

KIC 009519964

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})
009519964-01	OBS	No	666.963098	236.618201	121.0	8.860	18.0	2.7	64.42	3953	83.64	277.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009519964-01	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

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

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

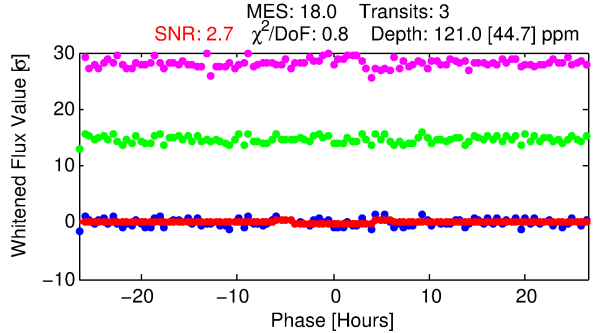
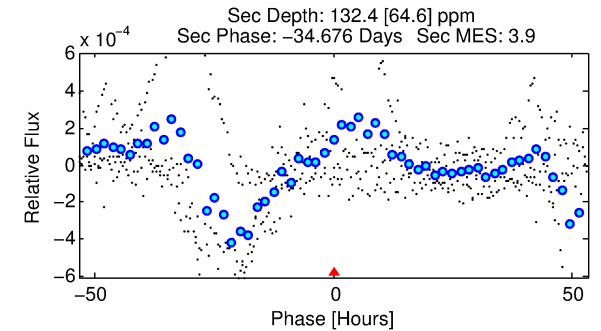
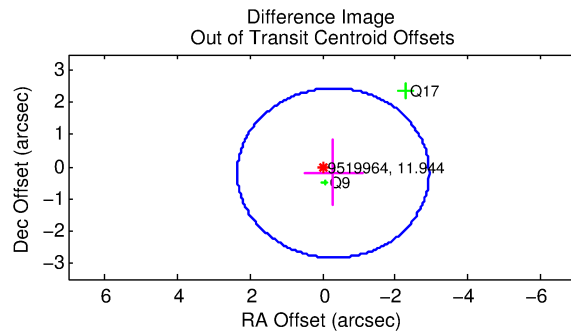
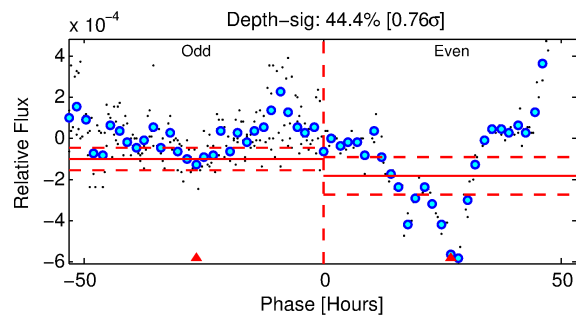
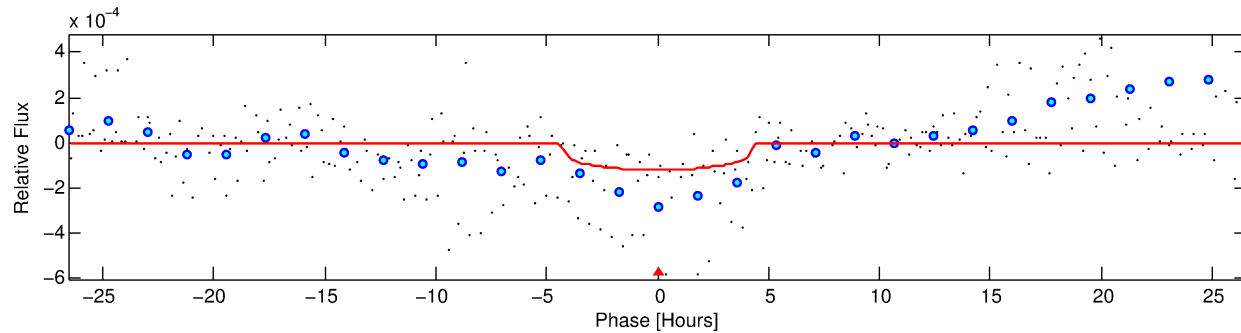
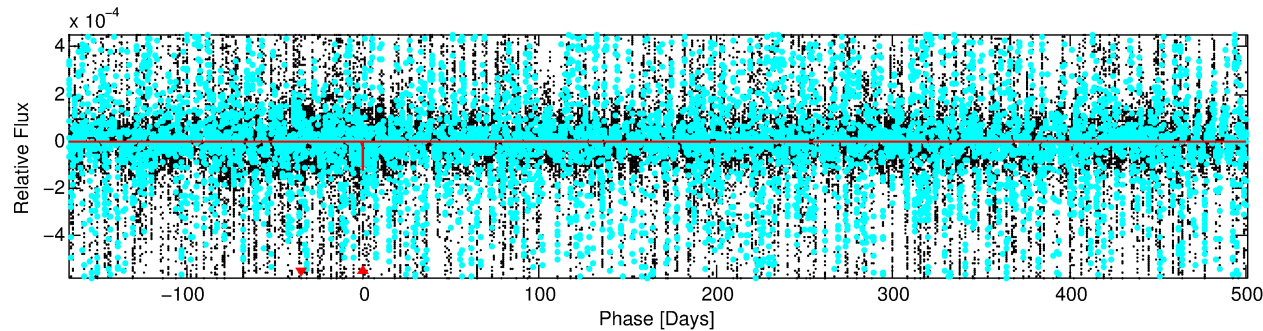
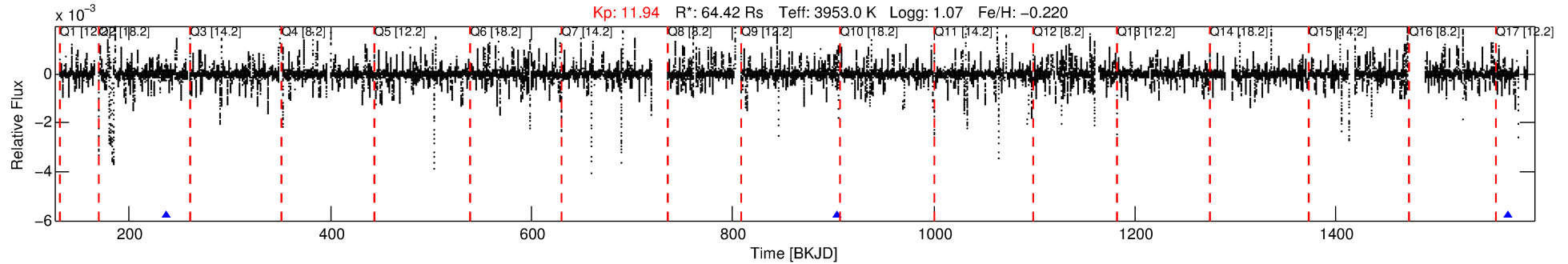
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009519964-01

No Significant Match Found

DV One-Page Summary

KIC: 9519964 Candidate: 1 of 1 Period: 666.963 d



DV Fit Results:

Period = 666.96310 [0.01435] d
Epoch = 236.6182 [0.0197] BKJD
 $R_p/R^* = 0.0119$ [0.0075]
 $a/R^* = 321.11$ [605.95]
 $b = 0.84$ [0.65]
 $\text{Seff} = 277.87$ [50.10]
 $T_{\text{eq}} = 1041$ [47] K
 $R_p = 83.63$ [55.33] Re
 $a = 1.8077$ [0.2490] AU
 $A_g = 34.04$ [46.22] [0.71 σ]
 $T_{\text{eff}} = 3888$ [1317] K [2.16 σ]

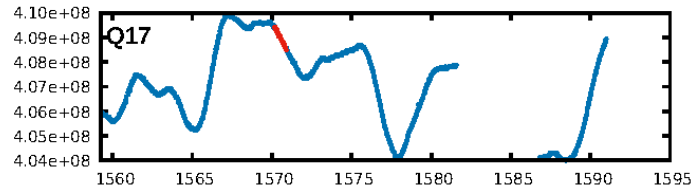
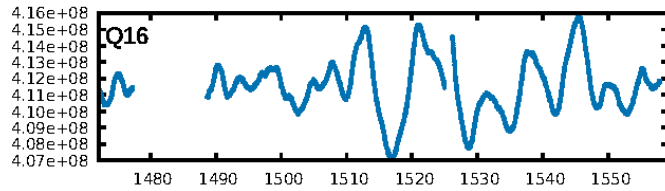
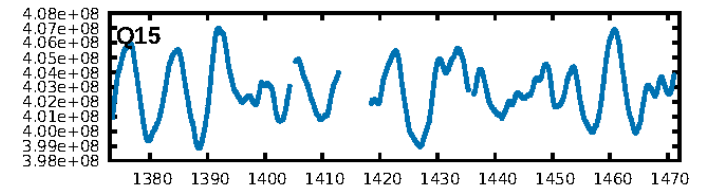
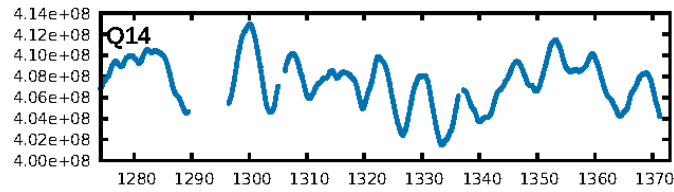
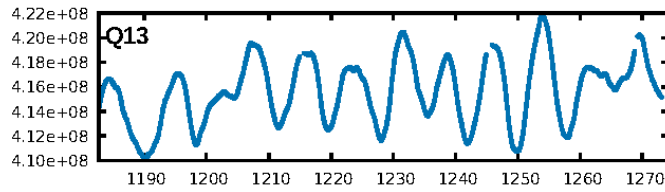
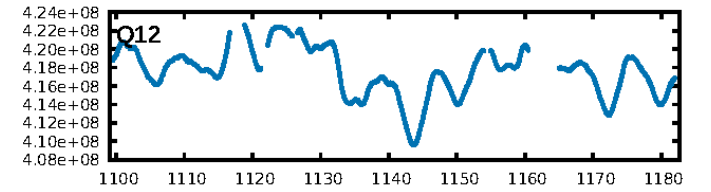
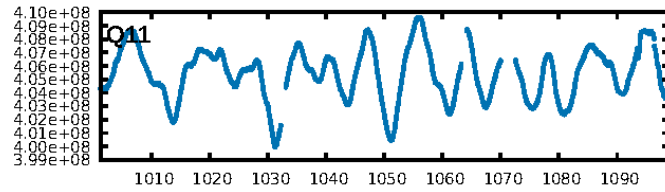
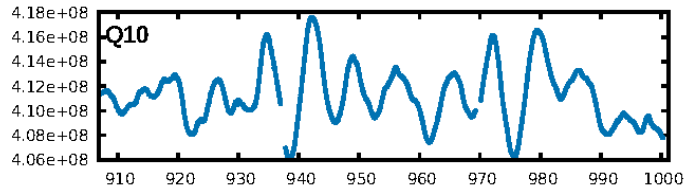
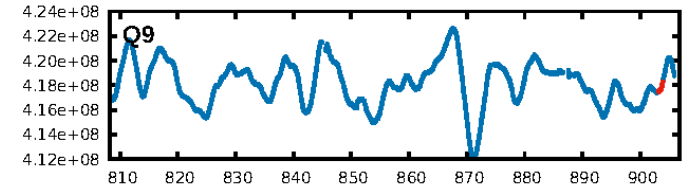
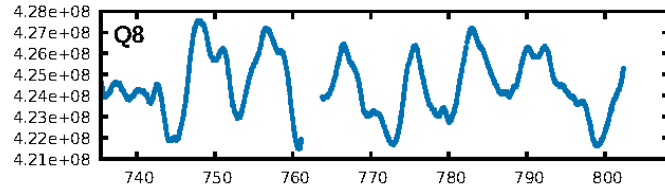
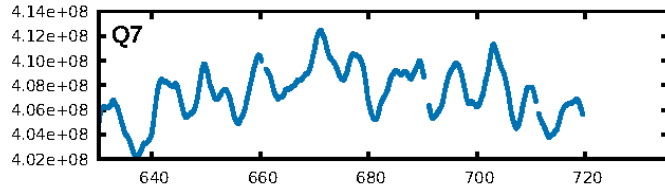
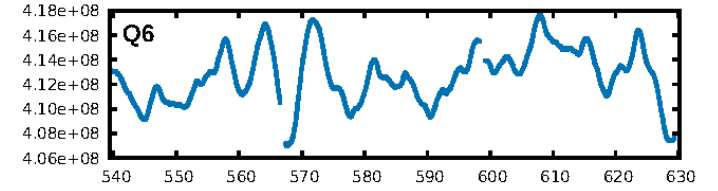
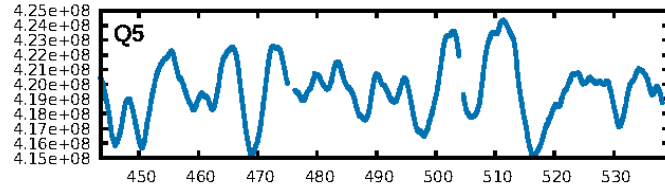
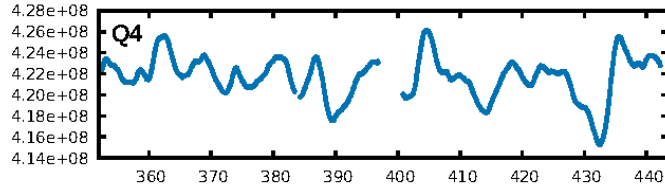
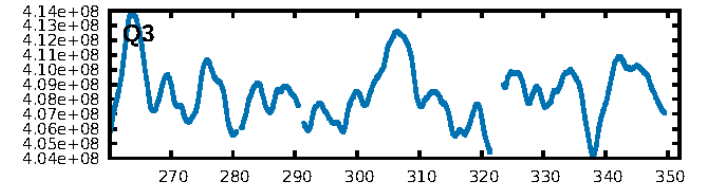
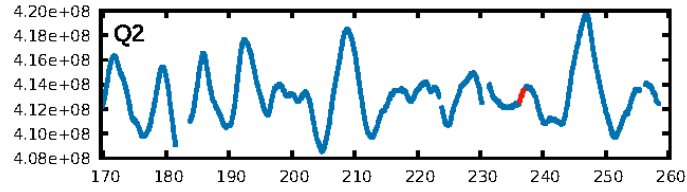
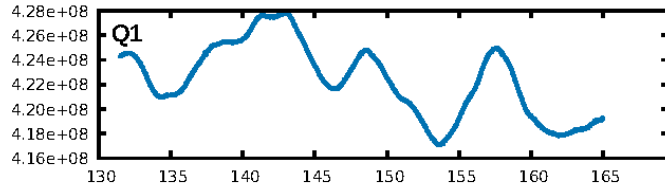
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 45.9%
ModelChiSquareGof-sig: 98.1%
Bootstrap-pfa: 1.74e-11
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 6.469
Centroid-sig: 27.5%
Centroid-so: 1.197 arcsec [0.83 σ]
OotOffset-rm: 0.360 arcsec [0.41 σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-rm: 0.246 arcsec [0.25 σ]
KicOffset-st: 0/0/0/2 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

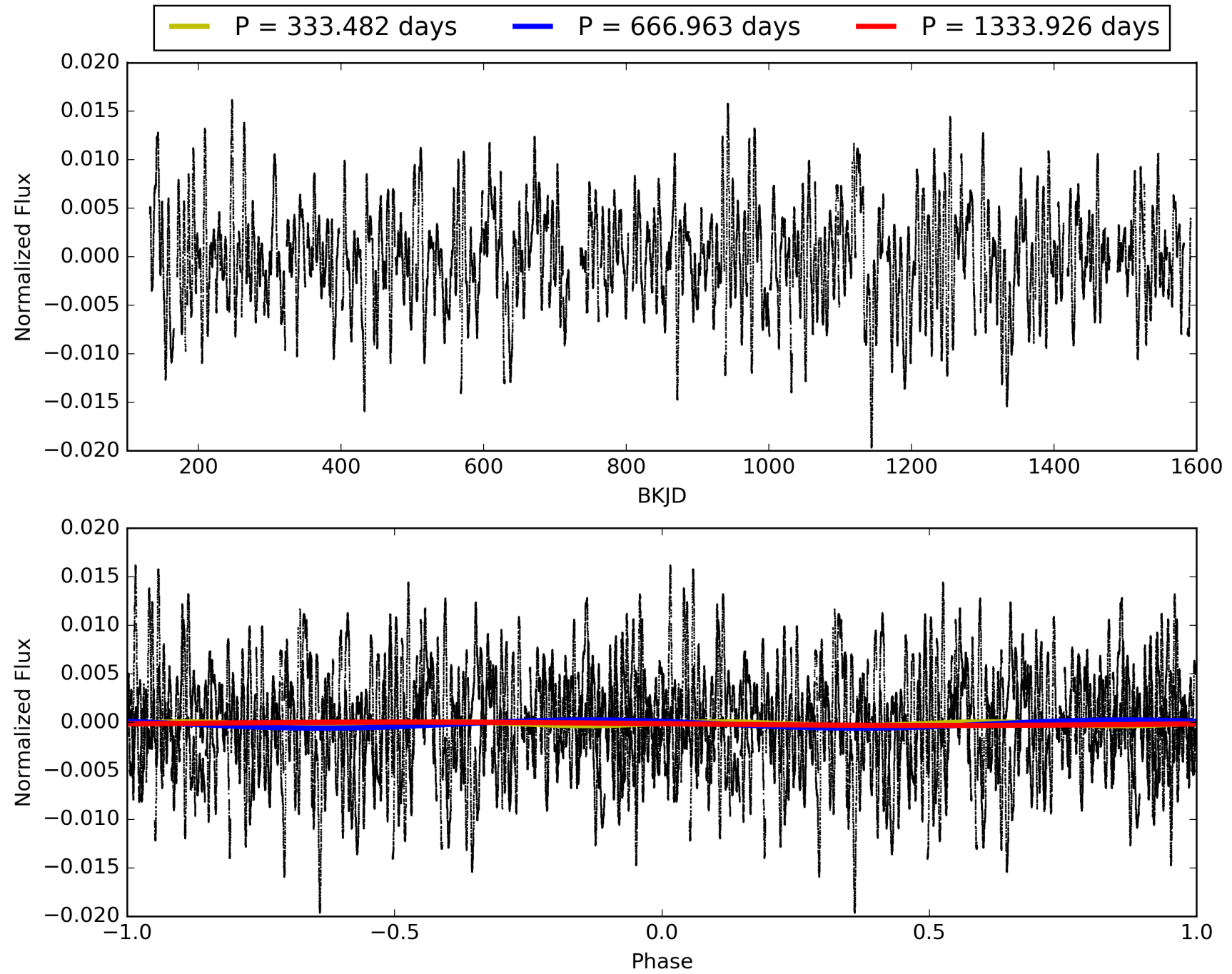
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:11:33 Z

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

TCE 009519964-01, PDC Light Curves

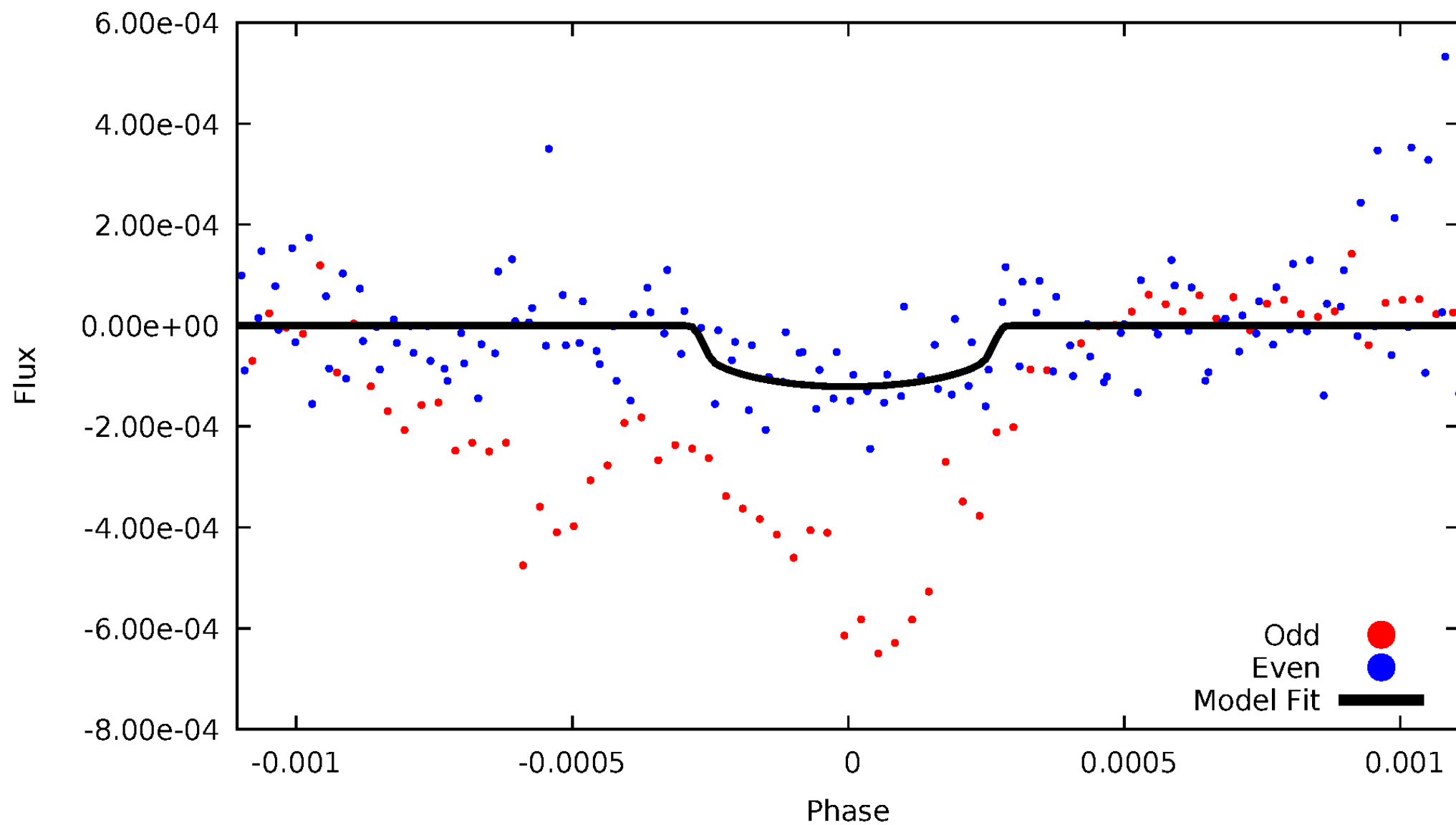


TCE 009519964-01



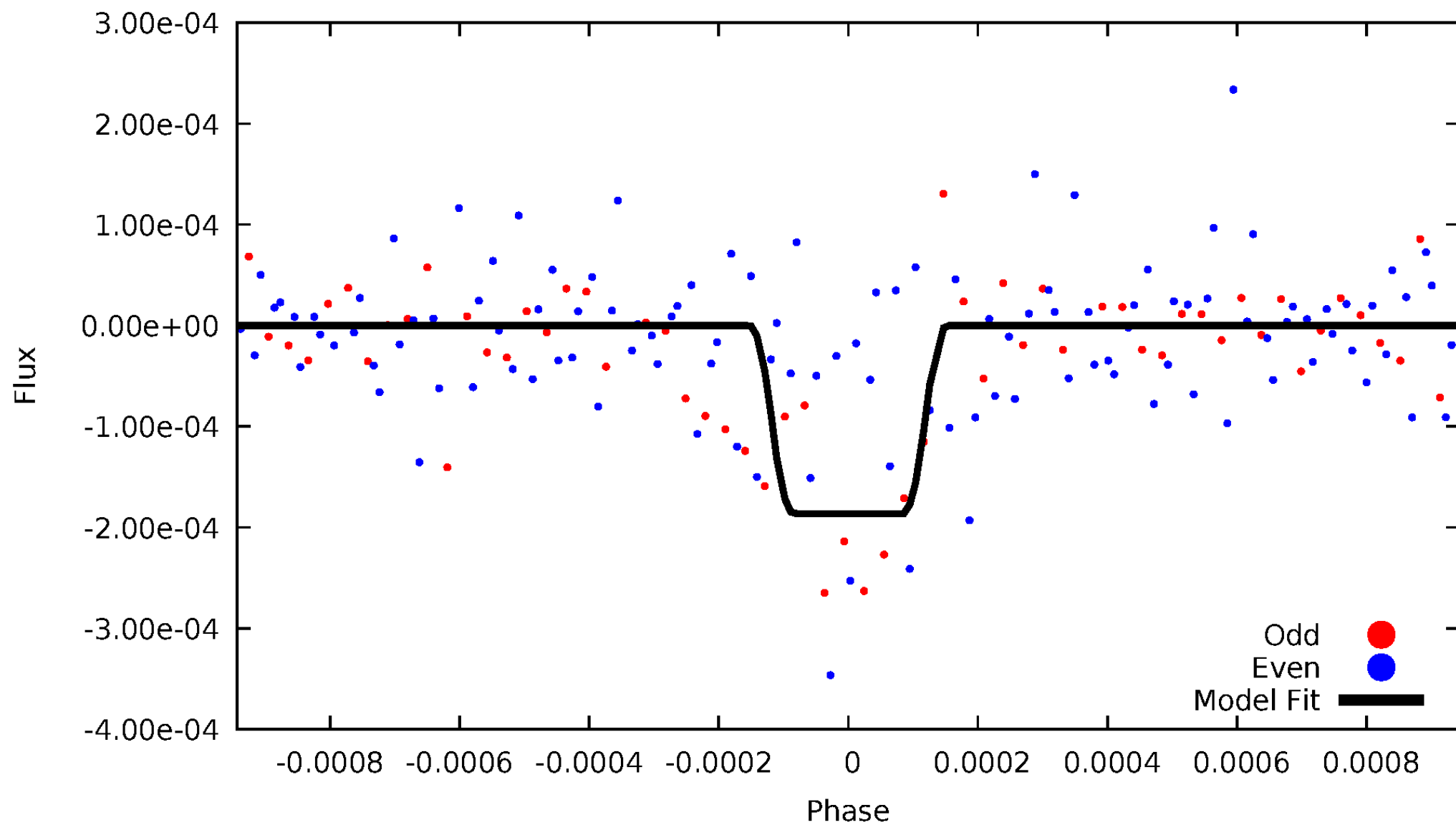
DV Odd/Even

TCE 009519964-01



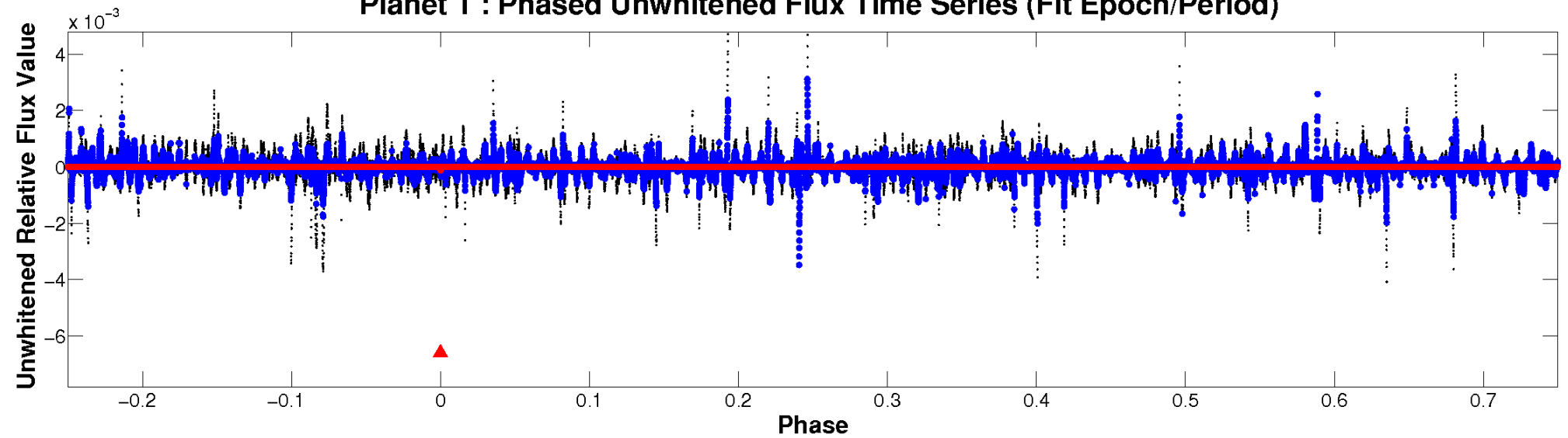
ALT Odd/Even

TCE 009519964-01

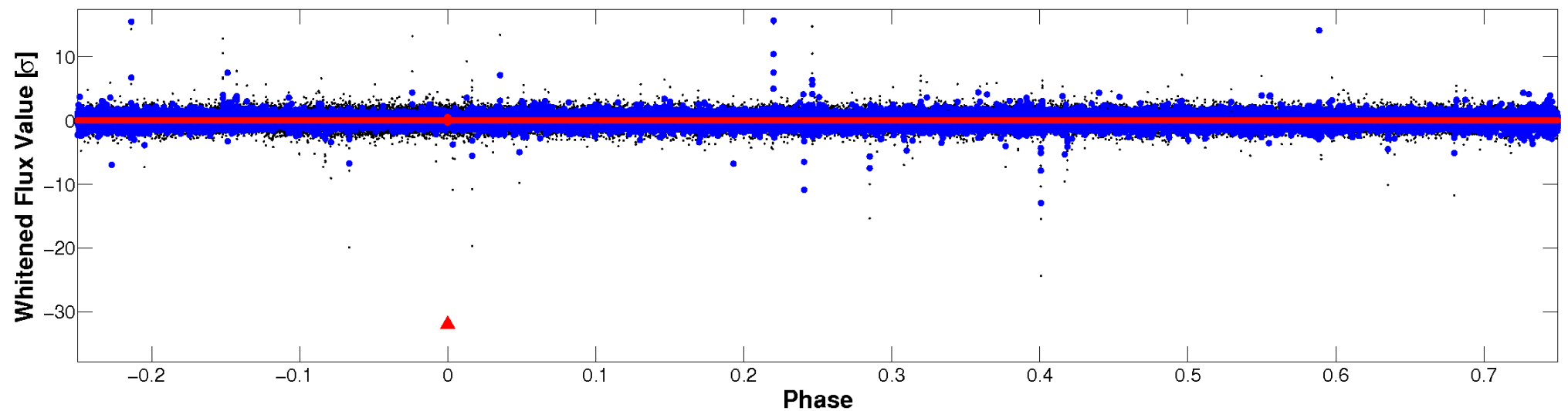


Non-Whitened Vs. Whitened Light Curve

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

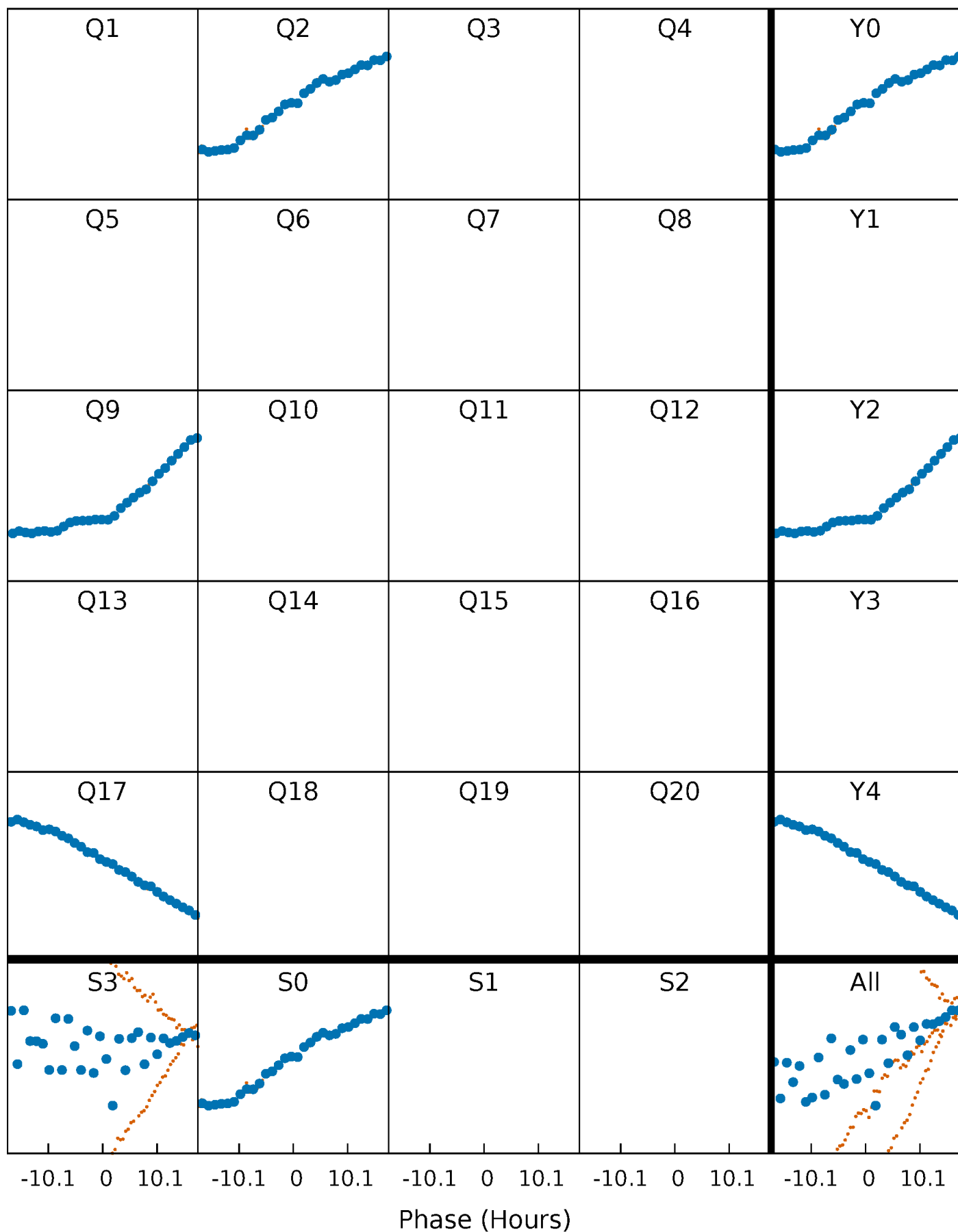


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



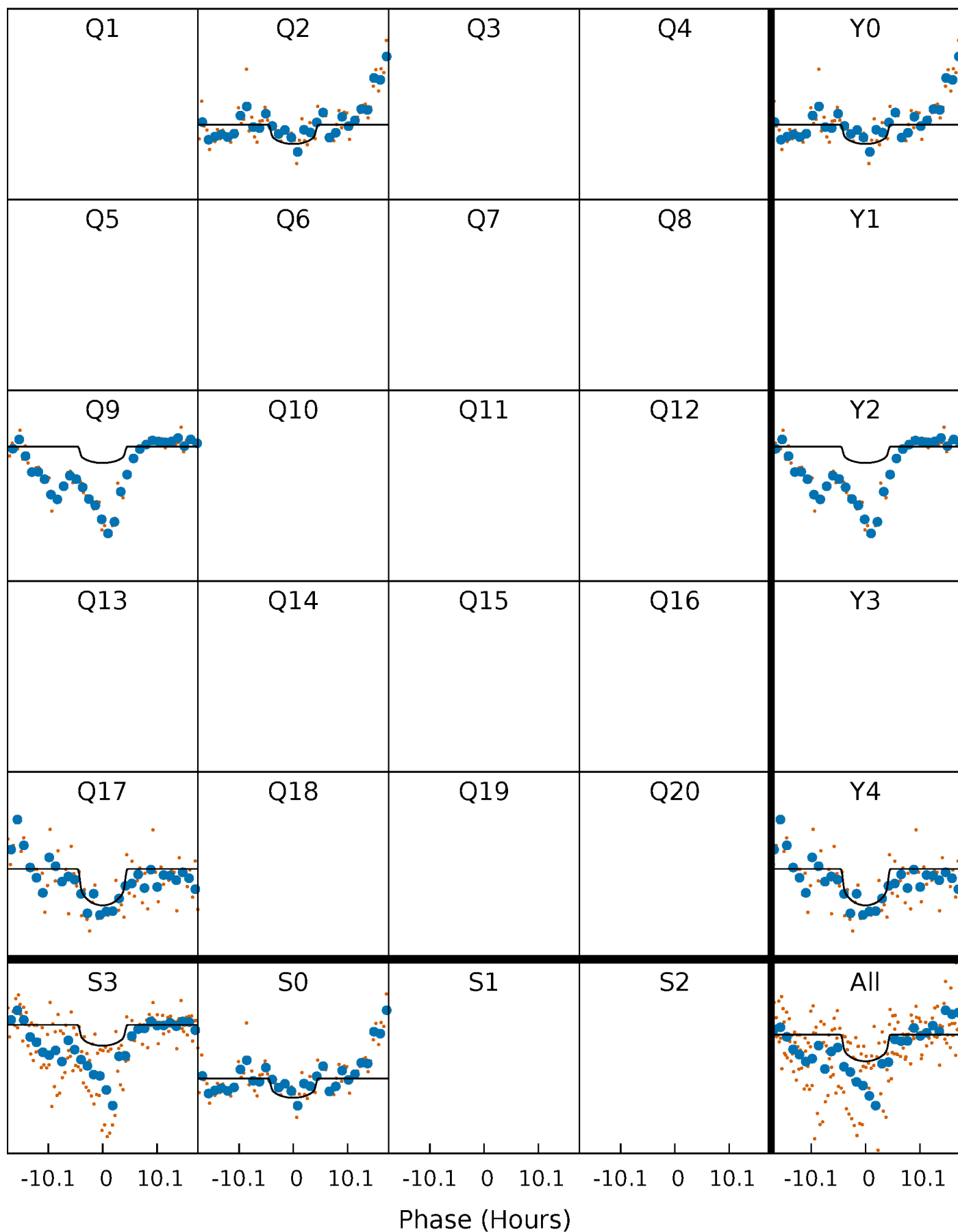
PDC Quarter-Phased Transit Curves

TCE 009519964-01 P=666.963098 Days $T_0=236.618201$ (BKJD)



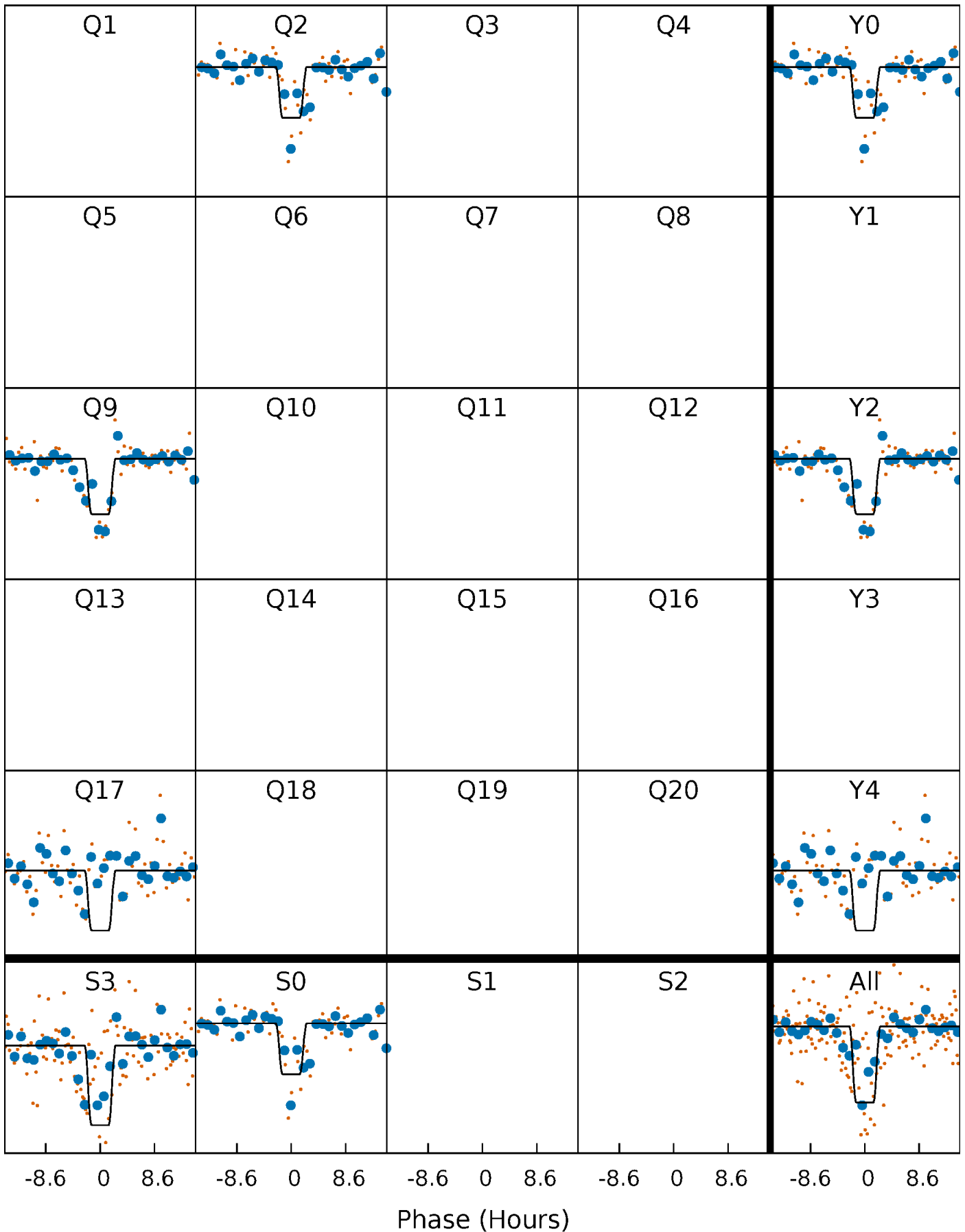
DV Quarter-Phased Transit Curves

TCE 009519964-01 P=666.963098 Days $T_0=236.618201$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

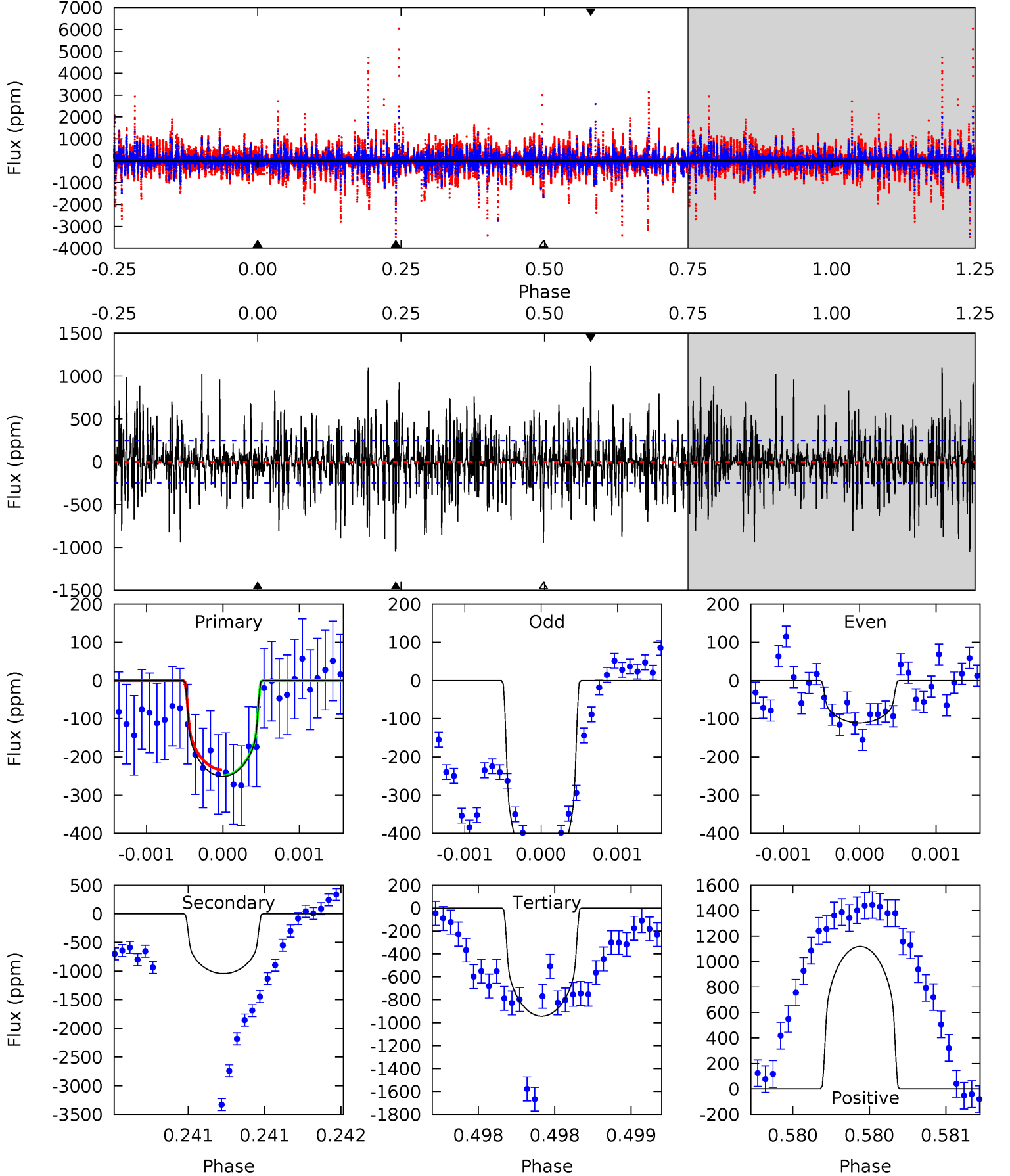
TCE 009519964-01 P=666.937776 Days $T_0=236.663182$ (BKJD)



DV Model-Shift Uniqueness Test

009519964-01, P = 666.963098 Days, E = 236.618201 Days

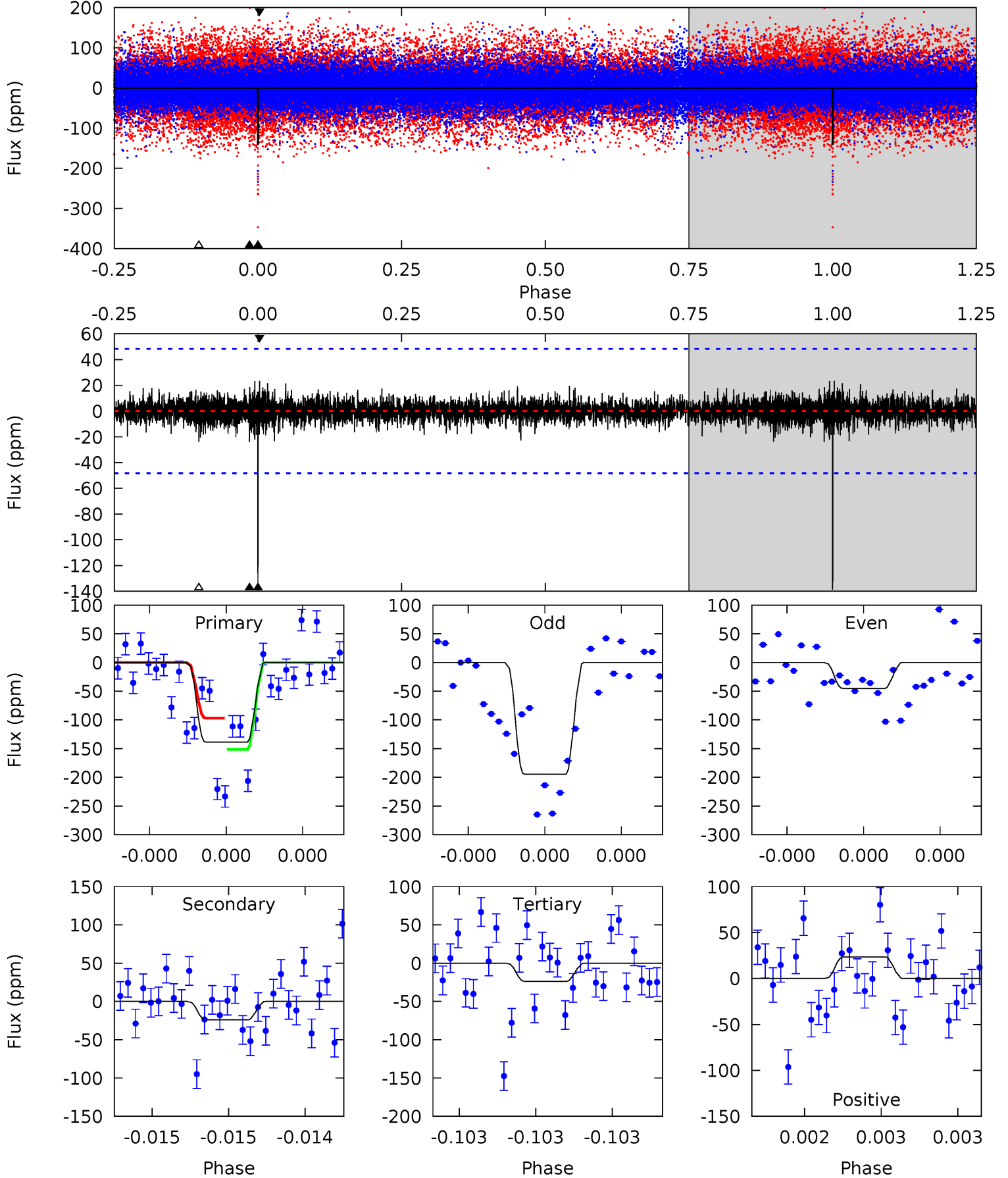
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.63	23.4	21.2	25.1	5.55	3.44	5.24	-15.5	-19.4	2.25	-1.68	3.94	1.69	0.52	0.17



Alt Model-Shift Uniqueness Test

009519964-01, P = 666.937776 Days, E = 236.663182 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.2	2.81	2.78	2.75	5.66	3.61	0.55	13.5	13.5	0.03	0.06	8.79	0.68	0.14	3.09



Stellar Parameters For KIC 009519964

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	3953^{+88}_{-108}	$1.068^{+0.030}_{-0.030}$	$-0.220^{+0.200}_{-0.250}$	$64.425^{+2.316}_{-13.125}$	$1.772^{+0.071}_{-0.640}$	$0.000^{+0.000}_{-0.000}$
	+2%/-3%	+3%/-3%	+91%/-114%	+4%/-20%	+4%/-36%	+30%/-8%
Source	PHO54	AST54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009519964-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1044 ± 45	$87.28^{+49.16}_{-46.55}$	1455^{+38}_{-44}	5784^{+3120}_{-1011}	243^{+874}_{-142}
Alt.	-24 ± 9	$94.22^{+51.60}_{-48.89}$	1454^{+37}_{-45}	2845^{+735}_{-383}	$4.645^{+15.441}_{-2.941}$

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

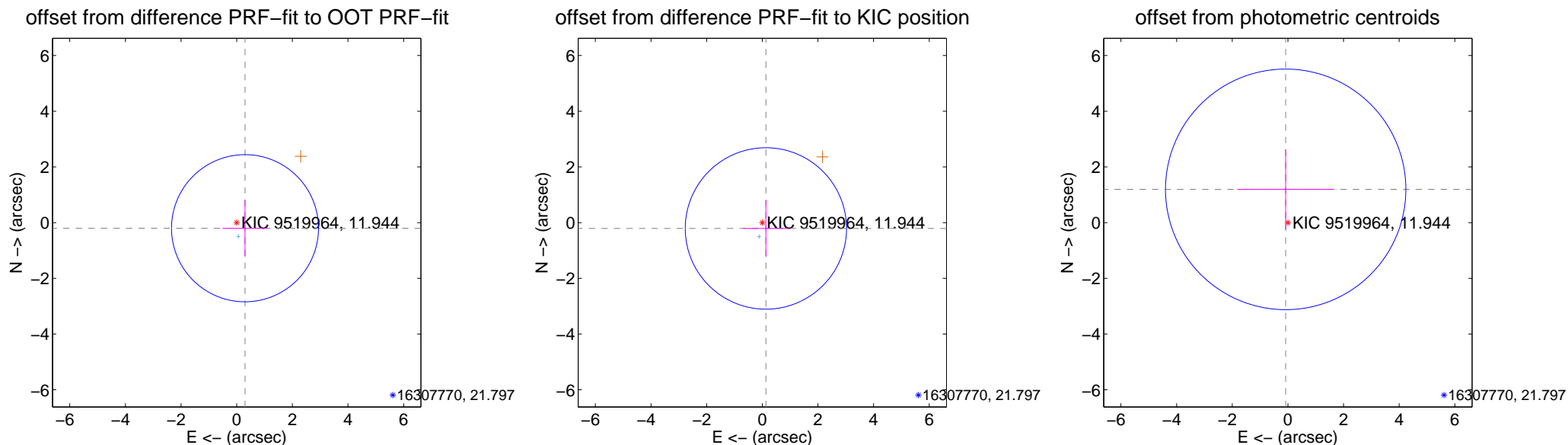
DV Centroid Data

Supplemental centroid analysis for 009519964-01. **Kepler magnitude: 11.94.** Transit SNR 2.75

There are 1 quarters with good PRF difference image offsets

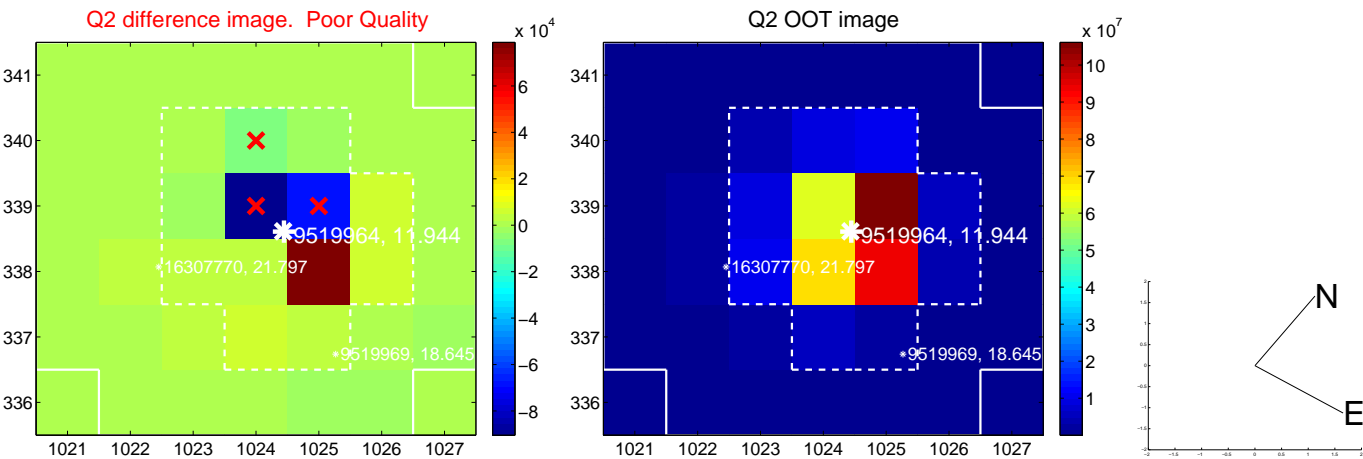
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.360 ± 0.880	0.41	-0.298 ± 0.808	-0.201 ± 1.022
PRF-fit source offset from KIC position	0.246 ± 0.966	0.25	-0.129 ± 0.822	-0.209 ± 1.016
photometric centroid source offset	1.20 ± 1.44	0.83	0.08 ± 1.74	1.19 ± 1.44



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.

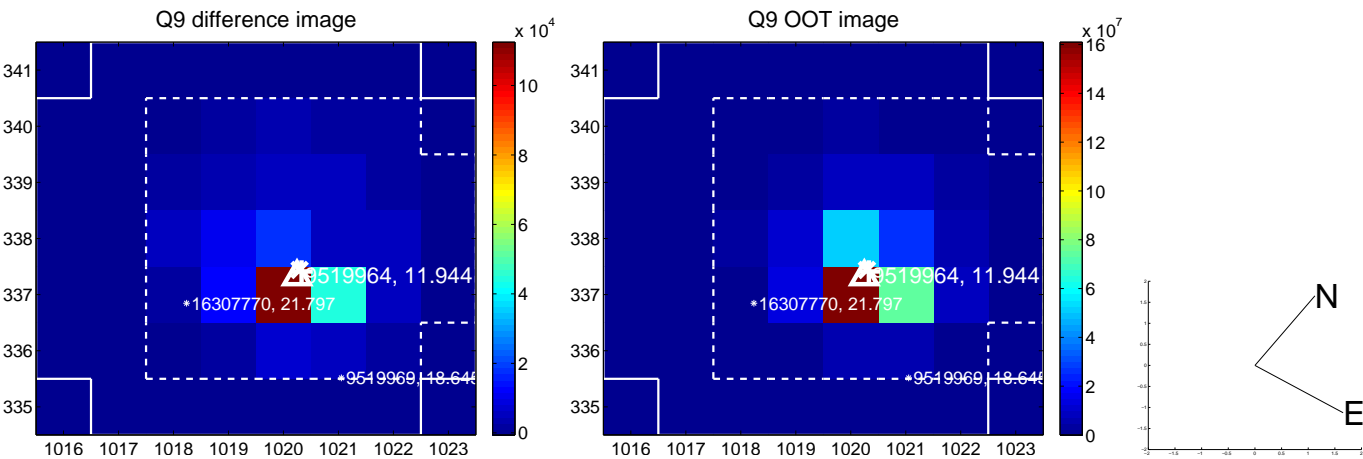
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



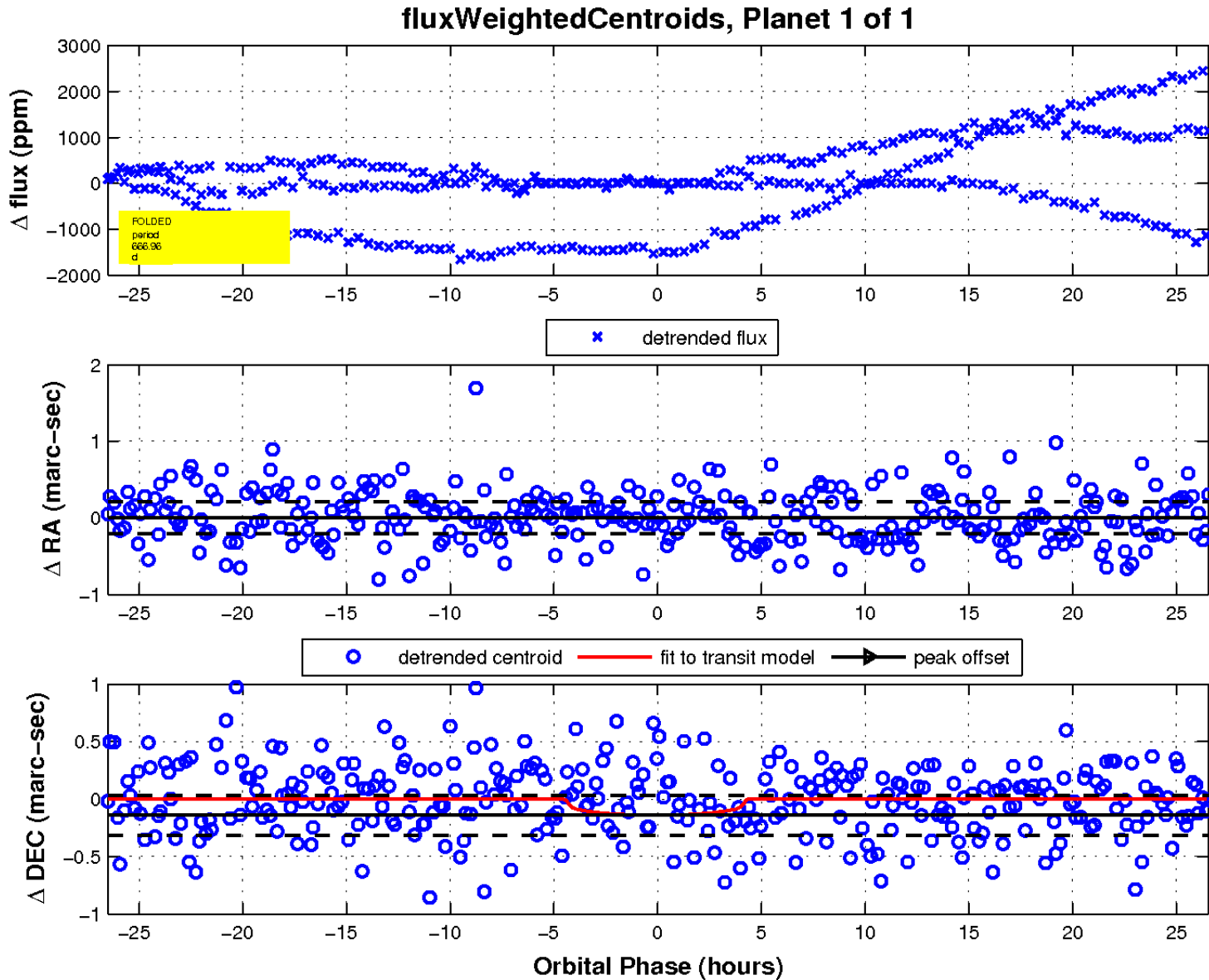
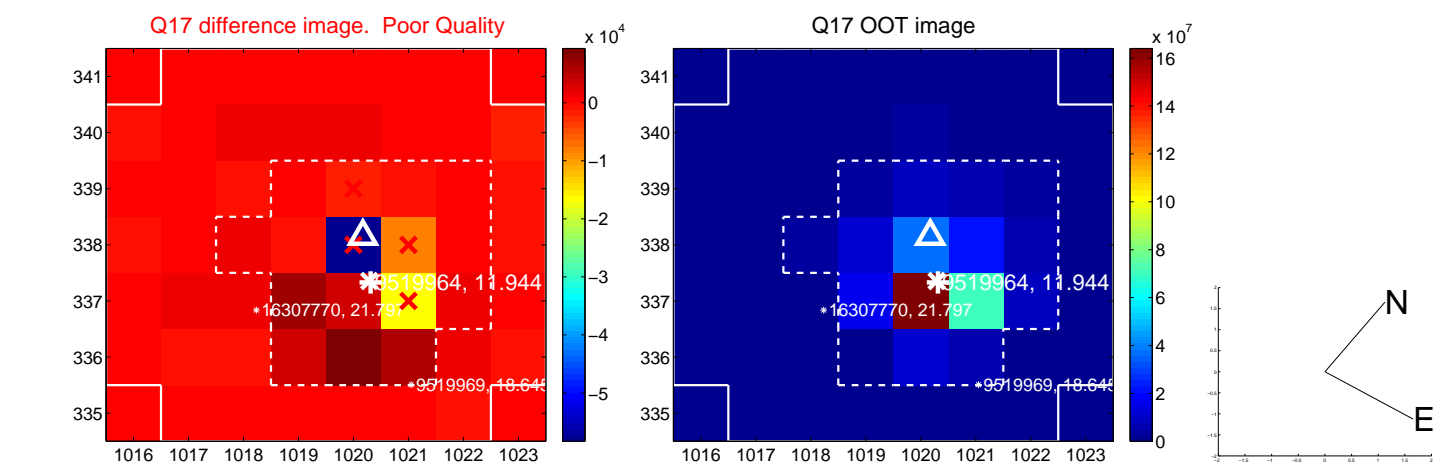
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white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

