

KIC 009077483

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})
009077483-01	OBS	No	67.341577	153.235666	19899.3	4.606	22.0	18.9	1.33	6438	32.67	23.47
009077483-02	OBS	No	80.968797	202.304741	13785.9	5.045	20.6	18.6	1.33	6438	15.71	18.36
009077483-03	OBS	No	73.661147	134.772303	2802.9	8.731	8.3	6.6	1.33	6438	7.09	20.82

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009077483-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009077483-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009077483-03	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—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.

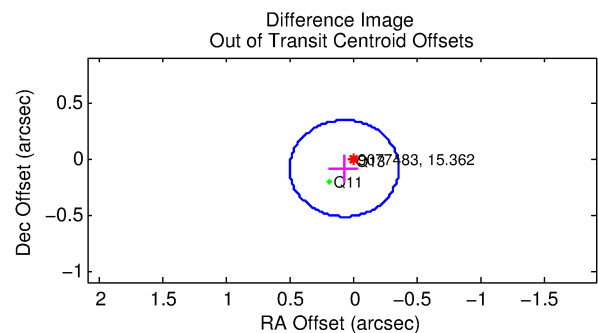
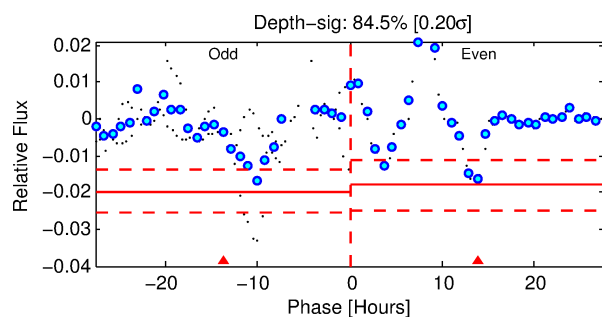
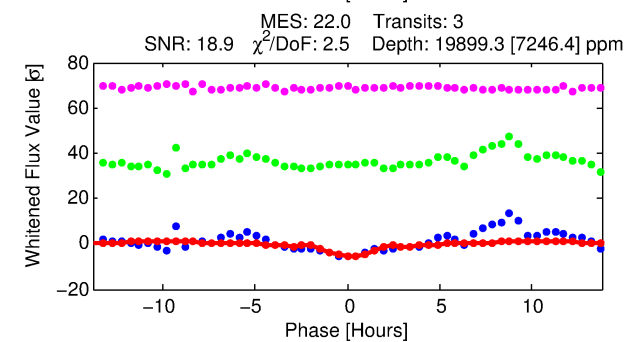
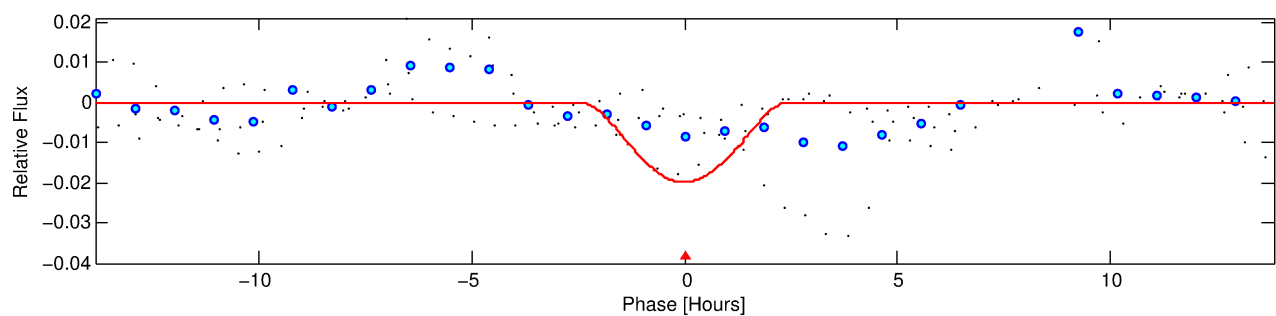
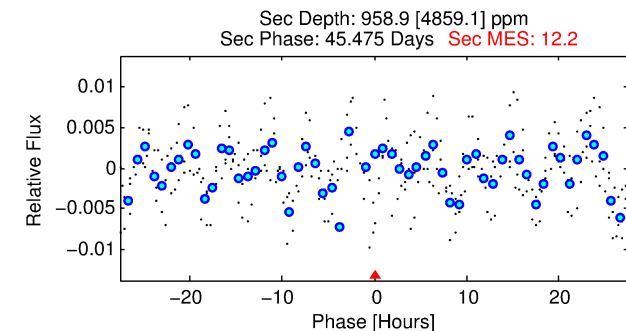
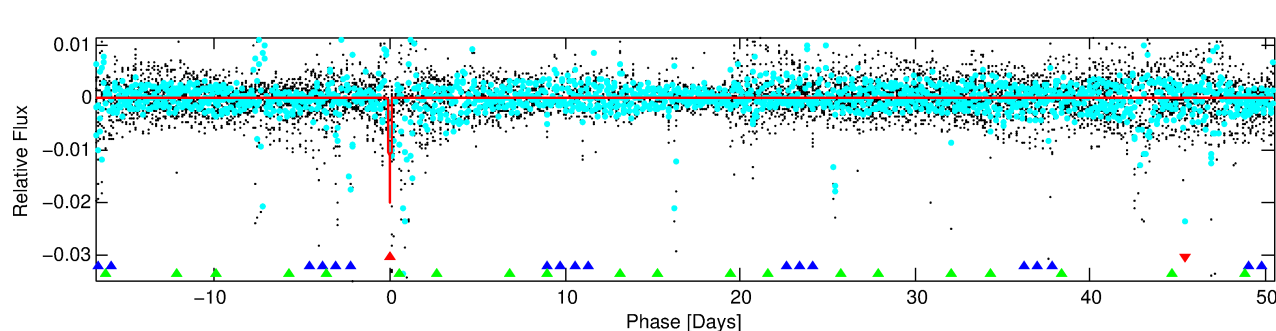
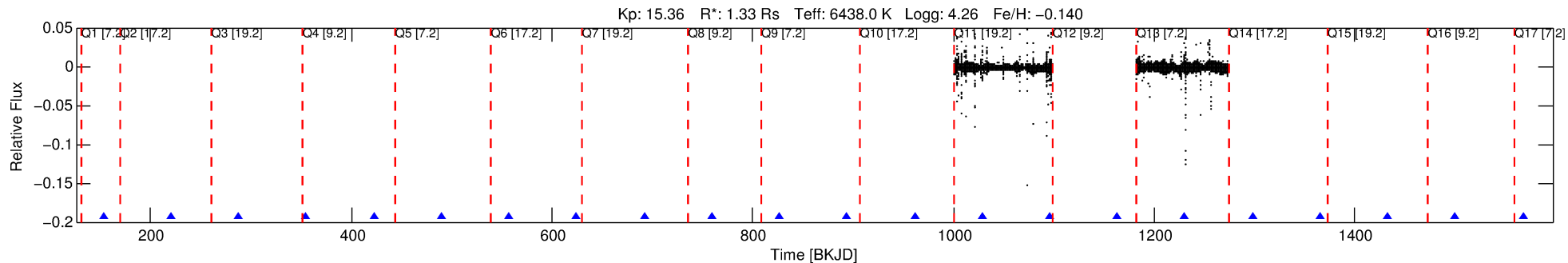
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009077483-01

No Significant Match Found

DV One-Page Summary

KIC: 9077483 Candidate: 1 of 3 Period: 67.342 d



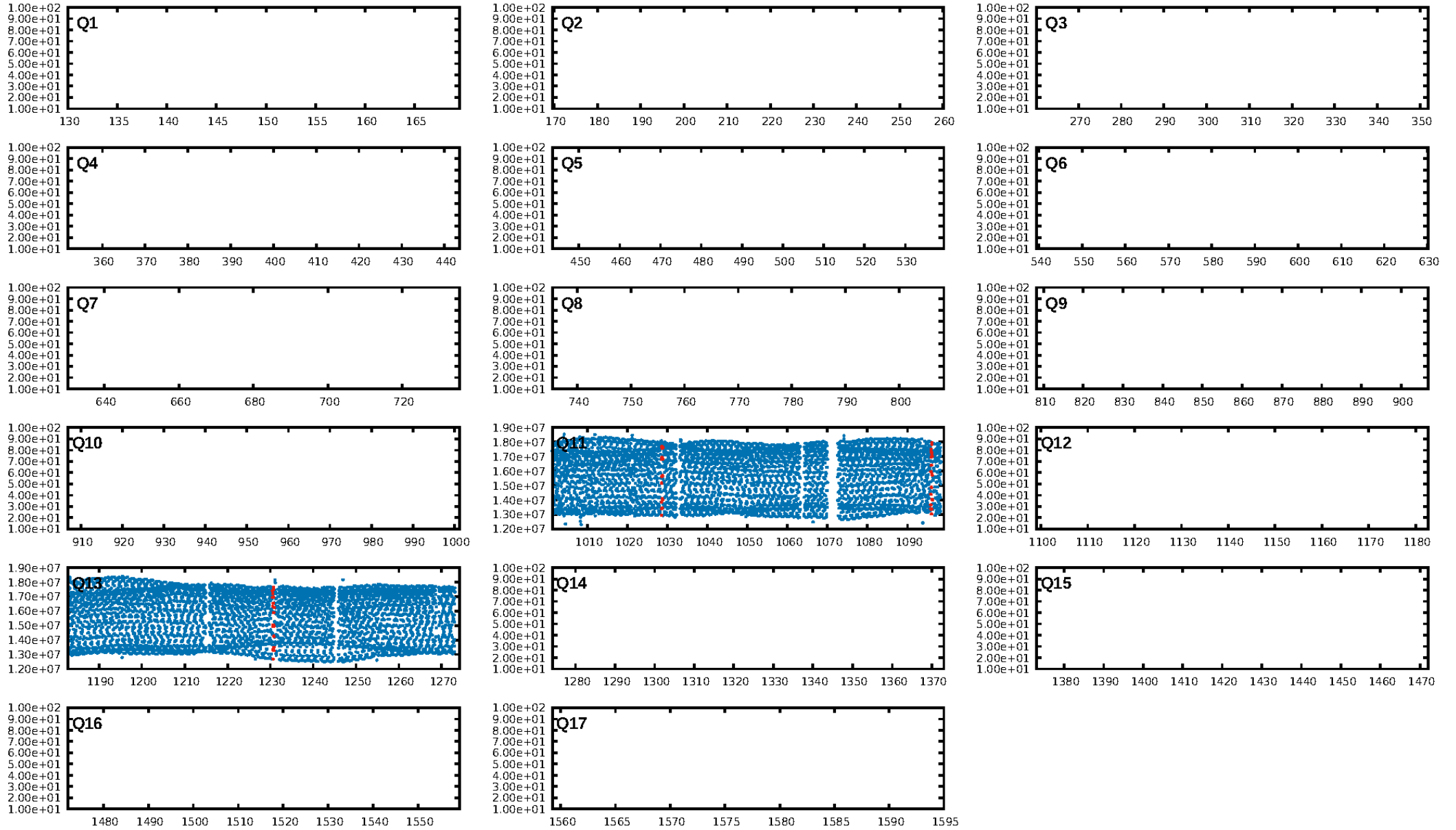
DV Fit Results:

Period = 67.34158 [0.00537] d
Epoch = 153.2357 [0.0756] BKJD
Rp/R* = 0.2248 [1.1206]
a/R* = 79.07 [42.15]
b = 1.00 [1.60]
Seff = 23.47 [9.26]
Teq = 561 [55] K
Rp = 32.67 [163.17] Re
a = 0.3411 [0.0851] AU
Ag = 57.51 [643.63] [0.09σ]
Teffp = 2390 [6683] K [0.27σ]

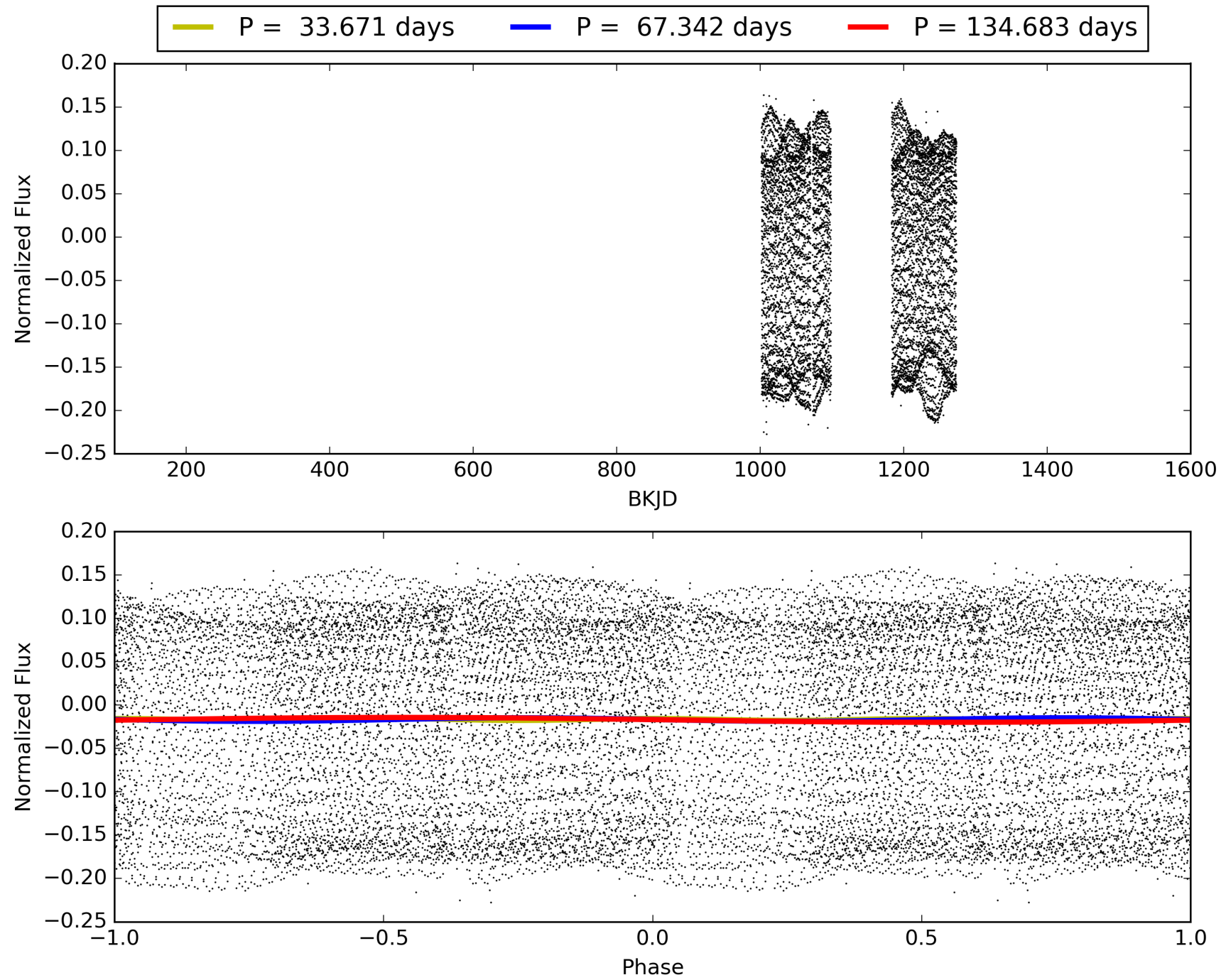
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [15.36σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.4%
Bootstrap-pfa: 4.60e-20
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.2824
Centroid-sig: 0.8%
Centroid-so: 0.353 arcsec [2.93σ]
OotOffset-rm: 0.120 arcsec [0.84σ]
KicOffset-rm: 0.138 arcsec [1.42σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 009077483-01, PDC Light Curves

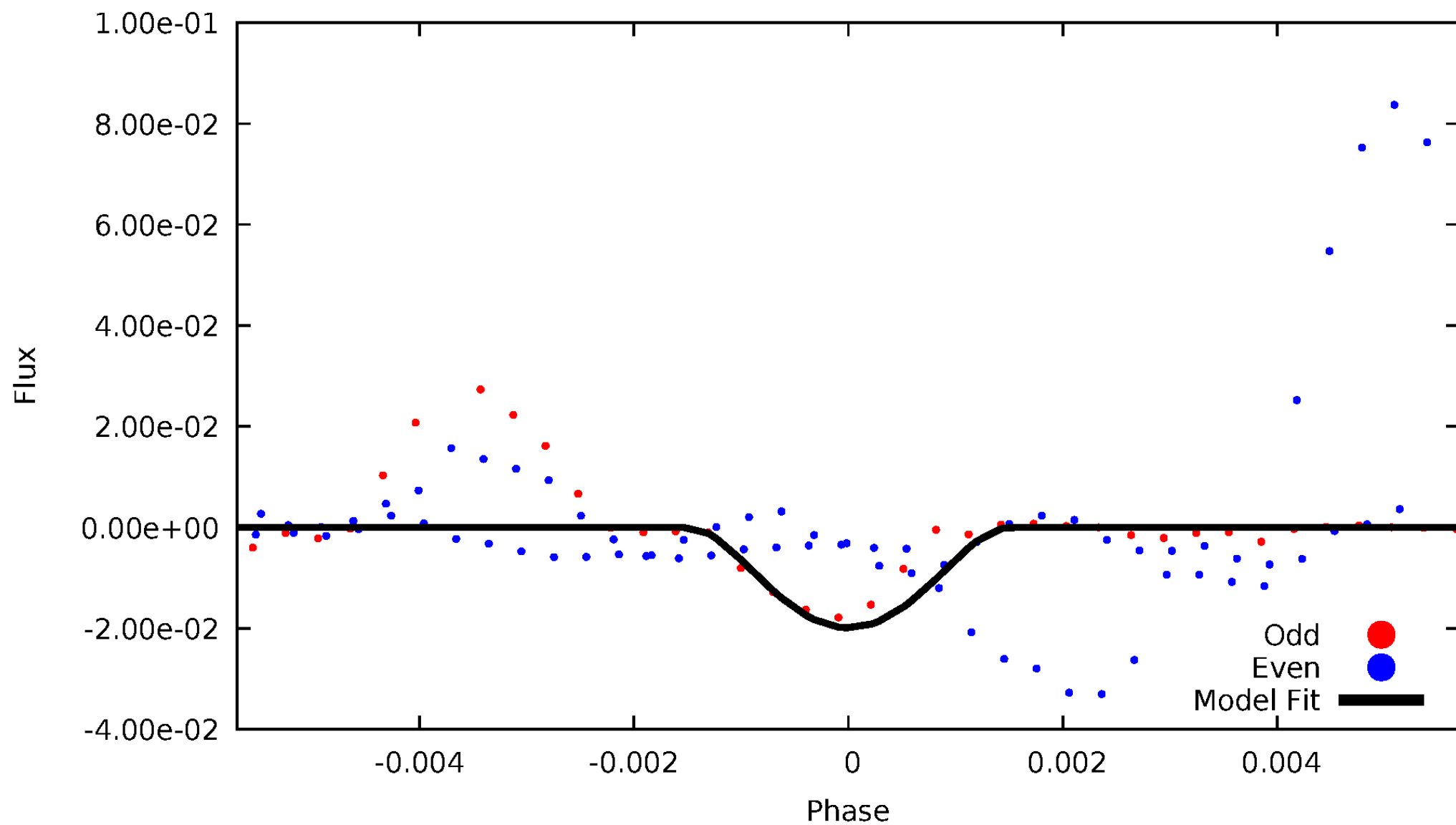


TCE 009077483-01



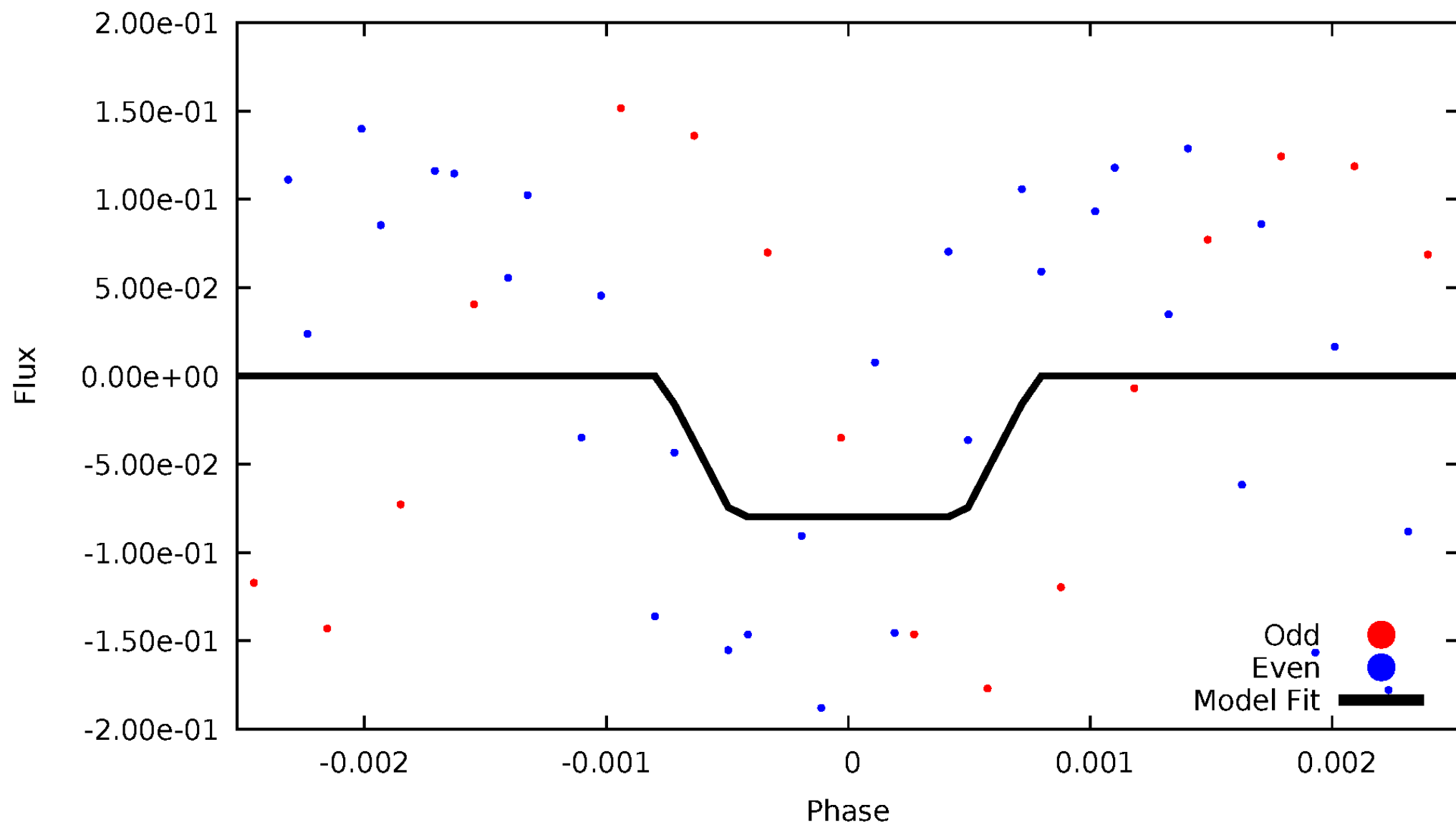
DV Odd/Even

TCE 009077483-01



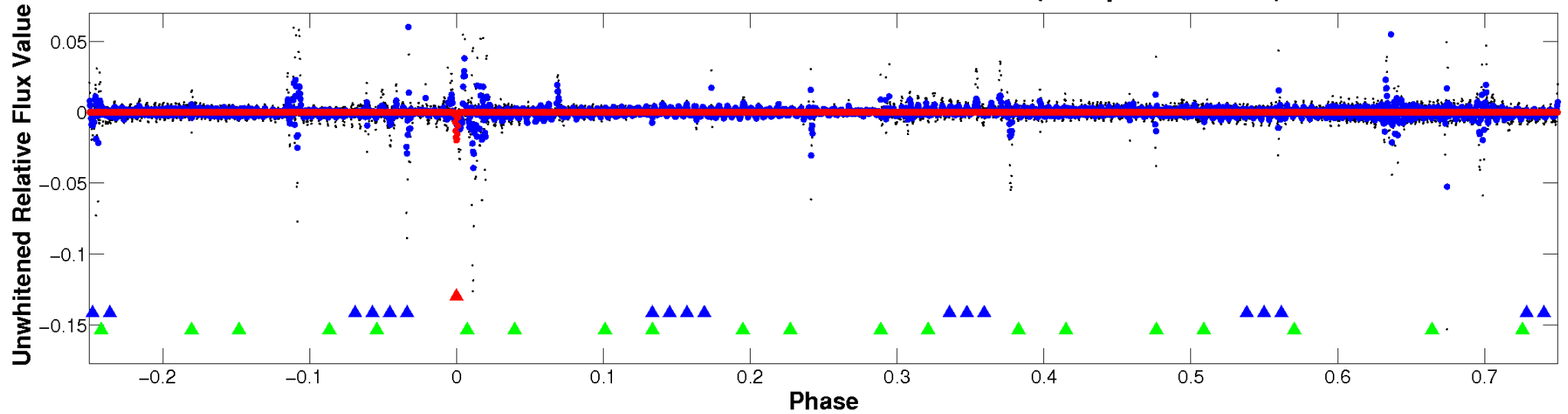
ALT Odd/Even

TCE 009077483-01

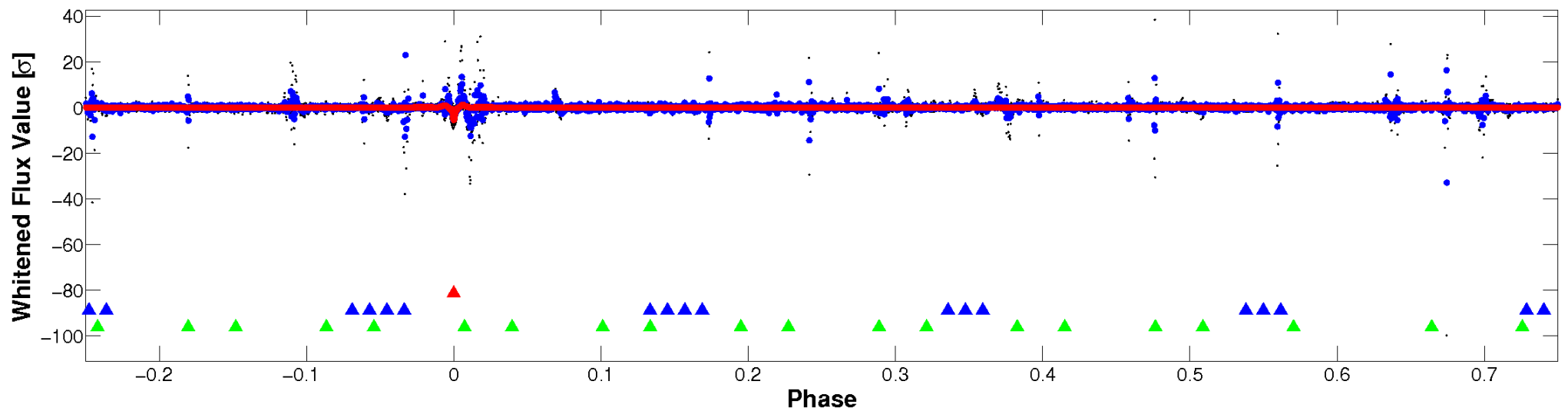


Non-Whitened Vs. Whitened Light Curve

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

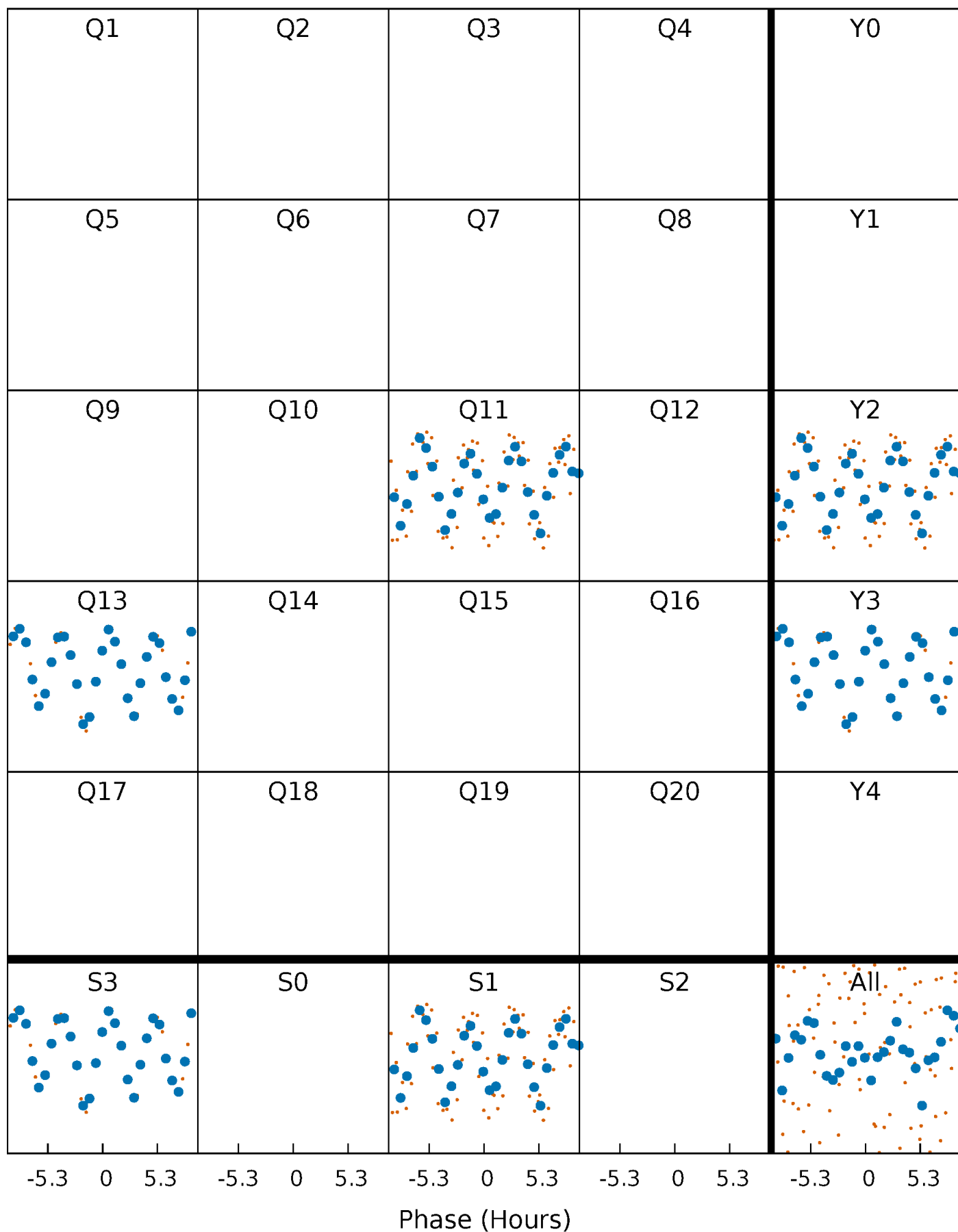


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



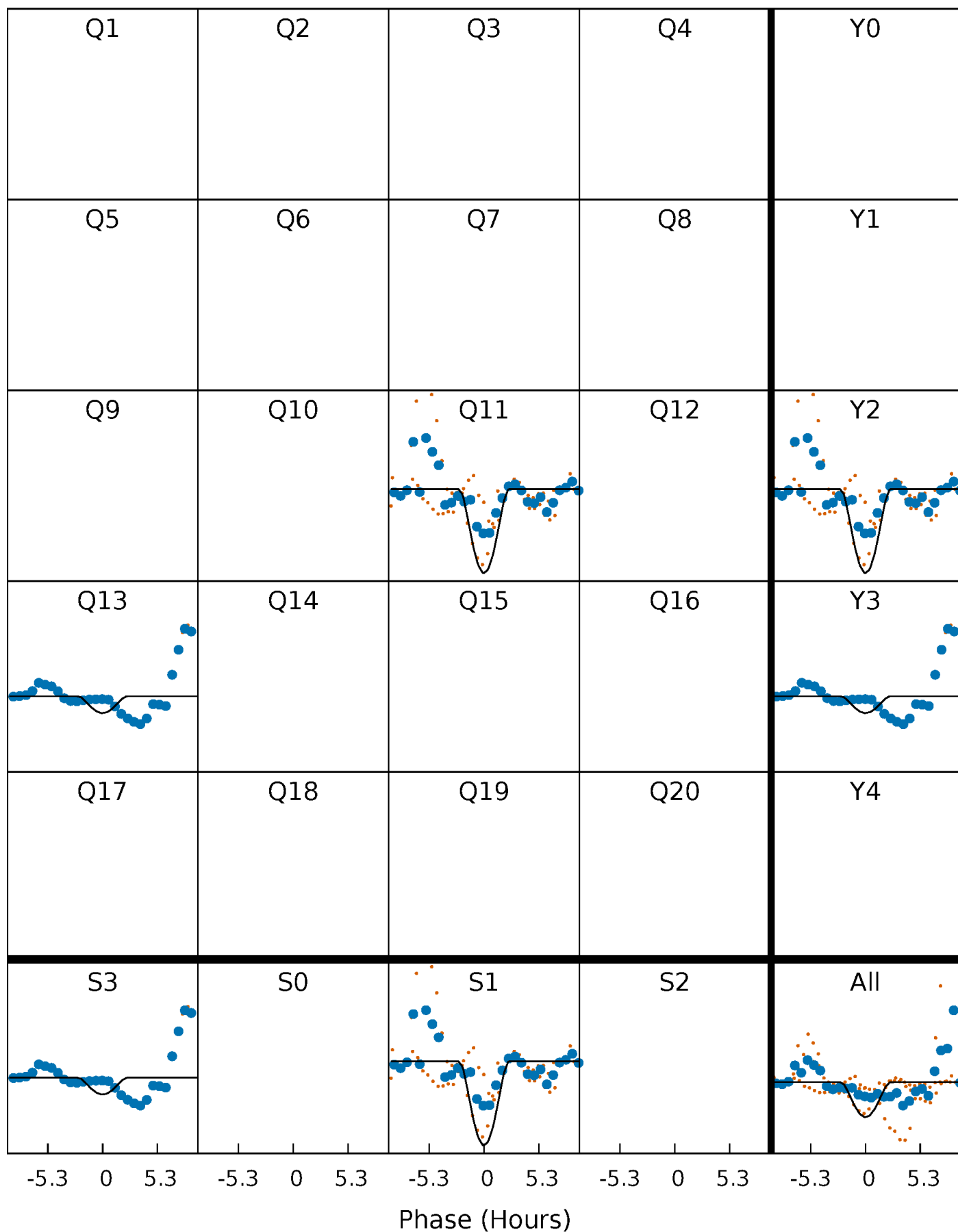
PDC Quarter-Phased Transit Curves

TCE 009077483-01 P= 67.341577 Days $T_0=153.235666$ (BKJD)



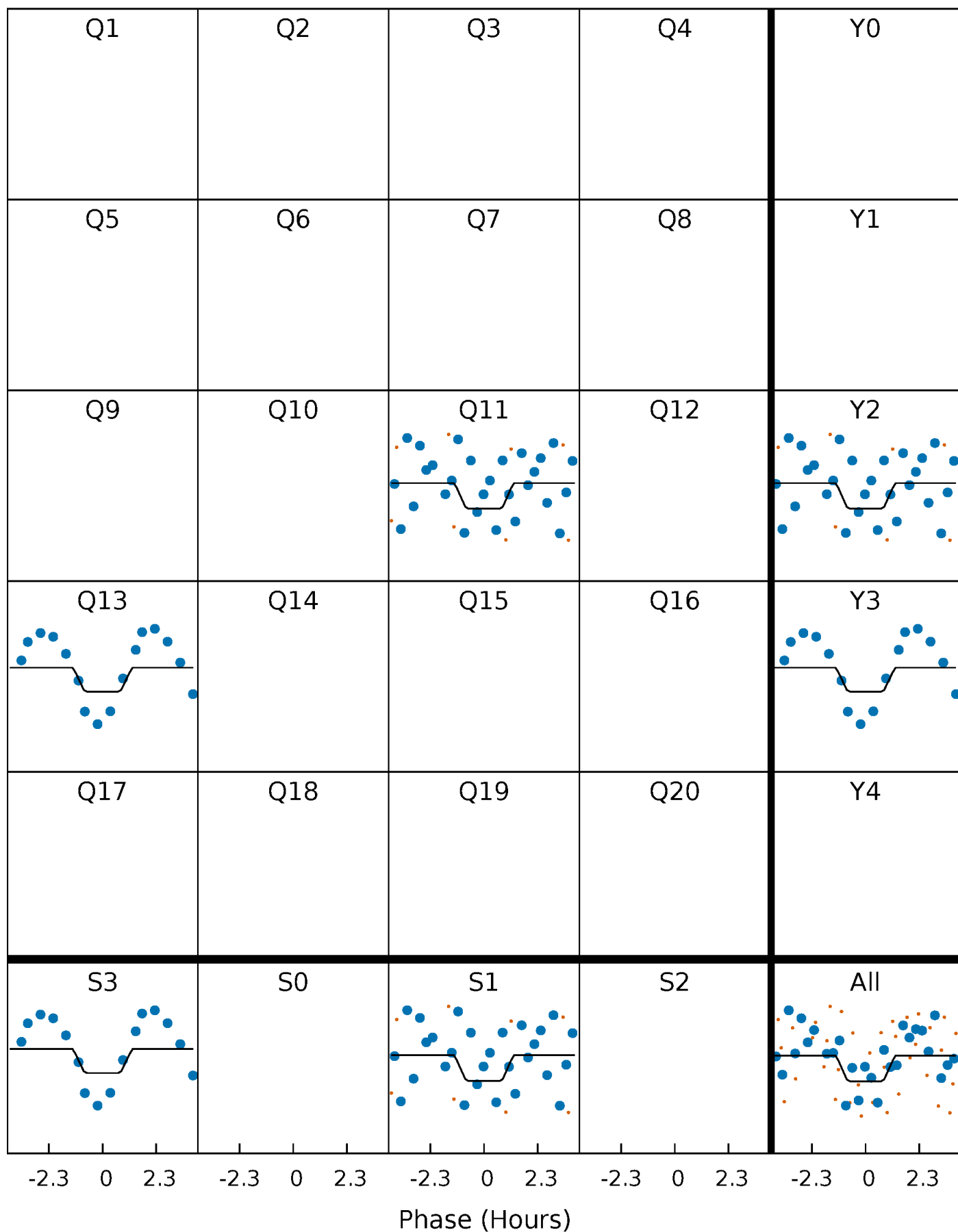
DV Quarter-Phased Transit Curves

TCE 009077483-01 P= 67.341577 Days $T_0=153.235666$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

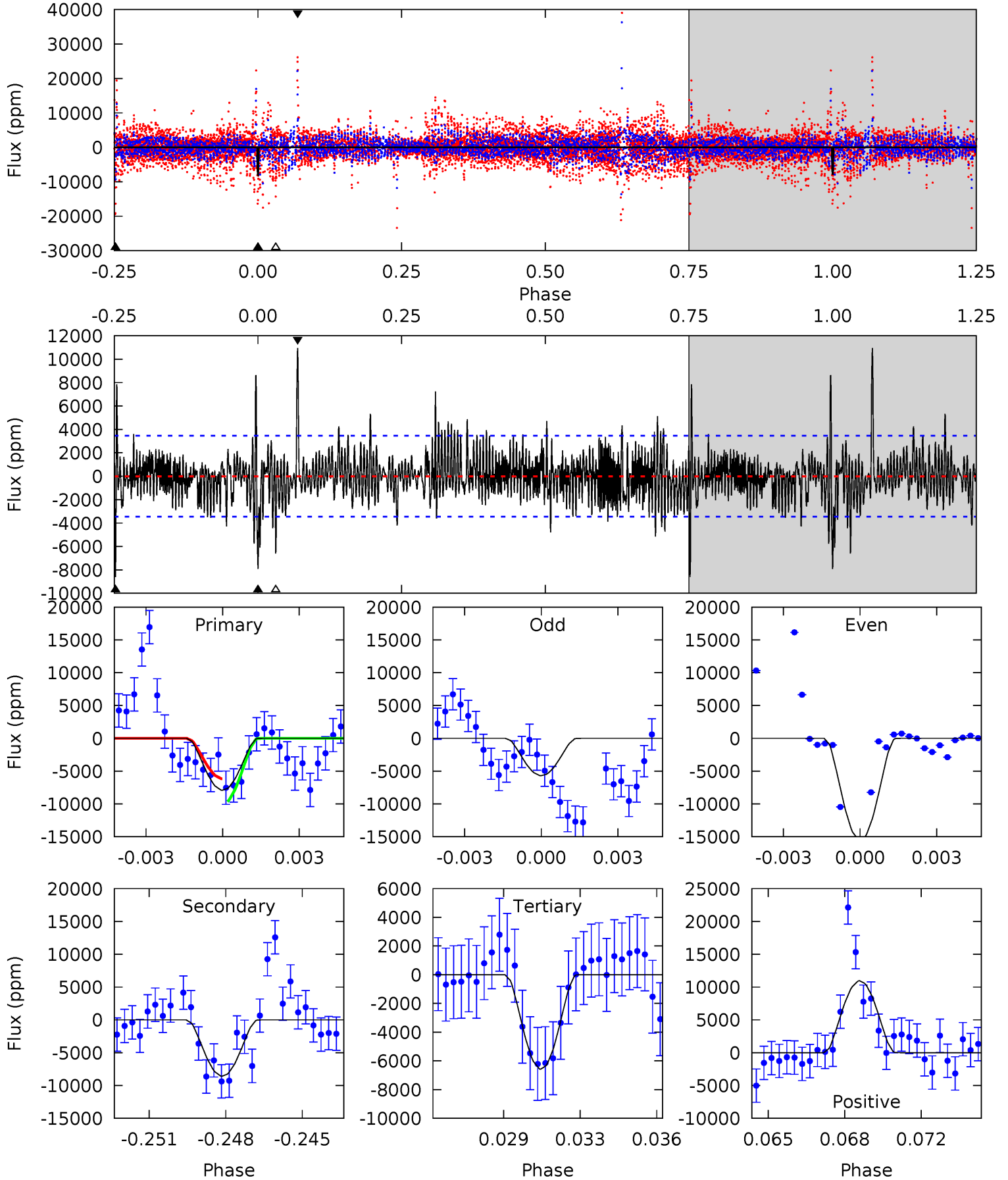
TCE 009077483-01 P= 67.378096 Days $T_0=152.593285$ (BKJD)



DV Model-Shift Uniqueness Test

009077483-01, P = 67.341577 Days, E = 153.235666 Days

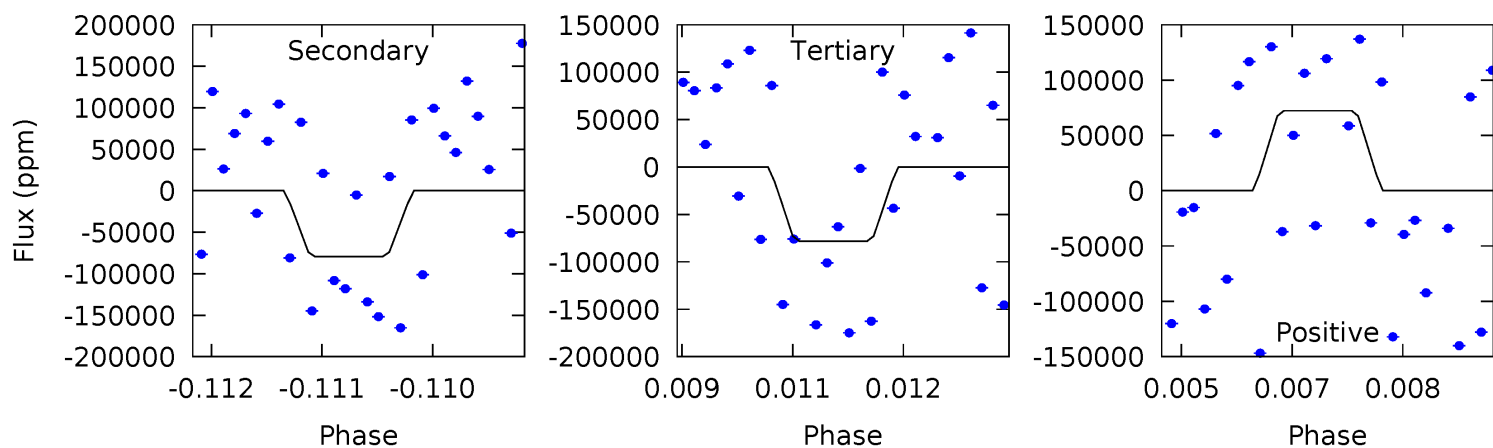
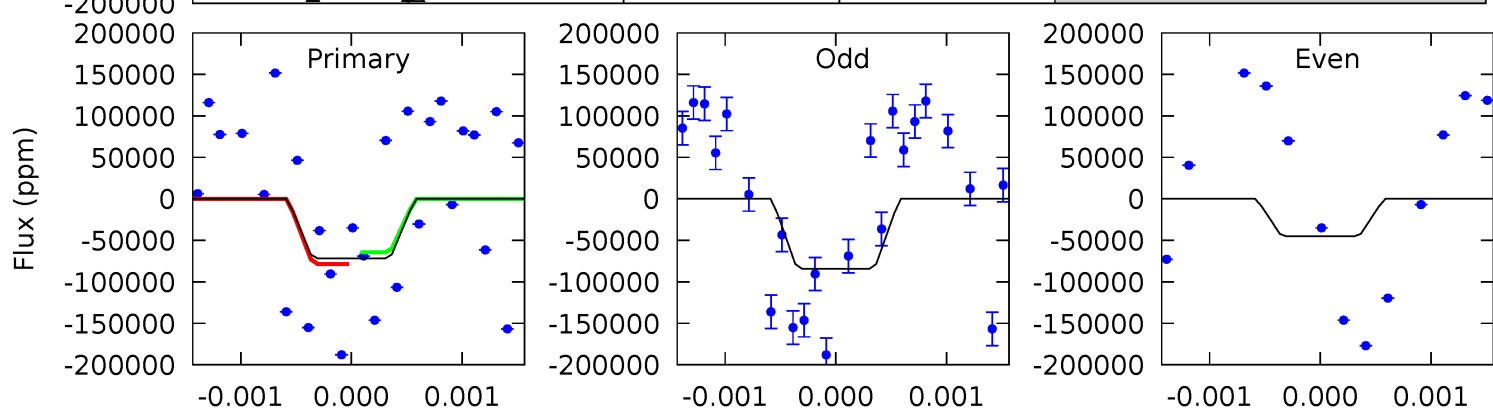
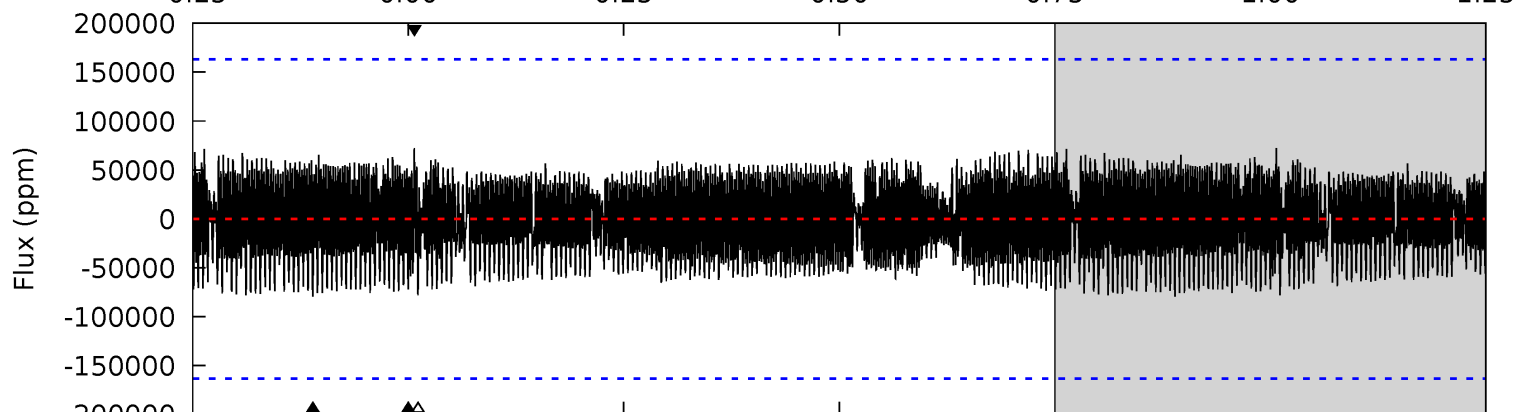
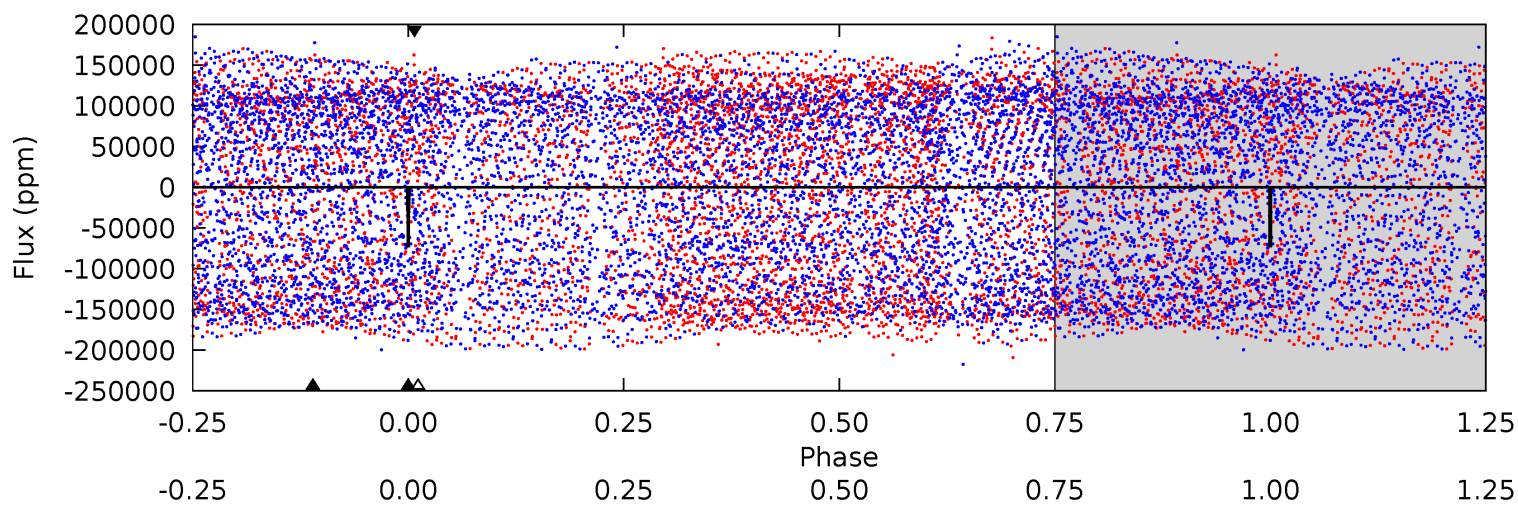
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	13.0	9.97	16.6	5.24	2.94	2.54	2.04	-4.59	3.04	-3.59	5.95	1.32	0.56	2.68



Alt Model-Shift Uniqueness Test

009077483-01, P = 67.378096 Days, E = 152.593285 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.37	2.62	2.58	2.39	5.40	3.20	1.11	-0.21	-0.02	0.04	0.23	0.60	1.57	0.48	0.23



Stellar Parameters For KIC 009077483

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6438^{+181}_{-250}	$4.256^{+0.132}_{-0.198}$	$-0.140^{+0.250}_{-0.300}$	$1.332^{+0.395}_{-0.263}$	$1.166^{+0.192}_{-0.157}$	$0.696^{+0.500}_{-0.334}$
	+3%/-4%	+3%/-5%	+179%/-214%	+30%/-20%	+16%/-13%	+72%/-48%
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 009077483-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-8595 ± 660	$128.23^{+129.33}_{-88.03}$	787^{+65}_{-48}	2849^{+1232}_{-476}	35^{+309}_{-27}
Alt.	-79281 ± 30261	$124.59^{+140.83}_{-82.57}$	795^{+56}_{-51}	4078^{+2509}_{-912}	330^{+2859}_{-260}

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 $A_{obs} \gg 1.0$

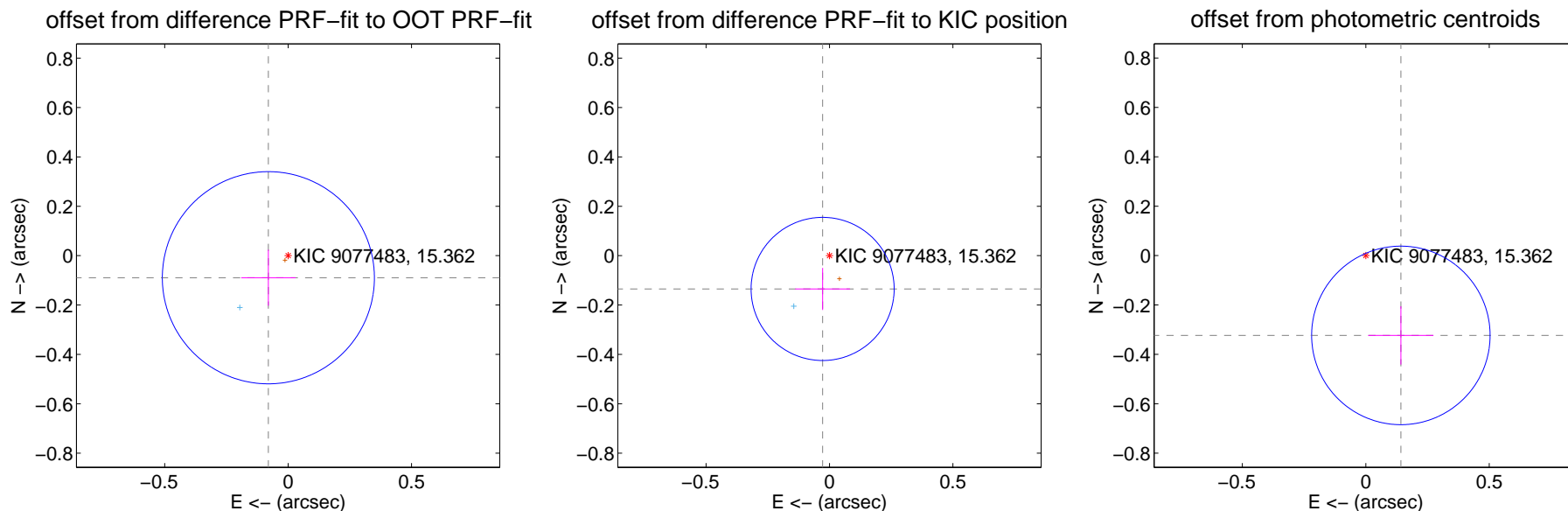
DV Centroid Data

Supplemental centroid analysis for 009077483-01. Kepler magnitude: 15.36. Transit SNR 18.86

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.120 ± 0.143	0.84	0.080 ± 0.110	-0.089 ± 0.113
PRF-fit source offset from KIC position	0.138 ± 0.097	1.42	0.028 ± 0.111	-0.135 ± 0.085
photometric centroid source offset	0.35 ± 0.12	2.93	-0.14 ± 0.13	-0.32 ± 0.12



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.



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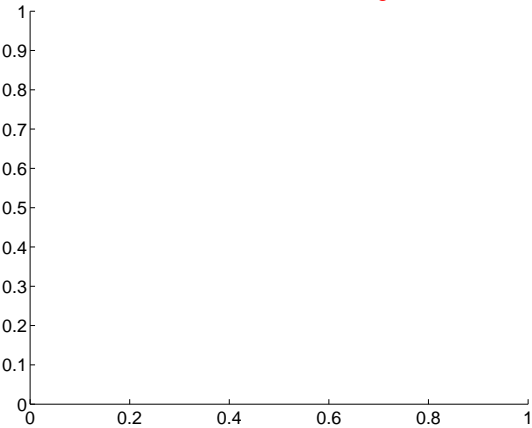
Q9 no difference image



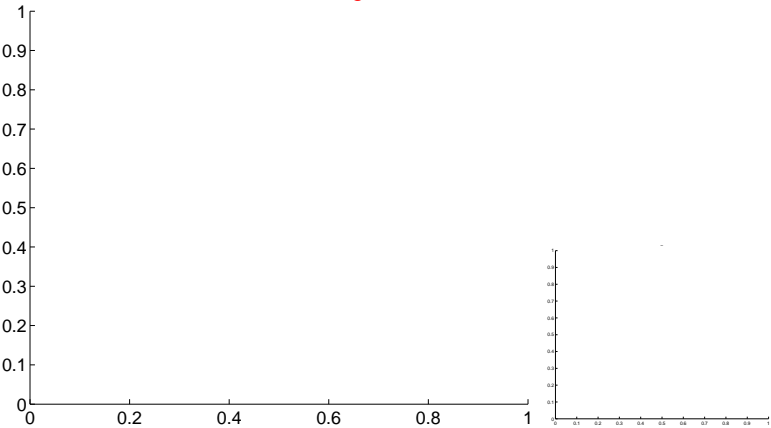
Q9 no OOT image



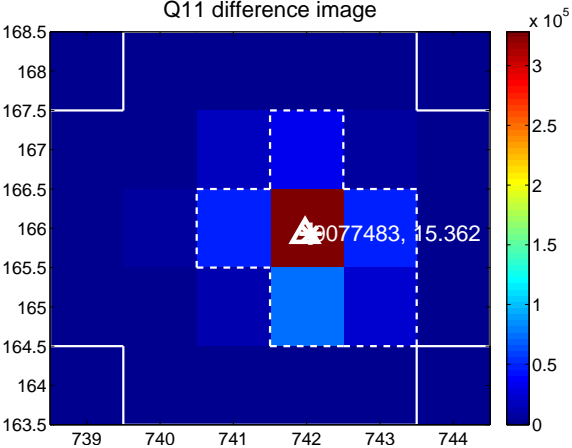
Q10 no difference image



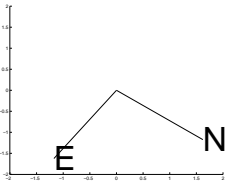
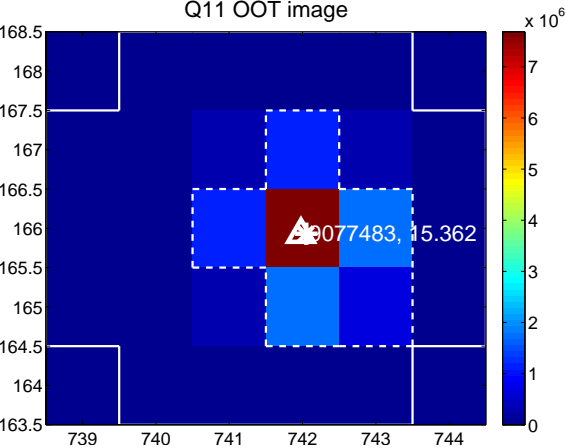
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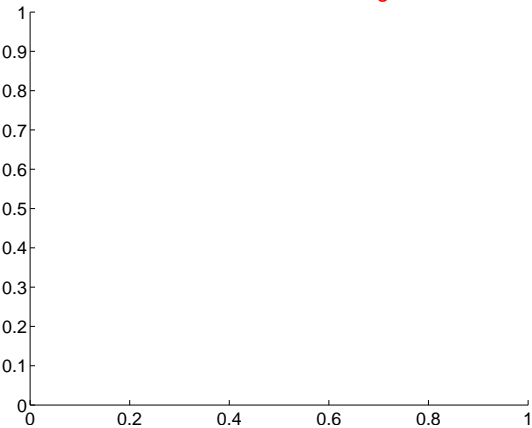
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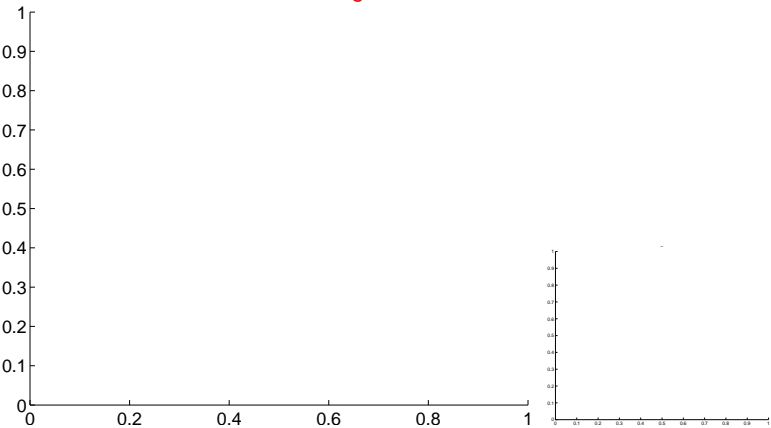
Q11 OOT image



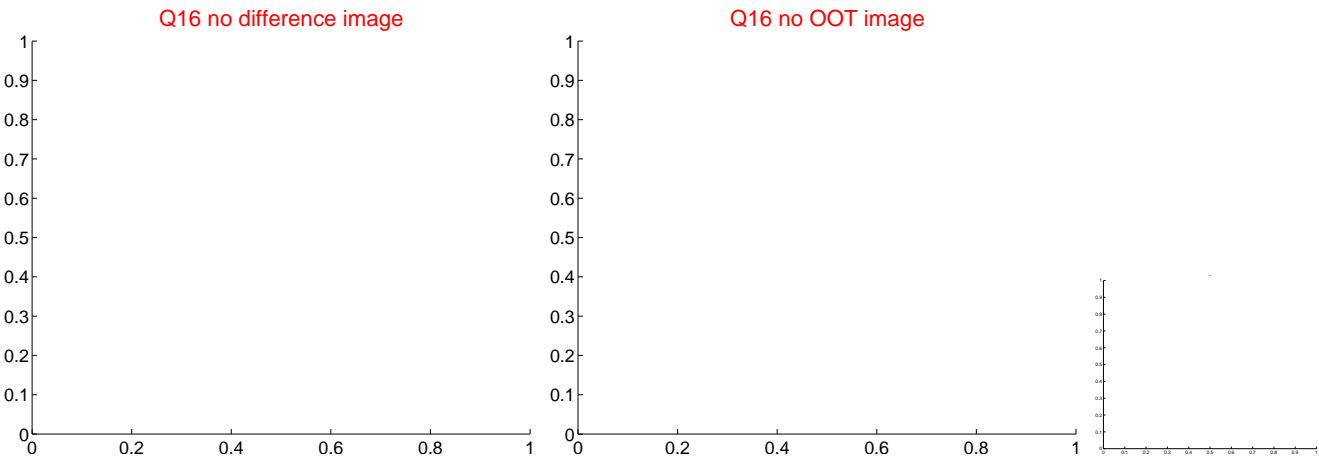
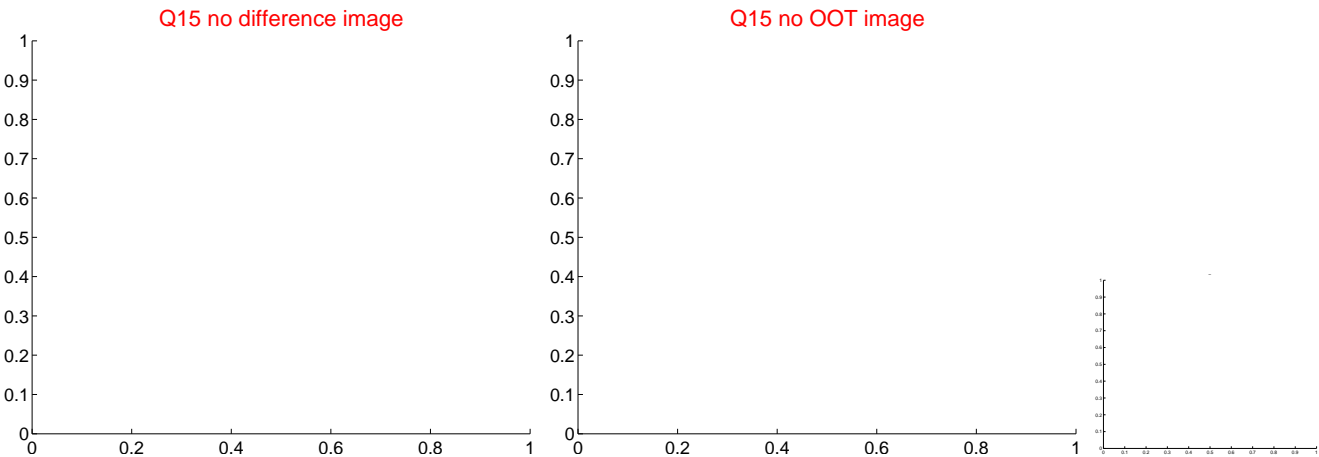
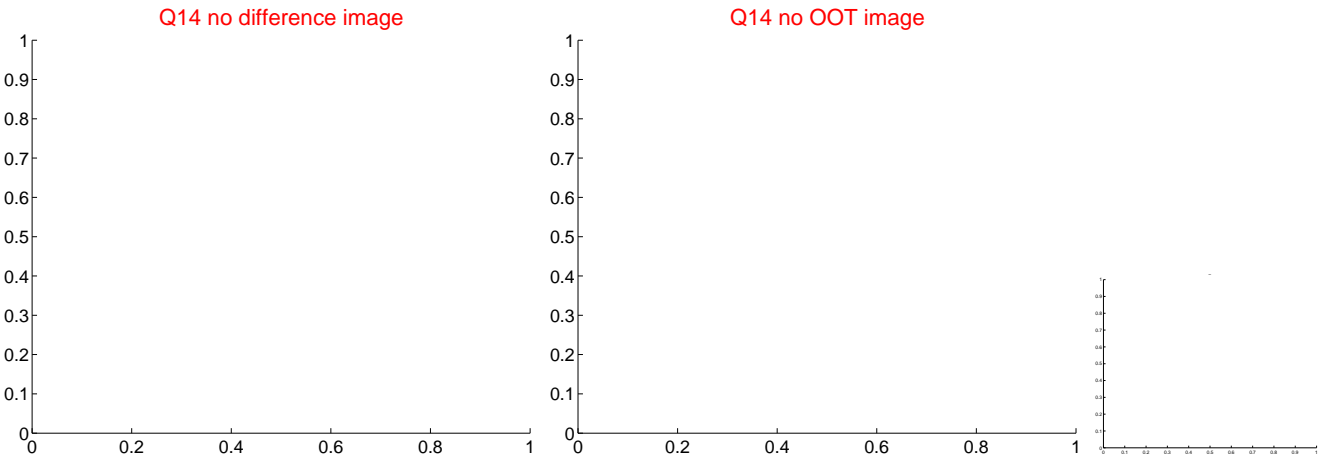
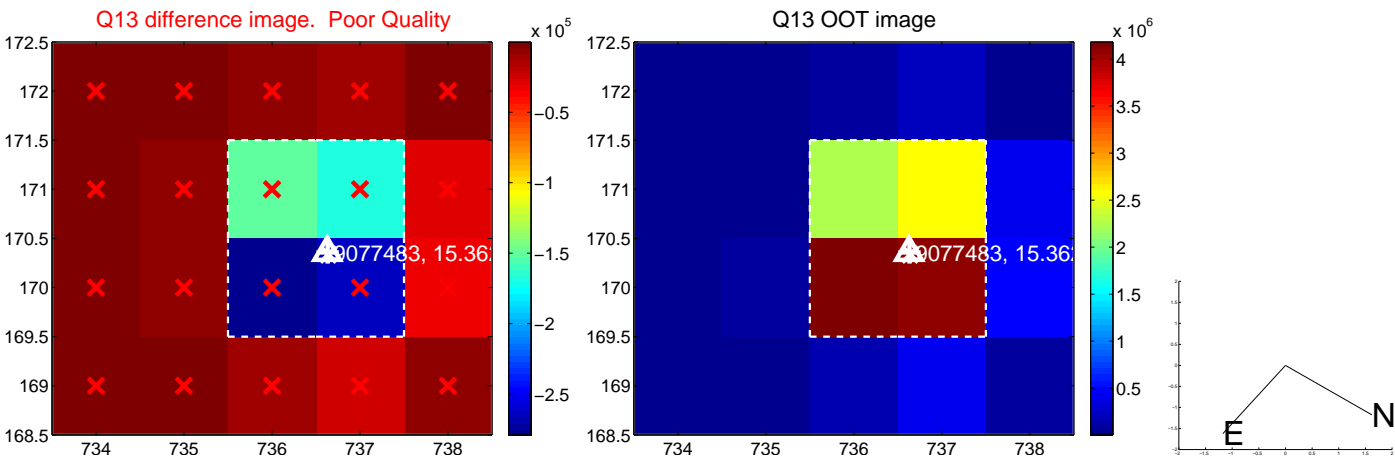
Q12 no difference image



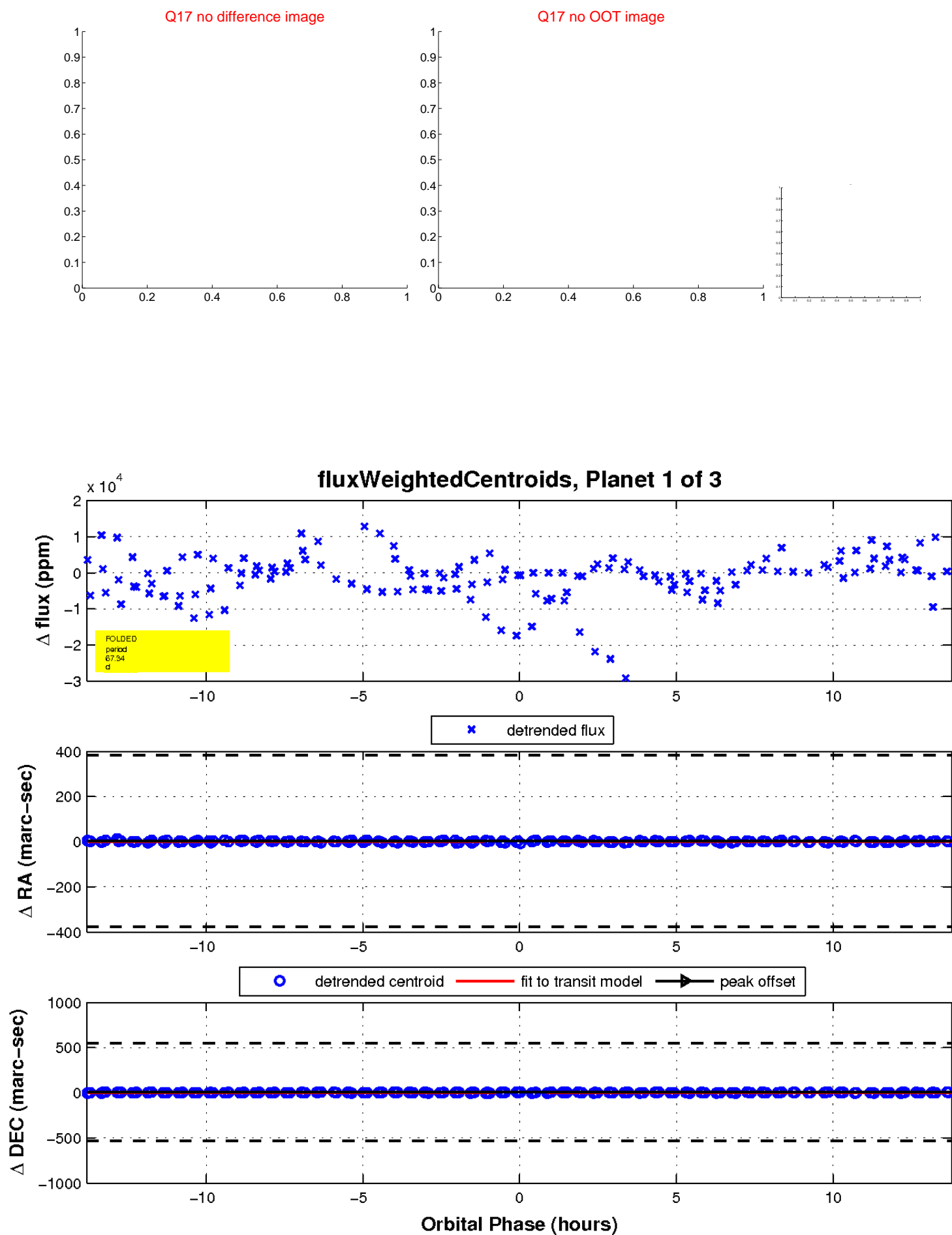
Q12 no OOT image



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

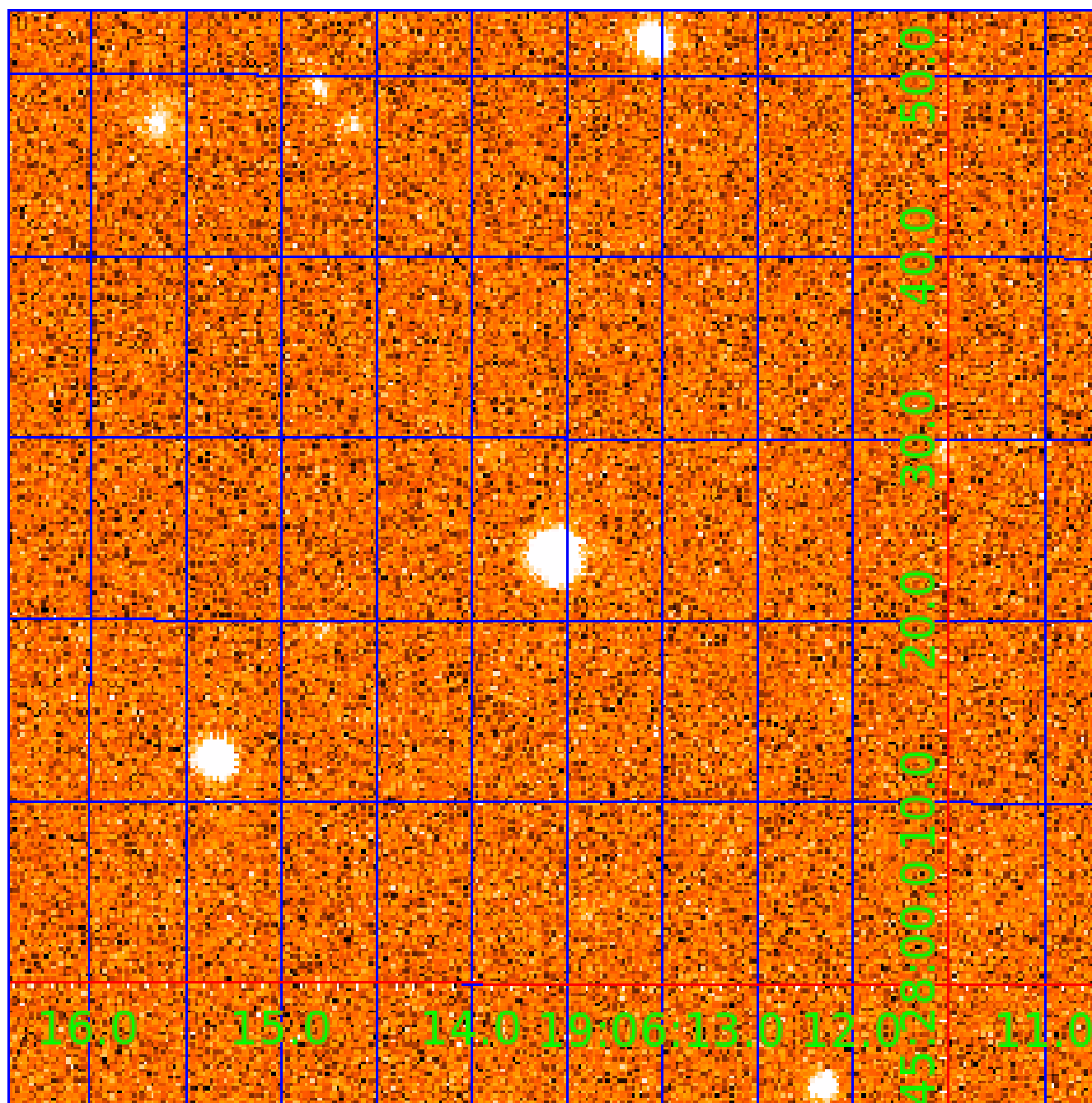


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009077483

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

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009077483-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009077483-03	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—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.

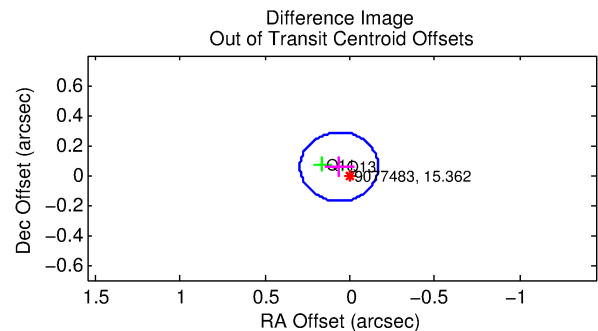
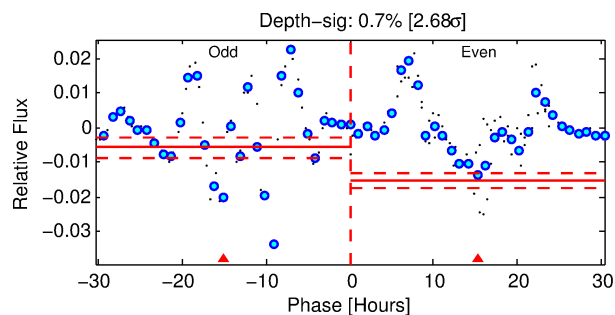
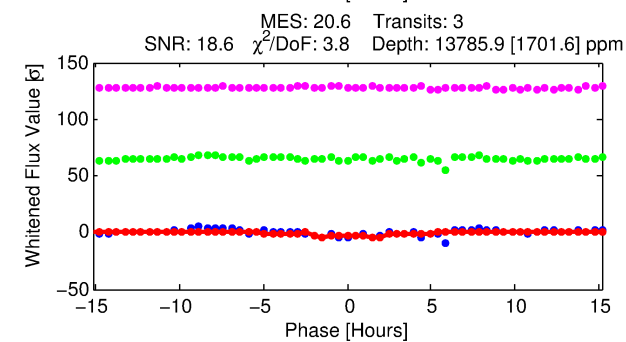
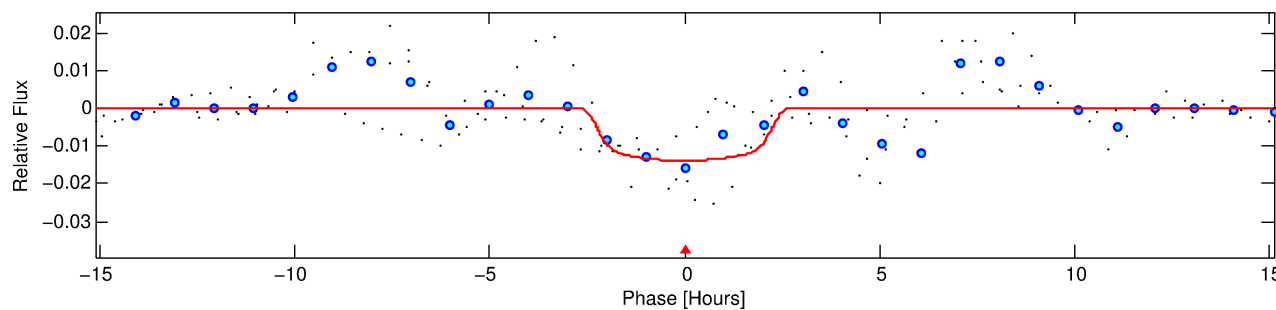
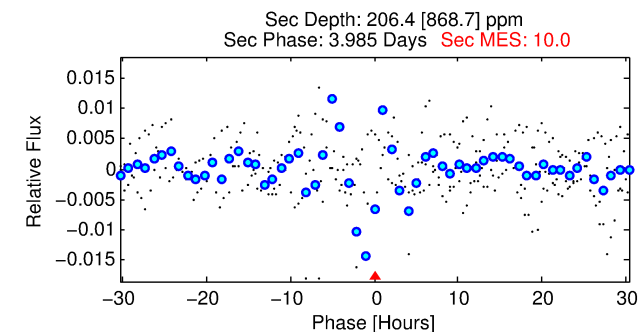
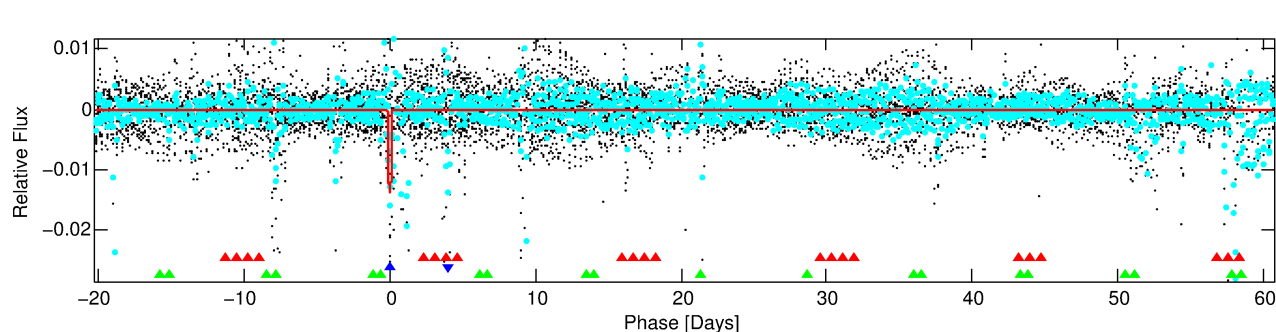
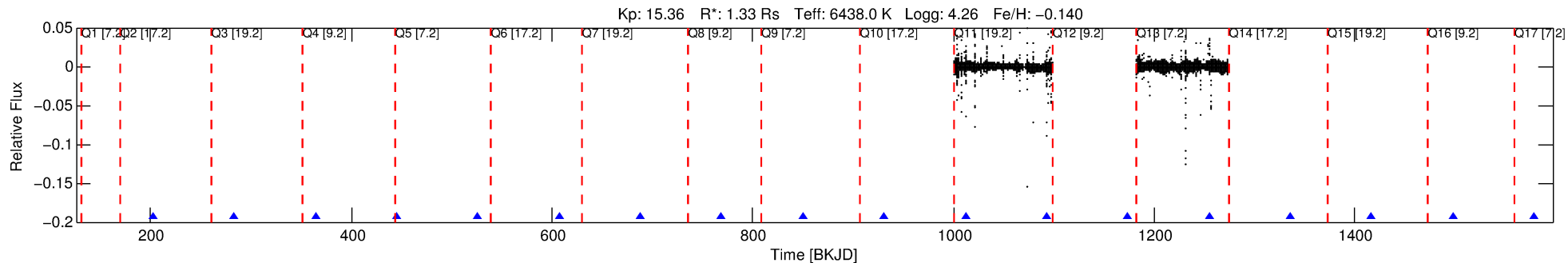
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009077483-02

No Significant Match Found

DV One-Page Summary

KIC: 9077483 Candidate: 2 of 3 Period: 80.969 d



DV Fit Results:

Period = 80.96880 [0.00337] d
Epoch = 202.3047 [0.0421] BKJD
Rp/R* = 0.1081 [0.0267]
a/R* = 135.85 [162.34]
b = 0.00 [1785.30]
Seff = 18.36 [7.24]
Teq = 528 [52] K
Rp = 15.71 [6.06] Re
a = 0.3857 [0.0962] AU
Ag = 68.49 [291.24] [0.23σ]
Teffp = 2348 [2488] K [0.73σ]

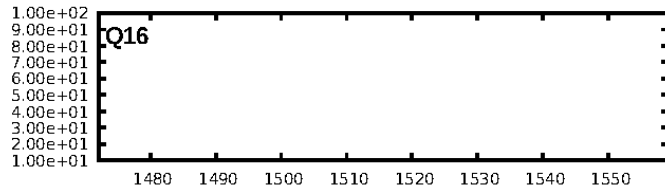
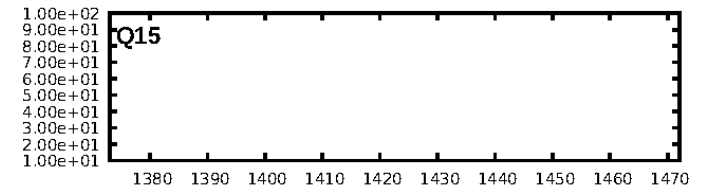
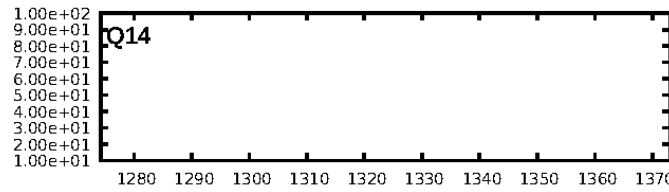
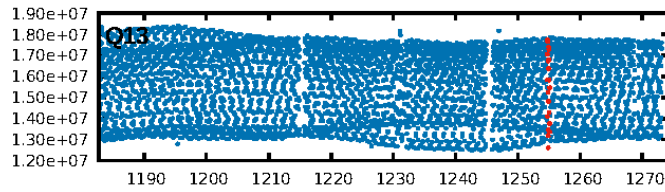
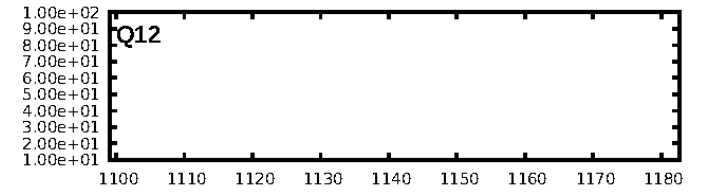
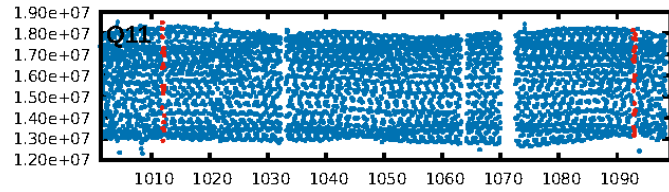
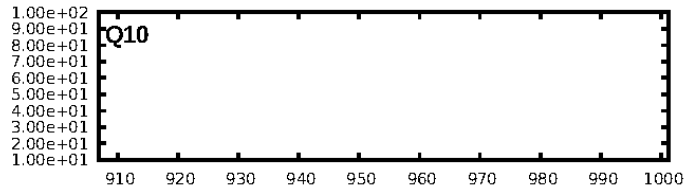
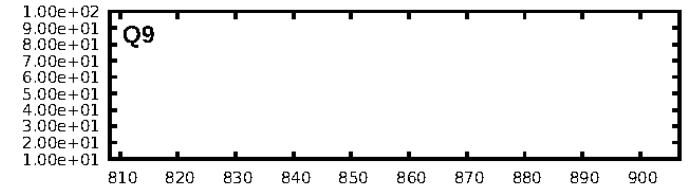
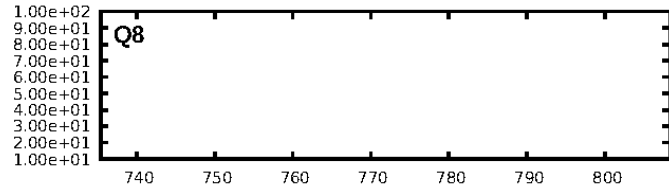
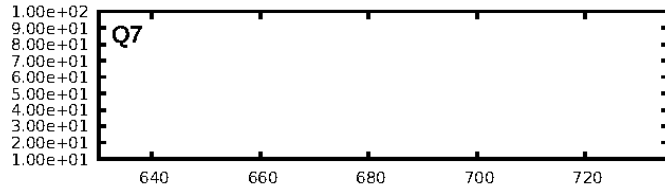
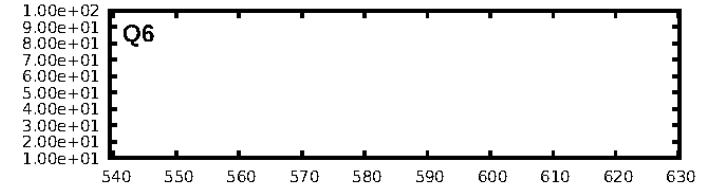
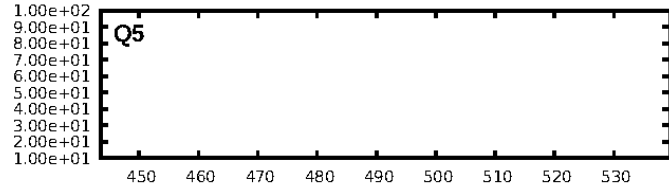
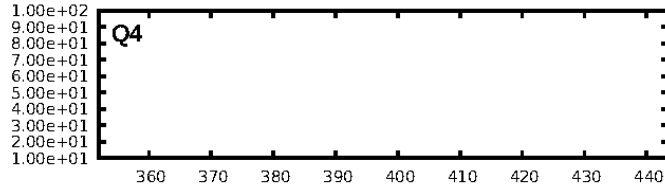
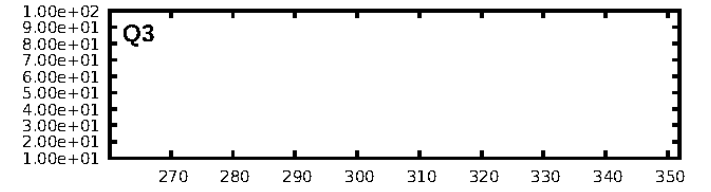
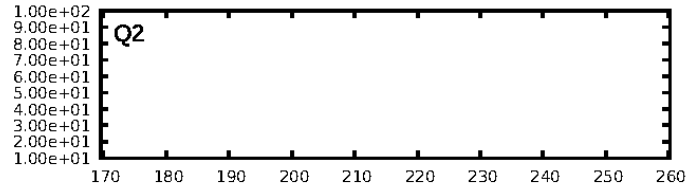
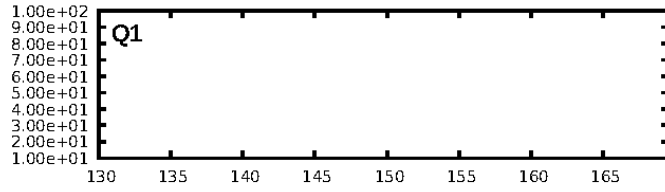
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [17.39σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 4.19e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.3905
Centroid-sig: 3.4%
Centroid-so: 0.133 arcsec [1.03σ]
OotOffset-rm: 0.086 arcsec [1.12σ]
KicOffset-rm: 0.008 arcsec [0.09σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

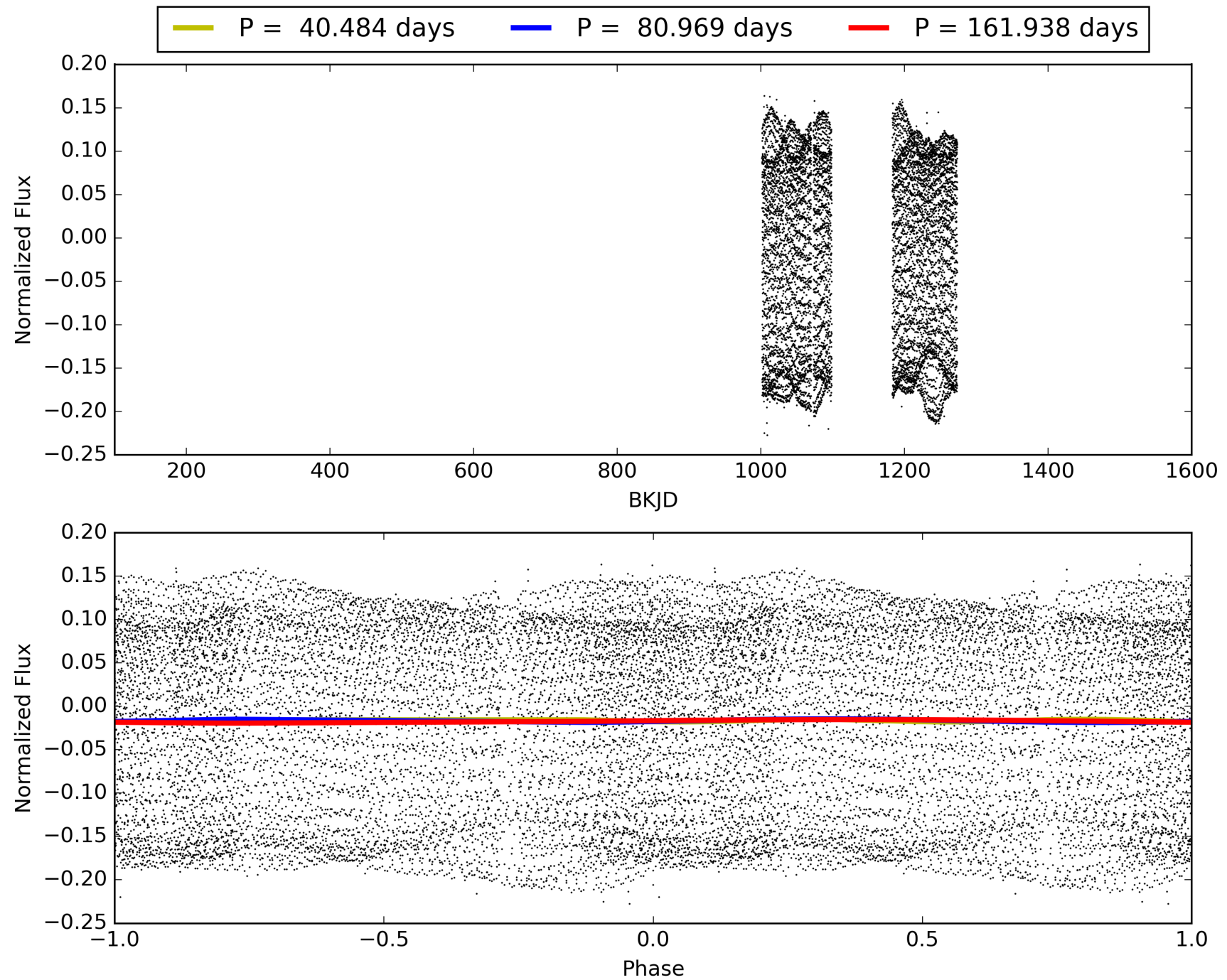
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 12:20:44 Z

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

TCE 009077483-02, PDC Light Curves

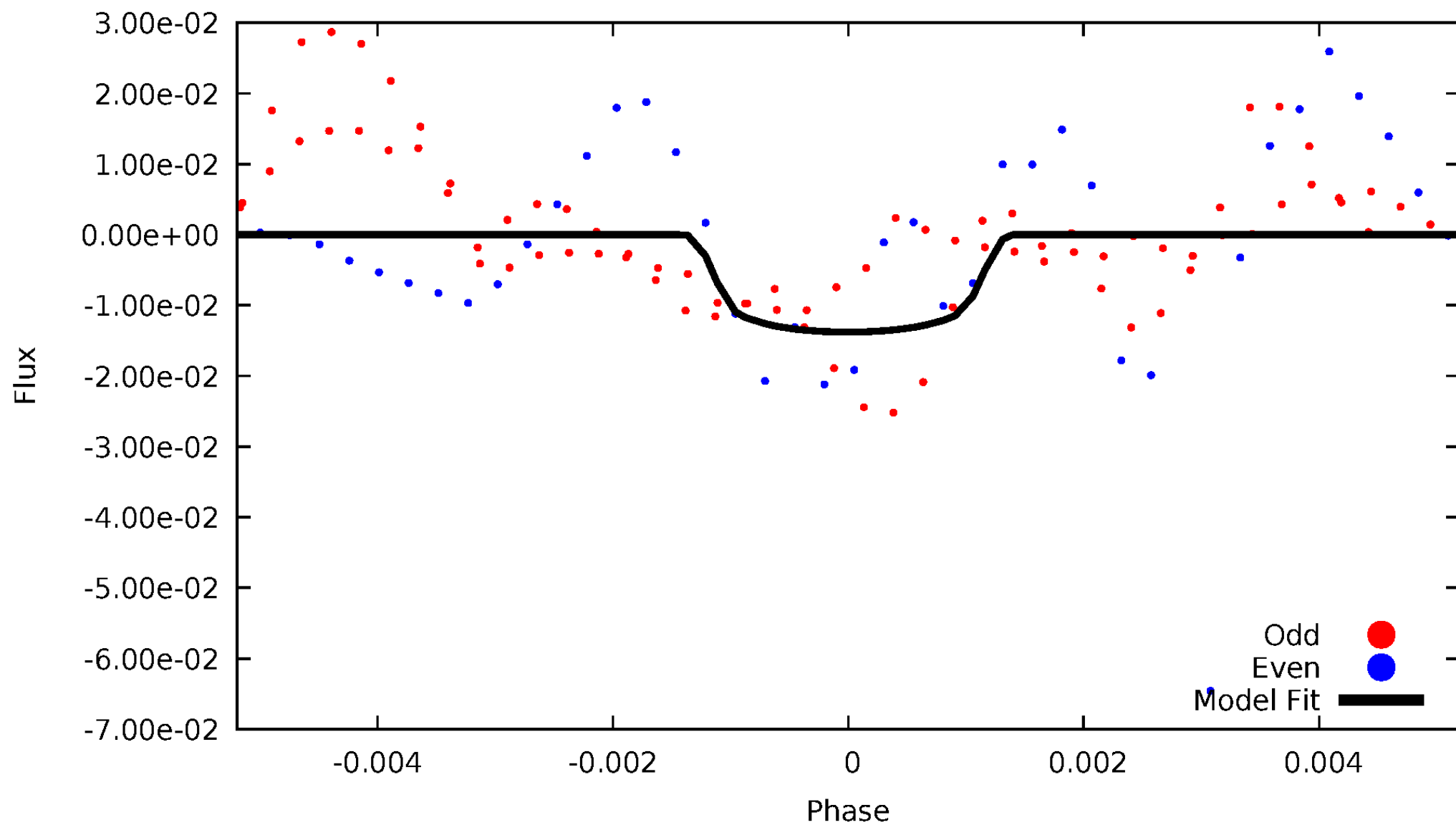


TCE 009077483-02



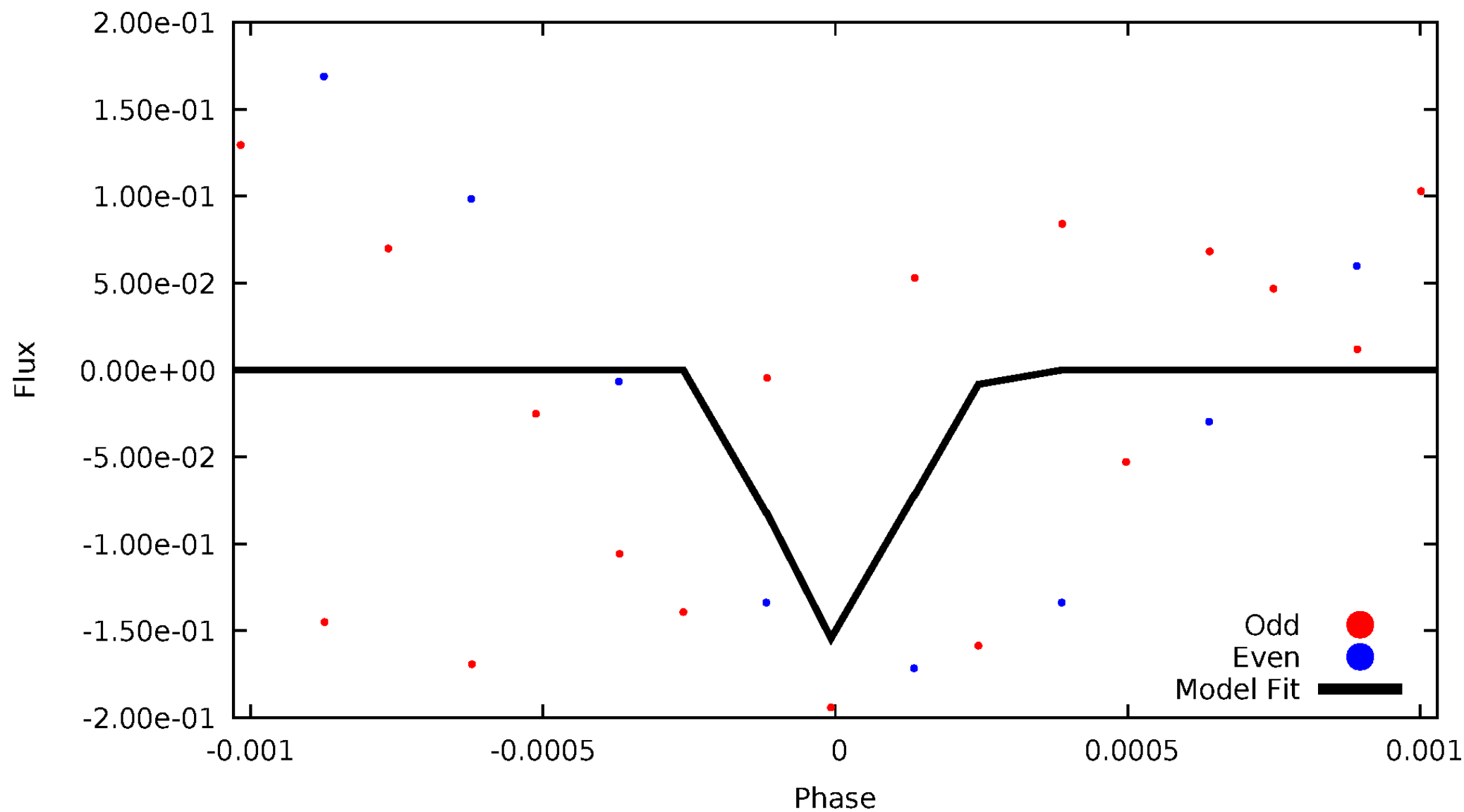
DV Odd/Even

TCE 009077483-02



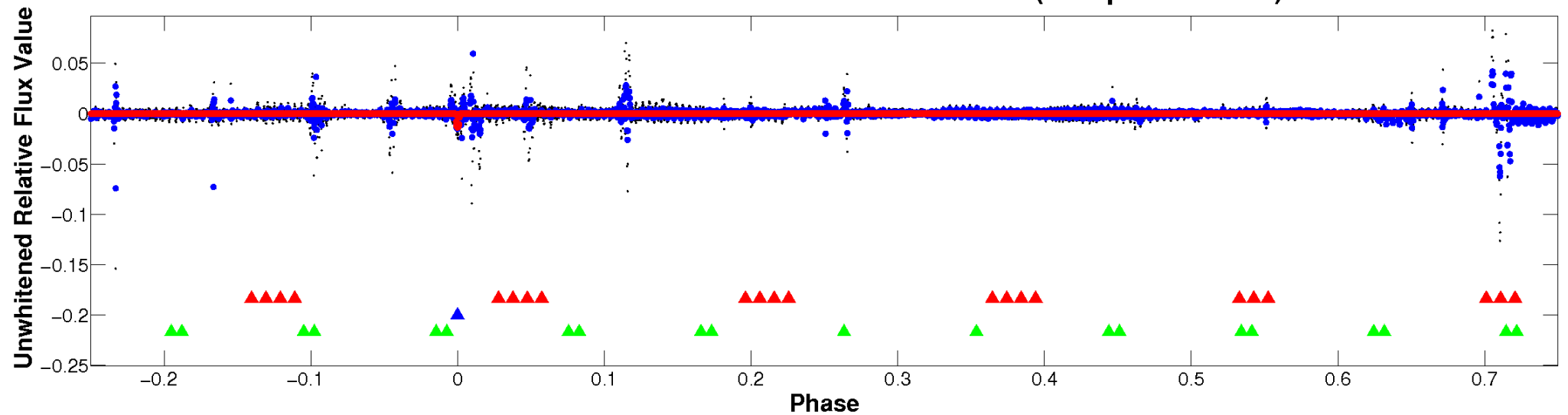
ALT Odd/Even

TCE 009077483-02

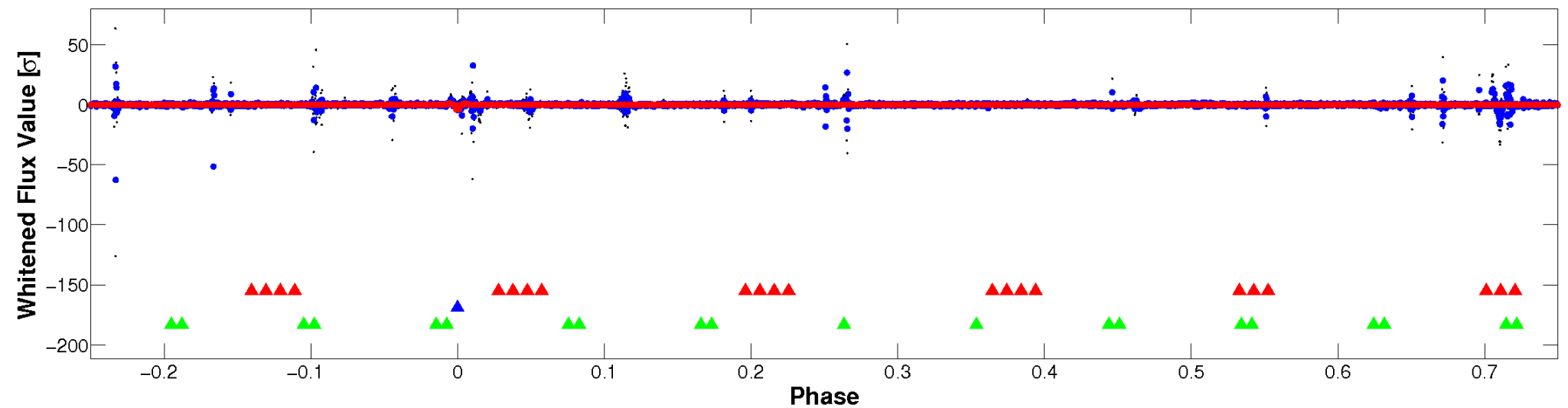


Non-Whitened Vs. Whitened Light Curve

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

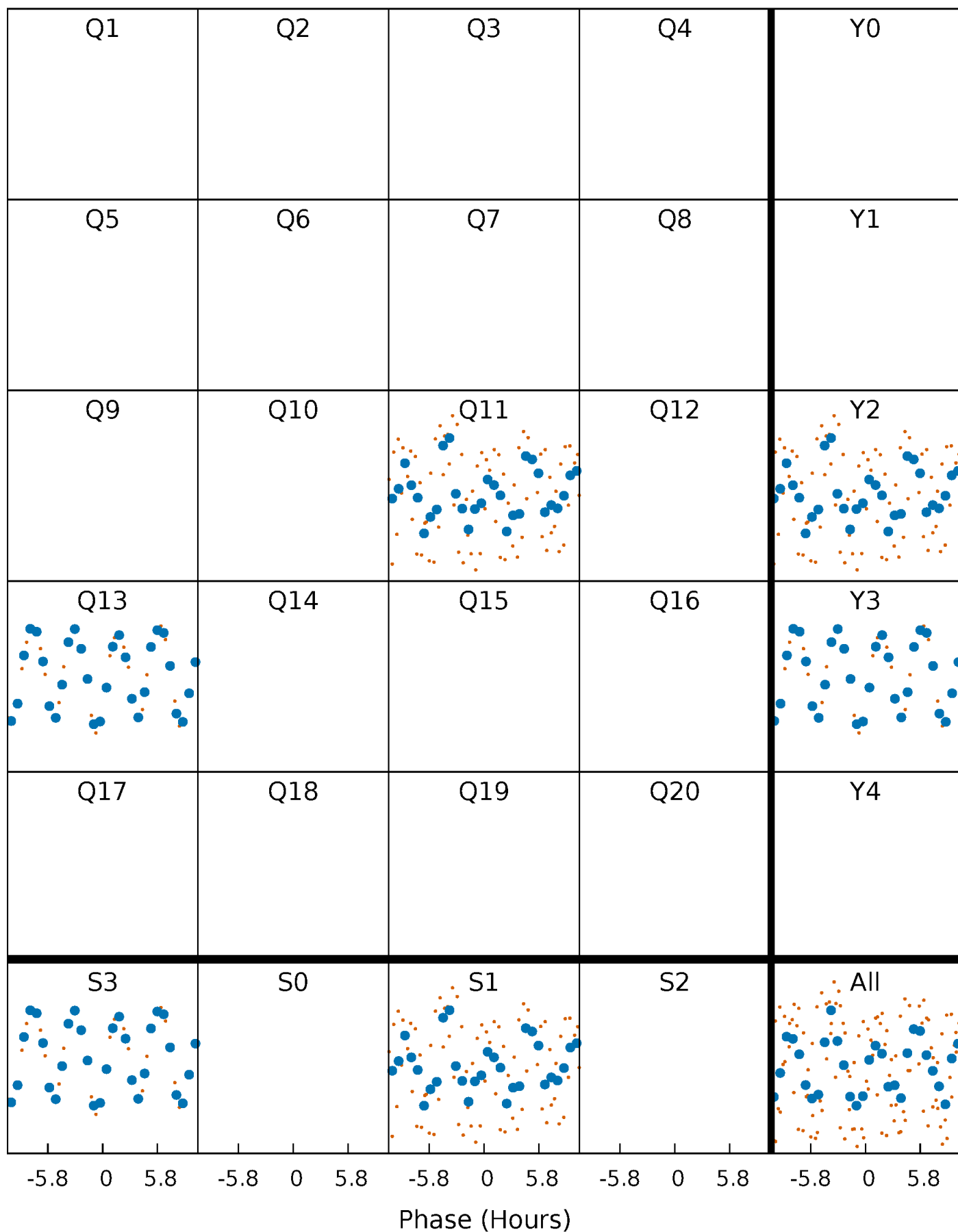


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



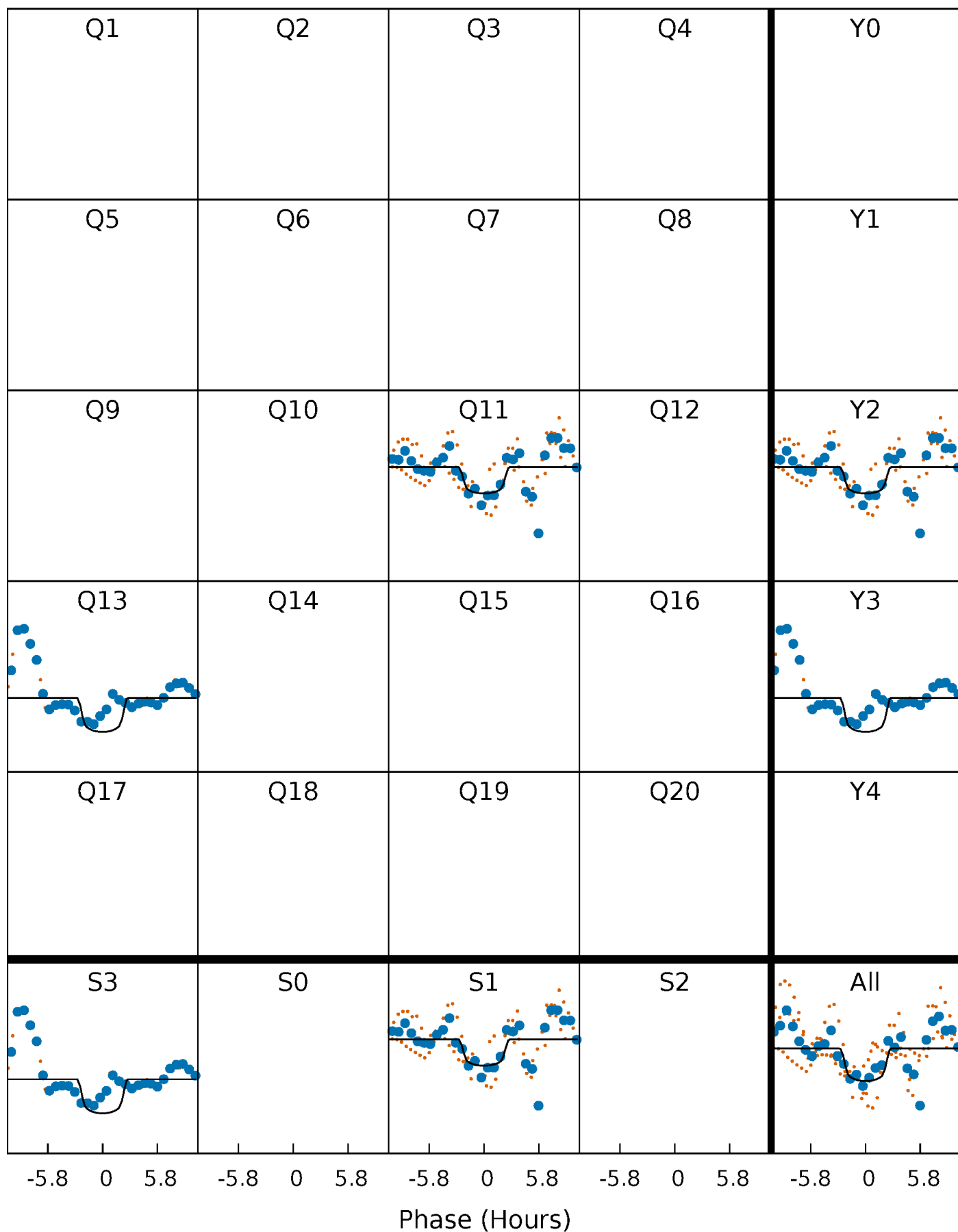
PDC Quarter-Phased Transit Curves

TCE 009077483-02 P= 80.968797 Days $T_0=202.304741$ (BKJD)



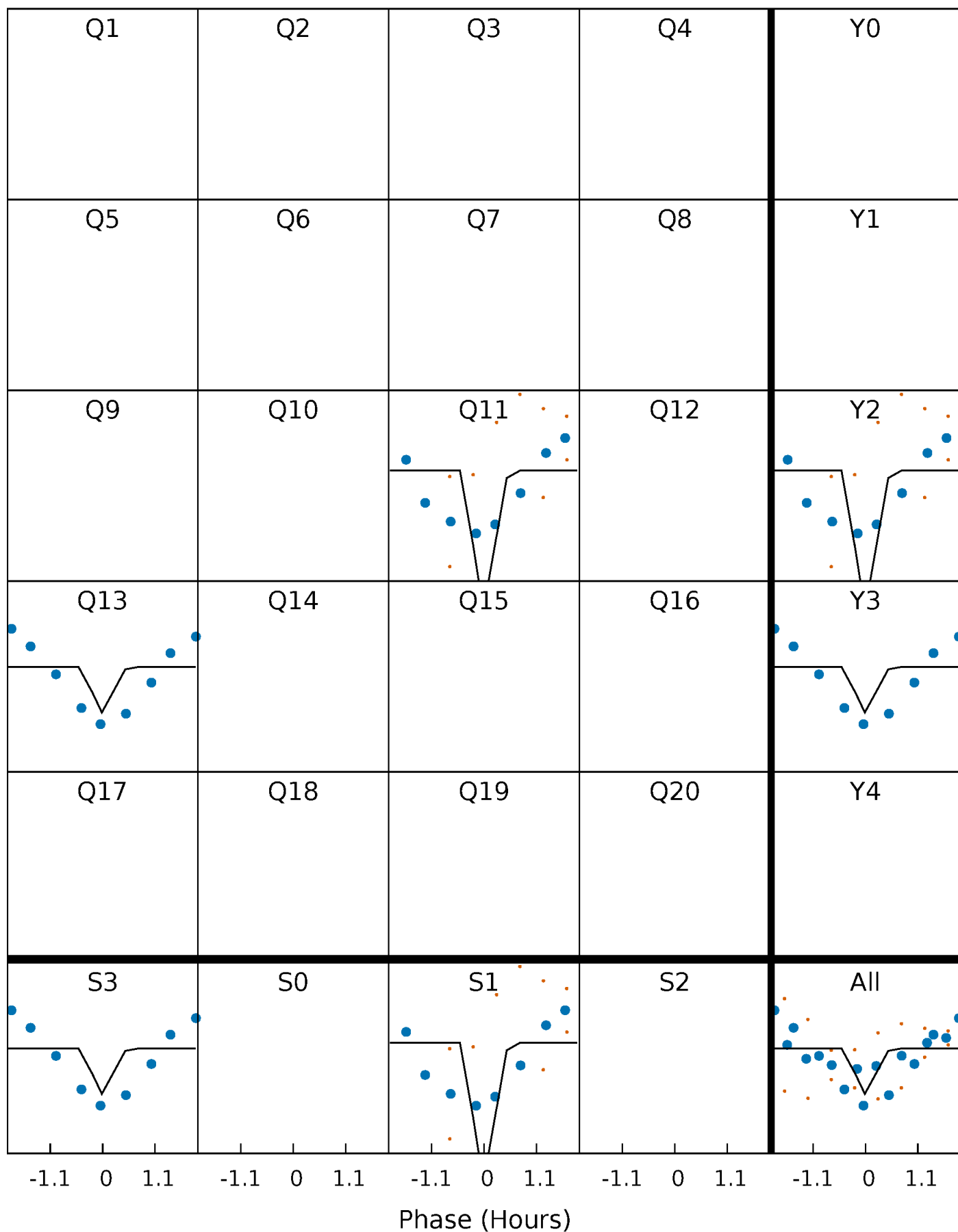
DV Quarter-Phased Transit Curves

TCE 009077483-02 $P = 80.968797$ Days $T_0 = 202.304741$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

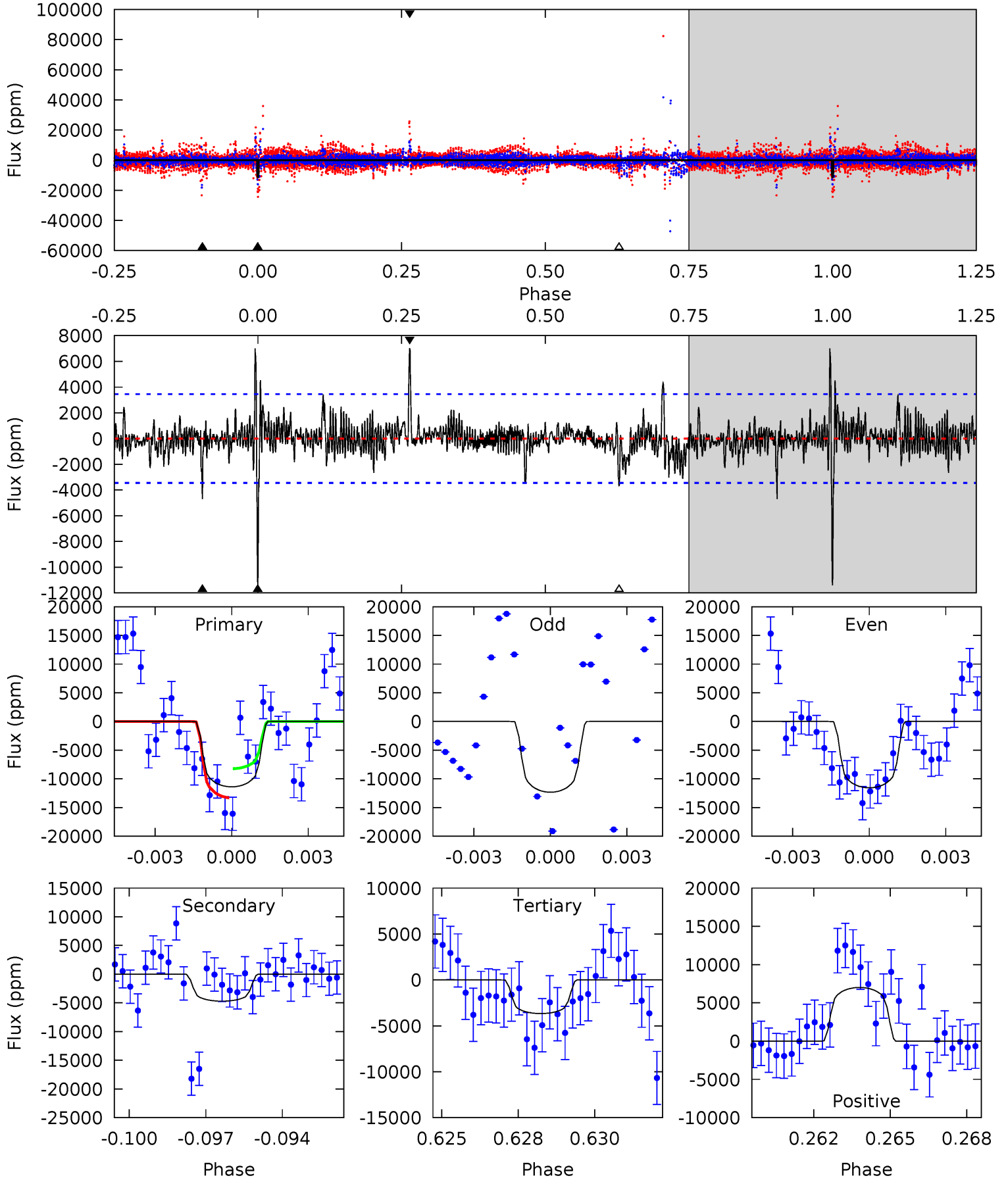
TCE 009077483-02 P= 80.975354 Days $T_0=202.191396$ (BKJD)



DV Model-Shift Uniqueness Test

009077483-02, P = 80.968797 Days, E = 202.304741 Days

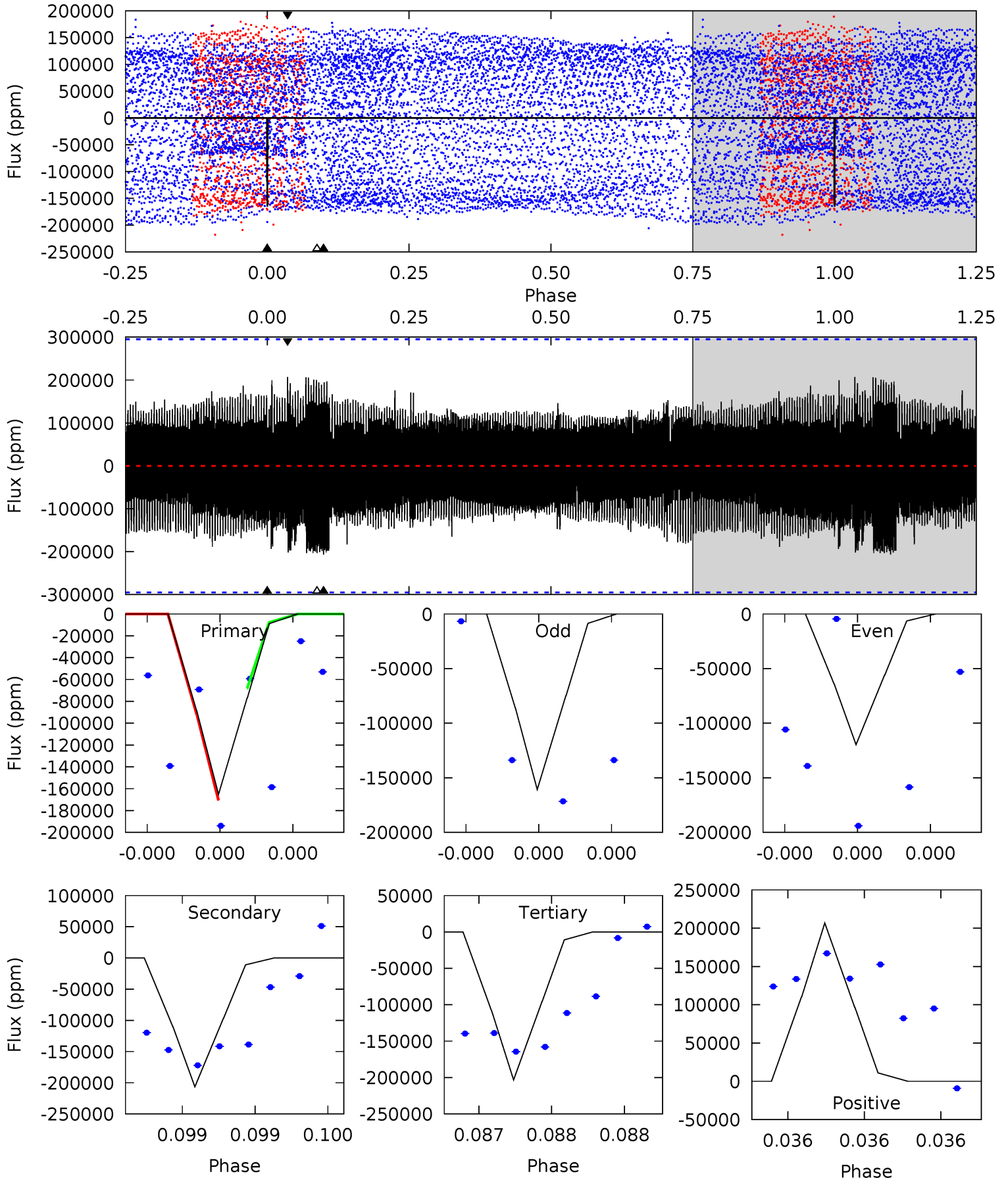
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.4	7.16	5.58	10.7	5.26	2.97	1.50	11.8	6.68	1.58	-3.52	0.52	0.96	0.38	3.84



Alt Model-Shift Uniqueness Test

009077483-02, P = 80.975354 Days, E = 202.191396 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.15	3.94	3.88	3.95	5.63	3.57	1.63	-0.73	-0.80	0.06	-0.01	0.34	0.76	0.50	0.98



Stellar Parameters For KIC 009077483

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6438^{+181}_{-250}	$4.256^{+0.132}_{-0.198}$	$-0.140^{+0.250}_{-0.300}$	$1.332^{+0.395}_{-0.263}$	$1.166^{+0.192}_{-0.157}$	$0.696^{+0.500}_{-0.334}$
	+3%/-4%	+3%/-5%	+179%/-214%	+30%/-20%	+16%/-13%	+72%/-48%
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 009077483-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-4704 ± 656	$16.11^{+4.80}_{-4.15}$	744^{+63}_{-49}	5208^{+691}_{-541}	1503^{+1254}_{-643}
Alt.	-206376 ± 52401	$58.35^{+10.76}_{-7.89}$	742^{+58}_{-48}	7419^{+831}_{-855}	6111^{+3129}_{-2303}

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 $A_{obs} \gg 1.0$

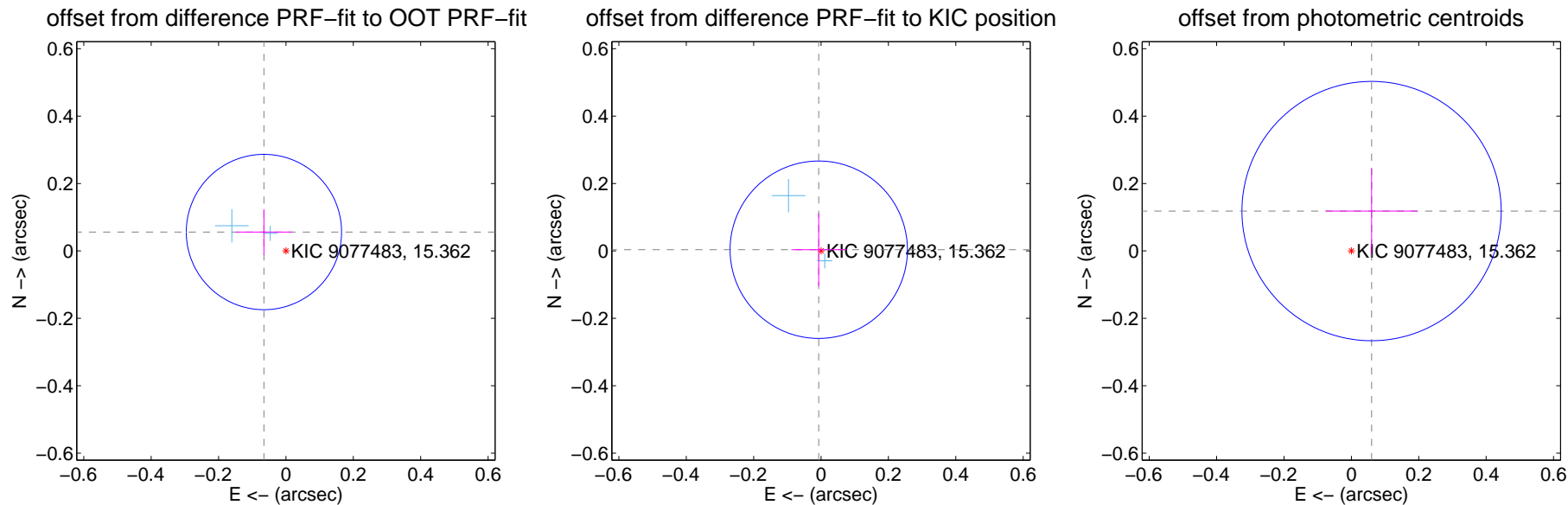
DV Centroid Data

Supplemental centroid analysis for 009077483-02. Kepler magnitude: 15.36. Transit SNR 18.63

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.086 ± 0.077	1.12	0.065 ± 0.083	0.056 ± 0.067
PRF-fit source offset from KIC position	0.008 ± 0.088	0.09	0.007 ± 0.081	0.004 ± 0.108
photometric centroid source offset	0.13 ± 0.13	1.03	-0.06 ± 0.14	0.12 ± 0.13

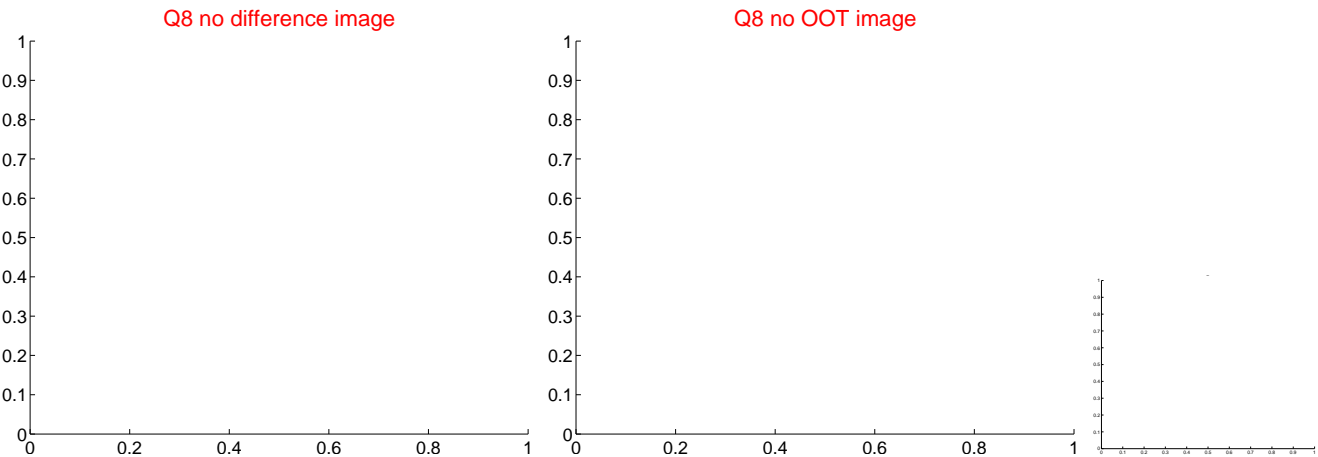
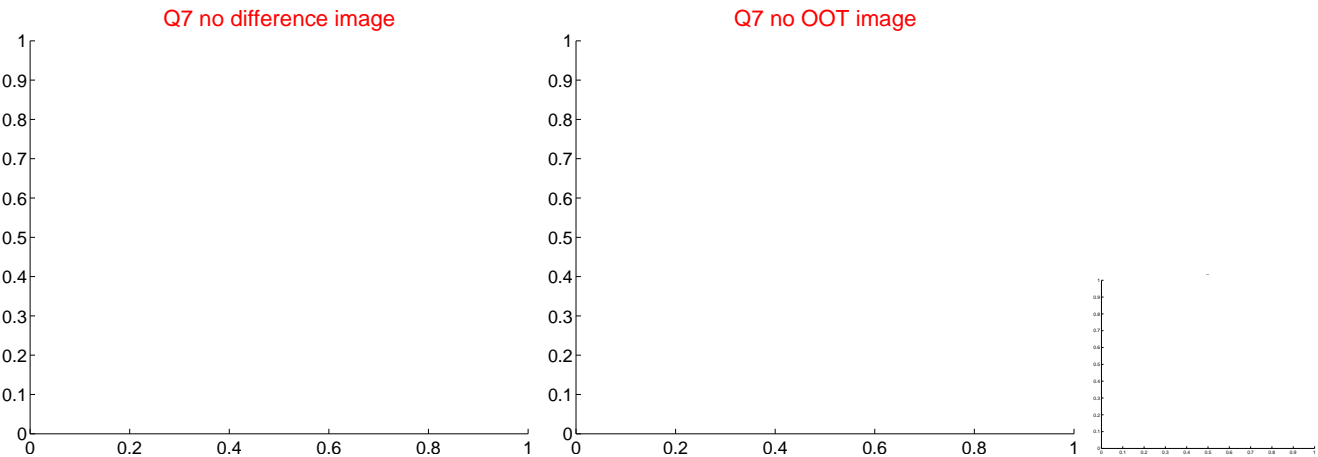
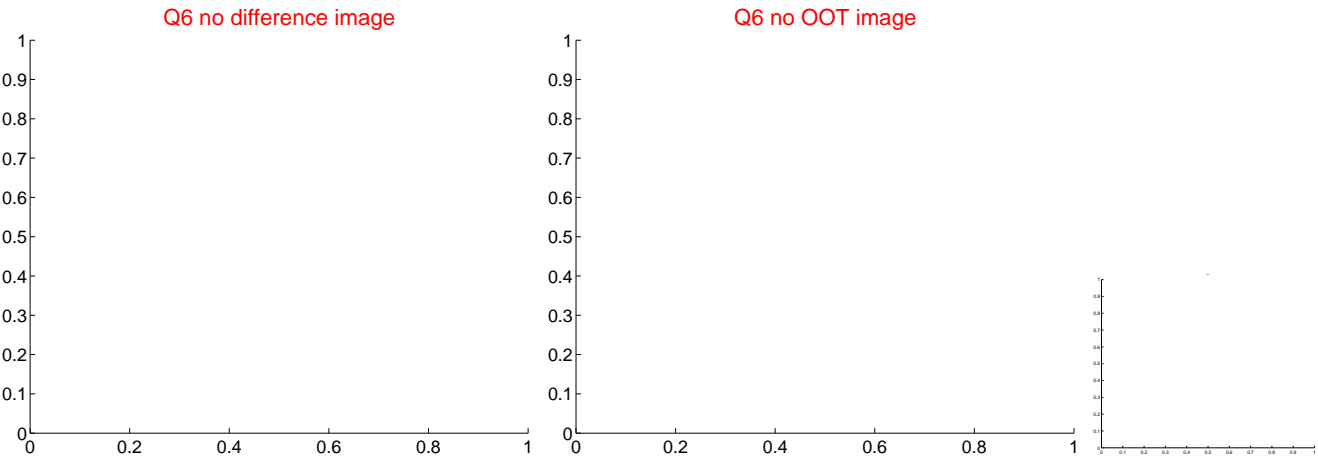
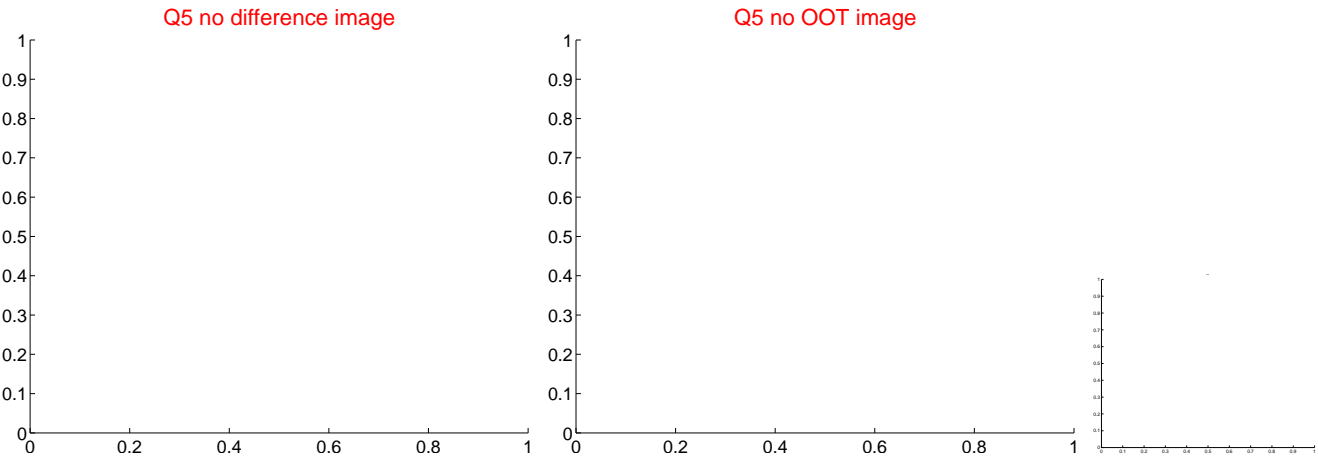


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

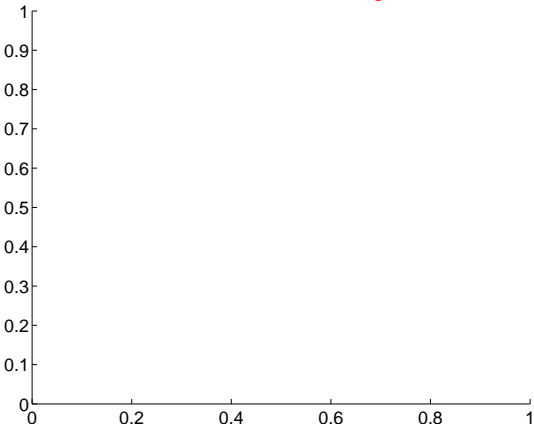


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

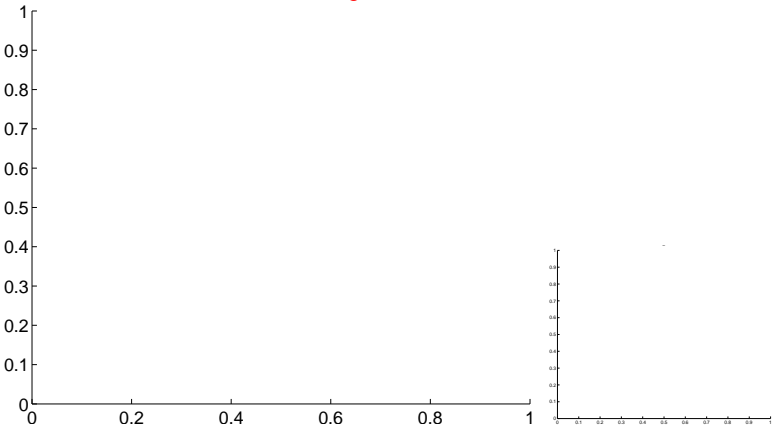


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

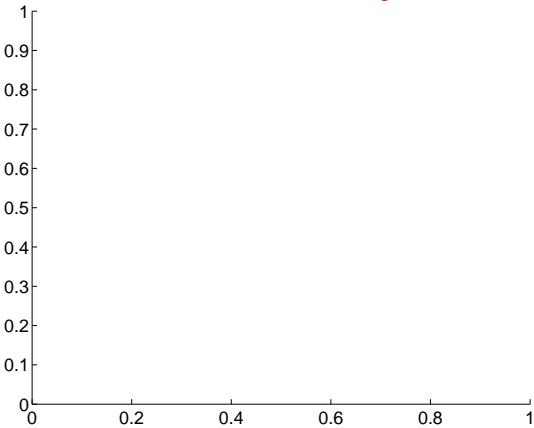
Q9 no difference image



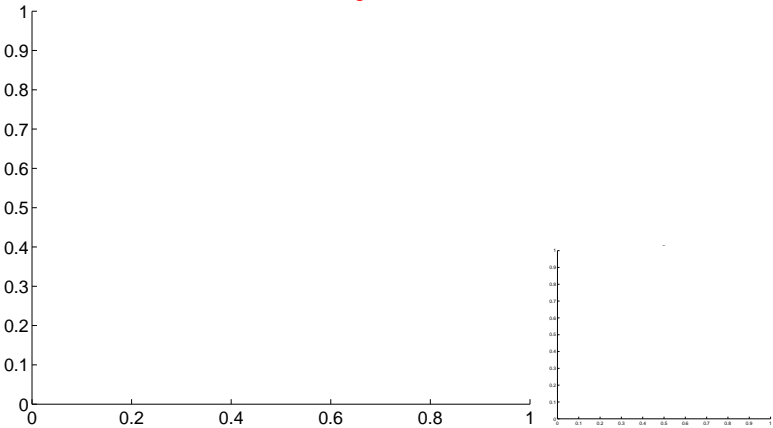
Q9 no OOT image



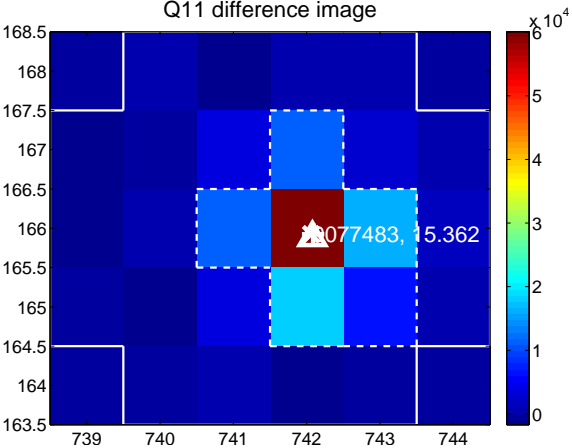
Q10 no difference image



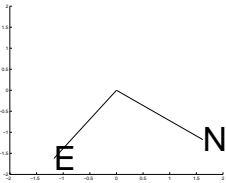
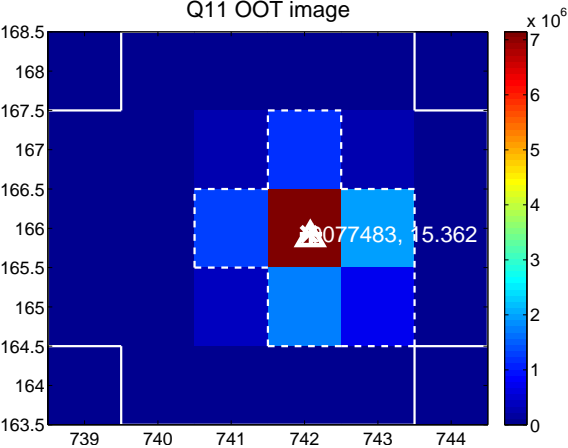
Q10 no OOT image



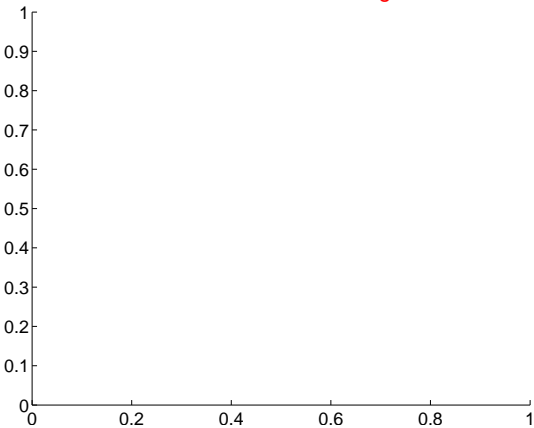
Q11 difference image



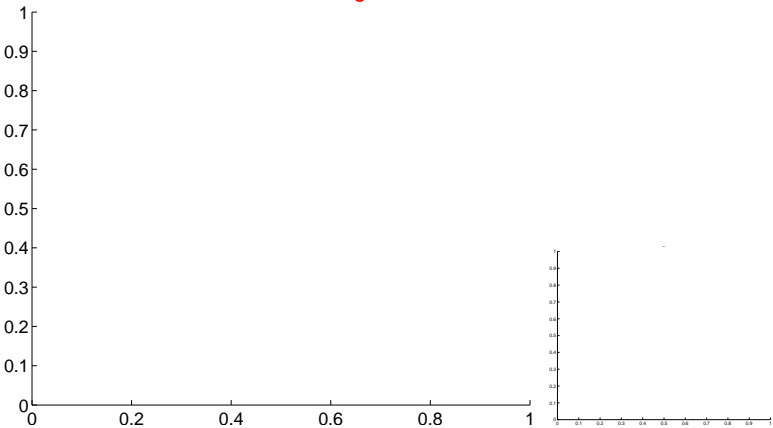
Q11 OOT image



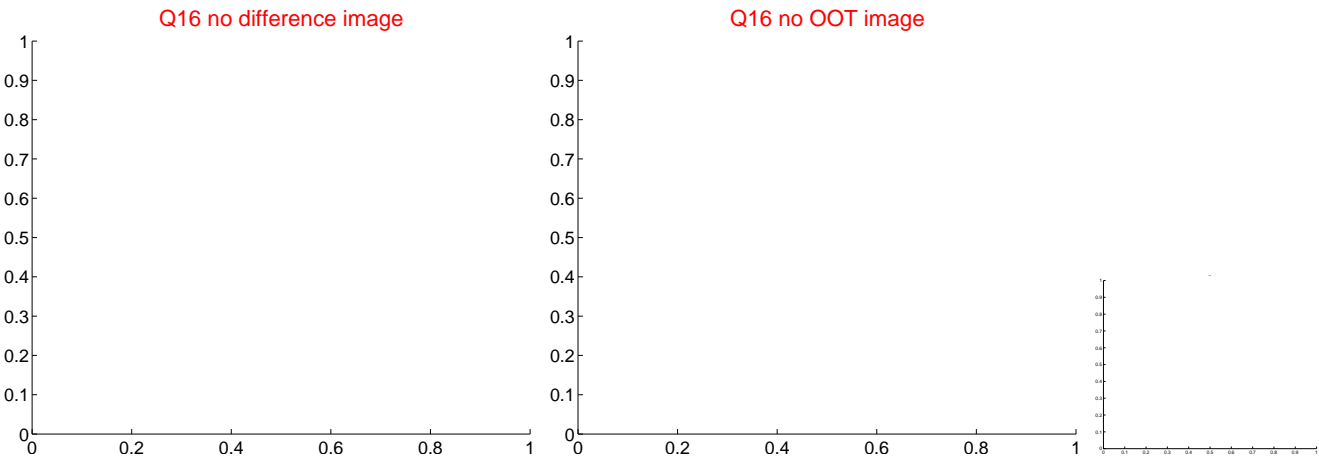
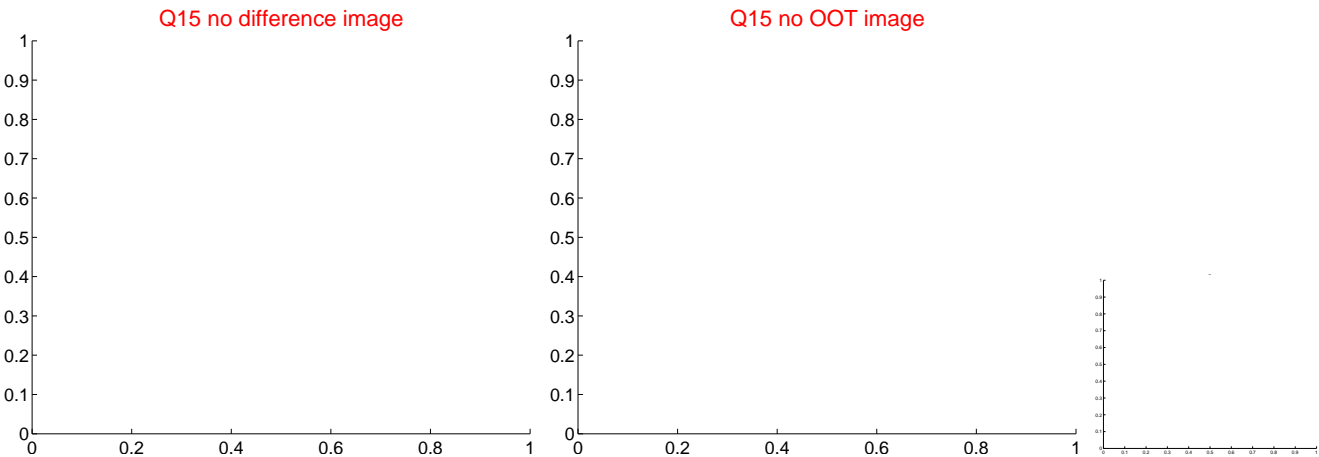
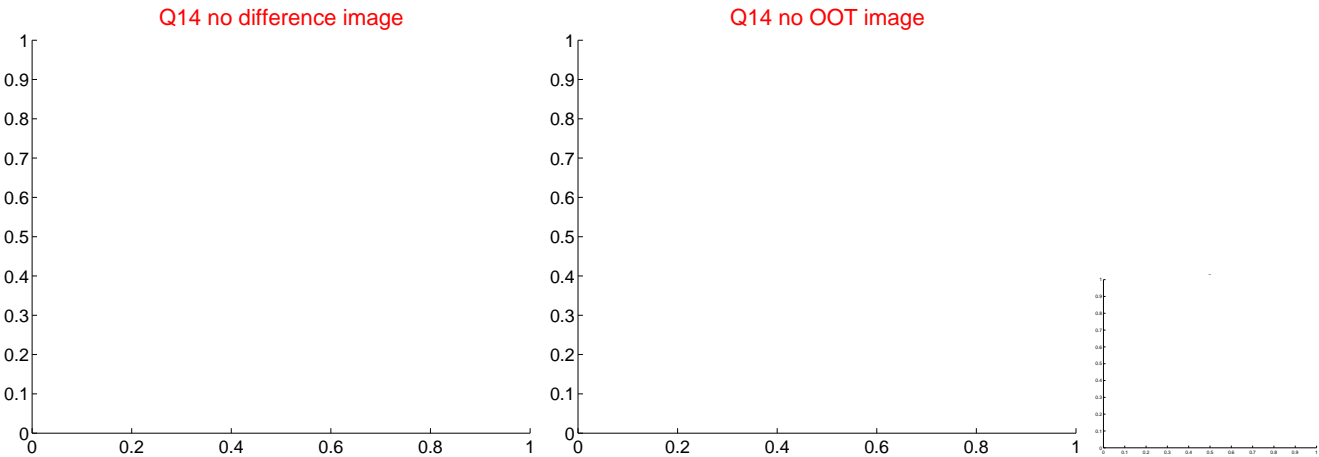
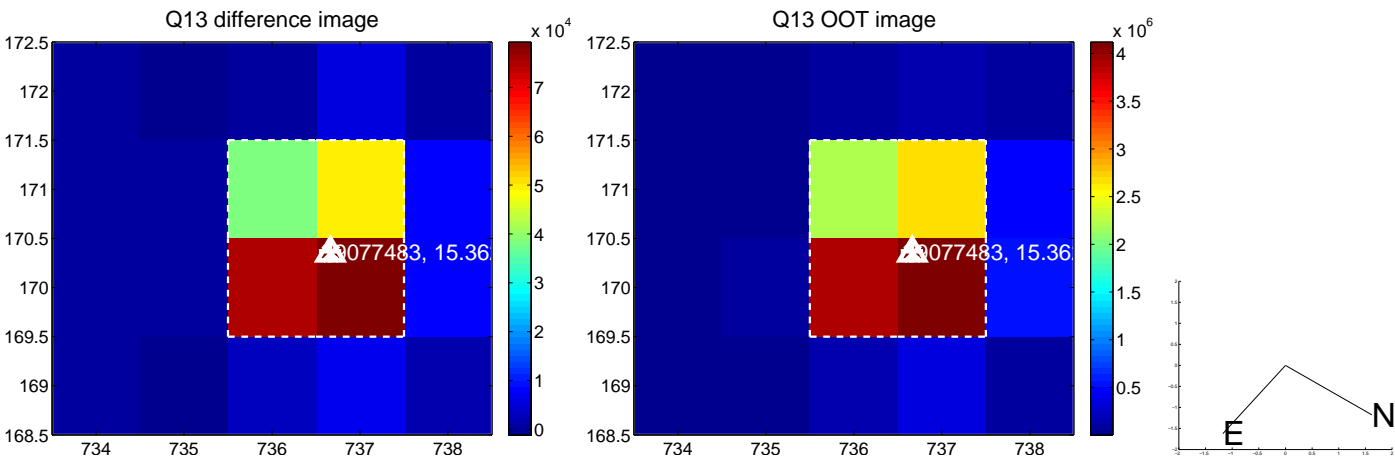
Q12 no difference image



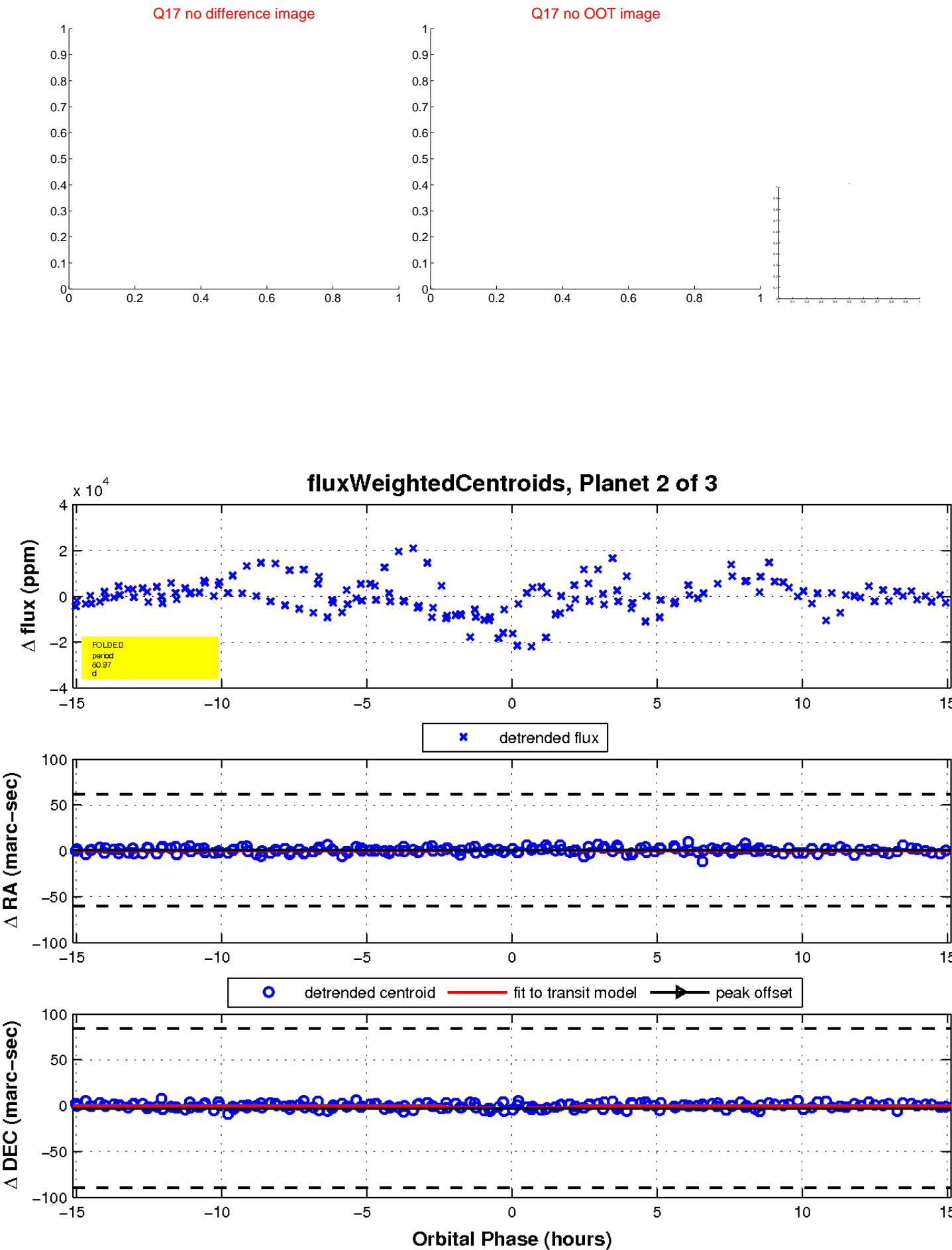
Q12 no OOT image



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

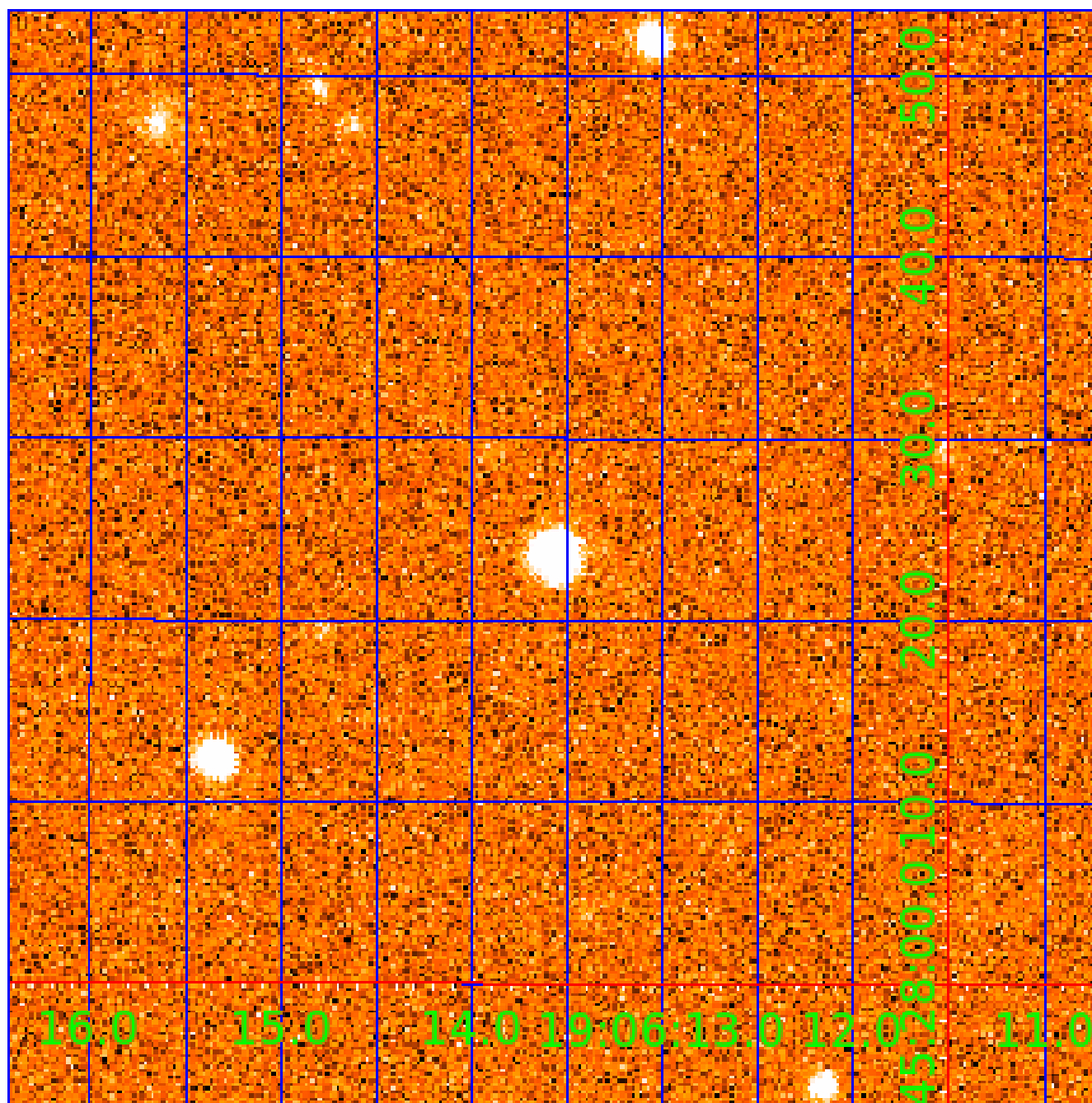


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009077483

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})
009077483-01	OBS	No	67.341577	153.235666	19899.3	4.606	22.0	18.9	1.33	6438	32.67	23.47
009077483-02	OBS	No	80.968797	202.304741	13785.9	5.045	20.6	18.6	1.33	6438	15.71	18.36
009077483-03	OBS	No	73.661147	134.772303	2802.9	8.731	8.3	6.6	1.33	6438	7.09	20.82

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009077483-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009077483-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009077483-03	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—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.

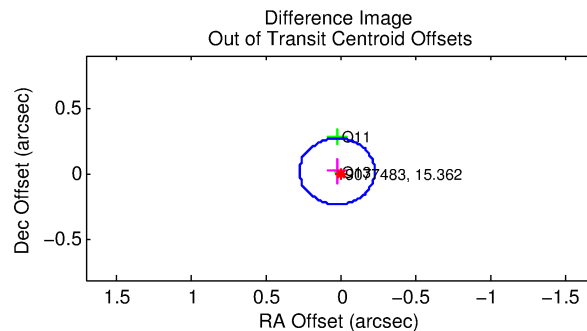
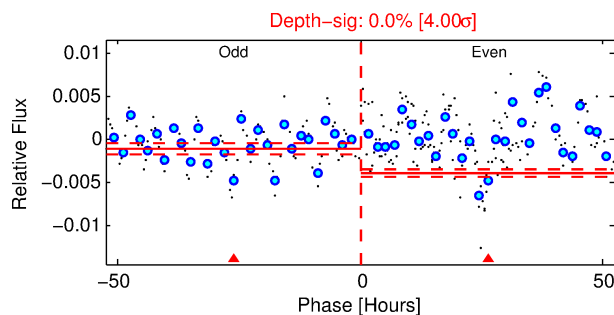
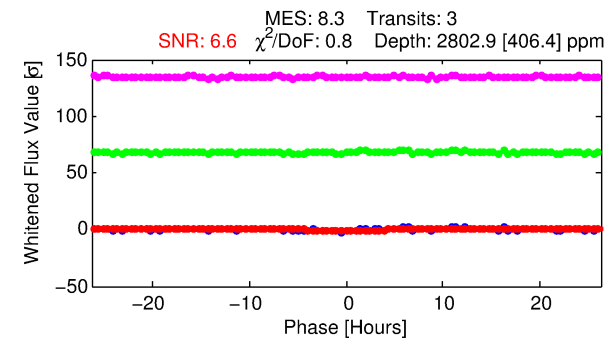
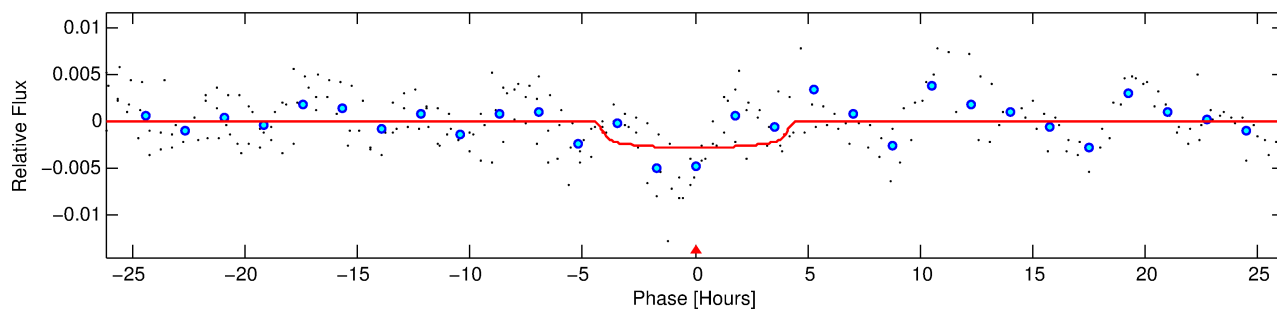
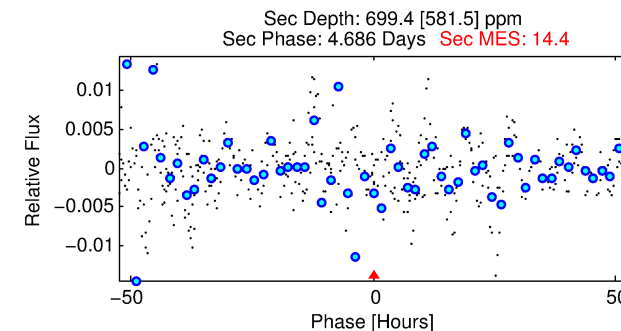
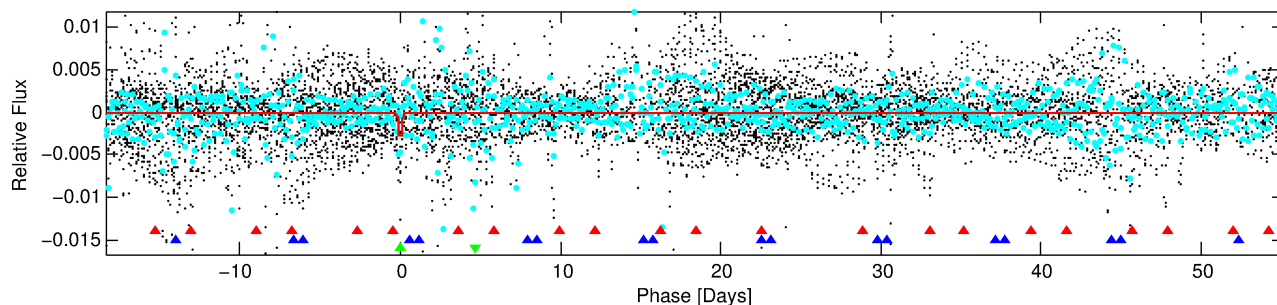
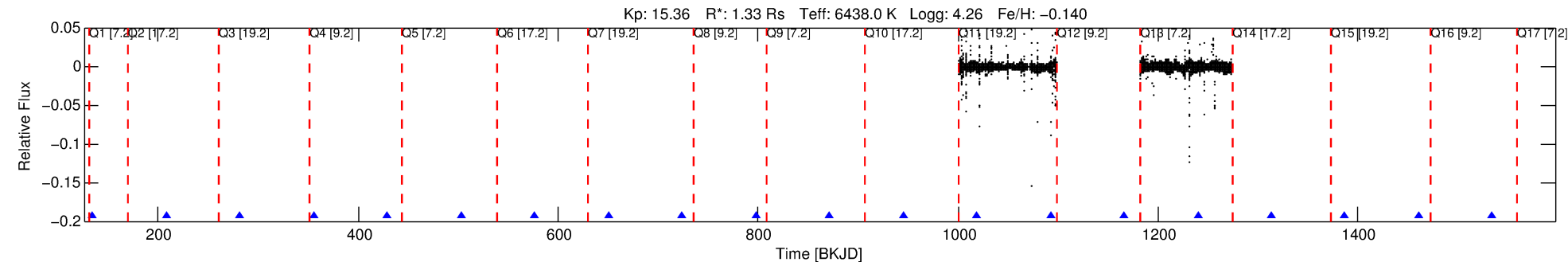
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009077483-03

No Significant Match Found

DV One-Page Summary

KIC: 9077483 Candidate: 3 of 3 Period: 73.661 d



DV Fit Results:

Period = 73.66115 [0.00586] d
Epoch = 134.7723 [0.0768] BKJD
Rp/R* = 0.0488 [0.0231]
a/R* = 66.99 [162.76]
b = 0.14 [17.04]
Seff = 20.82 [8.21]
Teq = 545 [54] K
Rp = 7.09 [3.97] Re
a = 0.3621 [0.0903] AU
Ag = 1003.67 [1317.15] [0.76 σ]
Teff = 4740 [1506] K [2.78 σ]

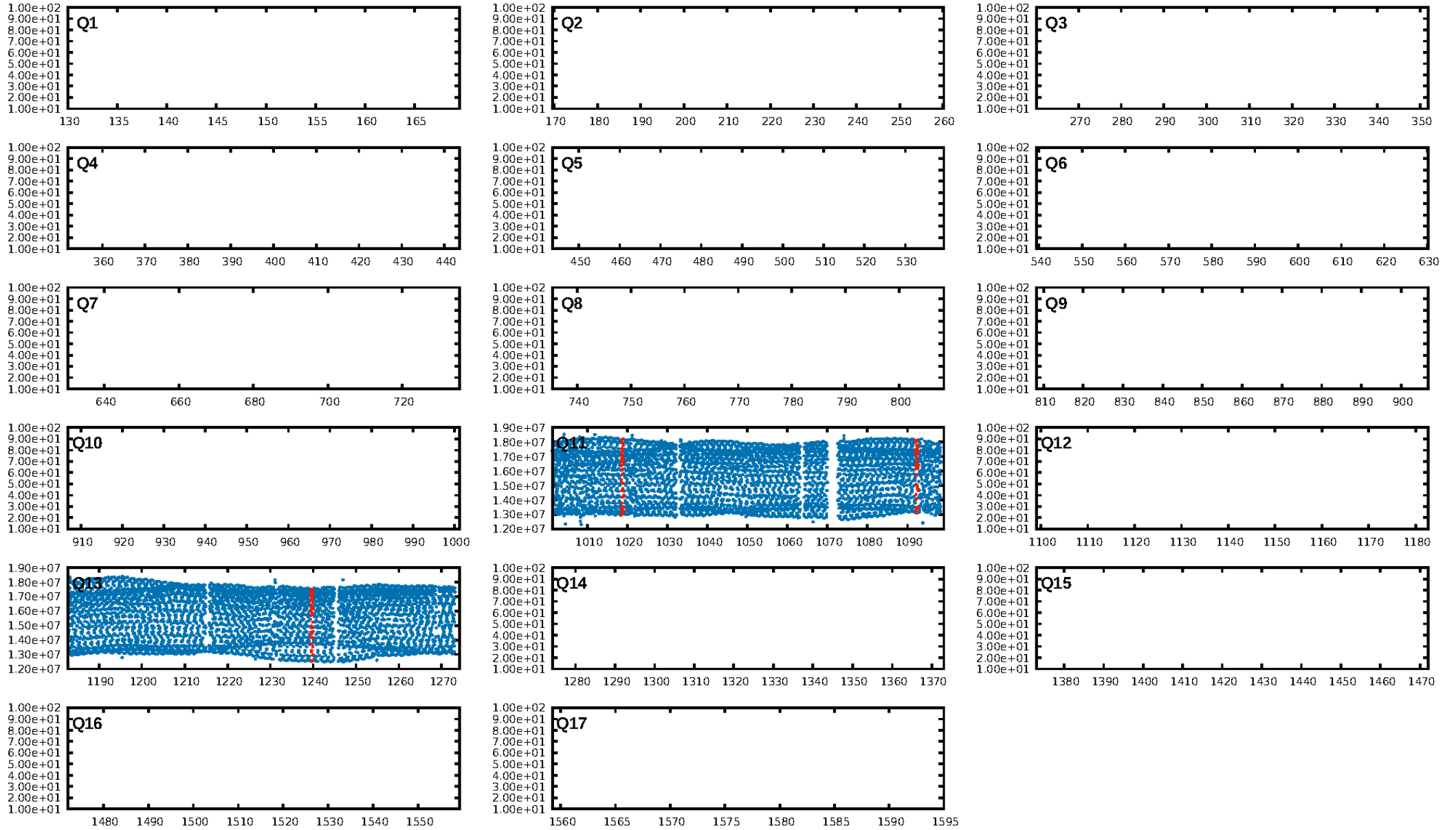
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [15.36 σ]
LongPeriod-sig: 100.0% [17.39 σ]
ModelChiSquare2-sig: 9.2%
ModelChiSquareGof-sig: 99.6%
Bootstrap-pfa: 1.26e-04
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.212
Centroid-sig: 0.1%
Centroid-so: 1.074 arcsec [2.14 σ]
OotOffset-rm: 0.030 arcsec [0.36 σ]
KicOffset-rm: 0.059 arcsec [0.33 σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

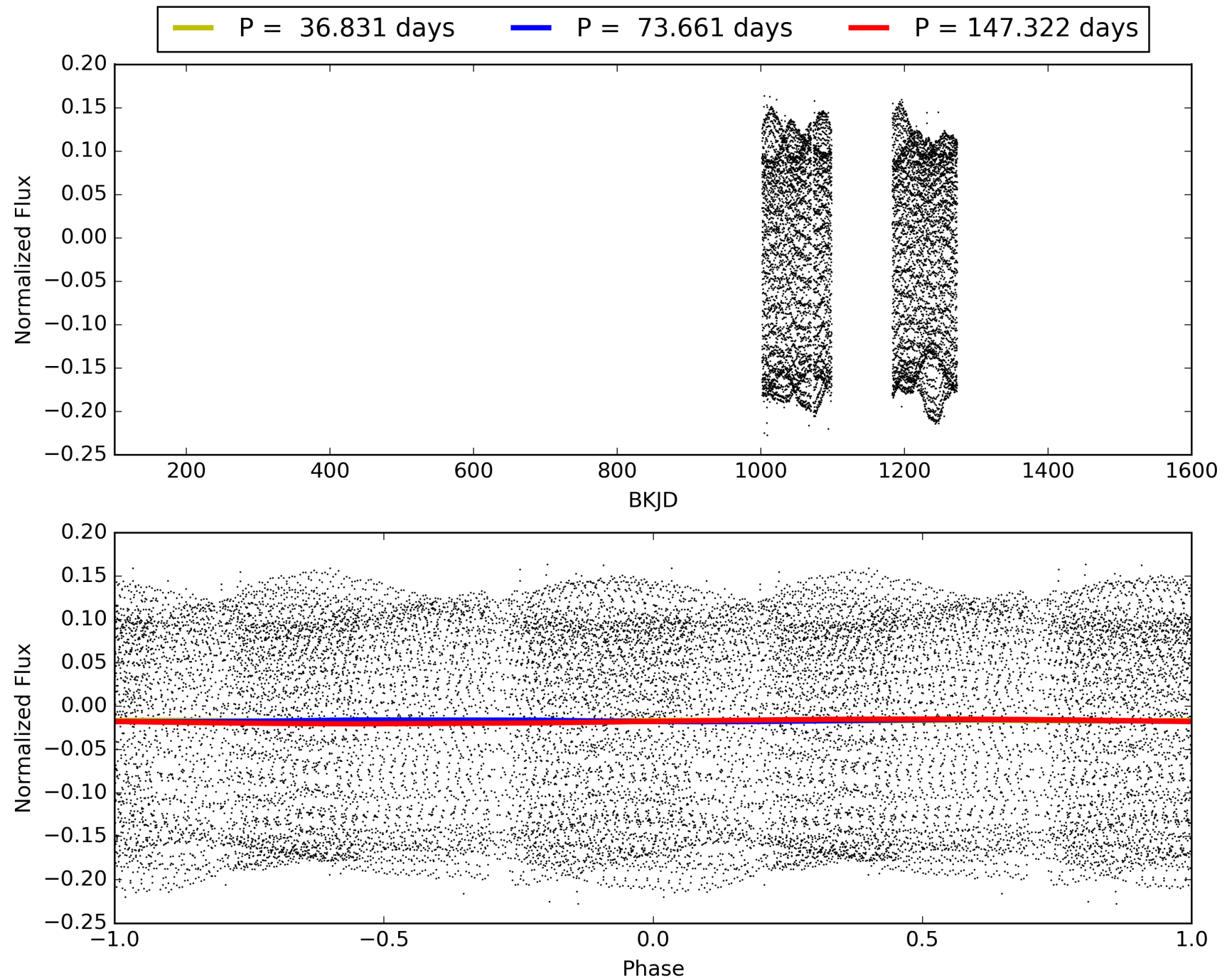
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 12:20:48 Z

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

TCE 009077483-03, PDC Light Curves

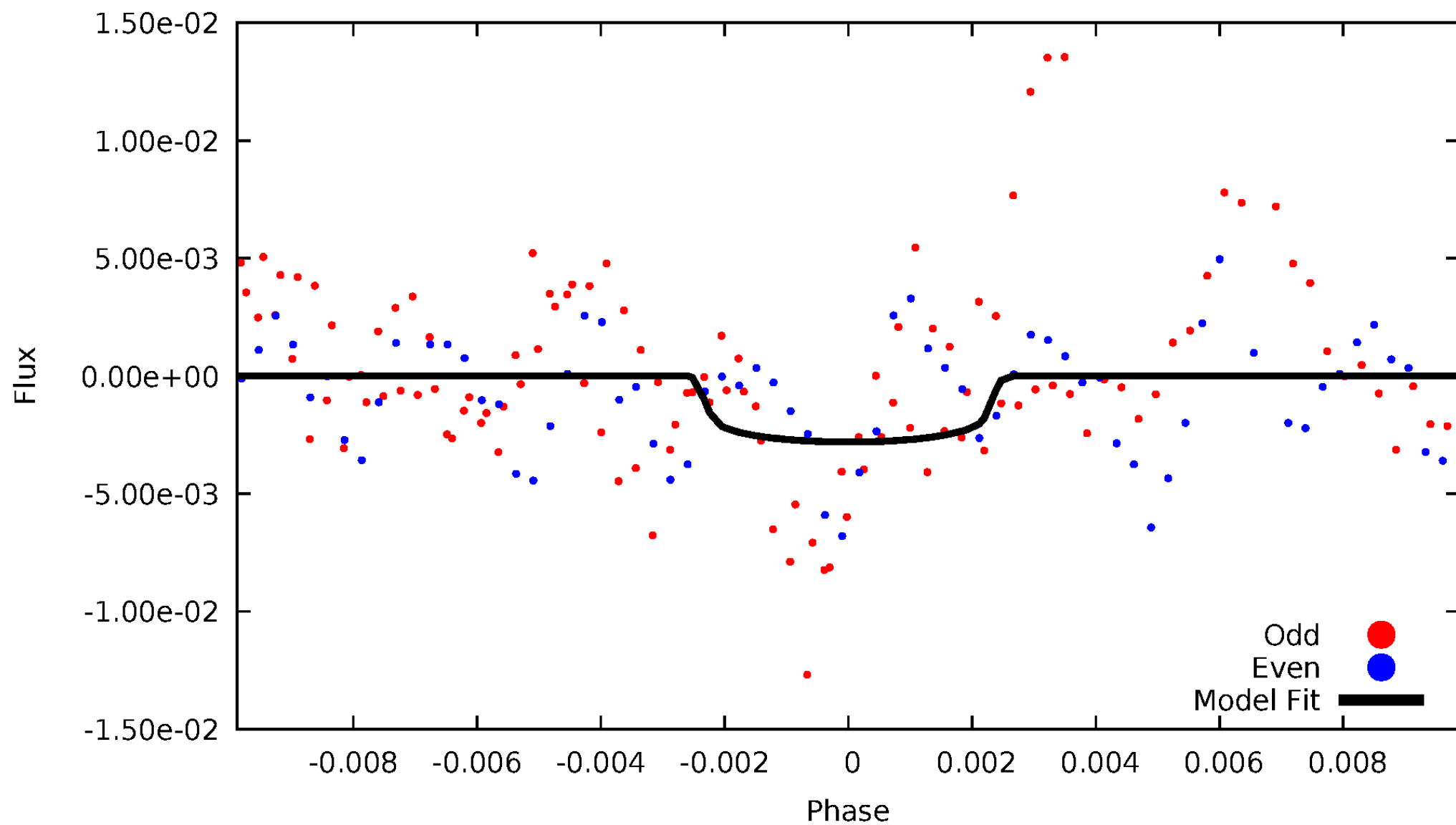


TCE 009077483-03



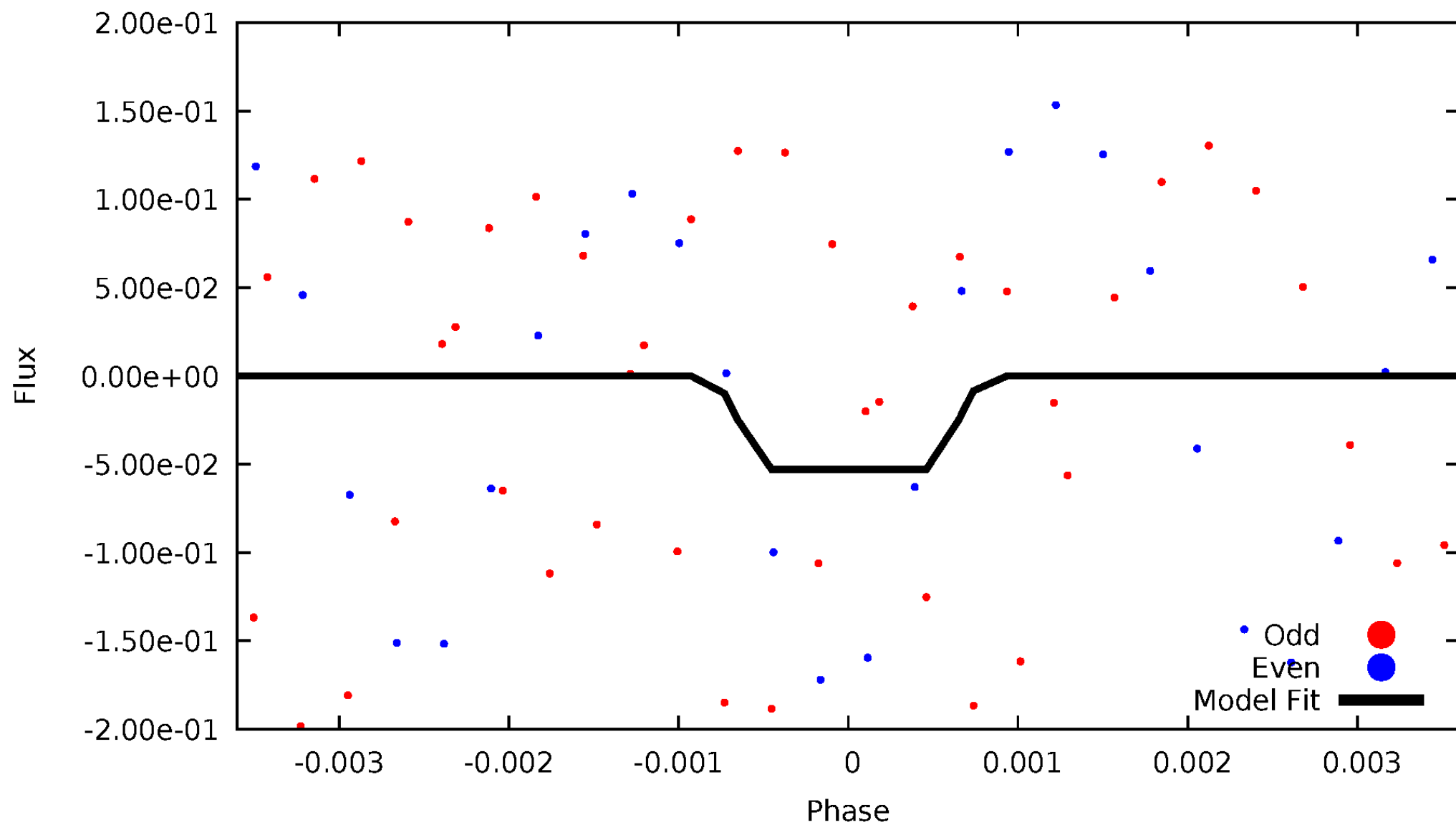
DV Odd/Even

TCE 009077483-03



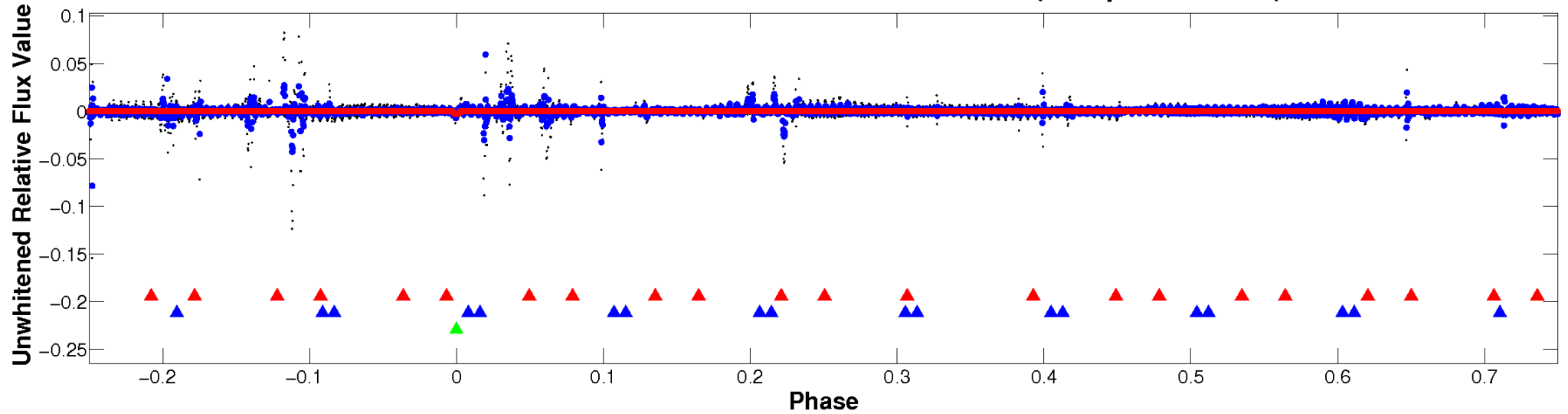
ALT Odd/Even

TCE 009077483-03

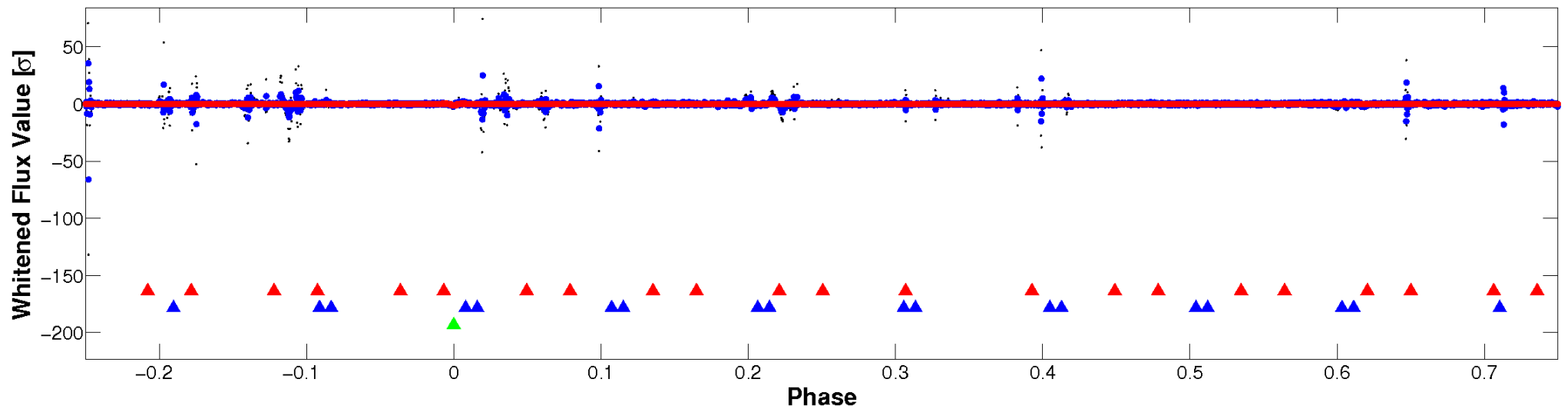


Non-Whitened Vs. Whitened Light Curve

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

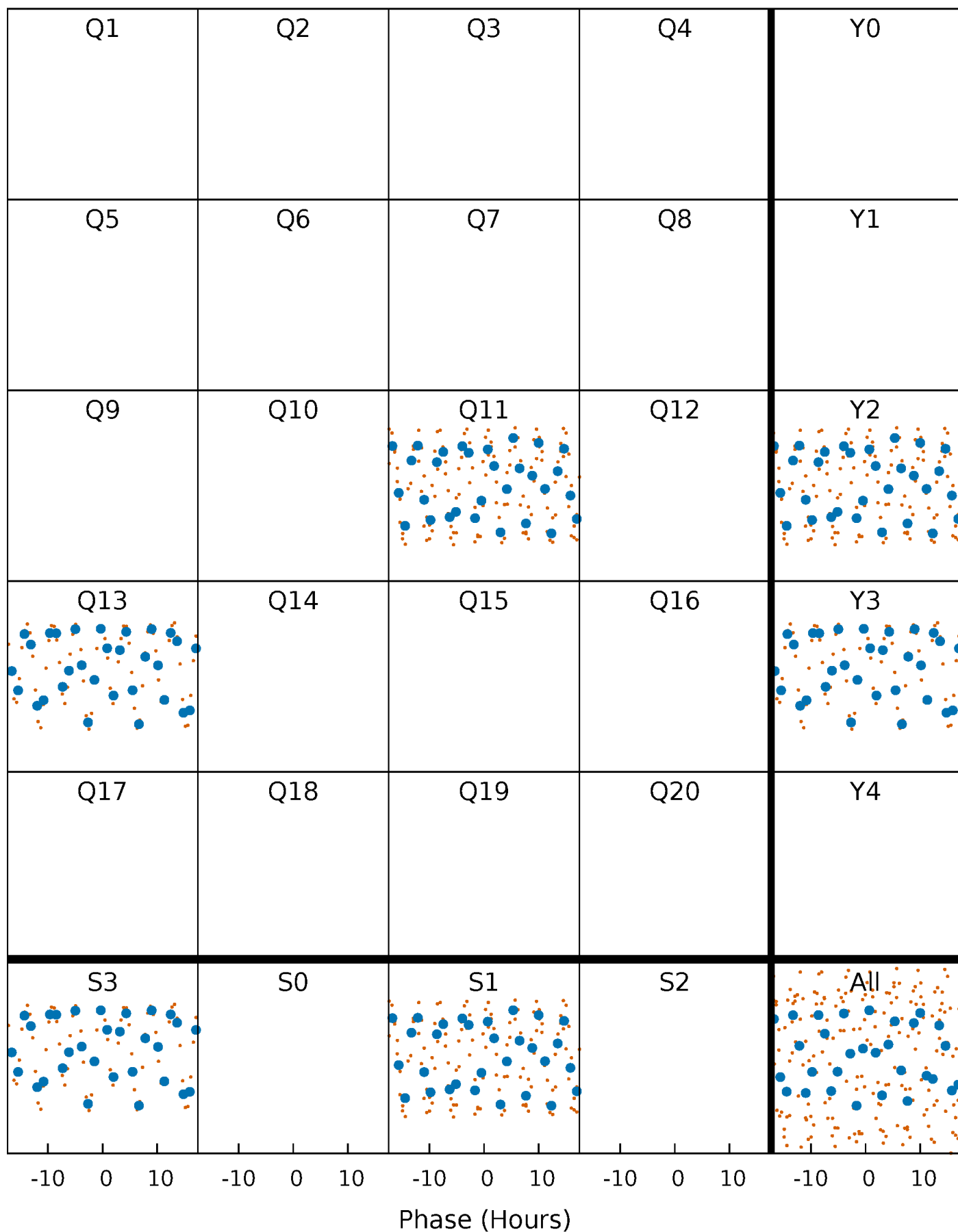


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



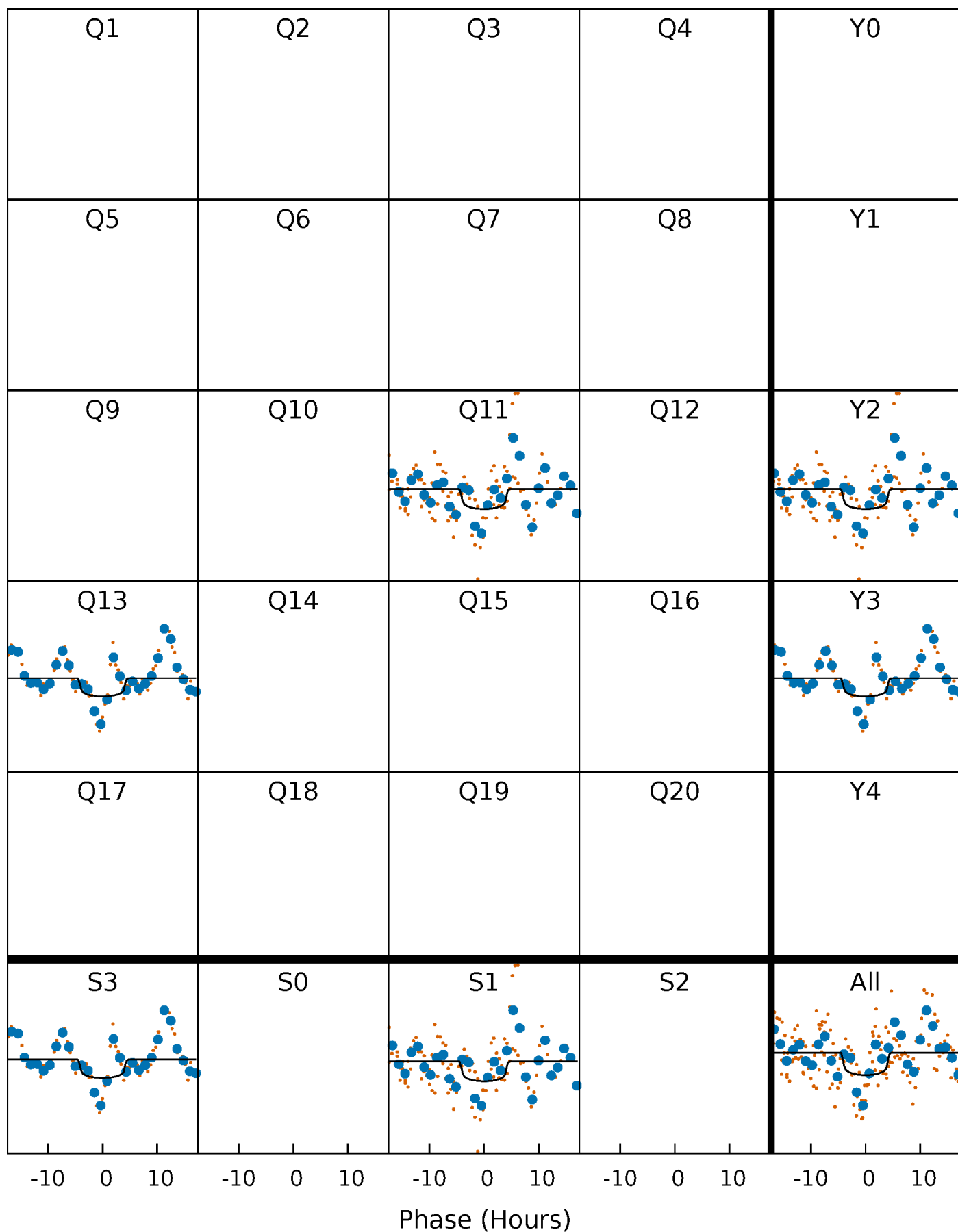
PDC Quarter-Phased Transit Curves

TCE 009077483-03 P= 73.661147 Days $T_0=134.772303$ (BKJD)



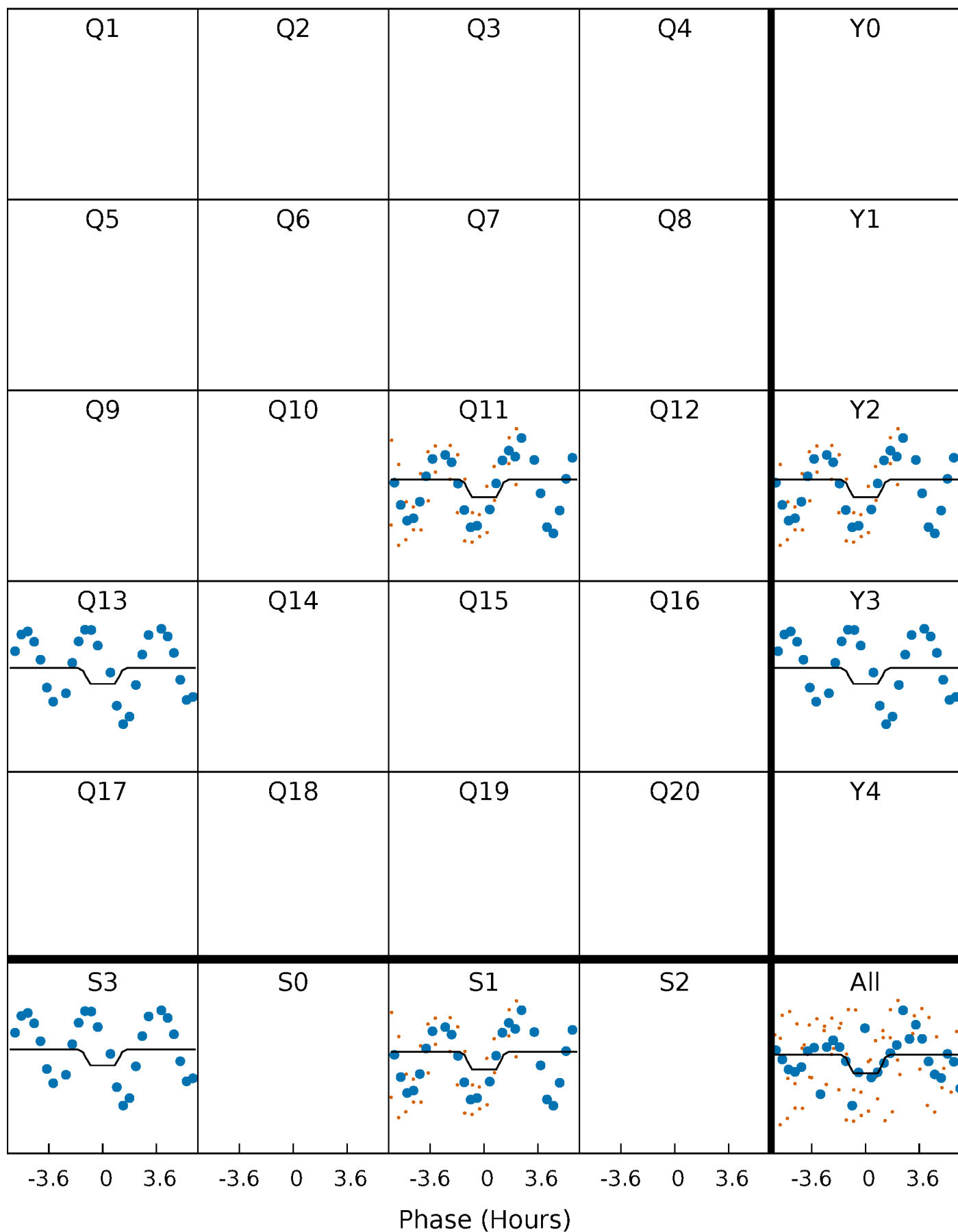
DV Quarter-Phased Transit Curves

TCE 009077483-03 P= 73.661147 Days $T_0=134.772303$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

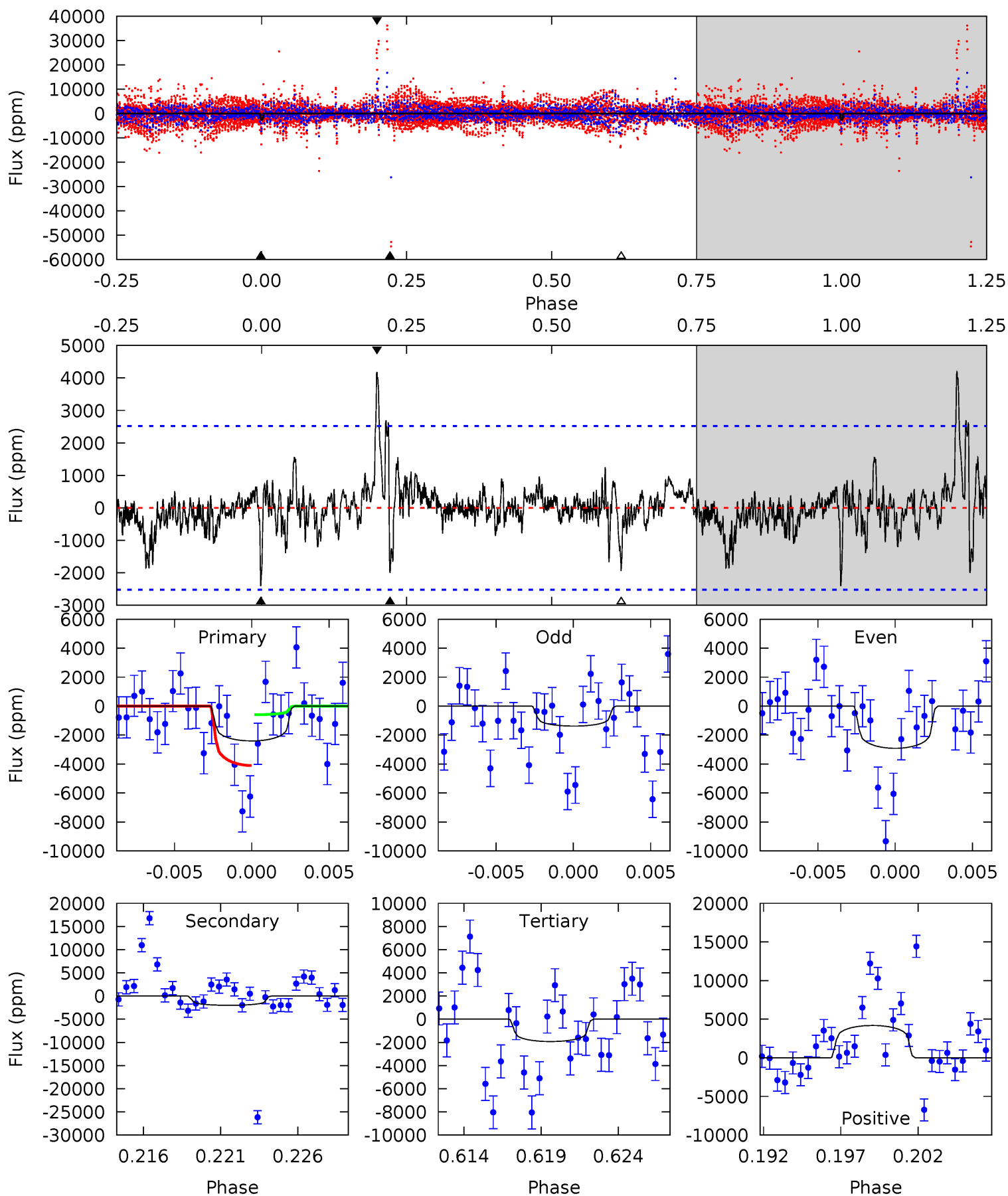
TCE 009077483-03 $P = 73.681751$ Days $T_0 = 134.672777$ (BKJD)



DV Model-Shift Uniqueness Test

009077483-03, P = 73.661147 Days, E = 134.772303 Days

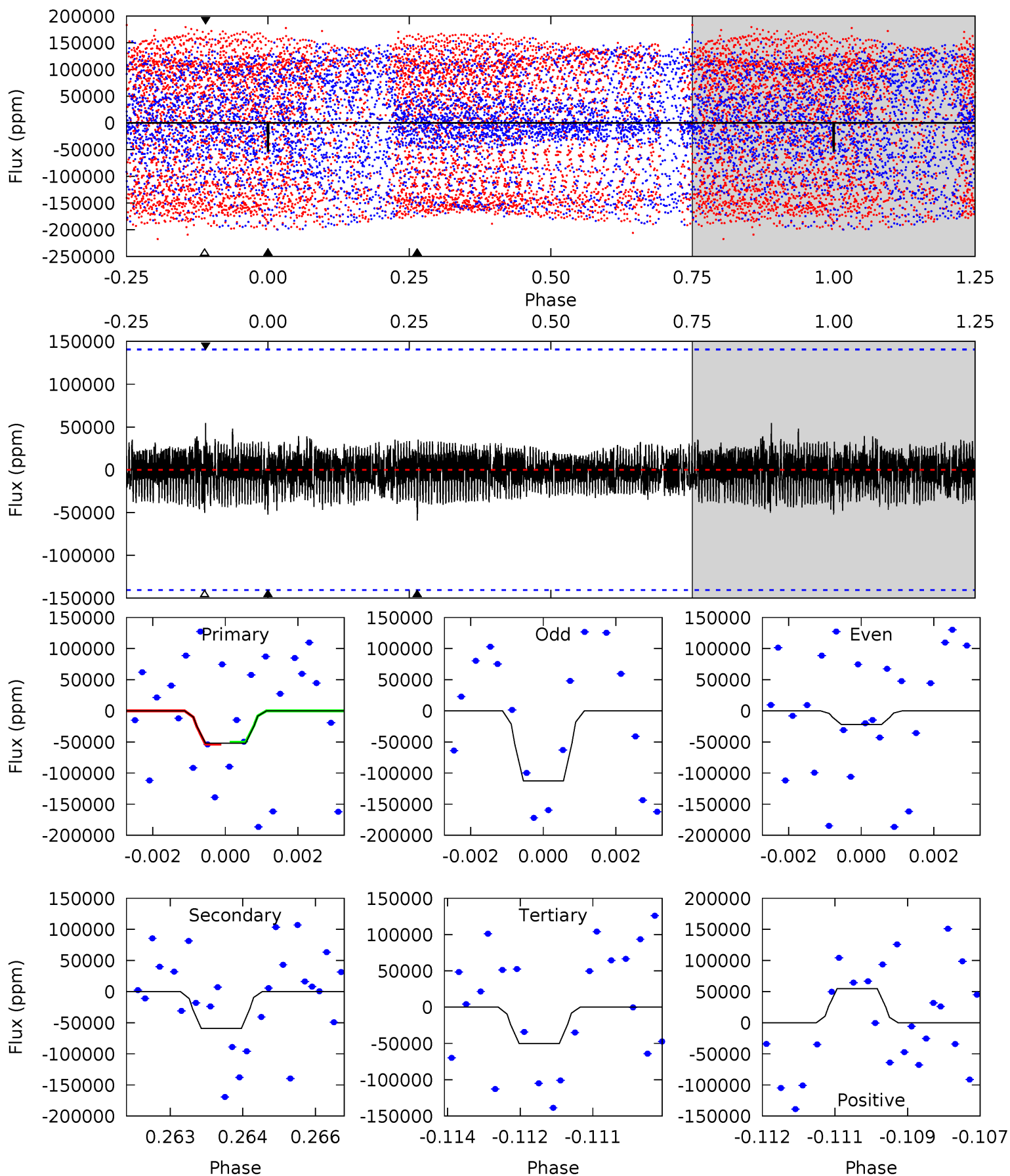
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.93	4.10	3.95	8.58	5.17	2.82	1.16	0.97	-3.65	0.15	-4.47	1.23	1.04	0.64	3.59



Alt Model-Shift Uniqueness Test

009077483-03, P = 73.681751 Days, E = 134.672777 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.99	2.26	1.91	2.09	5.36	3.15	0.63	0.07	-0.10	0.34	0.17	1.59	0.79	0.48	0.06



Stellar Parameters For KIC 009077483

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6438^{+181}_{-250}	$4.256^{+0.132}_{-0.198}$	$-0.140^{+0.250}_{-0.300}$	$1.332^{+0.395}_{-0.263}$	$1.166^{+0.192}_{-0.157}$	$0.696^{+0.500}_{-0.334}$
	+3%/-4%	+3%/-5%	+179%/-214%	+30%/-20%	+16%/-13%	+72%/-48%
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 009077483-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2002 ± 488	$7.30^{+3.95}_{-3.22}$	766^{+53}_{-50}	6072^{+2536}_{-1000}	2742^{+6095}_{-1615}
Alt.	-59139 ± 26218	$33.94^{+5.92}_{-4.84}$	766^{+61}_{-55}	6669^{+972}_{-1033}	3768^{+2602}_{-1887}

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 $A_{obs} \gg 1.0$

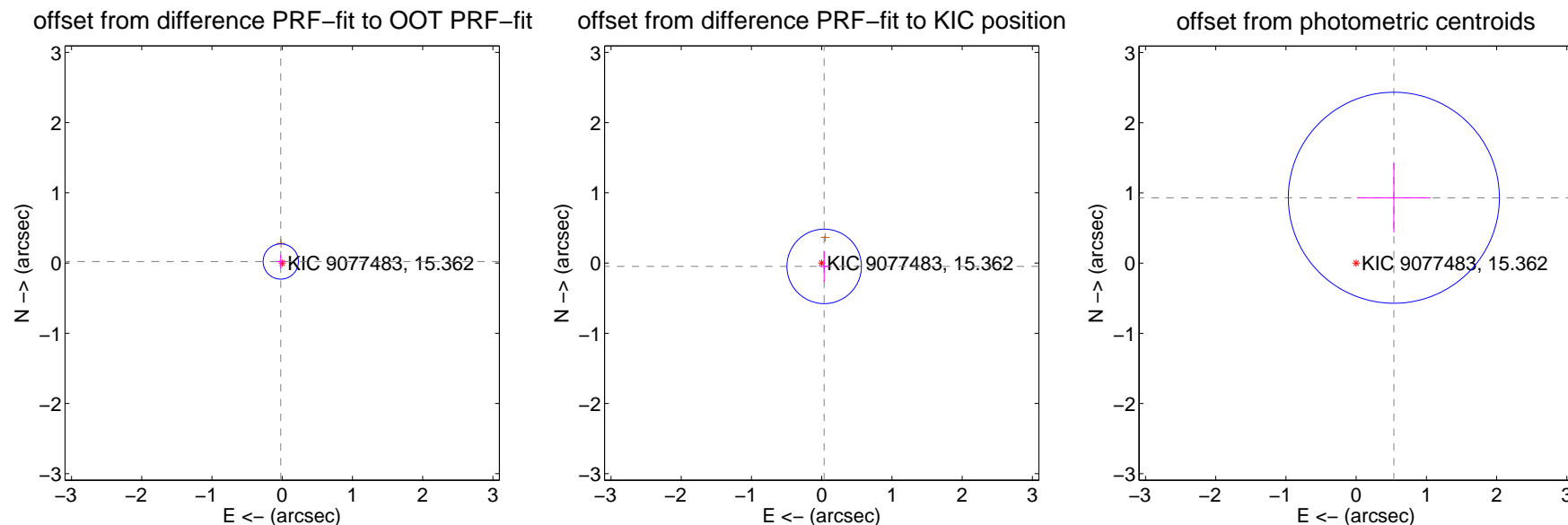
DV Centroid Data

Supplemental centroid analysis for 009077483-03. Kepler magnitude: 15.36. Transit SNR 6.61

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.030 ± 0.084	0.36	0.021 ± 0.067	0.022 ± 0.097
PRF-fit source offset from KIC position	0.059 ± 0.177	0.33	-0.035 ± 0.067	-0.048 ± 0.219
photometric centroid source offset	1.07 ± 0.50	2.14	-0.54 ± 0.52	0.93 ± 0.49



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.



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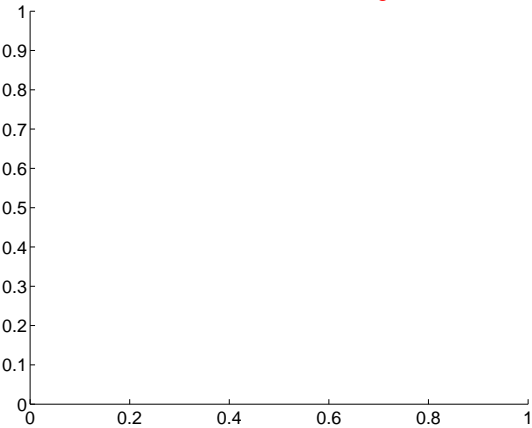
Q9 no difference image



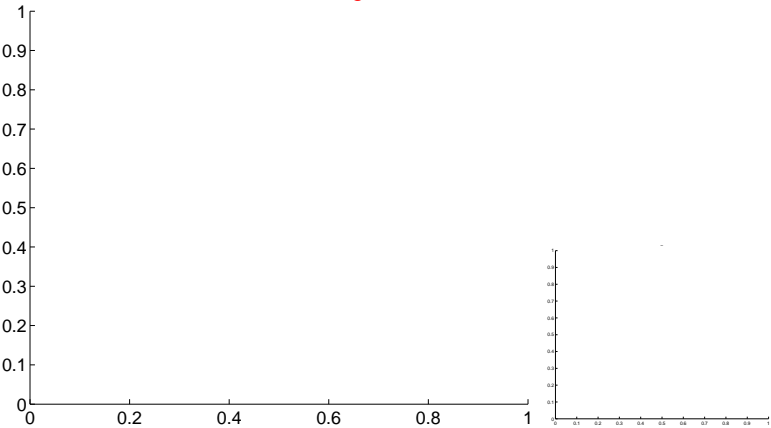
Q9 no OOT image



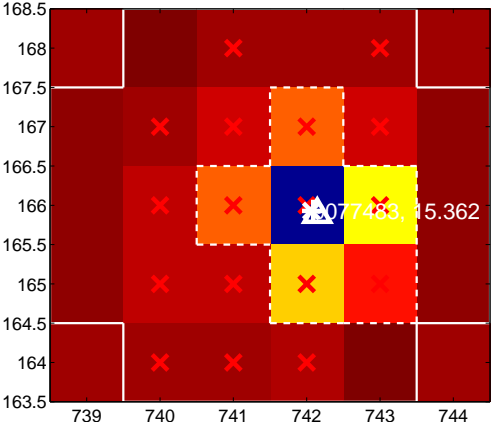
Q10 no difference image



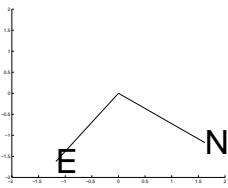
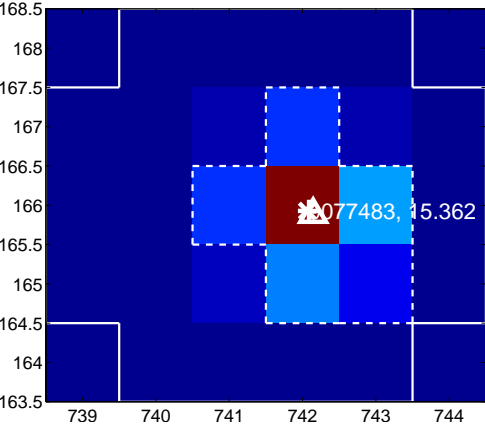
Q10 no OOT image



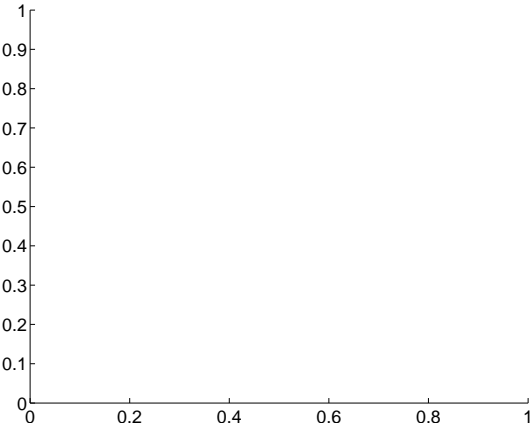
Q11 difference image. Poor Quality



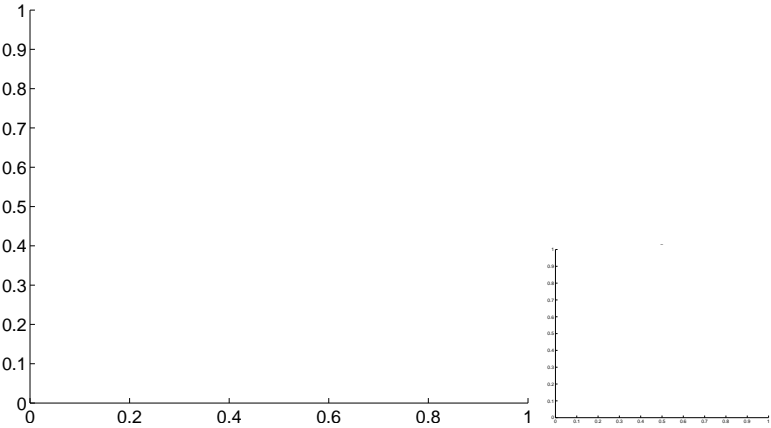
Q11 OOT image



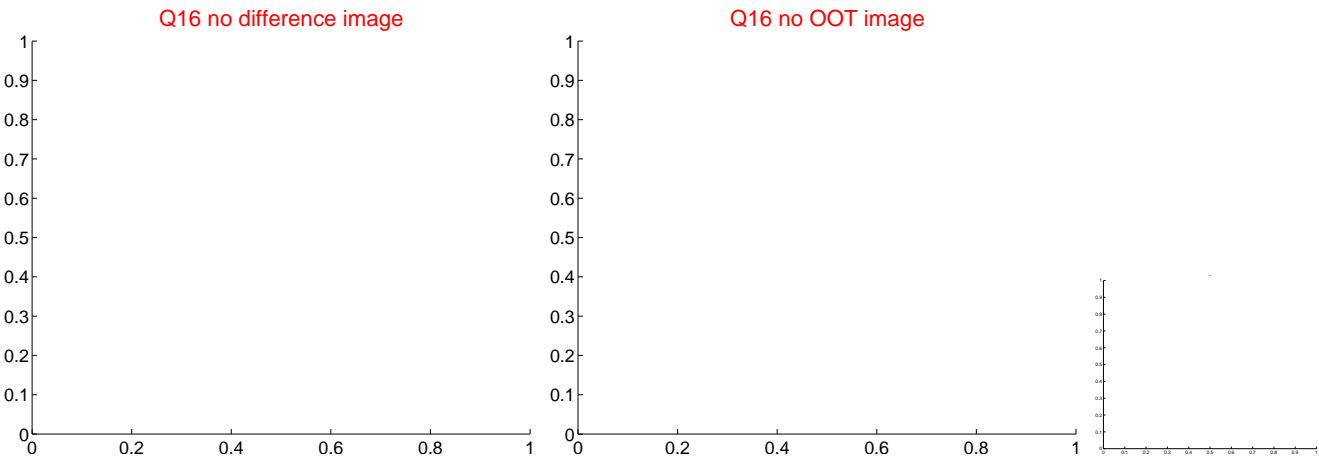
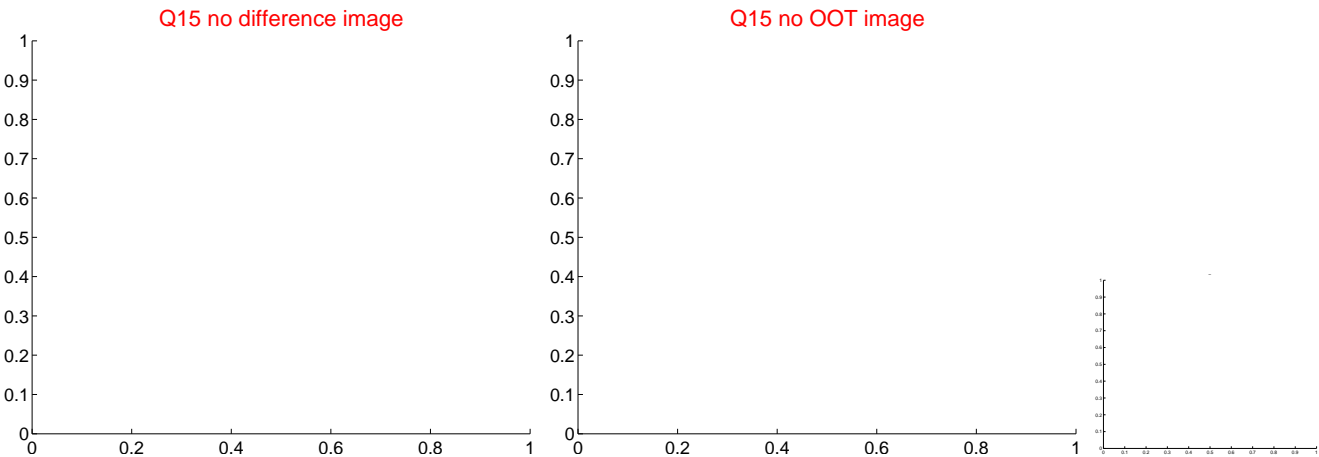
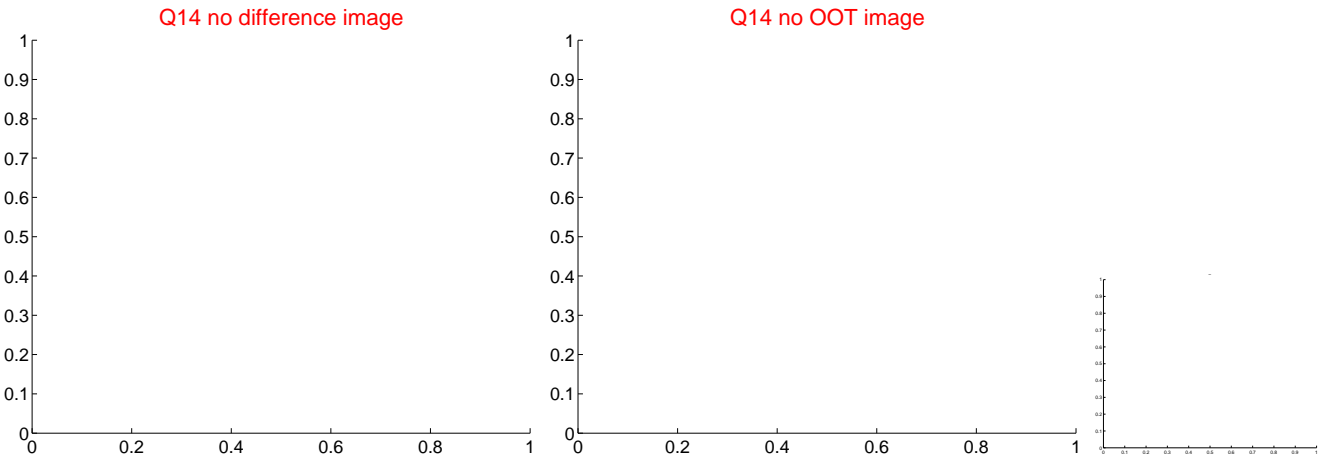
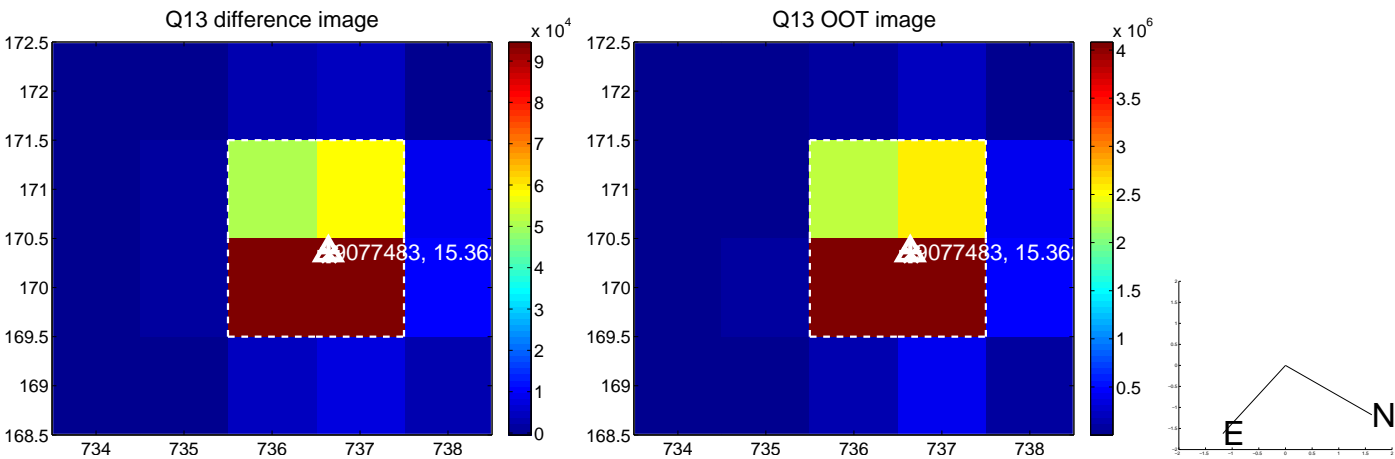
Q12 no difference image



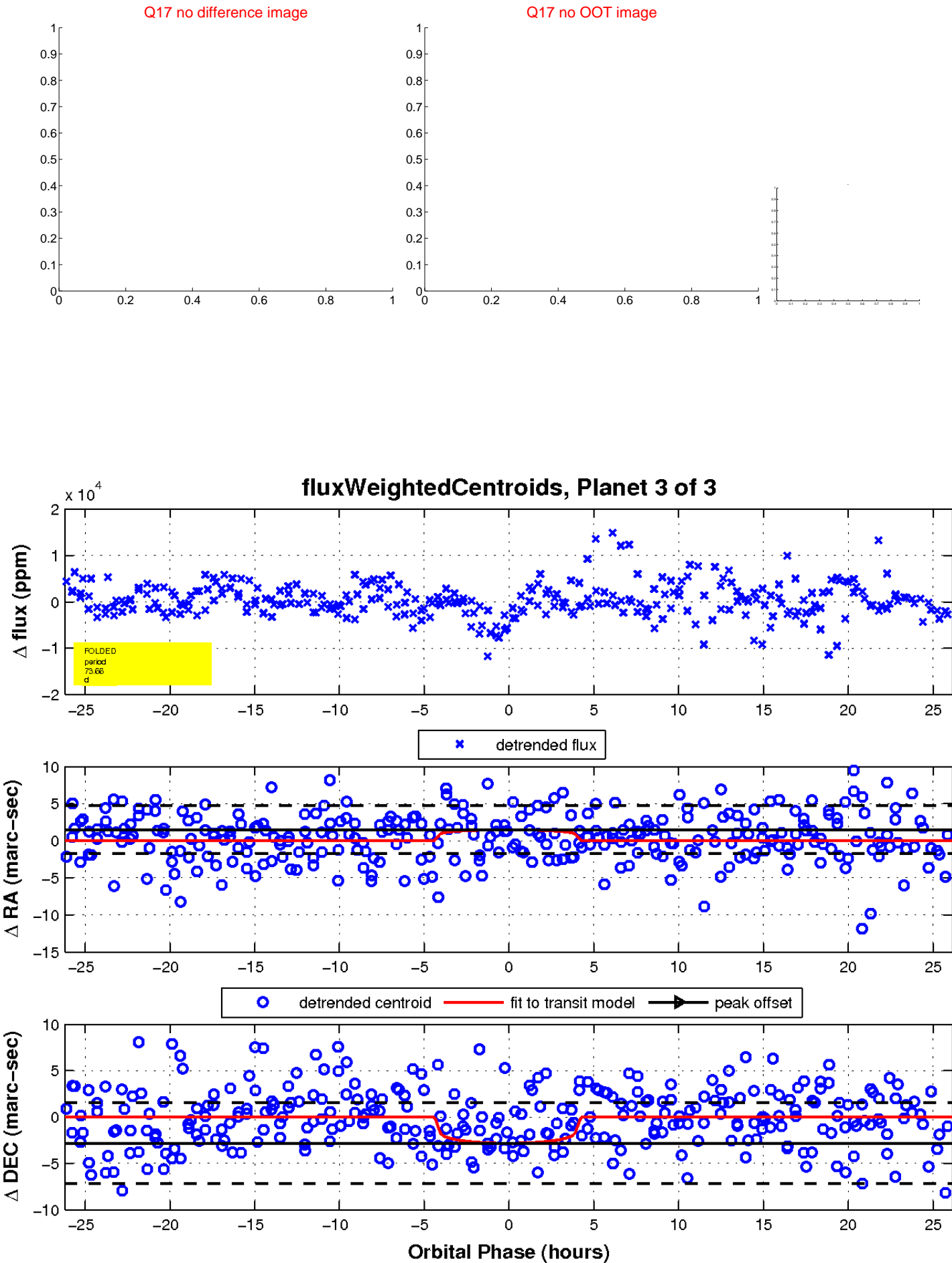
Q12 no OOT image



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.



UKIRT Image

Declination

