

KIC 004851356

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})
004851356-01	OBS	6462.01	1.235187	131.974699	41.2	5.392	9.2	9.7	1.00	5930	0.65	2184.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004851356-01	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.

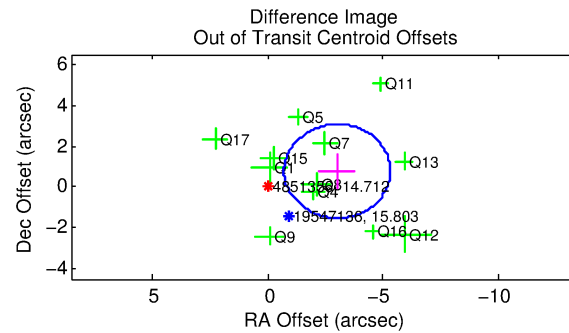
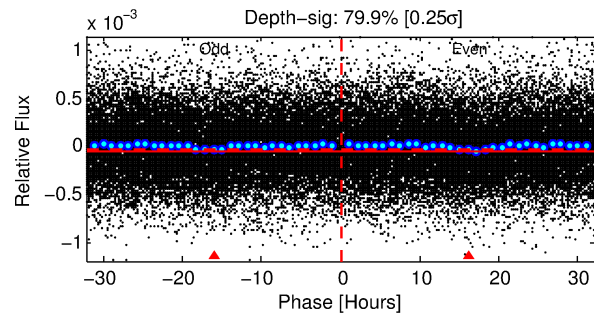
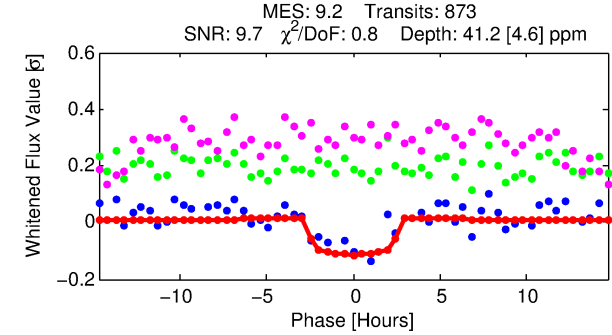
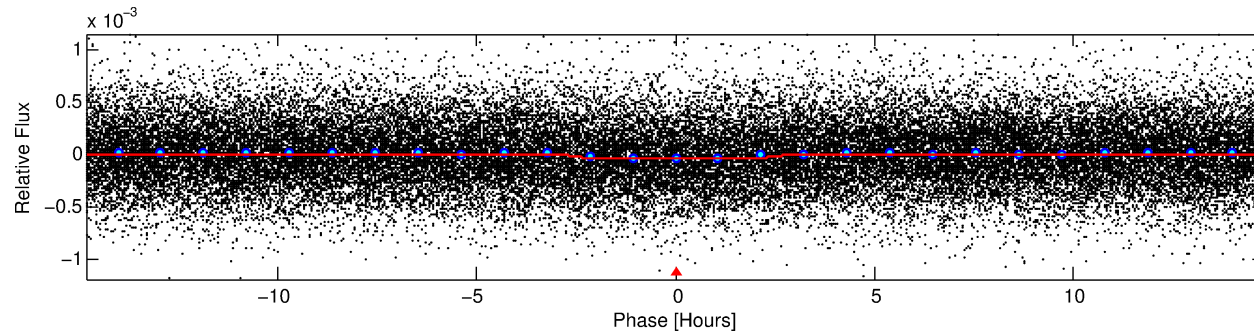
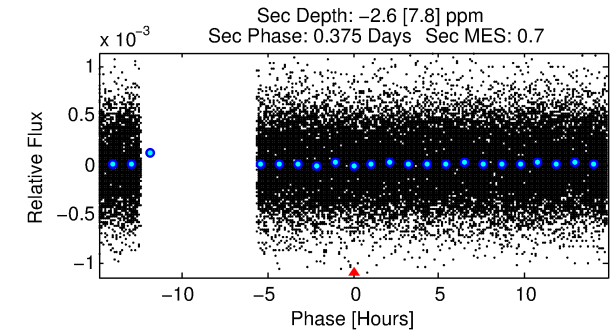
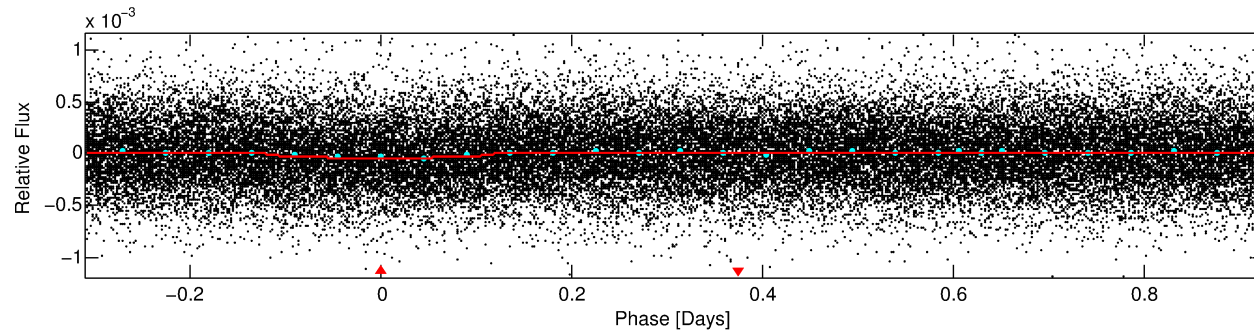
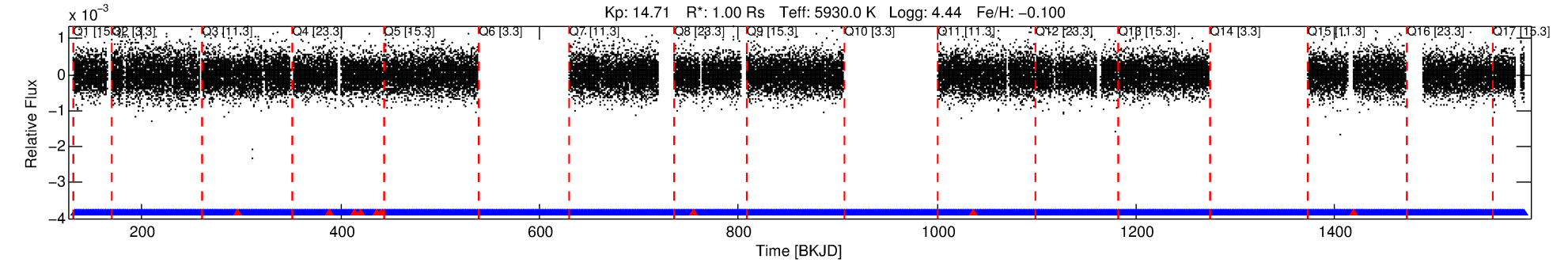
Ephemeris Match Information For 004851356-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
004851356-01	4851356	004851217-01	4851217	1:1	97.1	-2	-24	11.11	14.71	216.02	Direct-PRF	0	3.80	1.80

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 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 $\sigma_P < 5.0$ and $\sigma_T < 5.0$. 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: 4851356 Candidate: 1 of 1 Period: 1.235 d
KOI: K06462.01 Corr: 0.915



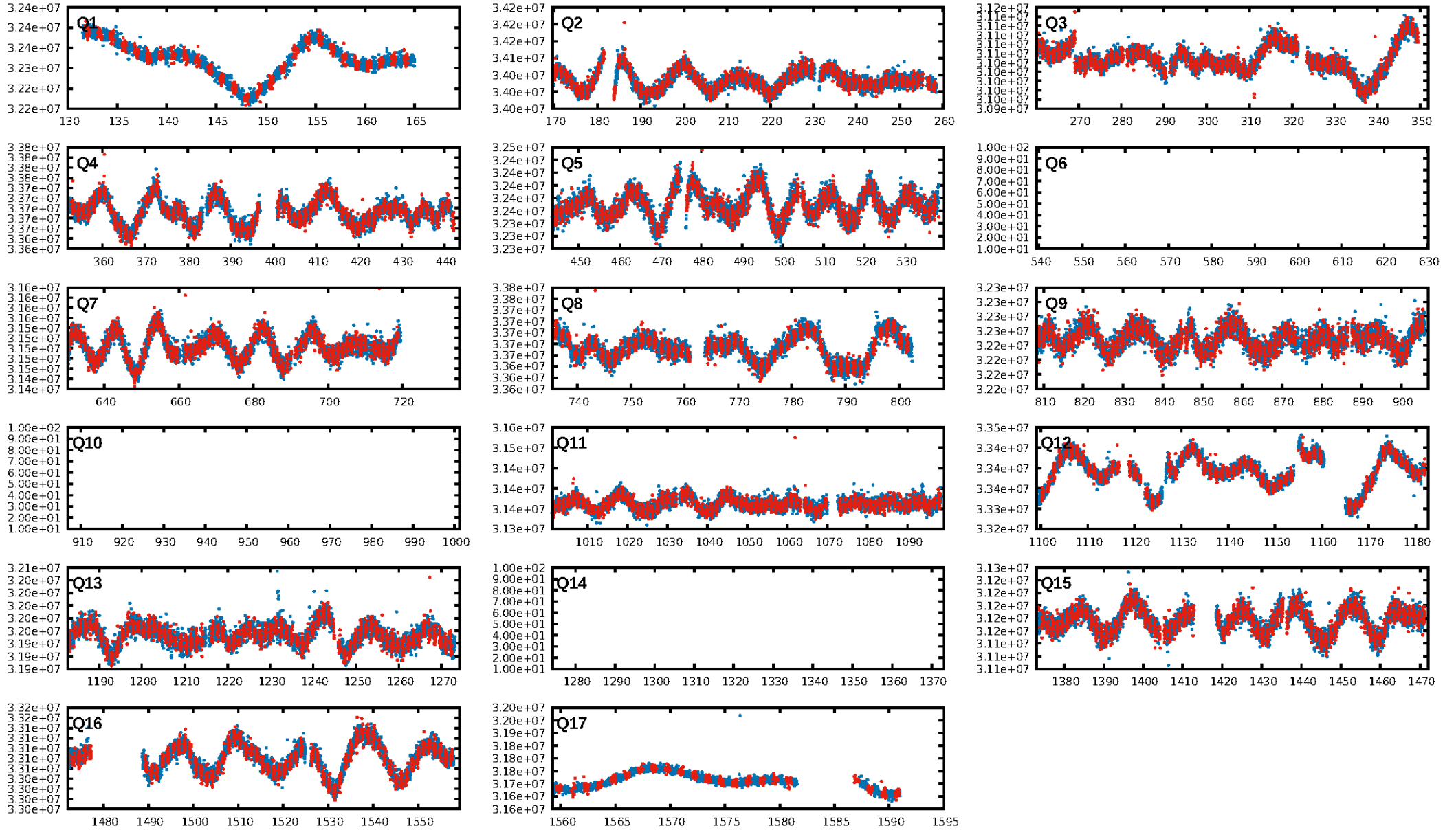
DV Fit Results:

Period = 1.23519 [0.00002] d
Epoch = 131.9747 [0.0056] BKJD
Rp/R* = 0.0060 [0.0046]
a/R* = 1.75 [4.20]
b = 0.41 [7.40]
Seff = 2184.07 [978.39]
Teff = 1743 [195] K
Rp = 0.65 [0.54] Re
a = 0.0225 [0.0062] AU
Ag = N/A
Teffp = N/A

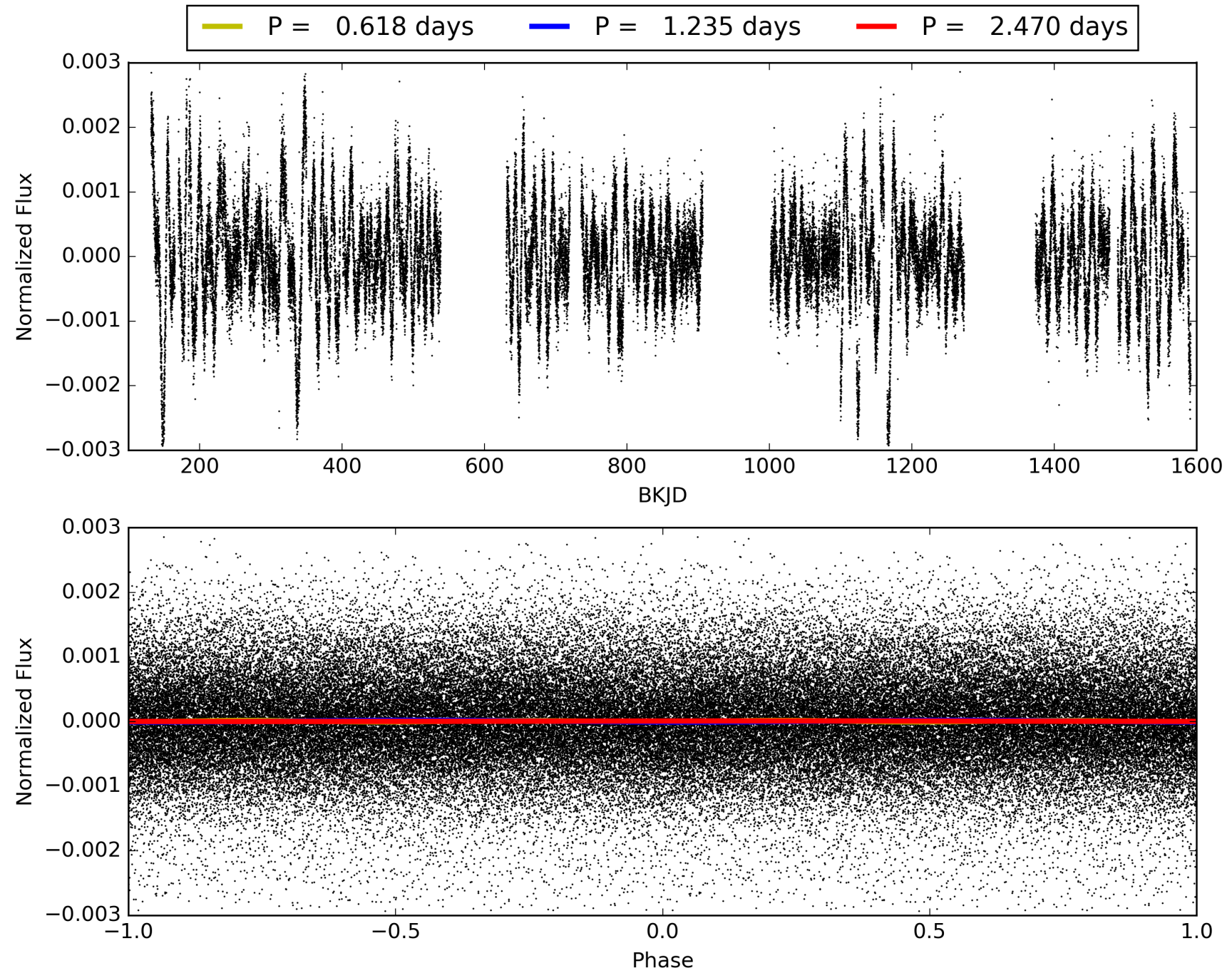
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.10e-17
RollingBand-fgt: 0.99 [815/824]
GhostDiagnostic-chr: 0.2199
Centroid-sig: 0.0%
Centroid-so: 6.657 arcsec [5.30σ]
OotOffset-rm: 3.108 arcsec [4.06σ]
KicOffset-rm: 3.144 arcsec [4.13σ]
OotOffset-st: 0/3/4/5 [12]
KicOffset-st: 0/3/4/5 [12]
DiffImageQuality-fgm: 0.17 [2/12]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 004851356-01, PDC Light Curves

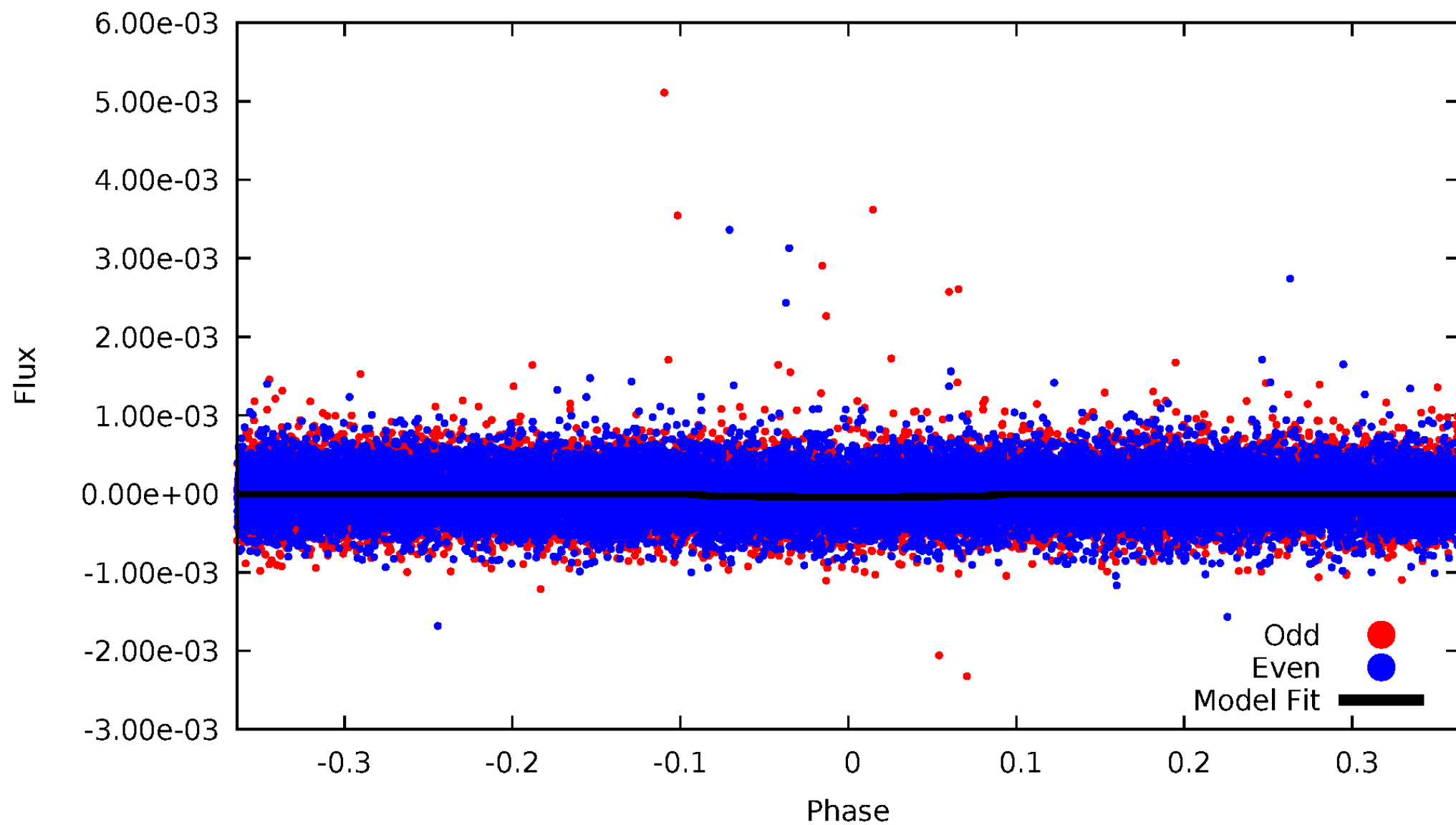


TCE 004851356-01



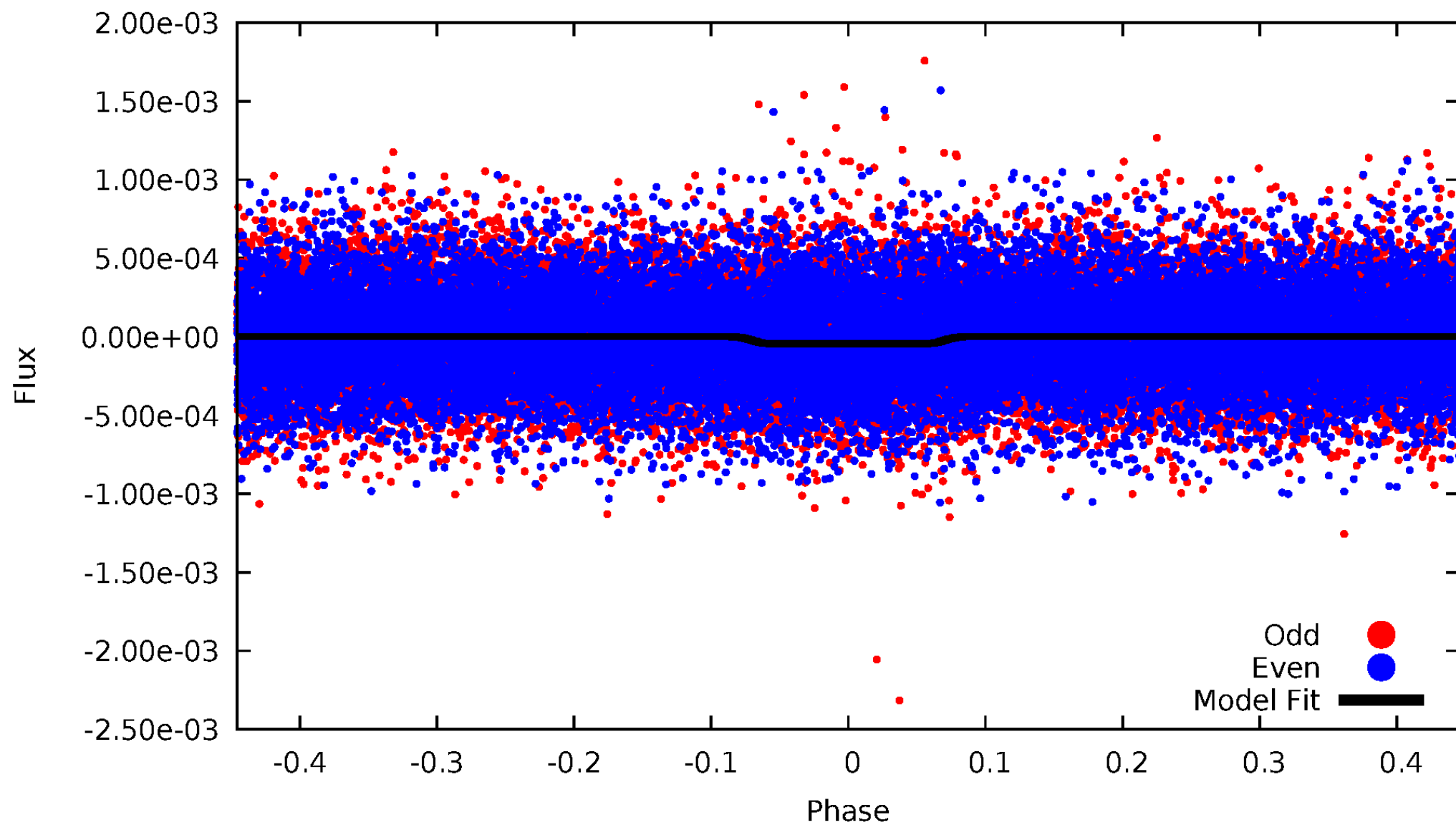
DV Odd/Even

TCE 004851356-01



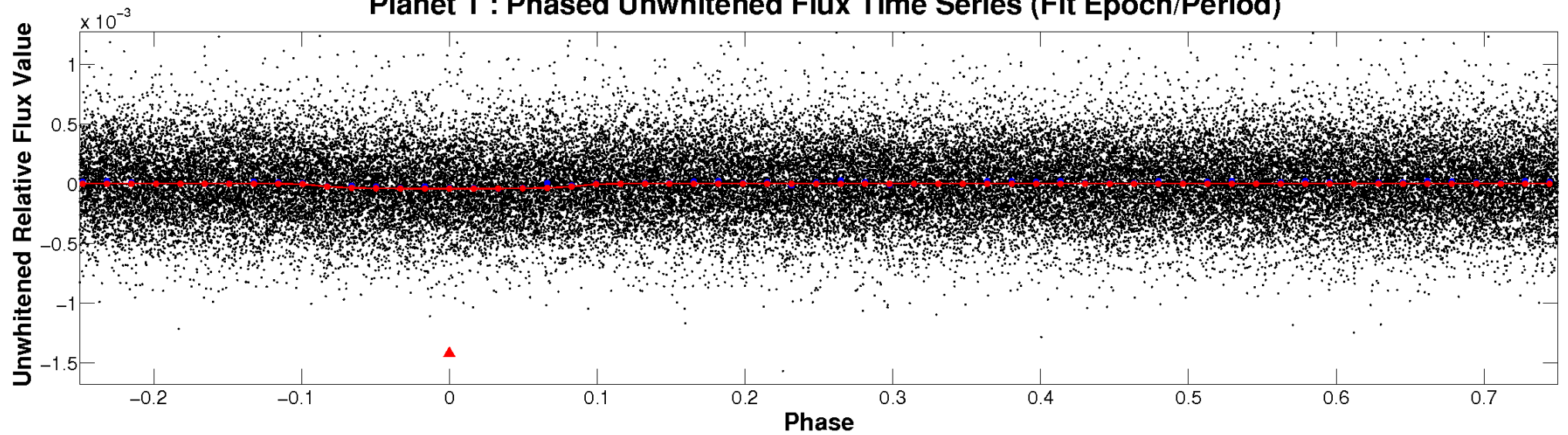
ALT Odd/Even

TCE 004851356-01

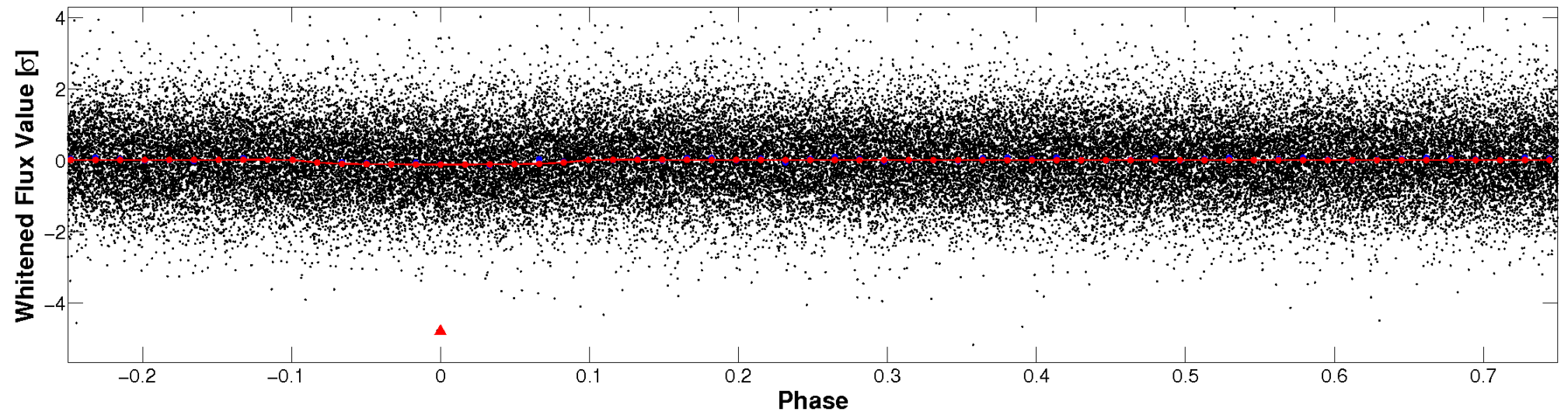


Non-Whitened Vs. Whitened Light Curve

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

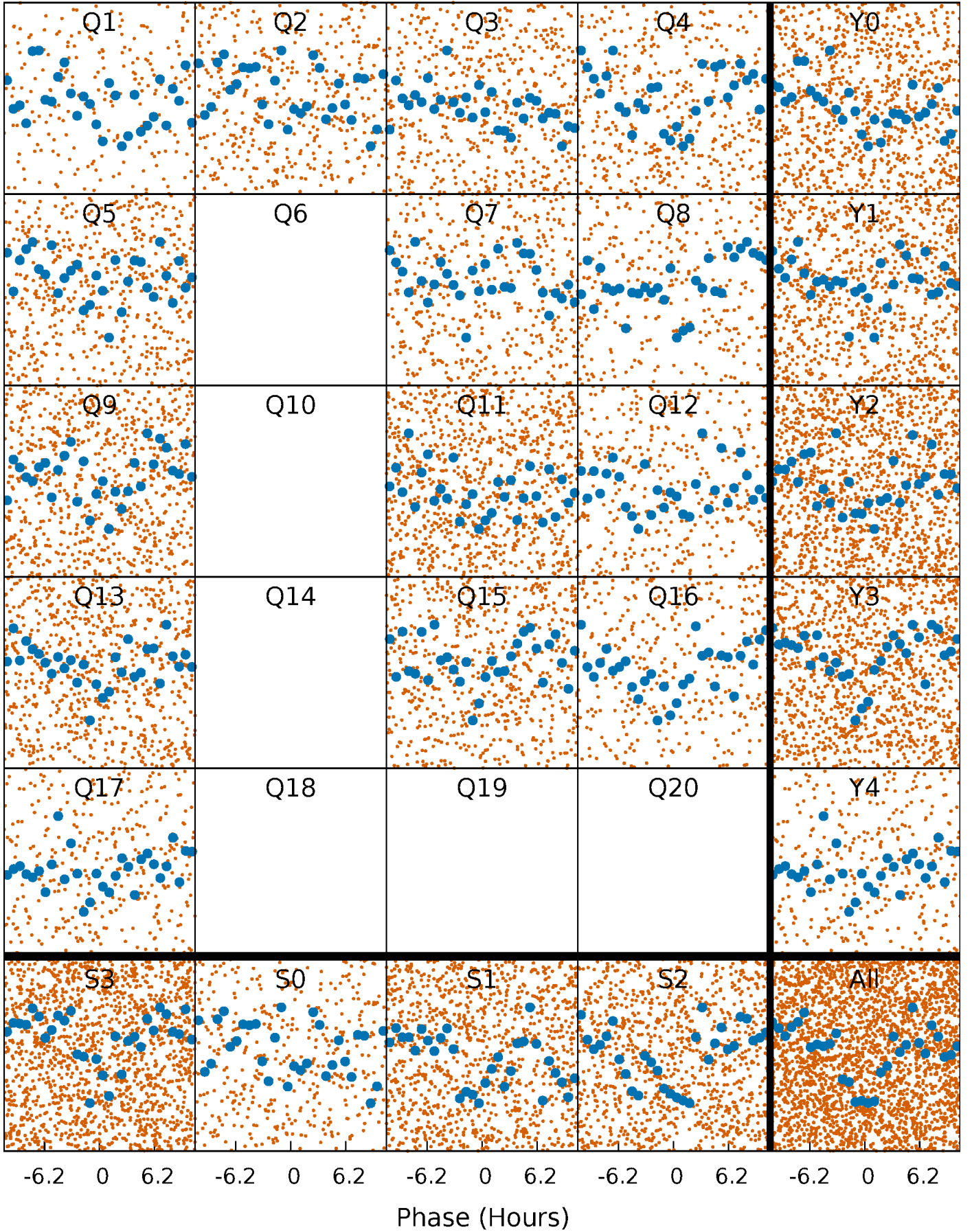


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



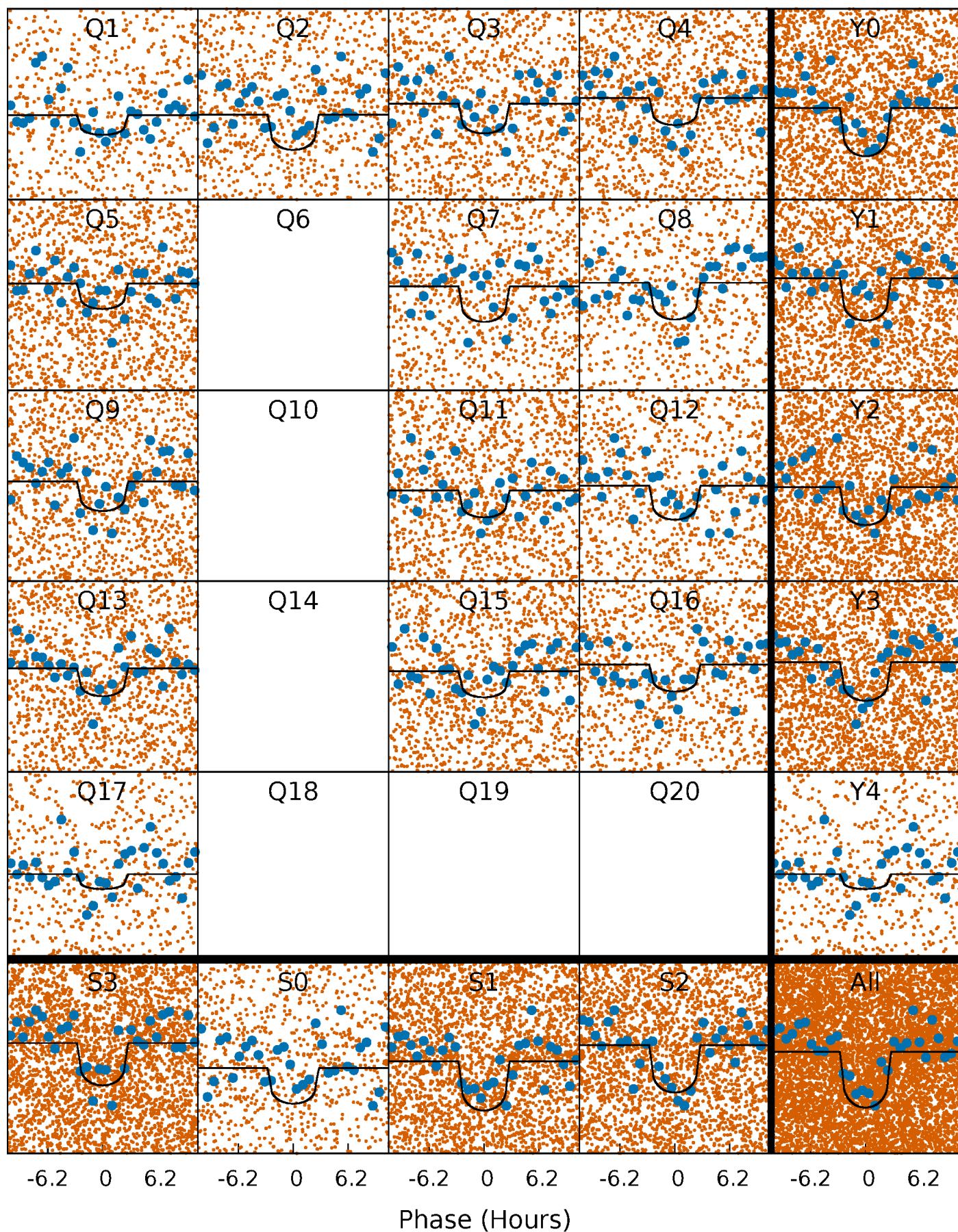
PDC Quarter-Phased Transit Curves

TCE 004851356-01 P= 1.235187 Days $T_0=131.974699$ (BKJD)



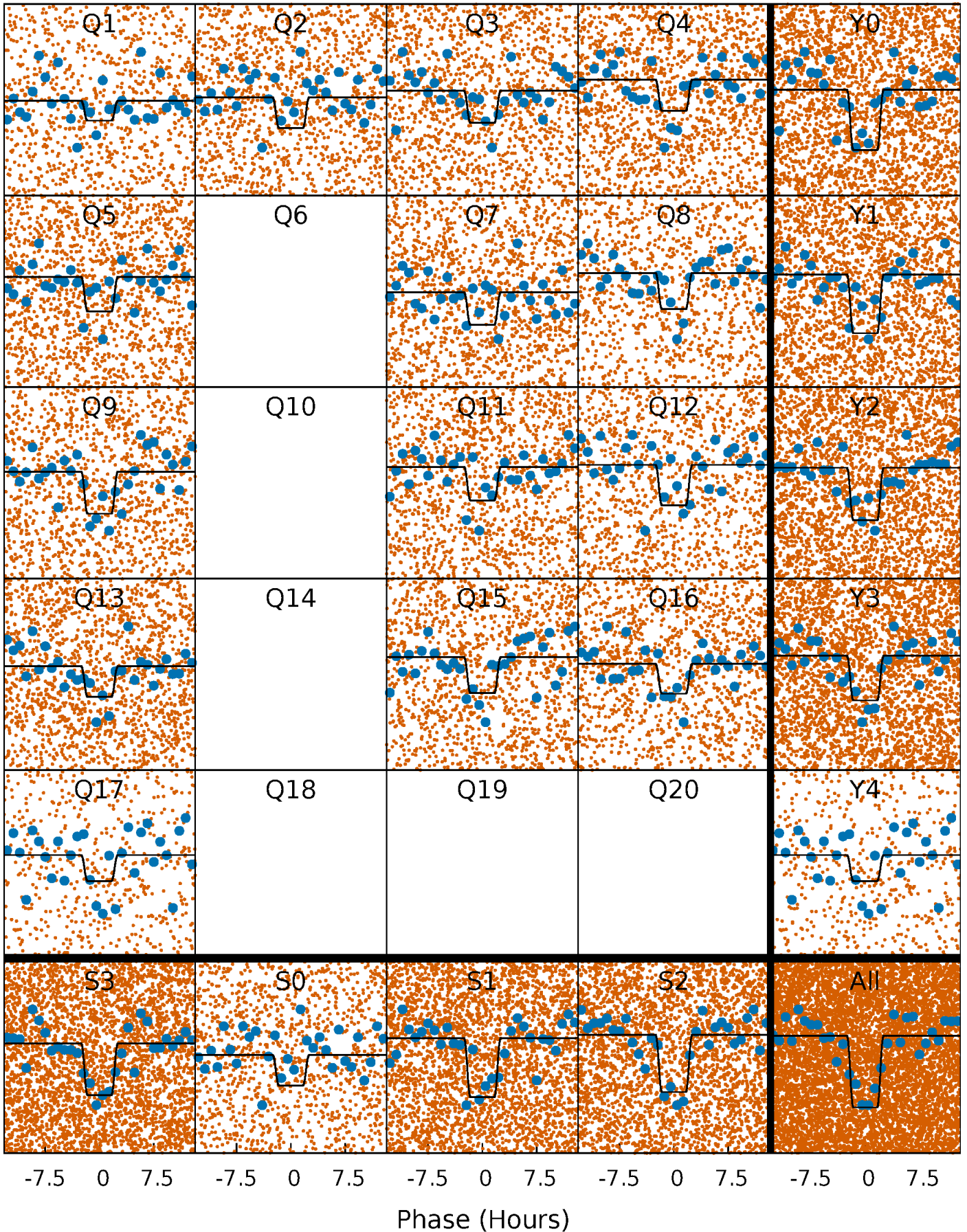
DV Quarter-Phased Transit Curves

TCE 004851356-01 P= 1.235187 Days $T_0=131.974699$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

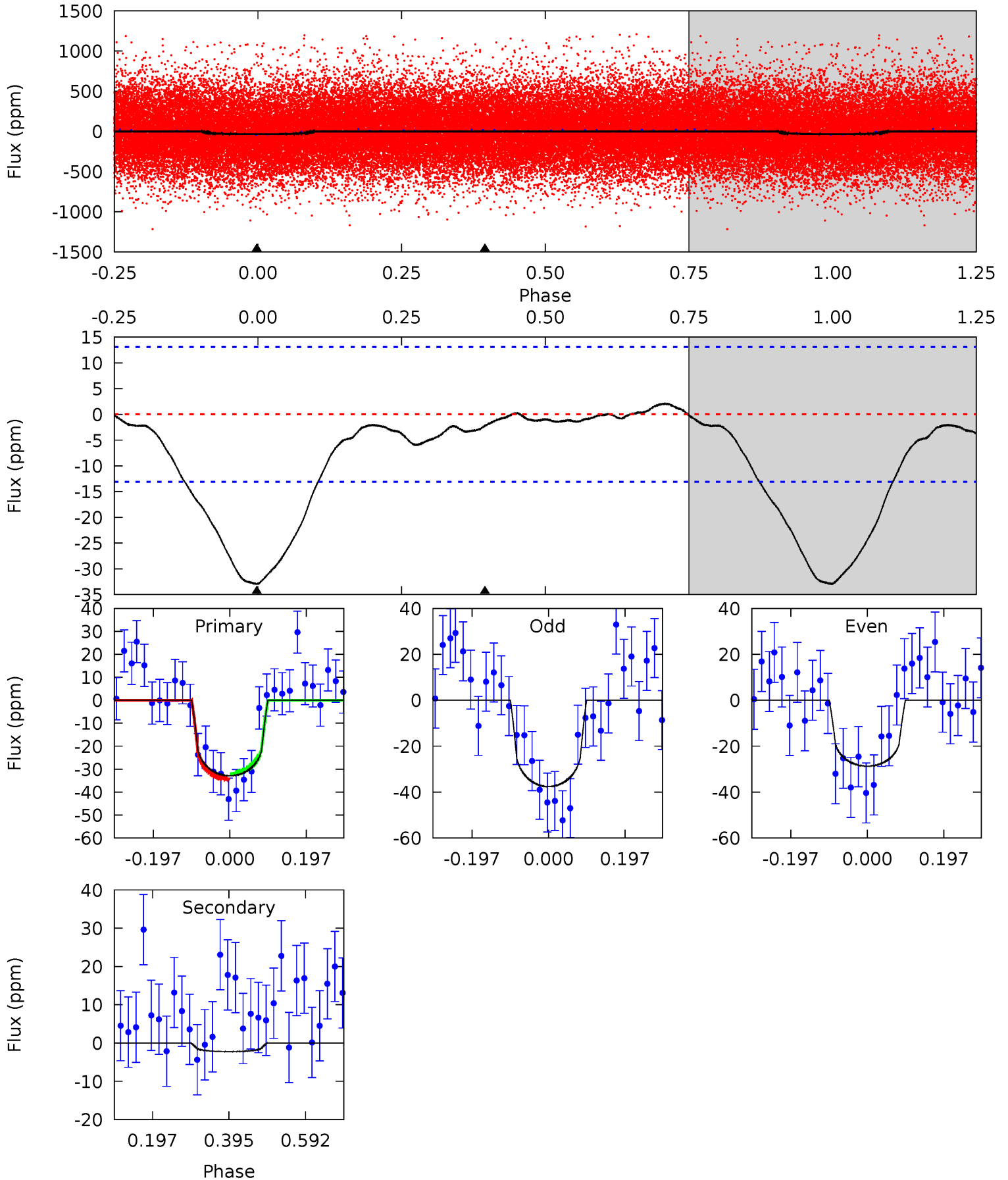
TCE 004851356-01 P= 1.235100 Days $T_0=132.028368$ (BKJD)



DV Model-Shift Uniqueness Test

004851356-01, P = 1.235187 Days, E = 130.739512 Days

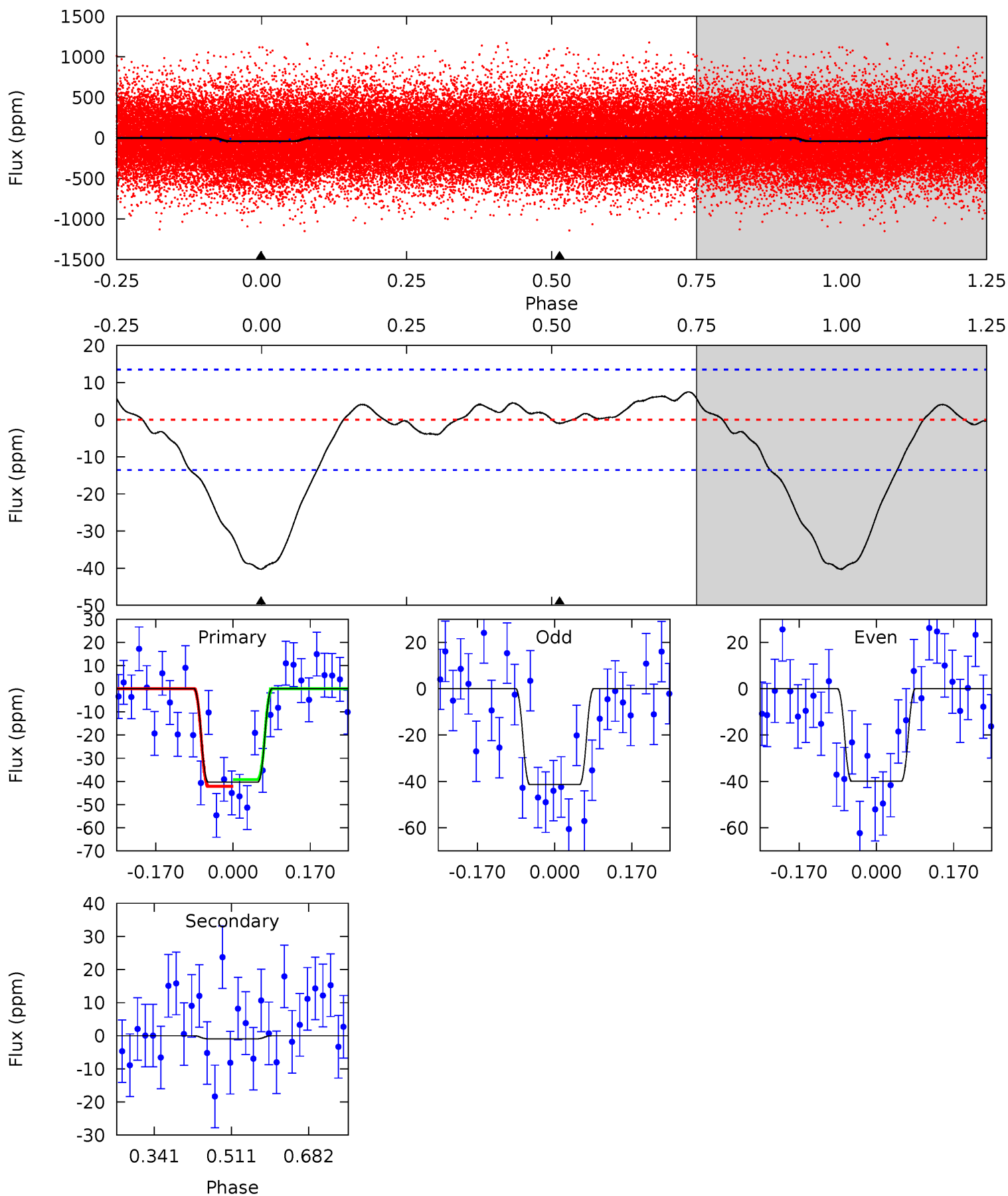
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	0.76	0	0	4.42	1.29	0.43	11.1	11.1	0.76	0.76	1.52	0.93	0.06	0.39



Alt Model-Shift Uniqueness Test

004851356-01, P = 1.235100 Days, E = 130.793268 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	0.30	0	0	4.45	1.37	1.17	13.2	13.2	0.30	0.30	0.25	1.01	0.16	0.48



Stellar Parameters For KIC 004851356

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5930^{+290}_{-322}	$4.436^{+0.090}_{-0.210}$	$-0.100^{+0.300}_{-0.300}$	$0.997^{+0.333}_{-0.166}$	$0.990^{+0.152}_{-0.138}$	$1.407^{+0.693}_{-0.744}$
	+5%/-5%	+2%/-5%	+300%/-300%	+33%/-17%	+15%/-14%	+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 004851356-01 / KOI 6462.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2 ± 3	$0.76^{+0.48}_{-0.47}$	2479^{+240}_{-170}	3021^{+1448}_{-6089}	$0.823^{+5.939}_{-1.042}$
Alt.	-1 ± 3	$0.81^{+0.57}_{-0.44}$	2491^{+201}_{-196}	-2105^{+5852}_{-1319}	$0.270^{+2.399}_{-1.232}$

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

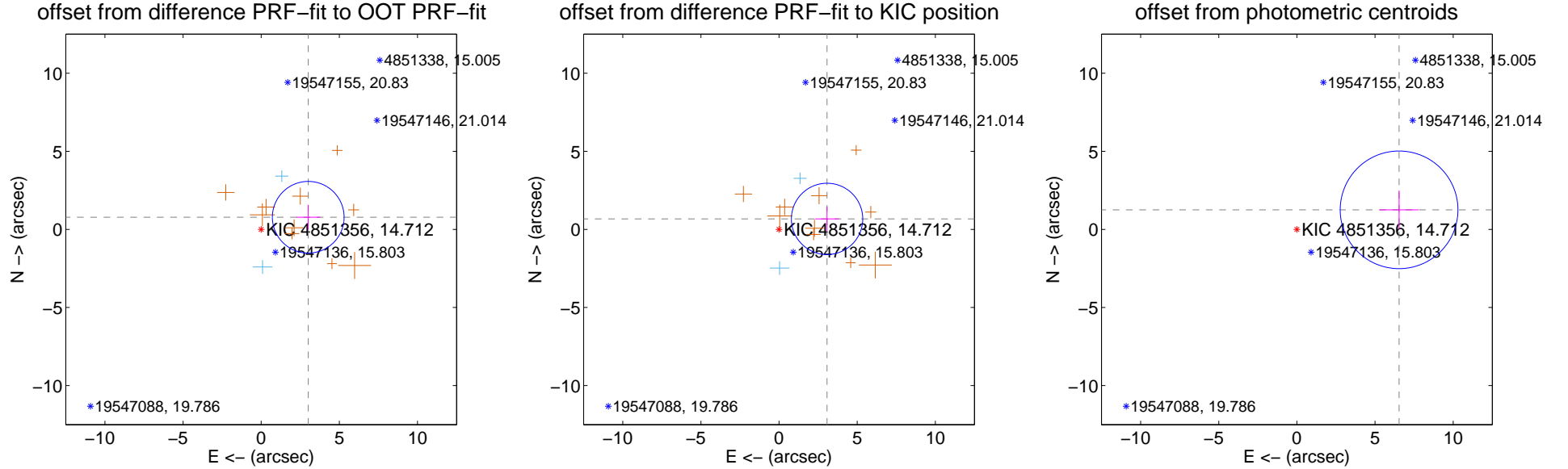
DV Centroid Data

Supplemental centroid analysis for 004851356-01. Kepler magnitude: 14.71. Transit SNR 9.65

There are 2 quarters with good PRF difference image offsets

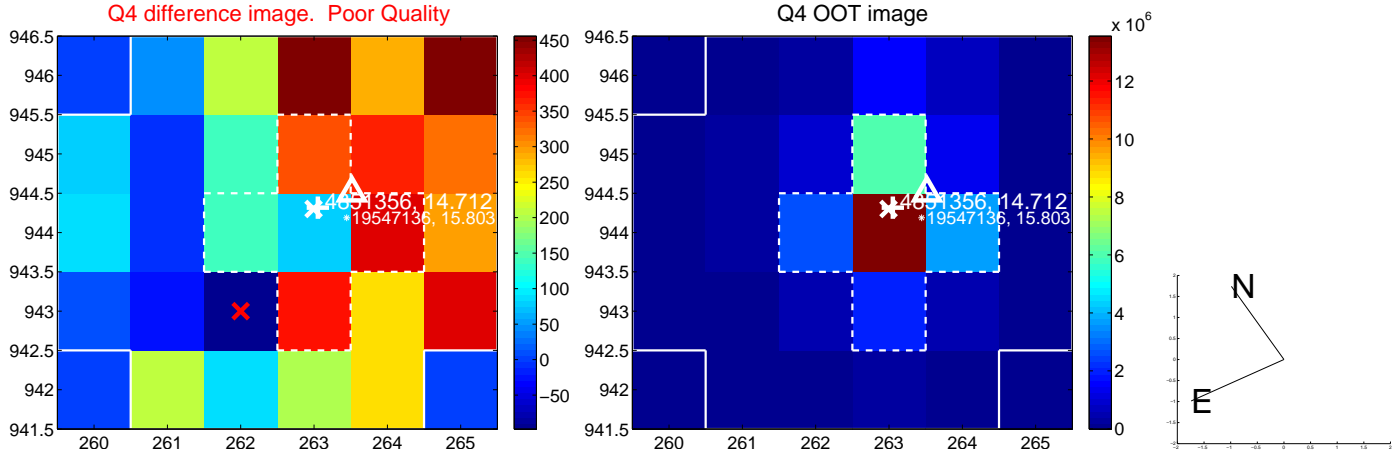
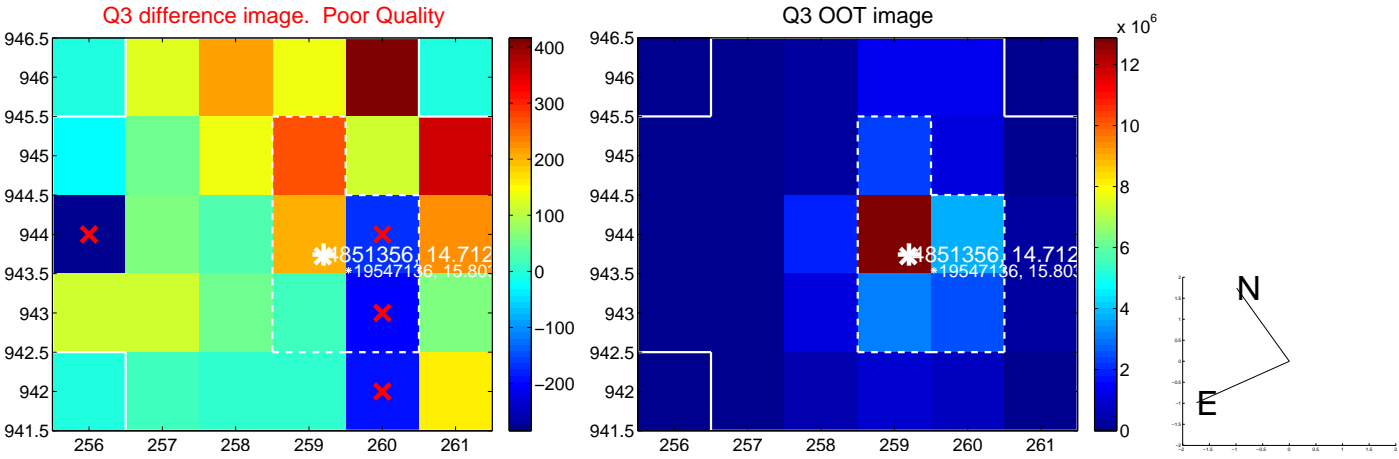
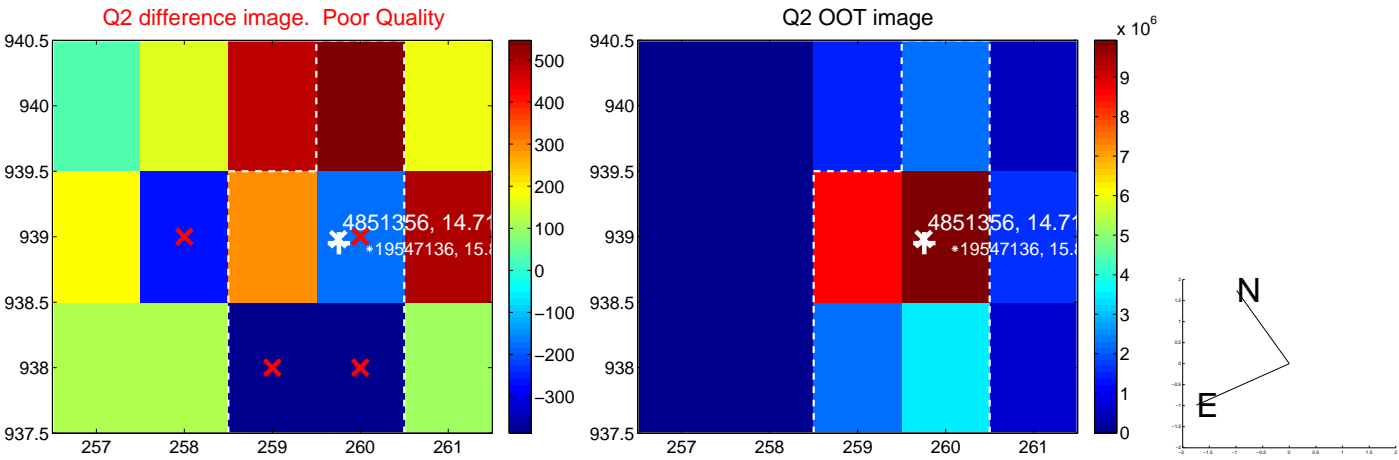
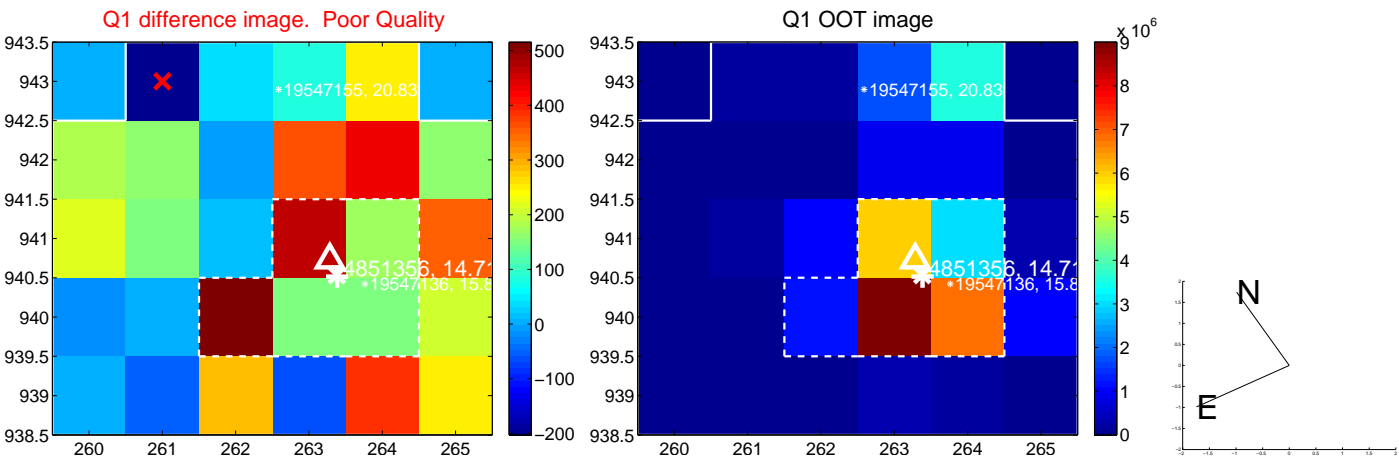
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.108 ± 0.765	4.06	-3.009 ± 0.763	0.778 ± 0.793
PRF-fit source offset from KIC position	3.144 ± 0.761	4.13	-3.071 ± 0.760	0.672 ± 0.775
photometric centroid source offset	6.66 ± 1.26	5.30	-6.54 ± 1.26	1.25 ± 1.24

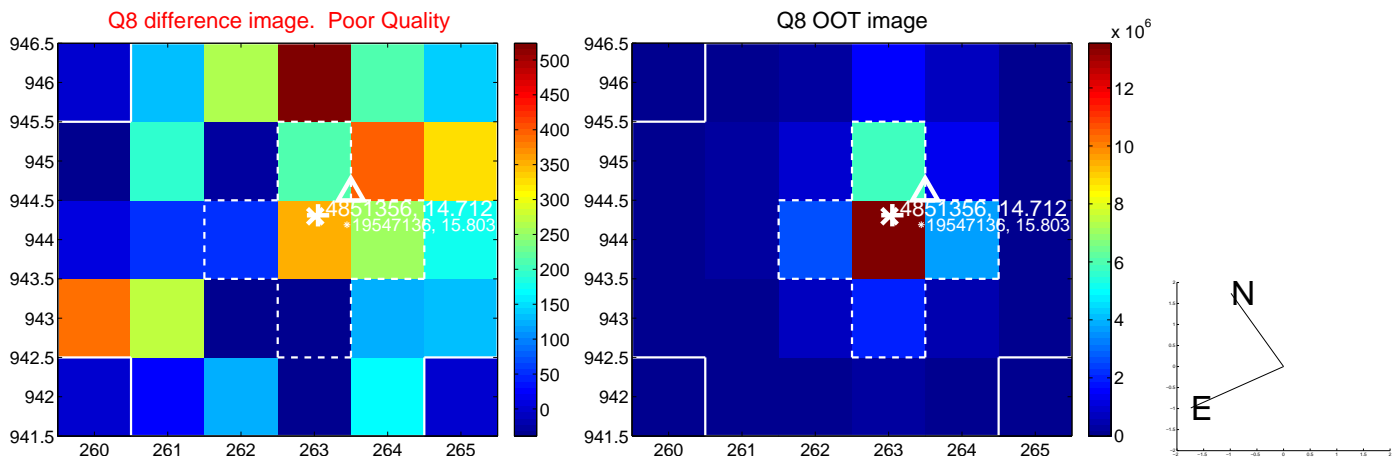
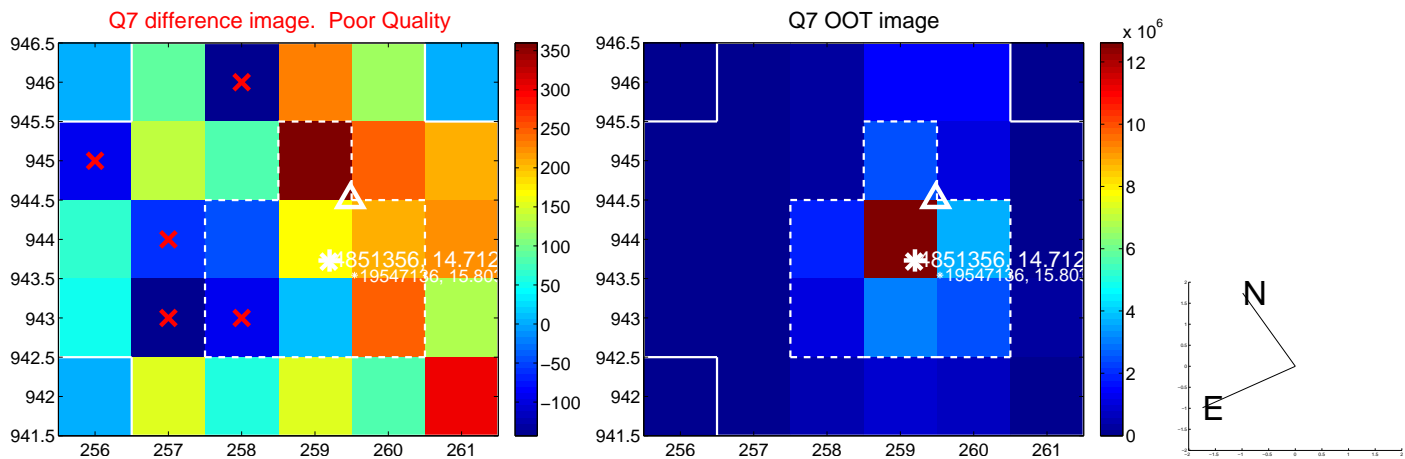
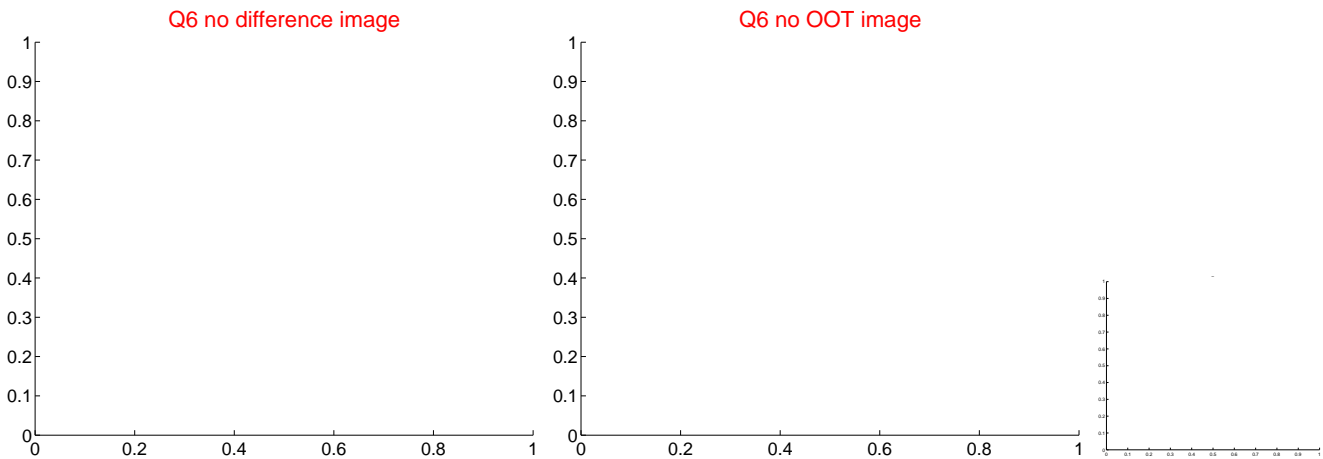
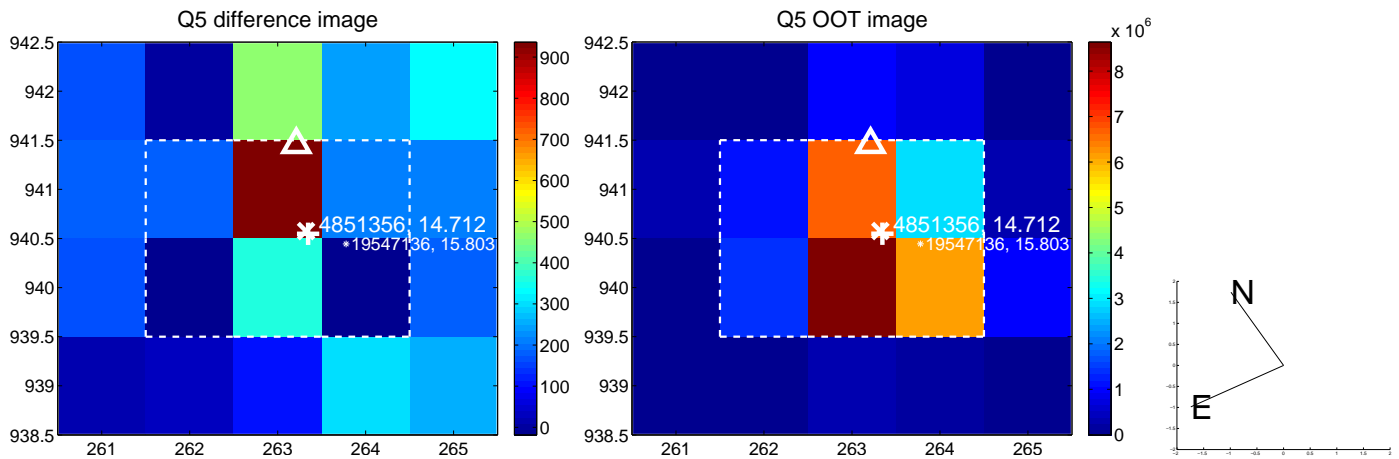


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

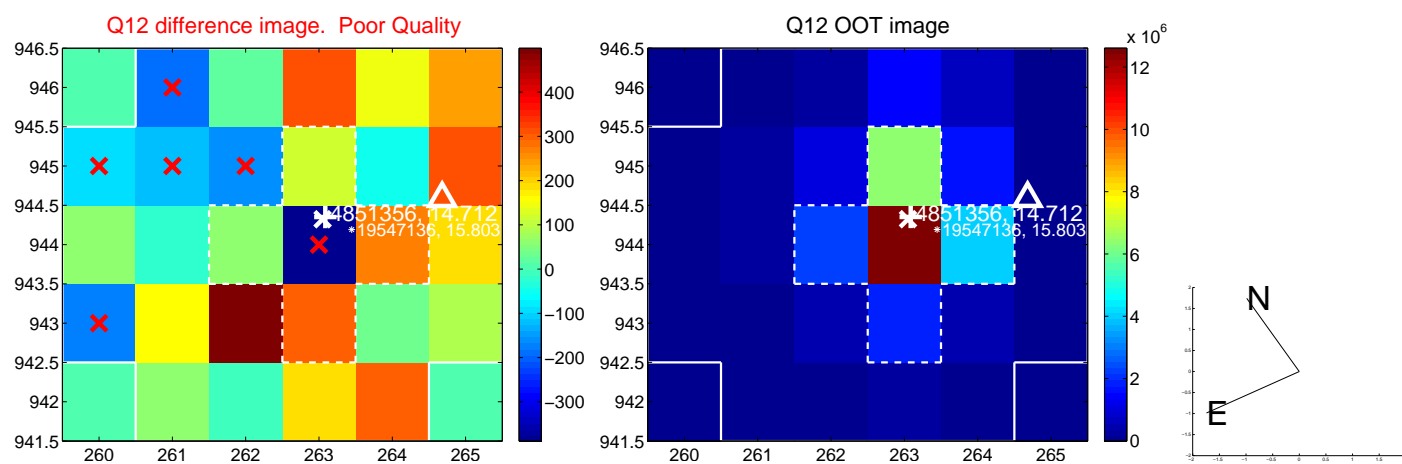
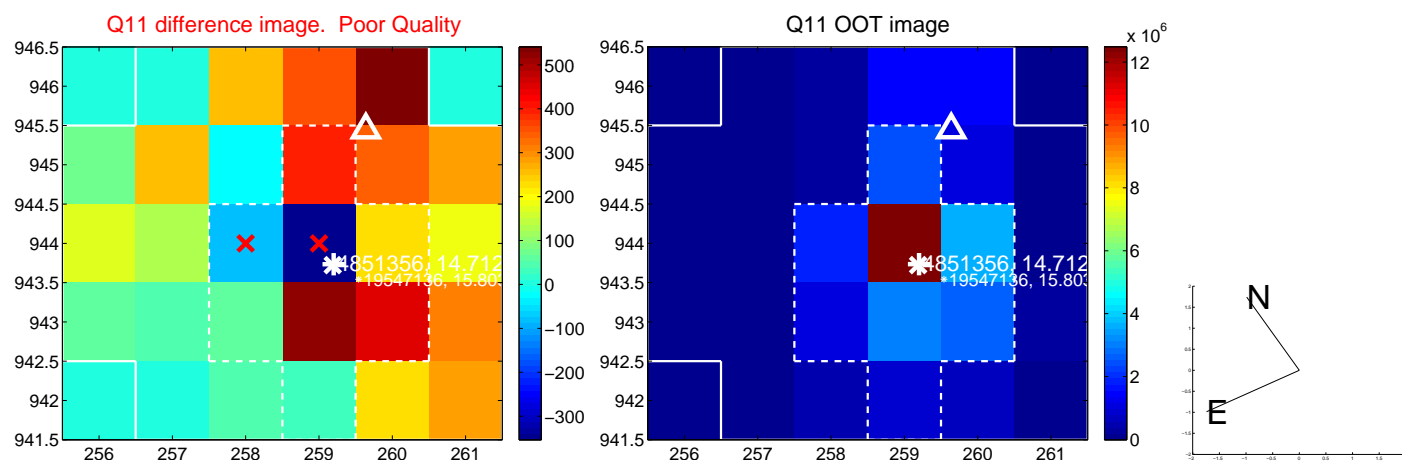
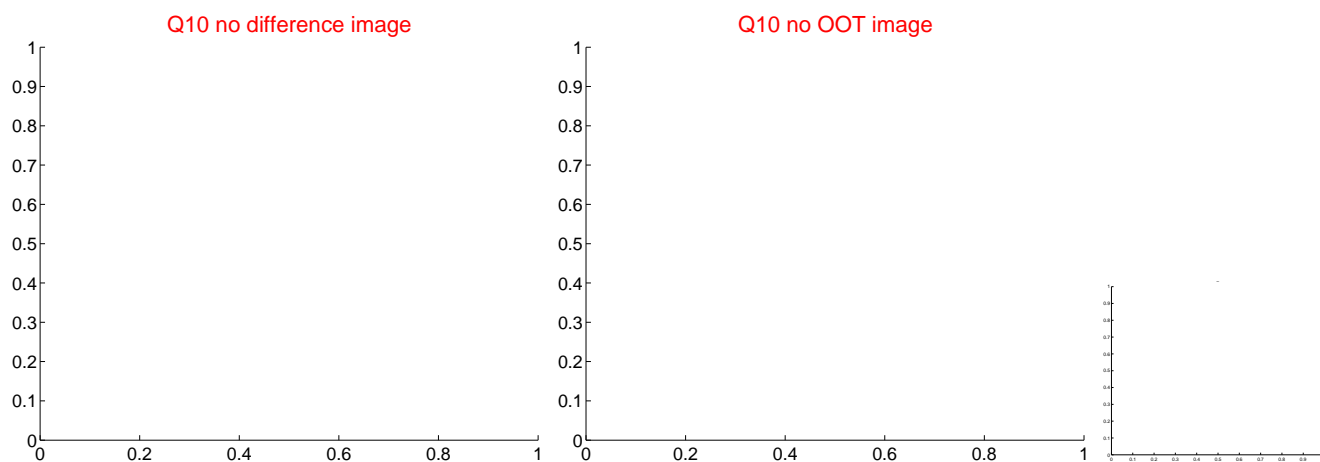
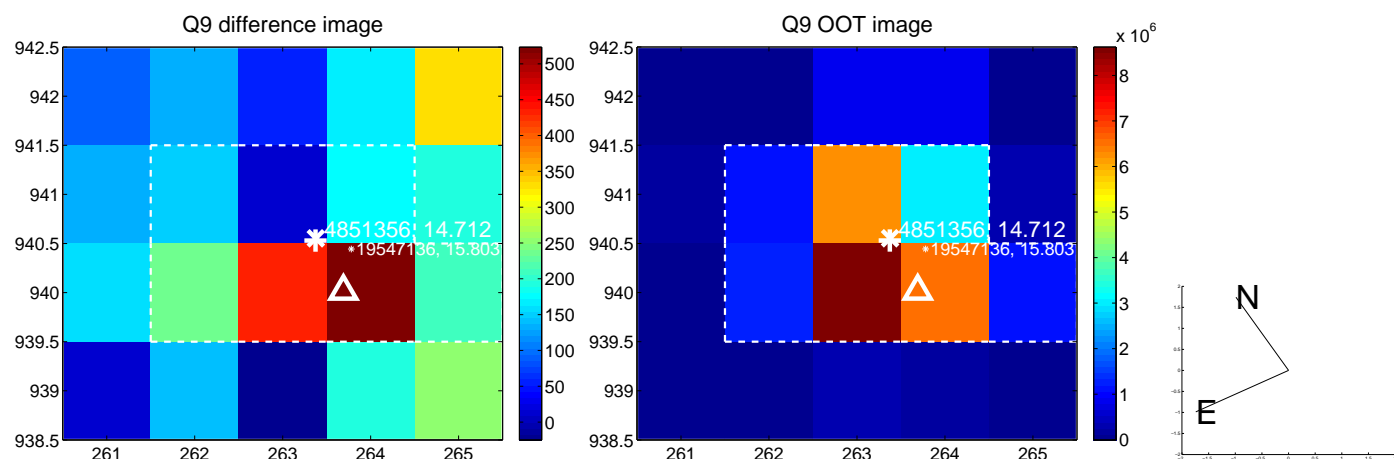
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



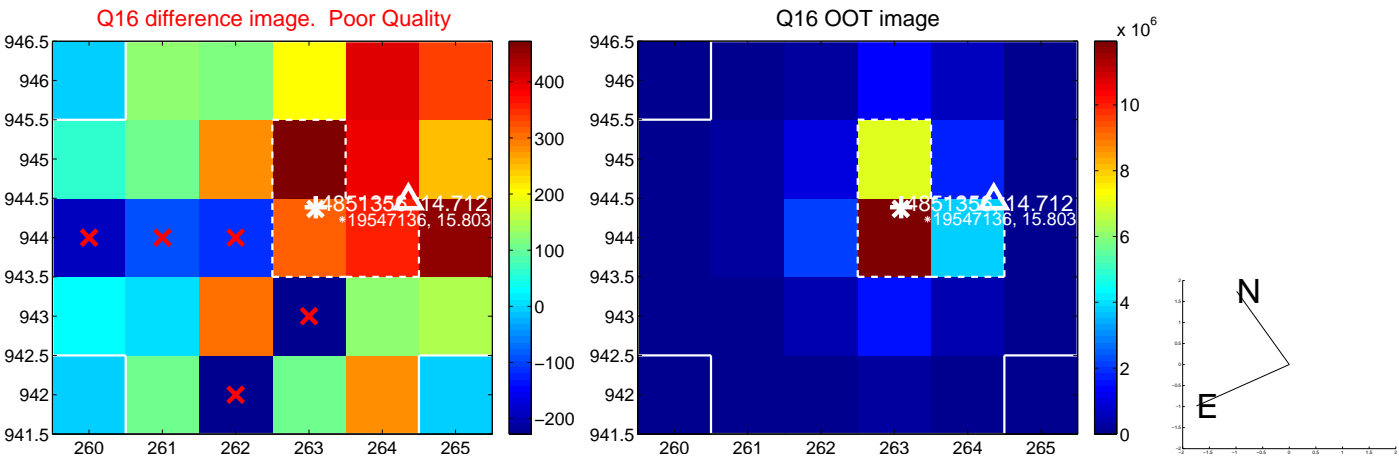
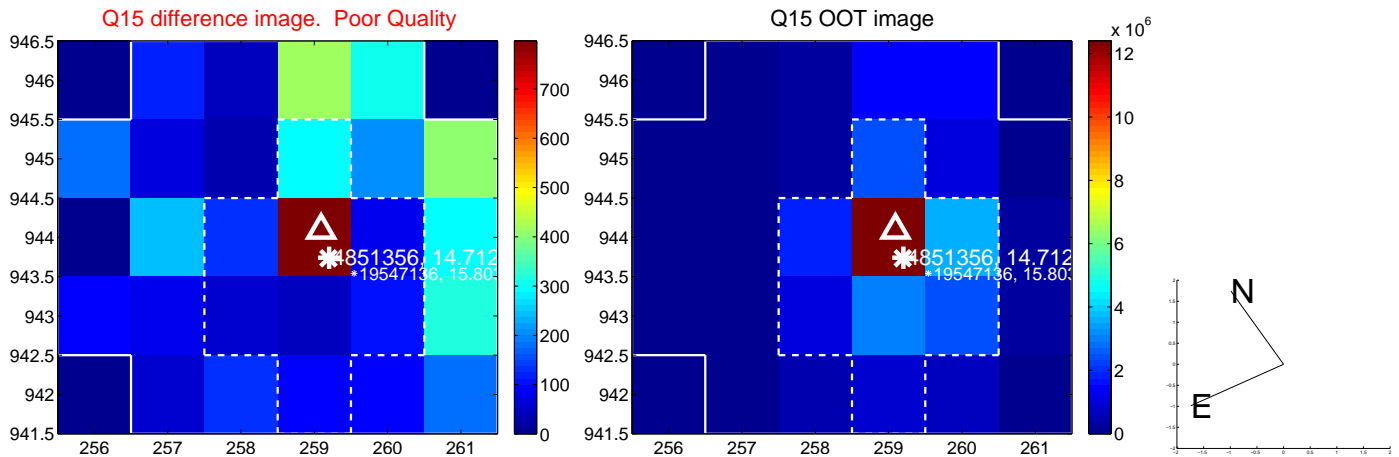
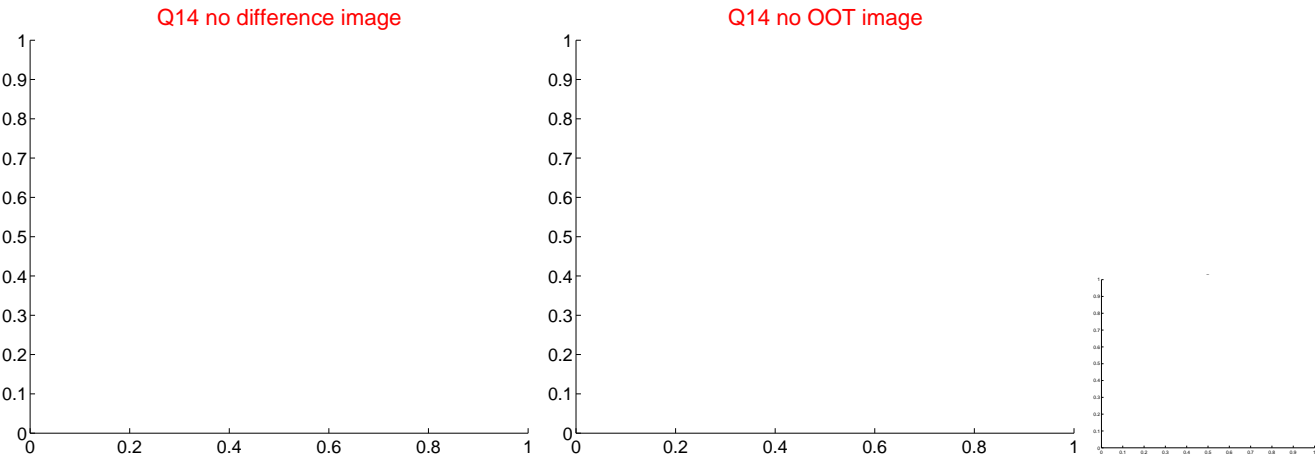
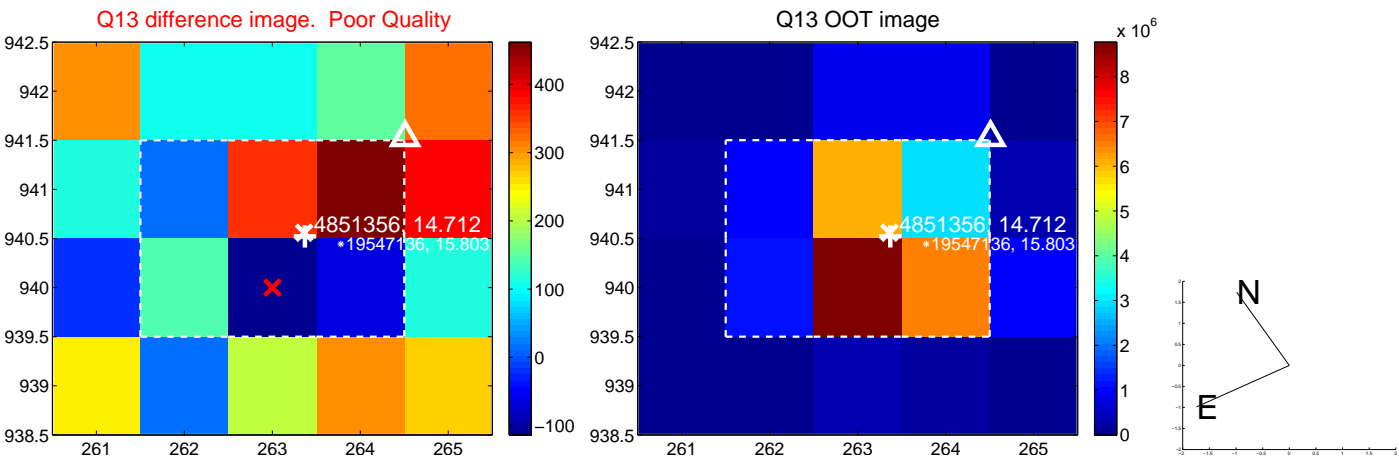
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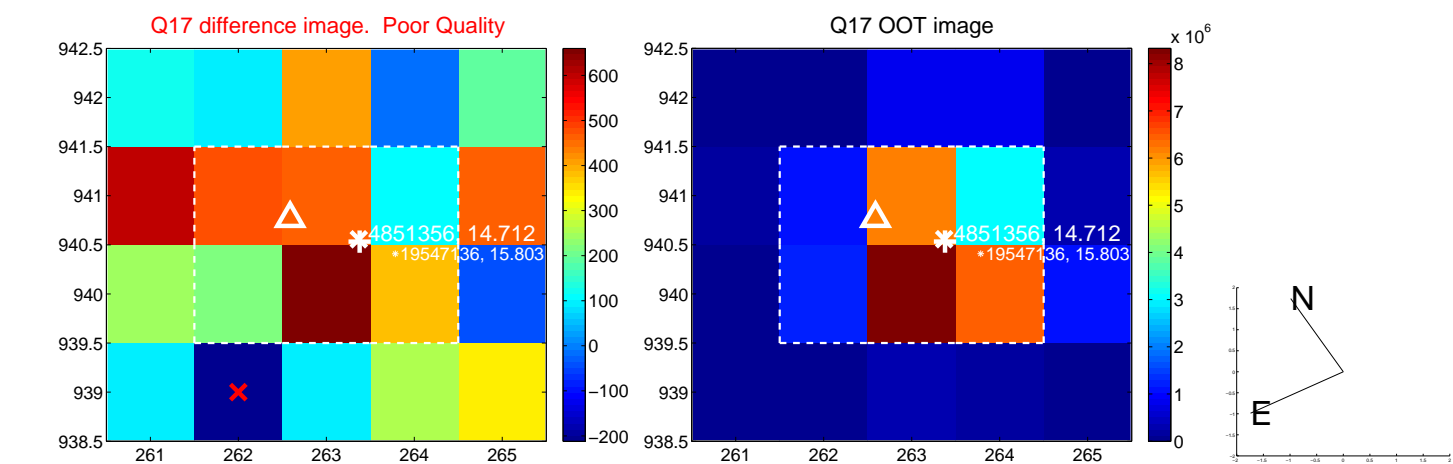
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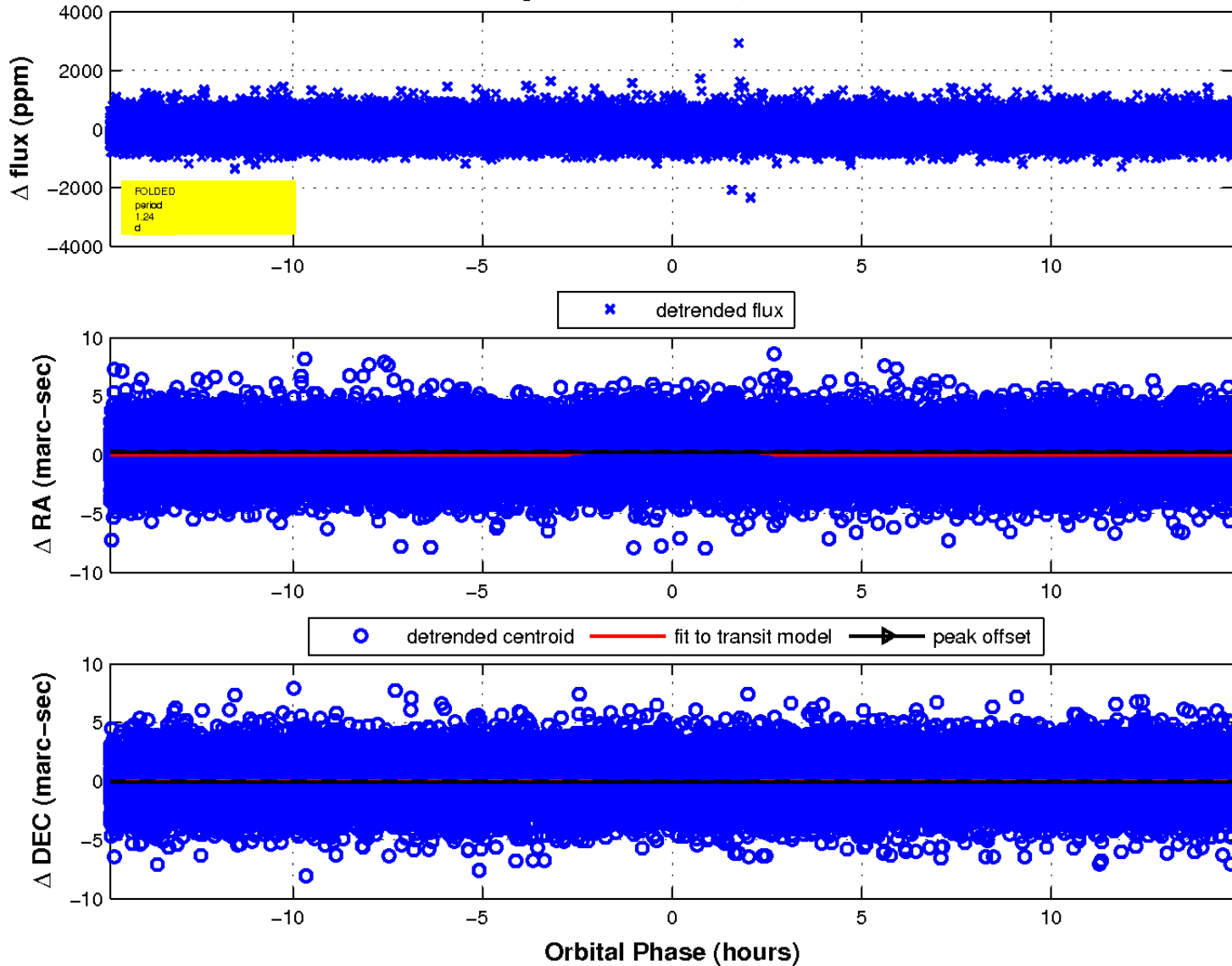
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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

