

KIC 009141355

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R _★ (R _☉)	T _★ (K)	R _p (R _⊕)	S _p (S _⊕)
009141355-01	OBS	5622.01	469.620662	422.507132	1398.4	13.224	13.9	15.2	0.76	5474	3.40	0.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009141355-01	OBS	PC	0.95	0	0	0	0	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 009141355-01

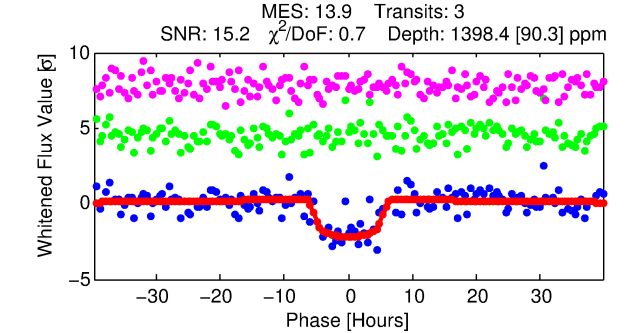
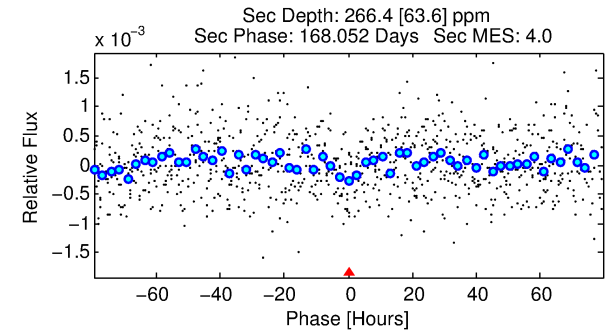
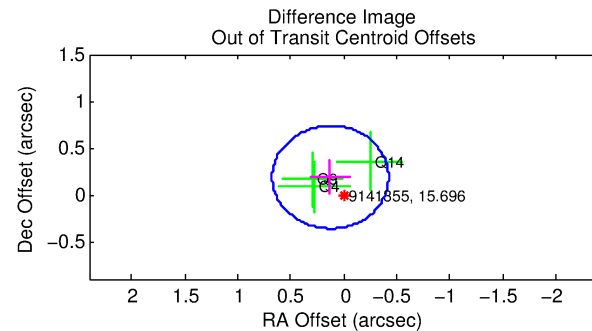
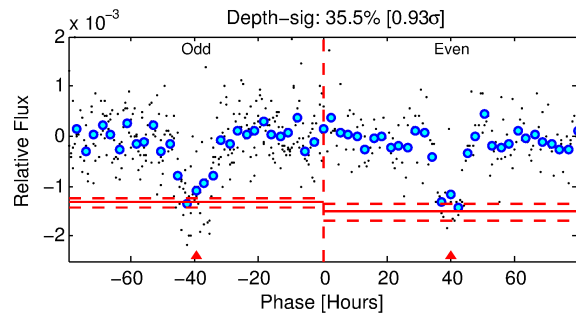
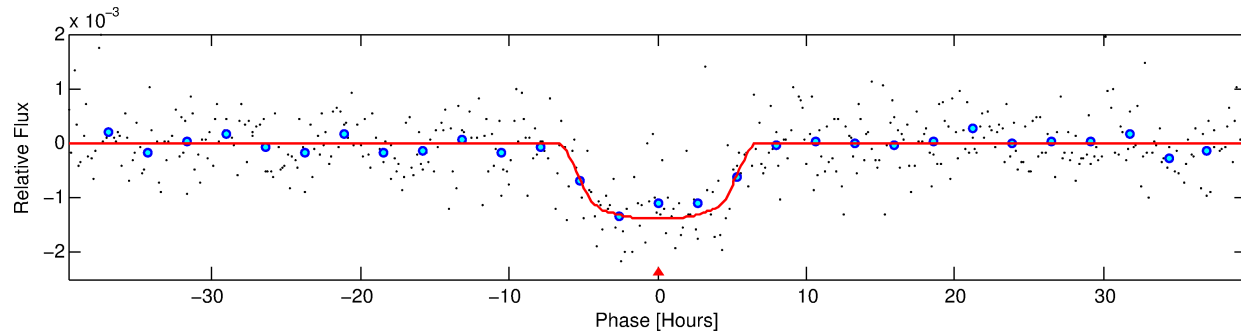
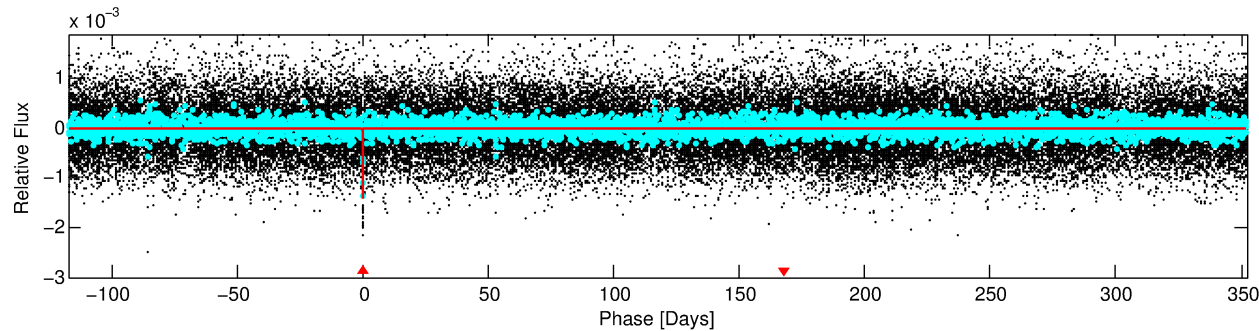
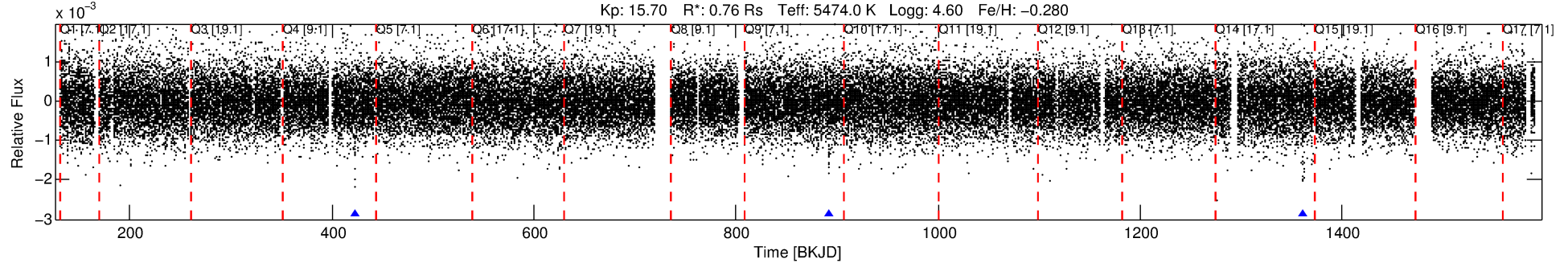
No Significant Match Found

DV One-Page Summary

KIC: 9141355 Candidate: 1 of 1 Period: 469.621 d

KOI: K05622.01 Corr: 0.984

Kp: 15.70 R*: 0.76 Rs Teff: 5474.0 K Logg: 4.60 Fe/H: -0.280



DV Fit Results:

Period = 469.62066 [0.01014] d
Epoch = 422.5071 [0.0138] BKJD
Rp/R* = 0.0409 [0.0026]
a/R* = 142.78 [29.66]
b = 0.90 [0.05]
Seff = 0.38 [0.10]
Teq = 200 [13] K
Rp = 3.41 [0.71] Re
a = 1.1166 [0.1845] AU
Ag = 15756.41 [5658.86] [2.78σ]
Teffp = 3458 [256] K [12.73σ]

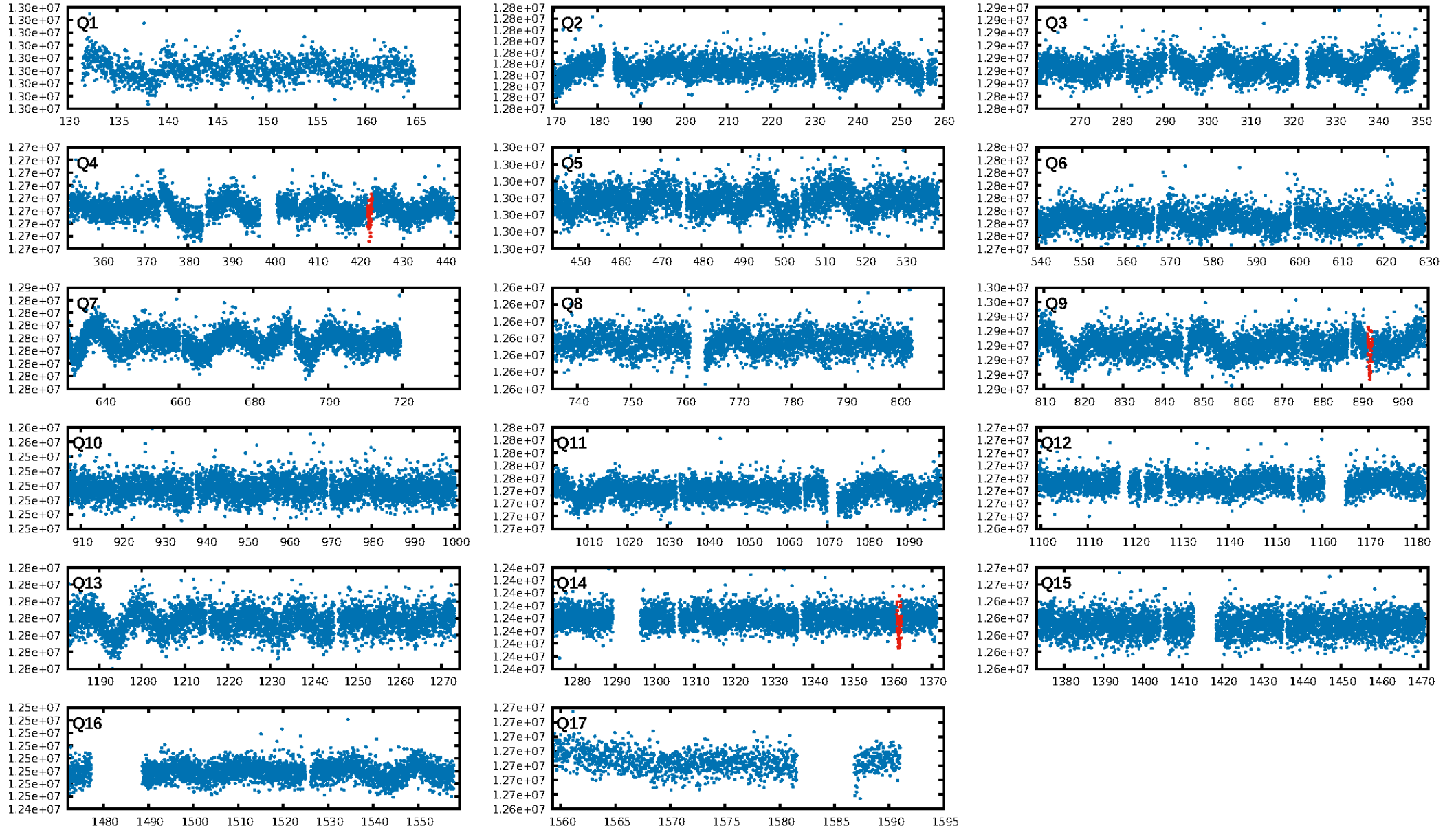
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 54.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.45e-25
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.366
Centroid-sig: 0.6%
Centroid-so: 1.637 arcsec [2.15σ]
OotOffset-rm: 0.225 arcsec [1.23σ]
KicOffset-rm: 0.241 arcsec [1.31σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

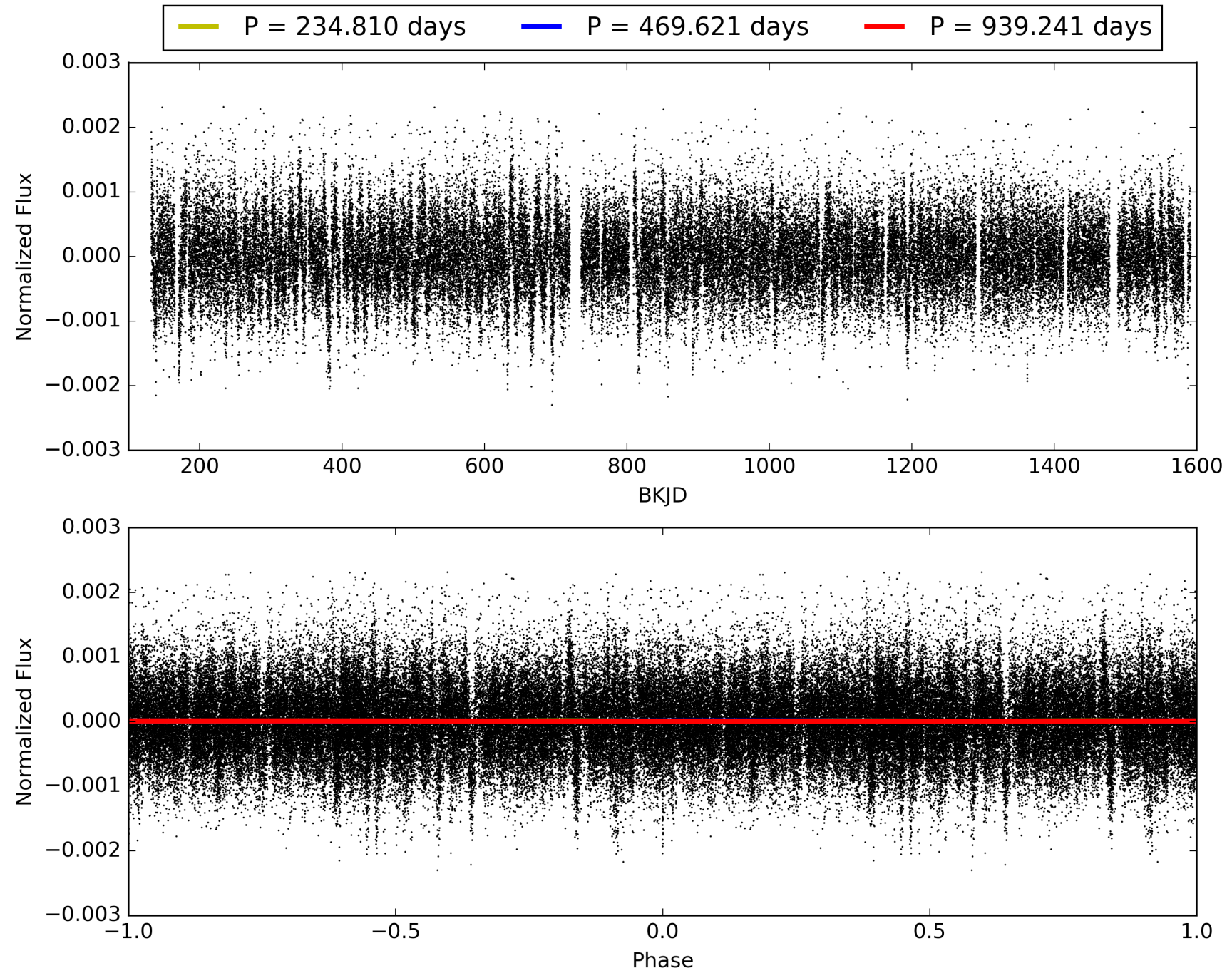
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:11:00 Z

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

TCE 009141355-01, PDC Light Curves

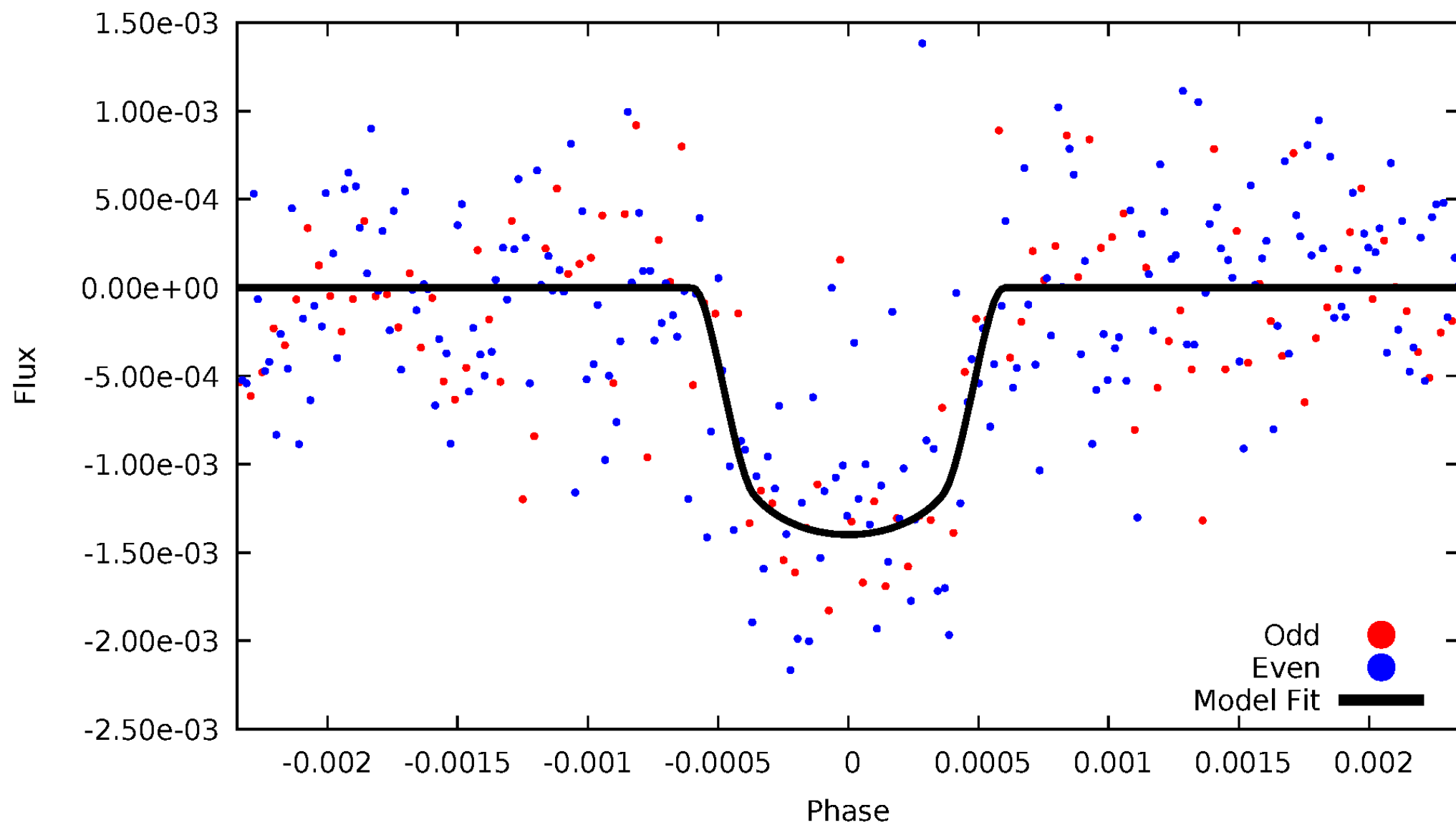


TCE 009141355-01



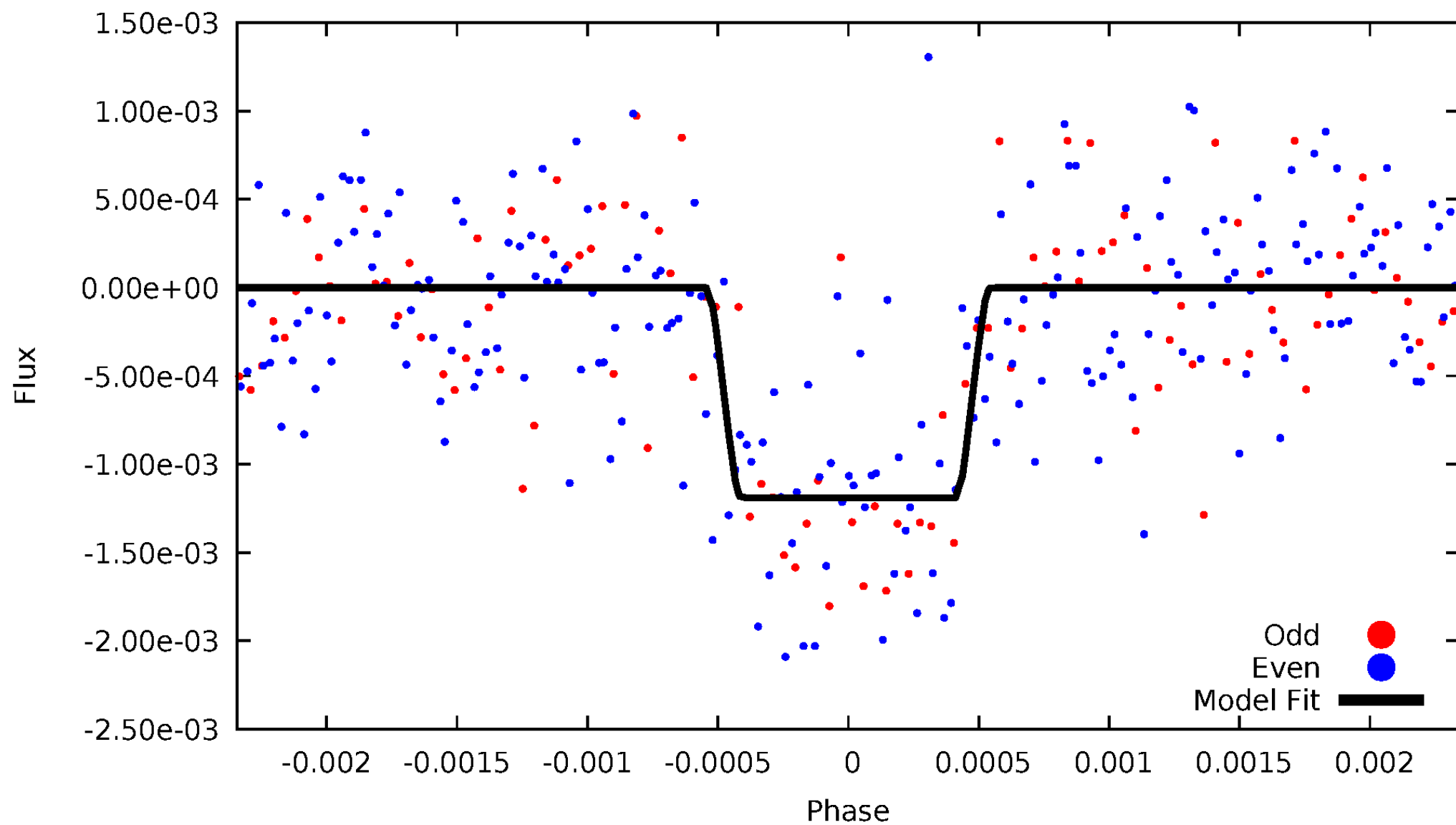
DV Odd/Even

TCE 009141355-01

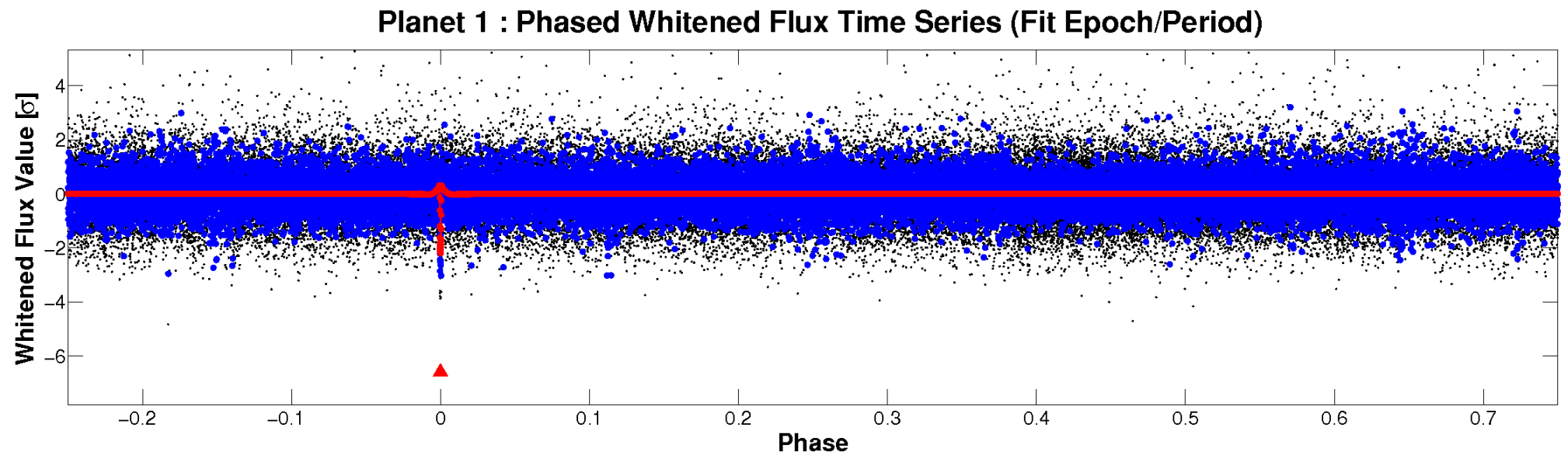
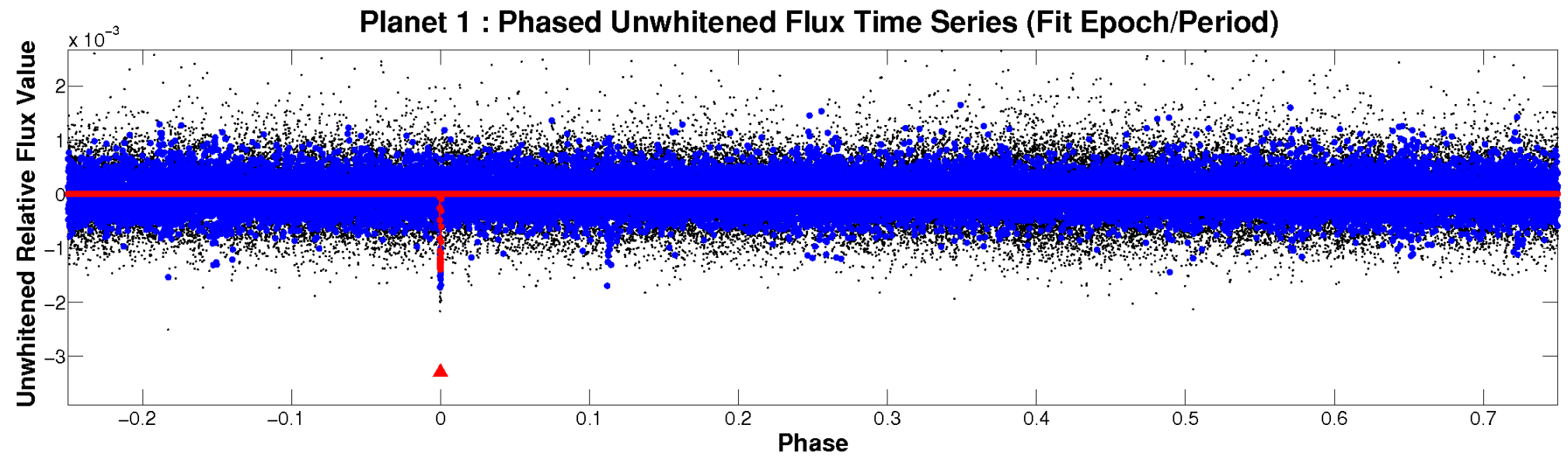


ALT Odd/Even

TCE 009141355-01



Non-Whitened Vs. Whitened Light Curve



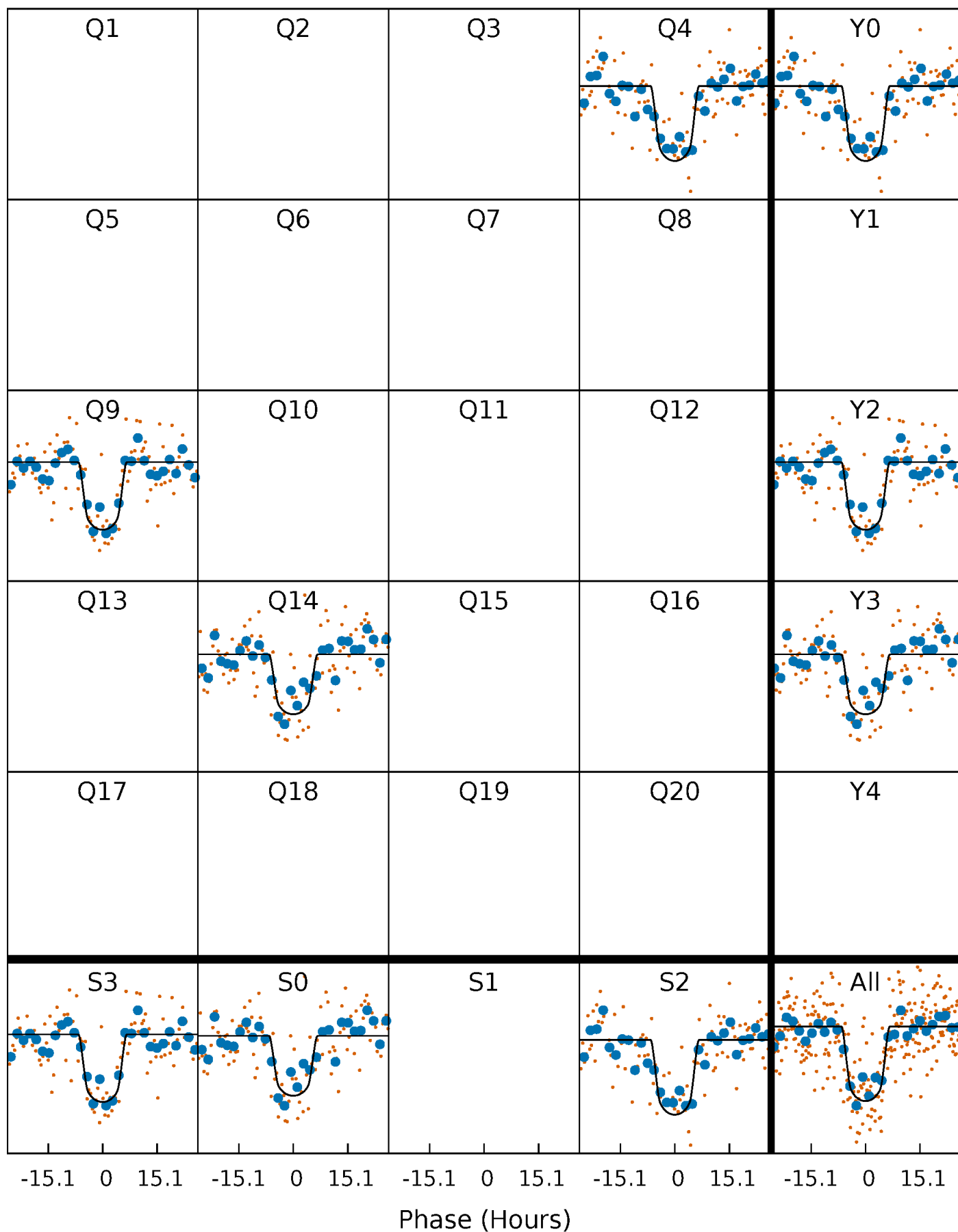
PDC Quarter-Phased Transit Curves

TCE 009141355-01 P=469.620662 Days $T_0=422.507132$ (BKJD)



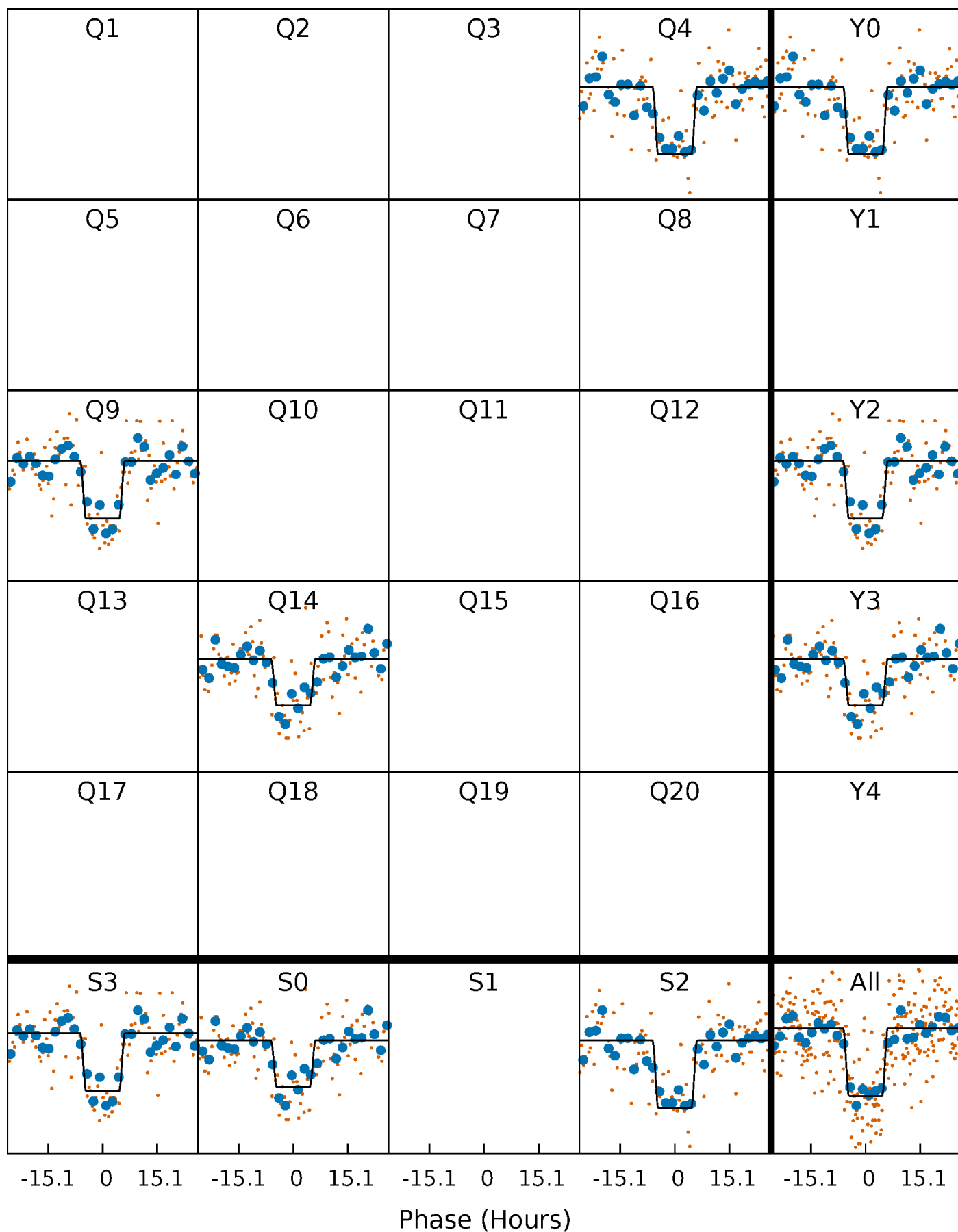
DV Quarter-Phased Transit Curves

TCE 009141355-01 P=469.620662 Days $T_0=422.507132$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

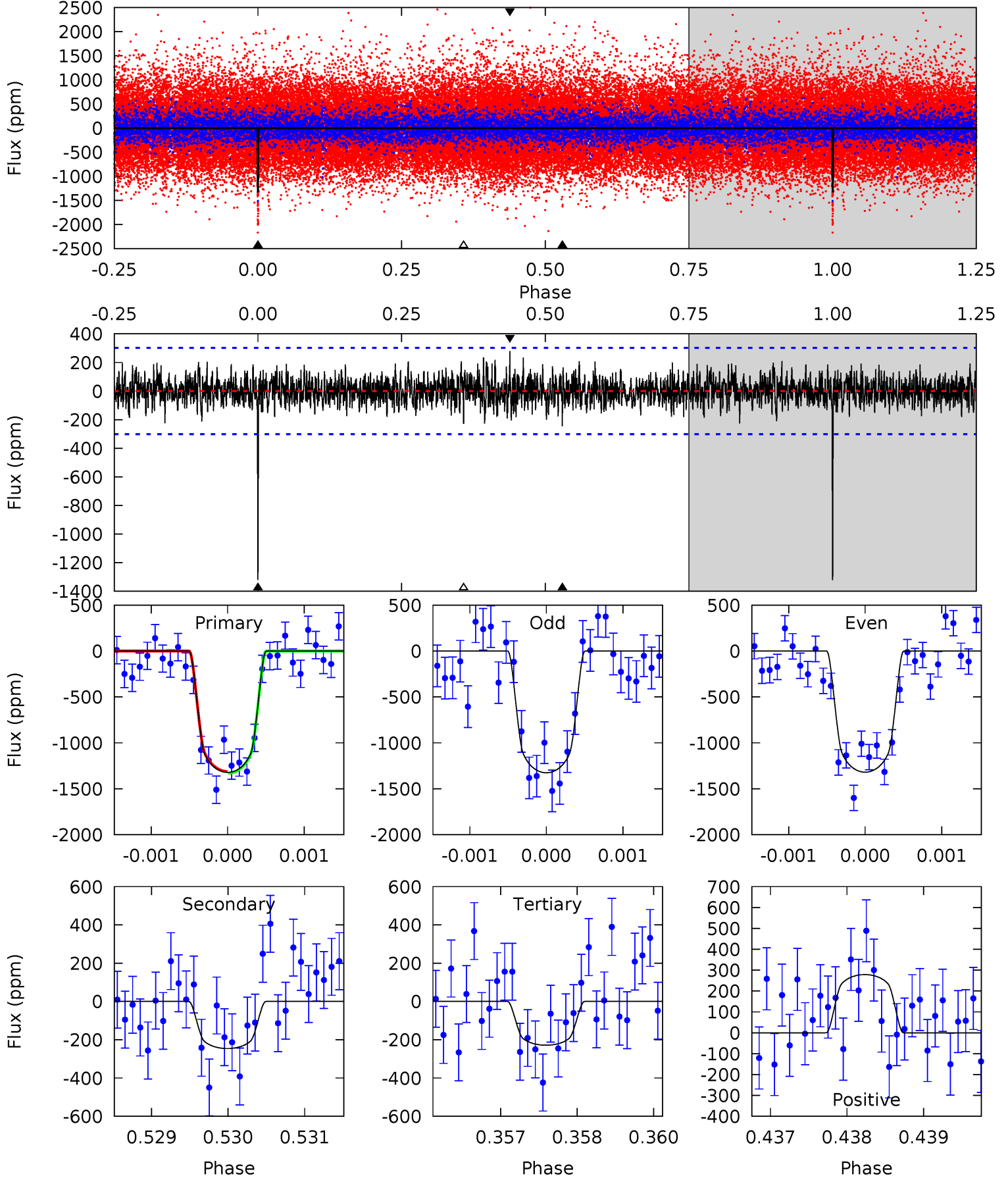
TCE 009141355-01 P=469.610887 Days $T_0=422.515948$ (BKJD)



DV Model-Shift Uniqueness Test

009141355-01, P = 469.620662 Days, E = 422.507132 Days

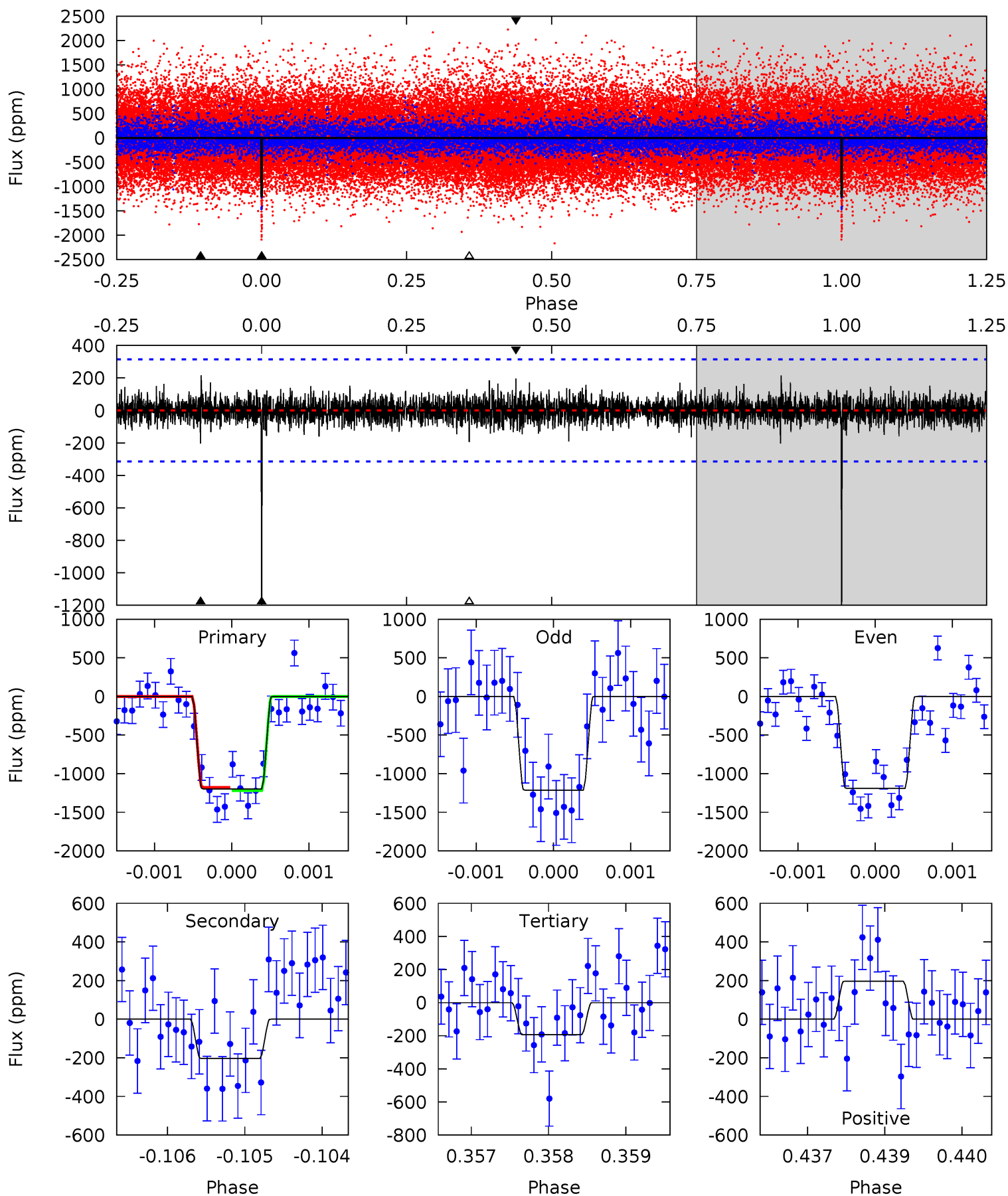
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.7	4.42	4.11	5.01	5.42	3.24	1.27	19.6	18.7	0.31	-0.59	0.06	1.02	0.17	0.18



Alt Model-Shift Uniqueness Test

009141355-01, P = 469.610887 Days, E = 422.515948 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.7	3.52	3.36	3.40	5.44	3.27	0.84	17.4	17.3	0.16	0.12	0.19	0.98	0.15	0.37



Stellar Parameters For KIC 009141355

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5474^{+166}_{-149}	$4.598^{+0.032}_{-0.128}$	$-0.280^{+0.300}_{-0.300}$	$0.763^{+0.152}_{-0.065}$	$0.847^{+0.083}_{-0.092}$	$2.690^{+0.467}_{-1.023}$
	+3%/-3%	+1%/-3%	+107%/-107%	+20%/-9%	+10%/-11%	+17%/-38%
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 009141355-01 / KOI 5622.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-246 ± 56	$3.52^{+0.41}_{-0.31}$	285^{+14}_{-12}	3761^{+183}_{-183}	13348^{+4105}_{-3761}
Alt.	-203 ± 58	$2.94^{+0.39}_{-0.27}$	284^{+13}_{-11}	3872^{+217}_{-244}	15785^{+5839}_{-5084}

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 $A_{obs} \gg 1.0$

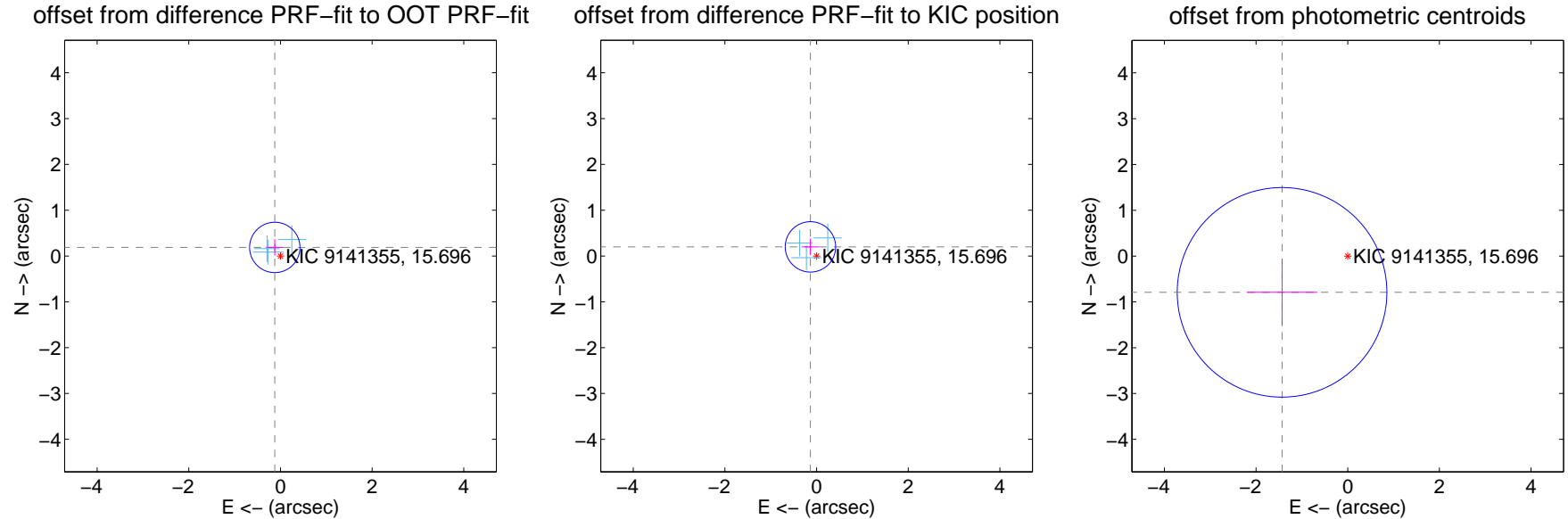
DV Centroid Data

Supplemental centroid analysis for 009141355-01. Kepler magnitude: 15.70. Transit SNR 15.20

There are 3 quarters with good PRF difference image offsets

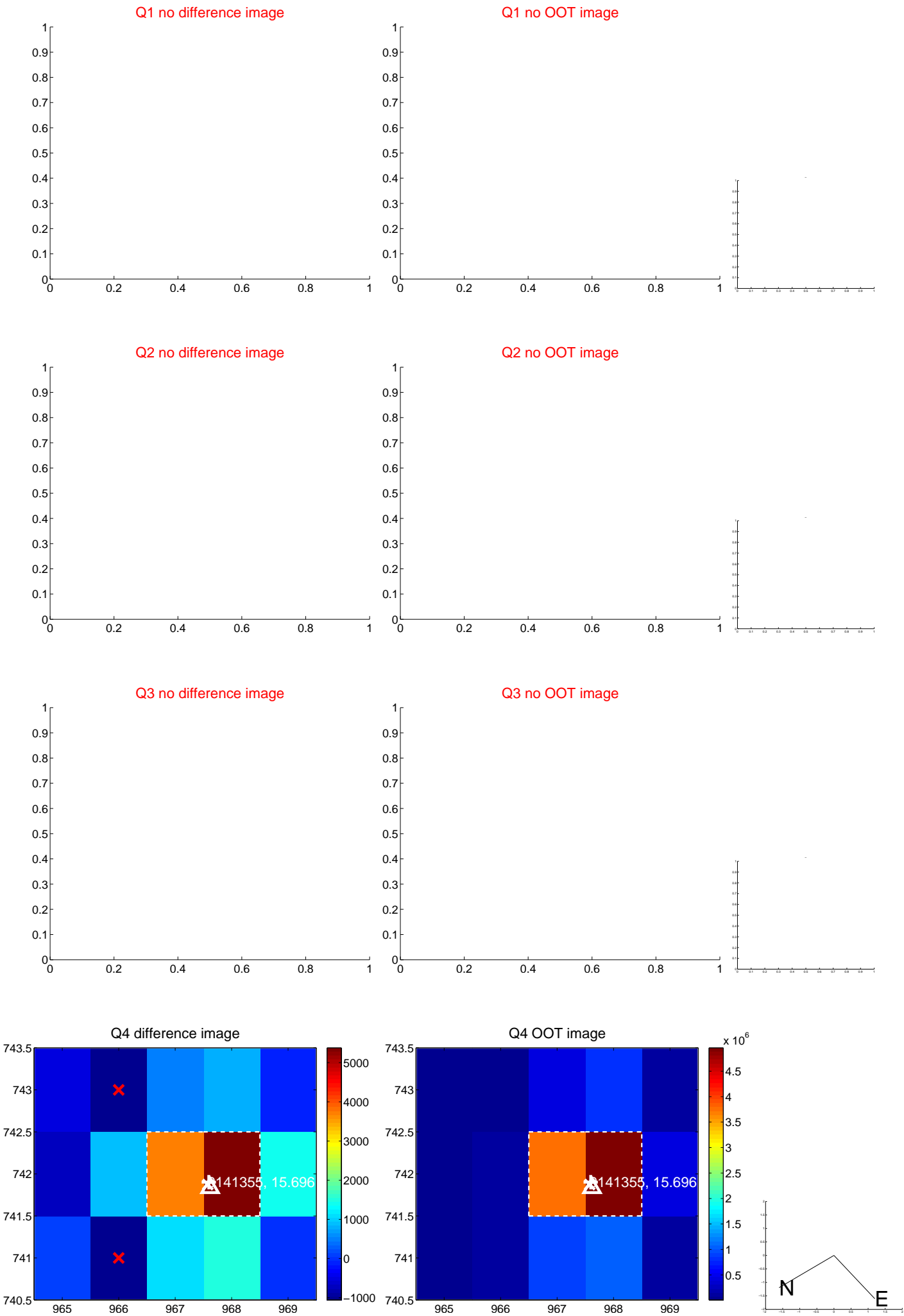
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.225 ± 0.183	1.23	0.124 ± 0.189	0.188 ± 0.181
PRF-fit source offset from KIC position	0.241 ± 0.183	1.31	0.134 ± 0.189	0.200 ± 0.181
photometric centroid source offset	1.64 ± 0.76	2.15	1.43 ± 0.77	-0.79 ± 0.73



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.

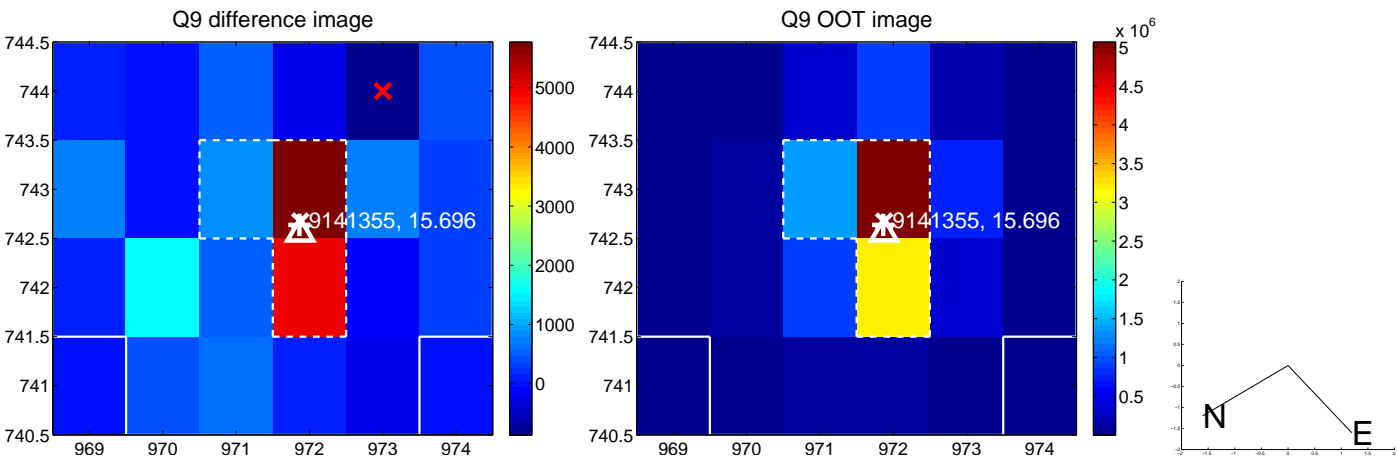
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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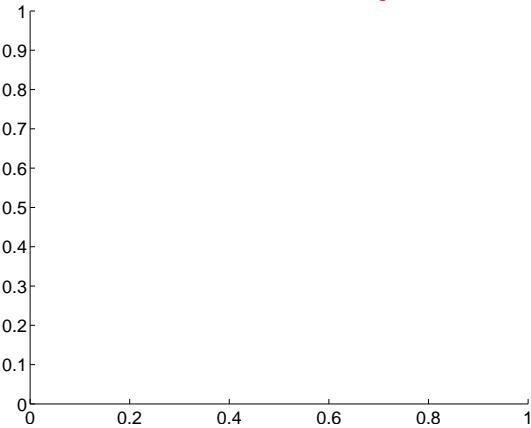


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

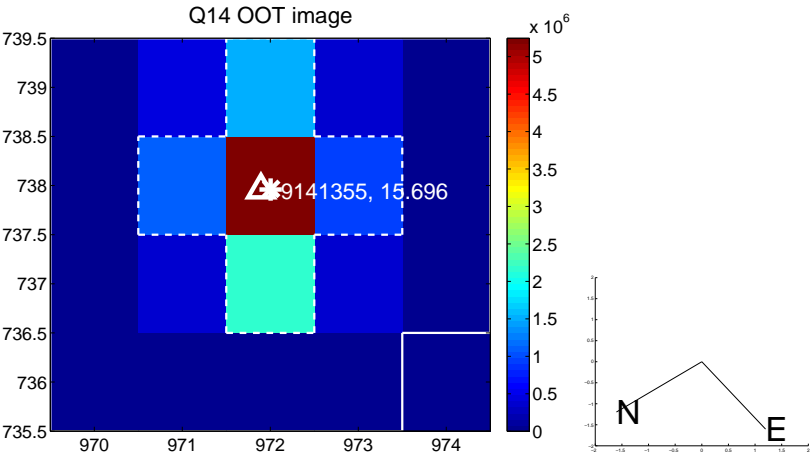
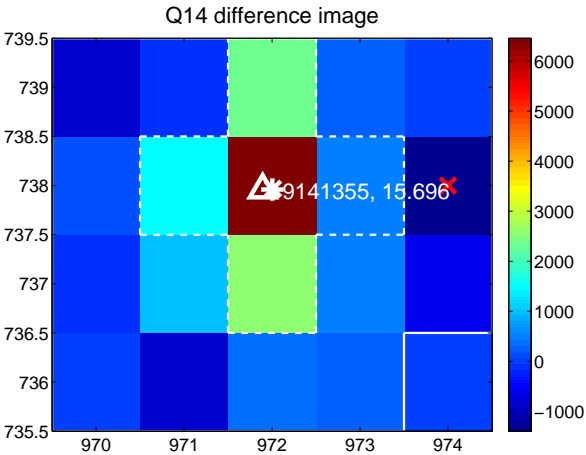
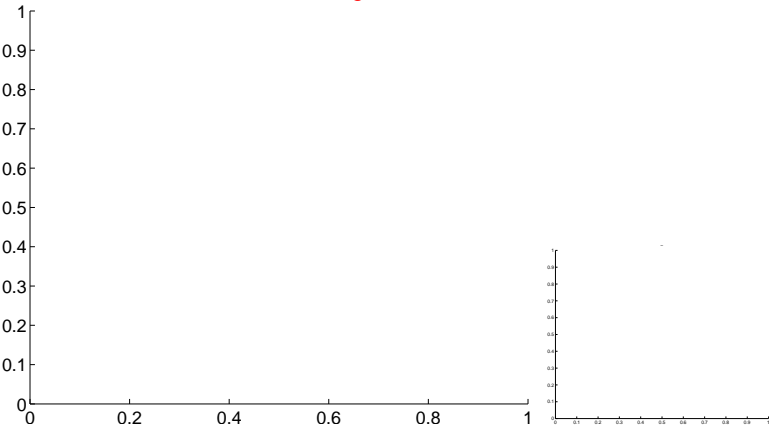


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

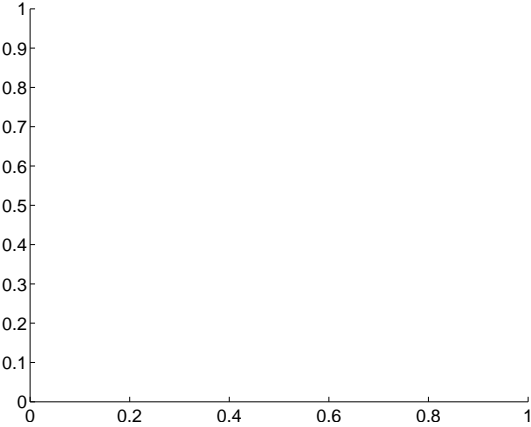
Q13 no difference image



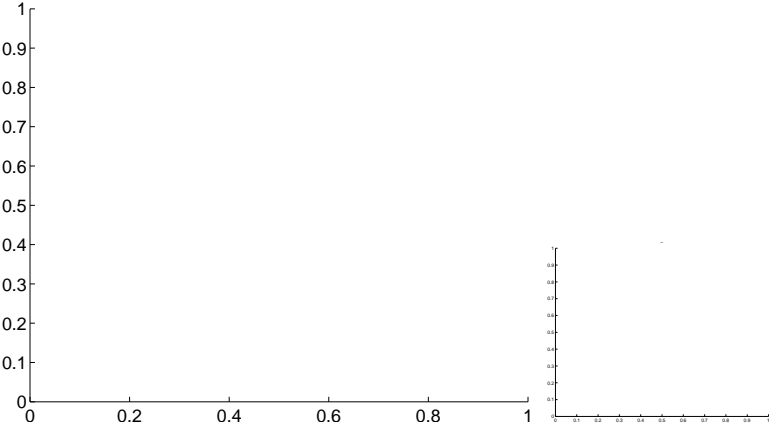
Q13 no OOT image



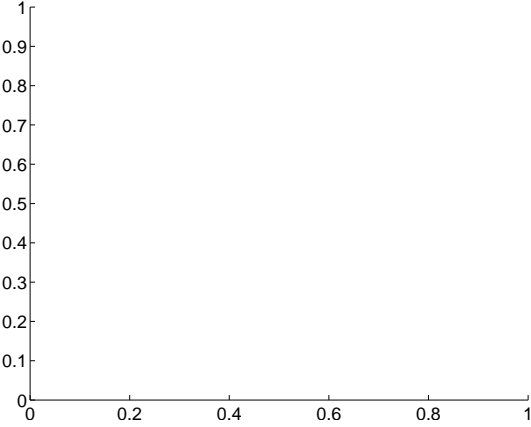
Q15 no difference image



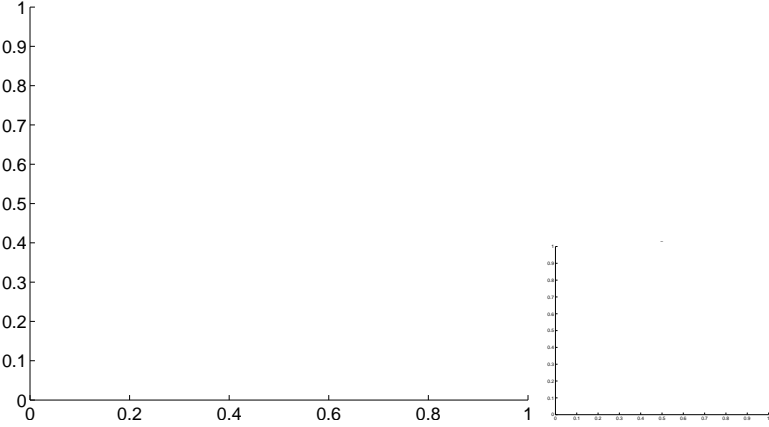
Q15 no OOT image



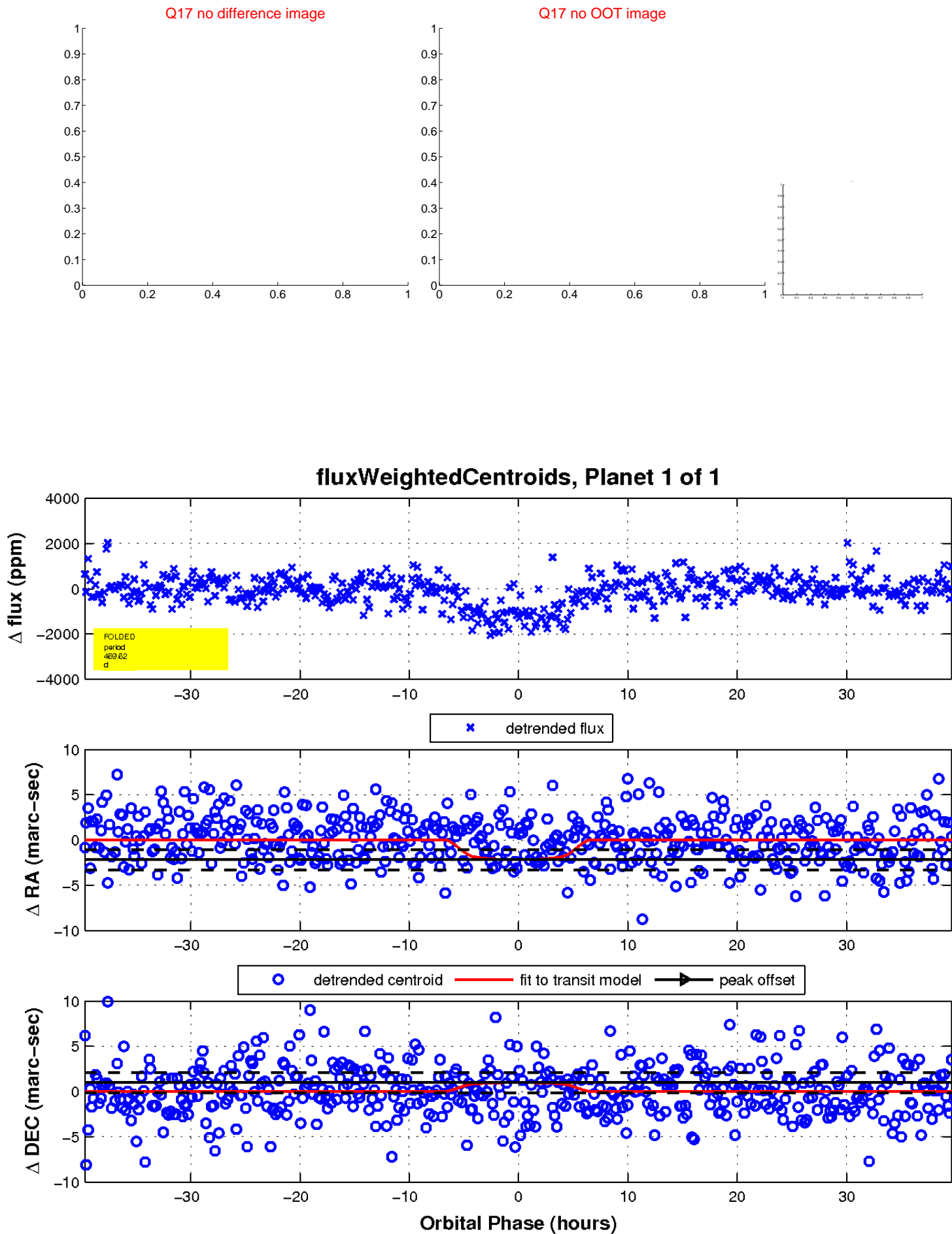
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

