

KIC 012023386

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})
012023386-01	OBS	No	477.219159	203.644936	115.2	3.152	9.7	4.3	1.45	6254	1.87	1.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012023386-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—ALL_TRANS_CHASES—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

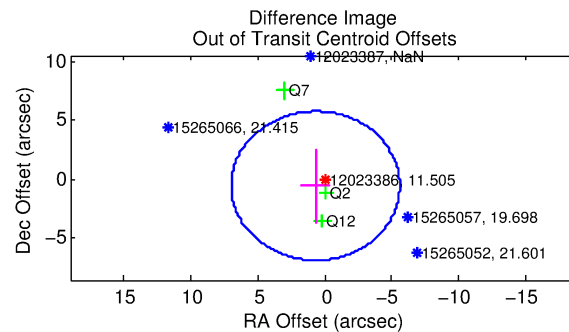
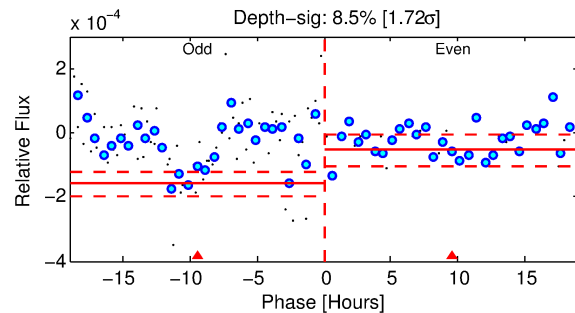
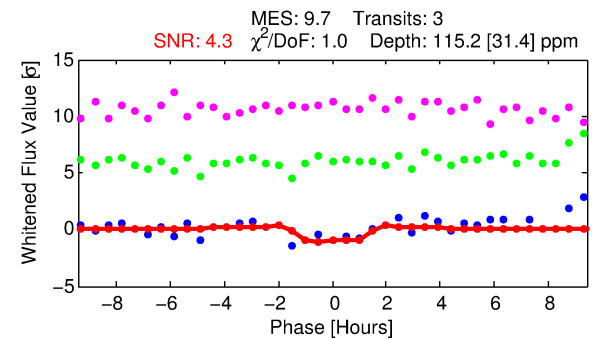
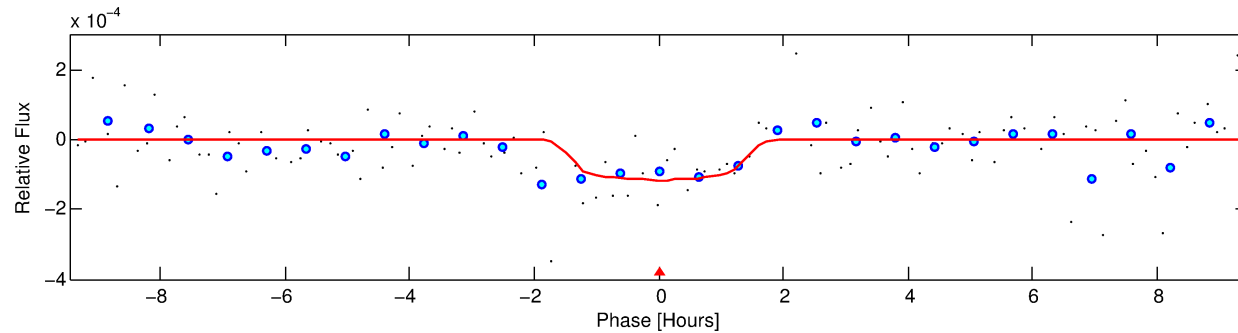
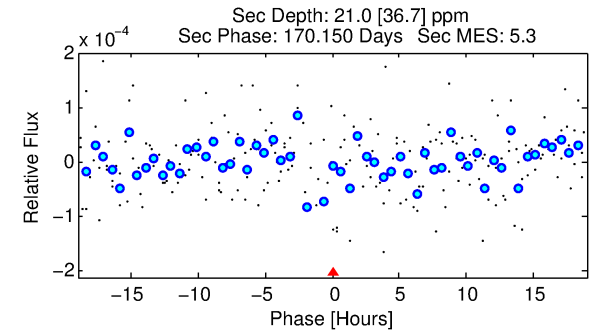
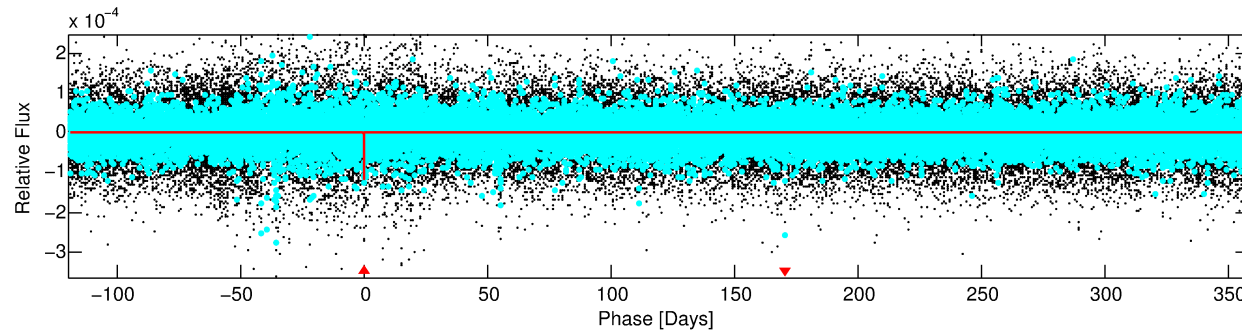
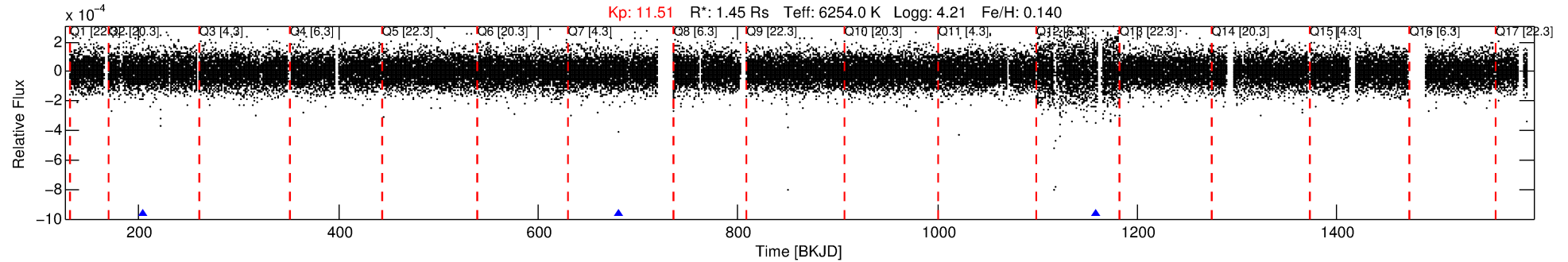
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012023386-01

No Significant Match Found

DV One-Page Summary

KIC: 12023386 Candidate: 1 of 1 Period: 477.219 d



DV Fit Results:

Period = 477.21916 [0.00970] d
Epoch = 203.6449 [0.0100] BKJD
Rp/R* = 0.0118 [0.0092]
a/R* = 478.98 [1991.64]
b = 0.92 [0.67]
Seff = 1.74 [0.40]
Teq = 293 [17] K
Rp = 1.87 [1.50] Re
a = 1.2885 [0.2044] AU
Ag = 5467.52 [12829.60] [0.43σ]
Teffp = 3891 [2273] K [1.58σ]

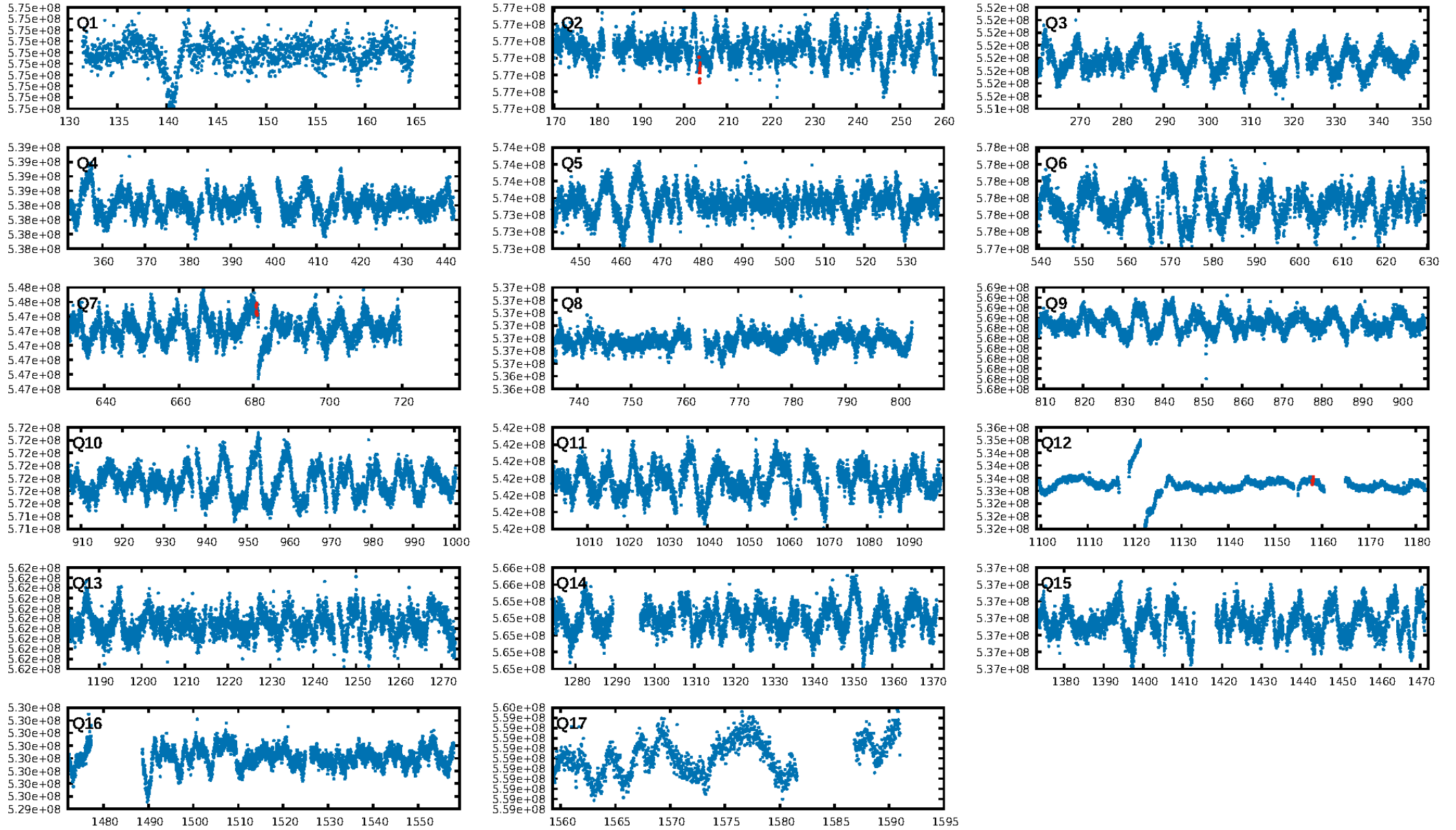
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 6.6%
ModelChiSquareGof-sig: 97.0%
Bootstrap-pfa: 1.13e-16
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.694
Centroid-sig: 53.3%
Centroid-so: 1.756 arcsec [0.72σ]
OotOffset-rm: 0.872 arcsec [0.42σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-rm: 0.982 arcsec [0.50σ]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

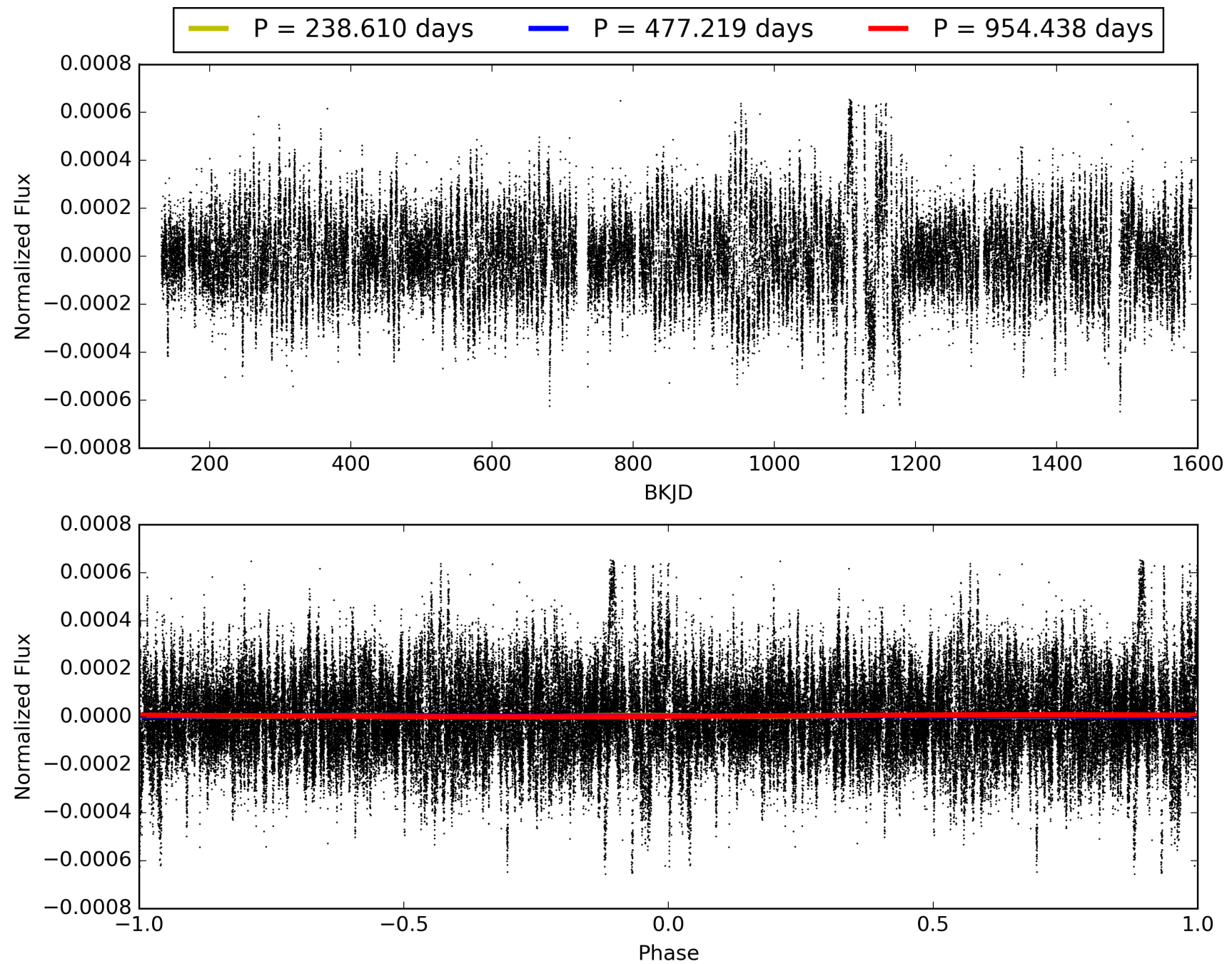
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 23:00:42 Z

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

TCE 012023386-01, PDC Light Curves

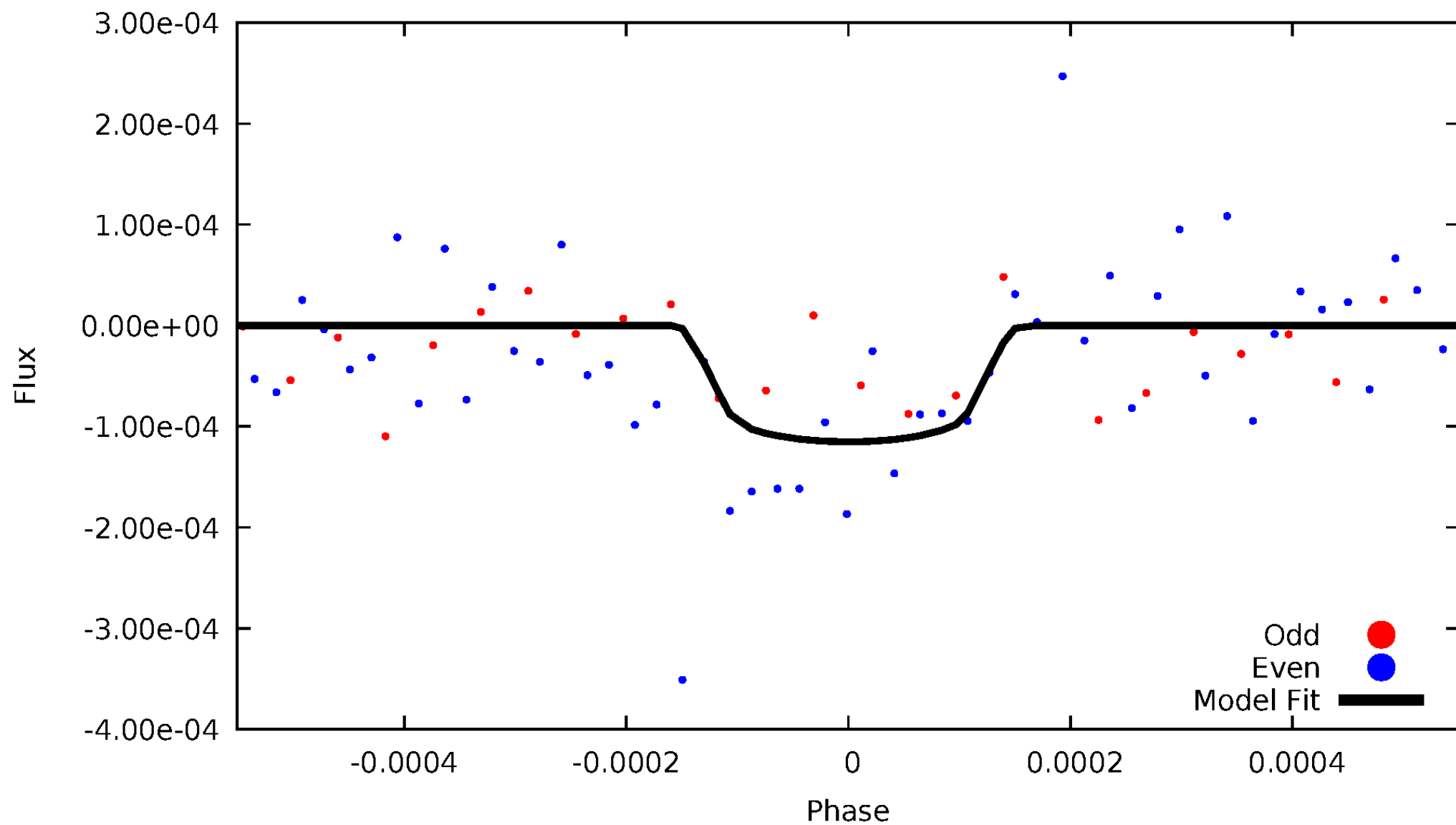


TCE 012023386-01



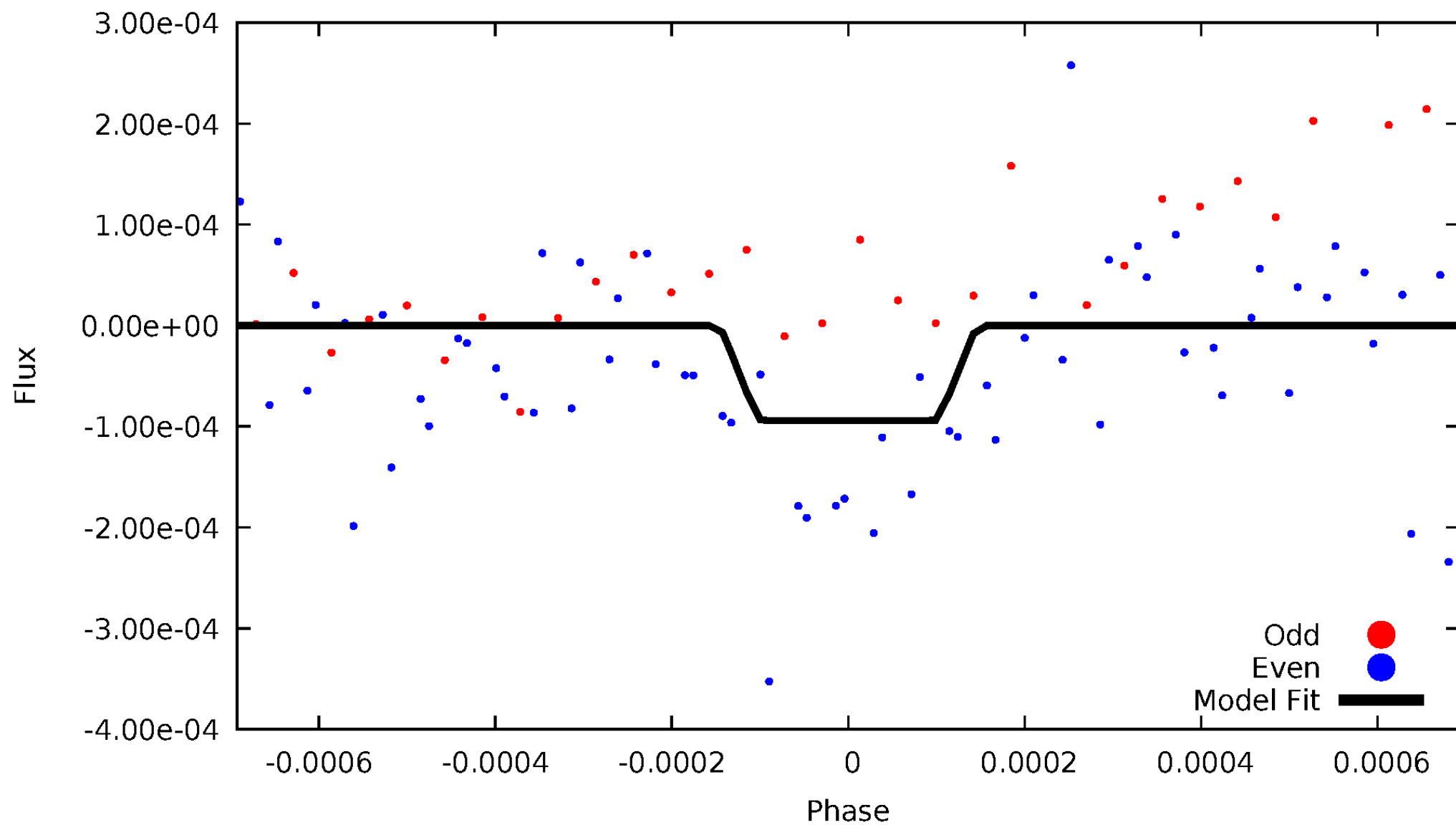
DV Odd/Even

TCE 012023386-01



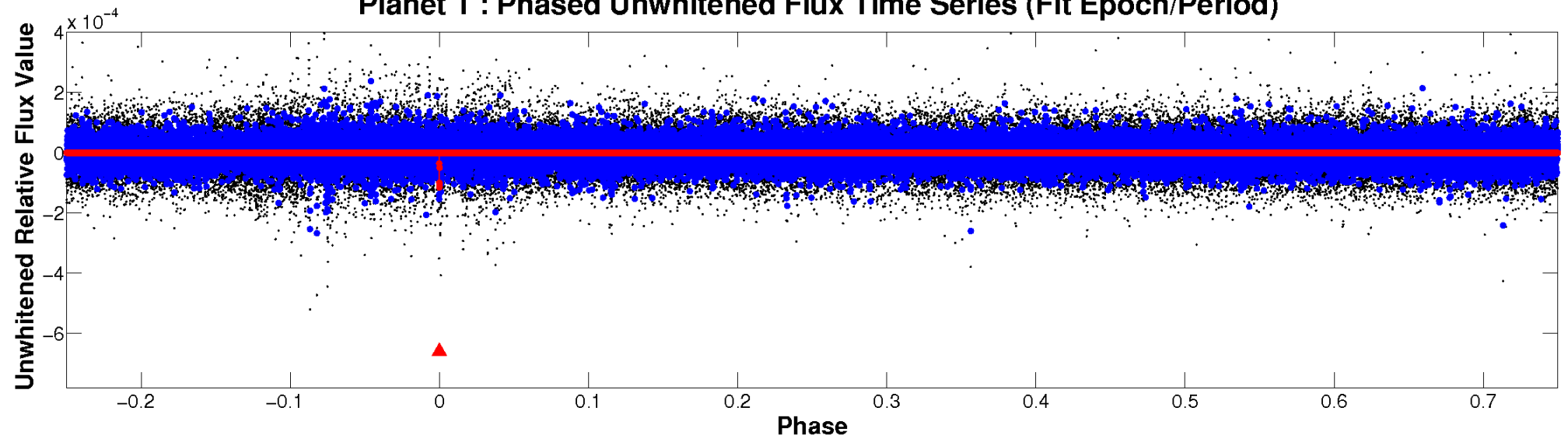
ALT Odd/Even

TCE 012023386-01

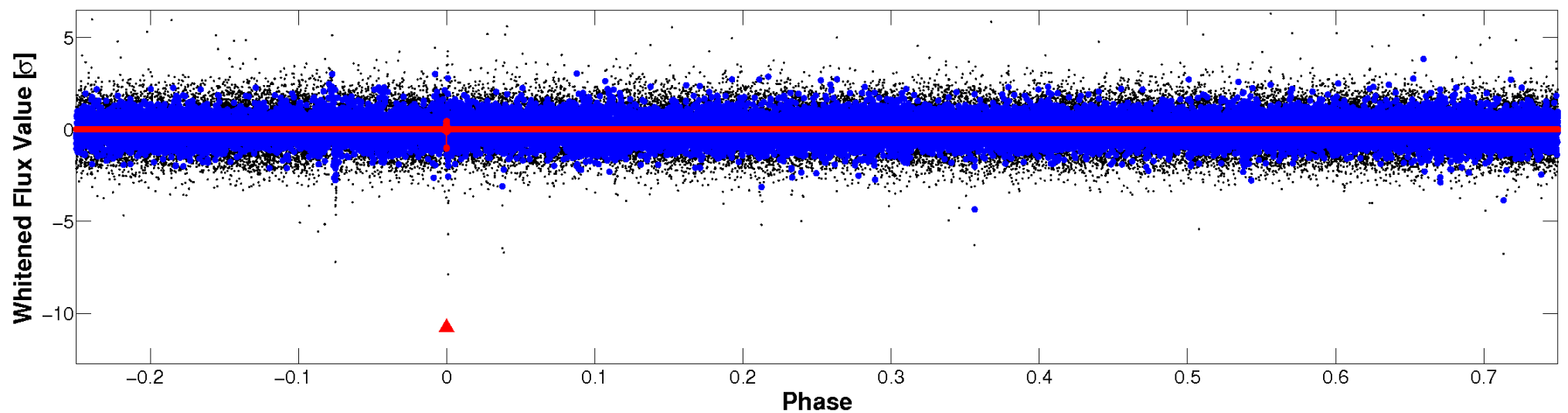


Non-Whitened Vs. Whitened Light Curve

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

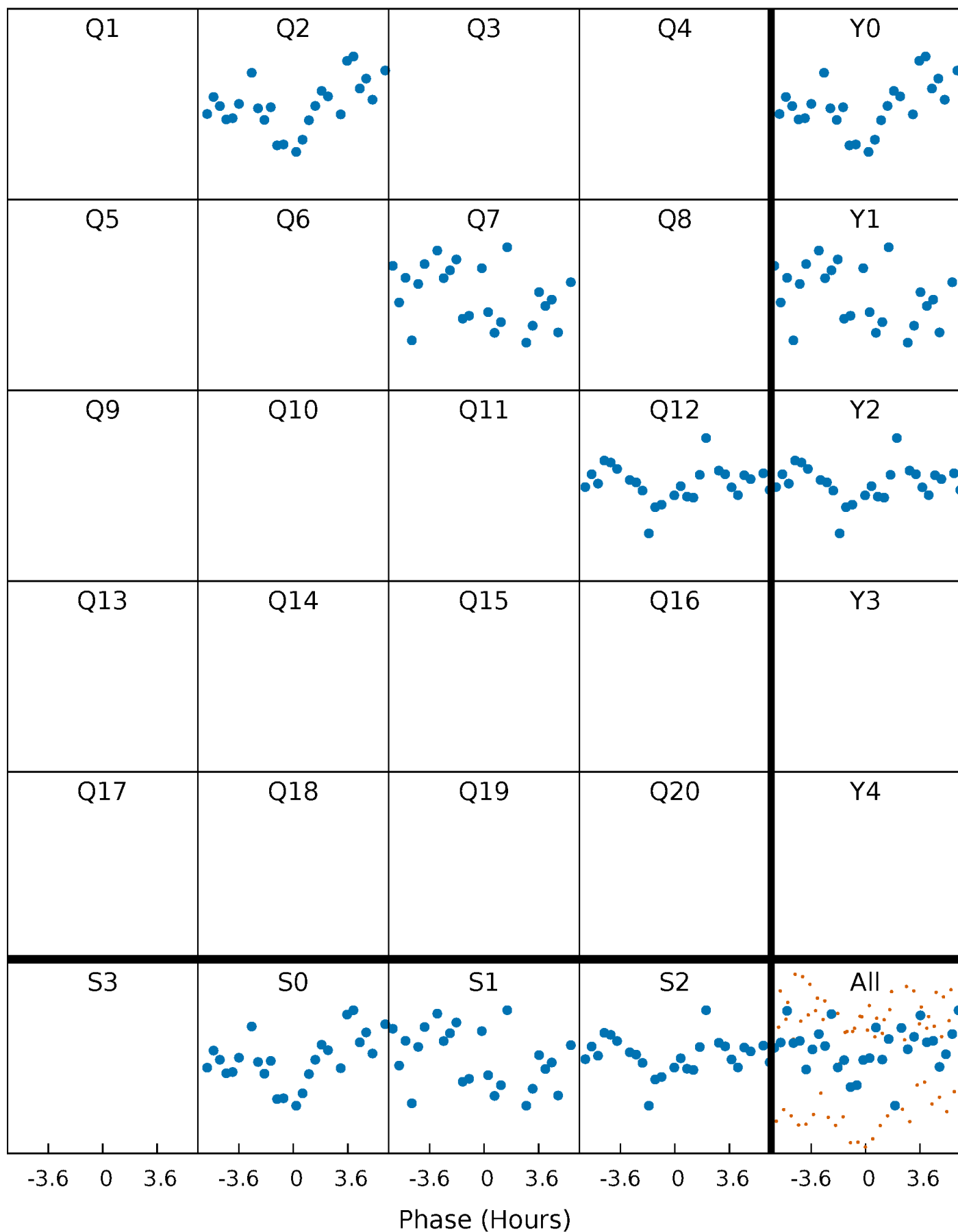


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



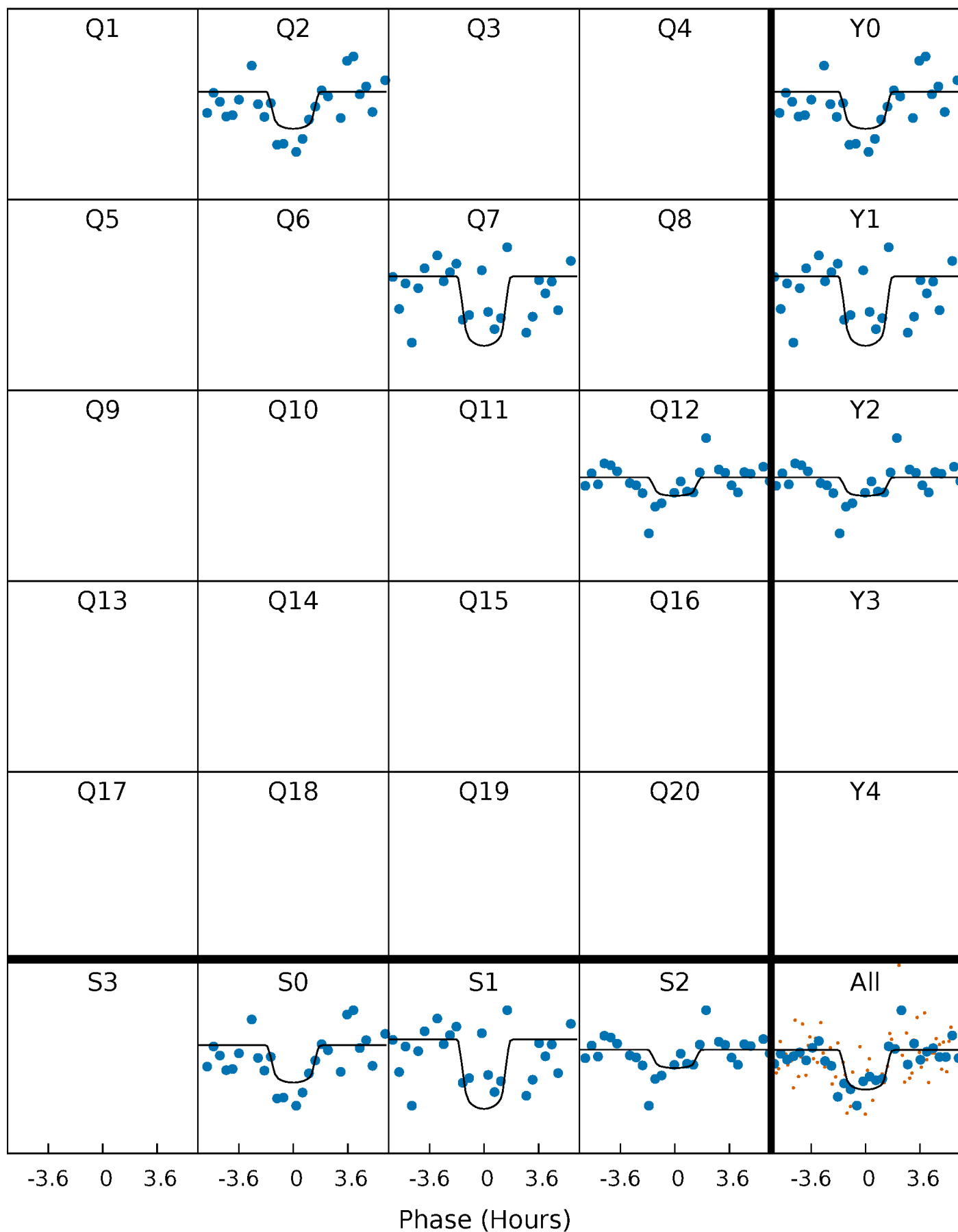
PDC Quarter-Phased Transit Curves

TCE 012023386-01 P=477.219159 Days $T_0=203.644936$ (BKJD)



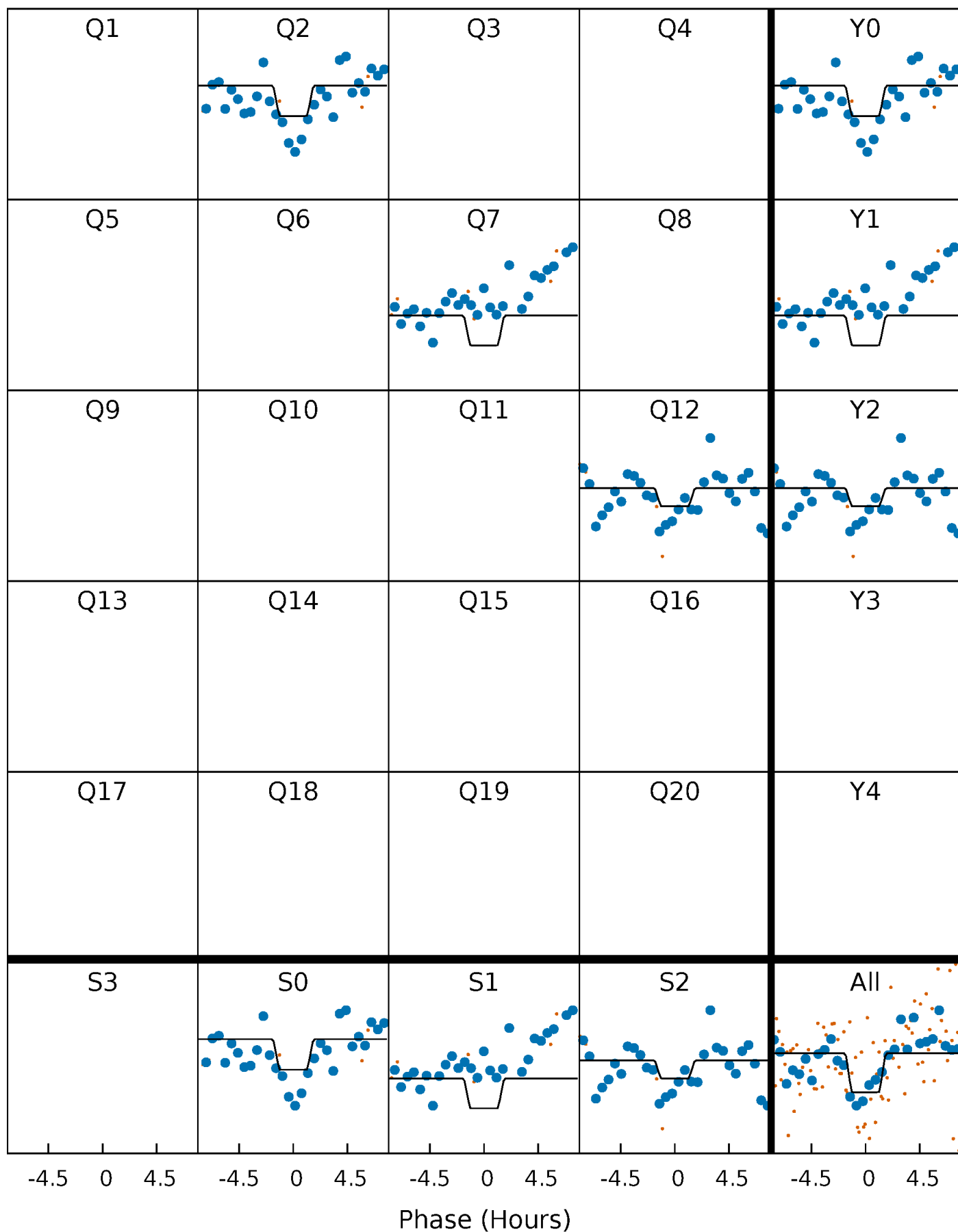
DV Quarter-Phased Transit Curves

TCE 012023386-01 P=477.219159 Days $T_0=203.644936$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

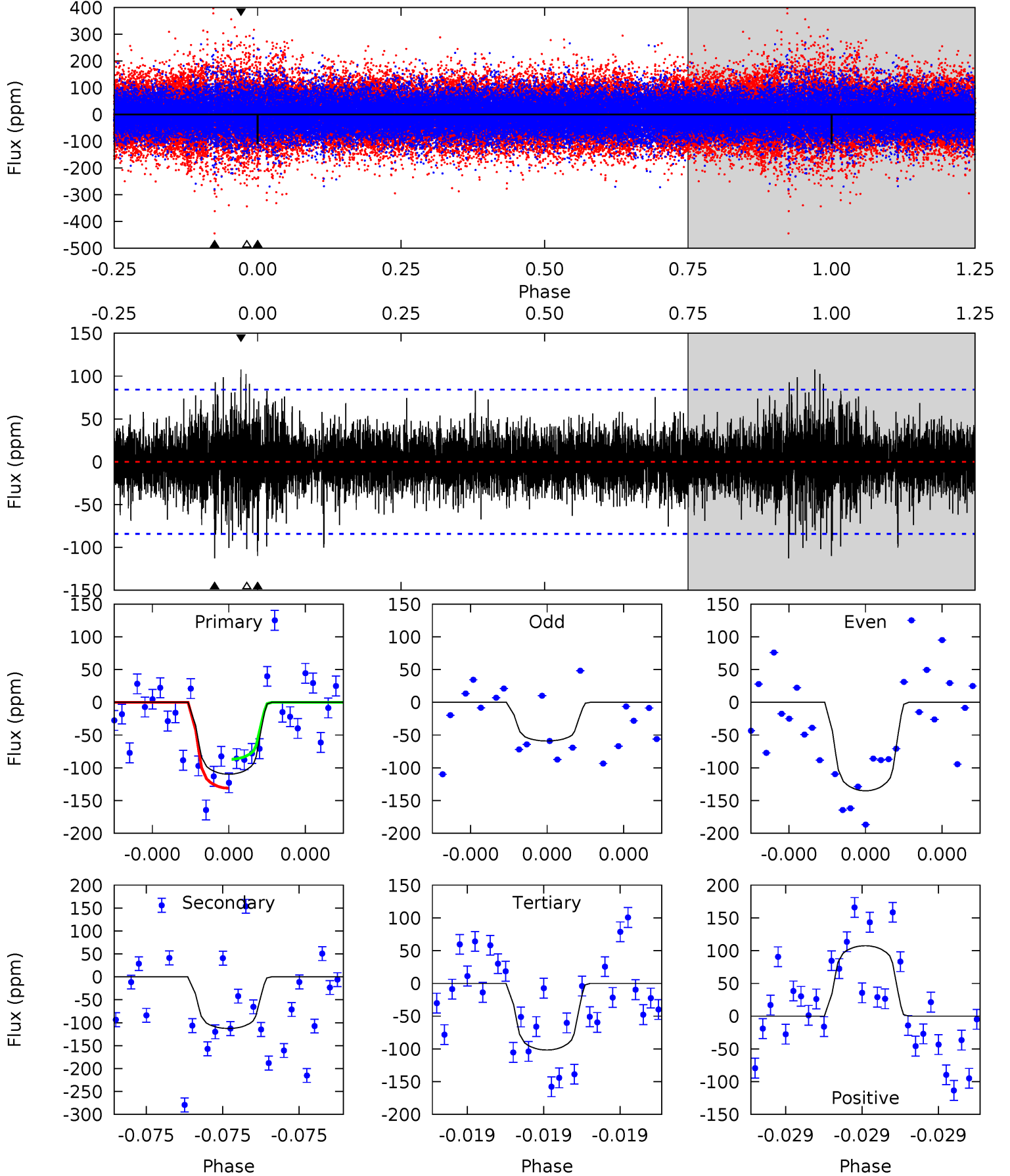
TCE 012023386-01 P=477.212171 Days $T_0=203.630531$ (BKJD)



DV Model-Shift Uniqueness Test

012023386-01, P = 477.219159 Days, E = 203.644936 Days

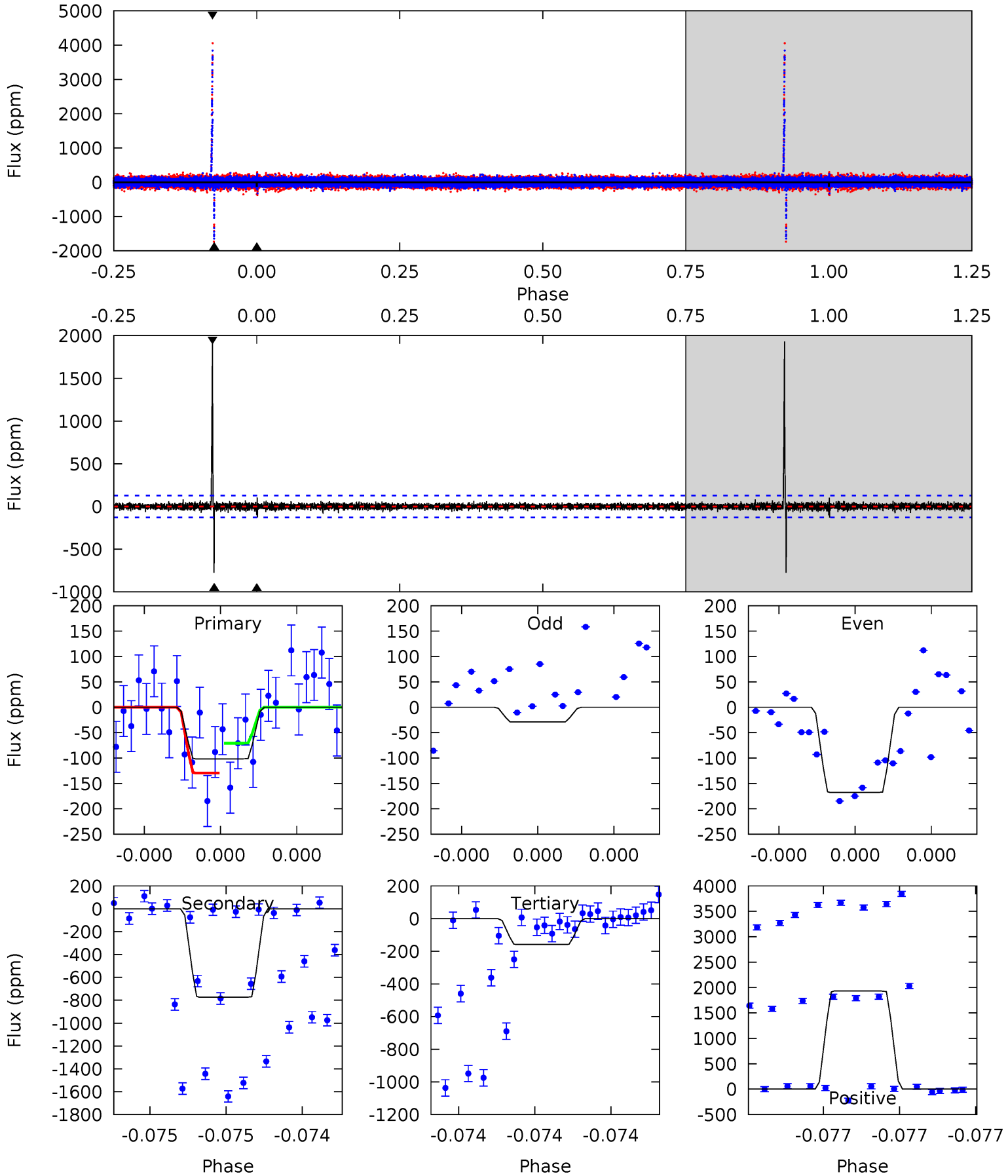
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.39	7.58	6.84	7.23	5.66	3.62	1.43	0.55	0.16	0.74	0.35	2.47	0.94	0.49	1.48



Alt Model-Shift Uniqueness Test

012023386-01, P = 477.212171 Days, E = 203.630531 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.47	34.0	6.96	84.9	5.68	3.64	2.36	-2.49	-80.4	27.1	-50.9	3.22	0.66	0.71	1.30



Stellar Parameters For KIC 012023386

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6254^{+75}_{-81}	$4.213^{+0.120}_{-0.120}$	$0.140^{+0.150}_{-0.150}$	$1.450^{+0.281}_{-0.230}$	$1.254^{+0.094}_{-0.115}$	$0.579^{+0.333}_{-0.212}$
	+1%/-1%	+3%/-3%	+107%/-107%	+19%/-16%	+7%/-9%	+57%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 012023386-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-113 ± 15	$1.96^{+1.31}_{-1.20}$	408^{+21}_{-16}	5791^{+4049}_{-1144}	$26648^{+134774}_{-16849}$
Alt.	-774 ± 23	$1.80^{+1.51}_{-1.11}$	409^{+19}_{-18}	11004^{+18877}_{-3569}	$220824^{+1282884}_{-154312}$

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

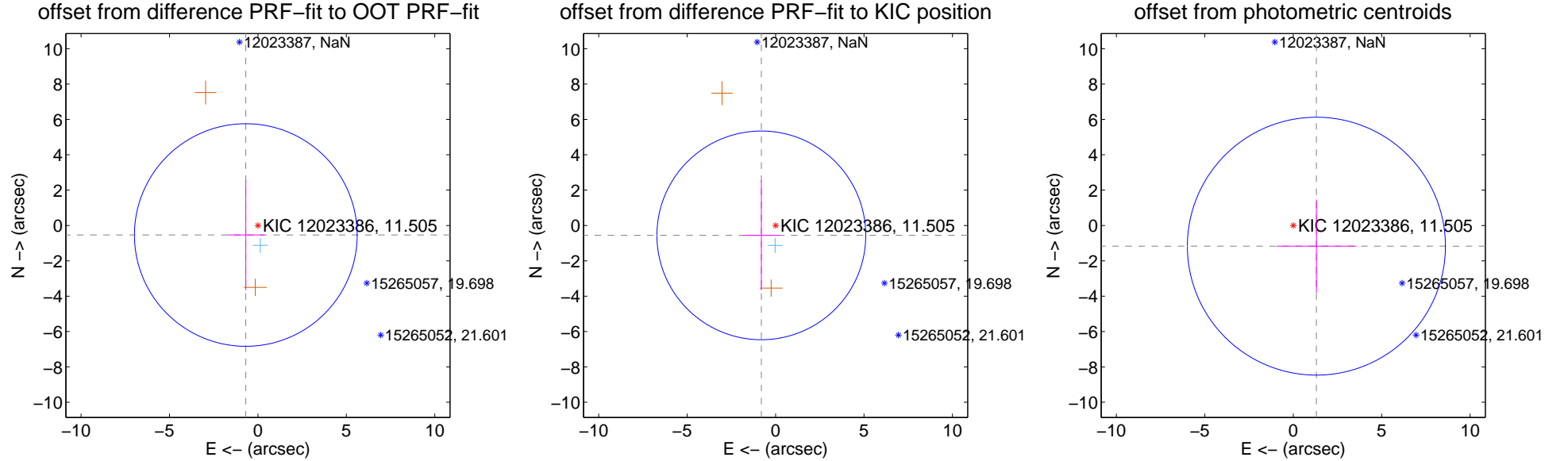
DV Centroid Data

Supplemental centroid analysis for 012023386-01. **Kepler magnitude: 11.51.** Transit SNR 4.31

There are 1 quarters with good PRF difference image offsets

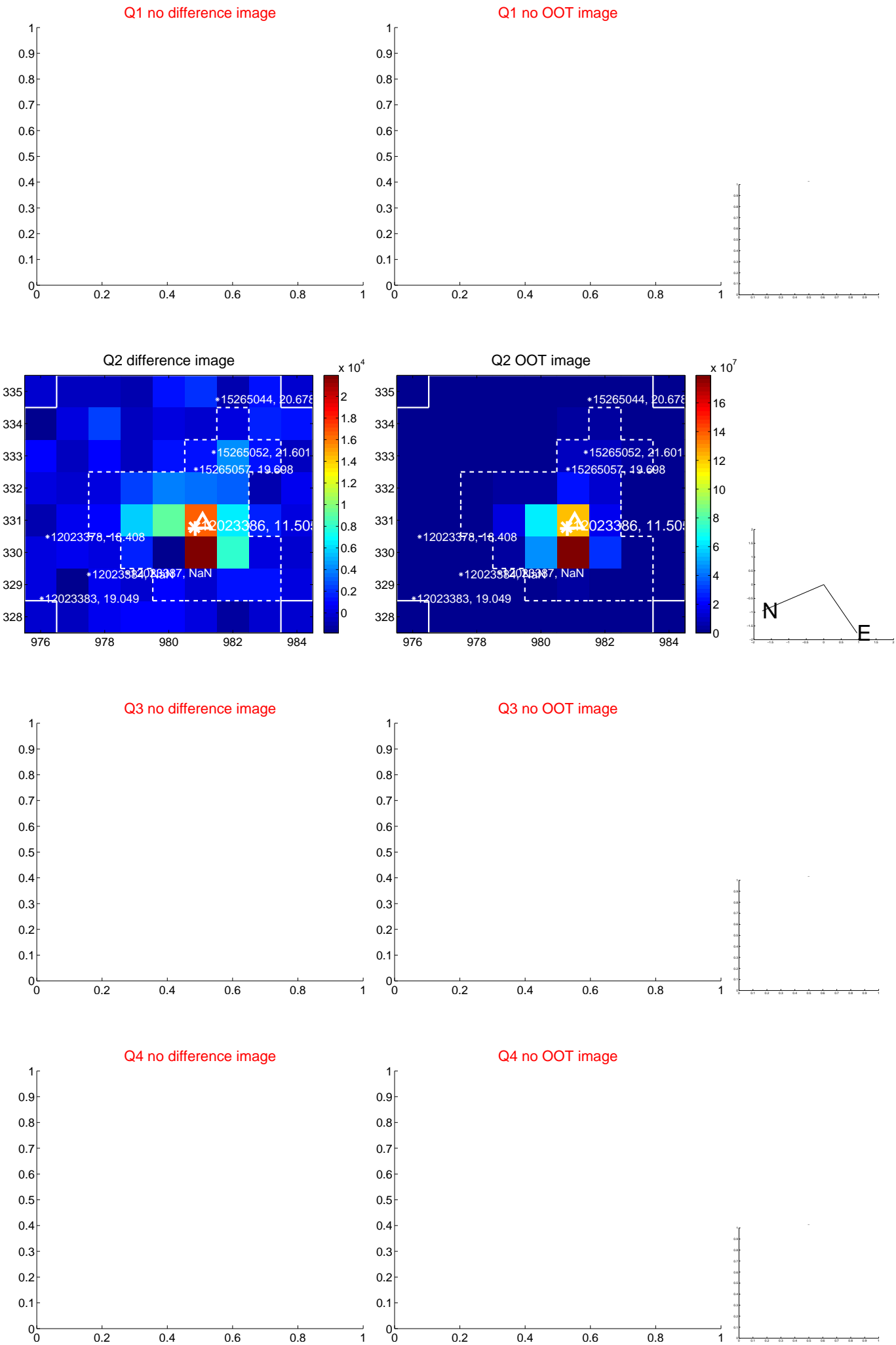
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.872 ± 2.099	0.42	0.685 ± 1.057	-0.540 ± 3.117
PRF-fit source offset from KIC position	0.982 ± 1.968	0.50	0.806 ± 1.036	-0.560 ± 3.112
photometric centroid source offset	1.76 ± 2.43	0.72	-1.31 ± 2.25	-1.17 ± 2.64

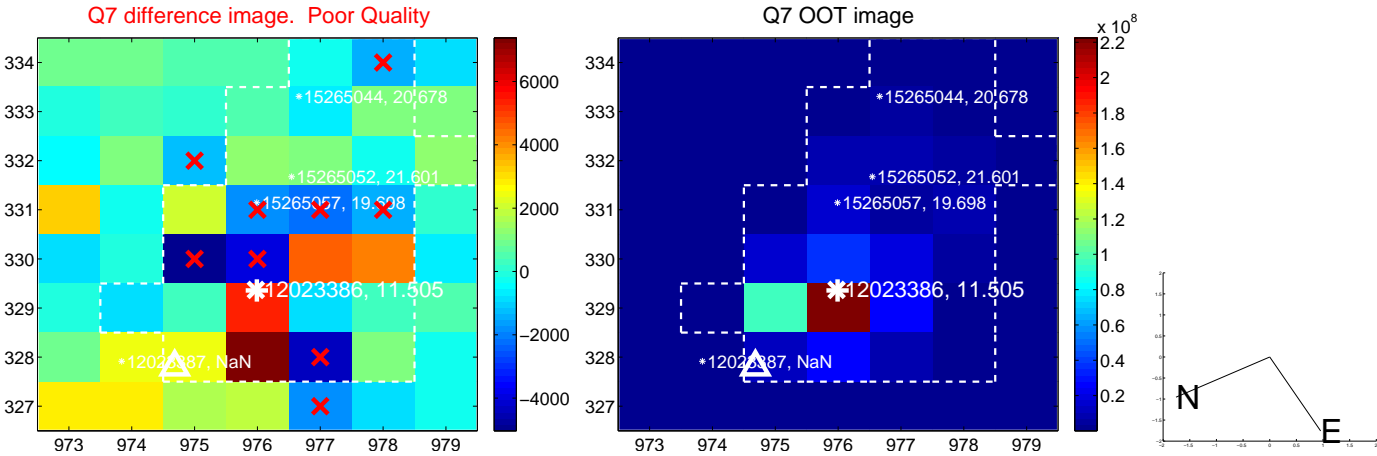


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

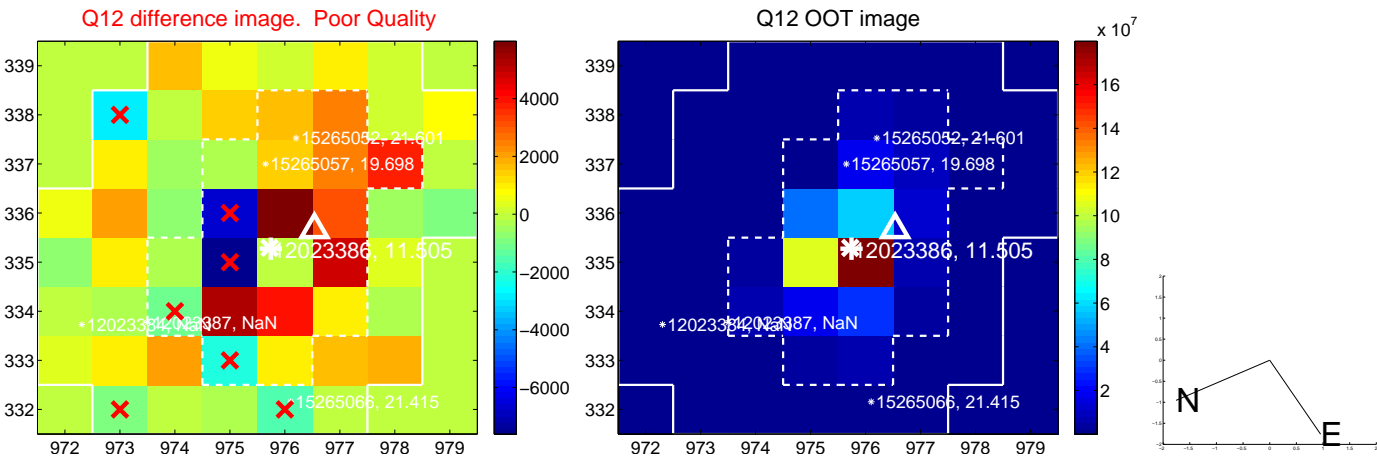
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



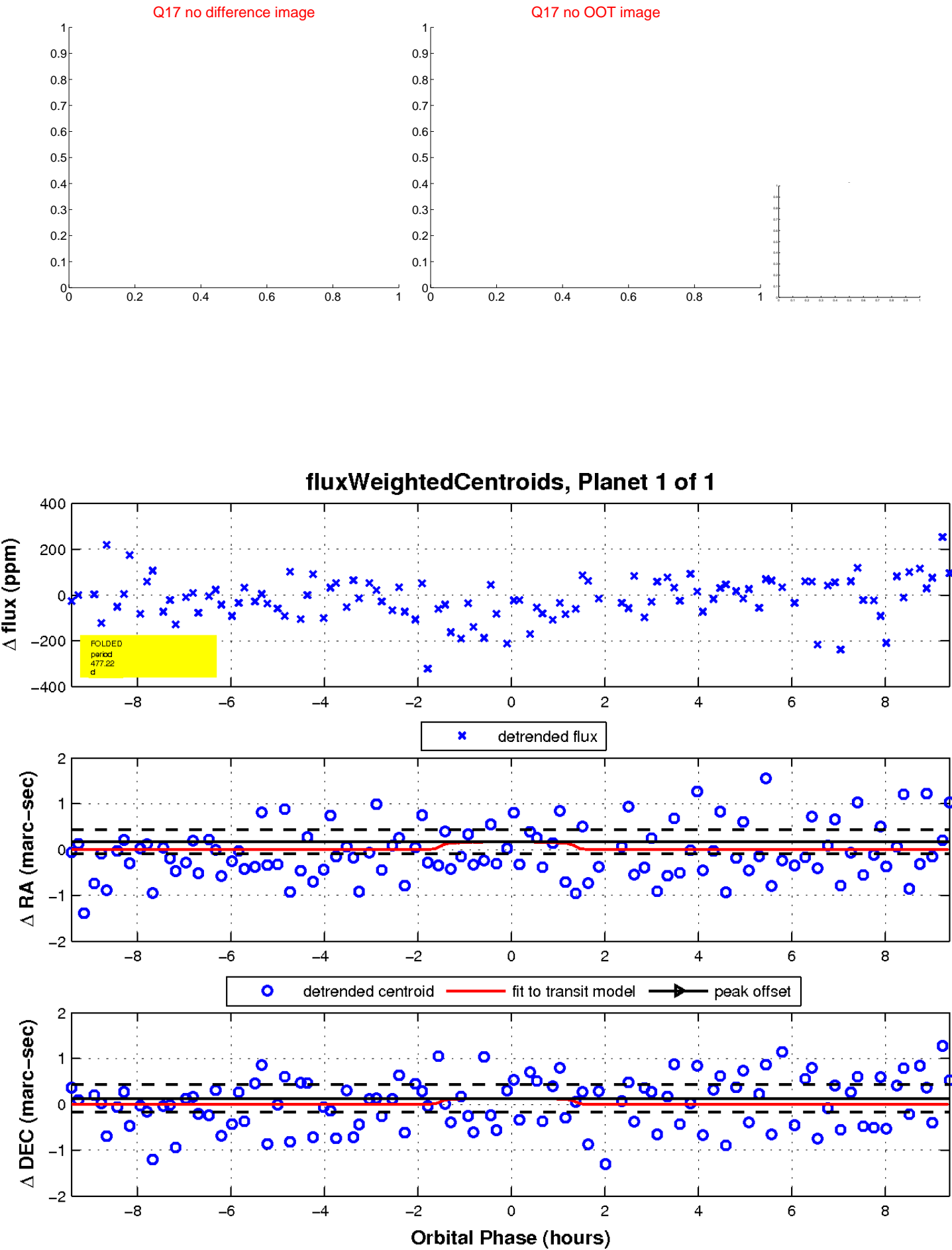
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

