

KIC 007903109

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})
007903109-01	OBS	No	427.419161	484.910510	1141.0	16.314	12.2	11.8	0.82	5255	2.83	0.43

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007903109-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—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.

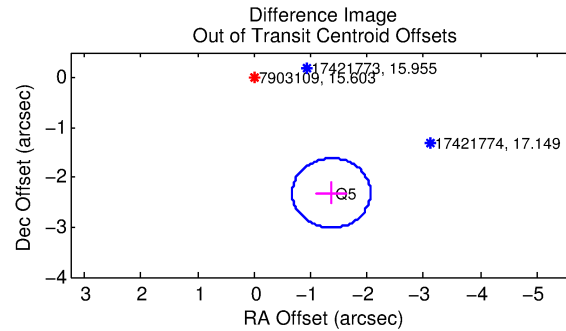
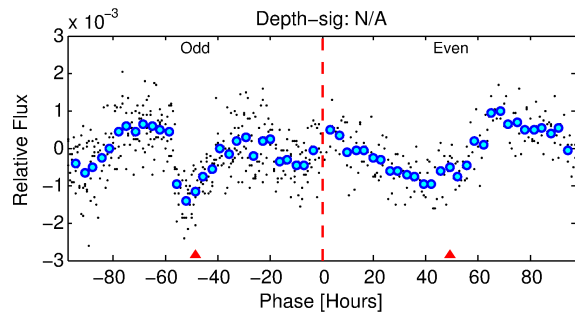
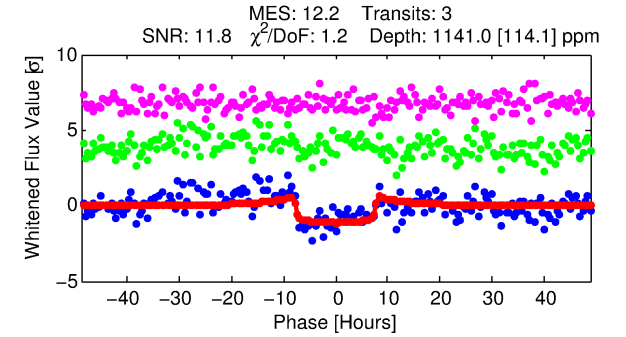
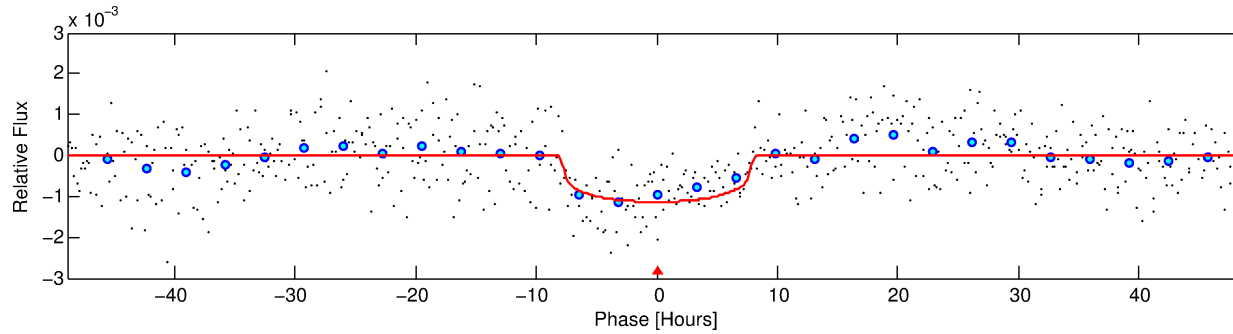
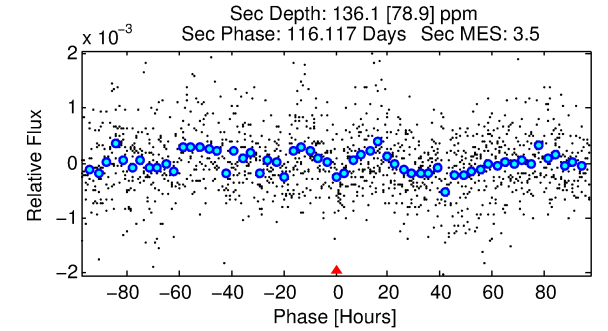
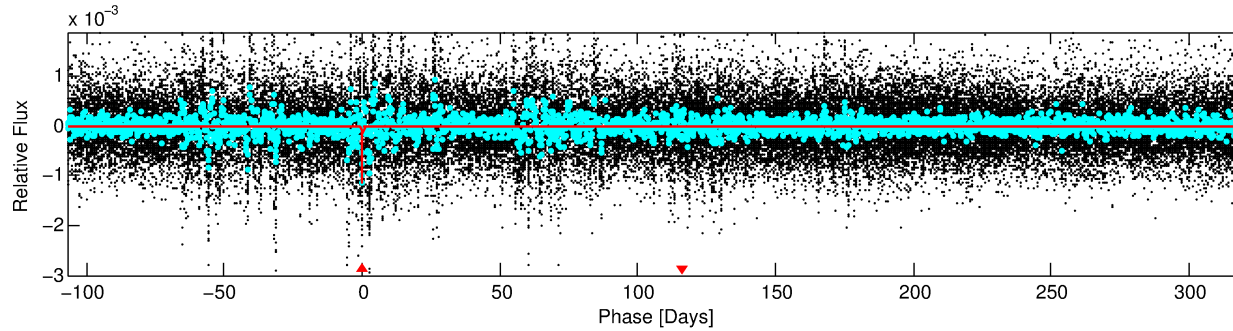
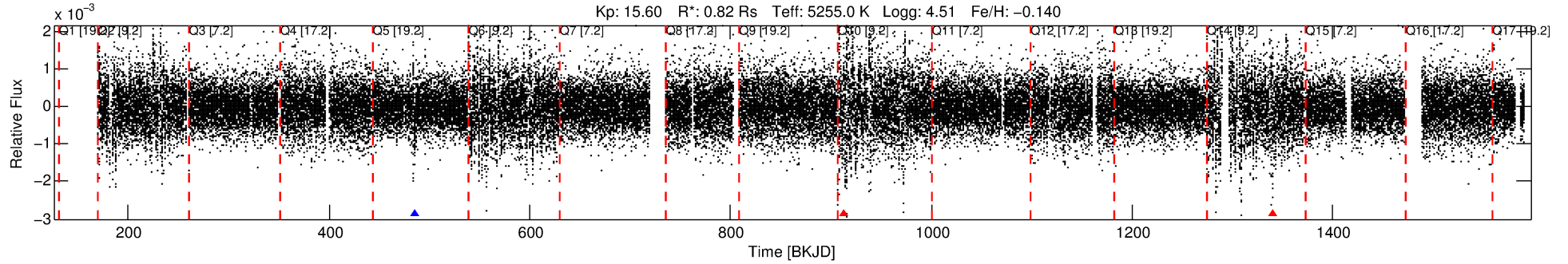
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007903109-01

No Significant Match Found

DV One-Page Summary

KIC: 7903109 Candidate: 1 of 1 Period: 427.419 d



DV Fit Results:

Period = 427.41916 [0.01178] d
Epoch = 484.9105 [0.0135] BKJD
Rp/R* = 0.0317 [0.0104]
a/R* = 173.81 [210.95]
b = 0.56 [1.52]
Seff = 0.44 [0.12]
Teq = 207 [14] K
Rp = 2.83 [1.03] Re
a = 1.0235 [0.1394] AU
Ag = 9806.87 [8816.69] [1.11σ]
Teff = 3187 [712] K [4.18σ]

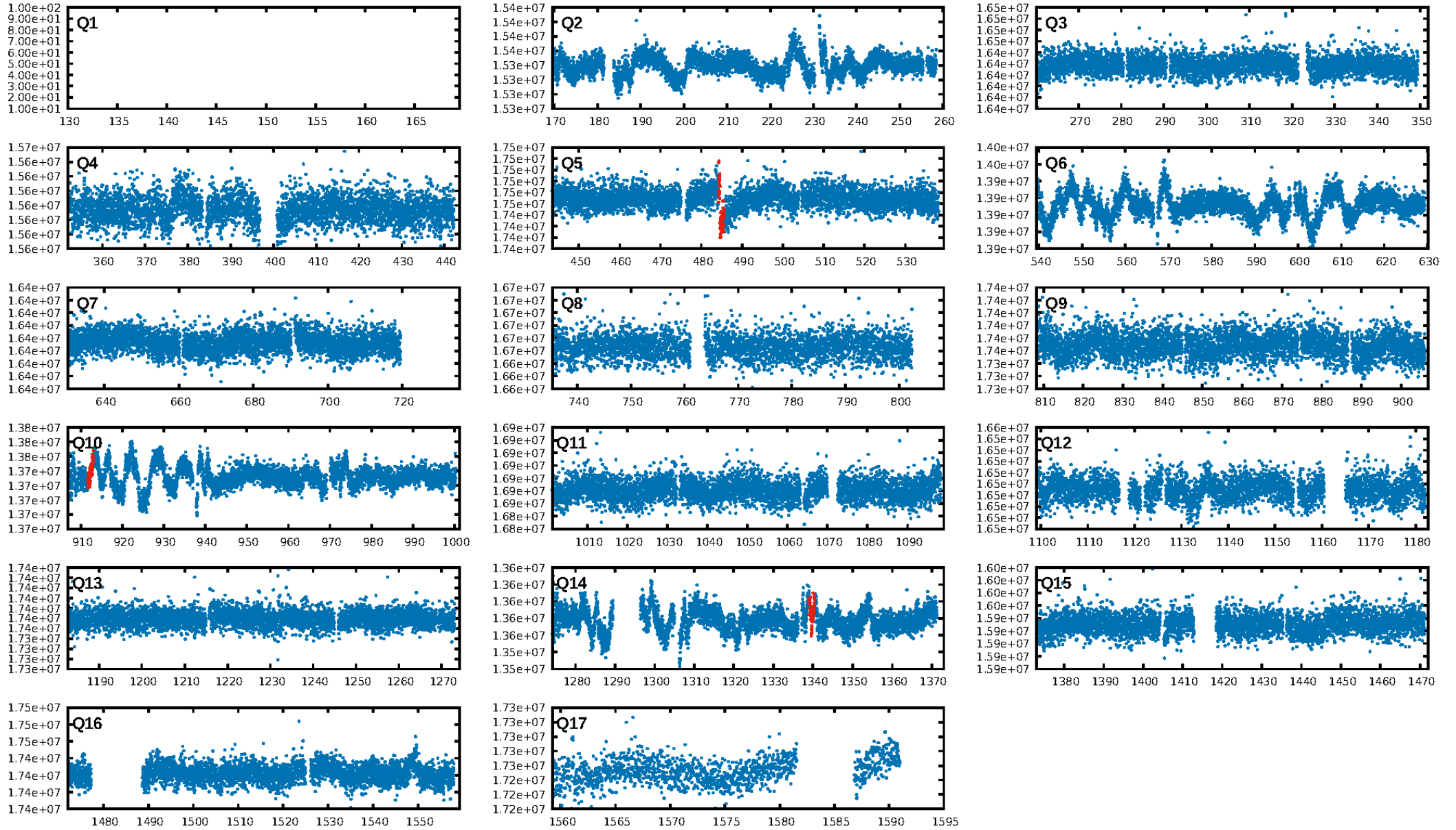
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.4%
ModelChiSquareGoF-sig: 98.7%
Bootstrap-pfa: 2.23e-14
RollingBand-fgt: 0.33 [1/3]
GhostDiagnostic-chr: 116.7
Centroid-sig: 97.8%
Centroid-so: 1.061 arcsec [1.02σ]
OotOffset-rm: 2.691 arcsec [11.64σ]
KicOffset-rm: 3.552 arcsec [14.56σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

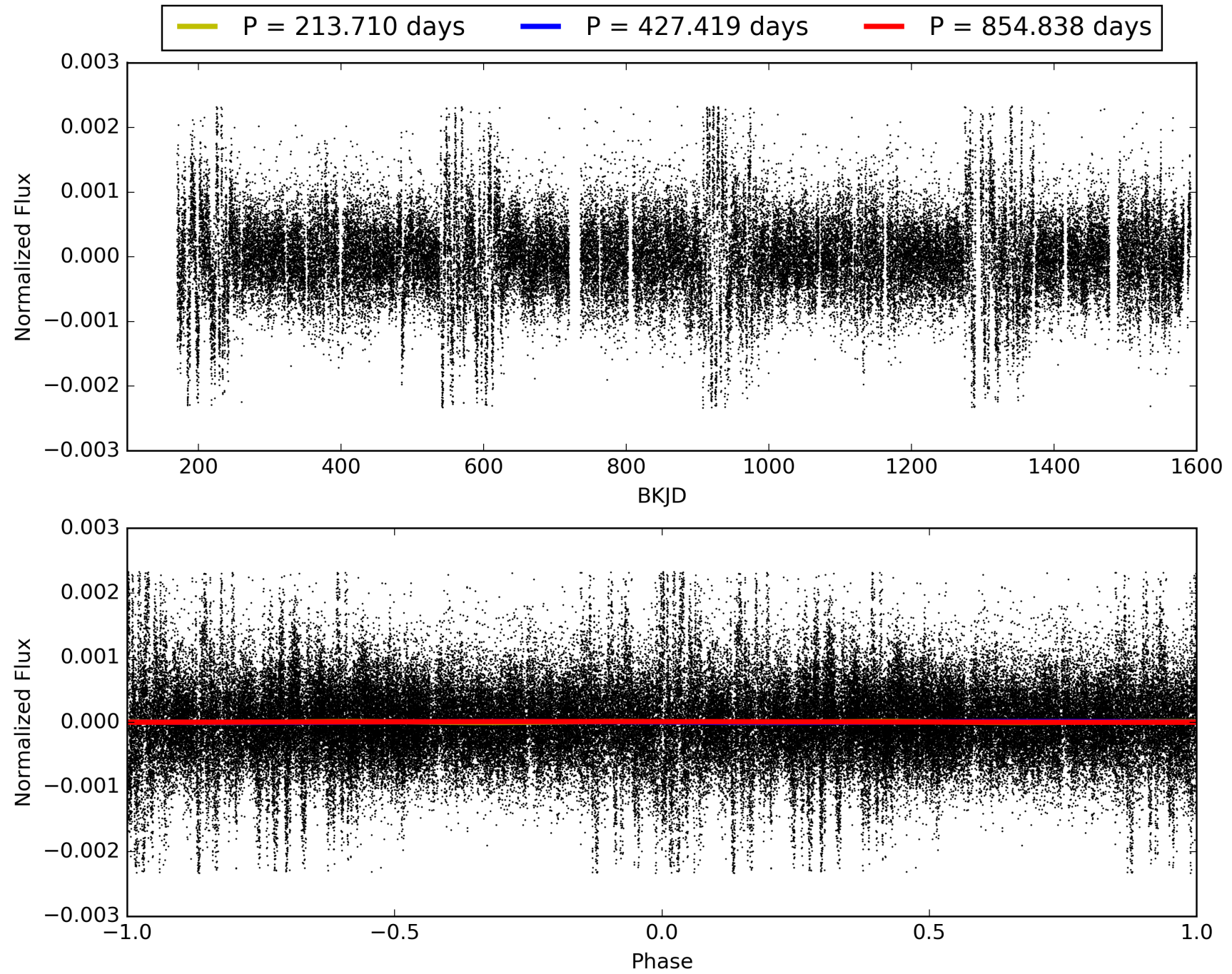
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:42:23 Z

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

TCE 007903109-01, PDC Light Curves

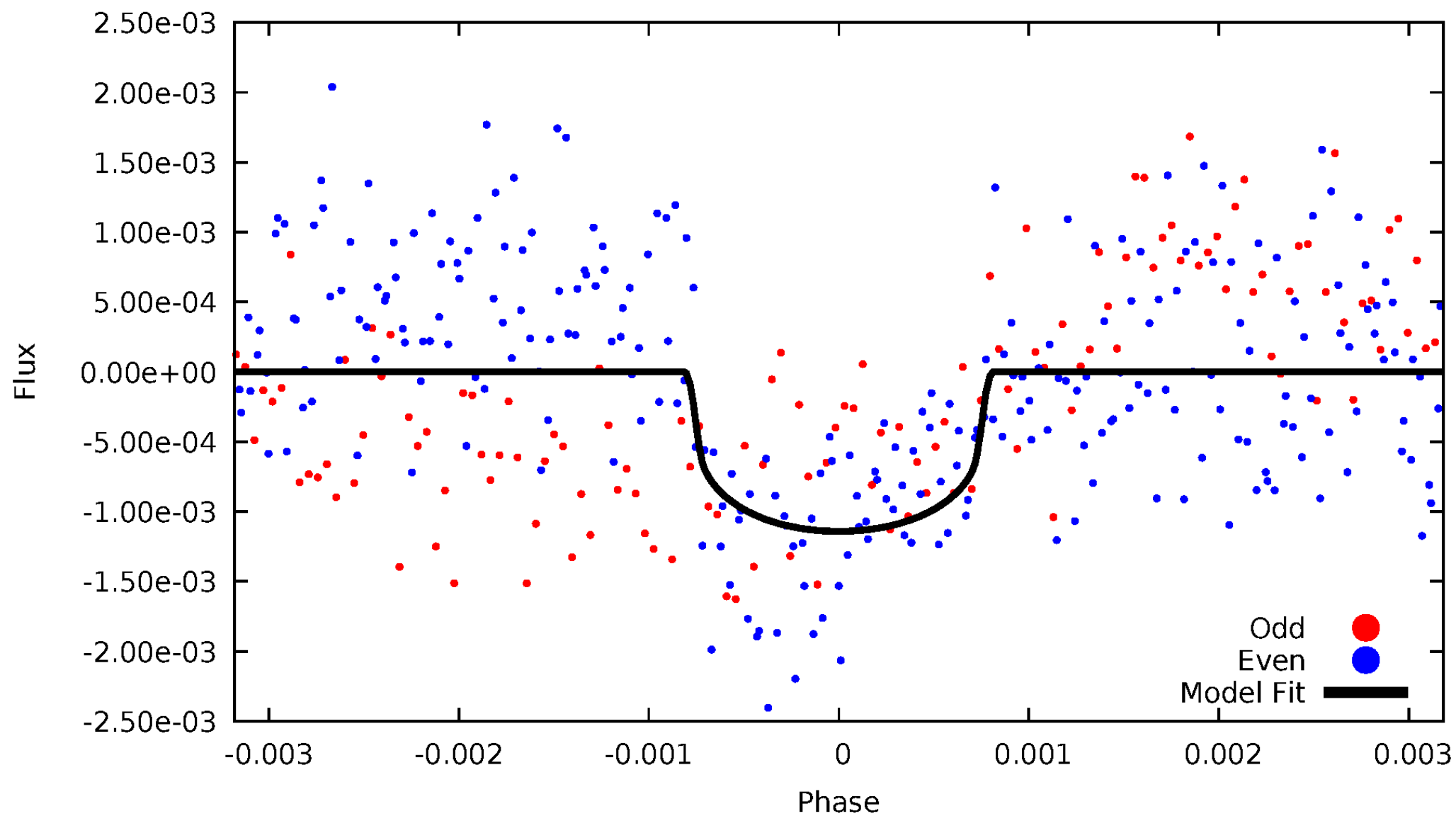


TCE 007903109-01



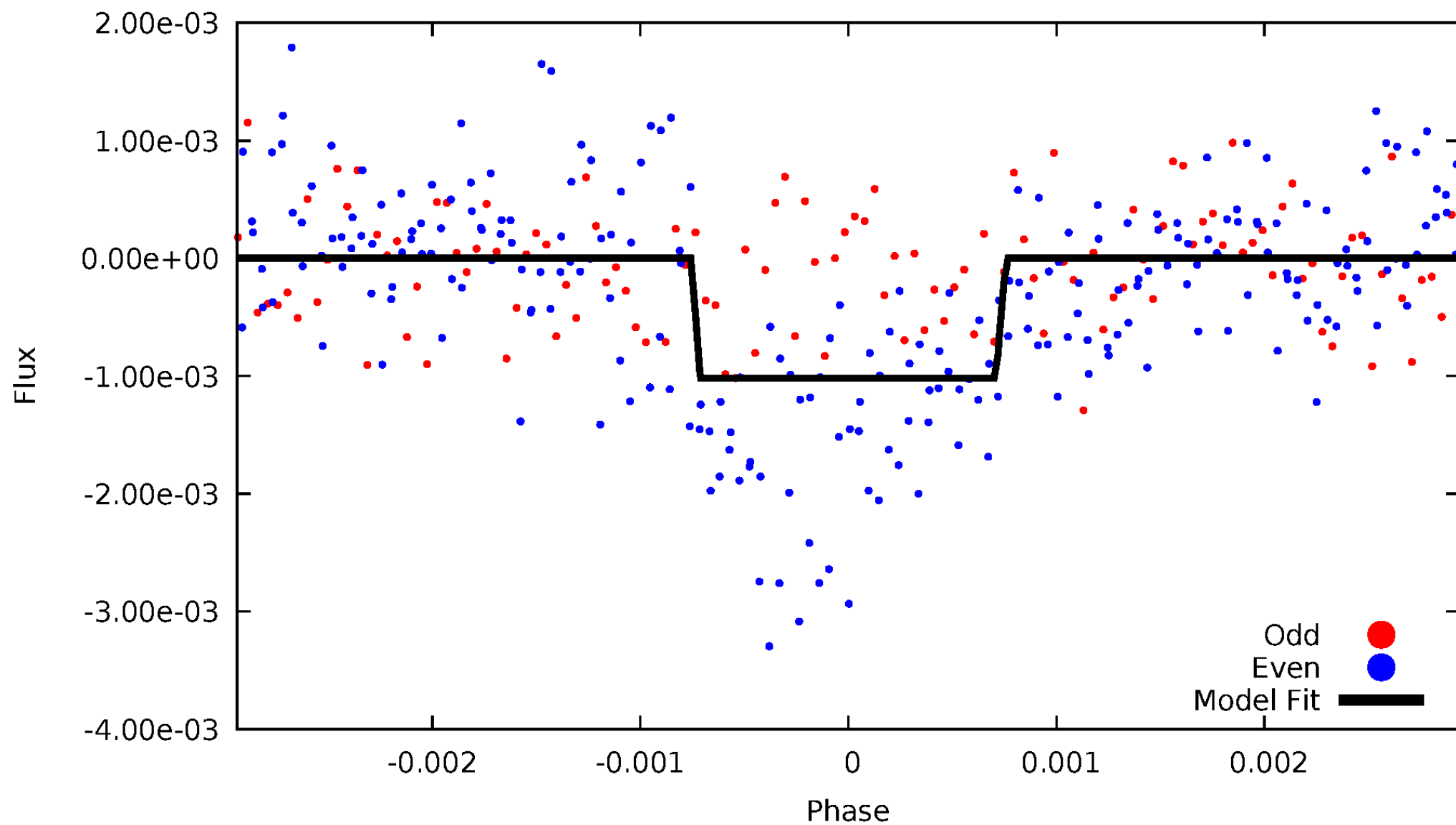
DV Odd/Even

TCE 007903109-01

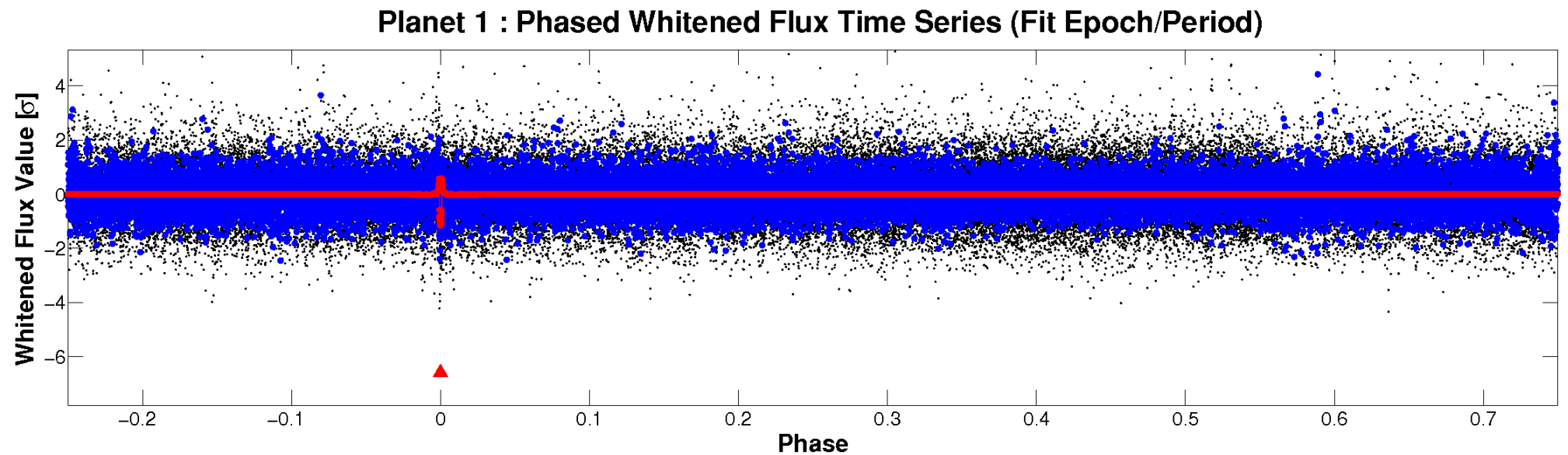
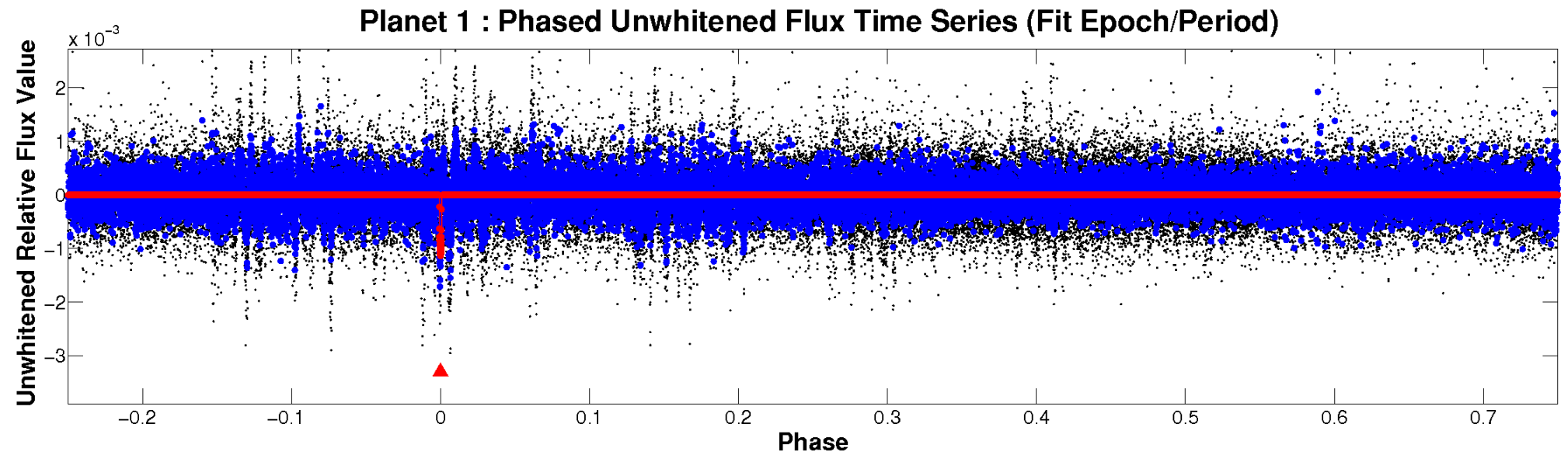


ALT Odd/Even

TCE 007903109-01

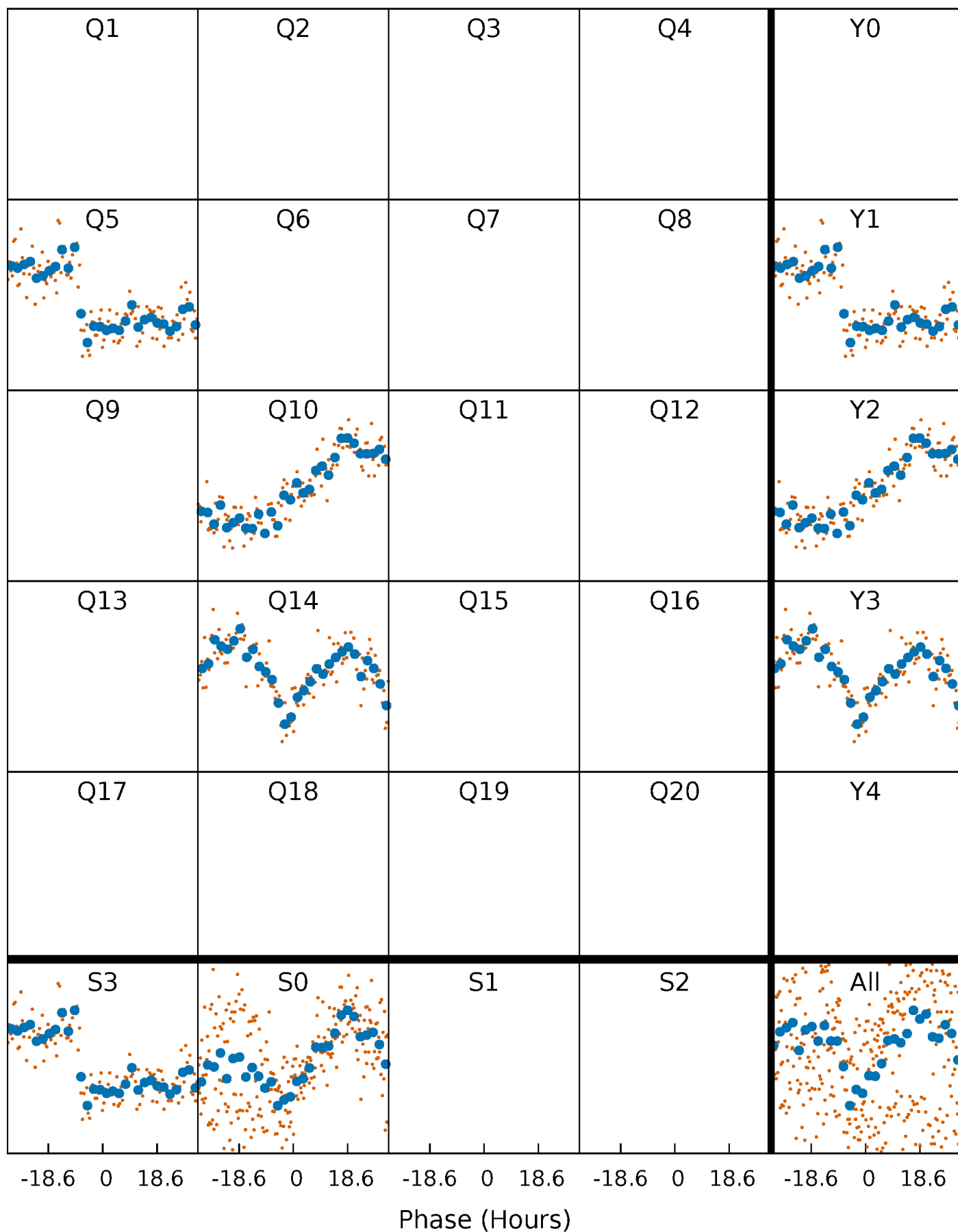


Non-Whitened Vs. Whitened Light Curve



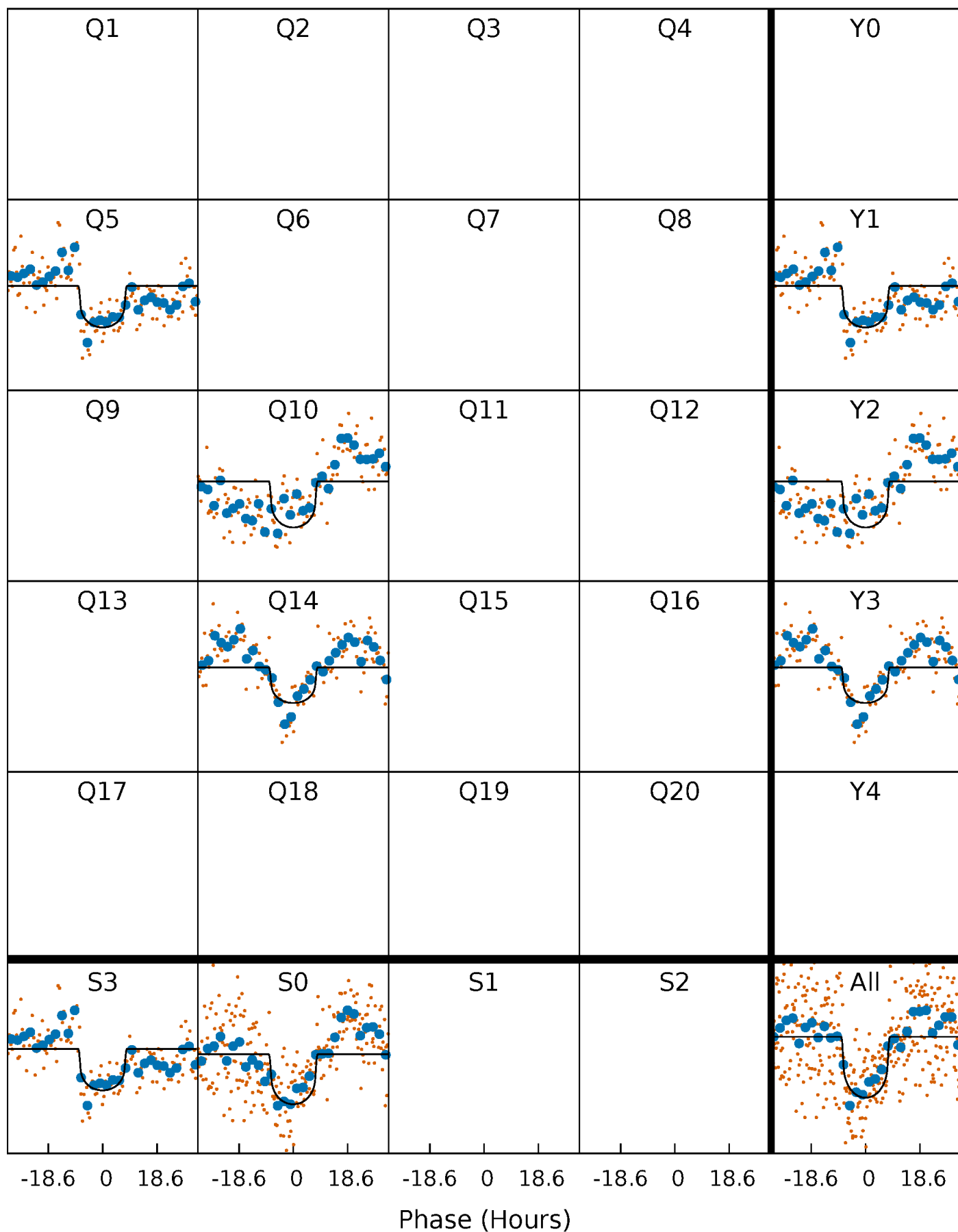
PDC Quarter-Phased Transit Curves

TCE 007903109-01 P=427.419161 Days $T_0=484.910510$ (BKJD)



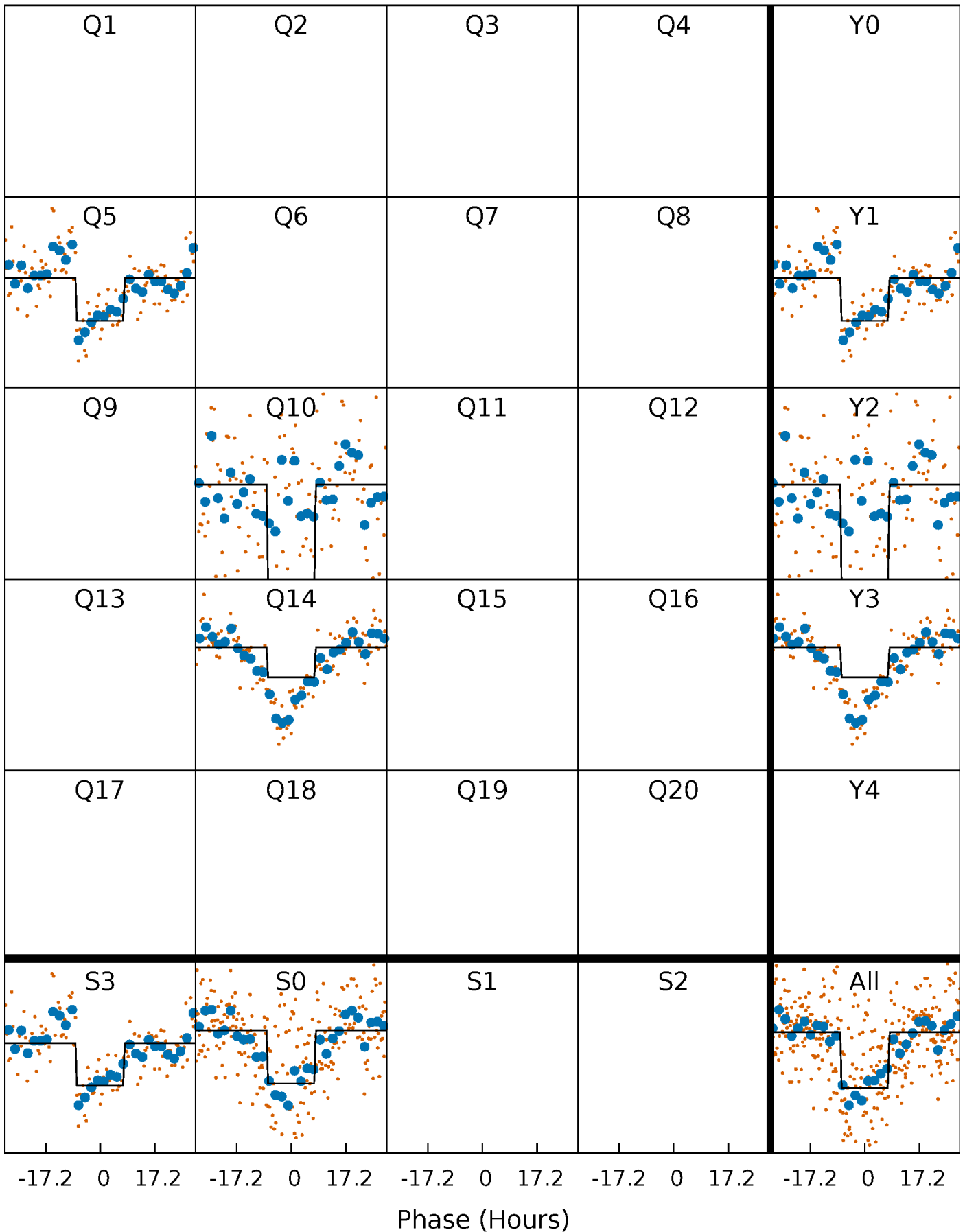
DV Quarter-Phased Transit Curves

TCE 007903109-01 P=427.419161 Days $T_0=484.910510$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

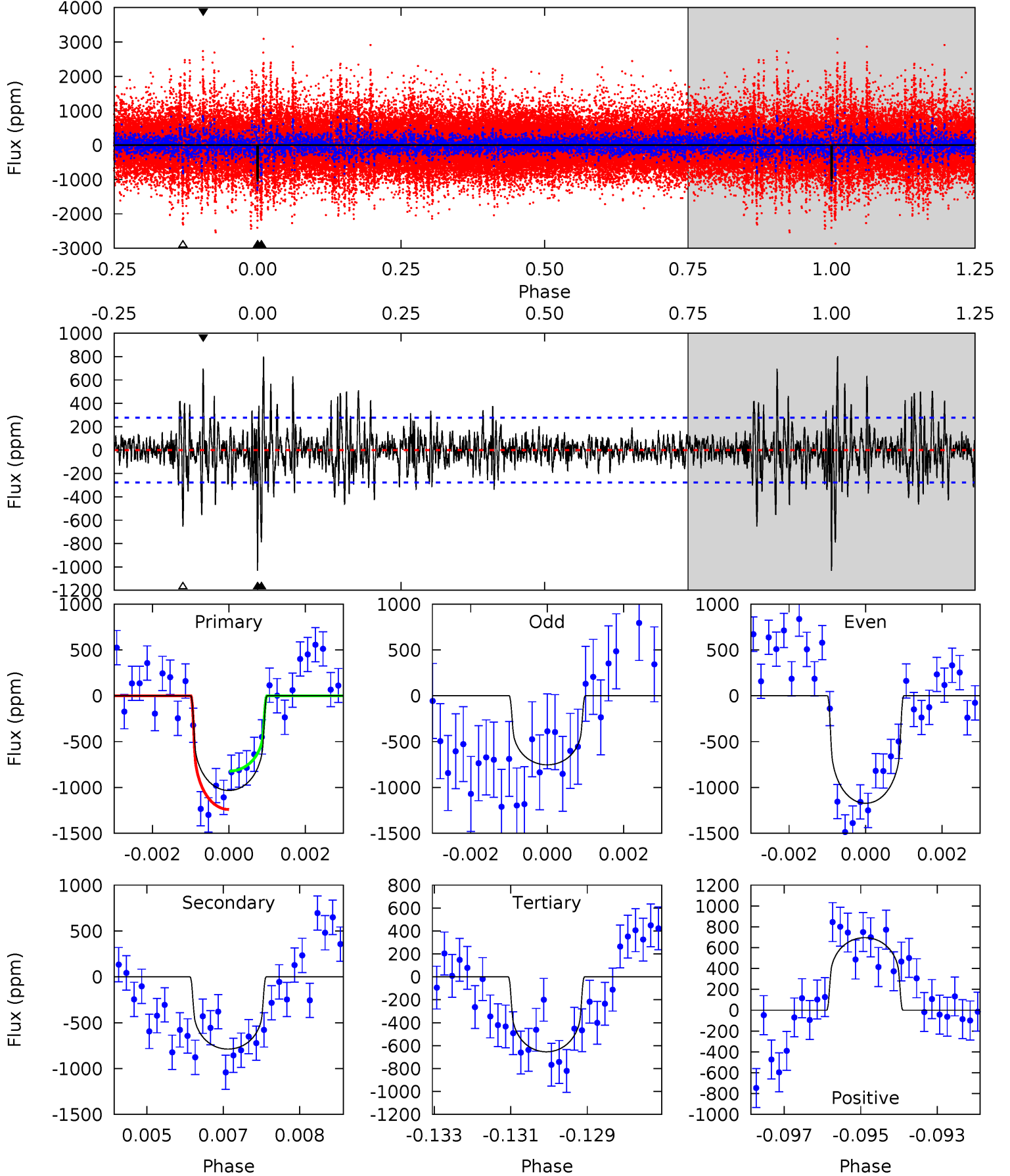
TCE 007903109-01 P=427.422397 Days $T_0=484.907137$ (BKJD)



DV Model-Shift Uniqueness Test

007903109-01, $P = 427.419161$ Days, $E = 57.491349$ Days

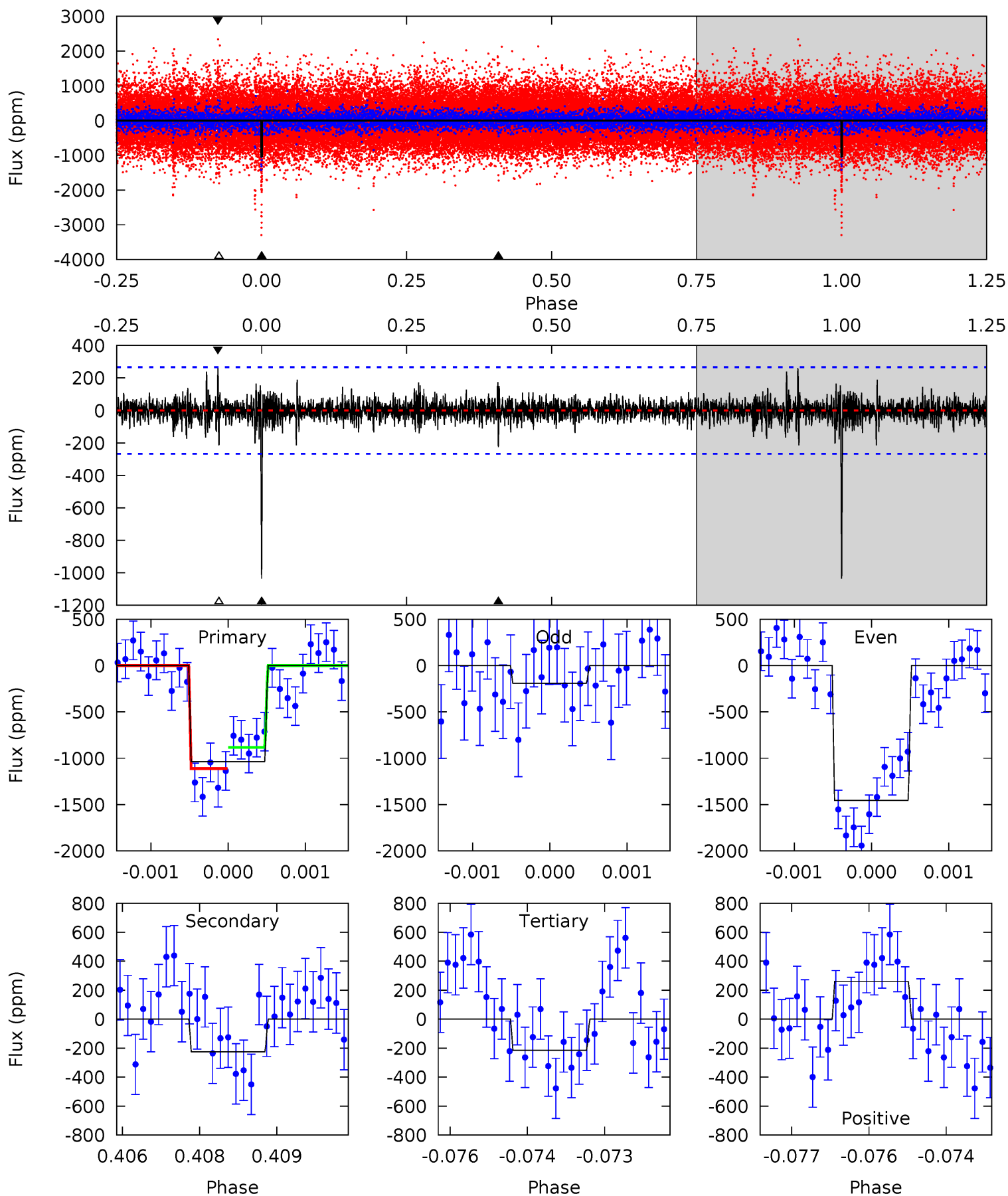
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.0	15.2	12.7	13.5	5.36	3.15	2.52	7.33	6.53	2.59	1.78	3.76	0.89	0.44	4.06



Alt Model-Shift Uniqueness Test

007903109-01, $P = 427.422397$ Days, $E = 57.484740$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.9	4.55	4.32	5.26	5.38	3.18	0.88	16.6	15.6	0.24	-0.70	12.0	1.03	0.20	2.28



Stellar Parameters For KIC 007903109

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5255^{+232}_{-211}	$4.507^{+0.090}_{-0.110}$	$-0.140^{+0.300}_{-0.300}$	$0.817^{+0.131}_{-0.098}$	$0.783^{+0.112}_{-0.069}$	$2.019^{+0.766}_{-0.657}$
	+4%/-4%	+2%/-2%	+214%/-214%	+16%/-12%	+14%/-9%	+38%/-33%
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 007903109-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-788 ± 52	$2.87^{+1.00}_{-0.90}$	289^{+17}_{-16}	4990^{+942}_{-583}	55802^{+63816}_{-25205}
Alt.	-226 ± 50	$2.81^{+1.06}_{-0.90}$	291^{+18}_{-16}	3951^{+664}_{-444}	16297^{+21728}_{-8132}

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 $A_{\text{obs}} \gg 1.0$

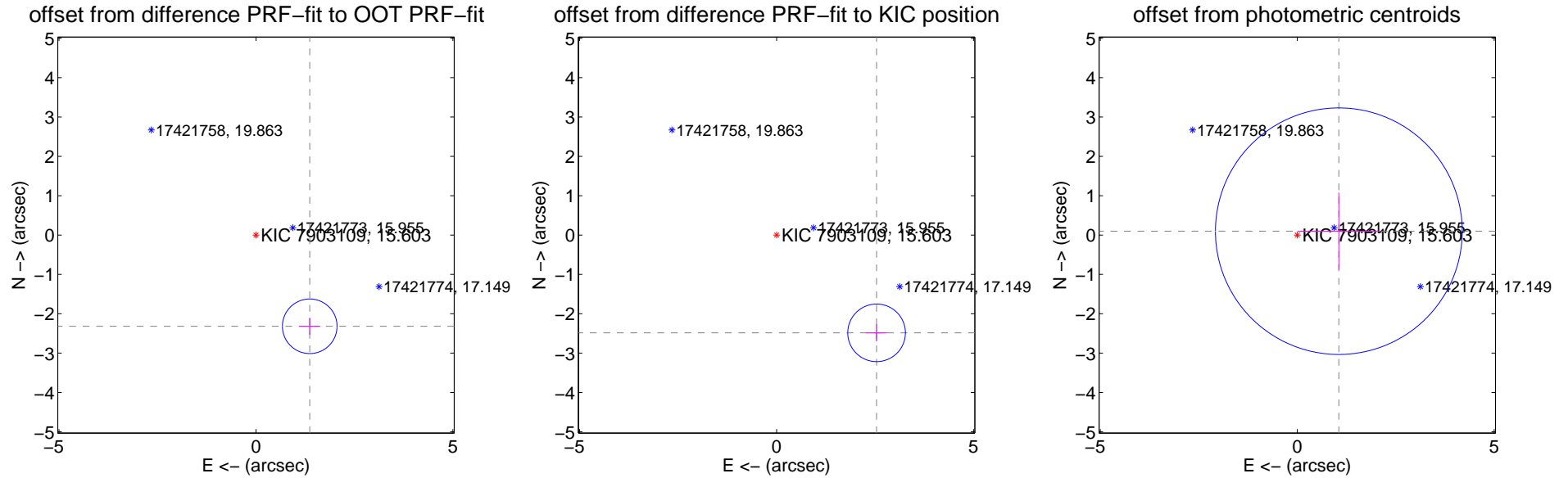
DV Centroid Data

Supplemental centroid analysis for 007903109-01. Kepler magnitude: 15.60. Transit SNR 11.85

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 1.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.691 ± 0.231	11.64	-1.365 ± 0.267	-2.318 ± 0.217
PRF-fit source offset from KIC position	3.552 ± 0.244	14.56	-2.539 ± 0.267	-2.485 ± 0.217
photometric centroid source offset	1.06 ± 1.04	1.02	-1.06 ± 1.04	0.10 ± 0.98

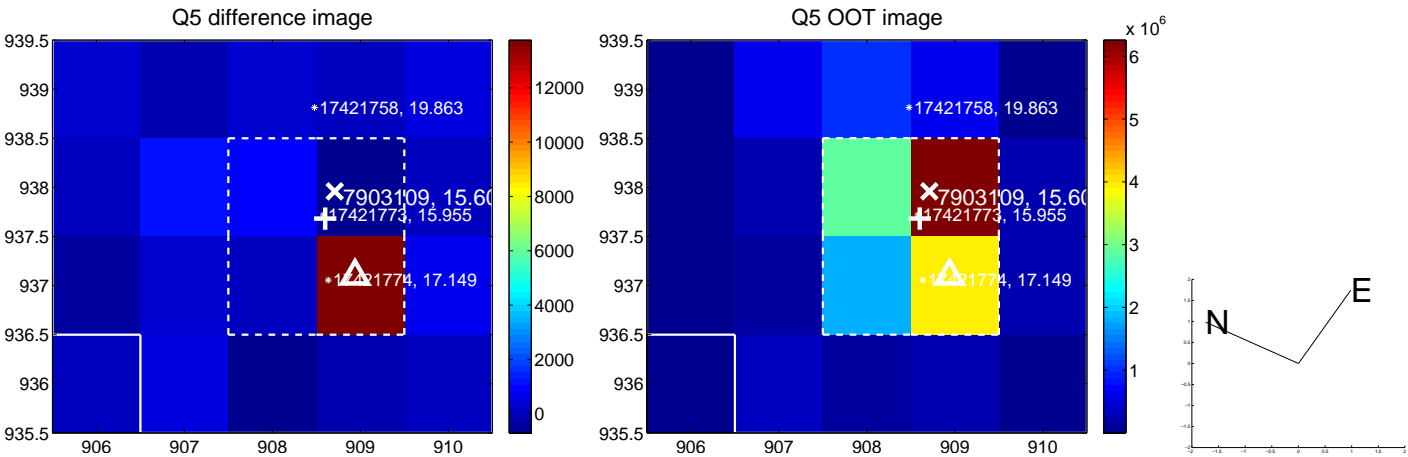


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

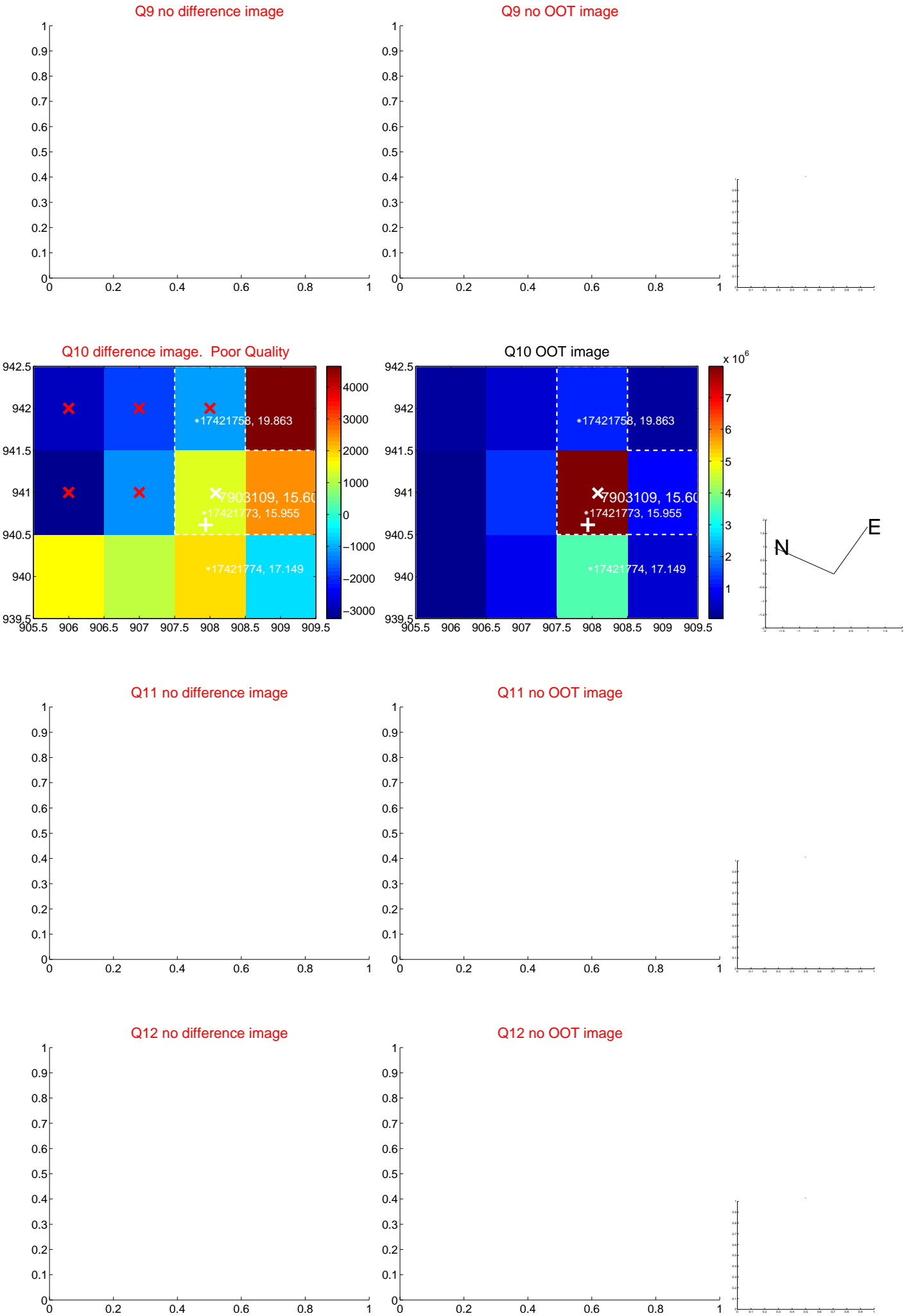
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



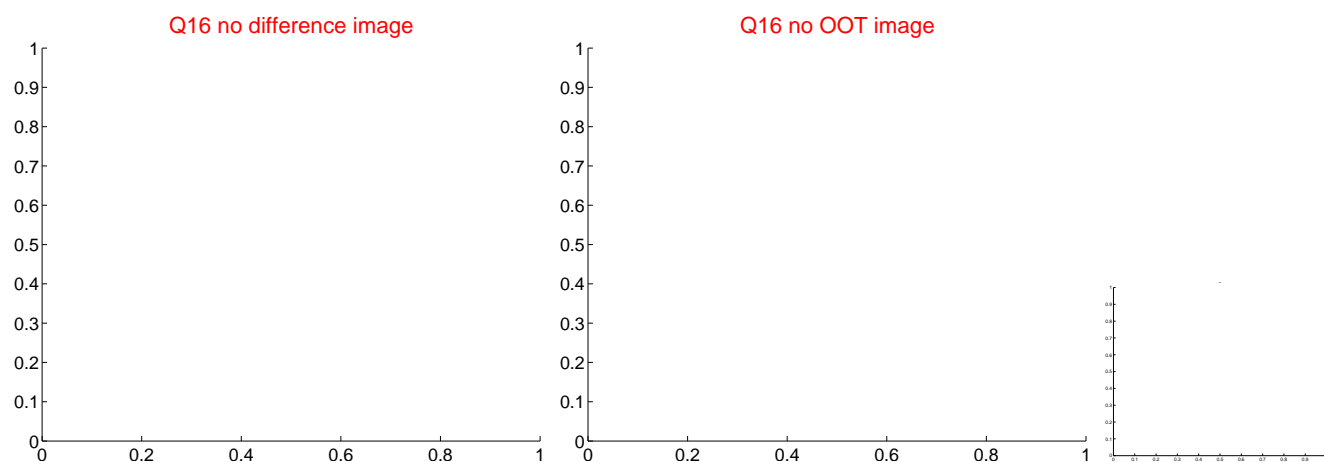
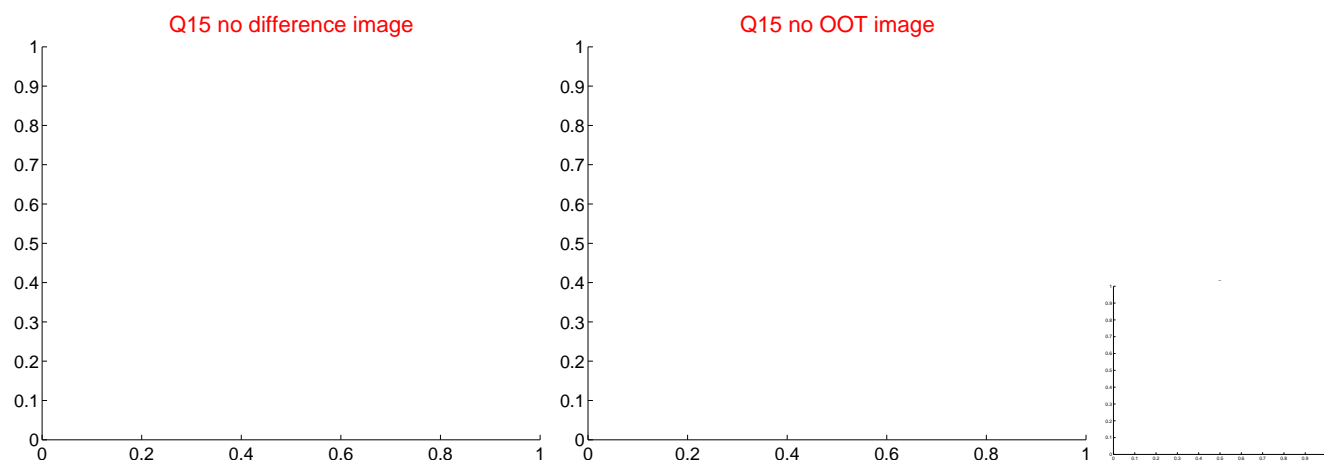
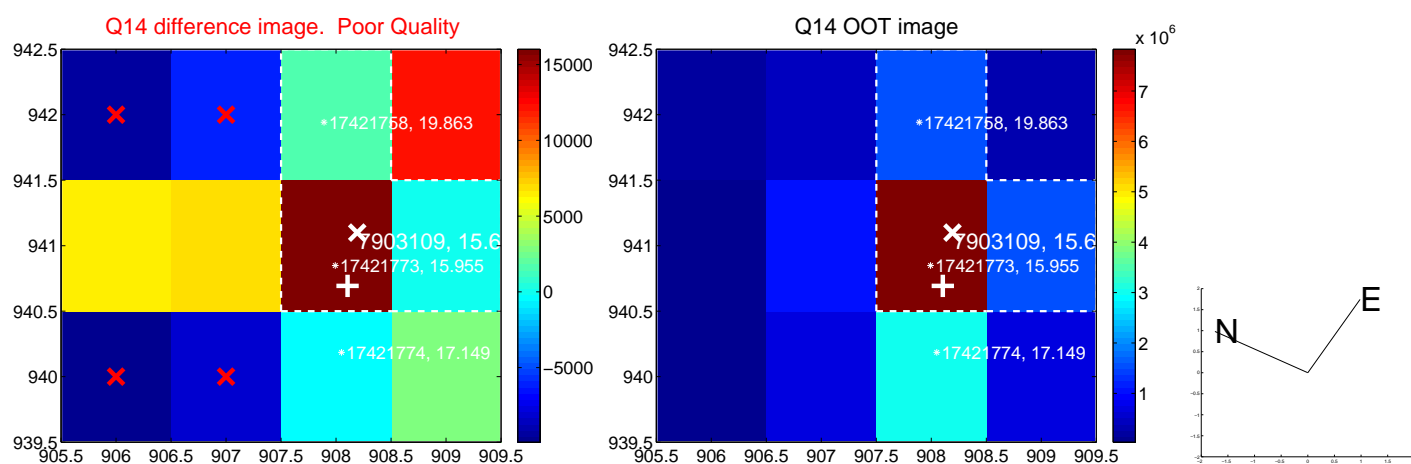
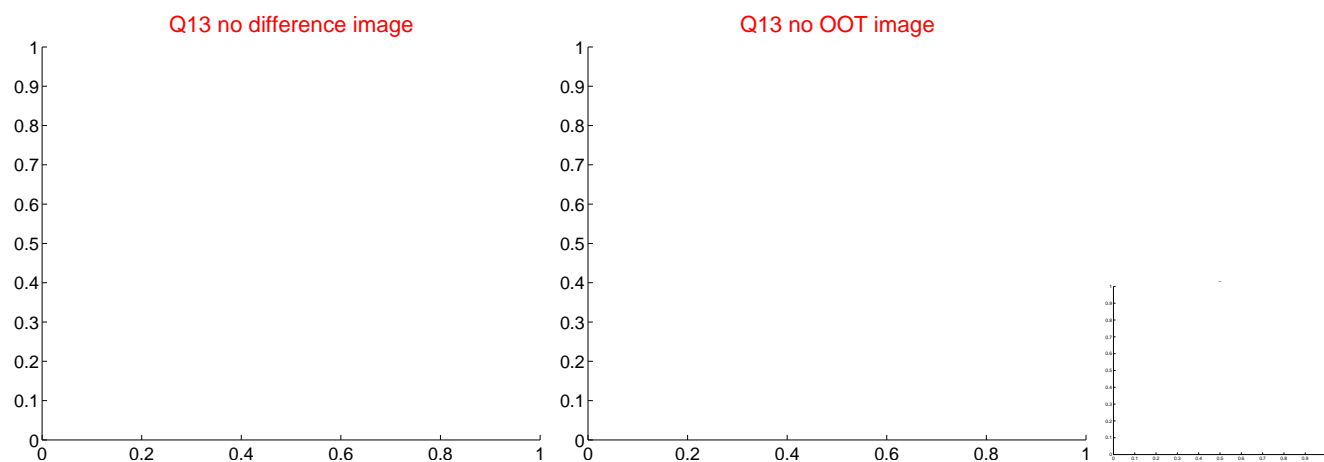
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



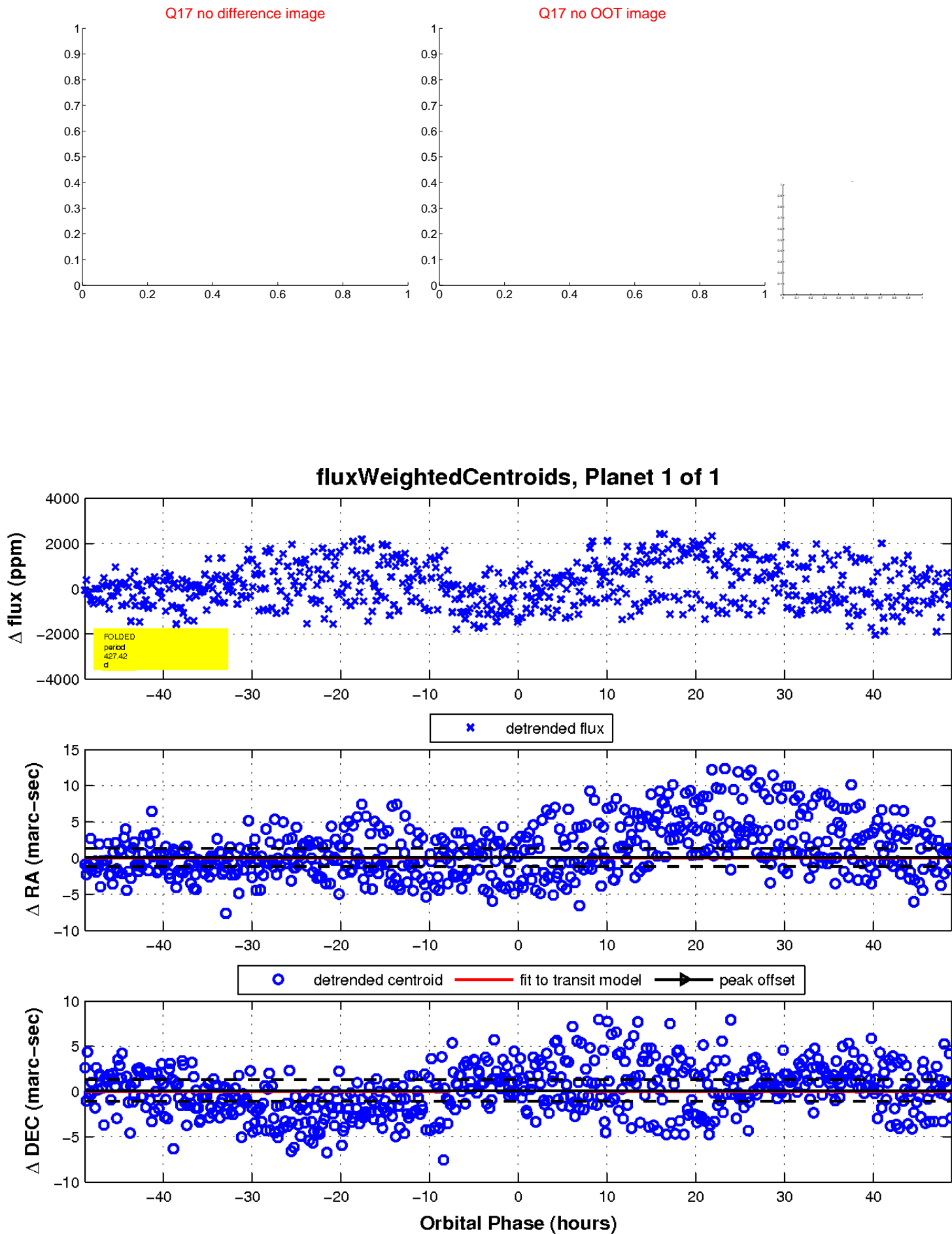
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

