

KIC 010321972

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})
010321972-01	OBS	7998.01	122.131801	228.221052	1469.9	17.237	7.9	9.0	0.89	5592	3.78	3.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010321972-01	OBS	PC	0.69	0	0	0	0	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.

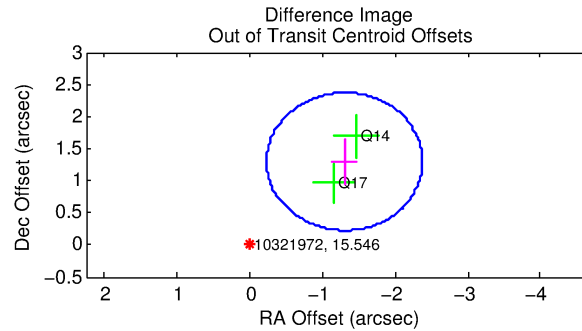
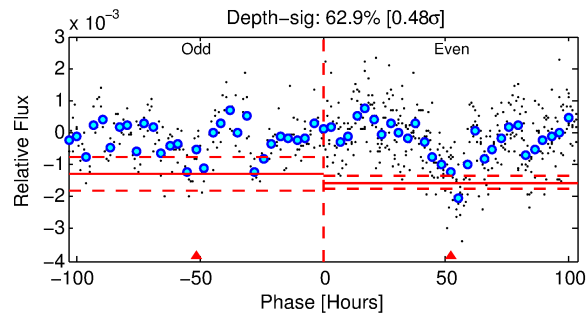
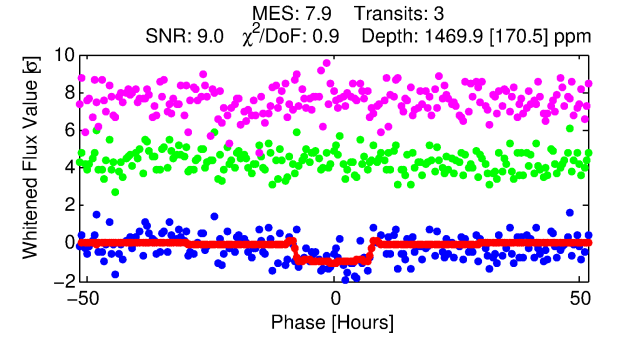
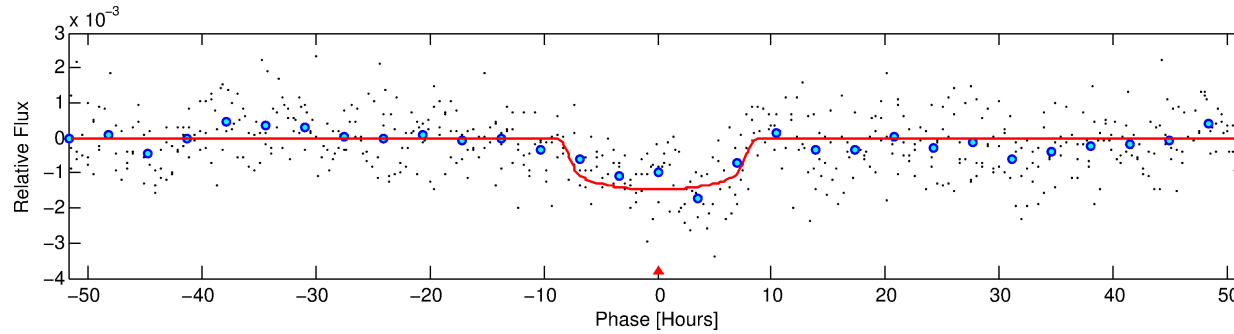
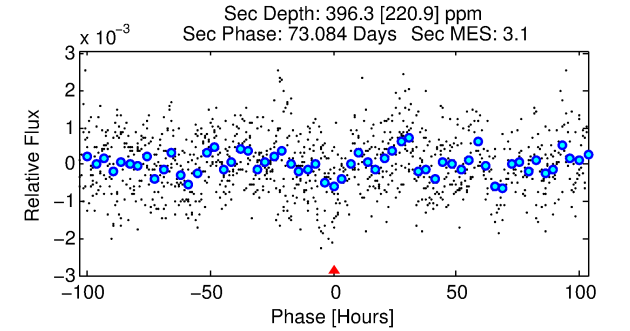
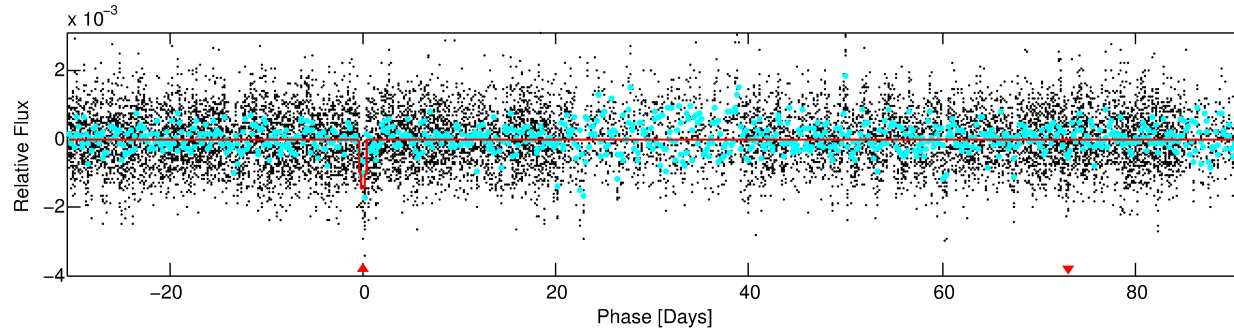
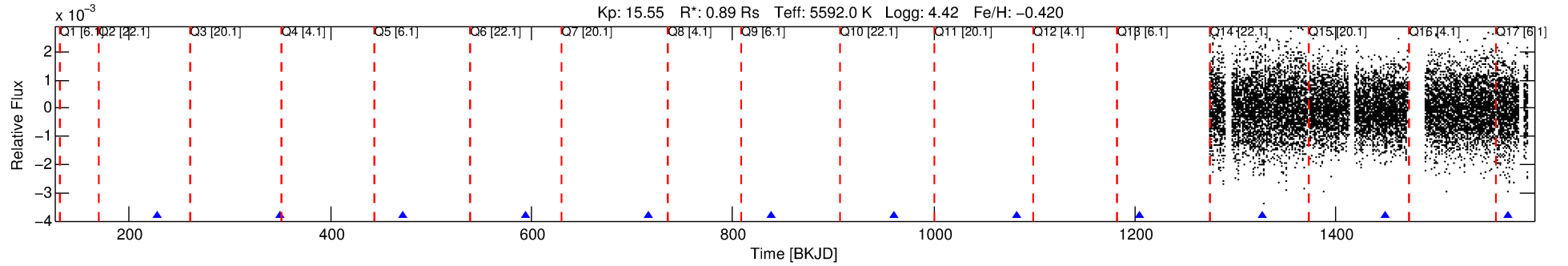
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010321972-01

No Significant Match Found

DV One-Page Summary

KIC: 10321972 Candidate: 1 of 1 Period: 122.132 d



DV Fit Results:

Period = 122.13180 [0.01502] d
Epoch = 228.2211 [0.1528] BKJD
Rp/R* = 0.0388 [0.0042]
a/R* = 36.55 [14.89]
b = 0.79 [0.20]
Seff = 3.61 [1.48]
Teq = 352 [36] K
Rp = 3.78 [1.23] Re
a = 0.4404 [0.1152] AU
Ag = 2952.79 [2102.42] [1.40σ]
Teff = 4006 [615] K [5.93σ]

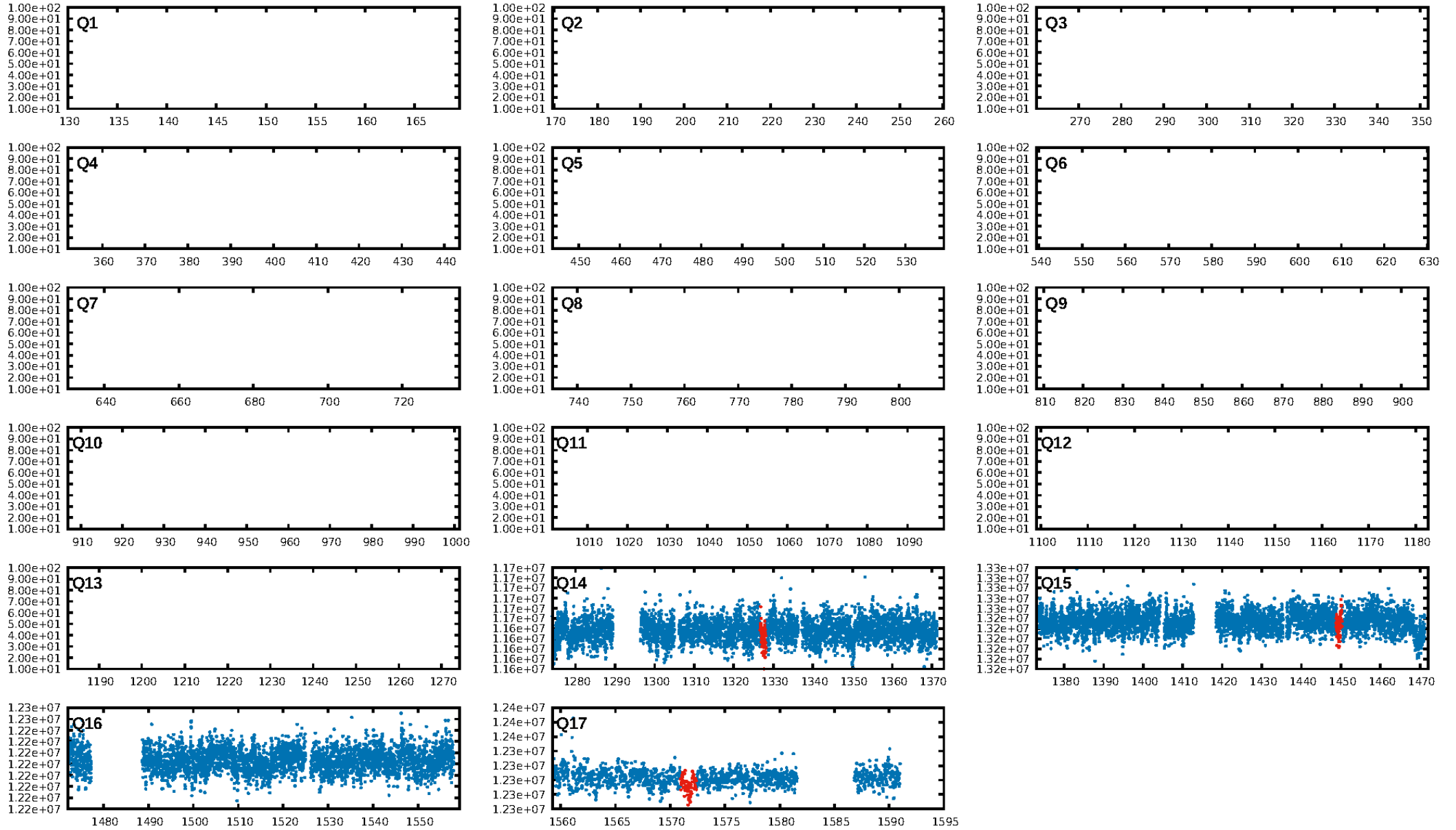
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 55.3%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 5.92e-12
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 6.732
Centroid-sig: 35.2%
Centroid-so: 0.722 arcsec [1.66σ]
OotOffset-rm: 1.841 arcsec [5.15σ]
KicOffset-rm: 0.925 arcsec [3.57σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

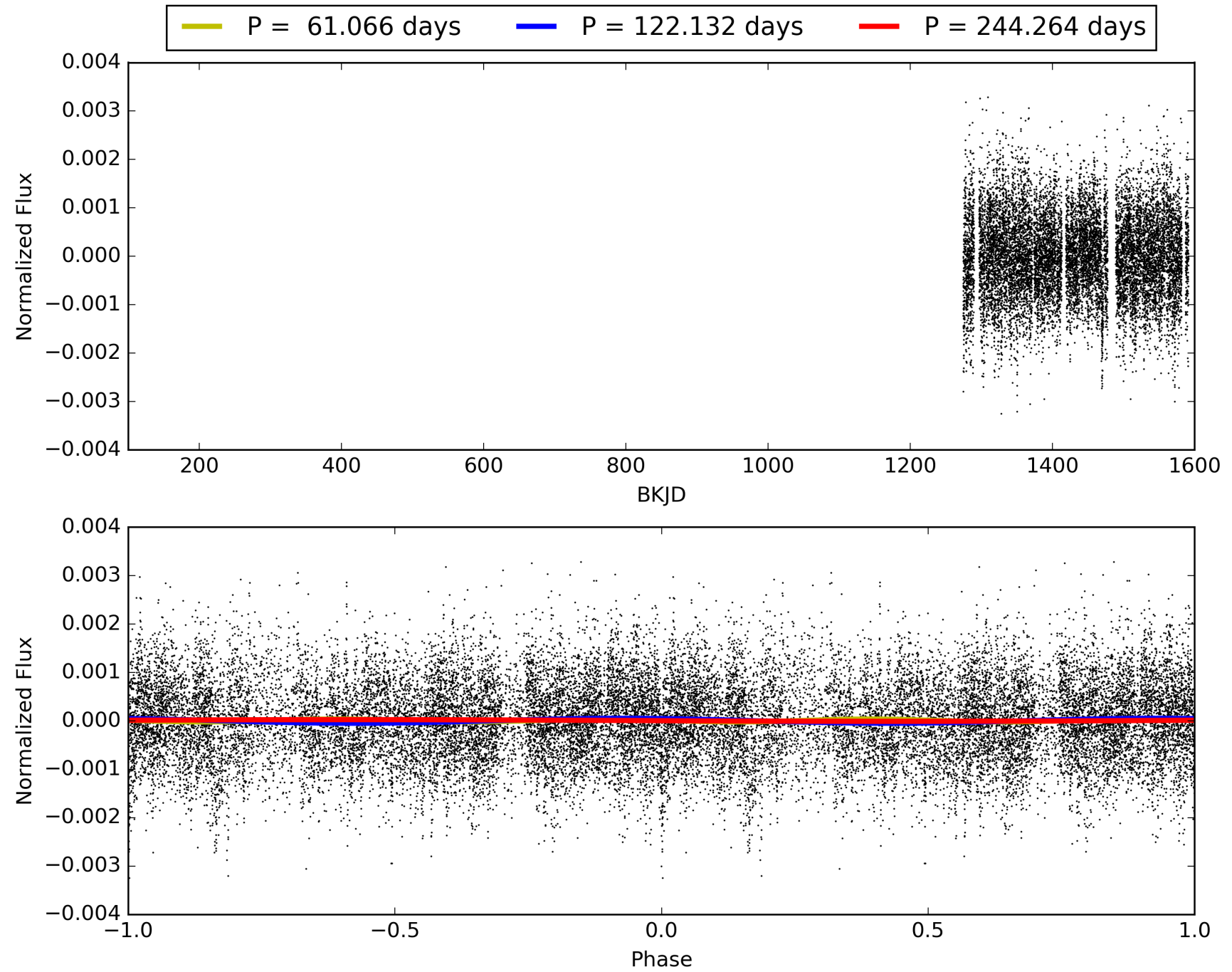
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 18:37:10 Z

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

TCE 010321972-01, PDC Light Curves

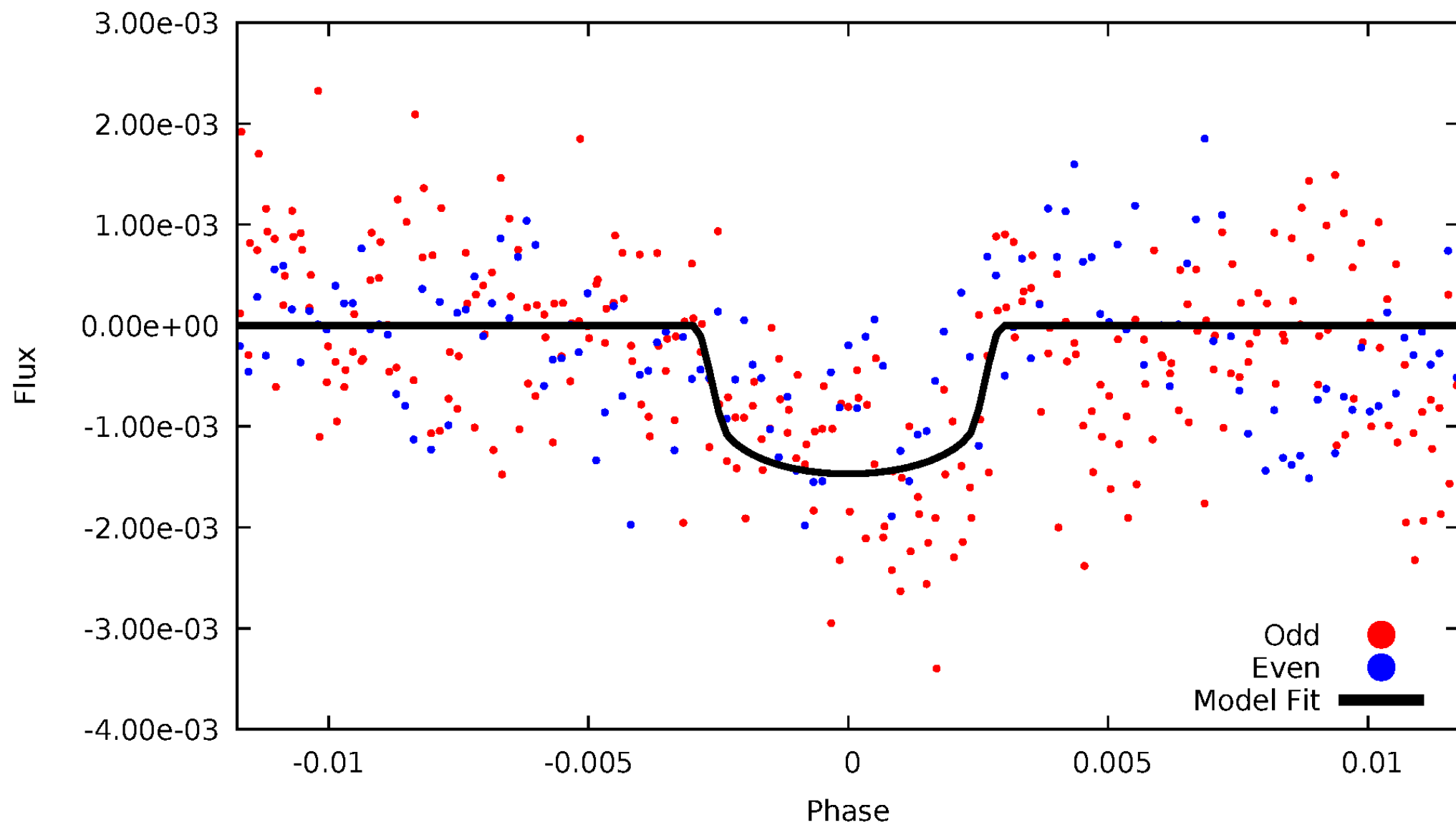


TCE 010321972-01



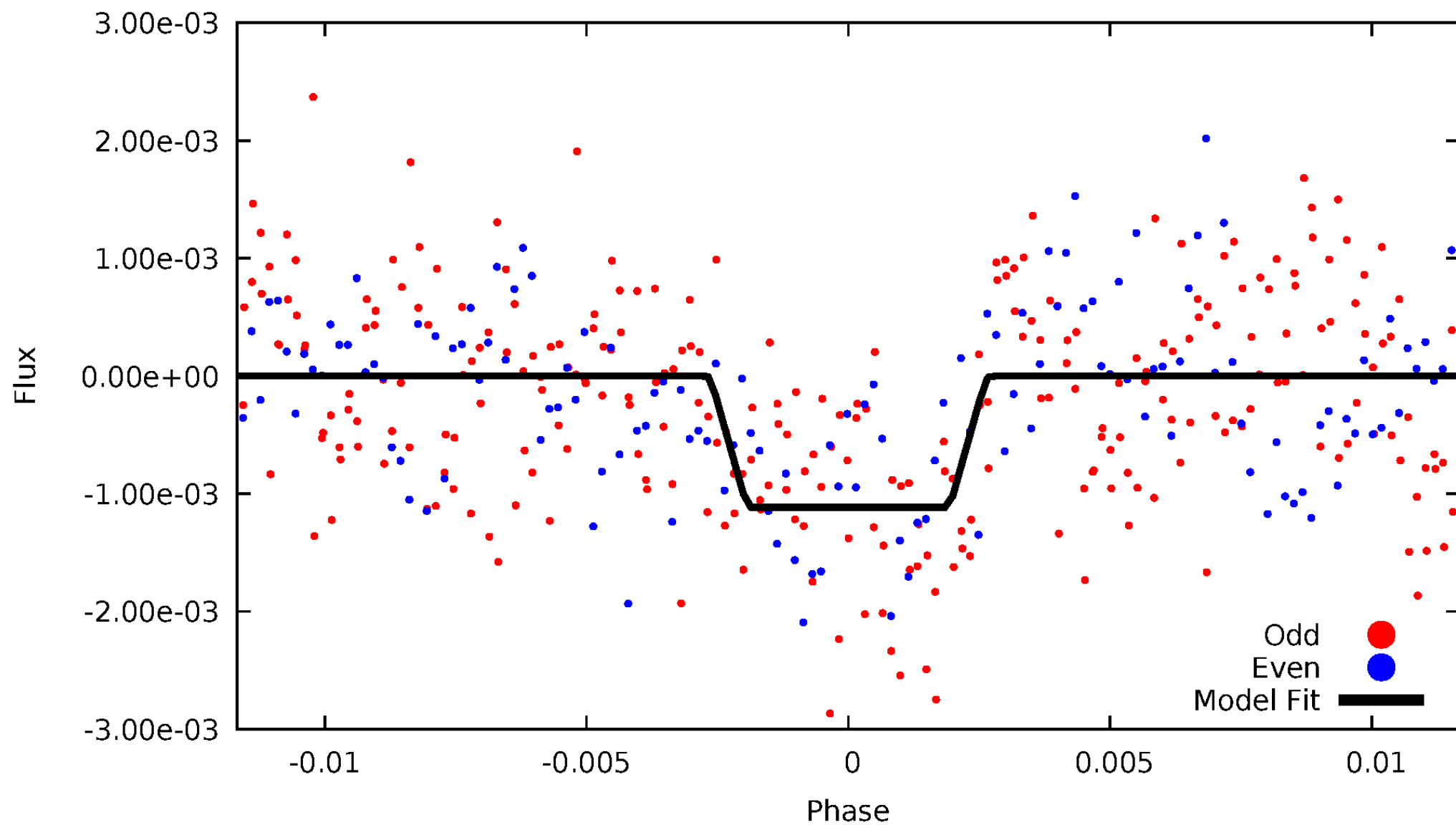
DV Odd/Even

TCE 010321972-01



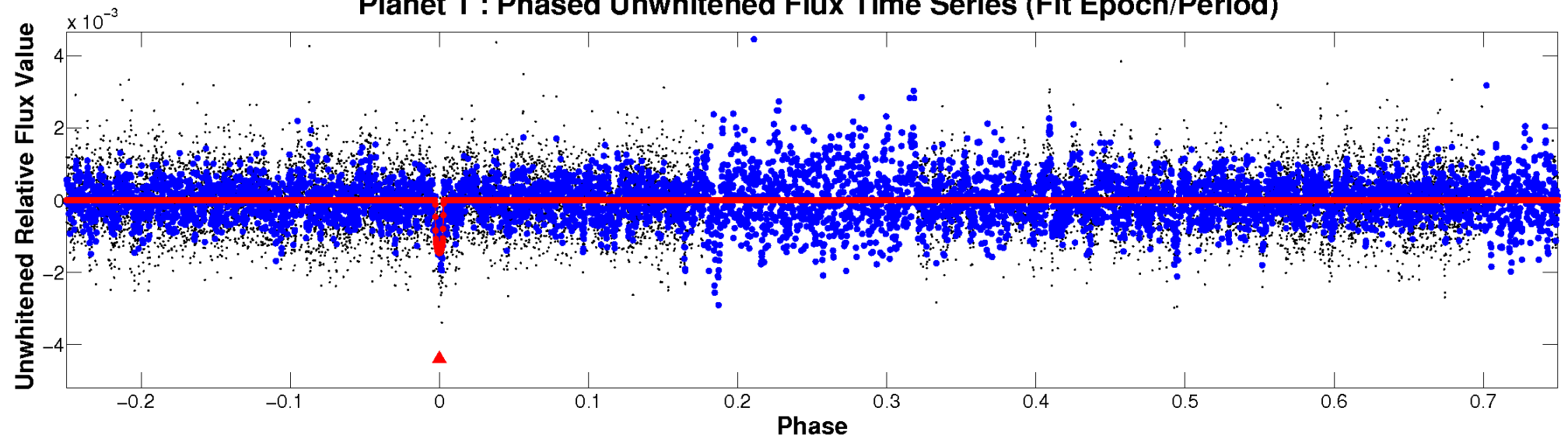
ALT Odd/Even

TCE 010321972-01

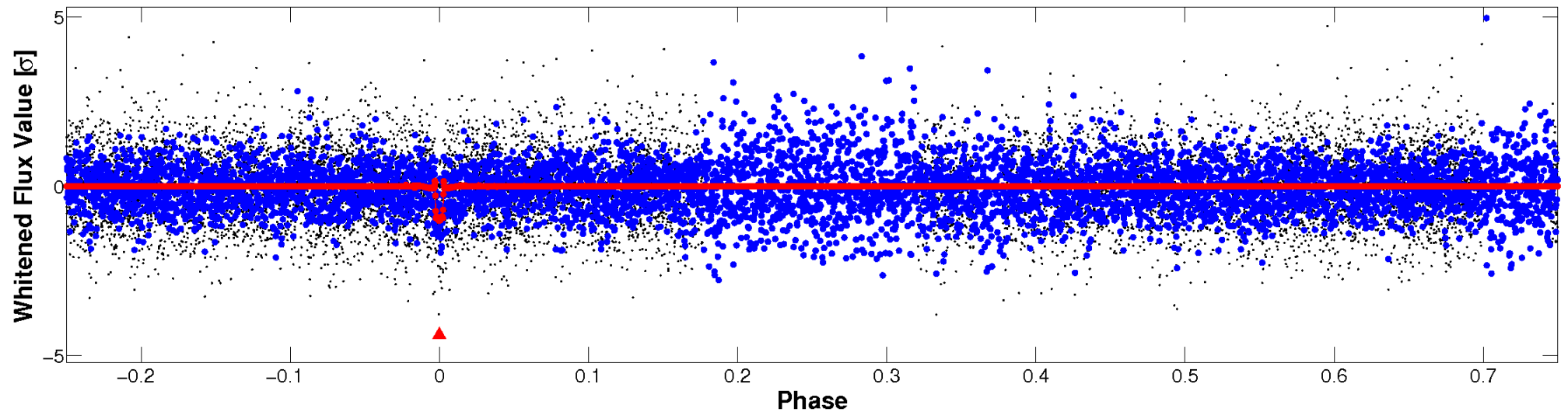


Non-Whitened Vs. Whitened Light Curve

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

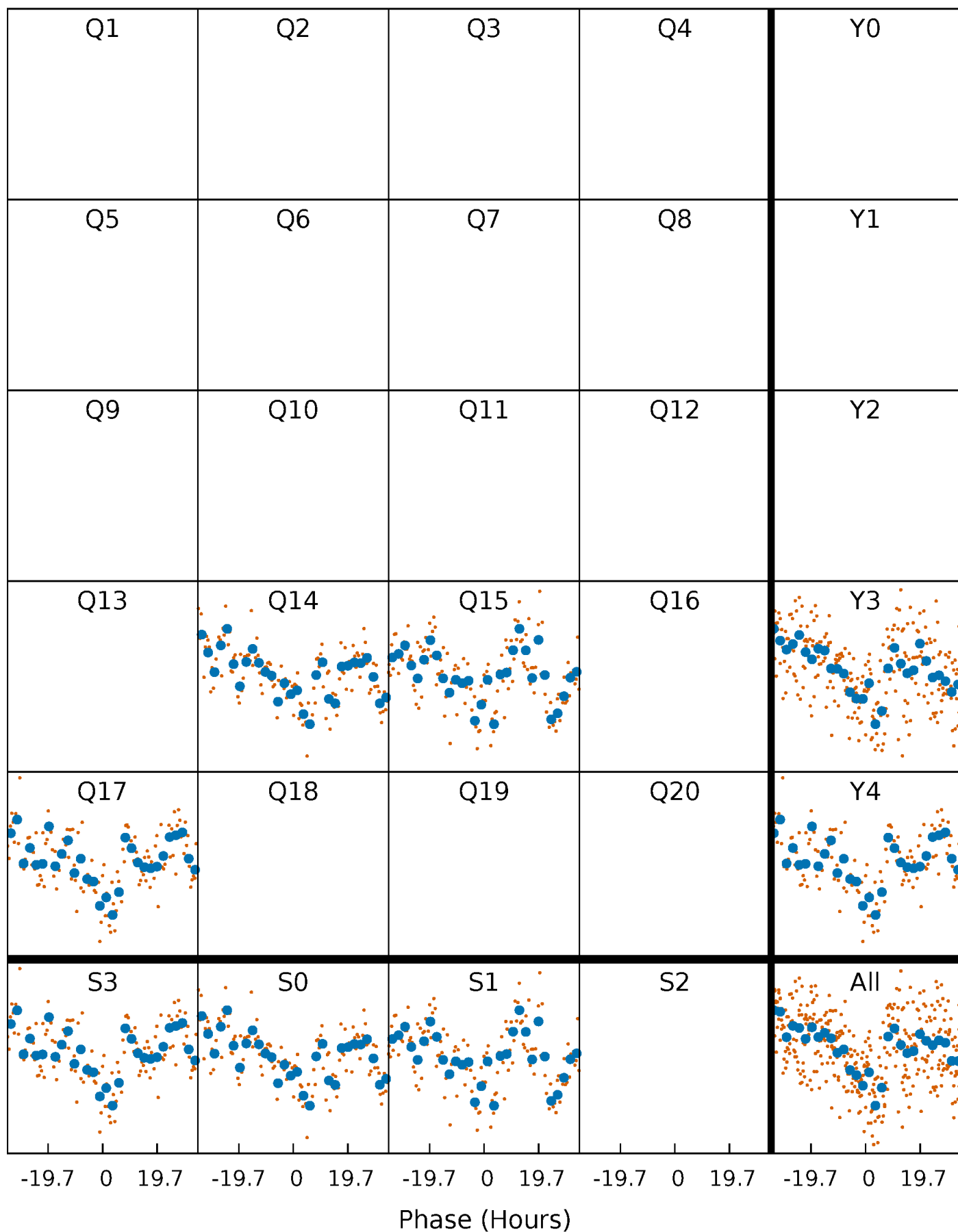


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 010321972-01 P=122.131801 Days $T_0=228.221052$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 010321972-01 P=122.131801 Days $T_0=228.221052$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

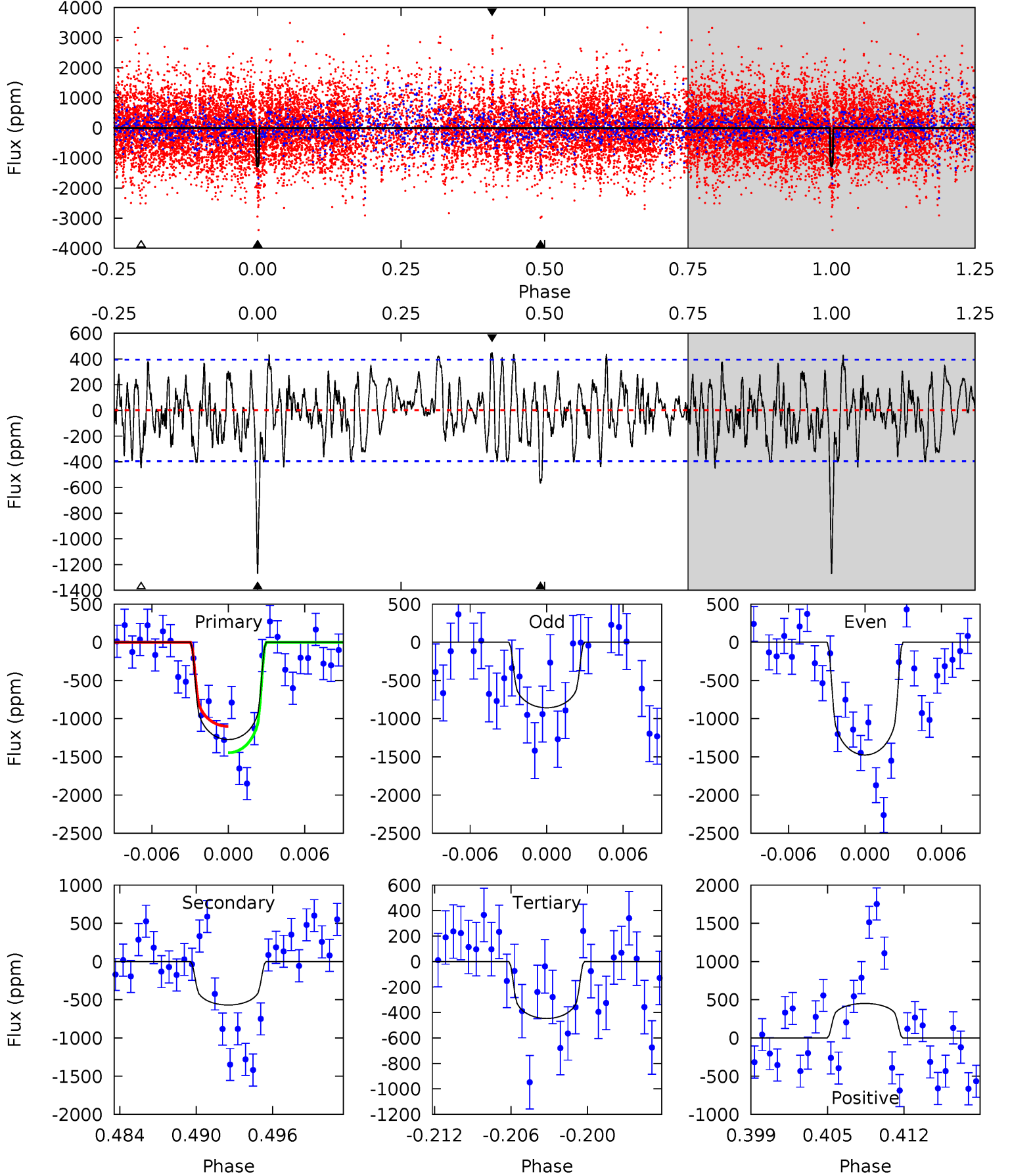
TCE 010321972-01 P=122.131388 Days $T_0=228.227683$ (BKJD)



DV Model-Shift Uniqueness Test

010321972-01, P = 122.131801 Days, E = 228.221052 Days

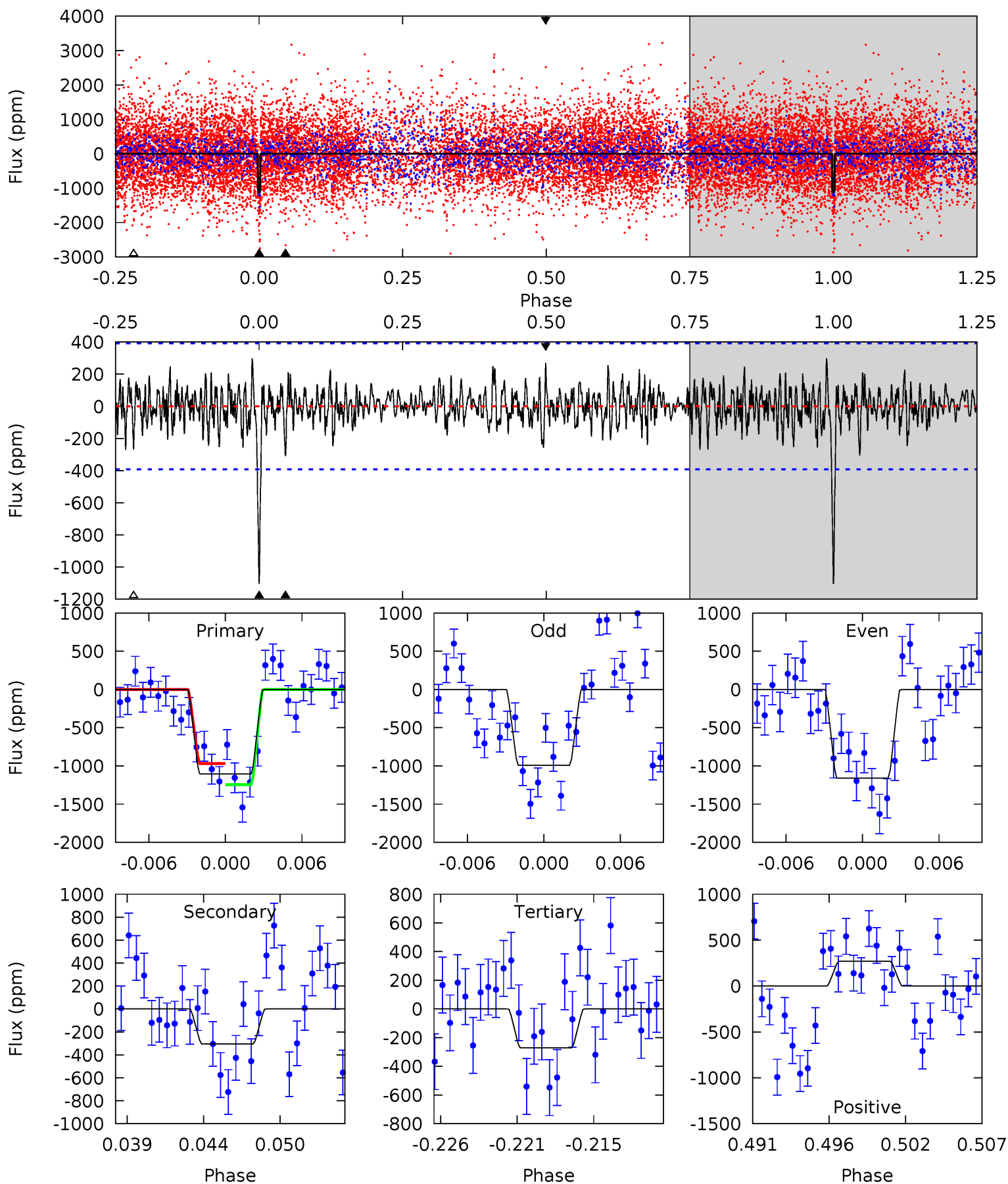
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.5	7.38	5.80	5.86	5.12	2.74	2.27	10.7	10.7	1.58	1.52	3.93	0.89	0.26	2.24



Alt Model-Shift Uniqueness Test

010321972-01, P = 122.131388 Days, E = 228.227683 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	3.99	3.55	3.53	5.14	2.78	1.19	10.9	10.9	0.45	0.46	1.07	1.11	0.21	1.80



Stellar Parameters For KIC 010321972

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5592^{+195}_{-195}	$4.418^{+0.156}_{-0.214}$	$-0.420^{+0.300}_{-0.250}$	$0.894^{+0.273}_{-0.168}$	$0.764^{+0.124}_{-0.053}$	$1.507^{+1.095}_{-0.855}$
	+3%/-3%	+4%/-5%	+71%/-60%	+31%/-19%	+16%/-7%	+73%/-57%
Source	KIC0	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 010321972-01 / KOI 7998.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-569 ± 77	$3.90^{+0.78}_{-0.63}$	496^{+42}_{-35}	4542^{+274}_{-265}	3976^{+1777}_{-1251}
Alt.	-305 ± 76	$3.36^{+0.75}_{-0.58}$	497^{+43}_{-33}	4259^{+343}_{-291}	2851^{+1585}_{-1055}

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 $A_{obs} \gg 1.0$

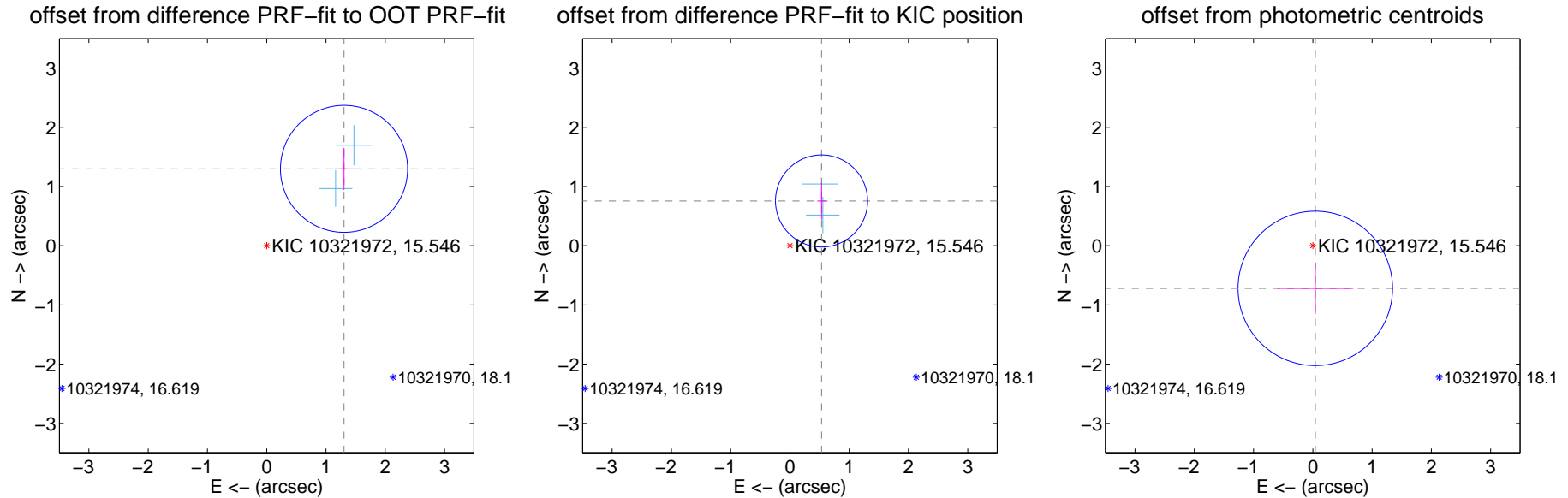
DV Centroid Data

Supplemental centroid analysis for 010321972-01. Kepler magnitude: 15.55. Transit SNR 8.97

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.76 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.841 ± 0.358	5.15	-1.305 ± 0.162	1.298 ± 0.356
PRF-fit source offset from KIC position	0.925 ± 0.259	3.57	-0.533 ± 0.072	0.755 ± 0.313
photometric centroid source offset	0.72 ± 0.43	1.66	-0.04 ± 0.64	-0.72 ± 0.43



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.



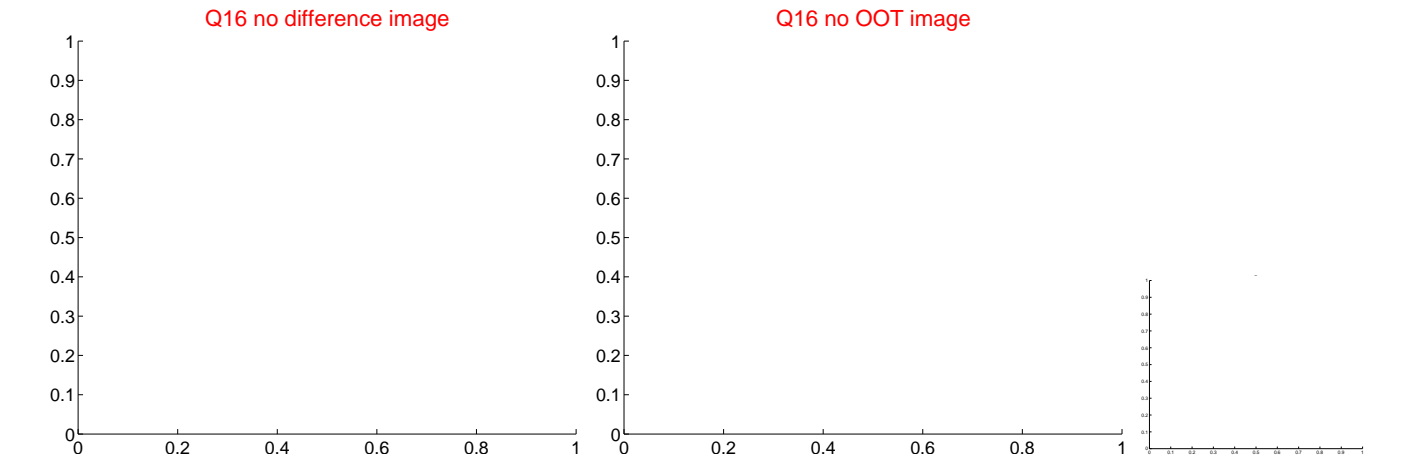
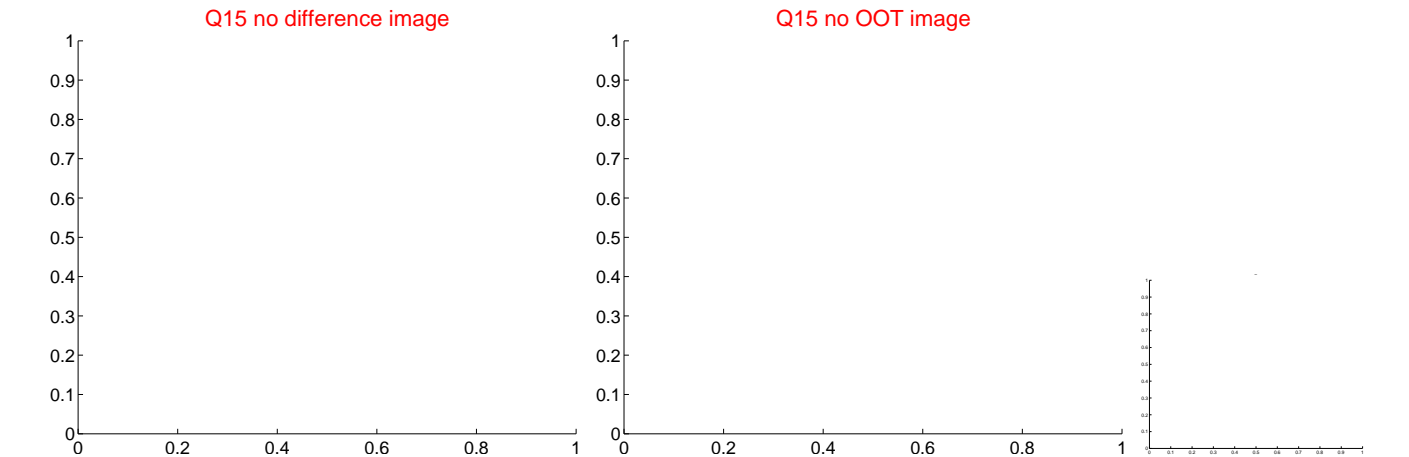
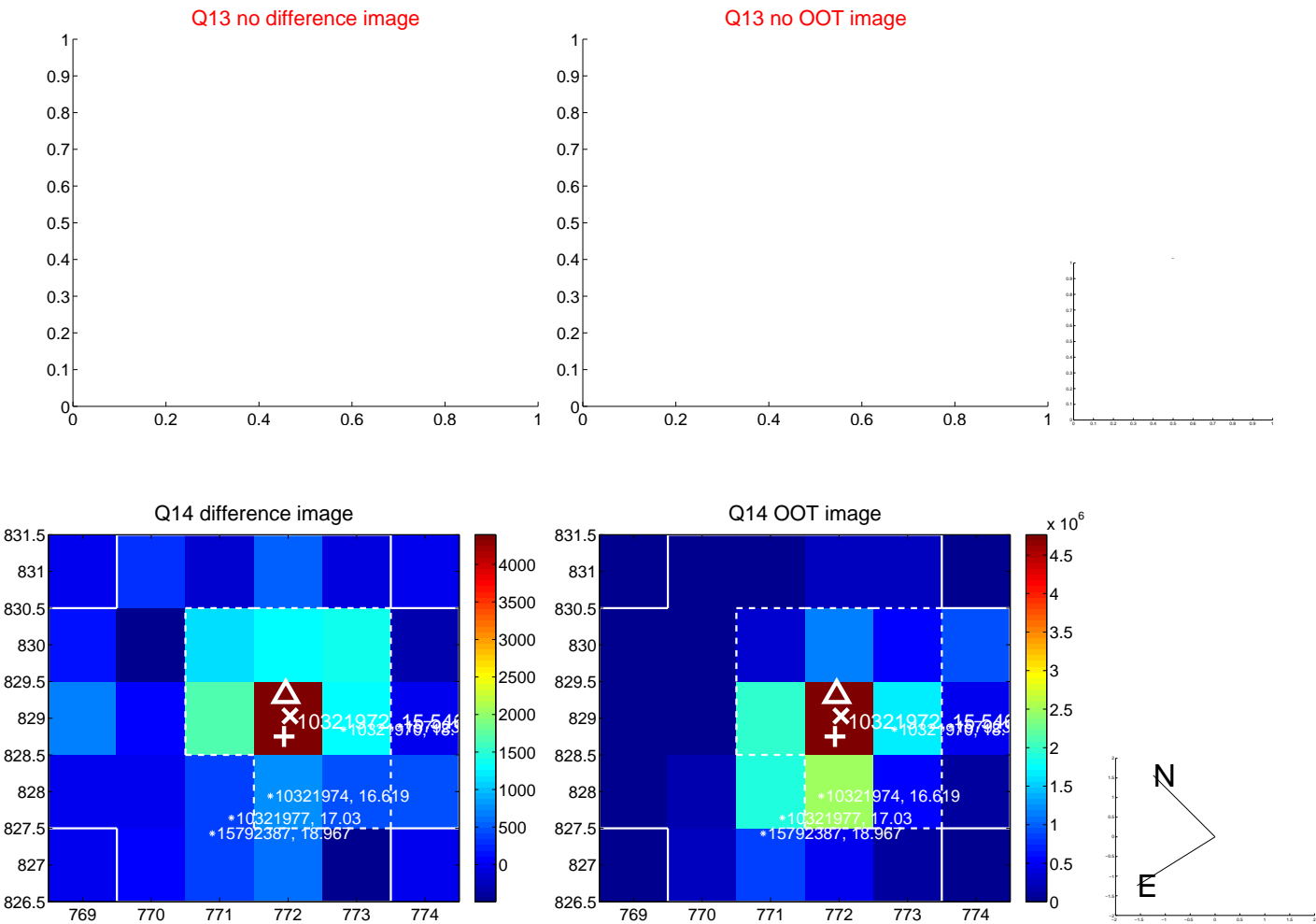
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



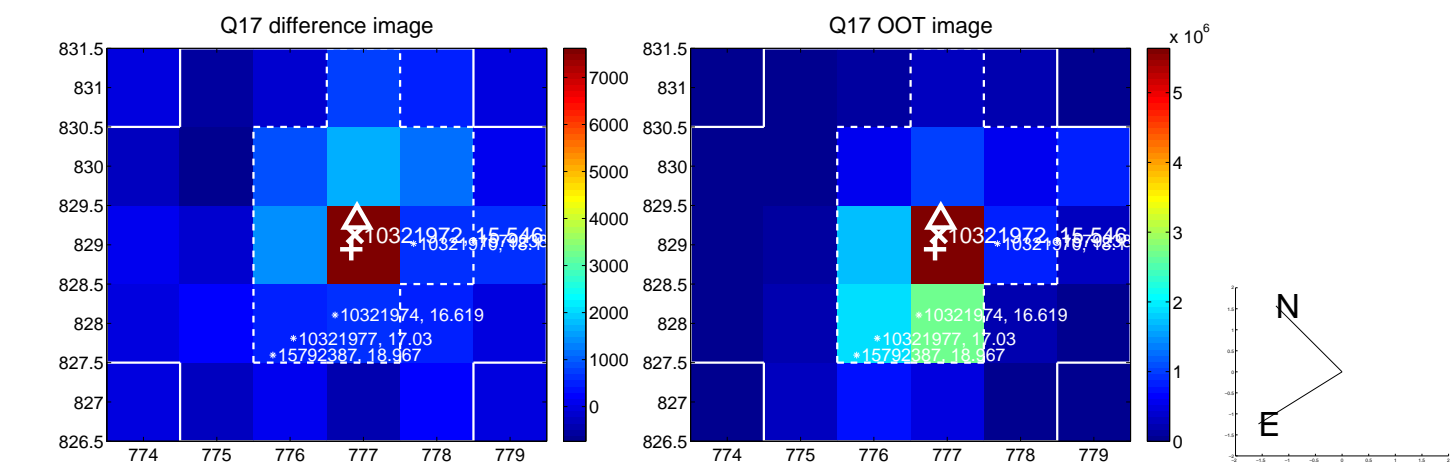
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



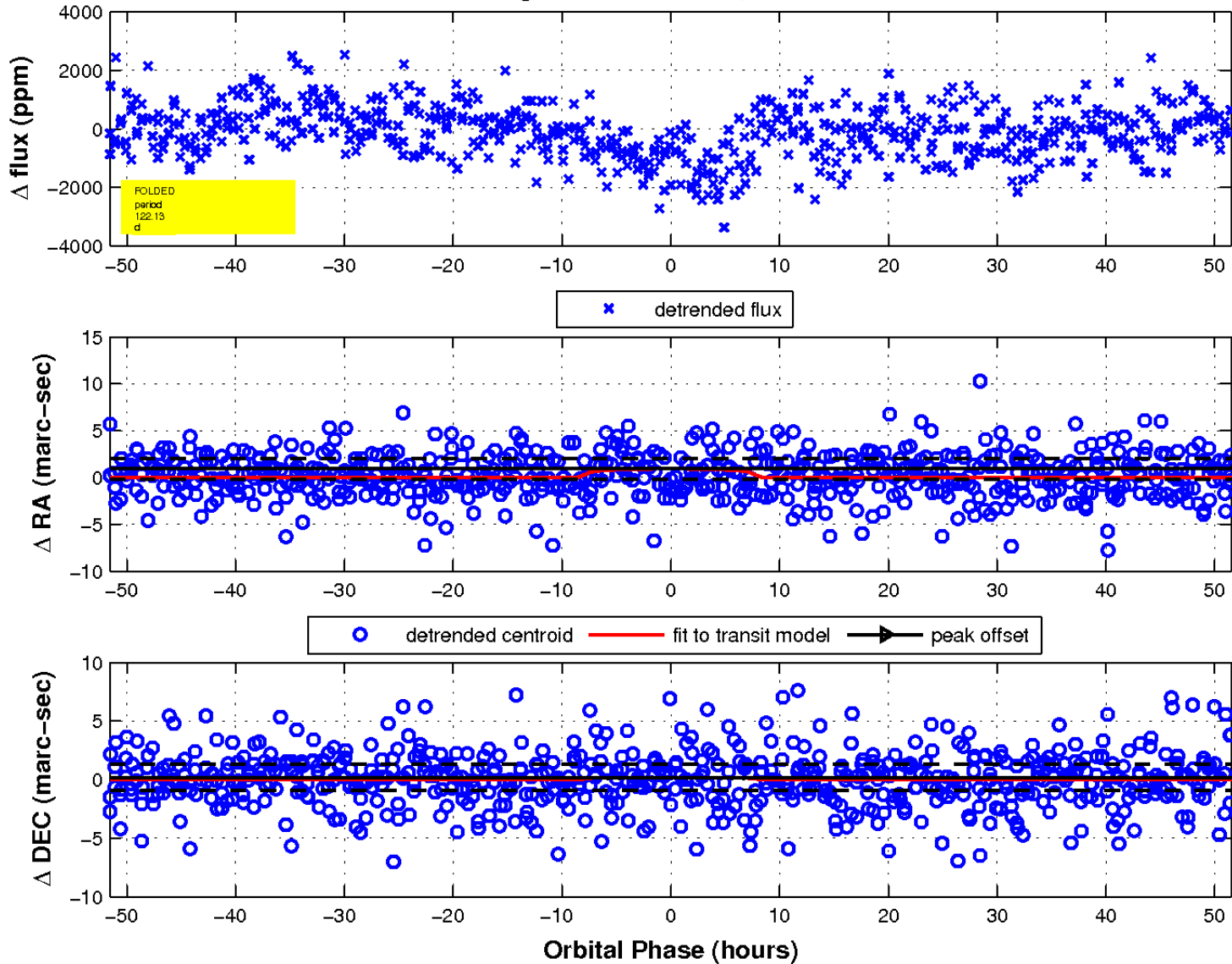
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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

