

KIC 005710376

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})
005710376-01	OBS	No	84.277447	199.277036	1300.5	8.055	13.2	4.7	0.64	4002	2.21	0.89
005710376-02	OBS	No	114.727271	184.054458	1666.6	2.798	11.7	6.4	0.64	4002	2.62	0.59
005710376-03	OBS	No	80.854028	172.523944	954.1	2.561	12.3	5.2	0.64	4002	2.19	0.94
005710376-04	OBS	No	84.424989	178.050939	1079.2	3.951	11.0	5.4	0.64	4002	2.33	0.89
005710376-05	OBS	No	347.474379	407.522565	5297.1	30.567	10.0	9.3	0.64	4002	4.72	0.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005710376-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005710376-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
005710376-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005710376-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005710376-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS

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

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

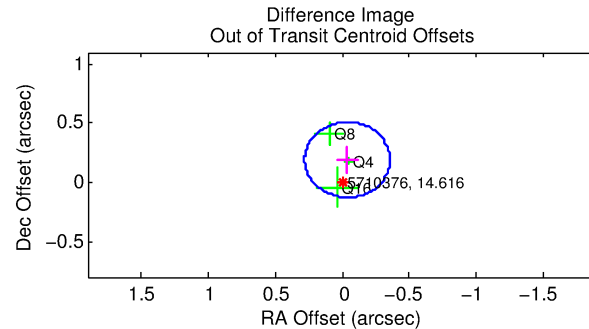
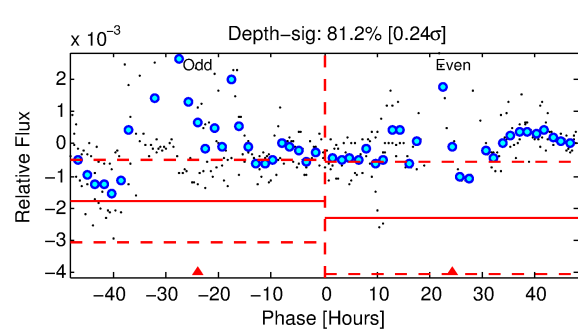
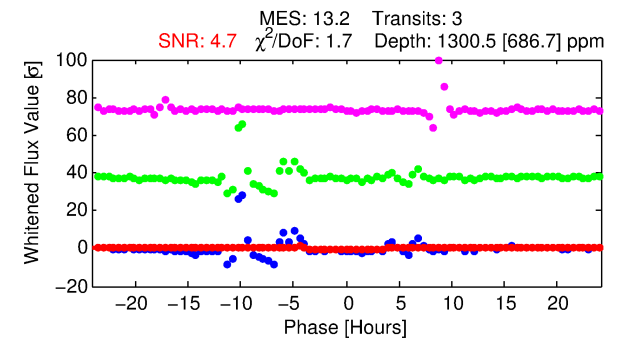
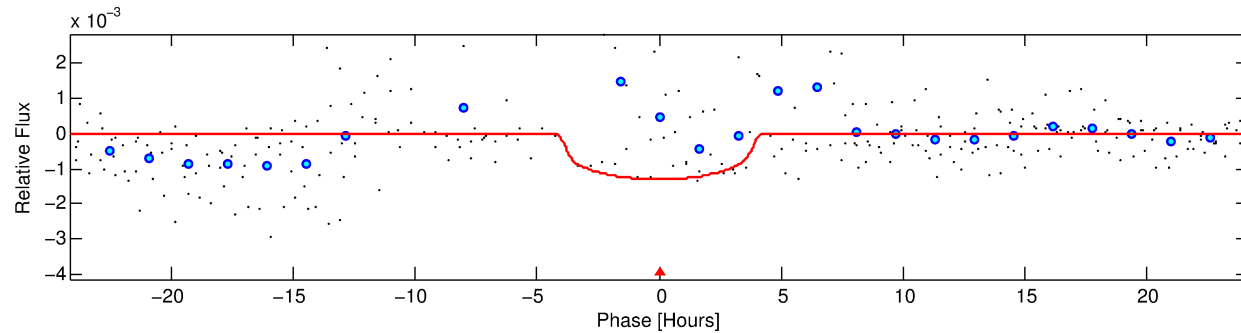
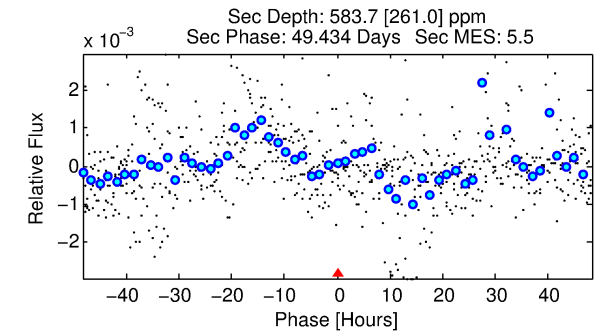
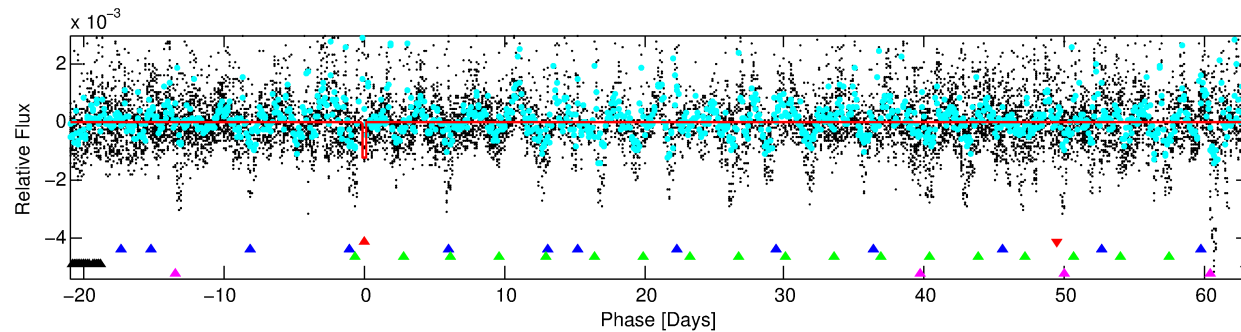
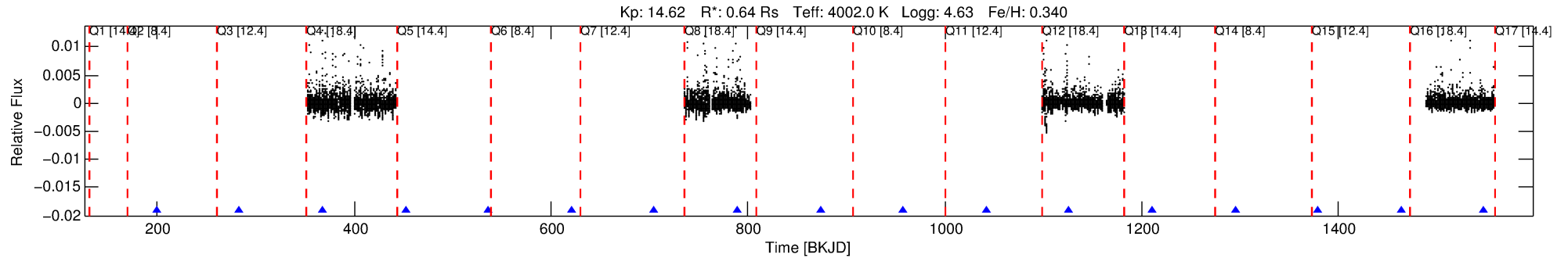
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005710376-01

No Significant Match Found

DV One-Page Summary

KIC: 5710376 Candidate: 1 of 5 Period: 84.277 d



DV Fit Results:

Period = 84.27745 [0.00247] d
Epoch = 199.2770 [0.0312] BKJD
Rp/R* = 0.0318 [0.0778]
a/R* = 80.60 [587.47]
b = 0.22 [32.27]
Seff = 0.89 [0.17]
Teq = 247 [12] K
Rp = 2.21 [5.41] Re
a = 0.3237 [0.0258] AU
Ag = 6899.77 [33907.56] [0.20σ]
Teffp = 3487 [4285] K [0.76σ]

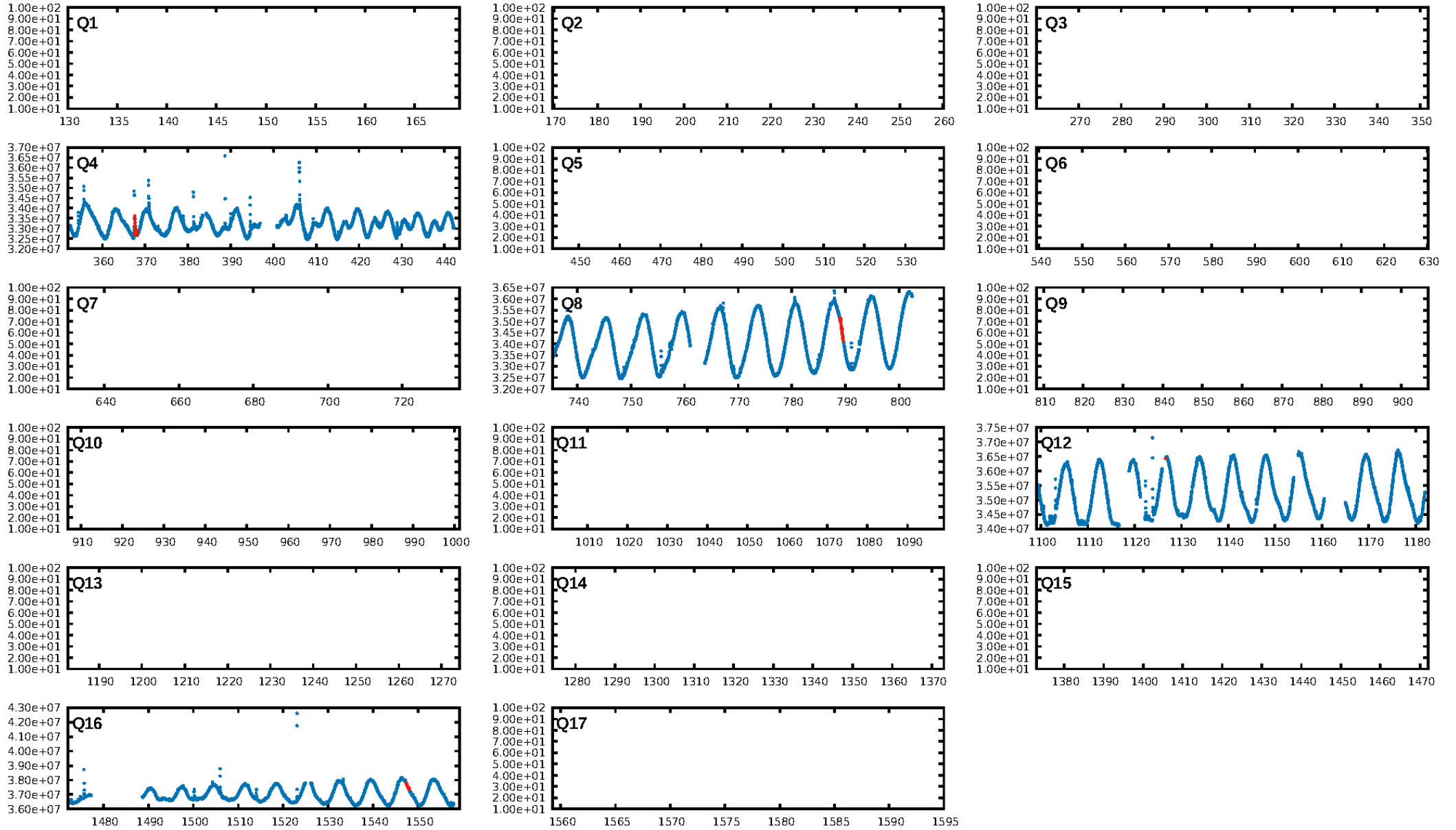
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [9.72σ]
LongPeriod-sig: 30.7% [0.39σ]
ModelChiSquare2-sig: 2.2%
ModelChiSquareGof-sig: 1.7%
Bootstrap-pfa: 5.21e-16
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.3893
Centroid-sig: 34.5%
Centroid-so: 0.702 arcsec [0.72σ]
OotOffset-rm: 0.195 arcsec [1.84σ]
OotOffset-st: 0/0/3/0 [3]
KicOffset-rm: 0.102 arcsec [1.10σ]
KicOffset-st: 0/0/3/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.67 [2/3]

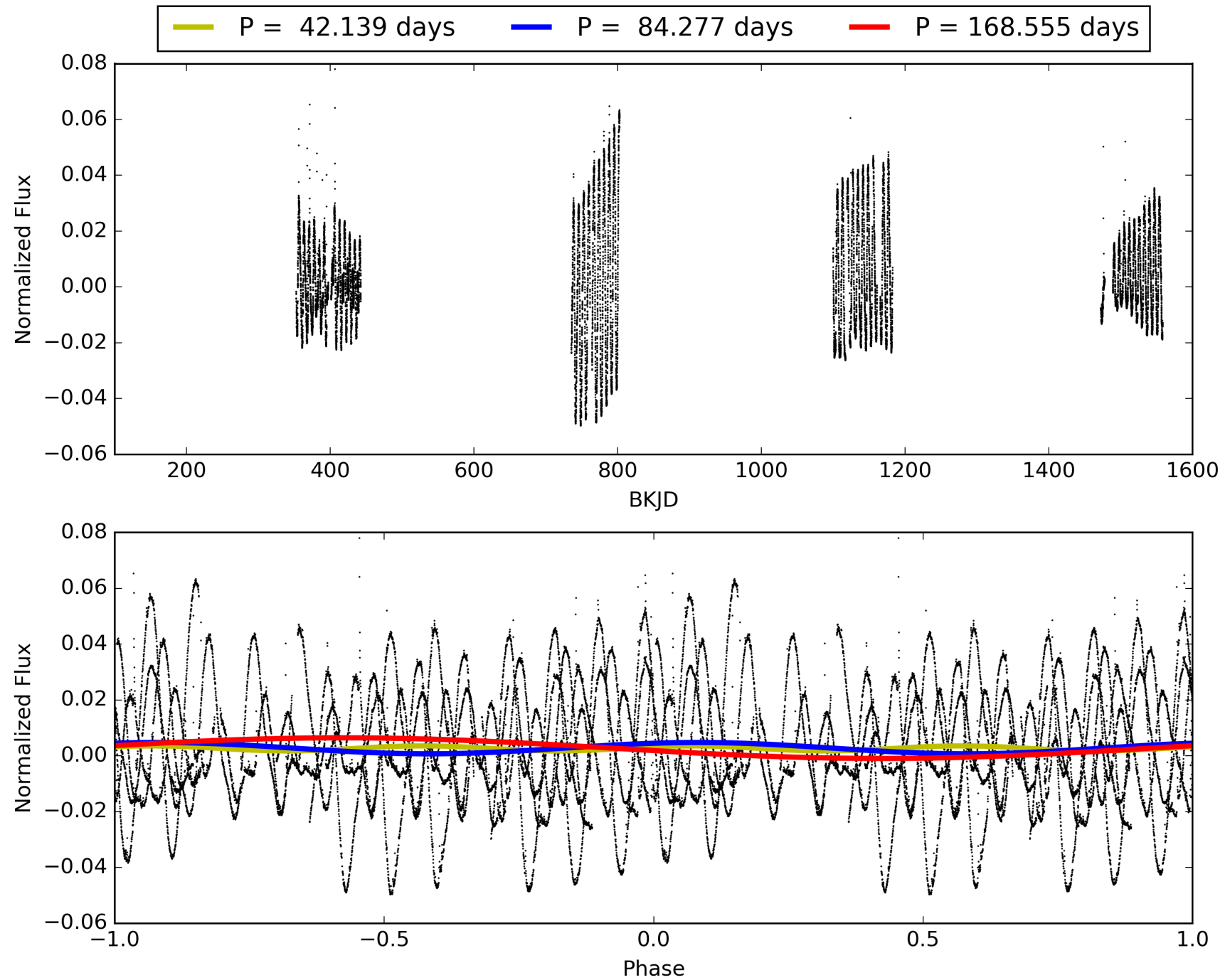
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005710376-01, PDC Light Curves

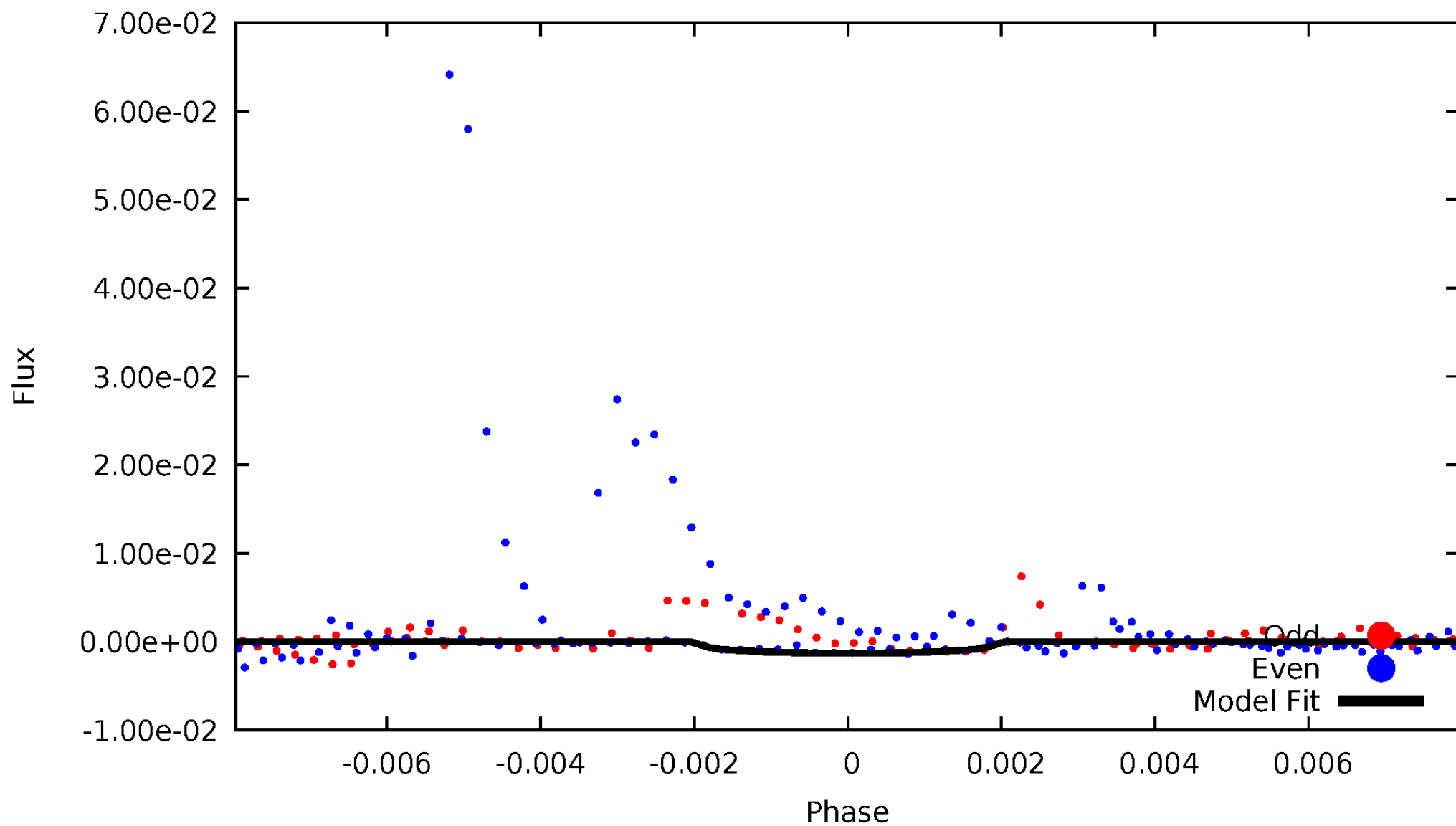


TCE 005710376-01



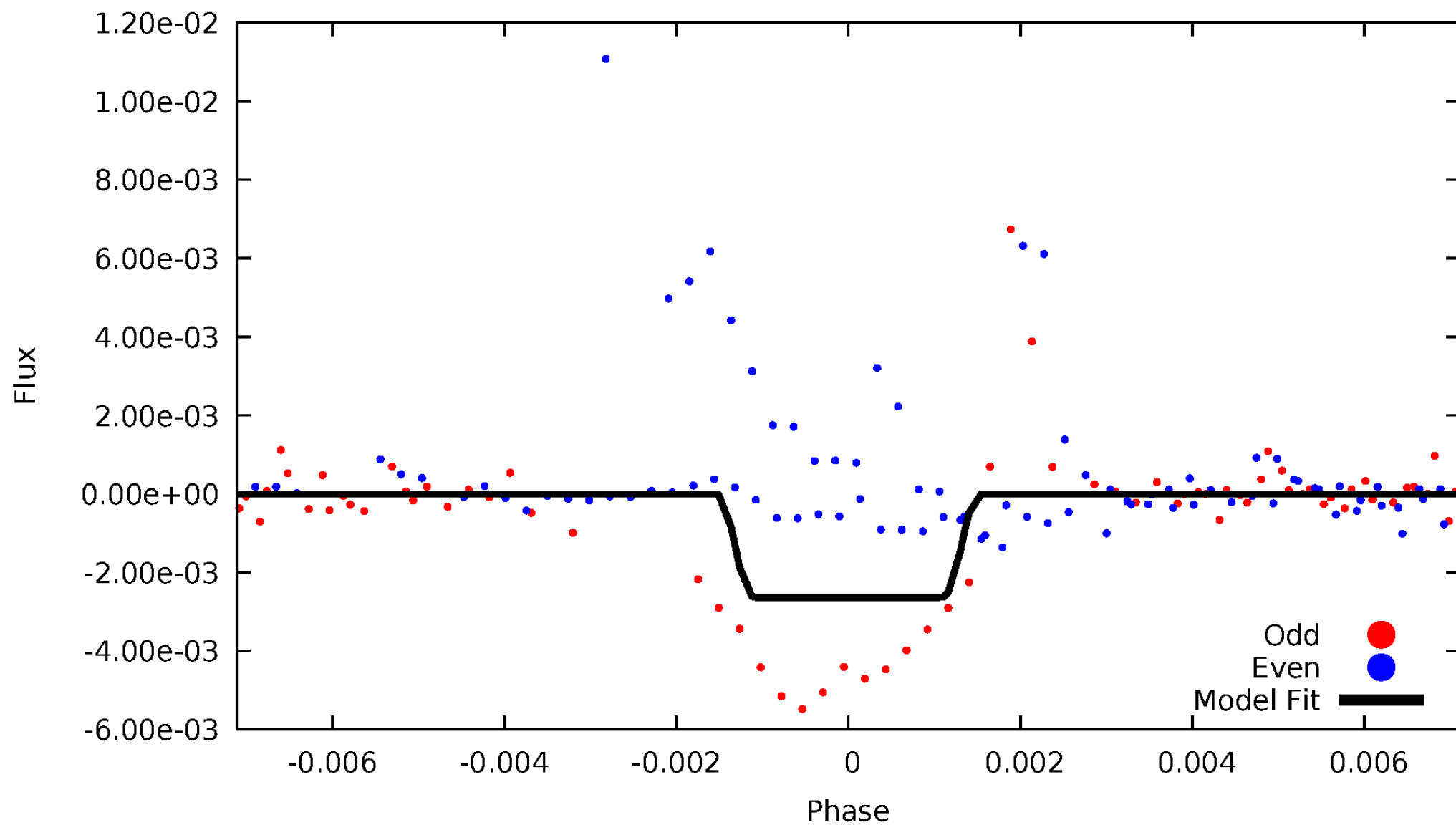
DV Odd/Even

TCE 005710376-01



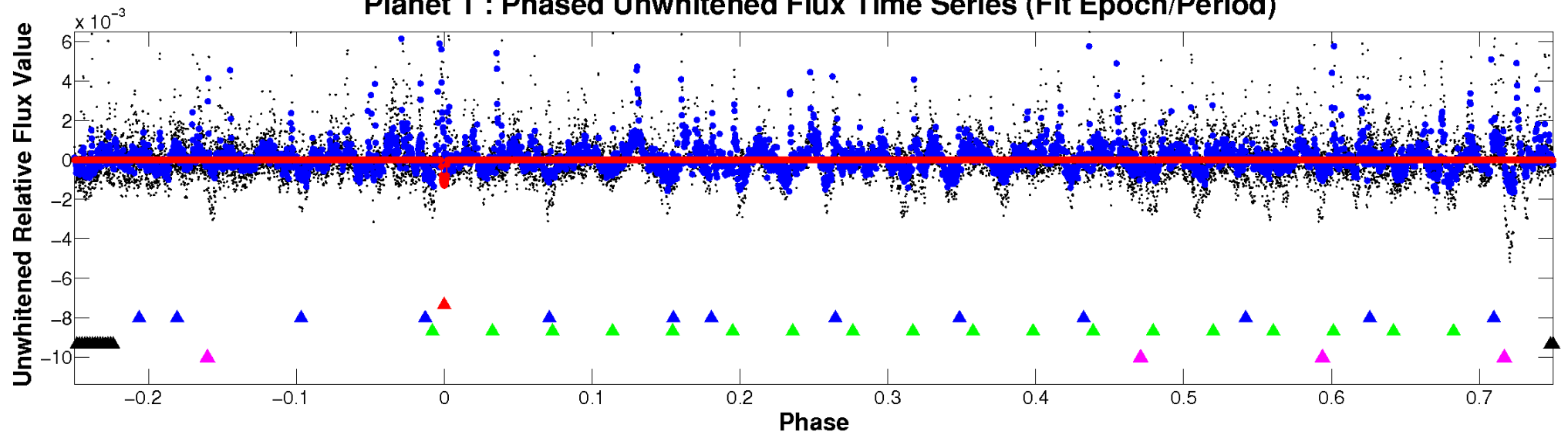
ALT Odd/Even

TCE 005710376-01

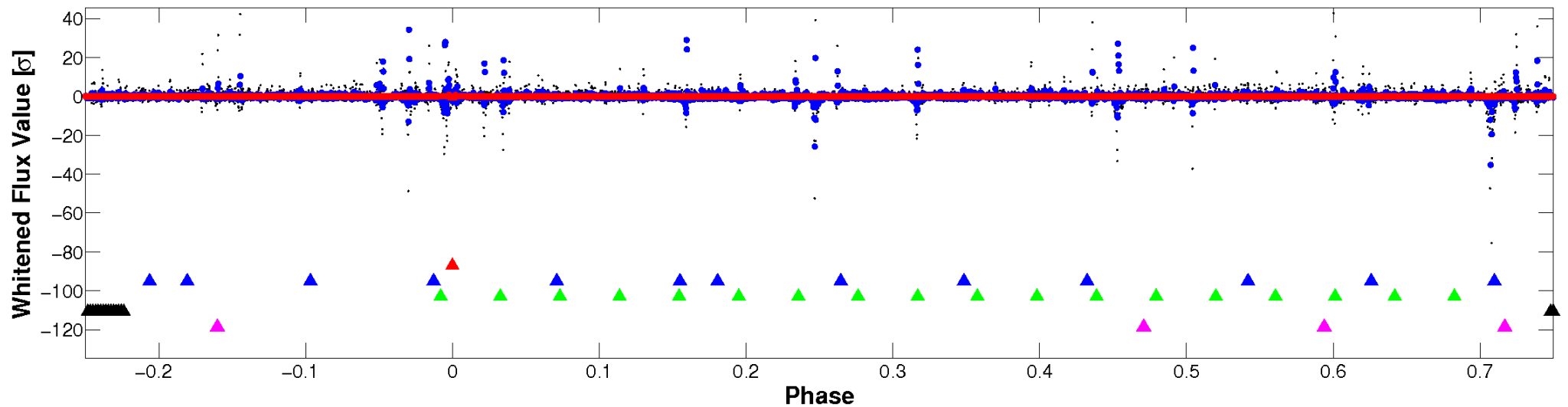


Non-Whitened Vs. Whitened Light Curve

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

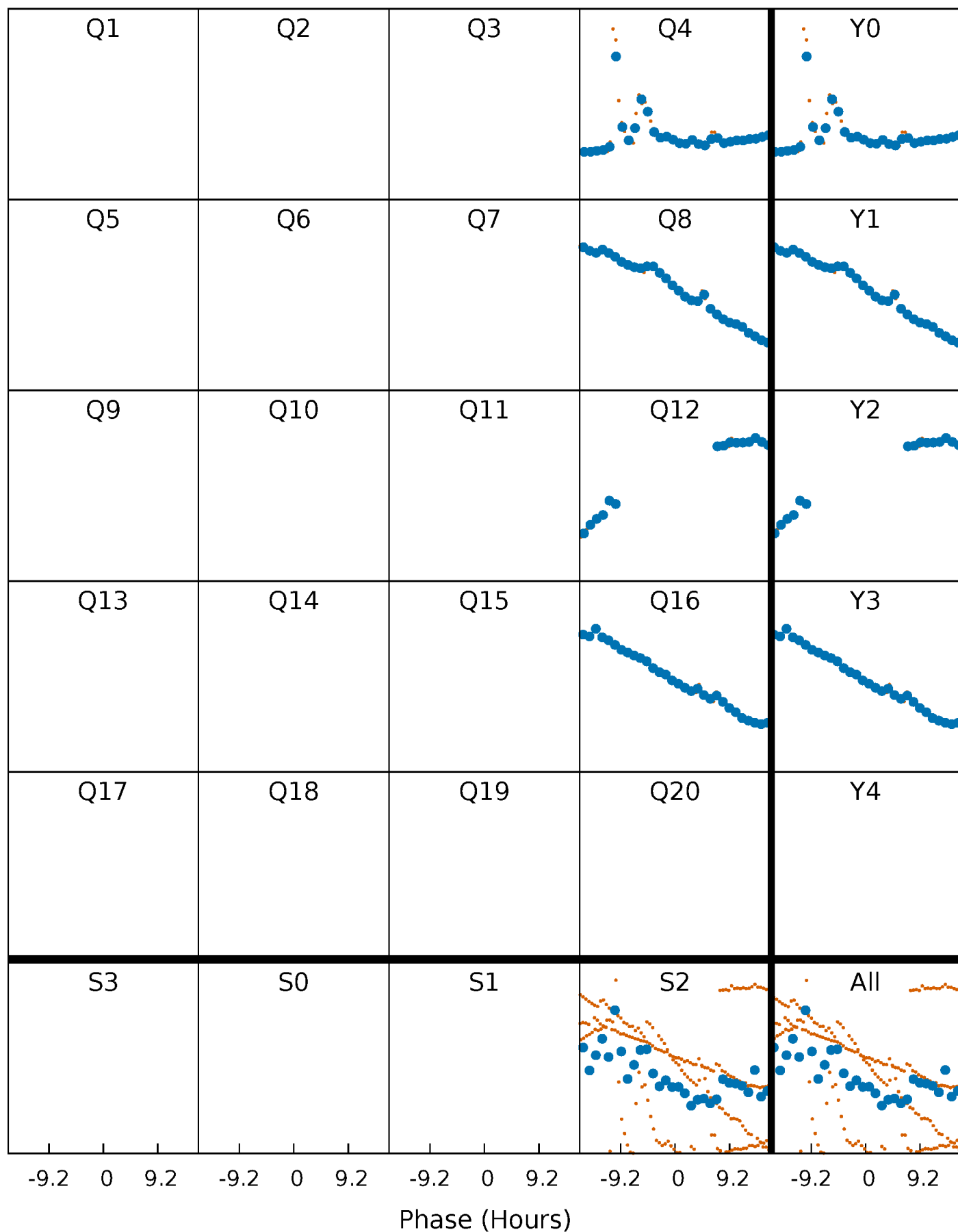


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



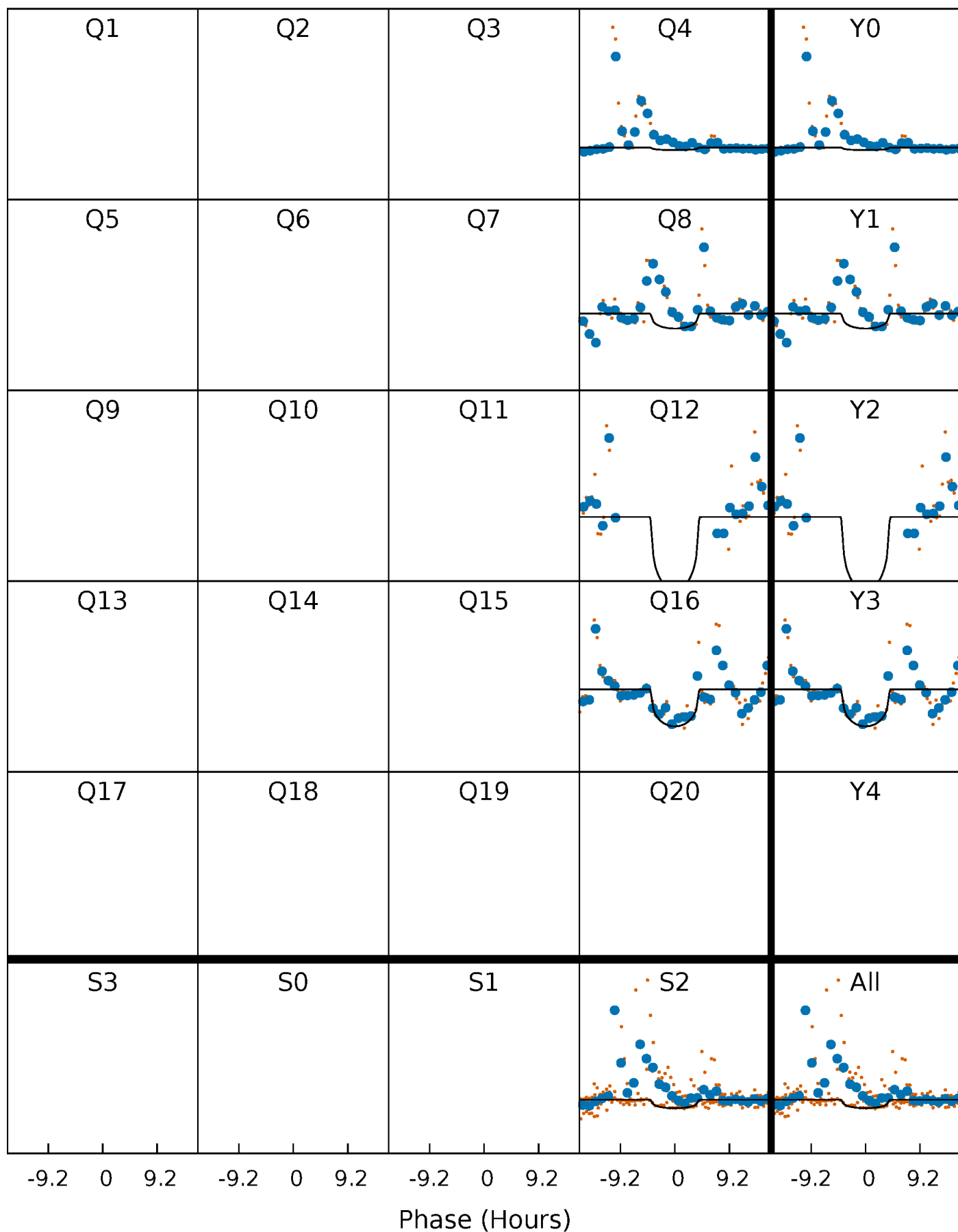
PDC Quarter-Phased Transit Curves

TCE 005710376-01 P= 84.277447 Days $T_0=199.277036$ (BKJD)



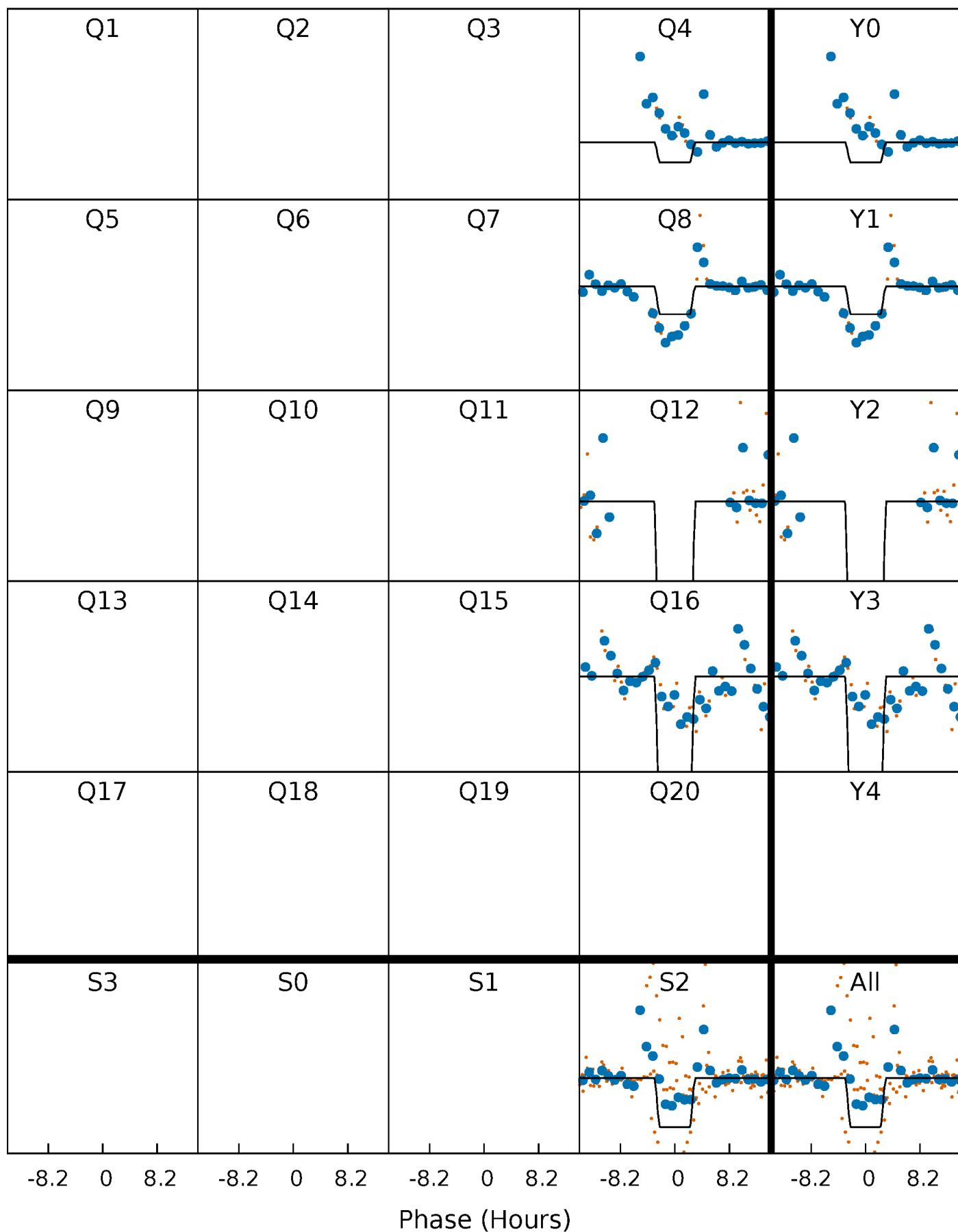
DV Quarter-Phased Transit Curves

TCE 005710376-01 P= 84.277447 Days $T_0=199.277036$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

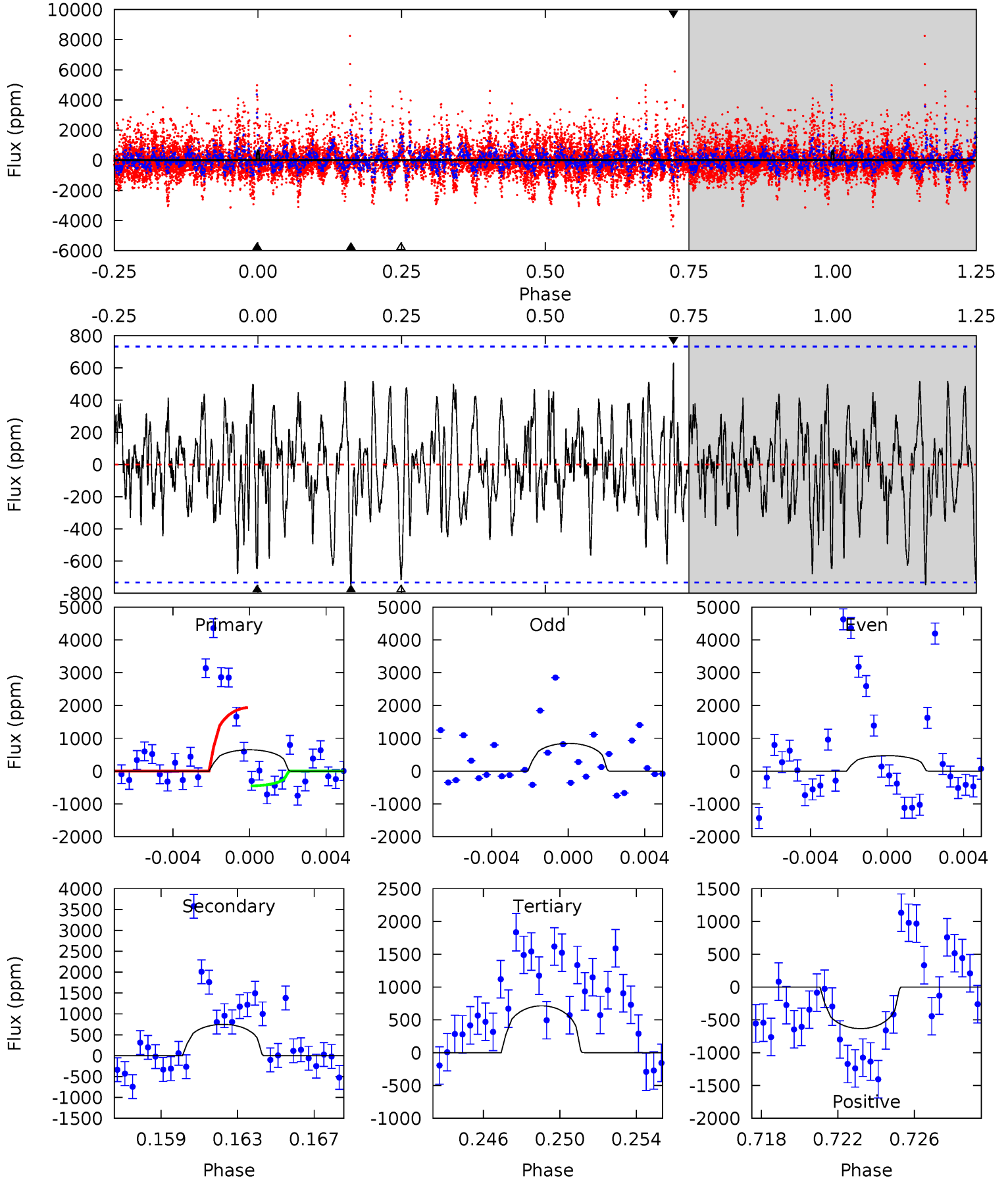
TCE 005710376-01 P= 84.266437 Days $T_0=199.385461$ (BKJD)



DV Model-Shift Uniqueness Test

005710376-01, P = 84.277447 Days, E = 199.277036 Days

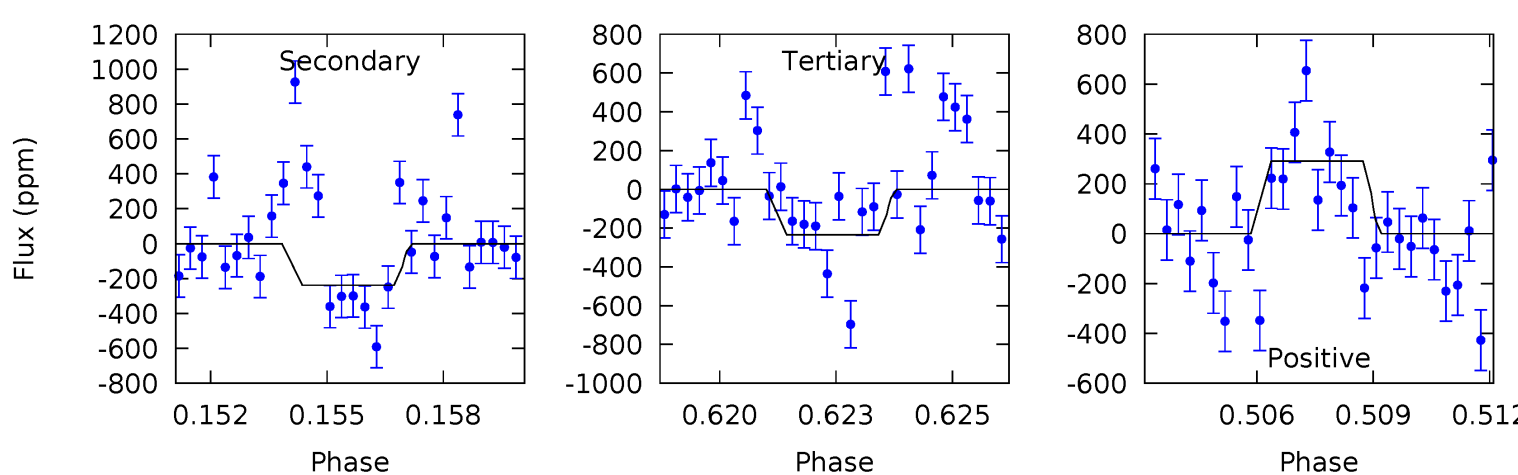
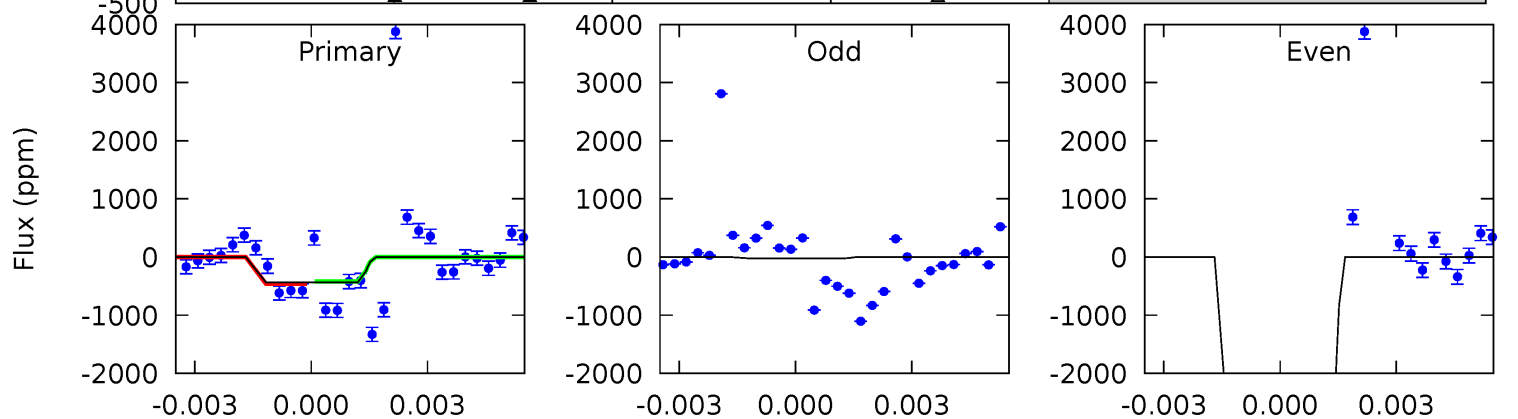
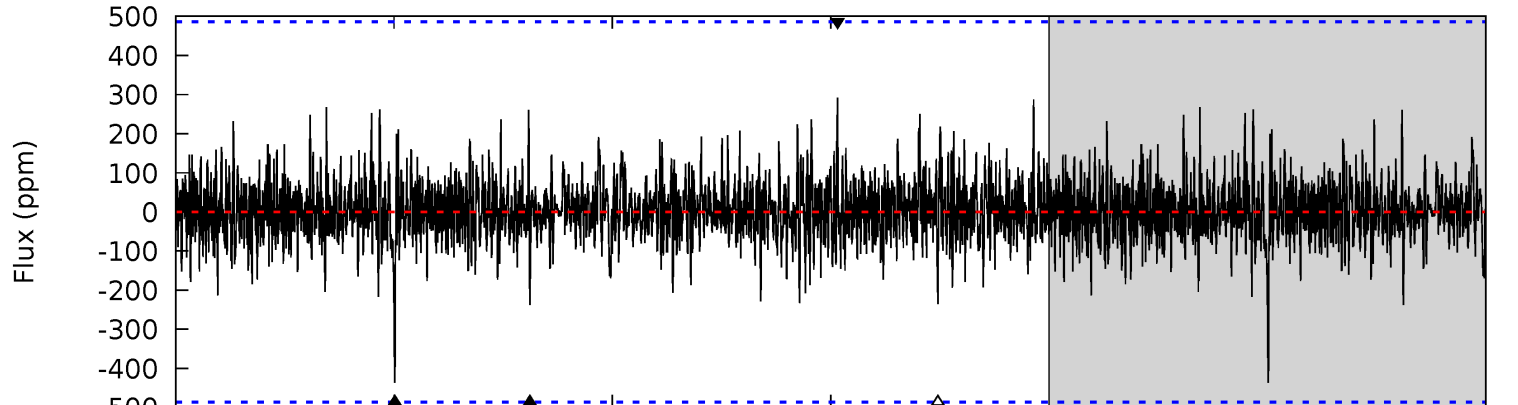
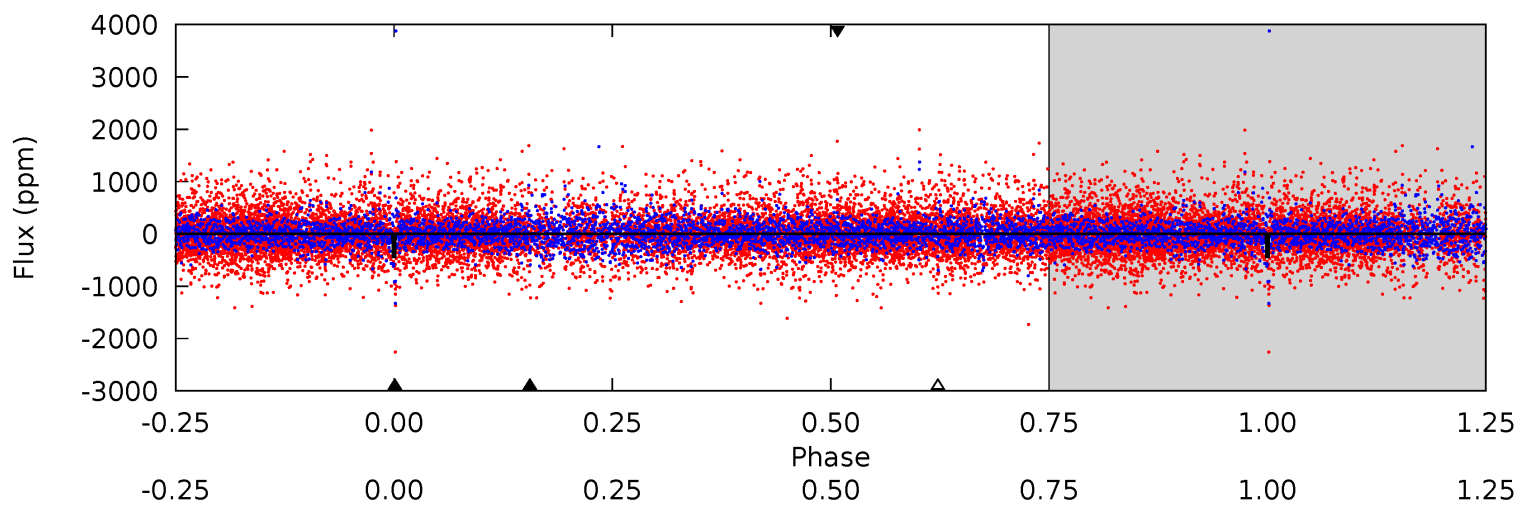
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.60	5.31	5.06	4.49	5.20	2.88	1.56	-0.46	0.10	0.25	0.82	1.00	1.82	0.46	5.16



Alt Model-Shift Uniqueness Test

005710376-01, P = 84.266437 Days, E = 199.385461 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.73	2.58	2.55	3.16	5.27	2.99	0.73	2.18	1.57	0.04	-0.58	30.1	2.01	0.40	0



Stellar Parameters For KIC 005710376

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4002^{+140}_{-154}	$4.635^{+0.056}_{-0.016}$	$0.340^{+0.100}_{-0.300}$	$0.636^{+0.030}_{-0.064}$	$0.637^{+0.037}_{-0.059}$	$3.488^{+0.879}_{-0.269}$
	+3%/-4%	+1%/-0%	+29%/-88%	+5%/-10%	+6%/-9%	+25%/-8%
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 005710376-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-749 ± 141	$4.35^{+4.35}_{-2.83}$	343^{+13}_{-14}	3046^{+1286}_{-504}	2242^{+16141}_{-1669}
Alt.	-238 ± 92	$5.20^{+4.71}_{-3.53}$	343^{+13}_{-14}	2490^{+892}_{-369}	492^{+4060}_{-372}

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 $A_{obs} \gg 1.0$

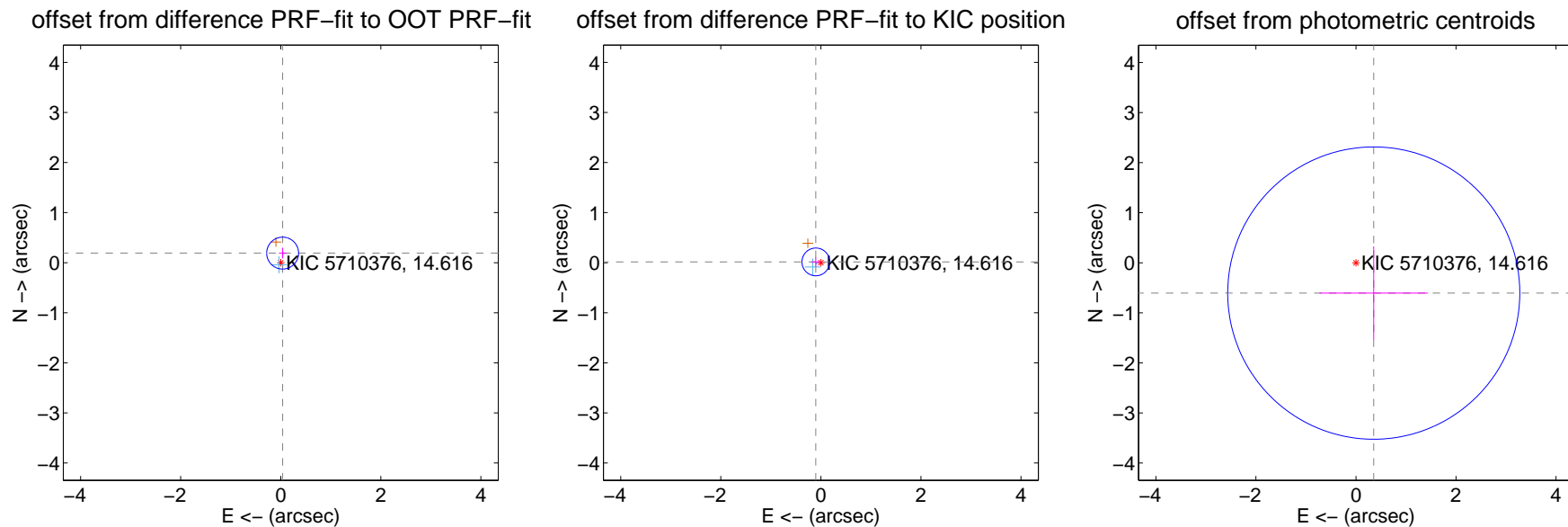
DV Centroid Data

Supplemental centroid analysis for 005710376-01. Kepler magnitude: 14.62. Transit SNR 4.72

There are 2 quarters with good PRF difference image offsets

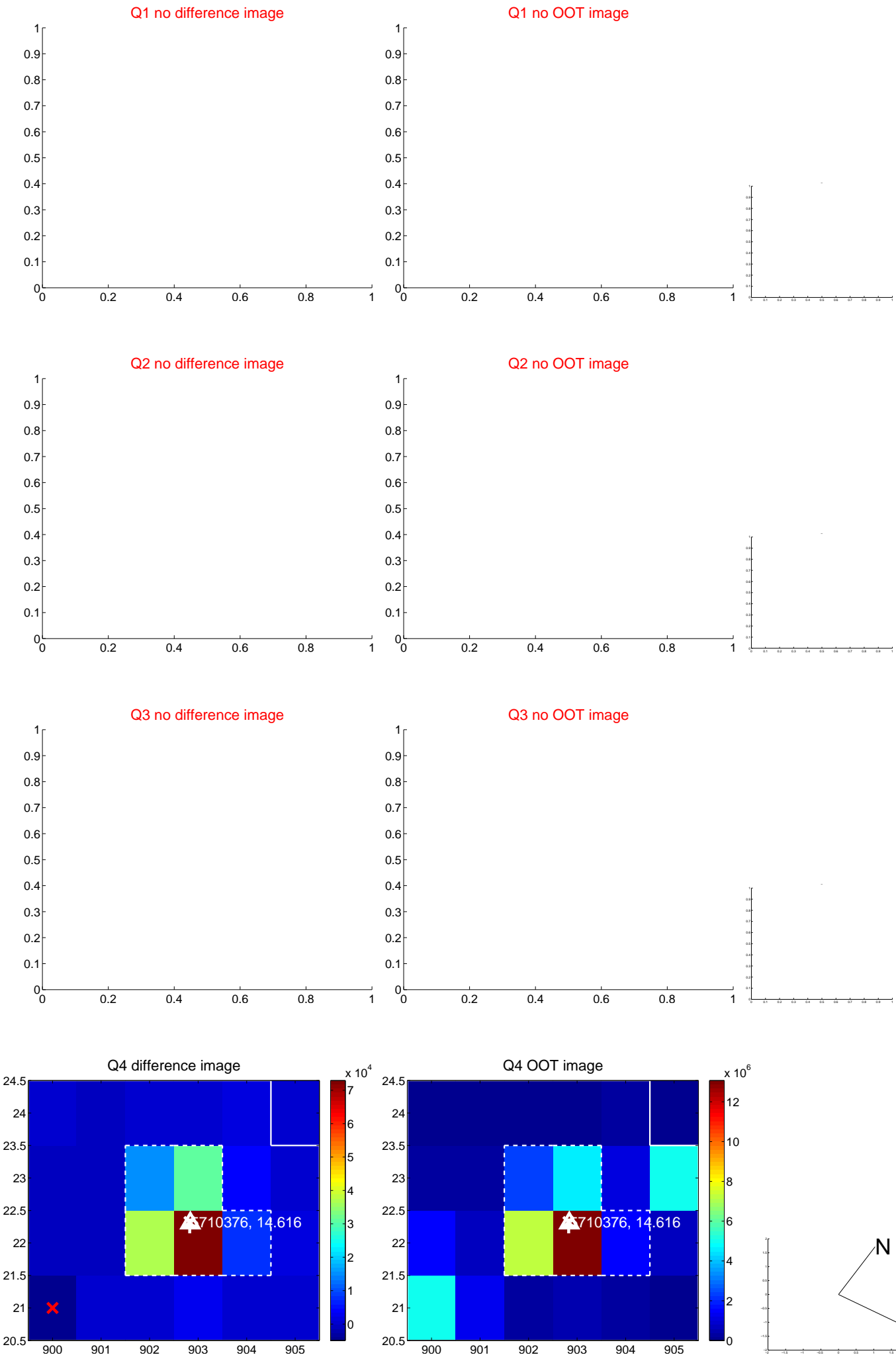
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.195 ± 0.106	1.84	-0.038 ± 0.075	0.191 ± 0.107
PRF-fit source offset from KIC position	0.102 ± 0.092	1.10	0.101 ± 0.092	0.016 ± 0.093
photometric centroid source offset	0.70 ± 0.97	0.72	-0.36 ± 1.08	-0.61 ± 0.93

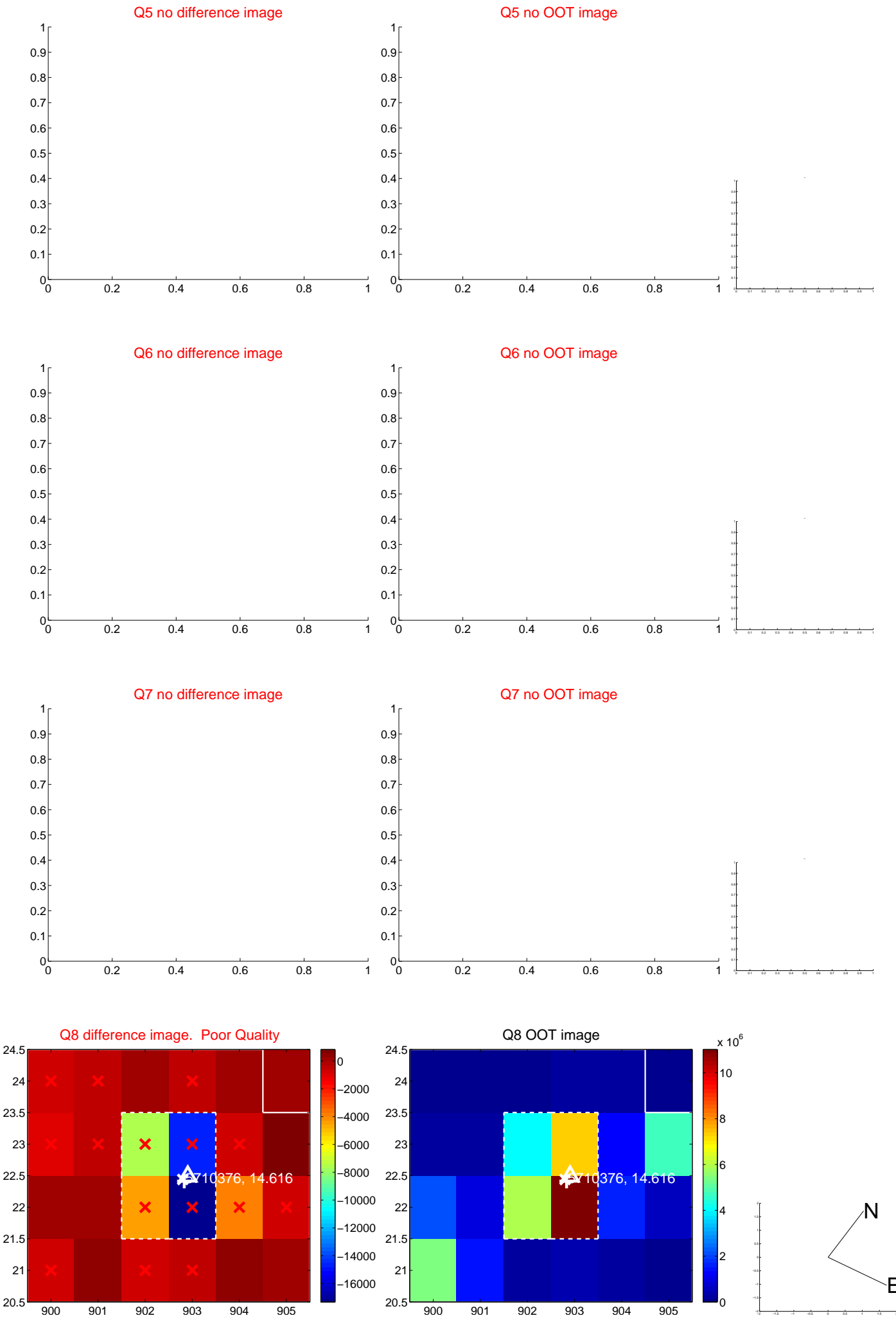


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



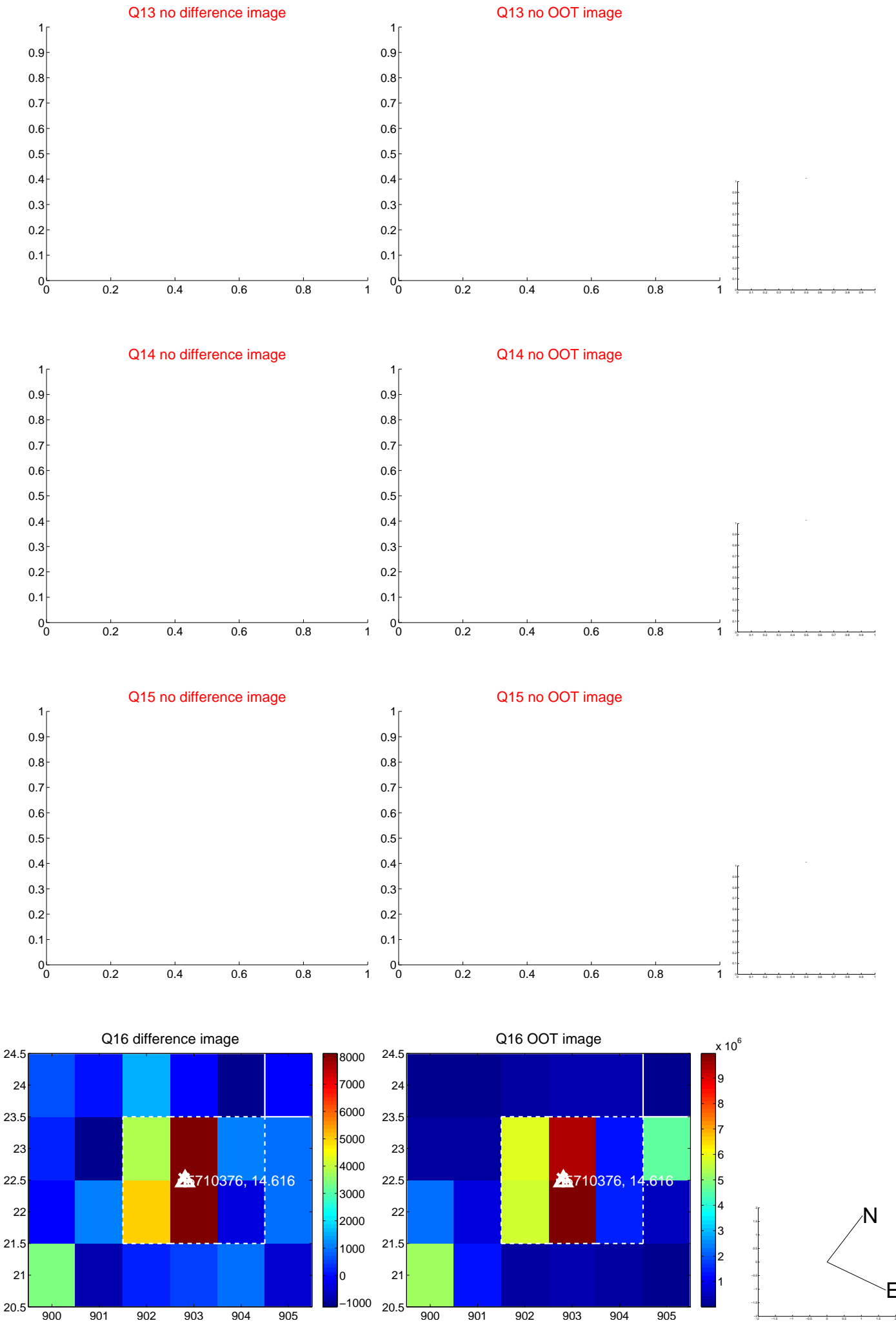
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



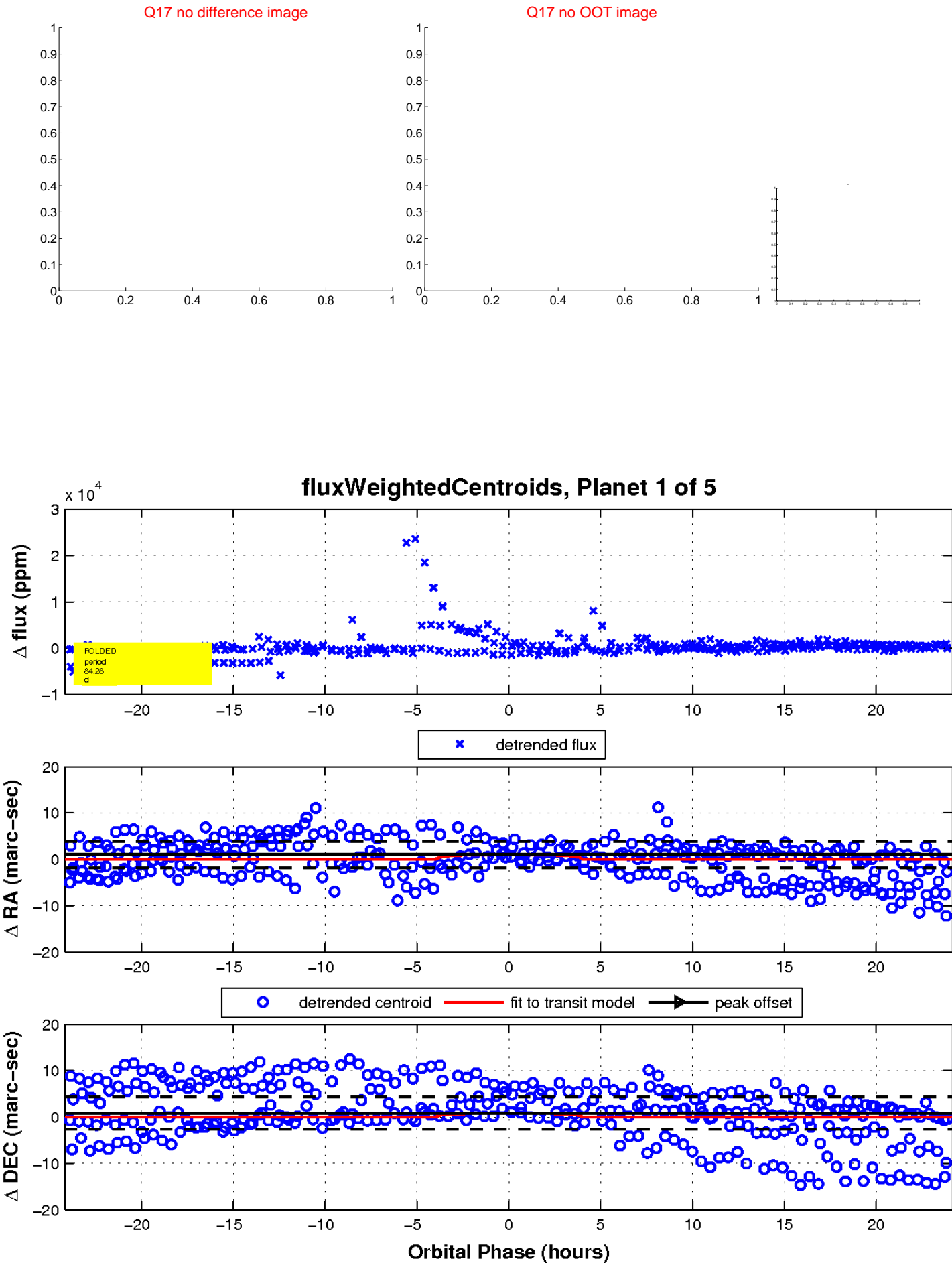
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white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

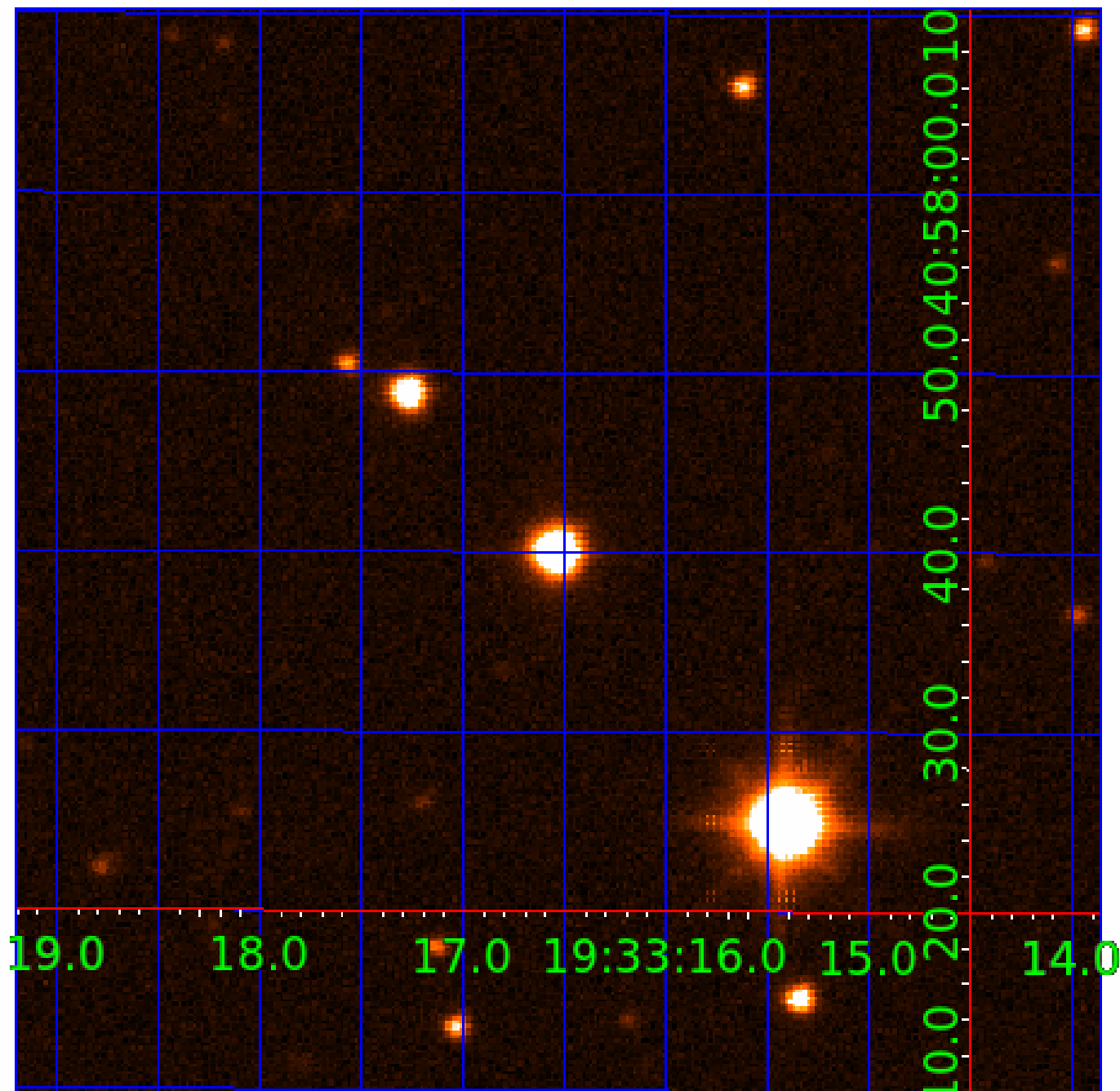


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005710376

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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005710376-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
005710376-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005710376-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005710376-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS

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

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

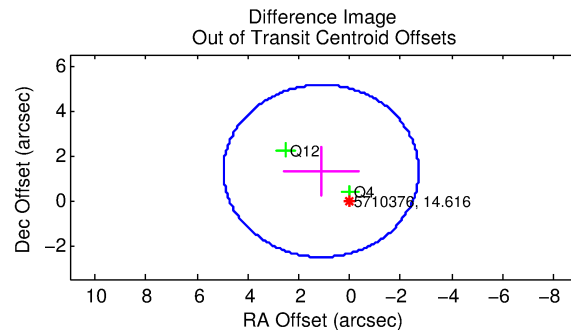
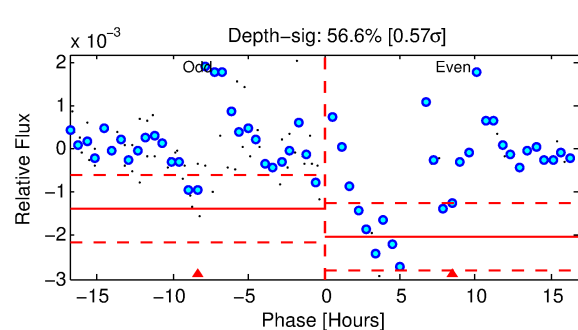
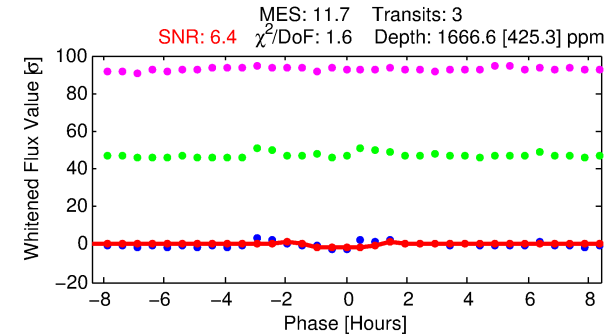
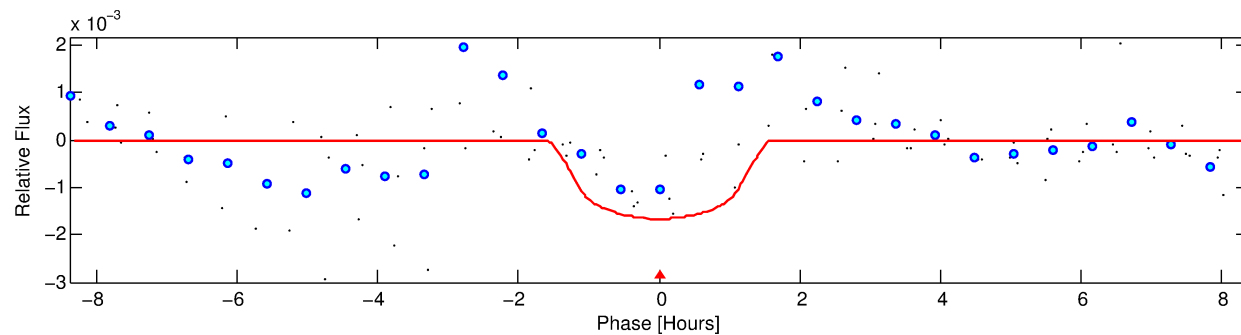
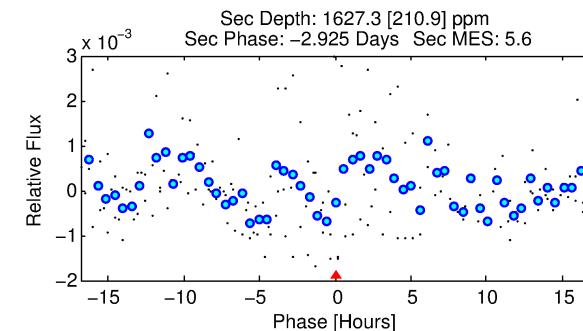
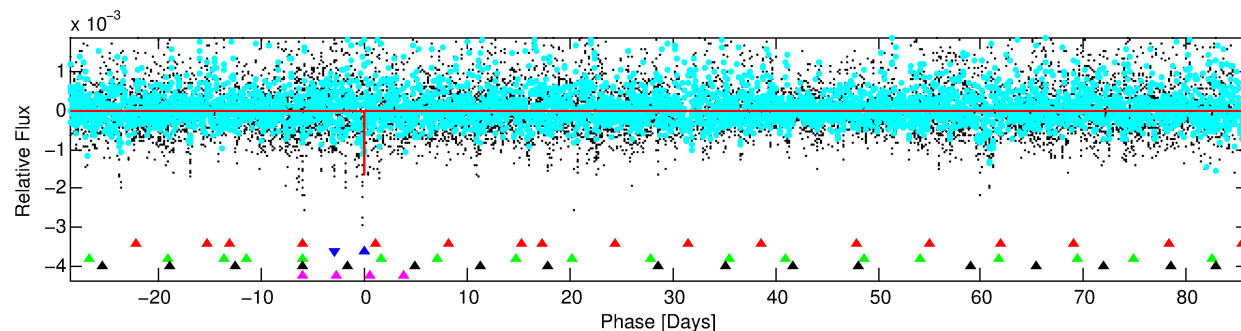
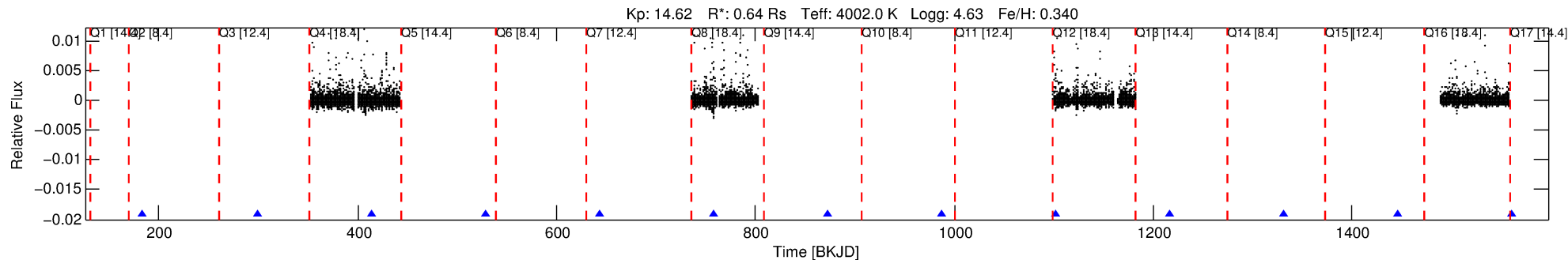
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005710376-02

No Significant Match Found

DV One-Page Summary

KIC: 5710376 Candidate: 2 of 5 Period: 114.727 d



DV Fit Results:

Period = 114.72727 [0.00251] d
Epoch = 184.0545 [0.0171] BKJD
Rp/R* = 0.0377 [0.1159]
a/R* = 282.49 [2585.46]
b = 0.51 [13.53]
Seff = 0.59 [0.11]
Teq = 223 [11] K
Rp = 2.61 [8.05] Re
a = 0.3976 [0.0317] AU
Ag = 20700.02 [127446.95] [0.16σ]
Teffp = 4141 [6375] K [0.61σ]

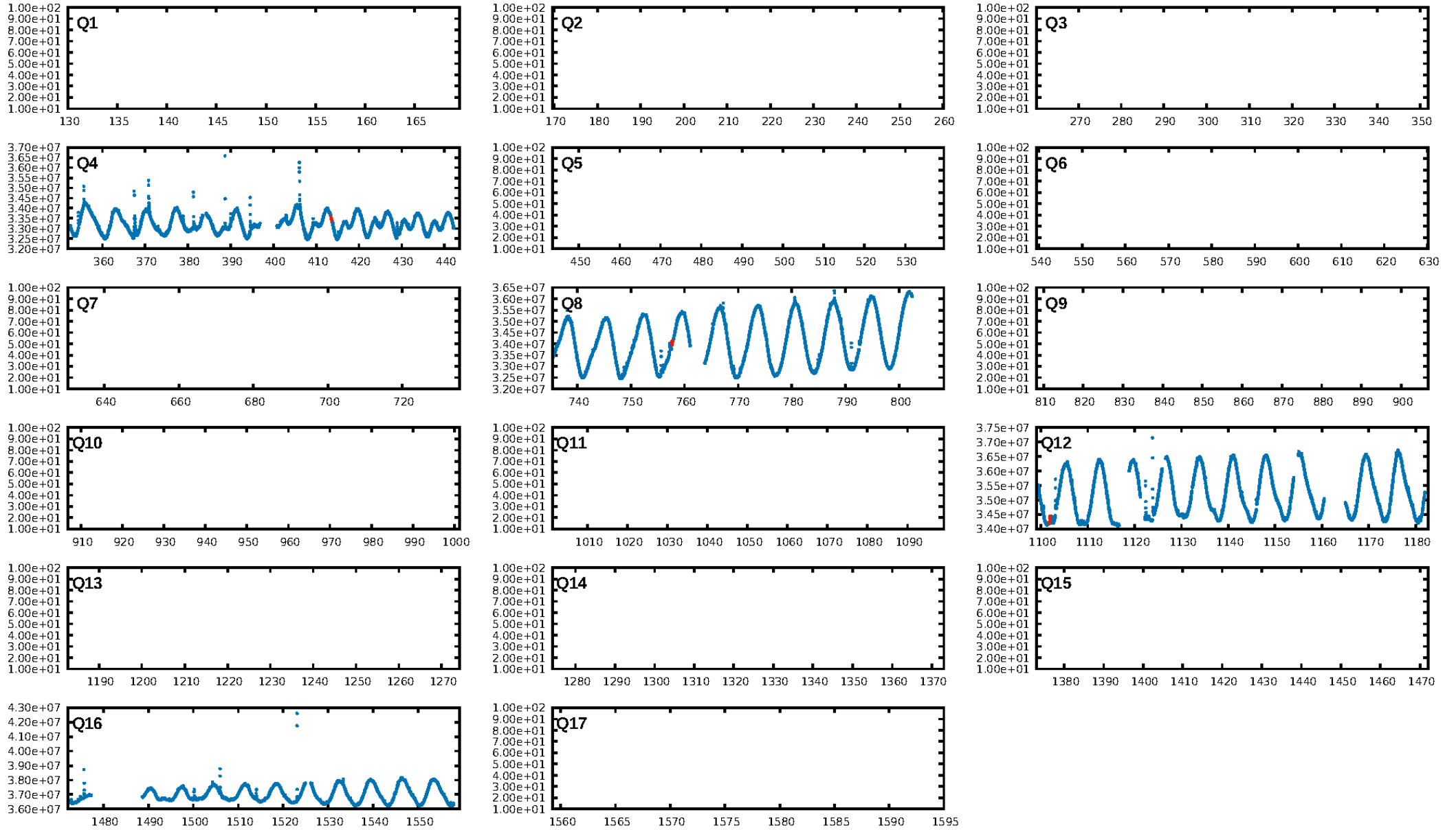
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [150.20σ]
LongPeriod-sig: 100.0% [181.98σ]
ModelChiSquare2-sig: 7.5%
ModelChiSquareGof-sig: 54.3%
Bootstrap-pfa: 6.36e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.4133
Centroid-sig: 58.9%
Centroid-so: 1.072 arcsec [1.14σ]
OotOffset-rm: 1.718 arcsec [1.34σ]
KicOffset-rm: 1.730 arcsec [1.28σ]
OotOffset-st: 0/0/2/0 [2]
KicOffset-st: 0/0/2/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 0.67 [2/3]

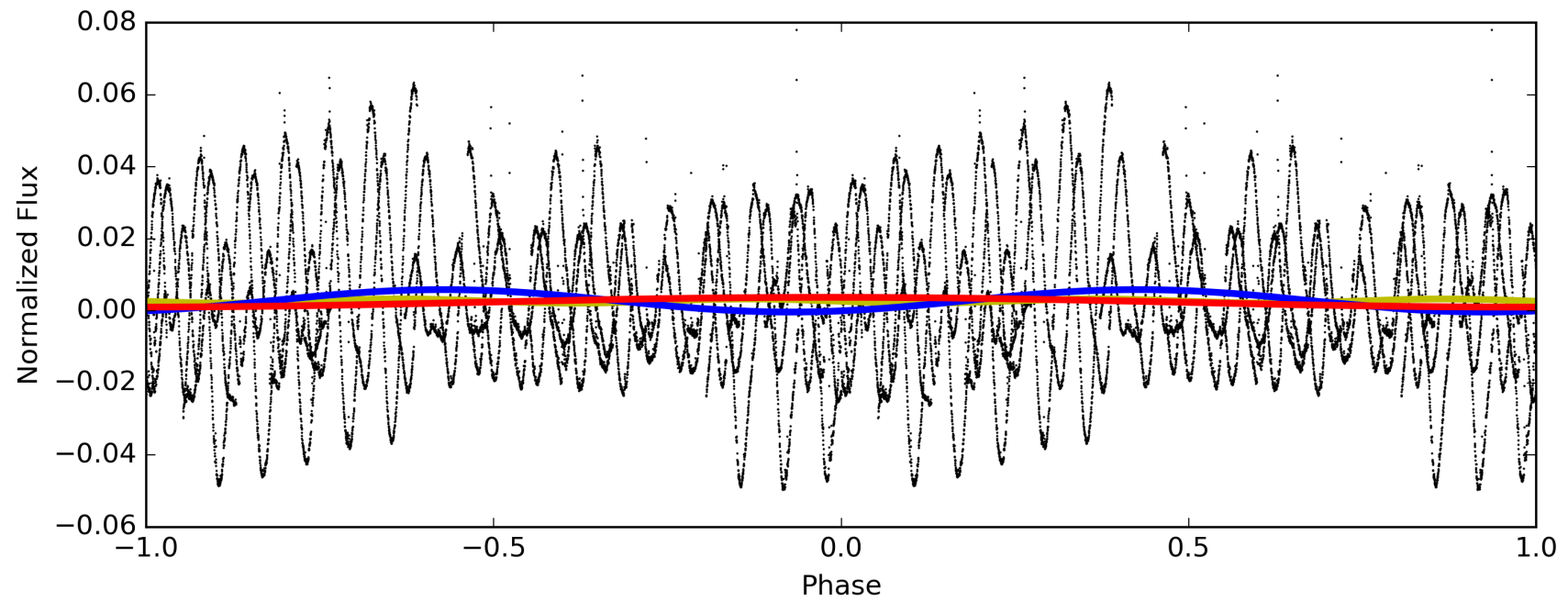
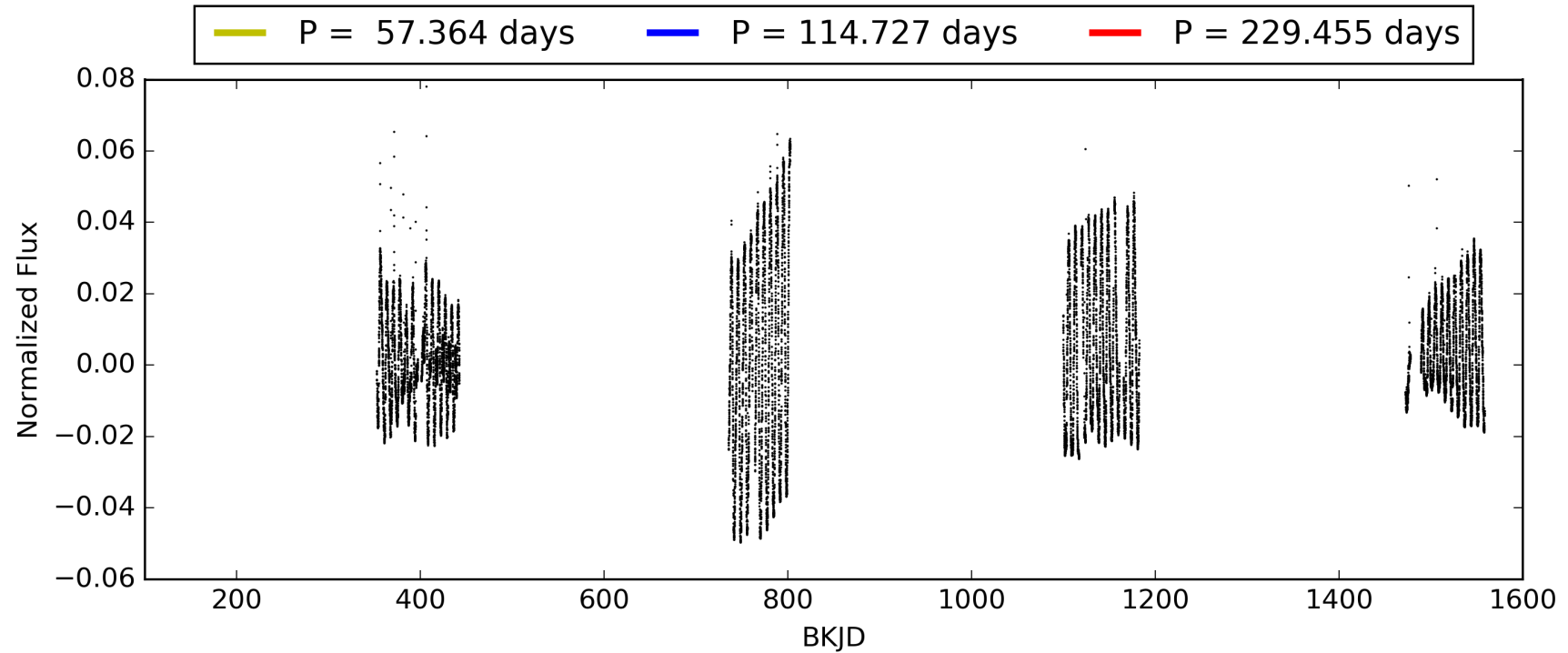
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005710376-02, PDC Light Curves

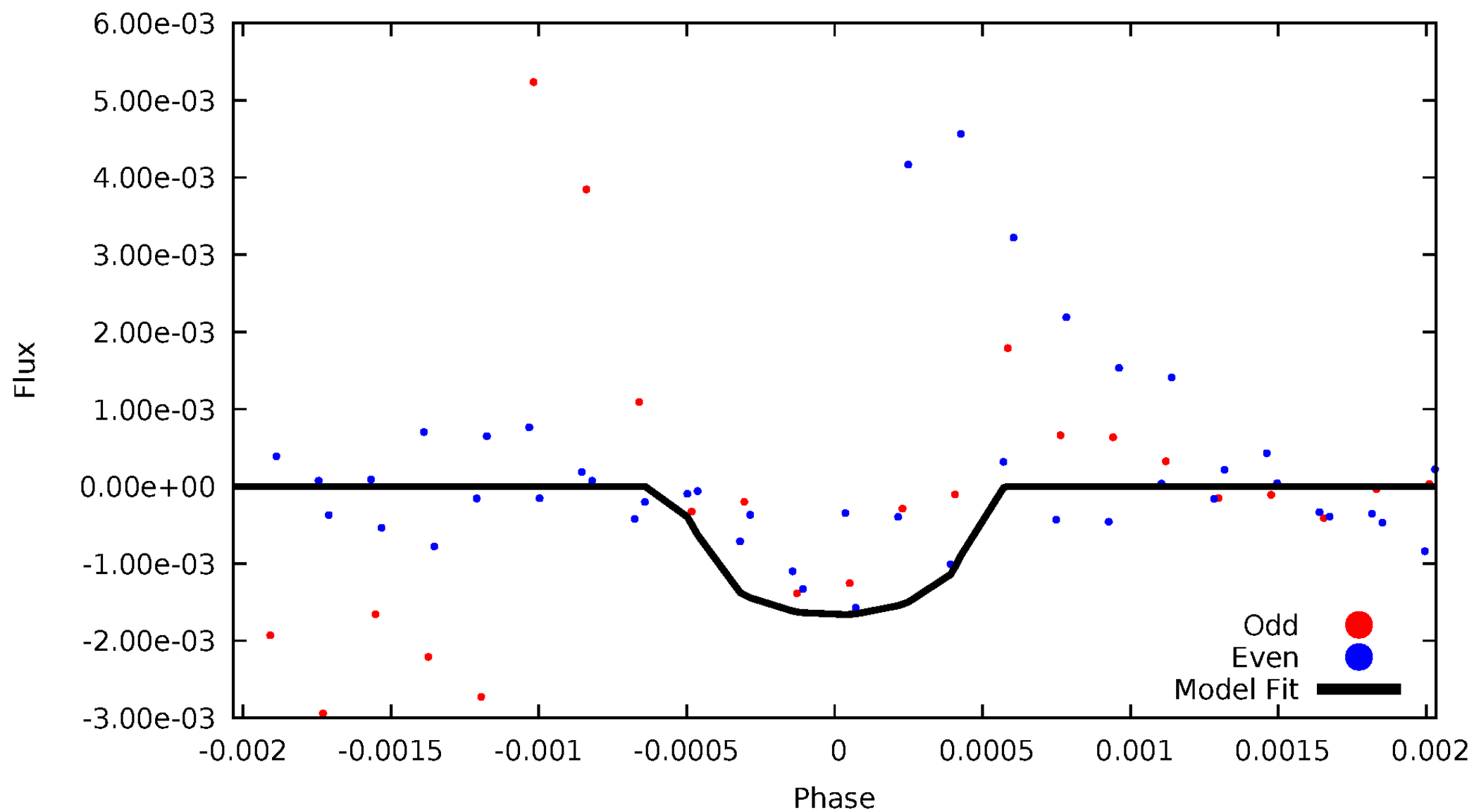


TCE 005710376-02



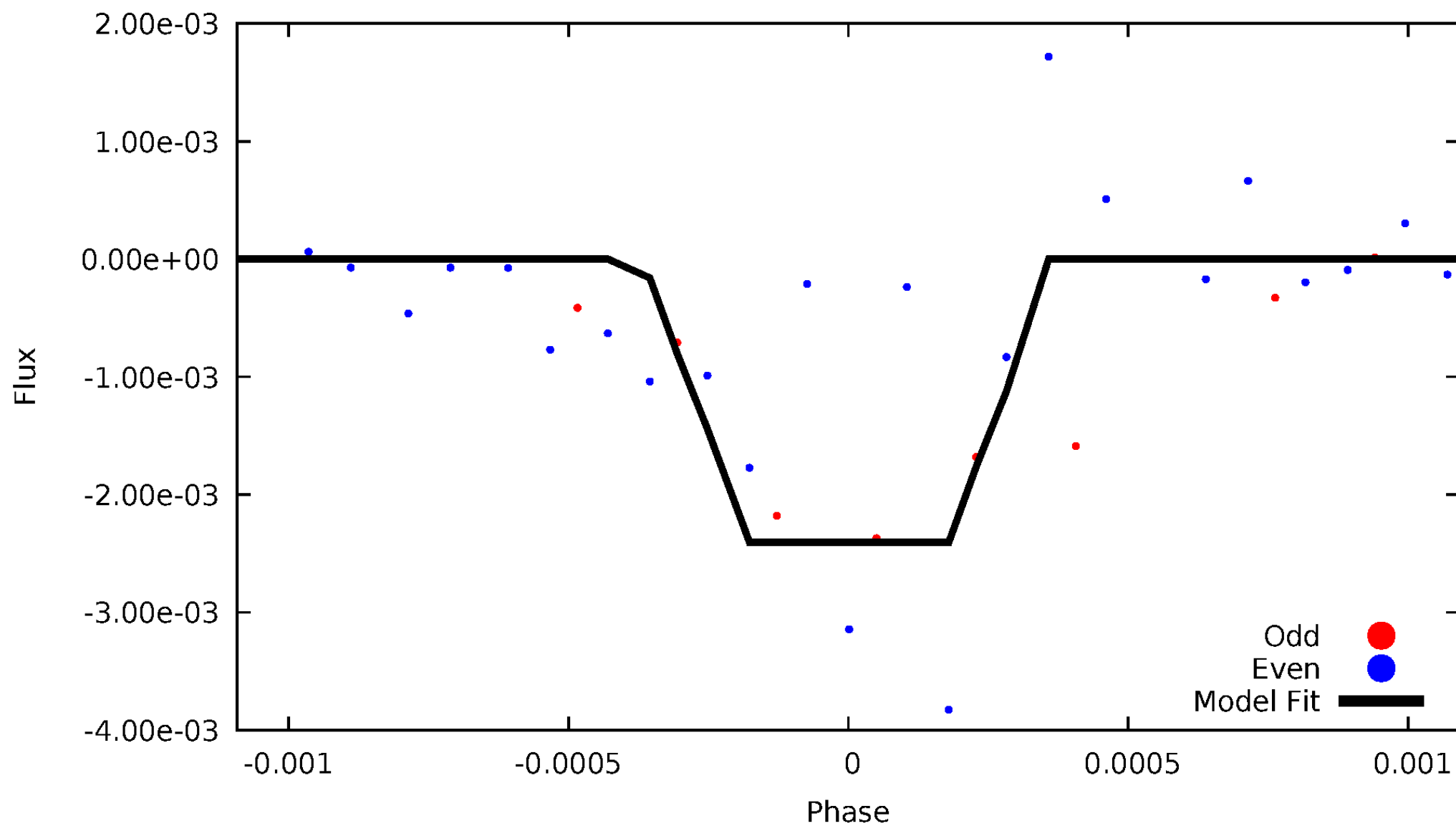
DV Odd/Even

TCE 005710376-02



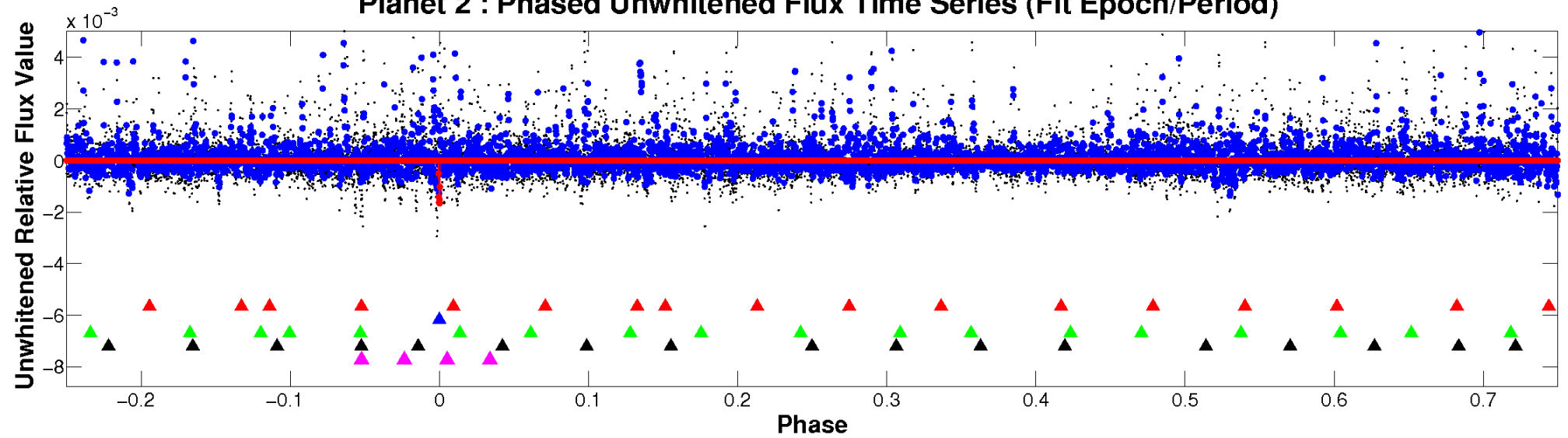
ALT Odd/Even

TCE 005710376-02

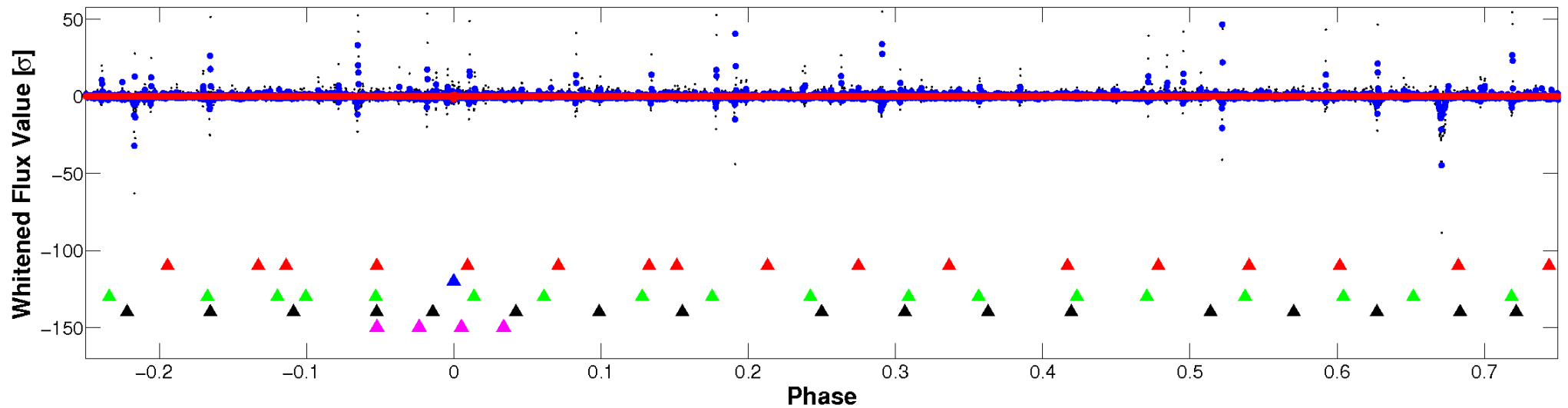


Non-Whitened Vs. Whitened Light Curve

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

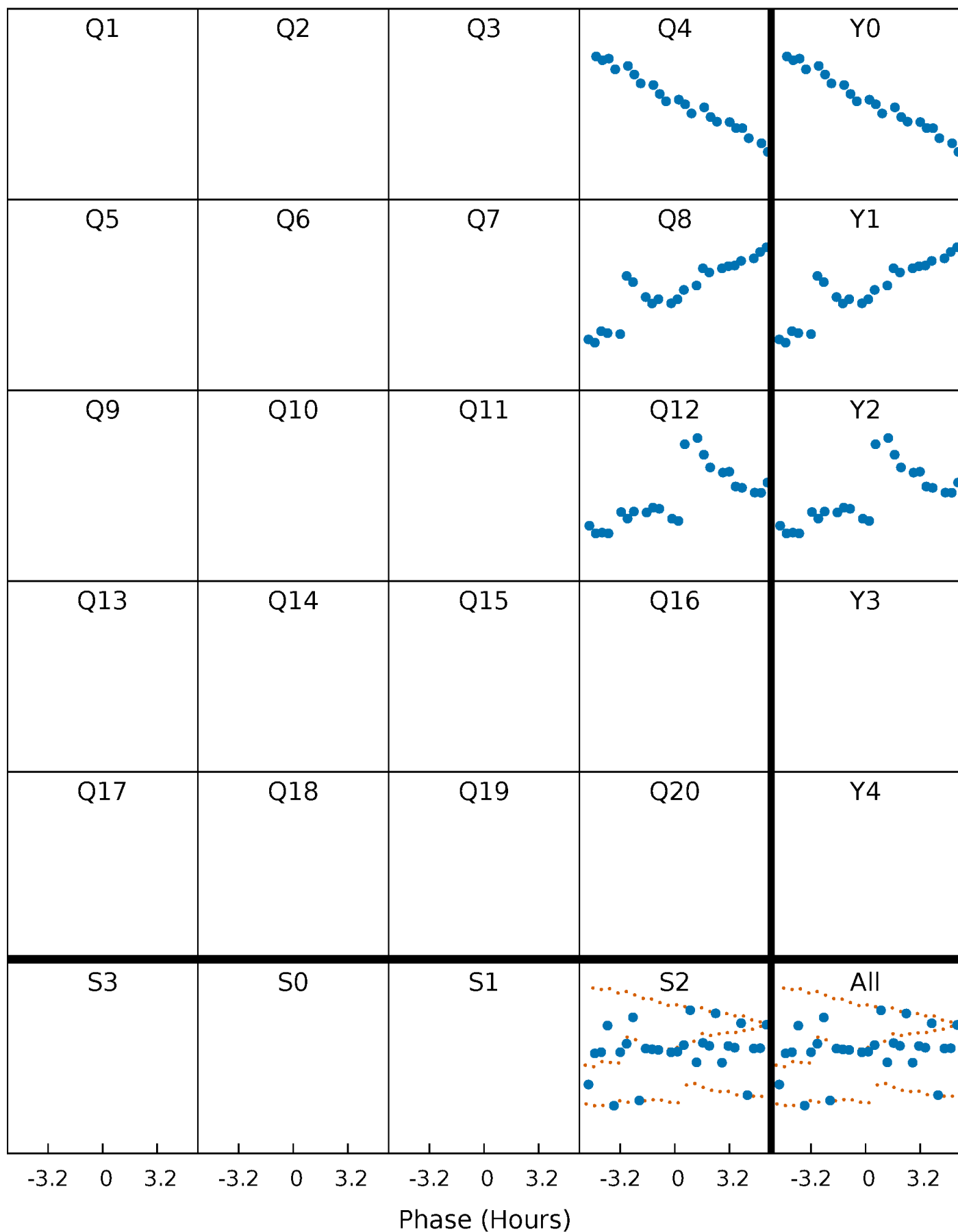


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



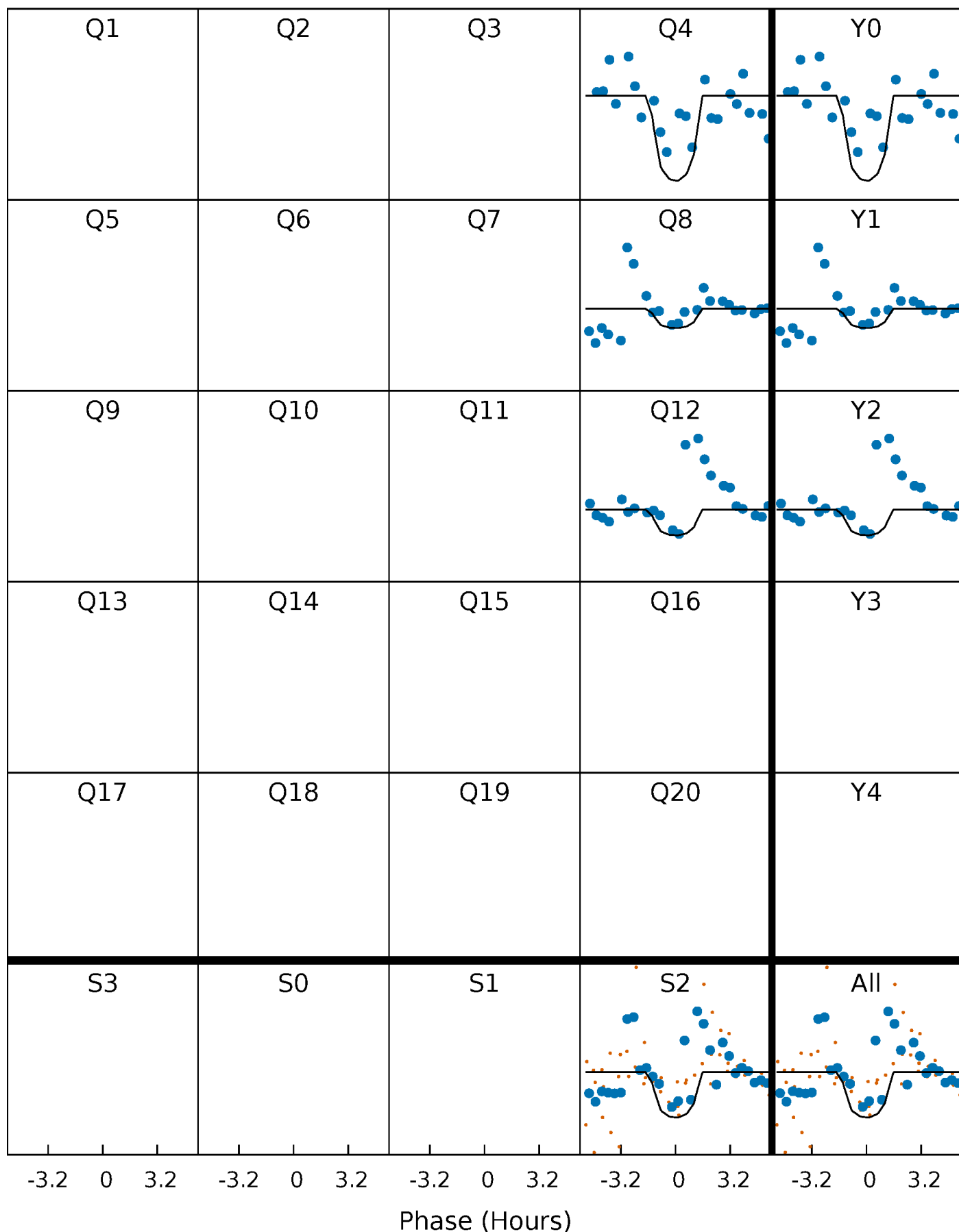
PDC Quarter-Phased Transit Curves

TCE 005710376-02 P=114.727271 Days $T_0=184.054458$ (BKJD)



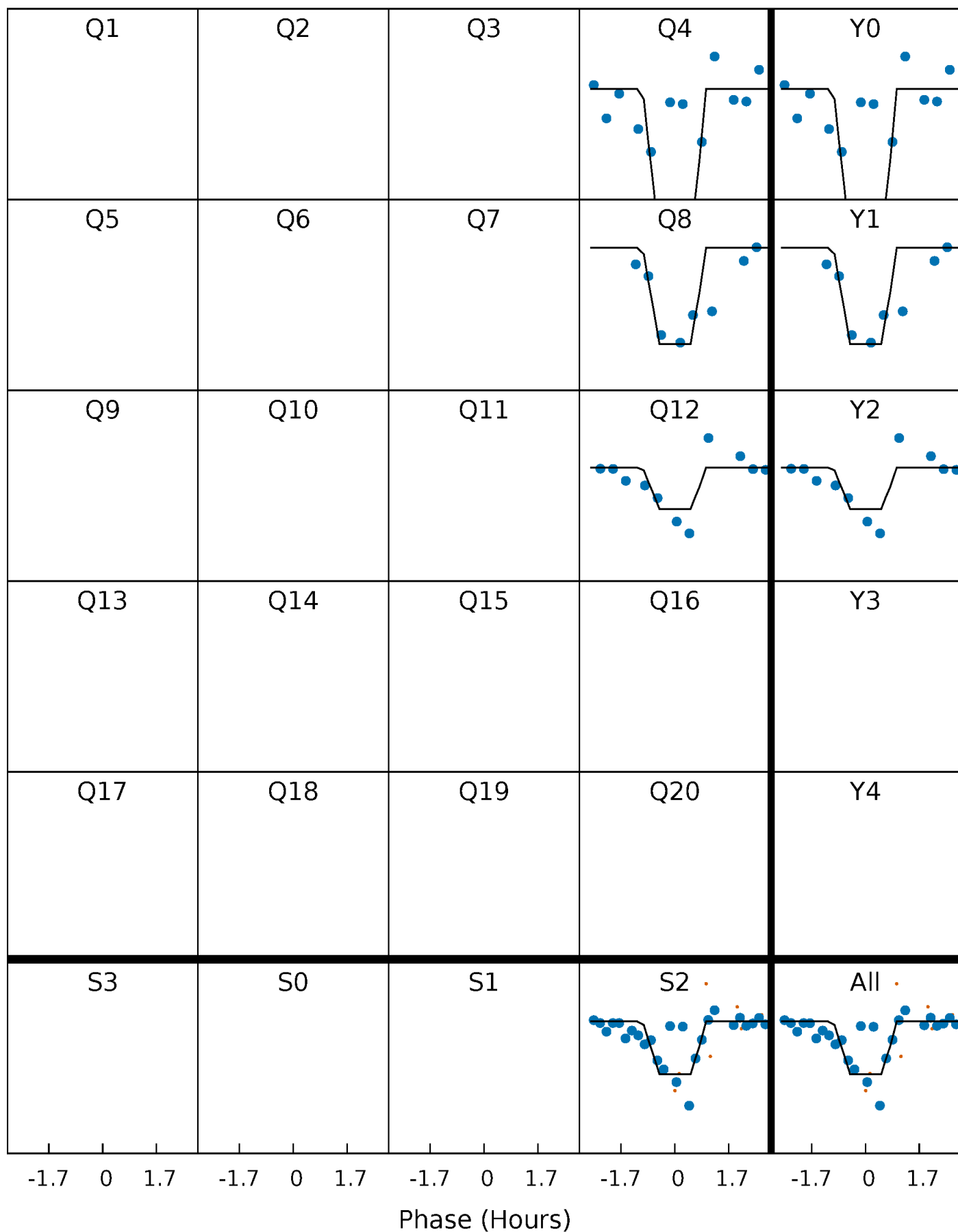
DV Quarter-Phased Transit Curves

TCE 005710376-02 P=114.727271 Days $T_0=184.054458$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

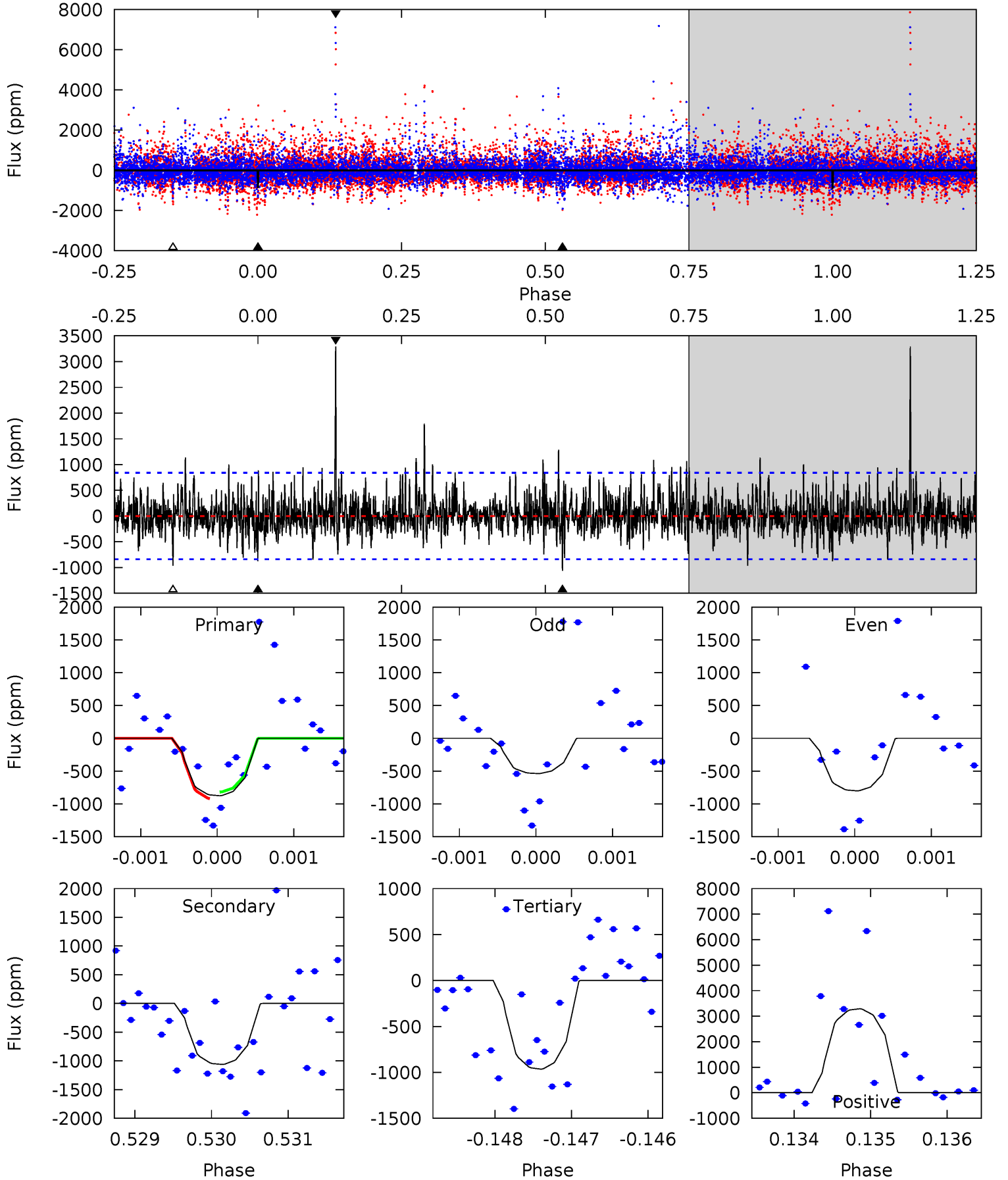
TCE 005710376-02 P=114.723086 Days $T_0=184.075463$ (BKJD)



DV Model-Shift Uniqueness Test

005710376-02, P = 114.727271 Days, E = 184.054458 Days

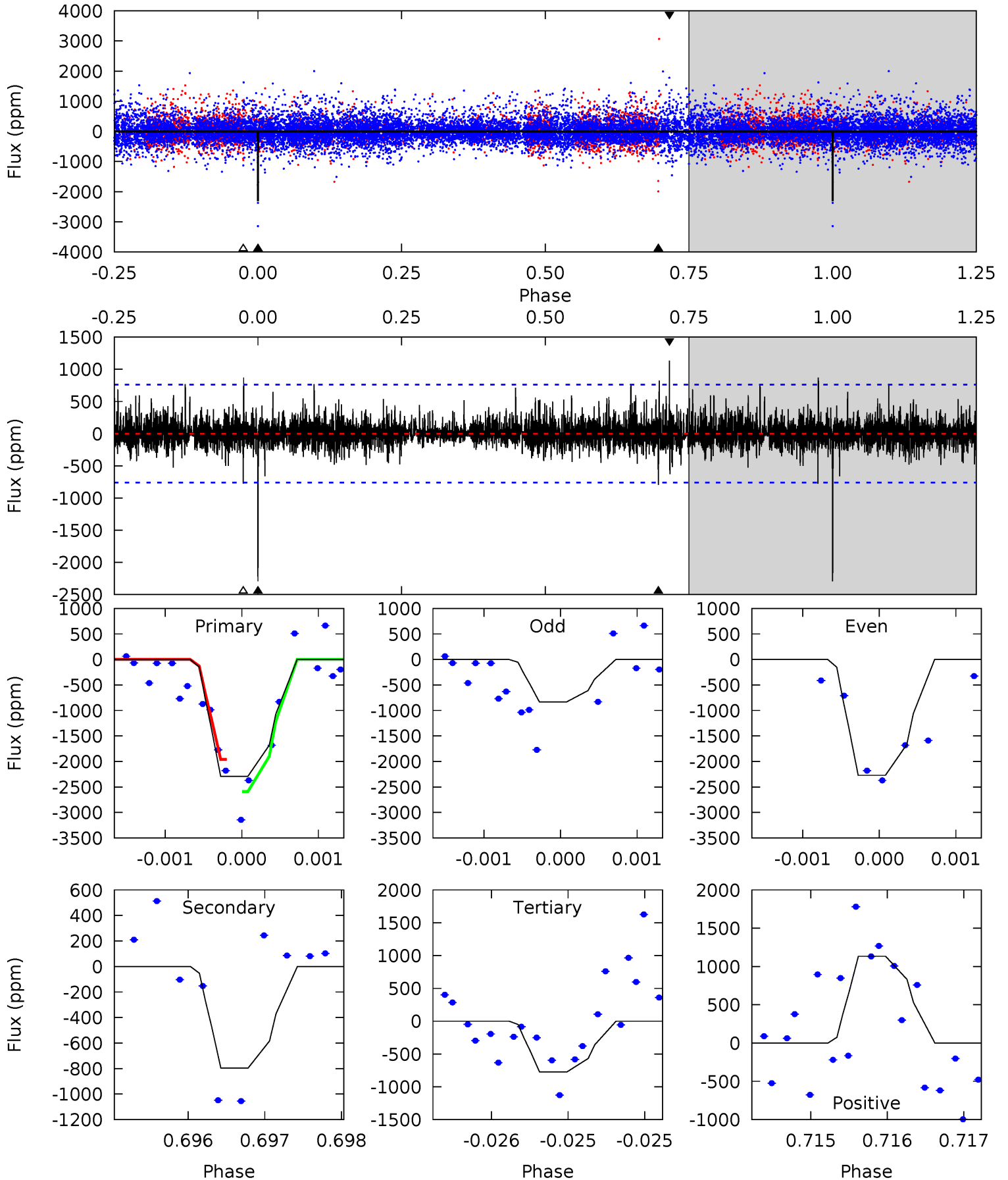
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.67	6.88	6.26	21.3	5.44	3.27	1.89	-0.58	-15.7	0.63	-14.5	0.56	0.35	0.76	0.33



Alt Model-Shift Uniqueness Test

005710376-02, P = 114.723086 Days, E = 184.075463 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.7	5.79	5.63	8.24	5.53	3.42	1.18	11.0	8.42	0.16	-2.45	4.21	0.84	0.33	0



Stellar Parameters For KIC 005710376

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4002^{+140}_{-154}	$4.635^{+0.056}_{-0.016}$	$0.340^{+0.100}_{-0.300}$	$0.636^{+0.030}_{-0.064}$	$0.637^{+0.037}_{-0.059}$	$3.488^{+0.879}_{-0.269}$
	+3%/-4%	+1%/-0%	+29%/-88%	+5%/-10%	+6%/-9%	+25%/-8%
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 005710376-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1062 ± 154	$6.17^{+6.49}_{-4.17}$	309^{+12}_{-13}	2889^{+1349}_{-471}	2408^{+21561}_{-1850}
Alt.	-796 ± 138	$6.22^{+6.28}_{-4.31}$	310^{+11}_{-12}	2790^{+1259}_{-450}	1755^{+17532}_{-1321}

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 $A_{obs} \gg 1.0$

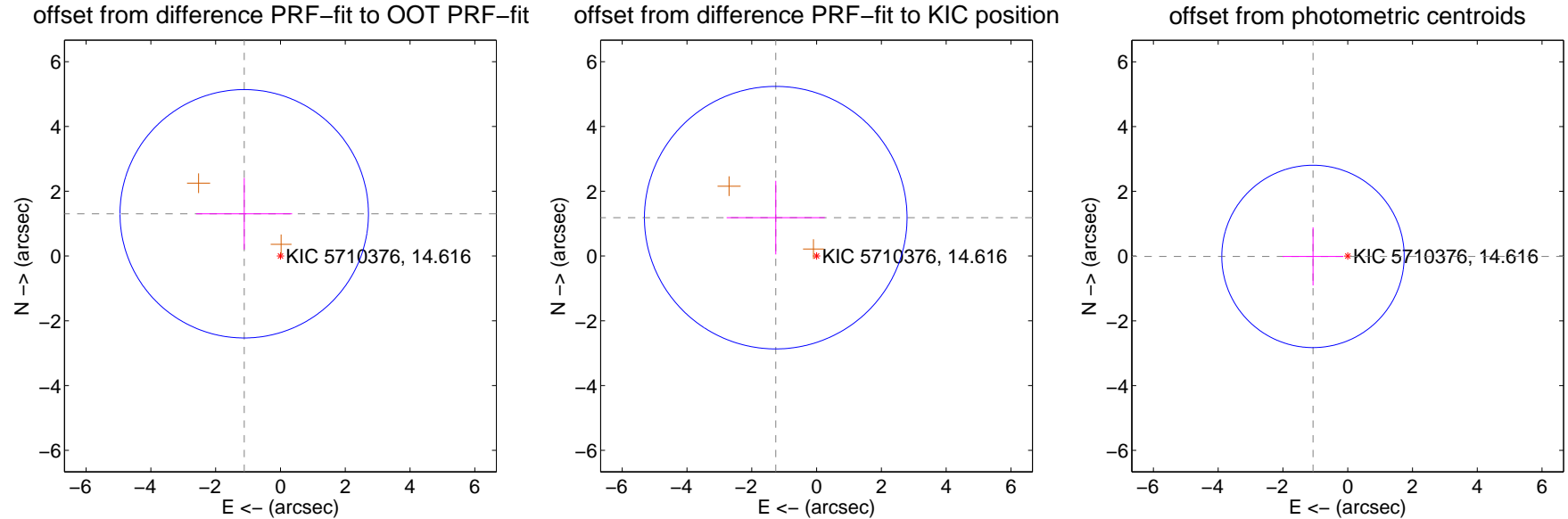
DV Centroid Data

Supplemental centroid analysis for 005710376-02. Kepler magnitude: 14.62. Transit SNR 6.42

There are 0 quarters with good PRF difference image offsets

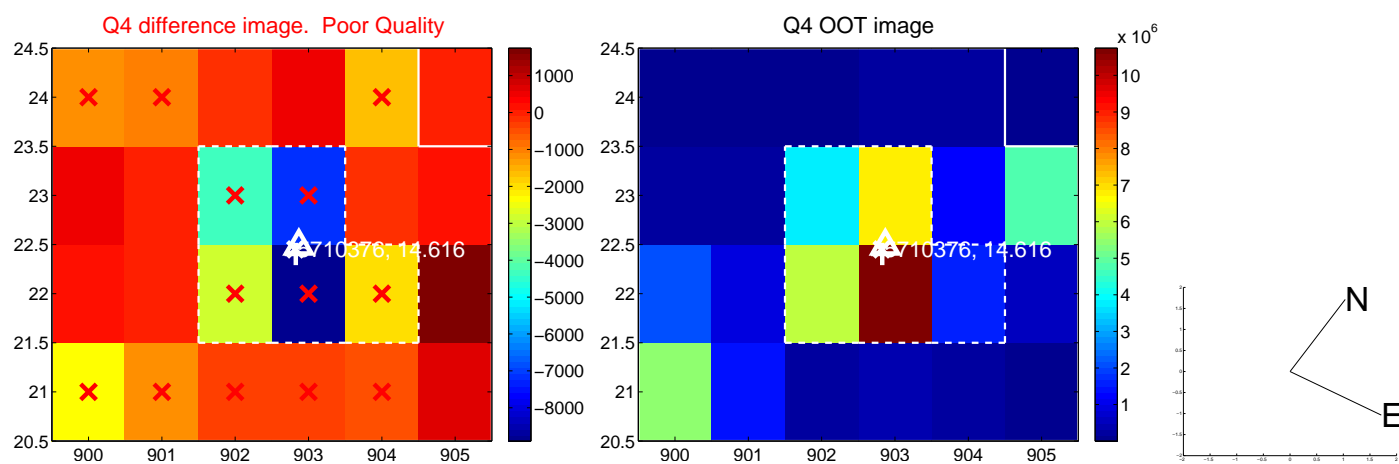
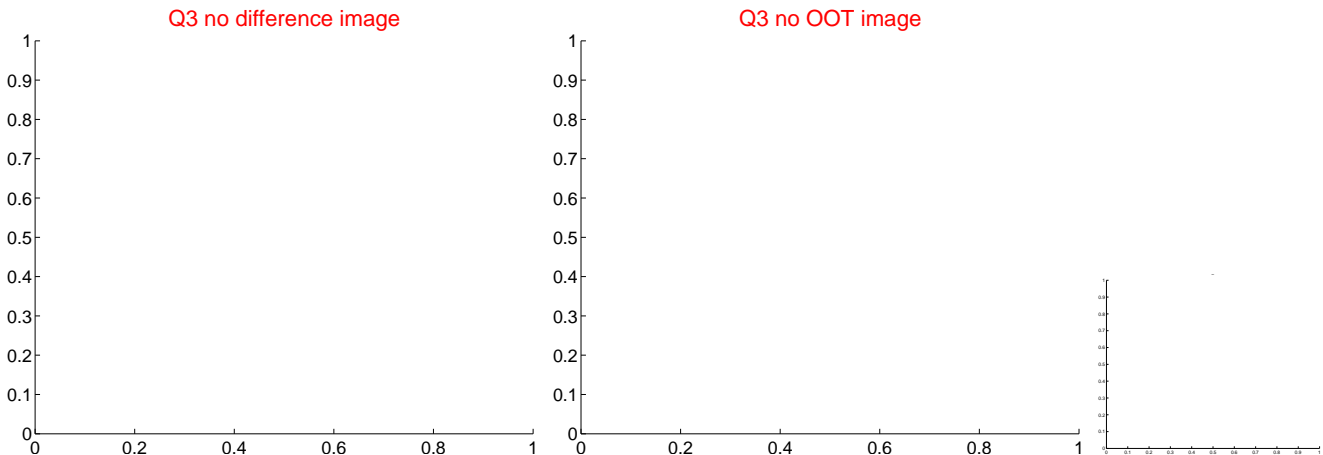
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.718 ± 1.278	1.34	1.118 ± 1.481	1.304 ± 1.105
PRF-fit source offset from KIC position	1.730 ± 1.351	1.28	1.261 ± 1.515	1.184 ± 1.136
photometric centroid source offset	1.07 ± 0.94	1.14	1.07 ± 0.94	-0.01 ± 0.90

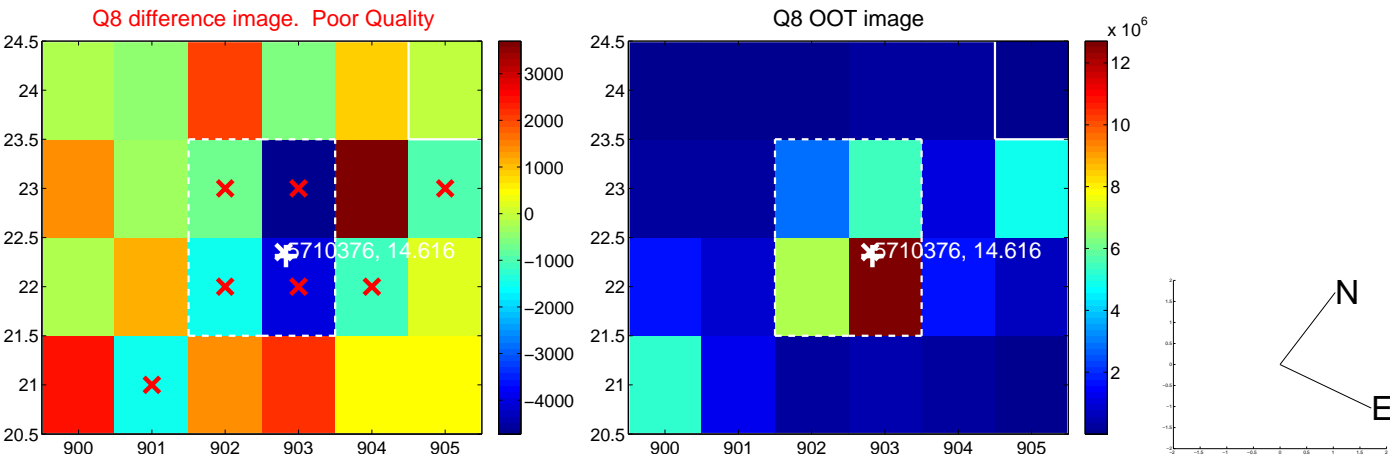


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

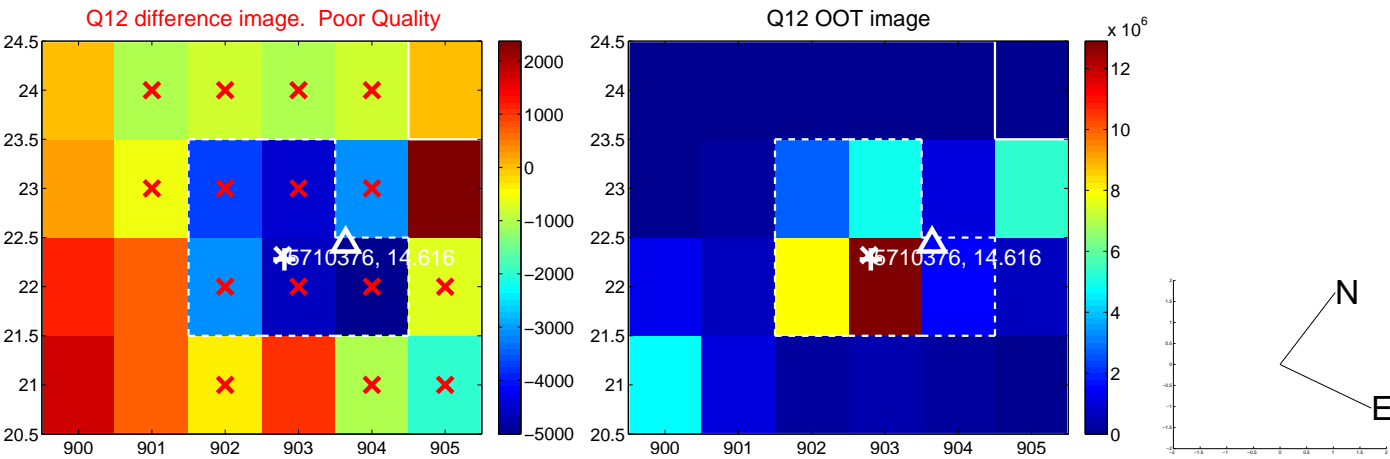
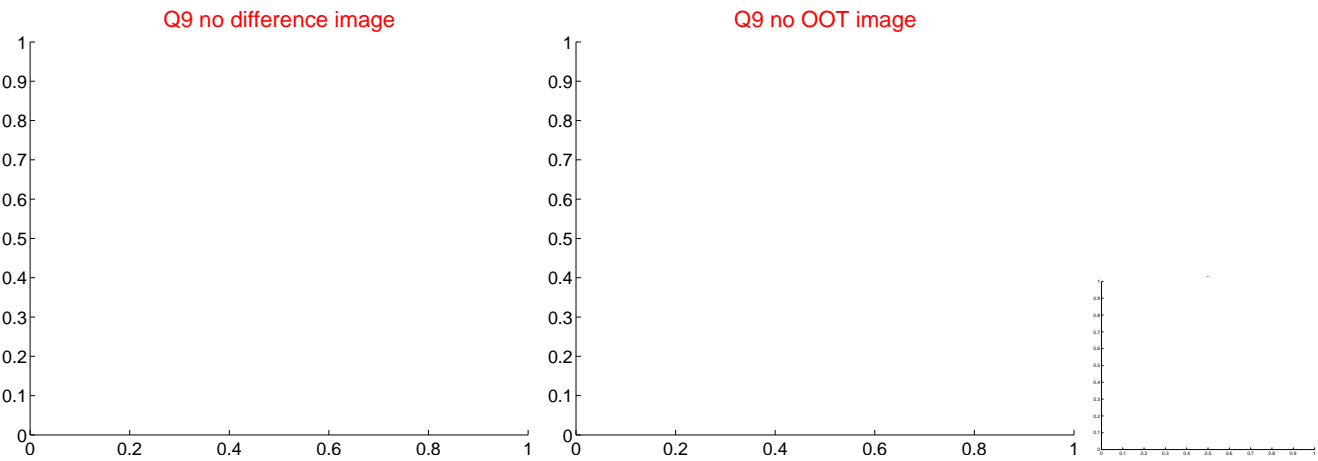
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



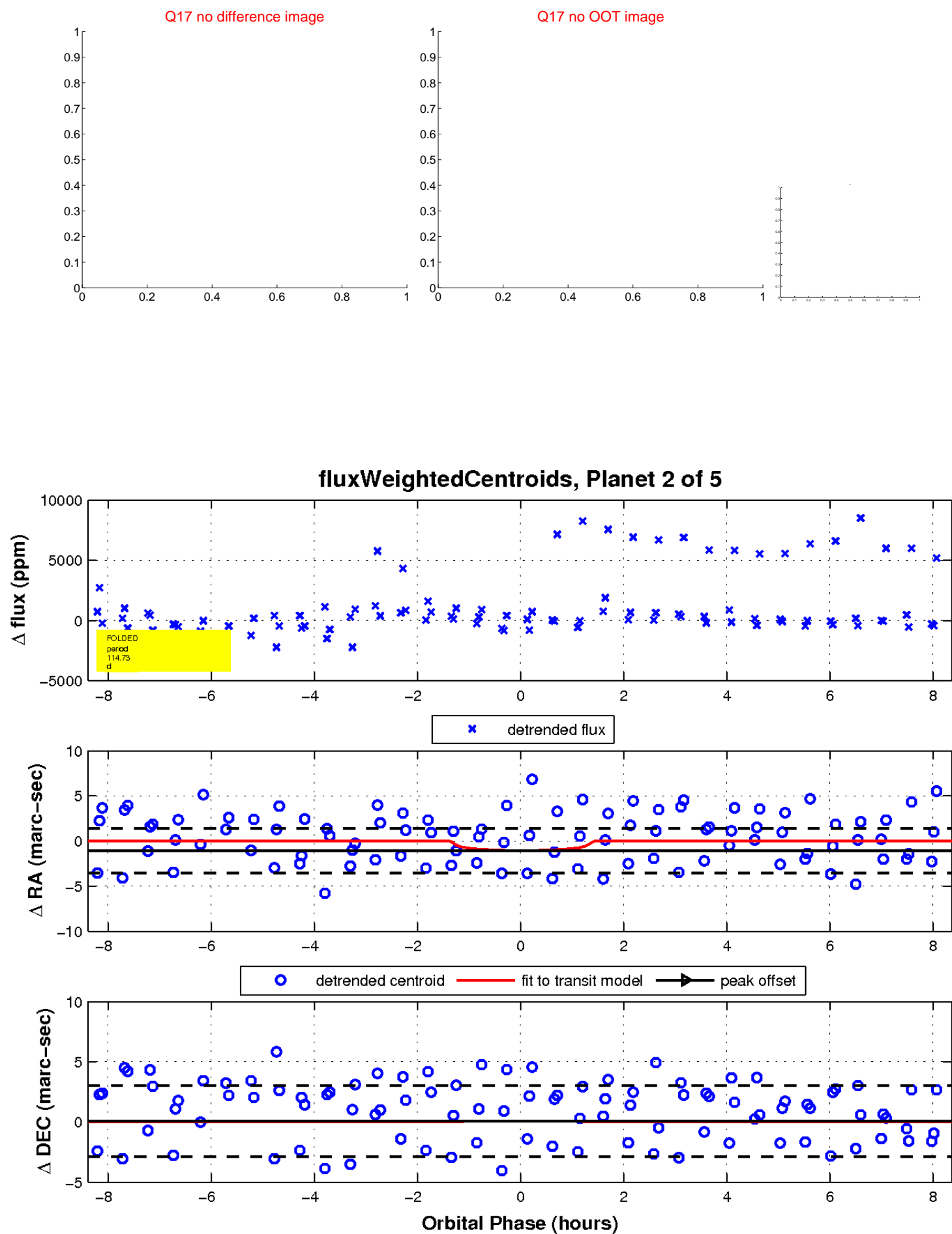
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

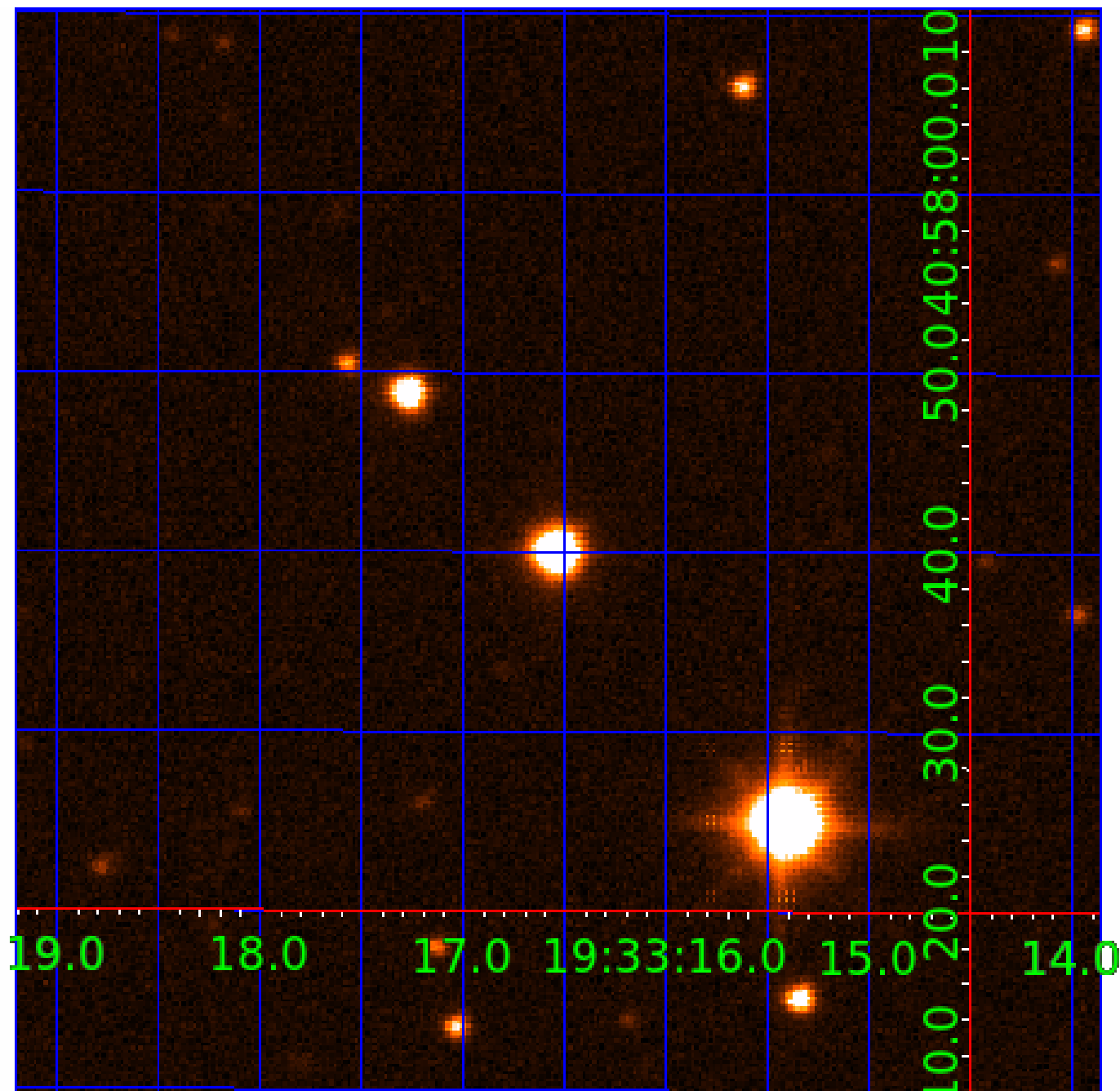


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005710376

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})
005710376-01	OBS	No	84.277447	199.277036	1300.5	8.055	13.2	4.7	0.64	4002	2.21	0.89
005710376-02	OBS	No	114.727271	184.054458	1666.6	2.798	11.7	6.4	0.64	4002	2.62	0.59
005710376-03	OBS	No	80.854028	172.523944	954.1	2.561	12.3	5.2	0.64	4002	2.19	0.94
005710376-04	OBS	No	84.424989	178.050939	1079.2	3.951	11.0	5.4	0.64	4002	2.33	0.89
005710376-05	OBS	No	347.474379	407.522565	5297.1	30.567	10.0	9.3	0.64	4002	4.72	0.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005710376-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005710376-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
005710376-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005710376-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005710376-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS

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

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

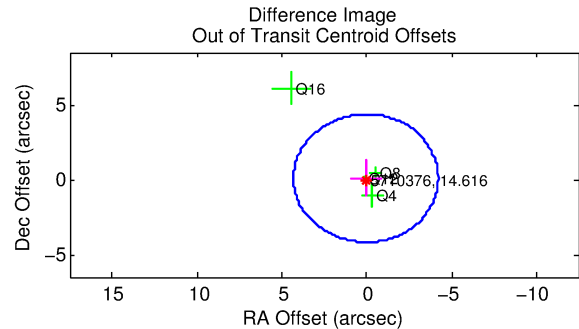
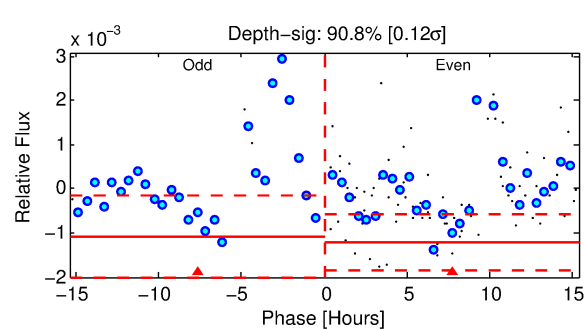
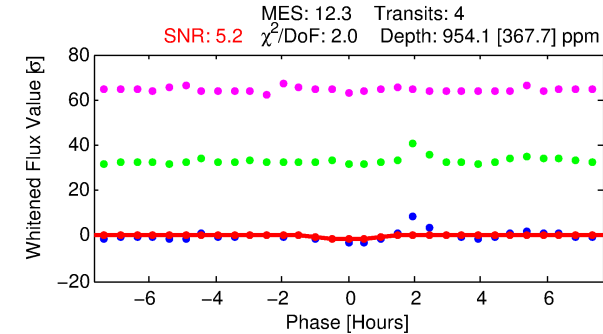
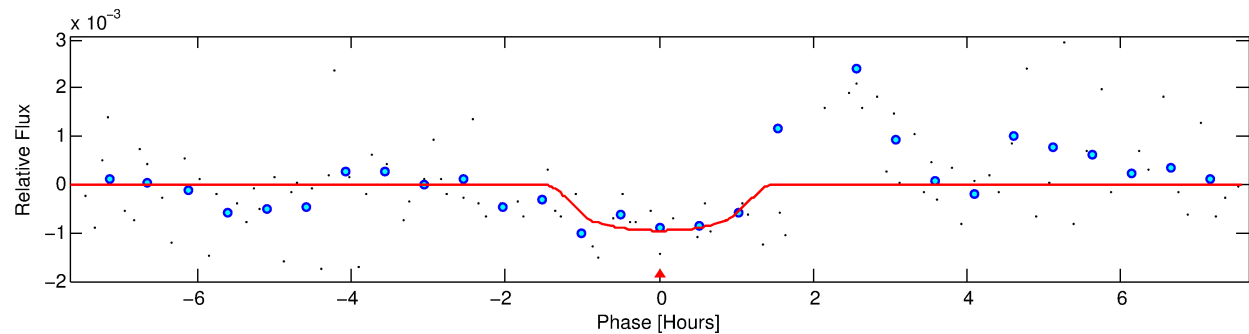
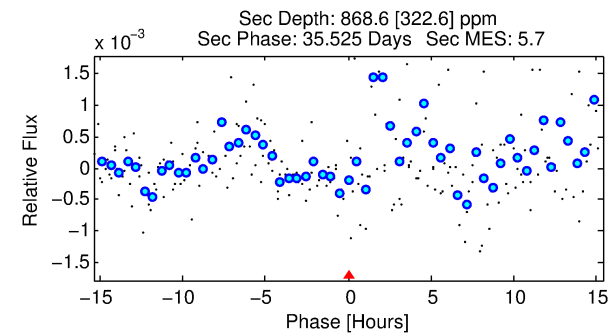
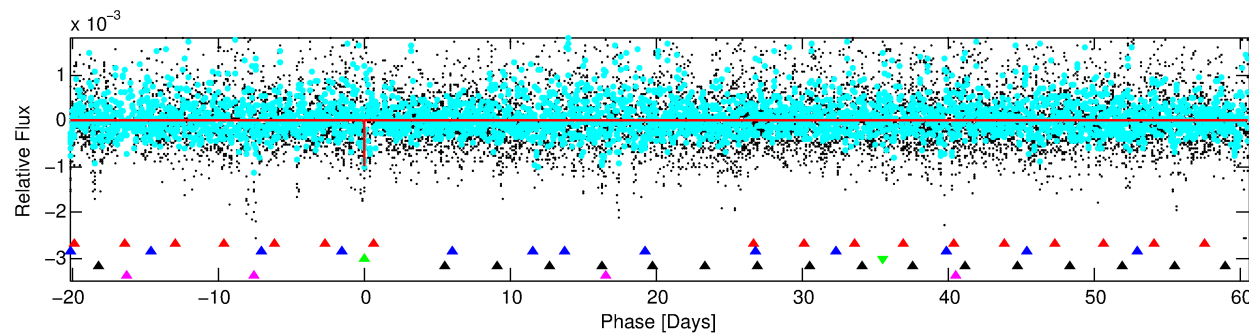
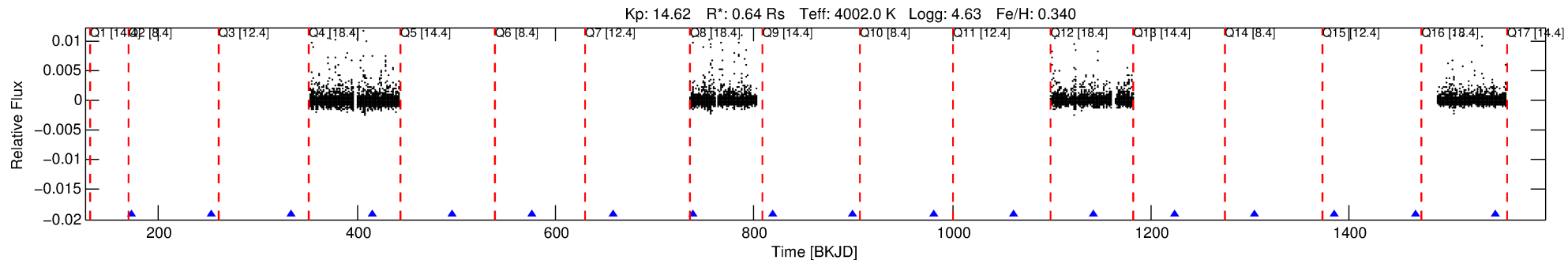
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005710376-03

No Significant Match Found

DV One-Page Summary

KIC: 5710376 Candidate: 3 of 5 Period: 80.854 d



DV Fit Results:

Period = 80.85403 [0.00267] d
Epoch = 172.5239 [0.0350] BKJD
Rp/R* = 0.0315 [0.1341]
a/R* = 163.38 [2252.50]
b = 0.78 [7.27]
Seff = 0.94 [0.18]
Teq = 251 [12] K
Rp = 2.19 [9.31] Re
a = 0.3149 [0.0251] AU
Ag = 9922.71 [84637.19] [0.12σ]
Teffp = 3872 [8257] K [0.44σ]

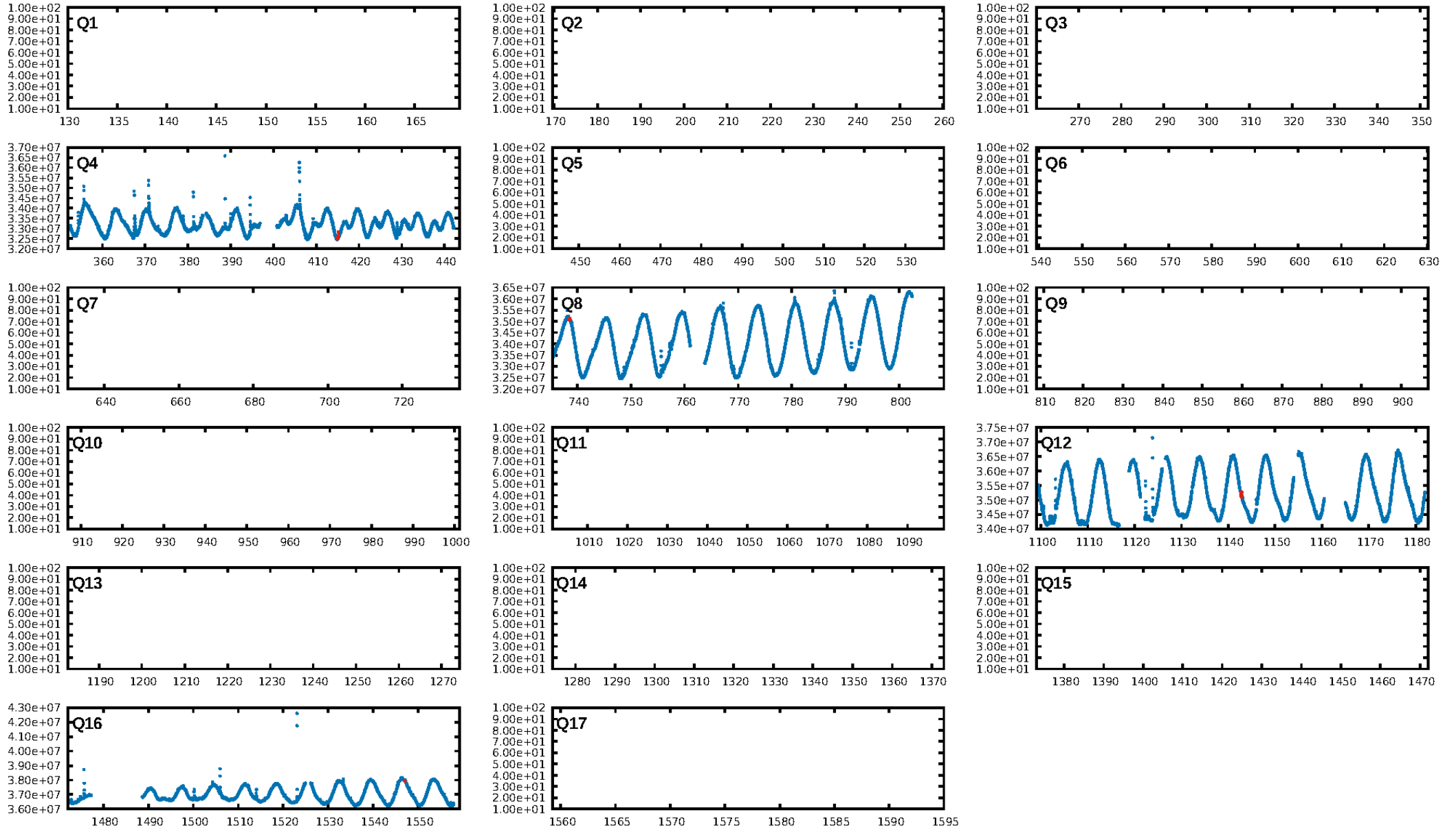
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [9.72σ]
ModelChiSquare2-sig: 86.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.75e-15
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.519
Centroid-sig: 19.6%
Centroid-so: 1.415 arcsec [1.15σ]
OotOffset-rm: 0.101 arcsec [0.07σ]
KicOffset-rm: 0.197 arcsec [0.13σ]
OotOffset-st: 0/0/4/0 [4]
KicOffset-st: 0/0/4/0 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [4/4]

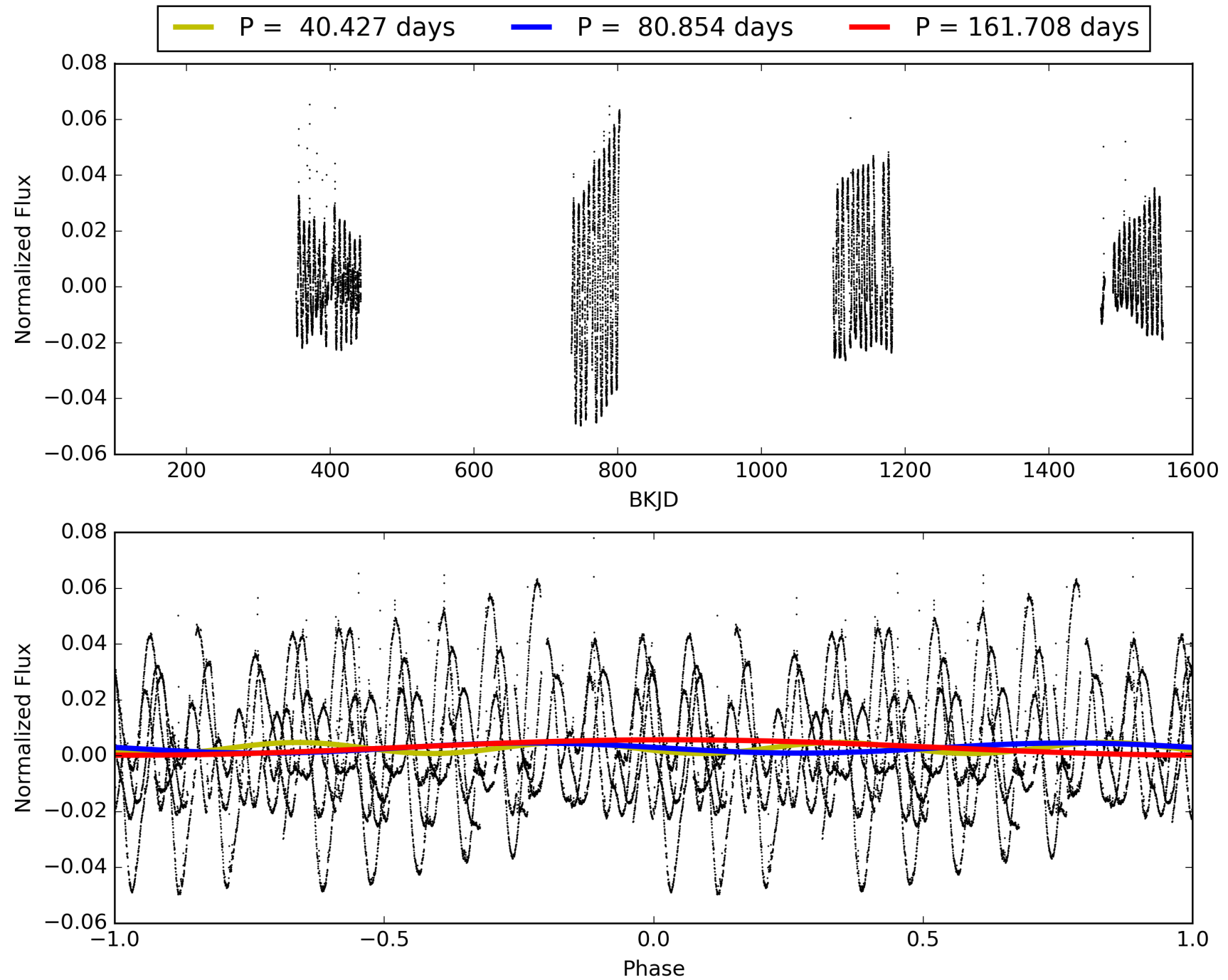
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:00:32 Z

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

TCE 005710376-03, PDC Light Curves

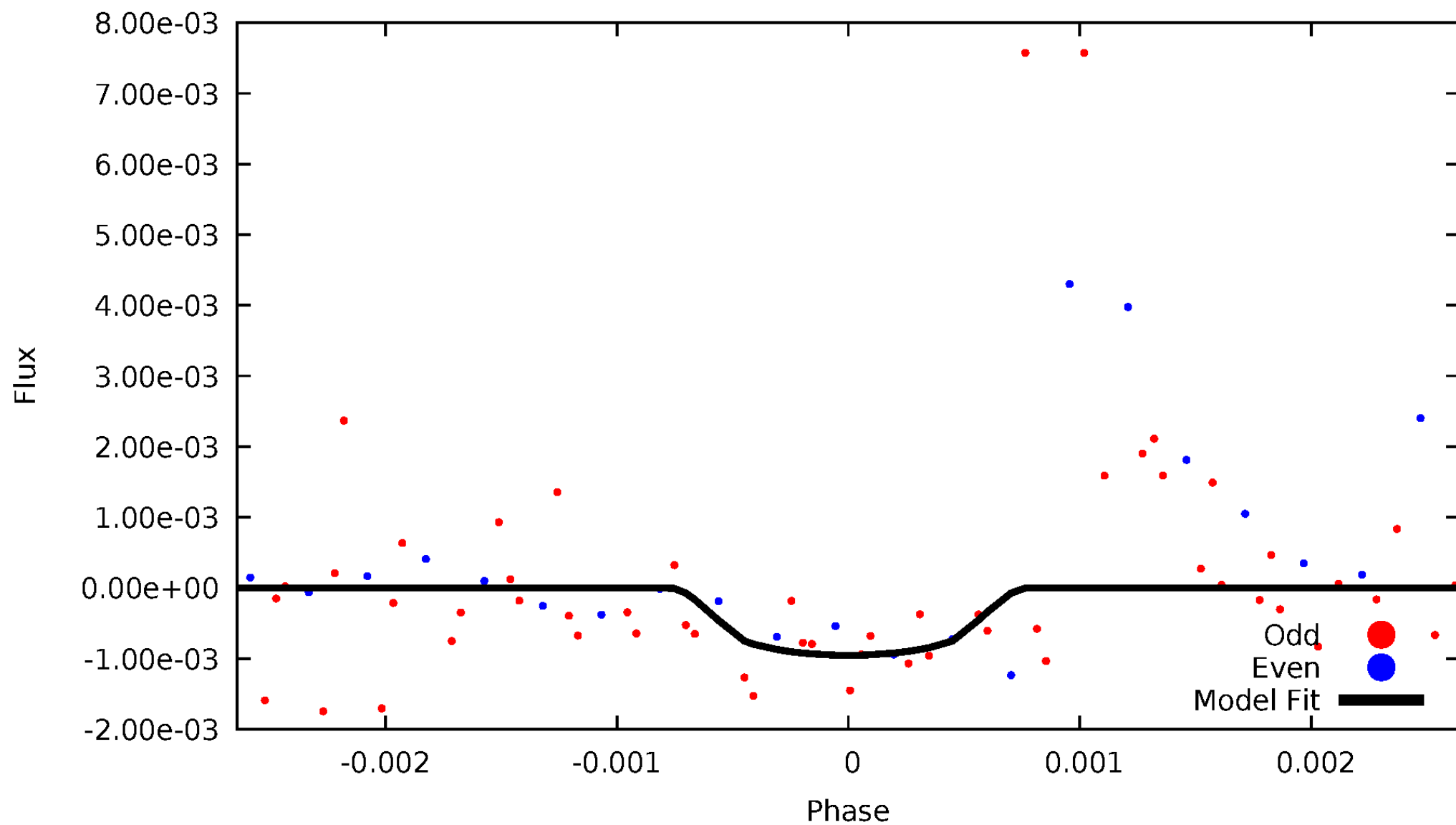


TCE 005710376-03



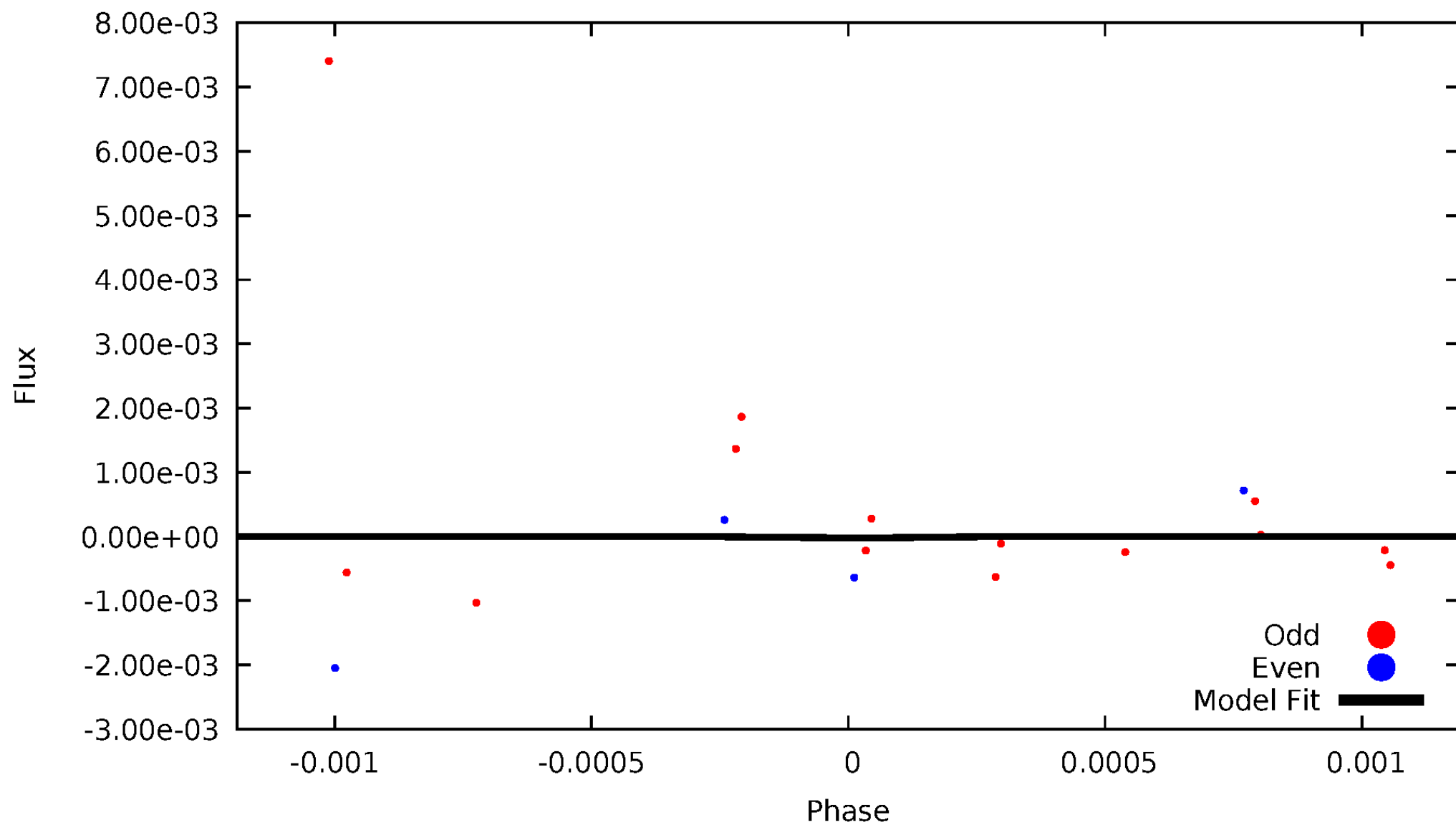
DV Odd/Even

TCE 005710376-03



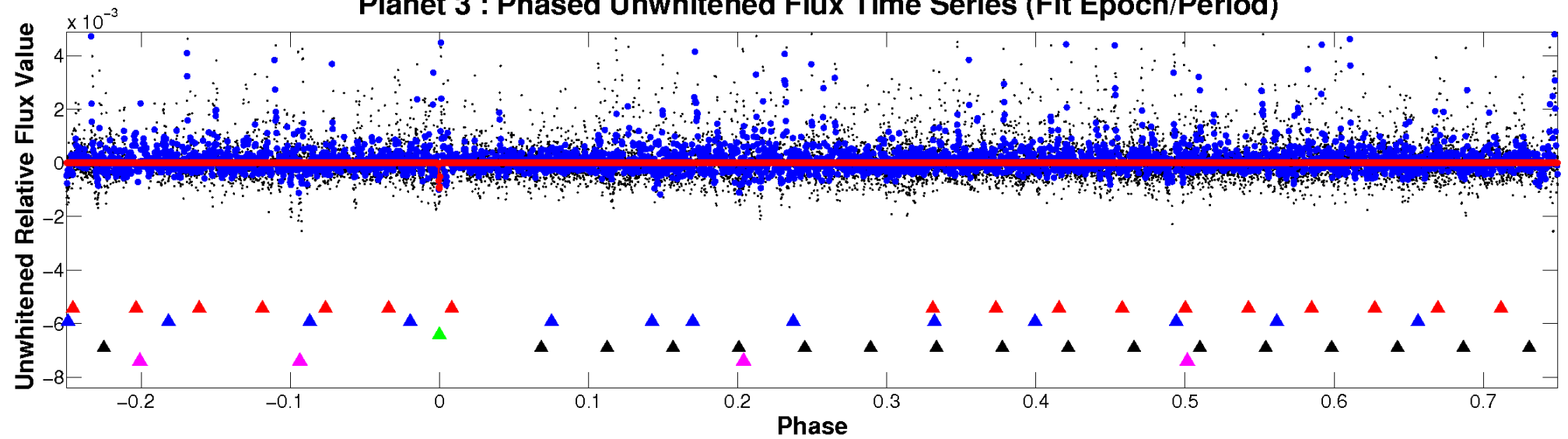
ALT Odd/Even

TCE 005710376-03

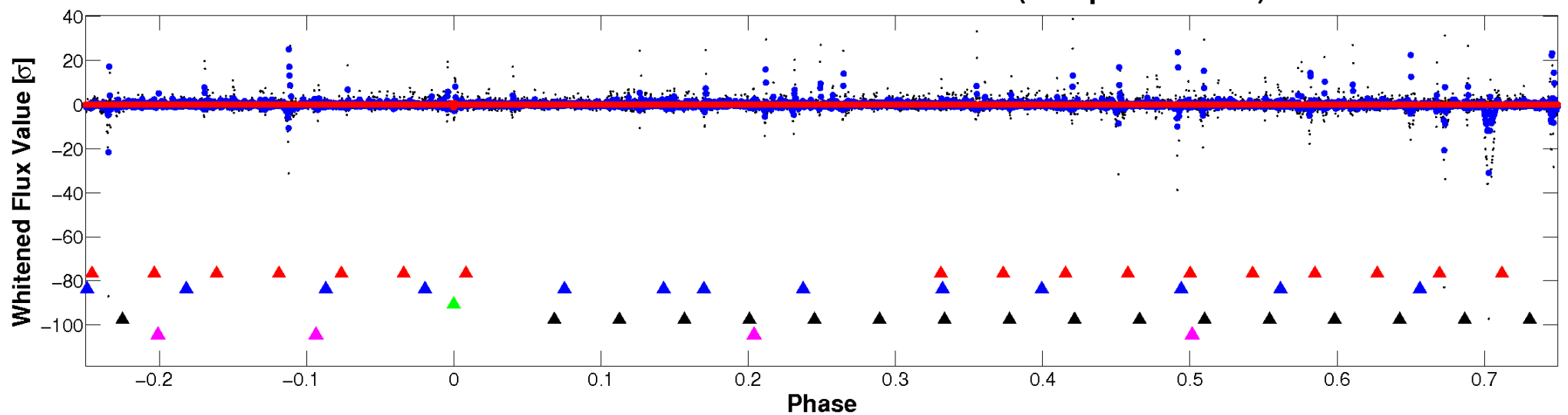


Non-Whitened Vs. Whitened Light Curve

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

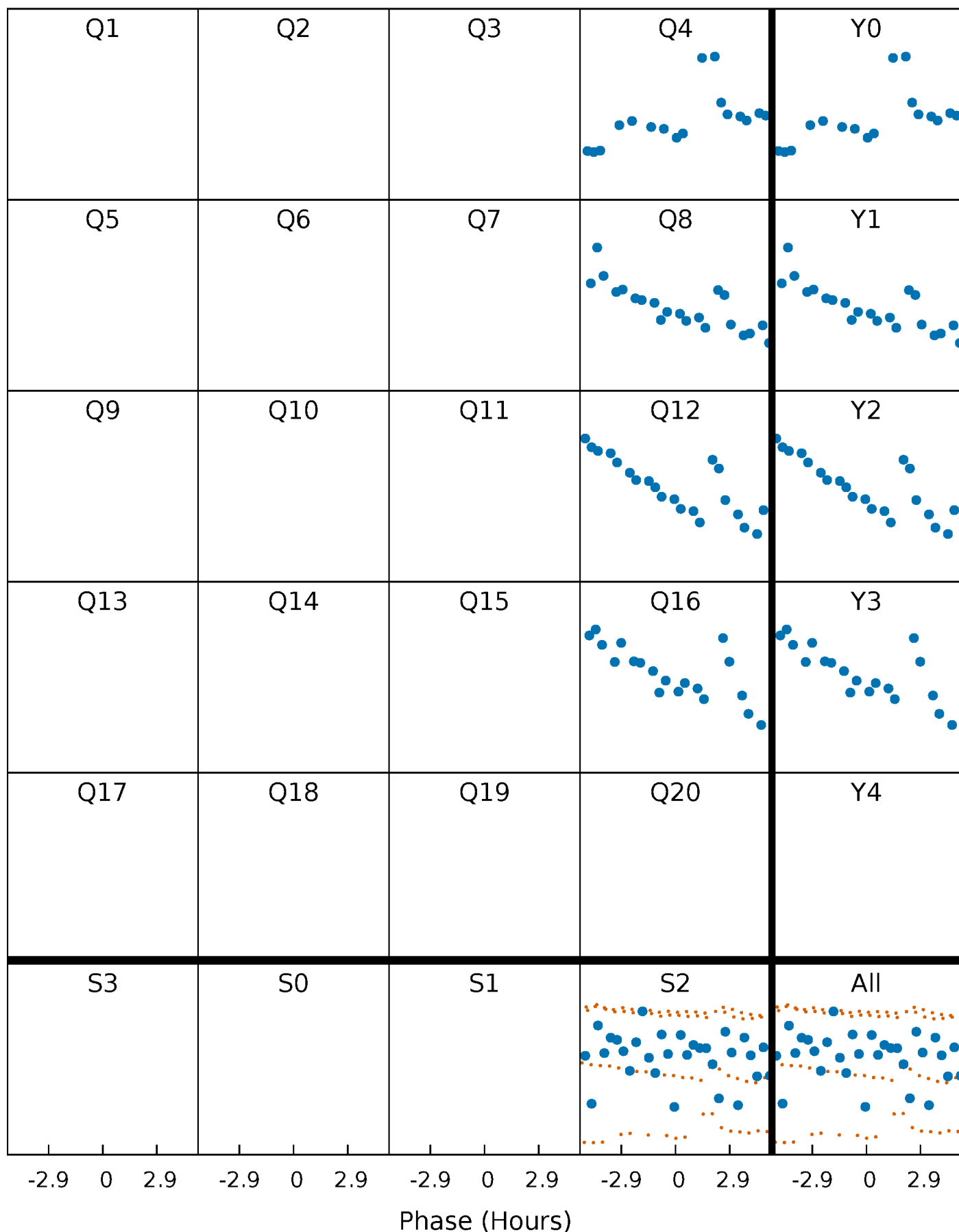


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



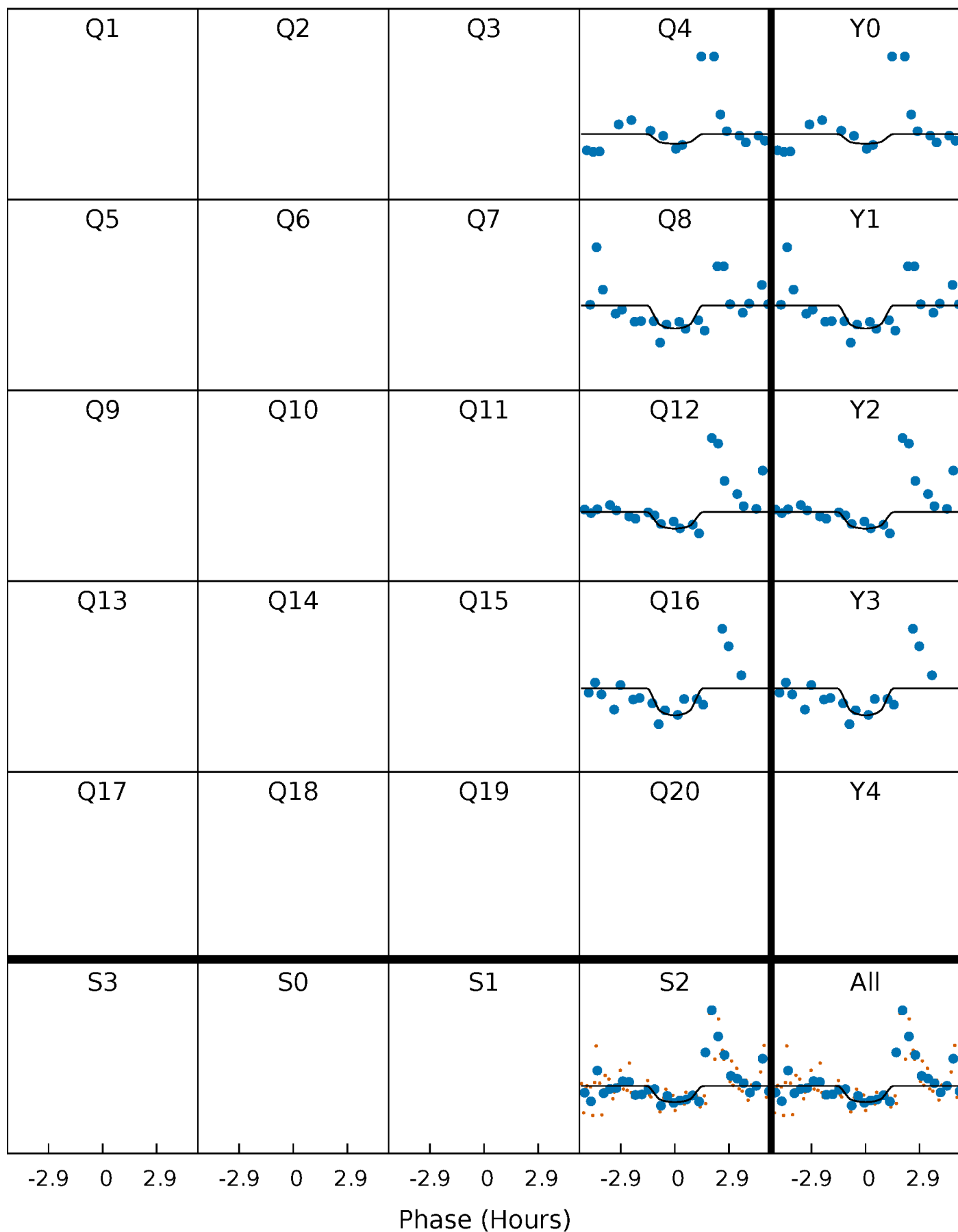
PDC Quarter-Phased Transit Curves

TCE 005710376-03 P= 80.854028 Days $T_0=172.523944$ (BKJD)



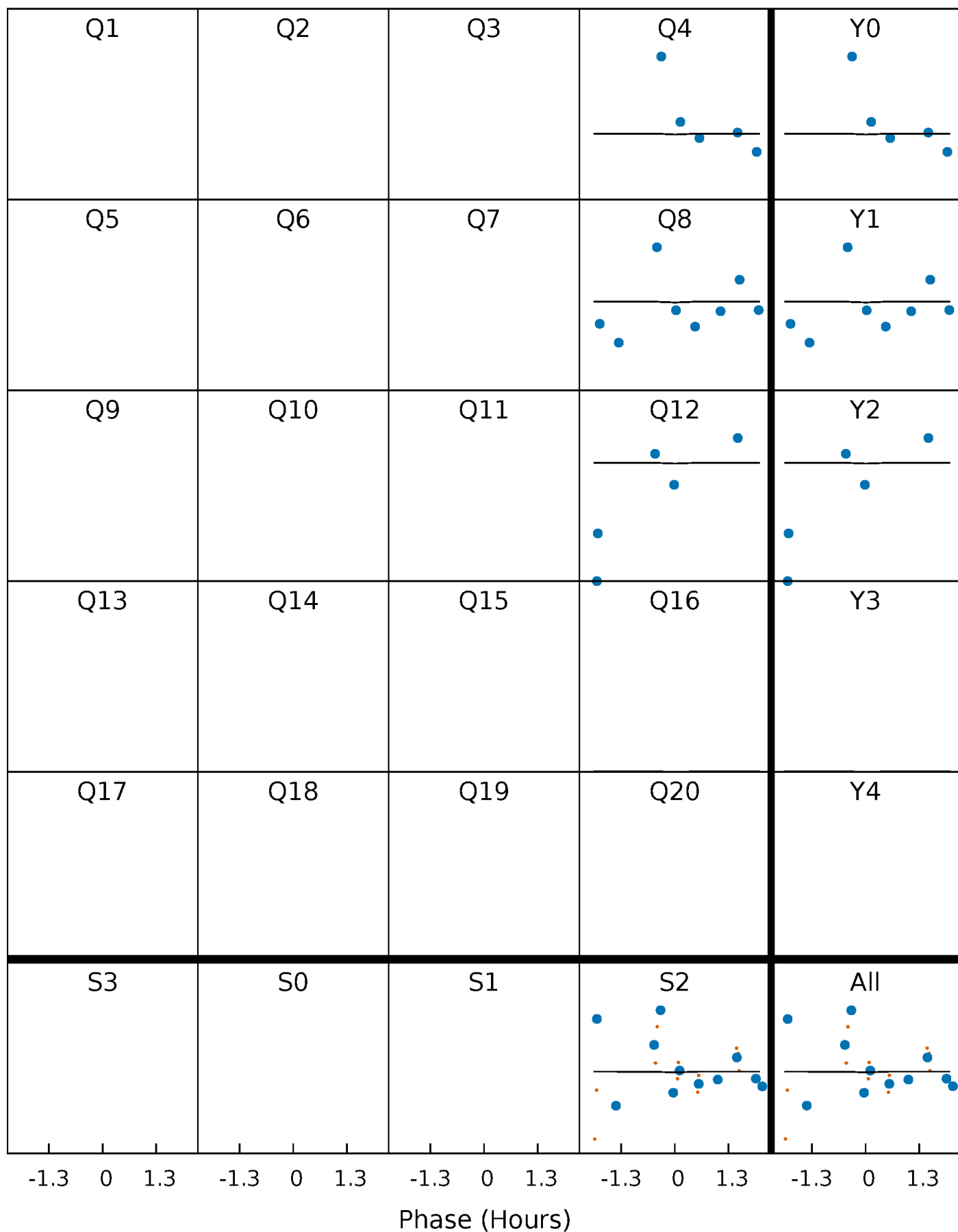
DV Quarter-Phased Transit Curves

TCE 005710376-03 $P = 80.854028$ Days $T_0 = 172.523944$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

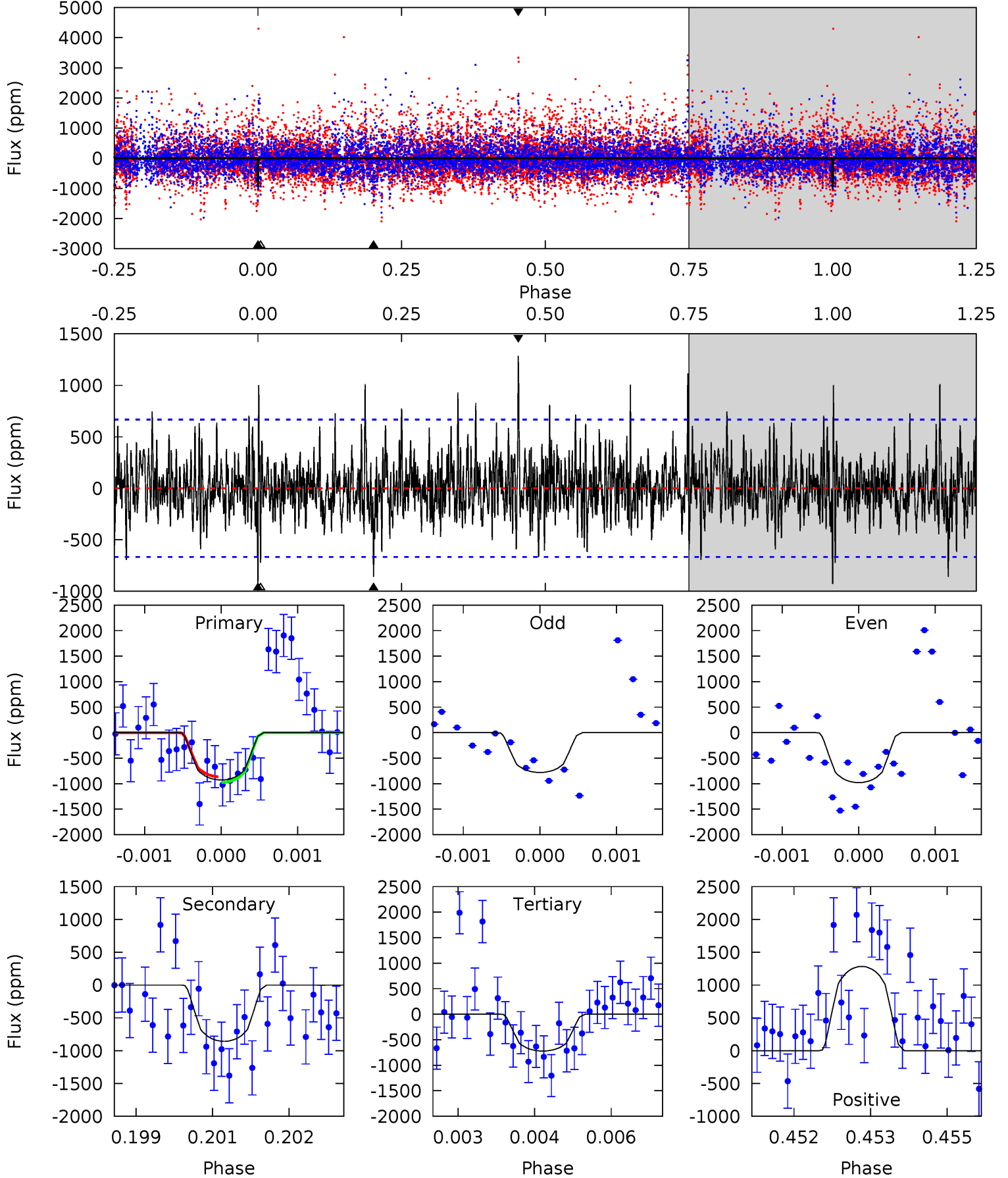
TCE 005710376-03 P= 80.856035 Days $T_0=172.637471$ (BKJD)



DV Model-Shift Uniqueness Test

005710376-03, P = 80.854028 Days, E = 172.523944 Days

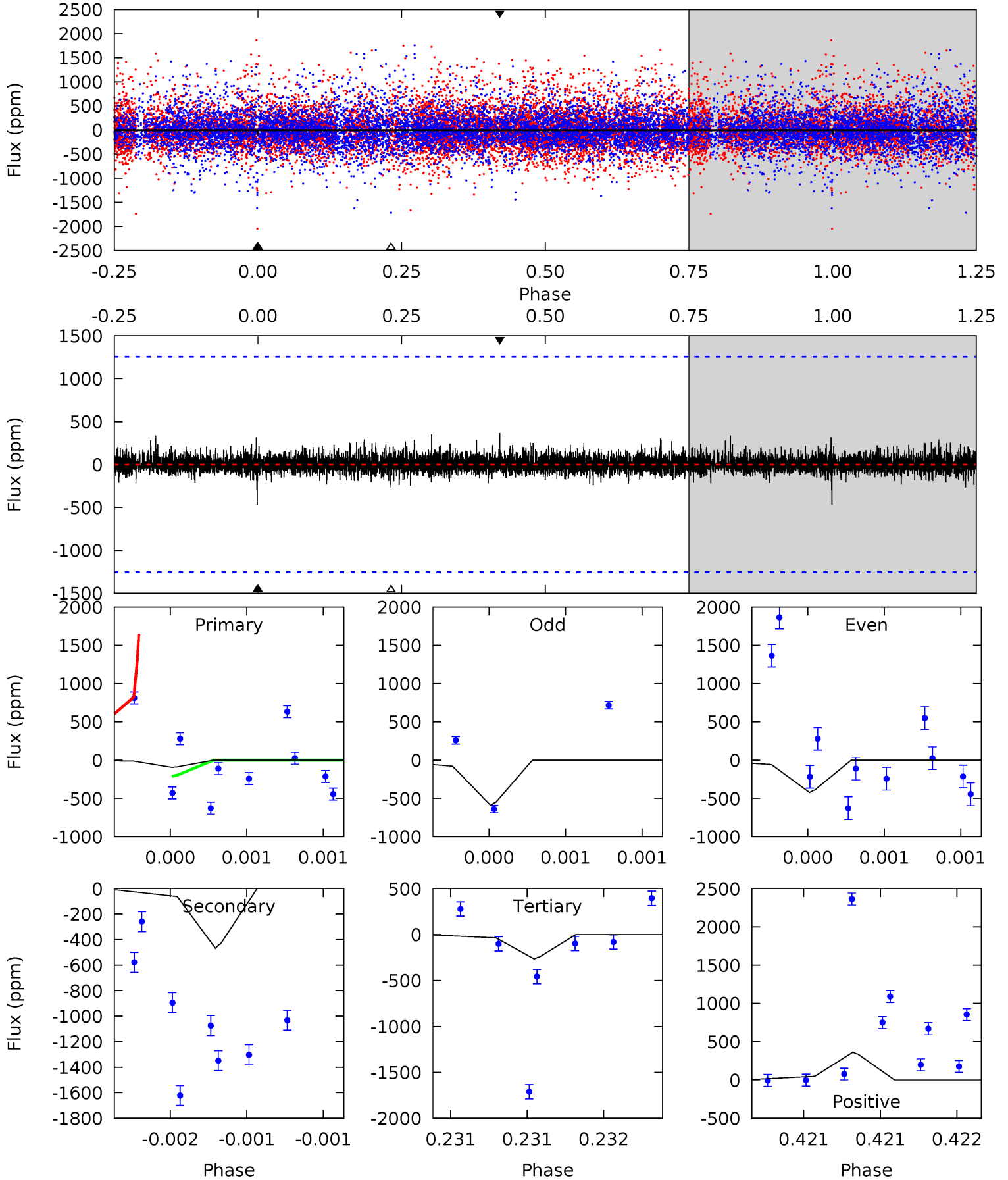
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.49	6.92	5.83	10.4	5.38	3.18	1.85	1.66	-2.88	1.10	-3.44	0.55	1.01	0.58	0.45



Alt Model-Shift Uniqueness Test

005710376-03, P = 80.856035 Days, E = 172.637471 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.42	2.08	1.18	1.62	5.57	3.48	0.31	-0.76	-1.20	0.90	0.46	0.39	1.19	0.44	3.21



Stellar Parameters For KIC 005710376

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4002^{+140}_{-154}	$4.635^{+0.056}_{-0.016}$	$0.340^{+0.100}_{-0.300}$	$0.636^{+0.030}_{-0.064}$	$0.637^{+0.037}_{-0.059}$	$3.488^{+0.879}_{-0.269}$
	+3%/-4%	+1%/-0%	+29%/-88%	+5%/-10%	+6%/-9%	+25%/-8%
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 005710376-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-858 ± 124	$7.39^{+7.57}_{-5.13}$	347^{+13}_{-13}	2698^{+1155}_{-420}	859^{+8574}_{-657}
Alt.	-468 ± 225	$6.53^{+7.29}_{-4.64}$	347^{+15}_{-14}	2555^{+1125}_{-453}	548^{+6296}_{-443}

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

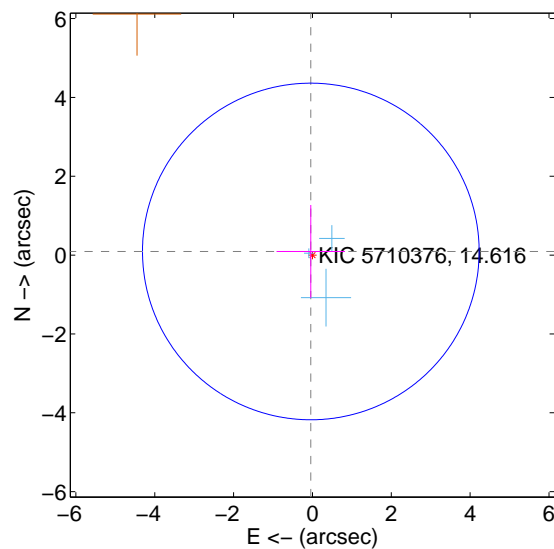
Supplemental centroid analysis for 005710376-03. Kepler magnitude: 14.62. Transit SNR 5.19

There are 3 quarters with good PRF difference image offsets

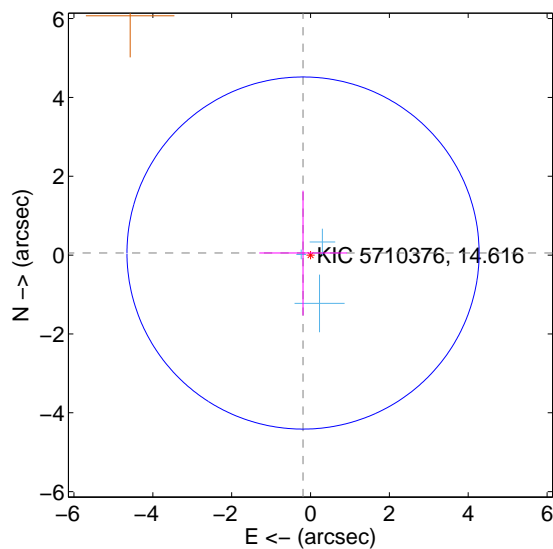
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.101 ± 1.423	0.07	0.041 ± 0.869	0.092 ± 1.178
PRF-fit source offset from KIC position	0.197 ± 1.489	0.13	0.190 ± 1.111	0.053 ± 1.583
photometric centroid source offset	1.41 ± 1.23	1.15	0.38 ± 1.40	-1.36 ± 1.22

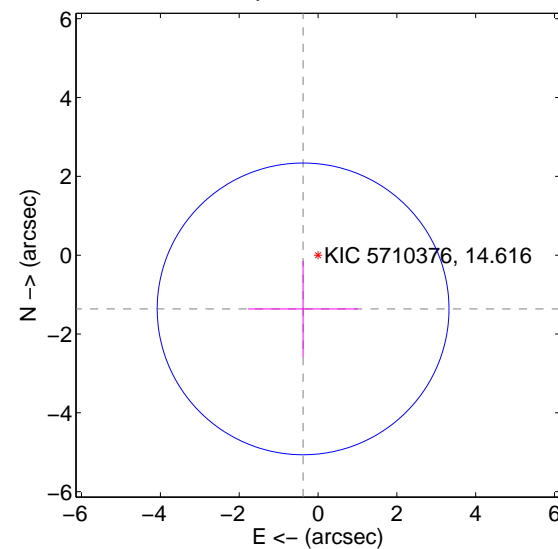
offset from difference PRF-fit to OOT PRF-fit



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



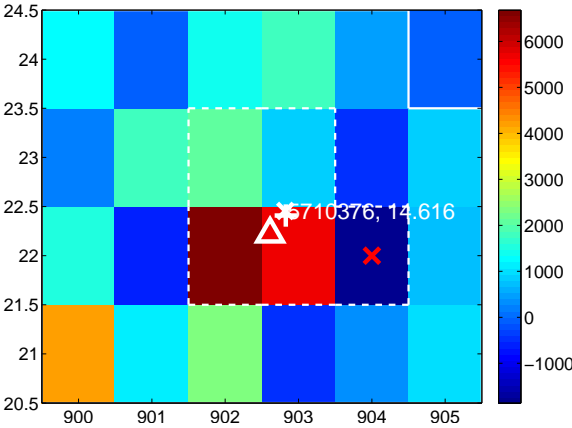
Q3 no difference image



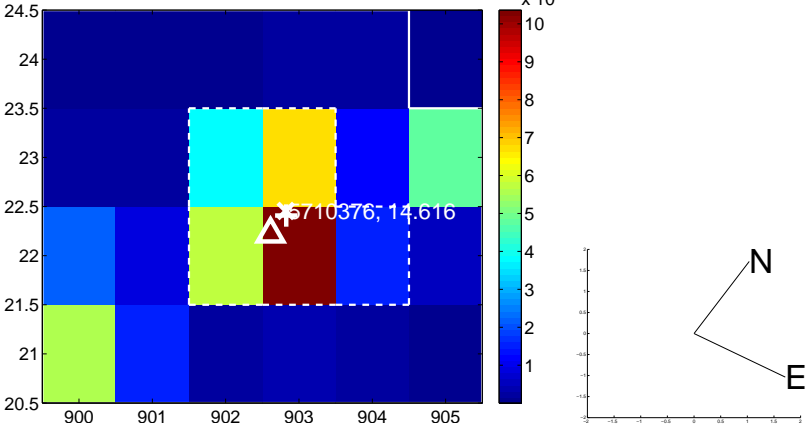
Q3 no OOT image



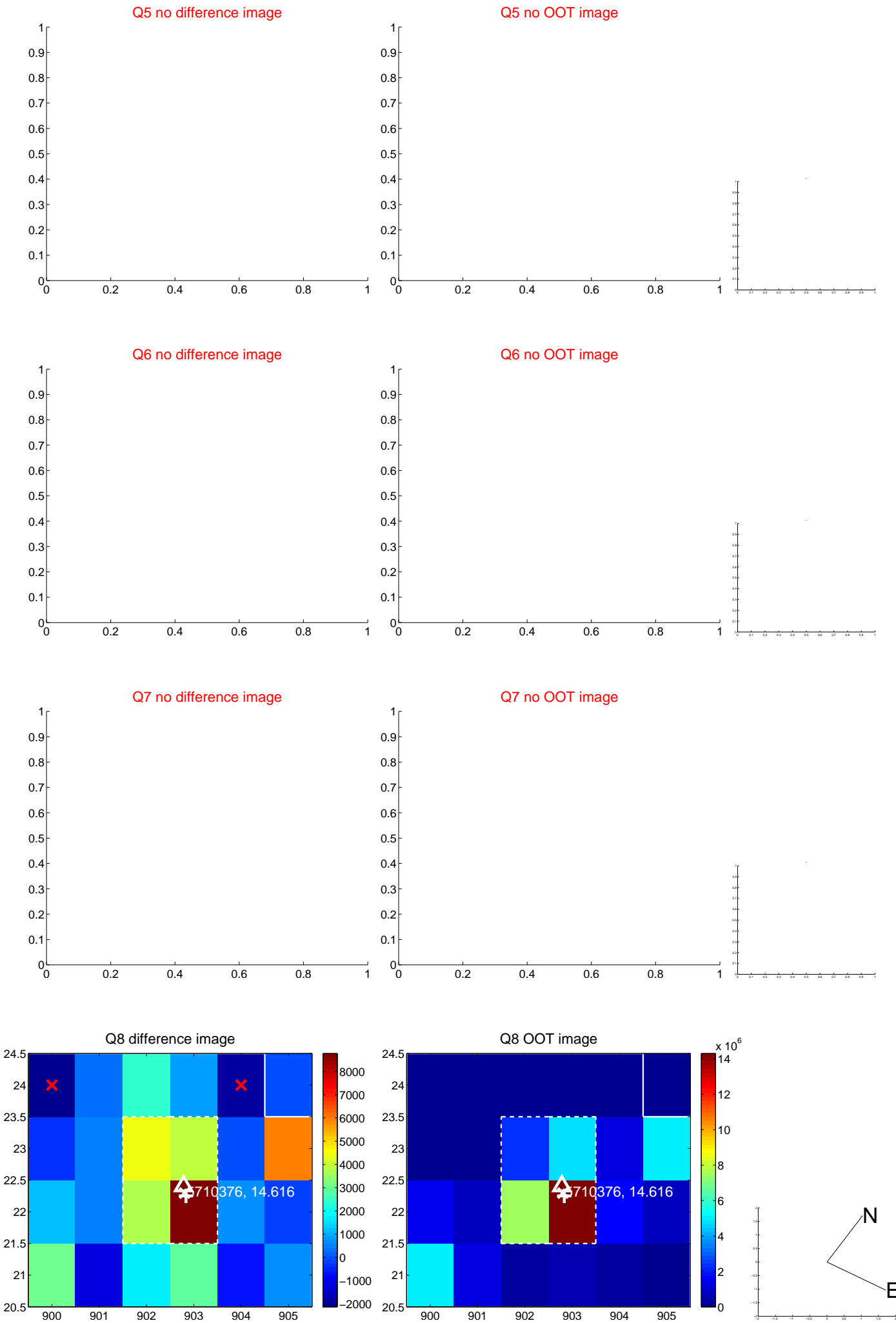
Q4 difference image



Q4 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.

Q9 no difference image



Q9 no OOT image



Q10 no difference image



Q10 no OOT image



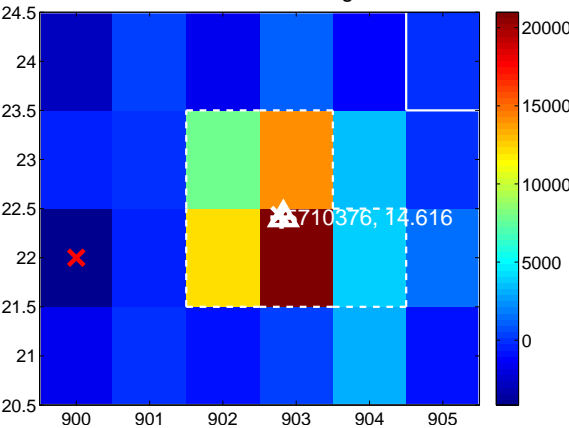
Q11 no difference image



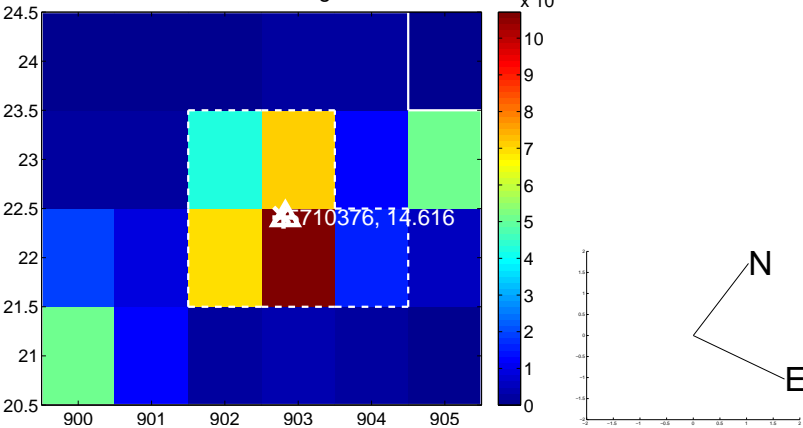
Q11 no OOT image



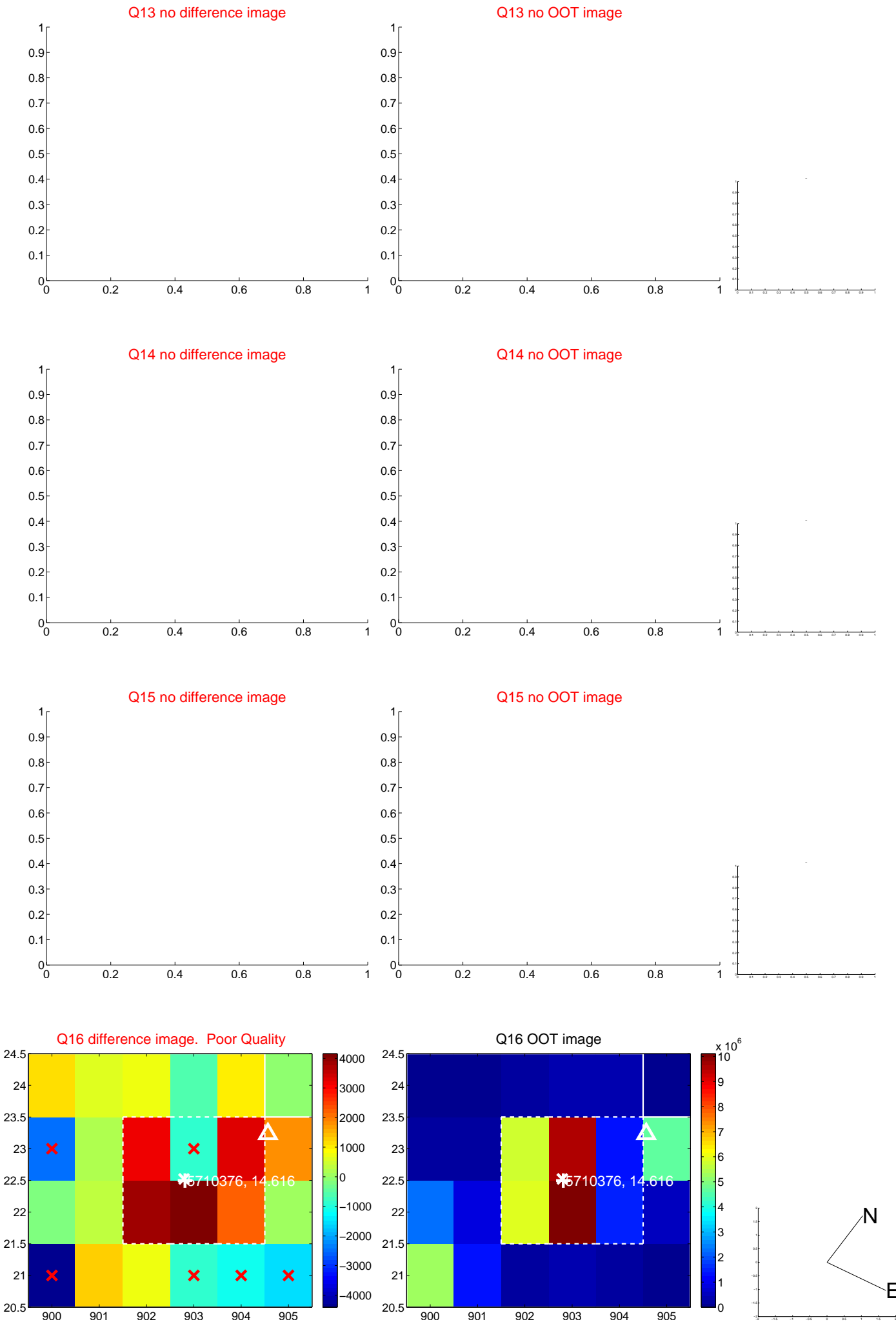
Q12 difference image



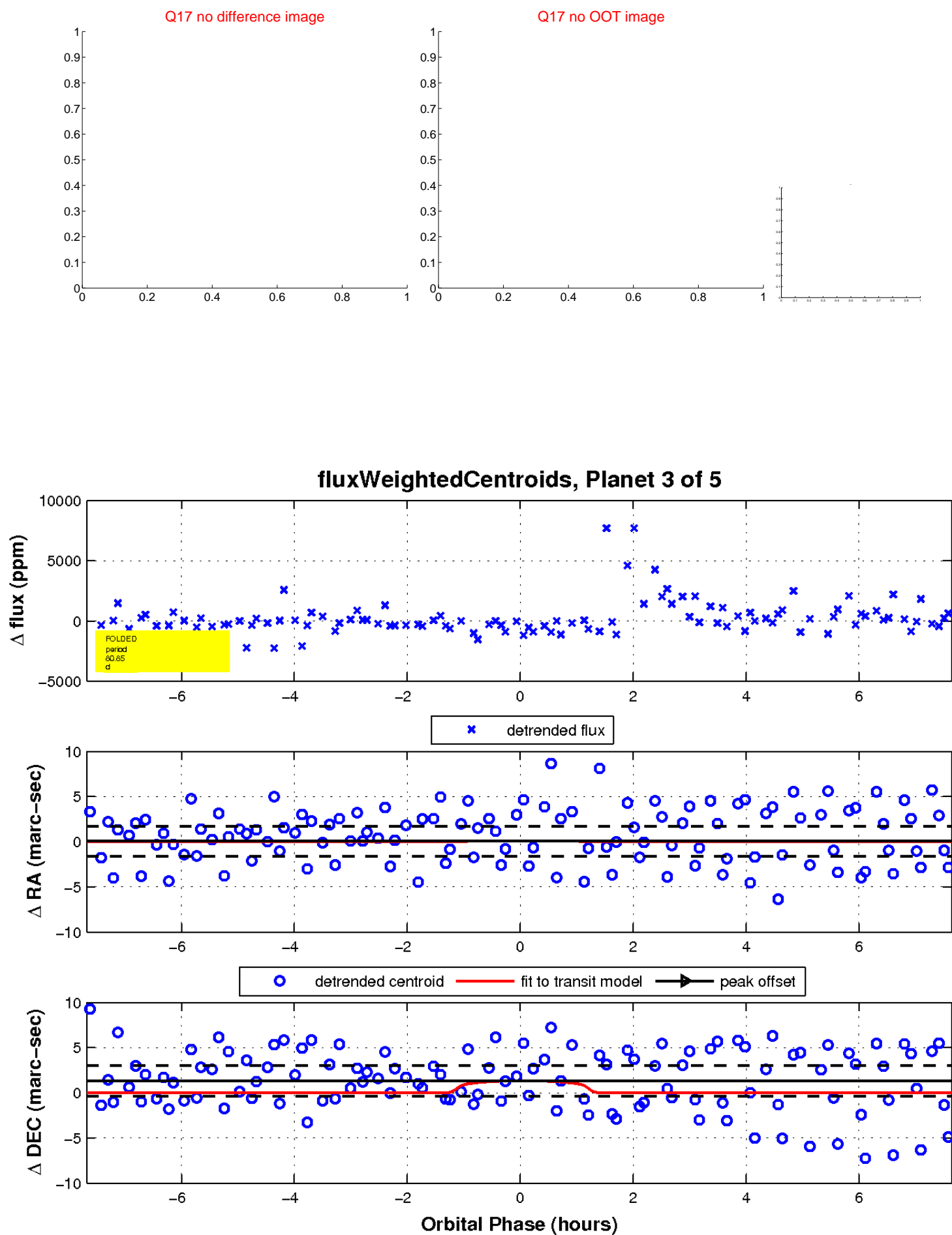
Q12 OOT image



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

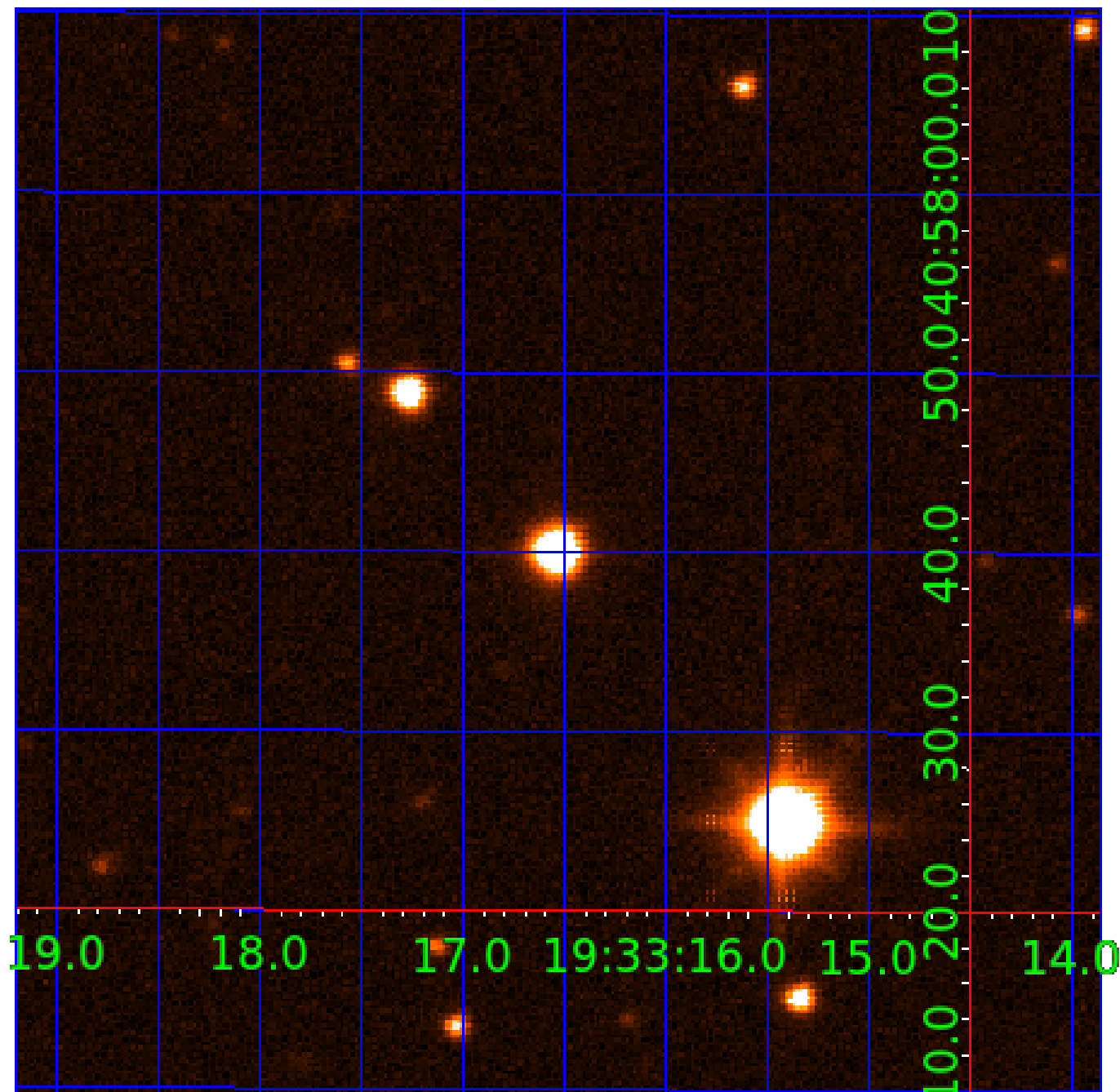


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005710376

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})
005710376-01	OBS	No	84.277447	199.277036	1300.5	8.055	13.2	4.7	0.64	4002	2.21	0.89
005710376-02	OBS	No	114.727271	184.054458	1666.6	2.798	11.7	6.4	0.64	4002	2.62	0.59
005710376-03	OBS	No	80.854028	172.523944	954.1	2.561	12.3	5.2	0.64	4002	2.19	0.94
005710376-04	OBS	No	84.424989	178.050939	1079.2	3.951	11.0	5.4	0.64	4002	2.33	0.89
005710376-05	OBS	No	347.474379	407.522565	5297.1	30.567	10.0	9.3	0.64	4002	4.72	0.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005710376-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005710376-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
005710376-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005710376-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005710376-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS

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

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

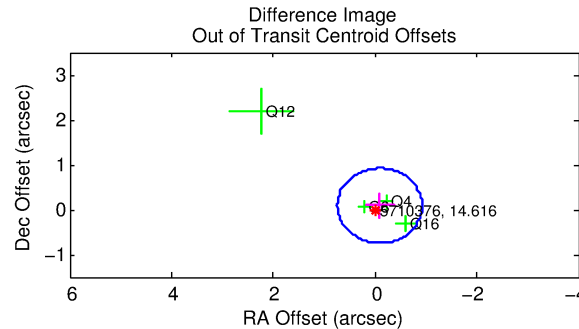
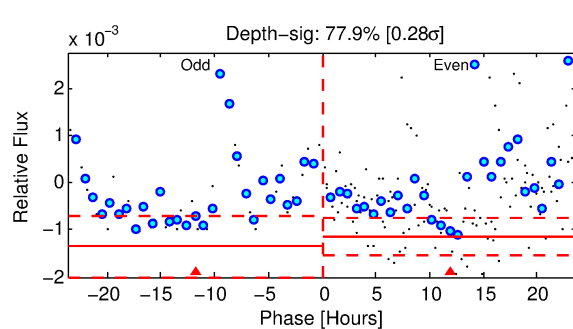
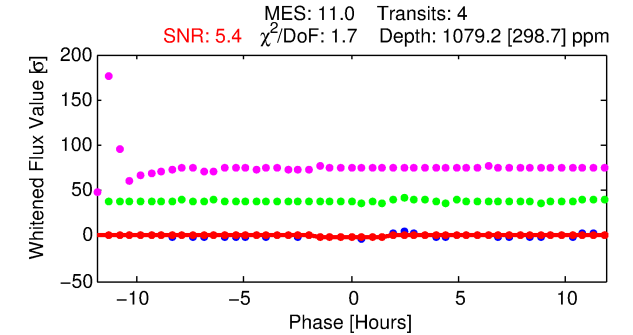
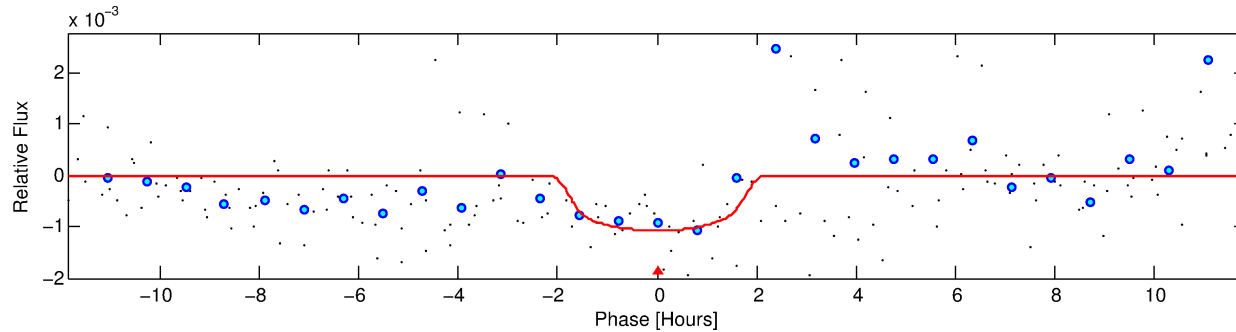
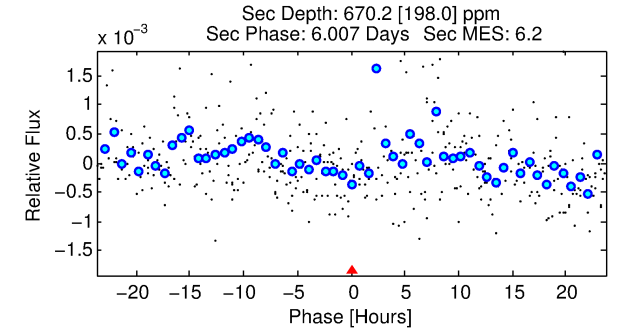
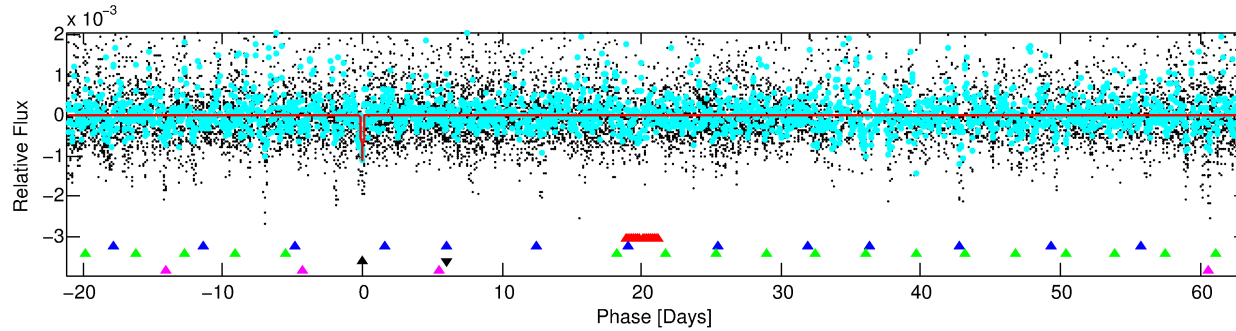
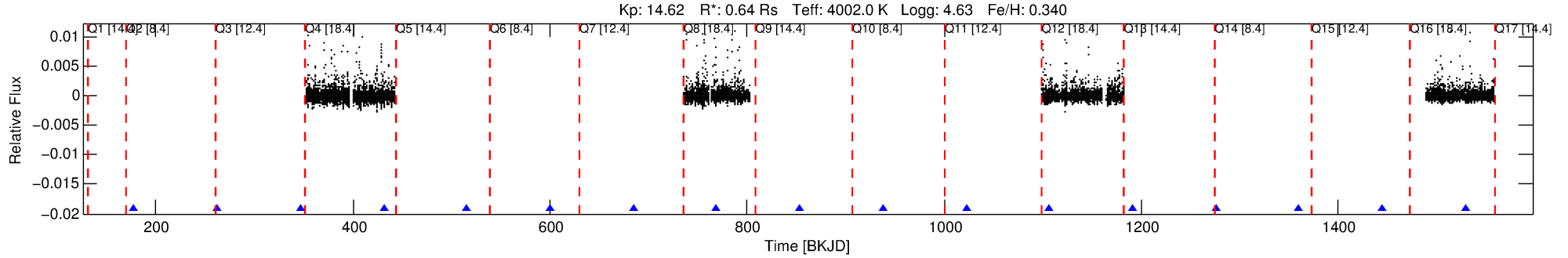
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005710376-04

No Significant Match Found

DV One-Page Summary

KIC: 5710376 Candidate: 4 of 5 Period: 84.425 d



DV Fit Results:

Period = 84.42499 [0.00148] d
Epoch = 178.0509 [0.0168] BKJD
Rp/R* = 0.0336 [0.0340]
a/R* = 109.95 [361.26]
b = 0.78 [1.66]
Seff = 0.89 [0.17]
Teq = 247 [12] K
Rp = 2.33 [2.37] Re
a = 0.3241 [0.0258] AU
Ag = 7135.93 [14650.82] [0.49σ]
Teff = 3515 [1807] K [1.81σ]

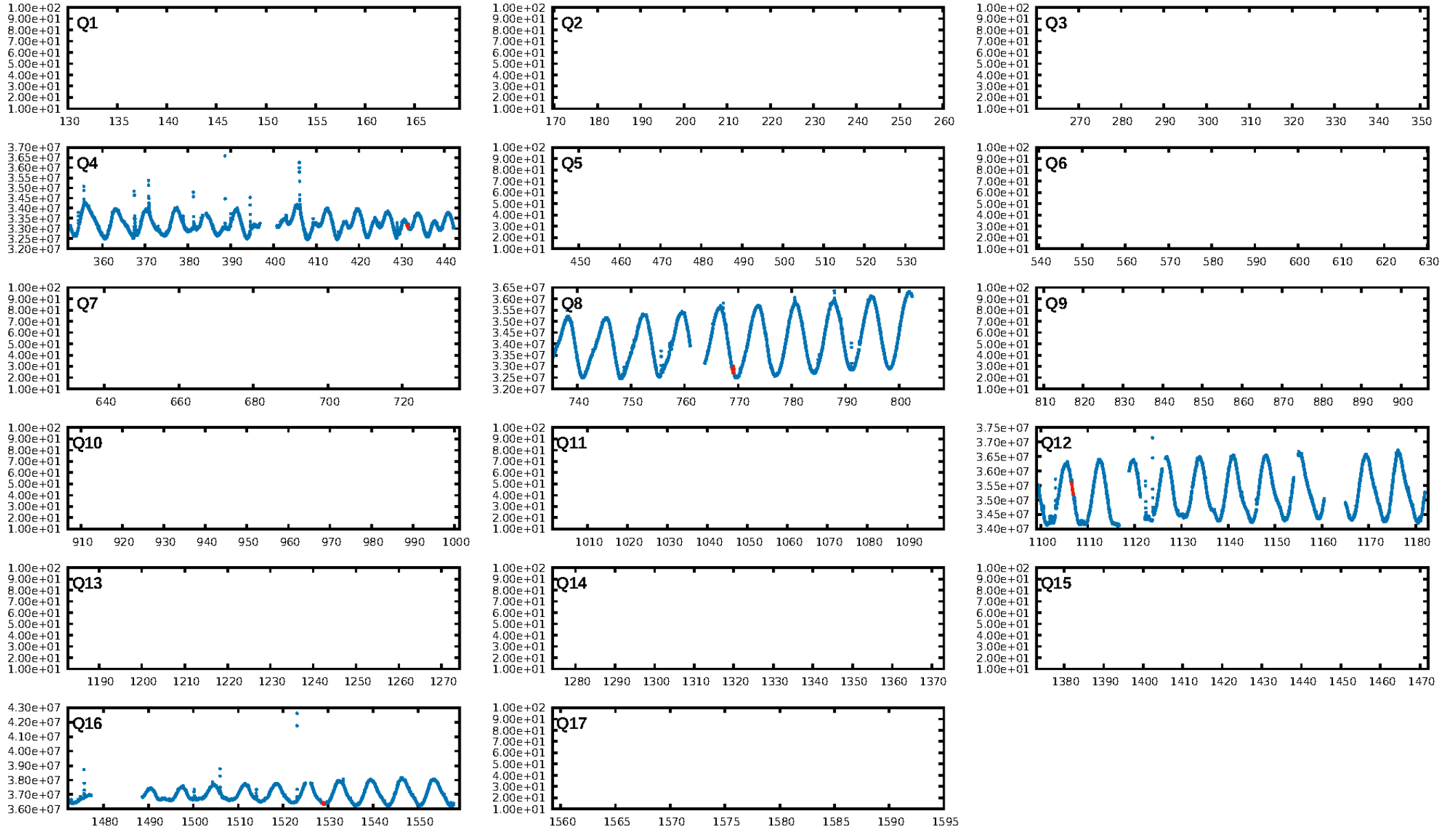
DV Diagnostic Results:

ShortPeriod-sig: 30.7% [0.39σ]
LongPeriod-sig: 100.0% [150.20σ]
ModelChiSquare2-sig: 2.4%
ModelChiSquareGof-sig: 48.7%
Bootstrap-pfa: 4.61e-12
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.2686
Centroid-sig: 2.0%
Centroid-so: 1.516 arcsec [1.43σ]
OotOffset-rm: 0.125 arcsec [0.45σ]
OotOffset-st: 0/0/4/0 [4]
KicOffset-rm: 0.050 arcsec [0.08σ]
KicOffset-st: 0/0/4/0 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [4/4]

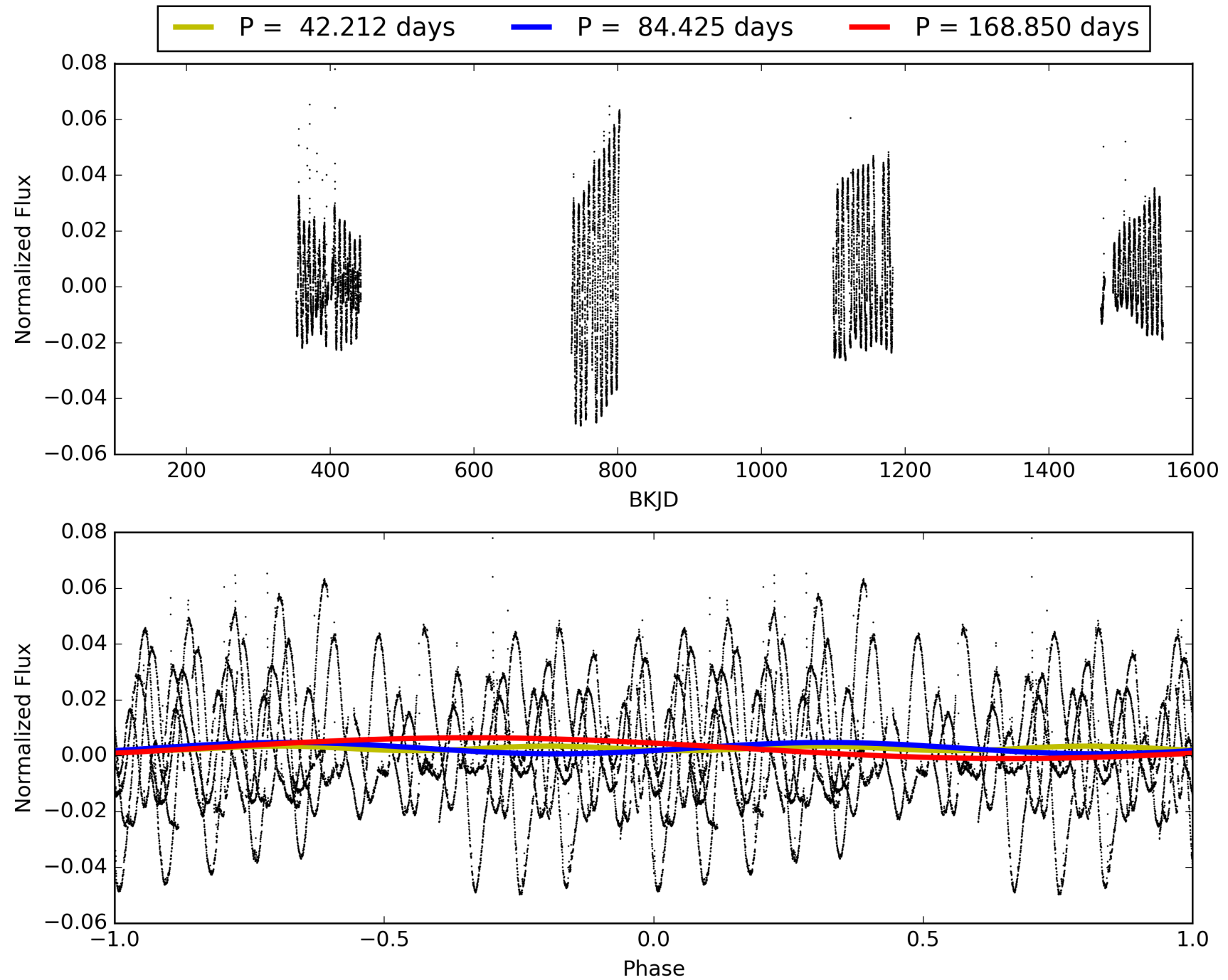
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:00:36 Z

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

TCE 005710376-04, PDC Light Curves

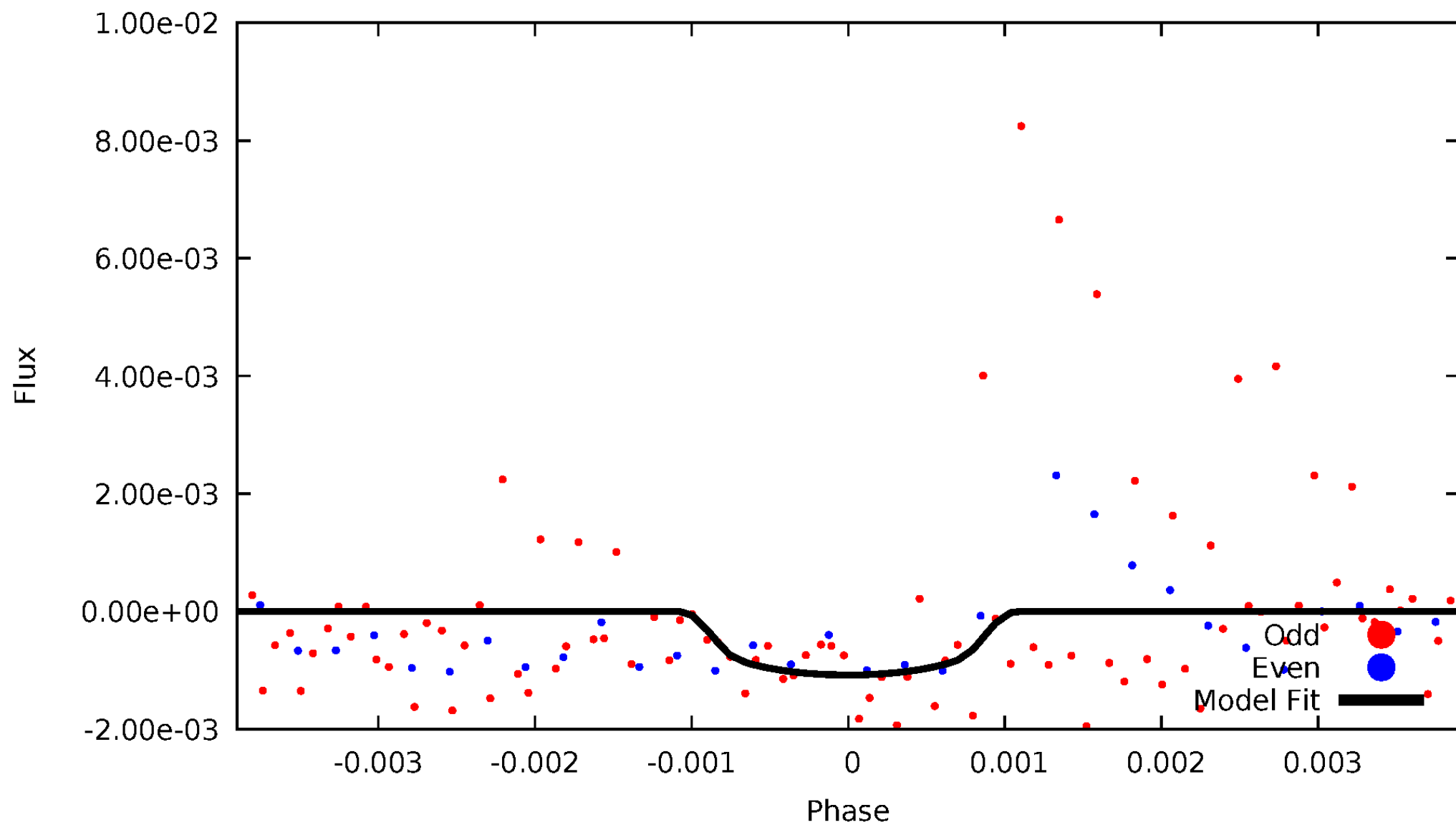


TCE 005710376-04



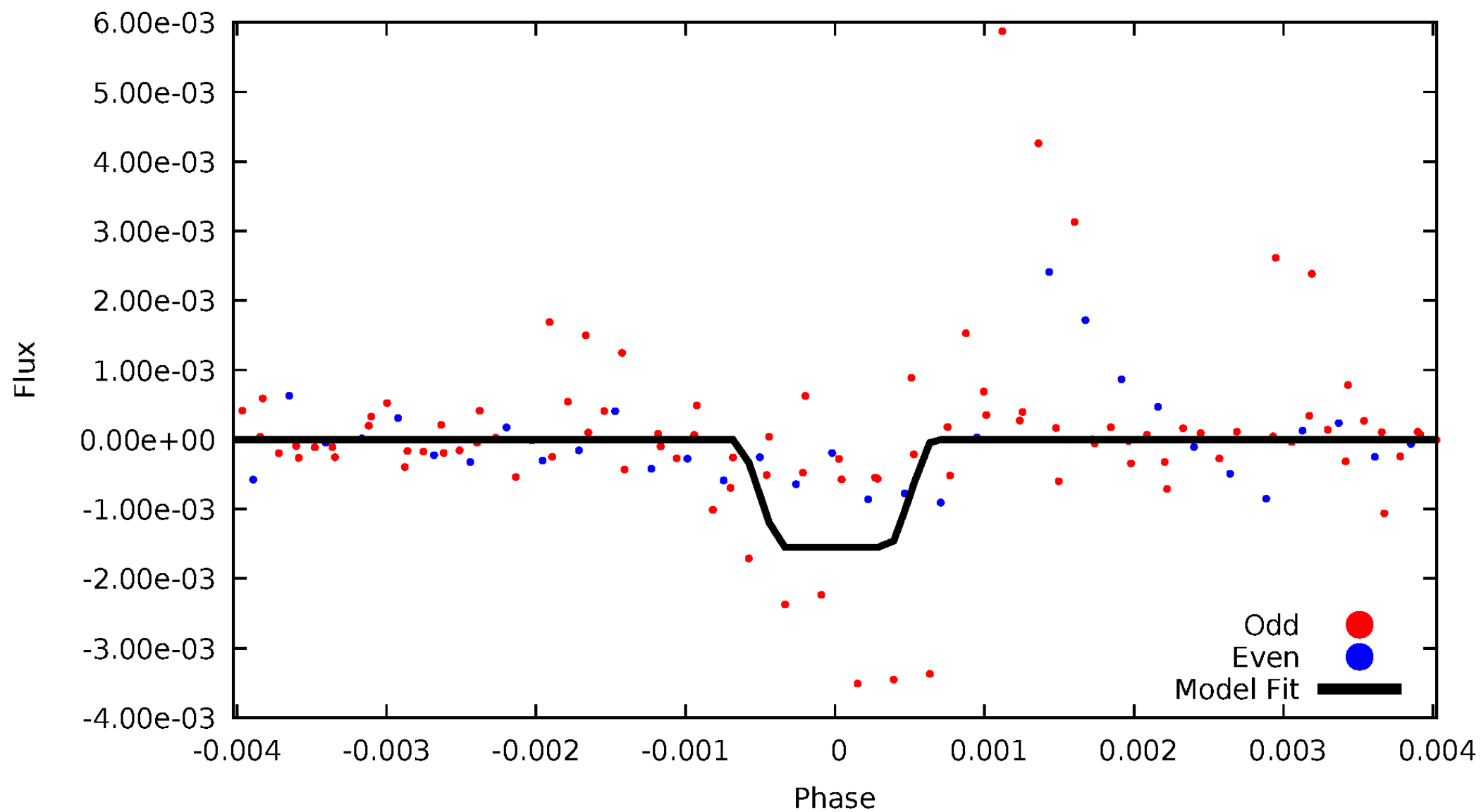
DV Odd/Even

TCE 005710376-04



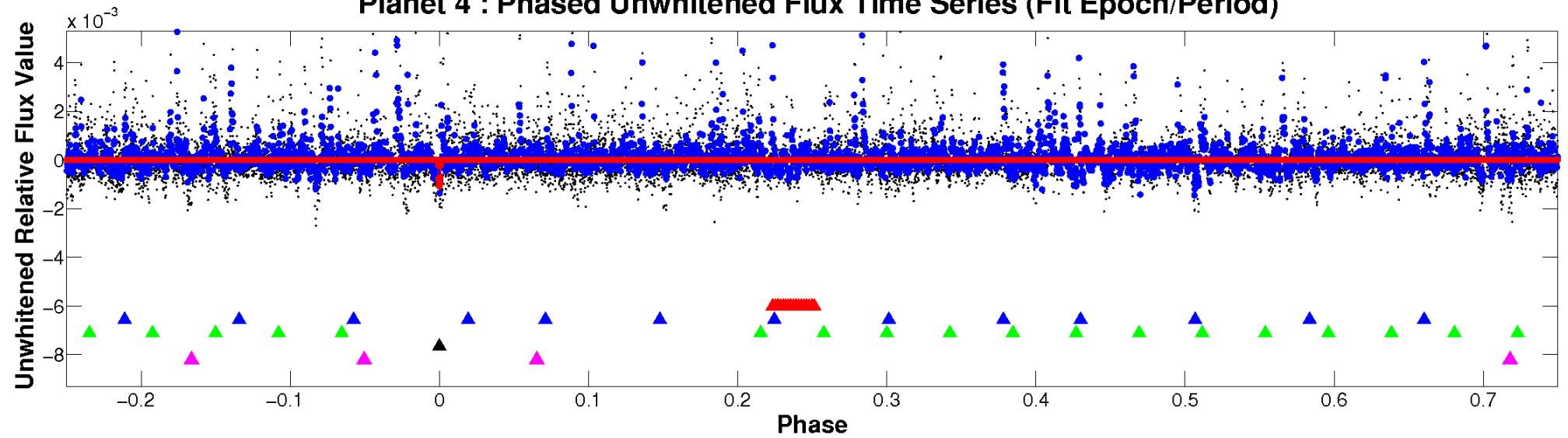
ALT Odd/Even

TCE 005710376-04

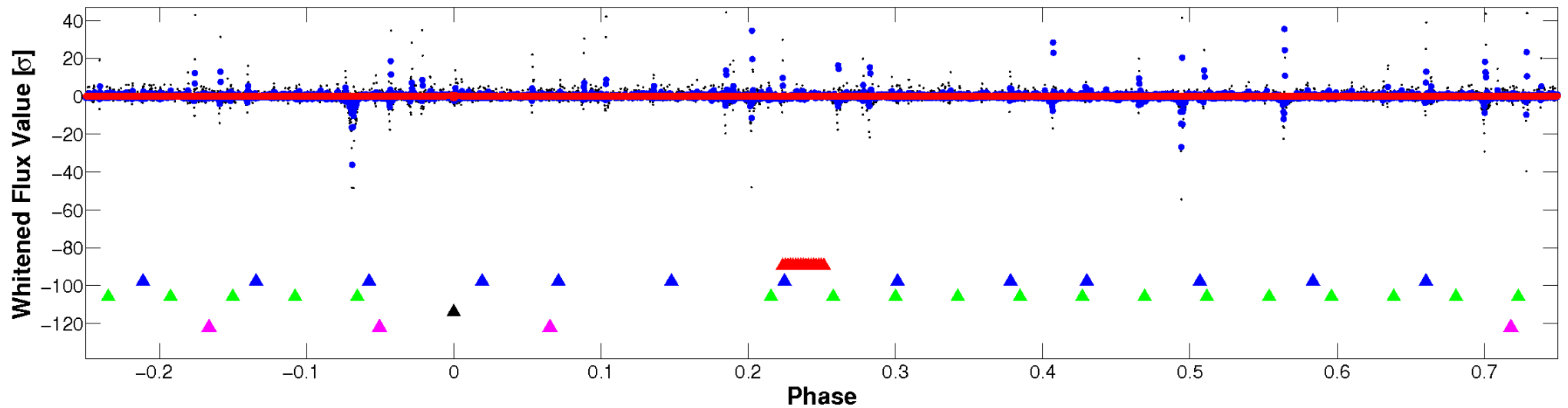


Non-Whitened Vs. Whitened Light Curve

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

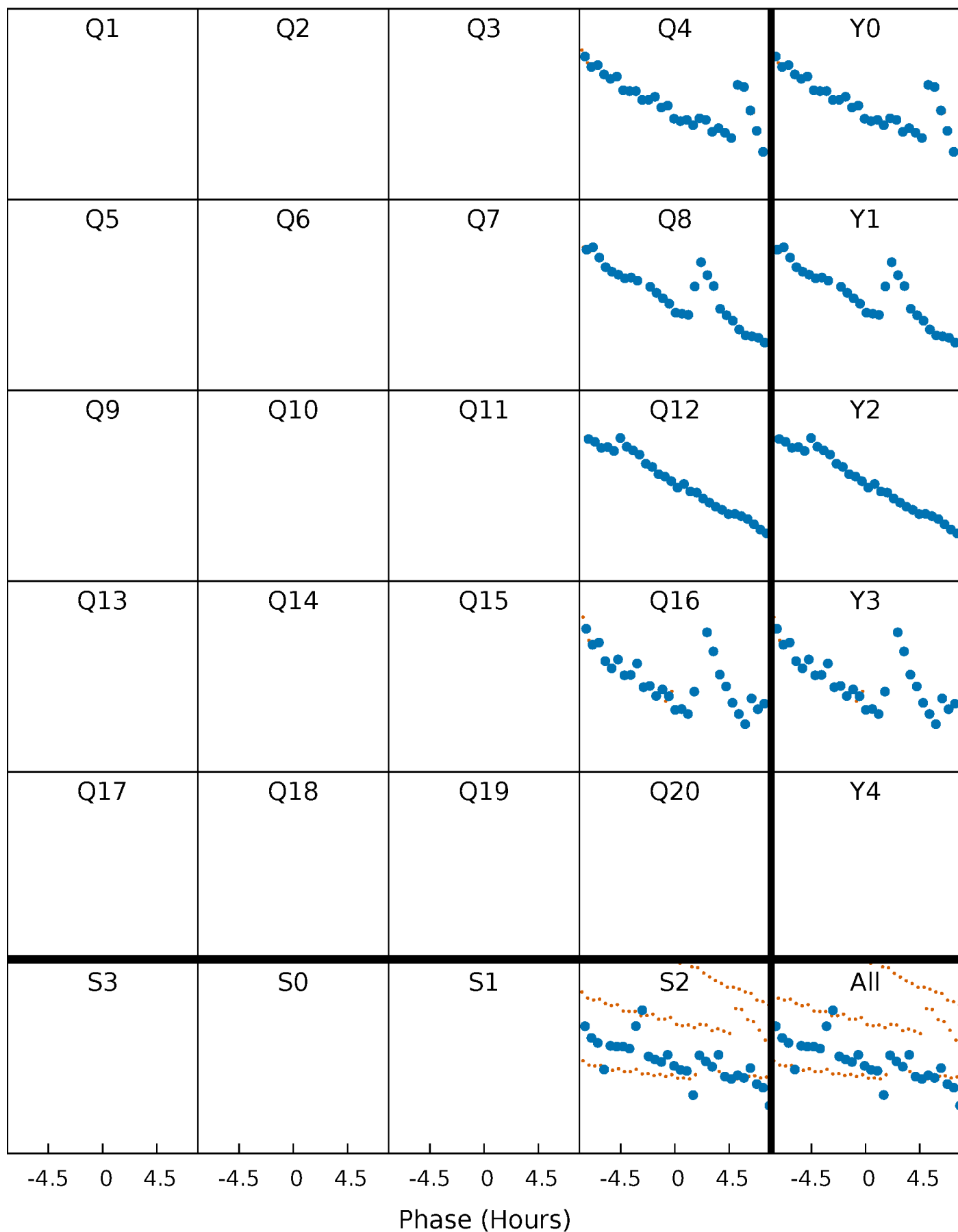


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



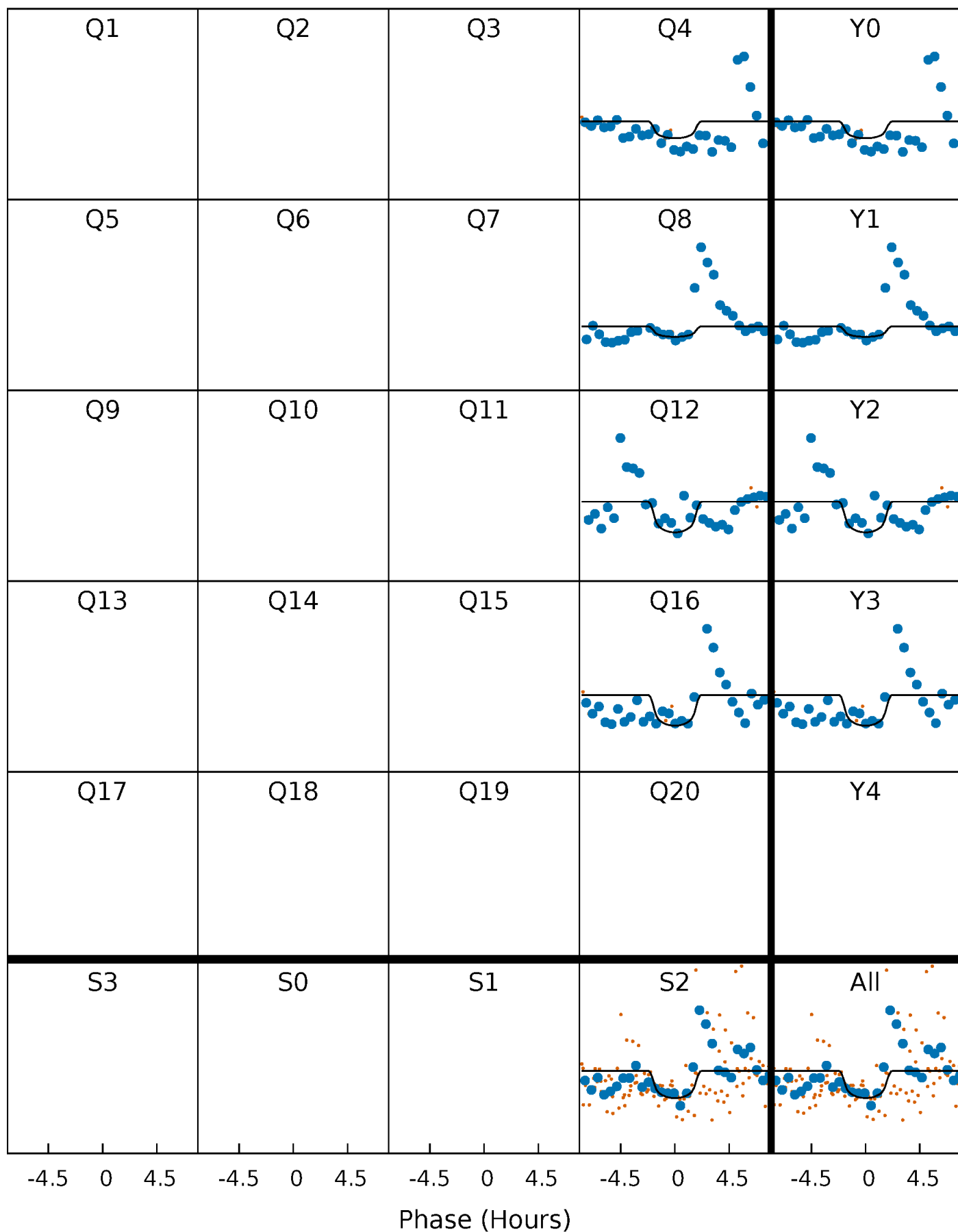
PDC Quarter-Phased Transit Curves

TCE 005710376-04 P= 84.424989 Days $T_0=178.050939$ (BKJD)



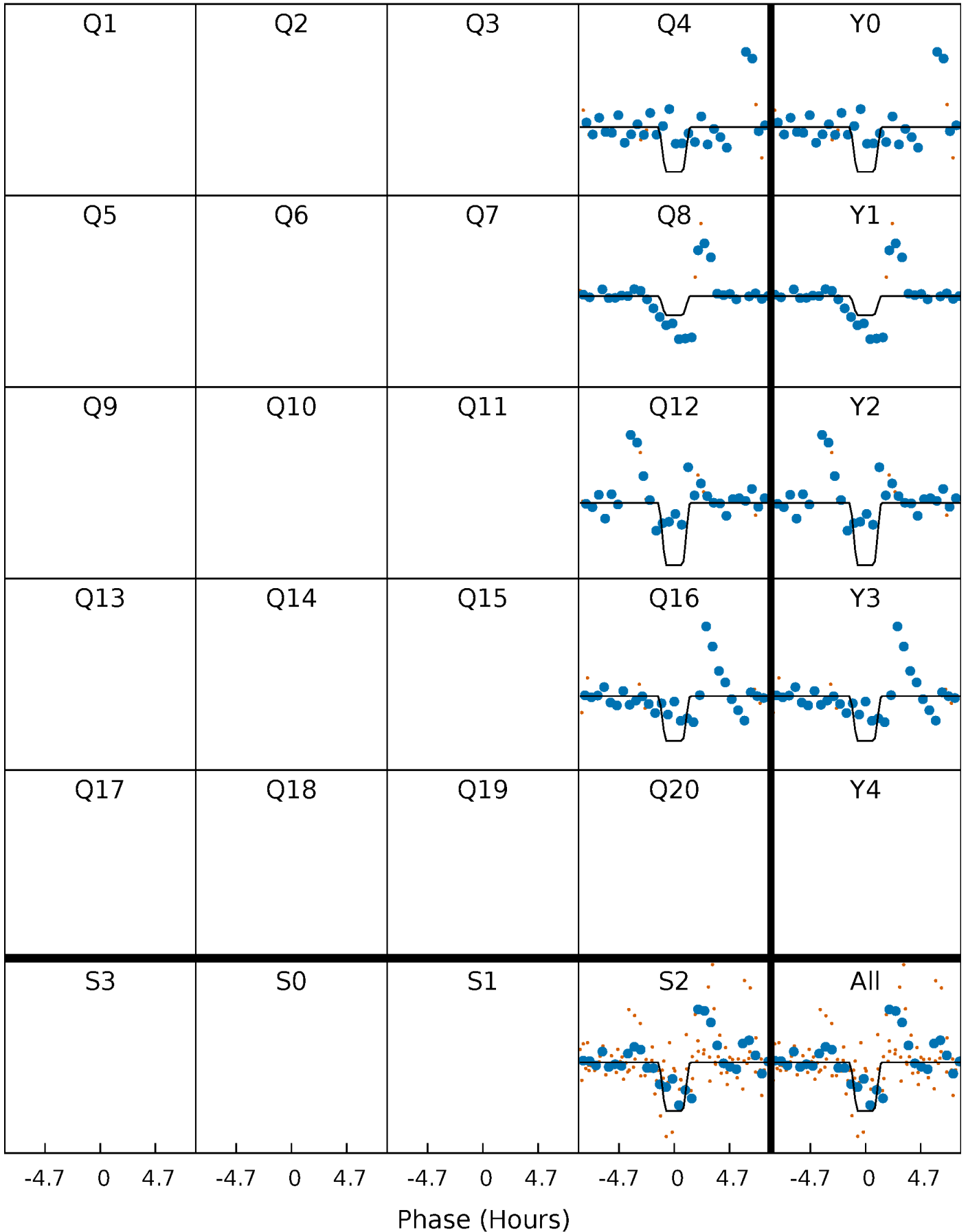
DV Quarter-Phased Transit Curves

TCE 005710376-04 P= 84.424989 Days $T_0=178.050939$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

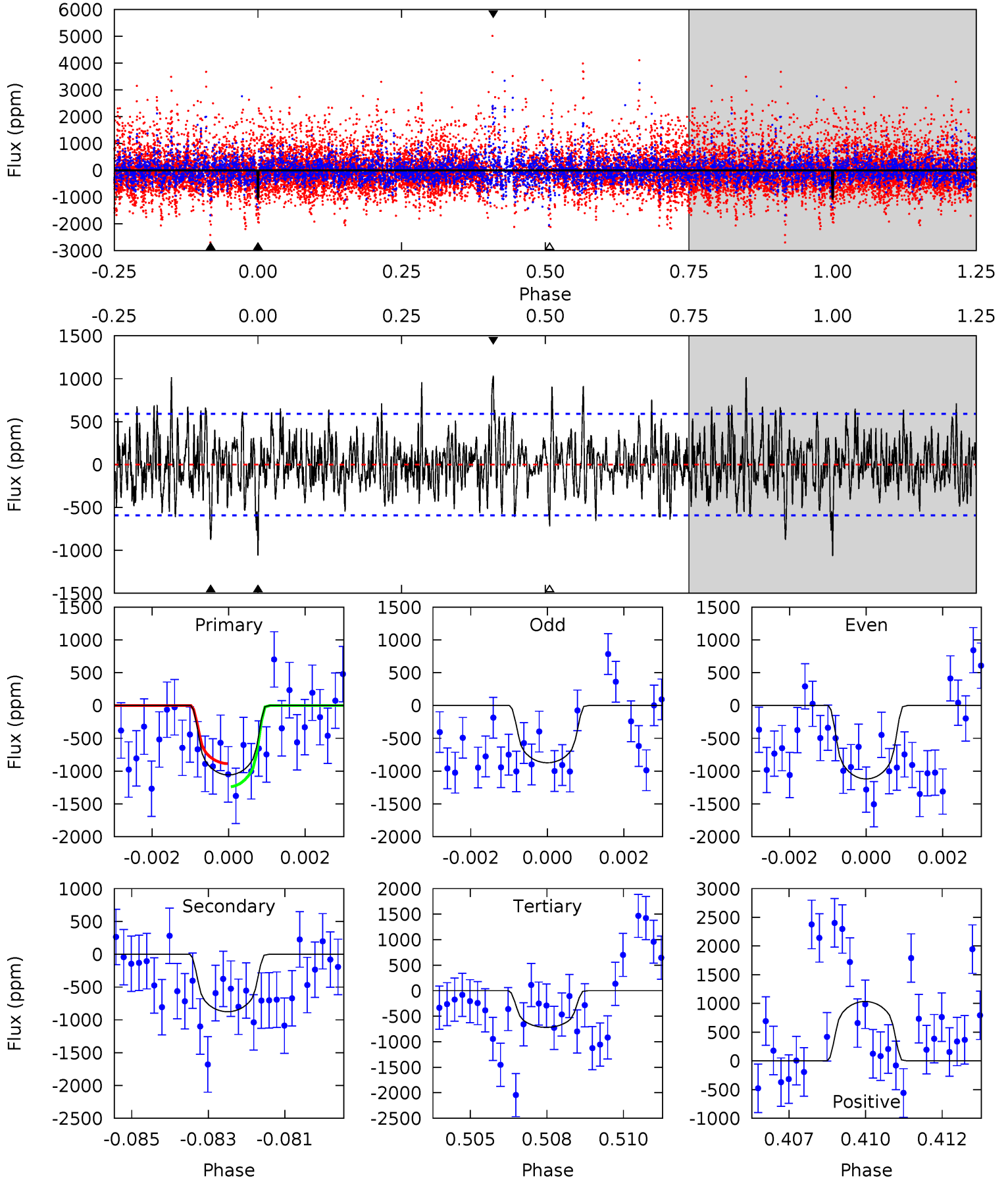
TCE 005710376-04 P= 84.424149 Days $T_0=178.055489$ (BKJD)



DV Model-Shift Uniqueness Test

005710376-04, P = 84.424989 Days, E = 178.050939 Days

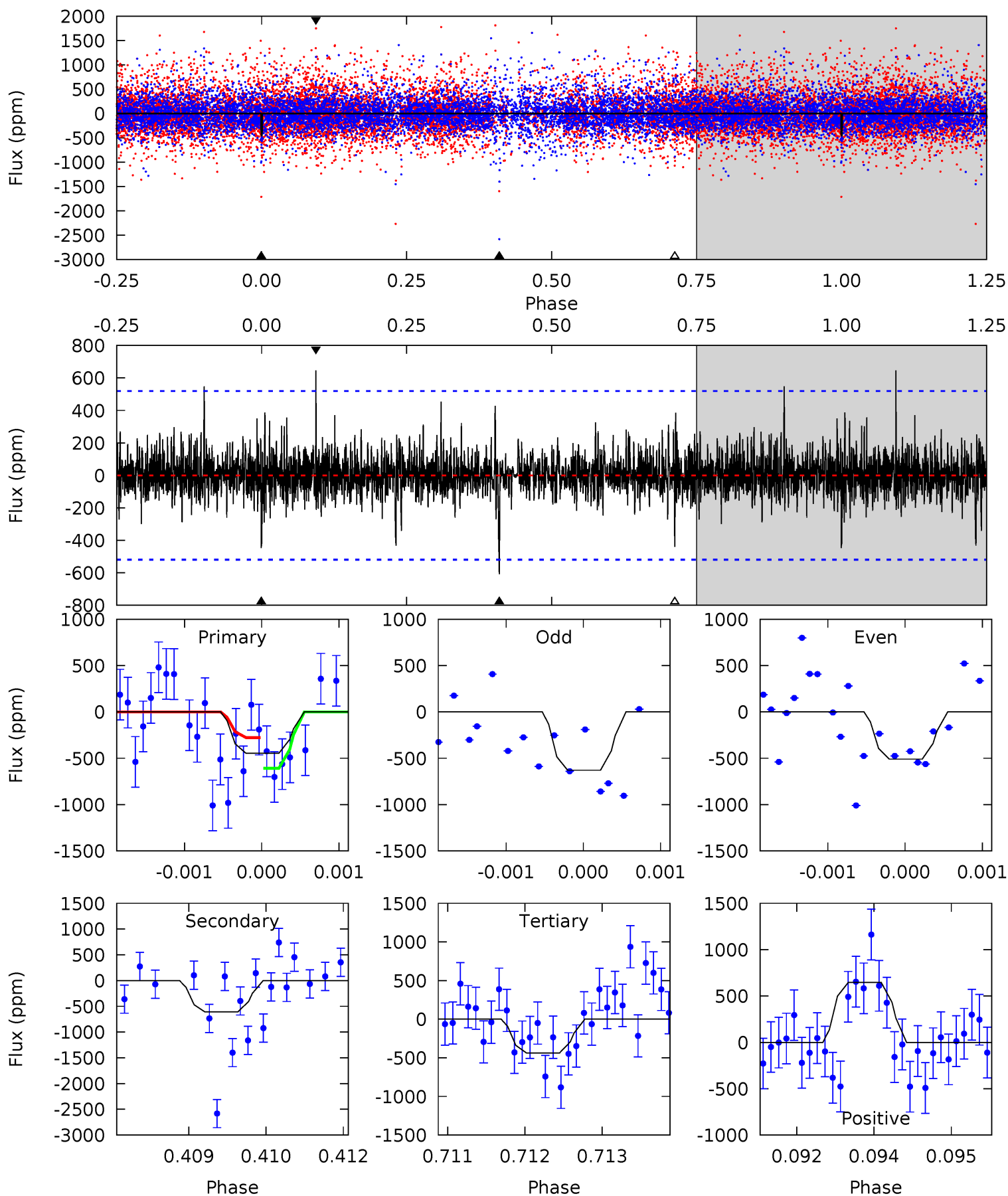
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.51	7.86	6.46	9.29	5.31	3.06	2.27	3.05	0.22	1.41	-1.42	0.31	1.21	0.49	1.59



Alt Model-Shift Uniqueness Test

005710376-04, P = 84.424149 Days, E = 178.055489 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.65	6.33	4.57	6.74	5.41	3.22	1.04	0.08	-2.09	1.77	-0.40	0.53	2.14	0.52	1.75



Stellar Parameters For KIC 005710376

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4002^{+140}_{-154}	$4.635^{+0.056}_{-0.016}$	$0.340^{+0.100}_{-0.300}$	$0.636^{+0.030}_{-0.064}$	$0.637^{+0.037}_{-0.059}$	$3.488^{+0.879}_{-0.269}$
	+3%/-4%	+1%/-0%	+29%/-88%	+5%/-10%	+6%/-9%	+25%/-8%
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 005710376-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-876 ± 111	$2.71^{+2.08}_{-1.66}$	342^{+13}_{-14}	3603^{+1565}_{-567}	6862^{+39487}_{-4679}
Alt.	-609 ± 96	$3.06^{+2.23}_{-1.77}$	342^{+14}_{-14}	3288^{+1125}_{-495}	3843^{+16300}_{-2616}

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 $A_{obs} \gg 1.0$

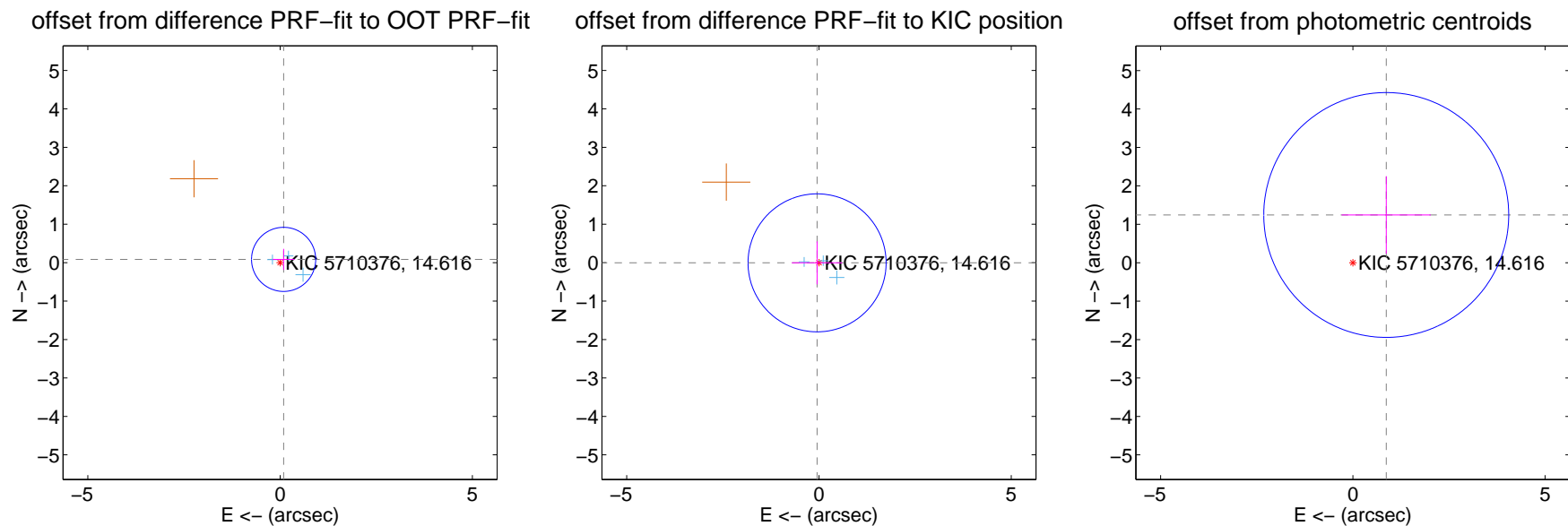
DV Centroid Data

Supplemental centroid analysis for 005710376-04. Kepler magnitude: 14.62. Transit SNR 5.35

There are 3 quarters with good PRF difference image offsets

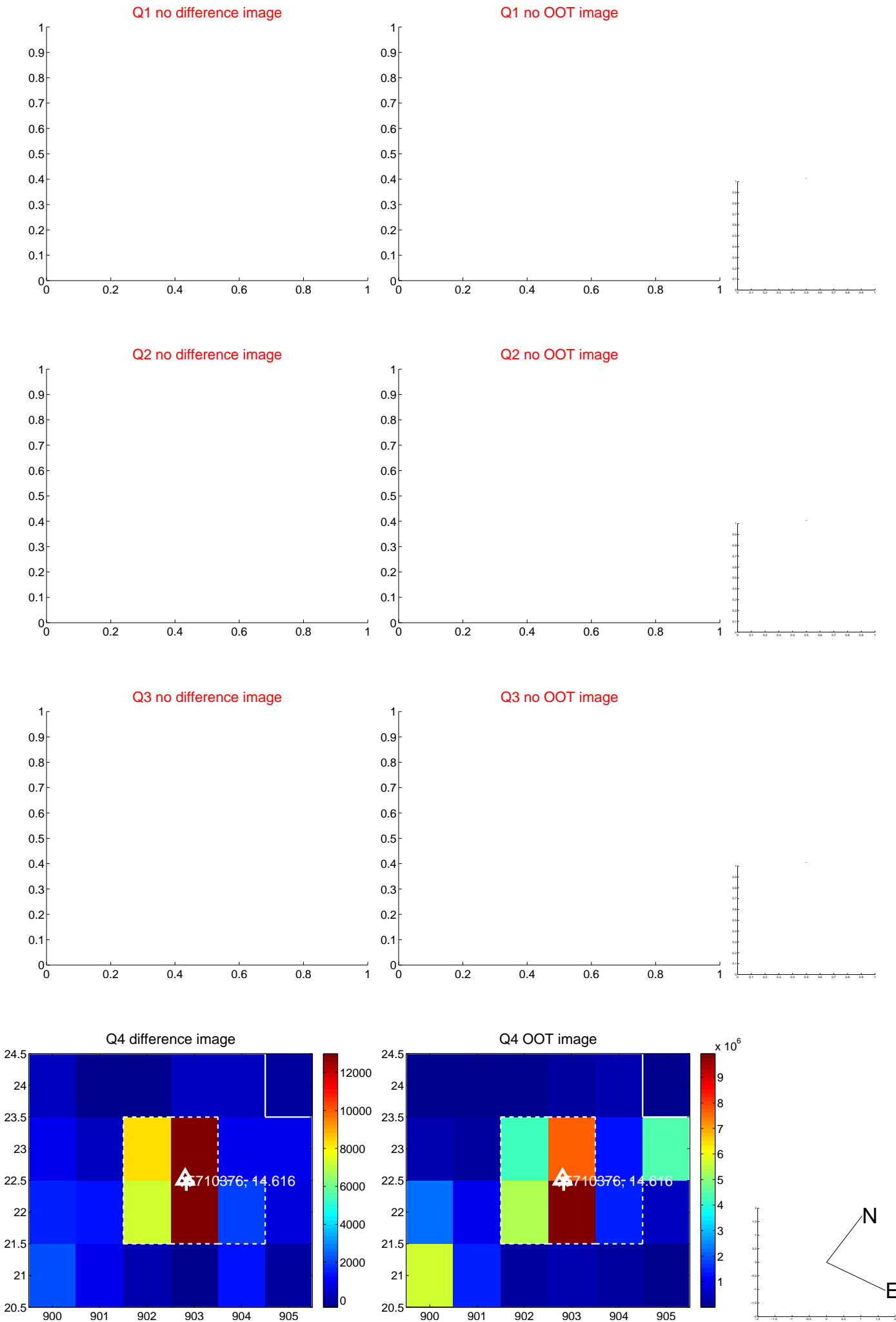
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.125 ± 0.278	0.45	-0.091 ± 0.281	0.085 ± 0.274
PRF-fit source offset from KIC position	0.050 ± 0.598	0.08	0.050 ± 0.658	-0.005 ± 0.558
photometric centroid source offset	1.52 ± 1.06	1.43	-0.87 ± 1.16	1.24 ± 1.01

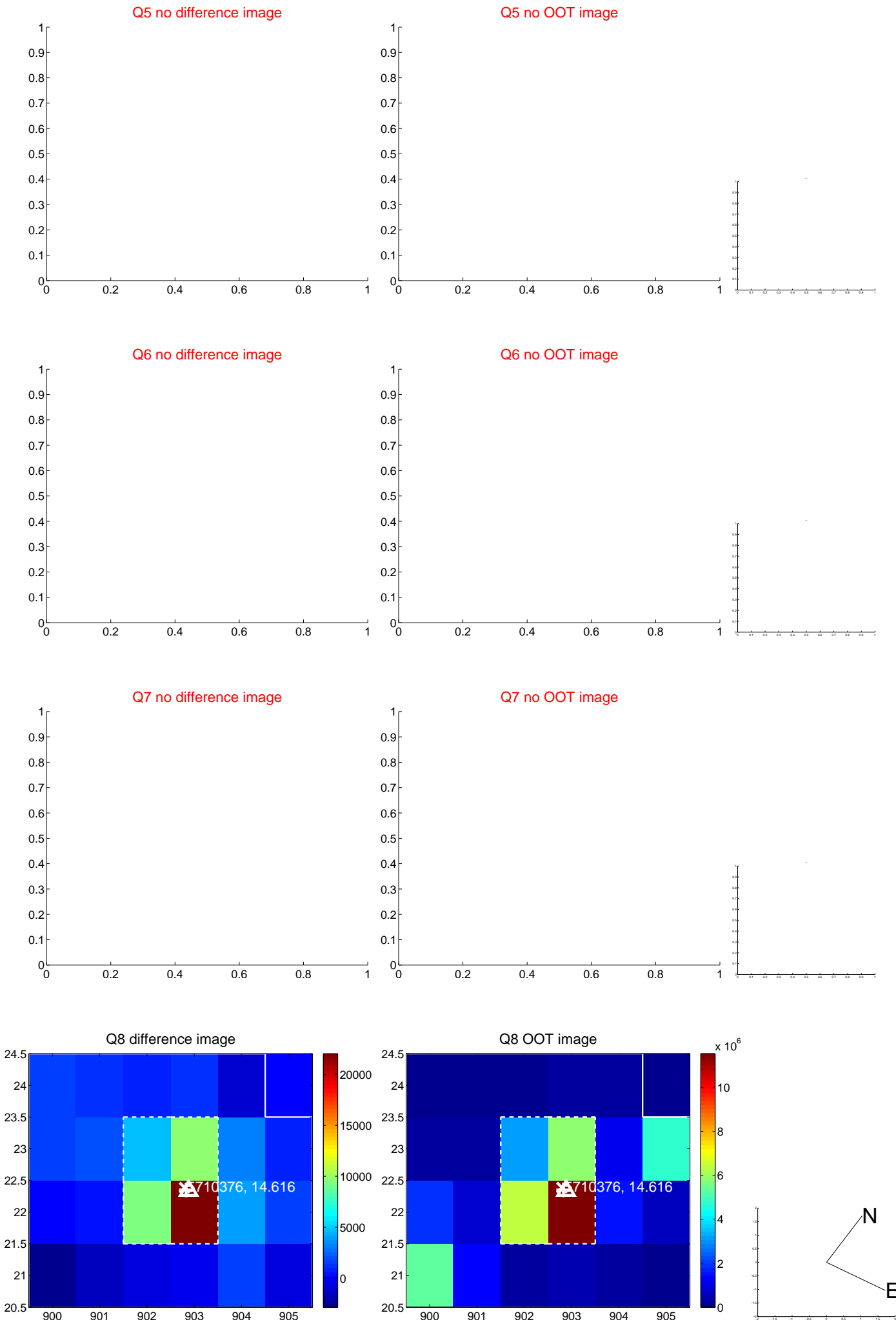


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

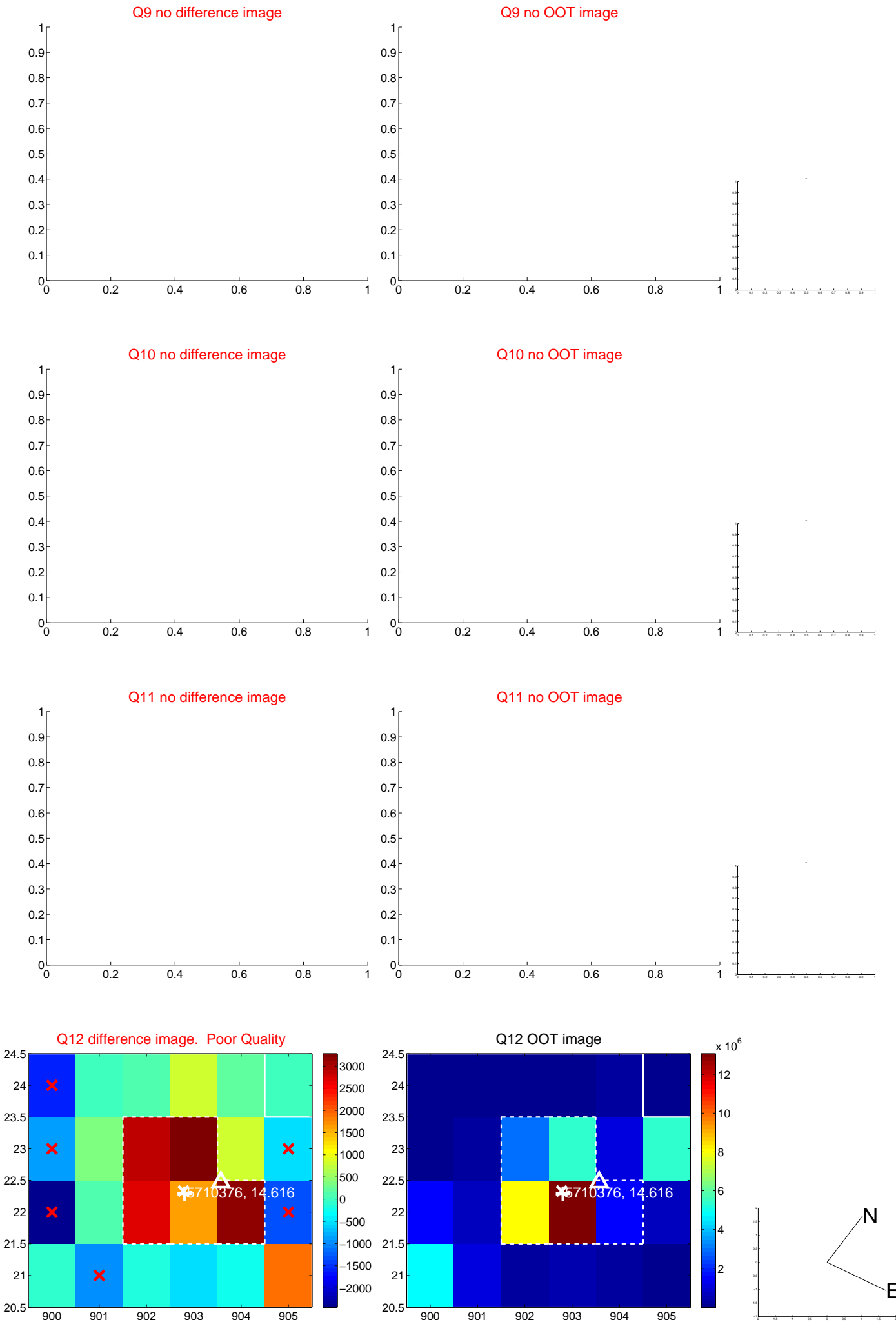
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

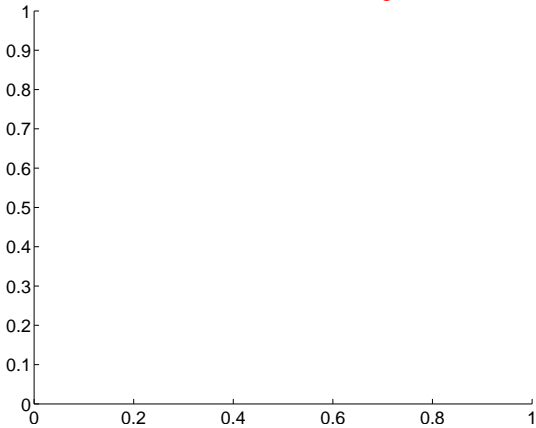


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

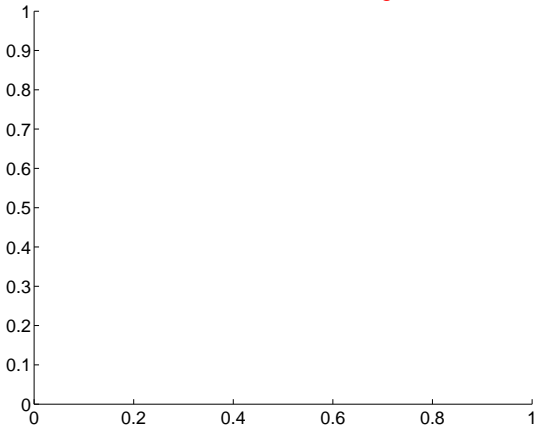
Q13 no difference image



Q13 no OOT image



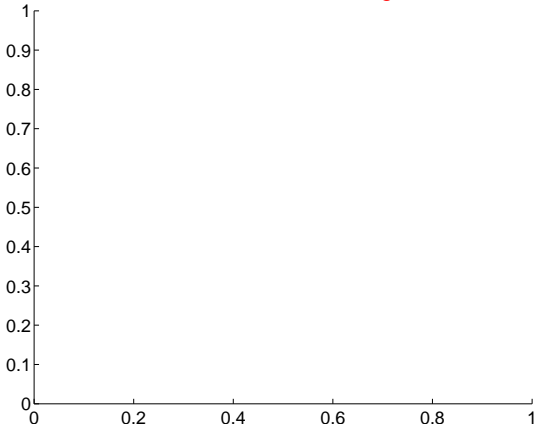
Q14 no difference image



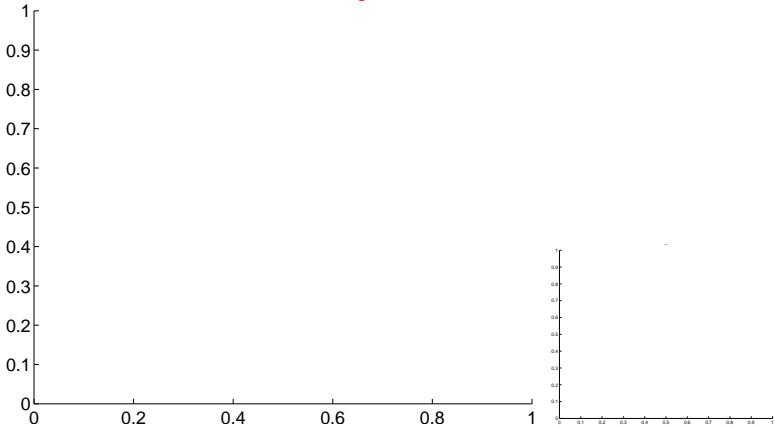
Q14 no OOT image



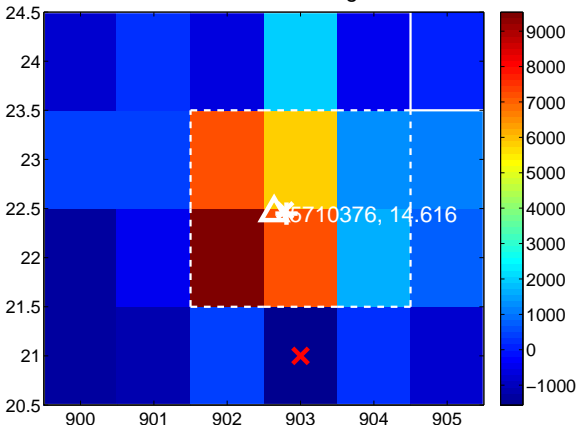
Q15 no difference image



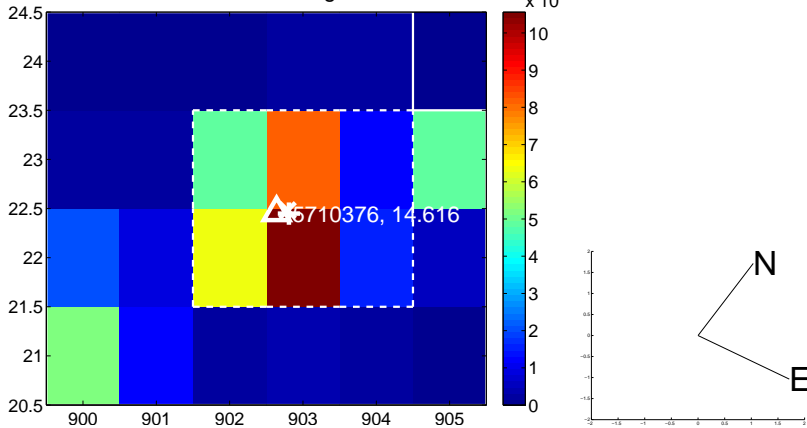
Q15 no OOT image



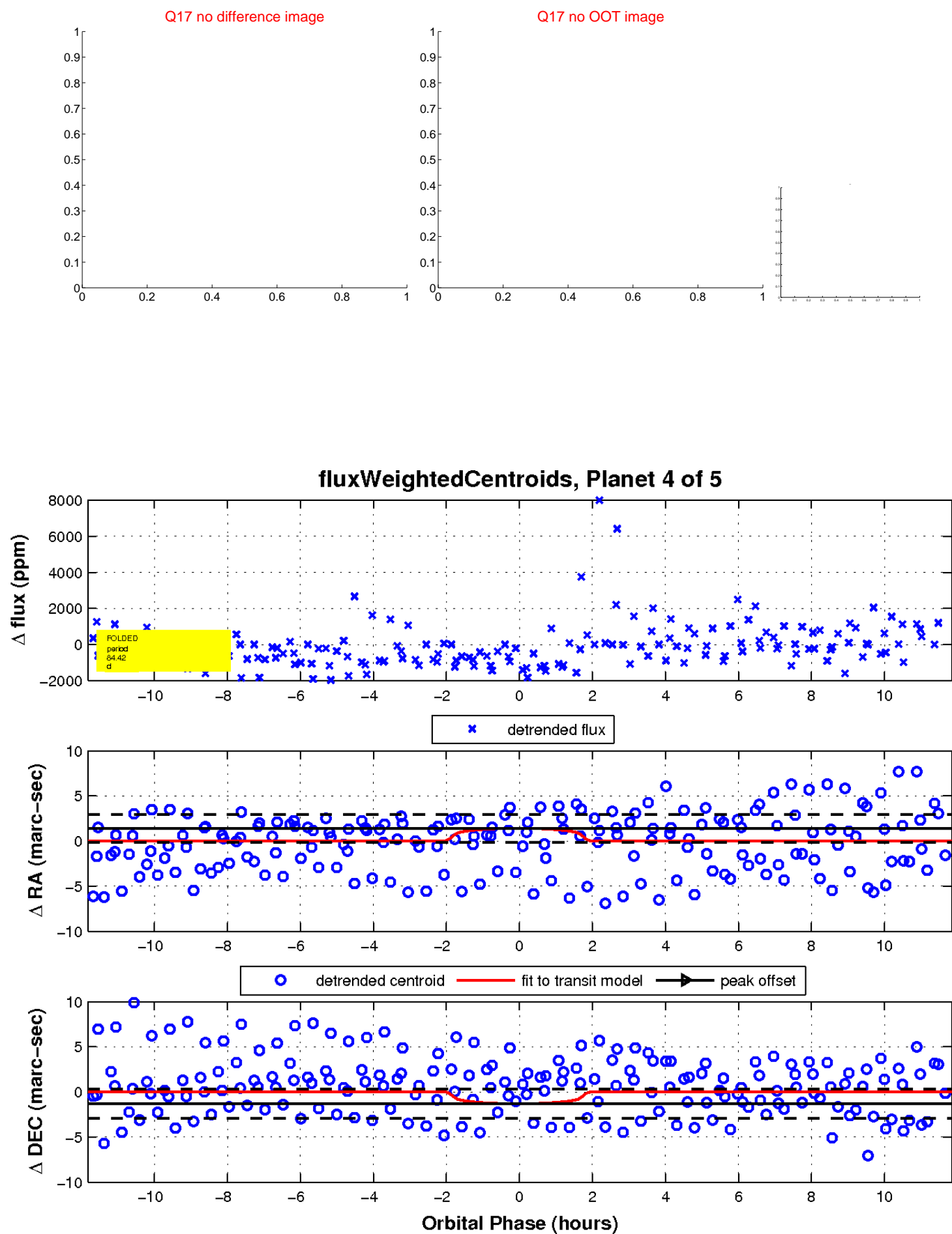
Q16 difference image



Q16 OOT image

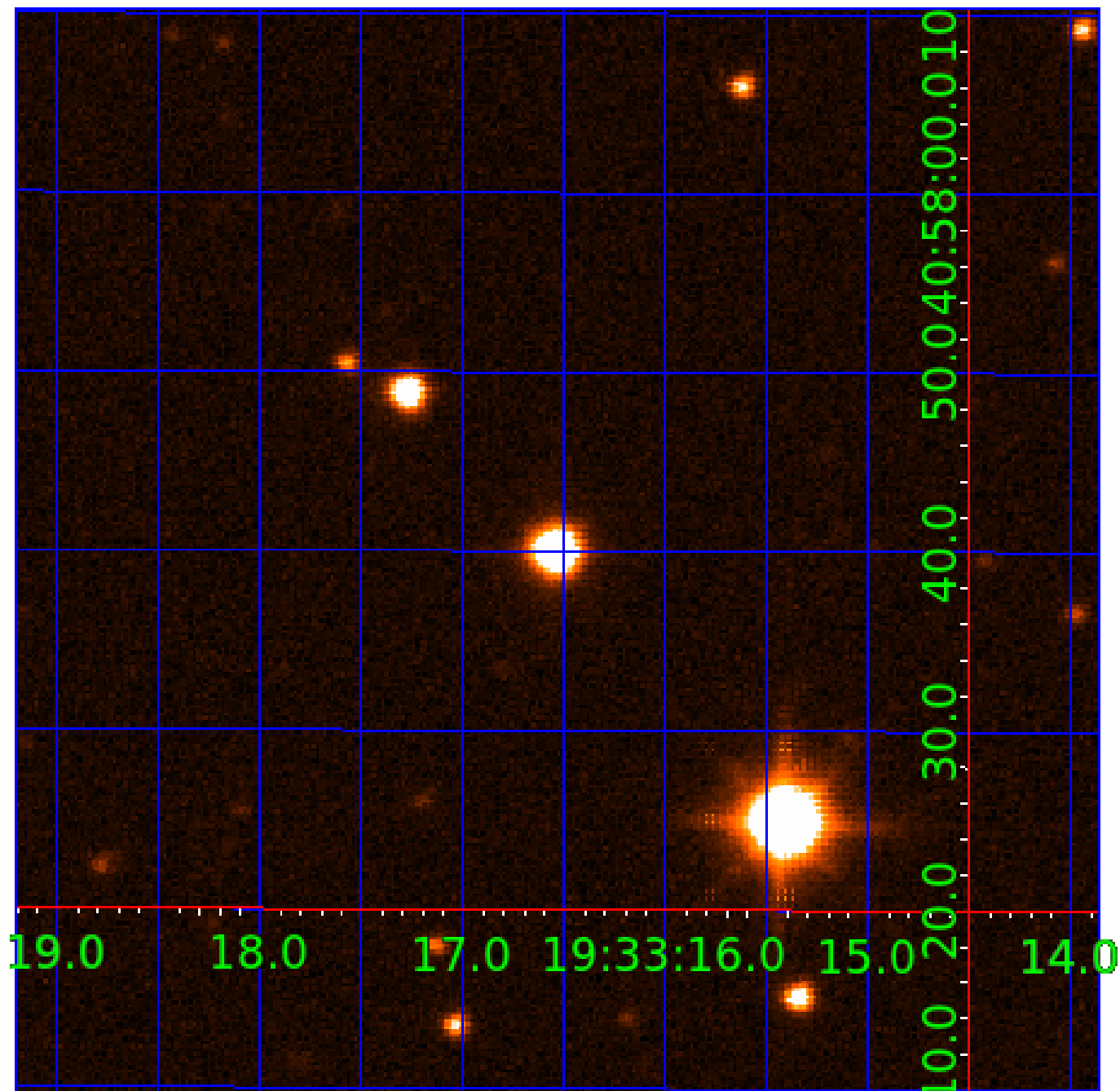


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005710376

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})
005710376-01	OBS	No	84.277447	199.277036	1300.5	8.055	13.2	4.7	0.64	4002	2.21	0.89
005710376-02	OBS	No	114.727271	184.054458	1666.6	2.798	11.7	6.4	0.64	4002	2.62	0.59
005710376-03	OBS	No	80.854028	172.523944	954.1	2.561	12.3	5.2	0.64	4002	2.19	0.94
005710376-04	OBS	No	84.424989	178.050939	1079.2	3.951	11.0	5.4	0.64	4002	2.33	0.89
005710376-05	OBS	No	347.474379	407.522565	5297.1	30.567	10.0	9.3	0.64	4002	4.72	0.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005710376-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005710376-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
005710376-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005710376-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005710376-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS

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

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

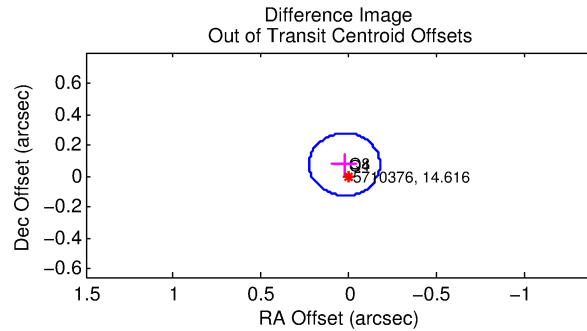
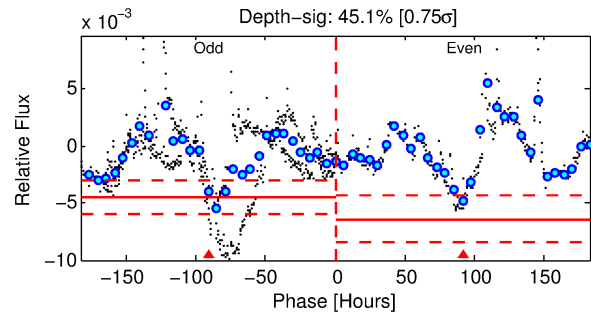
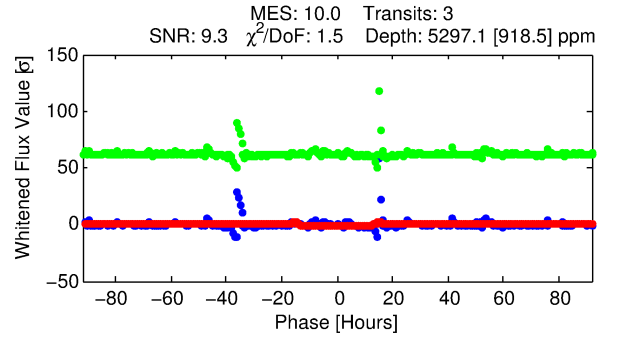
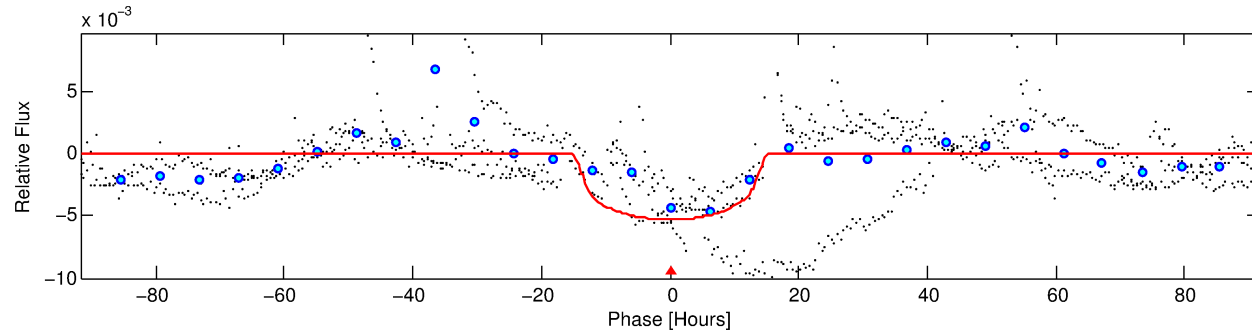
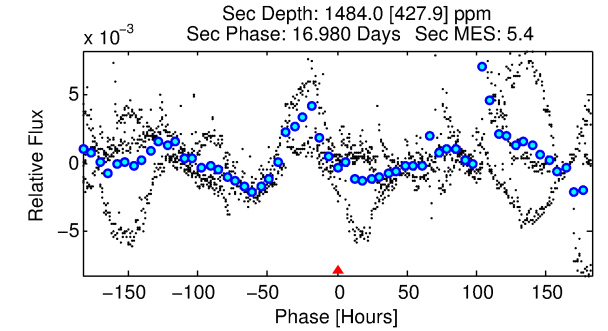
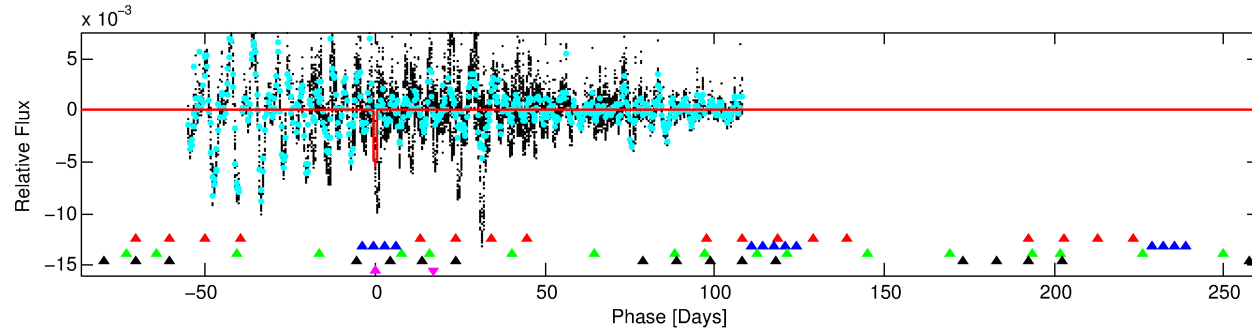
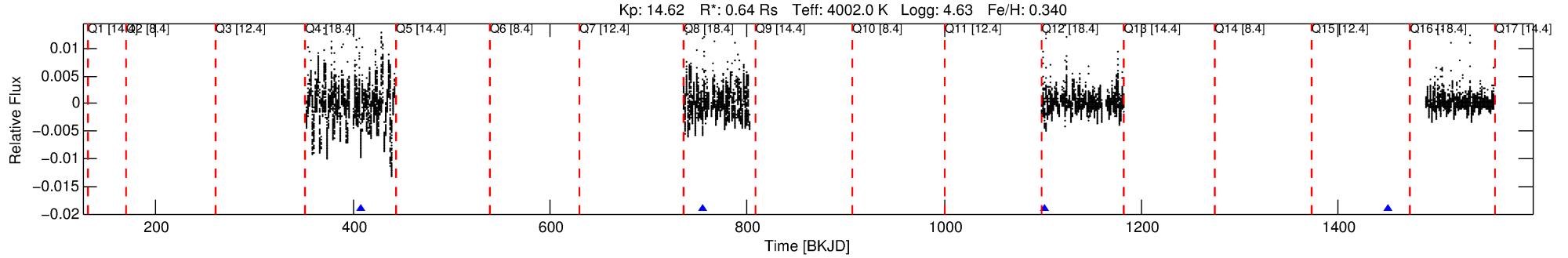
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005710376-05

No Significant Match Found

DV One-Page Summary

KIC: 5710376 Candidate: 5 of 5 Period: 347.474 d



DV Fit Results:

Period = 347.47438 [0.01583] d
Epoch = 407.5226 [0.0176] BKJD
Rp/R* = 0.0680 [0.0069]
a/R* = 78.54 [11.19]
b = 0.57 [0.17]
Seff = 0.13 [0.03]
Teq = 154 [7] K
Rp = 4.72 [0.68] Re
a = 0.8323 [0.0663] AU
Ag = 25379.86 [9377.48] [2.71σ]
Teff = 3012 [290] K [9.85σ]

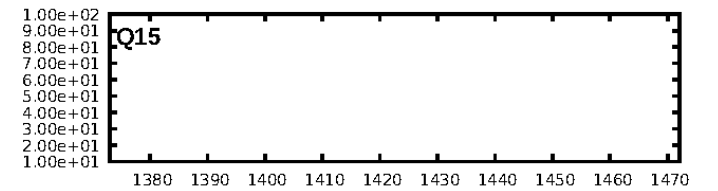
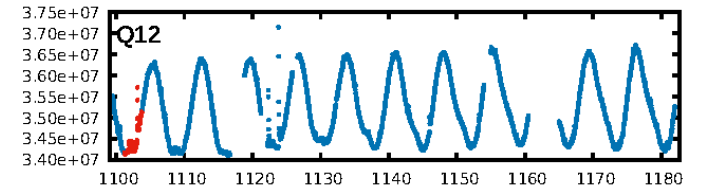
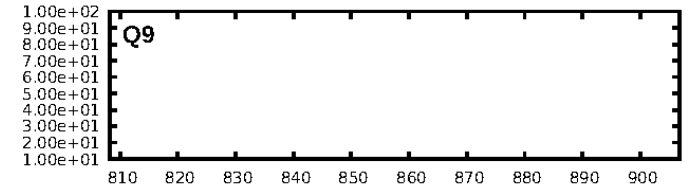
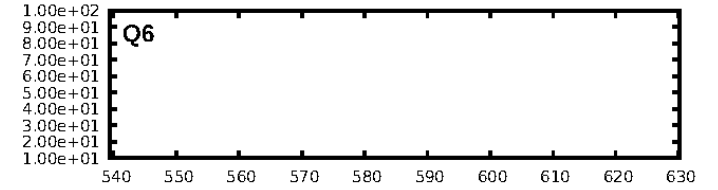
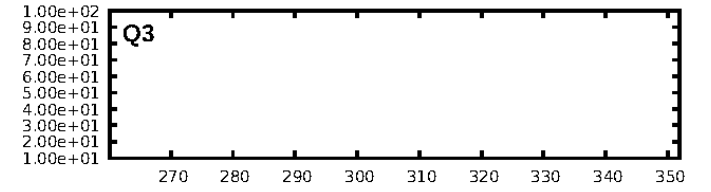
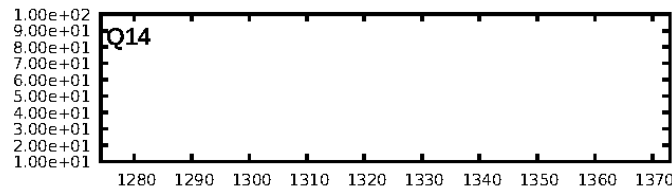
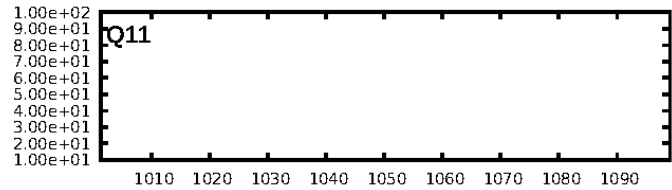
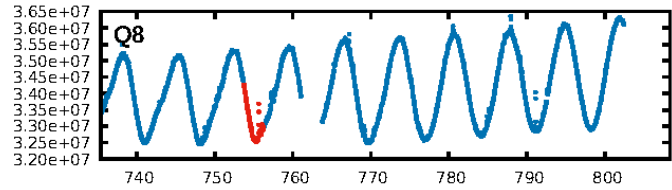
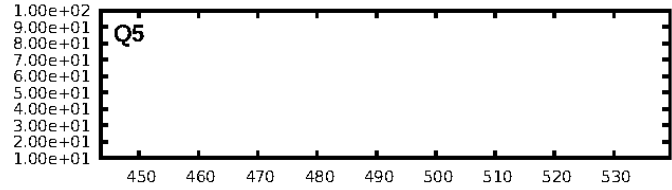
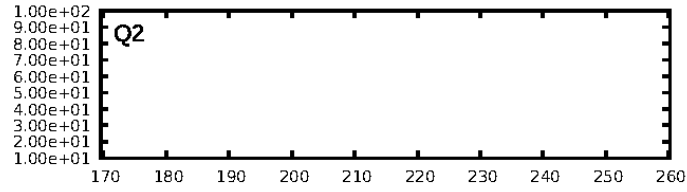
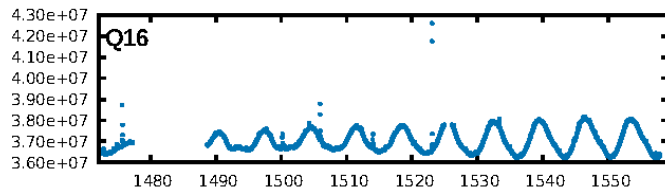
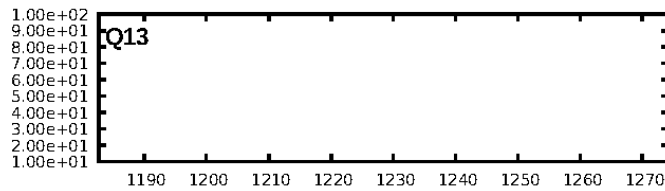
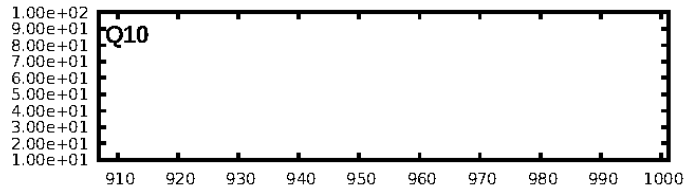
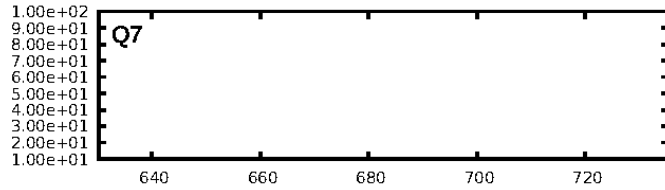
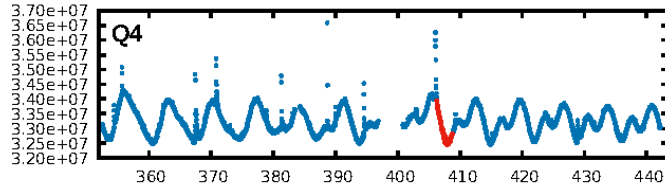
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [181.98σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 70.3%
Bootstrap-pfa: 8.99e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.103
Centroid-sig: 12.2%
Centroid-so: 1.152 arcsec [2.71σ]
OotOffset-rm: 0.081 arcsec [1.20σ]
KicOffset-rm: 0.192 arcsec [2.39σ]
OotOffset-st: 0/0/2/0 [2]
KicOffset-st: 0/0/2/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

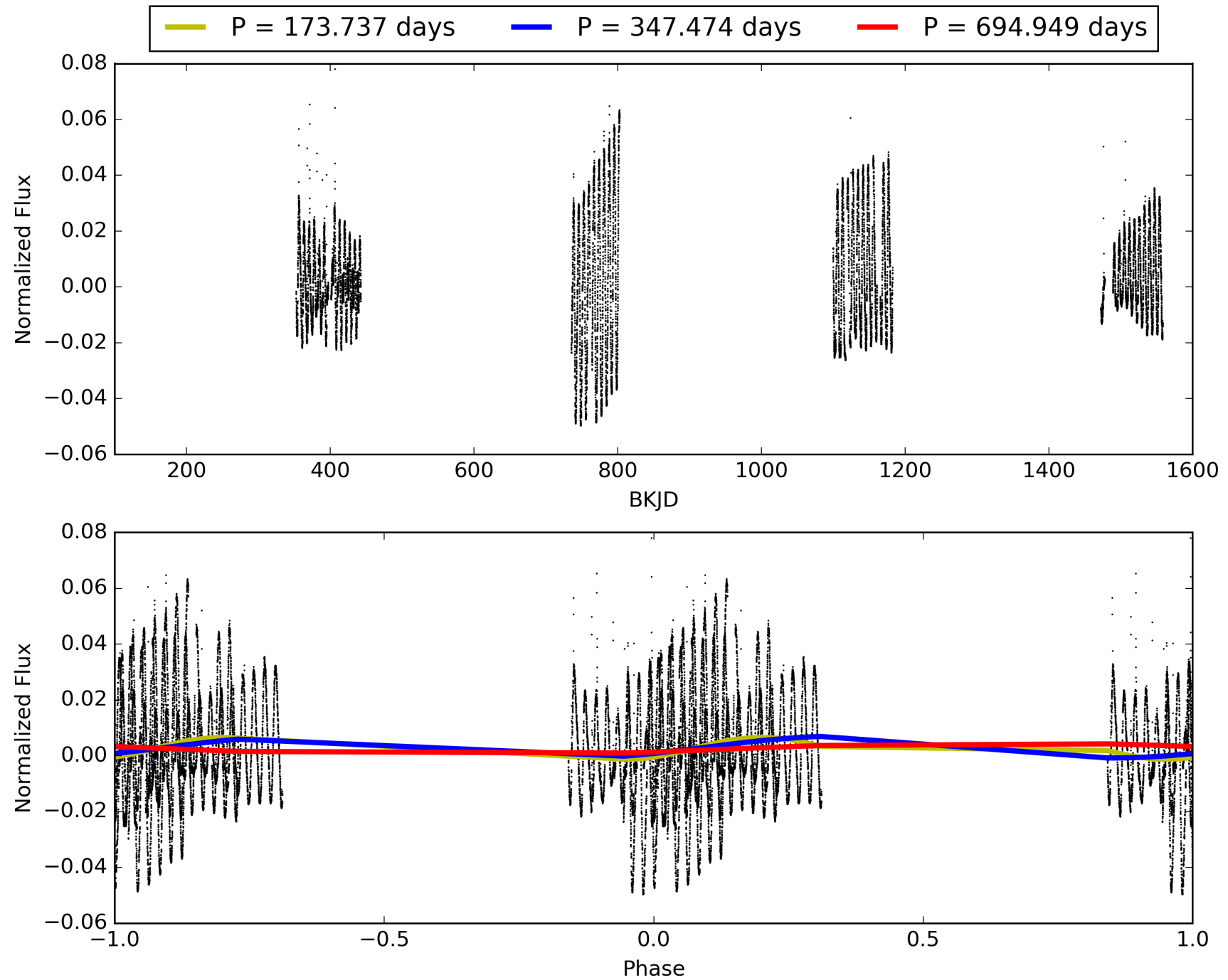
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:00:40 Z

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

TCE 005710376-05, PDC Light Curves

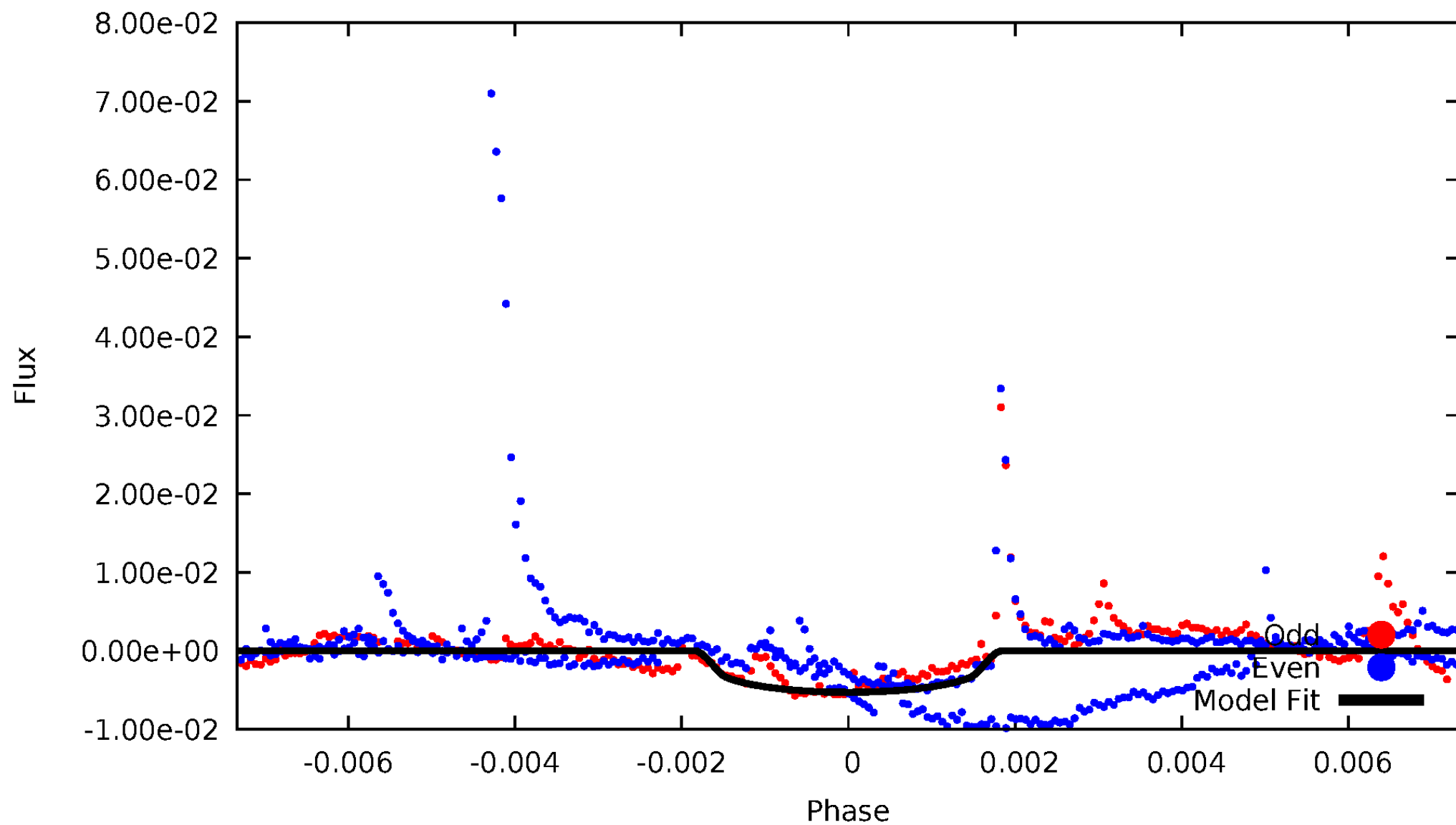


TCE 005710376-05



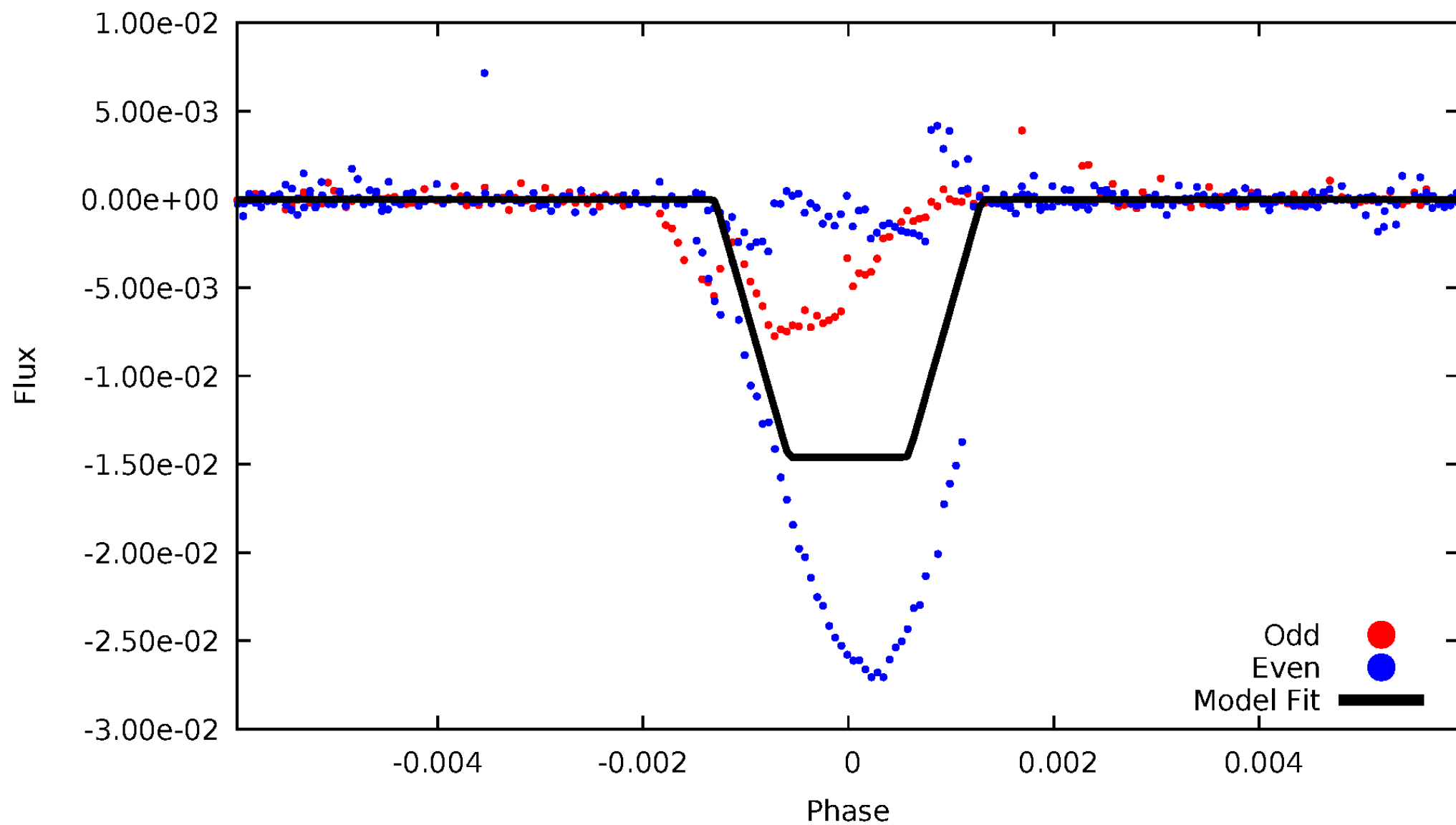
DV Odd/Even

TCE 005710376-05



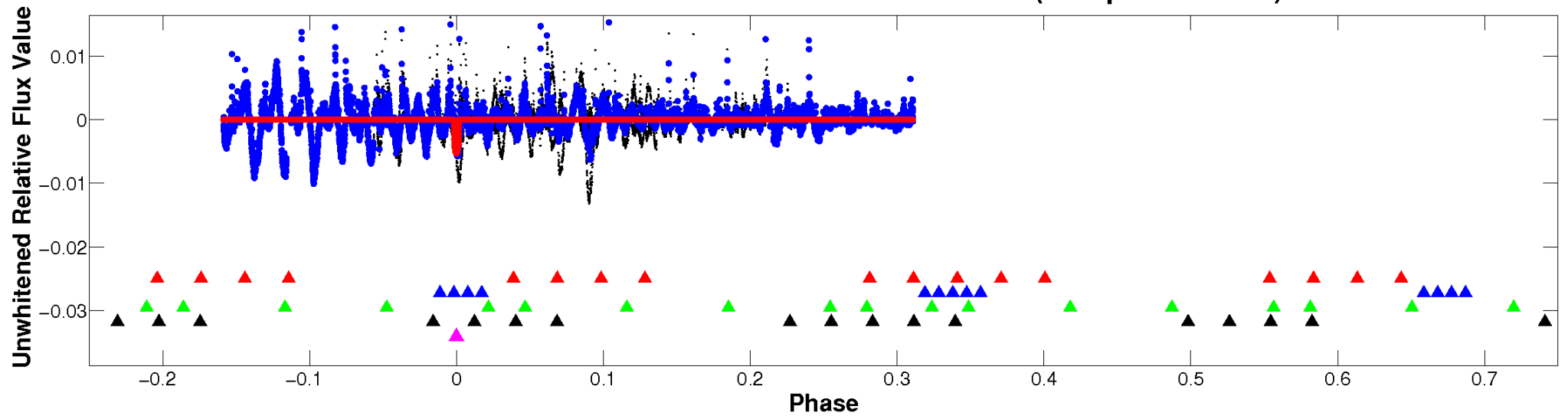
ALT Odd/Even

TCE 005710376-05

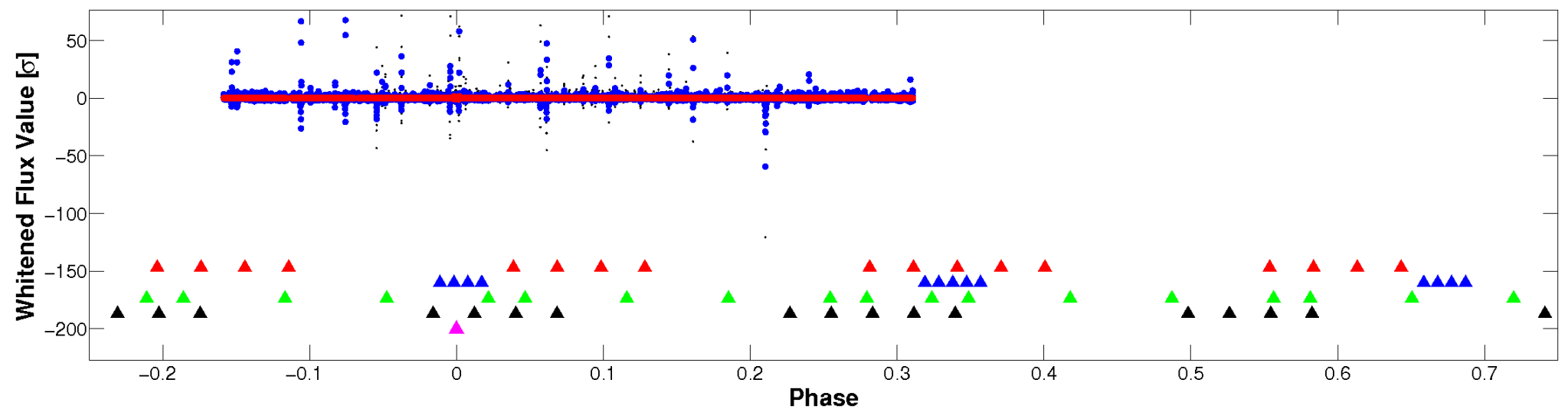


Non-Whitened Vs. Whitened Light Curve

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

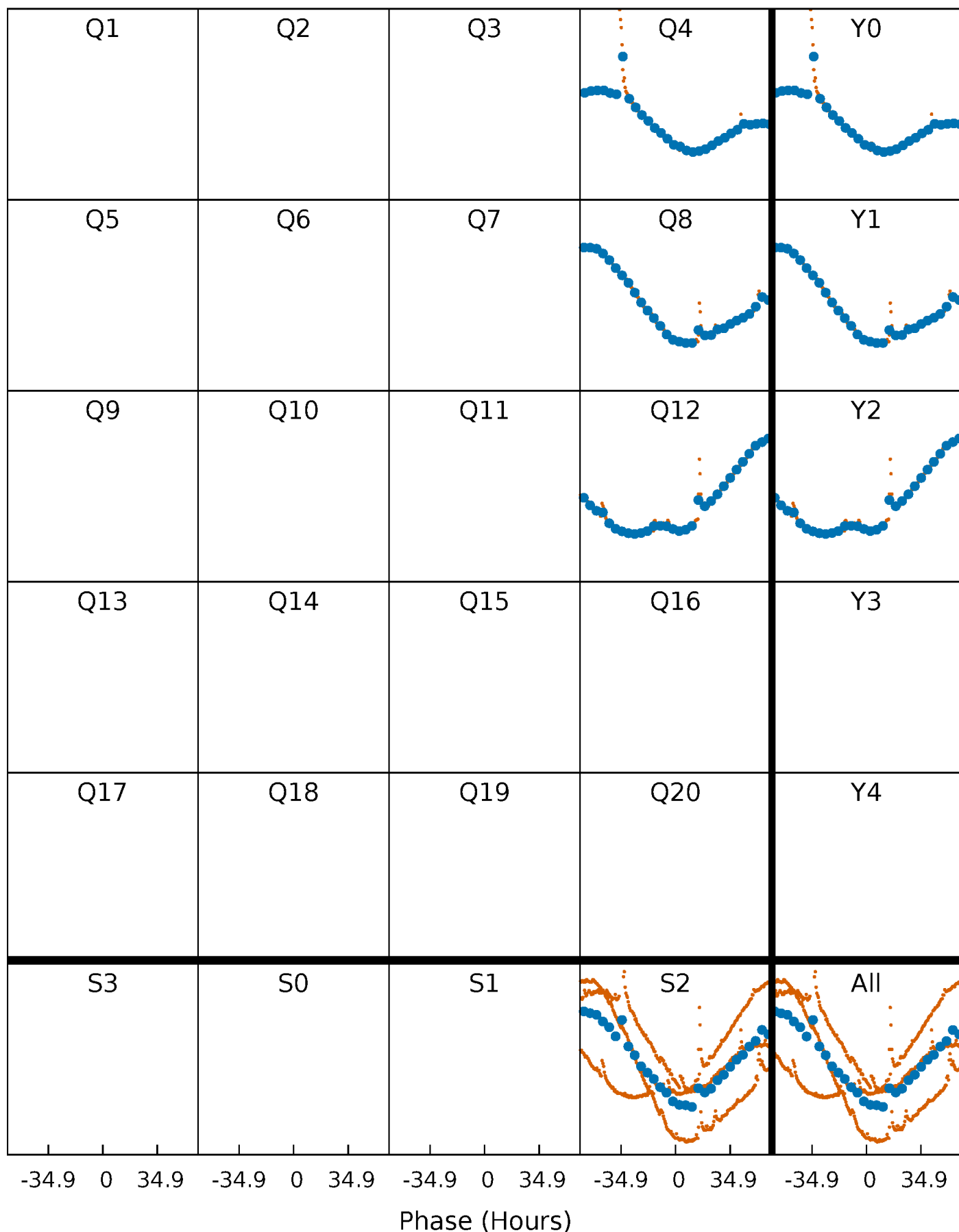


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



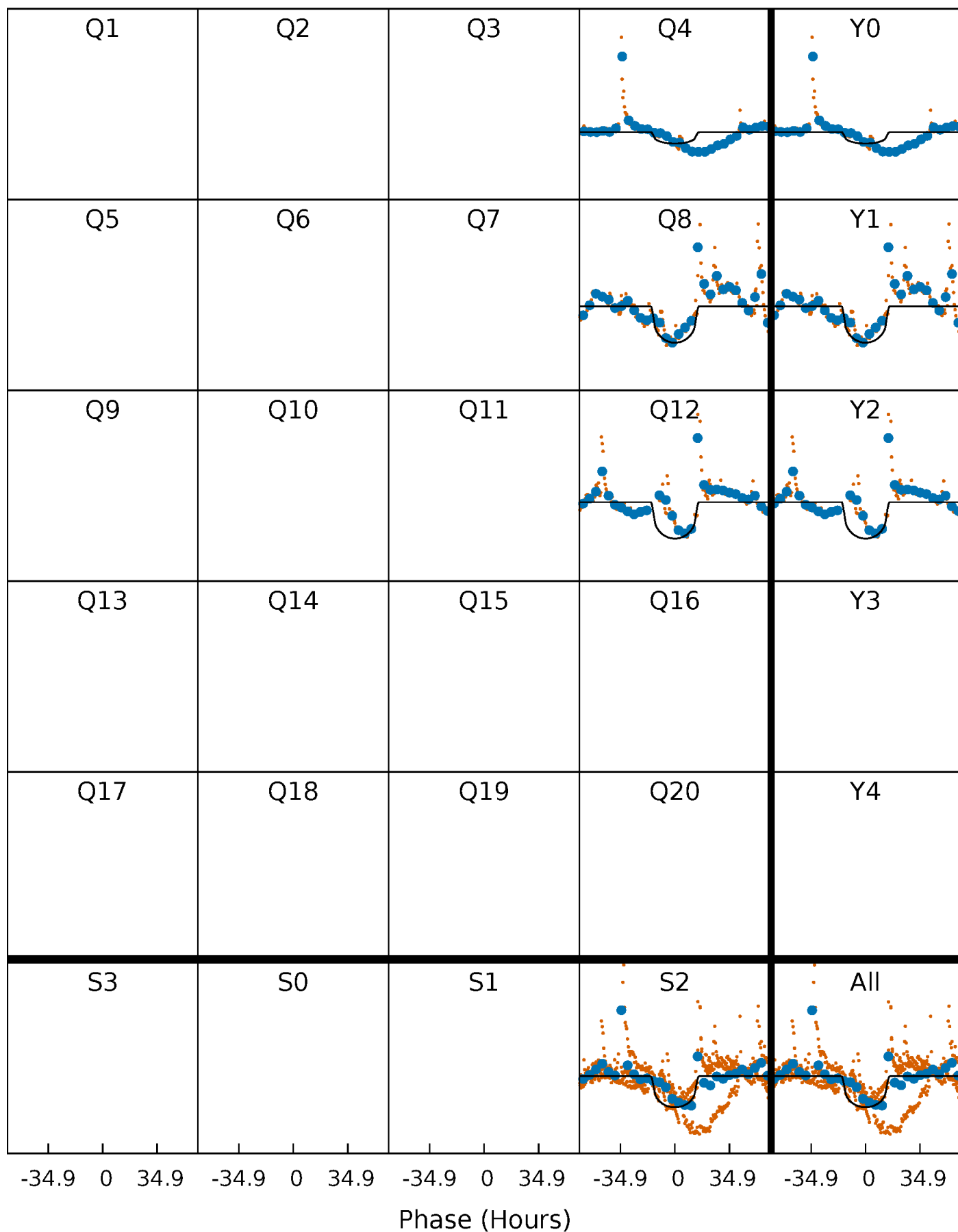
PDC Quarter-Phased Transit Curves

TCE 005710376-05 P=347.474379 Days $T_0=407.522565$ (BKJD)



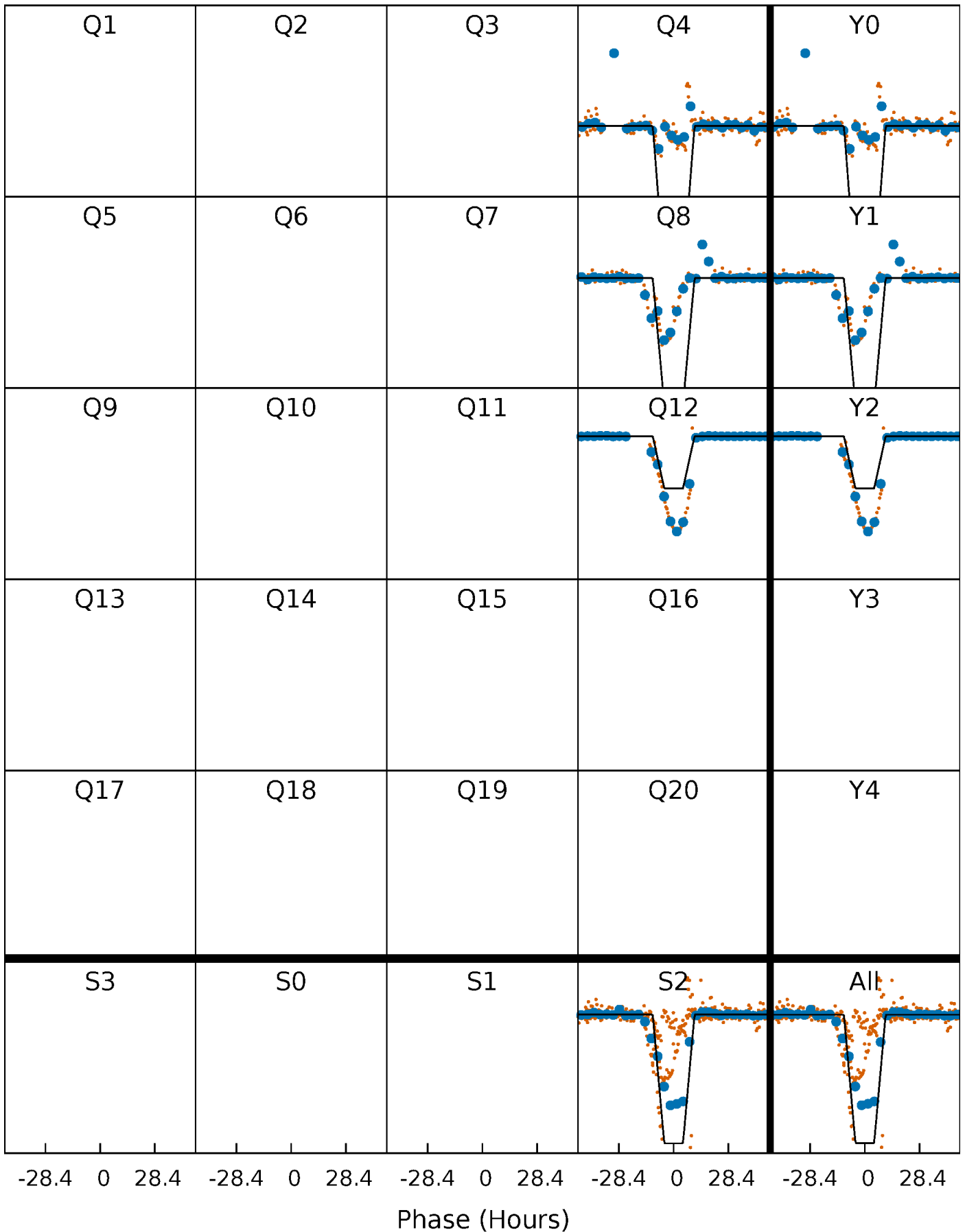
DV Quarter-Phased Transit Curves

TCE 005710376-05 $P=347.474379$ Days $T_0=407.522565$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

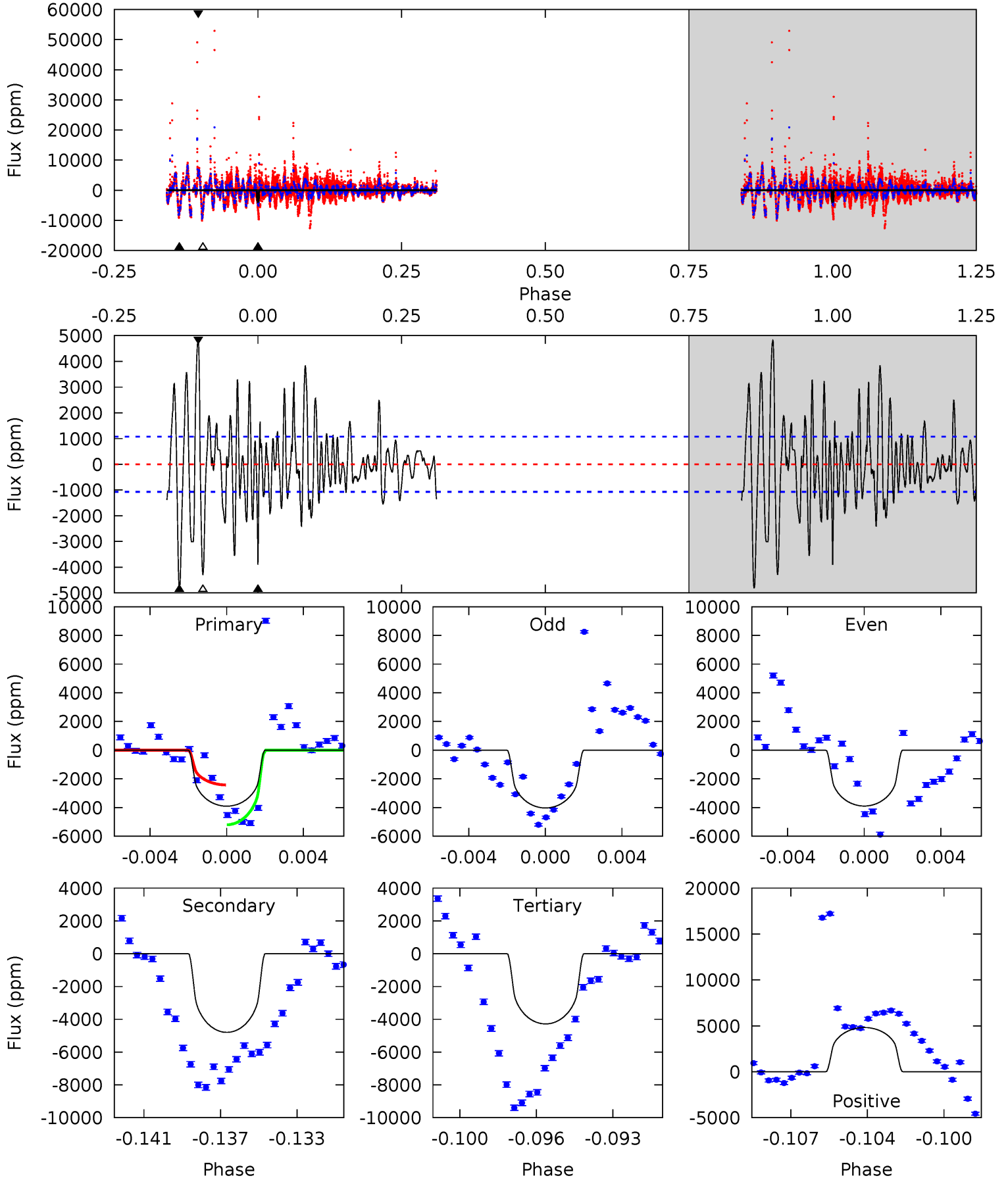
TCE 005710376-05 $P=347.656590$ Days $T_0=407.367885$ (BKJD)



DV Model-Shift Uniqueness Test

005710376-05, P = 347.474379 Days, E = 60.048186 Days

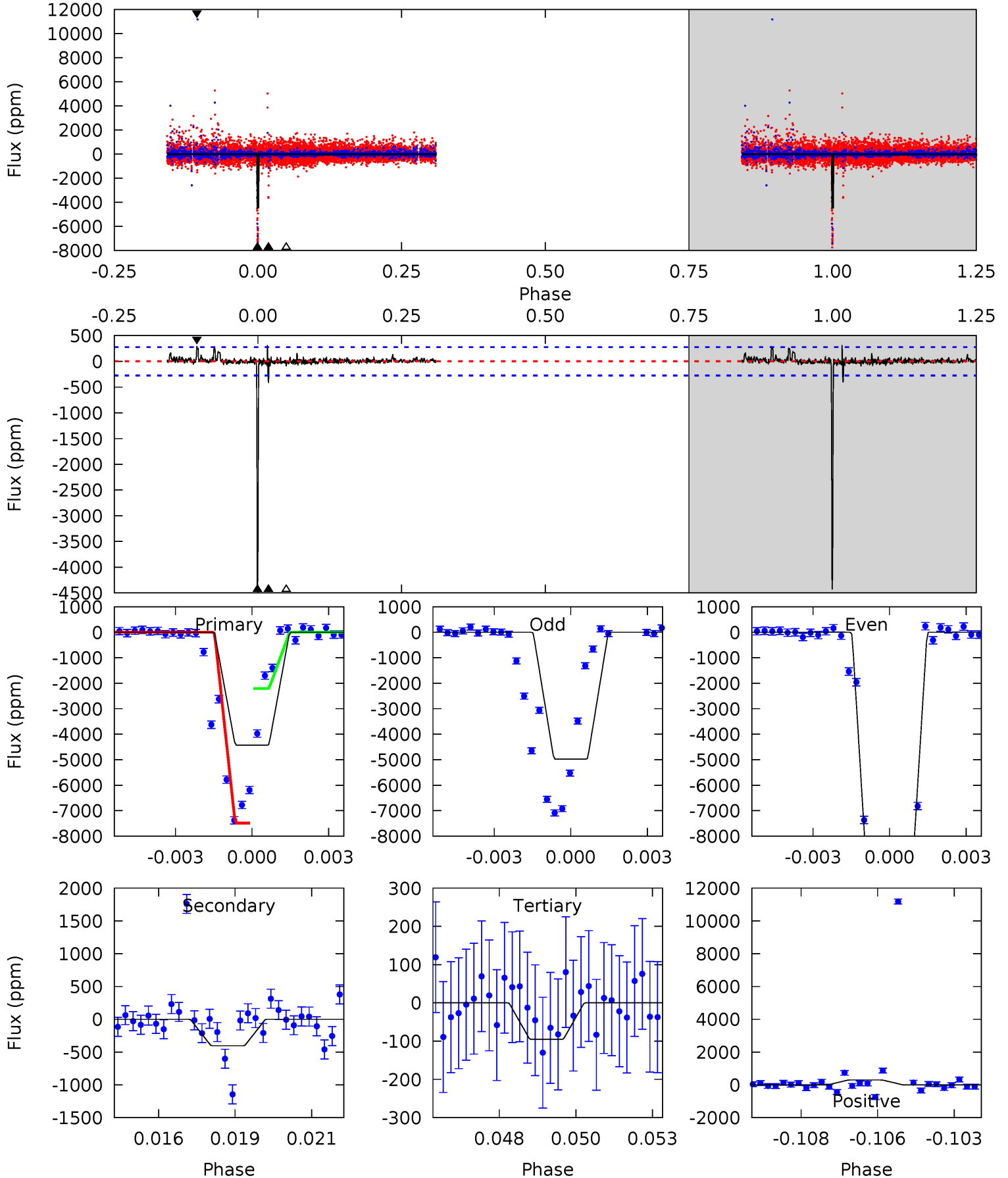
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.0	23.4	20.8	23.4	5.21	2.90	6.58	-1.83	-4.42	2.50	-0.09	0.27	0.97	0.50	5.56



Alt Model-Shift Uniqueness Test

005710376-05, P = 347.656590 Days, E = 59.711295 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
84.3	7.68	1.81	5.64	5.28	3.01	0.67	82.5	78.6	5.86	2.03	99.8	2.02	0.06	7.89



Stellar Parameters For KIC 005710376

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4002^{+140}_{-154}	$4.635^{+0.056}_{-0.016}$	$0.340^{+0.100}_{-0.300}$	$0.636^{+0.030}_{-0.064}$	$0.637^{+0.037}_{-0.059}$	$3.488^{+0.879}_{-0.269}$
	+3%/-4%	+1%/-0%	+29%/-88%	+5%/-10%	+6%/-9%	+25%/-8%
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 005710376-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-4798 ± 205	$4.67^{+0.53}_{-0.52}$	214^{+8}_{-9}	4025^{+214}_{-198}	85396^{+20932}_{-16311}
Alt.	-403 ± 53	$8.30^{+0.52}_{-0.60}$	213^{+9}_{-8}	2392^{+73}_{-74}	2269^{+460}_{-372}

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

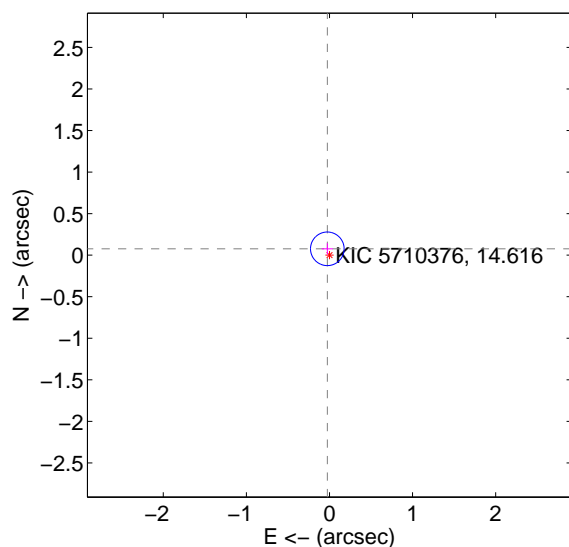
Supplemental centroid analysis for 005710376-05. Kepler magnitude: 14.62. Transit SNR 9.31

There are 2 quarters with good PRF difference image offsets

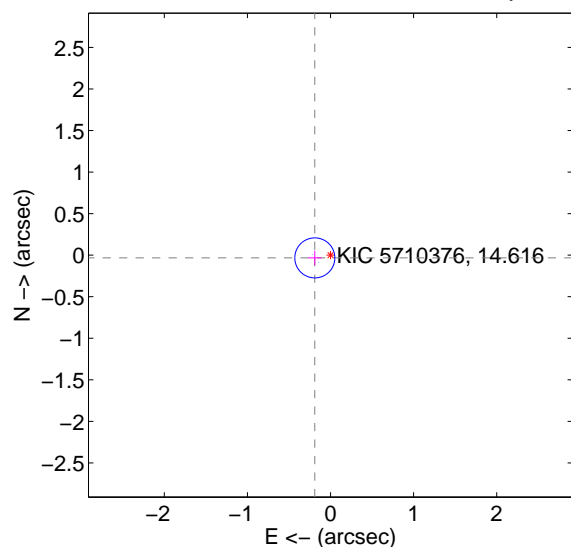
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.081 ± 0.067	1.20	0.026 ± 0.067	0.077 ± 0.067
PRF-fit source offset from KIC position	0.192 ± 0.080	2.39	0.189 ± 0.080	-0.033 ± 0.087
photometric centroid source offset	1.15 ± 0.42	2.71	1.15 ± 0.42	0.04 ± 0.41

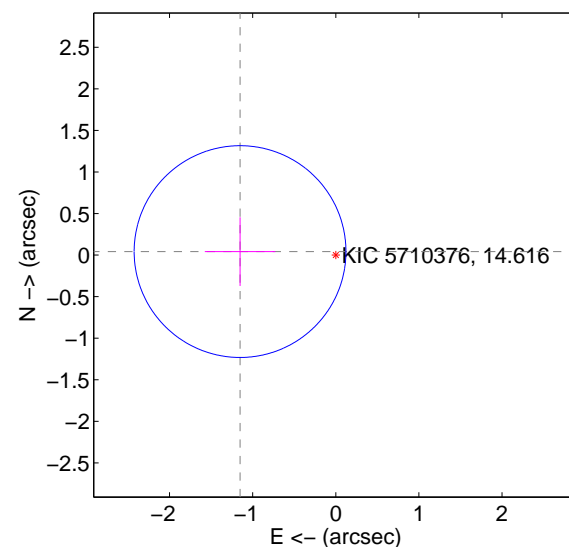
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

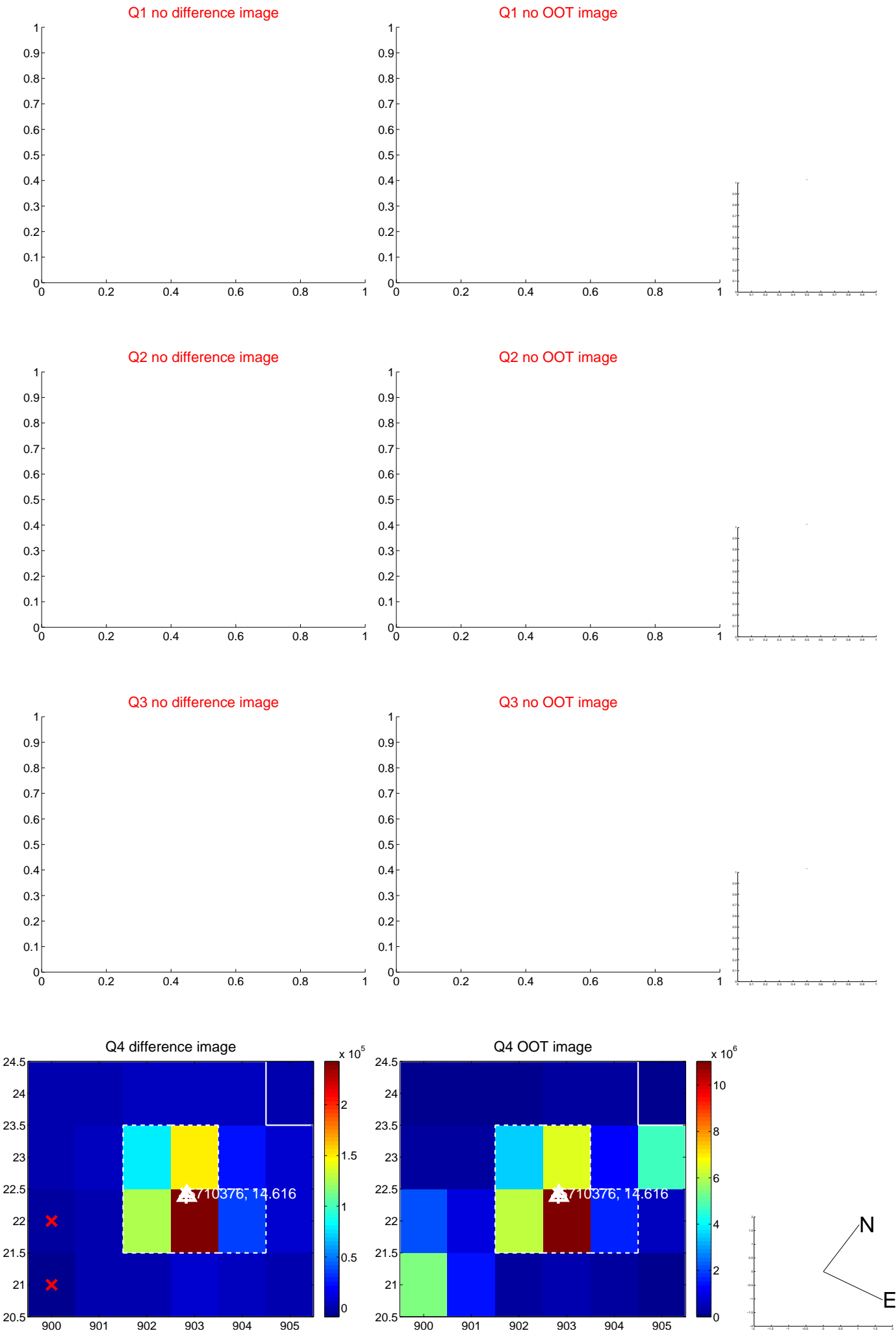


offset from photometric centroids

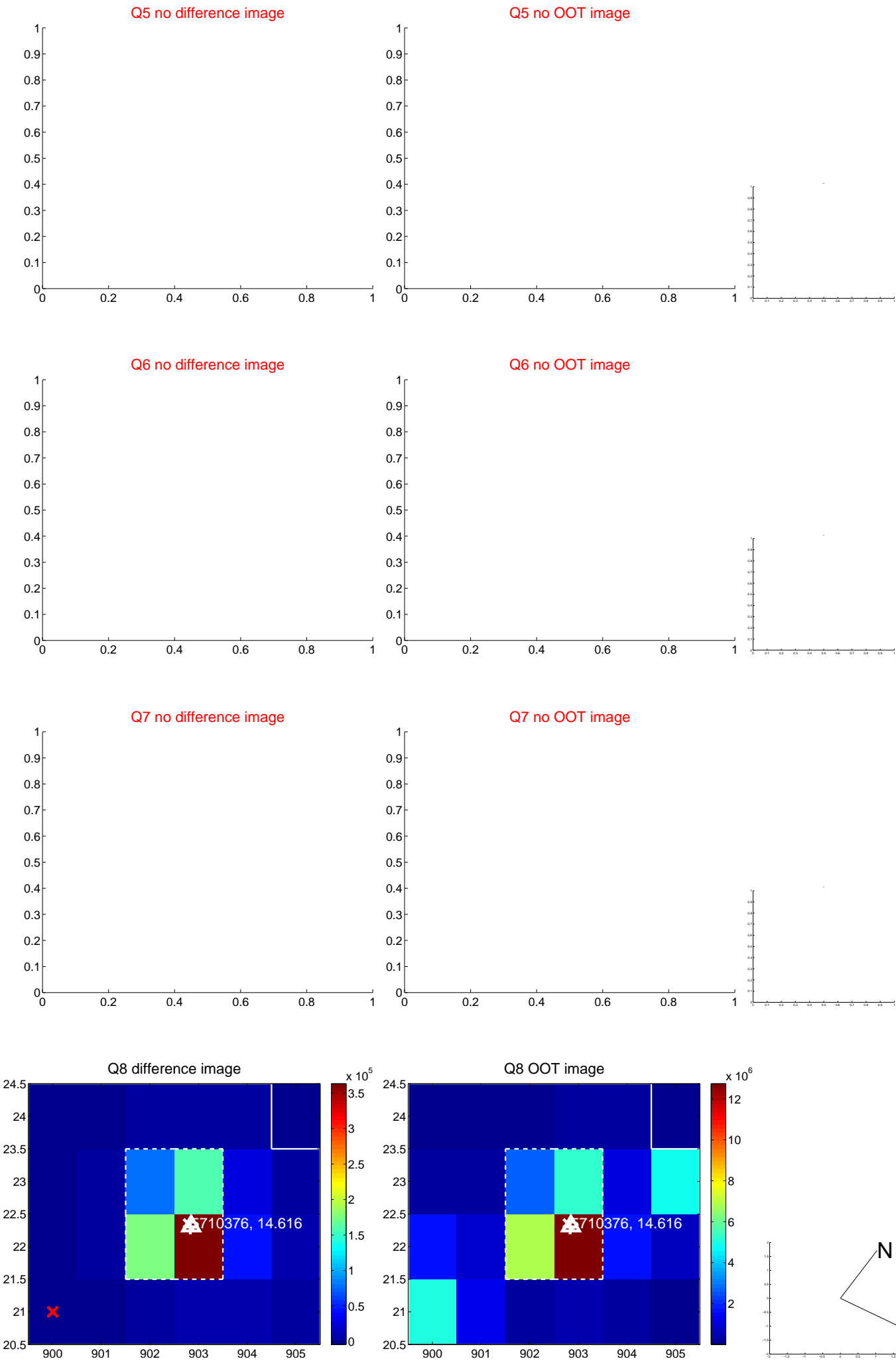


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



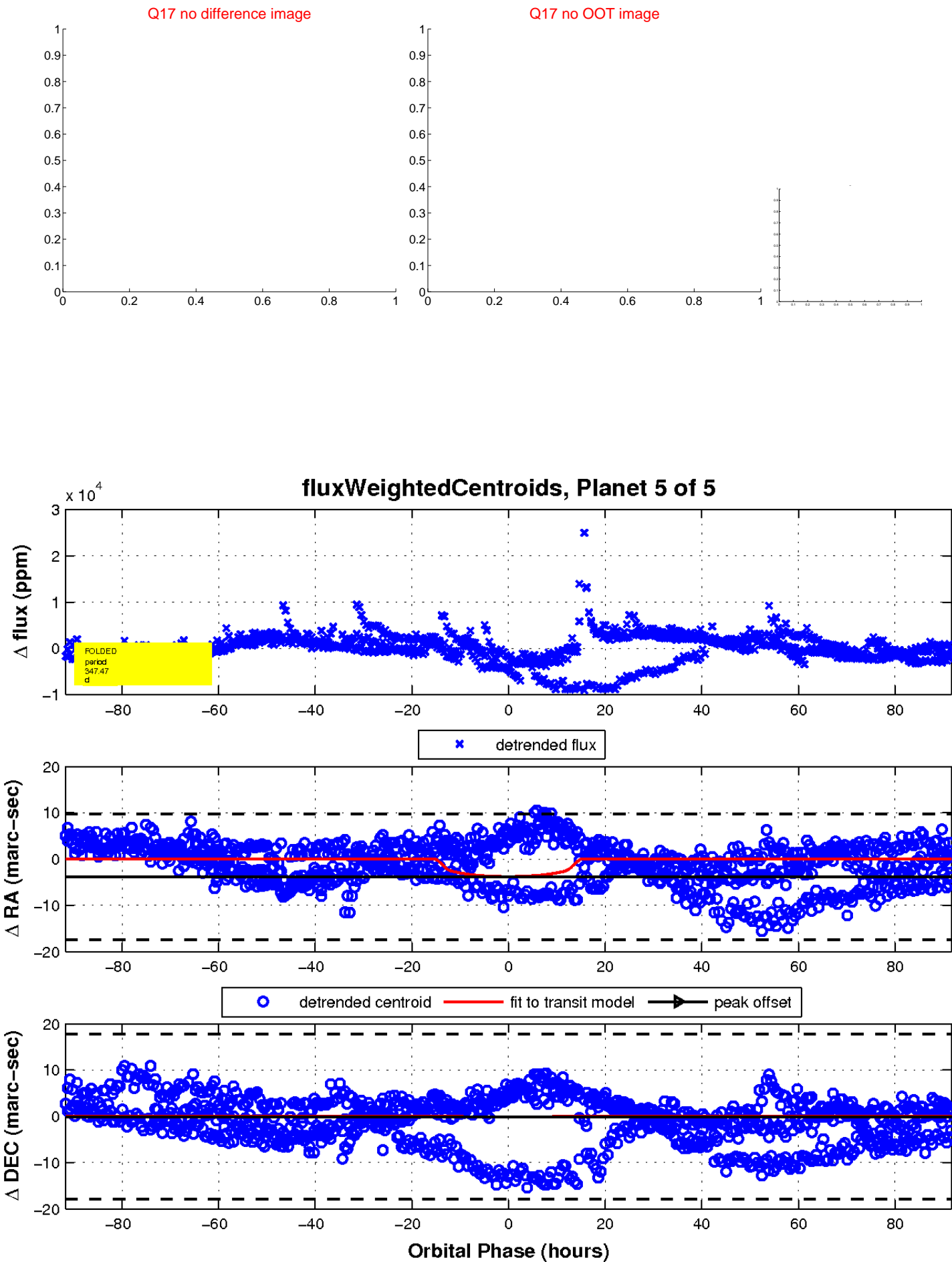
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

