

KIC 006870438

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})
006870438-01	OBS	No	0.564382	131.925467	27.6	4.801	14.9	12.9	1.41	6855	0.76	17930.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006870438-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV

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

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

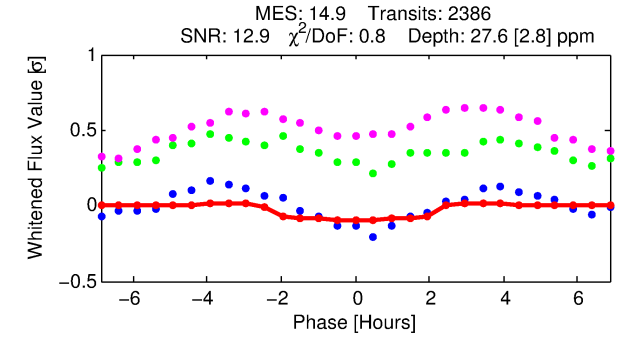
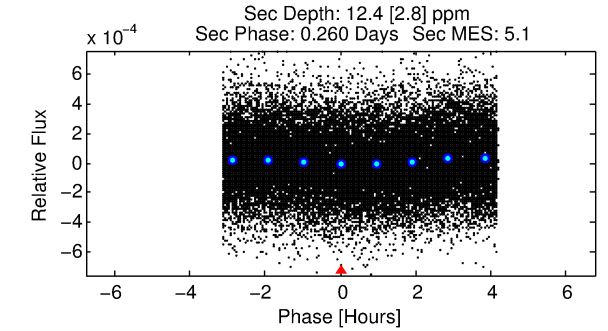
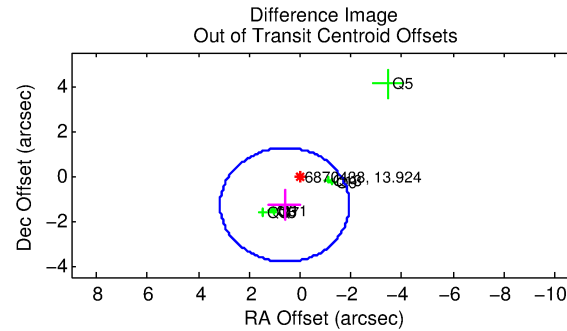
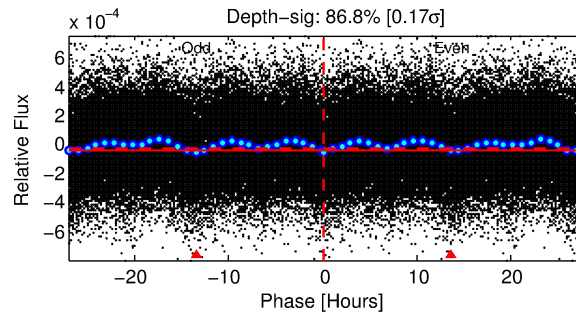
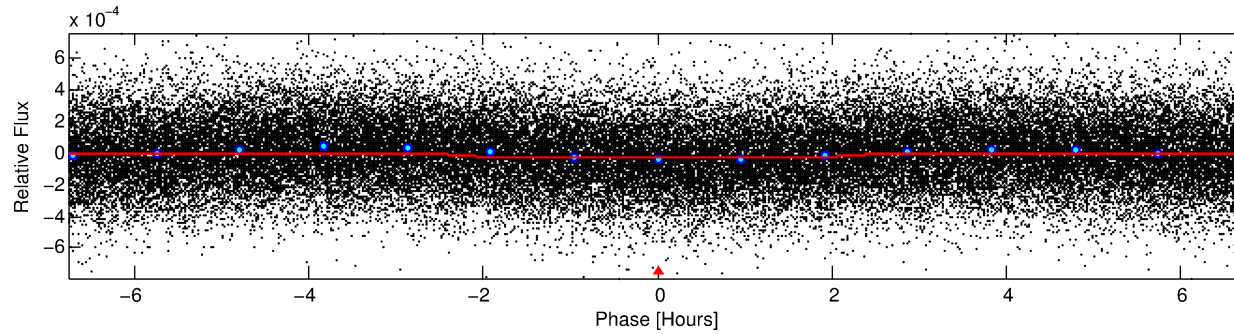
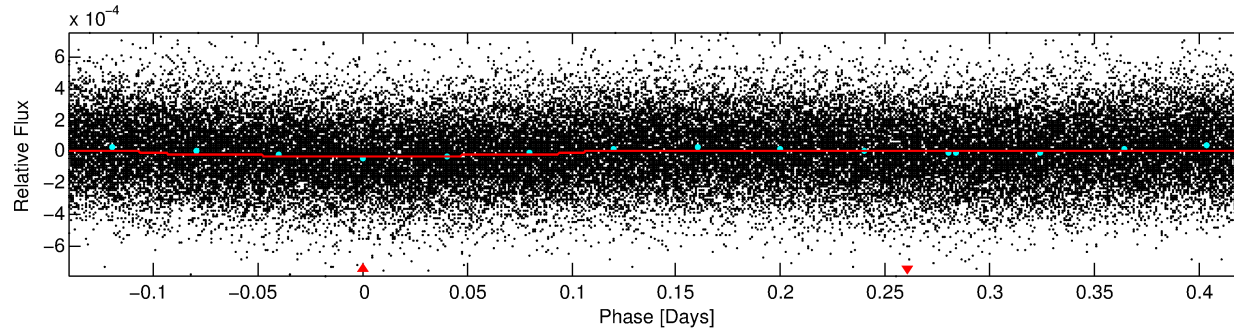
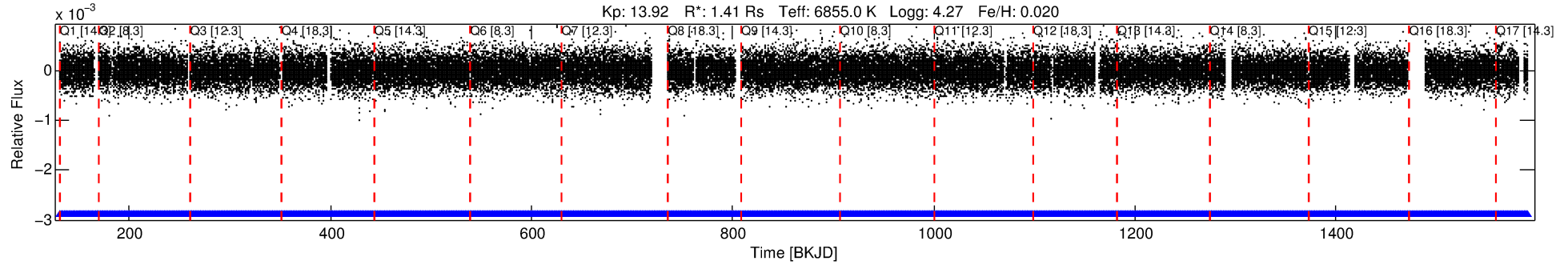
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006870438-01

No Significant Match Found

DV One-Page Summary

KIC: 6870438 Candidate: 1 of 1 Period: 0.564 d



DV Fit Results:

Period = 0.56438 [0.00001] d
Epoch = 131.9255 [0.0031] BKJD
Rp/R* = 0.0049 [0.0031]
a/R* = 1.11 [0.70]
b = 0.35 [8.90]
Seff = 17930.34 [7850.07]
Teq = 2951 [323] K
Rp = 0.76 [0.54] Re
a = 0.0148 [0.0042] AU
Ag = 2.63 [3.49] [0.47 σ]
Teffp = 5807 [1853] K [1.52 σ]

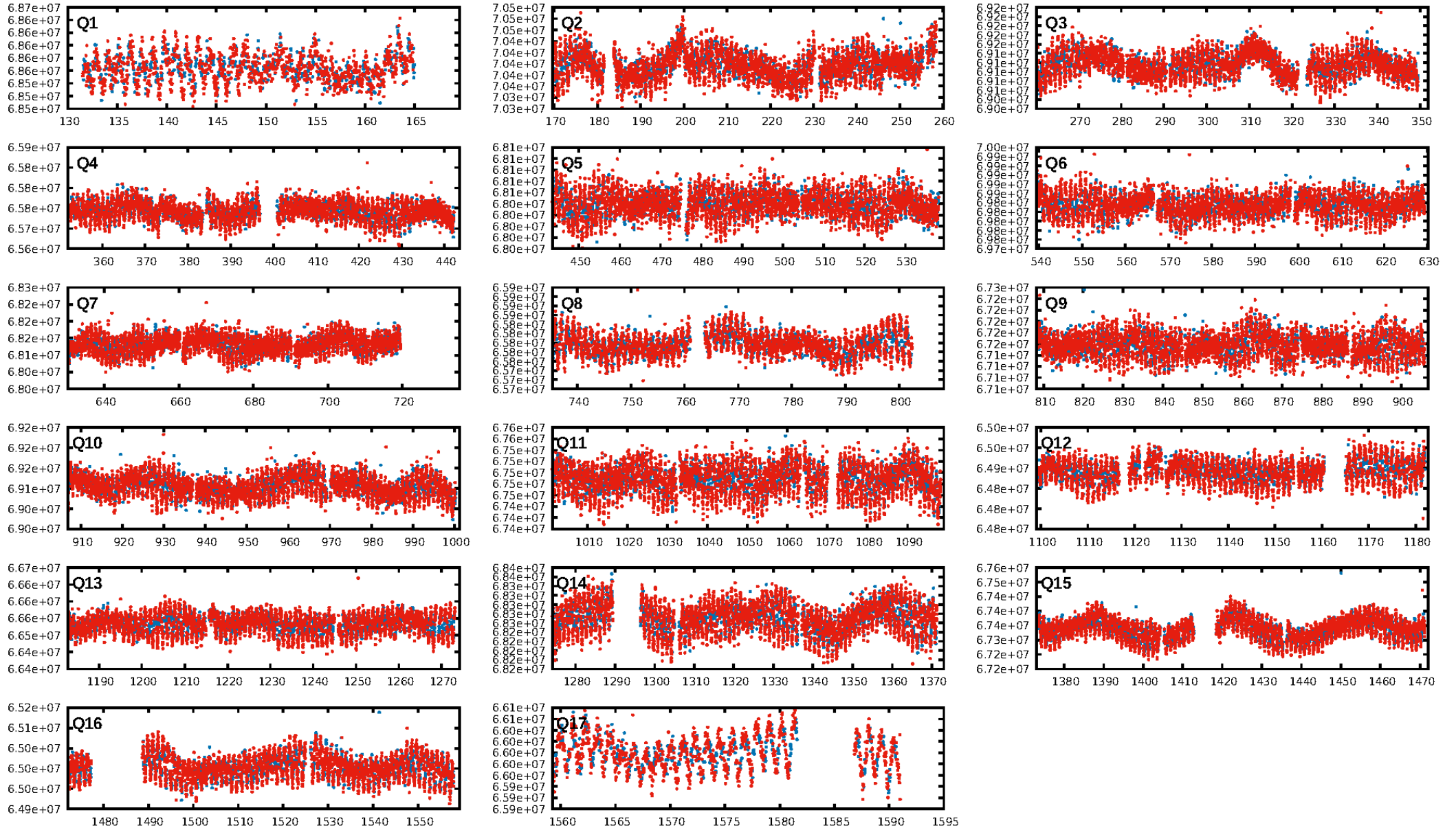
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2279/2279]
GhostDiagnostic-chr: 2.303
Centroid-sig: 94.5%
Centroid-so: 0.172 arcsec [0.28 σ]
OotOffset-rm: 1.423 arcsec [1.68 σ]
OotOffset-st: 0/4/0/3 [7]
KicOffset-rm: 1.574 arcsec [1.71 σ]
KicOffset-st: 0/4/0/3 [7]
DiffImageQuality-fgm: 0.86 [6/7]
DiffImageOverlap-fno: 1.00 [17/17]

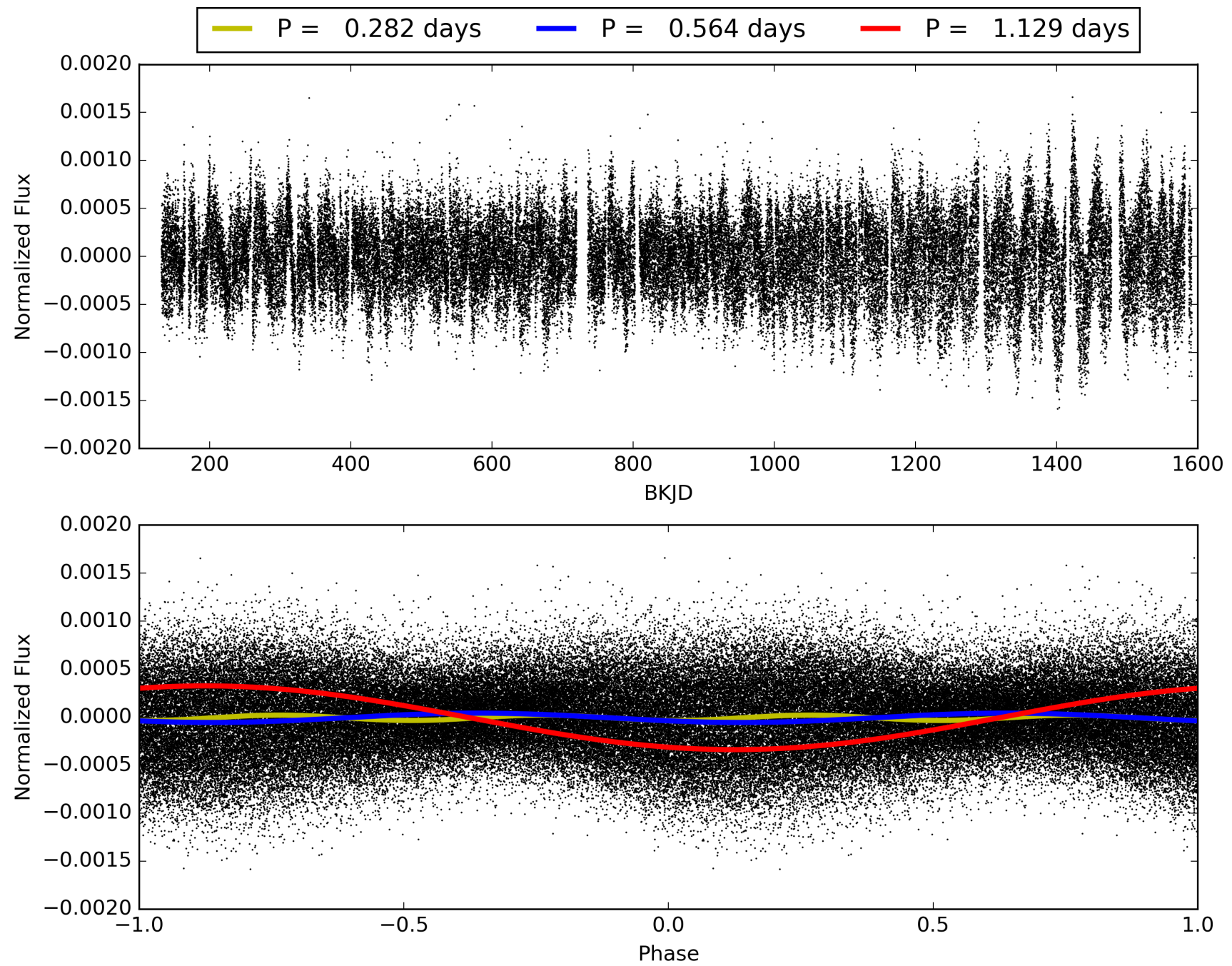
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:16:17 Z

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

TCE 006870438-01, PDC Light Curves

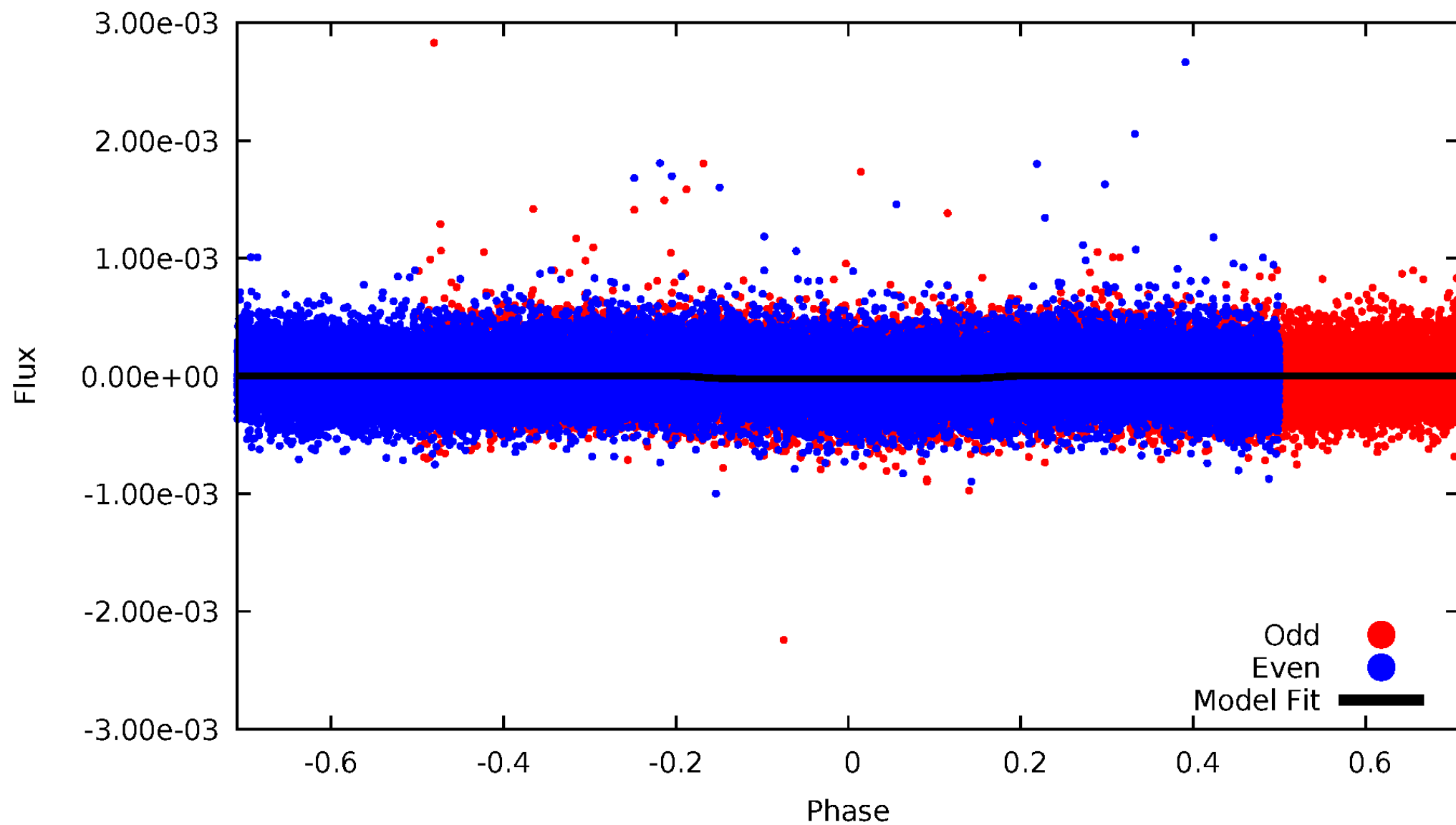


TCE 006870438-01



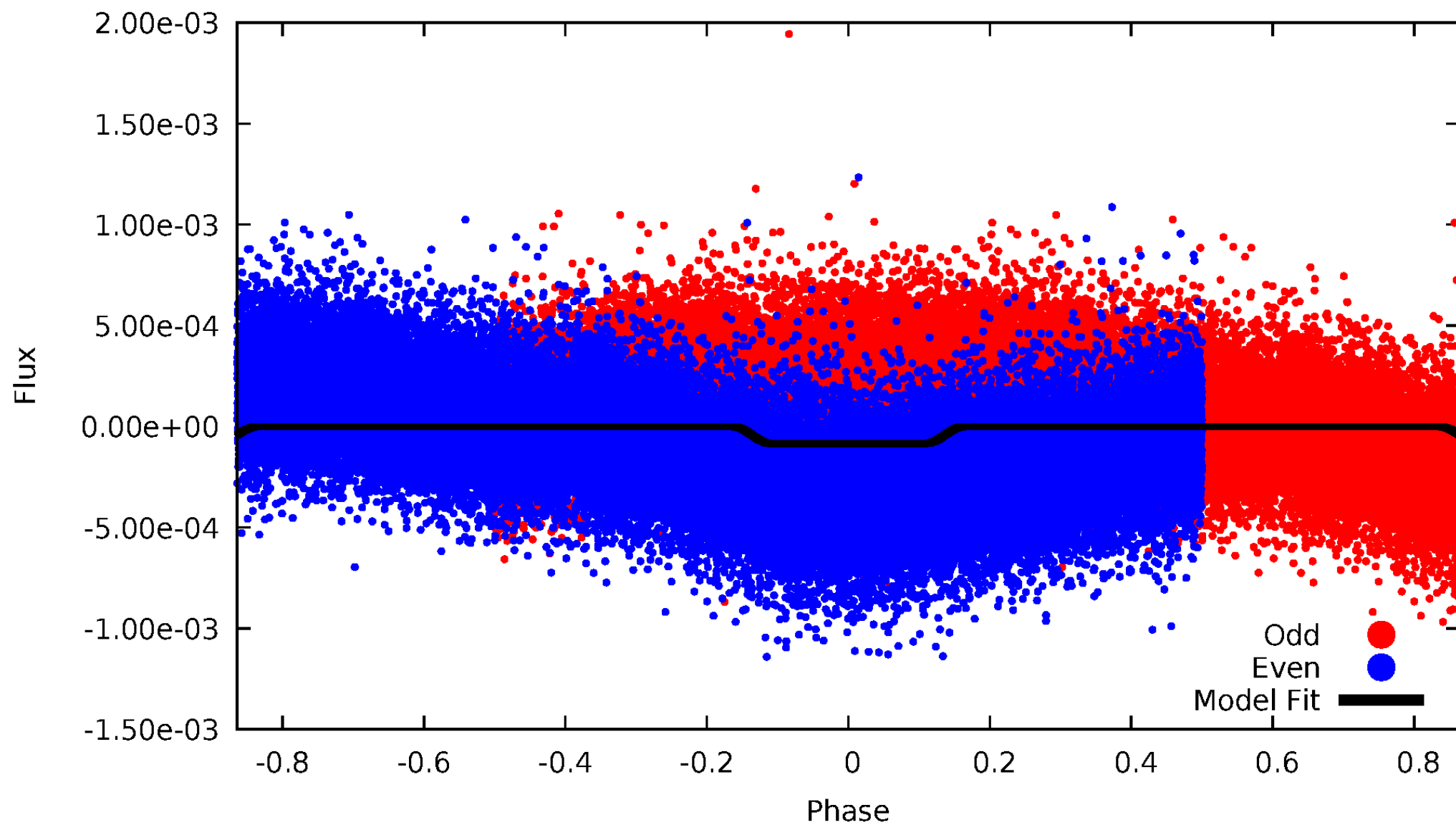
DV Odd/Even

TCE 006870438-01



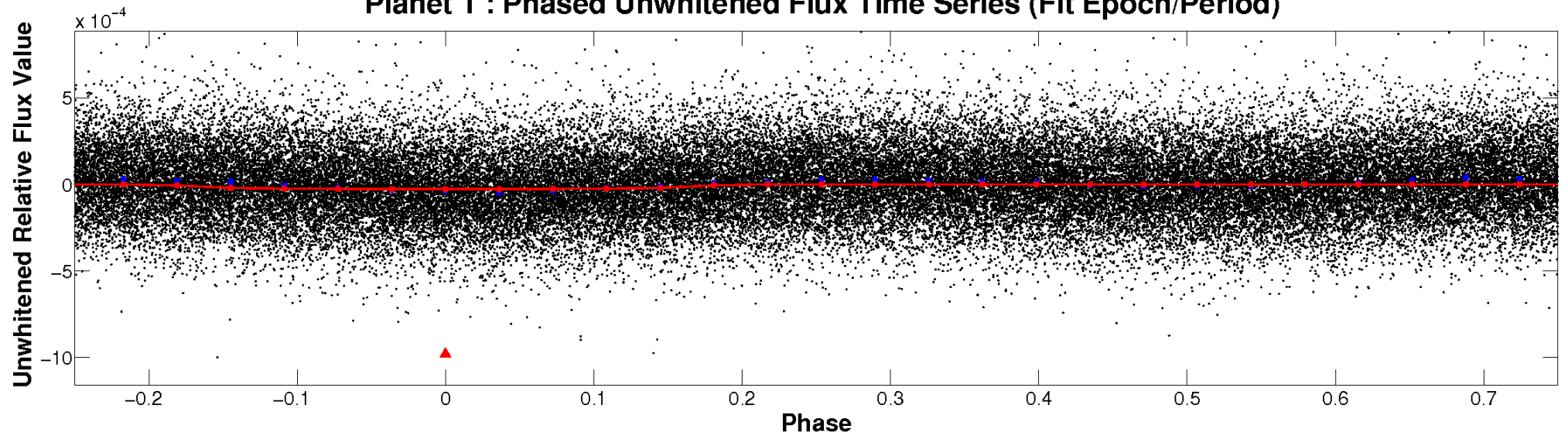
ALT Odd/Even

TCE 006870438-01

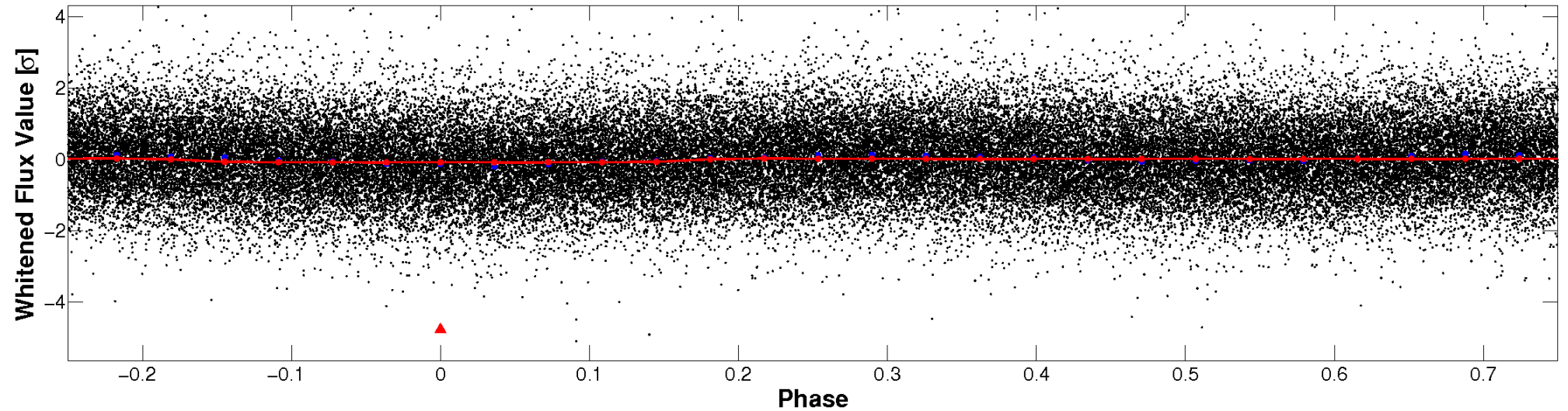


Non-Whitened Vs. Whitened Light Curve

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

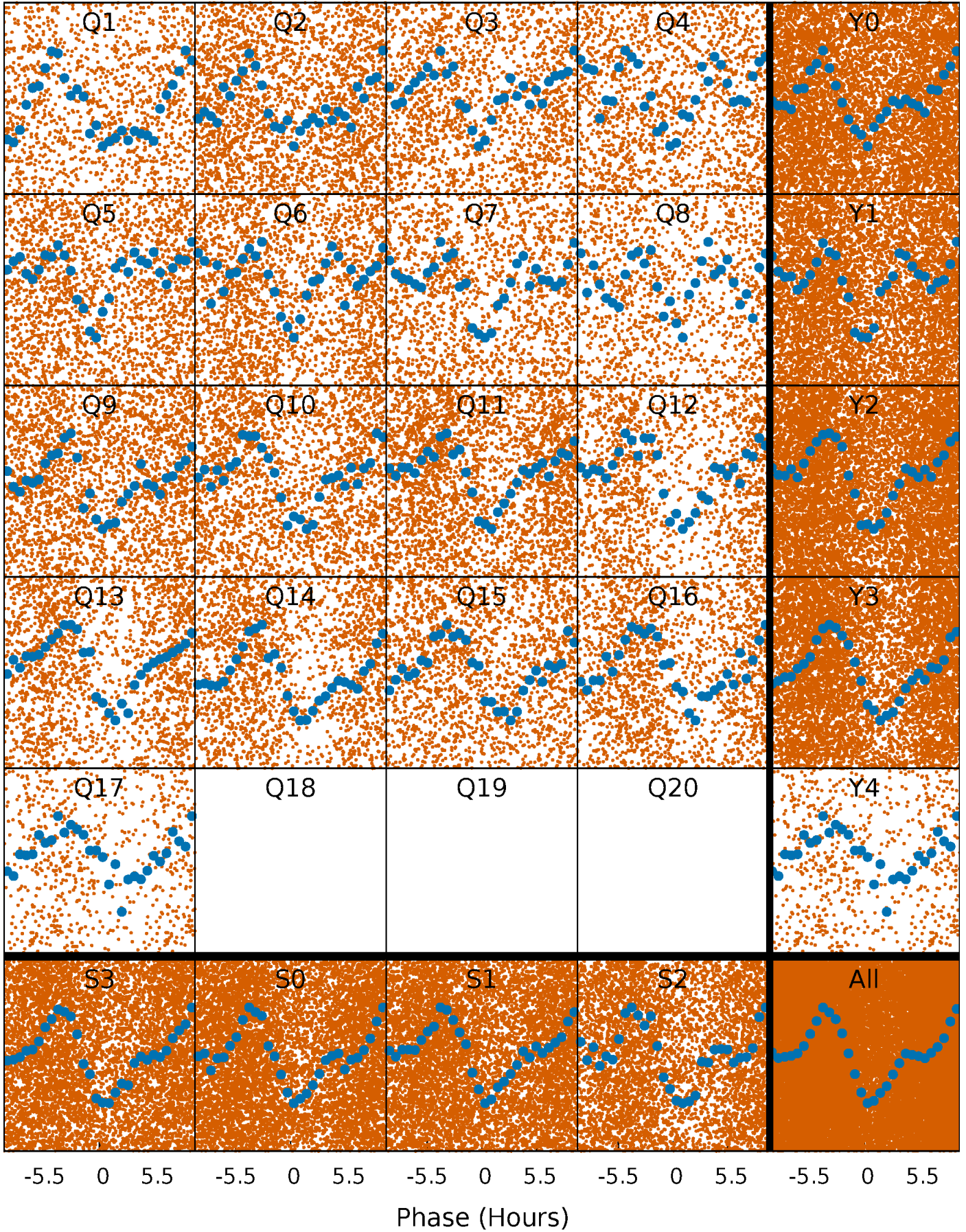


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



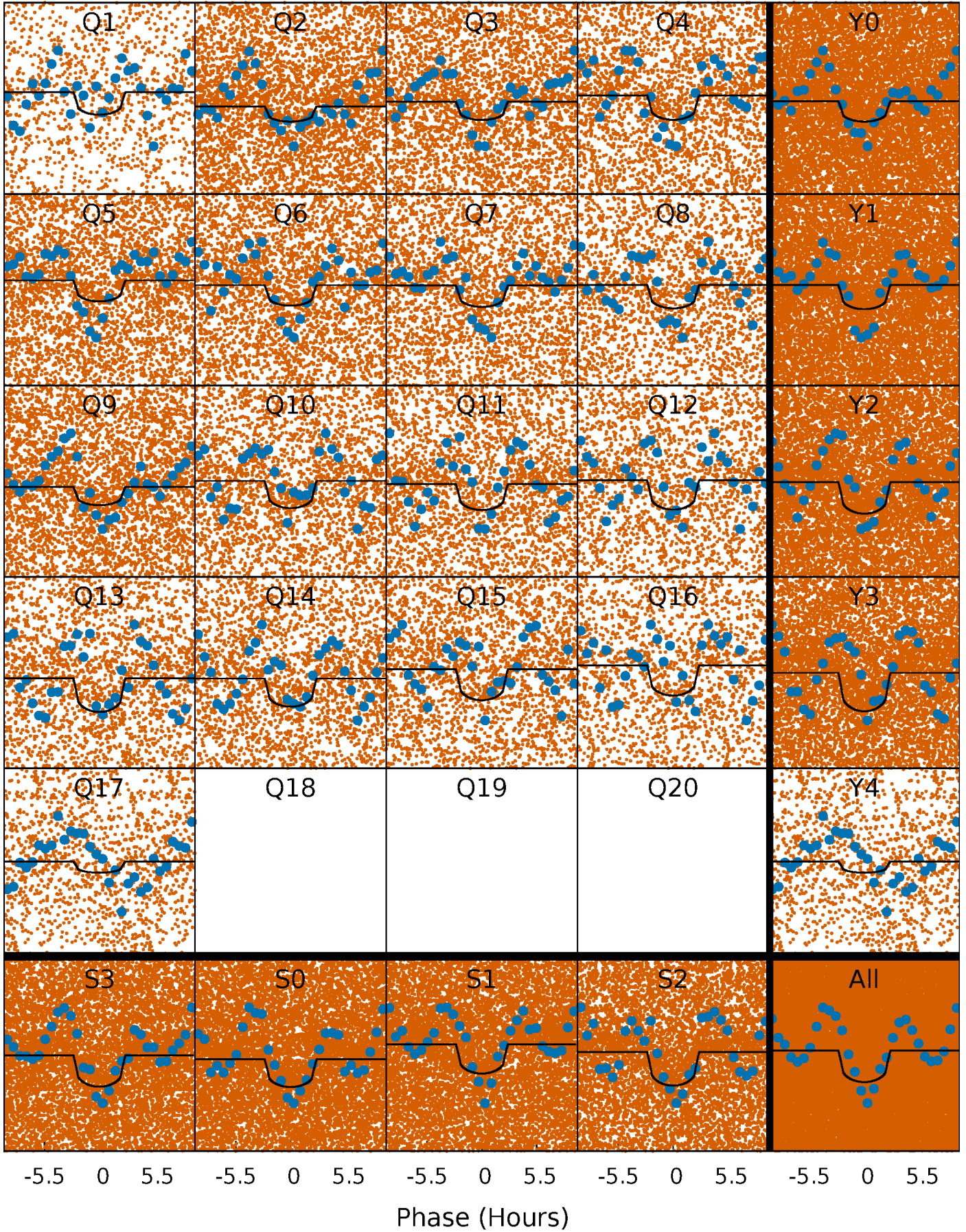
PDC Quarter-Phased Transit Curves

TCE 006870438-01 P= 0.564382 Days $T_0=131.925467$ (BKJD)



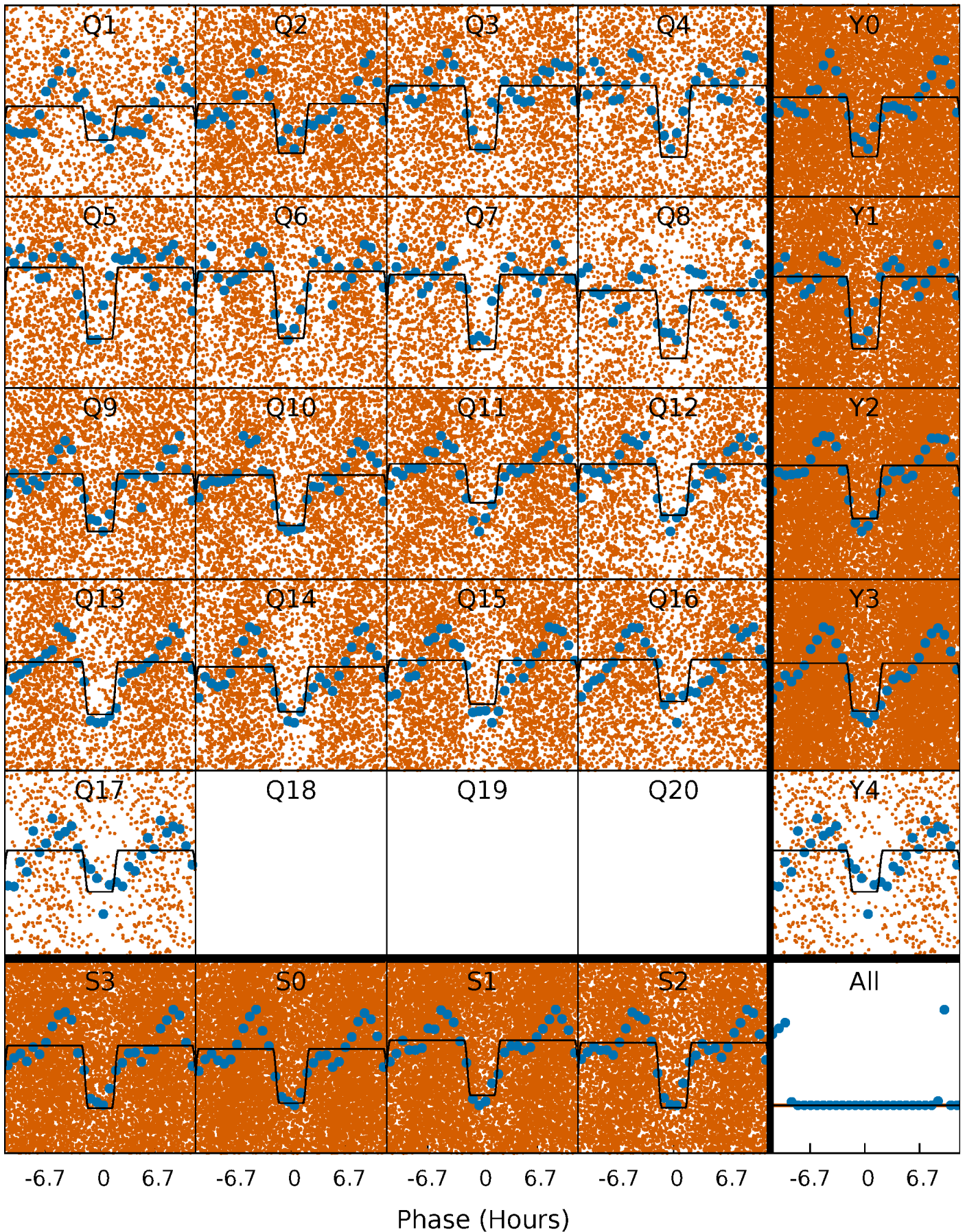
DV Quarter-Phased Transit Curves

TCE 006870438-01 P= 0.564382 Days $T_0=131.925467$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

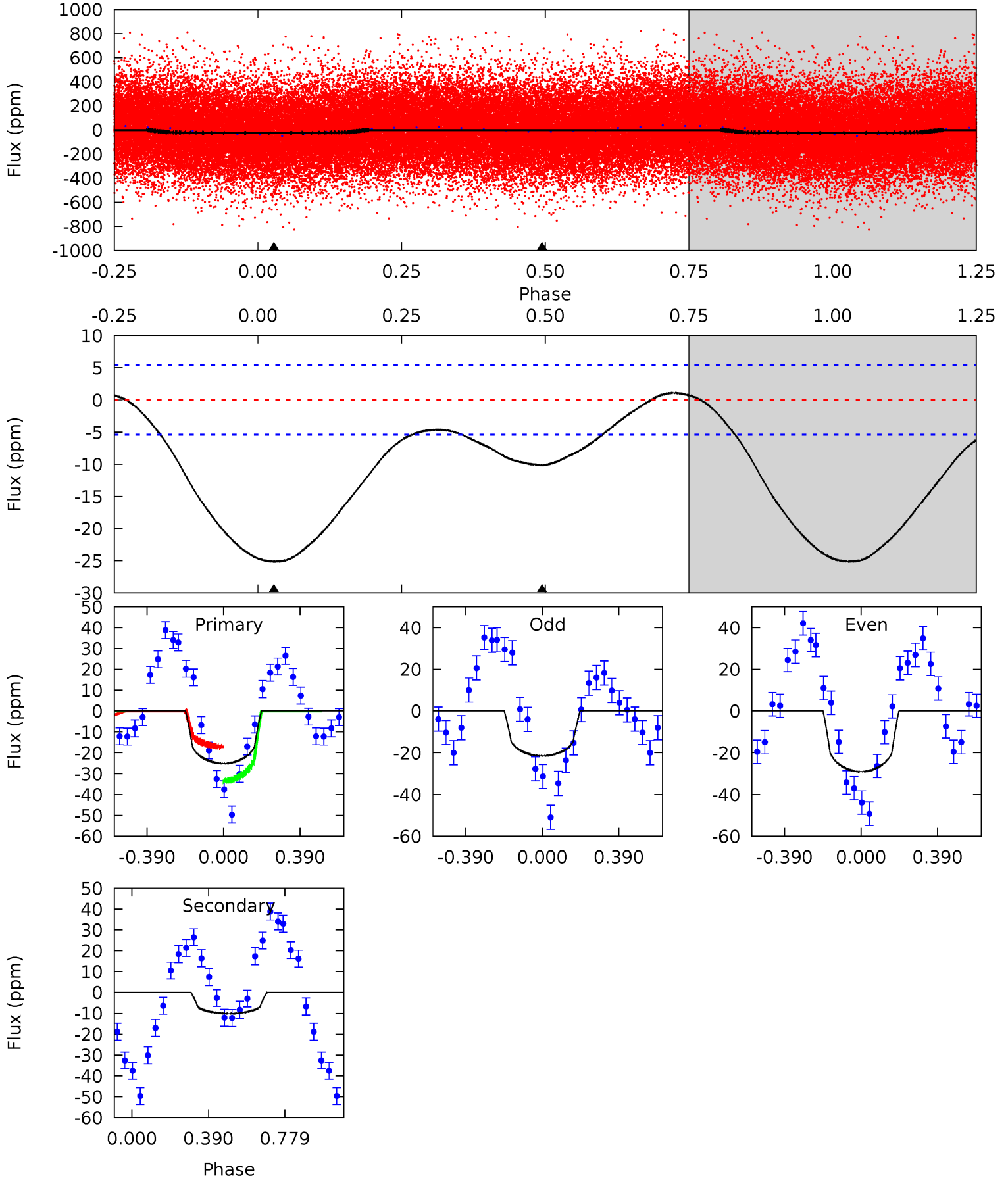
TCE 006870438-01 P= 0.564412 Days $T_0=131.920953$ (BKJD)



DV Model-Shift Uniqueness Test

006870438-01, P = 0.564382 Days, E = 131.361085 Days

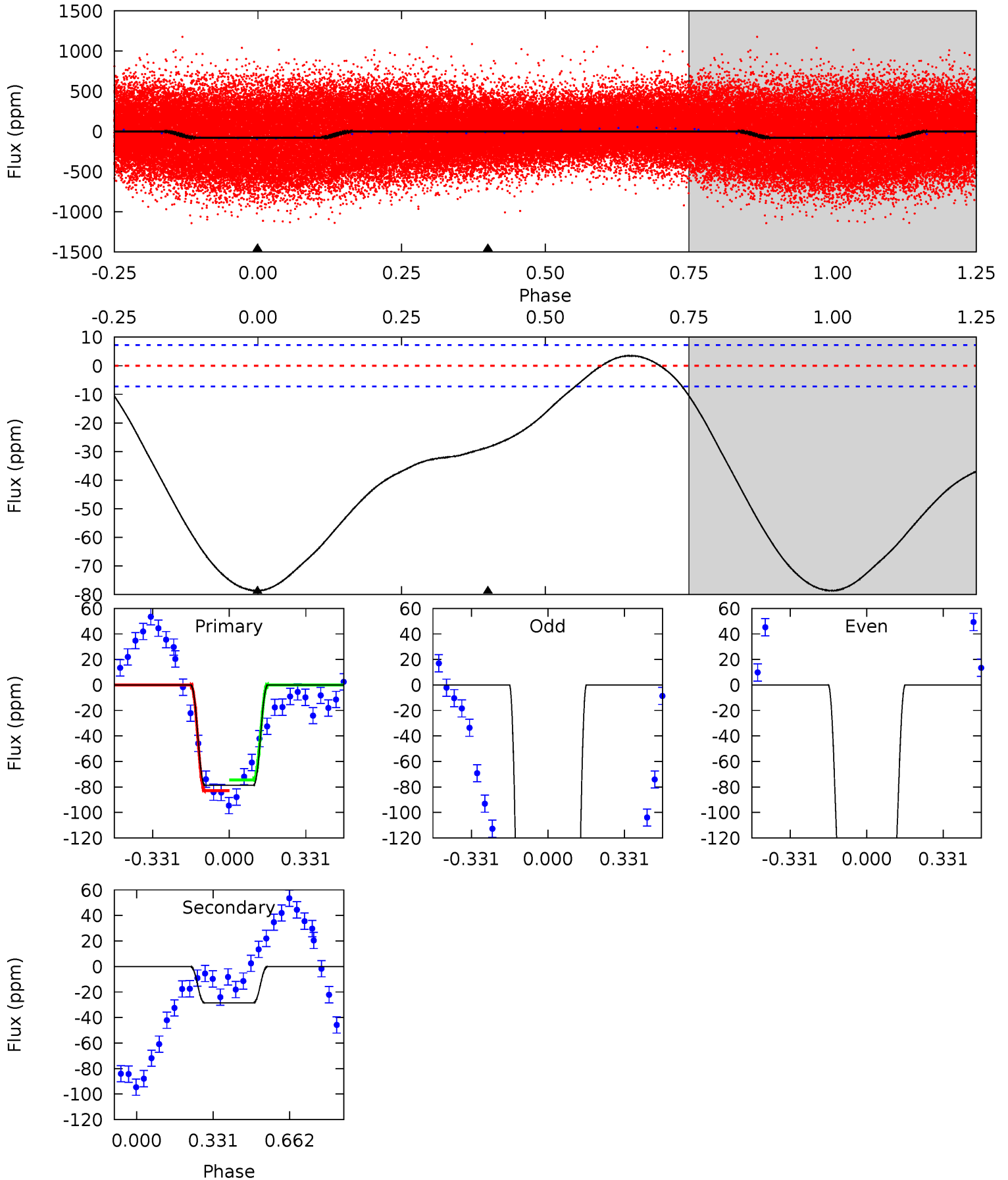
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.8	8.00	0	0	4.27	0.86	1.88	19.8	19.8	8.00	8.00	3.03	1.06	0.04	6.52



Alt Model-Shift Uniqueness Test

006870438-01, P = 0.564412 Days, E = 131.356541 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
46.9	17.0	0	0	4.31	0.97	2.50	46.9	46.9	17.0	17.0	44.7	1.49	0.04	2.18



Stellar Parameters For KIC 006870438

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6855^{+189}_{-283}	$4.274^{+0.072}_{-0.217}$	$0.020^{+0.250}_{-0.350}$	$1.413^{+0.490}_{-0.210}$	$1.372^{+0.204}_{-0.204}$	$0.685^{+0.279}_{-0.378}$
	+3%/-4%	+2%/-5%	+1250%/-1750%	+35%/-15%	+15%/-15%	+41%/-55%
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 006870438-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-10 ± 1	$0.80^{+0.58}_{-0.41}$	4198^{+344}_{-242}	5283^{+2711}_{-1327}	$1.934^{+6.513}_{-1.279}$
Alt.	-29 ± 2	$1.47^{+0.57}_{-0.49}$	4193^{+316}_{-242}	4999^{+1121}_{-769}	$1.566^{+1.872}_{-0.746}$

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 $A_{obs} \gg 1.0$

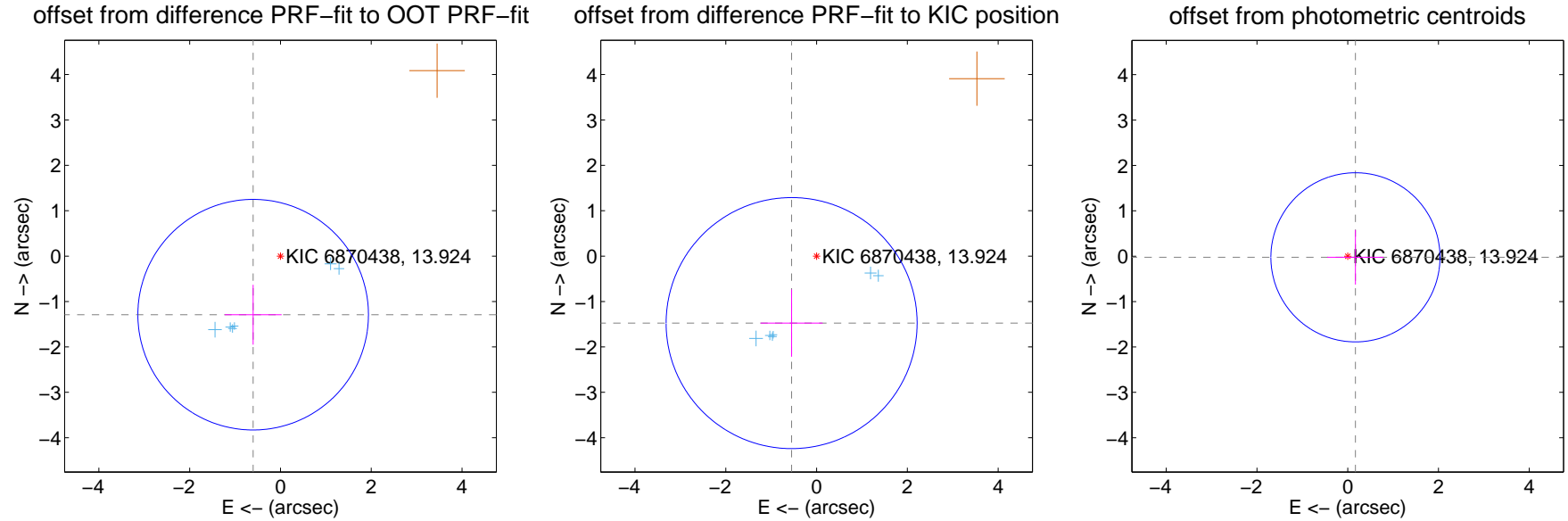
DV Centroid Data

Supplemental centroid analysis for 006870438-01. Kepler magnitude: 13.92. Transit SNR 12.88

There are 6 quarters with good PRF difference image offsets

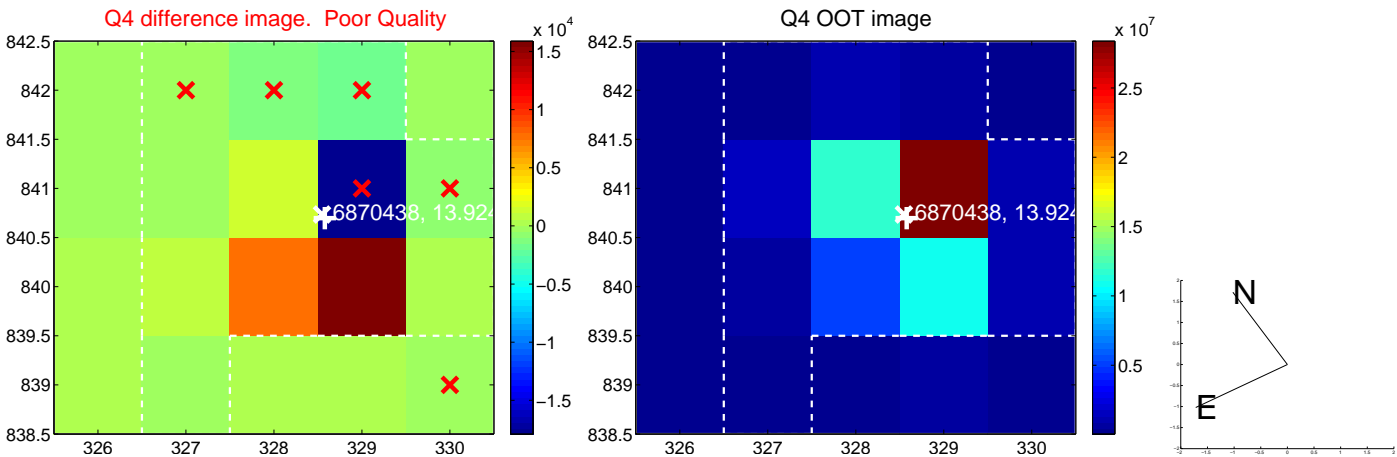
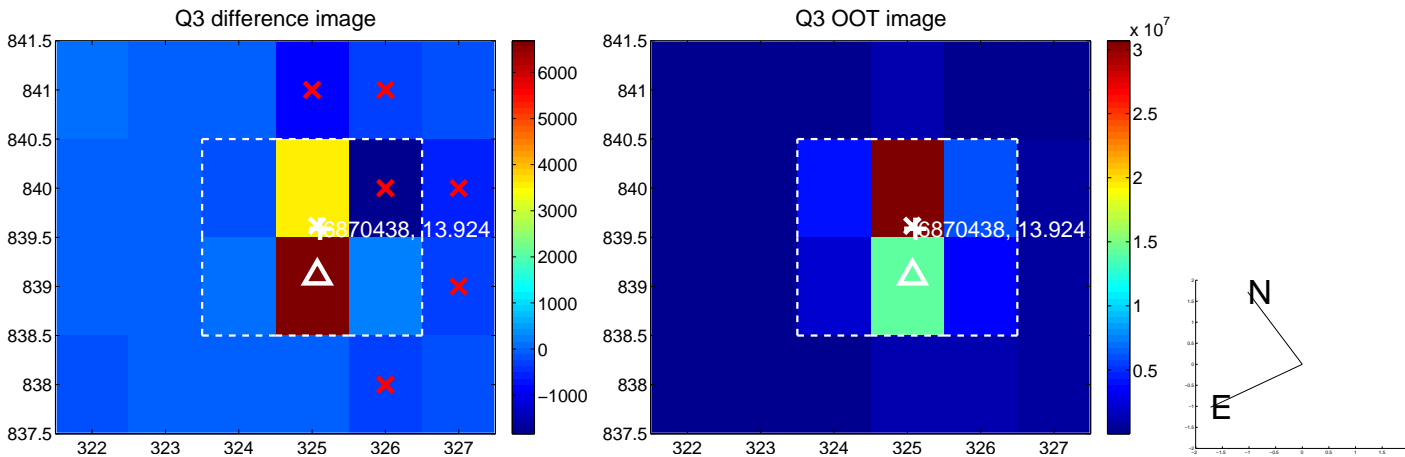
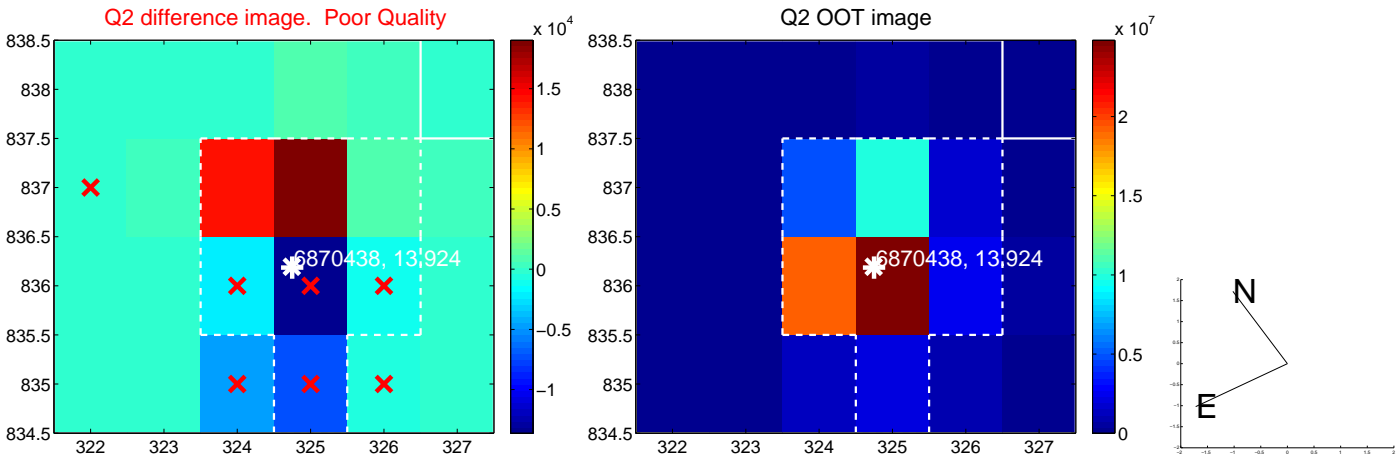
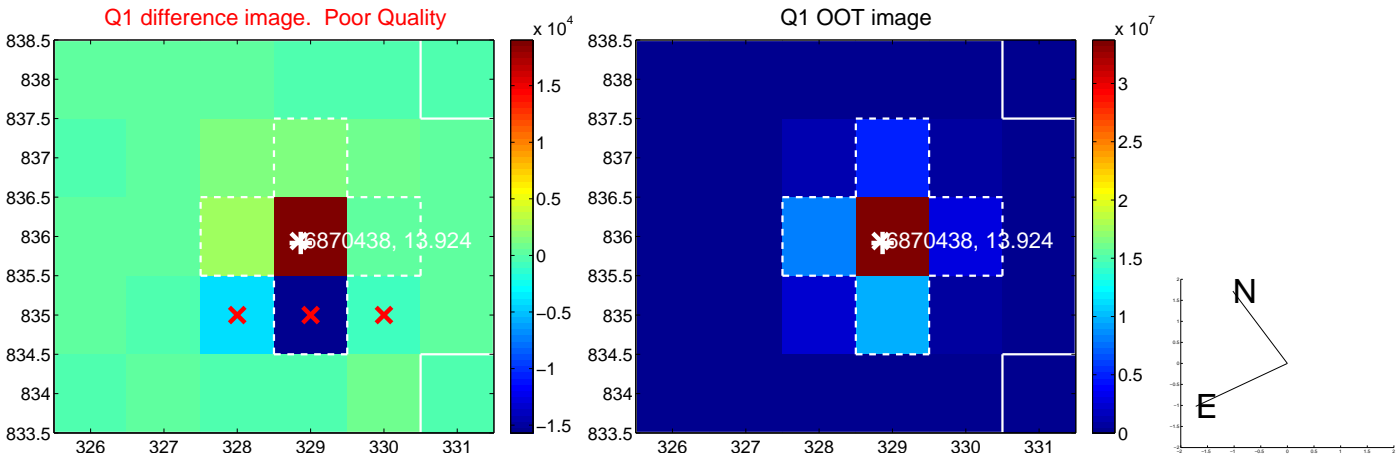
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.423 ± 0.847	1.68	0.602 ± 0.628	-1.290 ± 0.660
PRF-fit source offset from KIC position	1.574 ± 0.922	1.71	0.550 ± 0.684	-1.475 ± 0.740
photometric centroid source offset	0.17 ± 0.62	0.28	-0.17 ± 0.62	-0.02 ± 0.60

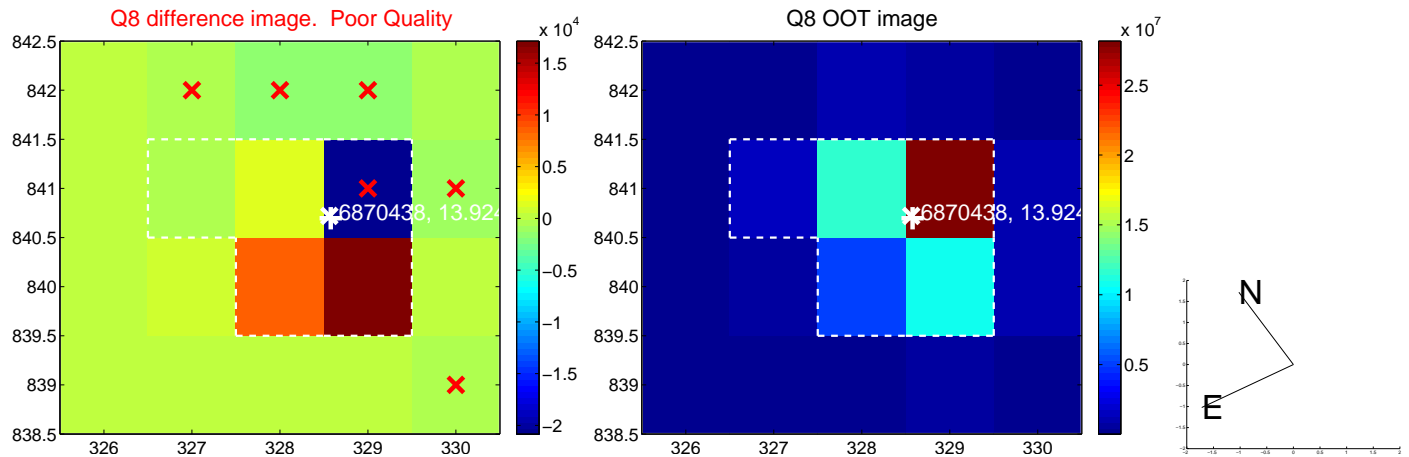
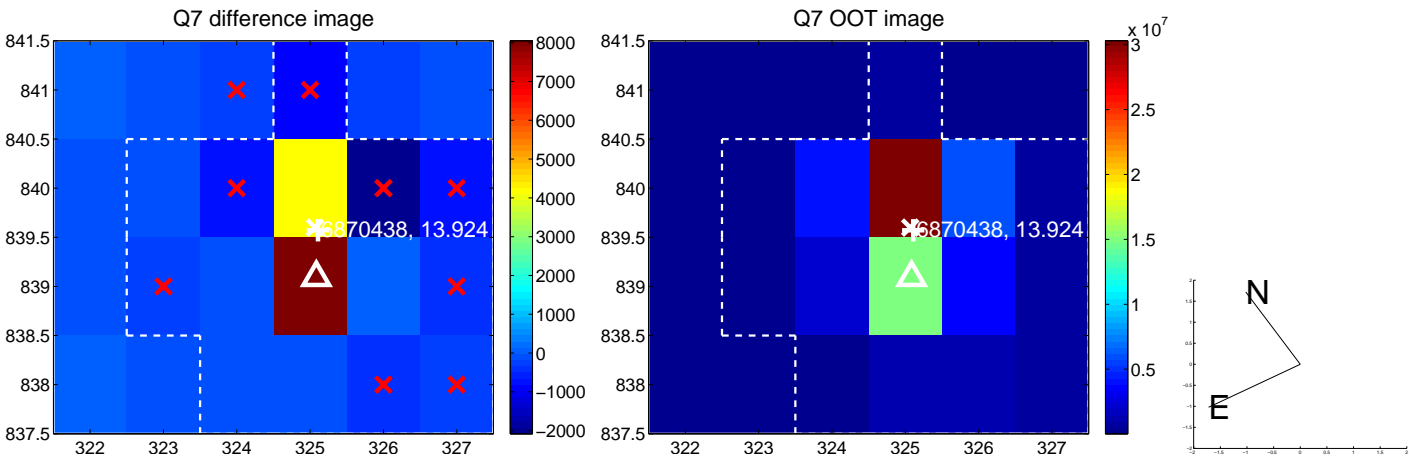
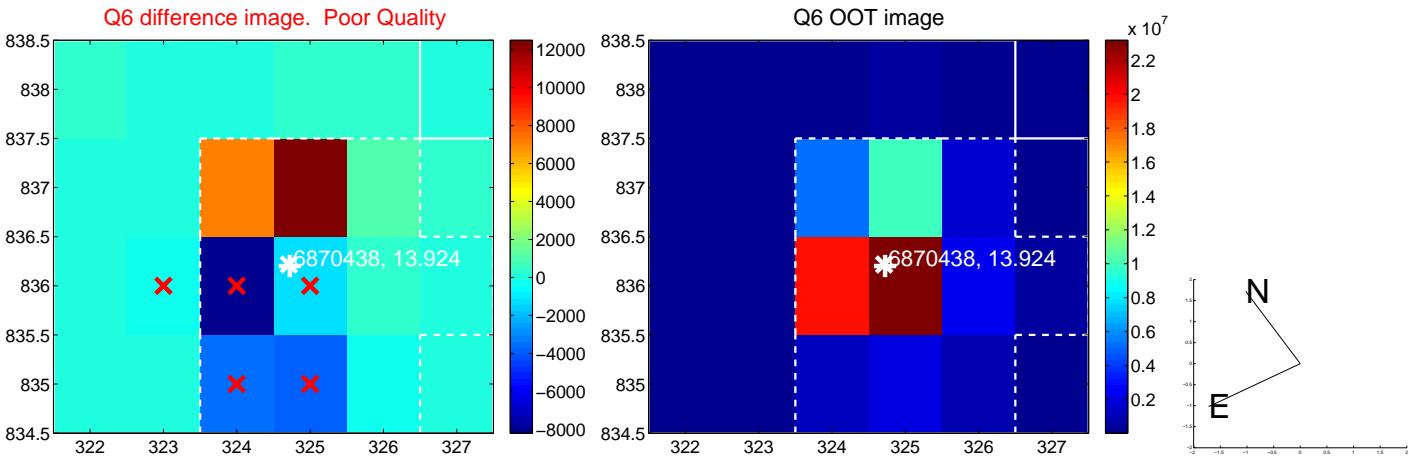
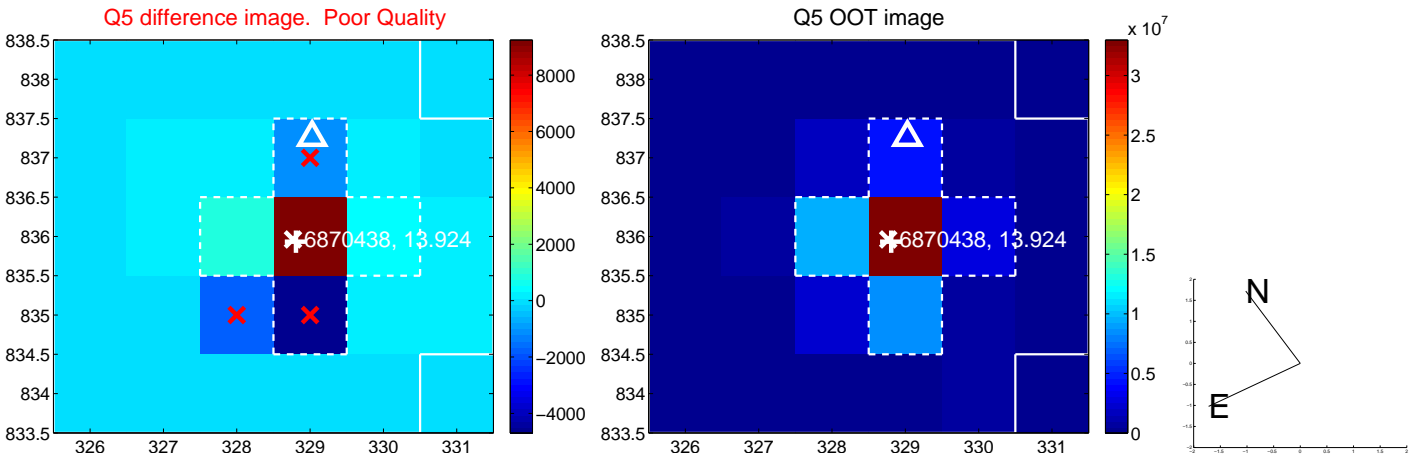


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

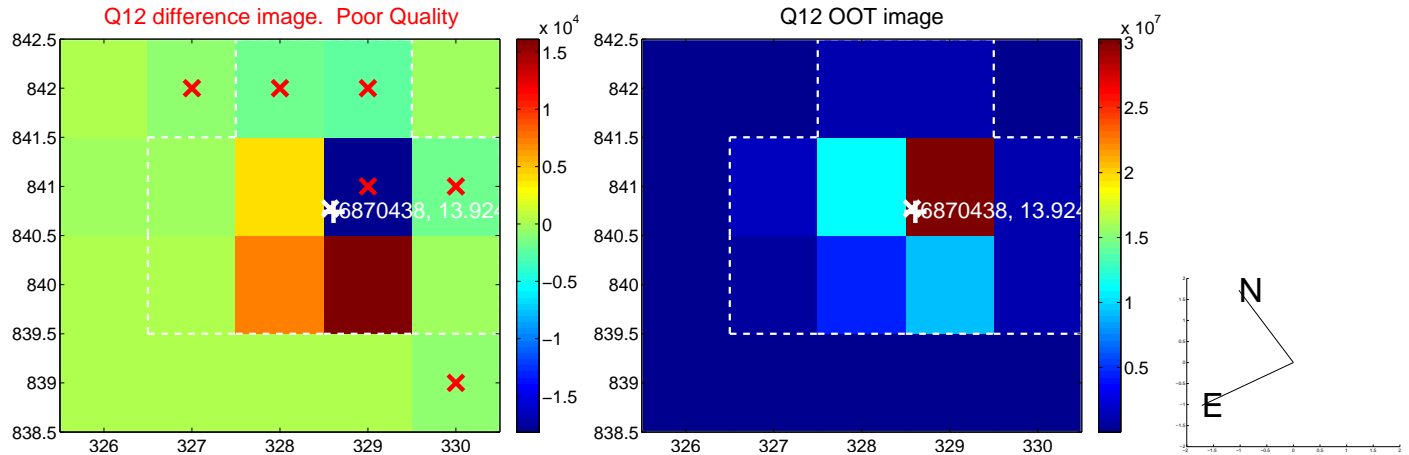
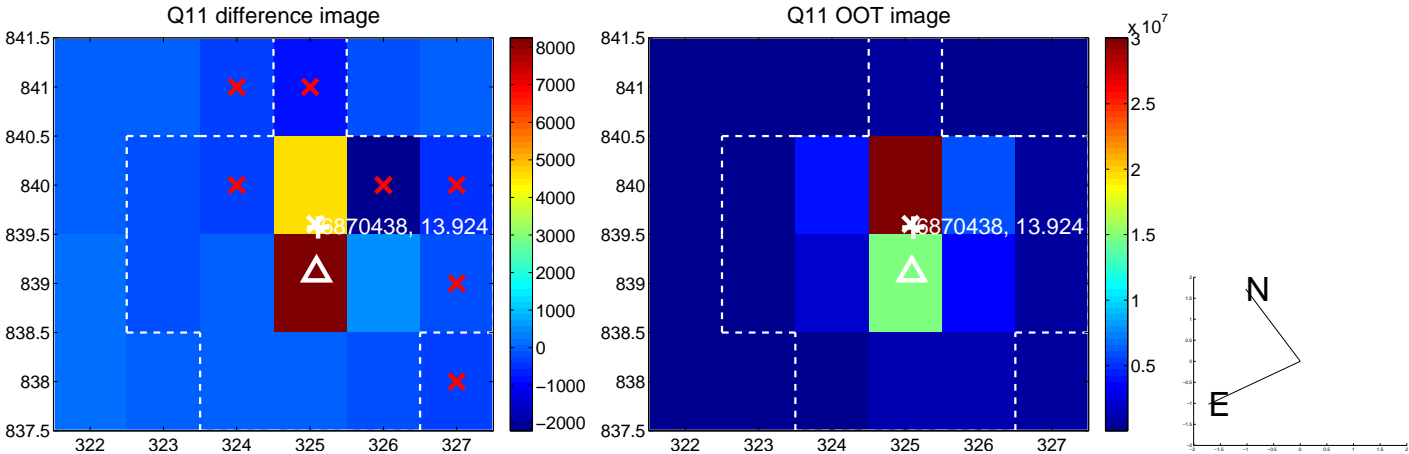
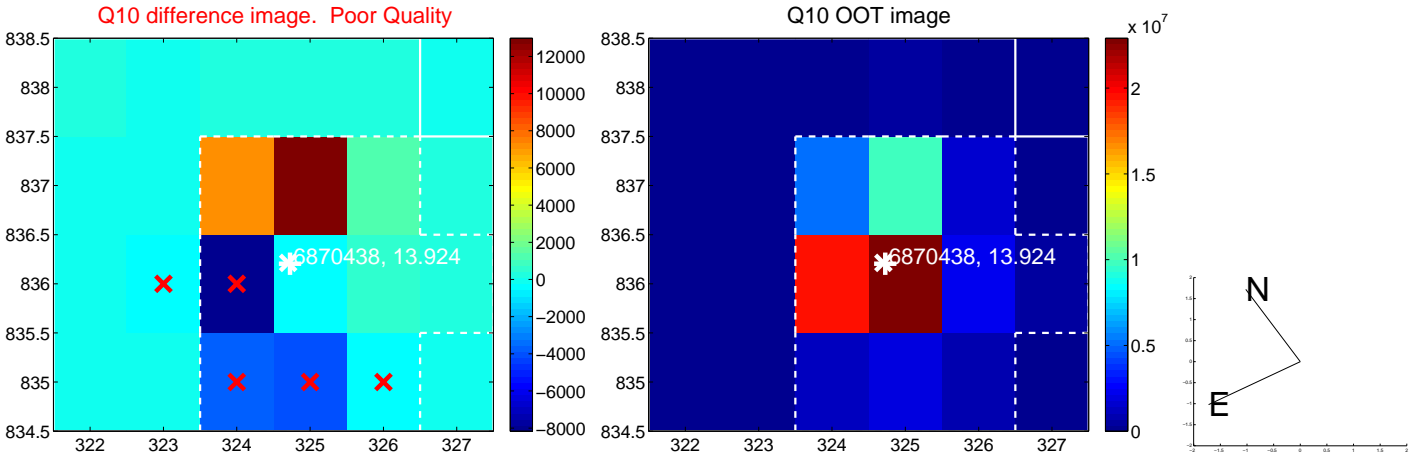
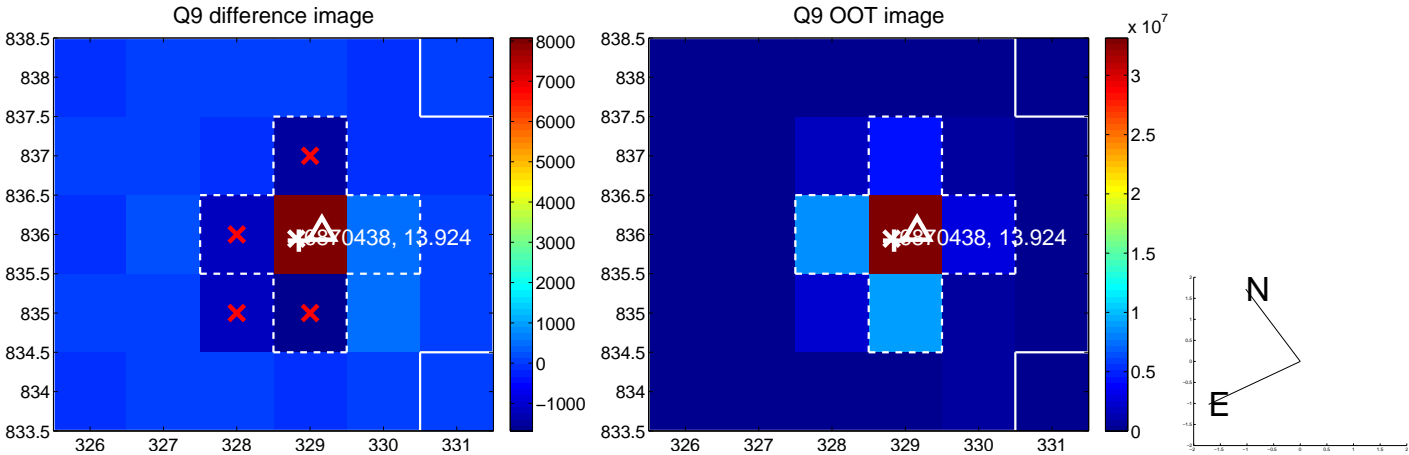
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



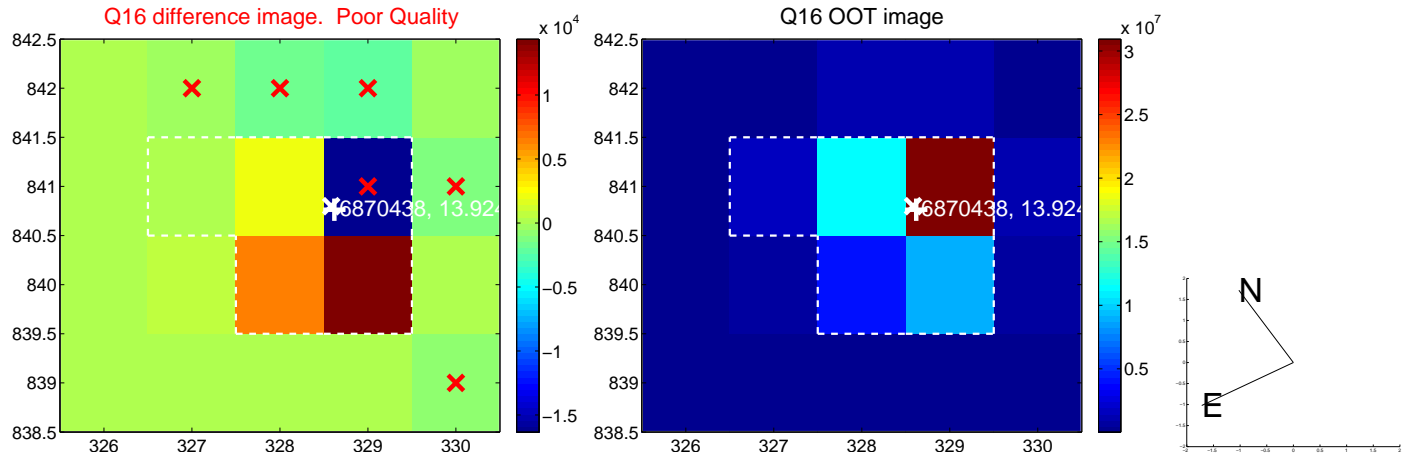
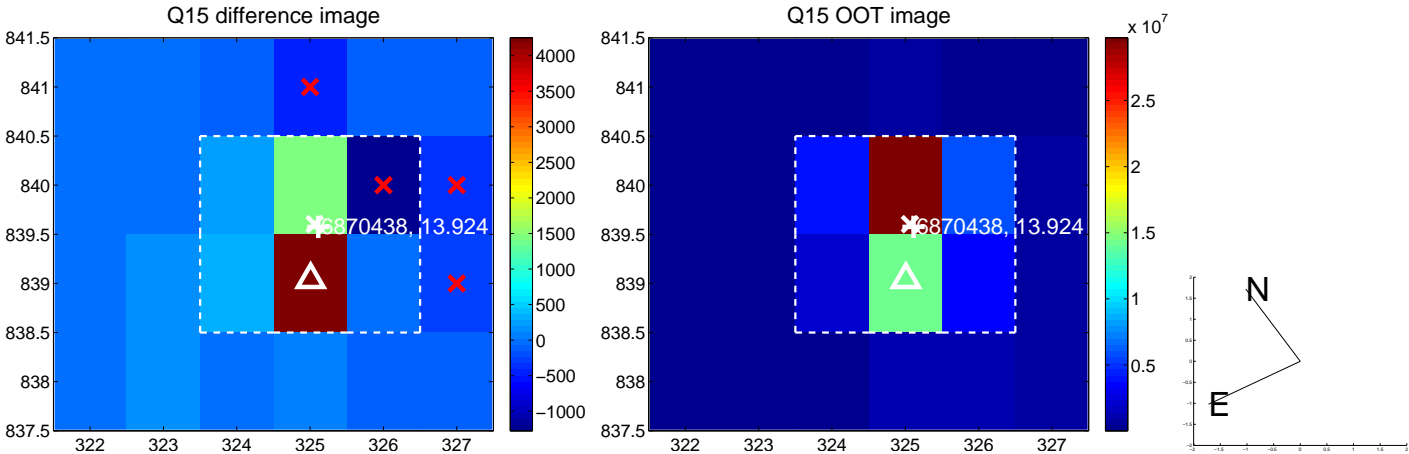
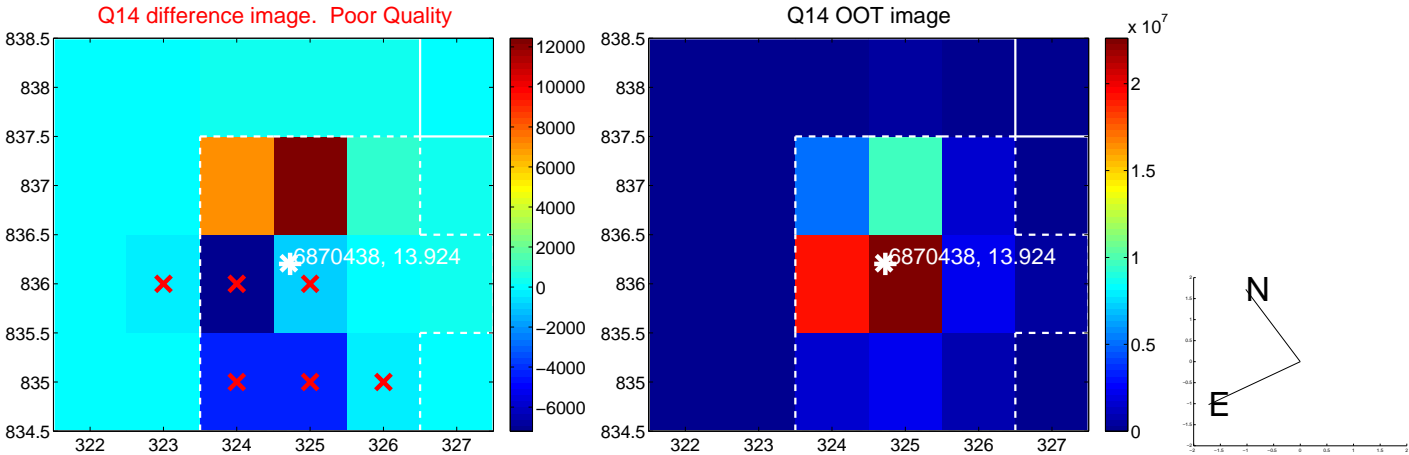
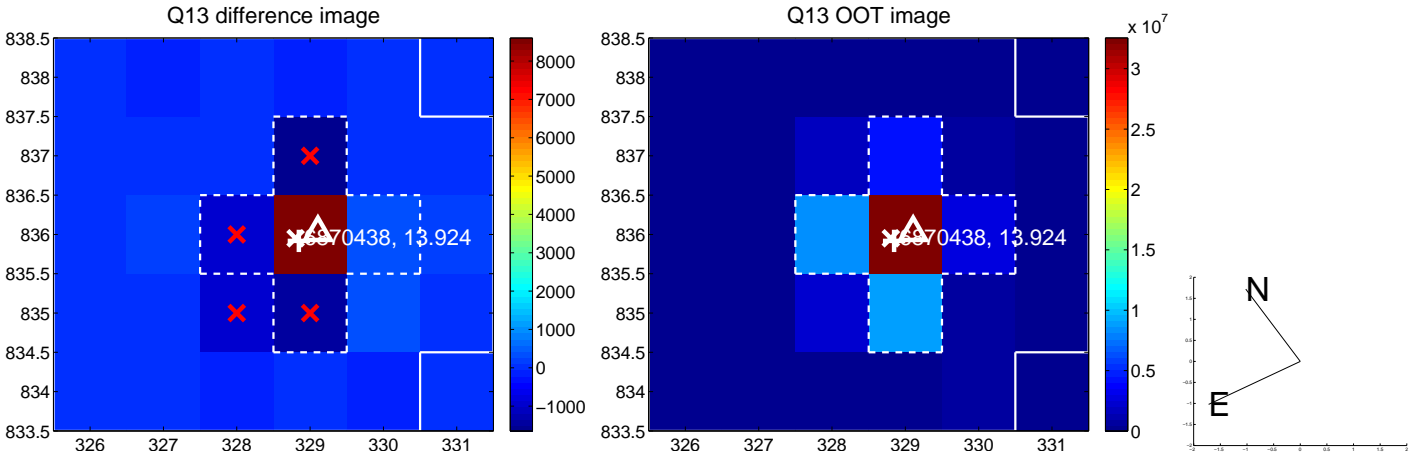
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



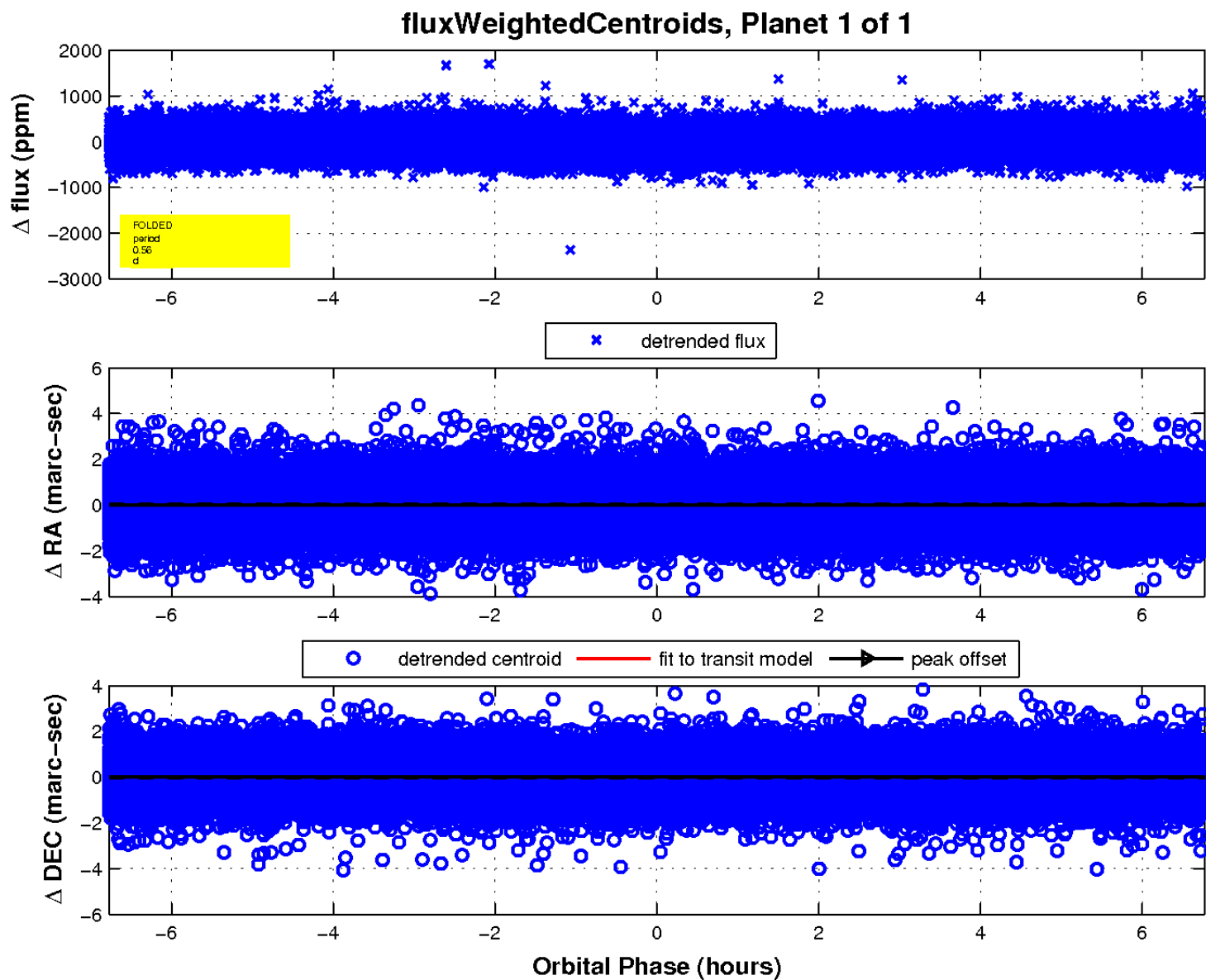
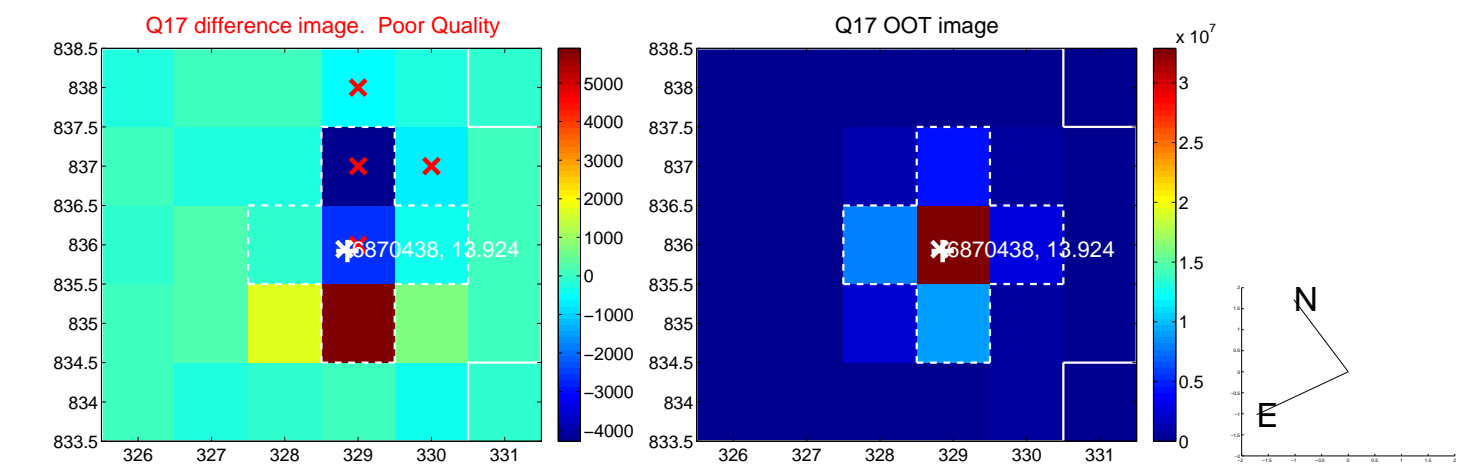
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

