

KIC 012071873

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})
012071873-01	OBS	No	432.012279	155.478398	2144.8	9.339	14.9	6.7	0.27	3336	1.27	0.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012071873-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS

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

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

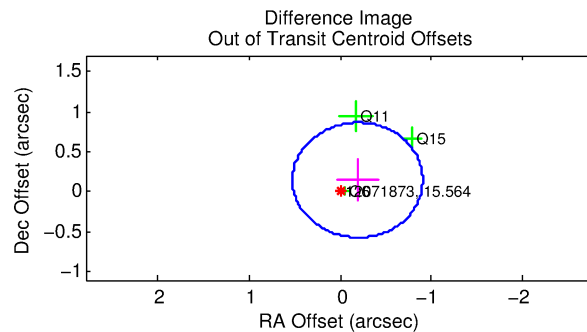
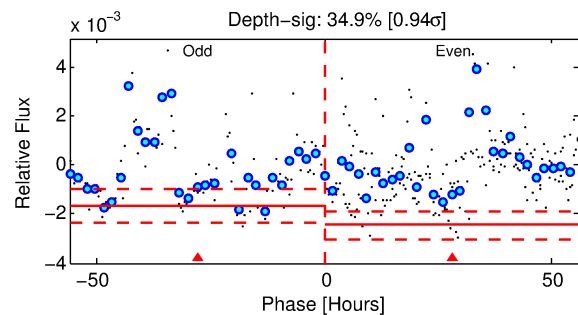
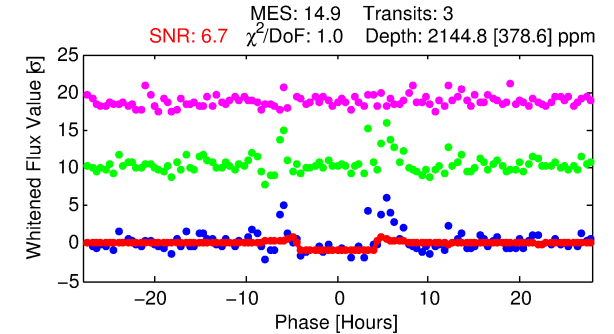
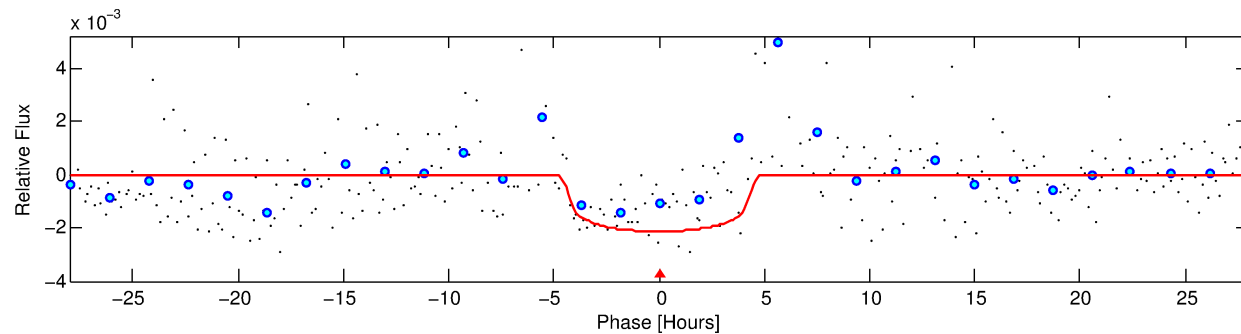
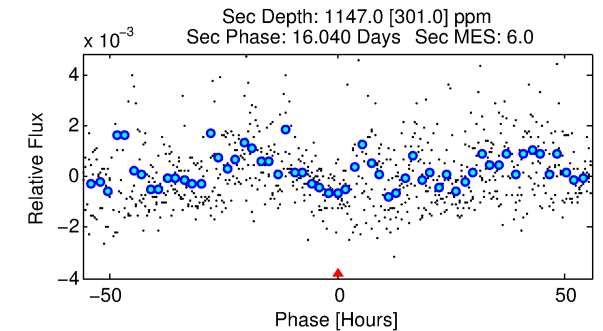
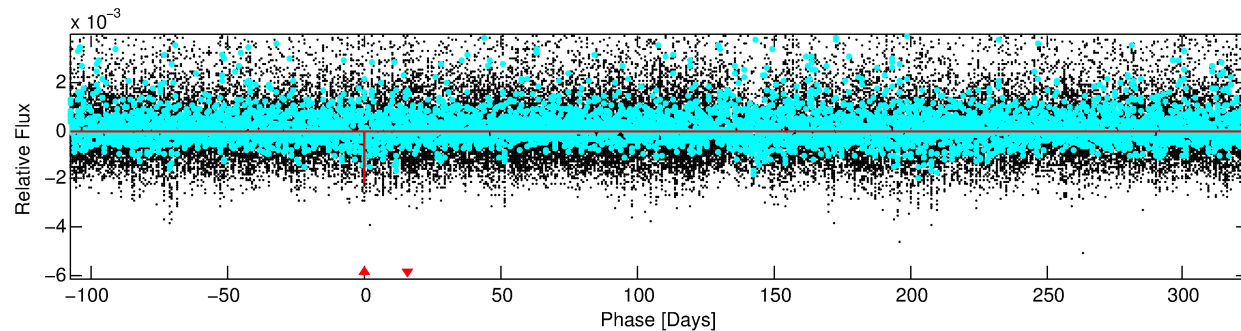
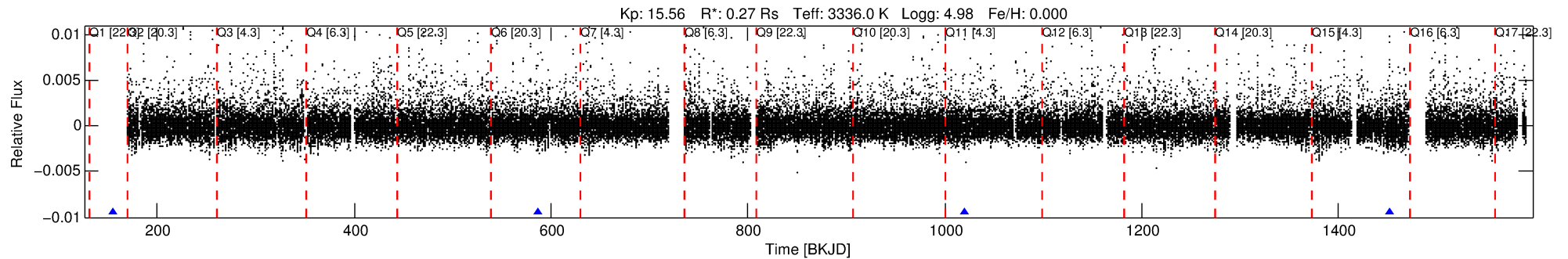
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012071873-01

No Significant Match Found

DV One-Page Summary

KIC: 12071873 Candidate: 1 of 1 Period: 432.012 d



DV Fit Results:

Period = 432.01228 [0.00824] d
Epoch = 155.4784 [0.0183] BKJD
Rp/R* = 0.0435 [0.0115]
a/R* = 317.48 [318.70]
b = 0.53 [1.36]
Seff = 0.02 [0.00]
Teq = 91 [3] K
Rp = 1.27 [0.38] Re
a = 0.7065 [0.0709] AU
Ag = 195063.82 [117440.45] [1.66σ]
Teff = 2945 [437] K [6.54σ]

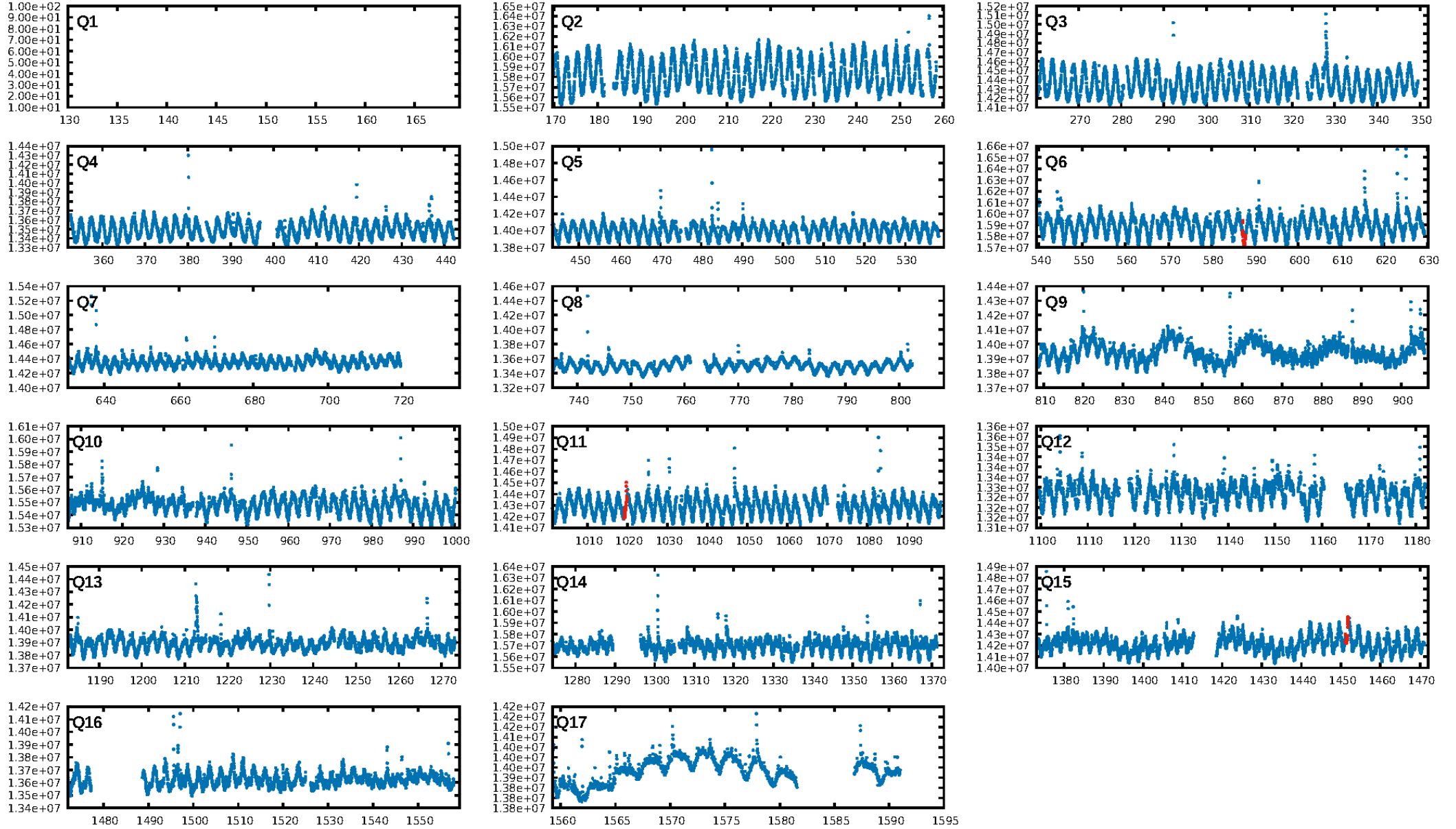
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 31.5%
ModelChiSquareGof-sig: 99.2%
Bootstrap-pfa: 2.92e-17
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -13.21
Centroid-sig: 66.1%
Centroid-so: 0.514 arcsec [0.68σ]
OotOffset-rm: 0.240 arcsec [1.01σ]
KicOffset-rm: 0.141 arcsec [1.02σ]
OotOffset-st: 1/2/0/0 [3]
KicOffset-st: 1/2/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

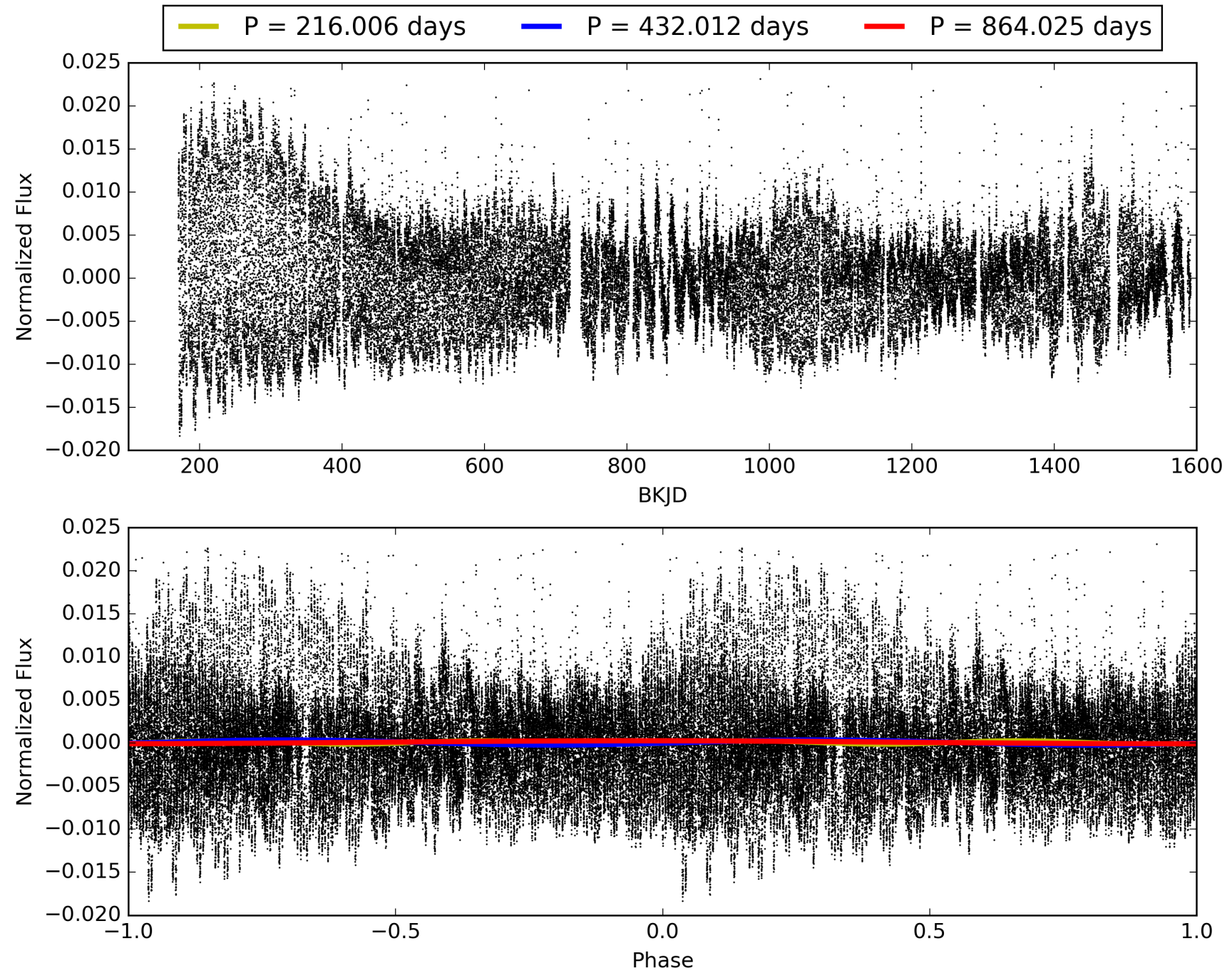
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 01:43:49 Z

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

TCE 012071873-01, PDC Light Curves

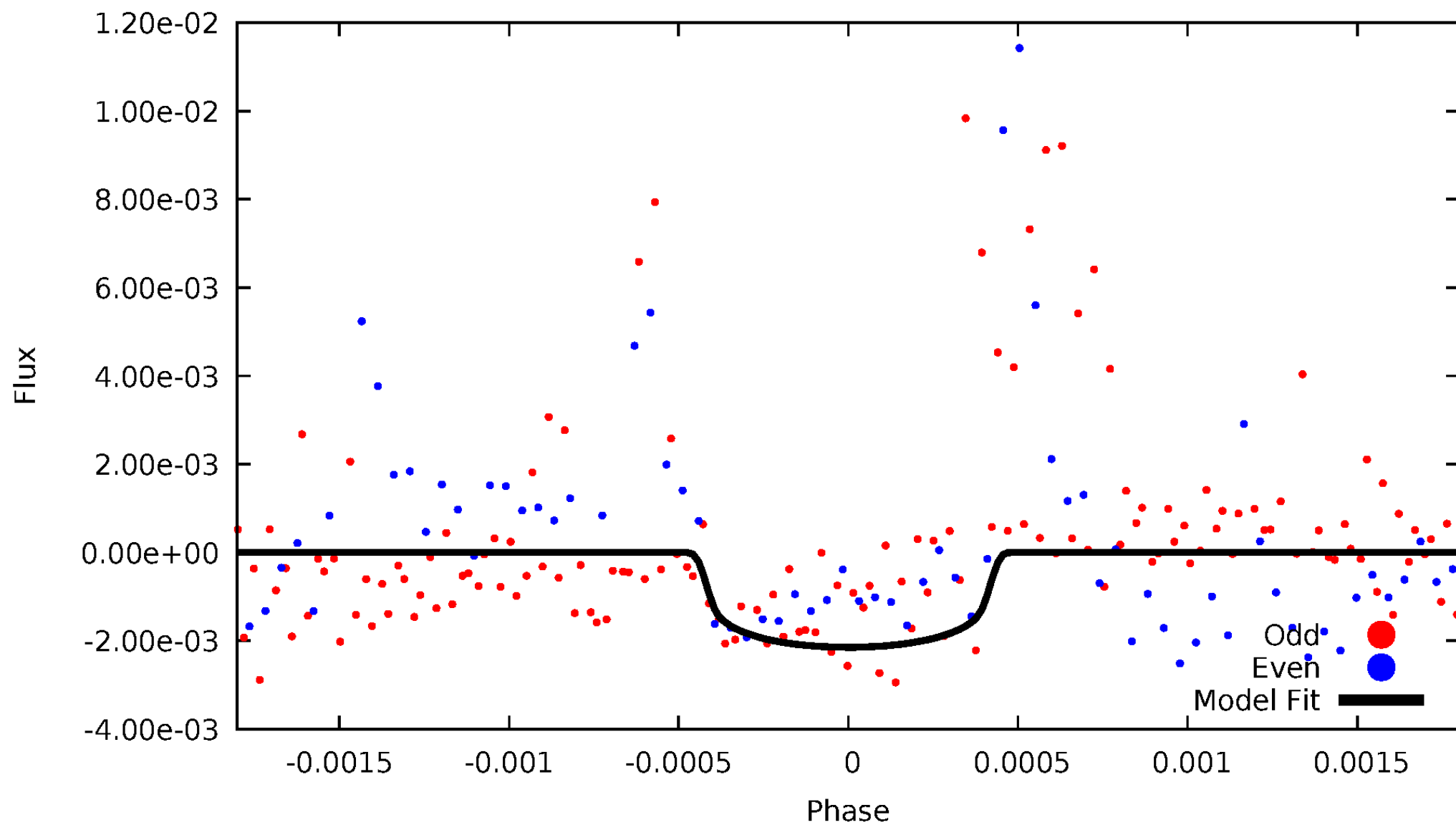


TCE 012071873-01



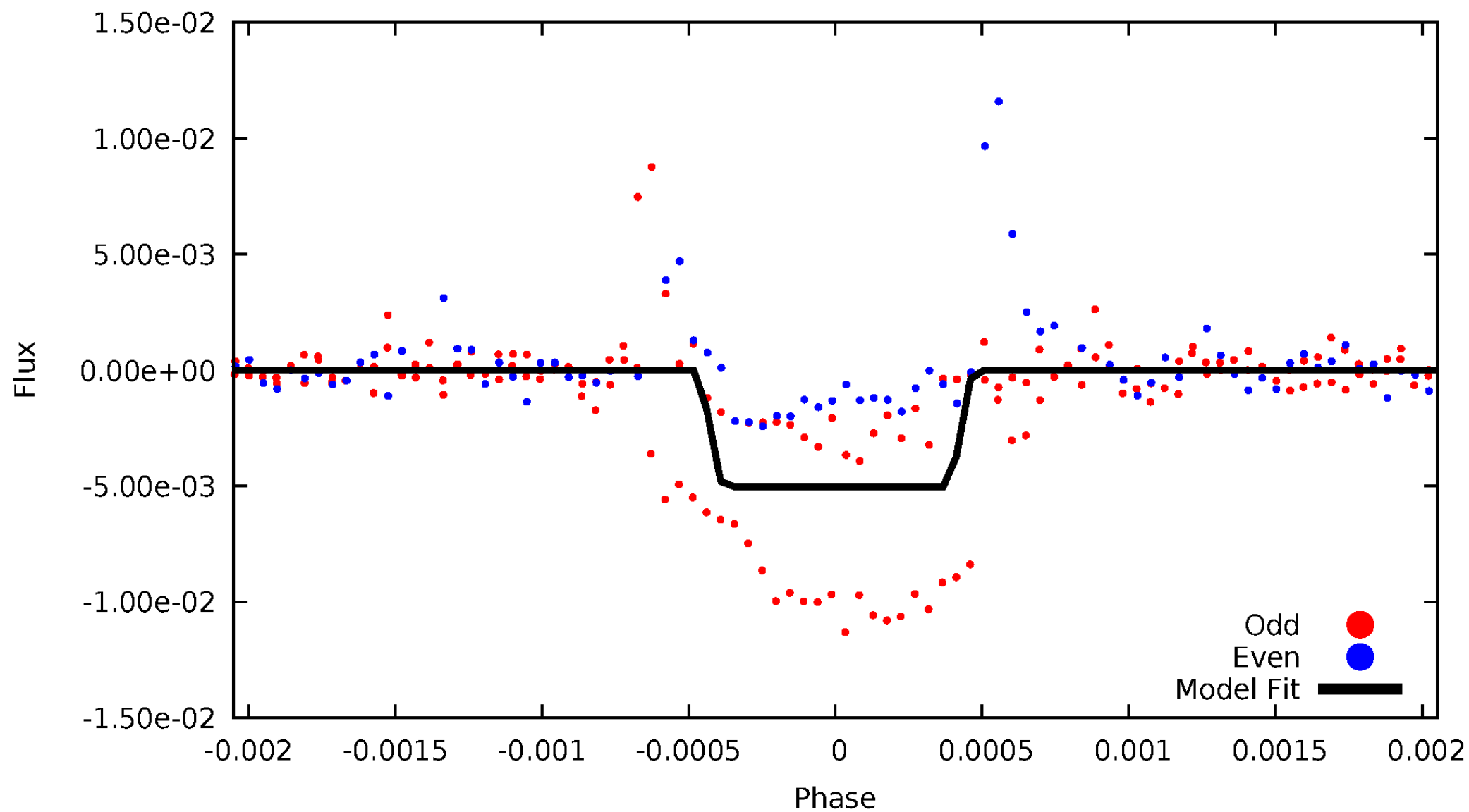
DV Odd/Even

TCE 012071873-01

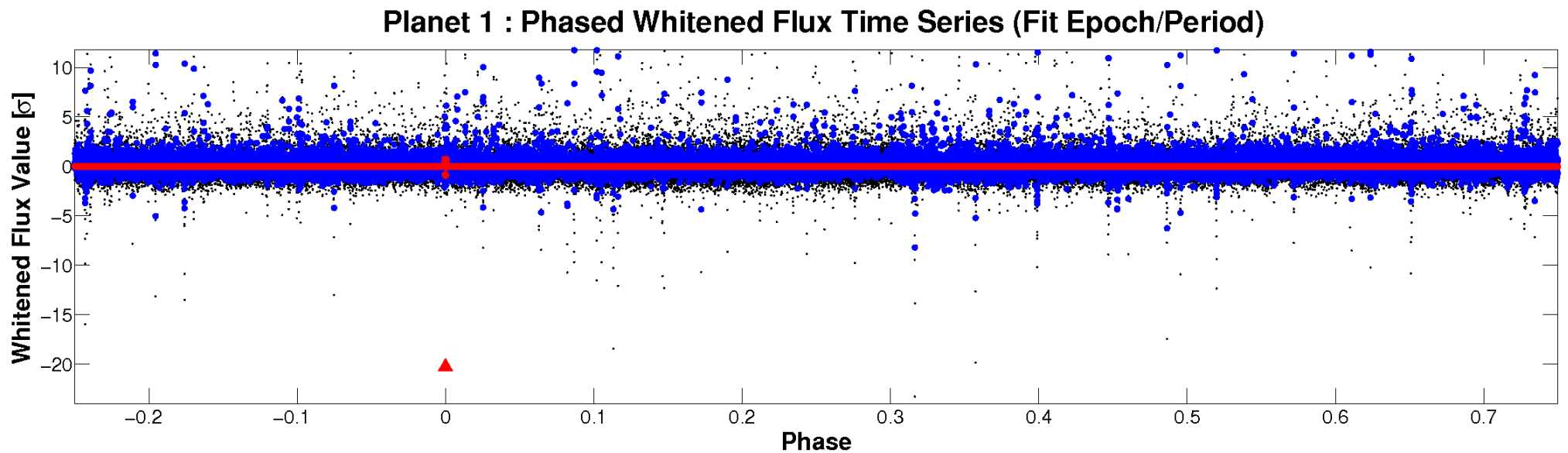
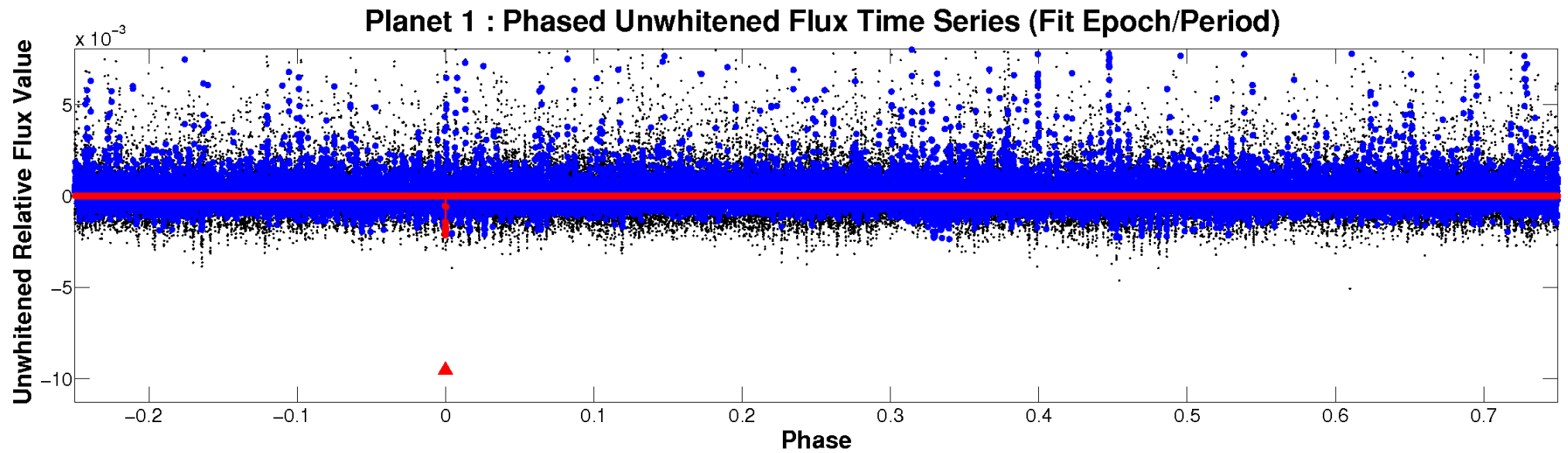


ALT Odd/Even

TCE 012071873-01

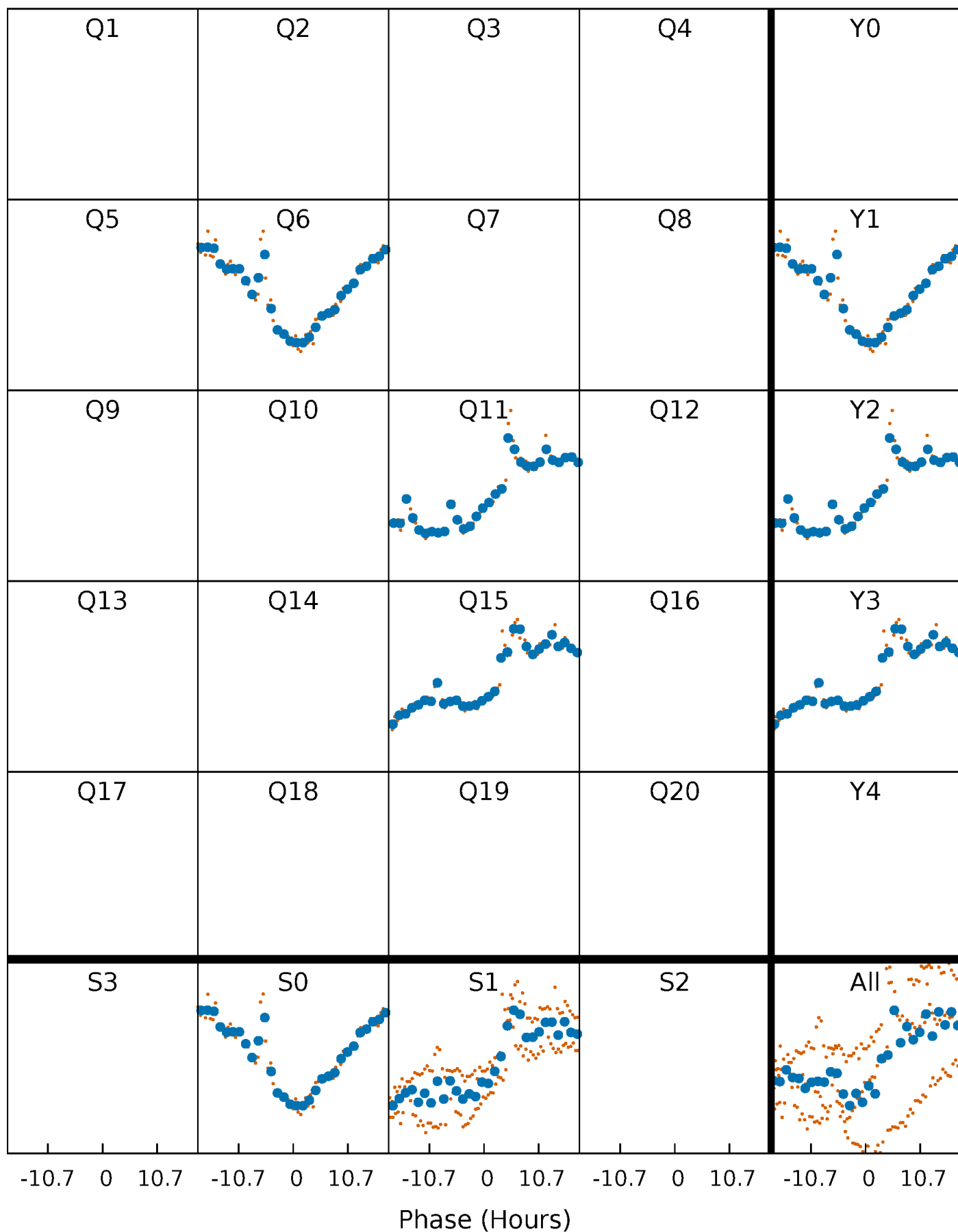


Non-Whitened Vs. Whitened Light Curve



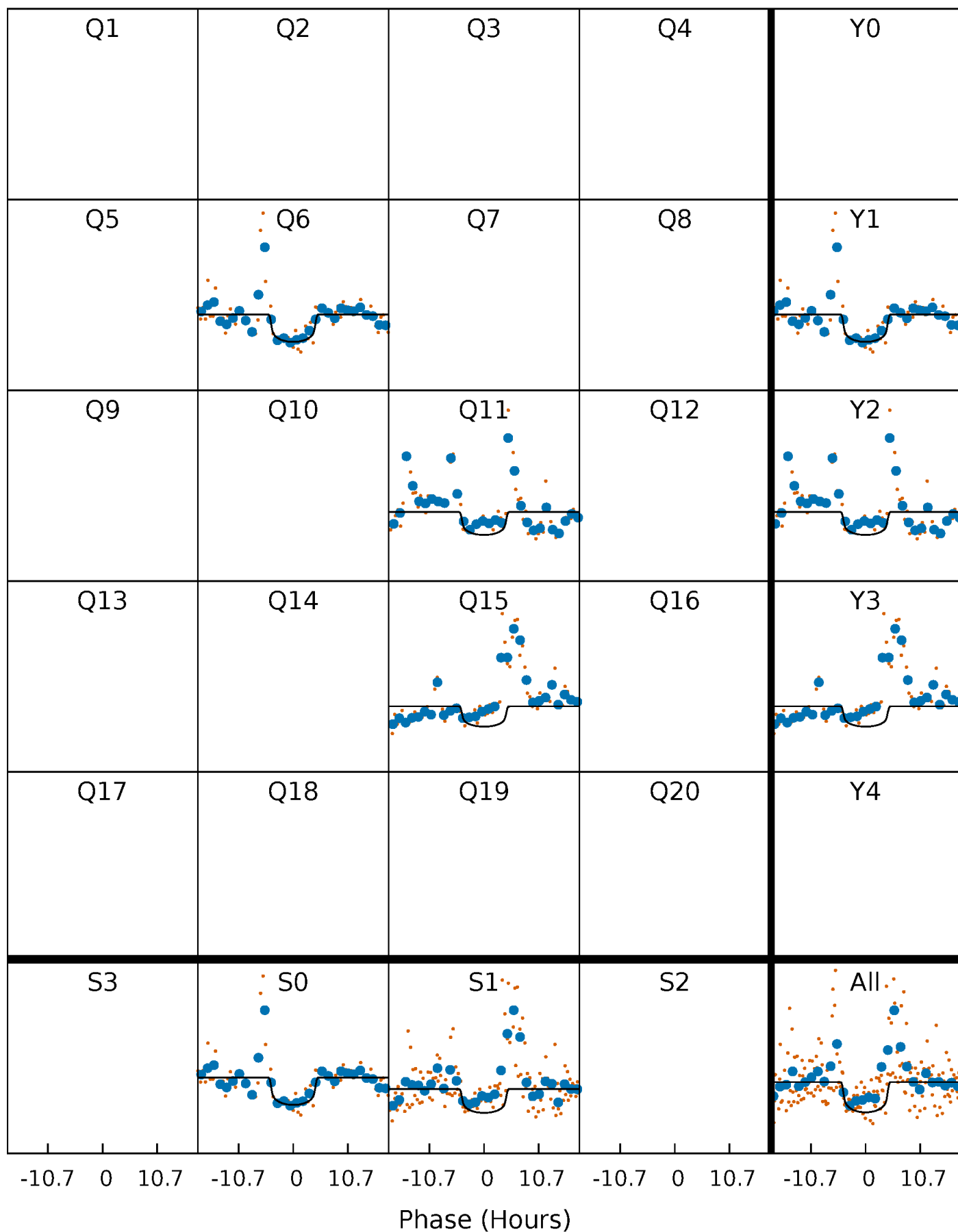
PDC Quarter-Phased Transit Curves

TCE 012071873-01 P=432.012278 Days $T_0=155.478398$ (BKJD)



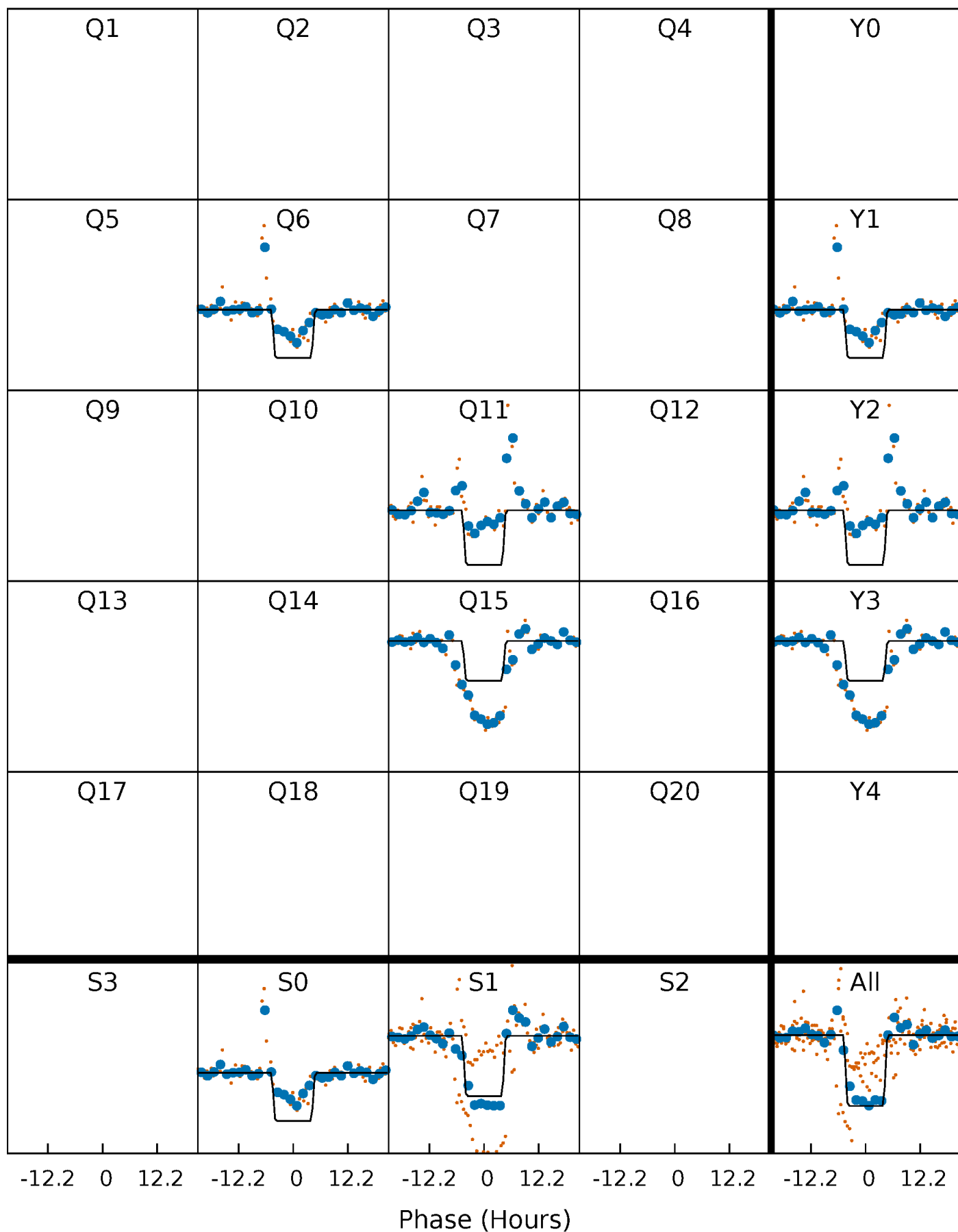
DV Quarter-Phased Transit Curves

TCE 012071873-01 P=432.012278 Days $T_0=155.478398$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

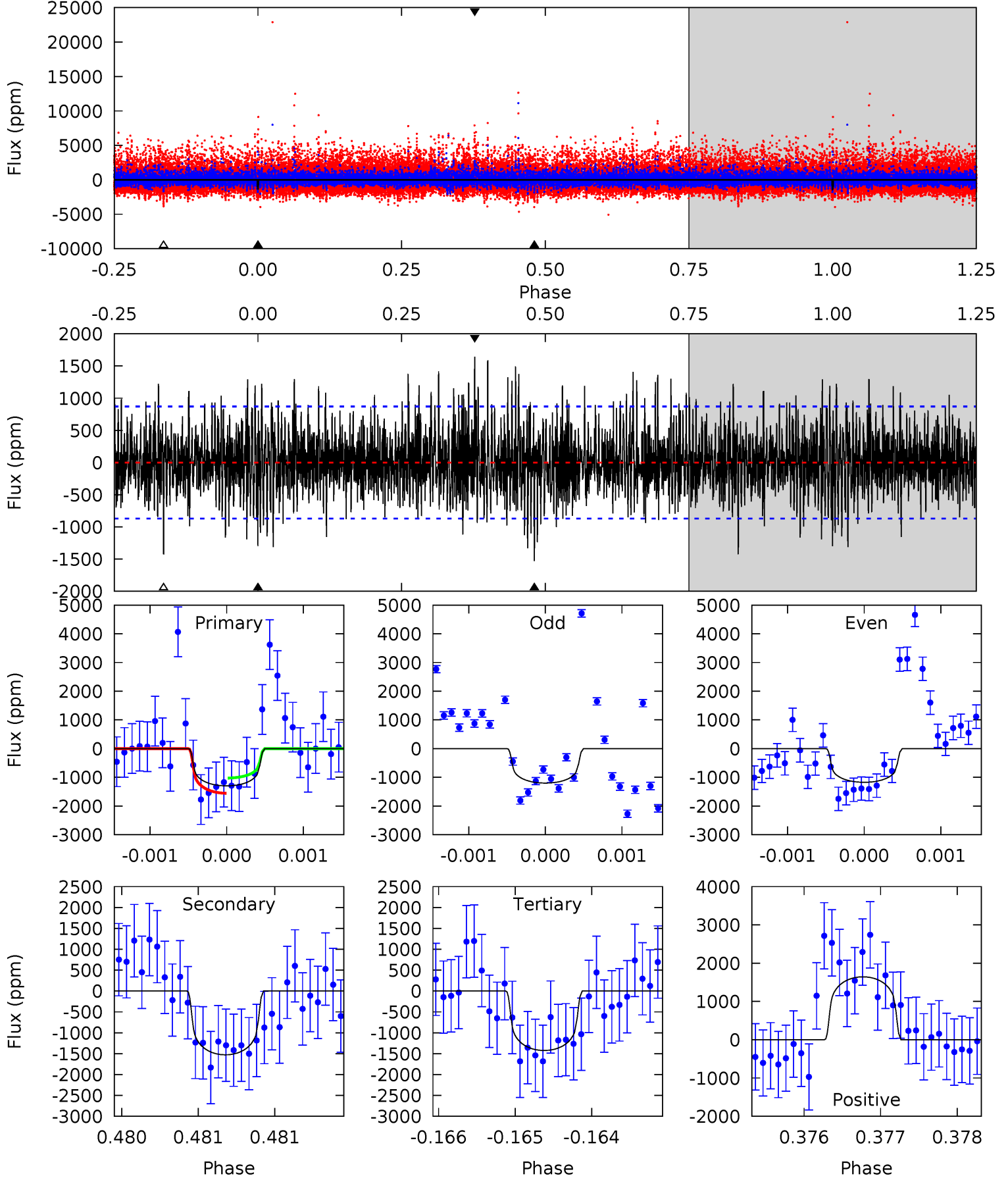
TCE 012071873-01 P=431.965458 Days $T_0=155.549392$ (BKJD)



DV Model-Shift Uniqueness Test

012071873-01, P = 432.012278 Days, E = 155.478398 Days

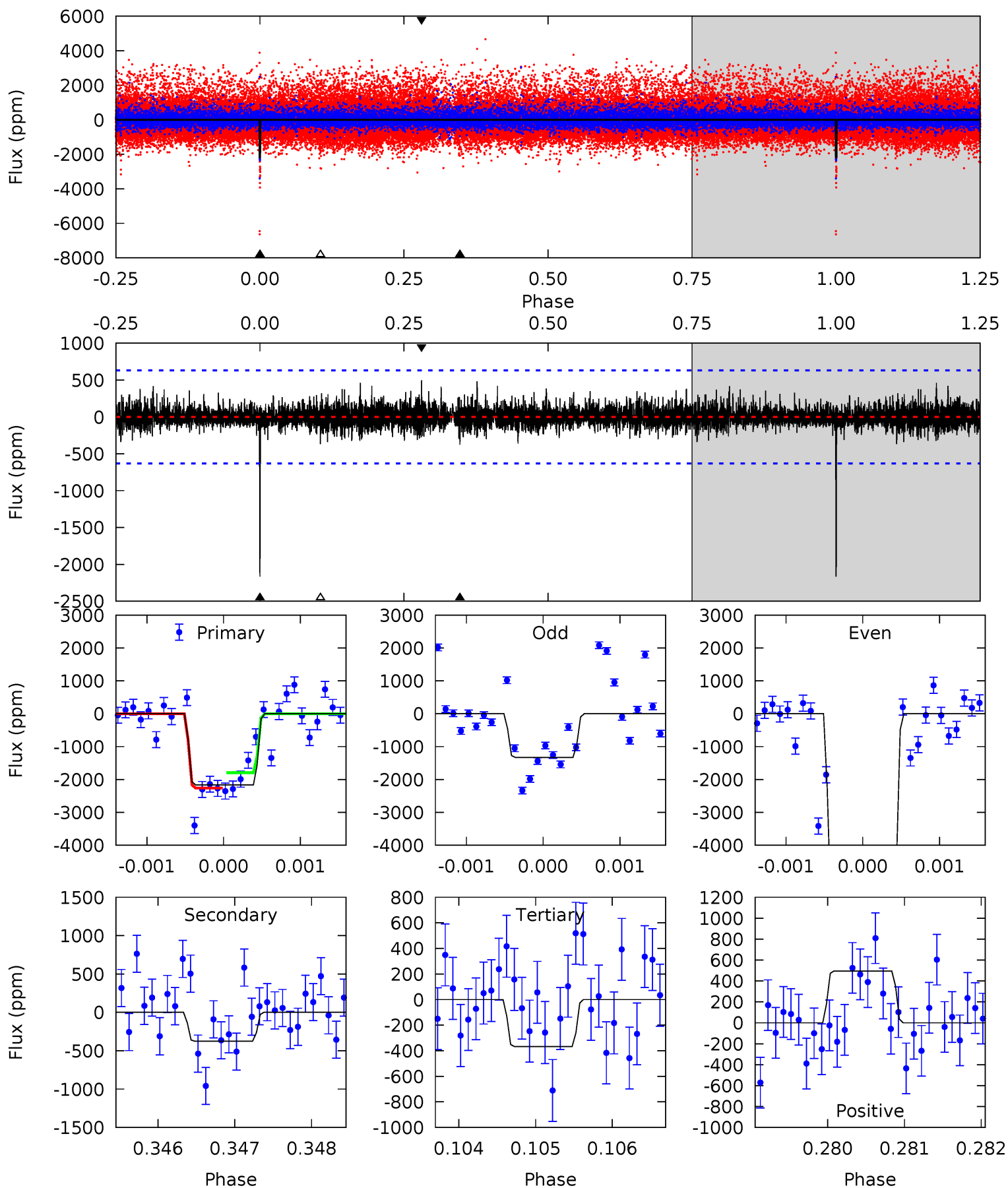
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.14	9.58	8.93	10.3	5.46	3.31	2.54	-0.79	-2.16	0.65	-0.72	0.07	0.83	0.52	1.68



Alt Model-Shift Uniqueness Test

012071873-01, P = 431.965458 Days, E = 155.549392 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.7	3.26	3.18	4.29	5.46	3.31	0.84	15.6	14.5	0.08	-1.03	24.7	1.84	0.19	2.00



Stellar Parameters For KIC 012071873

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3336^{+43}_{-36}	$4.983^{+0.040}_{-0.044}$	$0.000^{+0.100}_{-0.100}$	$0.268^{+0.038}_{-0.027}$	$0.252^{+0.049}_{-0.030}$	$18.420^{+4.033}_{-3.642}$
	+1%/-1%	+1%/-1%	+inf%/-inf%	+14%/-10%	+19%/-12%	+22%/-20%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 012071873-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1528 ± 160	$1.28^{+0.34}_{-0.36}$	127^{+3}_{-3}	3244^{+335}_{-231}	$261532^{+223588}_{-104146}$
Alt.	-376 ± 115	$2.07^{+0.39}_{-0.35}$	127^{+3}_{-2}	2362^{+127}_{-130}	23345^{+13676}_{-9026}

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

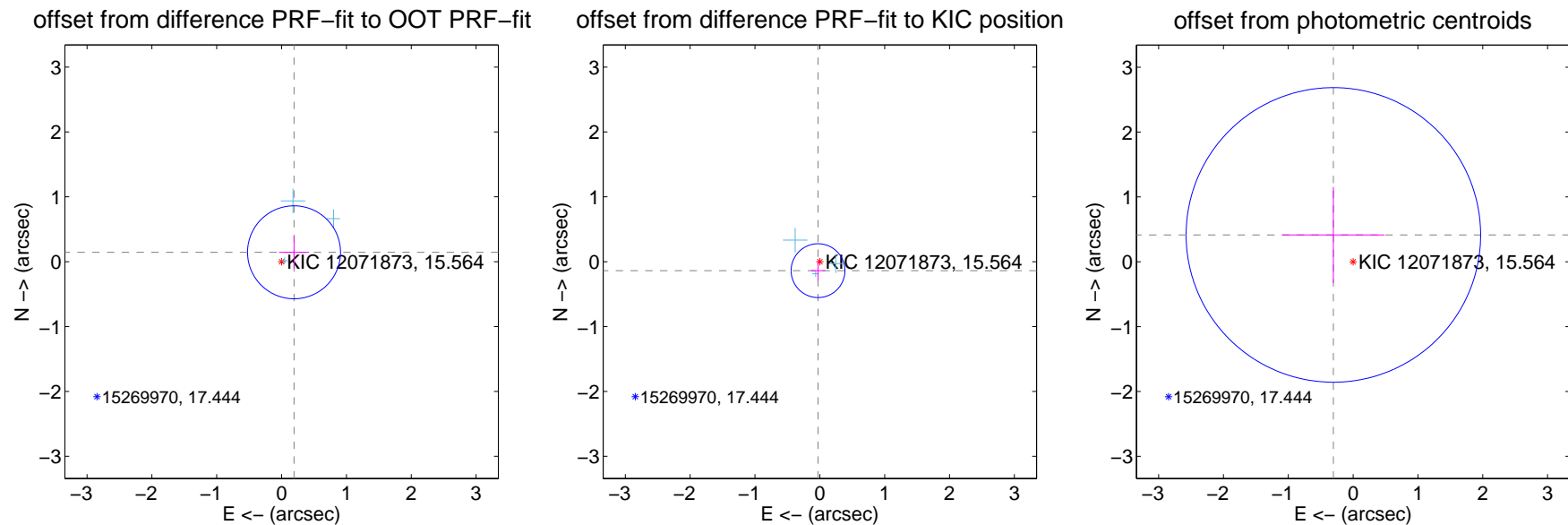
DV Centroid Data

Supplemental centroid analysis for 012071873-01. Kepler magnitude: 15.56. Transit SNR 6.65

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.89 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.240 ± 0.239	1.01	-0.192 ± 0.232	0.145 ± 0.250
PRF-fit source offset from KIC position	0.141 ± 0.138	1.02	0.028 ± 0.110	-0.138 ± 0.148
photometric centroid source offset	0.51 ± 0.76	0.68	0.30 ± 0.79	0.41 ± 0.74

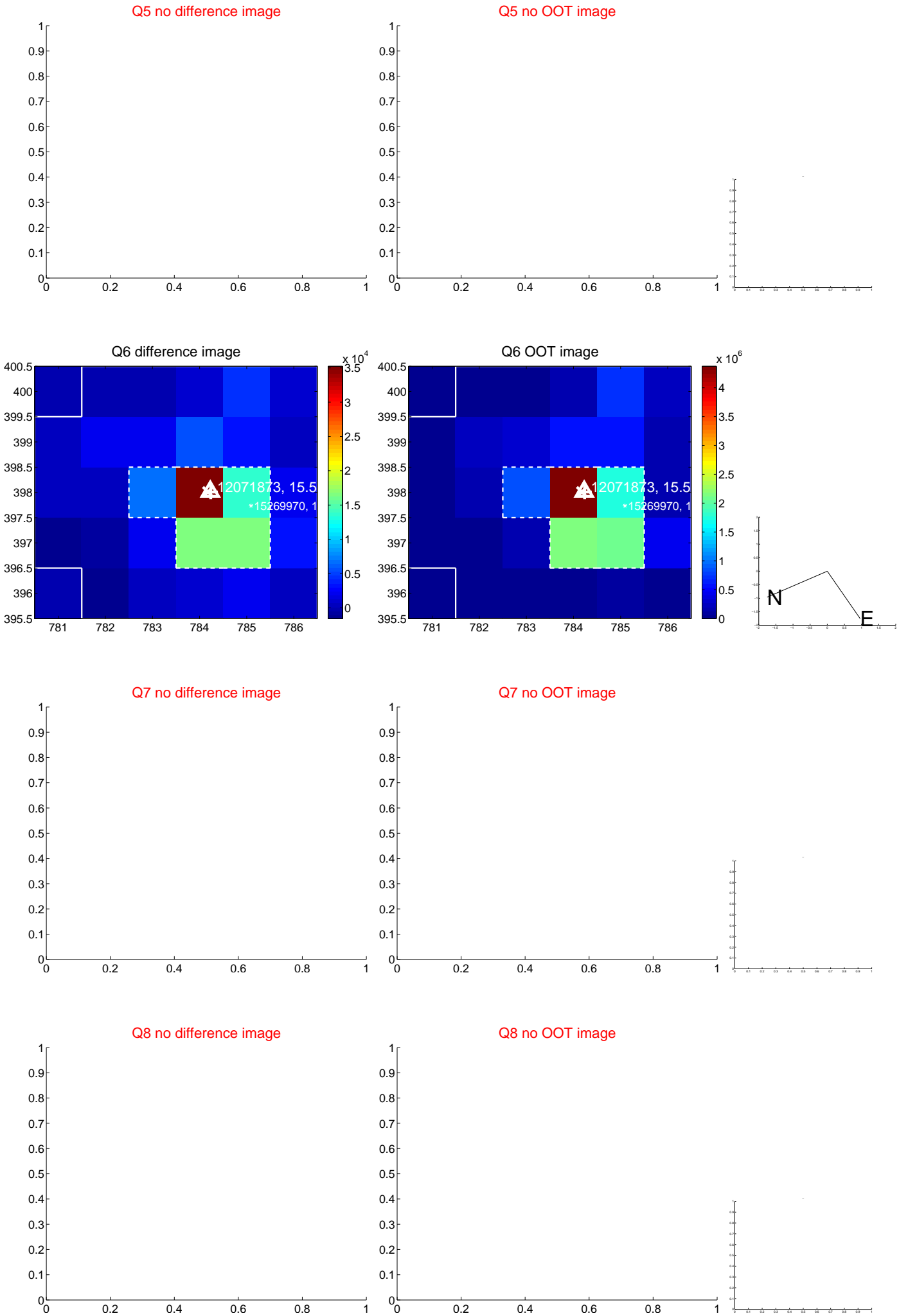


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

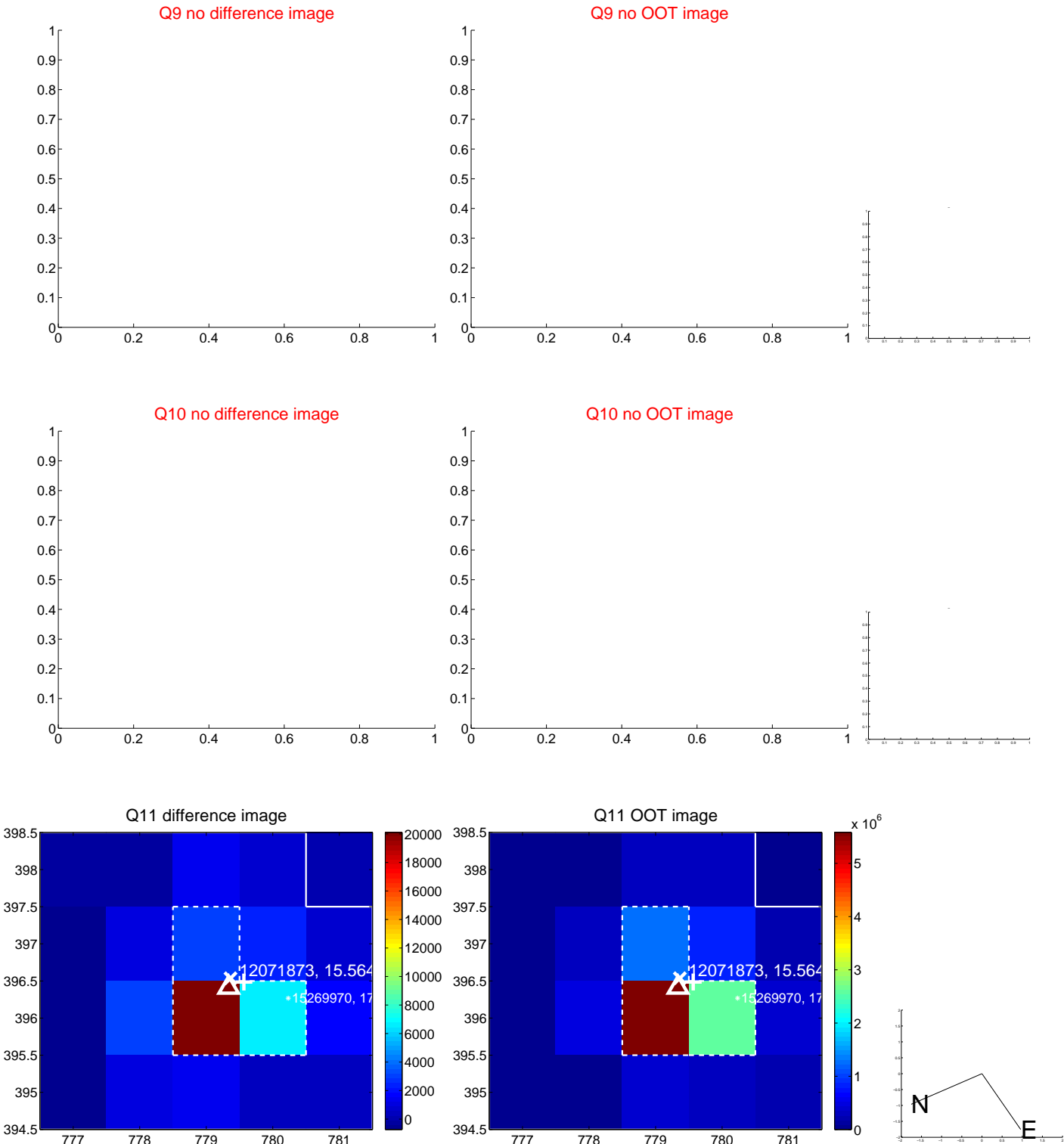
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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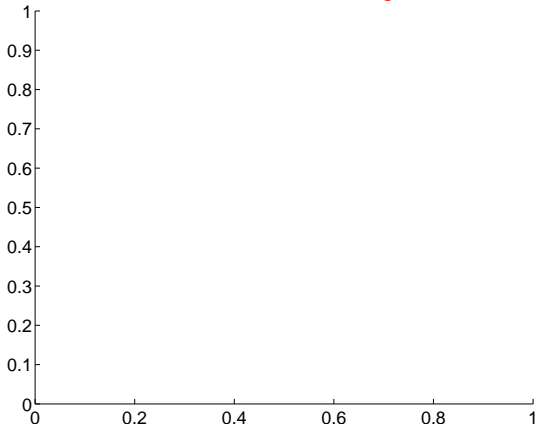


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

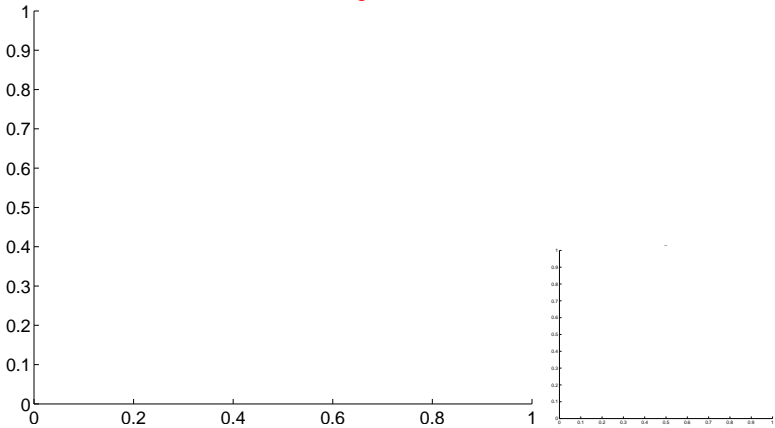


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

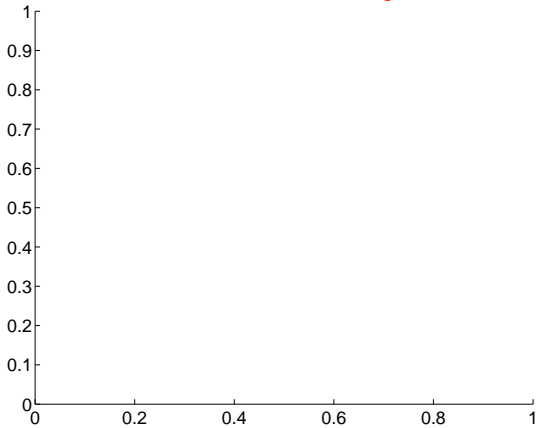
Q13 no difference image



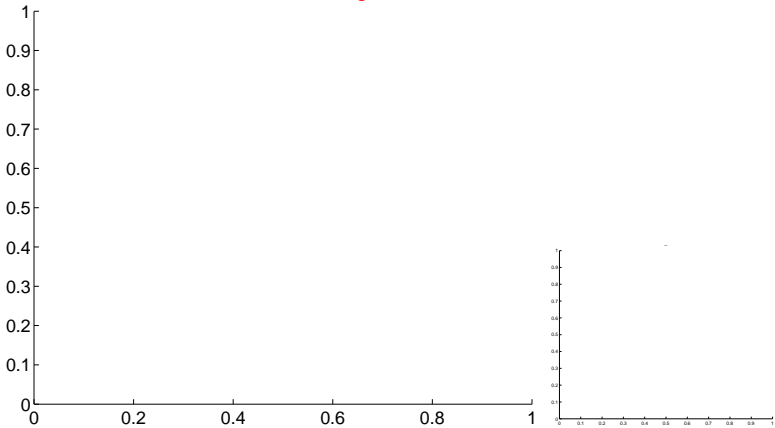
Q13 no OOT image



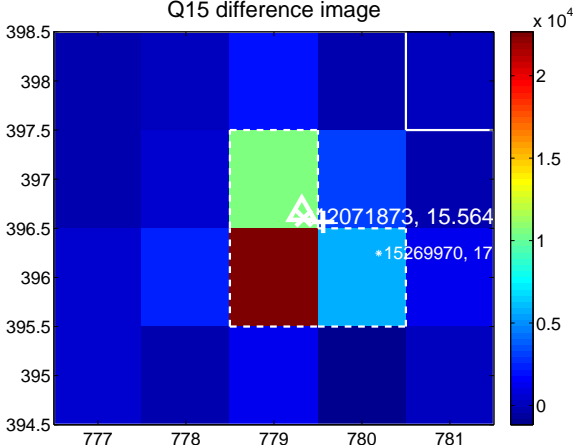
Q14 no difference image



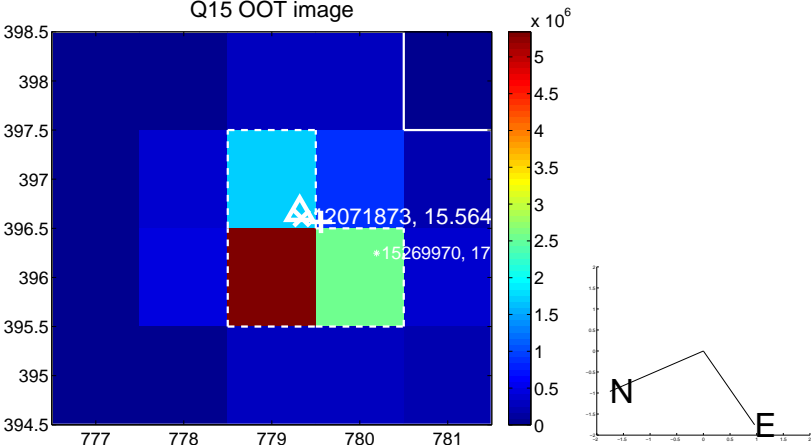
Q14 no OOT image



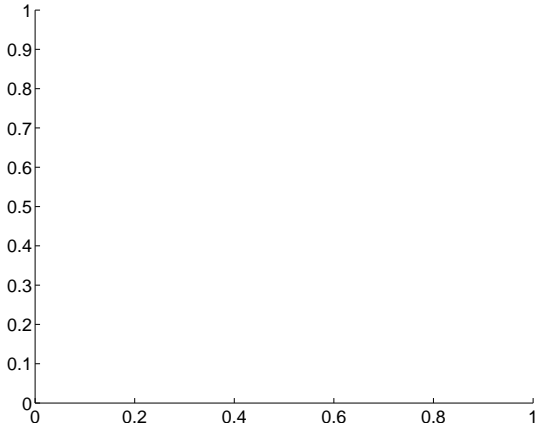
Q15 difference image



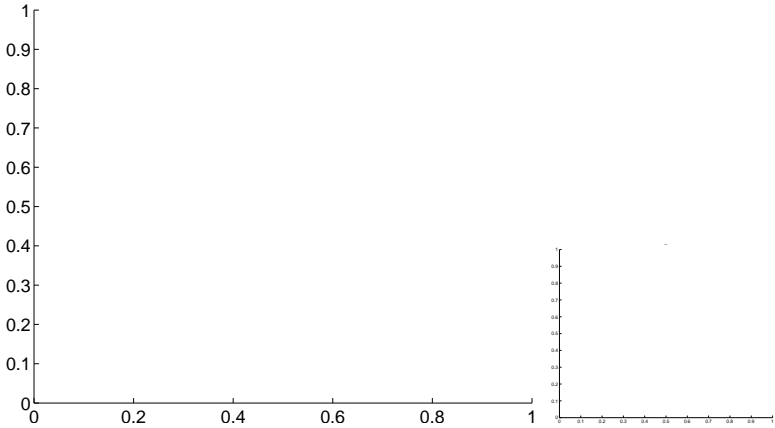
Q15 OOT image



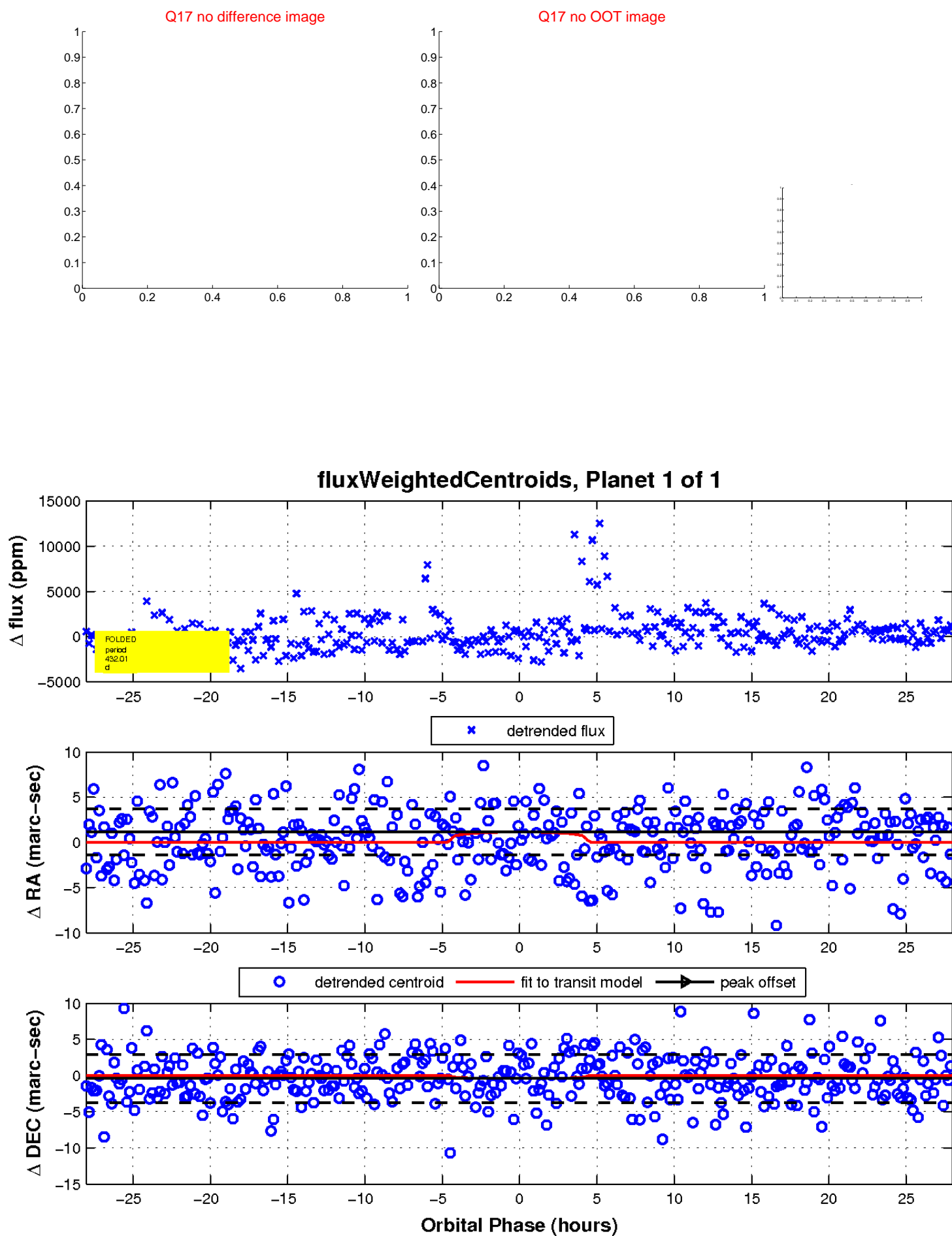
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

