

KIC 009028012

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})
009028012-01	OBS	No	3.859845	135.208766	17.5	30.173	7.1	8.9	0.75	5765	0.32	276.30

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009028012-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET

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

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

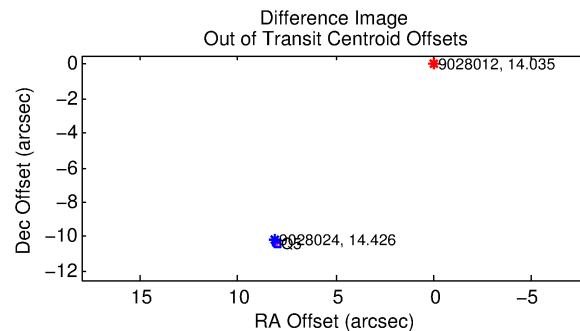
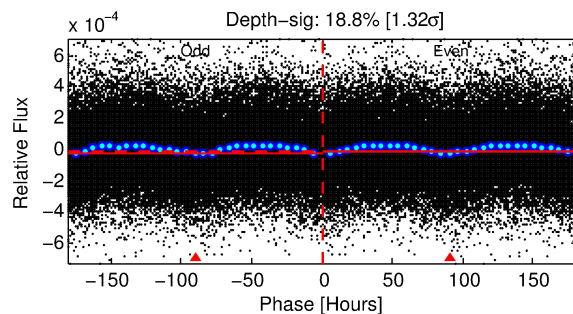
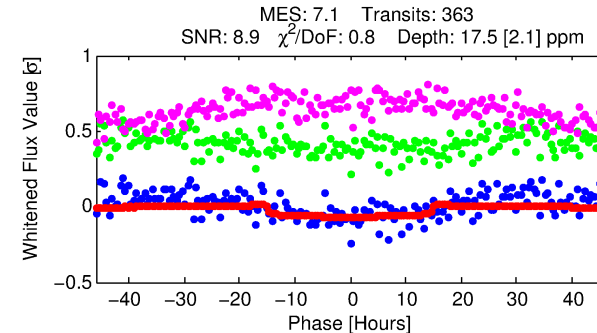
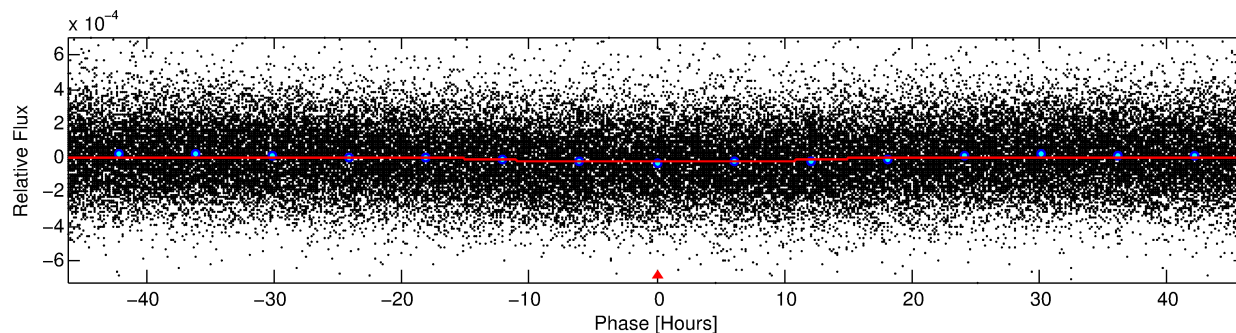
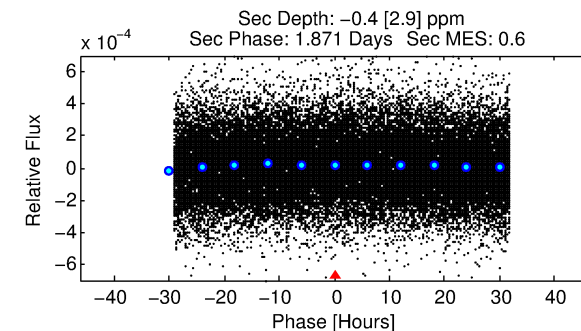
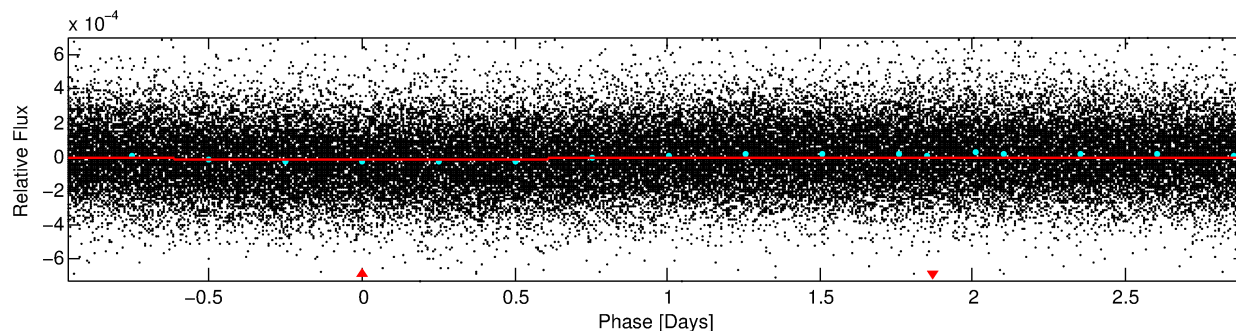
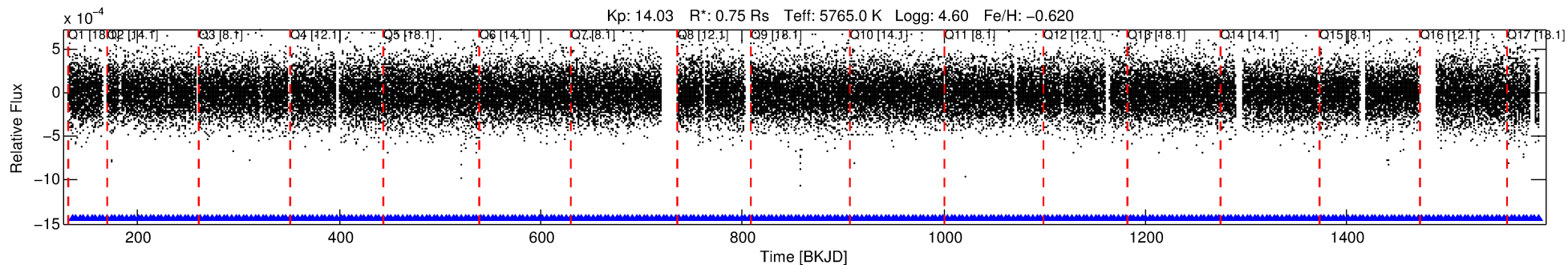
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009028012-01

No Significant Match Found

DV One-Page Summary

KIC: 9028012 Candidate: 1 of 1 Period: 3.860 d



DV Fit Results:

Period = 3.85985 [0.00013] d
Epoch = 135.2088 [0.0230] BKJD
Rp/R* = 0.0039 [0.0042]
a/R* = 1.16 [1.59]
b = 0.33 [14.85]
Seff = 276.29 [78.91]
Teq = 1040 [74] K
Rp = 0.32 [0.35] Re
a = 0.0449 [0.0082] AU
Ag = N/A
Teffp = N/A

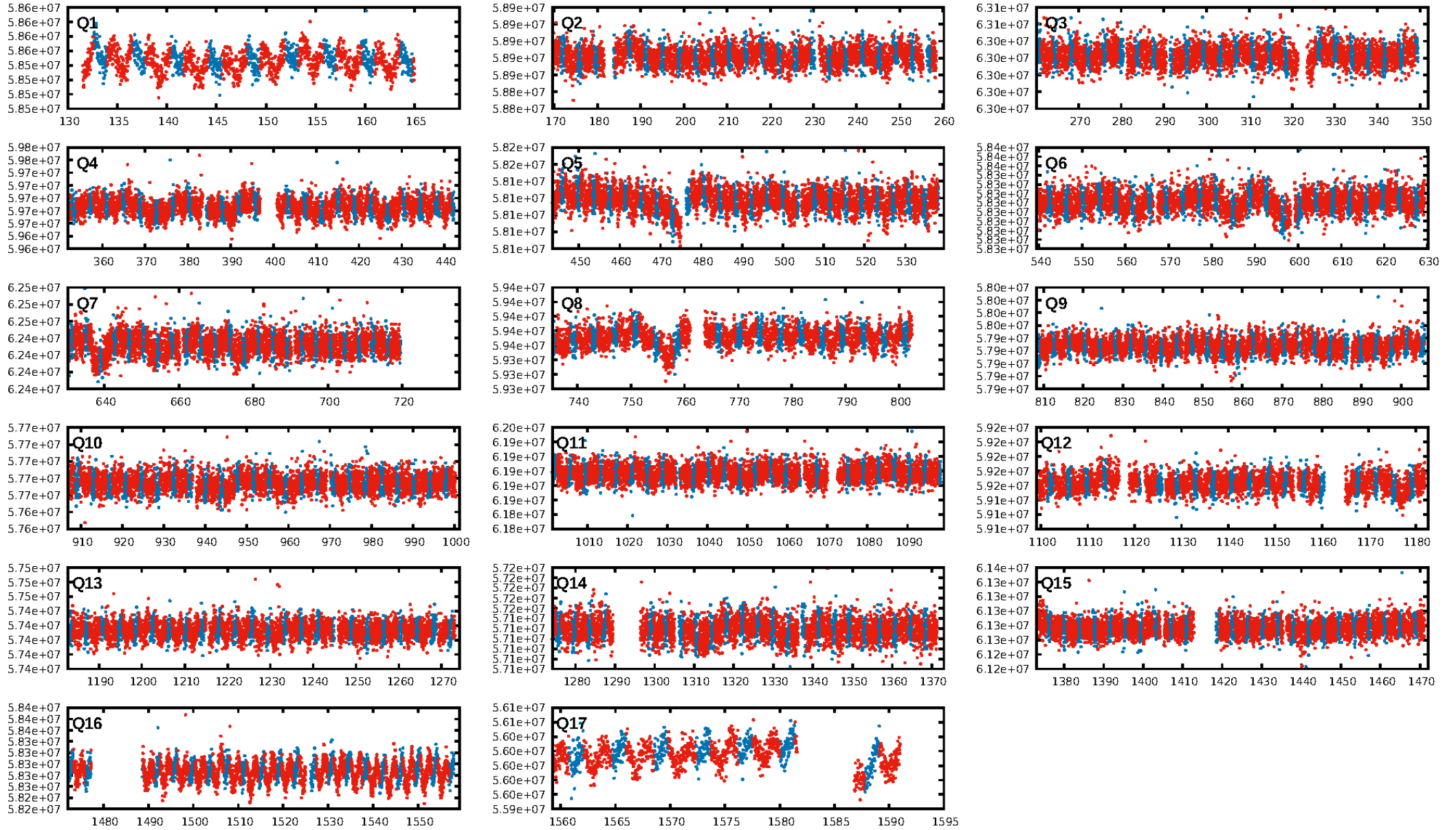
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [346/346]
GhostDiagnostic-chr: -0.9133
Centroid-sig: 0.0%
Centroid-so: 15.778 arcsec [7.84σ]
OotOffset-rm: 13.166 arcsec [197.03σ]
KicOffset-rm: 13.171 arcsec [197.11σ]
OotOffset-st: 0/0/0 [1]
KicOffset-st: 0/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [17/17]

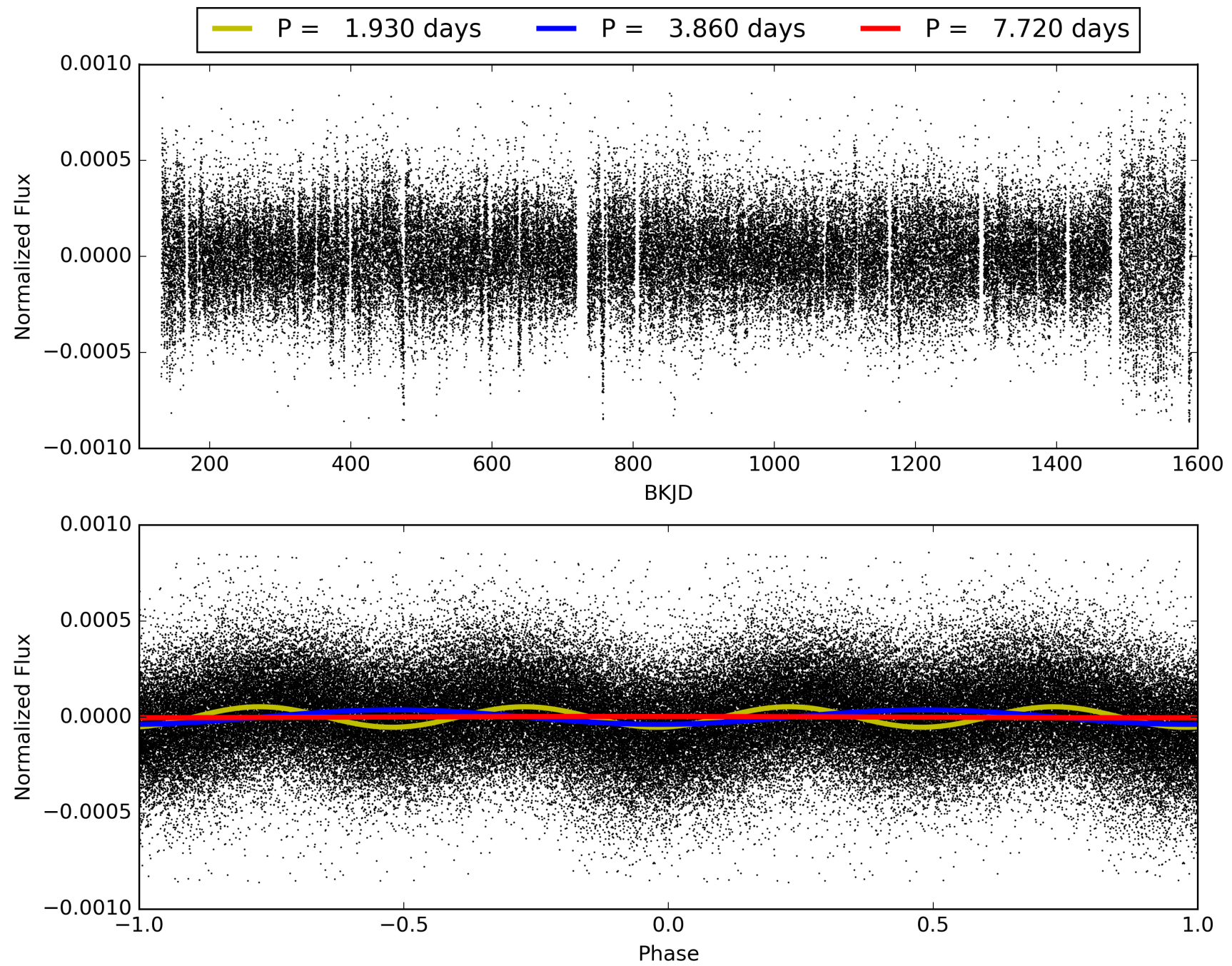
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:15:50 Z

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

TCE 009028012-01, PDC Light Curves

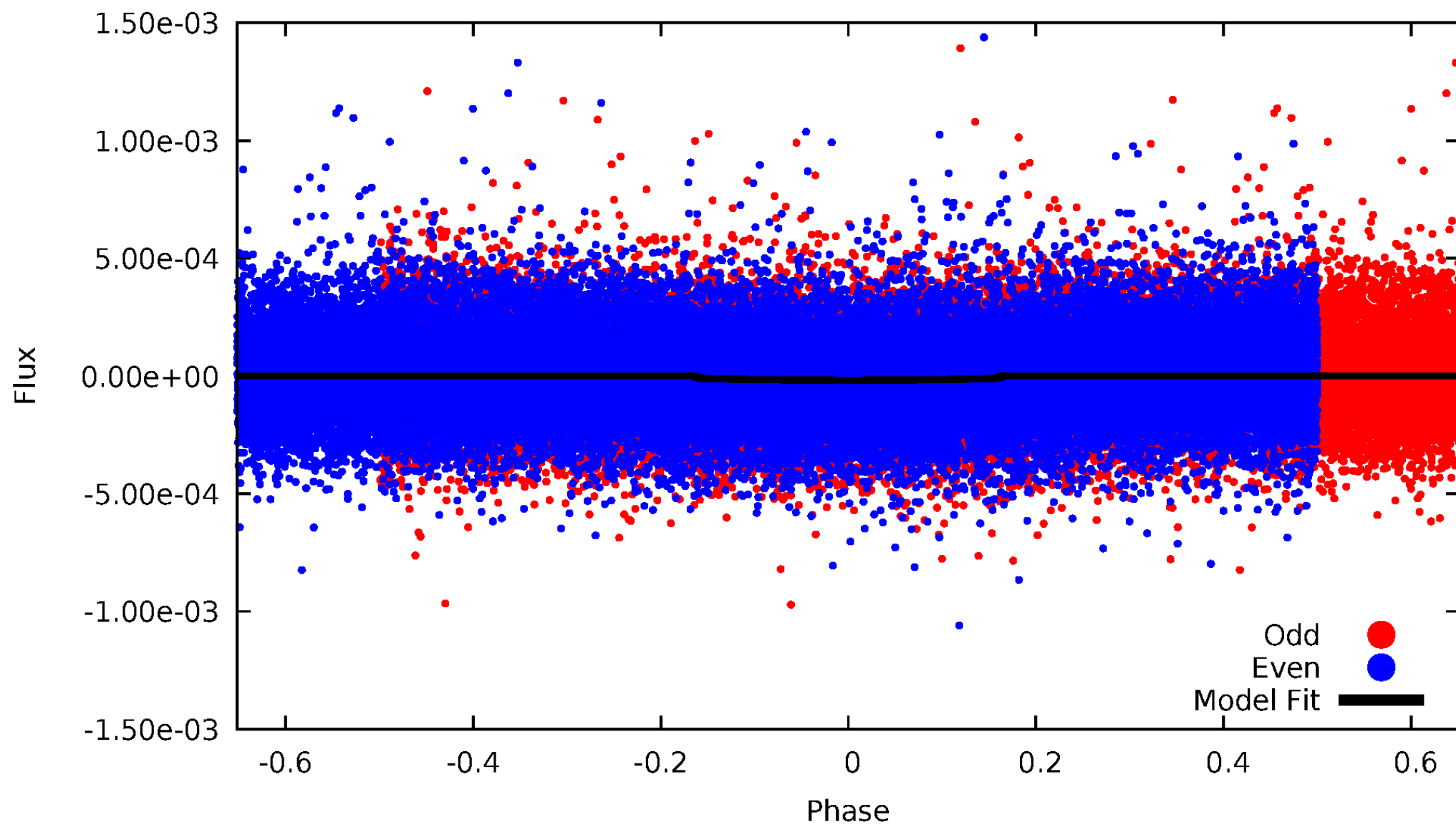


TCE 009028012-01



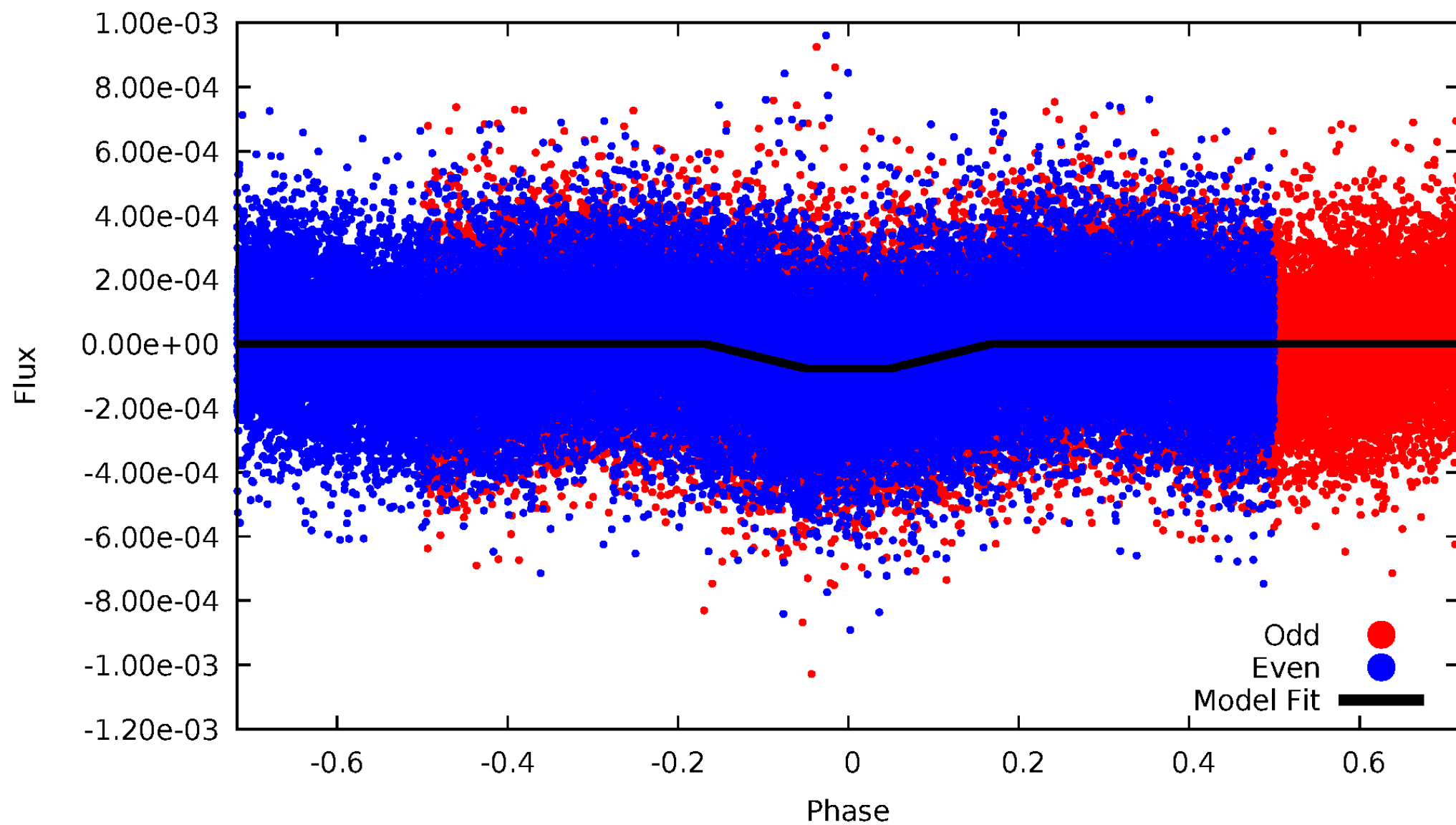
DV Odd/Even

TCE 009028012-01



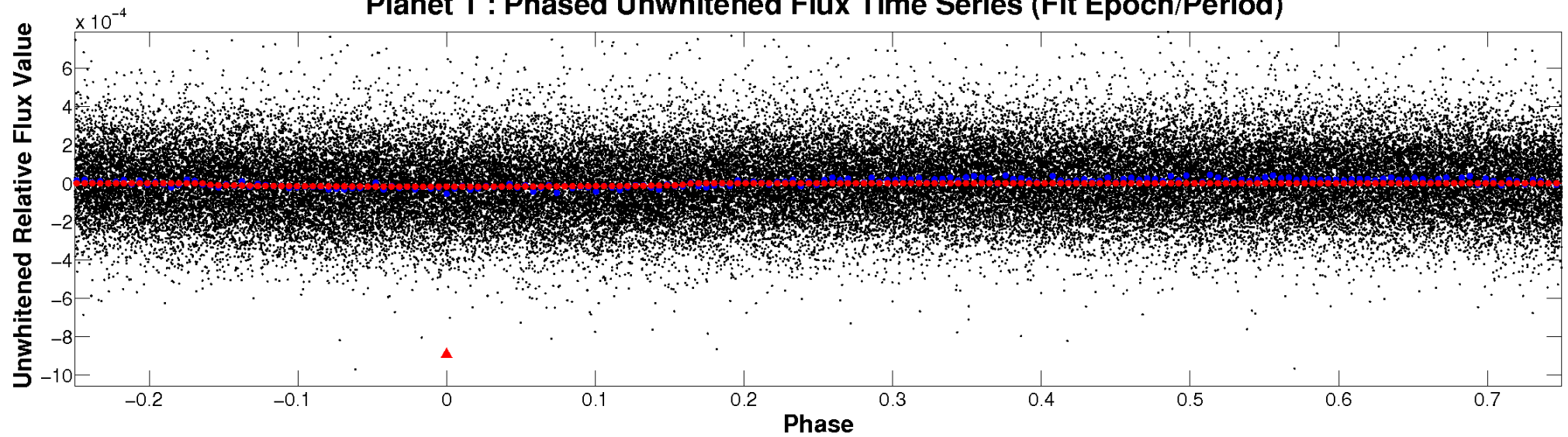
ALT Odd/Even

TCE 009028012-01

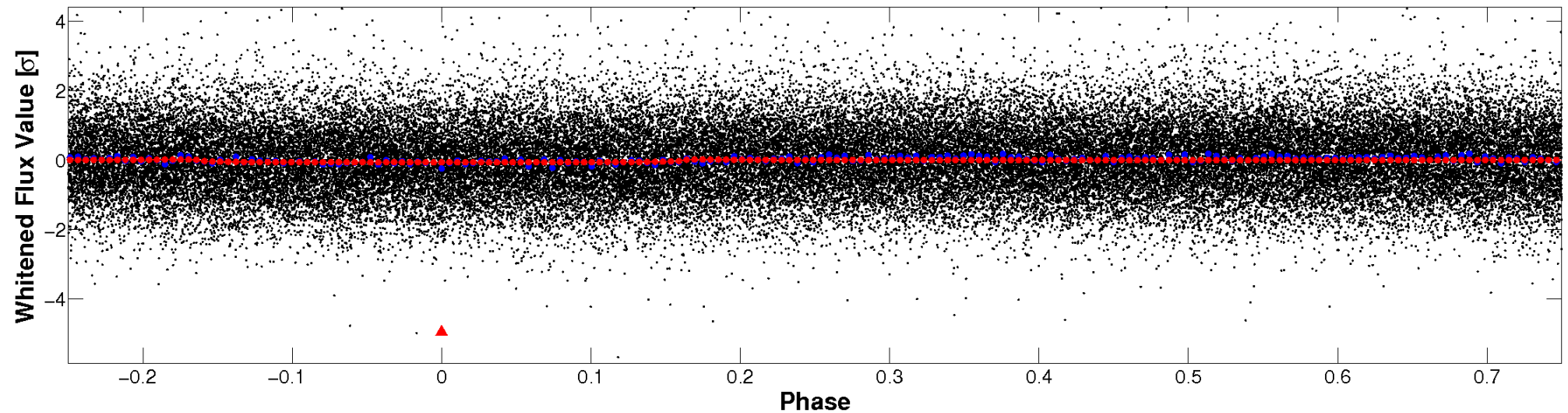


Non-Whitened Vs. Whitened Light Curve

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

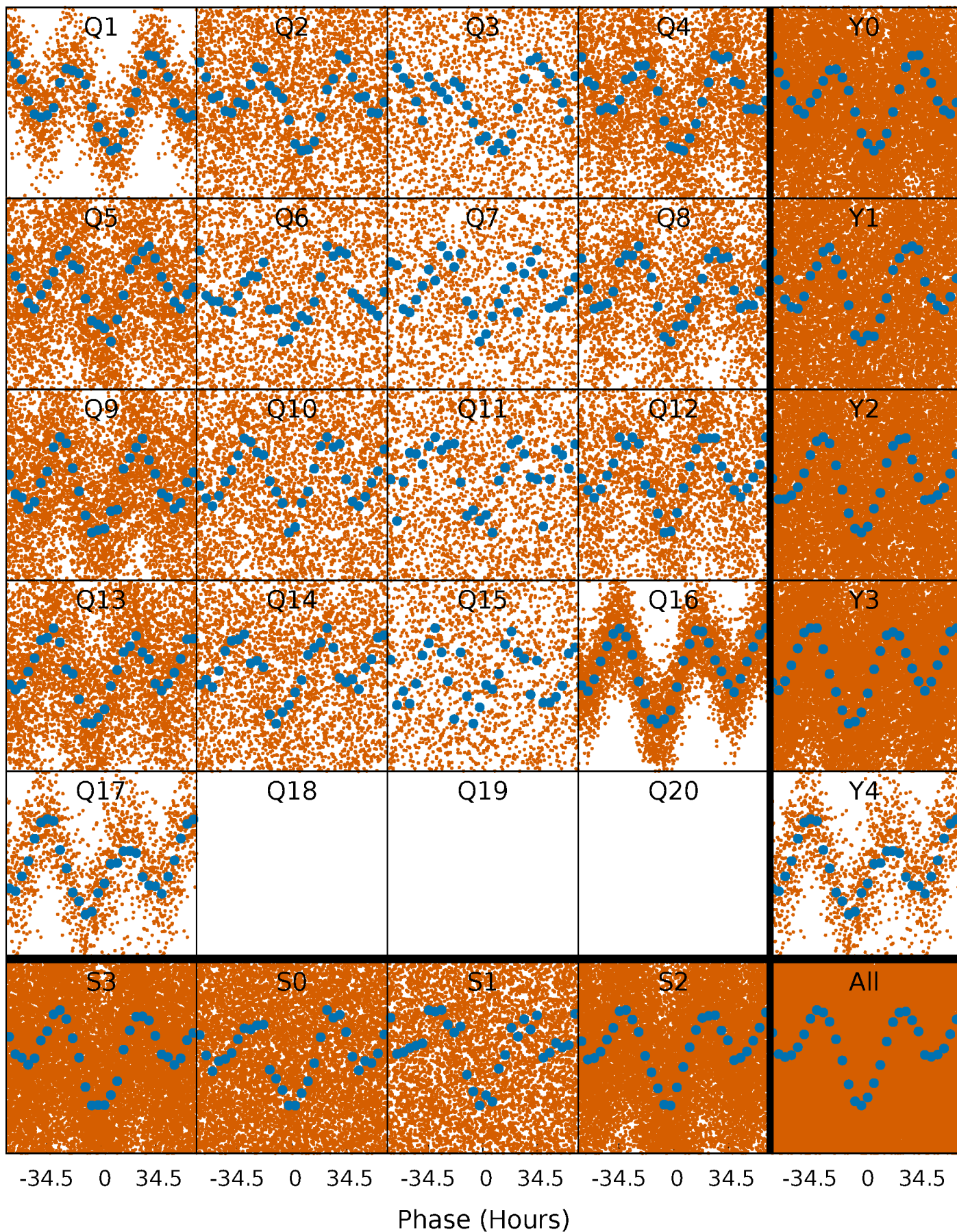


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



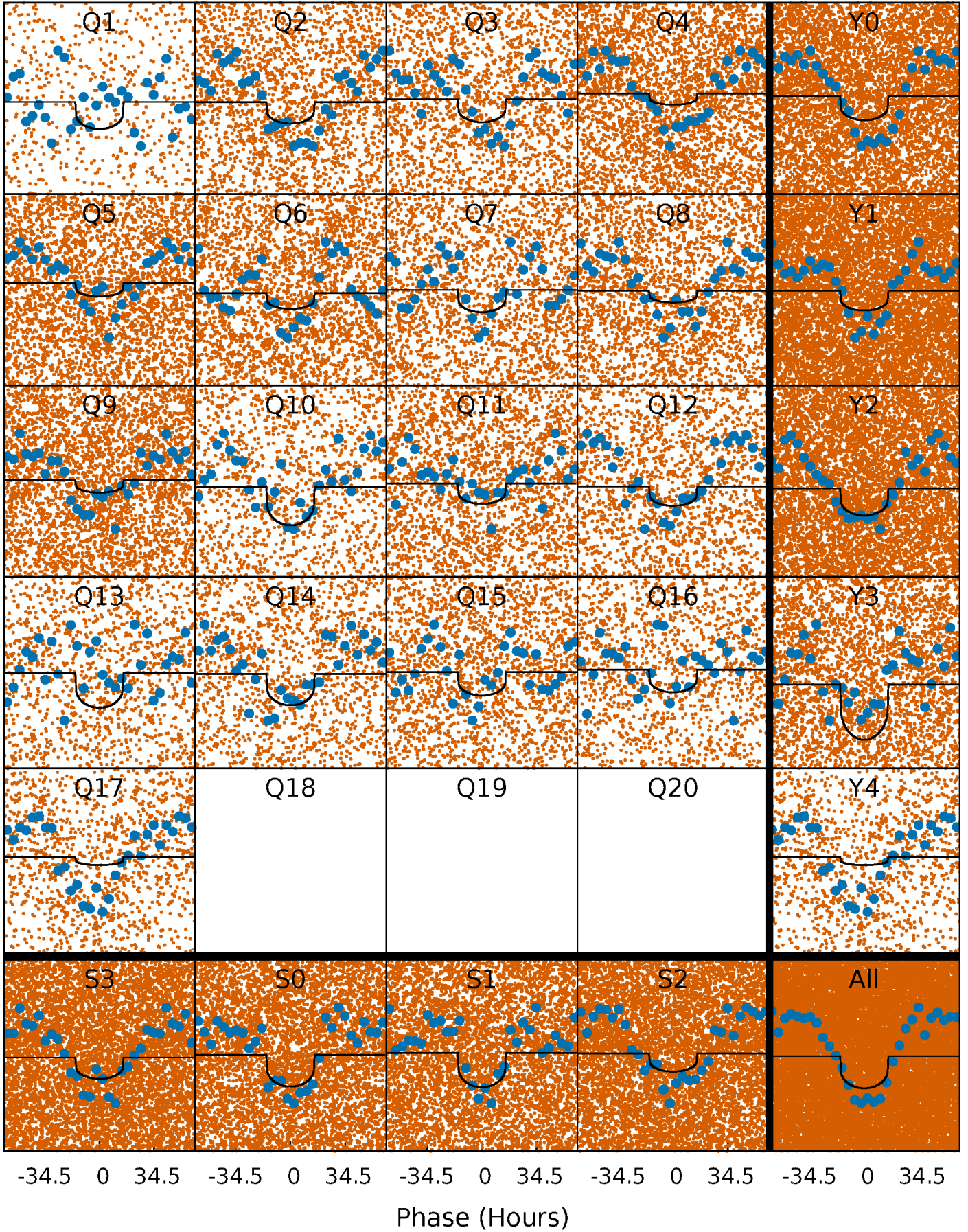
PDC Quarter-Phased Transit Curves

TCE 009028012-01 P= 3.859845 Days $T_0=135.208766$ (BKJD)



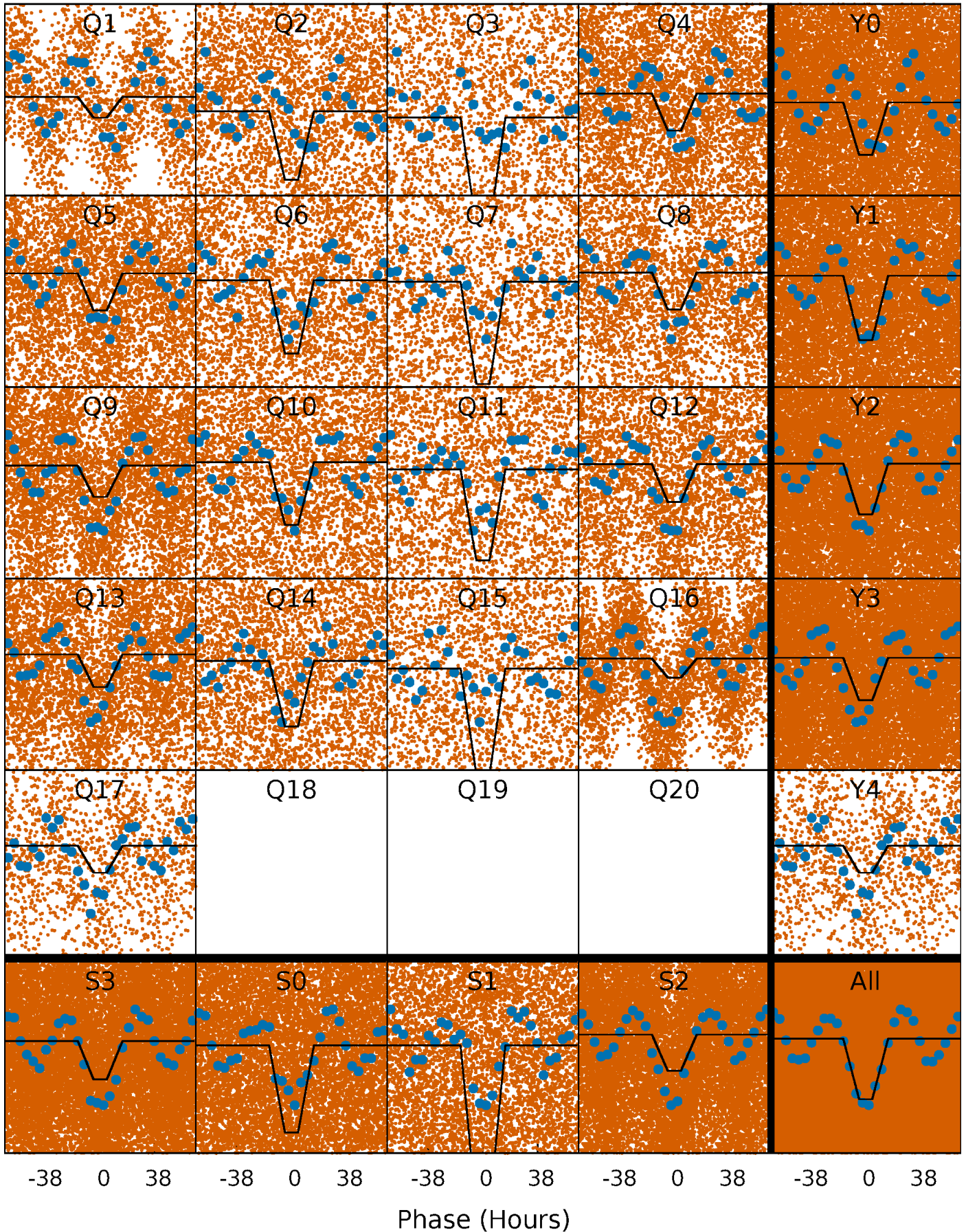
DV Quarter-Phased Transit Curves

TCE 009028012-01 P= 3.859845 Days $T_0=135.208766$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

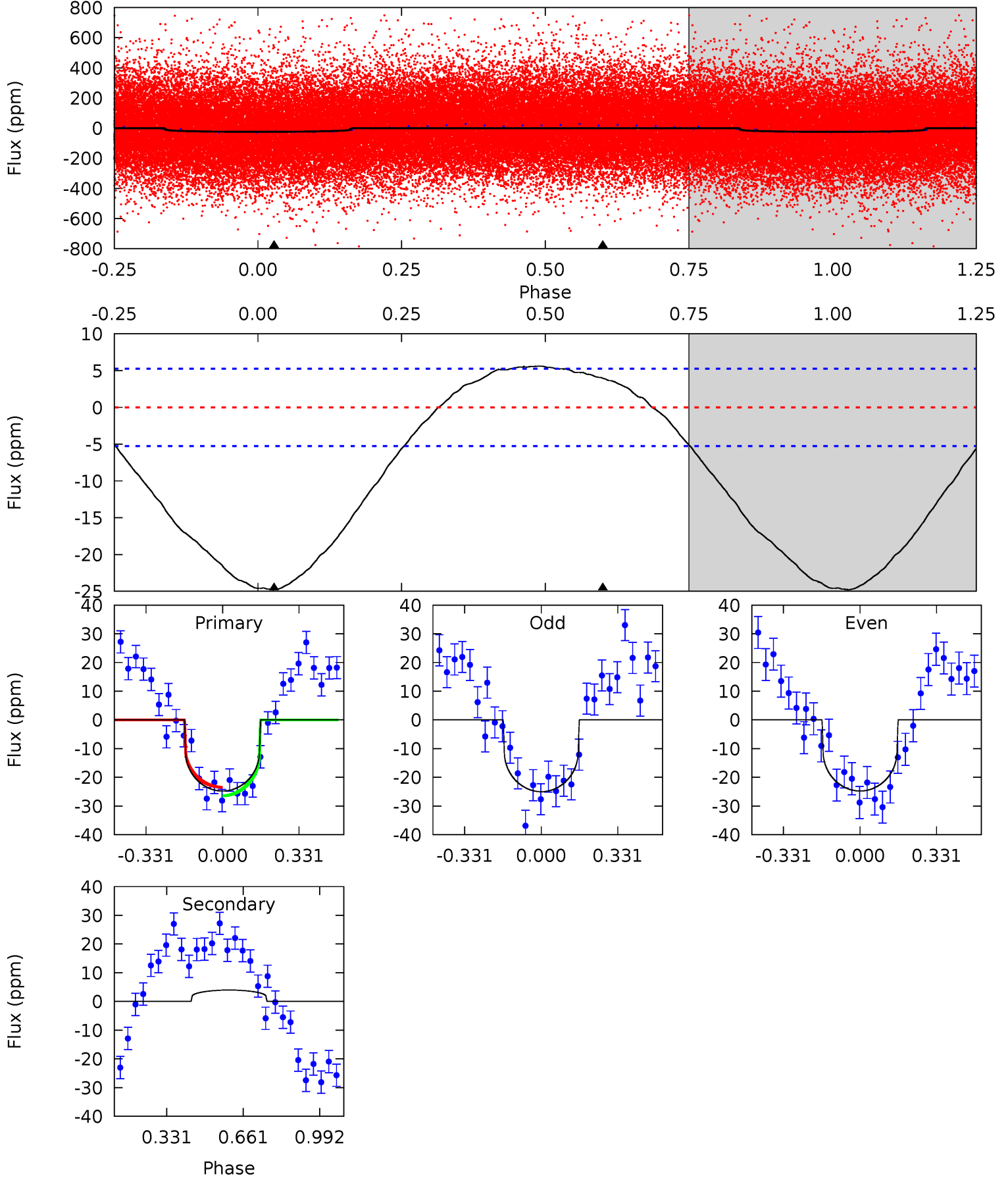
TCE 009028012-01 P= 3.859817 Days $T_0=135.141454$ (BKJD)



DV Model-Shift Uniqueness Test

009028012-01, P = 3.859845 Days, E = 131.348921 Days

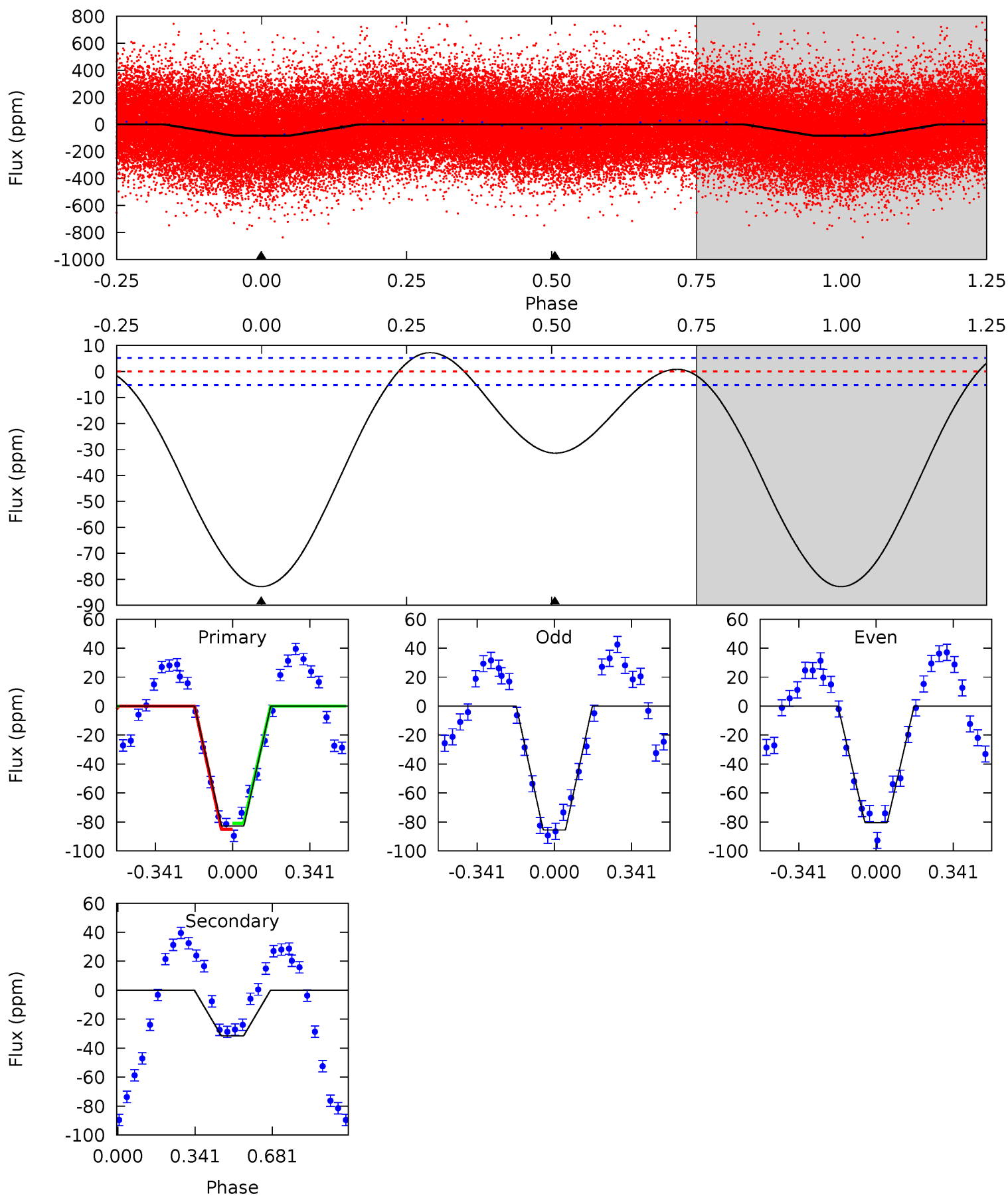
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.3	-3.25	0	0	4.31	0.97	1.82	20.3	20.3	-3.25	-3.25	0.10	1.19	0.18	1.19



Alt Model-Shift Uniqueness Test

009028012-01, P = 3.859817 Days, E = 131.281637 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
68.7	26.1	0	0	4.30	0.95	3.24	68.7	68.7	26.1	26.1	2.14	1.18	0.08	1.63



Stellar Parameters For KIC 009028012

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5765^{+157}_{-157}	$4.596^{+0.038}_{-0.143}$	$-0.620^{+0.300}_{-0.300}$	$0.750^{+0.165}_{-0.055}$	$0.810^{+0.085}_{-0.077}$	$2.700^{+0.512}_{-1.154}$
	+3%/-3%	+1%/-3%	+48%/-48%	+22%/-7%	+10%/-10%	+19%/-43%
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 009028012-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	4 ± 1	$0.40^{+0.34}_{-0.26}$	1475^{+78}_{-60}	-4050^{+751}_{-2101}	$-26.114^{+18.906}_{-178.706}$
Alt.	-31 ± 1	$0.74^{+0.36}_{-0.32}$	1475^{+81}_{-56}	4775^{+1411}_{-683}	63^{+135}_{-35}

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

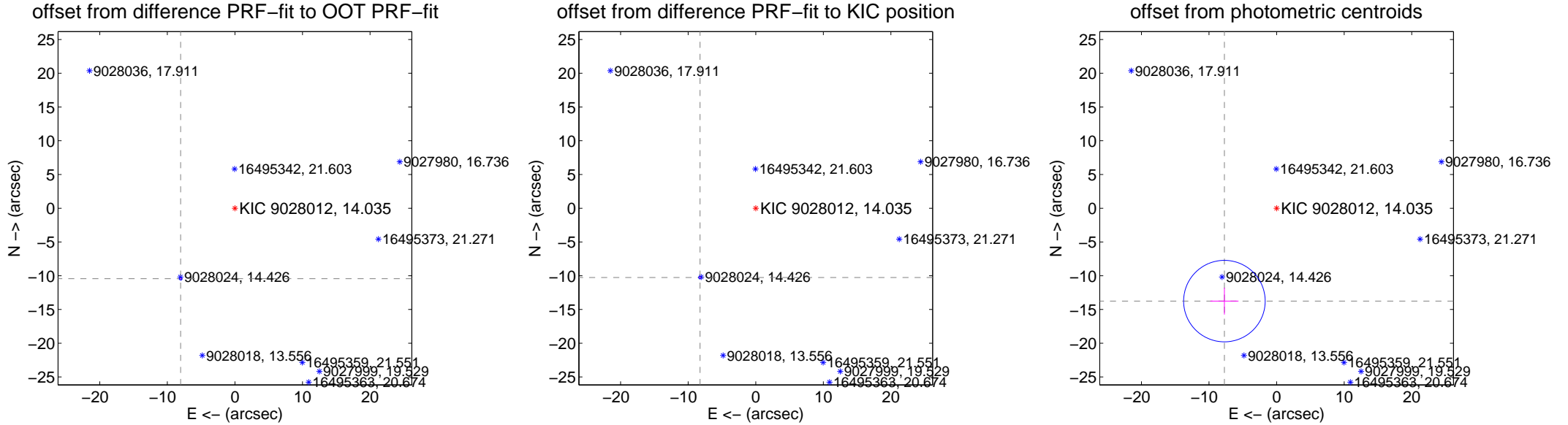
DV Centroid Data

Supplemental centroid analysis for 009028012-01. Kepler magnitude: 14.04. Transit SNR 8.89

There are 1 quarters with good PRF difference image offsets

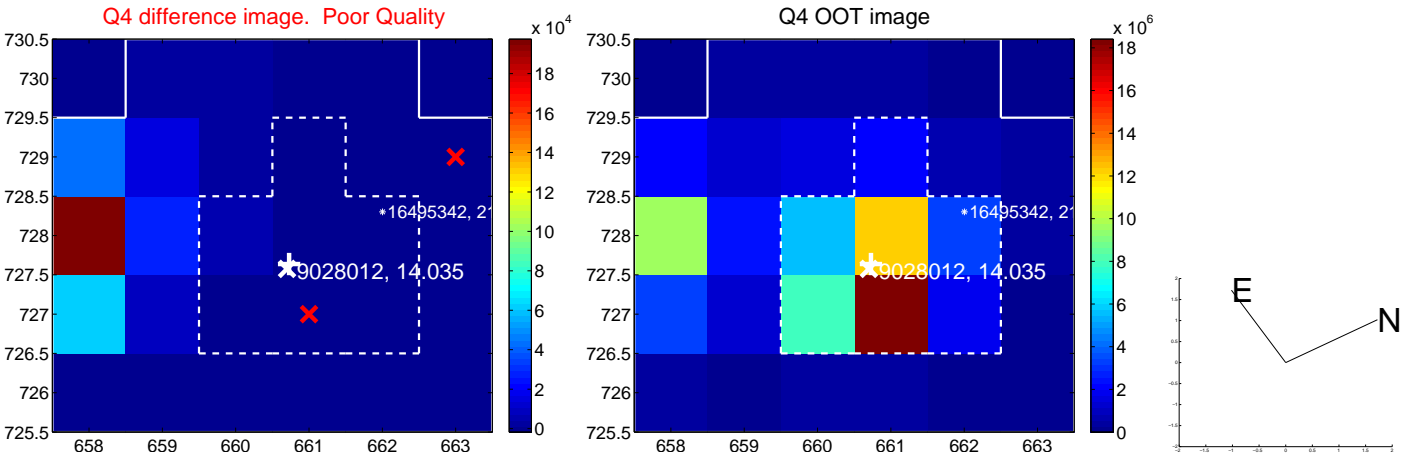
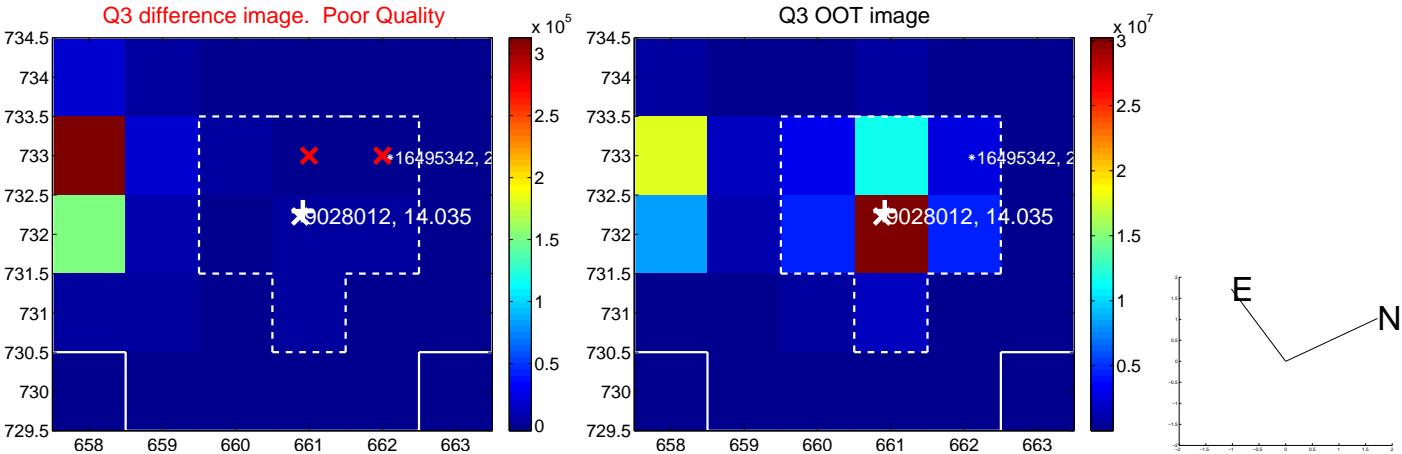
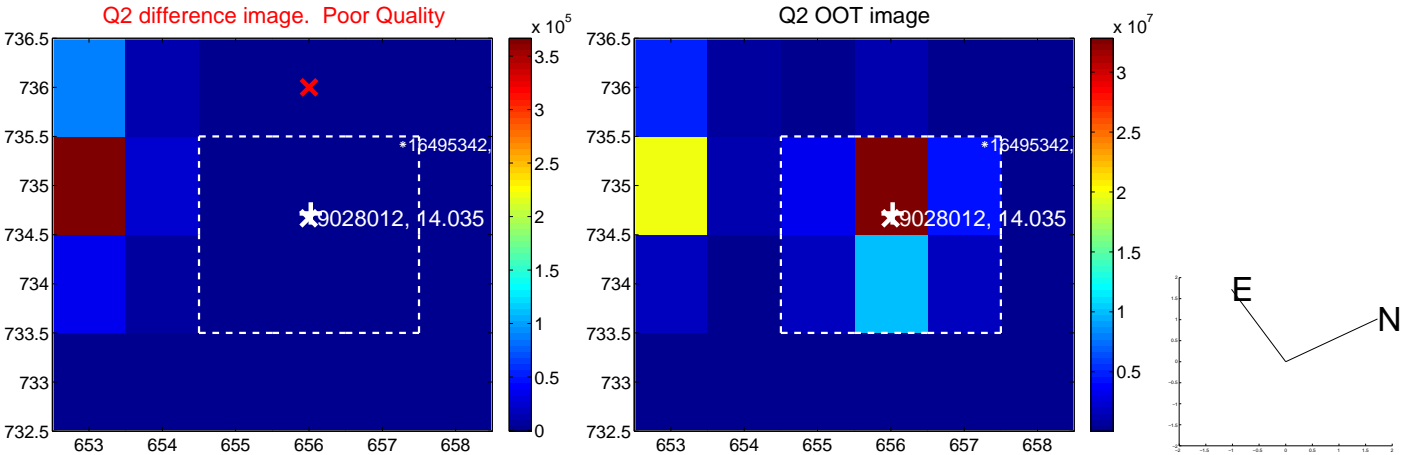
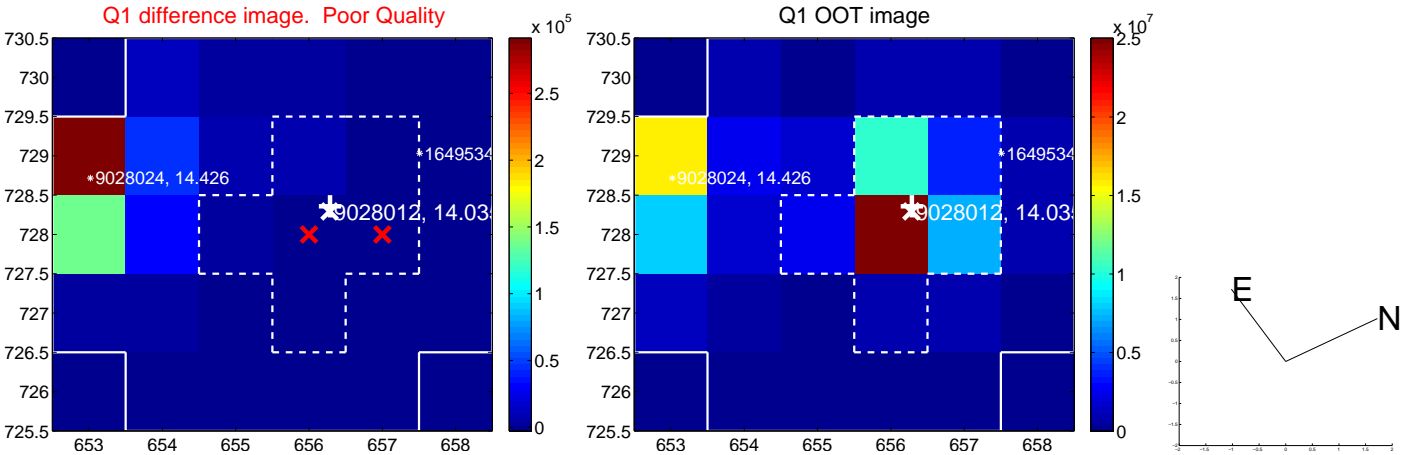
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	13.166 \pm 0.067	197.03	8.029 \pm 0.067	-10.435 \pm 0.067
PRF-fit source offset from KIC position	13.171 \pm 0.067	197.11	8.250 \pm 0.067	-10.267 \pm 0.067
photometric centroid source offset	15.78 \pm 2.01	7.84	7.72 \pm 2.08	-13.76 \pm 1.99

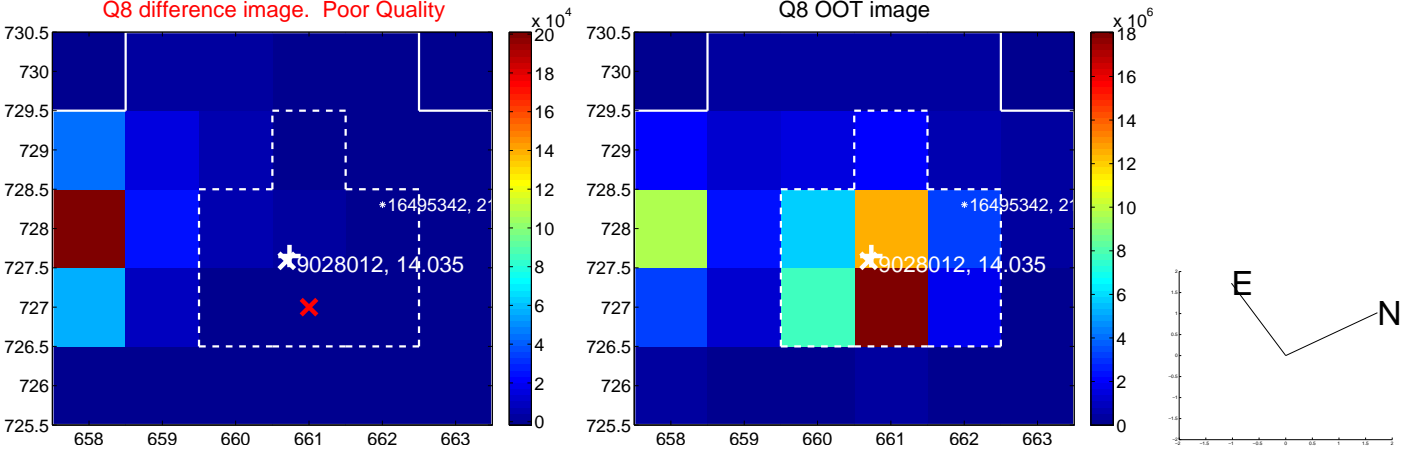
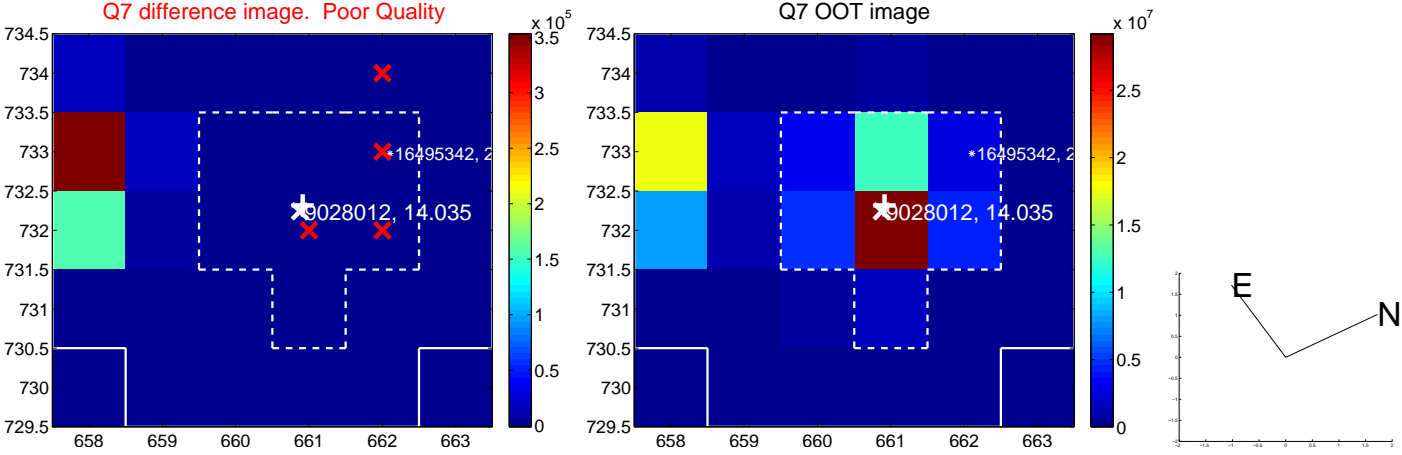
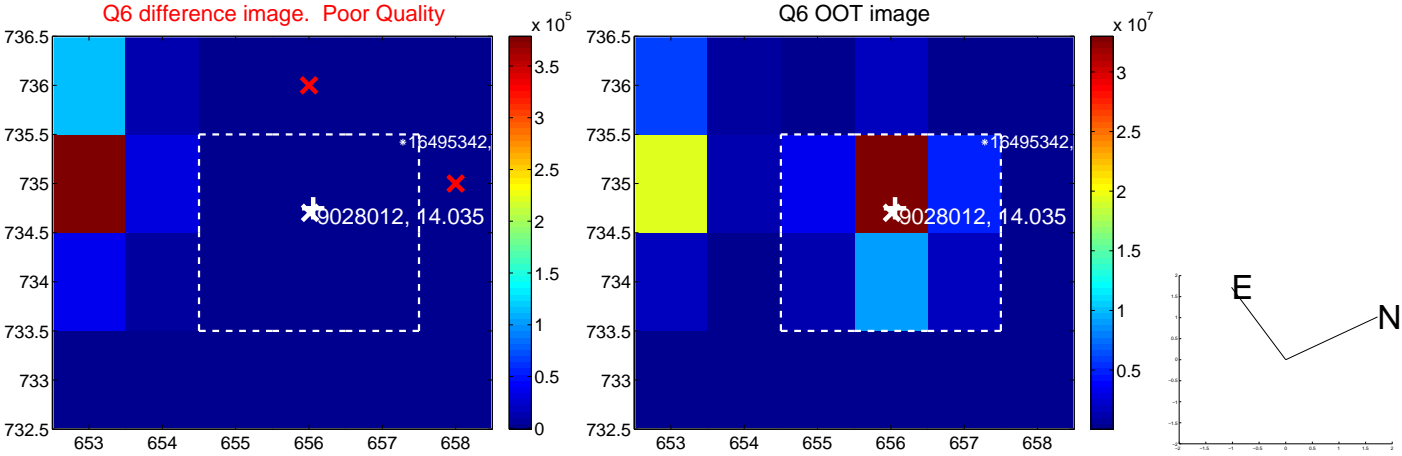
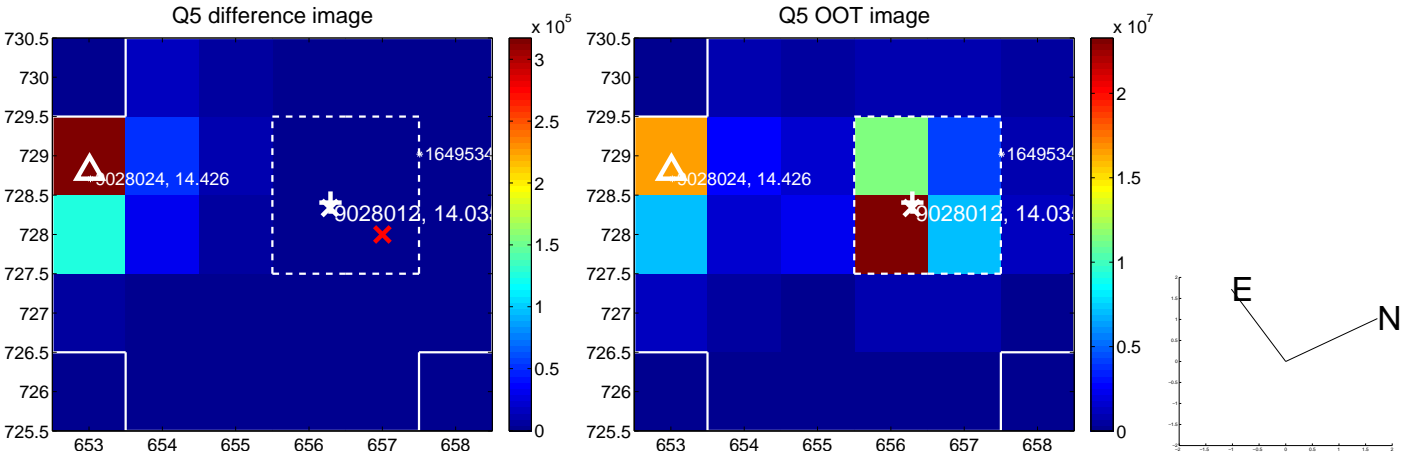


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

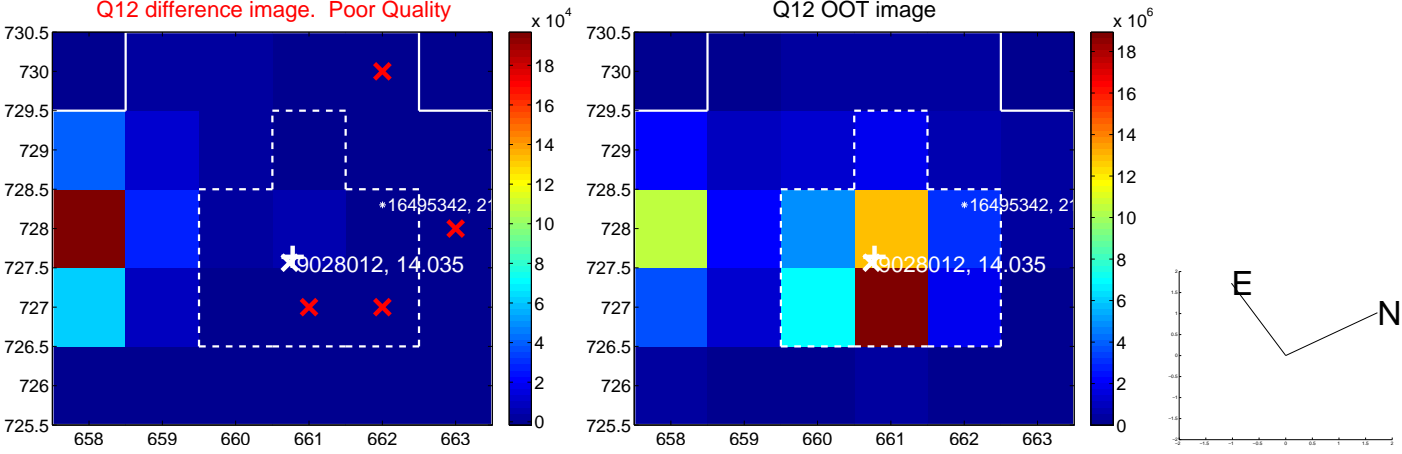
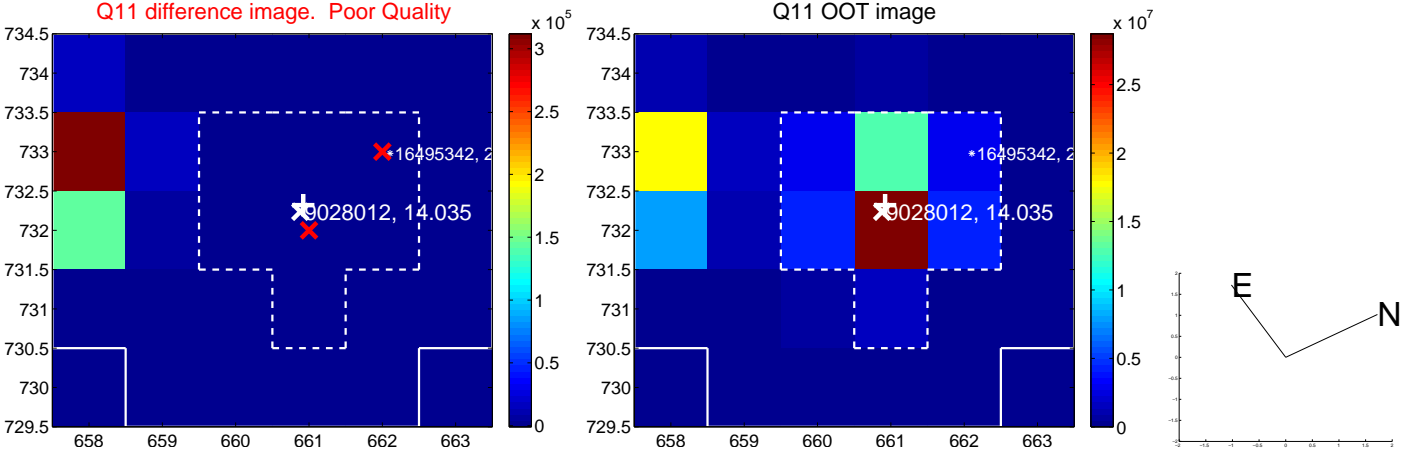
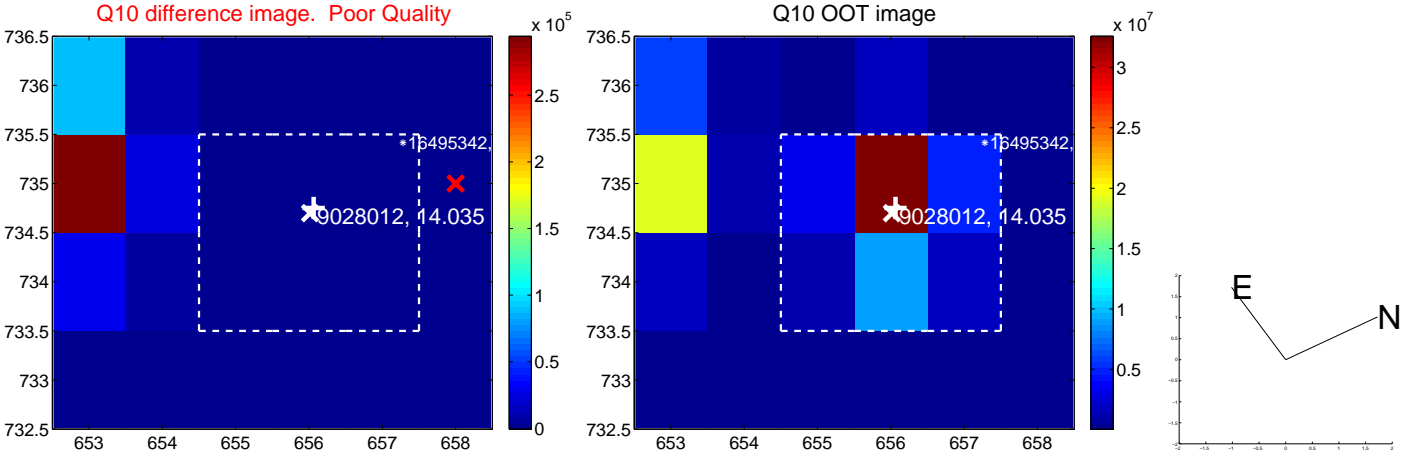
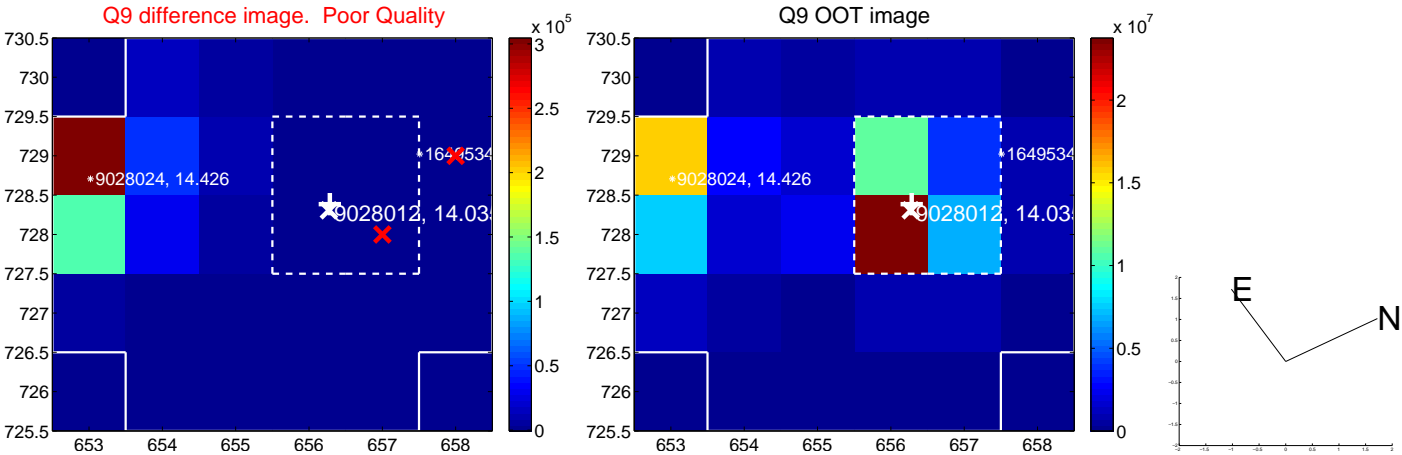
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



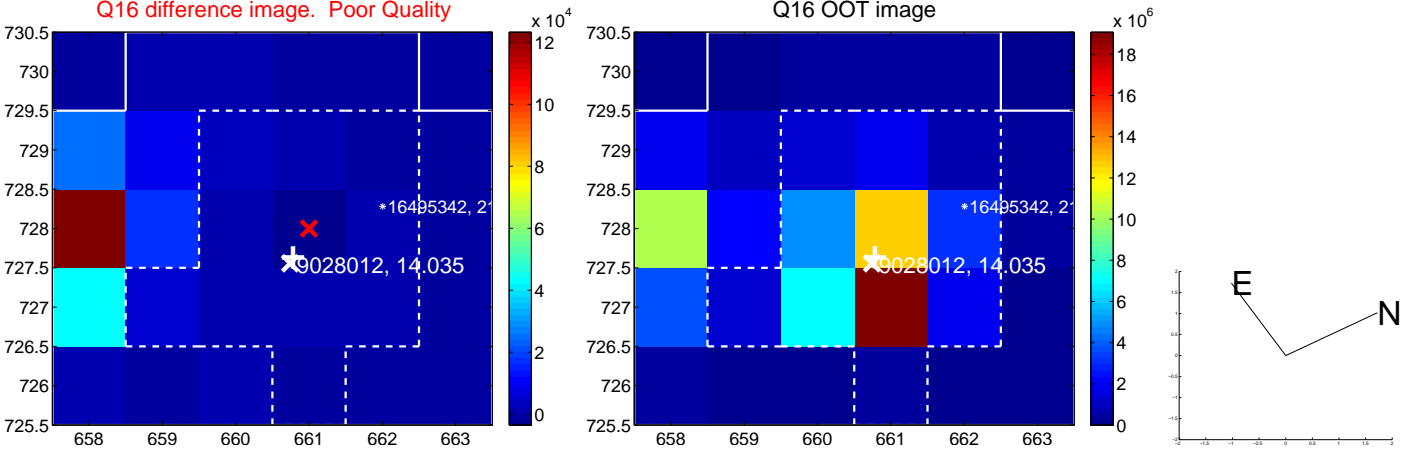
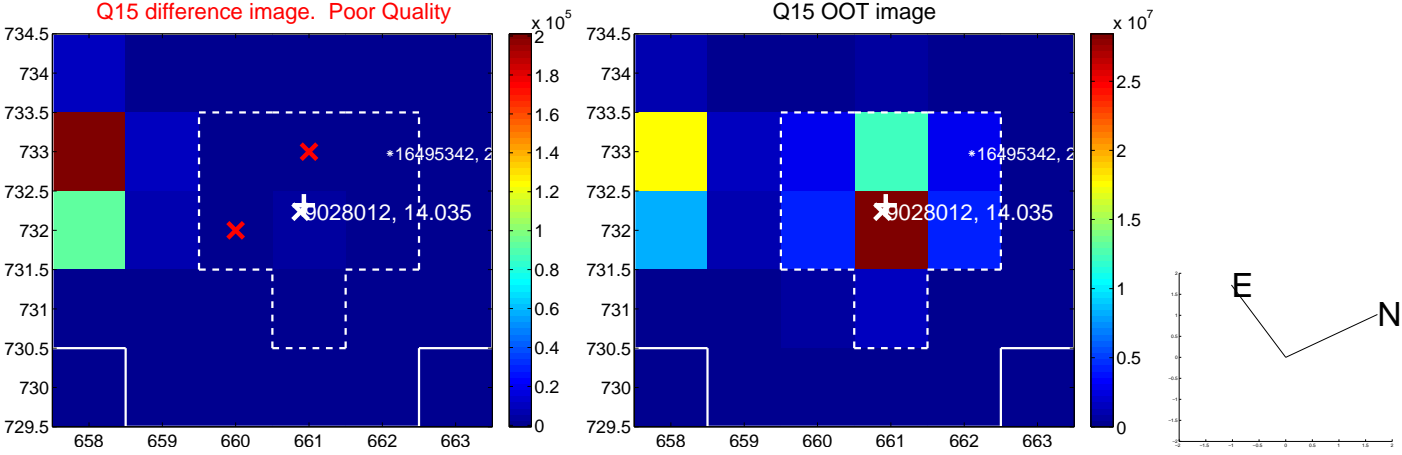
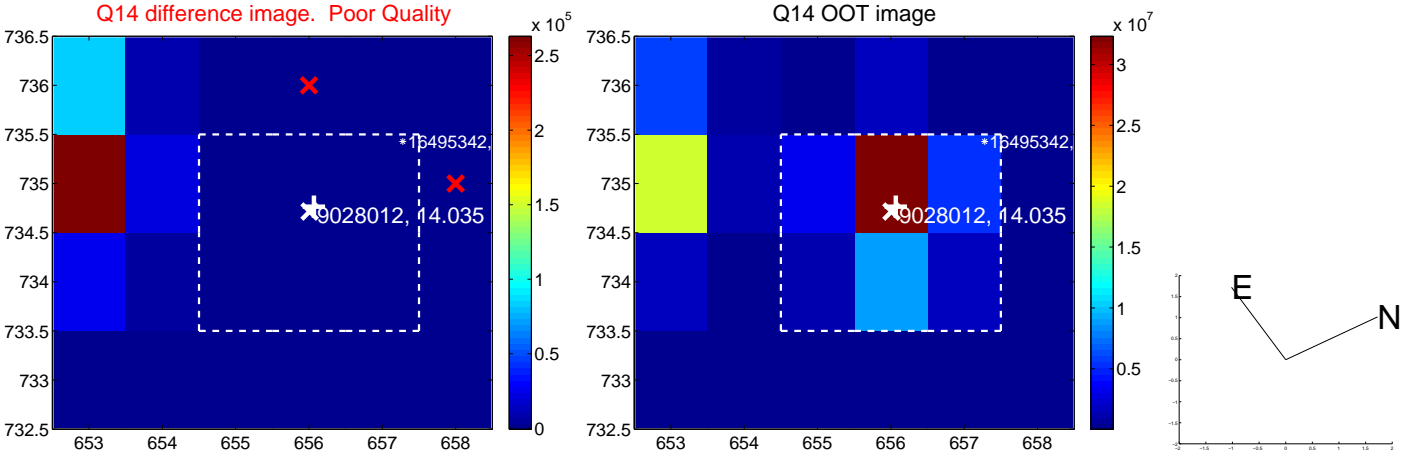
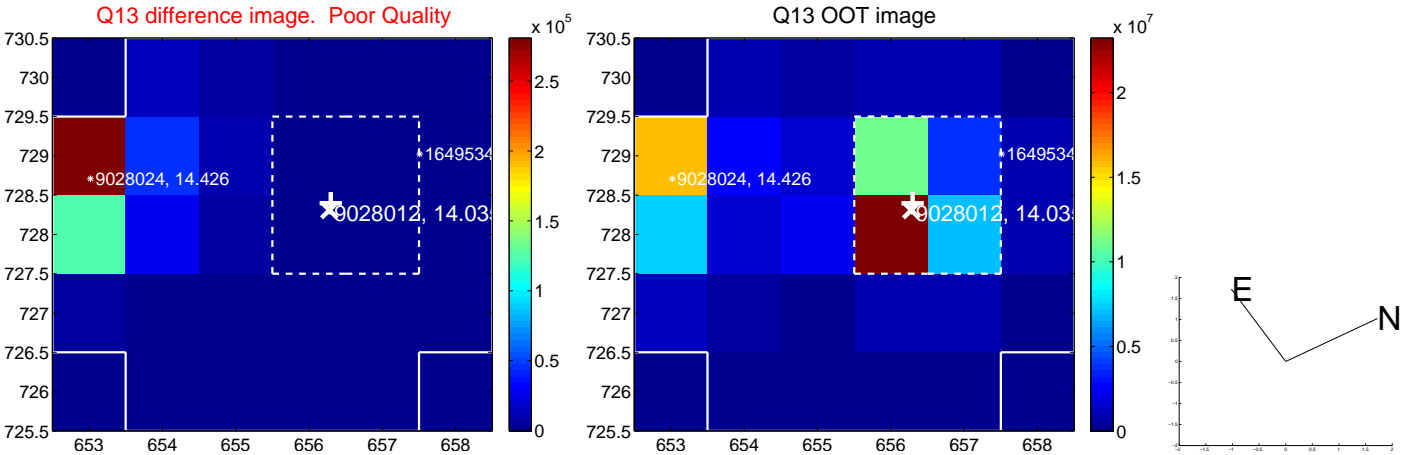
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



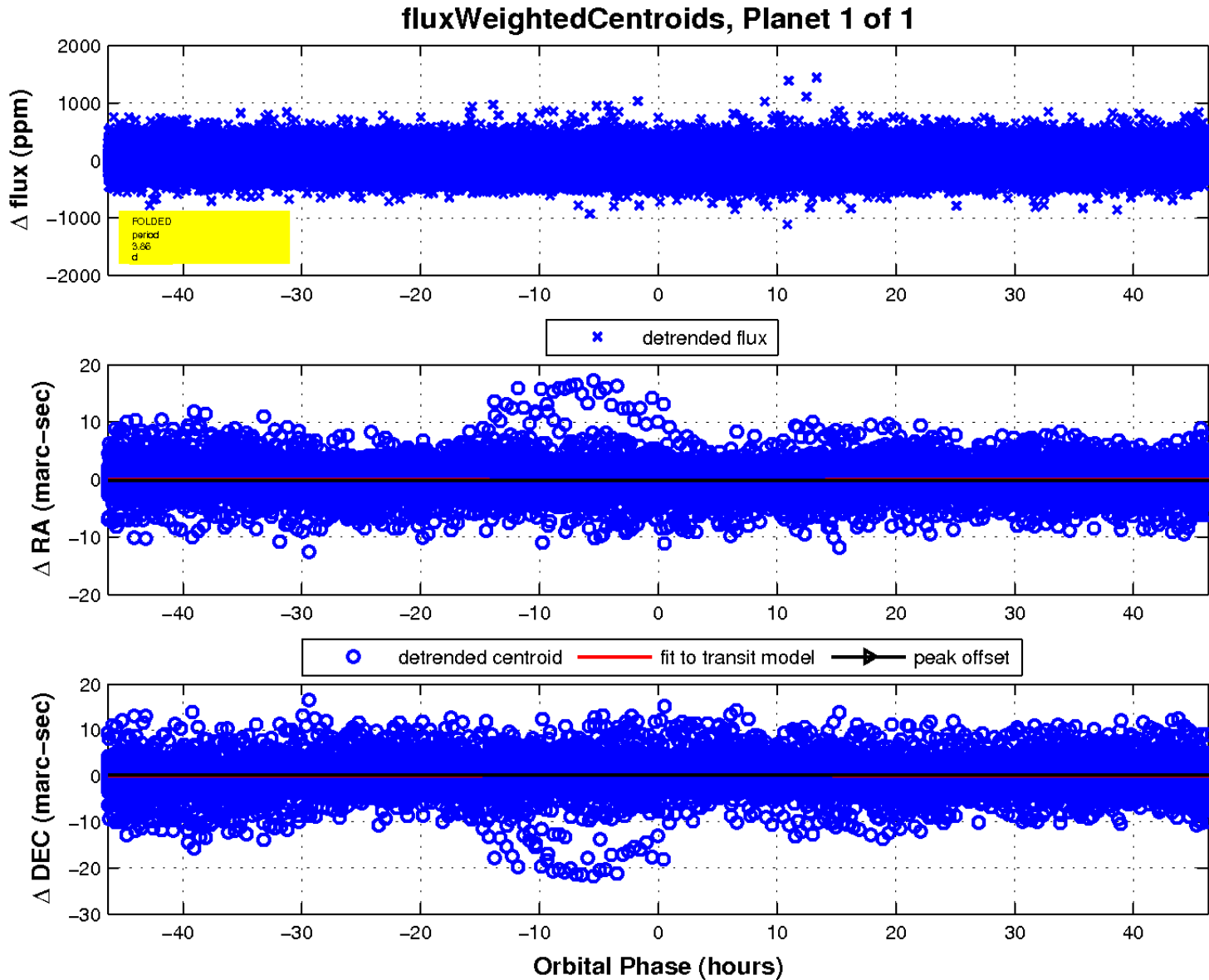
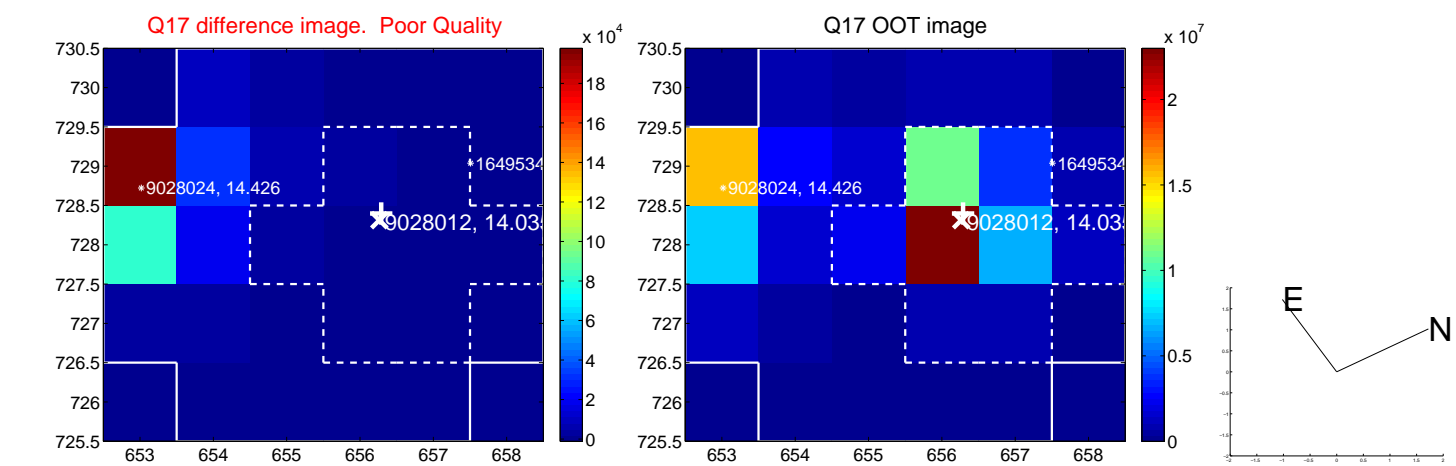
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white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

