

KIC 007345363

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})
007345363-01	OBS	No	318.317447	367.358888	5297.2	12.905	23.2	6.6	0.69	4430	6.49	0.25
007345363-02	OBS	No	469.835656	278.349962	3256.7	9.000	24.9	-1.0	0.69	4430	3.73	0.15
007345363-03	OBS	No	288.941974	196.880062	2999.9	3.733	19.3	9.7	0.69	4430	4.55	0.29
007345363-04	OBS	No	428.907236	491.298307	1692.5	7.500	18.8	-1.0	0.69	4430	2.69	0.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007345363-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007345363-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
007345363-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS
007345363-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_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.

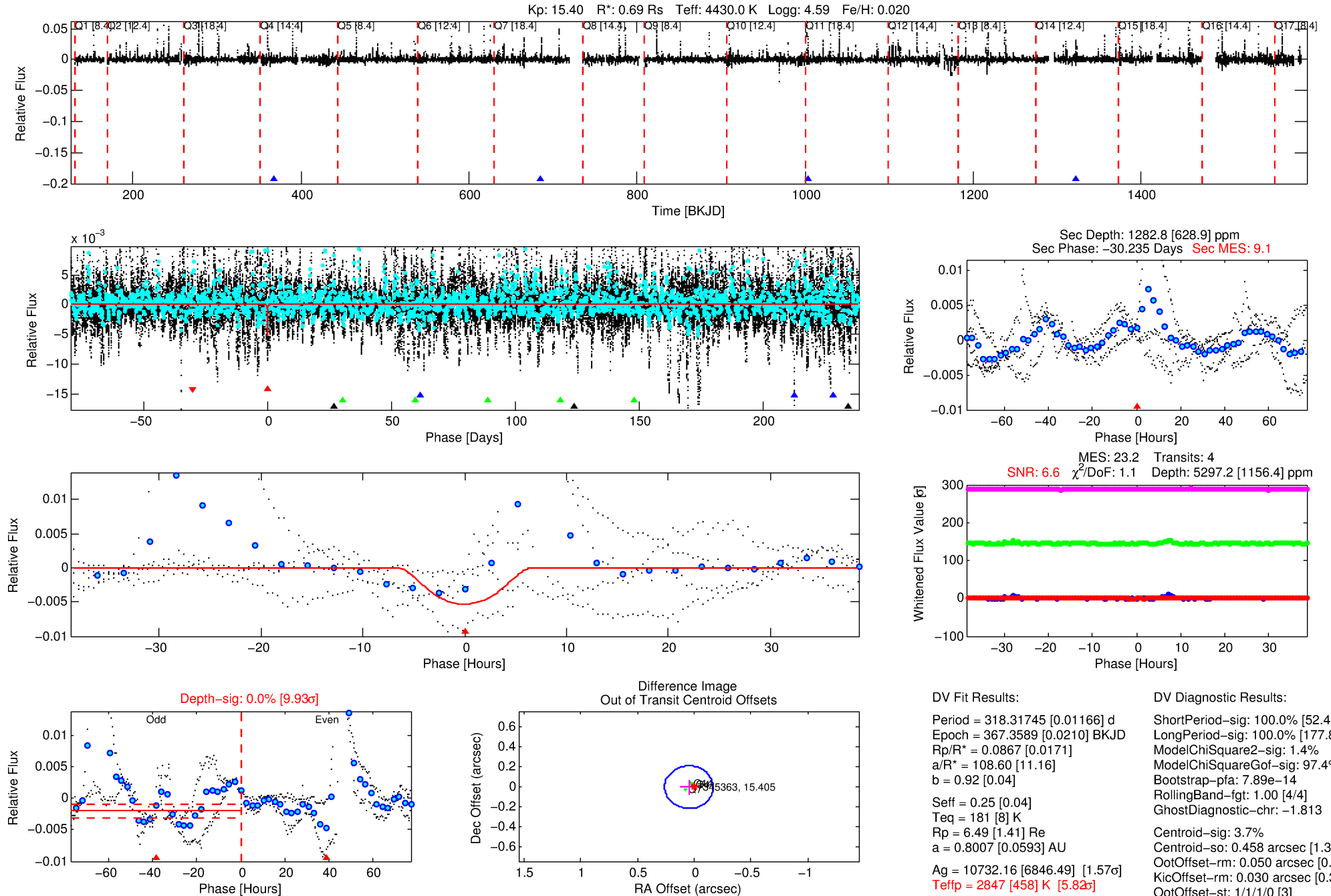
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007345363-01

No Significant Match Found

DV One-Page Summary

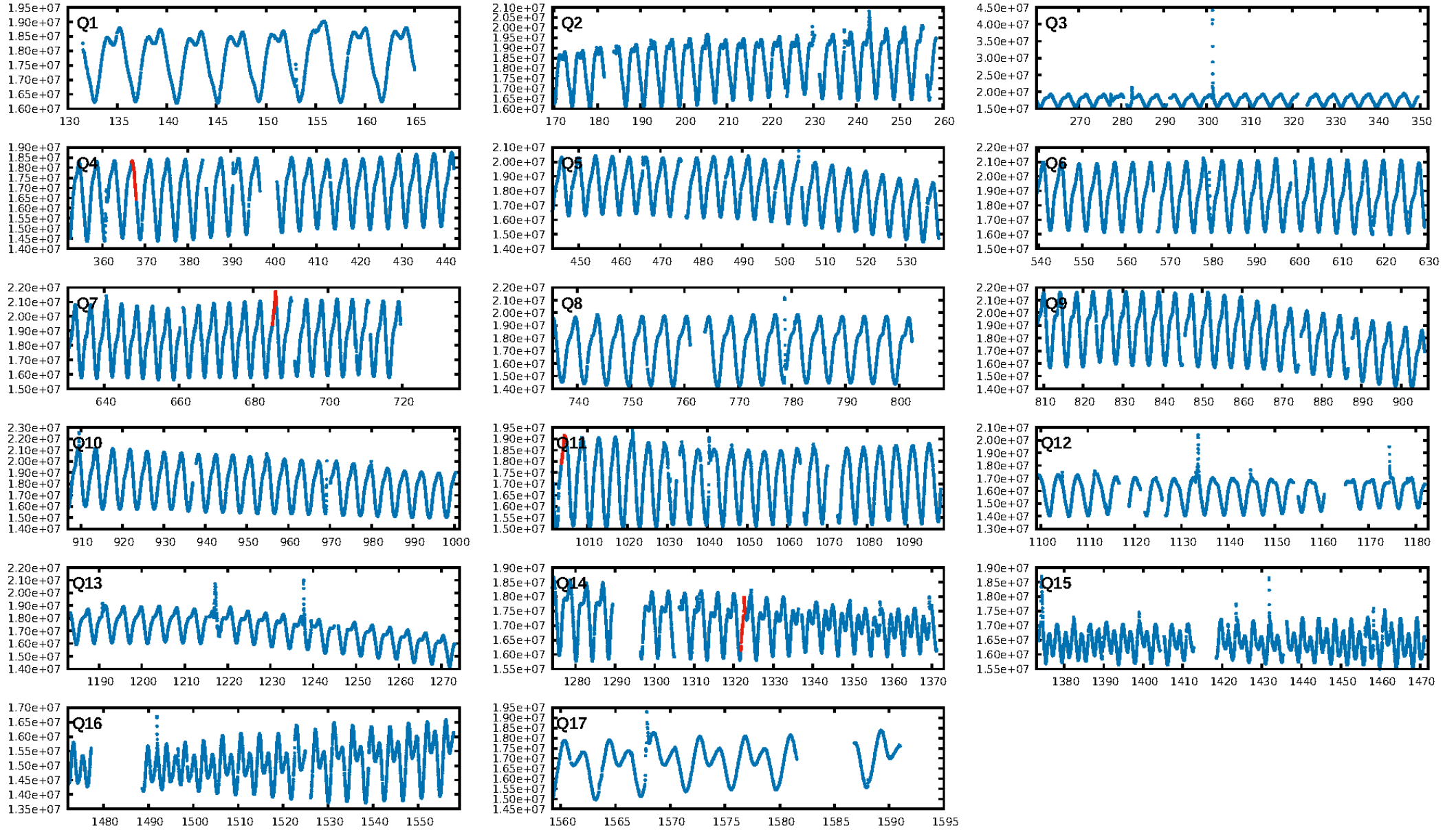
KIC: 7345363 Candidate: 1 of 4 Period: 318.317 d



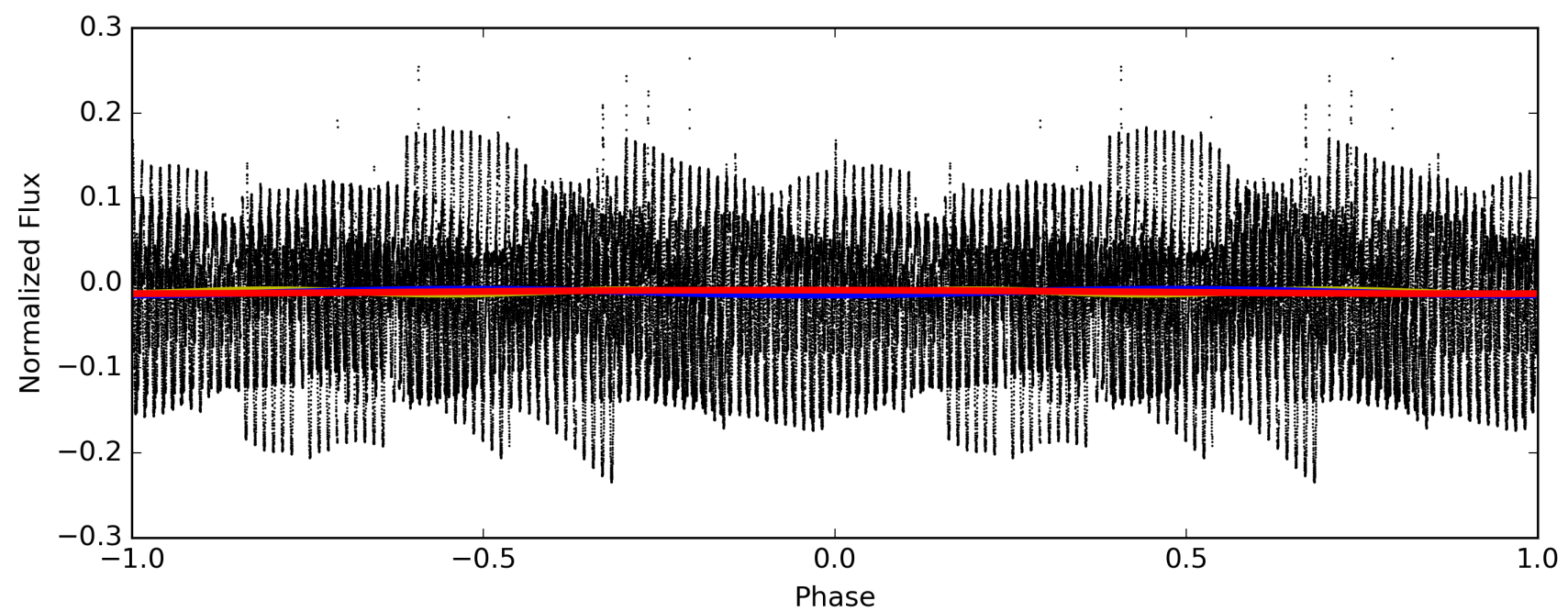
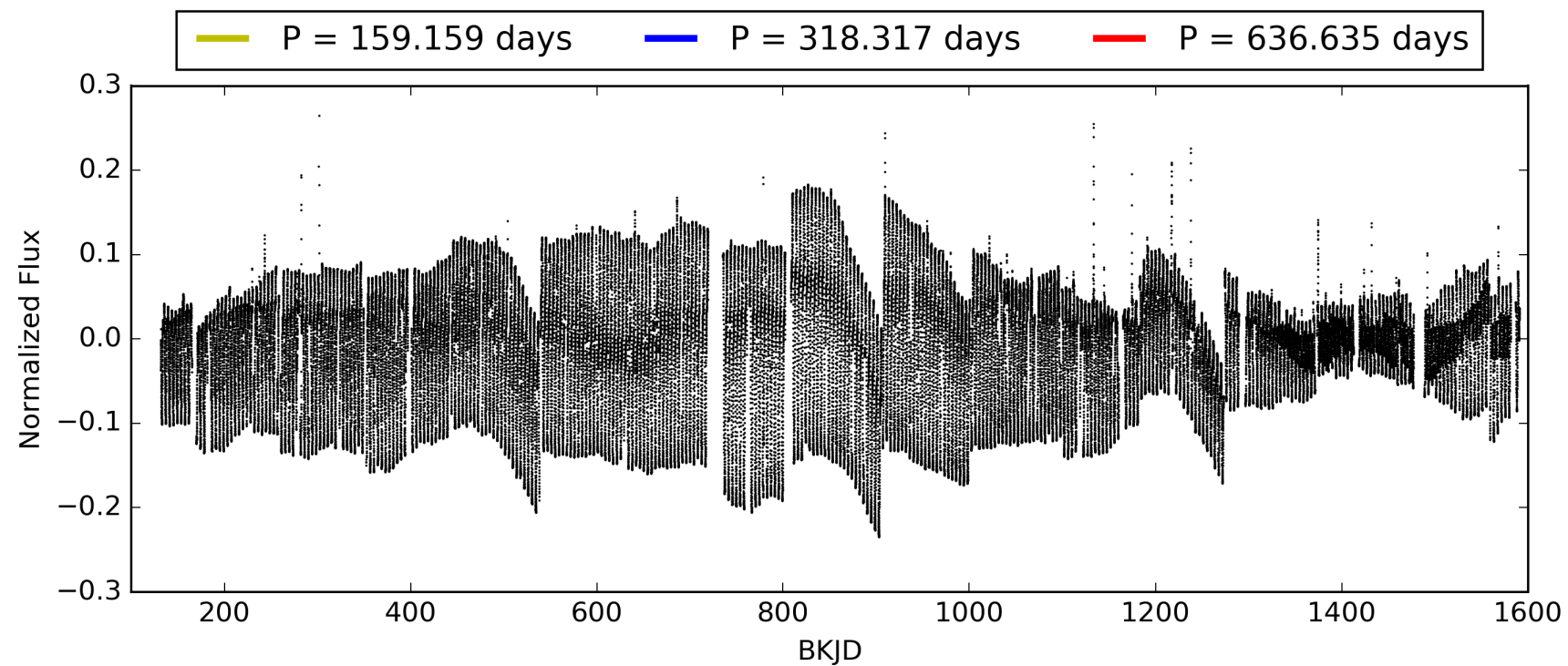
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:16:52 Z

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

TCE 007345363-01, PDC Light Curves

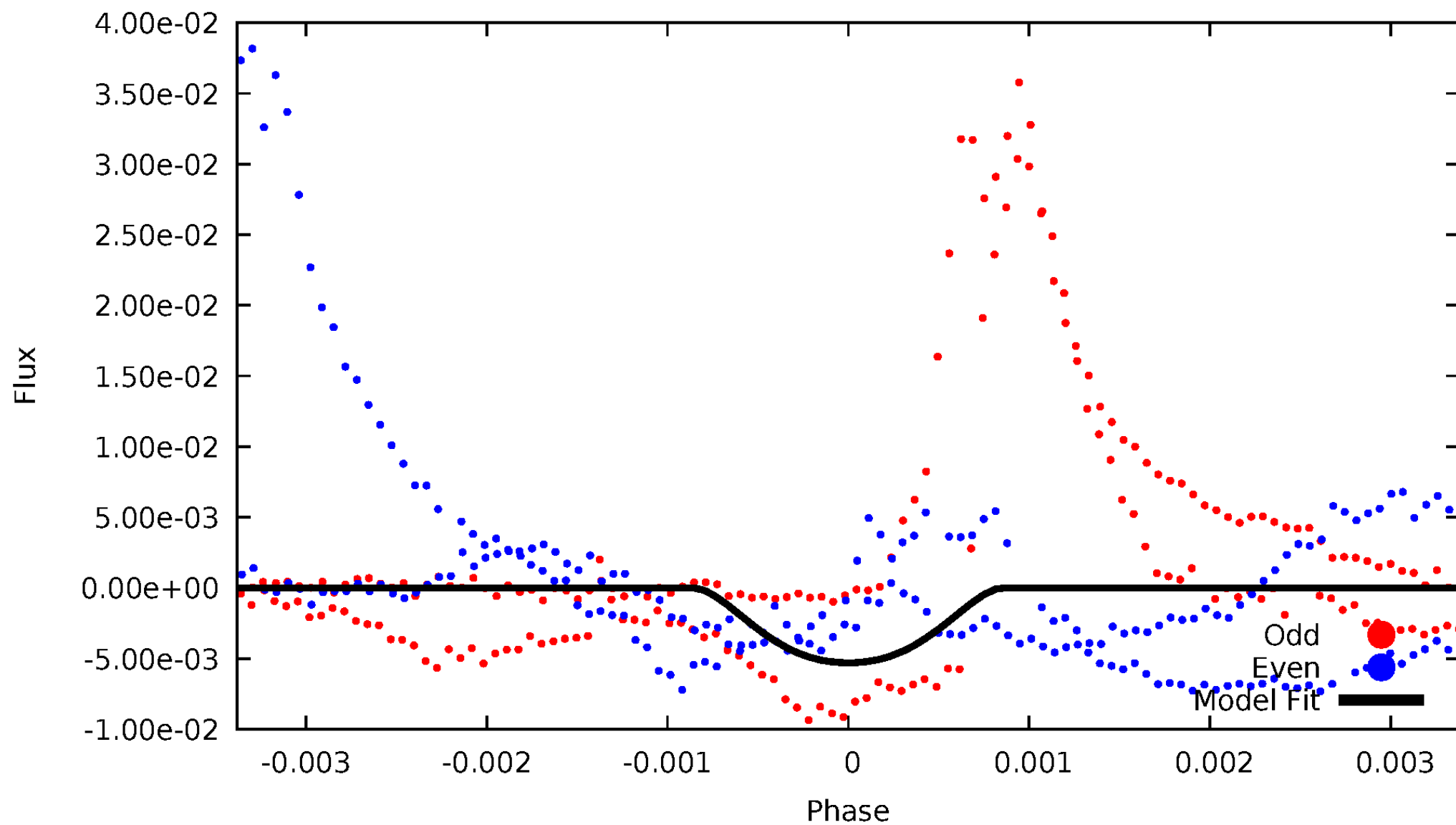


TCE 007345363-01



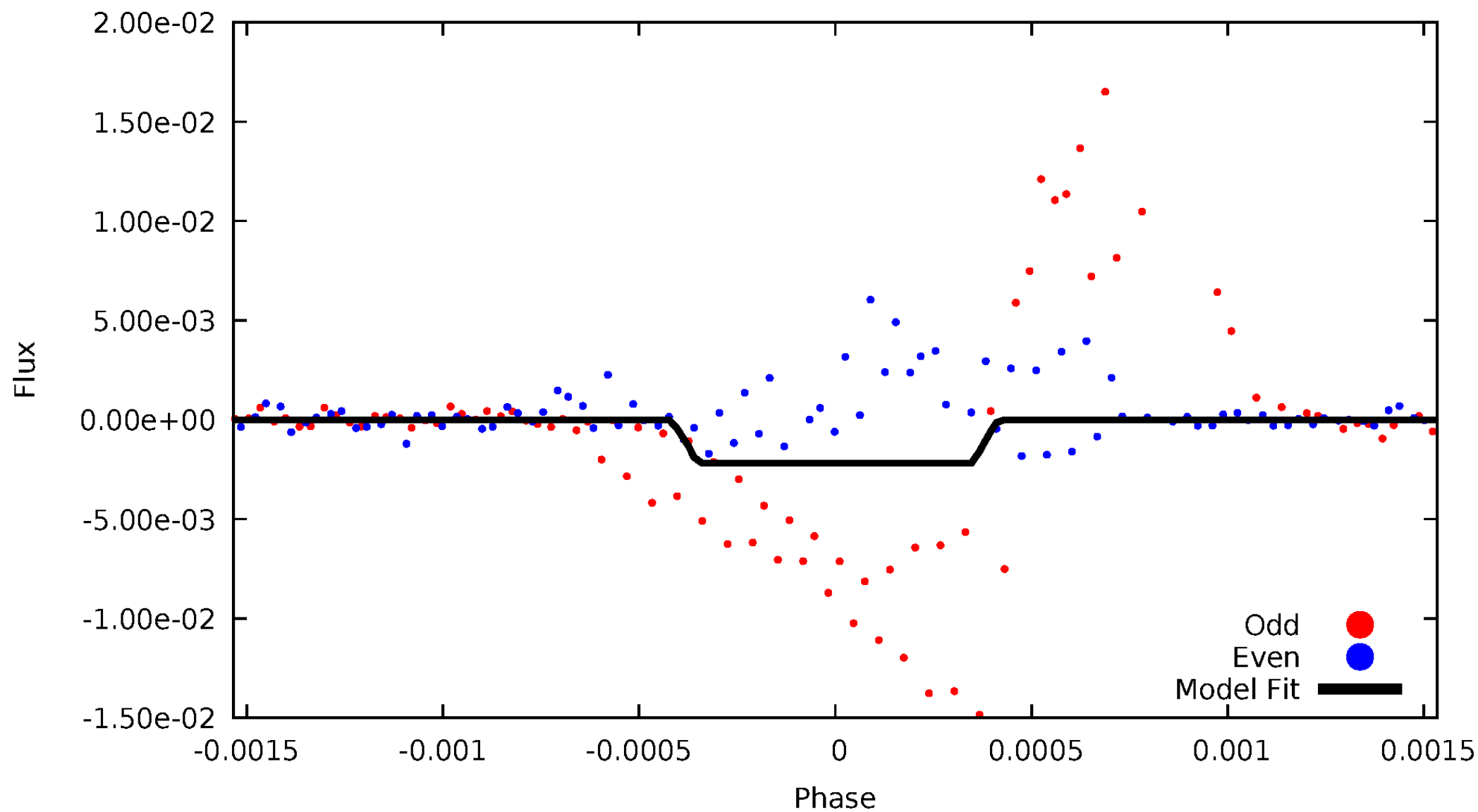
DV Odd/Even

TCE 007345363-01



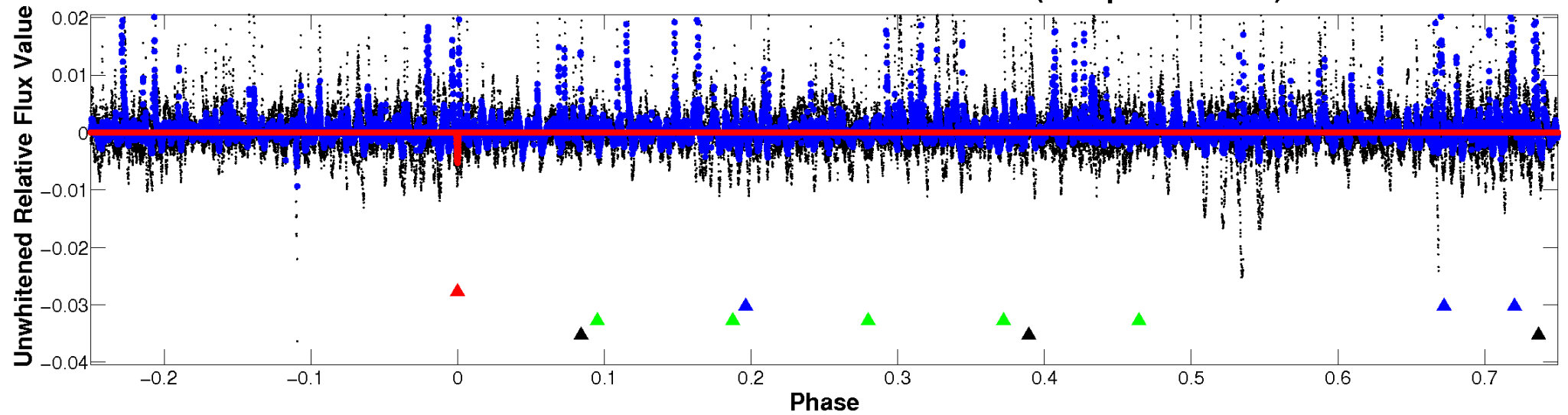
ALT Odd/Even

TCE 007345363-01

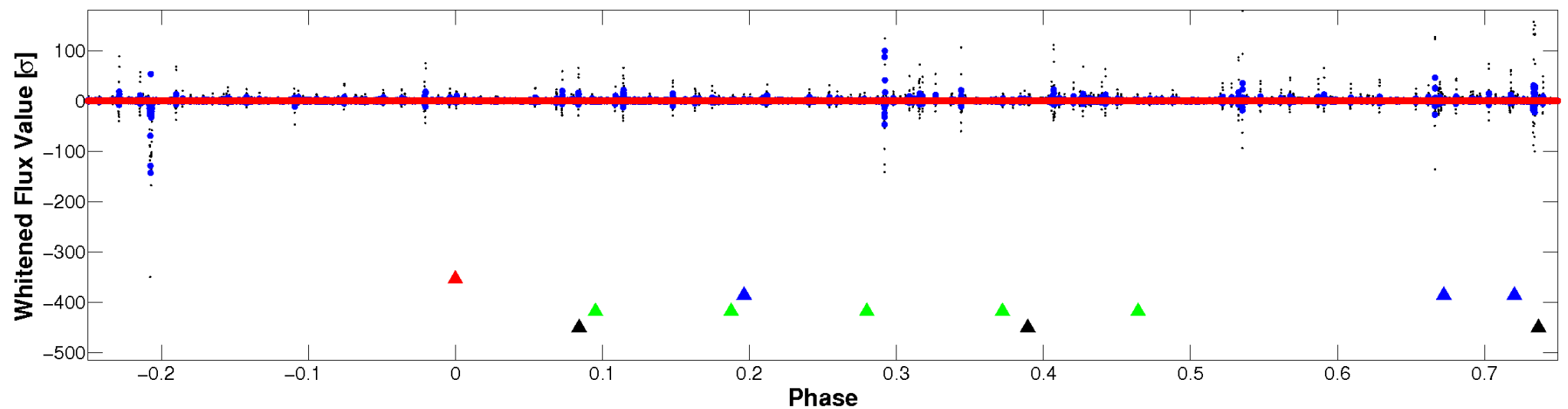


Non-Whitened Vs. Whitened Light Curve

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

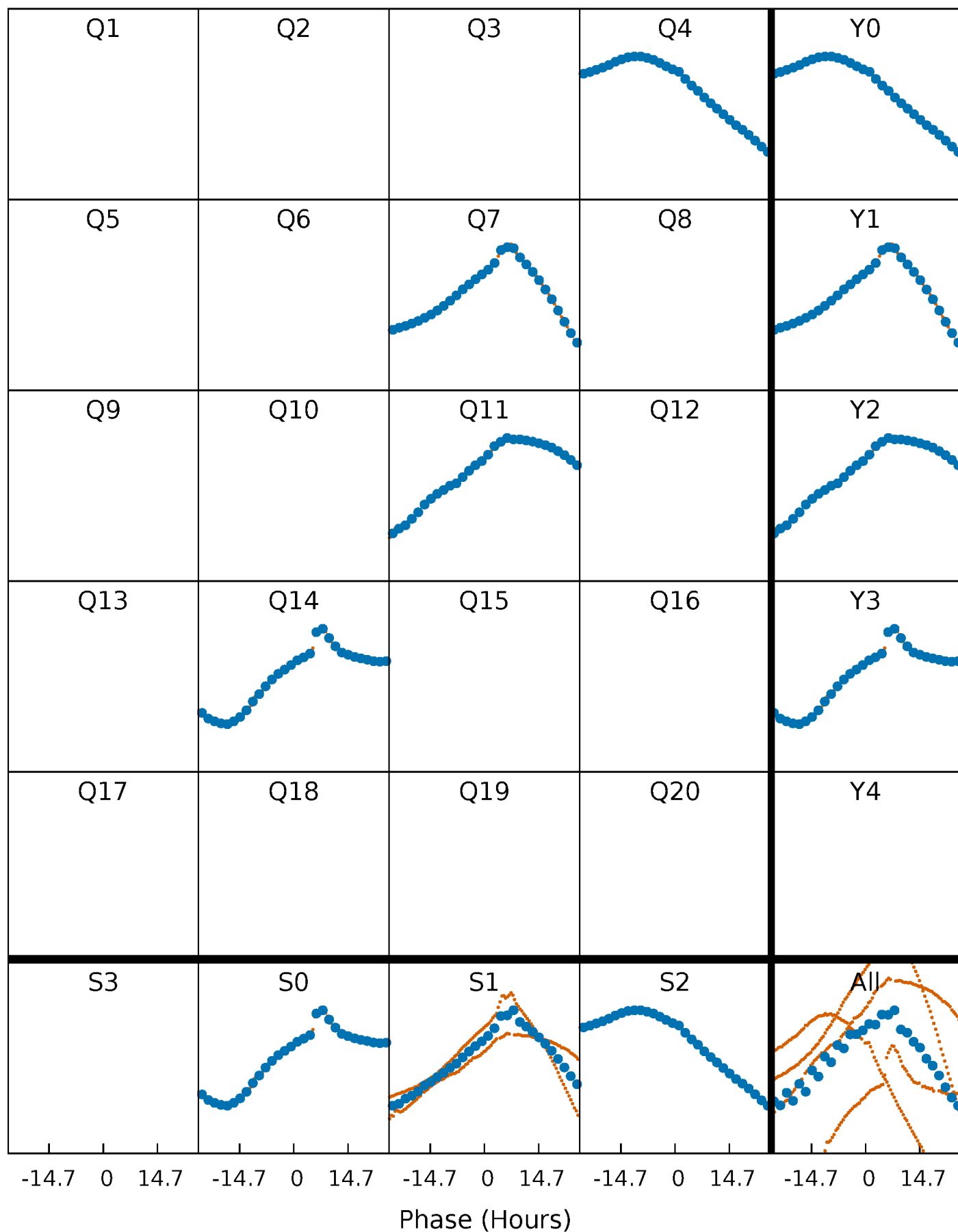


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



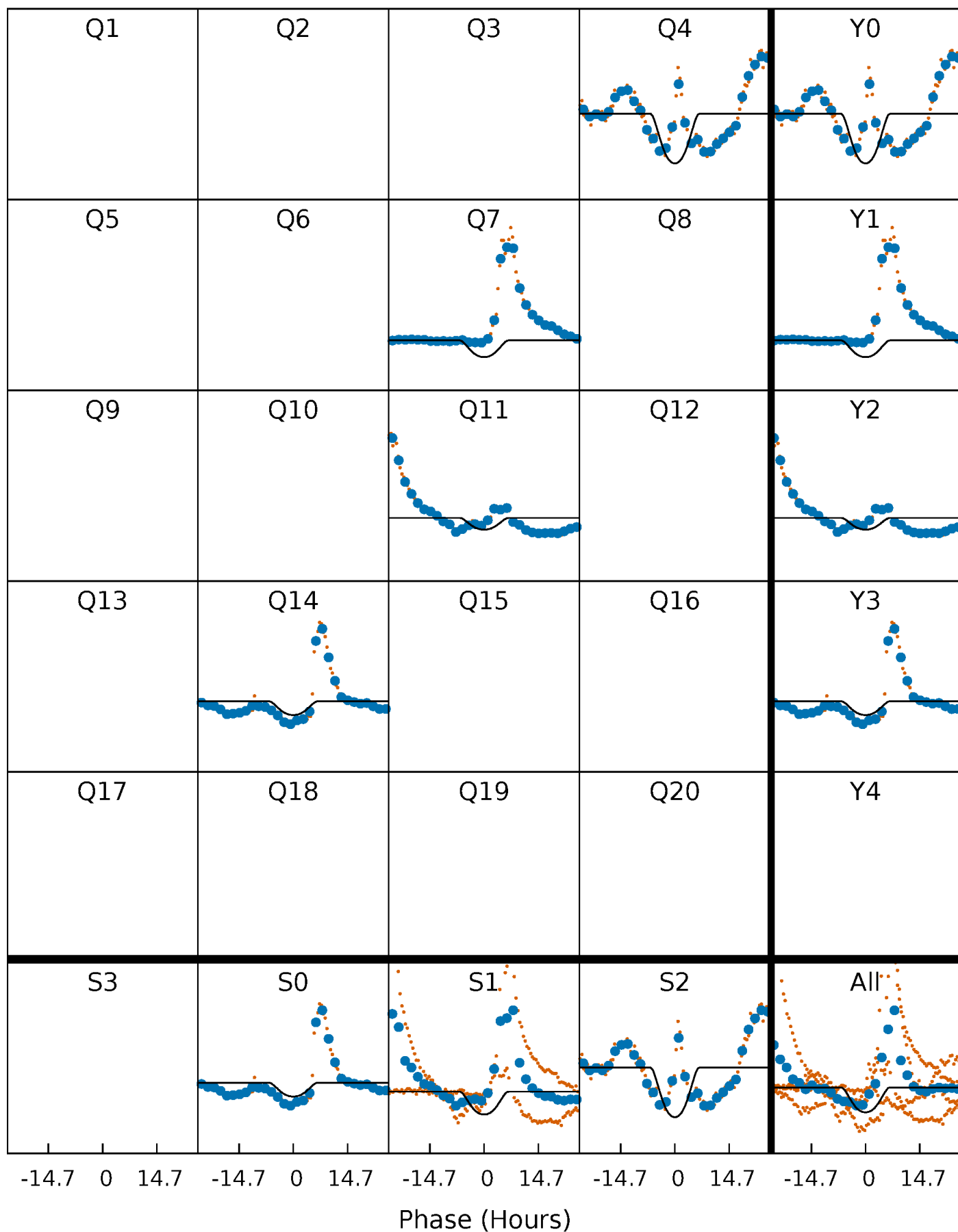
PDC Quarter-Phased Transit Curves

TCE 007345363-01 P=318.317447 Days $T_0=367.358888$ (BKJD)



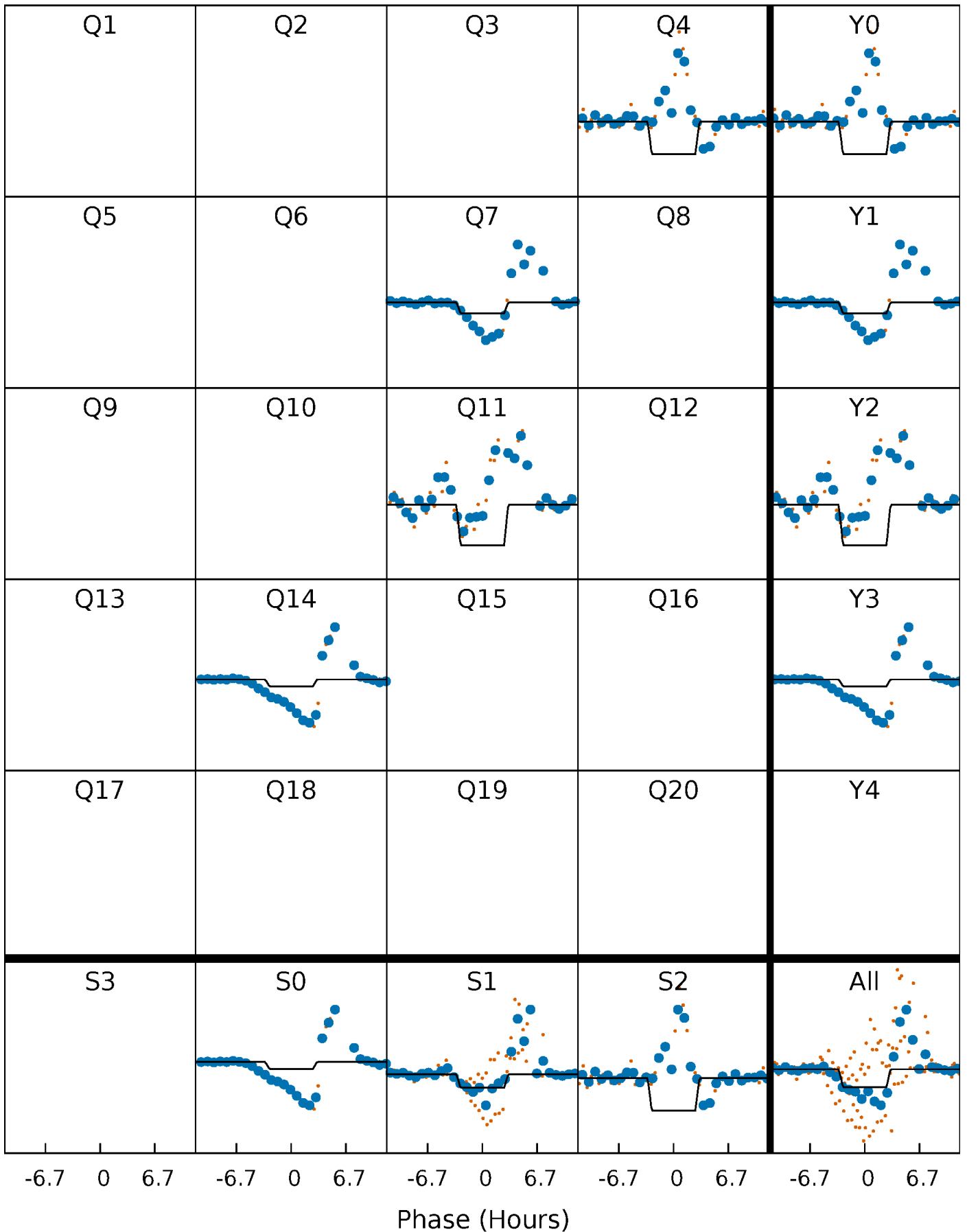
DV Quarter-Phased Transit Curves

TCE 007345363-01 P=318.317447 Days $T_0=367.358888$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

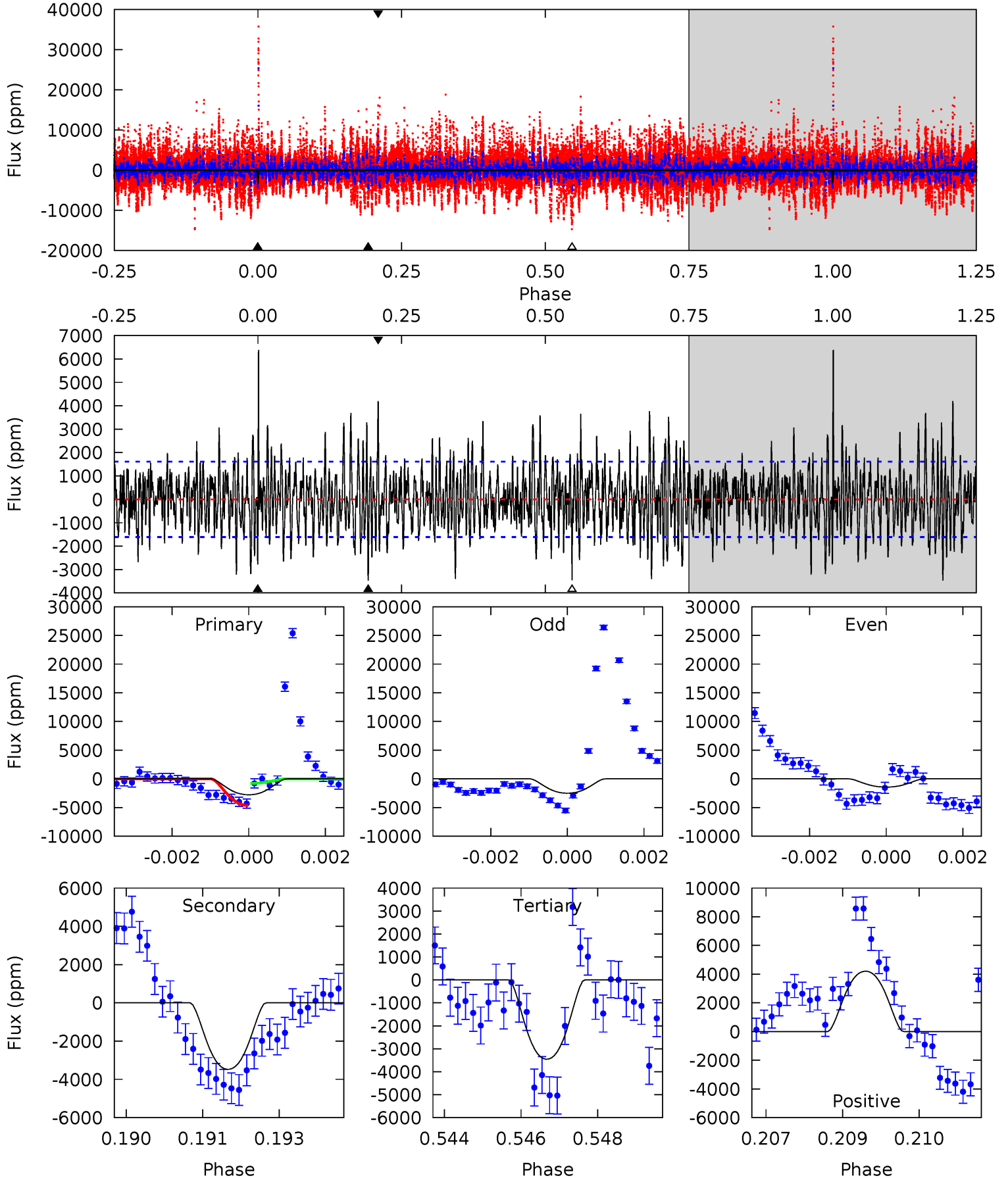
TCE 007345363-01 P=318.341242 Days $T_0=367.366349$ (BKJD)



DV Model-Shift Uniqueness Test

007345363-01, P = 318.317447 Days, E = 49.041441 Days

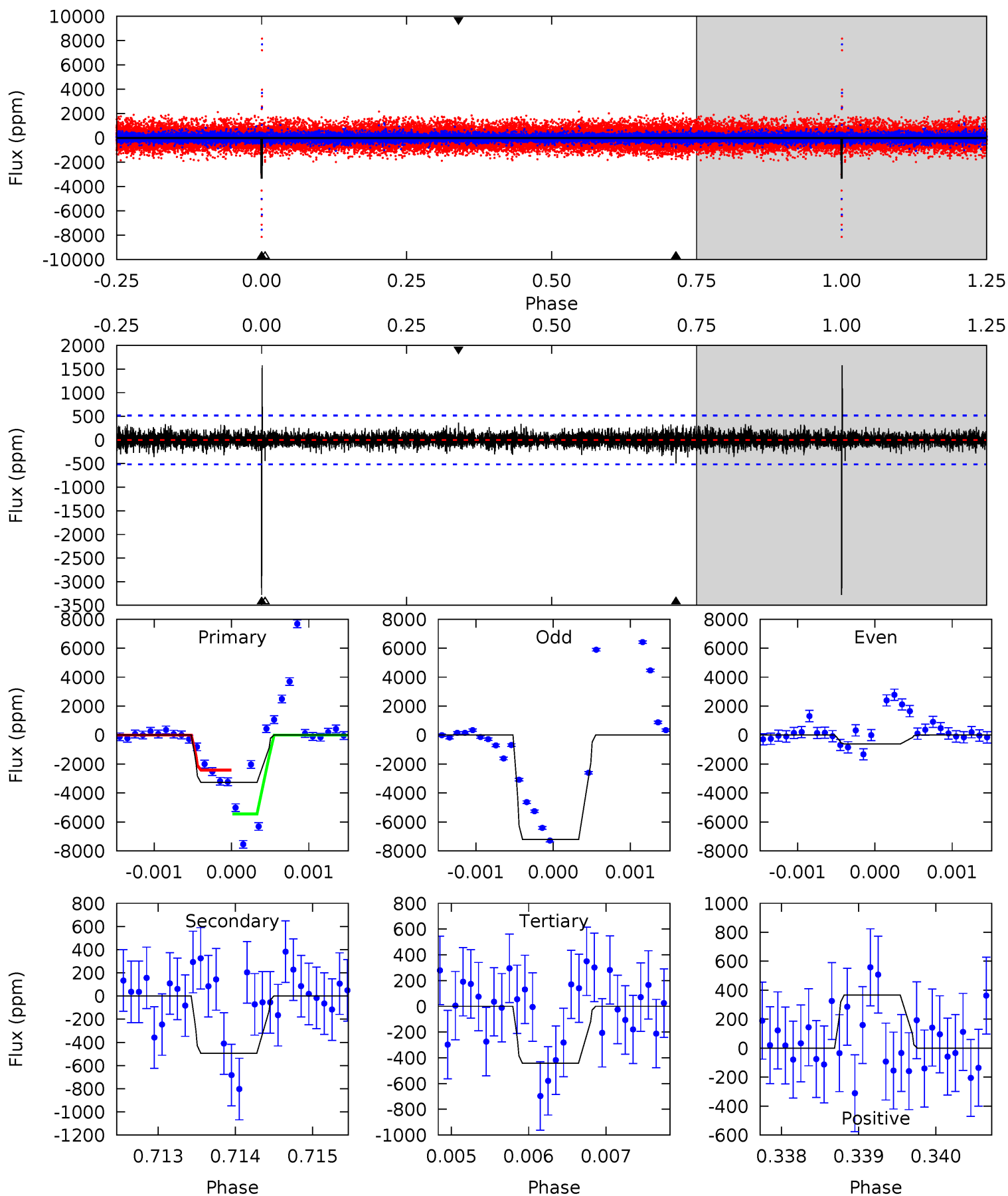
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.23	11.6	11.5	14.0	5.35	3.13	3.78	-2.25	-4.75	0.06	-2.44	1.21	1.36	0.65	6.49



Alt Model-Shift Uniqueness Test

007345363-01, P = 318.341242 Days, E = 49.025107 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.7	5.24	4.70	3.89	5.49	3.35	0.88	30.0	30.8	0.54	1.35	46.4	1.26	0.33	15.2



Stellar Parameters For KIC 007345363

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4430^{+134}_{-147}	$4.595^{+0.056}_{-0.020}$	$0.020^{+0.250}_{-0.300}$	$0.686^{+0.038}_{-0.062}$	$0.674^{+0.060}_{-0.054}$	$2.945^{+0.739}_{-0.252}$
	+3%/-3%	+1%/-0%	+1250%/-1500%	+6%/-9%	+9%/-8%	+25%/-9%
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 007345363-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3473 ± 301	$6.40^{+1.22}_{-1.23}$	251^{+8}_{-10}	3847^{+357}_{-239}	29931^{+17103}_{-8840}
Alt.	-494 ± 94	$3.48^{+1.29}_{-1.24}$	251^{+9}_{-9}	3406^{+510}_{-325}	14242^{+20180}_{-6846}

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

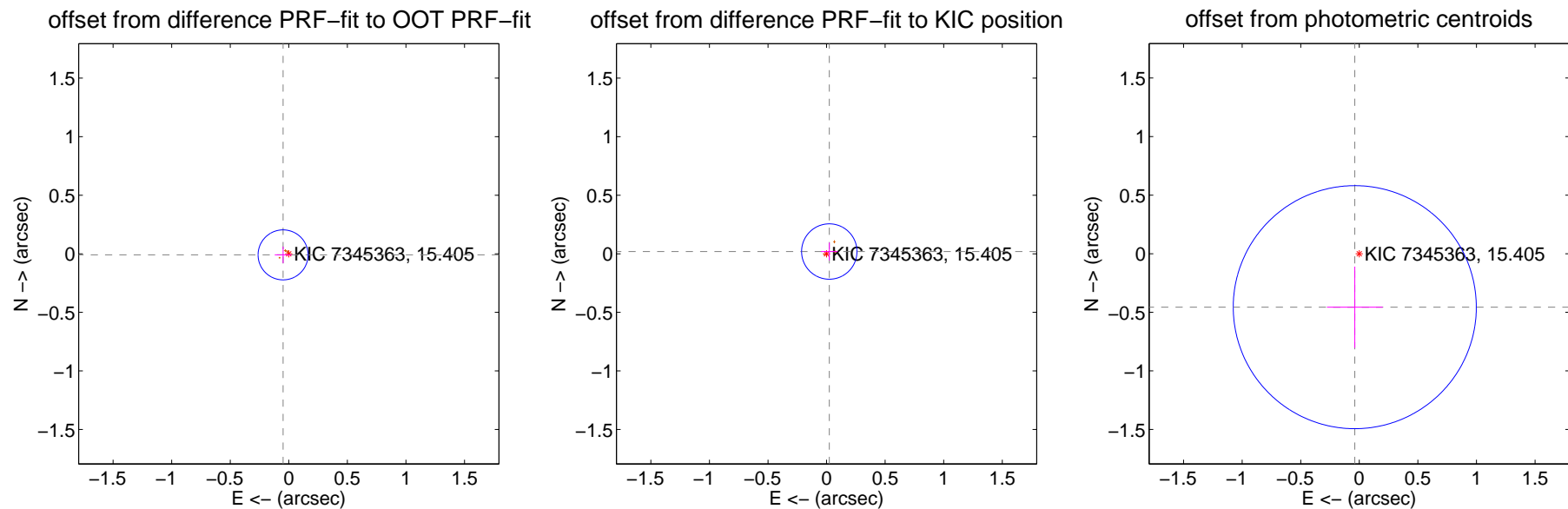
DV Centroid Data

Supplemental centroid analysis for 007345363-01. Kepler magnitude: 15.40. Transit SNR 6.62

There are 0 quarters with good PRF difference image offsets

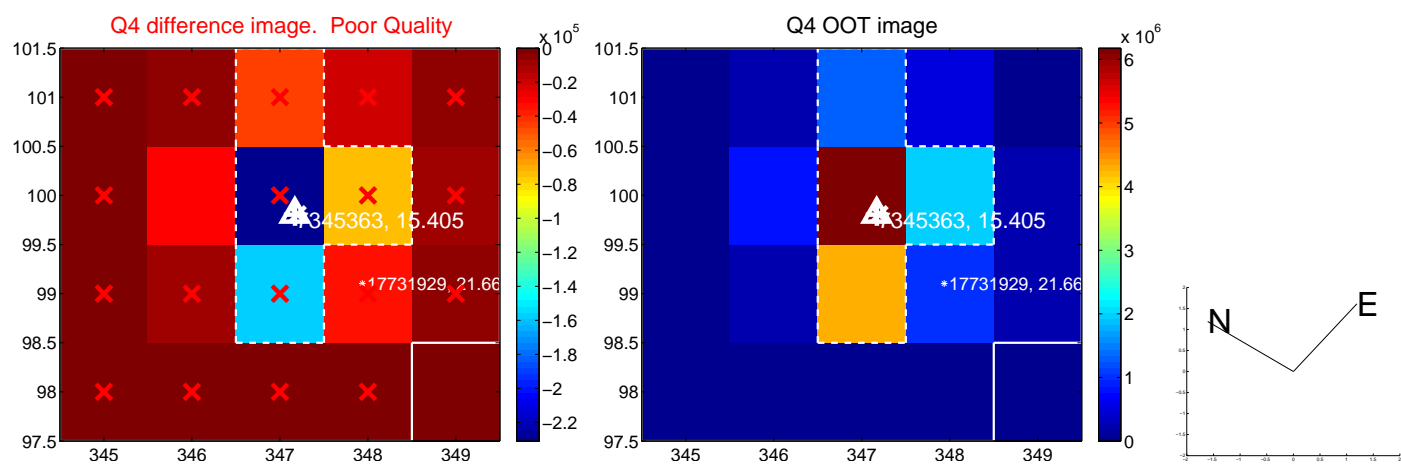
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.050 ± 0.071	0.70	0.049 ± 0.071	-0.009 ± 0.071
PRF-fit source offset from KIC position	0.030 ± 0.079	0.38	-0.023 ± 0.072	0.019 ± 0.076
photometric centroid source offset	0.46 ± 0.35	1.32	0.04 ± 0.24	-0.46 ± 0.35



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



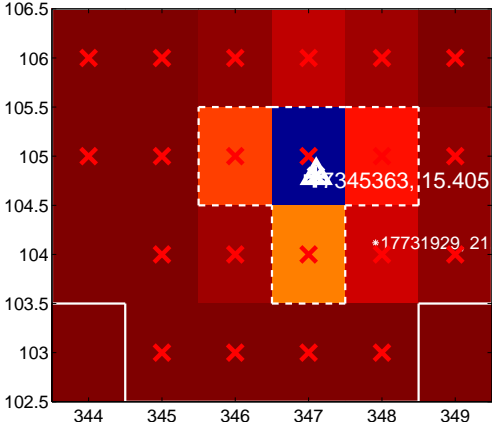
Q6 no difference image



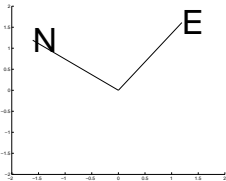
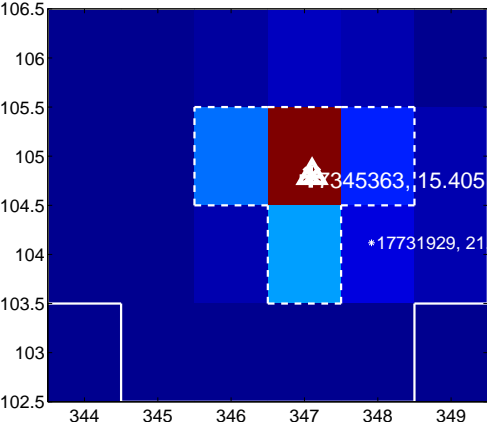
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



Q8 no difference image



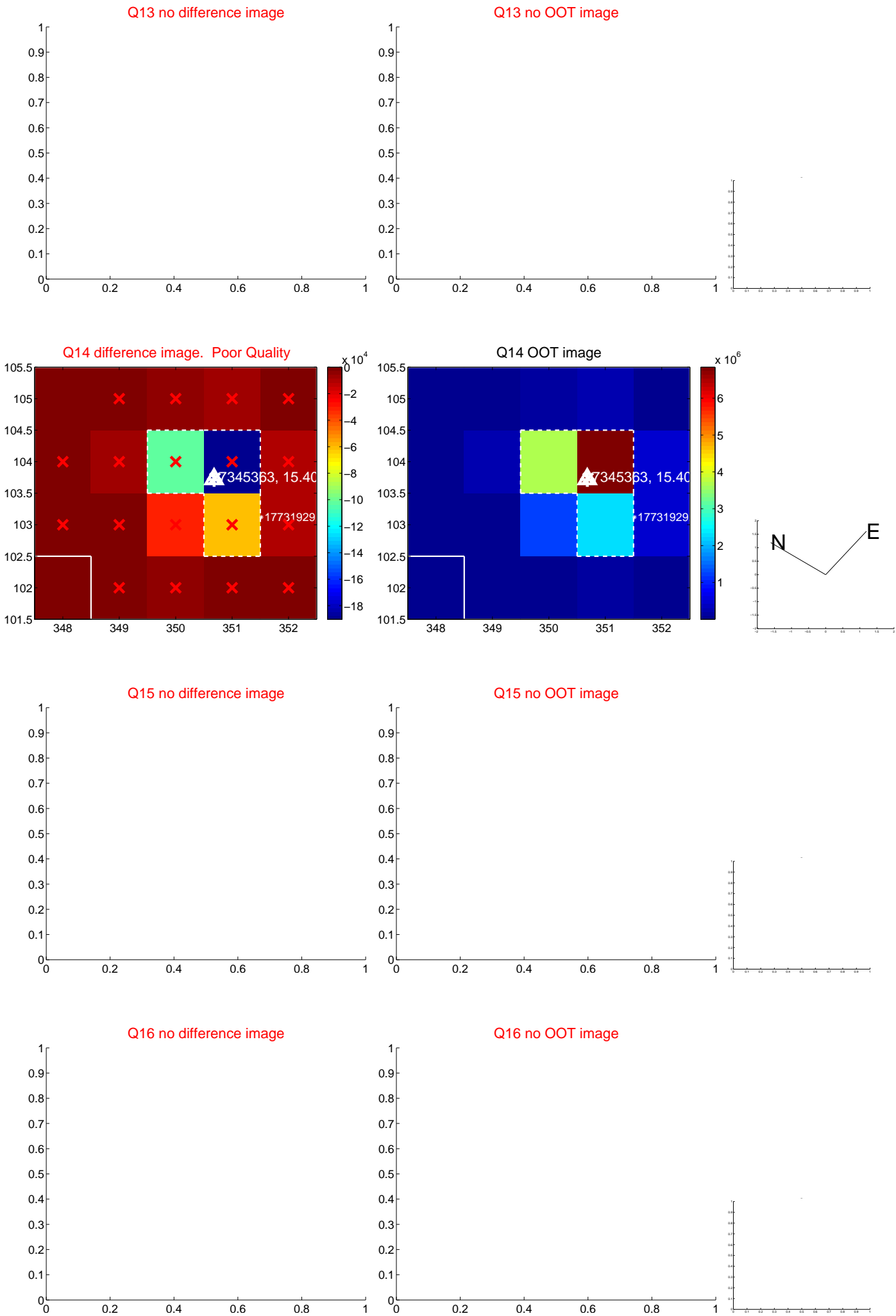
Q8 no OOT image



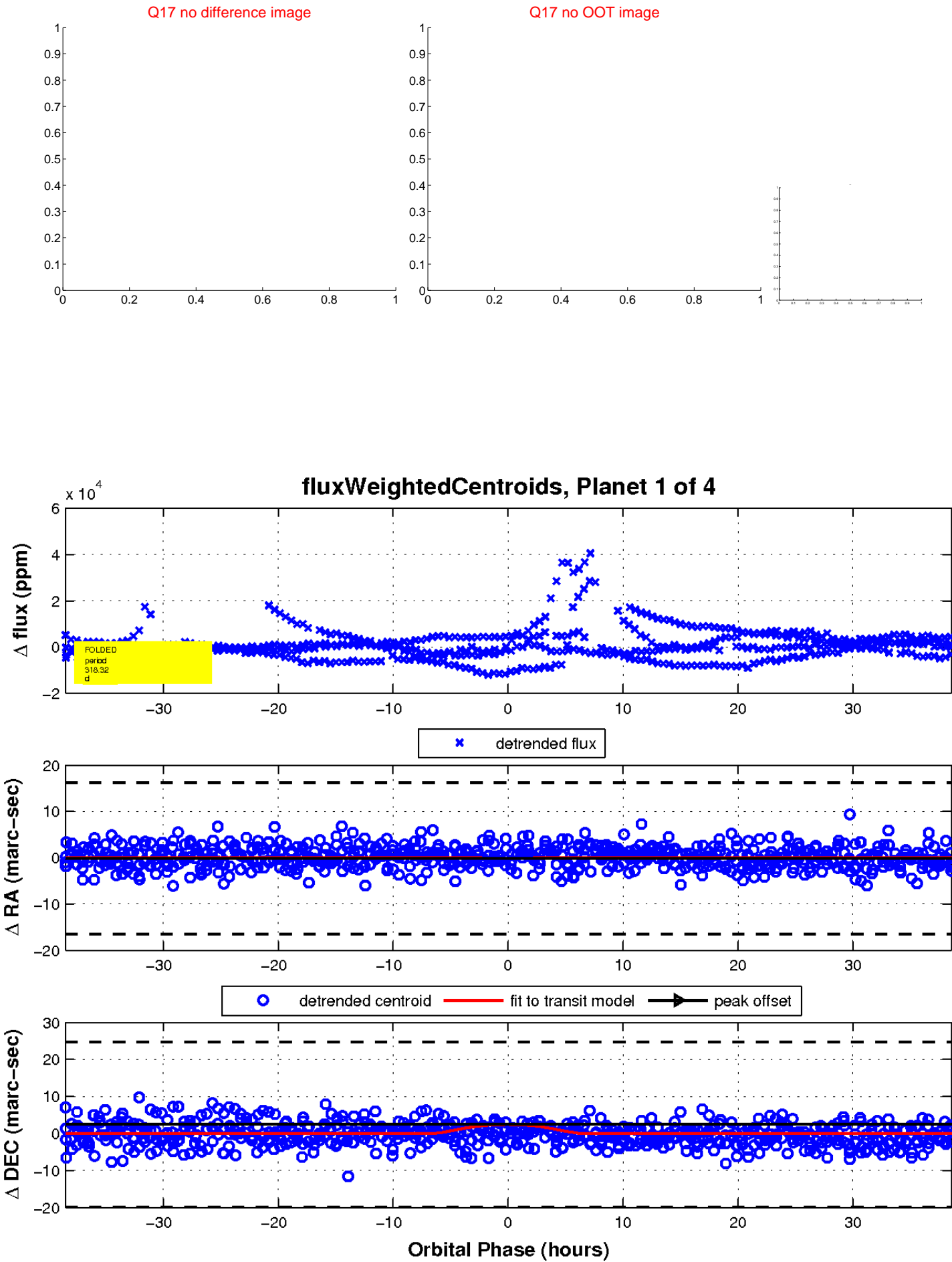
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

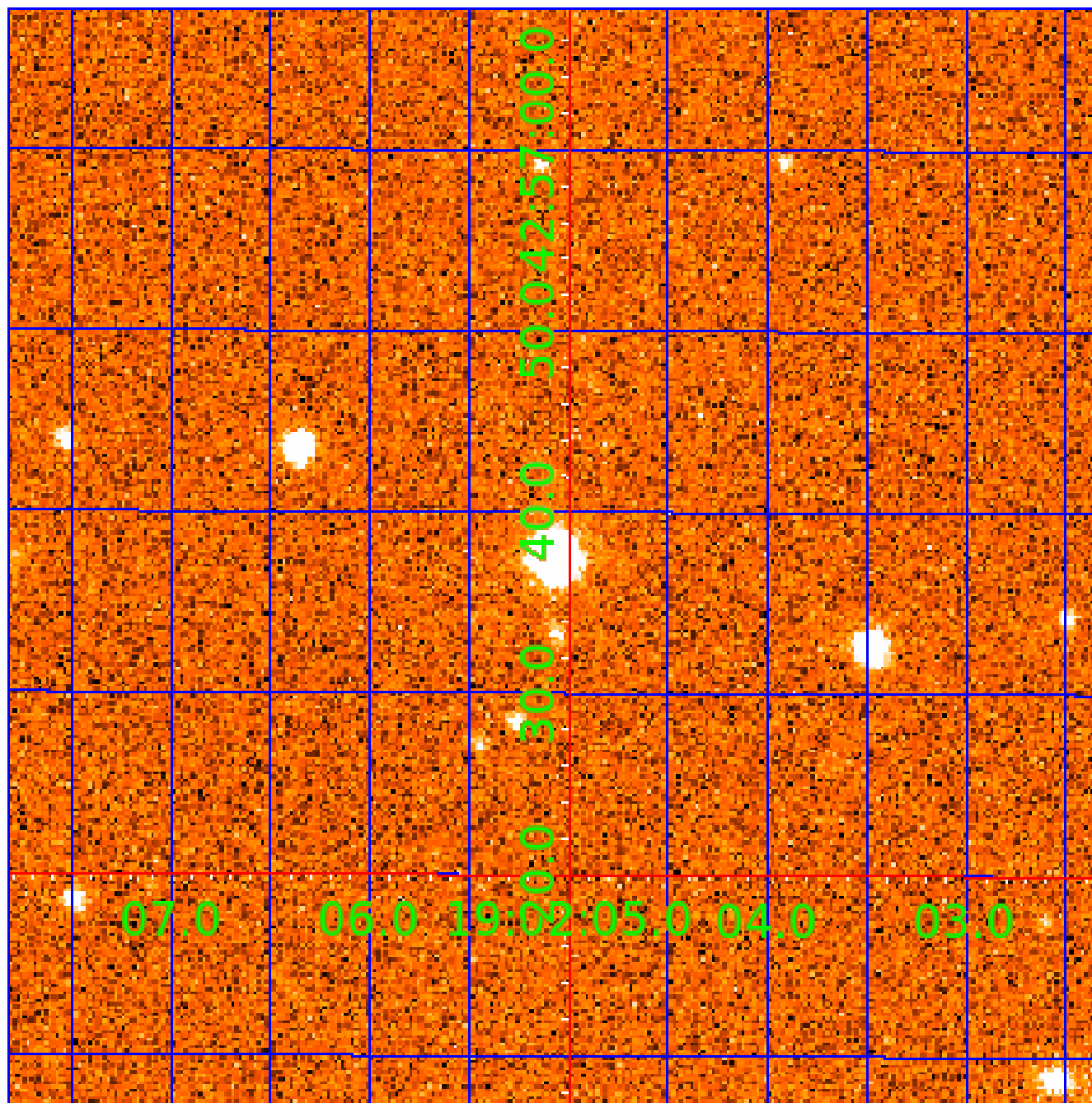


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007345363

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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007345363-04	OBS	No	428.907236	491.298307	1692.5	7.500	18.8	-1.0	0.69	4430	2.69	0.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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007345363-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
007345363-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS
007345363-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_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.

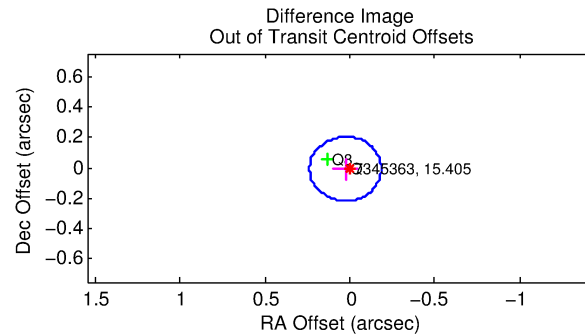
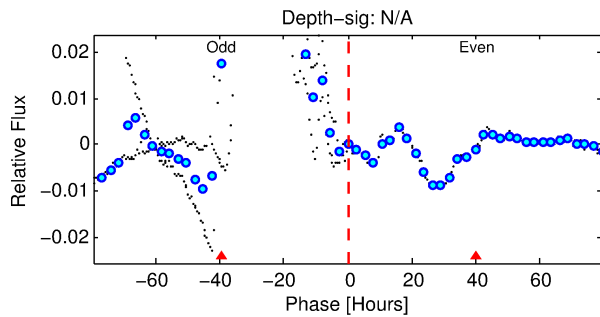
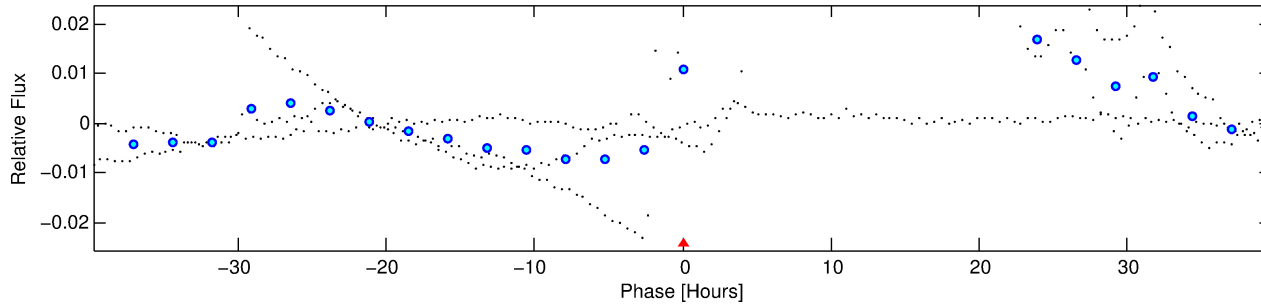
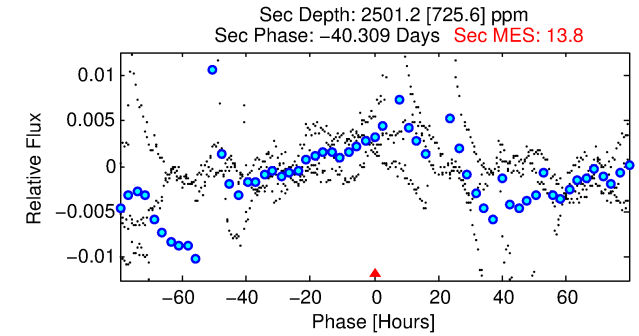
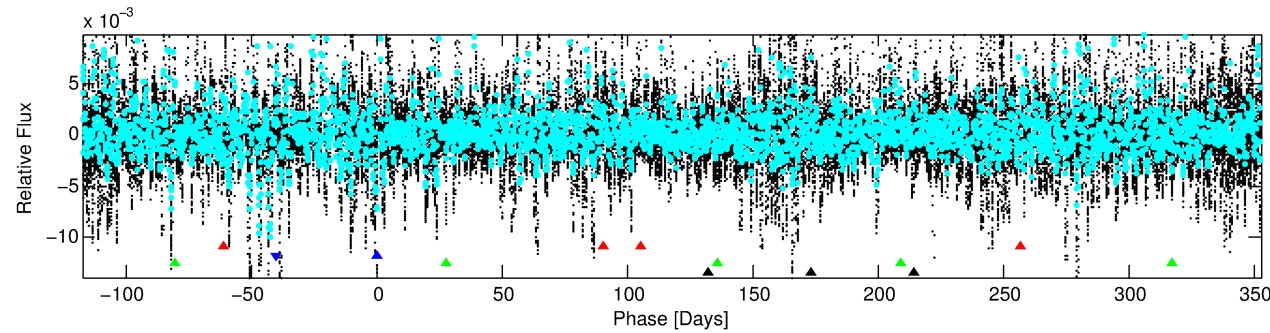
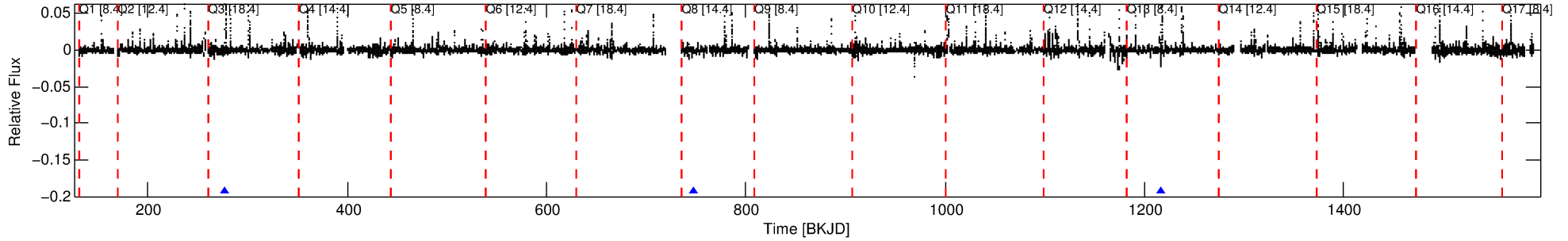
Ephemeris Match Information For 007345363-02

No Significant Match Found

DV One-Page Summary

KIC: 7345363 Candidate: 2 of 4 Period: 469.836 d

Kp: 15.40 R*: 0.69 Rs Teff: 4430.0 K Logg: 4.59 Fe/H: 0.020



TPS TCE Results:

Period = 469.83566 d
Epoch = 278.3500 BKJD

DV fit results are unavailable

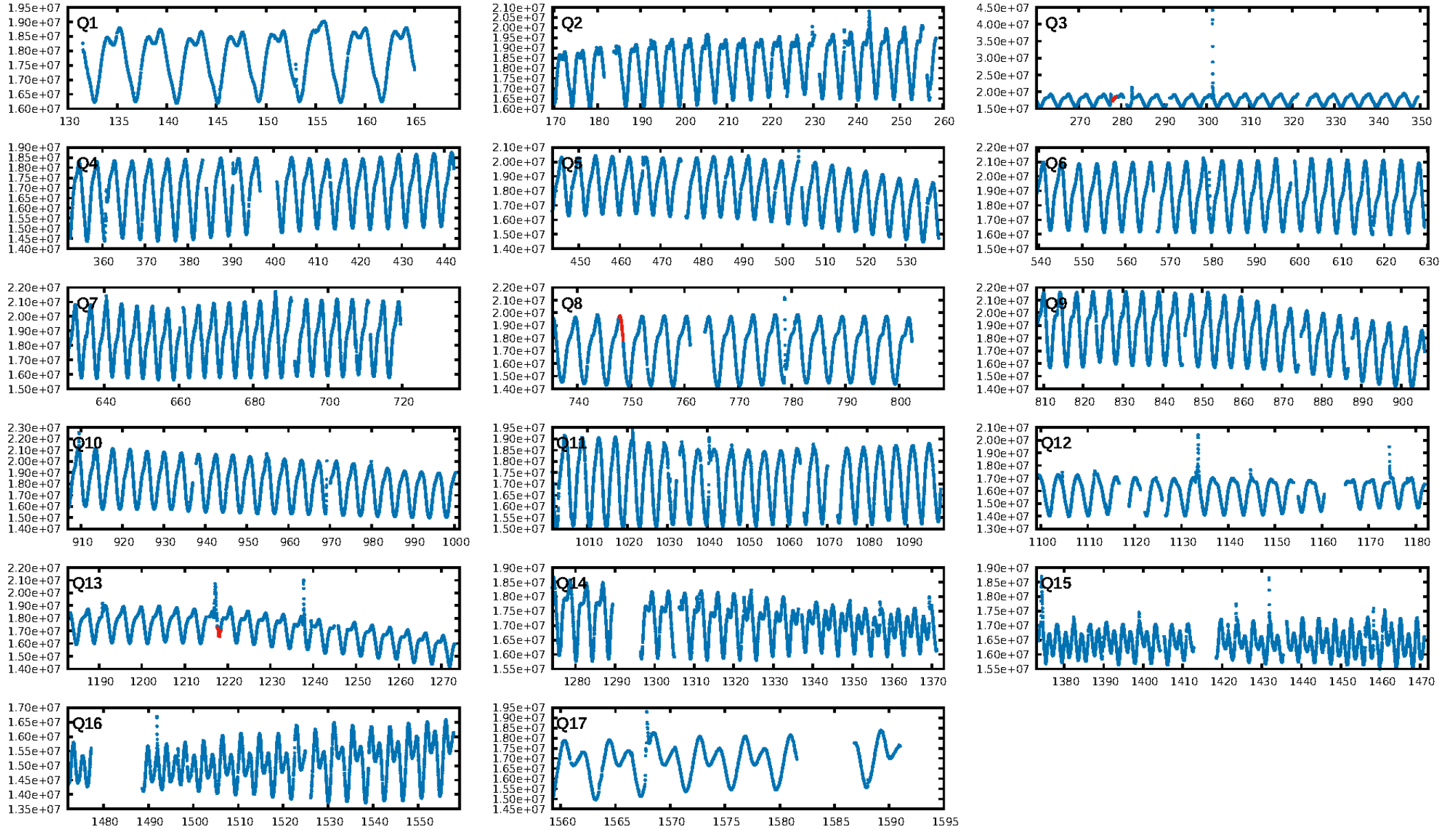
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [83.85 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.93e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.1116
Centroid-sig: 48.1%
Centroid-so: 0.890 arcsec [0.73 σ]
OotOffset-rm: 0.028 arcsec [0.41 σ]
KicOffset-rm: 0.103 arcsec [1.24 σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

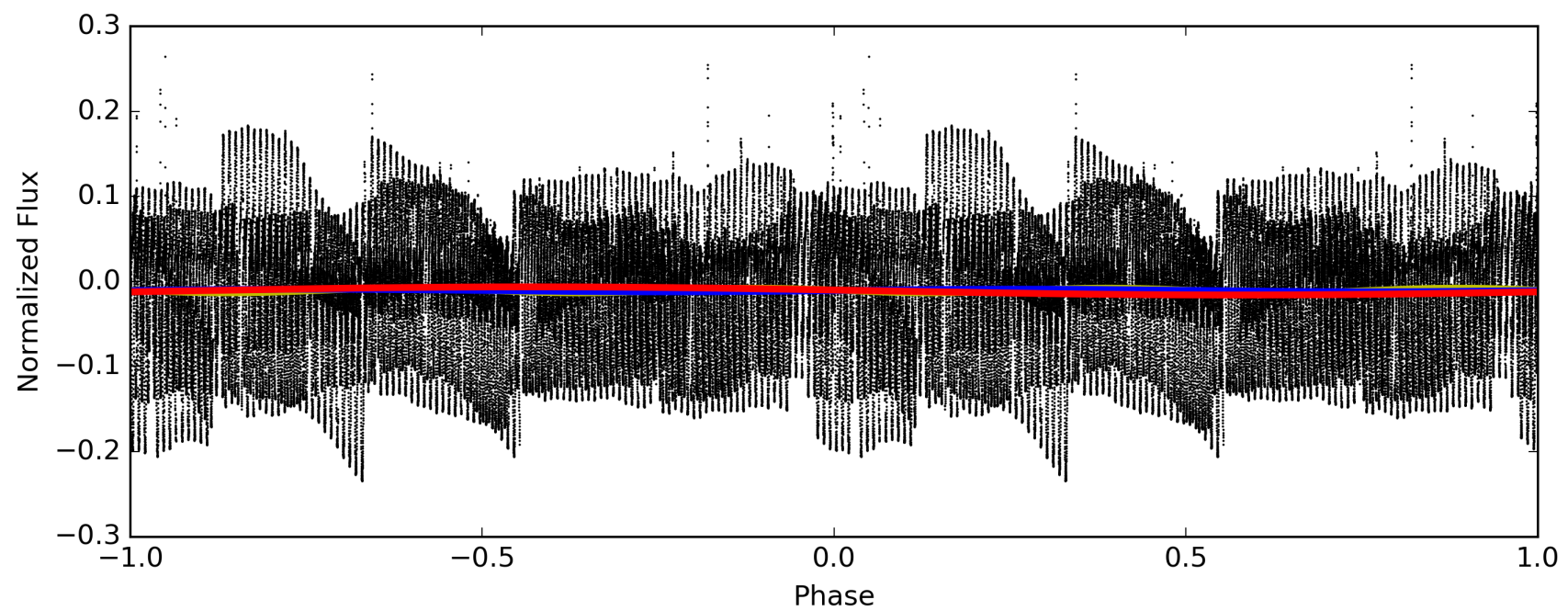
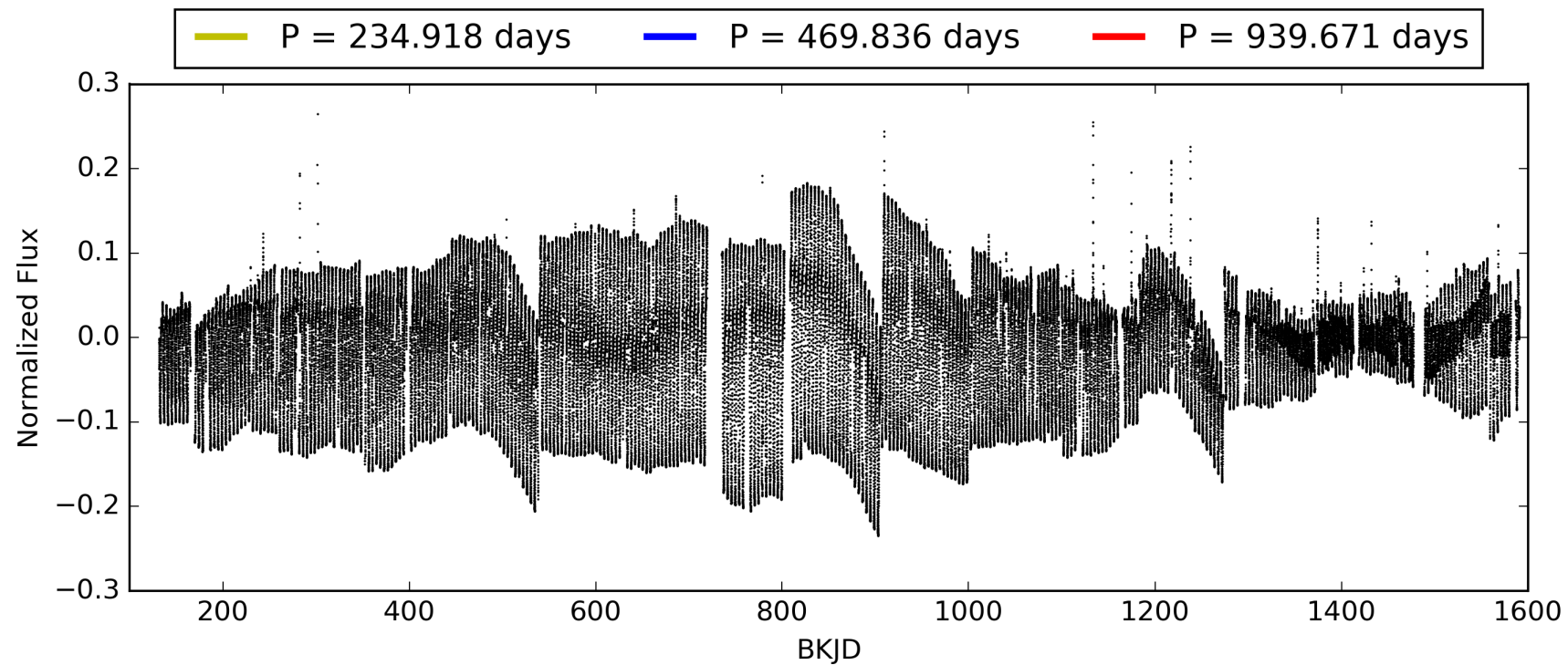
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:17:00 Z

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

TCE 007345363-02, PDC Light Curves

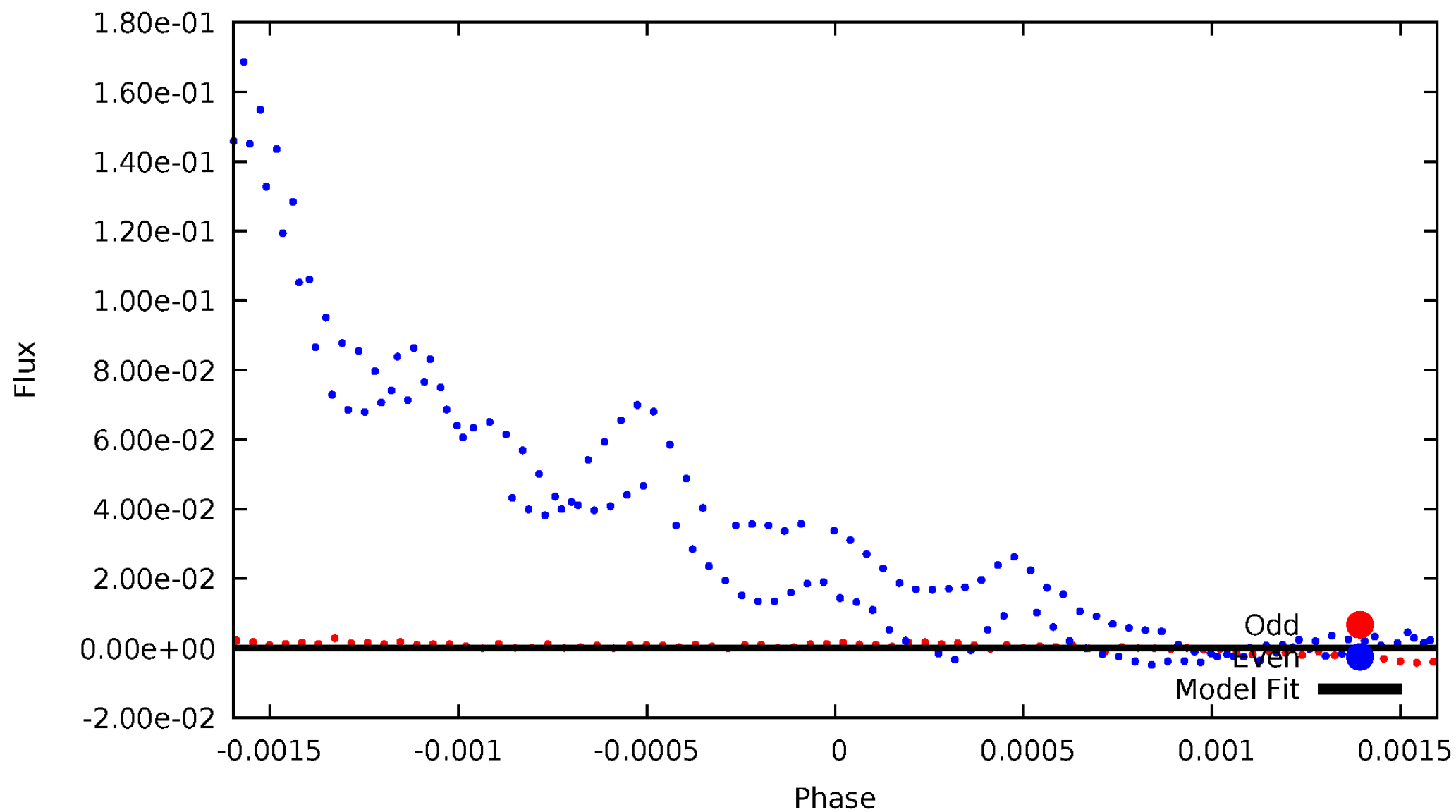


TCE 007345363-02



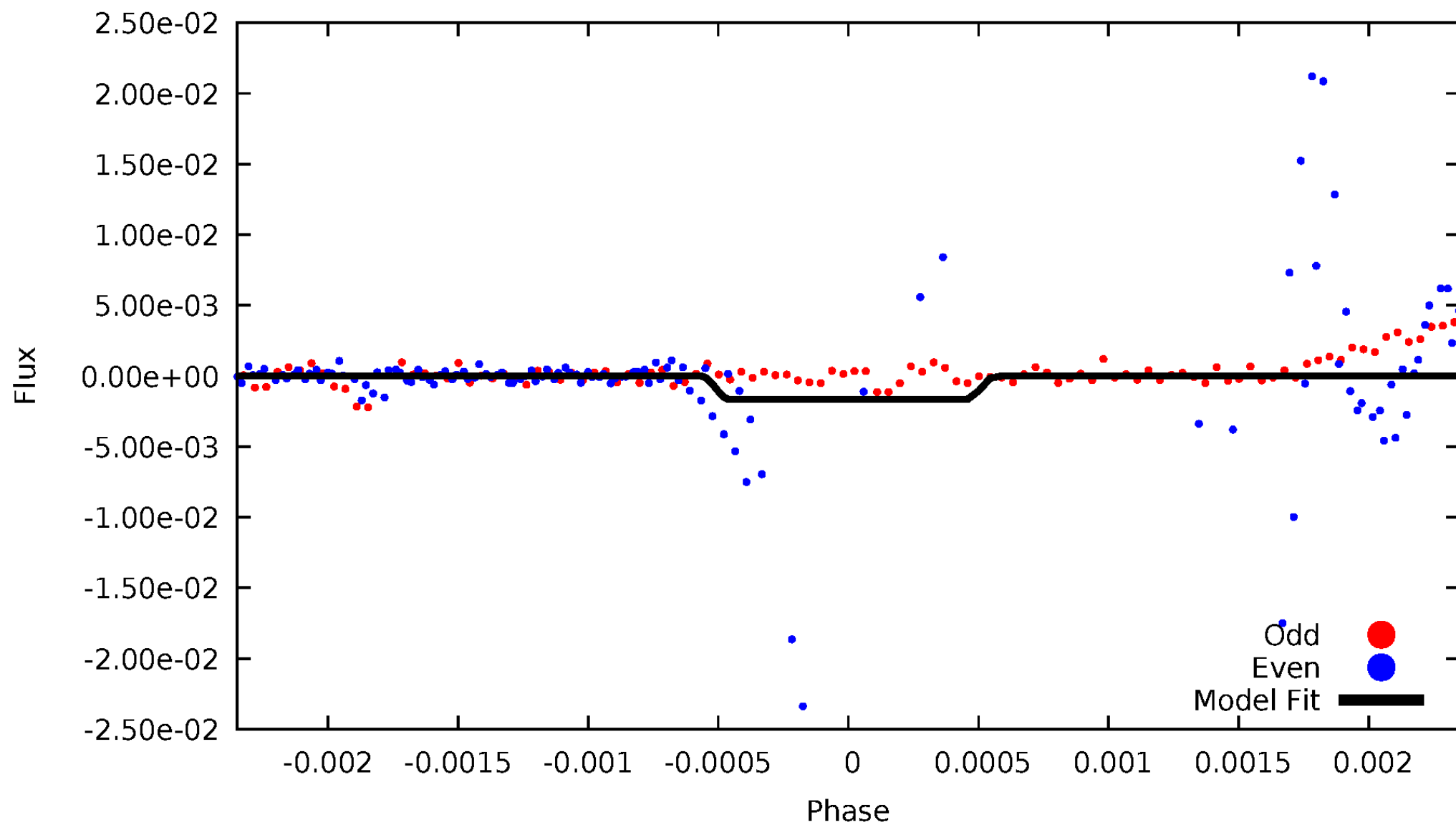
DV Odd/Even

TCE 007345363-02



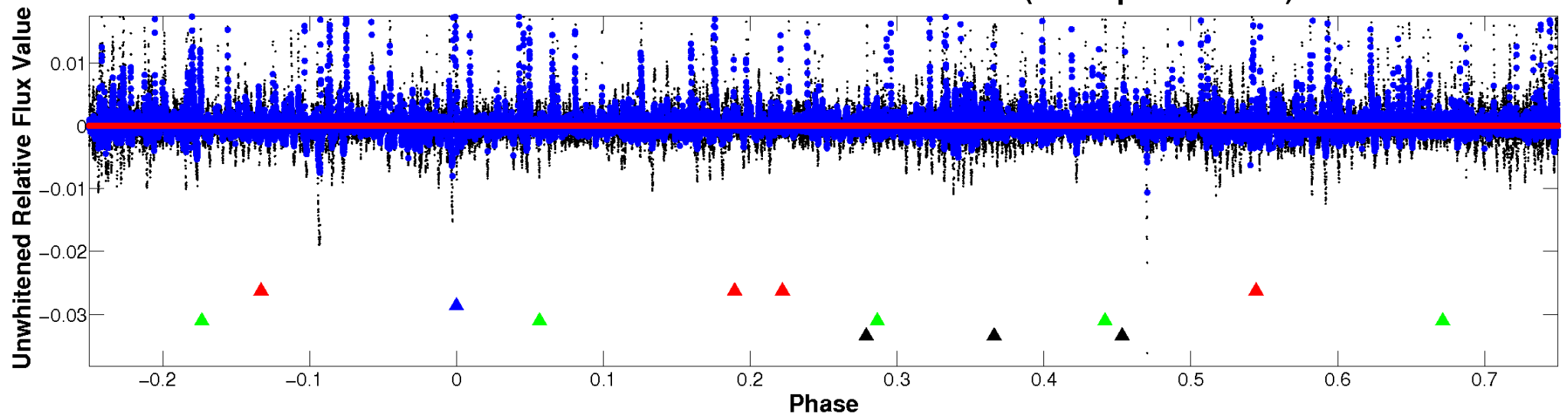
ALT Odd/Even

TCE 007345363-02



Non-Whitened Vs. Whitened Light Curve

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

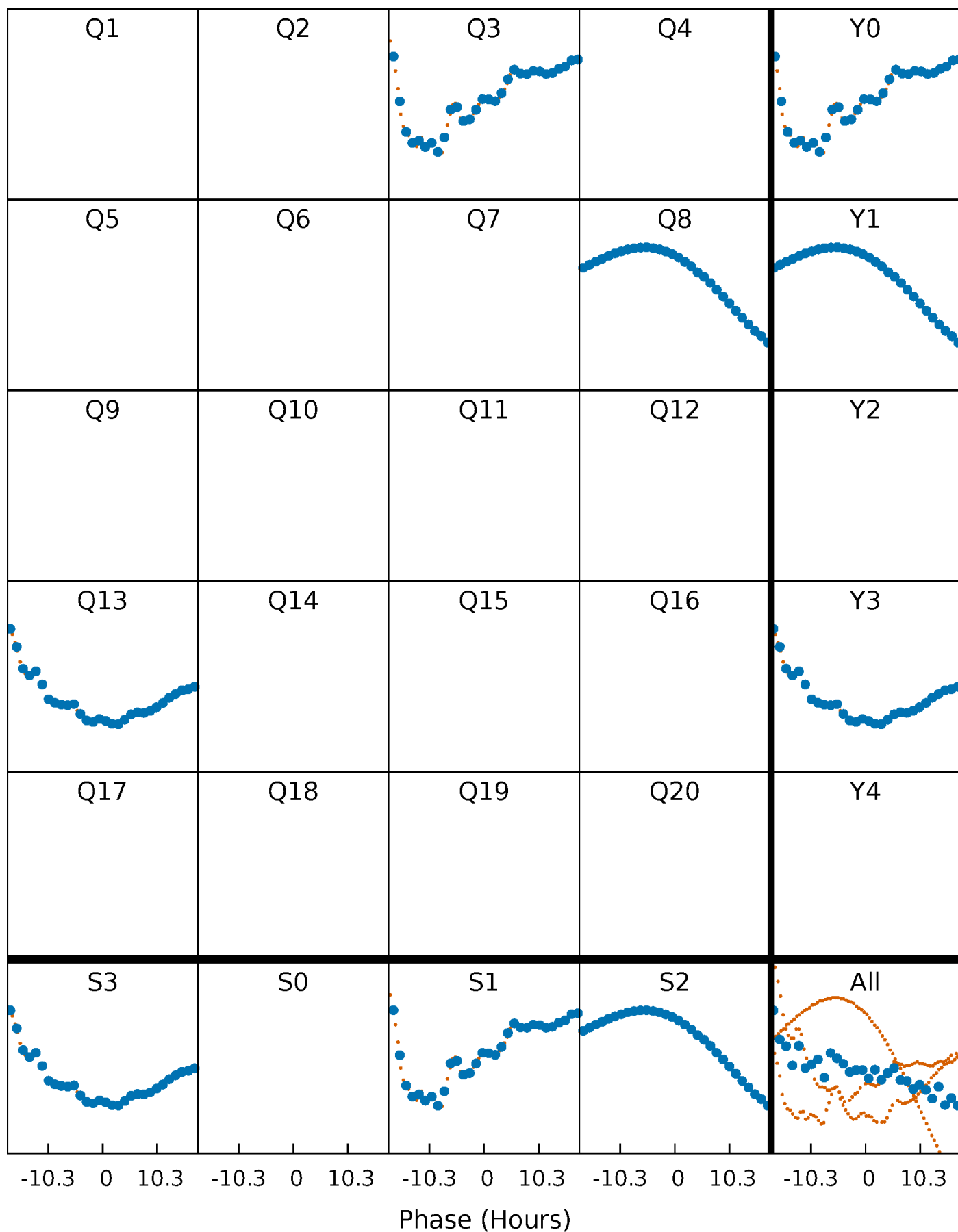


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



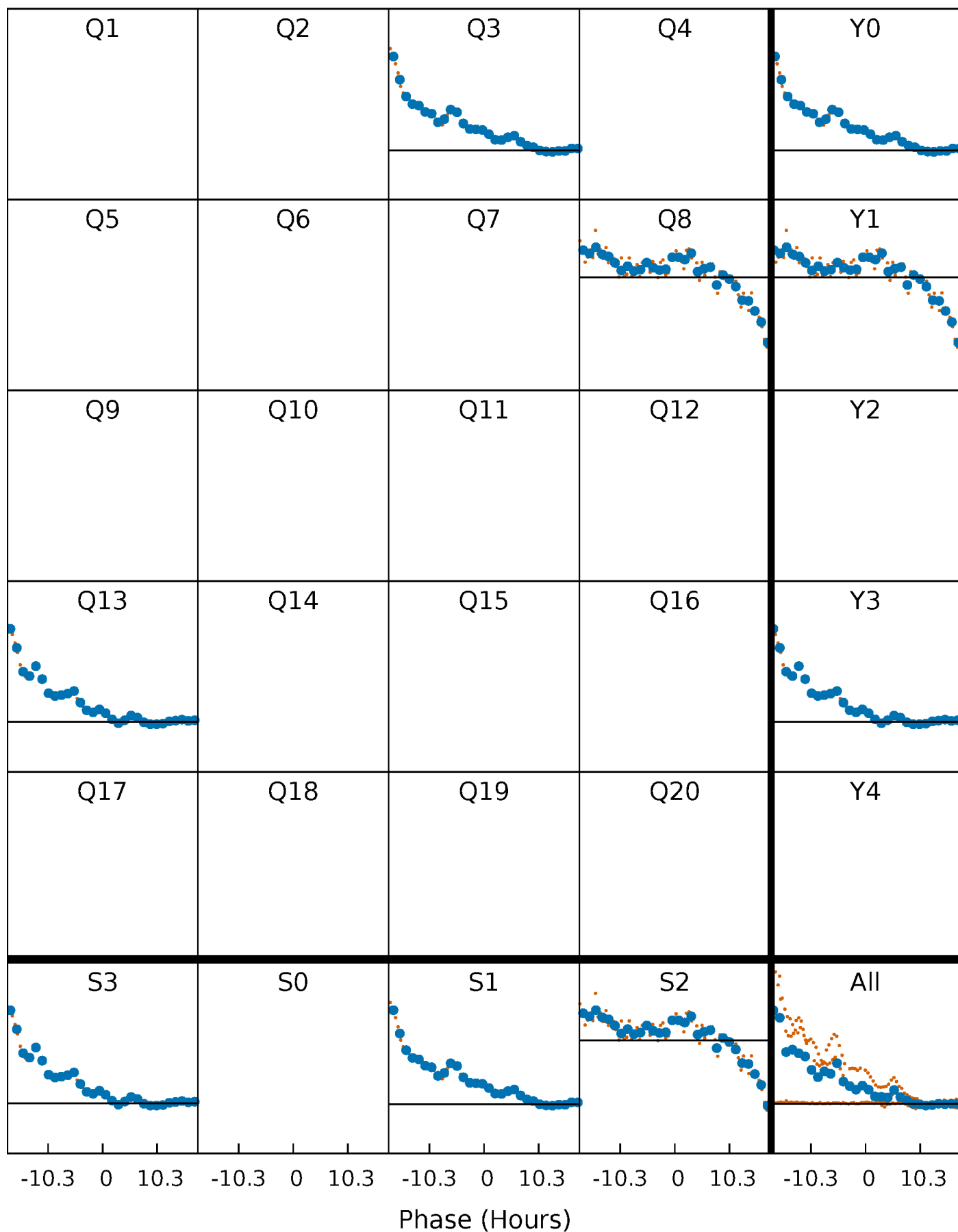
PDC Quarter-Phased Transit Curves

TCE 007345363-02 $P=469.835656$ Days $T_0=278.349962$ (BKJD)



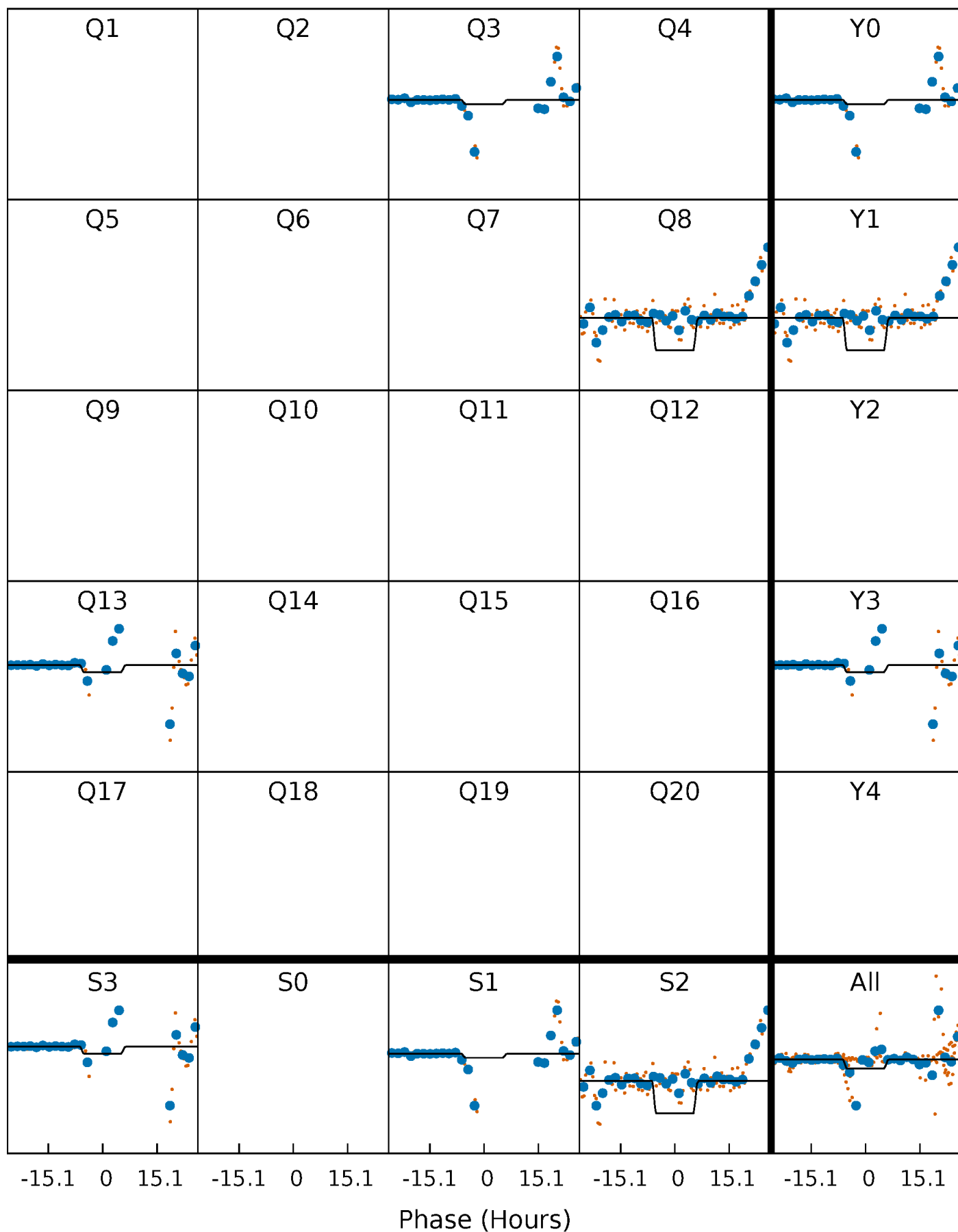
DV Quarter-Phased Transit Curves

TCE 007345363-02 $P=469.835656$ Days $T_0=278.349962$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

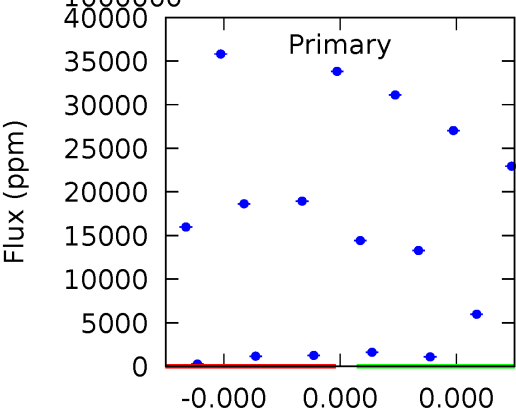
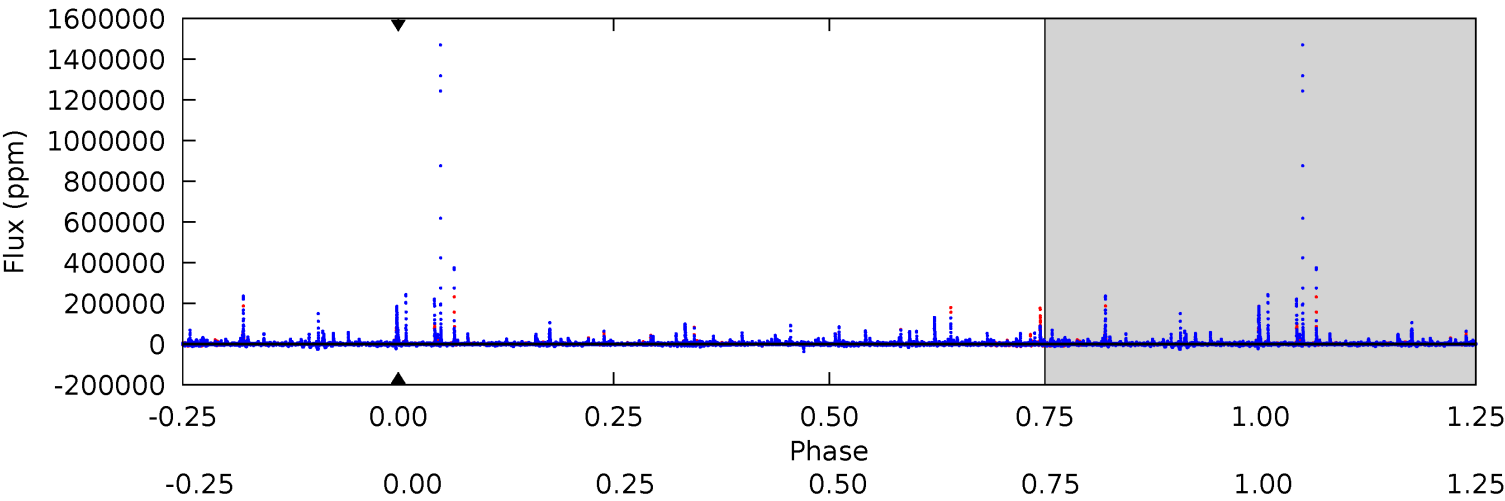
TCE 007345363-02 $P=469.835656$ Days $T_0=277.265592$ (BKJD)



DV Model-Shift Uniqueness Test

007345363-02, P = 469.835656 Days, E = 278.349962 Days

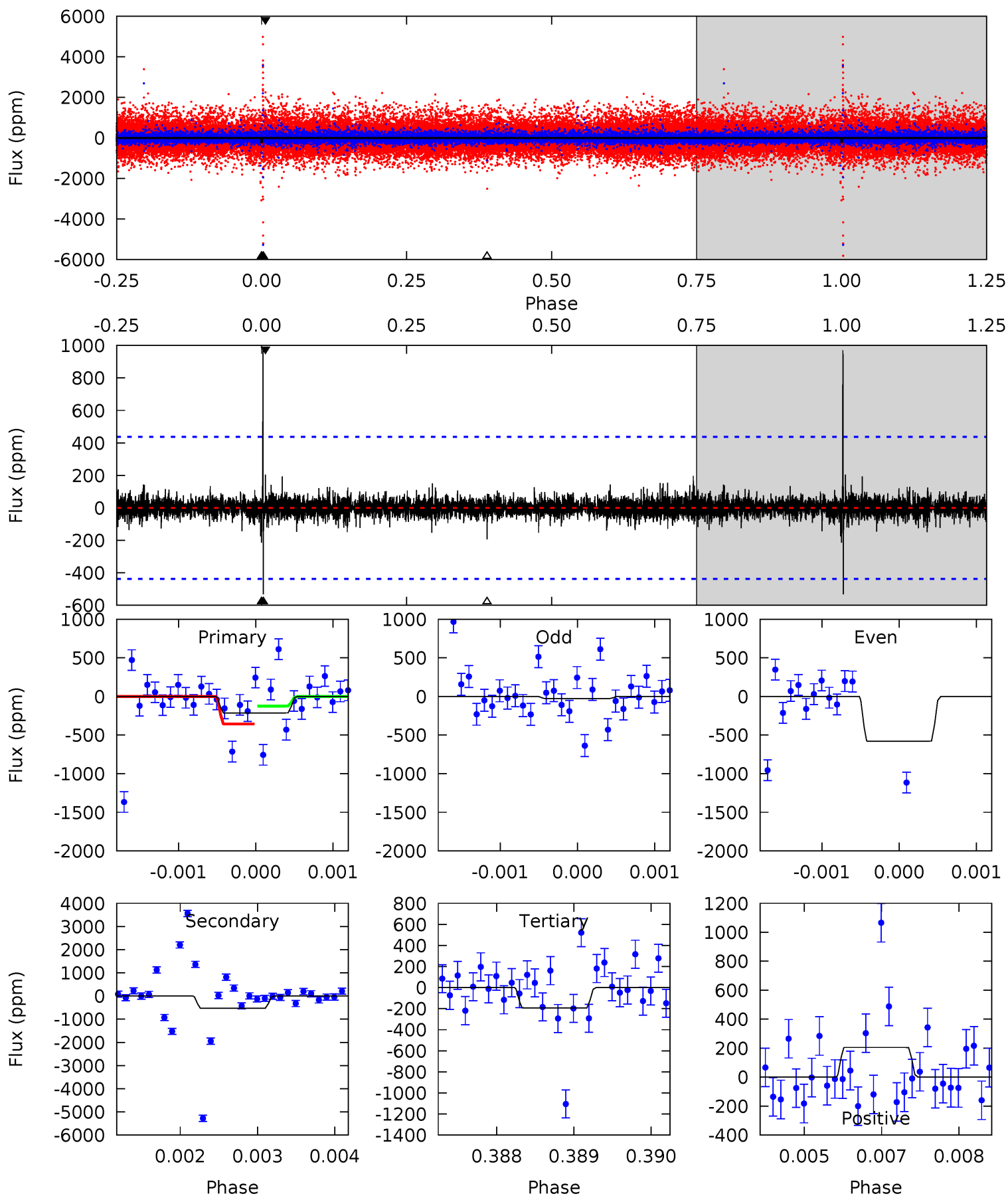
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007345363-02, P = 469.835656 Days, E = 277.265592 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.65	6.60	2.41	2.54	5.44	3.26	0.41	0.24	0.11	4.19	4.06	2.60	141.7	0.65	1.46



Stellar Parameters For KIC 007345363

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4430^{+134}_{-147}	$4.595^{+0.056}_{-0.020}$	$0.020^{+0.250}_{-0.300}$	$0.686^{+0.038}_{-0.062}$	$0.674^{+0.060}_{-0.054}$	$2.945^{+0.739}_{-0.252}$
	+3%/-3%	+1%/-0%	+1250%/-1500%	+6%/-9%	+9%/-8%	+25%/-9%
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 007345363-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$6.65^{+6.13}_{-4.70}$	220^{+8}_{-8}	3631^{+6850}_{-13060}	$38590^{+2683276}_{-2186989}$
Alt.	-531 ± 80	$6.38^{+6.26}_{-4.25}$	220^{+7}_{-9}	2890^{+1218}_{-467}	7892^{+59803}_{-5903}

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

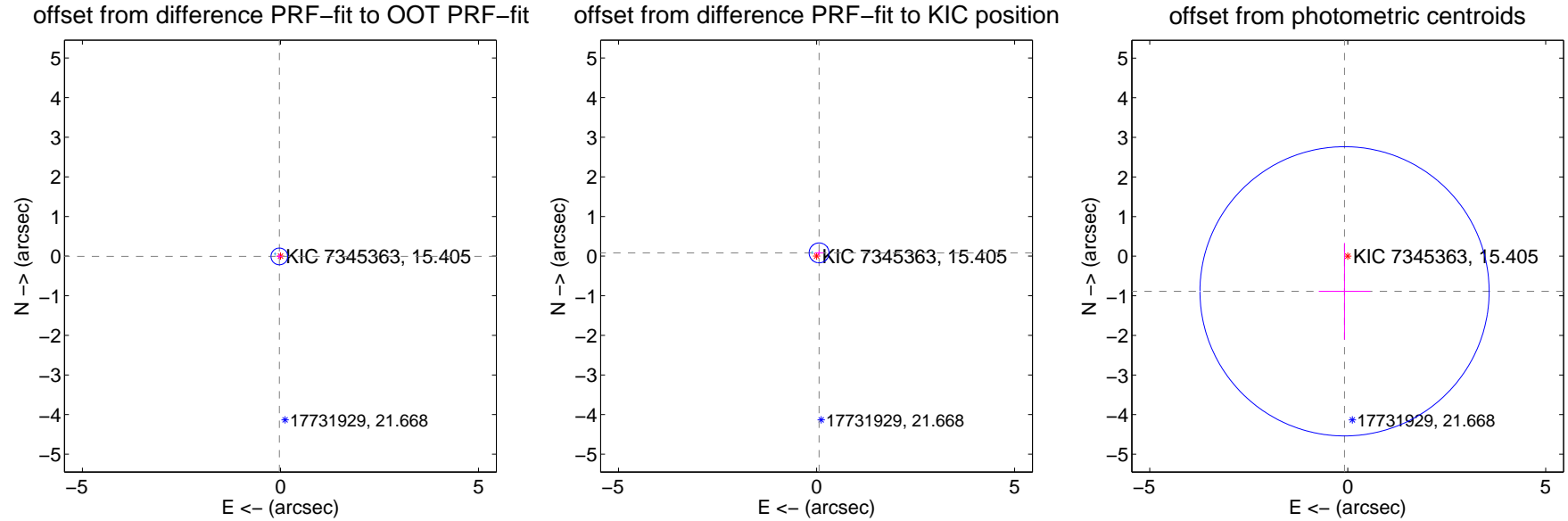
DV Centroid Data

Supplemental centroid analysis for 007345363-02. Kepler magnitude: 15.40. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.028 ± 0.070	0.41	0.028 ± 0.072	-0.007 ± 0.069
PRF-fit source offset from KIC position	0.103 ± 0.084	1.24	-0.063 ± 0.110	0.082 ± 0.067
photometric centroid source offset	0.89 ± 1.22	0.73	0.08 ± 0.65	-0.89 ± 1.22



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

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

Q1 no difference image



Q1 no OOT image



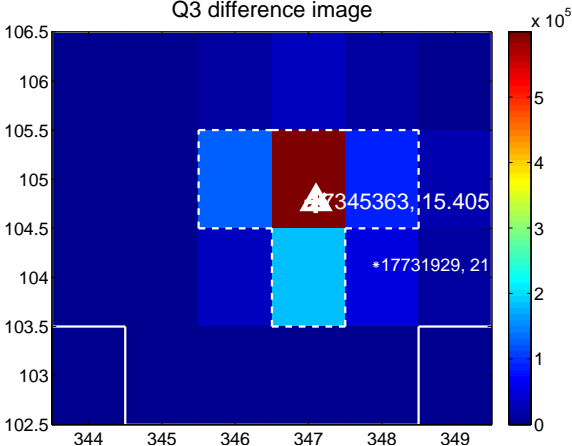
Q2 no difference image



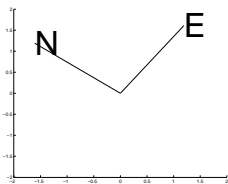
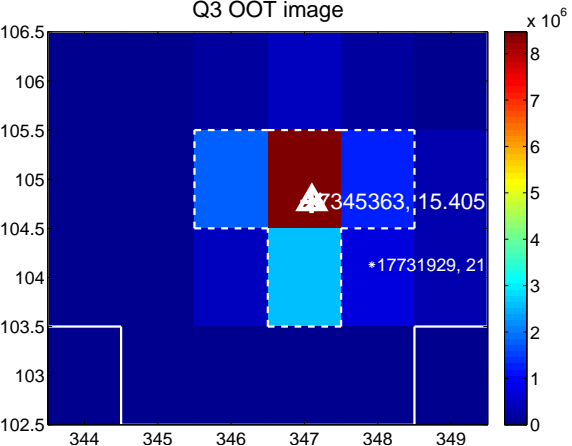
Q2 no OOT image



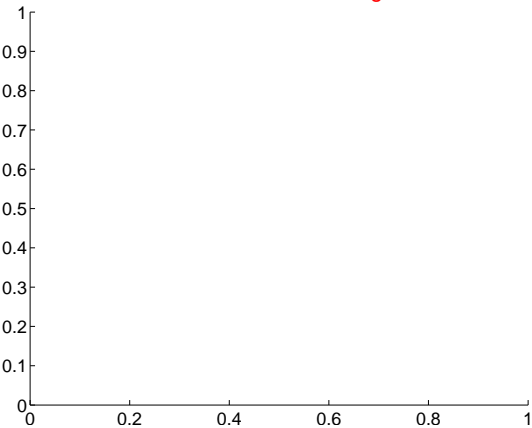
Q3 difference image



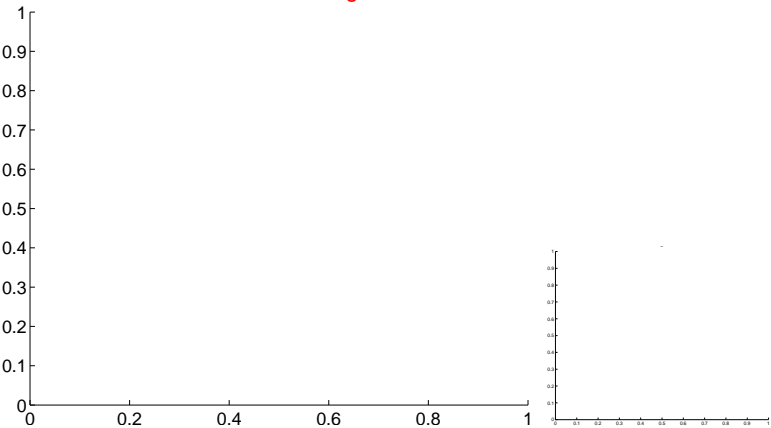
Q3 OOT image



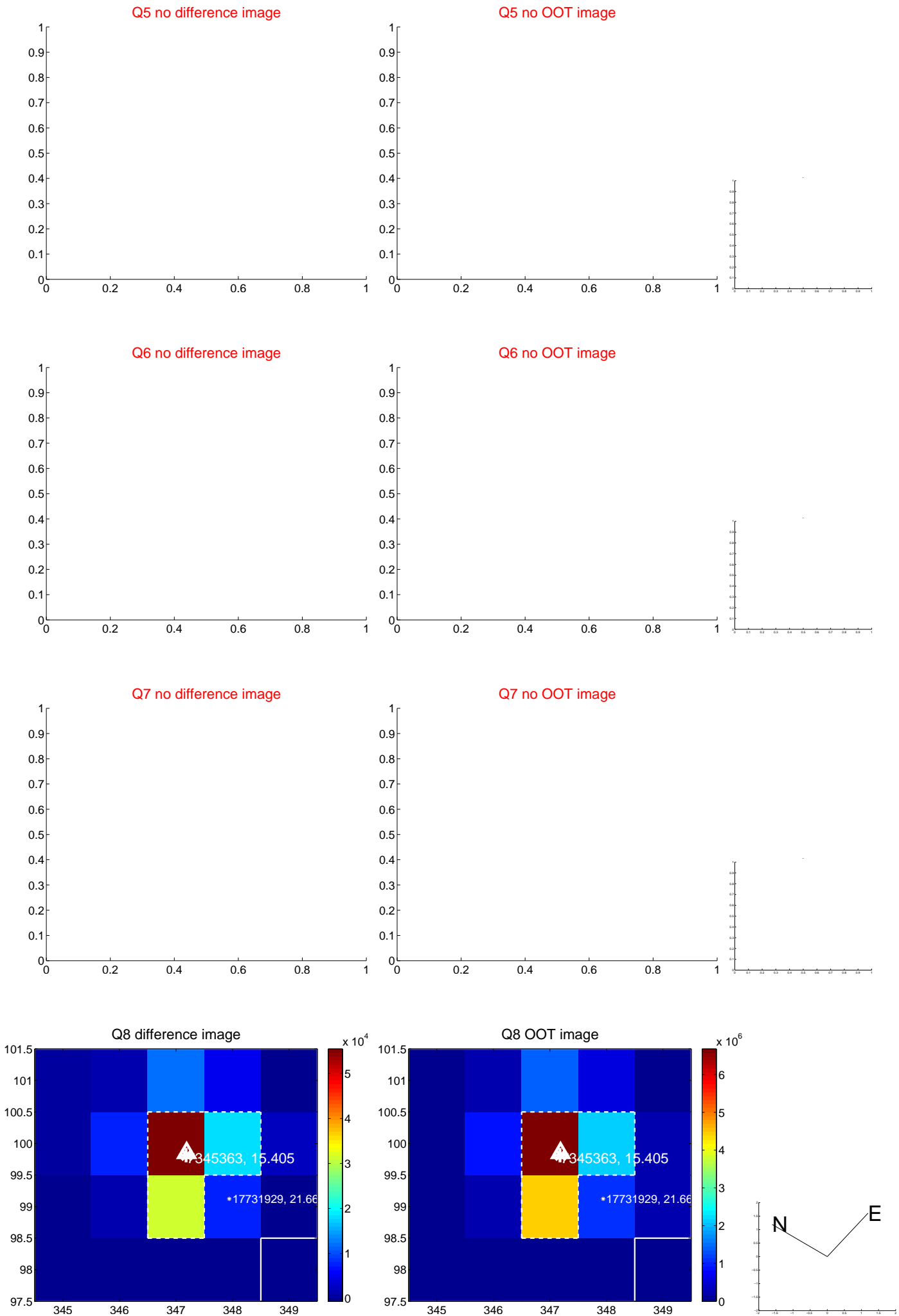
Q4 no difference image



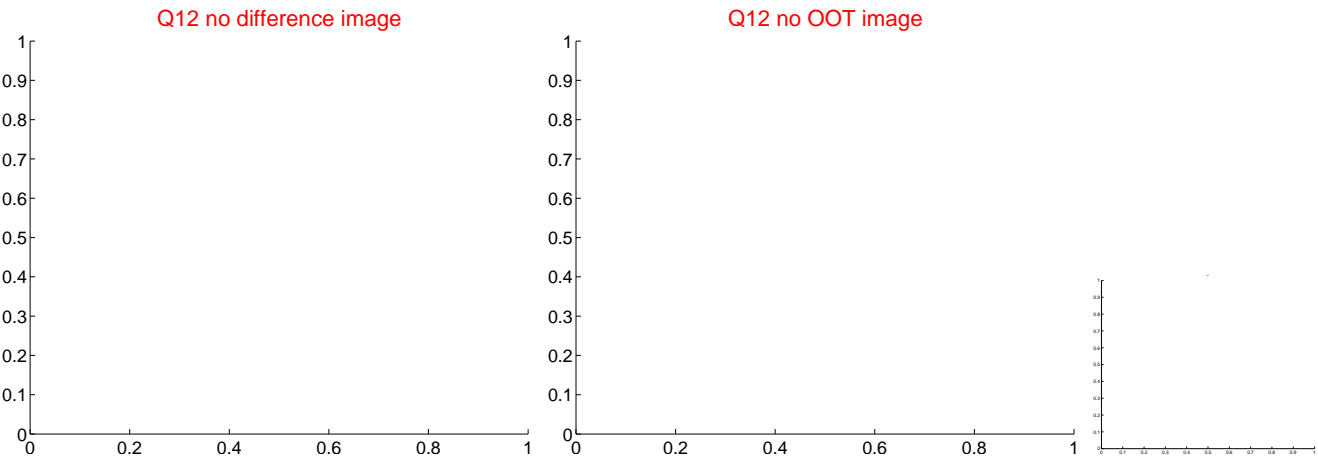
Q4 no OOT image



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



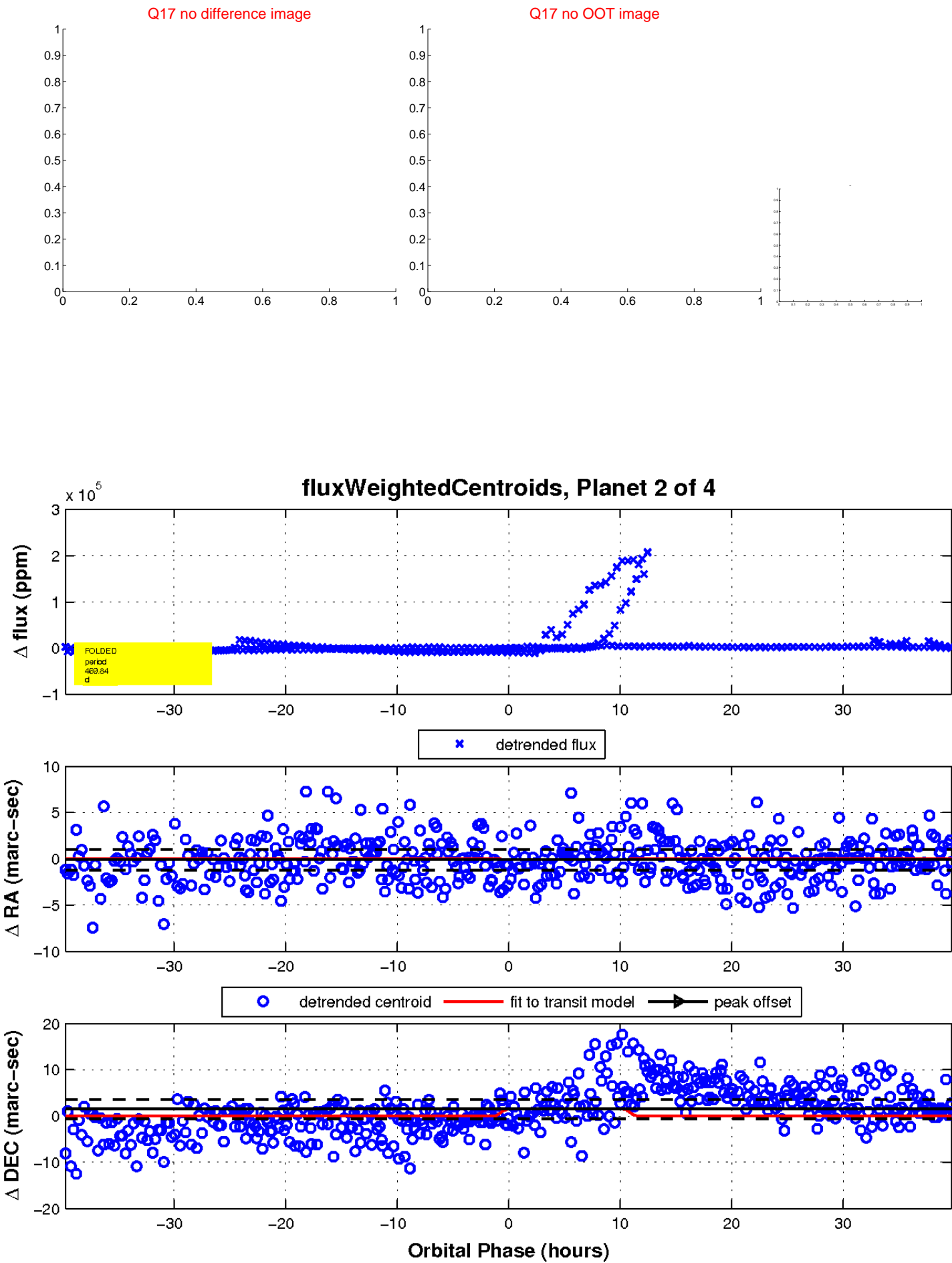
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

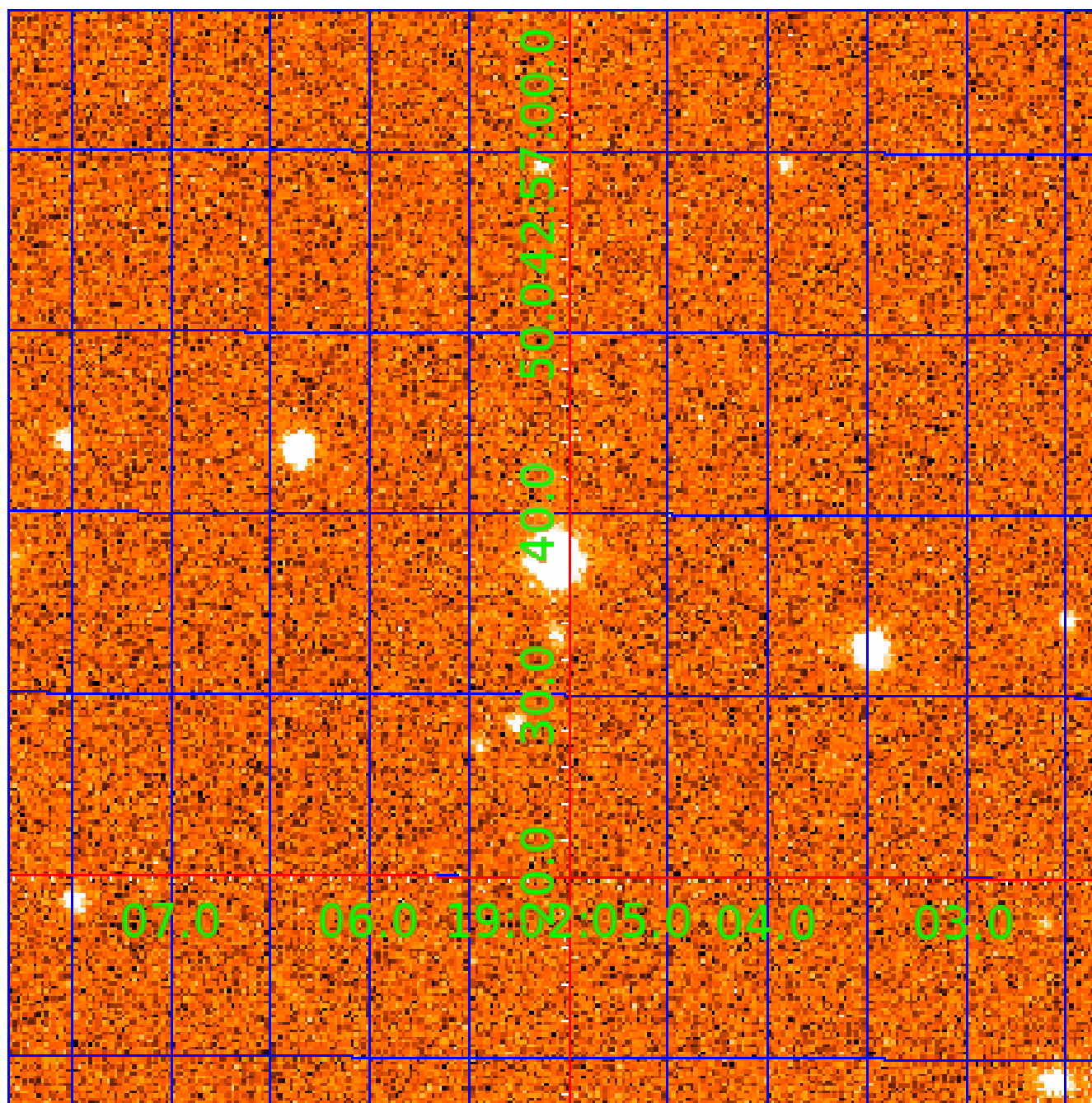


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007345363

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})
007345363-01	OBS	No	318.317447	367.358888	5297.2	12.905	23.2	6.6	0.69	4430	6.49	0.25
007345363-02	OBS	No	469.835656	278.349962	3256.7	9.000	24.9	-1.0	0.69	4430	3.73	0.15
007345363-03	OBS	No	288.941974	196.880062	2999.9	3.733	19.3	9.7	0.69	4430	4.55	0.29
007345363-04	OBS	No	428.907236	491.298307	1692.5	7.500	18.8	-1.0	0.69	4430	2.69	0.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007345363-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007345363-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
007345363-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS
007345363-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_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.

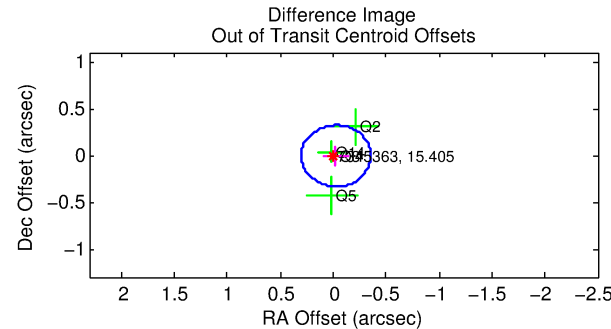
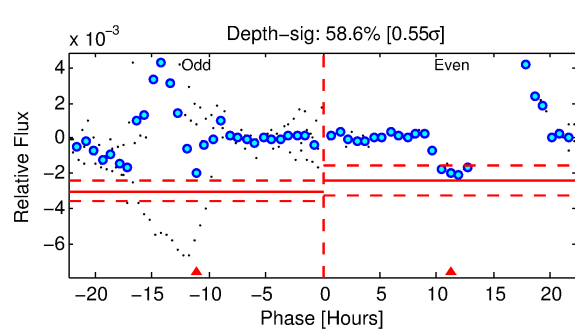
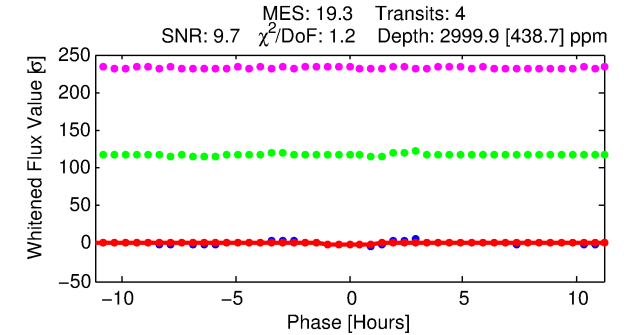
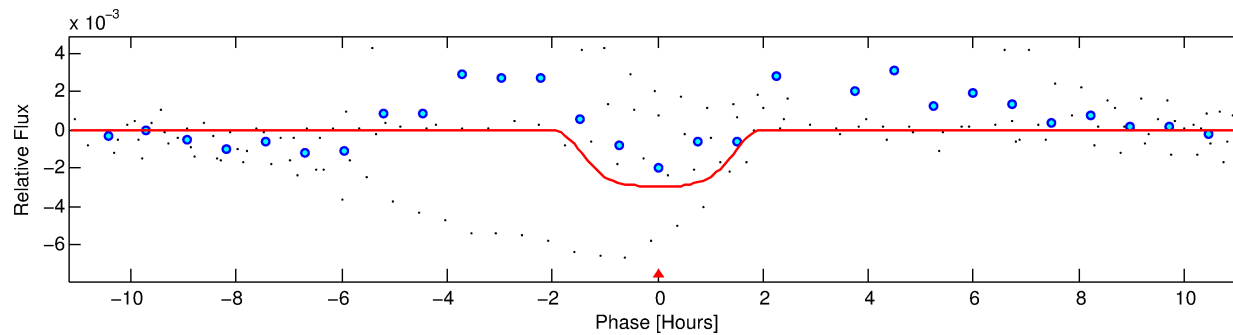
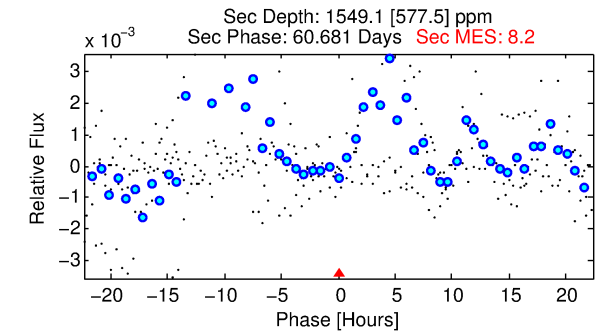
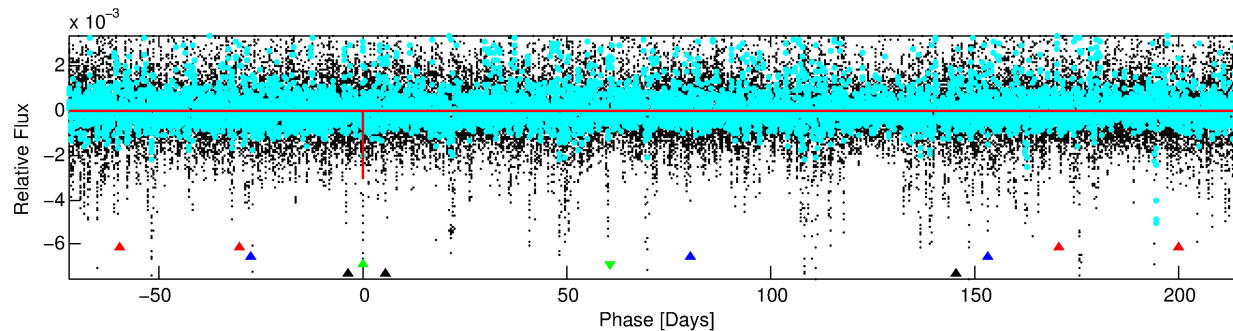
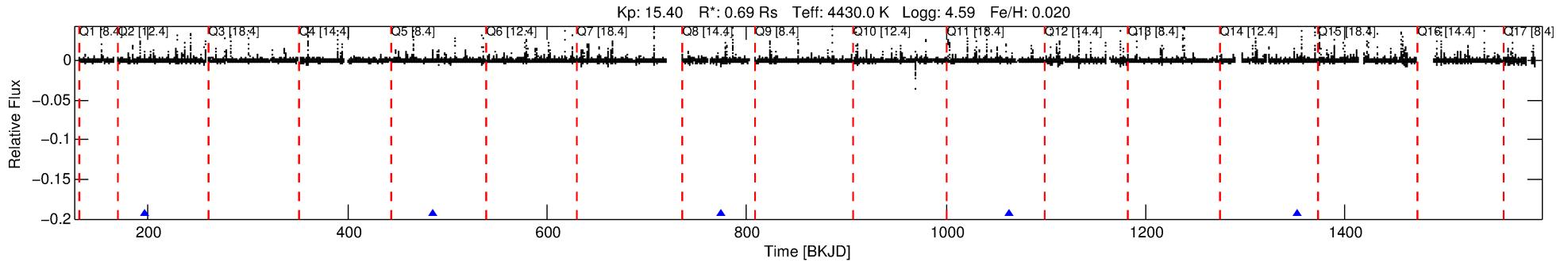
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007345363-03

No Significant Match Found

DV One-Page Summary

KIC: 7345363 Candidate: 3 of 4 Period: 288.942 d



DV Fit Results:

Period = 288.94197 [0.00276] d
Epoch = 196.8801 [0.0056] BKJD
Rp/R* = 0.0608 [0.0081]
a/R* = 350.35 [104.87]
b = 0.88 [0.08]
Seff = 0.29 [0.05]
Teq = 187 [8] K
Rp = 4.55 [0.73] Re
a = 0.7507 [0.0556] AU
Ag = 23186.88 [10887.23] [2.13σ]
Teffp = 3564 [425] K [7.95σ]

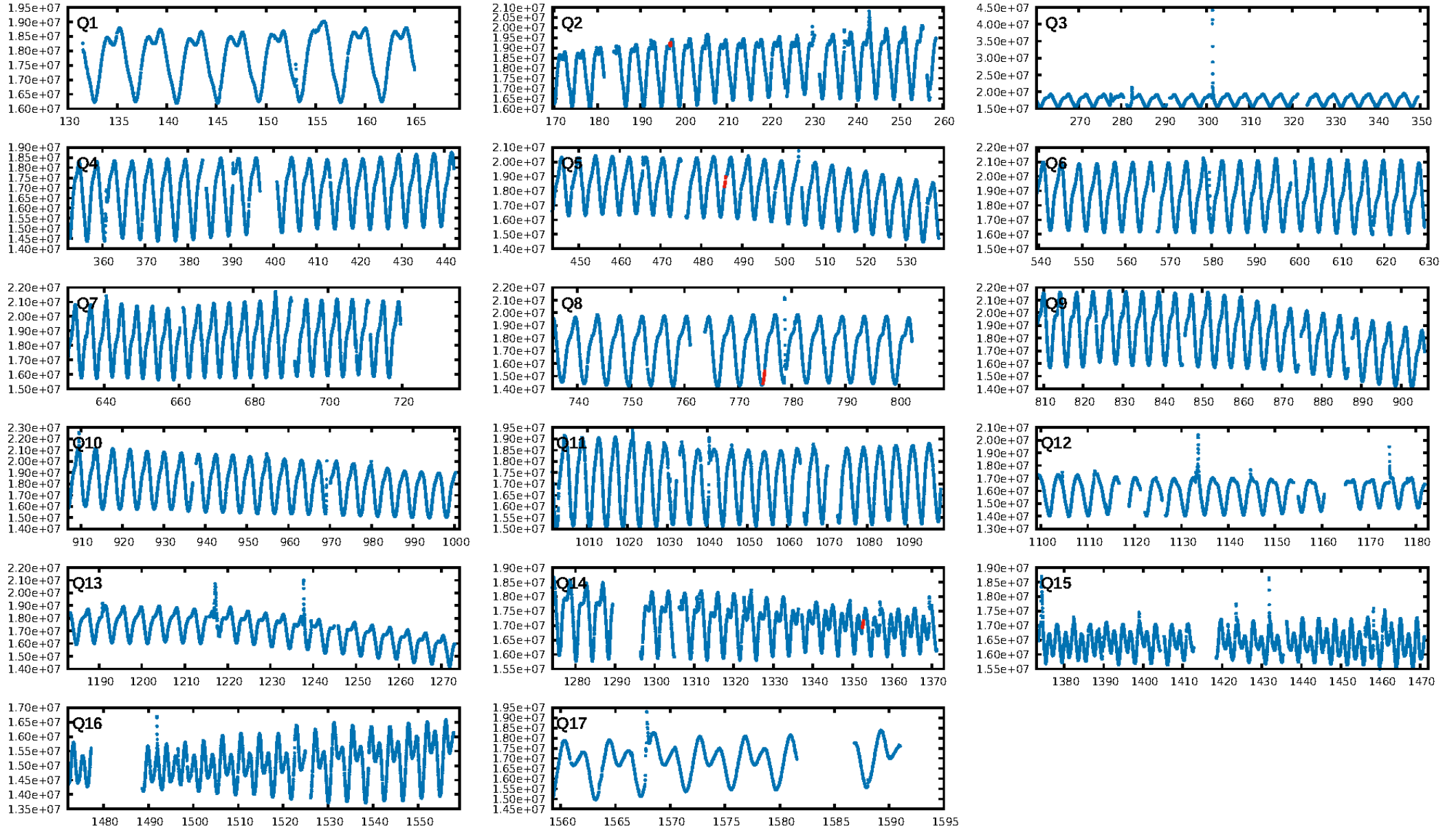
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [52.48σ]
ModelChiSquare2-sig: 55.3%
ModelChiSquareGof-sig: 92.5%
Bootstrap-pfa: 1.82e-11
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.3569
Centroid-sig: 29.8%
Centroid-so: 0.729 arcsec [1.31σ]
OotOffset-rm: 0.028 arcsec [0.26σ]
KicOffset-rm: 0.075 arcsec [0.65σ]
OotOffset-st: 2/0/1/1 [4]
KicOffset-st: 2/0/1/1 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [4/4]

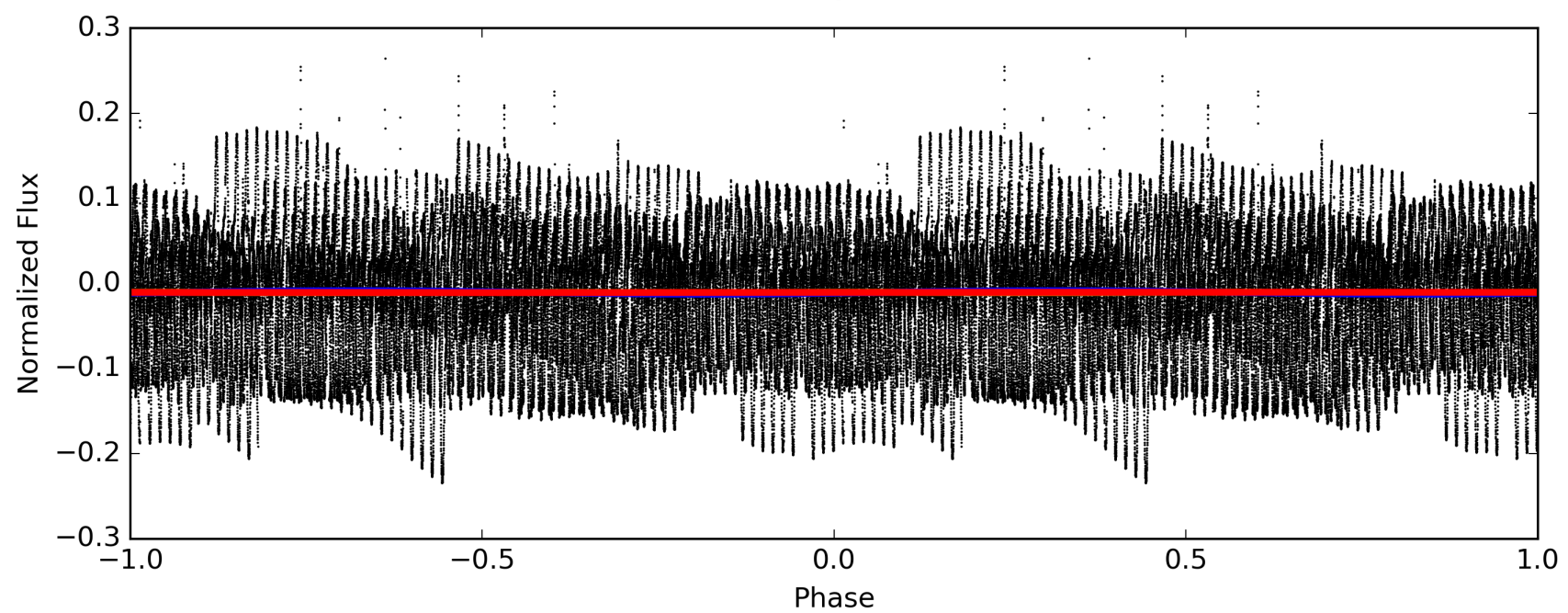
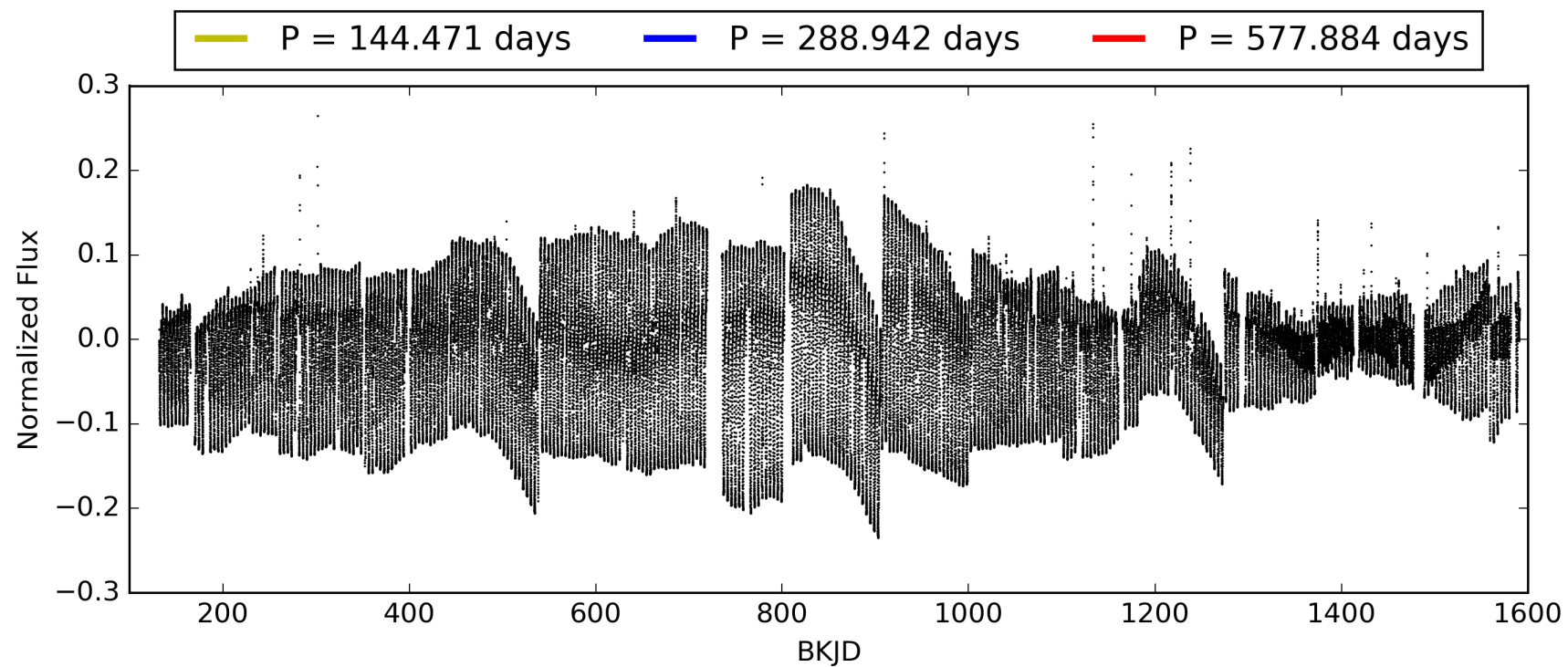
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:17:12 Z

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

TCE 007345363-03, PDC Light Curves

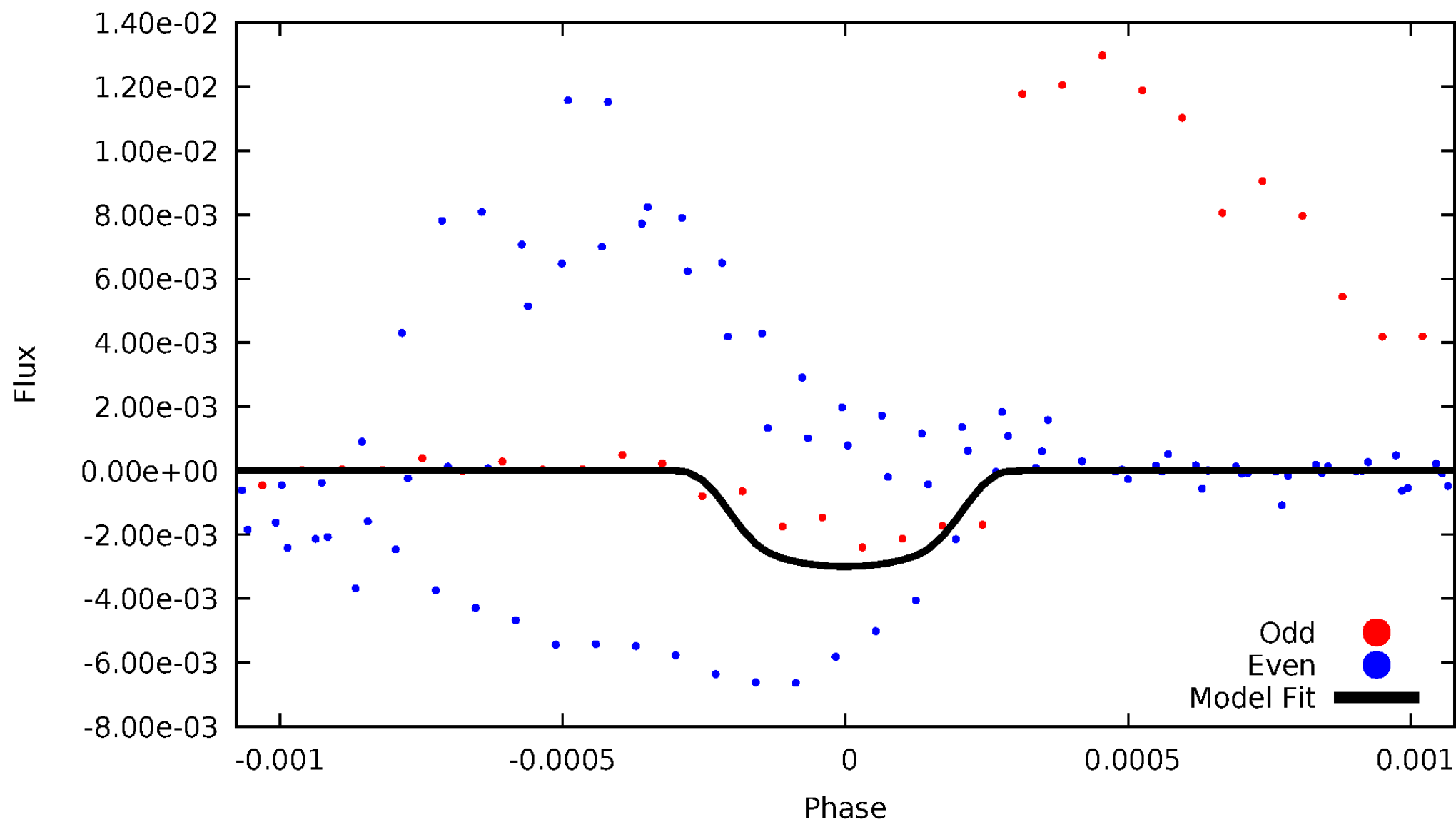


TCE 007345363-03



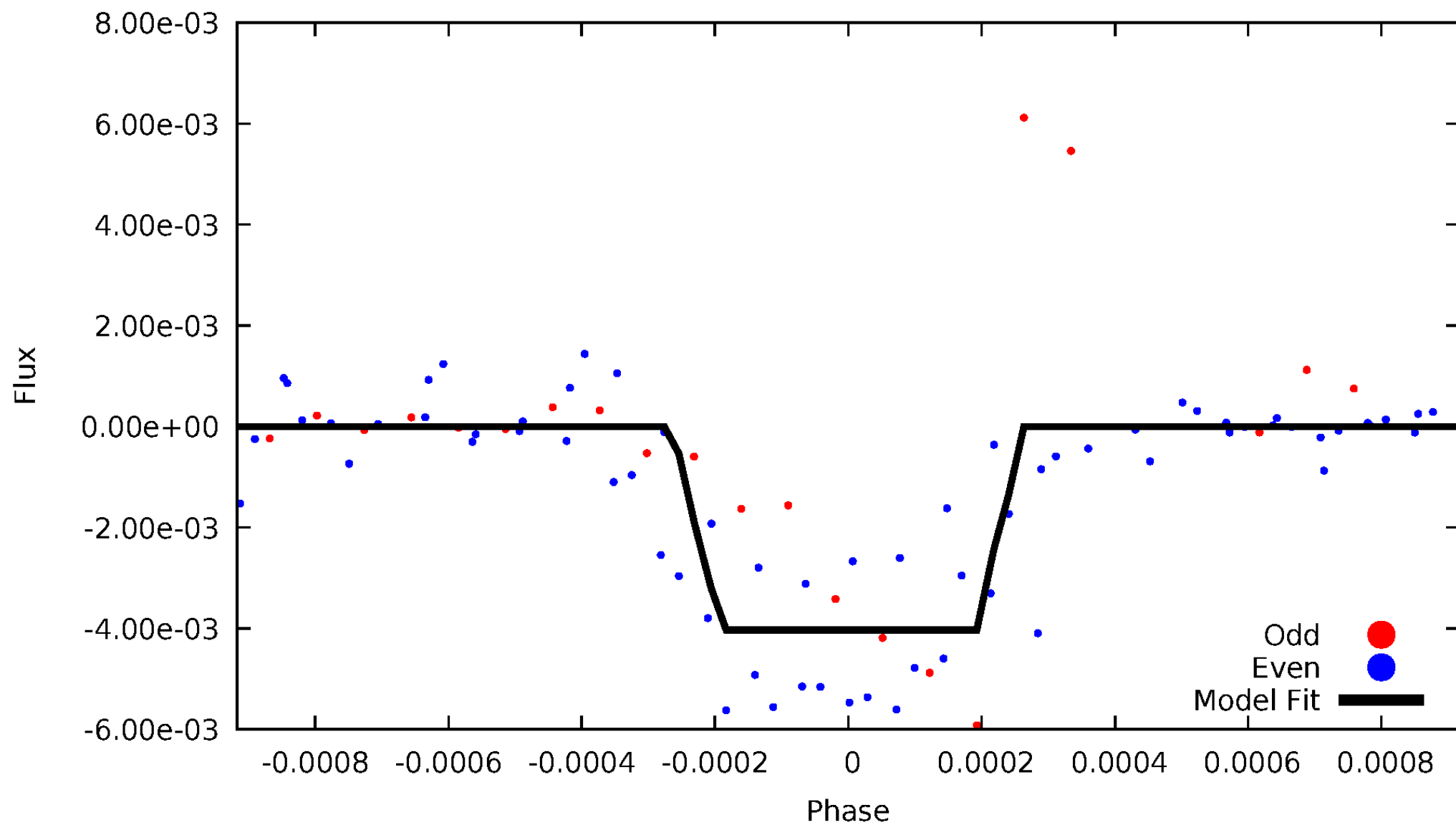
DV Odd/Even

TCE 007345363-03



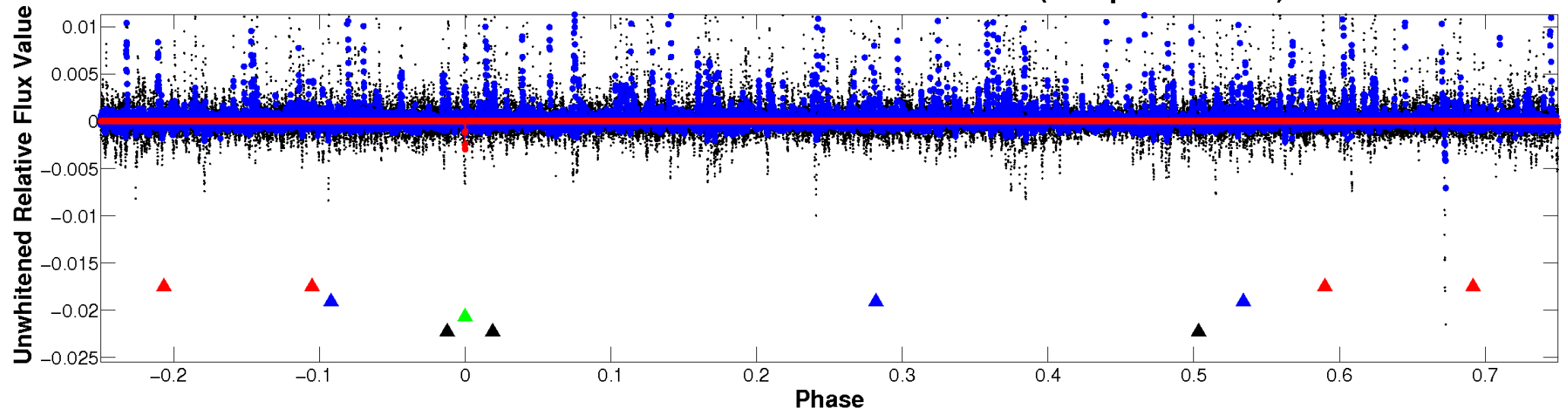
ALT Odd/Even

TCE 007345363-03

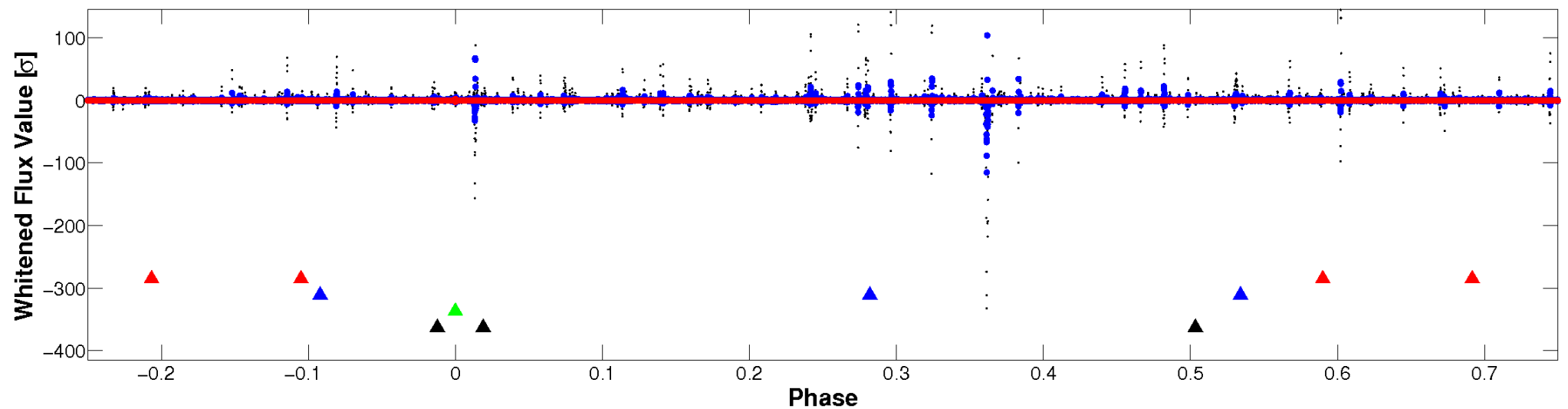


Non-Whitened Vs. Whitened Light Curve

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

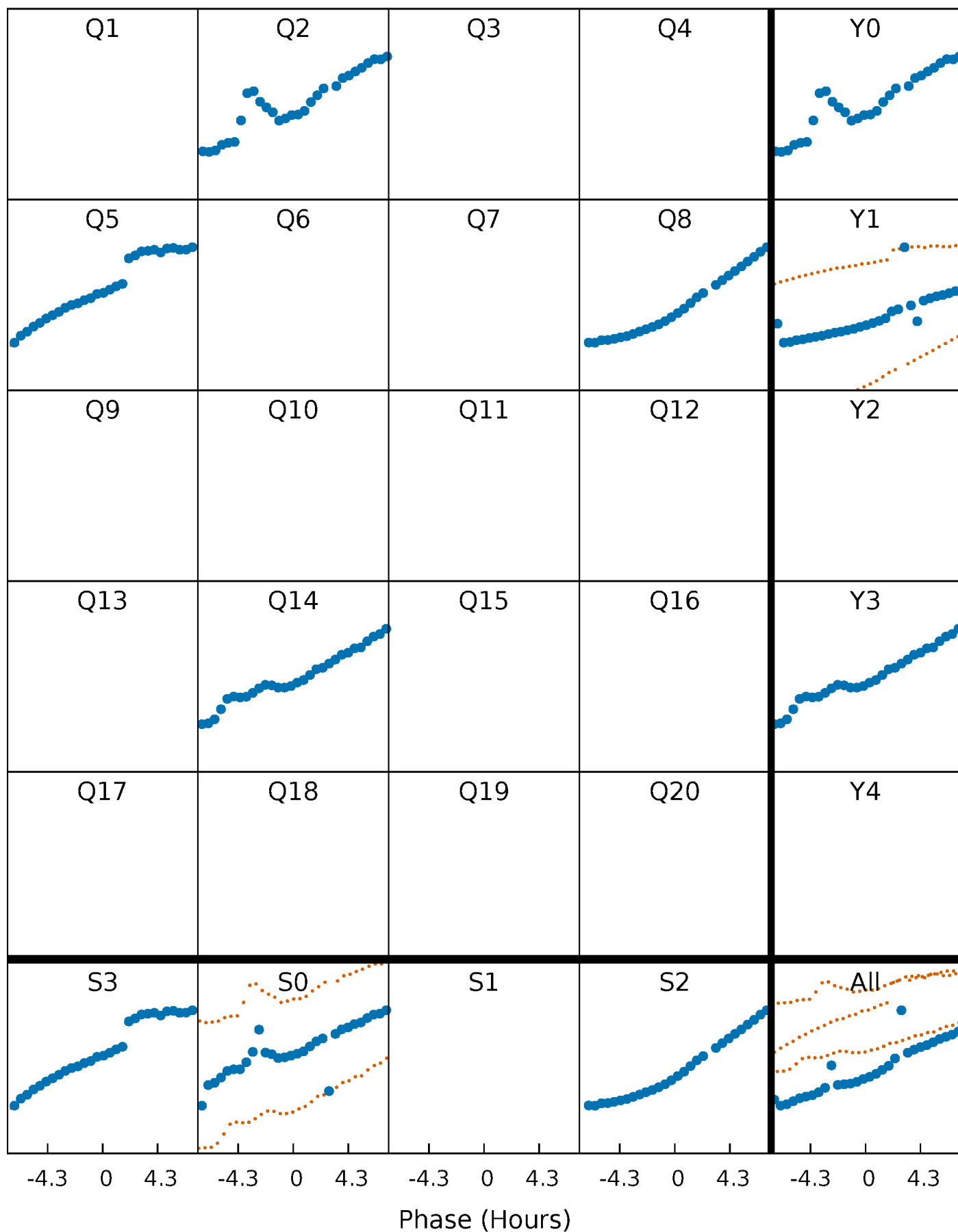


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



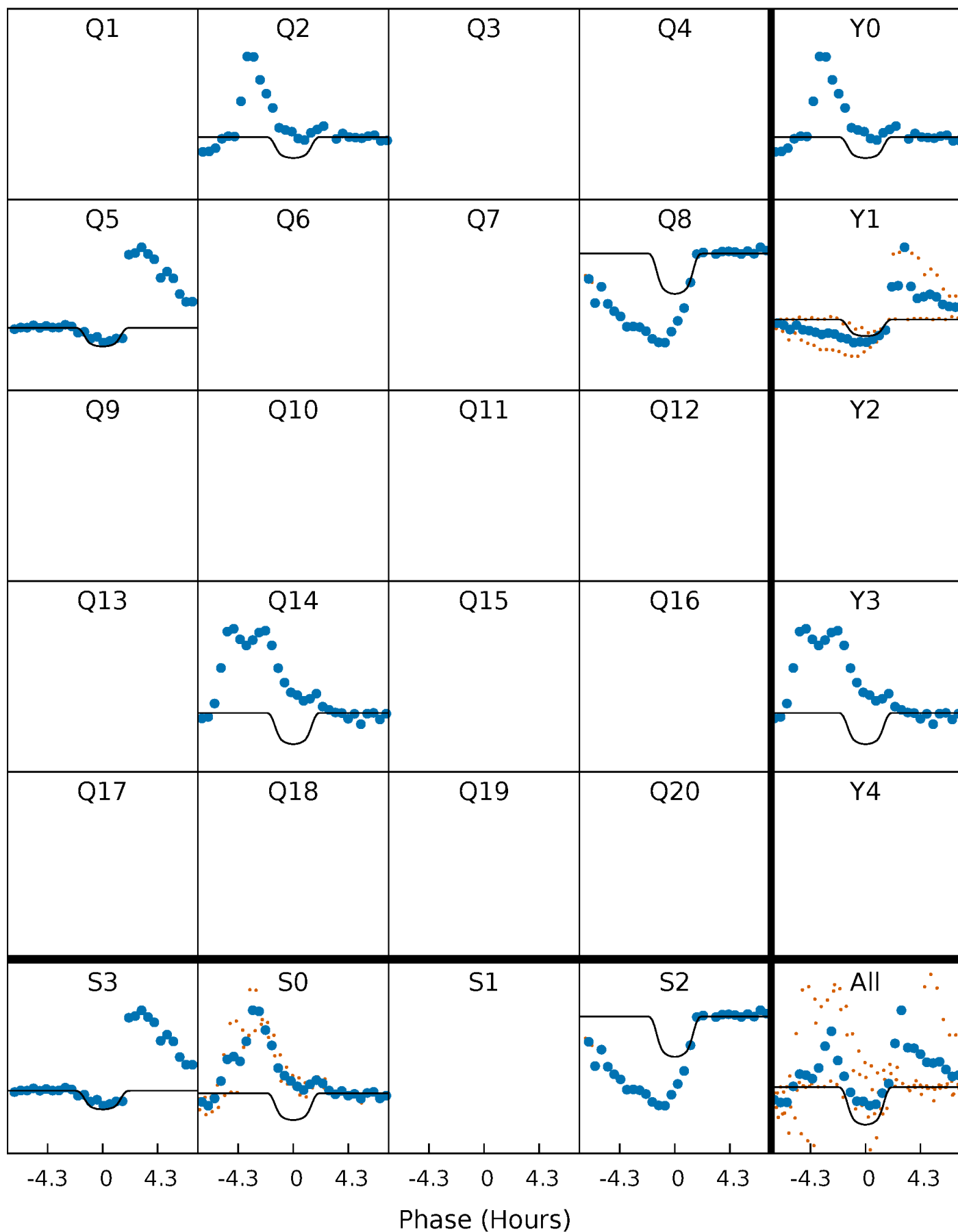
PDC Quarter-Phased Transit Curves

TCE 007345363-03 P=288.941974 Days $T_0=196.880062$ (BKJD)



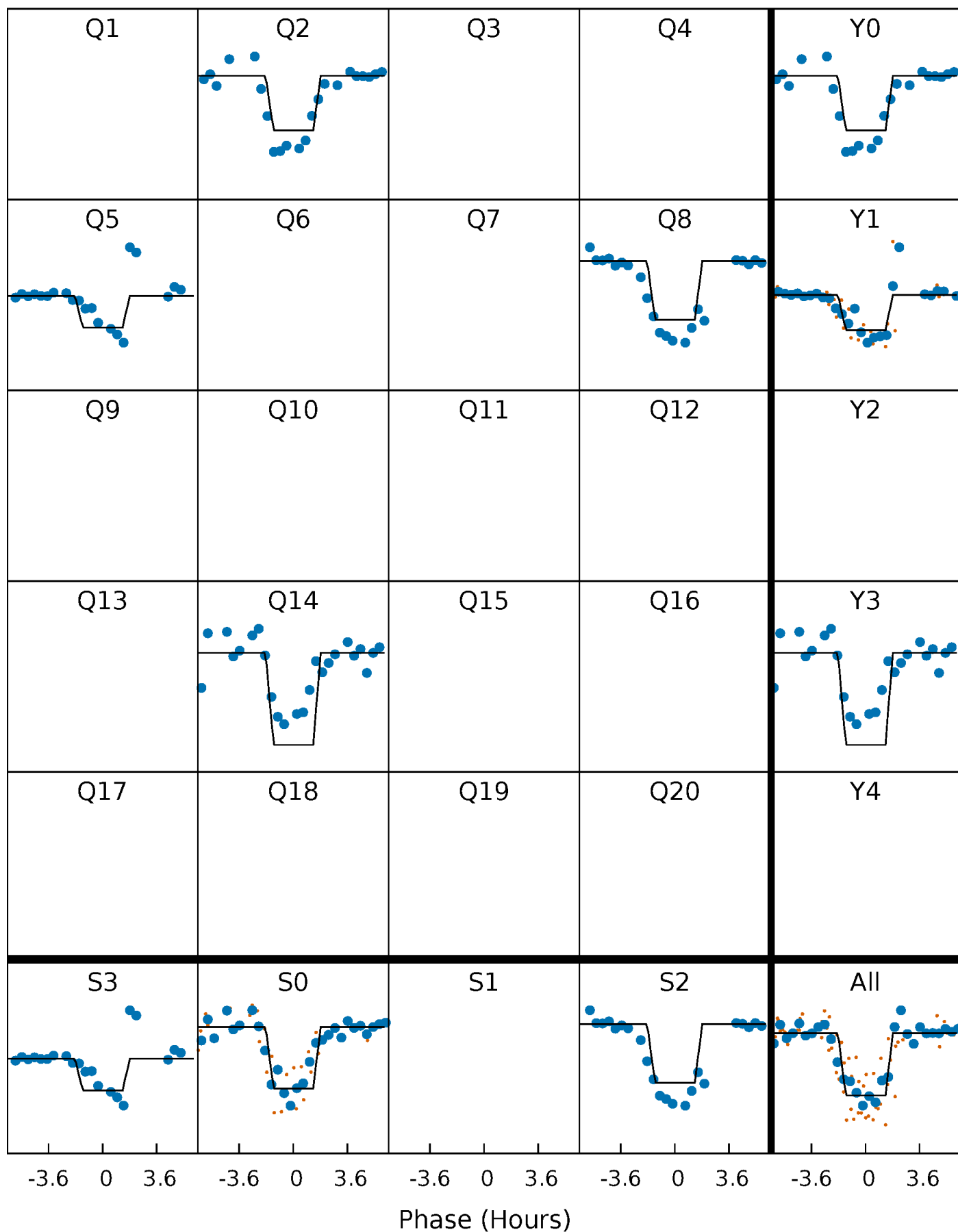
DV Quarter-Phased Transit Curves

TCE 007345363-03 $P=288.941974$ Days $T_0=196.880062$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

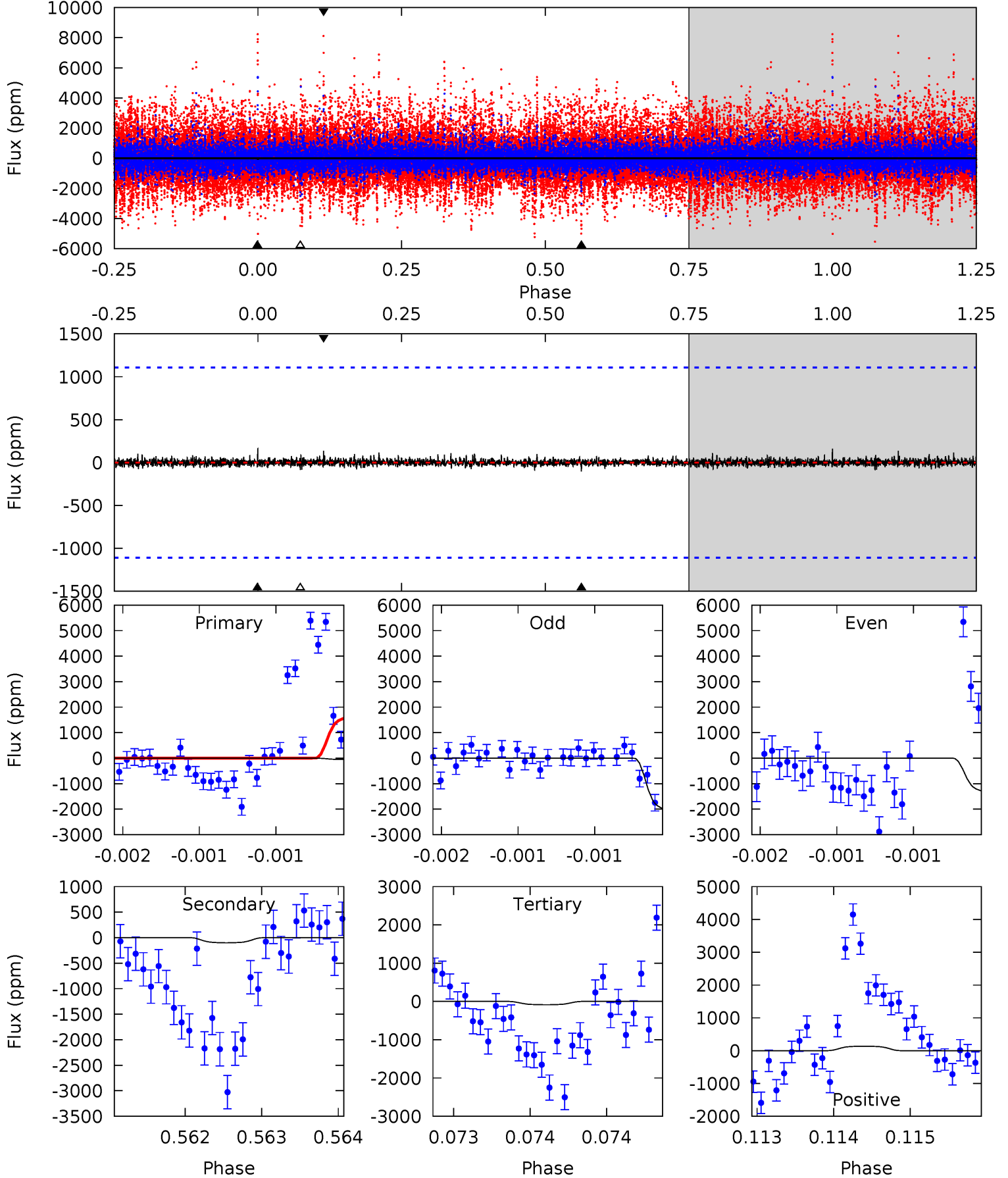
TCE 007345363-03 P=288.942812 Days $T_0=196.893489$ (BKJD)



DV Model-Shift Uniqueness Test

007345363-03, P = 288.941974 Days, E = 196.880062 Days

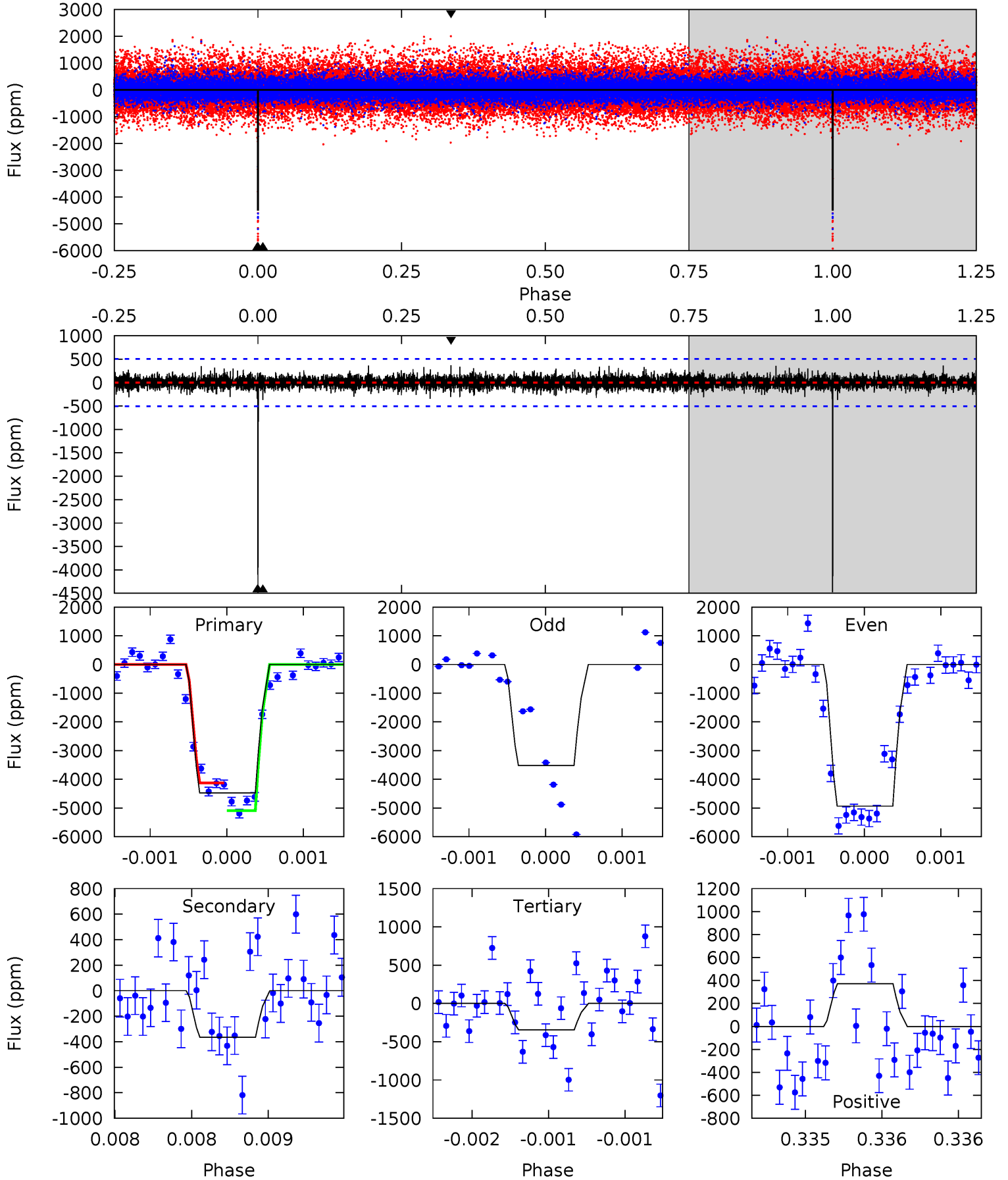
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.27	0.51	0.43	0.68	5.54	3.43	0.12	-0.16	-0.42	0.08	-0.18	1.14	1.99	0.62	0.77



Alt Model-Shift Uniqueness Test

007345363-03, P = 288.942812 Days, E = 196.893489 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
49.3	4.03	3.81	4.10	5.57	3.47	0.84	45.5	45.2	0.22	-0.07	7.16	0.95	0.08	5.21



Stellar Parameters For KIC 007345363

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4430^{+134}_{-147}	$4.595^{+0.056}_{-0.020}$	$0.020^{+0.250}_{-0.300}$	$0.686^{+0.038}_{-0.062}$	$0.674^{+0.060}_{-0.054}$	$2.945^{+0.739}_{-0.252}$
	+3%/-3%	+1%/-0%	+1250%/-1500%	+6%/-9%	+9%/-8%	+25%/-9%
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 007345363-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-101 ± 200	$4.49^{+0.62}_{-0.64}$	259^{+10}_{-9}	2538^{+437}_{-5065}	1454^{+3536}_{-2812}
Alt.	-366 ± 91	$4.69^{+0.70}_{-0.59}$	259^{+9}_{-10}	2983^{+171}_{-163}	5161^{+2103}_{-1716}

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

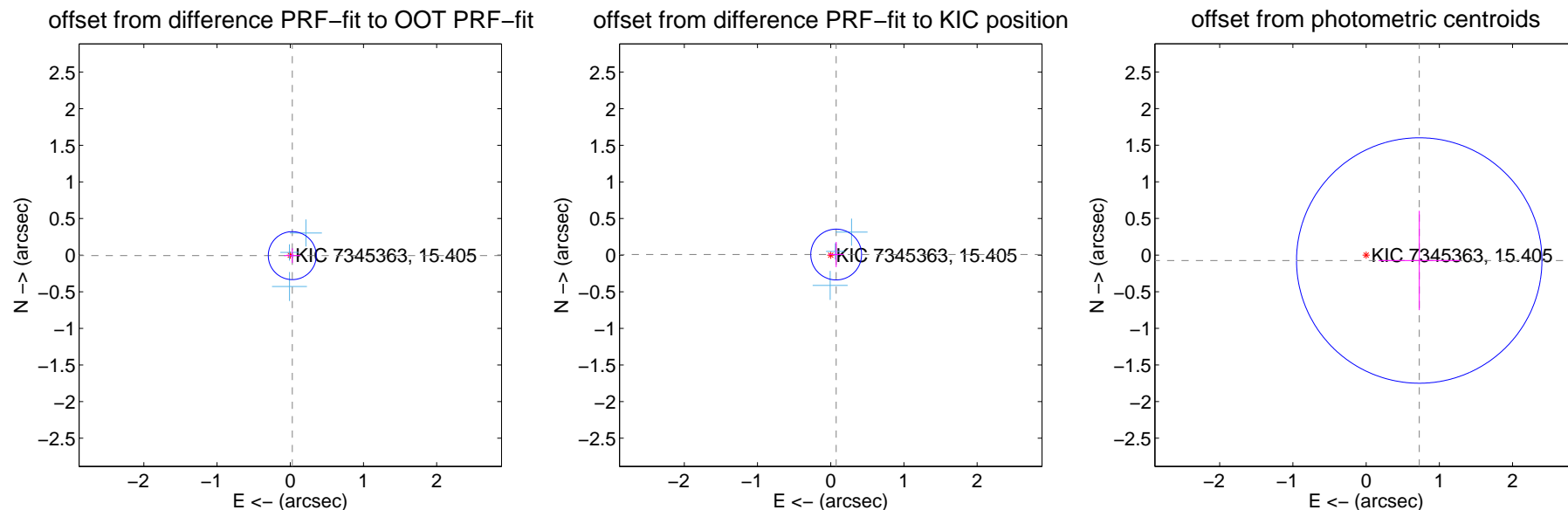
DV Centroid Data

Supplemental centroid analysis for 007345363-03. Kepler magnitude: 15.40. Transit SNR 9.70

There are 4 quarters with good PRF difference image offsets

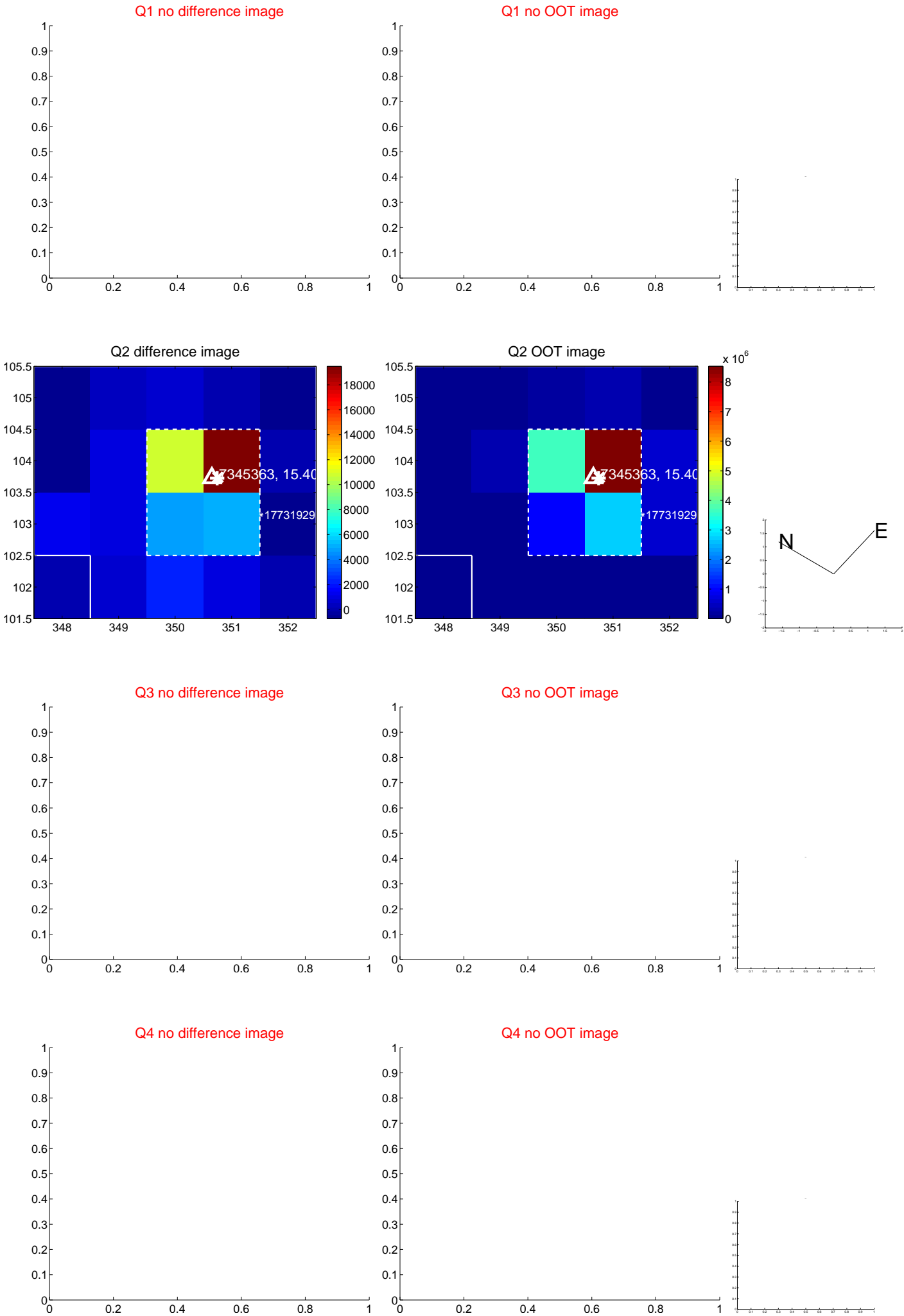
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.028 ± 0.109	0.26	-0.027 ± 0.110	-0.006 ± 0.099
PRF-fit source offset from KIC position	0.075 ± 0.116	0.65	-0.074 ± 0.103	0.009 ± 0.172
photometric centroid source offset	0.73 ± 0.56	1.31	-0.73 ± 0.56	-0.07 ± 0.68

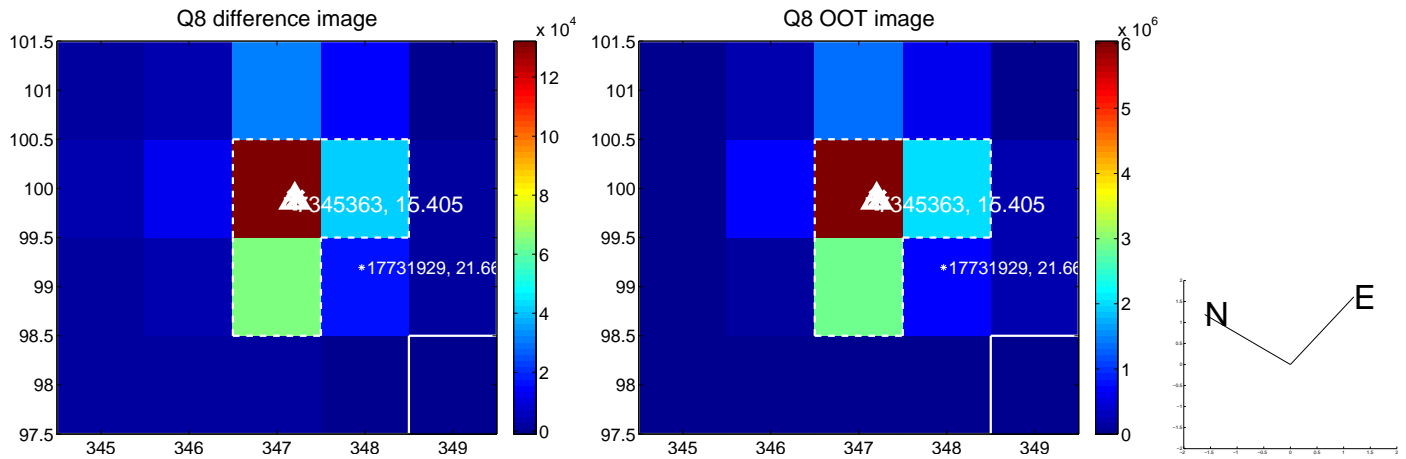
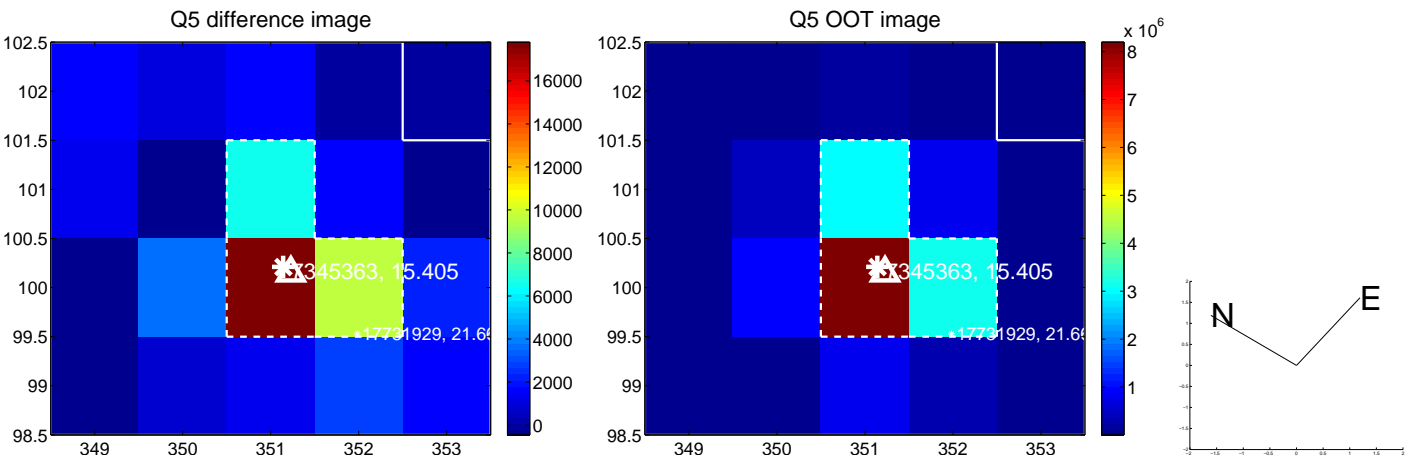


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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



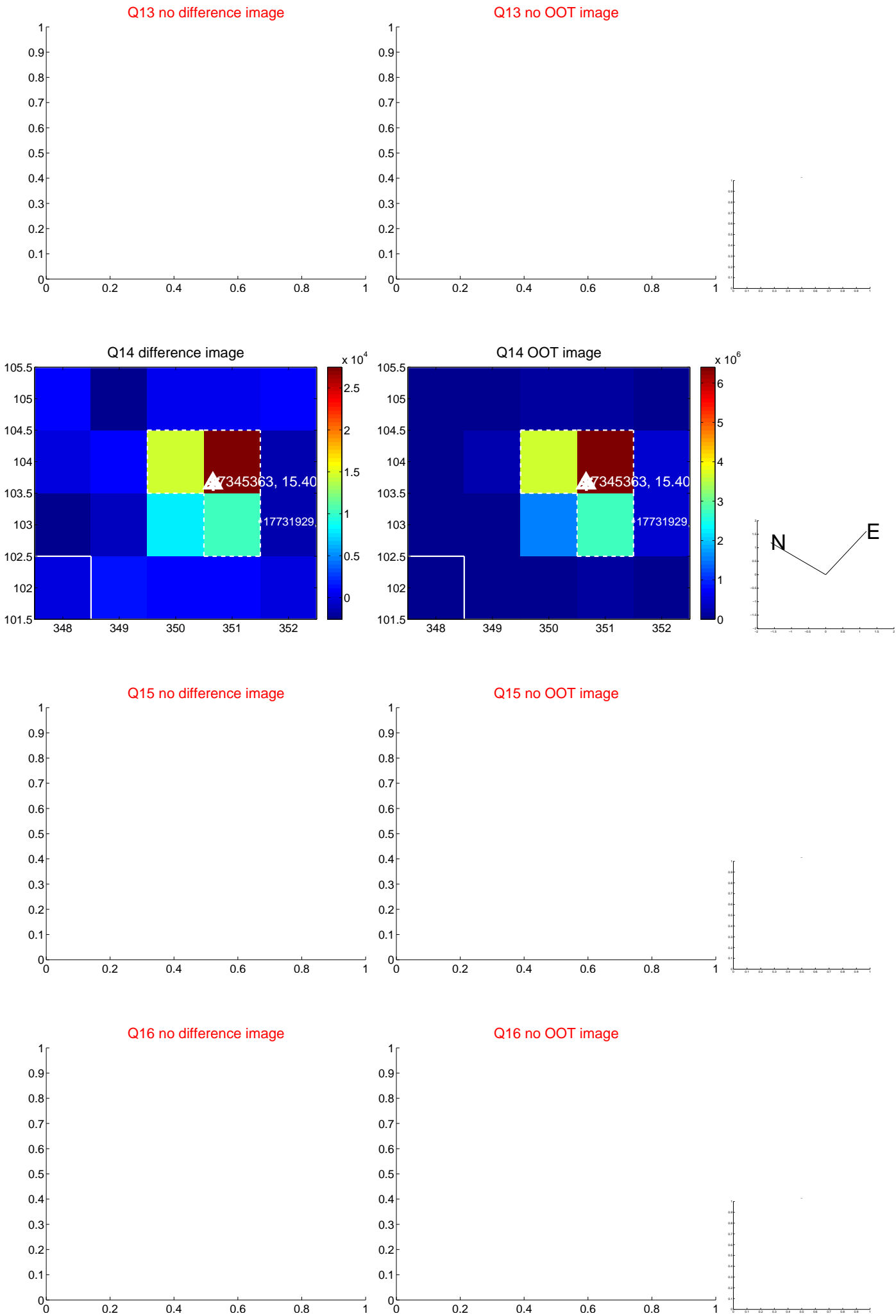
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



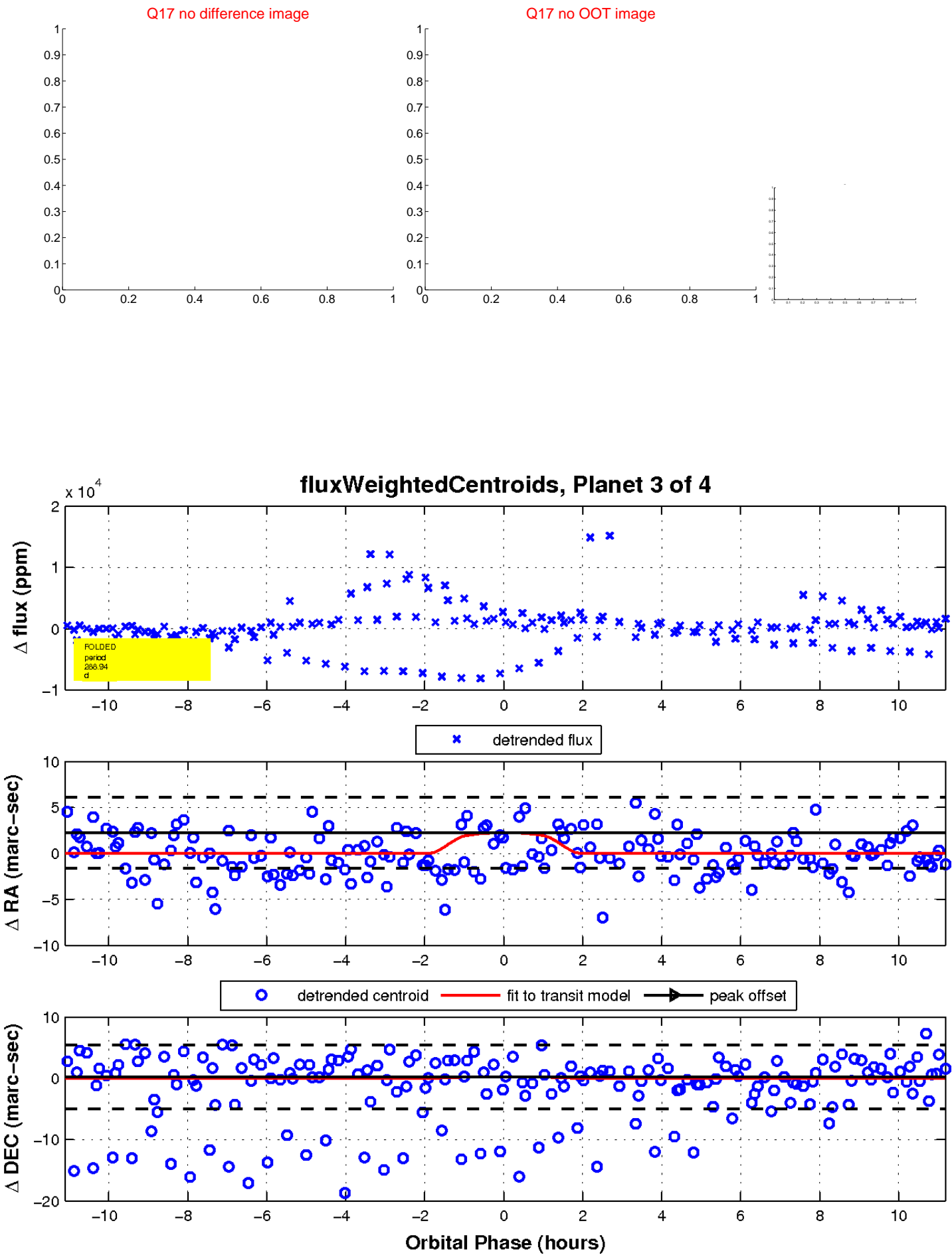
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

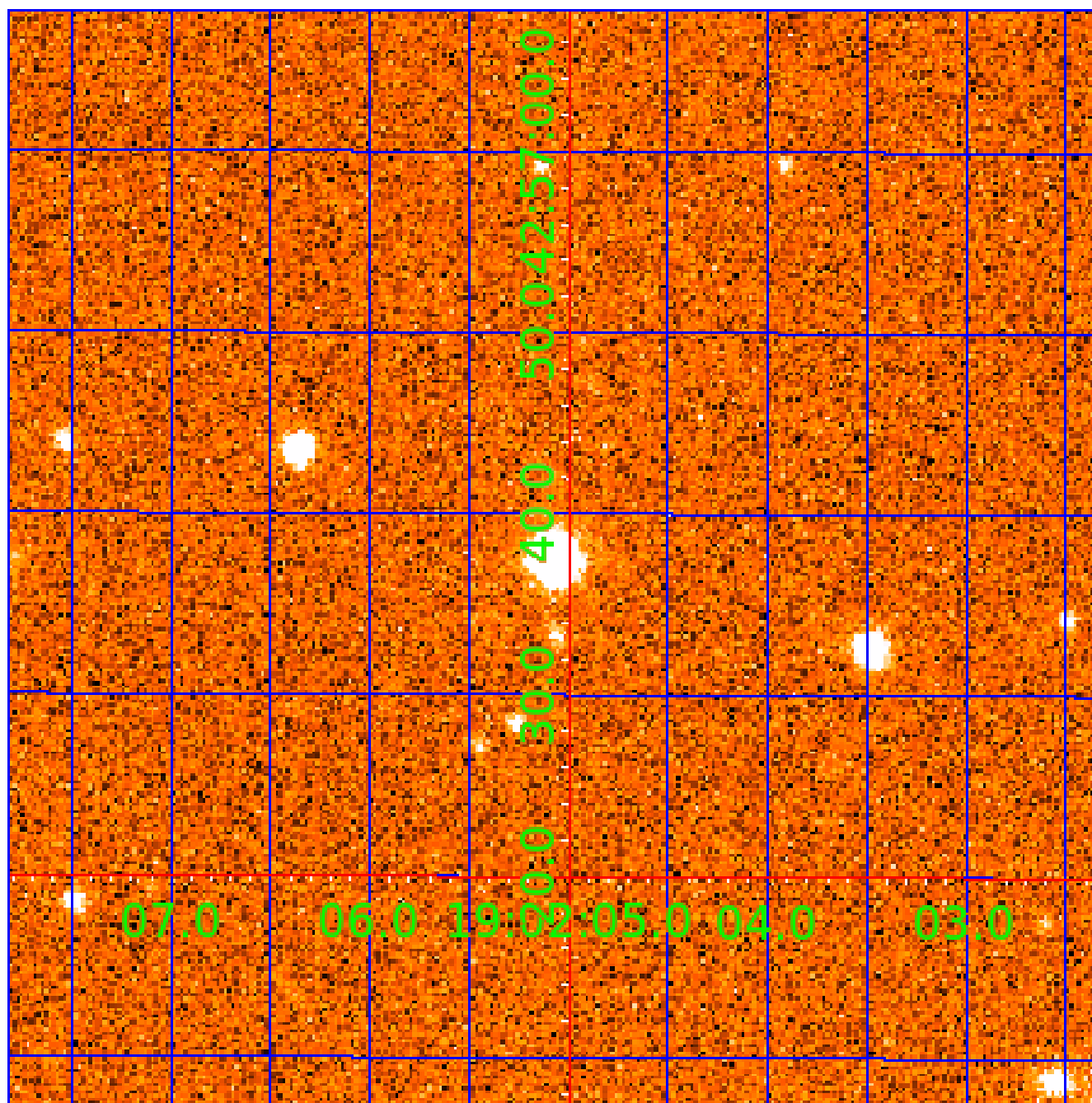


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007345363

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})
007345363-01	OBS	No	318.317447	367.358888	5297.2	12.905	23.2	6.6	0.69	4430	6.49	0.25
007345363-02	OBS	No	469.835656	278.349962	3256.7	9.000	24.9	-1.0	0.69	4430	3.73	0.15
007345363-03	OBS	No	288.941974	196.880062	2999.9	3.733	19.3	9.7	0.69	4430	4.55	0.29
007345363-04	OBS	No	428.907236	491.298307	1692.5	7.500	18.8	-1.0	0.69	4430	2.69	0.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007345363-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007345363-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
007345363-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS
007345363-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_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.

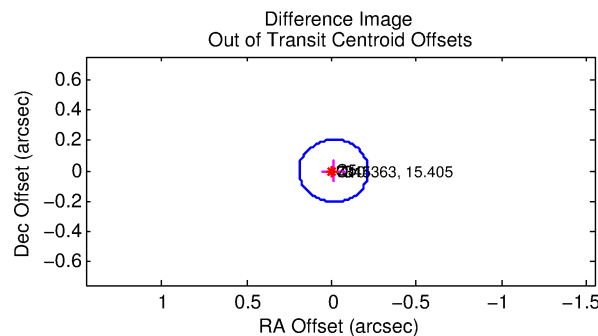
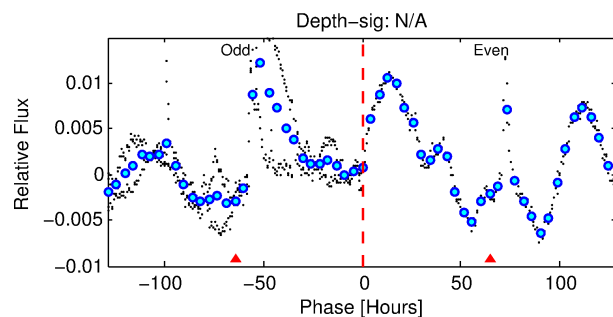
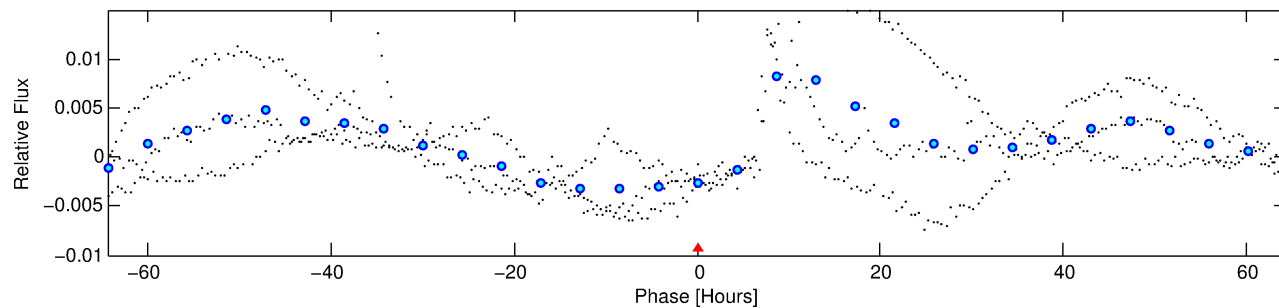
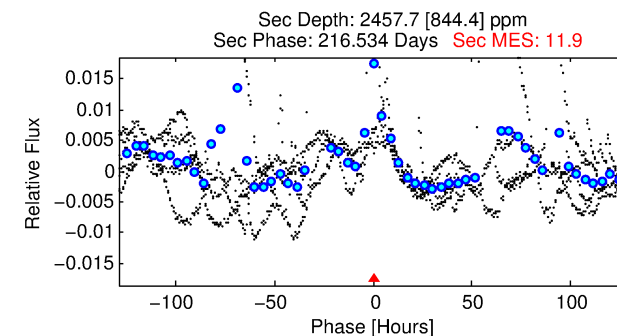
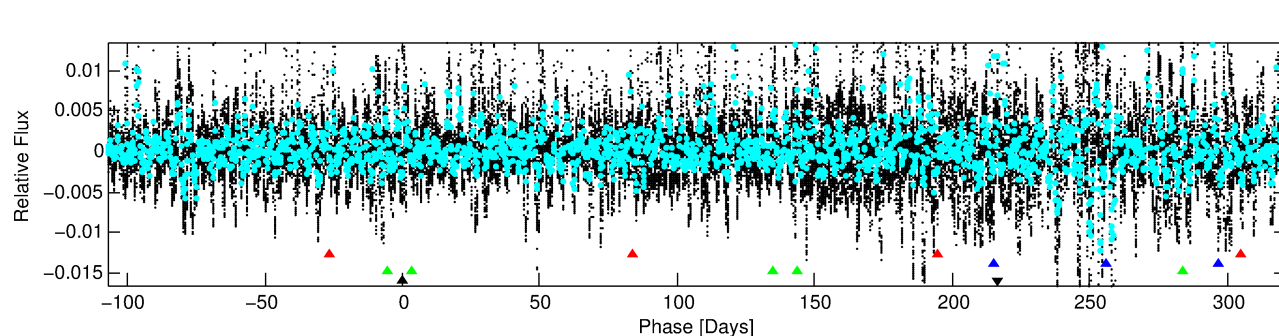
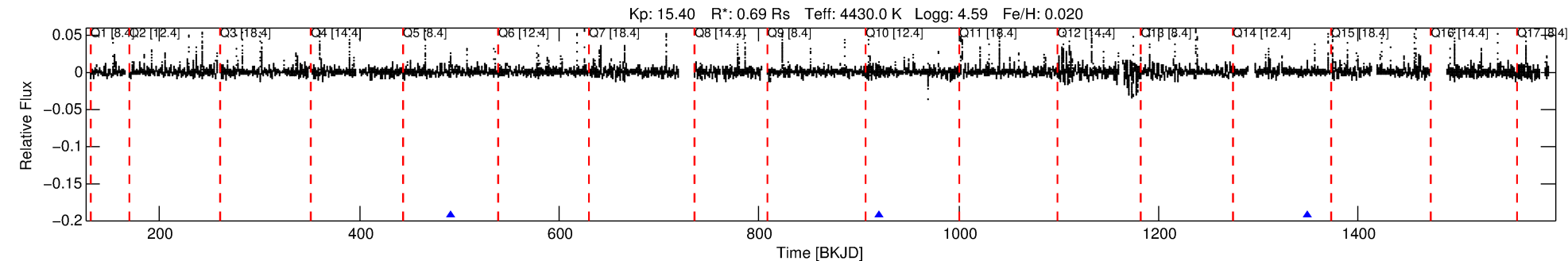
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007345363-04

No Significant Match Found

DV One-Page Summary

KIC: 7345363 Candidate: 4 of 4 Period: 428.907 d



TPS TCE Results:

Period = 428.90724 d
Epoch = 491.2983 BKJD

DV fit results are unavailable

DV Diagnostic Results:

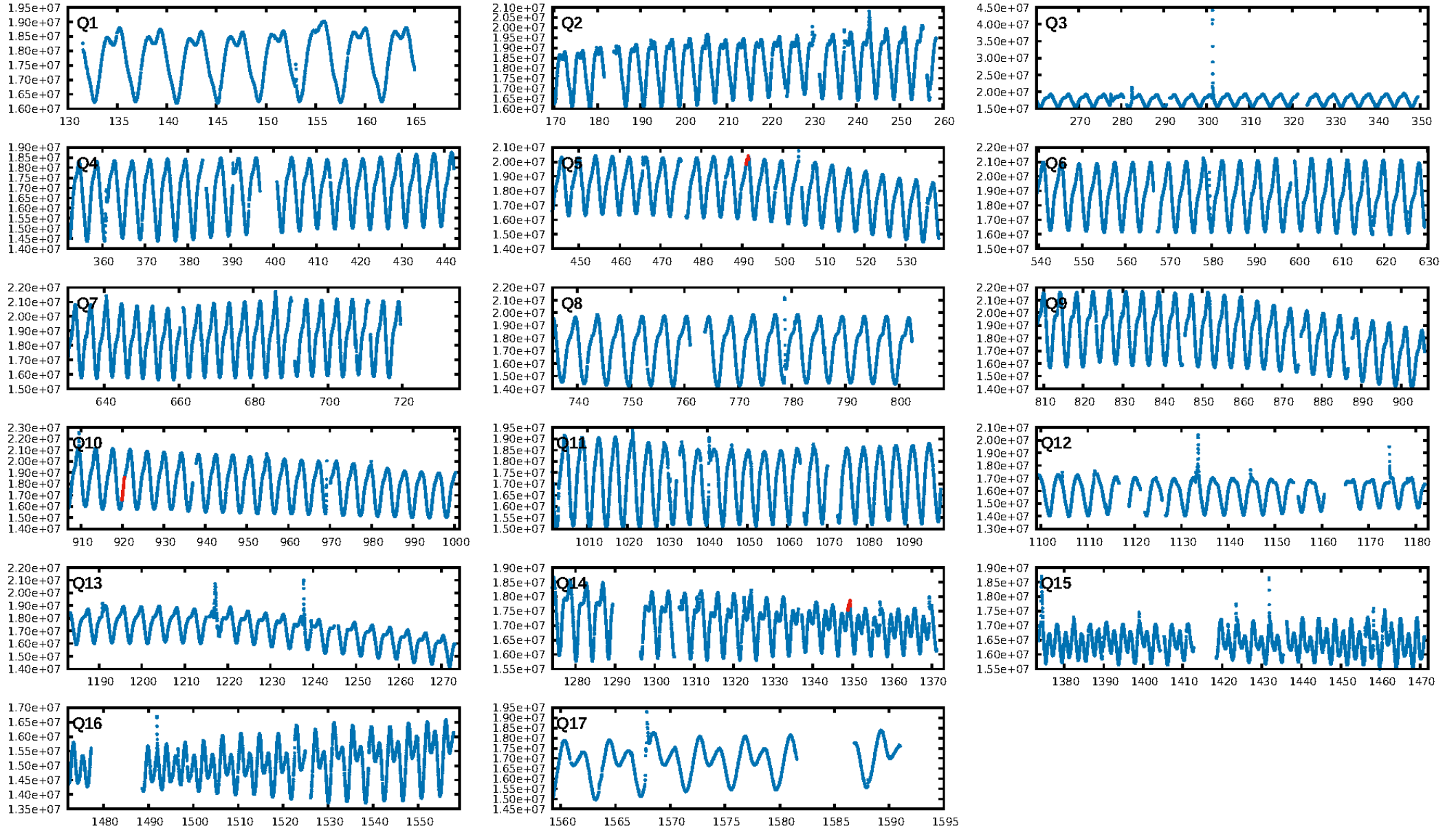
ShortPeriod-sig: 100.0% [177.82σ]
LongPeriod-sig: 100.0% [83.85σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.92e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.596

Centroid-sig: 82.6%
Centroid-so: 73.414 arcsec [0.41σ]
OotOffset-rm: 0.012 arcsec [0.17σ]
KicOffset-rm: 0.033 arcsec [0.42σ]
OotOffset-st: 2/0/0/1 [3]
KicOffset-st: 2/0/0/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

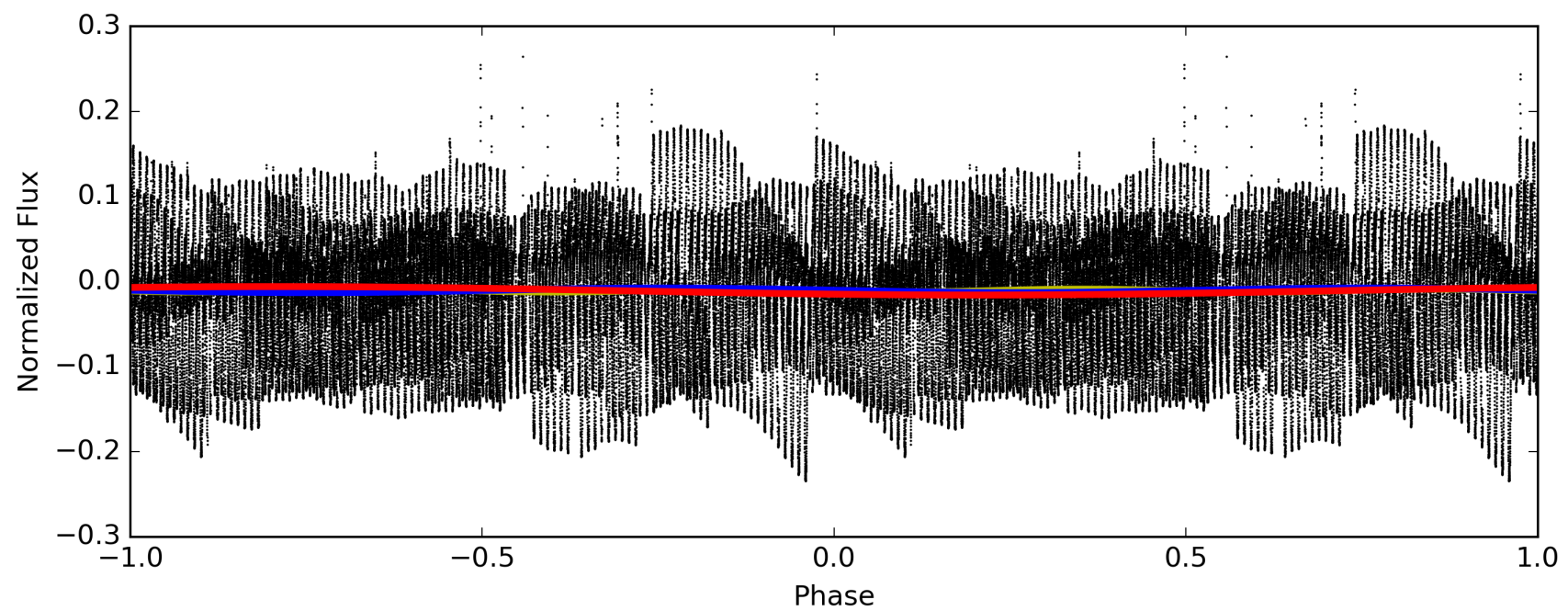
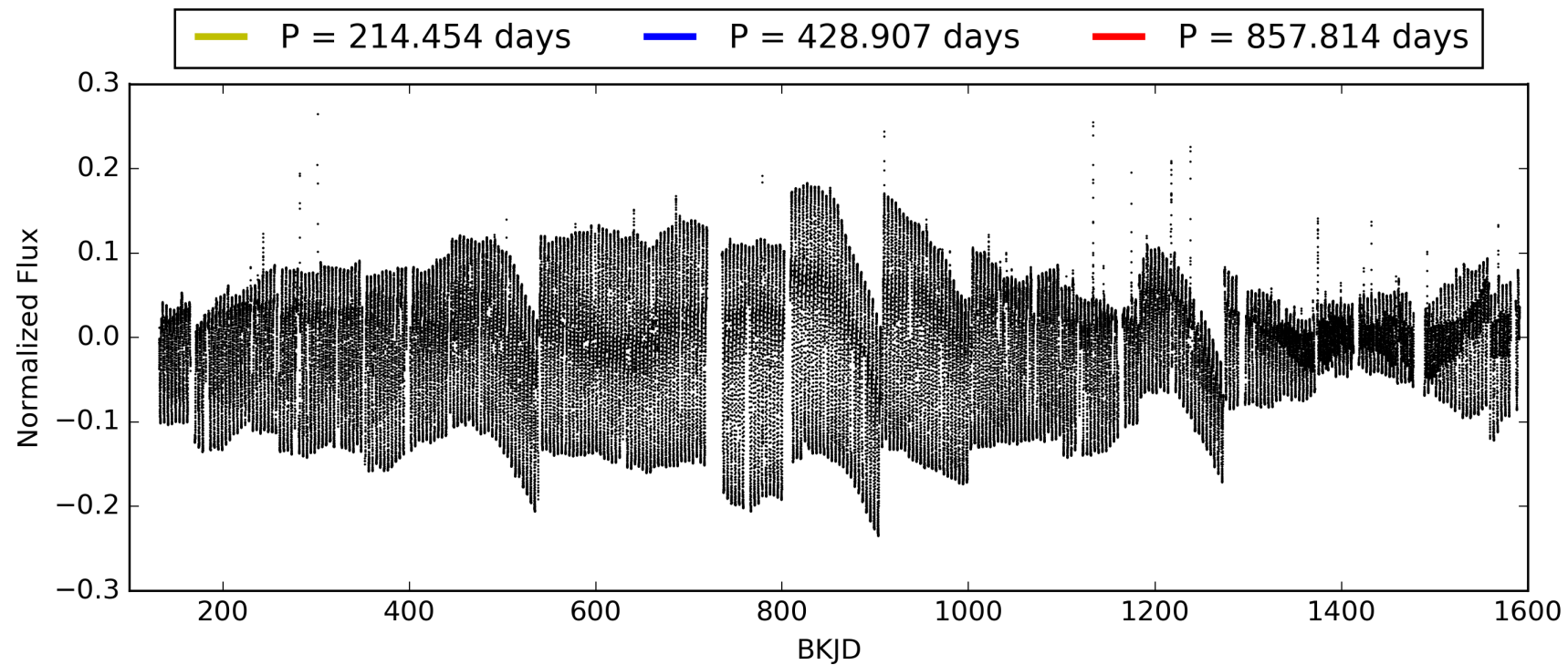
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:17:20 Z

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

TCE 007345363-04, PDC Light Curves

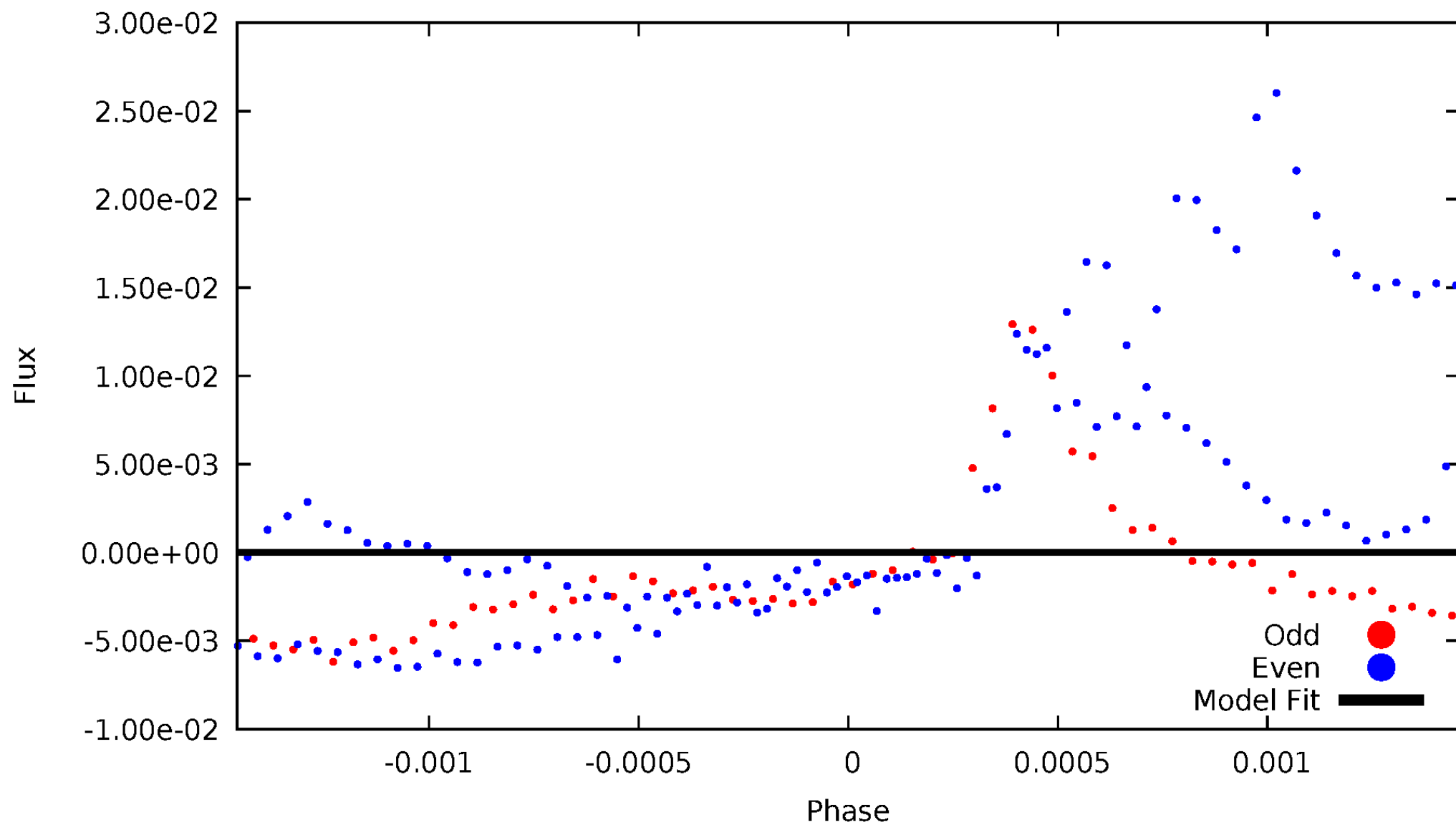


TCE 007345363-04



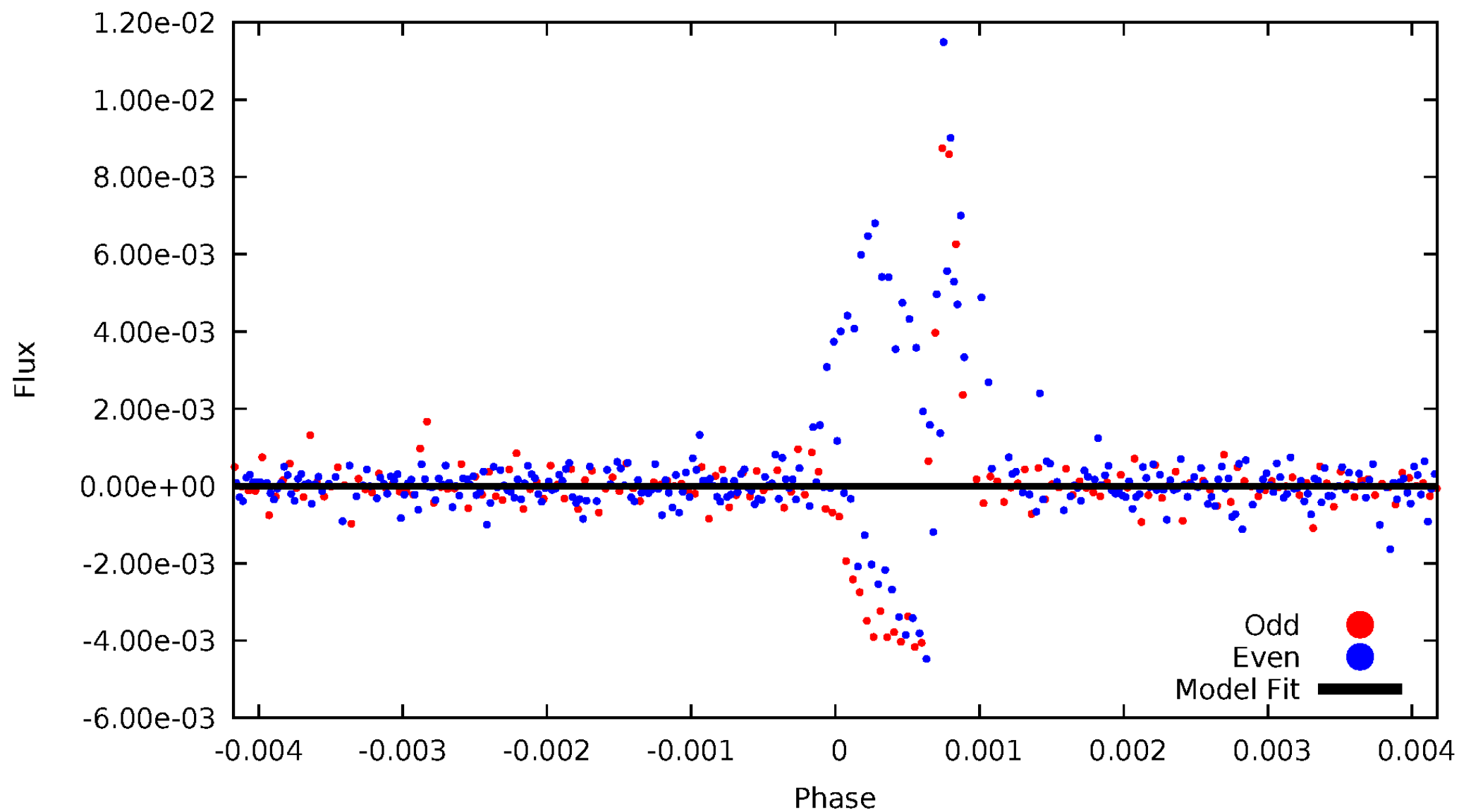
DV Odd/Even

TCE 007345363-04



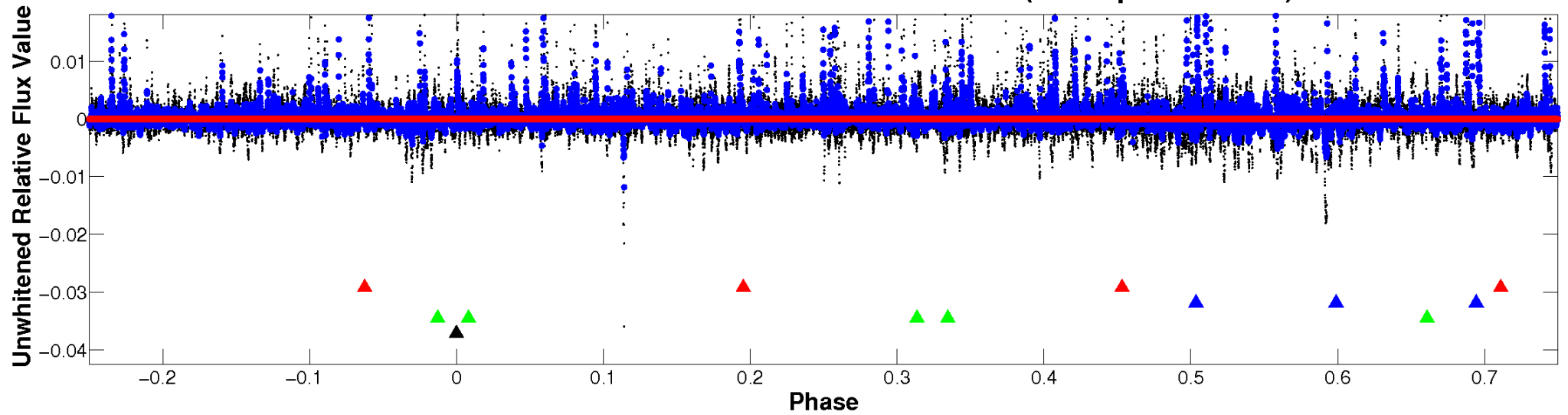
ALT Odd/Even

TCE 007345363-04



Non-Whitened Vs. Whitened Light Curve

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

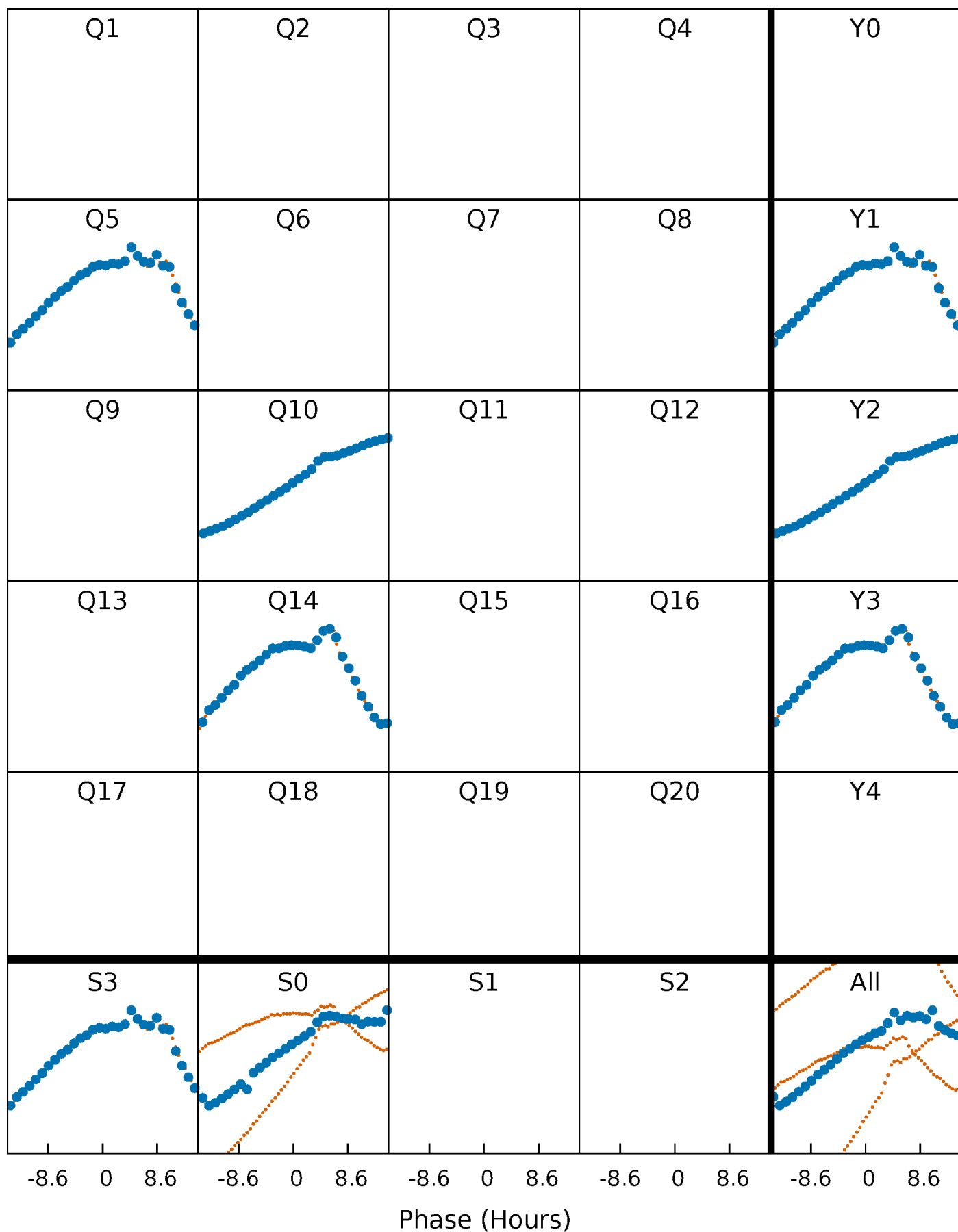


Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)



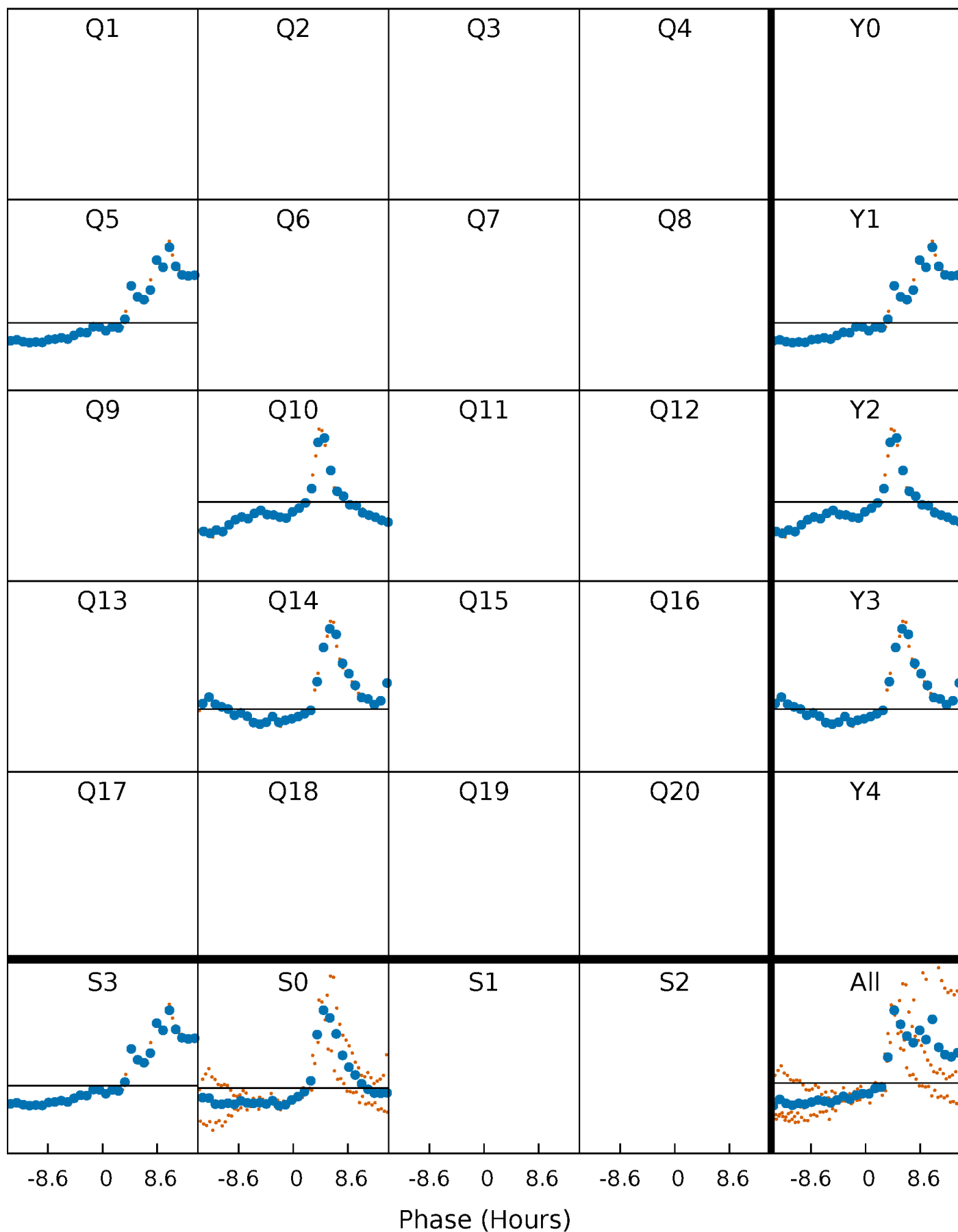
PDC Quarter-Phased Transit Curves

TCE 007345363-04 P=428.907236 Days $T_0=491.298307$ (BKJD)



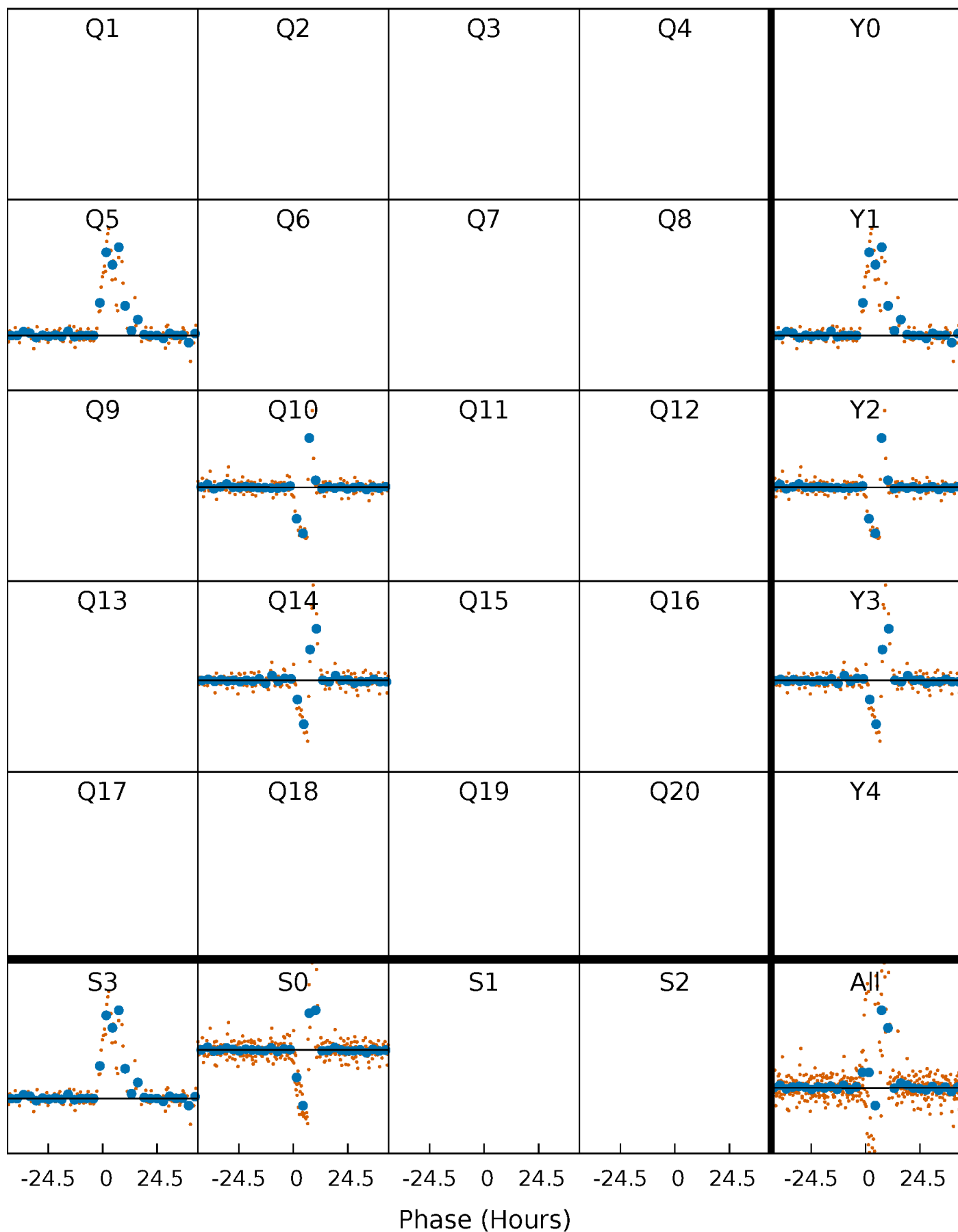
DV Quarter-Phased Transit Curves

TCE 007345363-04 P=428.907236 Days $T_0=491.298307$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

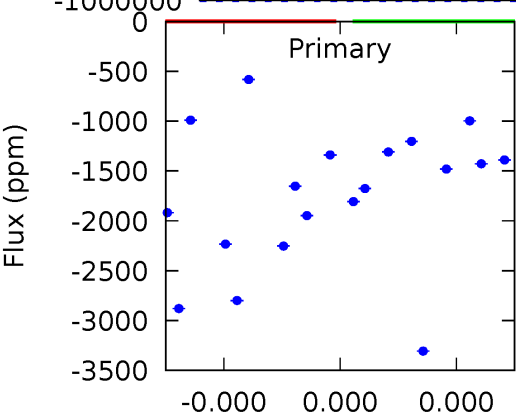
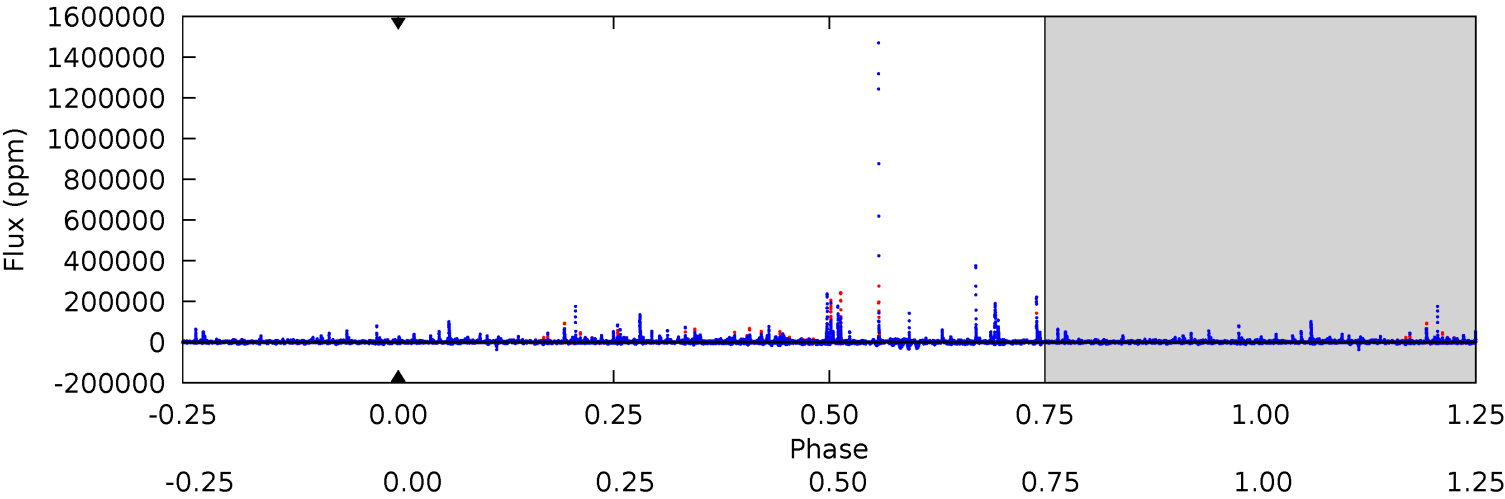
TCE 007345363-04 P=428.907236 Days $T_0=491.148215$ (BKJD)



DV Model-Shift Uniqueness Test

007345363-04, P = 428.907236 Days, E = 62.391071 Days

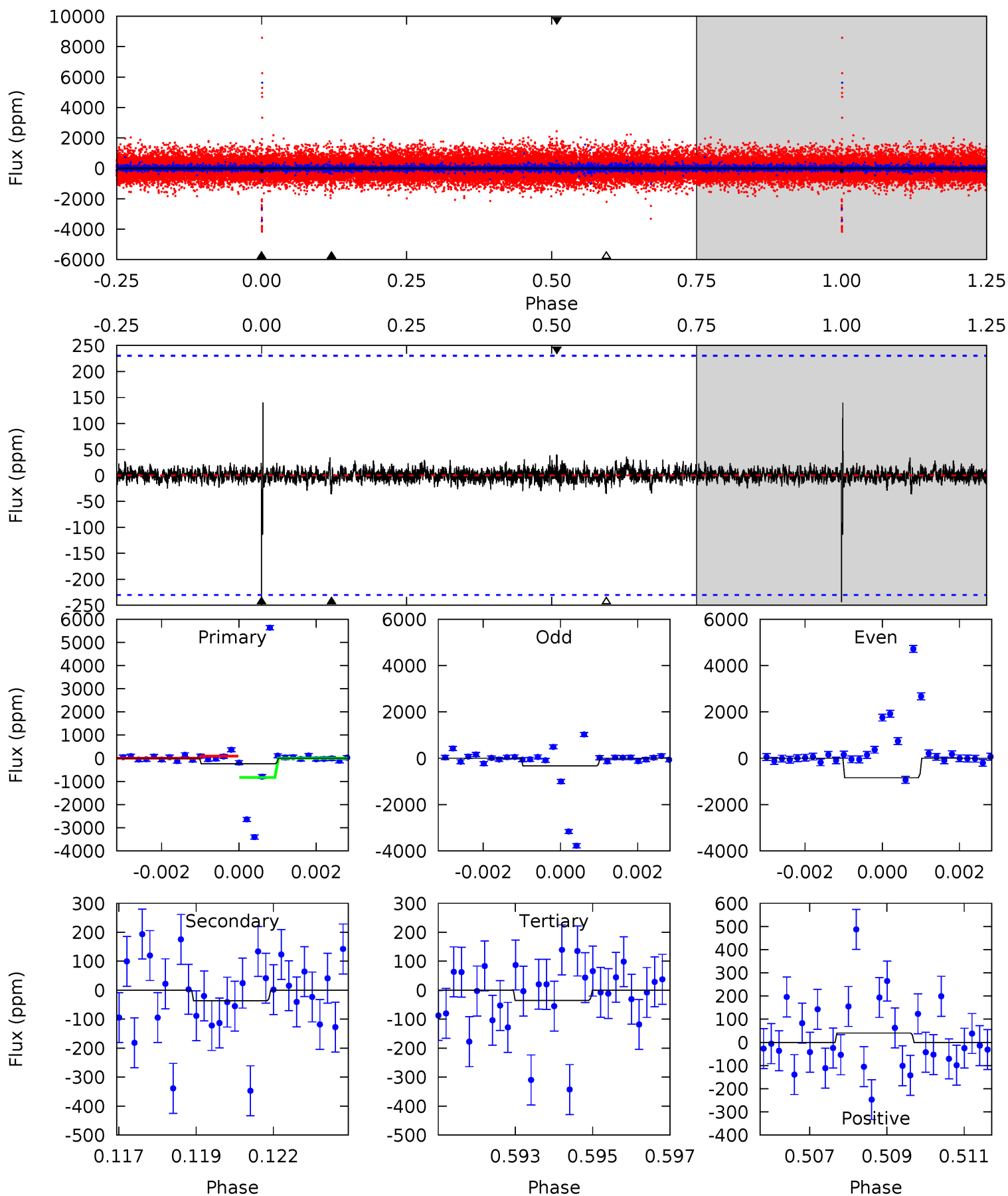
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007345363-04, P = 428.907236 Days, E = 62.240979 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.63	0.84	0.82	0.93	5.32	3.08	0.19	4.81	4.70	0.02	-0.09	4.12	-5.23	0.37	0



Stellar Parameters For KIC 007345363

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4430^{+134}_{-147}	$4.595^{+0.056}_{-0.020}$	$0.020^{+0.250}_{-0.300}$	$0.686^{+0.038}_{-0.062}$	$0.674^{+0.060}_{-0.054}$	$2.945^{+0.739}_{-0.252}$
	+3%/-3%	+1%/-0%	+1250%/-1500%	+6%/-9%	+9%/-8%	+25%/-9%
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 007345363-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$6.38^{+5.51}_{-4.20}$	227^{+8}_{-8}	-2833^{+13384}_{-6117}	$-6788.507^{+2548368.125}_{-1562102.580}$
Alt.	-36 ± 43	$5.13^{+5.78}_{-3.59}$	226^{+9}_{-8}	2065^{+771}_{-3851}	415^{+5663}_{-498}

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

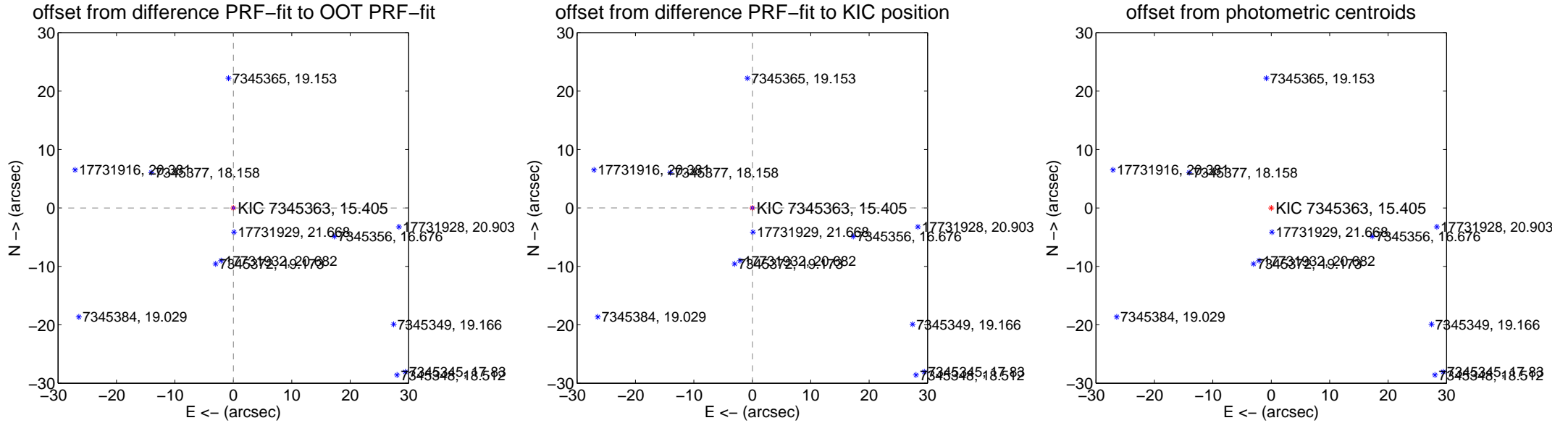
DV Centroid Data

Supplemental centroid analysis for 007345363-04. Kepler magnitude: 15.40. 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 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.012 ± 0.068	0.17	-0.012 ± 0.068	-0.000 ± 0.067
PRF-fit source offset from KIC position	0.033 ± 0.079	0.42	-0.031 ± 0.080	0.010 ± 0.067
photometric centroid source offset	73.40 ± 177.87	0.41	-62.38 ± 160.57	38.69 ± 216.50

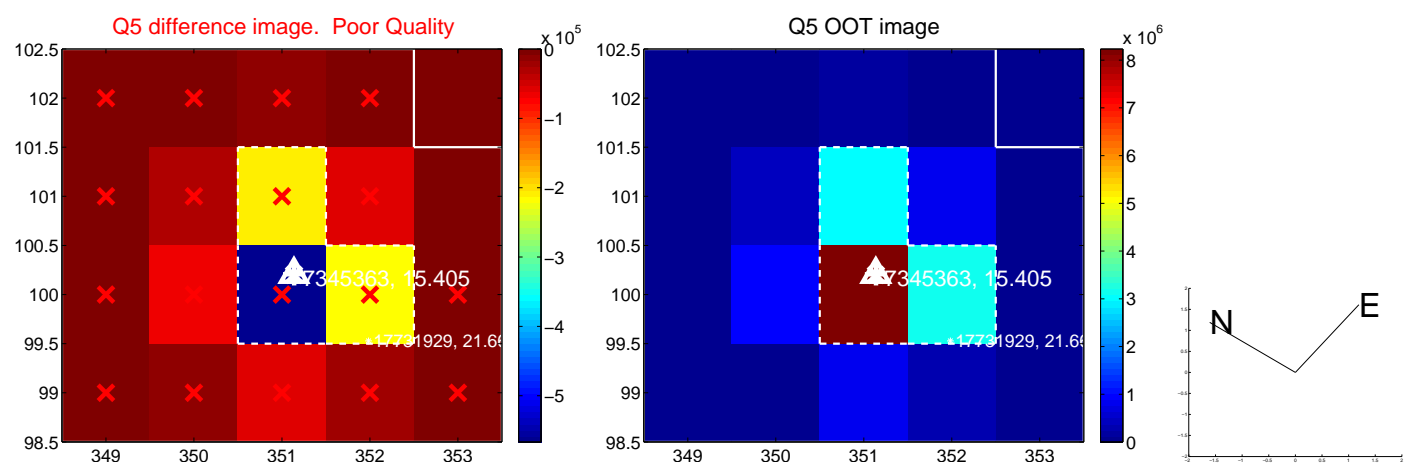


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

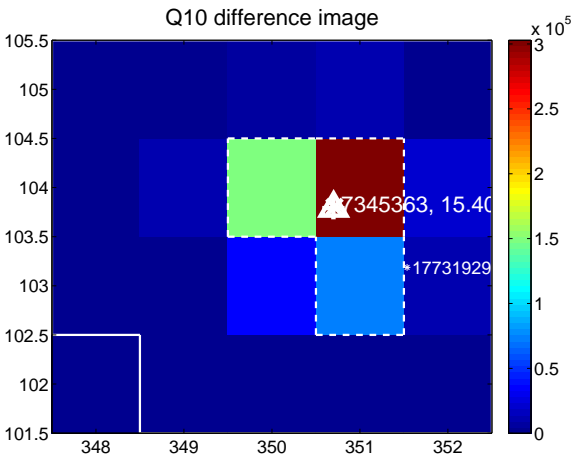
Q9 no difference image



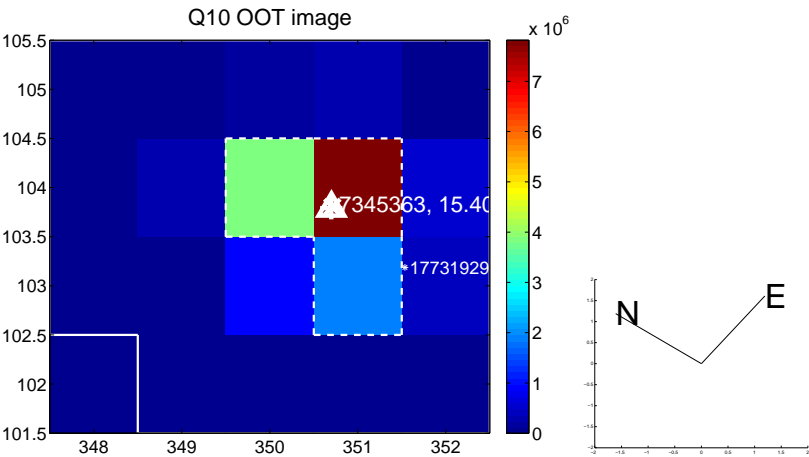
Q9 no OOT image



Q10 difference image



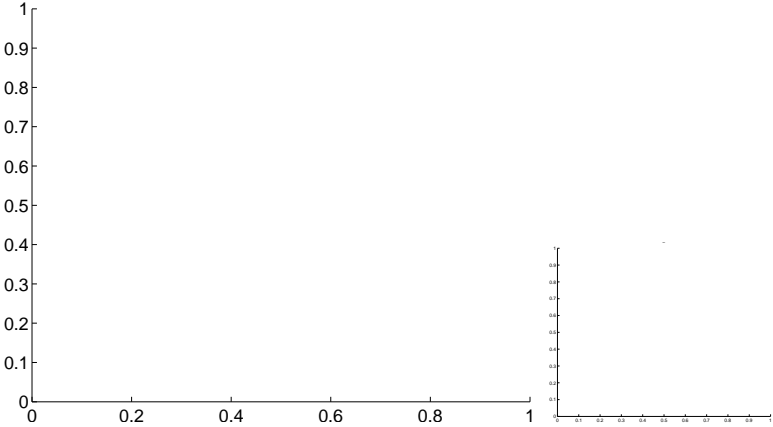
Q10 OOT image



Q11 no difference image



Q11 no OOT image



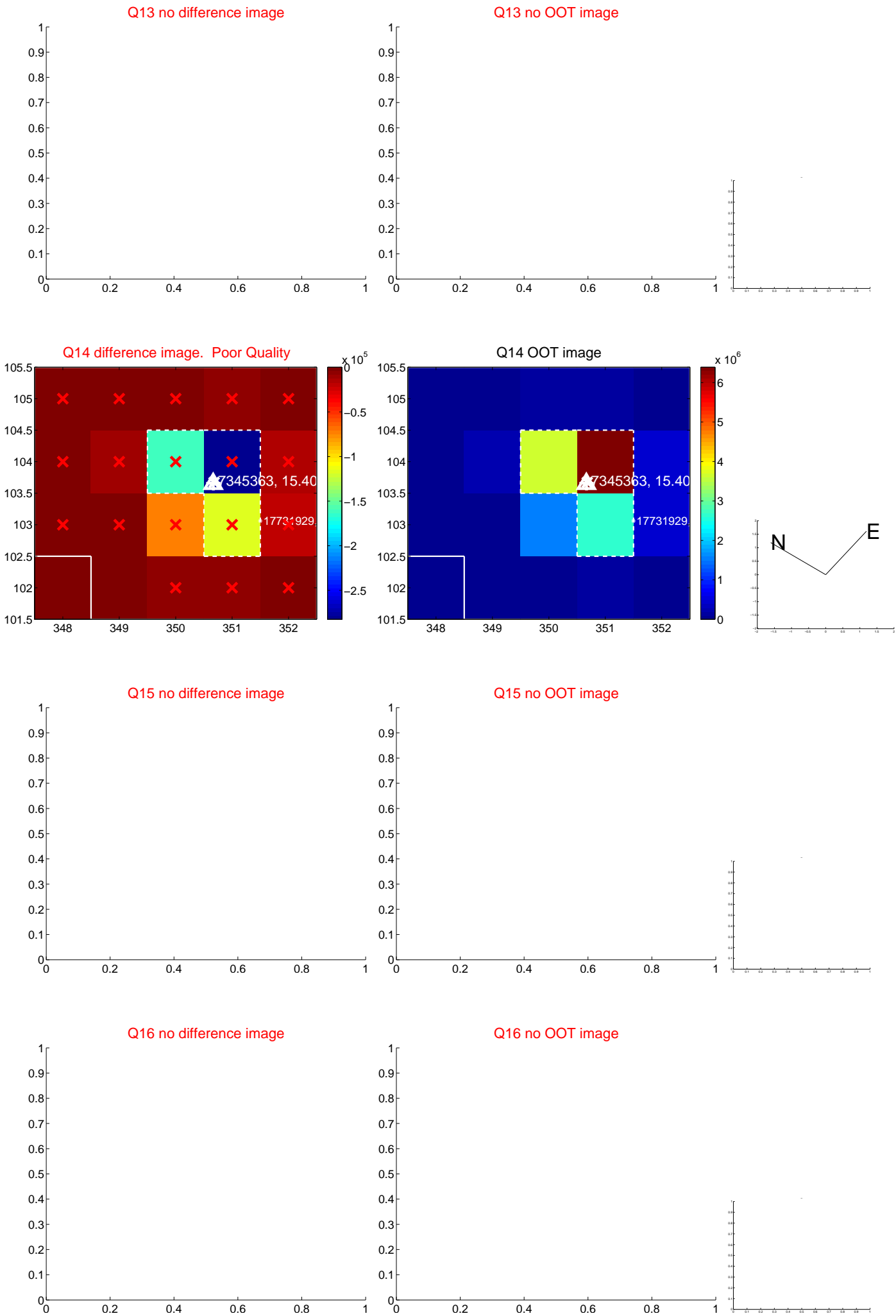
Q12 no difference image



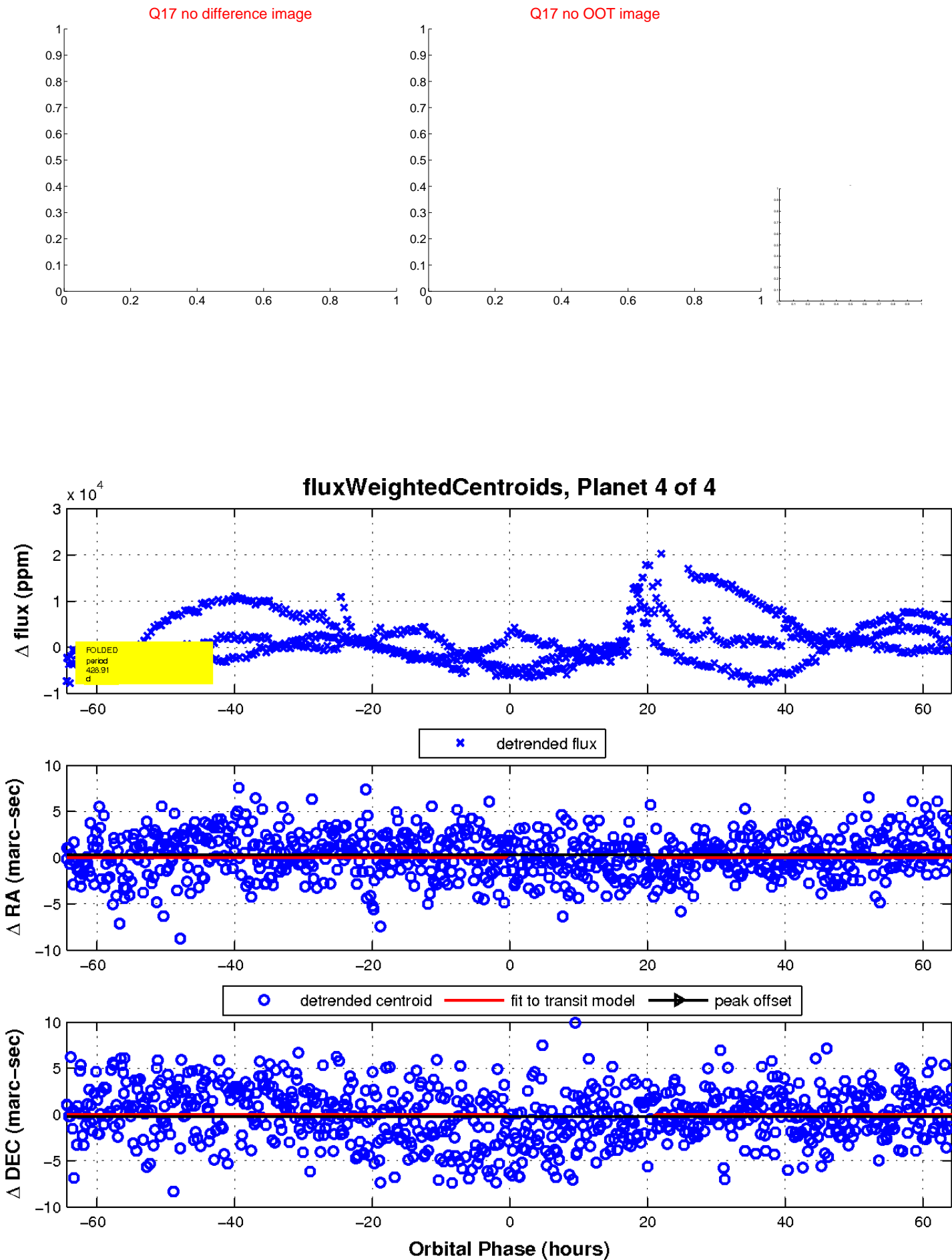
Q12 no OOT image



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

