

KIC 002161536

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})
002161536-01	OBS	2130.01	16.855898	138.267642	905.0	2.722	17.4	18.9	0.59	3967	2.15	6.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002161536-01	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.

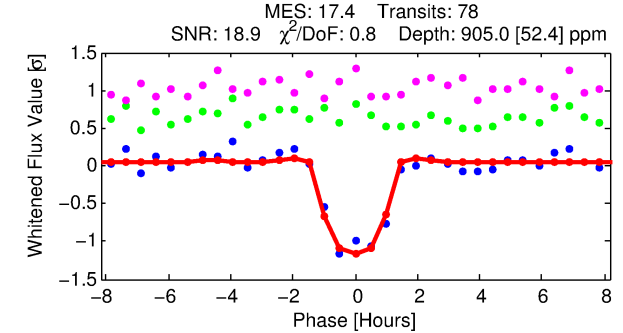
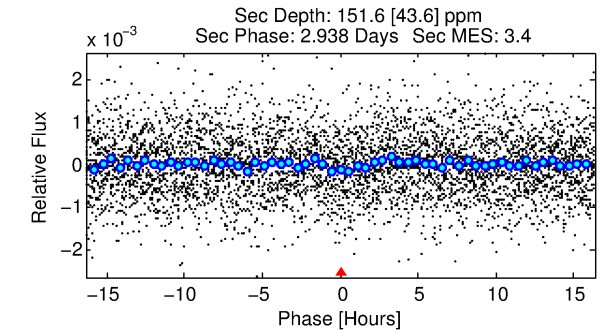
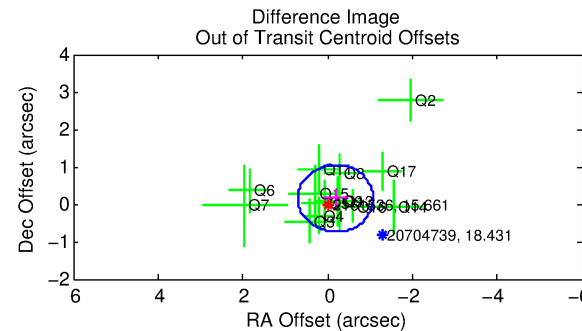
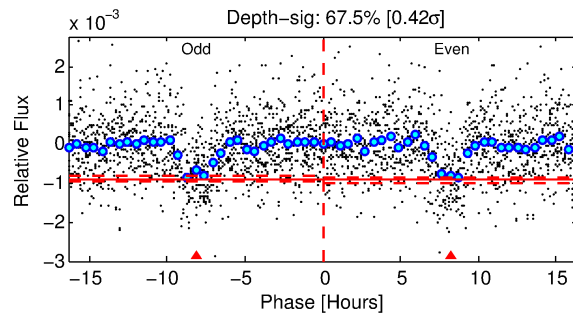
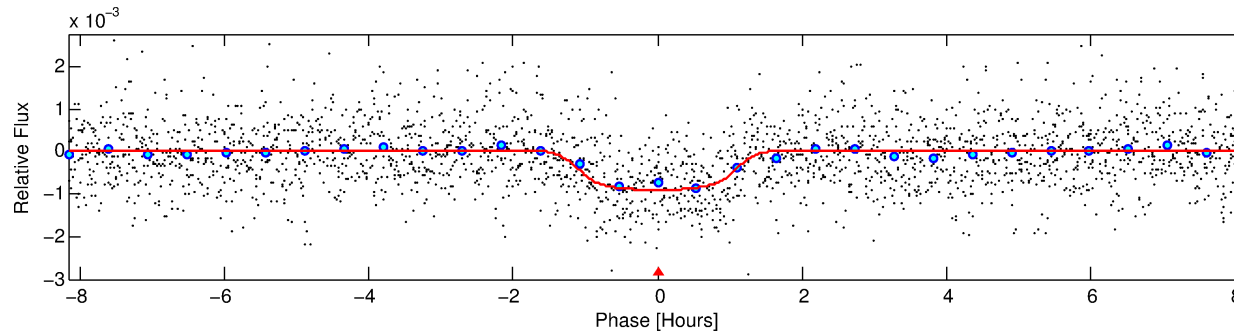
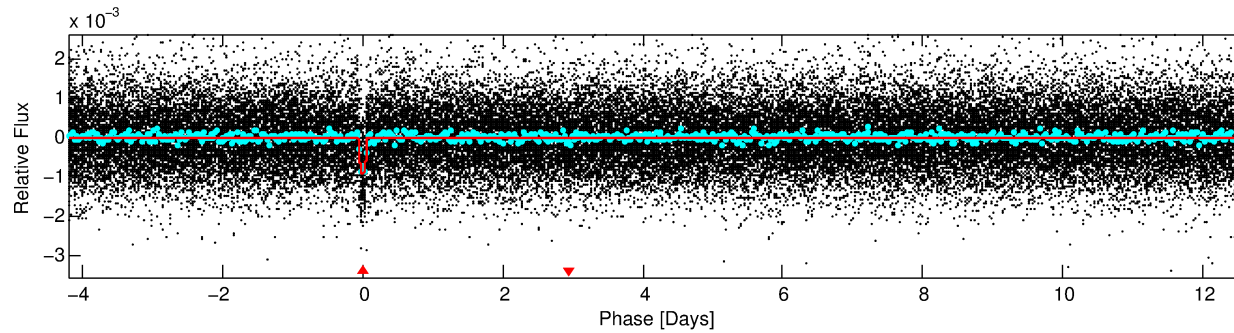
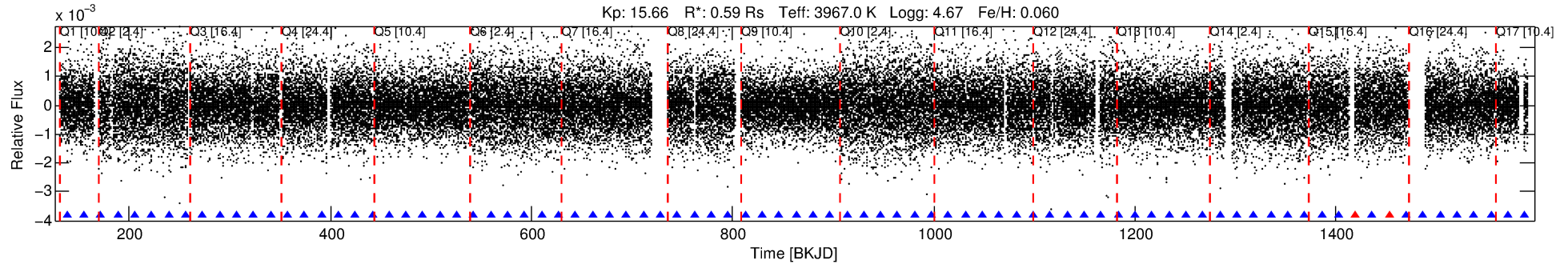
Ephemeris Match Information For 002161536-01

No Significant Match Found

DV One-Page Summary

KIC: 2161536 Candidate: 1 of 1 Period: 16.856 d

KOI: K02130.01 Corr: 0.975



DV Fit Results:

Period = 16.85590 [0.00007] d
Epoch = 138.2676 [0.0034] BKJD
Rp/R* = 0.0335 [0.0045]
a/R* = 23.76 [11.79]
b = 0.90 [0.10]
Seff = 6.54 [0.66]
Teq = 408 [10] K
Rp = 2.15 [0.31] Re
a = 0.1081 [0.0051] AU
Ag = 211.58 [84.09] [2.50 σ]
Teffp = 2404 [241] K [8.29 σ]

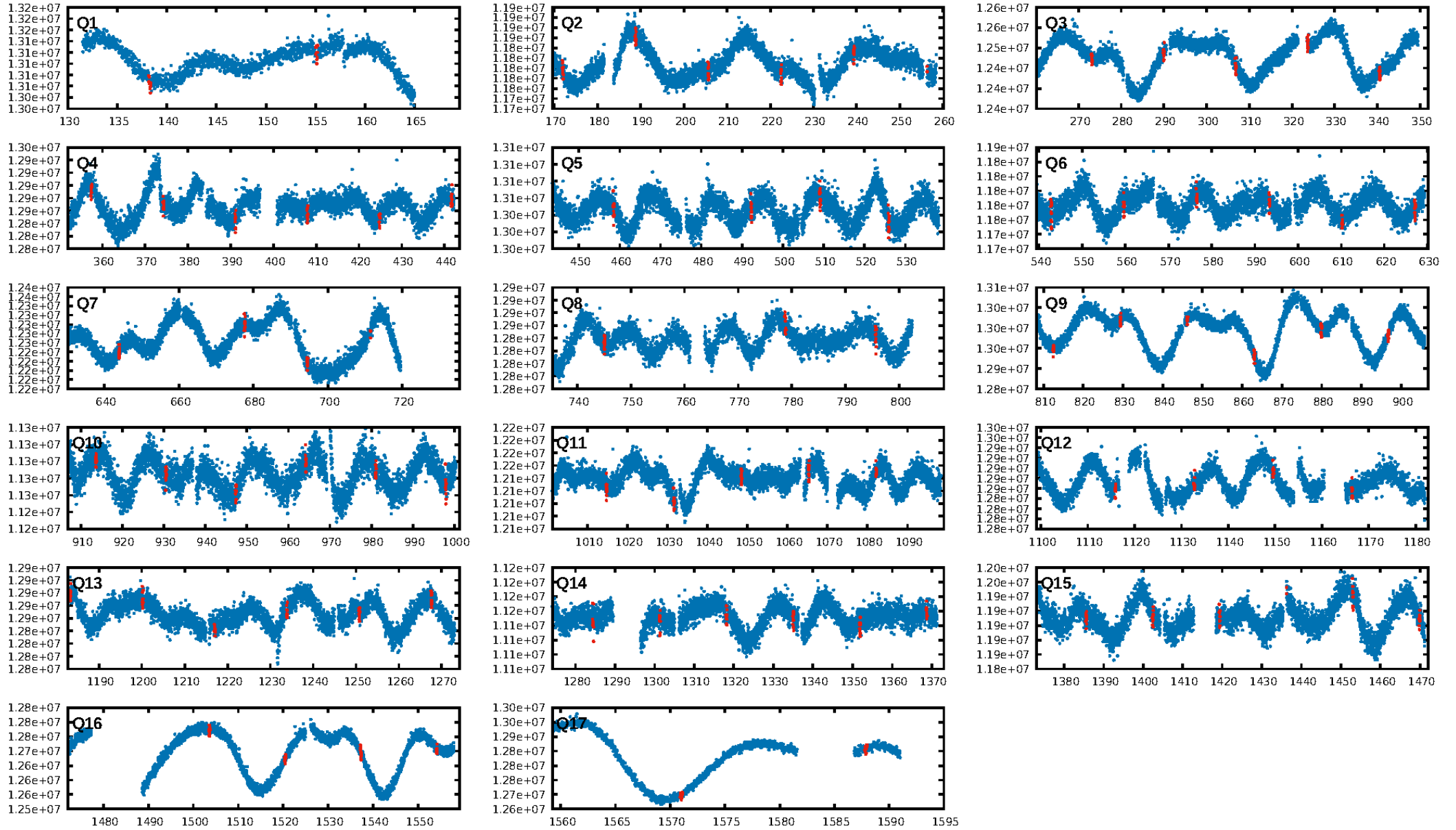
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.30e-67
RollingBand-fgt: 0.97 [72/74]
GhostDiagnostic-chr: 1.235
Centroid-sig: 34.7%
Centroid-so: 1.377 arcsec [2.12 σ]
OotOffset-rm: 0.242 arcsec [0.81 σ]
KicOffset-rm: 0.237 arcsec [0.79 σ]
OotOffset-st: 3/4/3/4 [14]
KicOffset-st: 3/4/3/4 [14]
DiffImageQuality-fgm: 0.64 [9/14]
DiffImageOverlap-fno: 1.00 [17/17]

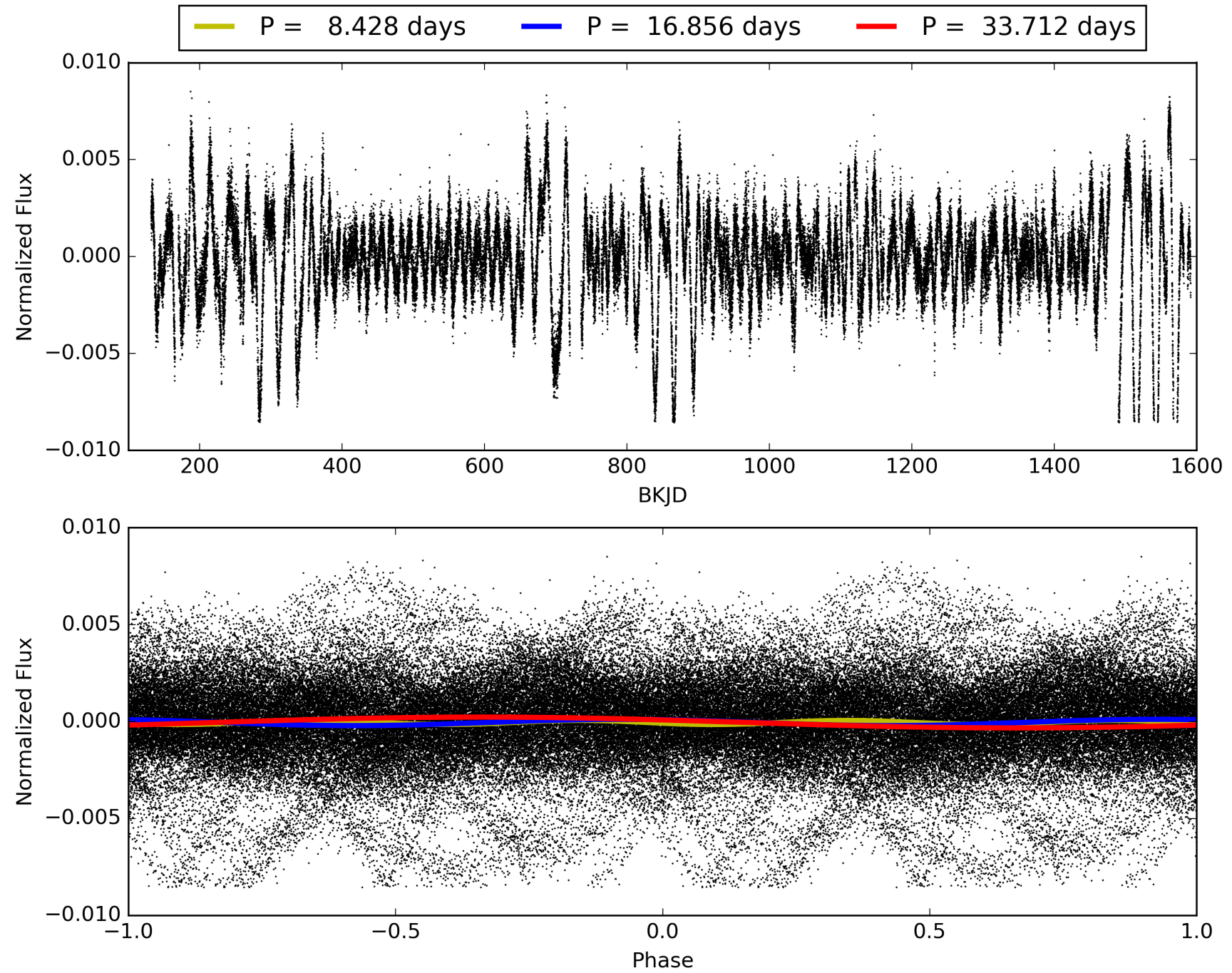
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:25:00 Z

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

TCE 002161536-01, PDC Light Curves

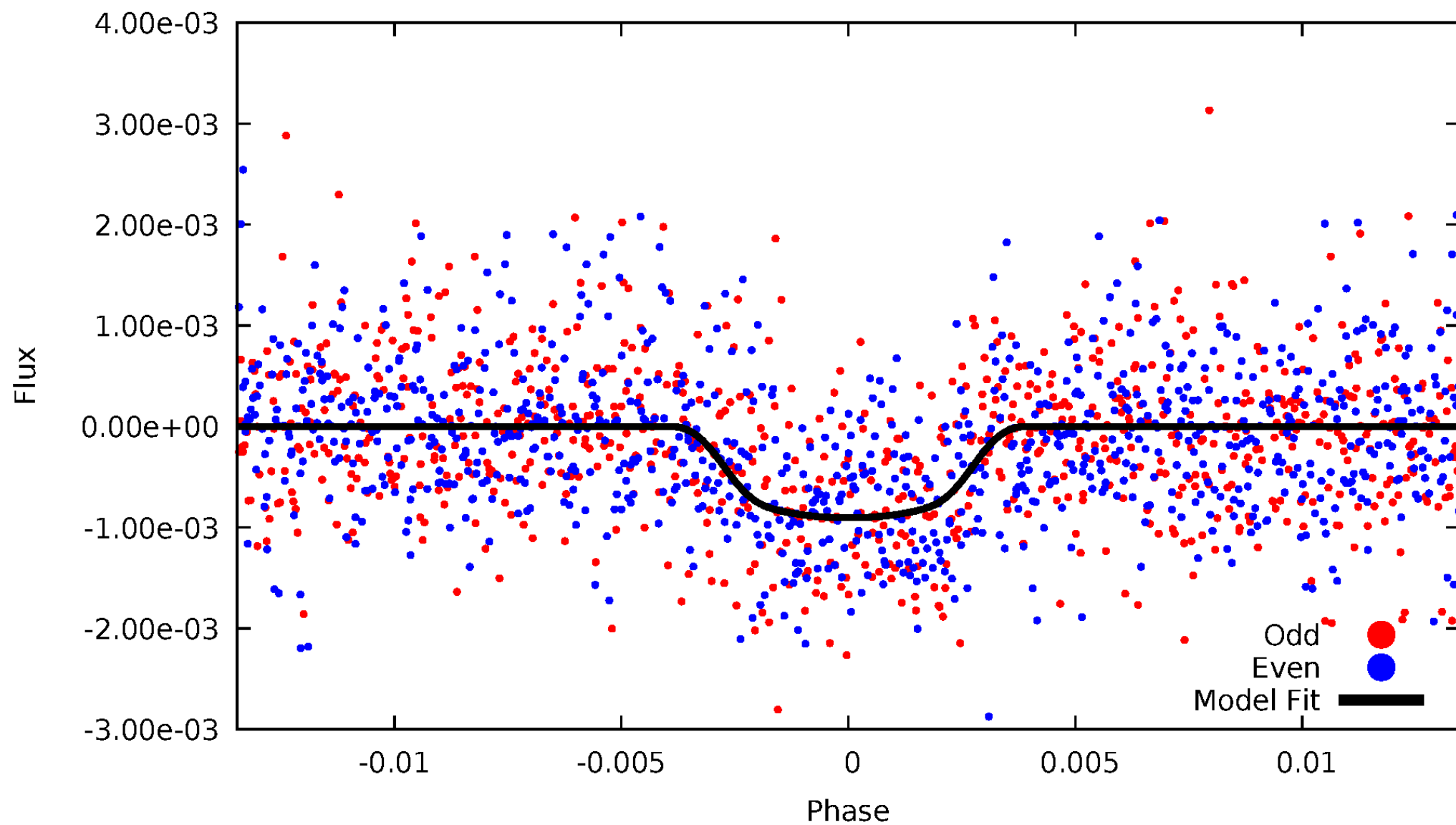


TCE 002161536-01



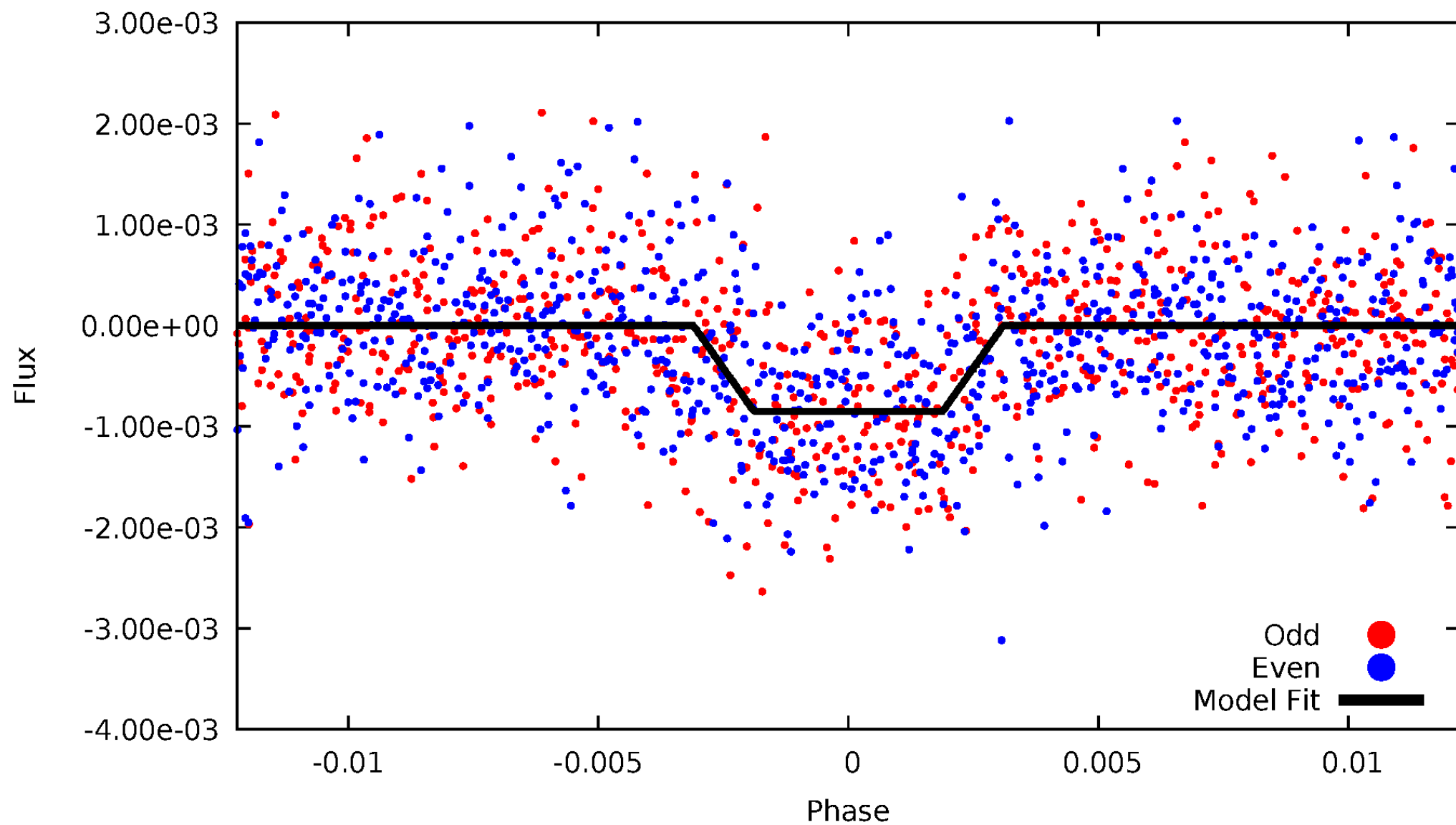
DV Odd/Even

TCE 002161536-01



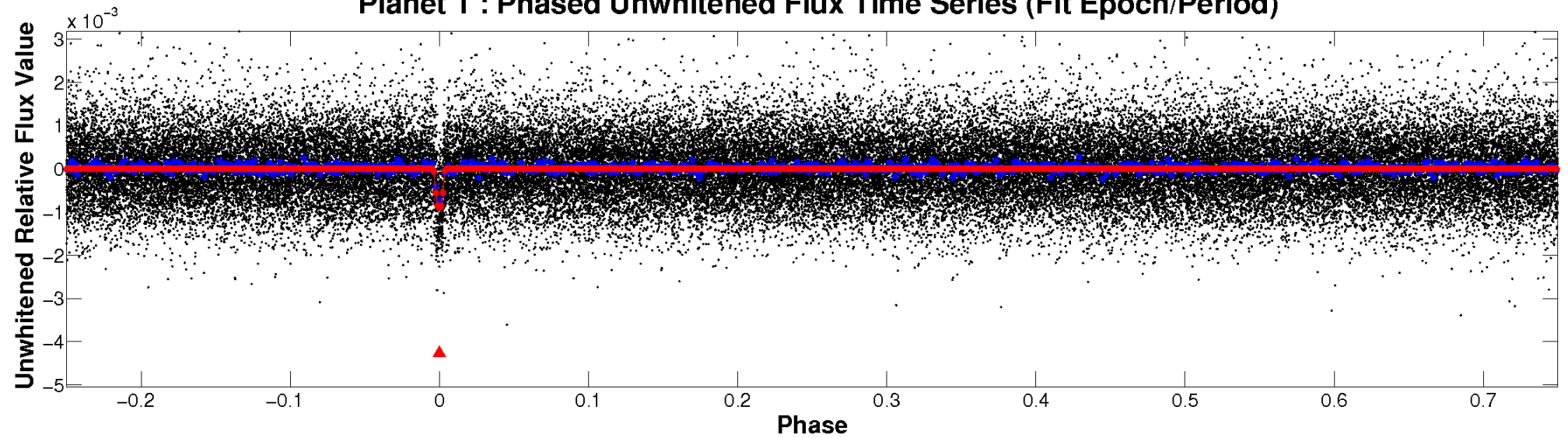
ALT Odd/Even

TCE 002161536-01

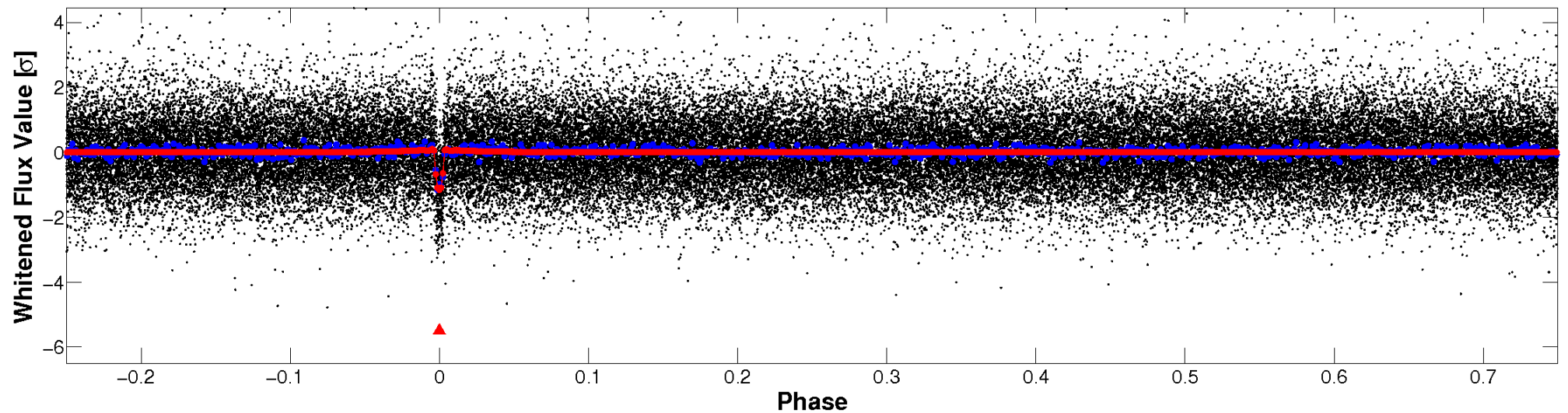


Non-Whitened Vs. Whitened Light Curve

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

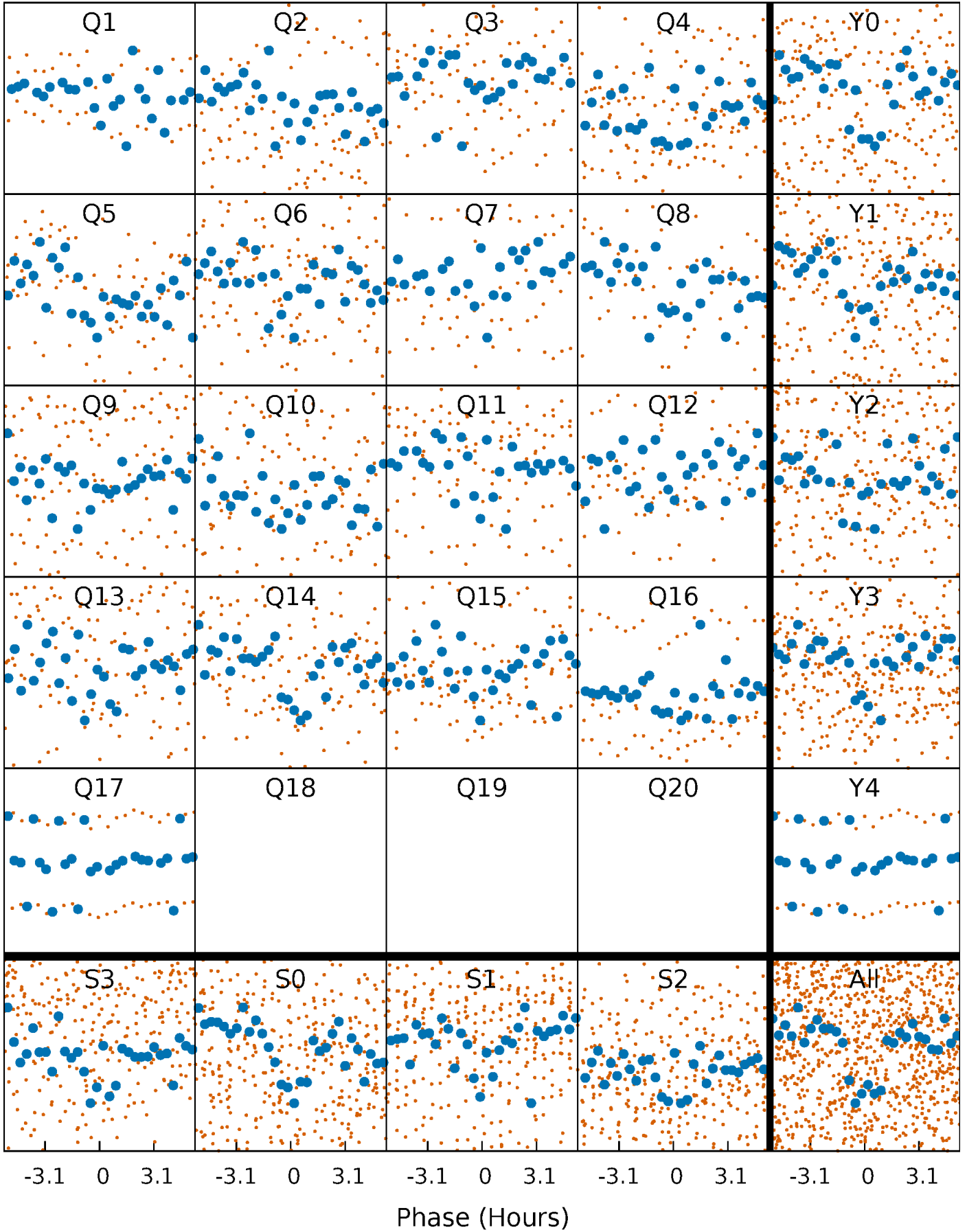


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



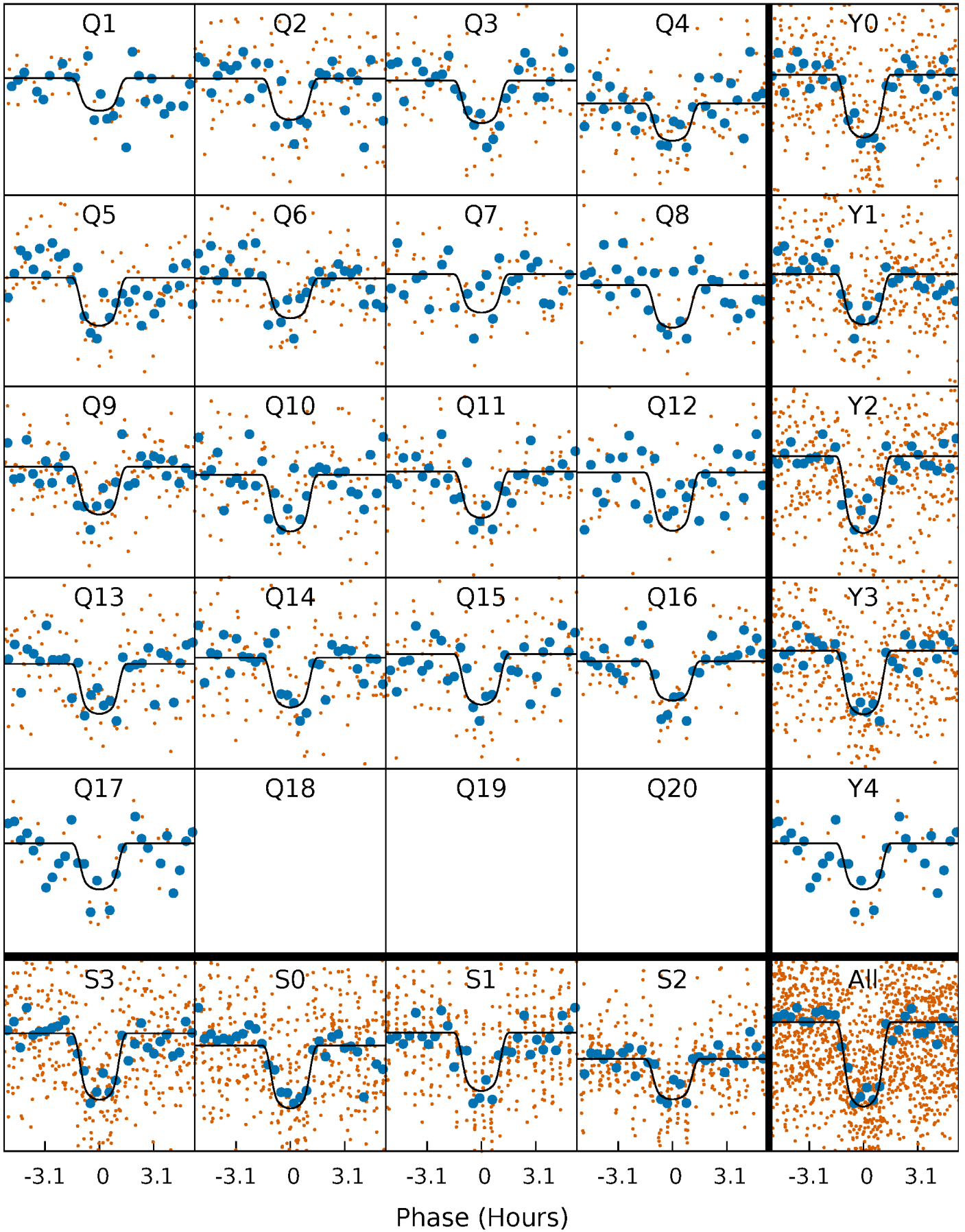
PDC Quarter-Phased Transit Curves

TCE 002161536-01 P= 16.855898 Days $T_0=138.267642$ (BKJD)



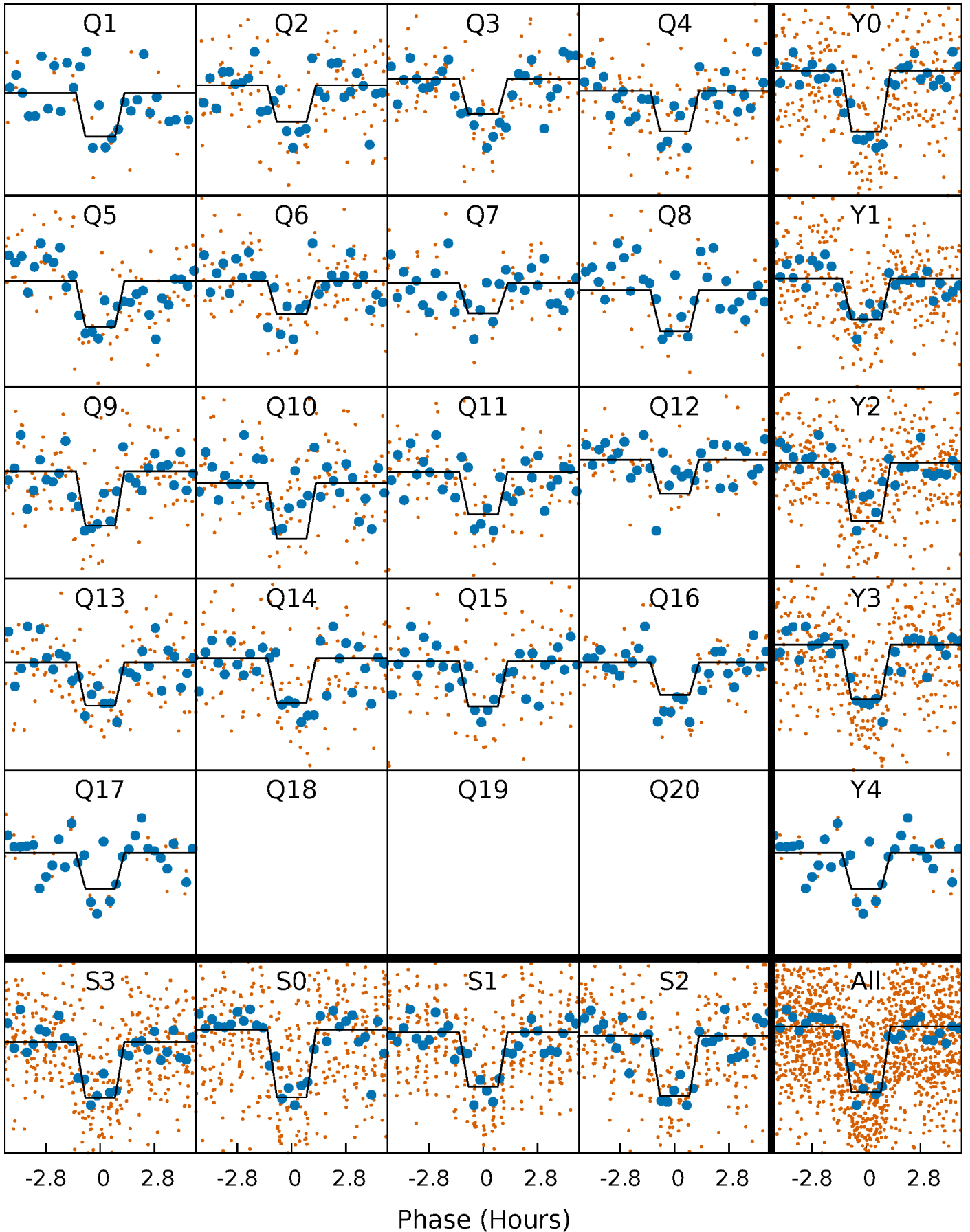
DV Quarter-Phased Transit Curves

TCE 002161536-01 P= 16.855898 Days $T_0=138.267642$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

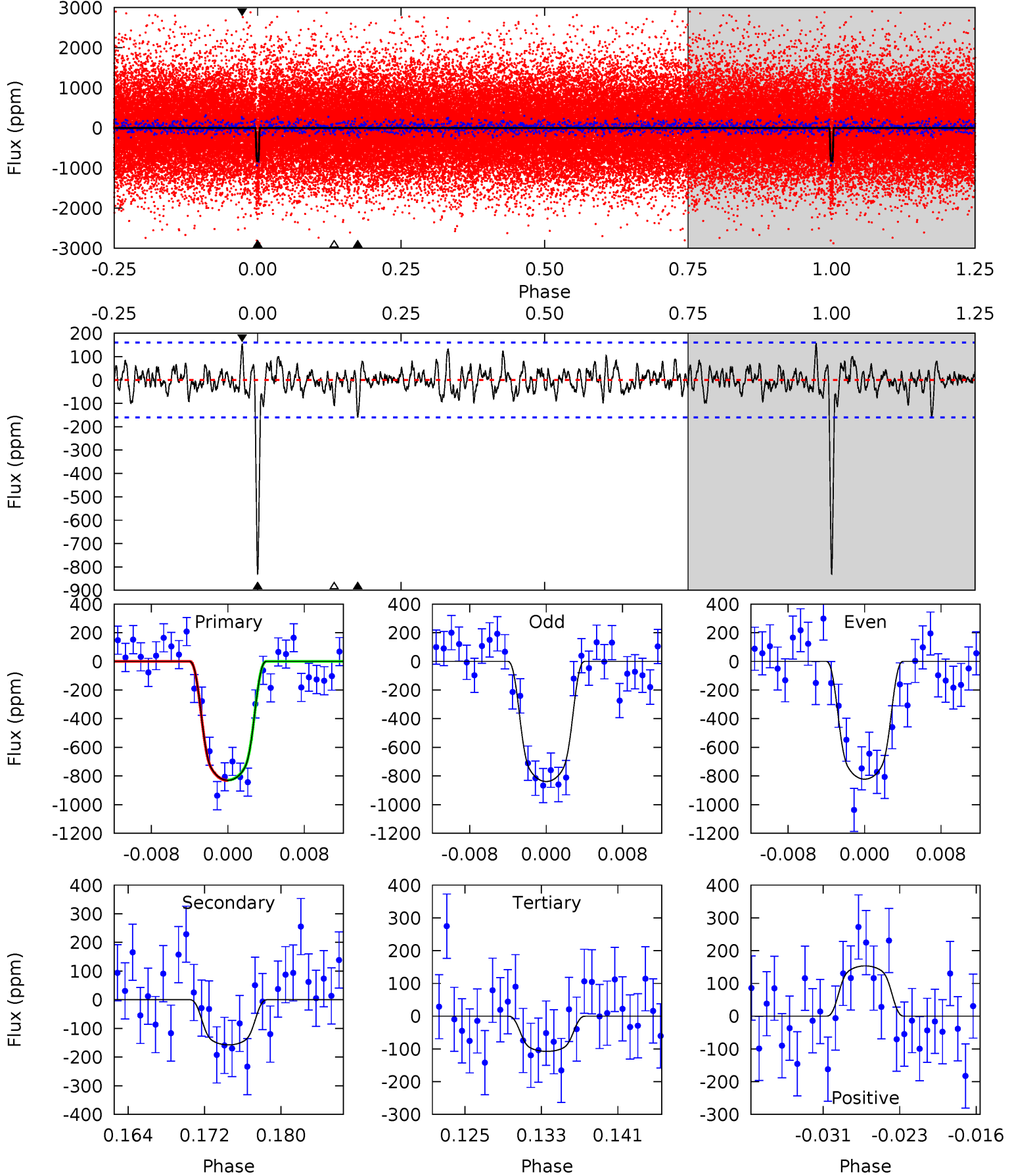
TCE 002161536-01 P= 16.855816 Days $T_0=138.273685$ (BKJD)



DV Model-Shift Uniqueness Test

002161536-01, P = 16.855898 Days, E = 121.411744 Days

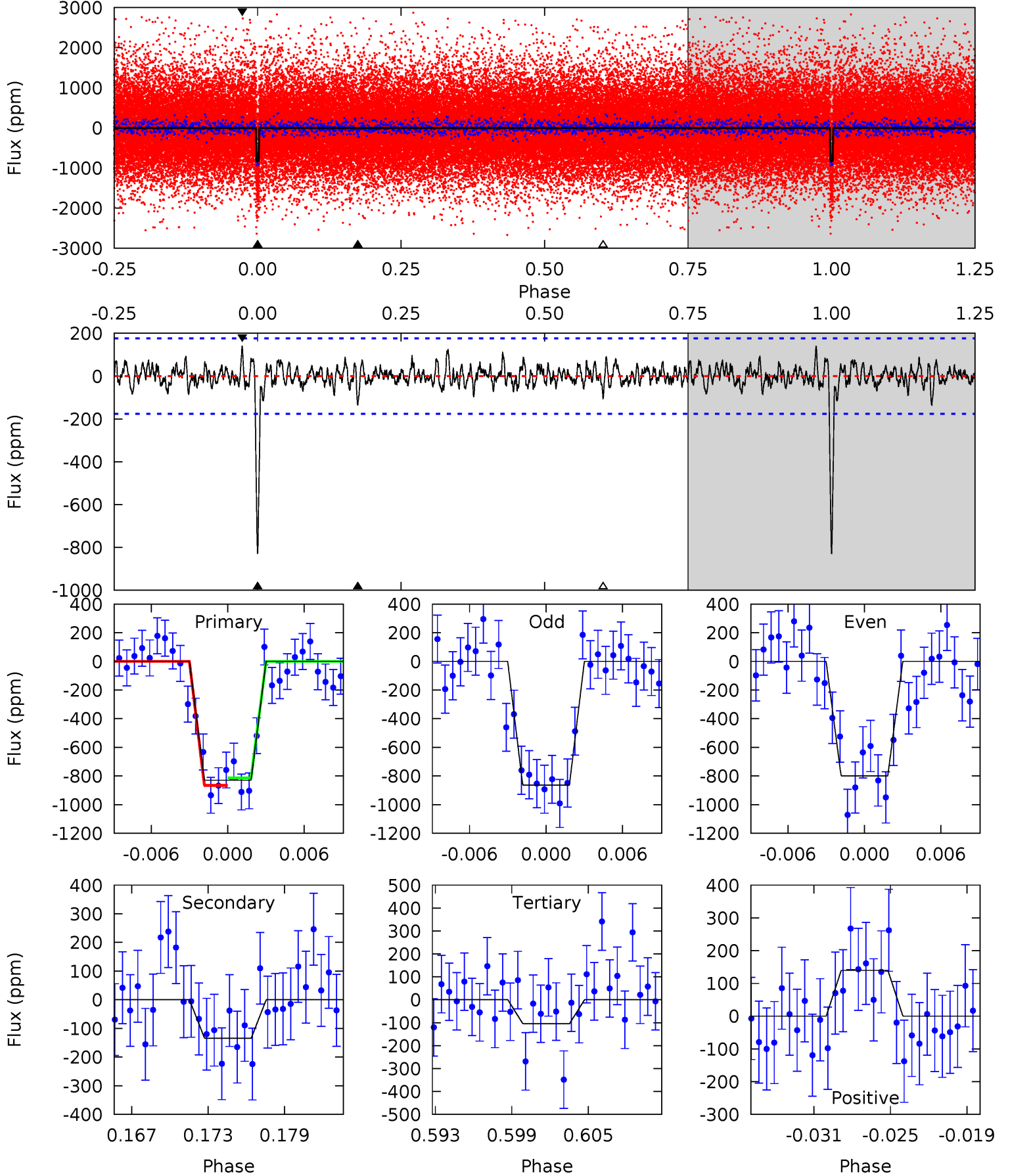
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.3	4.98	3.41	4.85	5.07	2.66	1.27	22.9	21.4	1.58	0.13	0.26	0.96	0.16	0.06



Alt Model-Shift Uniqueness Test

002161536-01, $P = 16.855816$ Days, $E = 121.417869$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.1	3.90	3.04	4.06	5.12	2.74	1.06	21.1	20.0	0.86	-0.16	0.93	1.02	0.14	0.78



Stellar Parameters For KIC 002161536

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3967^{+79}_{-79}	$4.674^{+0.032}_{-0.017}$	$0.060^{+0.150}_{-0.150}$	$0.587^{+0.026}_{-0.035}$	$0.593^{+0.034}_{-0.034}$	$4.129^{+0.614}_{-0.321}$
	+2%/-2%	+1%/-0%	+250%/-250%	+4%/-6%	+6%/-6%	+15%/-8%
Source	SPE70	SPE60	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 002161536-01 / KOI 2130.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-157 ± 32	$2.15^{+0.30}_{-0.30}$	568^{+12}_{-13}	2920^{+145}_{-131}	219^{+91}_{-59}
Alt.	-134 ± 34	$1.86^{+0.28}_{-0.29}$	569^{+12}_{-14}	2977^{+179}_{-169}	252^{+125}_{-86}

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 $A_{obs} \gg 1.0$

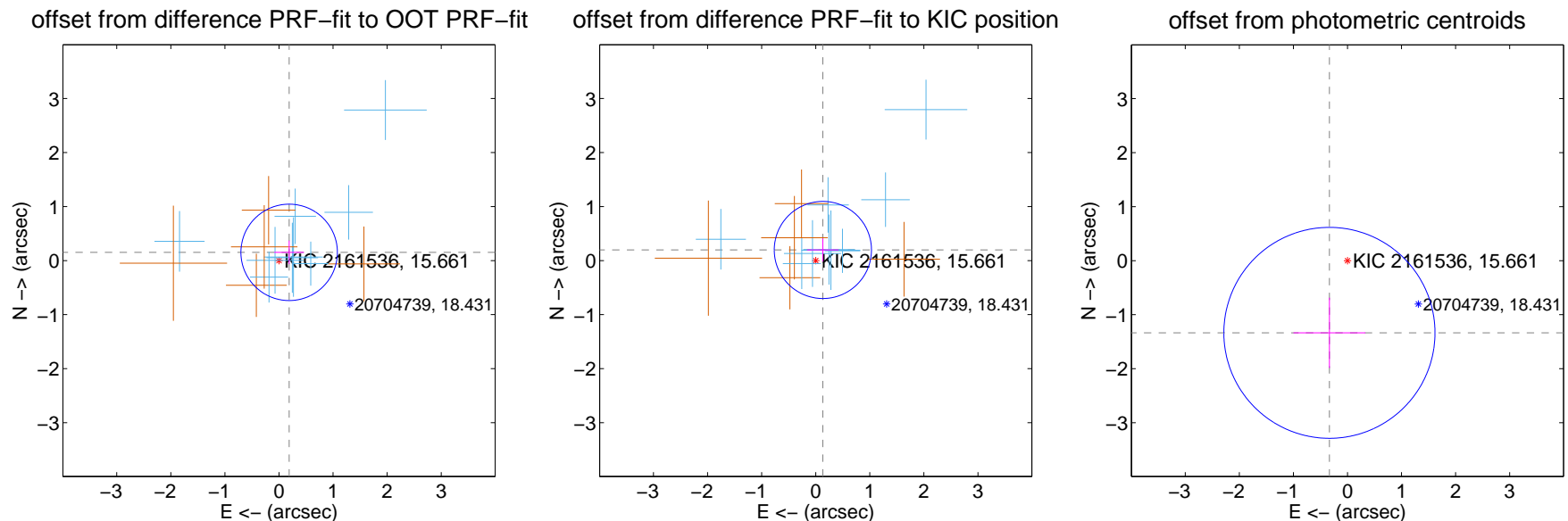
DV Centroid Data

Supplemental centroid analysis for 002161536-01. Kepler magnitude: 15.66. Transit SNR 18.85

There are 9 quarters with good PRF difference image offsets

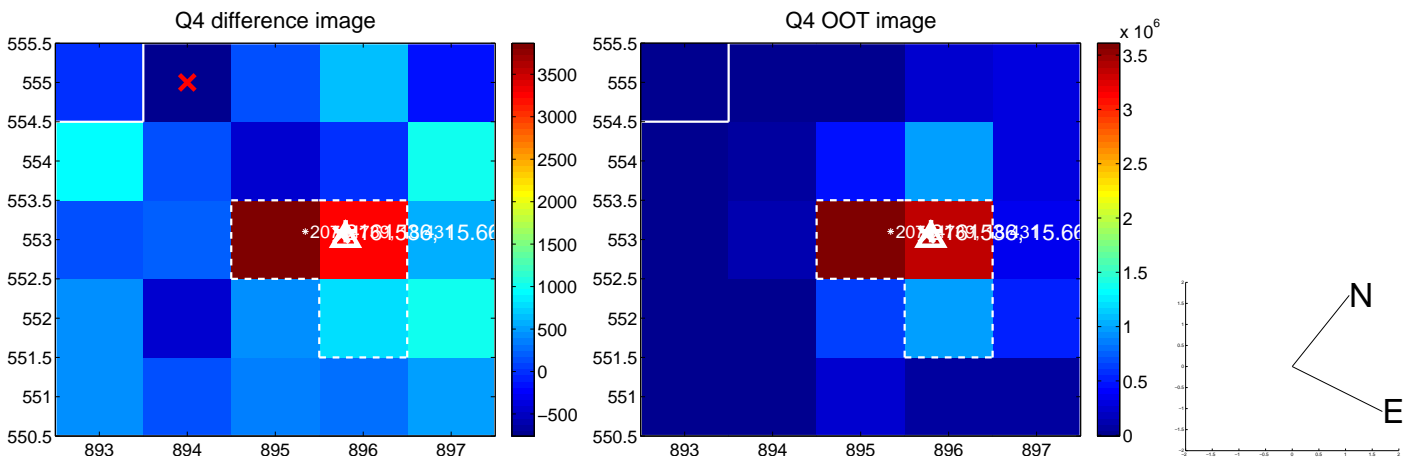
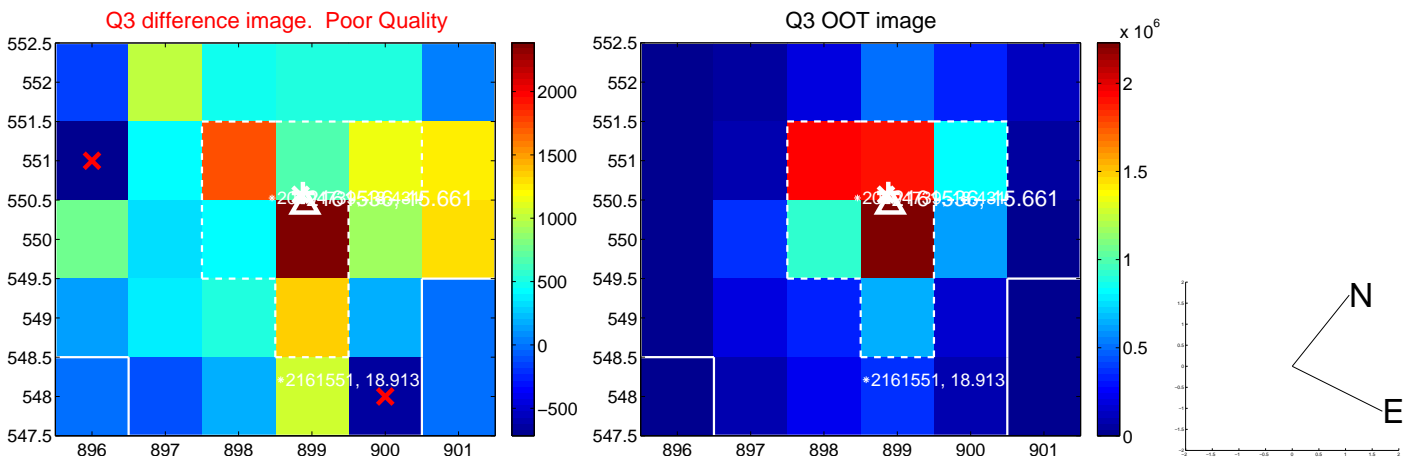
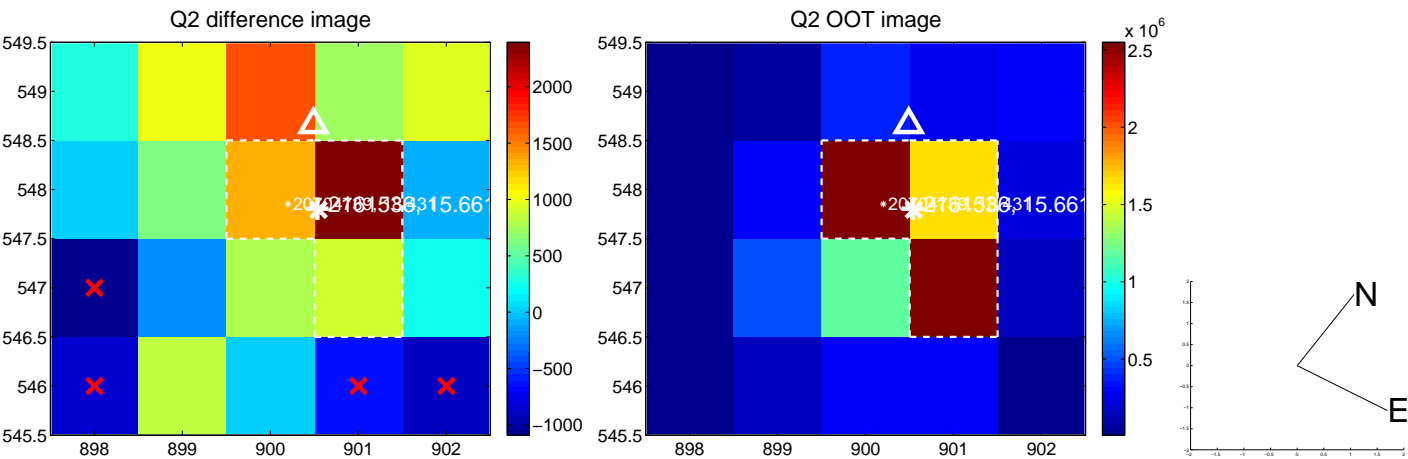
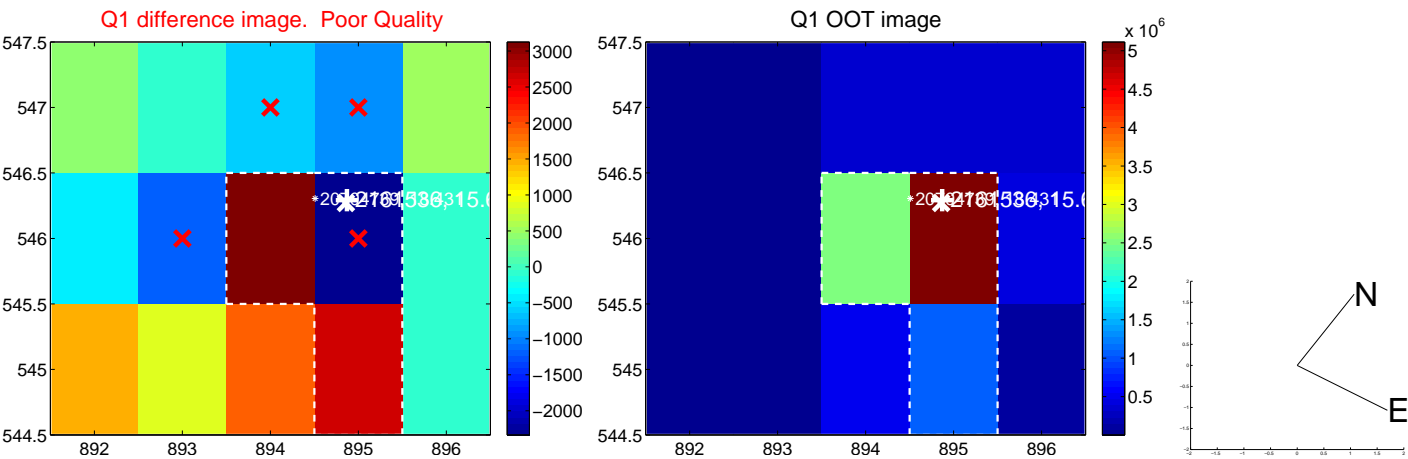
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.242 ± 0.297	0.81	-0.188 ± 0.275	0.152 ± 0.218
PRF-fit source offset from KIC position	0.237 ± 0.299	0.79	-0.132 ± 0.293	0.197 ± 0.212
photometric centroid source offset	1.38 ± 0.65	2.12	0.33 ± 0.66	-1.34 ± 0.65

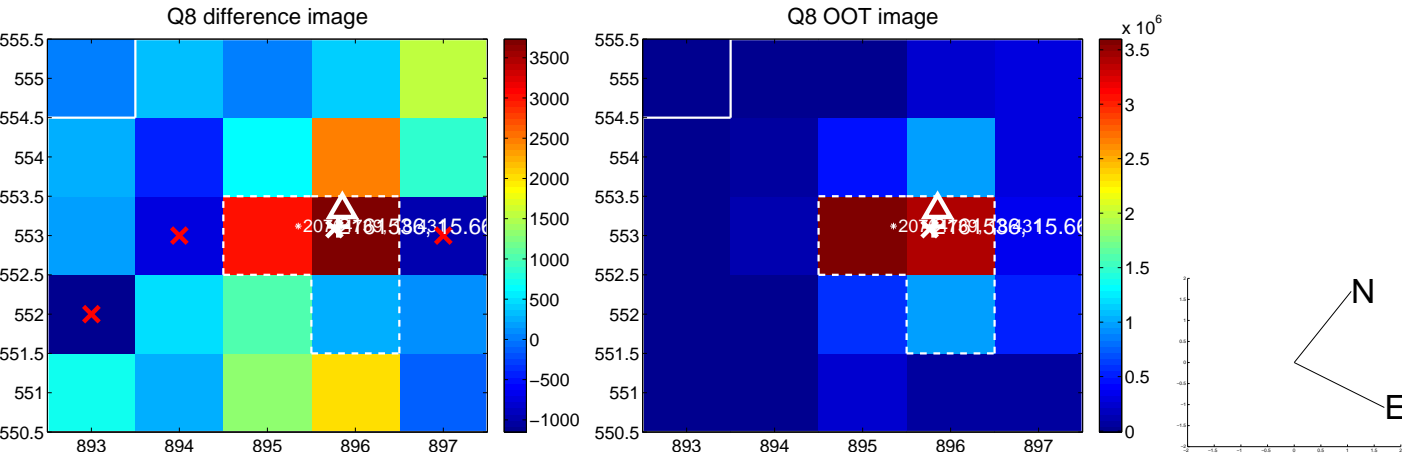
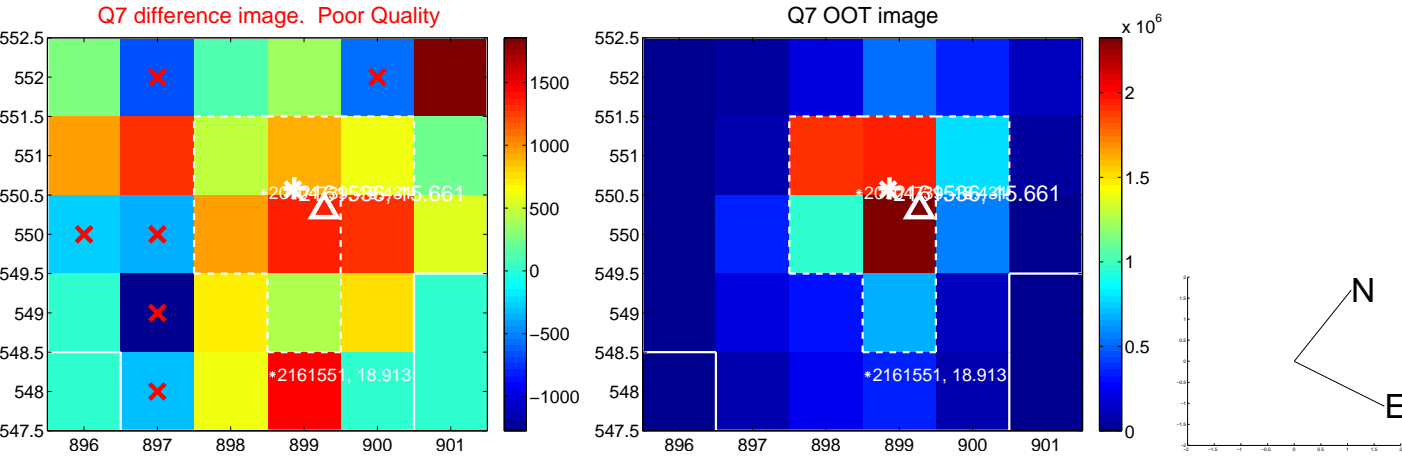
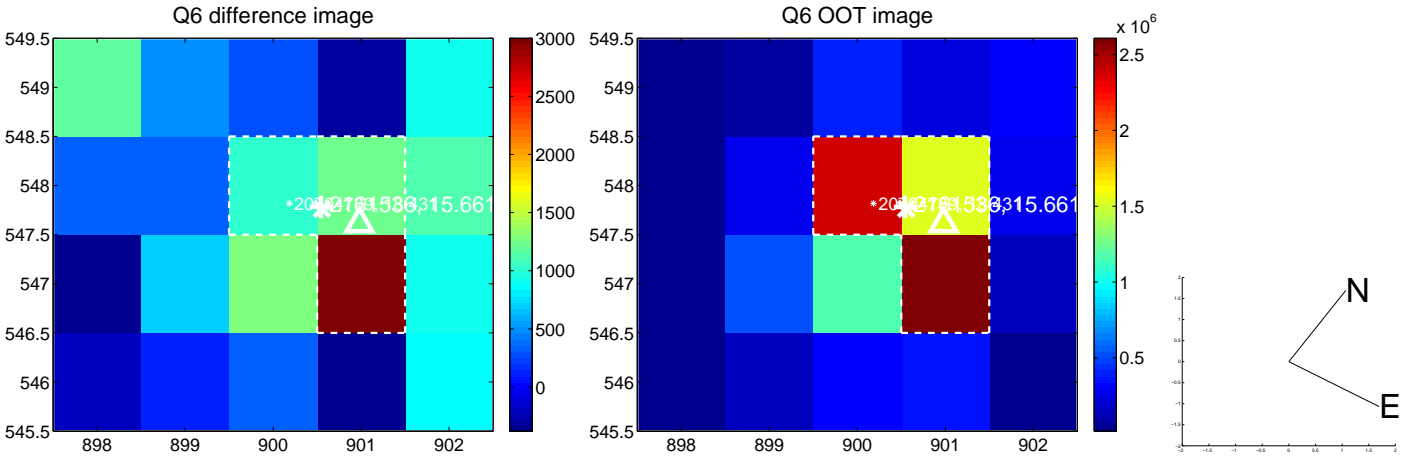
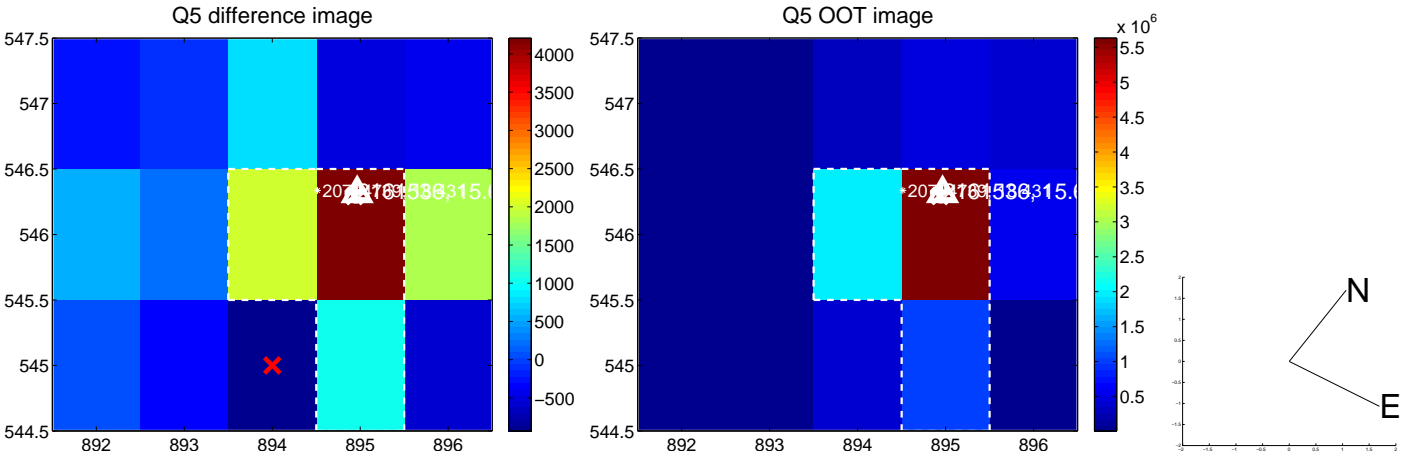


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000 are from the UKIRT catalog.

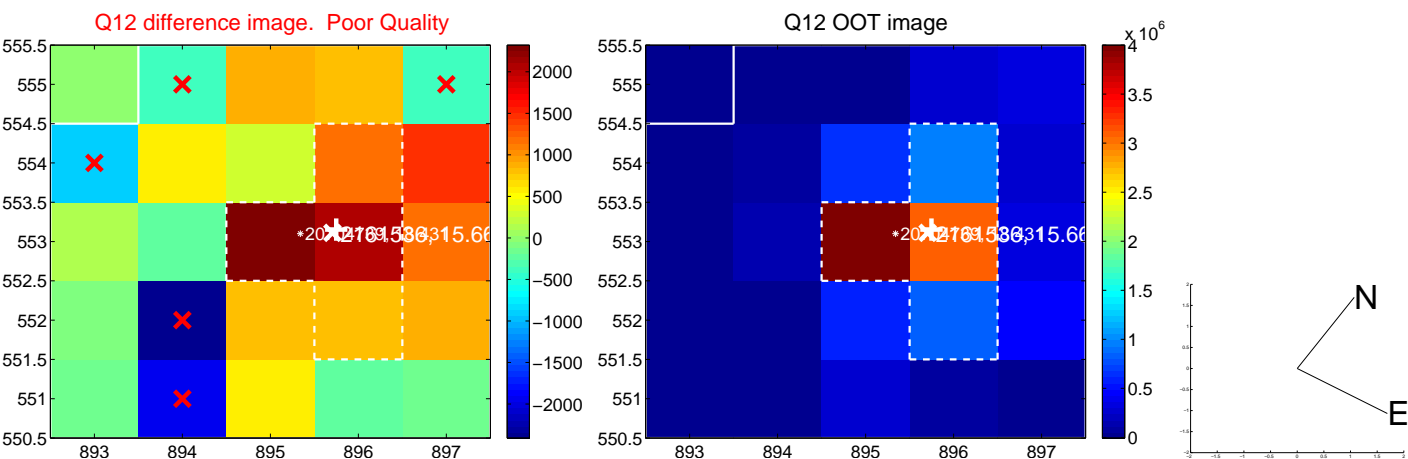
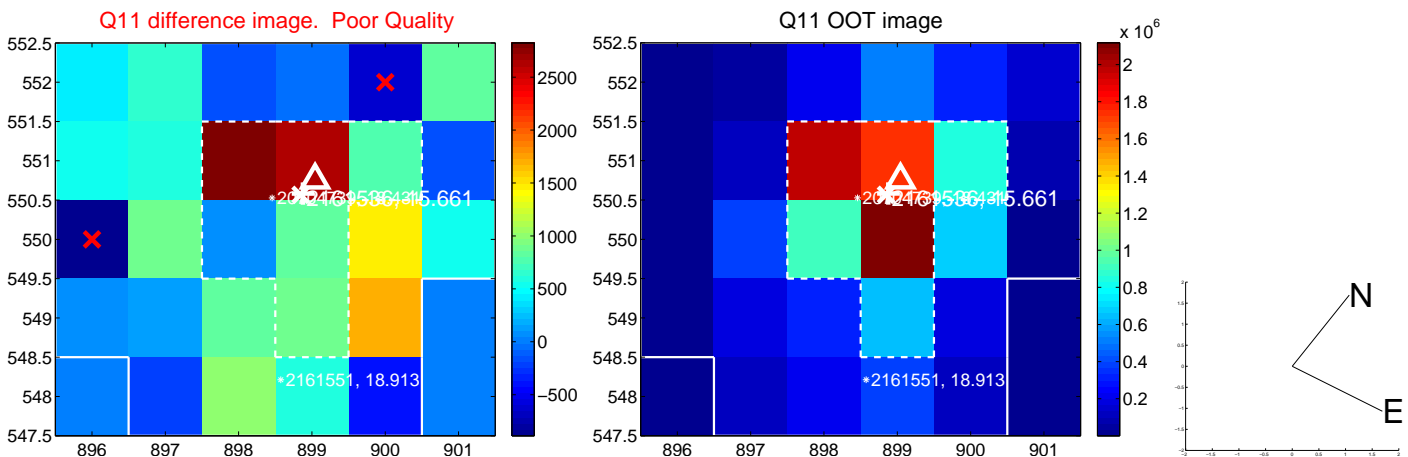
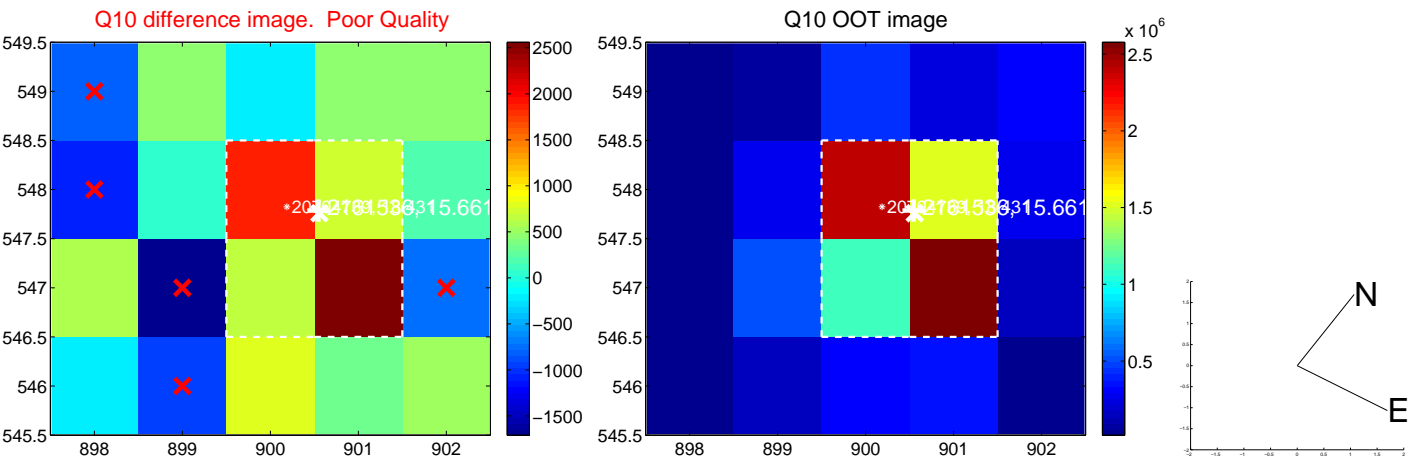
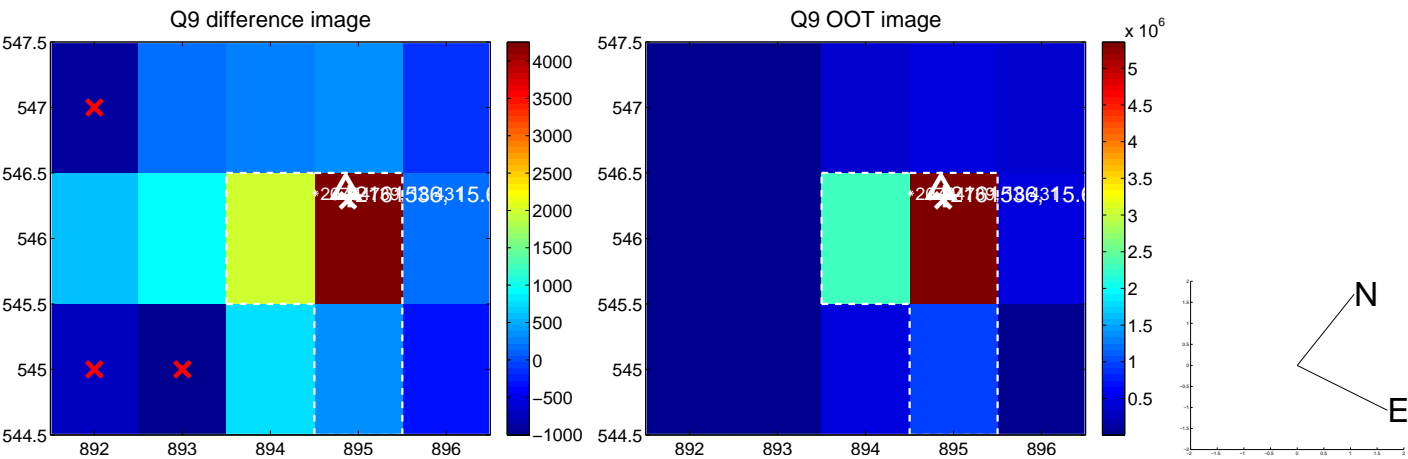
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



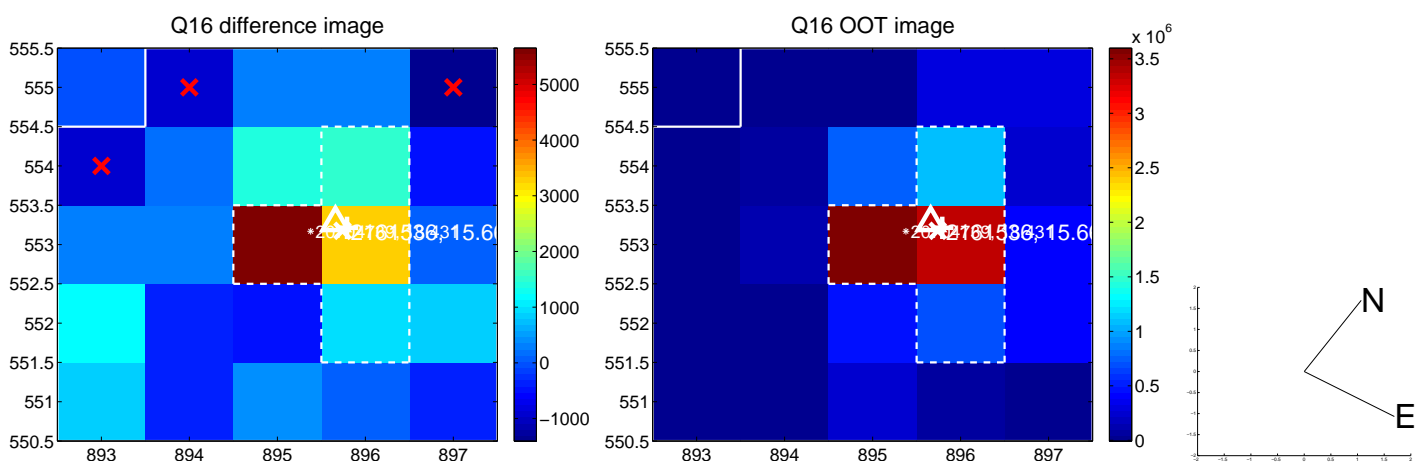
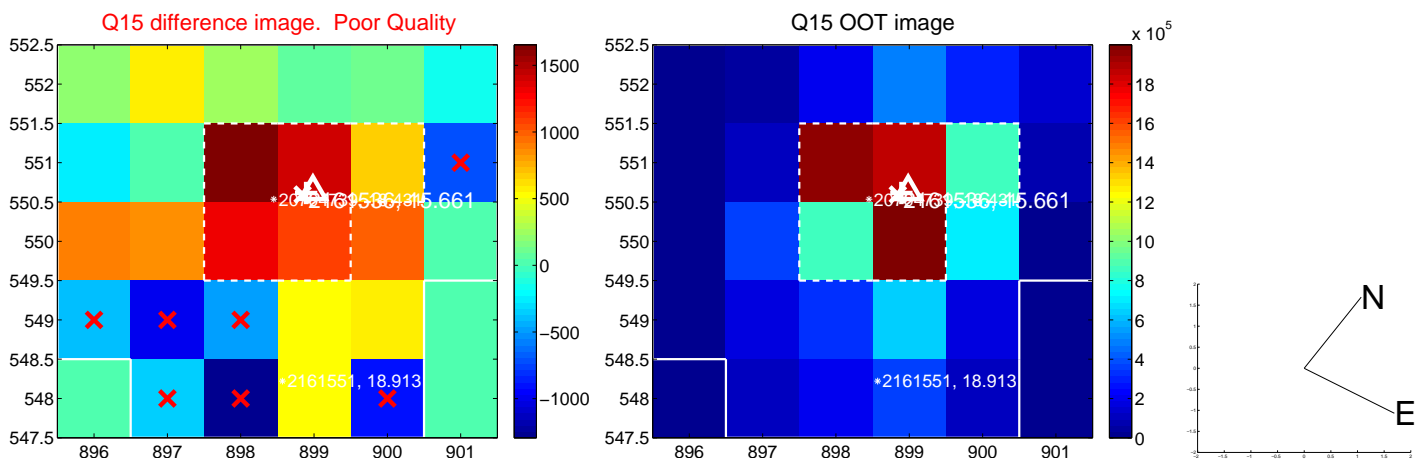
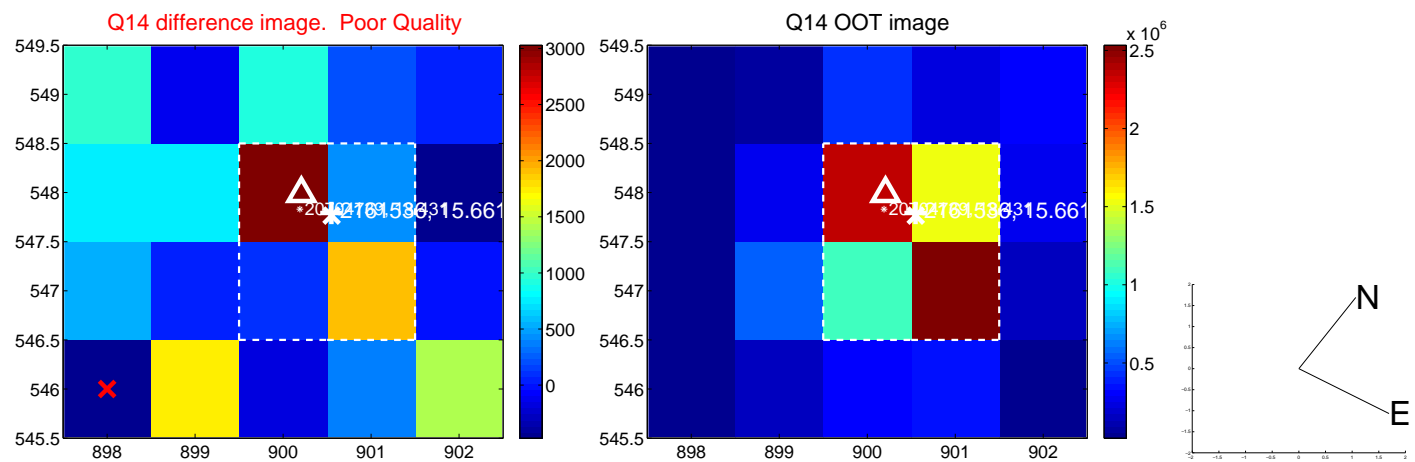
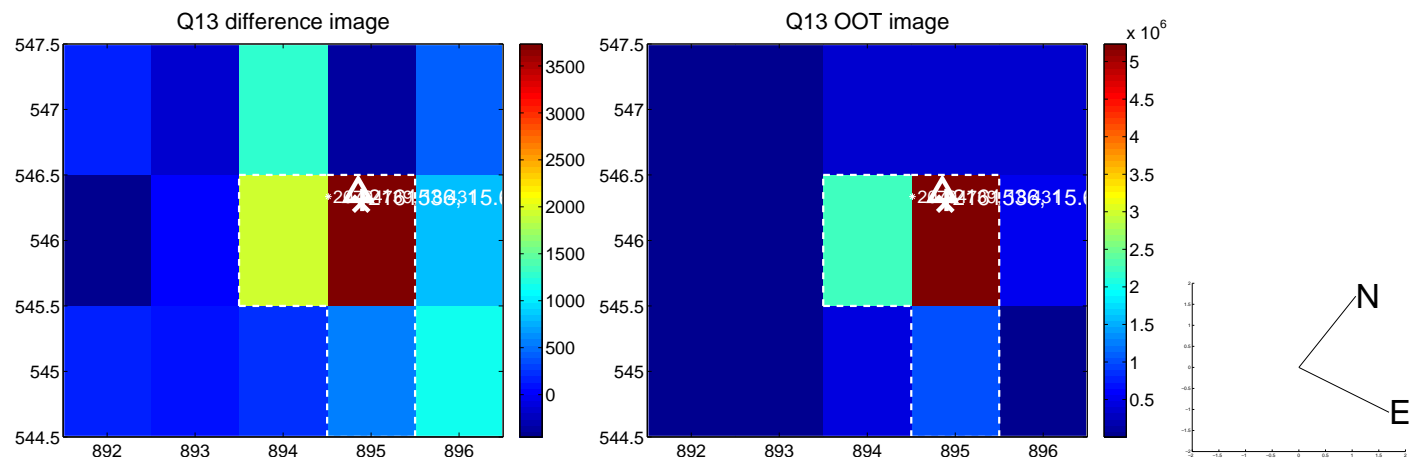
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



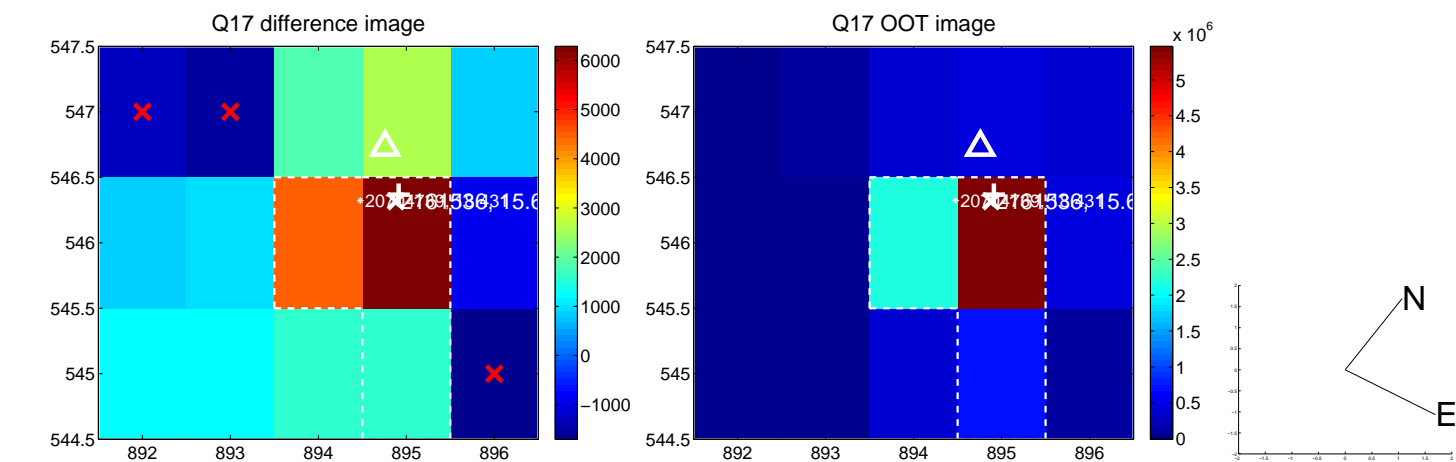
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



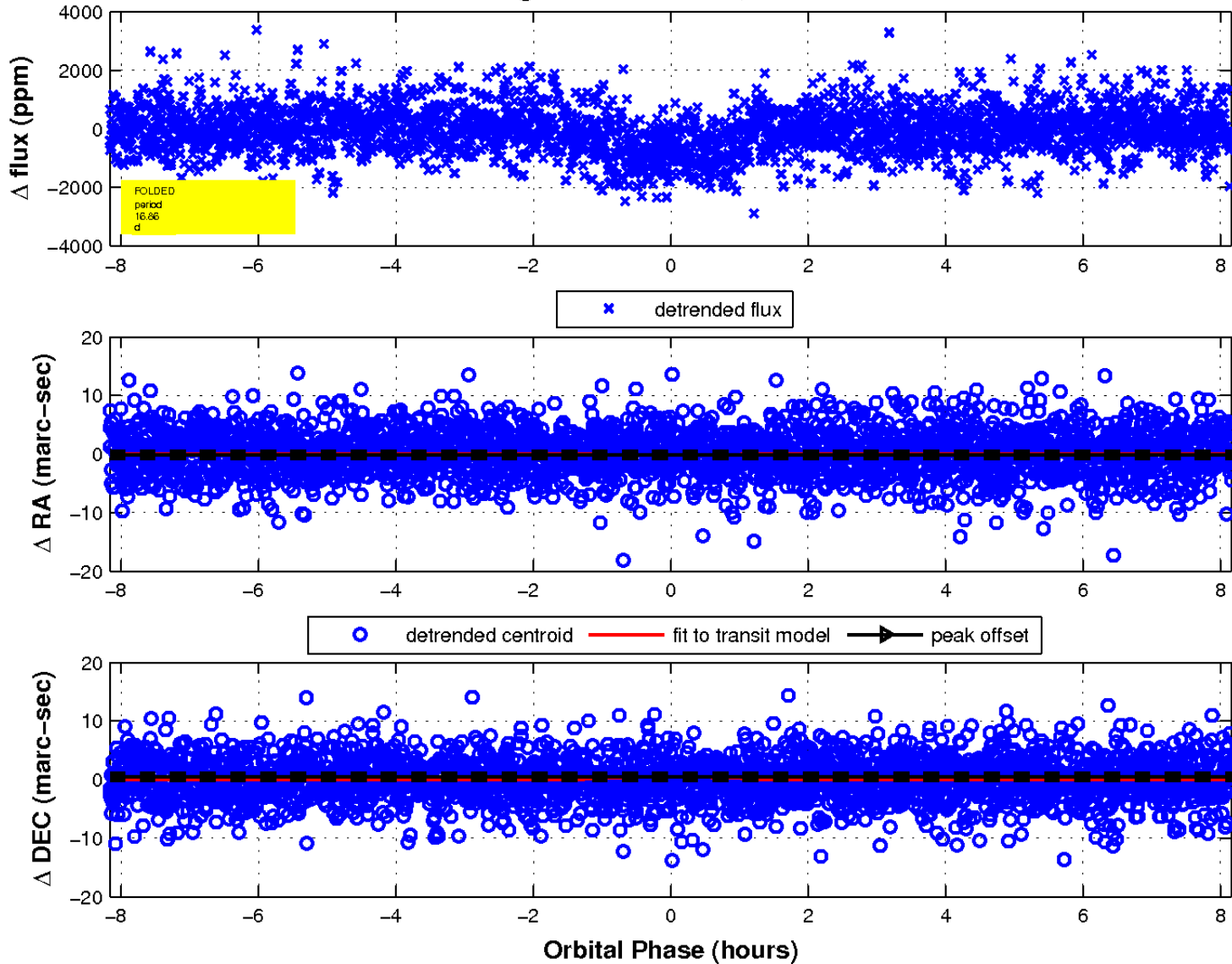
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

