

KIC 002156906

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})
002156906-01	OBS	No	401.533252	336.691162	938.0	10.571	7.8	8.7	0.99	6153	3.39	1.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002156906-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—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.

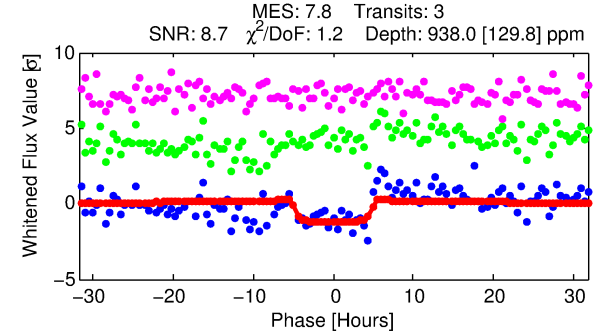
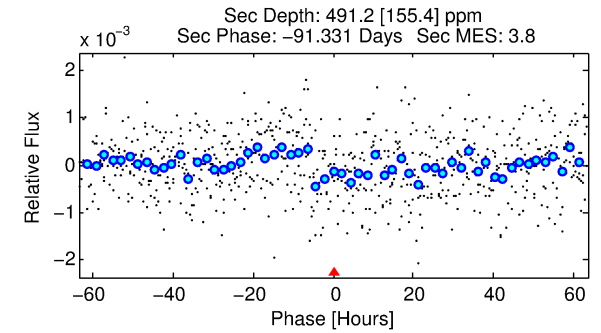
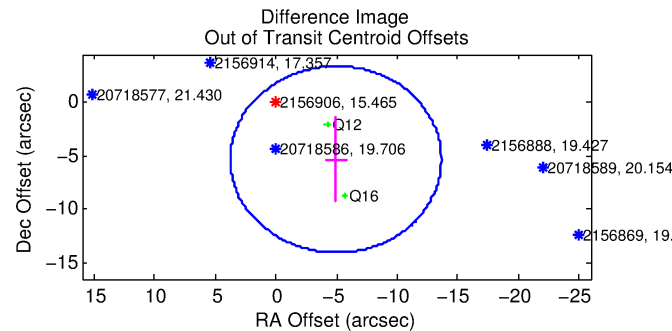
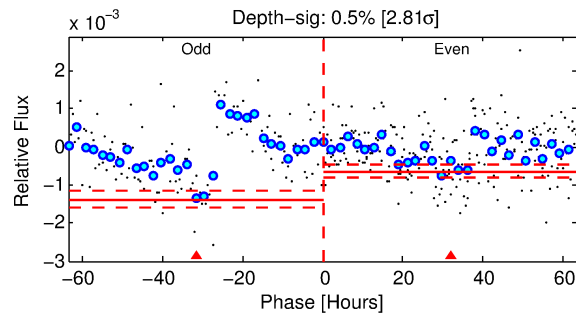
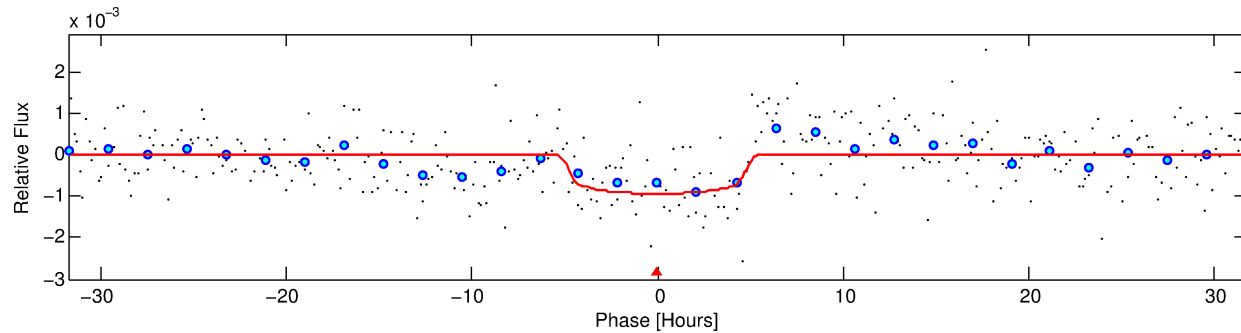
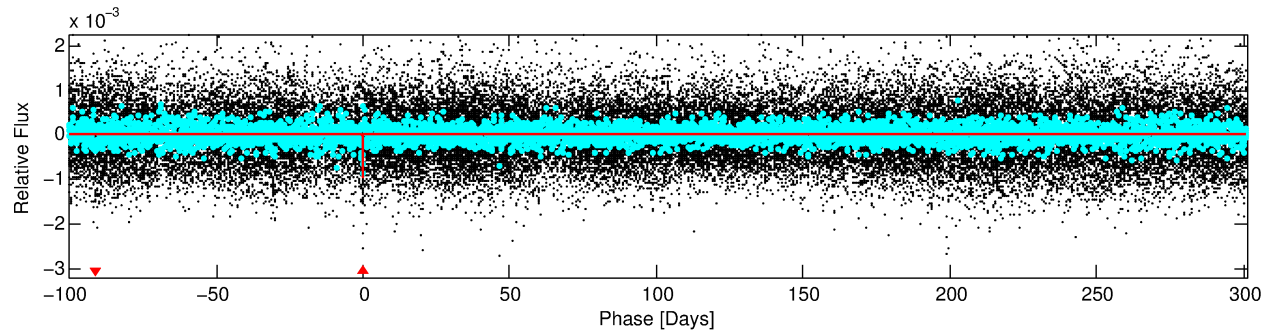
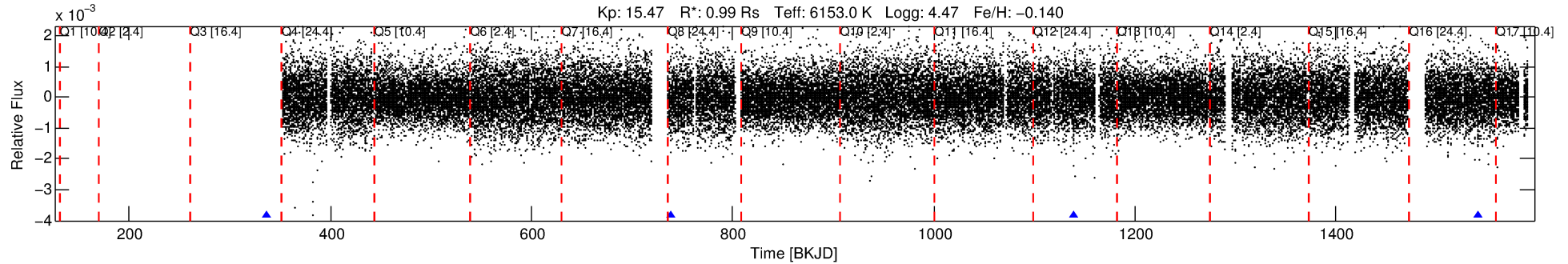
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002156906-01

No Significant Match Found

DV One-Page Summary

KIC: 2156906 Candidate: 1 of 1 Period: 401.533 d



DV Fit Results:

Period = 401.53325 [0.01461] d
Epoch = 336.6912 [0.0305] BKJD
Rp/R* = 0.0313 [0.0064]
a/R* = 182.77 [172.49]
b = 0.82 [0.39]
Seff = 1.07 [0.43]
Teq = 259 [26] K
Rp = 3.39 [1.23] Re
a = 1.0876 [0.2741] AU
Ag = 27811.07 [17667.88] [1.57 σ]
Teffp = 5179 [703] K [6.99 σ]

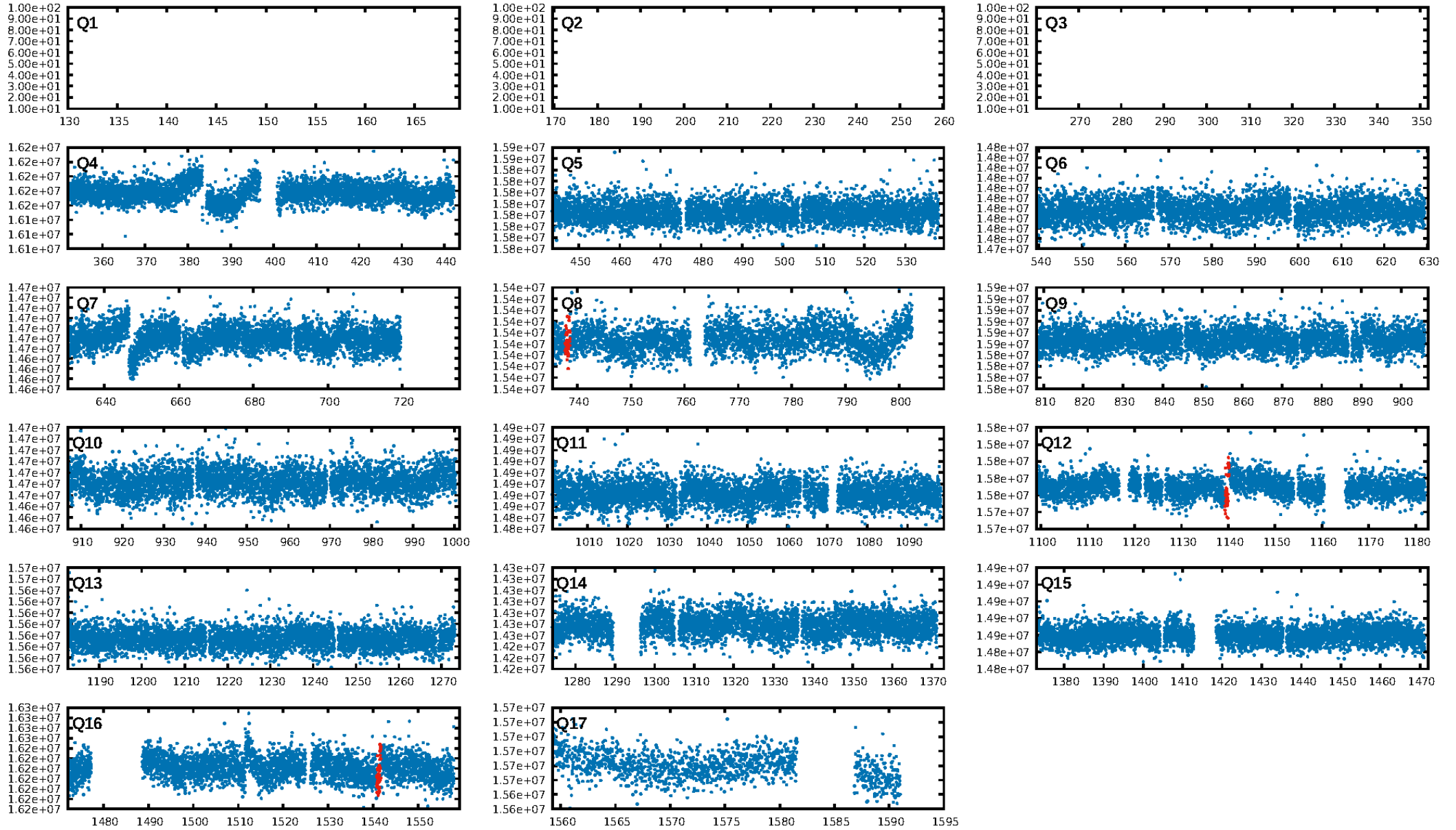
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.6%
ModelChiSquareGof-sig: 84.5%
Bootstrap-pfa: 2.13e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.971
Centroid-sig: 4.4%
Centroid-so: 2.123 arcsec [1.61 σ]
OotOffset-rm: 7.274 arcsec [2.50 σ]
KicOffset-rm: 7.337 arcsec [2.51 σ]
OotOffset-st: 0/0/2/0 [2]
KicOffset-st: 0/0/2/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

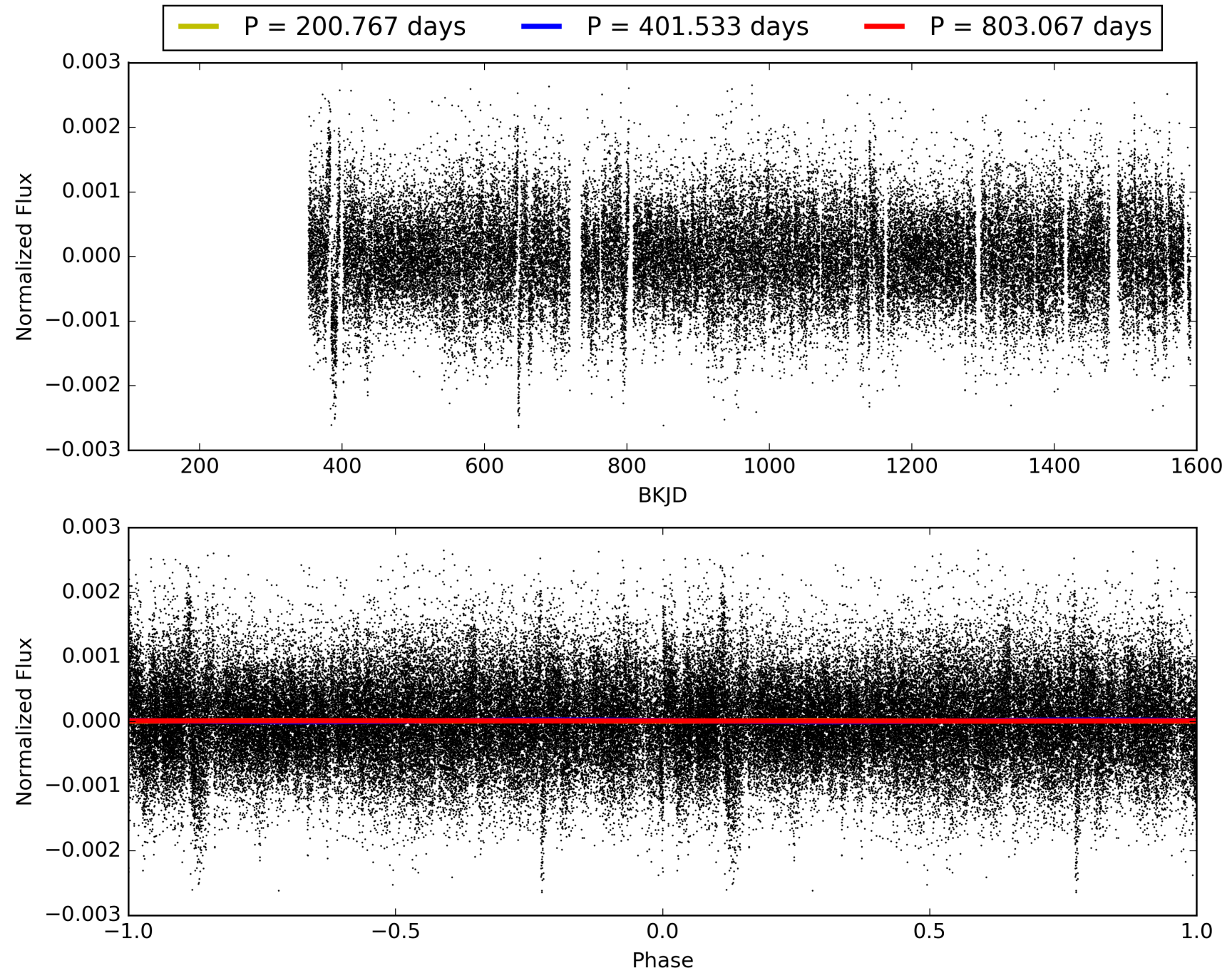
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:33:49 Z

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

TCE 002156906-01, PDC Light Curves

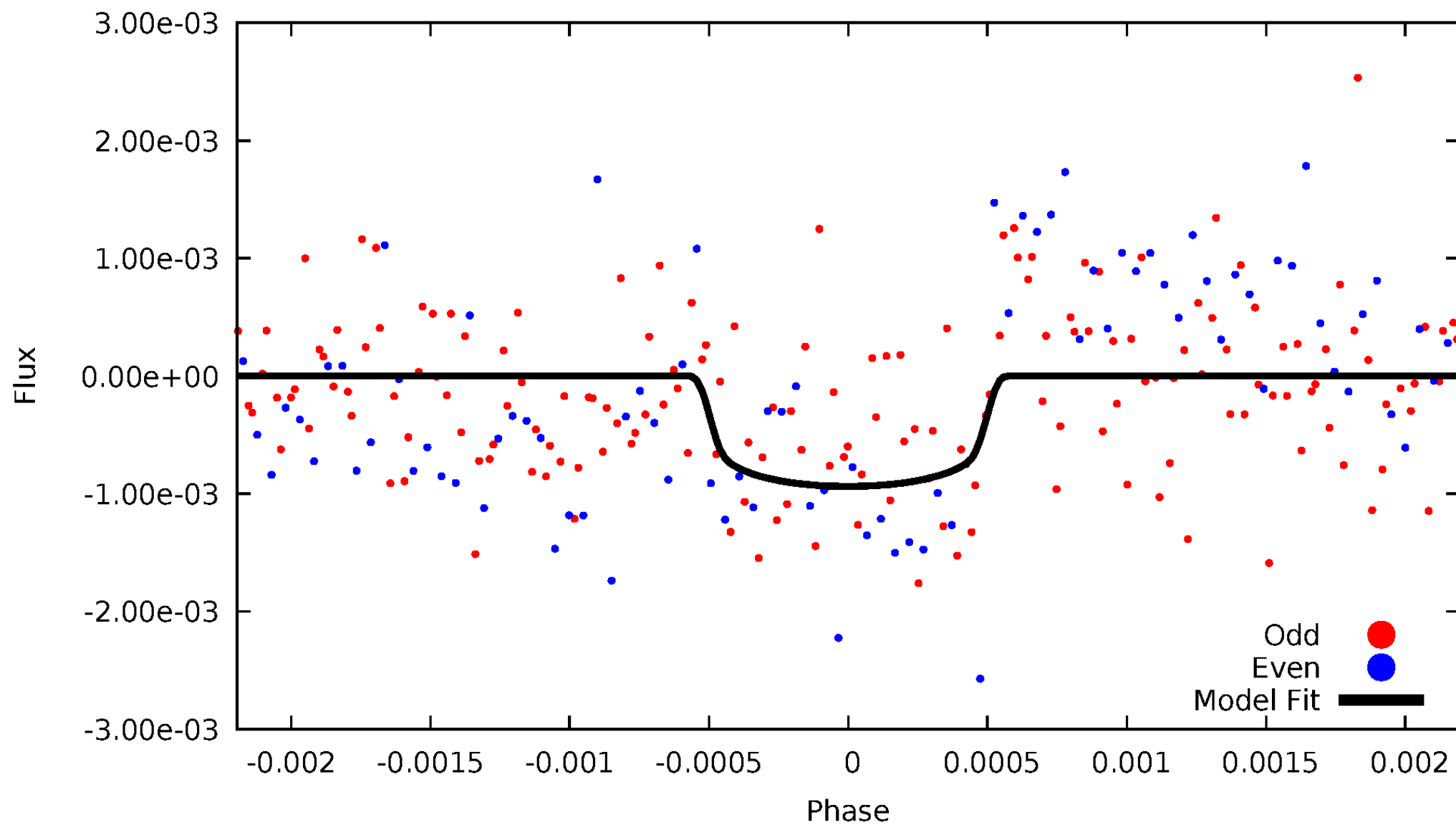


TCE 002156906-01



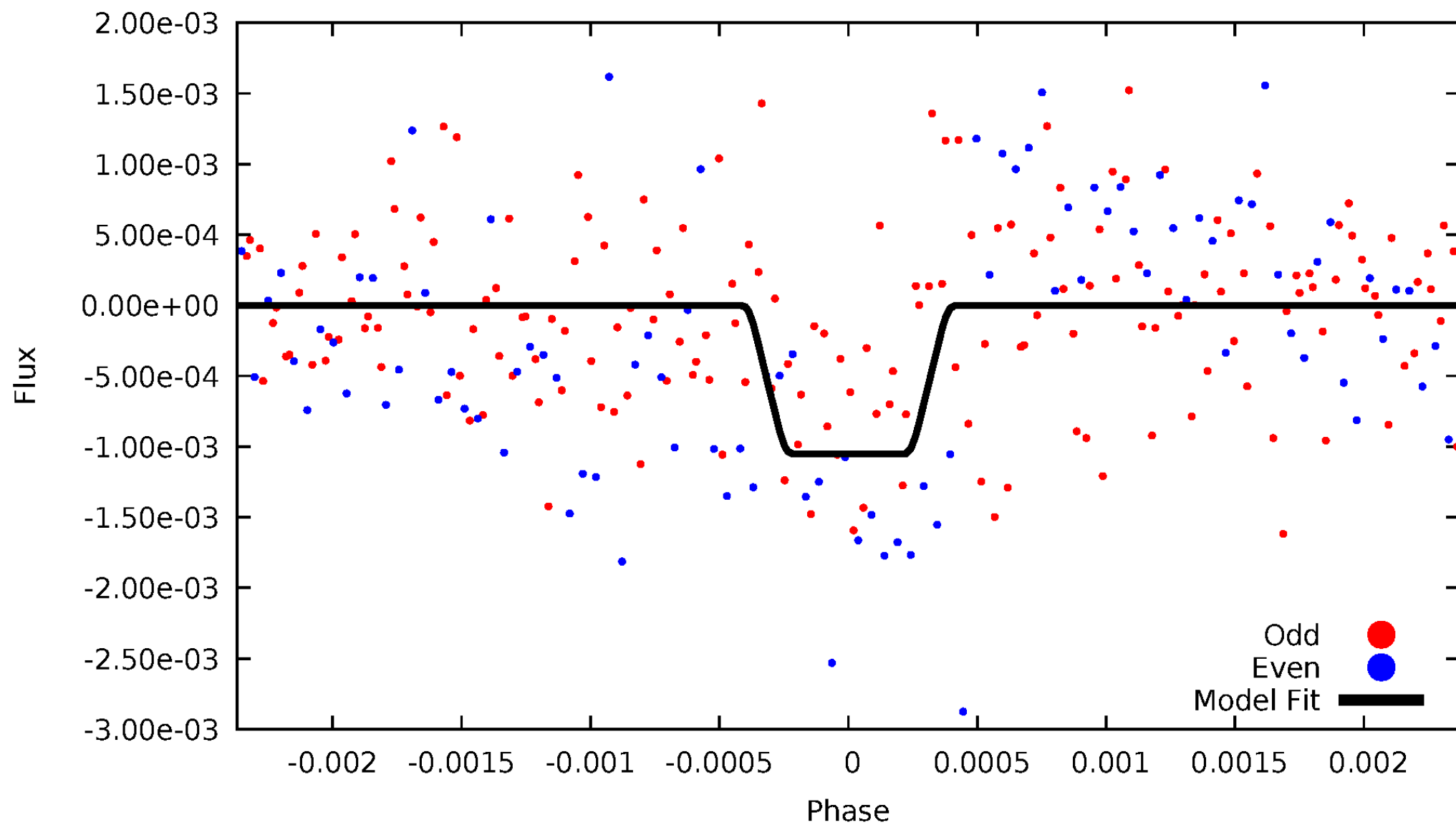
DV Odd/Even

TCE 002156906-01



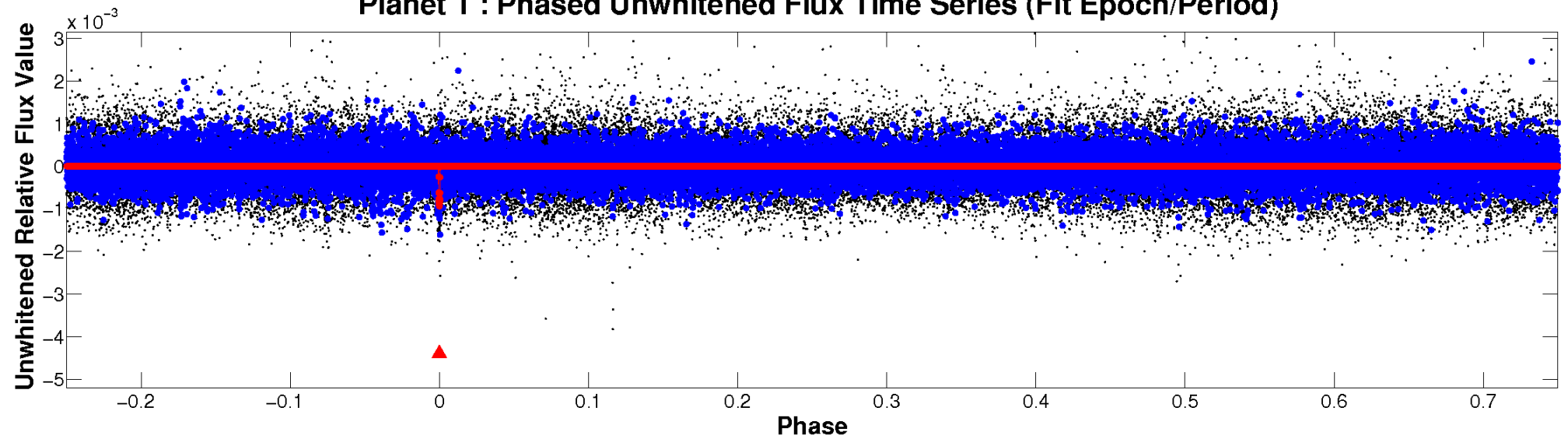
ALT Odd/Even

TCE 002156906-01

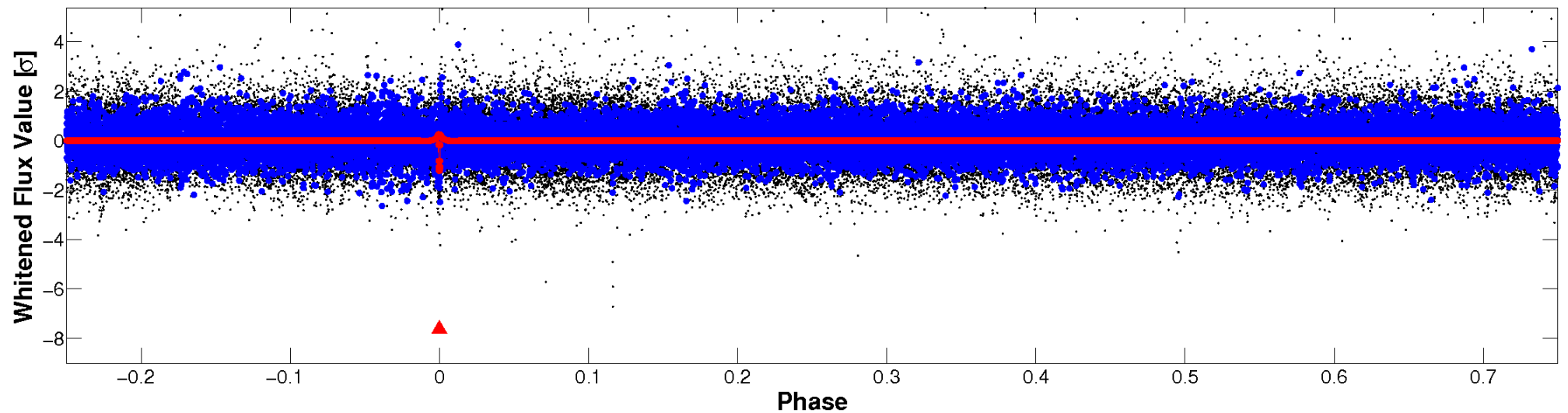


Non-Whitened Vs. Whitened Light Curve

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

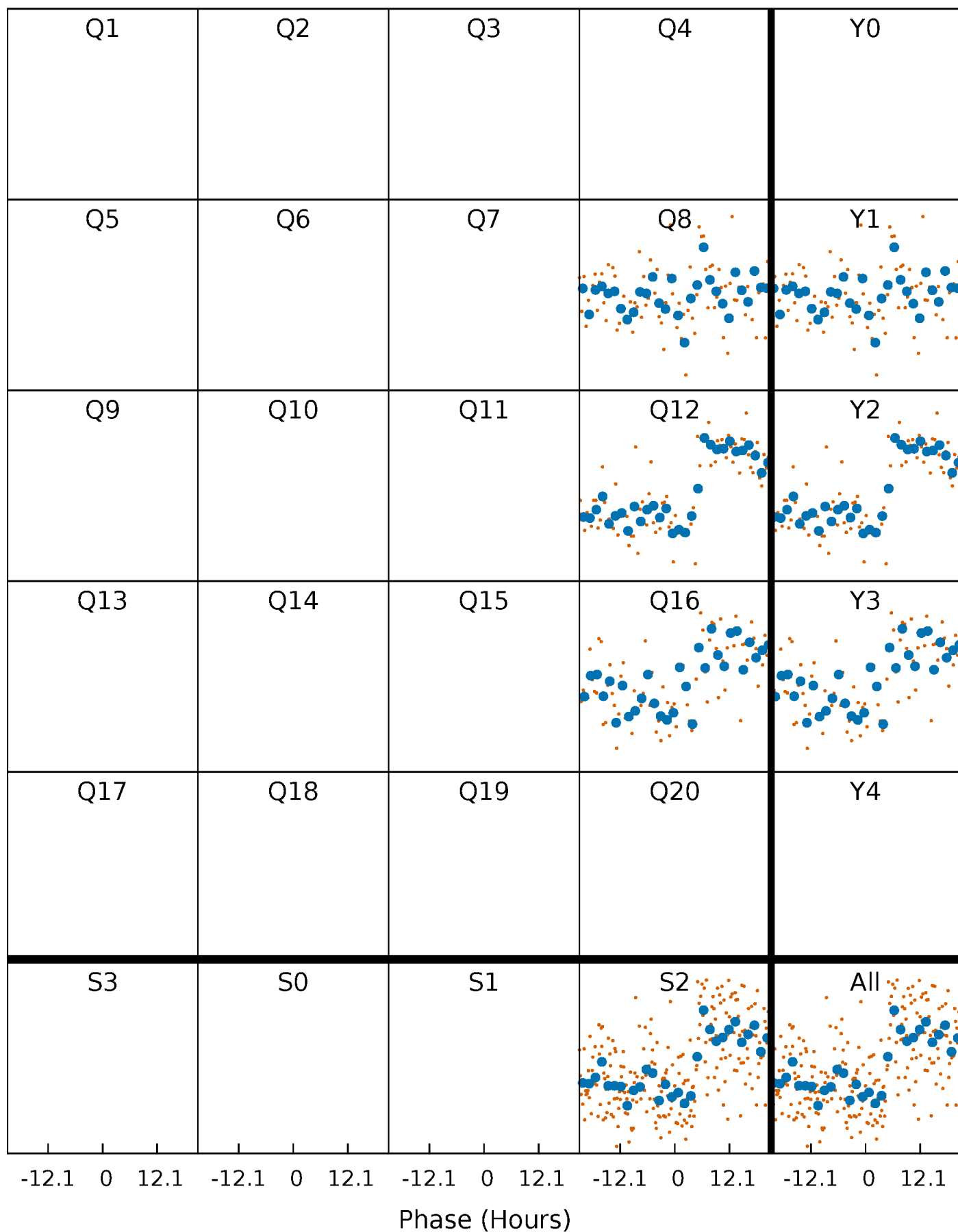


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



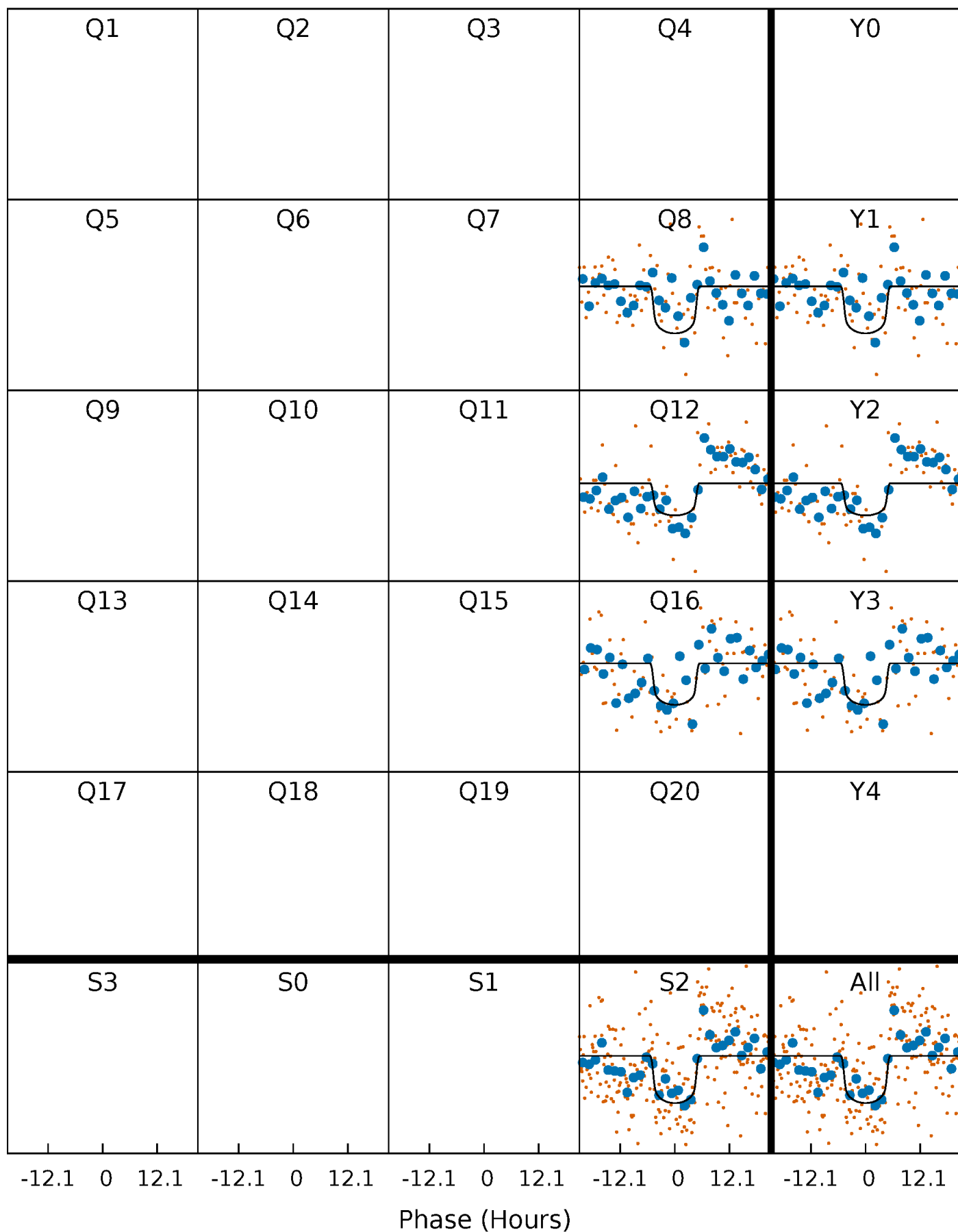
PDC Quarter-Phased Transit Curves

TCE 002156906-01 P=401.533252 Days $T_0=336.691162$ (BKJD)



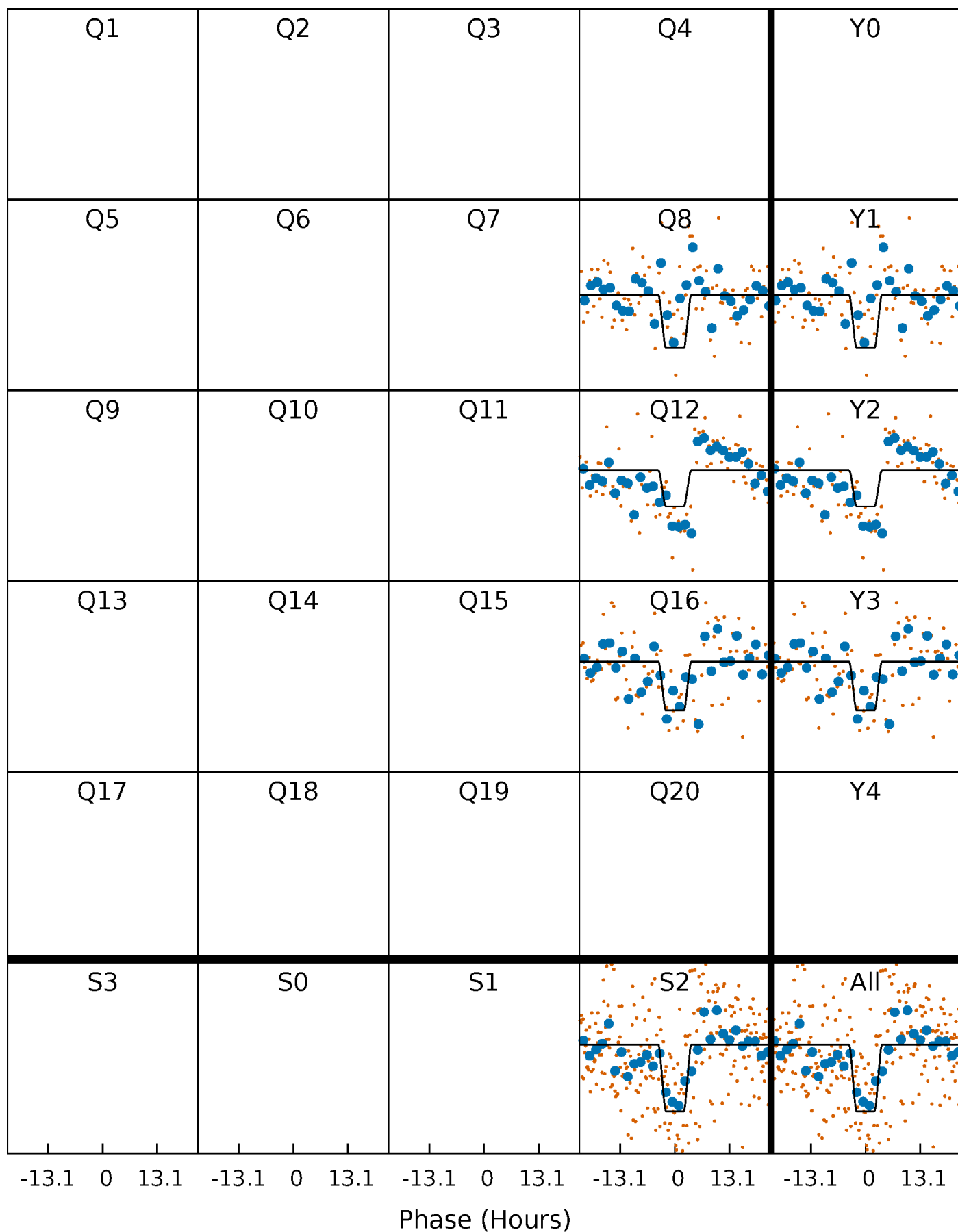
DV Quarter-Phased Transit Curves

TCE 002156906-01 P=401.533252 Days $T_0=336.691162$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

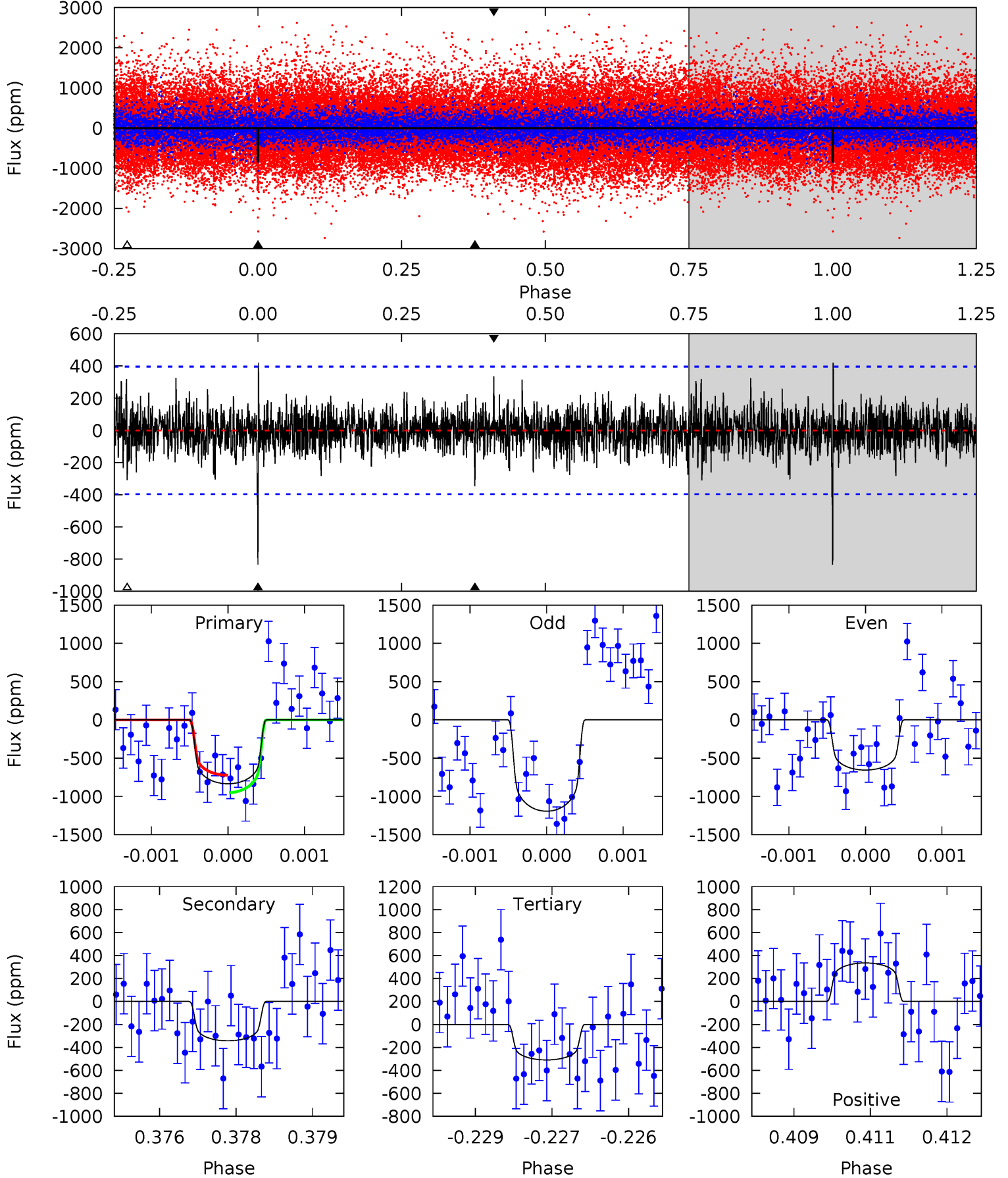
TCE 002156906-01 P=401.451342 Days $T_0=336.866115$ (BKJD)



DV Model-Shift Uniqueness Test

002156906-01, P = 401.533252 Days, E = 336.691162 Days

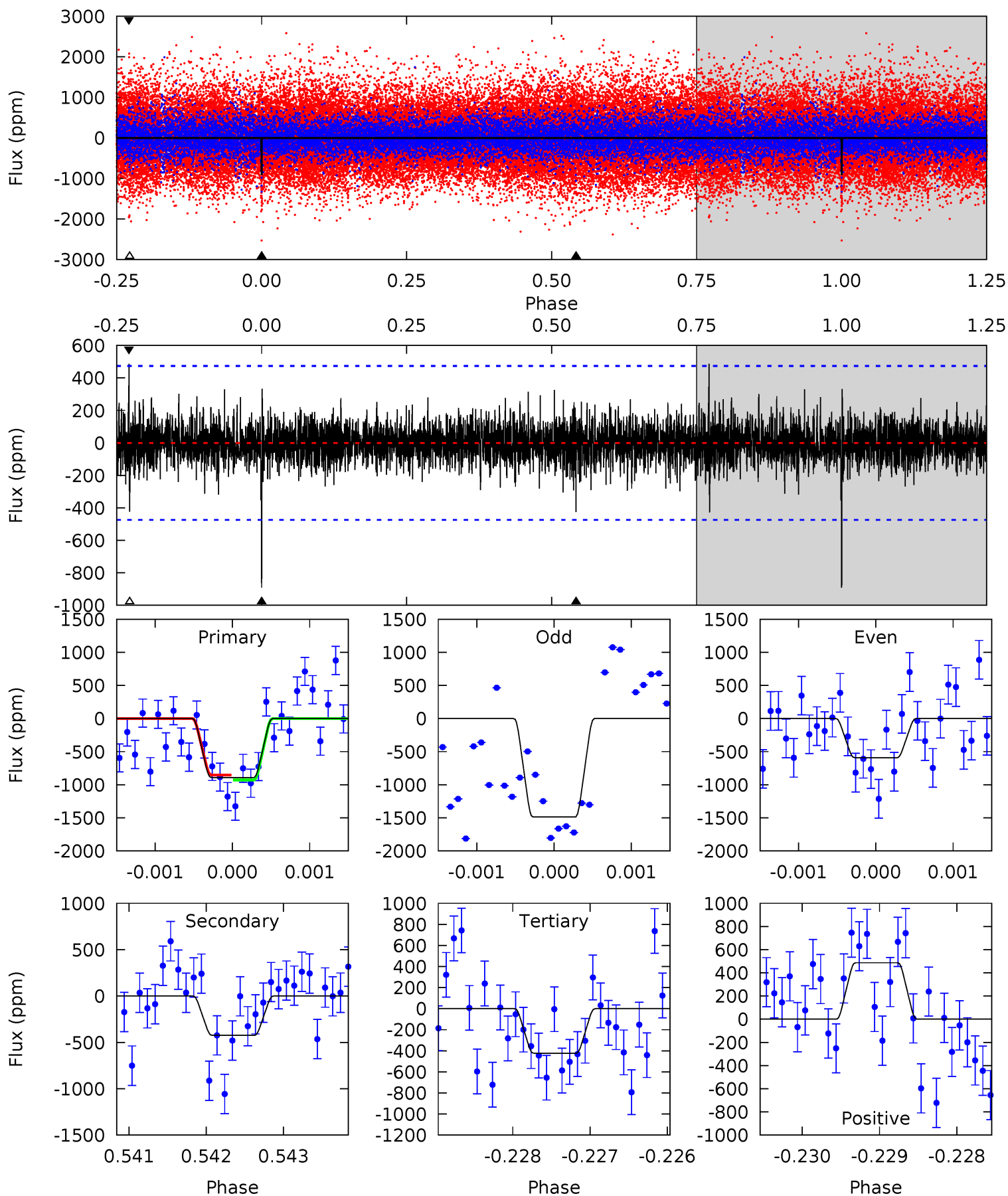
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	4.69	4.23	4.59	5.43	3.25	1.17	7.19	6.84	0.46	0.10	3.50	0.96	0.33	1.56



Alt Model-Shift Uniqueness Test

002156906-01, P = 401.451342 Days, E = 336.866115 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	4.92	4.90	5.64	5.49	3.35	1.06	5.42	4.69	0.01	-0.72	4.90	1.04	0.35	0.44



Stellar Parameters For KIC 002156906

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6153^{+190}_{-254}	$4.471^{+0.054}_{-0.202}$	$-0.140^{+0.250}_{-0.350}$	$0.993^{+0.296}_{-0.106}$	$1.065^{+0.134}_{-0.164}$	$1.531^{+0.427}_{-0.797}$
	+3%/-4%	+1%/-5%	+179%/-250%	+30%/-11%	+13%/-15%	+28%/-52%
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 002156906-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-343 ± 73	$3.55^{+0.86}_{-0.74}$	369^{+27}_{-19}	4794^{+578}_{-407}	16664^{+11813}_{-5930}
Alt.	-424 ± 86	$3.68^{+0.92}_{-0.76}$	370^{+26}_{-19}	4973^{+554}_{-446}	19468^{+12968}_{-7363}

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

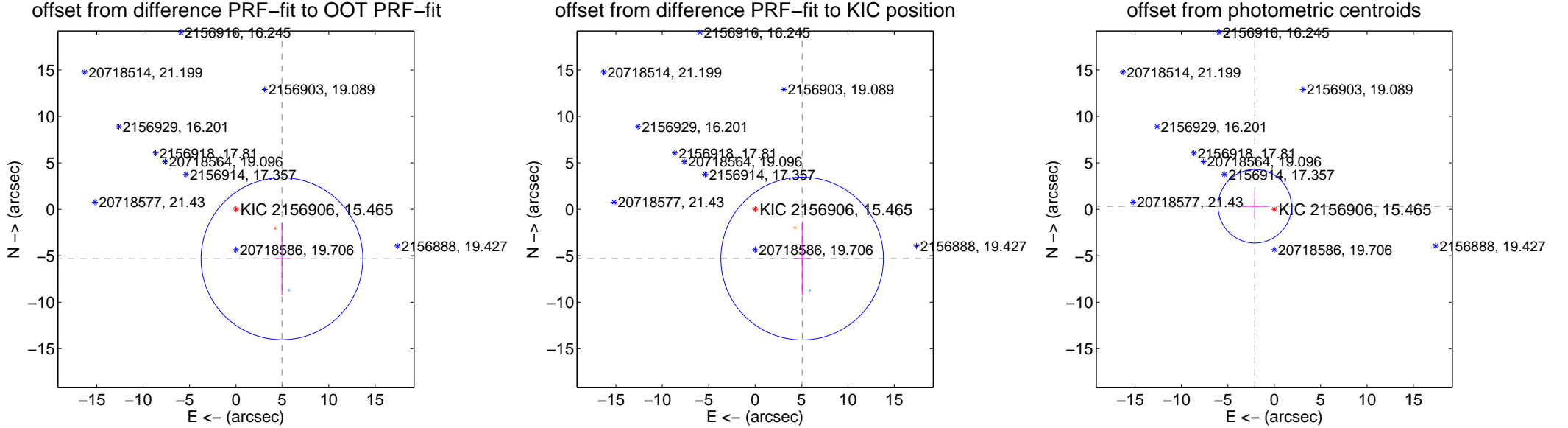
DV Centroid Data

Supplemental centroid analysis for 002156906-01. Kepler magnitude: 15.46. Transit SNR 8.67

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.274 ± 2.905	2.50	-4.956 ± 0.881	-5.325 ± 3.883
PRF-fit source offset from KIC position	7.337 ± 2.919	2.51	-5.068 ± 0.942	-5.305 ± 3.936
photometric centroid source offset	2.12 ± 1.32	1.61	2.10 ± 1.31	0.33 ± 1.45

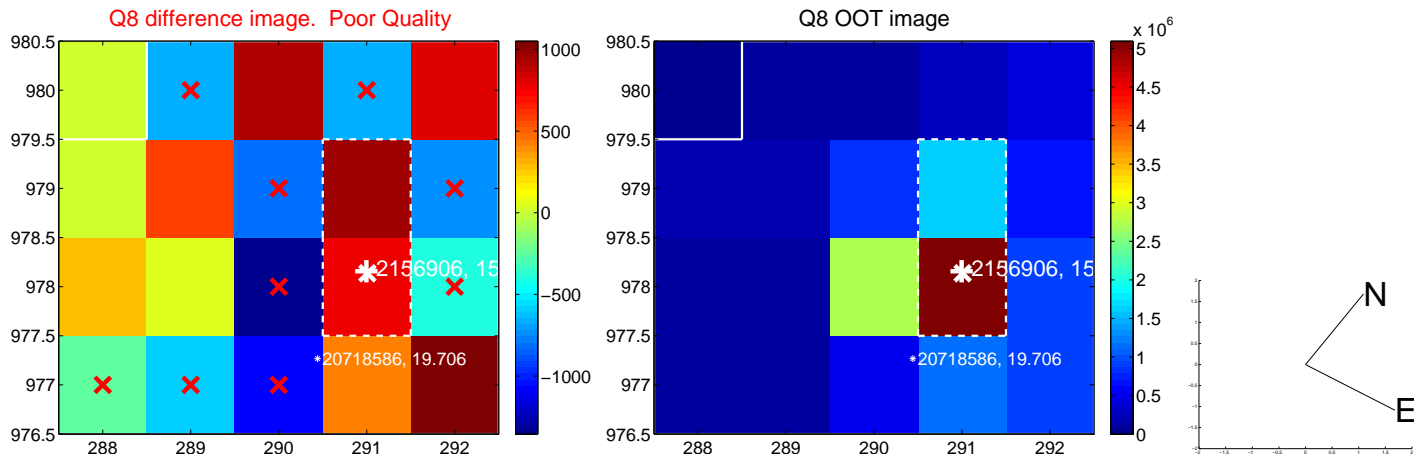
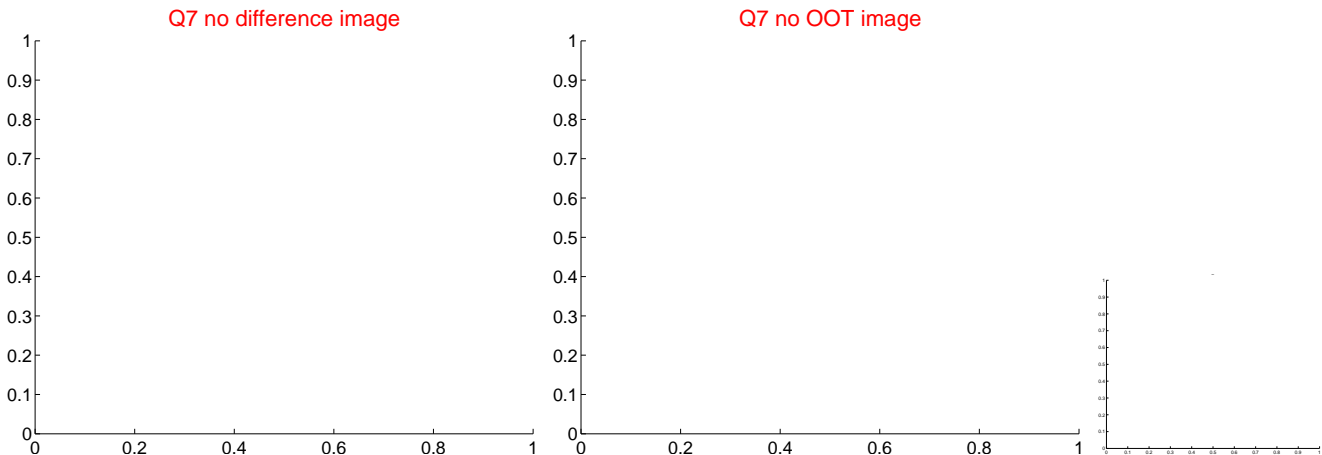
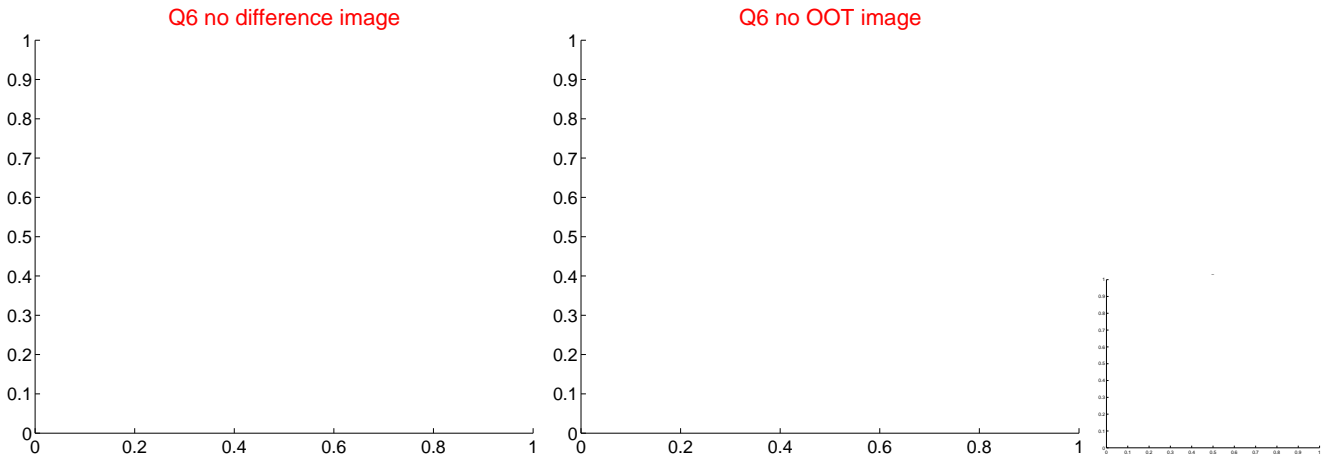
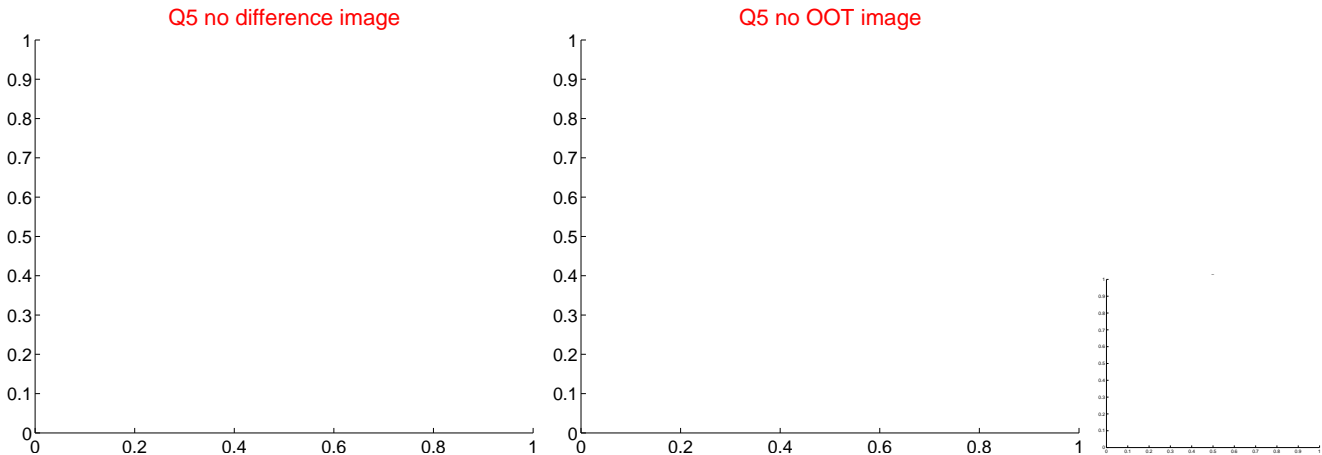


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

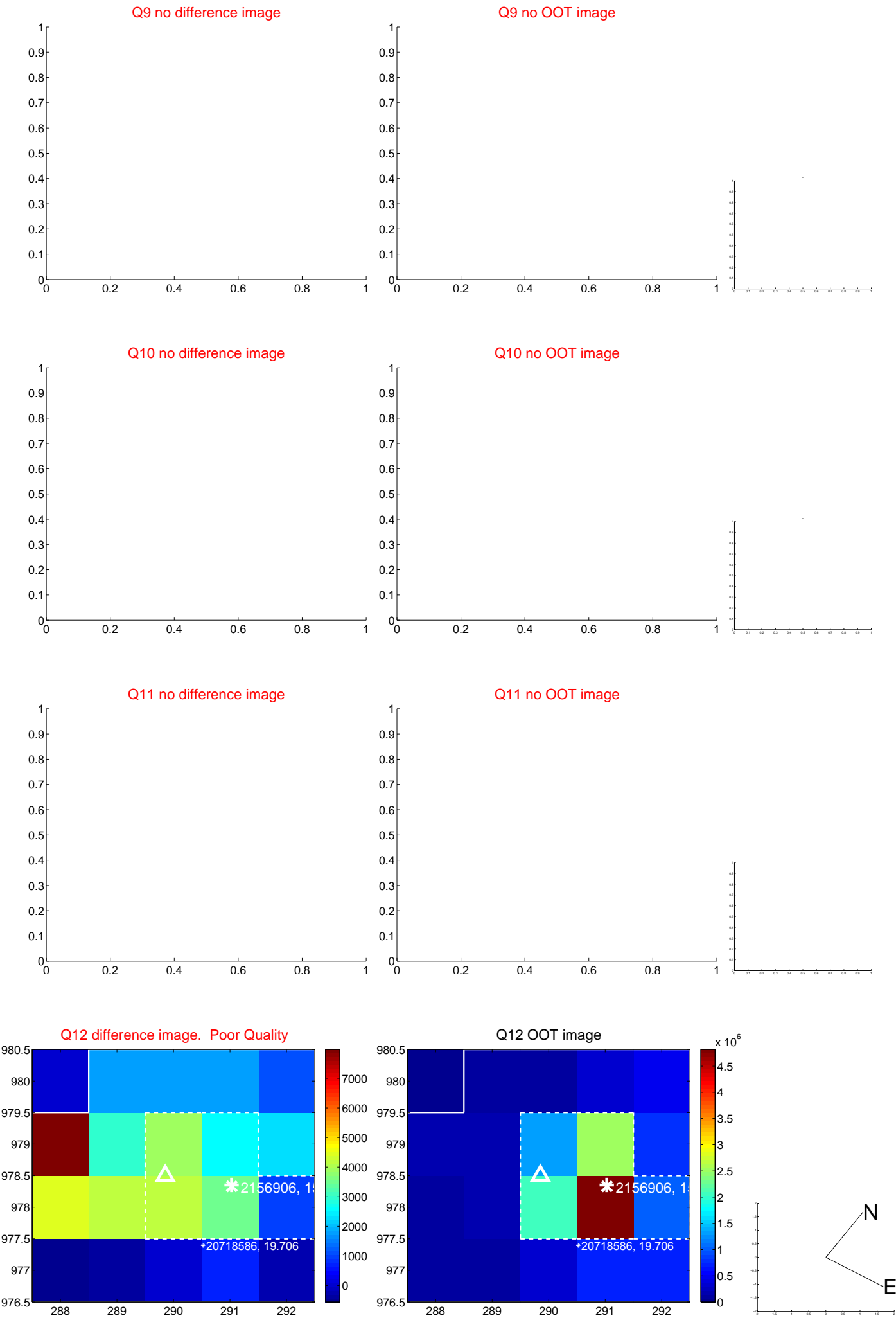
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



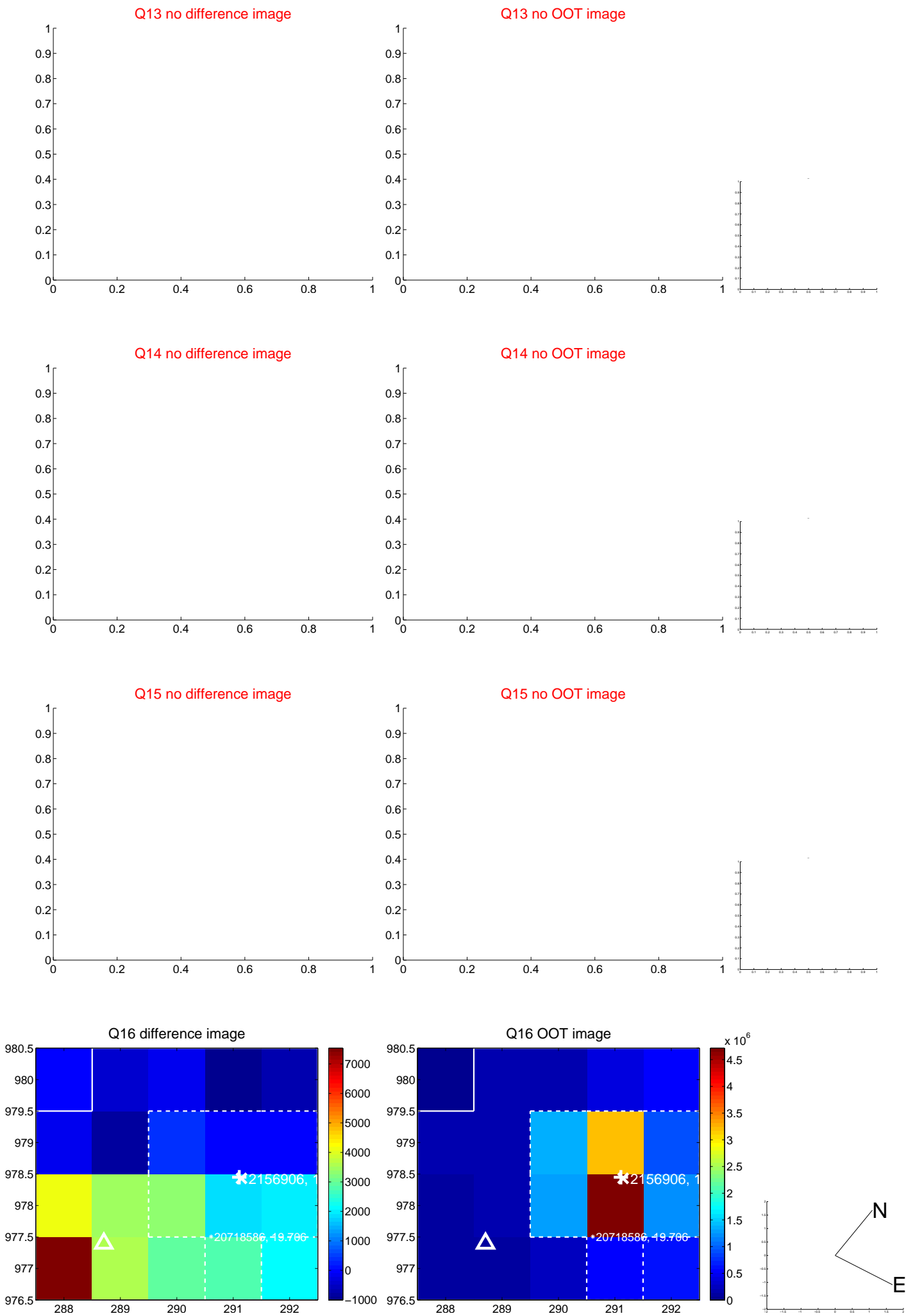
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



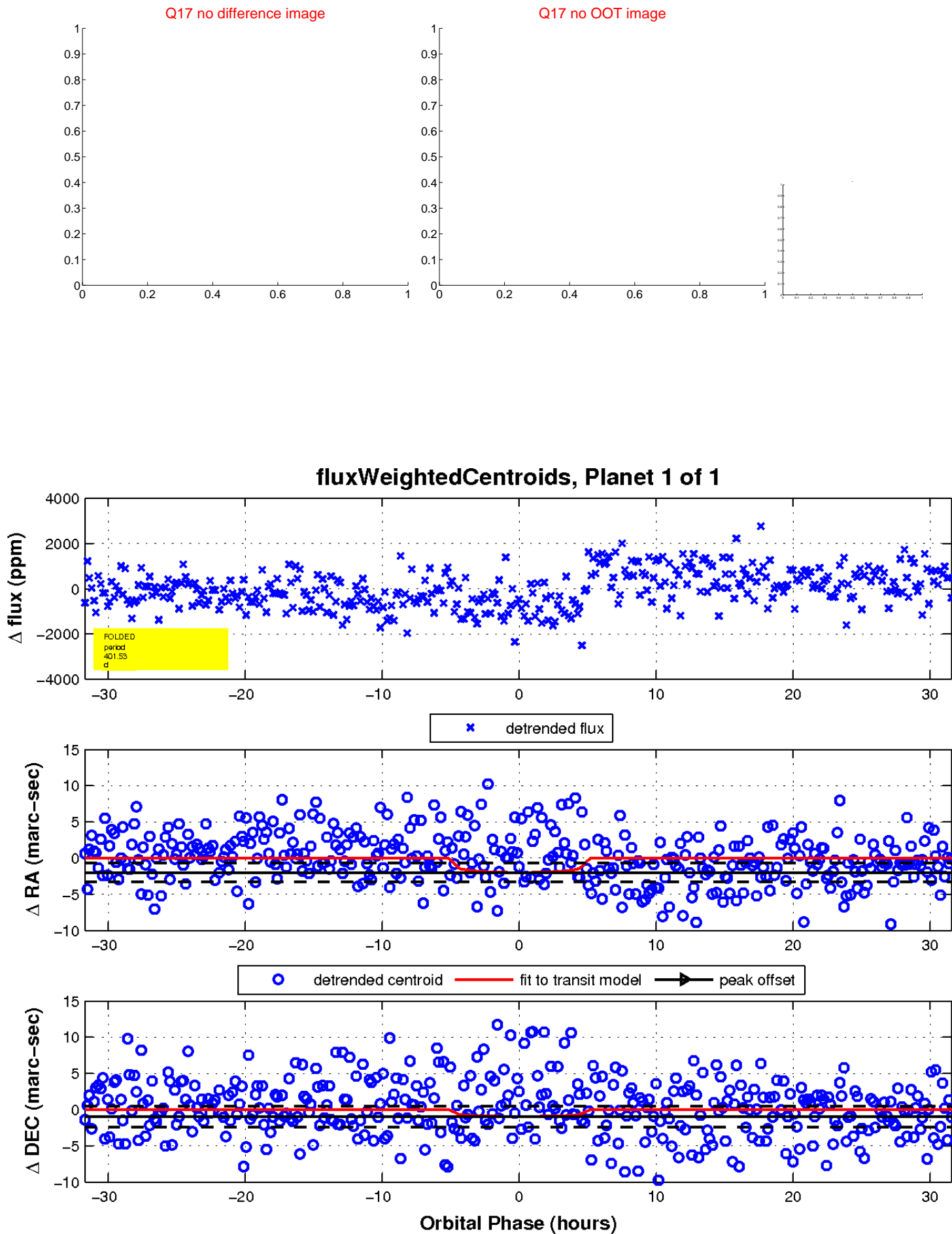
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

