

KIC 004751659

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})
004751659-01	OBS	No	391.507111	448.598057	111.3	14.384	7.5	7.7	0.93	6070	1.11	0.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004751659-01	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.

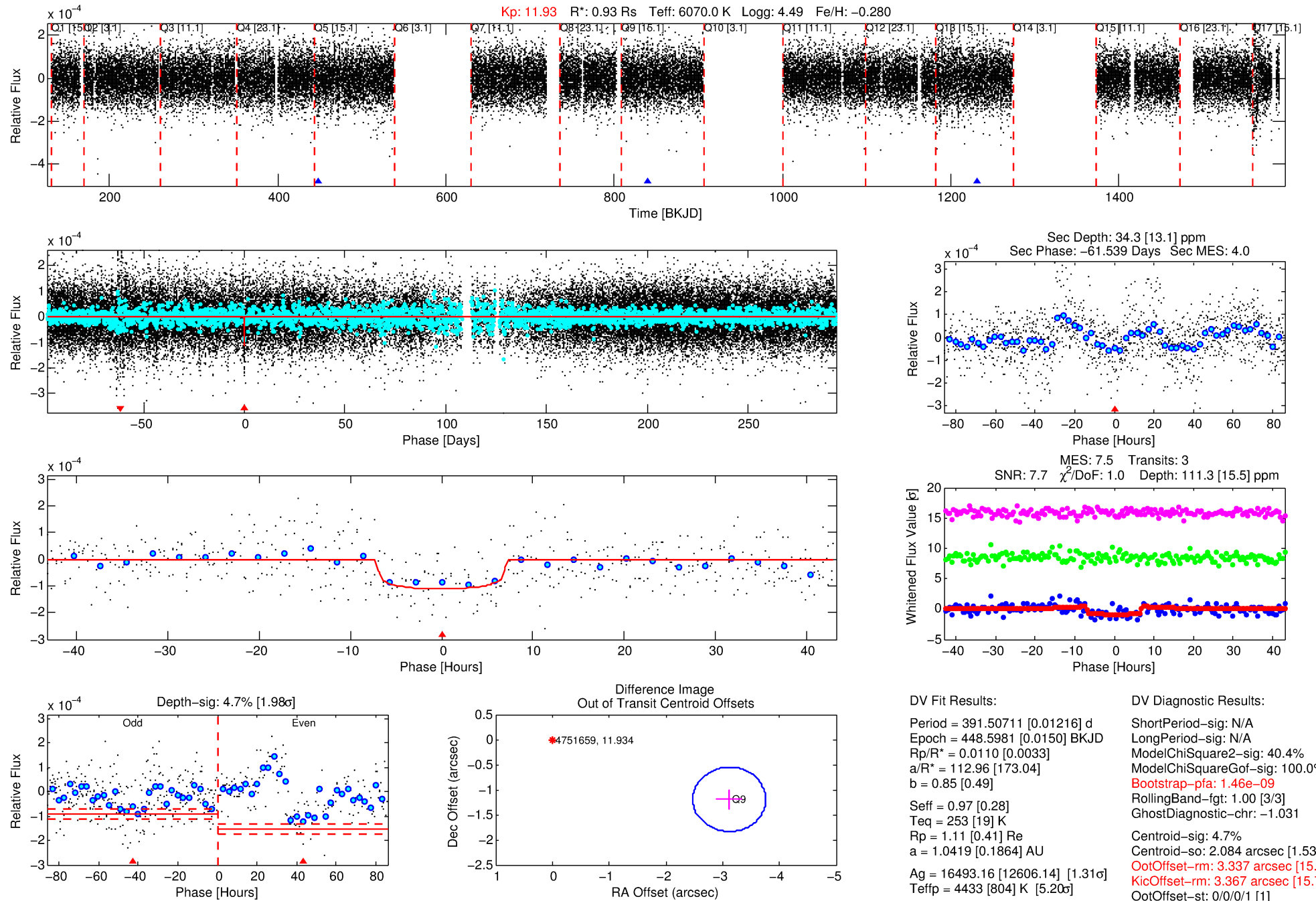
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004751659-01

No Significant Match Found

DV One-Page Summary

KIC: 4751659 Candidate: 1 of 1 Period: 391.507 d



DV Fit Results:

Period = 391.50711 [0.01216] d
Epoch = 448.5981 [0.0150] BKJD
Rp/R* = 0.0110 [0.0033]
a/R* = 112.96 [173.04]
b = 0.85 [0.49]
Seff = 0.97 [0.28]
Teq = 253 [19] K
Rp = 1.11 [0.41] Re
a = 1.0419 [0.1864] AU
Ag = 16493.16 [12606.14] [1.31σ]
Teff = 4433 [804] K [5.20σ]

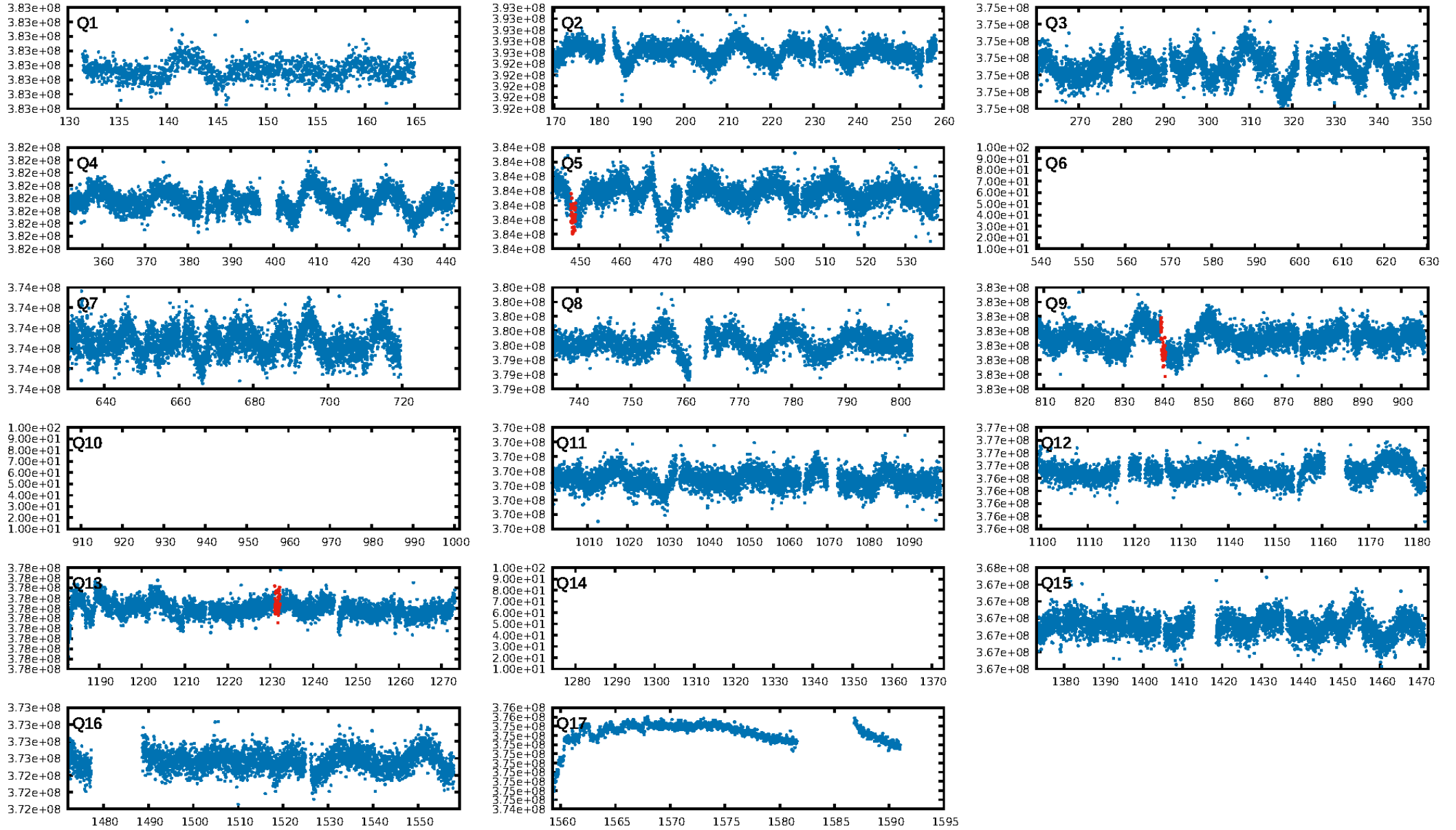
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 40.4%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 1.46e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.031
Centroid-sig: 4.7%
Centroid-so: 2.084 arcsec [1.53σ]
OotOffset-rm: 3.337 arcsec [15.61σ]
KicOffset-rm: 3.367 arcsec [15.72σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [2/2]

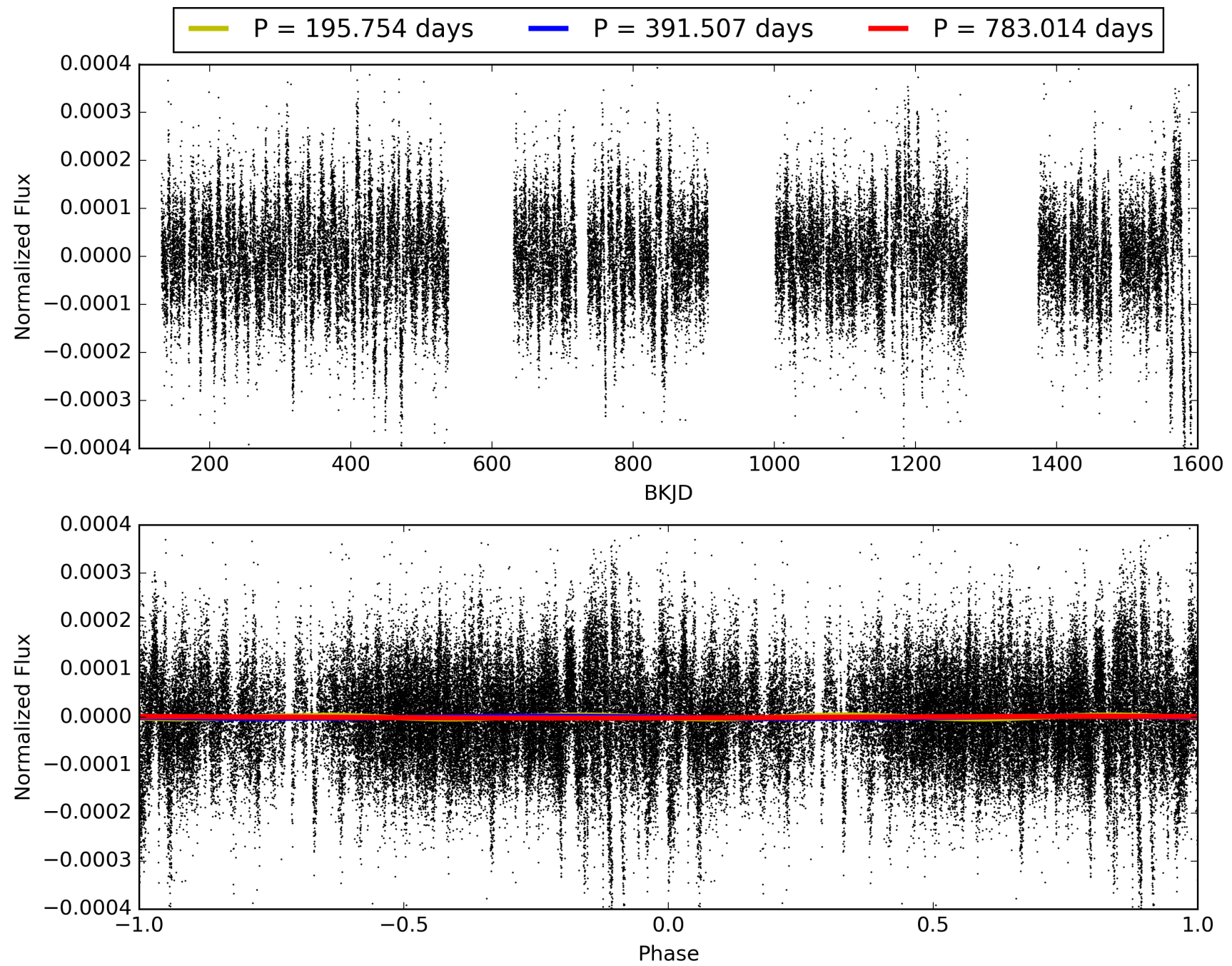
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:20:48 Z

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

TCE 004751659-01, PDC Light Curves

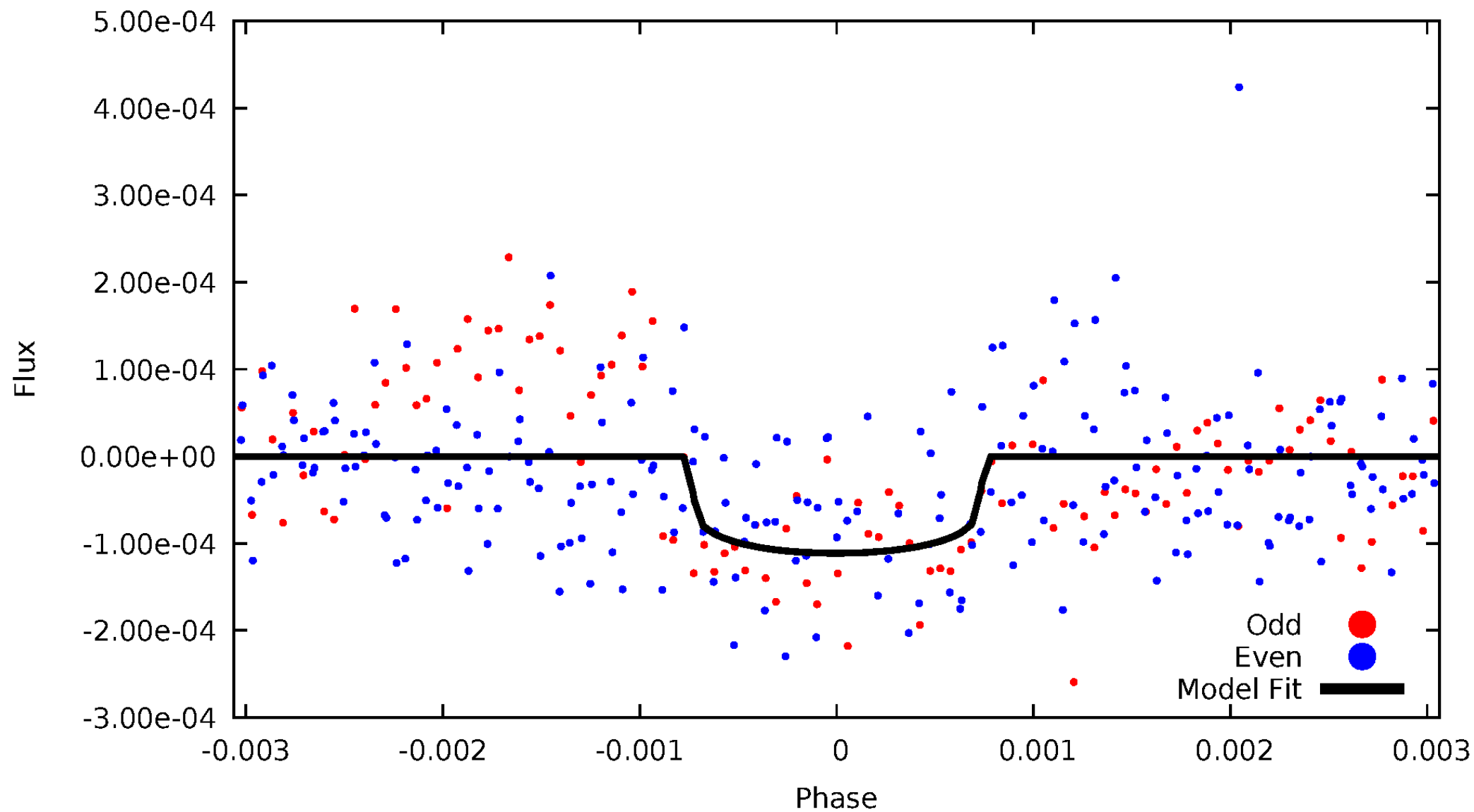


TCE 004751659-01



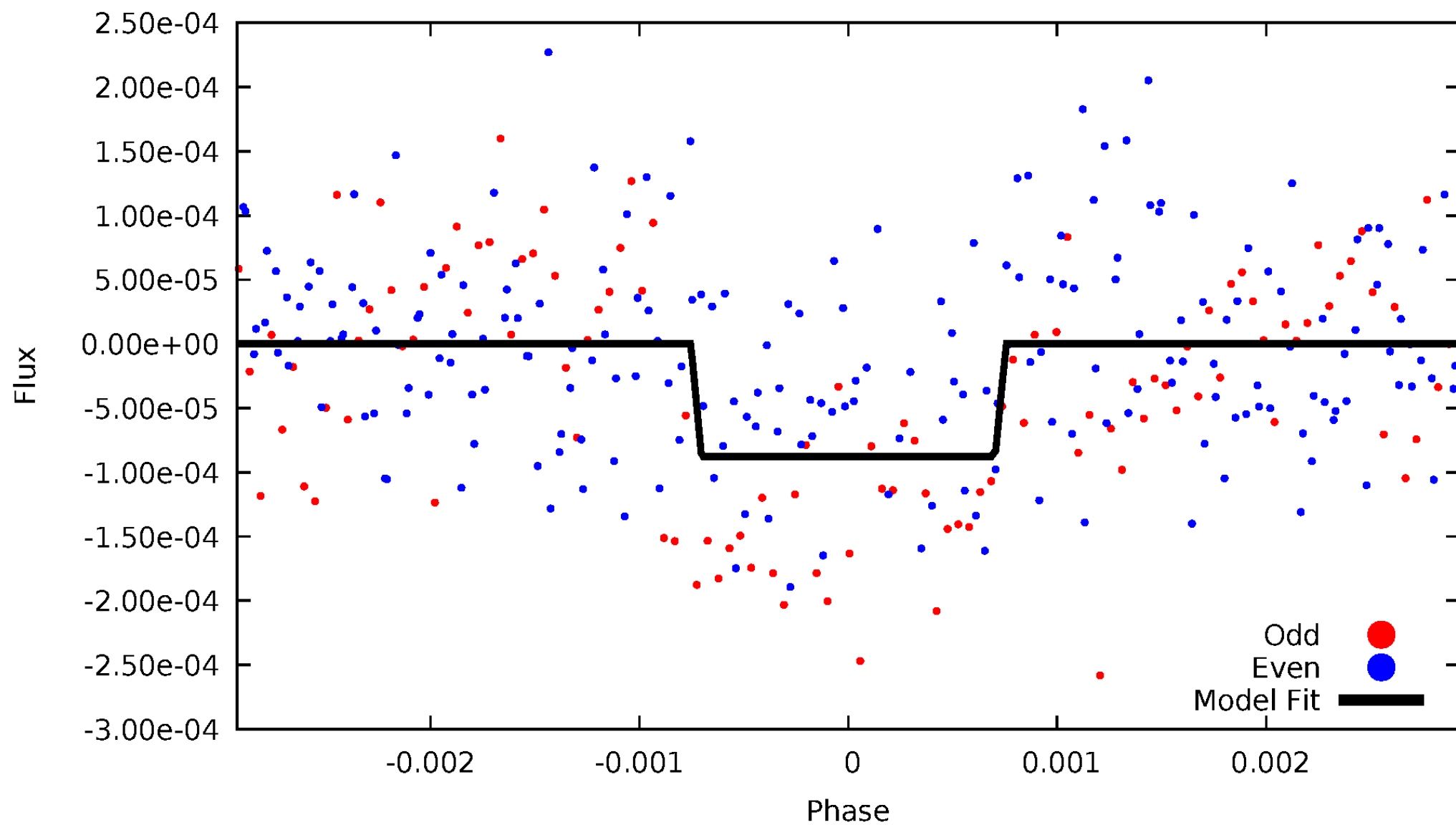
DV Odd/Even

TCE 004751659-01



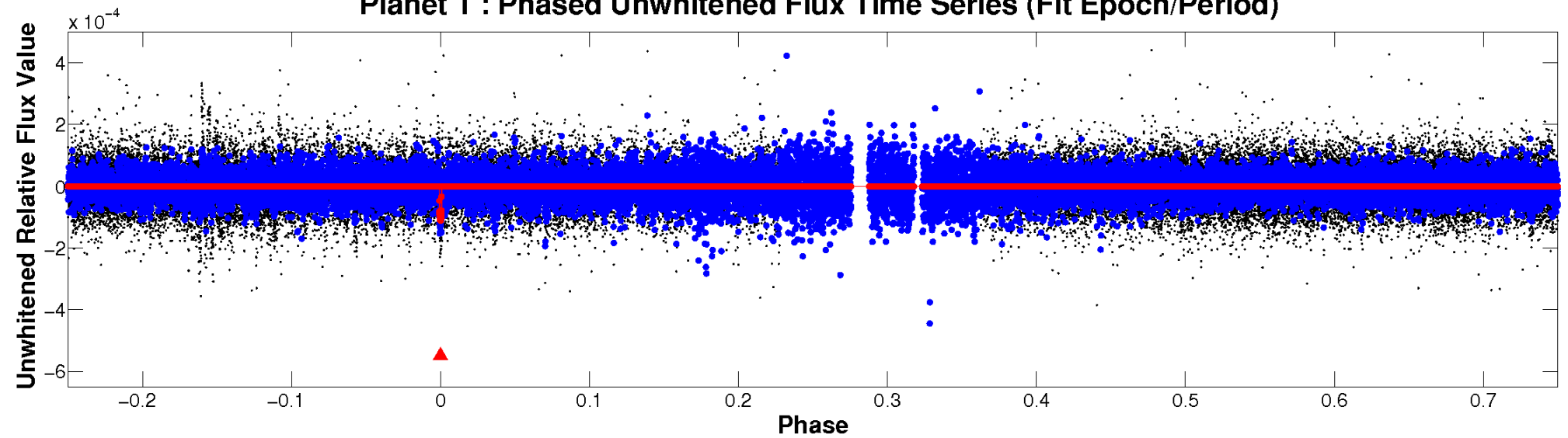
ALT Odd/Even

TCE 004751659-01

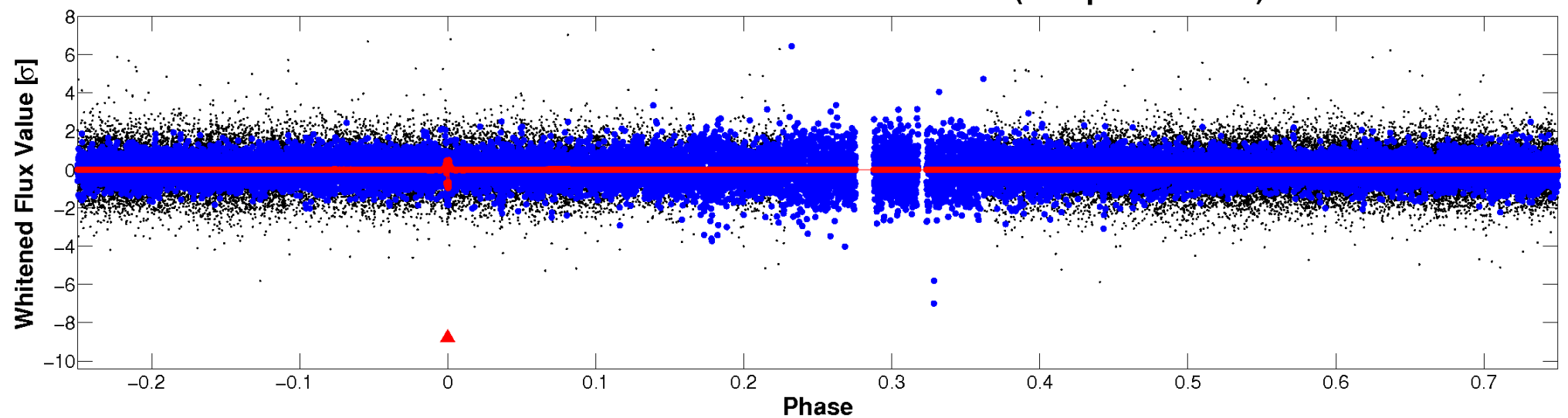


Non-Whitened Vs. Whitened Light Curve

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 004751659-01 P=391.507111 Days $T_0=448.598057$ (BKJD)



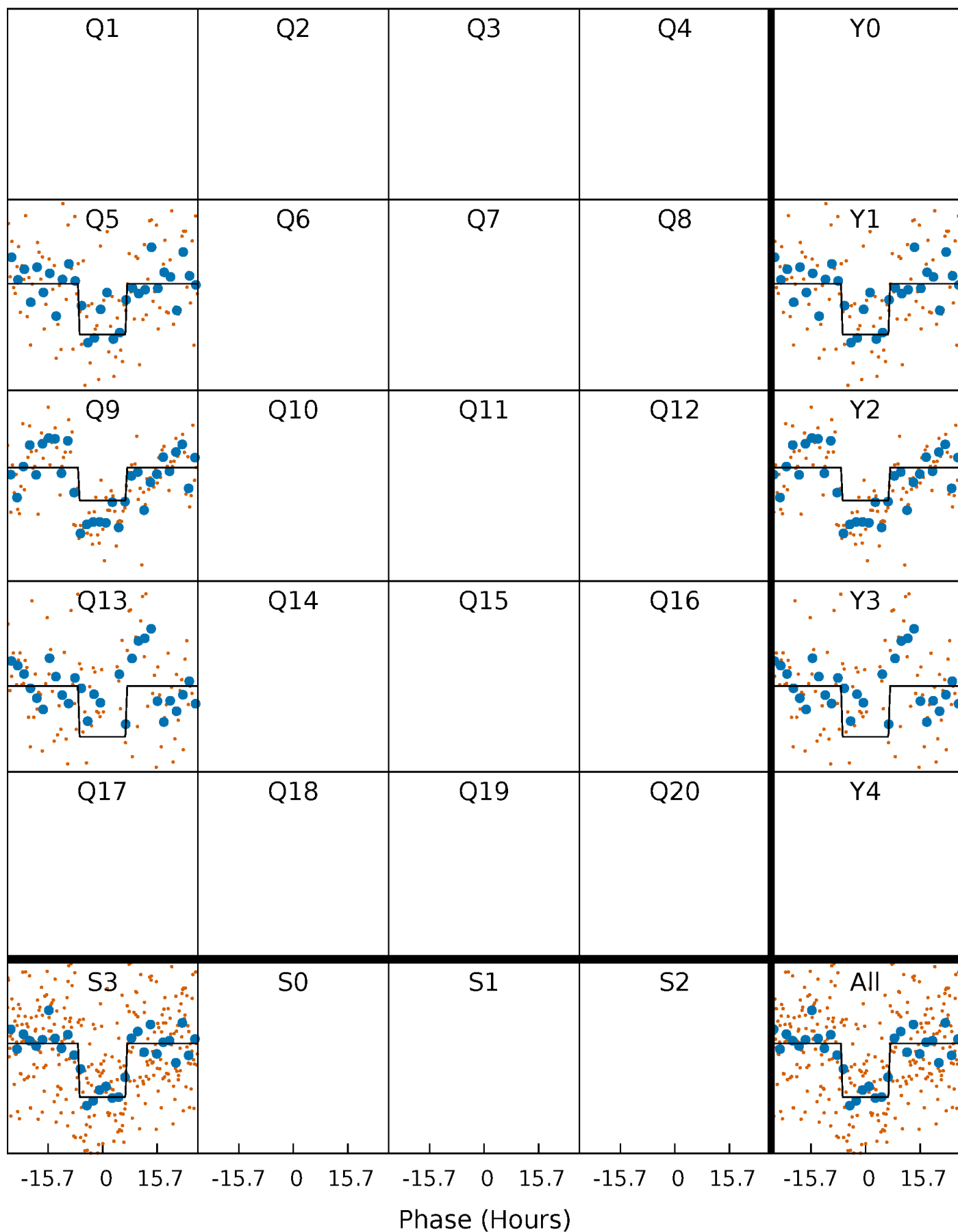
DV Quarter-Phased Transit Curves

TCE 004751659-01 P=391.507111 Days $T_0=448.598057$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

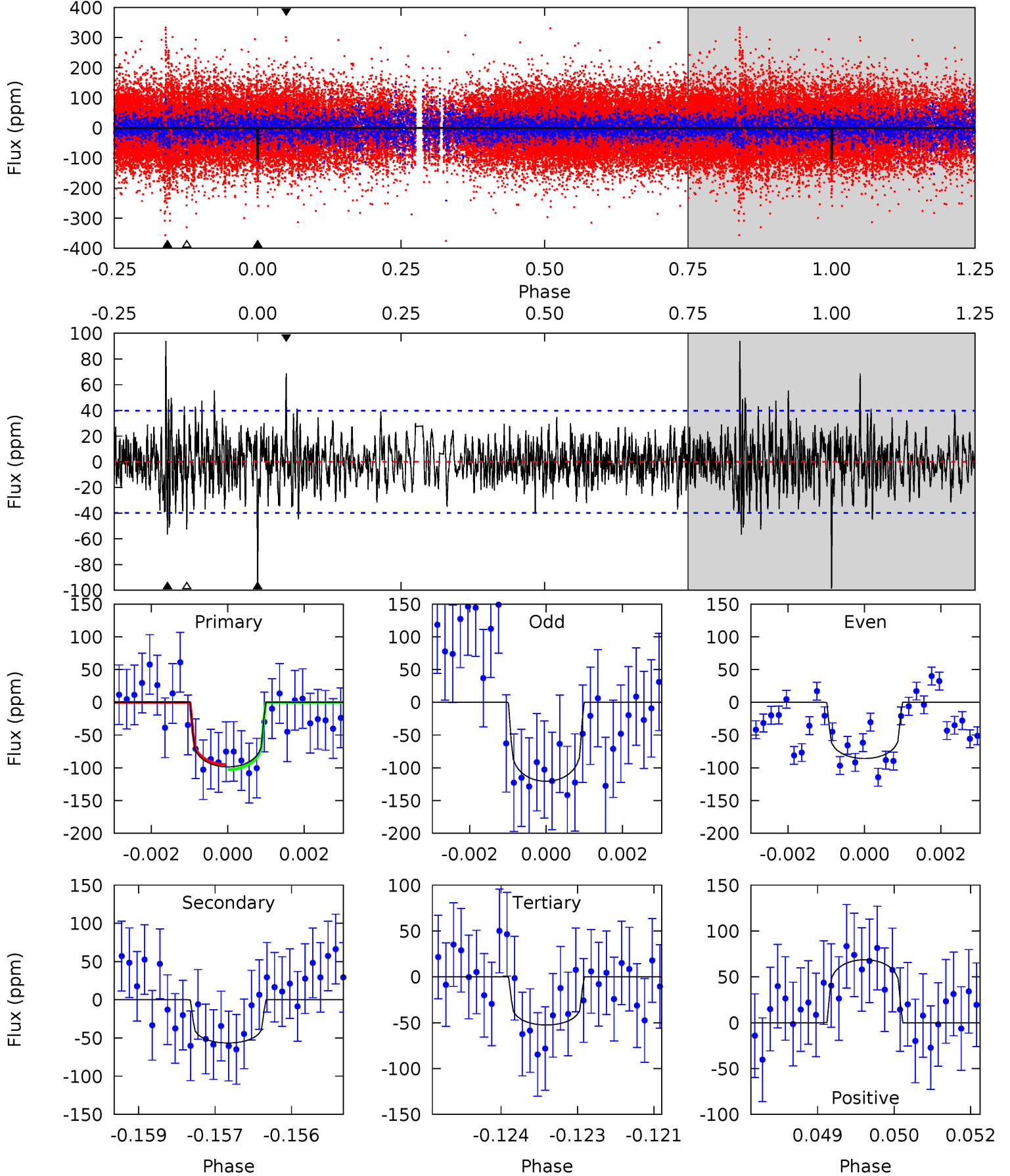
TCE 004751659-01 P=391.500198 Days $T_0=448.605001$ (BKJD)



DV Model-Shift Uniqueness Test

004751659-01, P = 391.507111 Days, E = 57.090946 Days

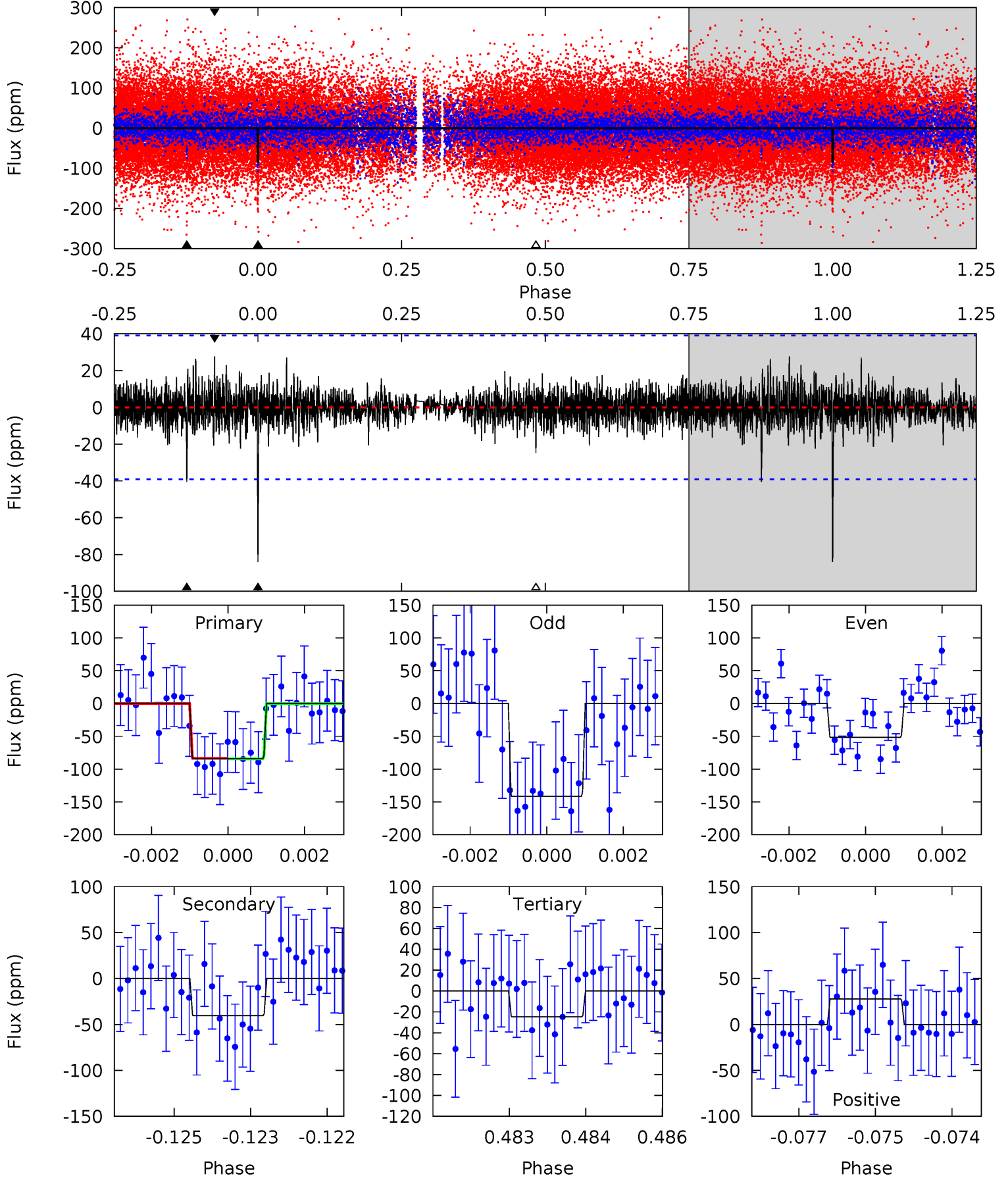
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	7.64	7.09	9.27	5.37	3.16	1.93	6.22	4.05	0.55	-1.63	2.28	0.78	0.49	0.50



Alt Model-Shift Uniqueness Test

004751659-01, P = 391.500198 Days, E = 57.104803 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.6	5.57	3.40	3.80	5.38	3.17	0.86	8.17	7.77	2.17	1.77	6.00	1.16	0.25	0.06



Stellar Parameters For KIC 004751659

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6070^{+151}_{-181}	$4.494^{+0.050}_{-0.150}$	$-0.280^{+0.250}_{-0.350}$	$0.930^{+0.191}_{-0.088}$	$0.983^{+0.109}_{-0.120}$	$1.720^{+0.444}_{-0.715}$
	+2%/-3%	+1%/-3%	+89%/-125%	+21%/-9%	+11%/-12%	+26%/-42%
Source	PHO1	FLK73	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 004751659-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-57 ± 7	$1.17^{+0.38}_{-0.37}$	358^{+17}_{-14}	5049^{+925}_{-546}	24651^{+26442}_{-10743}
Alt.	-40 ± 7	$0.97^{+0.39}_{-0.33}$	358^{+19}_{-15}	5082^{+1201}_{-661}	25026^{+33723}_{-12299}

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 $A_{obs} \gg 1.0$

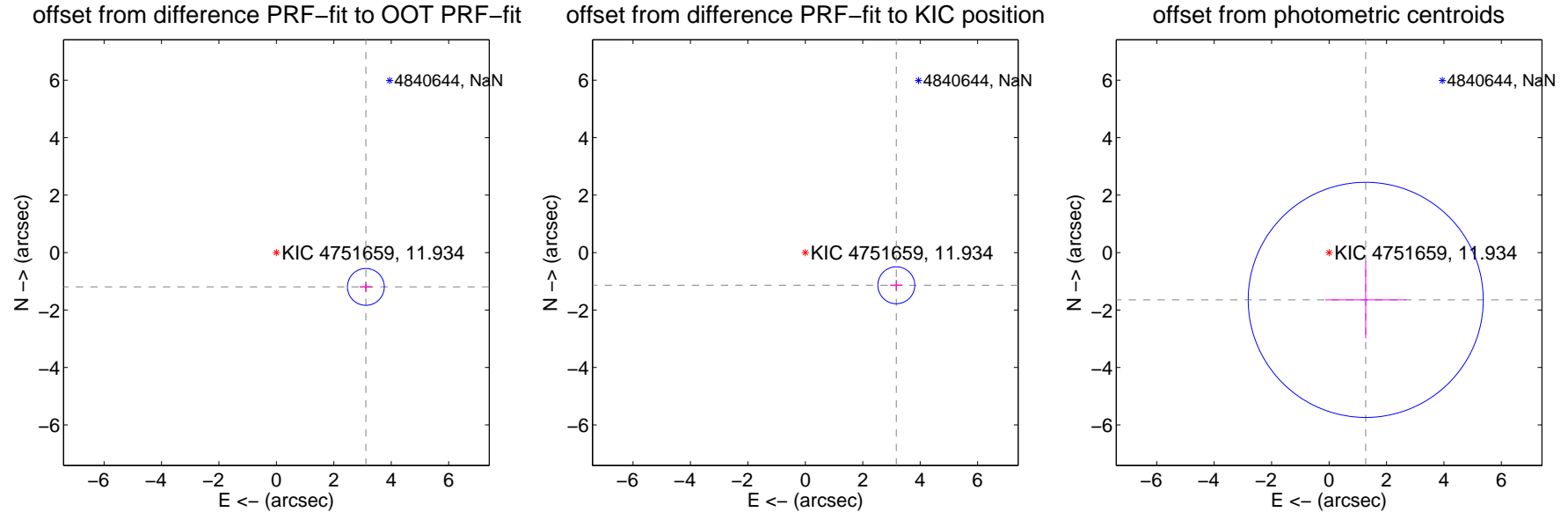
DV Centroid Data

Supplemental centroid analysis for 004751659-01. **Kepler magnitude: 11.93.** Transit SNR 7.75

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.337 ± 0.214	15.61	-3.116 ± 0.218	-1.195 ± 0.184
PRF-fit source offset from KIC position	3.367 ± 0.214	15.72	-3.169 ± 0.218	-1.138 ± 0.184
photometric centroid source offset	2.08 ± 1.36	1.53	-1.28 ± 1.41	-1.65 ± 1.34

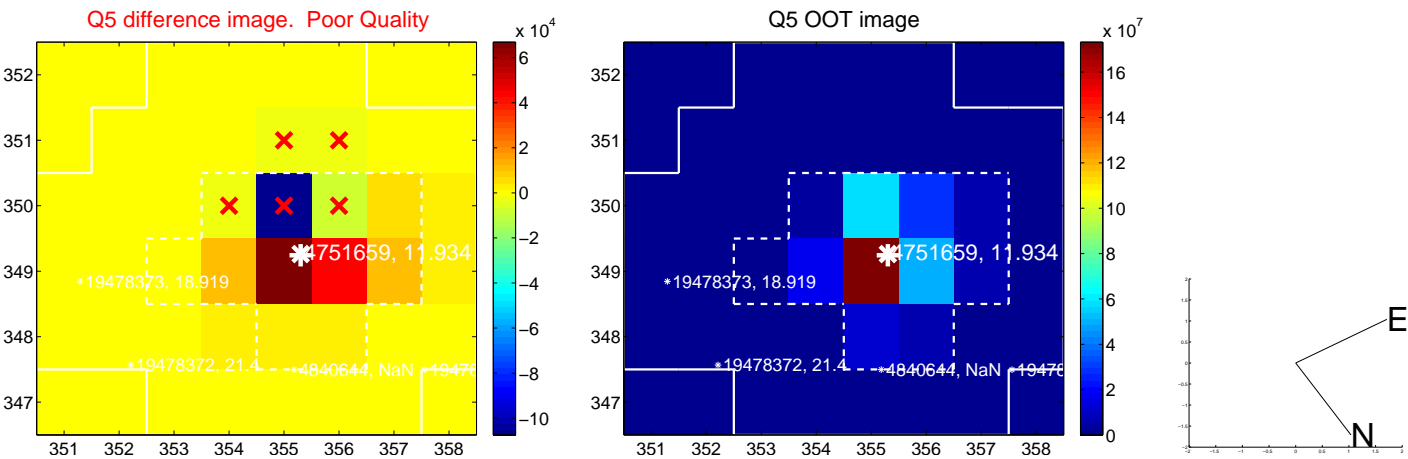


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

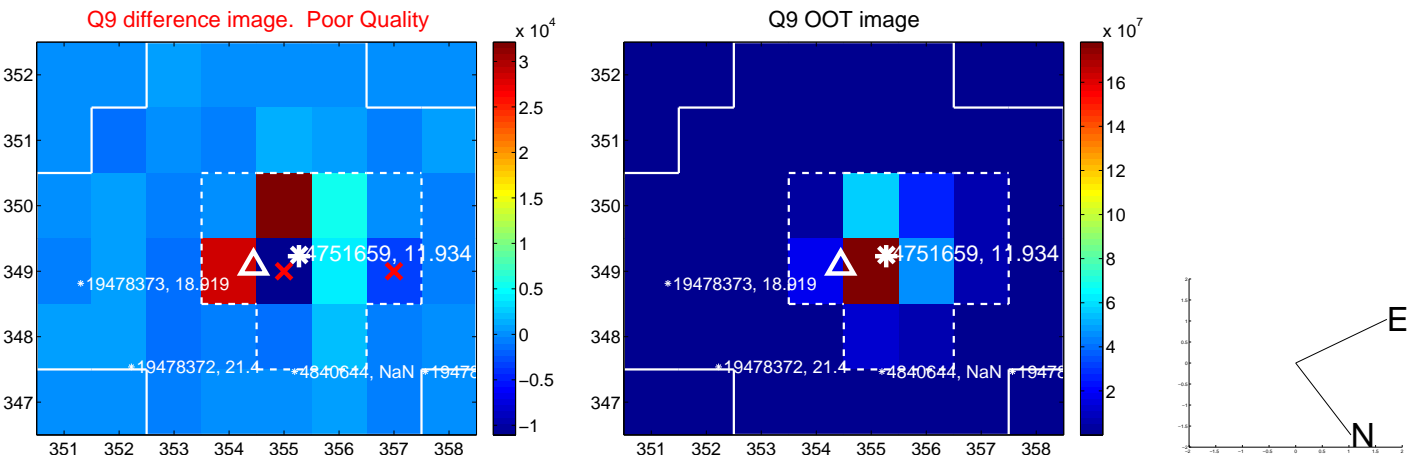
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



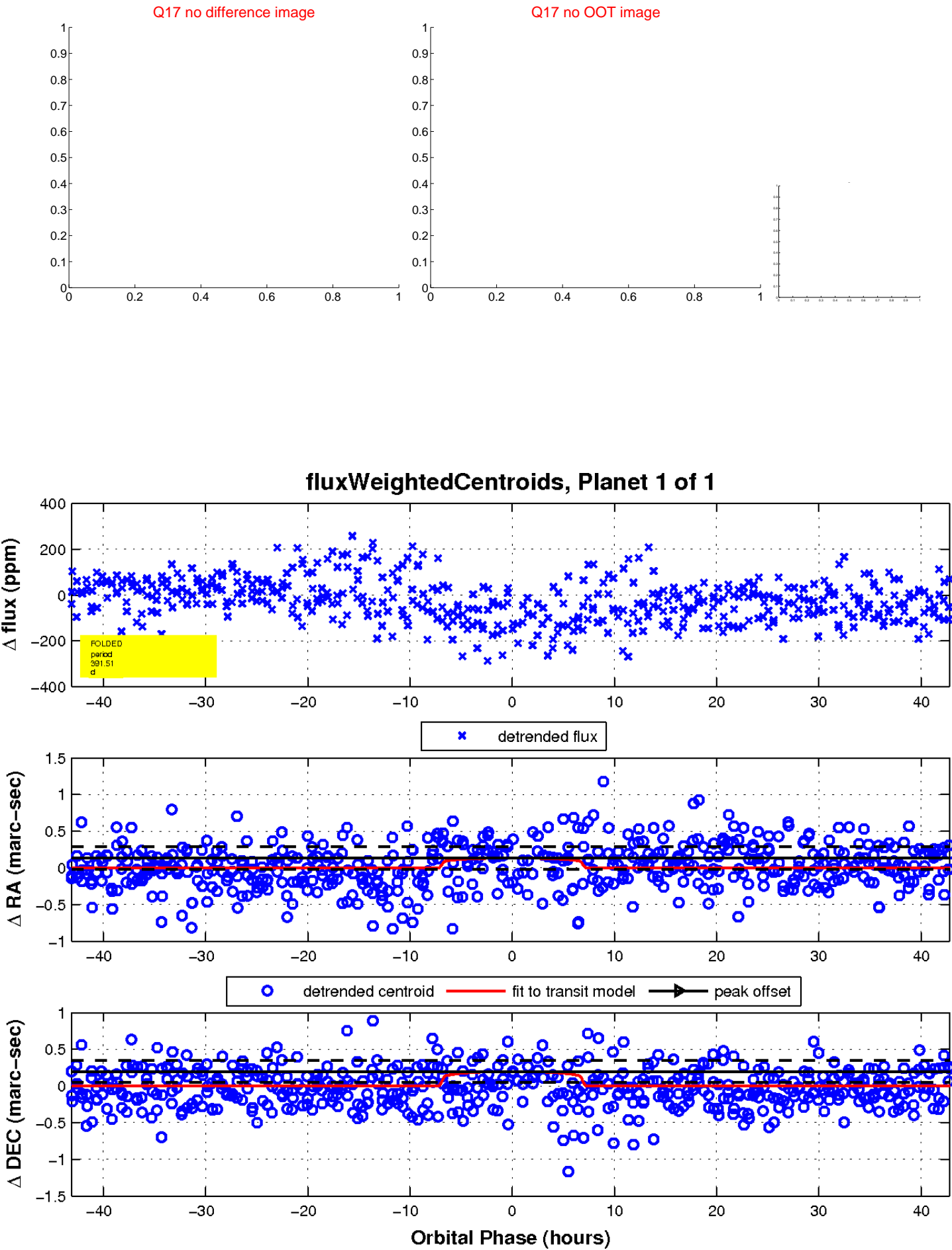
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

