

KIC 010015543

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})
010015543-01	OBS	No	402.494186	168.056149	732.6	2.711	7.9	8.0	0.94	6146	2.71	0.99

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010015543-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS

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

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

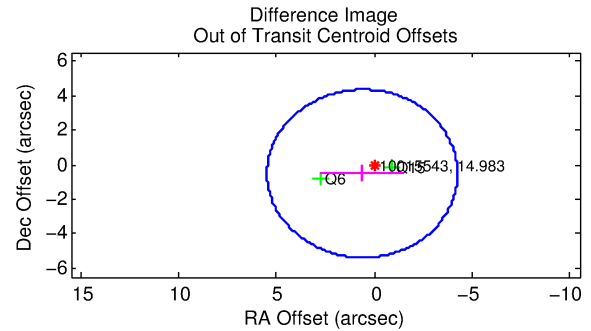
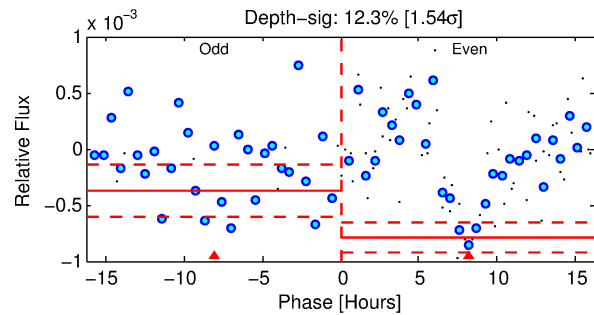
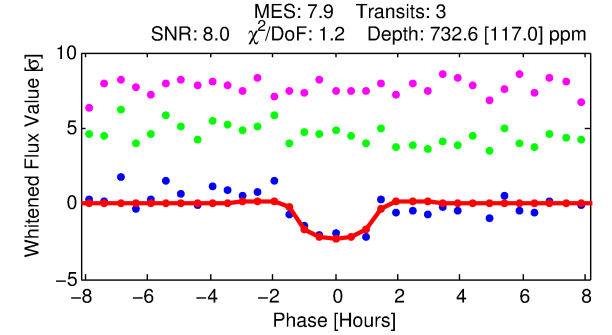
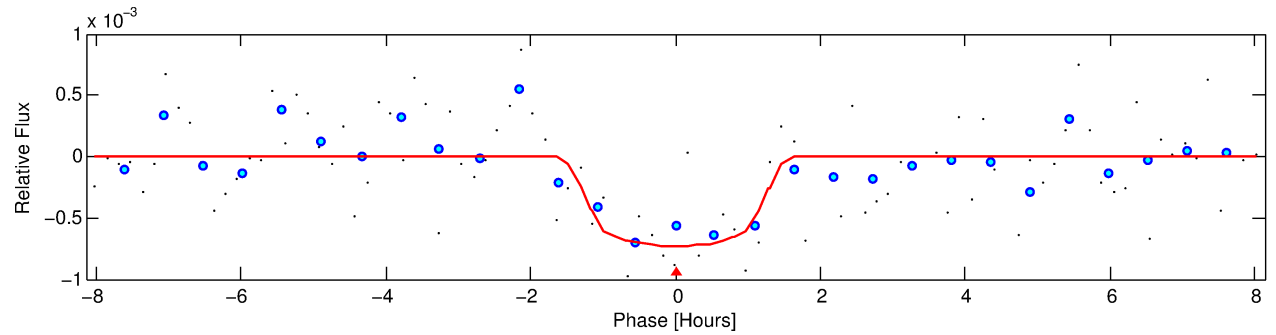
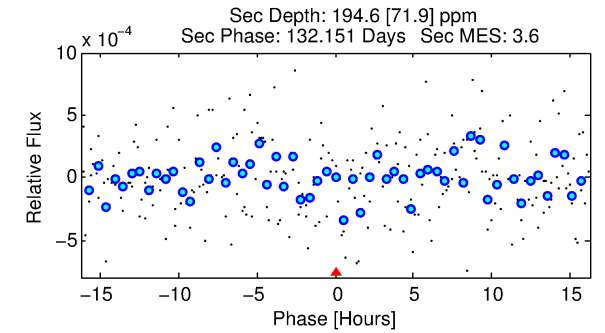
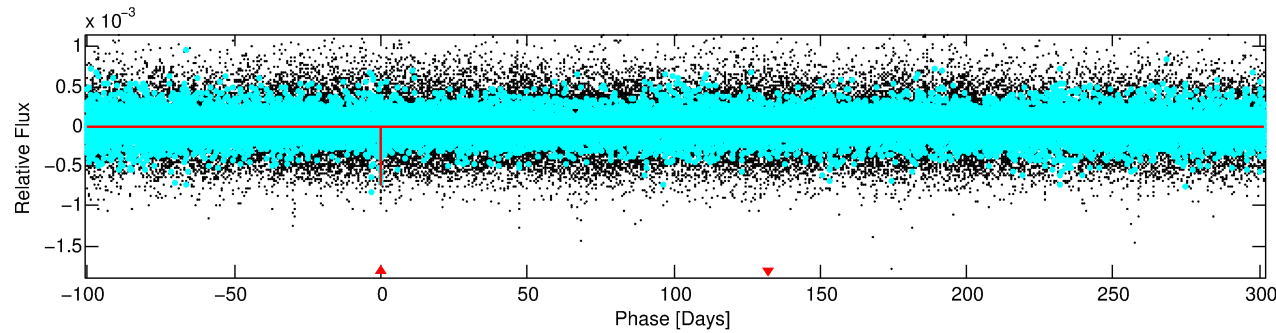
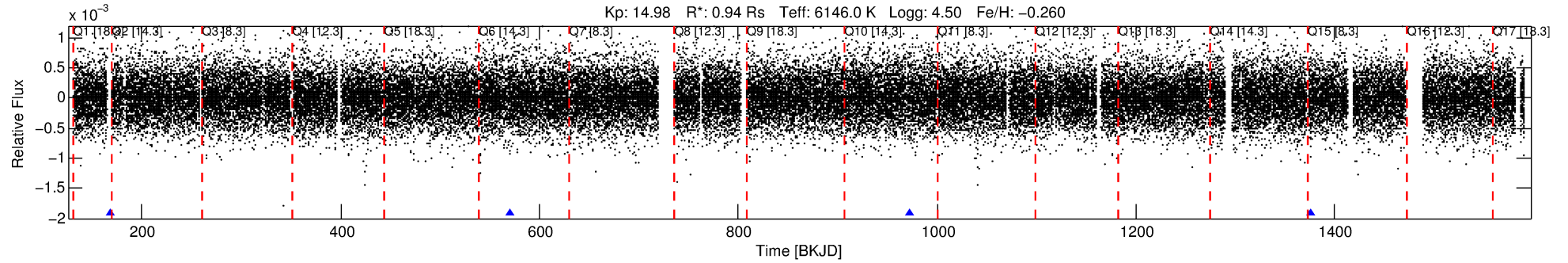
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010015543-01

No Significant Match Found

DV One-Page Summary

KIC: 10015543 Candidate: 1 of 1 Period: 402.494 d



DV Fit Results:

Period = 402.49419 [0.00712] d
Epoch = 168.0561 [0.0171] BKJD
Rp/R* = 0.0263 [0.1549]
a/R* = 881.62 [26198.34]
b = 0.67 [24.71]
Seff = 0.99 [0.38]
Teff = 254 [25] K
Rp = 2.71 [15.96] Re
a = 1.0737 [0.2648] AU
Ag = 16788.13 [197607.19] [0.08 σ]
Teffp = 4472 [13154] K [0.32 σ]

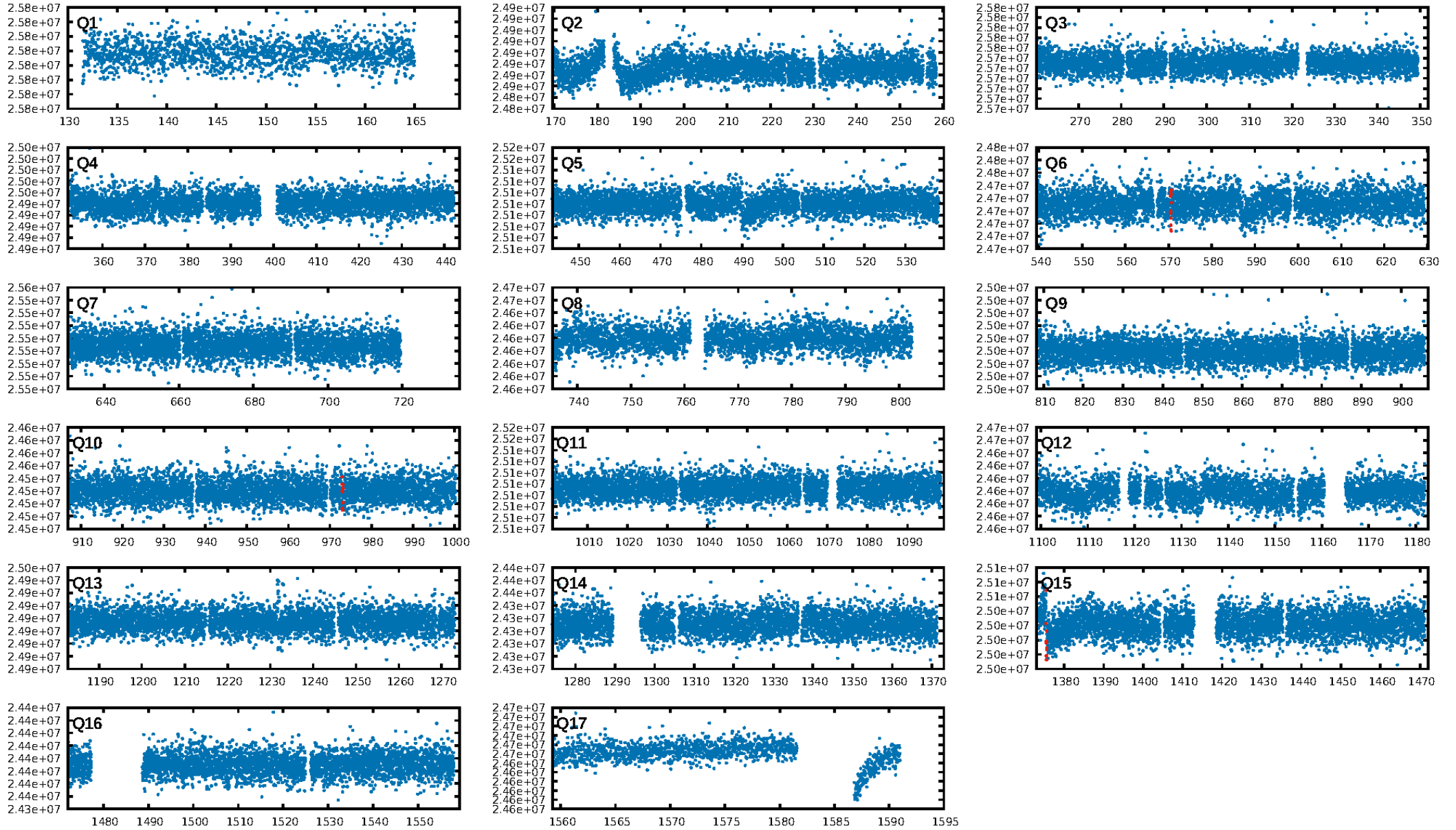
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 13.1%
ModelChiSquareGof-sig: 96.7%
Bootstrap-pfa: 5.90e-15
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -16.59
Centroid-sig: 53.0%
Centroid-so: 1.966 arcsec [1.10 σ]
OotOffset-rm: 0.802 arcsec [0.49 σ]
KicOffset-rm: 1.102 arcsec [1.16 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [3/3]

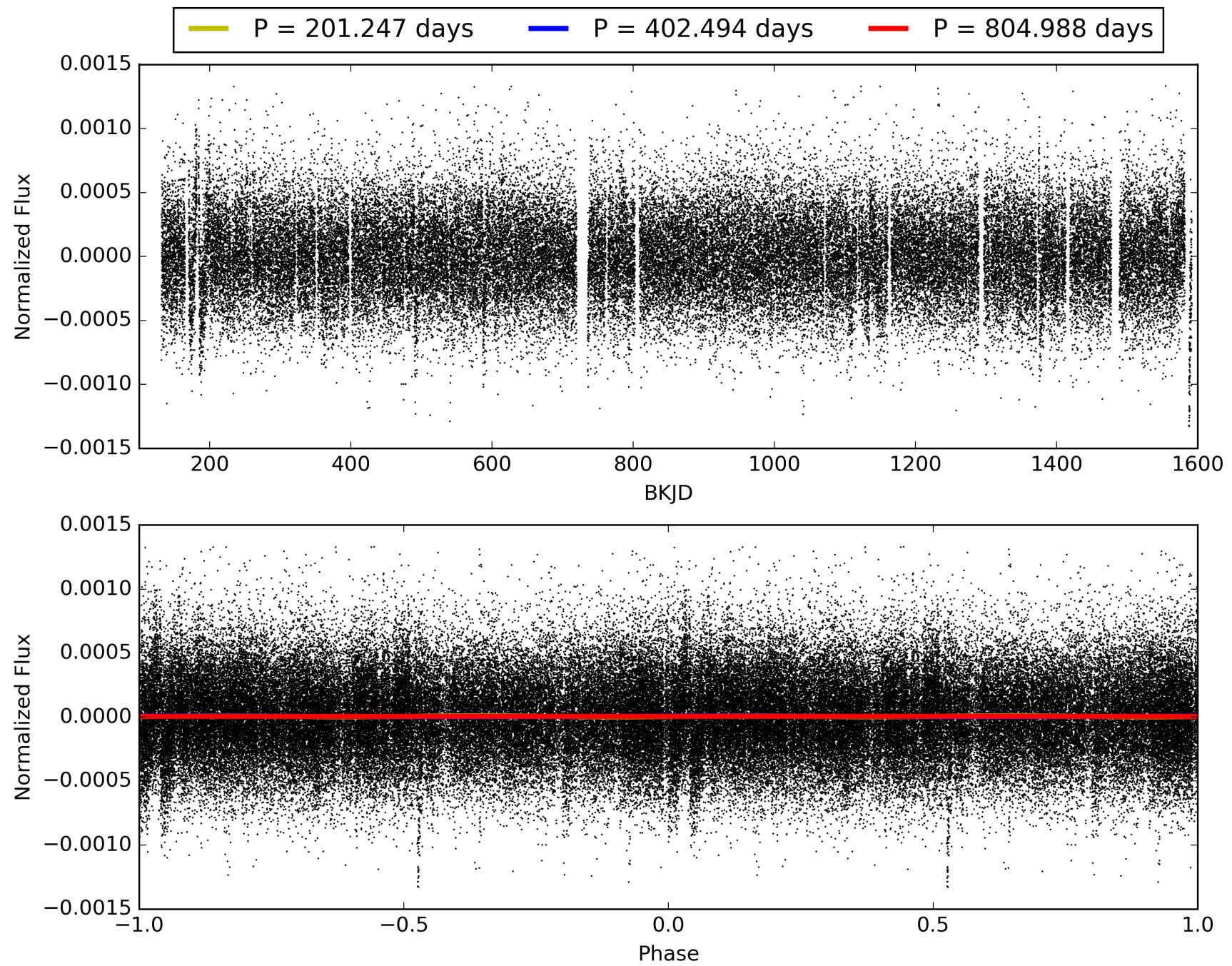
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:21:43 Z

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

TCE 010015543-01, PDC Light Curves

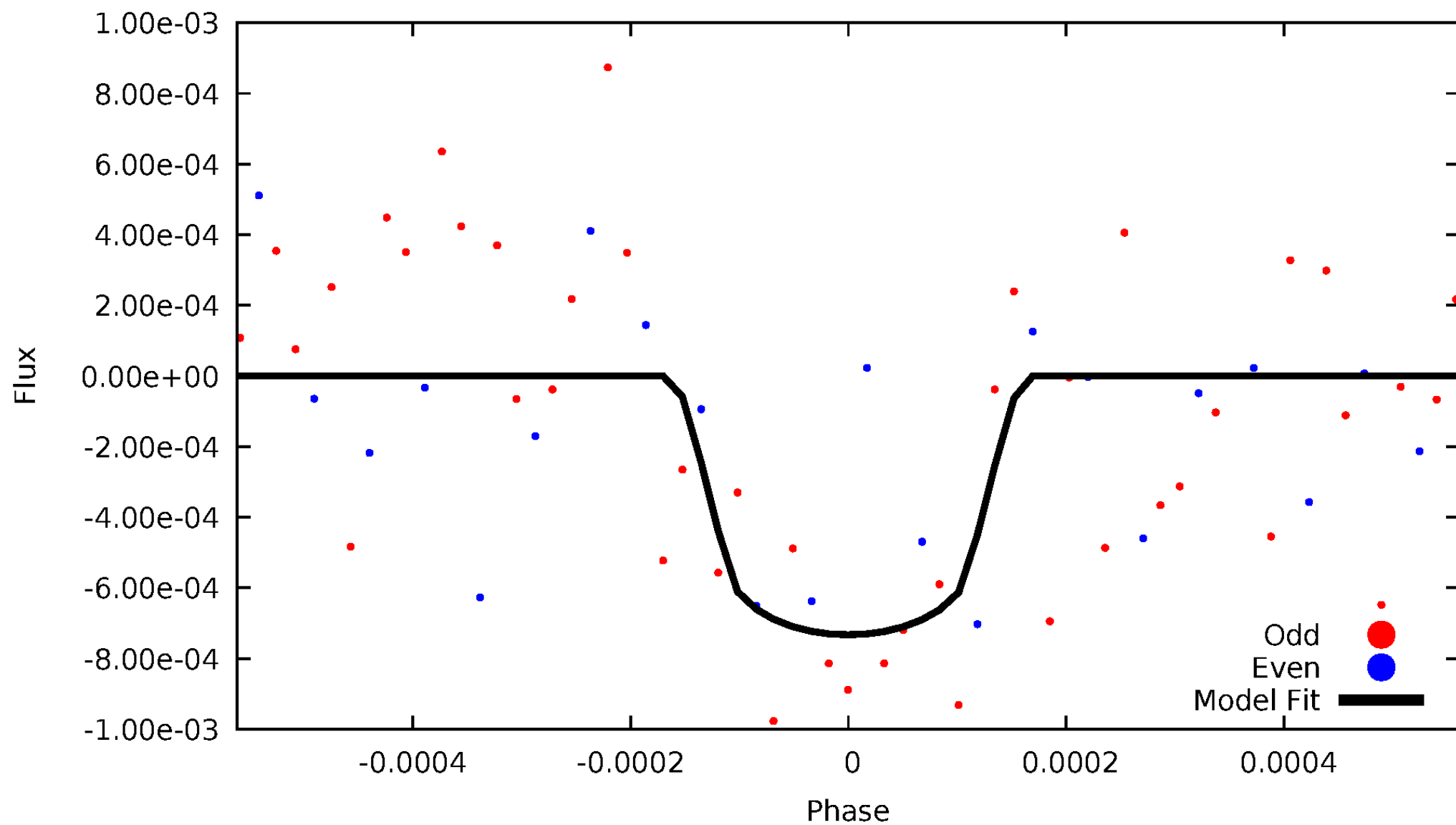


TCE 010015543-01



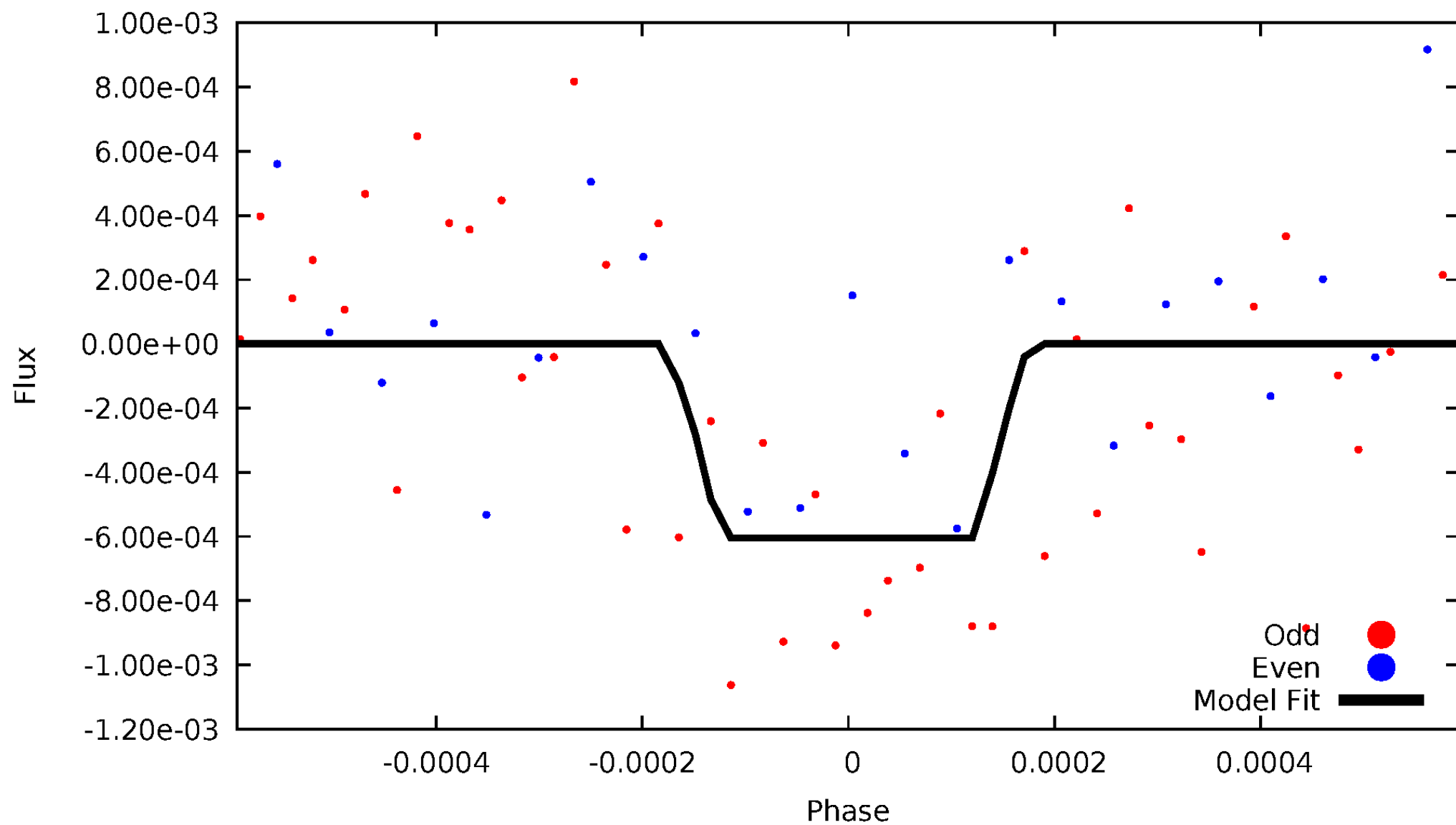
DV Odd/Even

TCE 010015543-01



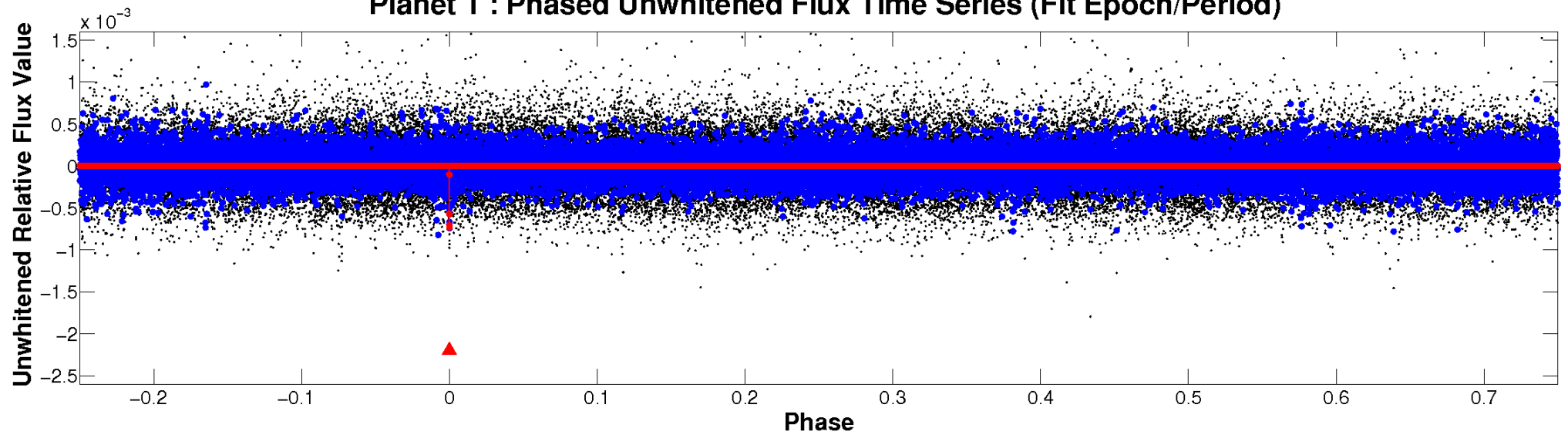
ALT Odd/Even

TCE 010015543-01

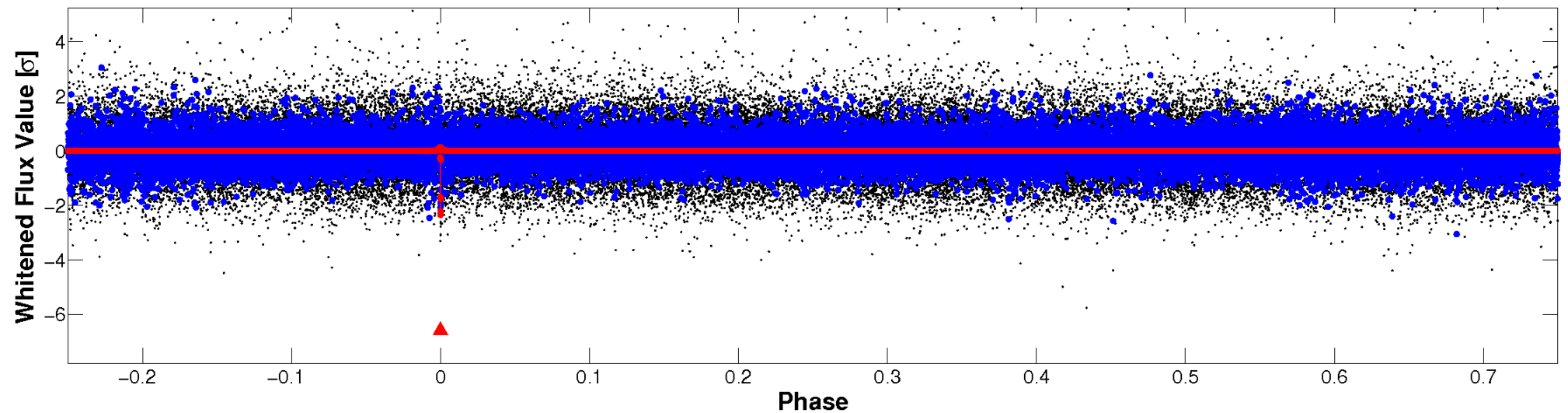


Non-Whitened Vs. Whitened Light Curve

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



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



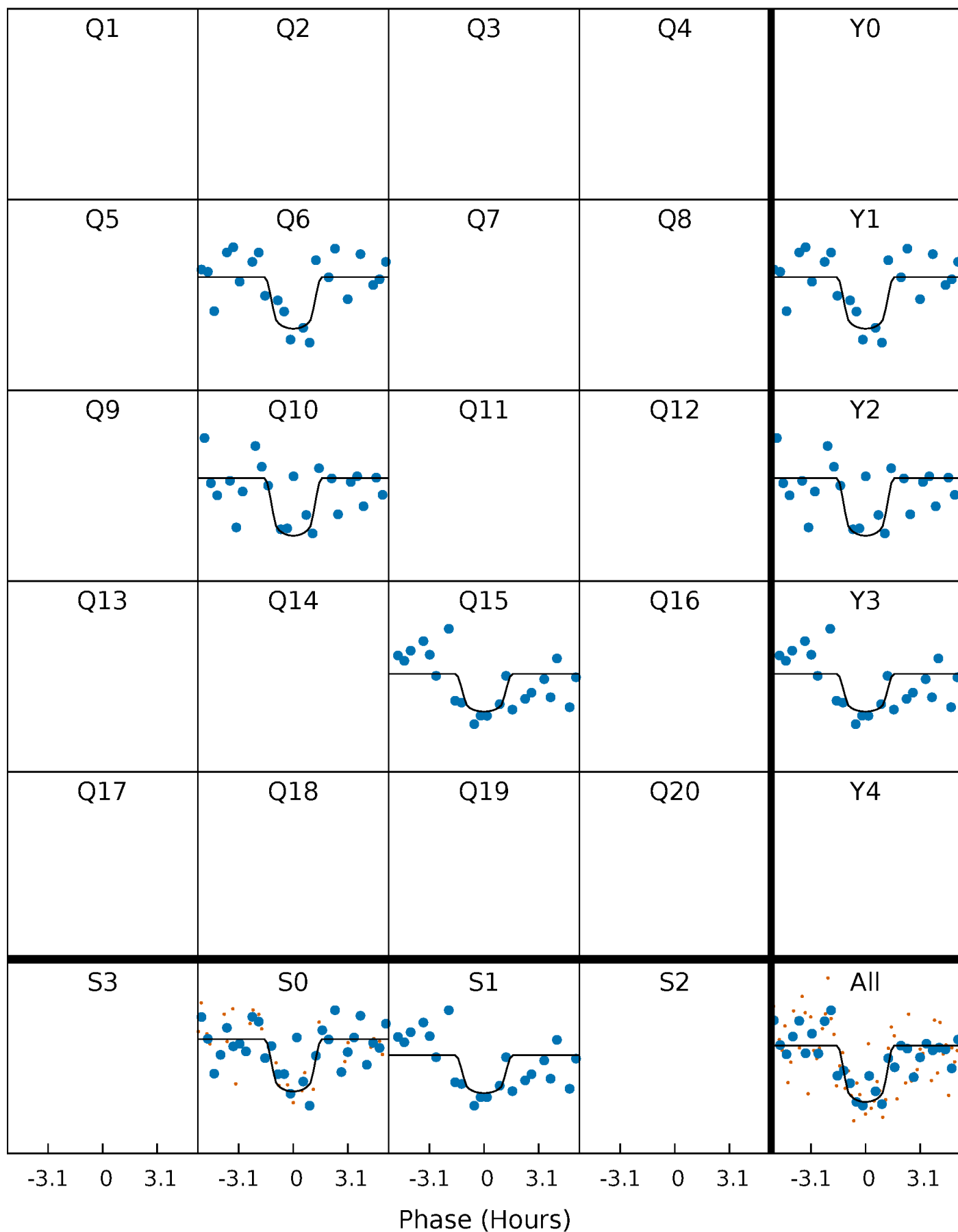
PDC Quarter-Phased Transit Curves

TCE 010015543-01 P=402.494186 Days $T_0=168.056149$ (BKJD)



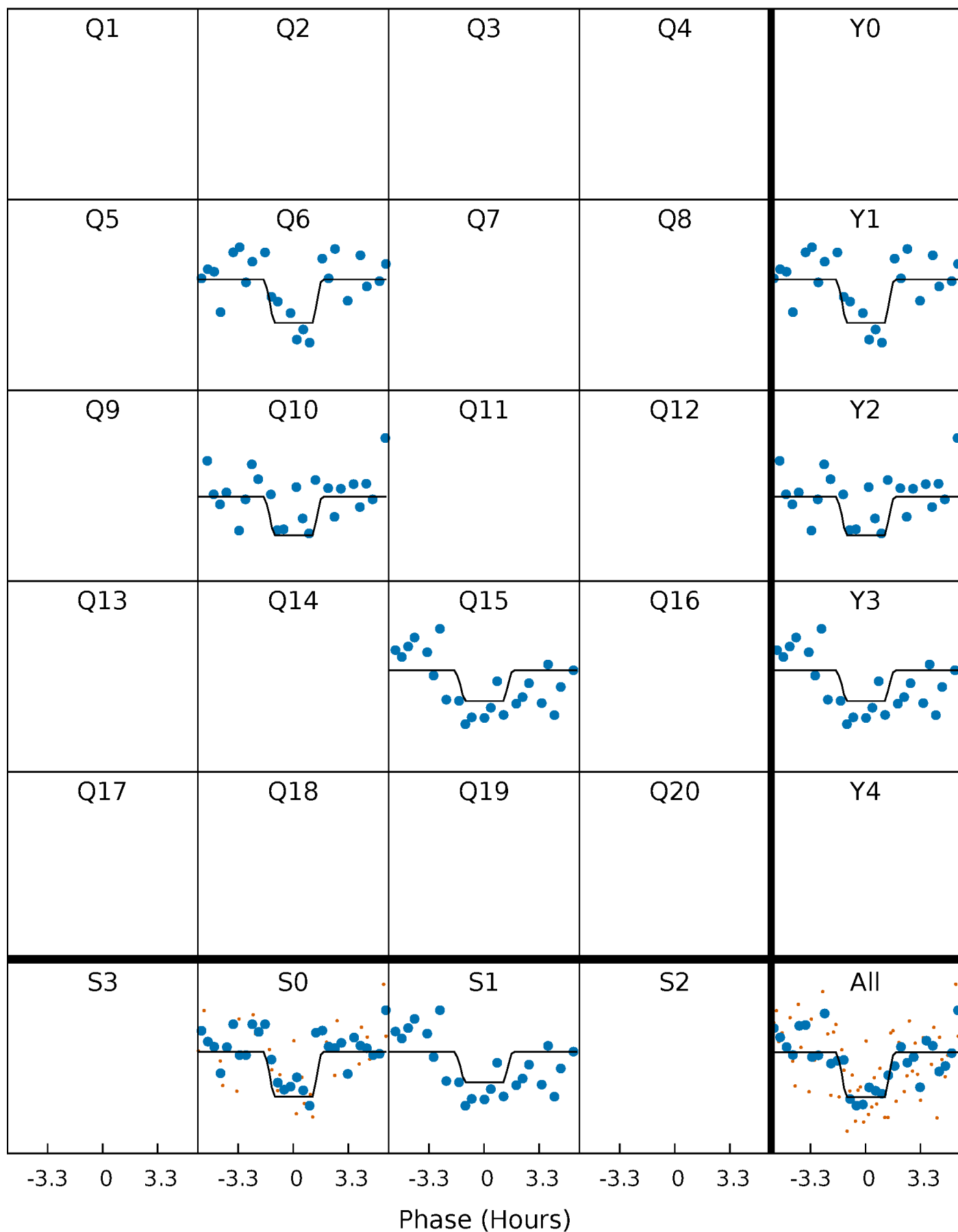
DV Quarter-Phased Transit Curves

TCE 010015543-01 P=402.494186 Days $T_0=168.056149$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

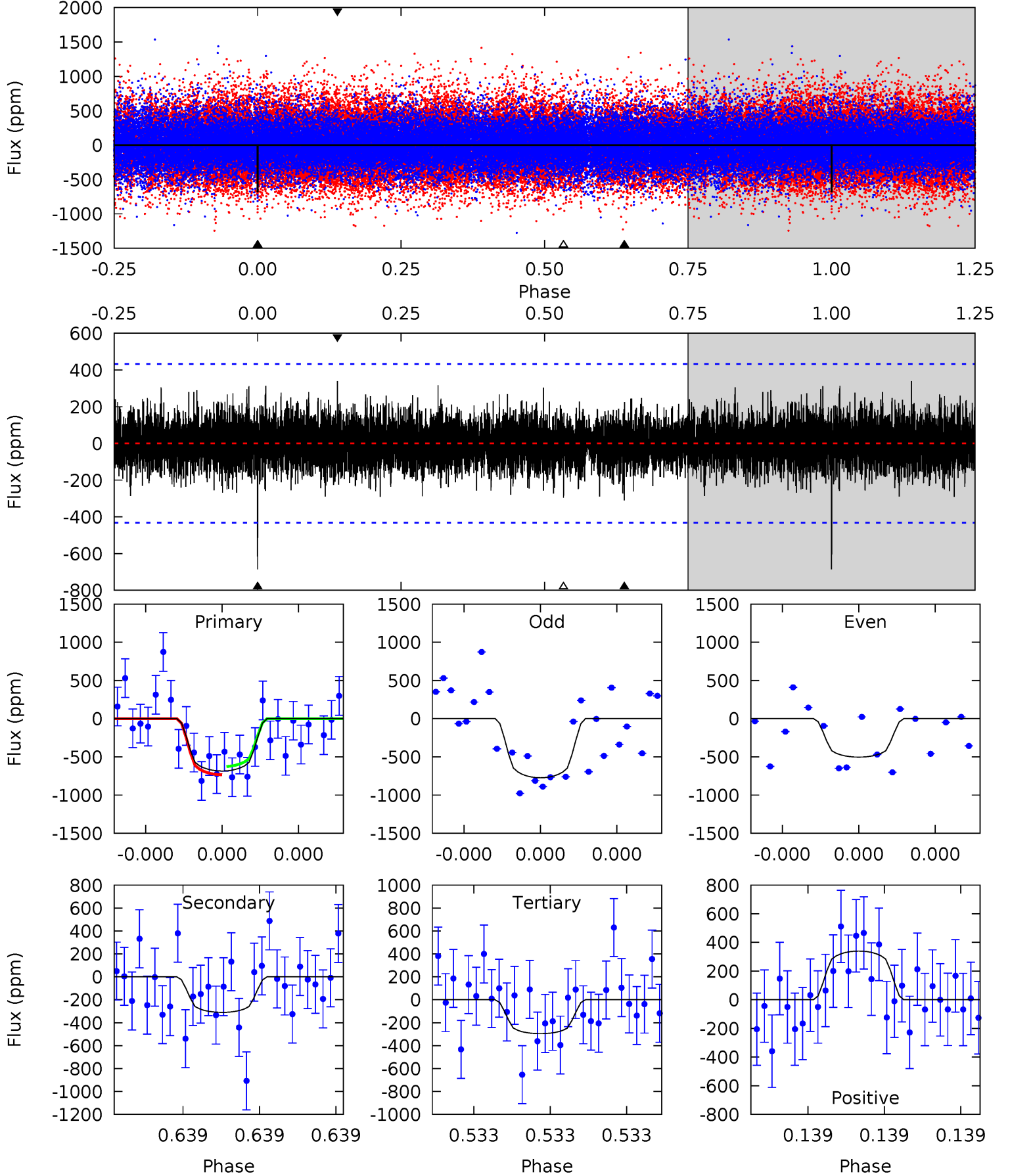
TCE 010015543-01 P=402.507076 Days $T_0=168.035671$ (BKJD)



DV Model-Shift Uniqueness Test

010015543-01, P = 402.494186 Days, E = 168.056149 Days

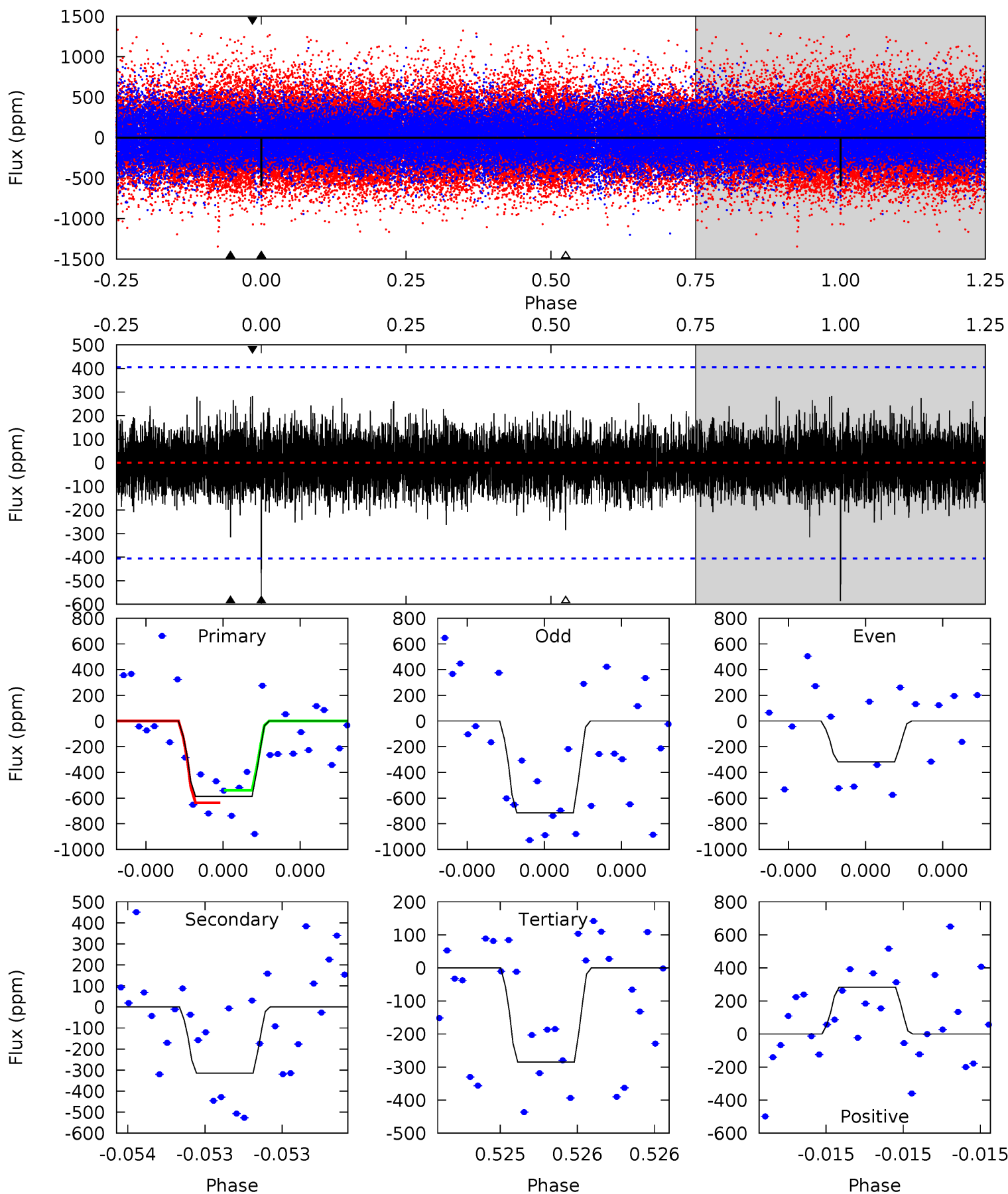
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.00	4.07	3.89	4.46	5.67	3.63	1.09	5.11	4.53	0.18	-0.39	1.75	0.94	0.33	0.70



Alt Model-Shift Uniqueness Test

010015543-01, P = 402.507076 Days, E = 168.035671 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.17	4.38	3.97	3.94	5.65	3.60	1.01	4.20	4.23	0.42	0.44	2.60	0.98	0.33	0.68



Stellar Parameters For KIC 010015543

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6146^{+170}_{-213}	$4.497^{+0.050}_{-0.200}$	$-0.260^{+0.250}_{-0.350}$	$0.943^{+0.273}_{-0.091}$	$1.020^{+0.124}_{-0.138}$	$1.713^{+0.434}_{-0.837}$
	+3%/-3%	+1%/-4%	+96%/-135%	+29%/-10%	+12%/-14%	+25%/-49%
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 010015543-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-310 ± 76	$12.63^{+12.55}_{-8.67}$	360^{+28}_{-17}	3026^{+1409}_{-531}	1206^{+10730}_{-930}
Alt.	-315 ± 72	$12.01^{+12.44}_{-8.72}$	364^{+25}_{-18}	3072^{+1758}_{-524}	1318^{+17893}_{-999}

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

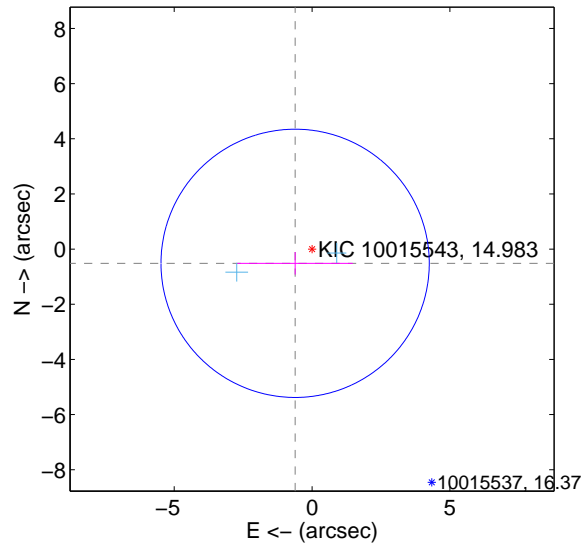
Supplemental centroid analysis for 010015543-01. Kepler magnitude: 14.98. Transit SNR 8.01

There are 2 quarters with good PRF difference image offsets

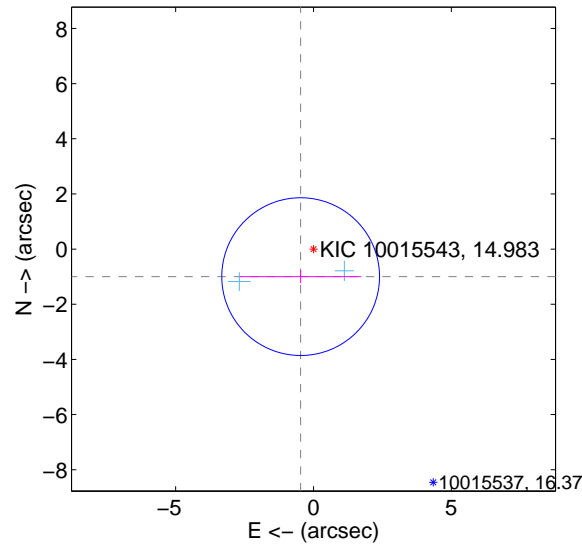
The direct PRF centroid is offset from the target star catalog position by about 0.68 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.802 ± 1.621	0.49	0.614 ± 2.090	-0.516 ± 0.409
PRF-fit source offset from KIC position	1.102 ± 0.953	1.16	0.466 ± 2.196	-0.998 ± 0.238
photometric centroid source offset	1.97 ± 1.78	1.10	-1.88 ± 1.76	-0.59 ± 1.98

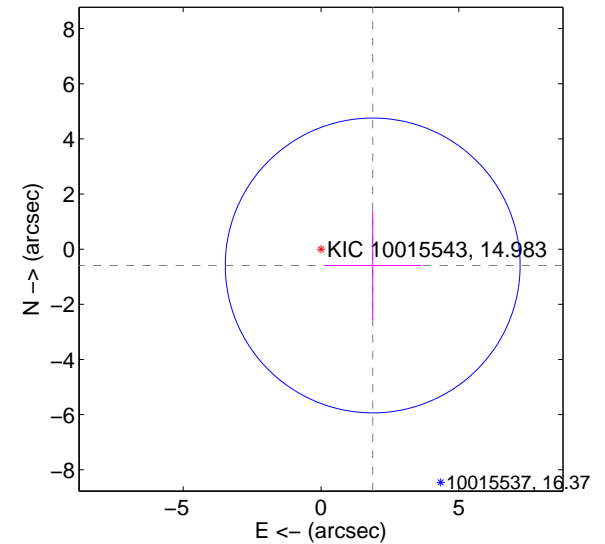
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



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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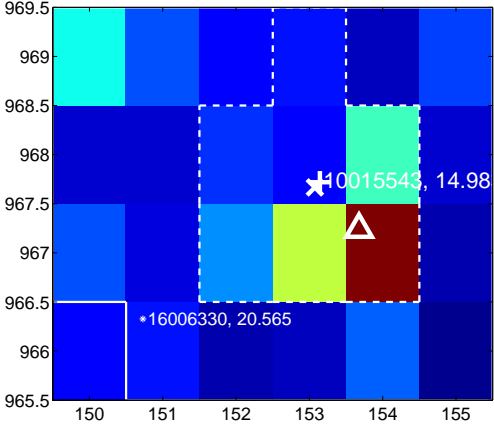
Q5 no difference image



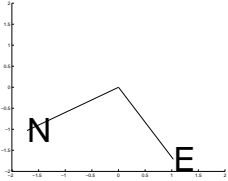
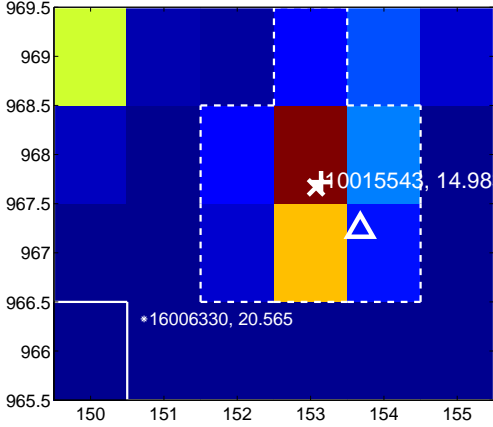
Q5 no OOT image



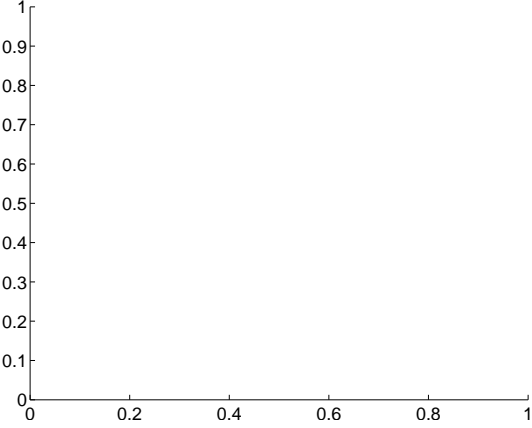
Q6 difference image



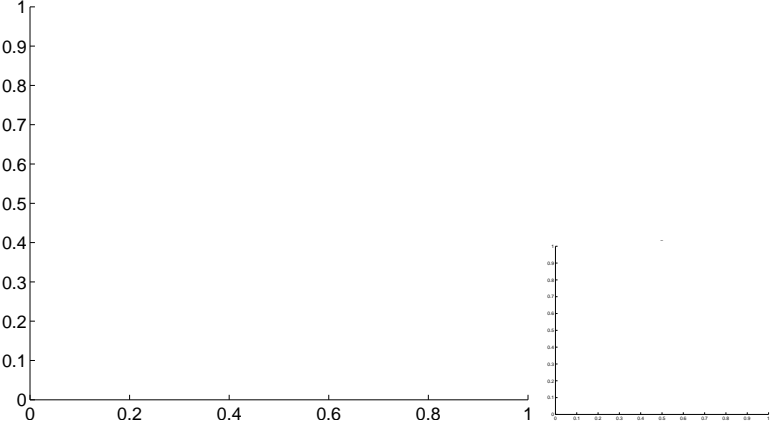
Q6 OOT image



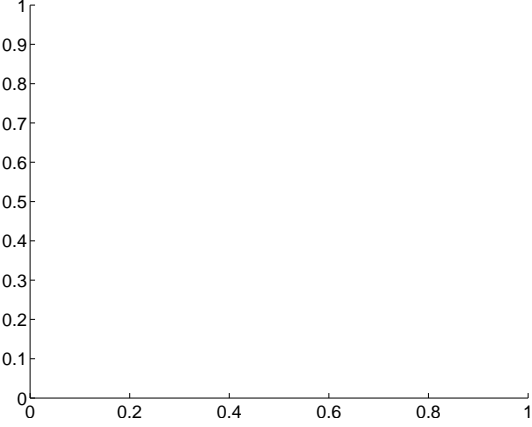
Q7 no difference image



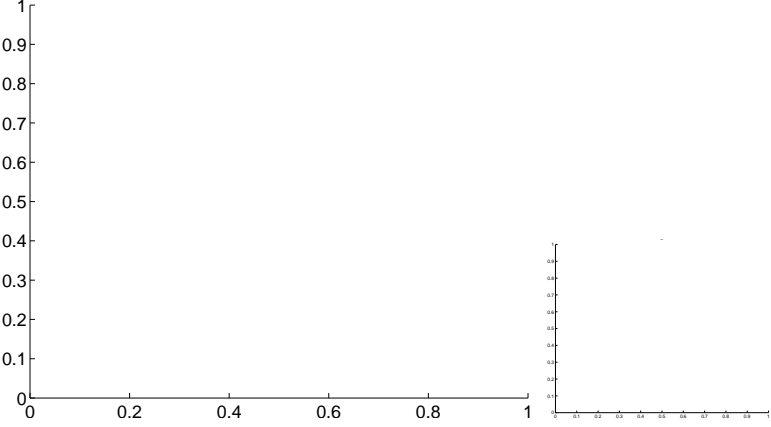
Q7 no OOT image



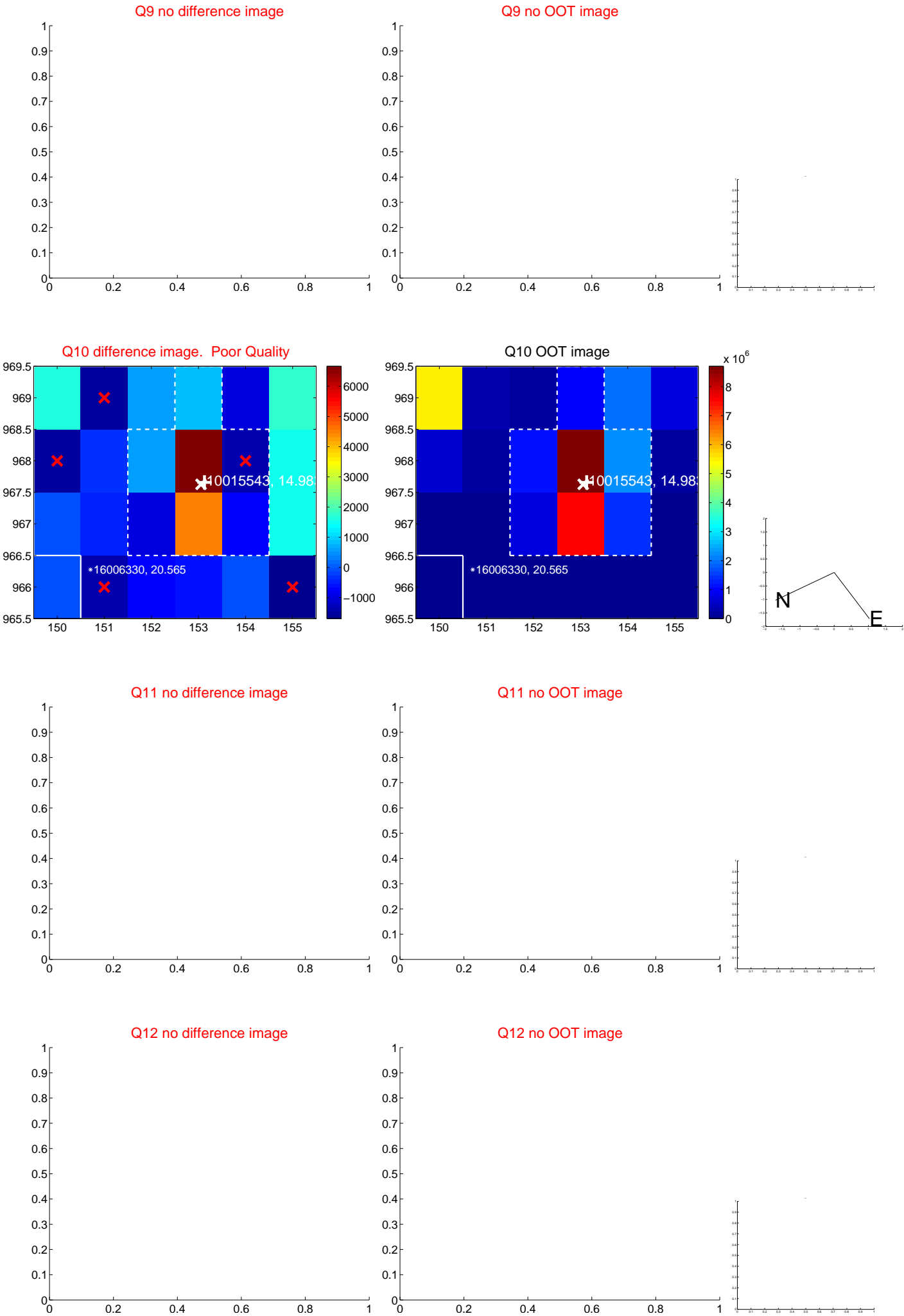
Q8 no difference image



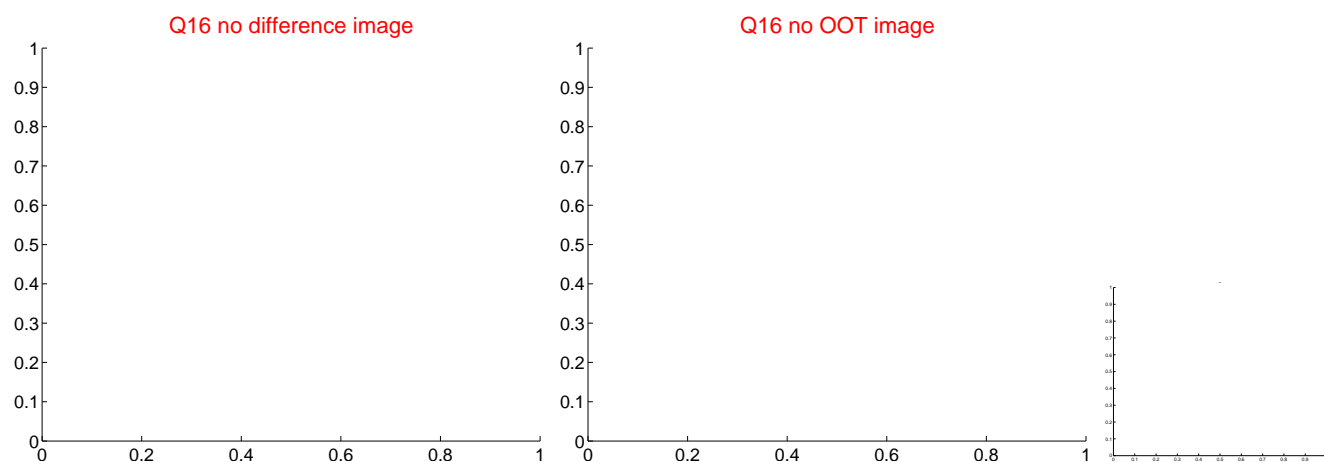
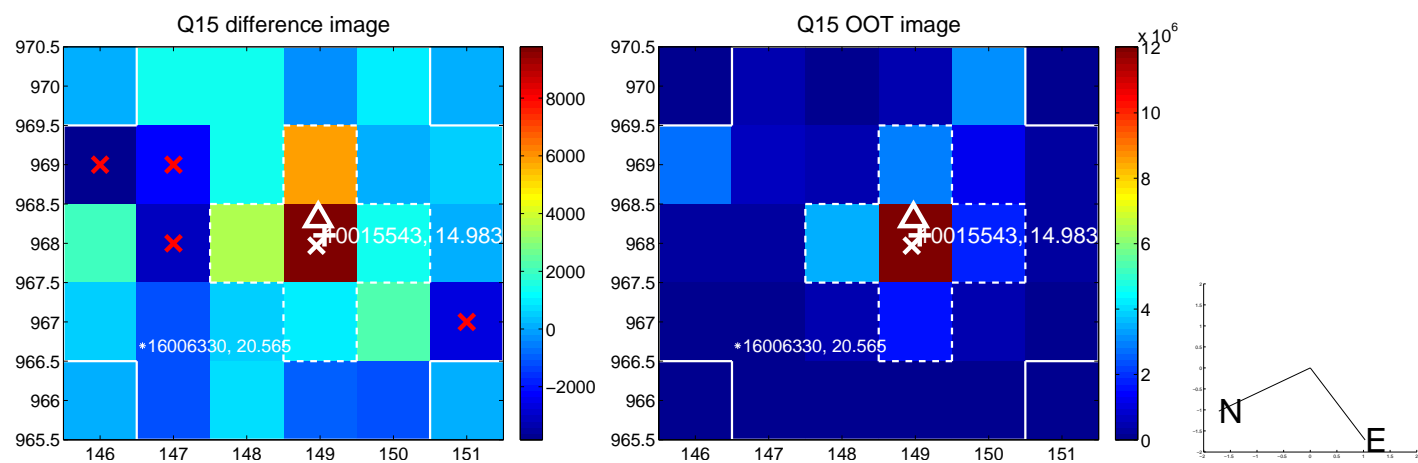
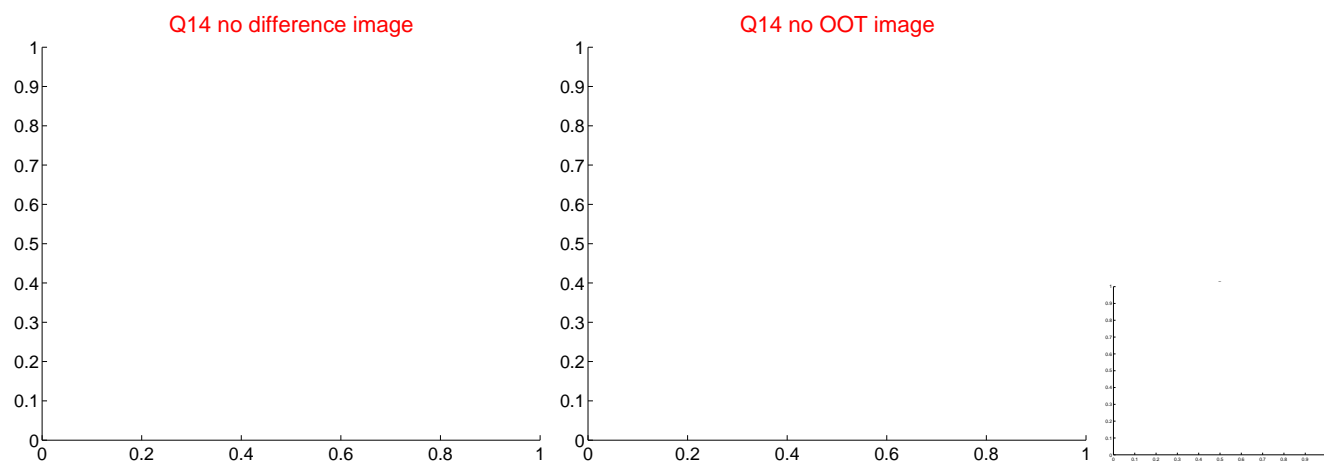
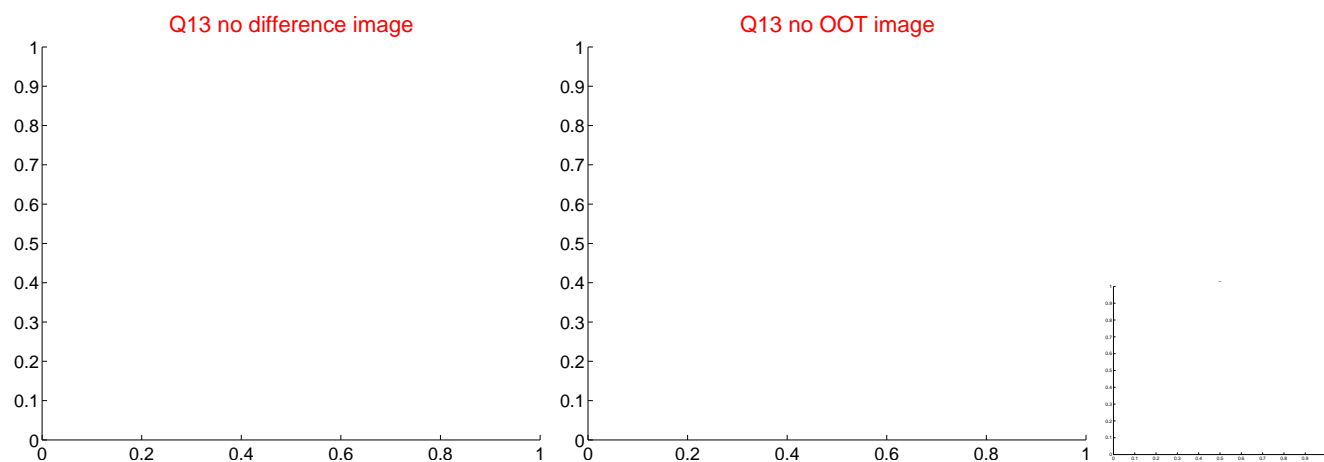
Q8 no OOT image



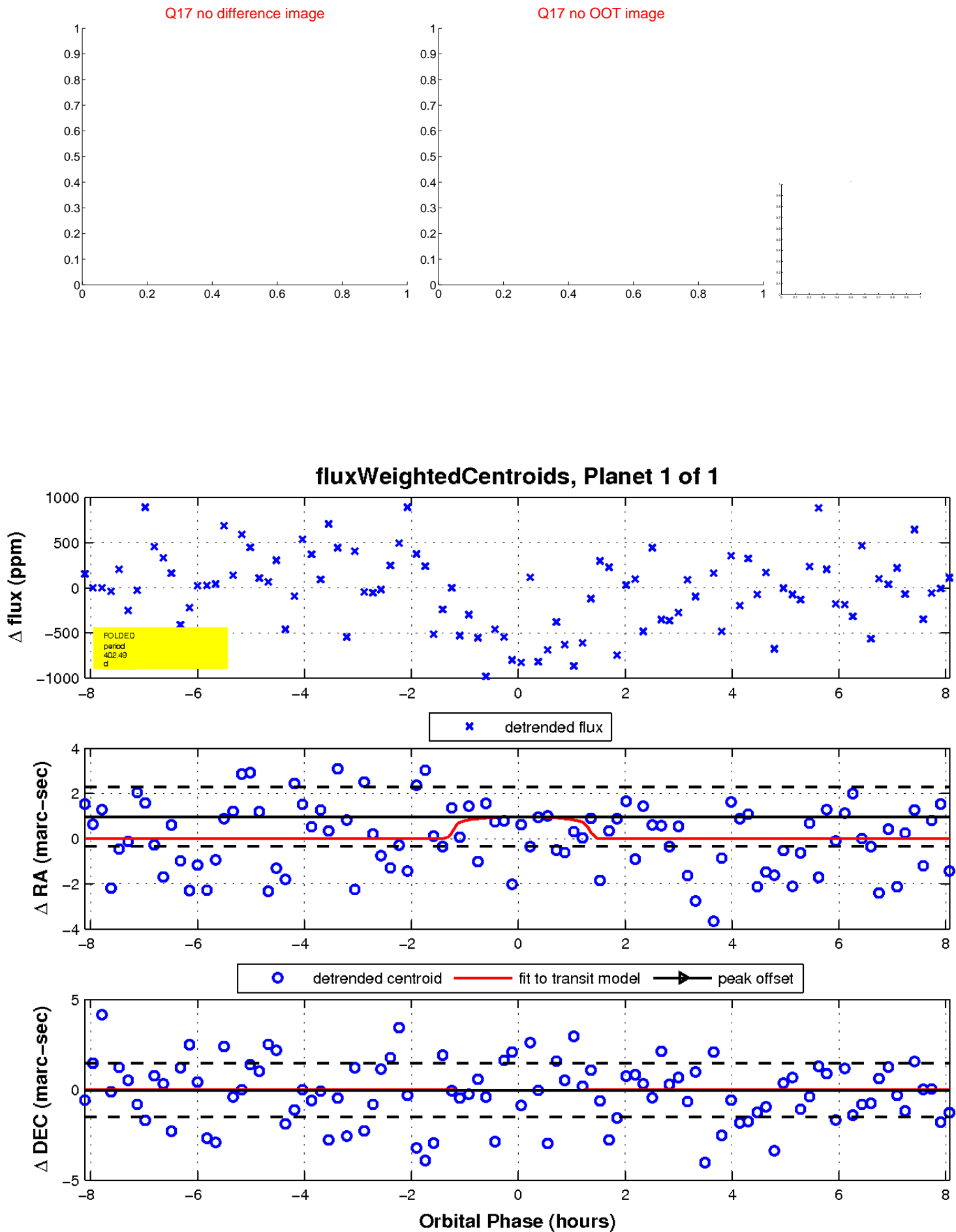
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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UKIRT Image

Declination

