

KIC 007731025

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})
007731025-01	OBS	No	13.755989	135.746724	37.0	48.466	7.4	10.8	1.42	6791	0.98	253.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007731025-01	OBS	FP	0.00	1	0	1	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_UNRESOLVED_OFFSET

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

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

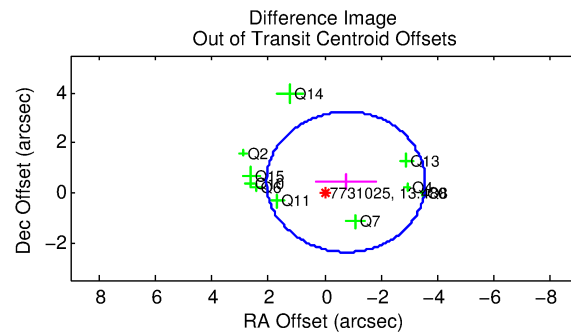
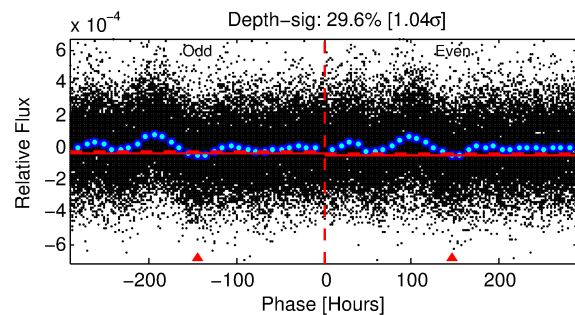
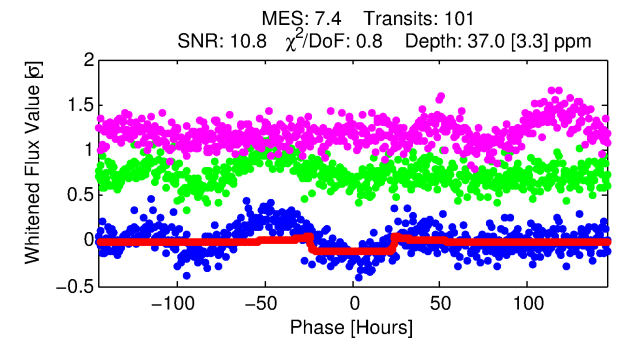
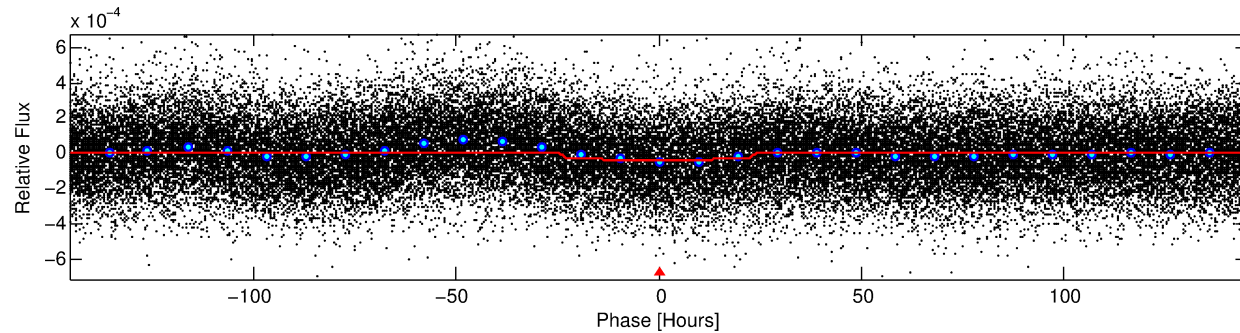
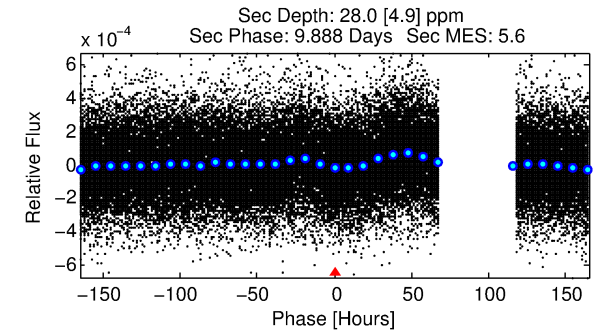
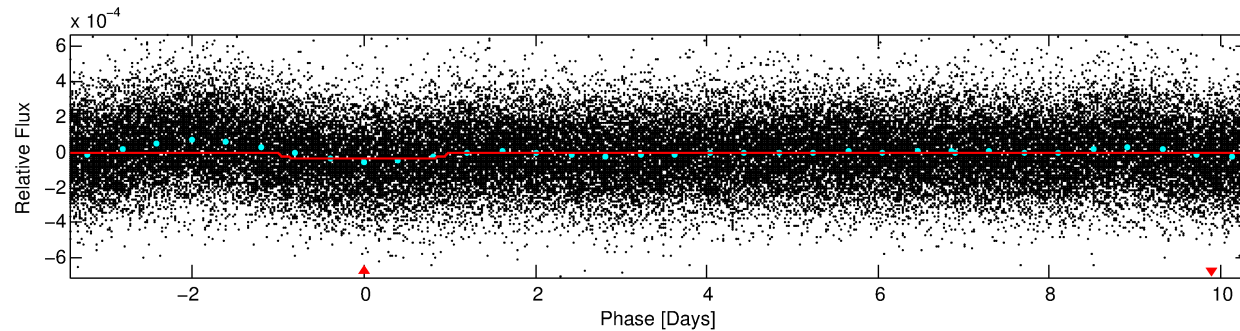
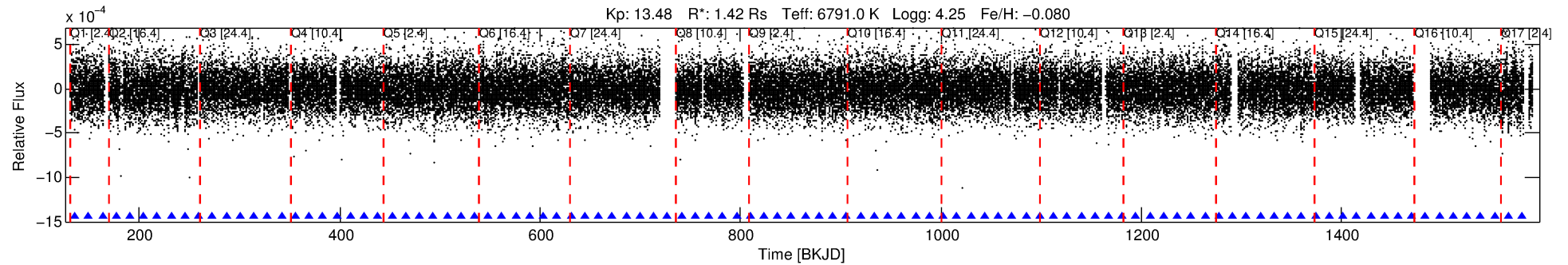
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007731025-01

No Significant Match Found

DV One-Page Summary

KIC: 7731025 Candidate: 1 of 1 Period: 13.756 d



DV Fit Results:

Period = 13.75599 [0.00058] d
Epoch = 135.7467 [0.0340] BKJD
Rp/R* = 0.0063 [0.0005]
a/R* = 1.46 [0.31]
b = 0.86 [0.12]
Seff = 253.97 [100.16]
Teq = 1018 [100] K
Rp = 0.98 [0.32] Re
a = 0.1233 [0.0321] AU
Ag = 244.03 [106.84] [2.27σ]
Teffp = 6220 [432] K [11.73σ]

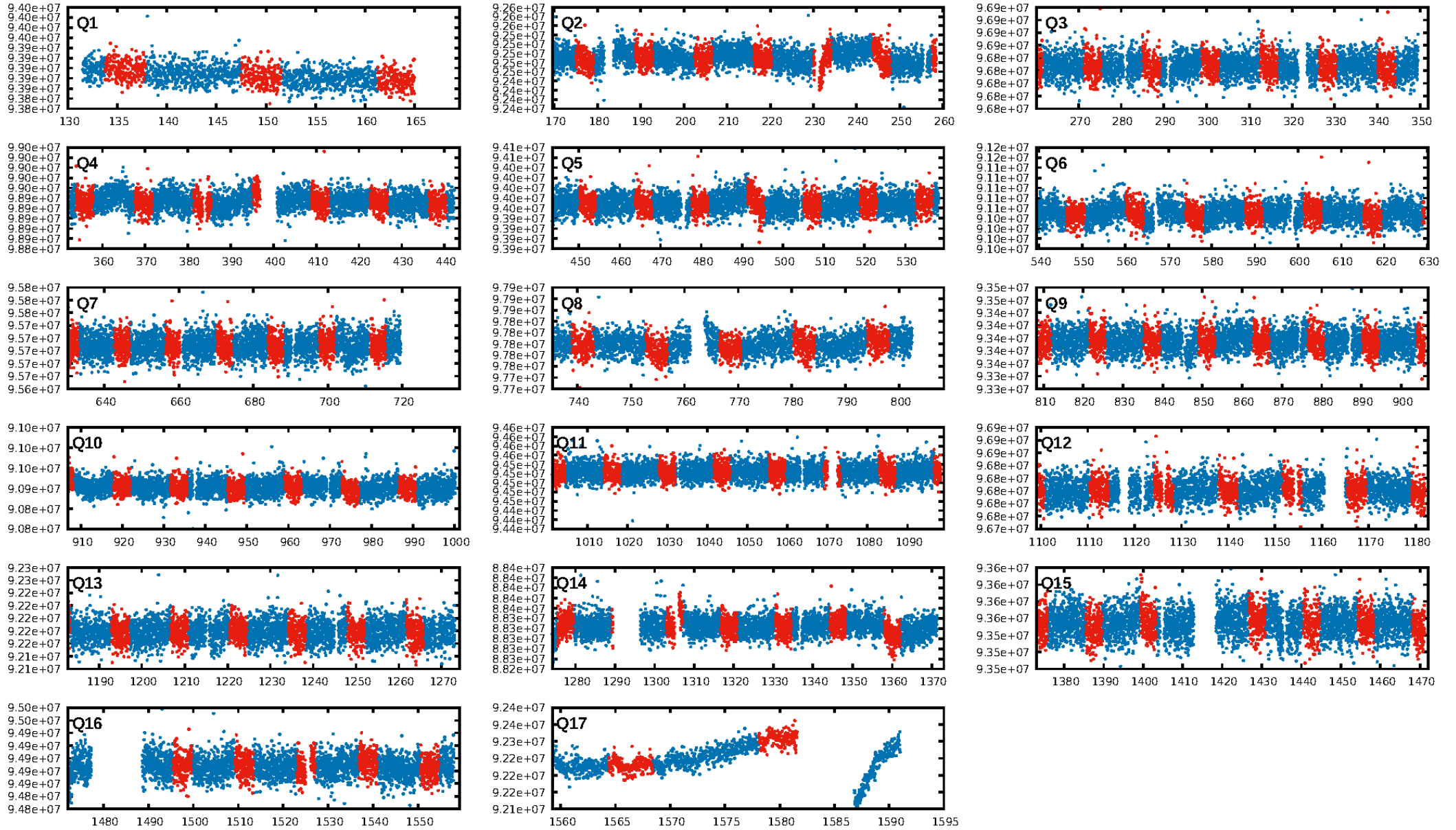
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.38e-13
RollingBand-fgt: 1.00 [96/96]
GhostDiagnostic-chr: 1.118
Centroid-sig: 5.2%
Centroid-so: 1.189 arcsec [1.26σ]
OotOffset-rm: 0.864 arcsec [0.92σ]
KicOffset-rm: 0.961 arcsec [1.09σ]
OotOffset-st: 4/3/2/1 [10]
KicOffset-st: 4/3/2/1 [10]
DiffImageQuality-fgm: 0.80 [8/10]
DiffImageOverlap-fno: 1.00 [17/17]

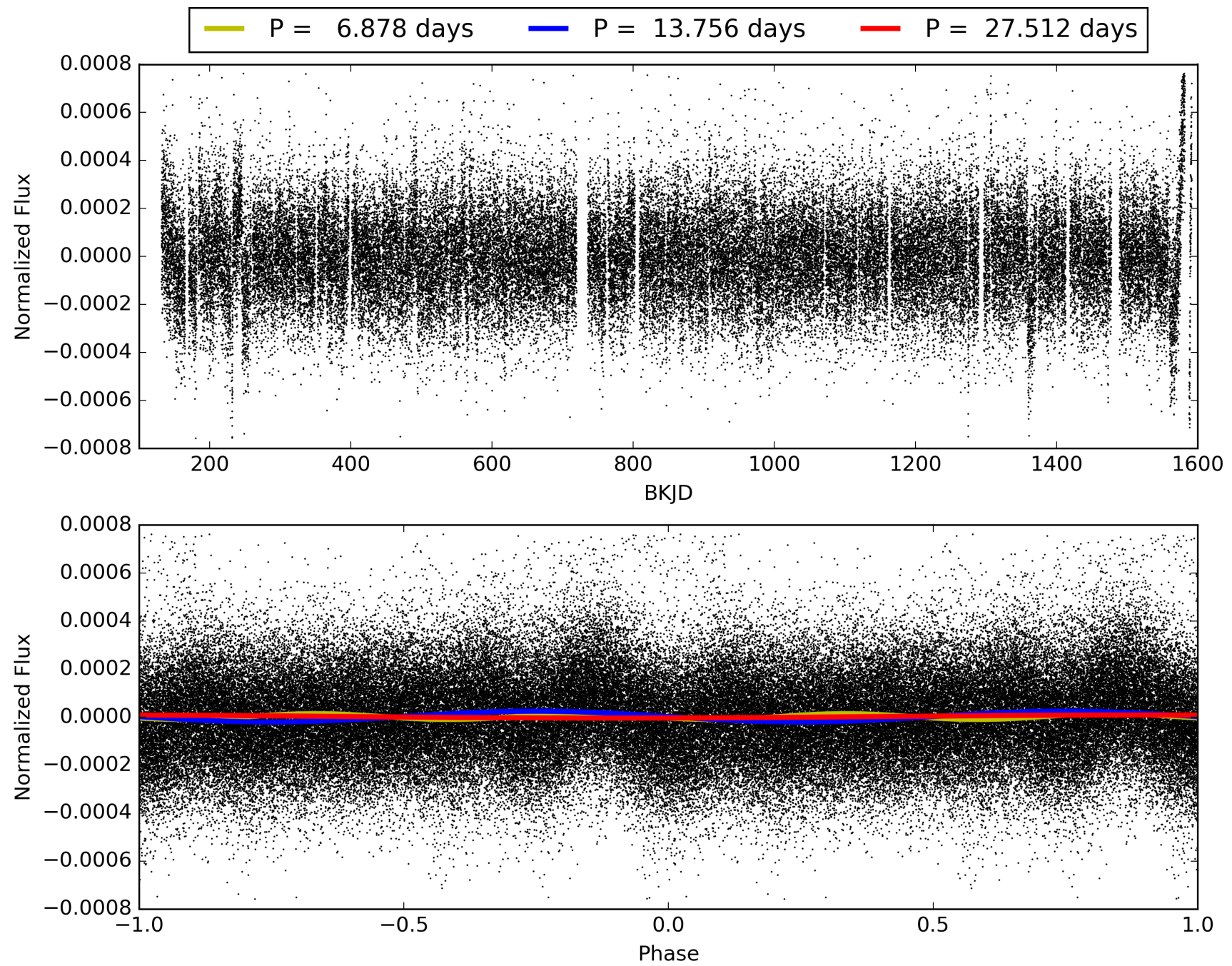
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:41:59 Z

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

TCE 007731025-01, PDC Light Curves

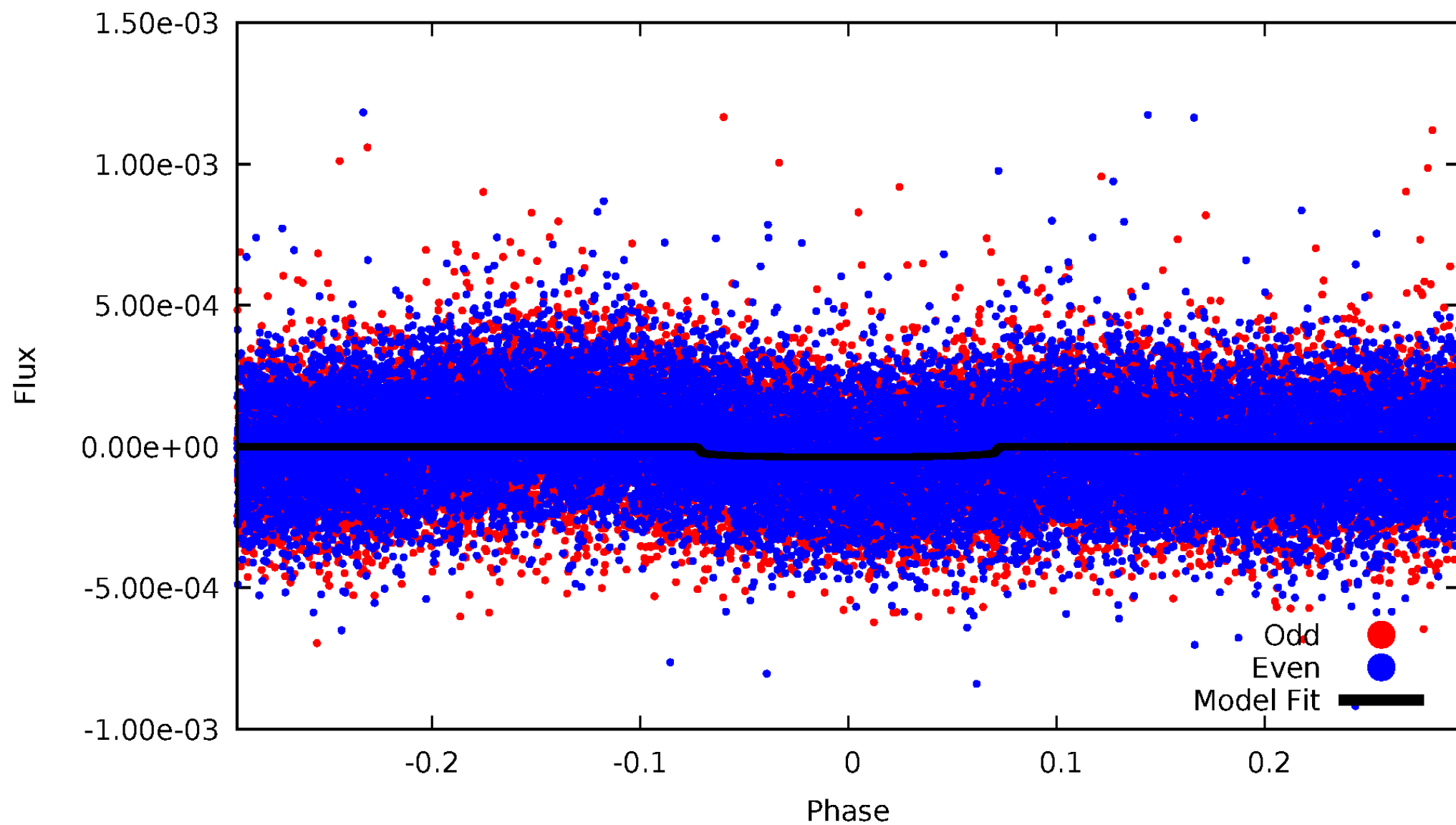


TCE 007731025-01



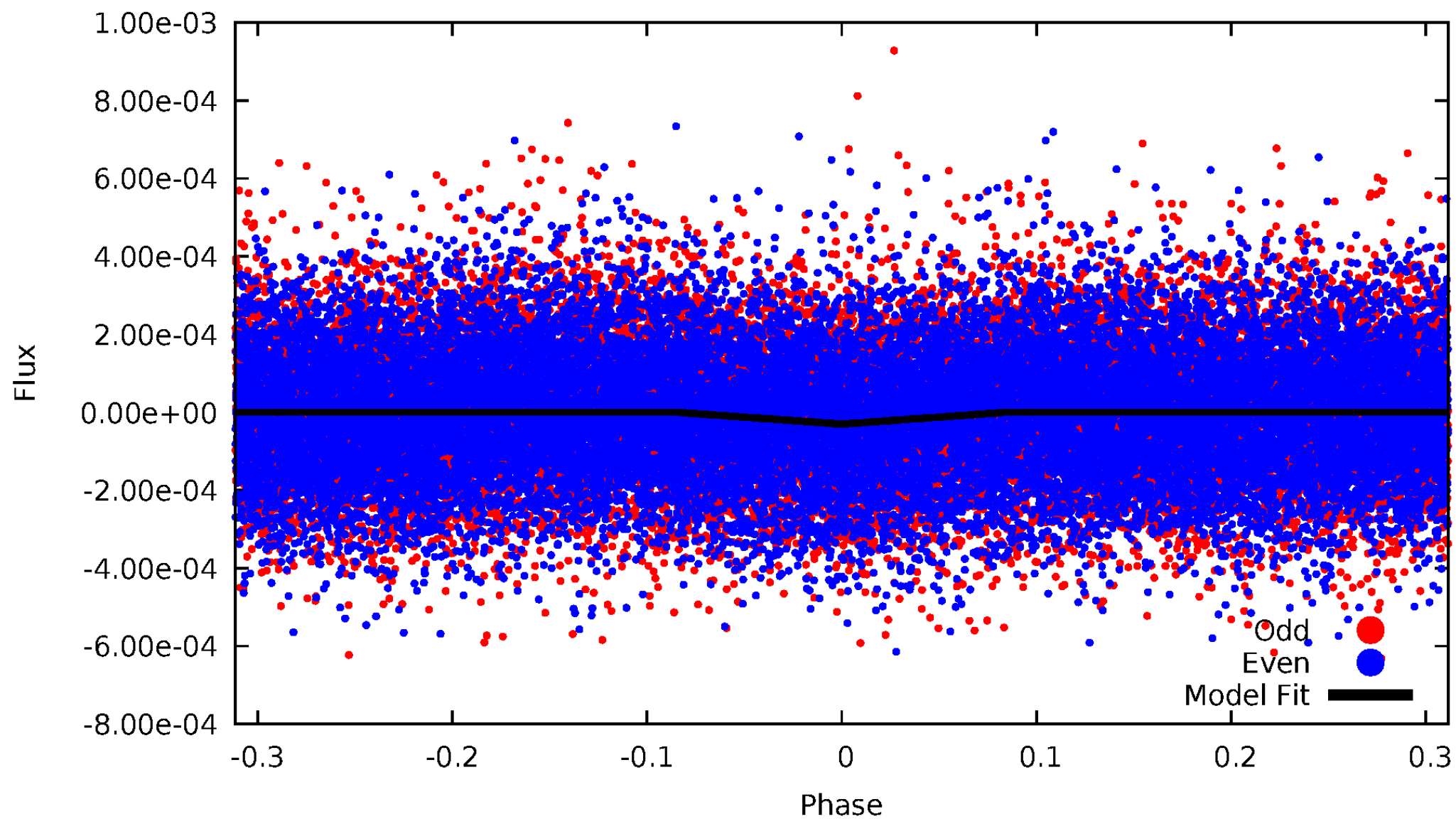
DV Odd/Even

TCE 007731025-01



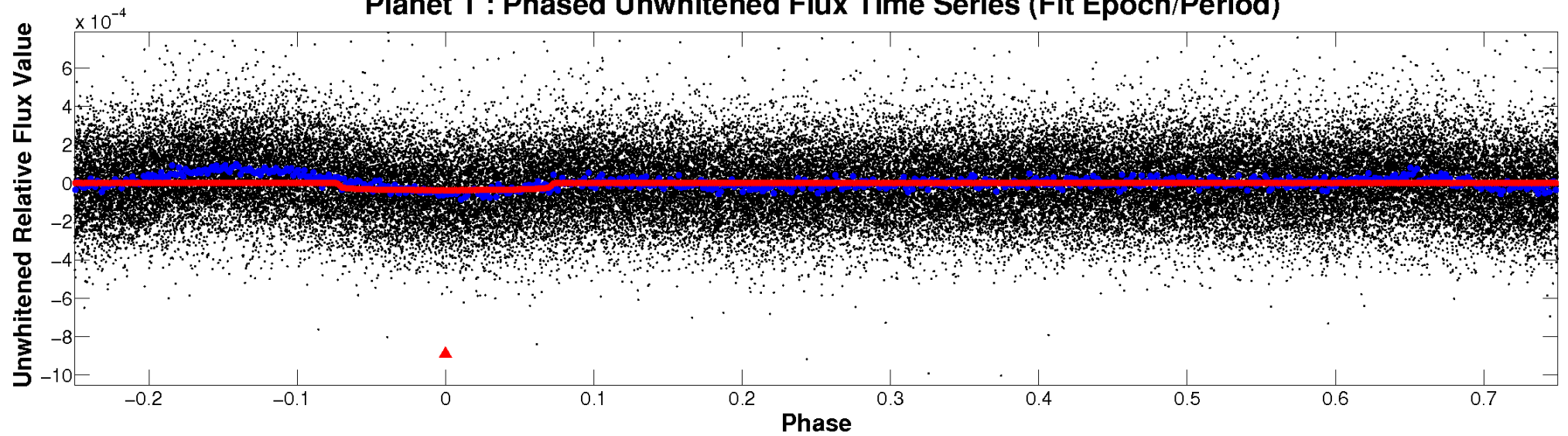
ALT Odd/Even

TCE 007731025-01

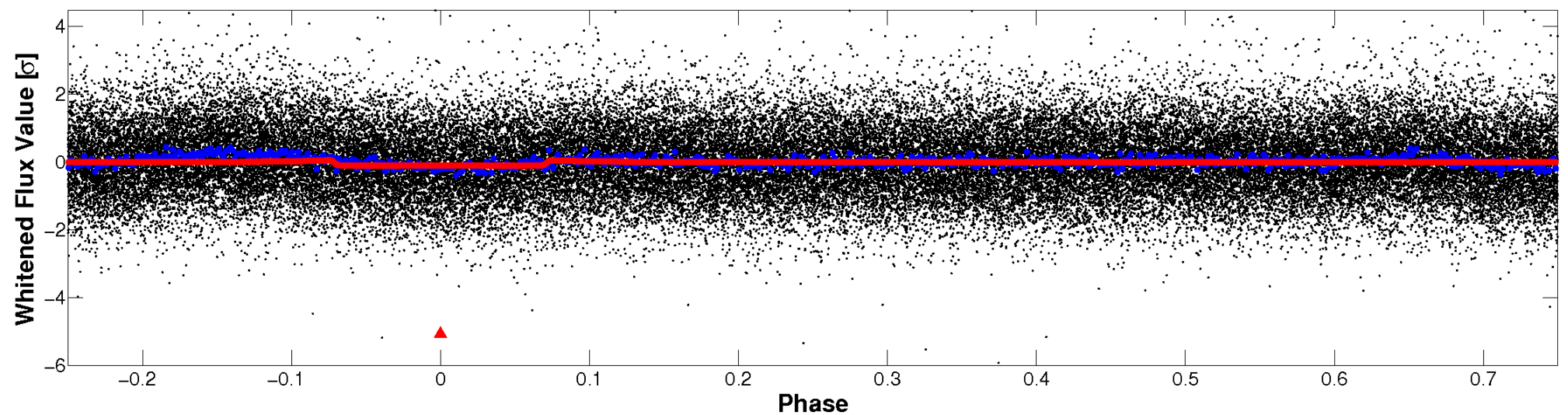


Non-Whitened Vs. Whitened Light Curve

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

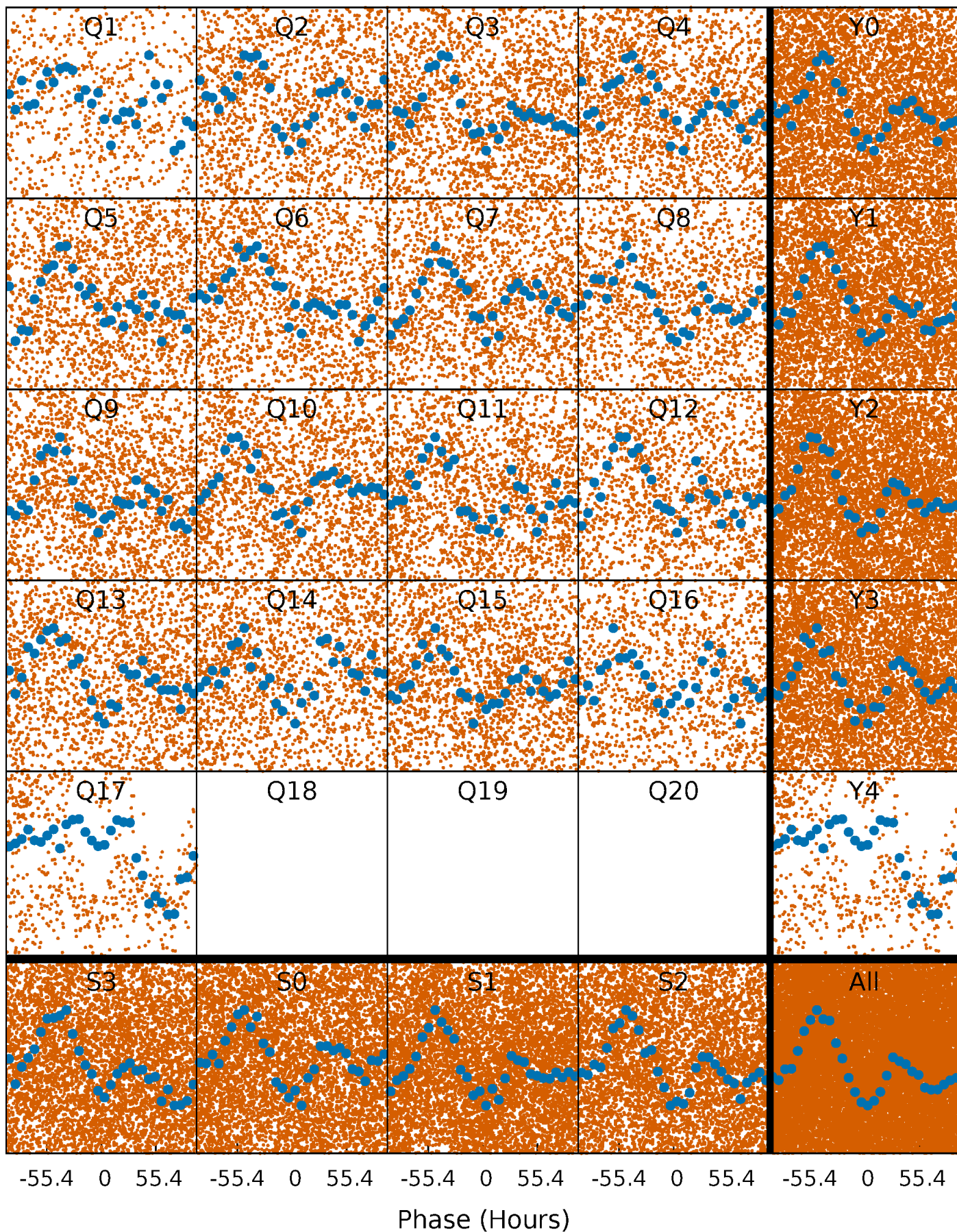


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



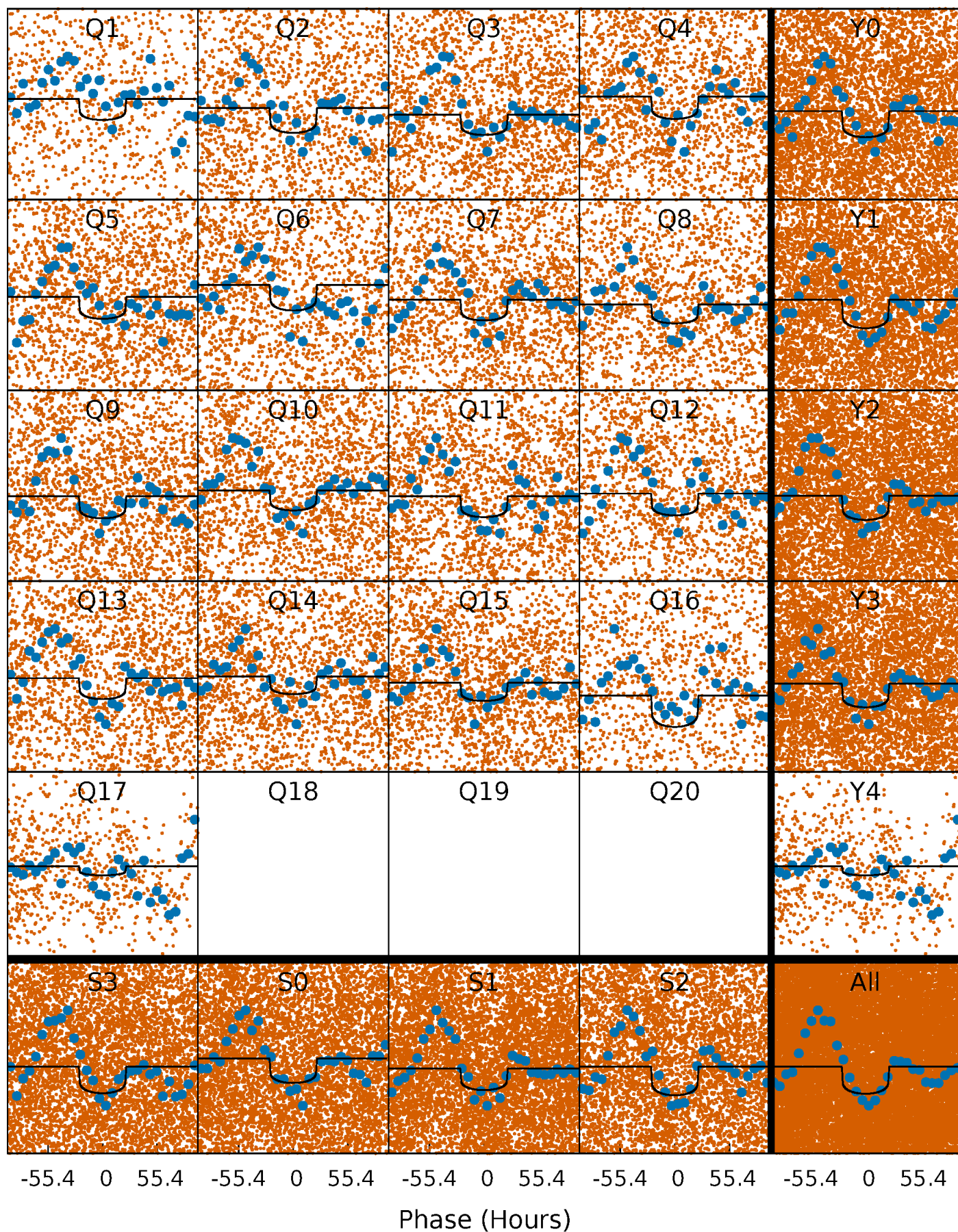
PDC Quarter-Phased Transit Curves

TCE 007731025-01 P= 13.755989 Days $T_0=135.746724$ (BKJD)



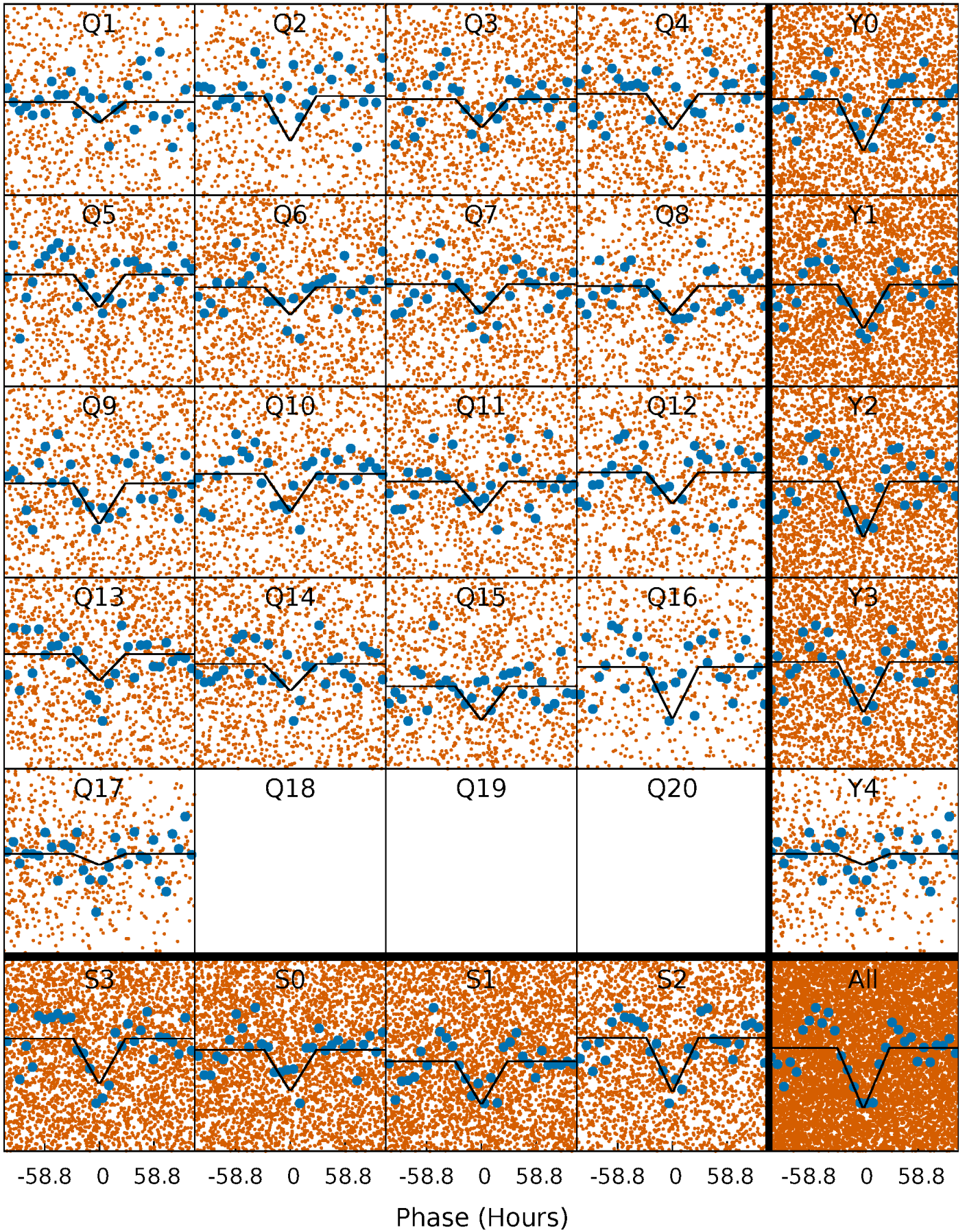
DV Quarter-Phased Transit Curves

TCE 007731025-01 P= 13.755989 Days $T_0=135.746724$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

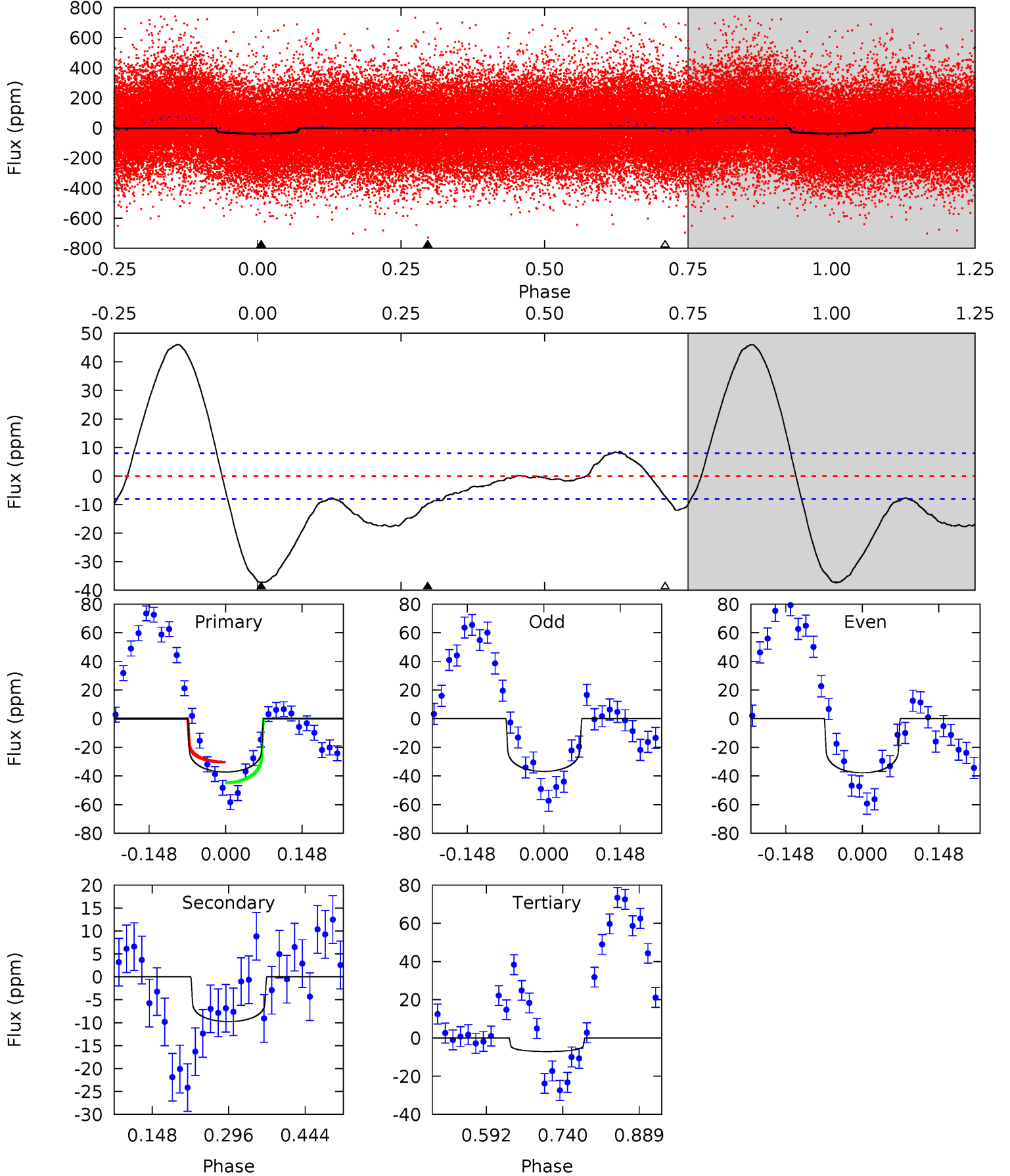
TCE 007731025-01 P= 13.757152 Days $T_0=135.697794$ (BKJD)



DV Model-Shift Uniqueness Test

007731025-01, $P = 13.755989$ Days, $E = 121.990735$ Days

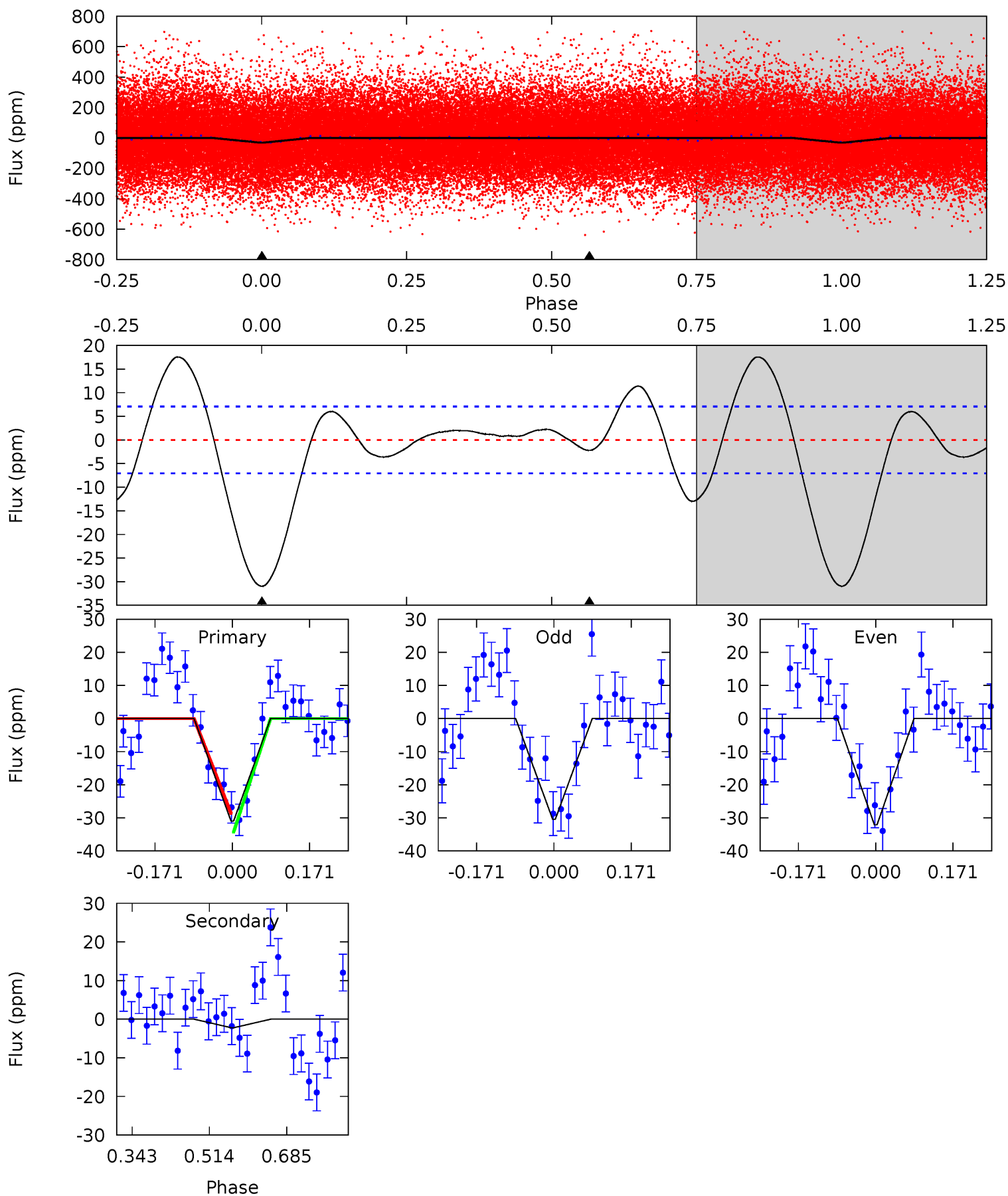
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.9	5.47	3.99	0	4.48	1.45	7.86	16.9	20.9	1.48	5.47	0.27	0.99	0.55	4.04



Alt Model-Shift Uniqueness Test

007731025-01, P = 13.757152 Days, E = 121.940642 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.5	1.39	0	0	4.45	1.37	3.33	19.5	19.5	1.39	1.39	0.53	0.96	0.36	1.78



Stellar Parameters For KIC 007731025

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6791^{+162}_{-243}	$4.252^{+0.090}_{-0.195}$	$-0.080^{+0.250}_{-0.350}$	$1.423^{+0.455}_{-0.245}$	$1.325^{+0.204}_{-0.204}$	$0.648^{+0.317}_{-0.340}$
	+2%/-4%	+2%/-5%	+312%/-438%	+32%/-17%	+15%/-15%	+49%/-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 007731025-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-10 ± 2	$1.00^{+0.17}_{-0.13}$	1437^{+107}_{-77}	4838^{+282}_{-255}	79^{+30}_{-25}
Alt.	-2 ± 2	$0.85^{+0.16}_{-0.11}$	1436^{+100}_{-76}	3889^{+447}_{-801}	23^{+23}_{-18}

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

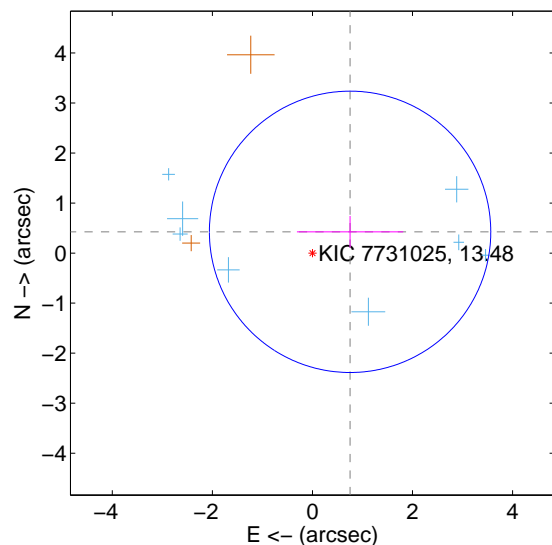
Supplemental centroid analysis for 007731025-01. Kepler magnitude: 13.48. Transit SNR 10.83

There are 8 quarters with good PRF difference image offsets

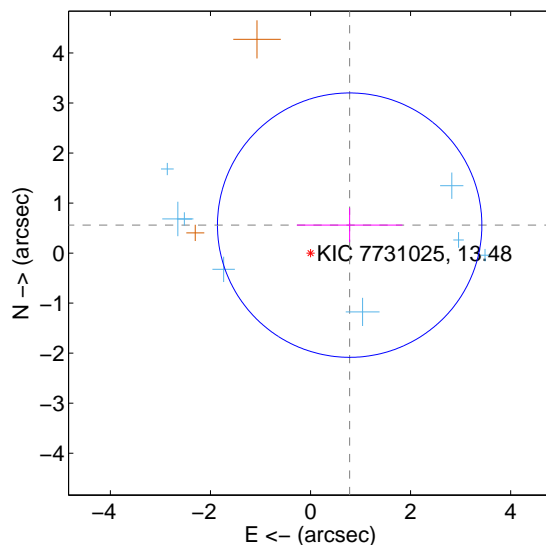
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.864 ± 0.937	0.92	-0.752 ± 1.061	0.425 ± 0.317
PRF-fit source offset from KIC position	0.961 ± 0.881	1.09	-0.782 ± 1.055	0.559 ± 0.341
photometric centroid source offset	1.19 ± 0.95	1.26	0.58 ± 0.96	-1.04 ± 0.94

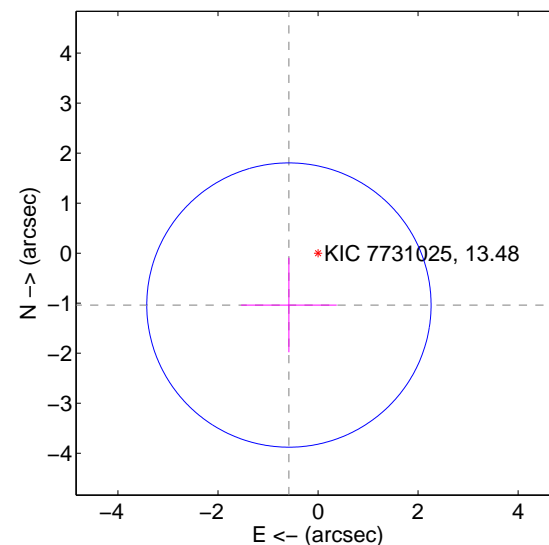
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

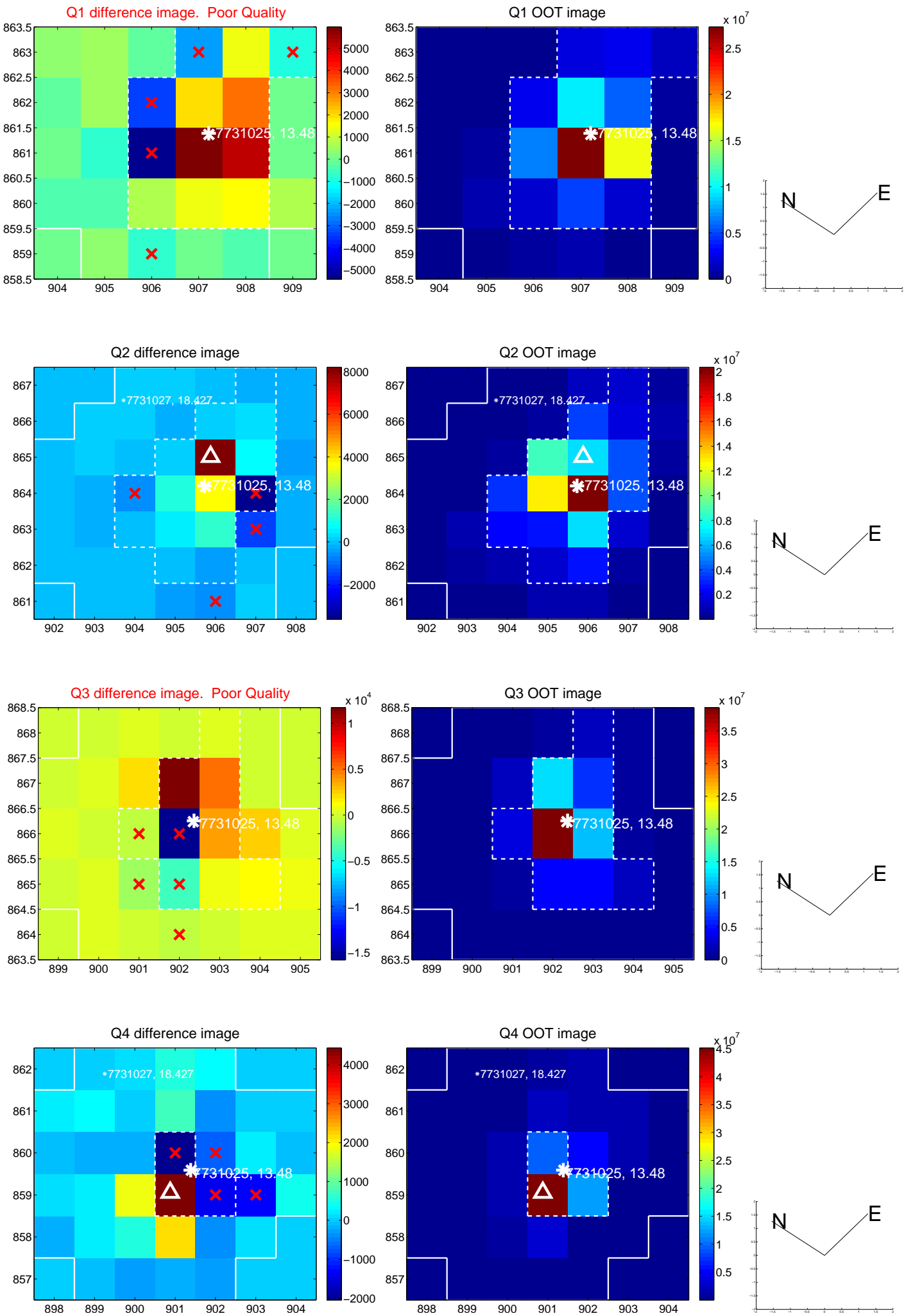


offset from photometric centroids

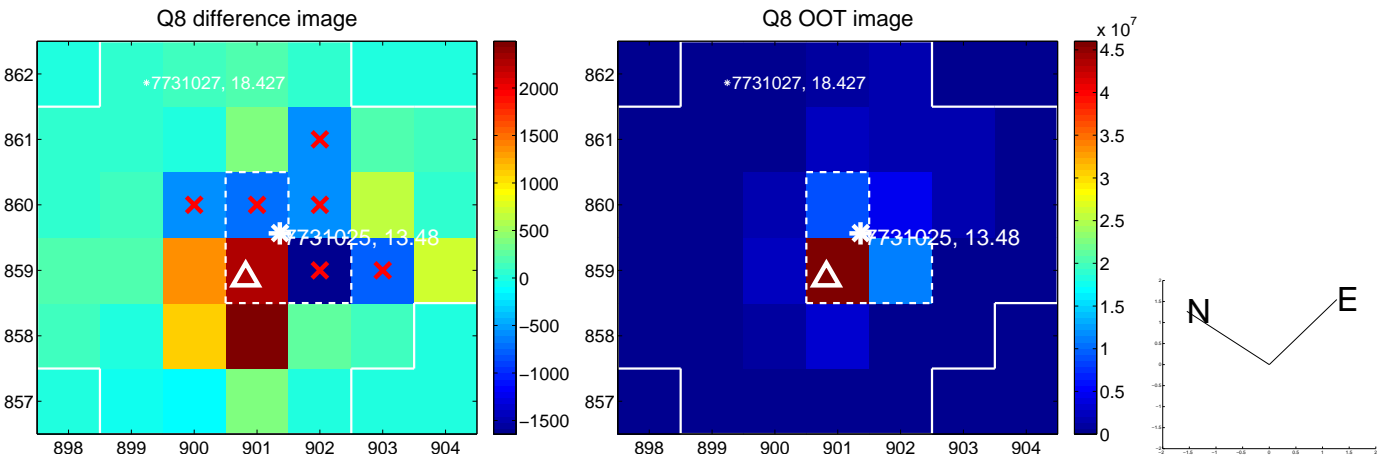
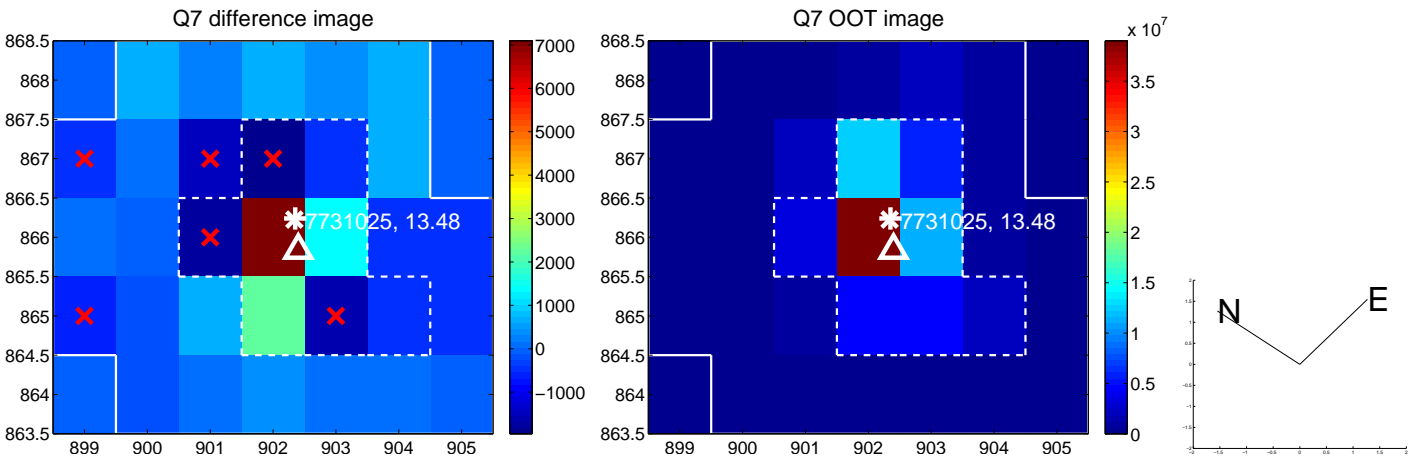
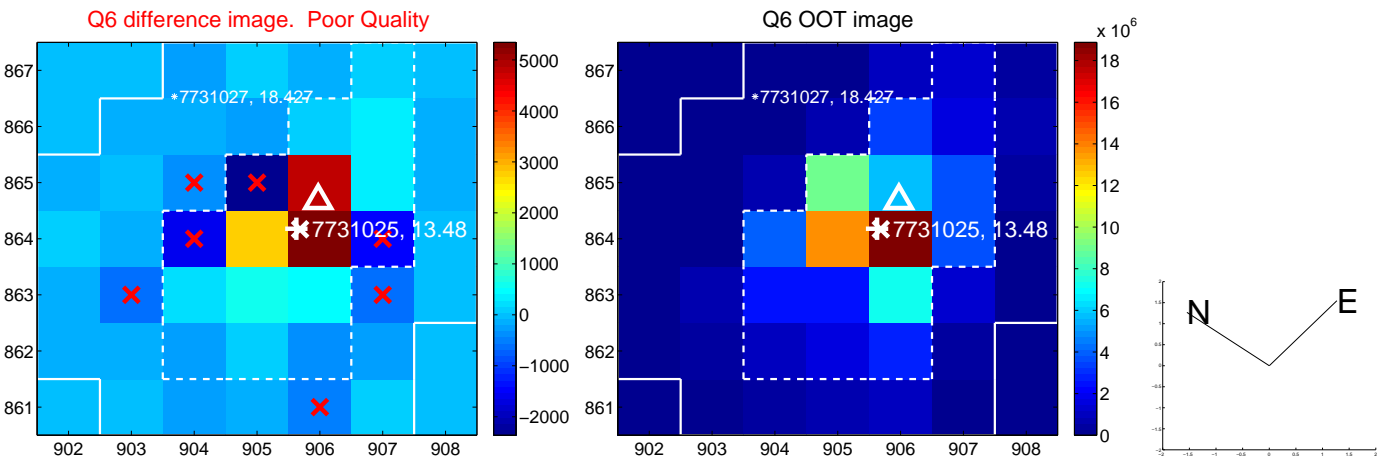
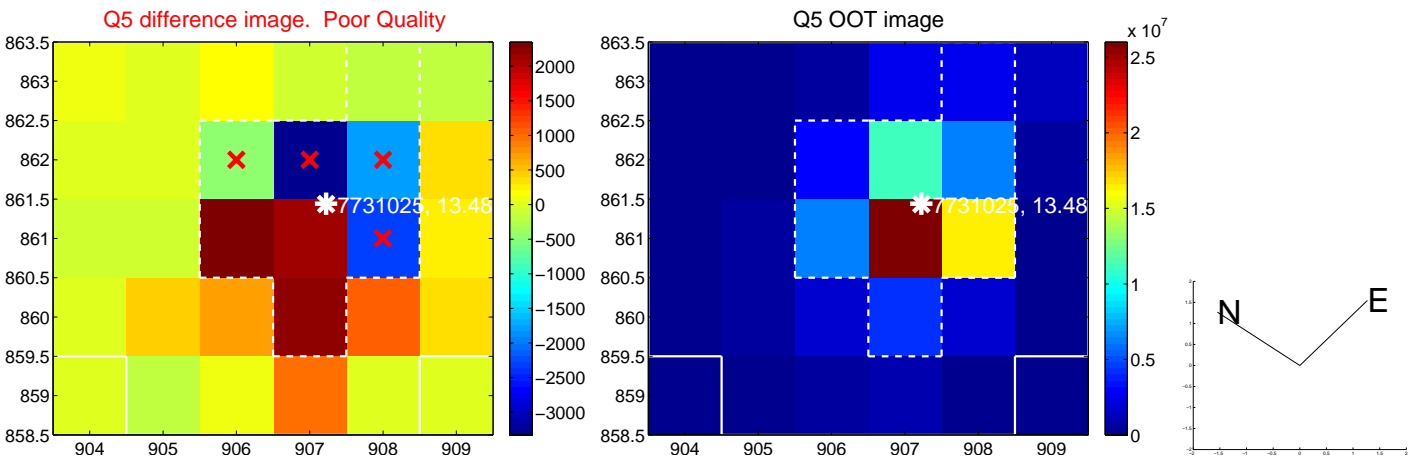


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

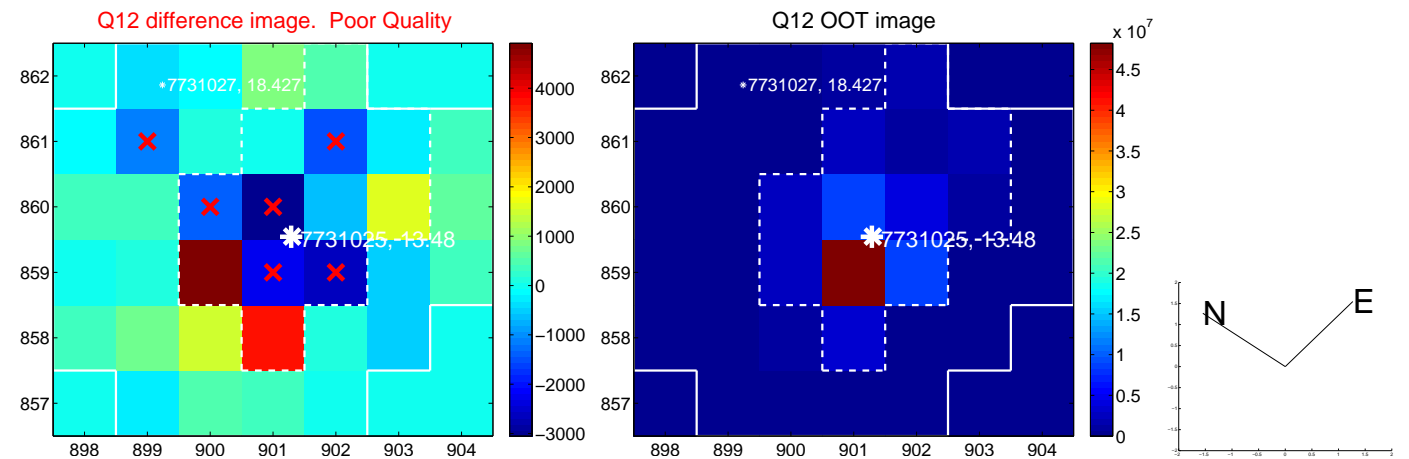
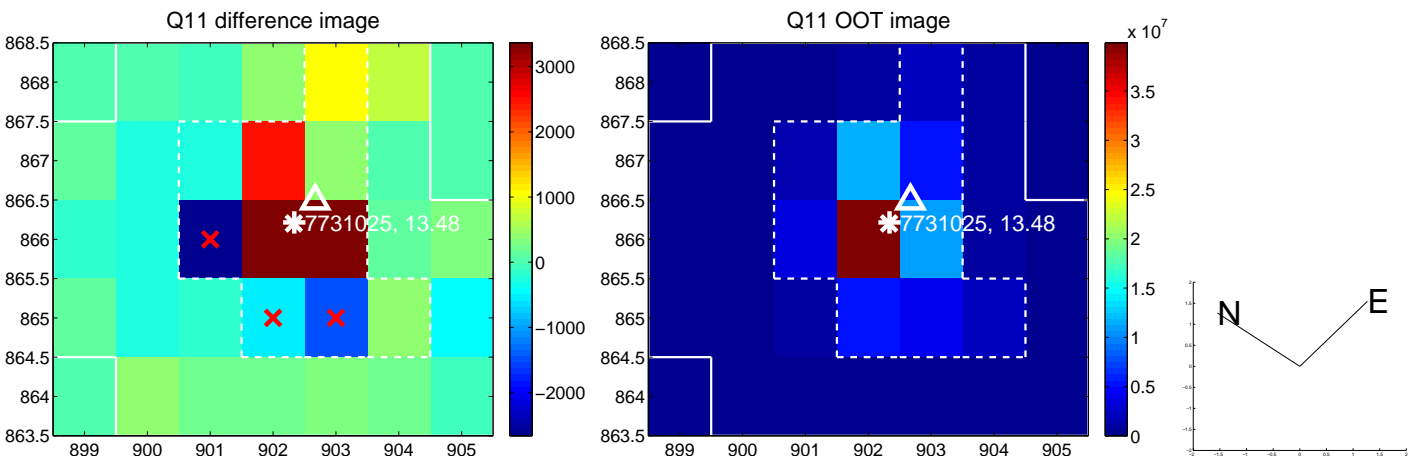
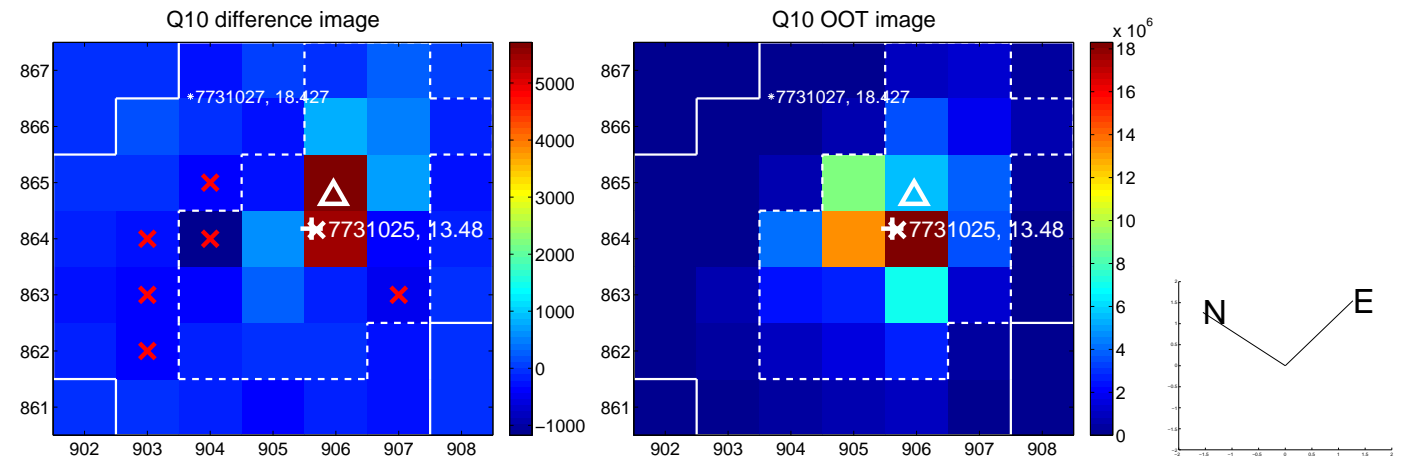
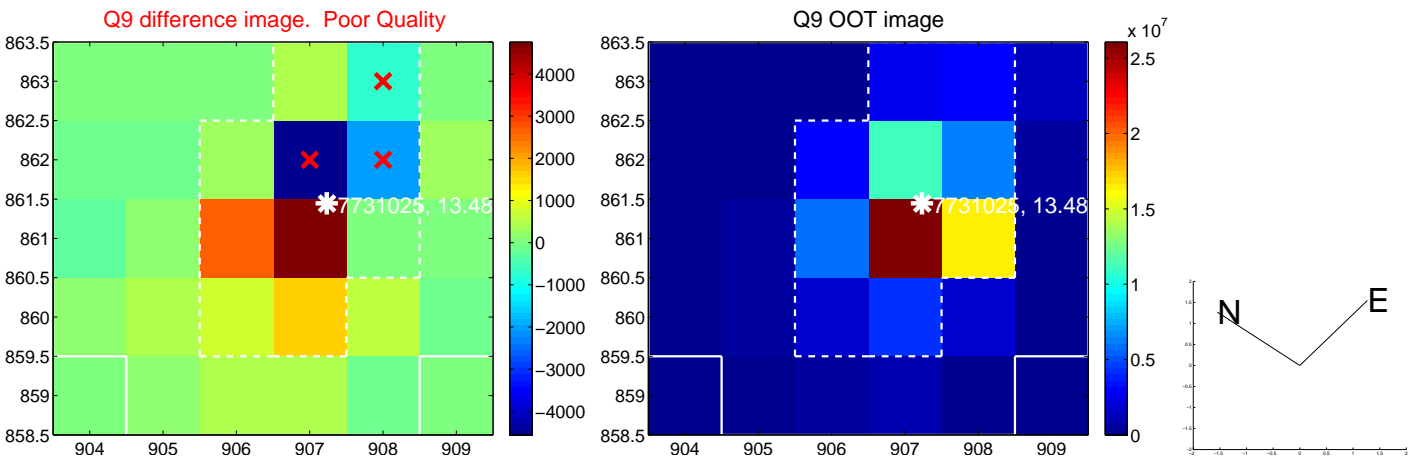
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



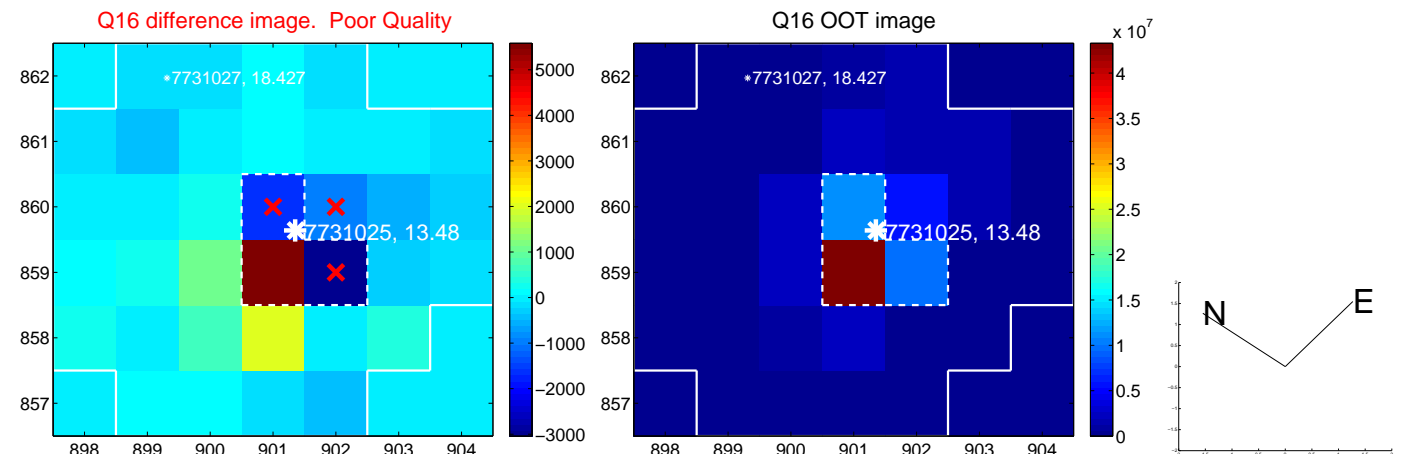
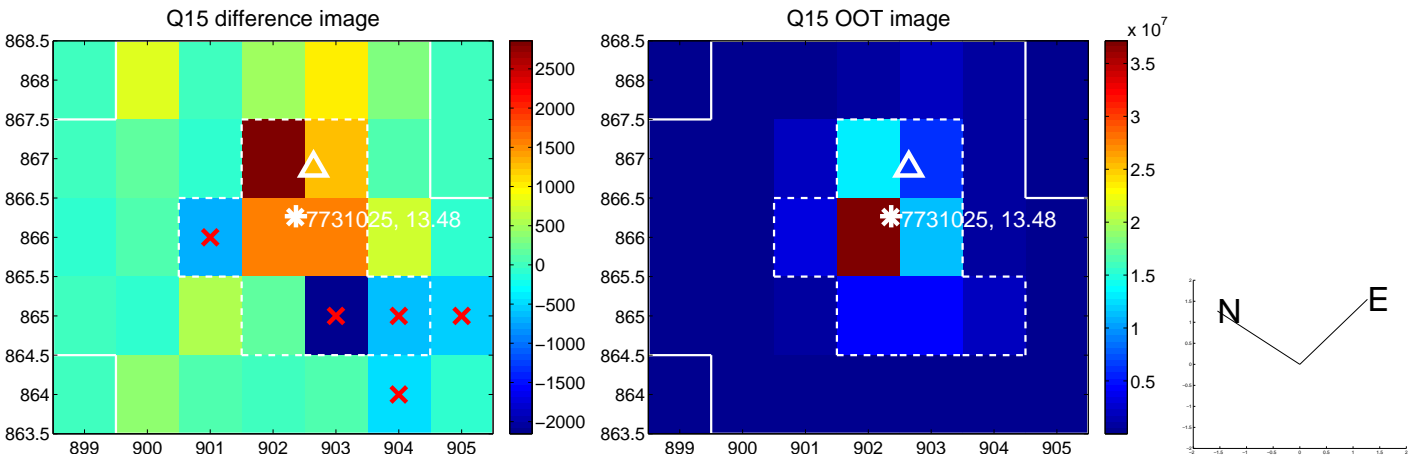
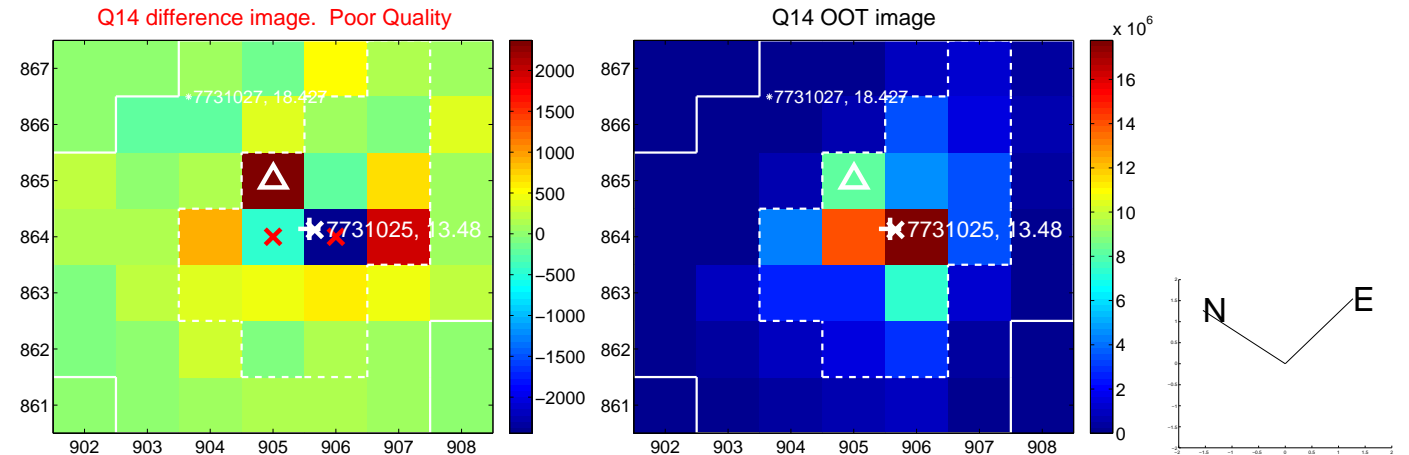
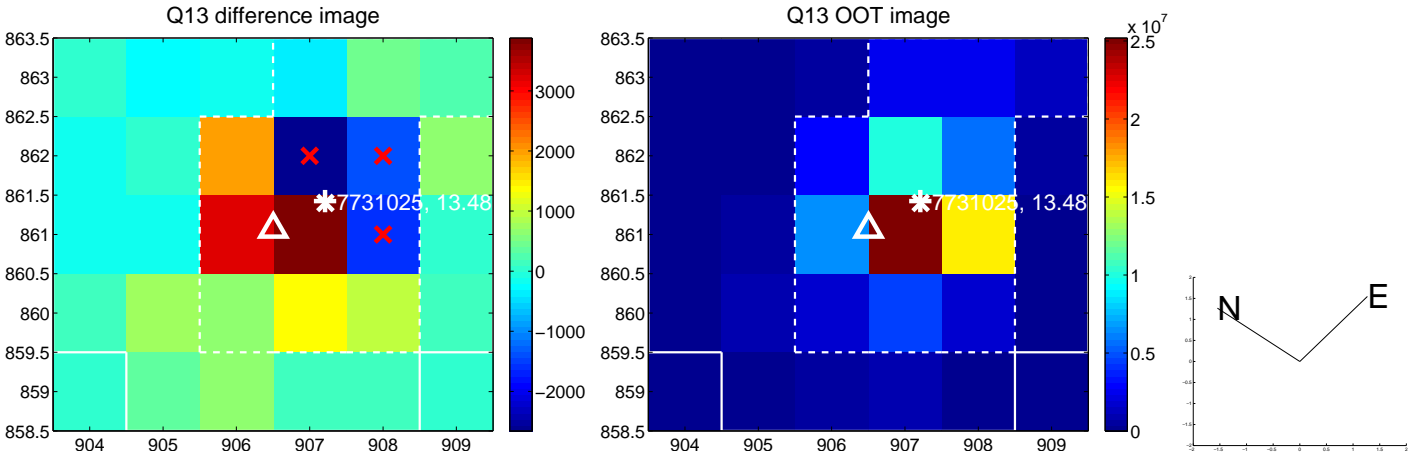
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



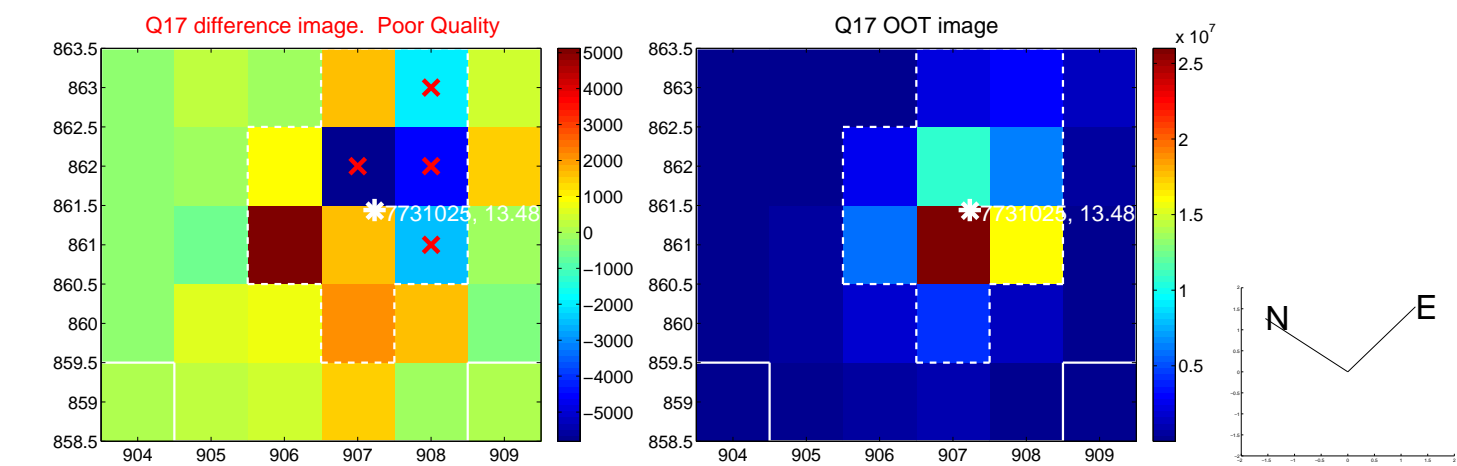
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



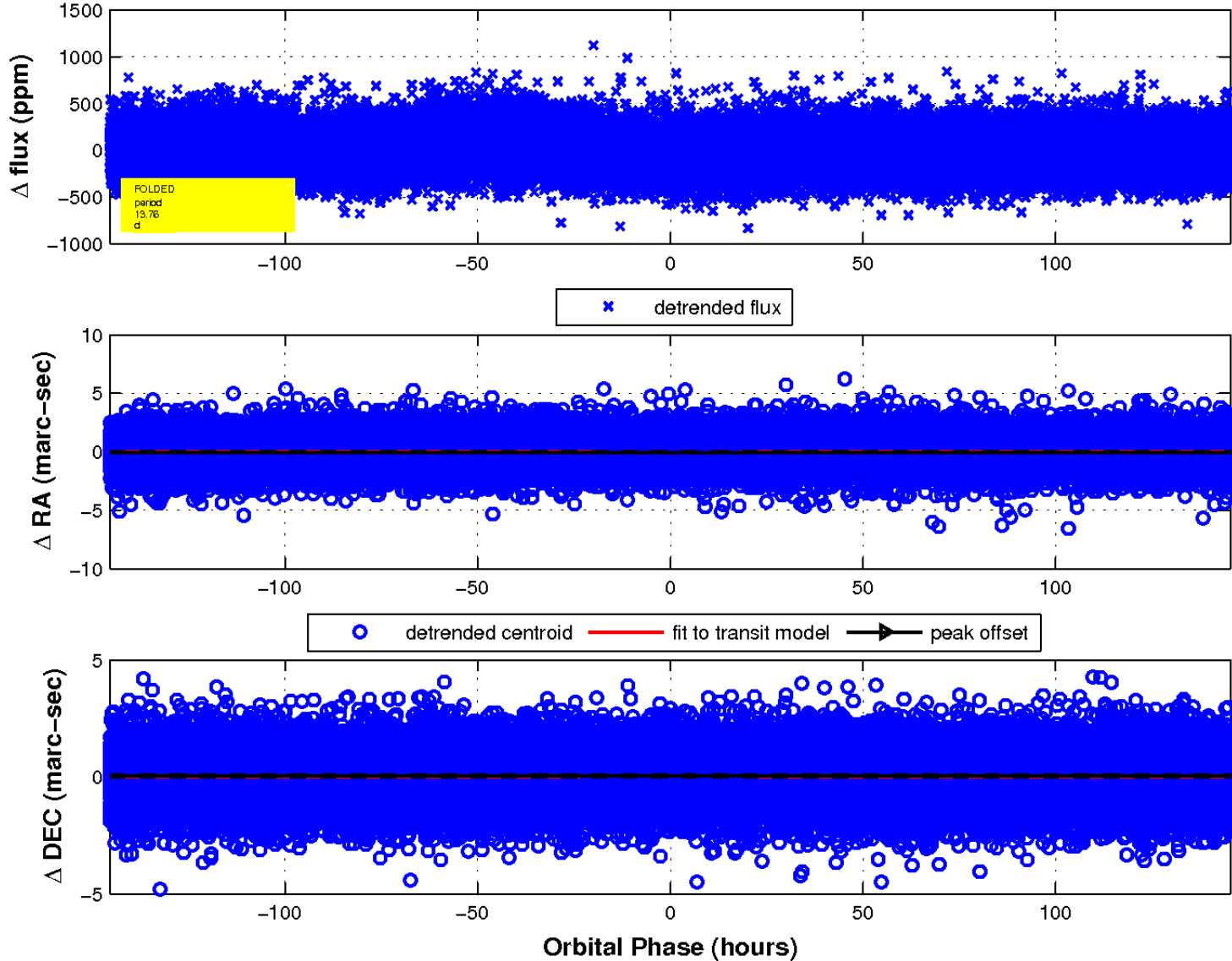
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

