

KIC 009003401

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})
009003401-01	OBS	2319.01	21.103354	144.658889	180.7	2.275	17.4	18.7	1.13	6000	1.93	63.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009003401-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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

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

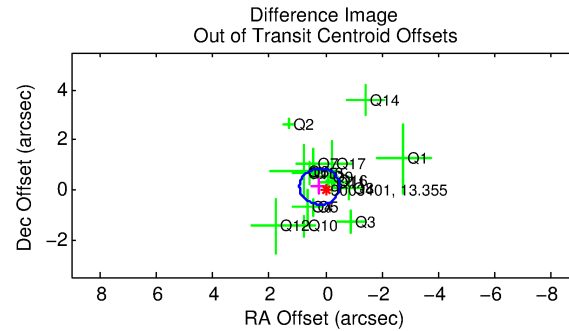
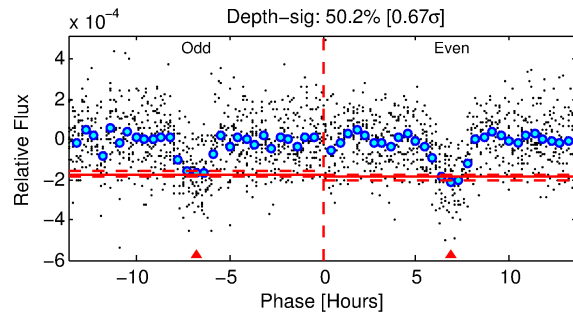
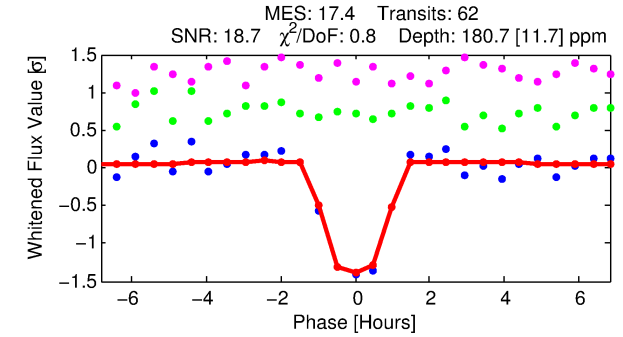
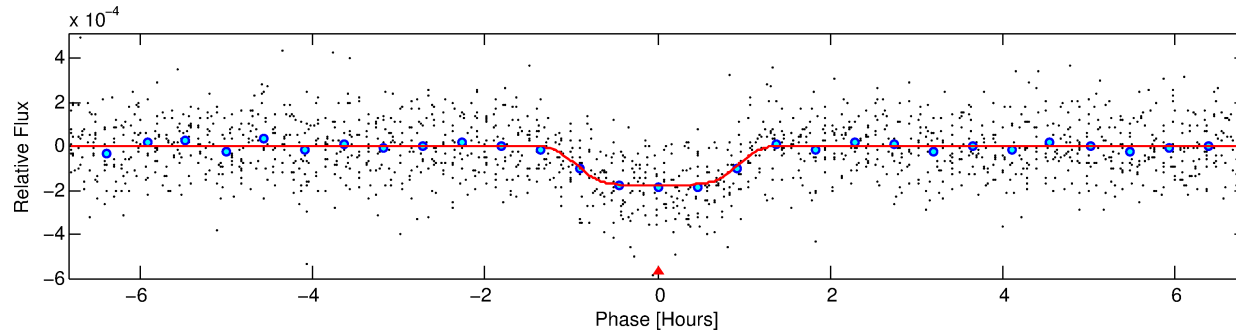
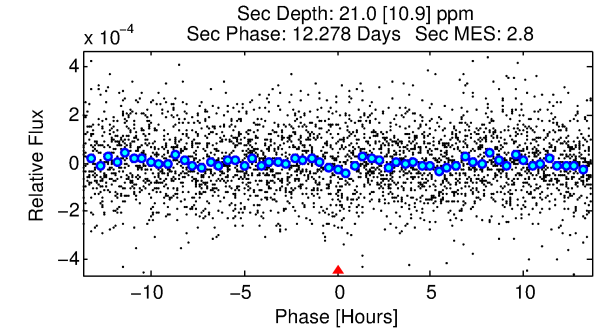
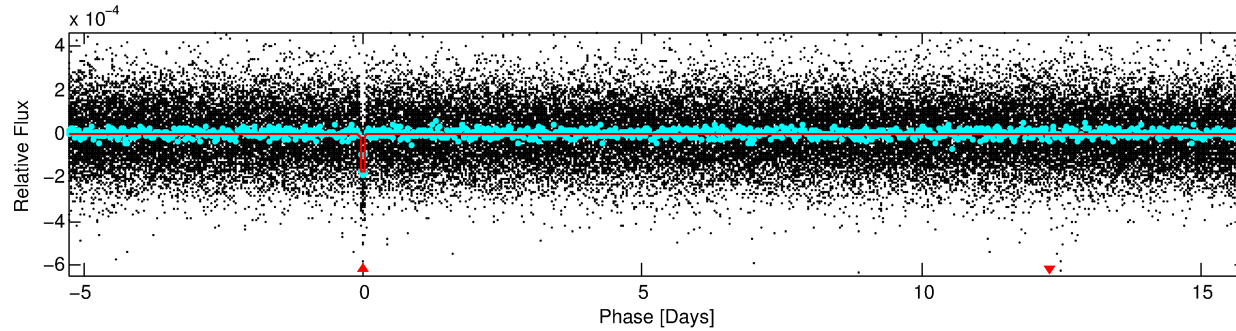
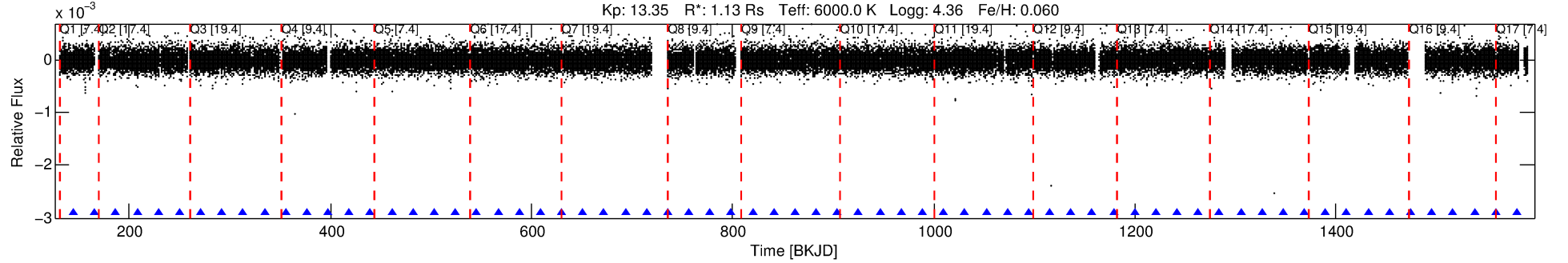
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009003401-01

No Significant Match Found

DV One-Page Summary

KIC: 9003401 Candidate: 1 of 1 Period: 21.103 d
KOI: K02319.01 Corr: 0.939



DV Fit Results:

Period = 21.10335 [0.00008] d
Epoch = 144.6589 [0.0031] BKJD
Rp/R* = 0.0157 [0.0019]
a/R* = 24.48 [14.25]
b = 0.96 [0.05]
Seff = 63.10 [14.82]
Teff = 719 [42] K
Rp = 1.93 [0.41] Re
a = 0.1527 [0.0226] AU
Ag = 72.56 [44.23] [1.62σ]
Teffp = 3243 [467] K [5.38σ]

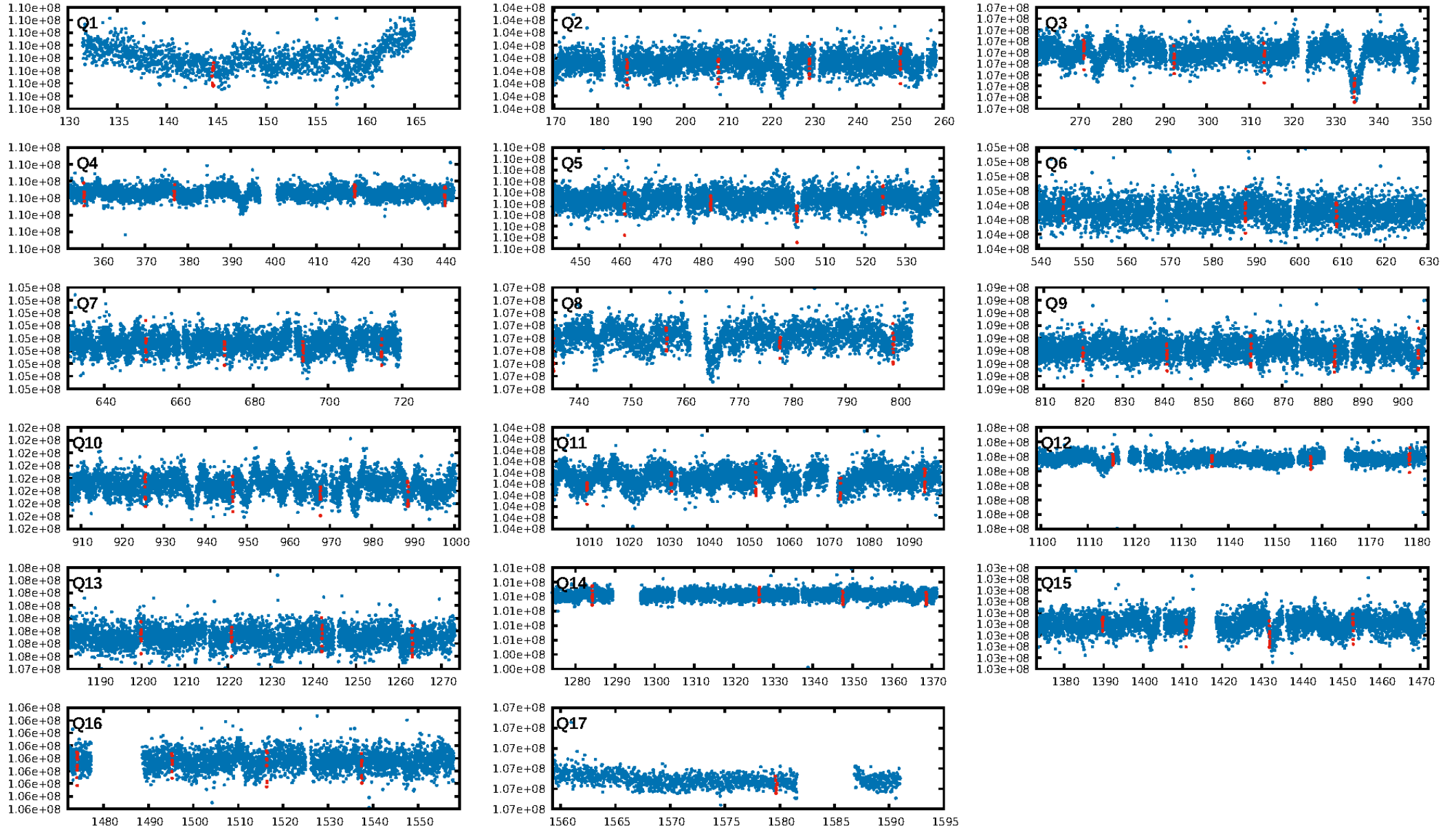
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.43e-64
RollingBand-fgt: 1.00 [60/60]
GhostDiagnostic-chr: 5.602
Centroid-sig: 35.9%
Centroid-so: 0.696 arcsec [1.09σ]
OotOffset-rm: 0.248 arcsec [1.04σ]
KicOffset-rm: 0.164 arcsec [0.59σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 1.00 [17/17]

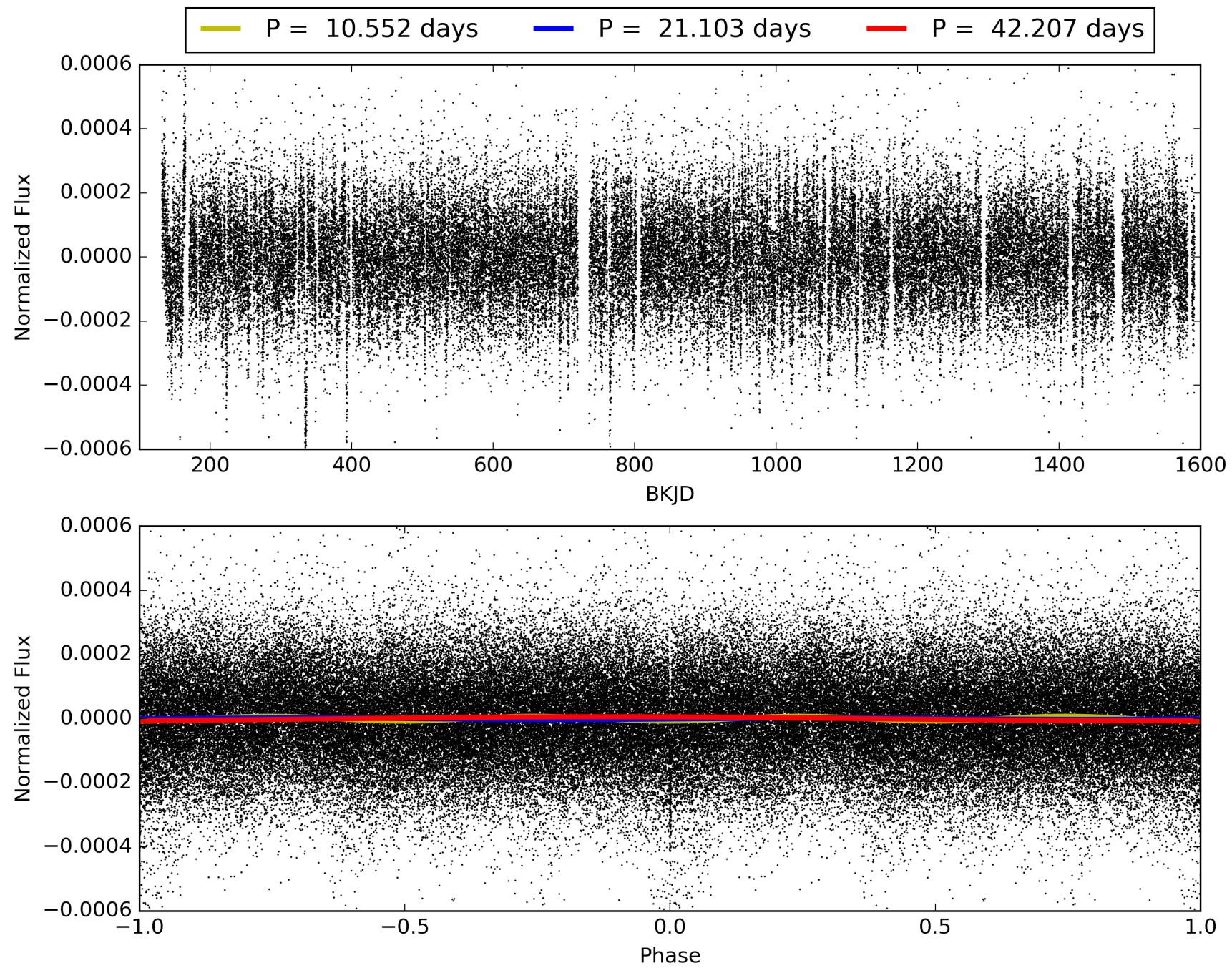
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:49:01 Z

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

TCE 009003401-01, PDC Light Curves

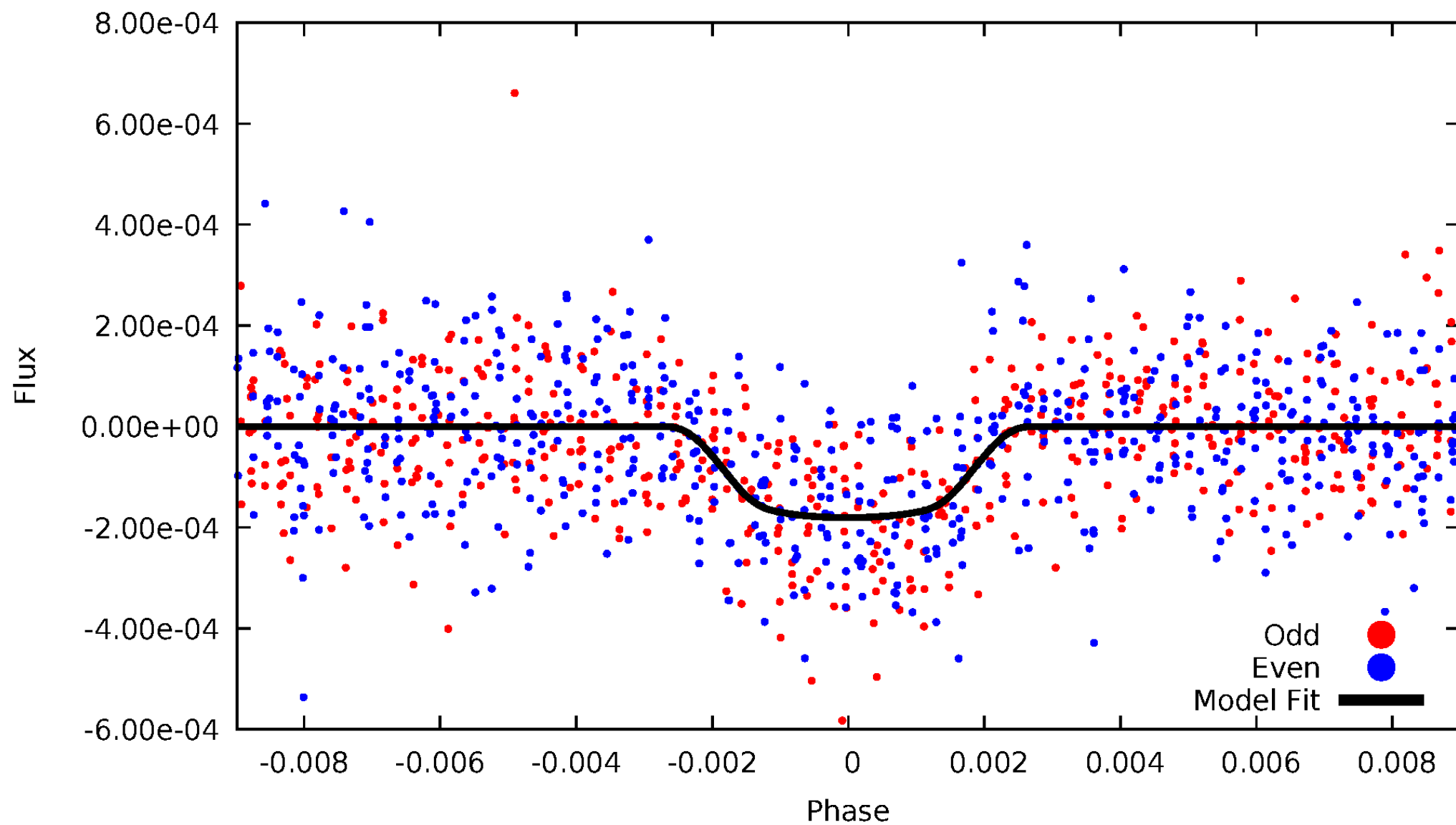


TCE 009003401-01



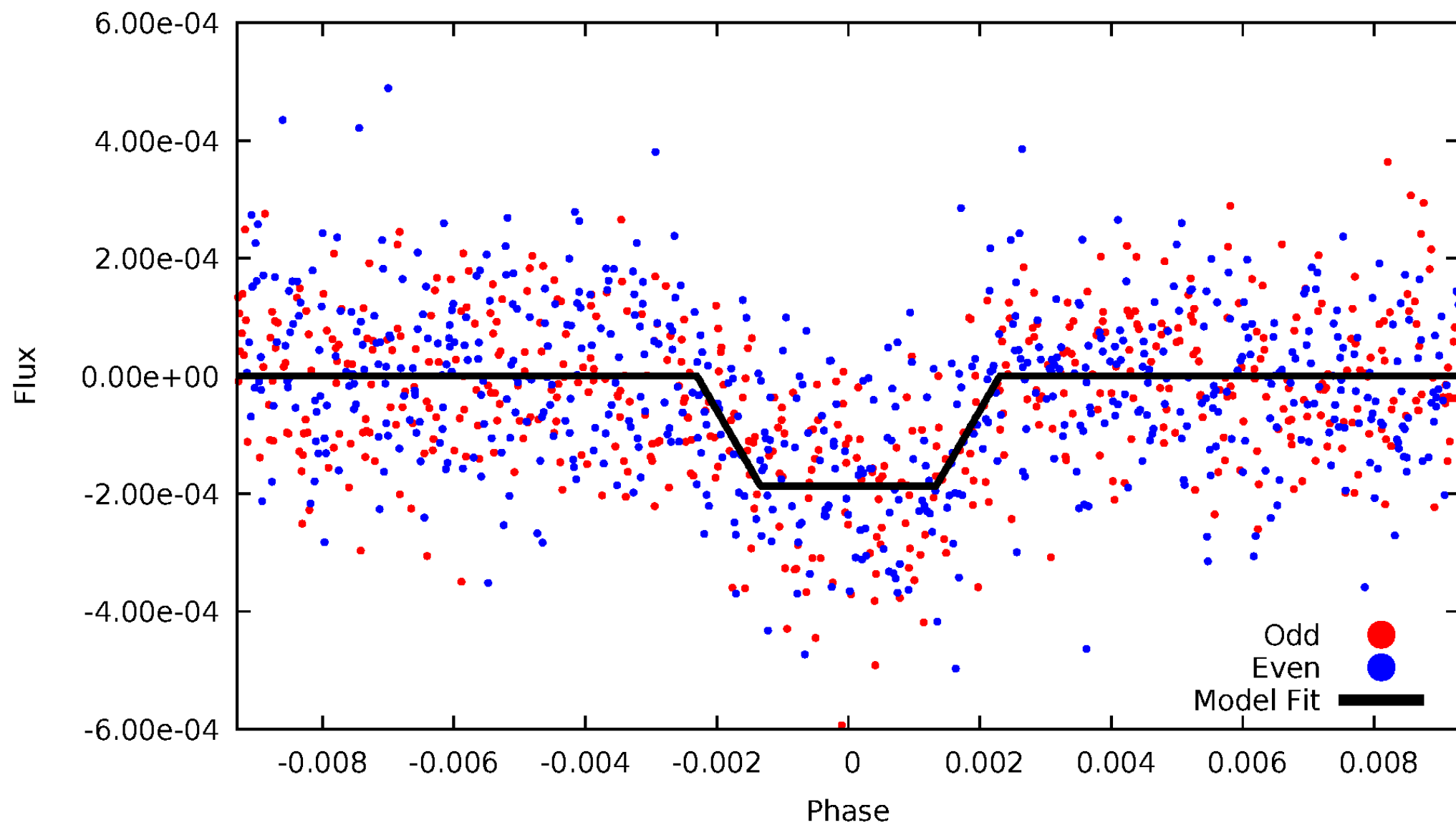
DV Odd/Even

TCE 009003401-01

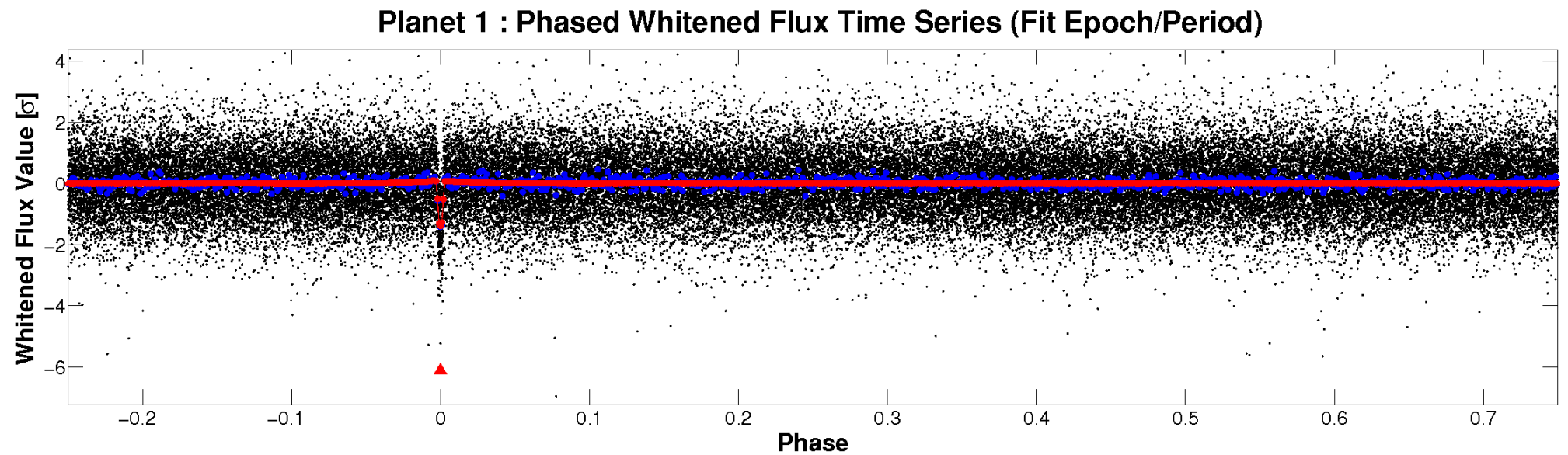
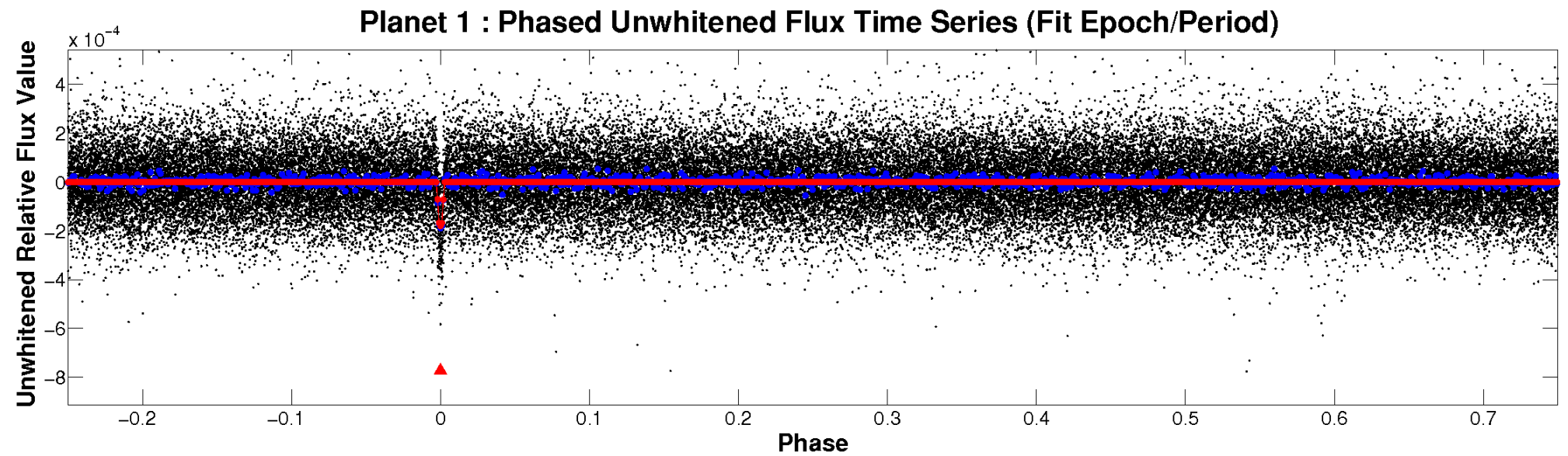


ALT Odd/Even

TCE 009003401-01

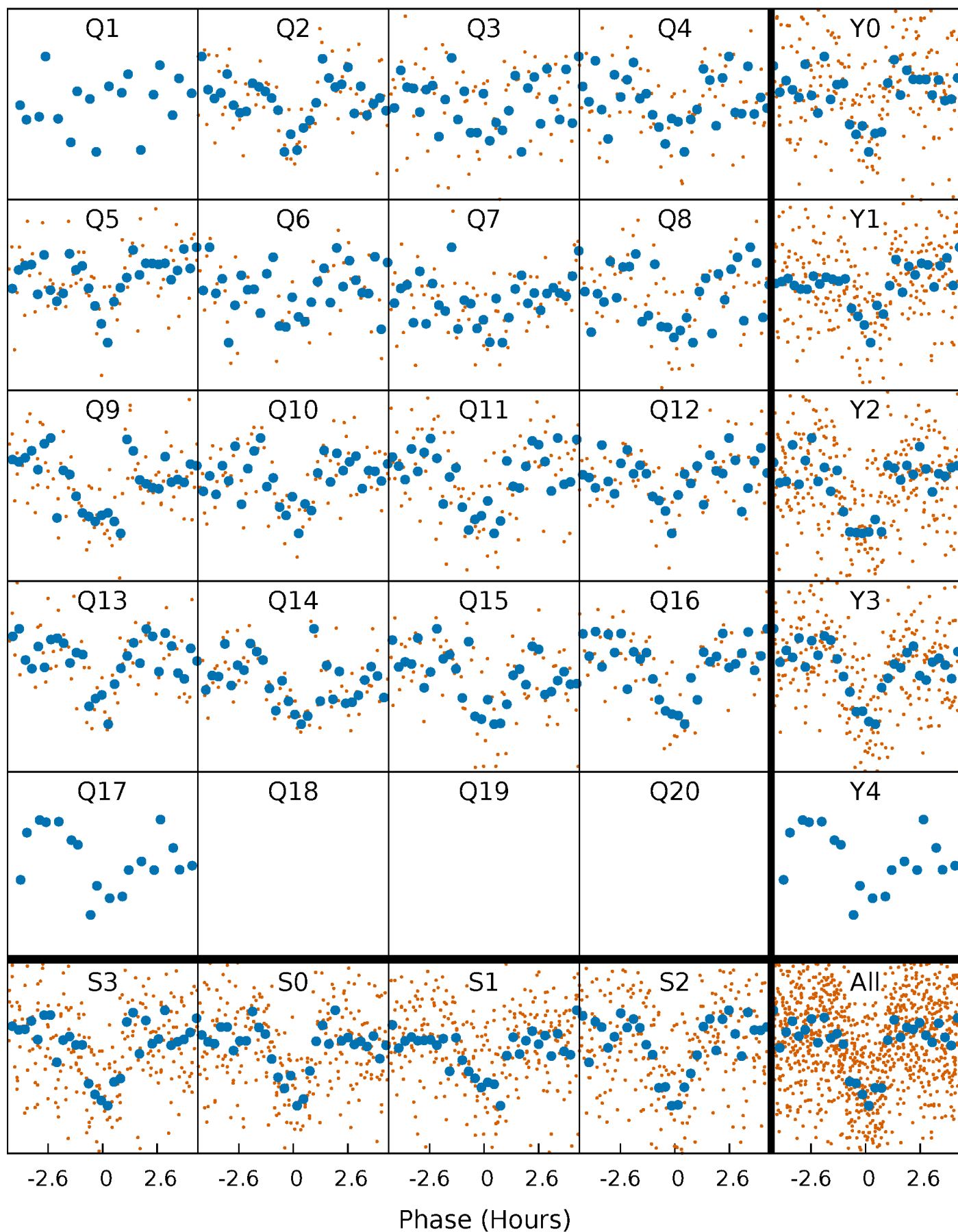


Non-Whitened Vs. Whitened Light Curve



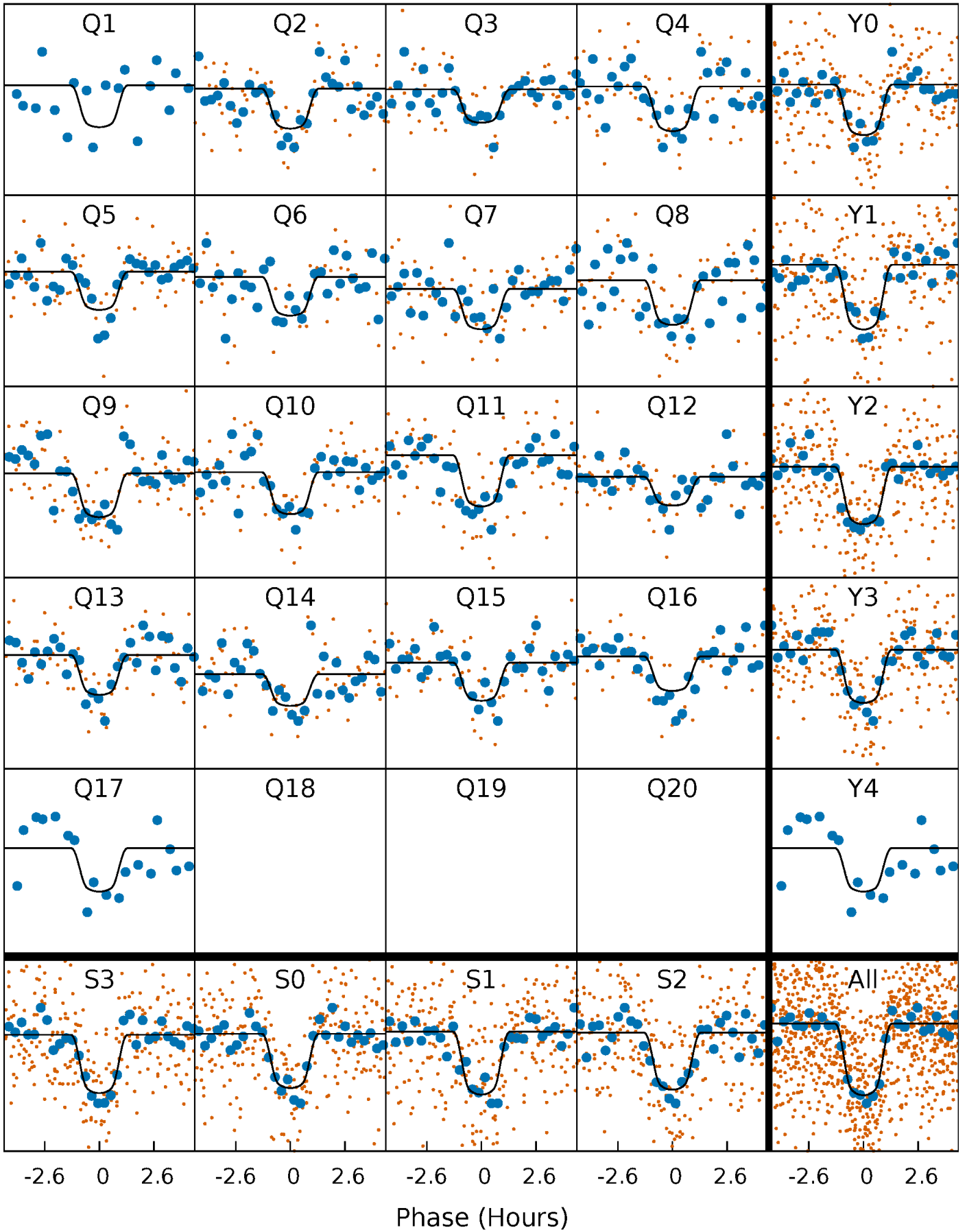
PDC Quarter-Phased Transit Curves

TCE 009003401-01 P= 21.103354 Days $T_0=144.658889$ (BKJD)



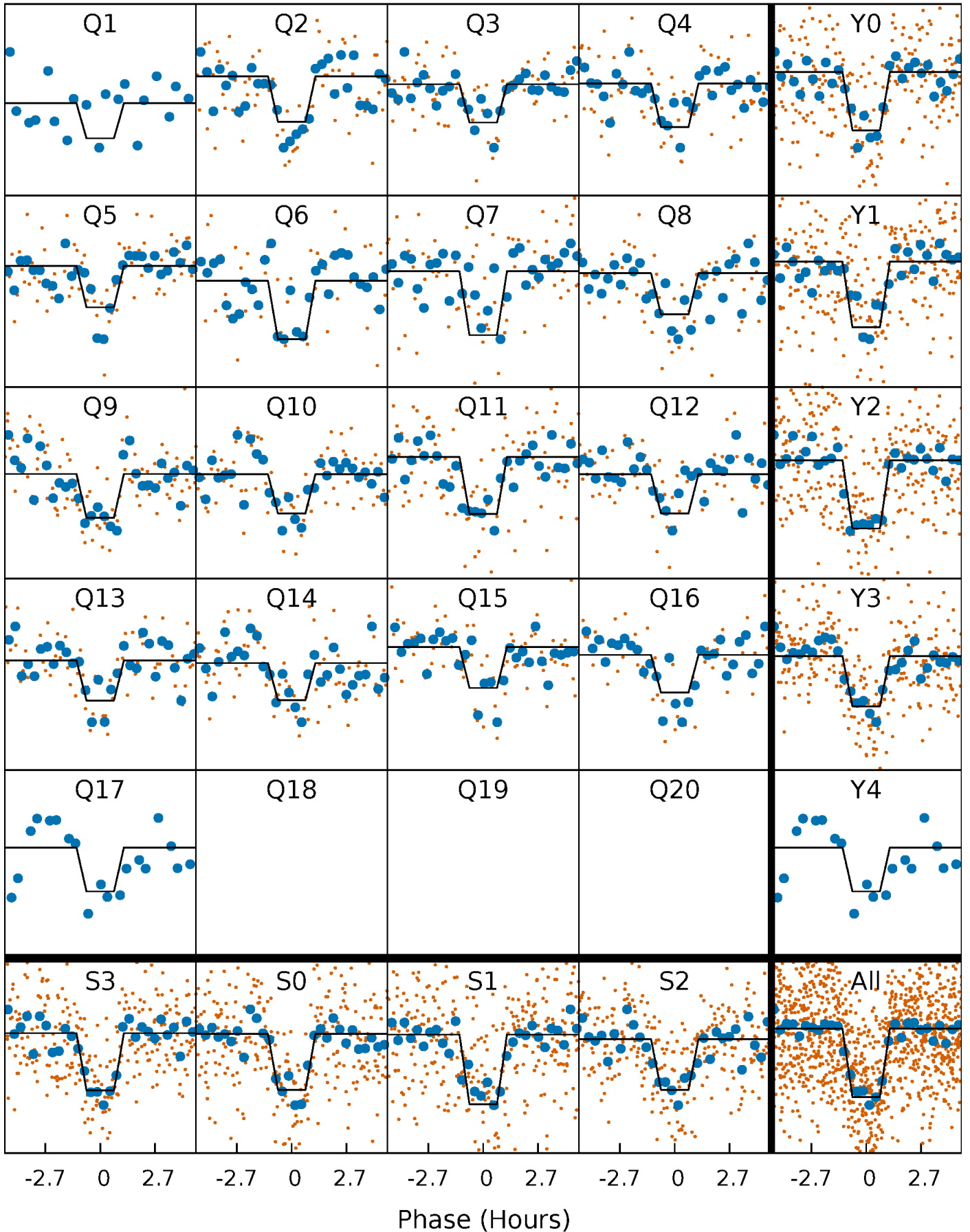
DV Quarter-Phased Transit Curves

TCE 009003401-01 P= 21.103354 Days $T_0=144.658889$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

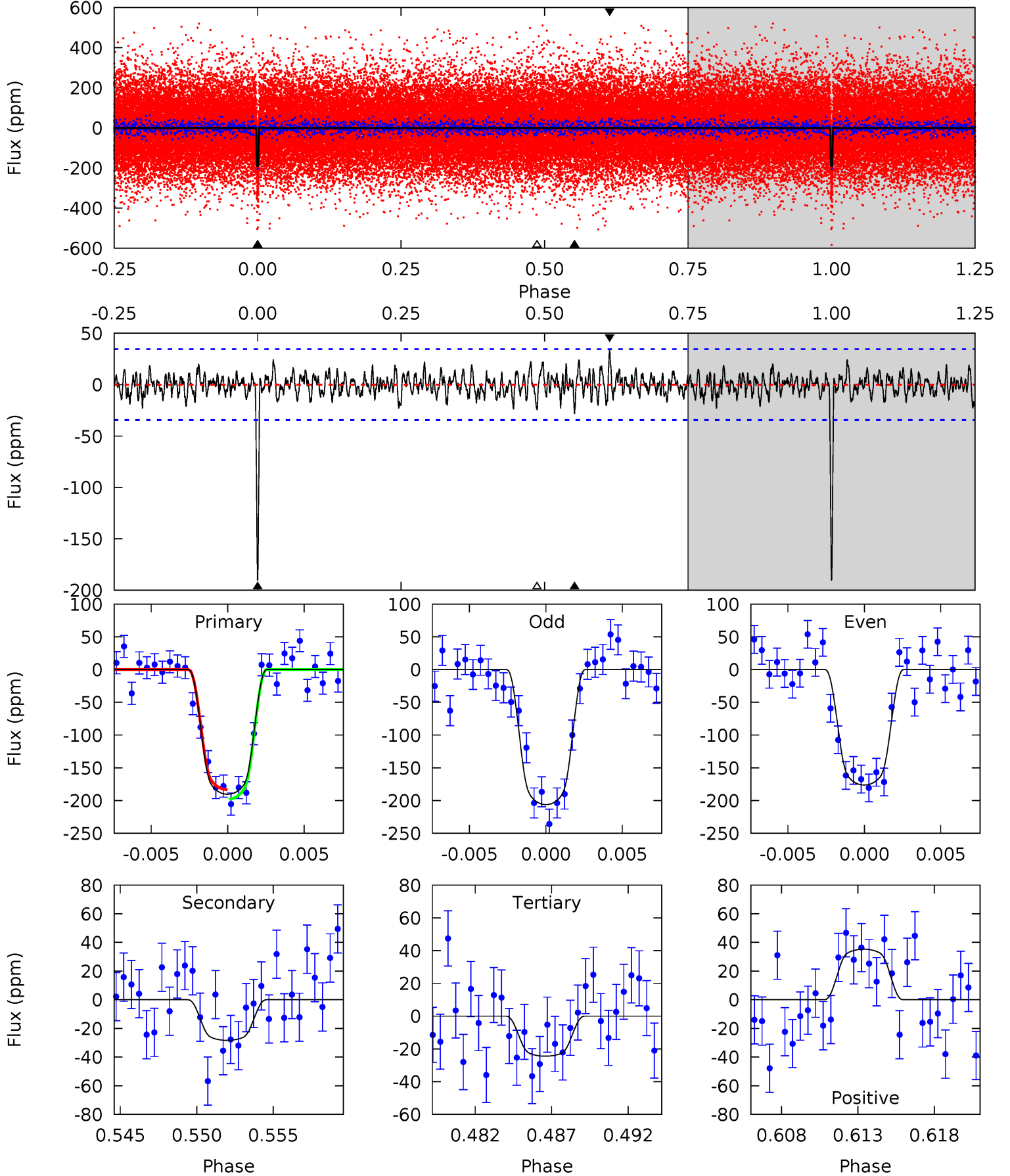
TCE 009003401-01 P= 21.103322 Days $T_0=144.659624$ (BKJD)



DV Model-Shift Uniqueness Test

009003401-01, P = 21.103354 Days, E = 123.555535 Days

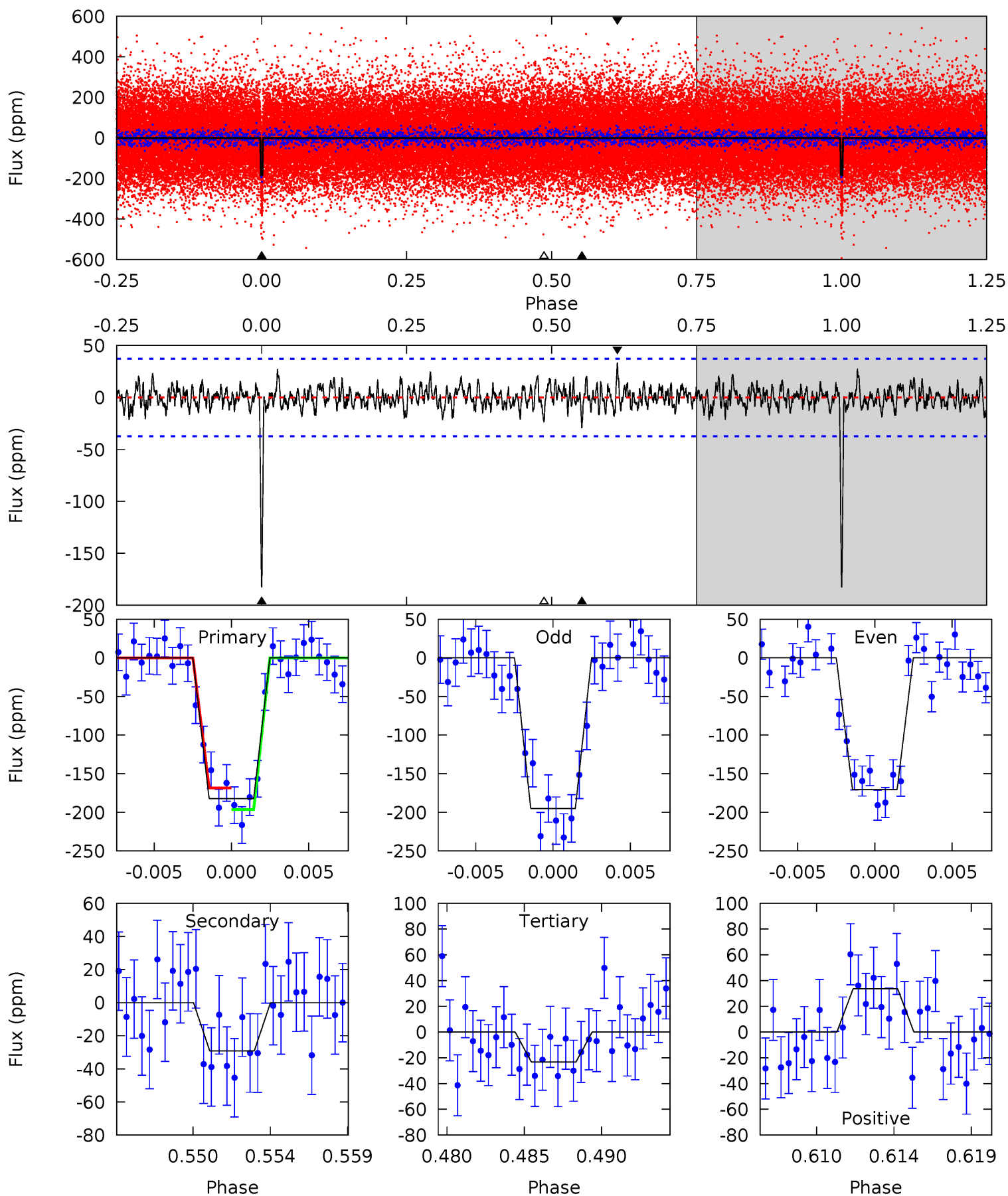
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.4	4.23	3.65	5.27	5.15	2.79	1.28	24.8	23.2	0.58	-1.04	2.23	0.97	0.16	1.08



Alt Model-Shift Uniqueness Test

009003401-01, P = 21.103322 Days, E = 123.556302 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.2	4.03	3.22	4.65	5.17	2.83	1.15	22.0	20.6	0.82	-0.61	1.68	0.98	0.16	1.93



Stellar Parameters For KIC 009003401

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	6000^{+108}_{-133}	$4.363^{+0.080}_{-0.120}$	$0.060^{+0.150}_{-0.150}$	$1.126^{+0.195}_{-0.105}$	$1.068^{+0.086}_{-0.070}$	$1.053^{+0.354}_{-0.373}$
	+2%/-2%	+2%/-3%	+250%/-250%	+17%/-9%	+8%/-7%	+34%/-35%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 009003401-01 / KOI 2319.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-28 ± 7	$1.94^{+0.30}_{-0.26}$	1006^{+46}_{-38}	3853^{+257}_{-227}	95^{+46}_{-30}
Alt.	-29 ± 7	$1.67^{+0.28}_{-0.25}$	1004^{+45}_{-35}	4074^{+315}_{-259}	131^{+66}_{-41}

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

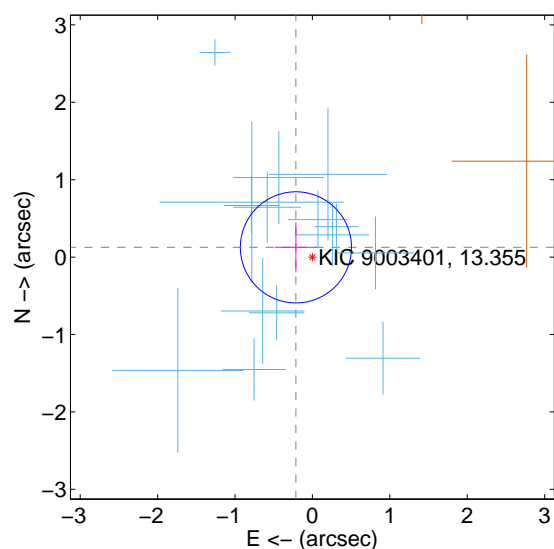
Supplemental centroid analysis for 009003401-01. Kepler magnitude: 13.36. Transit SNR 18.74

There are 15 quarters with good PRF difference image offsets

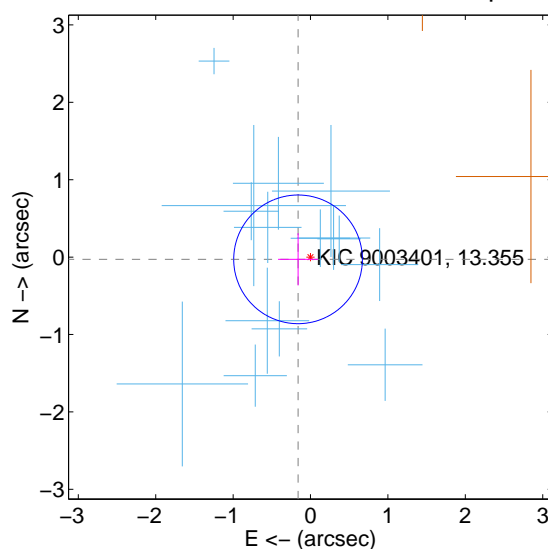
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.248 ± 0.239	1.04	0.213 ± 0.272	0.126 ± 0.323
PRF-fit source offset from KIC position	0.164 ± 0.277	0.59	0.161 ± 0.259	-0.029 ± 0.337
photometric centroid source offset	0.70 ± 0.64	1.09	-0.36 ± 0.69	-0.60 ± 0.62

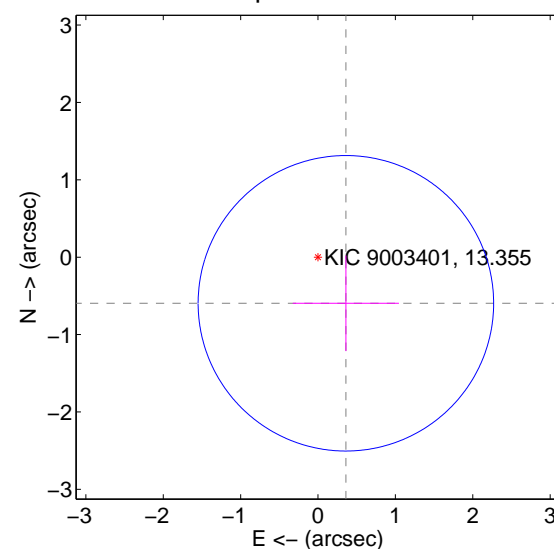
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

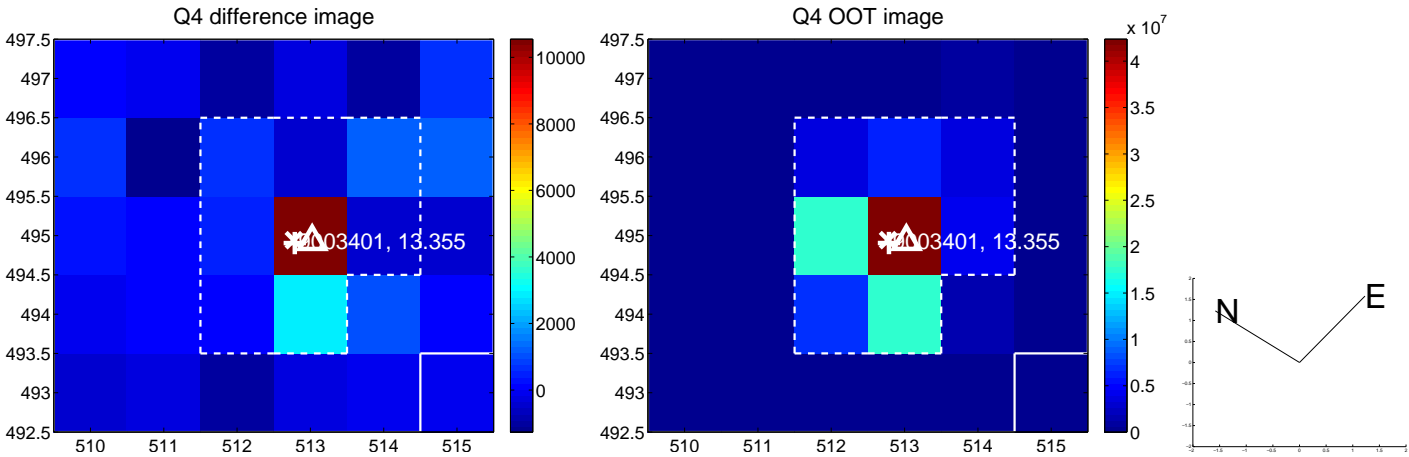
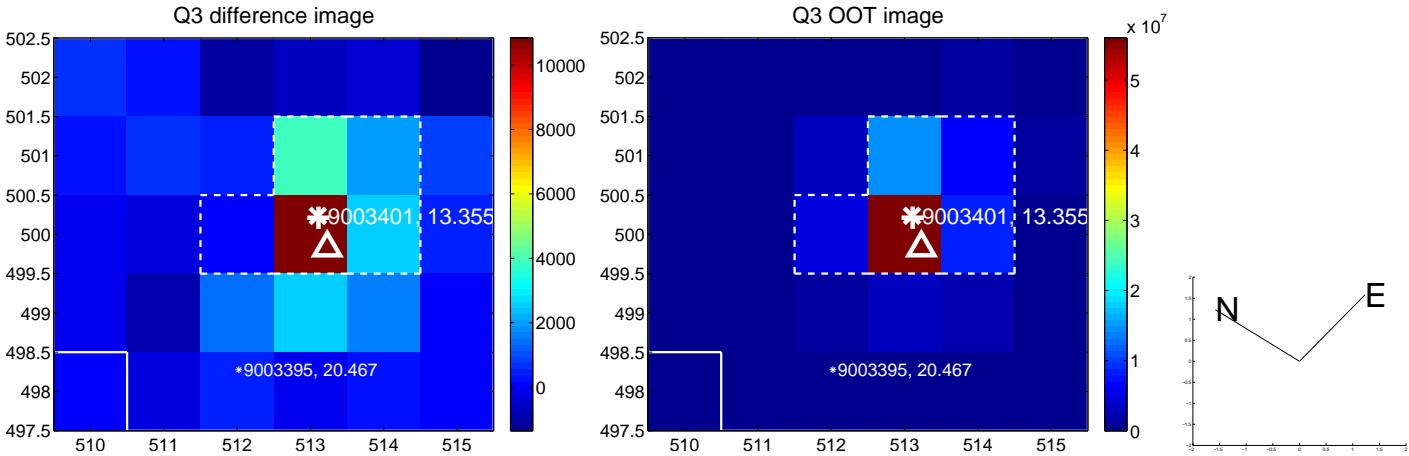
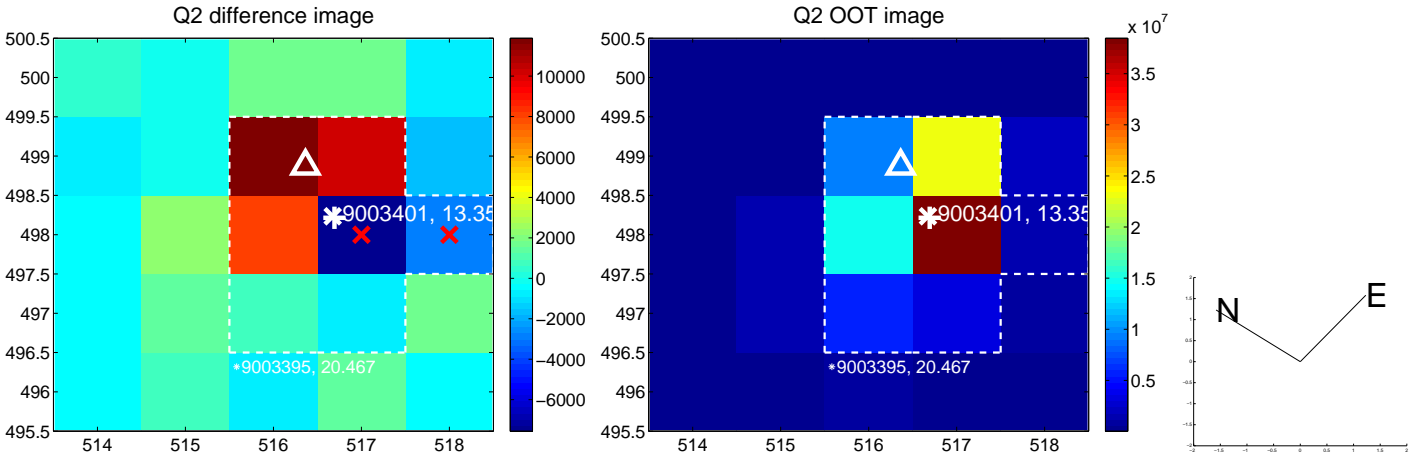
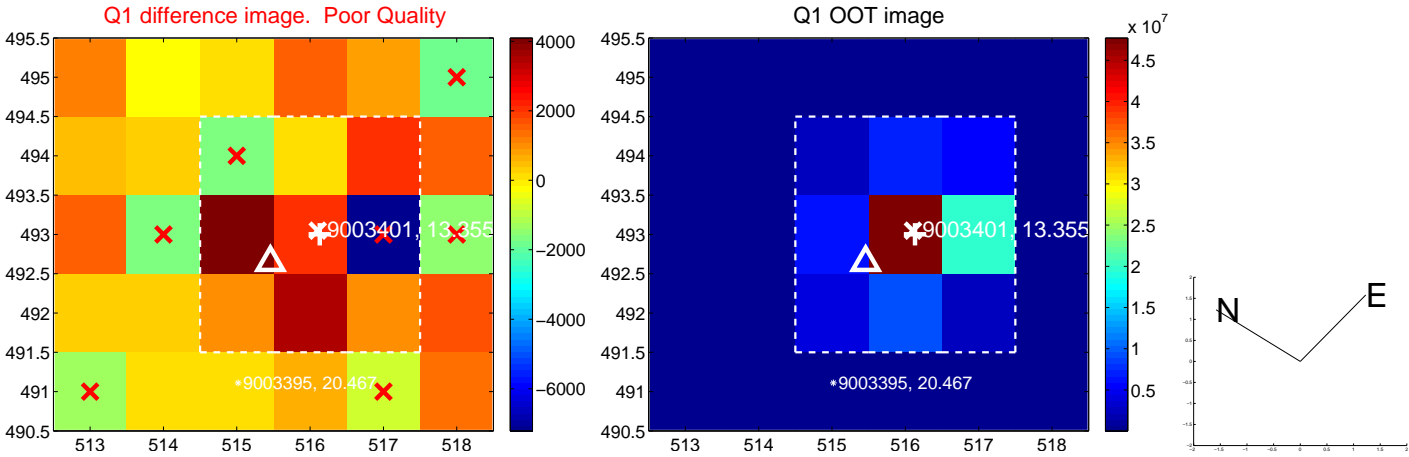


offset from photometric centroids

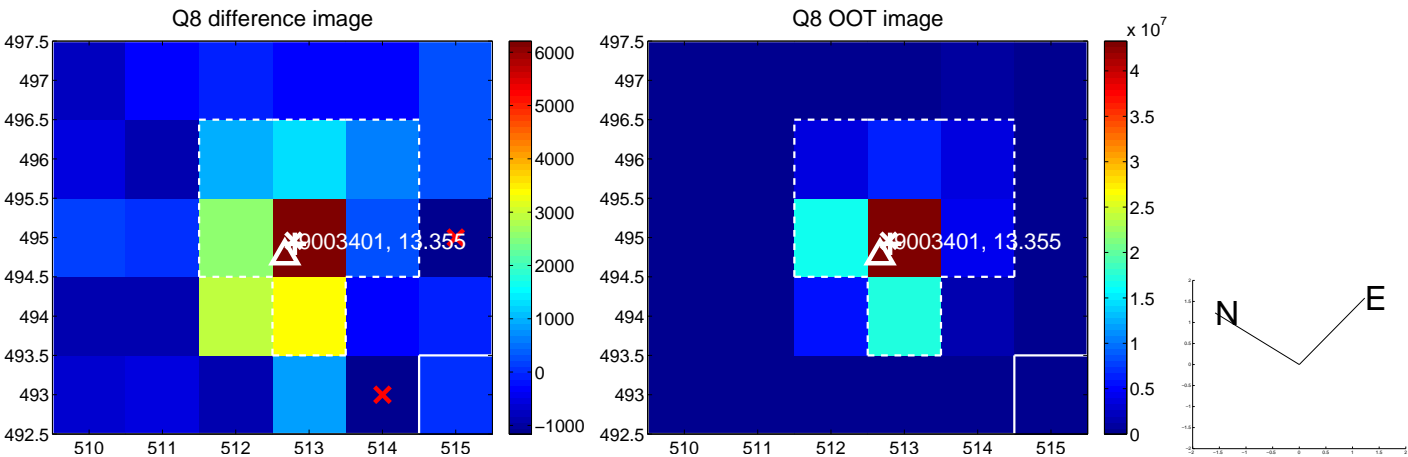
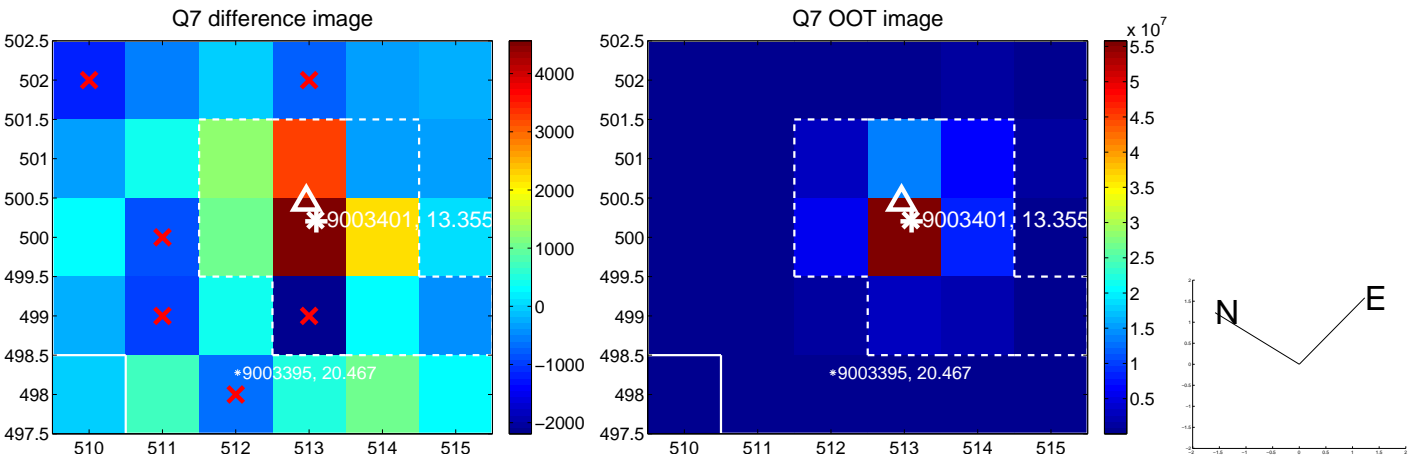
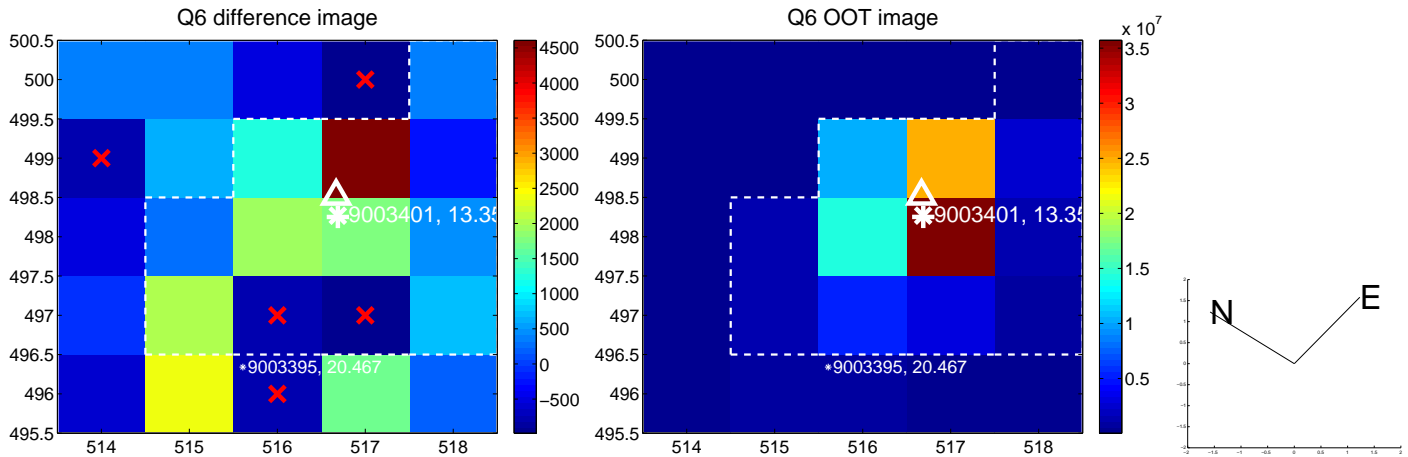
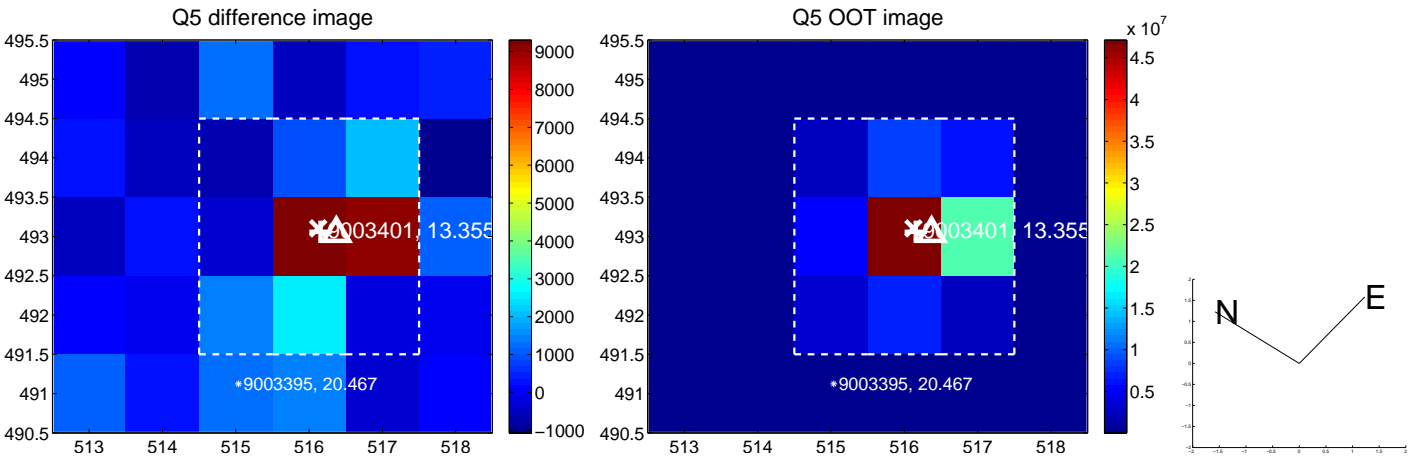


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

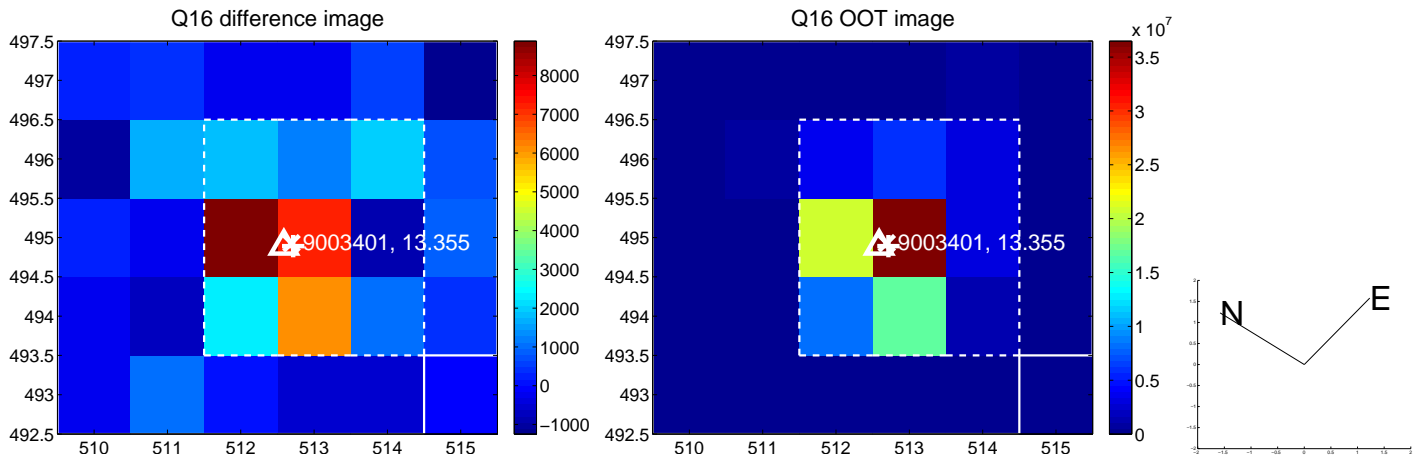
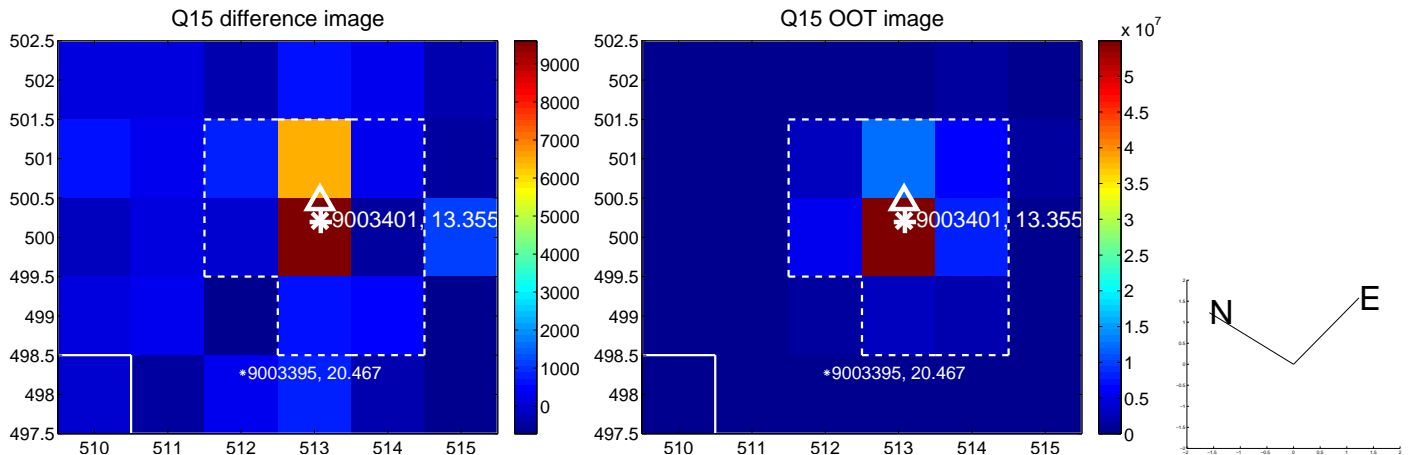
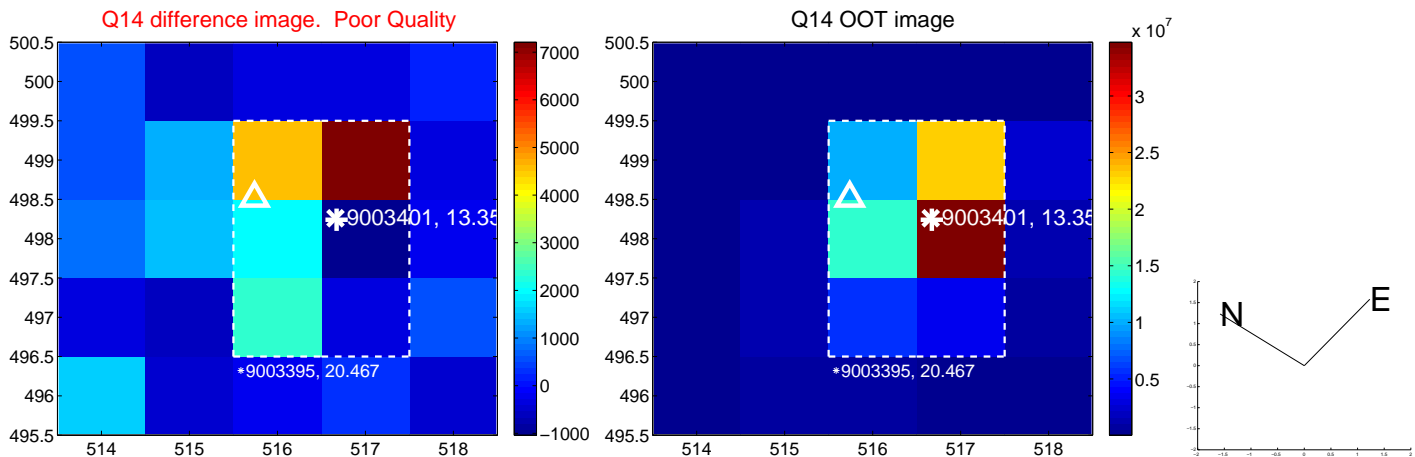
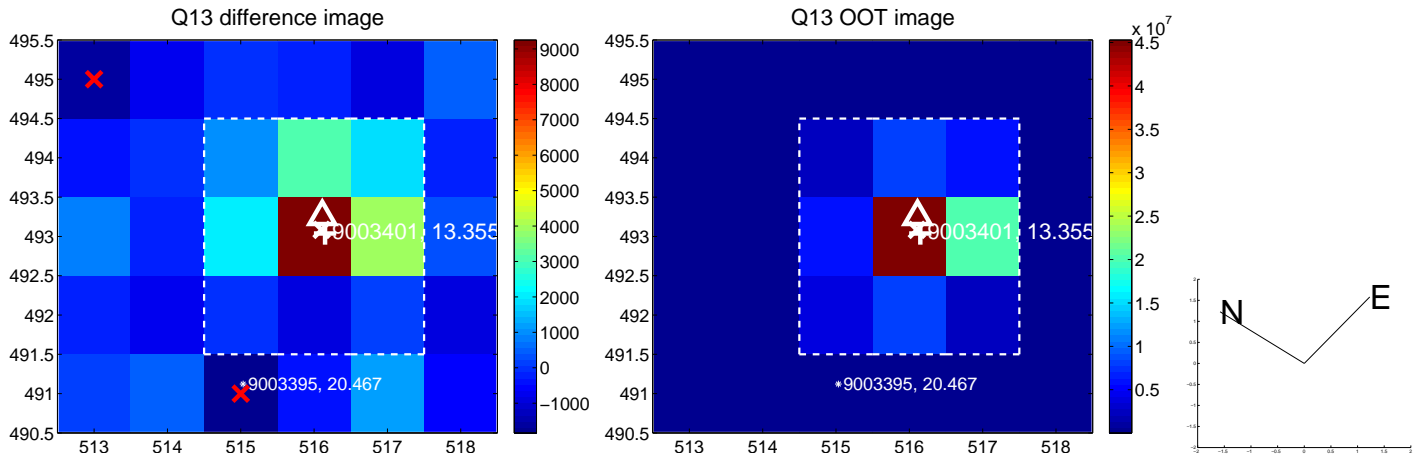
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



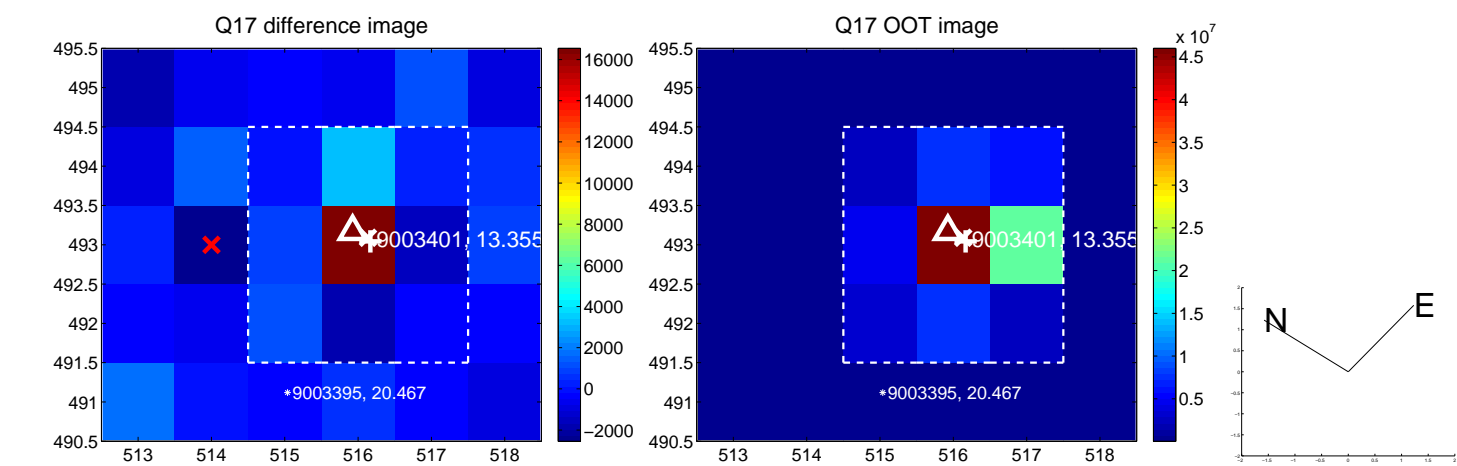
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



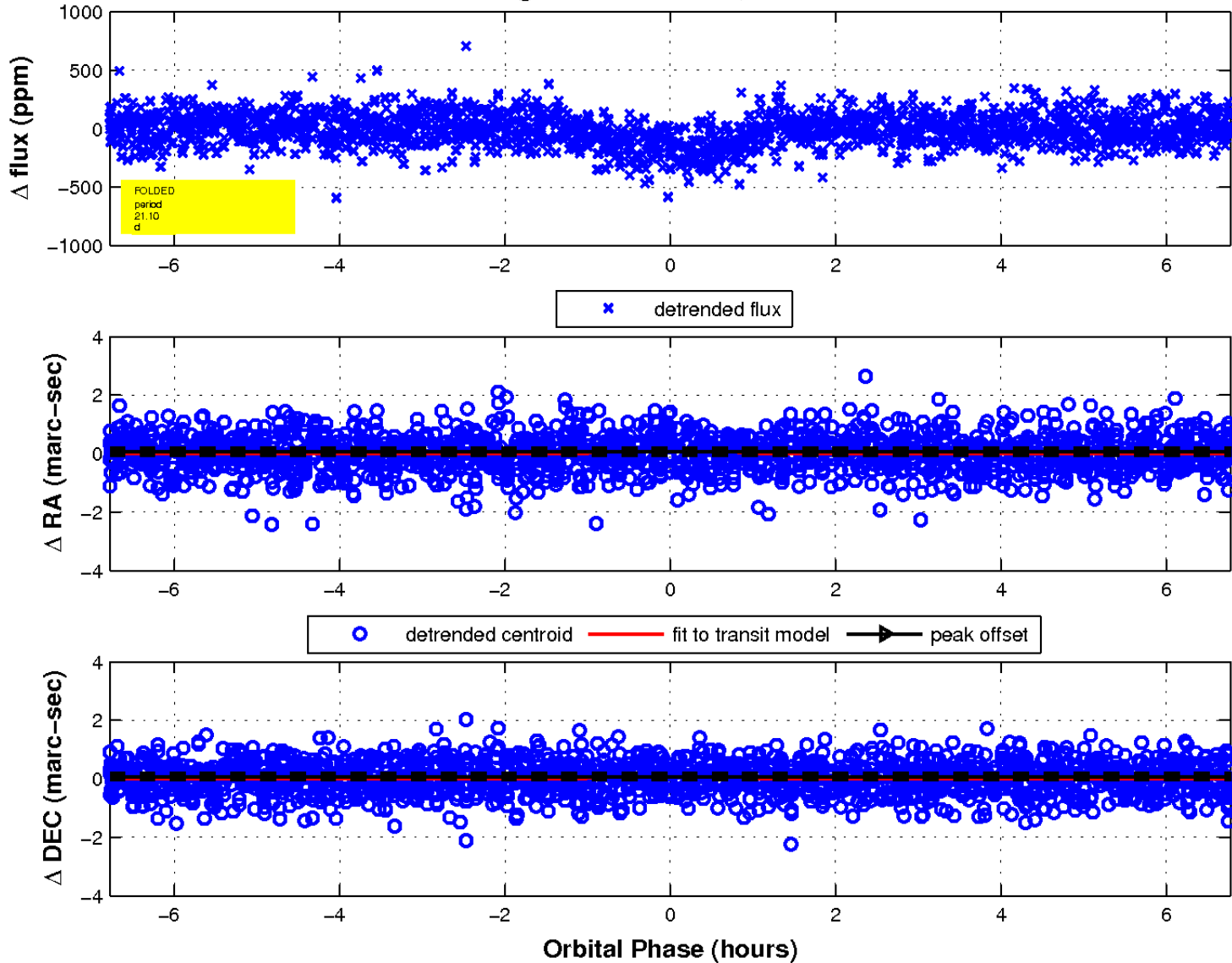
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

