

KIC 009590249

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})
009590249-01	OBS	No	0.528438	131.607037	64.1	4.238	8.0	8.5	0.53	3856	0.43	517.82

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009590249-01	OBS	FP	0.00	1	0	0	0	LPP_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.

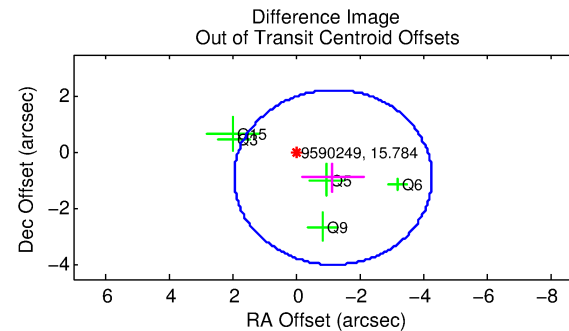
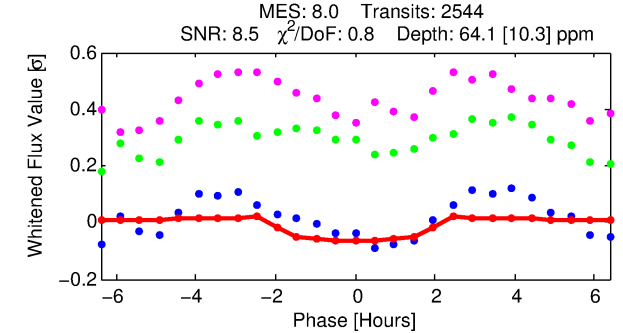
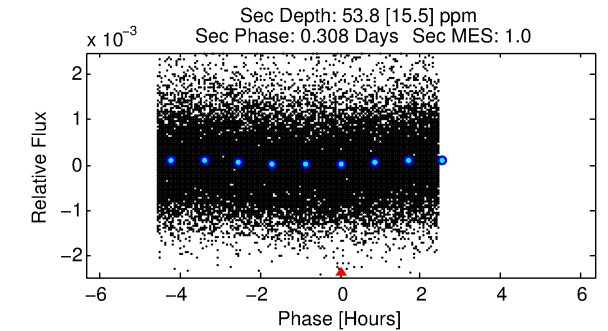
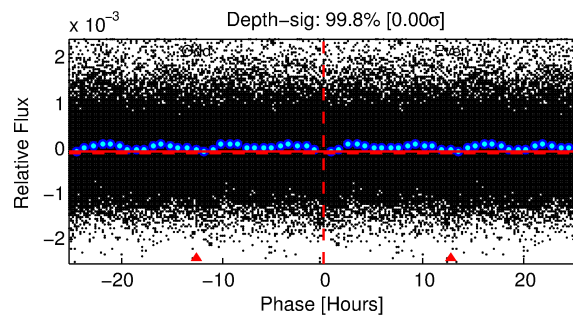
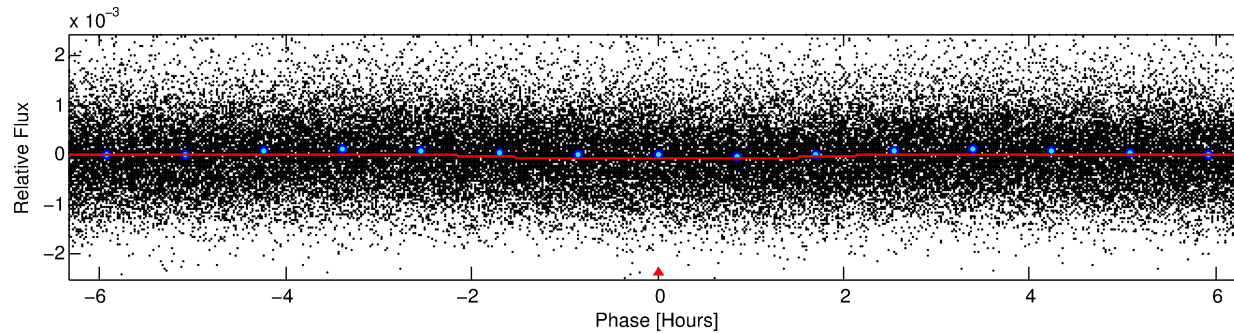
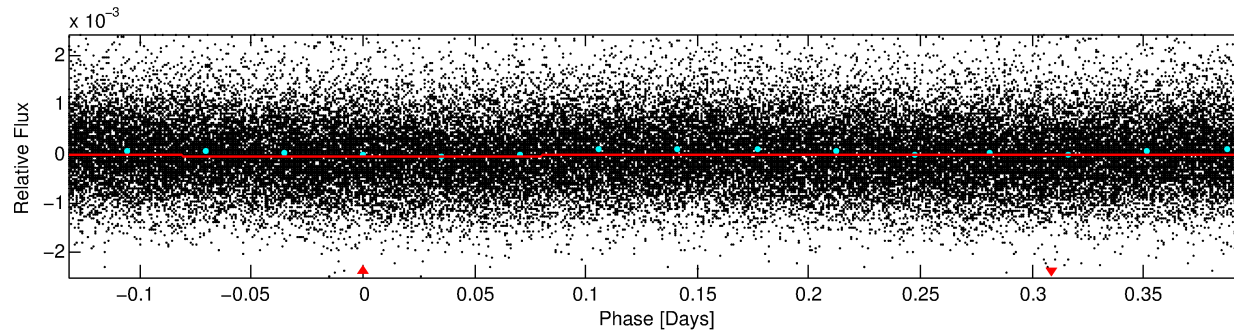
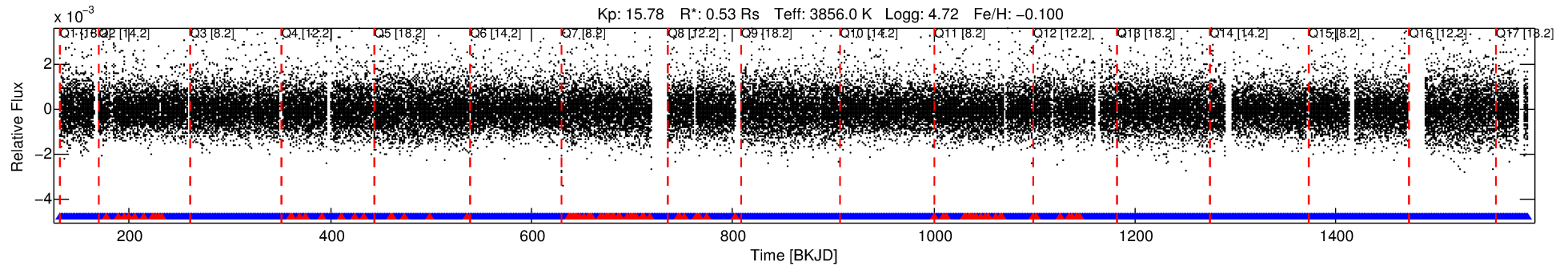
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009590249-01

No Significant Match Found

DV One-Page Summary

KIC: 9590249 Candidate: 1 of 1 Period: 0.528 d



DV Fit Results:

Period = 0.52844 [0.00001] d
Epoch = 131.6070 [0.0044] BKJD
Rp/R* = 0.0075 [0.0137]
a/R* = 1.12 [1.85]
b = 0.51 [11.61]
Seff = 517.82 [54.94]
Teq = 1216 [32] K
Rp = 0.43 [0.79] Re
a = 0.0104 [0.0005] AU
Ag = 16.90 [61.92] [0.26 σ]
Teffp = 3813 [3493] K [0.74 σ]

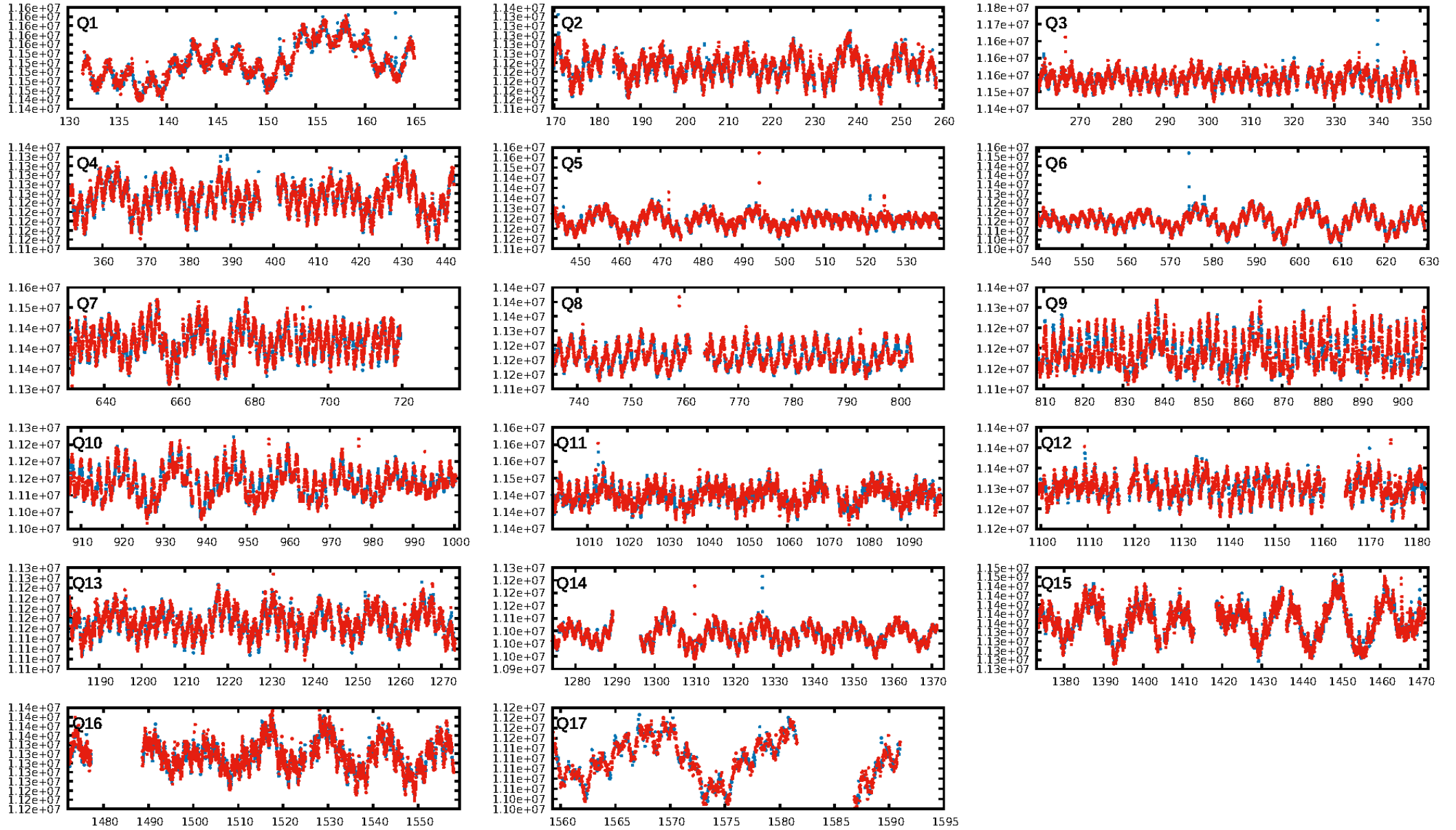
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.96 [2334/2429]
GhostDiagnostic-chr: 1.068
Centroid-sig: 49.1%
Centroid-so: 1.243 arcsec [1.01 σ]
OotOffset-rm: 1.466 arcsec [1.41 σ]
KicOffset-rm: 1.479 arcsec [1.31 σ]
OotOffset-st: 1/2/0/2 [5]
KicOffset-st: 1/2/0/2 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 1.00 [17/17]

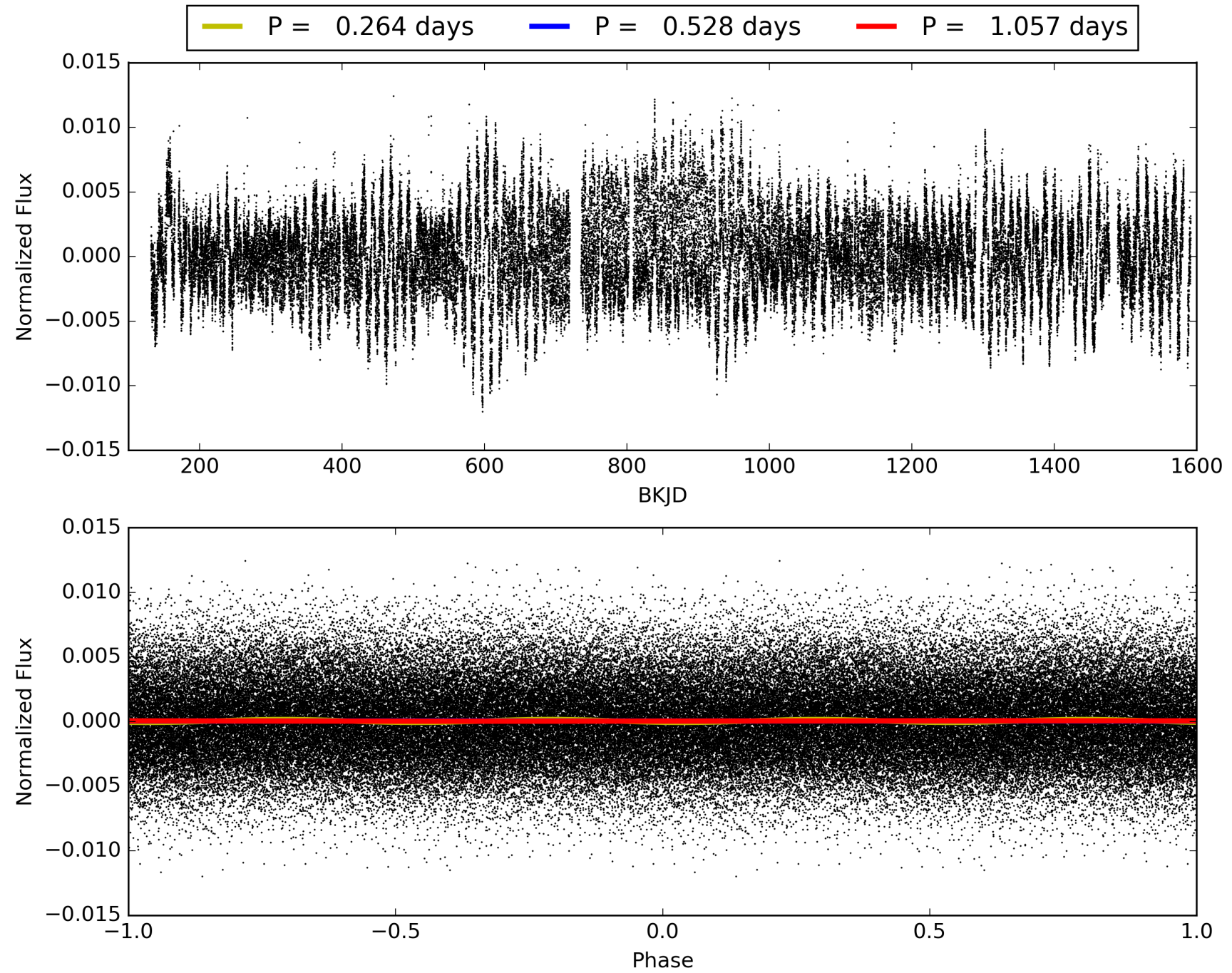
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:57:47 Z

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

TCE 009590249-01, PDC Light Curves

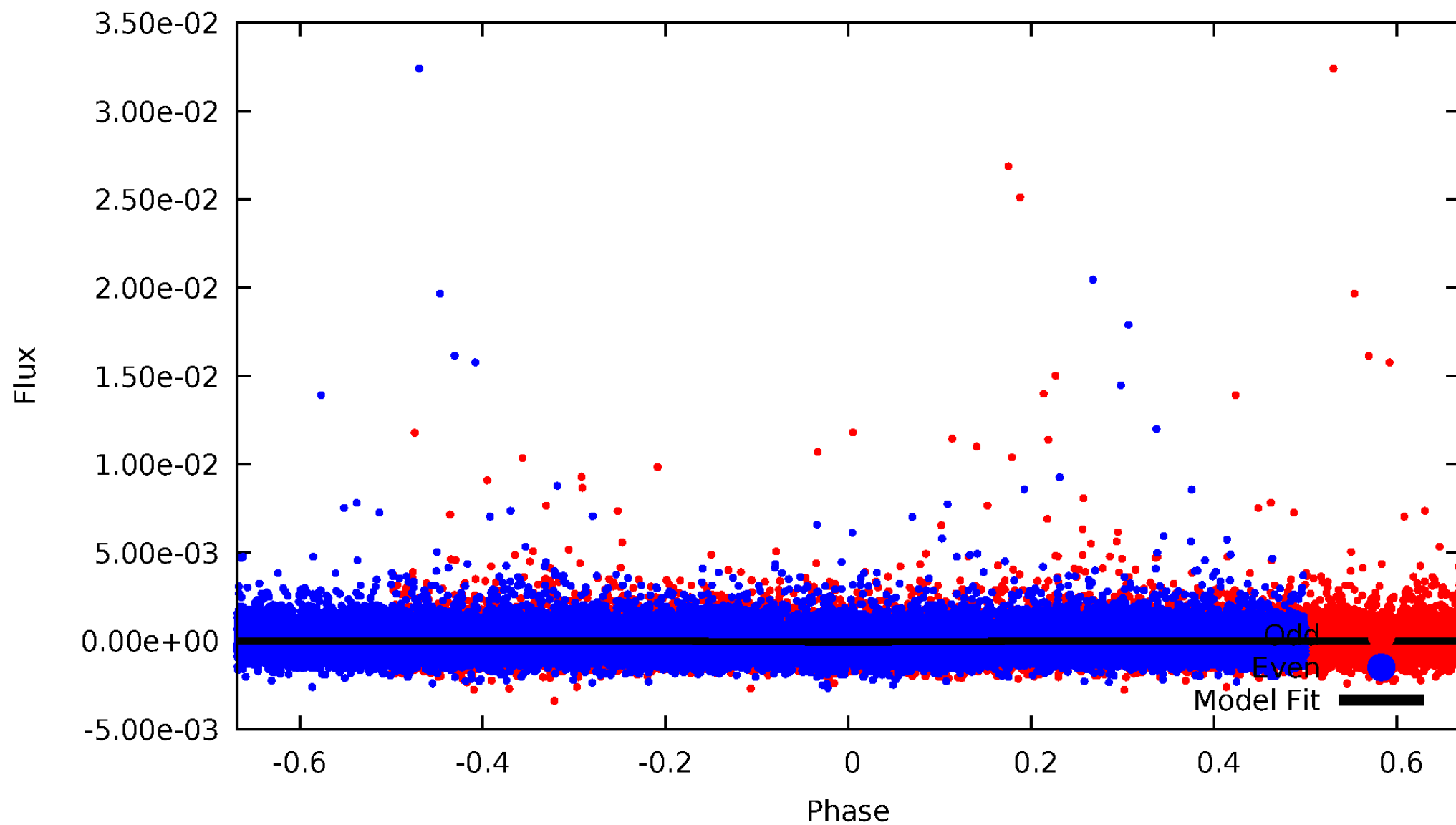


TCE 009590249-01



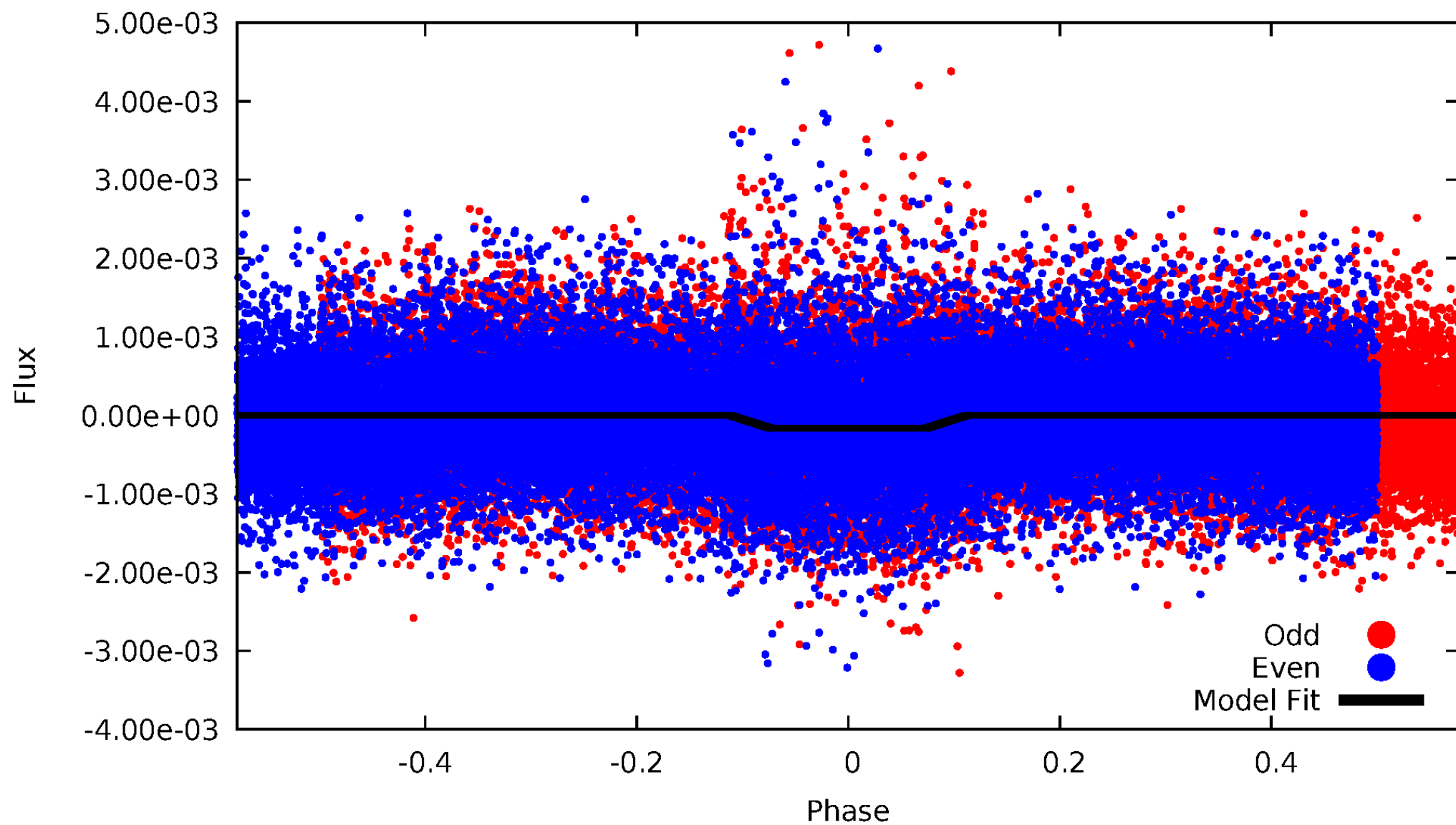
DV Odd/Even

TCE 009590249-01



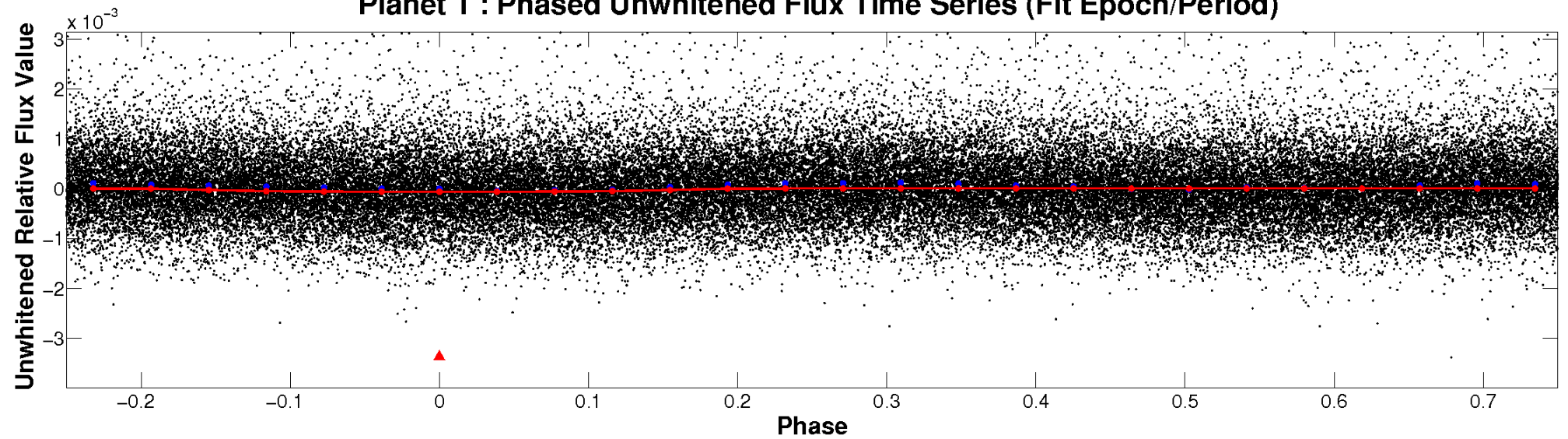
ALT Odd/Even

TCE 009590249-01

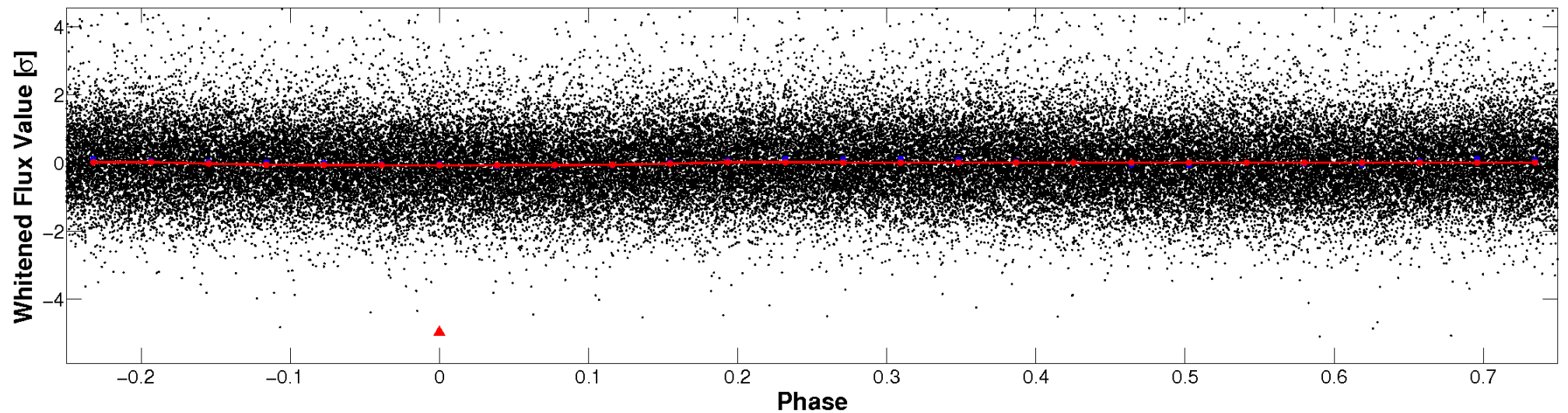


Non-Whitened Vs. Whitened Light Curve

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

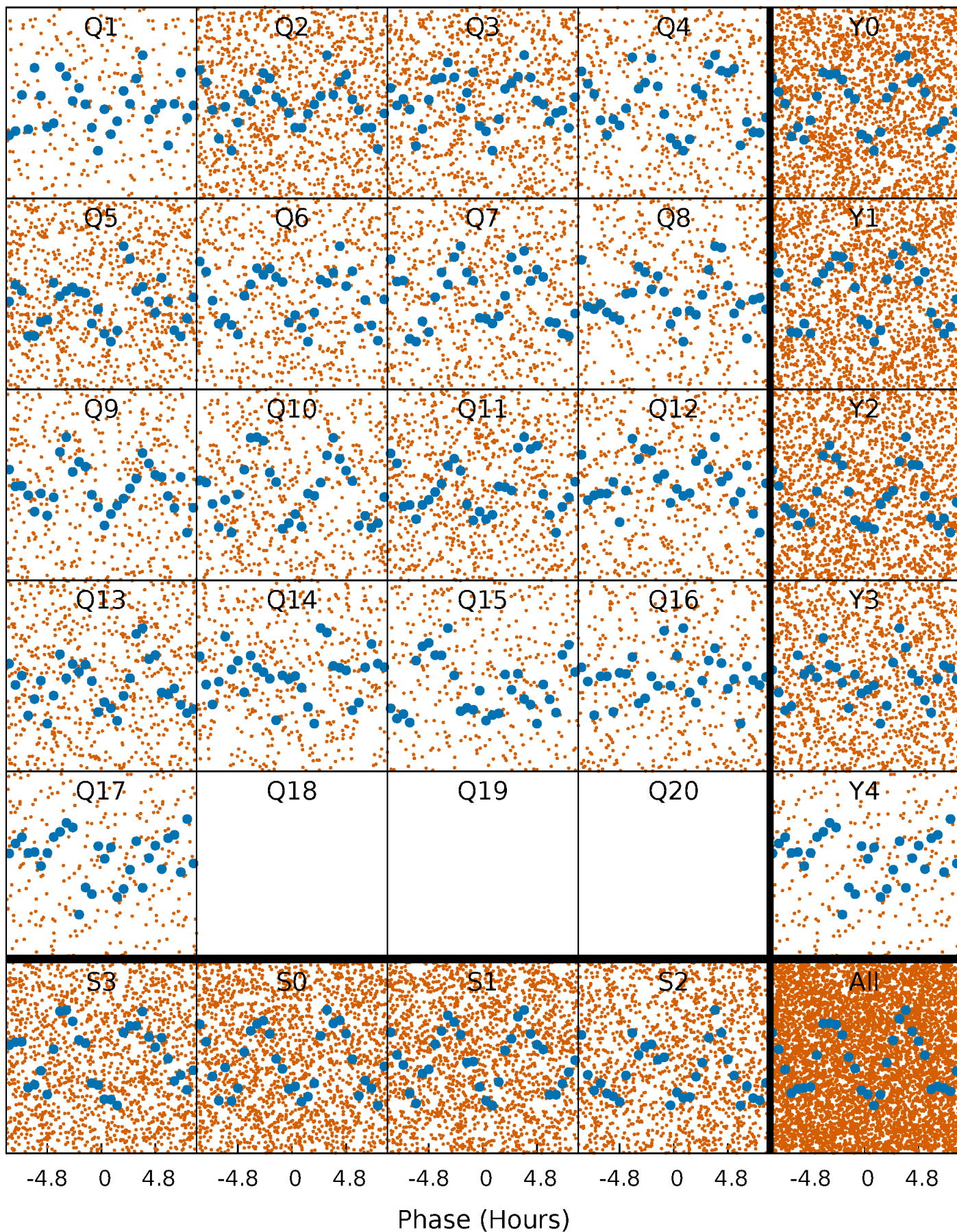


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



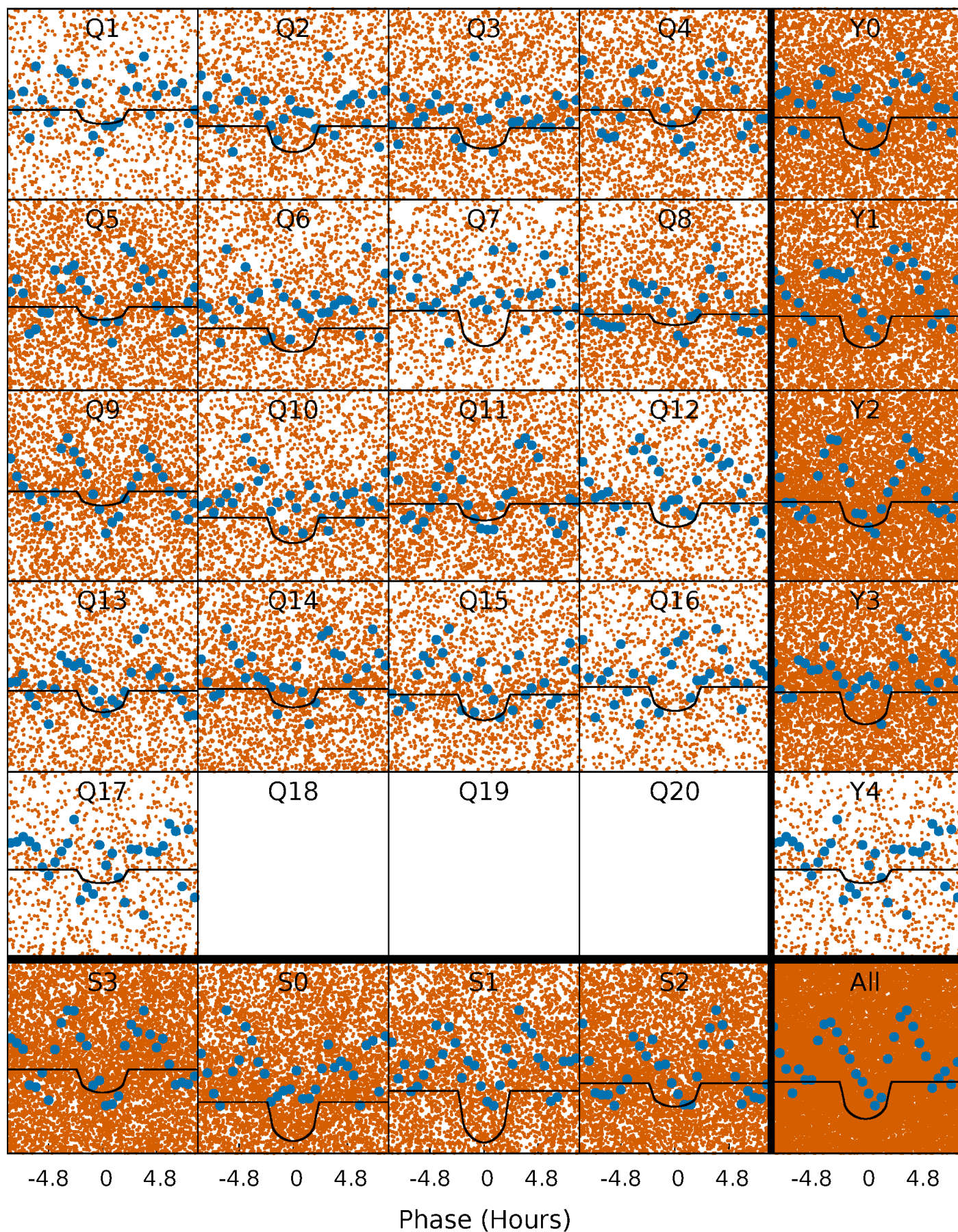
PDC Quarter-Phased Transit Curves

TCE 009590249-01 P= 0.528438 Days $T_0=131.607037$ (BKJD)



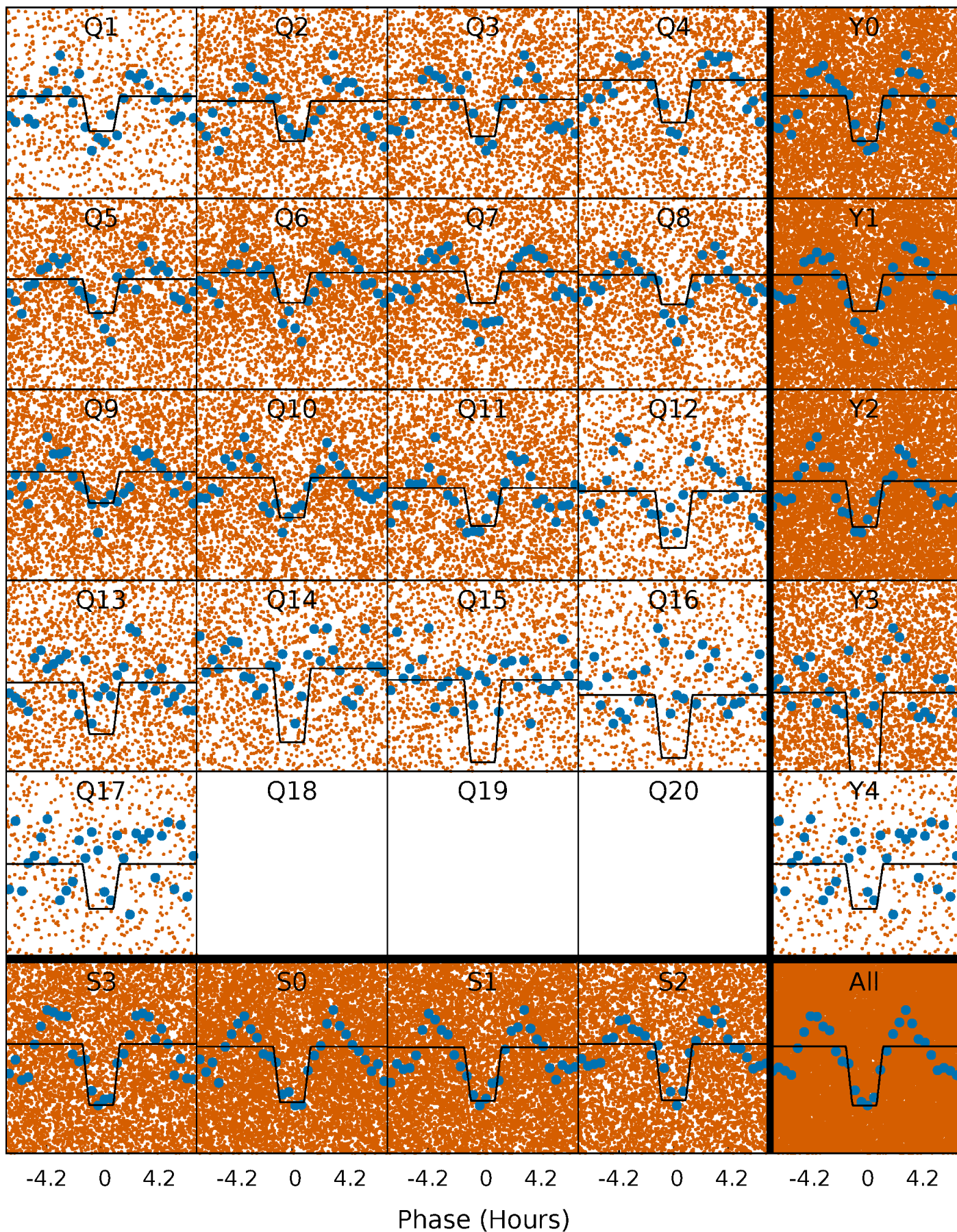
DV Quarter-Phased Transit Curves

TCE 009590249-01 P= 0.528438 Days $T_0=131.607037$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

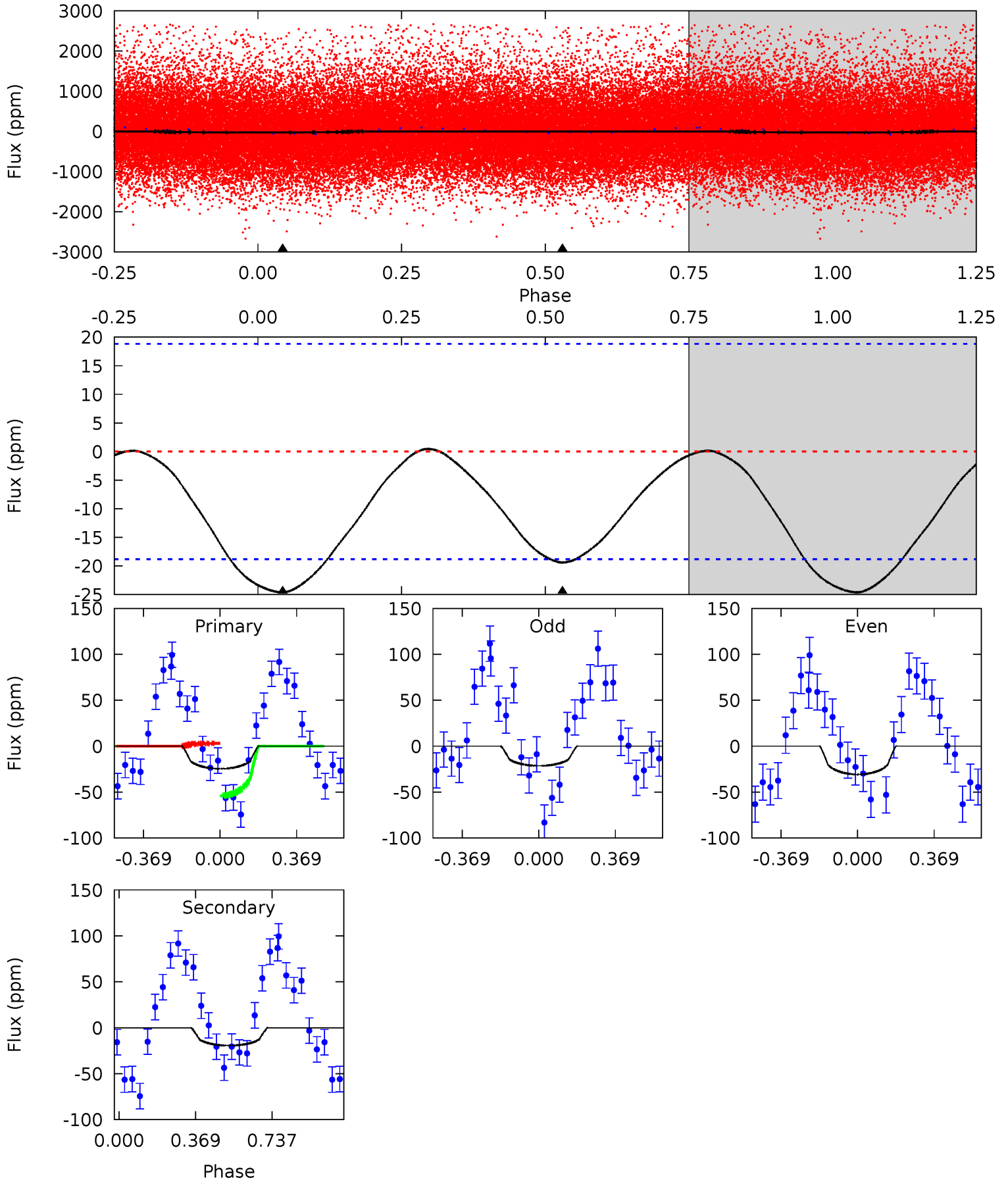
TCE 009590249-01 P= 0.528459 Days $T_0=131.613155$ (BKJD)



DV Model-Shift Uniqueness Test

009590249-01, P = 0.528438 Days, E = 131.078599 Days

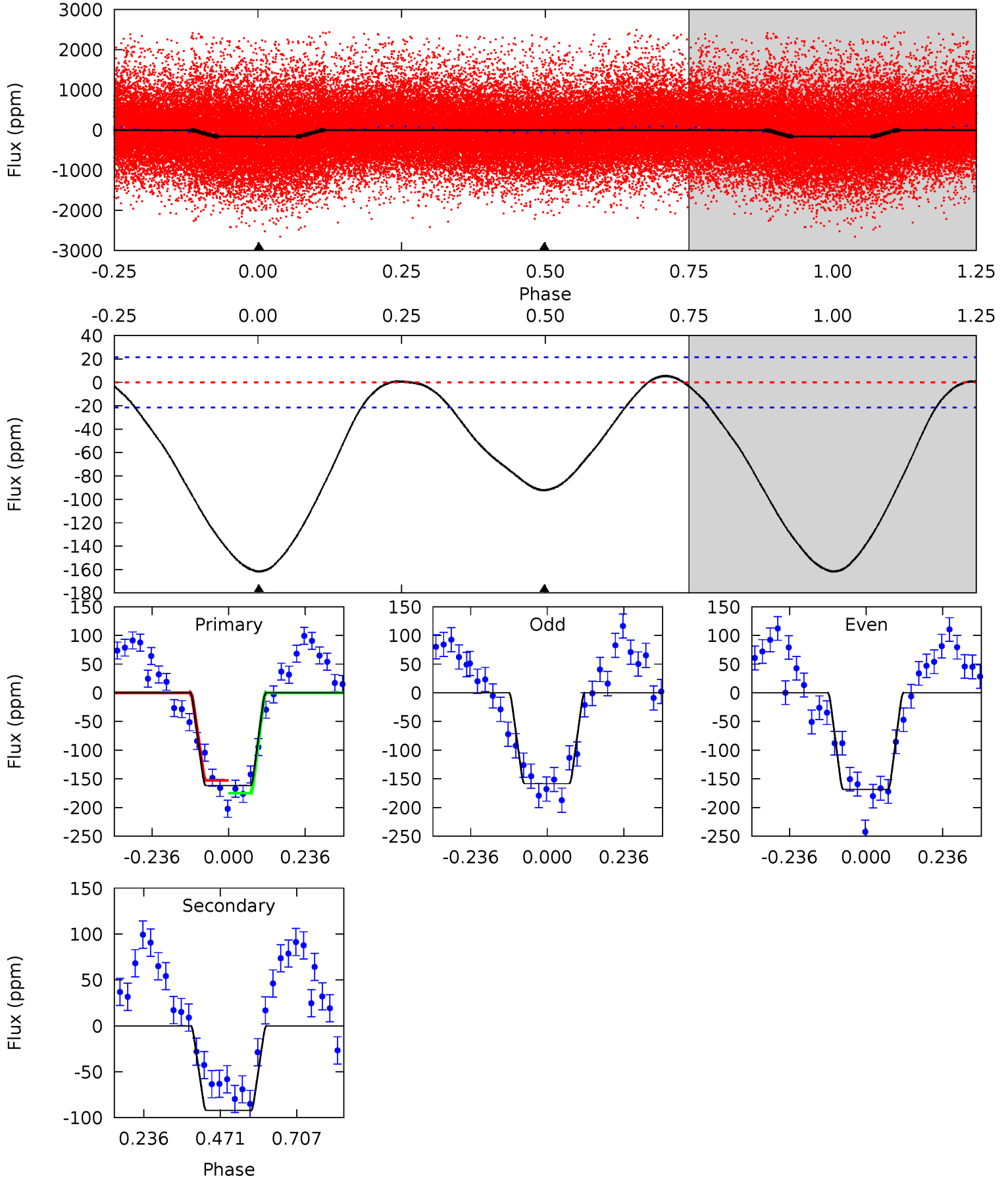
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.60	4.42	0	0	4.28	0.90	0.08	5.60	5.60	4.42	4.42	1.08	0.04	0.02	5.98



Alt Model-Shift Uniqueness Test

009590249-01, P = 0.528459 Days, E = 131.084696 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.0	18.8	0	0	4.38	1.19	1.01	33.0	33.0	18.8	18.8	1.03	0.95	0.03	2.28



Stellar Parameters For KIC 009590249

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3856^{+77}_{-77}	$4.716^{+0.036}_{-0.018}$	$-0.100^{+0.100}_{-0.100}$	$0.531^{+0.024}_{-0.034}$	$0.535^{+0.030}_{-0.030}$	$5.036^{+0.823}_{-0.425}$
	+2%/-2%	+1%/-0%	+100%/-100%	+5%/-6%	+6%/-6%	+16%/-8%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 009590249-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-19 ± 4	$0.74^{+0.69}_{-0.51}$	1692^{+42}_{-40}	2725^{+1243}_{-583}	$2.064^{+19.287}_{-1.537}$
Alt.	-92 ± 5	$0.93^{+0.70}_{-0.57}$	1693^{+40}_{-39}	3227^{+1333}_{-482}	$6.187^{+35.885}_{-4.113}$

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 $A_{\text{obs}} \gg 1.0$

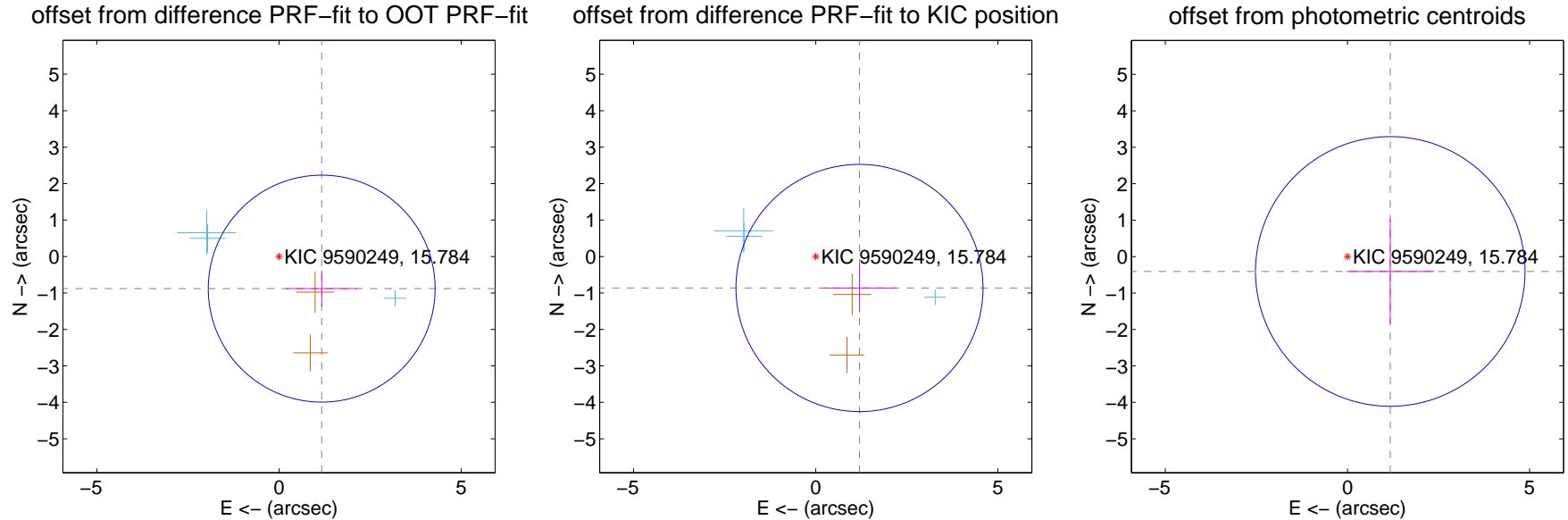
DV Centroid Data

Supplemental centroid analysis for 009590249-01. Kepler magnitude: 15.78. Transit SNR 8.50

There are 3 quarters with good PRF difference image offsets

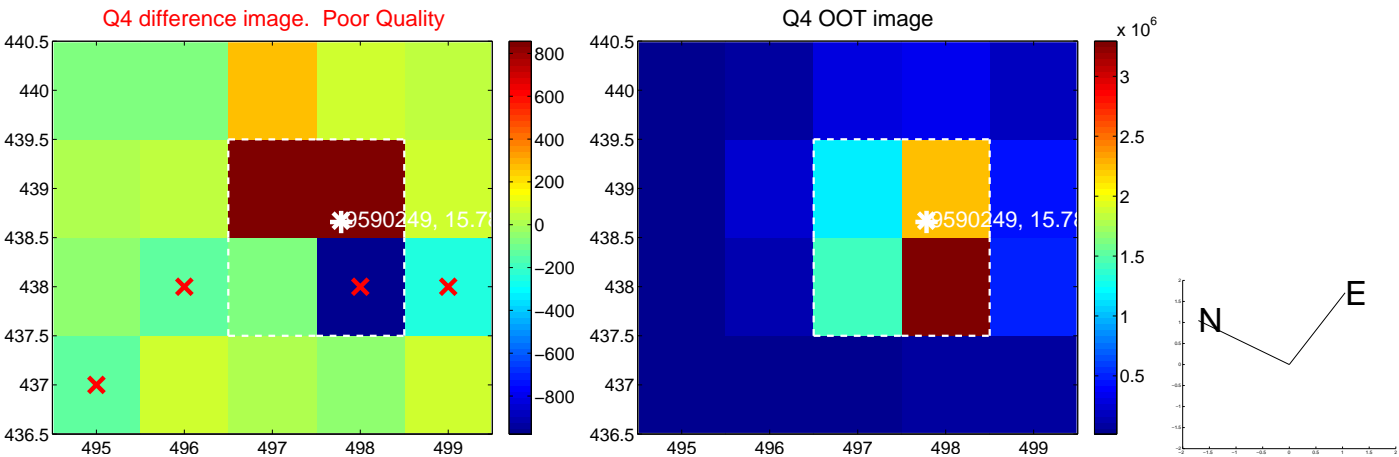
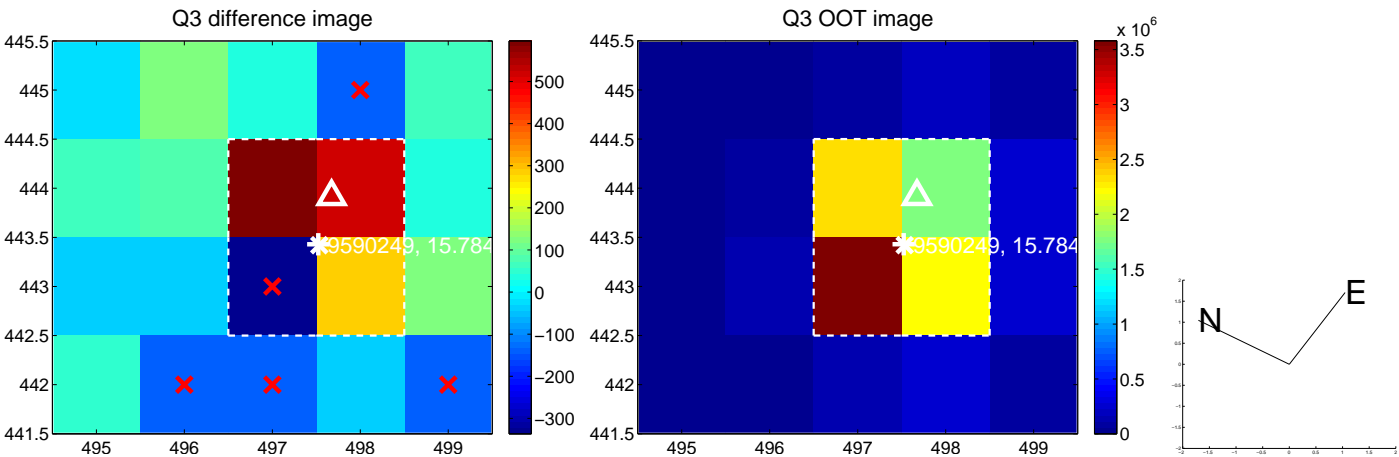
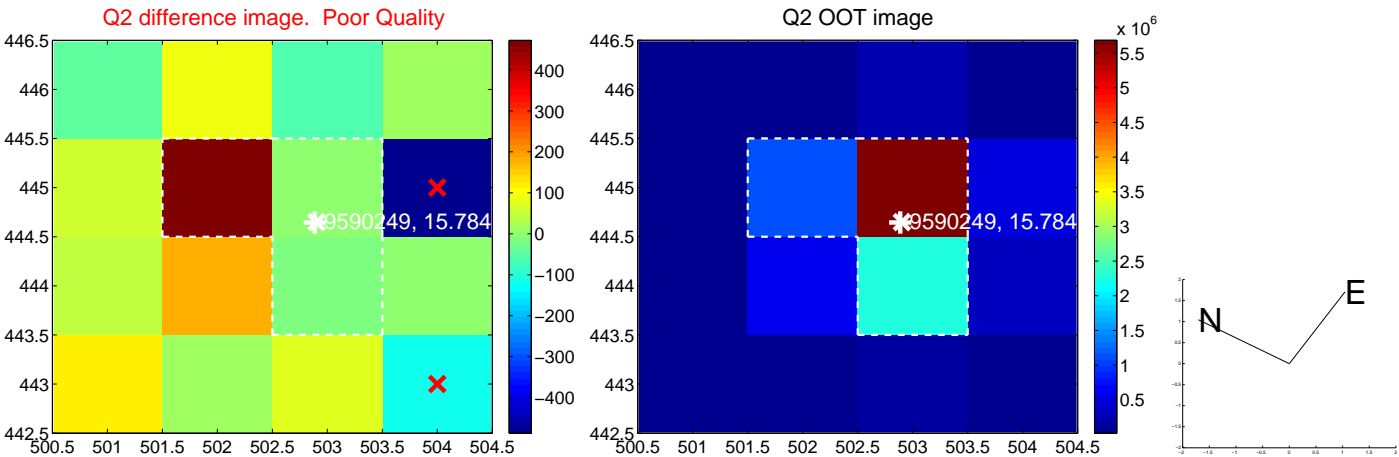
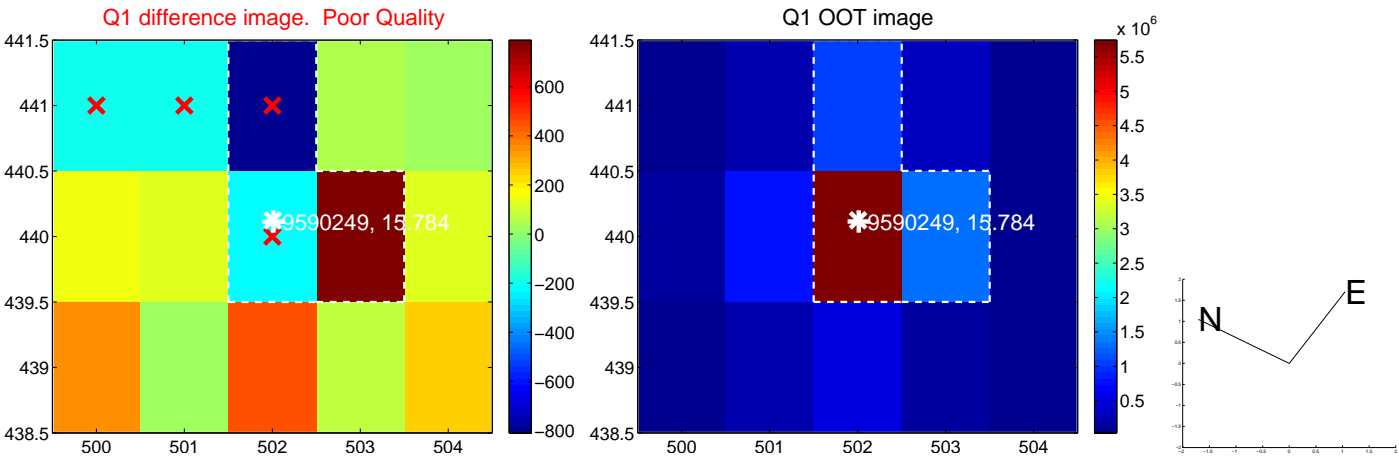
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.466 ± 1.038	1.41	-1.172 ± 0.981	-0.881 ± 0.498
PRF-fit source offset from KIC position	1.479 ± 1.130	1.31	-1.201 ± 0.979	-0.863 ± 0.663
photometric centroid source offset	1.24 ± 1.23	1.01	-1.17 ± 1.21	-0.41 ± 1.44

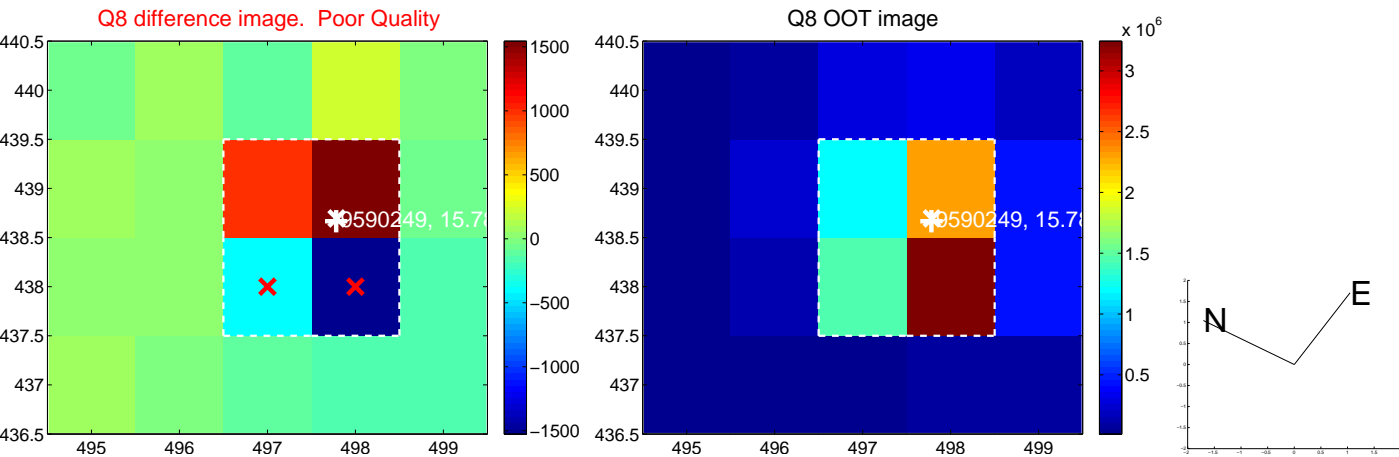
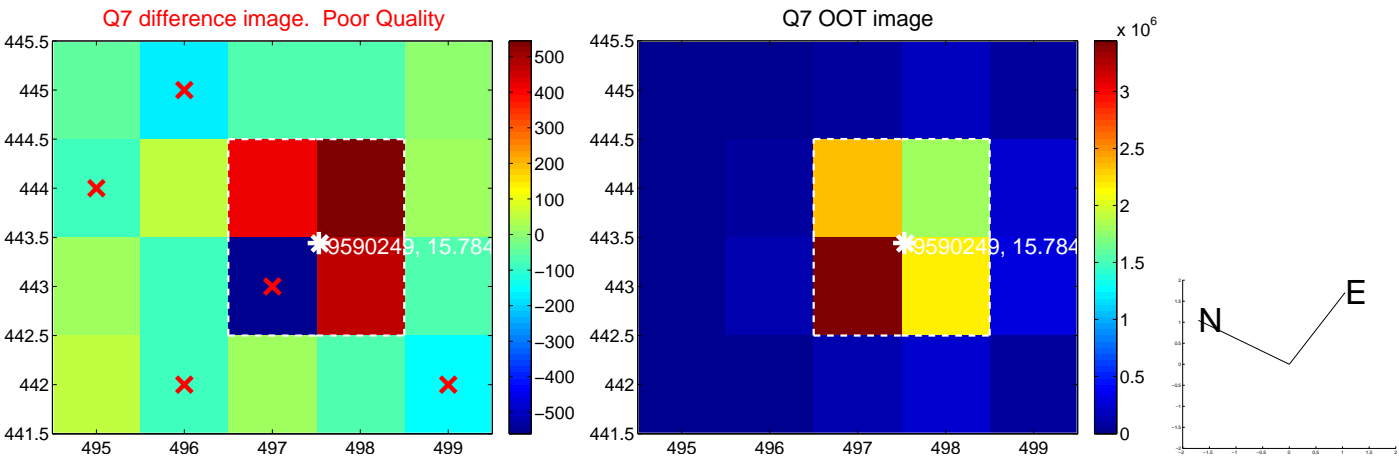
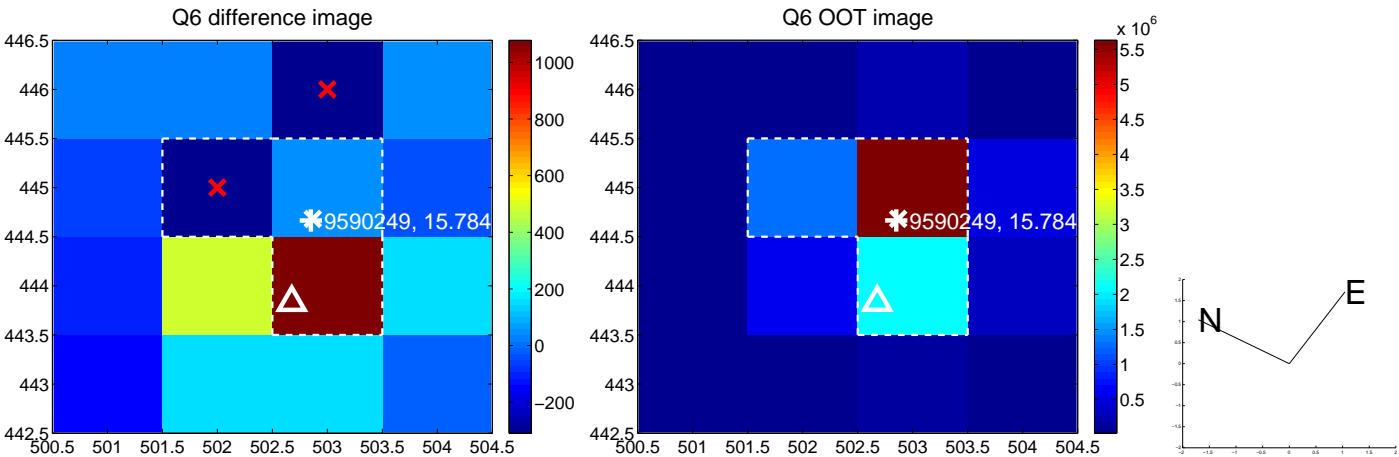
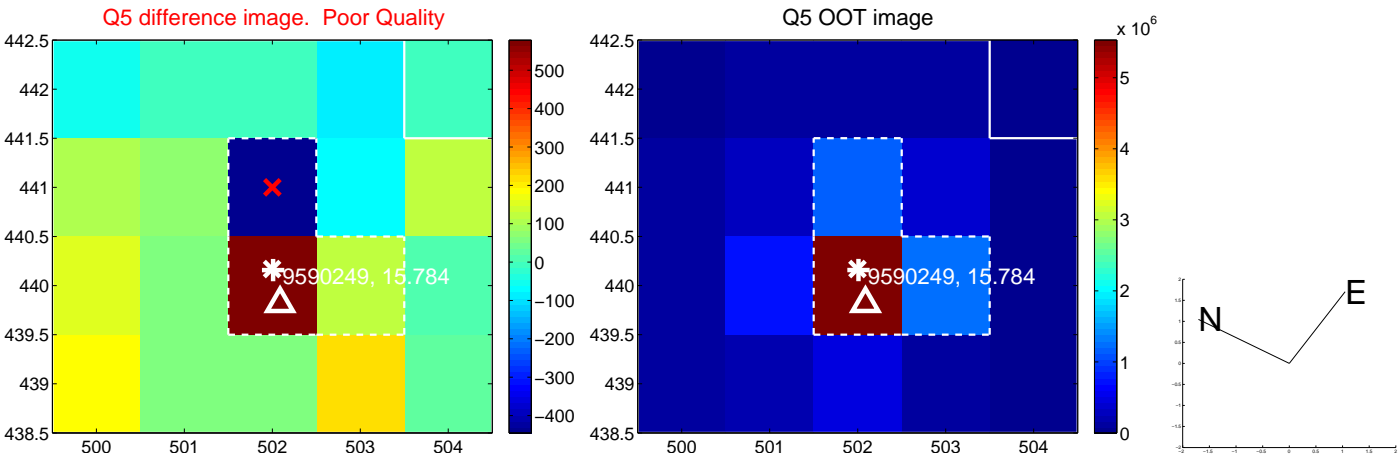


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

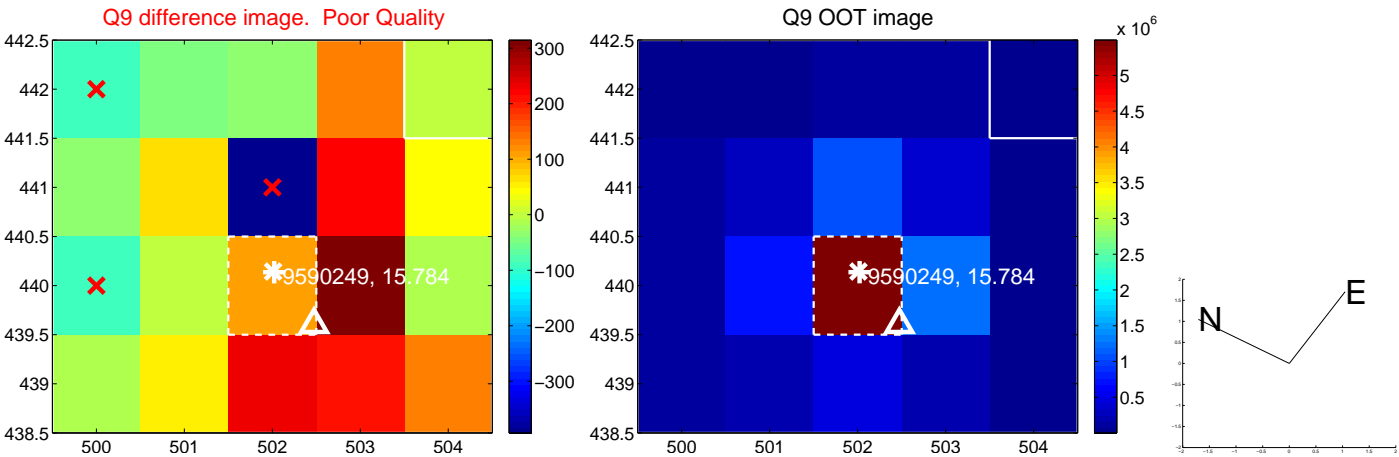
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



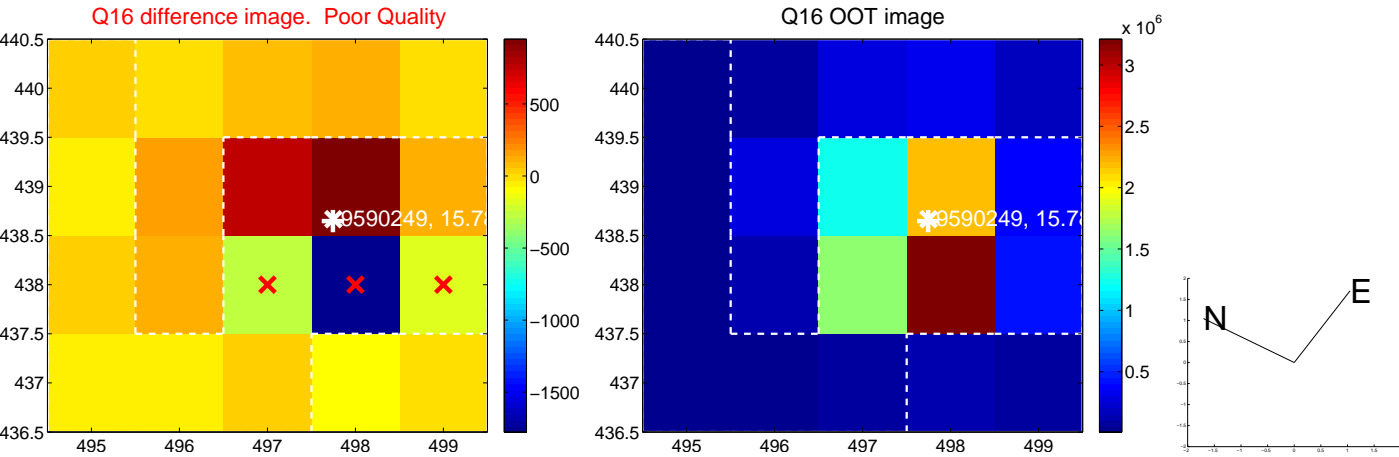
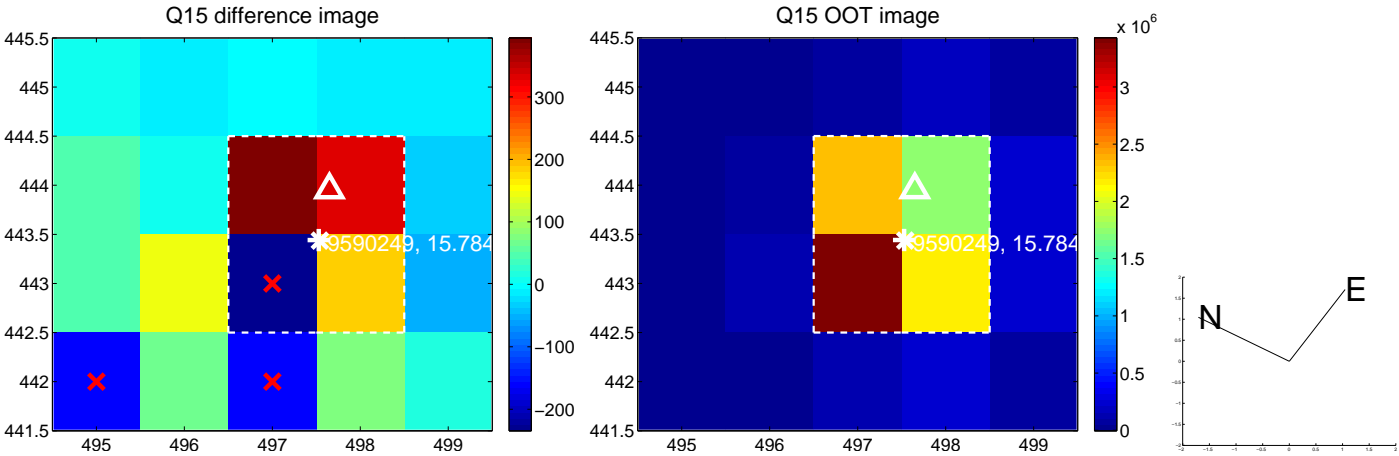
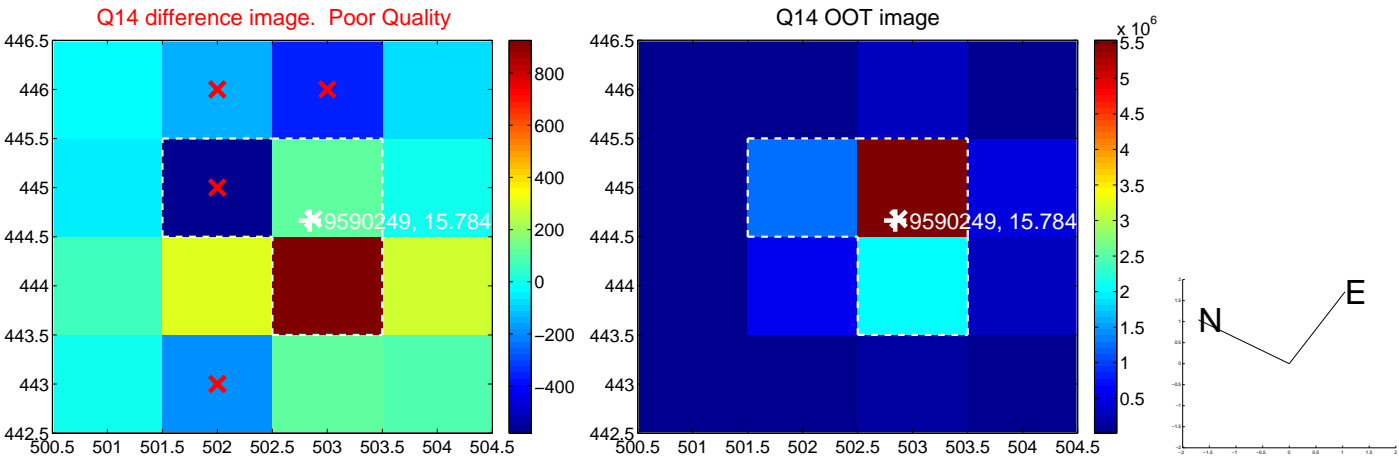
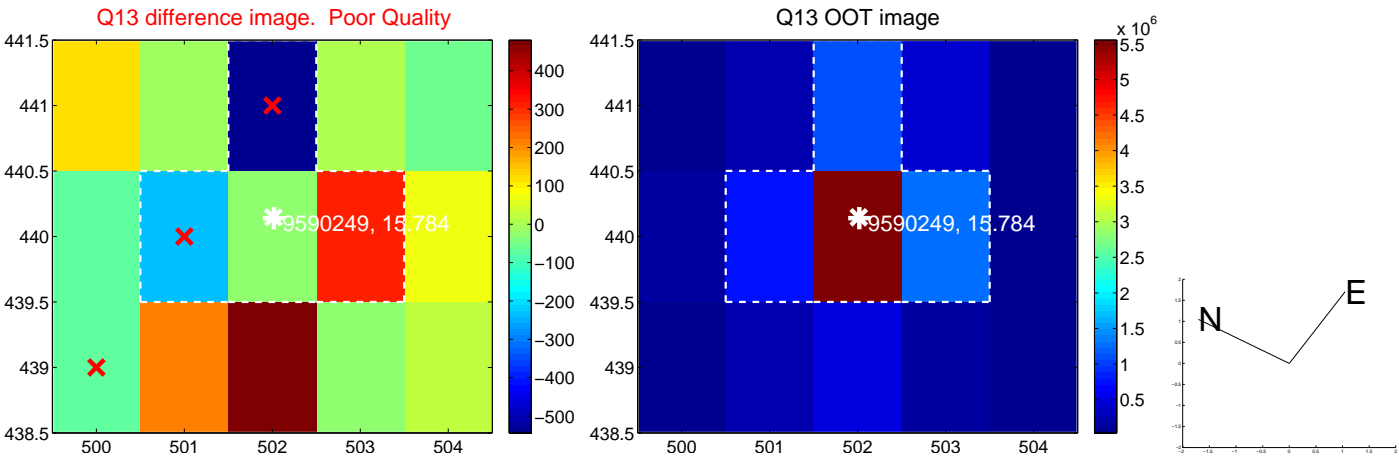
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



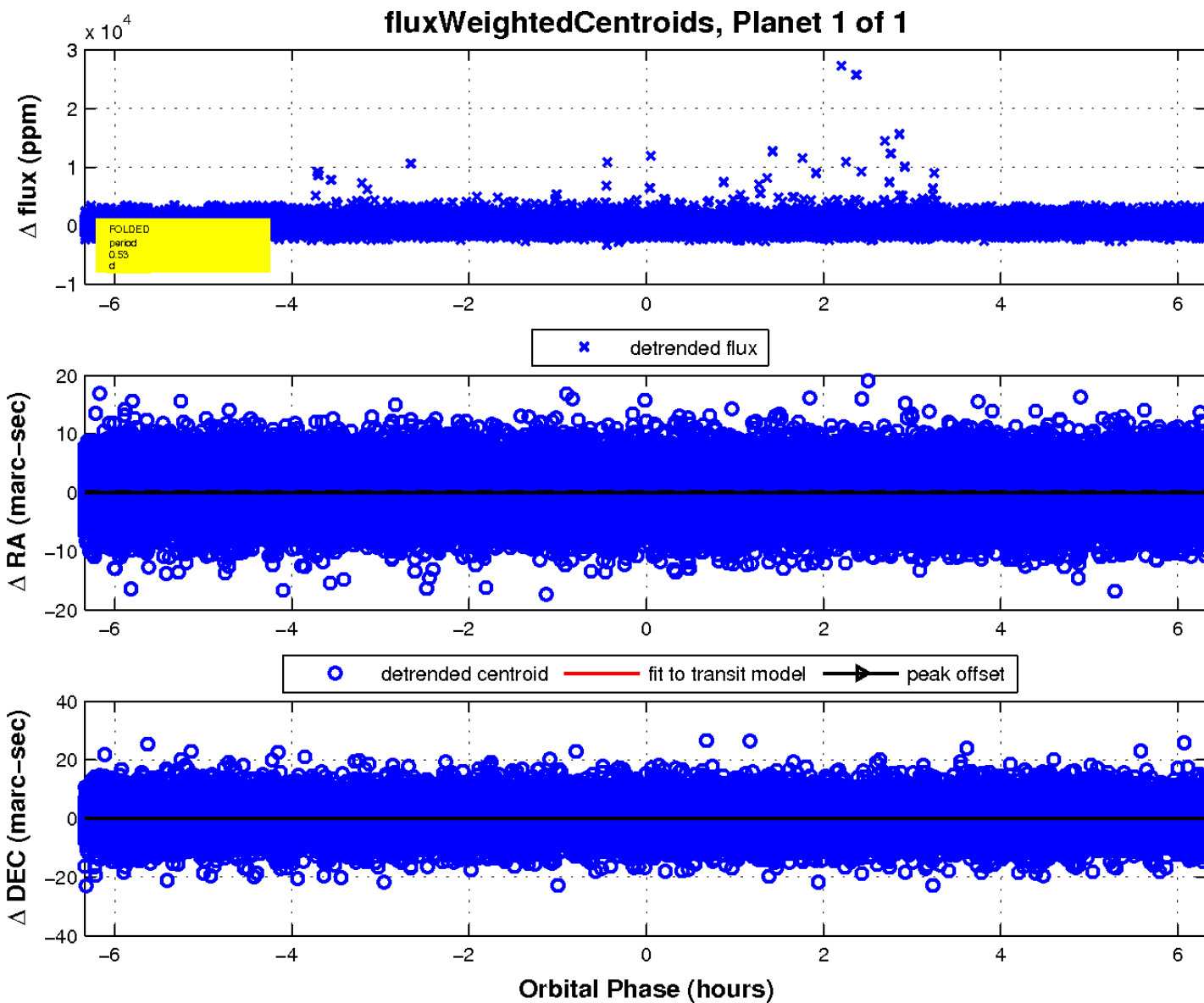
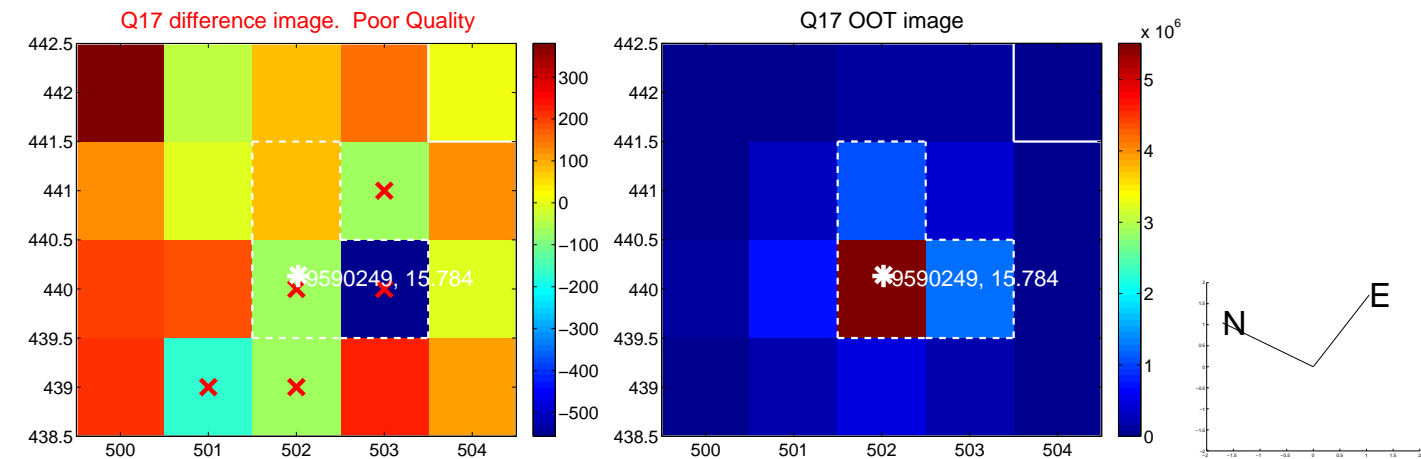
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

