

KIC 009472076

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})
009472076-01	OBS	No	355.741445	393.106209	702.8	3.232	8.6	8.8	7.48	4892	22.18	18.82

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009472076-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

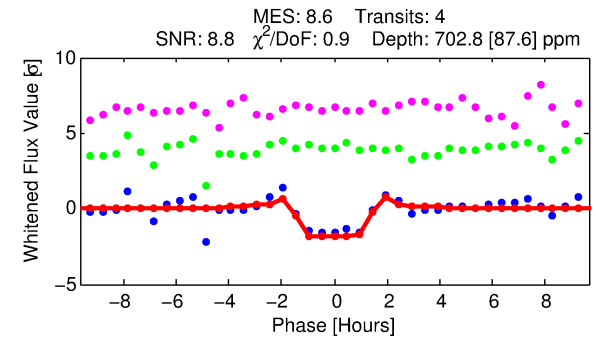
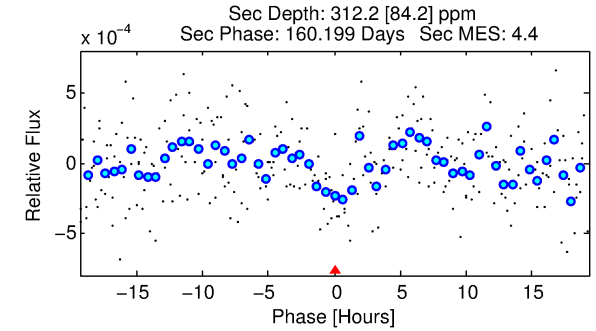
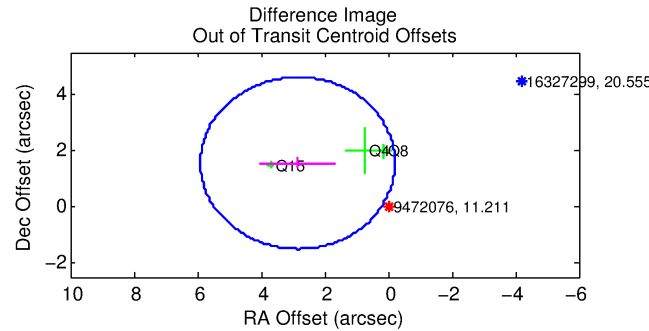
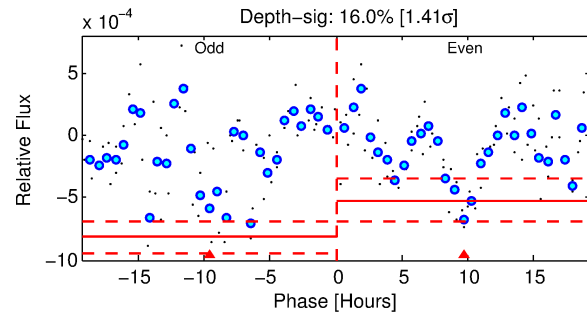
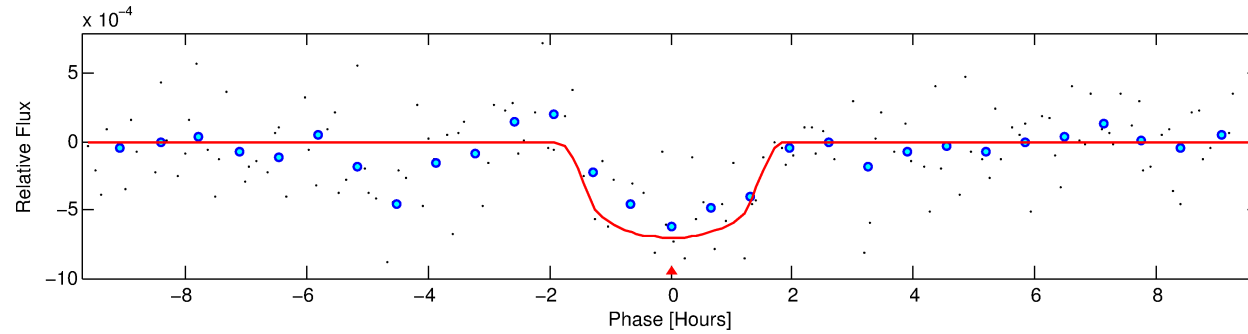
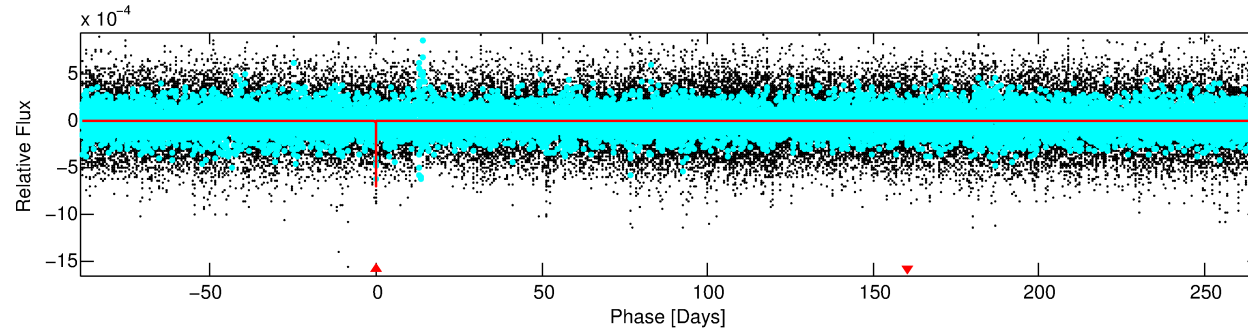
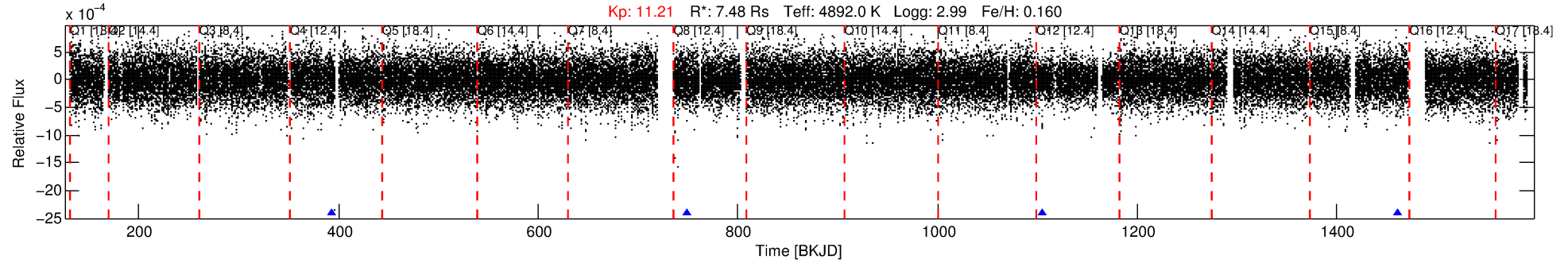
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009472076-01

No Significant Match Found

DV One-Page Summary

KIC: 9472076 Candidate: 1 of 1 Period: 355.741 d



DV Fit Results:

Period = 355.74144 [0.00266] d
Epoch = 393.1062 [0.0064] BKJD
Rp/R* = 0.0272 [0.0188]
a/R* = 548.19 [1303.79]
b = 0.79 [1.14]
Seff = 18.82 [3.39]
Teq = 531 [24] K
Rp = 22.19 [16.07] Re
a = 1.2355 [0.1818] AU
Ag = 532.62 [754.18] [0.70 σ]
Teffp = 3945 [1391] K [2.45 σ]

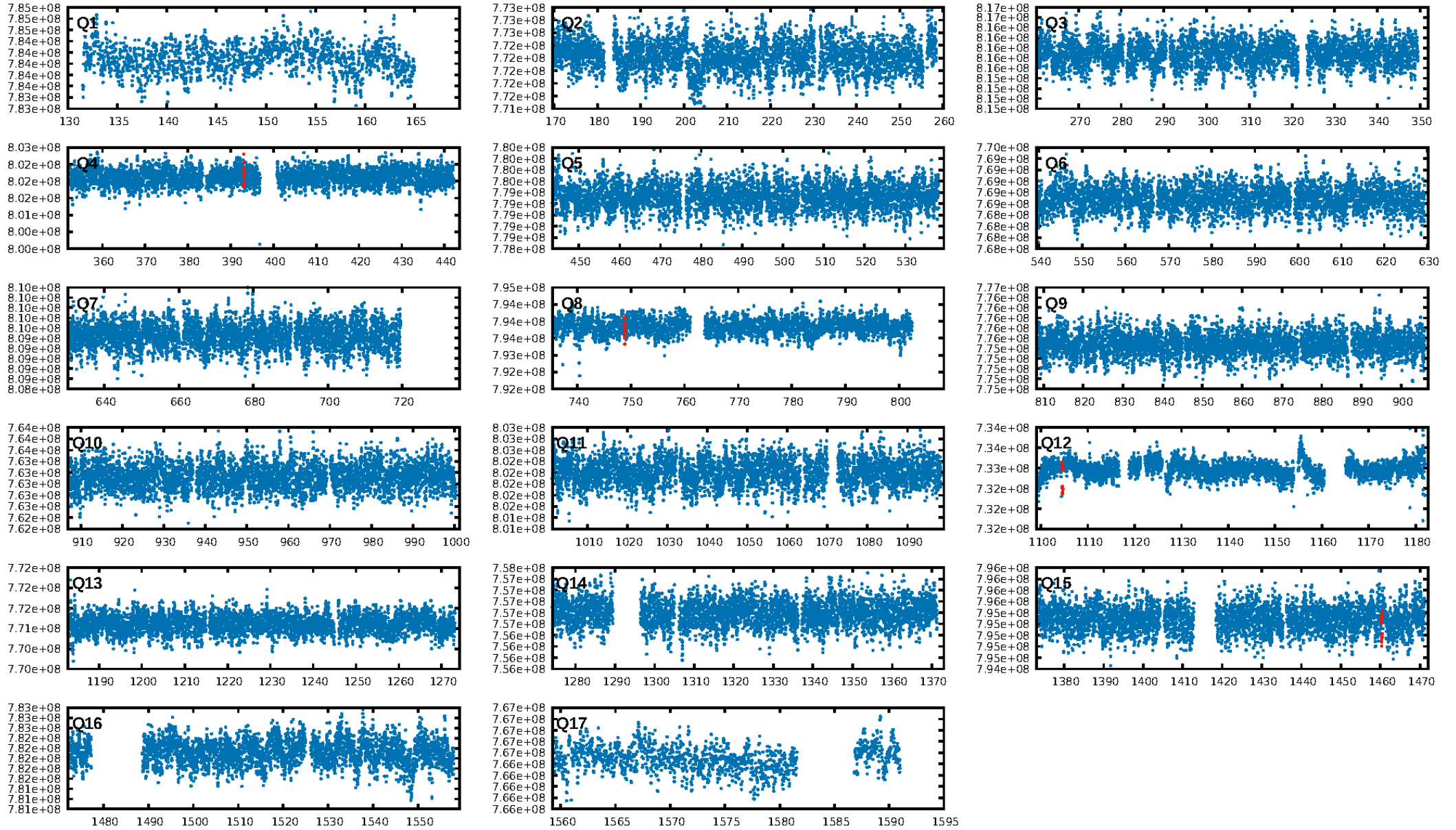
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.3%
ModelChiSquareGof-sig: 97.6%
Bootstrap-pfa: 4.10e-14
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 4.185
Centroid-sig: 14.2%
Centroid-so: 0.813 arcsec [3.65 σ]
OotOffset-rm: 3.244 arcsec [3.18 σ]
KicOffset-rm: 2.958 arcsec [3.61 σ]
OotOffset-st: 0.1/2/0 [3]
KicOffset-st: 0.1/2/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [4/4]

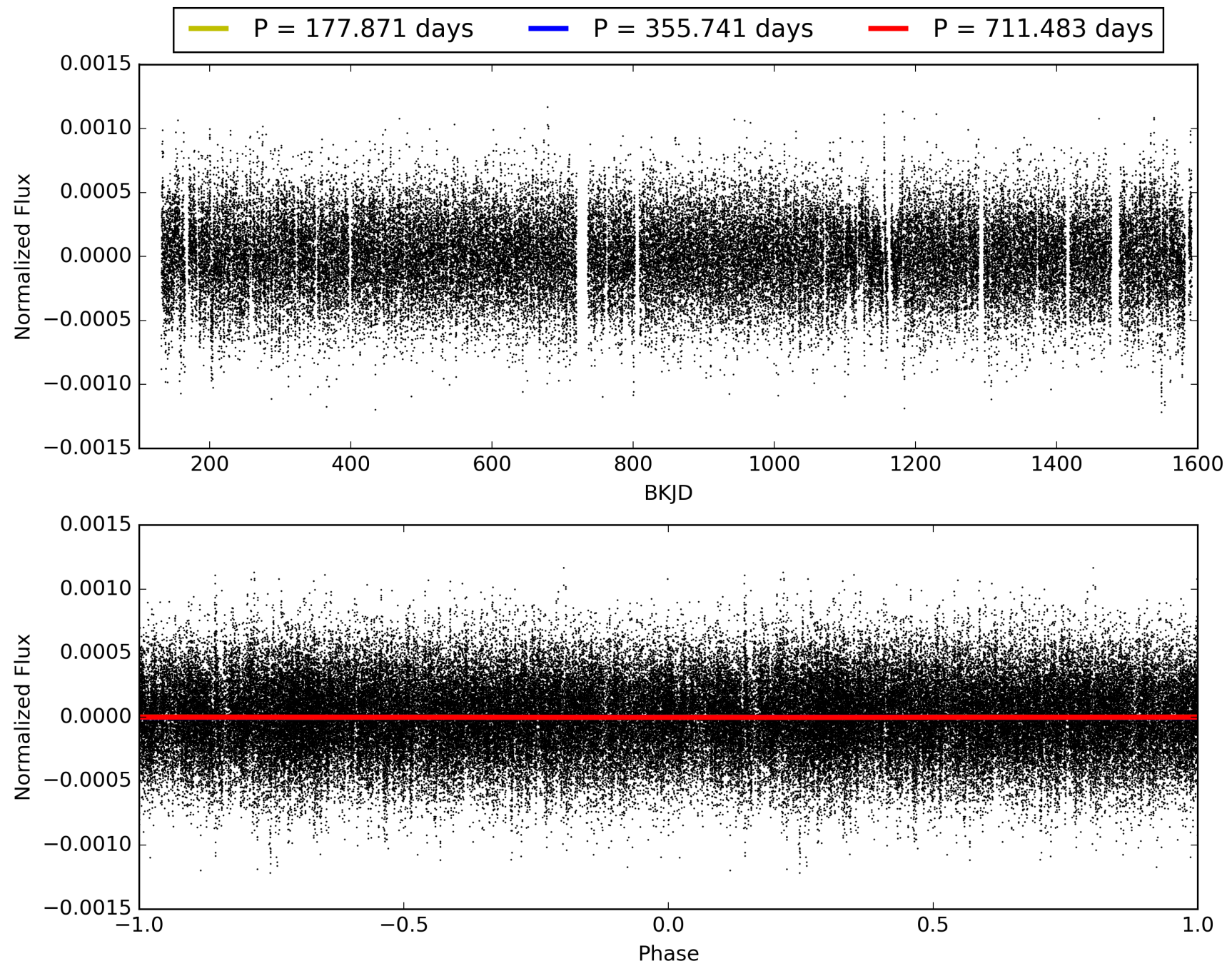
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:06:45 Z

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

TCE 009472076-01, PDC Light Curves

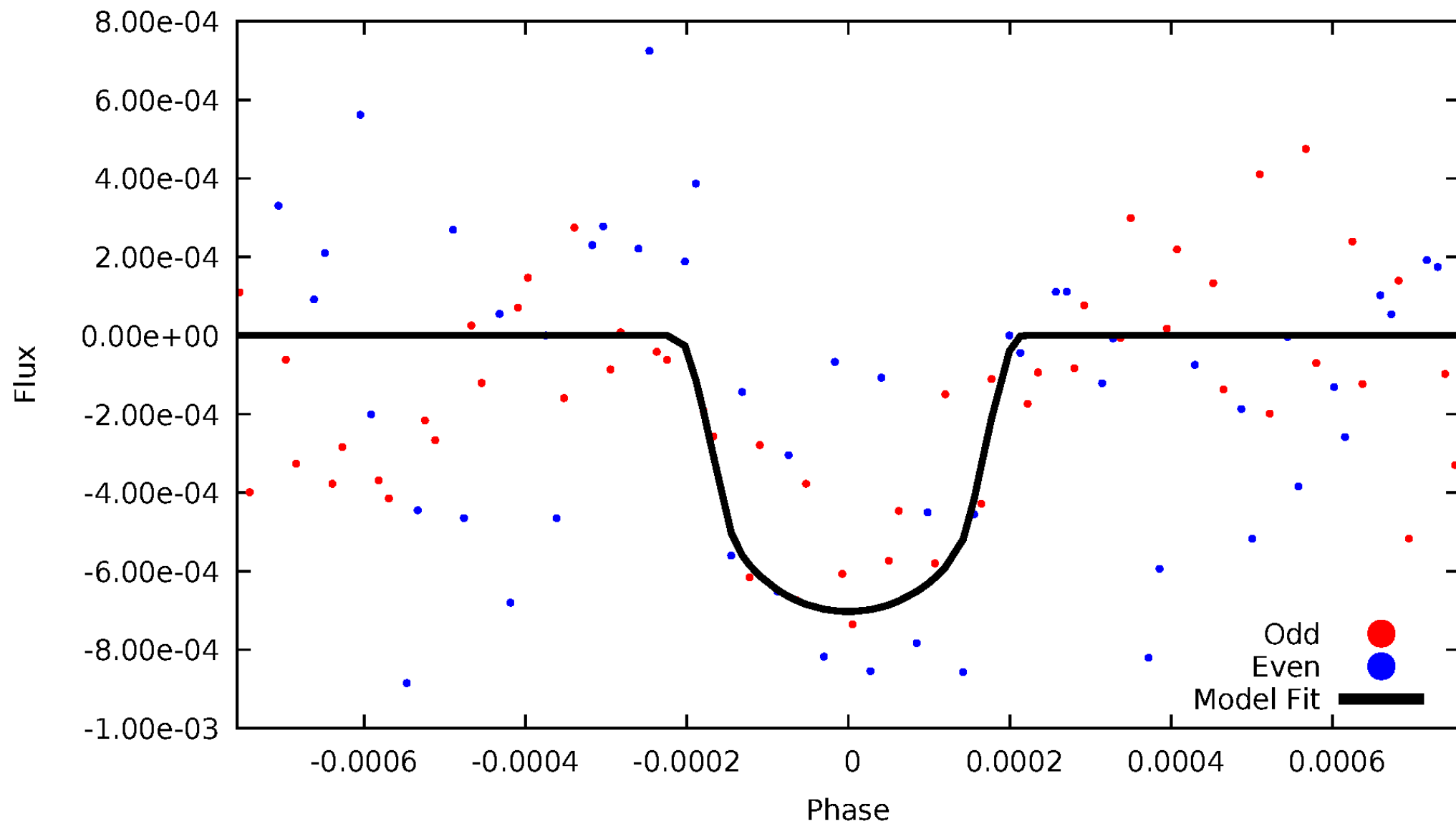


TCE 009472076-01



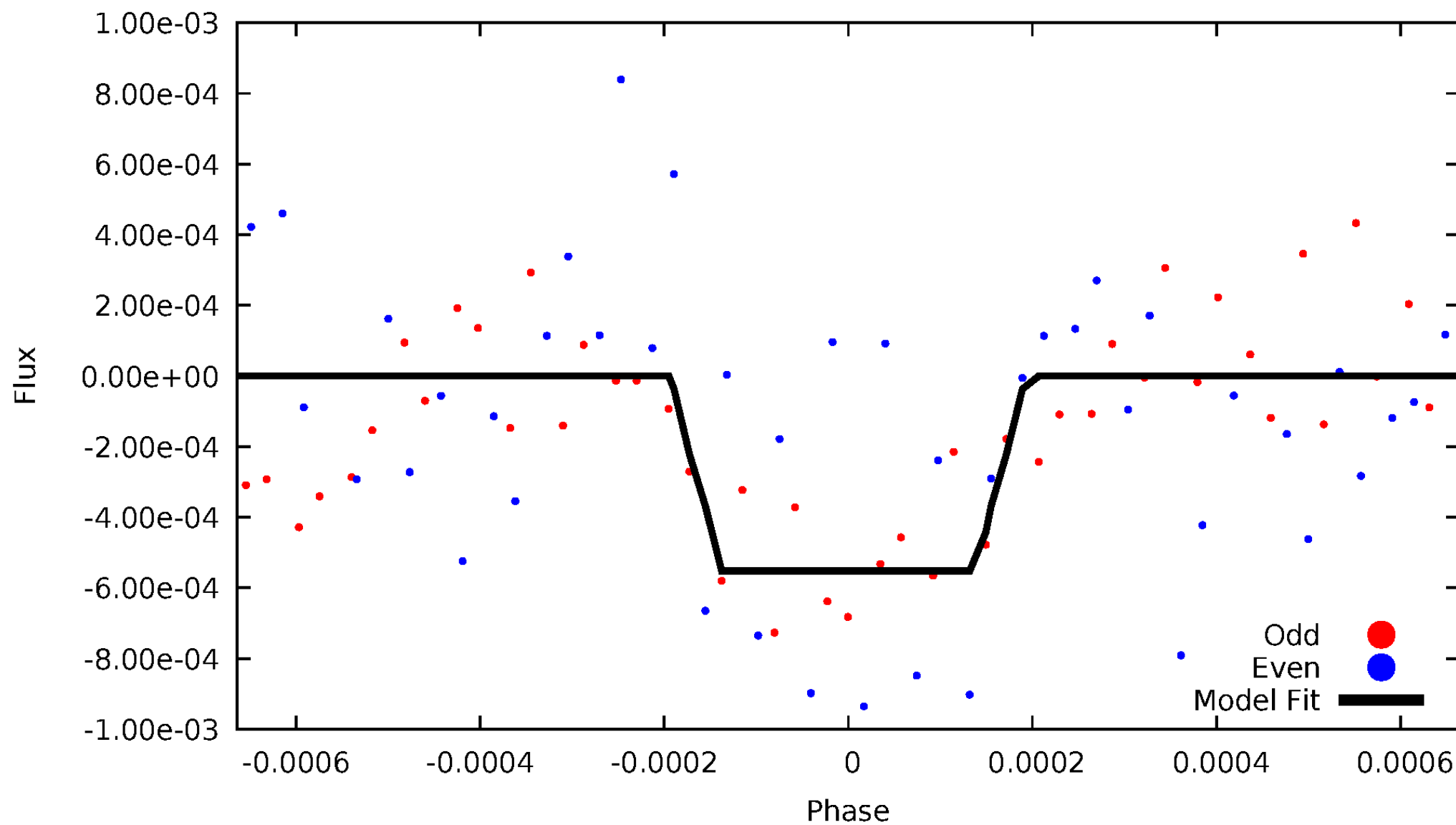
DV Odd/Even

TCE 009472076-01



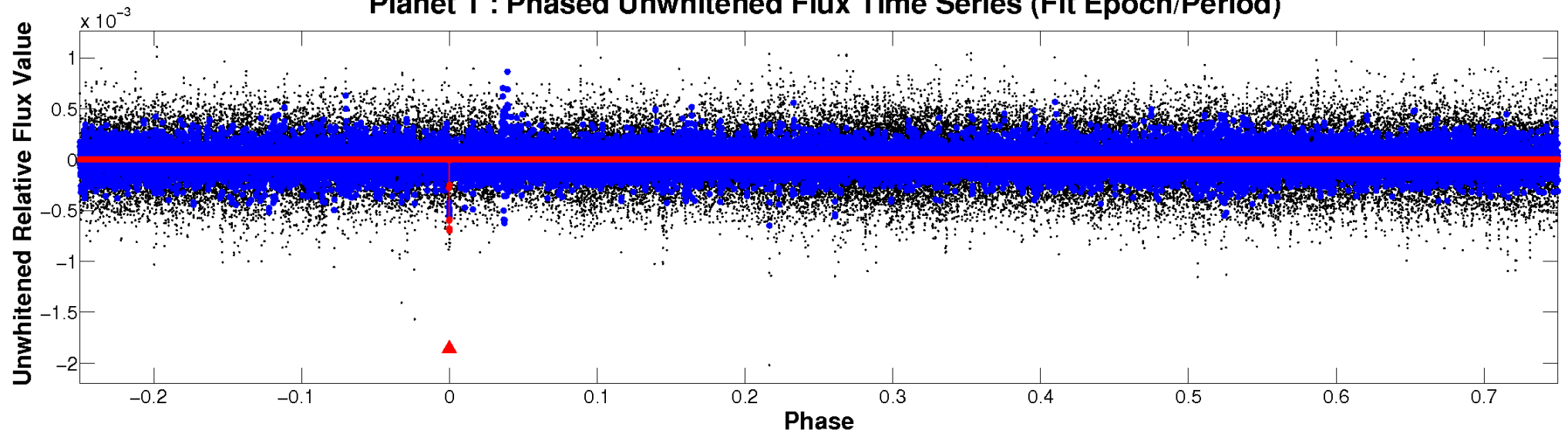
ALT Odd/Even

TCE 009472076-01

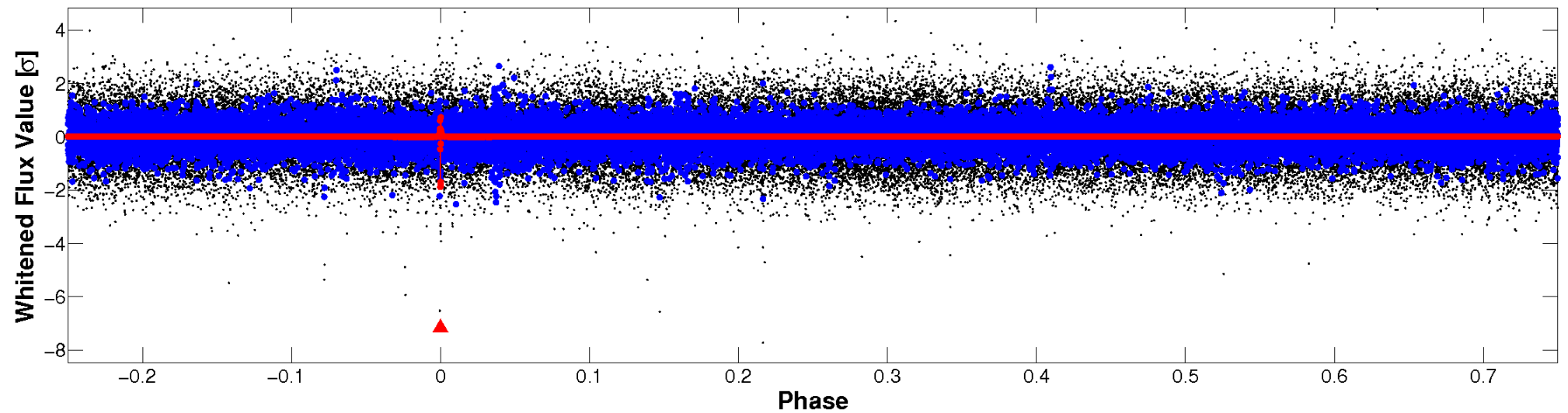


Non-Whitened Vs. Whitened Light Curve

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

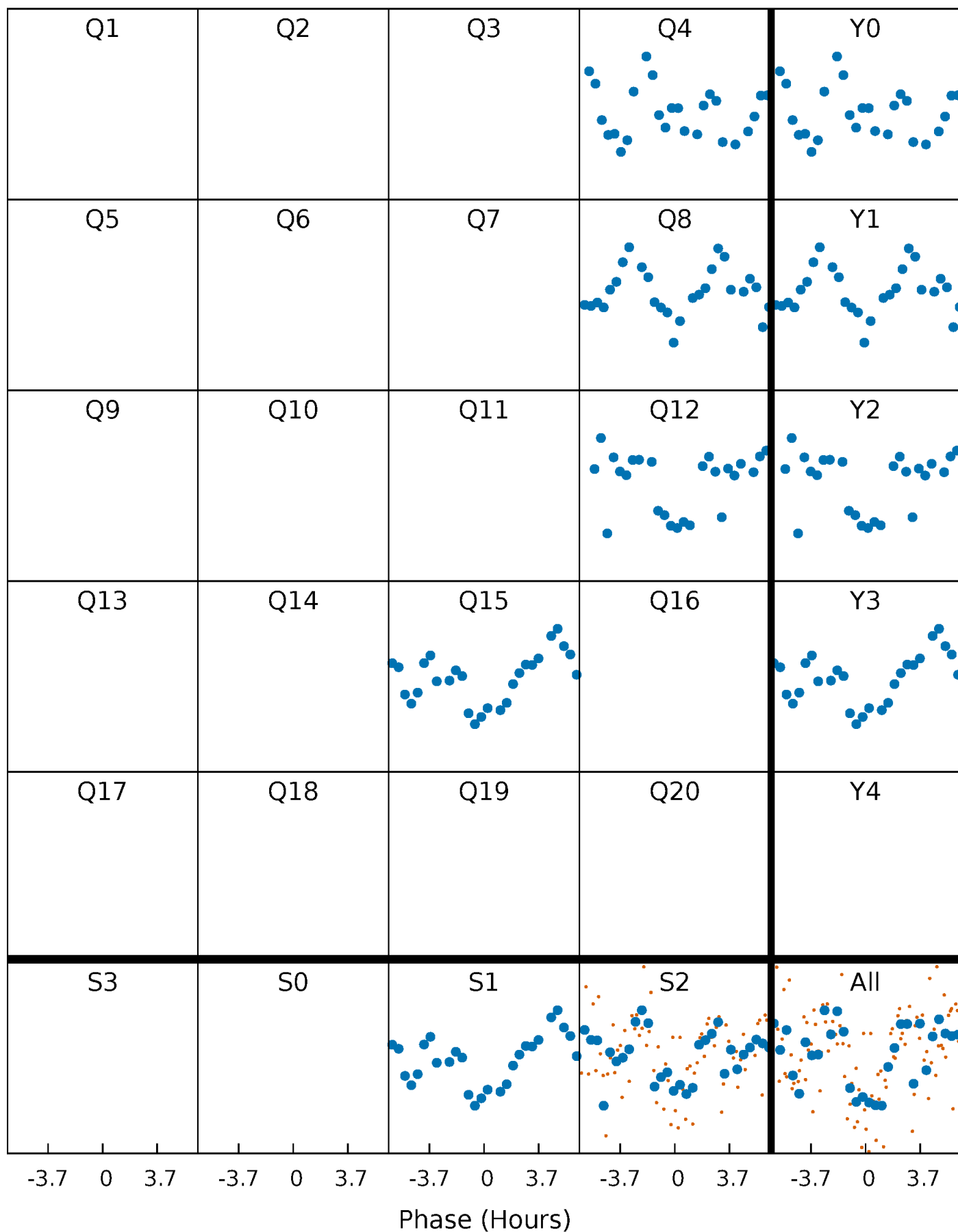


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



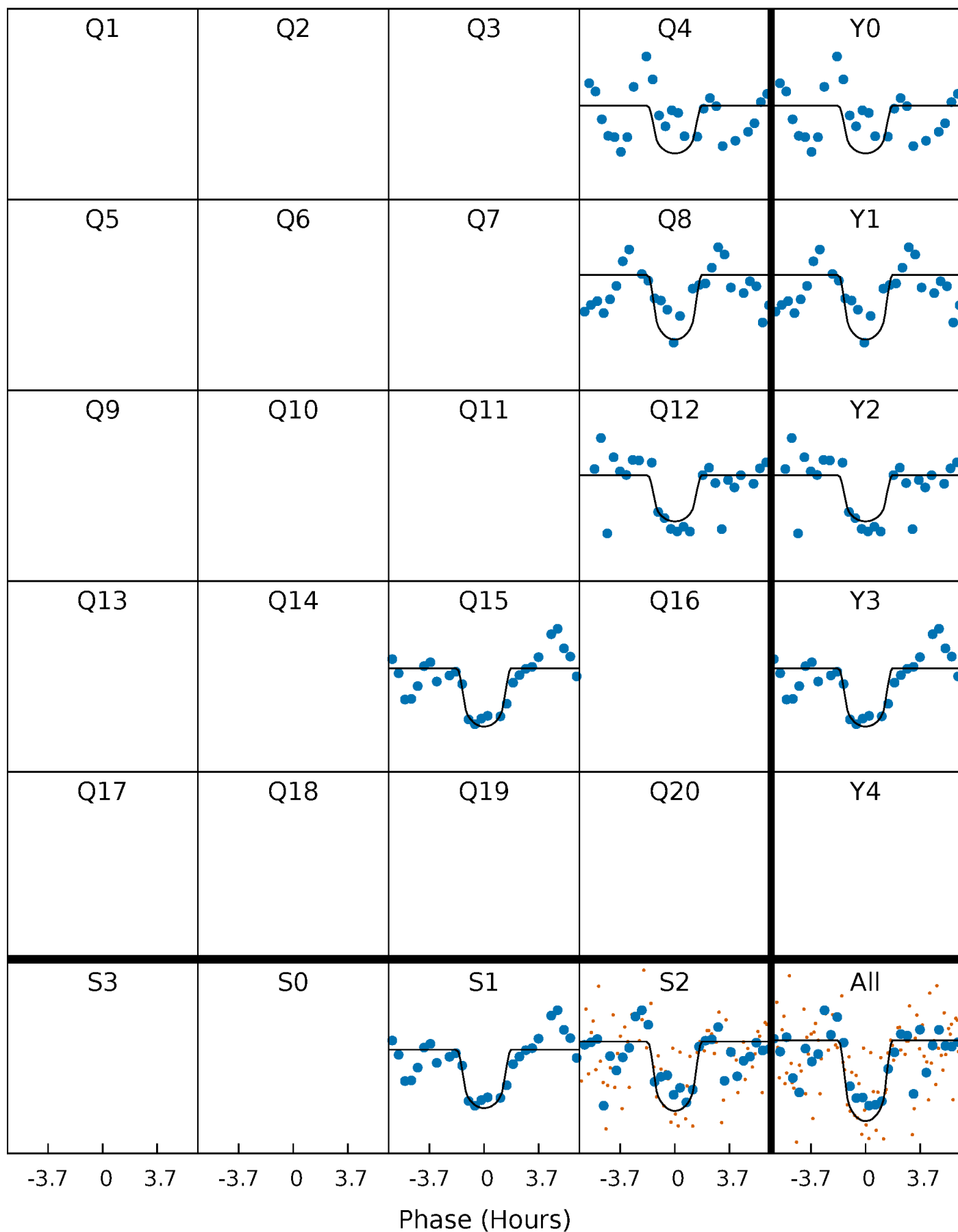
PDC Quarter-Phased Transit Curves

TCE 009472076-01 P=355.741445 Days $T_0=393.106209$ (BKJD)



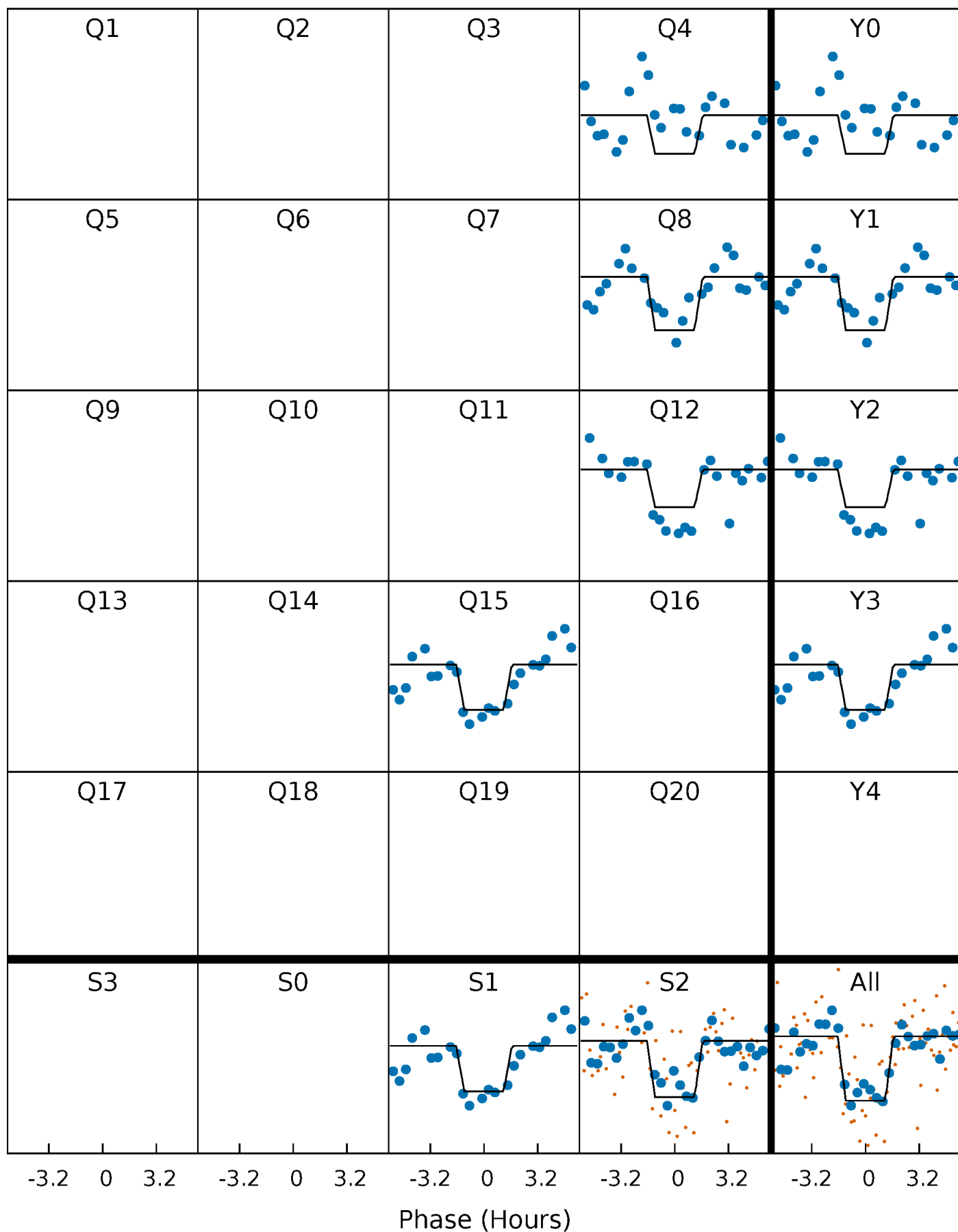
DV Quarter-Phased Transit Curves

TCE 009472076-01 P=355.741445 Days $T_0=393.106209$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

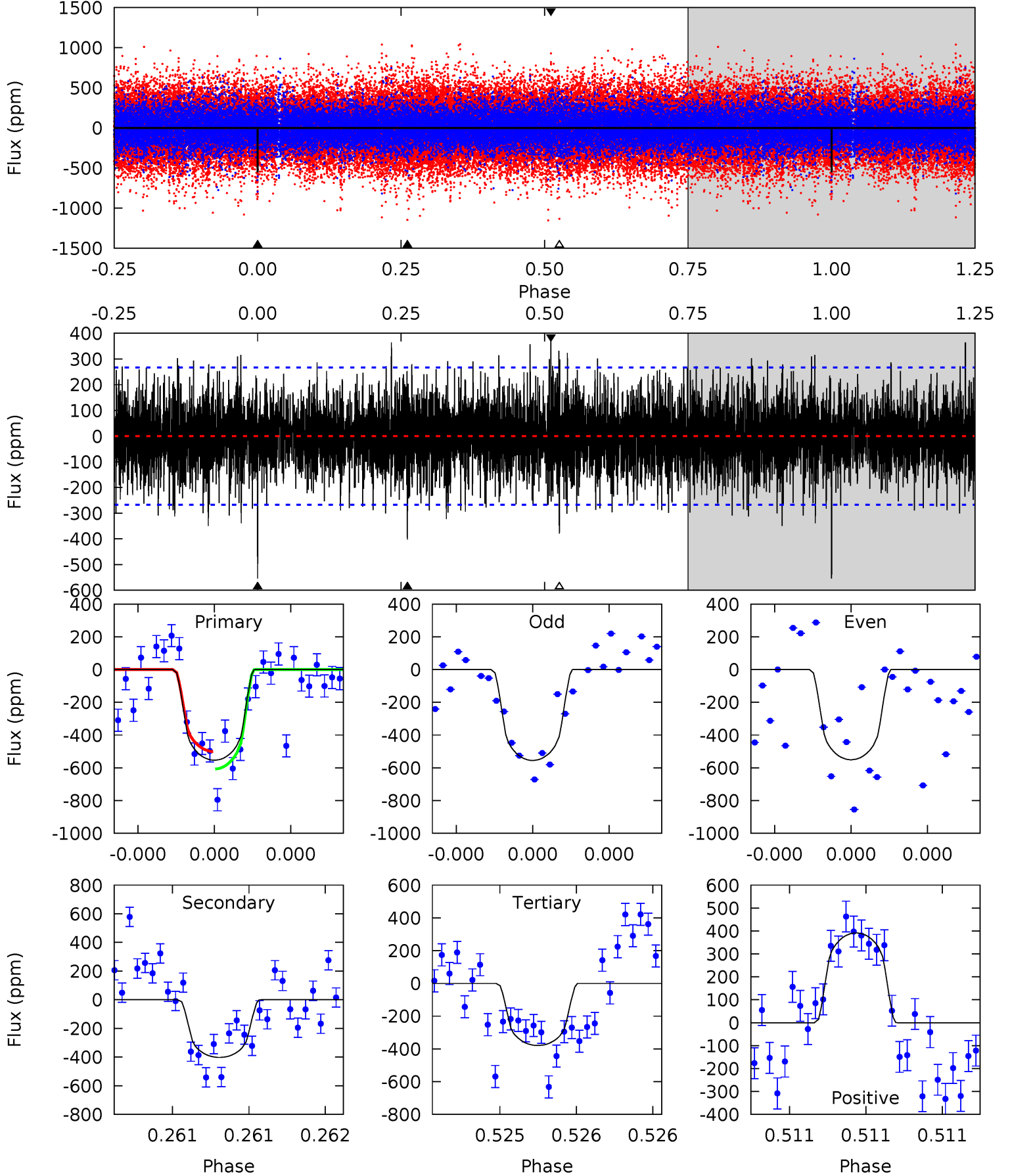
TCE 009472076-01 P=355.743185 Days $T_0=393.106431$ (BKJD)



DV Model-Shift Uniqueness Test

009472076-01, P = 355.741445 Days, E = 37.364764 Days

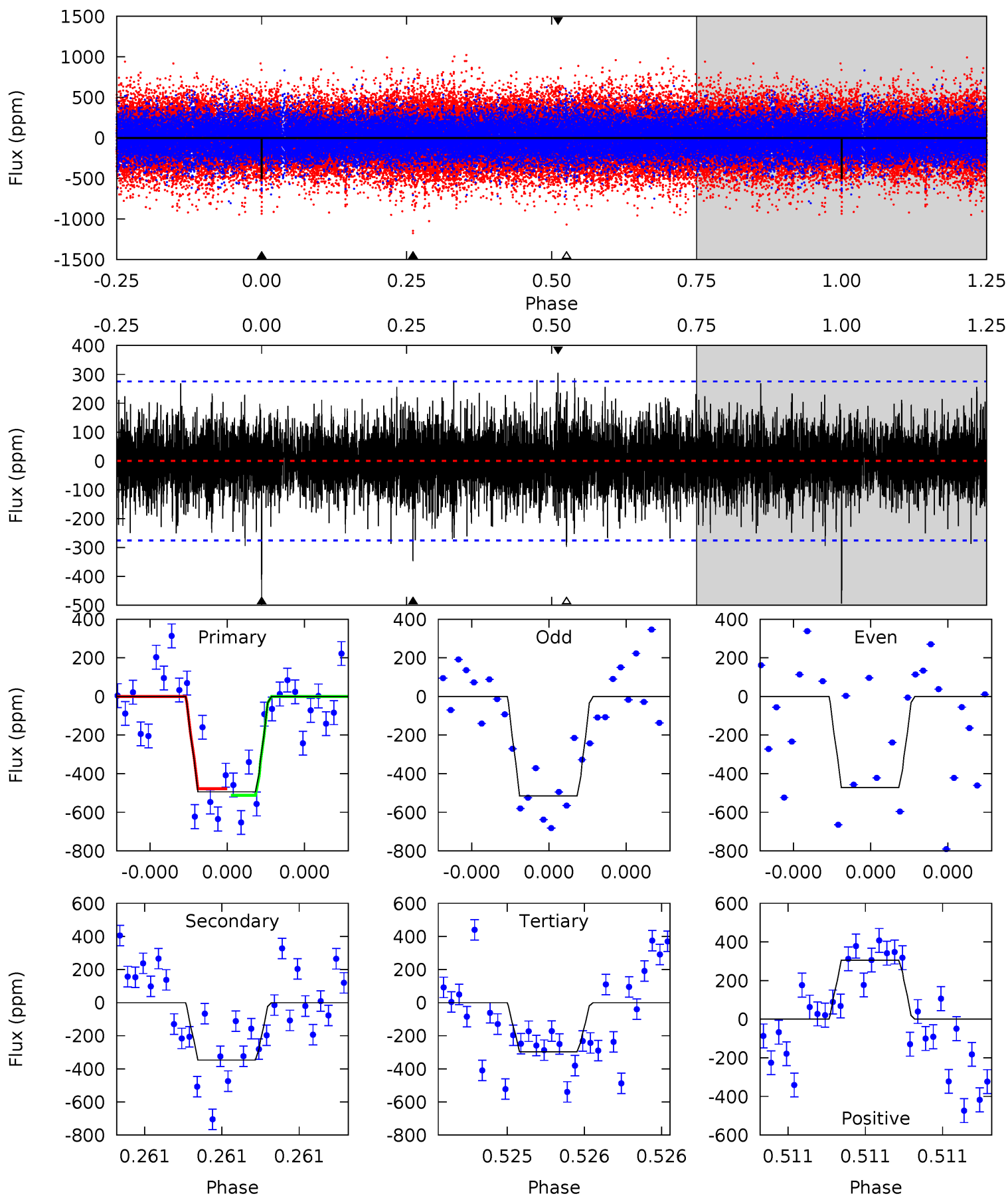
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.6	8.45	7.96	8.21	5.61	3.53	2.07	3.66	3.41	0.49	0.24	0.05	1.00	0.41	1.11



Alt Model-Shift Uniqueness Test

009472076-01, P = 355.743185 Days, E = 37.363246 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	7.09	6.07	6.24	5.63	3.57	1.59	4.02	3.86	1.02	0.85	0.45	0.96	0.38	0.35



Stellar Parameters For KIC 009472076

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4892^{+48}_{-115}	$2.988^{+0.033}_{-0.027}$	$0.160^{+0.100}_{-0.200}$	$7.483^{+0.383}_{-1.627}$	$1.986^{+0.138}_{-0.734}$	$0.007^{+0.002}_{-0.001}$
	+1%/-2%	+1%/-1%	+62%/-125%	+5%/-22%	+7%/-37%	+34%/-8%
Source	PHO55	AST55	SPE55	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009472076-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-403 ± 48	$24.34^{+12.23}_{-12.94}$	741^{+14}_{-19}	4174^{+1510}_{-551}	574^{+1947}_{-319}
Alt.	-347 ± 49	$20.71^{+14.05}_{-12.31}$	741^{+13}_{-19}	4309^{+2039}_{-717}	707^{+3379}_{-472}

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 $A_{obs} \gg 1.0$

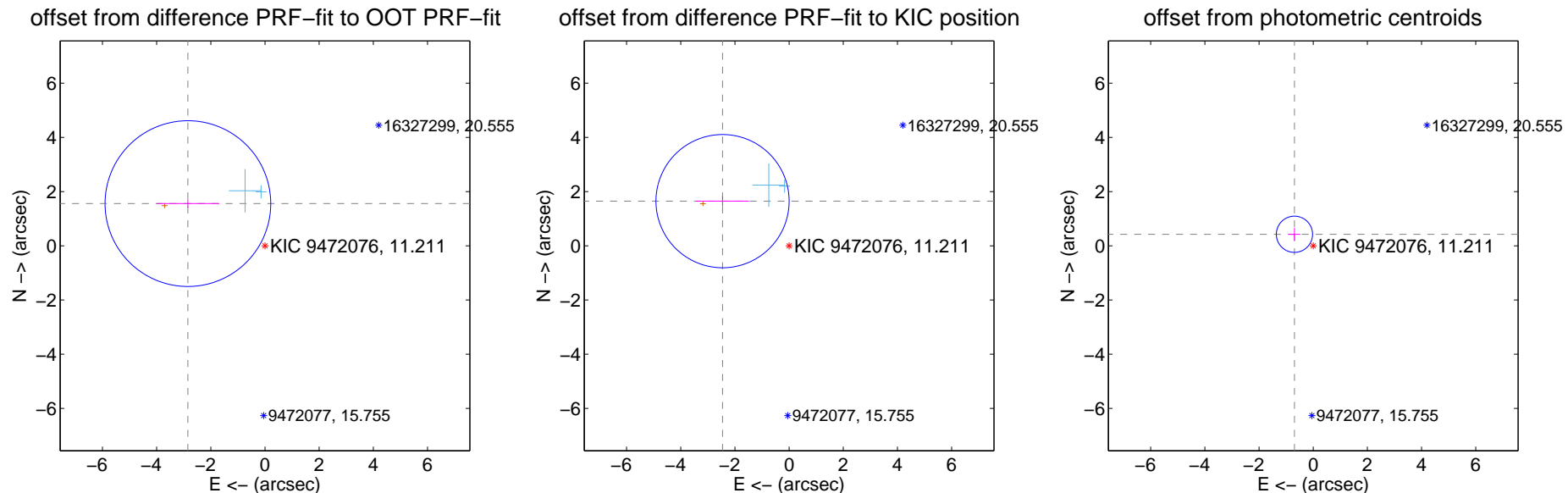
DV Centroid Data

Supplemental centroid analysis for 009472076-01. **Kepler magnitude: 11.21.** Transit SNR 8.75

There are 2 quarters with good PRF difference image offsets

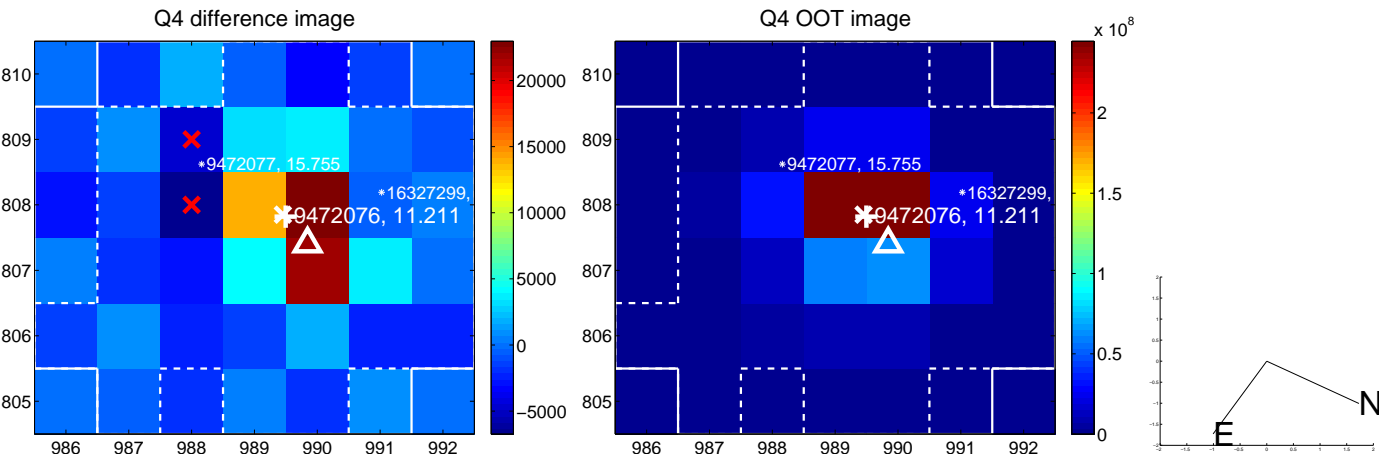
The direct PRF centroid is offset from the target star catalog position by about 0.53 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.244 ± 1.019	3.18	2.846 ± 1.159	1.557 ± 0.153
PRF-fit source offset from KIC position	2.958 ± 0.819	3.61	2.457 ± 0.978	1.648 ± 0.187
photometric centroid source offset	0.81 ± 0.22	3.65	0.69 ± 0.22	0.43 ± 0.23

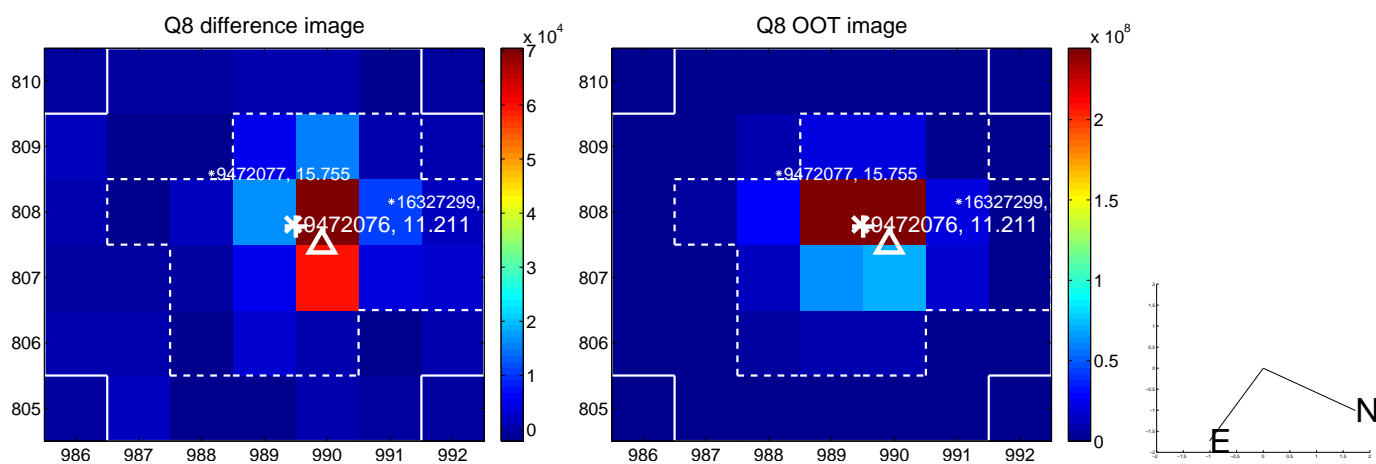
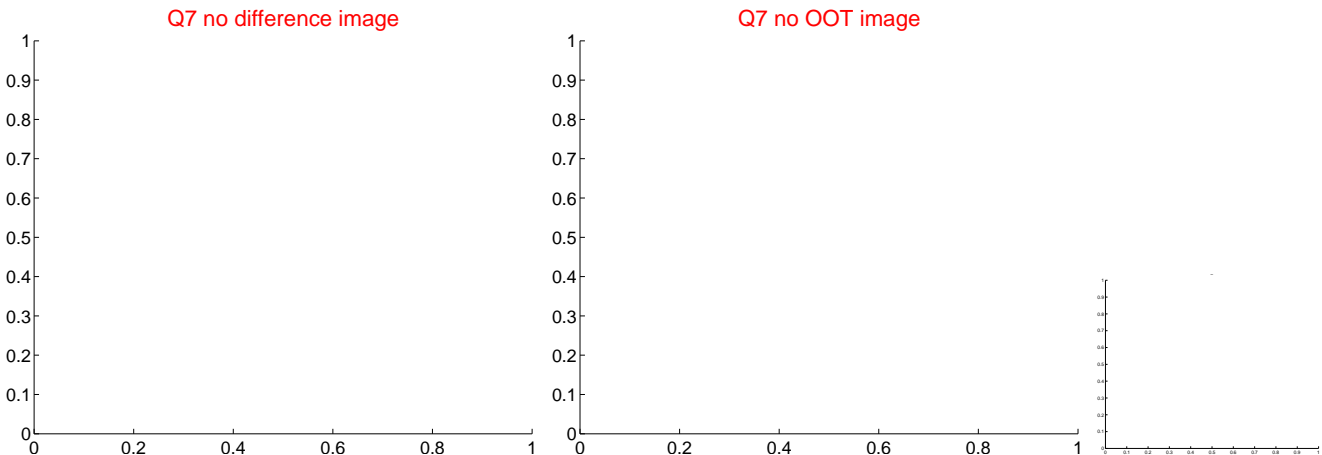
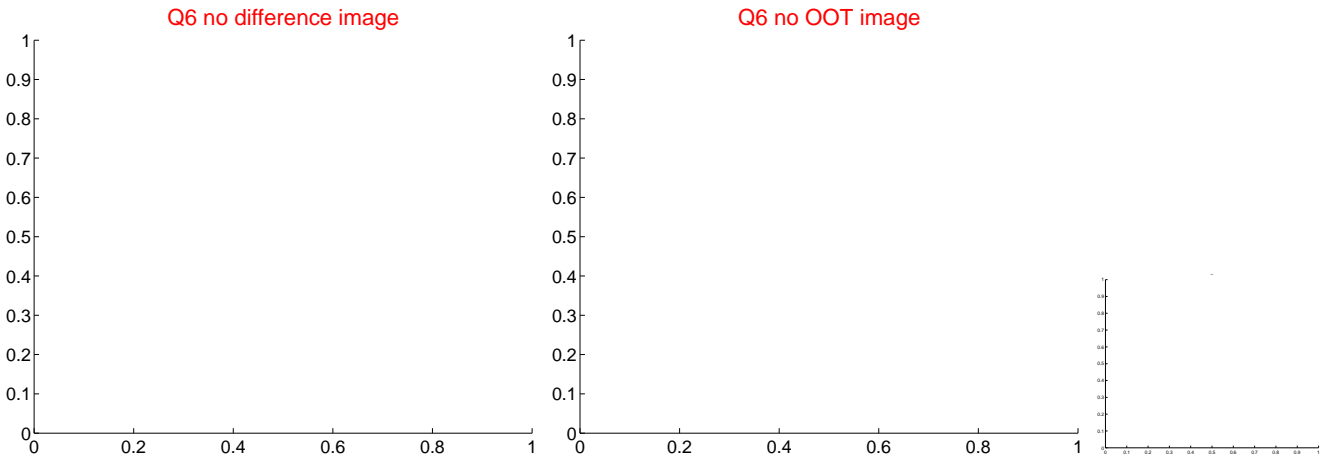
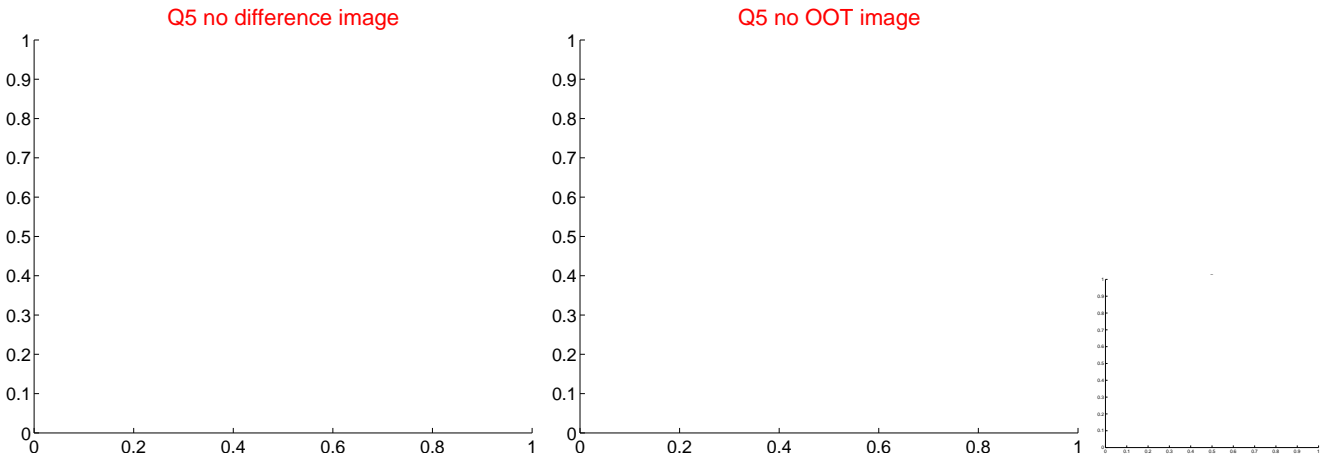


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

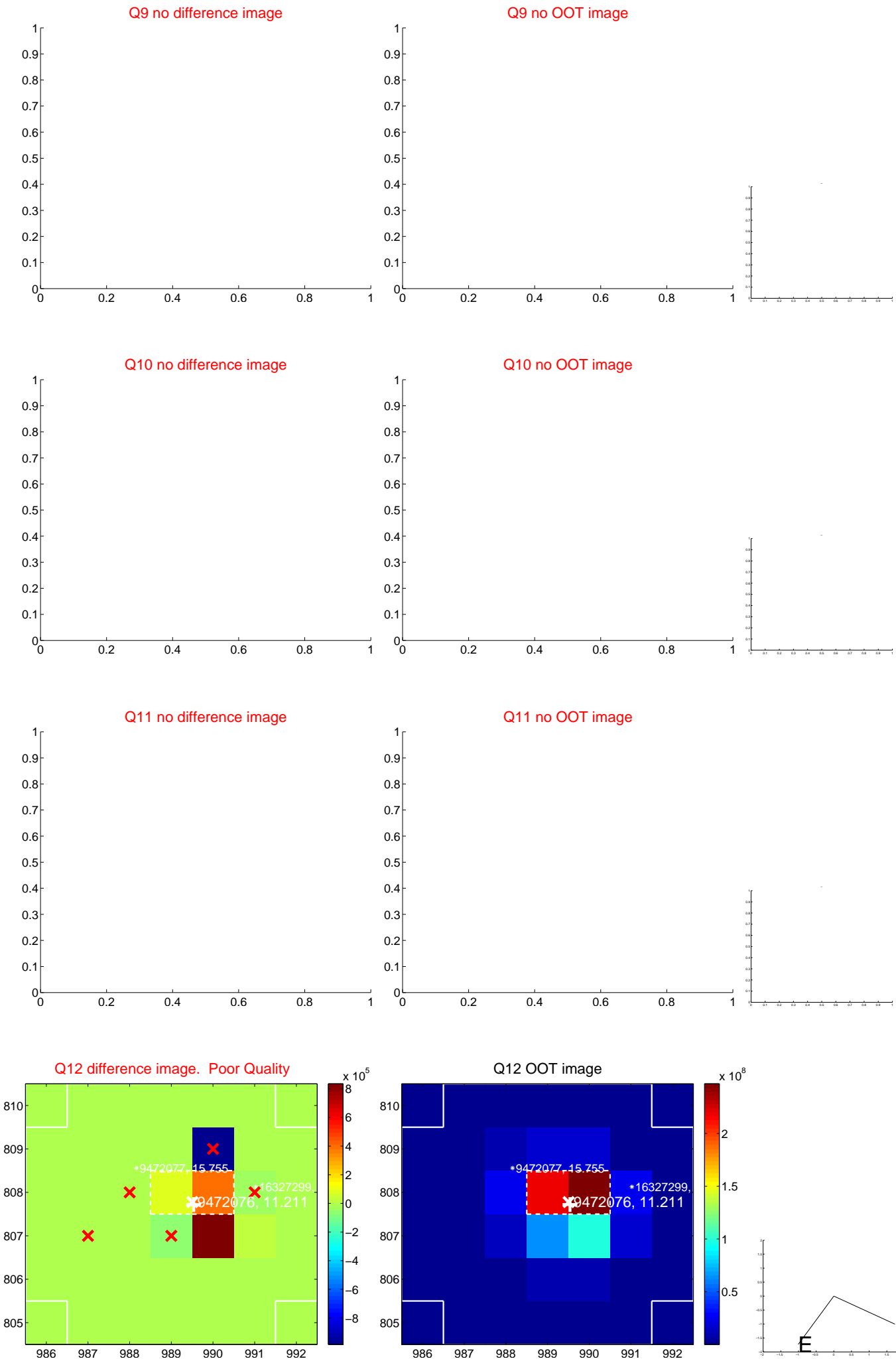
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



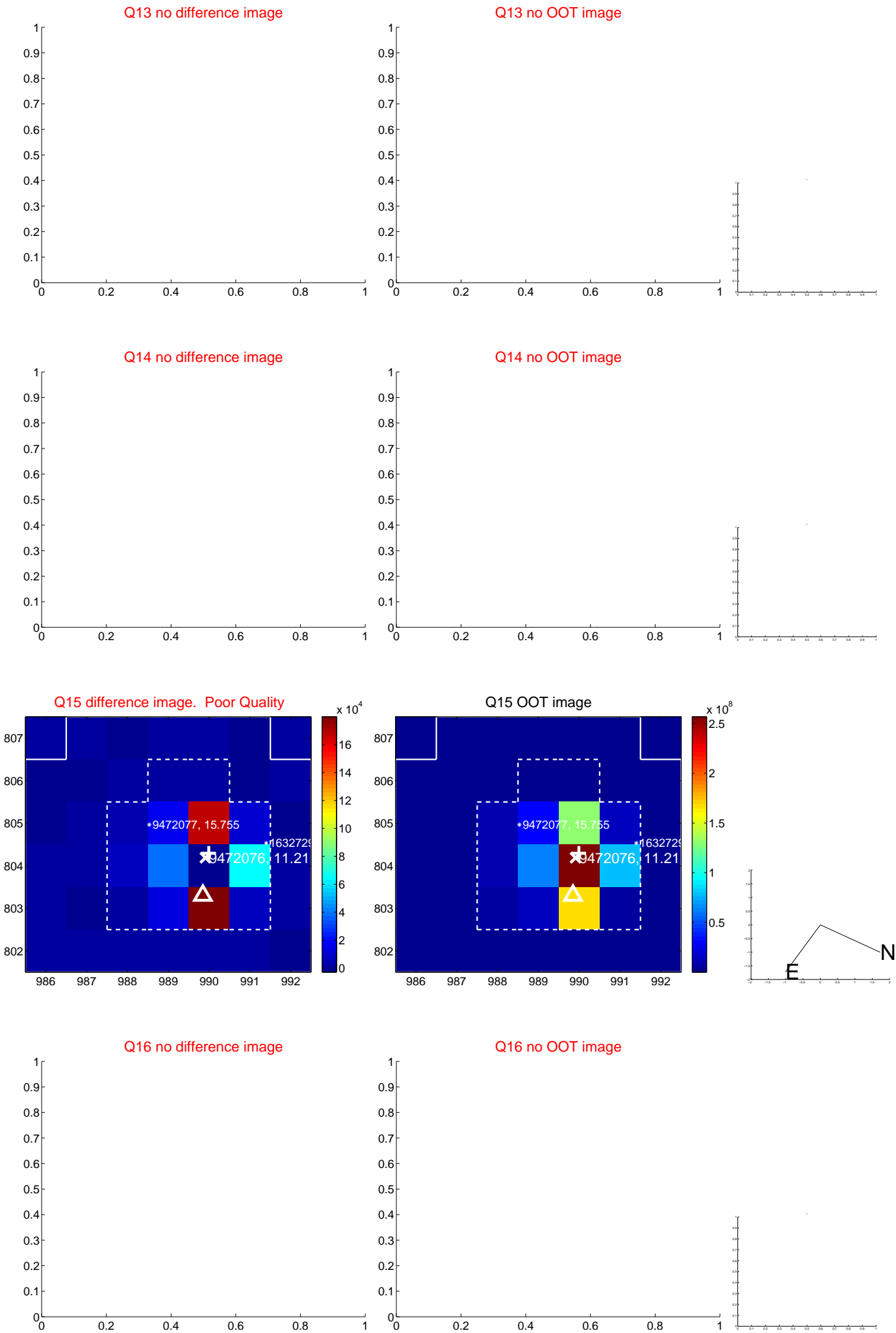
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



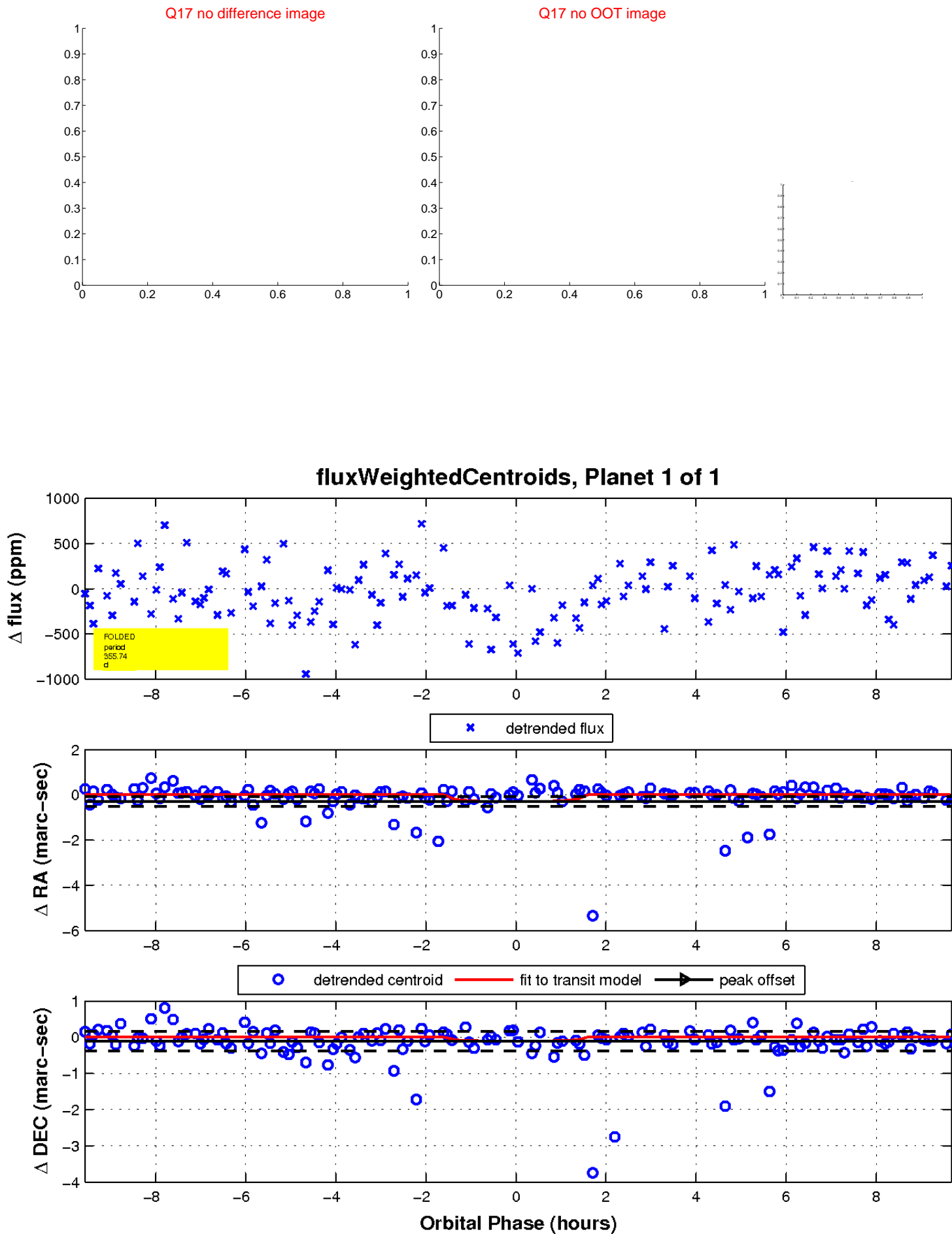
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \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

