

KIC 003352523

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})
003352523-01	OBS	No	286.715906	232.819264	506.3	6.846	9.3	6.4	0.58	4161	1.34	0.18
003352523-02	OBS	No	432.695846	233.230390	502.4	27.305	10.8	6.7	0.58	4161	1.32	0.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003352523-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003352523-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS— HALO_GHOST

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

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

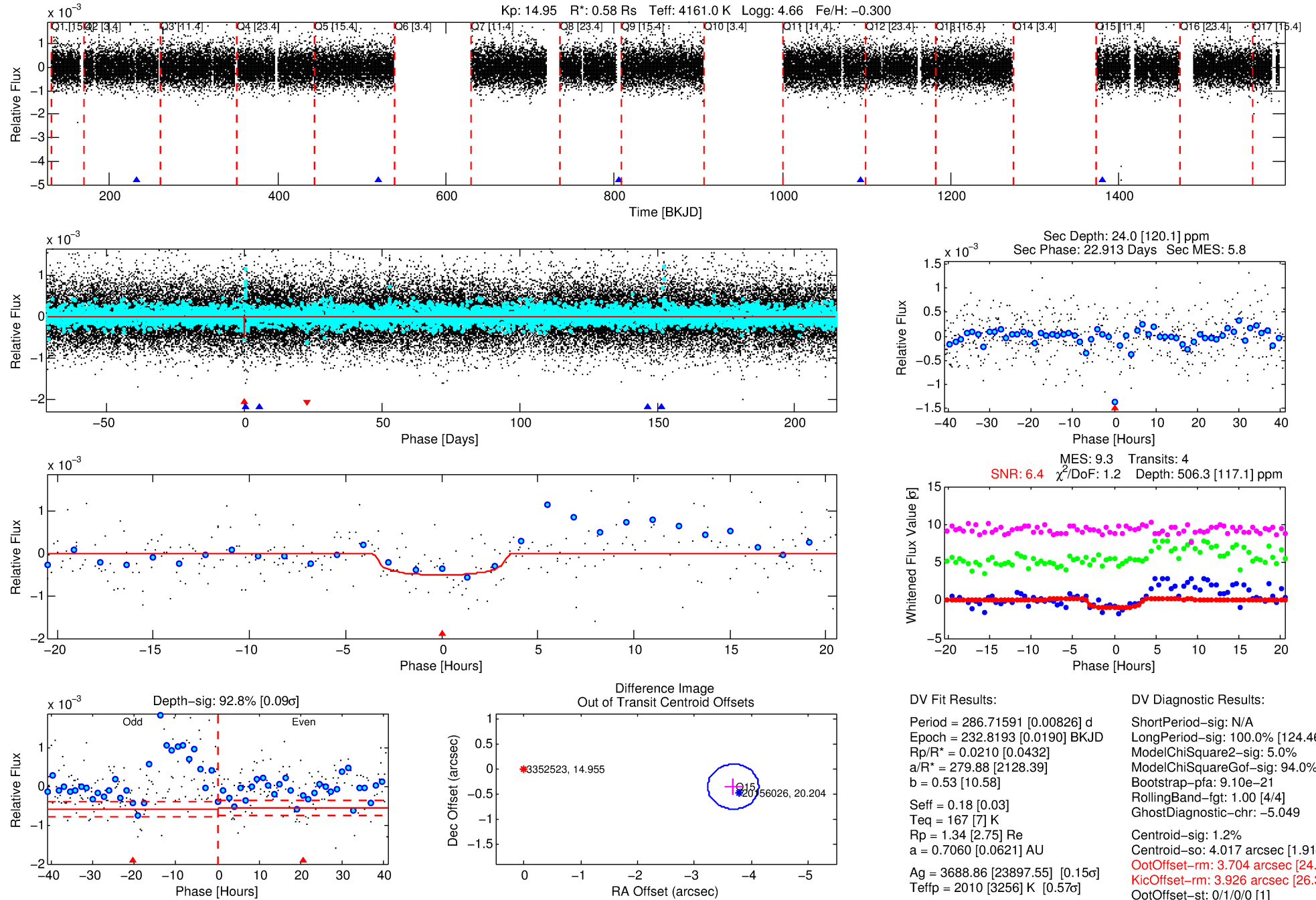
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003352523-01

No Significant Match Found

DV One-Page Summary

KIC: 3352523 Candidate: 1 of 2 Period: 286.716 d



DV Fit Results:

Period = 286.71591 [0.00826] d
Epoch = 232.8193 [0.0190] BKJD
Rp/R* = 0.0210 [0.0432]
a/R* = 279.88 [2128.39]
b = 0.53 [10.58]
Seff = 0.18 [0.03]
Teq = 167 [7] K
Rp = 1.34 [2.75] Re
a = 0.7060 [0.0621] AU
Ag = 3688.86 [23897.55] [0.15σ]
Teff = 2010 [3256] K [0.57σ]

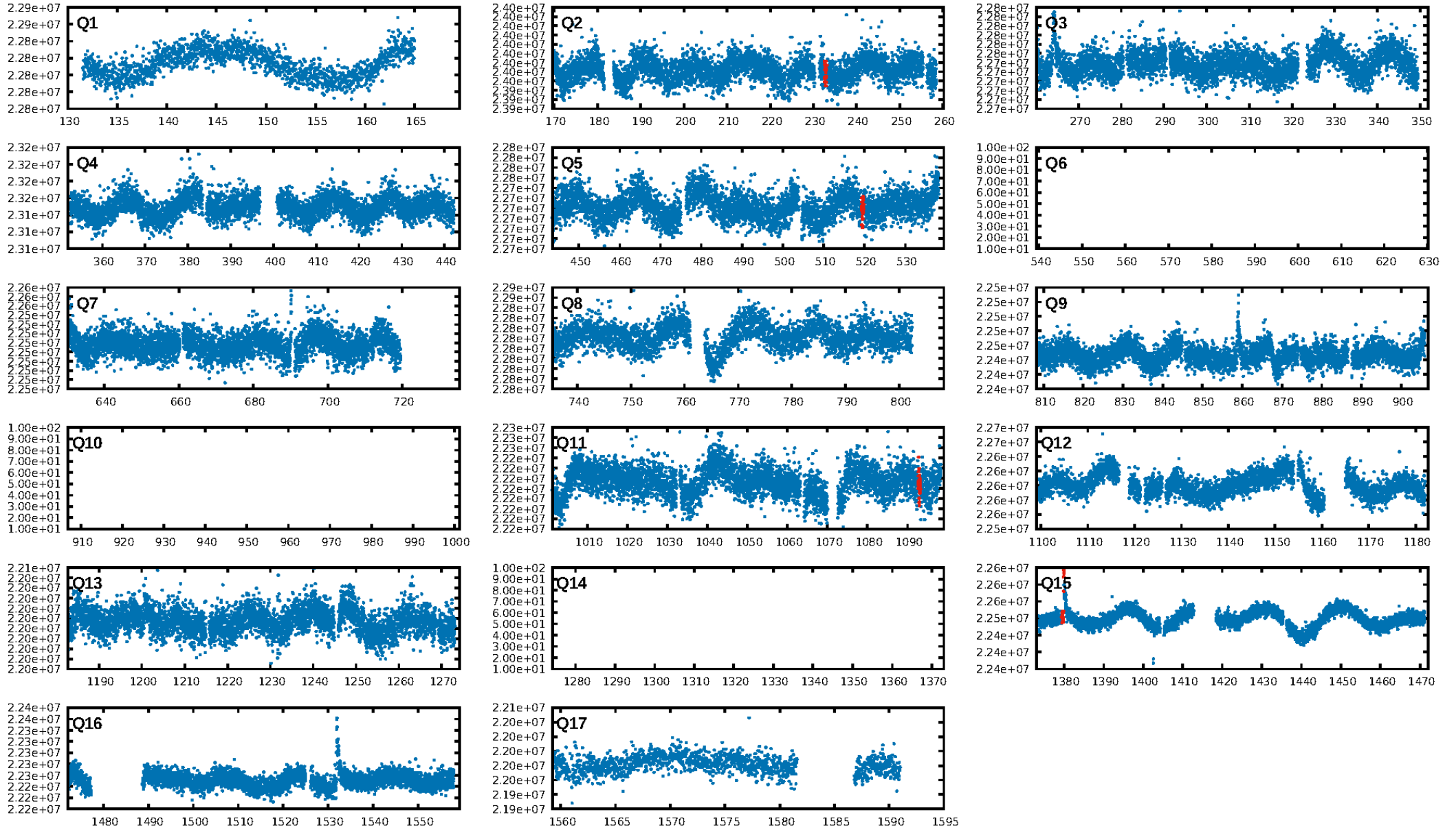
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [124.46σ]
ModelChiSquare2-sig: 5.0%
ModelChiSquareGof-sig: 94.0%
Bootstrap-pfa: 9.10e-21
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -5.049
Centroid-sig: 1.2%
Centroid-so: 4.017 arcsec [1.91σ]
OotOffset-rm: 3.704 arcsec [24.86σ]
KicOffset-rm: 3.926 arcsec [26.34σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

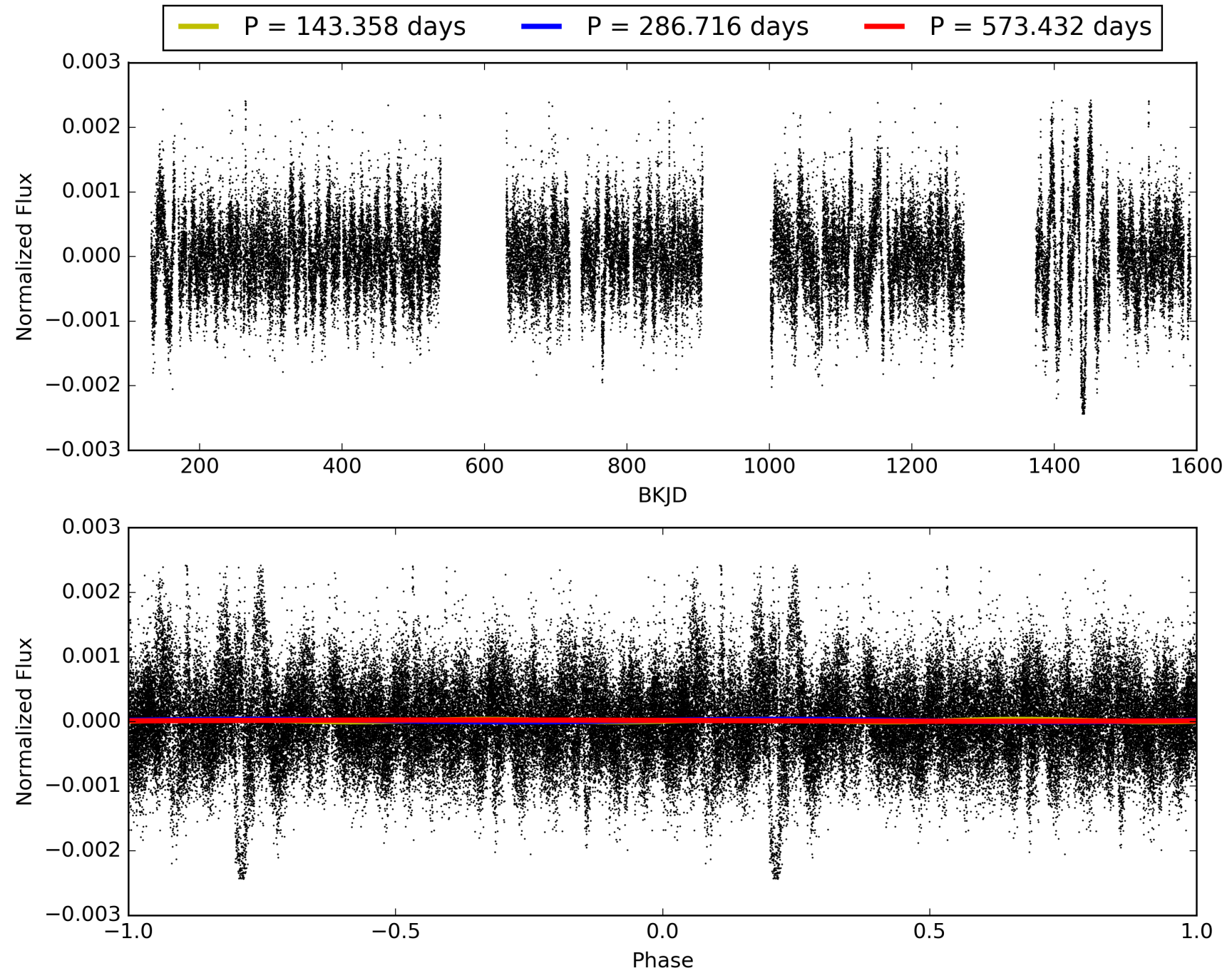
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:43:03 Z

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

TCE 003352523-01, PDC Light Curves

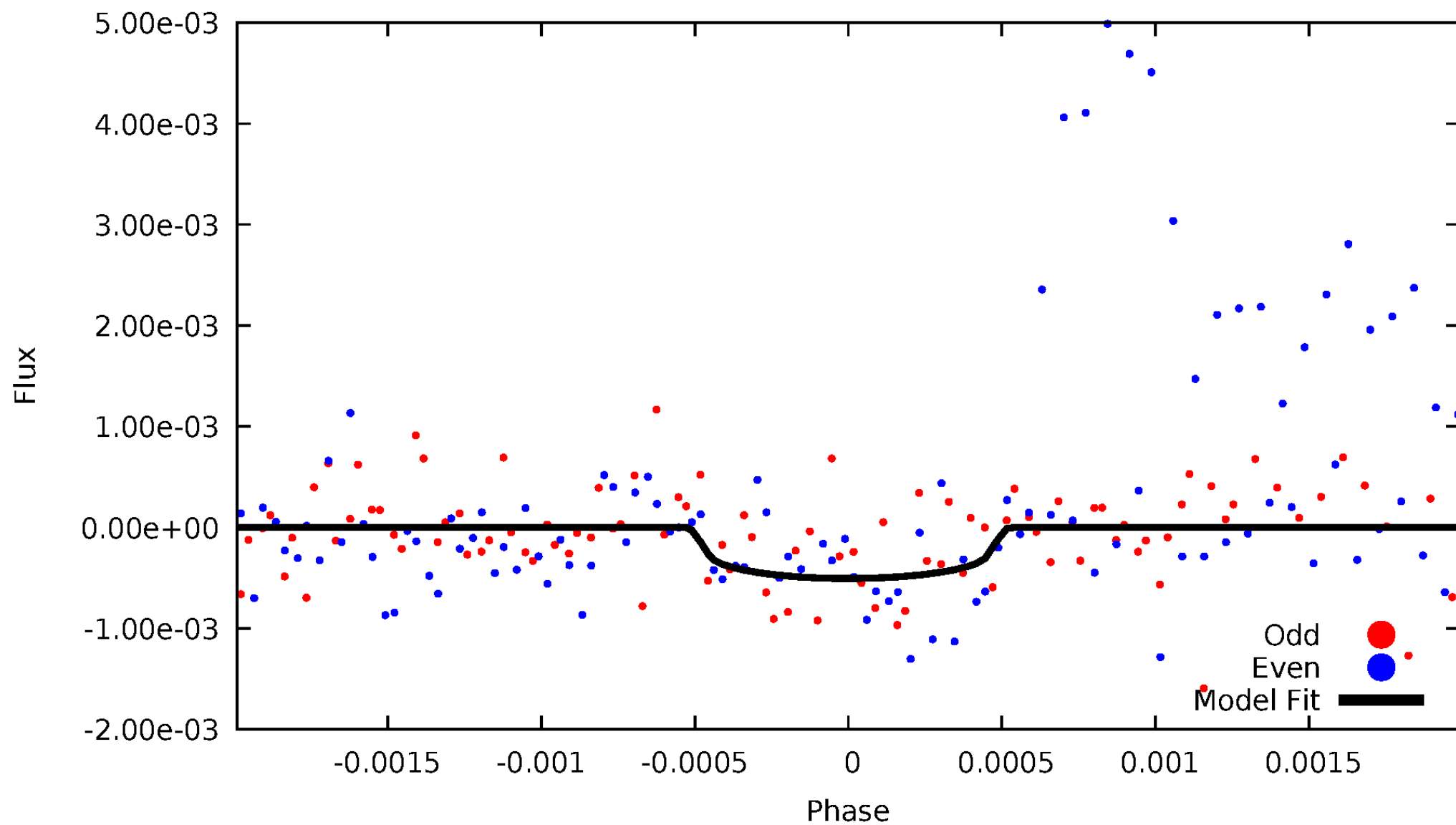


TCE 003352523-01



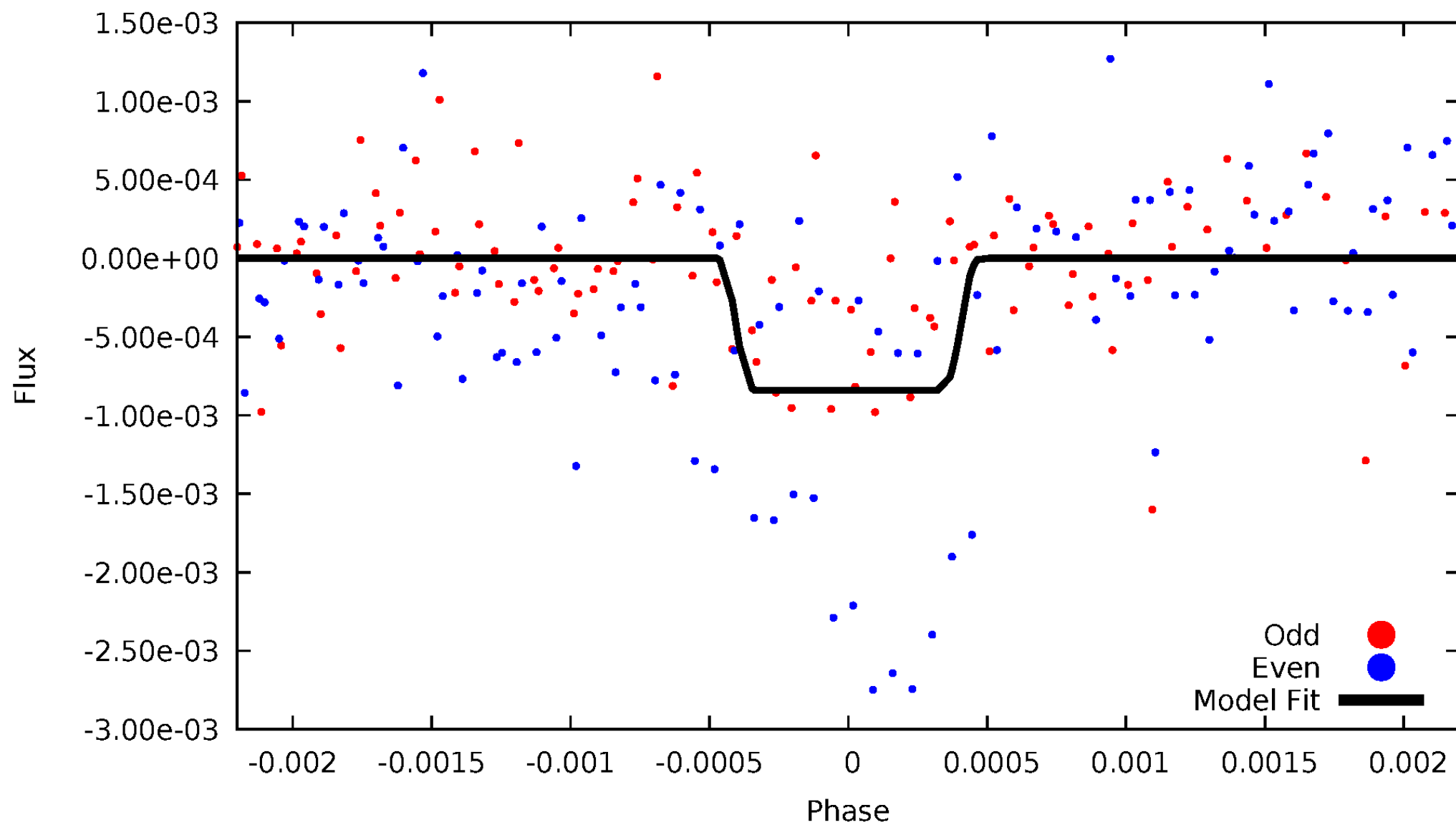
DV Odd/Even

TCE 003352523-01



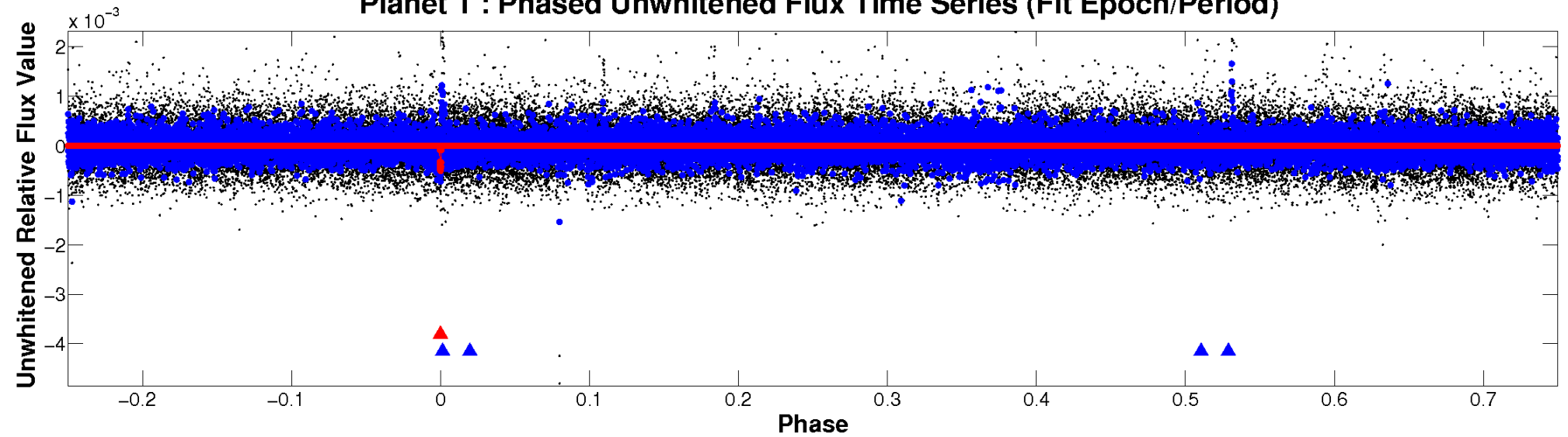
ALT Odd/Even

TCE 003352523-01

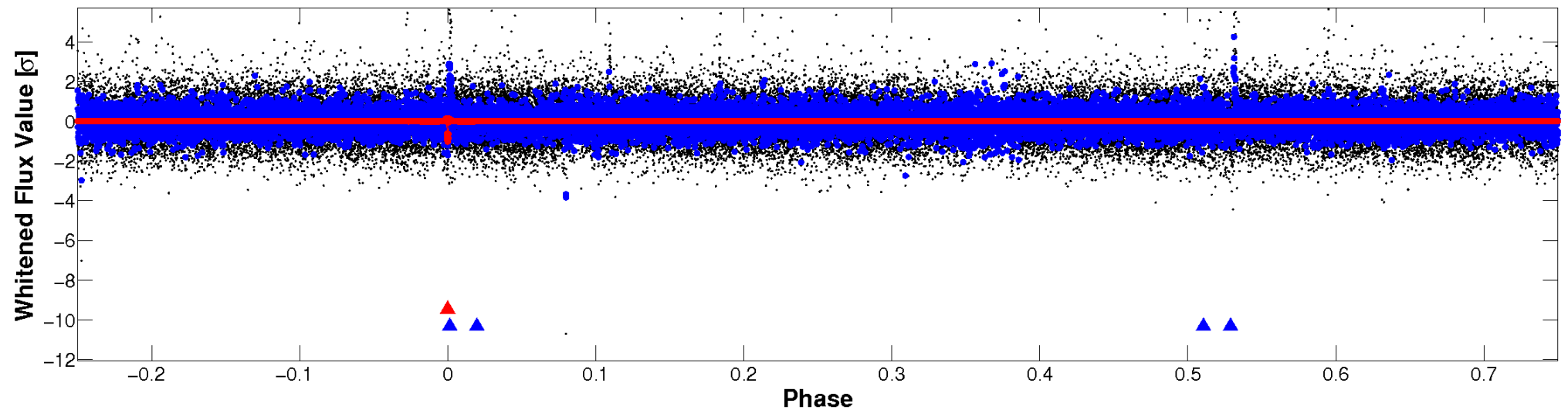


Non-Whitened Vs. Whitened Light Curve

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

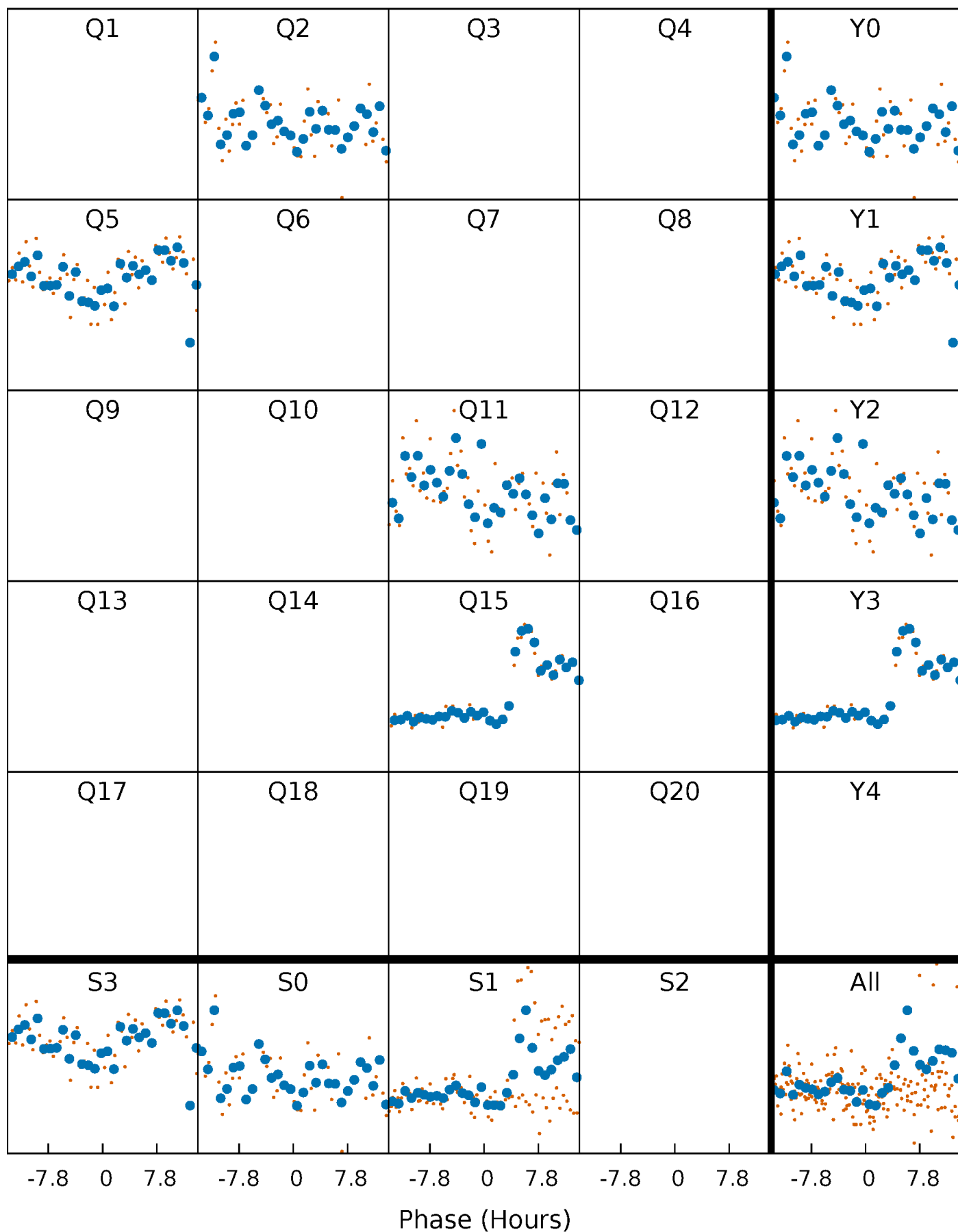


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



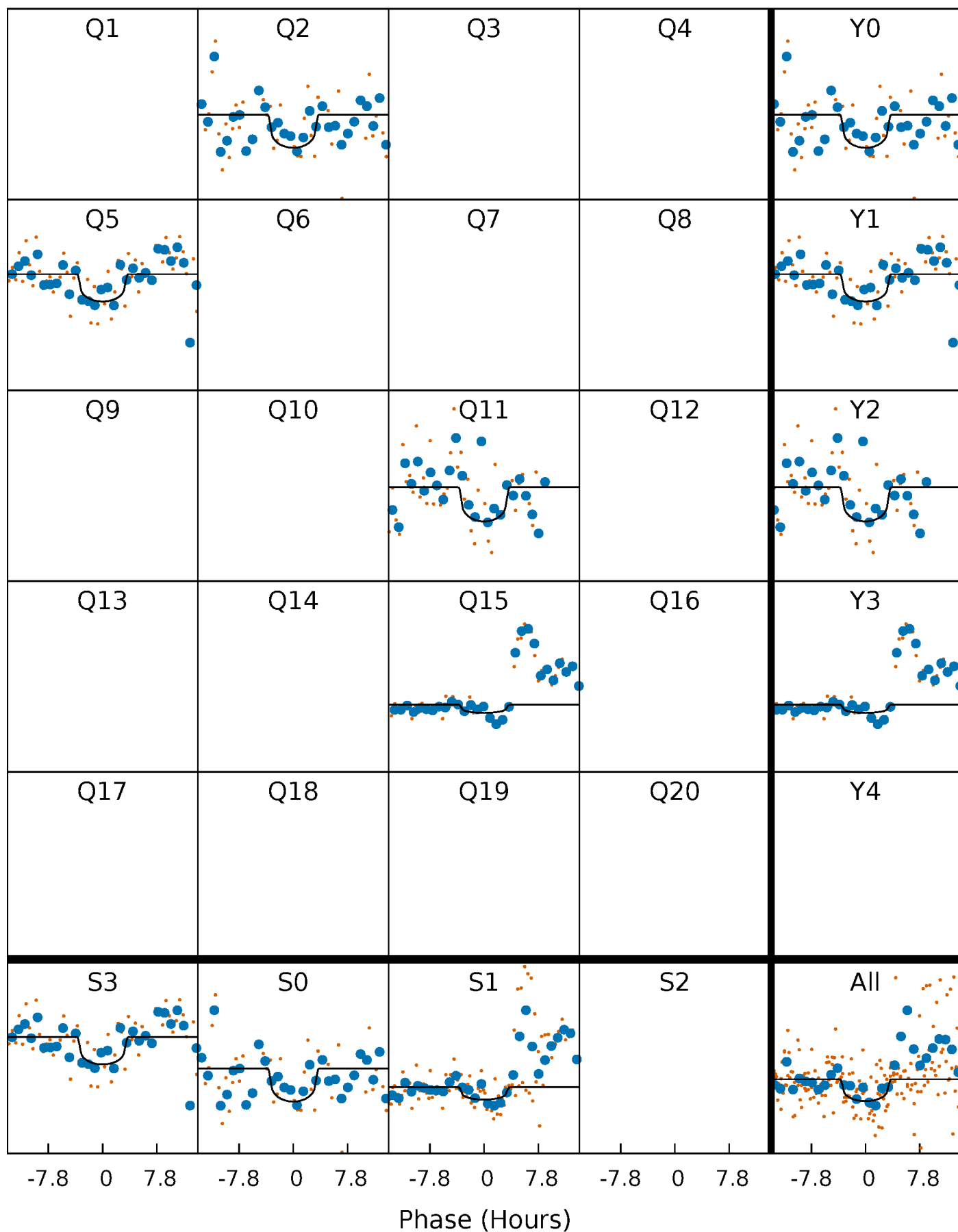
PDC Quarter-Phased Transit Curves

TCE 003352523-01 P=286.715906 Days $T_0=232.819264$ (BKJD)



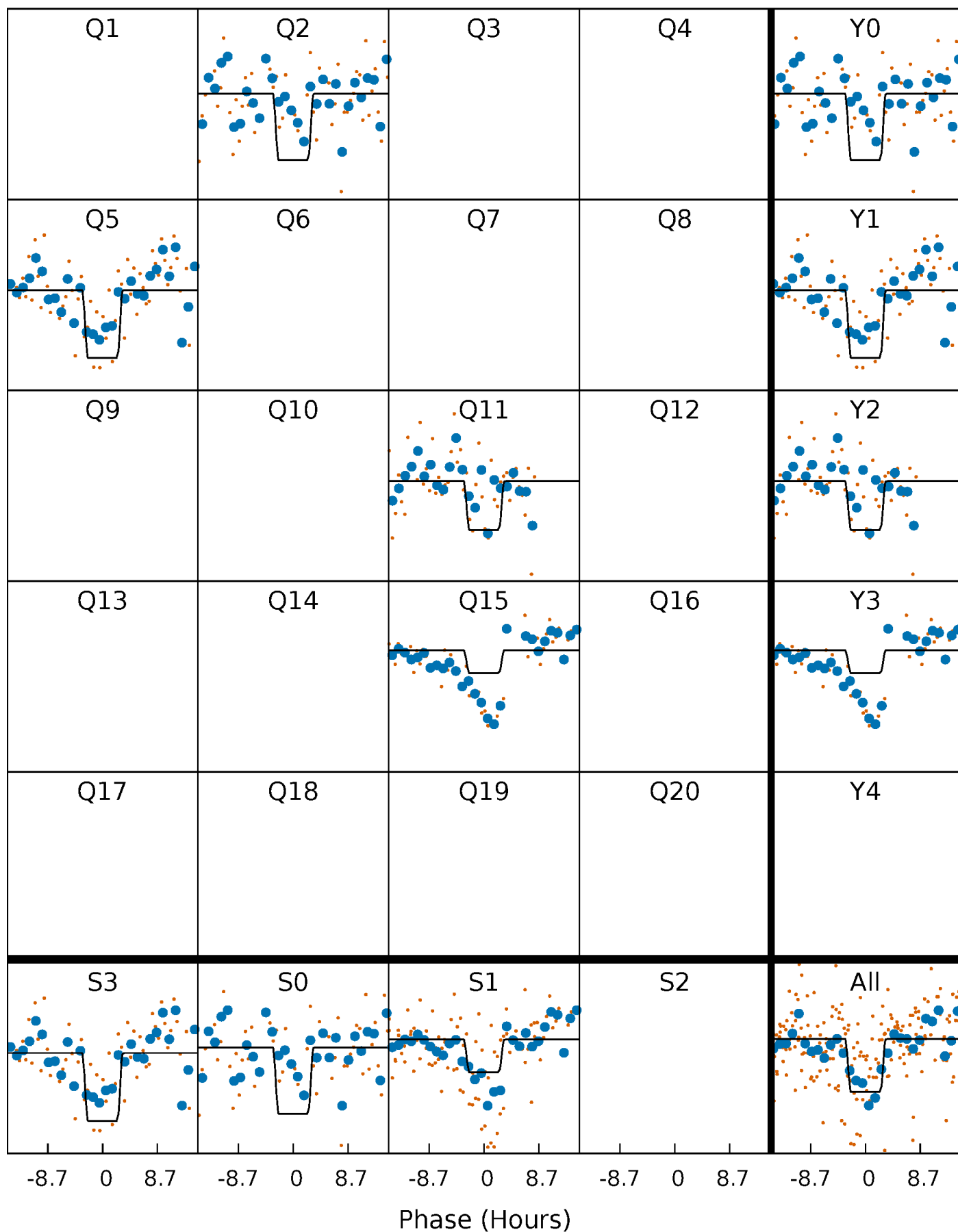
DV Quarter-Phased Transit Curves

TCE 003352523-01 P=286.715906 Days $T_0=232.819264$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

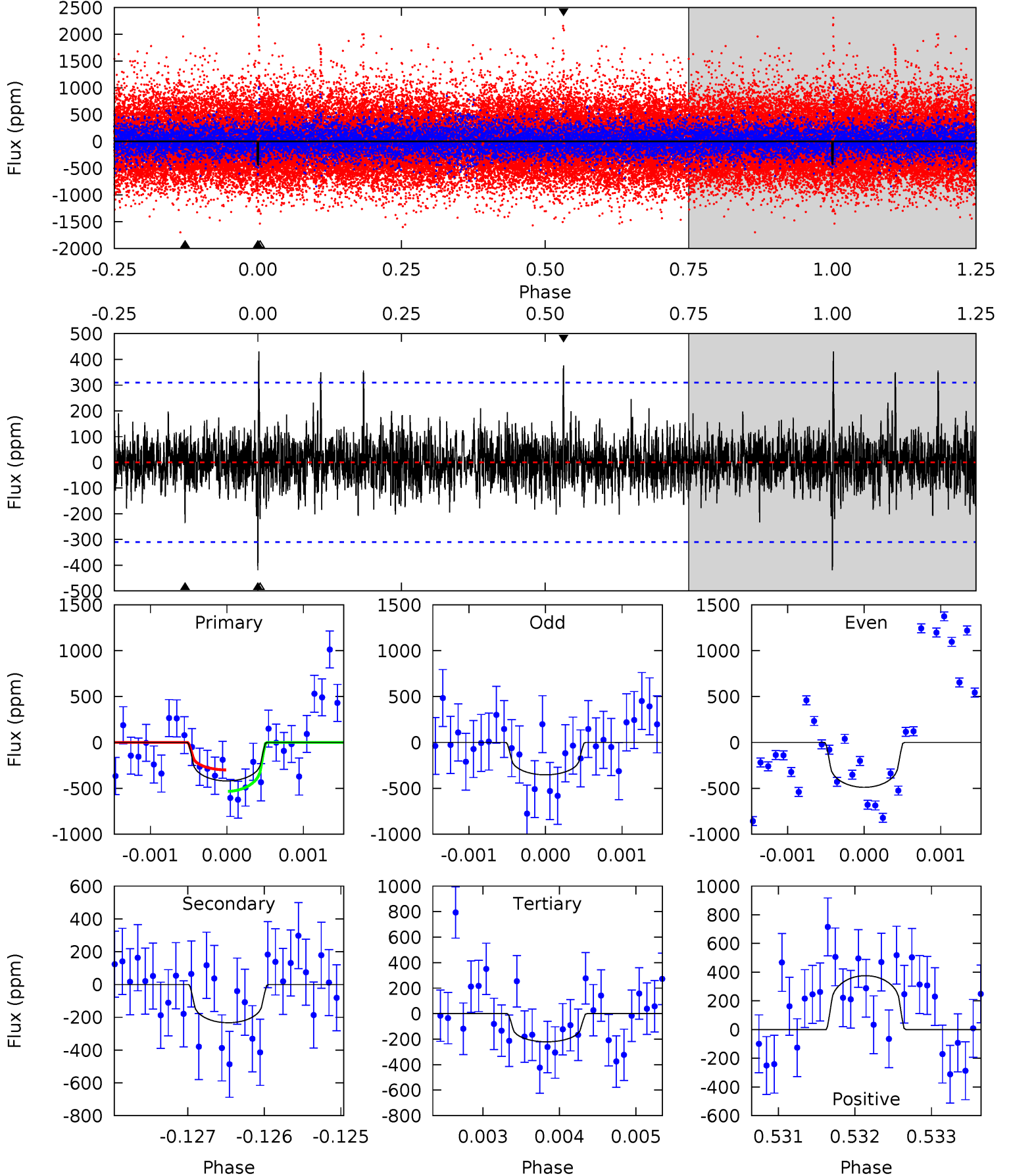
TCE 003352523-01 P=286.730525 Days $T_0=232.793608$ (BKJD)



DV Model-Shift Uniqueness Test

003352523-01, P = 286.715906 Days, E = 232.819264 Days

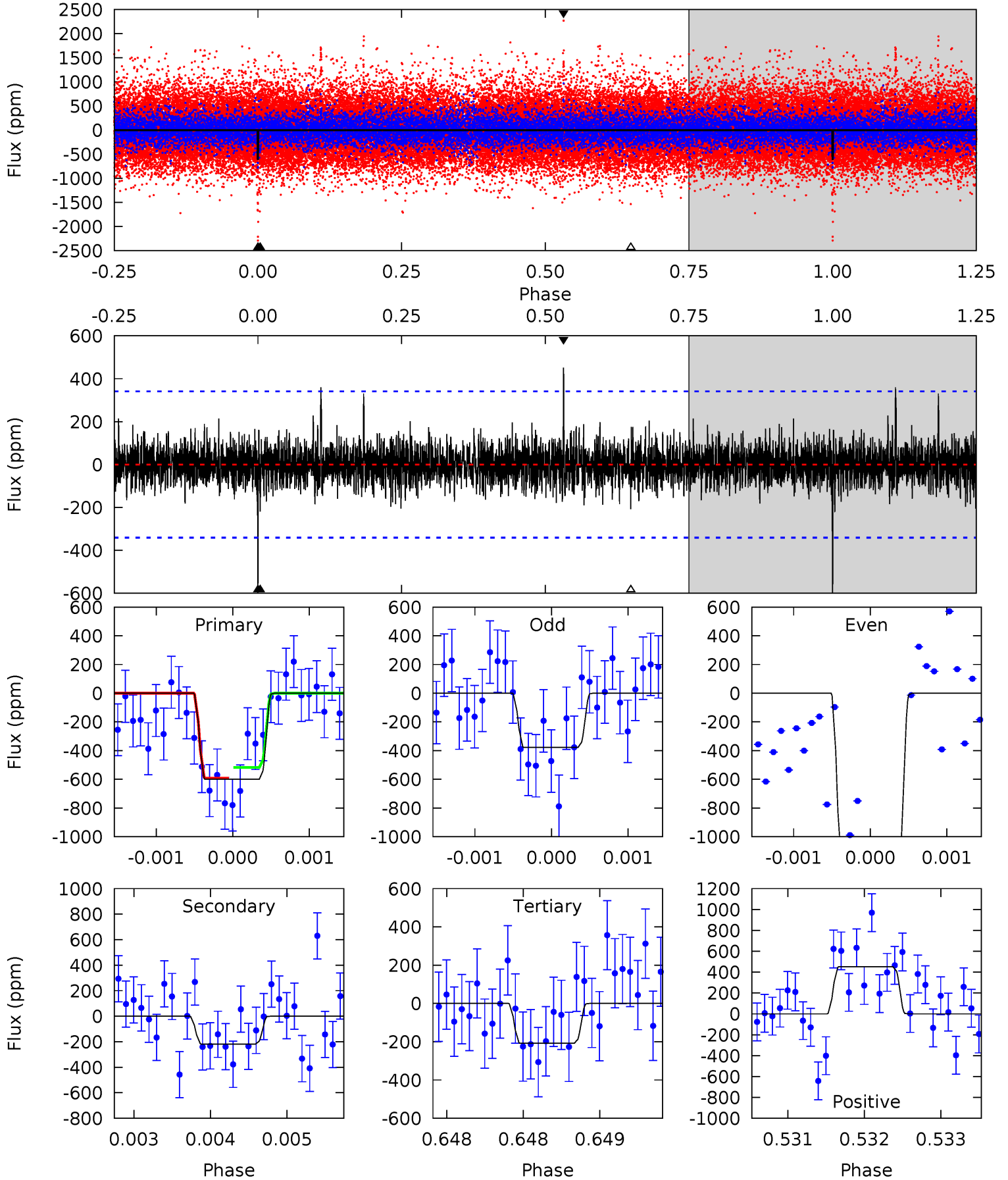
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.37	4.10	3.88	6.60	5.45	3.28	1.22	3.49	0.77	0.22	-2.50	1.20	1.10	0.51	2.05



Alt Model-Shift Uniqueness Test

003352523-01, P = 286.730525 Days, E = 232.793608 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.61	3.50	3.33	7.23	5.46	3.31	1.01	6.28	2.38	0.16	-3.74	7.27	2.07	0.43	0.59



Stellar Parameters For KIC 003352523

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4161^{+111}_{-136}	$4.663^{+0.059}_{-0.023}$	$-0.300^{+0.300}_{-0.300}$	$0.583^{+0.044}_{-0.066}$	$0.571^{+0.062}_{-0.051}$	$4.052^{+1.174}_{-0.449}$
	+3%/-3%	+1%/-0%	+100%/-100%	+8%/-11%	+11%/-9%	+29%/-11%
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 003352523-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-233 ± 57	$2.44^{+2.31}_{-1.69}$	231^{+8}_{-9}	3077^{+1417}_{-515}	$11206^{+103887}_{-8419}$
Alt.	-218 ± 62	$2.80^{+2.32}_{-1.87}$	231^{+7}_{-8}	2906^{+1224}_{-415}	7267^{+62071}_{-5122}

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

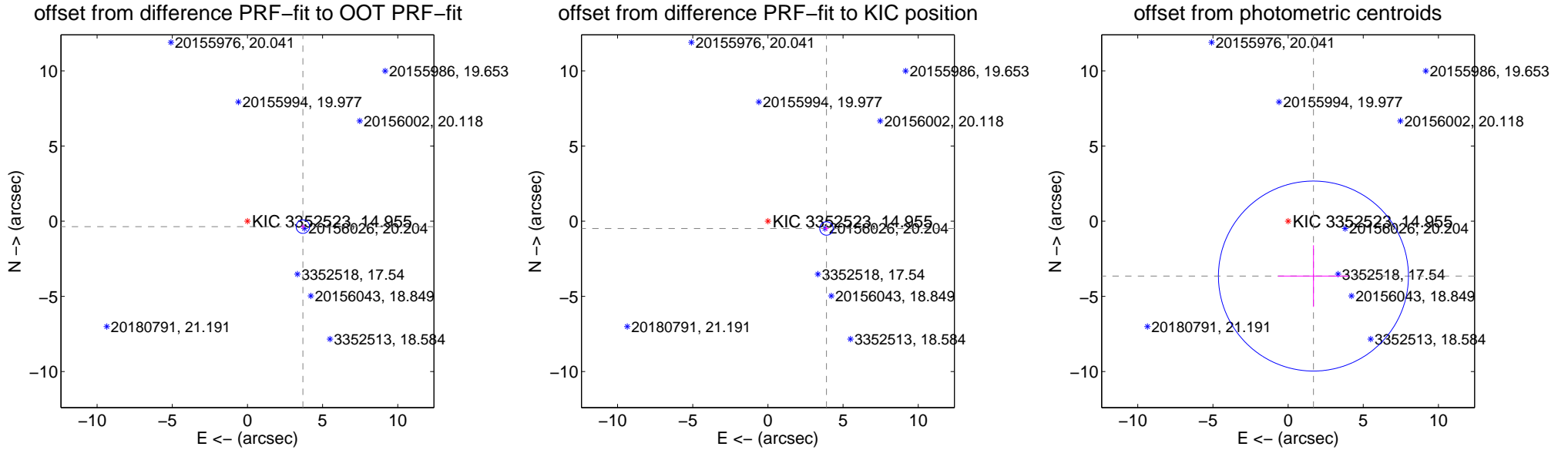
DV Centroid Data

Supplemental centroid analysis for 003352523-01. Kepler magnitude: 14.96. Transit SNR 6.42

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.704 ± 0.149	24.86	-3.687 ± 0.149	-0.362 ± 0.162
PRF-fit source offset from KIC position	3.926 ± 0.149	26.34	-3.897 ± 0.149	-0.483 ± 0.162
photometric centroid source offset	4.02 ± 2.11	1.91	-1.69 ± 2.35	-3.65 ± 2.05



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.

Q13 no difference image



Q13 no OOT image



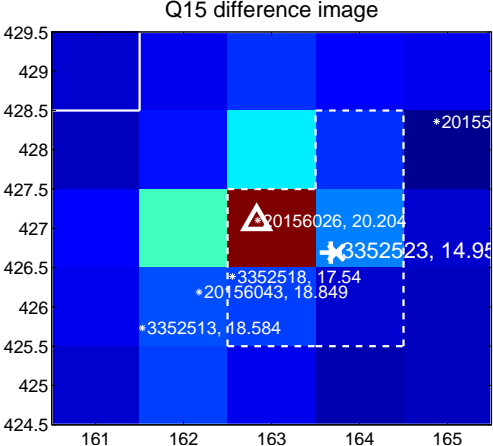
Q14 no difference image



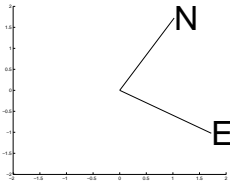
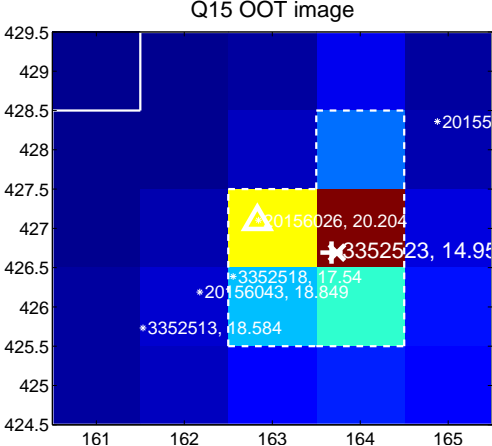
Q14 no OOT image



Q15 difference image



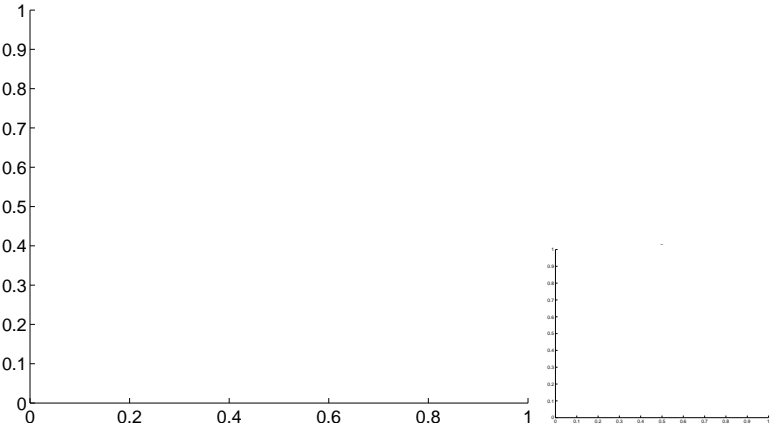
Q15 OOT image



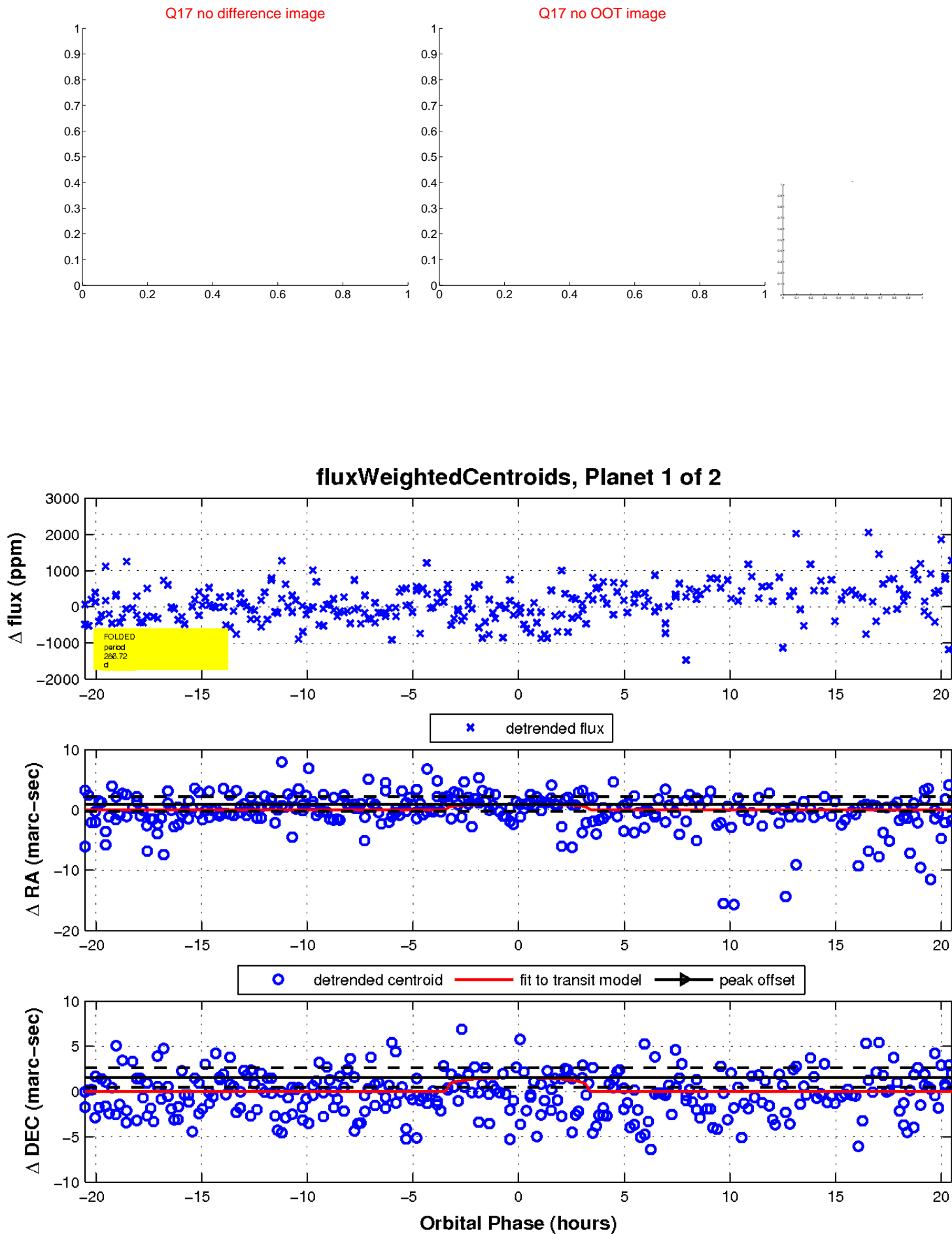
Q16 no difference image



Q16 no OOT image

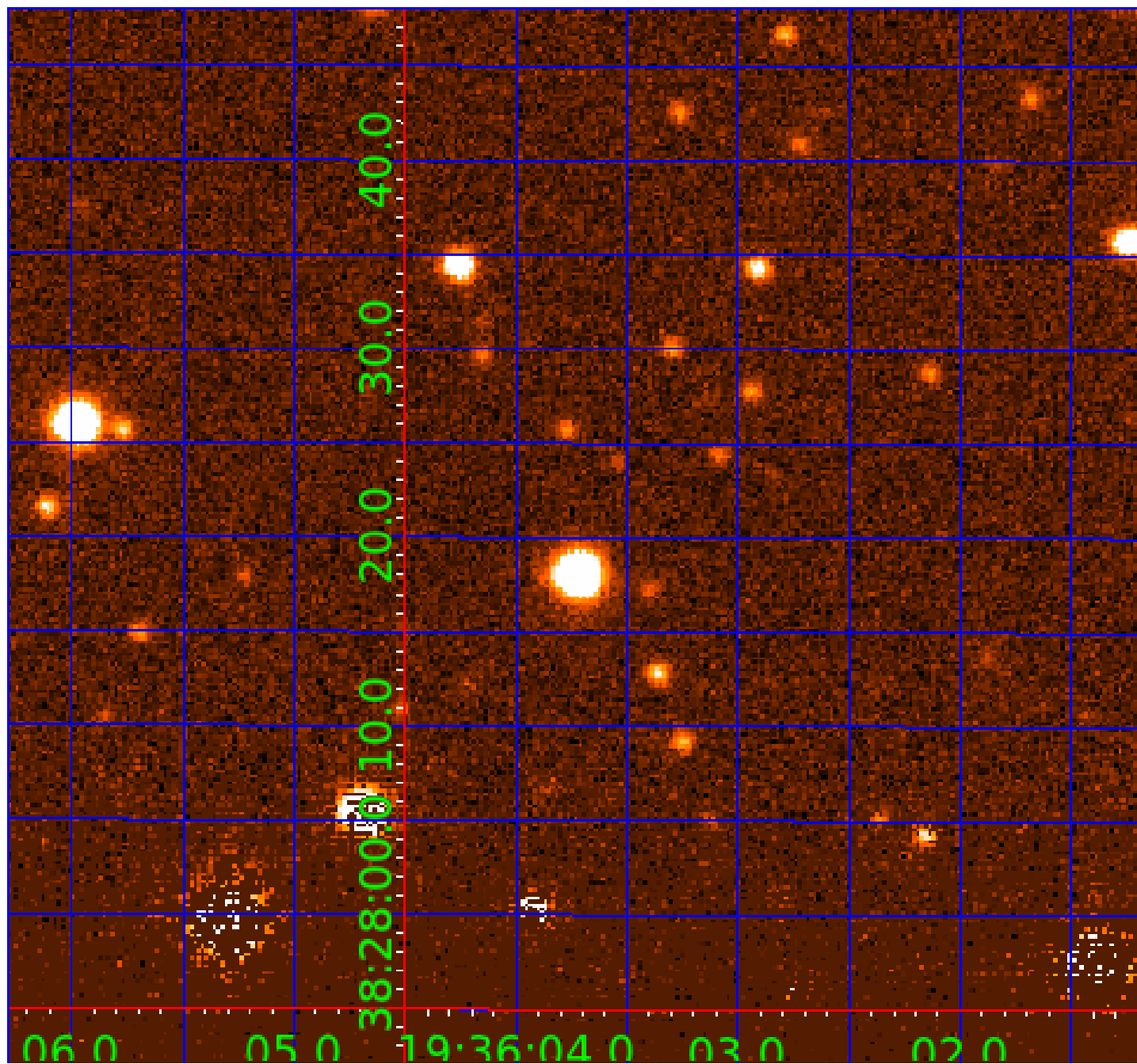


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003352523

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})
003352523-01	OBS	No	286.715906	232.819264	506.3	6.846	9.3	6.4	0.58	4161	1.34	0.18
003352523-02	OBS	No	432.695846	233.230390	502.4	27.305	10.8	6.7	0.58	4161	1.32	0.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003352523-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003352523-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS— HALO_GHOST

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

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

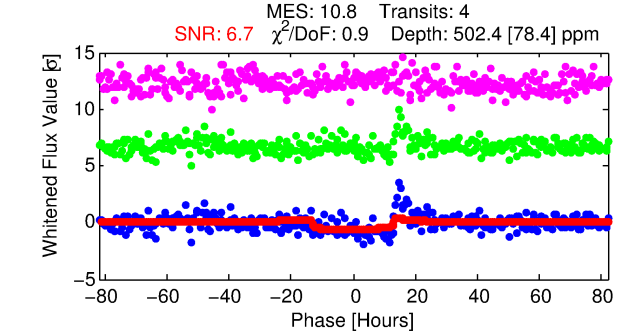
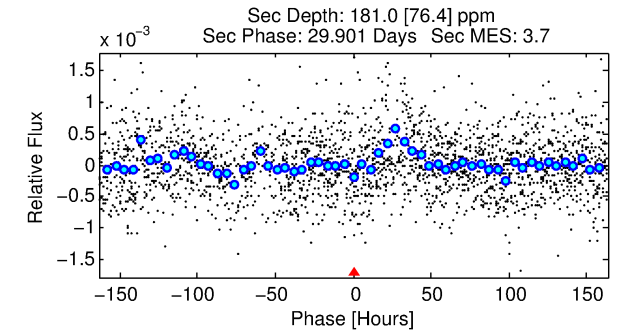
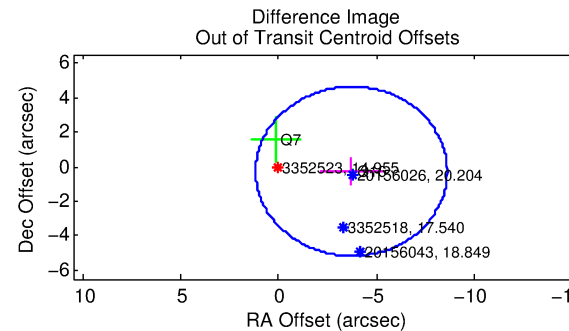
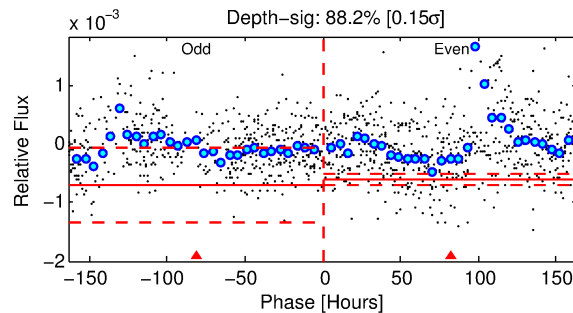
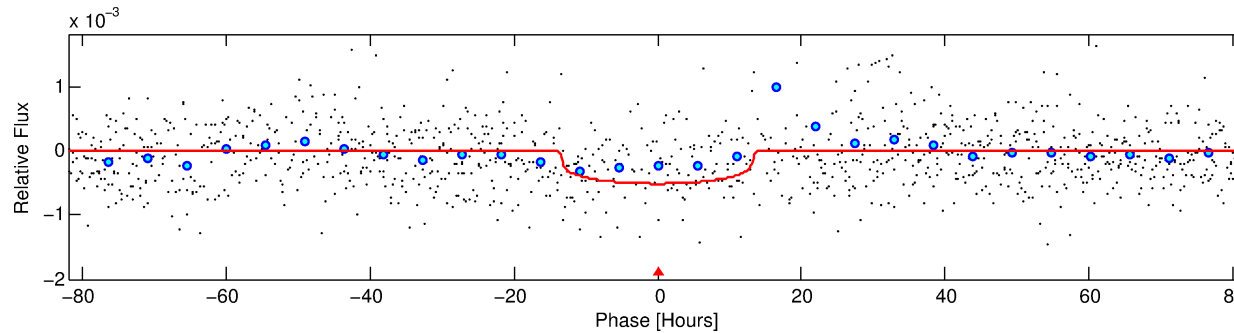
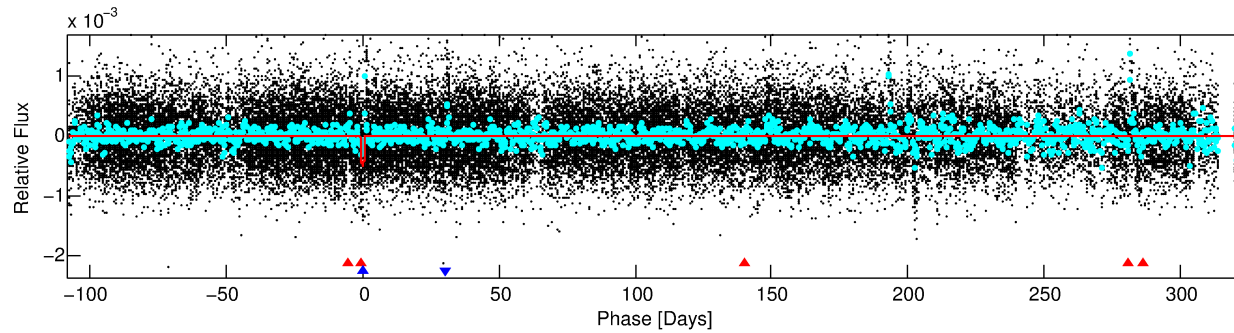
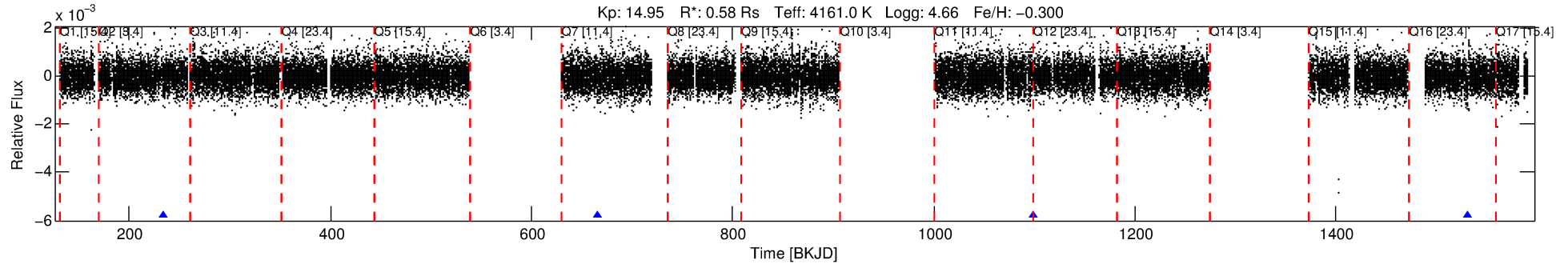
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003352523-02

No Significant Match Found

DV One-Page Summary

KIC: 3352523 Candidate: 2 of 2 Period: 432.696 d



DV Fit Results:

Period = 432.69585 [0.01802] d
Epoch = 233.2304 [0.0360] BKJD
Rp/R* = 0.0208 [0.0097]
a/R* = 107.81 [185.09]
b = 0.50 [2.60]
Seff = 0.11 [0.02]
Teq = 145 [6] K
Rp = 1.32 [0.64] Re
a = 0.9288 [0.0818] AU
Ag = 49018.44 [50531.44] [0.97 σ]
Teffp = 3346 [864] K [3.71 σ]

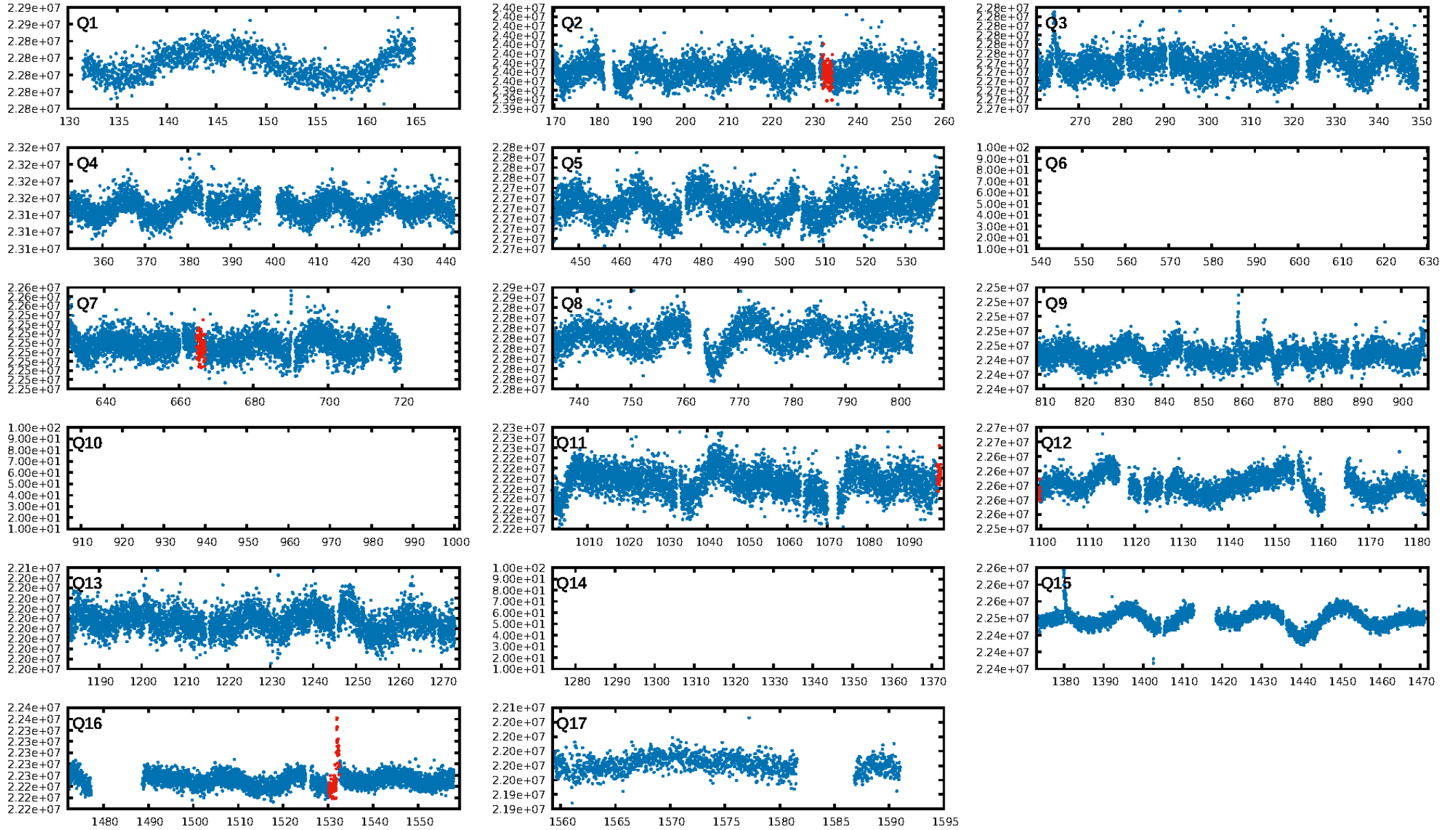
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [124.46 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.24e-16
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.1708
Centroid-sig: 30.8%
Centroid-so: 1.444 arcsec [0.99 σ]
OotOffset-rm: 3.735 arcsec [2.29 σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-rm: 3.865 arcsec [3.89 σ]
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DiffImageOverlap-fno: 1.00 [2/2]

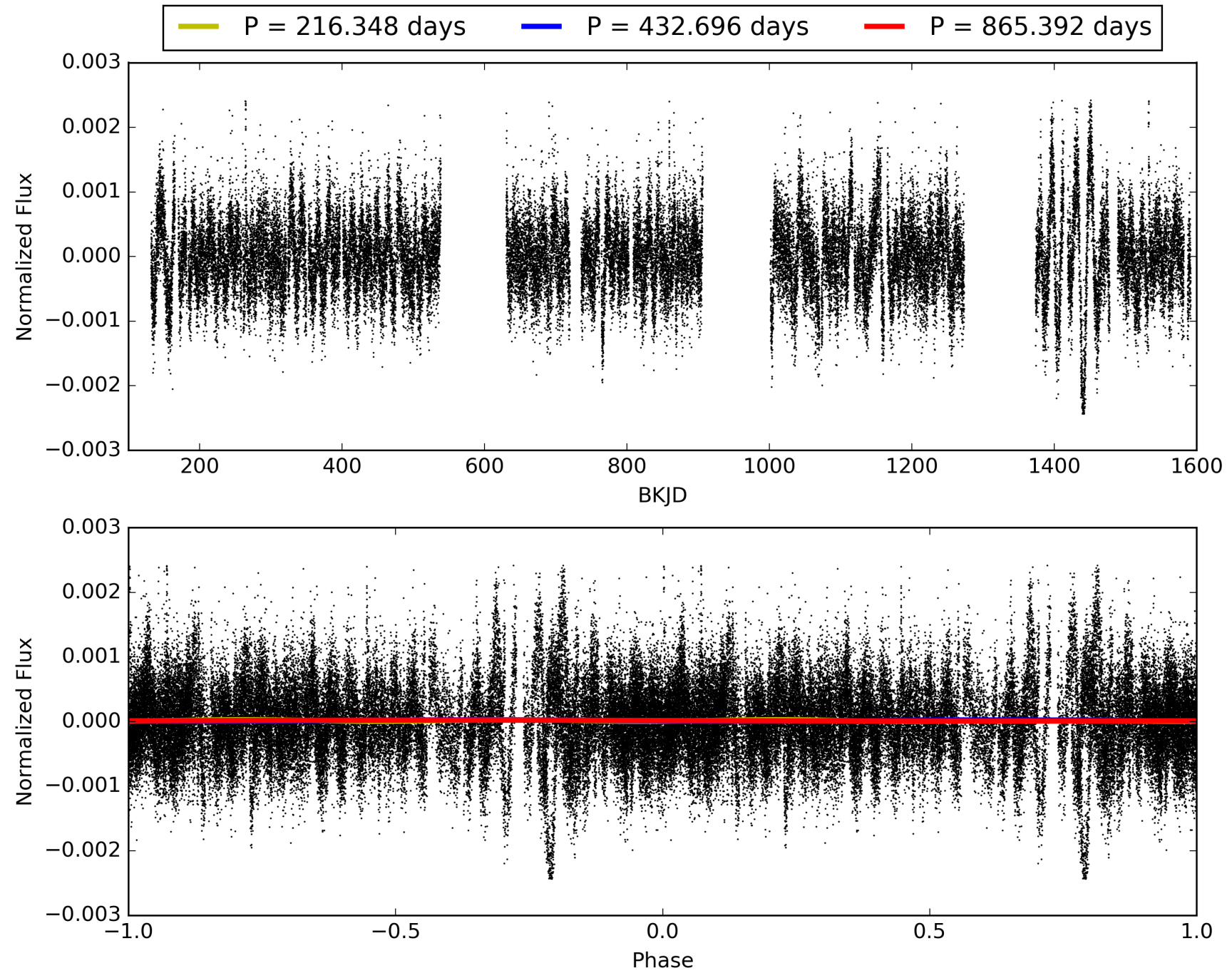
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:43:10 Z

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

TCE 003352523-02, PDC Light Curves

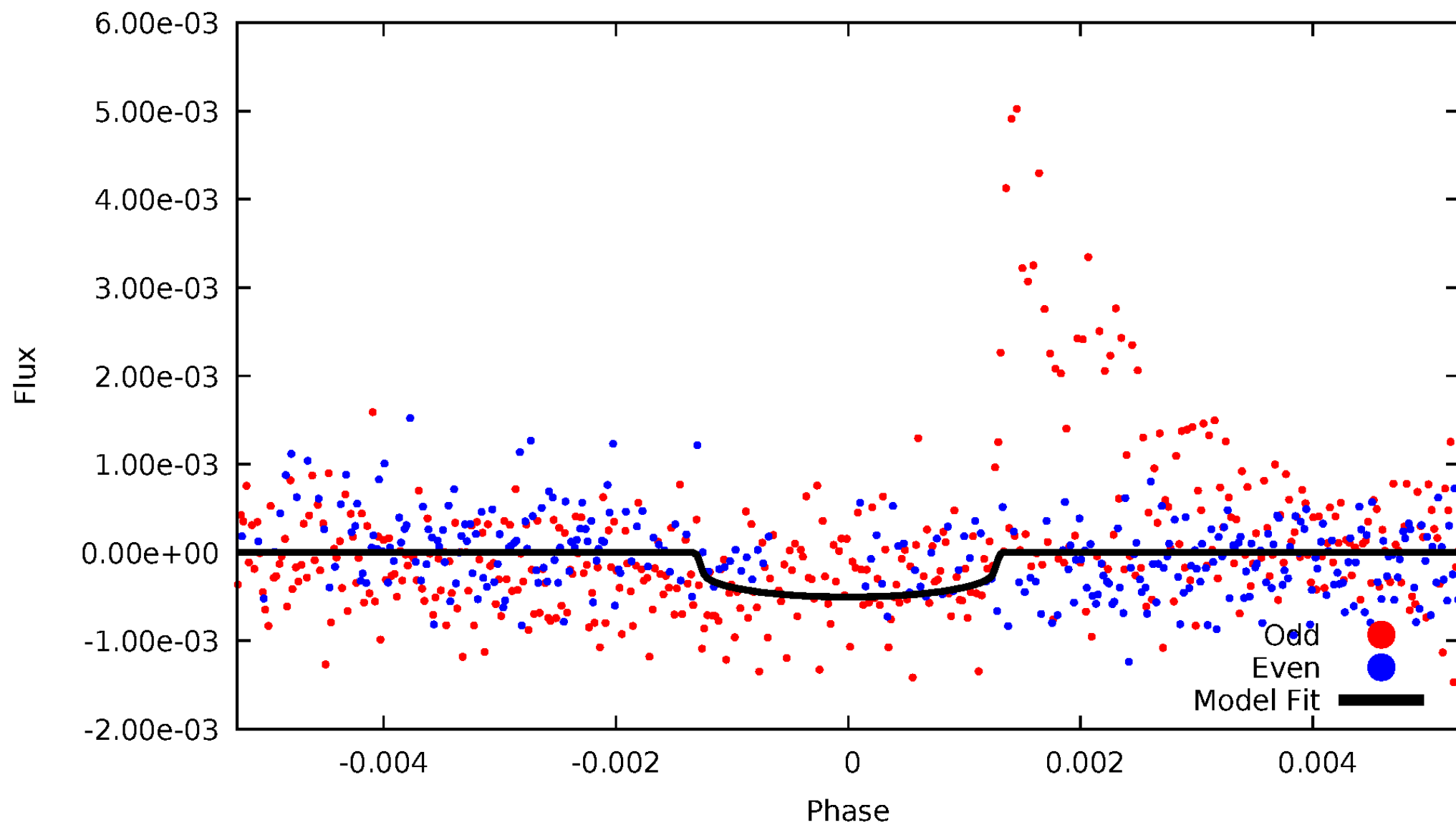


TCE 003352523-02



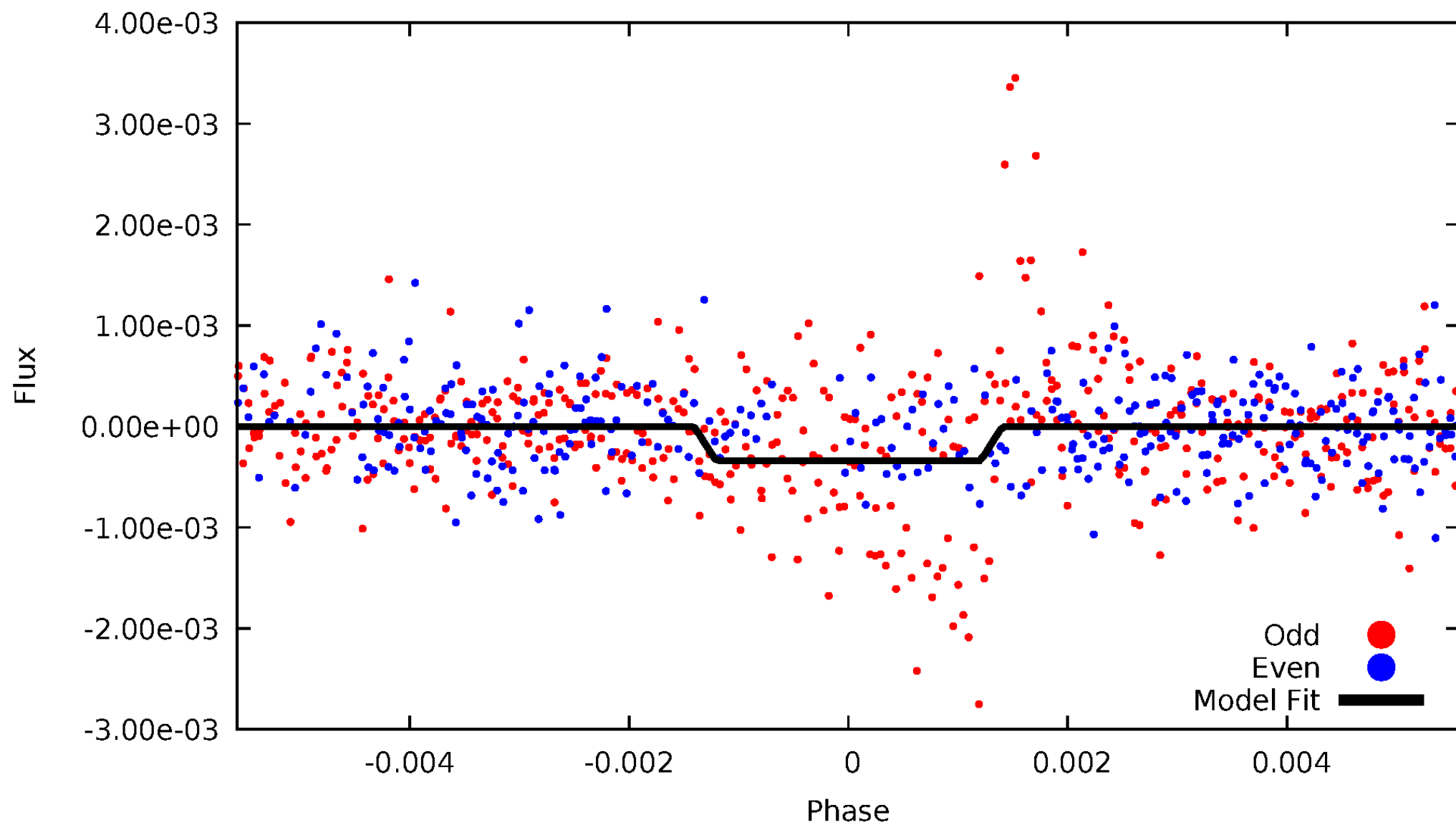
DV Odd/Even

TCE 003352523-02



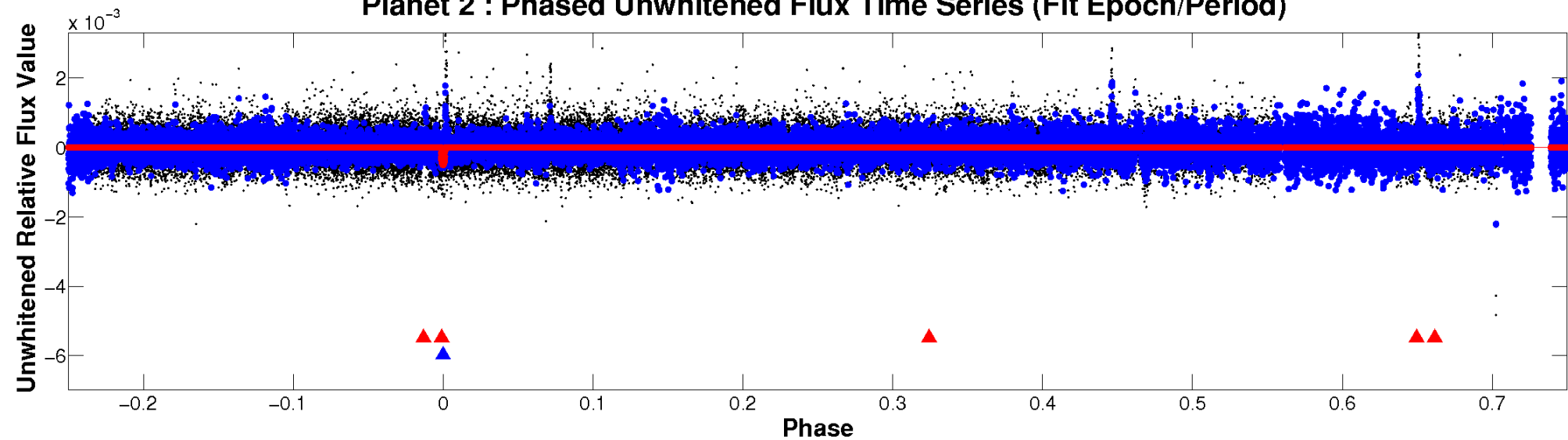
ALT Odd/Even

TCE 003352523-02

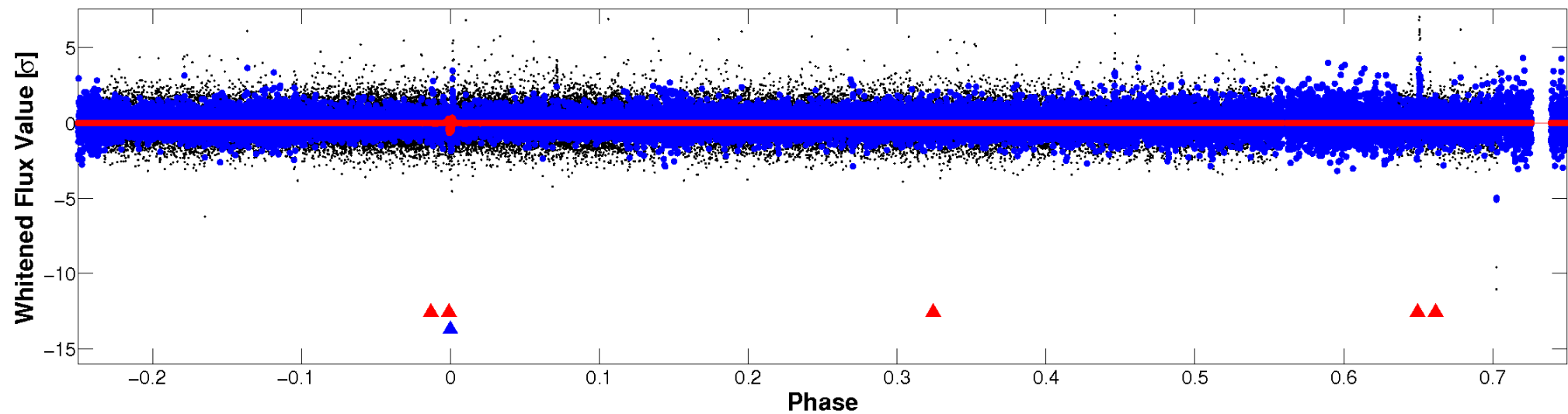


Non-Whitened Vs. Whitened Light Curve

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

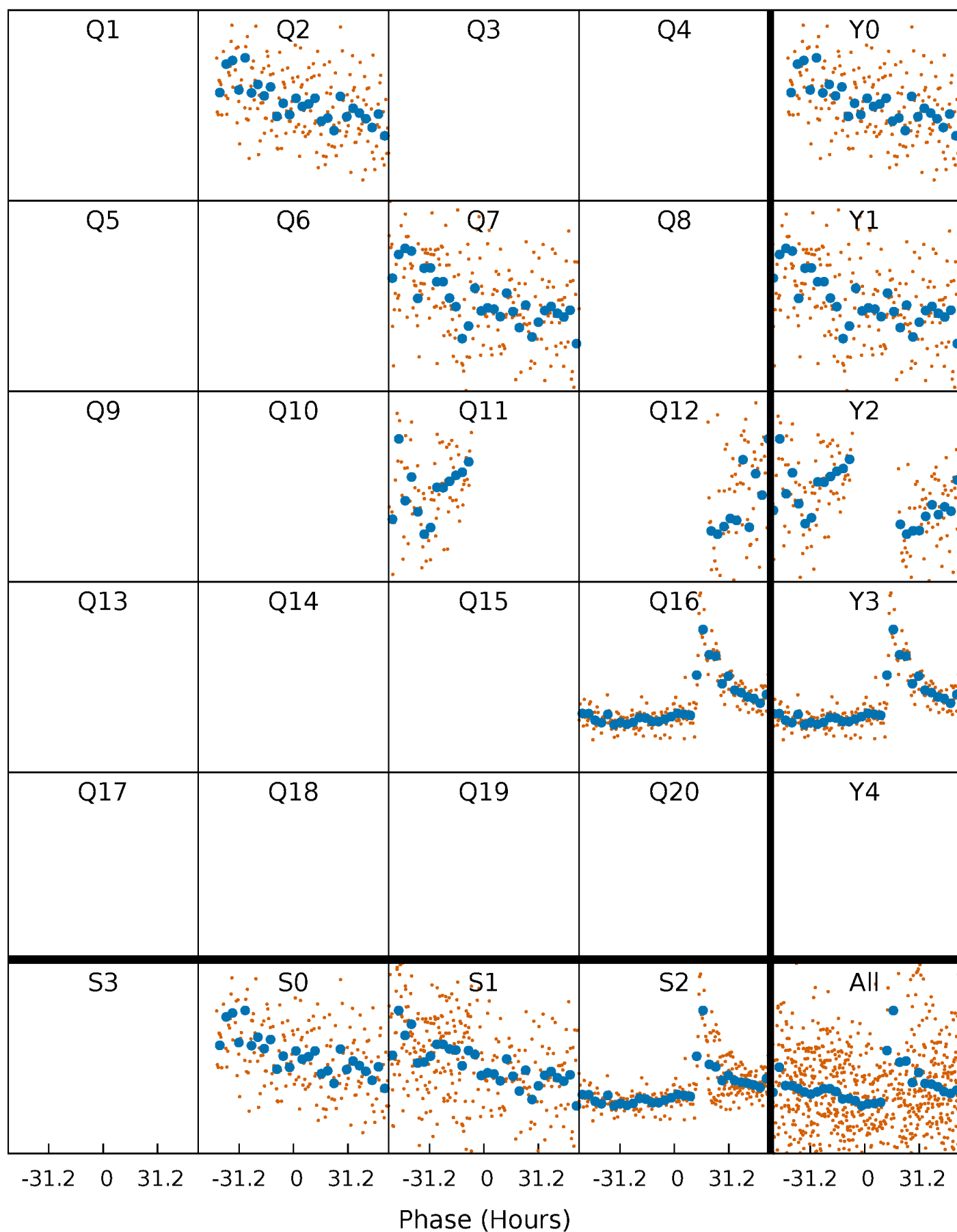


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



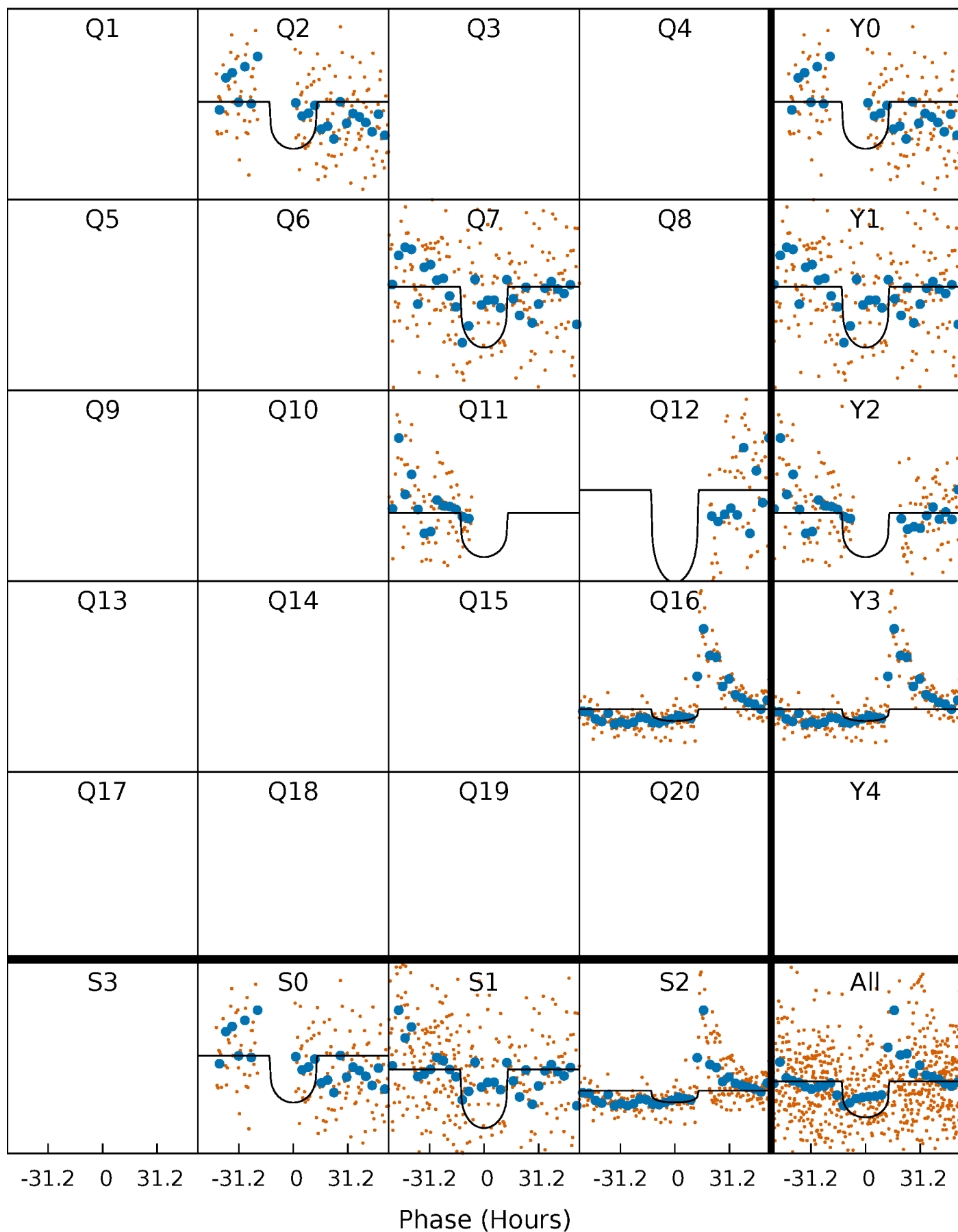
PDC Quarter-Phased Transit Curves

TCE 003352523-02 P=432.695846 Days $T_0=233.230390$ (BKJD)



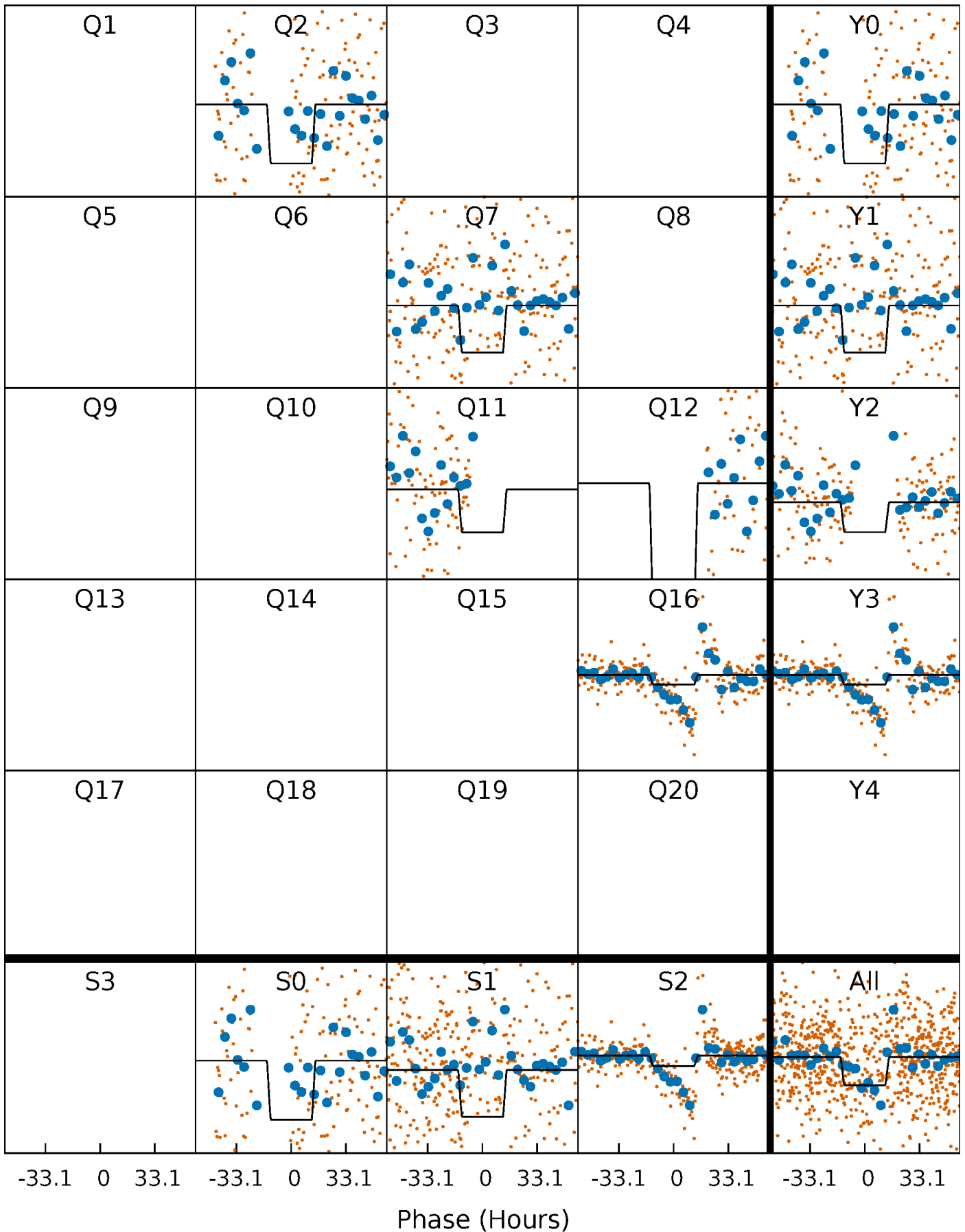
DV Quarter-Phased Transit Curves

TCE 003352523-02 $P=432.695846$ Days $T_0=233.230390$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

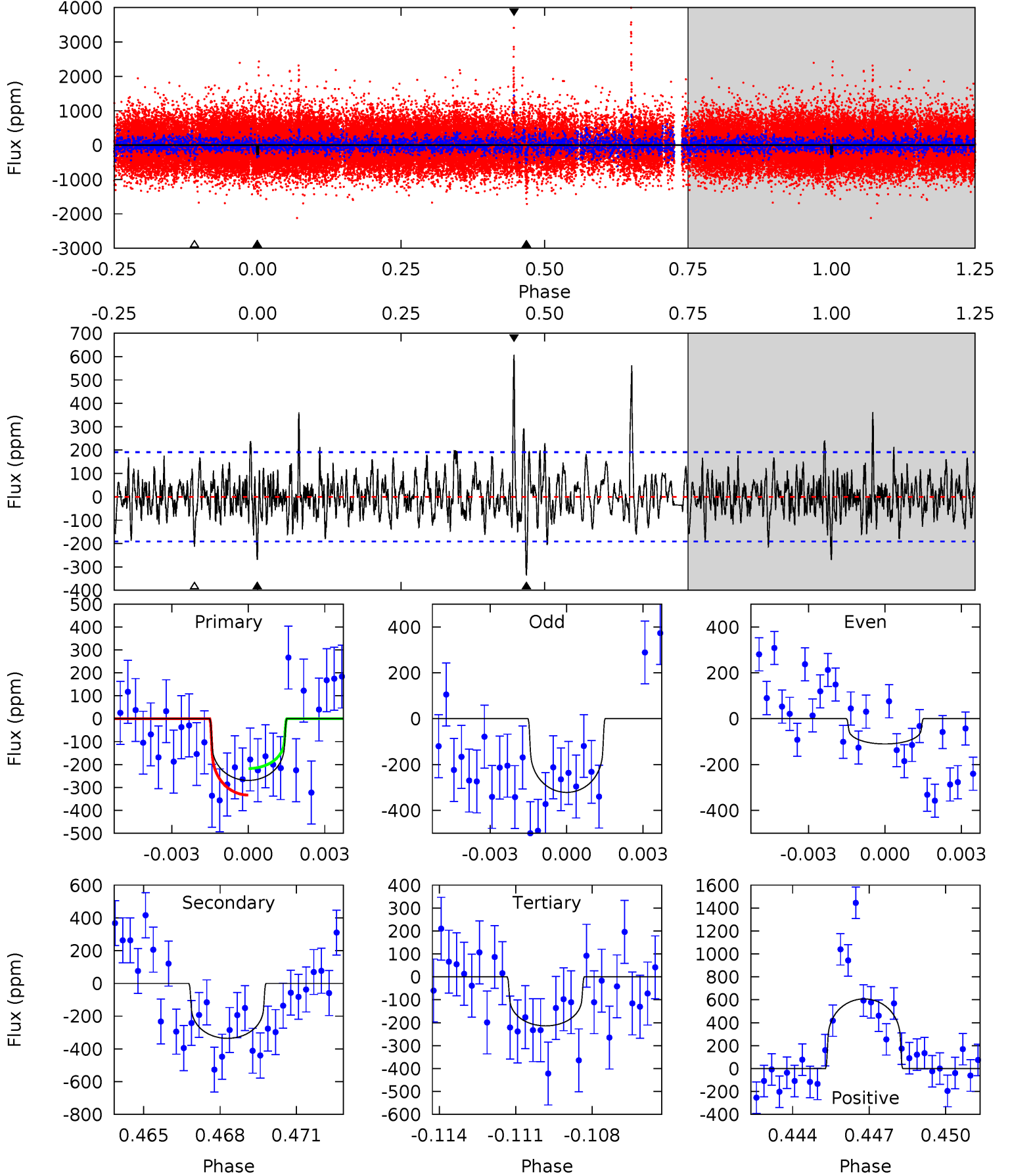
TCE 003352523-02 P=432.660199 Days $T_0=233.307181$ (BKJD)



DV Model-Shift Uniqueness Test

003352523-02, P = 432.695846 Days, E = 233.230390 Days

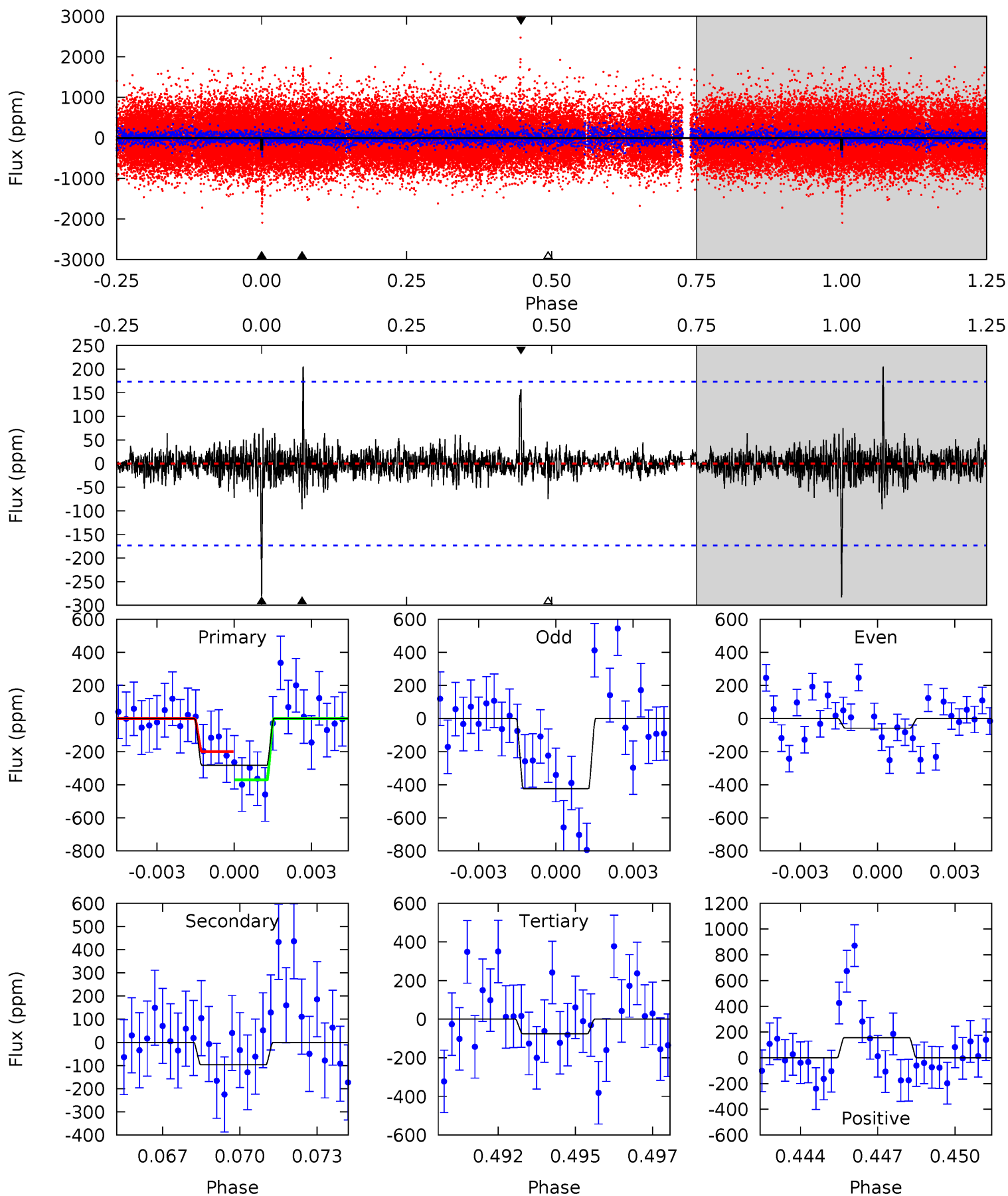
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.44	9.27	5.91	16.8	5.28	3.01	2.21	1.53	-9.33	3.36	-7.50	2.61	1.36	0.64	1.60



Alt Model-Shift Uniqueness Test

003352523-02, P = 432.660199 Days, E = 233.307181 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.59	2.94	2.28	4.77	5.27	2.99	0.62	6.31	3.82	0.66	-1.83	5.02	9.13	0.42	2.59



Stellar Parameters For KIC 003352523

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4161^{+111}_{-136}	$4.663^{+0.059}_{-0.023}$	$-0.300^{+0.300}_{-0.300}$	$0.583^{+0.044}_{-0.066}$	$0.571^{+0.062}_{-0.051}$	$4.052^{+1.174}_{-0.449}$
	+3%/-3%	+1%/-0%	+100%/-100%	+8%/-11%	+11%/-9%	+29%/-11%
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 003352523-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-336 ± 36	$1.33^{+0.59}_{-0.64}$	202^{+6}_{-7}	3925^{+1139}_{-442}	$90281^{+244617}_{-48312}$
Alt.	-97 ± 33	$1.18^{+0.61}_{-0.56}$	201^{+6}_{-7}	3343^{+842}_{-437}	32984^{+91005}_{-20002}

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 $A_{obs} \gg 1.0$

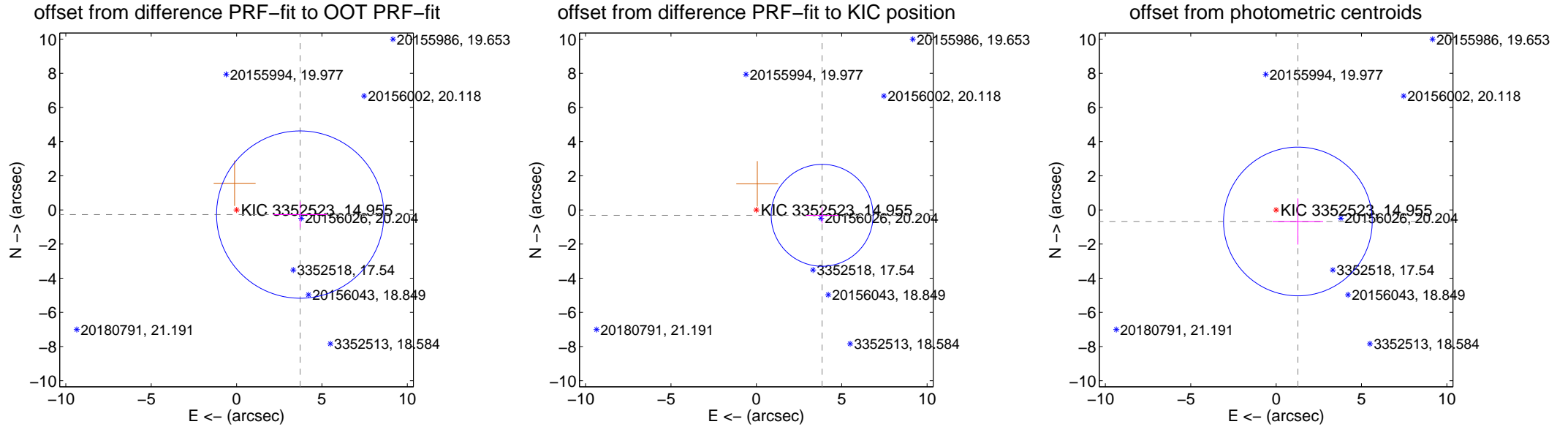
DV Centroid Data

Supplemental centroid analysis for 003352523-02. Kepler magnitude: 14.96. Transit SNR 6.74

There are 1 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.735 ± 1.633	2.29	-3.725 ± 1.582	-0.273 ± 0.755
PRF-fit source offset from KIC position	3.865 ± 0.994	3.89	-3.852 ± 0.960	-0.316 ± 0.468
photometric centroid source offset	1.44 ± 1.45	0.99	-1.28 ± 1.48	-0.68 ± 1.35



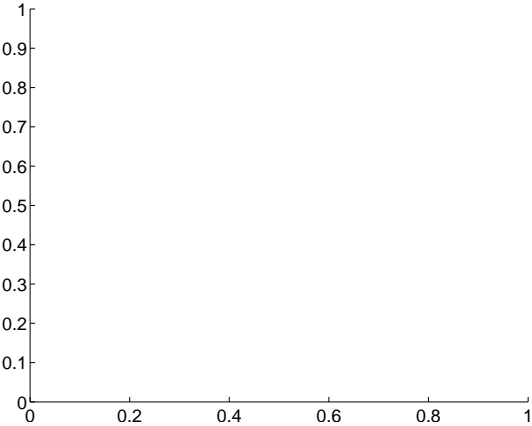
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

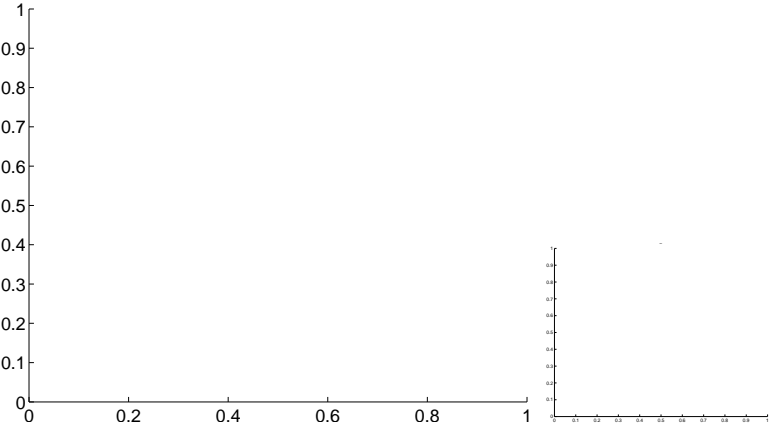


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

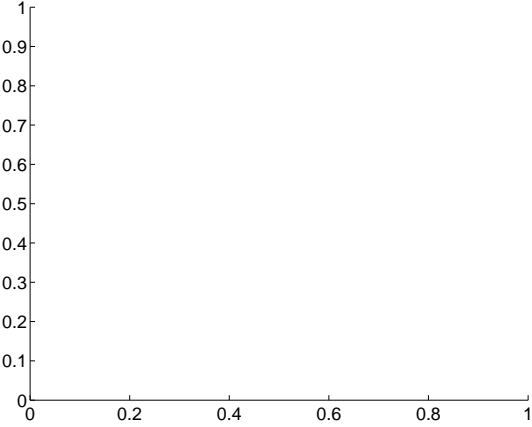
Q5 no difference image



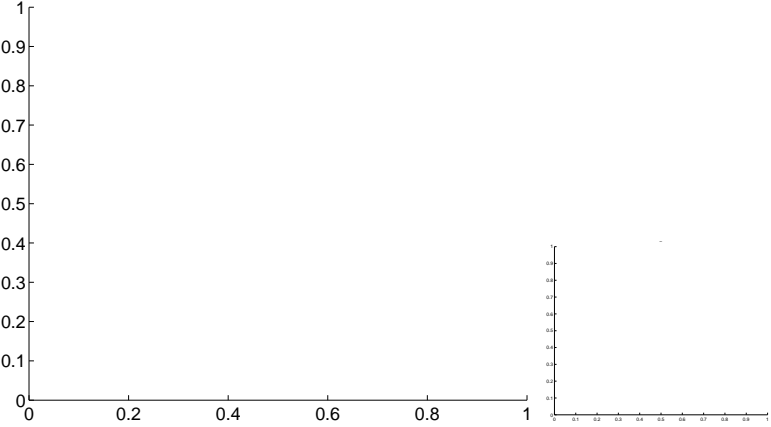
Q5 no OOT image



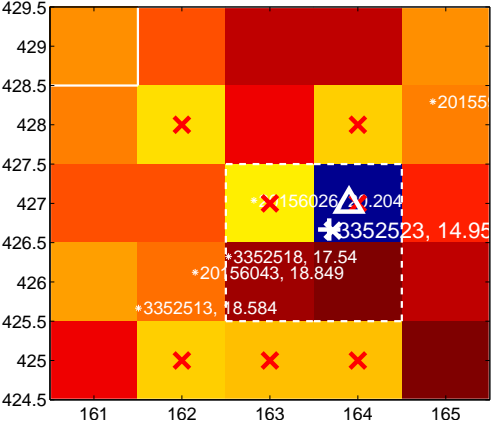
Q6 no difference image



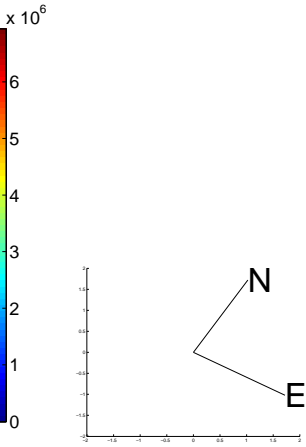
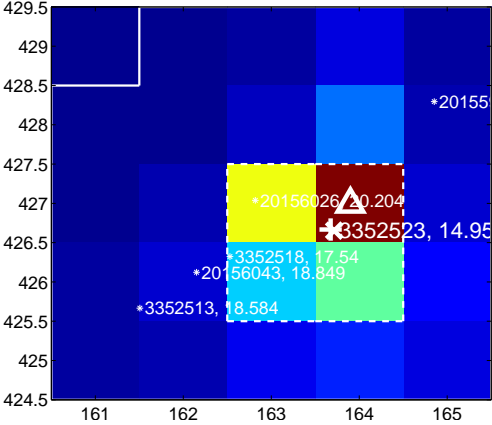
Q6 no OOT image



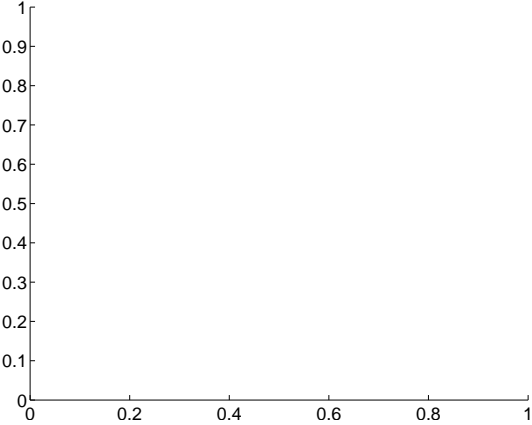
Q7 difference image. Poor Quality



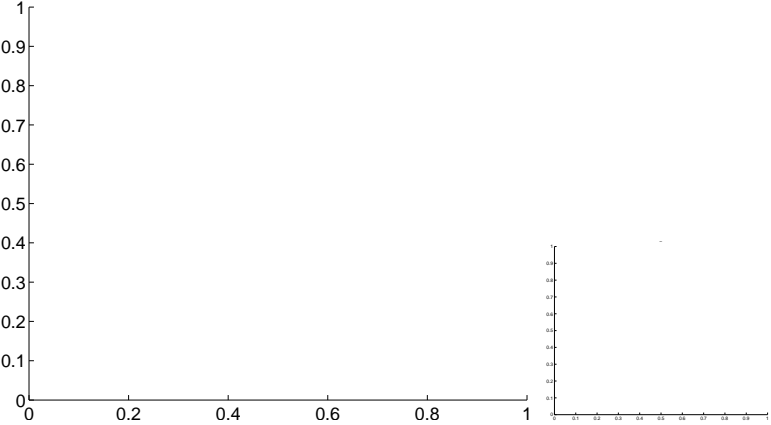
Q7 OOT image



Q8 no difference image



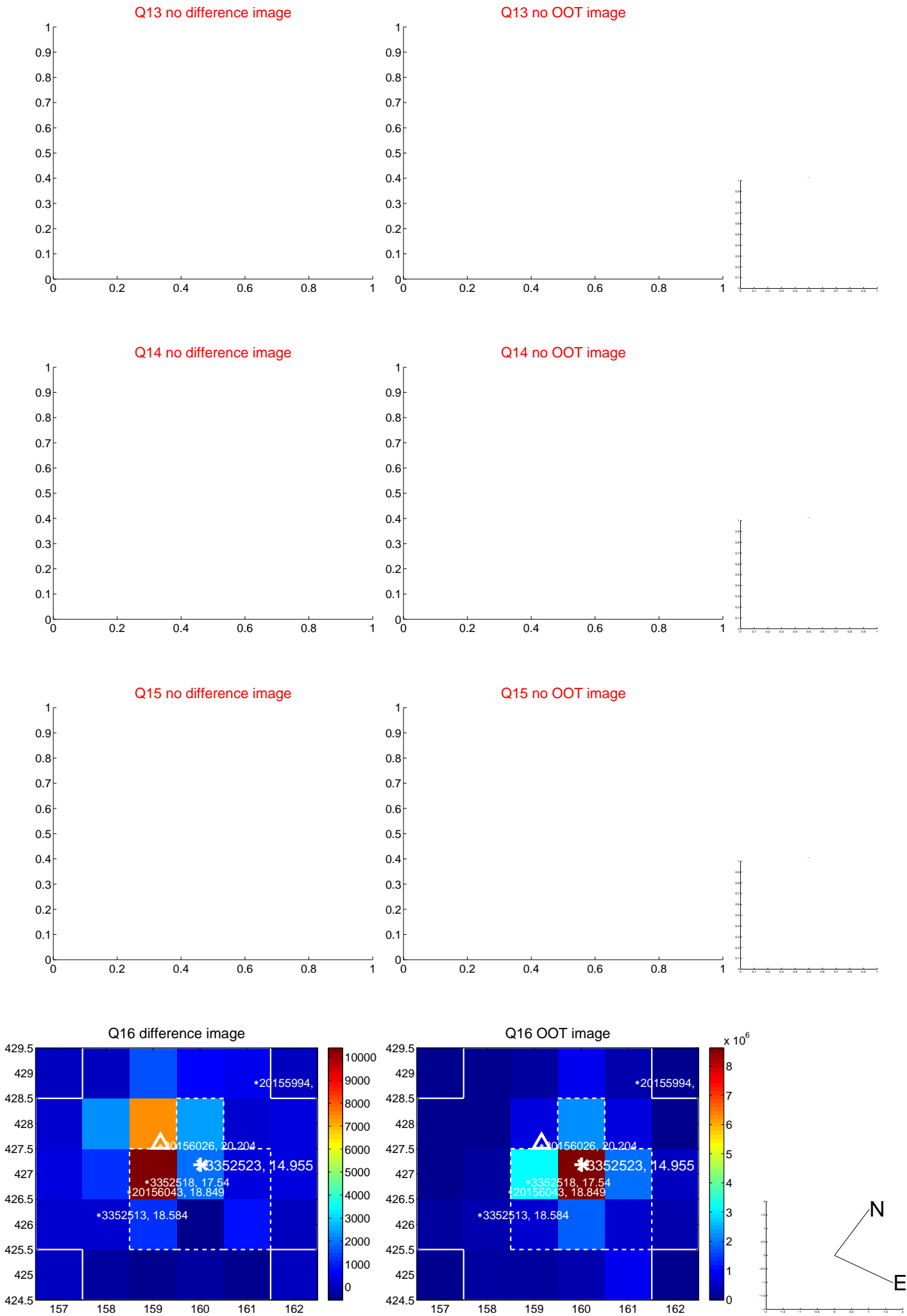
Q8 no OOT image



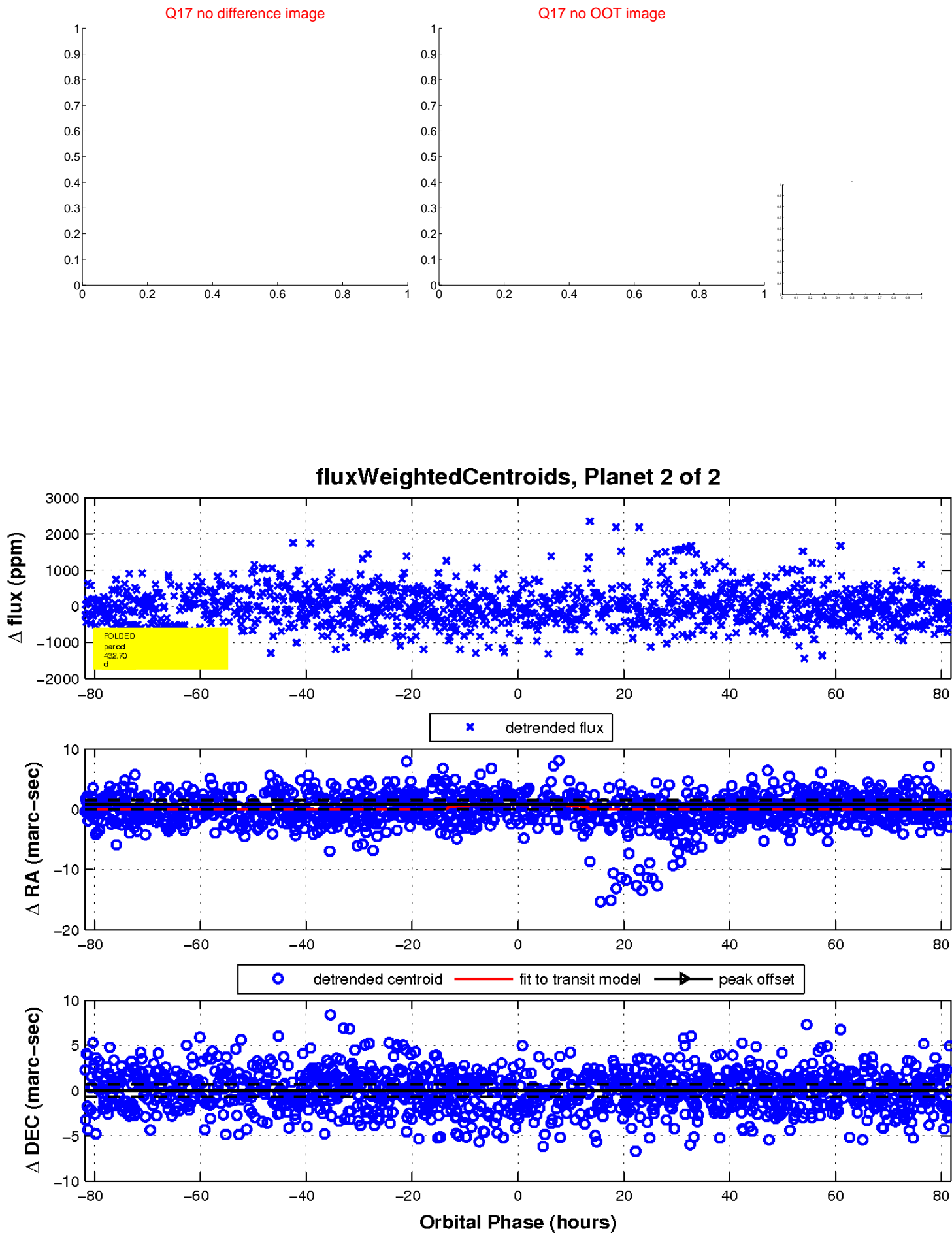
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

