

KIC 009516728

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})
009516728-01	OBS	No	390.556136	347.275619	265.5	20.075	7.1	8.2	1.10	6140	1.90	1.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009516728-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—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 009516728-01

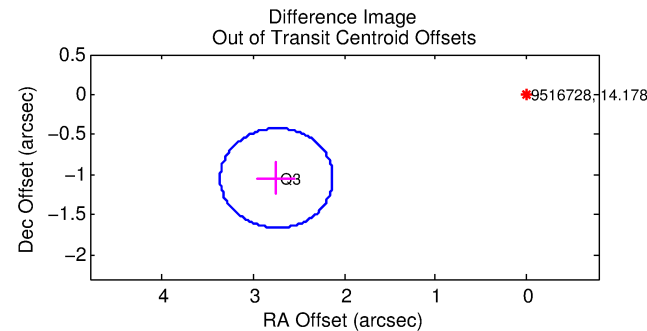
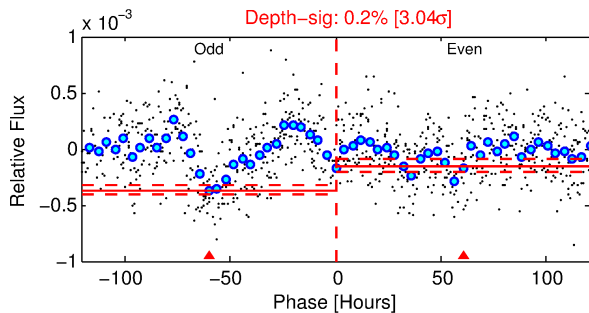
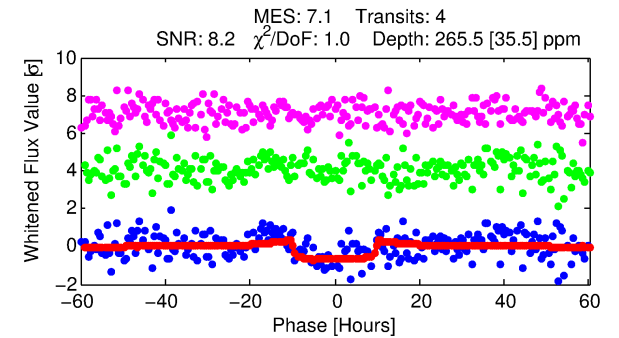
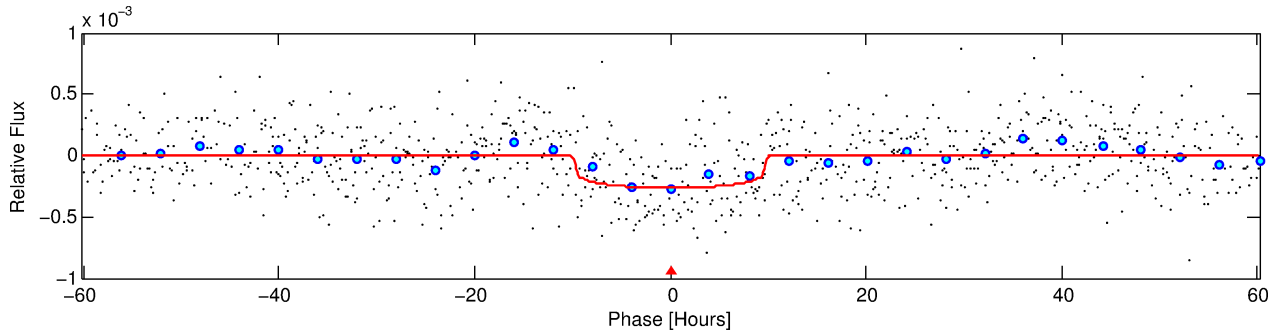
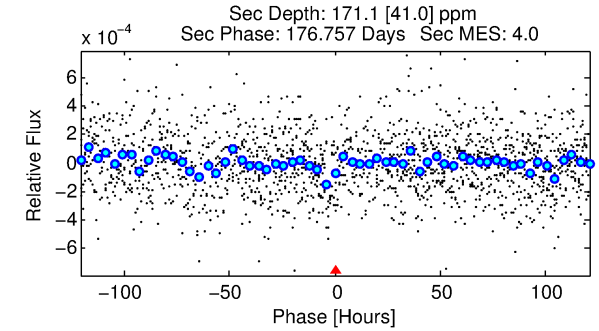
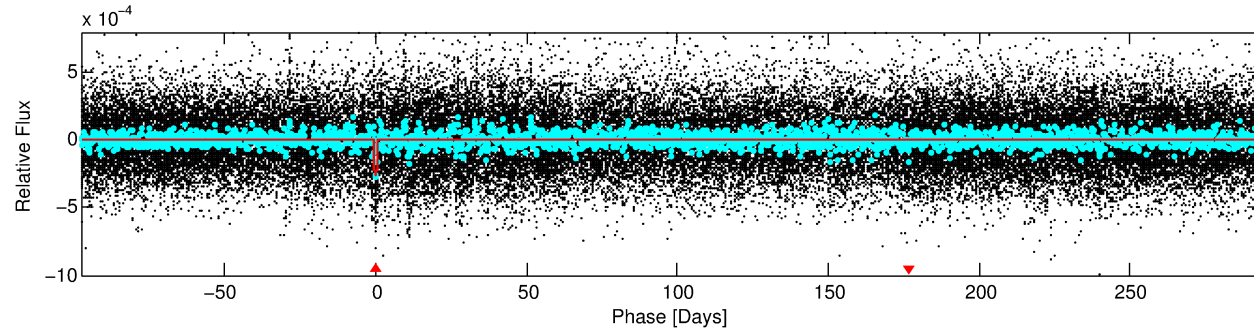
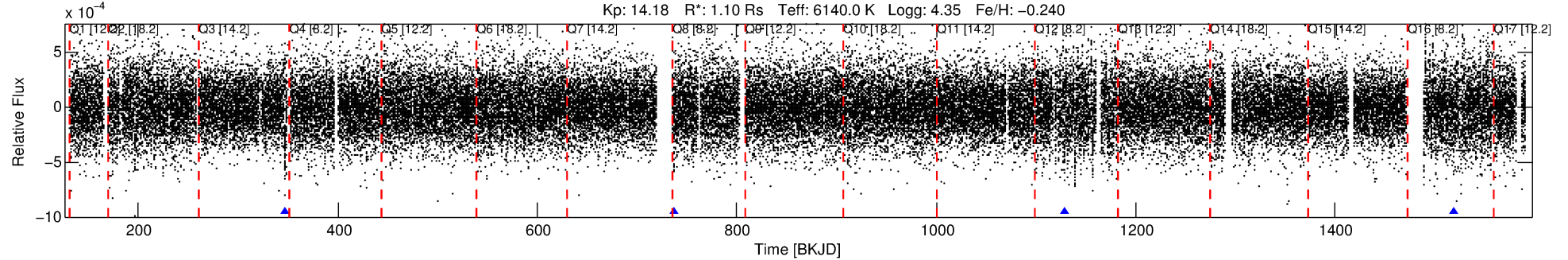
No Significant Match Found

DV One-Page Summary

KIC: 9516728 Candidate: 1 of 1 Period: 390.556 d

KOI: K04638 Corr: No Ephemeris Match

Kp: 14.18 R*: 1.10 Rs Teff: 6140.0 K Logg: 4.35 Fe/H: -0.240



DV Fit Results:

Period = 390.55614 [0.01231] d
Epoch = 347.2756 [0.0224] BKJD
Rp/R* = 0.0159 [0.0049]
a/R* = 110.76 [169.79]
b = 0.69 [1.16]
Seff = 1.41 [0.54]
Teq = 278 [26] K
Rp = 1.90 [0.82] Re
a = 1.0424 [0.2606] AU
Ag = 28207.11 [21228.12] [1.33σ]
Teffp = 5565 [939] K [5.63σ]

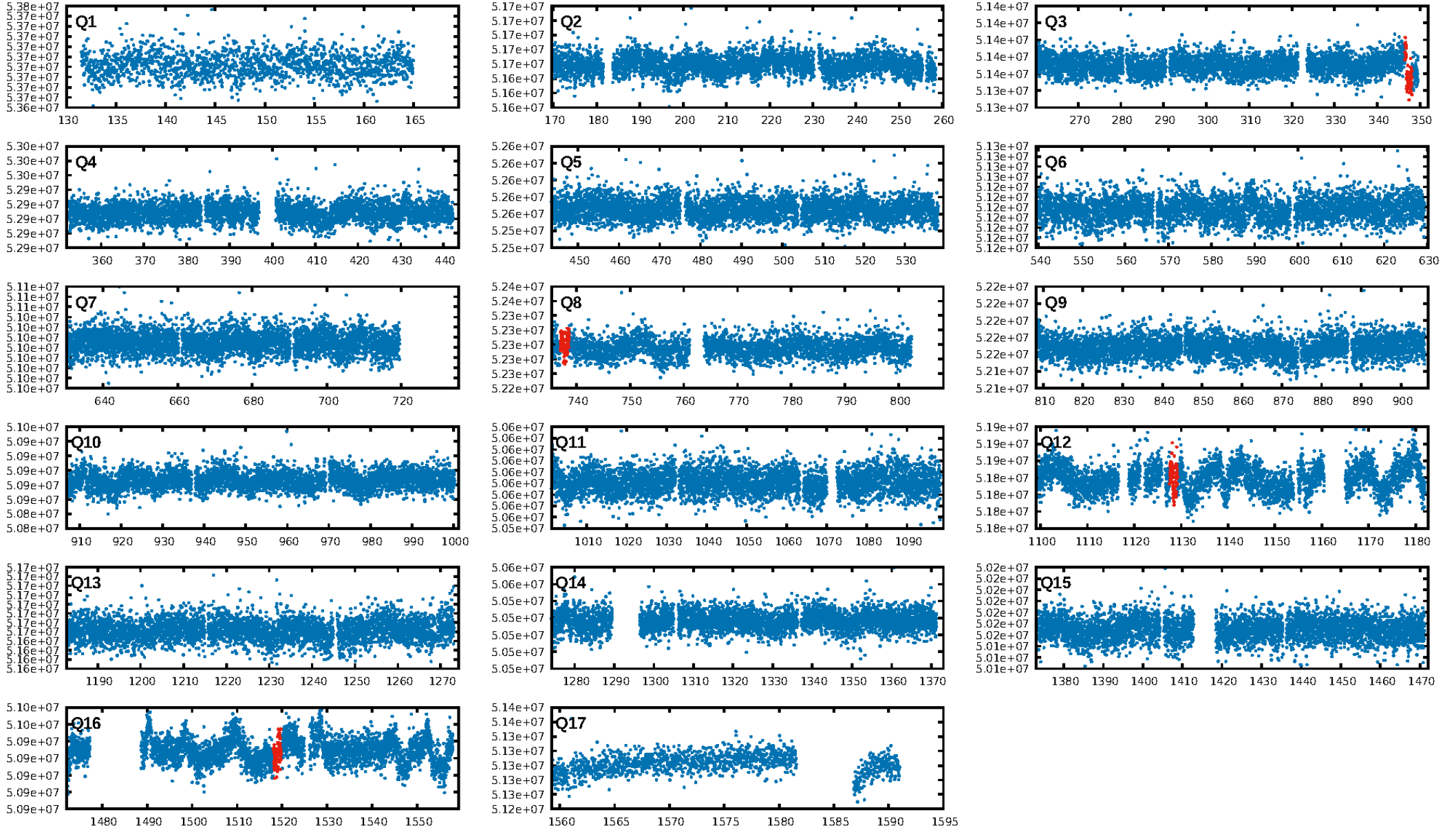
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 3.9%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 2.47e-11
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 4.221
Centroid-sig: 8.2%
Centroid-so: 0.743 arcsec [0.56σ]
OotOffset-rm: 2.935 arcsec [14.20σ]
KicOffset-rm: 2.859 arcsec [13.83σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

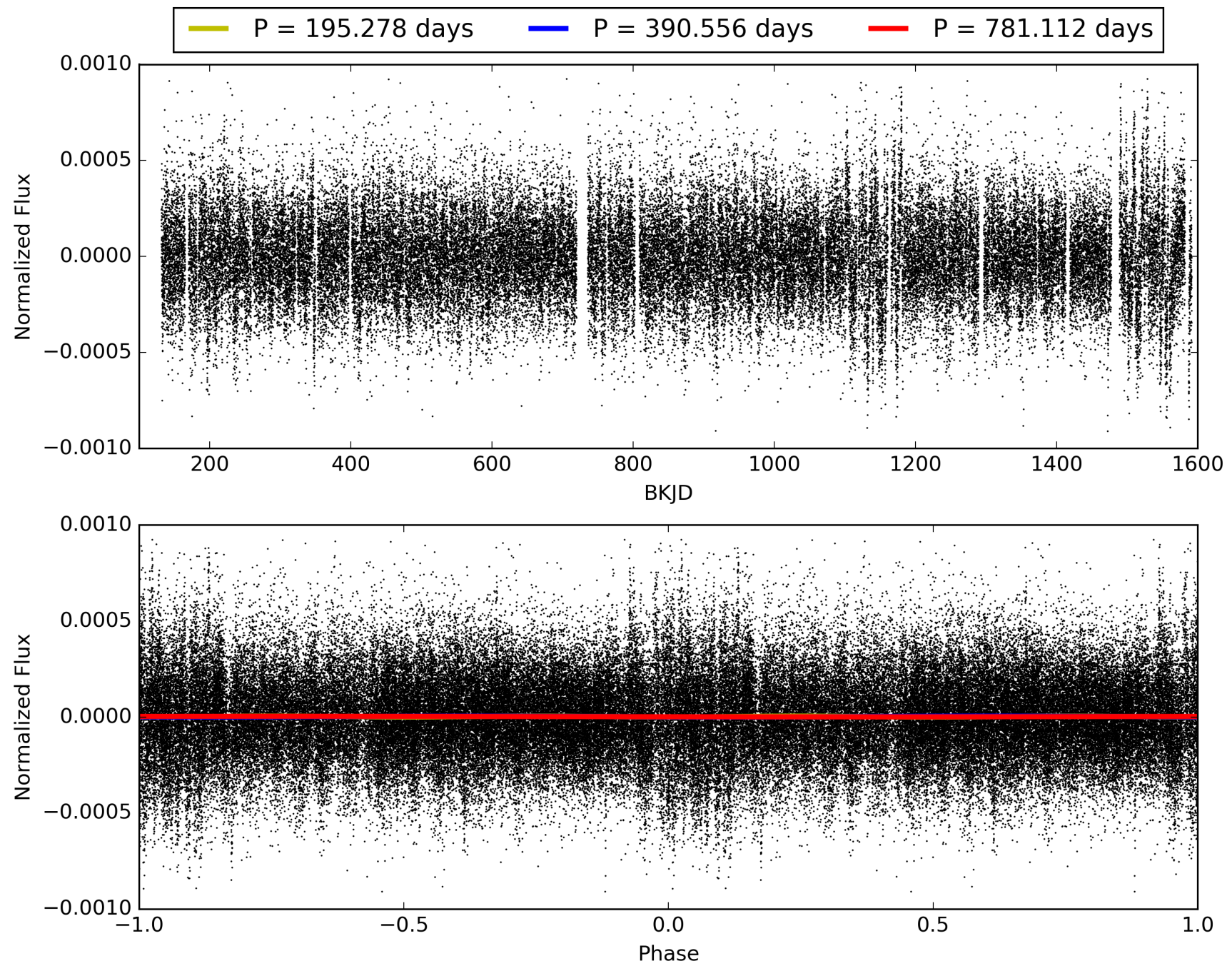
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:08:34 Z

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

TCE 009516728-01, PDC Light Curves

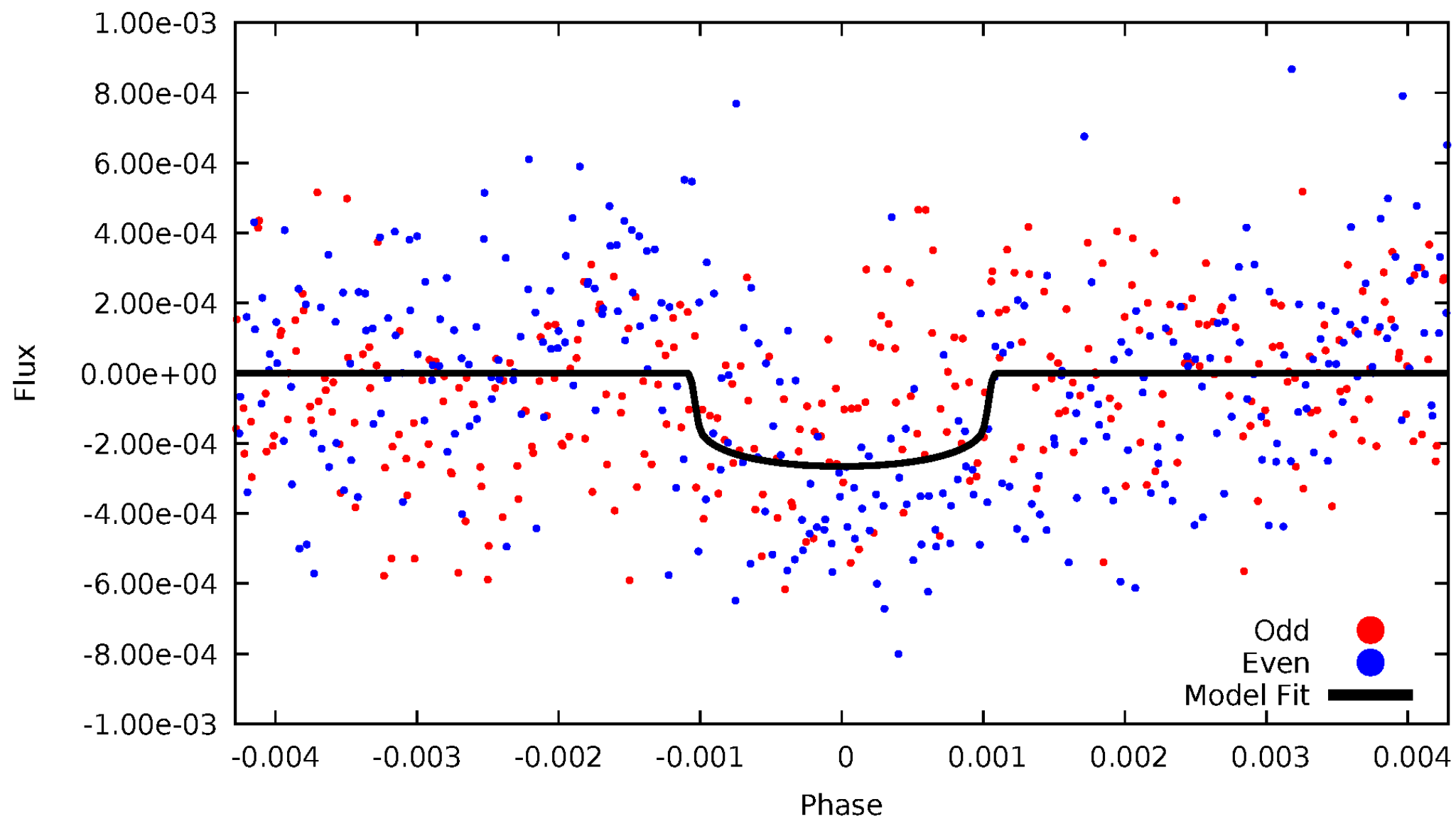


TCE 009516728-01



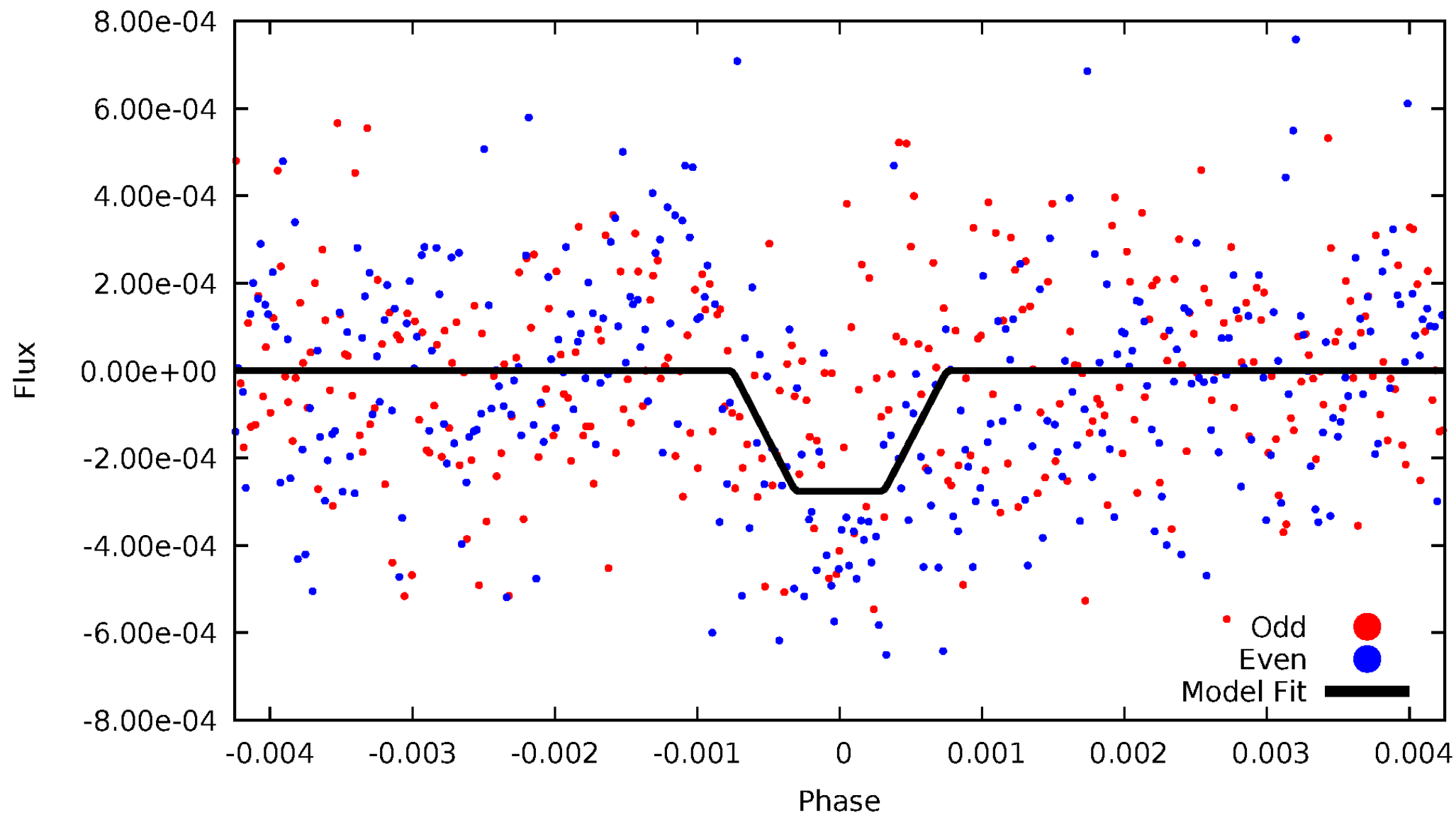
DV Odd/Even

TCE 009516728-01

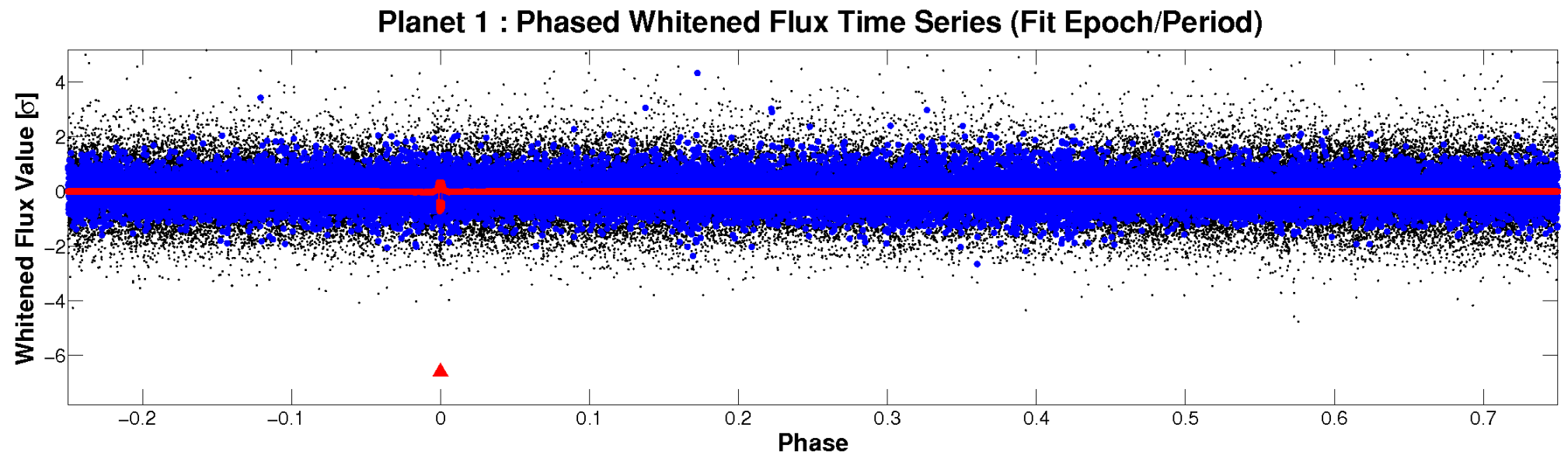
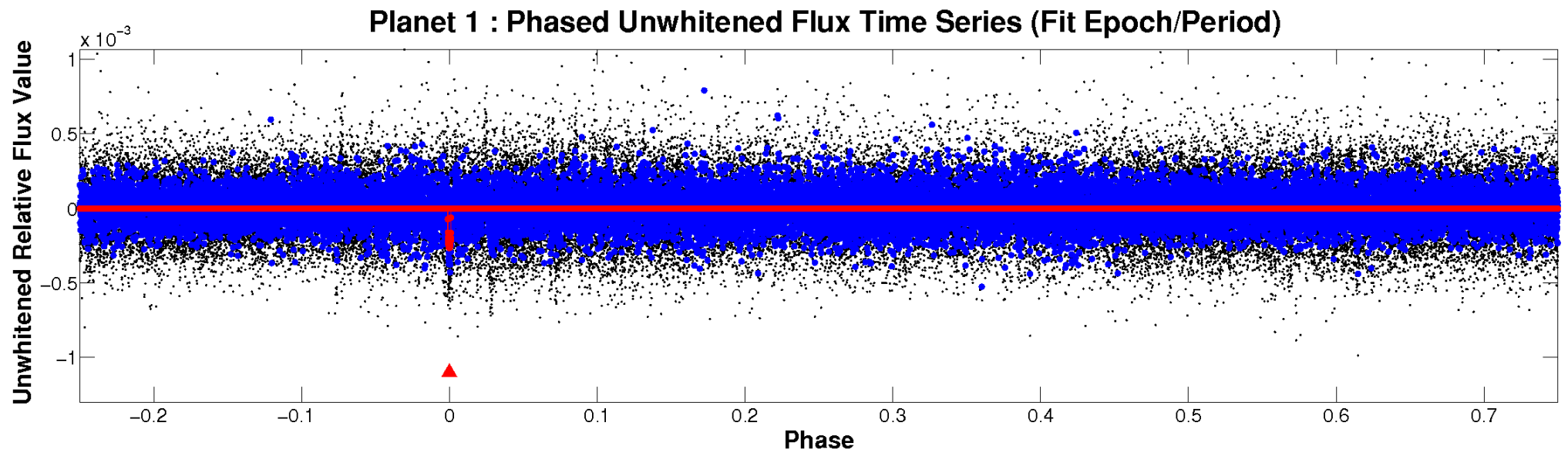


ALT Odd/Even

TCE 009516728-01



Non-Whitened Vs. Whitened Light Curve



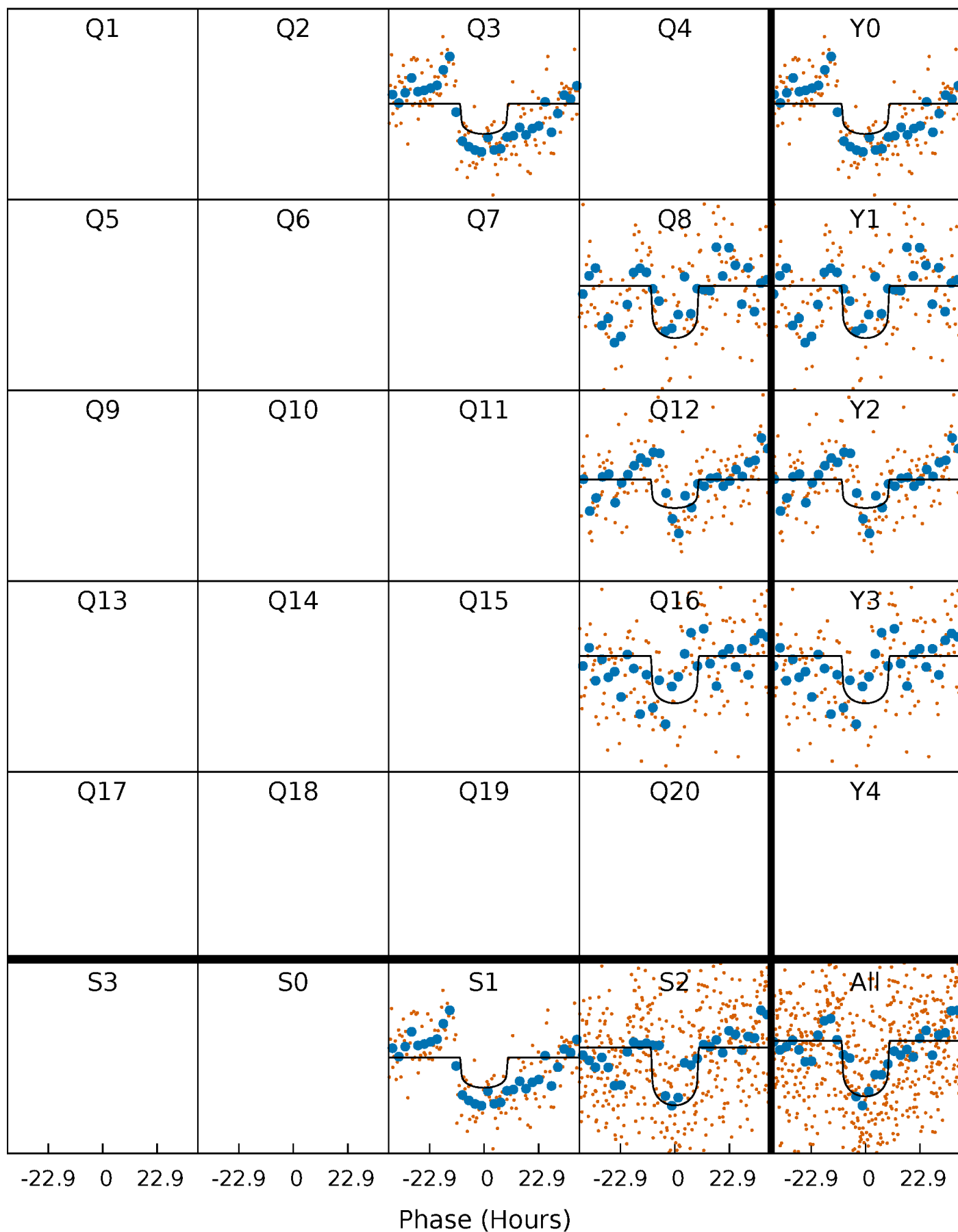
PDC Quarter-Phased Transit Curves

TCE 009516728-01 P=390.556136 Days $T_0=347.275619$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 009516728-01 P=390.556136 Days $T_0=347.275619$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

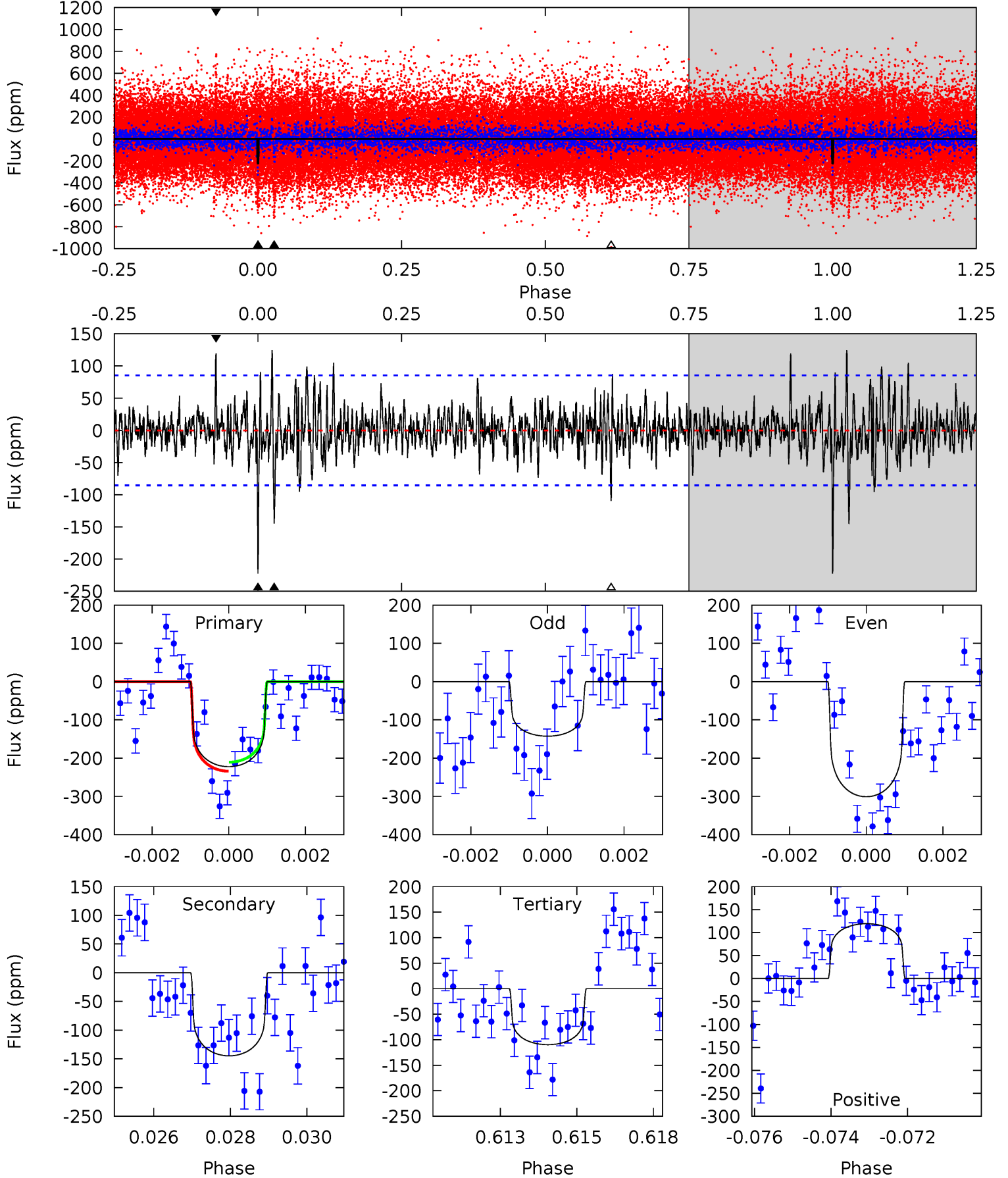
TCE 009516728-01 $P=390.614744$ Days $T_0=347.148245$ (BKJD)



DV Model-Shift Uniqueness Test

009516728-01, P = 390.556136 Days, E = 347.275619 Days

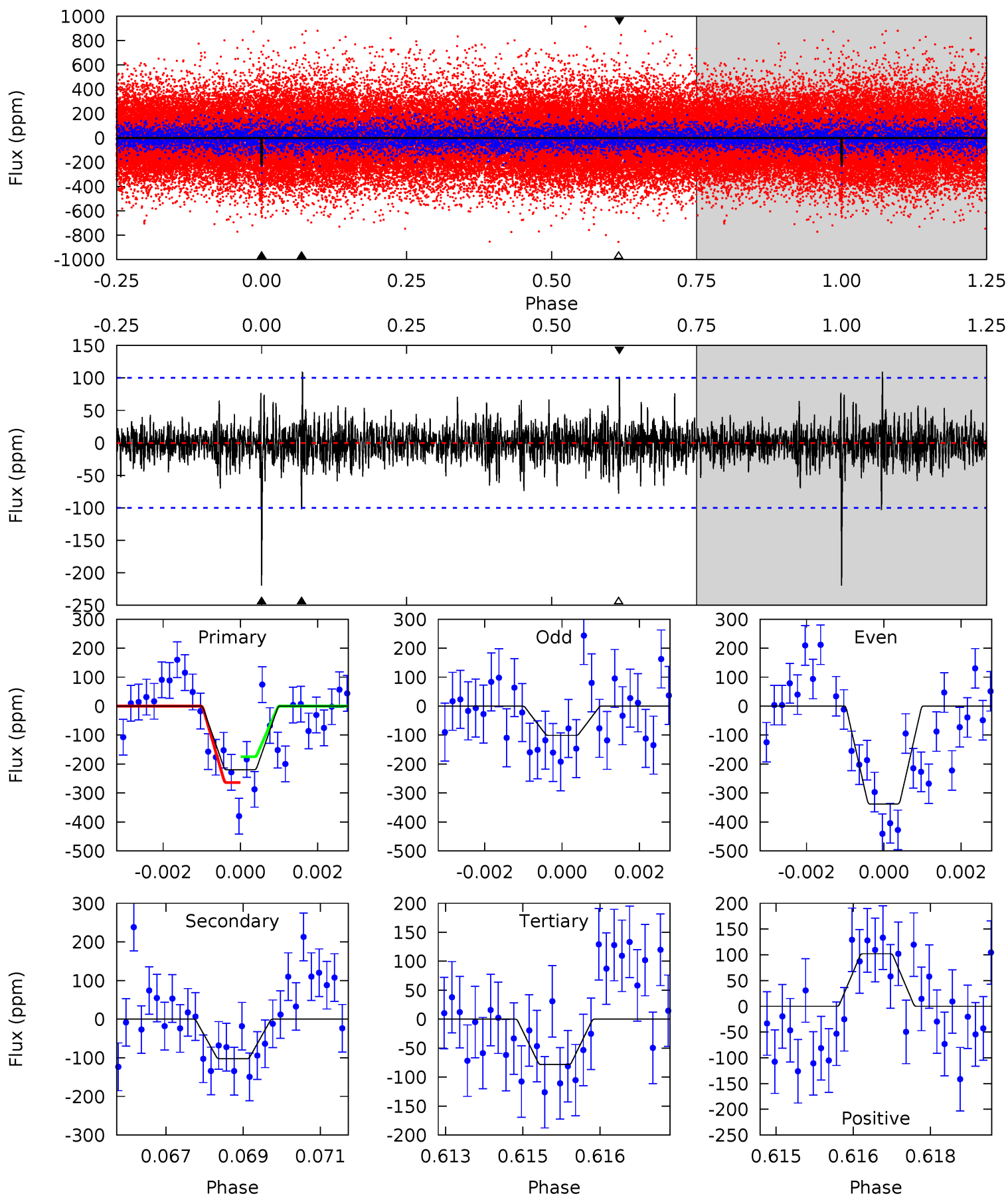
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	9.00	6.82	7.42	5.31	3.07	1.65	7.00	6.40	2.18	1.58	4.92	1.33	0.36	0.73



Alt Model-Shift Uniqueness Test

009516728-01, P = 390.614744 Days, E = 347.148245 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	5.49	4.20	5.47	5.37	3.17	1.12	7.59	6.31	1.29	0.02	6.37	0.85	0.33	2.38



Stellar Parameters For KIC 009516728

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6140^{+164}_{-200}	$4.354^{+0.128}_{-0.192}$	$-0.240^{+0.250}_{-0.300}$	$1.096^{+0.332}_{-0.179}$	$0.989^{+0.152}_{-0.111}$	$1.059^{+0.645}_{-0.544}$
	+3%/-3%	+3%/-4%	+104%/-125%	+30%/-16%	+15%/-11%	+61%/-51%
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 009516728-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-145 ± 16	$1.93^{+0.64}_{-0.60}$	390^{+32}_{-23}	5382^{+990}_{-565}	22808^{+25052}_{-9677}
Alt.	-102 ± 19	$2.01^{+0.71}_{-0.64}$	389^{+30}_{-23}	4916^{+833}_{-577}	15109^{+18366}_{-7274}

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 $A_{obs} \gg 1.0$

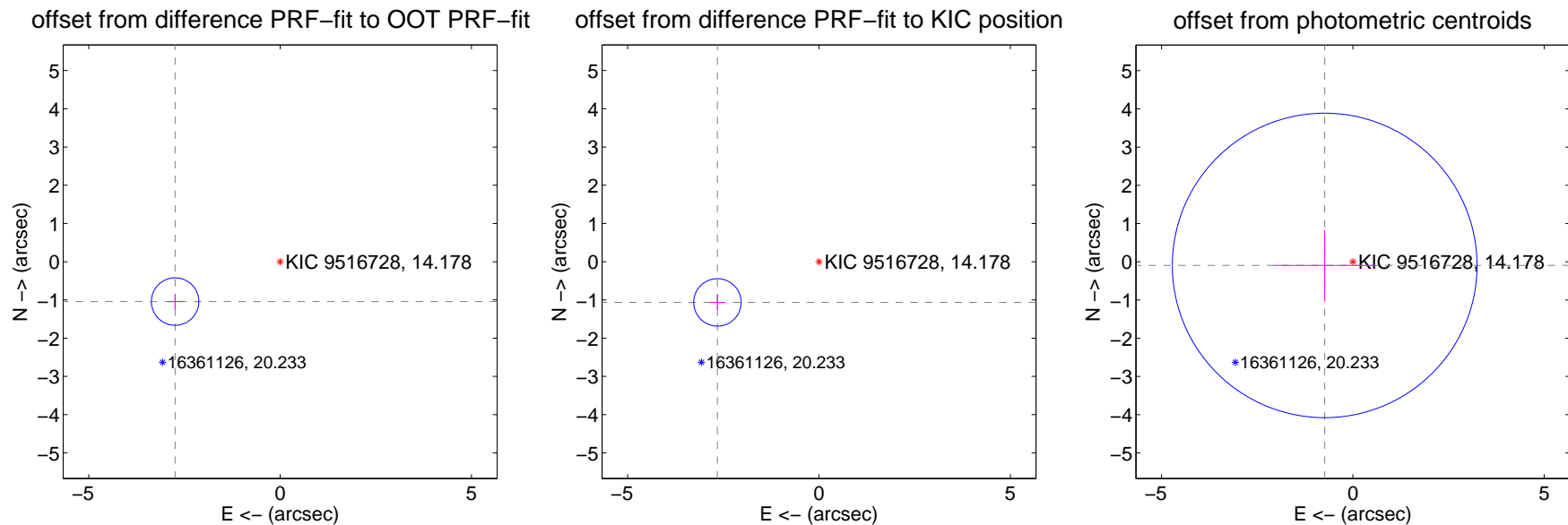
DV Centroid Data

Supplemental centroid analysis for 009516728-01. Kepler magnitude: 14.18. Transit SNR 8.23

There are 1 quarters with good PRF difference image offsets

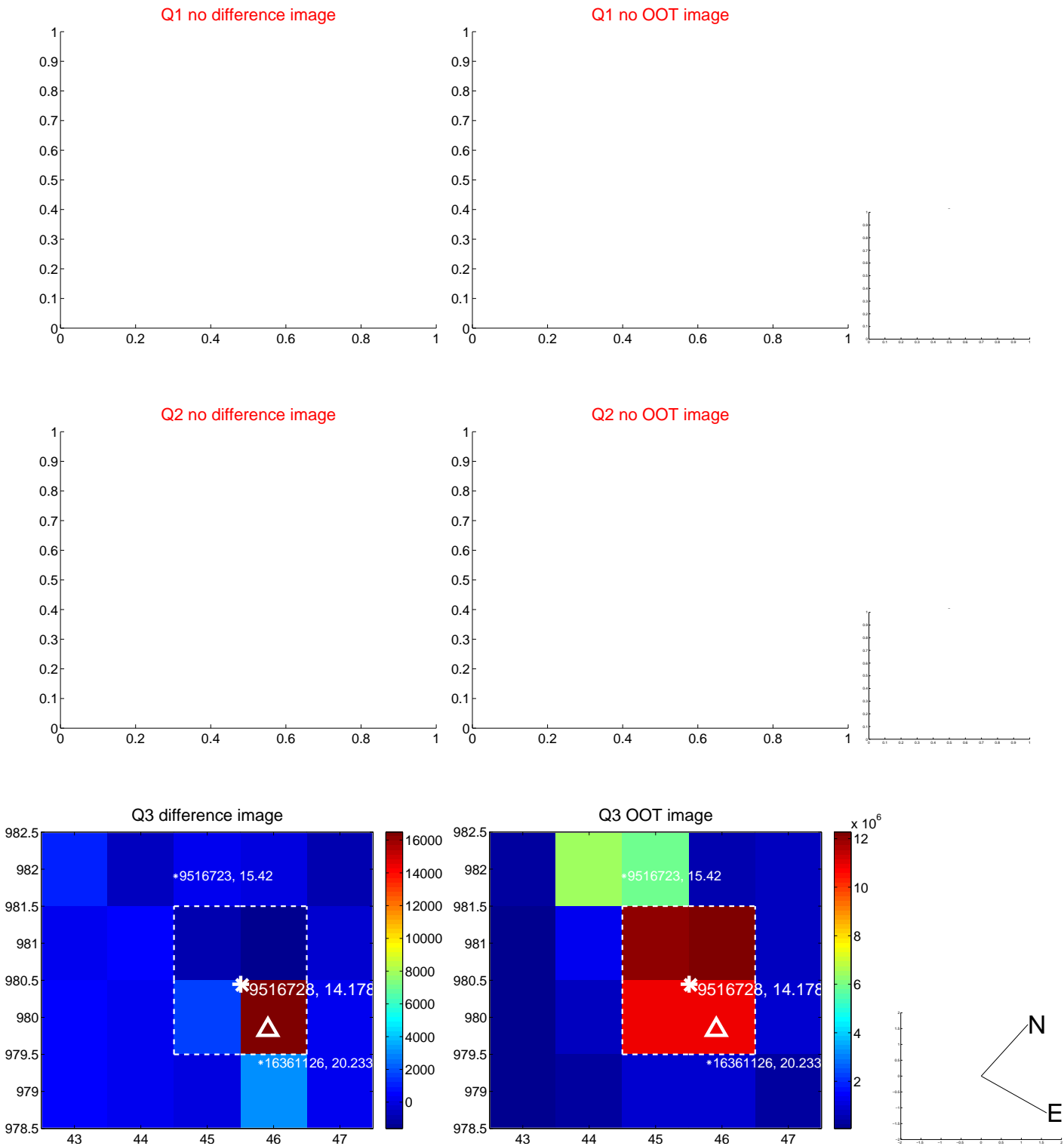
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.935 \pm 0.207	14.20	2.744 \pm 0.207	-1.042 \pm 0.205
PRF-fit source offset from KIC position	2.859 \pm 0.207	13.83	2.654 \pm 0.207	-1.064 \pm 0.205
photometric centroid source offset	0.74 \pm 1.33	0.56	0.74 \pm 1.33	-0.10 \pm 0.93

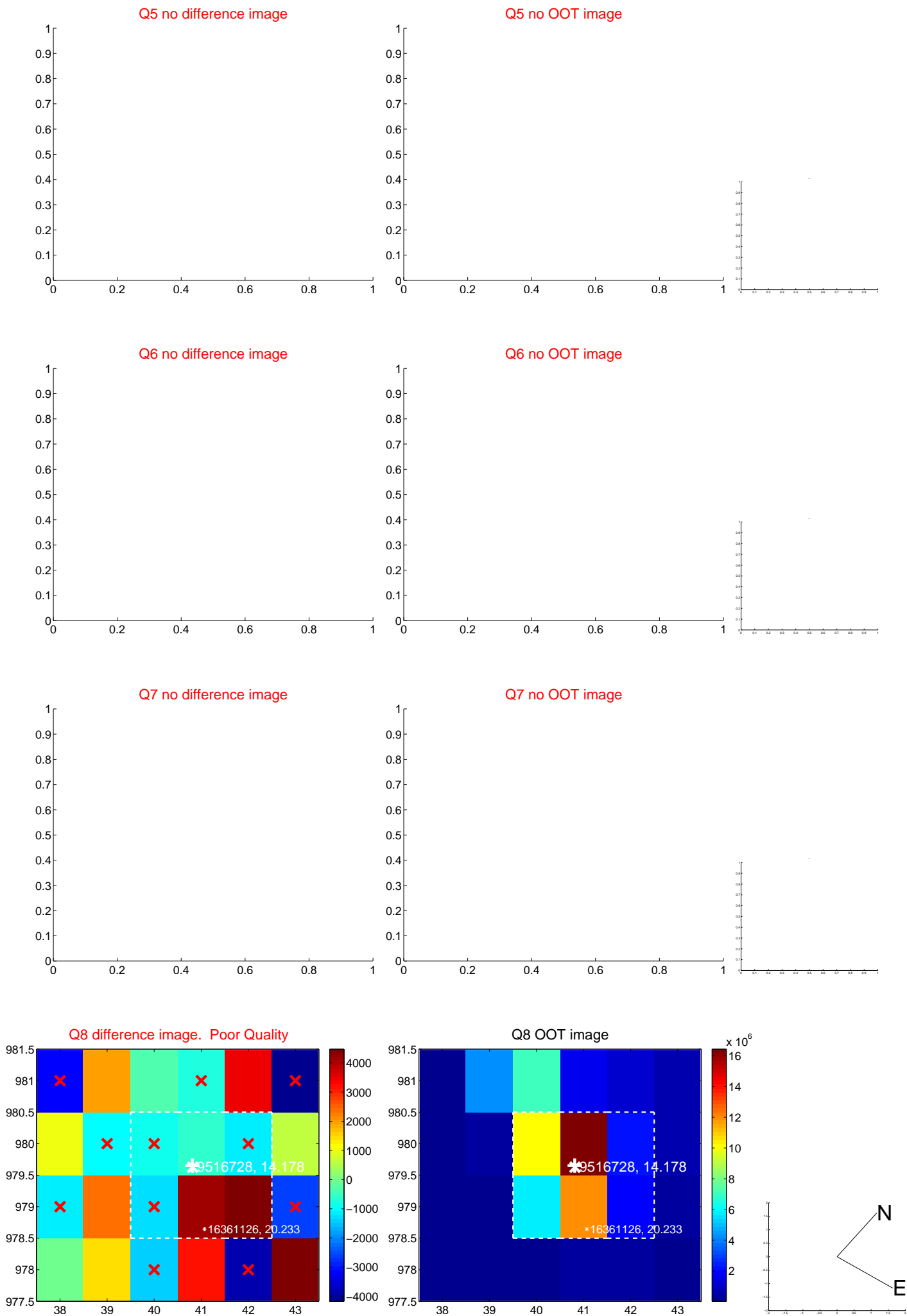


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



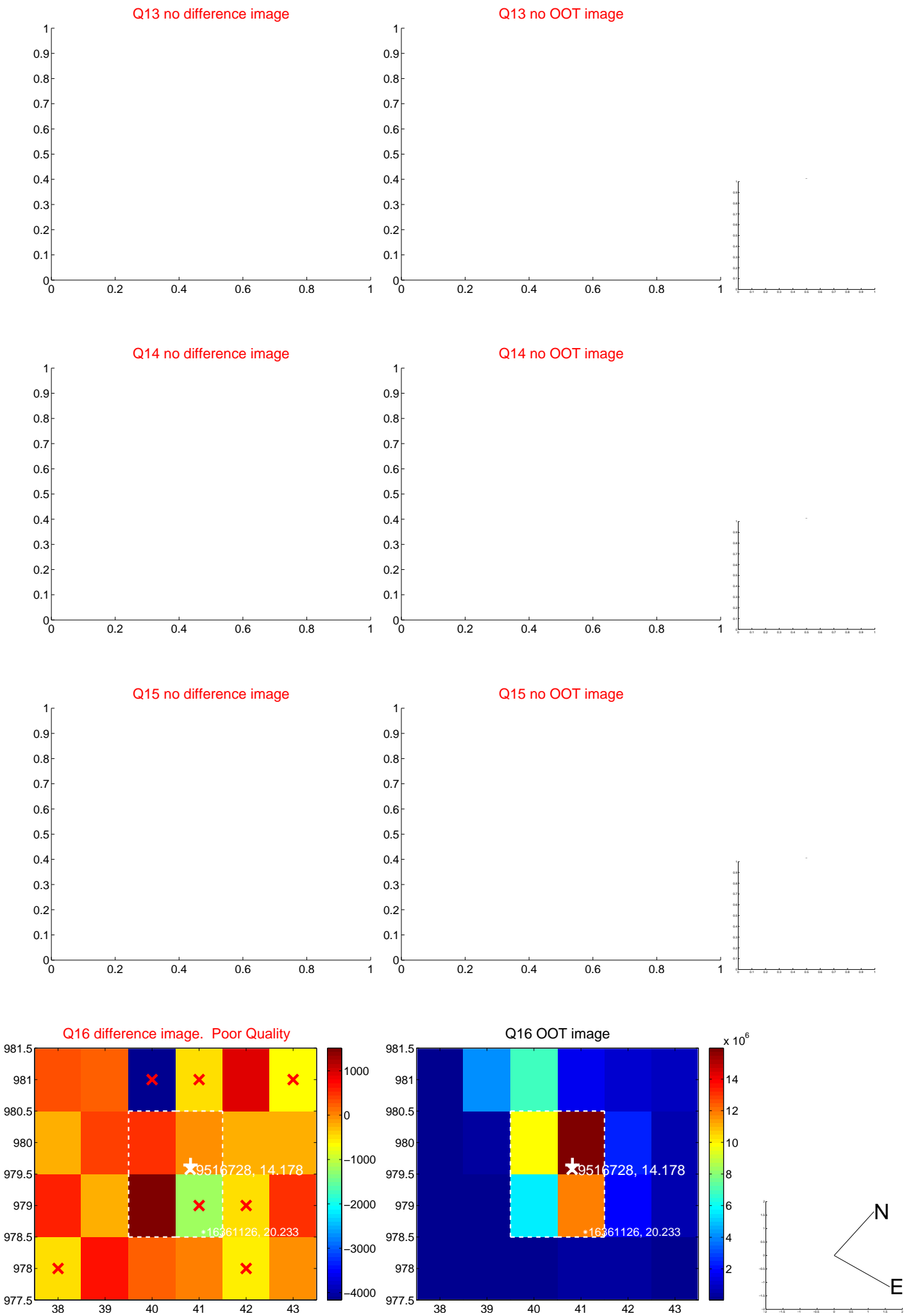
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



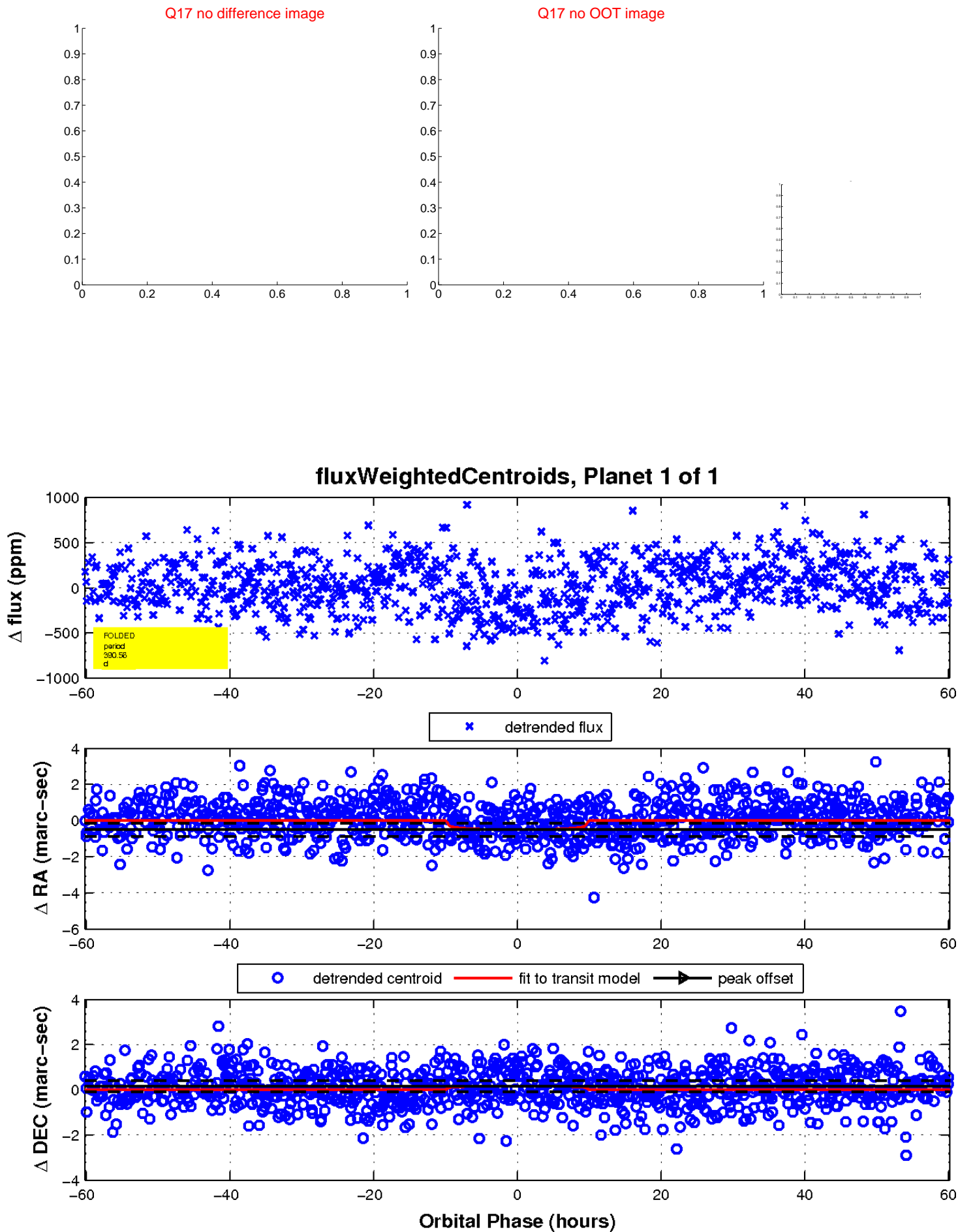
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: 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.



UKIRT Image

Declination

