

KIC 004178200

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})
004178200-01	OBS	No	407.665188	415.381803	424.6	32.476	8.7	11.3	0.73	5680	1.54	0.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004178200-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_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.

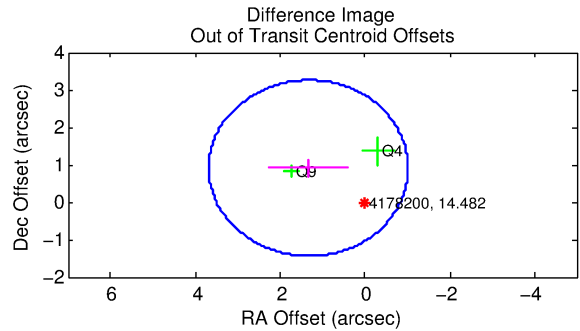
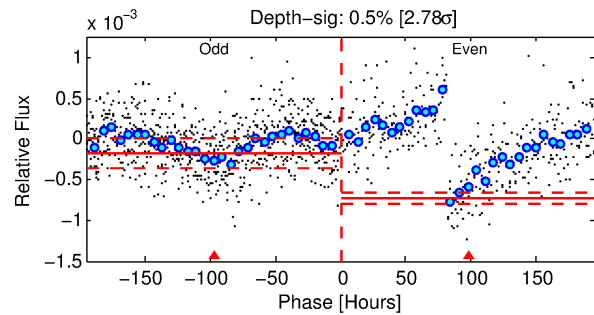
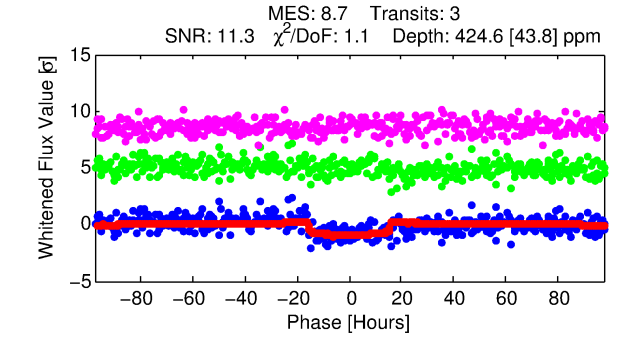
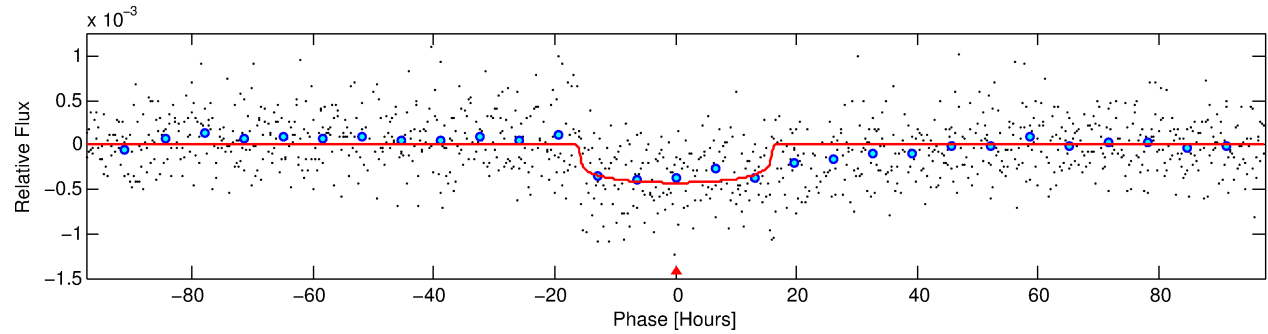
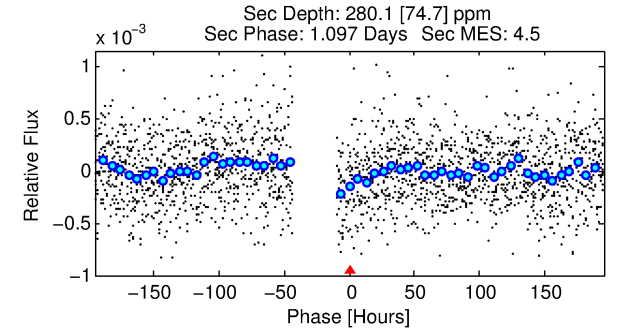
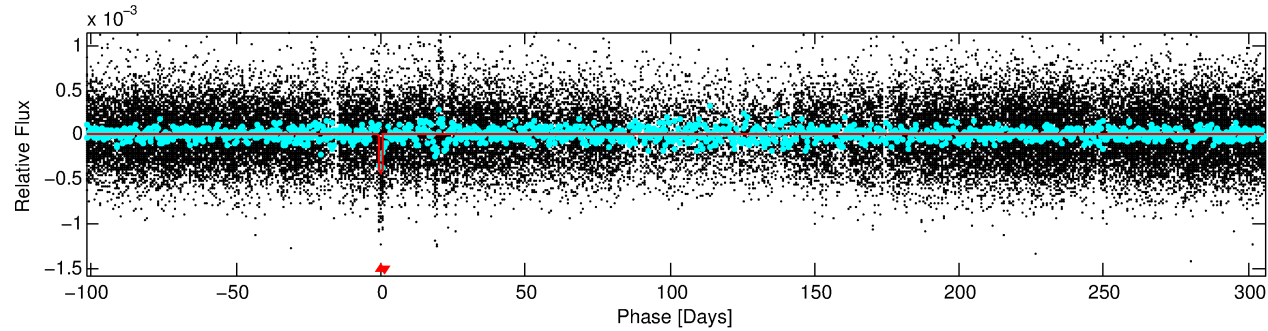
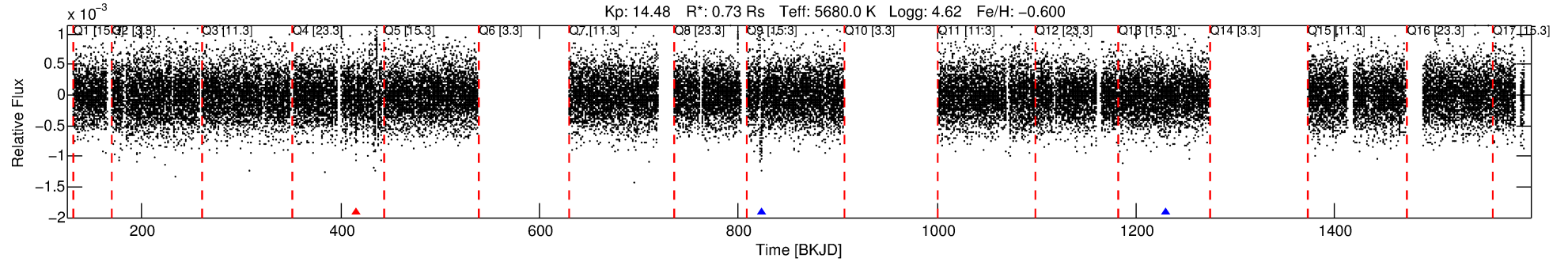
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004178200-01

No Significant Match Found

DV One-Page Summary

KIC: 4178200 Candidate: 1 of 1 Period: 407.665 d



DV Fit Results:

Period = 407.66519 [0.02611] d
Epoch = 415.3818 [0.0401] BKJD
Rp/R* = 0.0193 [0.0069]
a/R* = 86.66 [144.77]
b = 0.47 [2.76]
Seff = 0.50 [0.13]
Teff = 214 [14] K
Rp = 1.54 [0.62] Re
a = 1.0003 [0.1584] AU
Ag = 65278.59 [51901.10] [1.26 σ]
Teffp = 5290 [1018] K [4.99 σ]

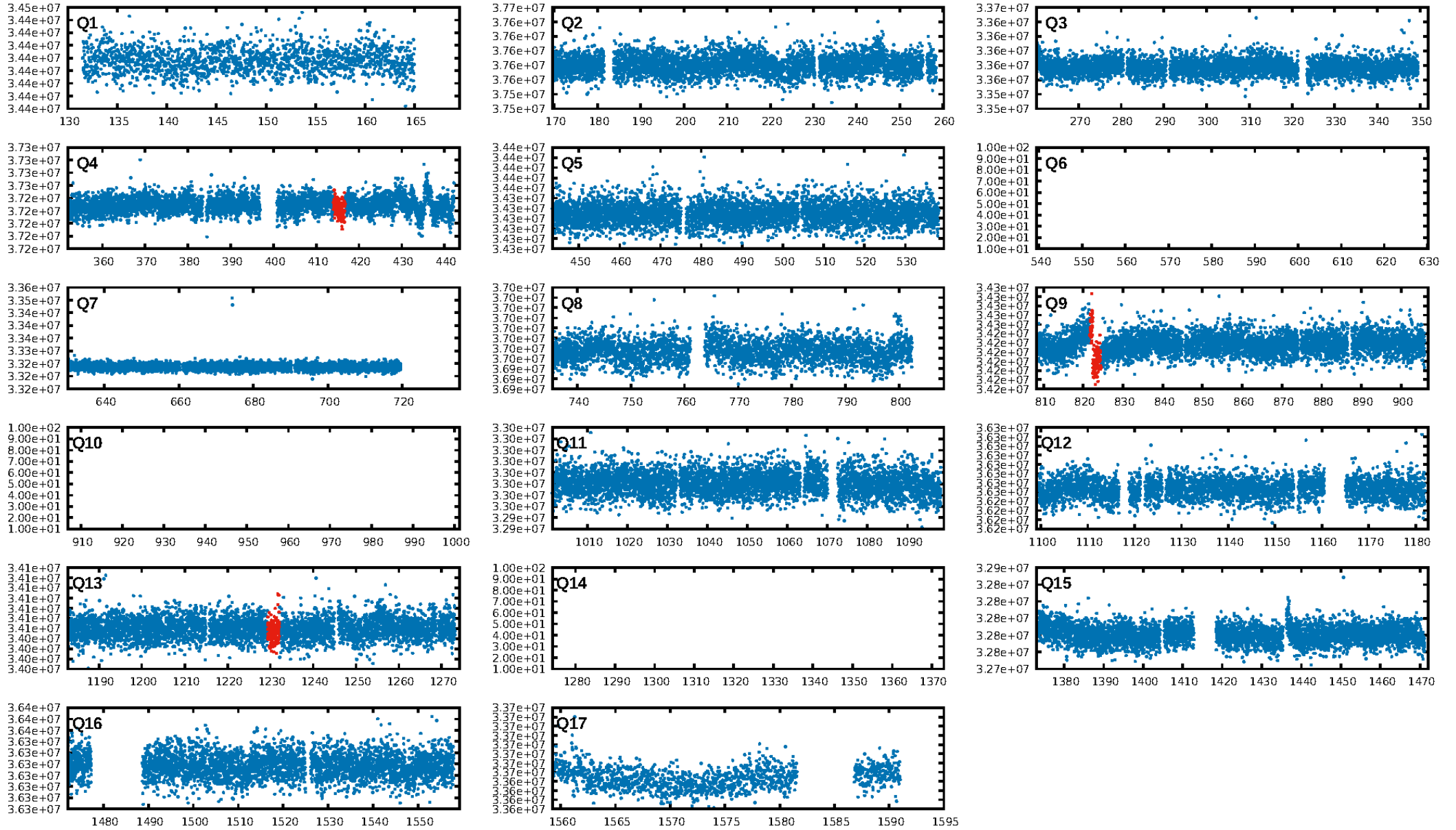
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 7.18e-17
RollingBand-fgt: 0.67 [2/3]
GhostDiagnostic-chr: 4.306
Centroid-sig: 2.2%
Centroid-so: 2.301 arcsec [1.71 σ]
OotOffset-rm: 1.610 arcsec [2.05 σ]
KicOffset-rm: 1.351 arcsec [1.83 σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

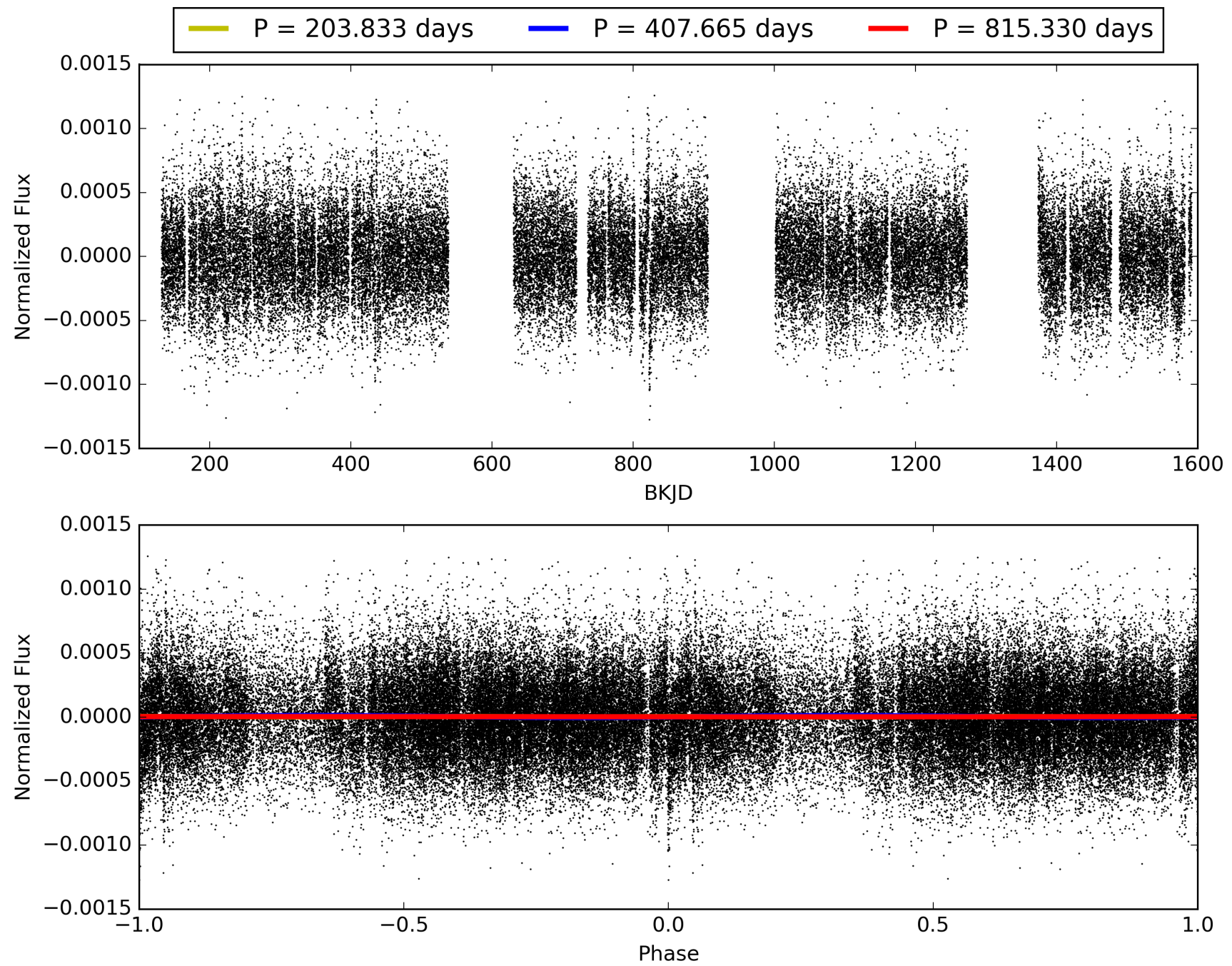
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:23:35 Z

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

TCE 004178200-01, PDC Light Curves

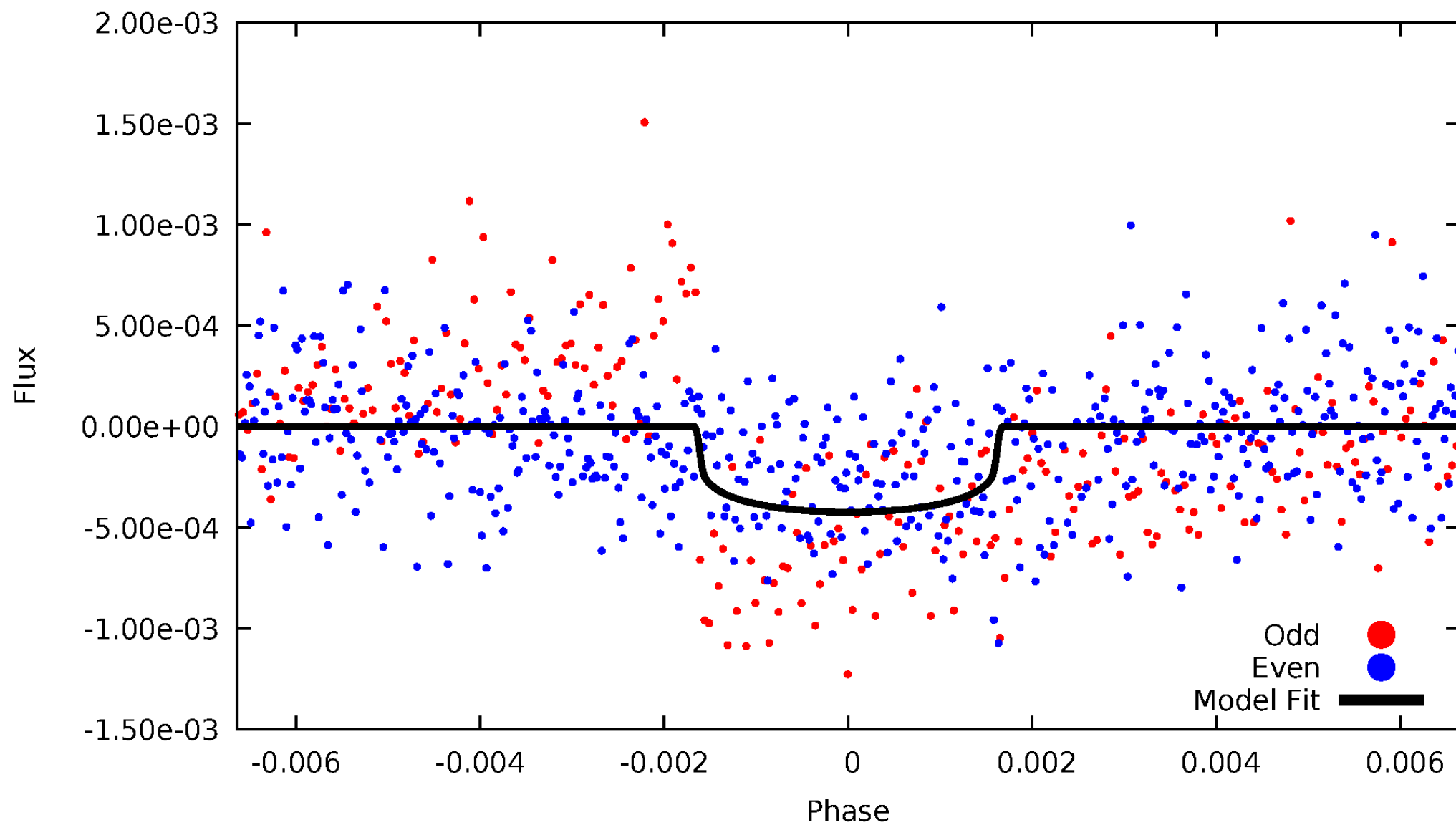


TCE 004178200-01



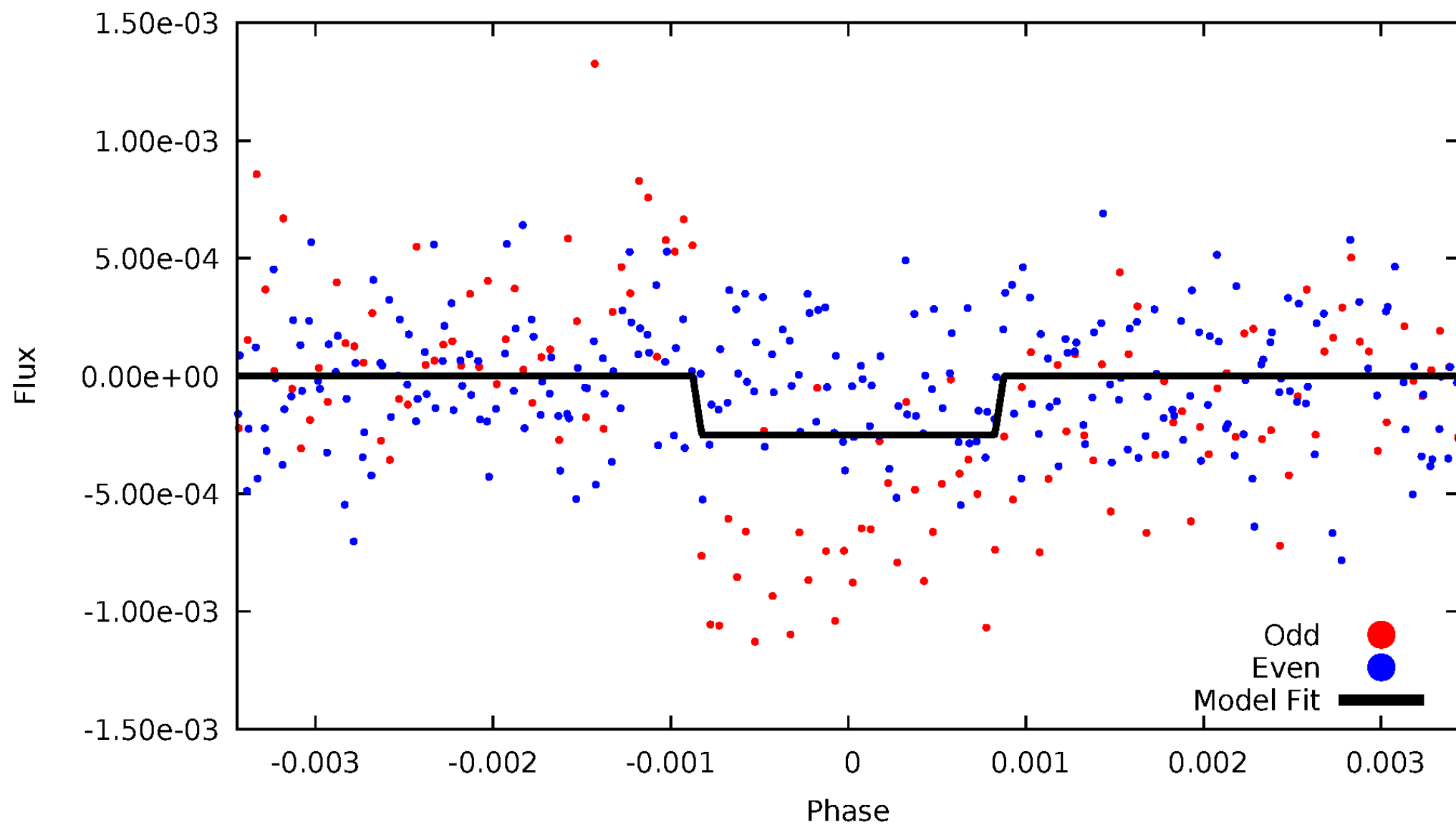
DV Odd/Even

TCE 004178200-01

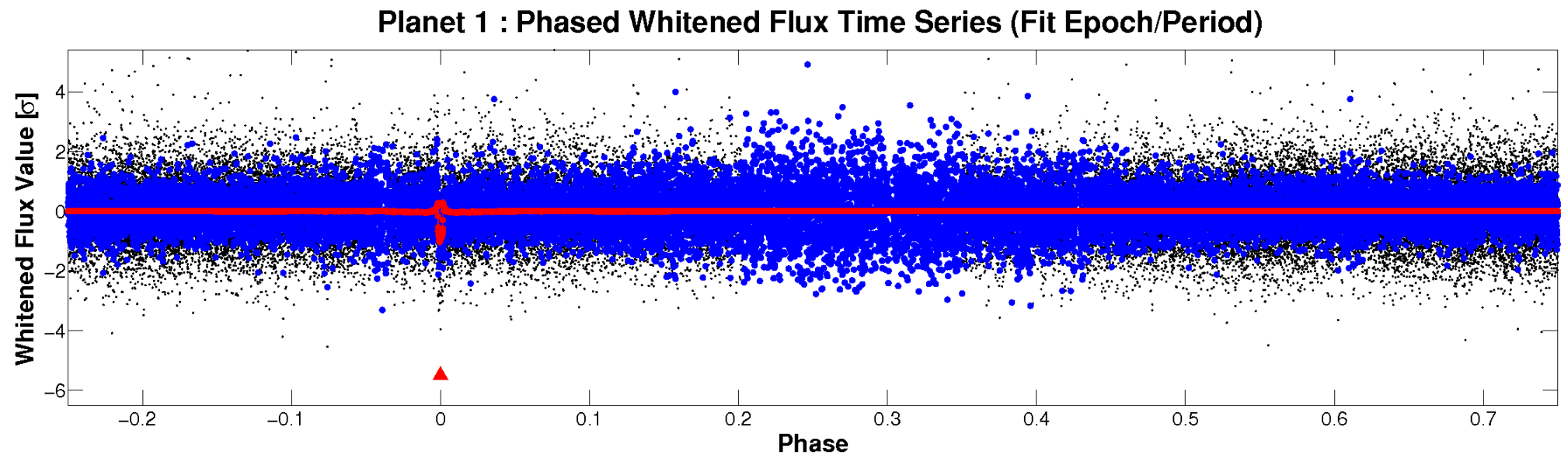
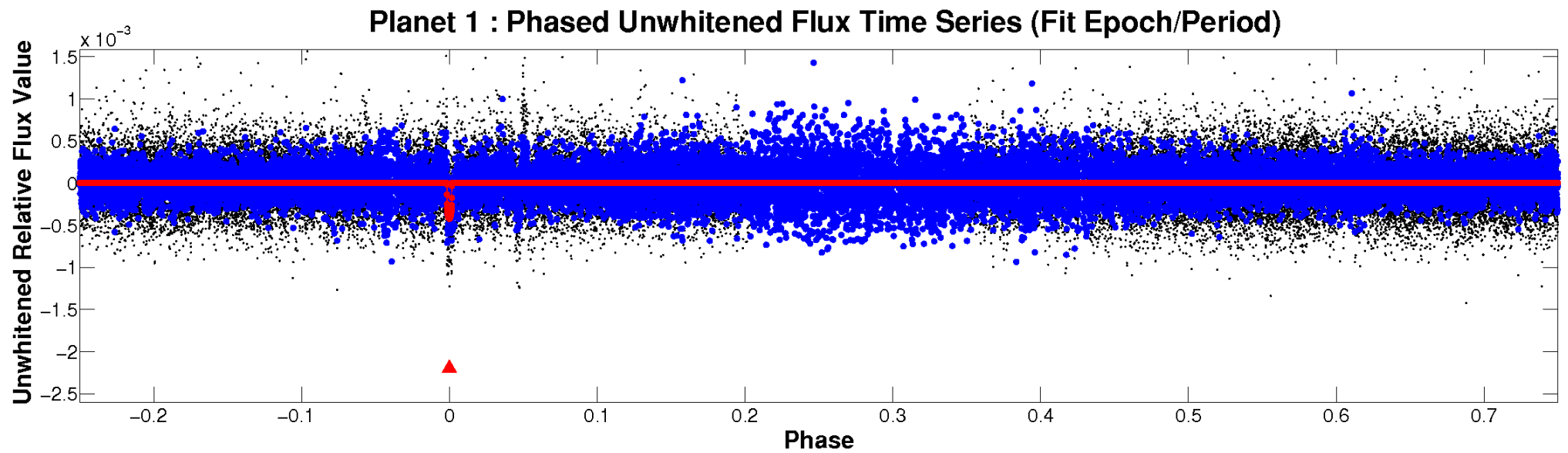


ALT Odd/Even

TCE 004178200-01



Non-Whitened Vs. Whitened Light Curve



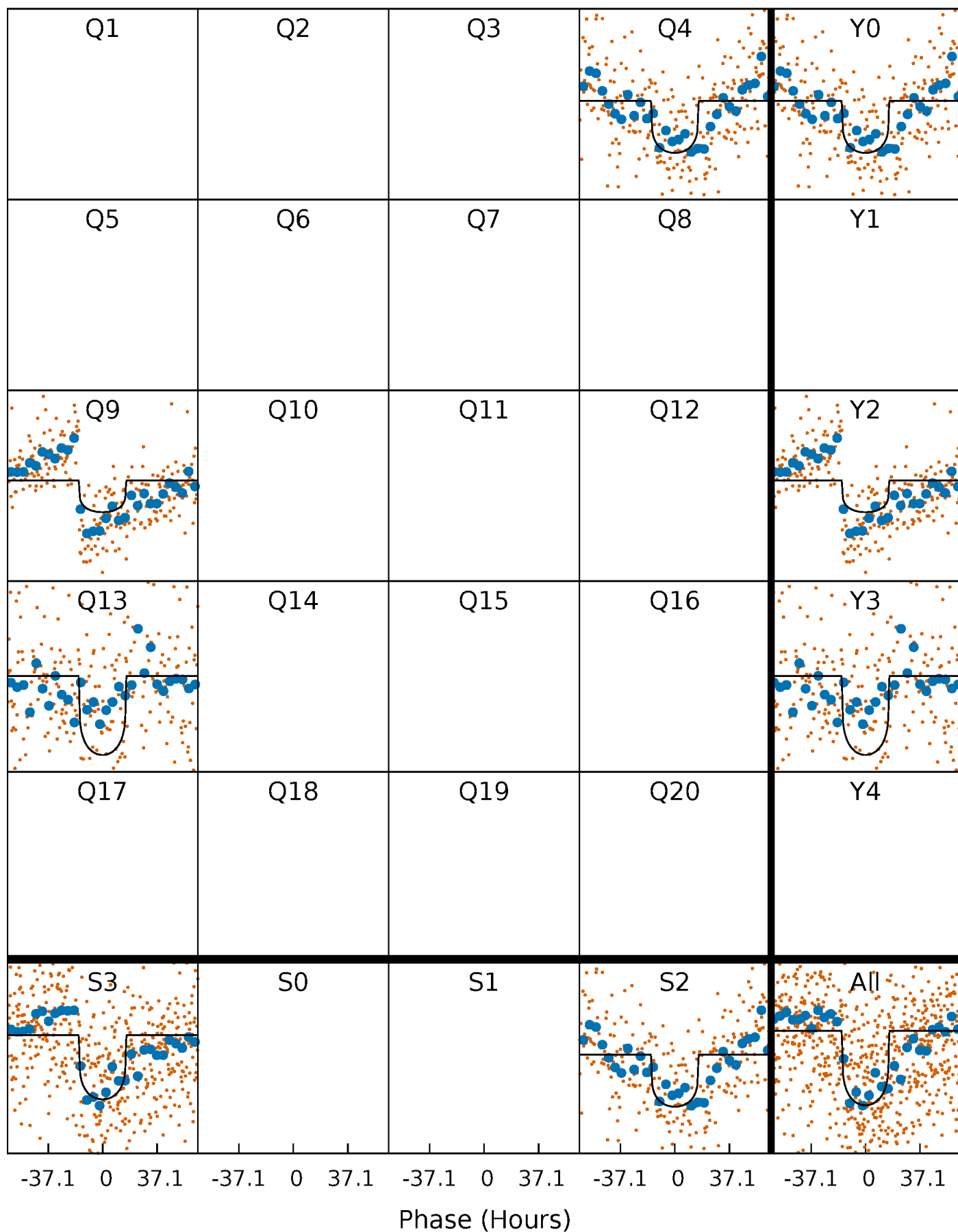
PDC Quarter-Phased Transit Curves

TCE 004178200-01 P=407.665188 Days $T_0=415.381803$ (BKJD)



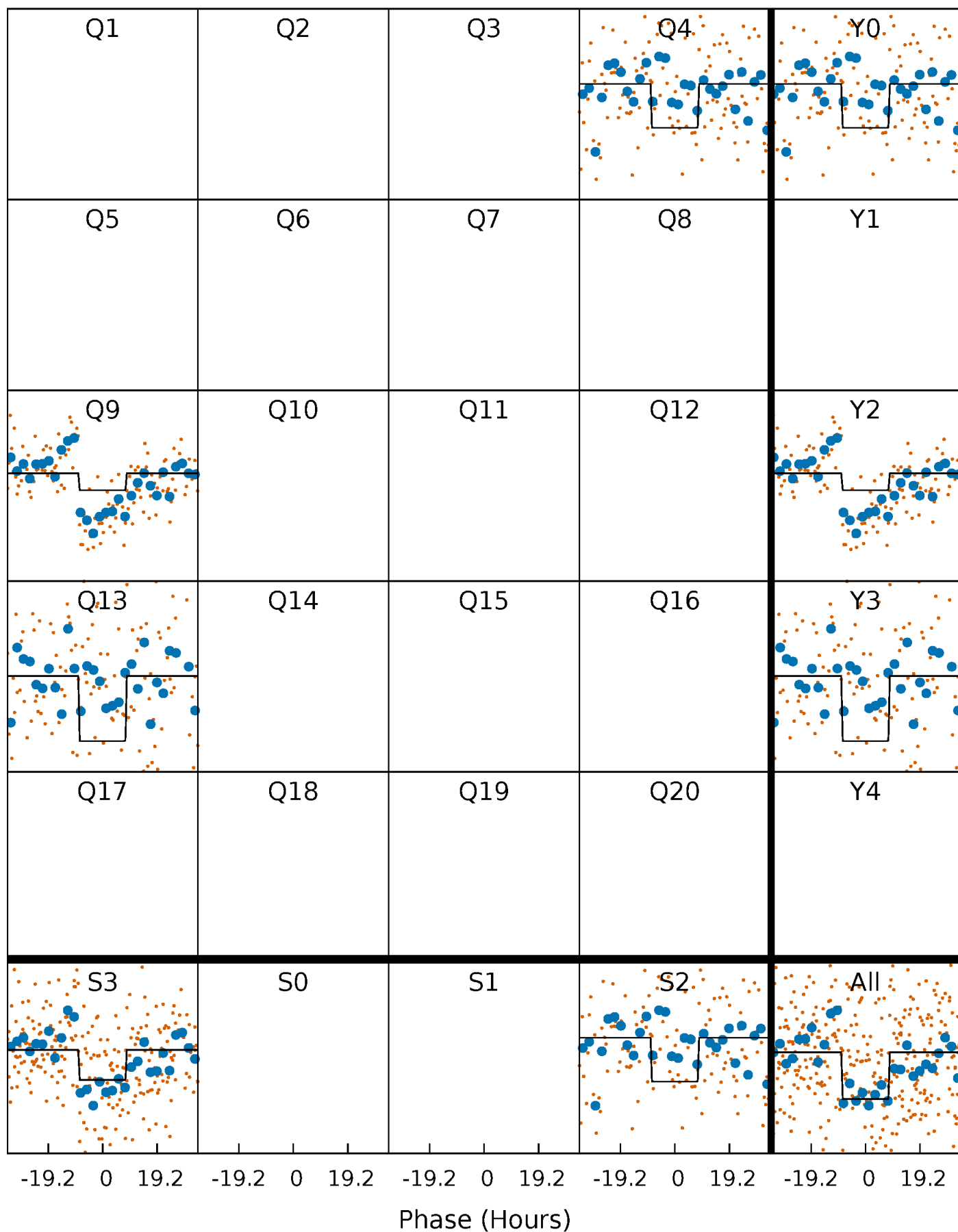
DV Quarter-Phased Transit Curves

TCE 004178200-01 P=407.665188 Days $T_0=415.381803$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

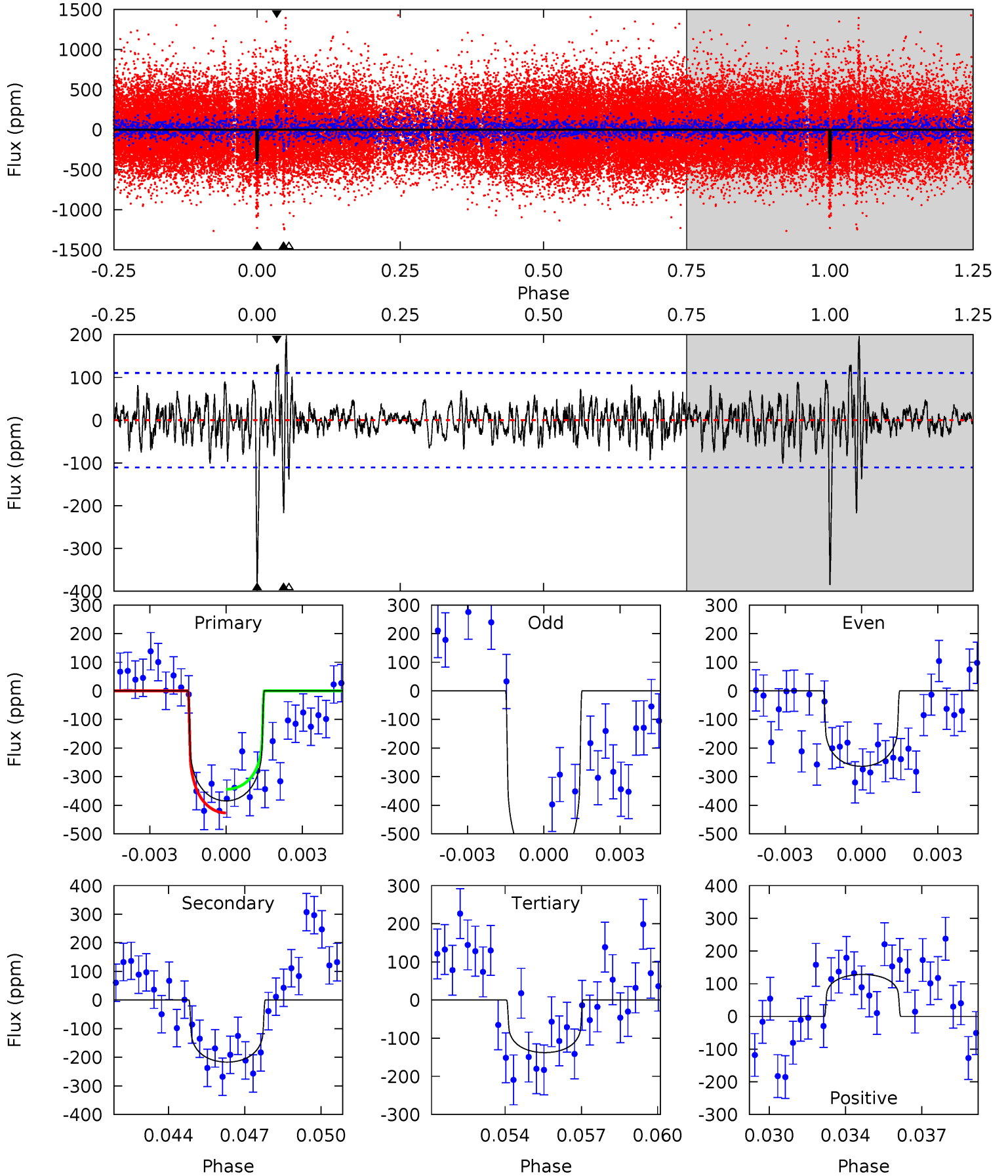
TCE 004178200-01 P=407.812991 Days $T_0=414.914397$ (BKJD)



DV Model-Shift Uniqueness Test

004178200-01, P = 407.665188 Days, E = 7.716615 Days

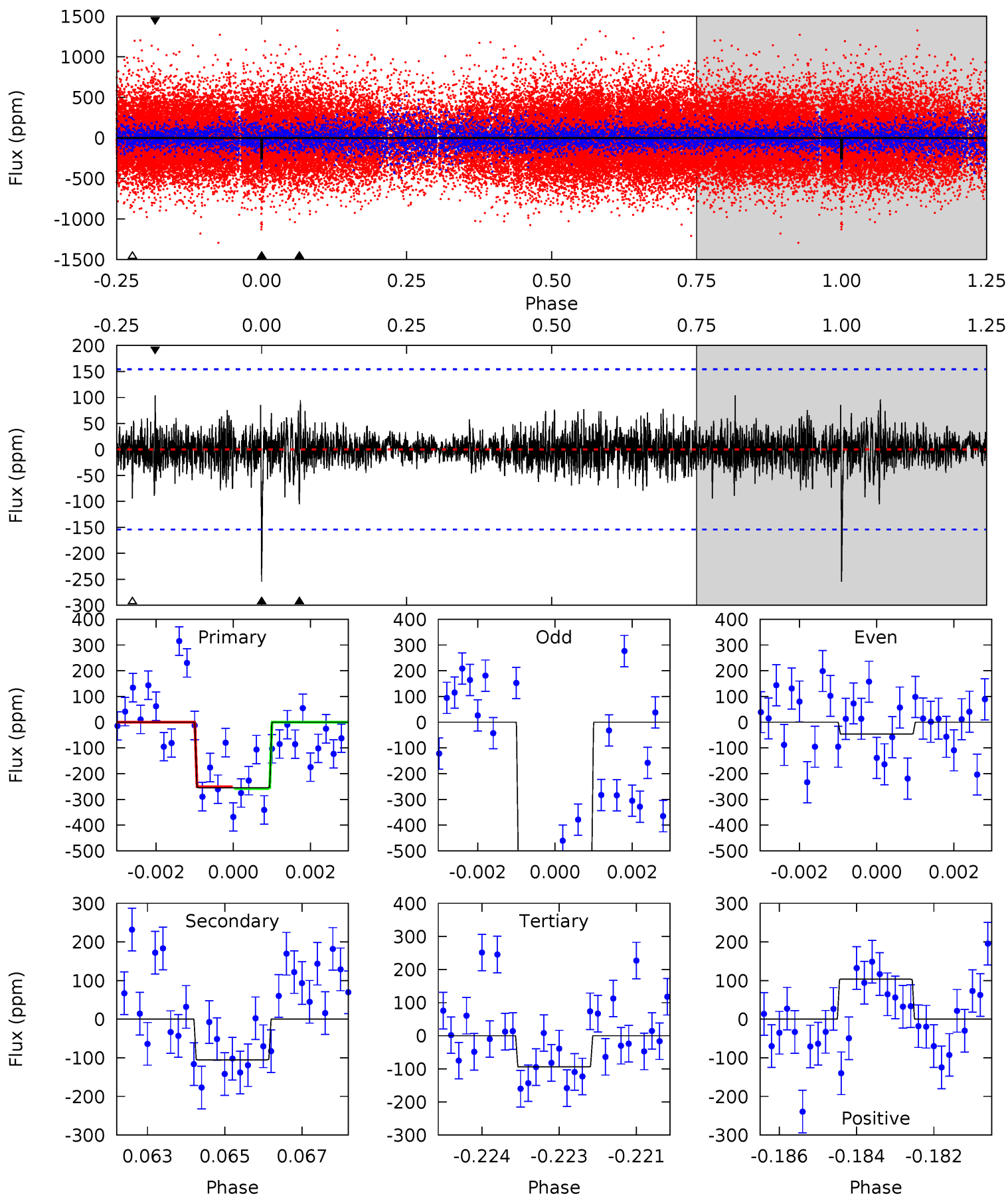
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.2	10.3	6.53	6.07	5.23	2.93	1.60	11.7	12.2	3.75	4.21	8.07	1.09	0.34	1.95



Alt Model-Shift Uniqueness Test

004178200-01, P = 407.812991 Days, E = 7.101406 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.83	3.65	3.27	3.60	5.35	3.13	0.81	5.57	5.23	0.39	0.06	10.1	3.87	0.29	0.12



Stellar Parameters For KIC 004178200

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5680^{+152}_{-169}	$4.616^{+0.032}_{-0.128}$	$-0.600^{+0.300}_{-0.300}$	$0.730^{+0.136}_{-0.054}$	$0.818^{+0.078}_{-0.086}$	$2.959^{+0.493}_{-1.092}$
	+3%/-3%	+1%/-3%	+50%/-50%	+19%/-7%	+10%/-11%	+17%/-37%
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 004178200-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-217 ± 21	$1.62^{+0.56}_{-0.58}$	304^{+15}_{-12}	5012^{+1073}_{-610}	44960^{+61913}_{-20339}
Alt.	-105 ± 29	$1.30^{+0.62}_{-0.52}$	304^{+14}_{-13}	4725^{+1187}_{-666}	33438^{+63472}_{-17732}

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

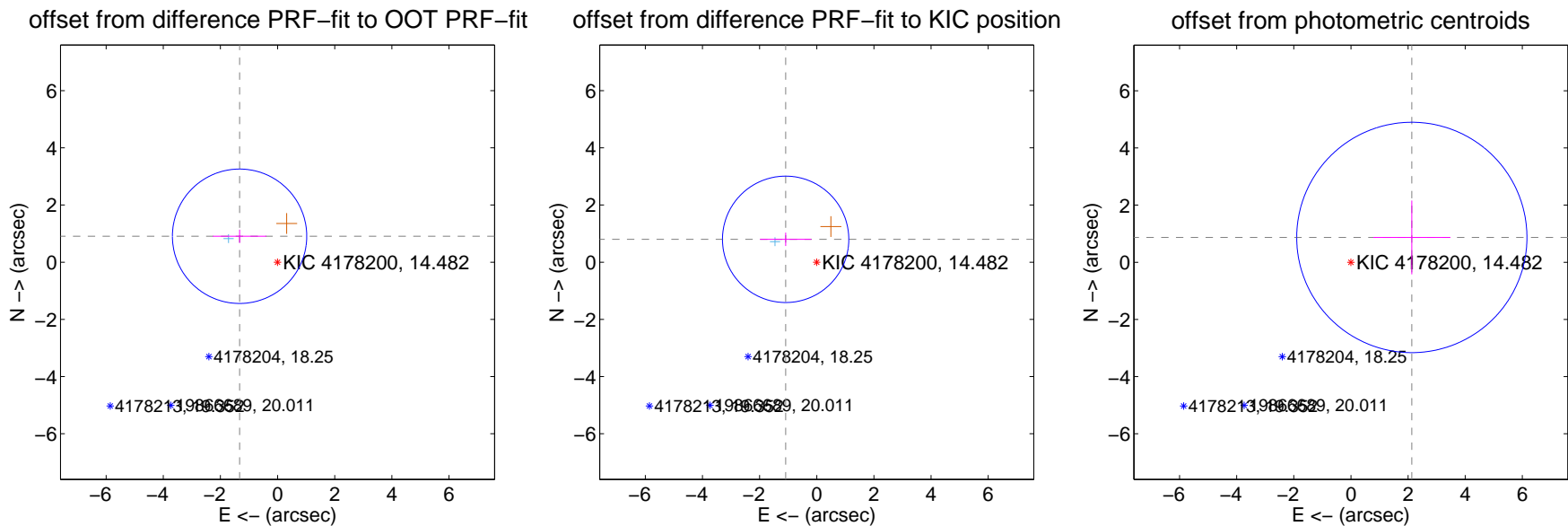
DV Centroid Data

Supplemental centroid analysis for 004178200-01. Kepler magnitude: 14.48. Transit SNR 11.29

There are 1 quarters with good PRF difference image offsets

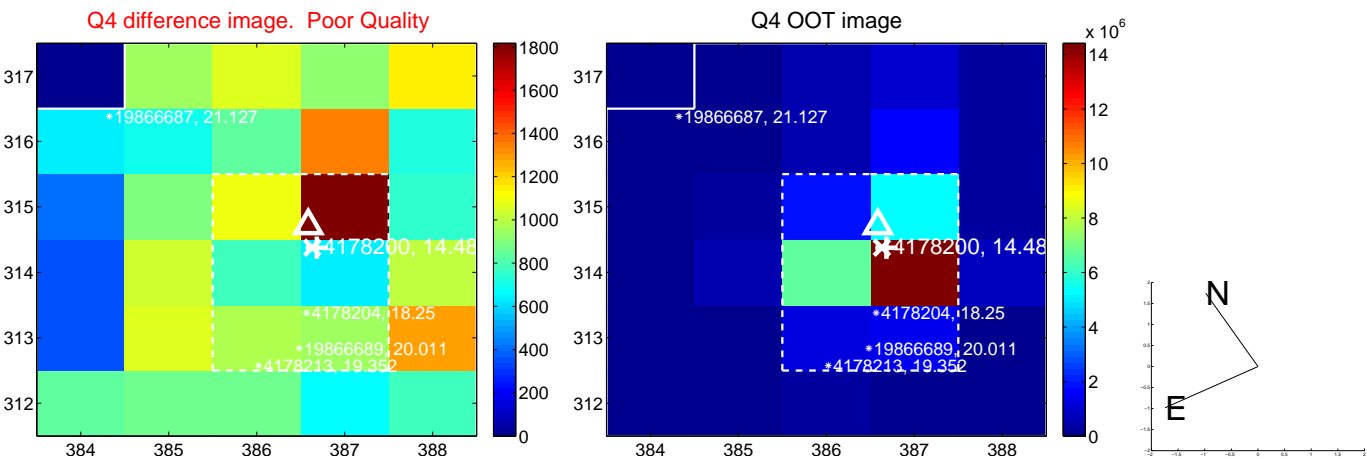
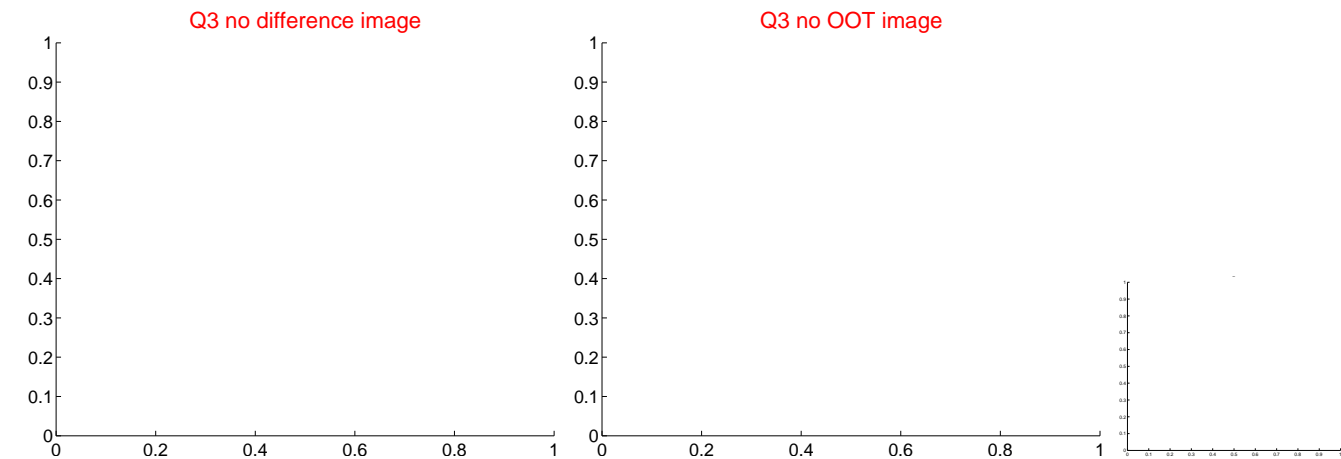
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.610 ± 0.784	2.05	1.330 ± 0.935	0.907 ± 0.232
PRF-fit source offset from KIC position	1.351 ± 0.737	1.83	1.089 ± 0.898	0.800 ± 0.232
photometric centroid source offset	2.30 ± 1.34	1.71	-2.13 ± 1.35	0.87 ± 1.29



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.

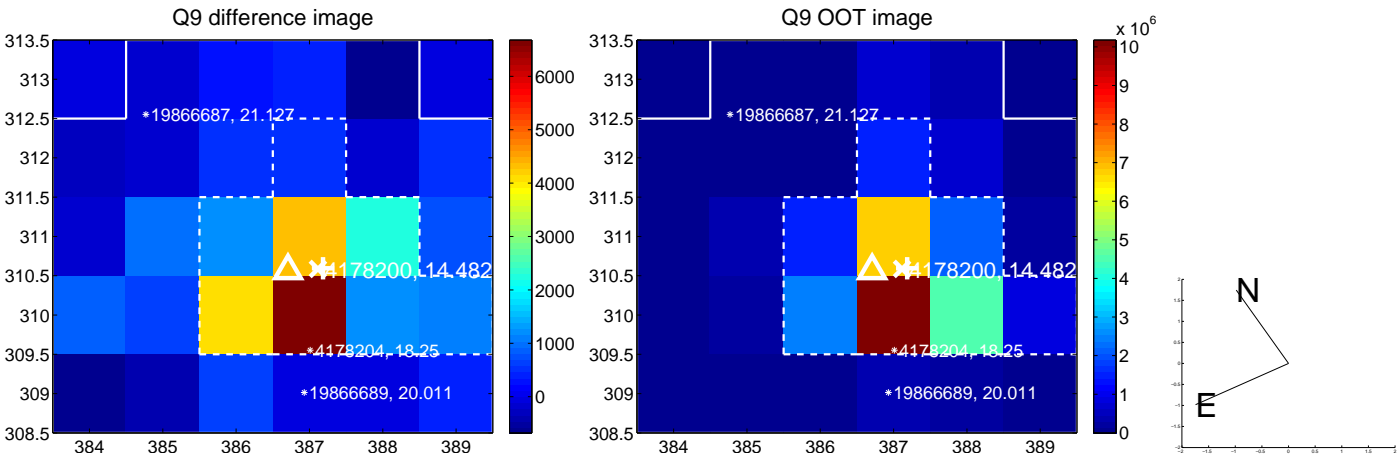
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



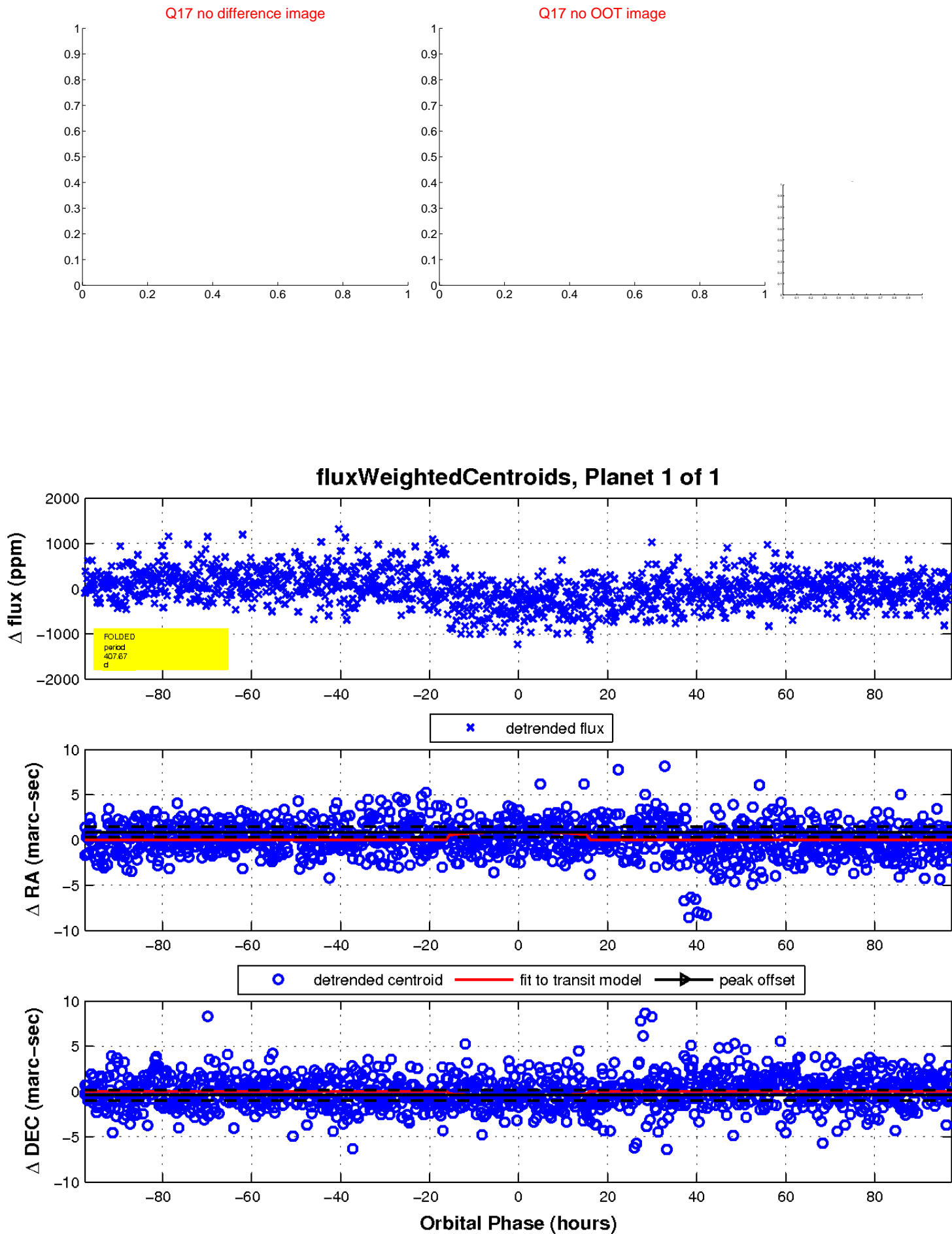
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

