

KIC 006113752

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})
006113752-01	OBS	7763.01	406.455391	230.890815	293.7	9.754	8.9	9.1	1.14	6217	2.13	1.42
006113752-02	OBS	No	390.122107	316.179849	324.3	6.569	9.2	8.7	1.14	6217	2.20	1.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006113752-01	OBS	FP	0.20	1	0	0	0	ALL_TRANS_CHASES—CENT_FEW_DIFFS
006113752-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—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.

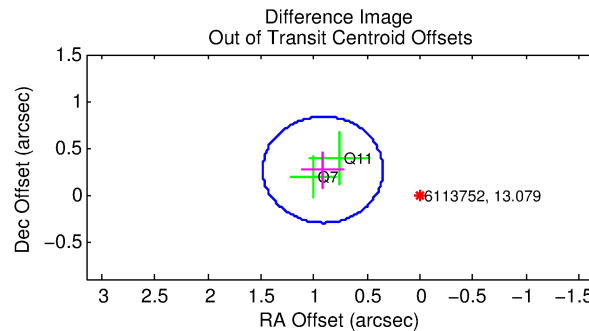
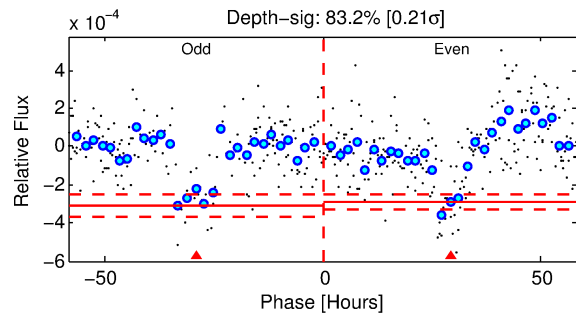
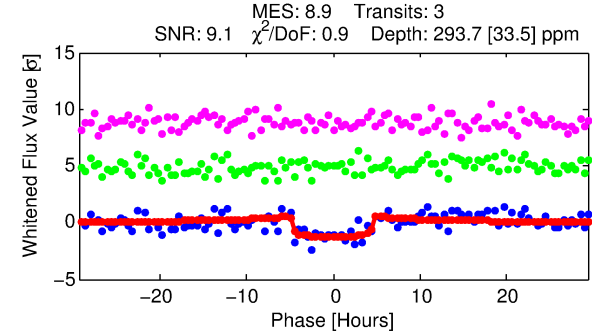
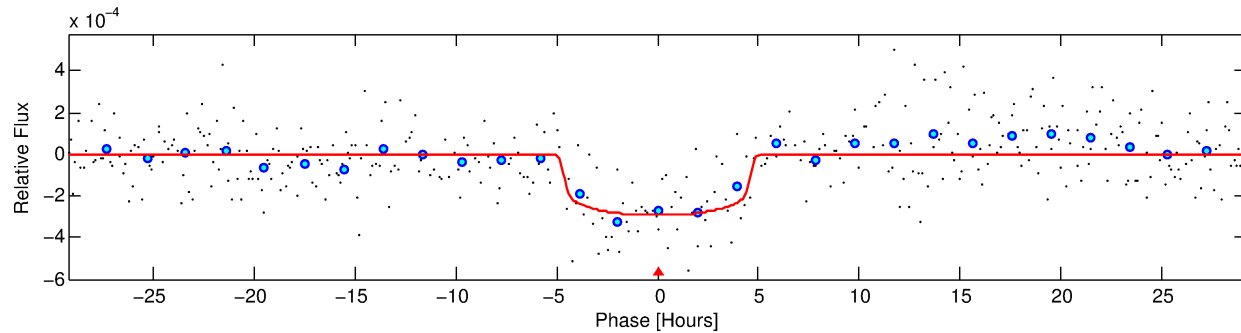
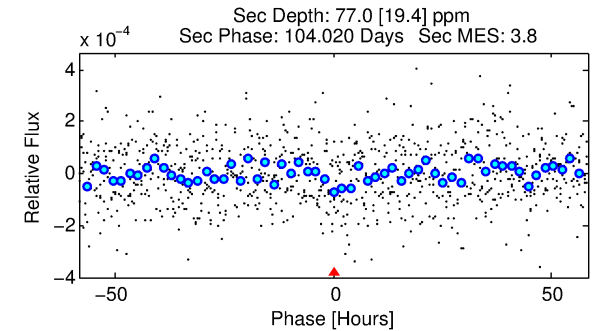
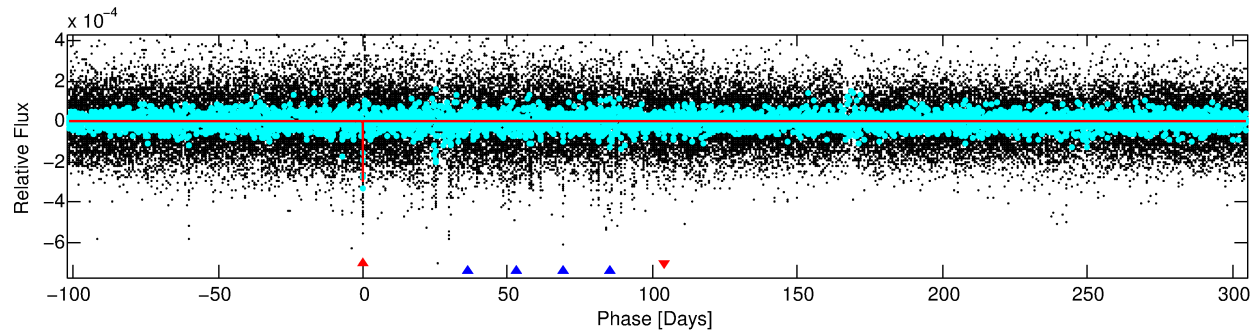
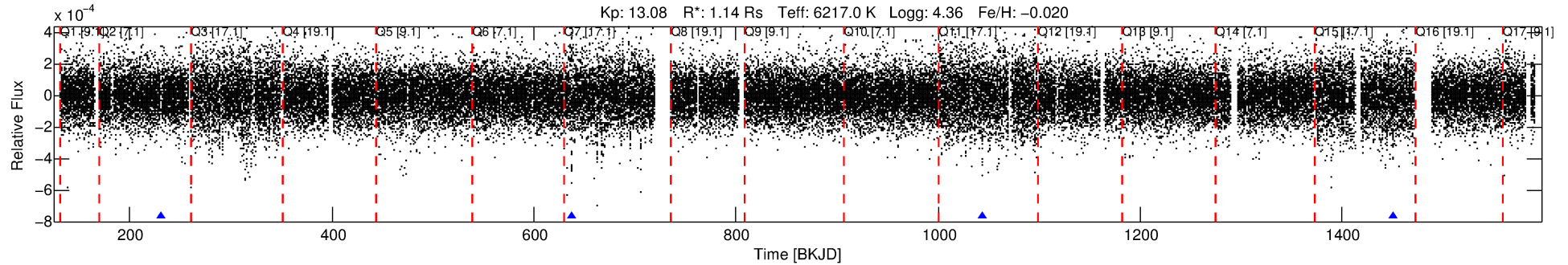
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006113752-01

No Significant Match Found

DV One-Page Summary

KIC: 6113752 Candidate: 1 of 2 Period: 406.455 d



DV Fit Results:

Period = 406.45539 [0.00914] d
Epoch = 230.8908 [0.0201] BKJD
Rp/R* = 0.0171 [0.0047]
a/R* = 213.22 [284.18]
b = 0.77 [0.73]
Seff = 1.42 [0.59]
Teq = 278 [29] K
Rp = 2.13 [0.92] Re
a = 1.1081 [0.3061] AU
Ag = 11429.21 [8190.33] [1.40σ]
Teffp = 4449 [683] K [6.11σ]

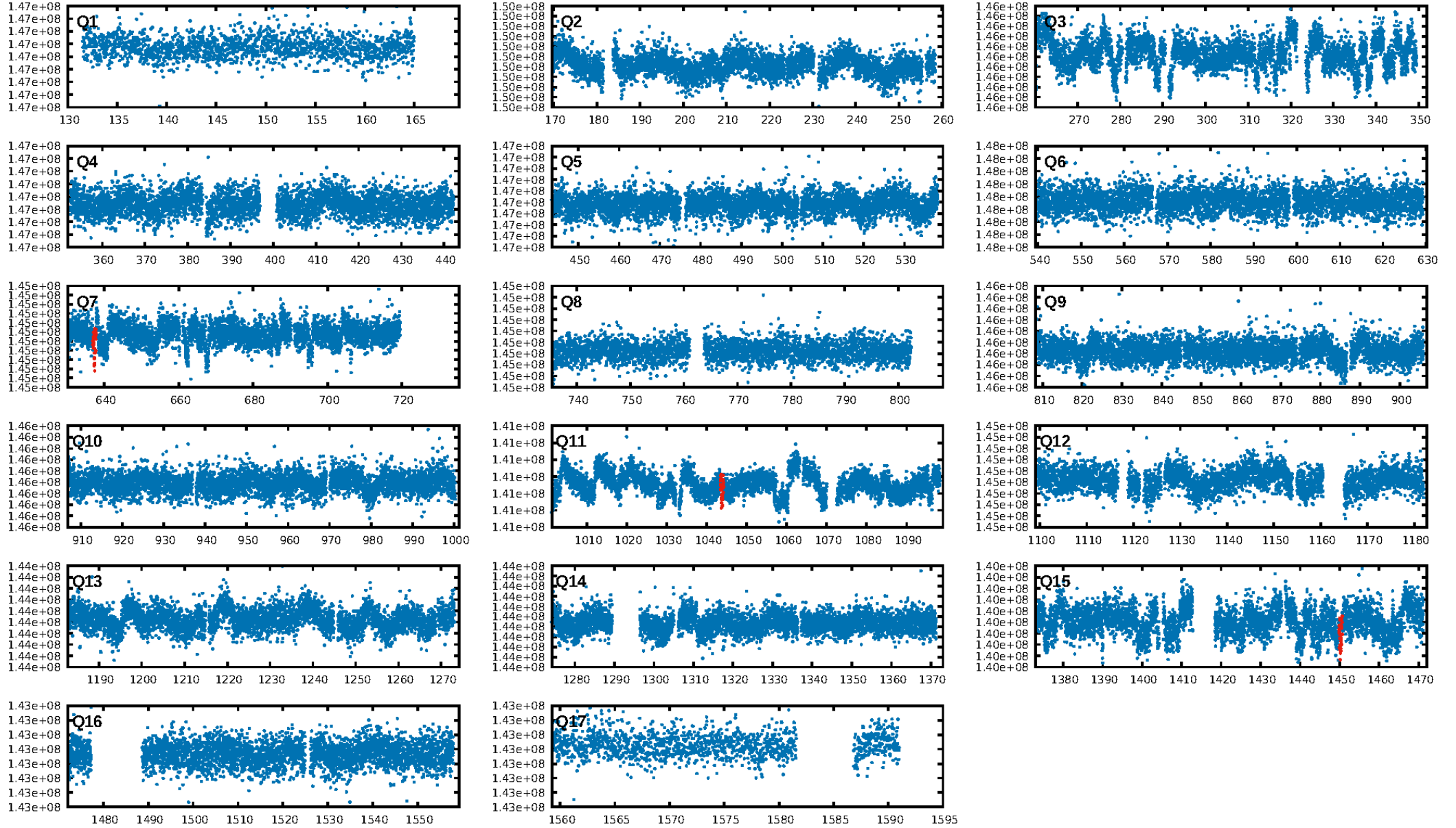
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [33.33σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 53.8%
ModelChiSquareGof-sig: 96.1%
Bootstrap-pfa: 2.04e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -3.56
Centroid-sig: 0.3%
Centroid-so: 1.774 arcsec [1.77σ]
OotOffset-rm: 0.954 arcsec [5.05σ]
KicOffset-rm: 1.135 arcsec [6.00σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

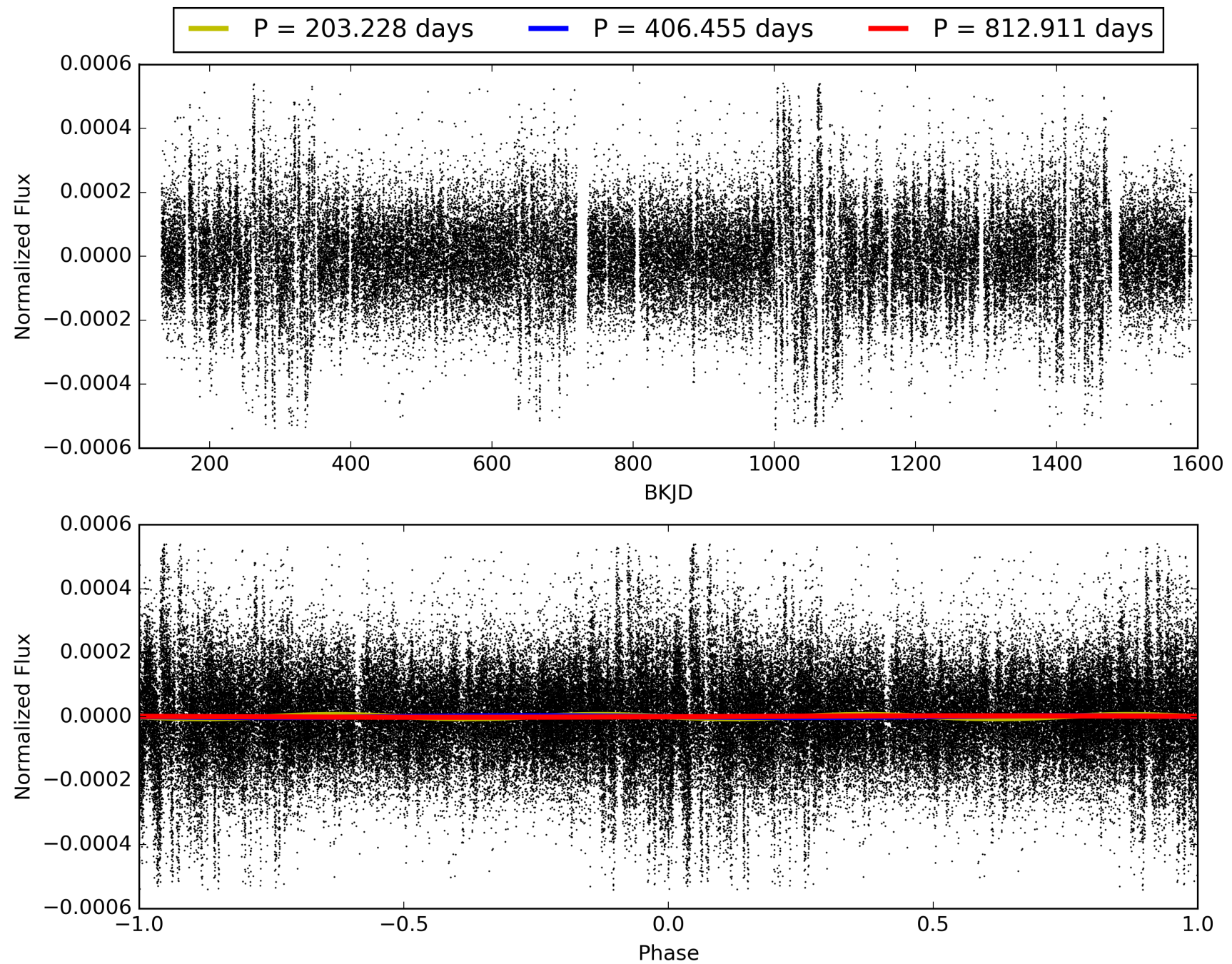
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 18:42:55 Z

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

TCE 006113752-01, PDC Light Curves

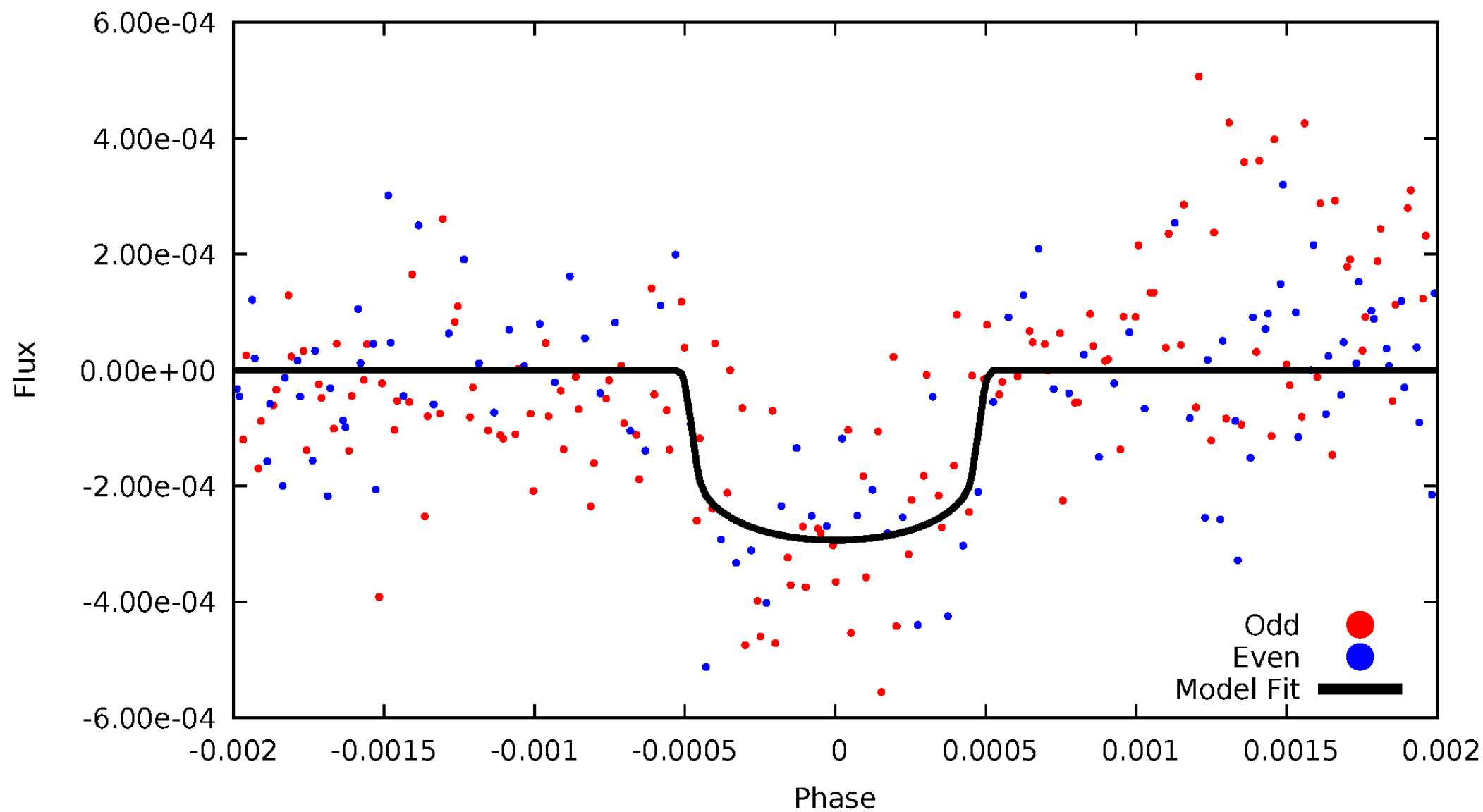


TCE 006113752-01



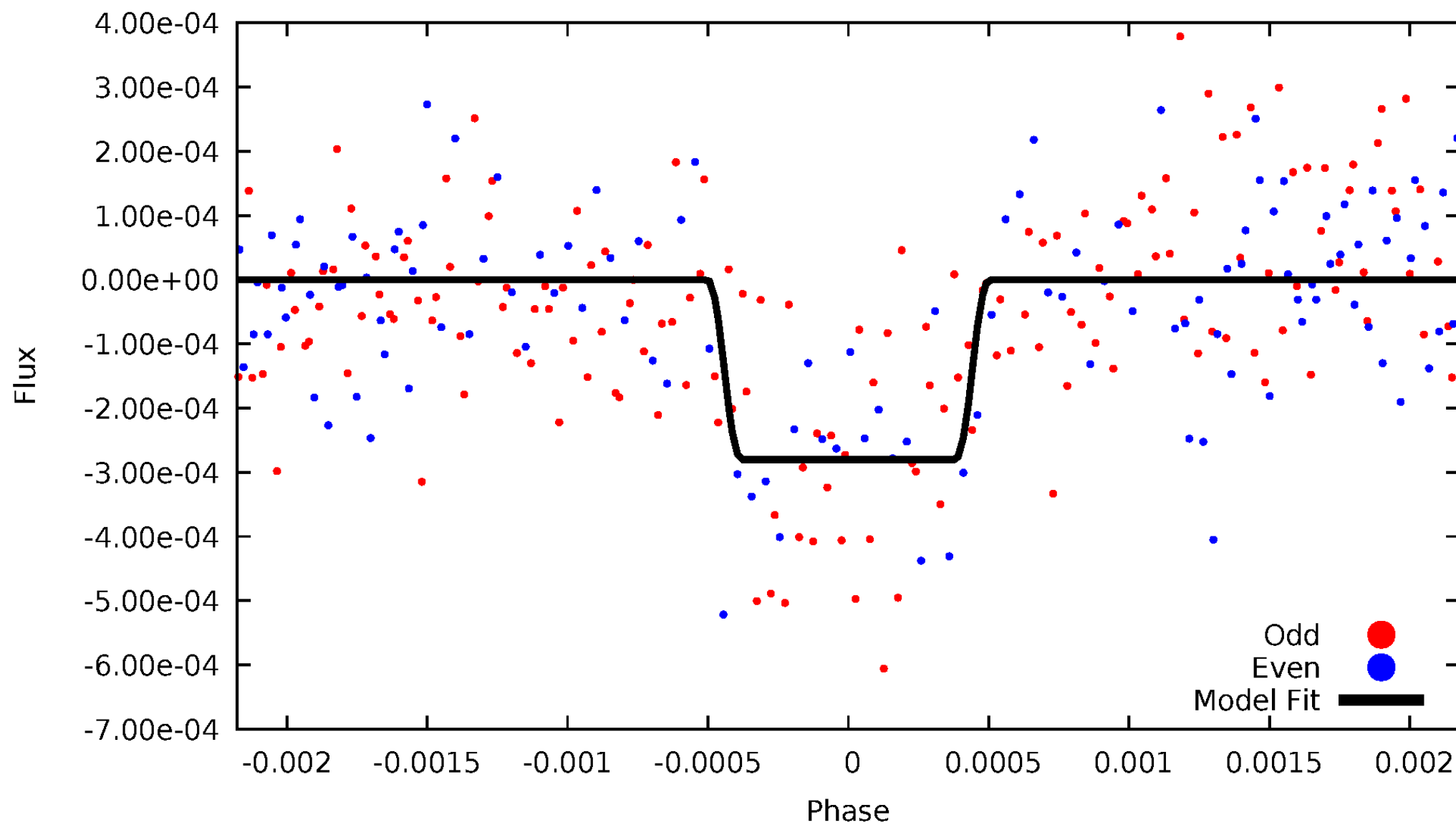
DV Odd/Even

TCE 006113752-01

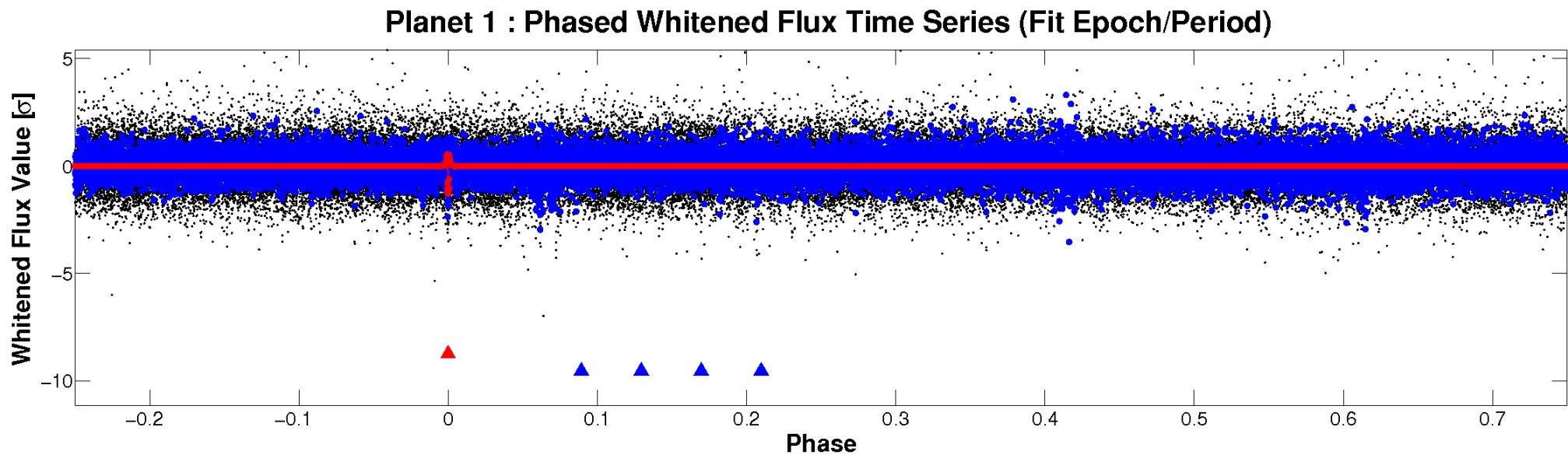
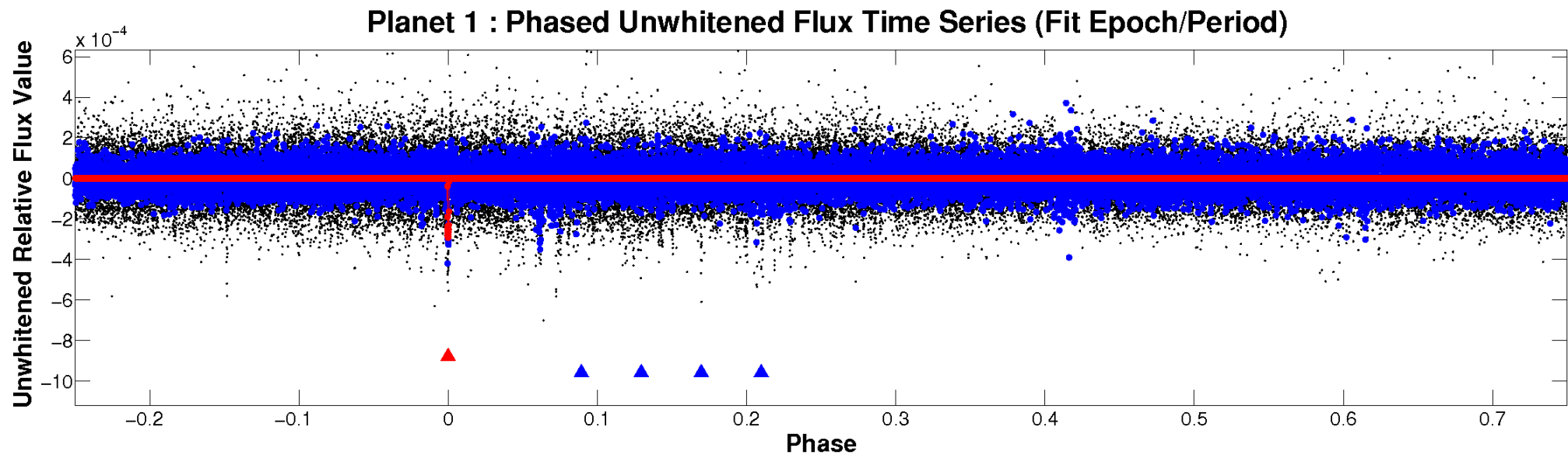


ALT Odd/Even

TCE 006113752-01

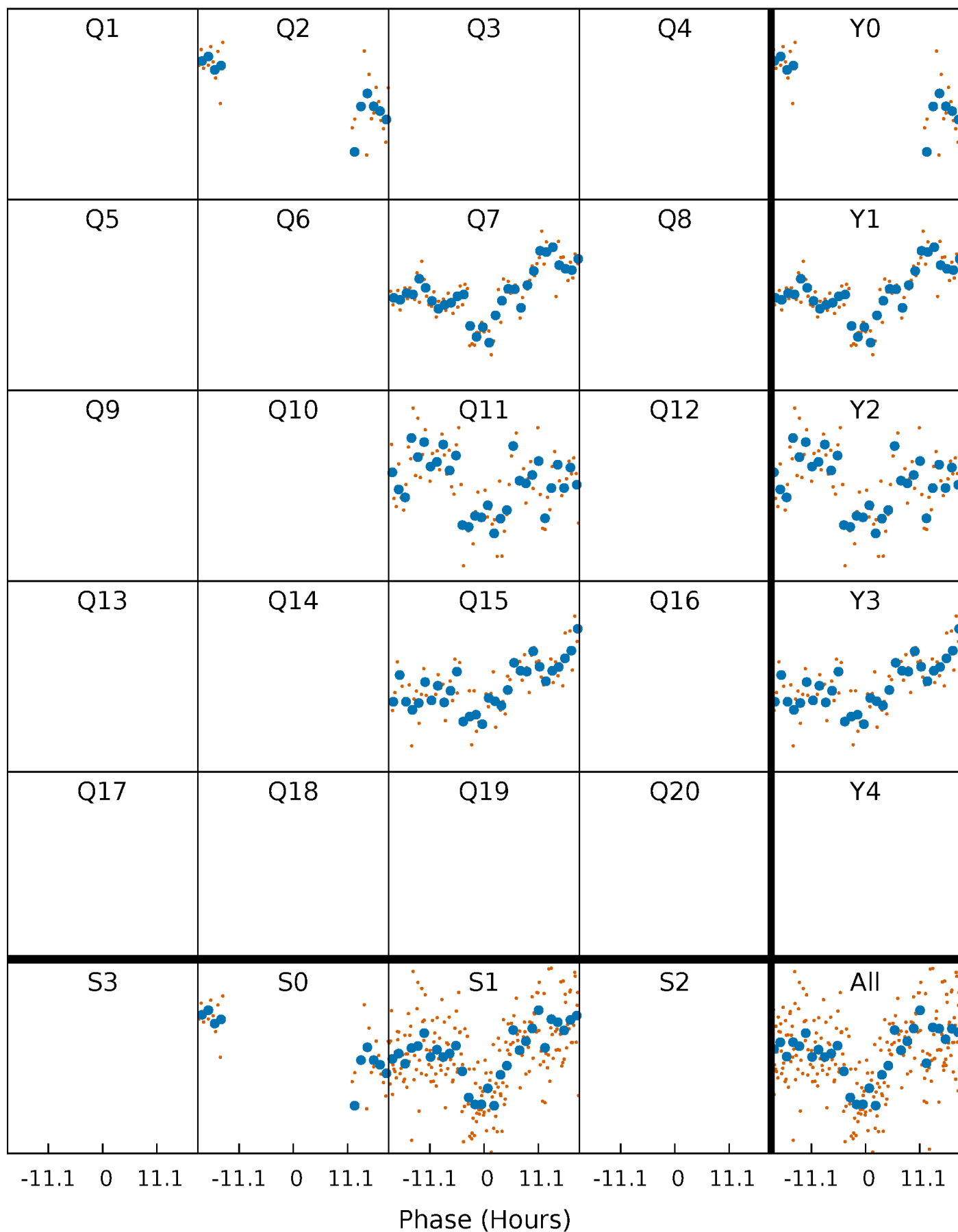


Non-Whitened Vs. Whitened Light Curve



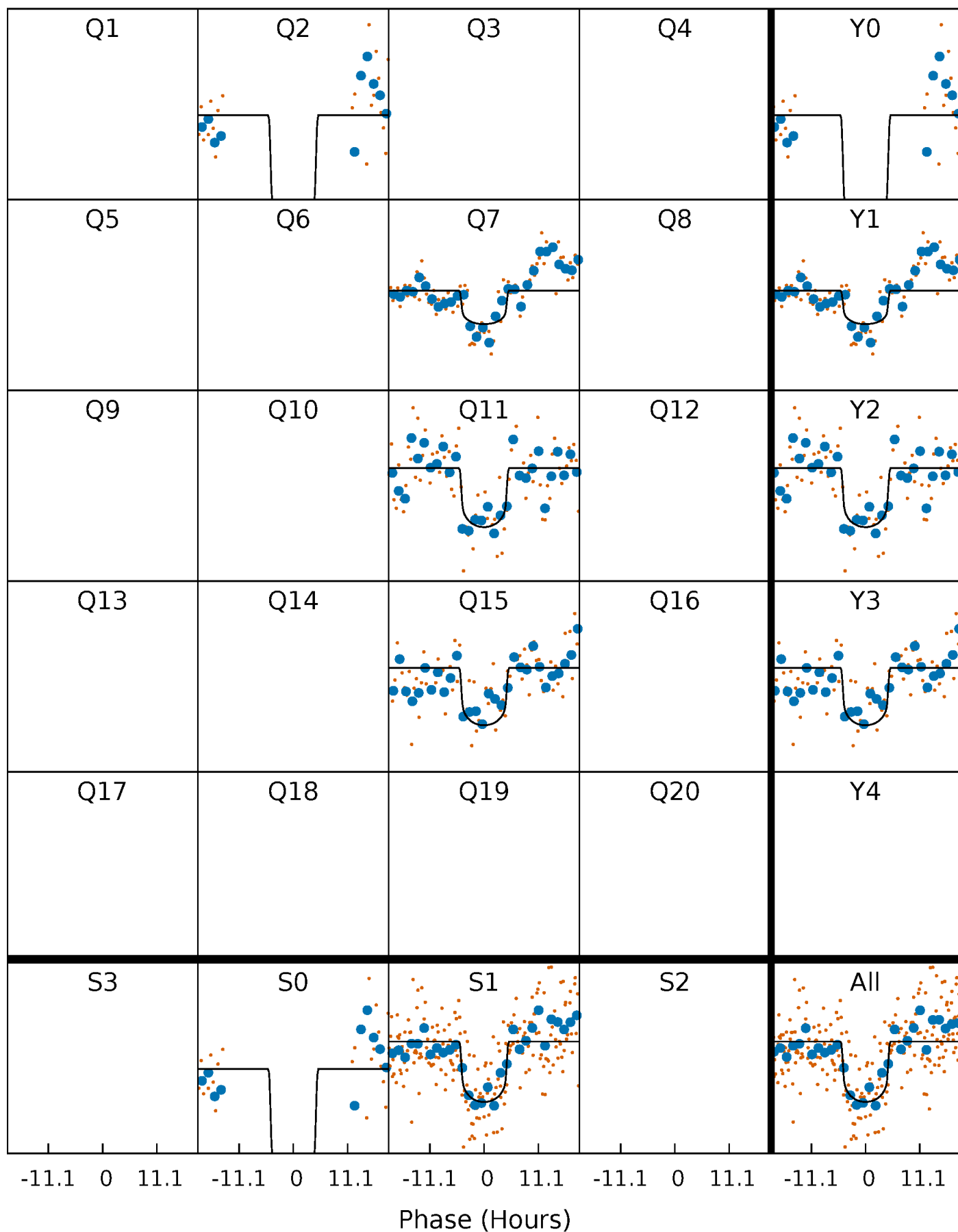
PDC Quarter-Phased Transit Curves

TCE 006113752-01 P=406.455391 Days $T_0=230.890815$ (BKJD)



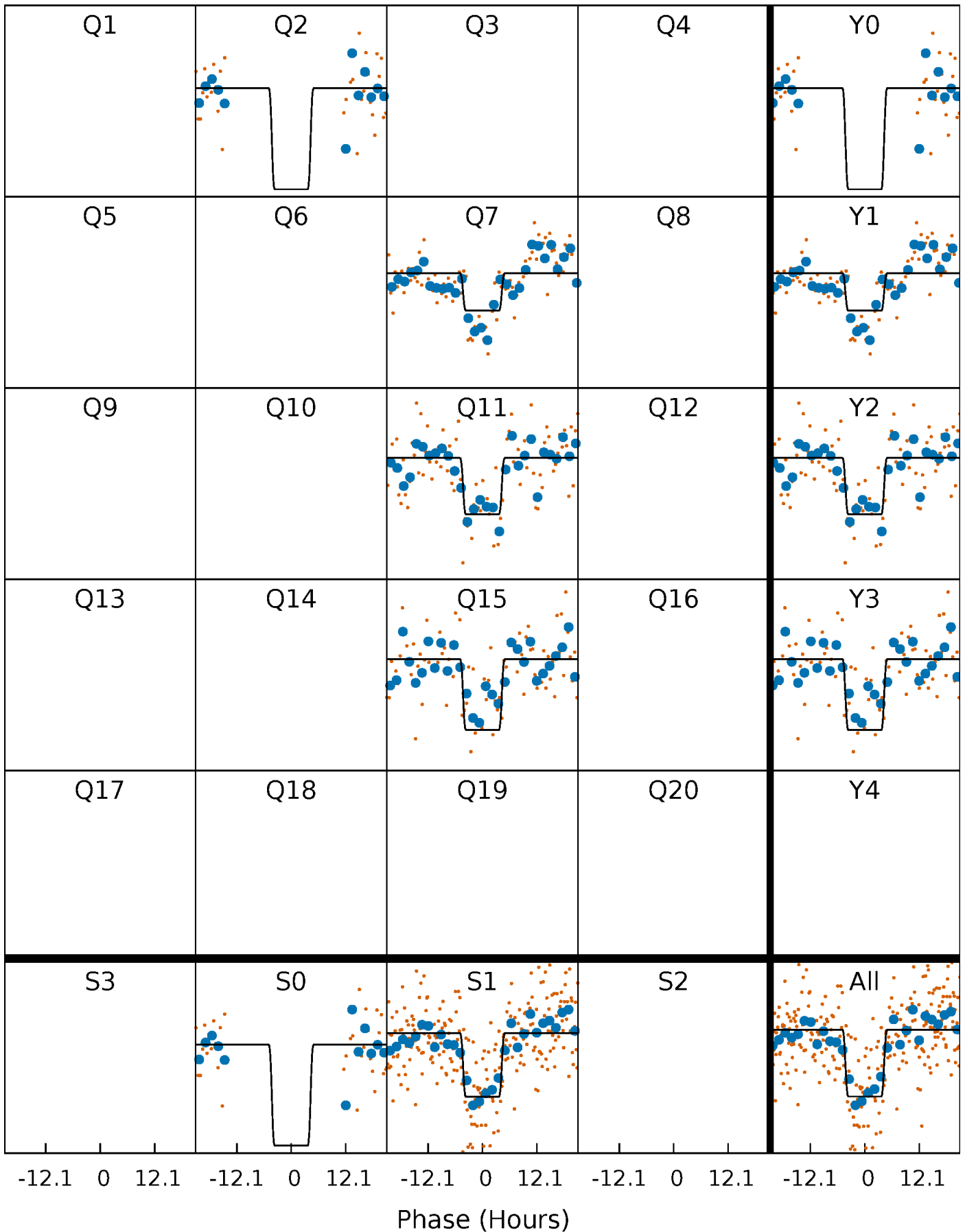
DV Quarter-Phased Transit Curves

TCE 006113752-01 P=406.455391 Days $T_0=230.890815$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

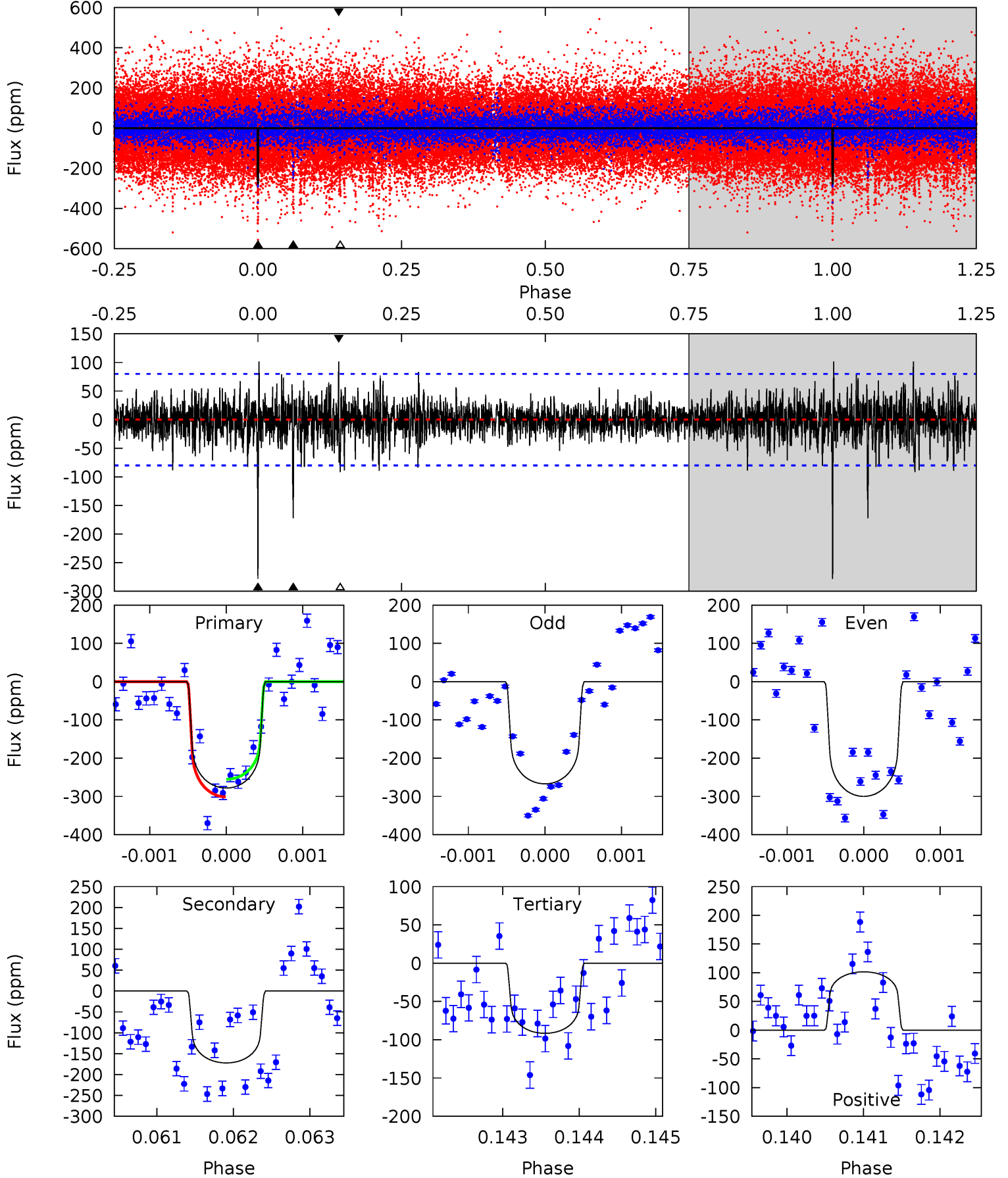
TCE 006113752-01 P=406.450753 Days $T_0=230.906133$ (BKJD)



DV Model-Shift Uniqueness Test

006113752-01, P = 406.455391 Days, E = 230.890815 Days

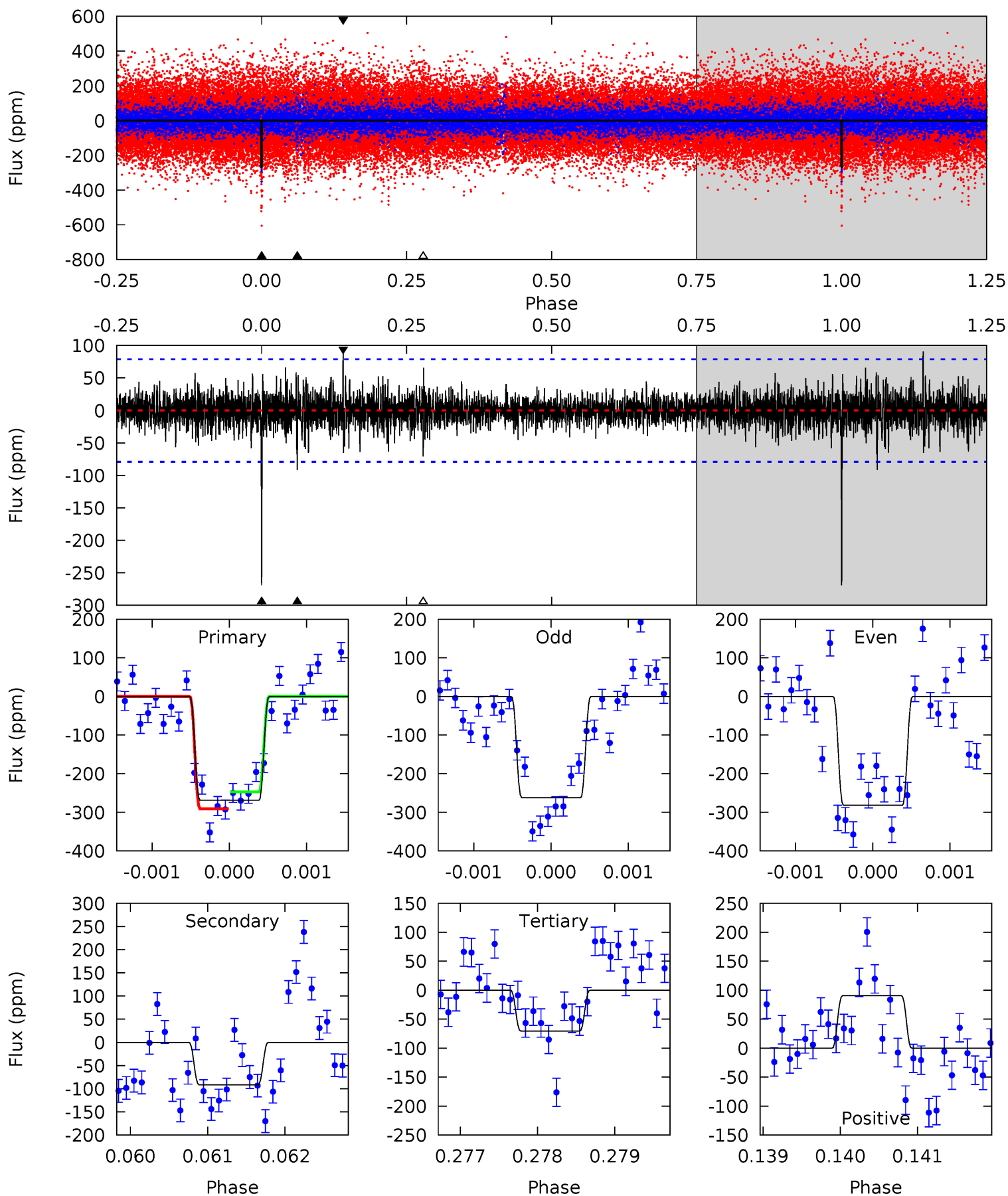
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.0	11.7	6.25	6.93	5.45	3.28	1.50	12.7	12.0	5.50	4.81	1.05	0.93	0.27	1.57



Alt Model-Shift Uniqueness Test

006113752-01, P = 406.450753 Days, E = 230.906133 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.6	6.32	4.87	6.25	5.45	3.29	1.13	13.7	12.3	1.44	0.07	0.63	0.95	0.25	1.51



Stellar Parameters For KIC 006113752

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6217^{+149}_{-204}	$4.364^{+0.090}_{-0.210}$	$-0.020^{+0.250}_{-0.300}$	$1.141^{+0.384}_{-0.153}$	$1.095^{+0.173}_{-0.126}$	$1.039^{+0.416}_{-0.570}$
	+2%/-3%	+2%/-5%	+1250%/-1500%	+34%/-13%	+16%/-12%	+40%/-55%
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 006113752-01 / KOI 7763.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-172 ± 15	$2.20^{+0.66}_{-0.63}$	392^{+30}_{-21}	5473^{+889}_{-578}	23992^{+22766}_{-9954}
Alt.	-91 ± 14	$2.16^{+0.71}_{-0.63}$	393^{+32}_{-21}	4821^{+747}_{-497}	13249^{+14156}_{-5800}

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

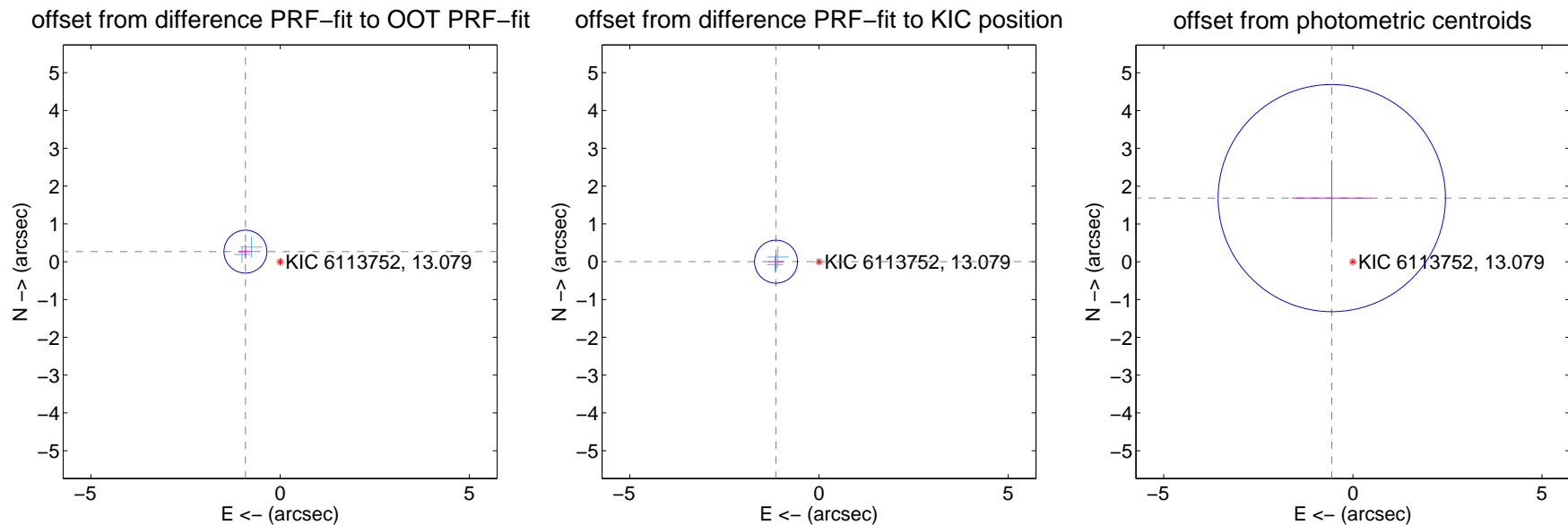
DV Centroid Data

Supplemental centroid analysis for 006113752-01. Kepler magnitude: 13.08. Transit SNR 9.15

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.42 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.954 ± 0.189	5.05	0.917 ± 0.189	0.267 ± 0.189
PRF-fit source offset from KIC position	1.135 ± 0.189	6.00	1.135 ± 0.189	0.001 ± 0.189
photometric centroid source offset	1.77 ± 1.00	1.77	0.56 ± 1.05	1.68 ± 1.00

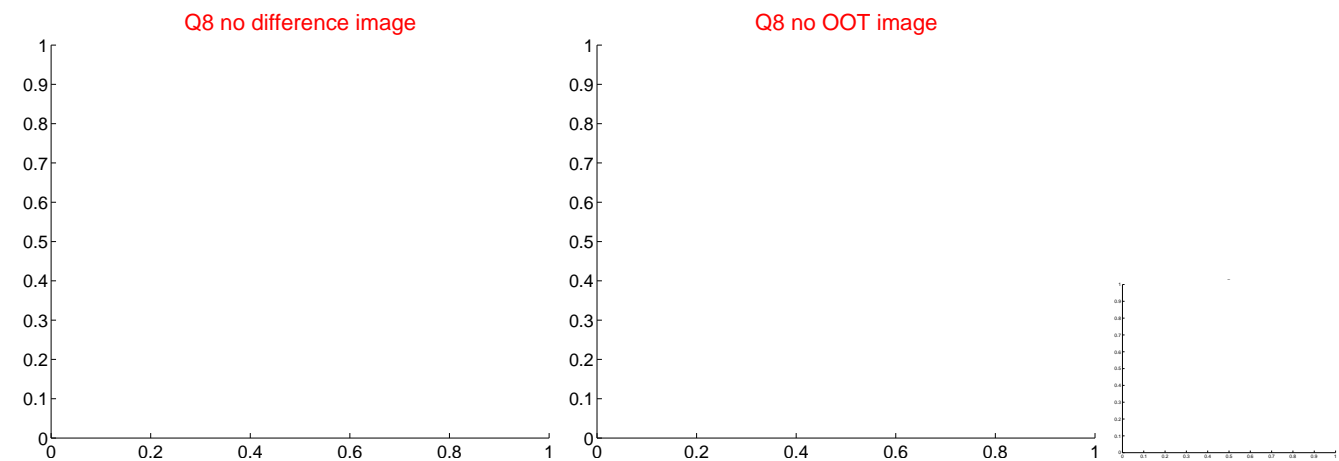
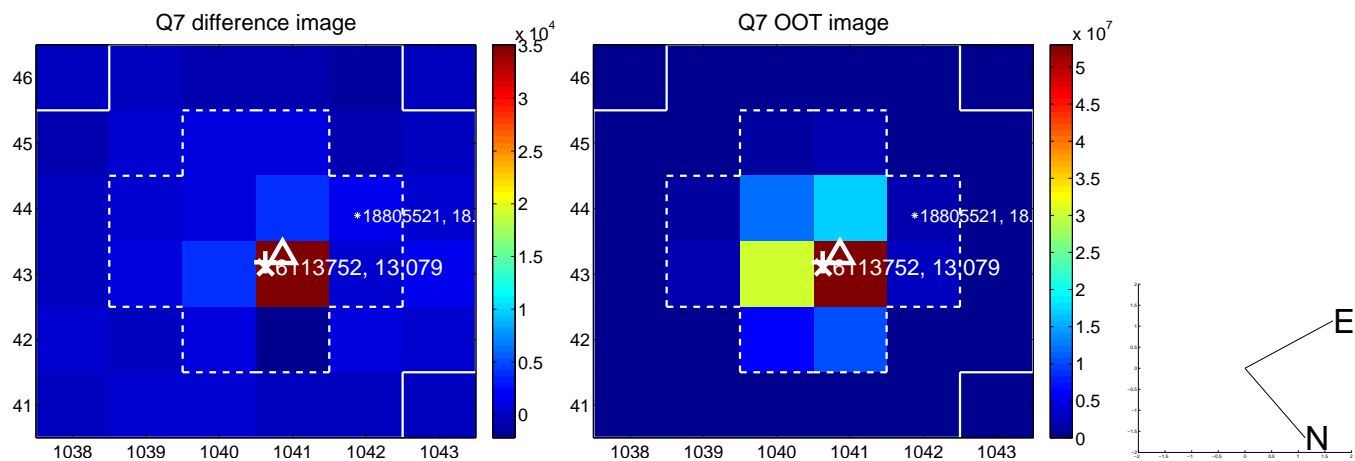
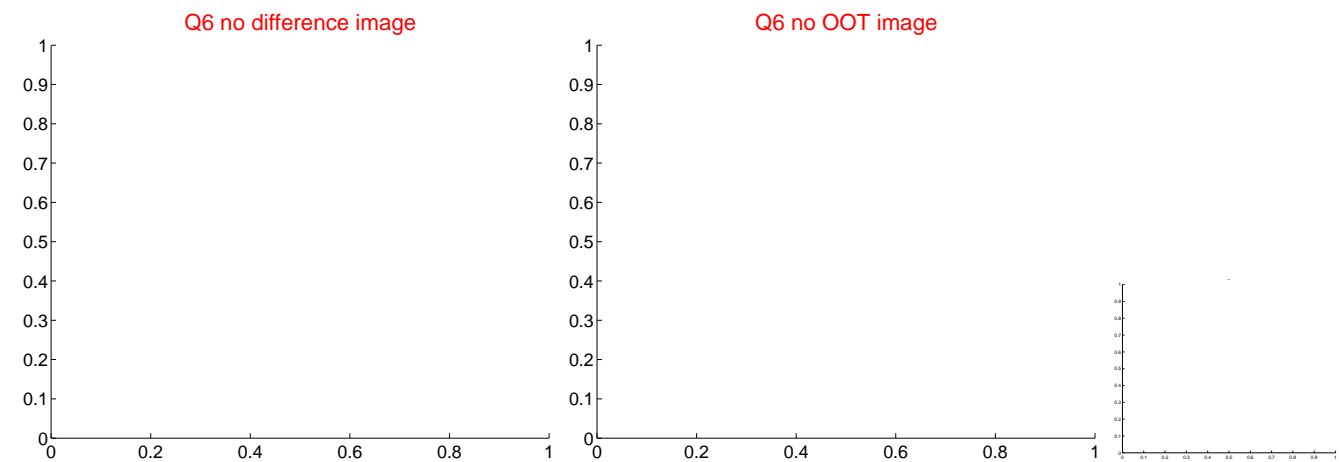
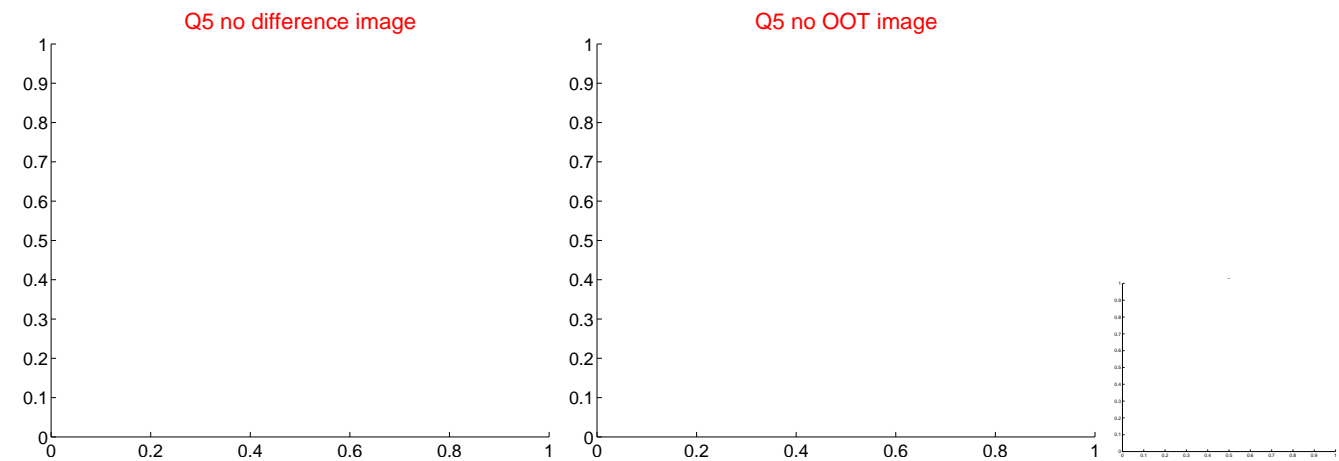


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

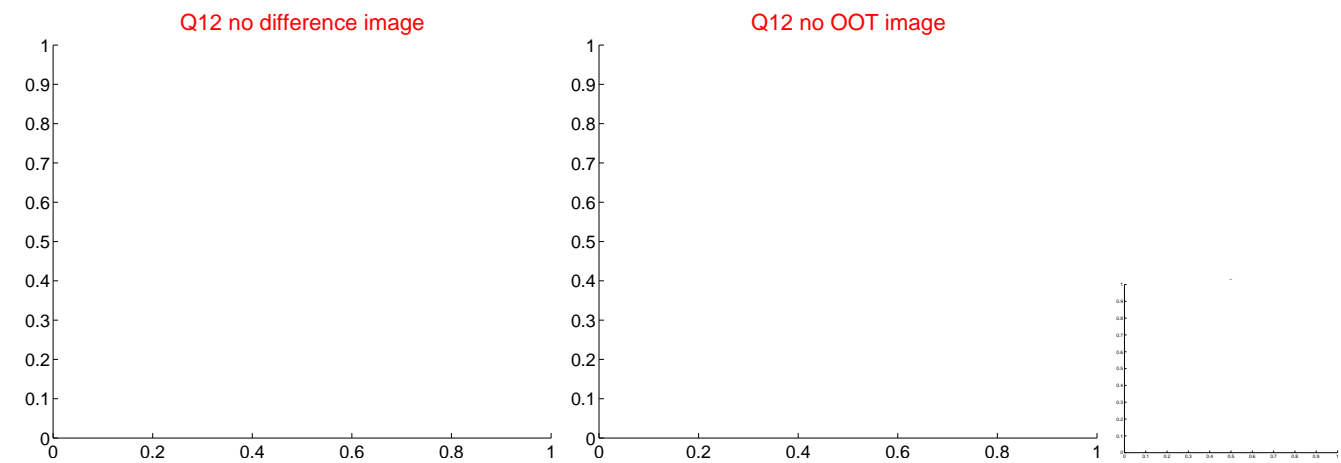
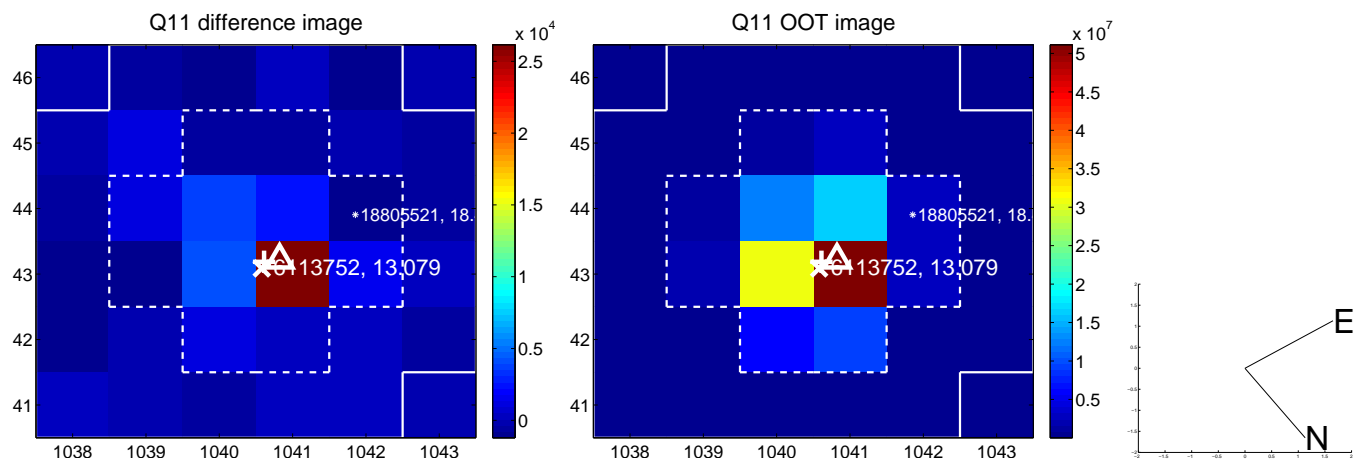
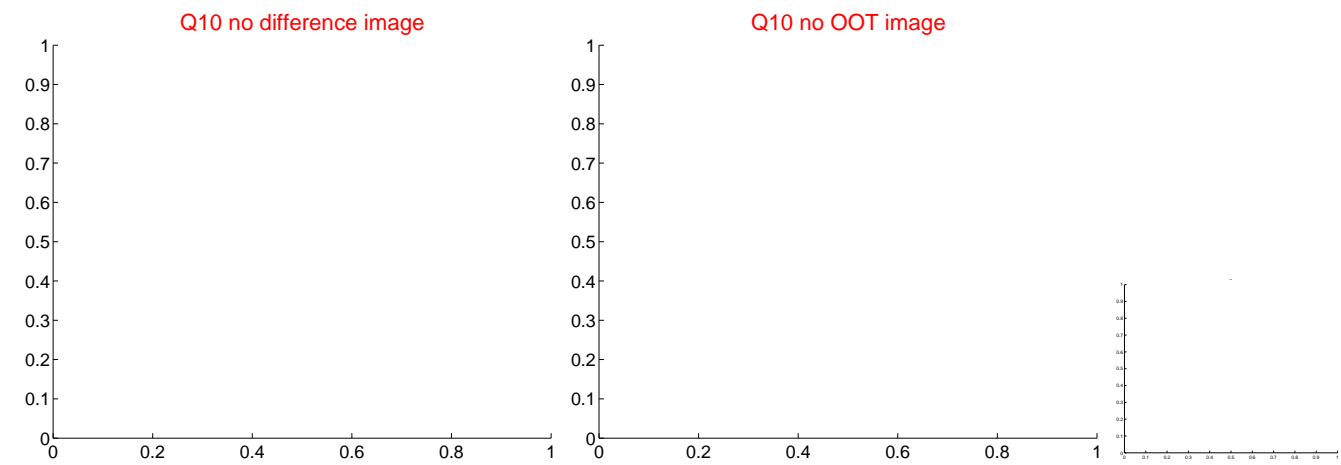
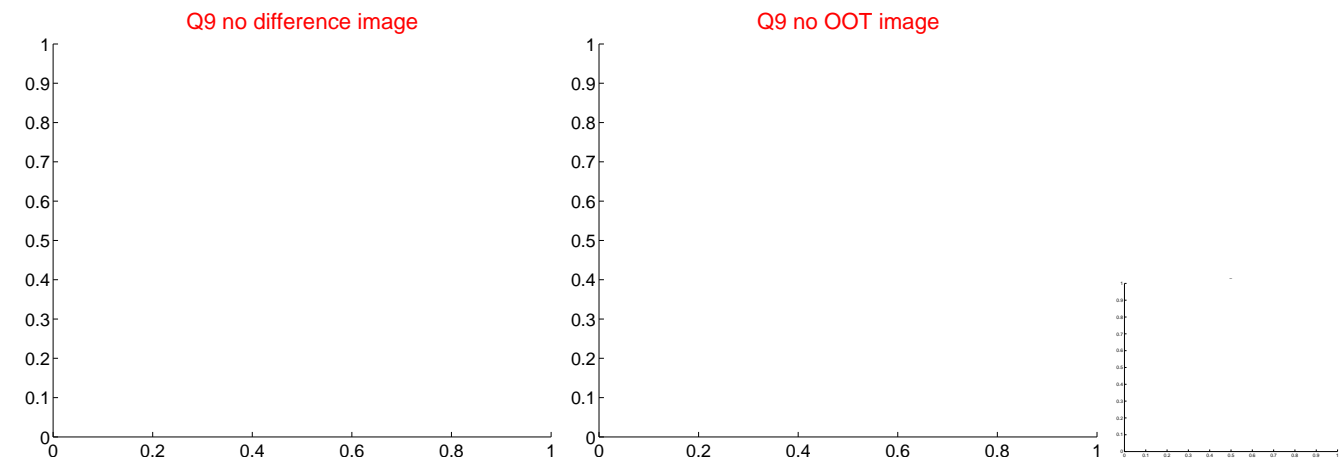
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



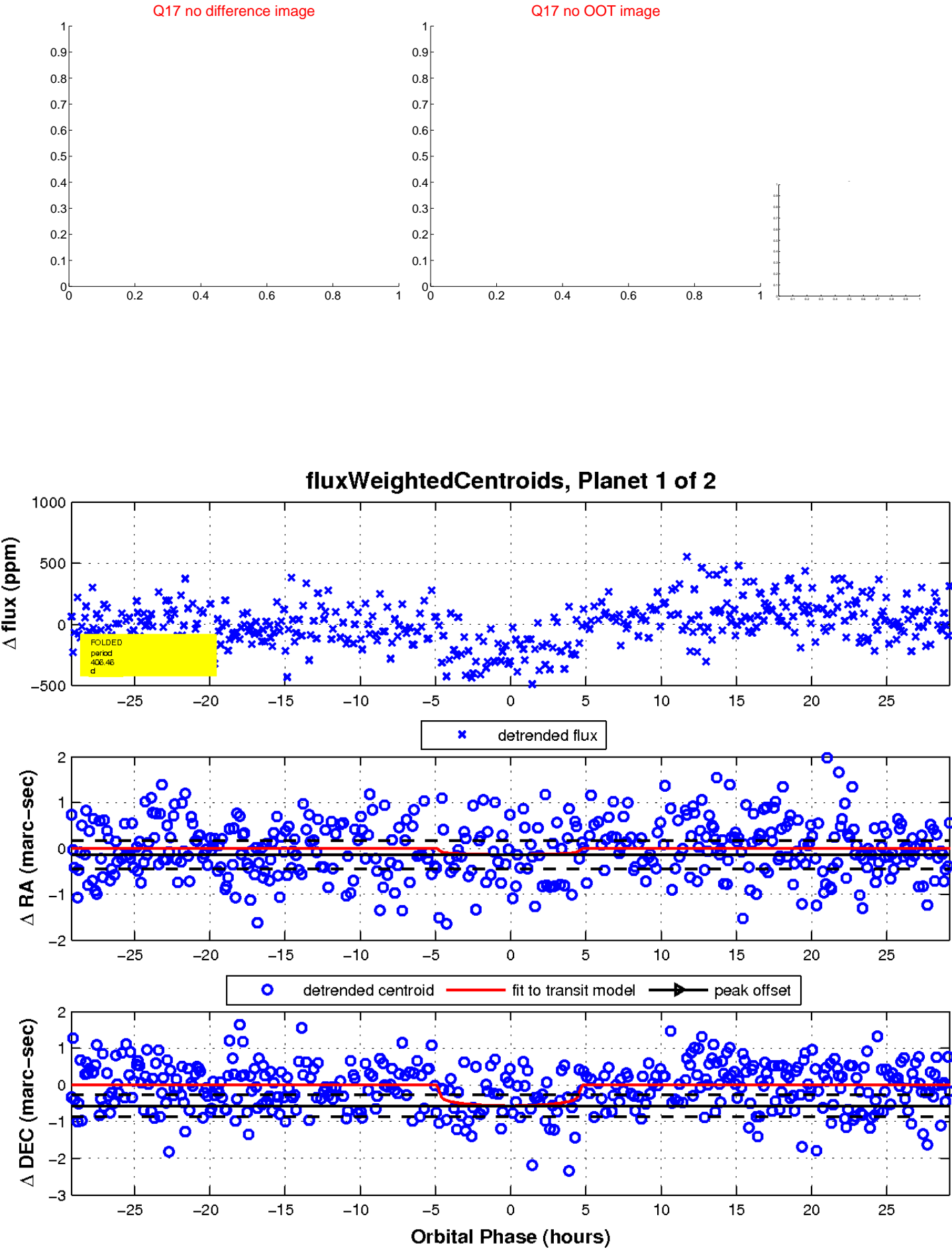
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

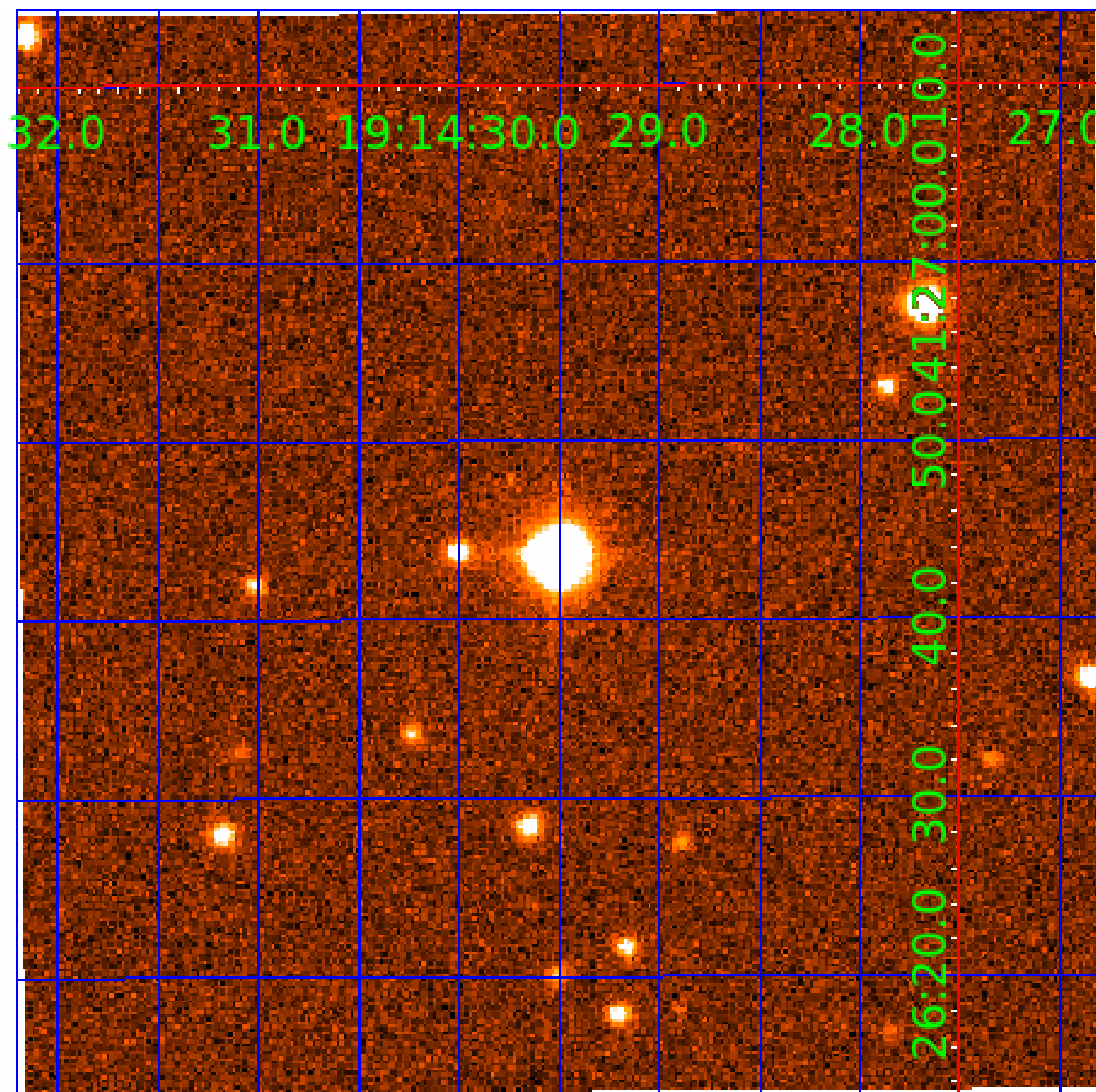


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006113752

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})
006113752-01	OBS	7763.01	406.455391	230.890815	293.7	9.754	8.9	9.1	1.14	6217	2.13	1.42
006113752-02	OBS	No	390.122107	316.179849	324.3	6.569	9.2	8.7	1.14	6217	2.20	1.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006113752-01	OBS	FP	0.20	1	0	0	0	ALL_TRANS_CHASES—CENT_FEW_DIFFS
006113752-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—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.

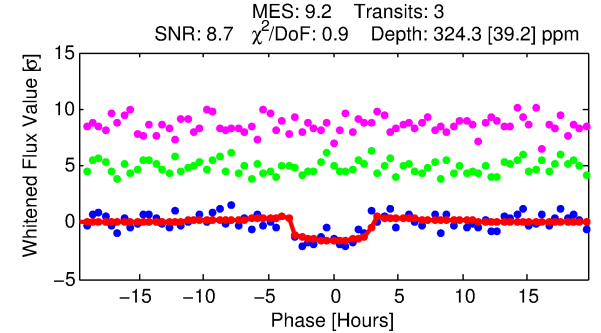
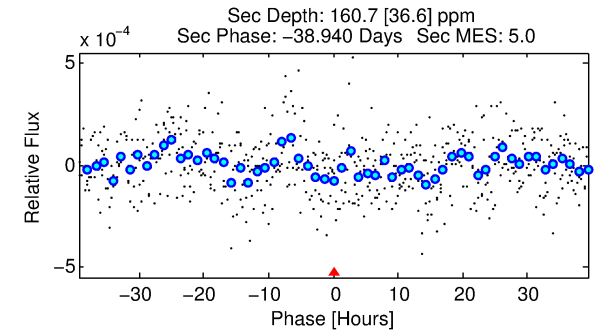
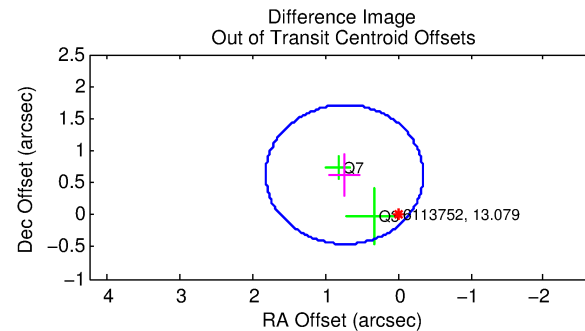
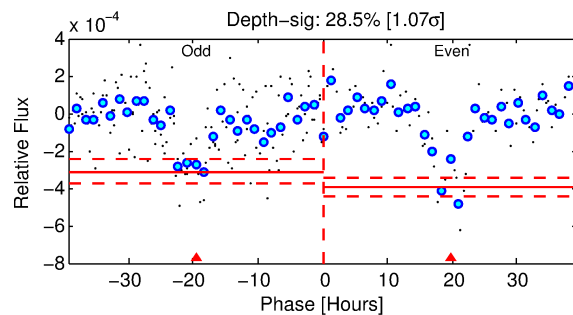
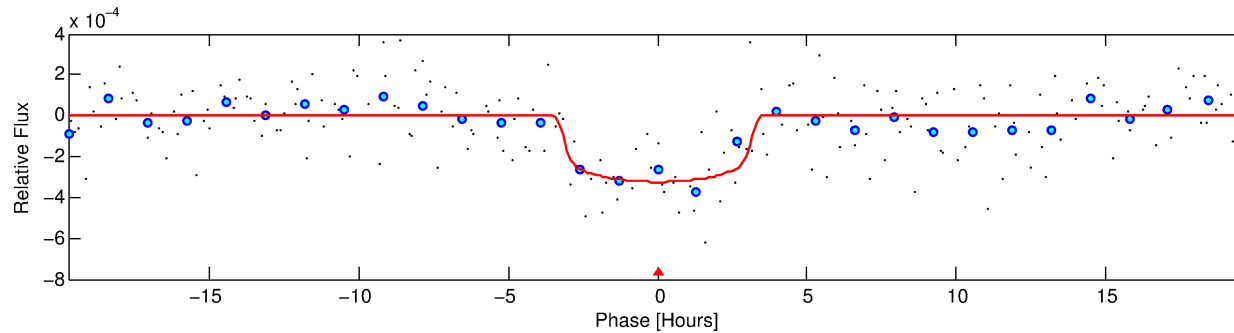
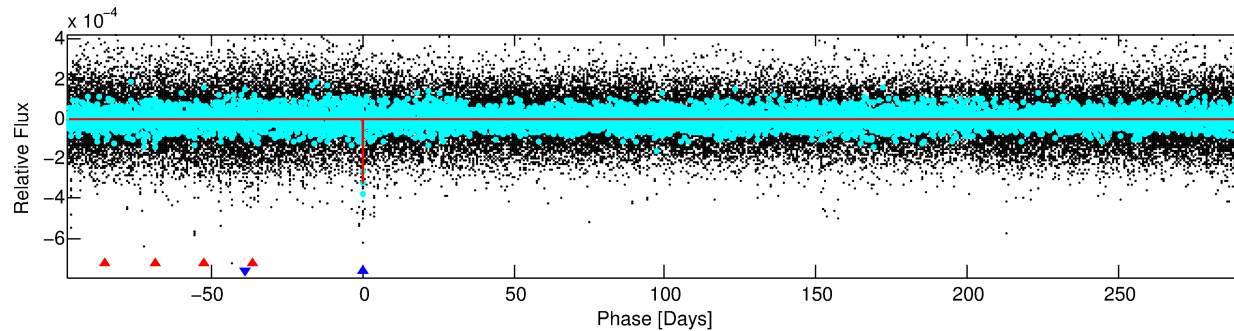
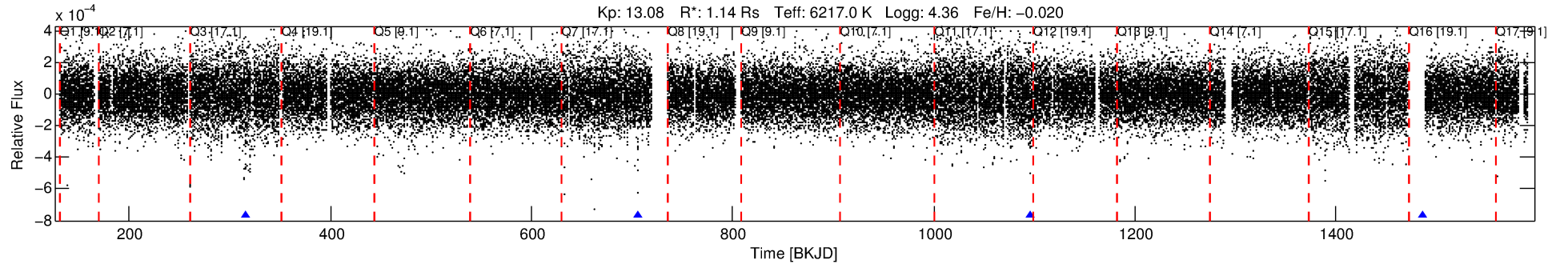
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006113752-02

No Significant Match Found

DV One-Page Summary

KIC: 6113752 Candidate: 2 of 2 Period: 390.122 d



DV Fit Results:

Period = 390.12211 [0.00762] d
Epoch = 316.1798 [0.0091] BKJD
Rp/R* = 0.0177 [0.0109]
a/R* = 330.23 [1024.56]
b = 0.71 [2.17]
Seff = 1.50 [0.62]
Teq = 282 [29] K
Rp = 2.20 [1.55] Re
a = 1.0782 [0.2979] AU
Ag = 21165.44 [27811.15] [0.76 σ]
Teffp = 5262 [1658] K [3.00 σ]

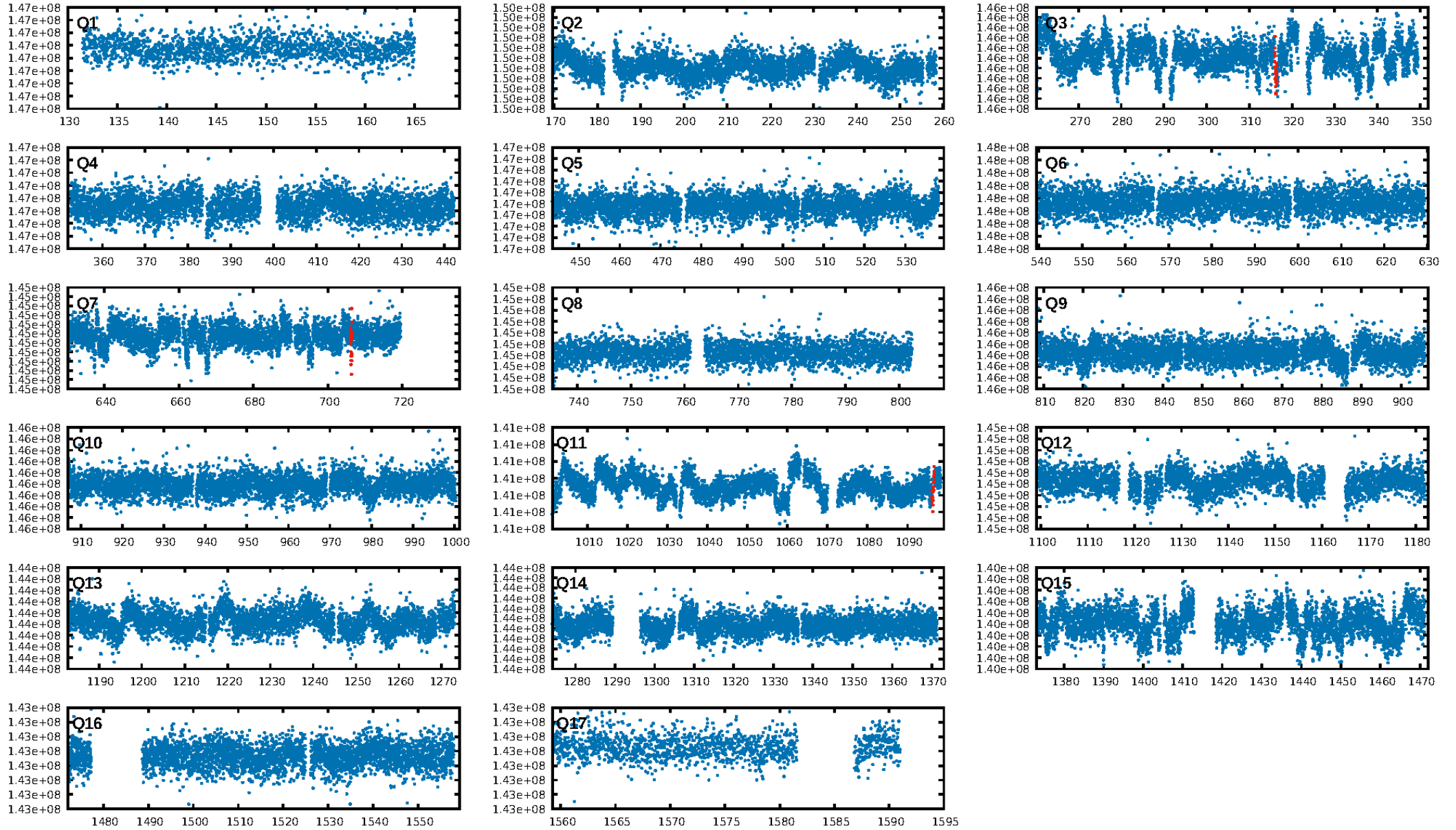
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [33.33 σ]
ModelChiSquare2-sig: 59.8%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 1.25e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -16.99
Centroid-sig: 71.2%
Centroid-so: 0.192 arcsec [0.19 σ]
OotOffset-rm: 0.968 arcsec [2.68 σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-rm: **0.993 arcsec [4.42 σ]**
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

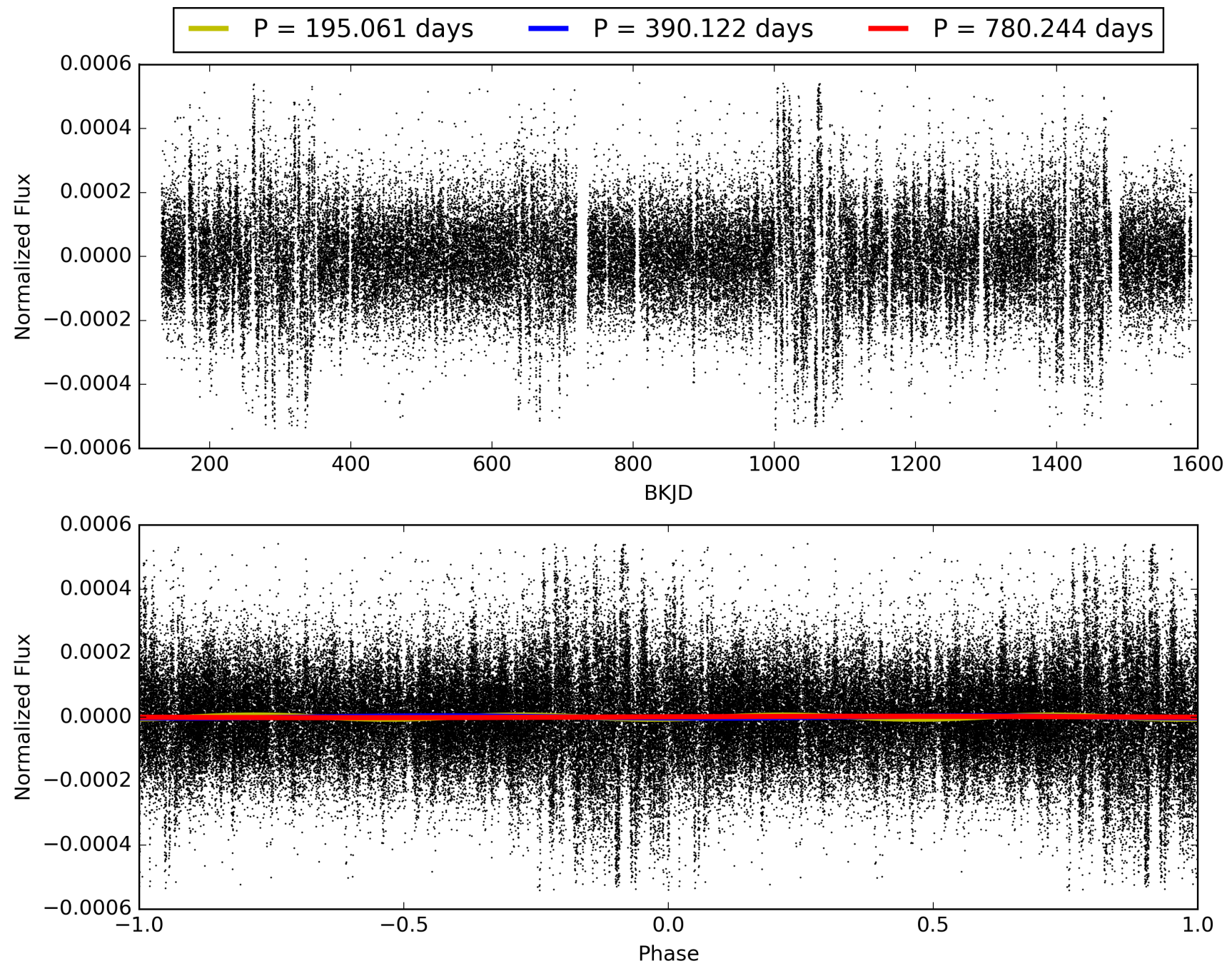
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 18:43:07 Z

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

TCE 006113752-02, PDC Light Curves

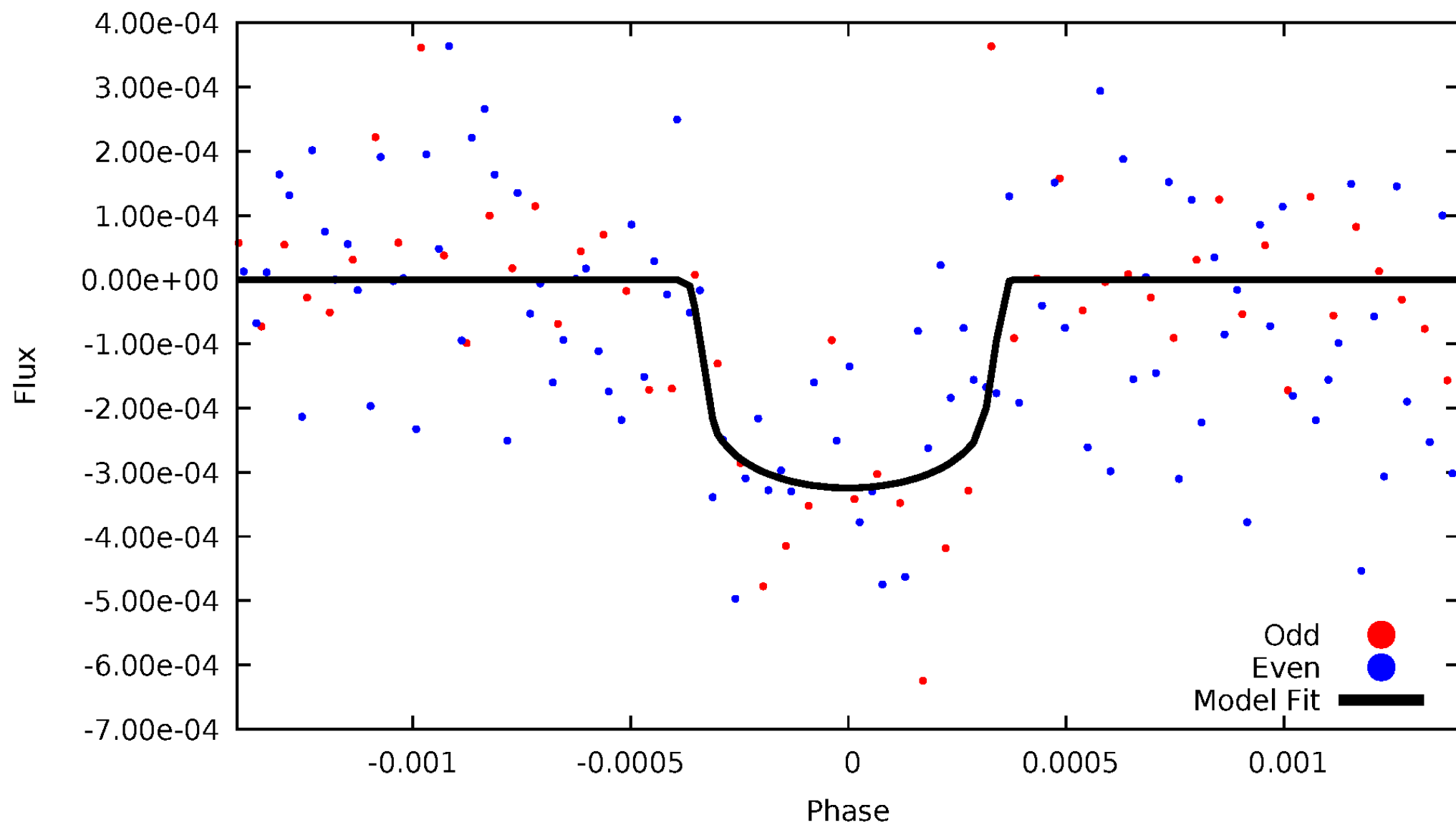


TCE 006113752-02



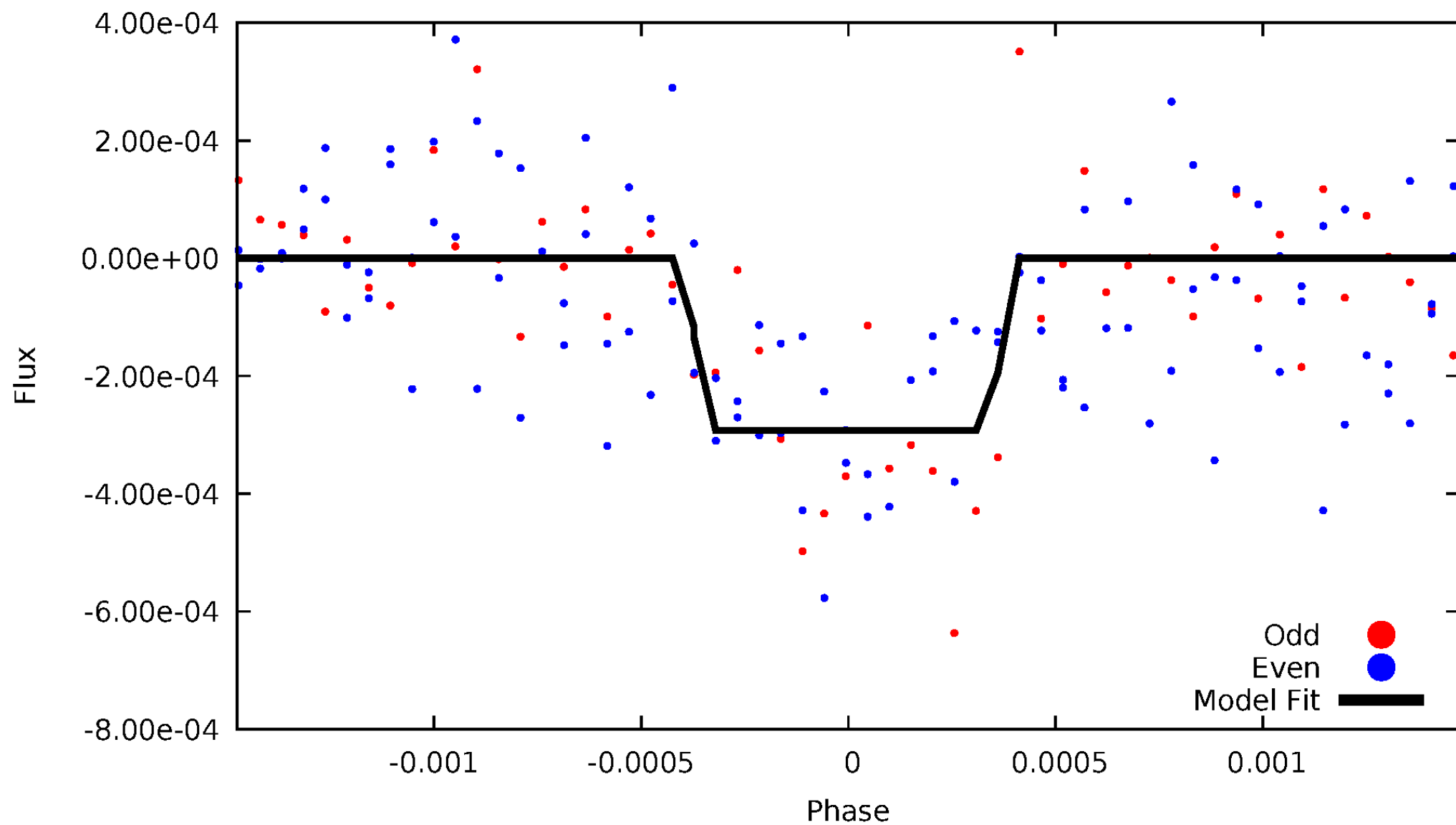
DV Odd/Even

TCE 006113752-02



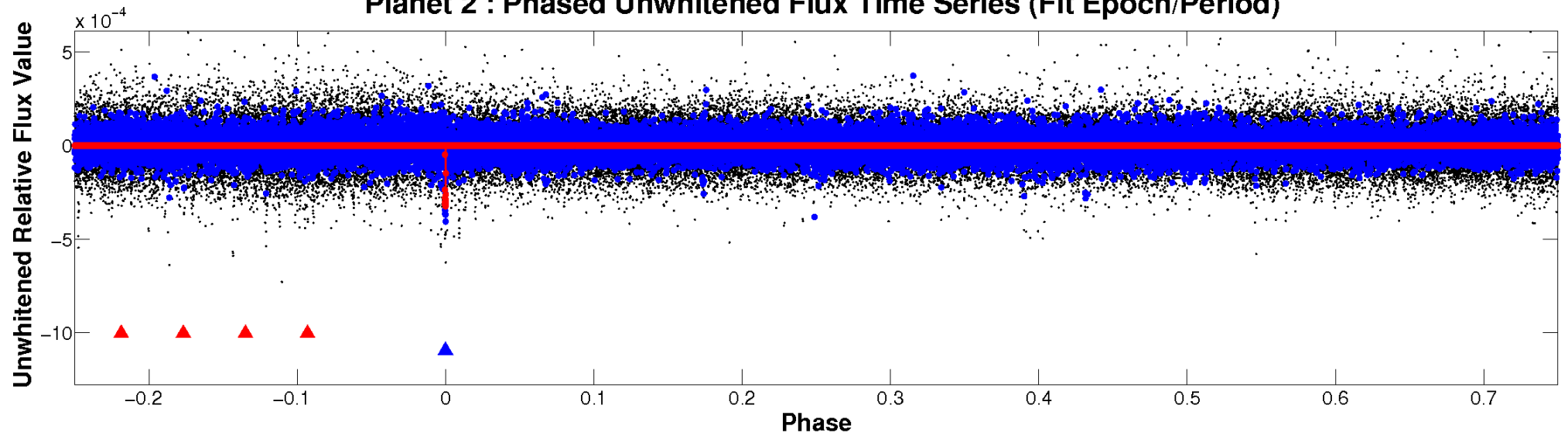
ALT Odd/Even

TCE 006113752-02

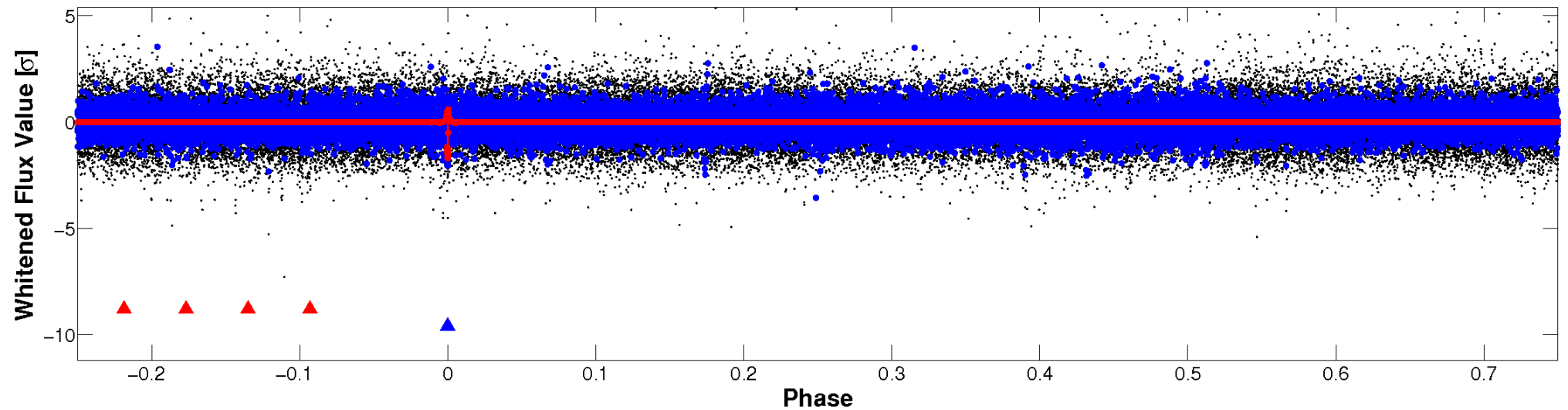


Non-Whitened Vs. Whitened Light Curve

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

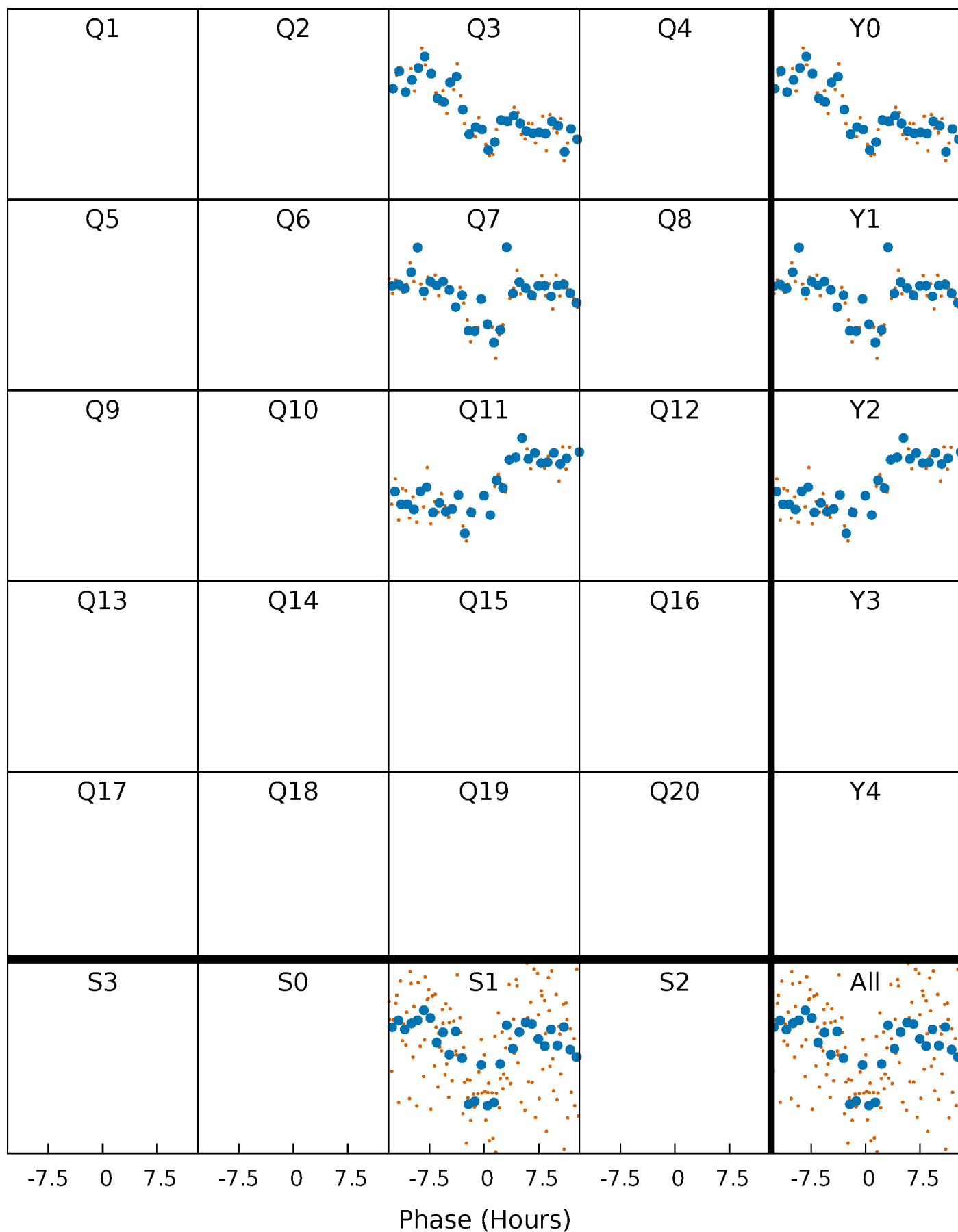


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



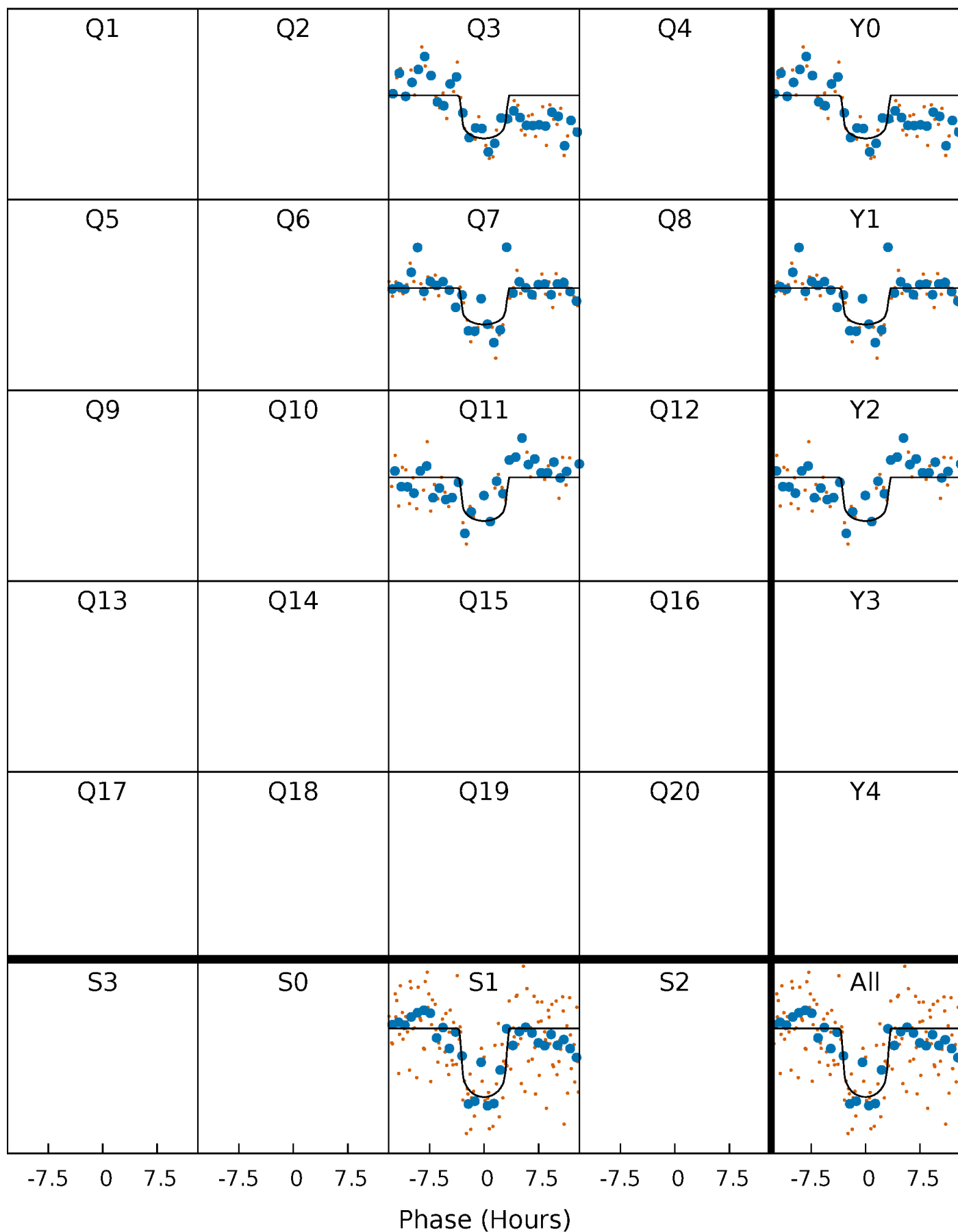
PDC Quarter-Phased Transit Curves

TCE 006113752-02 $P=390.122107$ Days $T_0=316.179849$ (BKJD)



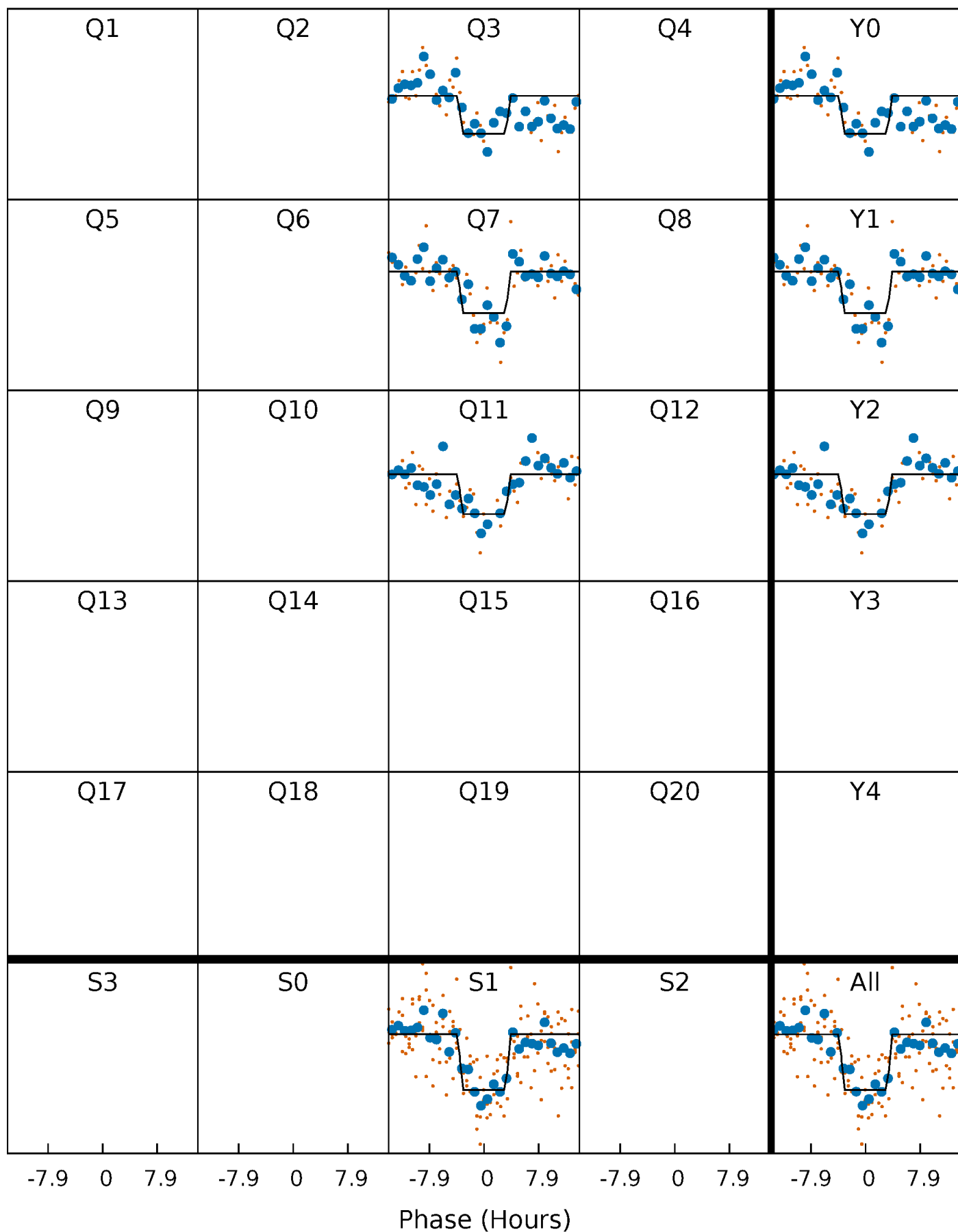
DV Quarter-Phased Transit Curves

TCE 006113752-02 P=390.122107 Days $T_0=316.179849$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

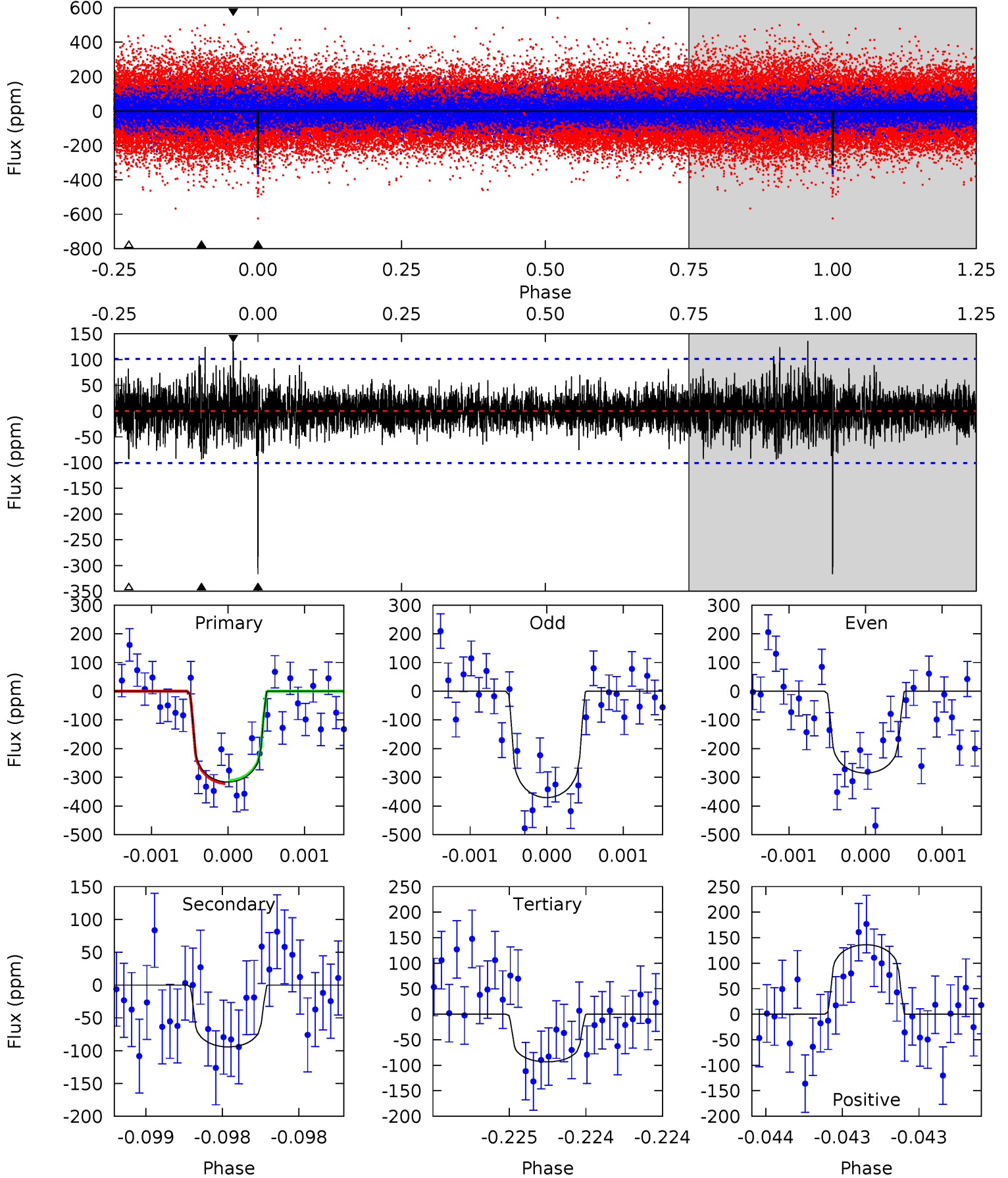
TCE 006113752-02 $P=390.076660$ Days $T_0=316.192193$ (BKJD)



DV Model-Shift Uniqueness Test

006113752-02, P = 390.122107 Days, E = 316.179849 Days

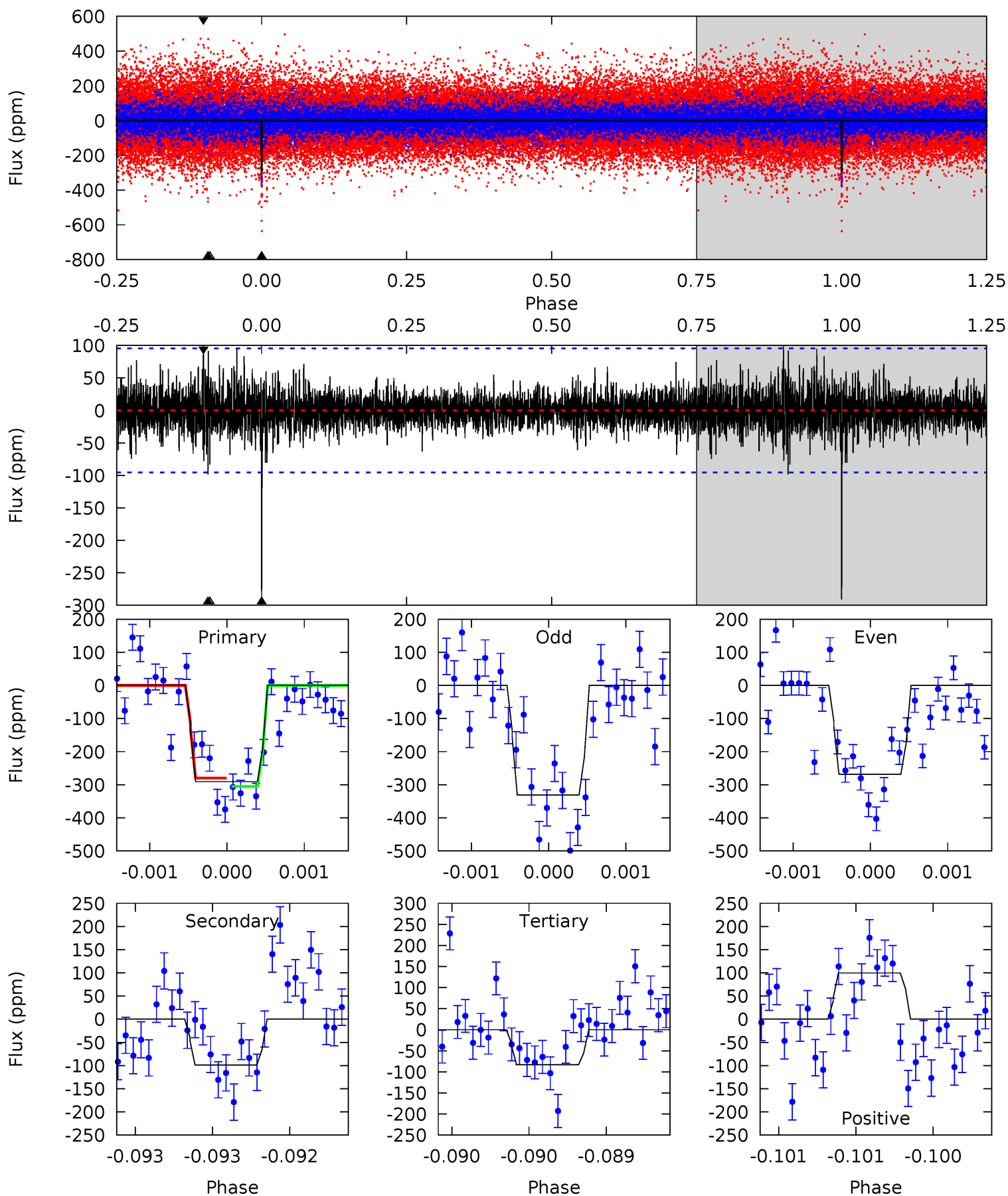
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.2	5.13	5.08	7.41	5.51	3.38	1.31	12.1	9.81	0.05	-2.28	2.25	0.94	0.30	0.29



Alt Model-Shift Uniqueness Test

006113752-02, P = 390.076660 Days, E = 316.192193 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	5.67	4.79	5.74	5.49	3.36	1.10	11.9	11.0	0.88	-0.07	1.71	0.97	0.26	0.74



Stellar Parameters For KIC 006113752

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6217^{+149}_{-204}	$4.364^{+0.090}_{-0.210}$	$-0.020^{+0.250}_{-0.300}$	$1.141^{+0.384}_{-0.153}$	$1.095^{+0.173}_{-0.126}$	$1.039^{+0.416}_{-0.570}$
	+2%/-3%	+2%/-5%	+1250%/-1500%	+34%/-13%	+16%/-12%	+40%/-55%
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 006113752-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-94 ± 18	$2.43^{+1.39}_{-1.33}$	397^{+32}_{-20}	4595^{+2050}_{-707}	10077^{+35918}_{-6171}
Alt.	-99 ± 17	$2.45^{+1.39}_{-1.23}$	400^{+31}_{-21}	4652^{+1800}_{-683}	10812^{+33752}_{-6610}

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

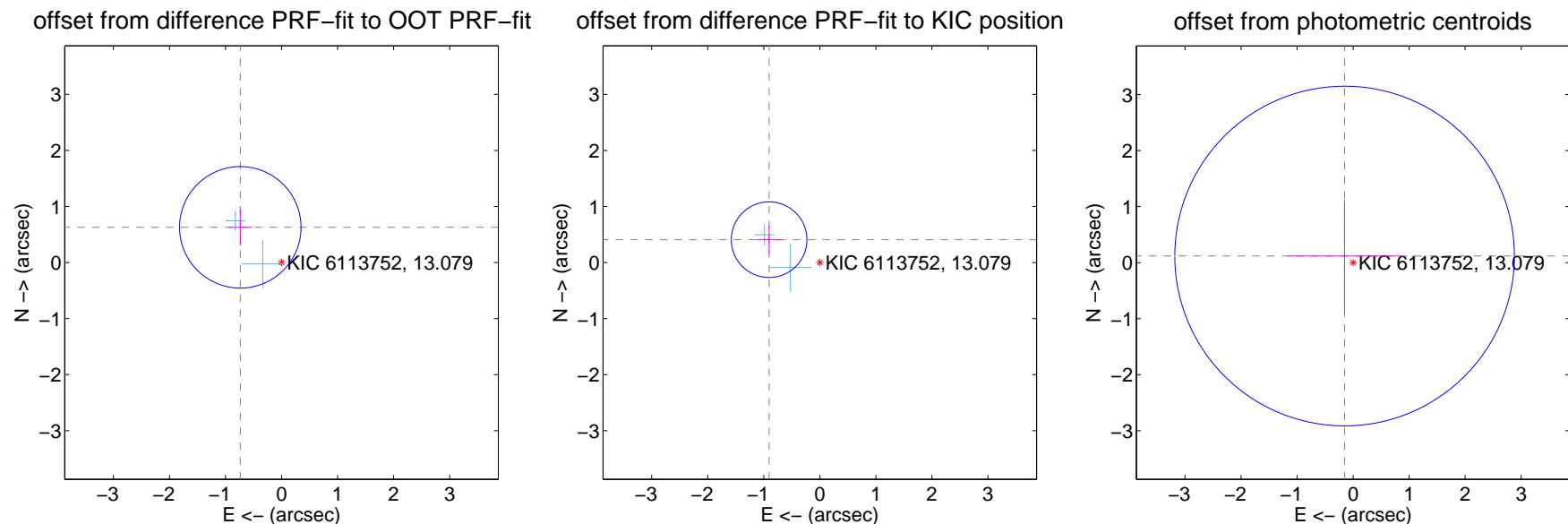
DV Centroid Data

Supplemental centroid analysis for 006113752-02. Kepler magnitude: 13.08. Transit SNR 8.66

There are 2 quarters with good PRF difference image offsets

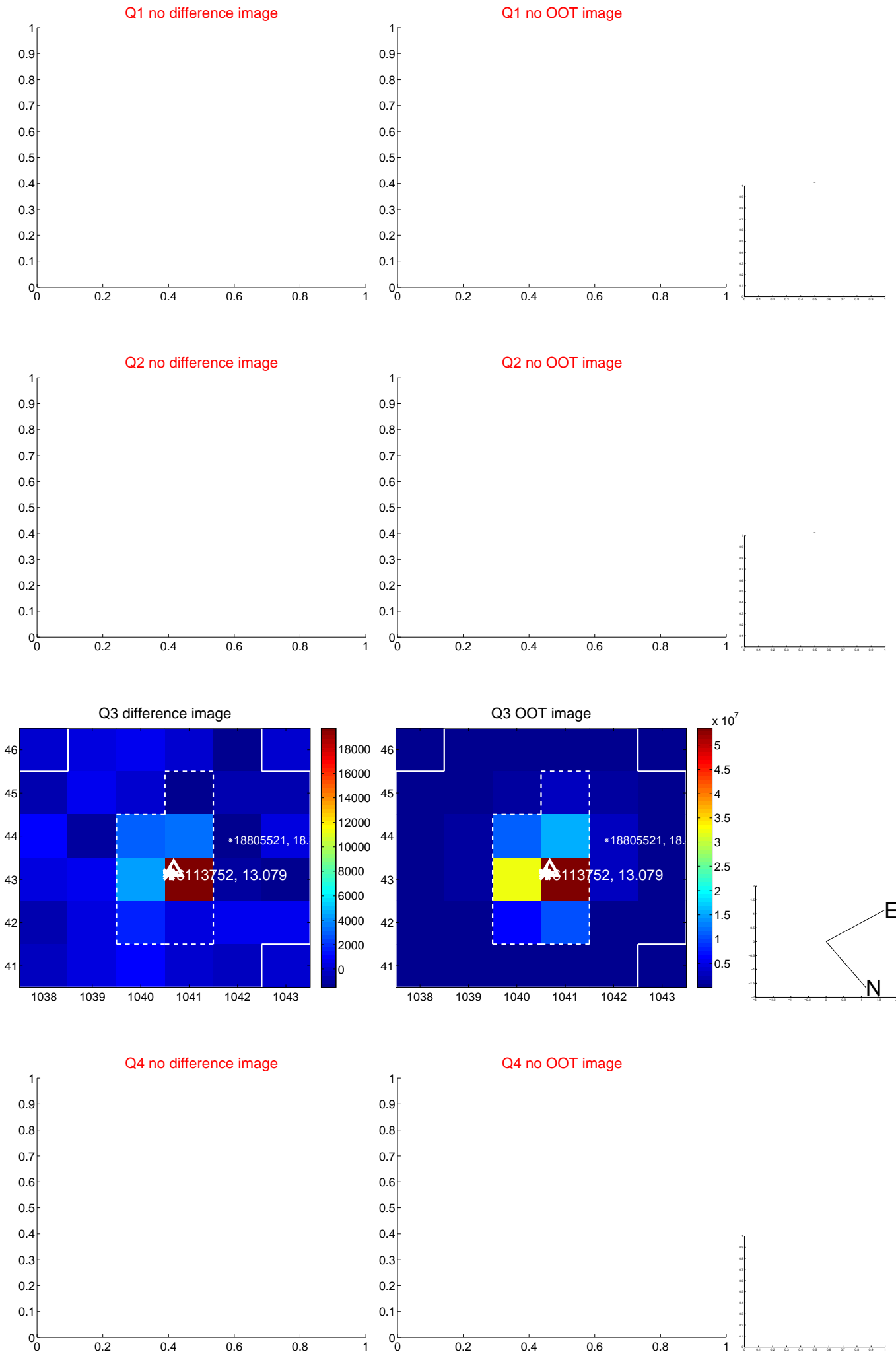
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.968 ± 0.361	2.68	0.736 ± 0.210	0.628 ± 0.320
PRF-fit source offset from KIC position	0.993 ± 0.225	4.42	0.905 ± 0.219	0.407 ± 0.253
photometric centroid source offset	0.19 ± 1.01	0.19	0.15 ± 1.02	0.12 ± 1.00

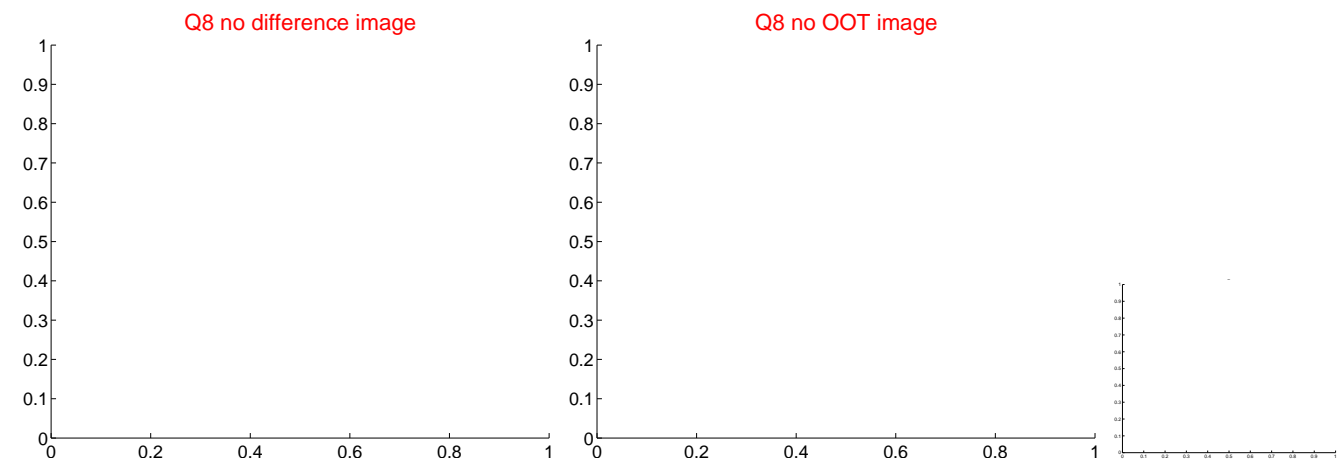
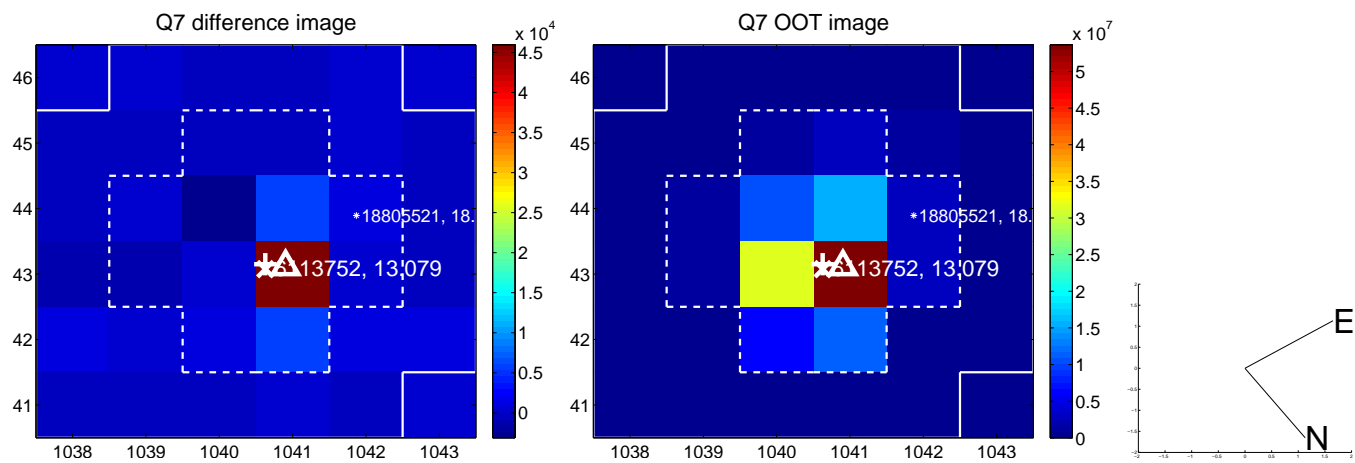
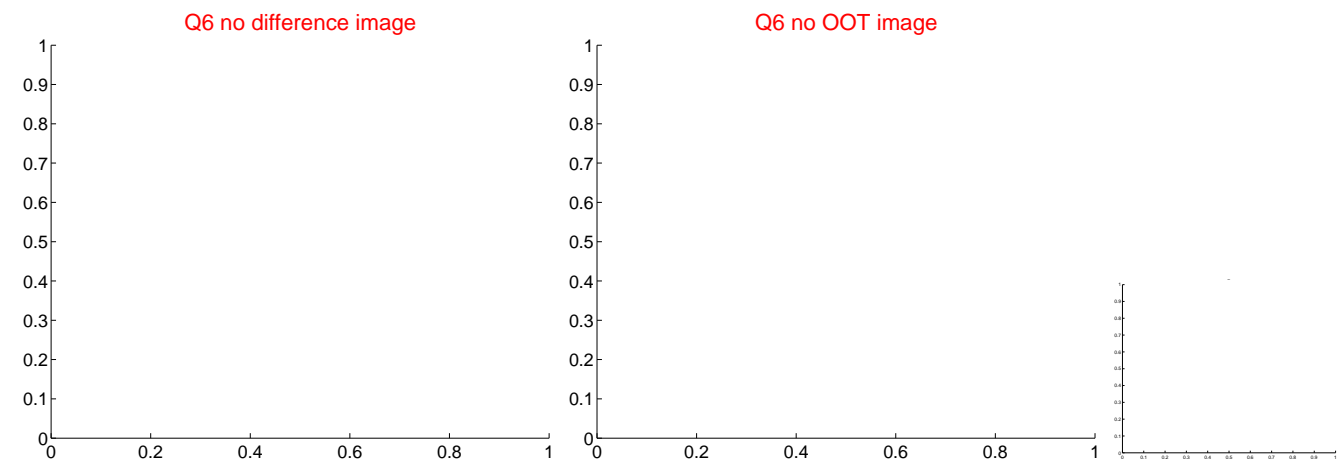
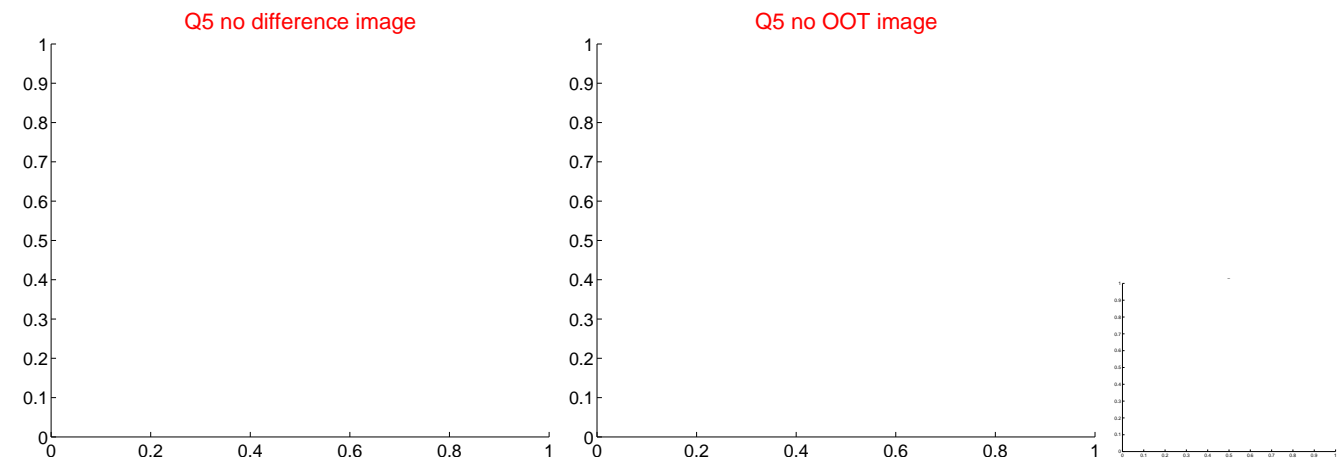


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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



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



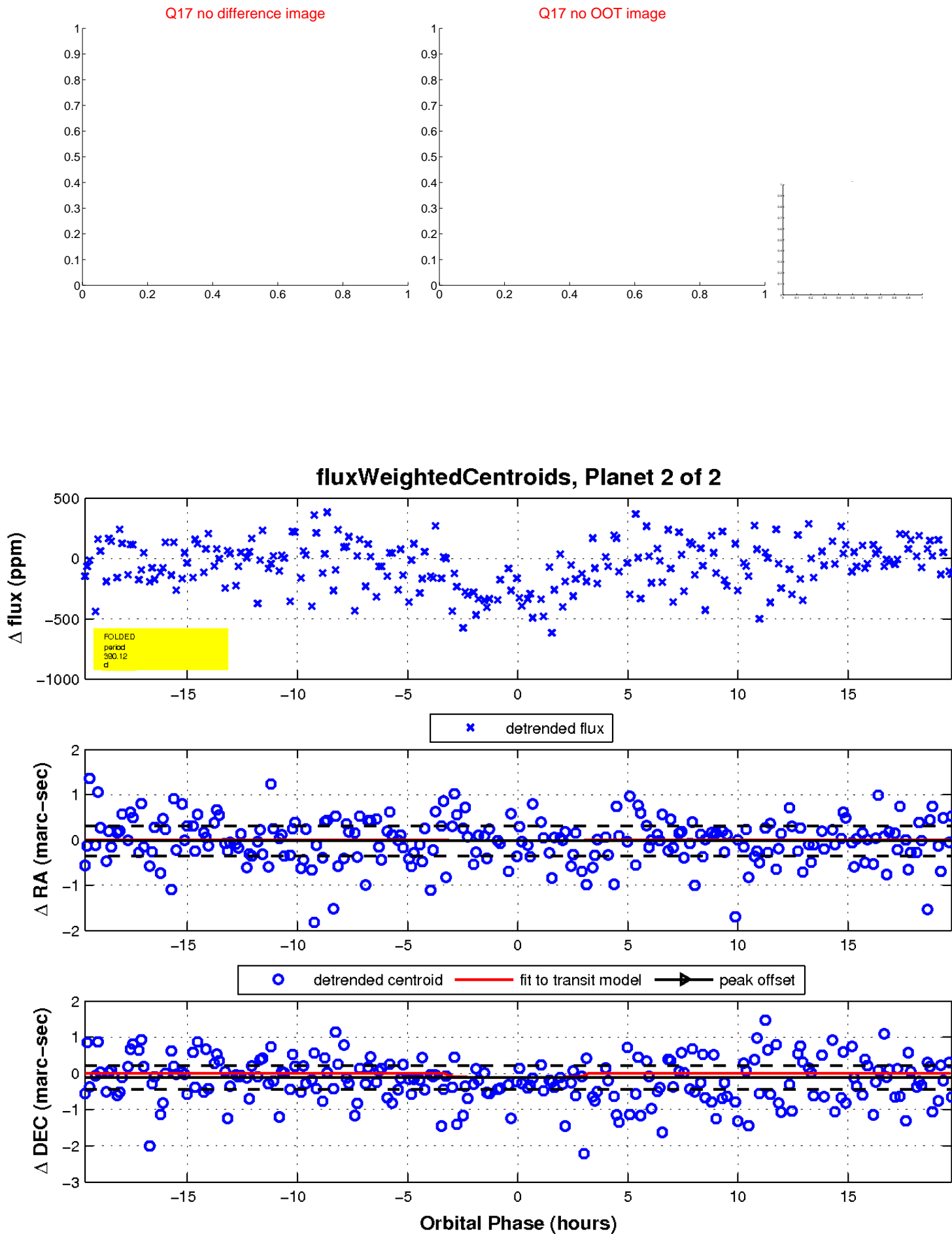
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

