

KIC 009887144

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})
009887144-01	OBS	No	411.291903	409.323386	507.1	6.773	7.3	6.6	0.96	5902	2.33	0.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009887144-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—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.

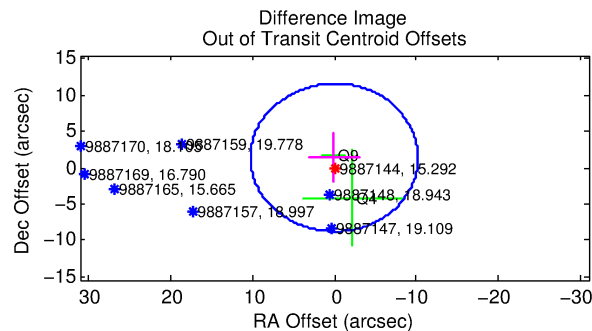
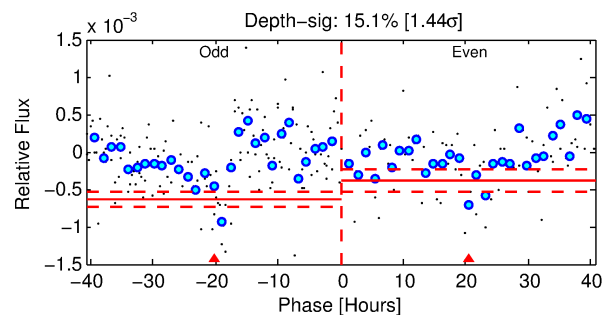
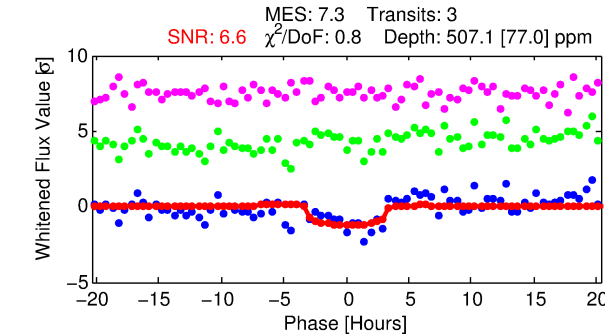
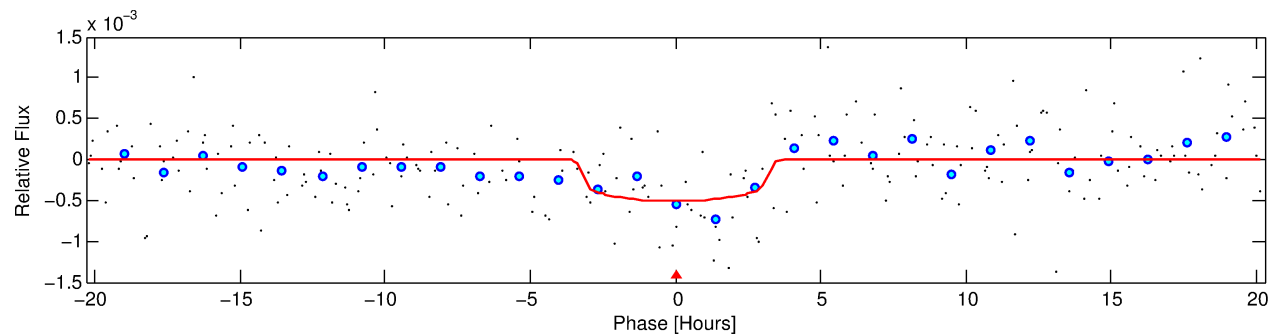
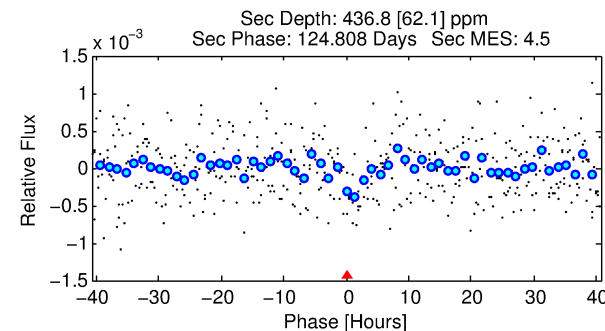
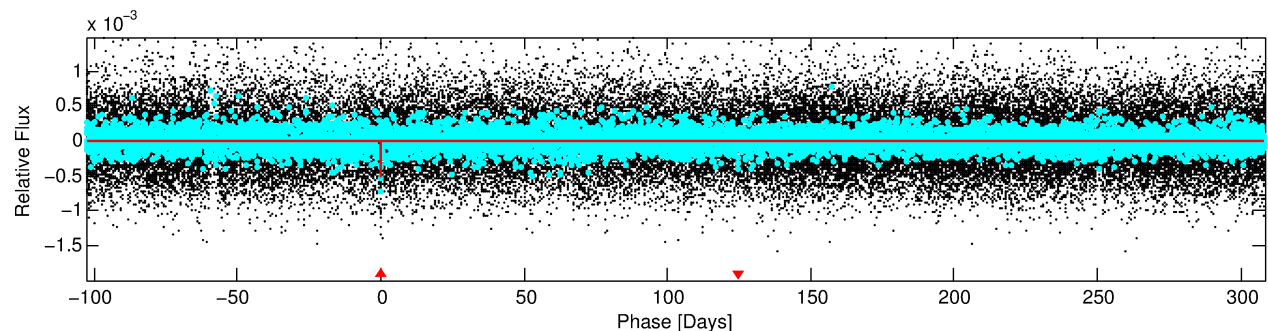
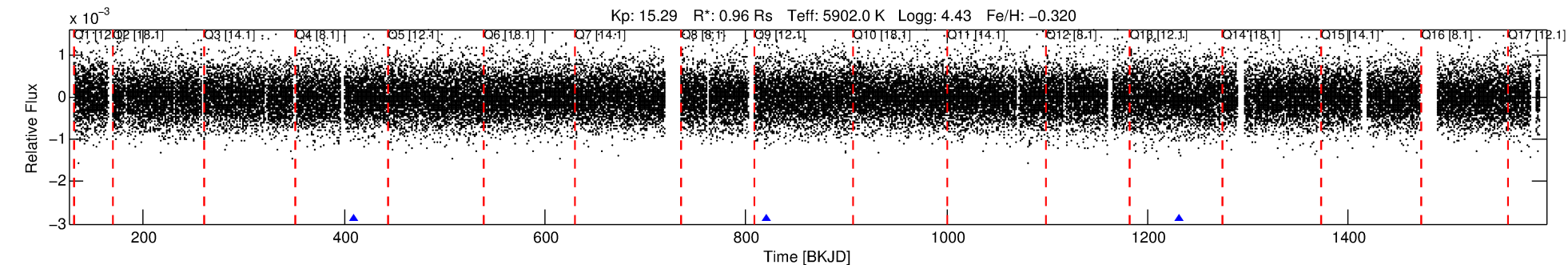
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009887144-01

No Significant Match Found

DV One-Page Summary

KIC: 9887144 Candidate: 1 of 1 Period: 411.292 d



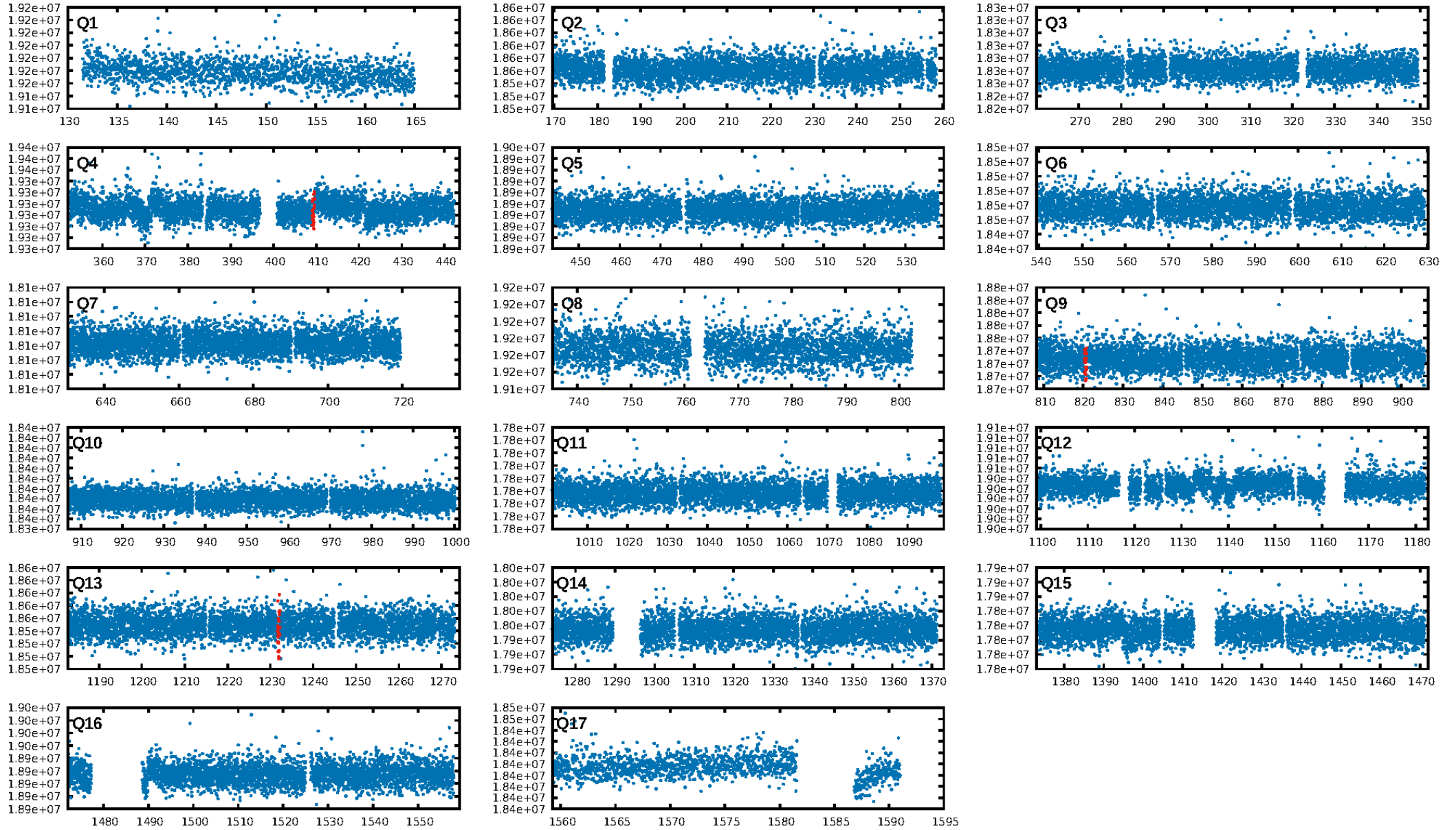
DV Fit Results:

Period = 411.29190 [0.01361] d
Epoch = 409.3234 [0.0175] BKJD
Rp/R* = 0.0223 [0.0167]
a/R* = 329.20 [1181.58]
b = 0.74 [2.26]
Seff = 0.92 [0.33]
Teq = 250 [22] K
Rp = 2.34 [1.86] Re
a = 1.0447 [0.2403] AU
Ag = 48089.69 [74045.41] [0.65 σ]
Teff = 5715 [2152] K [2.54 σ]

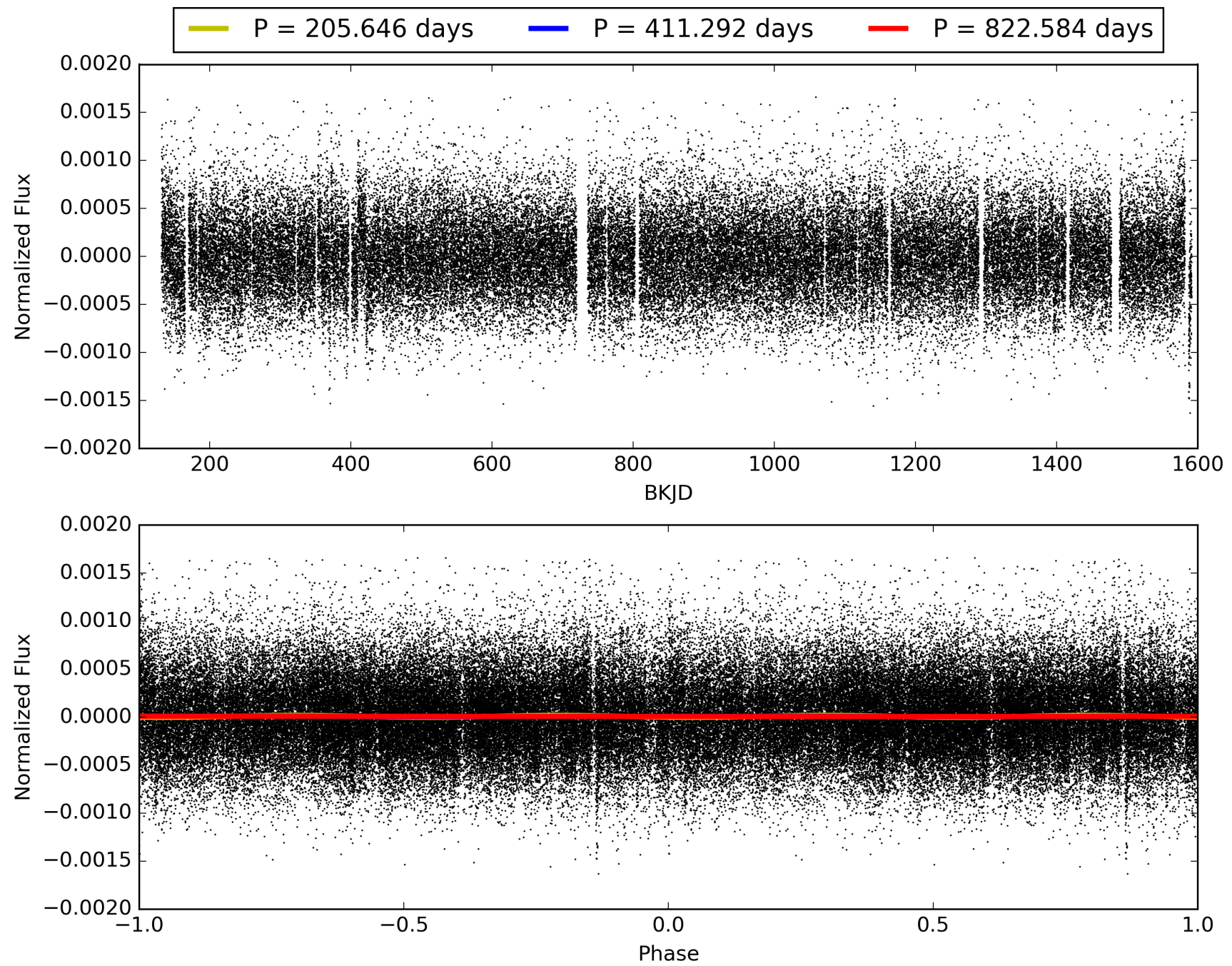
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 10.2%
ModelChiSquareGof-sig: 99.0%
Bootstrap-pfa: 9.33e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.265
Centroid-sig: 44.9%
Centroid-so: 1.984 arcsec [0.94 σ]
OotOffset-rm: 1.387 arcsec [0.41 σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-rm: 1.364 arcsec [0.40 σ]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 009887144-01, PDC Light Curves

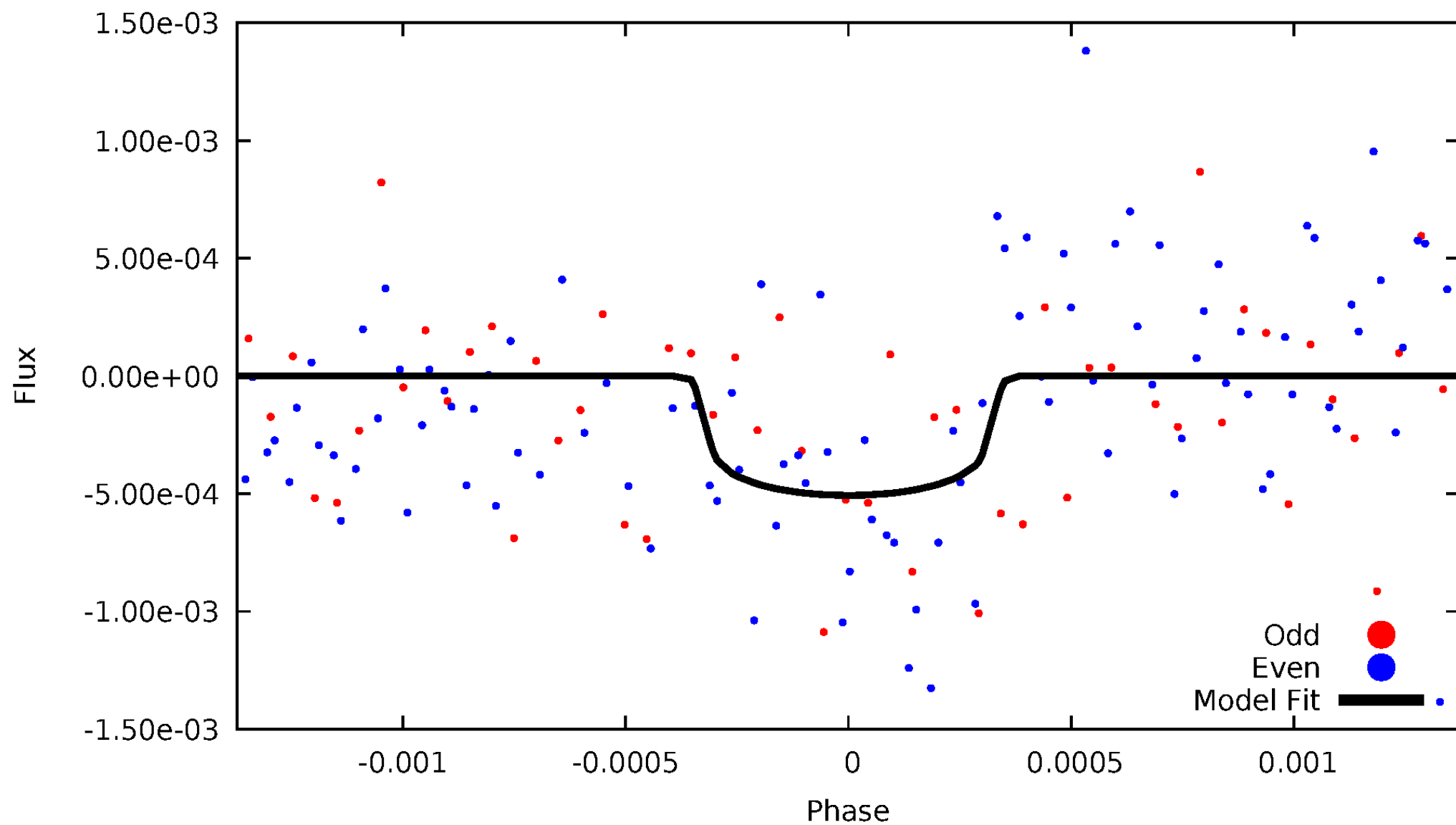


TCE 009887144-01



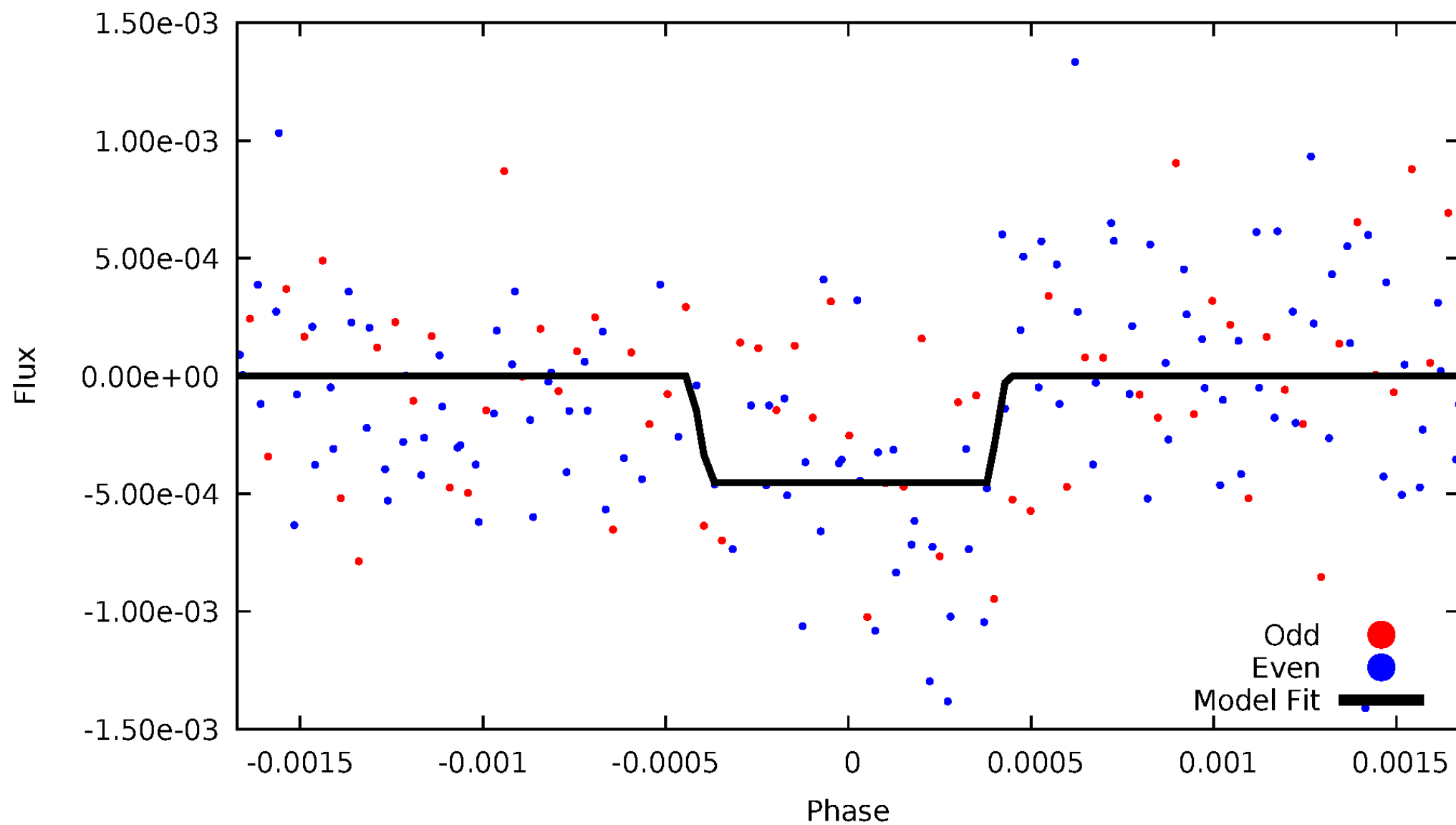
DV Odd/Even

TCE 009887144-01



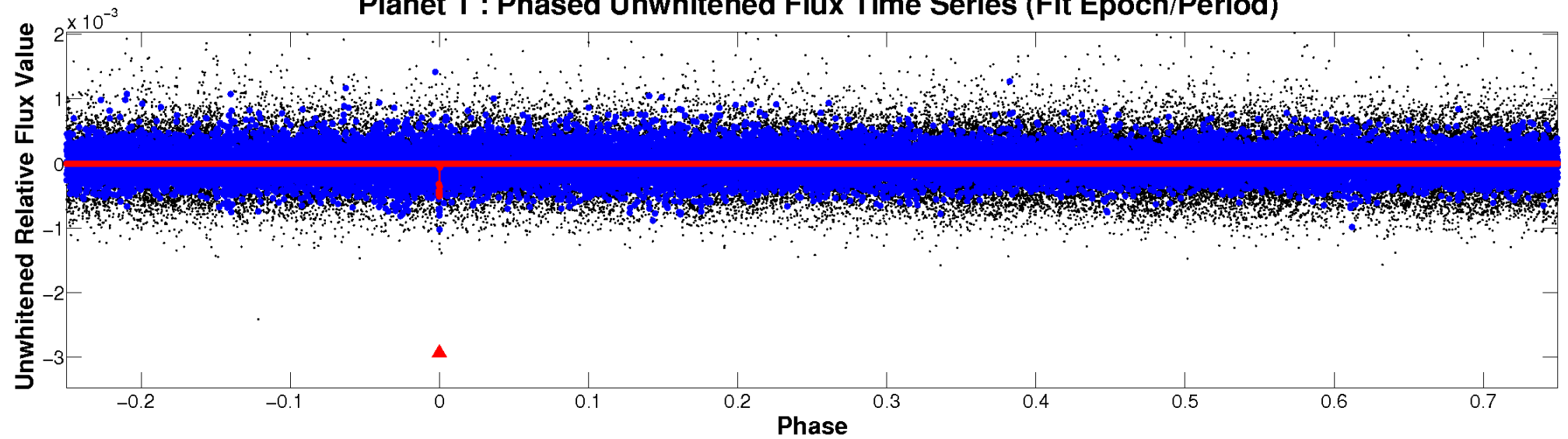
ALT Odd/Even

TCE 009887144-01

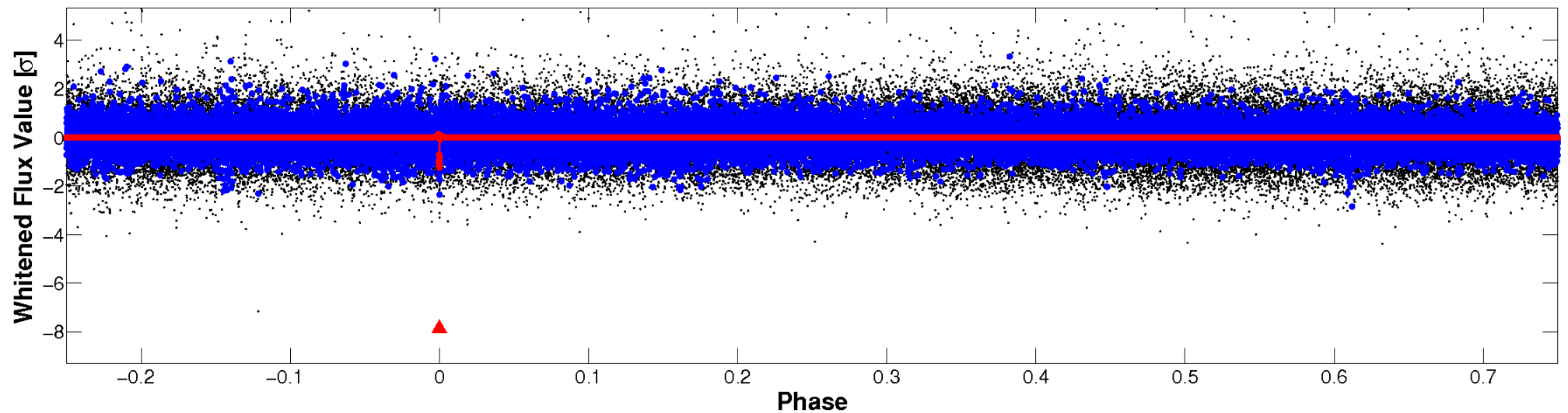


Non-Whitened Vs. Whitened Light Curve

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

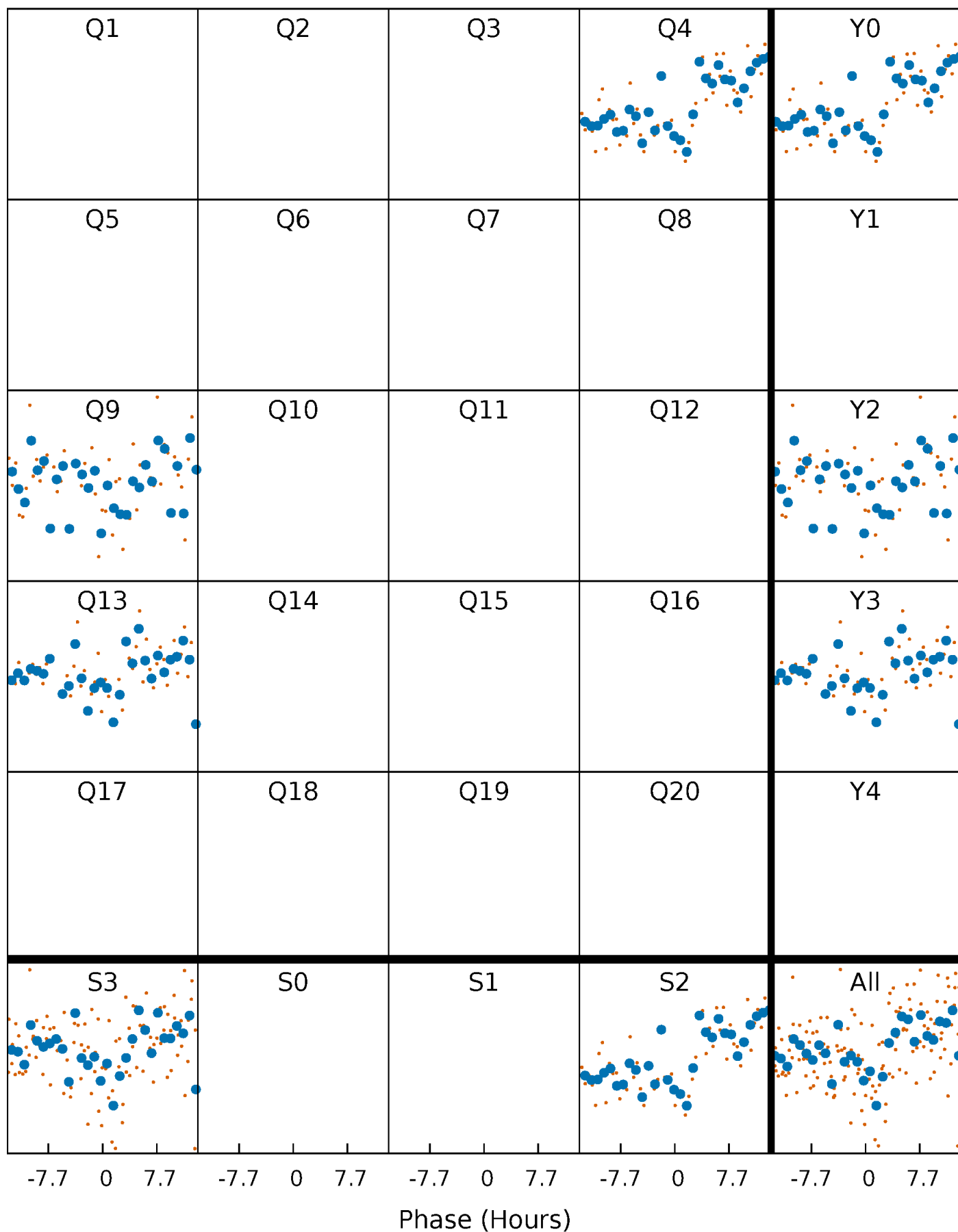


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



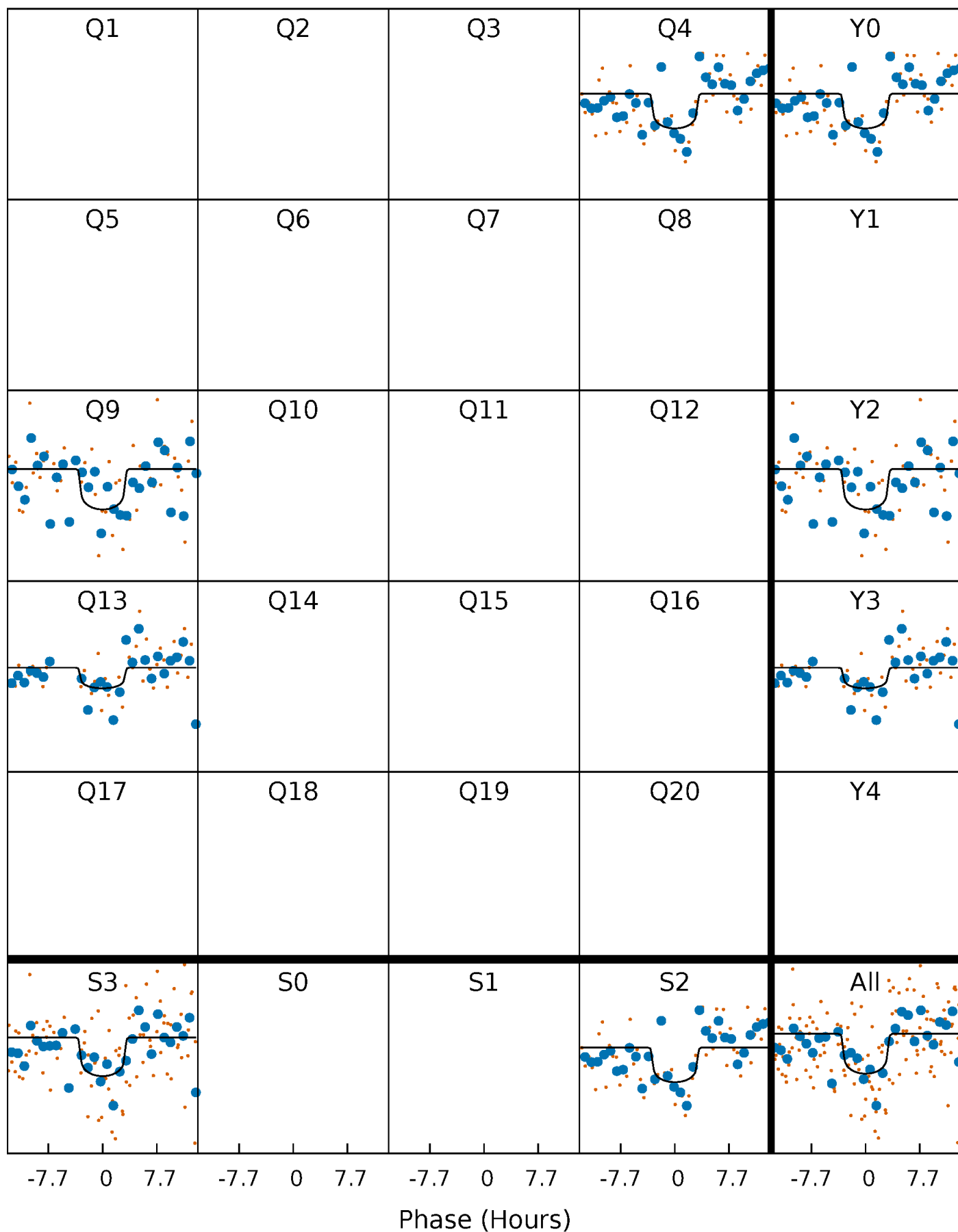
PDC Quarter-Phased Transit Curves

TCE 009887144-01 P=411.291903 Days $T_0=409.323386$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 009887144-01 P=411.291903 Days $T_0=409.323386$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

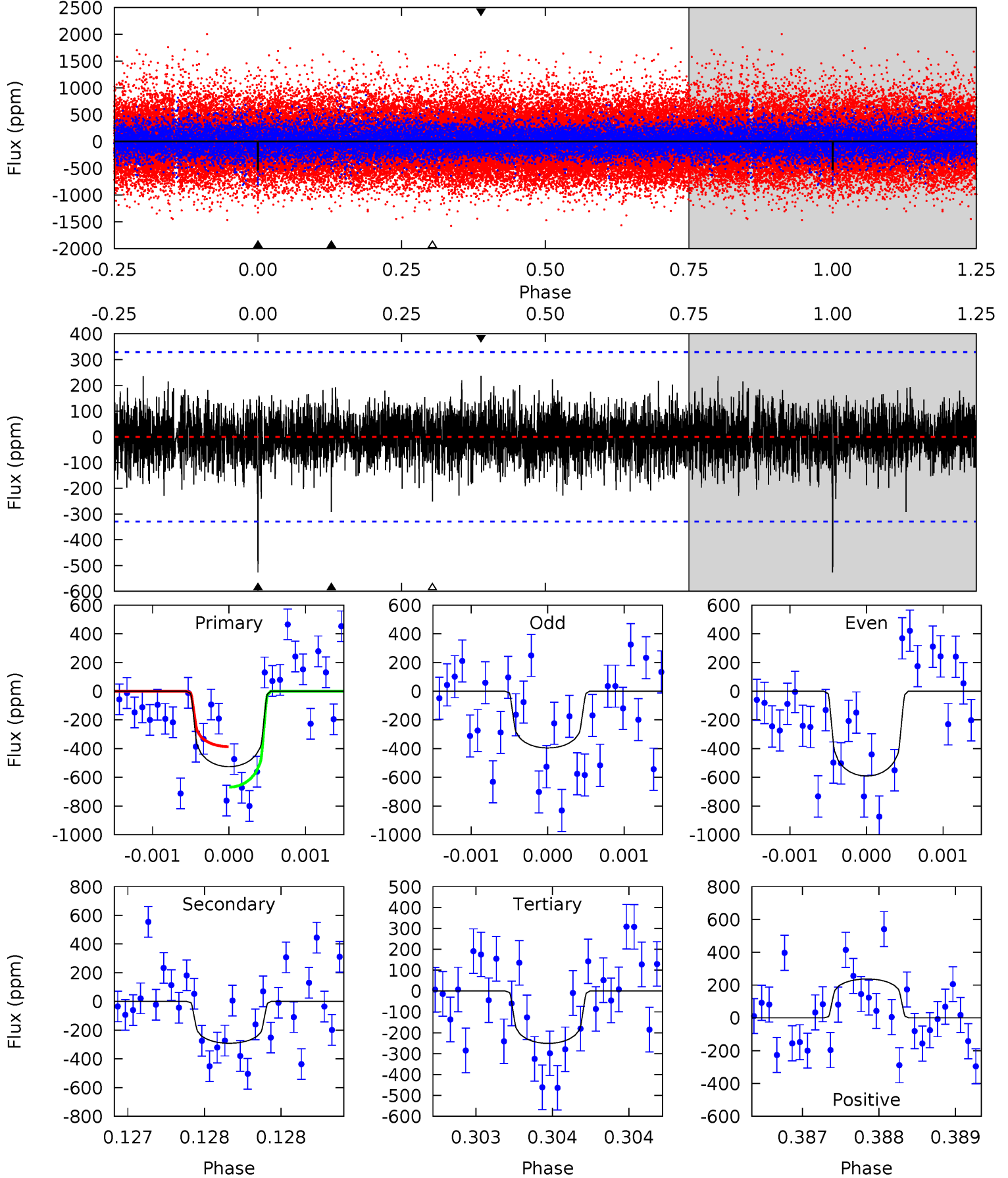
TCE 009887144-01 P=411.300318 Days $T_0=409.270965$ (BKJD)



DV Model-Shift Uniqueness Test

009887144-01, P = 411.291903 Days, E = 409.323386 Days

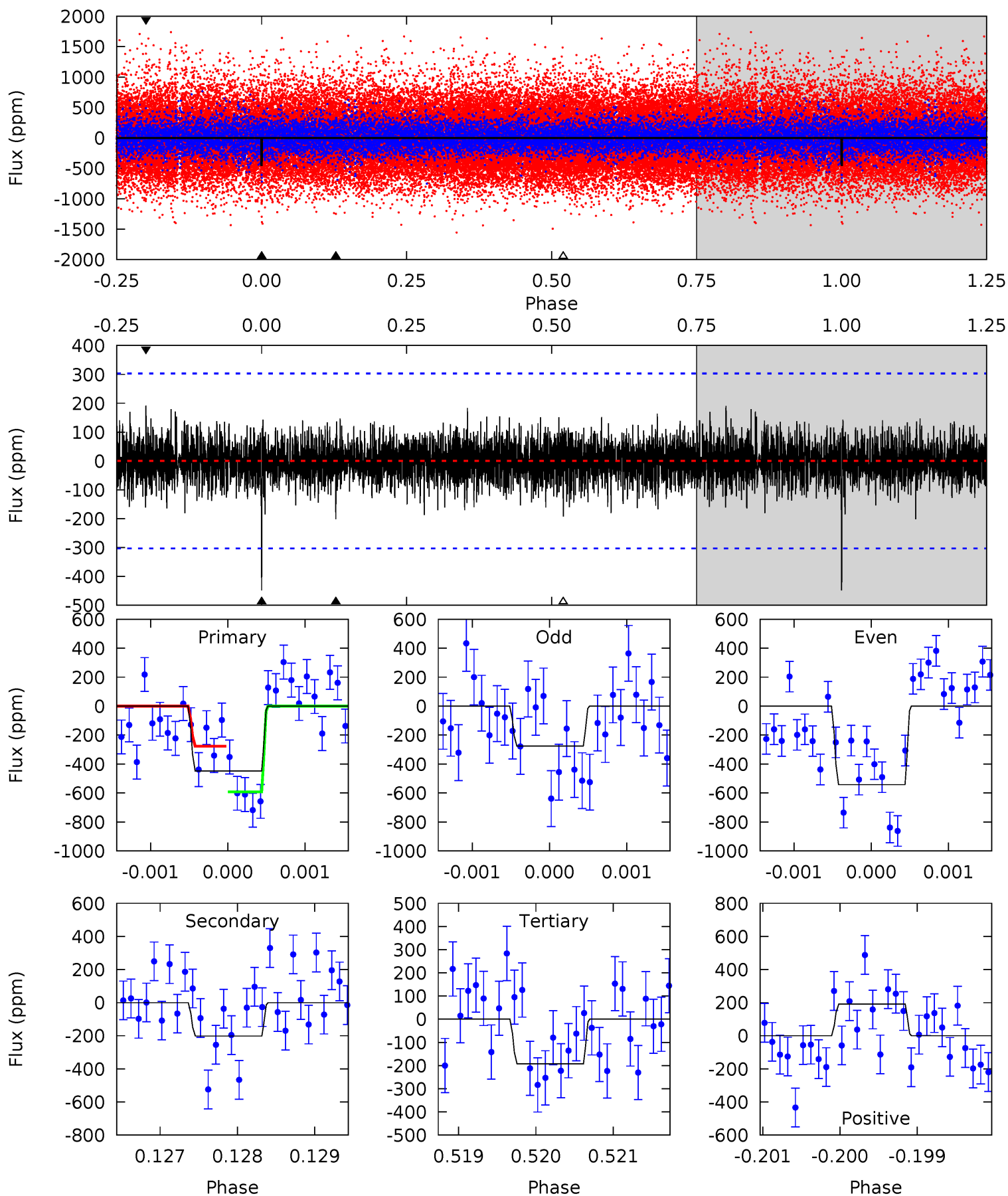
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.81	4.88	4.20	3.97	5.51	3.39	1.10	4.61	4.84	0.68	0.91	1.55	1.00	0.31	2.36



Alt Model-Shift Uniqueness Test

009887144-01, P = 411.300318 Days, E = 409.270965 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.10	3.65	3.47	3.45	5.48	3.33	0.92	4.63	4.65	0.17	0.19	2.31	0.99	0.30	2.84



Stellar Parameters For KIC 009887144

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5902^{+158}_{-175}	$4.427^{+0.101}_{-0.188}$	$-0.320^{+0.300}_{-0.300}$	$0.960^{+0.258}_{-0.139}$	$0.898^{+0.119}_{-0.086}$	$1.431^{+0.737}_{-0.695}$
	+3%/-3%	+2%/-4%	+94%/-94%	+27%/-14%	+13%/-10%	+52%/-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 009887144-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-291 ± 60	$2.66^{+1.90}_{-1.59}$	352^{+23}_{-18}	4957^{+2988}_{-913}	$24528^{+134370}_{-16195}$
Alt.	-202 ± 55	$2.53^{+1.95}_{-1.57}$	353^{+25}_{-19}	4741^{+2979}_{-921}	$18810^{+120967}_{-12917}$

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

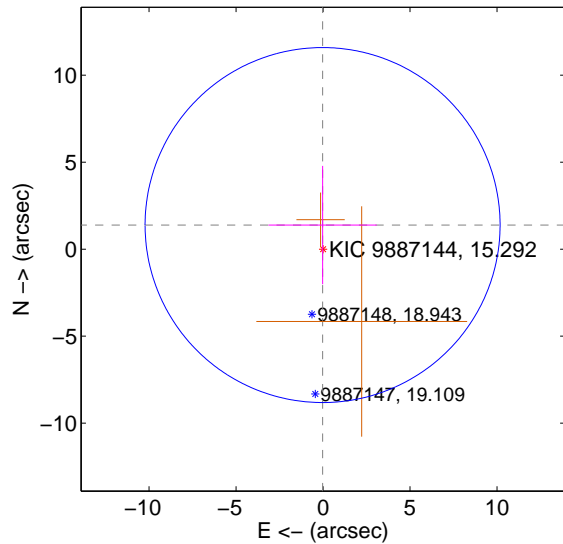
Supplemental centroid analysis for 009887144-01. Kepler magnitude: 15.29. Transit SNR 6.57

There are 0 quarters with good PRF difference image offsets

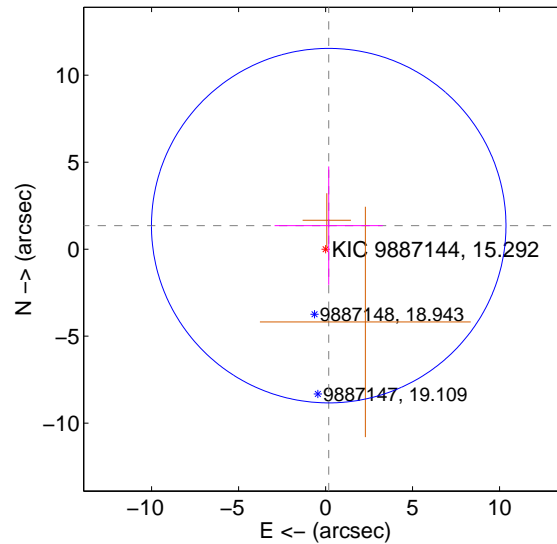
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.387 ± 3.402	0.41	0.026 ± 3.110	1.387 ± 3.402
PRF-fit source offset from KIC position	1.364 ± 3.397	0.40	-0.180 ± 3.110	1.352 ± 3.402
photometric centroid source offset	1.98 ± 2.11	0.94	-1.69 ± 2.12	-1.04 ± 2.06

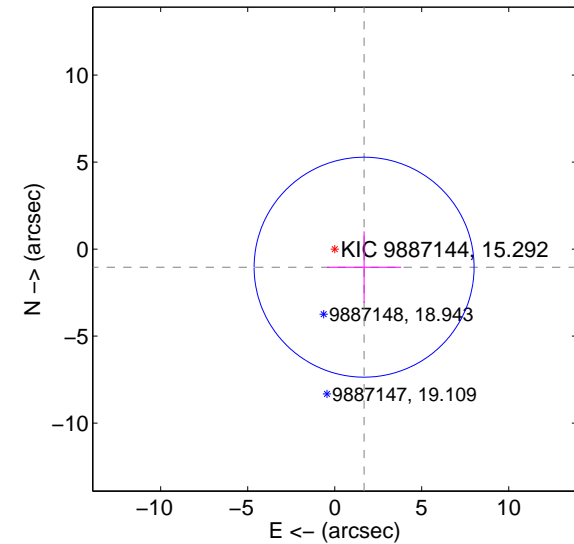
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

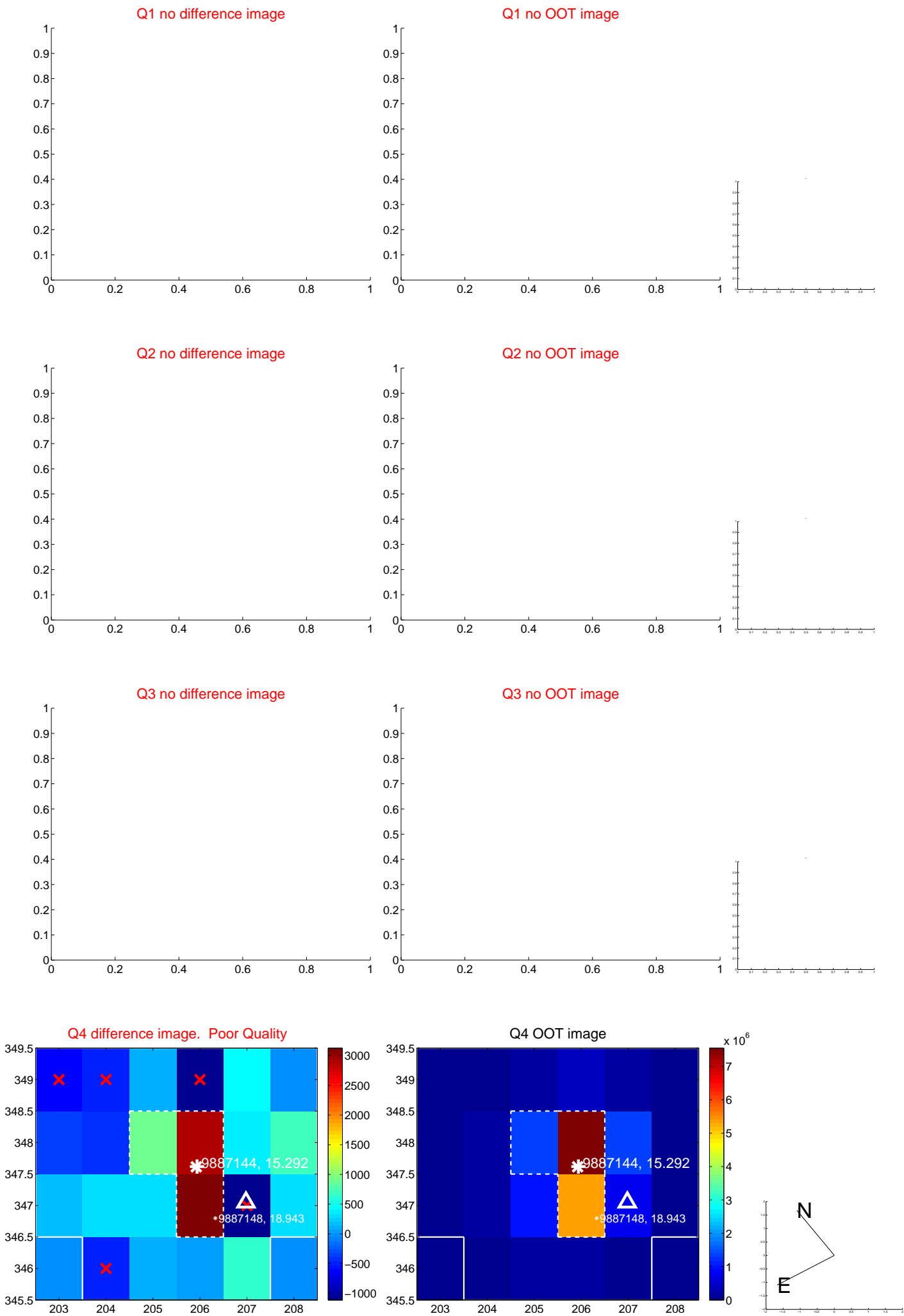


offset from photometric centroids

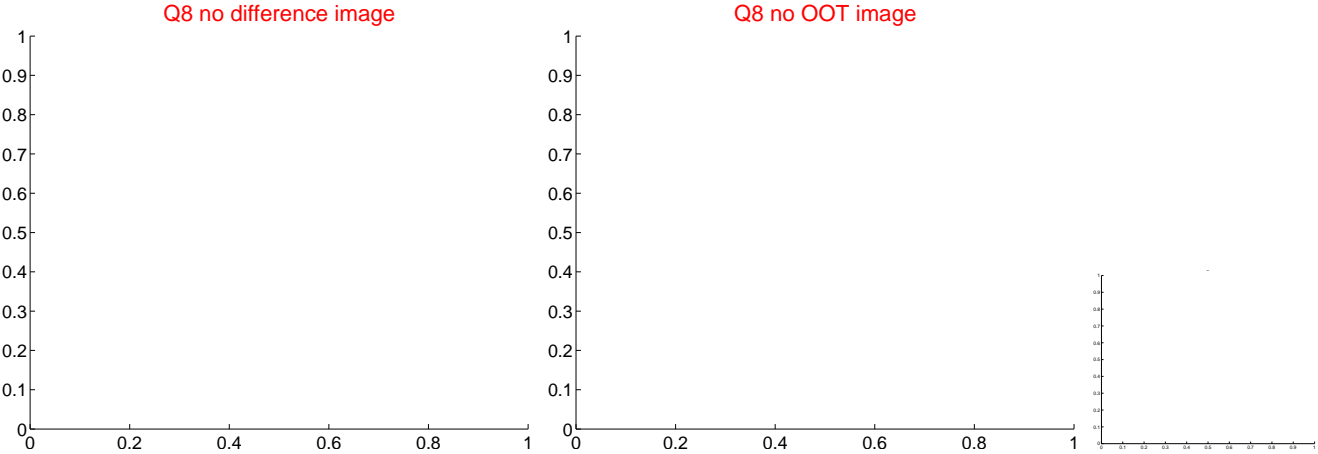


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

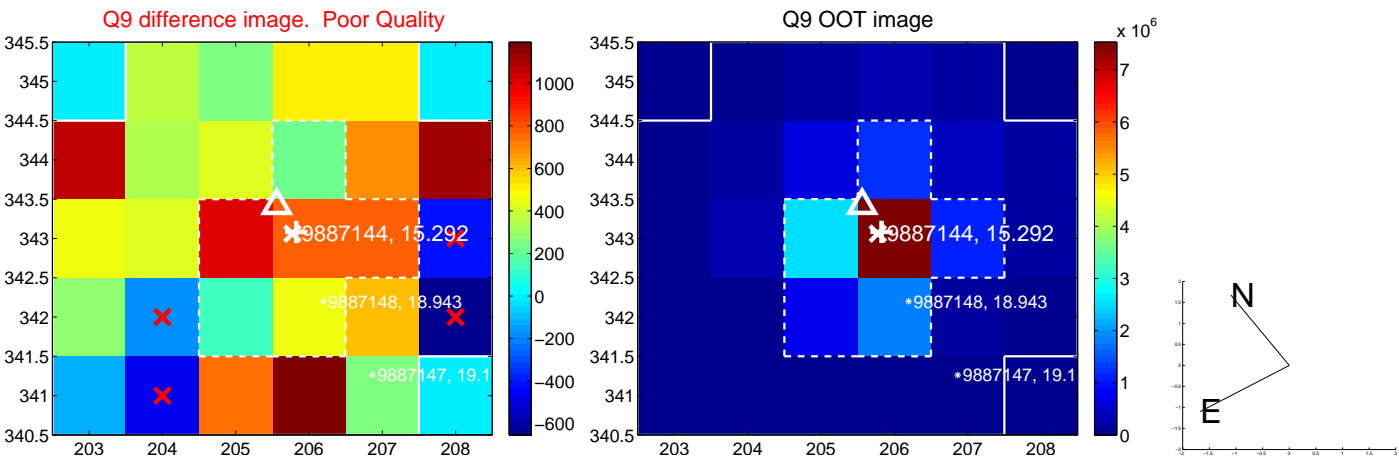
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



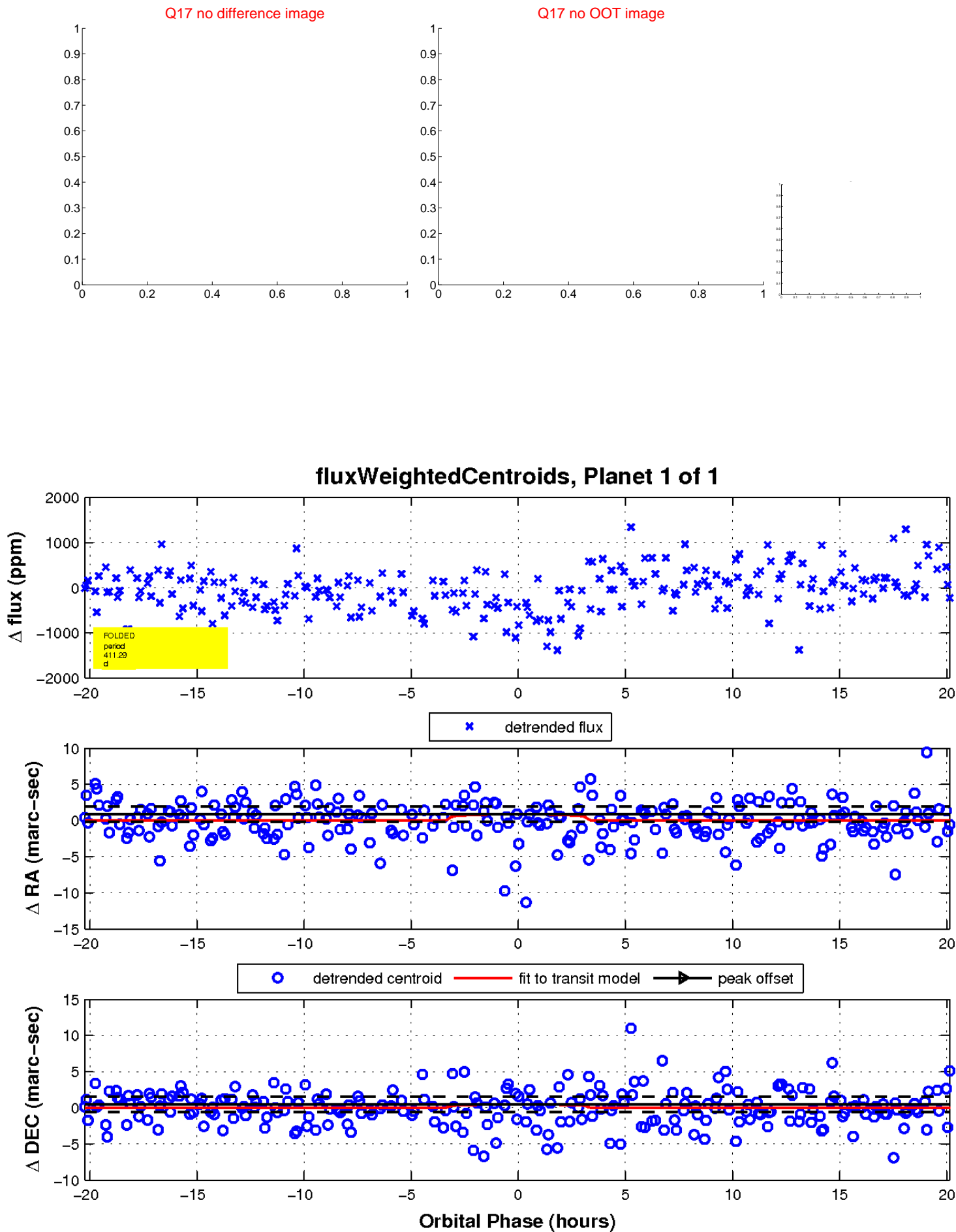
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

