

KIC 004851338

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R _★ (R _☉)	T _★ (K)	R _p (R _⊕)	S _p (S _⊕)
004851338-01	OBS	6461.01	1.235153	131.998409	55.4	4.691	10.3	10.6	1.08	6249	0.91	2868.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004851338-01	OBS	FP	0.00	0	0	1	1	HALO_GHOST—EPHEM_MATCH

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.

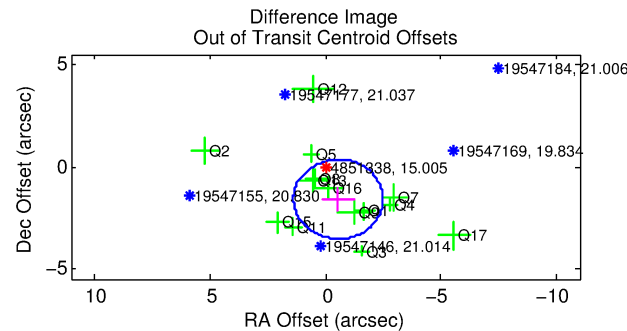
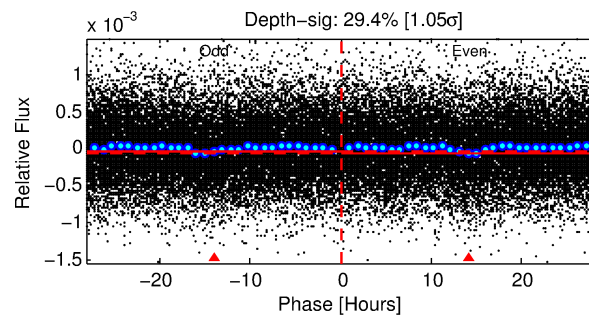
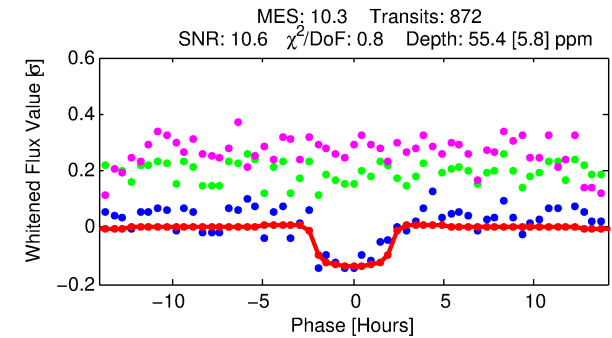
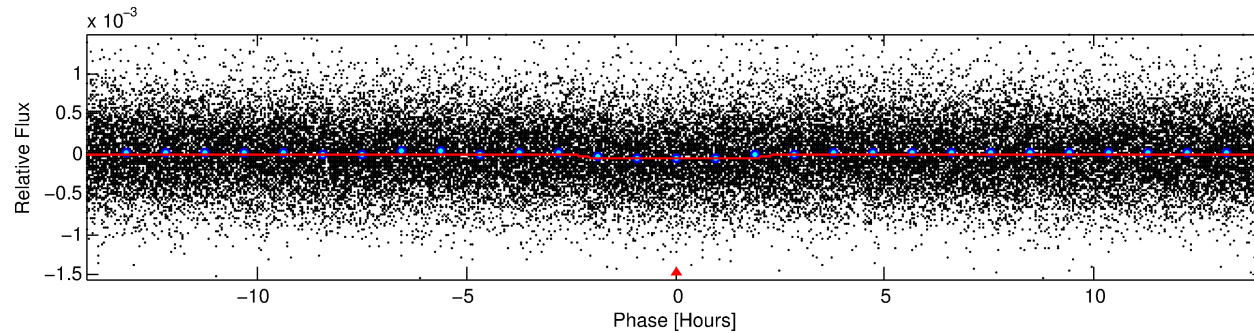
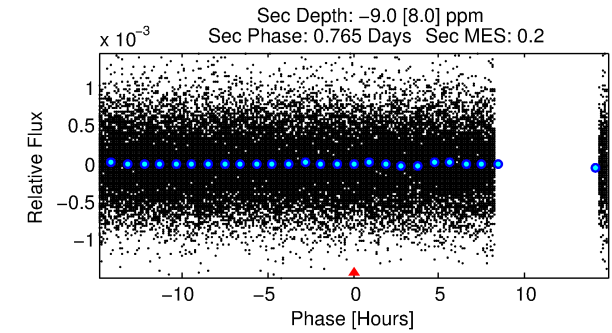
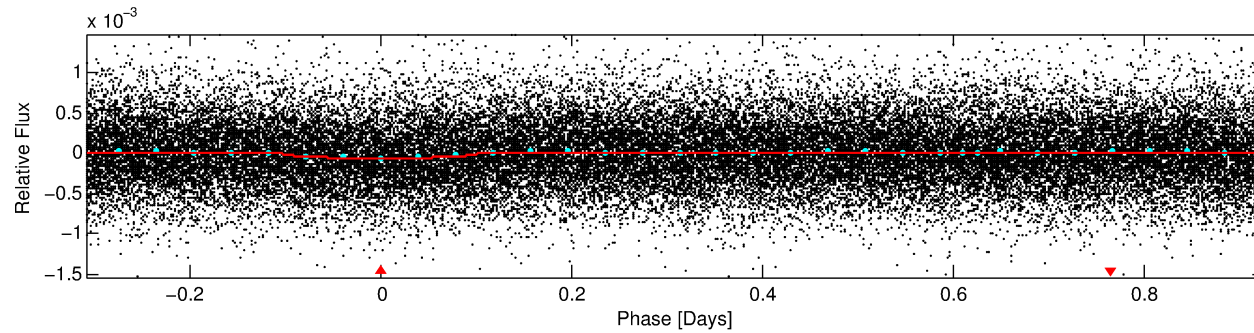
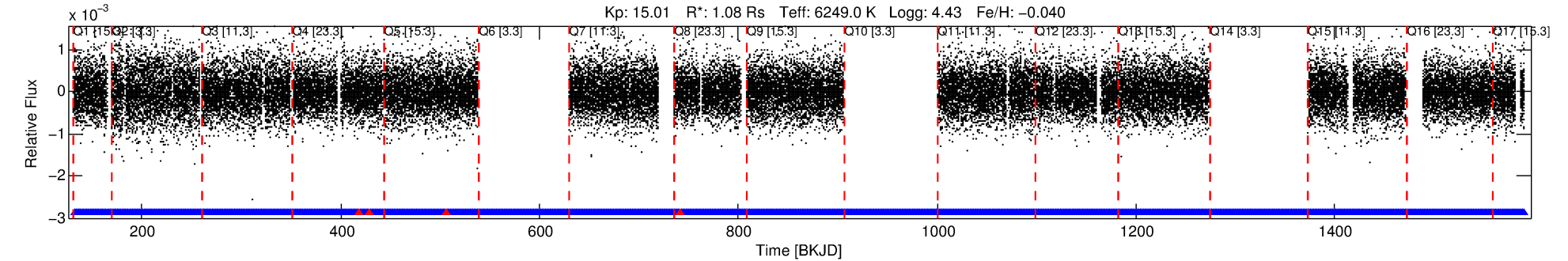
Ephemeris Match Information For 004851338-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	ΔRow	ΔCol	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ _P	σ _T
004851338-01	4851338	004851217-pri	4851217	1:2	95.9	2	-24	11.11	15.01	3600.00	Direct-PRF	0	1.84	1.25

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant σ_P < 5.0 and σ_T < 5.0. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 4851338 Candidate: 1 of 1 Period: 1.235 d
KOI: K06461.01 Corr: 0.984



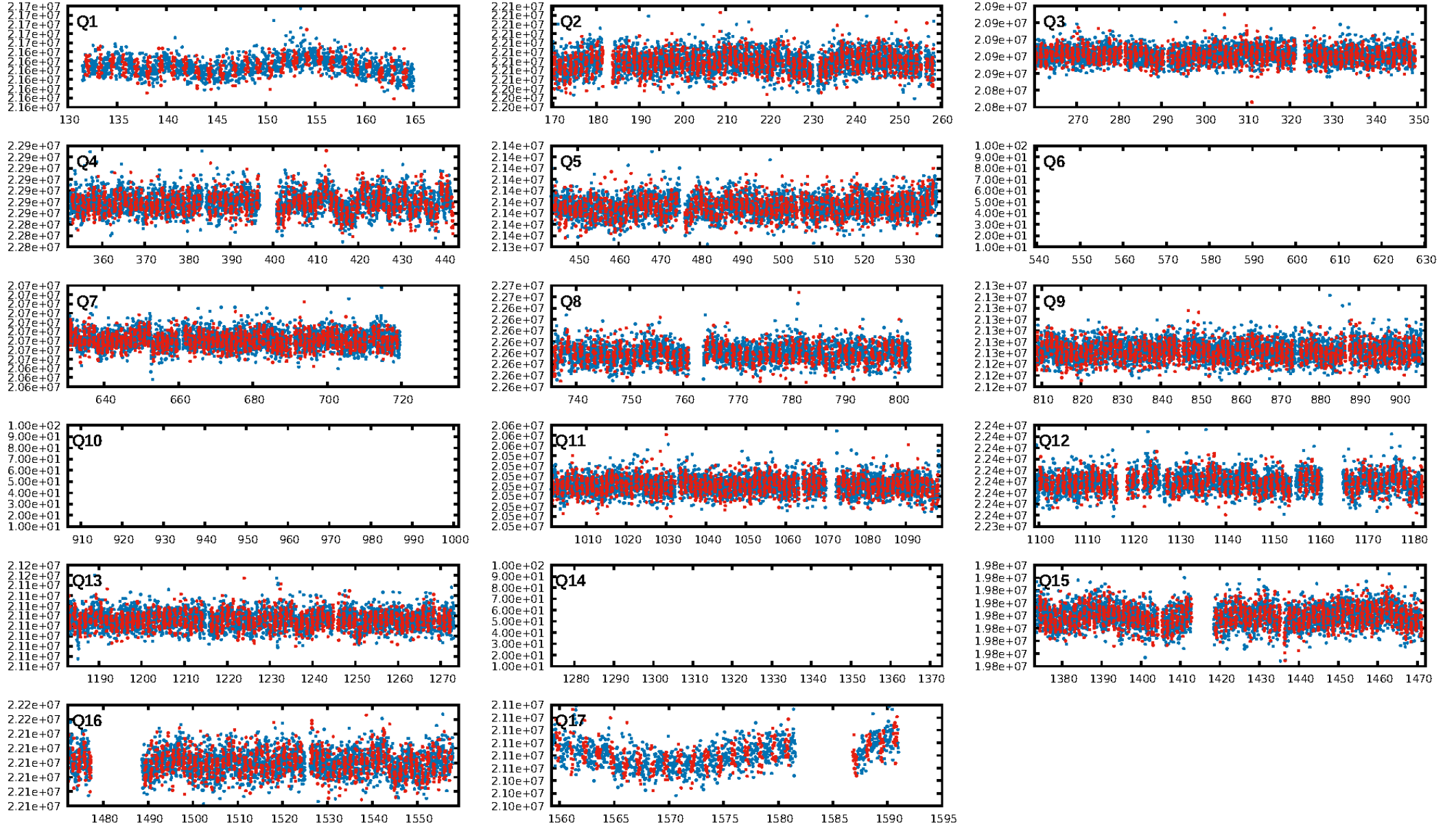
DV Fit Results:

Period = 1.23515 [0.00001] d
Epoch = 131.9984 [0.0052] BKJD
Rp/R* = 0.0077 [0.0046]
a/R* = 1.42 [2.27]
b = 0.85 [1.05]
Seff = 2868.91 [1031.51]
Teff = 1866 [168] K
Rp = 0.91 [0.60] Re
a = 0.0235 [0.0054] AU
Ag = N/A
Teffp = N/A

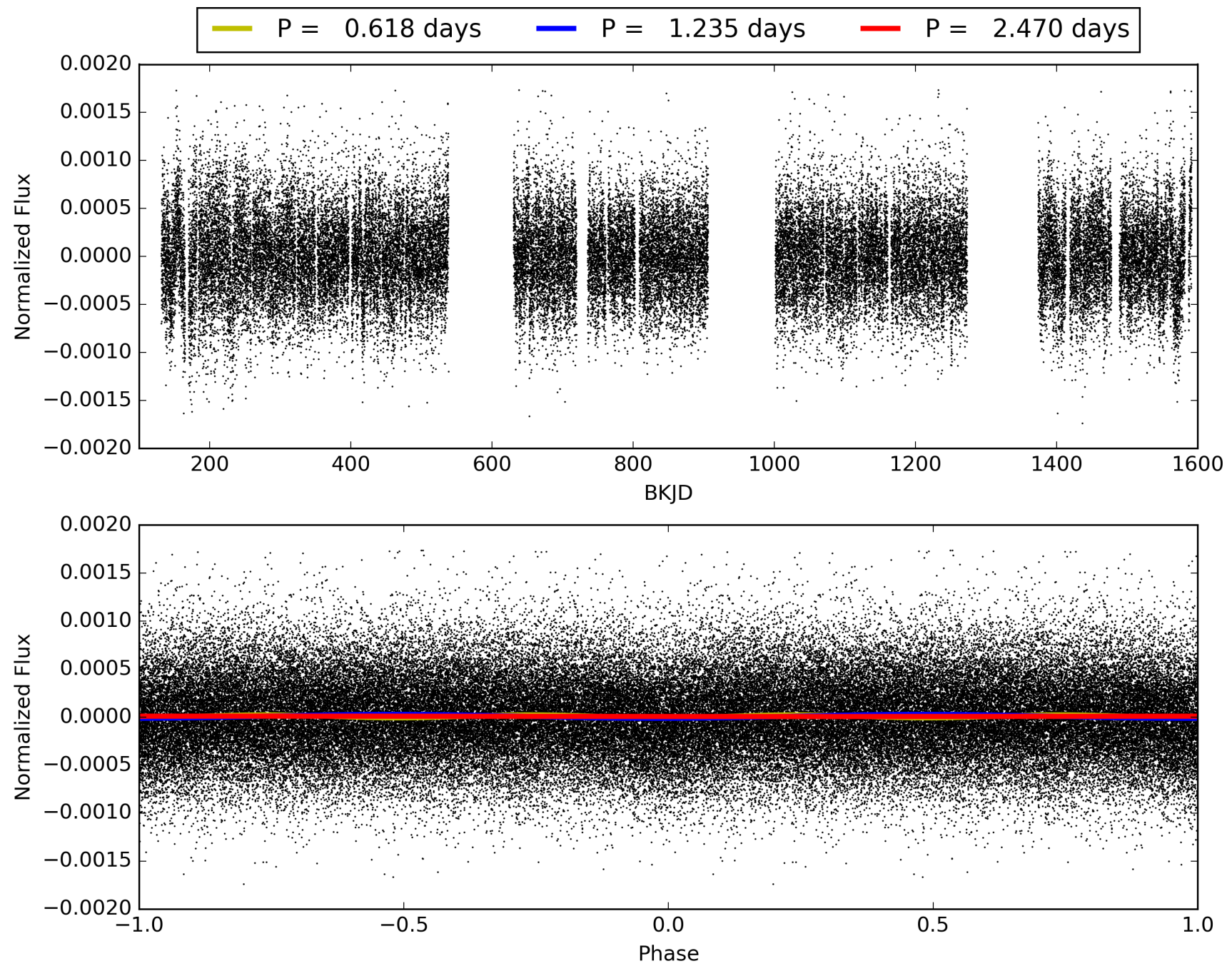
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.92e-24
RollingBand-fgt: 1.00 [819/823]
GhostDiagnostic-chr: 0.06676
Centroid-sig: 0.0%
Centroid-so: 8.039 arcsec [5.79σ]
OotOffset-rm: 1.687 arcsec [2.61σ]
KicOffset-rm: 1.740 arcsec [2.89σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 0.14 [2/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 004851338-01, PDC Light Curves

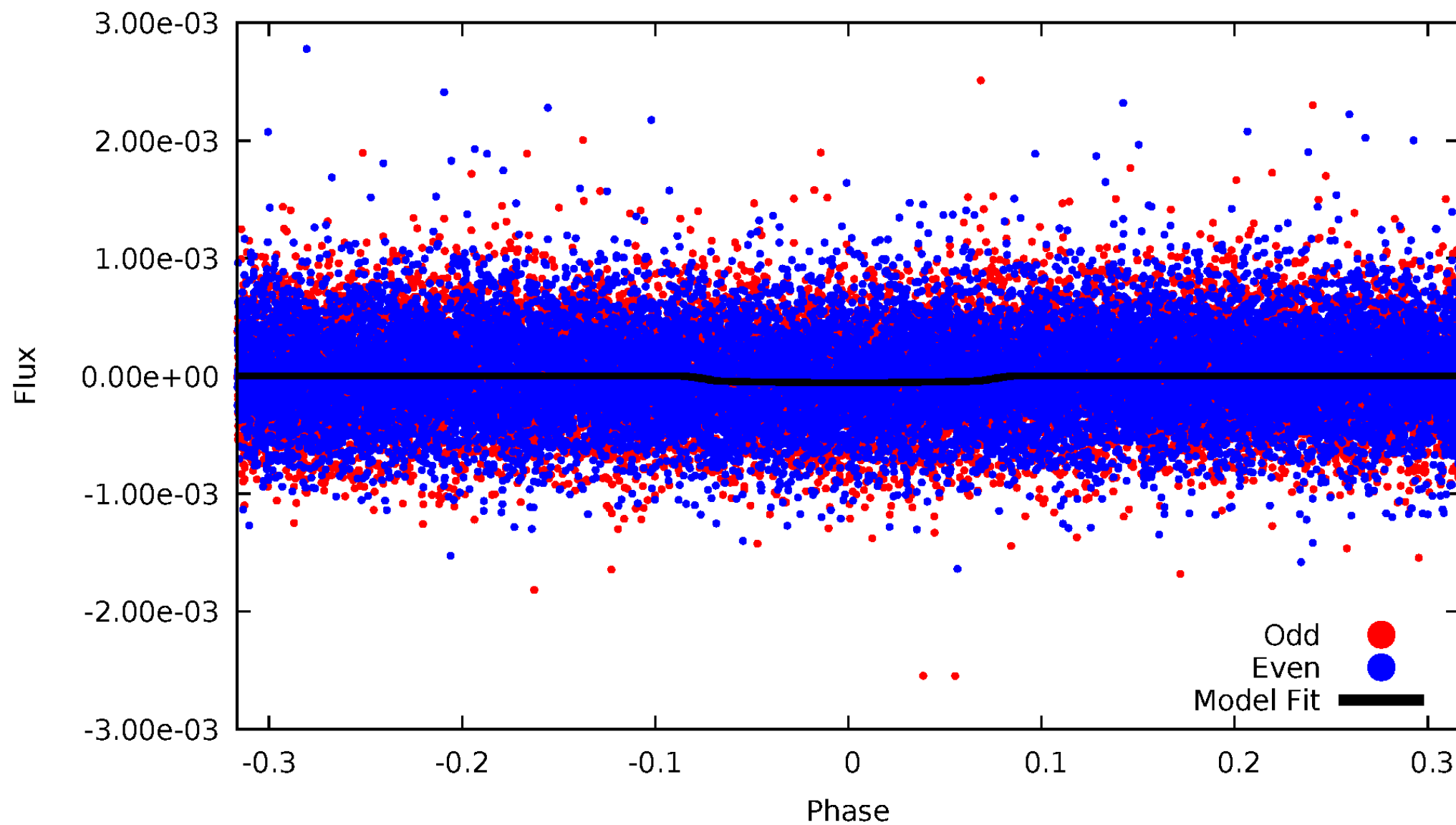


TCE 004851338-01



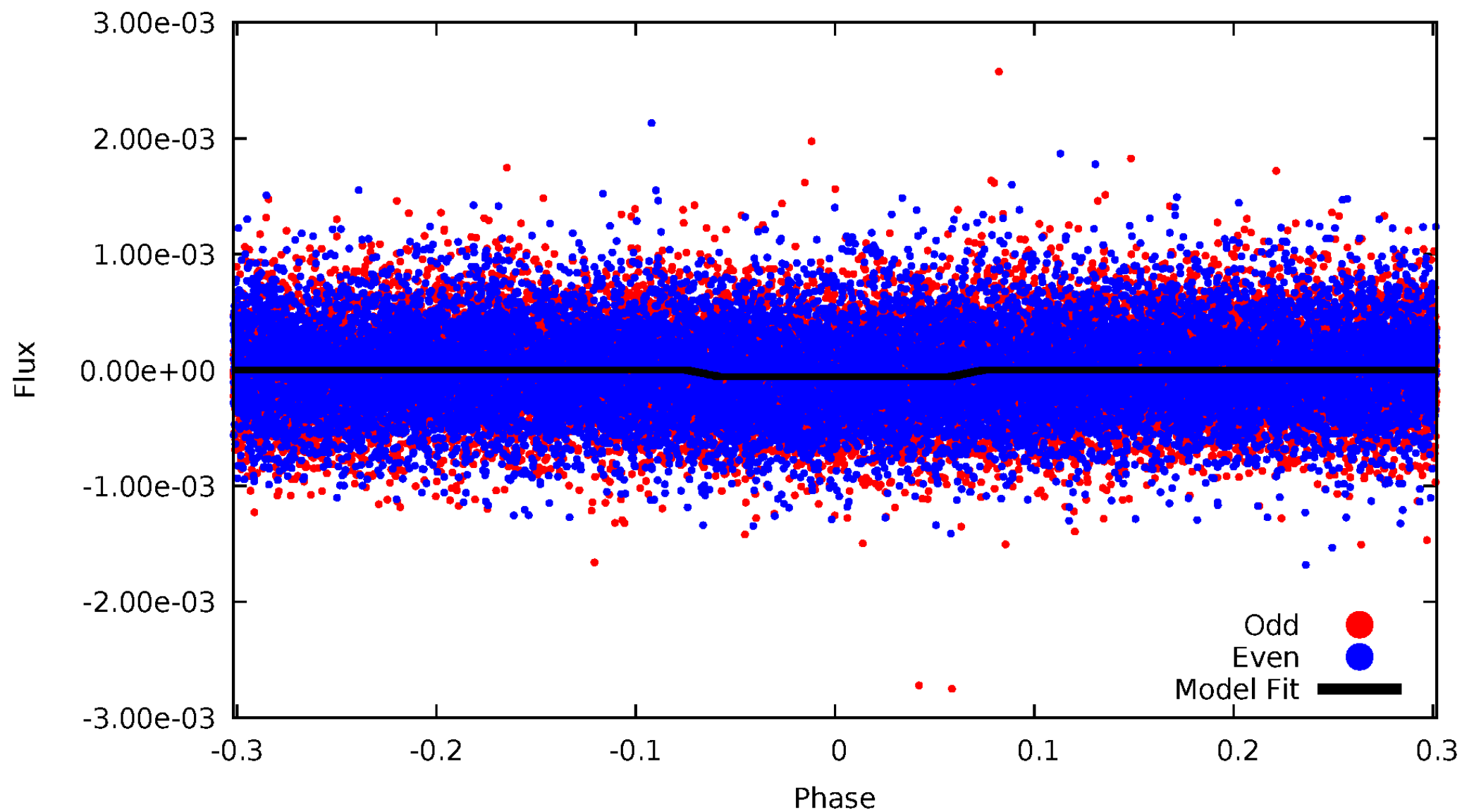
DV Odd/Even

TCE 004851338-01



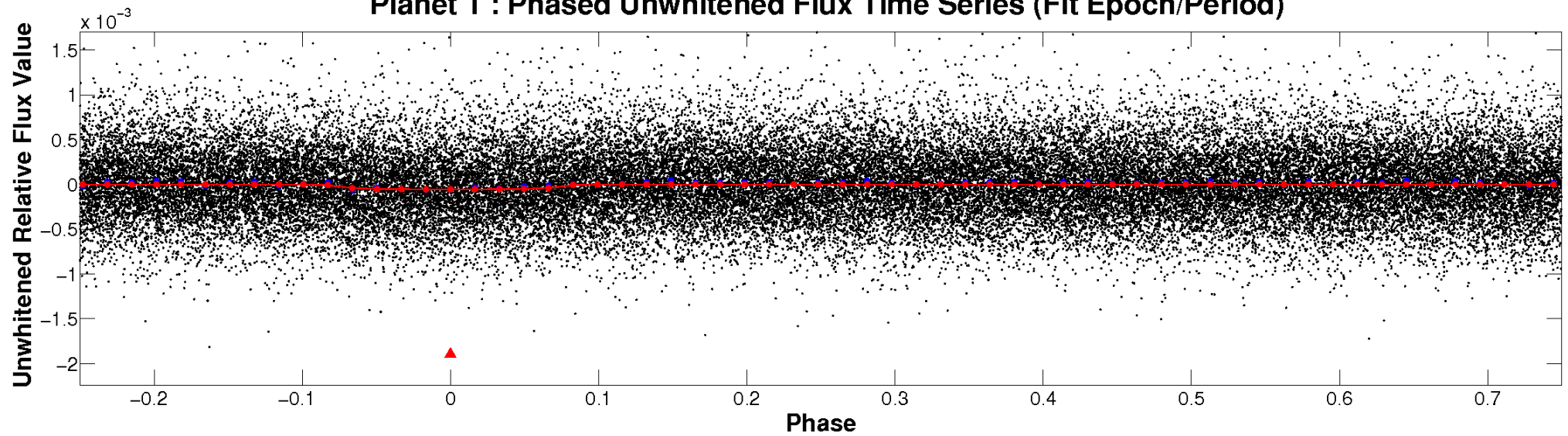
ALT Odd/Even

TCE 004851338-01

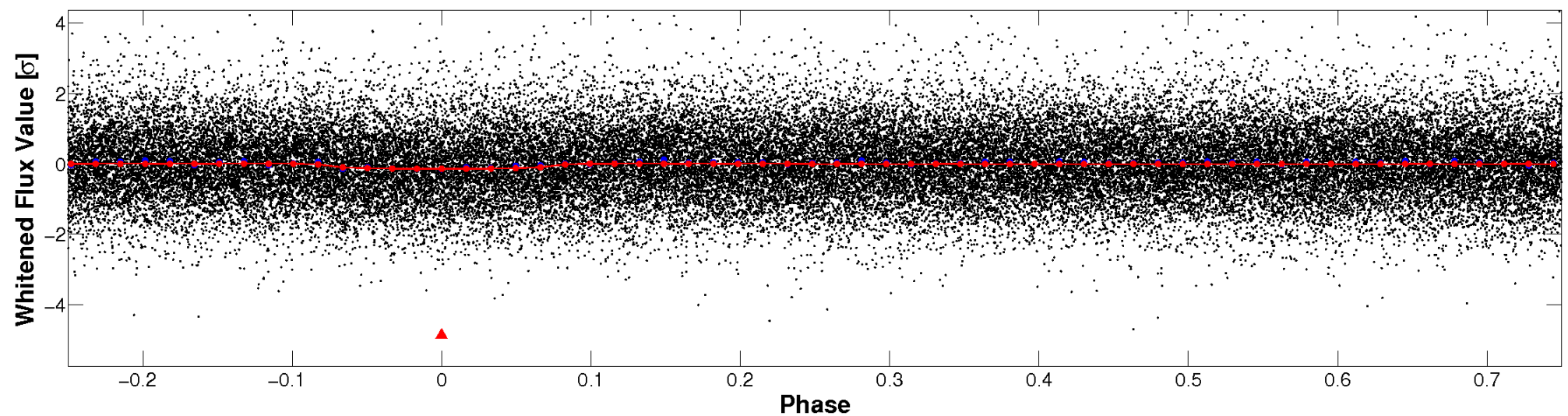


Non-Whitened Vs. Whitened Light Curve

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

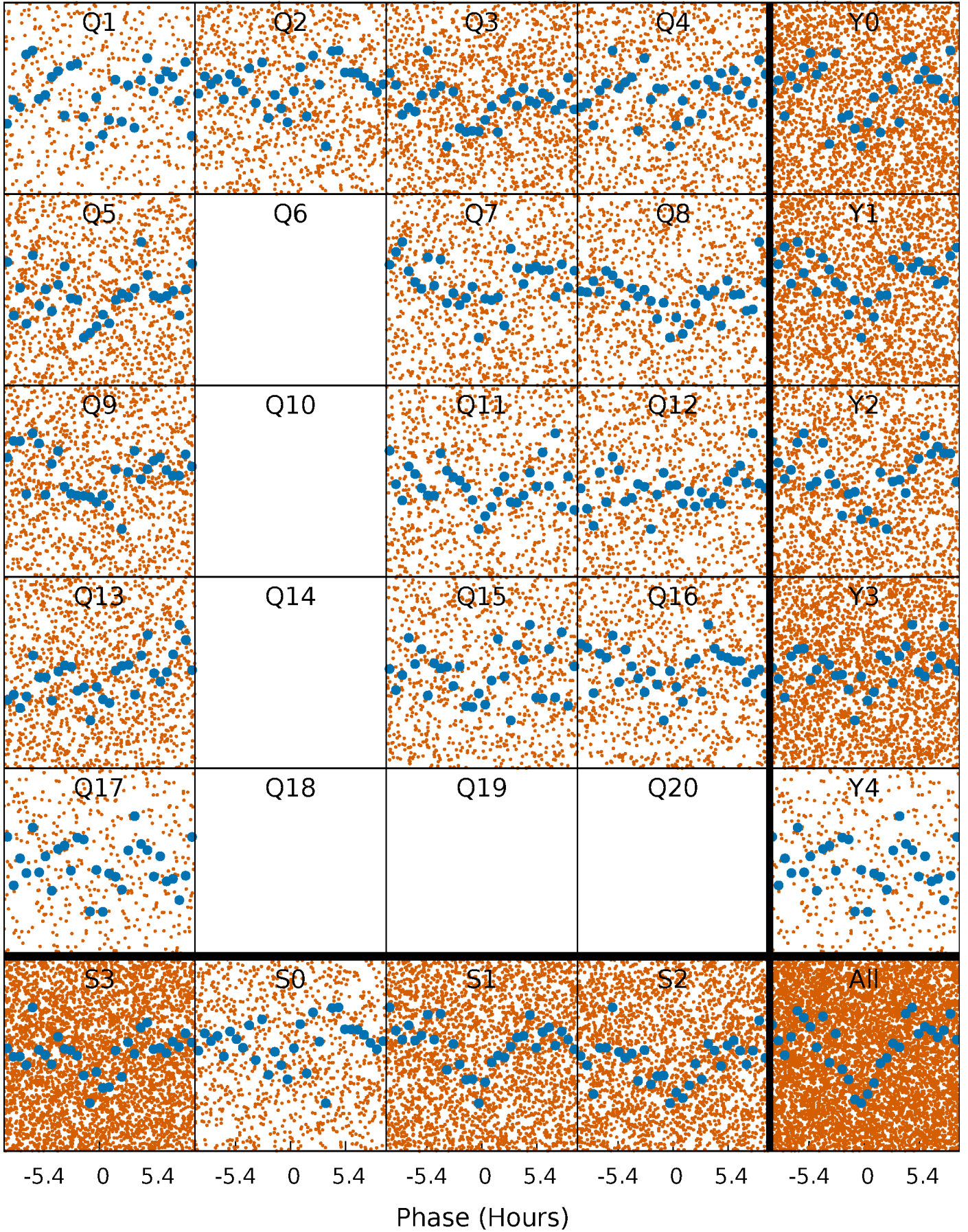


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



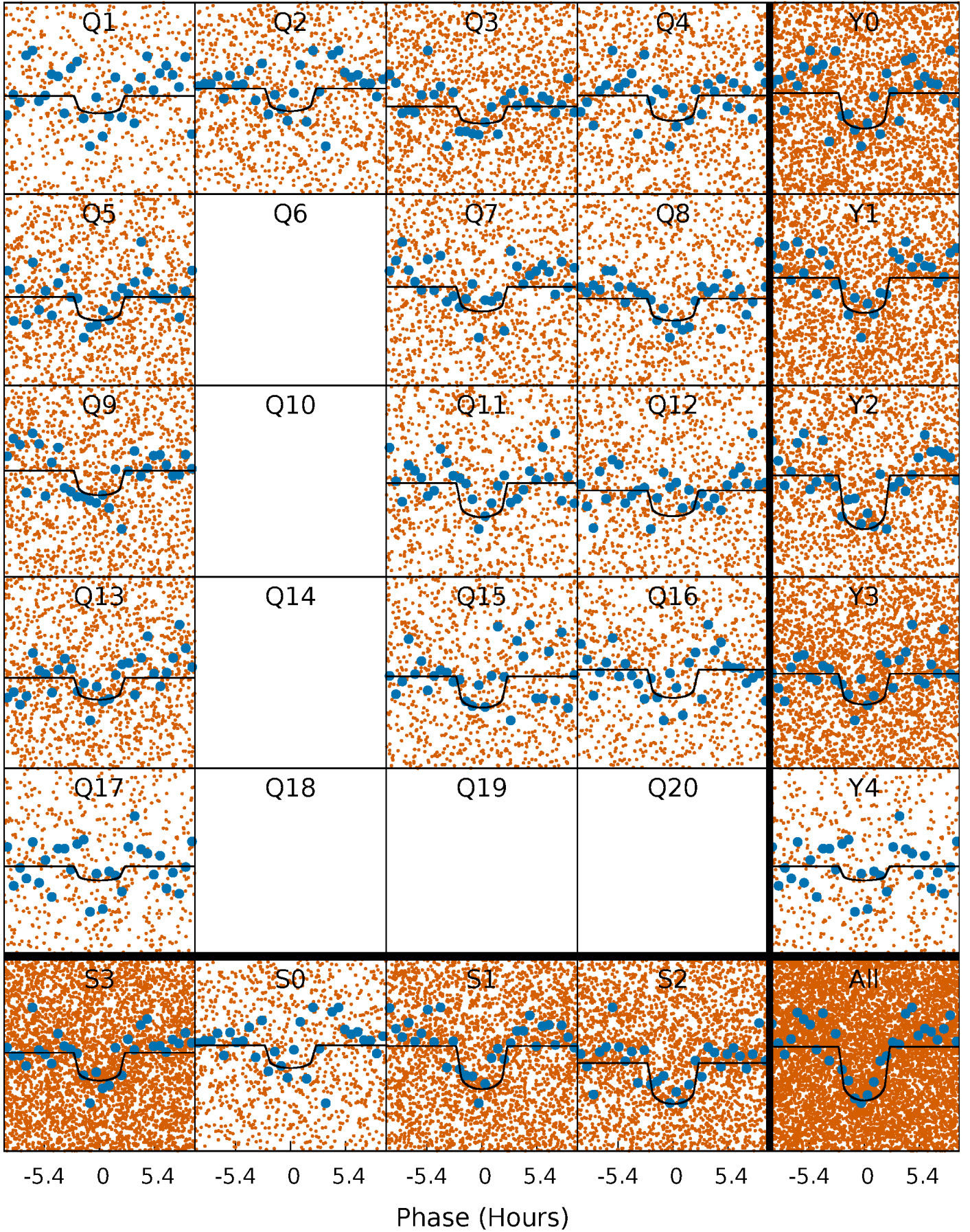
PDC Quarter-Phased Transit Curves

TCE 004851338-01 P= 1.235153 Days $T_0=131.998409$ (BKJD)



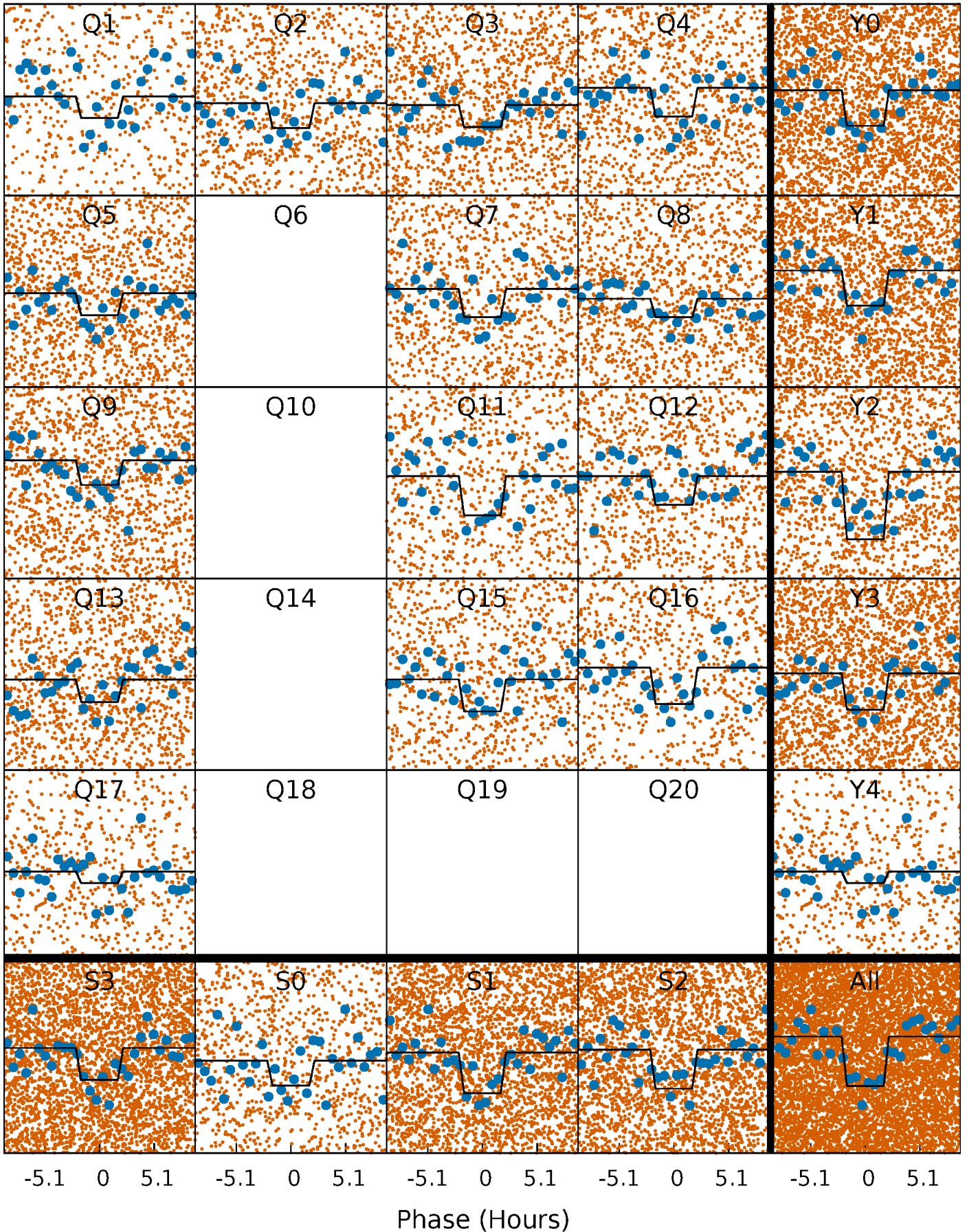
DV Quarter-Phased Transit Curves

TCE 004851338-01 P= 1.235153 Days $T_0=131.998409$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

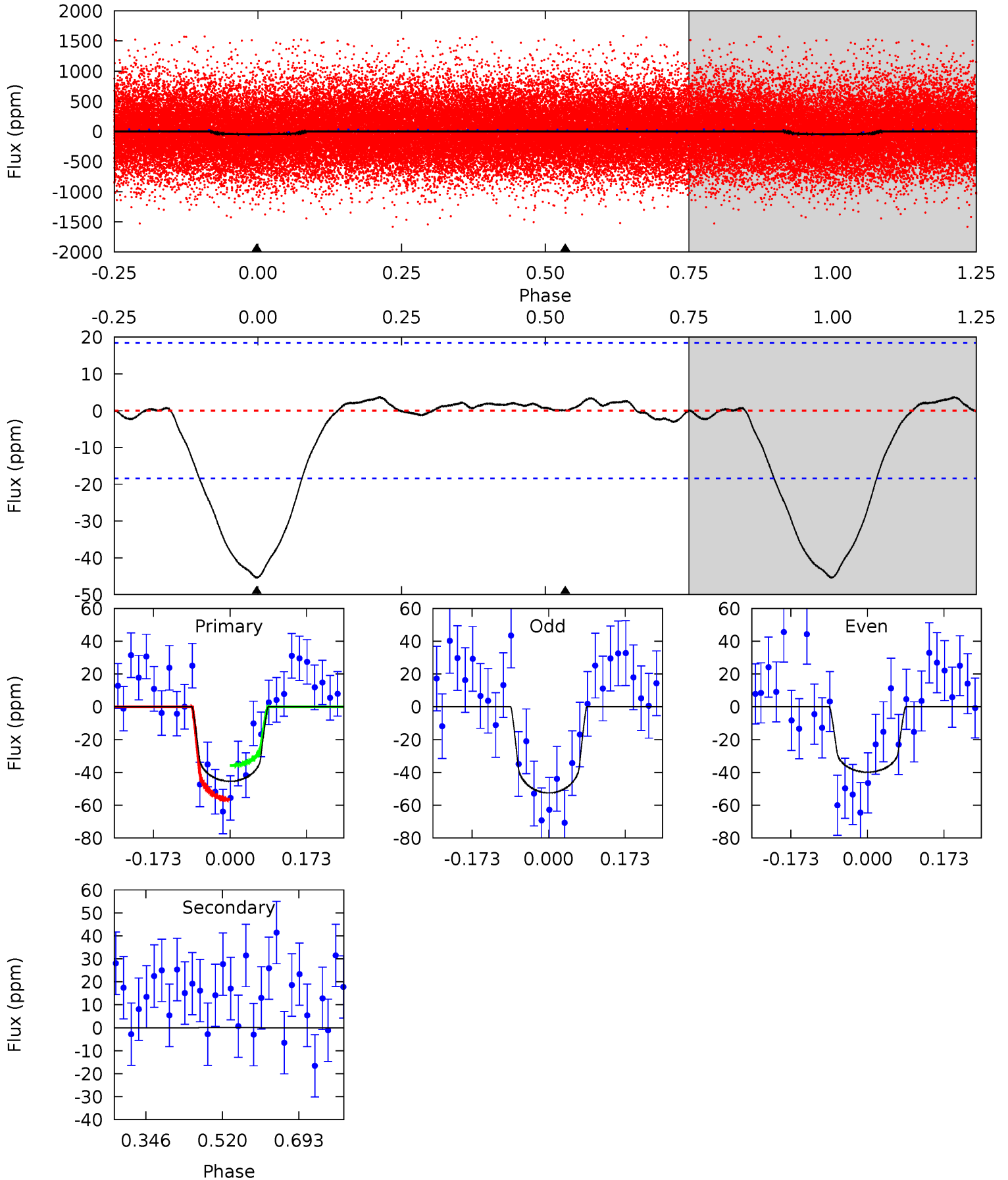
TCE 004851338-01 P= 1.235132 Days $T_0=131.997390$ (BKJD)



DV Model-Shift Uniqueness Test

004851338-01, P = 1.235153 Days, E = 130.763256 Days

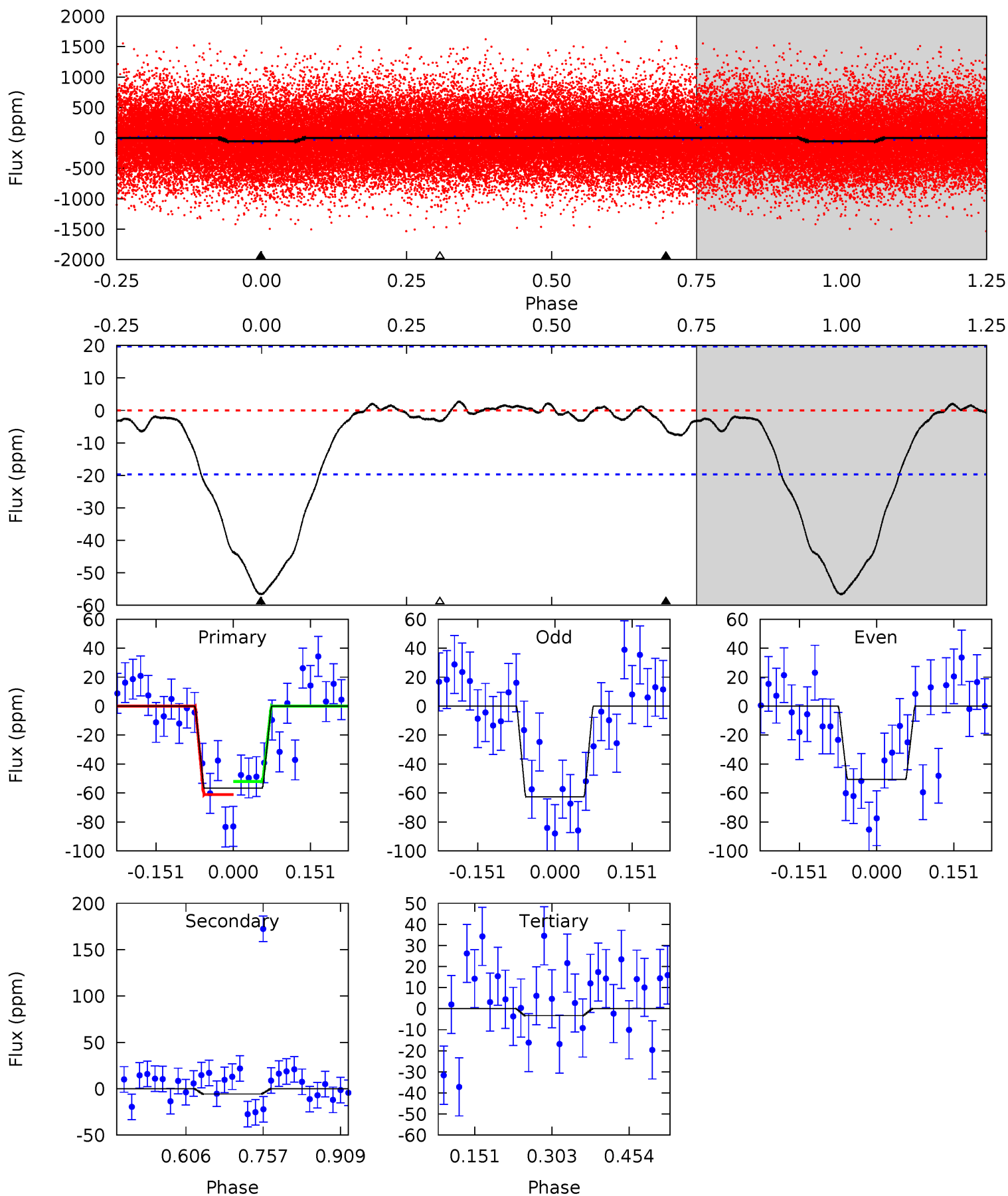
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	0	0	0	4.45	1.36	0.43	11.0	11.0	0	0	1.54	0.97	0.07	2.50



Alt Model-Shift Uniqueness Test

004851338-01, P = 1.235132 Days, E = 130.762258 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.9	1.30	0.75	0	4.48	1.43	0.34	12.1	12.9	0.55	1.30	1.36	1.11	0.05	1.02



Stellar Parameters For KIC 004851338

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6249^{+174}_{-217}	$4.428^{+0.060}_{-0.180}$	$-0.040^{+0.250}_{-0.300}$	$1.076^{+0.296}_{-0.127}$	$1.130^{+0.145}_{-0.159}$	$1.279^{+0.398}_{-0.631}$
	+3%/-3%	+1%/-4%	+625%/-750%	+28%/-12%	+13%/-14%	+31%/-49%
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 004851338-01 / KOI 6461.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 4	$0.99^{+0.56}_{-0.50}$	2650^{+170}_{-134}	-2977^{+6519}_{-901}	$-0.056^{+1.536}_{-1.752}$
Alt.	-6 ± 4	$0.97^{+0.55}_{-0.50}$	2656^{+173}_{-131}	3608^{+1311}_{-2069}	$1.686^{+6.023}_{-1.381}$

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 $A_{obs} \gg 1.0$

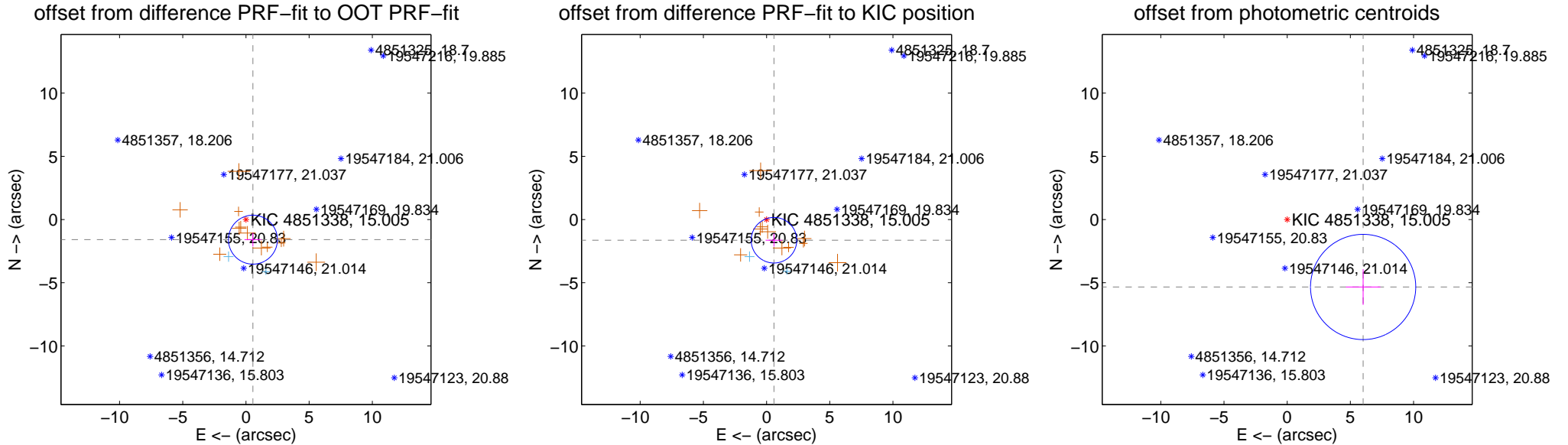
DV Centroid Data

Supplemental centroid analysis for 004851338-01. Kepler magnitude: 15.01. Transit SNR 10.58

There are 2 quarters with good PRF difference image offsets

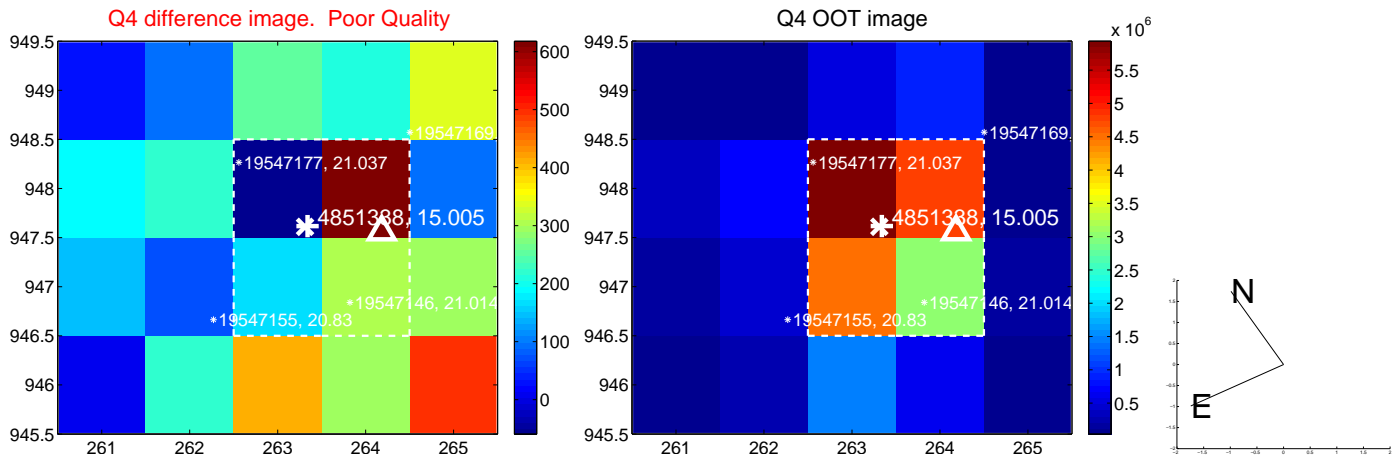
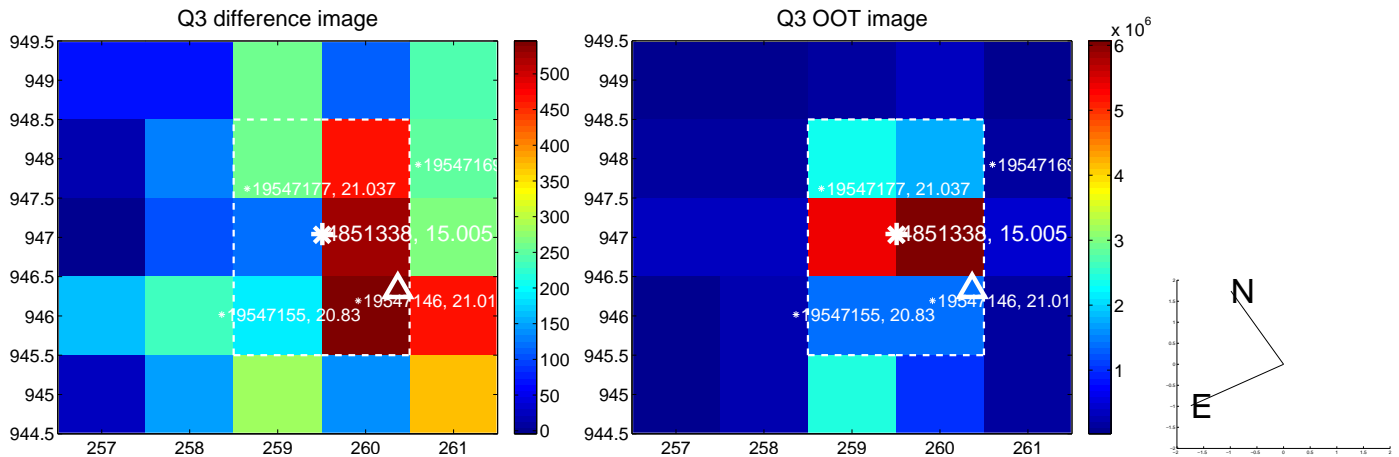
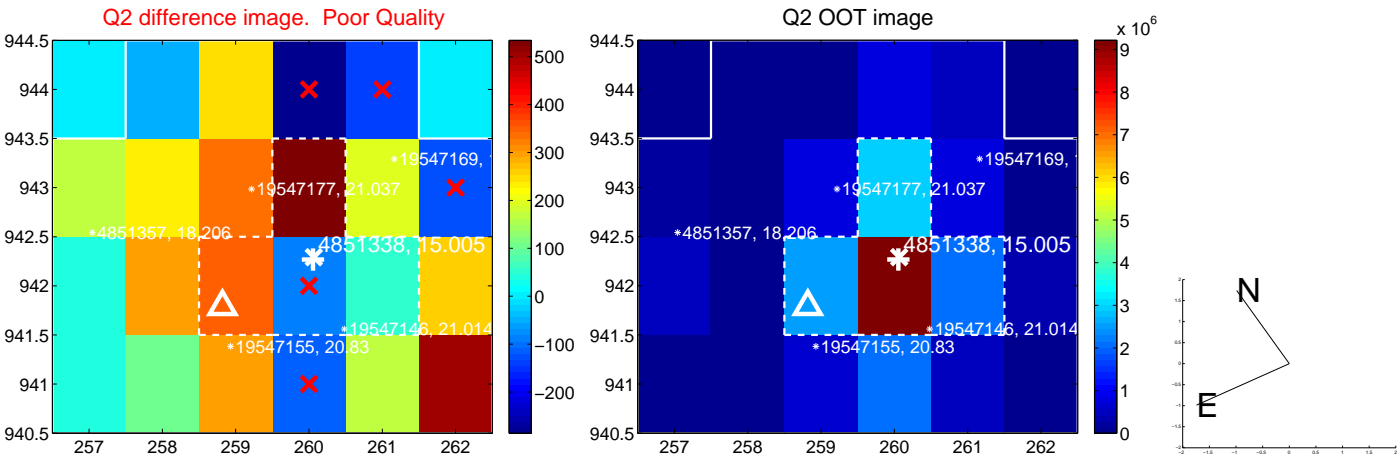
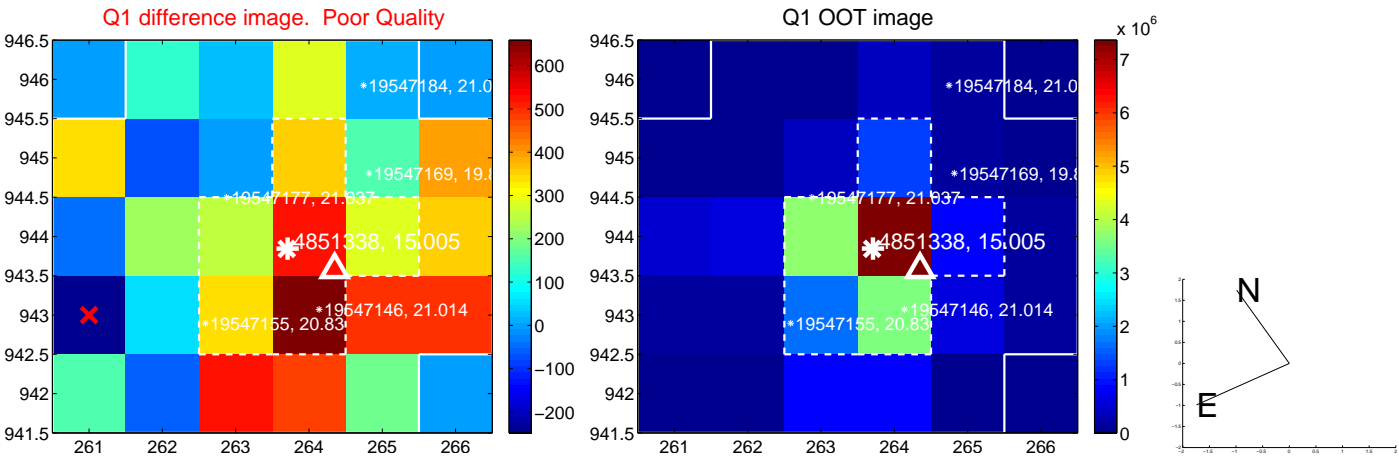
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.687 ± 0.646	2.61	-0.552 ± 0.666	-1.594 ± 0.546
PRF-fit source offset from KIC position	1.740 ± 0.601	2.89	-0.586 ± 0.661	-1.638 ± 0.509
photometric centroid source offset	8.04 ± 1.39	5.79	-6.01 ± 1.37	-5.34 ± 1.41

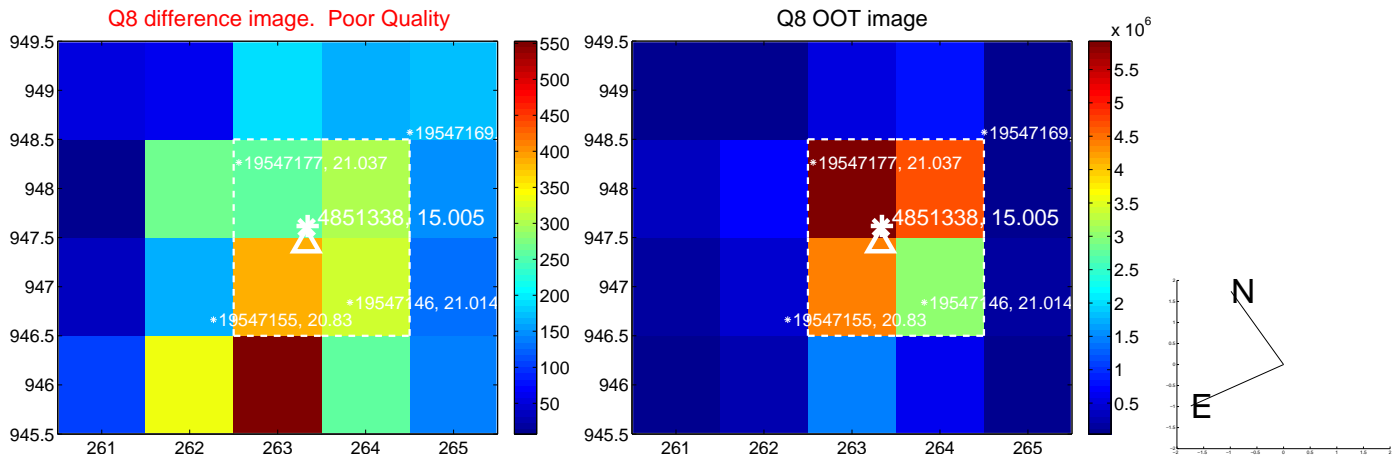
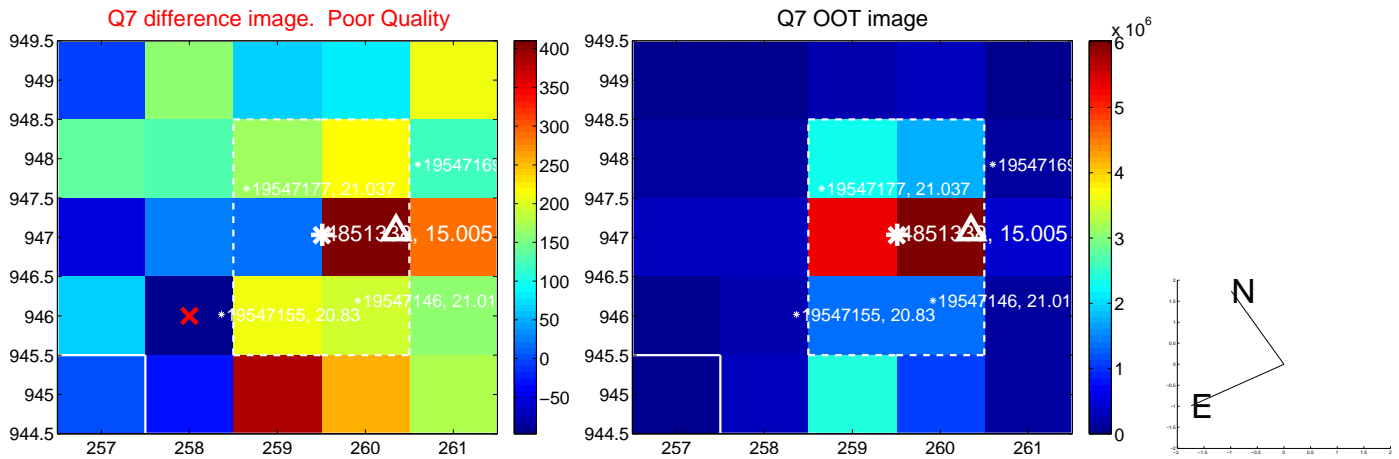
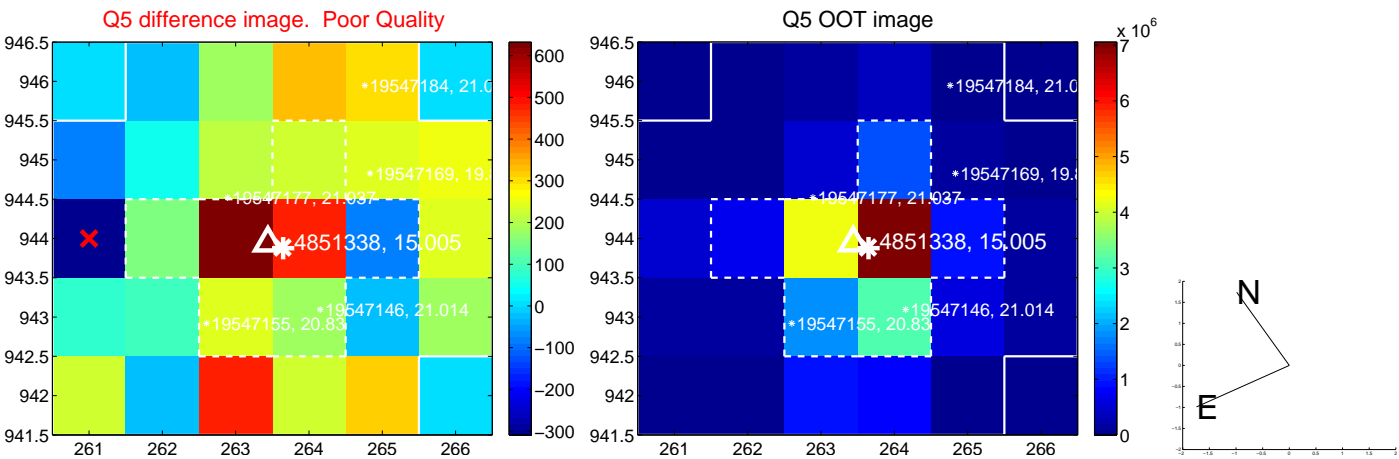


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

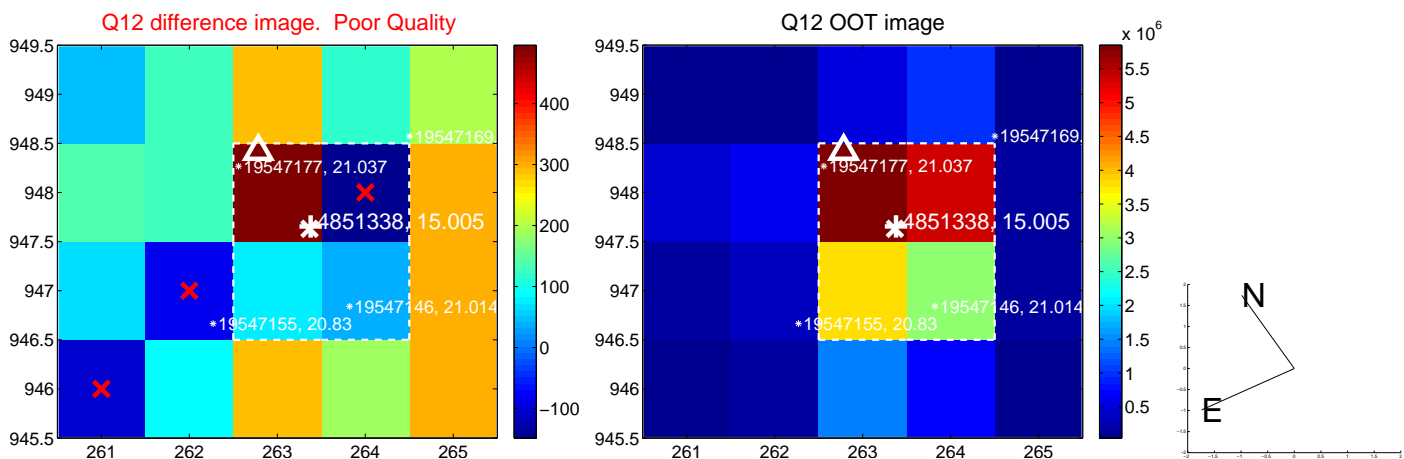
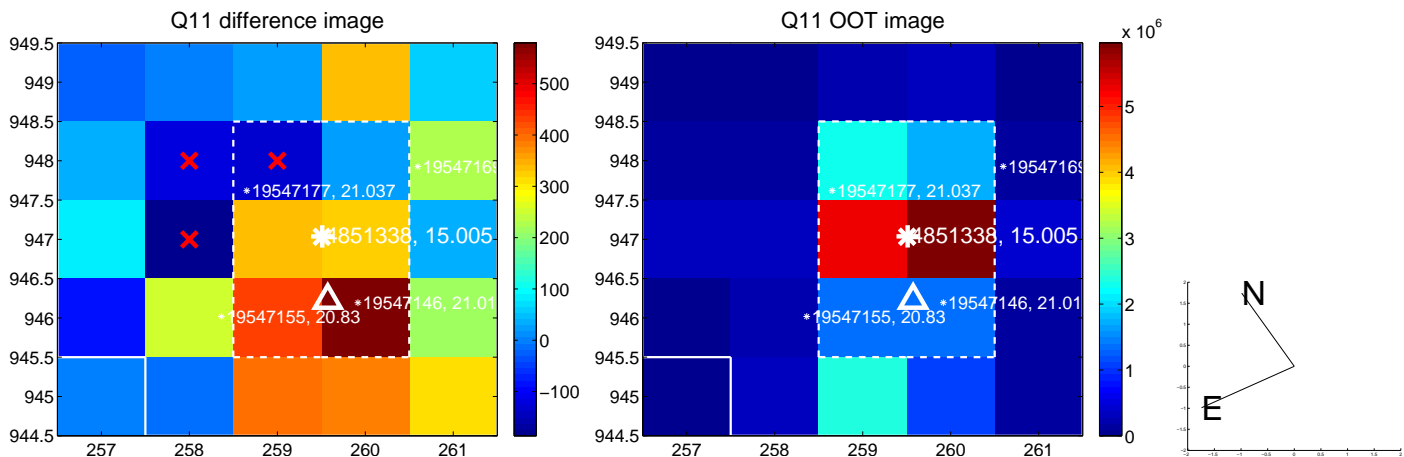
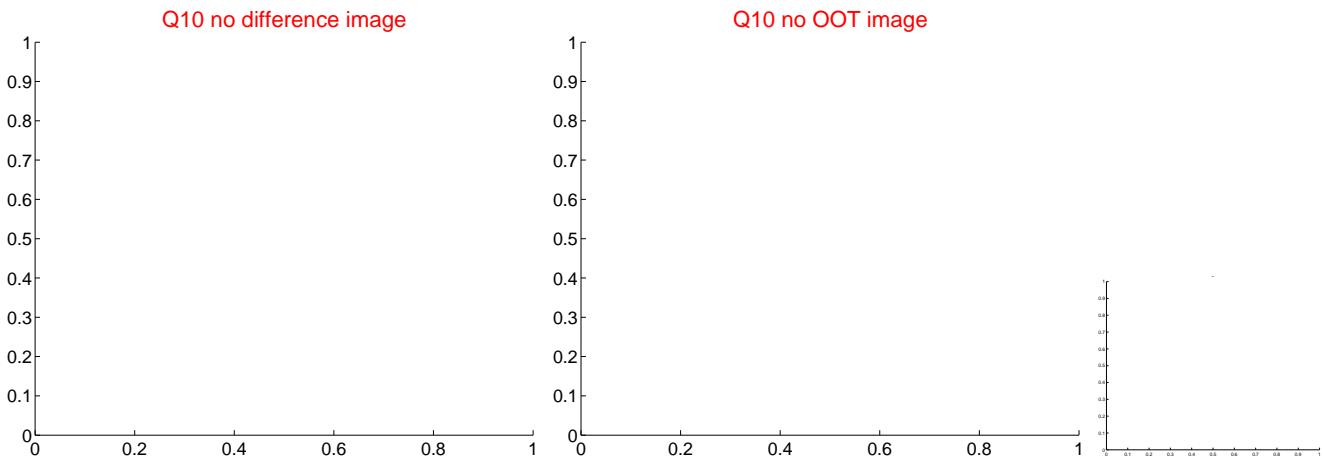
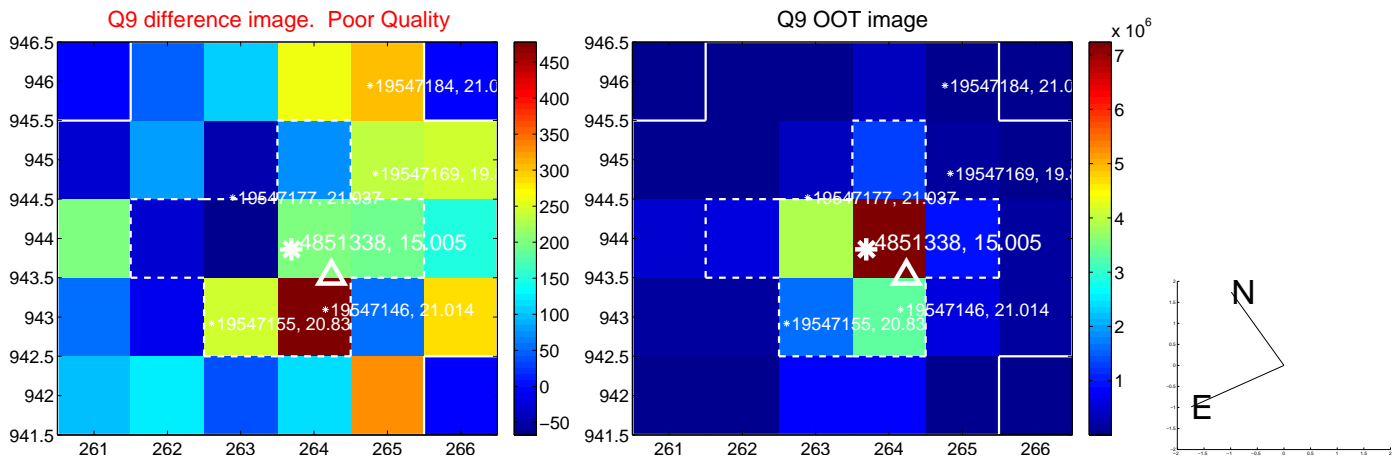
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



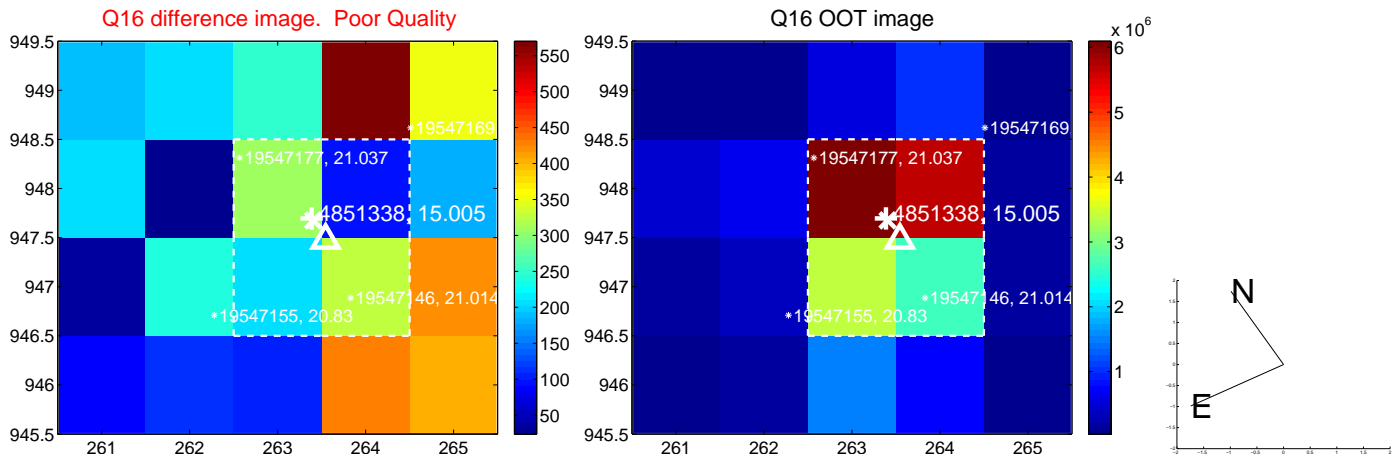
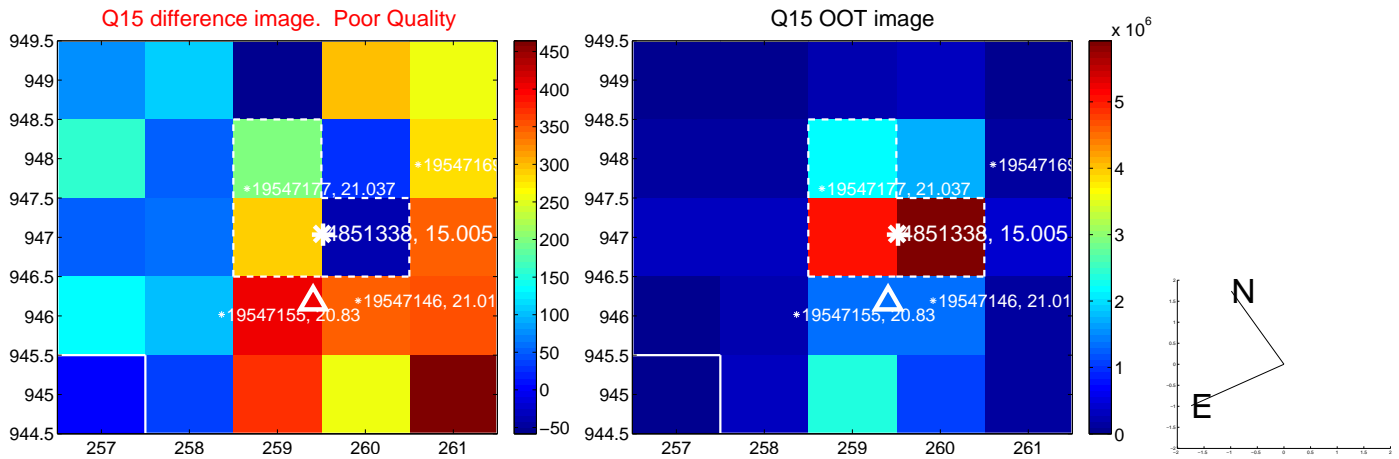
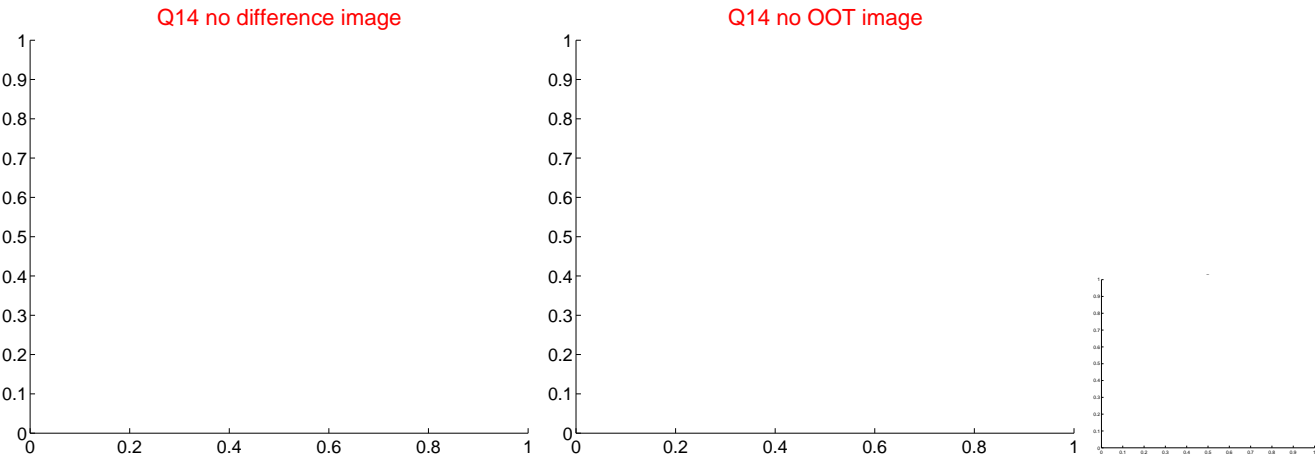
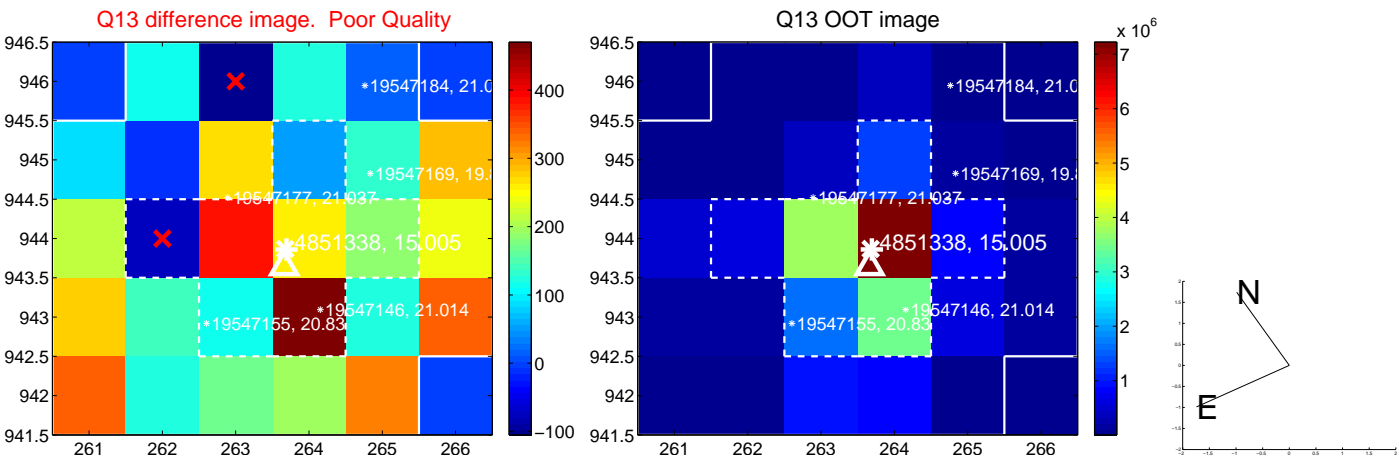
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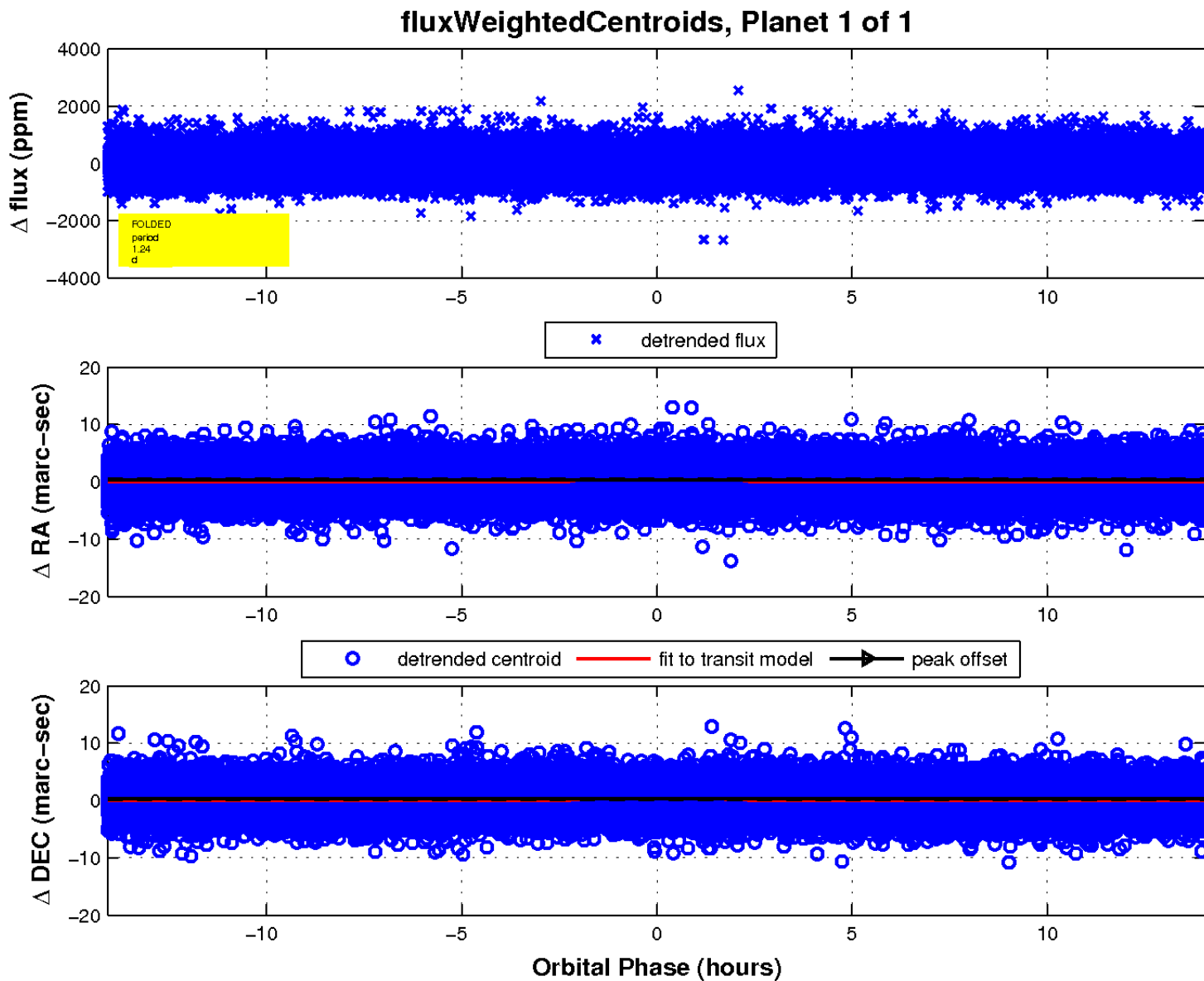
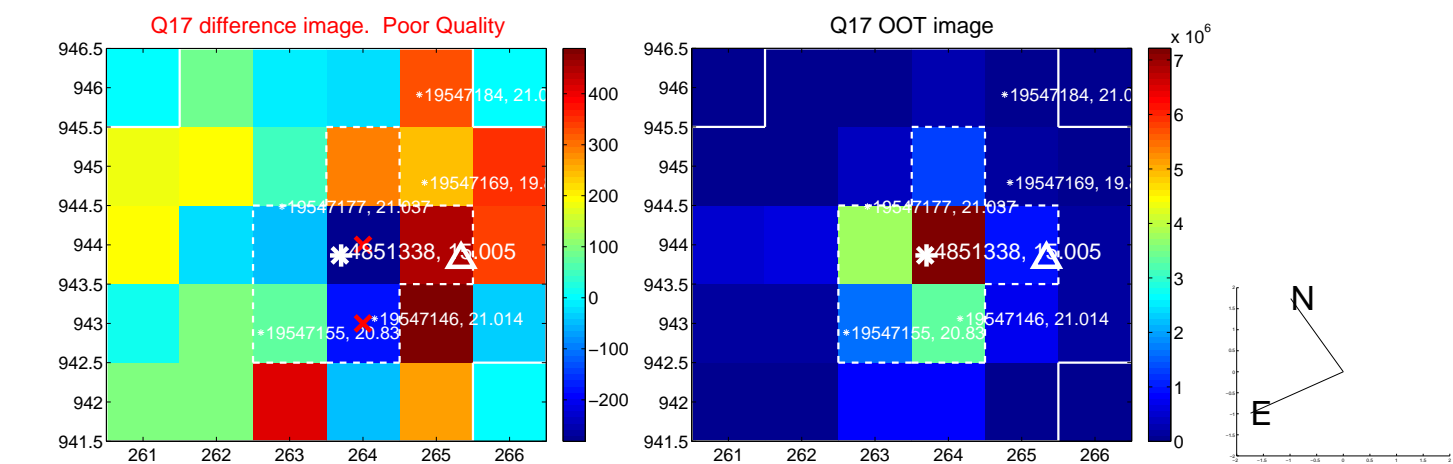
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UKIRT Image

Declination

