

KIC 009710436

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})
009710436-01	OBS	No	596.392426	318.462573	195.0	4.566	7.7	8.0	0.91	5857	1.55	0.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009710436-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_POS_DV—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.

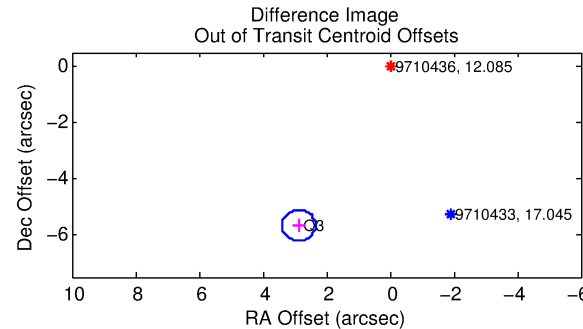
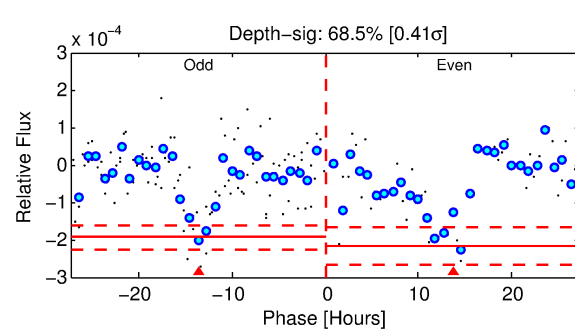
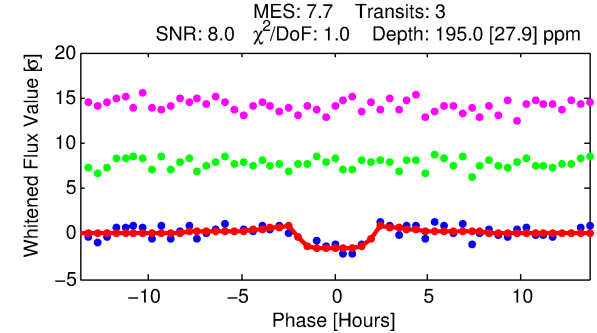
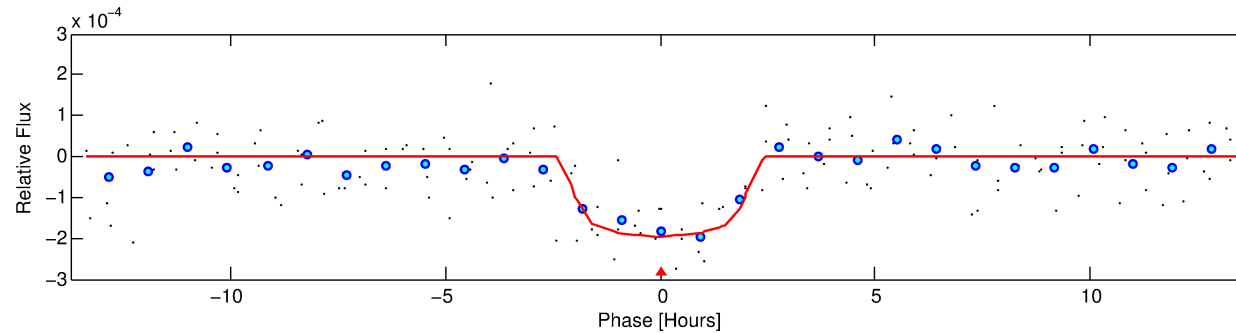
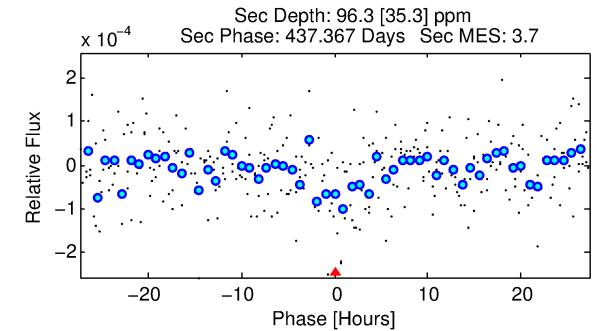
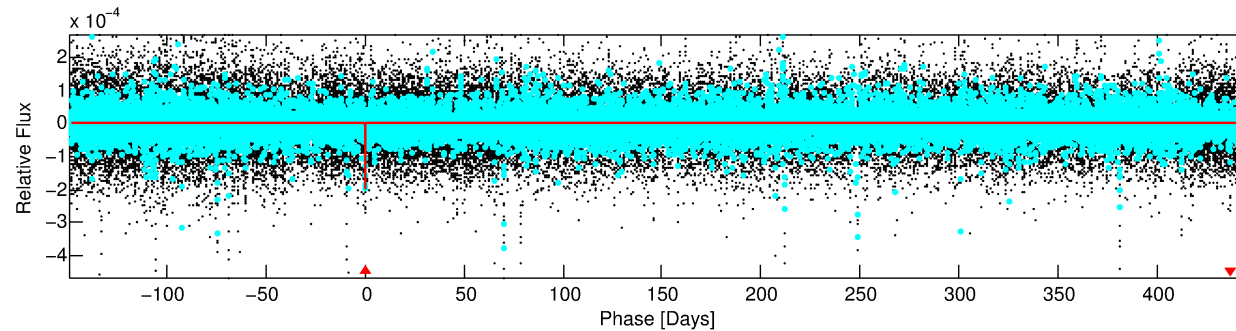
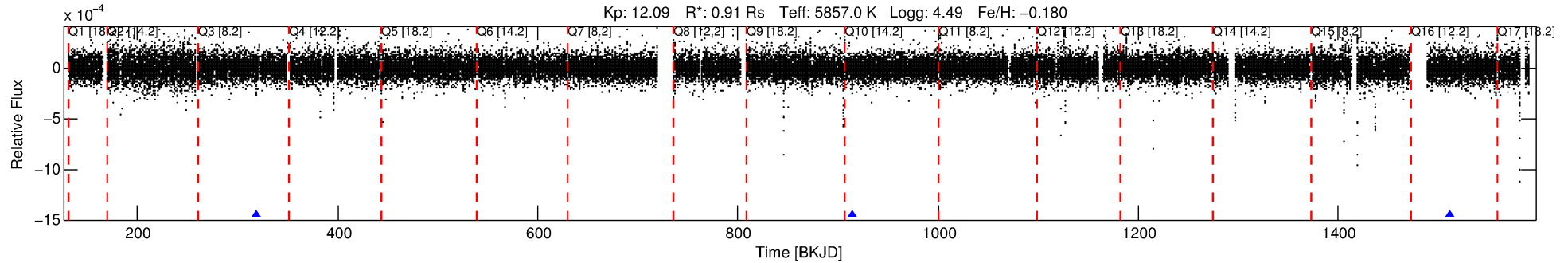
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009710436-01

No Significant Match Found

DV One-Page Summary

KIC: 9710436 Candidate: 1 of 1 Period: 596.392 d



DV Fit Results:

Period = 596.39243 [0.00539] d
Epoch = 318.4626 [0.0075] BKJD
Rp/R* = 0.0156 [0.0045]
a/R* = 415.21 [590.40]
b = 0.93 [0.22]
Seff = 0.47 [0.18]
Teq = 212 [20] K
Rp = 1.55 [0.63] Re
a = 1.3625 [0.3300] AU
Ag = 40704.05 [31403.98] [1.30σ]
Teffp = 4648 [806] K [5.50σ]

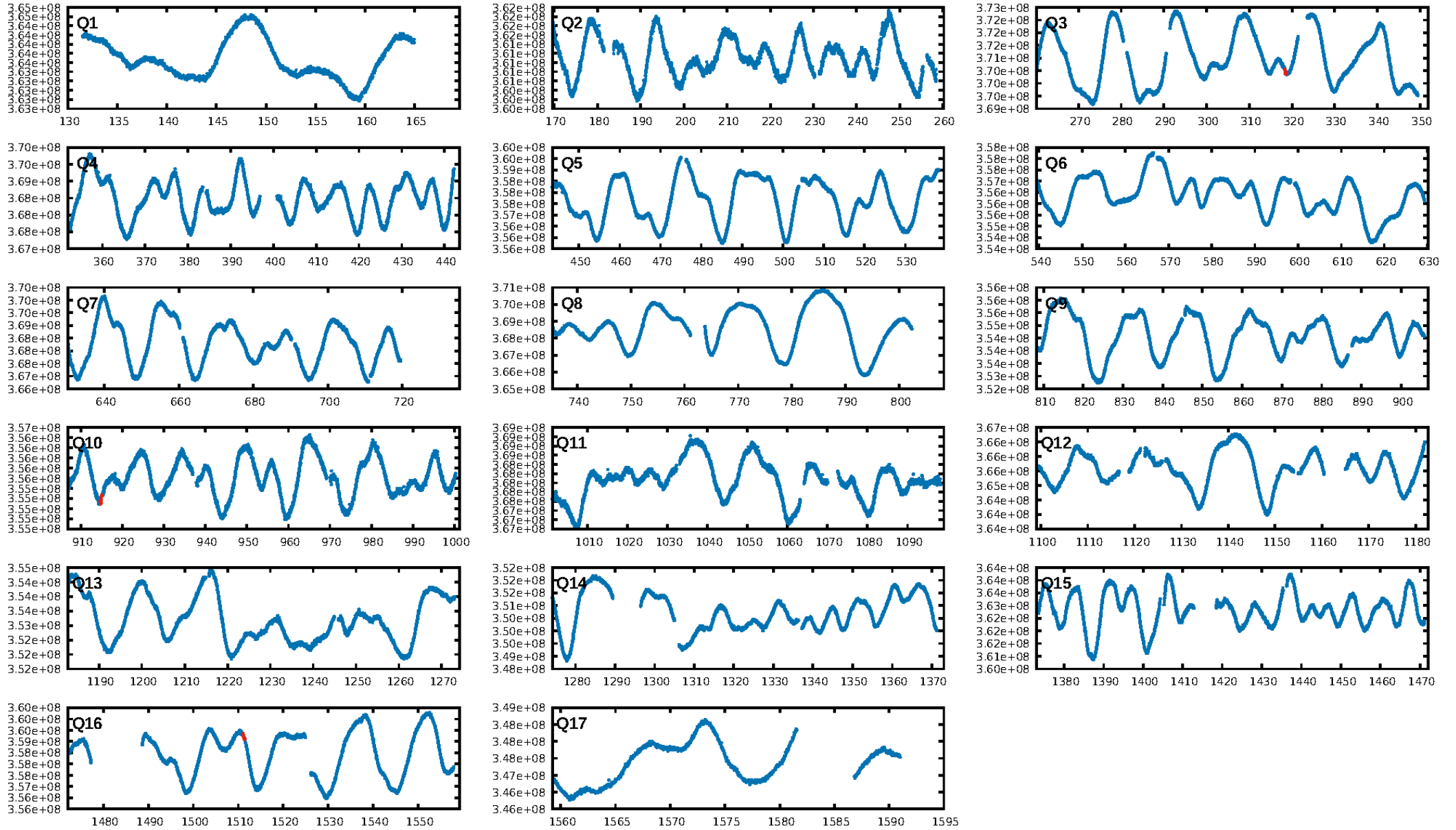
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 49.3%
ModelChiSquareGof-sig: 95.0%
Bootstrap-pfa: 7.96e-07
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.2525
Centroid-sig: 0.0%
Centroid-so: 3.403 arcsec [2.74σ]
OotOffset-rm: 6.348 arcsec [35.36σ]
KicOffset-rm: 6.560 arcsec [36.48σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

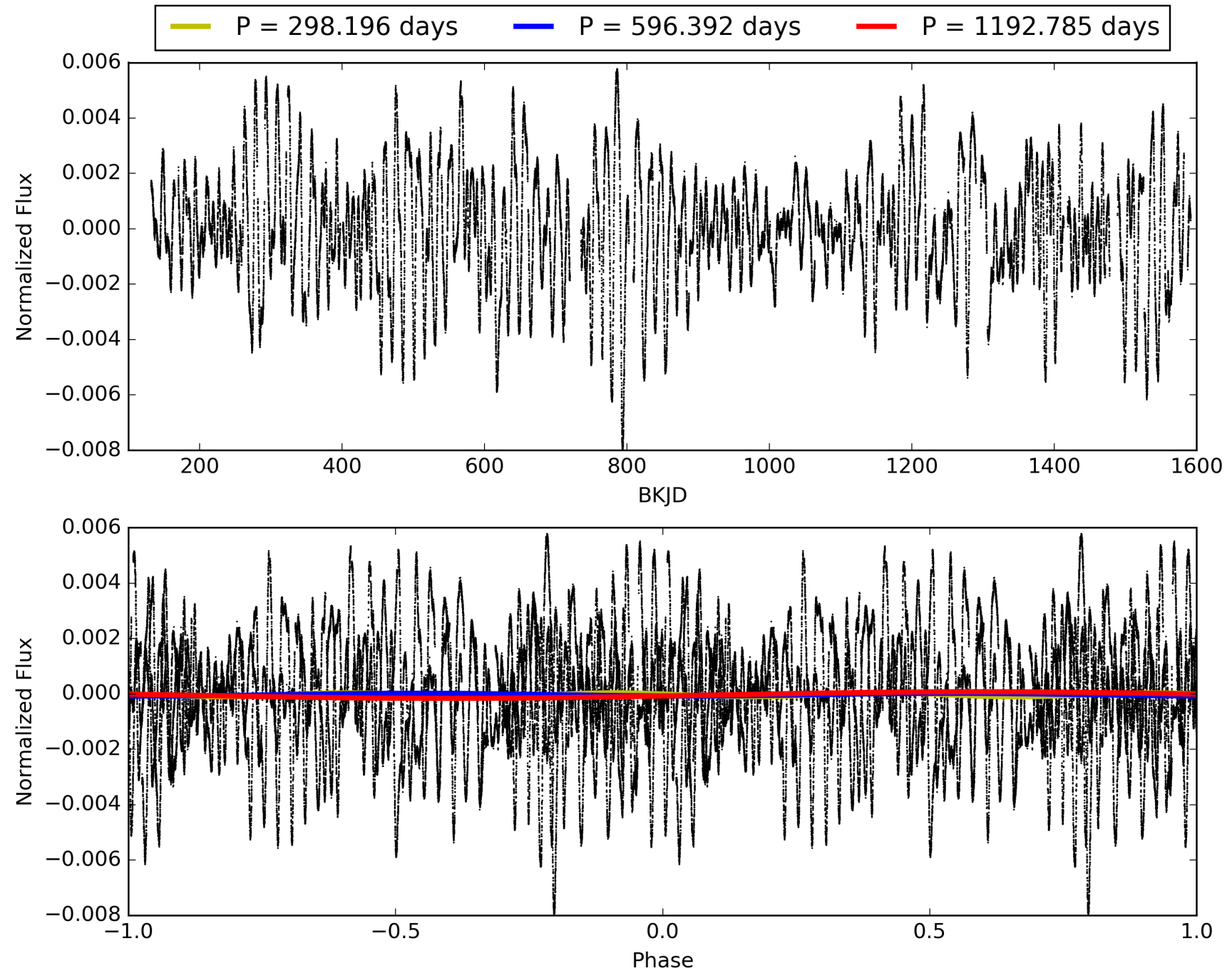
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 12:42:00 Z

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

TCE 009710436-01, PDC Light Curves

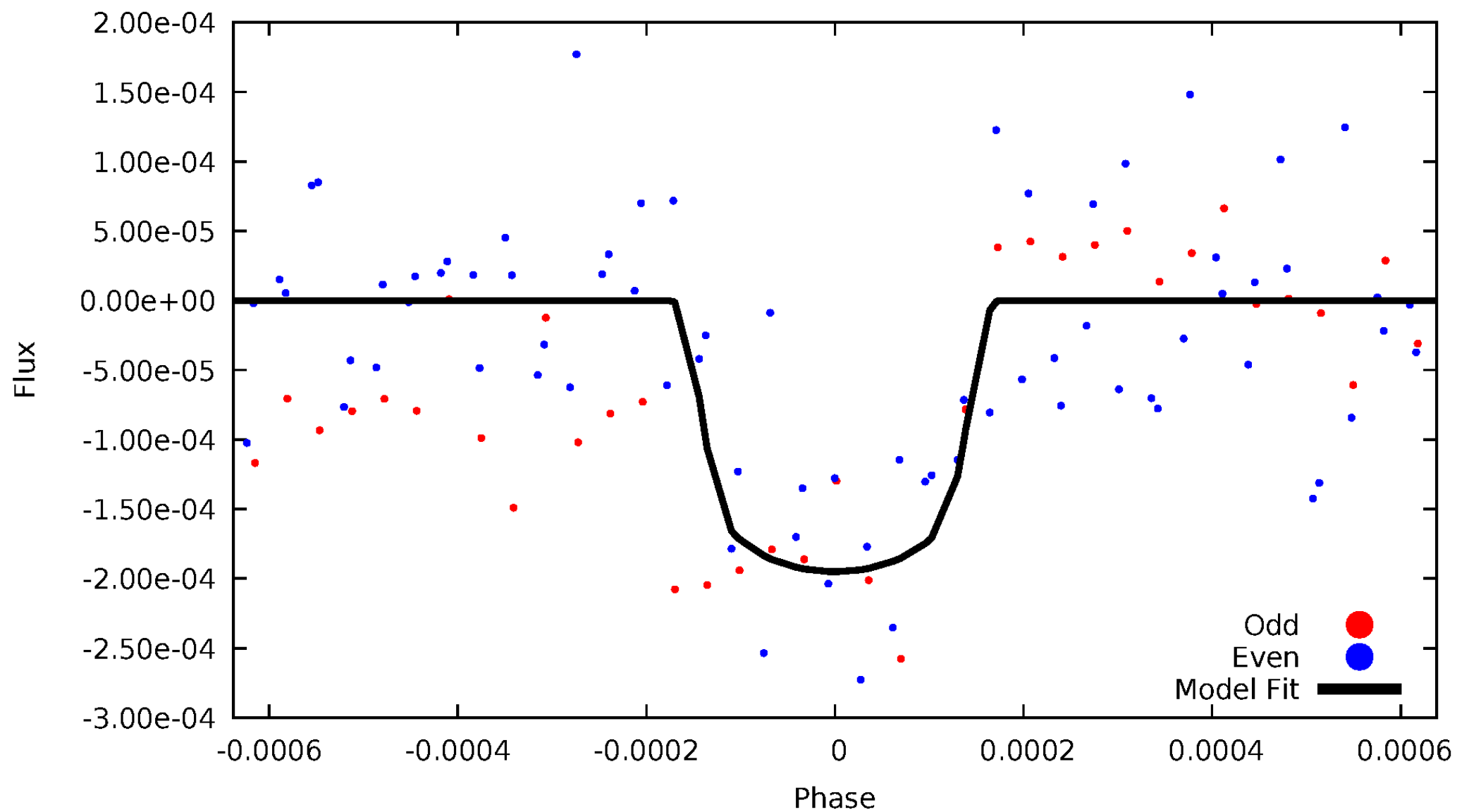


TCE 009710436-01



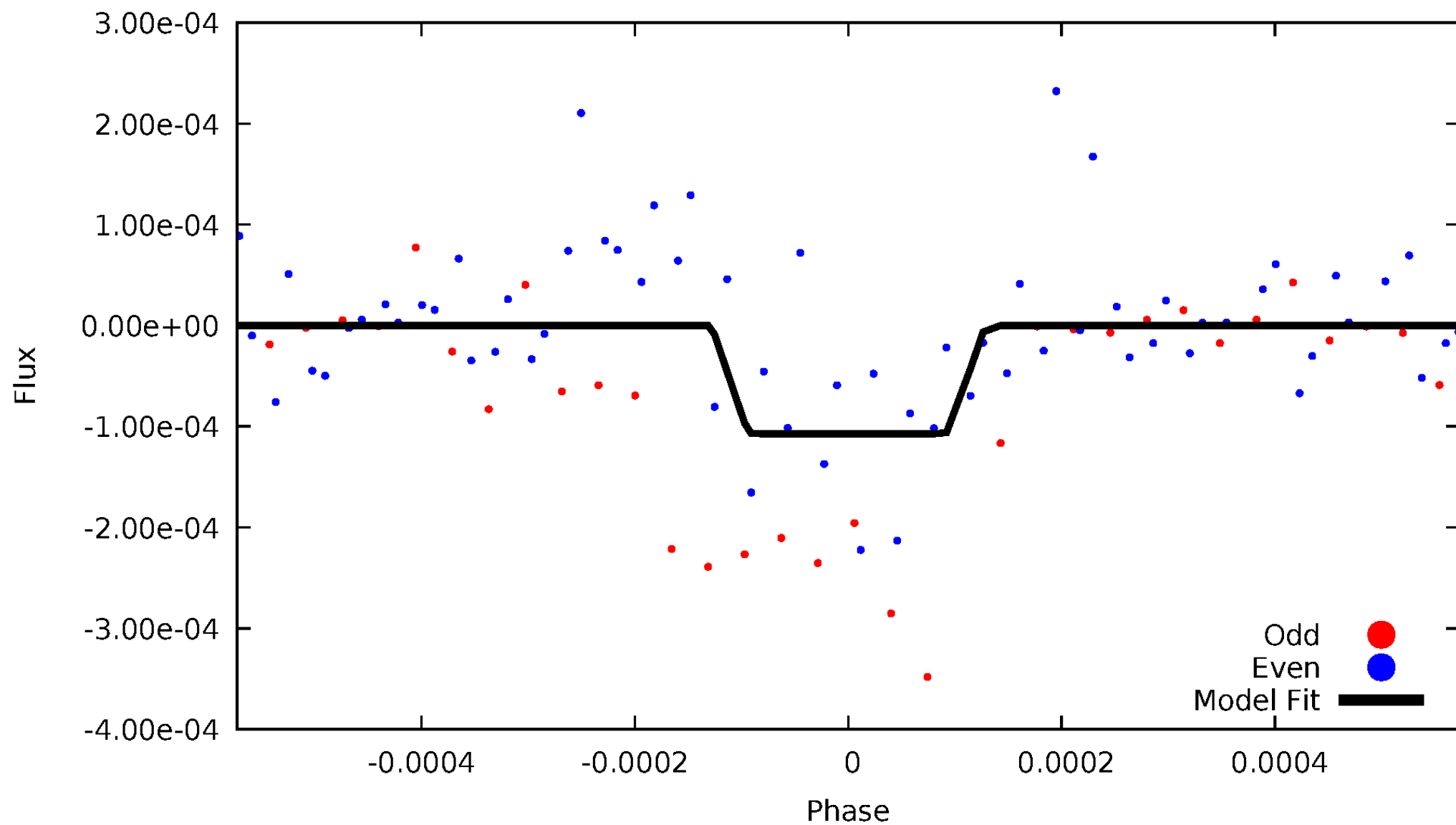
DV Odd/Even

TCE 009710436-01

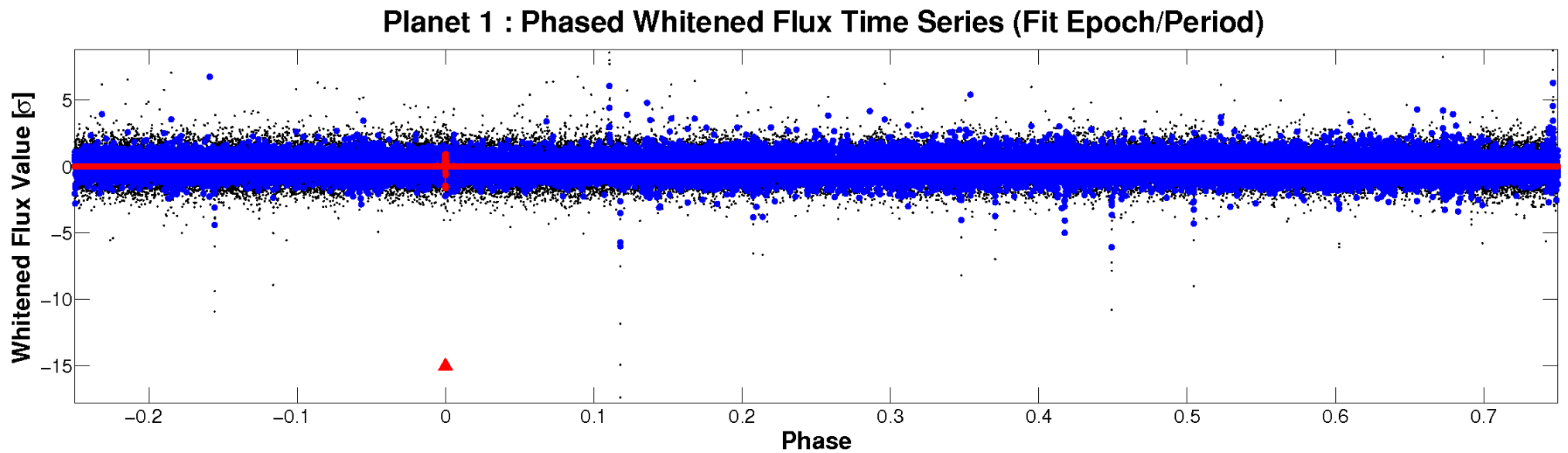
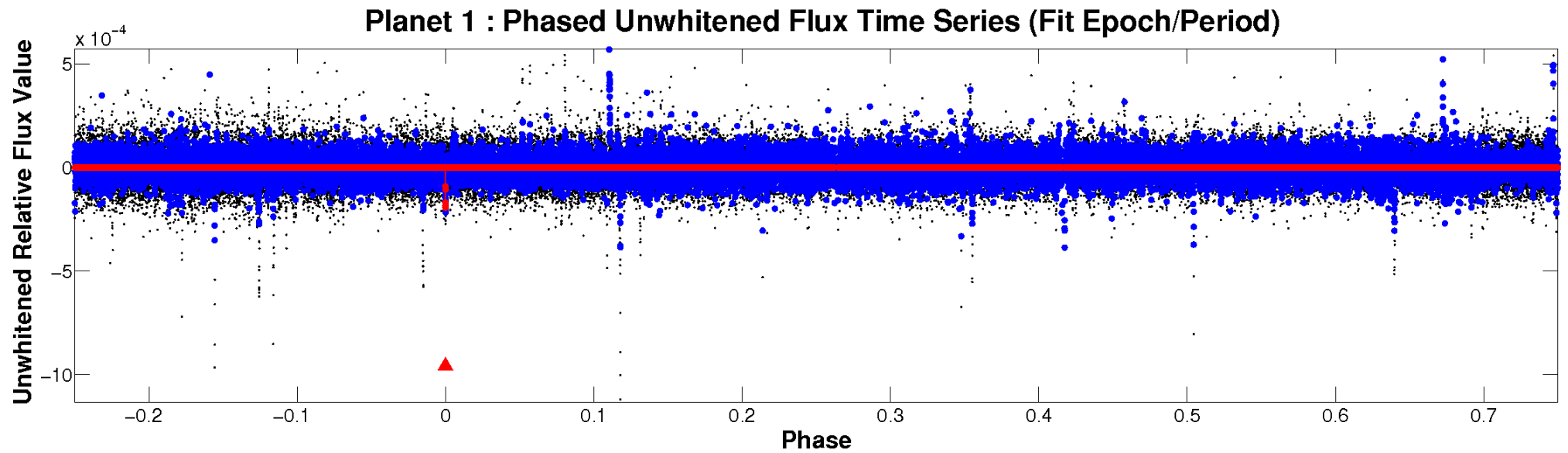


ALT Odd/Even

TCE 009710436-01

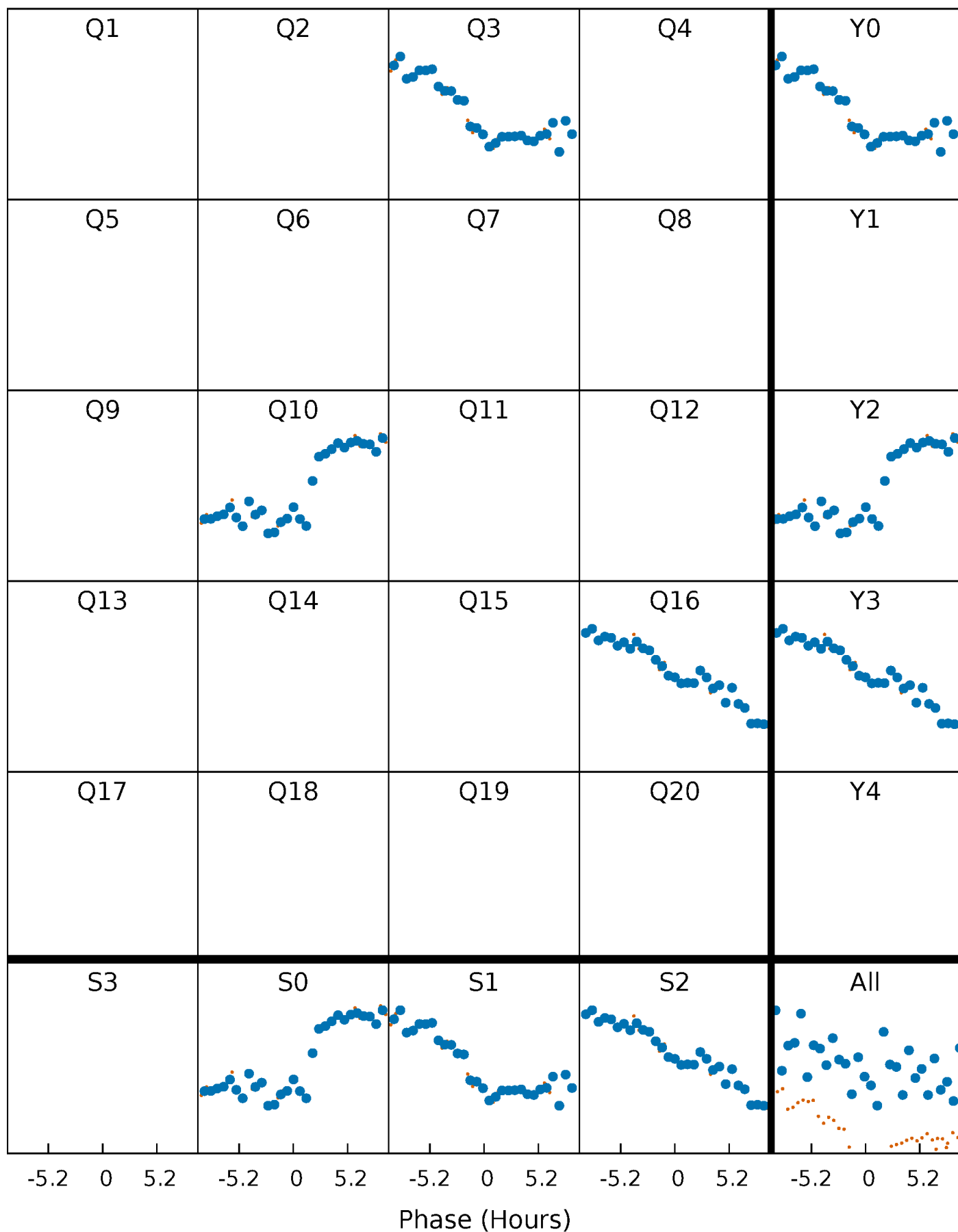


Non-Whitened Vs. Whitened Light Curve



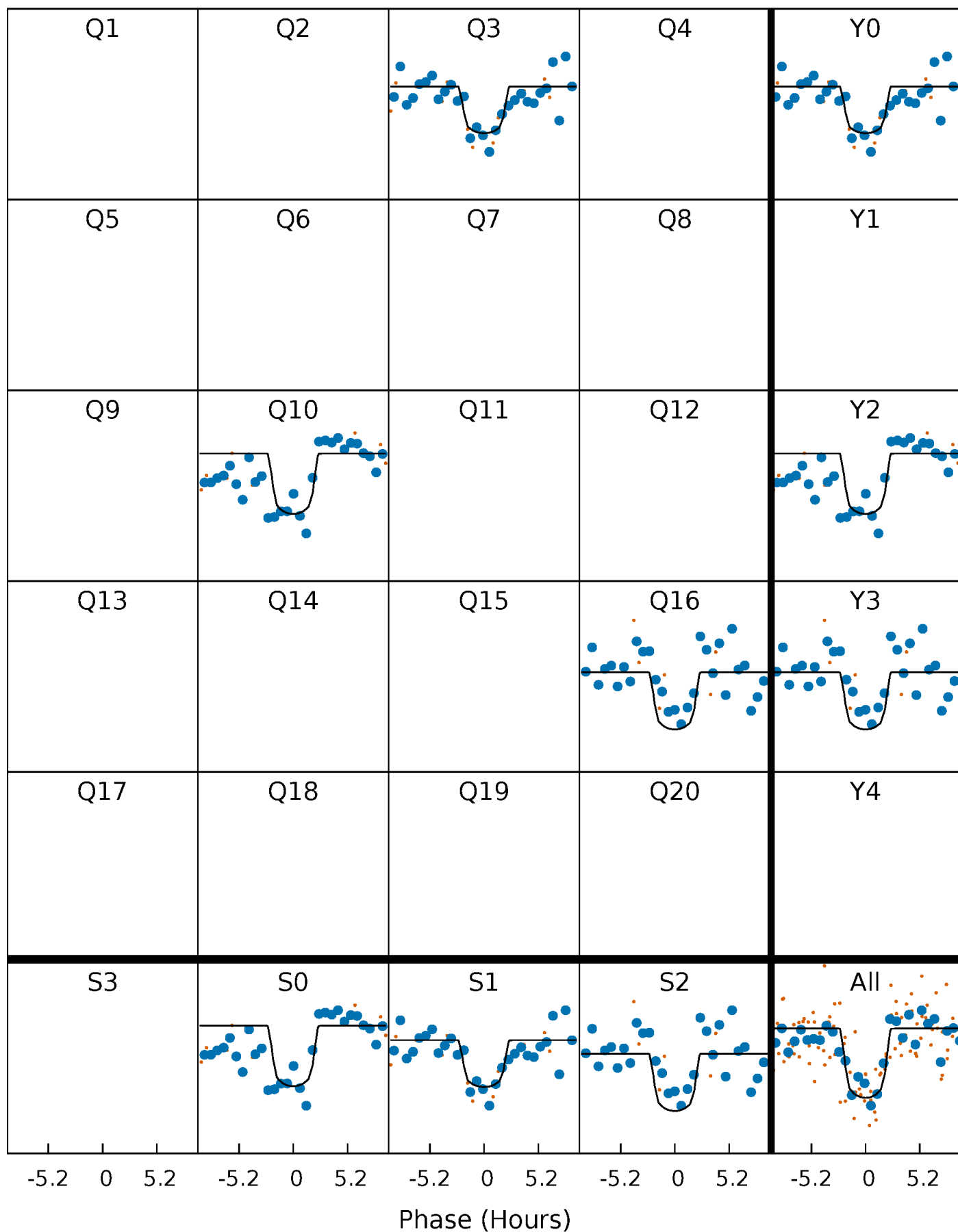
PDC Quarter-Phased Transit Curves

TCE 009710436-01 P=596.392426 Days $T_0=318.462574$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 009710436-01 P=596.392426 Days $T_0=318.462574$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

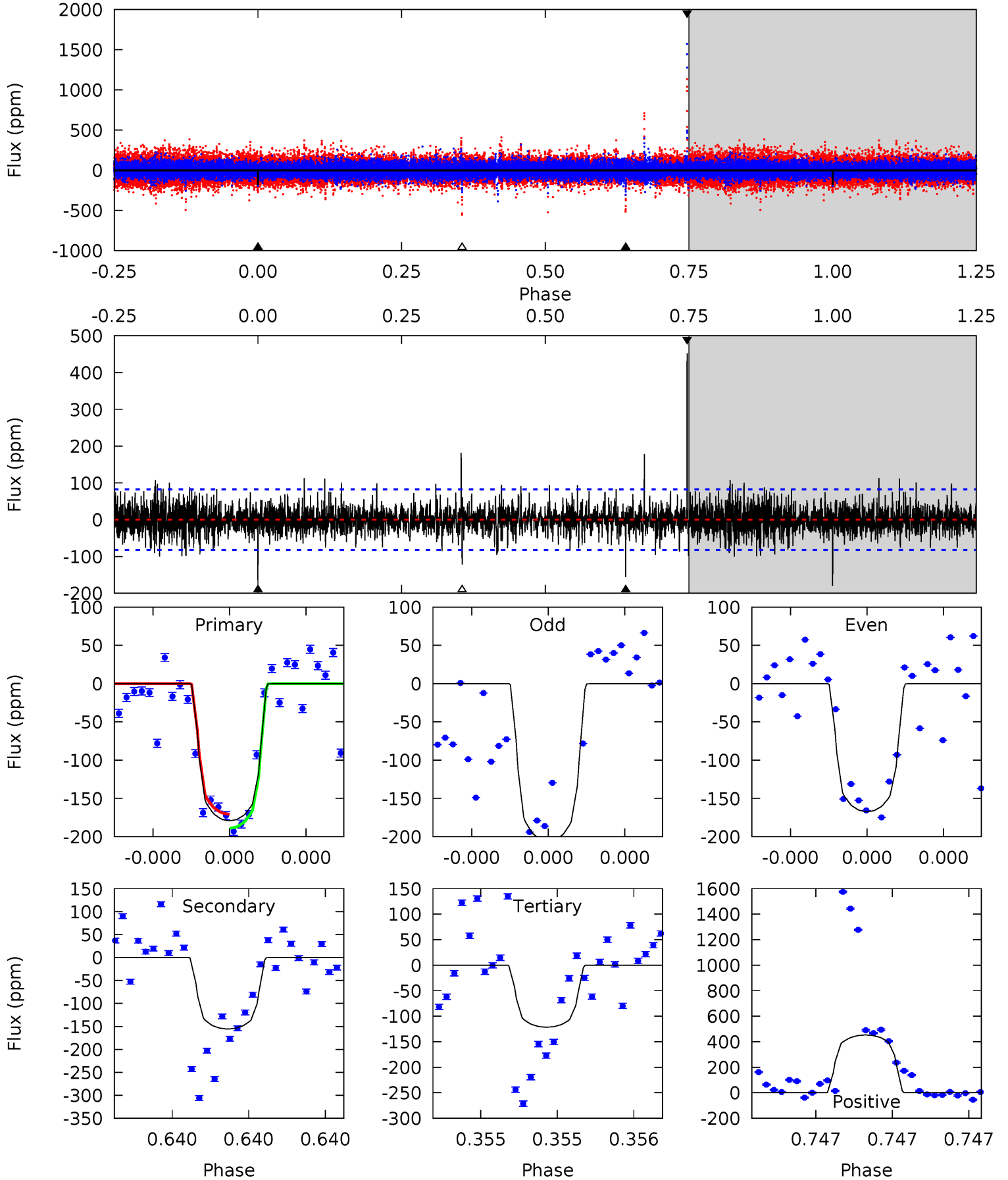
TCE 009710436-01 P=596.380693 Days $T_0=318.471873$ (BKJD)



DV Model-Shift Uniqueness Test

009710436-01, P = 596.392426 Days, E = 318.462574 Days

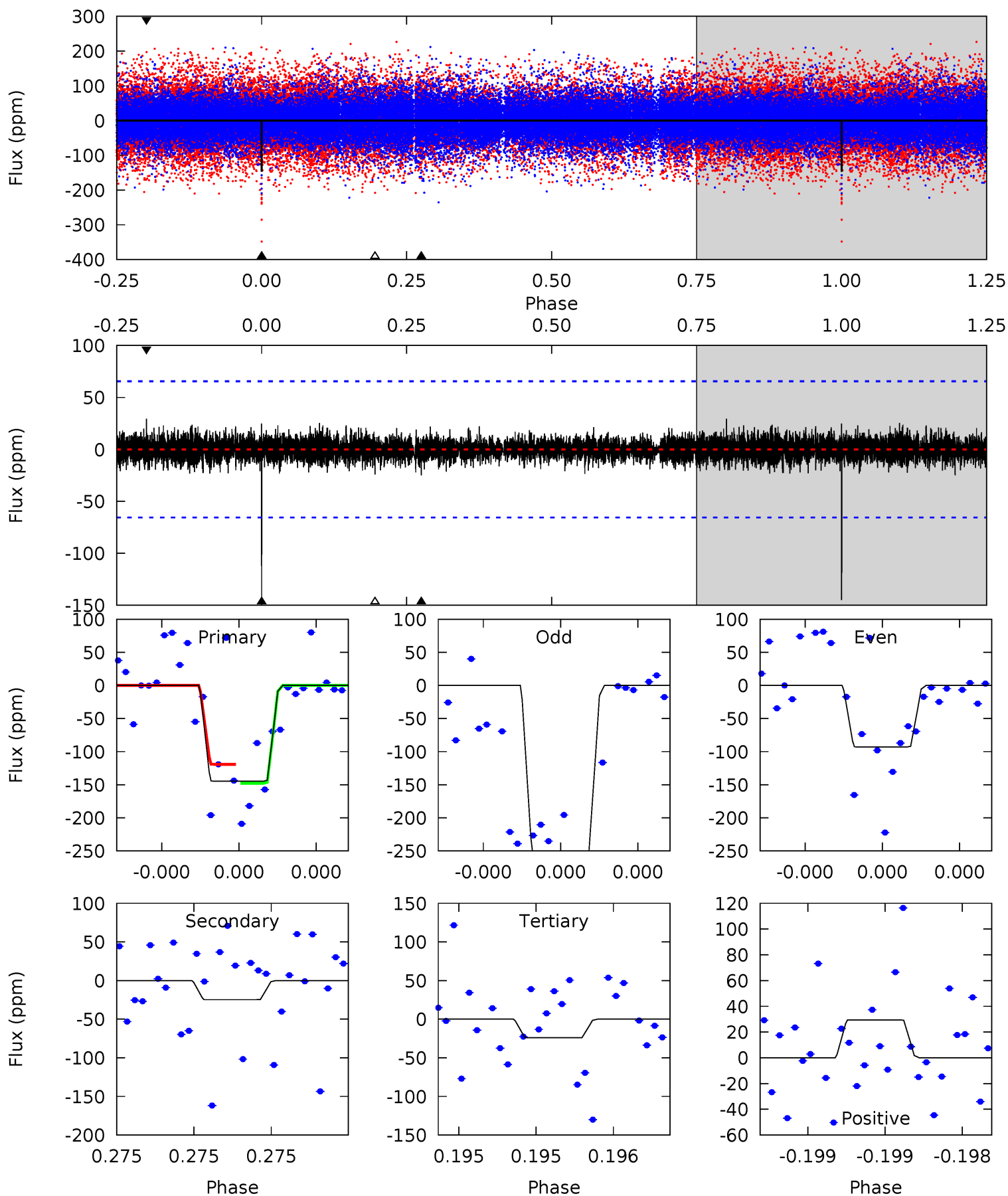
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.3	10.7	8.33	31.0	5.64	3.58	1.78	3.95	-18.8	2.33	-20.4	1.16	0.88	0.72	0.63



Alt Model-Shift Uniqueness Test

009710436-01, P = 596.380693 Days, E = 318.471873 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.6	2.15	2.09	2.56	5.69	3.66	0.51	10.5	10.0	0.06	-0.41	6.48	0.93	0.17	1.21



Stellar Parameters For KIC 009710436

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5857^{+132}_{-161}	$4.493^{+0.065}_{-0.195}$	$-0.180^{+0.300}_{-0.300}$	$0.914^{+0.261}_{-0.087}$	$0.949^{+0.120}_{-0.108}$	$1.752^{+0.490}_{-0.924}$
	+2%/-3%	+1%/-4%	+167%/-167%	+29%/-10%	+13%/-11%	+28%/-53%
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 009710436-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-156 ± 15	$1.62^{+0.54}_{-0.45}$	300^{+20}_{-13}	5267^{+848}_{-565}	58663^{+53363}_{-24524}
Alt.	-25 ± 12	$1.08^{+0.51}_{-0.44}$	300^{+19}_{-13}	4171^{+1222}_{-611}	19144^{+50201}_{-11954}

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

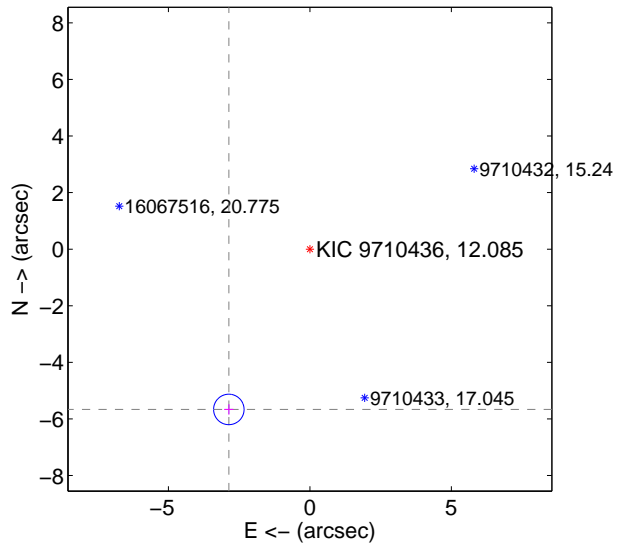
Supplemental centroid analysis for 009710436-01. Kepler magnitude: 12.09. Transit SNR 7.95

There are 1 quarters with good PRF difference image offsets

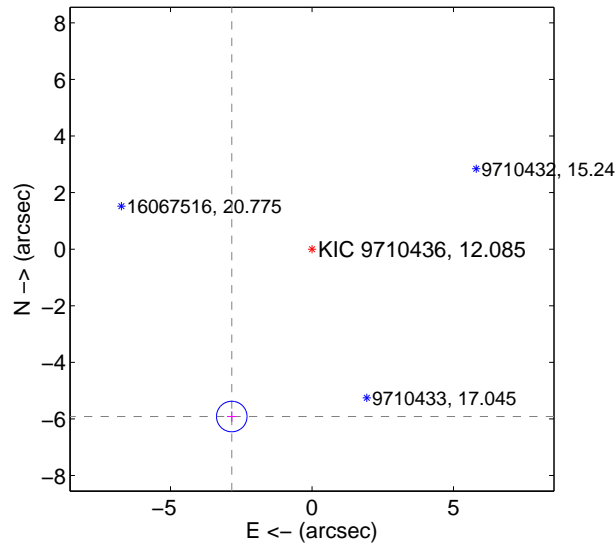
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.348 ± 0.180	35.36	2.865 ± 0.164	-5.665 ± 0.183
PRF-fit source offset from KIC position	6.560 ± 0.180	36.48	2.836 ± 0.164	-5.915 ± 0.183
photometric centroid source offset	3.40 ± 1.24	2.74	2.76 ± 1.32	-1.99 ± 1.07

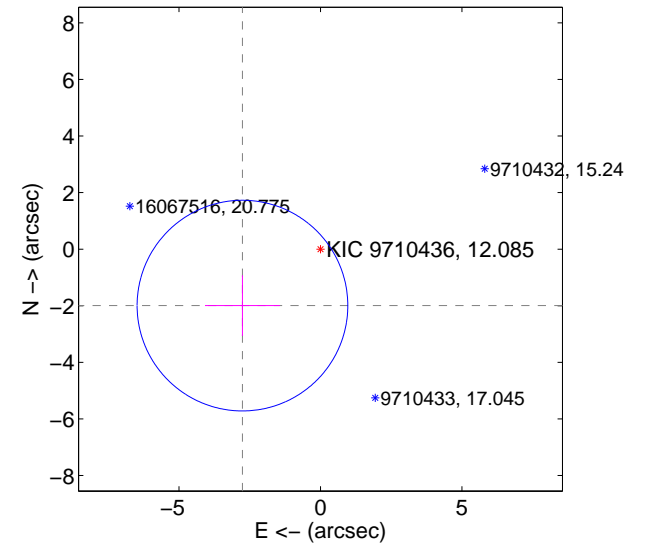
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

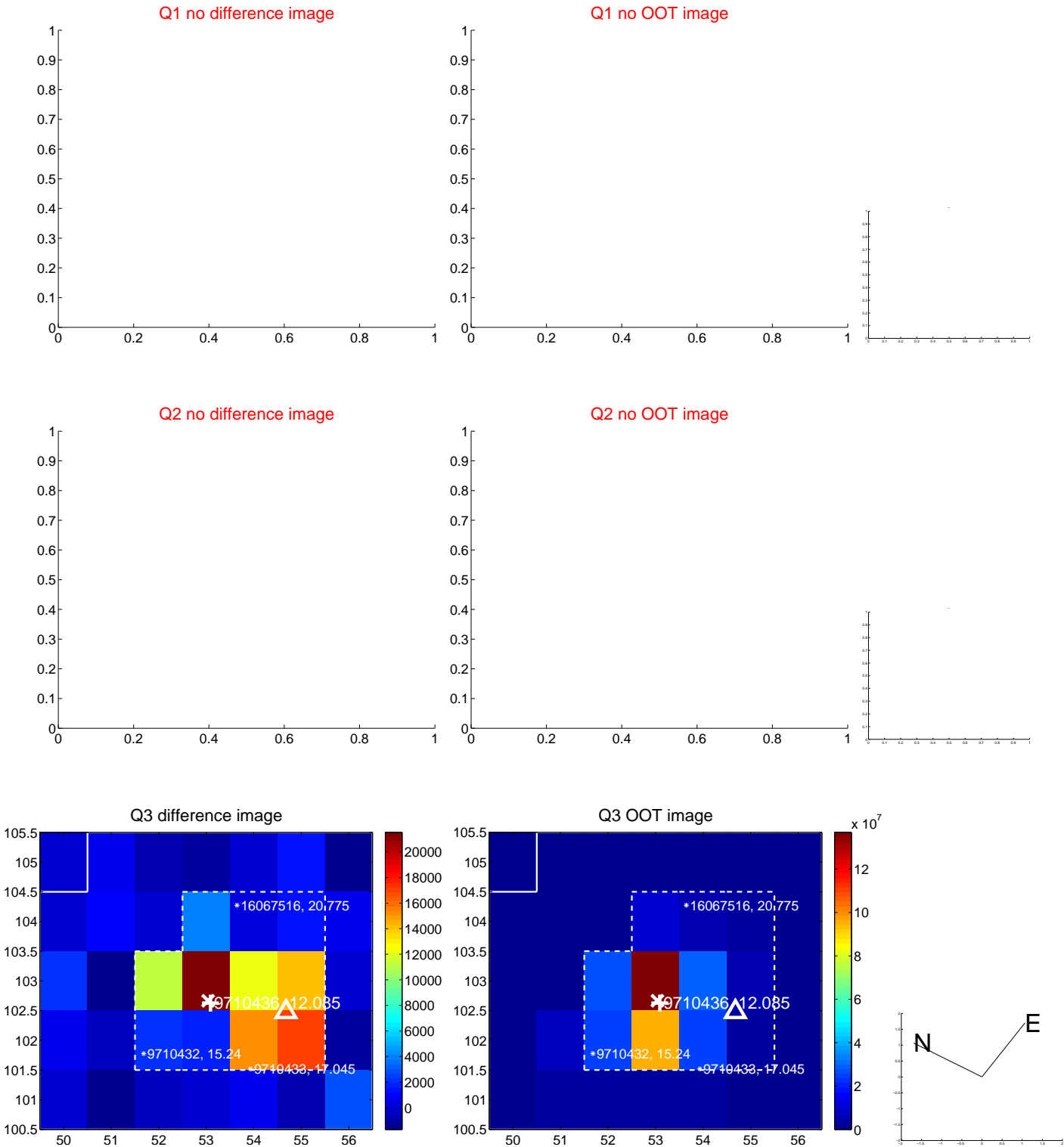


offset from photometric centroids

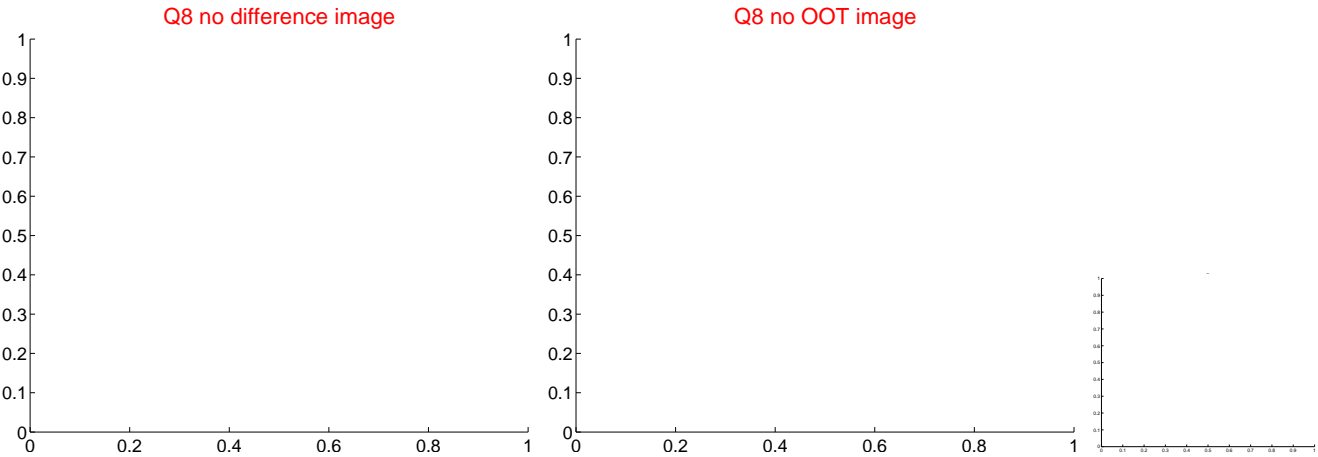
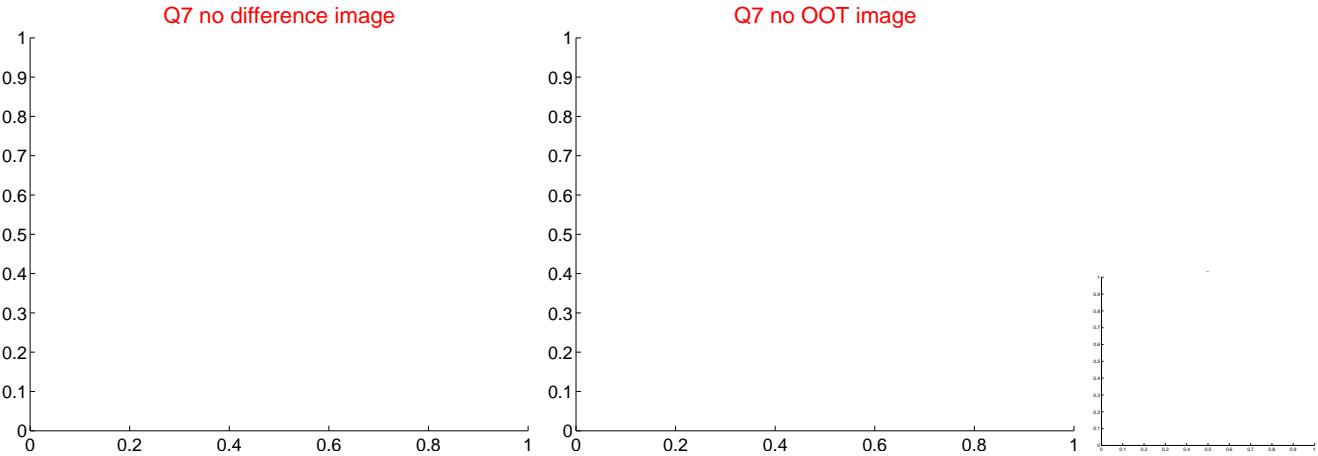
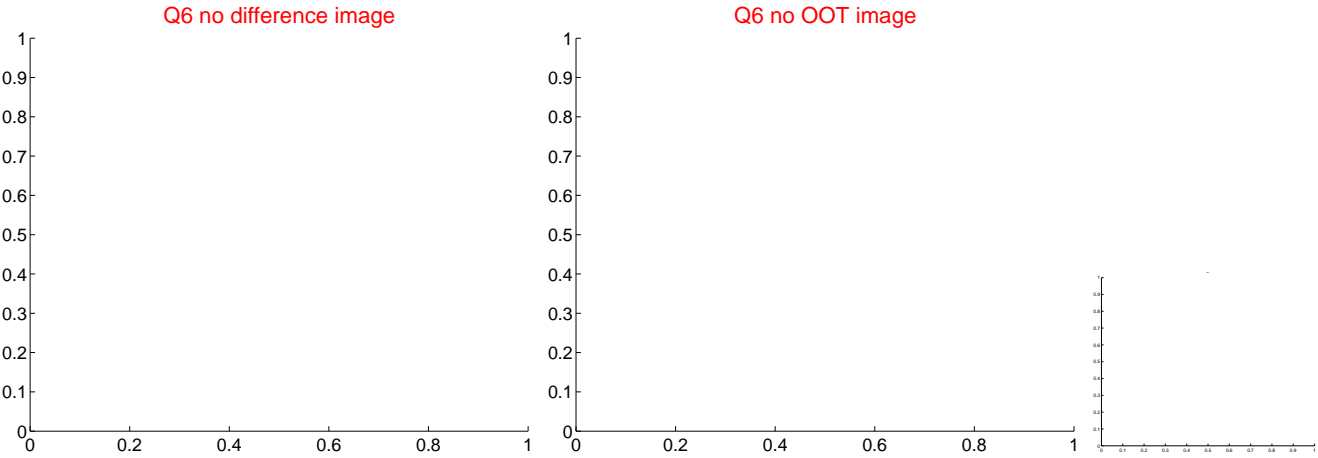
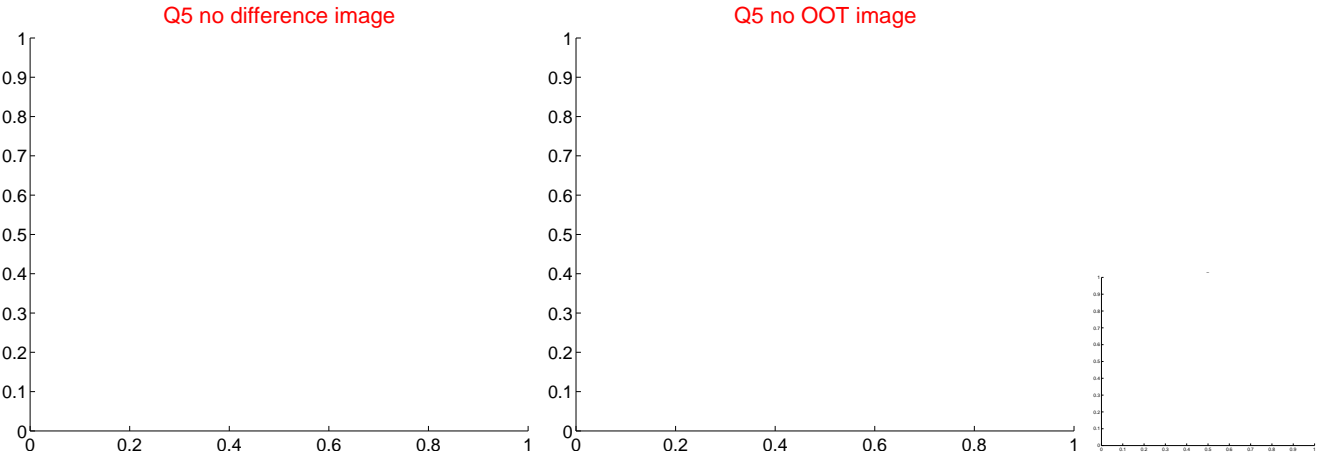


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

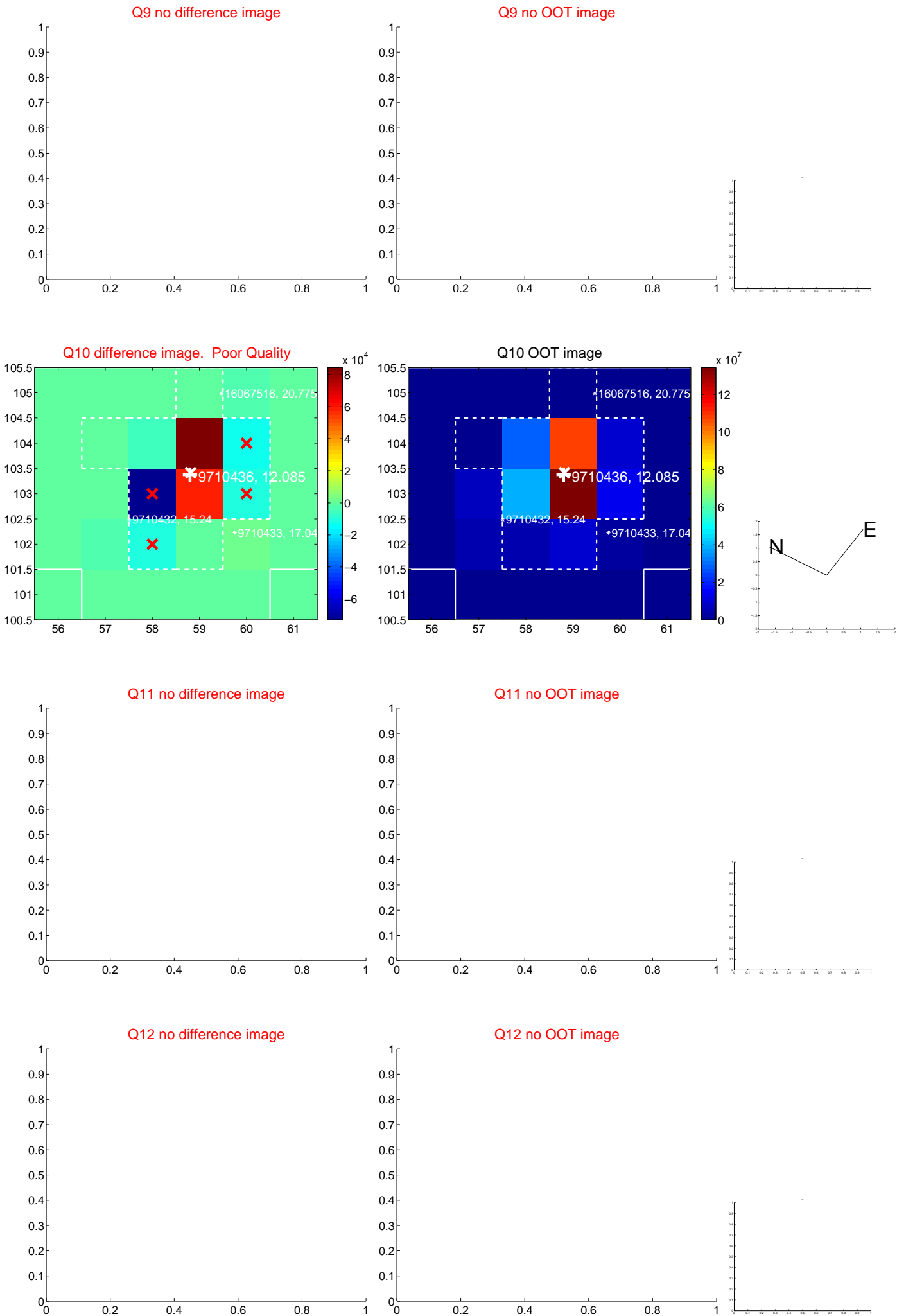
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



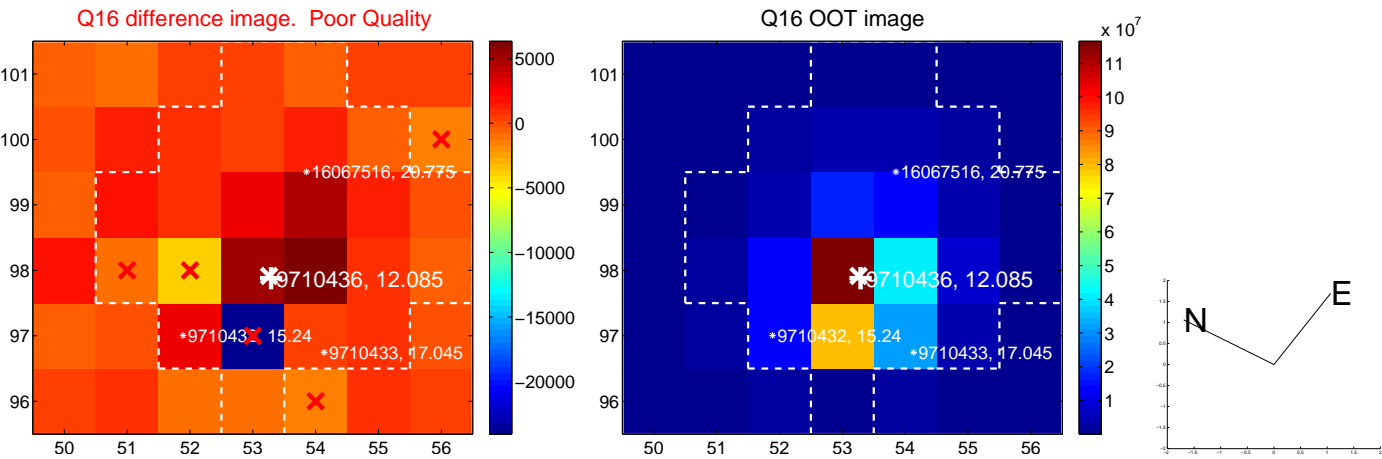
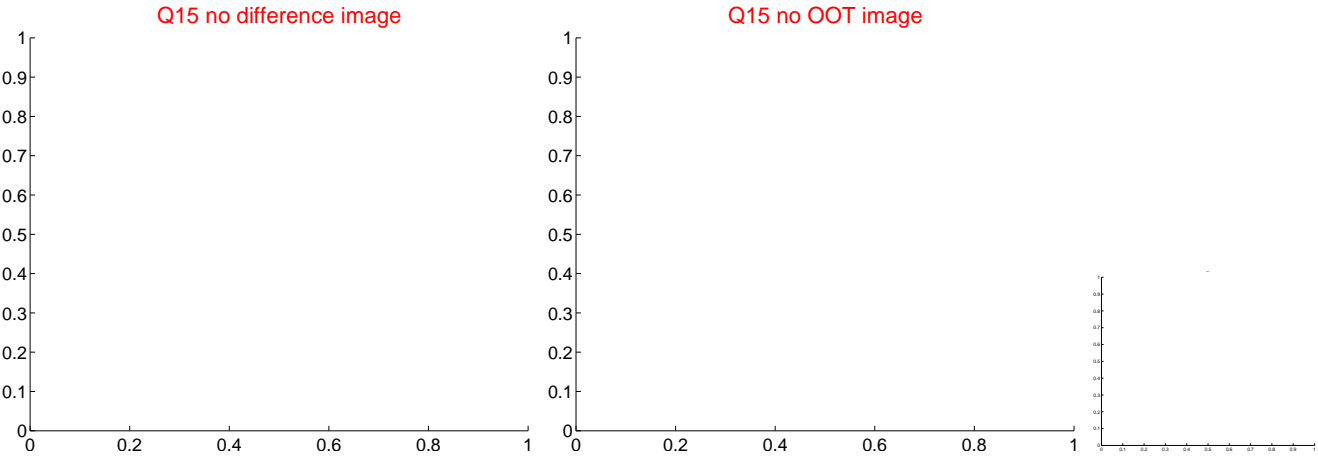
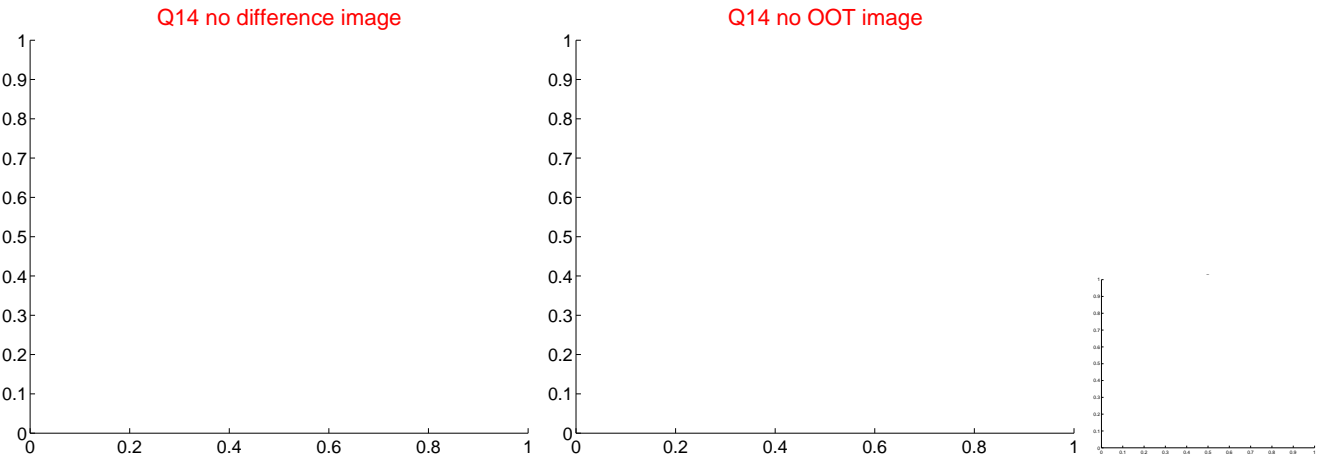
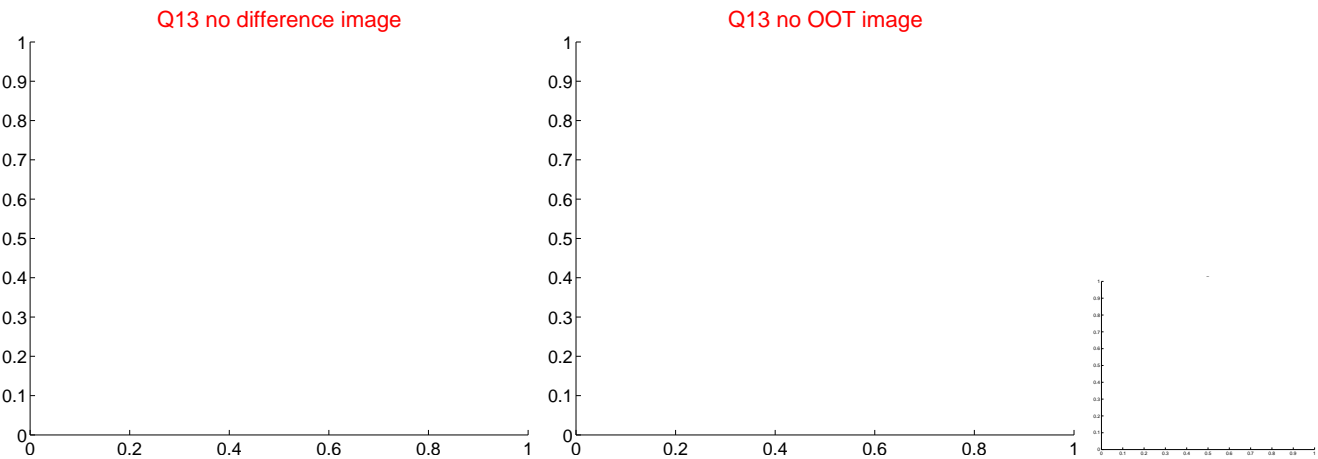
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



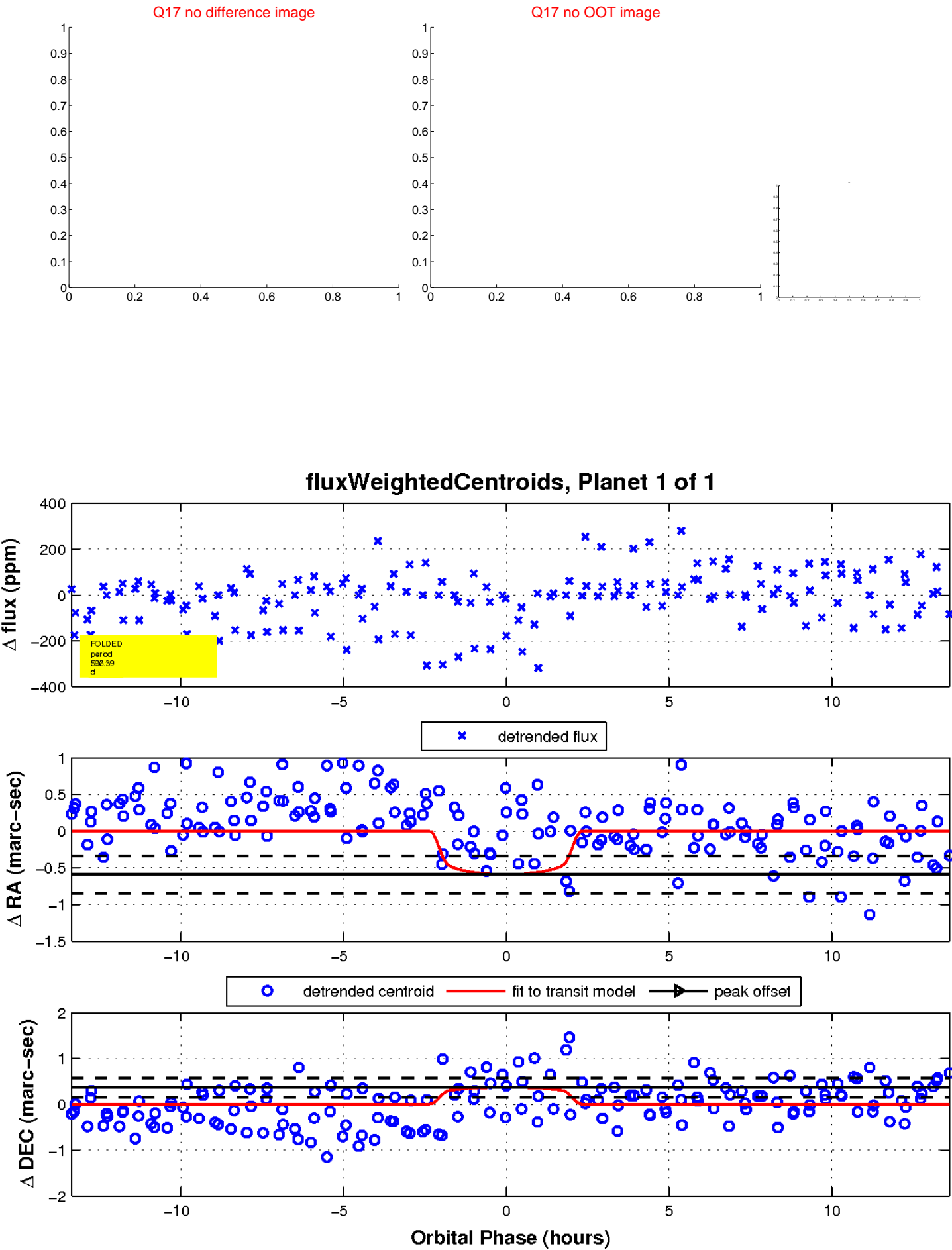
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

