

KIC 010071383

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})
010071383-02	OBS	No	315.114776	370.421223	1478.6	4.548	17.6	4.9	0.62	5207	2.43	0.41
010071383-03	OBS	No	582.137908	175.709687	1297.5	5.577	16.8	4.0	0.62	5207	2.20	0.18
010071383-04	OBS	No	376.714059	199.018097	1615.2	1.643	19.4	7.9	0.62	5207	2.54	0.33
010071383-05	OBS	No	307.013173	247.175805	618.0	3.000	16.8	-1.0	0.62	5207	1.52	0.43

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010071383-02	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010071383-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010071383-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_KIC_POS
010071383-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

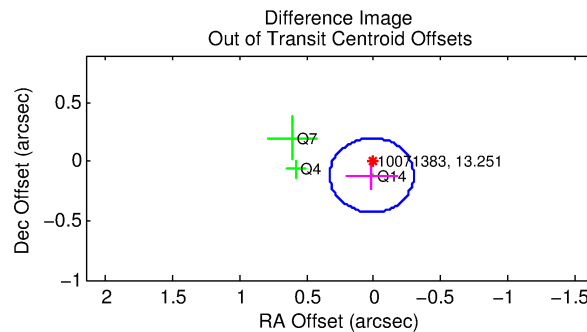
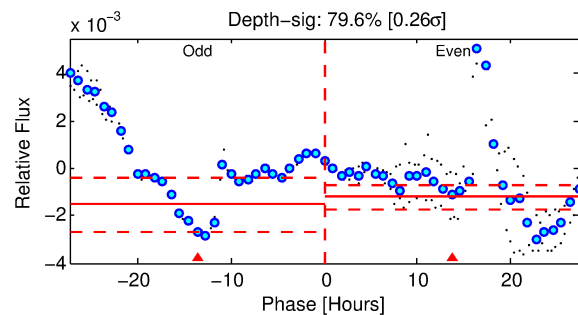
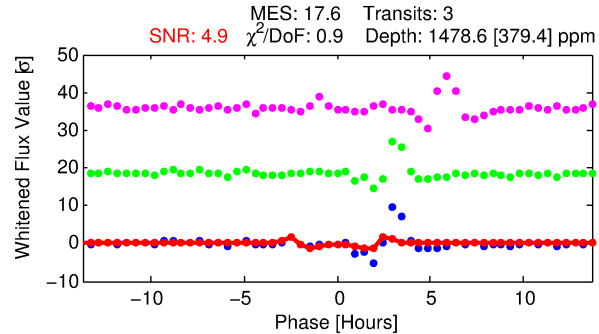
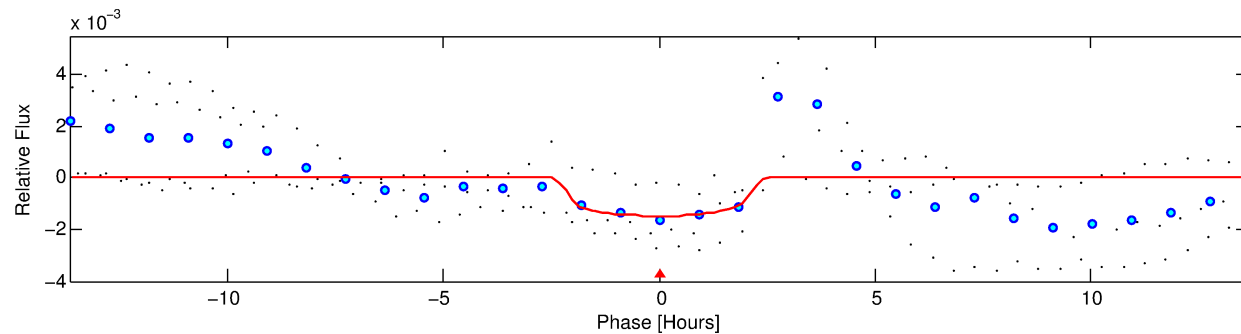
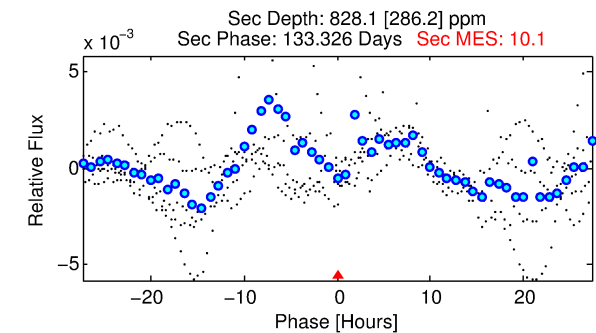
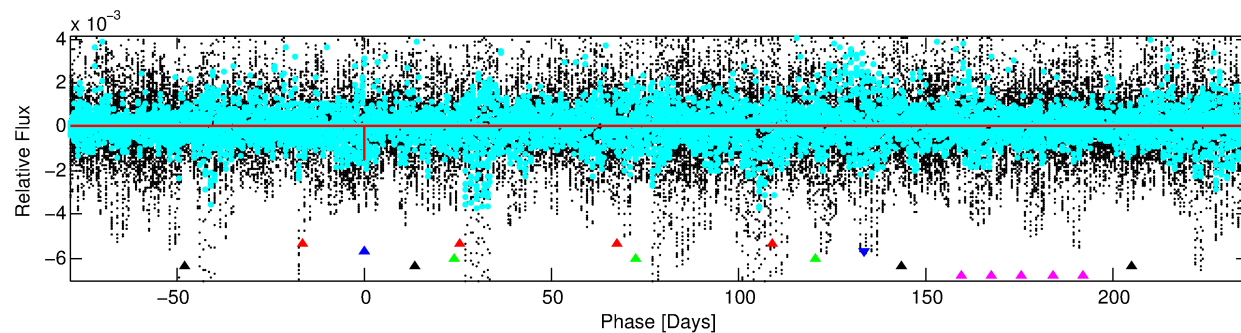
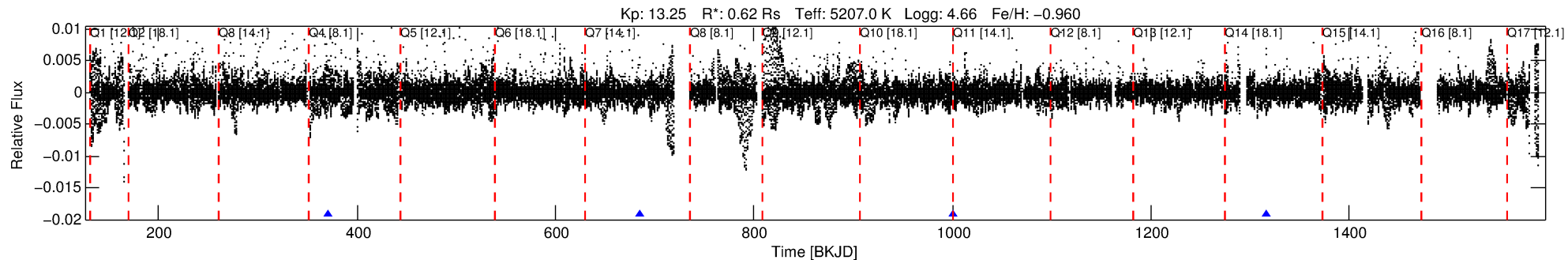
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010071383-02

No Significant Match Found

DV One-Page Summary

KIC: 10071383 Candidate: 2 of 5 Period: 315.115 d



DV Fit Results:

Period = 315.11478 [0.00298] d
Epoch = 370.4212 [0.0057] BKJD
Rp/R* = 0.0360 [0.0241]
a/R* = 479.71 [1260.37]
b = 0.50 [3.94]
Seff = 0.41 [0.06]
Teq = 204 [8] K
Rp = 2.43 [1.64] Re
a = 0.7804 [0.0521] AU
Ag = 47122.47 [65449.57] [0.72σ]
Teff = 4657 [1620] K [2.75σ]

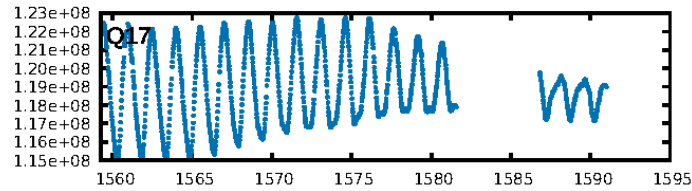
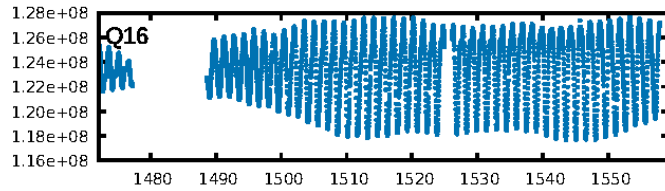
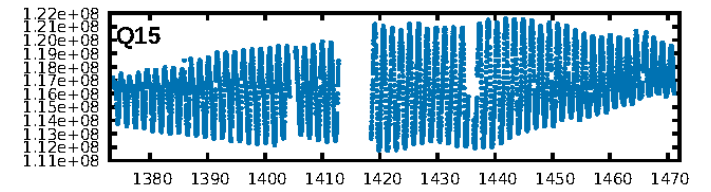
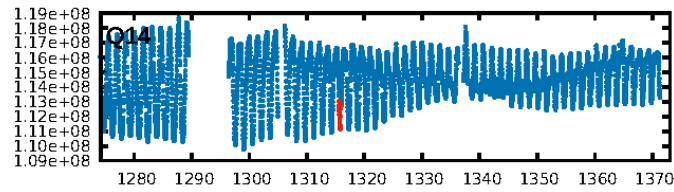
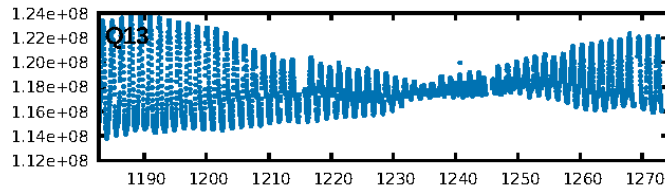
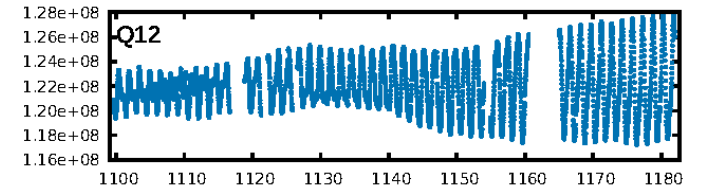
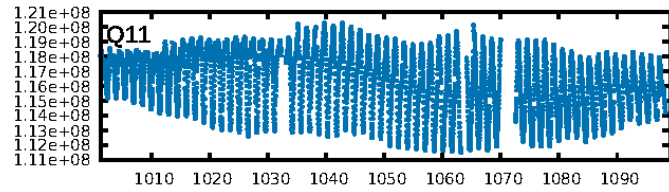
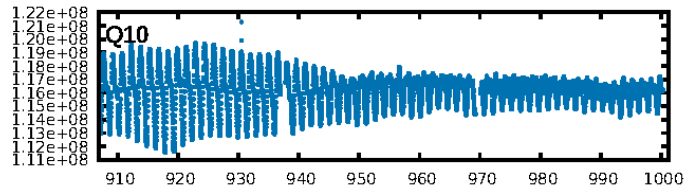
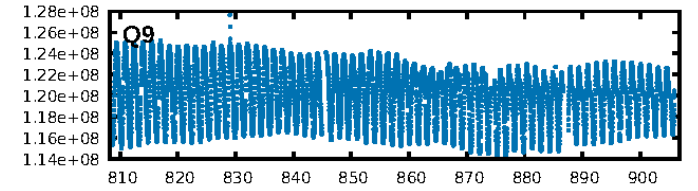
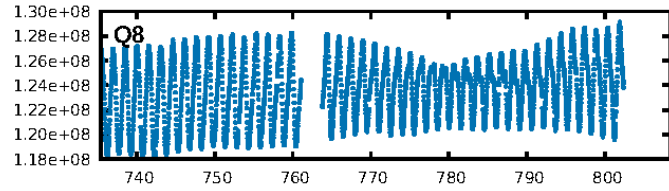
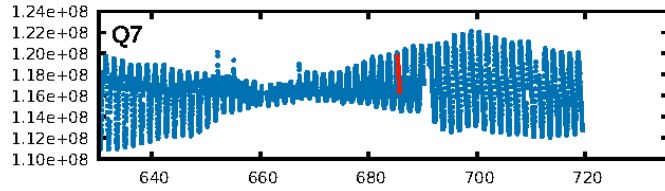
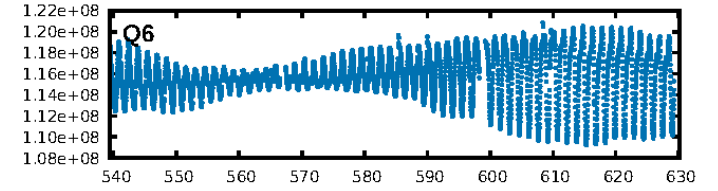
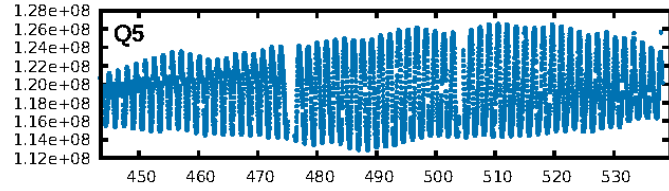
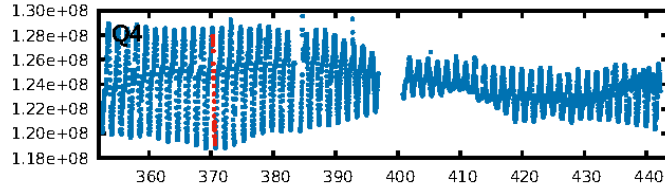
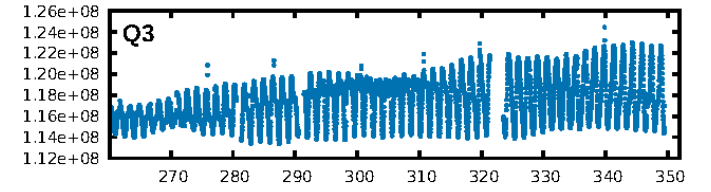
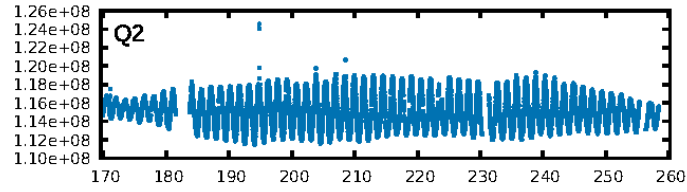
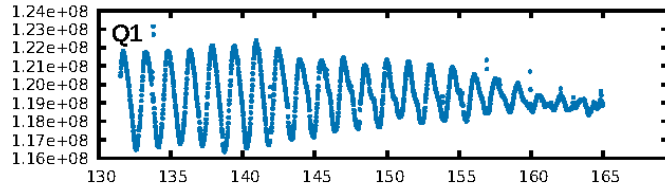
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [35.69σ]
LongPeriod-sig: 100.0% [174.49σ]
ModelChiSquare2-sig: 99.1%
ModelChiSquareGof-sig: 97.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.7957
Centroid-sig: N/A
Centroid-so: 0.831 arcsec [0.80σ]
OotOffset-rm: 0.116 arcsec [1.11σ]
KicOffset-rm: 0.449 arcsec [3.21σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

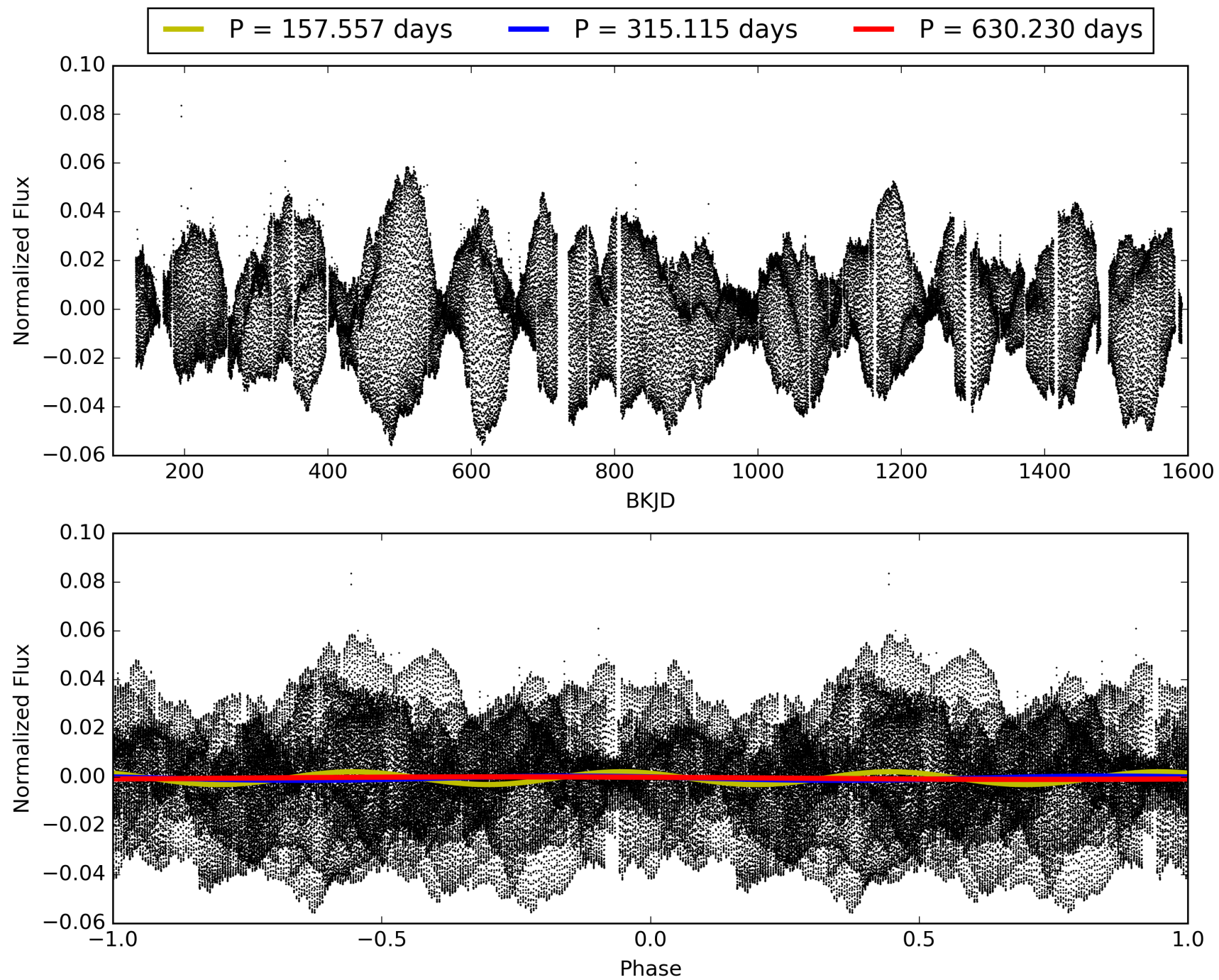
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:24:00 Z

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

TCE 010071383-02, PDC Light Curves

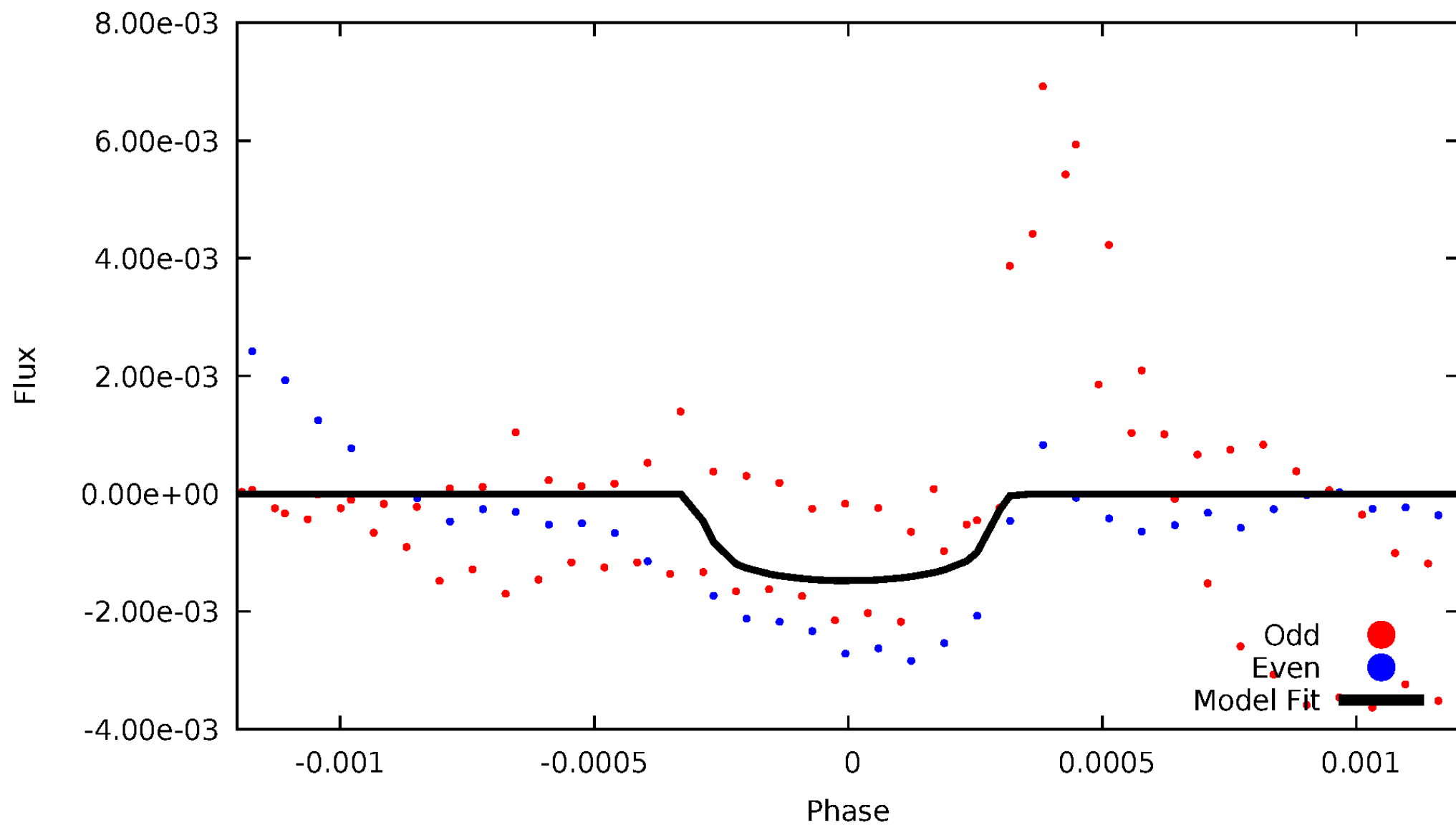


TCE 010071383-02



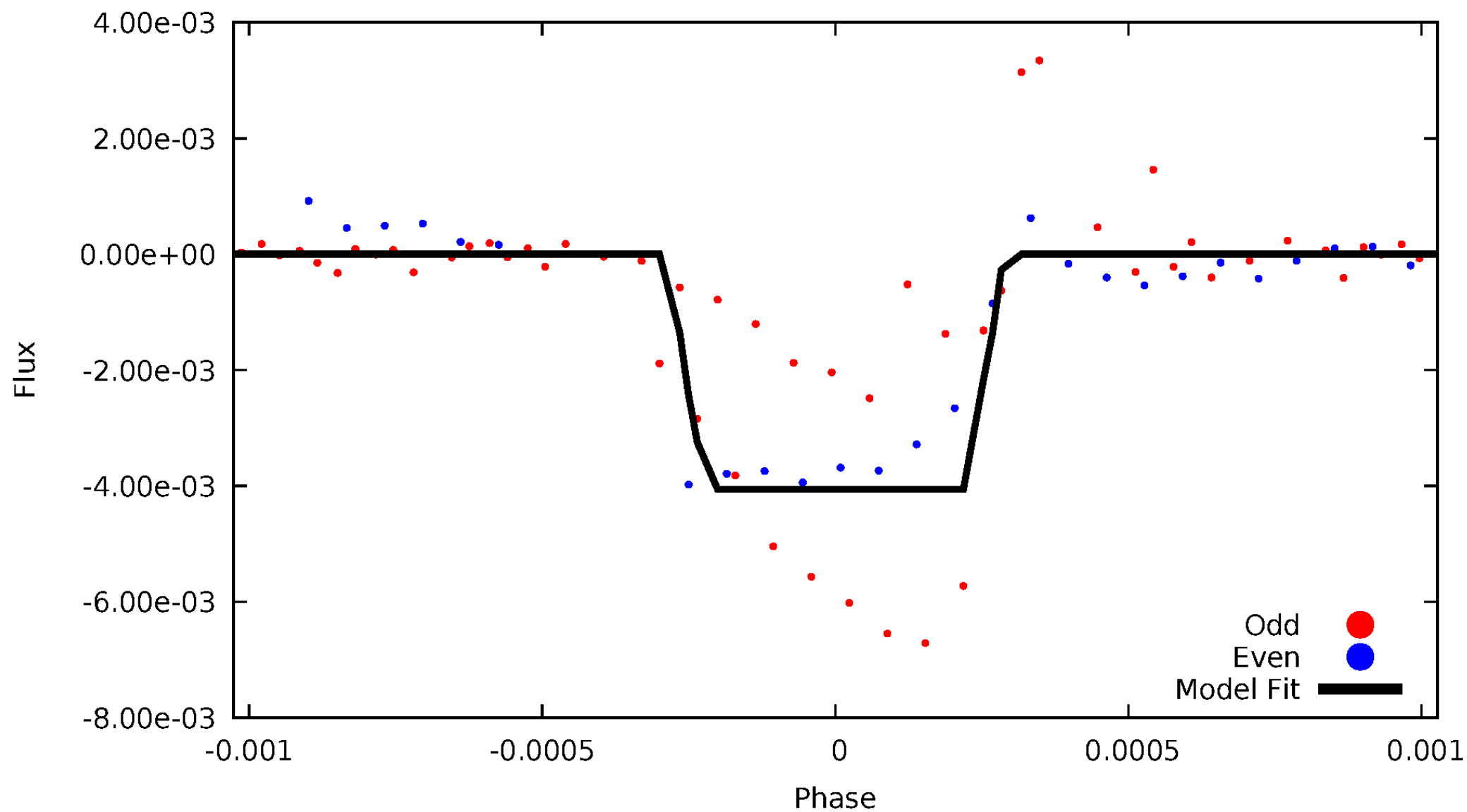
DV Odd/Even

TCE 010071383-02



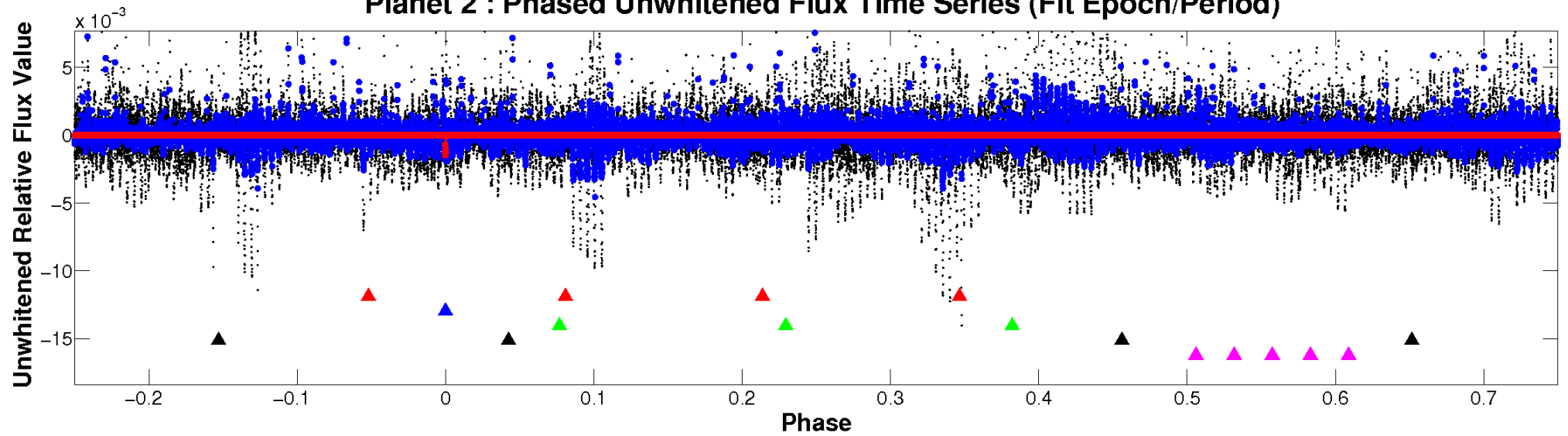
ALT Odd/Even

TCE 010071383-02

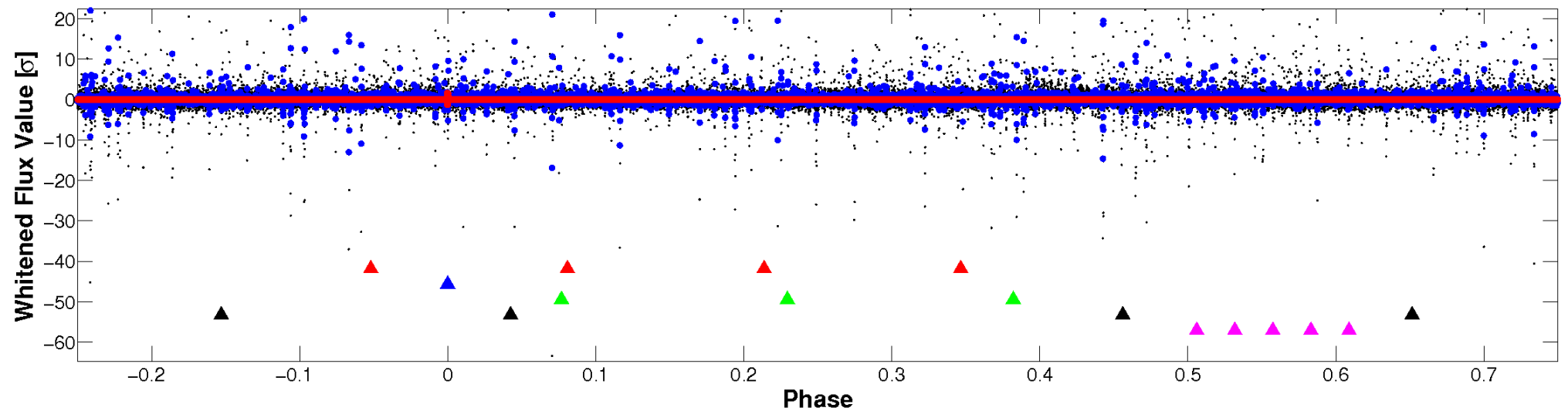


Non-Whitened Vs. Whitened Light Curve

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

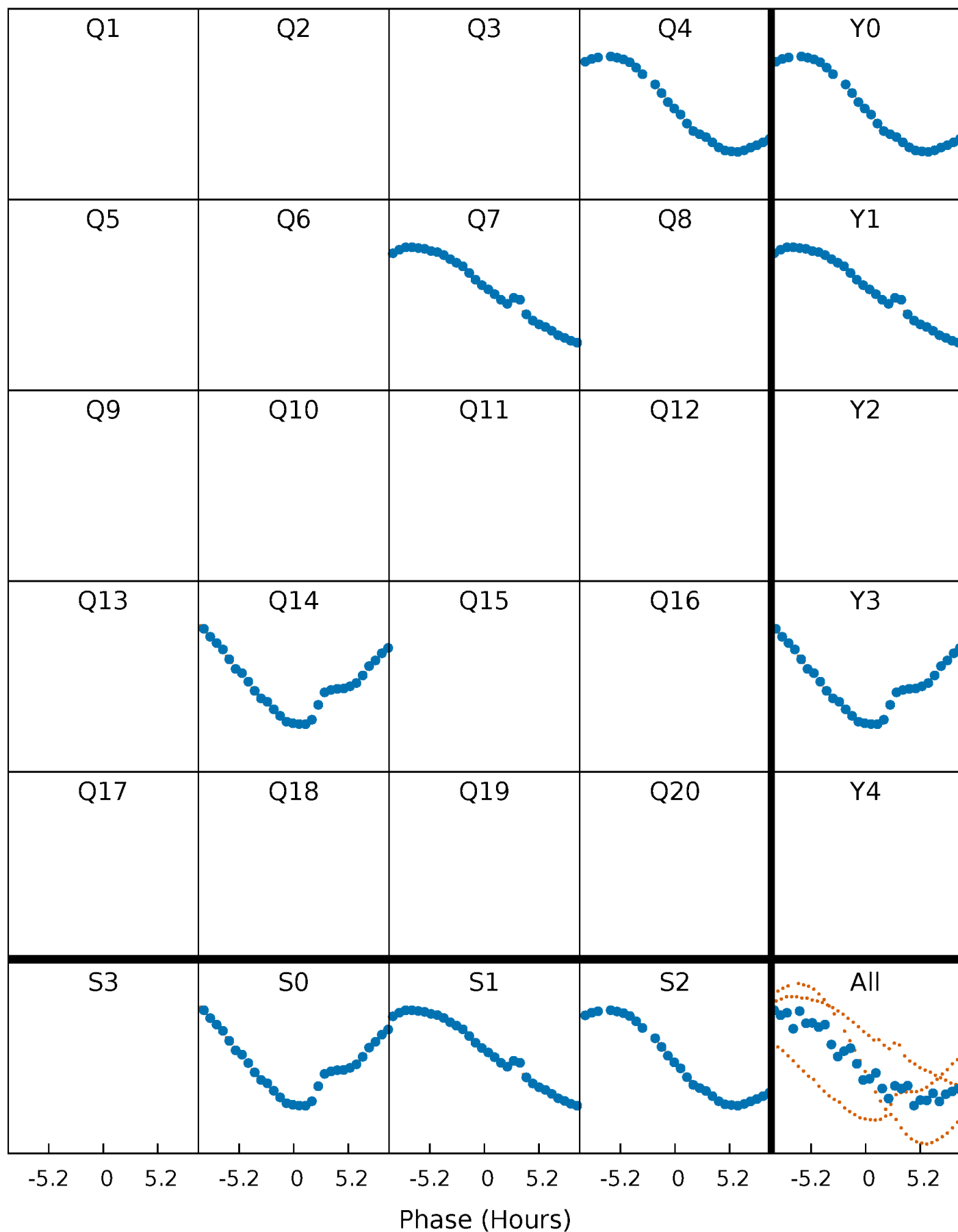


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



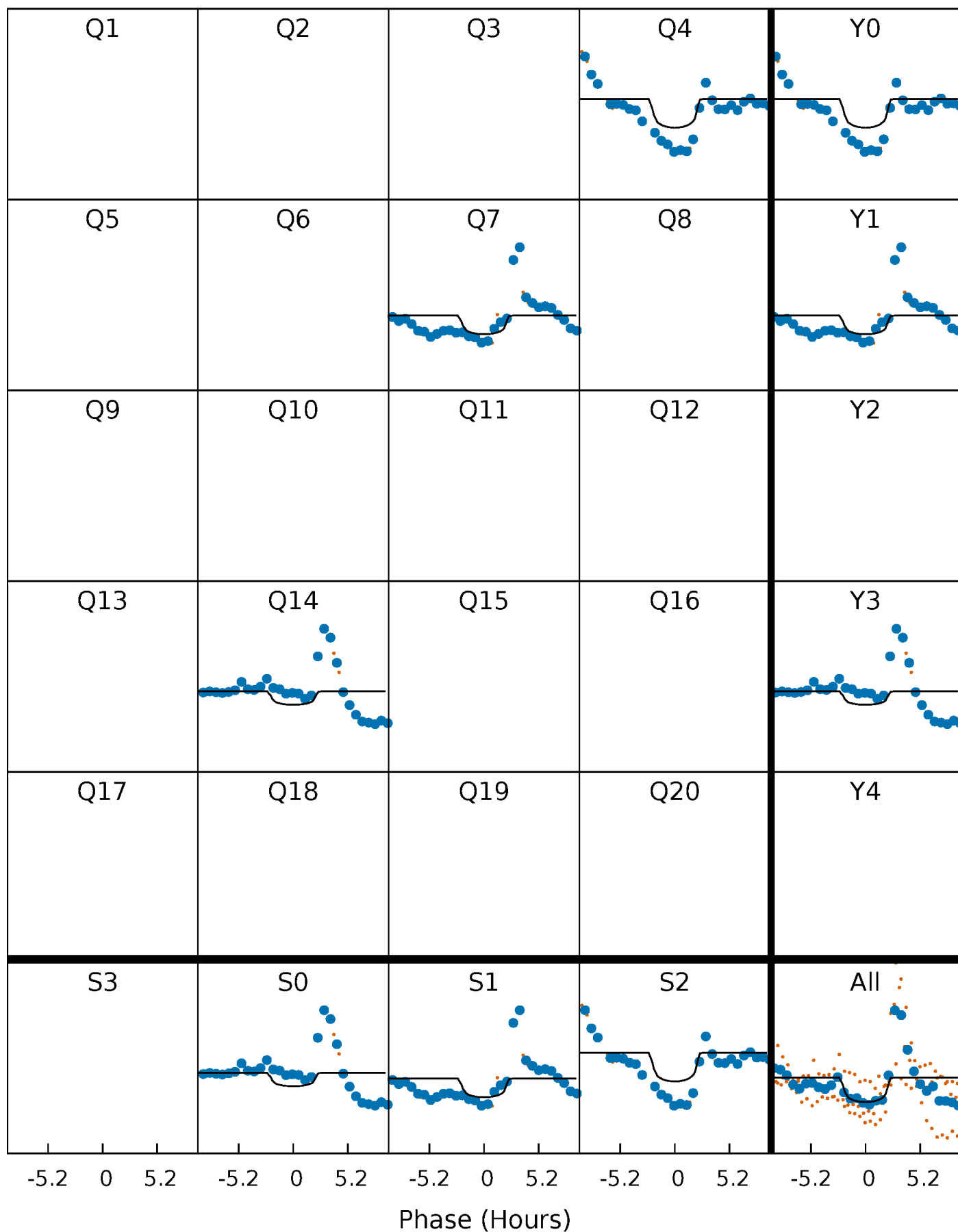
PDC Quarter-Phased Transit Curves

TCE 010071383-02 P=315.114777 Days $T_0=370.421223$ (BKJD)



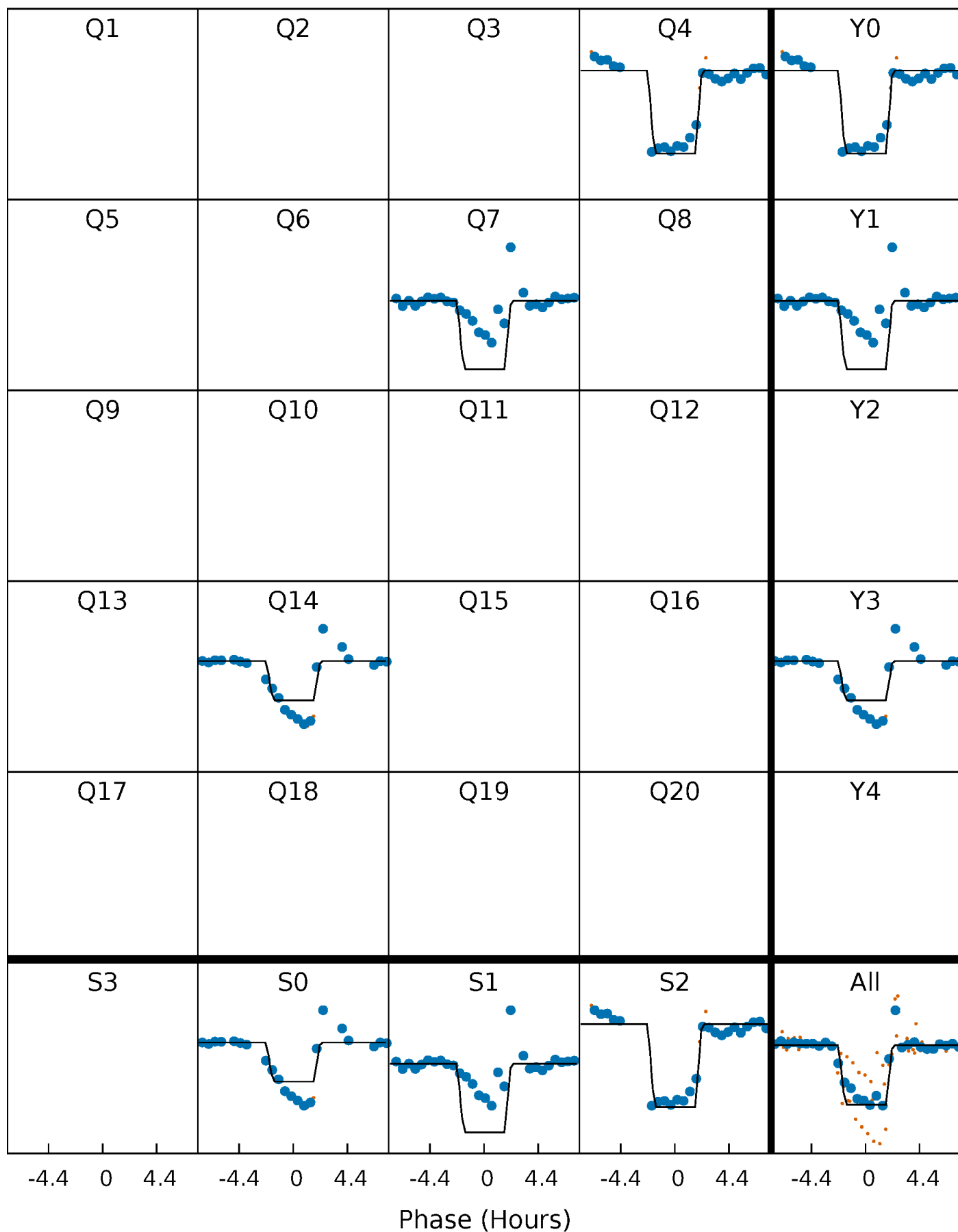
DV Quarter-Phased Transit Curves

TCE 010071383-02 P=315.114777 Days $T_0=370.421223$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

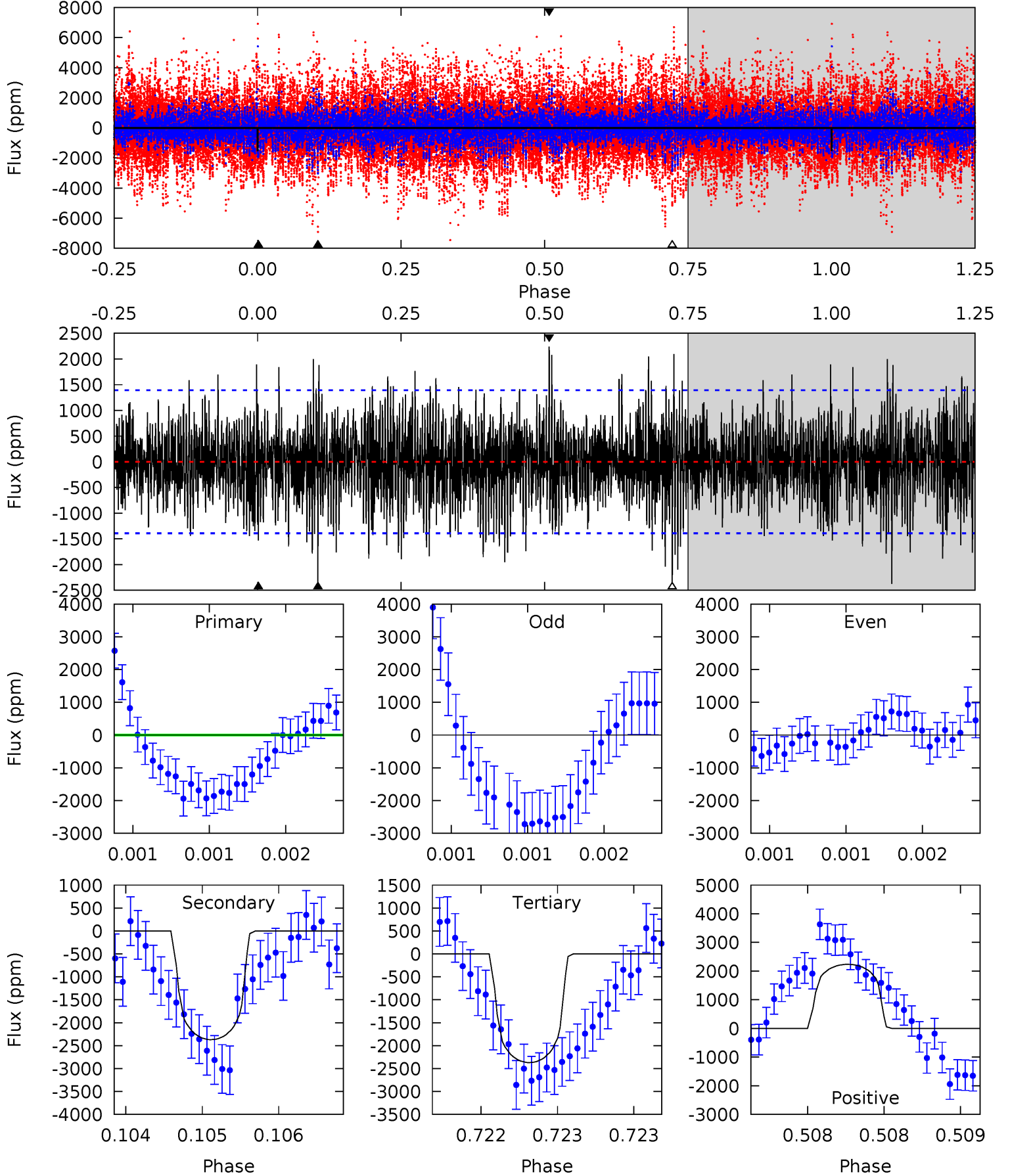
TCE 010071383-02 P=315.113175 Days $T_0=370.437021$ (BKJD)



DV Model-Shift Uniqueness Test

010071383-02, P = 315.114777 Days, E = 55.306446 Days

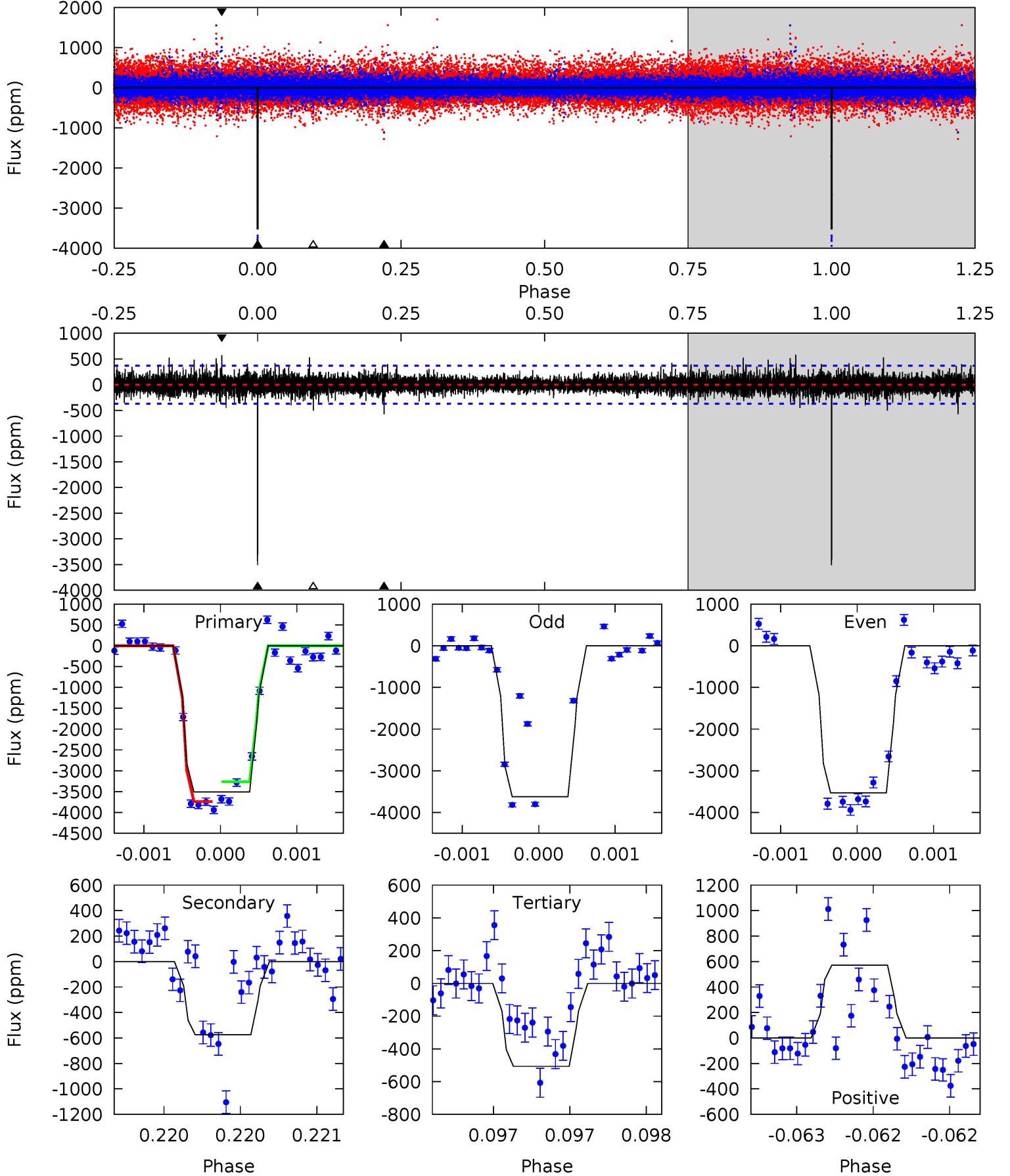
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.08	9.42	9.42	8.89	5.53	3.42	2.25	-3.34	-2.81	0.00	0.53	3.08	0.92	0.49	0.24



Alt Model-Shift Uniqueness Test

010071383-02, $P = 315.113175$ Days, $E = 55.323846$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
52.9	8.65	7.64	8.61	5.56	3.46	1.37	45.3	44.3	1.02	0.04	0.80	0.96	0.14	0



Stellar Parameters For KIC 010071383

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5207^{+141}_{-157}	$4.661^{+0.045}_{-0.045}$	$-0.960^{+0.300}_{-0.300}$	$0.618^{+0.053}_{-0.039}$	$0.639^{+0.052}_{-0.028}$	$3.811^{+0.643}_{-0.662}$
	+3%/-3%	+1%/-1%	+31%/-31%	+9%/-6%	+8%/-4%	+17%/-17%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010071383-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2372 ± 252	$2.52^{+1.57}_{-1.42}$	285^{+9}_{-10}	5871^{+3577}_{-1148}	$123922^{+528779}_{-76959}$
Alt.	-574 ± 66	$4.25^{+1.57}_{-1.60}$	285^{+9}_{-10}	3625^{+608}_{-351}	10765^{+16700}_{-5104}

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

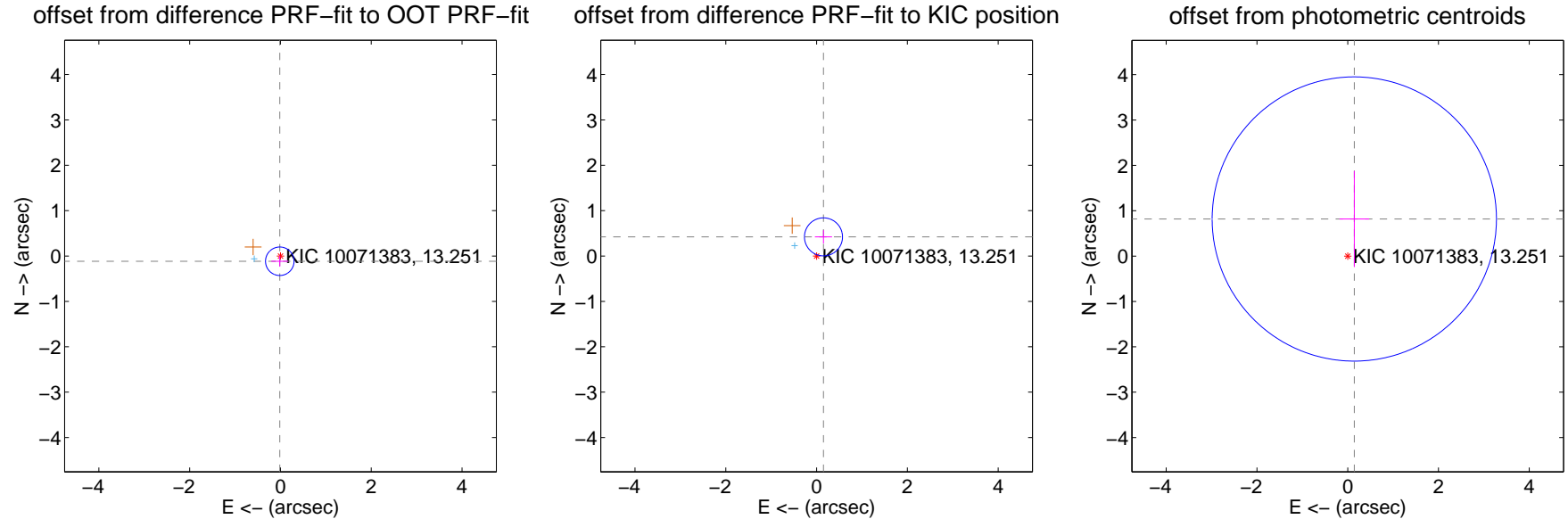
DV Centroid Data

Supplemental centroid analysis for 010071383-02. Kepler magnitude: 13.25. Transit SNR 4.94

There are 2 quarters with good PRF difference image offsets

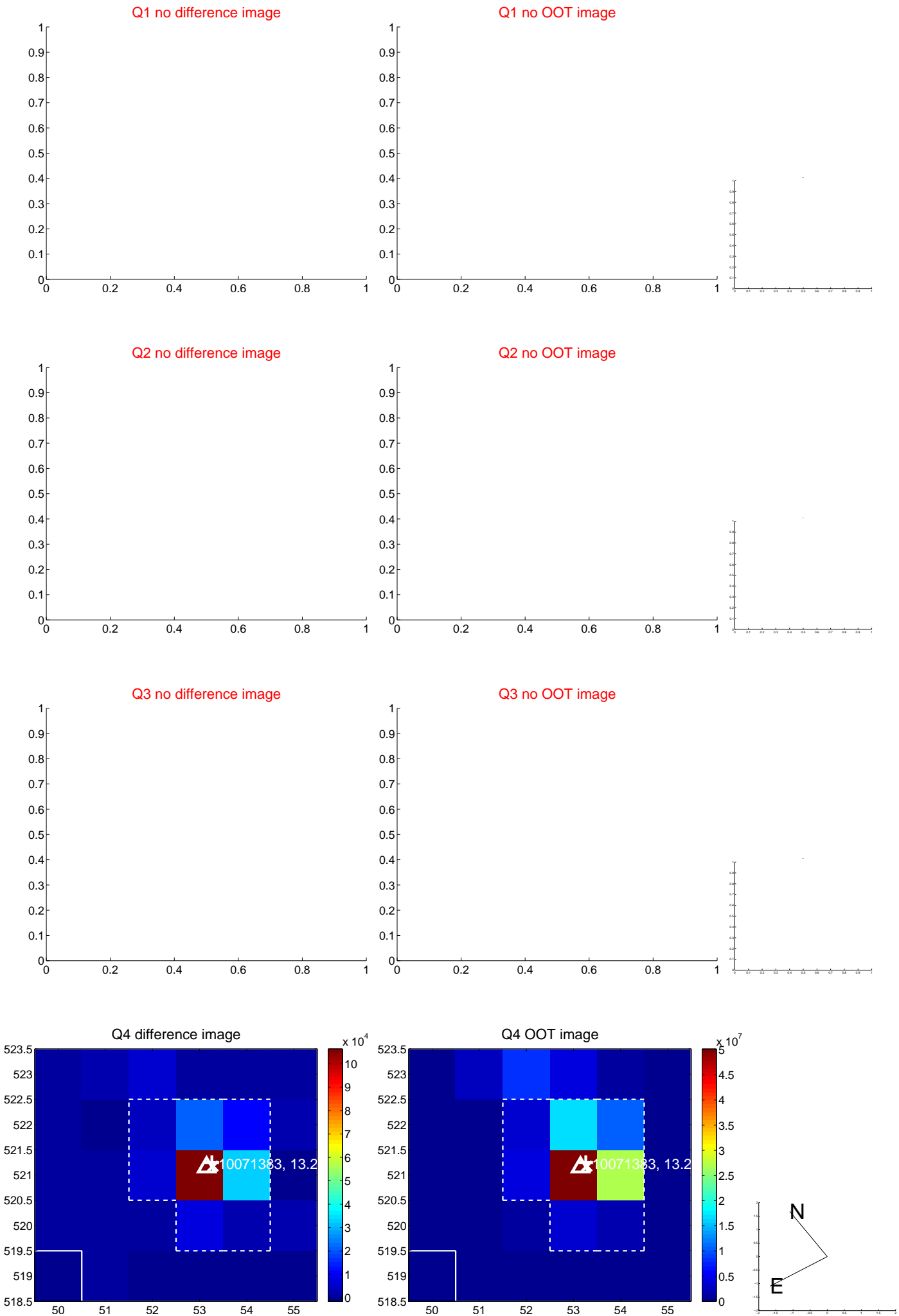
The direct PRF centroid is offset from the target star catalog position by about 0.56 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.116 ± 0.105	1.11	0.015 ± 0.186	-0.115 ± 0.120
PRF-fit source offset from KIC position	0.449 ± 0.140	3.21	-0.152 ± 0.189	0.422 ± 0.146
photometric centroid source offset	0.83 ± 1.04	0.80	-0.15 ± 0.33	0.82 ± 1.06



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



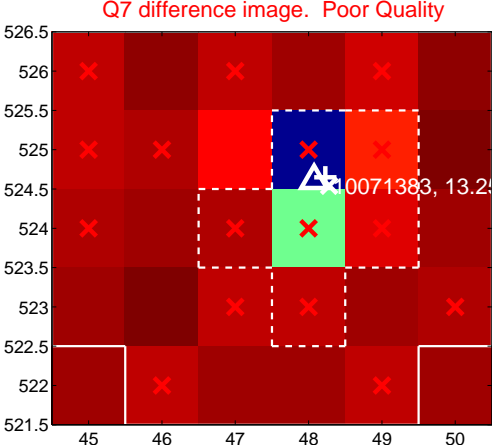
Q6 no difference image



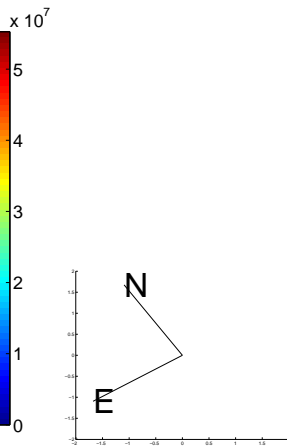
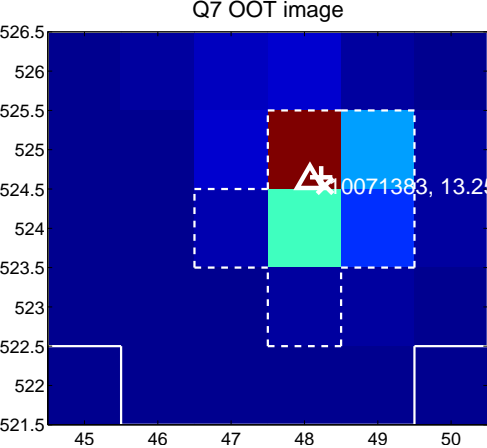
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 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.

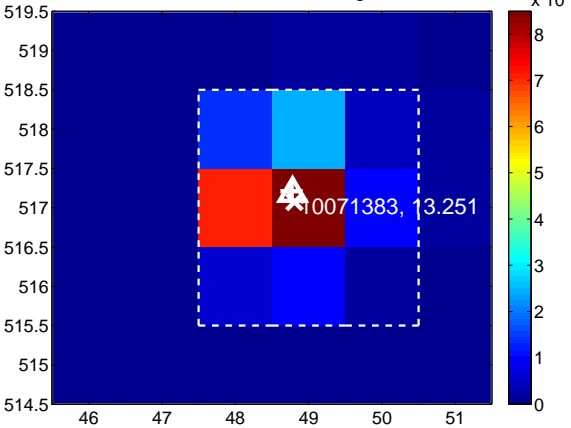
Q13 no difference image



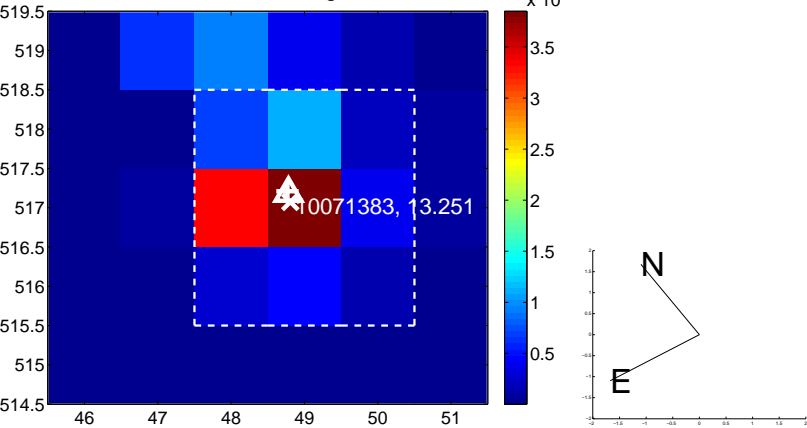
Q13 no OOT image



Q14 difference image



Q14 OOT image



Q15 no difference image



Q15 no OOT image



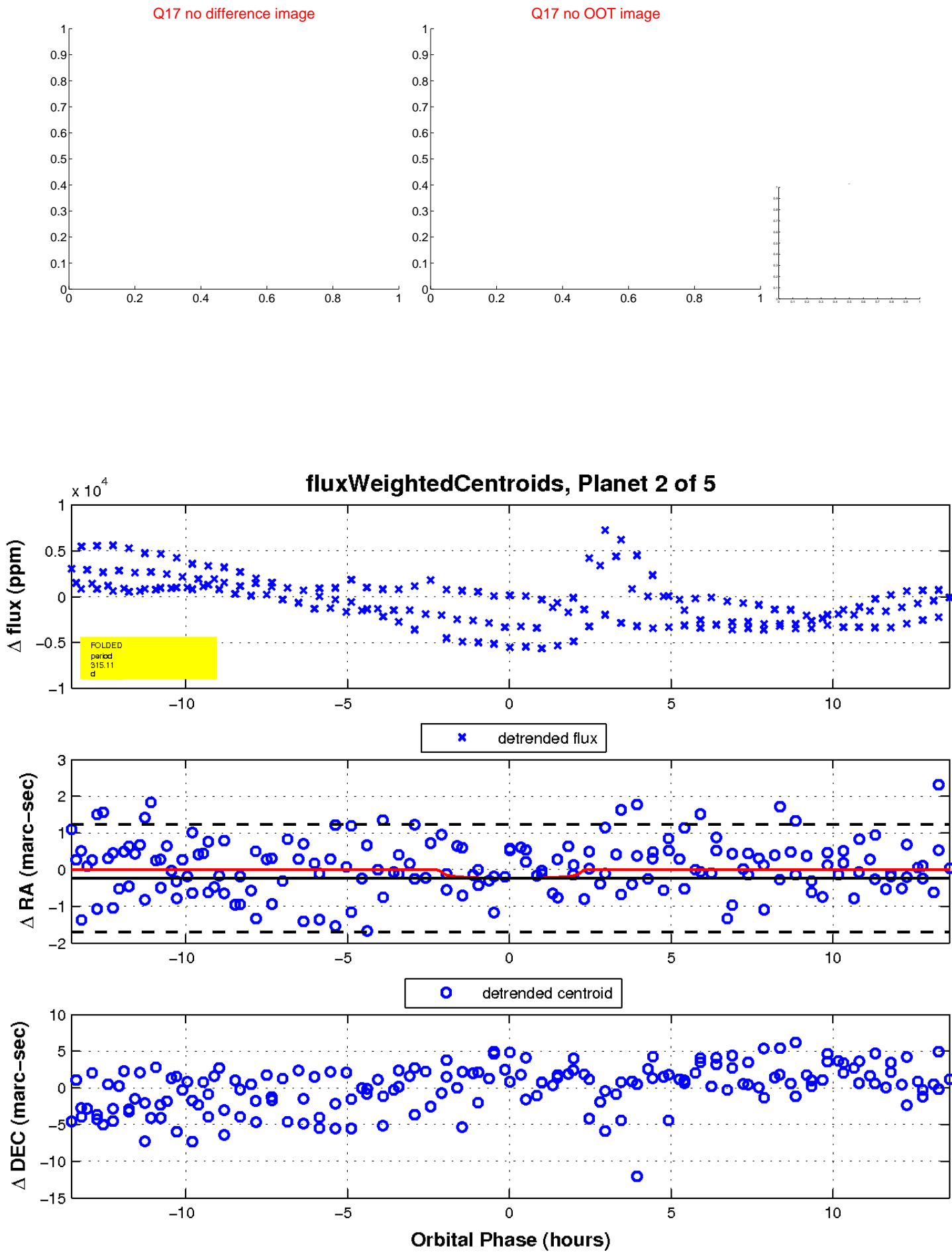
Q16 no difference image



Q16 no OOT image

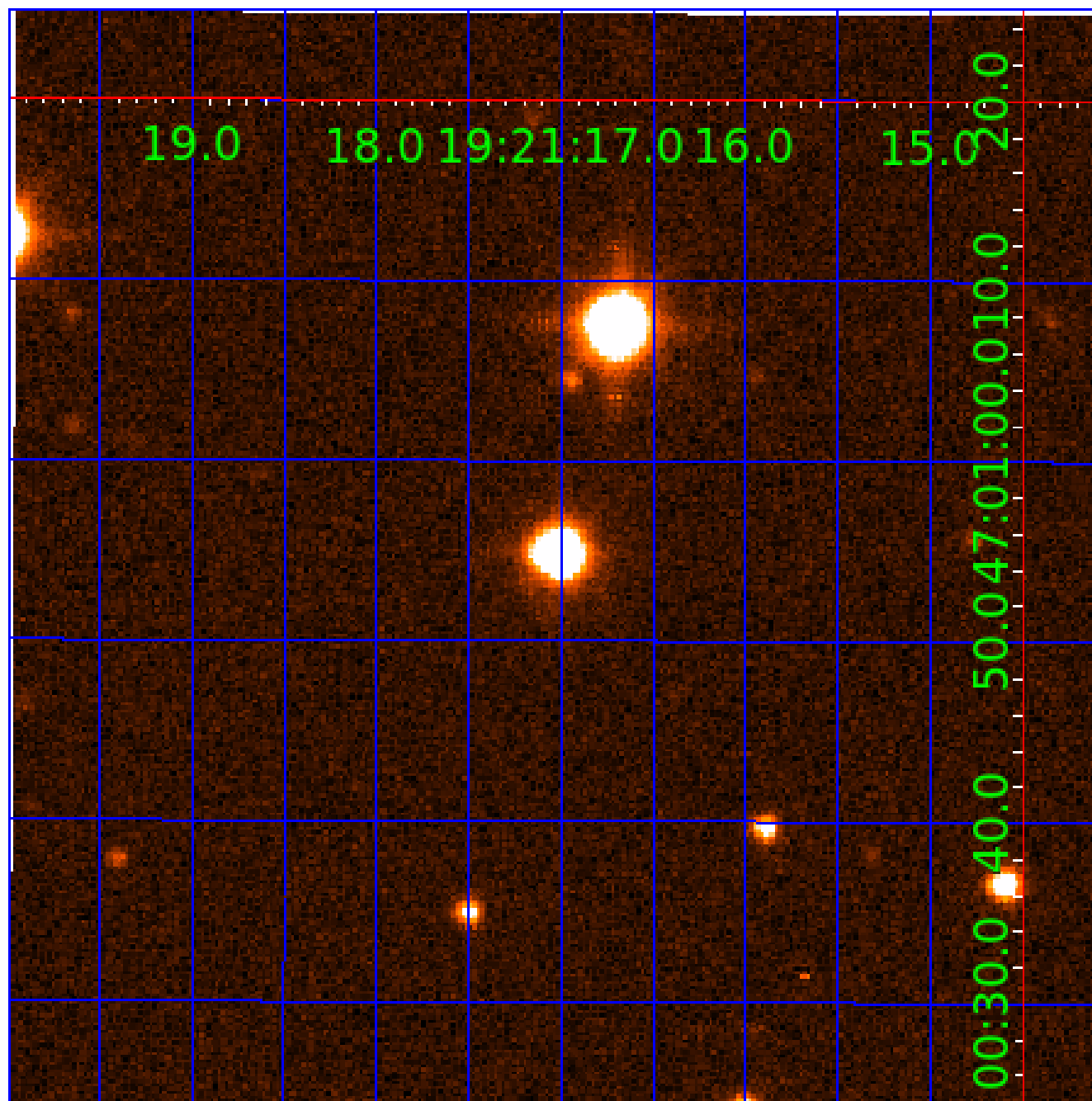


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010071383

Q1-17 DR25 TCE Parameters

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Robovetter Results

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010071383-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010071383-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_KIC_POS
010071383-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

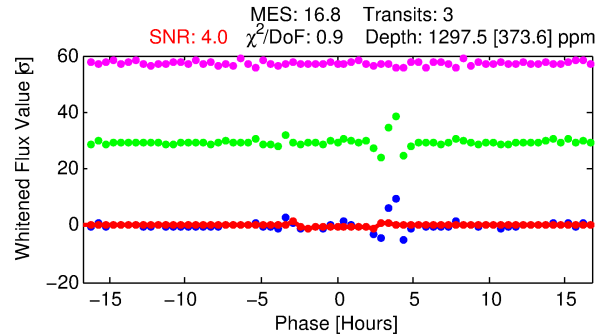
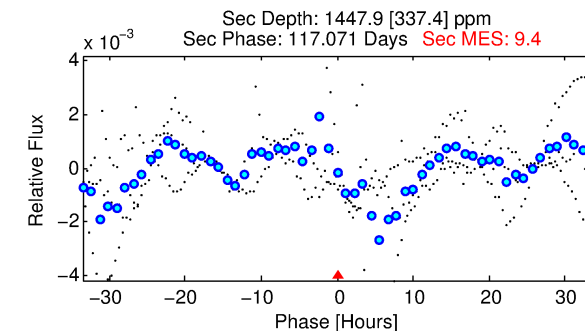
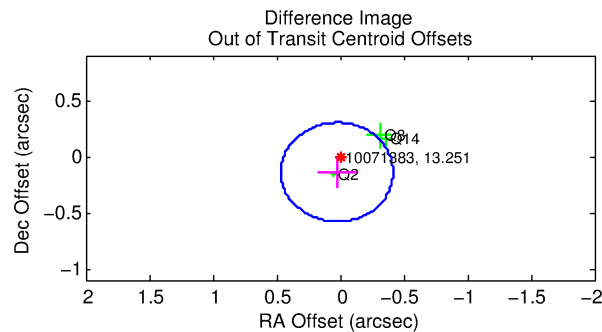
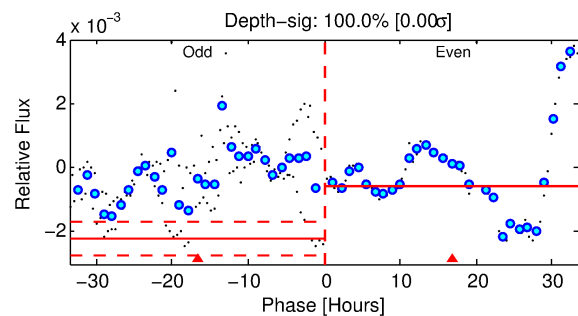
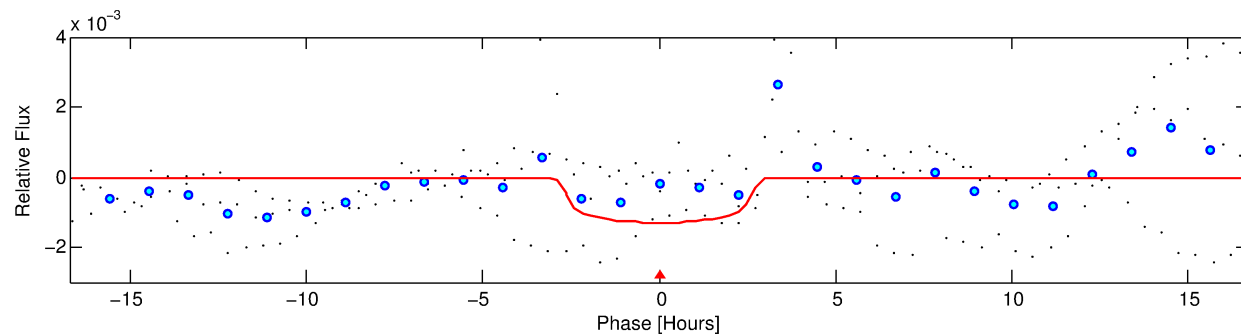
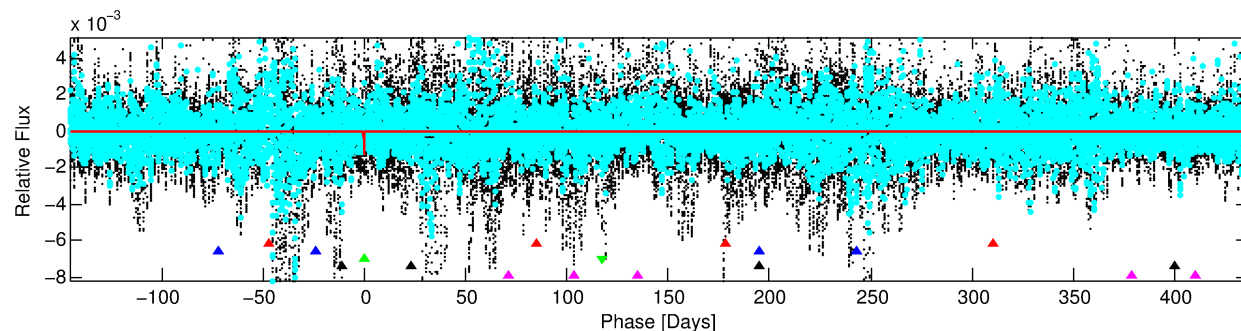
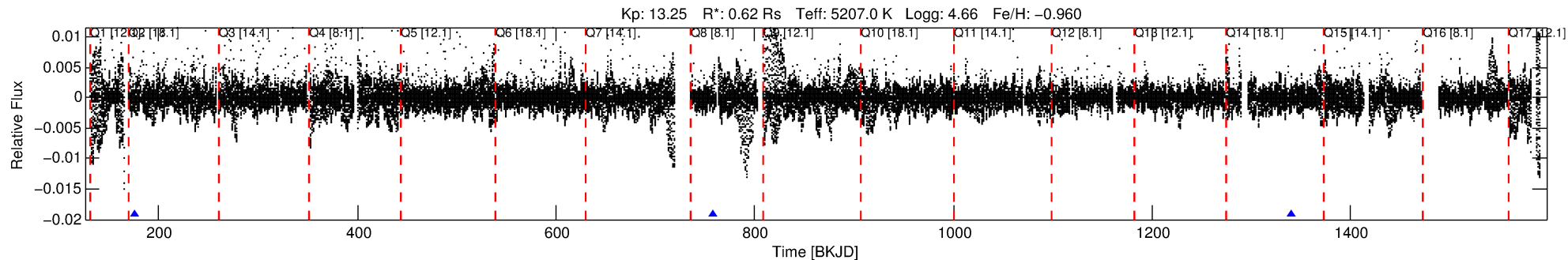
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010071383-03

No Significant Match Found

DV One-Page Summary

KIC: 10071383 Candidate: 3 of 5 Period: 582.138 d



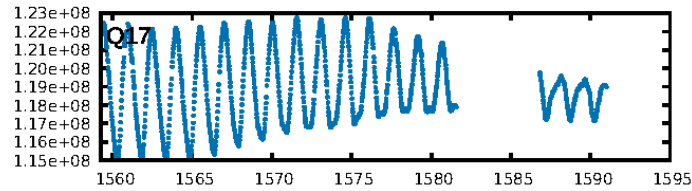
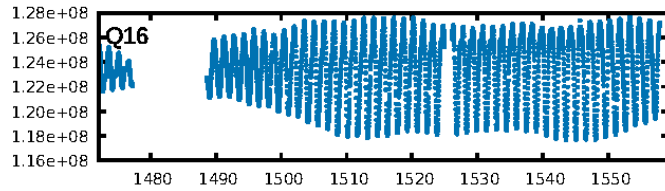
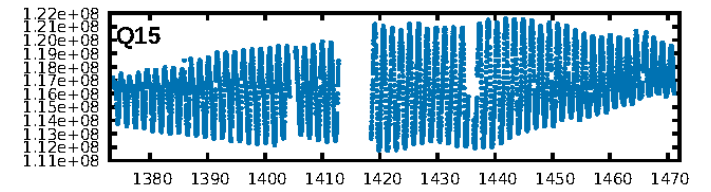
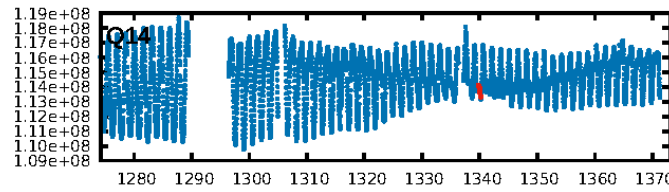
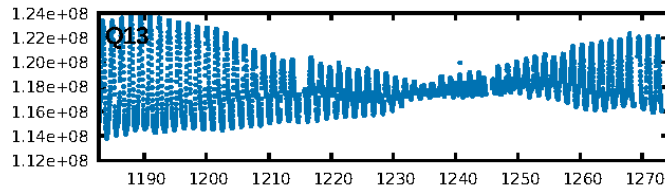
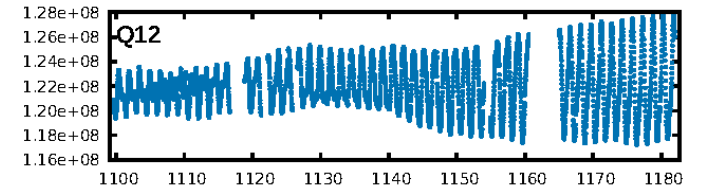
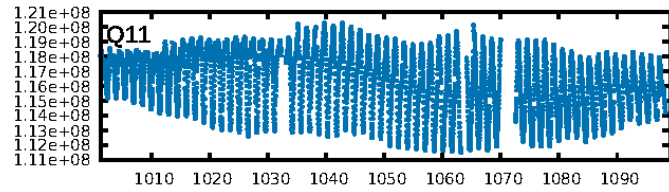
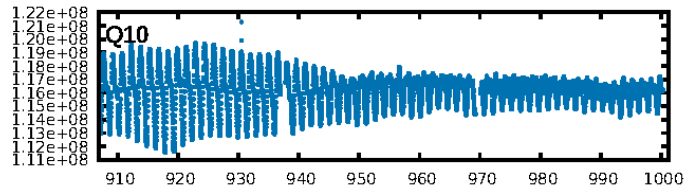
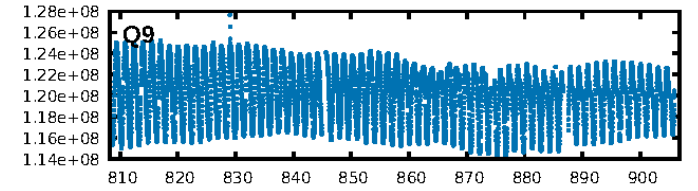
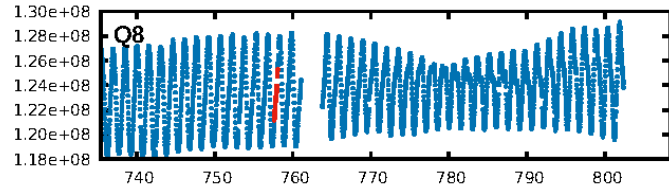
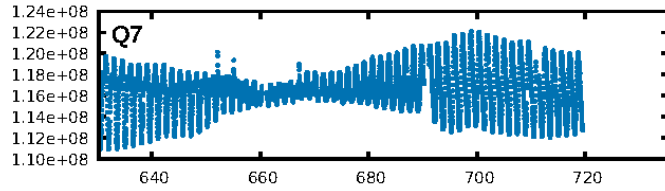
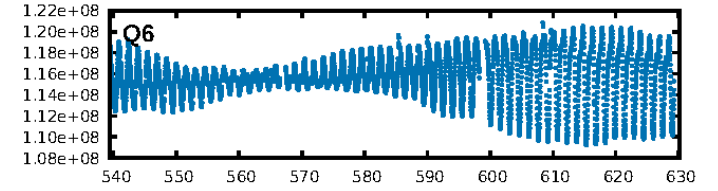
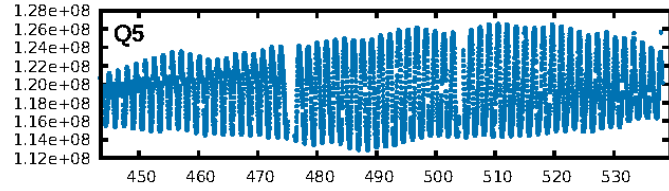
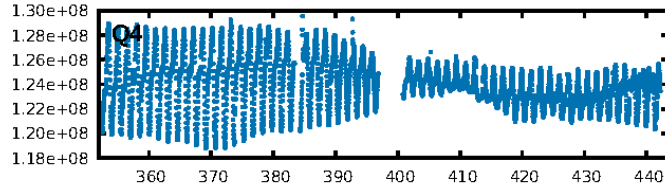
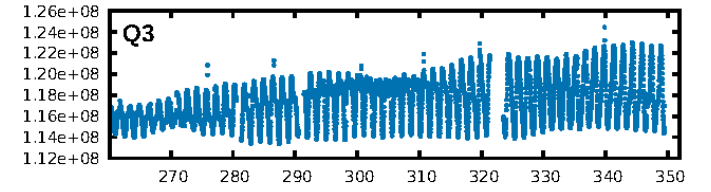
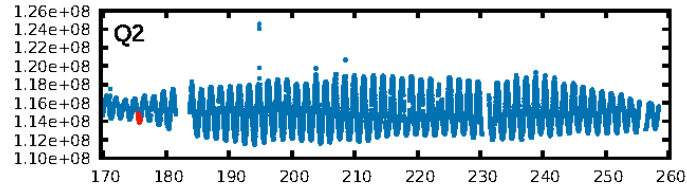
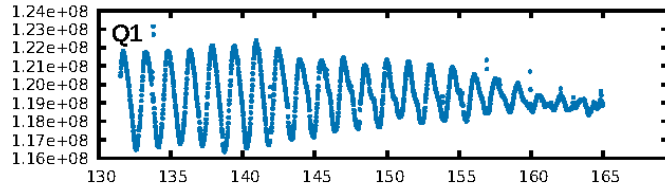
DV Fit Results:

Period = 582.13791 [0.00565] d
Epoch = 175.7097 [0.0079] BKJD
Rp/R* = 0.0326 [0.0386]
a/R* = 820.61 [4008.27]
b = 0.08 [57.67]
Seff = 0.18 [0.03]
Teq = 167 [6] K
Rp = 2.20 [2.61] Re
a = 1.1750 [0.0785] AU
Ag = 227079.24 [539720.10] [0.42σ]
Teff = 5623 [3343] K [1.63σ]

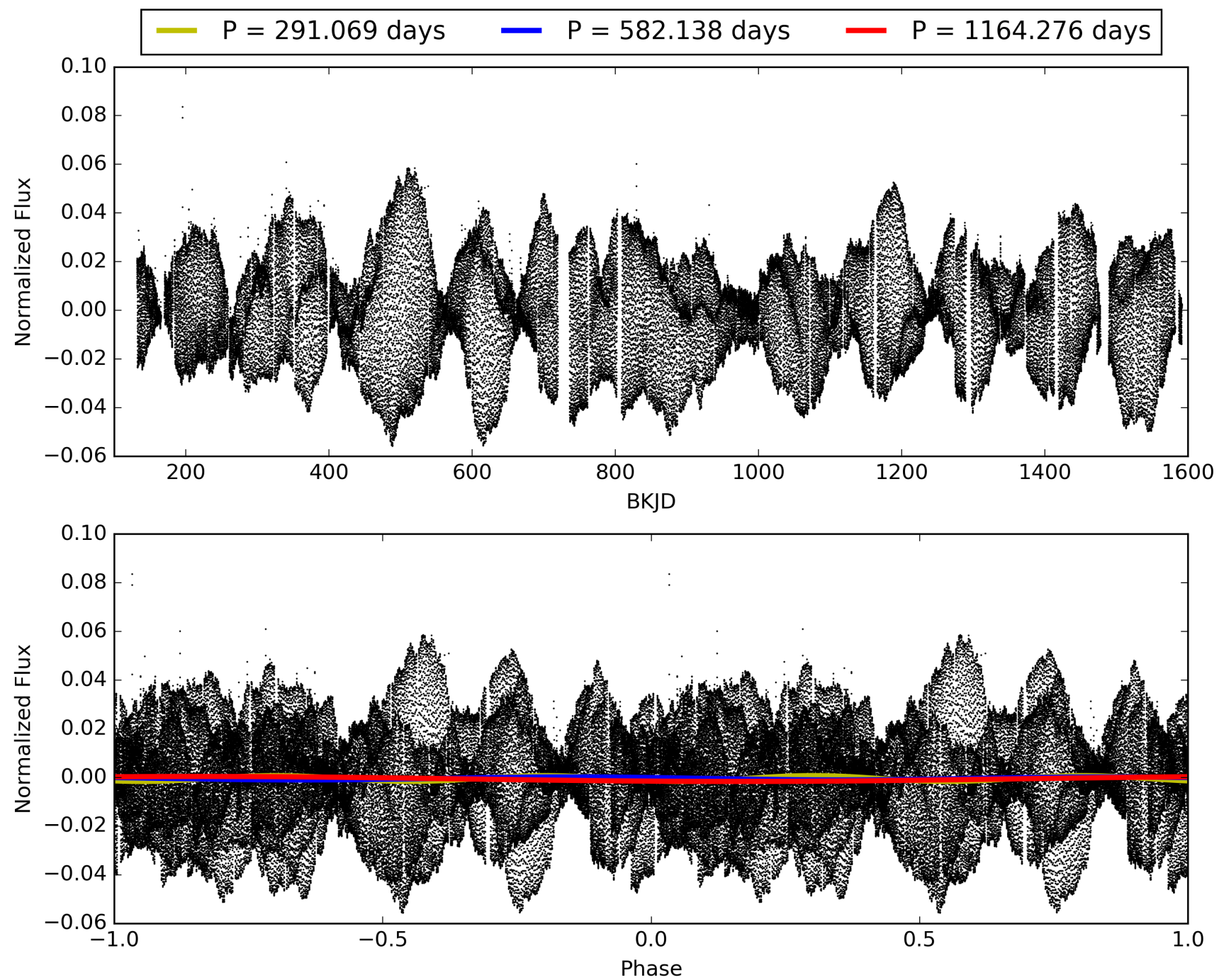
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [847.94σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 31.8%
ModelChiSquareGof-sig: 86.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -4.665
Centroid-sig: N/A
Centroid-so: 2.223 arcsec [0.75σ]
OotOffset-rm: 0.143 arcsec [0.97σ]
OotOffset-st: 2/0/1/0 [3]
KicOffset-rm: 0.267 arcsec [1.61σ]
KicOffset-st: 2/0/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 010071383-03, PDC Light Curves

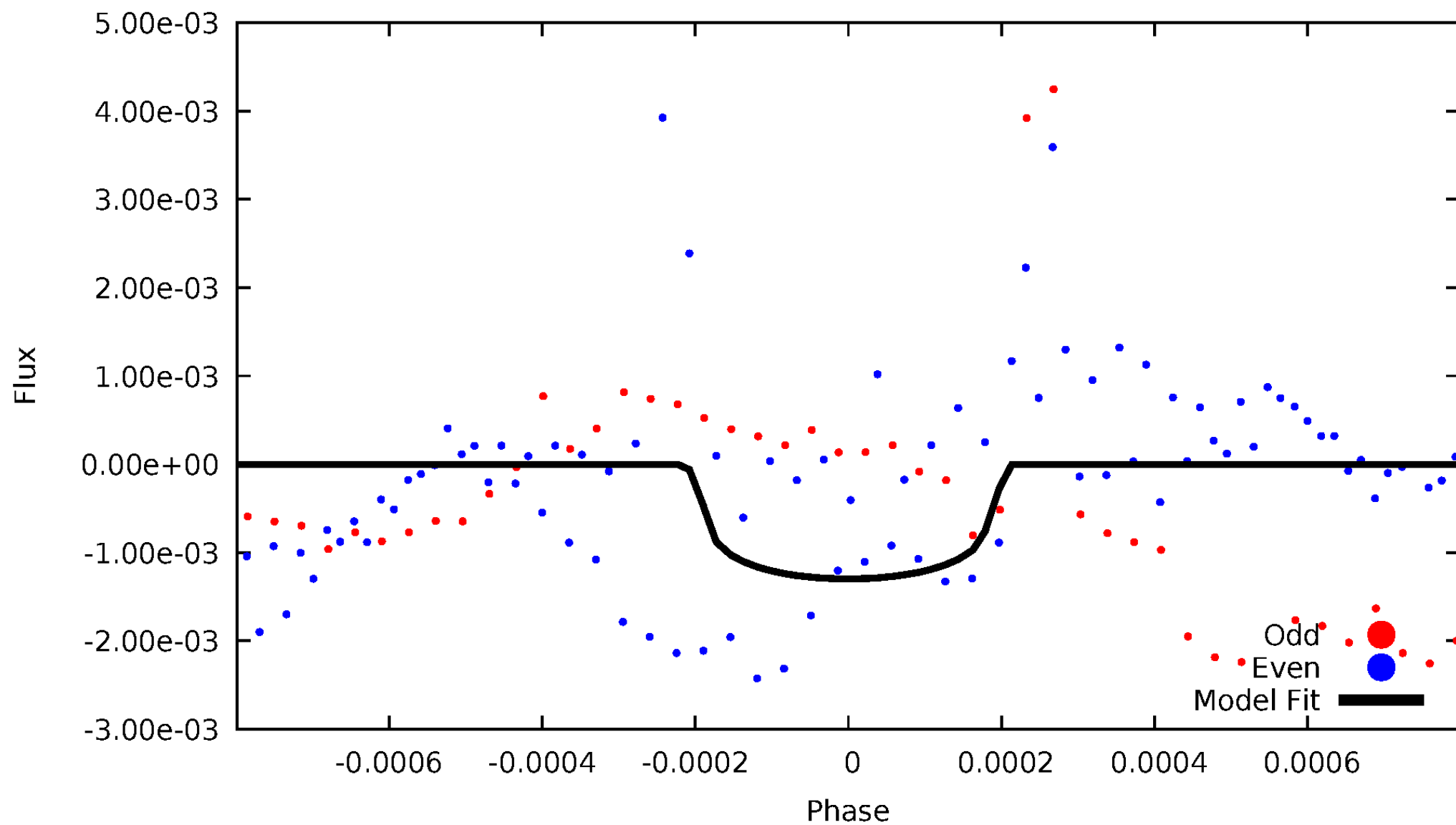


TCE 010071383-03



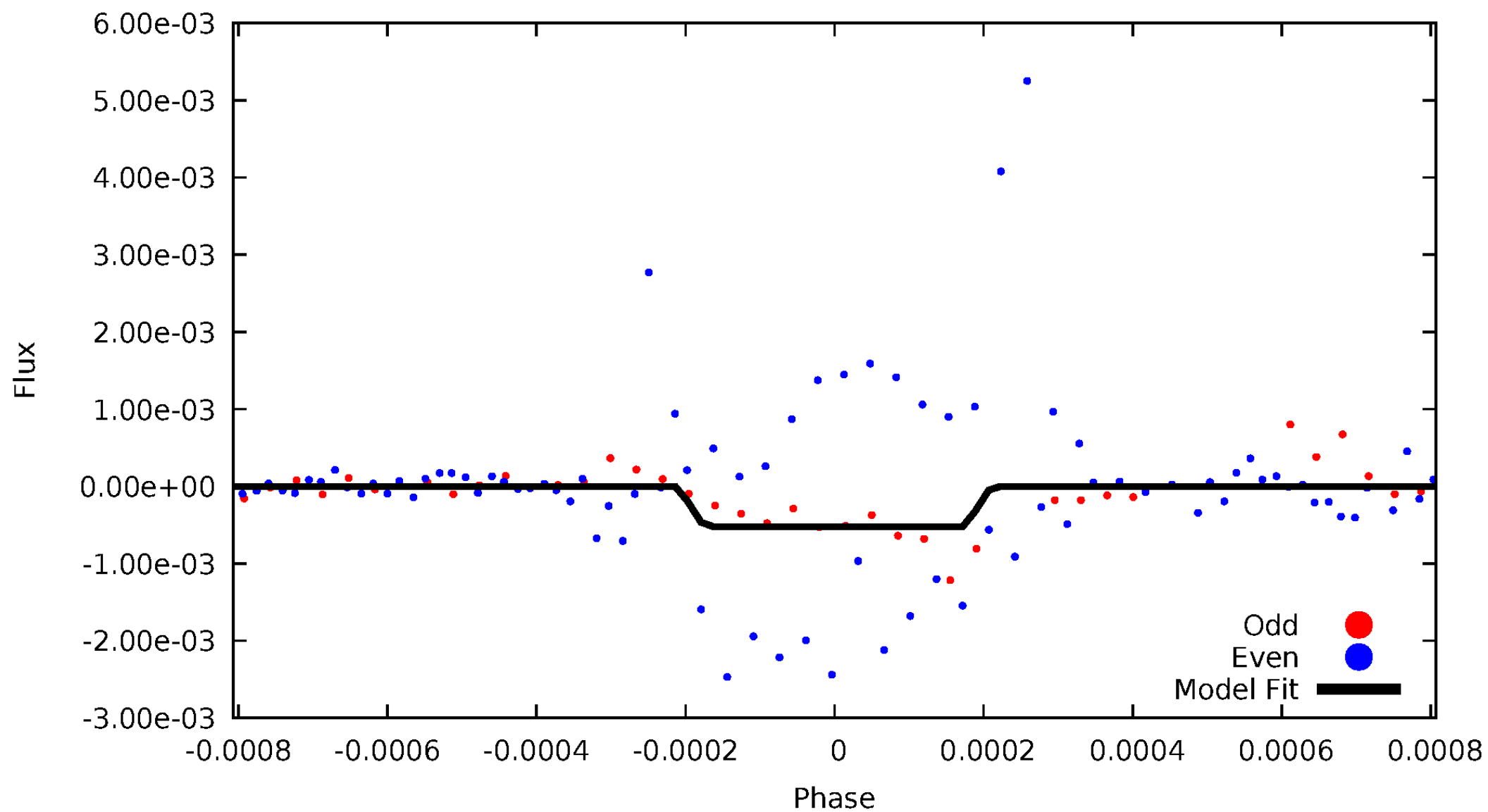
DV Odd/Even

TCE 010071383-03



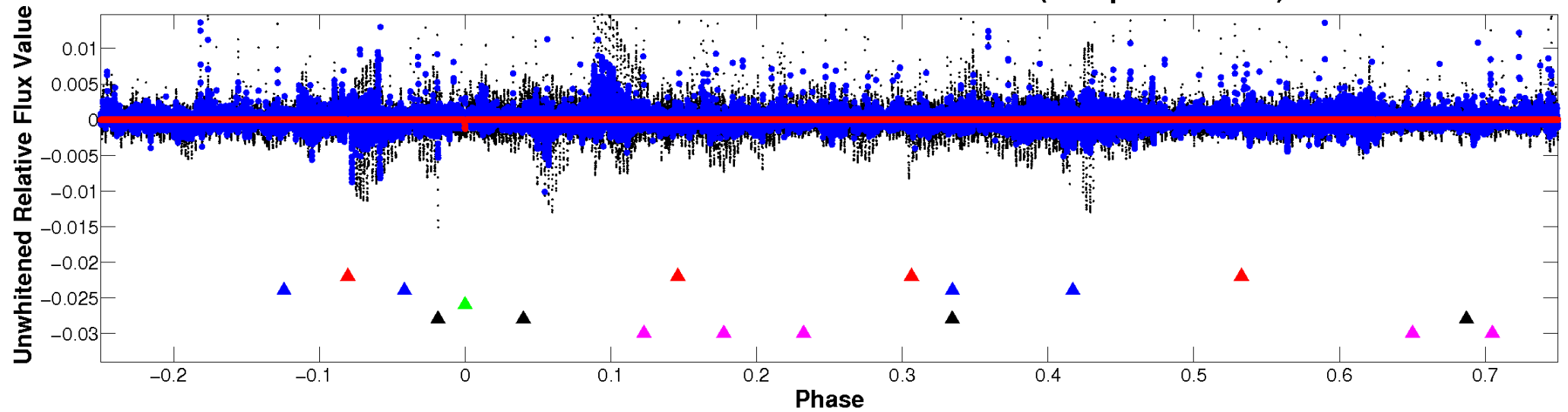
ALT Odd/Even

TCE 010071383-03

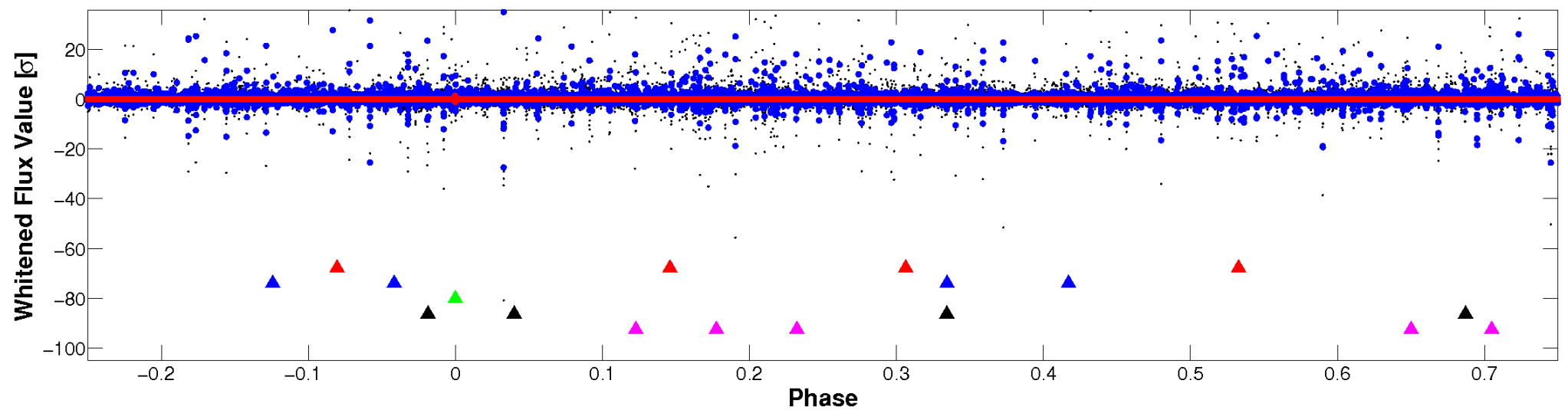


Non-Whitened Vs. Whitened Light Curve

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

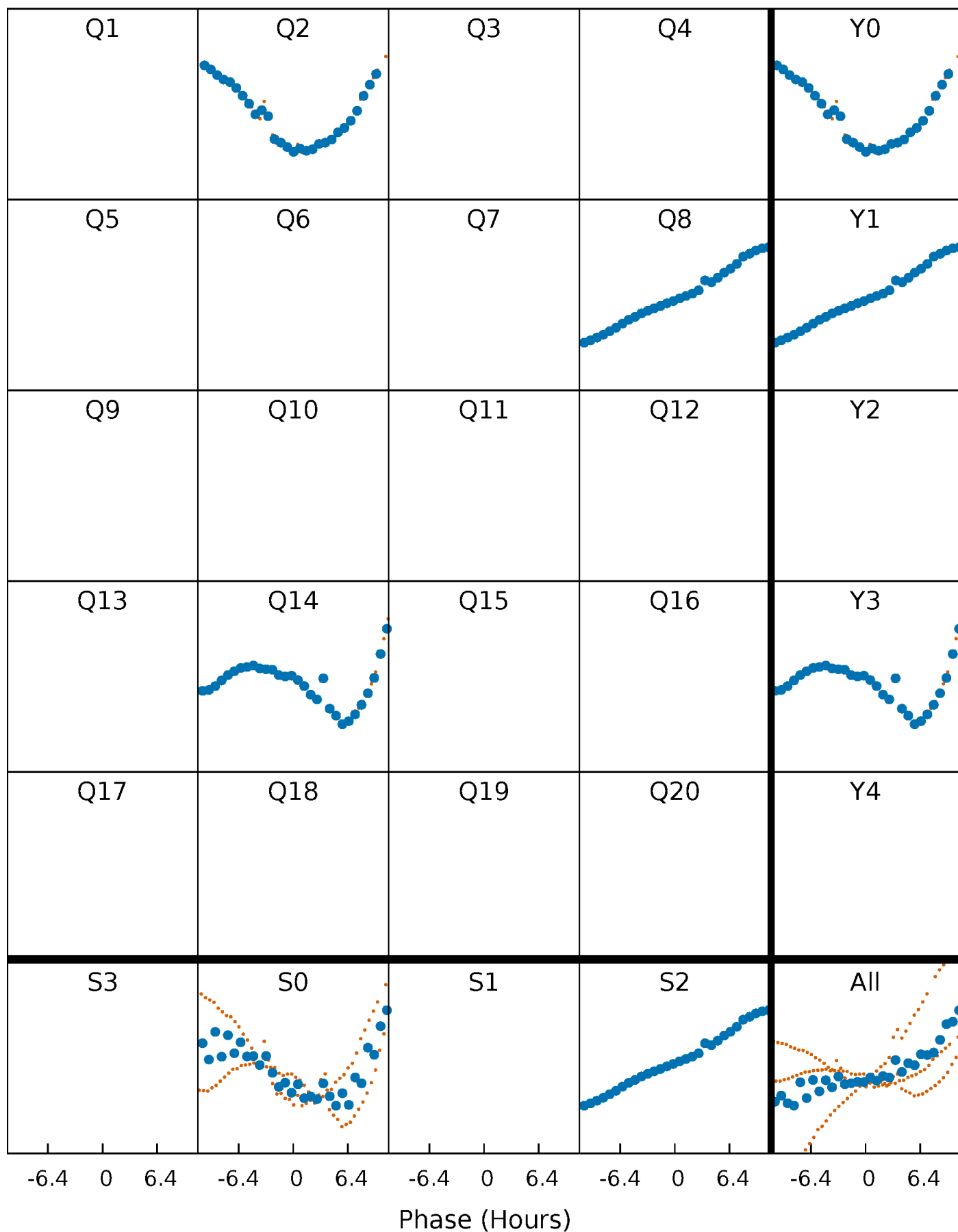


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



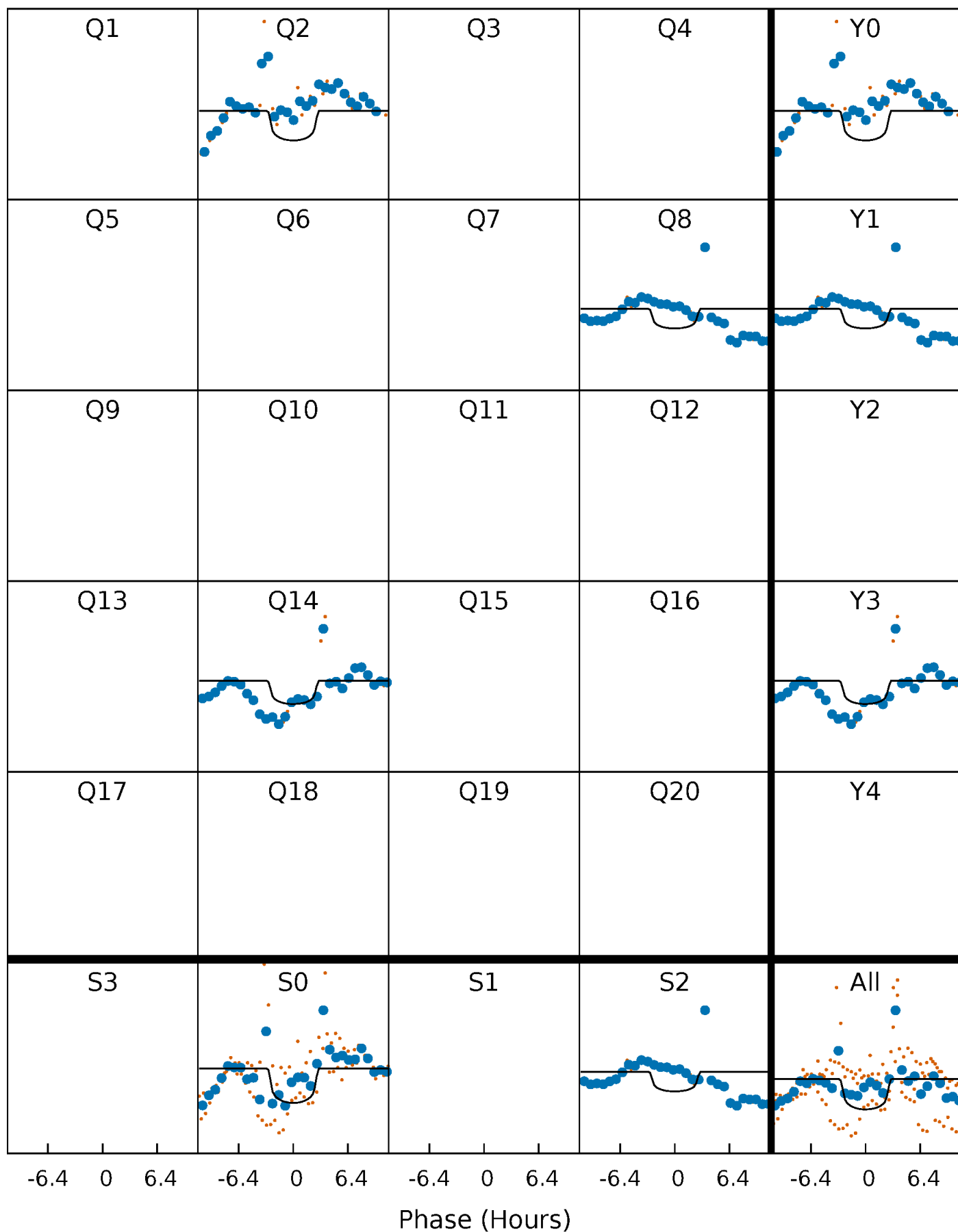
PDC Quarter-Phased Transit Curves

TCE 010071383-03 $P=582.137908$ Days $T_0=175.709687$ (BKJD)



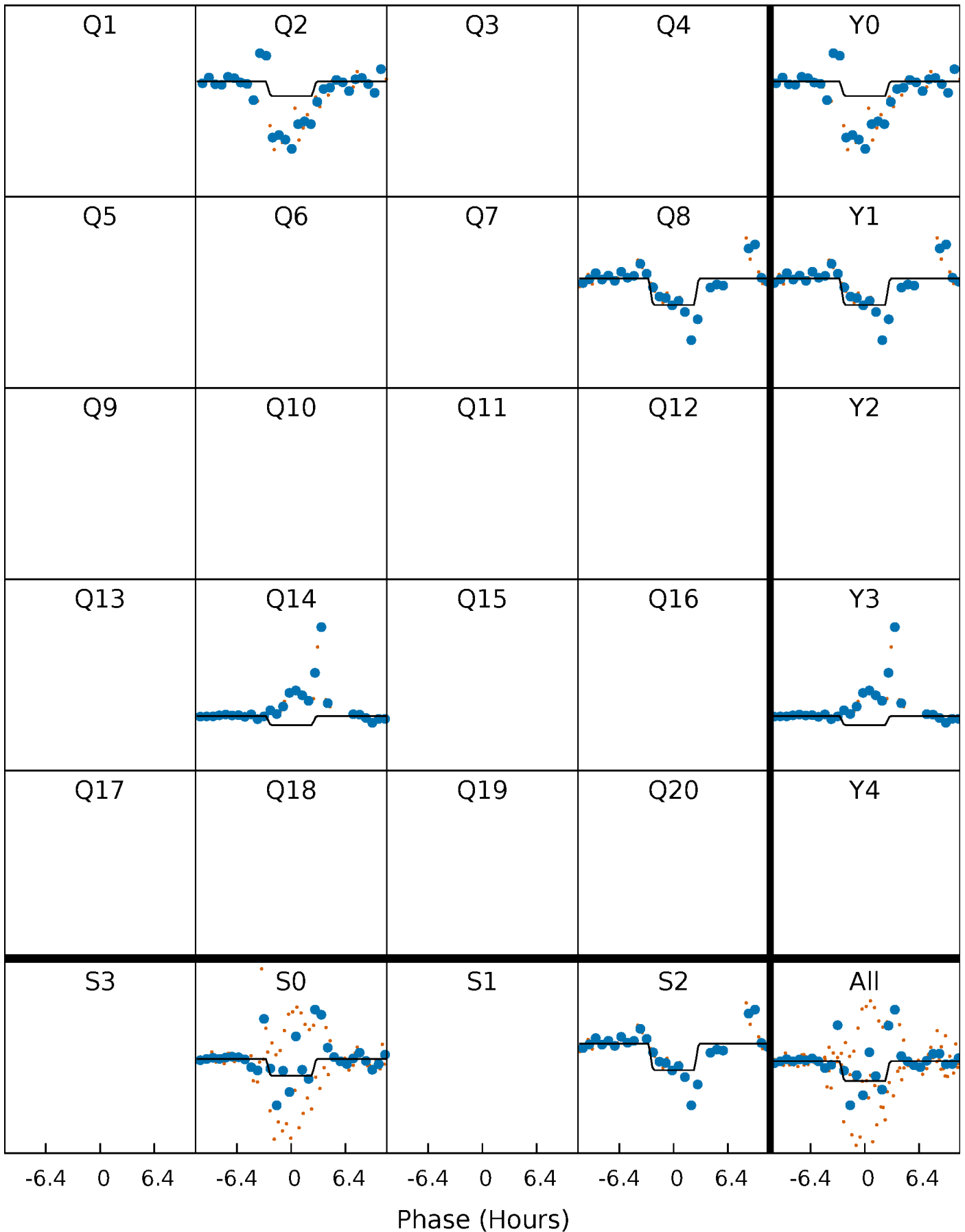
DV Quarter-Phased Transit Curves

TCE 010071383-03 P=582.137908 Days $T_0=175.709687$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

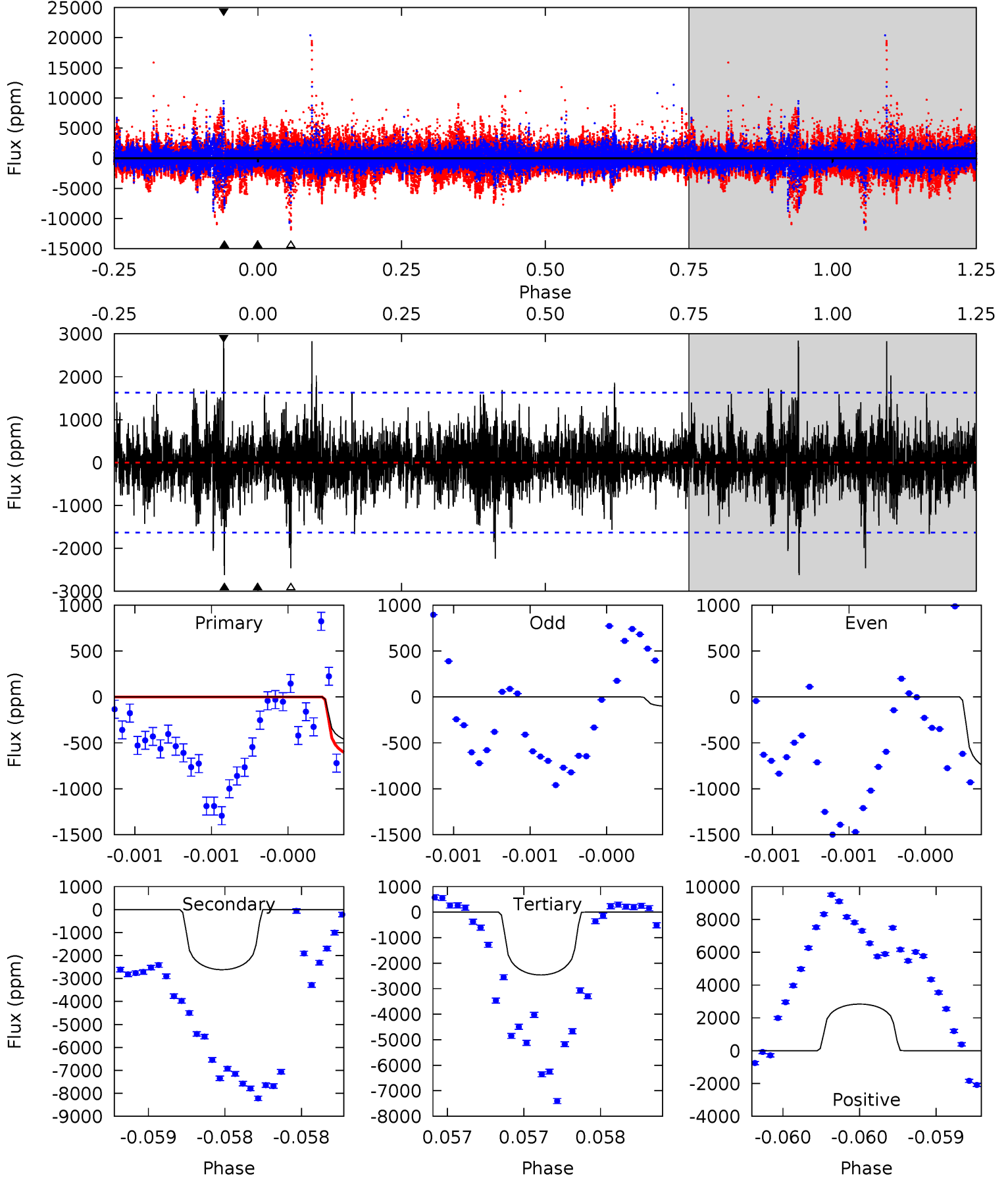
TCE 010071383-03 P=582.138502 Days $T_0=175.713510$ (BKJD)



DV Model-Shift Uniqueness Test

010071383-03, P = 582.137908 Days, E = 175.709687 Days

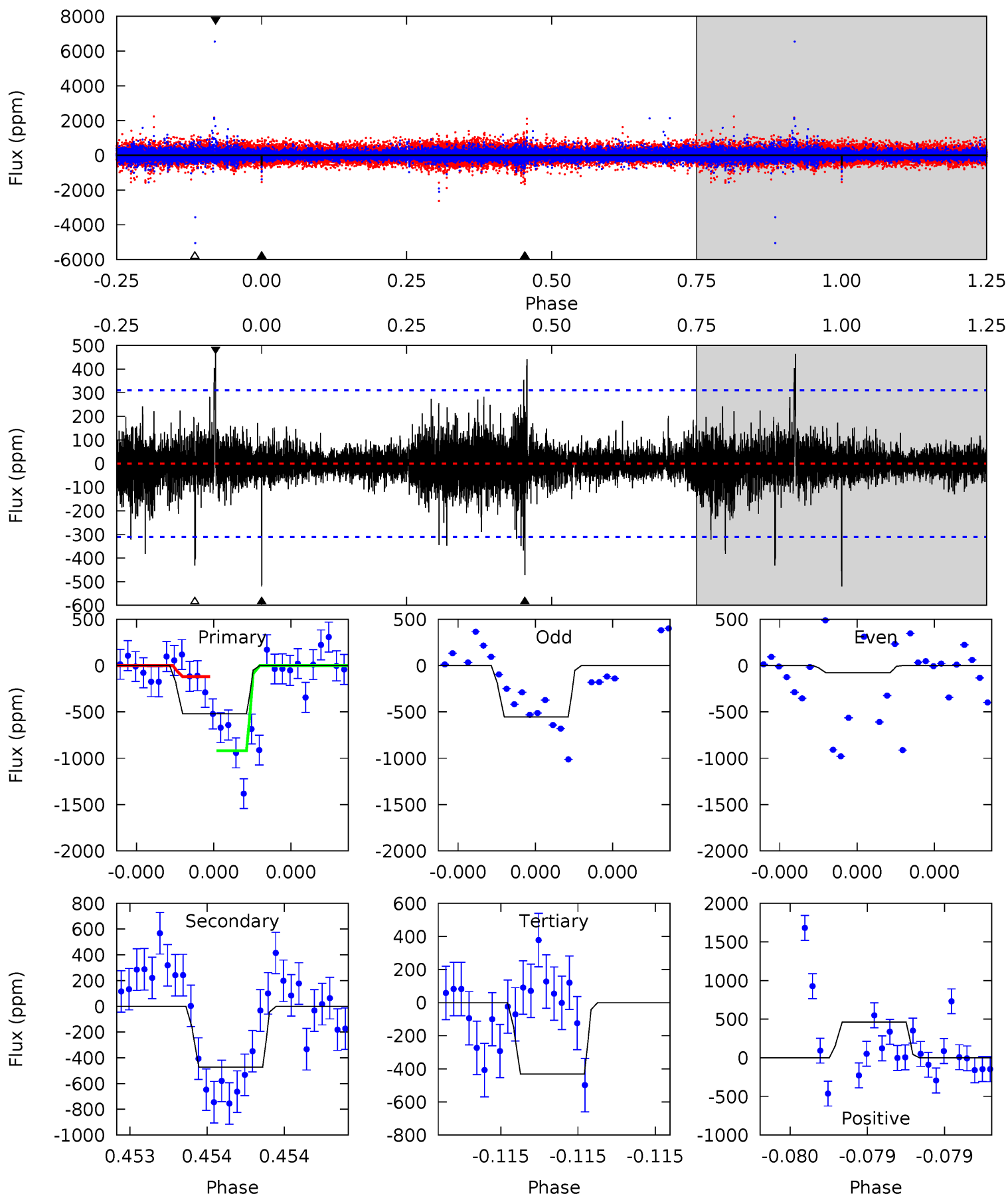
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.73	9.02	8.48	9.78	5.61	3.54	1.68	-6.75	-8.05	0.54	-0.76	0.96	-4.99	0.52	0.54



Alt Model-Shift Uniqueness Test

010071383-03, P = 582.138502 Days, E = 175.713510 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.40	8.53	7.80	8.38	5.61	3.54	1.02	1.61	1.02	0.73	0.15	4.91	0.86	0.47	0



Stellar Parameters For KIC 010071383

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5207^{+141}_{-157}	$4.661^{+0.045}_{-0.045}$	$-0.960^{+0.300}_{-0.300}$	$0.618^{+0.053}_{-0.039}$	$0.639^{+0.052}_{-0.028}$	$3.811^{+0.643}_{-0.662}$
	+3%/-3%	+1%/-1%	+31%/-31%	+9%/-6%	+8%/-4%	+17%/-17%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010071383-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2619 ± 290	$2.92^{+2.37}_{-1.93}$	233^{+7}_{-8}	5649^{+5263}_{-1277}	$236874^{+1779786}_{-164724}$
Alt.	-472 ± 55	$2.48^{+2.10}_{-1.67}$	233^{+7}_{-9}	4224^{+2580}_{-823}	$58527^{+452442}_{-41657}$

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

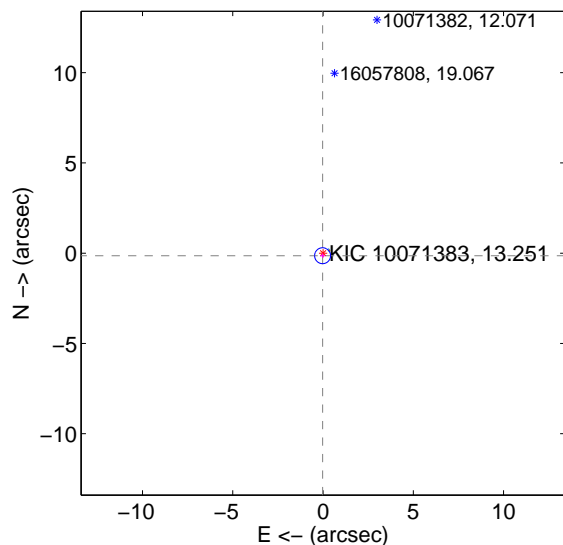
Supplemental centroid analysis for 010071383-03. Kepler magnitude: 13.25. Transit SNR 4.01

There are 2 quarters with good PRF difference image offsets

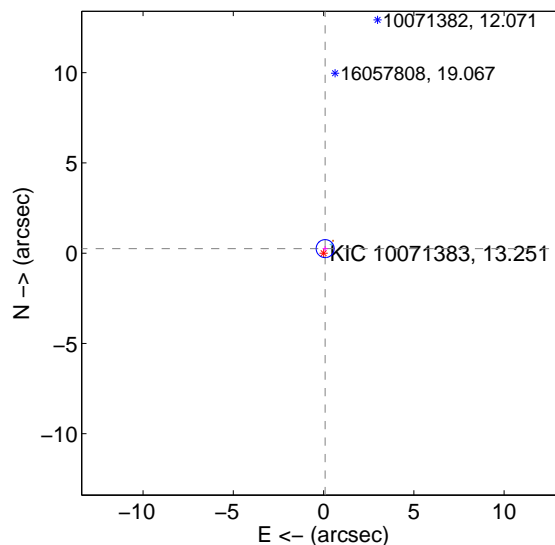
The direct PRF centroid is offset from the target star catalog position by about 0.56 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.143 ± 0.147	0.97	0.025 ± 0.146	-0.140 ± 0.129
PRF-fit source offset from KIC position	0.267 ± 0.166	1.61	-0.087 ± 0.142	0.252 ± 0.136
photometric centroid source offset	2.22 ± 2.98	0.75	-0.29 ± 0.49	-2.20 ± 3.01

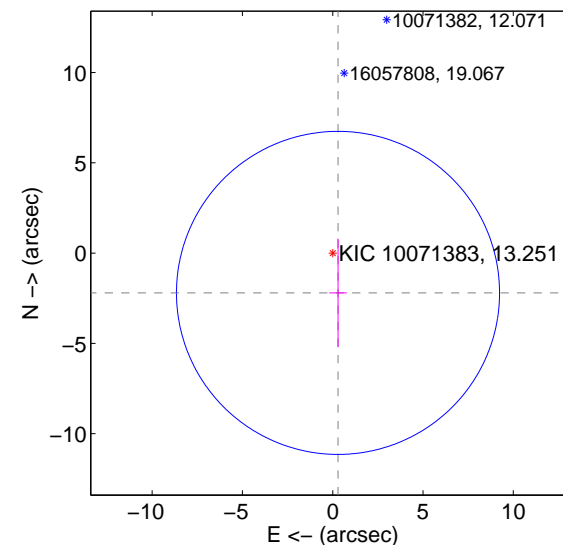
offset from difference PRF-fit to OOT PRF-fit



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.

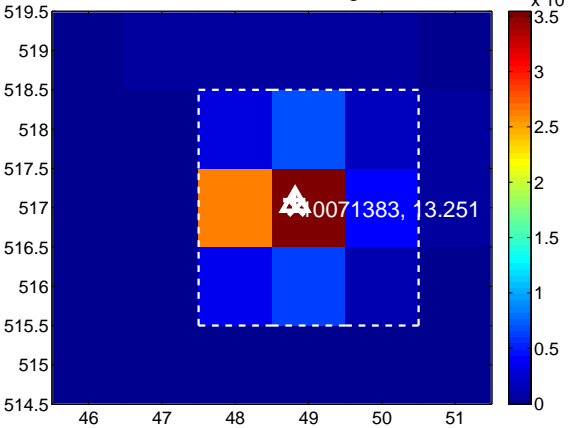
Q1 no difference image



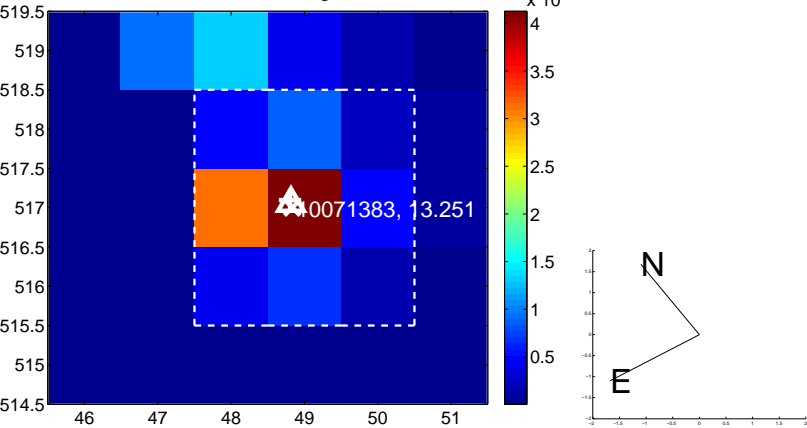
Q1 no OOT image



Q2 difference image



Q2 OOT image



Q3 no difference image



Q3 no OOT image



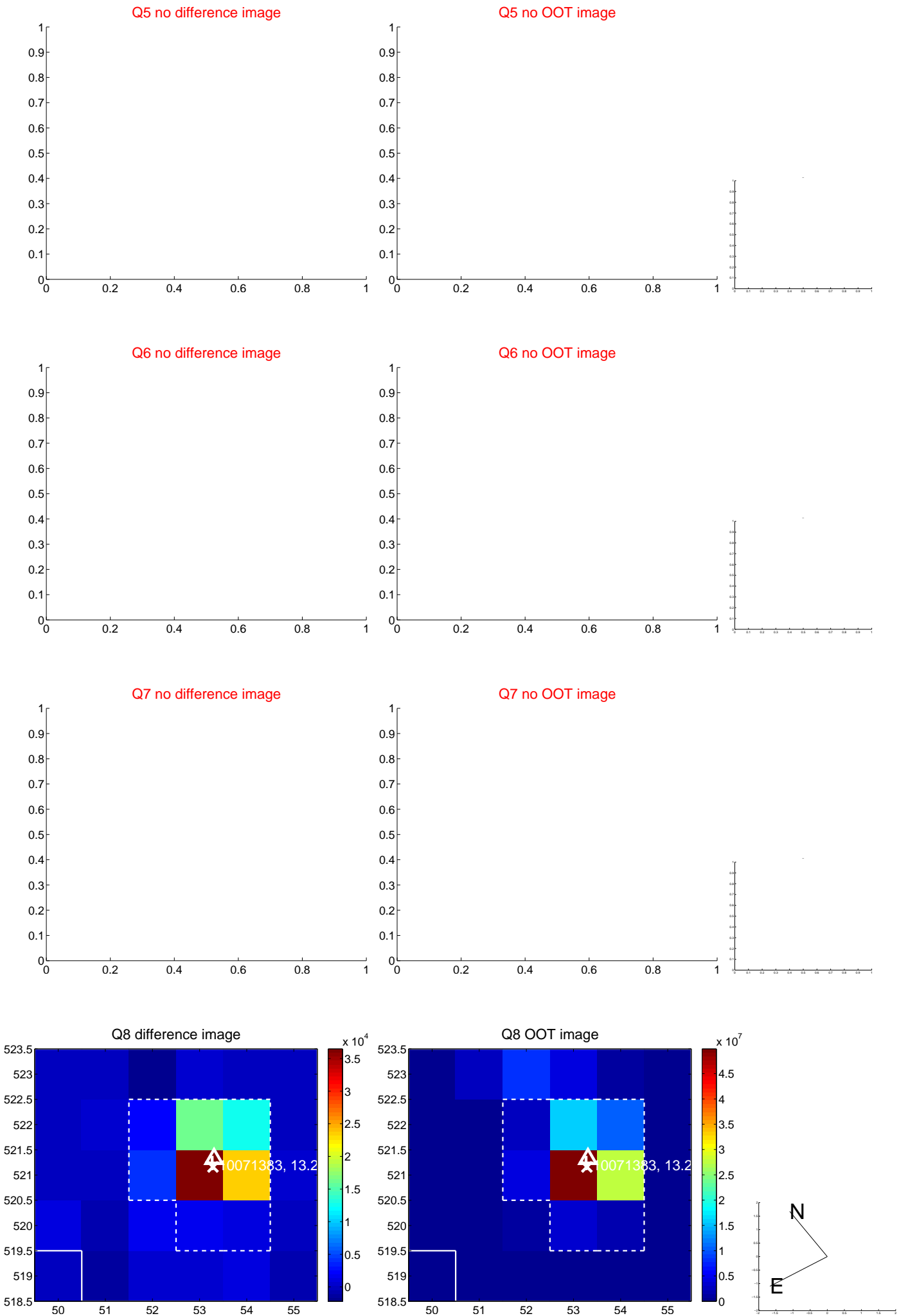
Q4 no difference image



Q4 no OOT image



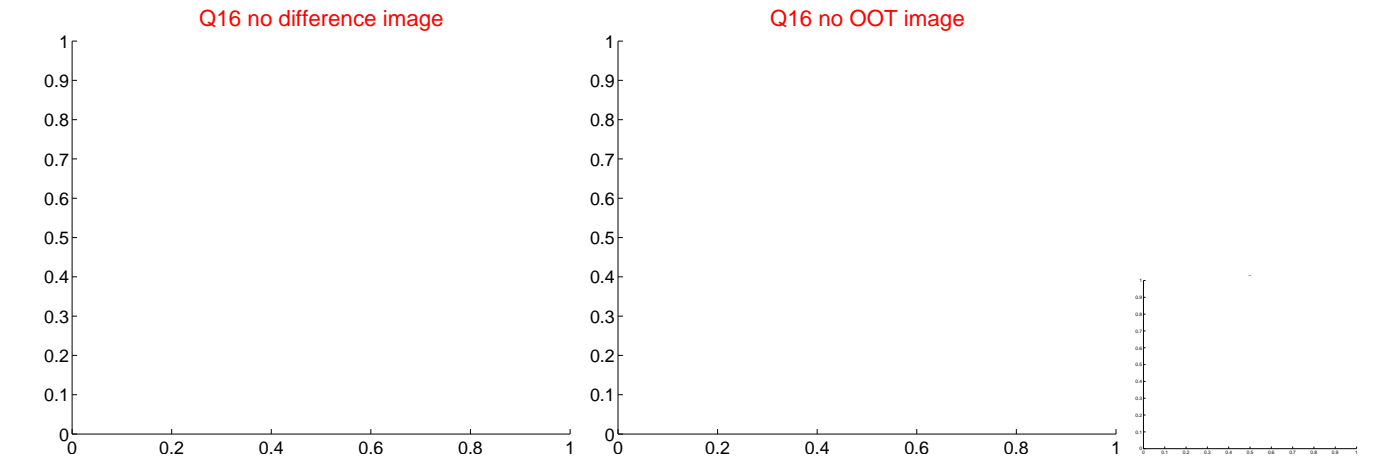
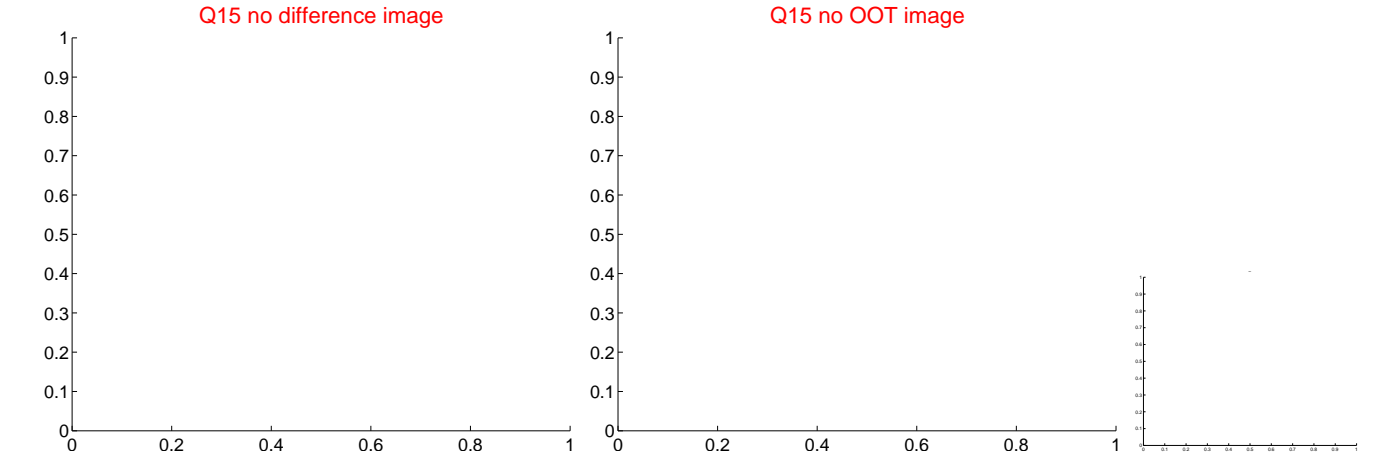
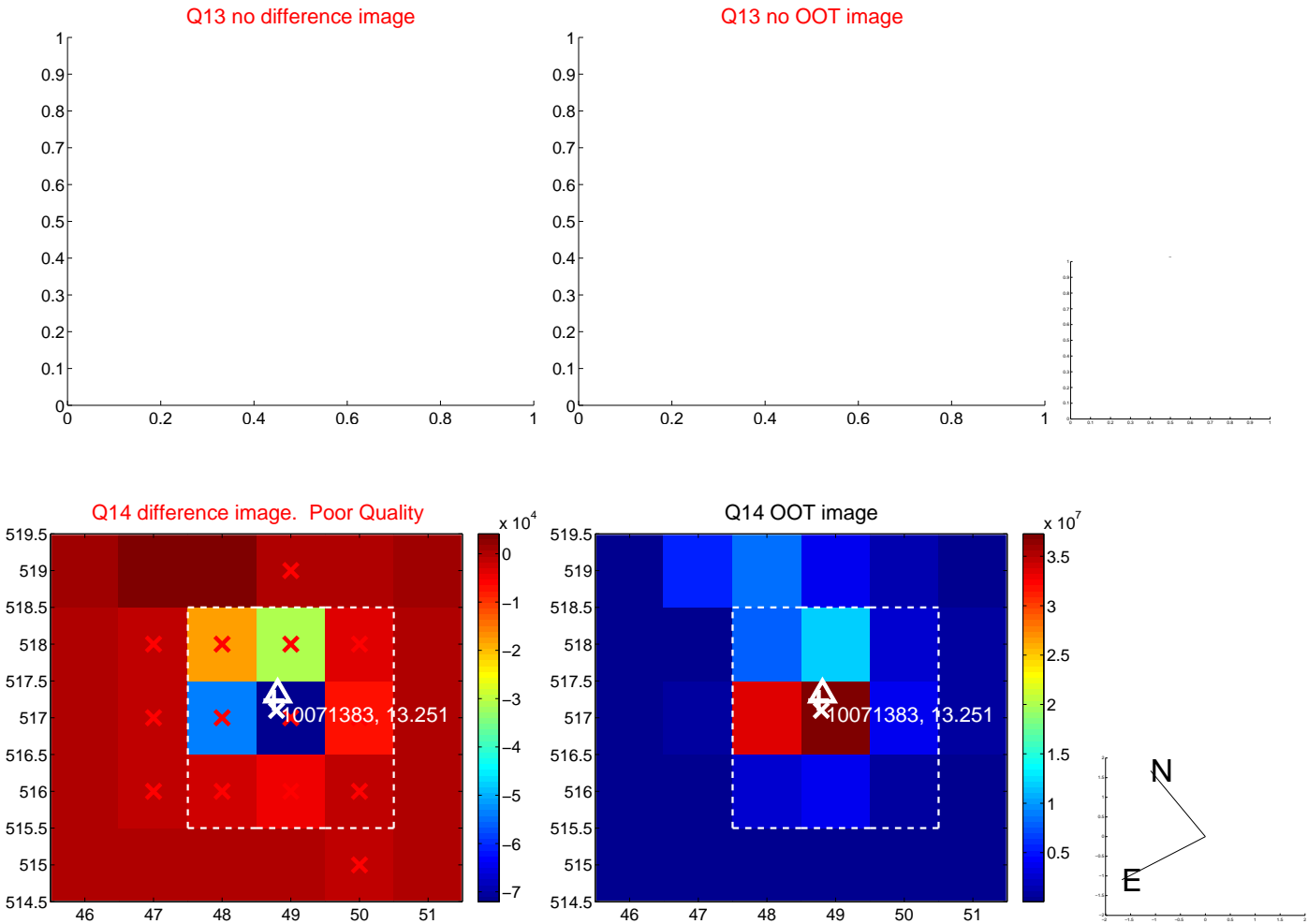
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



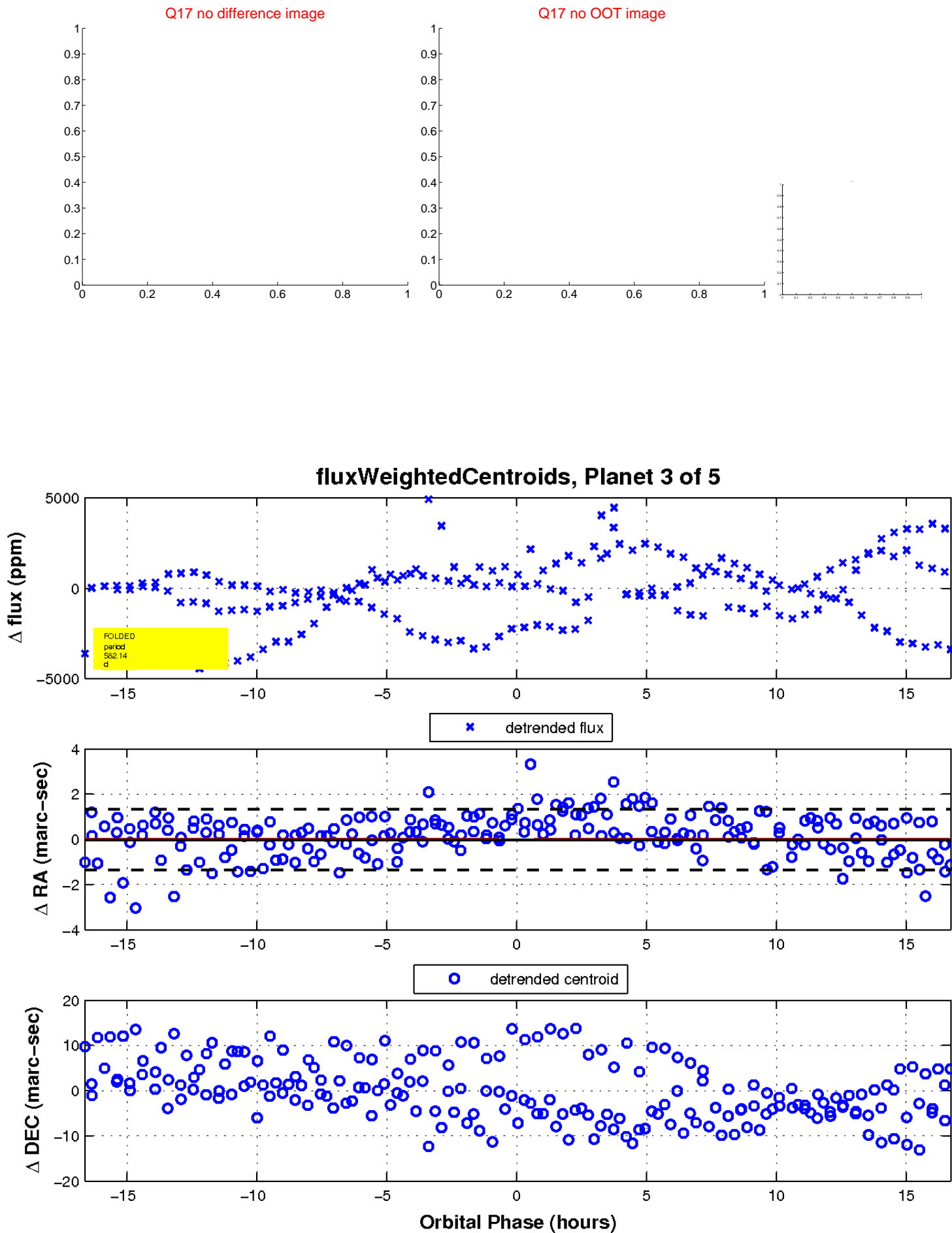
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

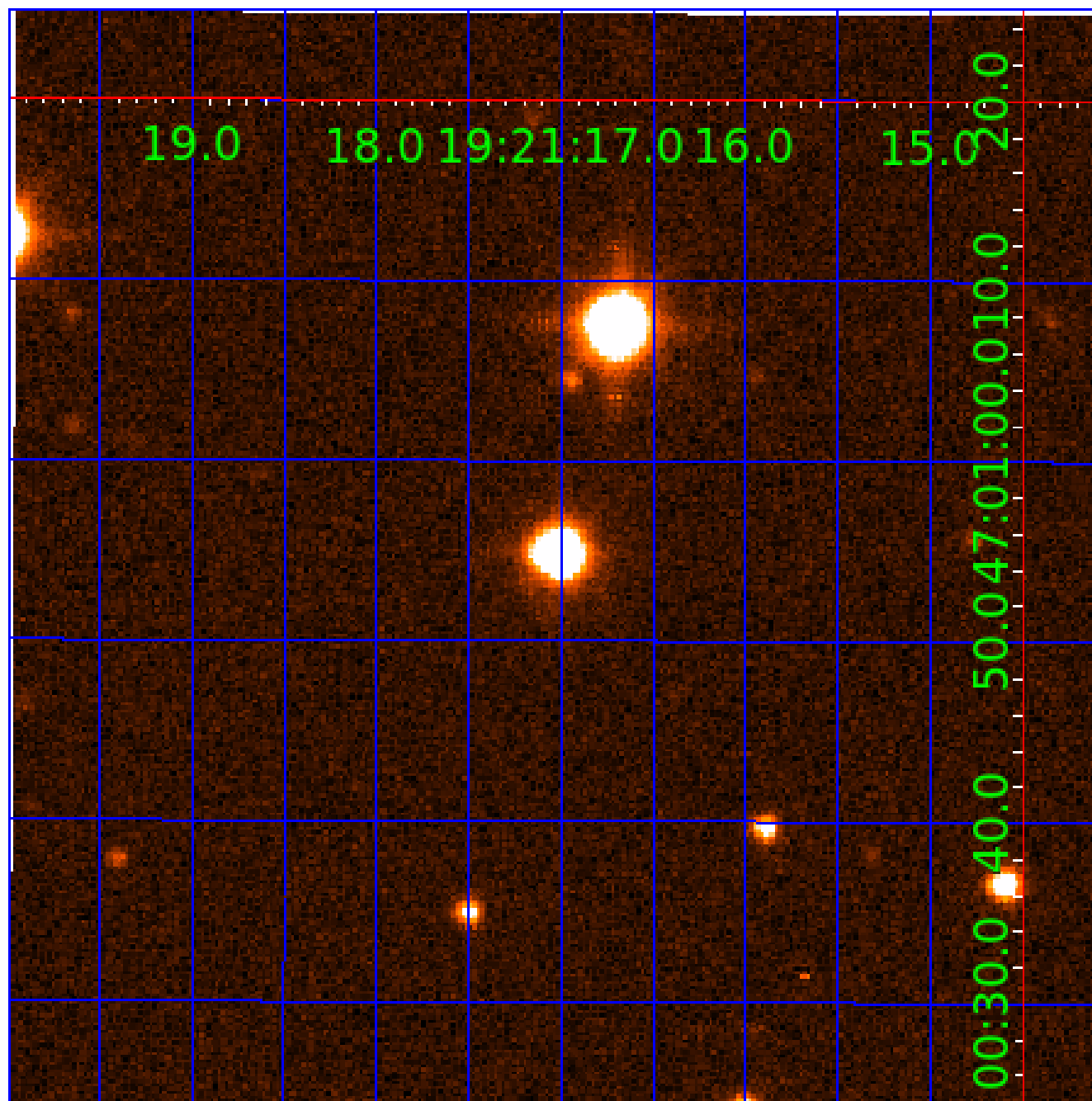


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010071383

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})
010071383-02	OBS	No	315.114776	370.421223	1478.6	4.548	17.6	4.9	0.62	5207	2.43	0.41
010071383-03	OBS	No	582.137908	175.709687	1297.5	5.577	16.8	4.0	0.62	5207	2.20	0.18
010071383-04	OBS	No	376.714059	199.018097	1615.2	1.643	19.4	7.9	0.62	5207	2.54	0.33
010071383-05	OBS	No	307.013173	247.175805	618.0	3.000	16.8	-1.0	0.62	5207	1.52	0.43

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010071383-02	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010071383-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010071383-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_KIC_POS
010071383-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

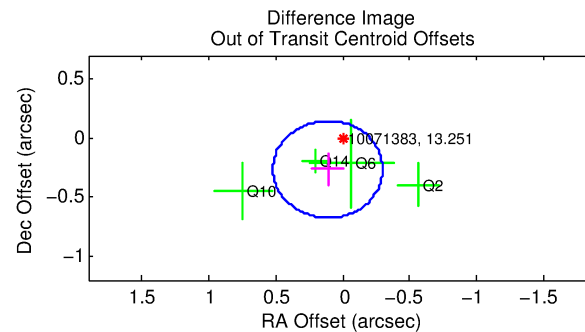
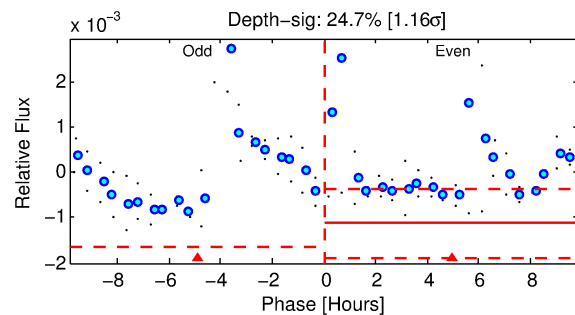
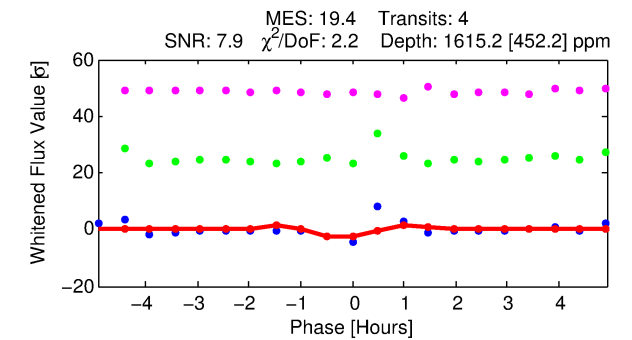
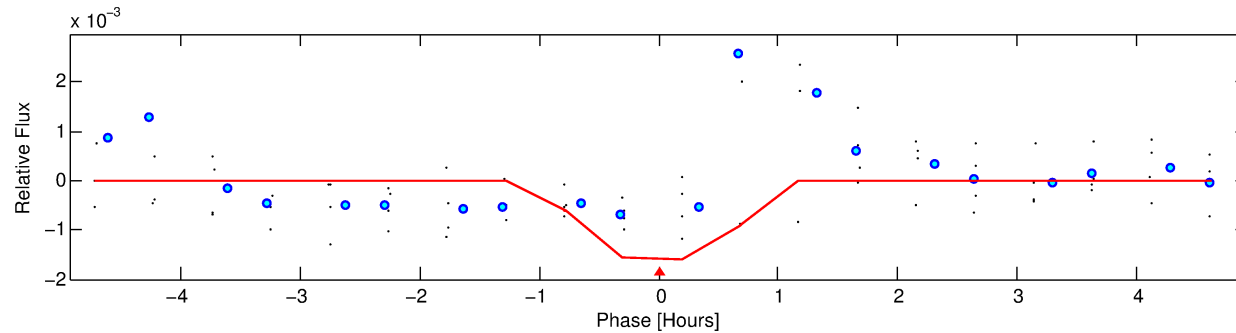
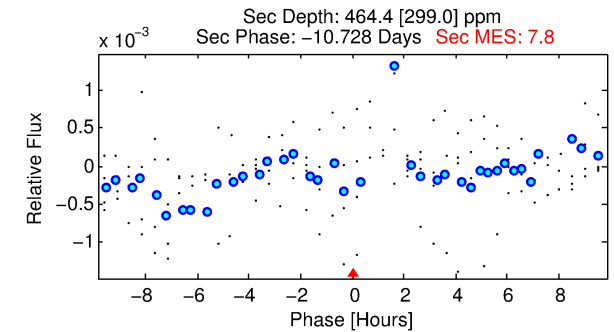
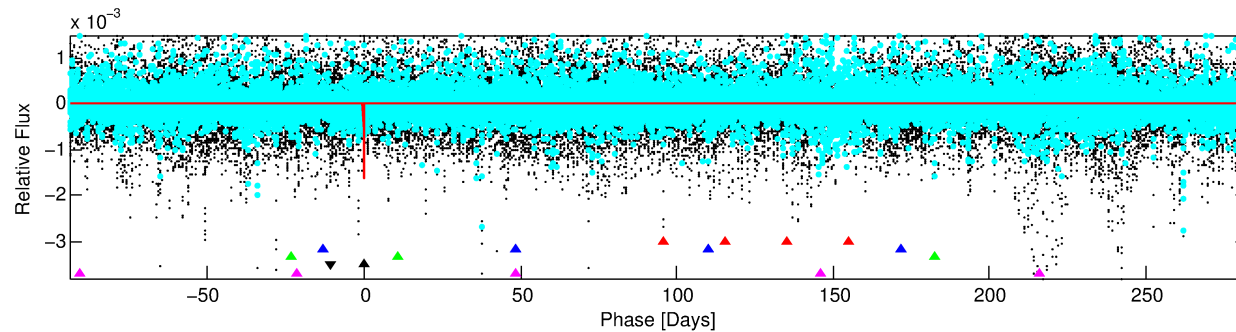
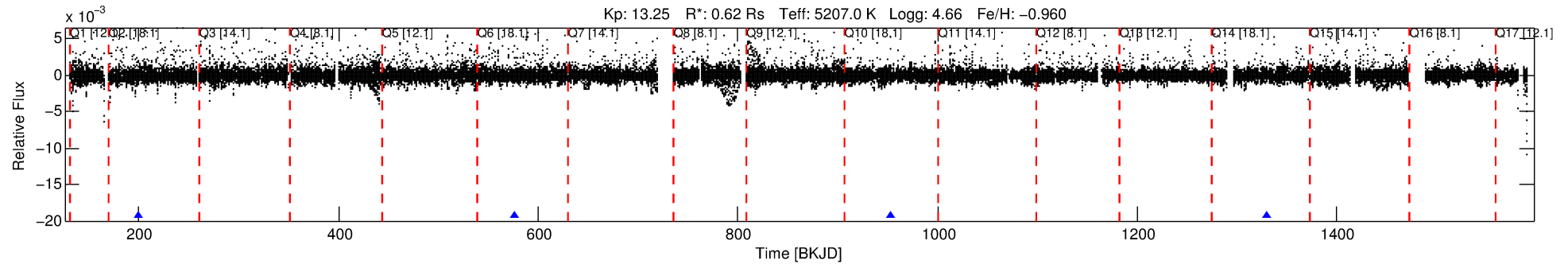
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010071383-04

No Significant Match Found

DV One-Page Summary

KIC: 10071383 Candidate: 4 of 5 Period: 376.714 d



DV Fit Results:

Period = 376.71406 [0.00270] d
Epoch = 199.0181 [0.0053] BKJD
Rp/R* = 0.0377 [0.2263]
a/R* = 1643.68 [42522.40]
b = 0.44 [47.30]
Seff = 0.33 [0.05]
Teq = 193 [7] K
Rp = 2.54 [15.26] Re
a = 0.8791 [0.0587] AU
Ag = 30538.91 [367126.02] [0.08 σ]
Teffp = 3937 [11831] K [0.32 σ]

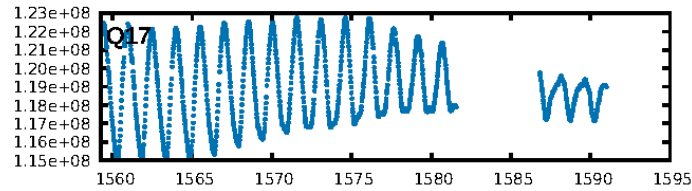
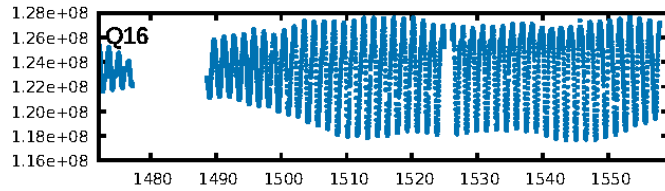
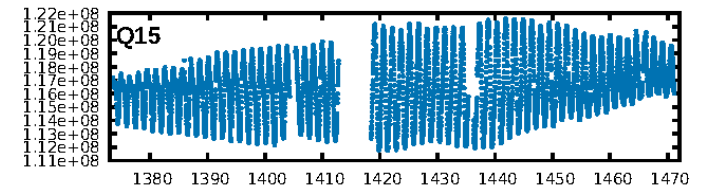
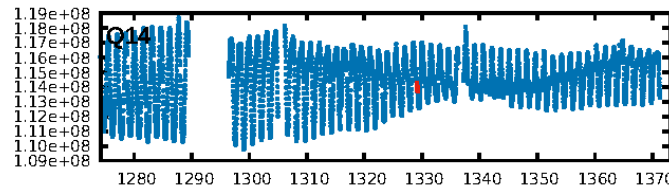
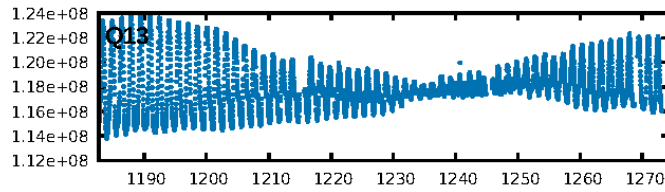
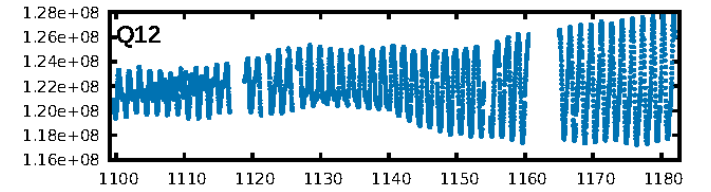
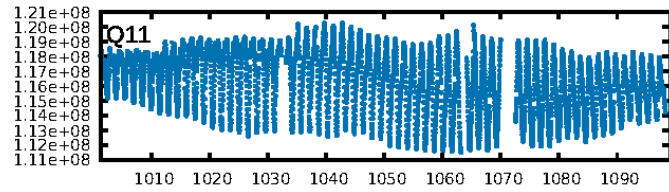
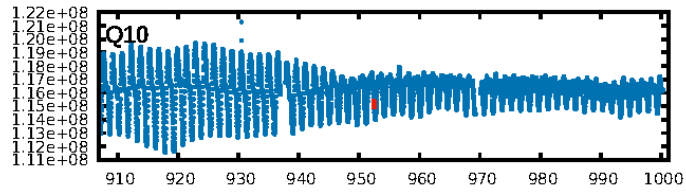
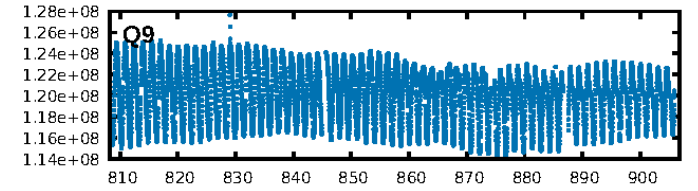
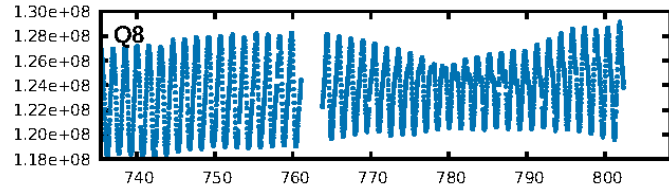
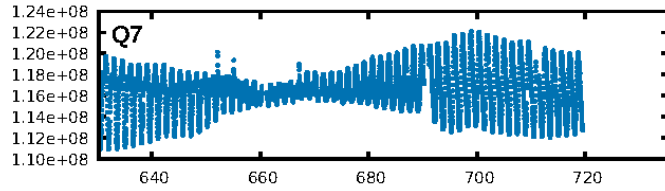
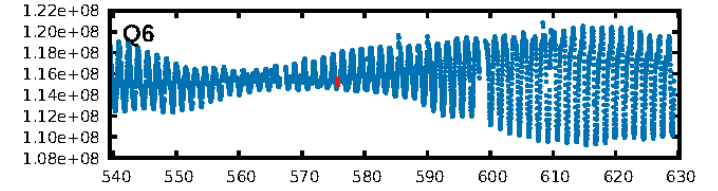
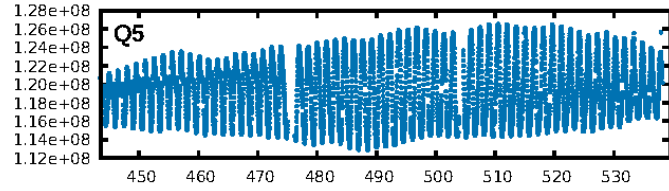
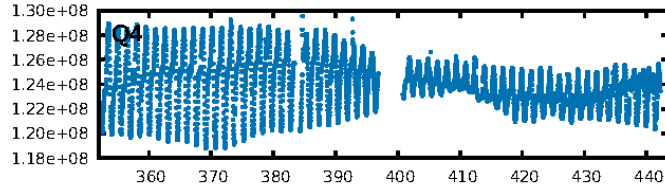
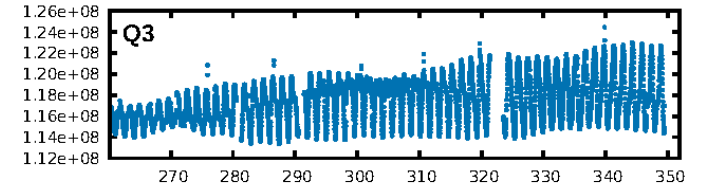
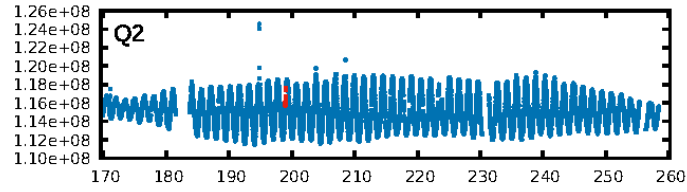
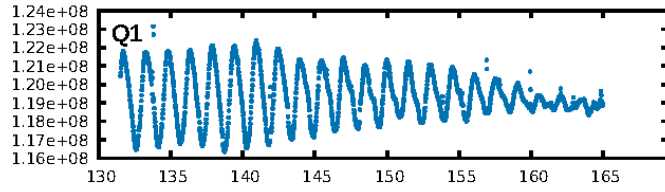
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [121.62 σ]
LongPeriod-sig: 100.0% [847.94 σ]
ModelChiSquare2-sig: 0.4%
ModelChiSquareGof-sig: 21.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.4895
Centroid-sig: N/A
Centroid-so: 2.645 arcsec [1.55 σ]
OotOffset-rm: 0.288 arcsec [2.10 σ]
KicOffset-rm: 0.240 arcsec [1.74 σ]
OotOffset-st: 4/0/0/0 [4]
KicOffset-st: 4/0/0/0 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [4/4]

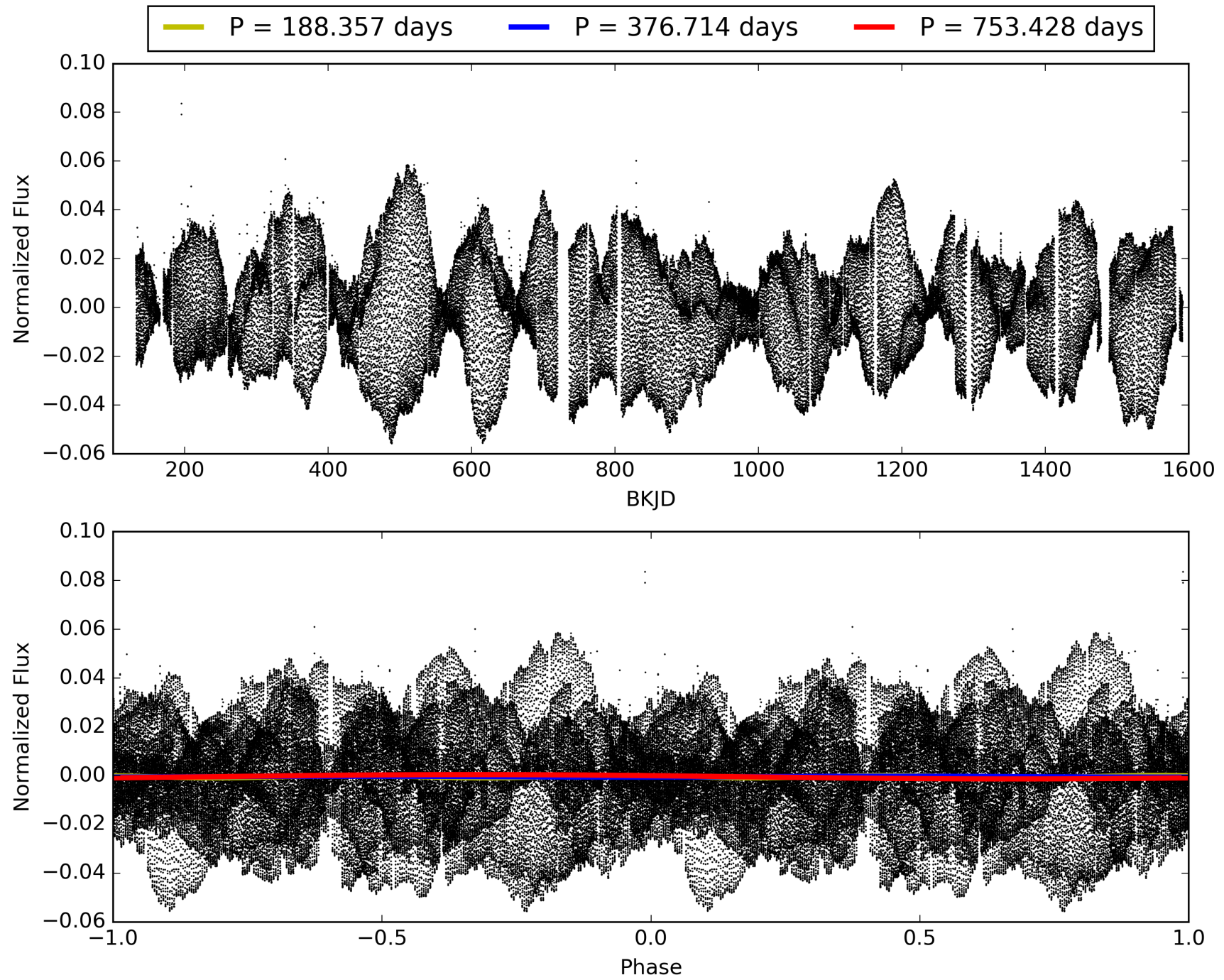
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:24:45 Z

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

TCE 010071383-04, PDC Light Curves

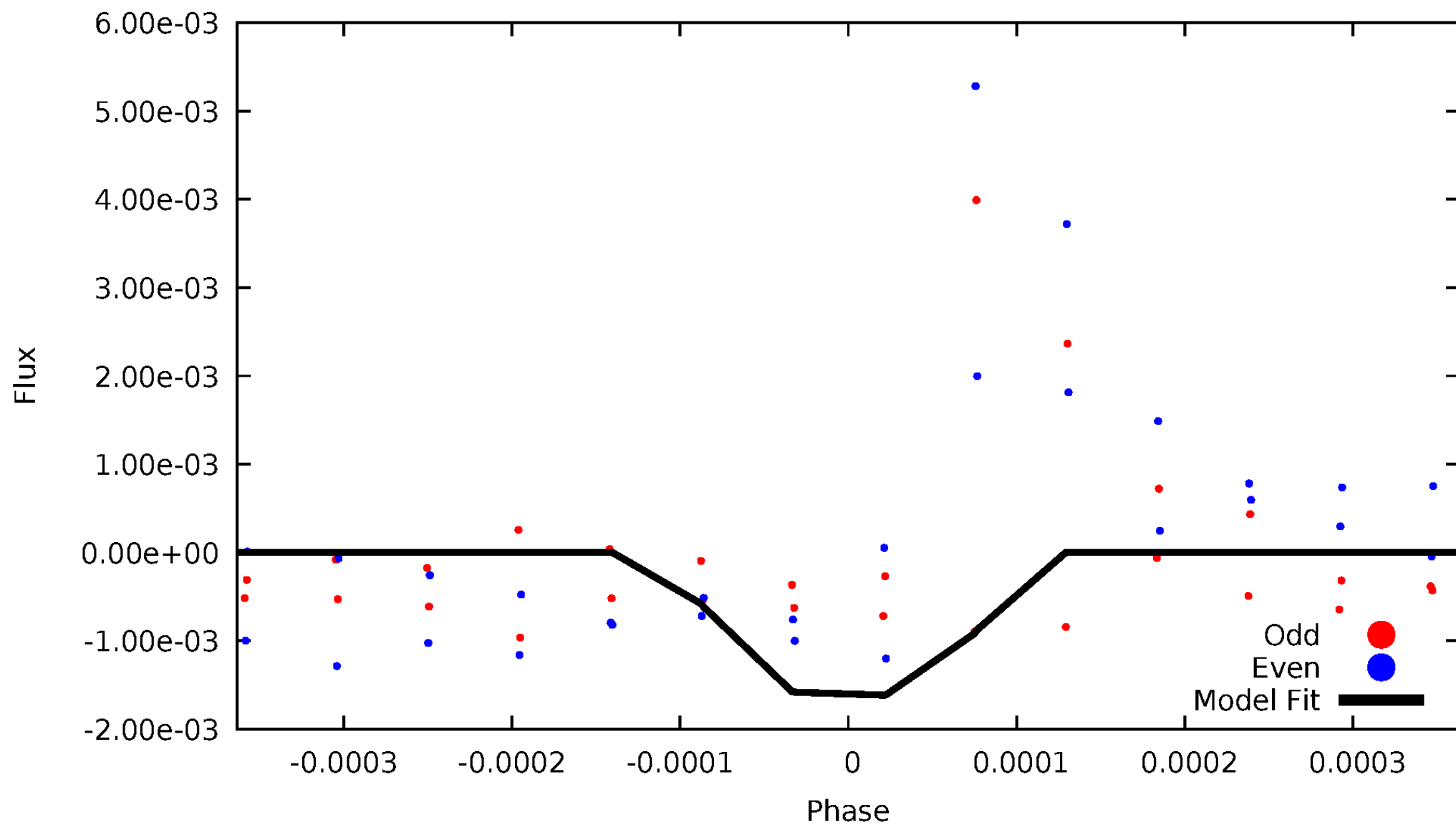


TCE 010071383-04



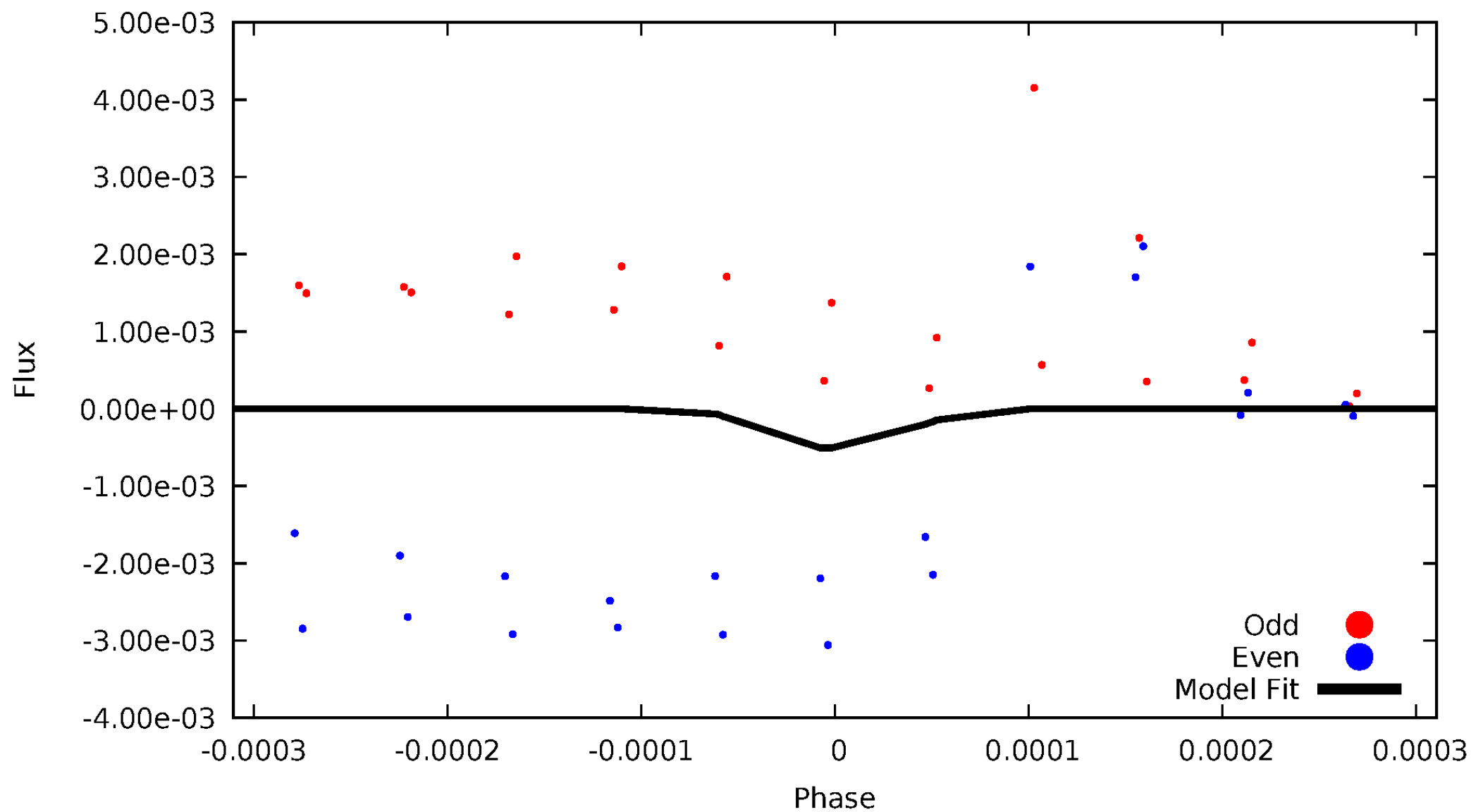
DV Odd/Even

TCE 010071383-04



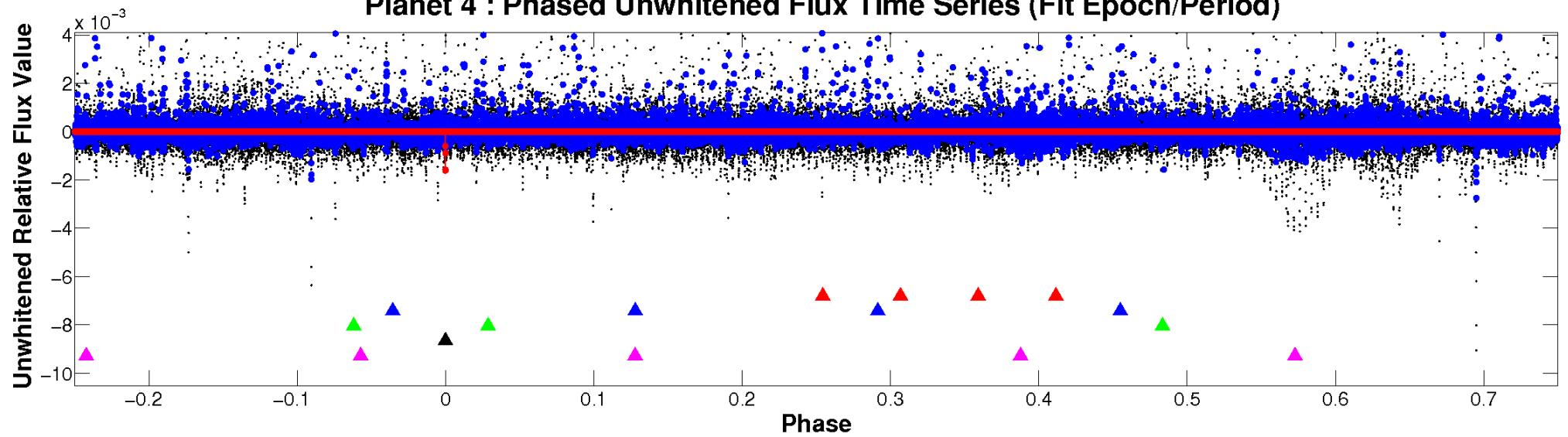
ALT Odd/Even

TCE 010071383-04

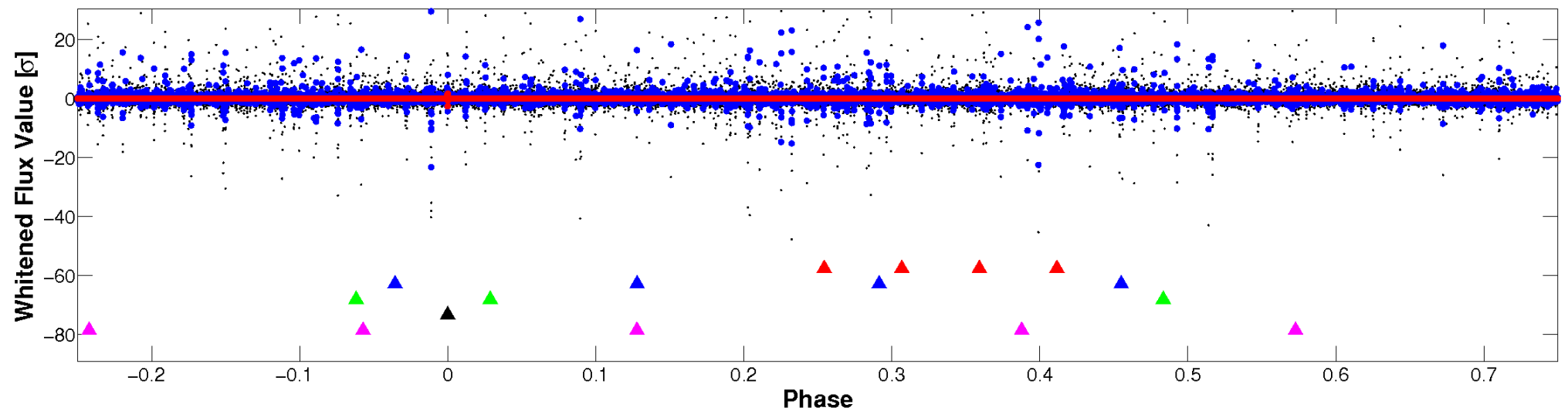


Non-Whitened Vs. Whitened Light Curve

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

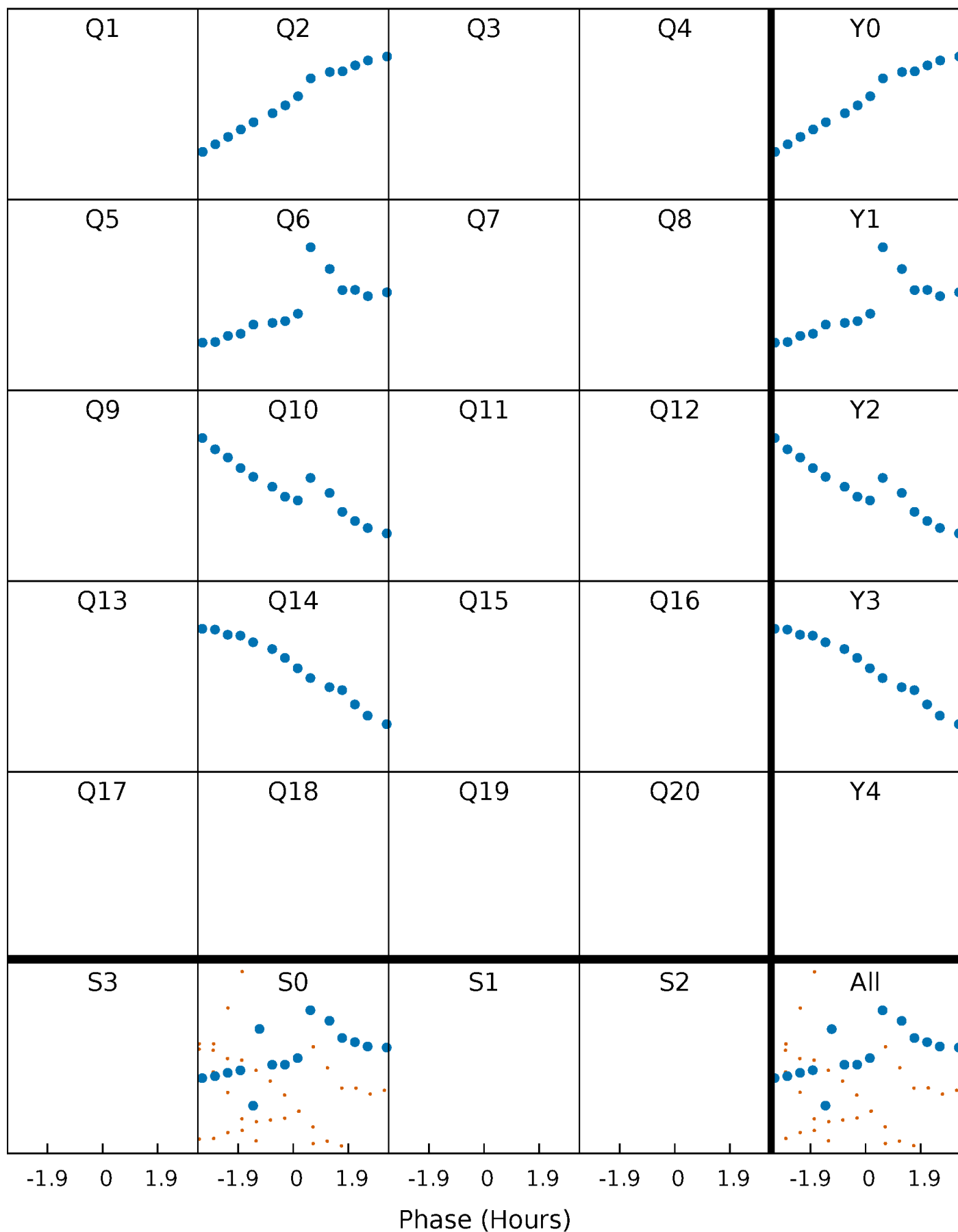


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



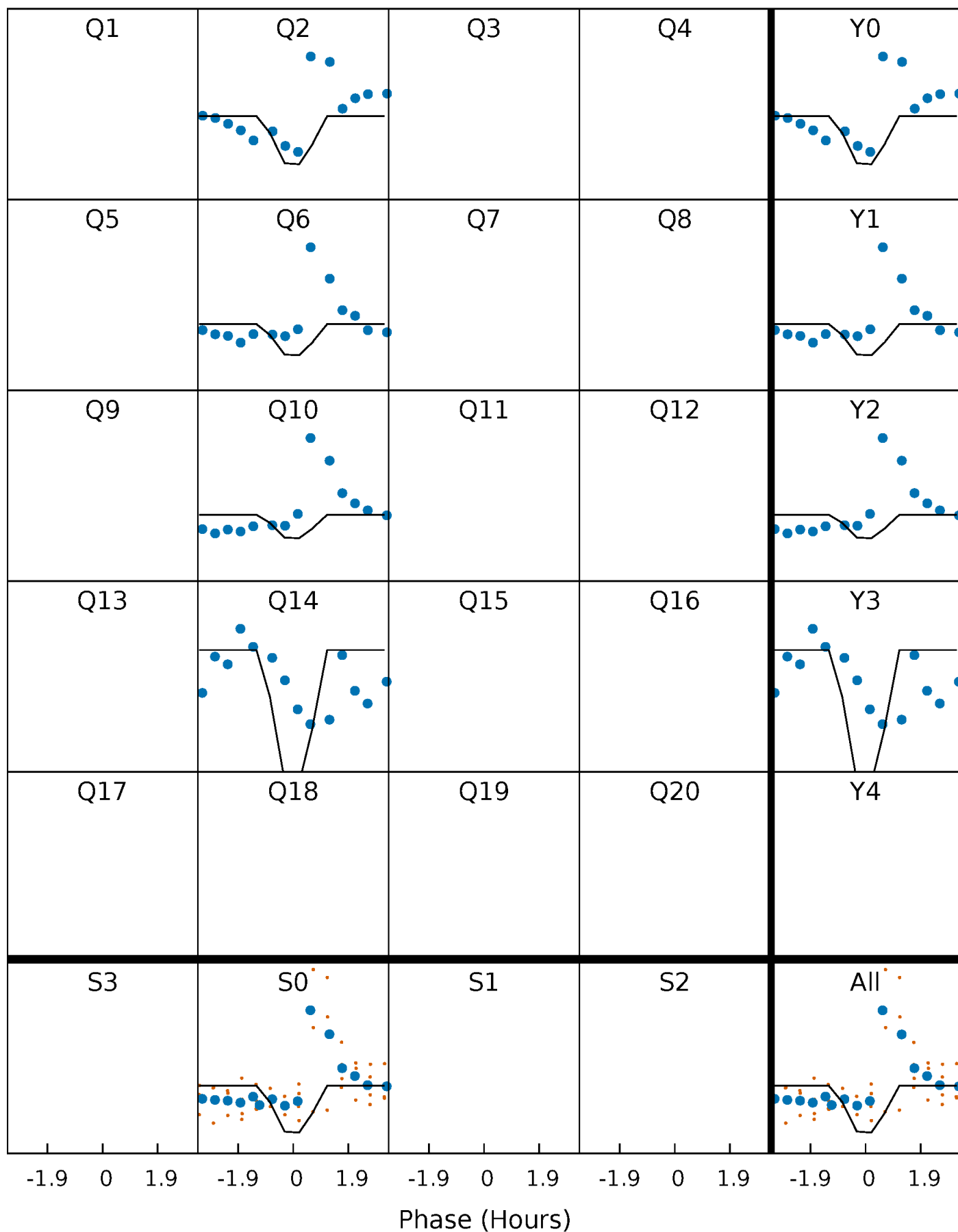
PDC Quarter-Phased Transit Curves

TCE 010071383-04 P=376.714059 Days $T_0=199.018097$ (BKJD)



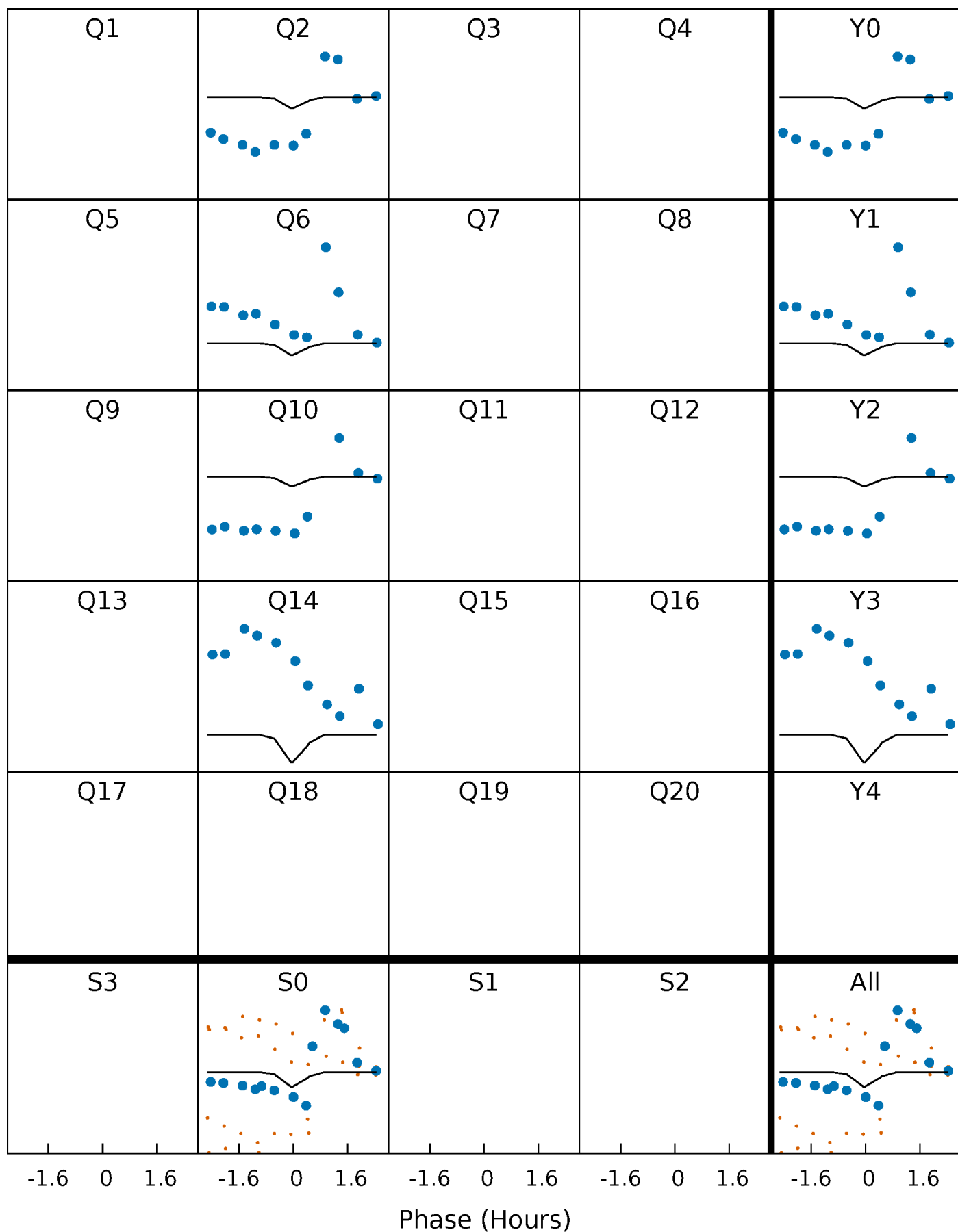
DV Quarter-Phased Transit Curves

TCE 010071383-04 P=376.714059 Days $T_0=199.018097$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

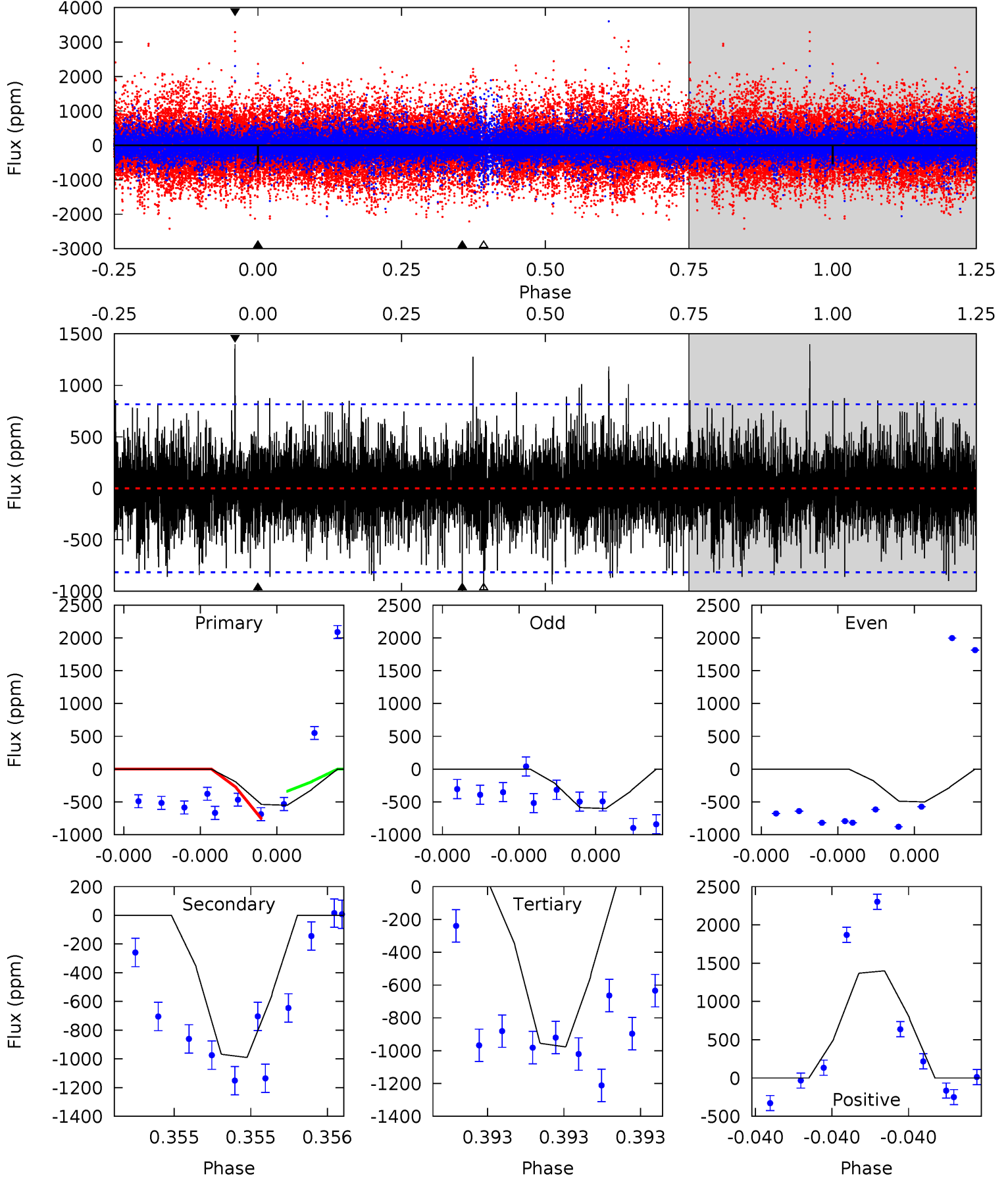
TCE 010071383-04 P=376.713112 Days $T_0=199.008969$ (BKJD)



DV Model-Shift Uniqueness Test

010071383-04, P = 376.714059 Days, E = 199.018097 Days

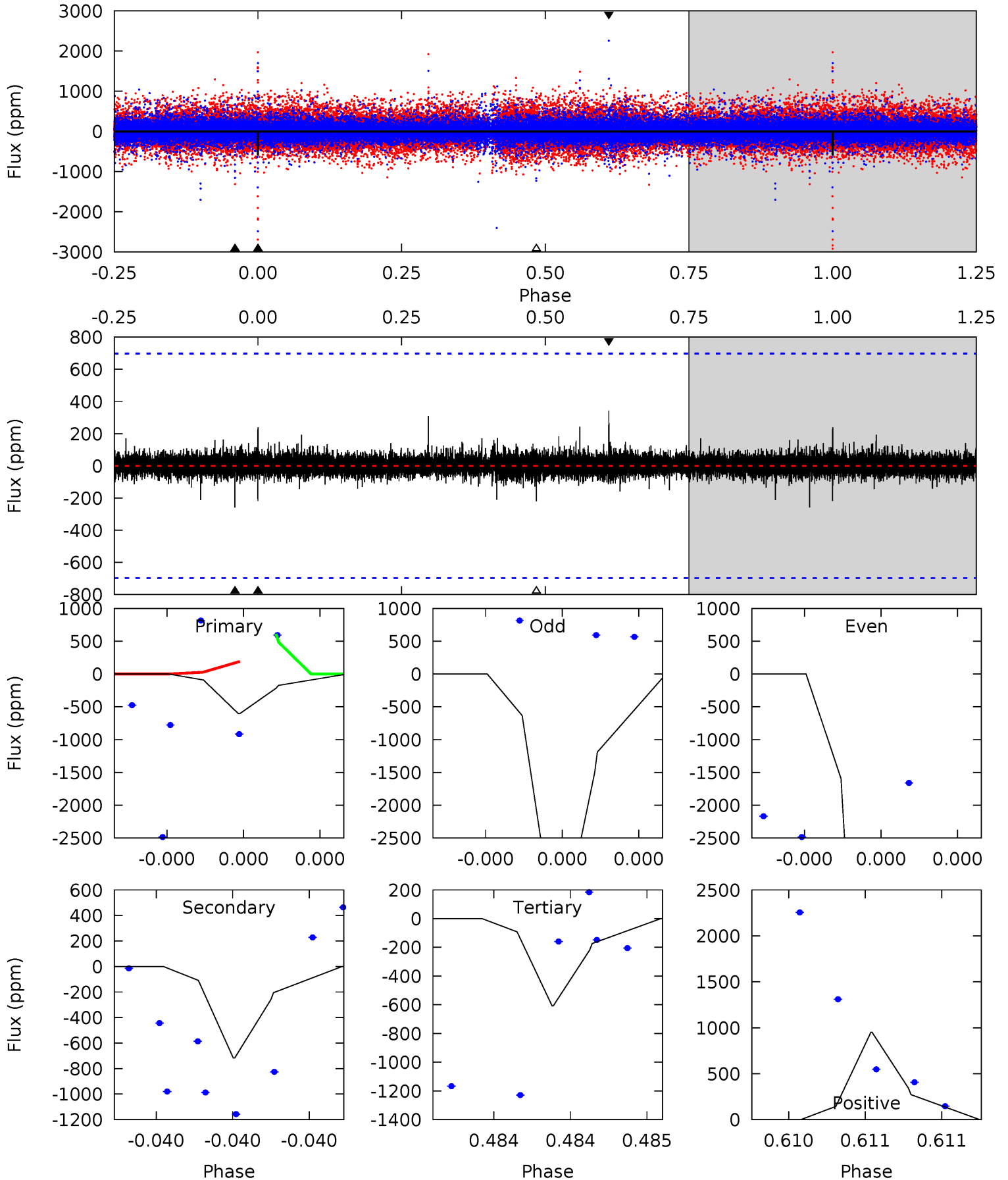
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.89	6.99	6.90	9.88	5.76	3.77	1.59	-3.01	-5.99	0.10	-2.89	0.32	-0.52	0.59	1.48



Alt Model-Shift Uniqueness Test

010071383-04, P = 376.713112 Days, E = 199.008969 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.82	2.16	1.83	2.86	5.82	3.86	0.27	-0.01	-1.04	0.33	-0.70	10.4	0.96	0.57	0



Stellar Parameters For KIC 010071383

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5207^{+141}_{-157}	$4.661^{+0.045}_{-0.045}$	$-0.960^{+0.300}_{-0.300}$	$0.618^{+0.053}_{-0.039}$	$0.639^{+0.052}_{-0.028}$	$3.811^{+0.643}_{-0.662}$
	+3%/-3%	+1%/-1%	+31%/-31%	+9%/-6%	+8%/-4%	+17%/-17%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010071383-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-990 ± 142	$11.17^{+10.86}_{-7.86}$	268^{+9}_{-9}	2944^{+1407}_{-490}	3436^{+35575}_{-2623}
Alt.	-259 ± 120	$11.18^{+12.15}_{-7.94}$	269^{+9}_{-8}	2436^{+995}_{-395}	783^{+9594}_{-625}

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

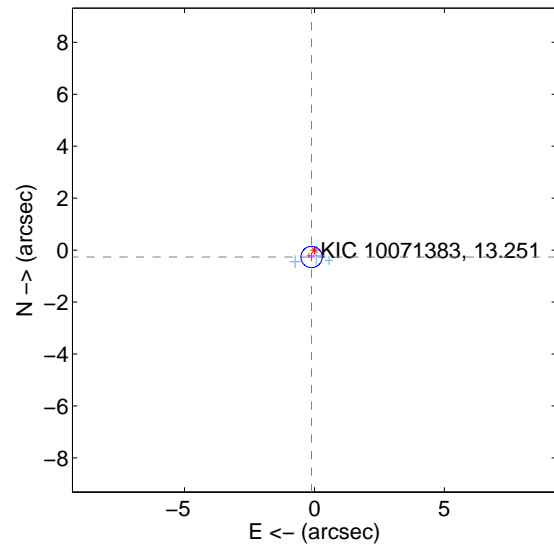
Supplemental centroid analysis for 010071383-04. Kepler magnitude: 13.25. Transit SNR 7.87

There are 3 quarters with good PRF difference image offsets

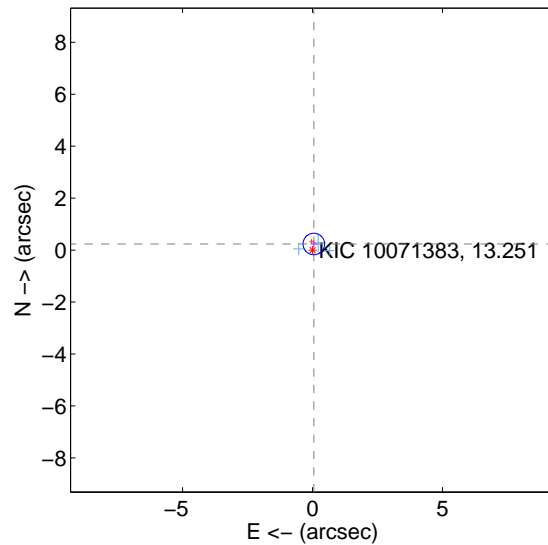
The direct PRF centroid is offset from the target star catalog position by about 0.56 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.288 ± 0.137	2.10	0.111 ± 0.125	-0.265 ± 0.139
PRF-fit source offset from KIC position	0.240 ± 0.138	1.74	-0.050 ± 0.125	0.235 ± 0.139
photometric centroid source offset	2.65 ± 1.71	1.55	-0.32 ± 0.43	2.63 ± 1.72

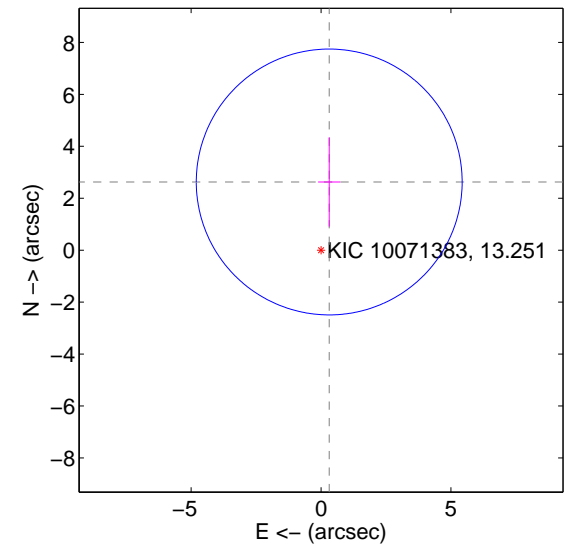
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



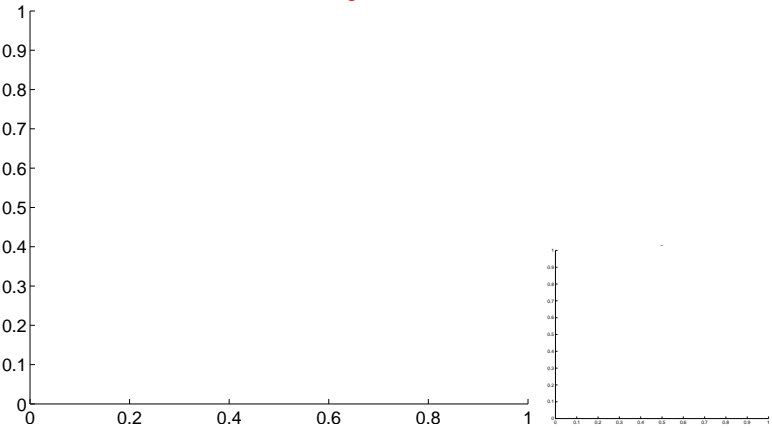
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

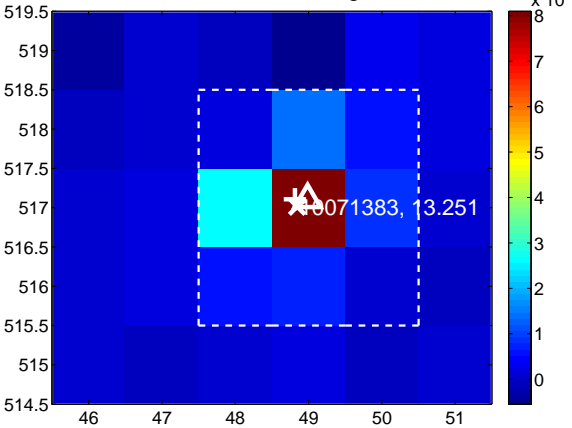
Q1 no difference image



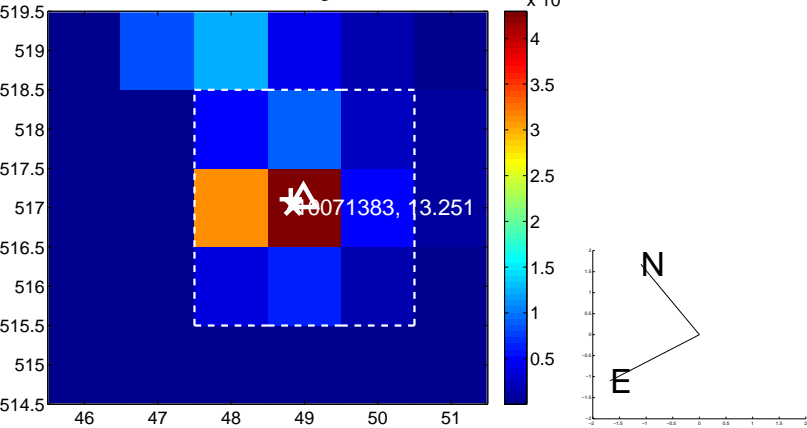
Q1 no OOT image



Q2 difference image



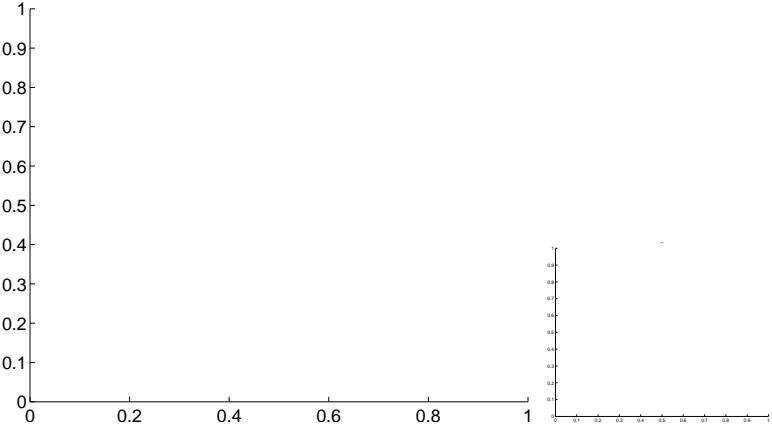
Q2 OOT image



Q3 no difference image



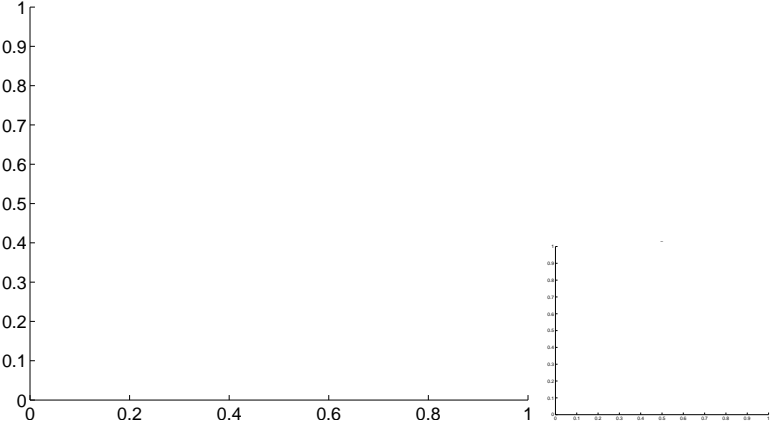
Q3 no OOT image



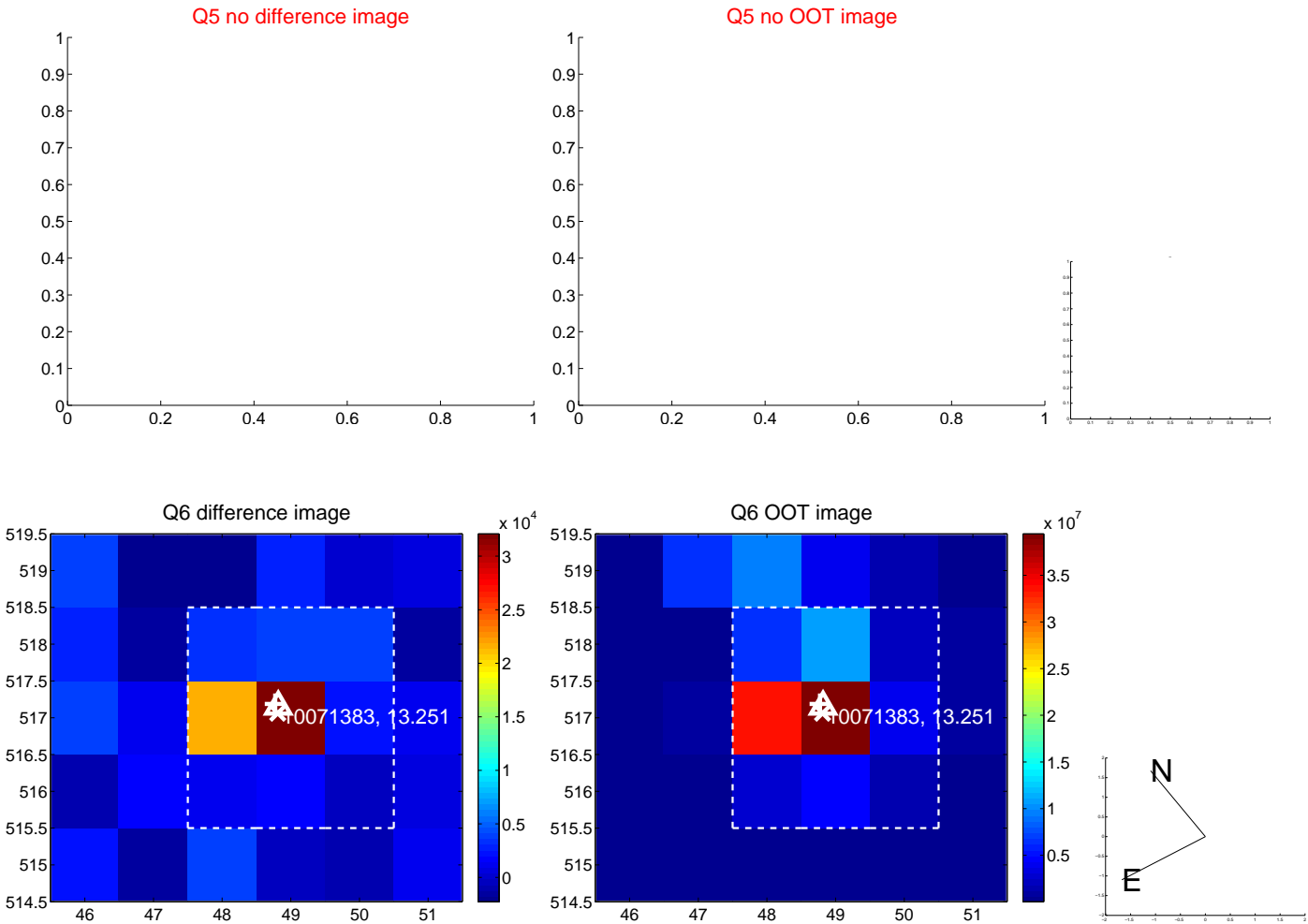
Q4 no difference image



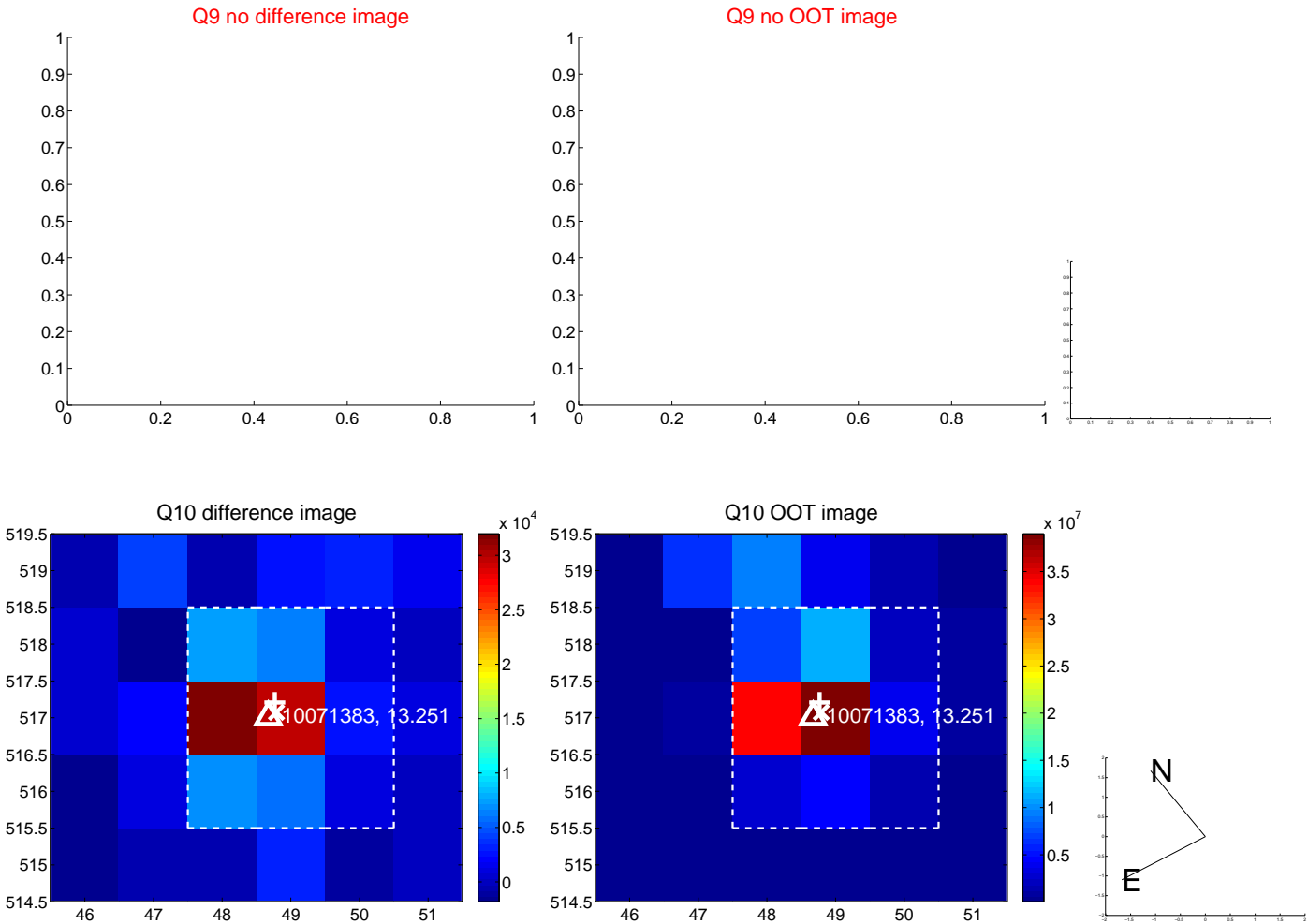
Q4 no OOT image



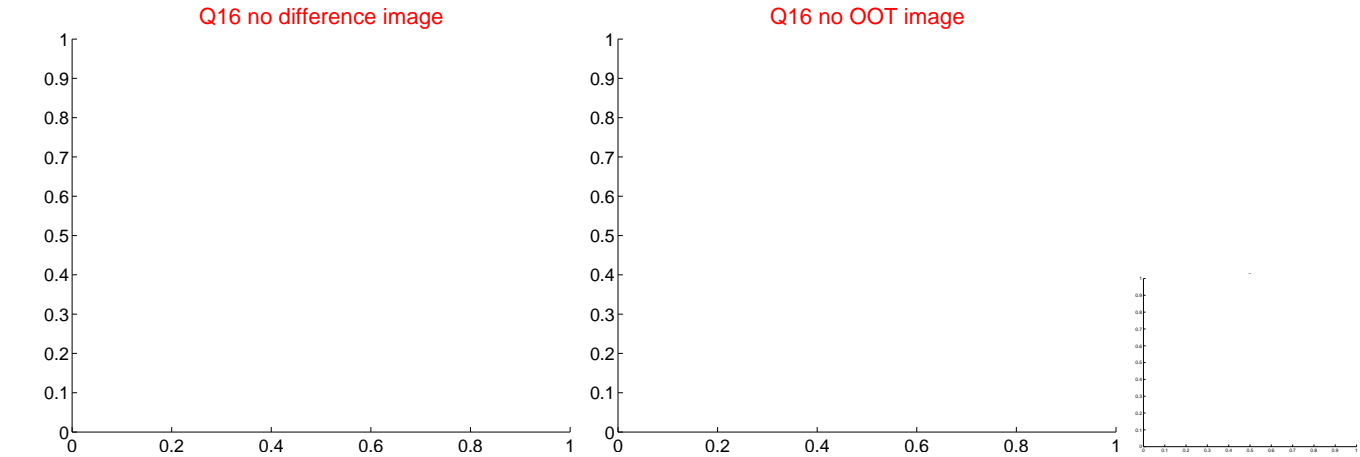
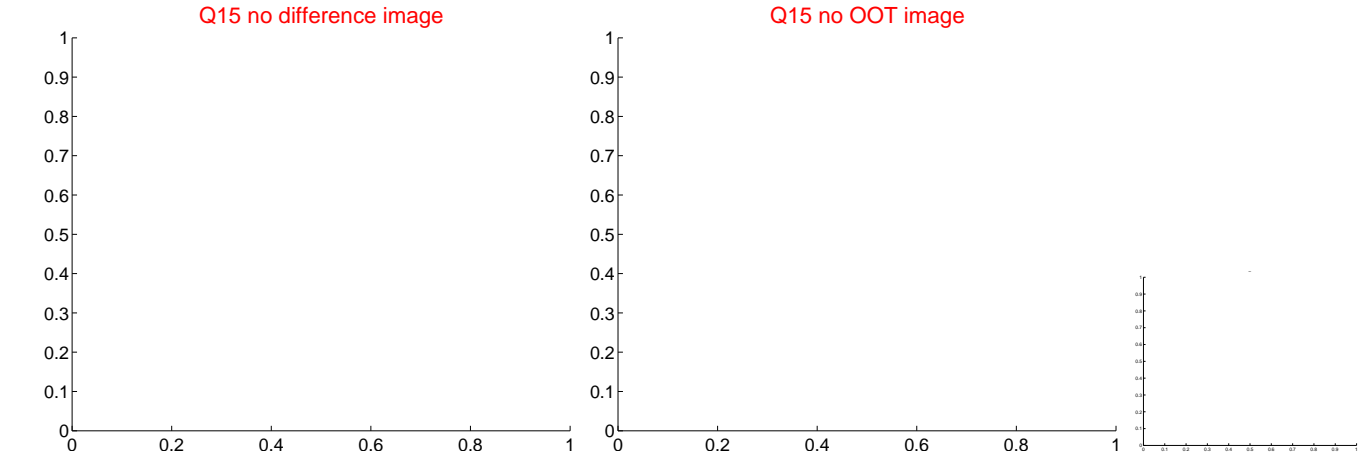
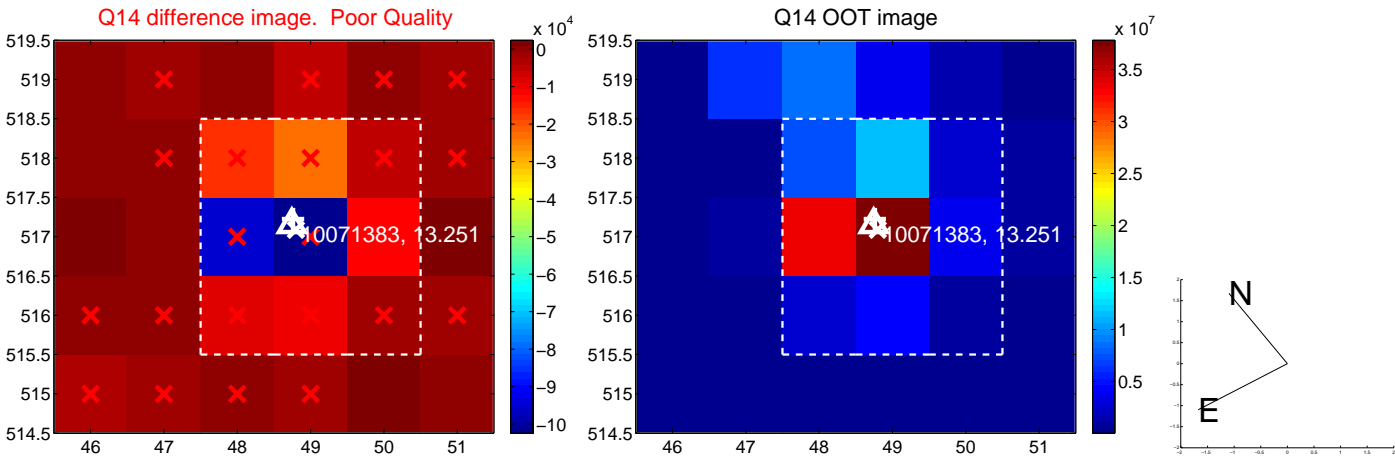
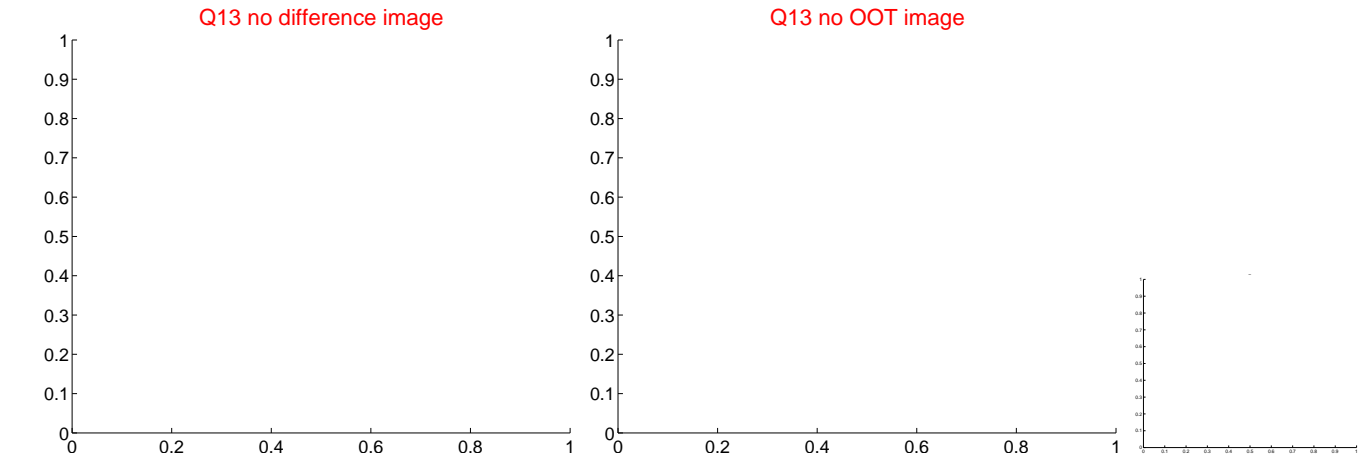
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



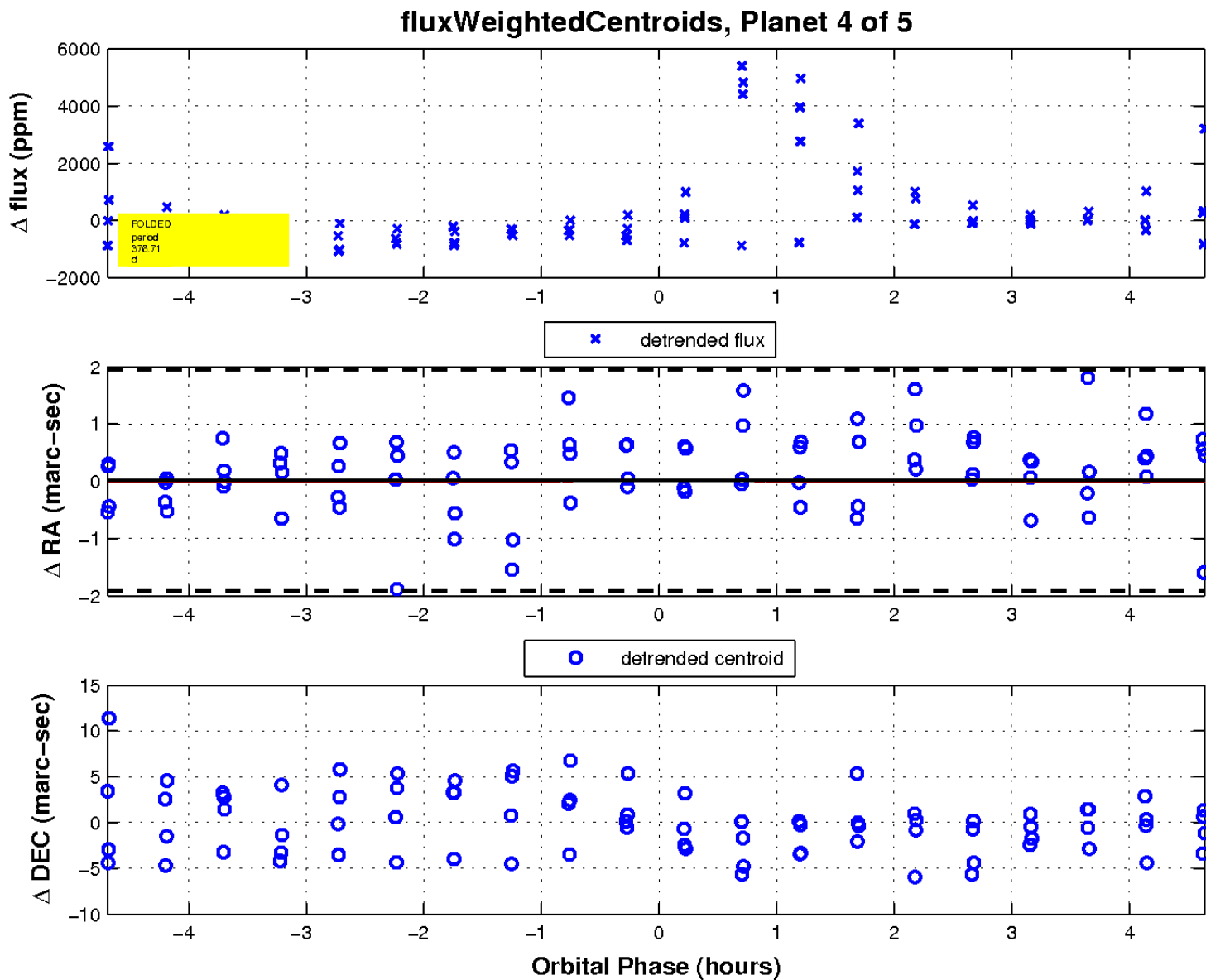
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

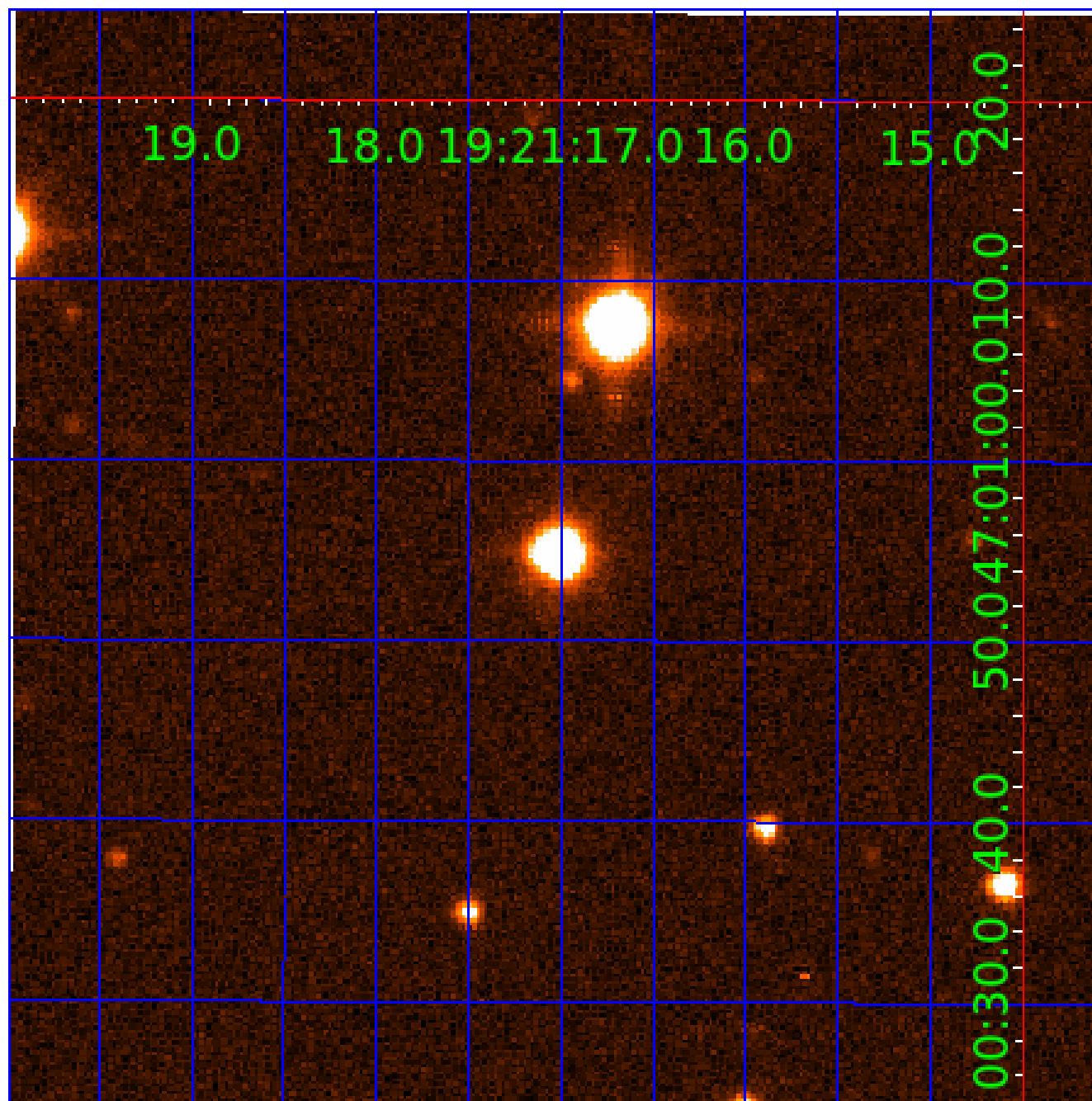


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010071383

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})
010071383-02	OBS	No	315.114776	370.421223	1478.6	4.548	17.6	4.9	0.62	5207	2.43	0.41
010071383-03	OBS	No	582.137908	175.709687	1297.5	5.577	16.8	4.0	0.62	5207	2.20	0.18
010071383-04	OBS	No	376.714059	199.018097	1615.2	1.643	19.4	7.9	0.62	5207	2.54	0.33
010071383-05	OBS	No	307.013173	247.175805	618.0	3.000	16.8	-1.0	0.62	5207	1.52	0.43

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010071383-02	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010071383-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010071383-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_KIC_POS
010071383-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

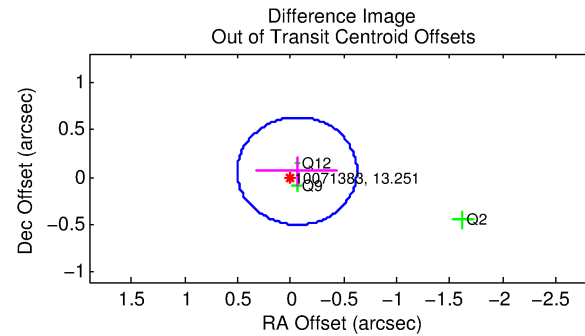
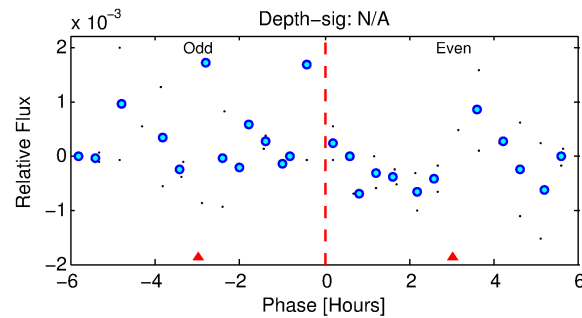
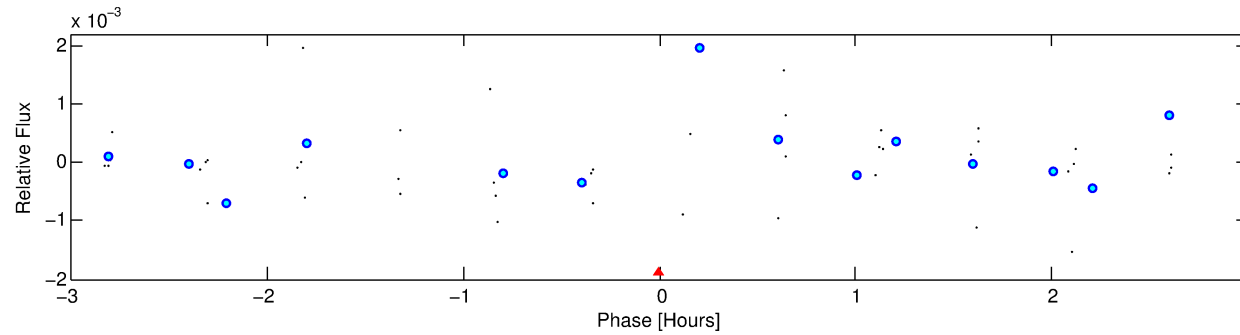
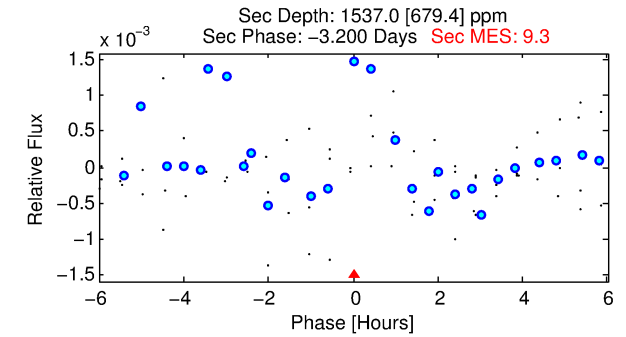
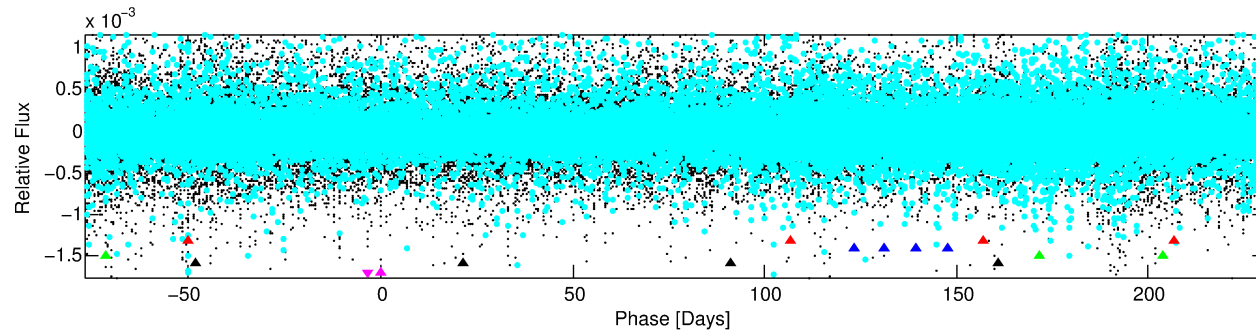
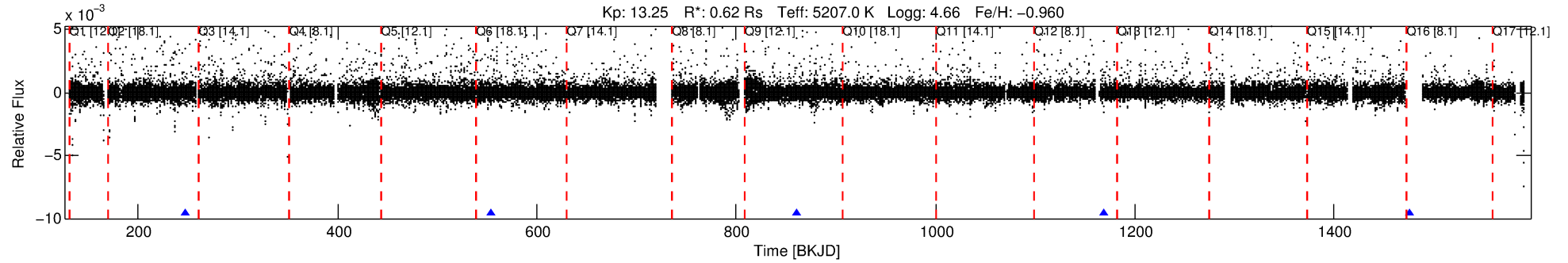
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010071383-05

No Significant Match Found

DV One-Page Summary

KIC: 10071383 Candidate: 5 of 5 Period: 307.013 d



TPS TCE Results:

Period = 307.01317 d
Epoch = 247.1758 BKJD

DV fit results are unavailable

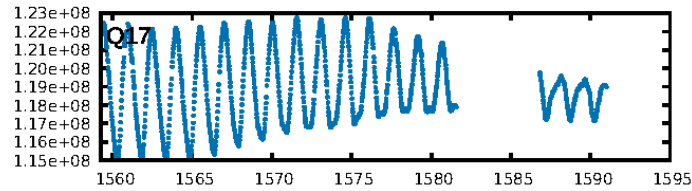
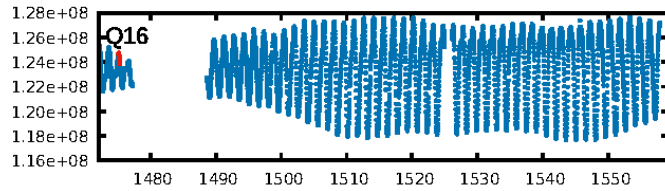
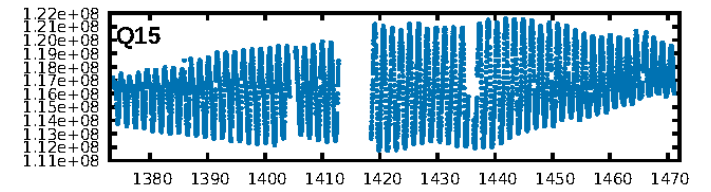
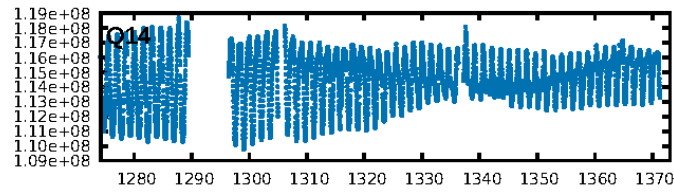
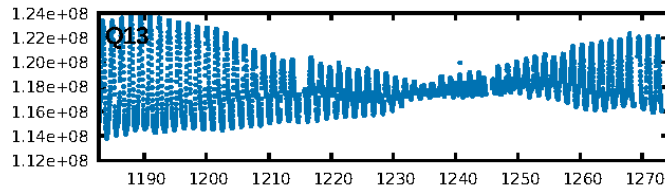
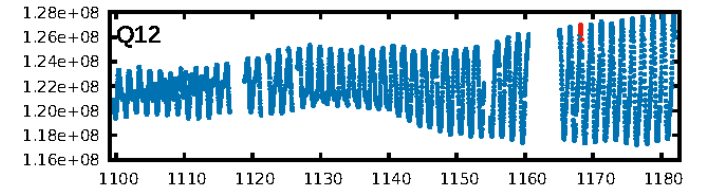
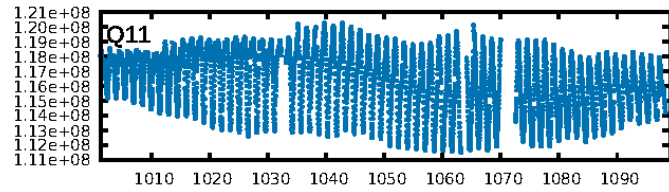
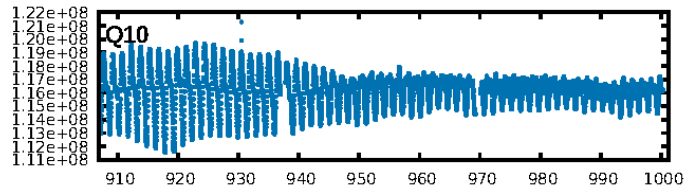
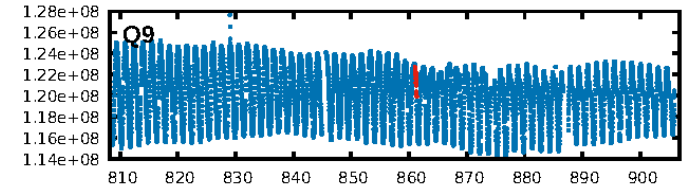
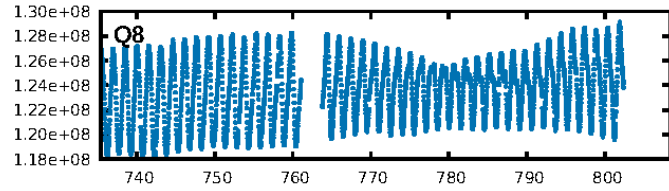
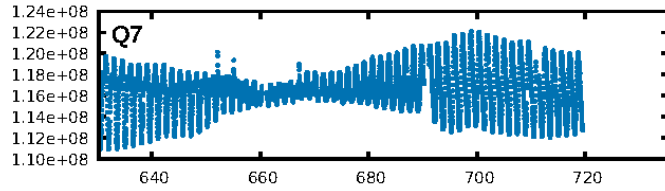
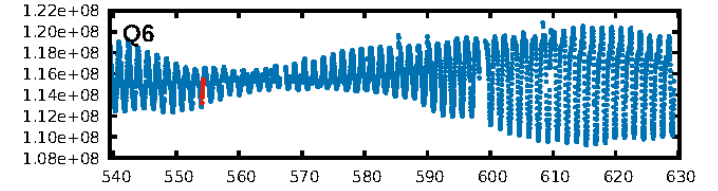
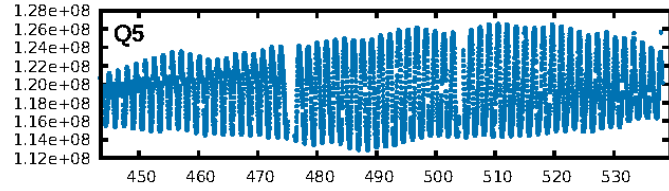
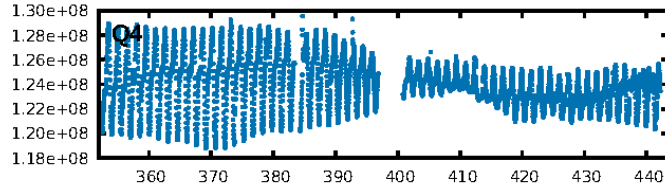
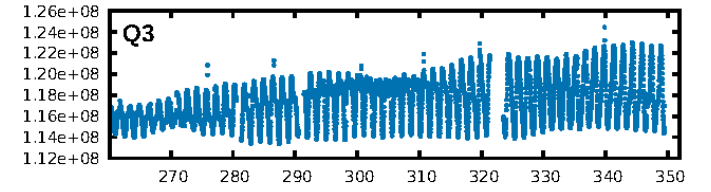
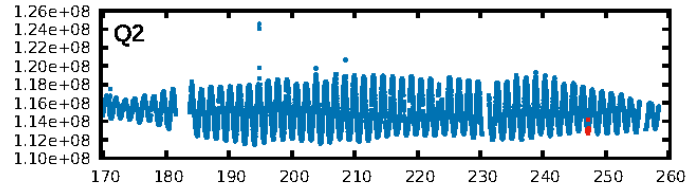
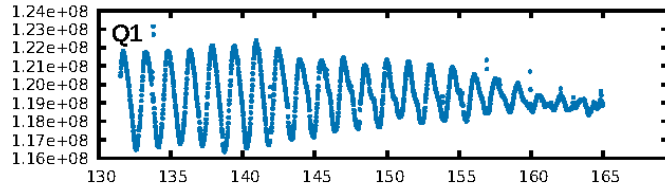
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [35.69s]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.6028
Centroid-sig: N/A
Centroid-so: 17.160 arcsec [0.67σ]
OotOffset-rm: 0.090 arcsec [0.48σ]
KicOffset-rm: 0.523 arcsec [3.47σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [4/4]

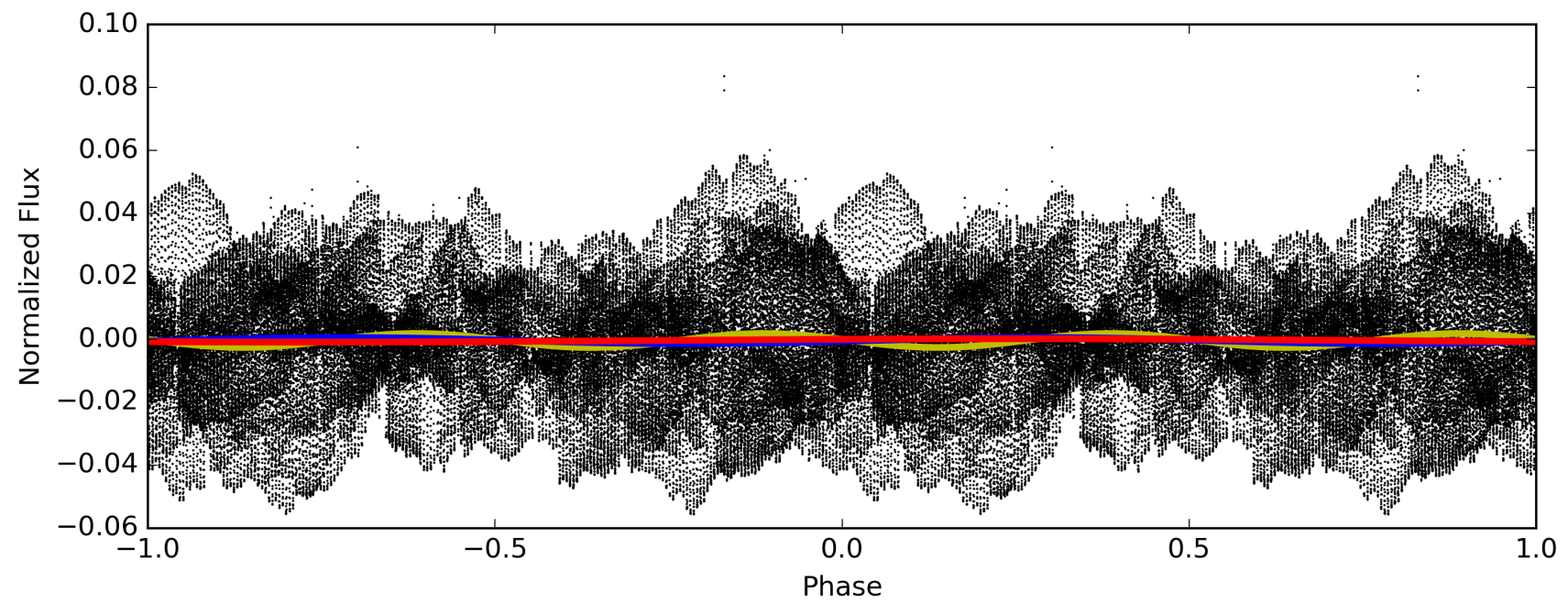
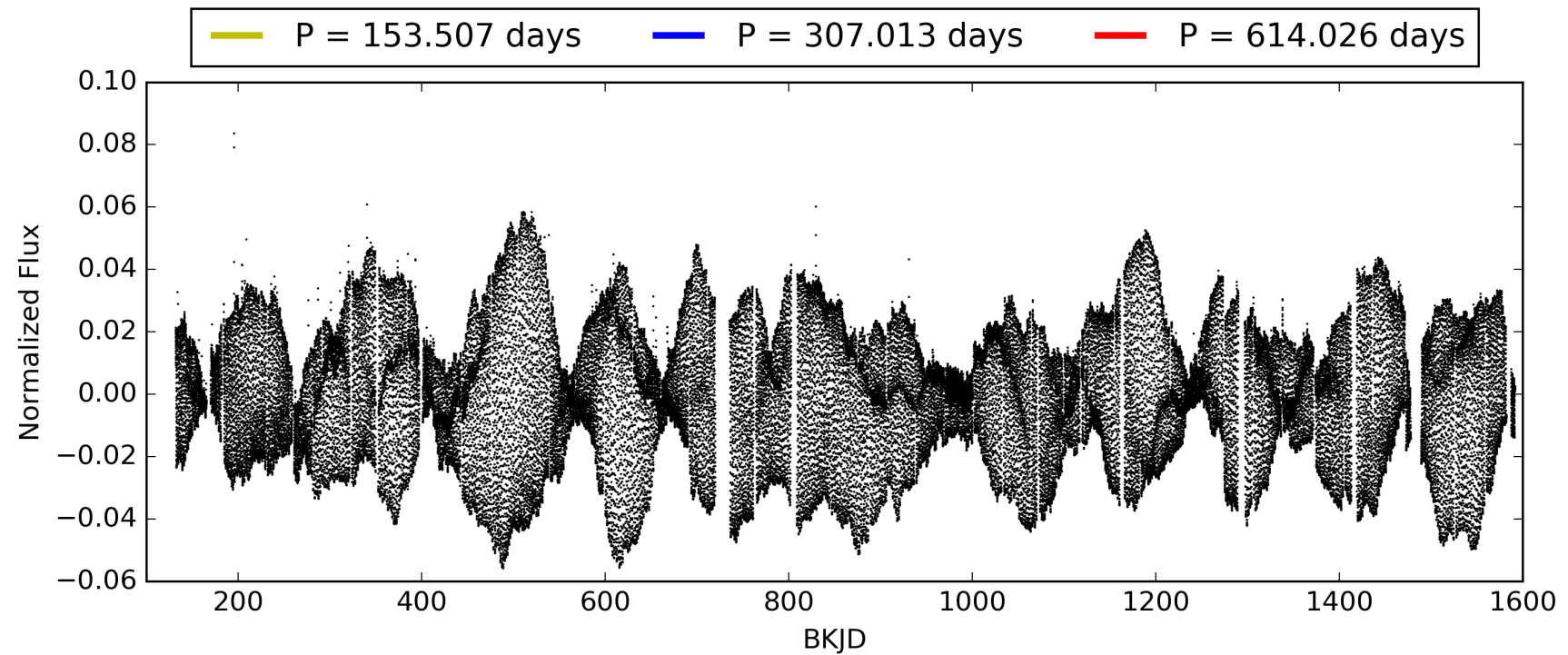
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:25:21 Z

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

TCE 010071383-05, PDC Light Curves

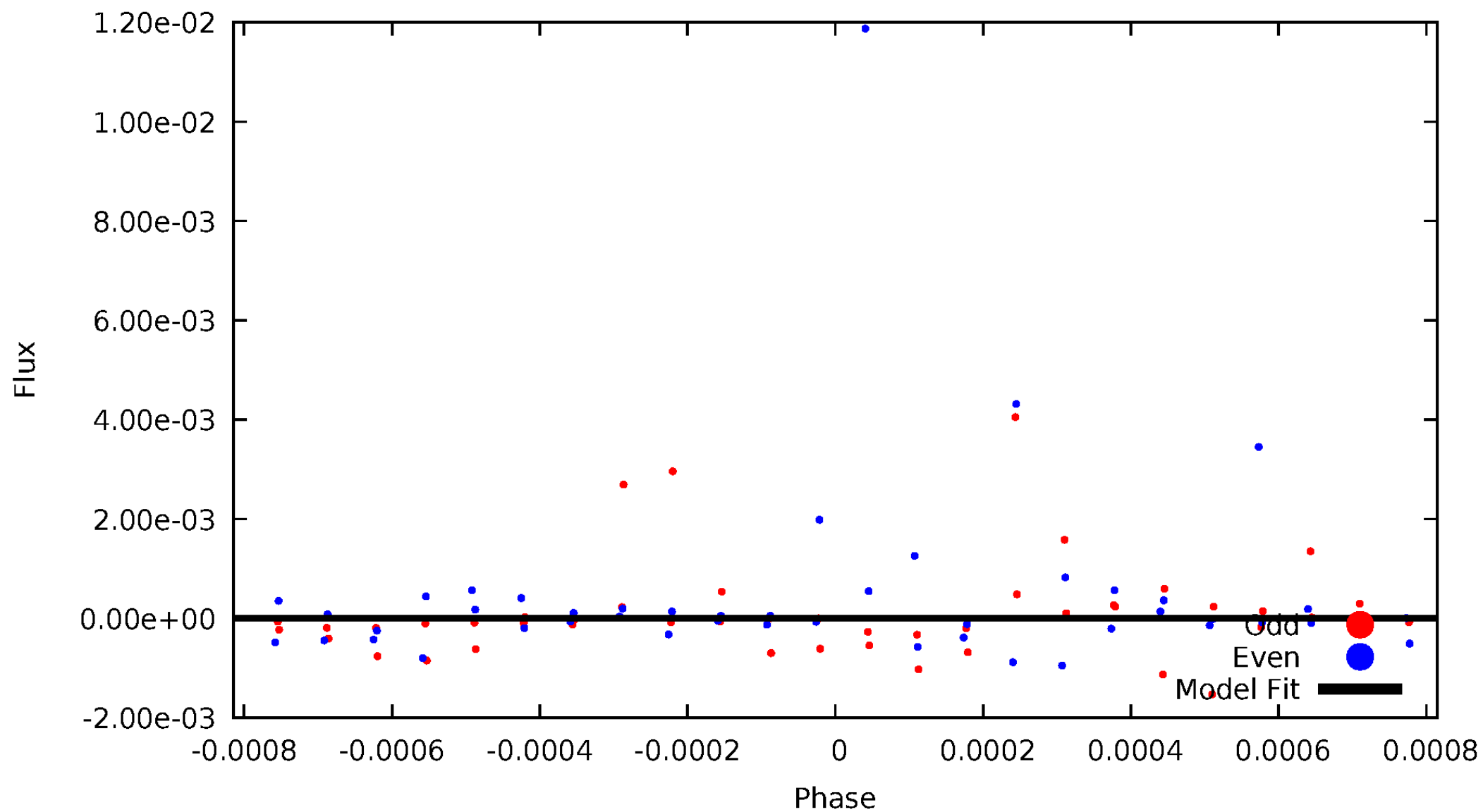


TCE 010071383-05



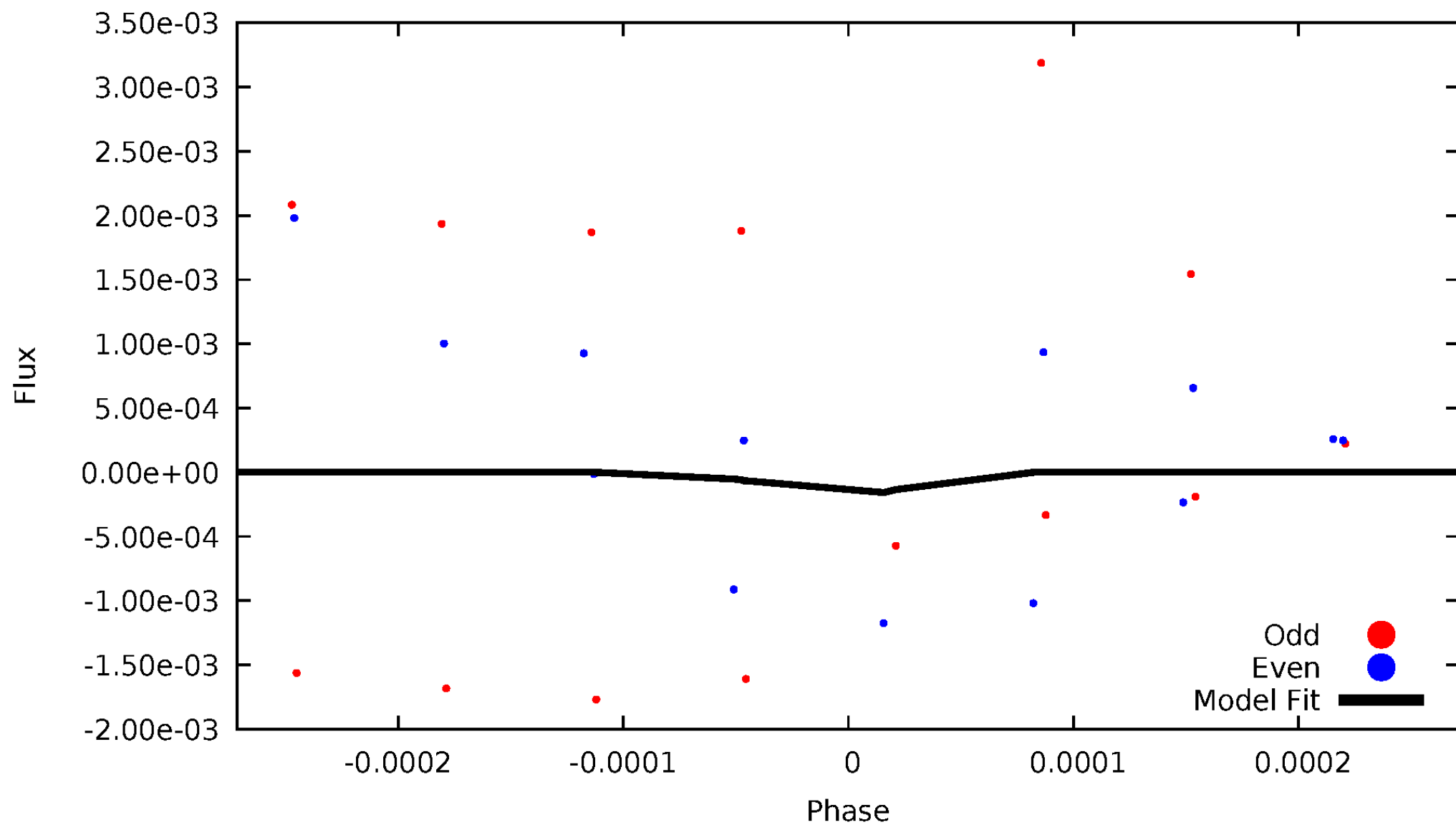
DV Odd/Even

TCE 010071383-05

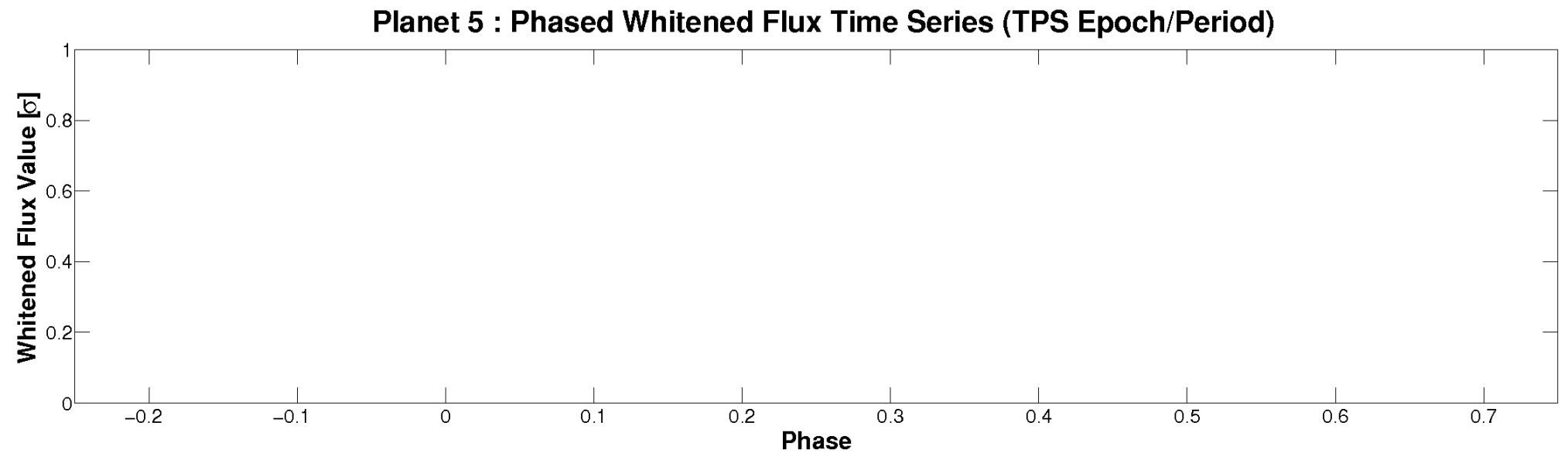
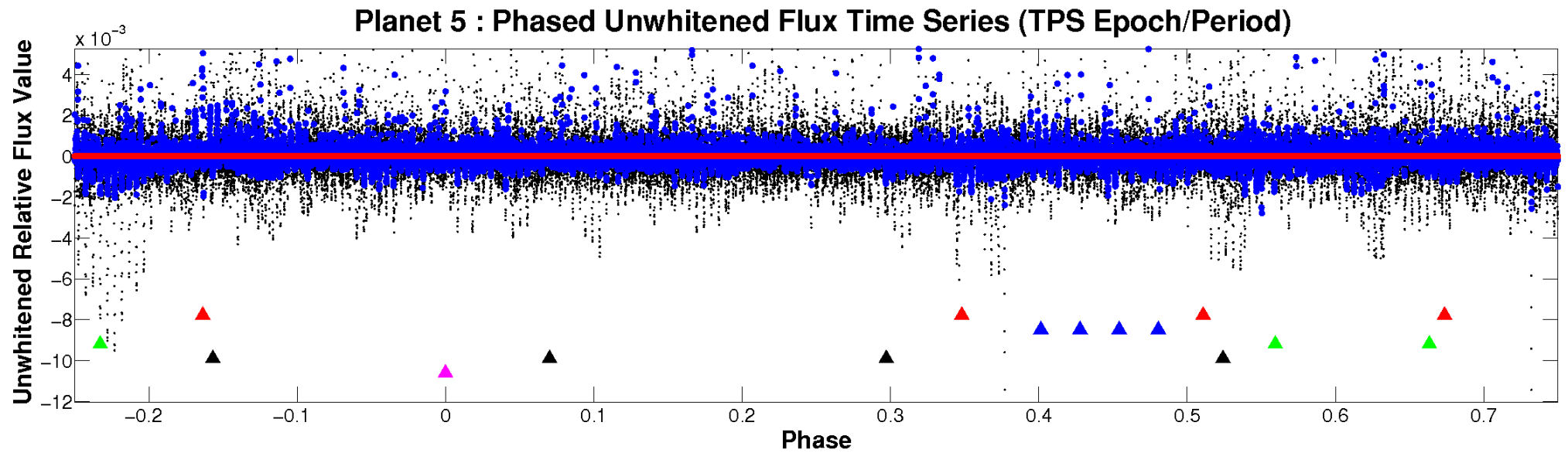


ALT Odd/Even

TCE 010071383-05

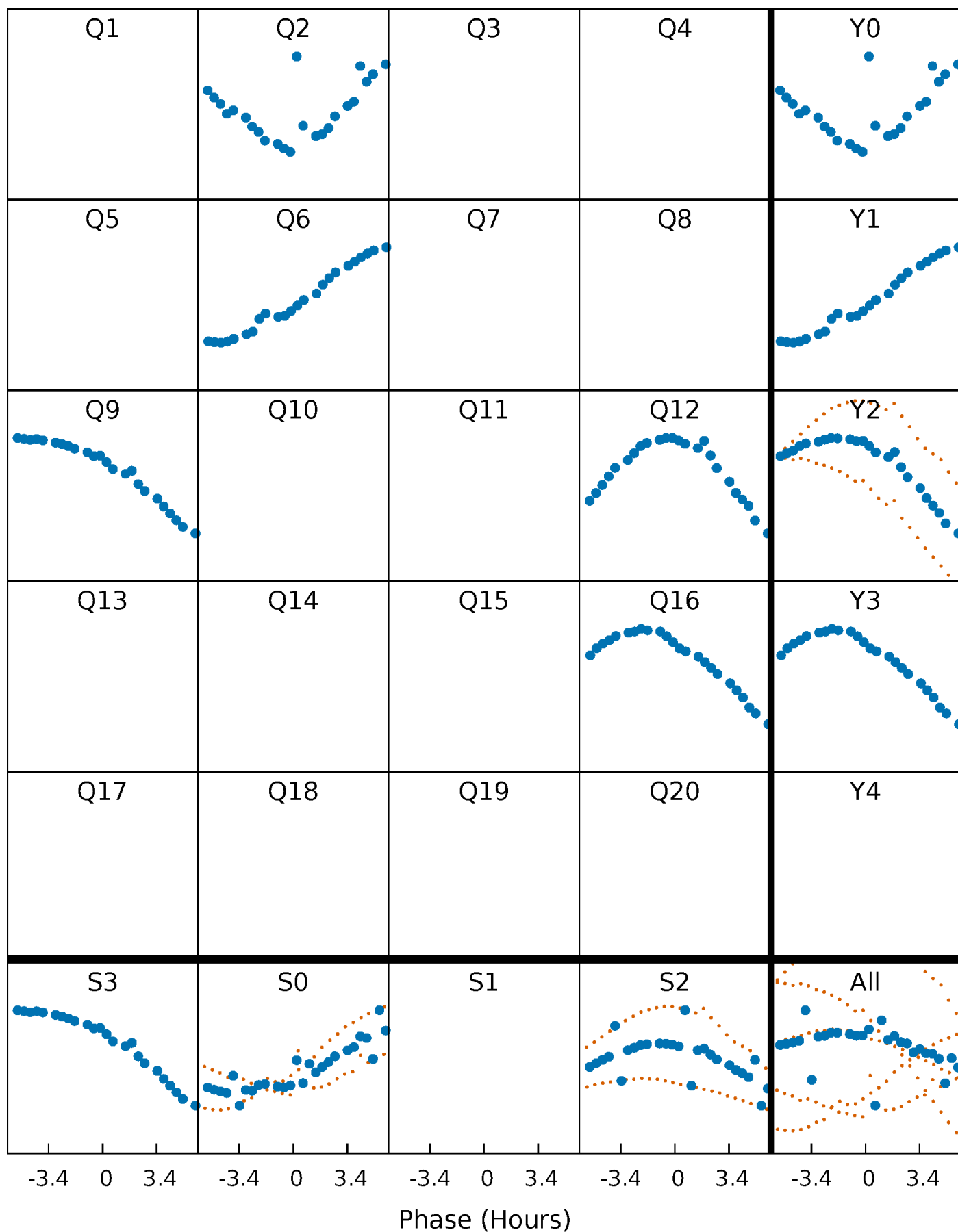


Non-Whitened Vs. Whitened Light Curve



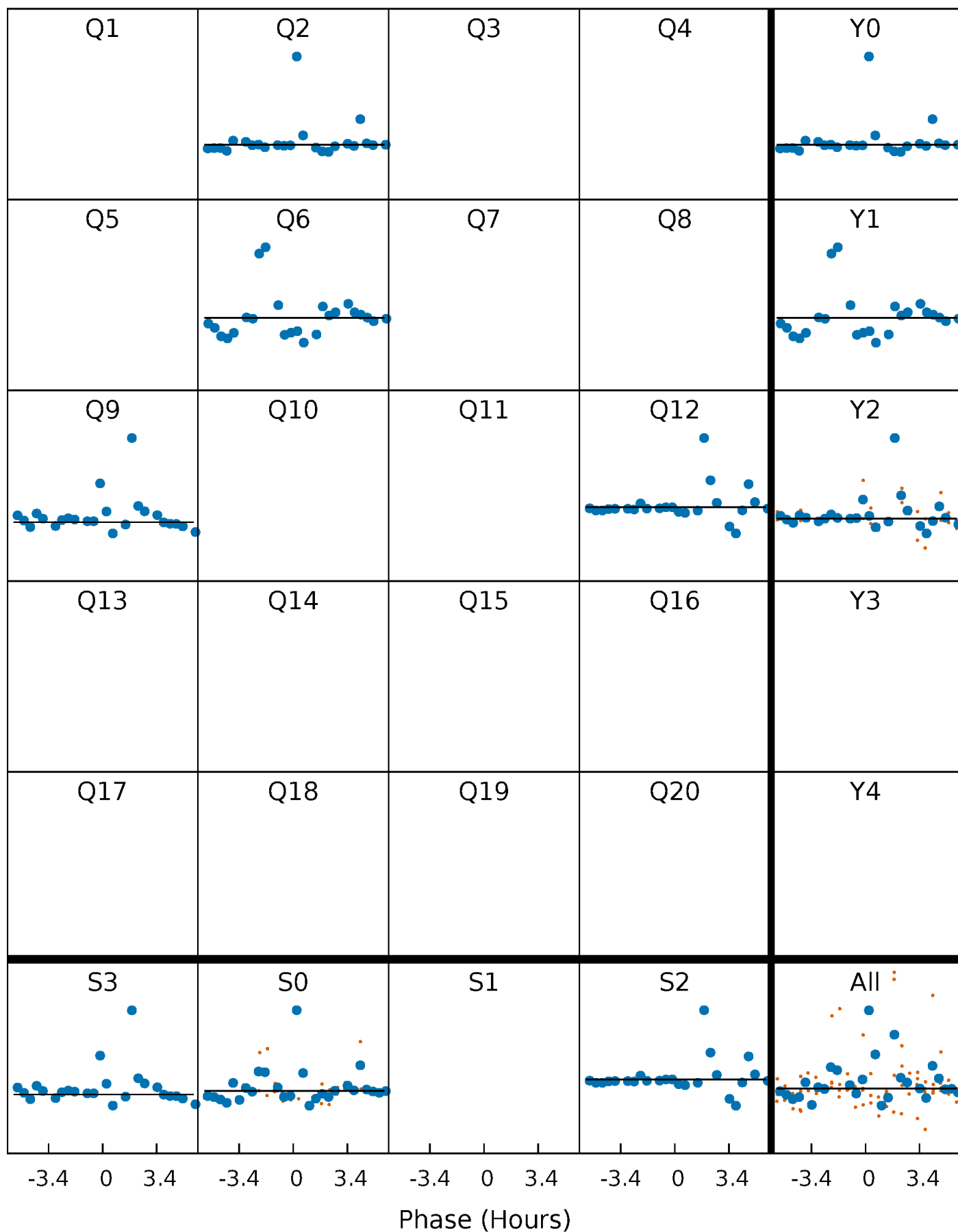
PDC Quarter-Phased Transit Curves

TCE 010071383-05 P=307.013173 Days $T_0=247.175805$ (BKJD)



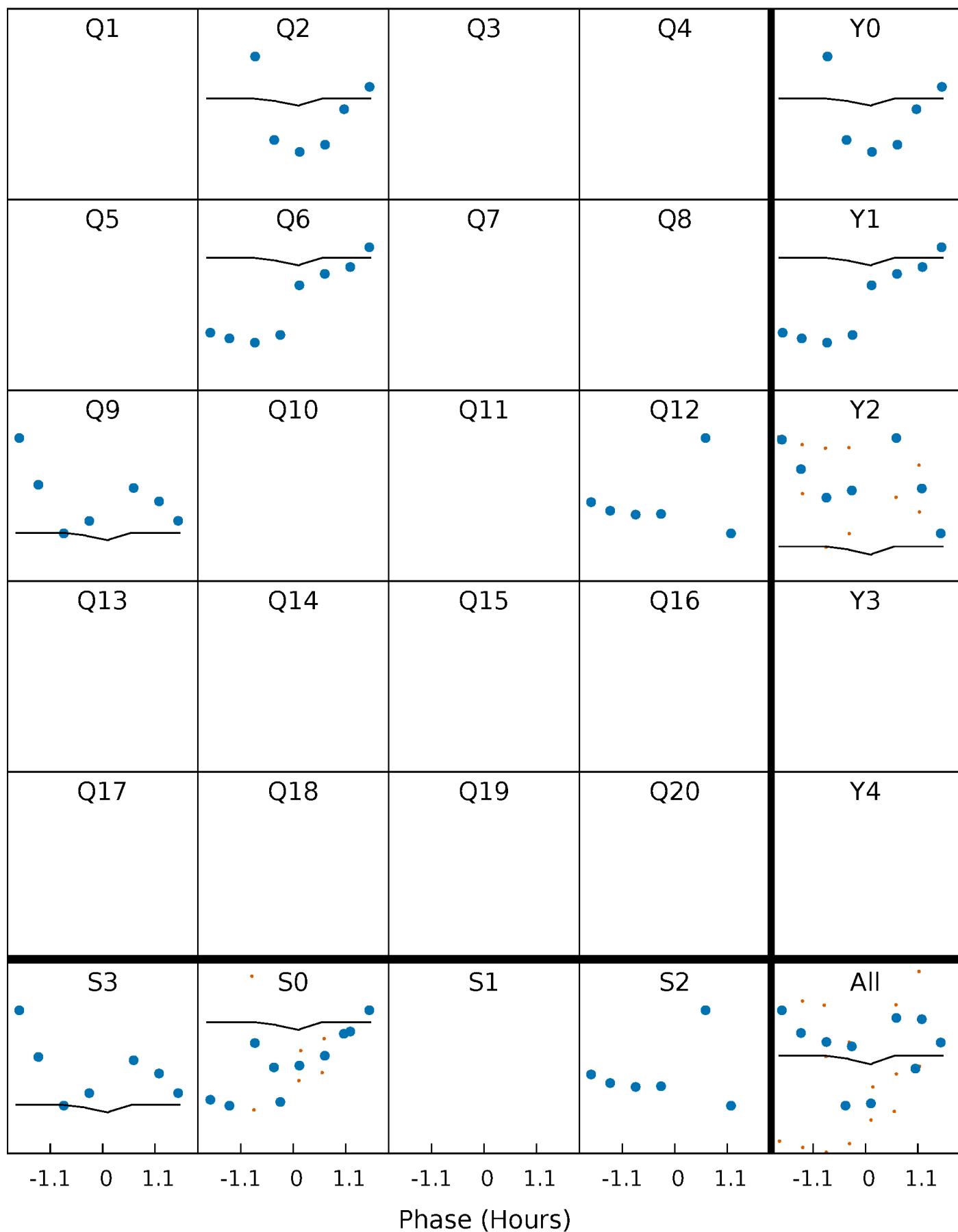
DV Quarter-Phased Transit Curves

TCE 010071383-05 $P=307.013173$ Days $T_0=247.175805$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

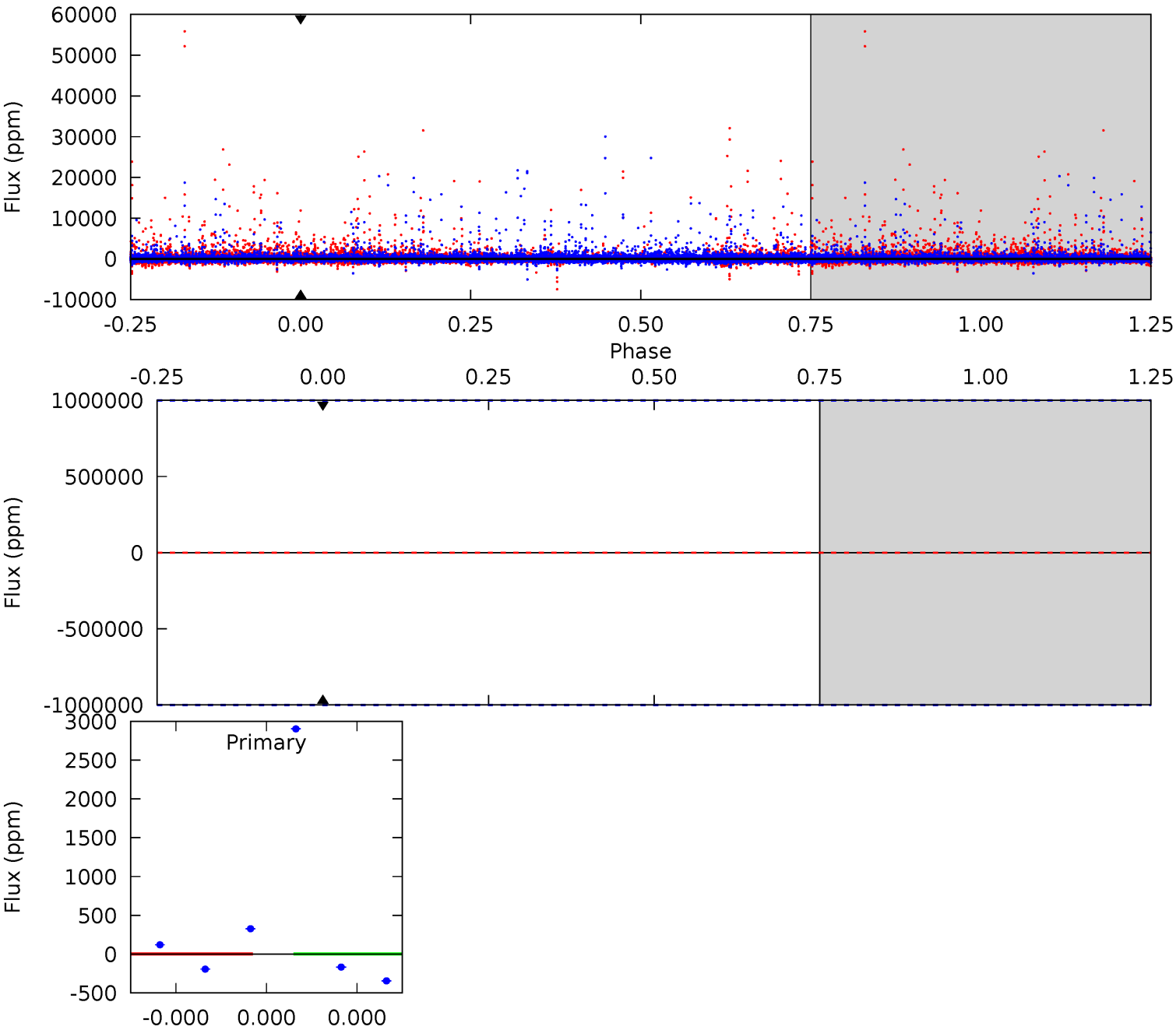
TCE 010071383-05 P=307.013173 Days $T_0=247.244787$ (BKJD)



DV Model-Shift Uniqueness Test

010071383-05, P = 307.013173 Days, E = 247.175805 Days

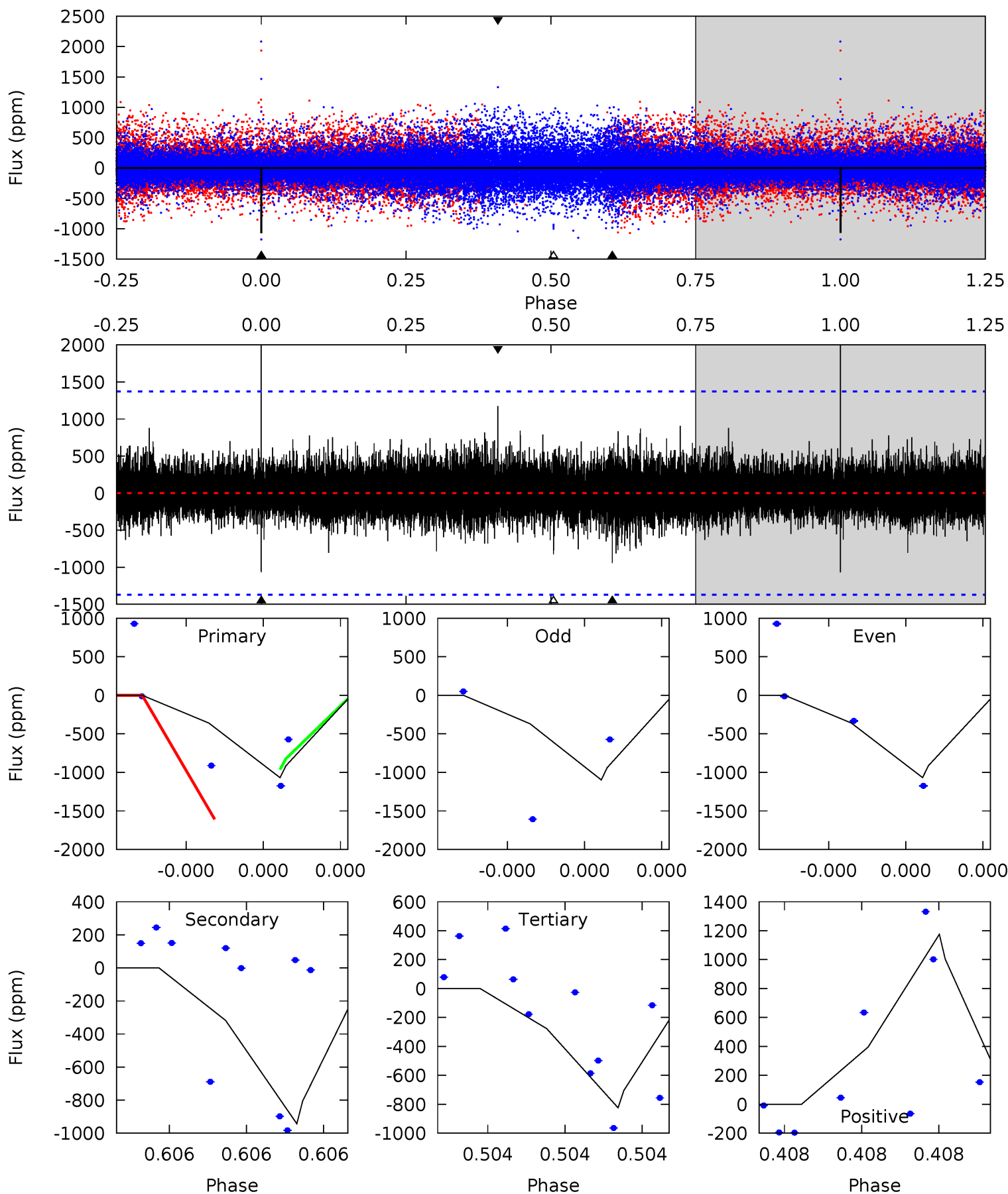
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010071383-05, P = 307.013173 Days, E = 247.244787 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	4.06	3.55	5.06	5.90	3.97	0.74	1.05	-0.46	0.51	-1.00	0.10	1.00	0.65	1.99



Stellar Parameters For KIC 010071383

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5207^{+141}_{-157}	$4.661^{+0.045}_{-0.045}$	$-0.960^{+0.300}_{-0.300}$	$0.618^{+0.053}_{-0.039}$	$0.639^{+0.052}_{-0.028}$	$3.811^{+0.643}_{-0.662}$
	+3%/-3%	+1%/-1%	+31%/-31%	+9%/-6%	+8%/-4%	+17%/-17%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010071383-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$5.07^{+5.52}_{-3.40}$	288^{+9}_{-10}	4076^{+11777}_{-19837}	$23393^{+2051540}_{-2074307}$
Alt.	-943 ± 232	$4.91^{+5.19}_{-3.42}$	288^{+10}_{-10}	3721^{+2301}_{-759}	$12442^{+115020}_{-9695}$

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

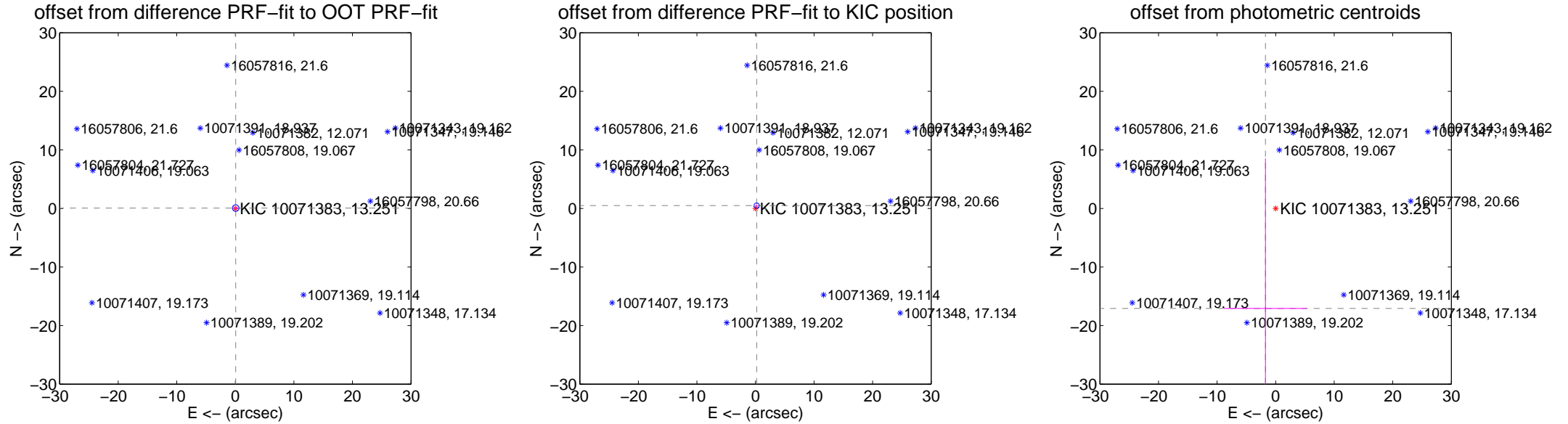
DV Centroid Data

Supplemental centroid analysis for 010071383-05. Kepler magnitude: 13.25. 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 0.46 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.090 ± 0.188	0.48	-0.062 ± 0.375	0.066 ± 0.145
PRF-fit source offset from KIC position	0.523 ± 0.151	3.47	-0.200 ± 0.132	0.483 ± 0.154
photometric centroid source offset	17.16 ± 25.49	0.67	1.74 ± 7.11	-17.07 ± 25.61



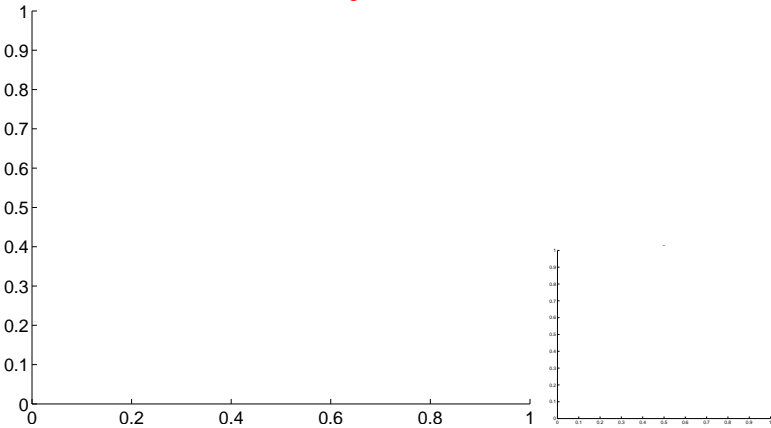
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

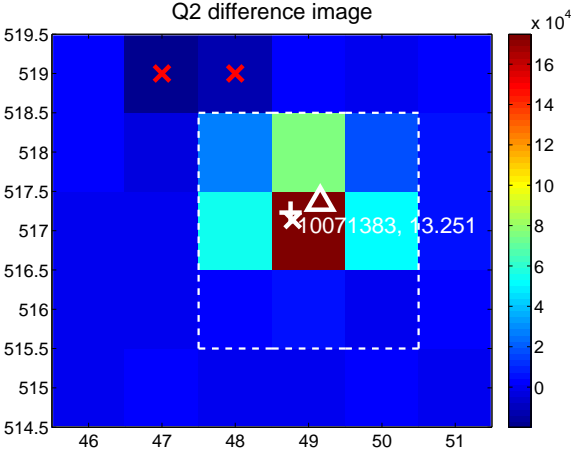
Q1 no difference image



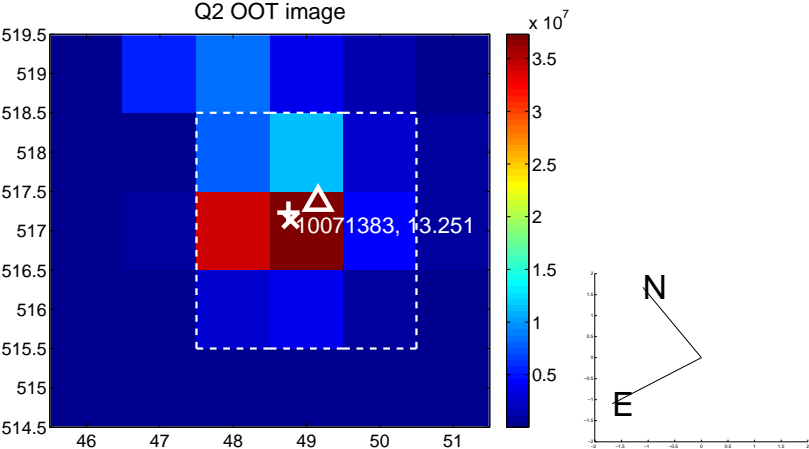
Q1 no OOT image



Q2 difference image



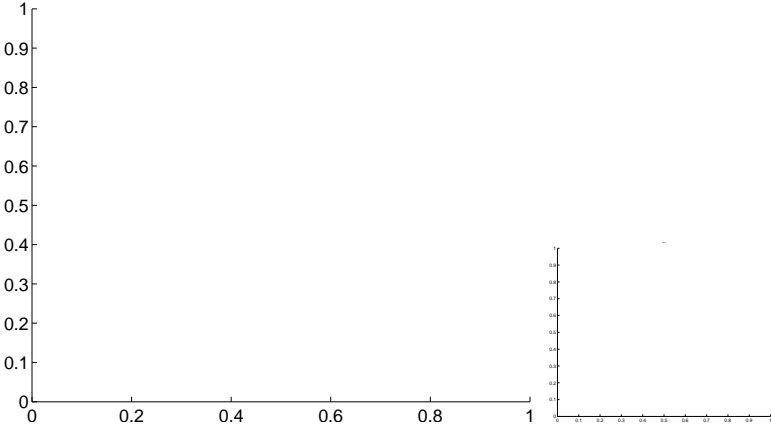
Q2 OOT image



Q3 no difference image



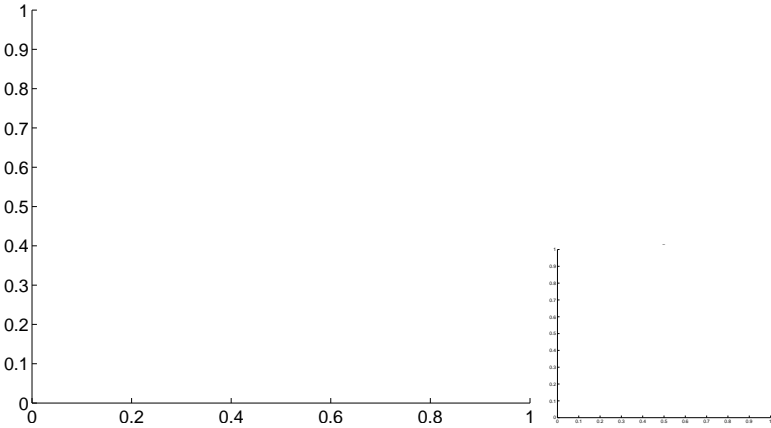
Q3 no OOT image



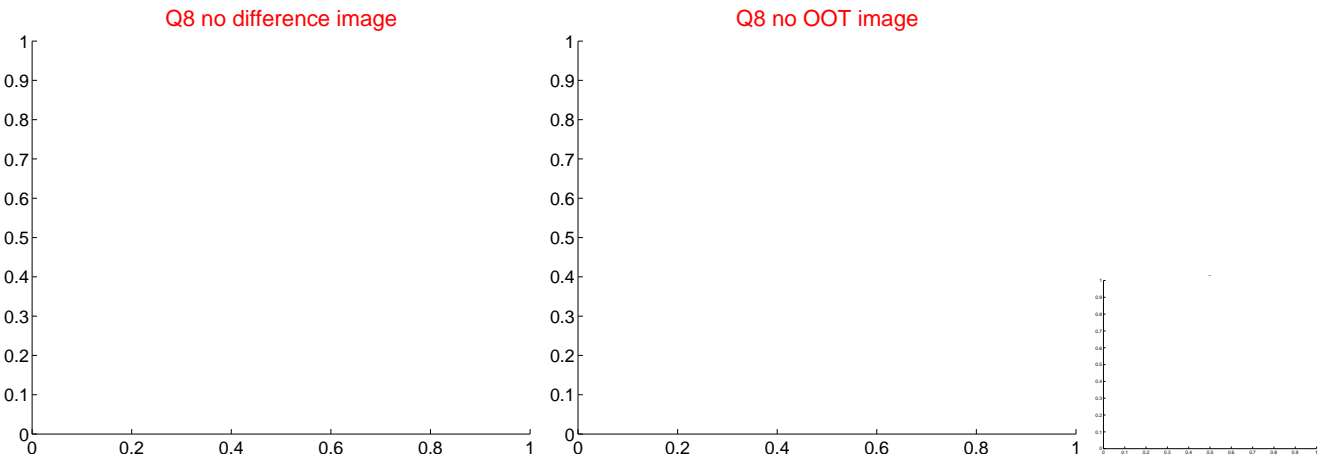
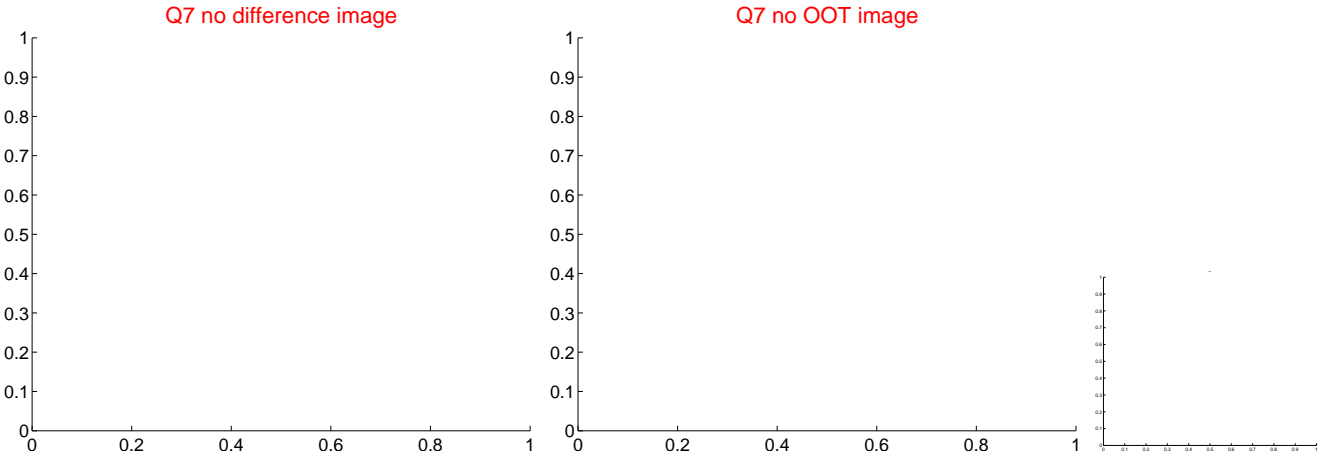
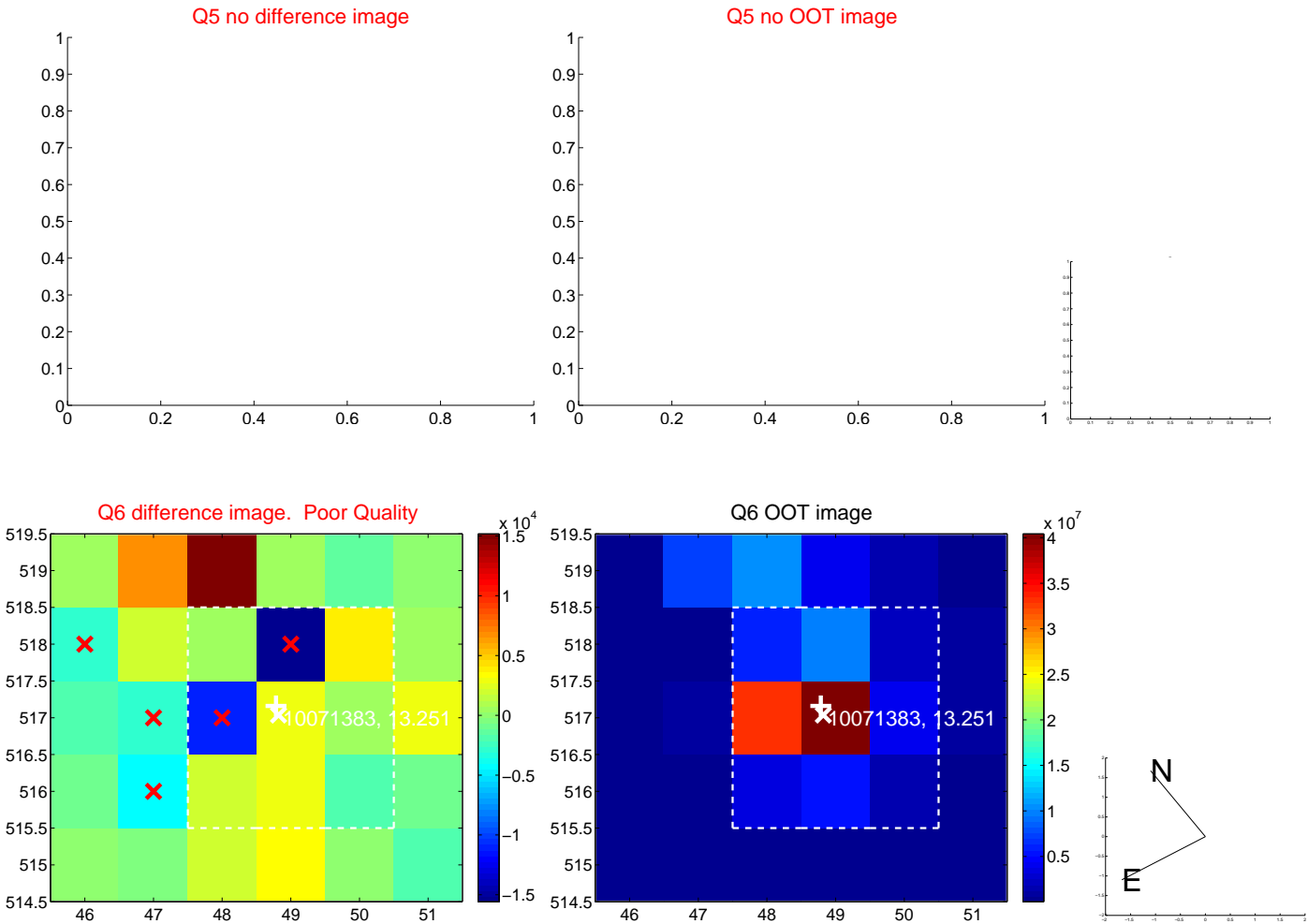
Q4 no difference image



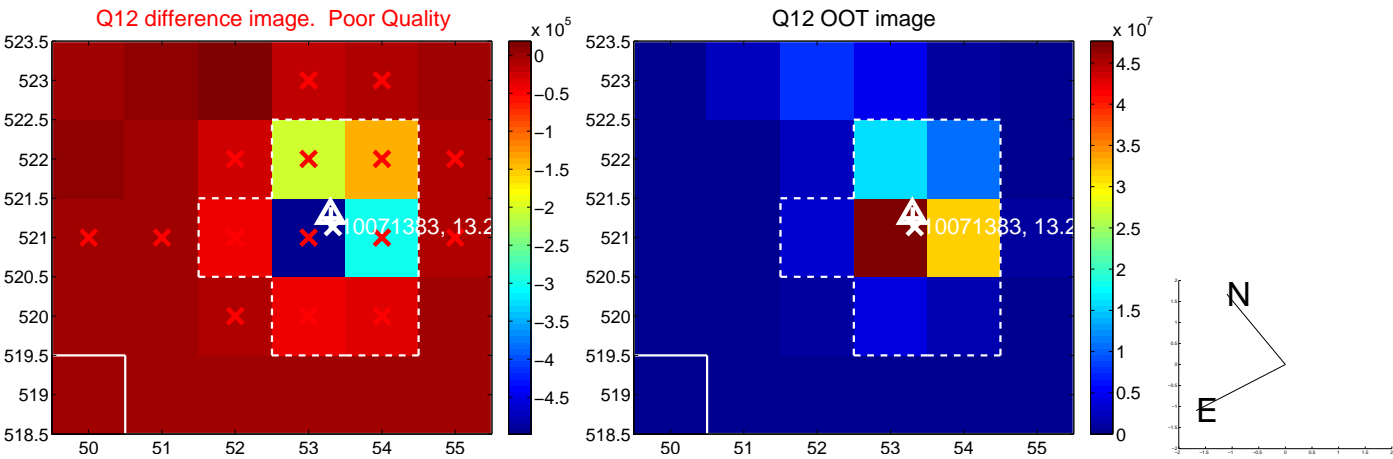
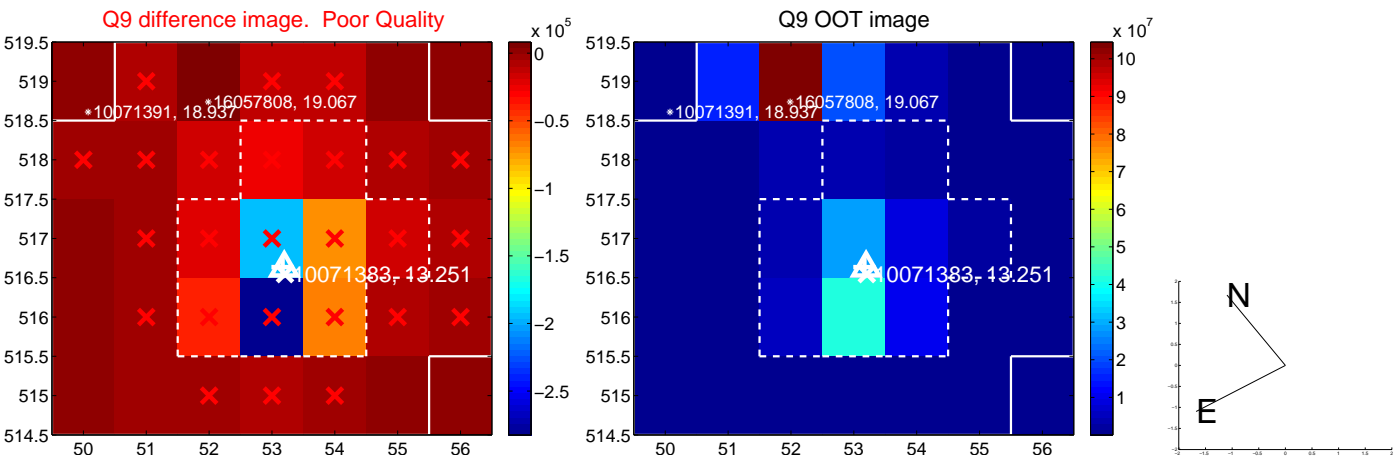
Q4 no OOT image



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



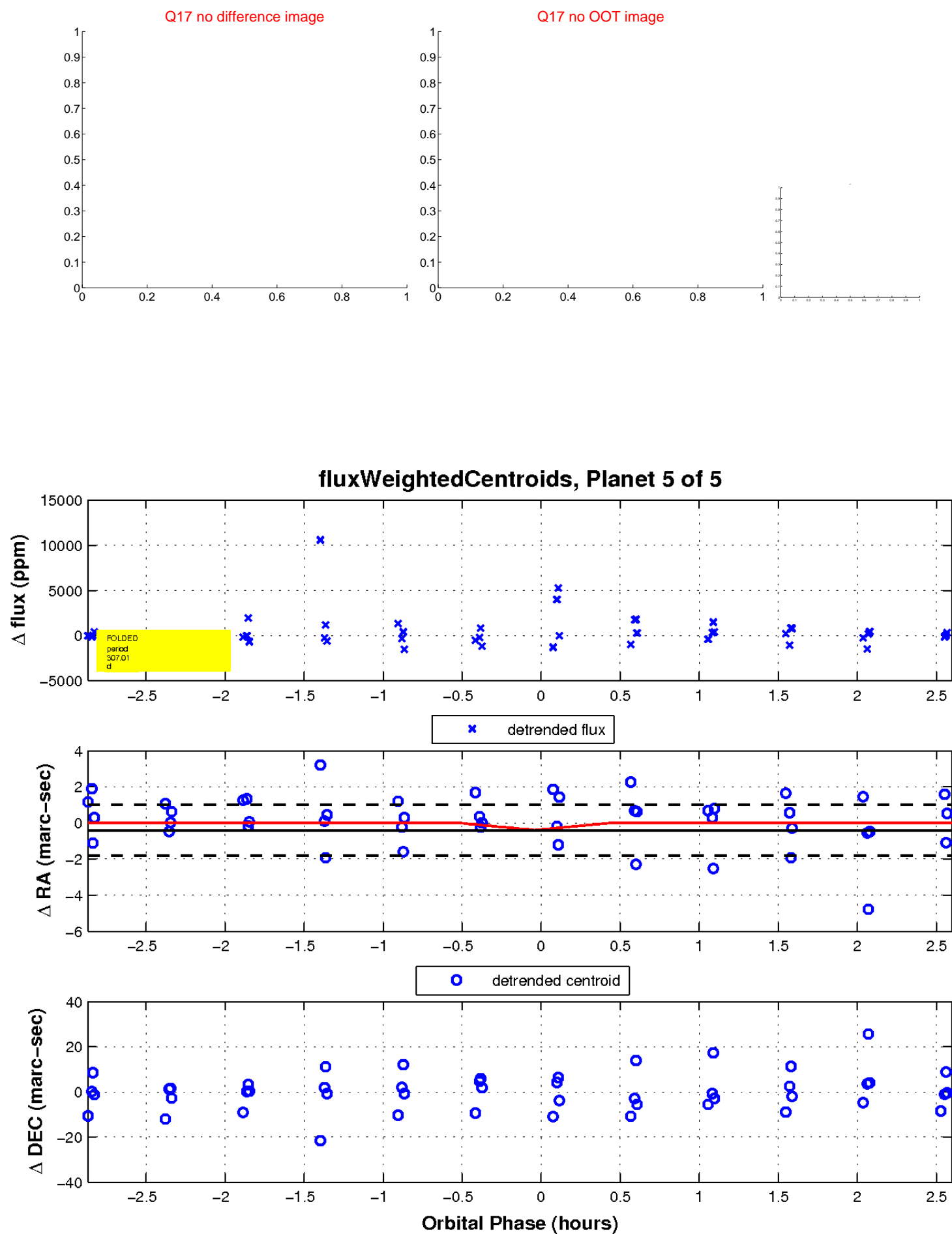
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

