

KIC 002997821

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})
002997821-01	OBS	No	489.119808	462.430841	709.0	11.840	7.2	7.1	0.80	5837	2.26	0.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002997821-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_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.

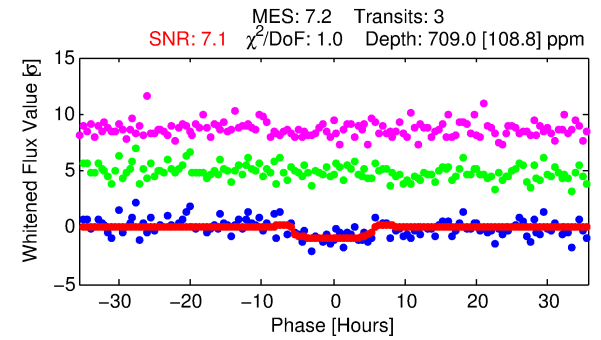
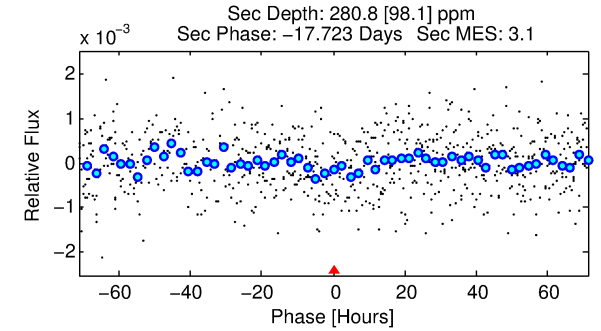
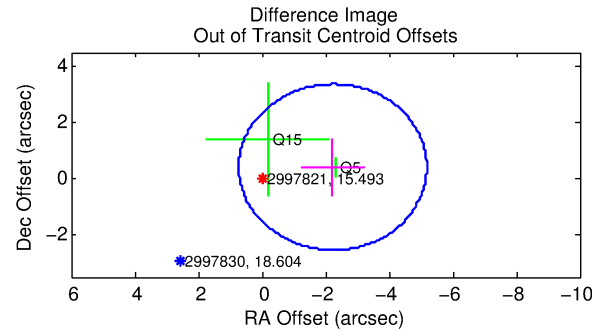
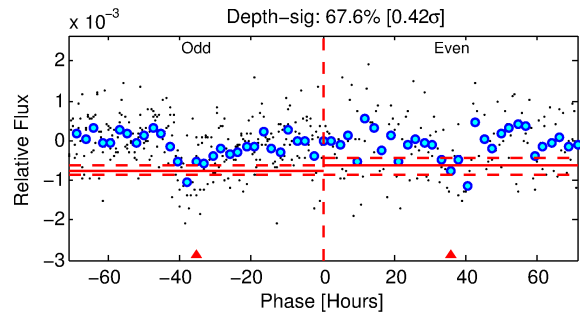
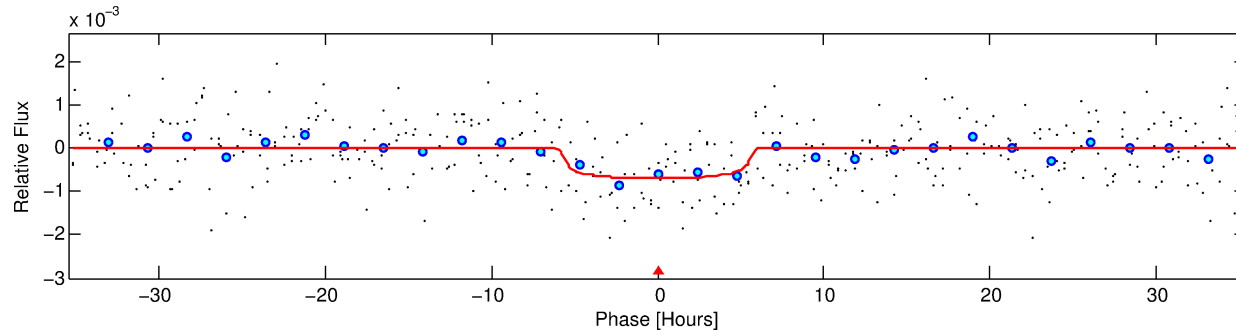
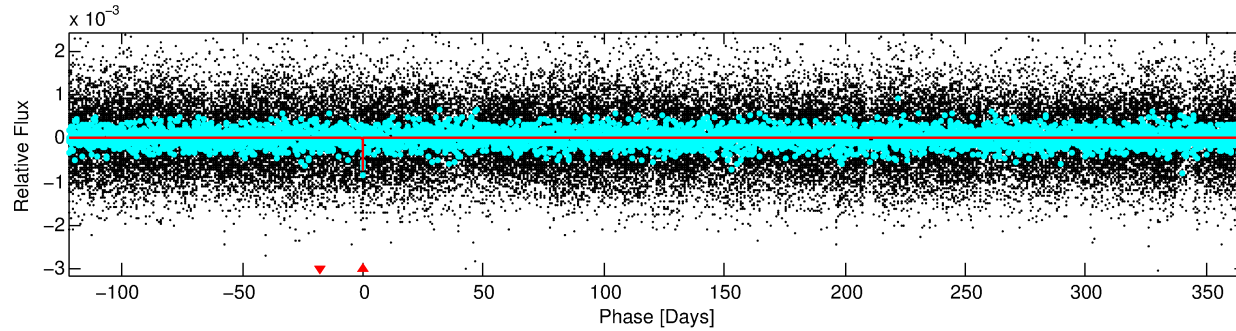
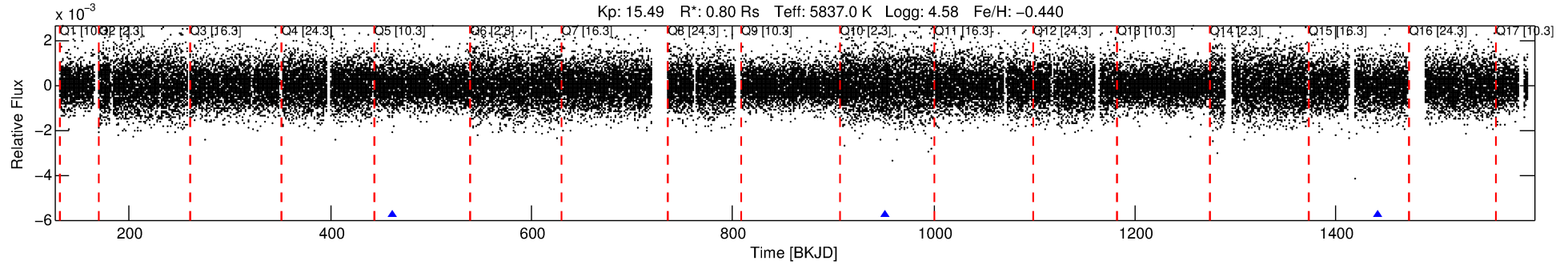
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002997821-01

No Significant Match Found

DV One-Page Summary

KIC: 2997821 Candidate: 1 of 1 Period: 489.120 d



DV Fit Results:

Period = 489.11981 [0.01783] d
Epoch = 462.4308 [0.0225] BKJD
Rp/R* = 0.0260 [0.0105]
a/R* = 239.50 [453.09]
b = 0.69 [1.44]
Seff = 0.49 [0.15]
Teq = 213 [17] K
Rp = 2.26 [1.05] Re
a = 1.1632 [0.2304] AU
Ag = 40778.30 [37720.30] [1.08 σ]
Teffp = 4686 [1038] K [4.31 σ]

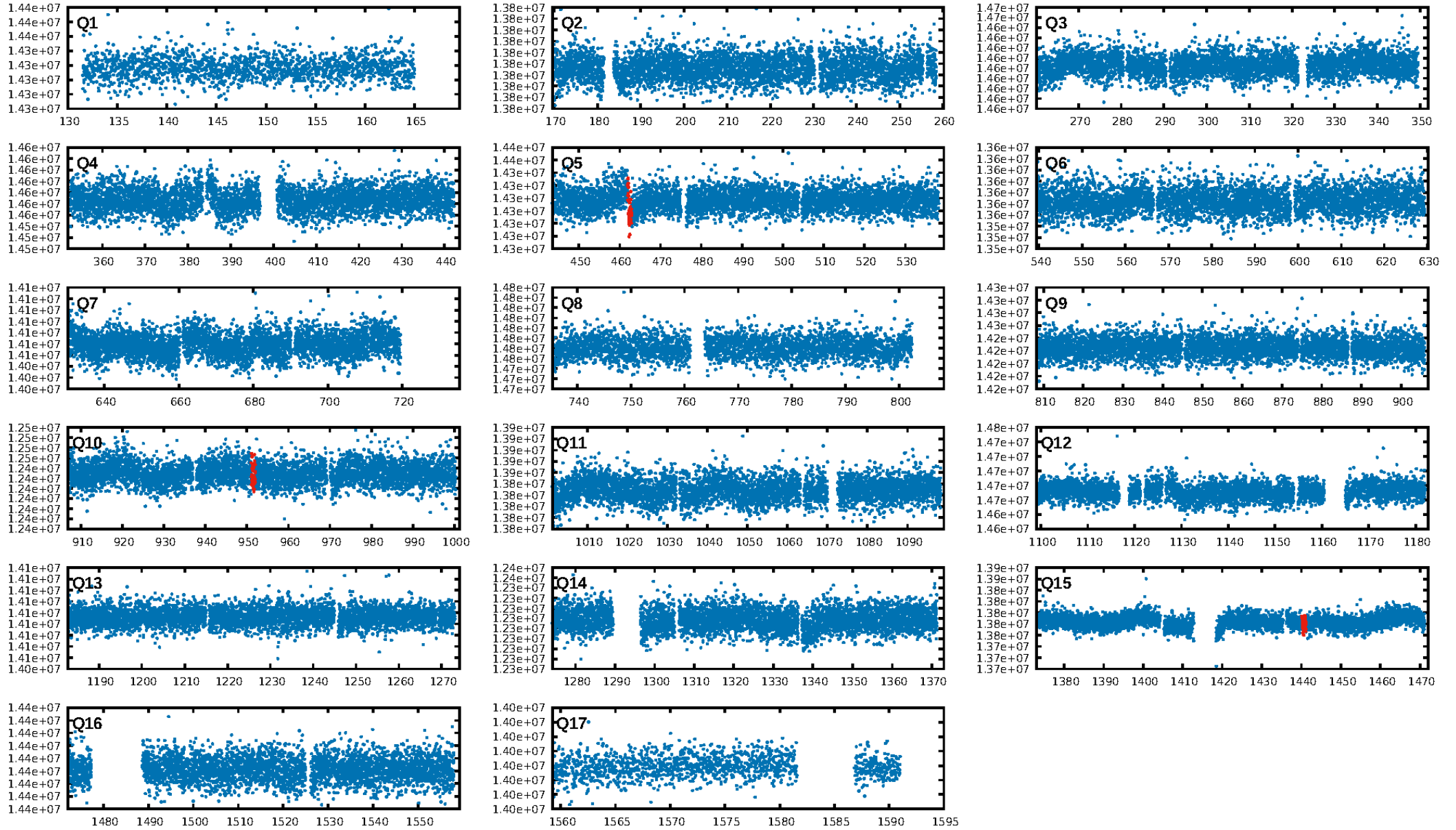
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 8.0%
ModelChiSquareGof-sig: 97.2%
Bootstrap-pfa: 2.63e-14
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.3803
Centroid-sig: 12.3%
Centroid-so: 2.815 arcsec [1.74 σ]
OotOffset-rm: 2.268 arcsec [2.30 σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-rm: 2.179 arcsec [2.21 σ]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

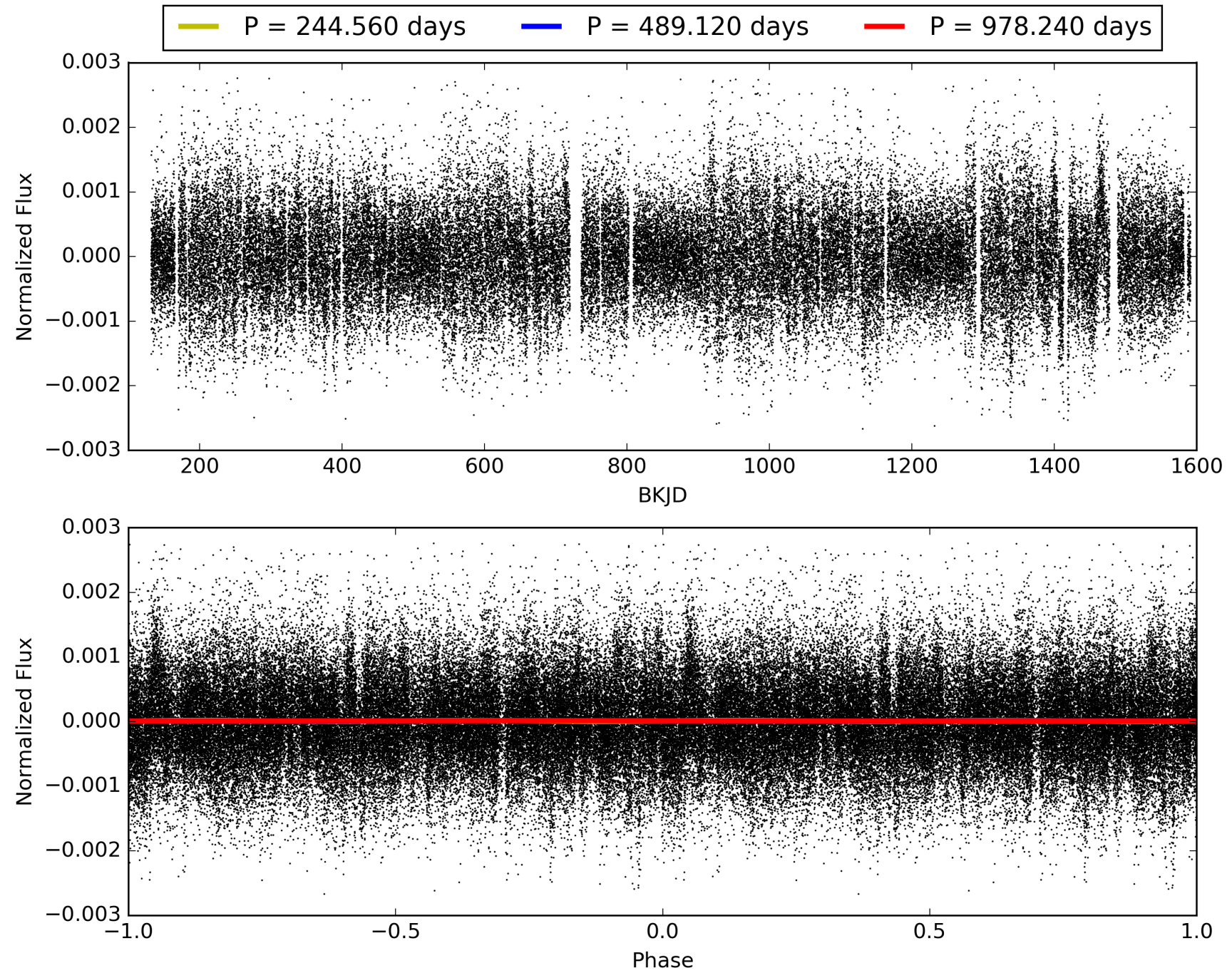
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:48:12 Z

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

TCE 002997821-01, PDC Light Curves

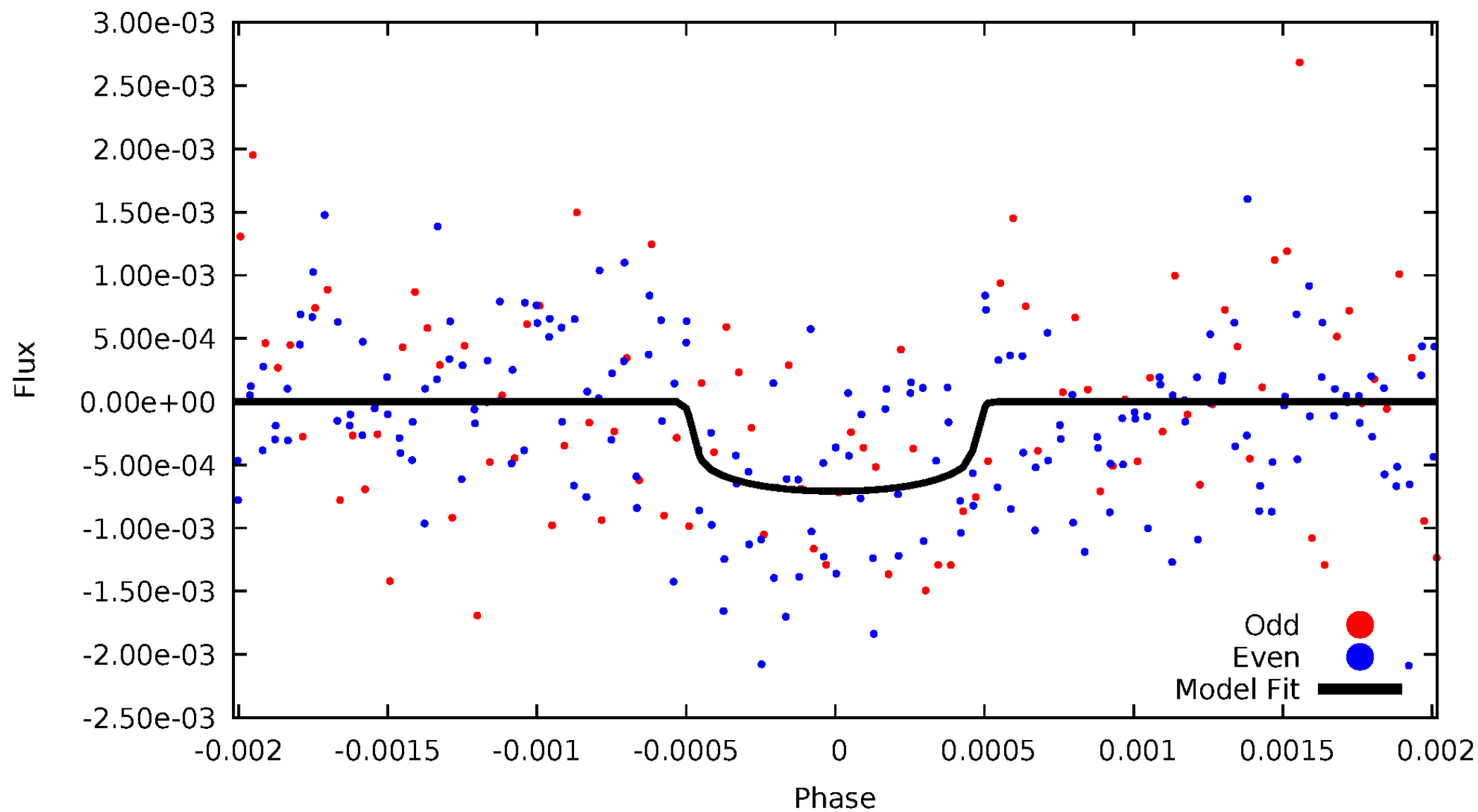


TCE 002997821-01



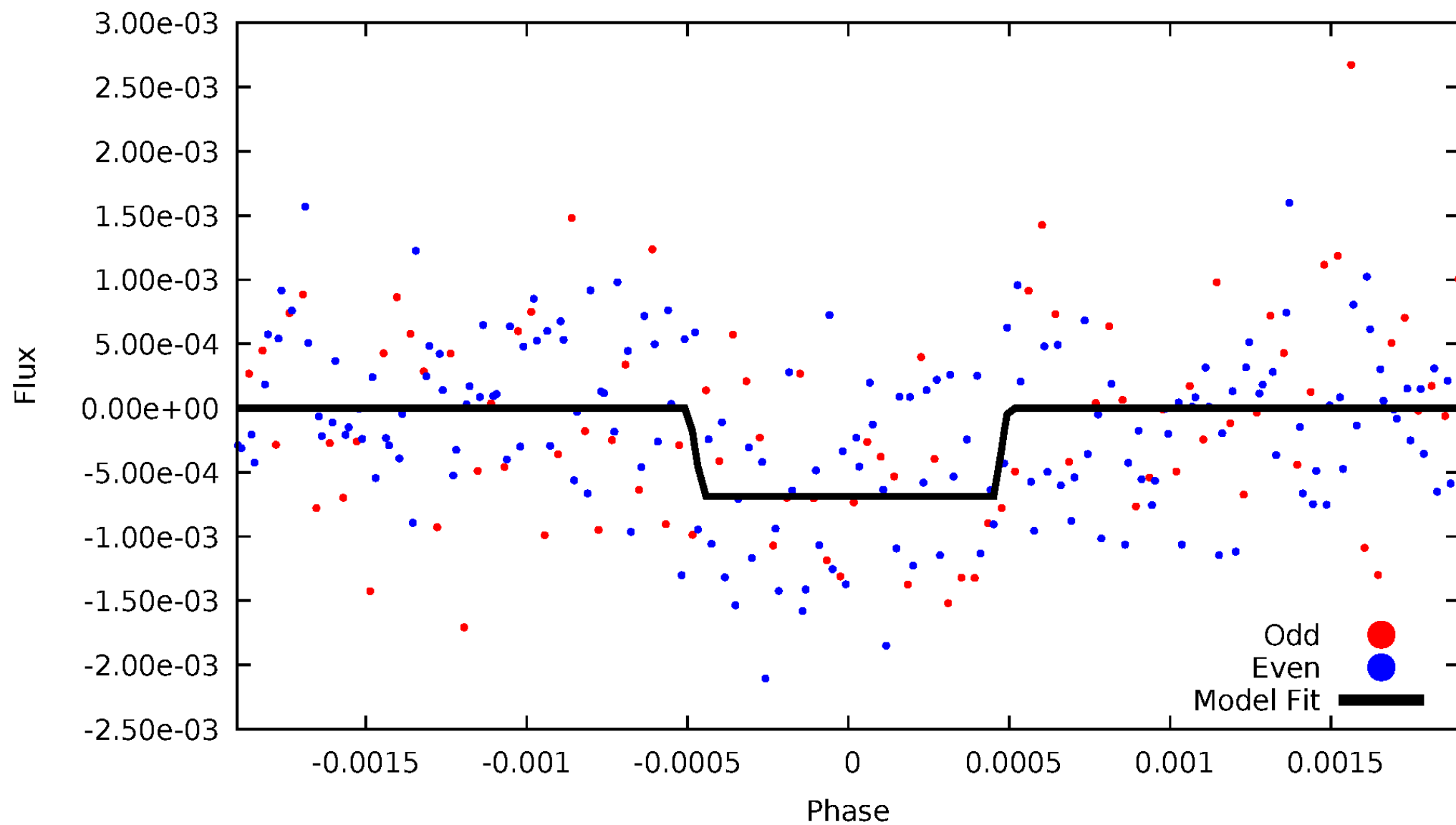
DV Odd/Even

TCE 002997821-01



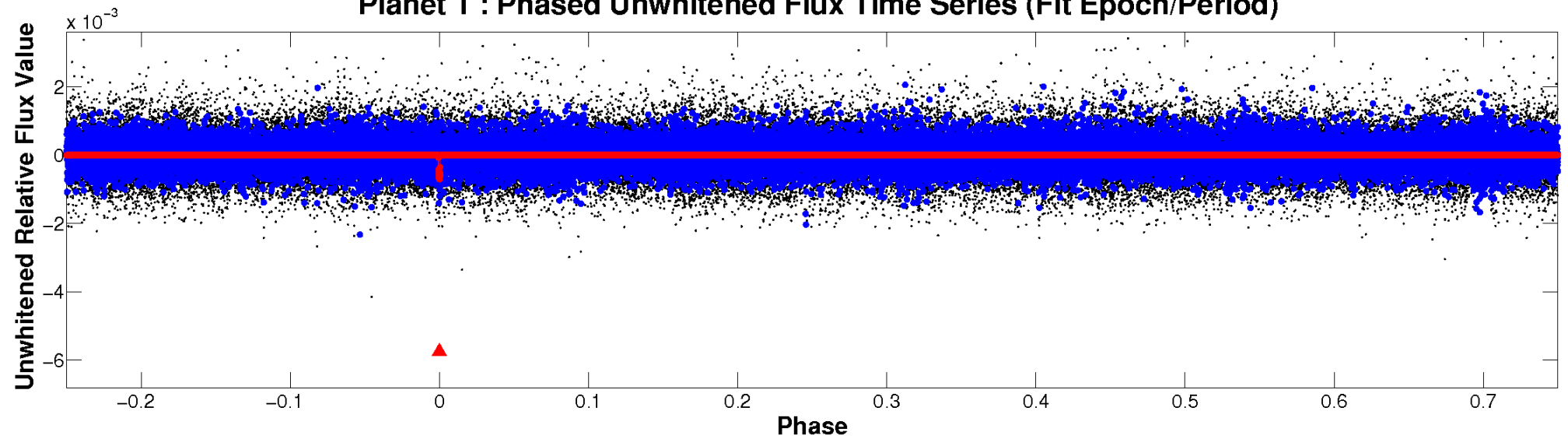
ALT Odd/Even

TCE 002997821-01

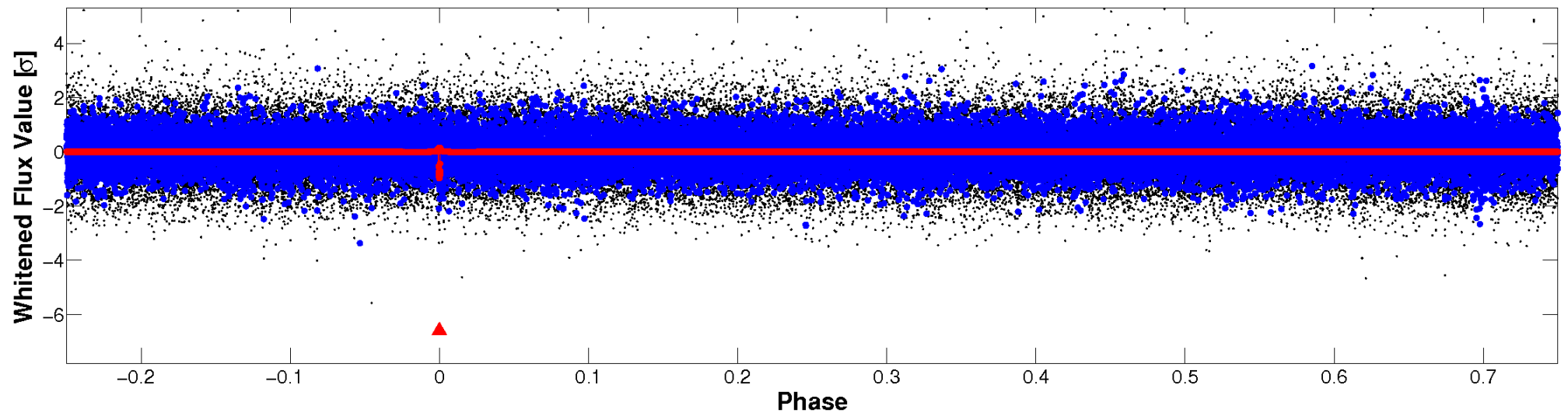


Non-Whitened Vs. Whitened Light Curve

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

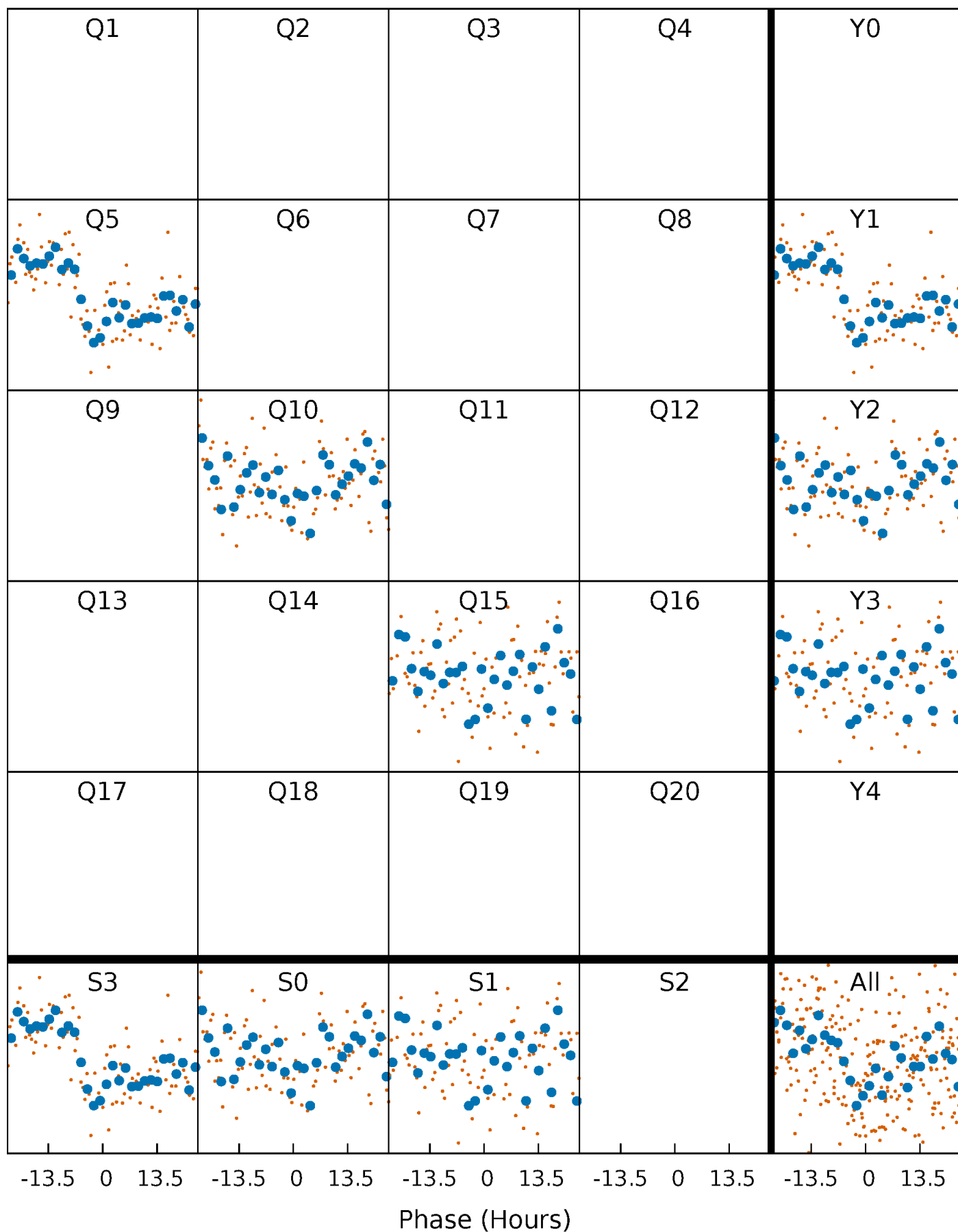


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 002997821-01 P=489.119808 Days $T_0=462.430841$ (BKJD)



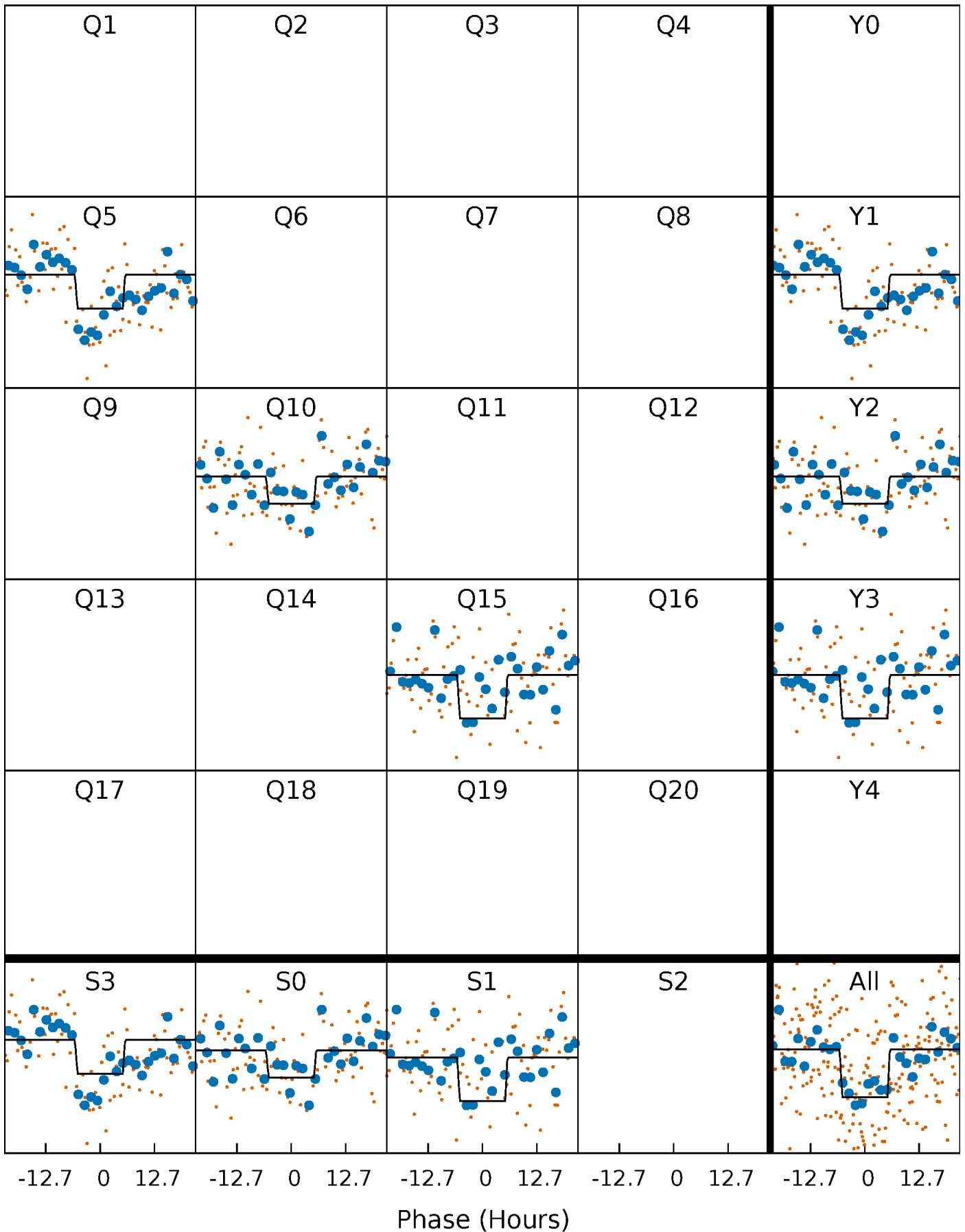
DV Quarter-Phased Transit Curves

TCE 002997821-01 P=489.119808 Days $T_0=462.430841$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

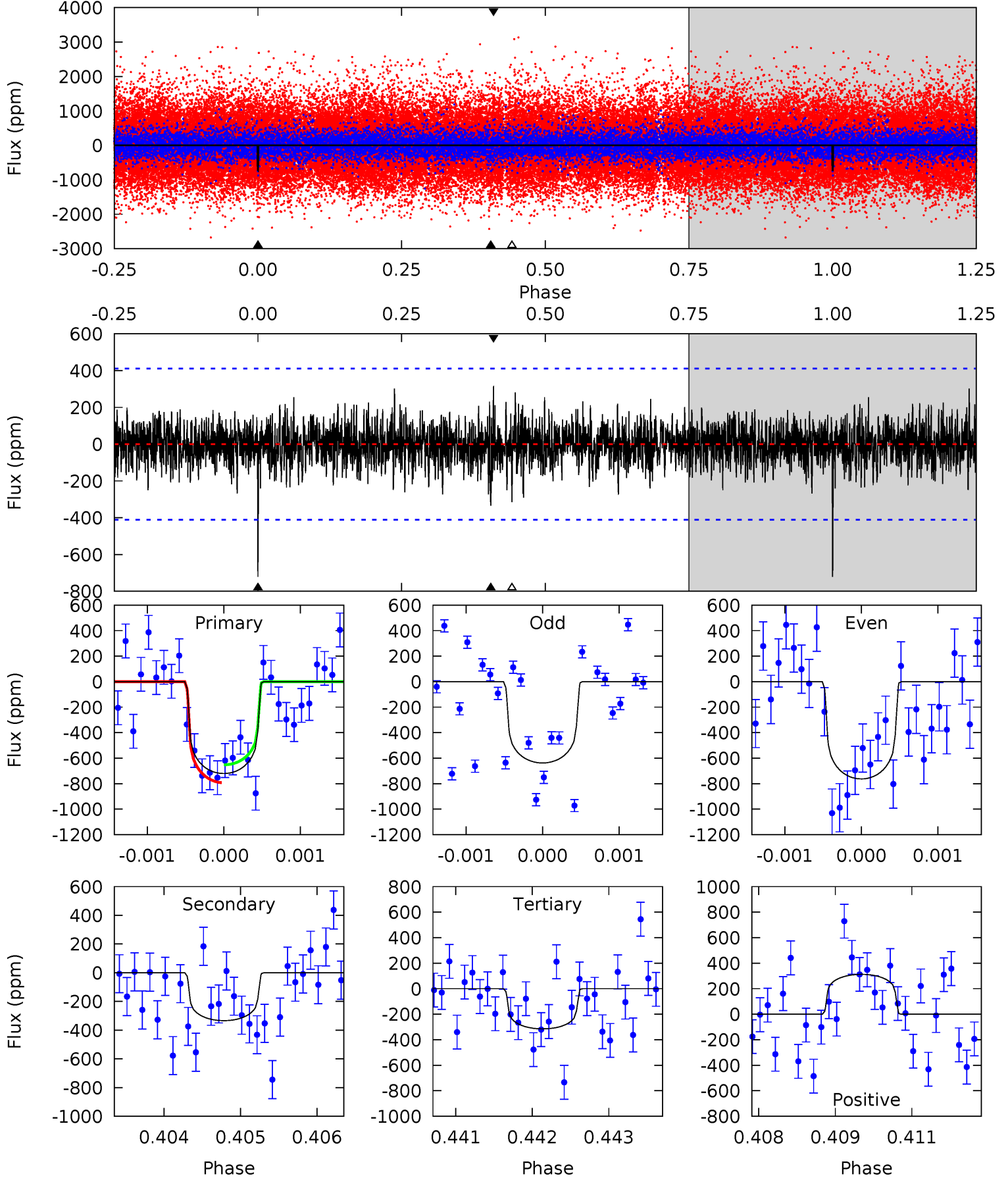
TCE 002997821-01 P=489.111314 Days $T_0=462.436342$ (BKJD)



DV Model-Shift Uniqueness Test

002997821-01, P = 489.119808 Days, E = 462.430841 Days

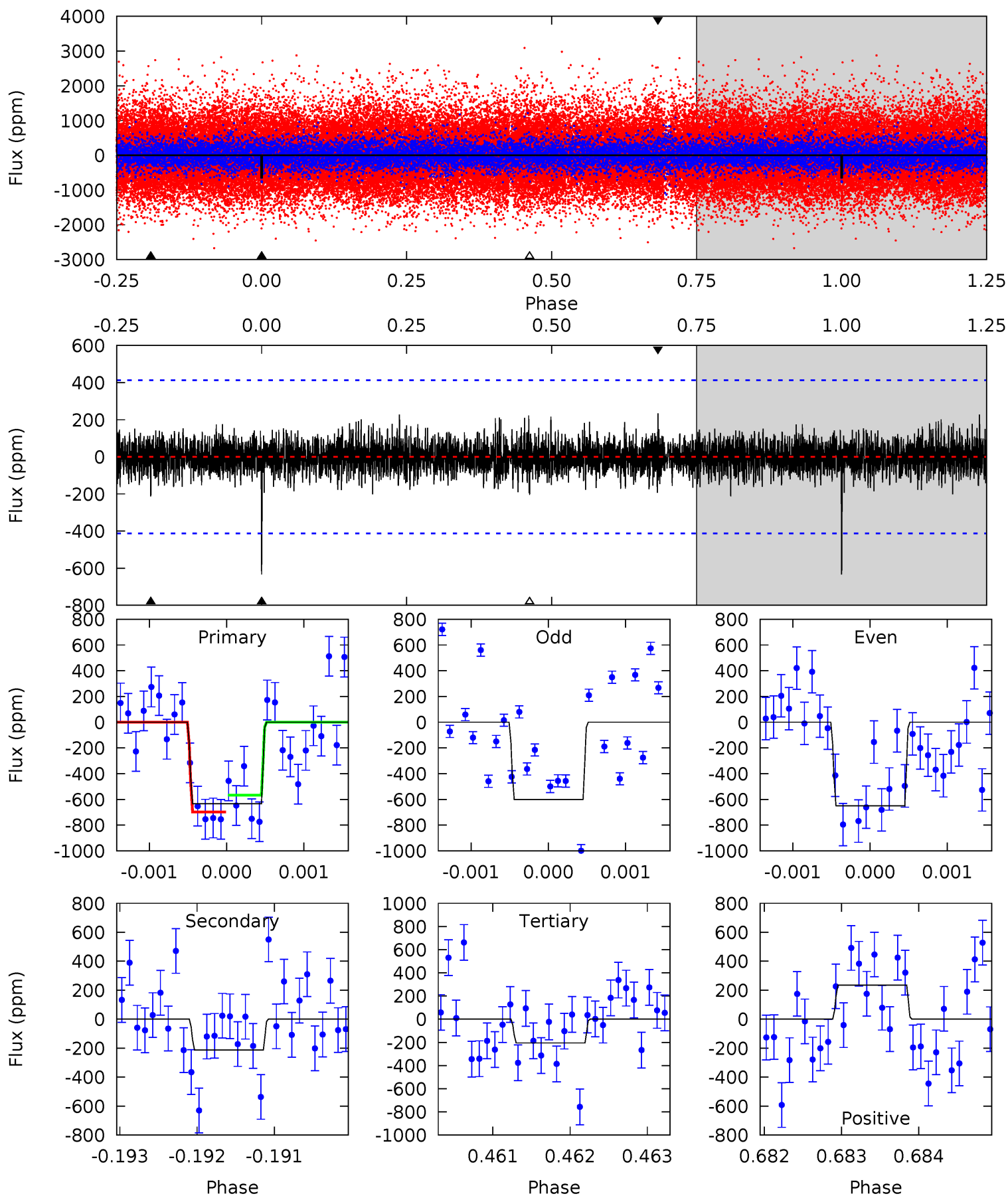
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.54	4.42	4.17	4.14	5.44	3.28	1.08	5.37	5.41	0.25	0.28	0.79	1.13	0.30	0.92



Alt Model-Shift Uniqueness Test

002997821-01, P = 489.111314 Days, E = 462.436342 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.37	2.81	2.71	3.10	5.45	3.29	0.79	5.66	5.27	0.11	-0.29	0.31	1.05	0.27	0.86



Stellar Parameters For KIC 002997821

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5837^{+158}_{-175}	$4.577^{+0.040}_{-0.160}$	$-0.440^{+0.300}_{-0.300}$	$0.798^{+0.186}_{-0.062}$	$0.887^{+0.089}_{-0.099}$	$2.458^{+0.395}_{-1.107}$
	+3%/-3%	+1%/-3%	+68%/-68%	+23%/-8%	+10%/-11%	+16%/-45%
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 002997821-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-334 ± 75	$2.37^{+0.98}_{-1.03}$	303^{+16}_{-13}	4966^{+1452}_{-677}	43952^{+88118}_{-22789}
Alt.	-213 ± 76	$2.37^{+1.02}_{-0.90}$	303^{+17}_{-13}	4465^{+1127}_{-582}	26122^{+49294}_{-14515}

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

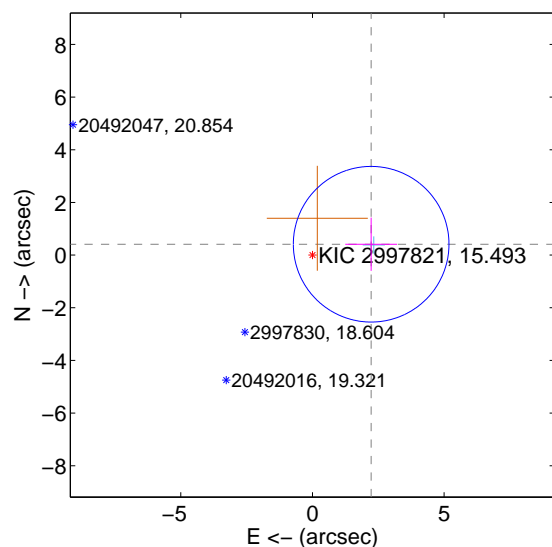
Supplemental centroid analysis for 002997821-01. Kepler magnitude: 15.49. Transit SNR 7.10

There are 1 quarters with good PRF difference image offsets

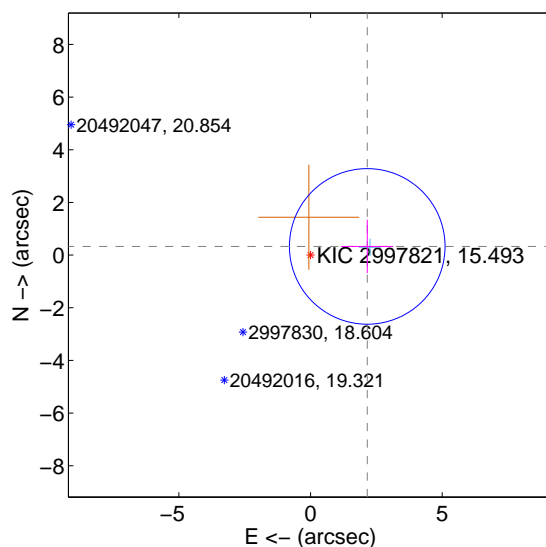
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.268 ± 0.985	2.30	-2.230 ± 0.984	0.413 ± 1.011
PRF-fit source offset from KIC position	2.179 ± 0.985	2.21	-2.154 ± 0.984	0.330 ± 1.011
photometric centroid source offset	2.81 ± 1.61	1.74	1.39 ± 1.71	-2.45 ± 1.58

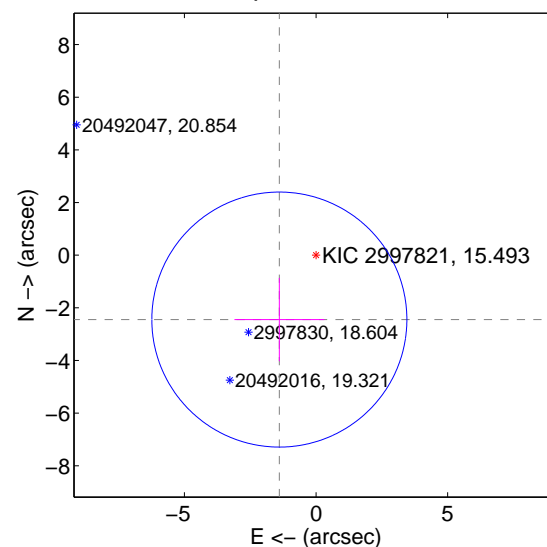
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

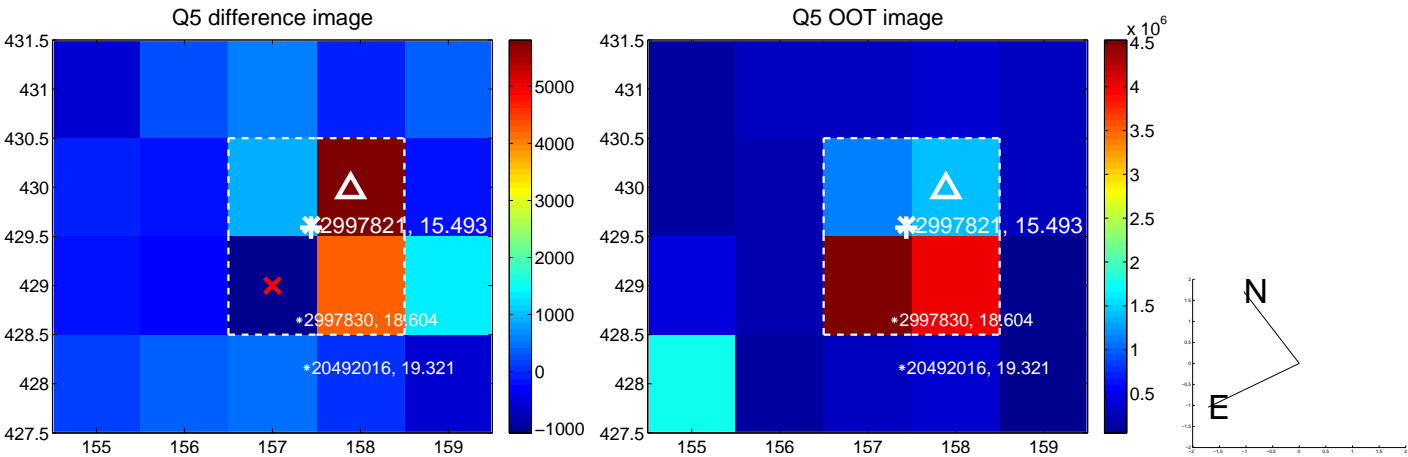


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

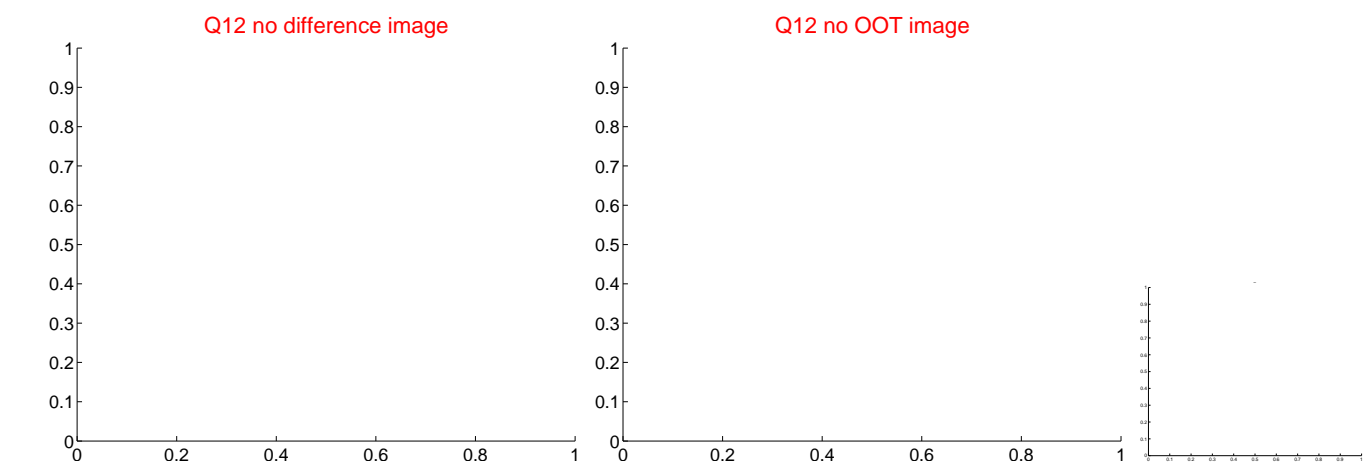
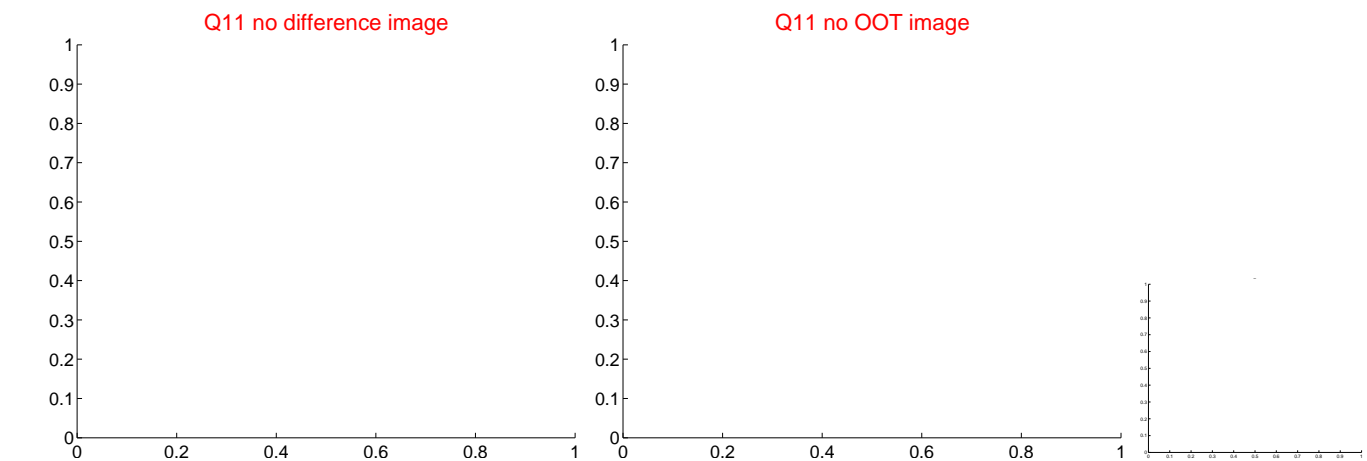
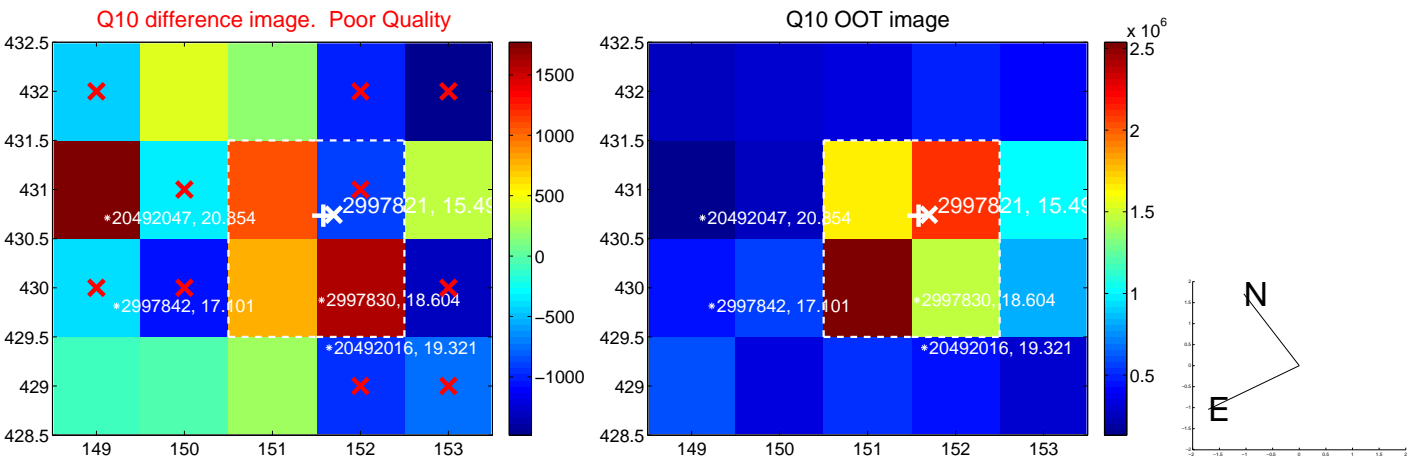
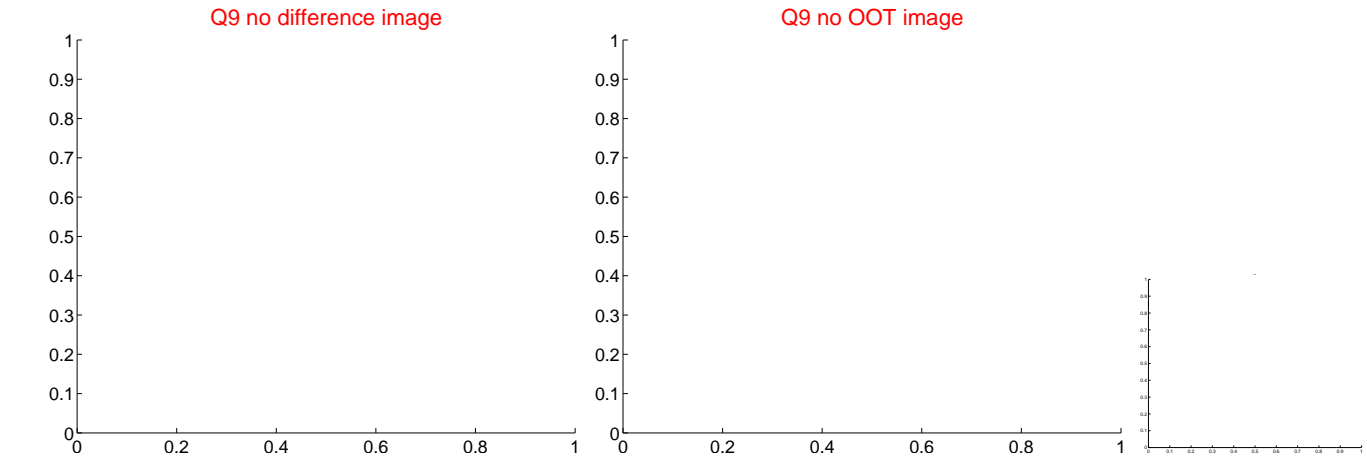
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



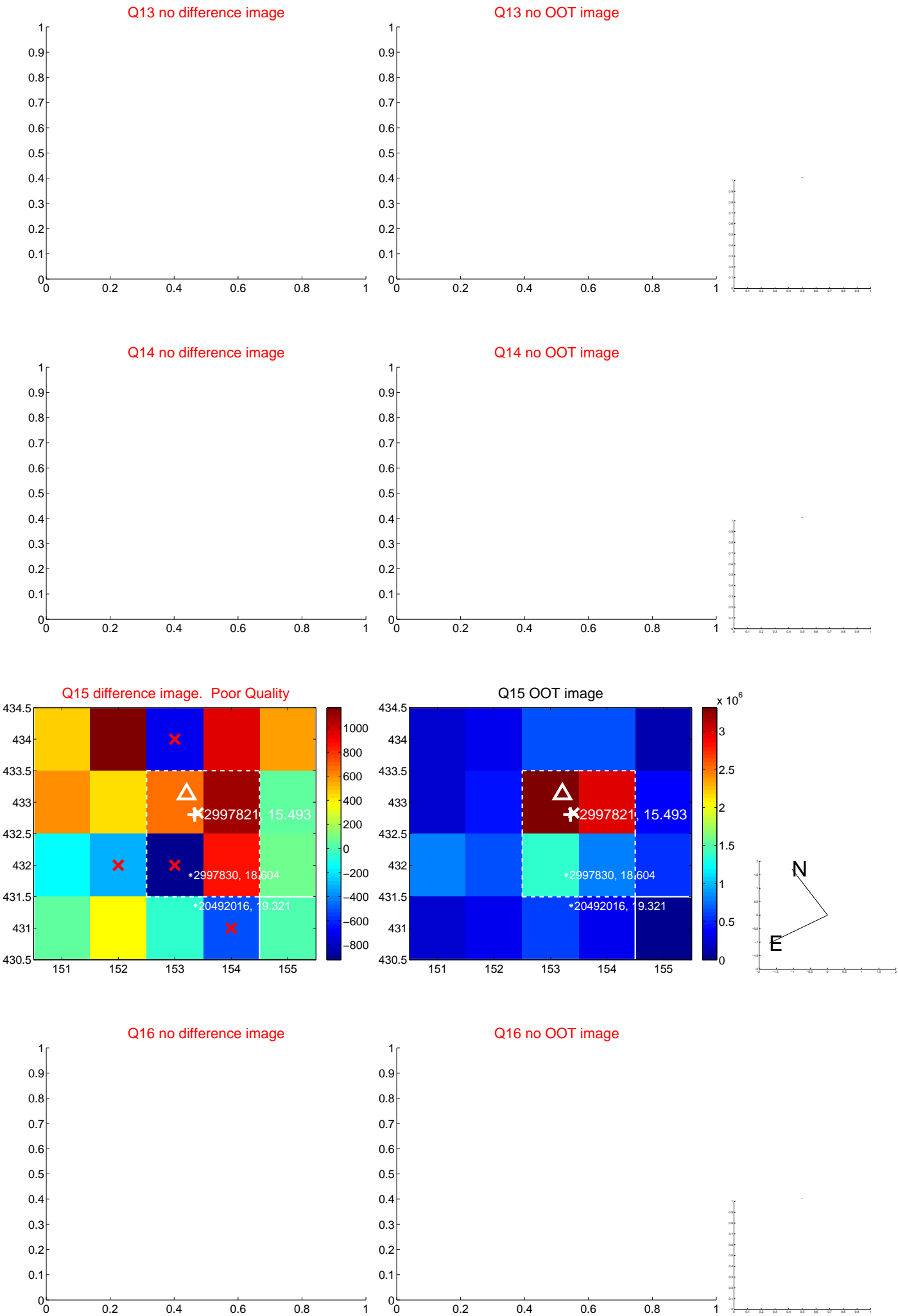
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



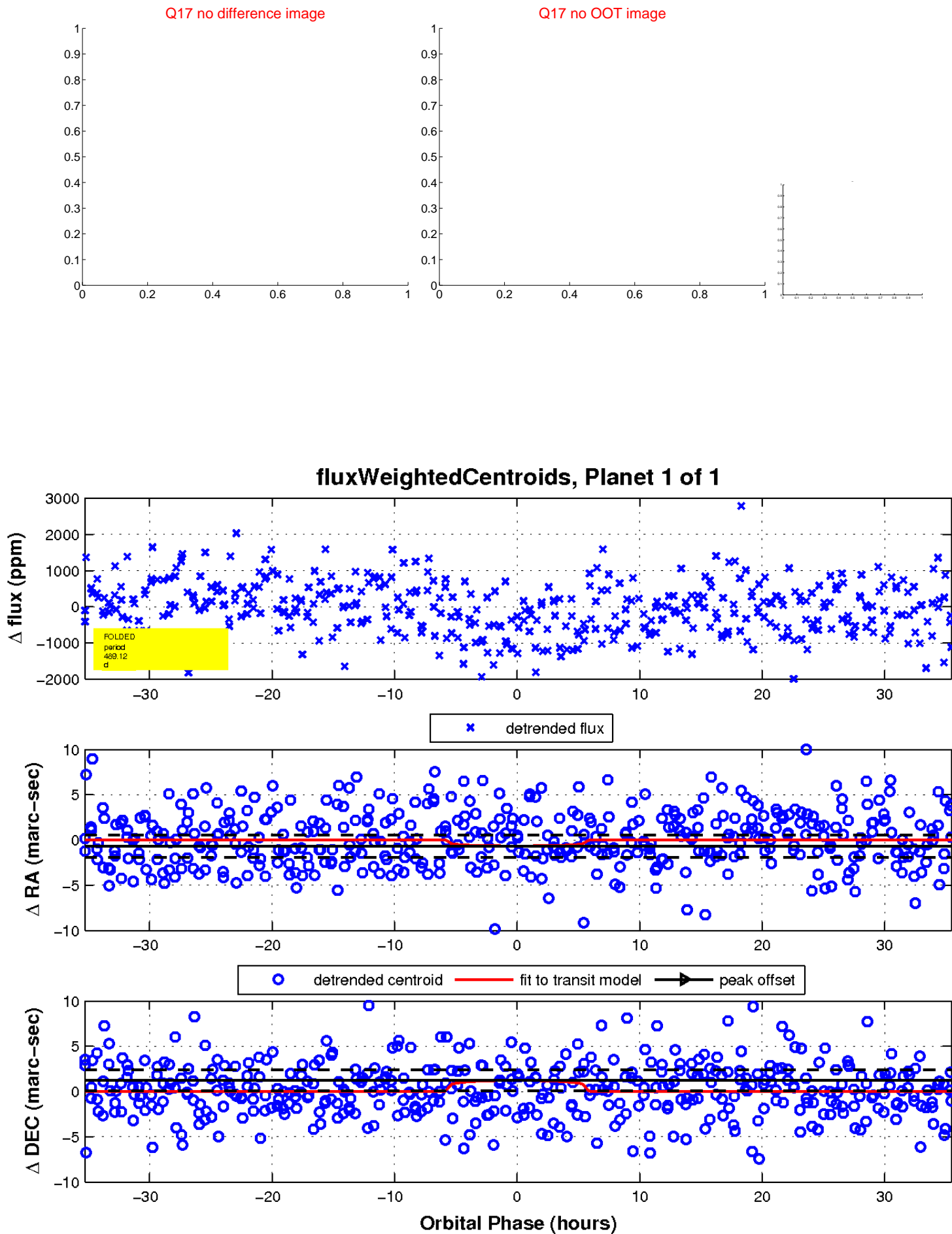
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

