

KIC 003426331

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})
003426331-01	OBS	No	694.029205	160.144750	368.1	17.477	8.8	9.3	1.07	5787	2.33	0.54
003426331-02	OBS	No	698.318398	157.753286	1075.7	69.062	38.4	16.6	1.07	5787	6.77	0.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003426331-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003426331-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—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.

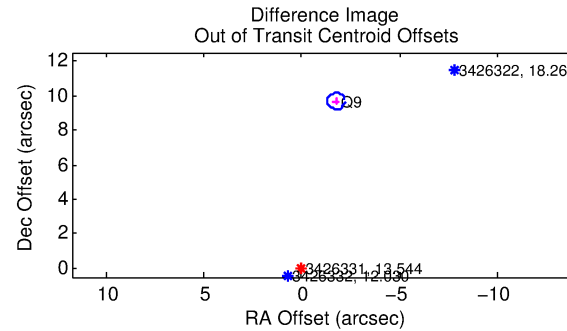
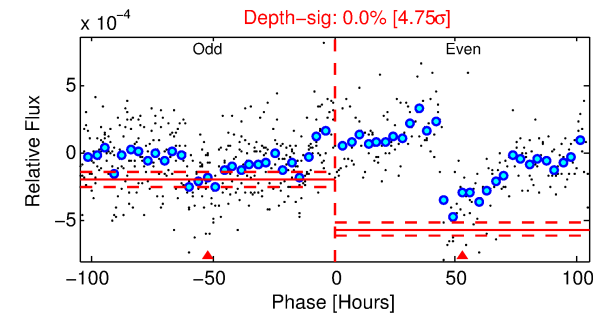
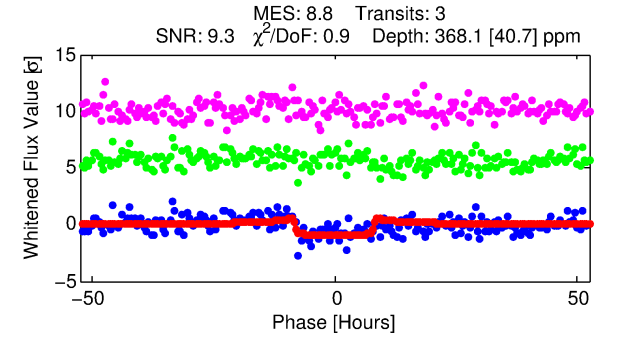
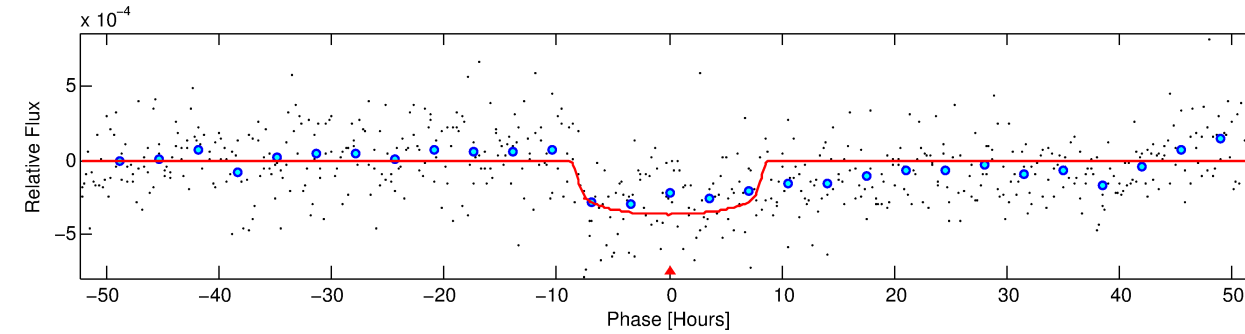
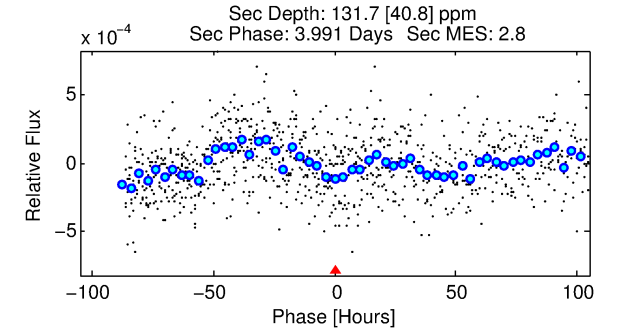
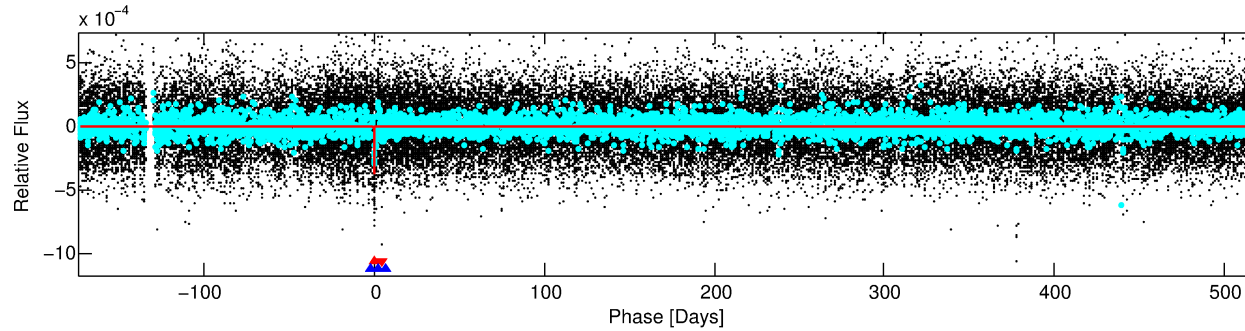
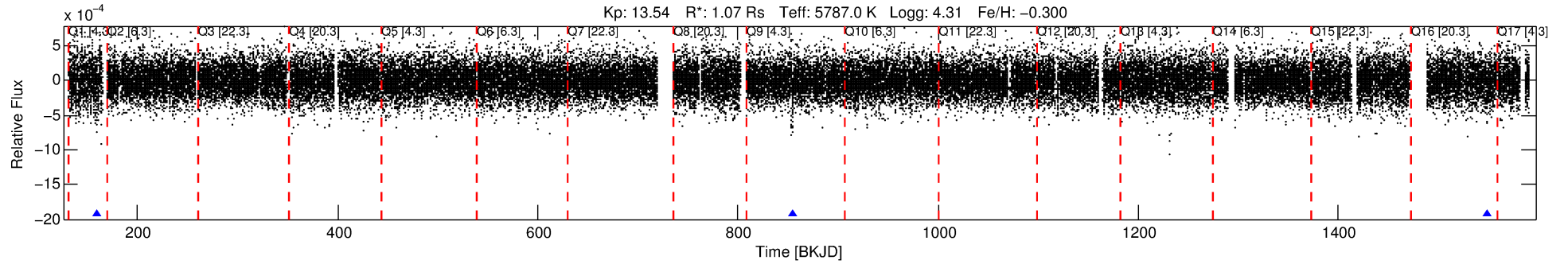
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003426331-01

No Significant Match Found

DV One-Page Summary

KIC: 3426331 Candidate: 1 of 2 Period: 694.029 d



DV Fit Results:

Period = 694.02920 [0.01424] d
Epoch = 160.1448 [0.0190] BKJD
Rp/R* = 0.0199 [0.0027]
a/R* = 174.15 [97.13]
b = 0.84 [0.19]
Seff = 0.54 [0.20]
Teq = 219 [21] K
Rp = 2.32 [0.76] Re
a = 1.4575 [0.3628] AU
Ag = 28481.56 [15495.76] [1.84σ]
Teffp = 4392 [464] K [8.99σ]

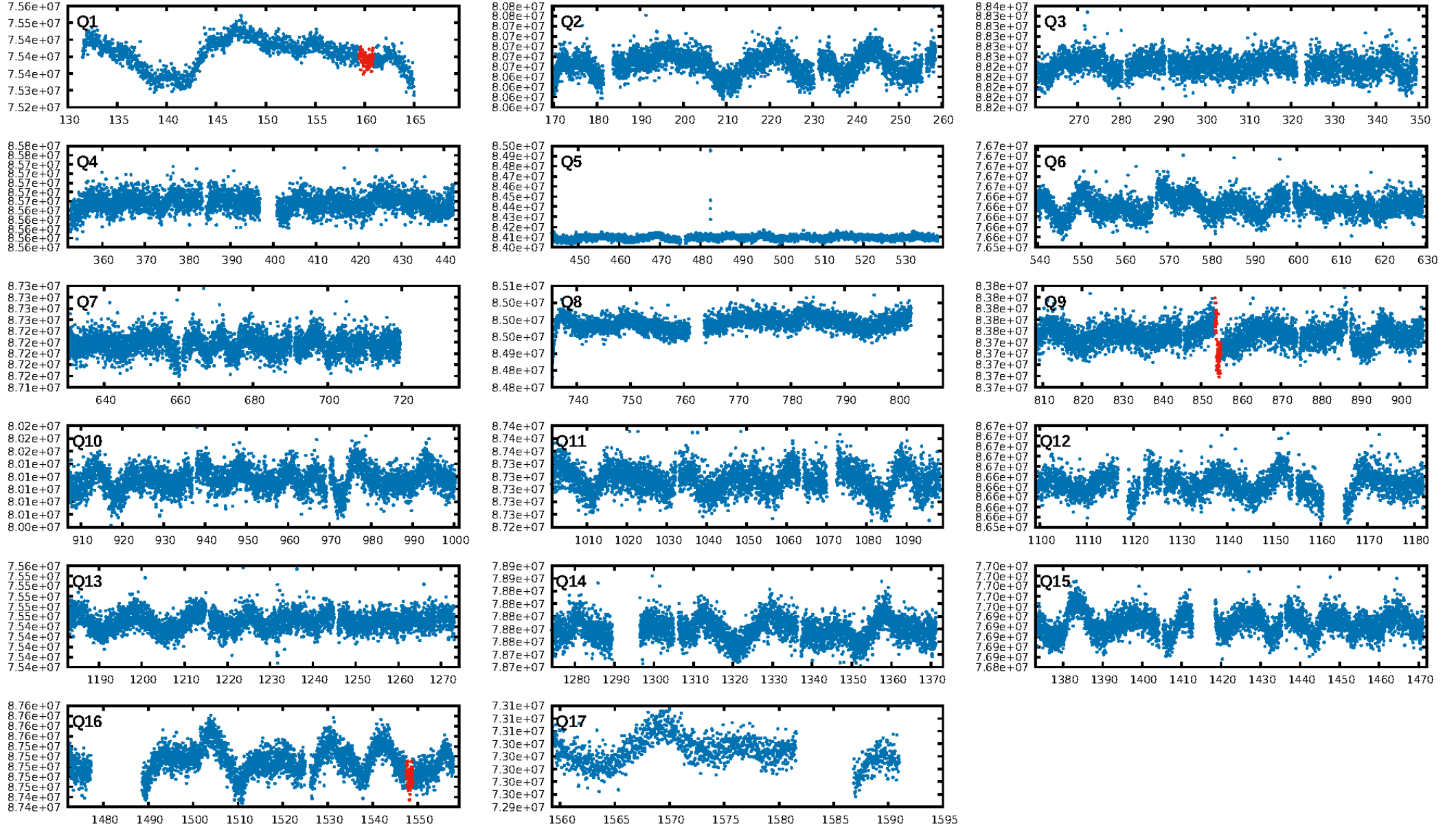
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 85.2% [1.45σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 99.4%
Bootstrap-pfa: 3.78e-12
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -2.926
Centroid-sig: 32.8%
Centroid-so: 3.252 arcsec [4.71σ]
OotOffset-rm: 9.830 arcsec [64.25σ]
KicOffset-rm: 1.768 arcsec [11.73σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 0.00 [0/2]

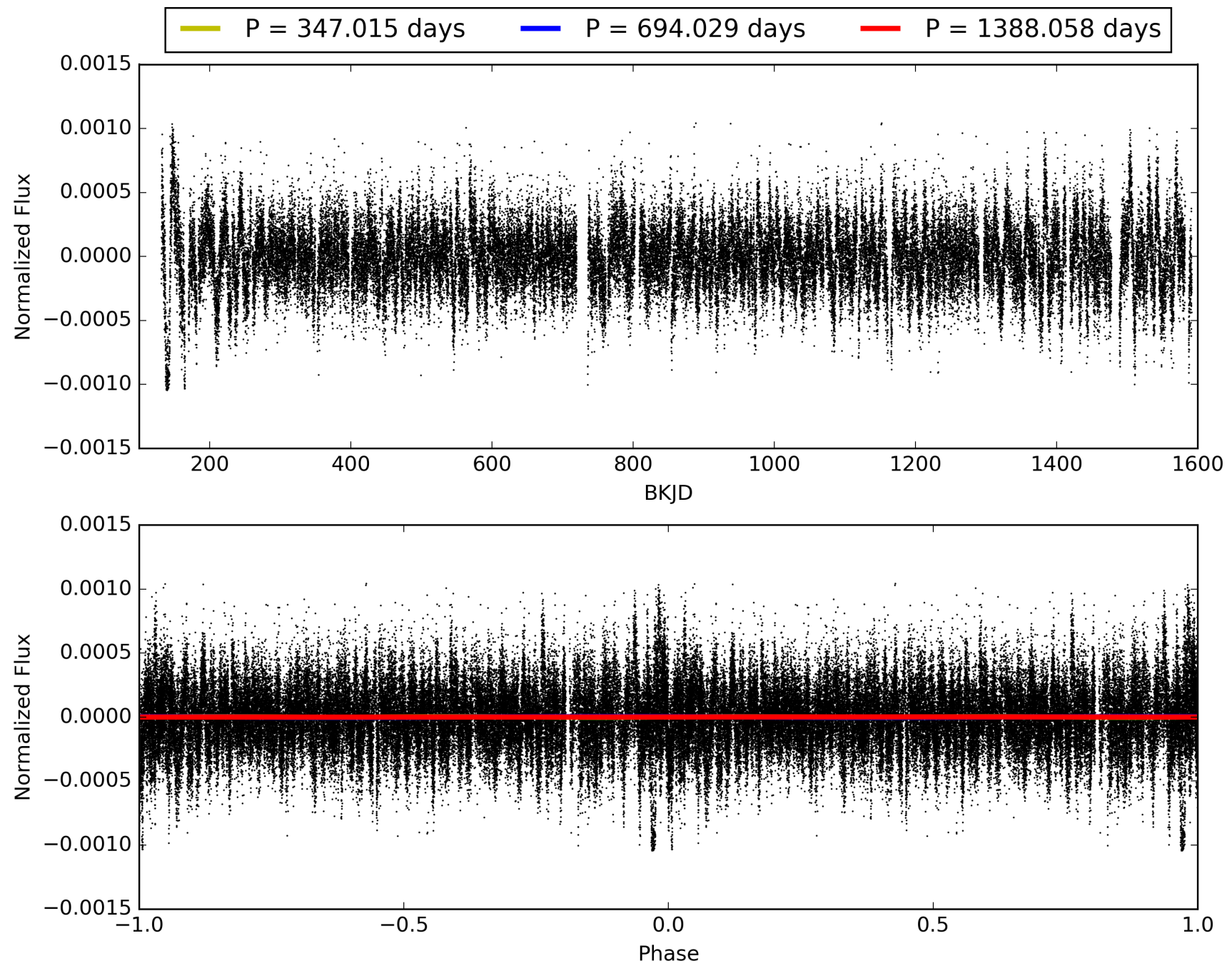
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:06:06 Z

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

TCE 003426331-01, PDC Light Curves

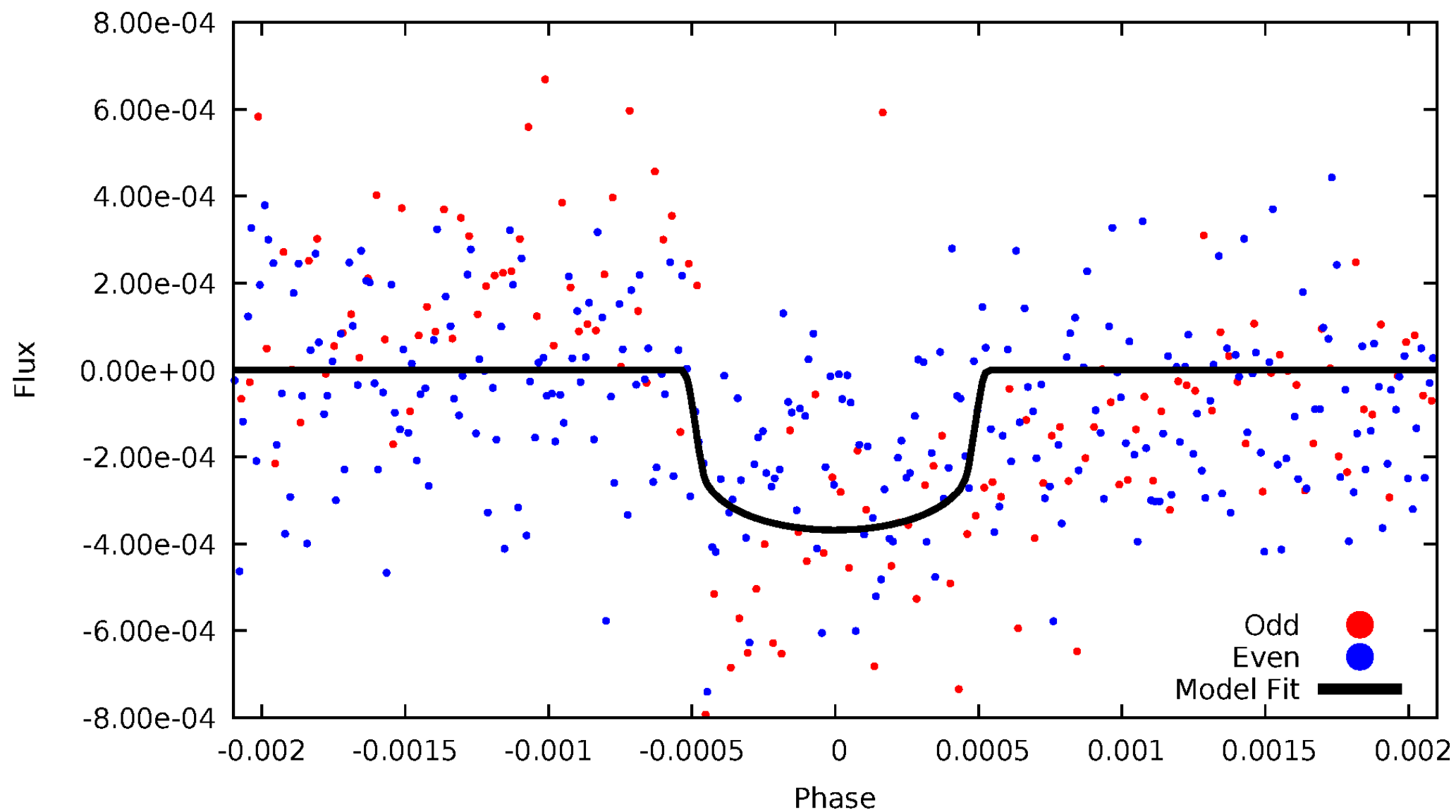


TCE 003426331-01



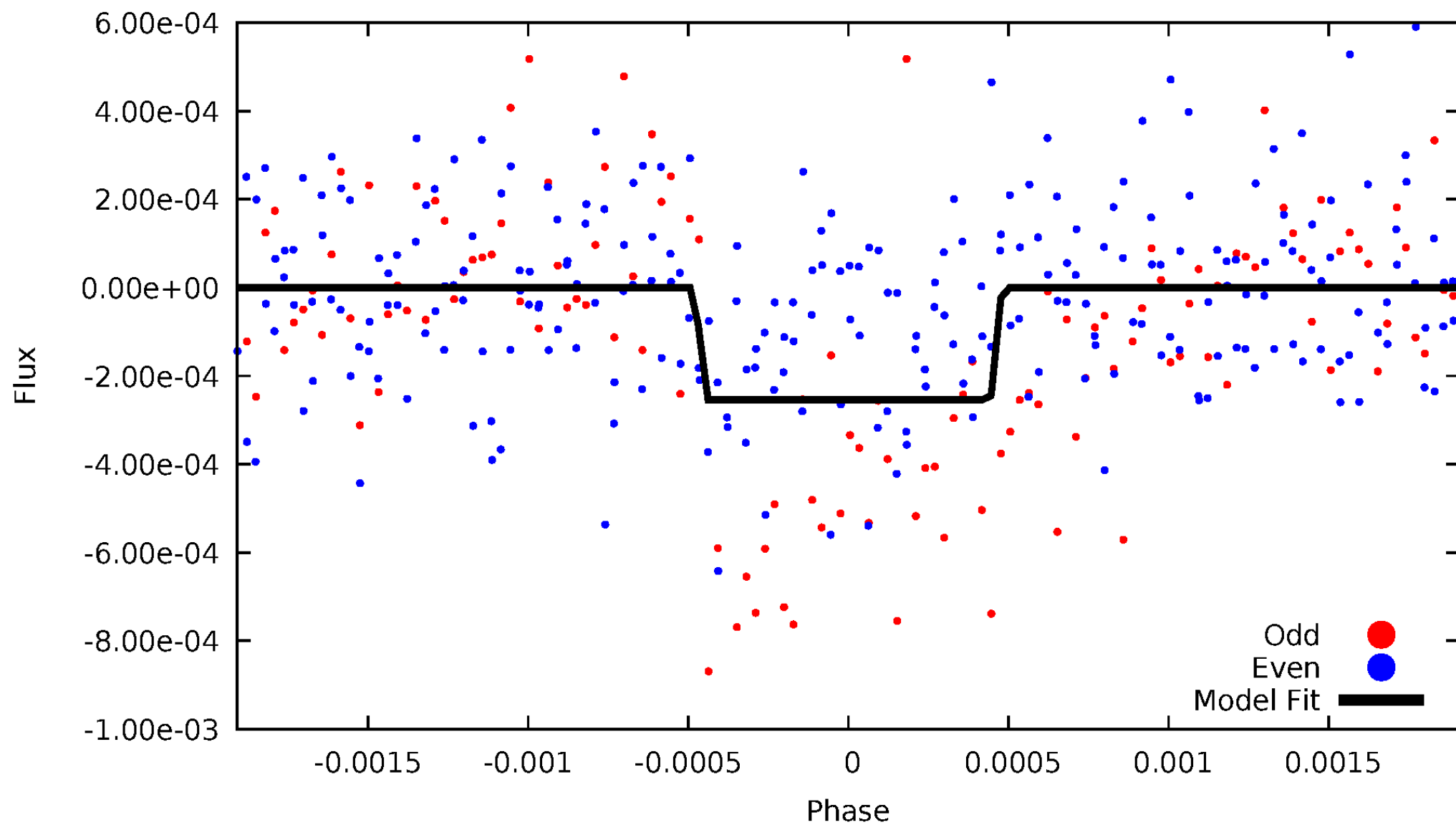
DV Odd/Even

TCE 003426331-01

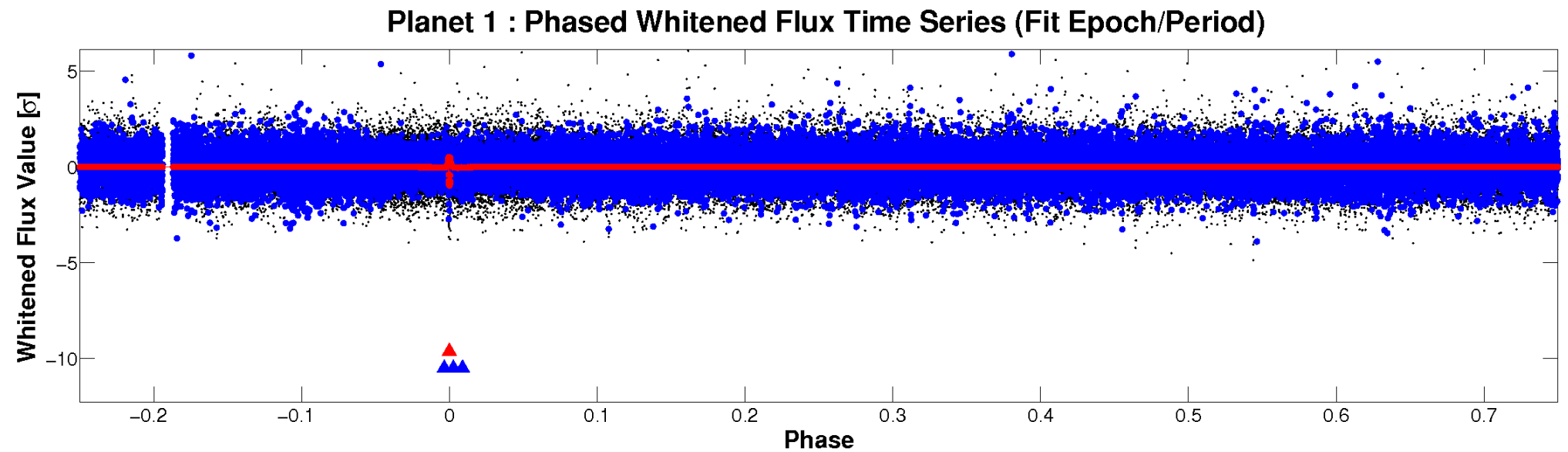
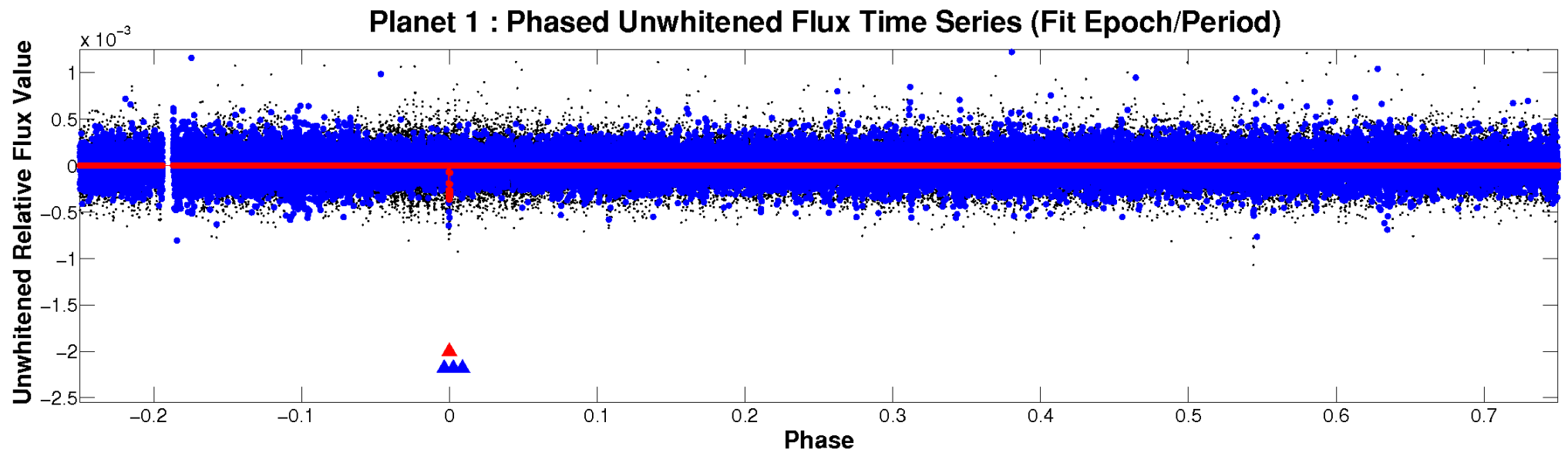


ALT Odd/Even

TCE 003426331-01



Non-Whitened Vs. Whitened Light Curve



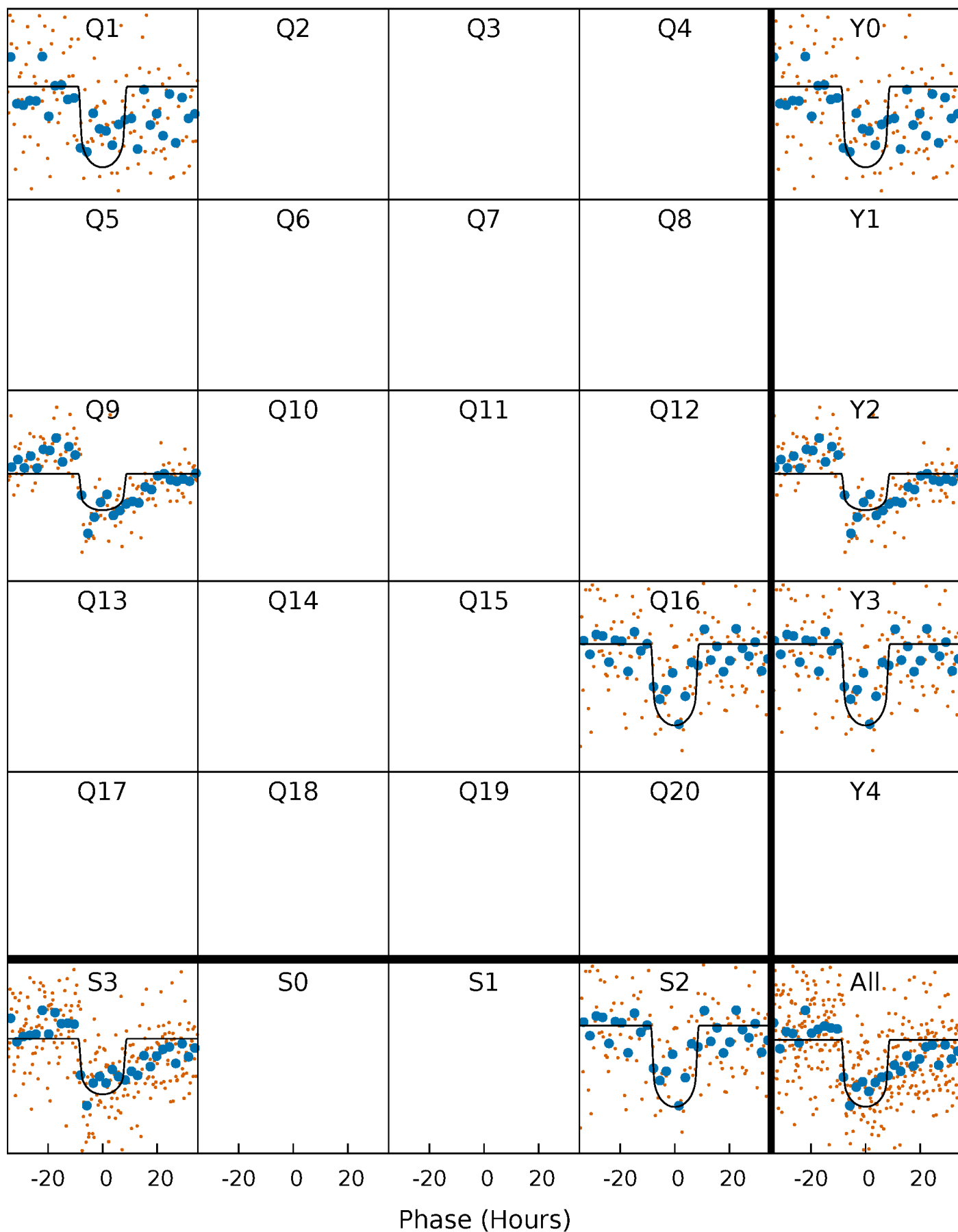
PDC Quarter-Phased Transit Curves

TCE 003426331-01 P=694.029204 Days $T_0=160.144750$ (BKJD)



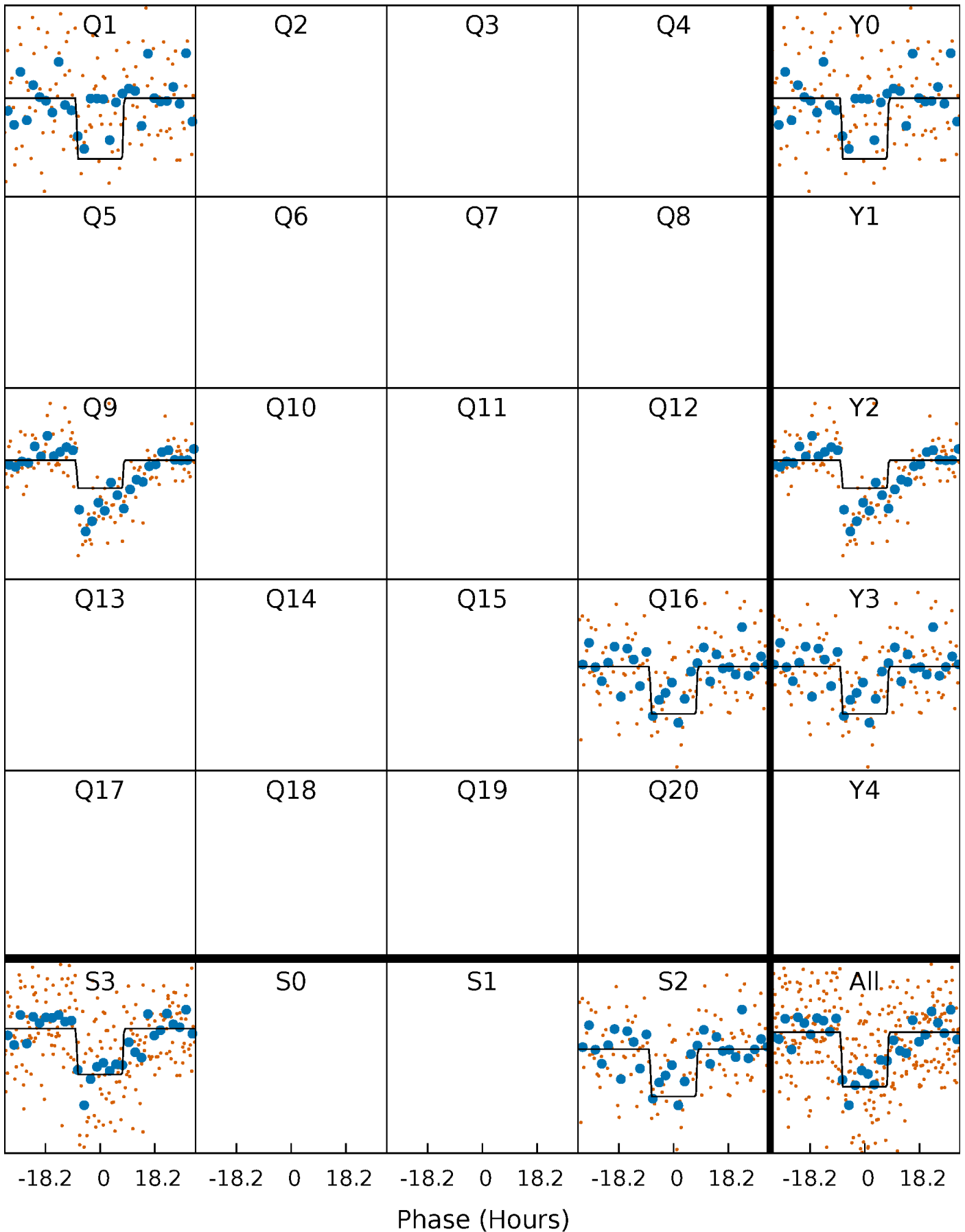
DV Quarter-Phased Transit Curves

TCE 003426331-01 P=694.029204 Days $T_0=160.144750$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

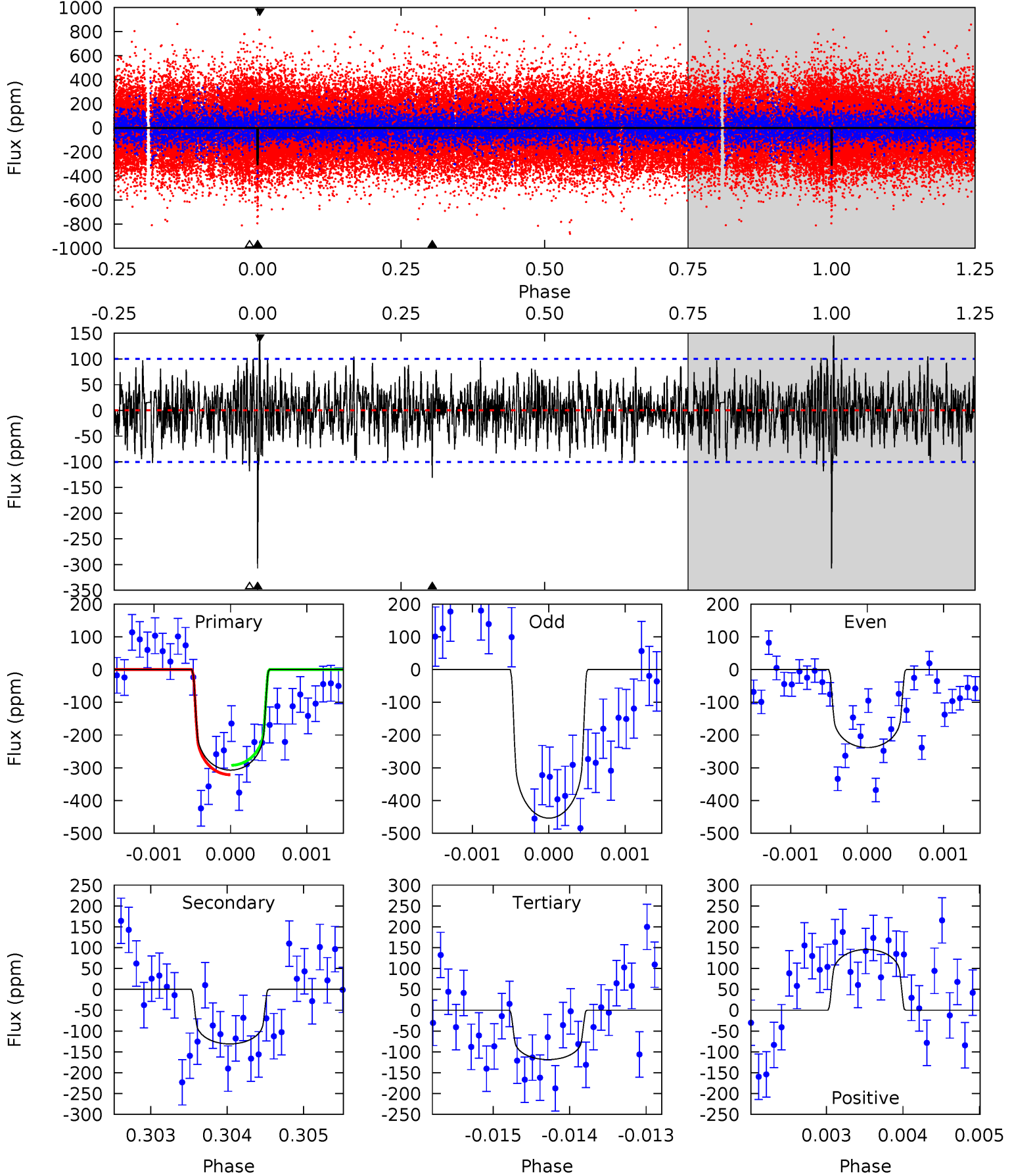
TCE 003426331-01 P=694.046299 Days $T_0=160.116966$ (BKJD)



DV Model-Shift Uniqueness Test

003426331-01, P = 694.029204 Days, E = 160.144750 Days

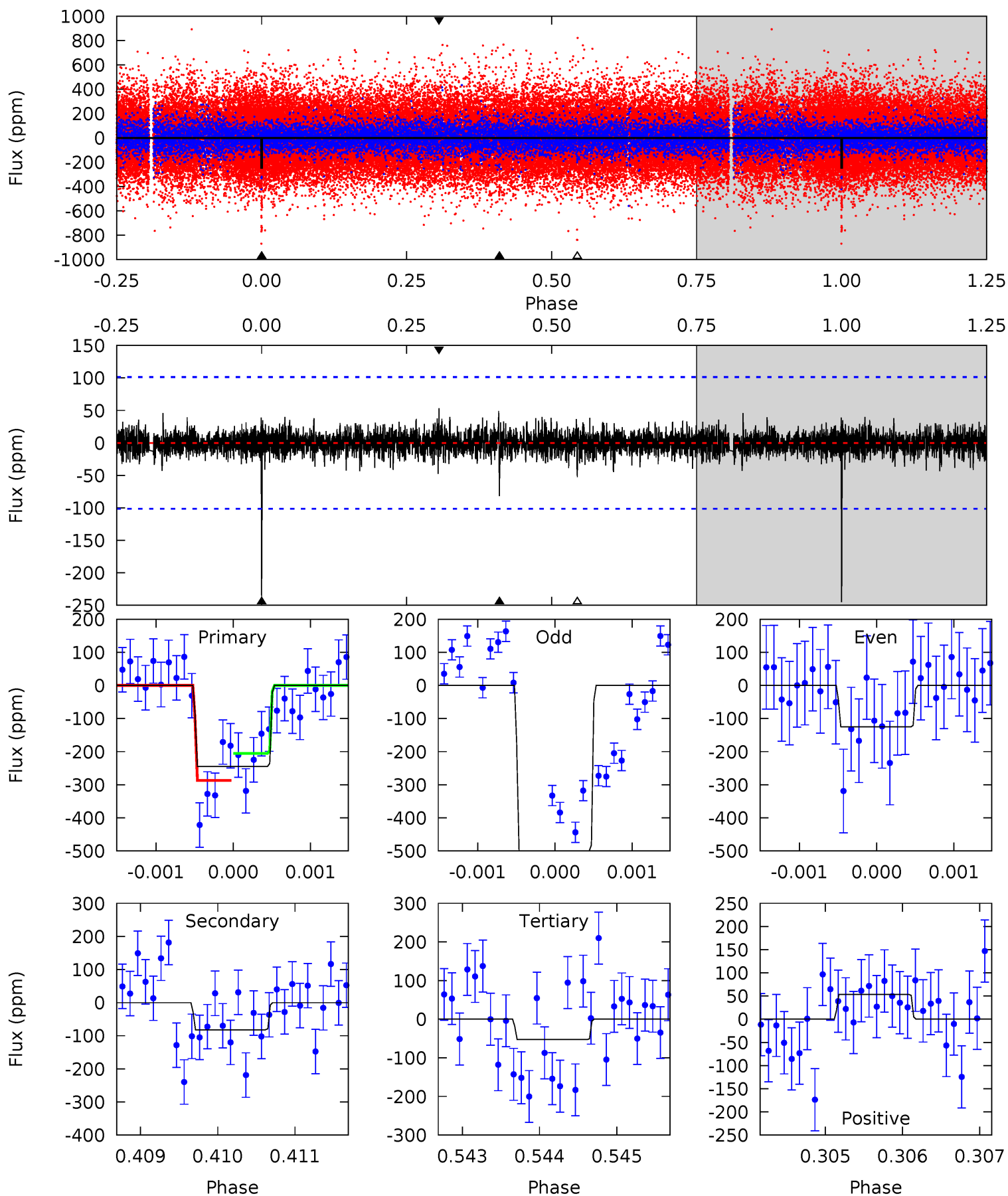
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.7	7.11	6.43	7.90	5.44	3.27	1.94	10.2	8.76	0.68	-0.80	5.35	1.23	0.32	0.78



Alt Model-Shift Uniqueness Test

003426331-01, P = 694.046299 Days, E = 160.116966 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	4.42	2.84	2.87	5.46	3.31	0.63	10.4	10.3	1.58	1.55	9.53	1.44	0.18	2.20



Stellar Parameters For KIC 003426331

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5787^{+155}_{-155}	$4.313^{+0.195}_{-0.195}$	$-0.300^{+0.300}_{-0.250}$	$1.069^{+0.319}_{-0.239}$	$0.857^{+0.130}_{-0.070}$	$0.989^{+0.962}_{-0.482}$
	+3%/-3%	+5%/-5%	+100%/-83%	+30%/-22%	+15%/-8%	+97%/-49%
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 003426331-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-131 ± 18	$2.33^{+0.52}_{-0.41}$	306^{+23}_{-21}	4546^{+331}_{-263}	27941^{+14563}_{-8817}
Alt.	-82 ± 19	$1.86^{+0.44}_{-0.40}$	308^{+23}_{-22}	4539^{+434}_{-353}	27282^{+18889}_{-10320}

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 $A_{obs} \gg 1.0$

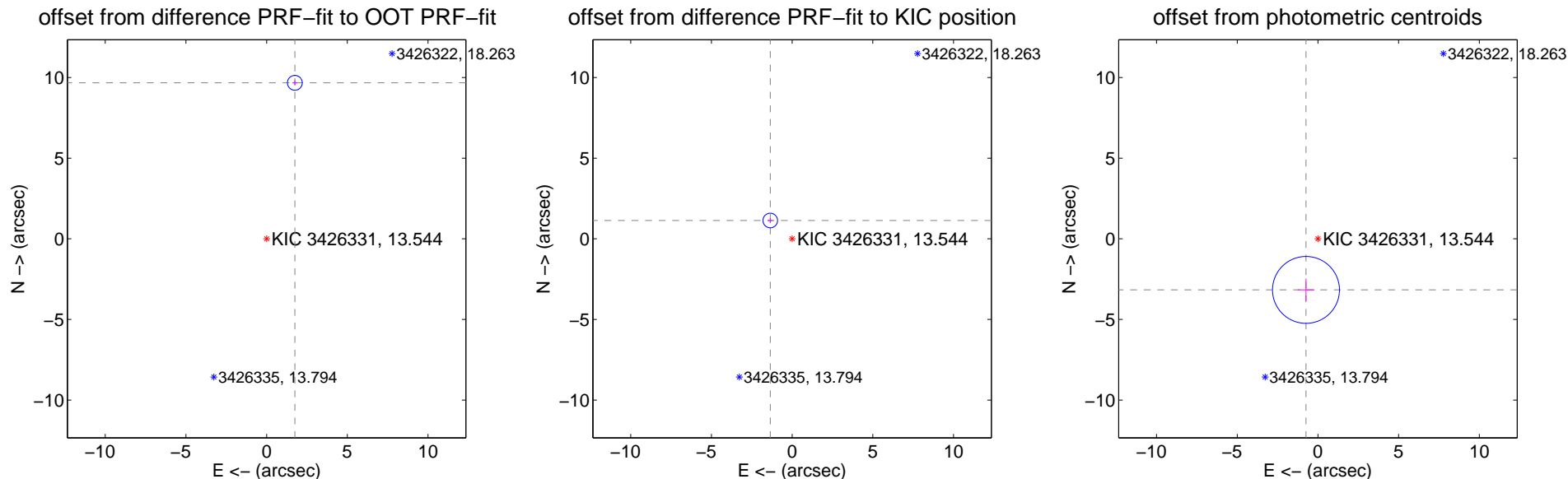
DV Centroid Data

Supplemental centroid analysis for 003426331-01. Kepler magnitude: 13.54. Transit SNR 9.27

There are 1 quarters with good PRF difference image offsets

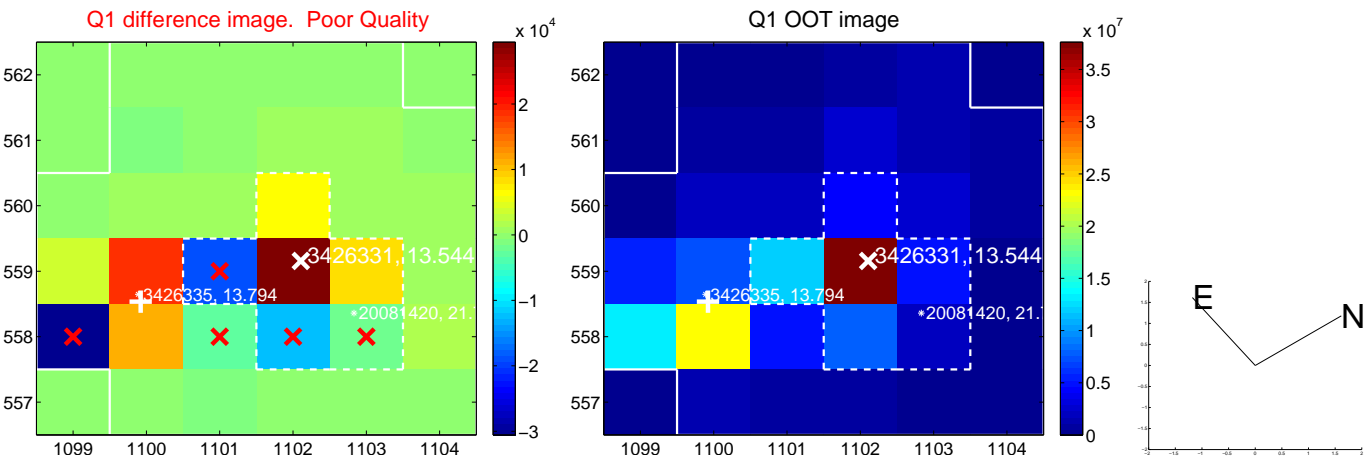
The OOT PRF centroid is offset from the target star catalog position by about 9.08 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	9.830 ± 0.153	64.25	-1.749 ± 0.149	9.673 ± 0.153
PRF-fit source offset from KIC position	1.768 ± 0.151	11.73	1.355 ± 0.149	1.135 ± 0.153
photometric centroid source offset	3.25 ± 0.69	4.71	0.74 ± 0.52	-3.17 ± 0.70



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.

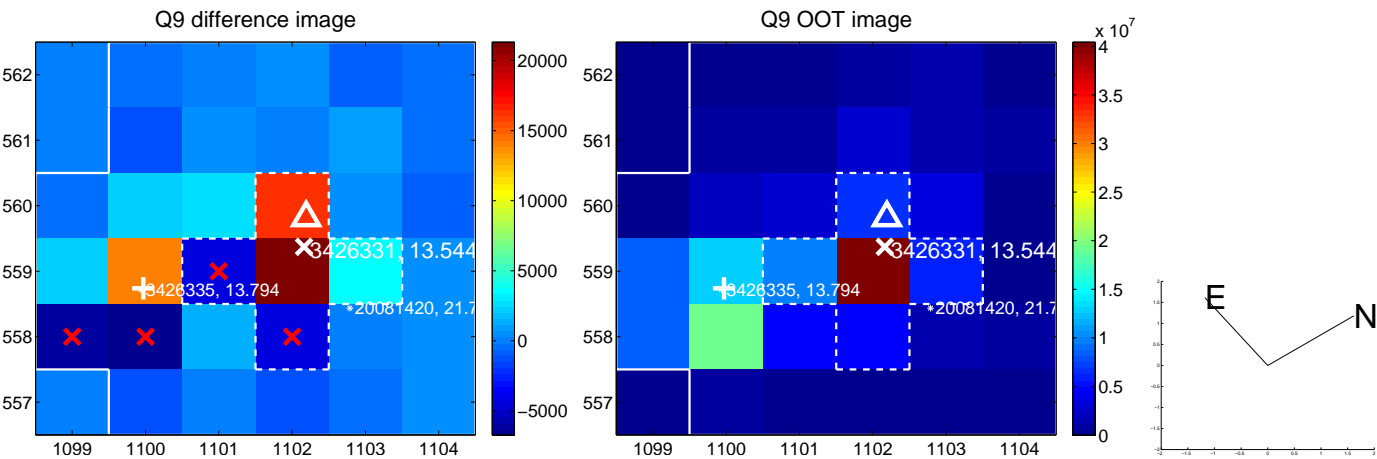
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



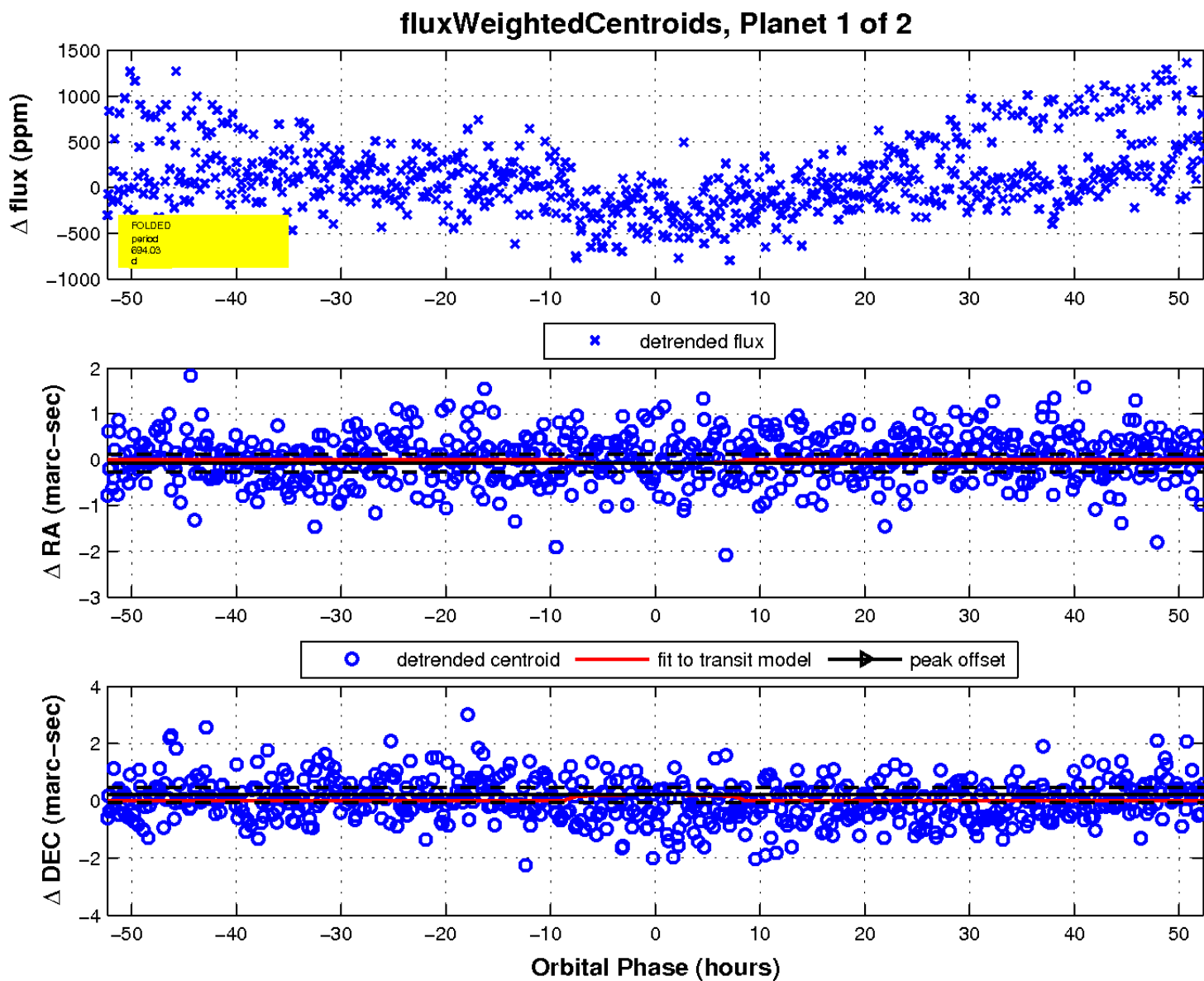
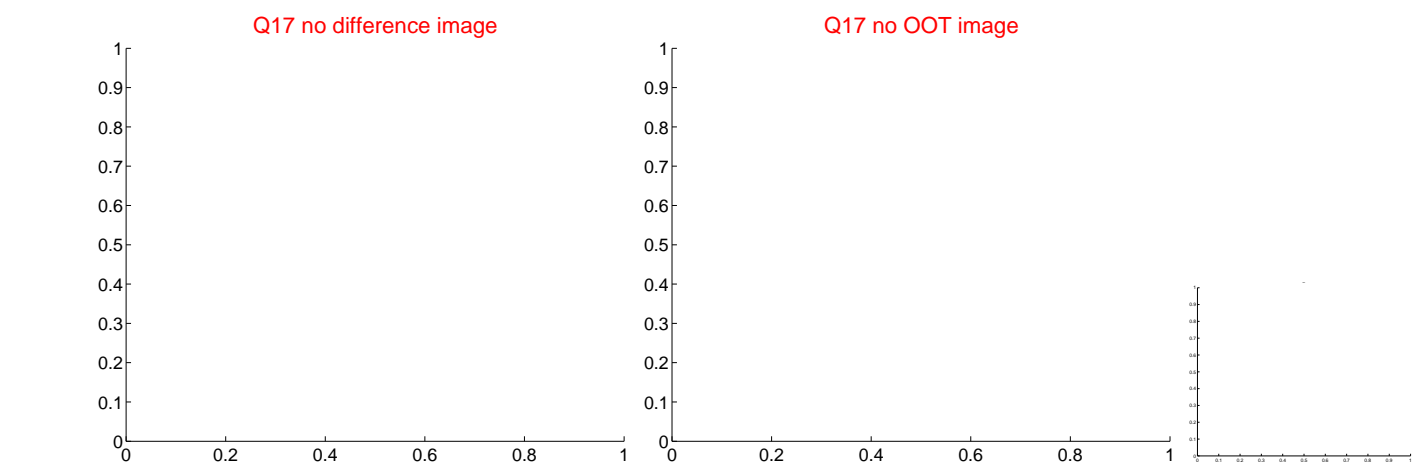
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

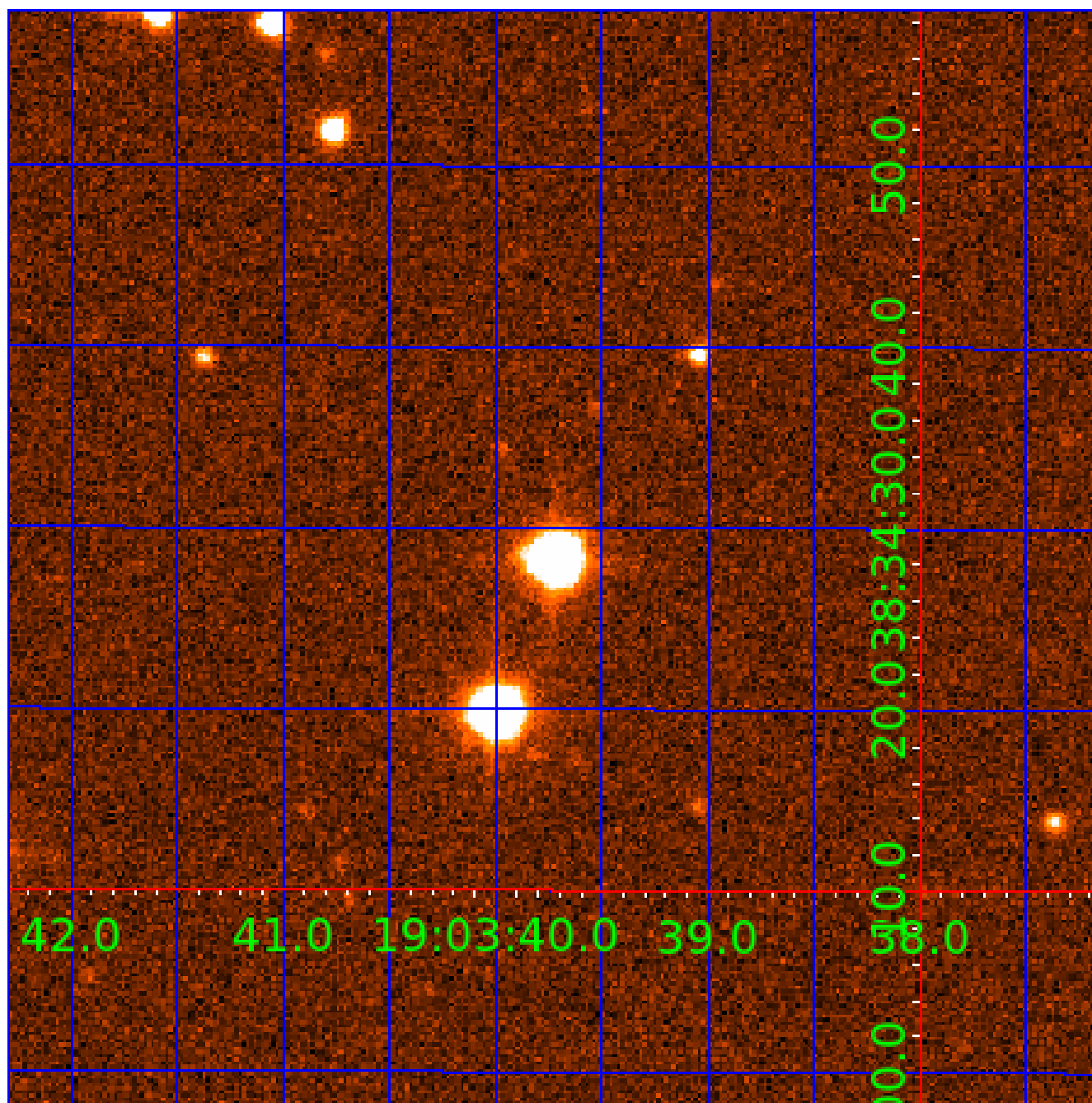


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003426331

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})
003426331-01	OBS	No	694.029205	160.144750	368.1	17.477	8.8	9.3	1.07	5787	2.33	0.54
003426331-02	OBS	No	698.318398	157.753286	1075.7	69.062	38.4	16.6	1.07	5787	6.77	0.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003426331-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003426331-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—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.

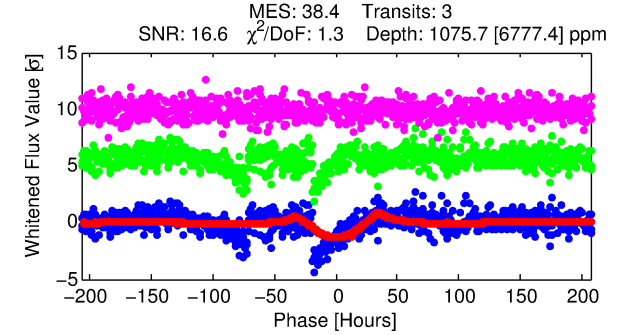
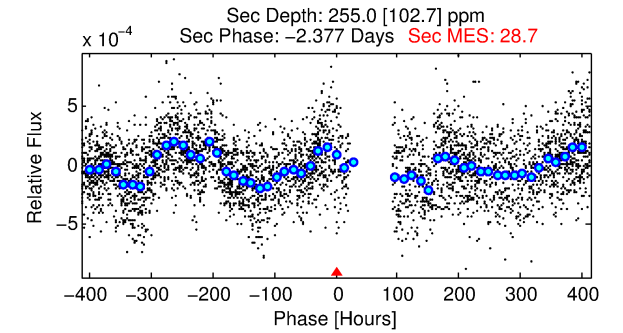
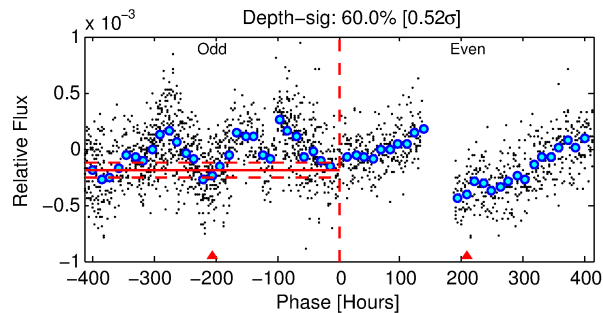
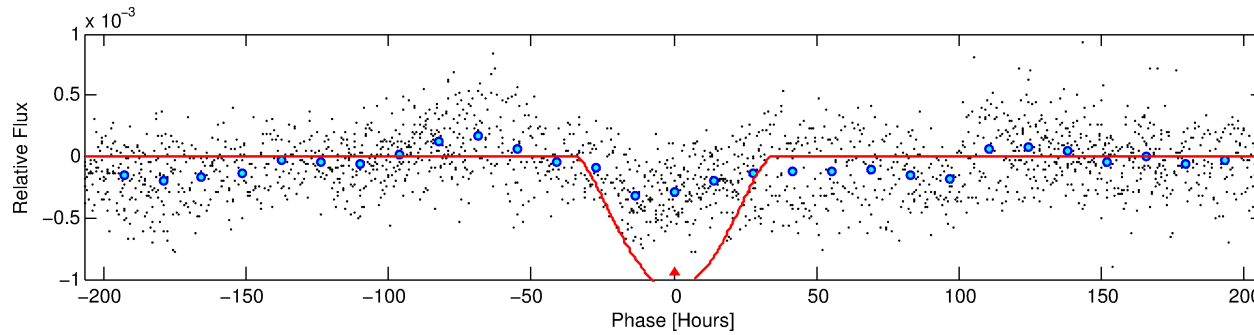
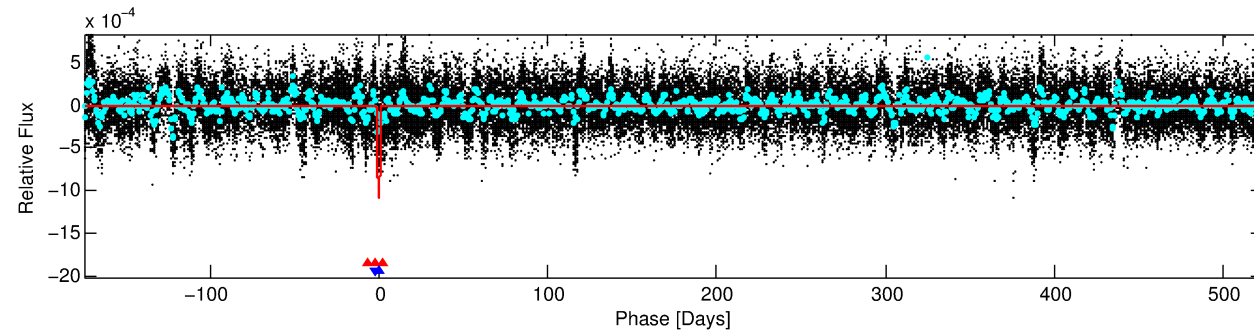
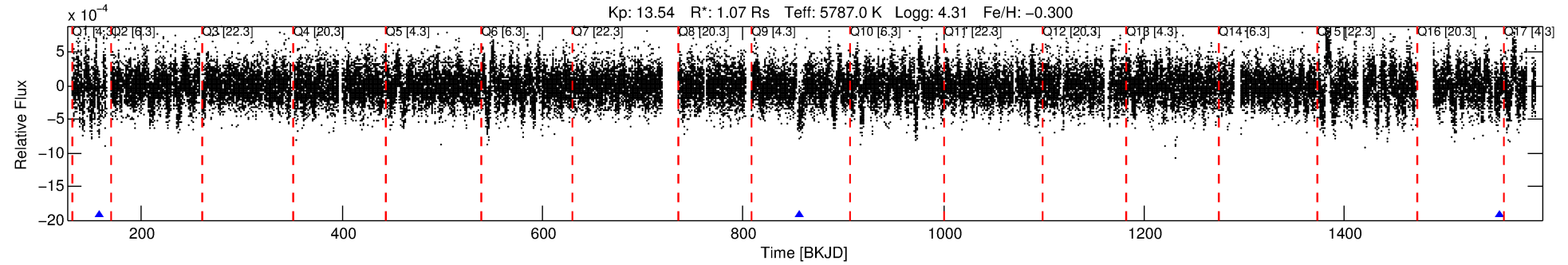
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003426331-02

No Significant Match Found

DV One-Page Summary

KIC: 3426331 Candidate: 2 of 2 Period: 698.318 d



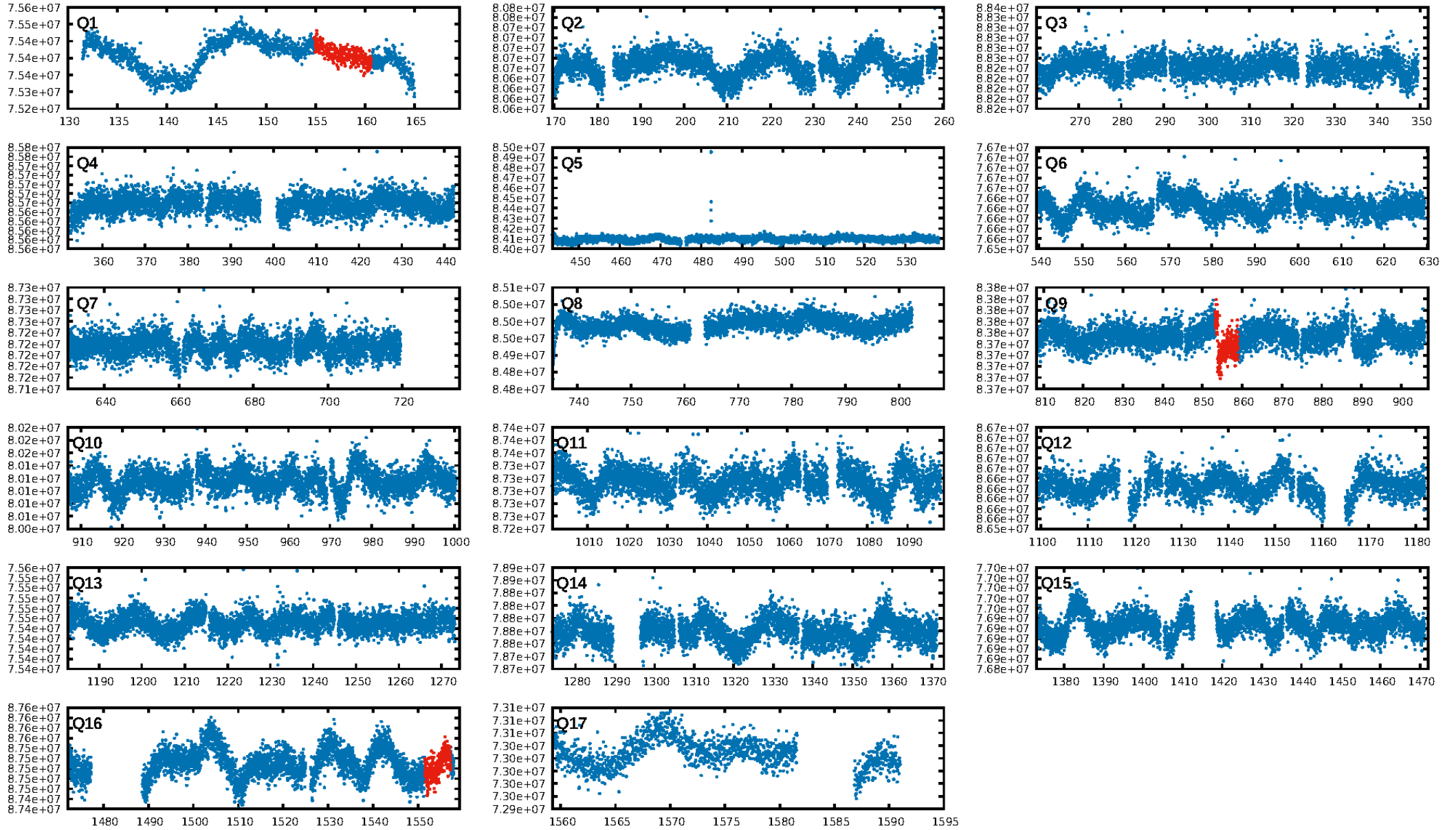
DV Fit Results:

Period = 698.31840 [0.06401] d
Epoch = 157.7533 [0.0907] BKJD
Rp/R* = 0.0580 [0.0651]
a/R* = 26.71 [7.01]
b = 1.00 [0.15]
Seff = 0.54 [0.20]
Teq = 218 [20] K
Rp = 6.77 [7.86] Re
a = 1.4635 [0.3643] AU
Ag = 6561.68 [15144.74] [0.43σ]
Teffp = 3036 [1733] K [1.63σ]

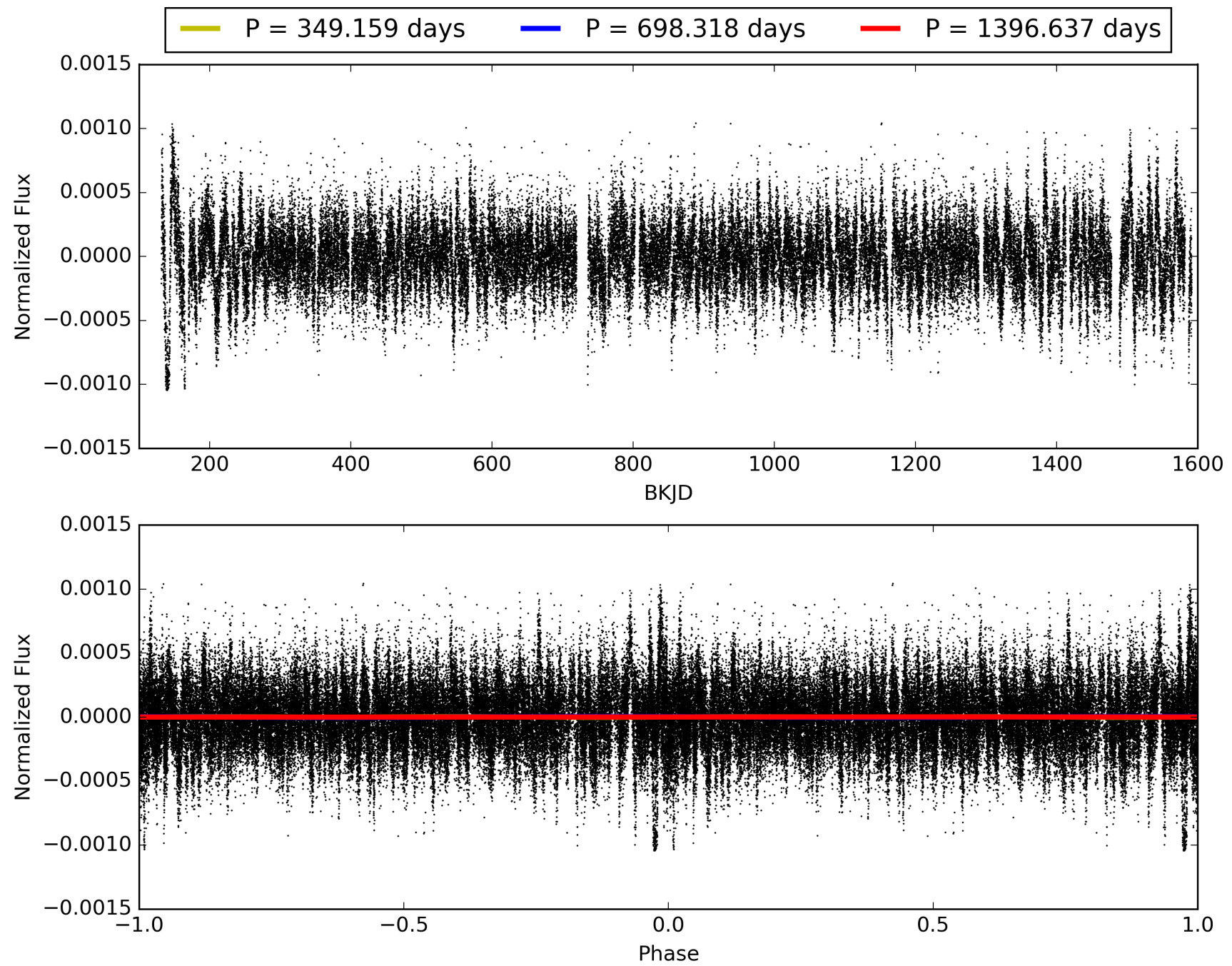
DV Diagnostic Results:

ShortPeriod-sig: 85.2% [1.45σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.1%
Bootstrap-pfa: 1.12e-158
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 1.593
Centroid-sig: 12.4%
Centroid-so: 2.501 arcsec [17.23σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 0.00 [0/2]

TCE 003426331-02, PDC Light Curves

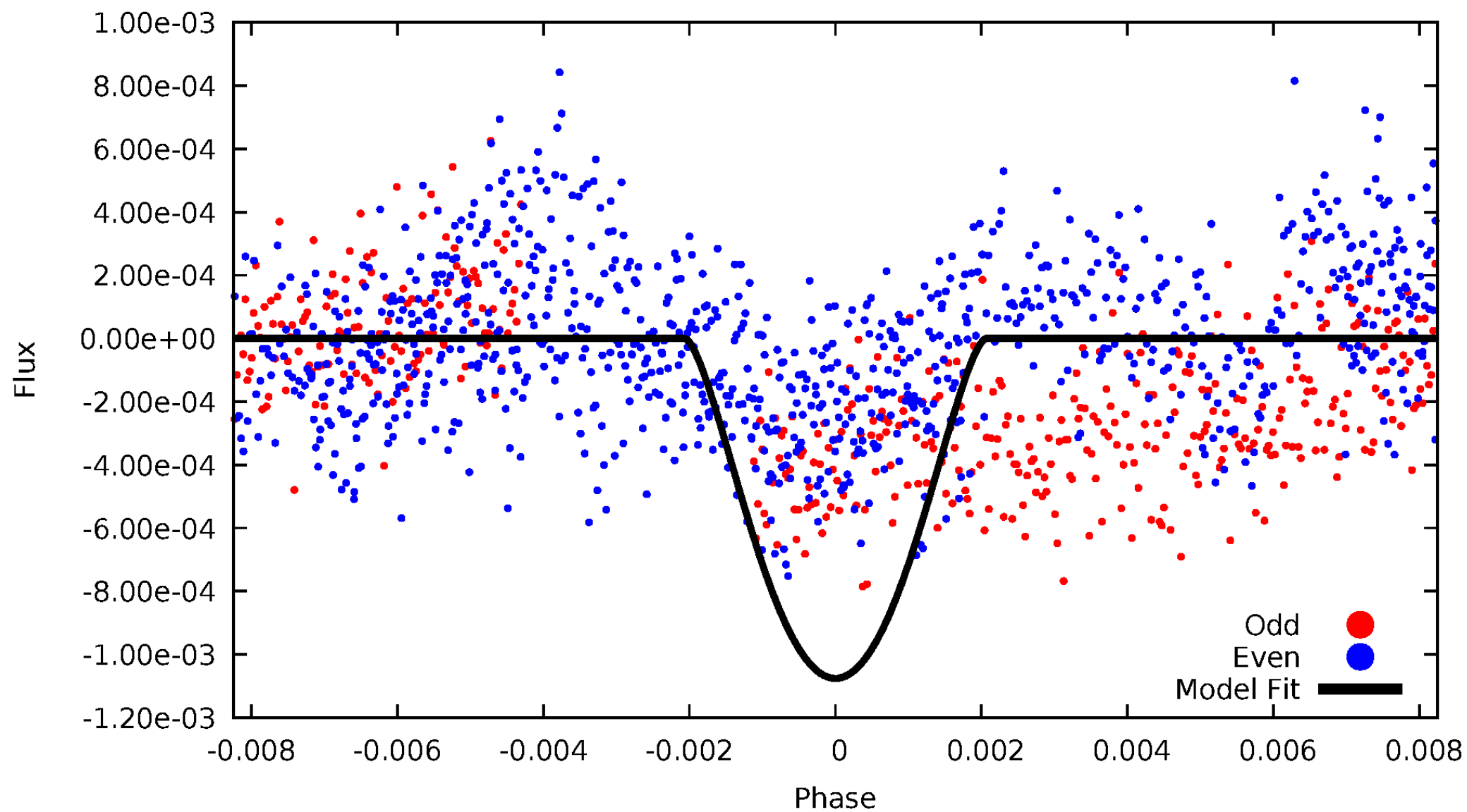


TCE 003426331-02



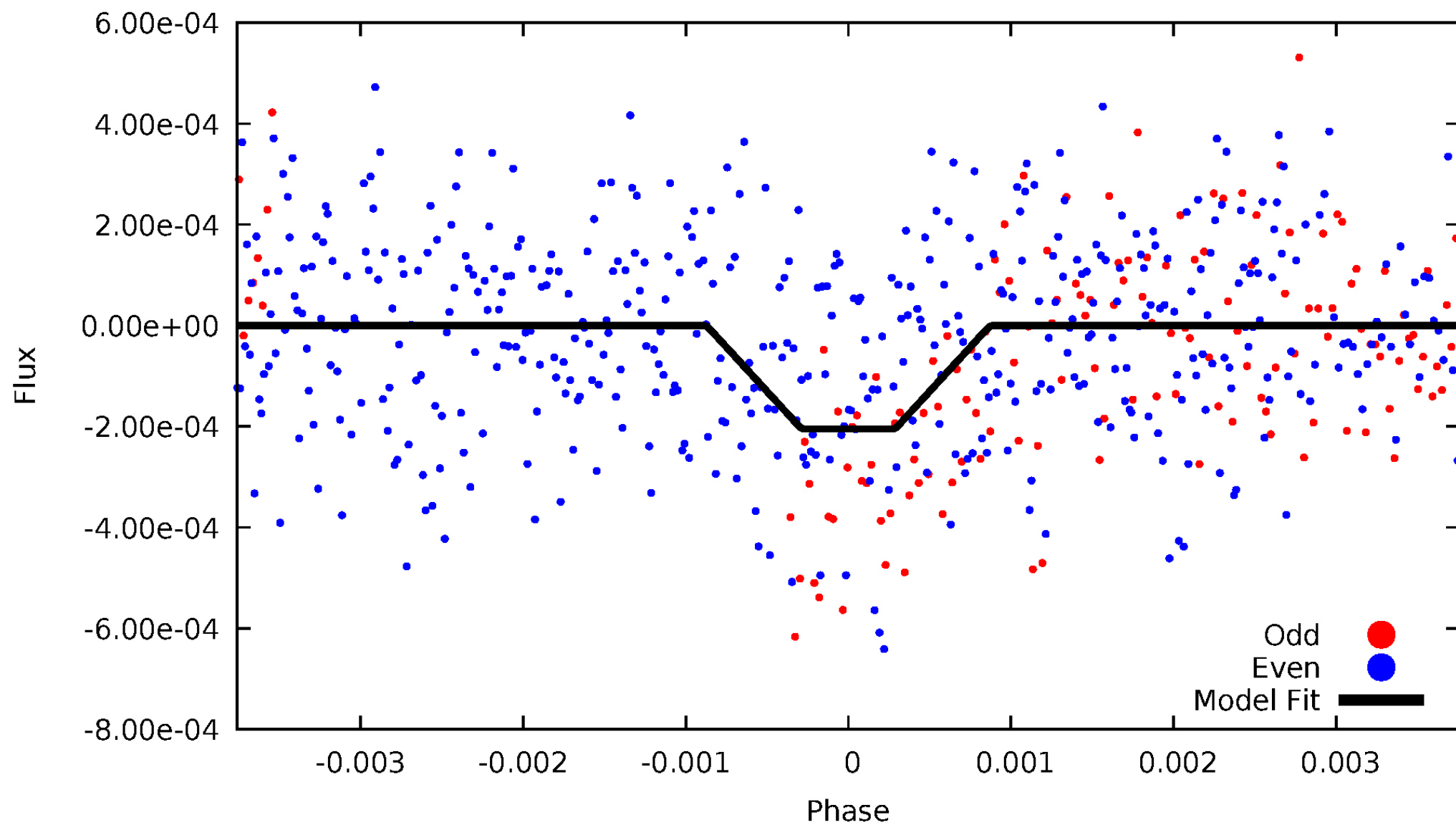
DV Odd/Even

TCE 003426331-02



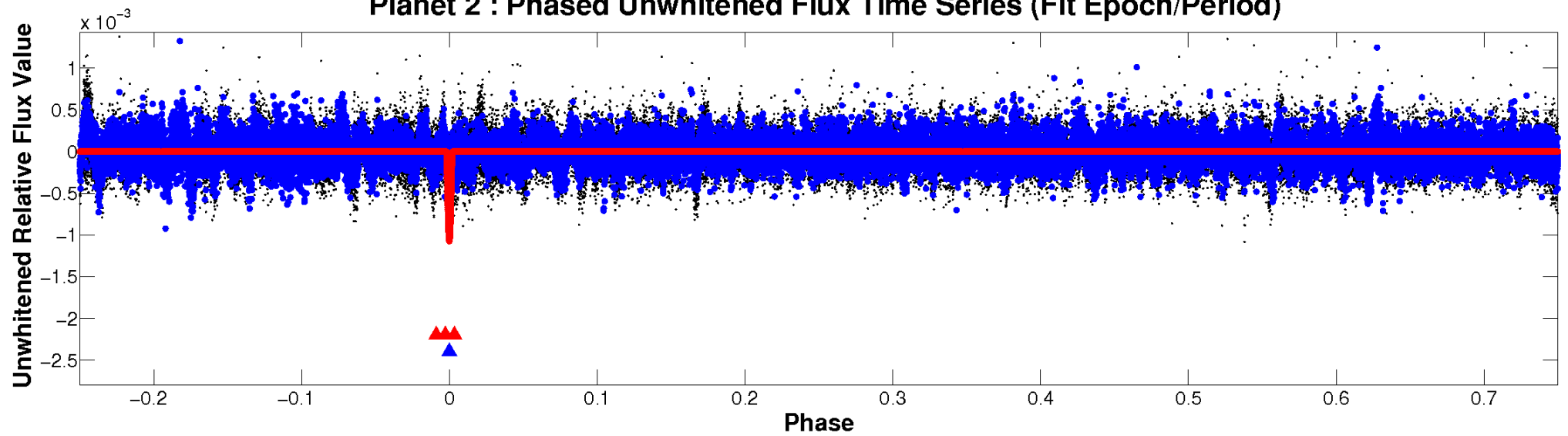
ALT Odd/Even

TCE 003426331-02

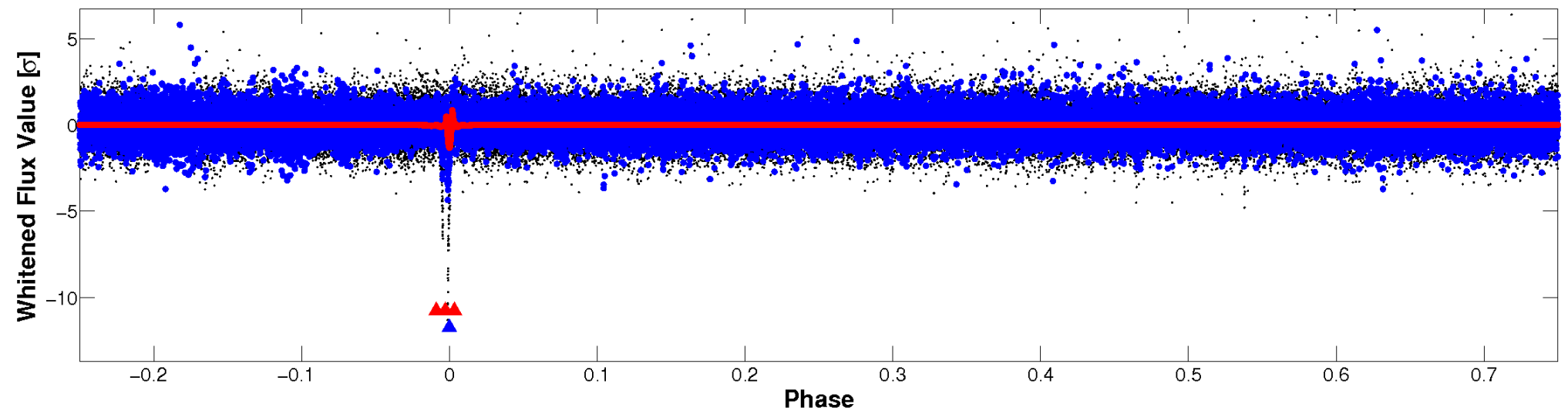


Non-Whitened Vs. Whitened Light Curve

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 003426331-02 P=698.318398 Days $T_0=157.753286$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 003426331-02 $P=698.318398$ Days $T_0=157.753286$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

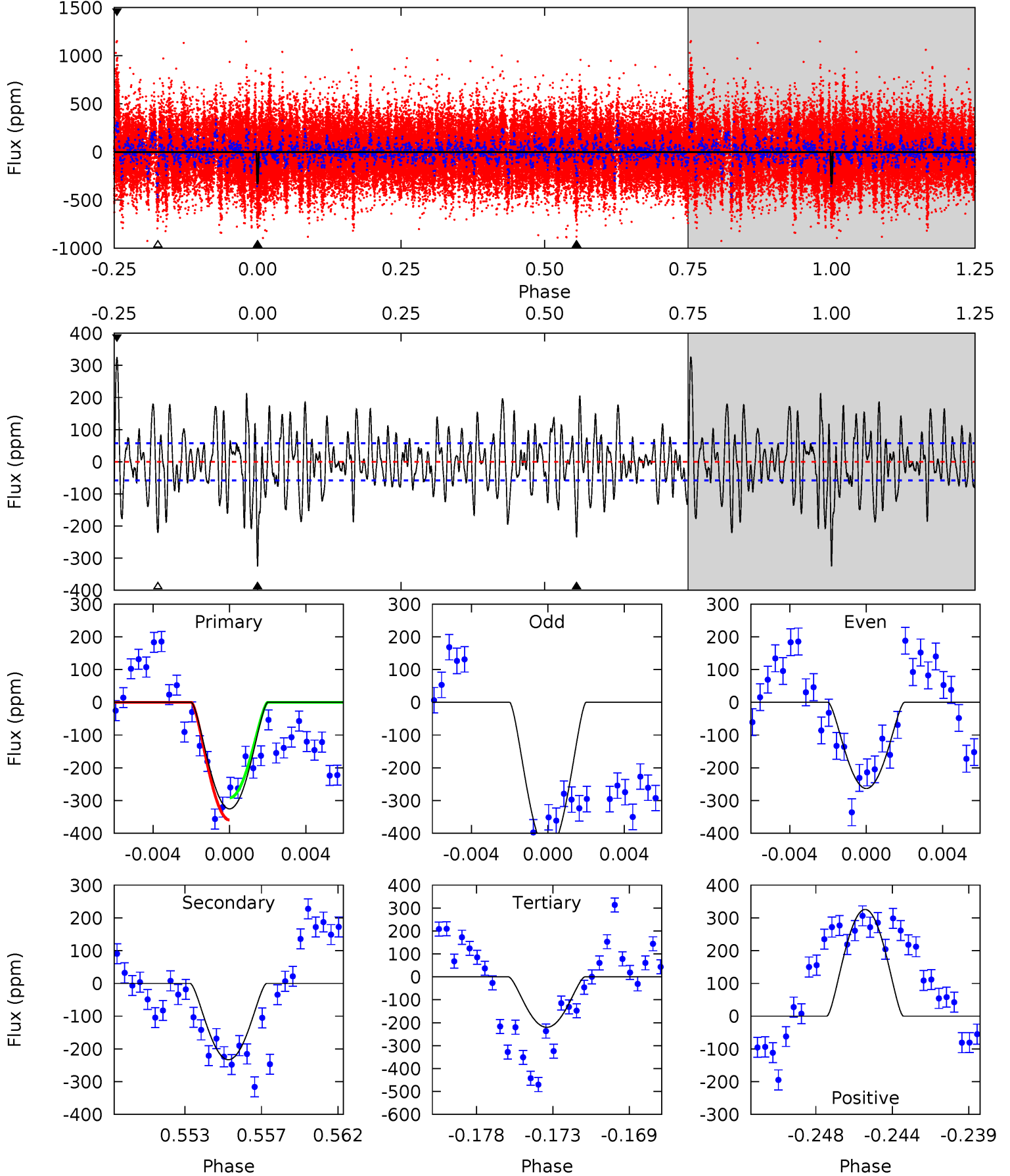
TCE 003426331-02 P=698.391836 Days $T_0=157.147410$ (BKJD)



DV Model-Shift Uniqueness Test

003426331-02, P = 698.318398 Days, E = 157.753286 Days

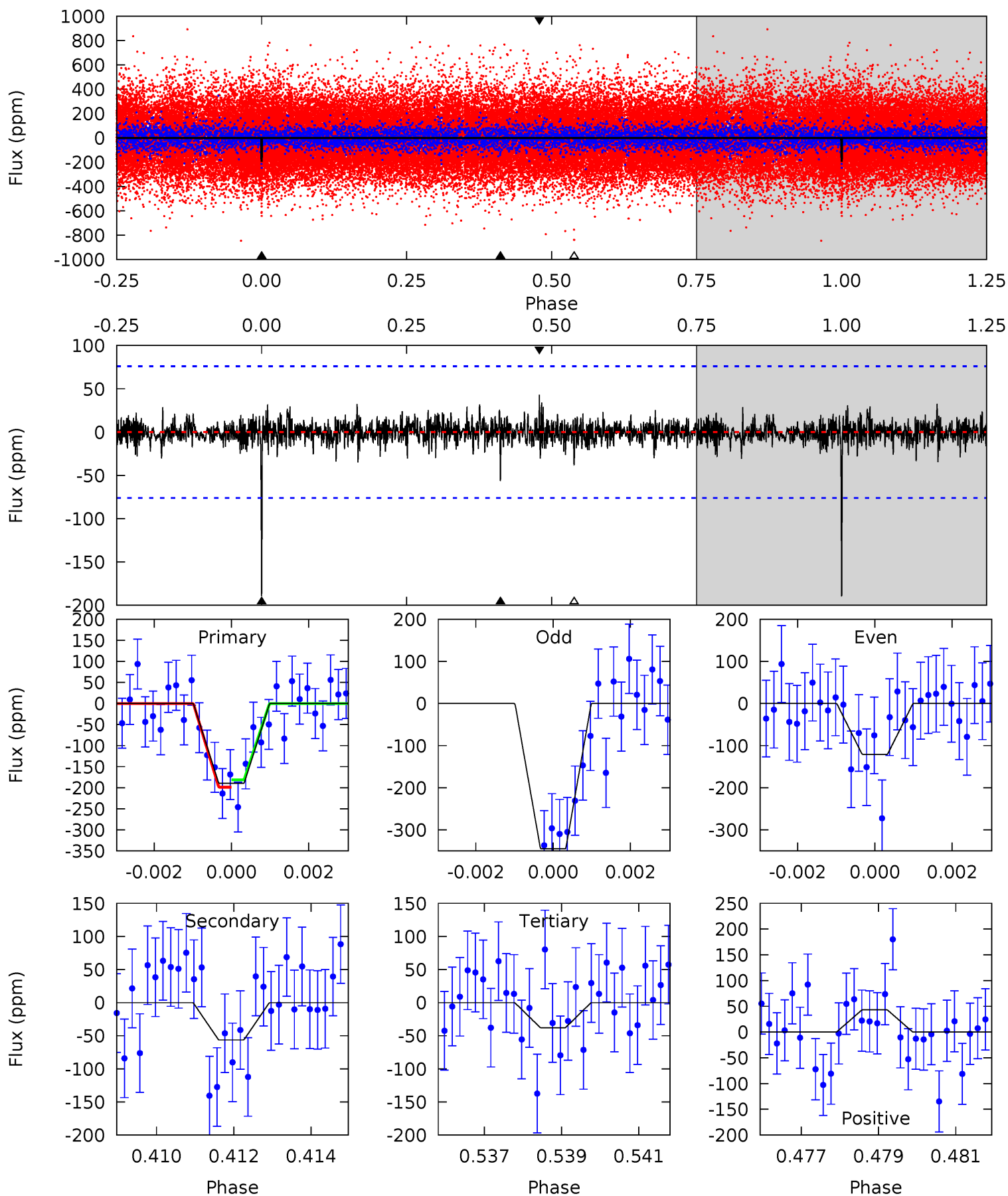
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.3	21.0	19.8	29.3	5.19	2.87	7.15	9.48	-0.01	1.16	-8.33	7.71	1.15	0.50	3.02



Alt Model-Shift Uniqueness Test

003426331-02, P = 698.391836 Days, E = 157.147410 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	3.96	2.66	3.03	5.35	3.13	0.65	10.7	10.3	1.30	0.93	6.99	1.44	0.19	0.61



Stellar Parameters For KIC 003426331

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5787^{+155}_{-155}	$4.313^{+0.195}_{-0.195}$	$-0.300^{+0.300}_{-0.250}$	$1.069^{+0.319}_{-0.239}$	$0.857^{+0.130}_{-0.070}$	$0.989^{+0.962}_{-0.482}$
	+3%/-3%	+5%/-5%	+100%/-83%	+30%/-22%	+15%/-8%	+97%/-49%
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 003426331-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-233 ± 11	$8.75^{+7.04}_{-5.65}$	303^{+24}_{-19}	3203^{+1289}_{-480}	3667^{+24481}_{-2523}
Alt.	-56 ± 14	$5.44^{+6.78}_{-3.58}$	305^{+24}_{-22}	2962^{+1295}_{-527}	2150^{+18592}_{-1715}

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 $A_{obs} \gg 1.0$

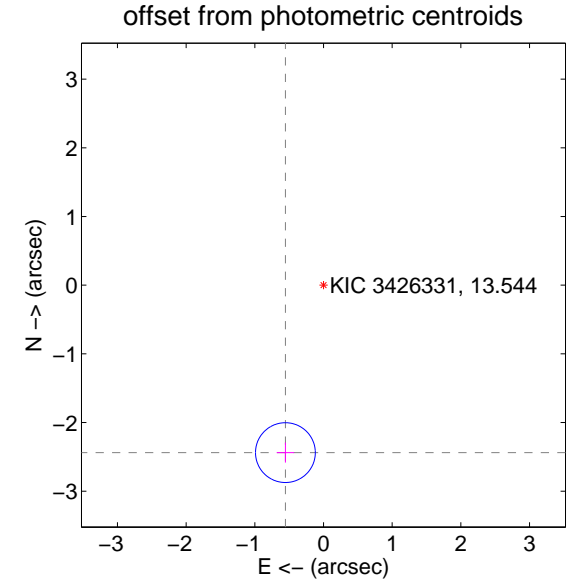
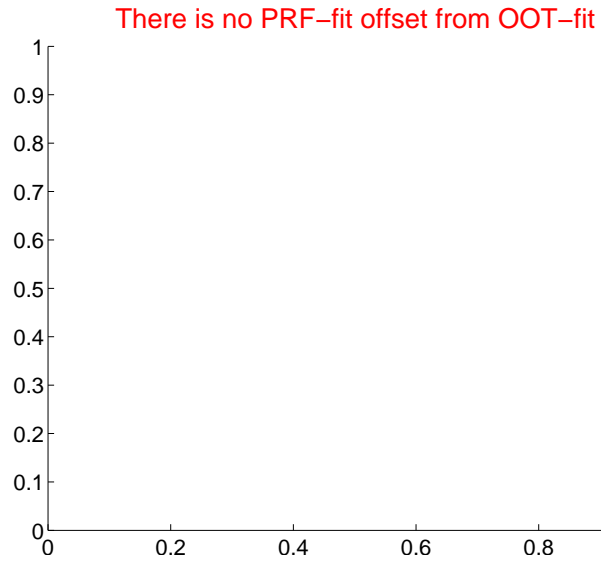
DV Centroid Data

Supplemental centroid analysis for 003426331-02. Kepler magnitude: 13.54. Transit SNR 16.59

There are 0 quarters with good PRF difference image offsets

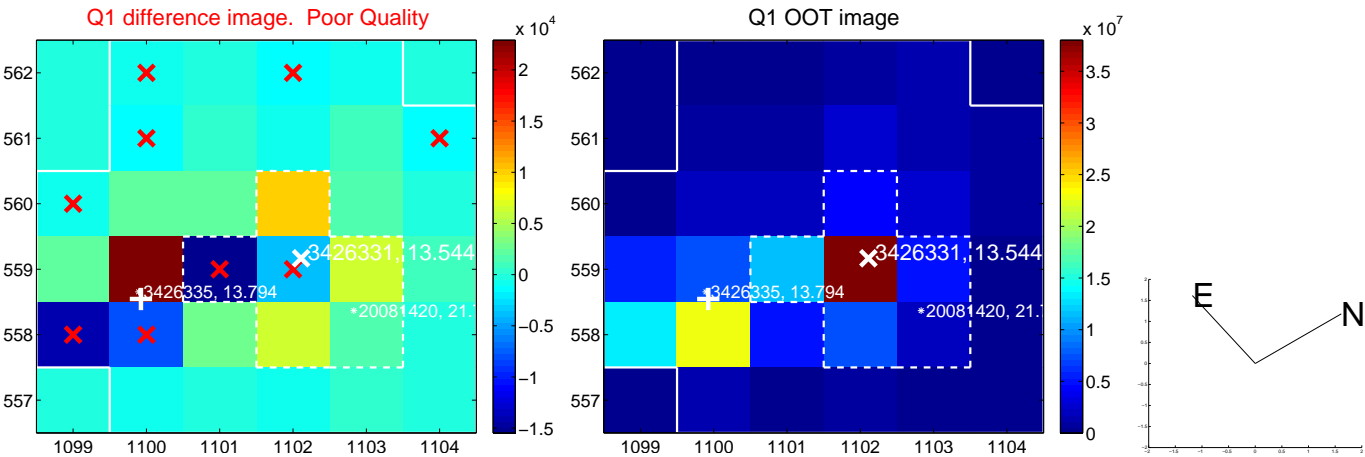
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	2.50 ± 0.15	17.23	0.55 ± 0.13	-2.44 ± 0.15



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

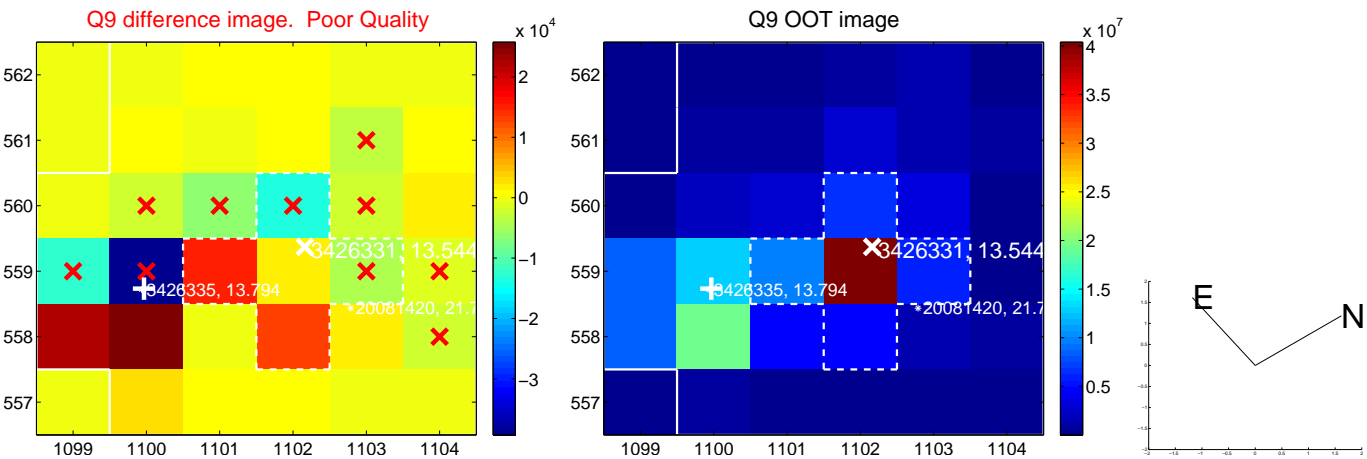
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



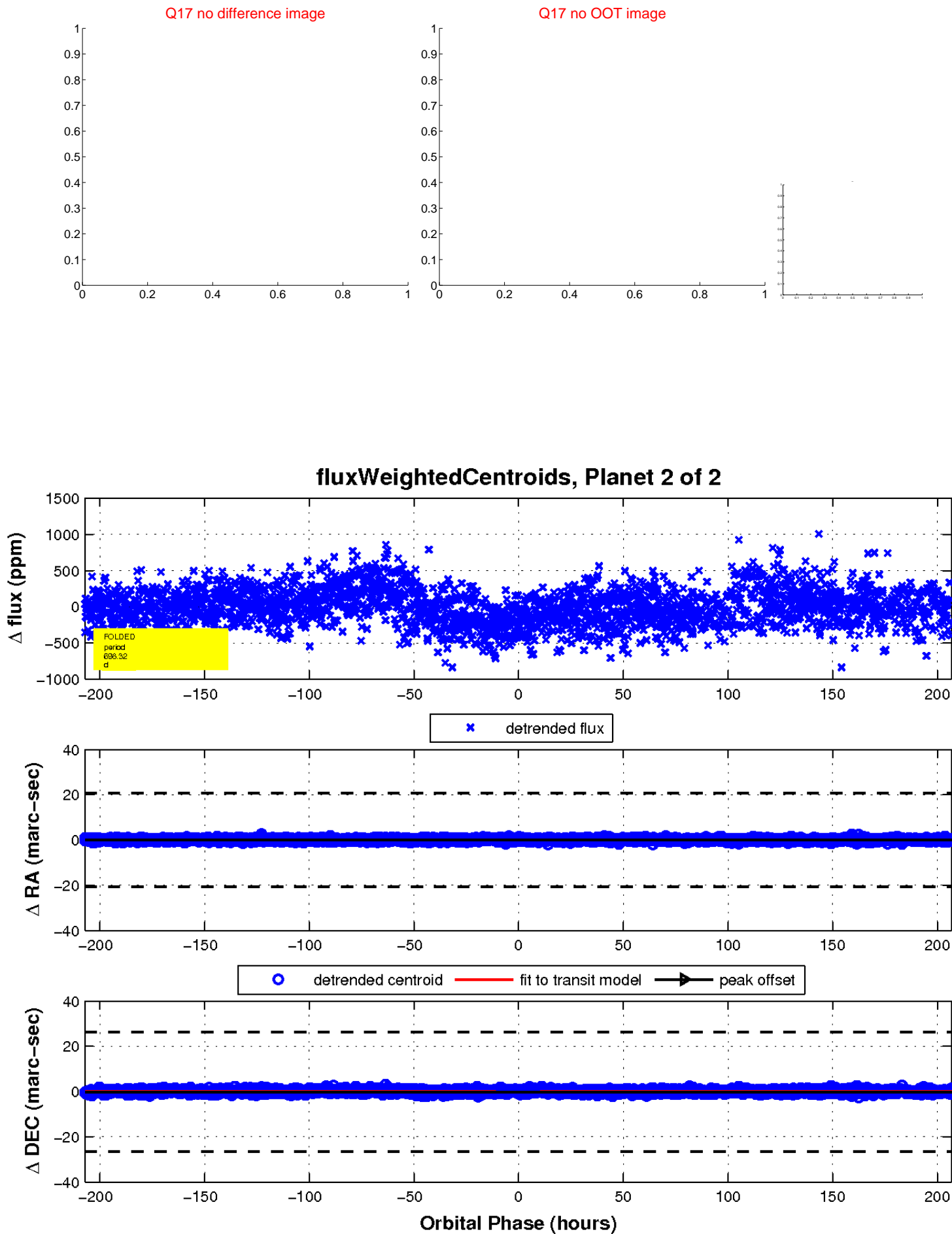
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

