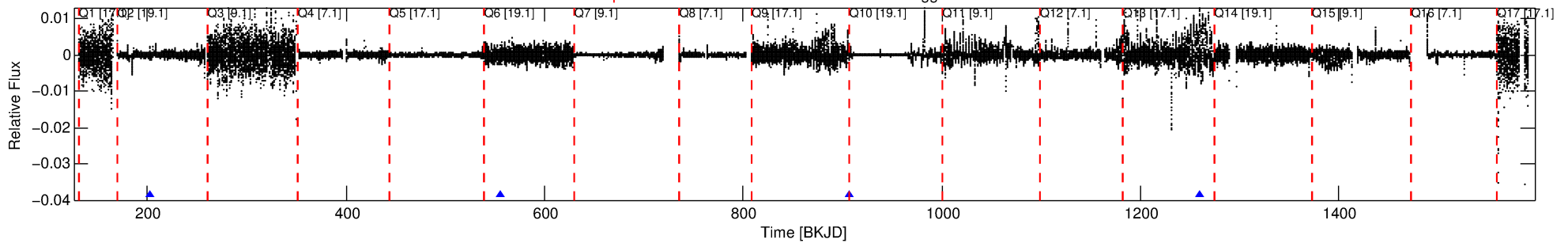
Ephemeris Match Information For 010978008-01

No Significant Match Found

DV One-Page Summary

KIC: 10978008 Candidate: 1 of 4 Period: 352.084 d

Kp: 11.41 R*: 150.65 Rs Teff: 3291.0 K Logg: 0.17 Fe/H: -0.020



TPS TCE Results:

Period = 352.08386 d
Epoch = 202.7969 BKJD

DV fit results are unavailable

DV Diagnostic Results:

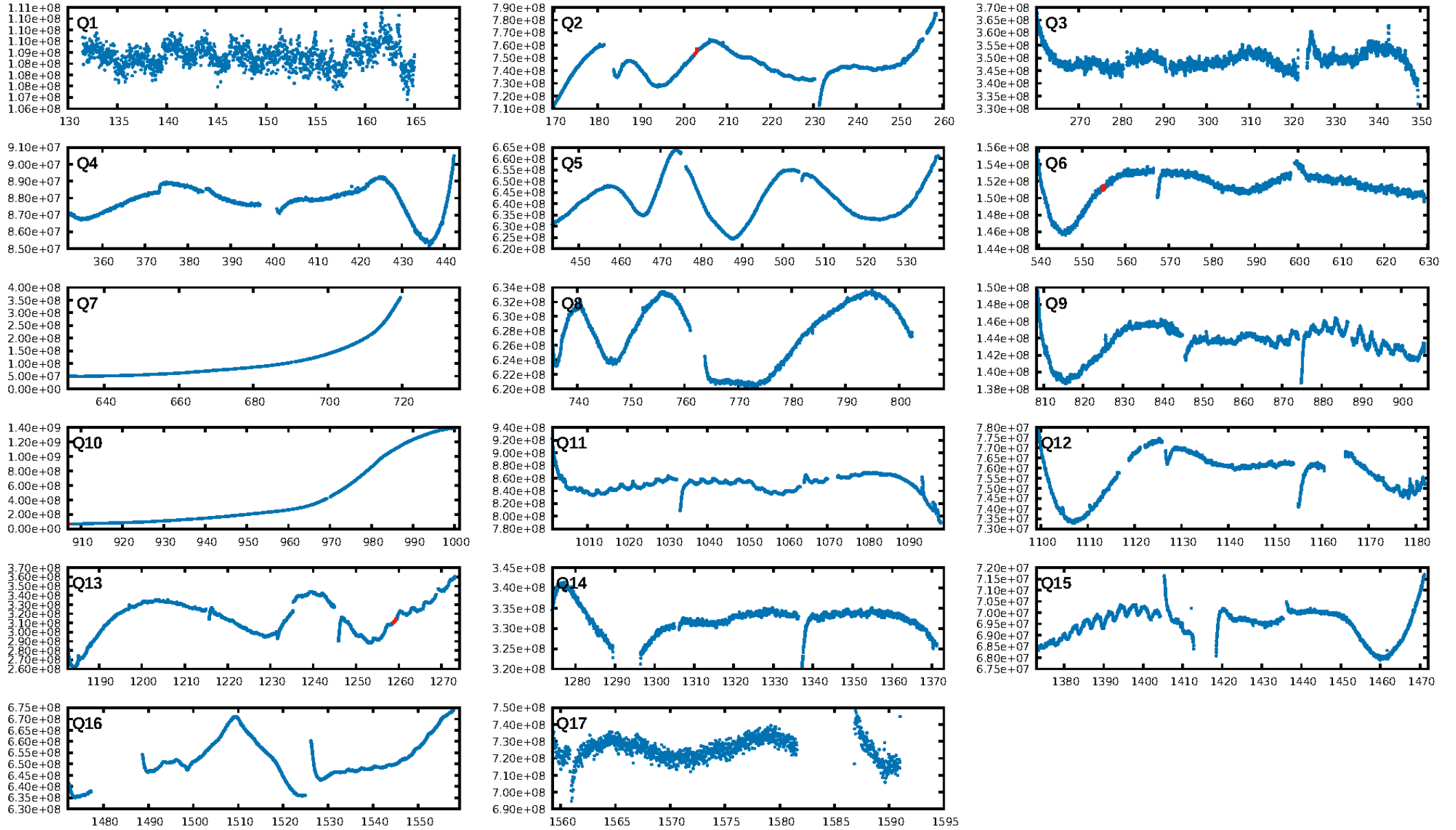
ShortPeriod-sig: 100.0% [113.57σ]
LongPeriod-sig: 100.0% [974.13σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.09489

Centroid-sig: 6.9%
Centroid-so: 0.099 arcsec [1.16σ]
OotOffset-rm: 0.450 arcsec [2.31σ]
KicOffset-rm: 0.452 arcsec [1.22σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [3/3]

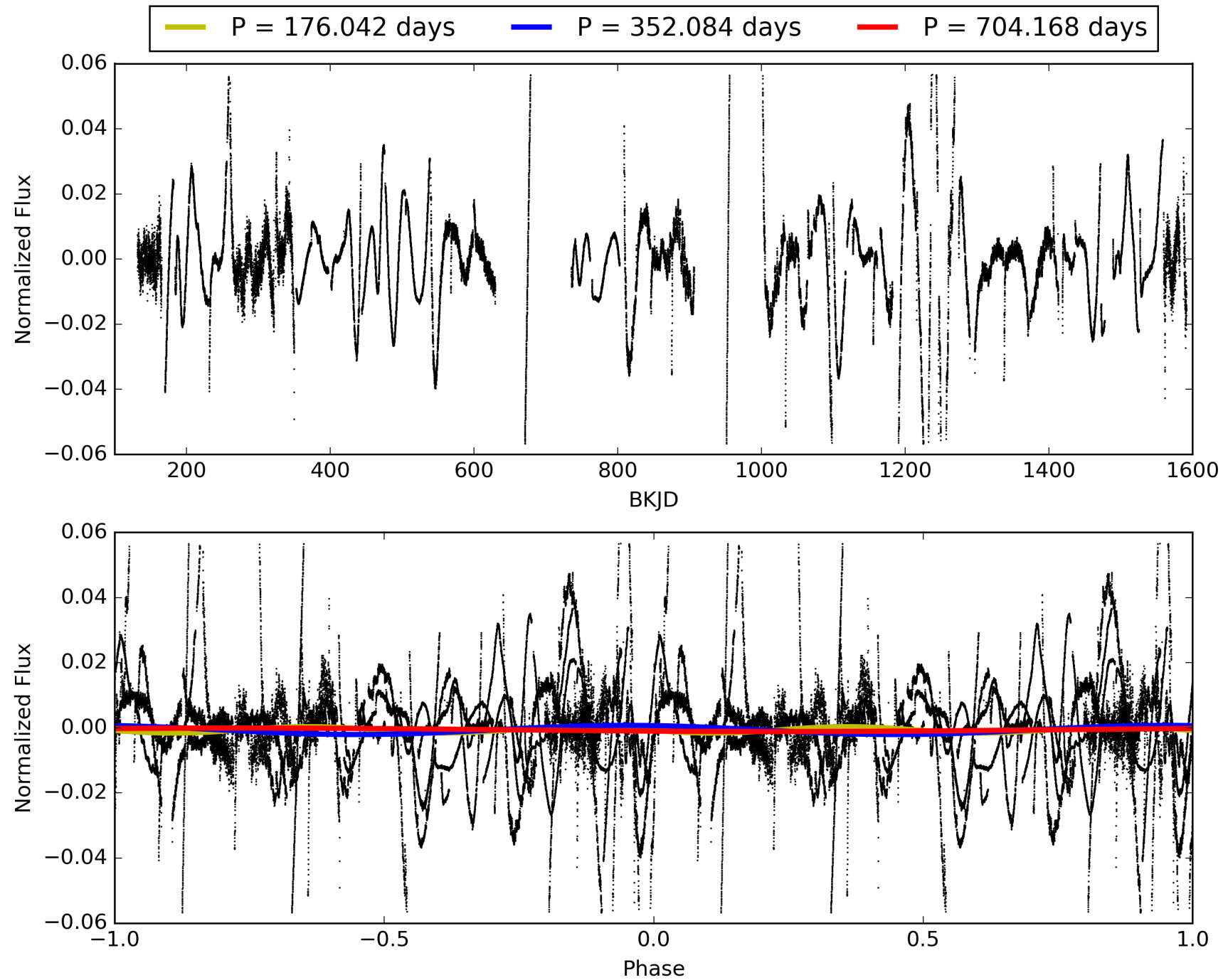
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:03:07 Z

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

TCE 010978008-01, PDC Light Curves

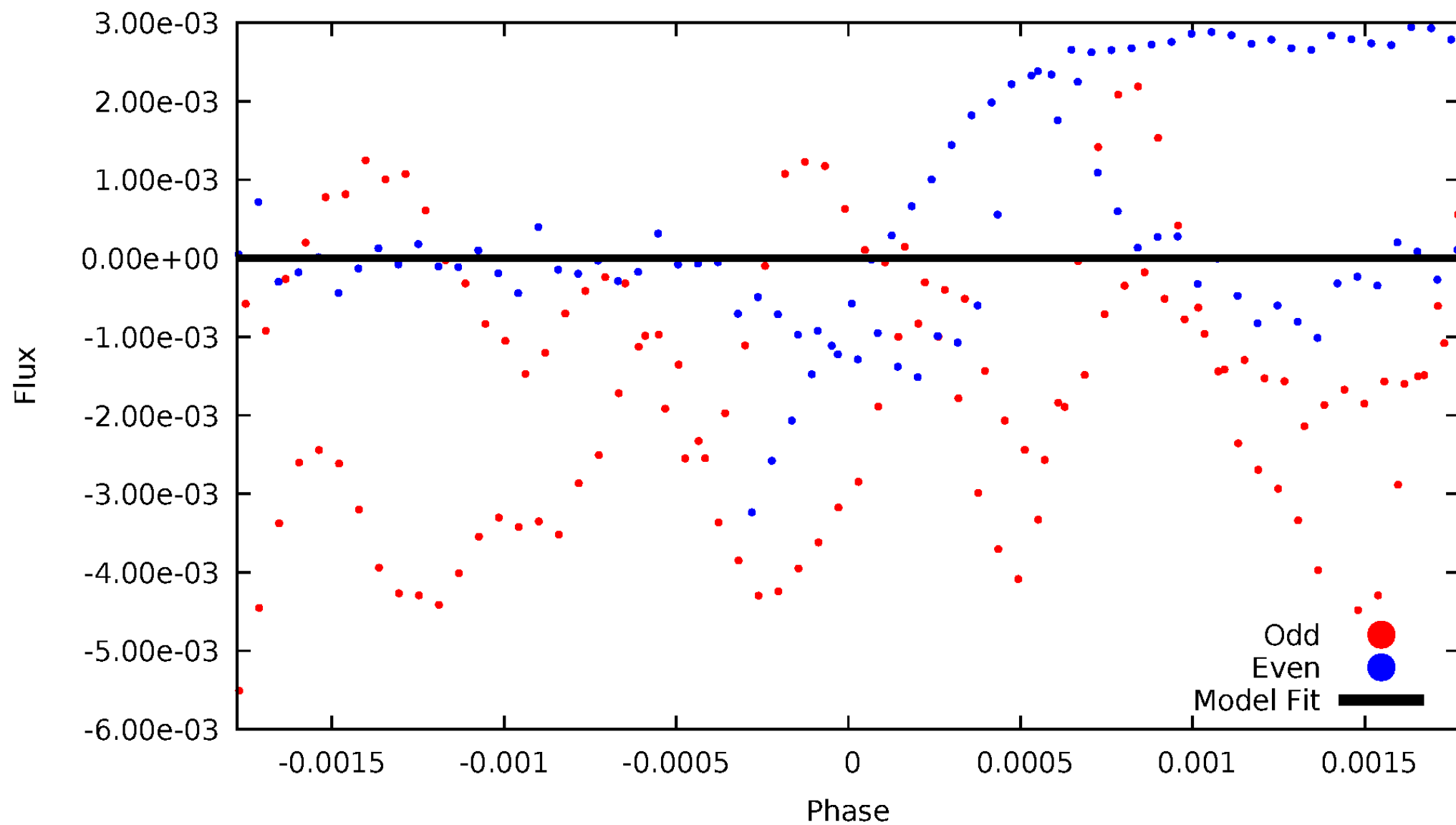


TCE 010978008-01



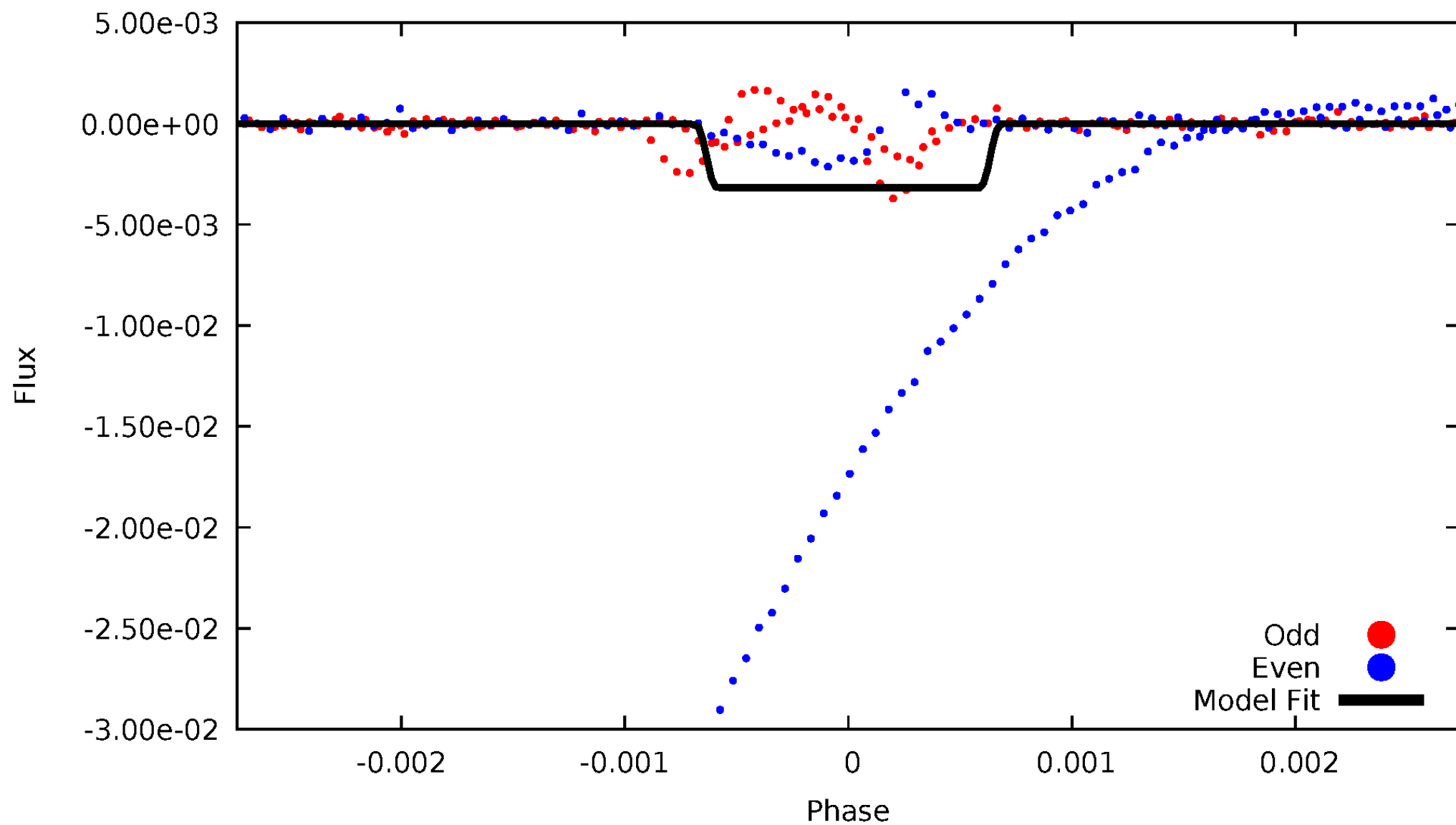
DV Odd/Even

TCE 010978008-01



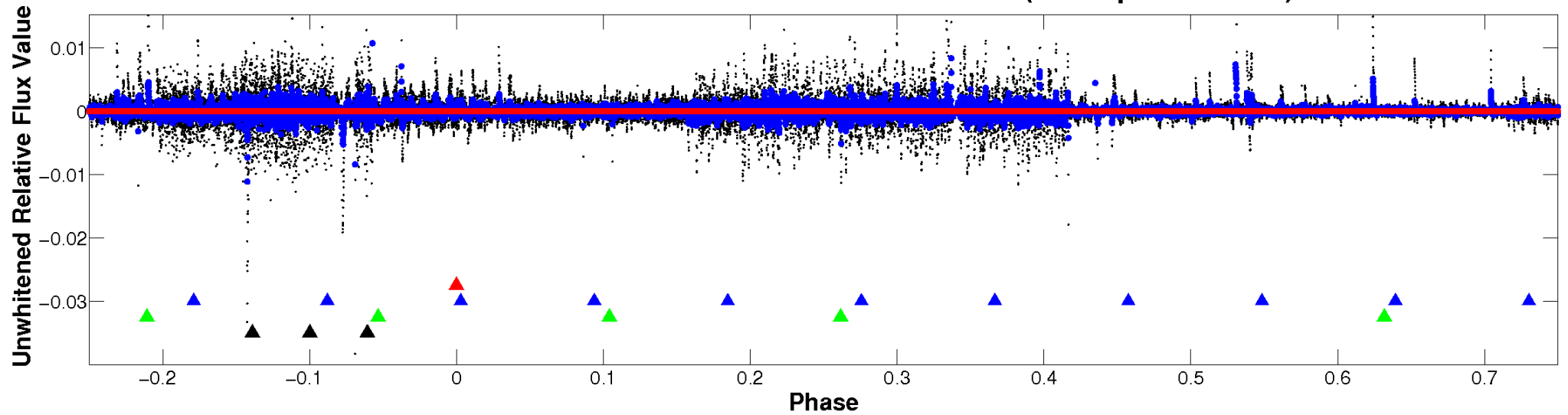
ALT Odd/Even

TCE 010978008-01

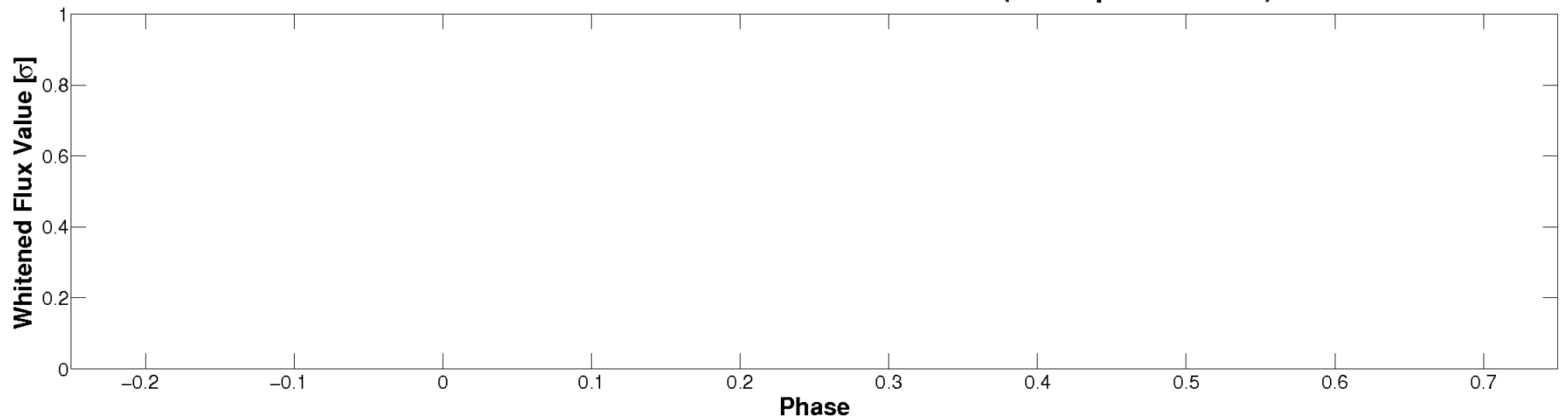


Non-Whitened Vs. Whitened Light Curve

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

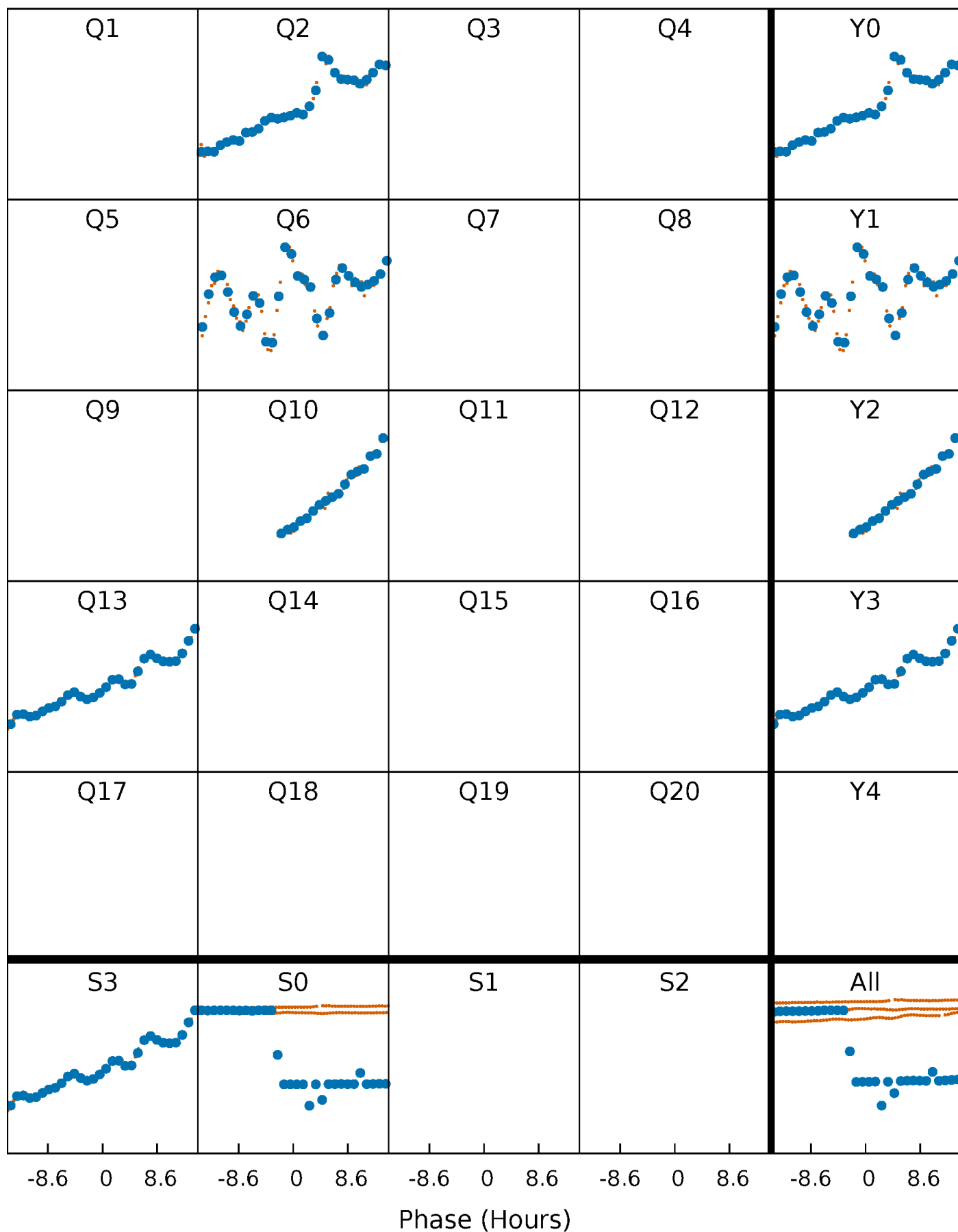


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



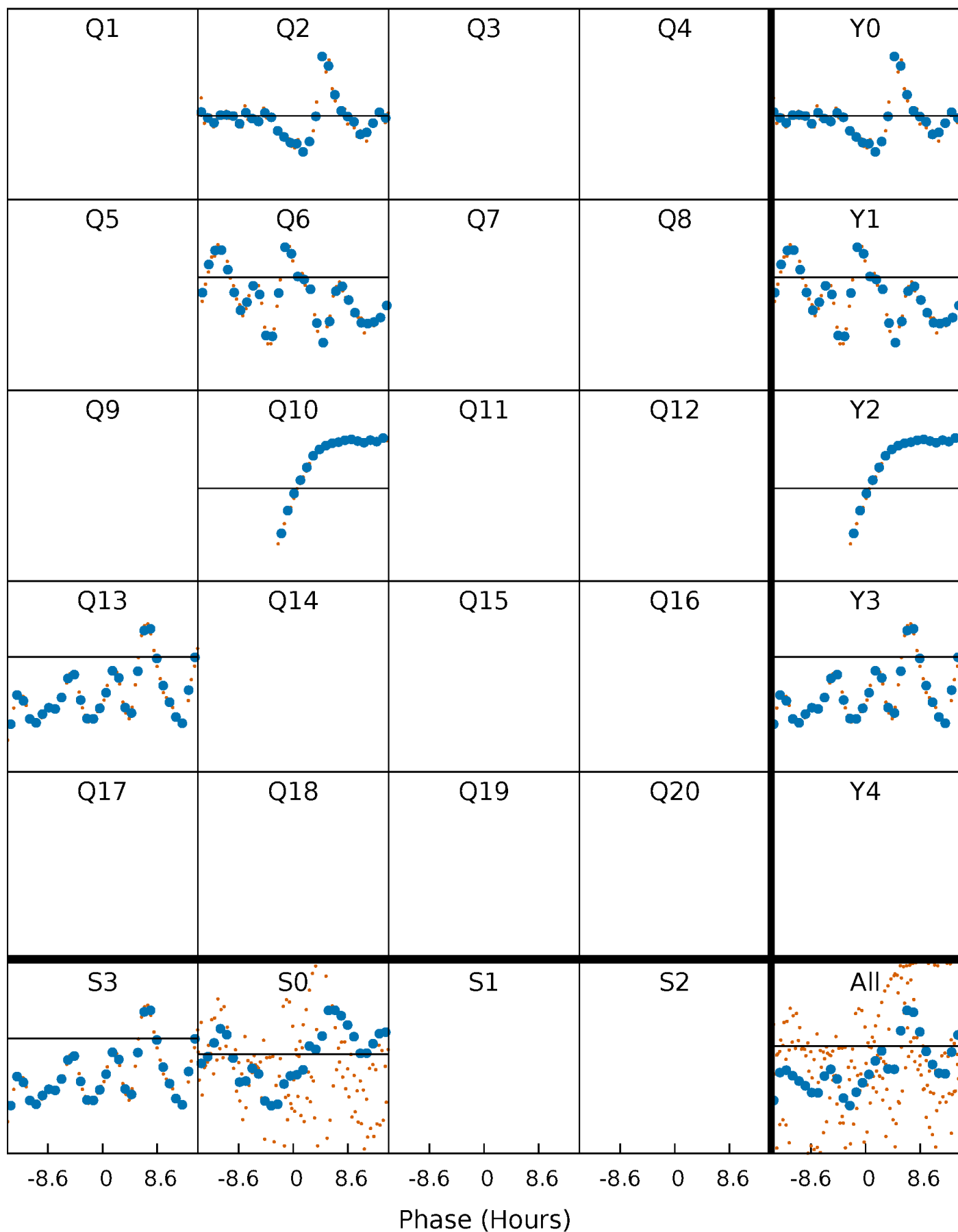
PDC Quarter-Phased Transit Curves

TCE 010978008-01 P=352.083861 Days $T_0=202.796874$ (BKJD)



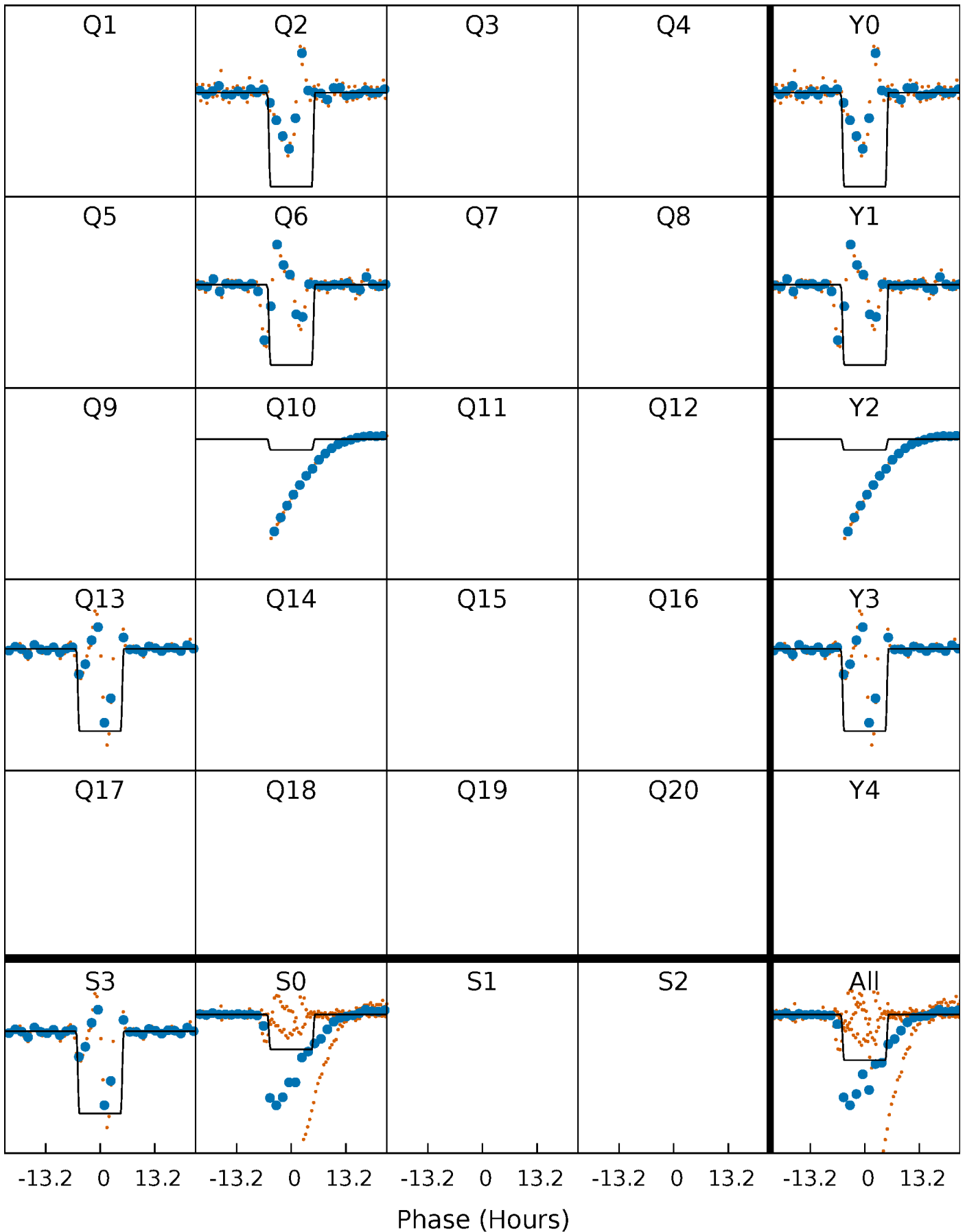
DV Quarter-Phased Transit Curves

TCE 010978008-01 P=352.083861 Days $T_0=202.796874$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

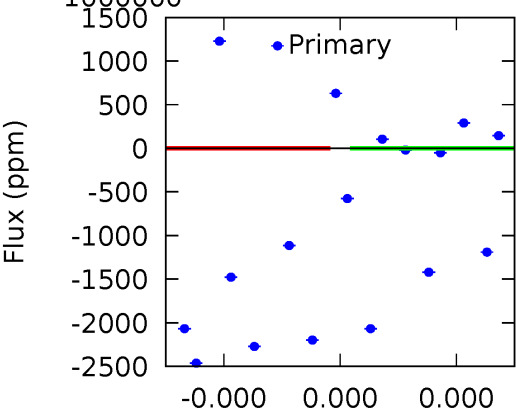
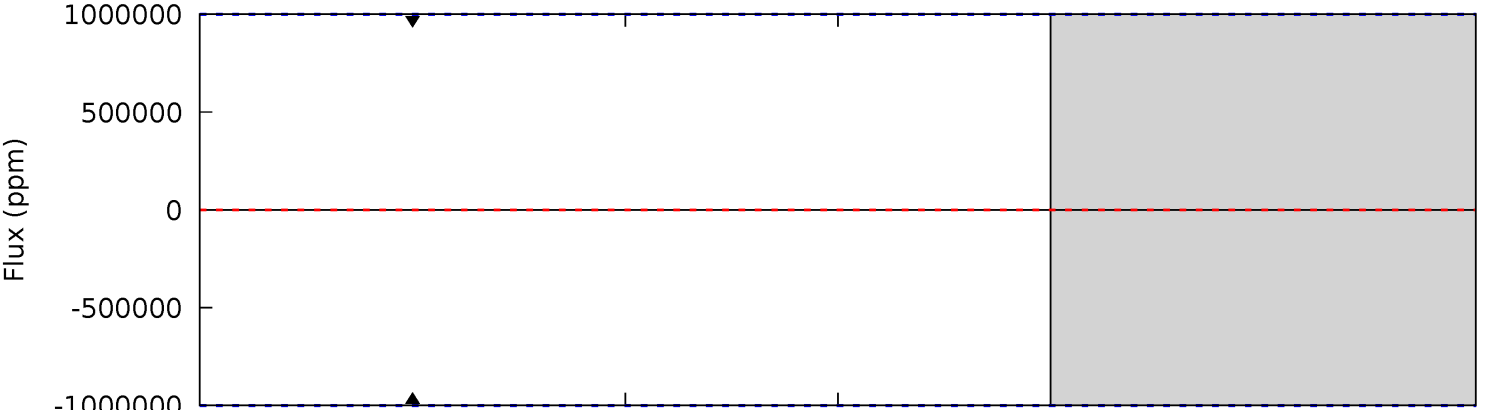
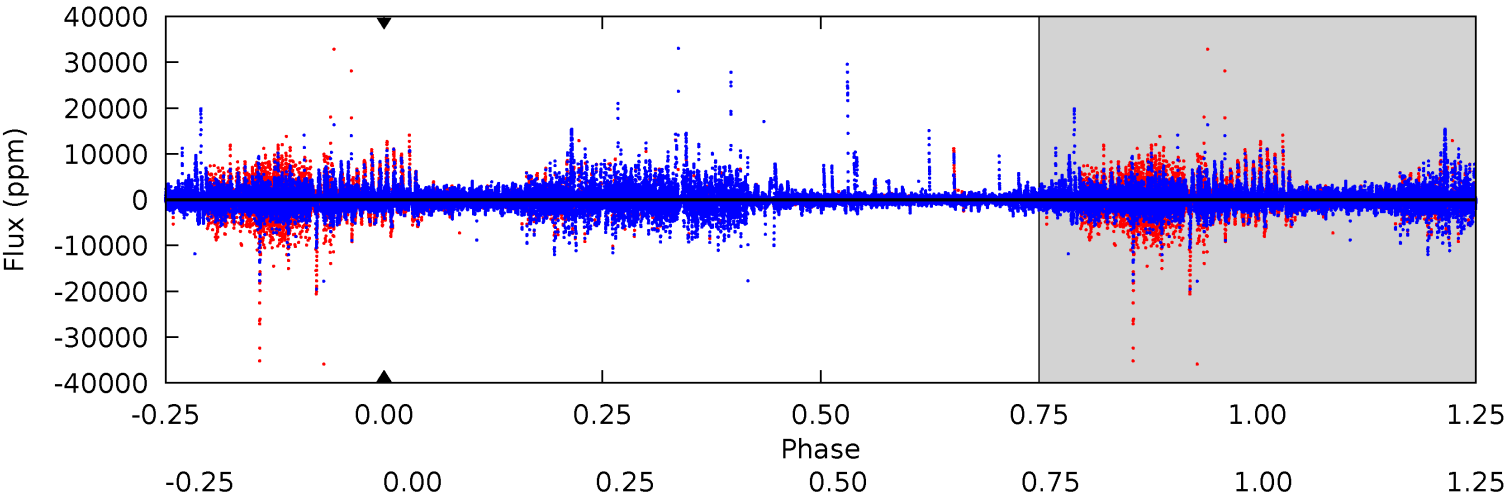
TCE 010978008-01 P=352.083861 Days $T_0=202.900204$ (BKJD)



DV Model-Shift Uniqueness Test

010978008-01, P = 352.083861 Days, E = 202.796874 Days

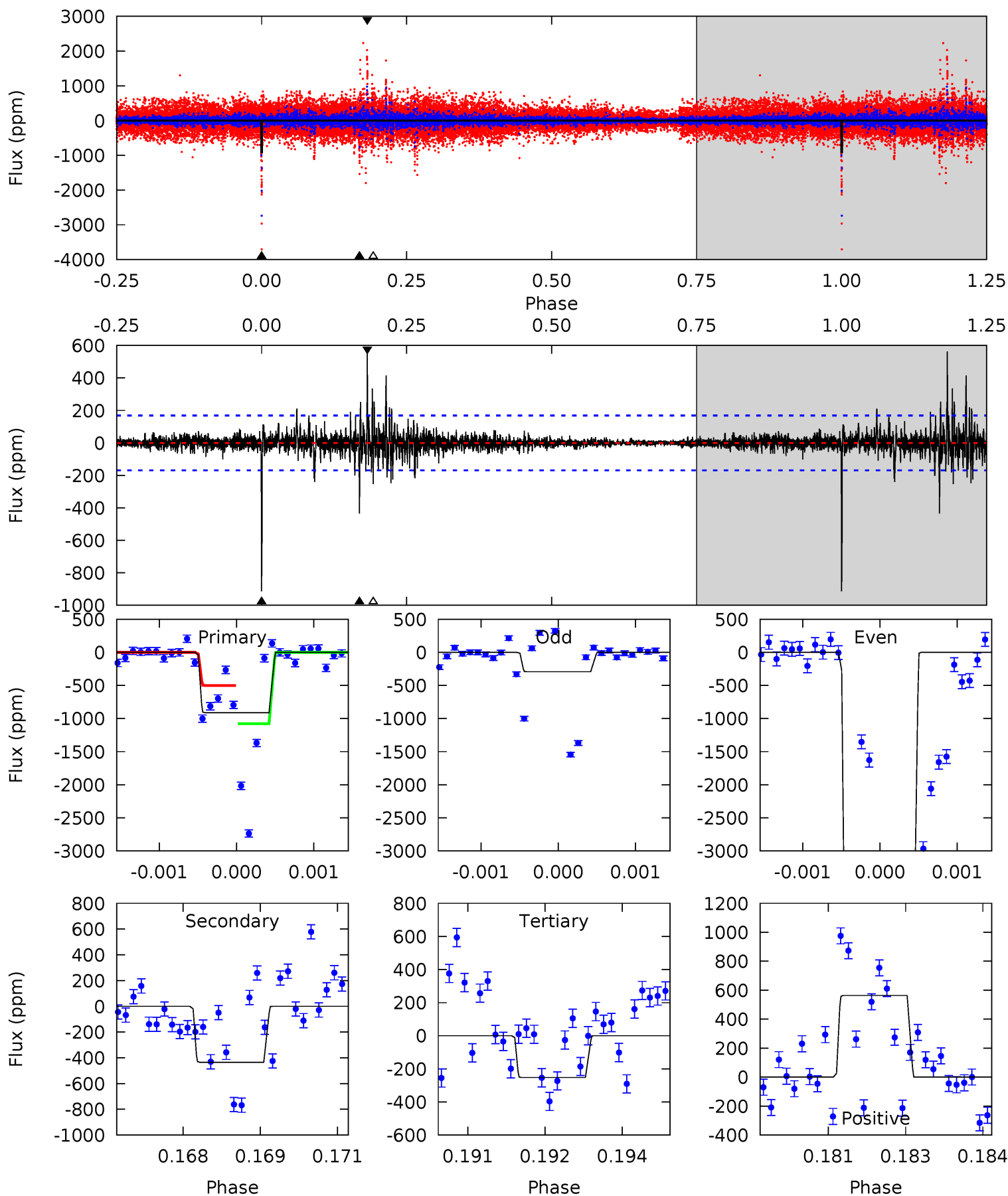
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010978008-01, P = 352.083861 Days, E = 202.900204 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.1	13.9	8.05	18.0	5.40	3.20	1.19	21.1	11.2	5.81	-4.11	34.8	6.84	0.38	8.28



Stellar Parameters For KIC 010978008

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3291^{+107}_{-88}	$0.169^{+0.208}_{-0.052}$	$-0.020^{+0.250}_{-0.150}$	$150.645^{+9.958}_{-29.874}$	$1.221^{+0.202}_{-0.166}$	$0.000^{+0.000}_{-0.000}$
	+3%/-3%	+123%/-31%	+1250%/-750%	+7%/-20%	+17%/-14%	+96%/-15%
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 010978008-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$1194.42^{+1398.22}_{-807.86}$	2394^{+108}_{-143}	-2826^{+9651}_{-3565}	$-0.451^{+98.739}_{-72.443}$
Alt.	-434 ± 31	$1518.11^{+1344.73}_{-1037.71}$	2396^{+107}_{-132}	-2315^{+5111}_{-163}	$0.112^{+0.977}_{-0.078}$

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 $A_{obs} \gg 1.0$

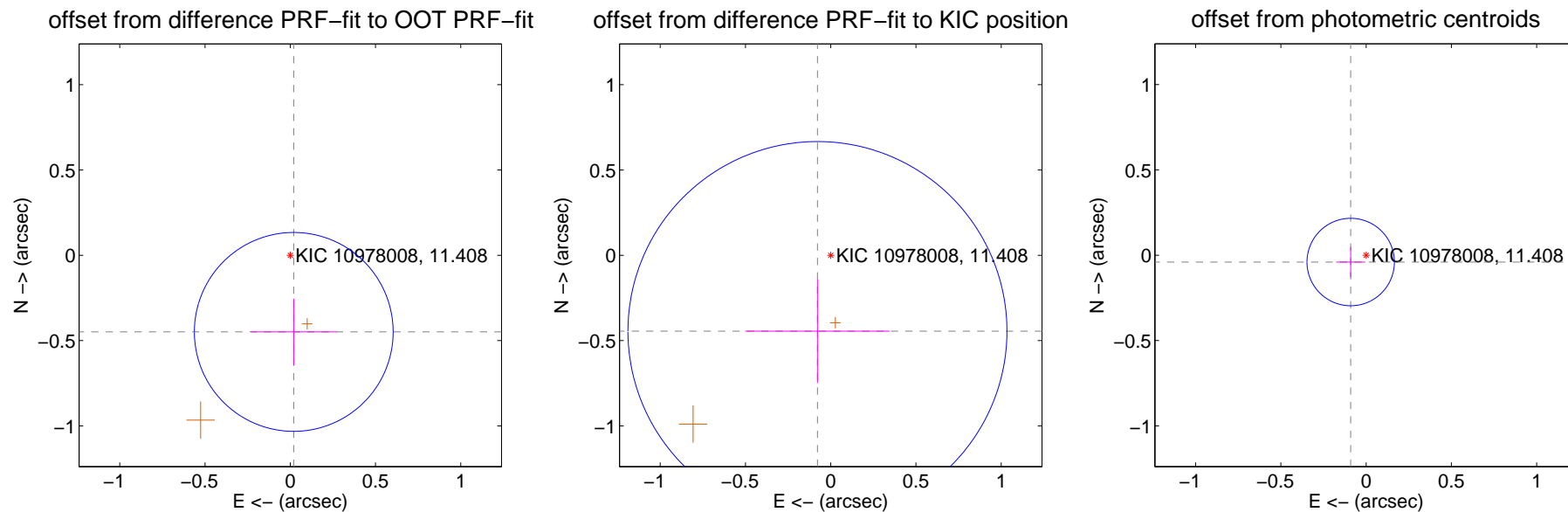
DV Centroid Data

Supplemental centroid analysis for 010978008-01. **Kepler magnitude: 11.41.** Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

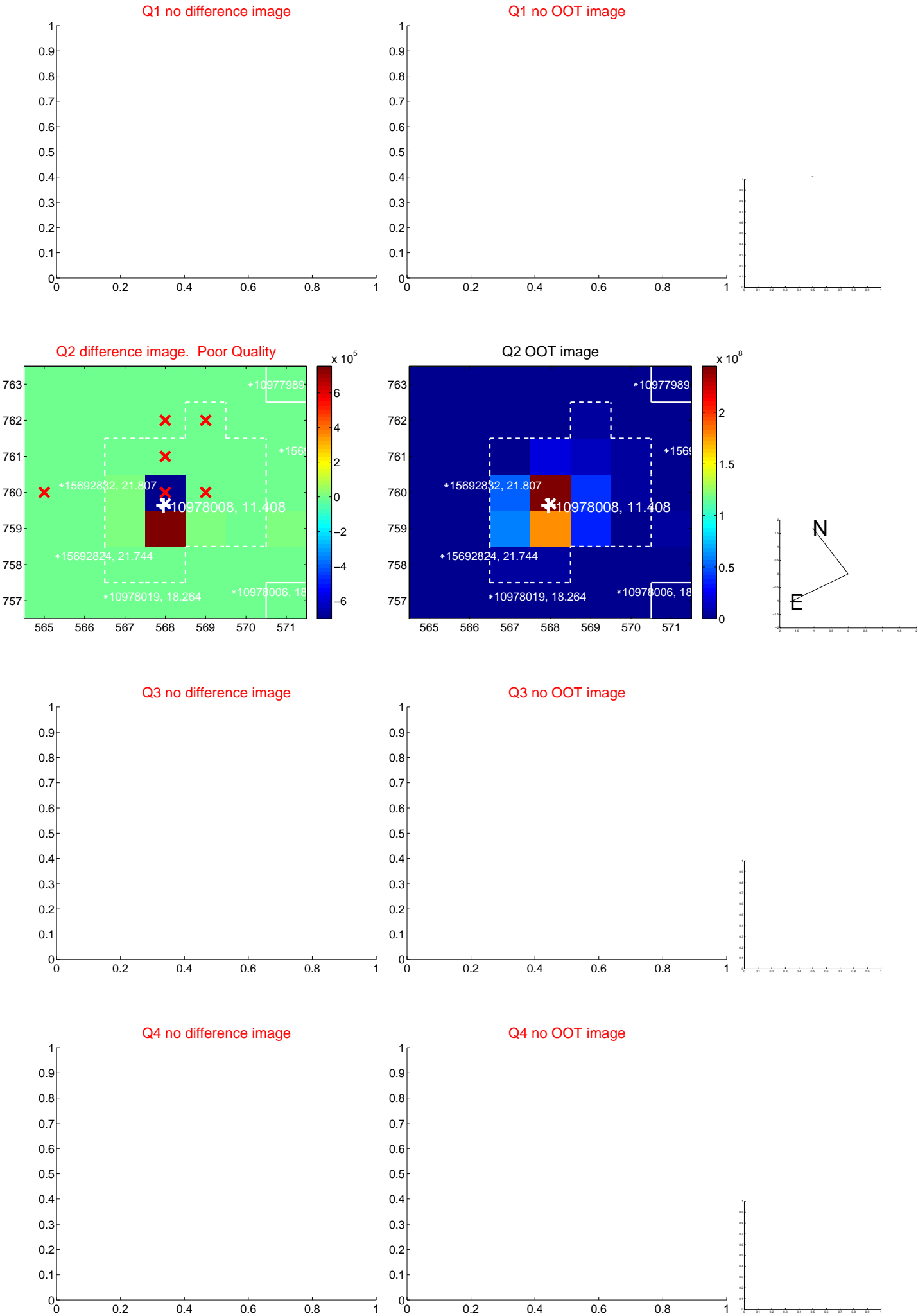
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.450 ± 0.194	2.31	-0.021 ± 0.251	-0.449 ± 0.194
PRF-fit source offset from KIC position	0.452 ± 0.371	1.22	0.078 ± 0.423	-0.445 ± 0.304
photometric centroid source offset	0.10 ± 0.09	1.16	0.09 ± 0.08	-0.04 ± 0.09



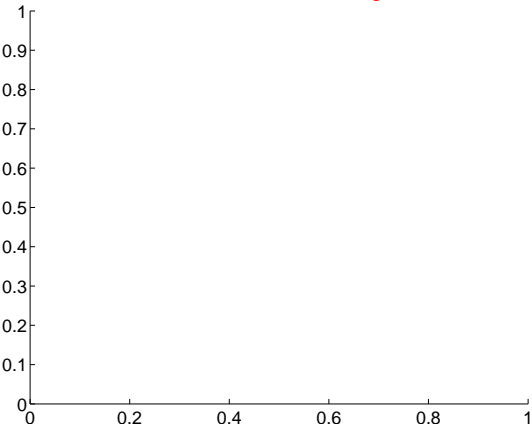
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

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

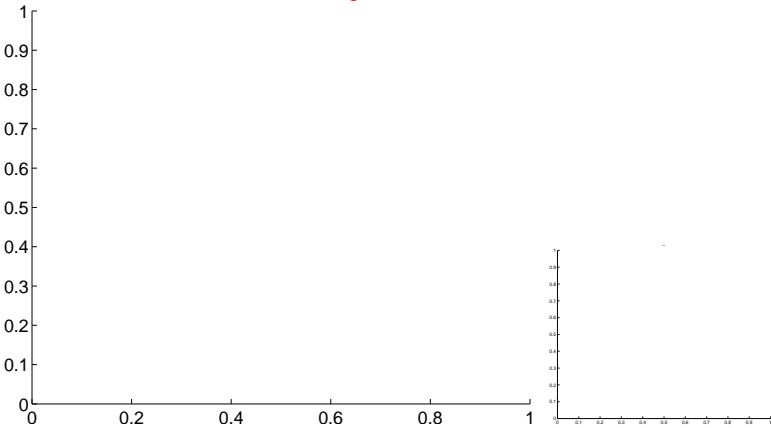


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

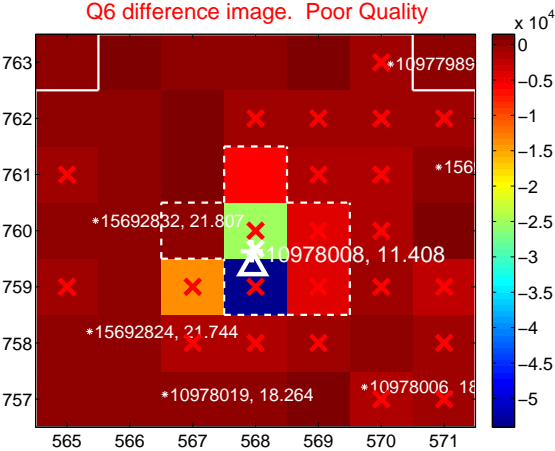
Q5 no difference image



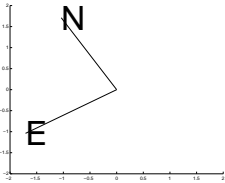
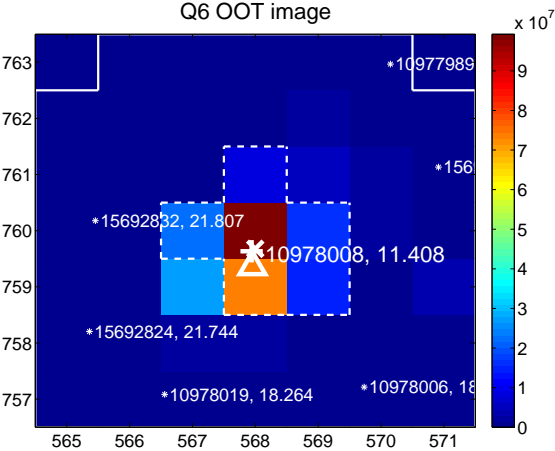
Q5 no OOT image



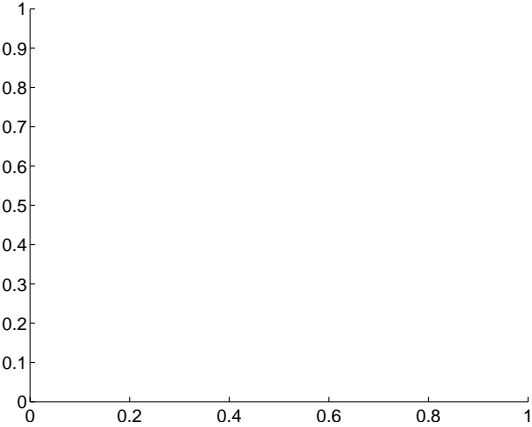
Q6 difference image. Poor Quality



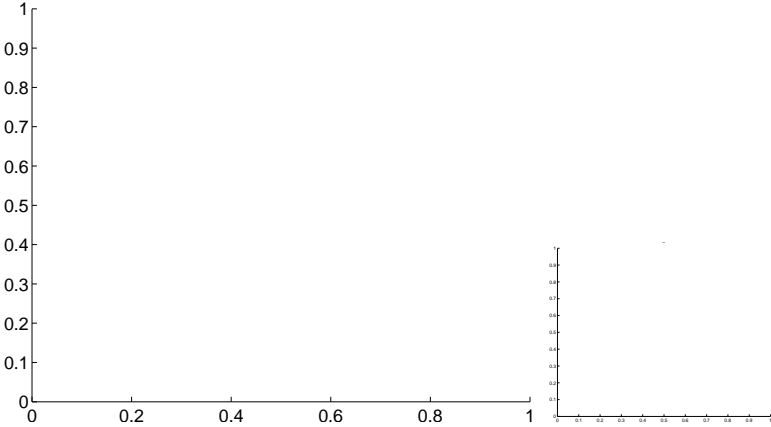
Q6 OOT image



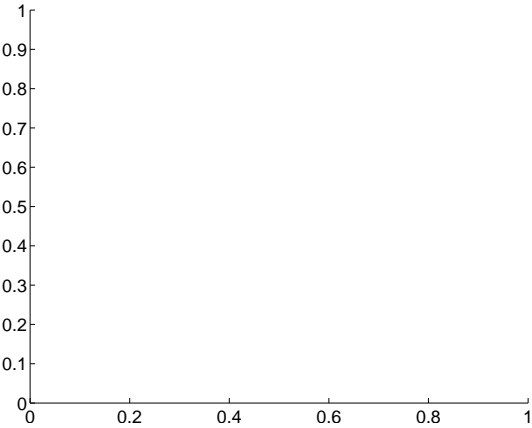
Q7 no difference image



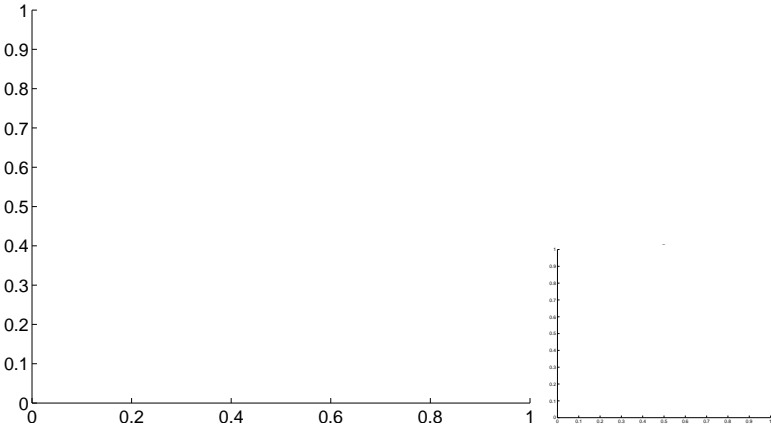
Q7 no OOT image



Q8 no difference image



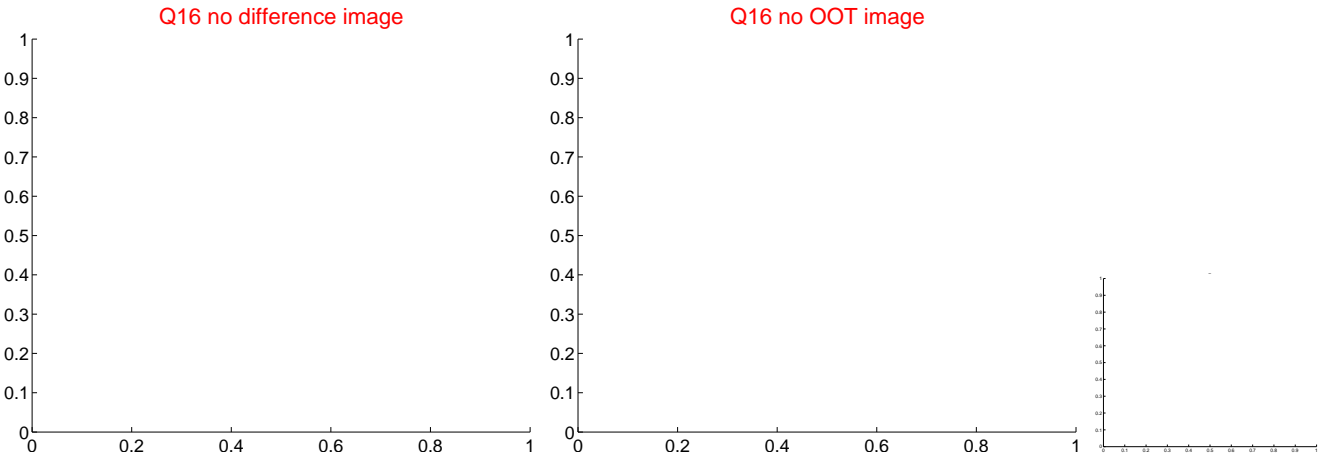
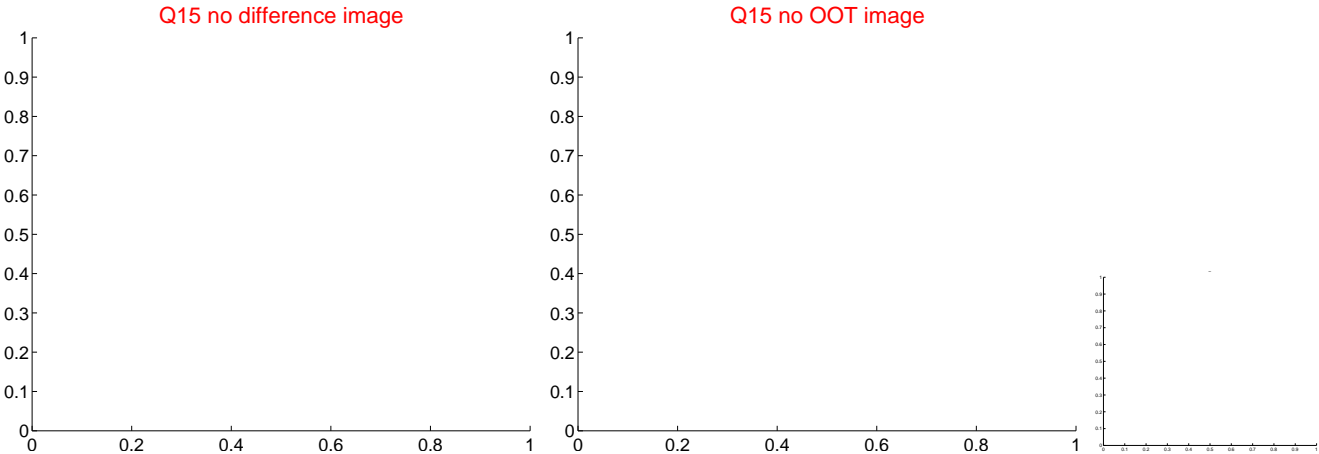
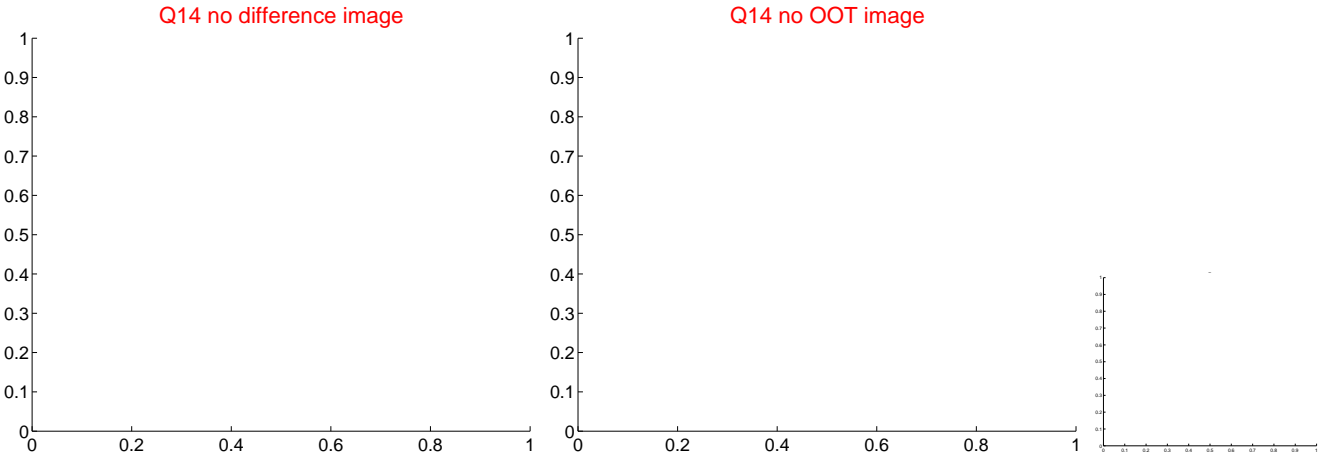
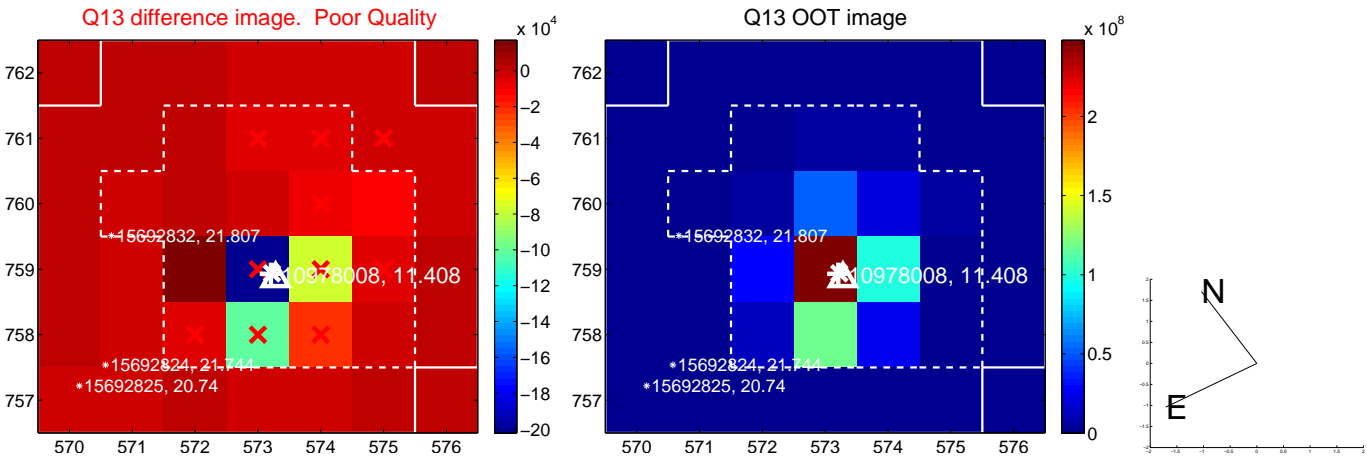
Q8 no OOT image



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



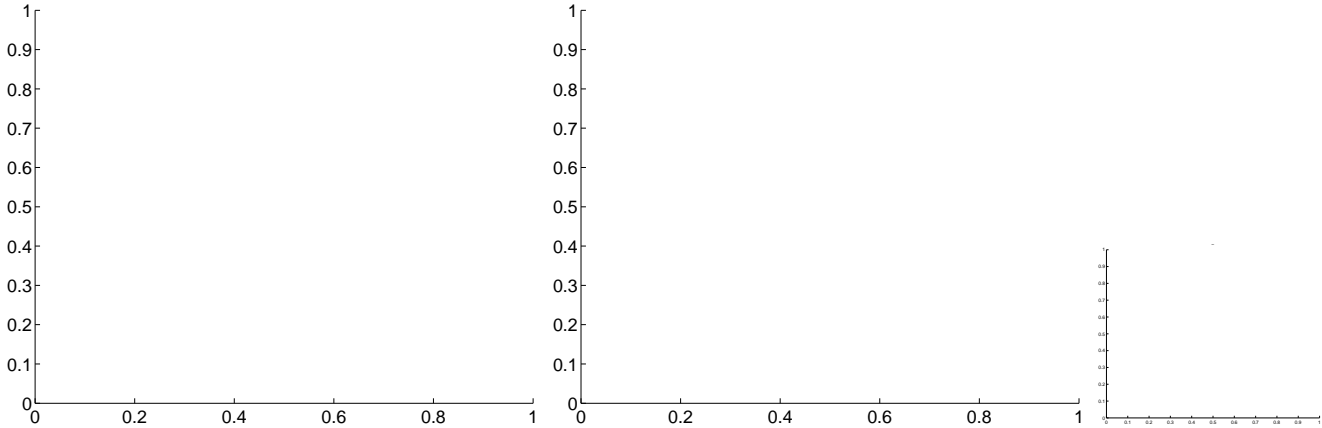
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



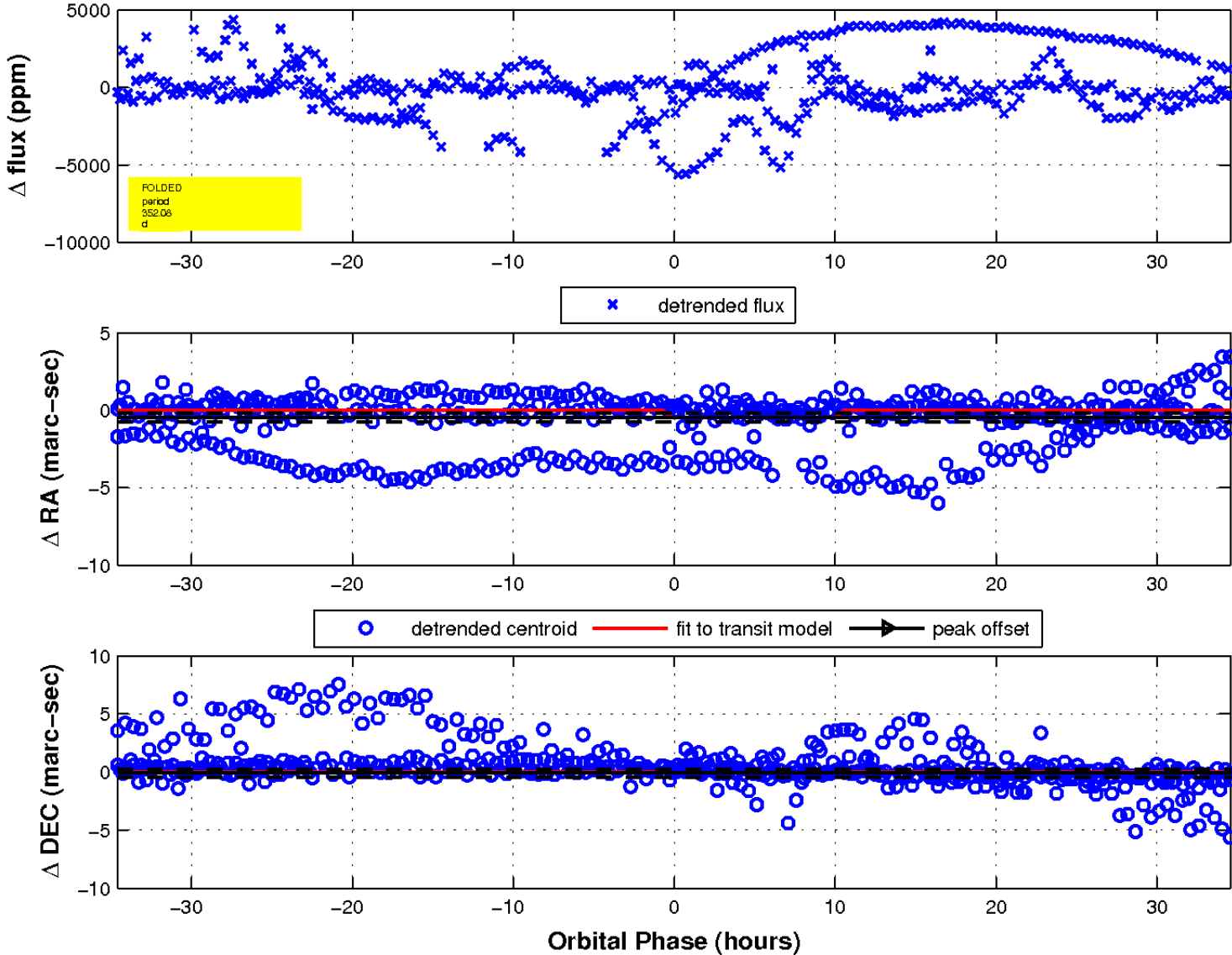
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q17 no difference image

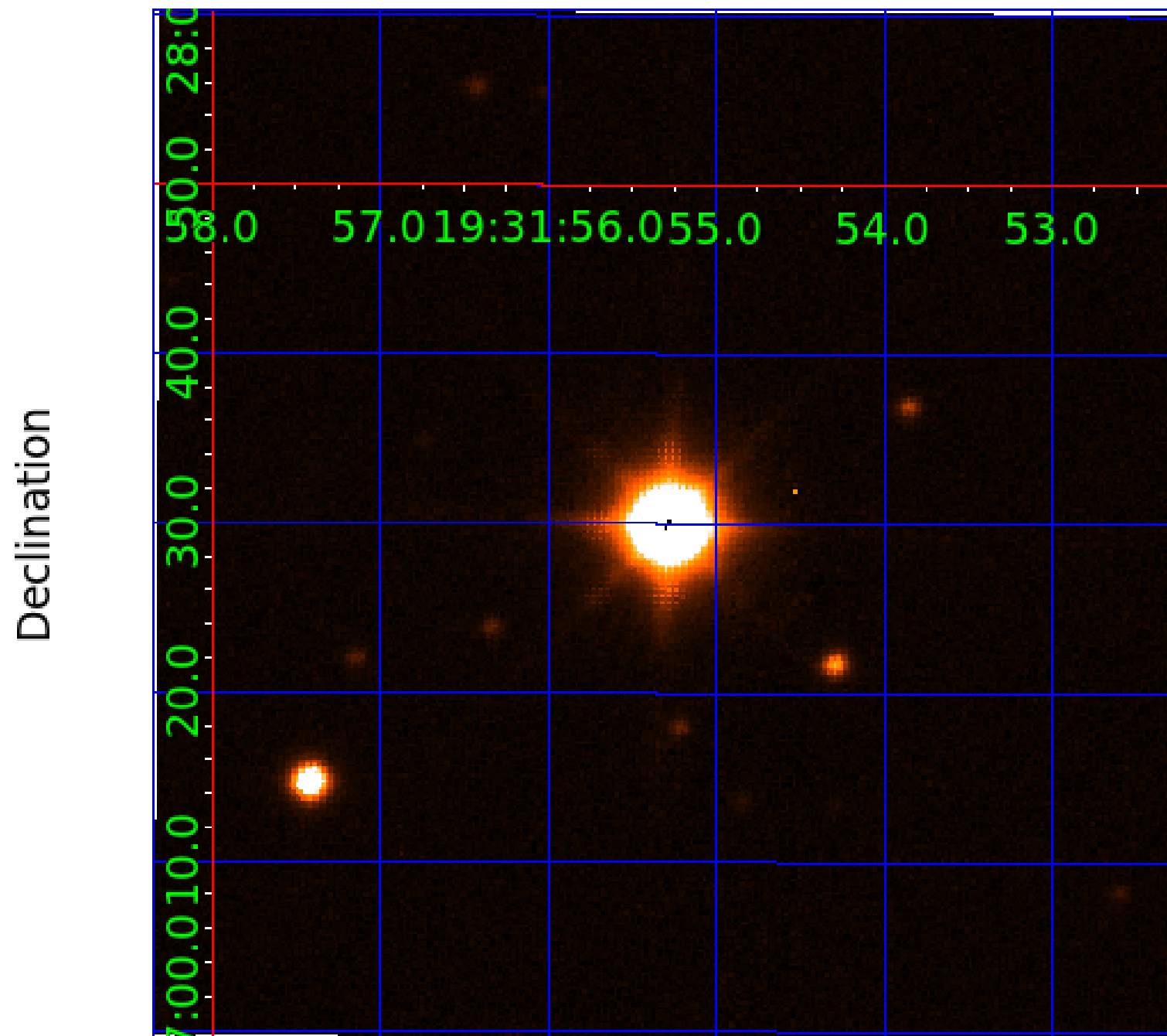
Q17 no OOT image



fluxWeightedCentroids, Planet 1 of 4



UKIRT Image



KIC 010978008

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})
010978008-01	OBS	No	352.083861	202.796873	219.4	7.500	13.8	-1.0	150.65	3291	204.76	2191.03
010978008-02	OBS	No	96.029827	139.774806	764.9	30.046	14.5	11.4	150.65	3291	931.80	0.00
010978008-03	OBS	No	296.647613	294.907956	203.9	9.000	13.9	-1.0	150.65	3291	197.37	2753.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010978008-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
010978008-02	OBS	FP	0.00	1	0	0	0	LPP_DV—INCONSISTENT_TRANS—CENT_SATURATED
010978008-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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

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

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

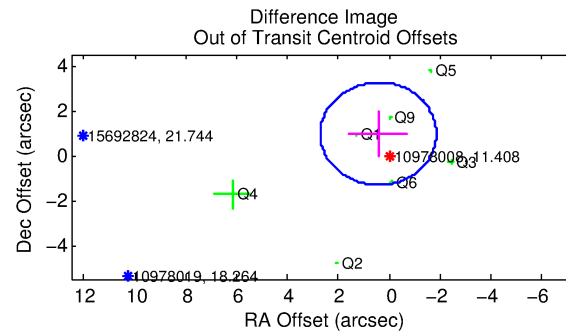
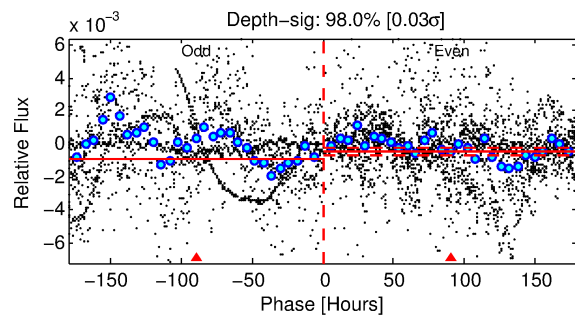
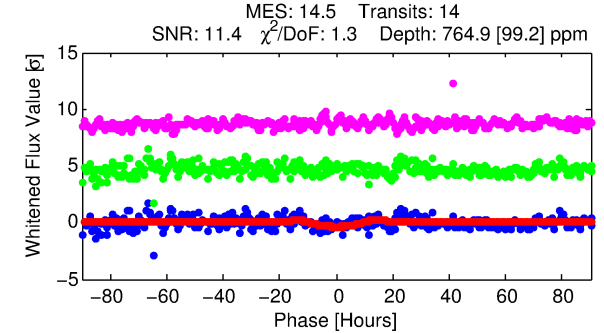
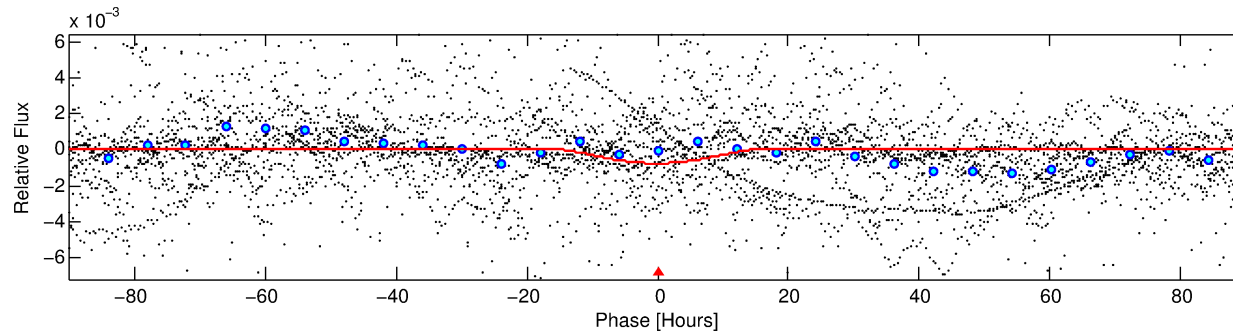
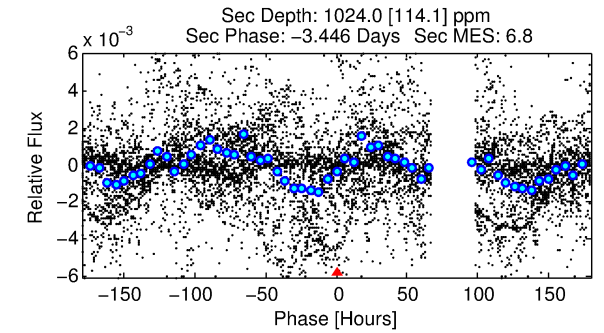
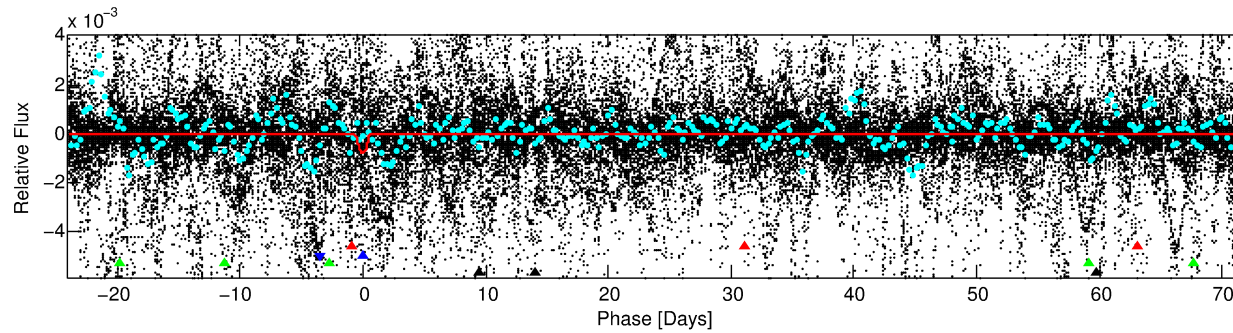
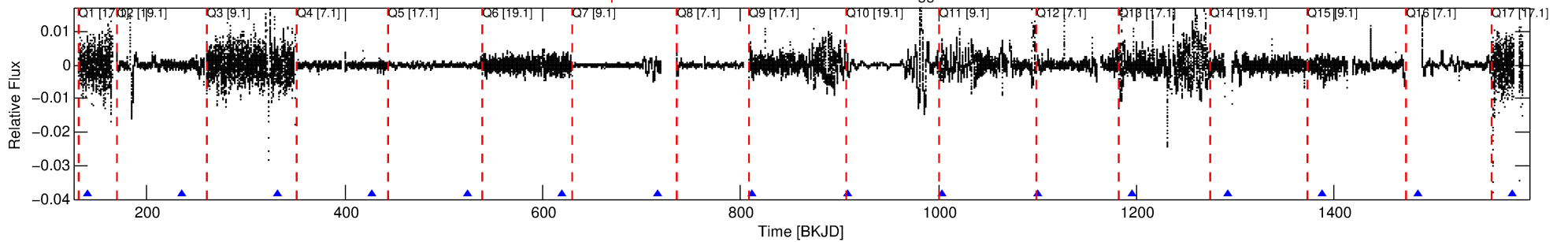
Ephemeris Match Information For 010978008-02

No Significant Match Found

DV One-Page Summary

KIC: 10978008 Candidate: 2 of 4 Period: 96.030 d

Kp: 11.41 R*: 150.65 Rs Teff: 3291.0 K Logg: 0.17 Fe/H: -0.020



DV Fit Results:

Period = 96.02983 [0.01172] d
Epoch = 139.7748 [0.0885] BKJD
Rp/R* = 0.0567 [0.0715]
a/R* = 8.42 [2.29]
b = 1.00 [0.10]
Seff = N/A
Teq = N/A
Rp = 931.80 [1189.99] Re
a = N/A
Ag = N/A
Teffp = N/A

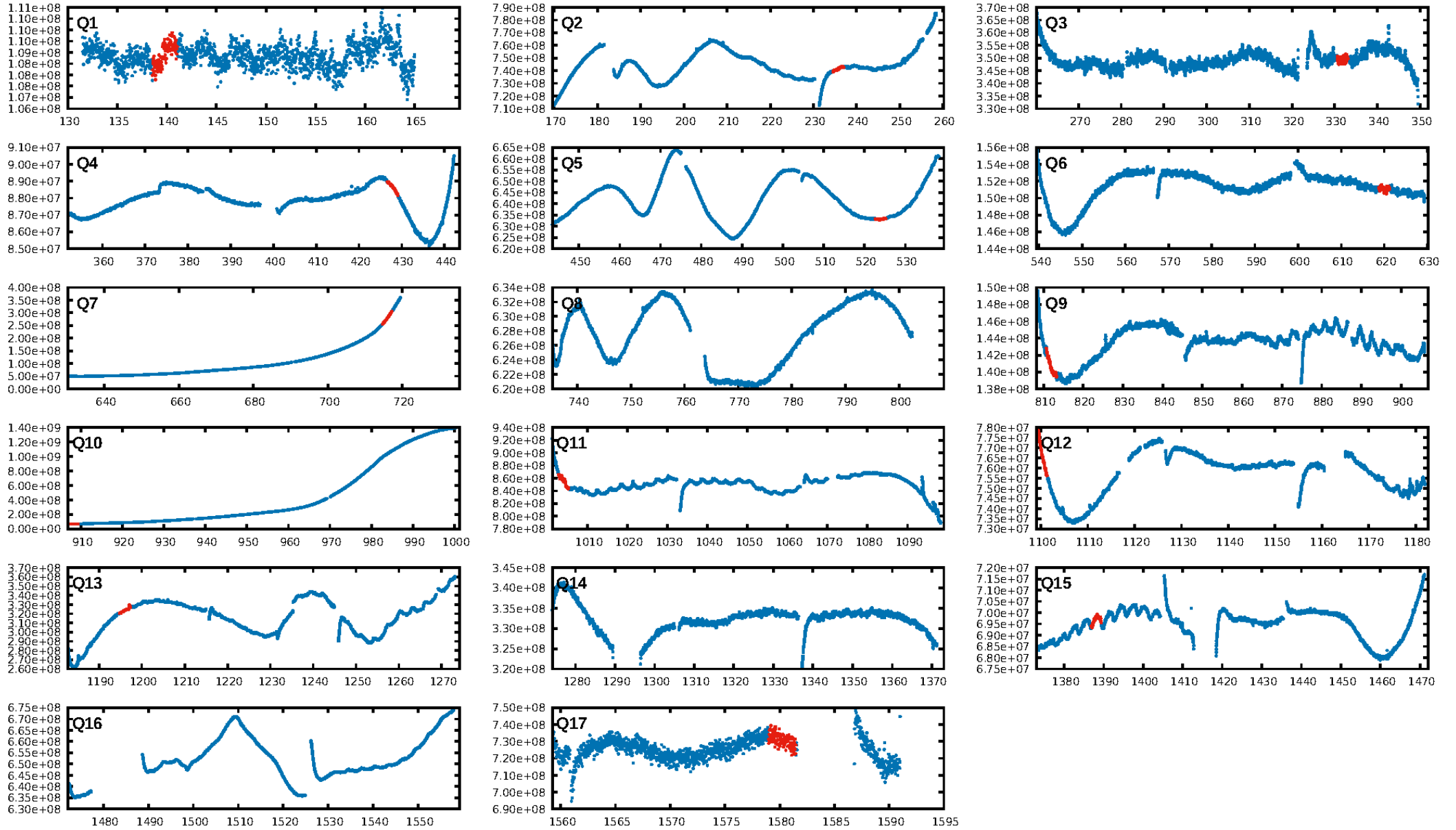
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [153.51σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [12/12]
GhostDiagnostic-chr: -3.245
Centroid-sig: 49.6%
Centroid-so: 0.376 arcsec [1.23σ]
OotOffset-rm: 1.054 arcsec [1.39σ]
KicOffset-rm: 1.360 arcsec [1.23σ]
OotOffset-st: 2/1/1/3 [7]
KicOffset-st: 2/1/1/3 [7]
DiffImageQuality-fgm: 0.57 [4/7]
DiffImageOverlap-fno: 1.00 [7/7]

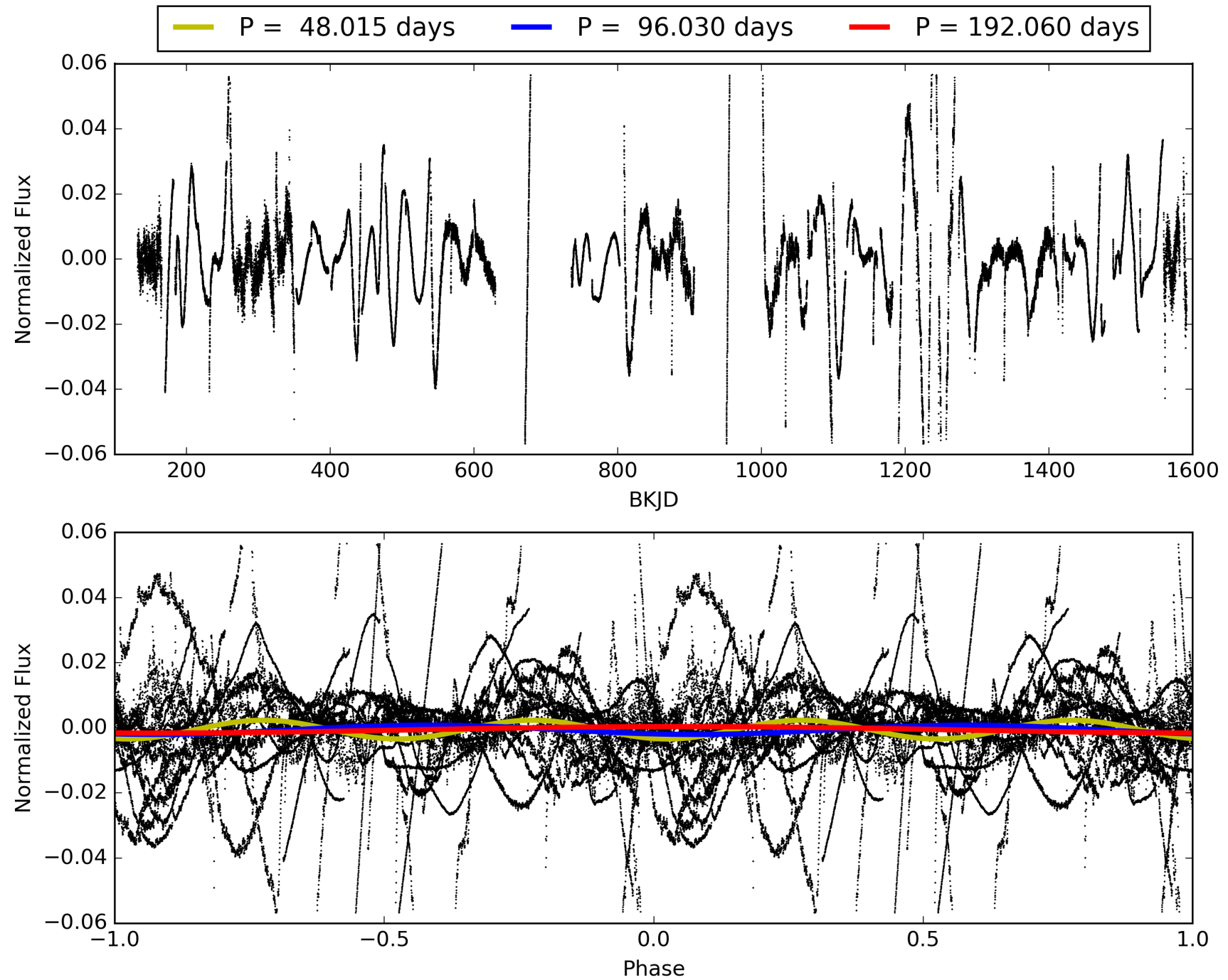
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:03:14 Z

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

TCE 010978008-02, PDC Light Curves

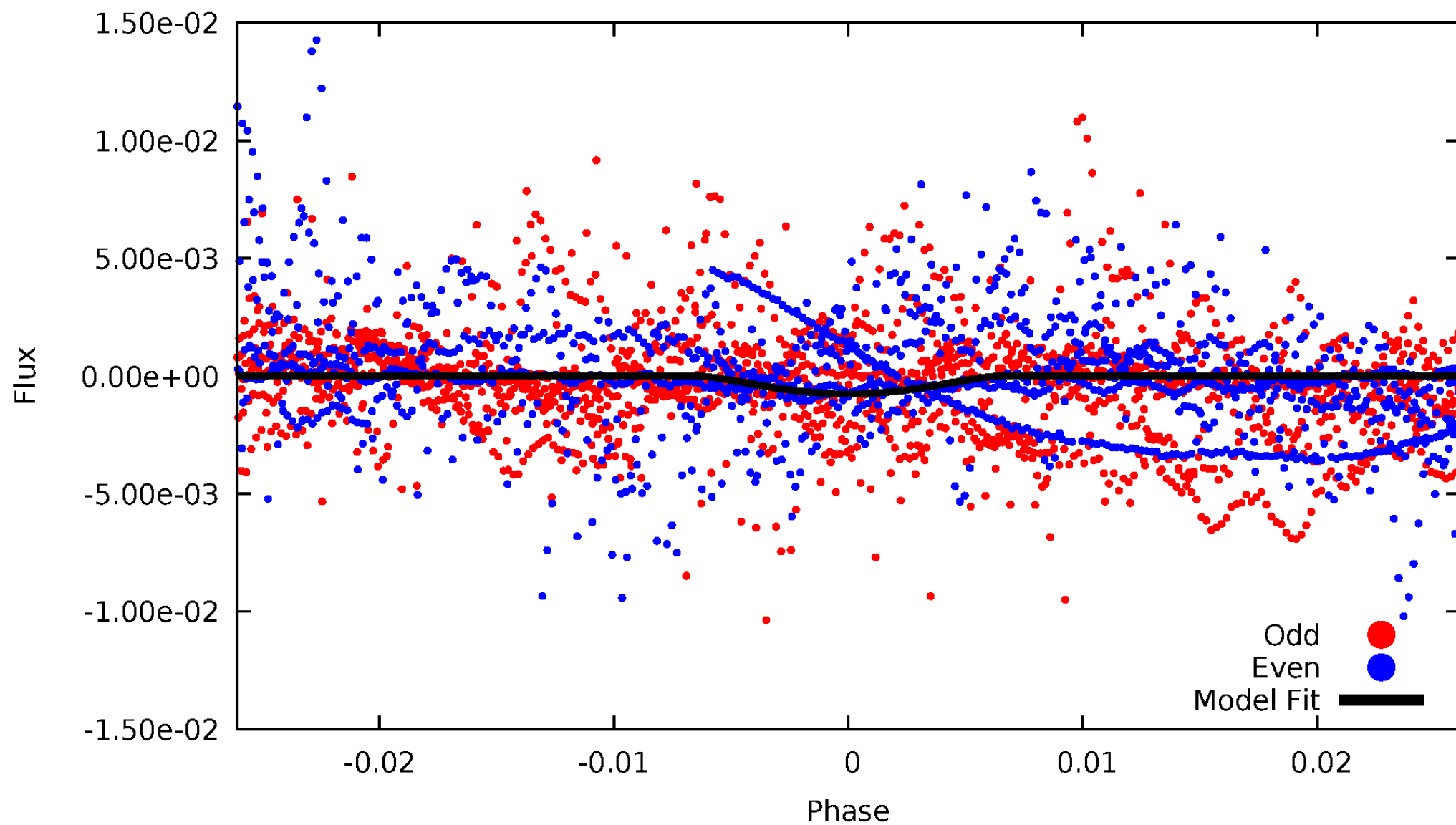


TCE 010978008-02



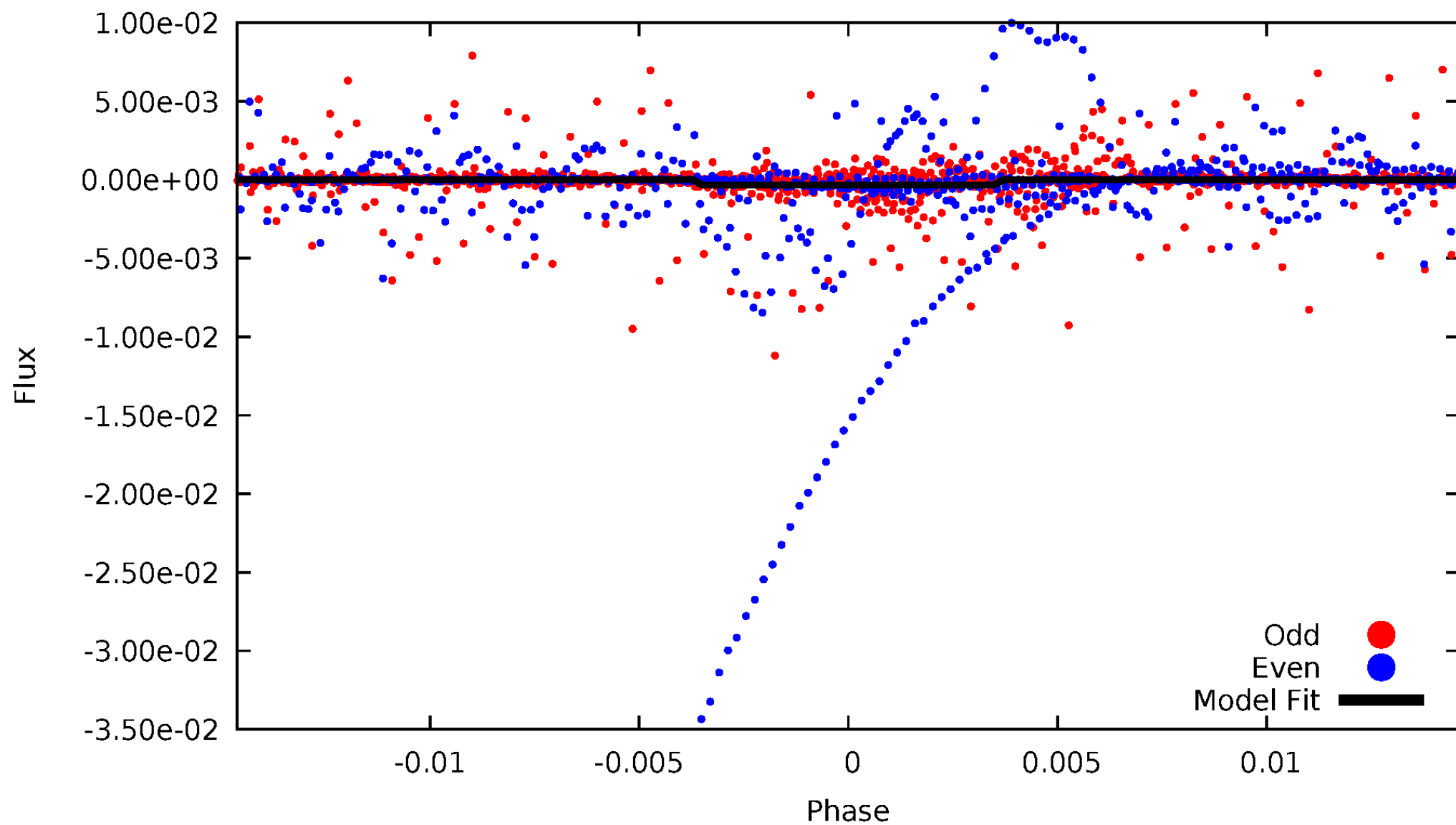
DV Odd/Even

TCE 010978008-02



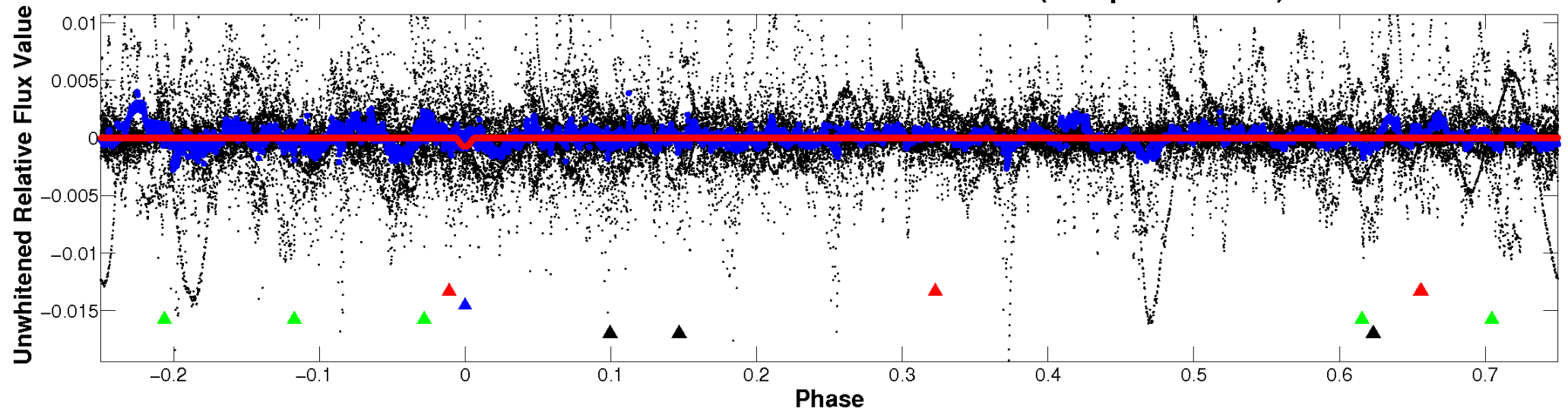
ALT Odd/Even

TCE 010978008-02

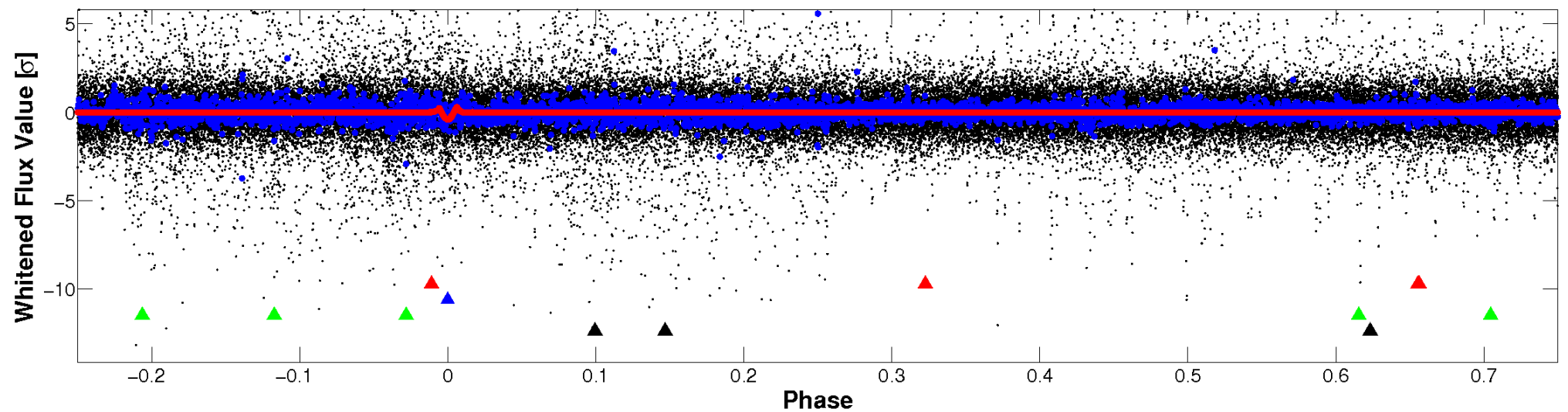


Non-Whitened Vs. Whitened Light Curve

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

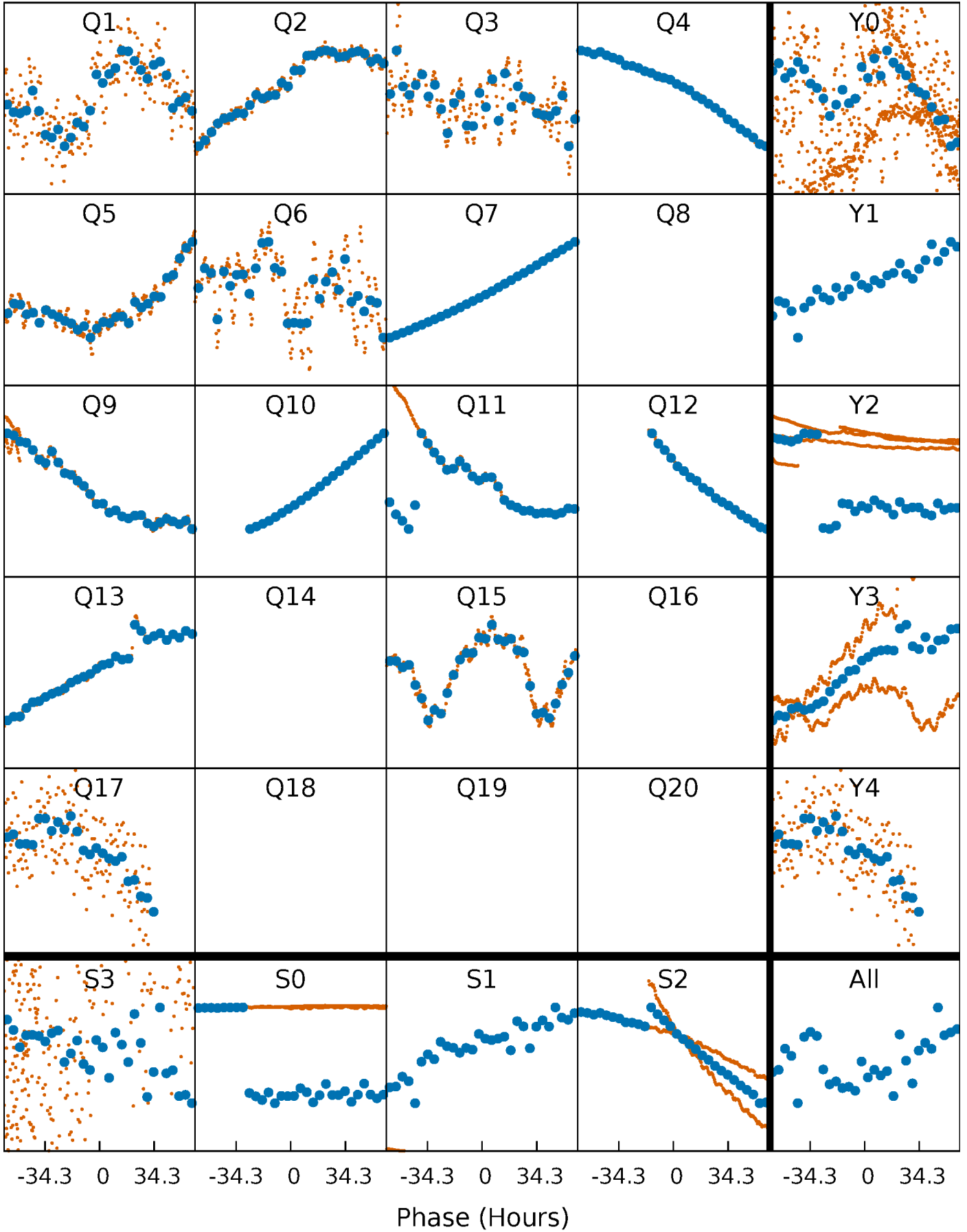


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



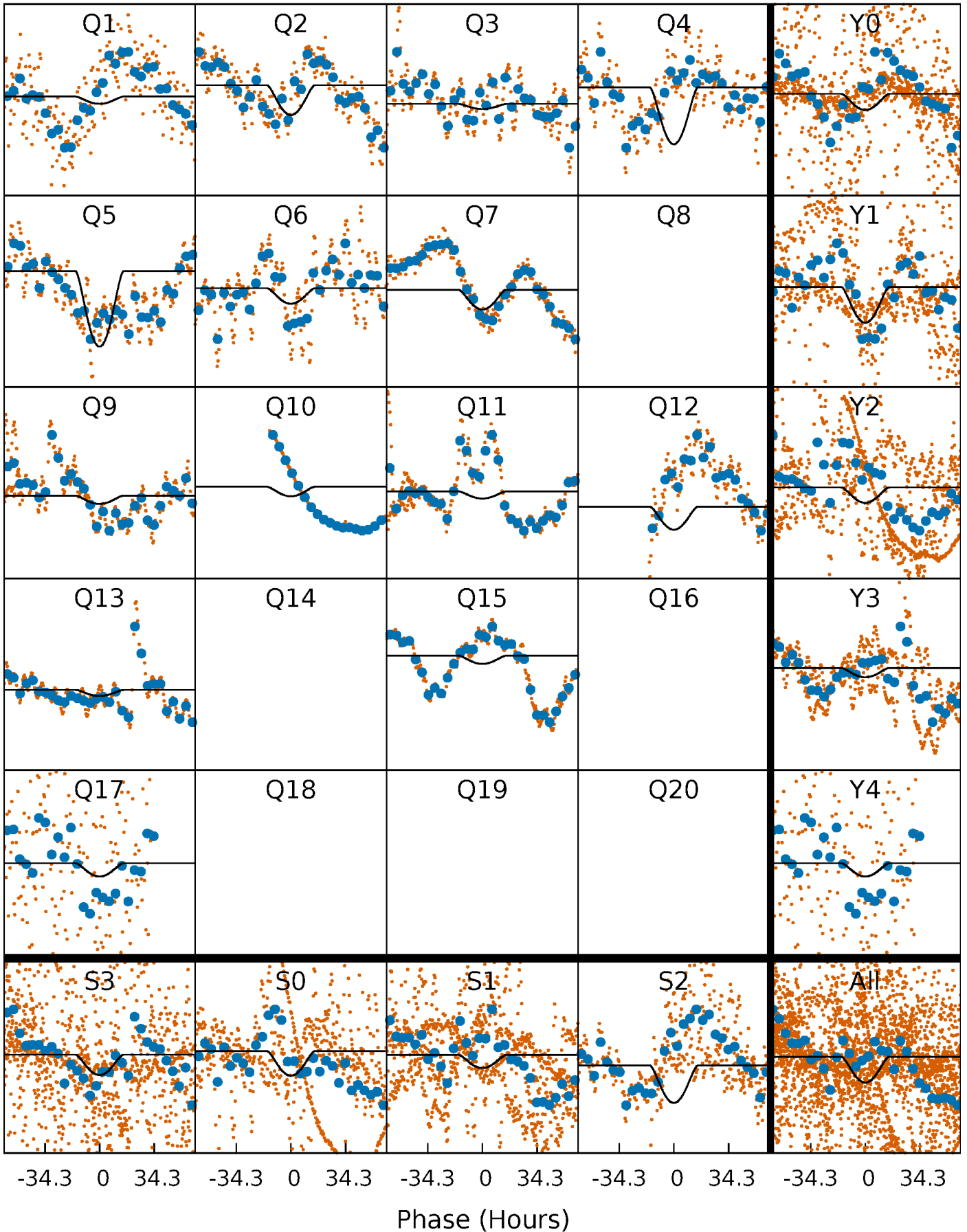
PDC Quarter-Phased Transit Curves

TCE 010978008-02 P= 96.029827 Days $T_0=139.774806$ (BKJD)



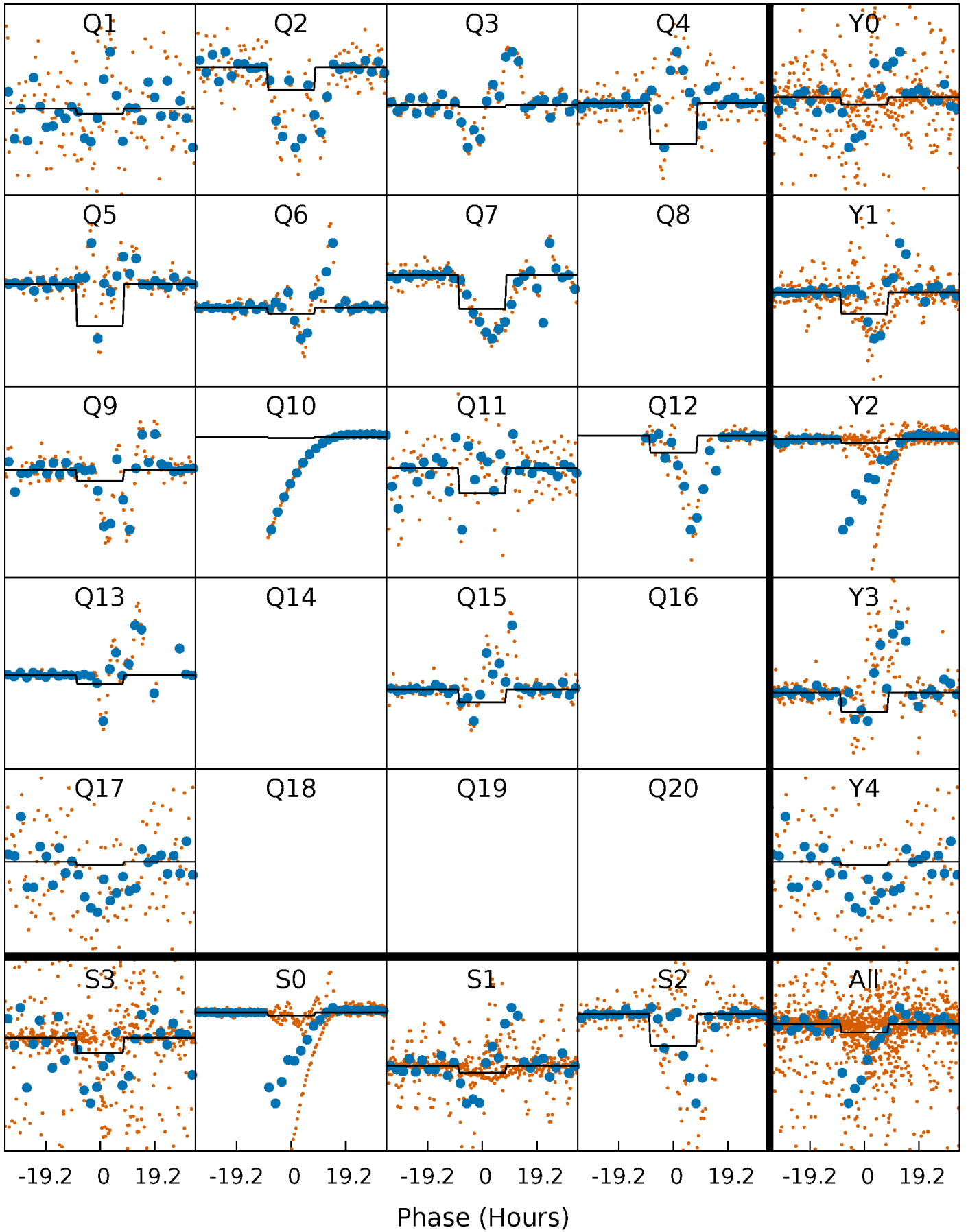
DV Quarter-Phased Transit Curves

TCE 010978008-02 $P = 96.029827$ Days $T_0 = 139.774806$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

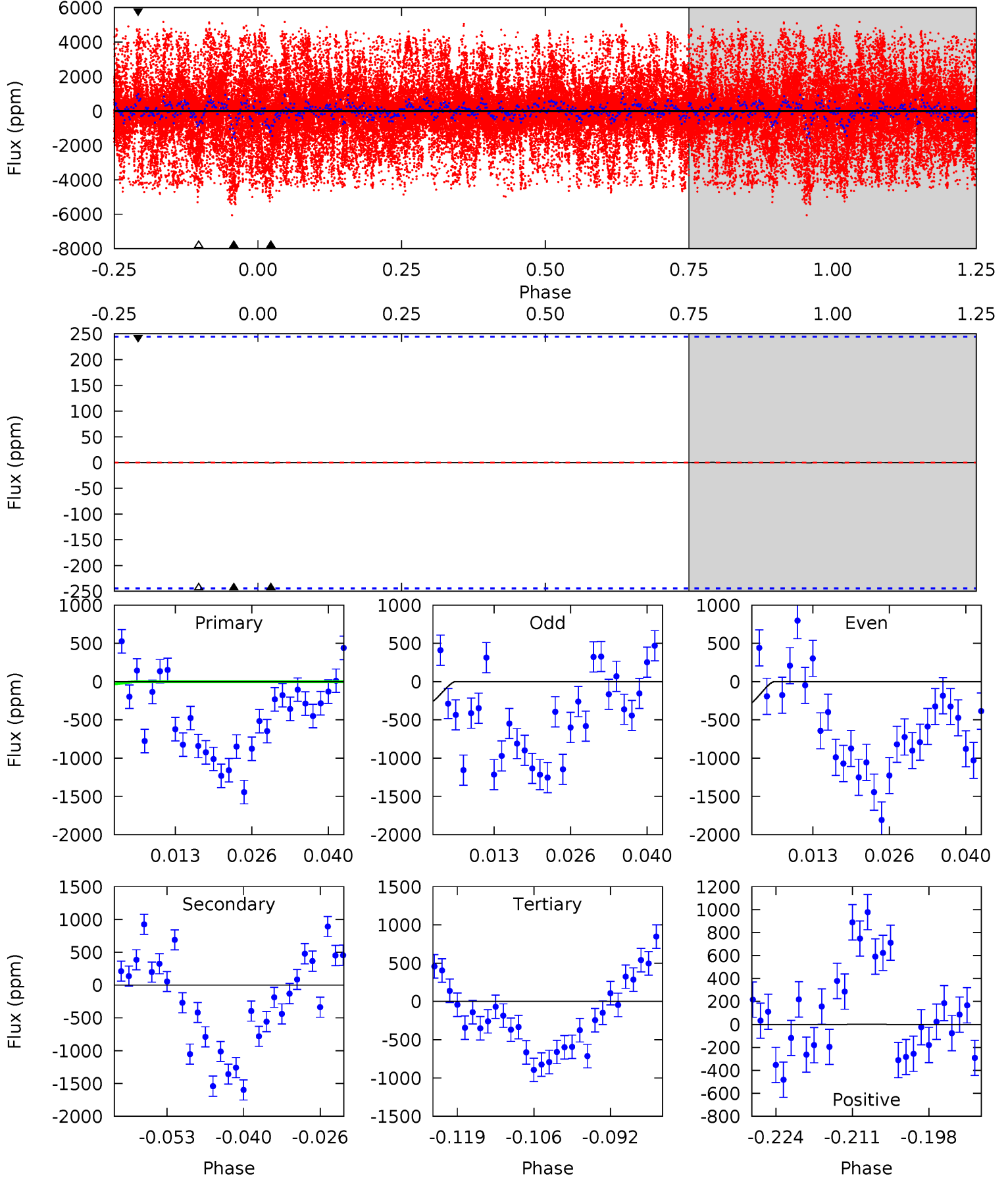
TCE 010978008-02 P= 96.030921 Days $T_0=139.589421$ (BKJD)



DV Model-Shift Uniqueness Test

010978008-02, P = 96.029827 Days, E = 43.744979 Days

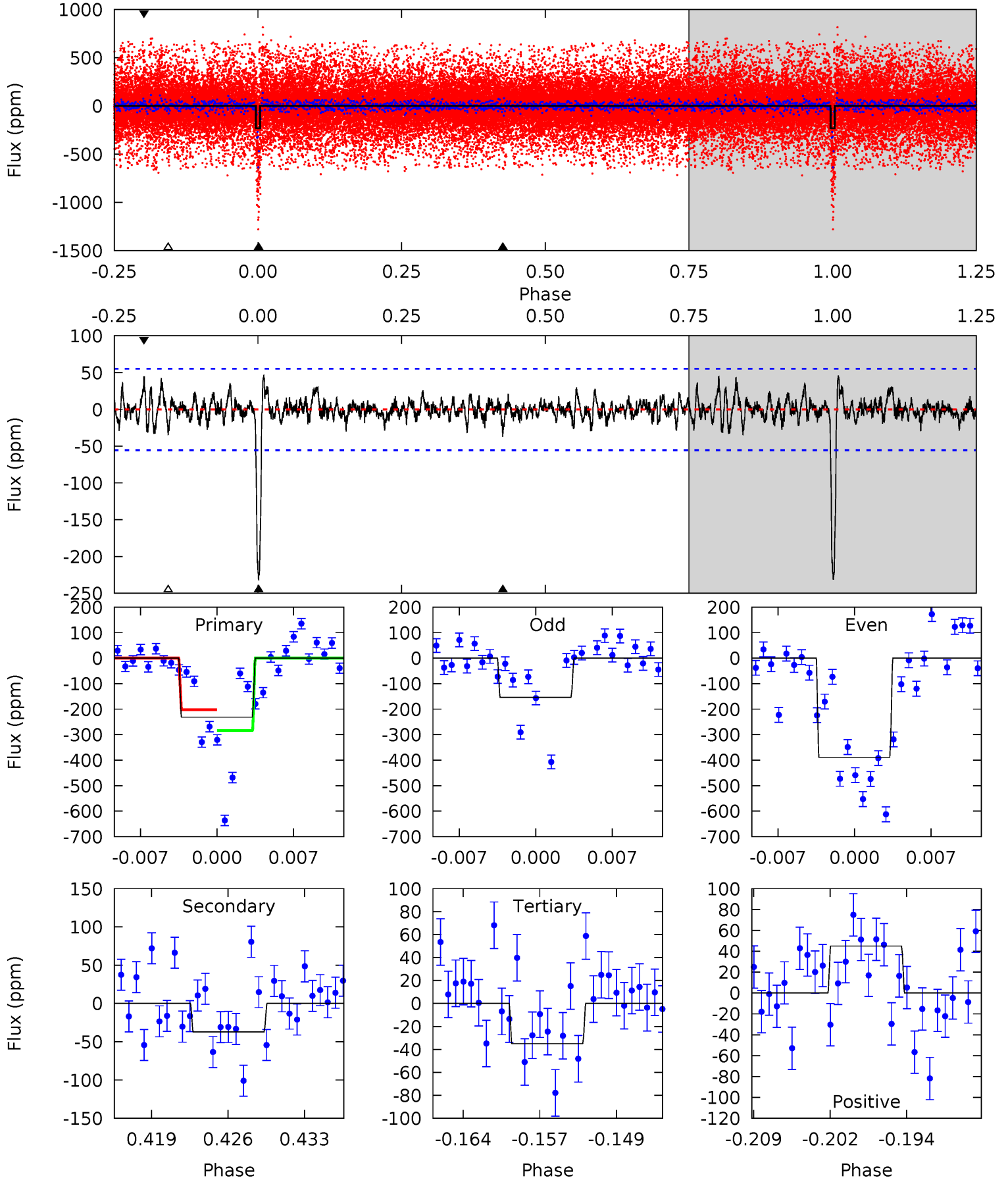
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.01	0.01	0	0	4.97	2.48	0.00	0.01	0.01	0.01	0.01	0.25	-0.55	0.36	0.20



Alt Model-Shift Uniqueness Test

010978008-02, P = 96.030921 Days, E = 43.558500 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.3	3.42	3.22	4.13	5.08	2.67	1.02	18.0	17.1	0.20	-0.71	10.4	4.72	0.17	3.72



Stellar Parameters For KIC 010978008

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3291^{+107}_{-88}	$0.169^{+0.208}_{-0.052}$	$-0.020^{+0.250}_{-0.150}$	$150.645^{+9.958}_{-29.874}$	$1.221^{+0.202}_{-0.166}$	$0.000^{+0.000}_{-0.000}$
	+3%/-3%	+123%/-31%	+1250%/-750%	+7%/-20%	+17%/-14%	+96%/-15%
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 010978008-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1 ± 49	$1246.65^{+1011.02}_{-831.30}$	3693^{+171}_{-198}	-3124^{+127}_{-129}	$0.000^{+0.006}_{-0.005}$
Alt.	-37 ± 11	$848.83^{+891.37}_{-571.61}$	3699^{+166}_{-208}	-3094^{+167}_{-126}	$0.005^{+0.045}_{-0.004}$

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 $A_{obs} \gg 1.0$

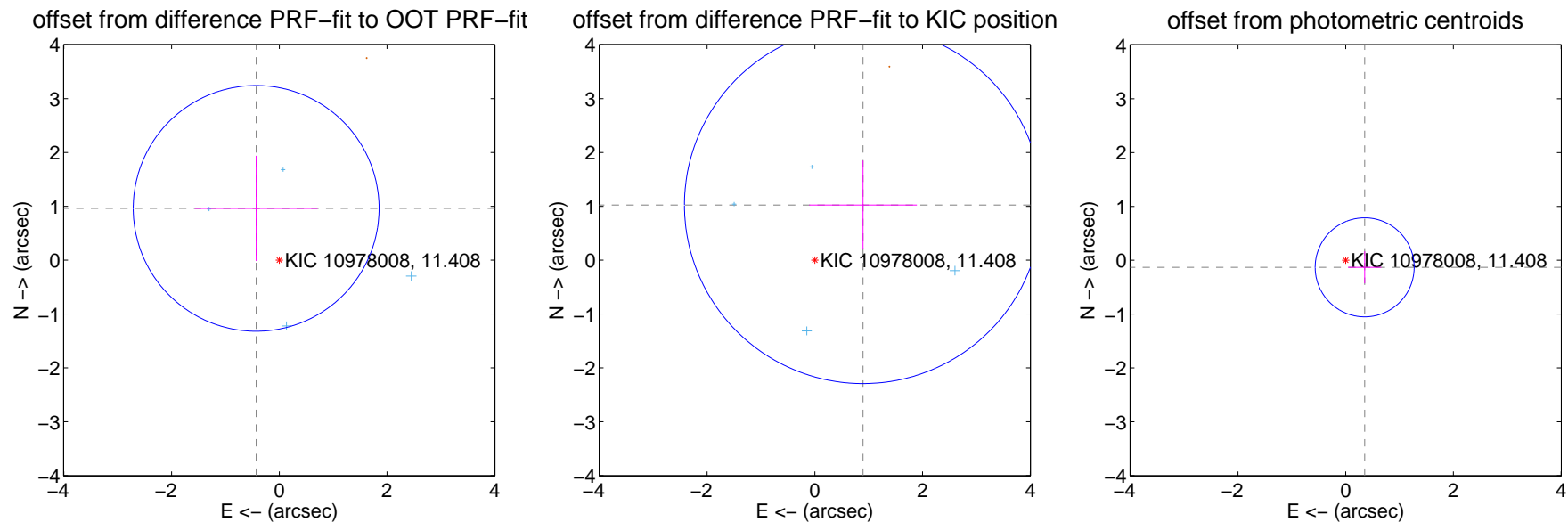
DV Centroid Data

Supplemental centroid analysis for 010978008-02. **Kepler magnitude: 11.41.** Transit SNR 11.43

There are 4 quarters with good PRF difference image offsets

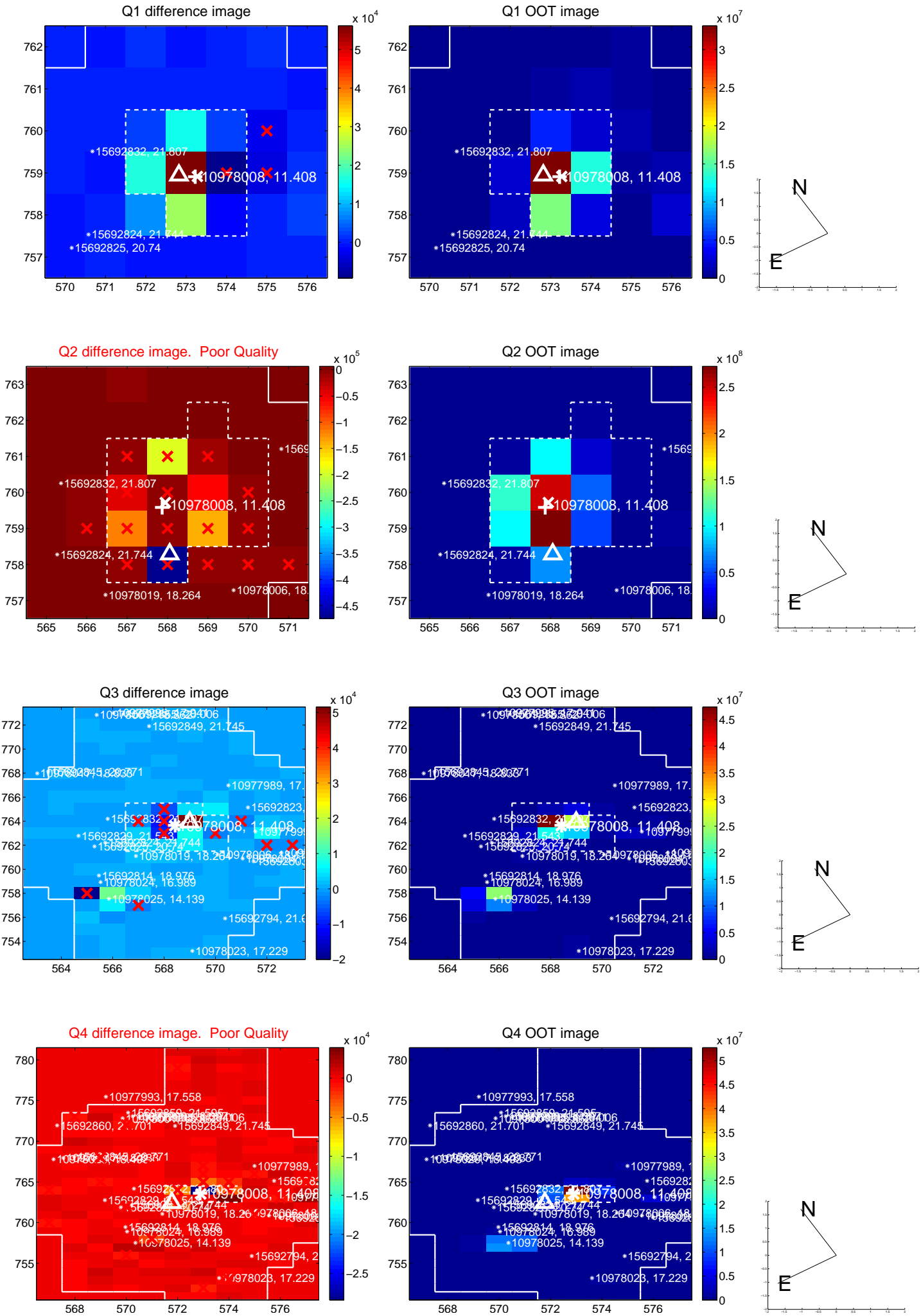
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.054 ± 0.760	1.39	0.430 ± 1.142	0.962 ± 0.976
PRF-fit source offset from KIC position	1.360 ± 1.105	1.23	-0.895 ± 1.000	1.024 ± 0.825
photometric centroid source offset	0.38 ± 0.31	1.23	-0.35 ± 0.31	-0.13 ± 0.30

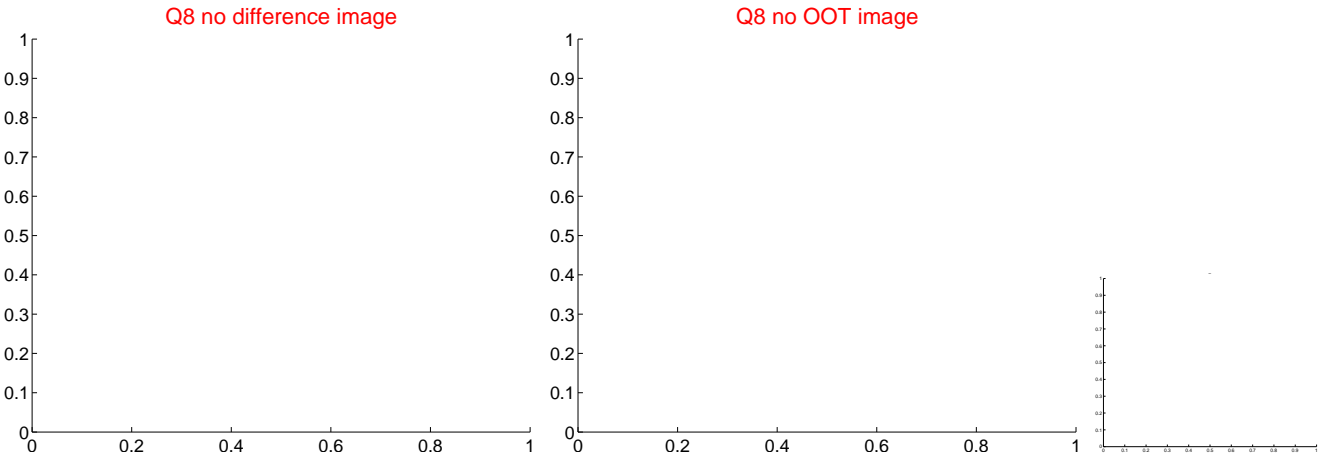
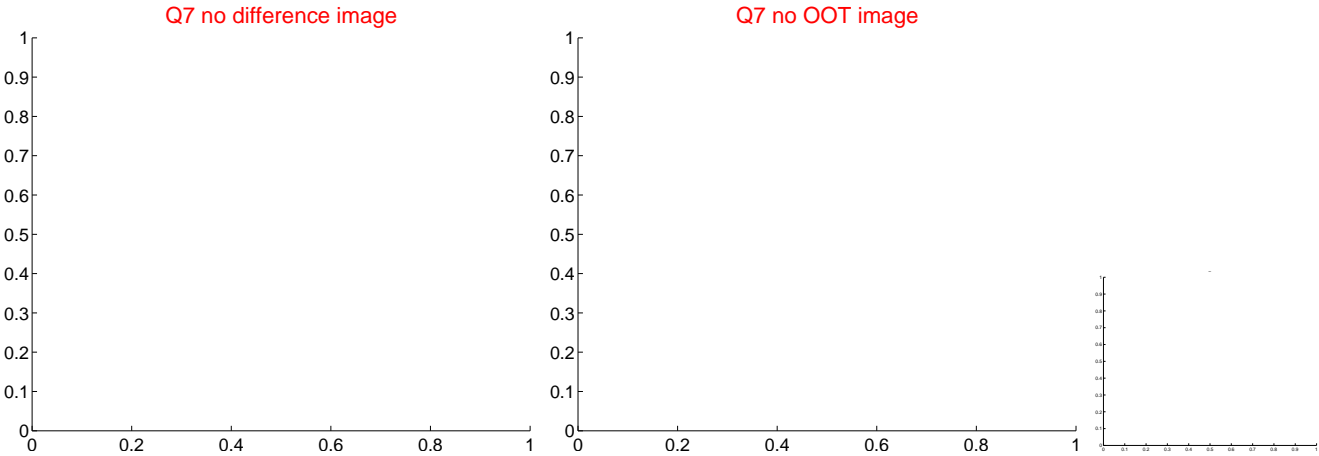
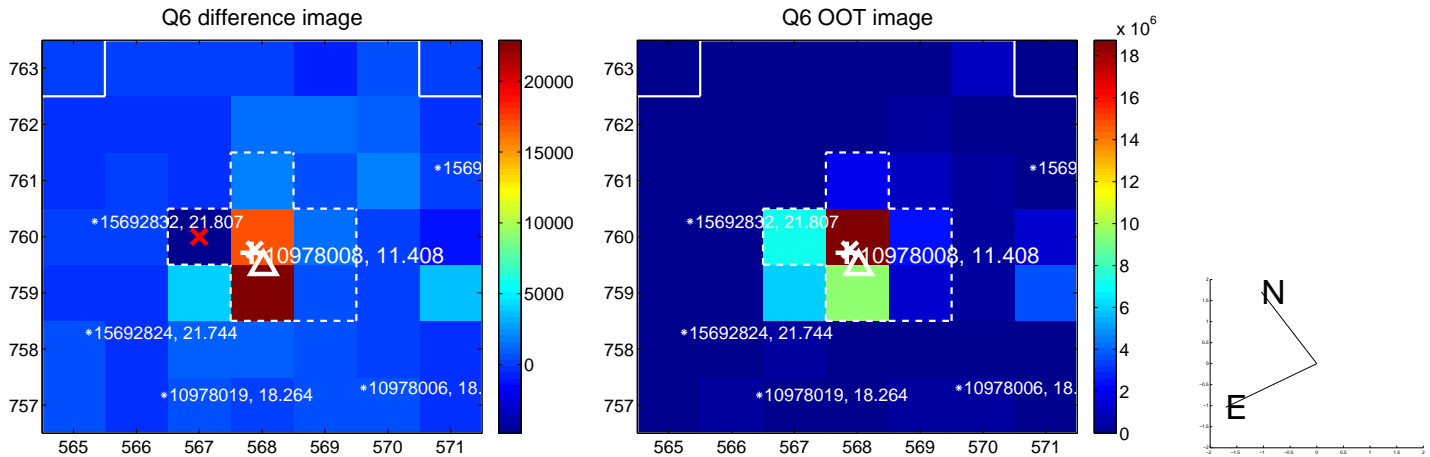
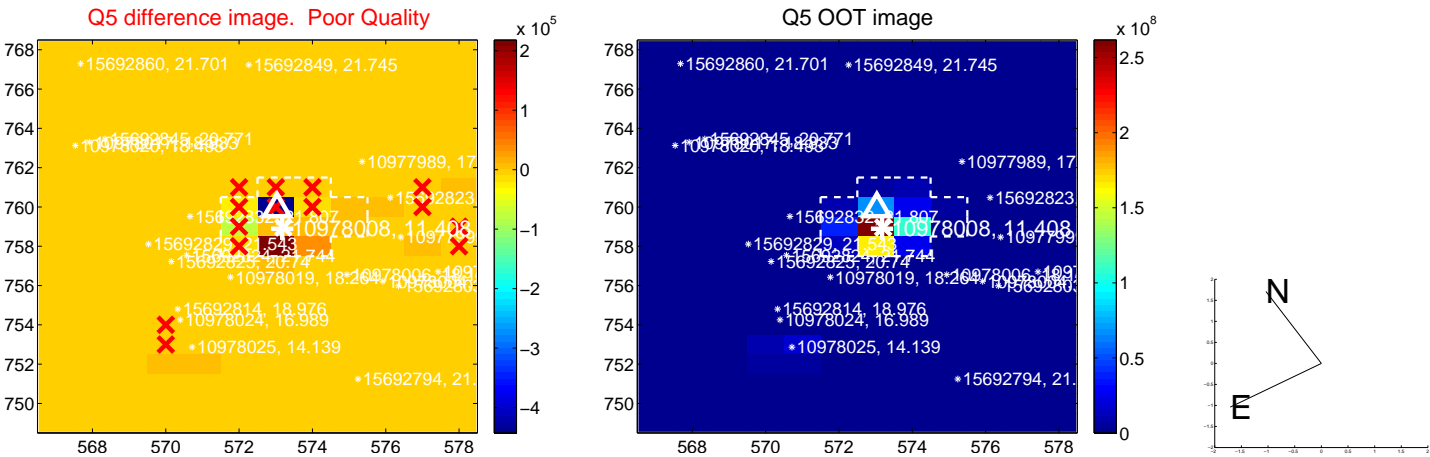


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

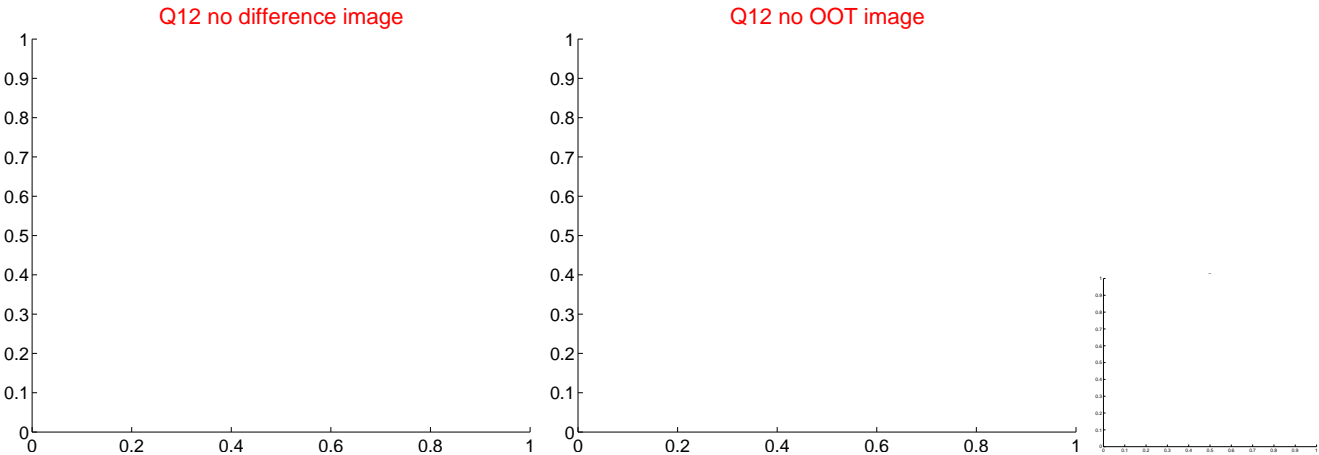
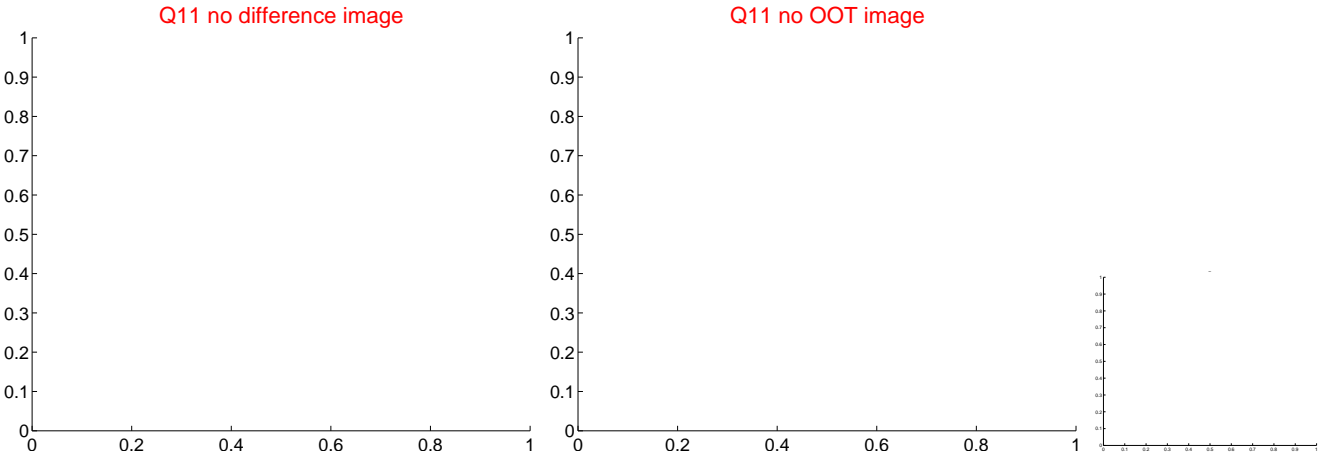
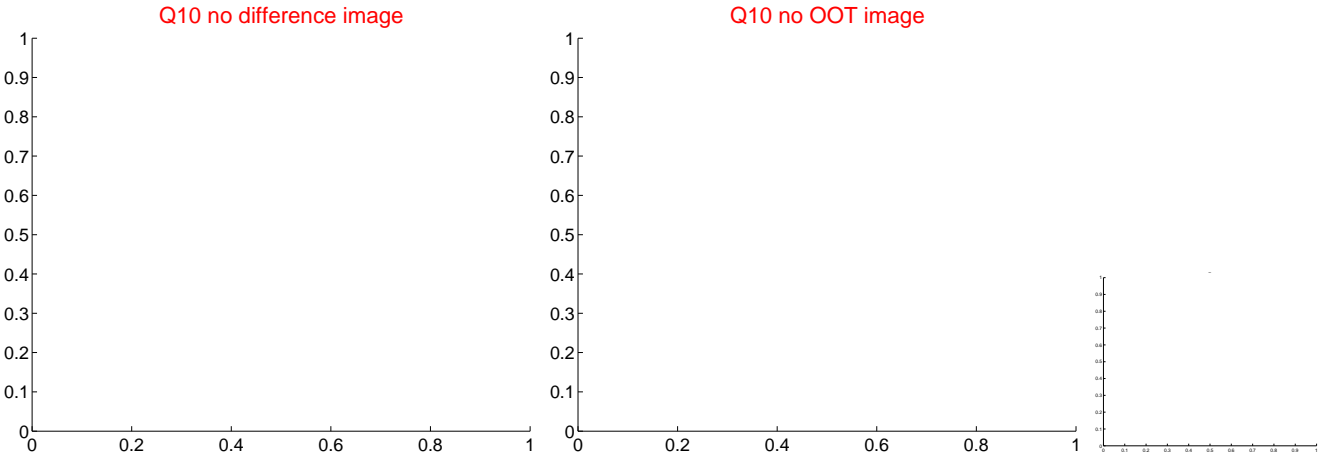
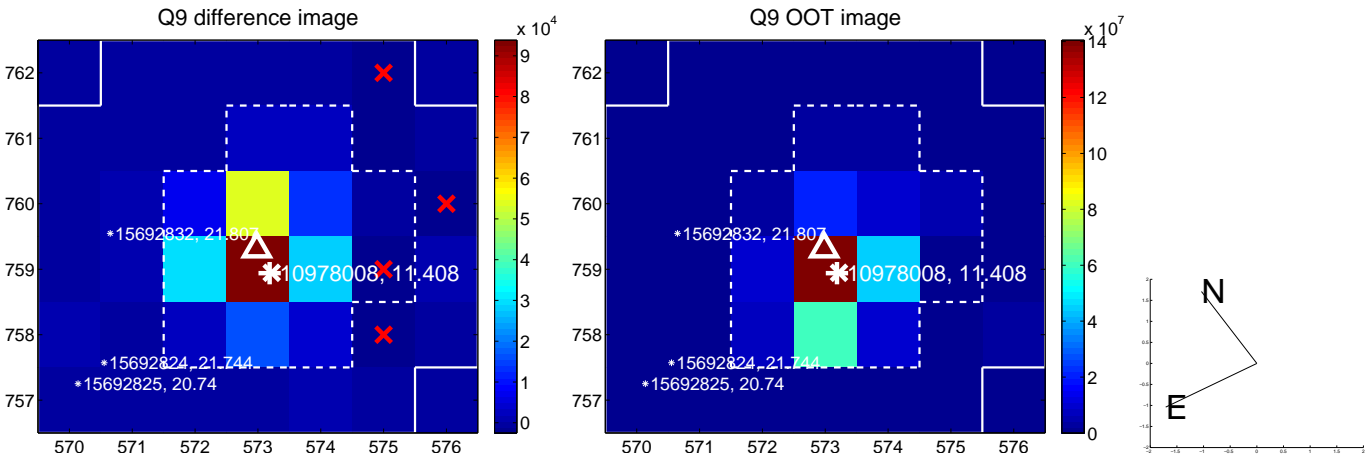
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



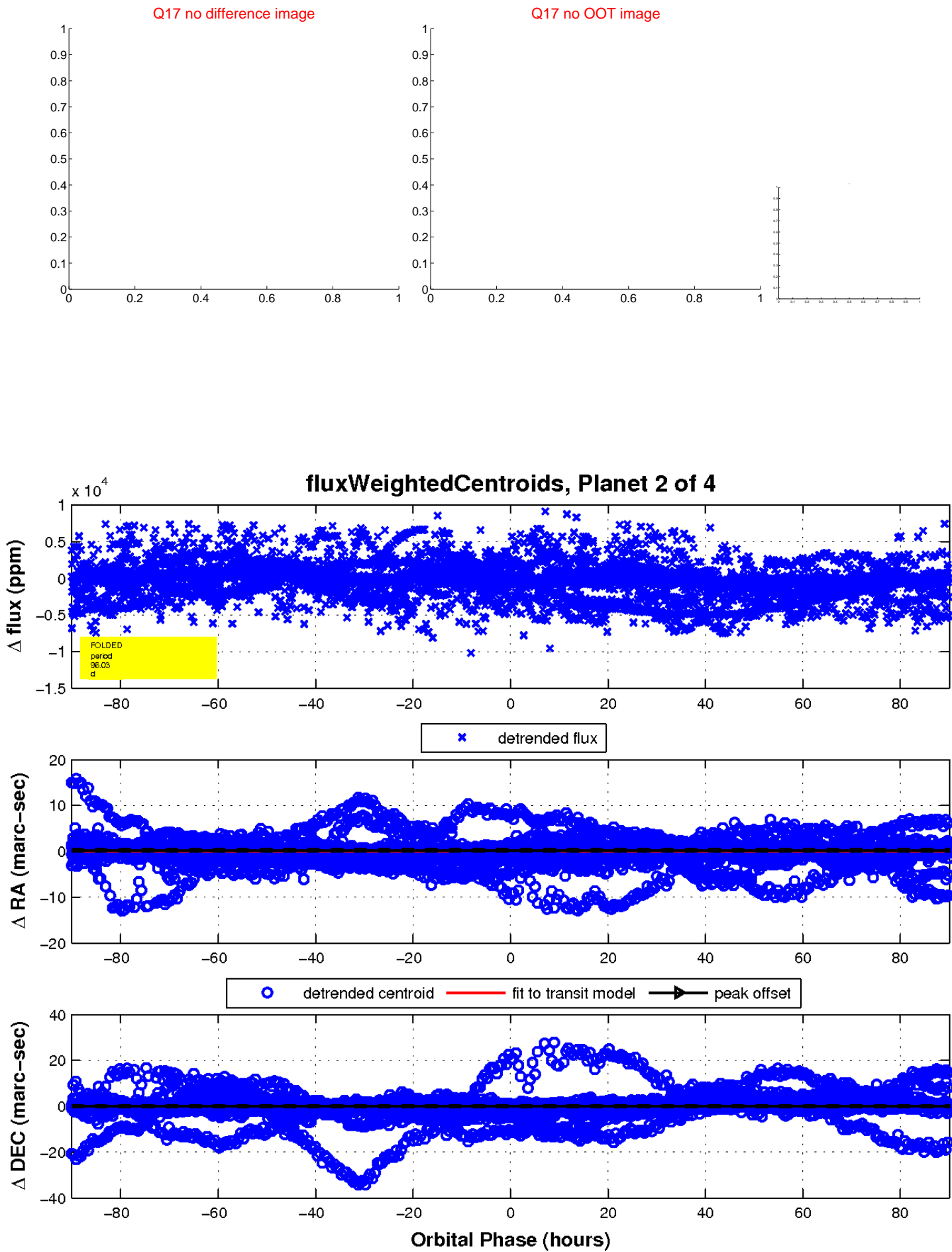
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



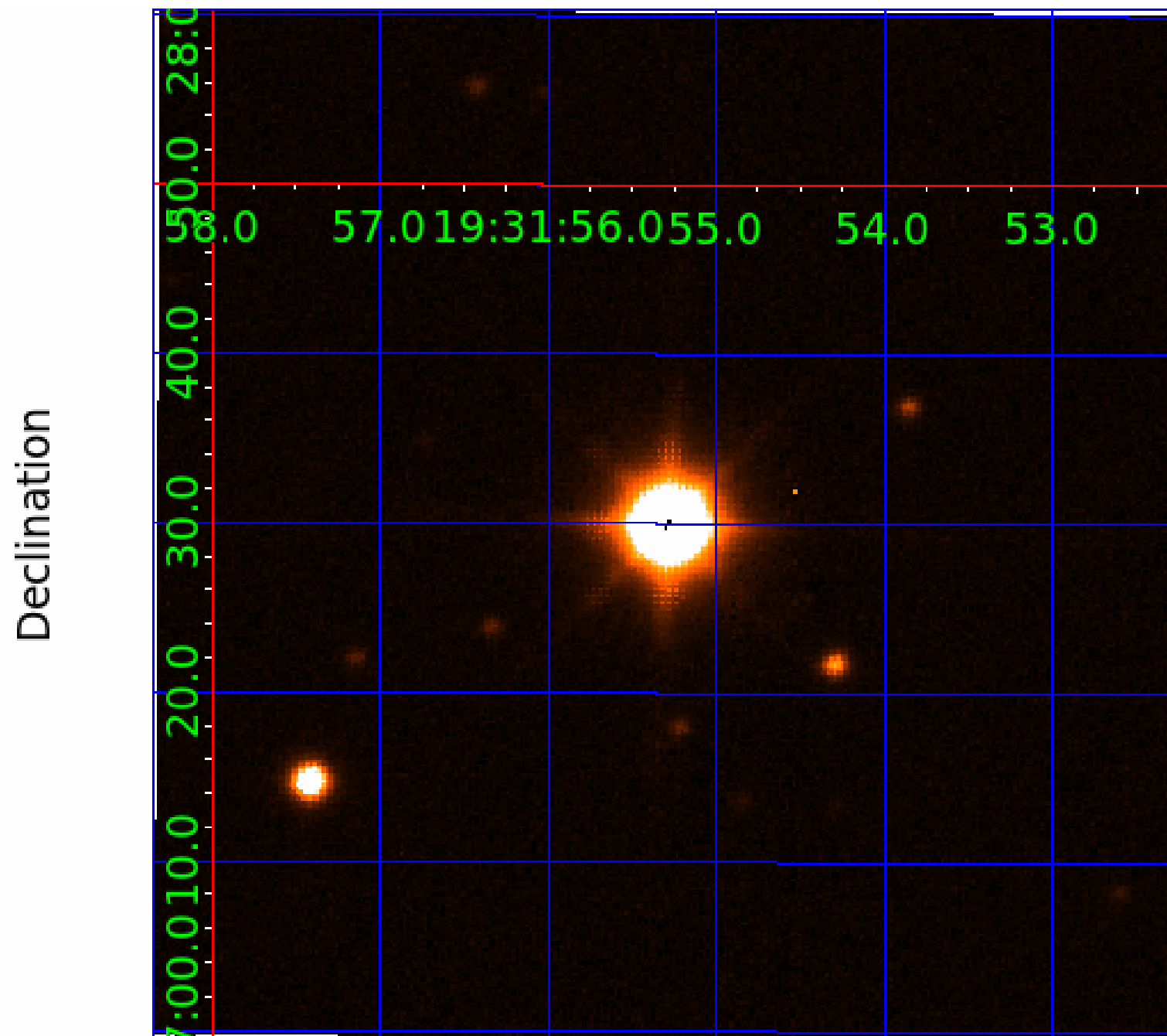
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 010978008

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})
010978008-01	OBS	No	352.083861	202.796873	219.4	7.500	13.8	-1.0	150.65	3291	204.76	2191.03
010978008-02	OBS	No	96.029827	139.774806	764.9	30.046	14.5	11.4	150.65	3291	931.80	0.00
010978008-03	OBS	No	296.647613	294.907956	203.9	9.000	13.9	-1.0	150.65	3291	197.37	2753.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010978008-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST
010978008-02	OBS	FP	0.00	1	0	0	0	LPP_DV—INCONSISTENT_TRANS—CENT_SATURATED
010978008-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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

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

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

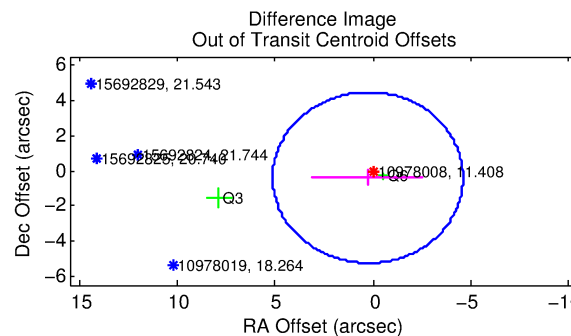
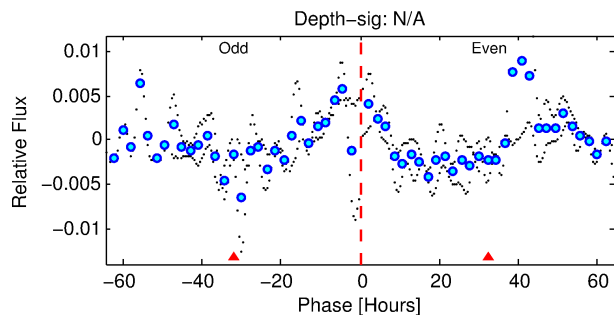
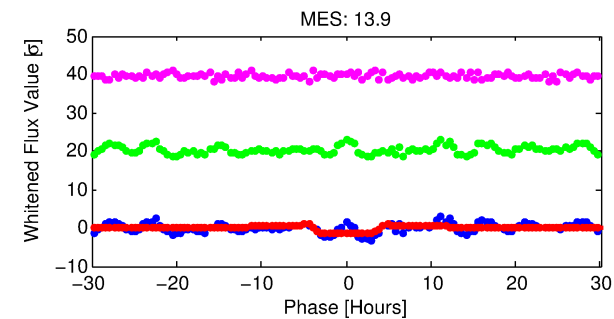
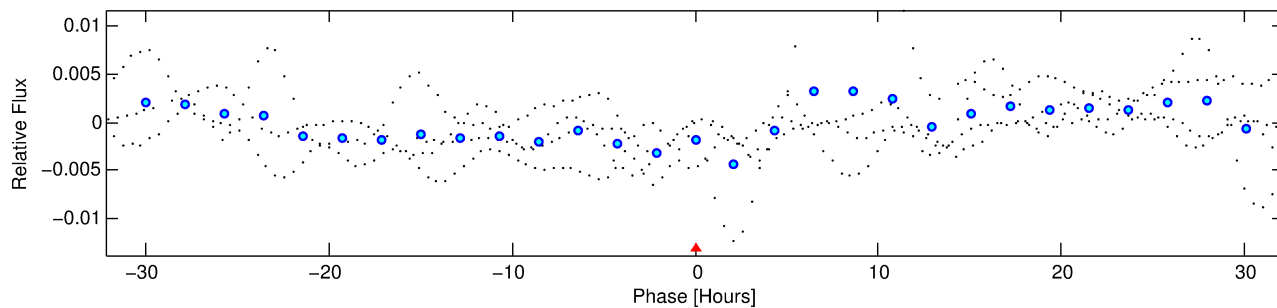
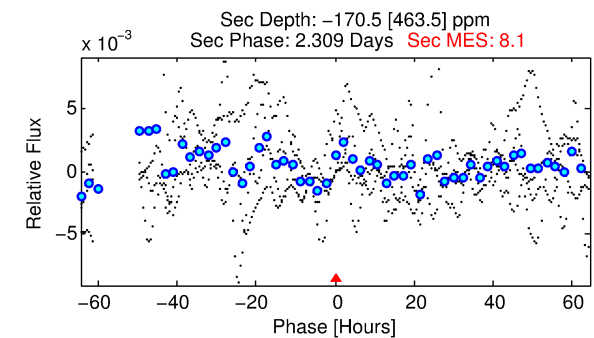
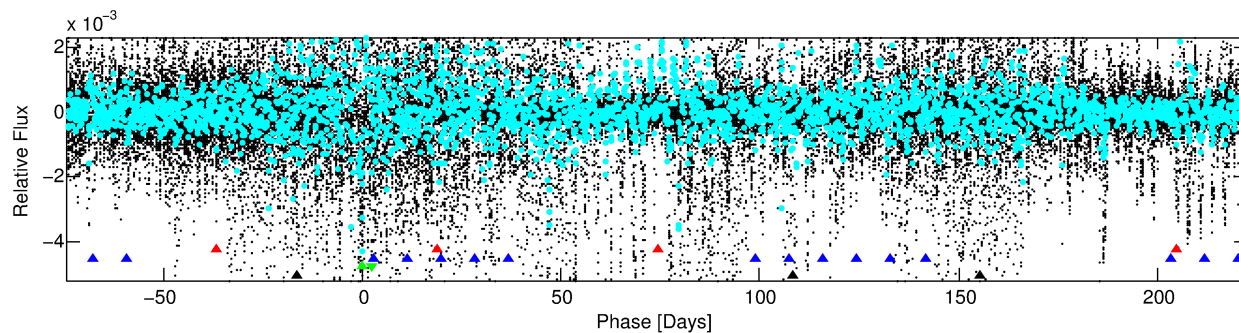
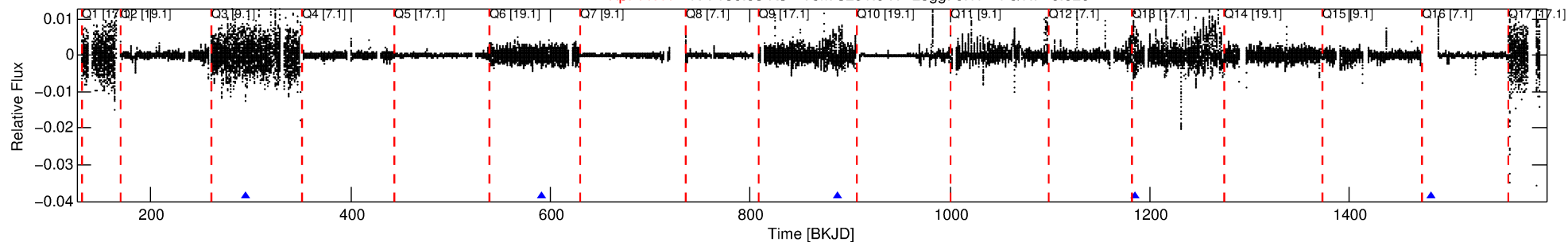
Ephemeris Match Information For 010978008-03

No Significant Match Found

DV One-Page Summary

KIC: 10978008 Candidate: 3 of 4 Period: 296.648 d

Kp: 11.41 R*: 150.65 Rs Teff: 3291.0 K Logg: 0.17 Fe/H: -0.020



TPS TCE Results:

Period = 296.64761 d
Epoch = 294.9080 BKJD

DV fit results are unavailable

DV Diagnostic Results:

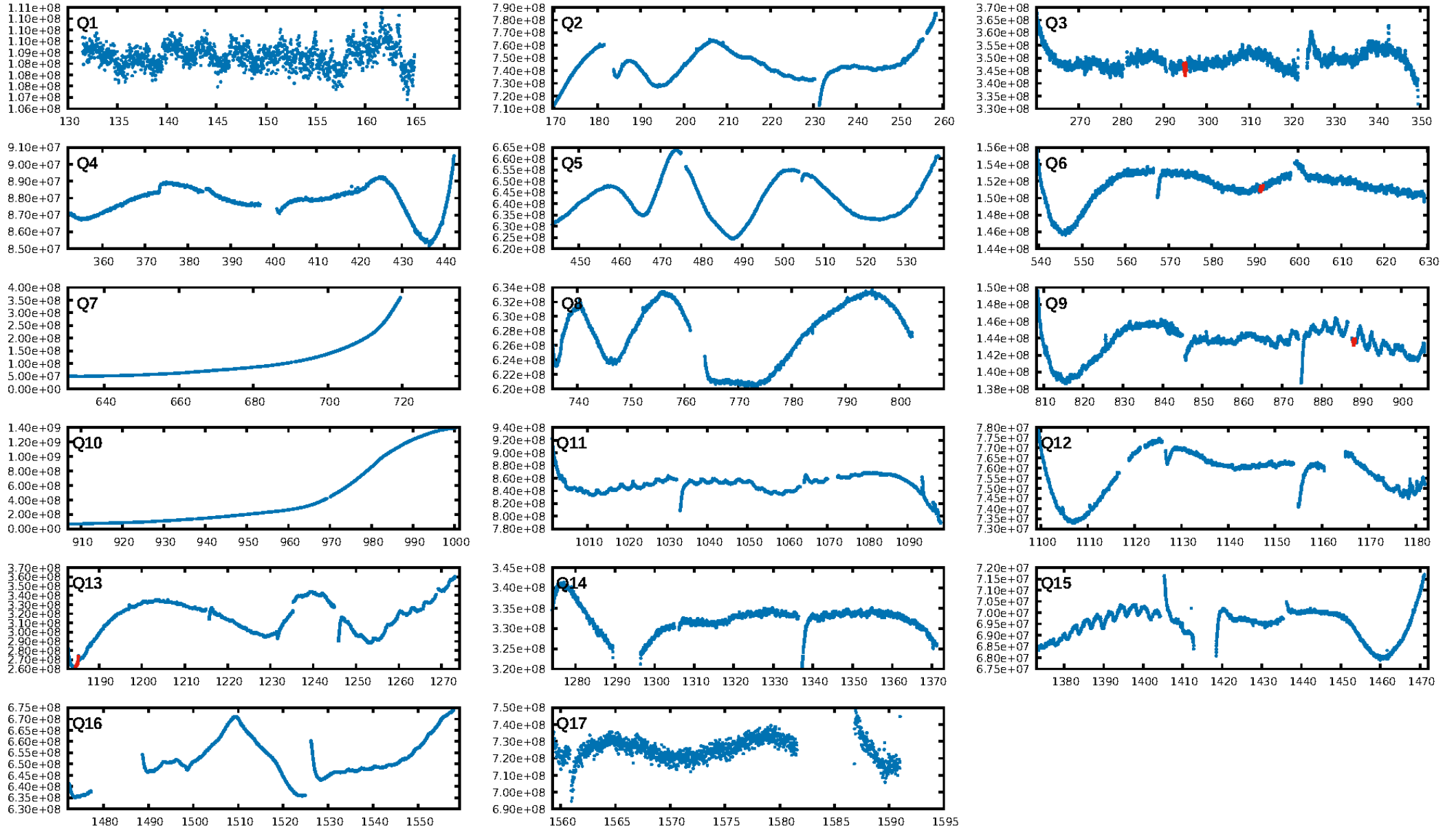
ShortPeriod-sig: 100.0% [153.51σ]
LongPeriod-sig: 100.0% [113.57σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.4916

Centroid-sig: 17.9%
Centroid-so: 0.209 arcsec [1.29σ]
OotOffset-rm: 0.473 arcsec [0.29σ]
KicOffset-rm: 0.682 arcsec [0.17σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

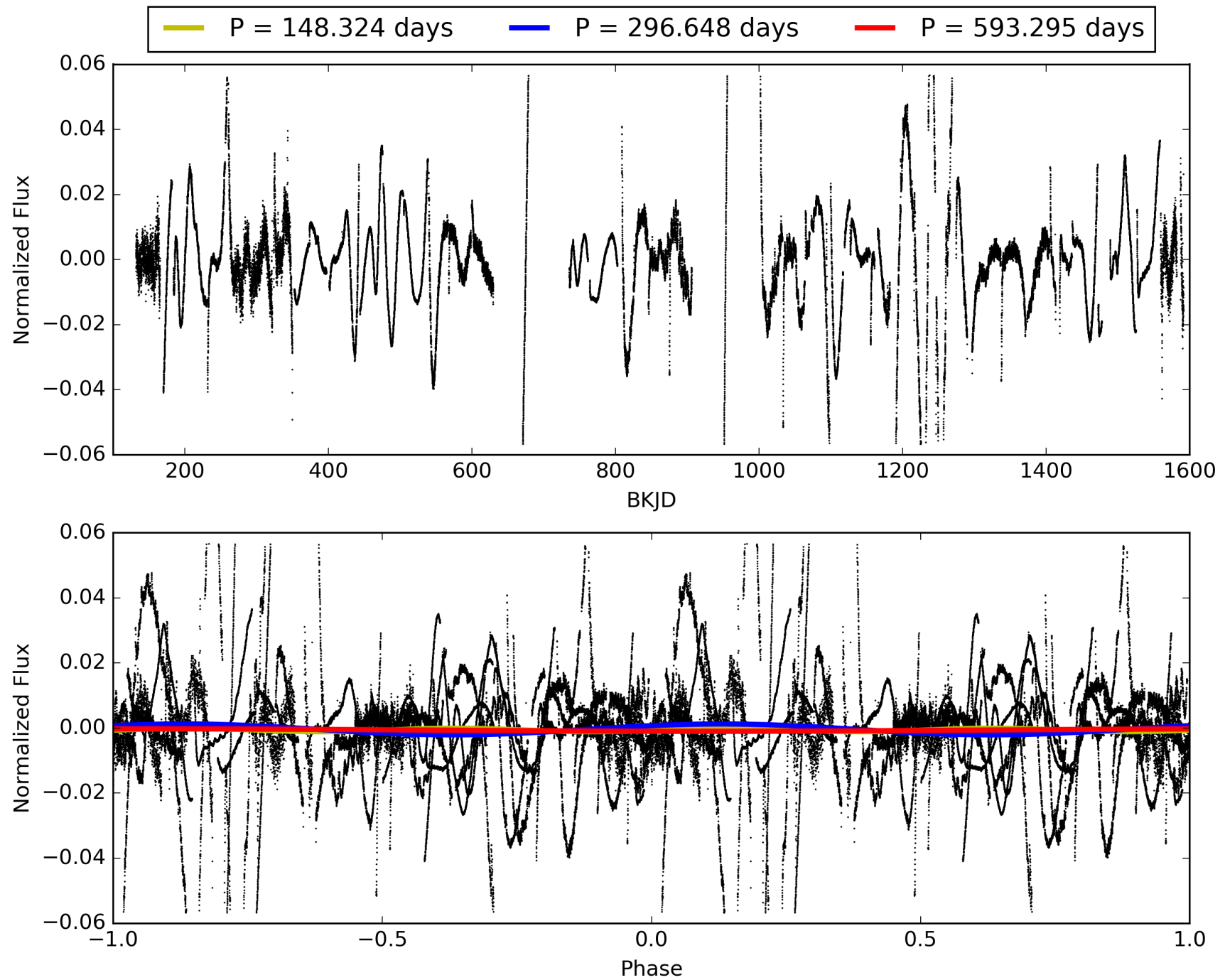
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:03:22 Z

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

TCE 010978008-03, PDC Light Curves

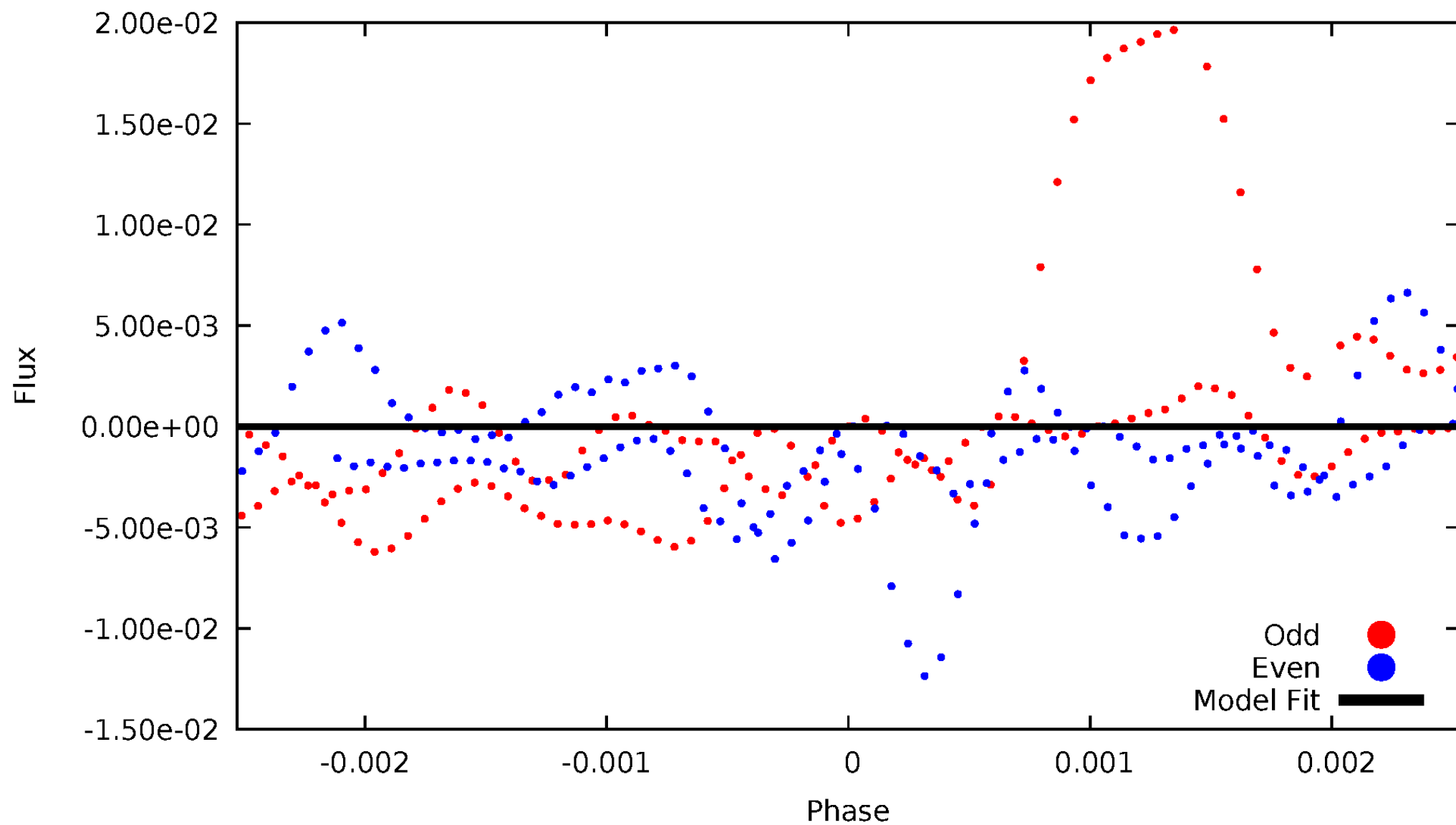


TCE 010978008-03



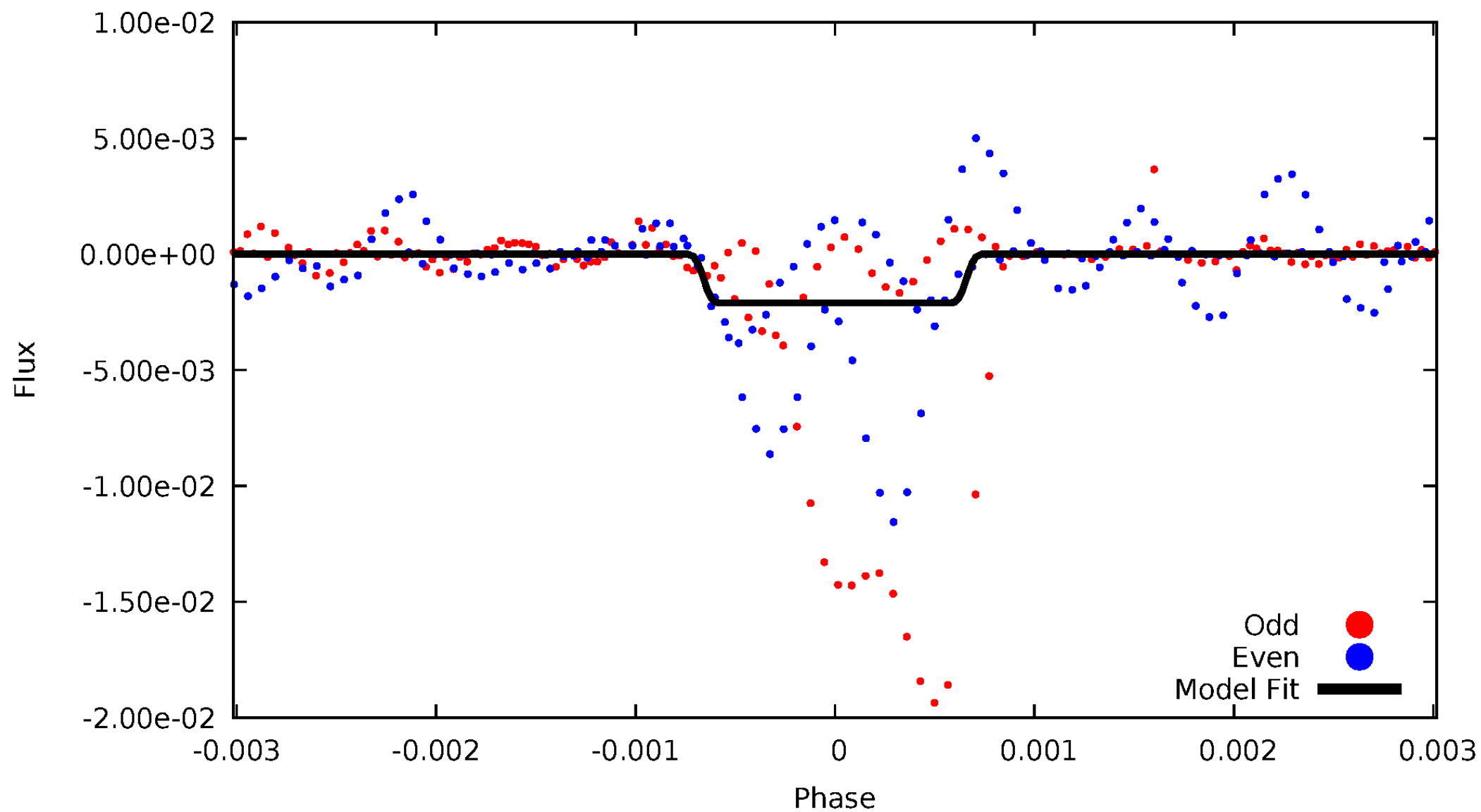
DV Odd/Even

TCE 010978008-03



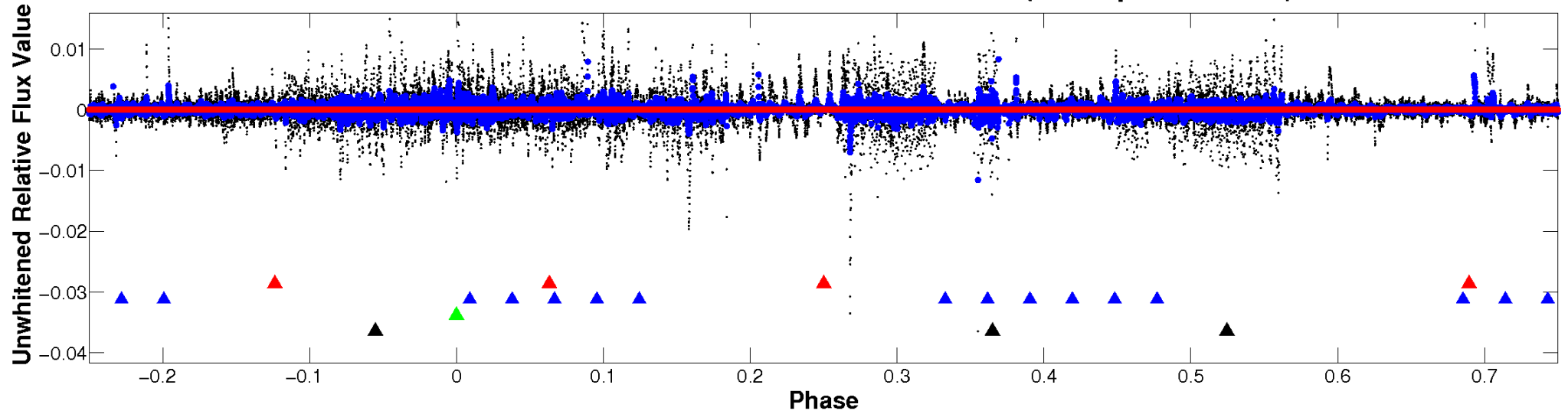
ALT Odd/Even

TCE 010978008-03

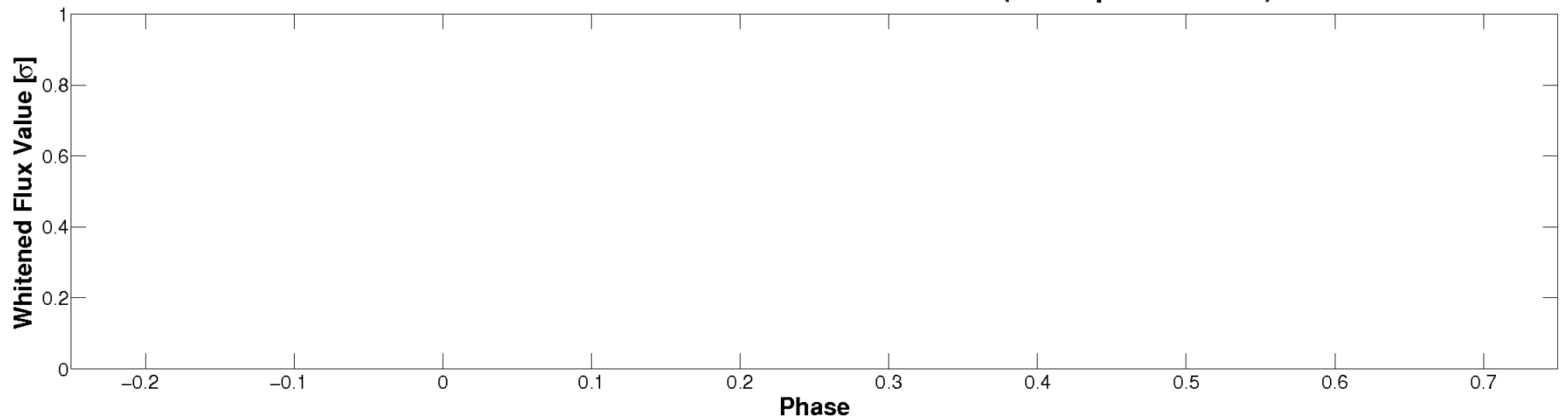


Non-Whitened Vs. Whitened Light Curve

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

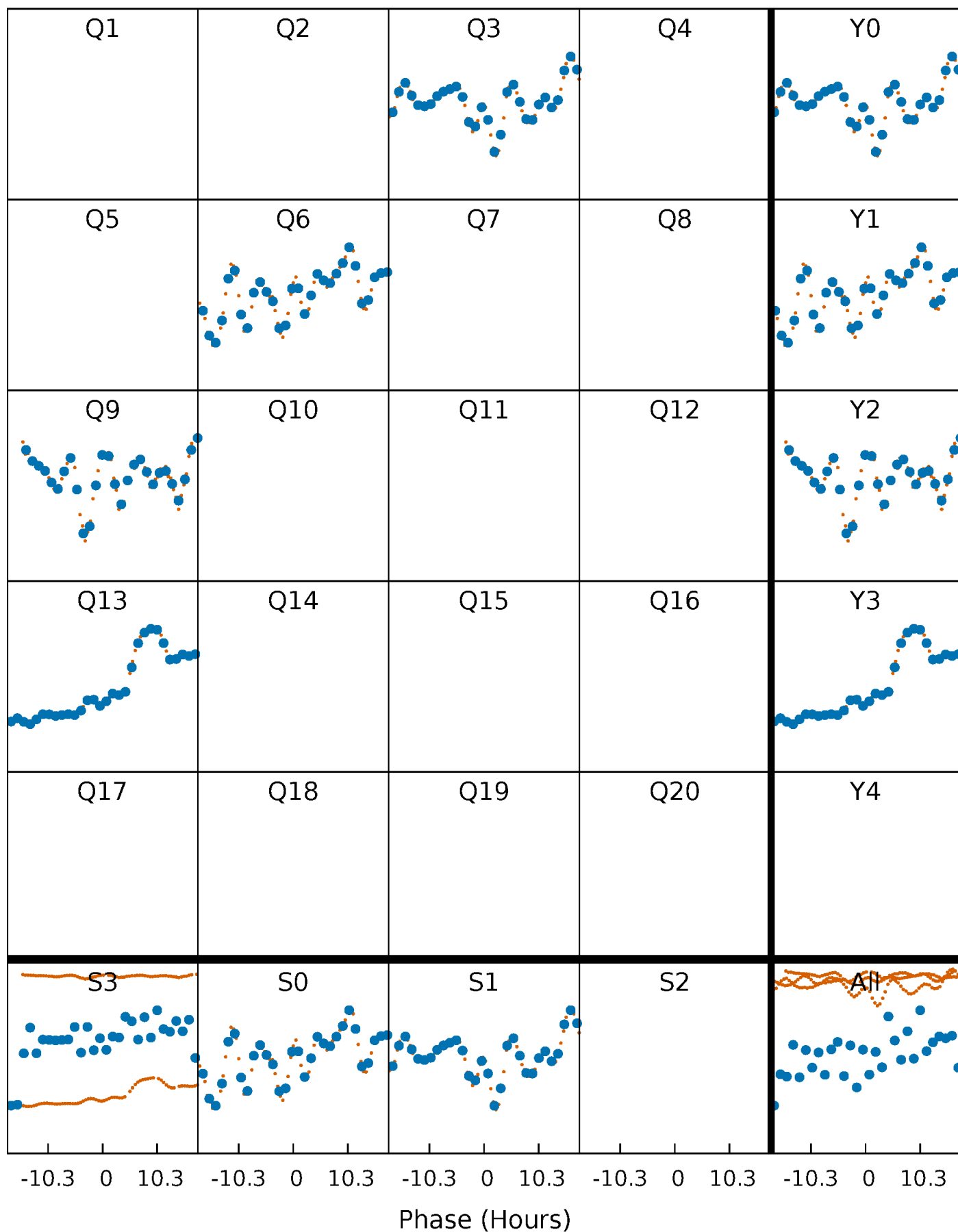


Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)



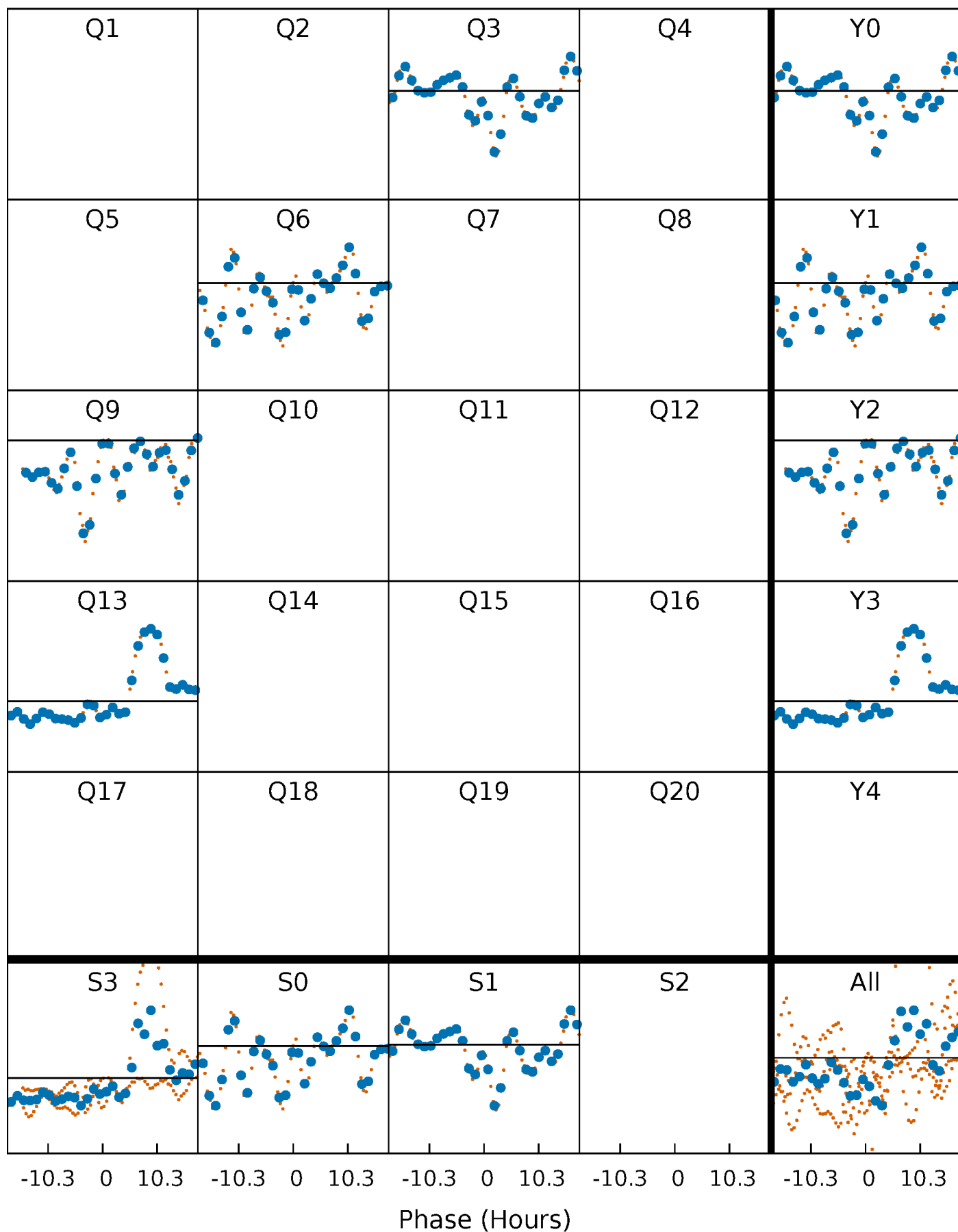
PDC Quarter-Phased Transit Curves

TCE 010978008-03 $P=296.647613$ Days $T_0=294.907956$ (BKJD)



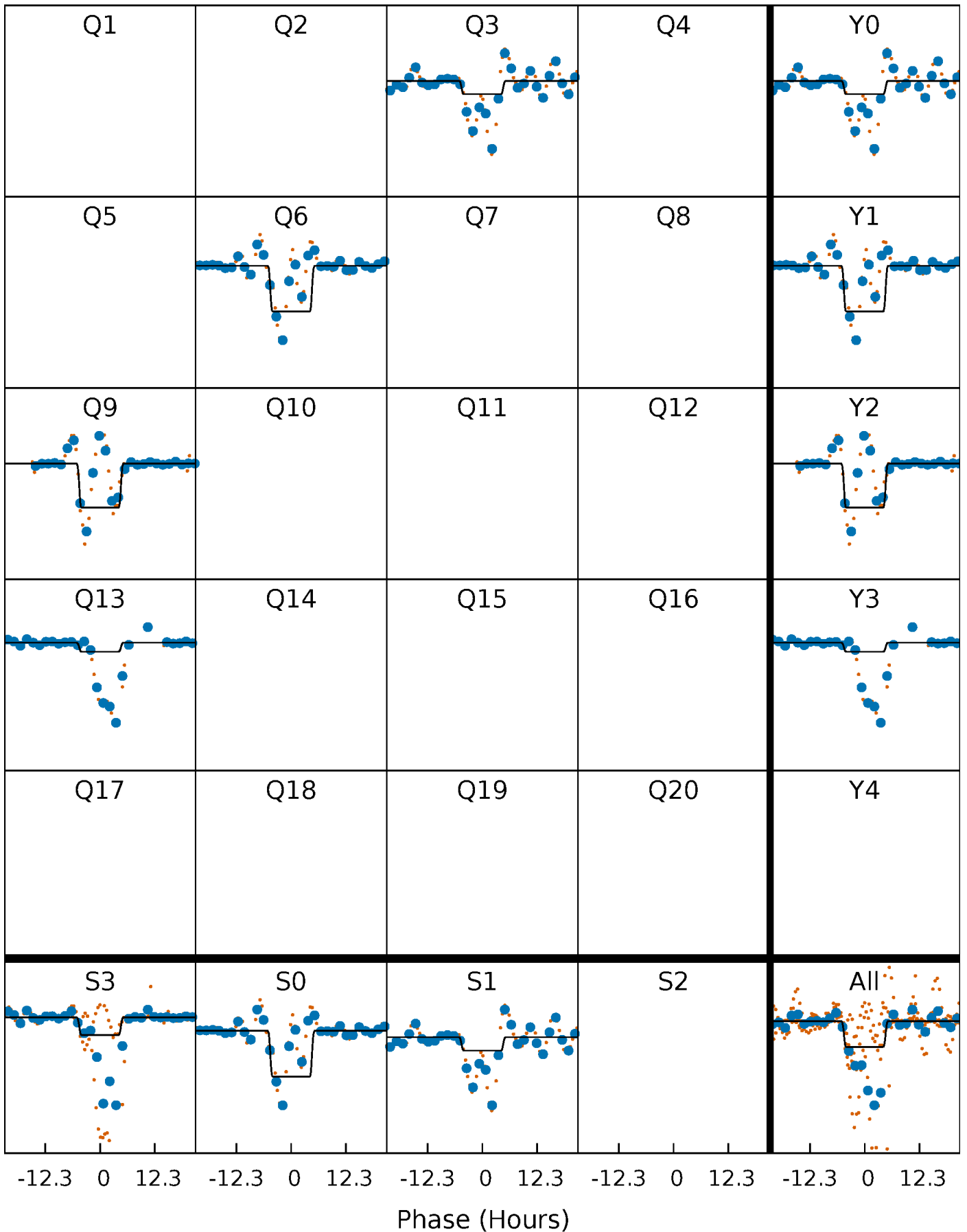
DV Quarter-Phased Transit Curves

TCE 010978008-03 $P=296.647613$ Days $T_0=294.907956$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

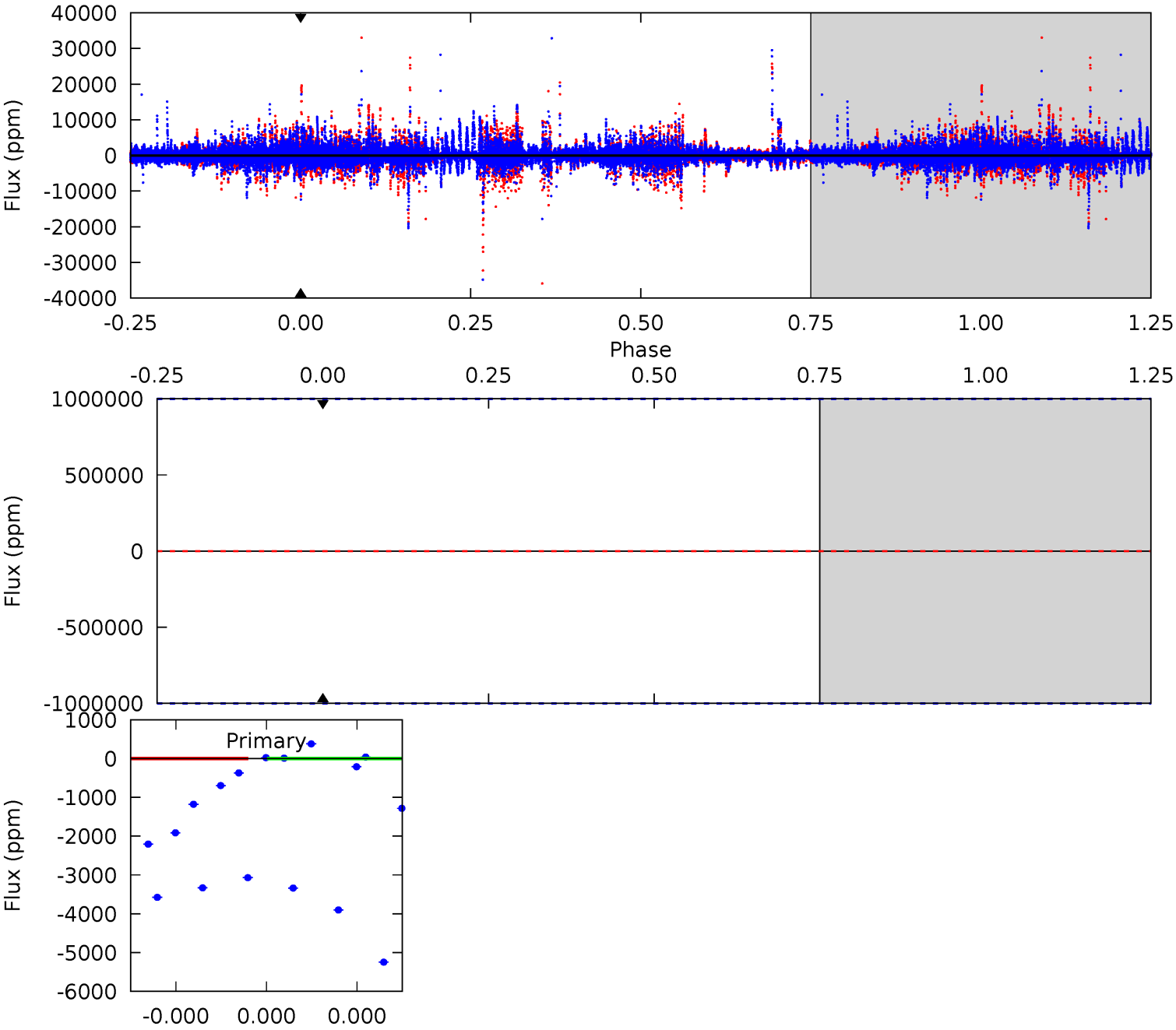
TCE 010978008-03 $P=296.647613$ Days $T_0=294.914547$ (BKJD)



DV Model-Shift Uniqueness Test

010978008-03, P = 296.647613 Days, E = 294.907956 Days

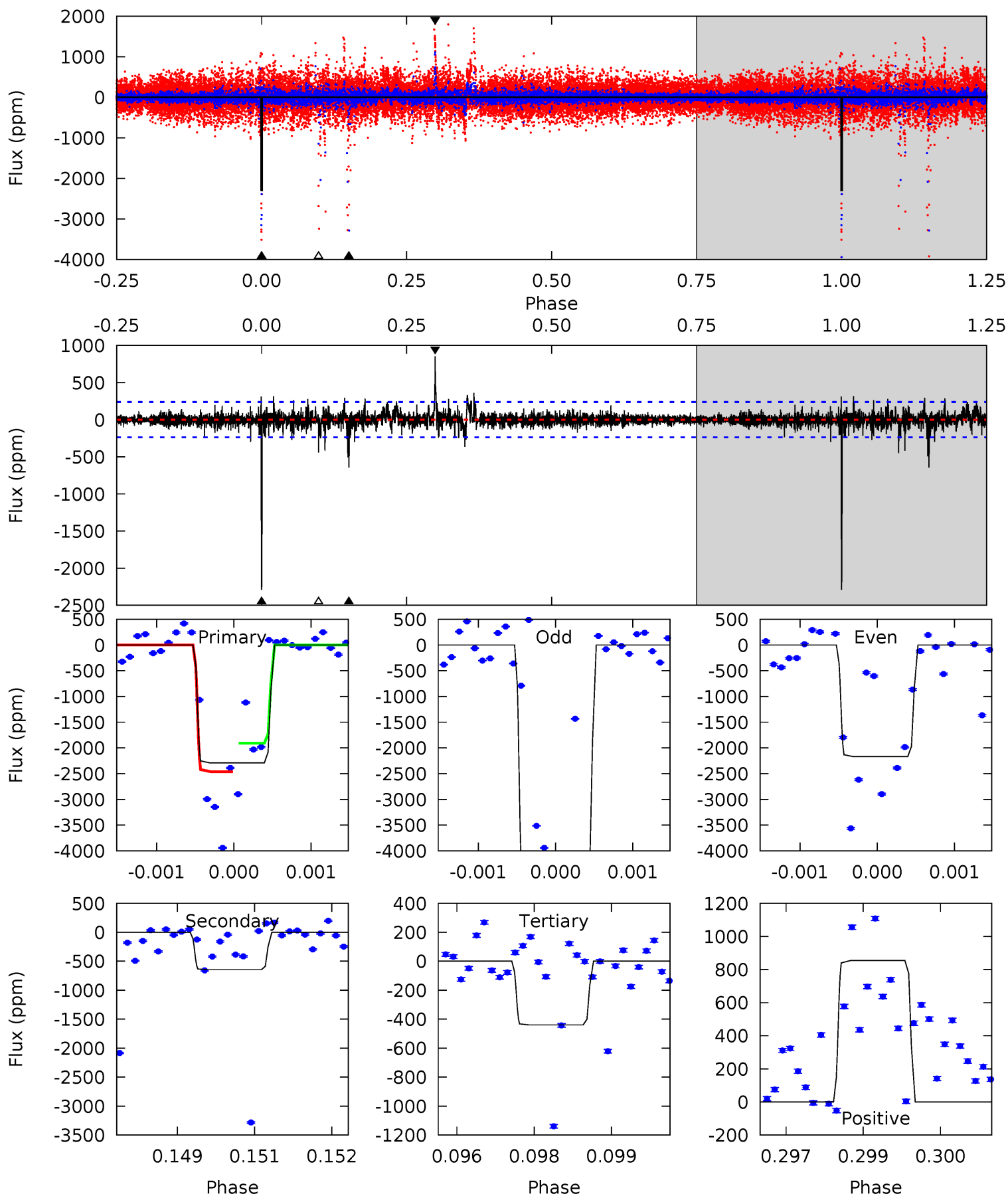
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010978008-03, P = 296.647613 Days, E = 294.914547 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
52.0	14.6	9.98	19.4	5.39	3.20	1.39	42.0	32.6	4.65	-4.76	5.10	1.34	0.27	0



Stellar Parameters For KIC 010978008

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3291^{+107}_{-88}	$0.169^{+0.208}_{-0.052}$	$-0.020^{+0.250}_{-0.150}$	$150.645^{+9.958}_{-29.874}$	$1.221^{+0.202}_{-0.166}$	$0.000^{+0.000}_{-0.000}$
	+3%/-3%	+123%/-31%	+1250%/-750%	+7%/-20%	+17%/-14%	+96%/-15%
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 010978008-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$1202.81^{+1158.69}_{-855.25}$	2541^{+119}_{-138}	-2751^{+9305}_{-3692}	$-0.195^{+64.523}_{-58.069}$
Alt.	-645 ± 44	$1341.90^{+1299.34}_{-861.45}$	2531^{+123}_{-148}	-2272^{+5318}_{-241}	$0.174^{+1.186}_{-0.130}$

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

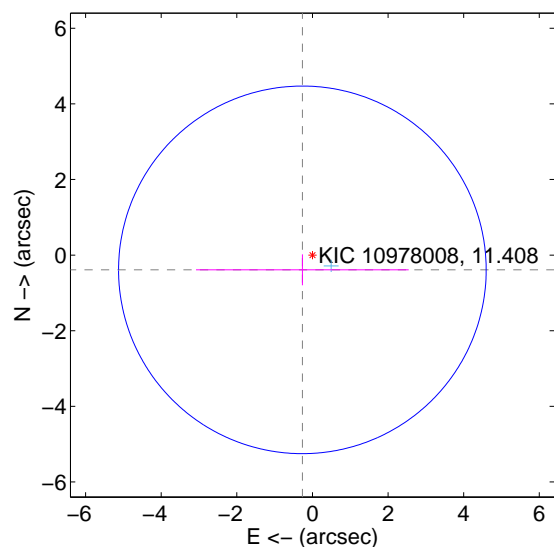
Supplemental centroid analysis for 010978008-03. **Kepler magnitude: 11.41.** Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

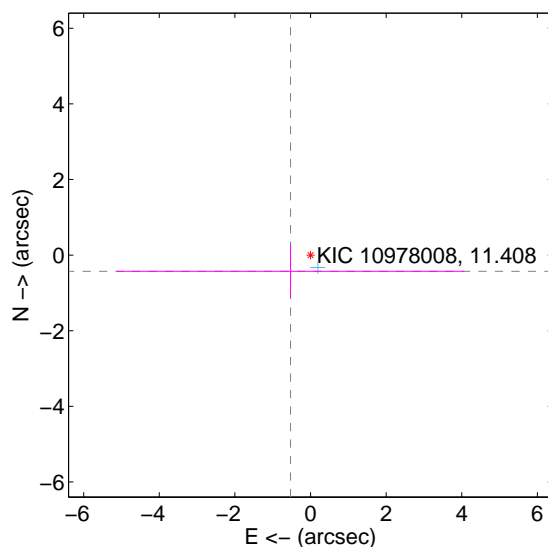
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.473 ± 1.621	0.29	0.266 ± 2.814	-0.391 ± 0.409
PRF-fit source offset from KIC position	0.682 ± 4.008	0.17	0.530 ± 4.601	-0.430 ± 0.691
photometric centroid source offset	0.21 ± 0.16	1.29	0.17 ± 0.16	-0.13 ± 0.17

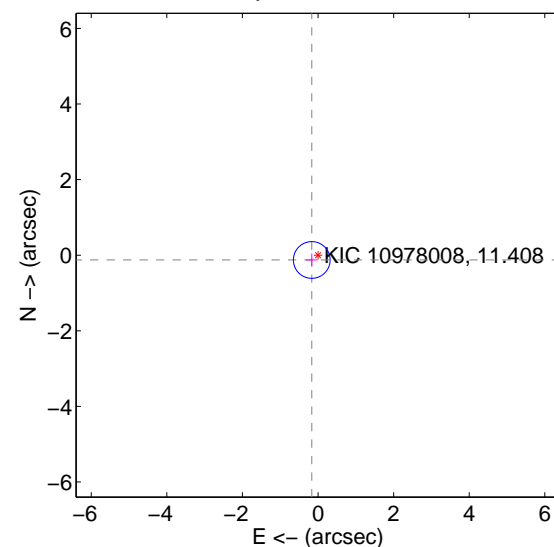
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



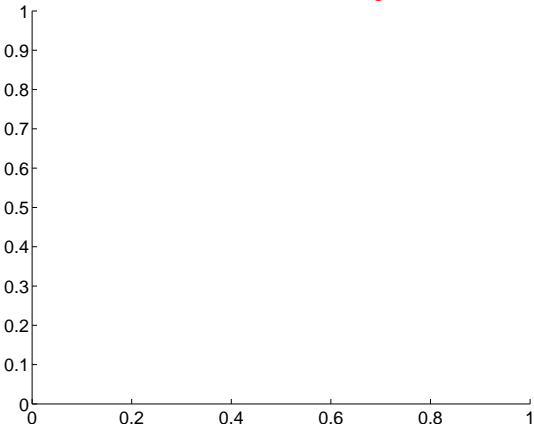
offset from photometric centroids



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.

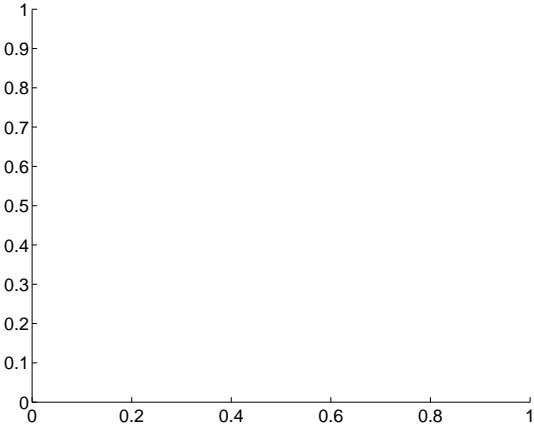
Q1 no difference image



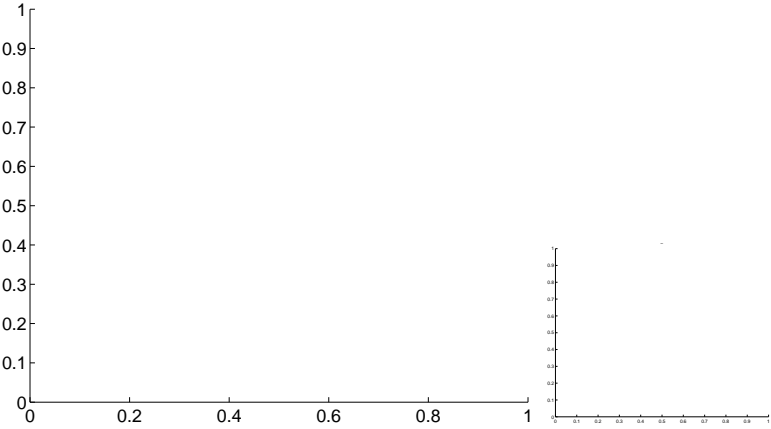
Q1 no OOT image



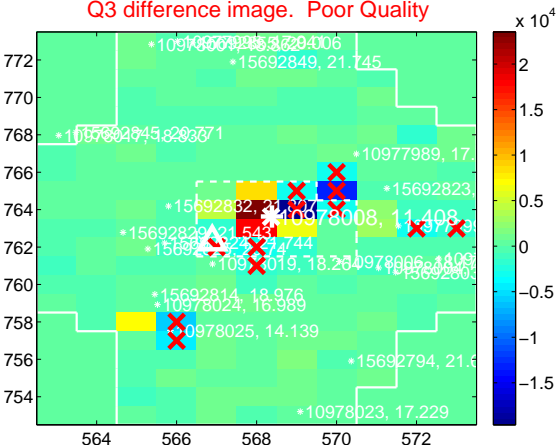
Q2 no difference image



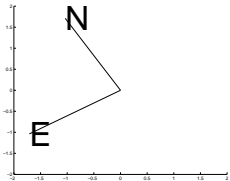
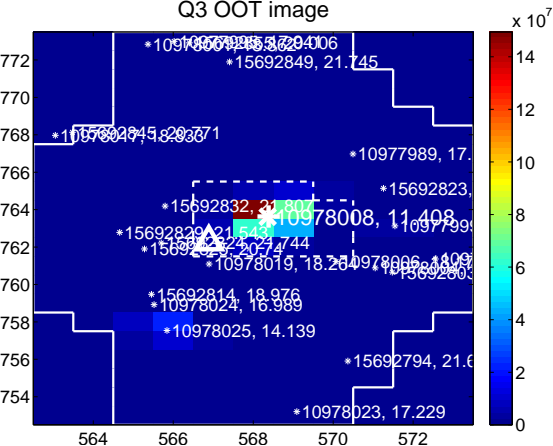
Q2 no OOT image



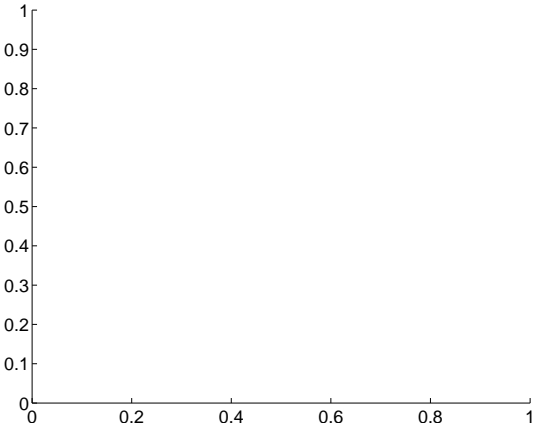
Q3 difference image. Poor Quality



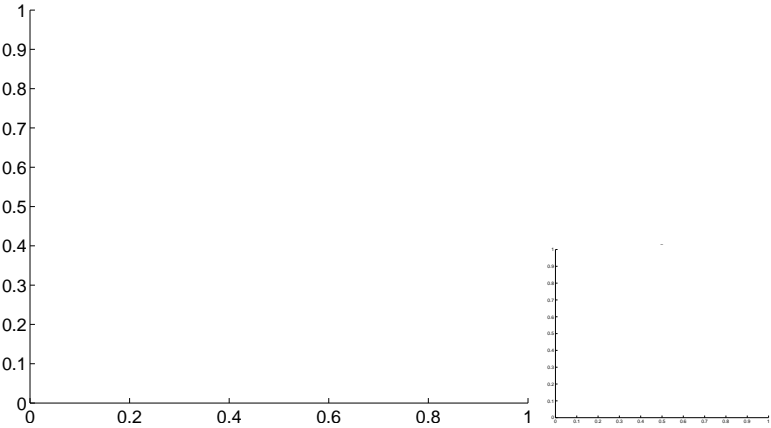
Q3 OOT image



Q4 no difference image

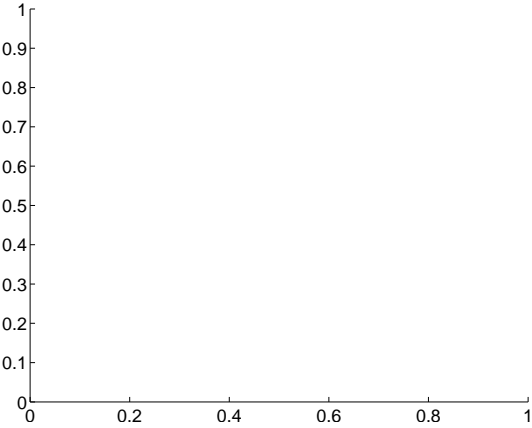


Q4 no OOT image

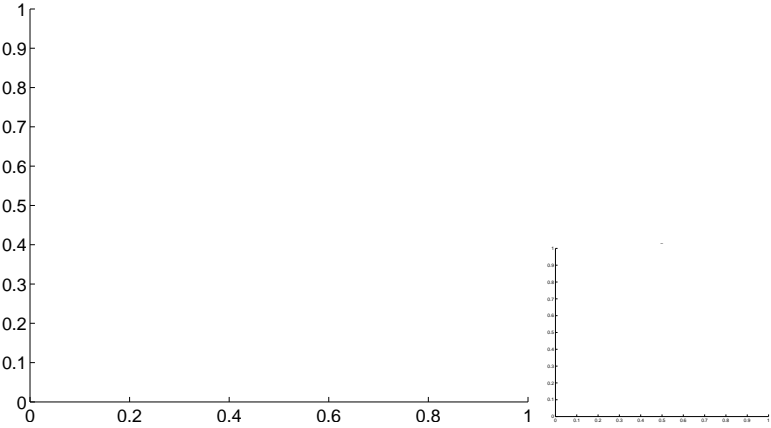


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

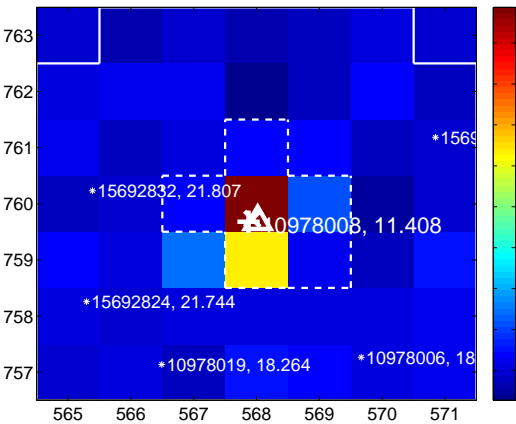
Q5 no difference image



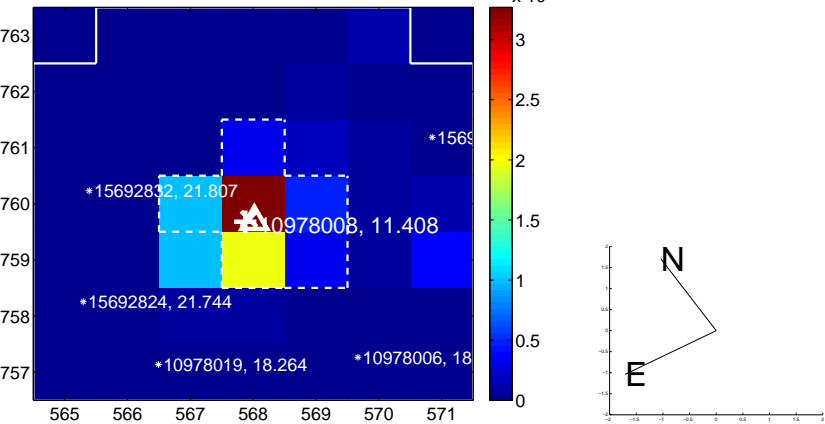
Q5 no OOT image



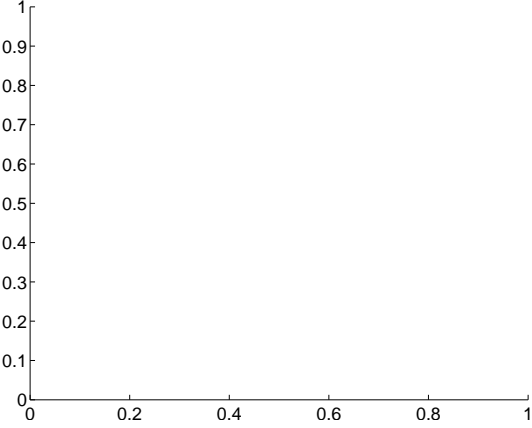
Q6 difference image



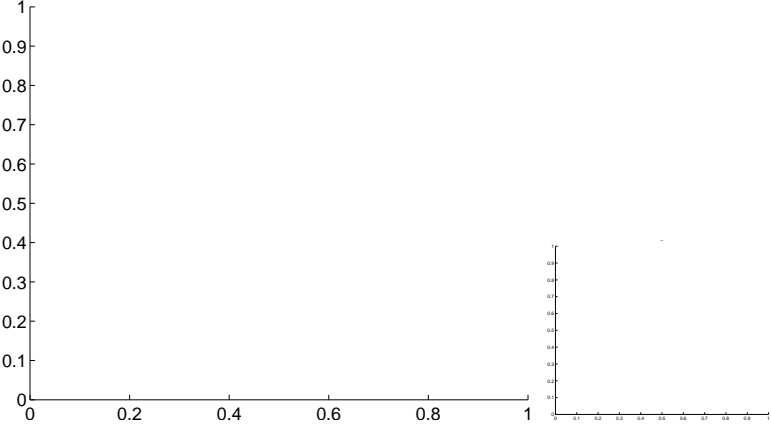
Q6 OOT image



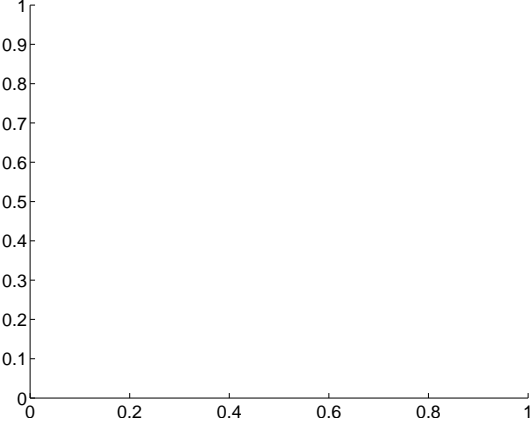
Q7 no difference image



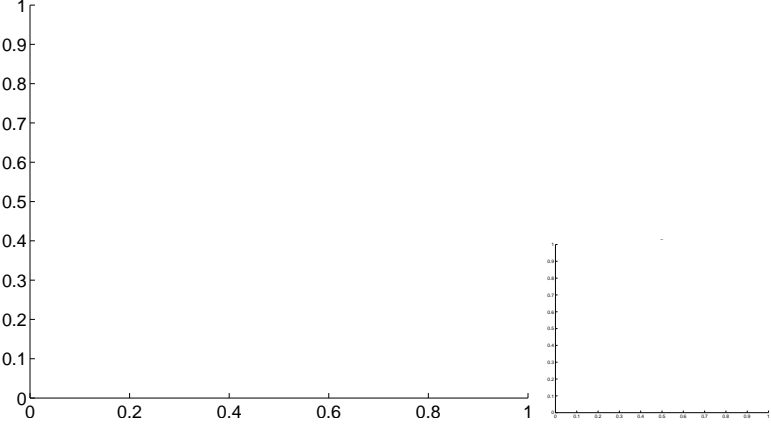
Q7 no OOT image



Q8 no difference image



Q8 no OOT image



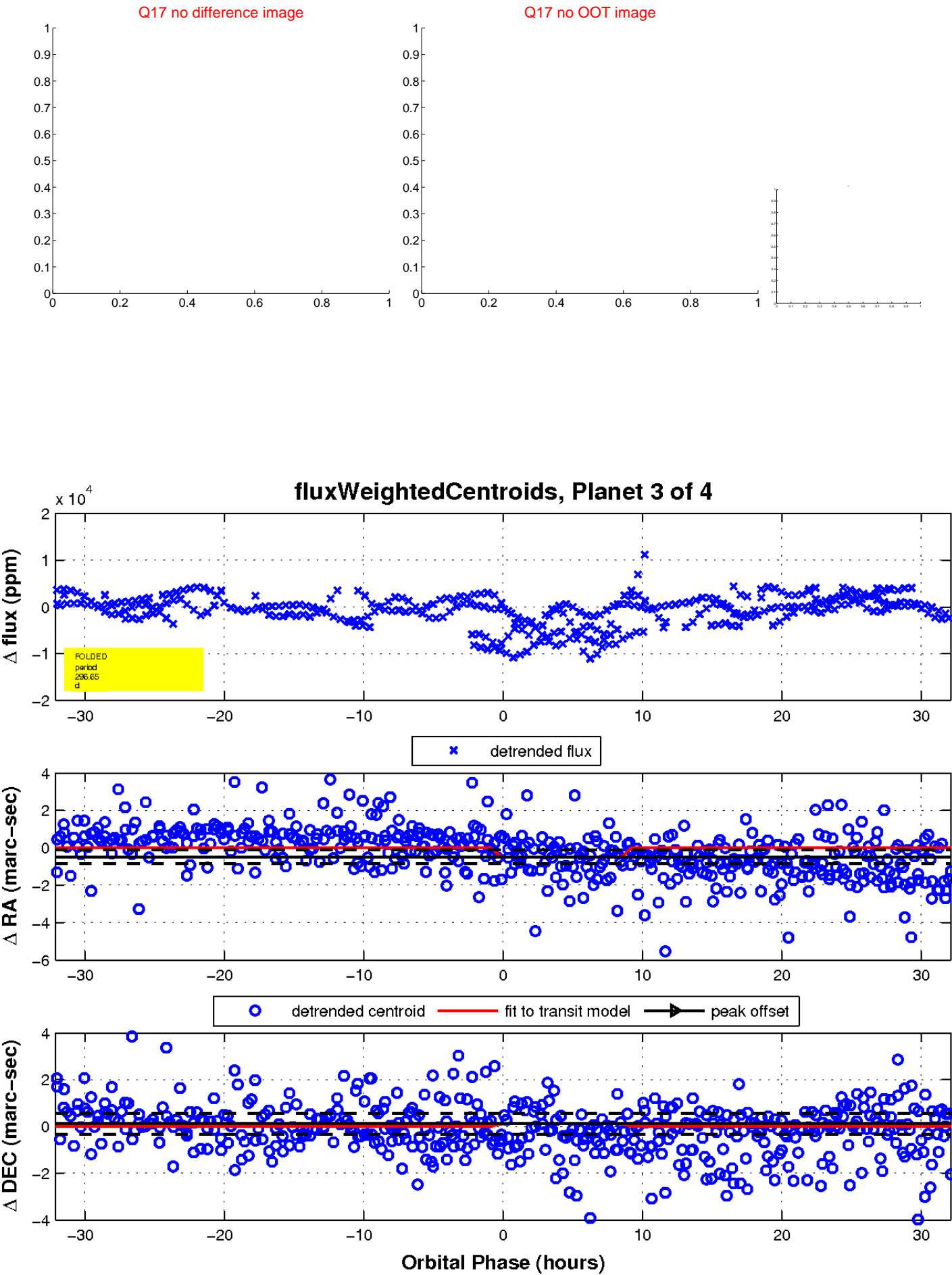
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

