

KIC 008565204

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})
008565204-01	OBS	No	341.616702	262.475875	999.1	9.714	10.8	5.8	0.32	3435	1.03	0.03
008565204-02	OBS	No	343.328794	326.391217	1511.5	3.413	10.8	8.3	0.32	3435	1.24	0.03

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008565204-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008565204-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

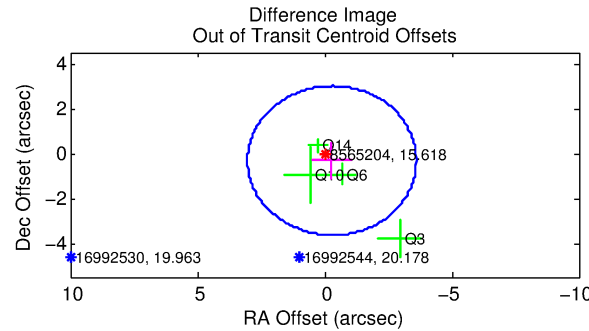
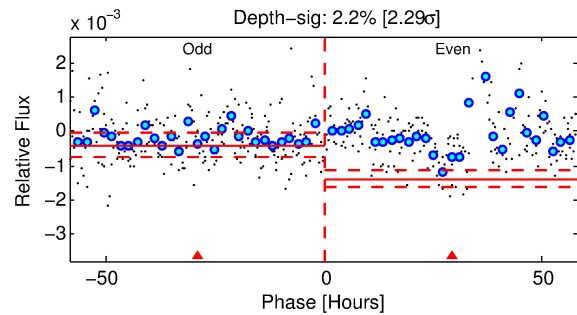
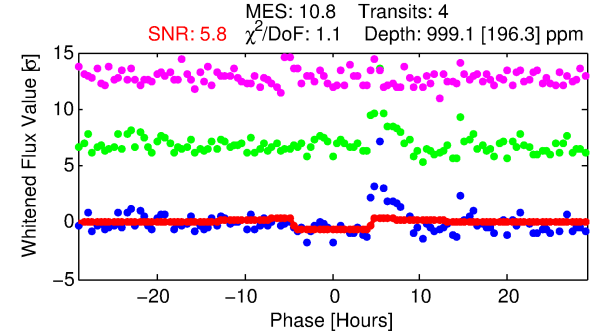
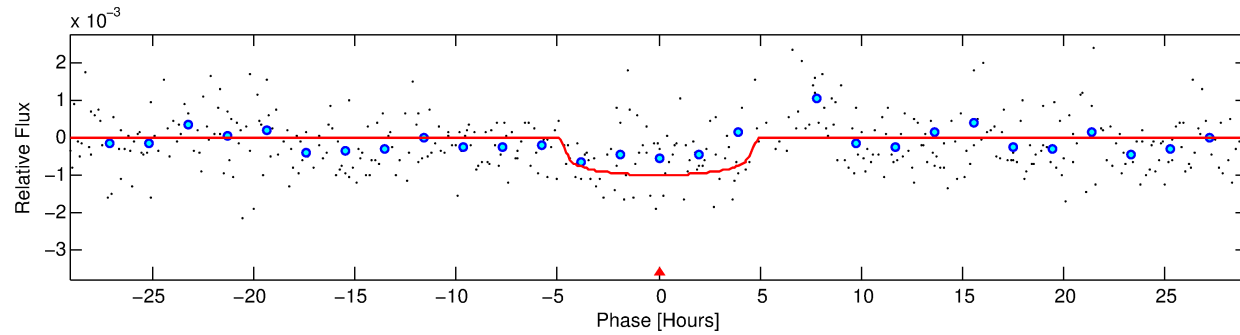
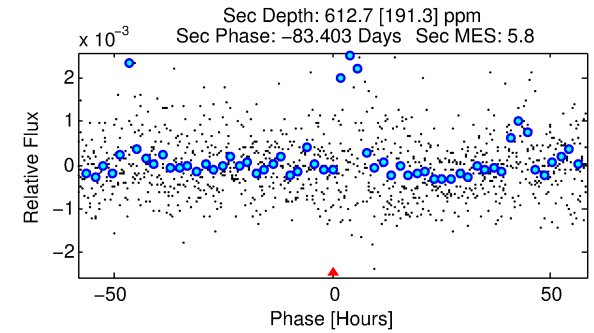
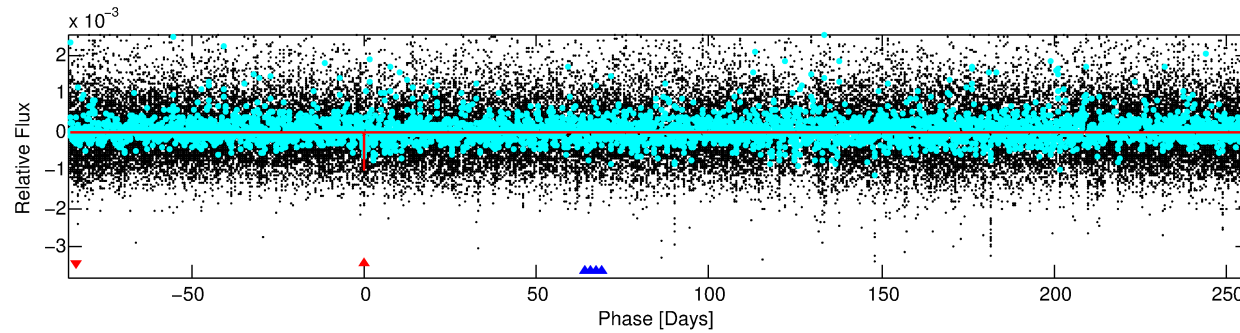
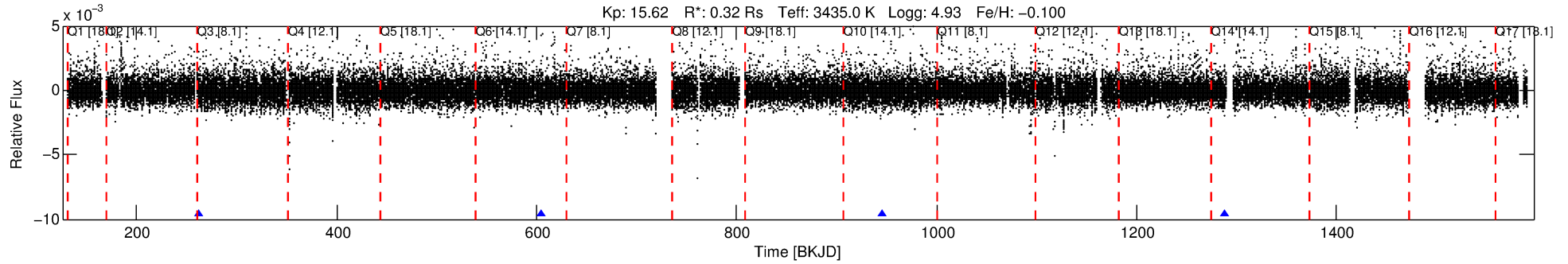
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008565204-01

No Significant Match Found

DV One-Page Summary

KIC: 8565204 Candidate: 1 of 2 Period: 341.617 d



DV Fit Results:

Period = 341.61670 [0.00871] d
Epoch = 262.4759 [0.0174] BKJD
Rp/R* = 0.0298 [0.0181]
a/R* = 233.82 [603.97]
b = 0.55 [3.28]
Seff = 0.03 [0.00]
Teq = 106 [3] K
Rp = 1.03 [0.64] Re
a = 0.6516 [0.0560] AU
Ag = 134015.33 [168872.55] [0.79σ]
Teffp = 3132 [984] K [3.08σ]

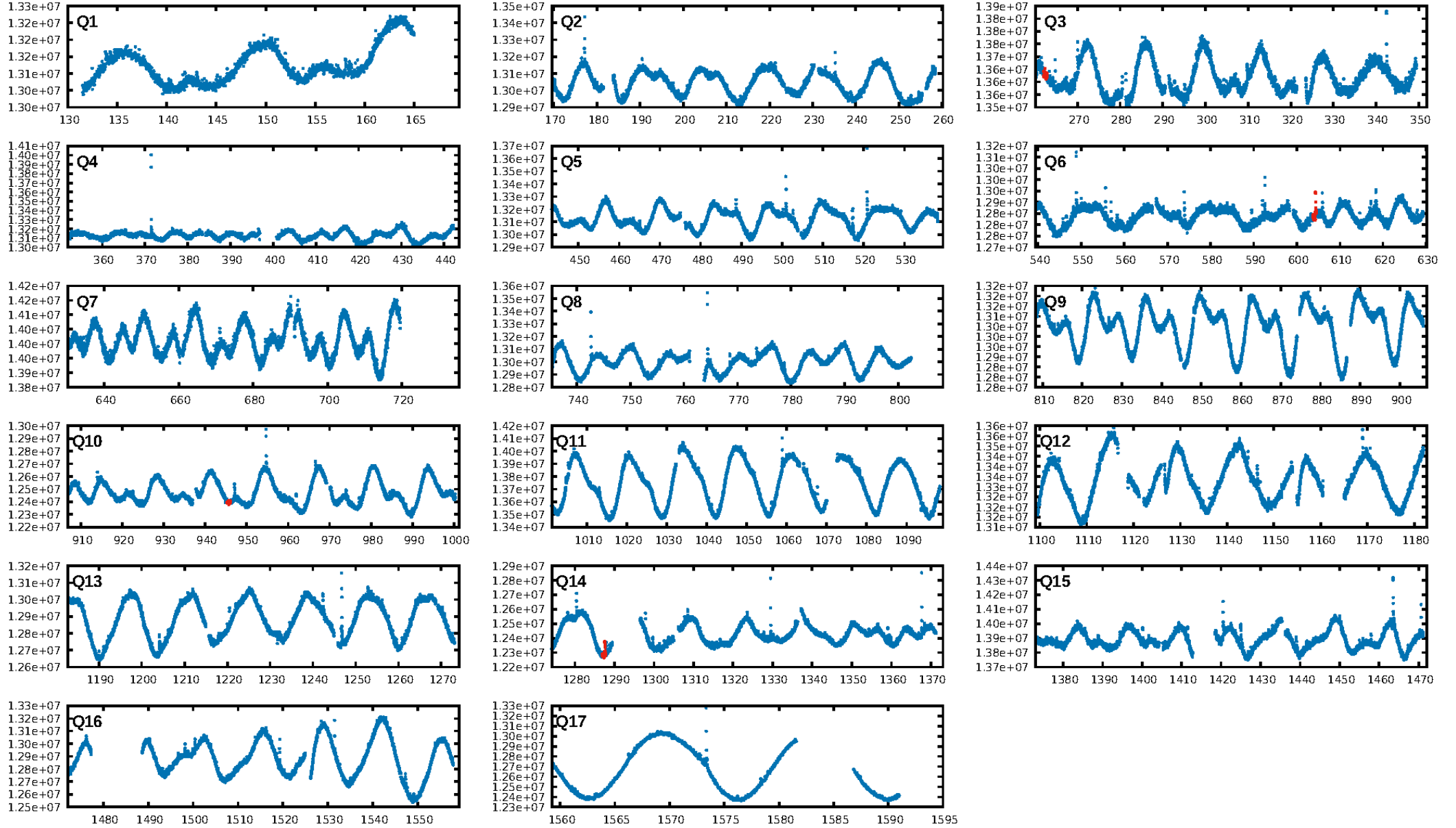
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [3.99σ]
ModelChiSquare2-sig: 9.2%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: 1.14e-11
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.366
Centroid-sig: 89.3%
Centroid-so: 0.287 arcsec [0.30σ]
OotOffset-rm: 0.432 arcsec [0.39σ]
OotOffset-st: 3/1/0/0 [4]
KicOffset-rm: 0.278 arcsec [0.27σ]
KicOffset-st: 3/1/0/0 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [4/4]

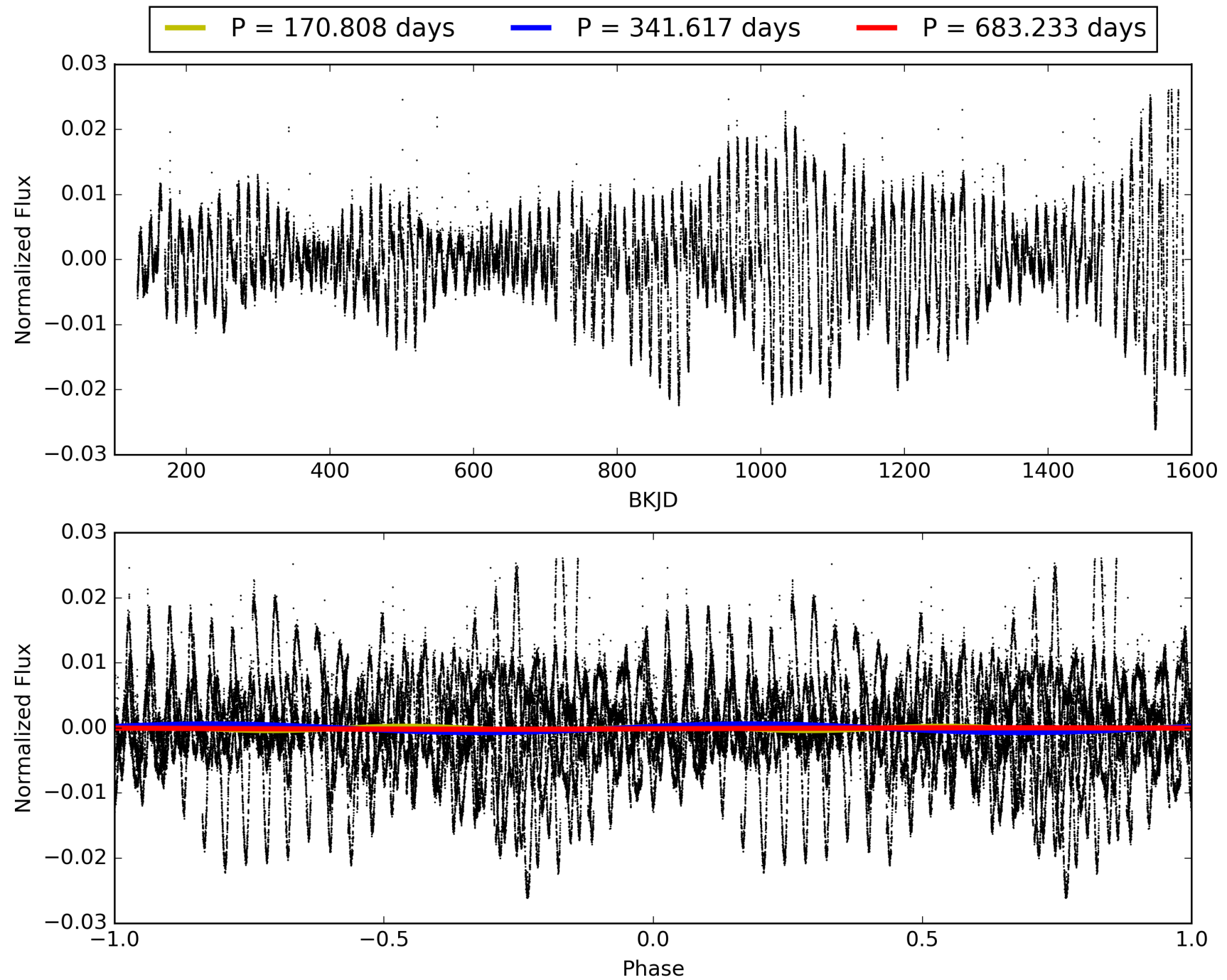
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 03:35:29 Z

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

TCE 008565204-01, PDC Light Curves

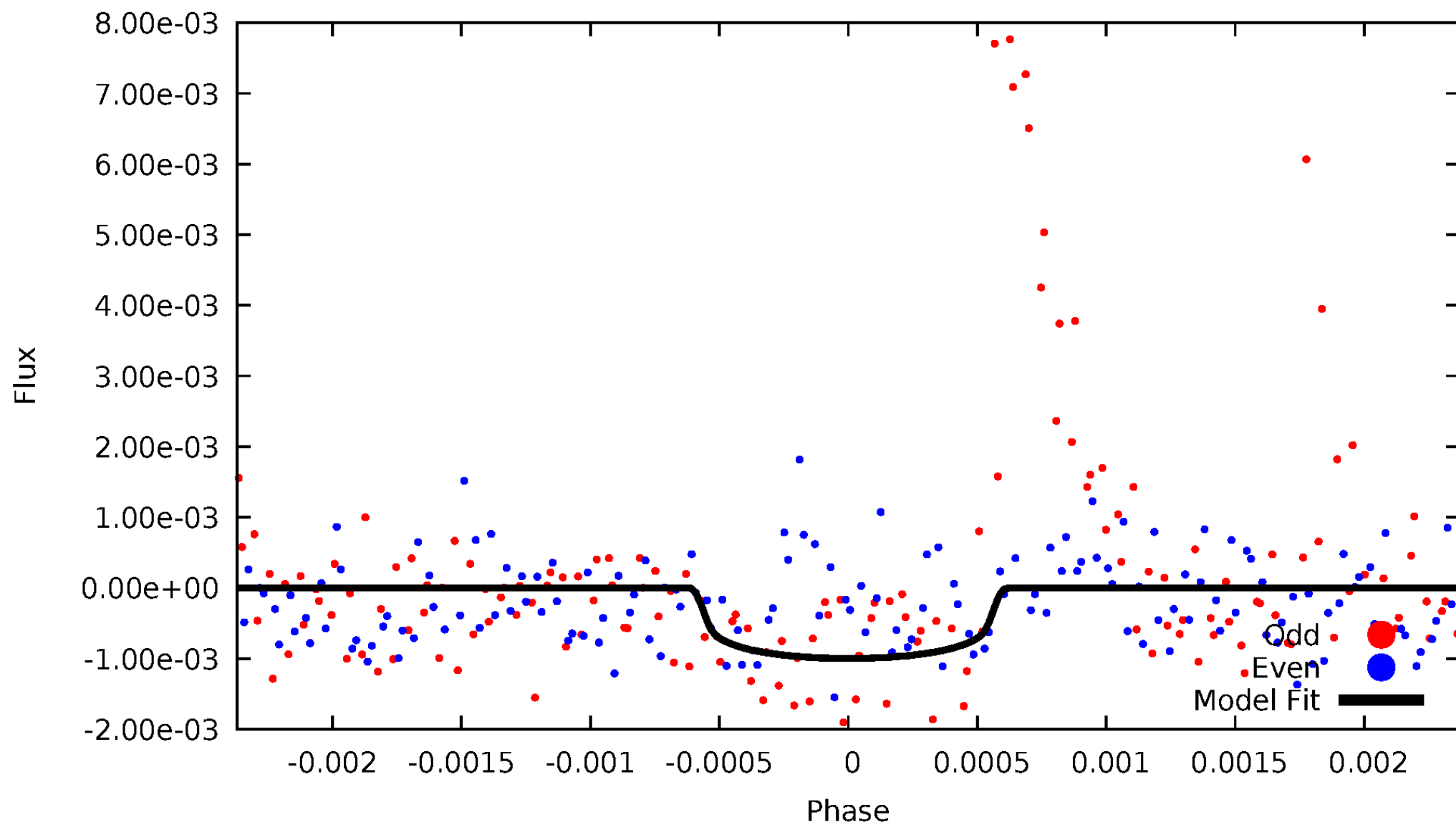


TCE 008565204-01



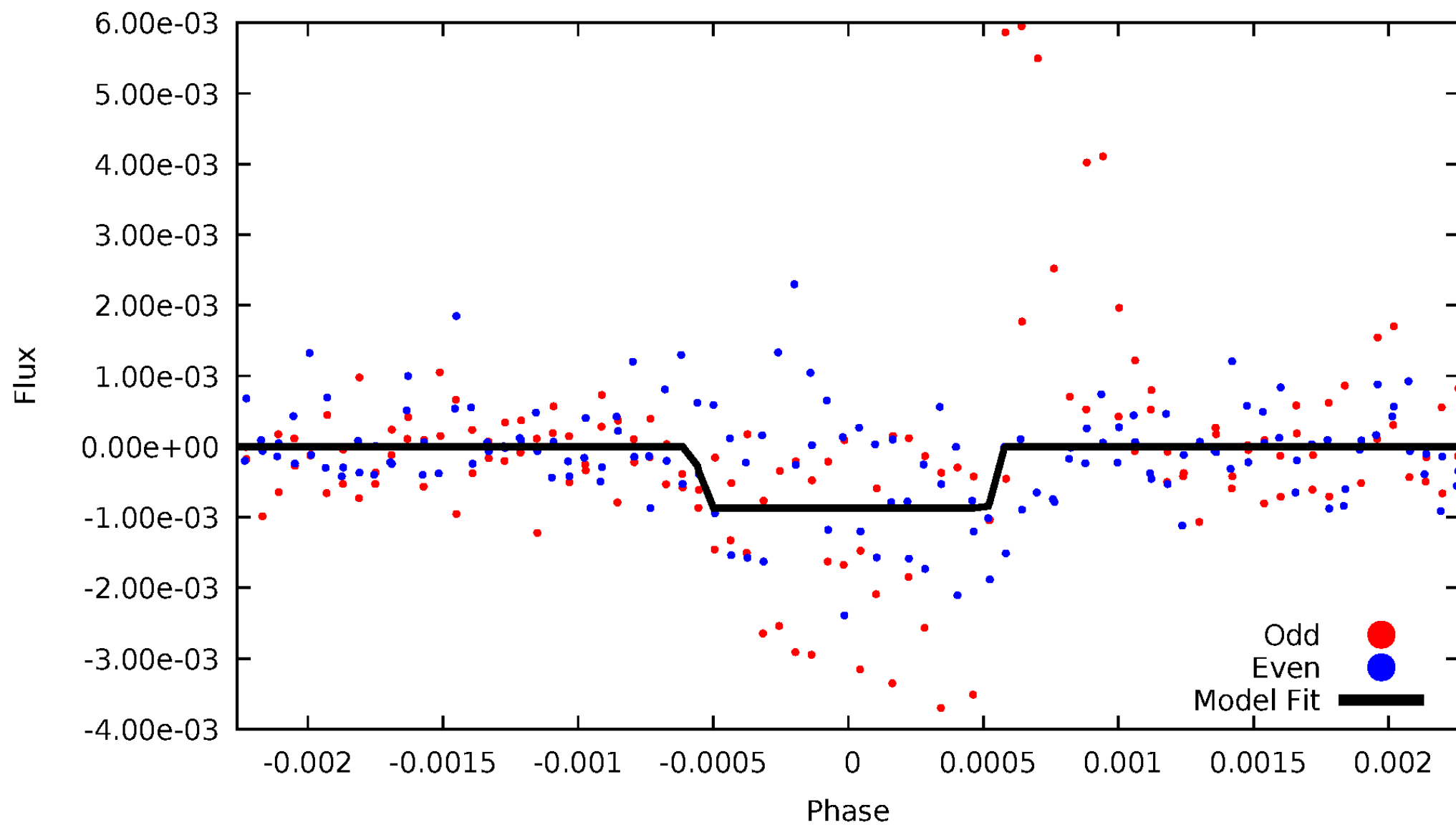
DV Odd/Even

TCE 008565204-01



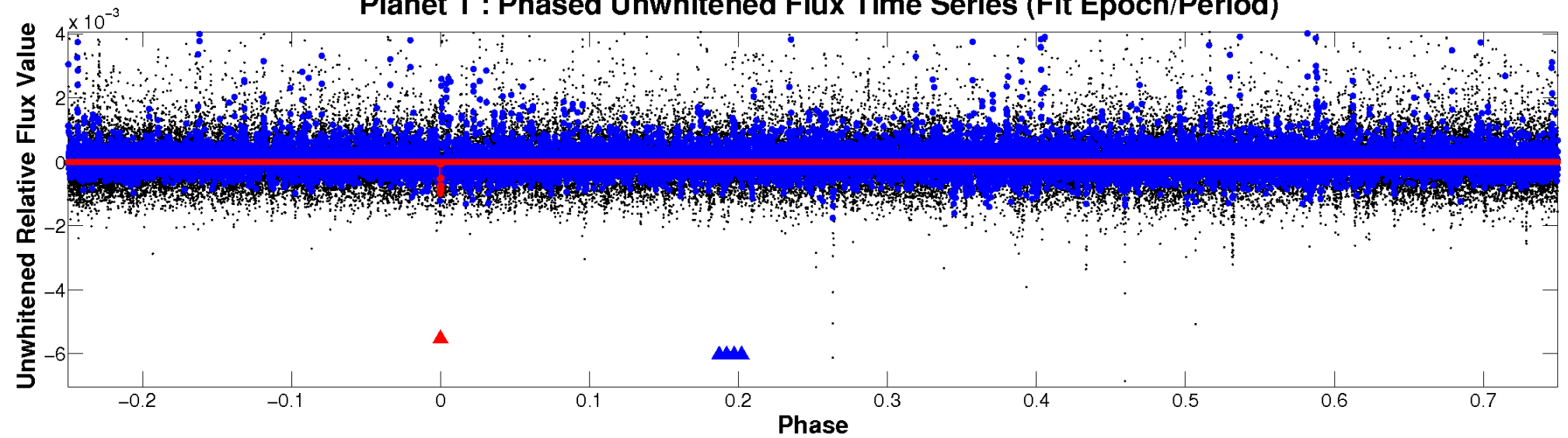
ALT Odd/Even

TCE 008565204-01

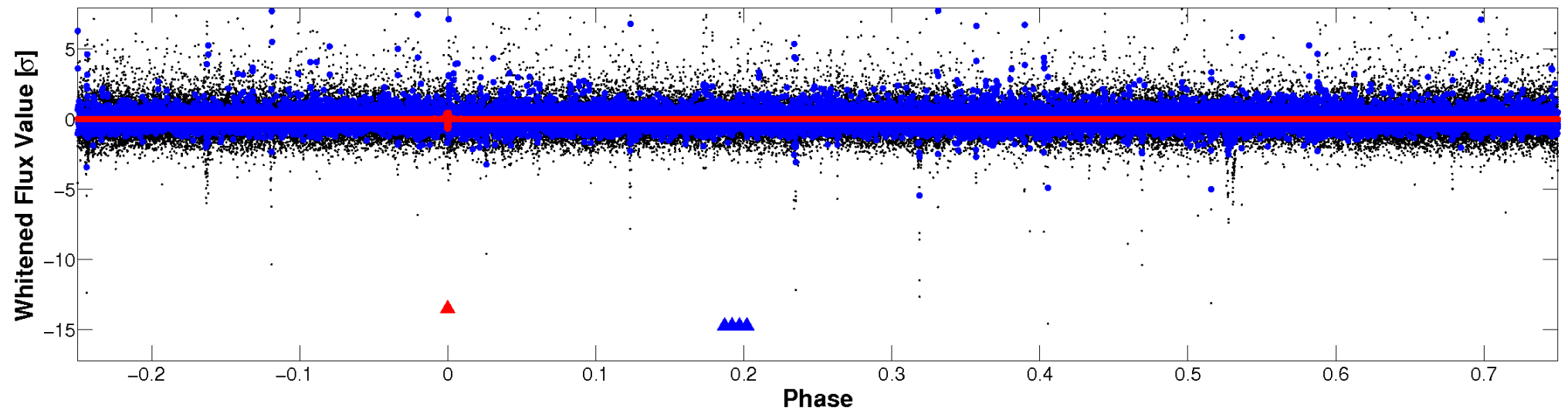


Non-Whitened Vs. Whitened Light Curve

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

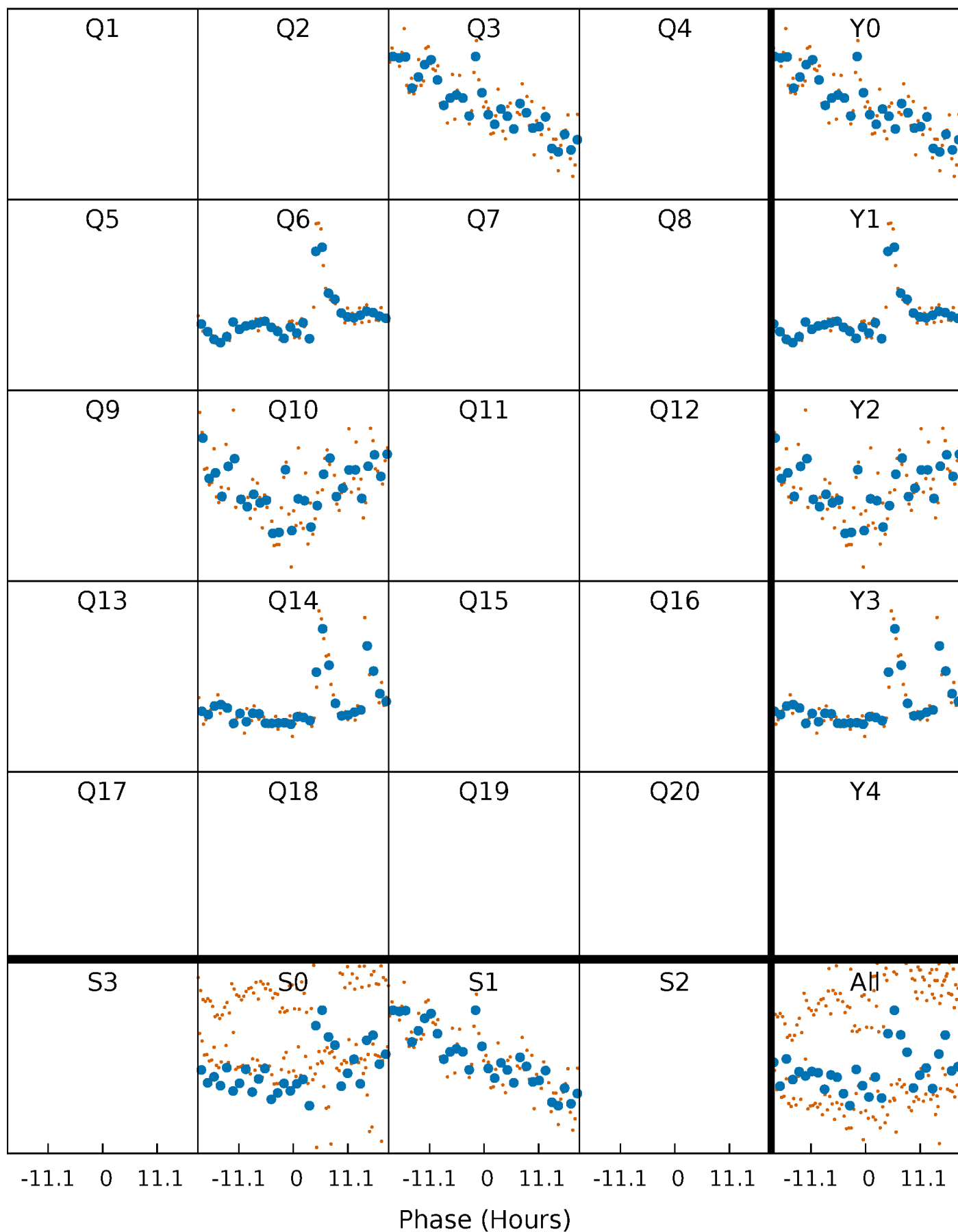


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



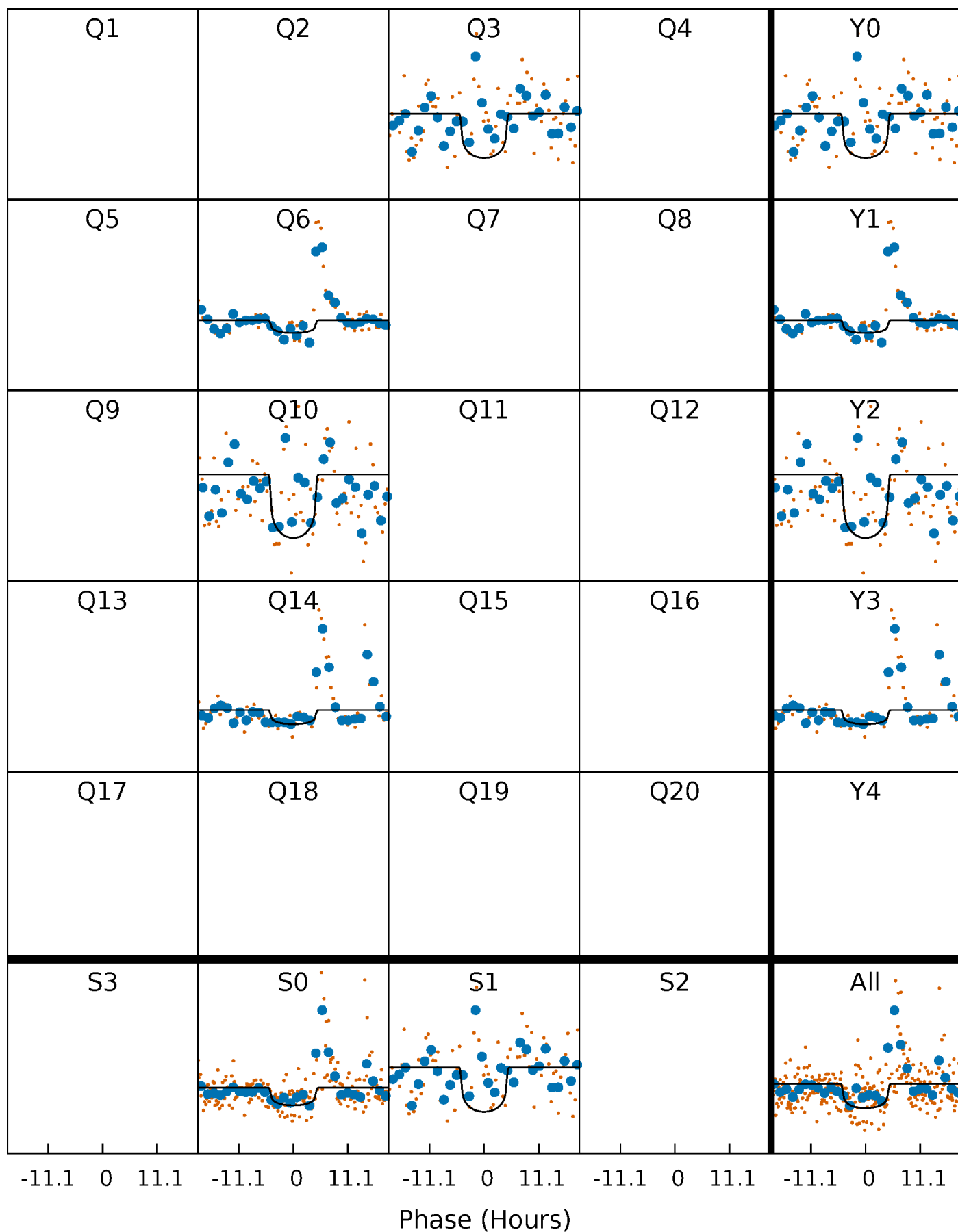
PDC Quarter-Phased Transit Curves

TCE 008565204-01 P=341.616702 Days $T_0=262.475875$ (BKJD)



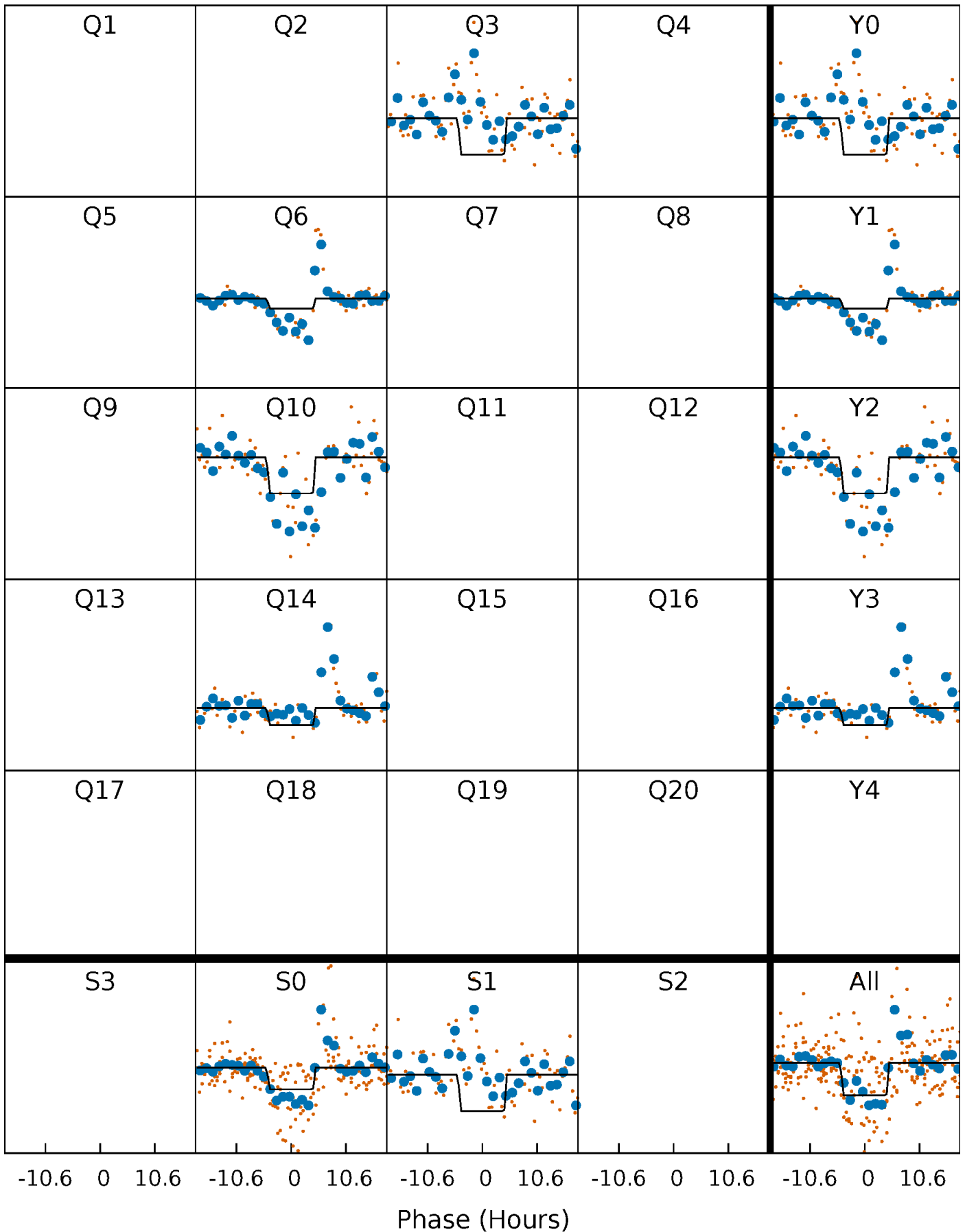
DV Quarter-Phased Transit Curves

TCE 008565204-01 P=341.616702 Days $T_0=262.475875$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

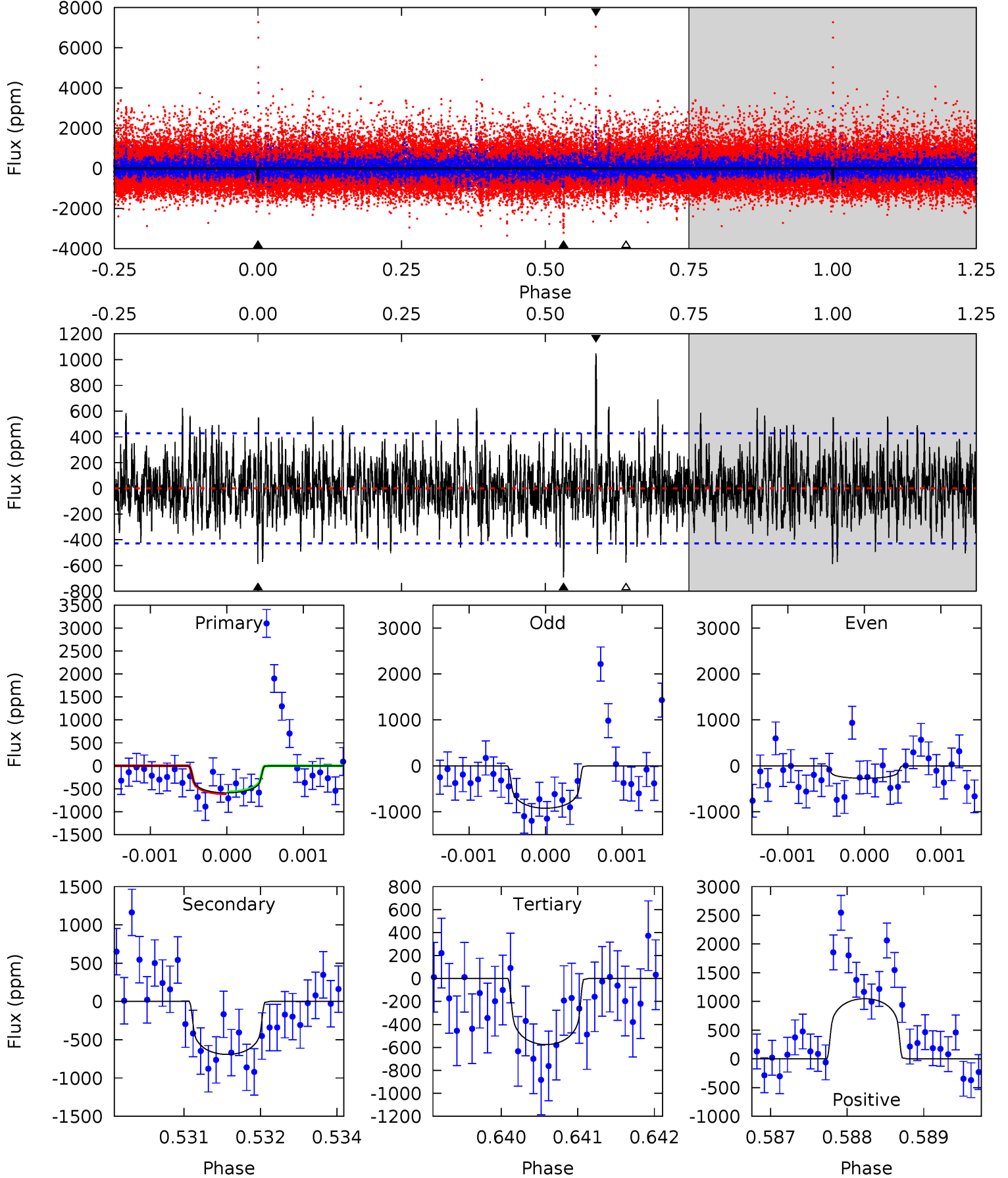
TCE 008565204-01 P=341.608256 Days $T_0=262.479537$ (BKJD)



DV Model-Shift Uniqueness Test

008565204-01, P = 341.616702 Days, E = 262.475875 Days

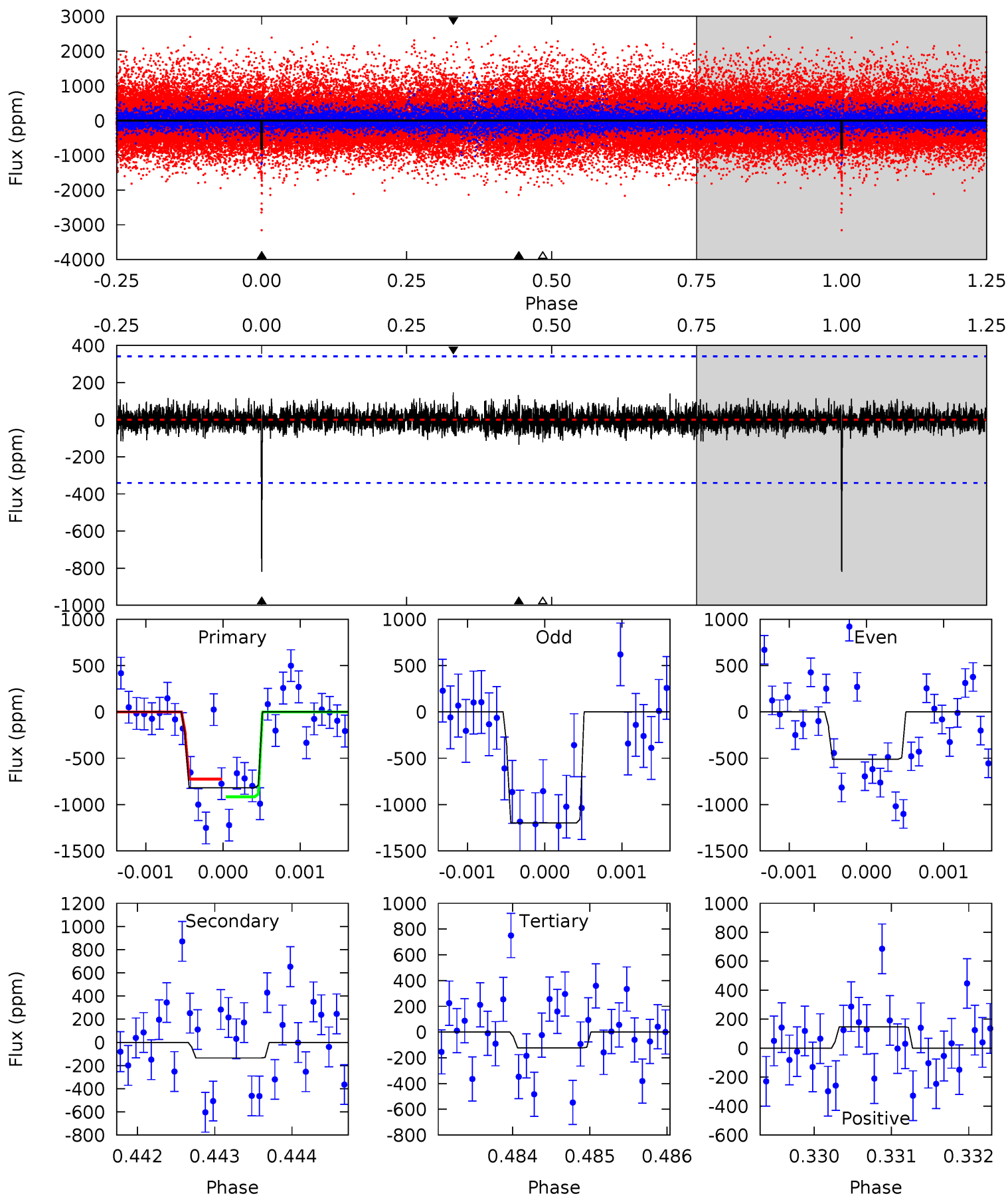
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.44	8.74	7.27	13.3	5.41	3.23	2.18	0.17	-5.81	1.47	-4.51	3.76	0.87	0.60	0.26



Alt Model-Shift Uniqueness Test

008565204-01, P = 341.608256 Days, E = 262.479537 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	2.15	1.94	2.35	5.43	3.25	0.52	11.1	10.7	0.20	-0.20	5.59	1.18	0.15	1.53



Stellar Parameters For KIC 008565204

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3435^{+44}_{-41}	$4.933^{+0.048}_{-0.032}$	$-0.100^{+0.100}_{-0.100}$	$0.318^{+0.034}_{-0.037}$	$0.315^{+0.041}_{-0.041}$	$13.860^{+3.639}_{-1.992}$
	+1%/-1%	+1%/-1%	+100%/-100%	+11%/-12%	+13%/-13%	+26%/-14%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 008565204-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-692 ± 79	$1.10^{+0.59}_{-0.55}$	148^{+3}_{-3}	3234^{+895}_{-358}	$131542^{+423203}_{-74666}$
Alt.	-135 ± 63	$1.06^{+0.66}_{-0.54}$	148^{+3}_{-3}	2577^{+598}_{-320}	24207^{+94322}_{-16060}

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

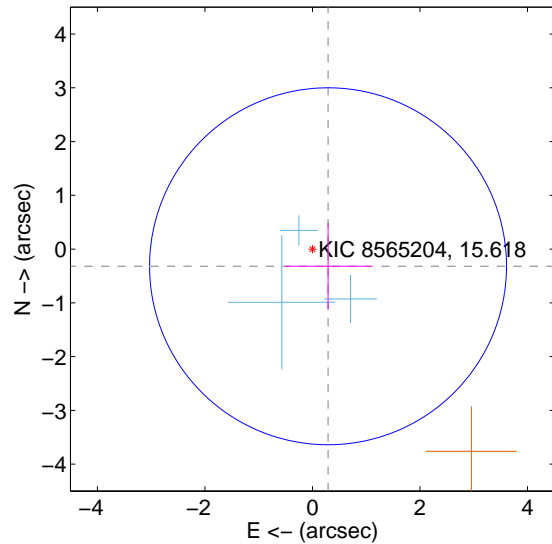
Supplemental centroid analysis for 008565204-01. Kepler magnitude: 15.62. Transit SNR 5.83

There are 3 quarters with good PRF difference image offsets

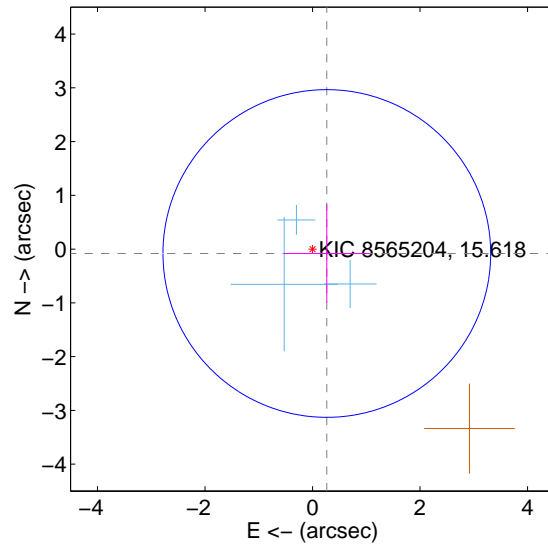
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.432 ± 1.107	0.39	-0.290 ± 0.802	-0.320 ± 0.805
PRF-fit source offset from KIC position	0.278 ± 1.016	0.27	-0.266 ± 0.796	-0.082 ± 0.913
photometric centroid source offset	0.29 ± 0.95	0.30	-0.15 ± 0.90	0.24 ± 0.96

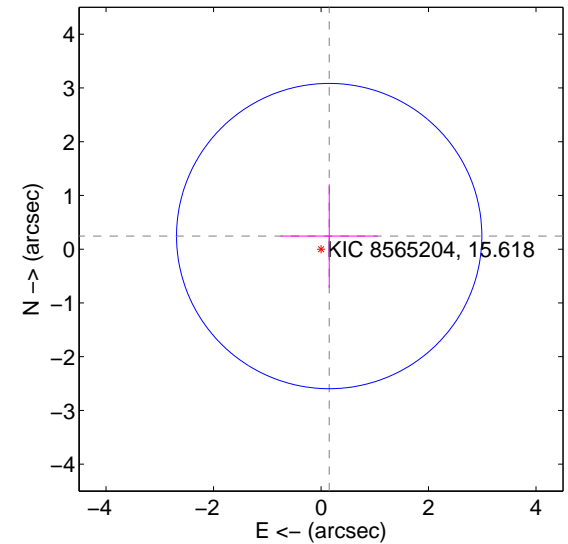
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



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

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

Q1 no difference image



Q1 no OOT image



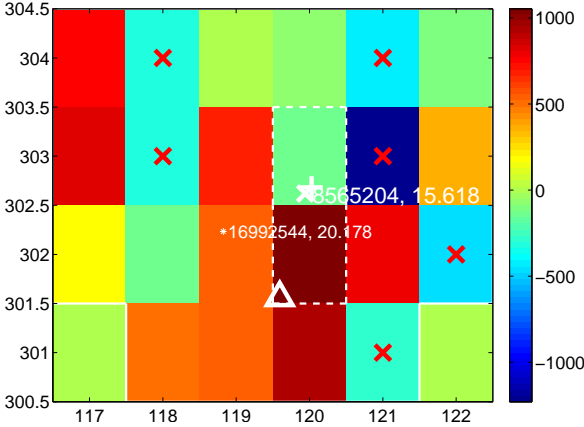
Q2 no difference image



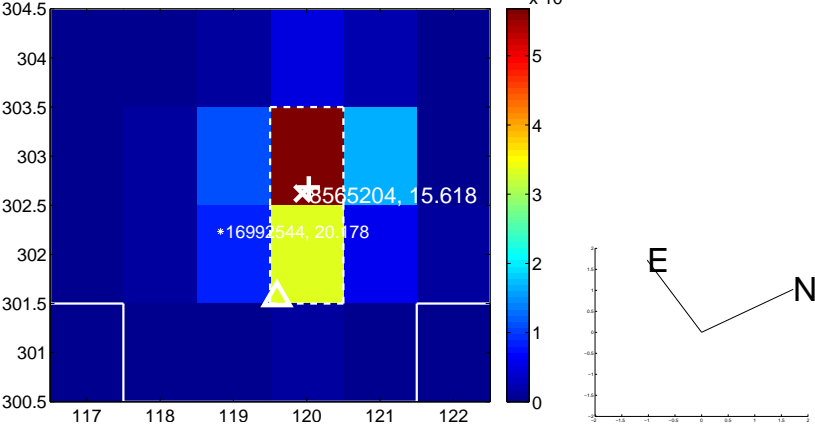
Q2 no OOT image



Q3 difference image. Poor Quality



Q3 OOT image



Q4 no difference image



Q4 no OOT image



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

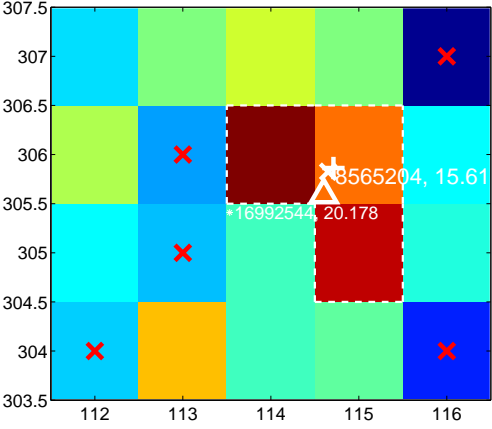
Q5 no difference image



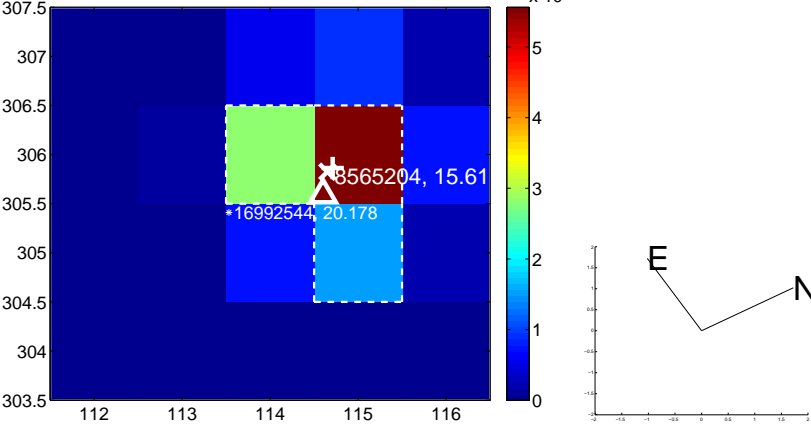
Q5 no OOT image



Q6 difference image



Q6 OOT image



Q7 no difference image



Q7 no OOT image



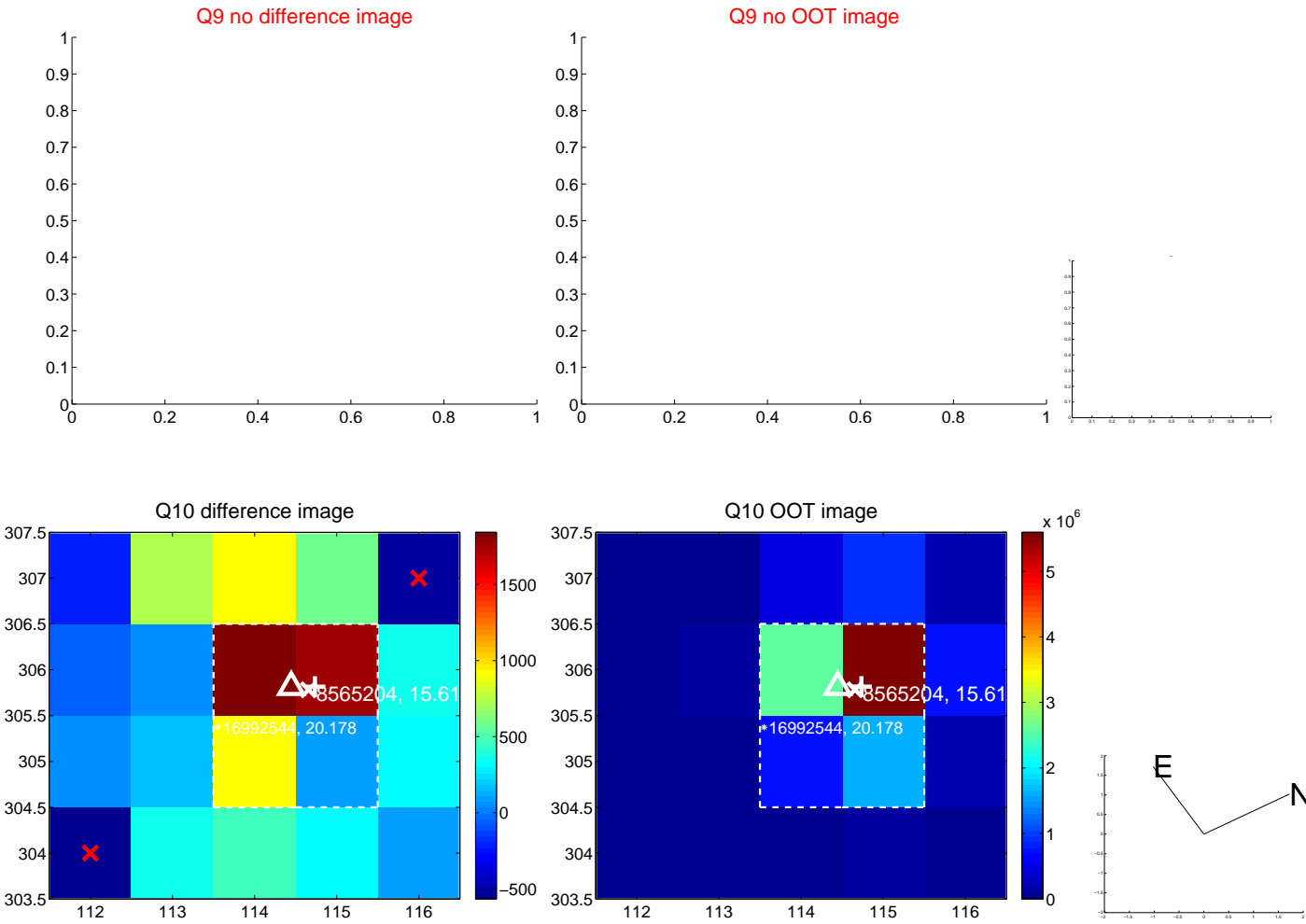
Q8 no difference image



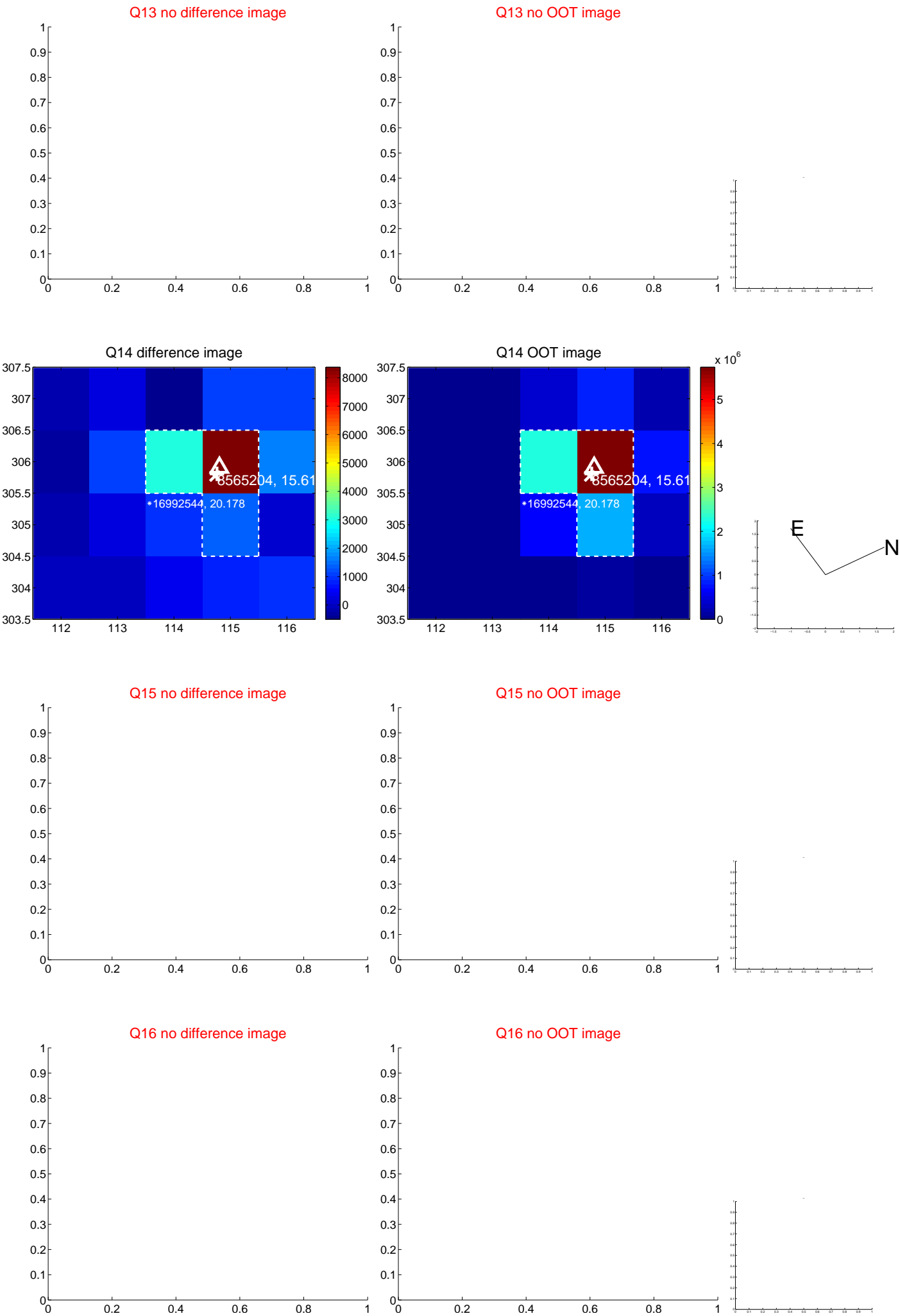
Q8 no OOT image



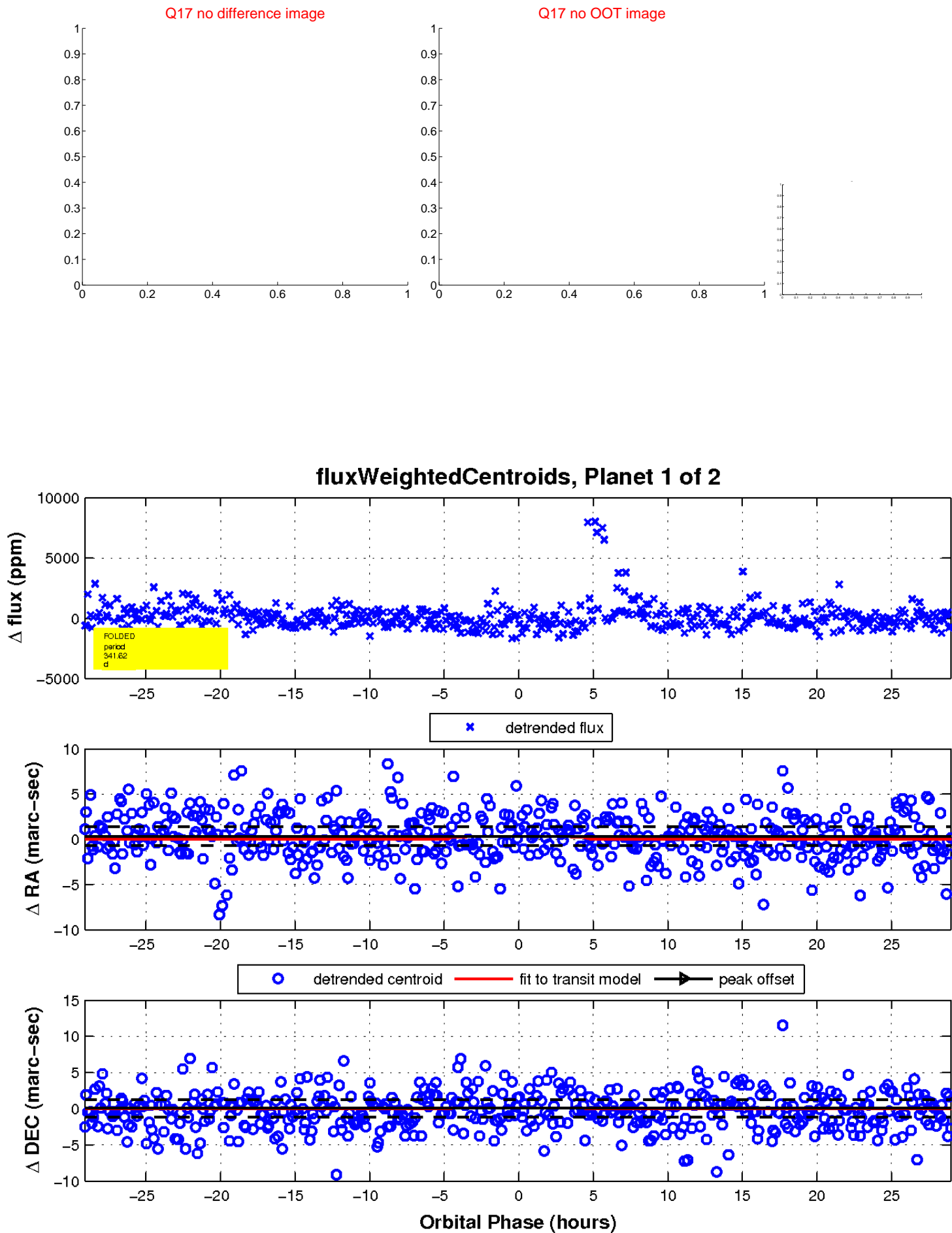
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

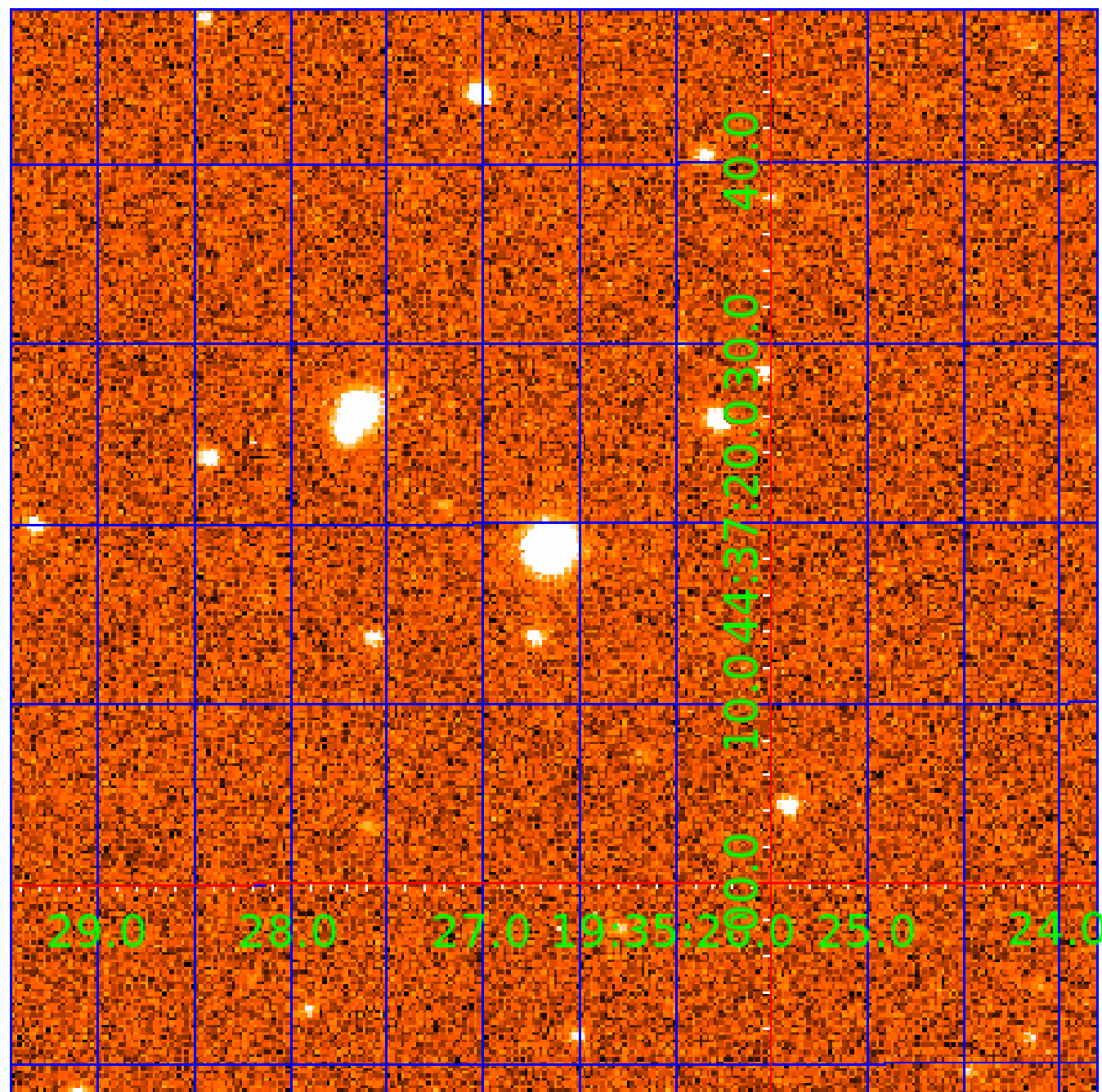


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008565204

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})
008565204-01	OBS	No	341.616702	262.475875	999.1	9.714	10.8	5.8	0.32	3435	1.03	0.03
008565204-02	OBS	No	343.328794	326.391217	1511.5	3.413	10.8	8.3	0.32	3435	1.24	0.03

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008565204-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008565204-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

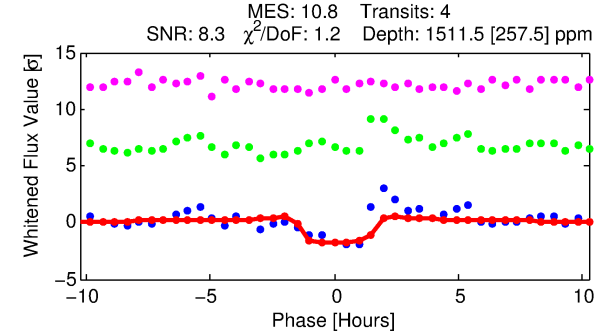
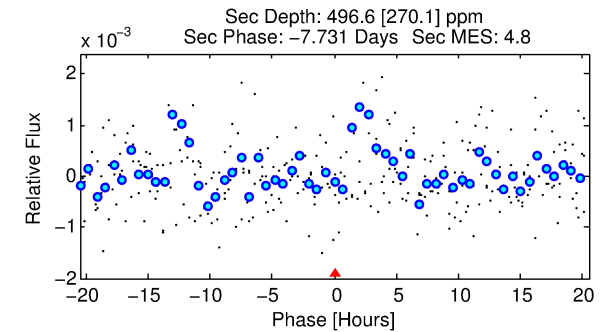
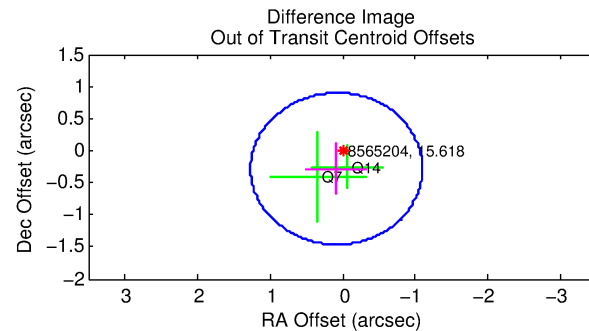
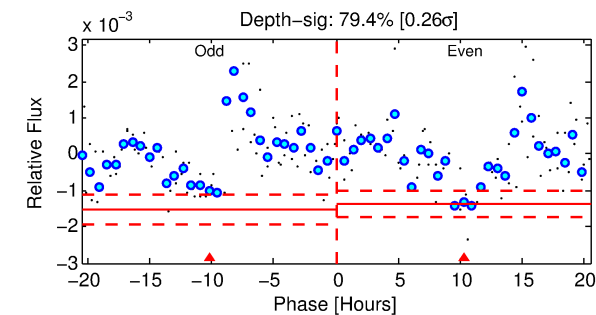
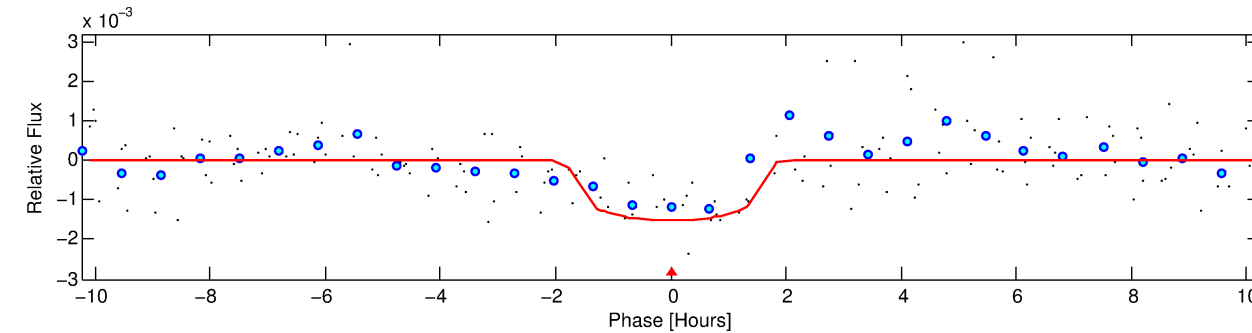
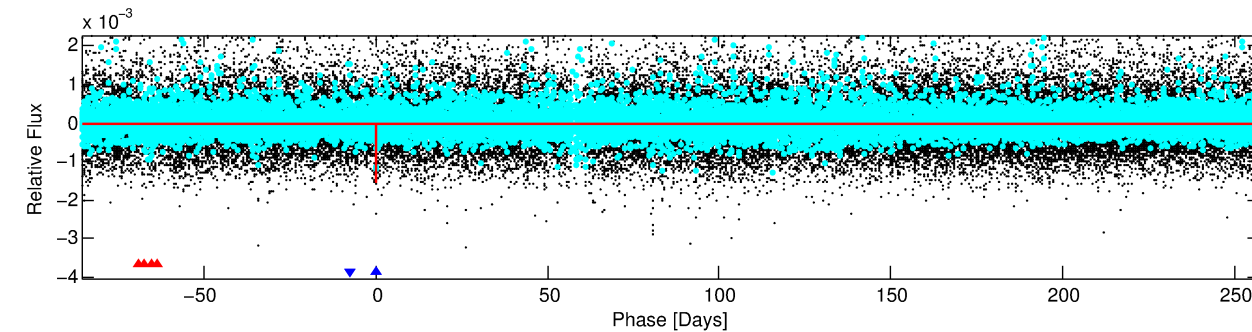
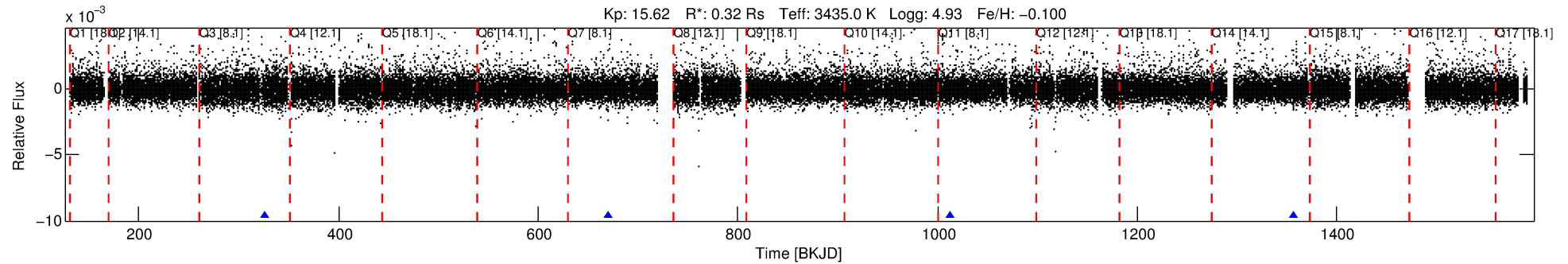
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008565204-02

No Significant Match Found

DV One-Page Summary

KIC: 8565204 Candidate: 2 of 2 Period: 343.329 d



DV Fit Results:

Period = 343.32879 [0.00510] d
Epoch = 326.3912 [0.0097] BKJD
Rp/R* = 0.0356 [0.1288]
a/R* = 760.82 [12161.15]
b = 0.30 [47.87]
Seff = 0.03 [0.00]
Teq = 106 [3] K
Rp = 1.24 [4.47] Re
a = 0.6538 [0.0561] AU
Ag = 76474.54 [554827.14] [0.14 σ]
Teffp = 2717 [4928] K [0.53 σ]

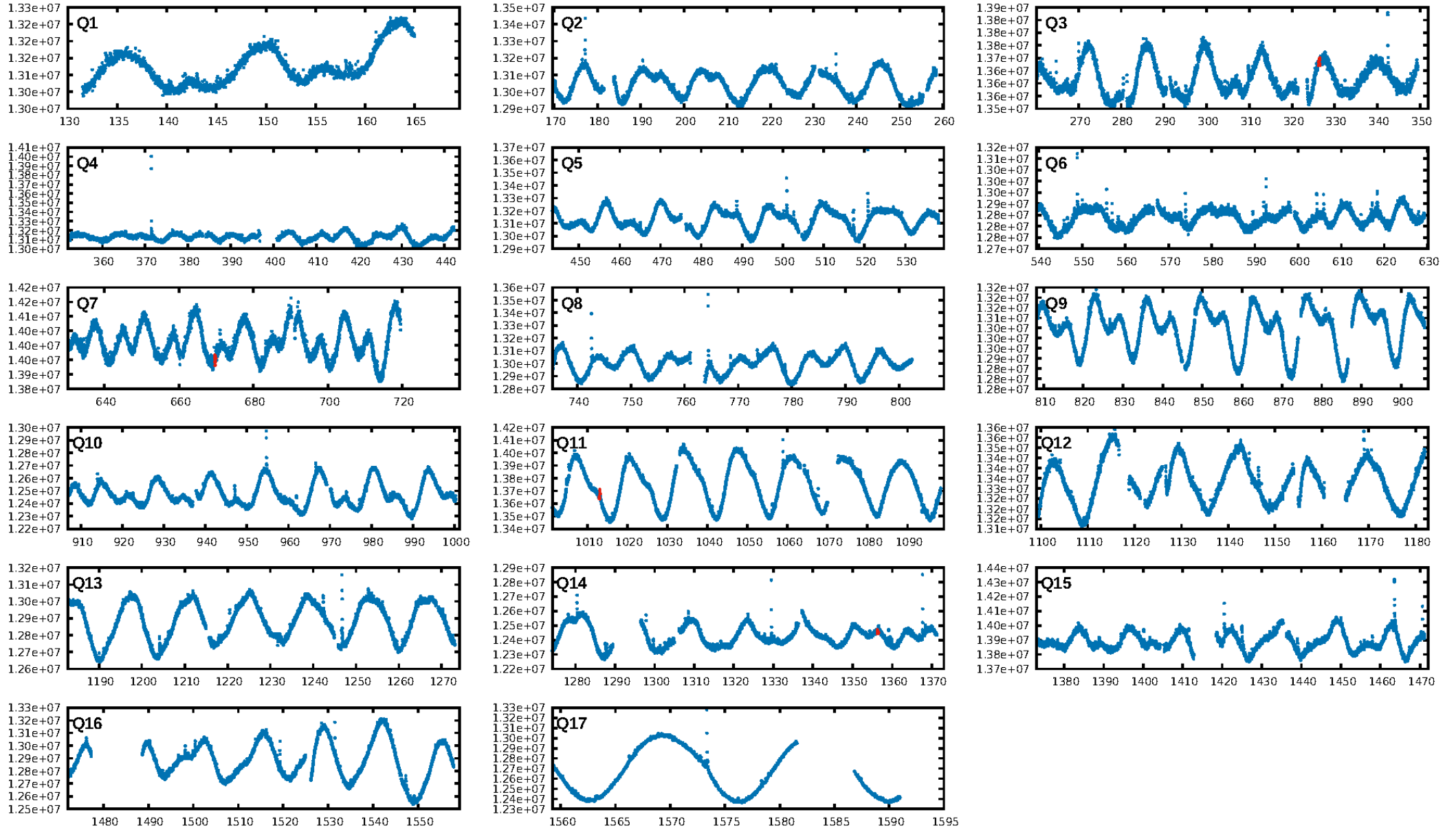
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [3.99 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 77.7%
ModelChiSquareGof-sig: 99.5%
Bootstrap-pfa: 4.13e-14
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.4118
Centroid-sig: 99.5%
Centroid-so: 0.412 arcsec [0.42 σ]
OotOffset-rm: 0.294 arcsec [0.75 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-rm: 0.161 arcsec [0.39 σ]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [4/4]

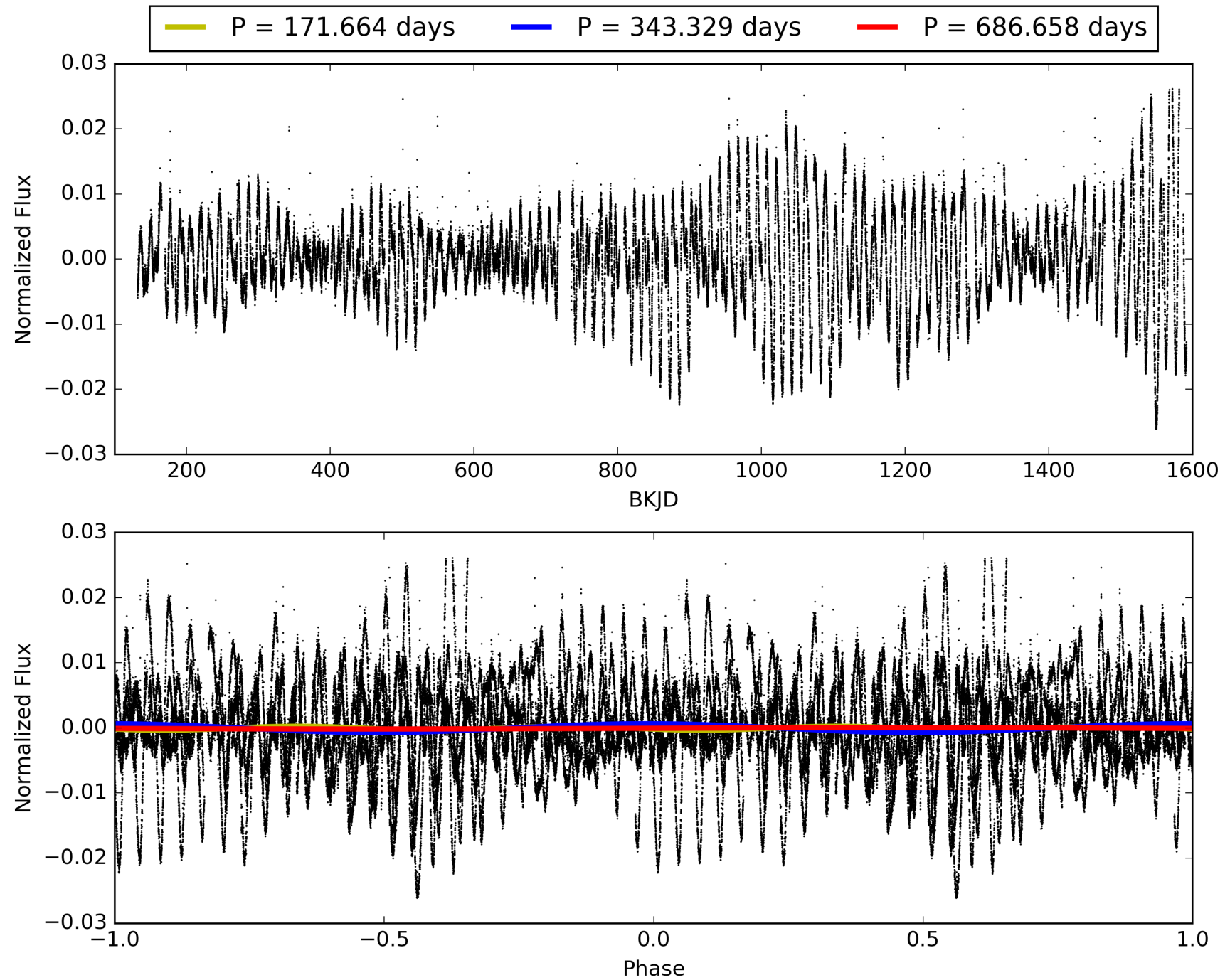
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 03:35:49 Z

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

TCE 008565204-02, PDC Light Curves

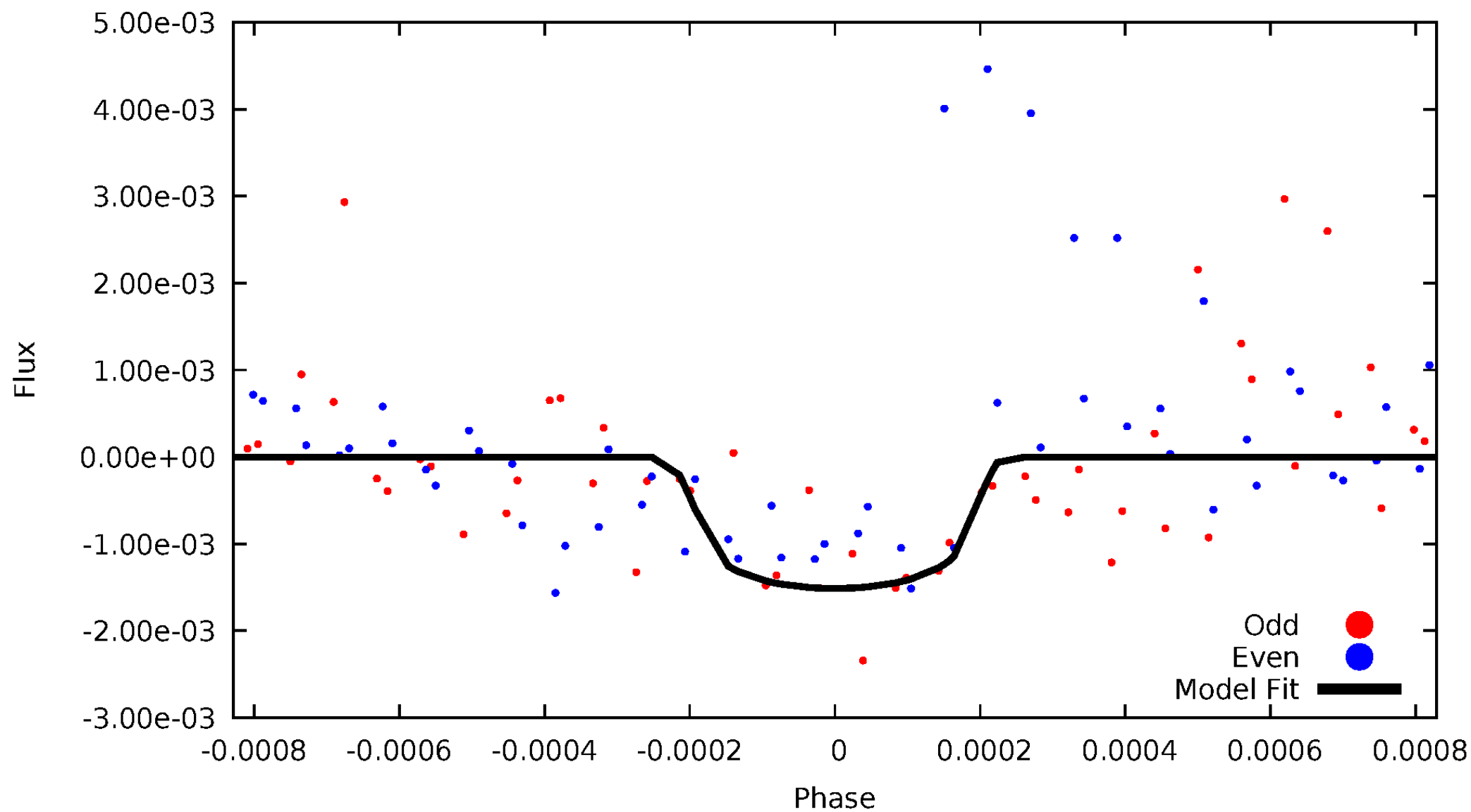


TCE 008565204-02



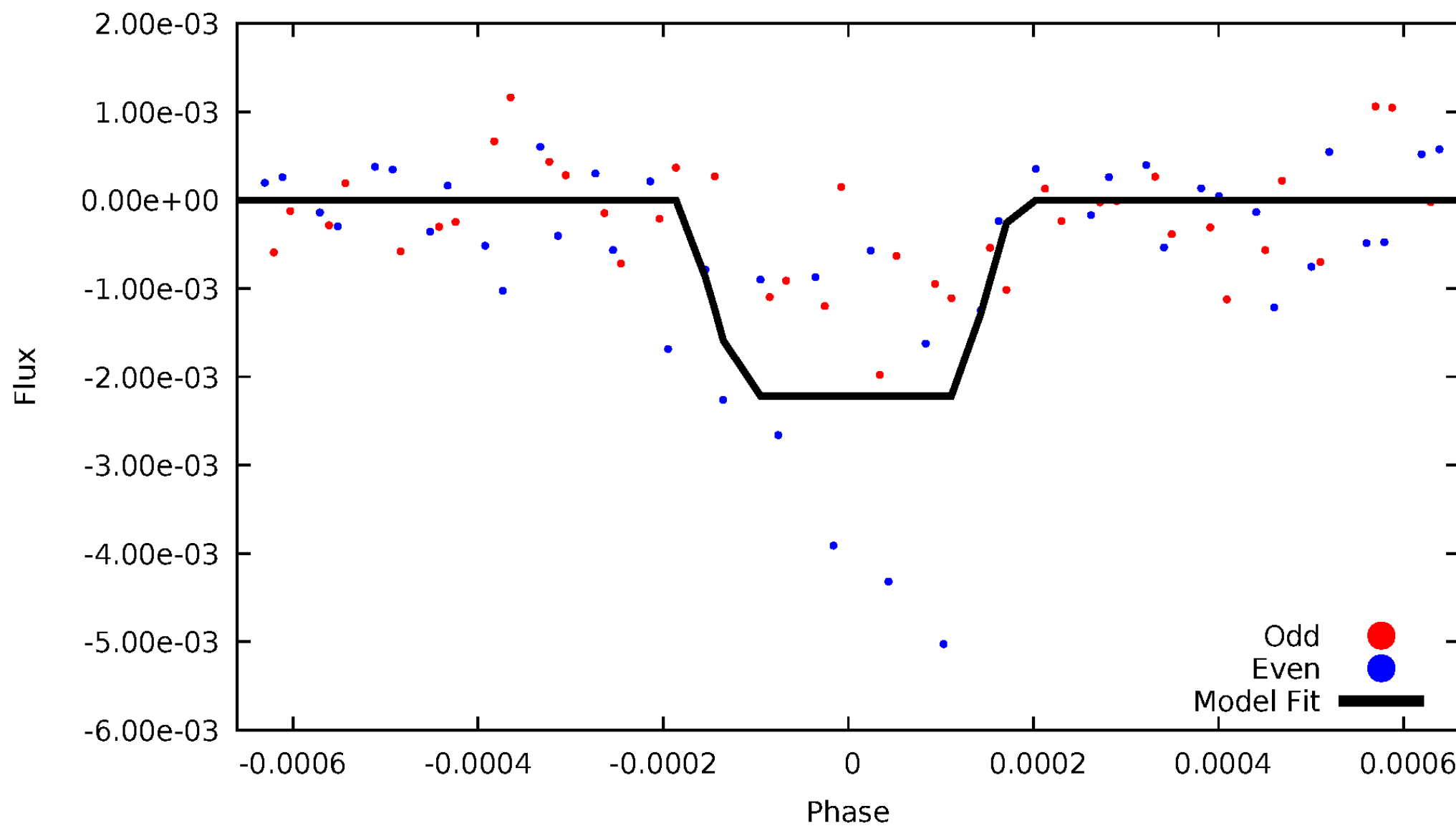
DV Odd/Even

TCE 008565204-02



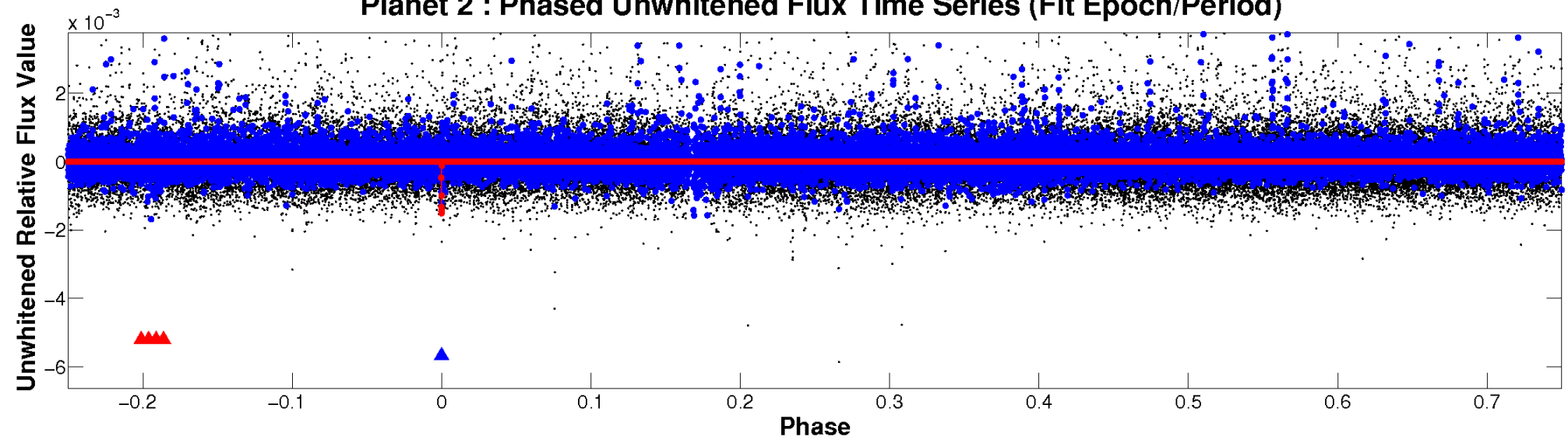
ALT Odd/Even

TCE 008565204-02

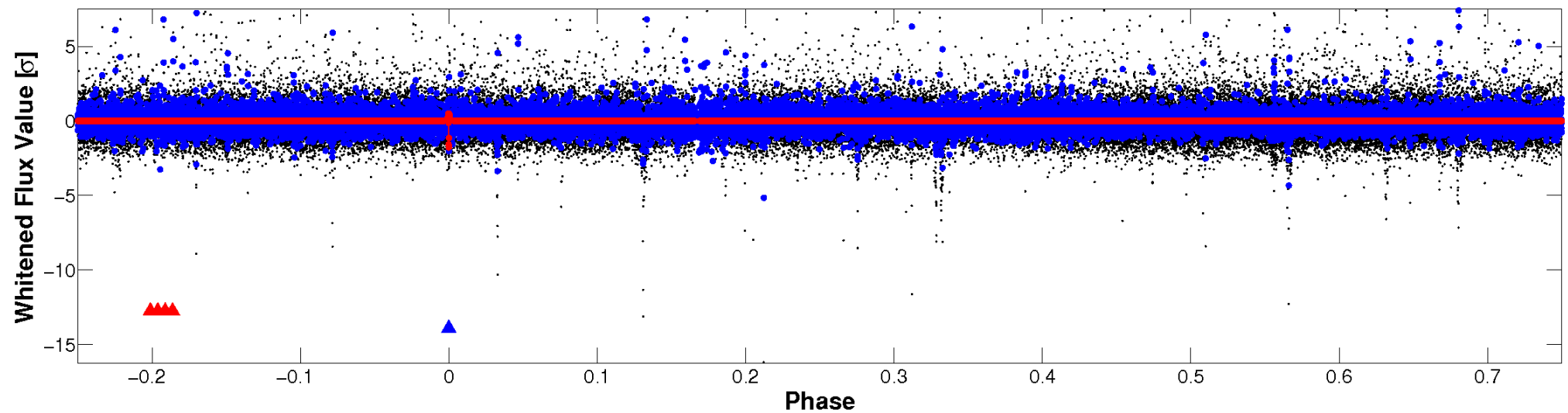


Non-Whitened Vs. Whitened Light Curve

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

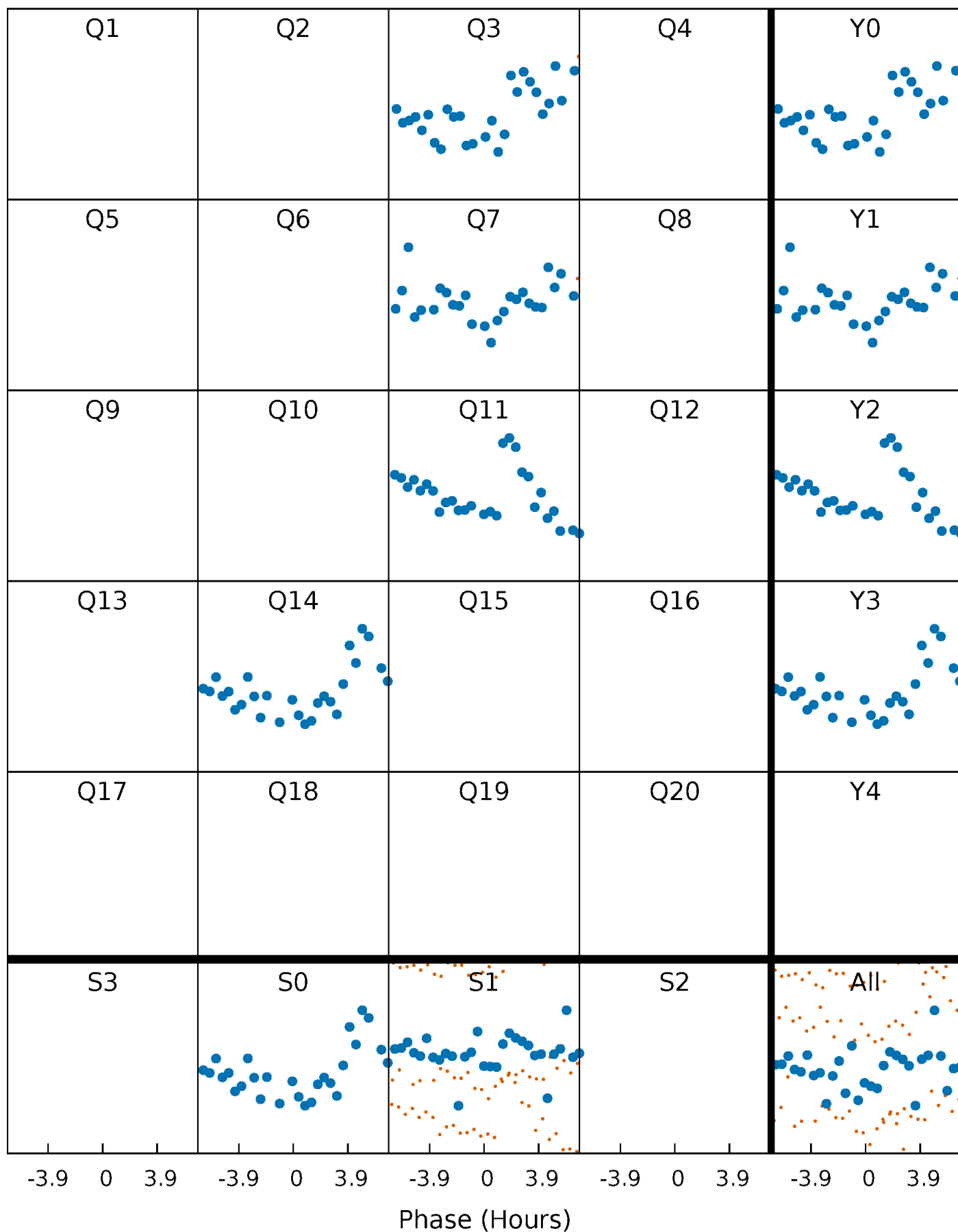


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



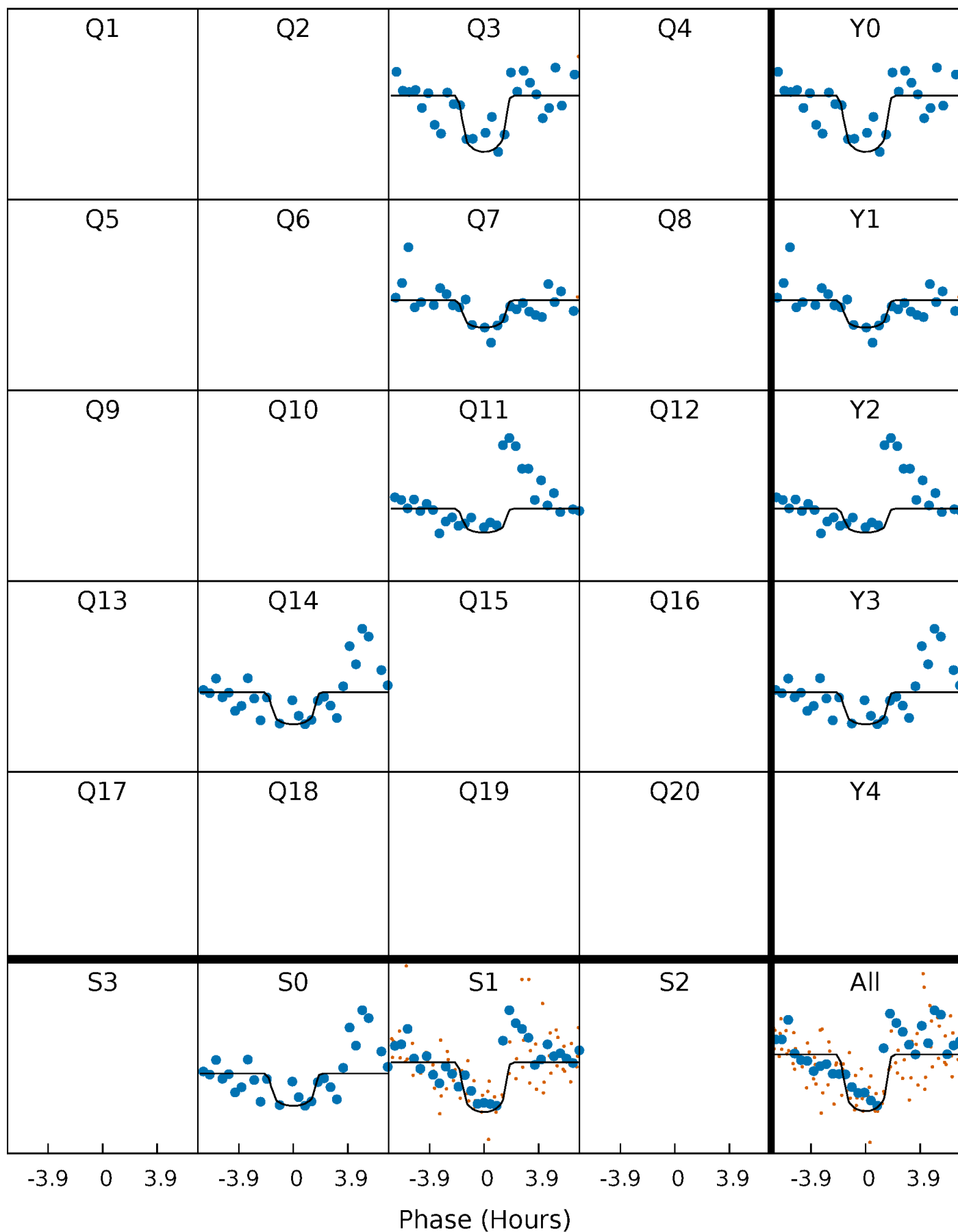
PDC Quarter-Phased Transit Curves

TCE 008565204-02 P=343.328794 Days $T_0=326.391217$ (BKJD)



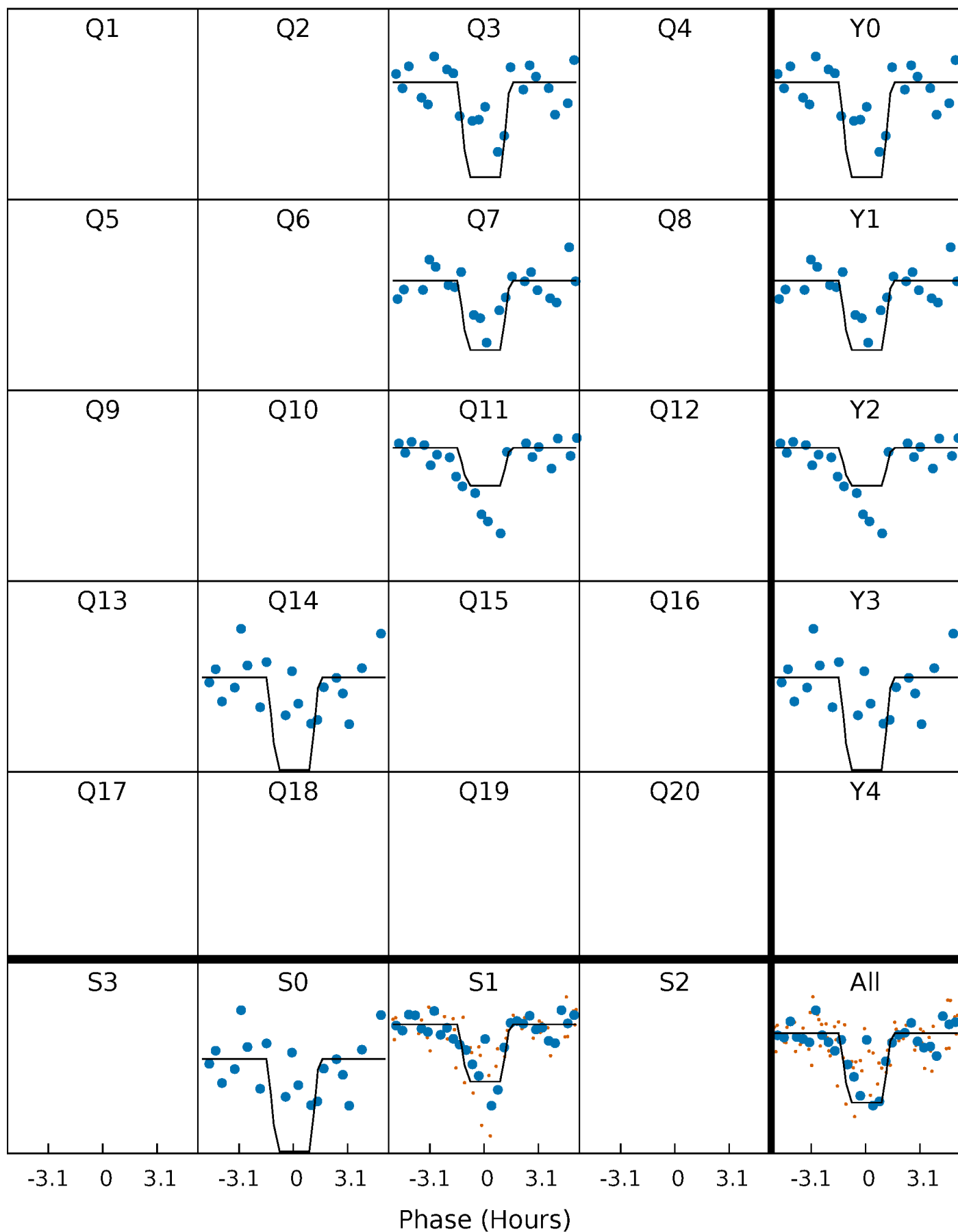
DV Quarter-Phased Transit Curves

TCE 008565204-02 $P=343.328794$ Days $T_0=326.391217$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

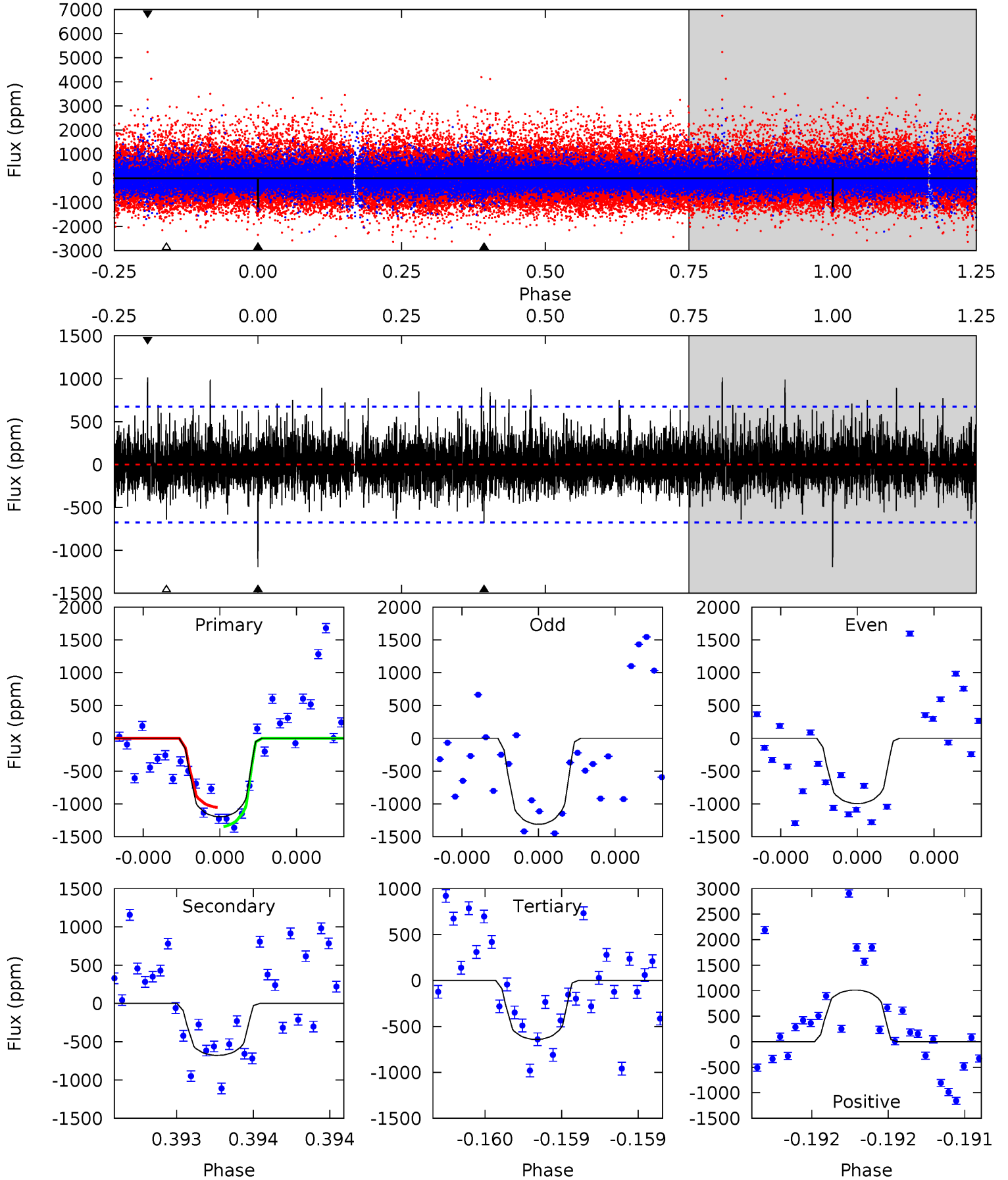
TCE 008565204-02 P=343.323182 Days $T_0=326.398470$ (BKJD)



DV Model-Shift Uniqueness Test

008565204-02, P = 343.328794 Days, E = 326.391217 Days

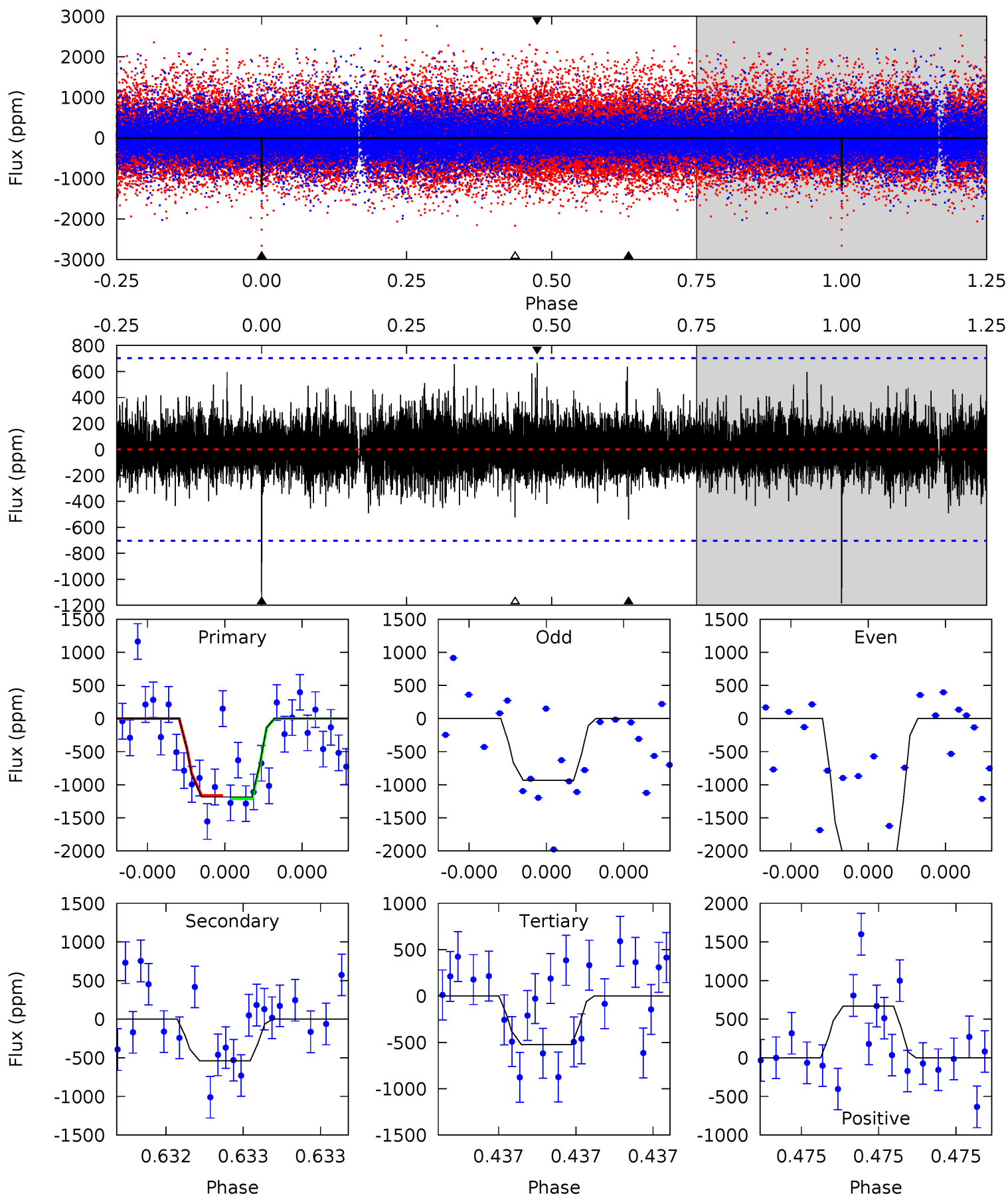
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.91	5.61	5.31	8.39	5.58	3.49	1.55	4.60	1.52	0.30	-2.77	1.25	0.82	0.46	1.21



Alt Model-Shift Uniqueness Test

008565204-02, P = 343.323182 Days, E = 326.398470 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.53	4.34	4.21	5.37	5.65	3.60	1.02	5.31	4.16	0.13	-1.03	5.23	1.48	0.36	0.21



Stellar Parameters For KIC 008565204

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3435^{+44}_{-41}	$4.933^{+0.048}_{-0.032}$	$-0.100^{+0.100}_{-0.100}$	$0.318^{+0.034}_{-0.037}$	$0.315^{+0.041}_{-0.041}$	$13.860^{+3.639}_{-1.992}$
	+1%/-1%	+1%/-1%	+100%/-100%	+11%/-12%	+13%/-13%	+26%/-14%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 008565204-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-678 ± 121	$3.51^{+3.41}_{-2.38}$	147^{+3}_{-3}	2380^{+810}_{-338}	$12905^{+107412}_{-9595}$
Alt.	-540 ± 124	$3.58^{+3.83}_{-2.43}$	147^{+3}_{-4}	2295^{+819}_{-329}	9585^{+88813}_{-7365}

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

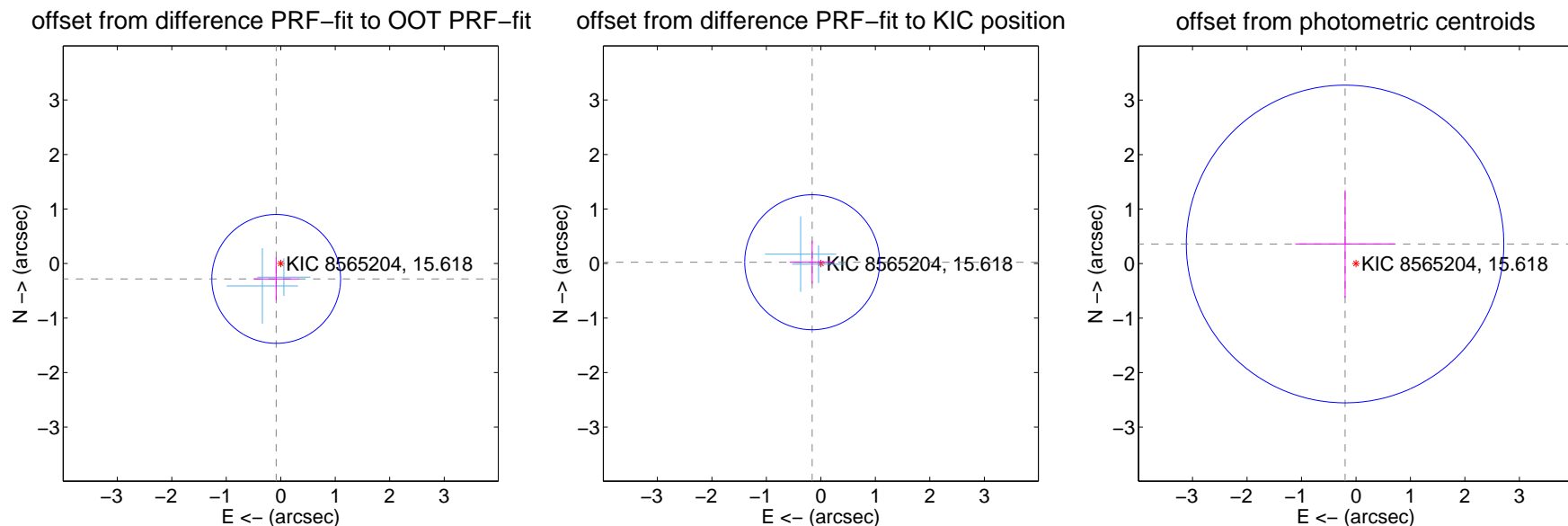
DV Centroid Data

Supplemental centroid analysis for 008565204-02. Kepler magnitude: 15.62. Transit SNR 8.28

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.294 ± 0.394	0.75	0.084 ± 0.413	-0.282 ± 0.392
PRF-fit source offset from KIC position	0.161 ± 0.413	0.39	0.159 ± 0.413	0.024 ± 0.392
photometric centroid source offset	0.41 ± 0.97	0.42	0.20 ± 0.91	0.36 ± 0.99



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

Q1 no difference image



Q1 no OOT image



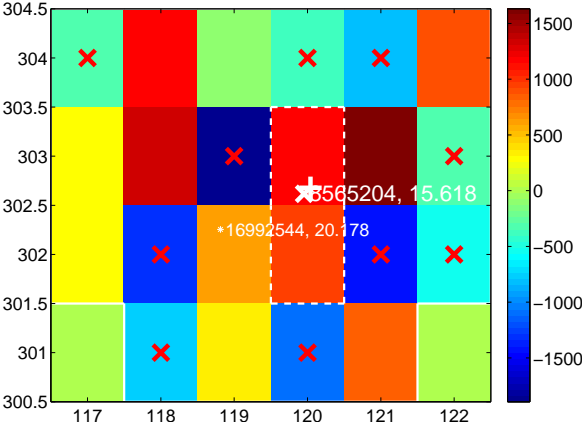
Q2 no difference image



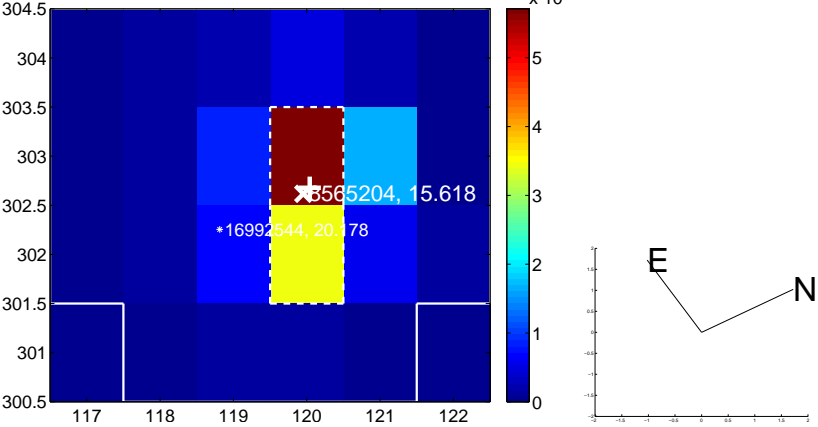
Q2 no OOT image



Q3 difference image. Poor Quality



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.

Q5 no difference image



Q5 no OOT image



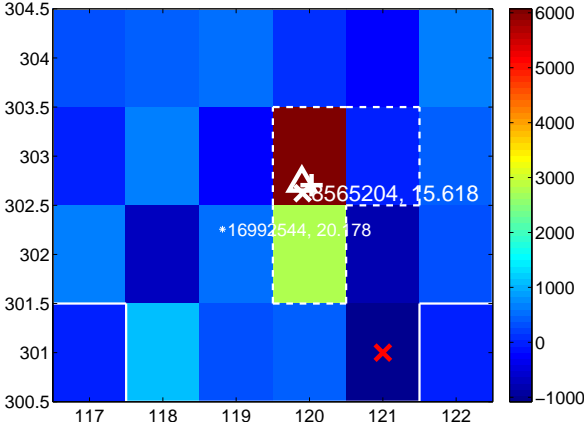
Q6 no difference image



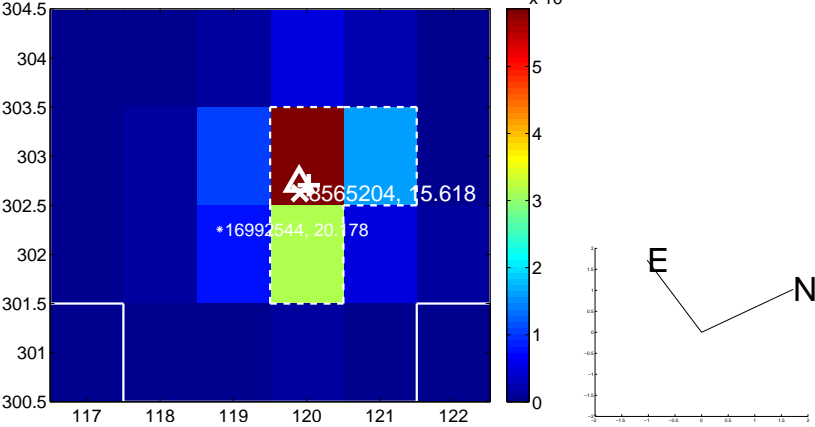
Q6 no OOT image



Q7 difference image



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.

Q9 no difference image



Q9 no OOT image



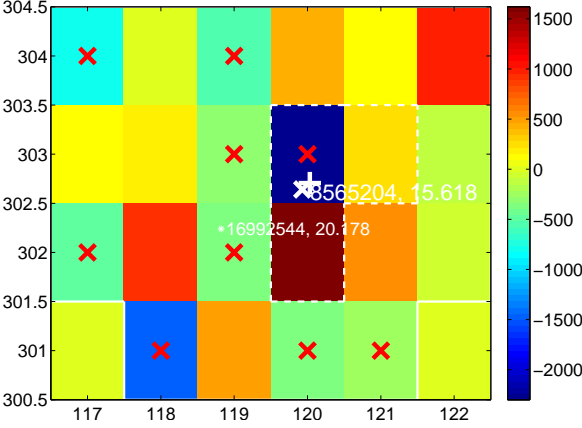
Q10 no difference image



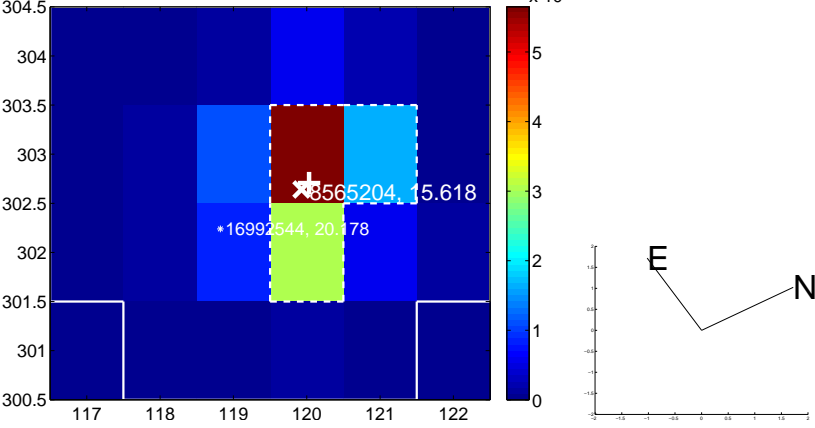
Q10 no OOT image



Q11 difference image. Poor Quality



Q11 OOT image



Q12 no difference image



Q12 no OOT image



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

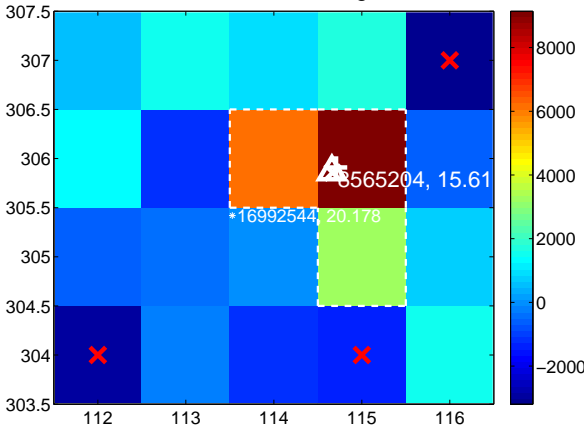
Q13 no difference image



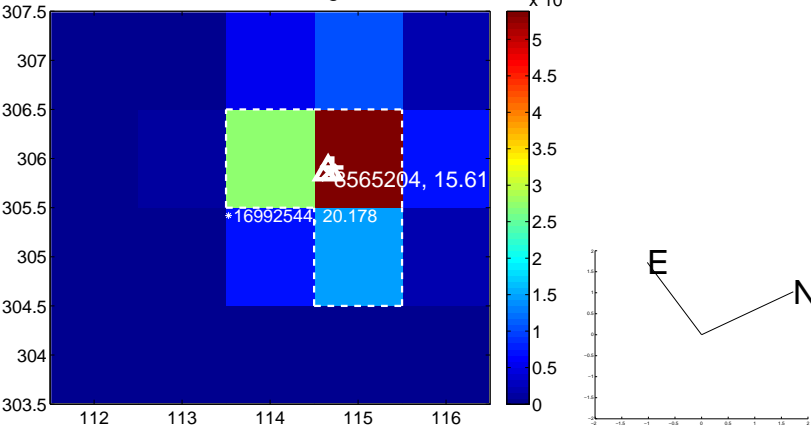
Q13 no OOT image



Q14 difference image



Q14 OOT image



Q15 no difference image



Q15 no OOT image



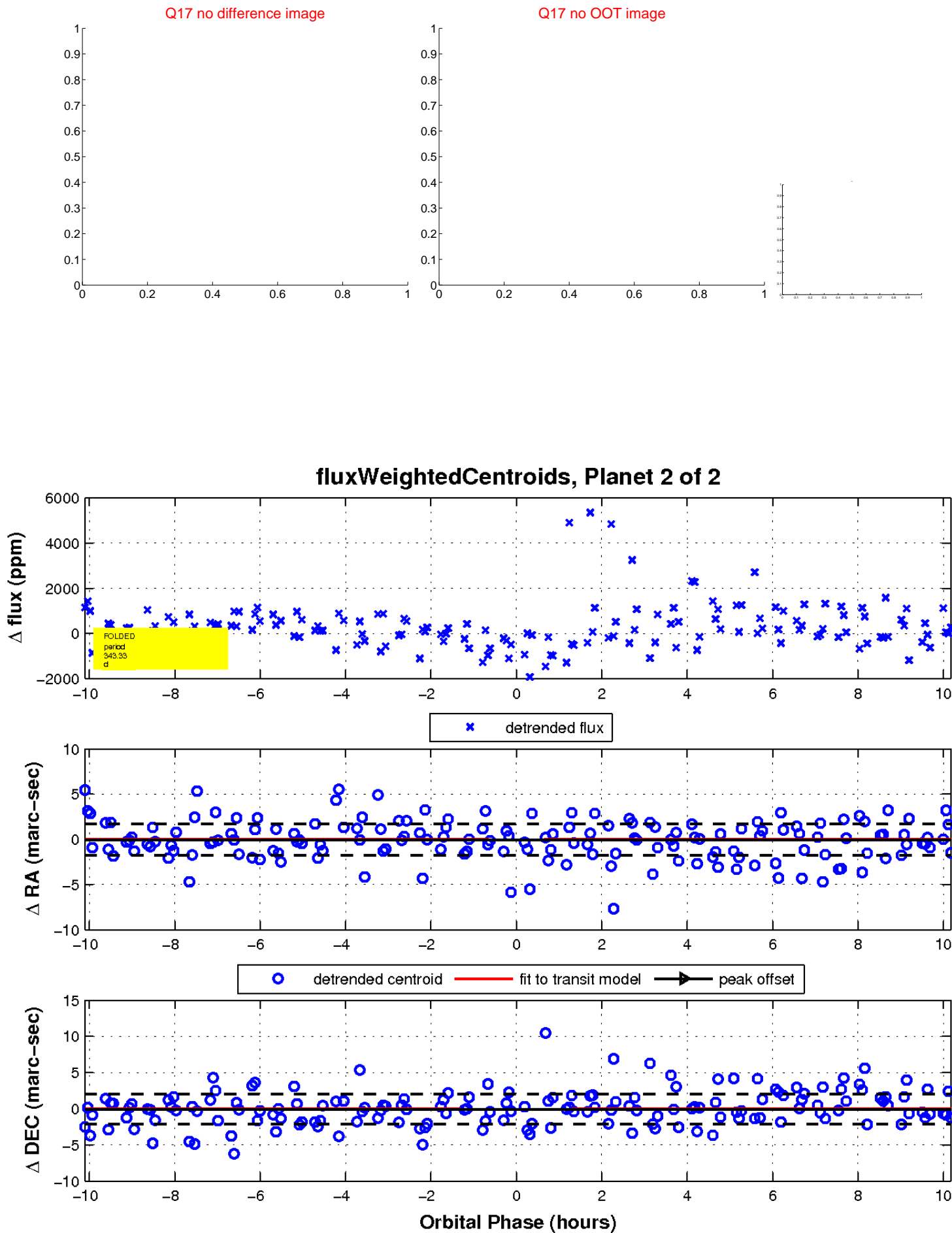
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

