

KIC 009305012

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})
009305012-01	OBS	No	0.967945	132.466697	67.0	8.692	10.6	13.6	2.69	9189	2.28	81323.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009305012-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—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.

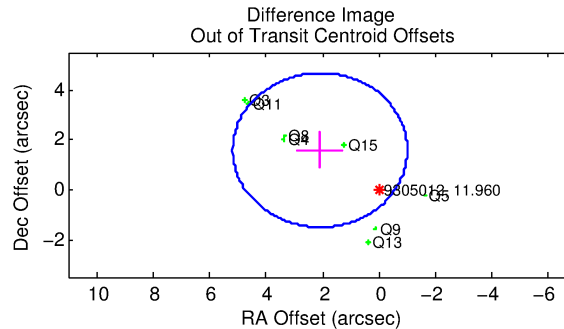
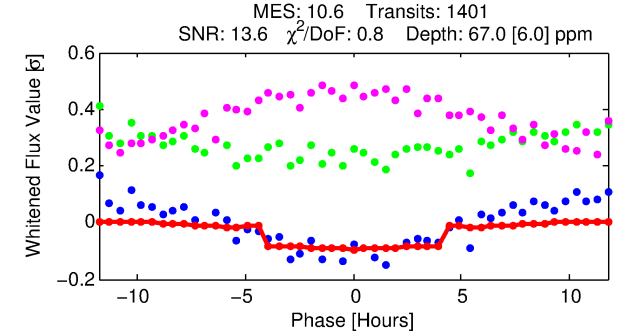
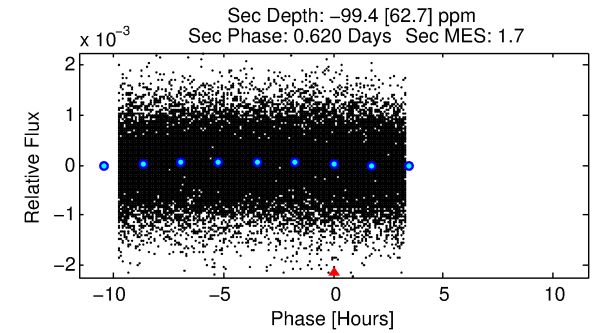
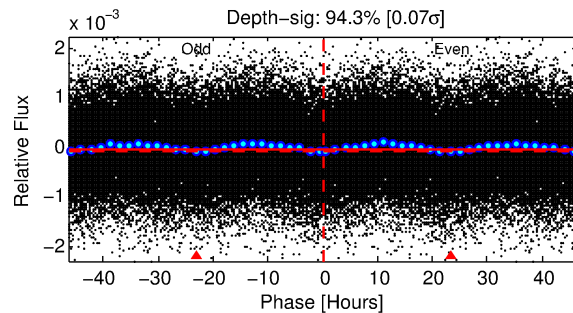
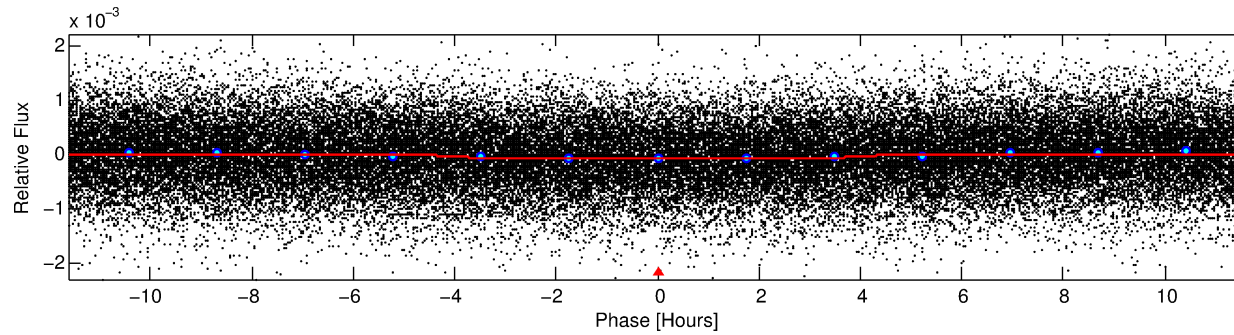
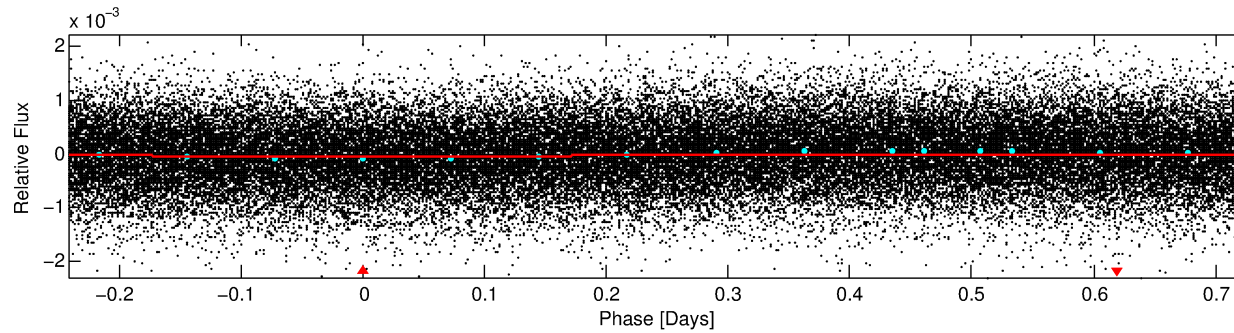
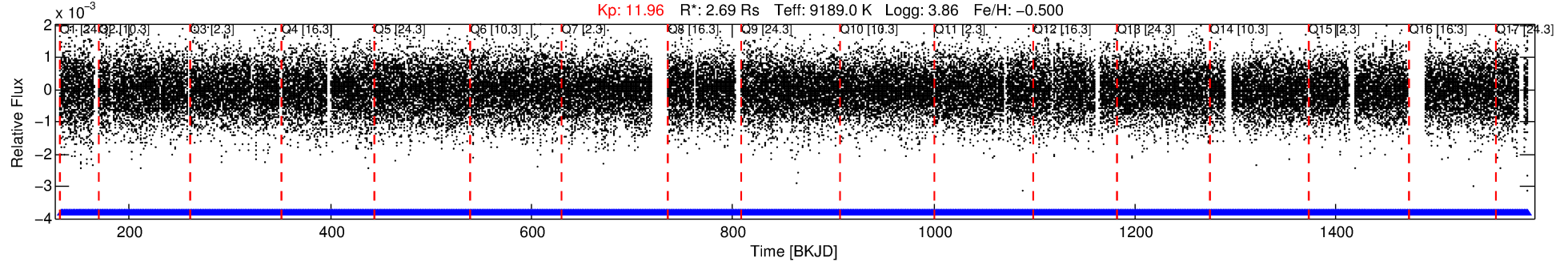
Ephemeris Match Information For 009305012-01

No Significant Match Found

DV One-Page Summary

KIC: 9305012 Candidate: 1 of 1 Period: 0.968 d
KOI: K04416 Corr: No Ephemeris Match

Kp: 11.96 R*: 2.69 Rs Teff: 9189.0 K Logg: 3.86 Fe/H: -0.500



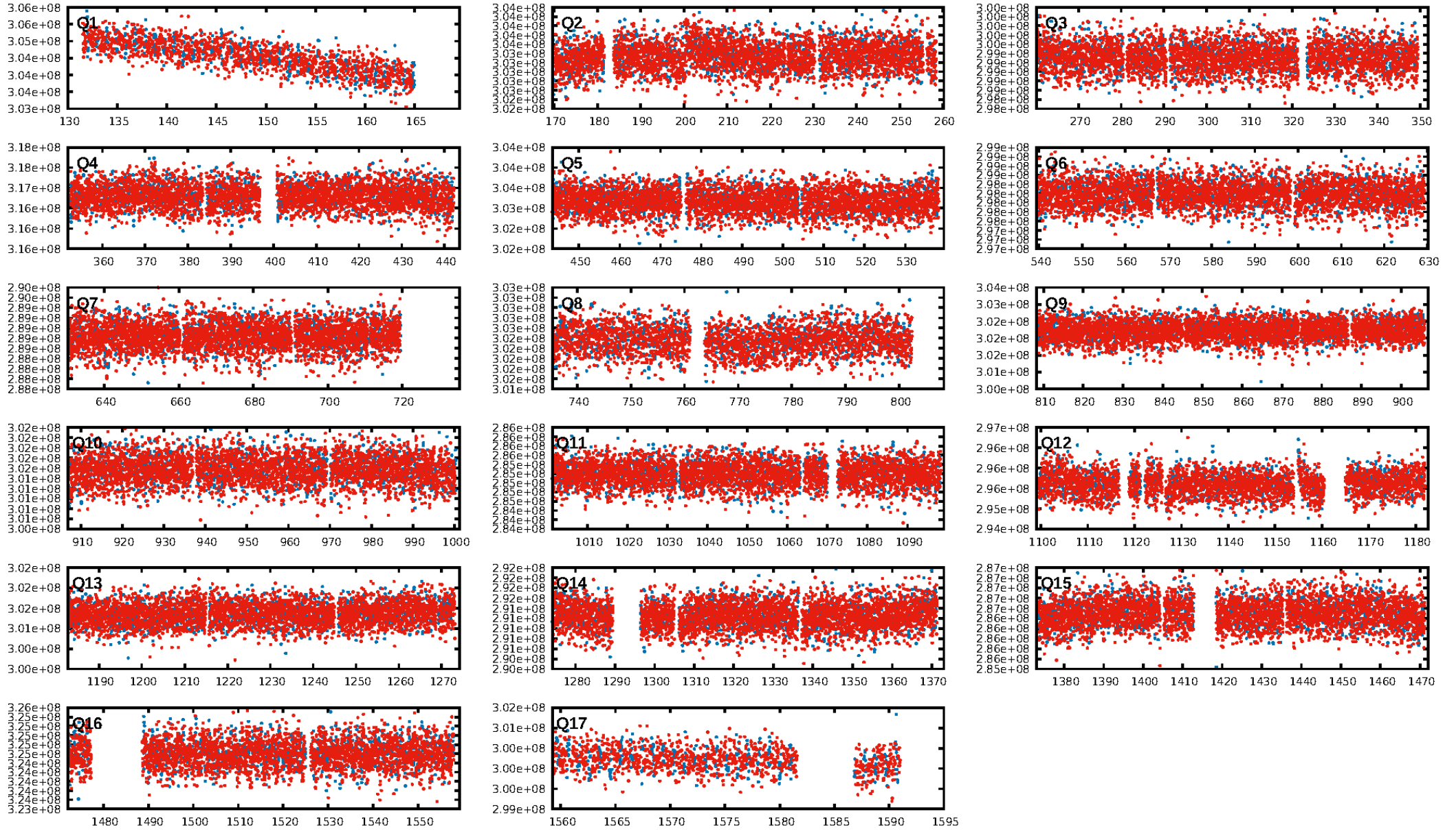
DV Fit Results:

Period = 0.96794 [0.00001] d
Epoch = 132.4667 [0.0042] BKJD
Rp/R* = 0.0078 [0.0046]
a/R* = 1.08 [0.61]
b = 0.40 [8.51]
Seff = 81323.60 [53715.22]
Teq = 4306 [711] K
Rp = 2.28 [1.69] Re
a = 0.0239 [0.0097] AU
Ag = N/A
Teffp = N/A

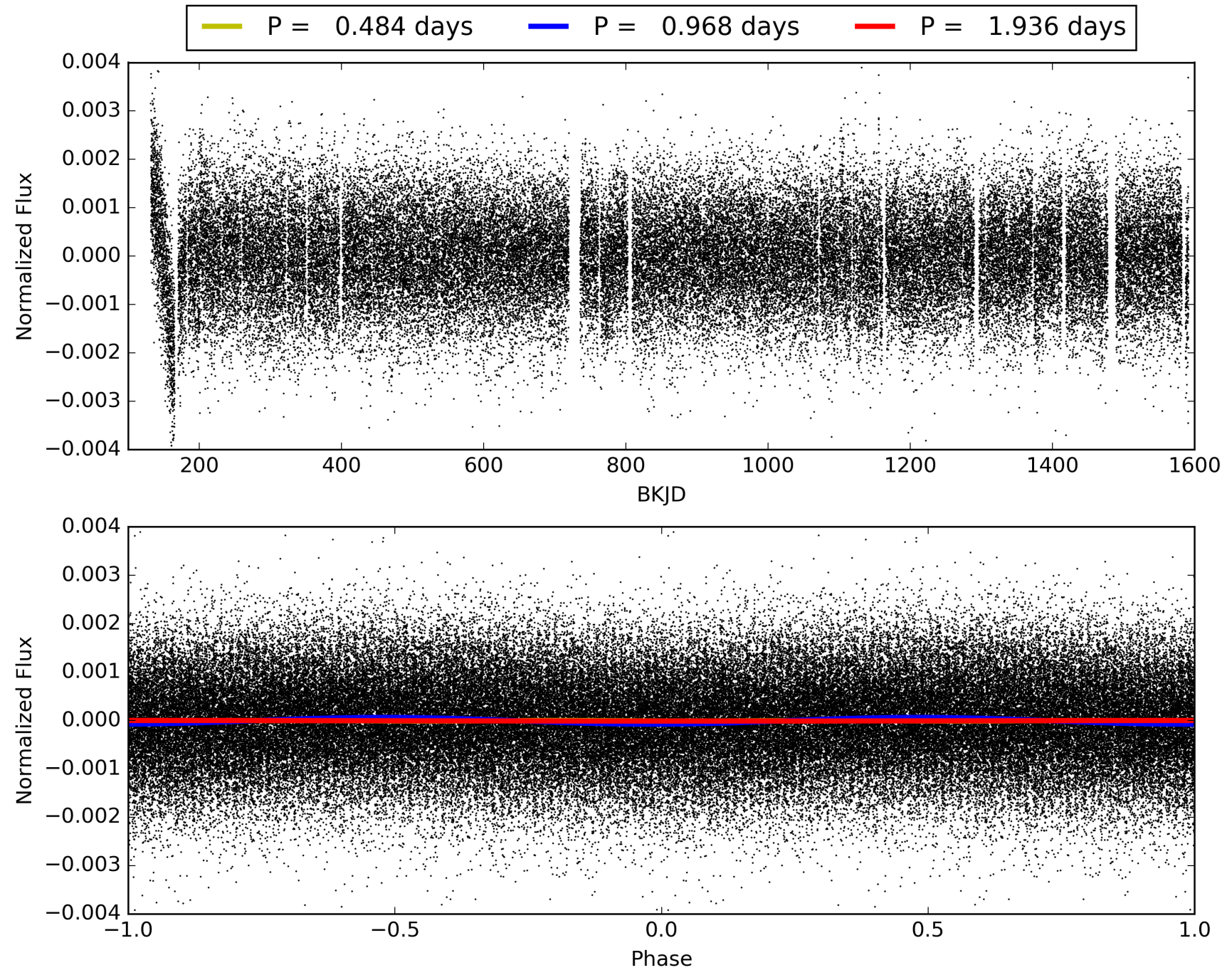
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1337/1337]
GhostDiagnostic-chr: 2.323
Centroid-sig: 11.7%
Centroid-so: 0.219 arcsec [1.28σ]
OotOffset-rm: 2.619 arcsec [2.54σ]
KicOffset-rm: 2.460 arcsec [2.48σ]
OotOffset-st: 0/3/2/3 [8]
KicOffset-st: 0/3/2/3 [8]
DiffImageQuality-fgm: 0.38 [3/8]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009305012-01, PDC Light Curves

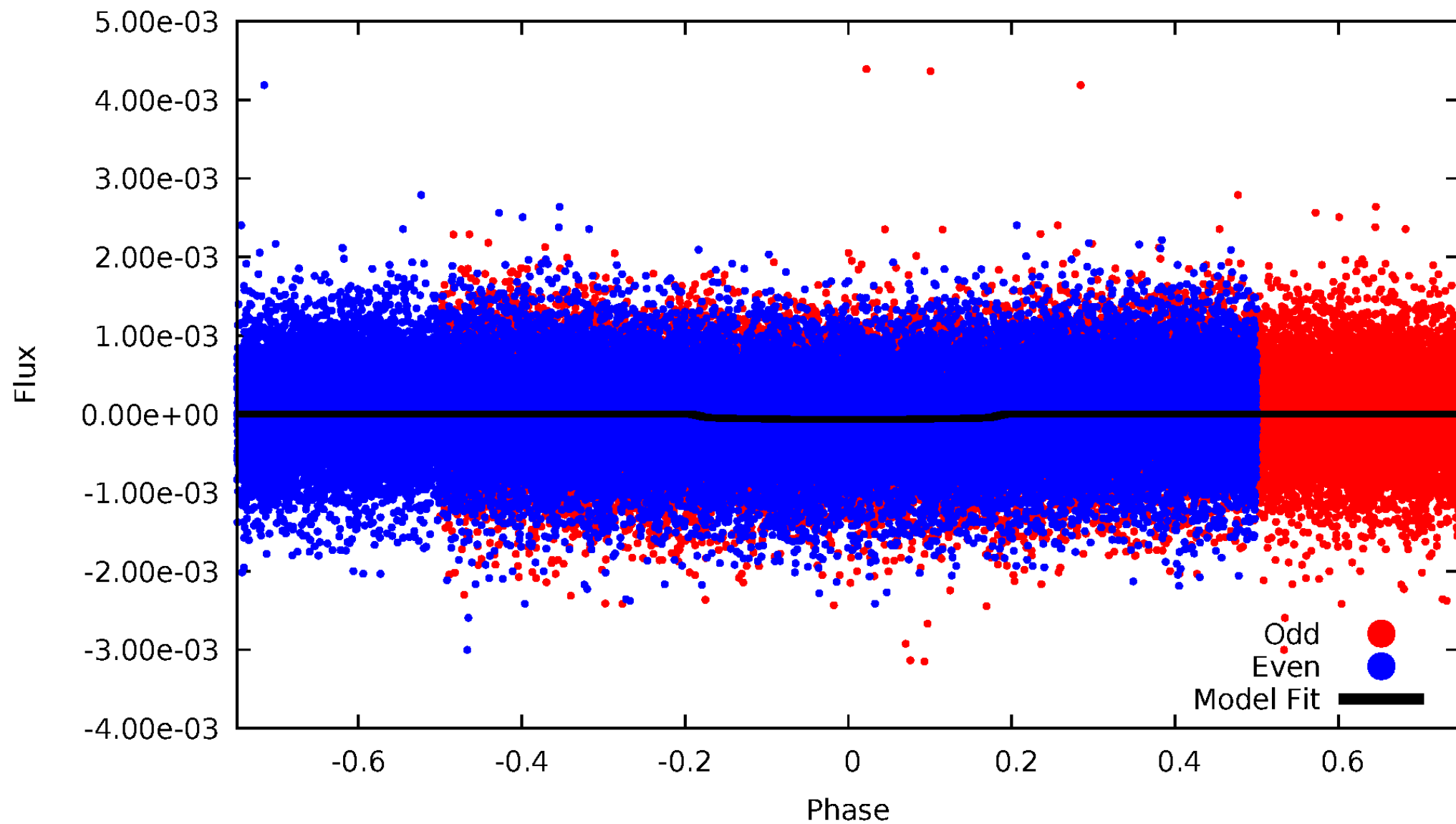


TCE 009305012-01



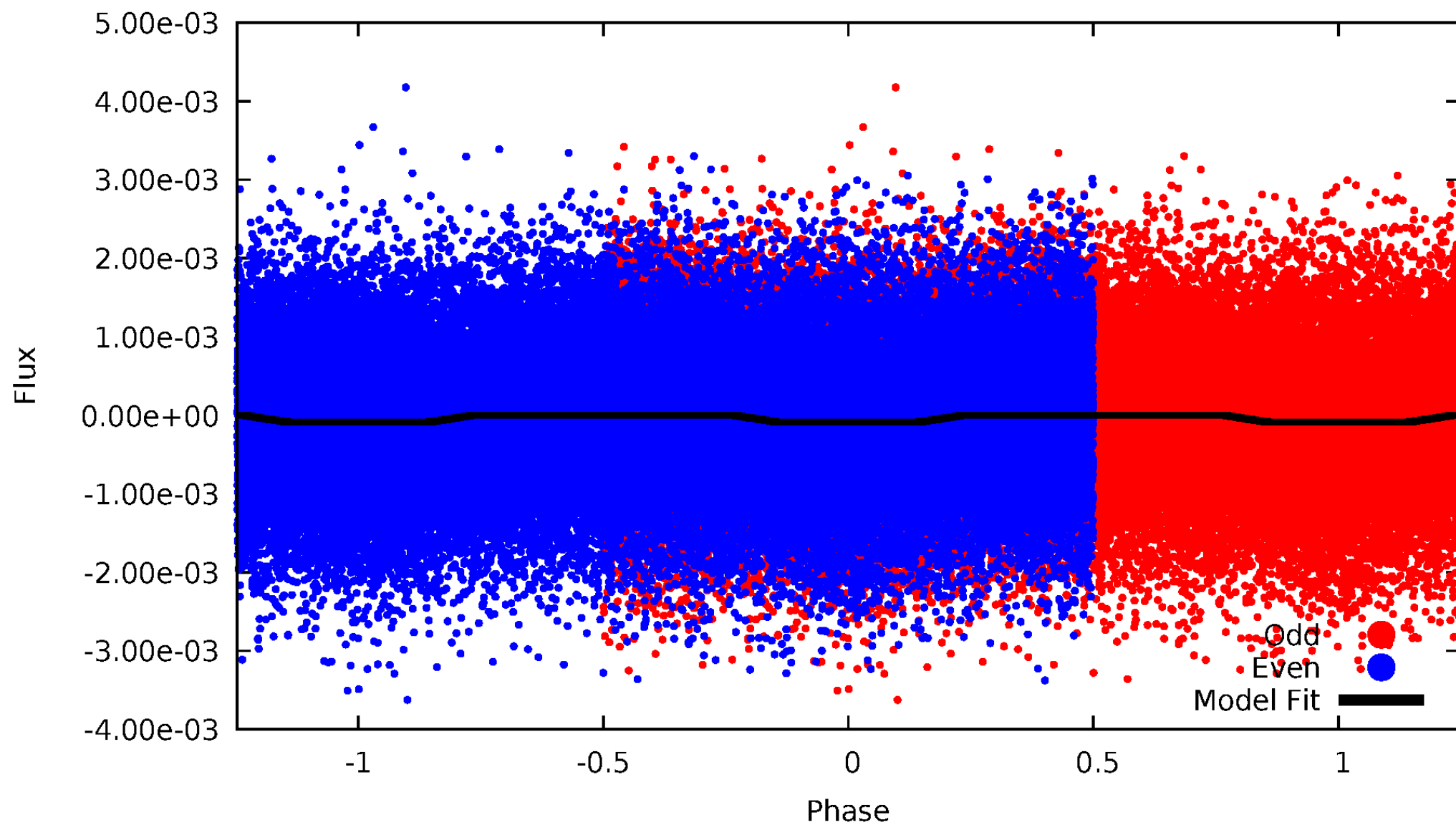
DV Odd/Even

TCE 009305012-01

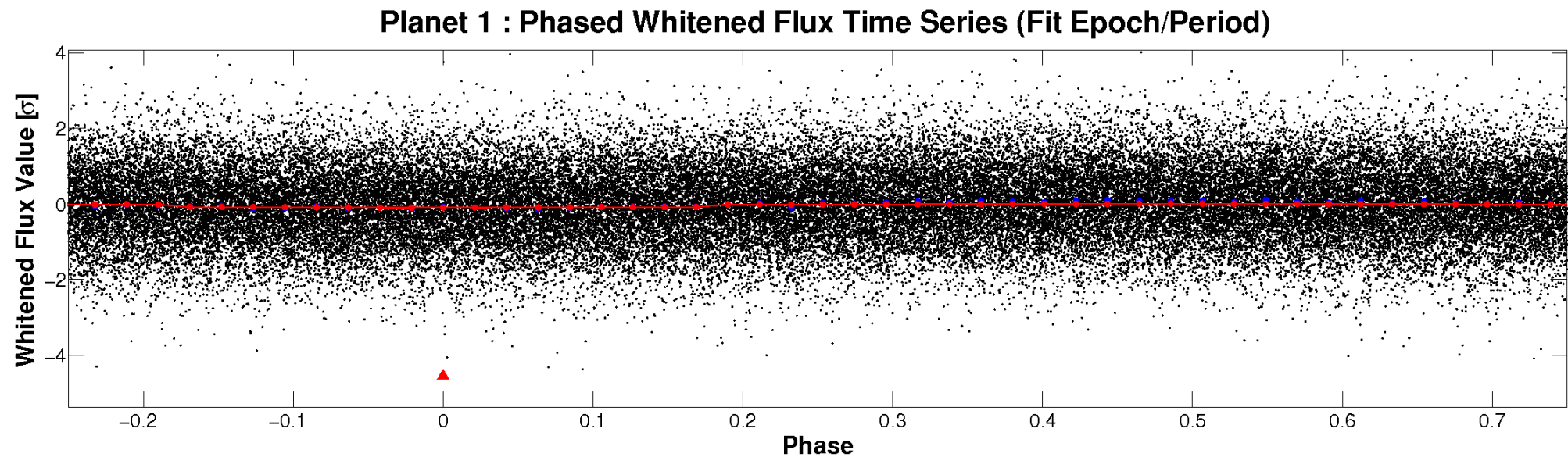
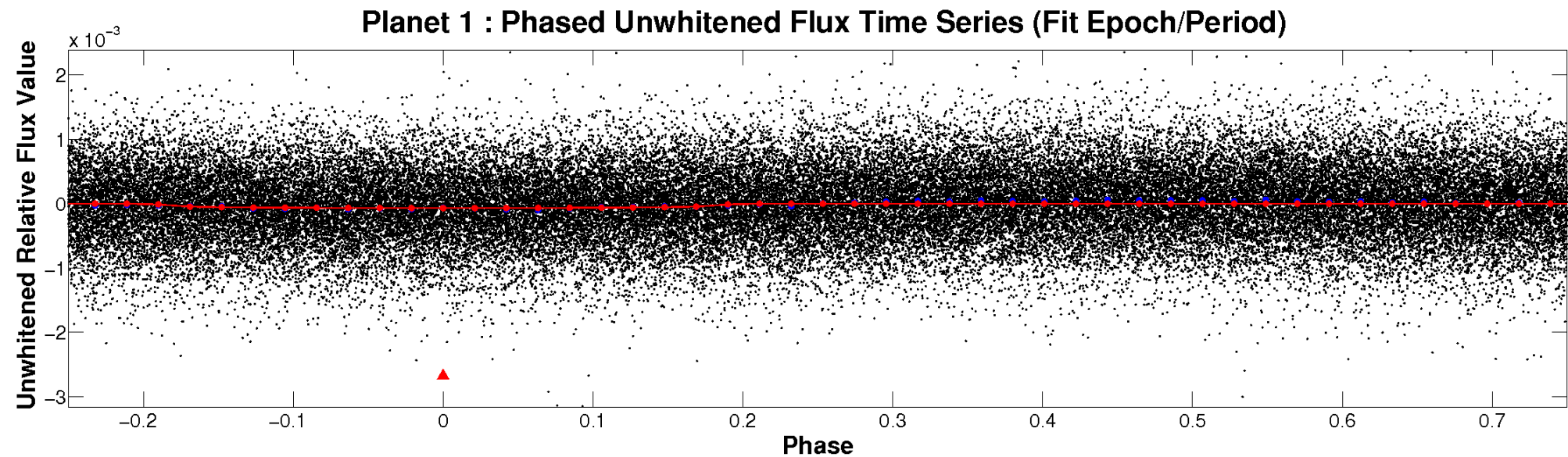


ALT Odd/Even

TCE 009305012-01

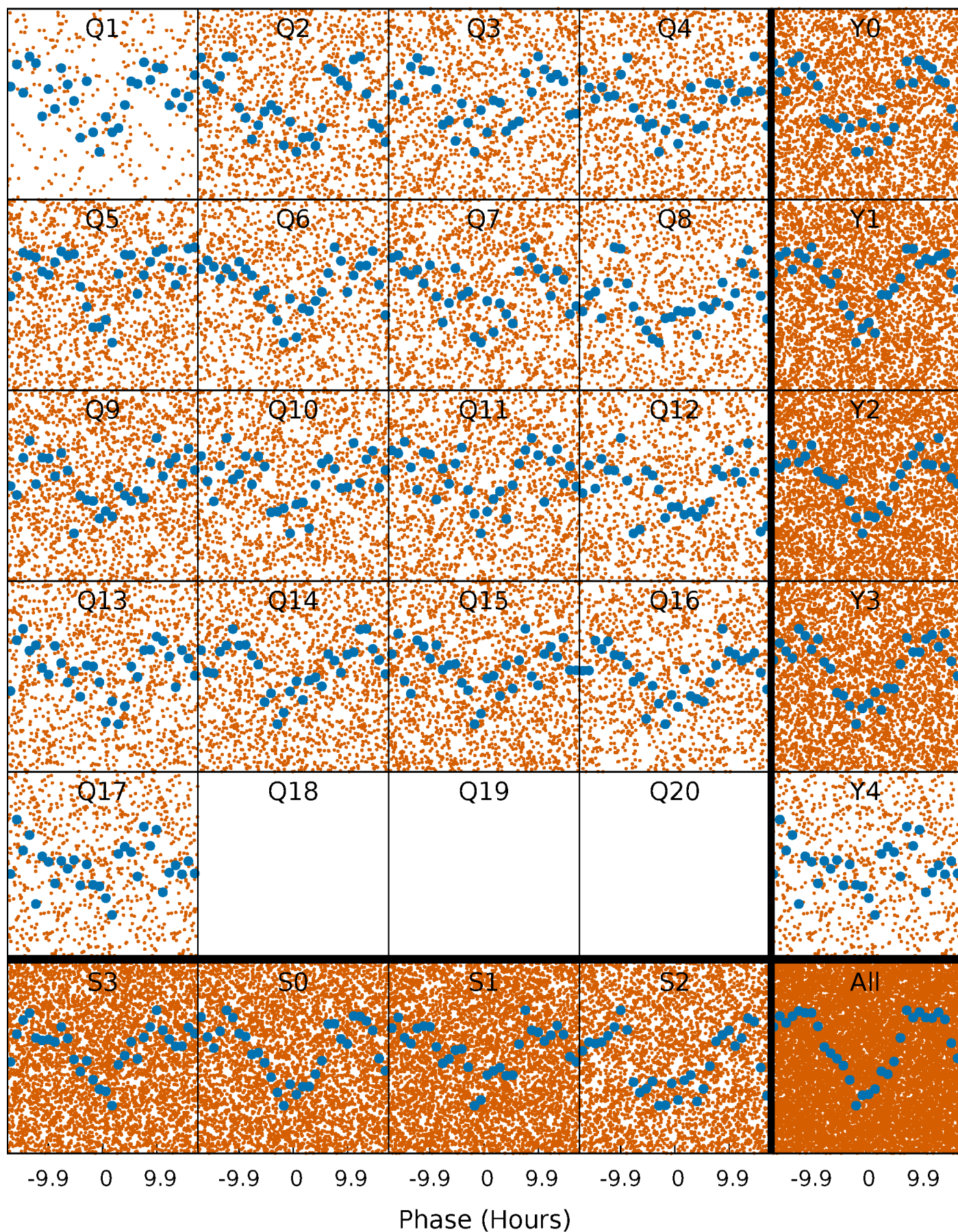


Non-Whitened Vs. Whitened Light Curve



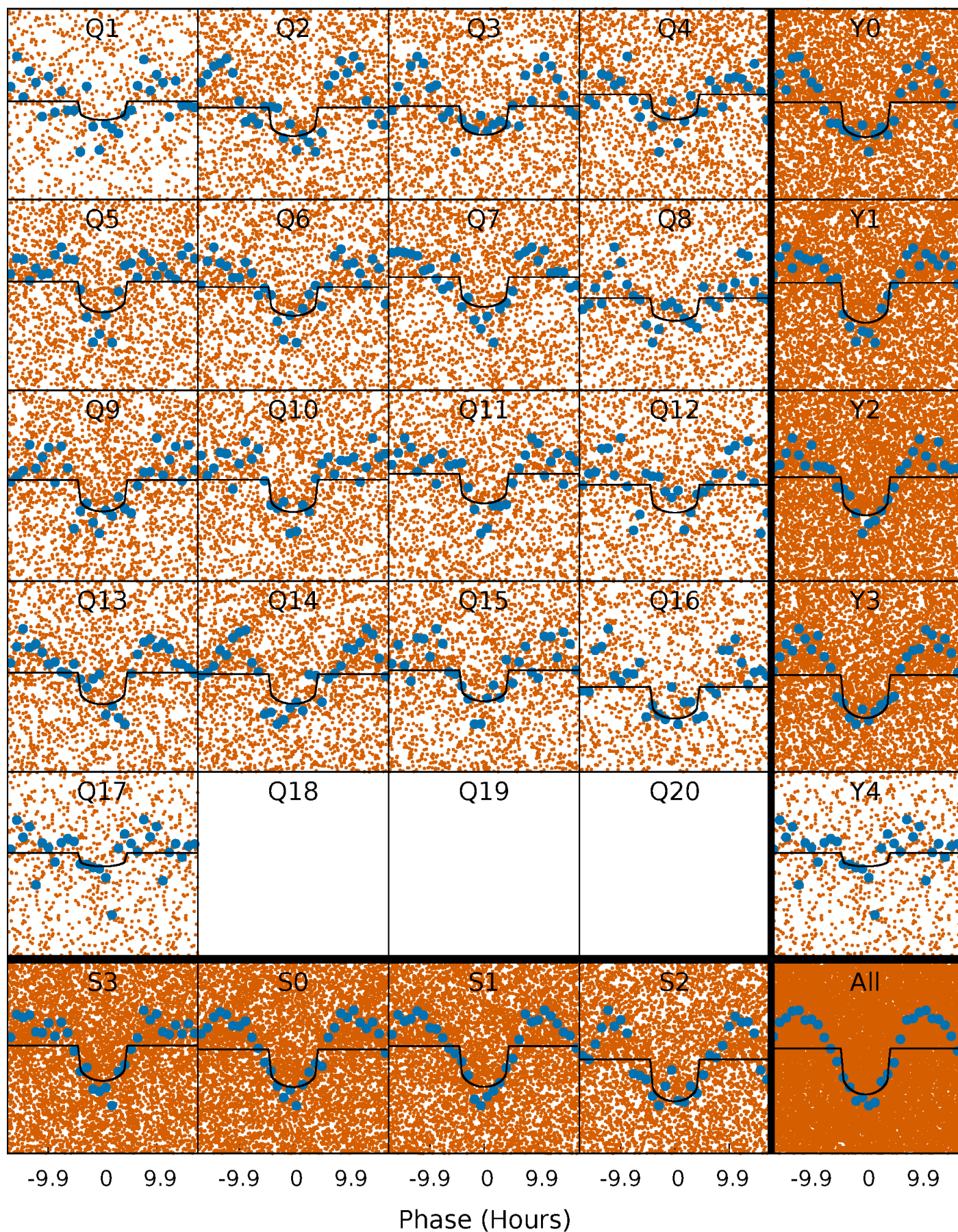
PDC Quarter-Phased Transit Curves

TCE 009305012-01 P= 0.967945 Days $T_0=132.466697$ (BKJD)



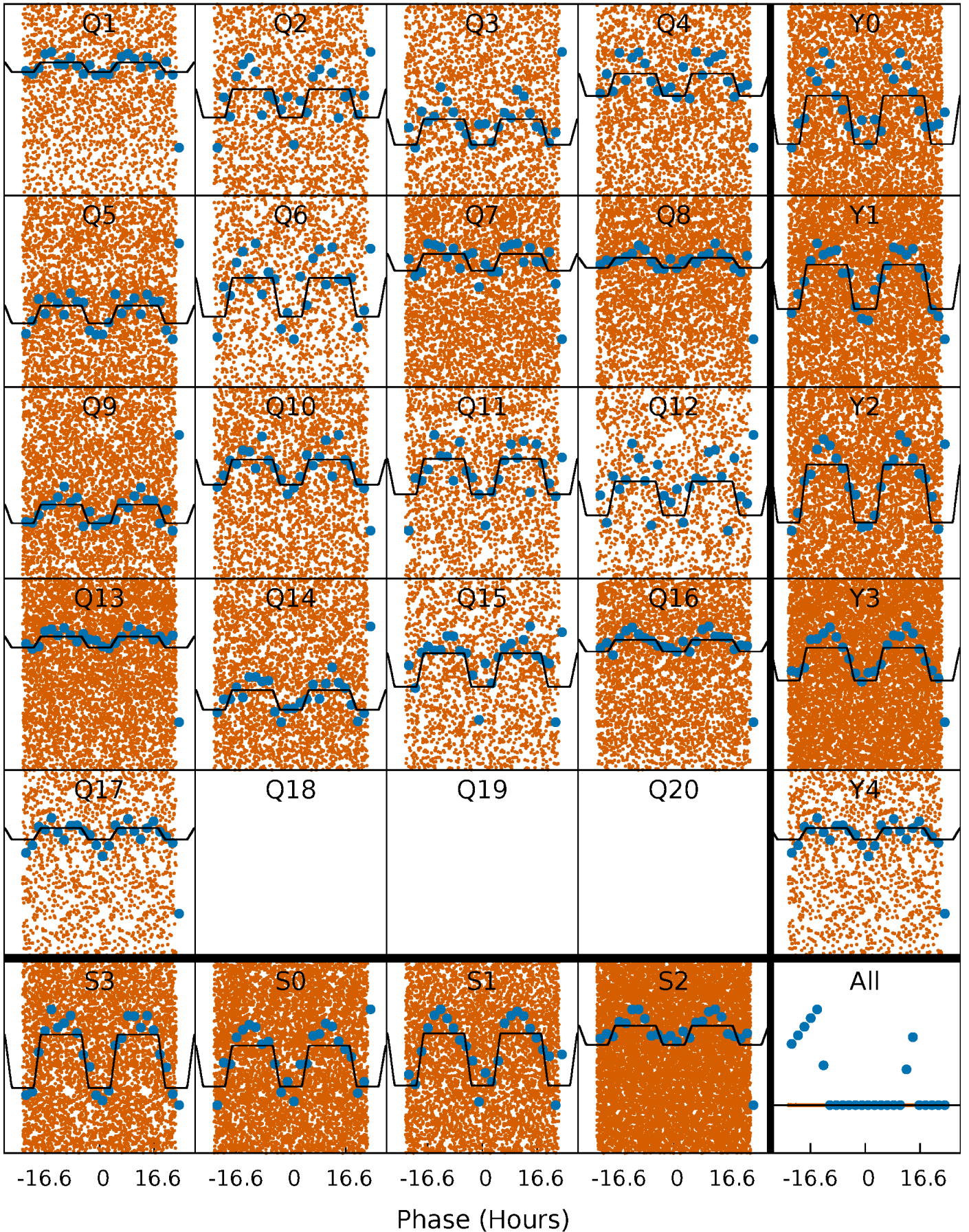
DV Quarter-Phased Transit Curves

TCE 009305012-01 P= 0.967945 Days $T_0=132.466697$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

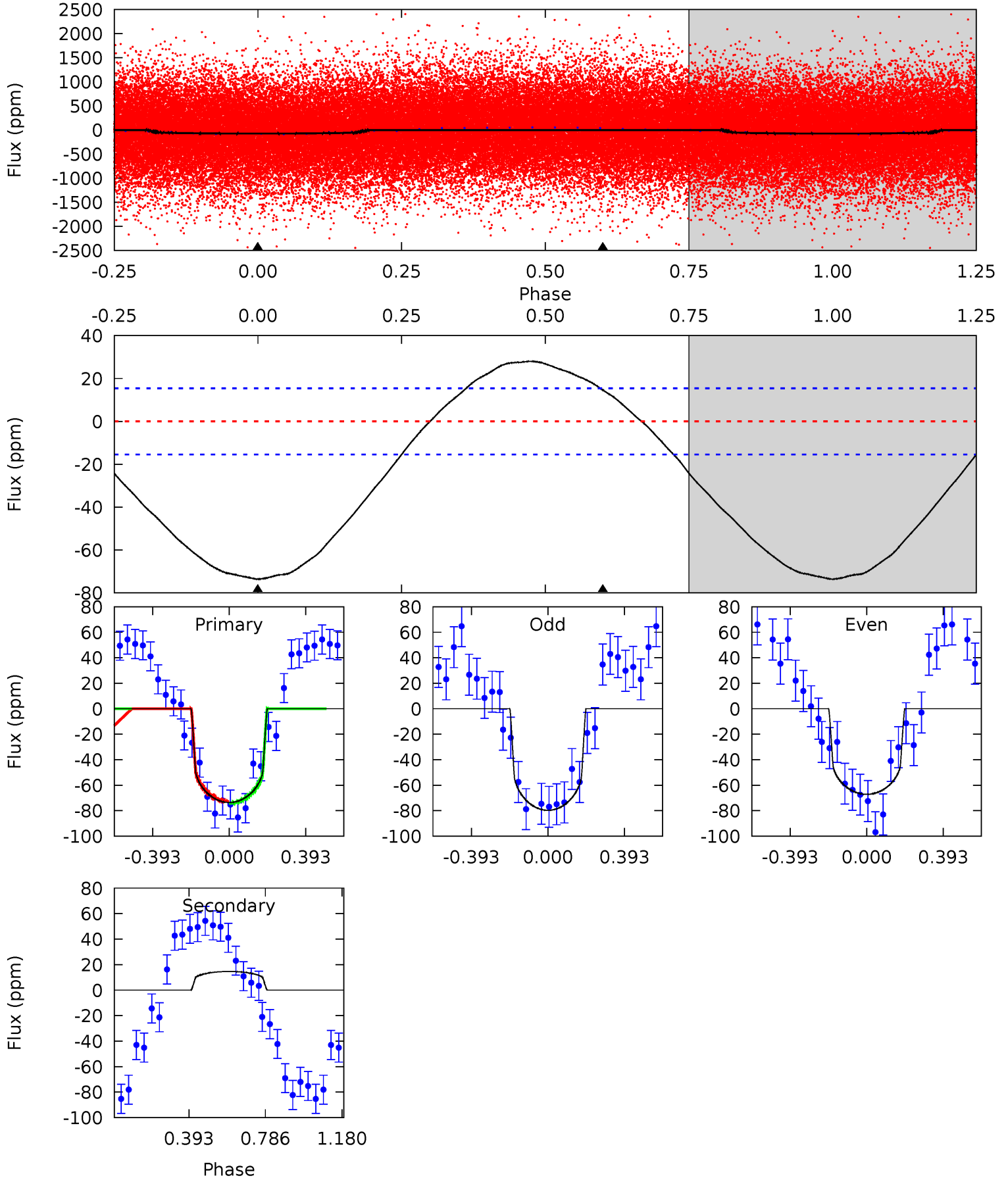
TCE 009305012-01 P= 0.967928 Days $T_0=131.508436$ (BKJD)



DV Model-Shift Uniqueness Test

009305012-01, P = 0.967945 Days, E = 131.498752 Days

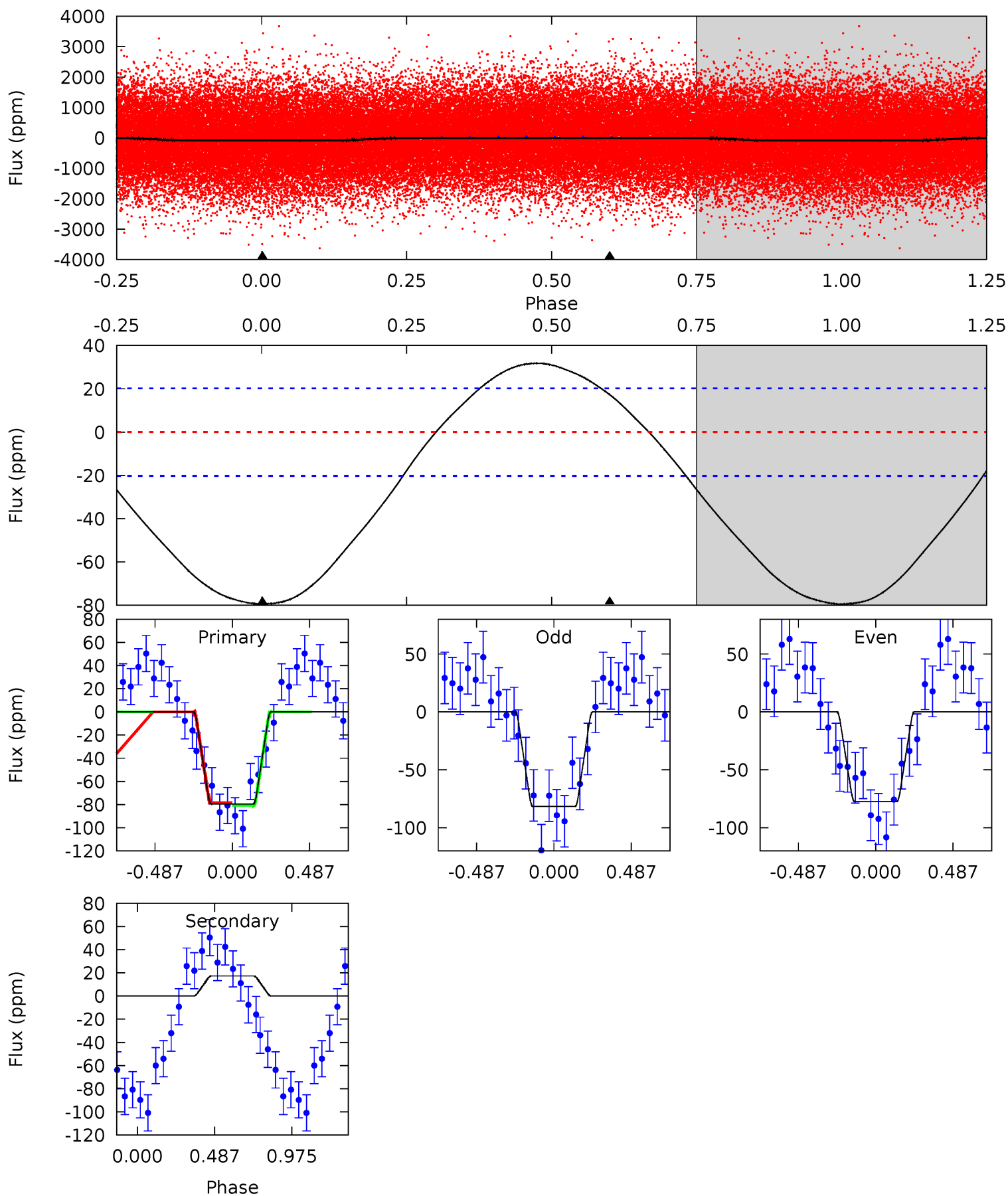
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.4	-4.06	0	0	4.27	0.85	2.26	20.4	20.4	-4.06	-4.06	1.75	0.98	0.28	0.17



Alt Model-Shift Uniqueness Test

009305012-01, P = 0.967928 Days, E = 131.508436 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.6	-3.62	0	0	4.22	0.69	1.92	16.6	16.6	-3.62	-3.62	0.43	0.87	0.29	0.23



Stellar Parameters For KIC 009305012

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	9189^{+255}_{-415}	$3.864^{+0.368}_{-0.098}$	$-0.500^{+0.150}_{-0.400}$	$2.692^{+0.503}_{-1.174}$	$1.933^{+0.301}_{-0.452}$	$0.140^{+0.468}_{-0.043}$
	+3%/-5%	+10%/-3%	+30%/-80%	+19%/-44%	+16%/-23%	+335%/-31%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009305012-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	15 ± 4	$2.09^{+1.40}_{-1.08}$	5834^{+414}_{-639}	-6421^{+929}_{-2866}	$-1.012^{+0.645}_{-3.580}$
Alt.	17 ± 5	$2.48^{+1.45}_{-1.23}$	5816^{+436}_{-599}	-6294^{+853}_{-2440}	$-0.878^{+0.557}_{-2.619}$

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 $A_{obs} \gg 1.0$

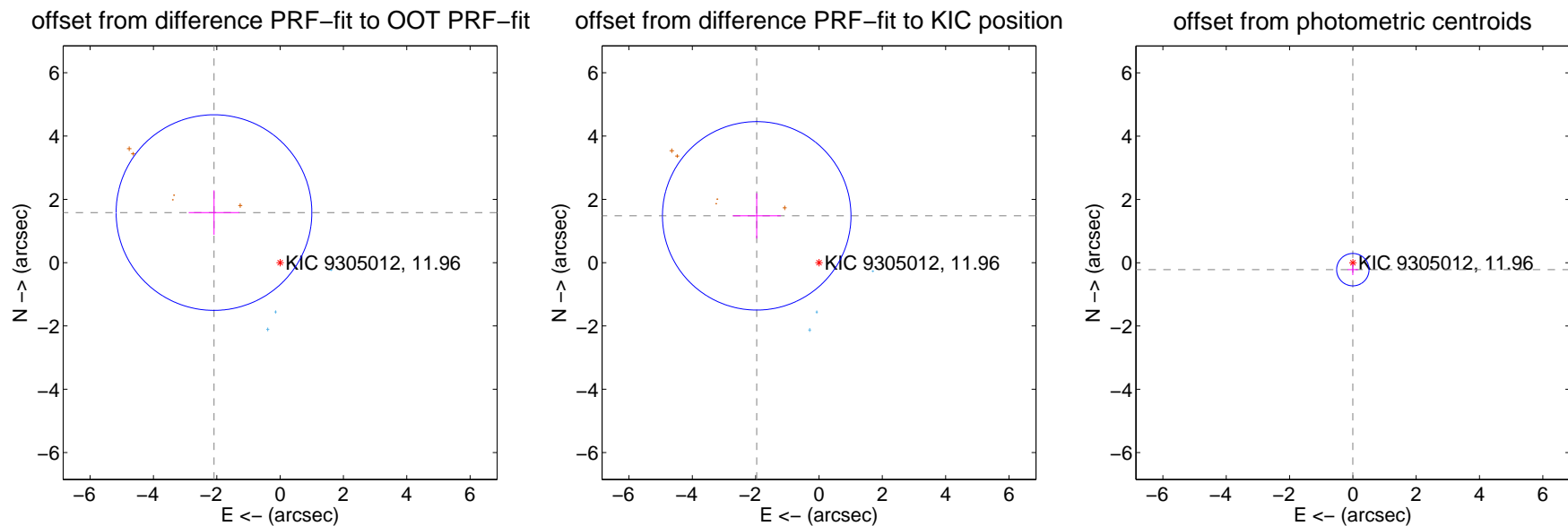
DV Centroid Data

Supplemental centroid analysis for 009305012-01. **Kepler magnitude: 11.96.** Transit SNR 13.60

There are 3 quarters with good PRF difference image offsets

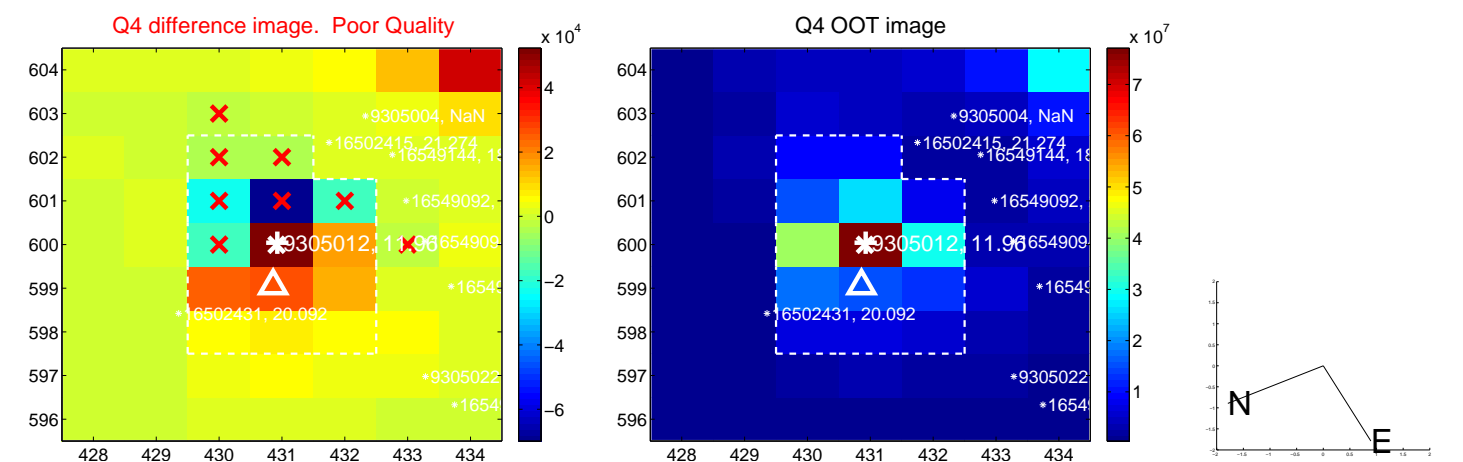
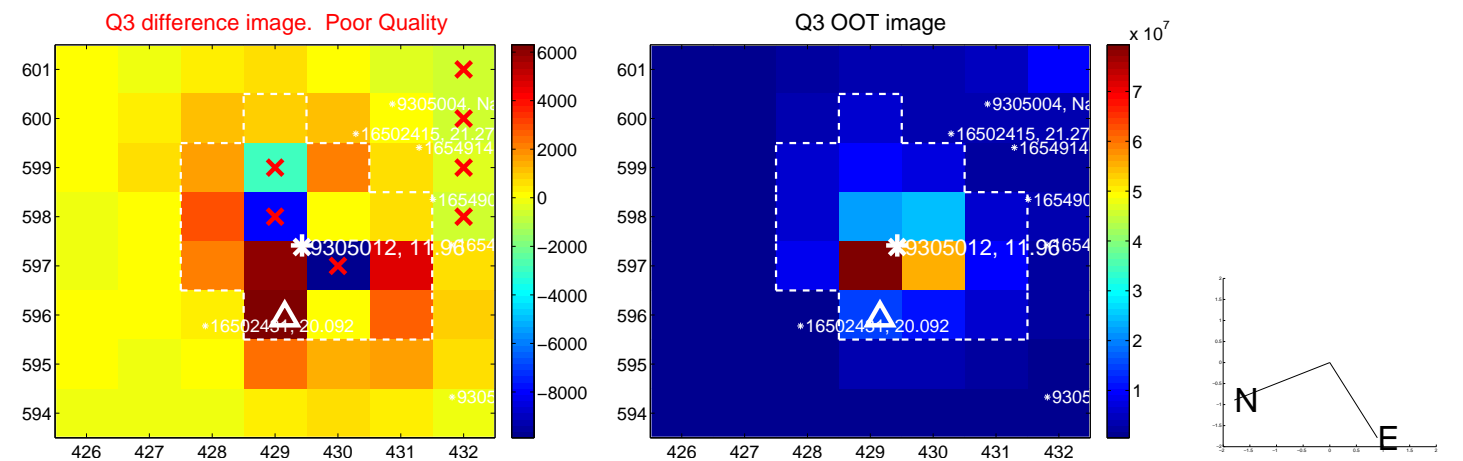
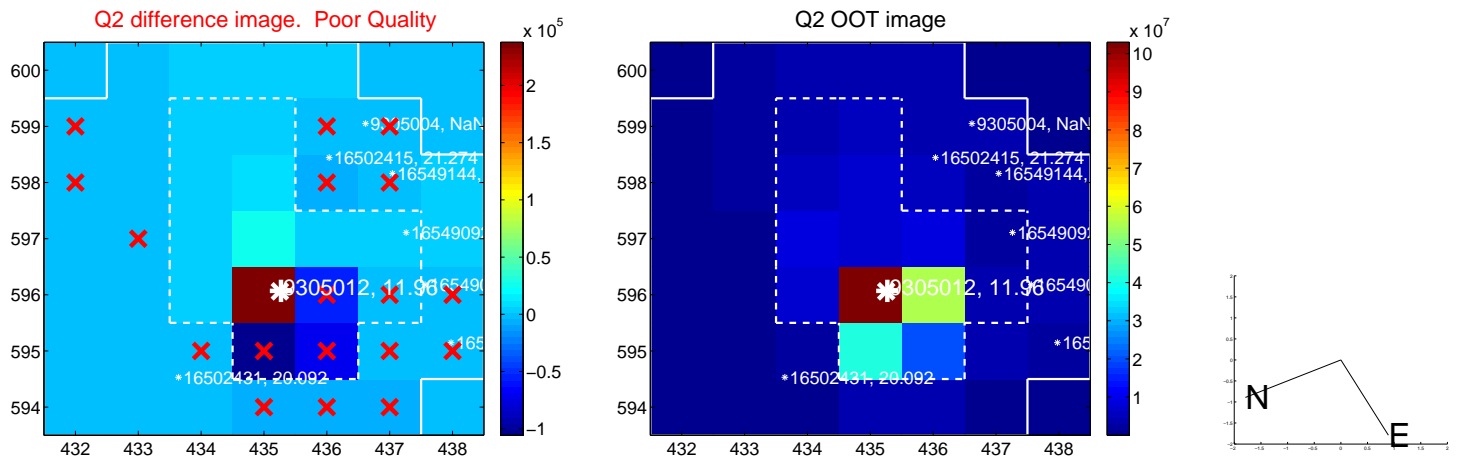
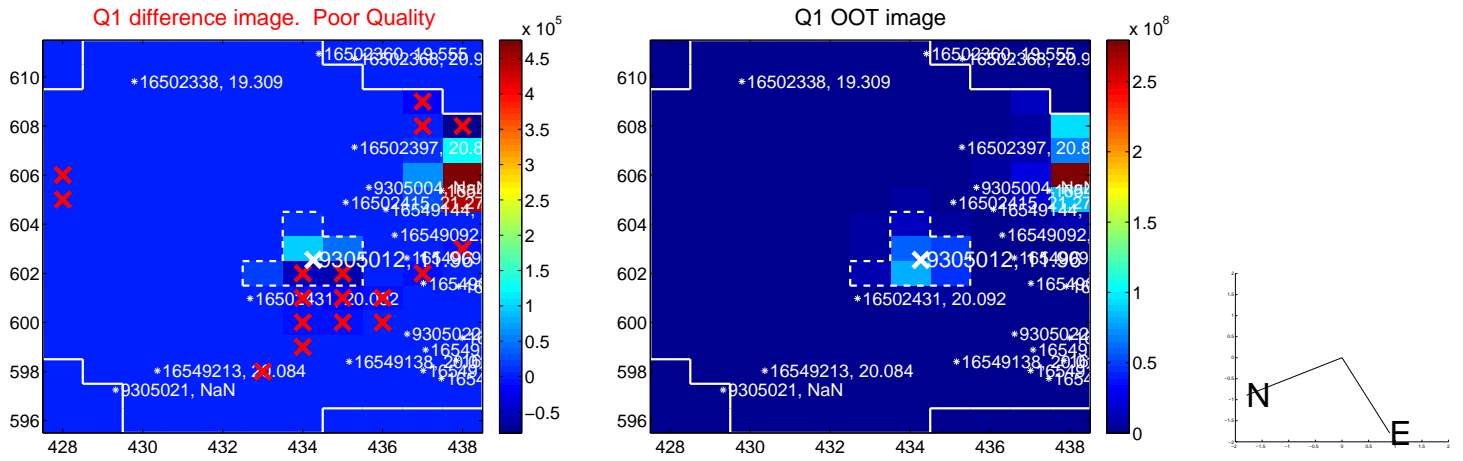
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.619 ± 1.030	2.54	2.088 ± 0.799	1.582 ± 0.701
PRF-fit source offset from KIC position	2.460 ± 0.992	2.48	1.966 ± 0.757	1.479 ± 0.715
photometric centroid source offset	0.22 ± 0.17	1.28	0.00 ± 0.16	-0.22 ± 0.17

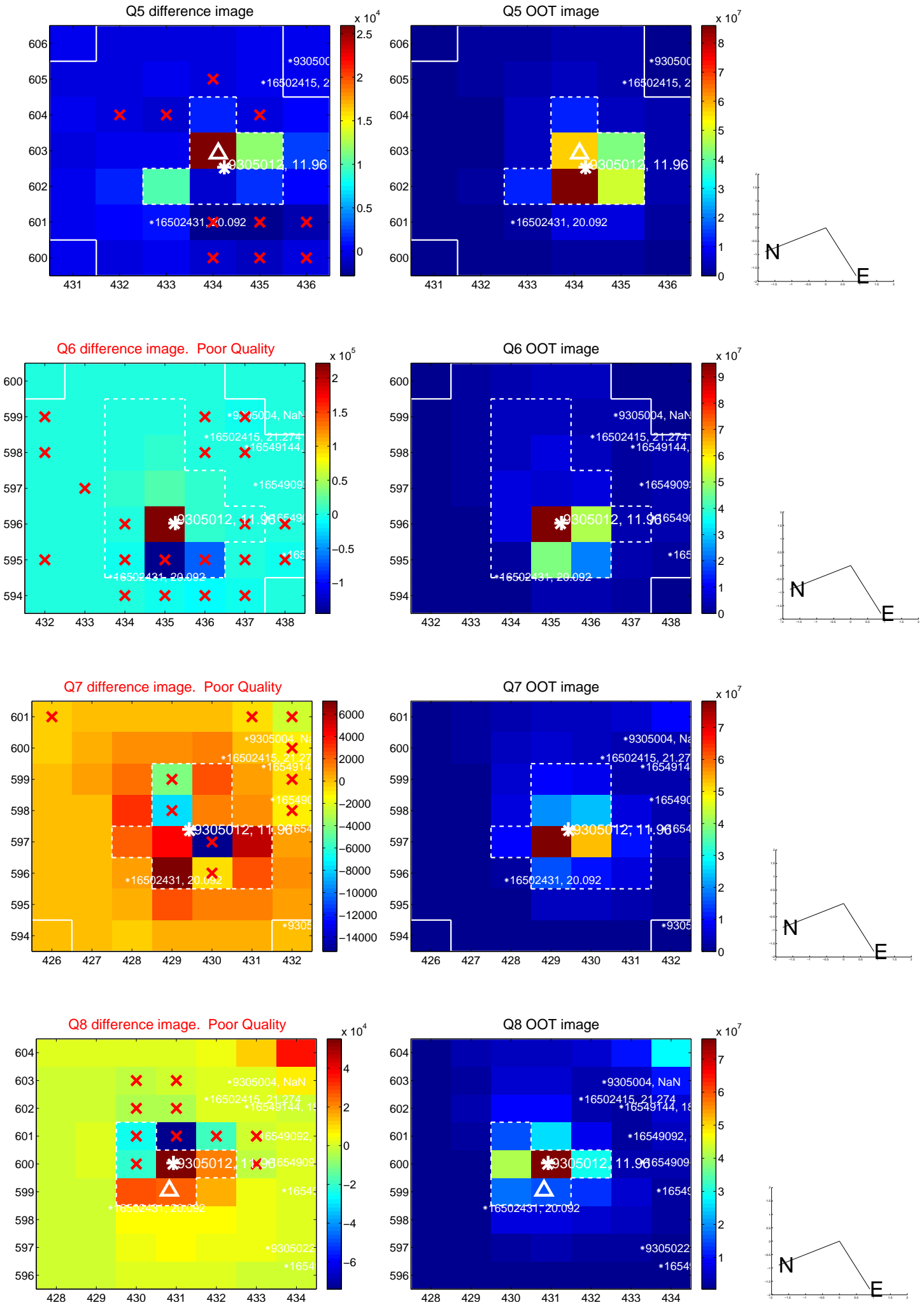


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

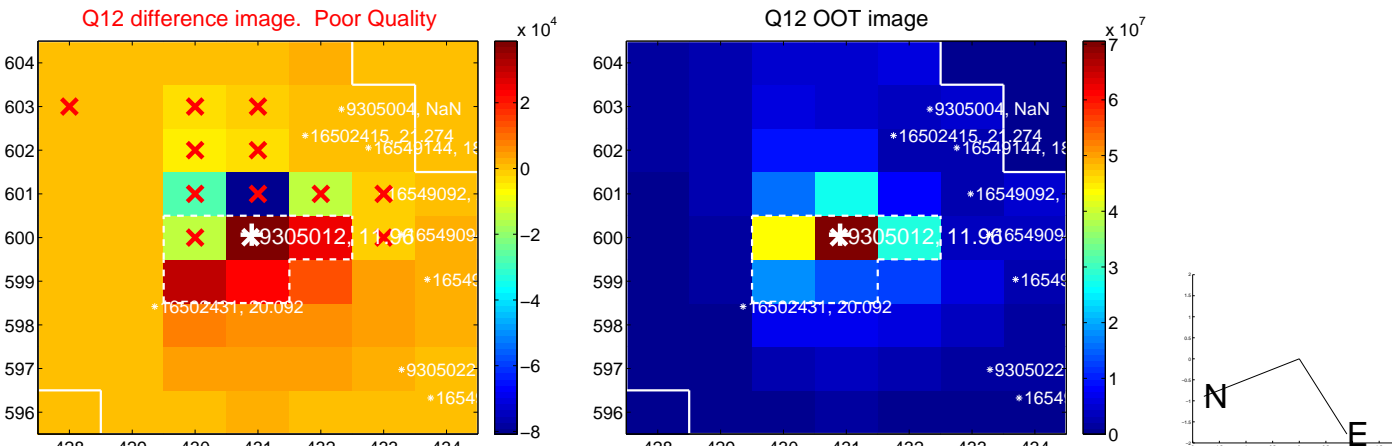
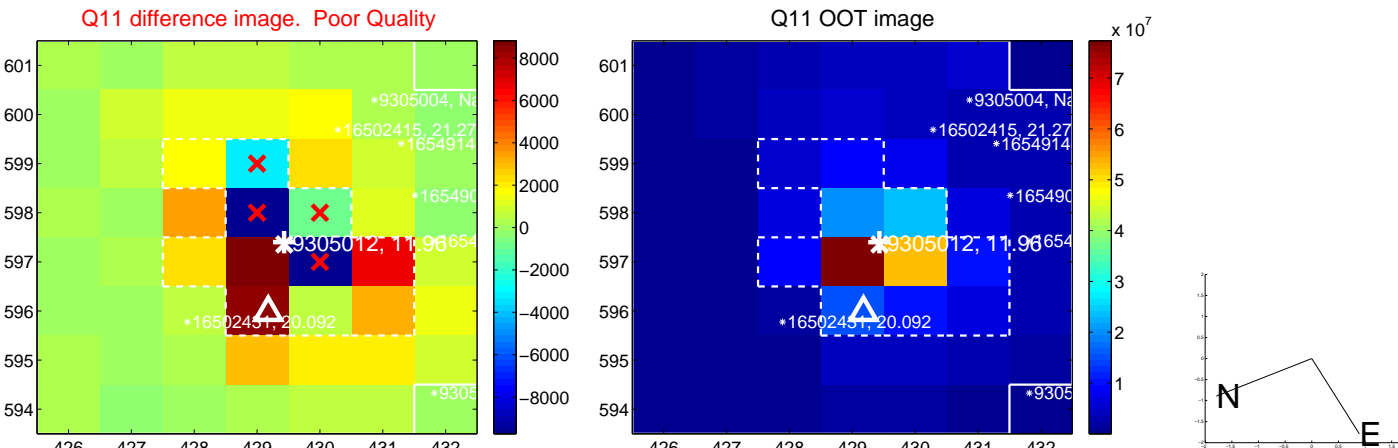
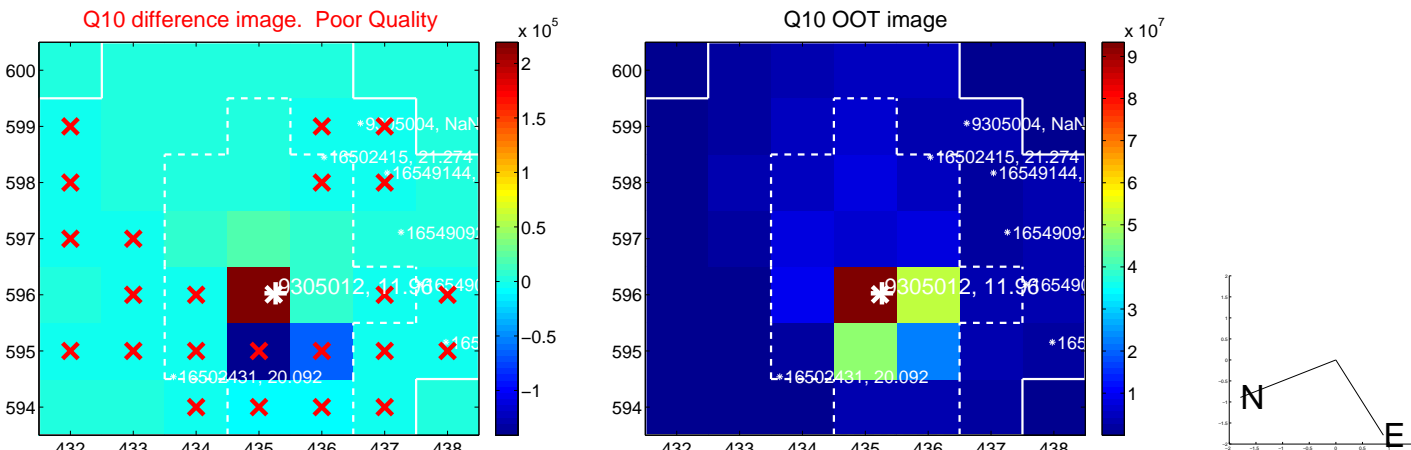
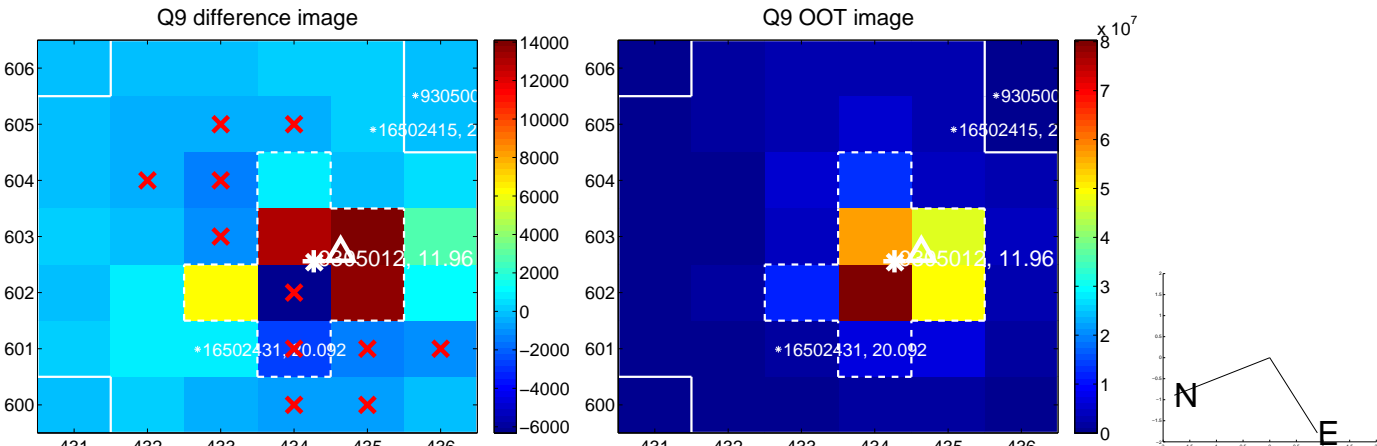
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



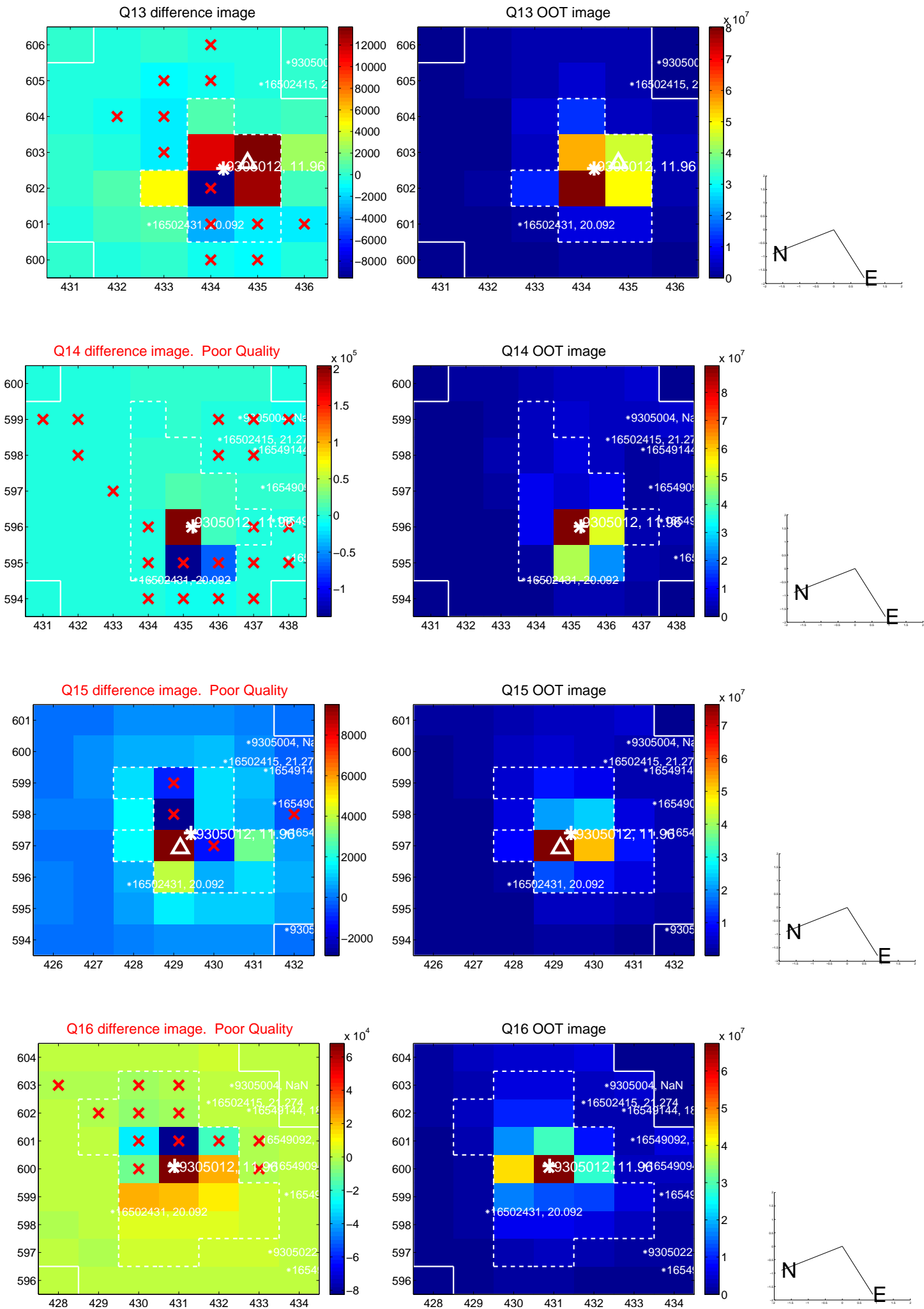
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



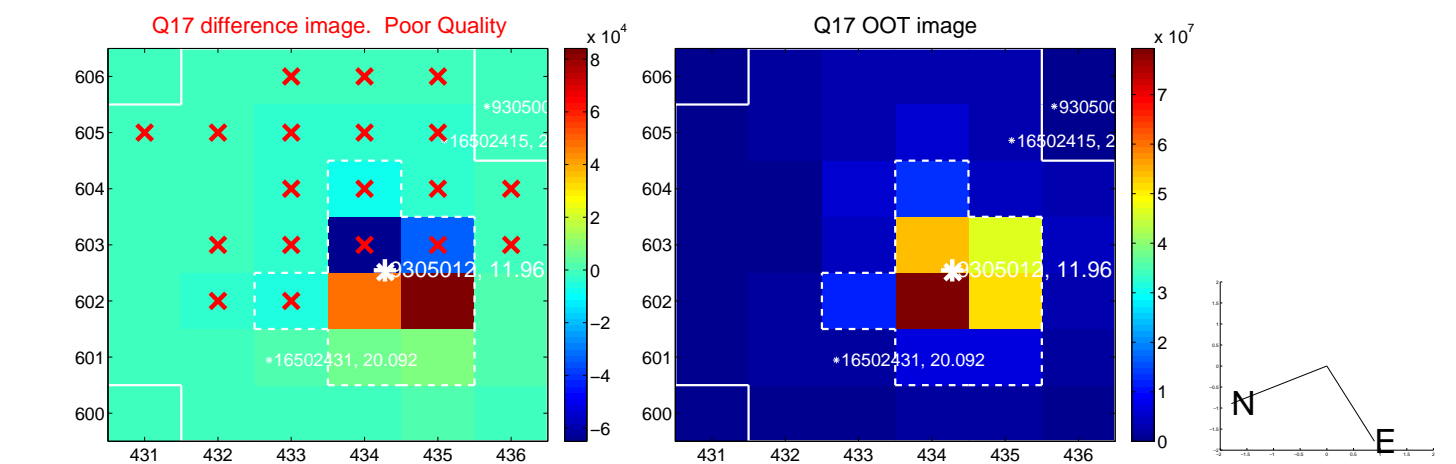
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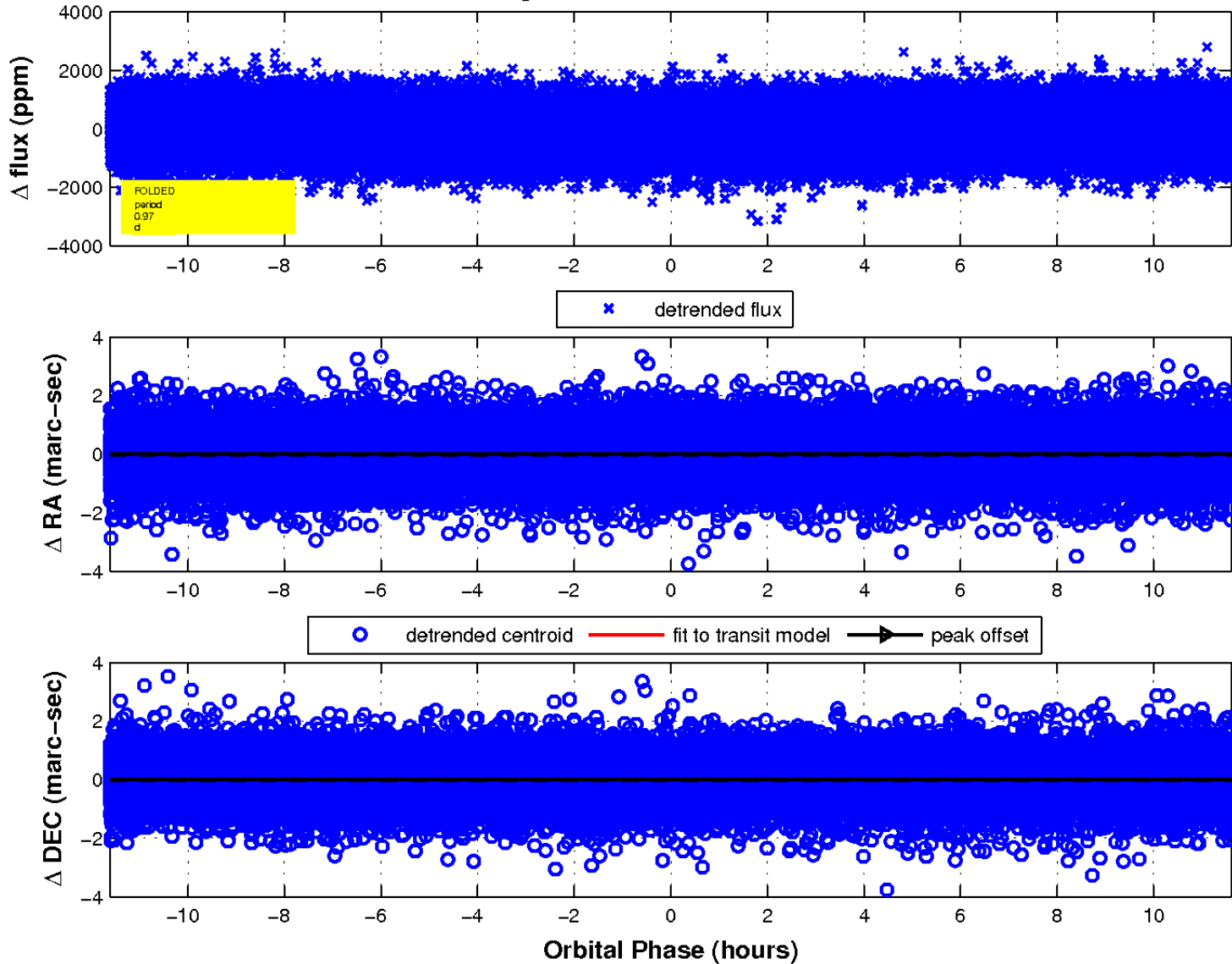
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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

