

KIC 001870398

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})
001870398-01	OBS	4927.01	43.139088	132.320664	298.0	55.310	8.6	17.4	1.77	6198	5.90	58.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001870398-01	OBS	FP	0.00	1	0	0	0	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.

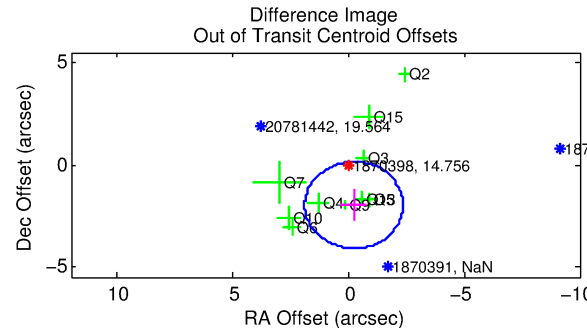
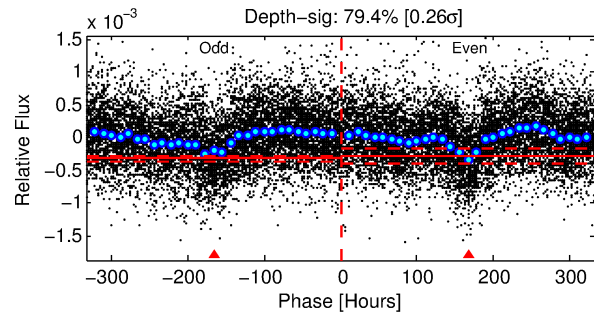
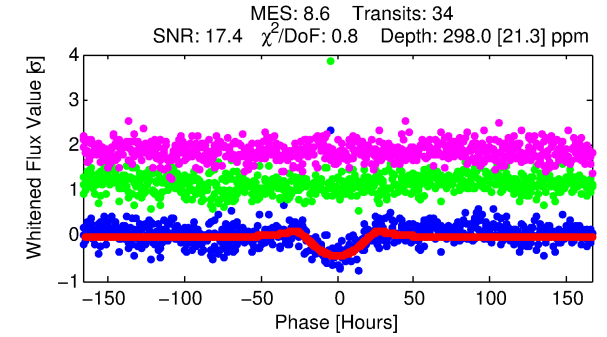
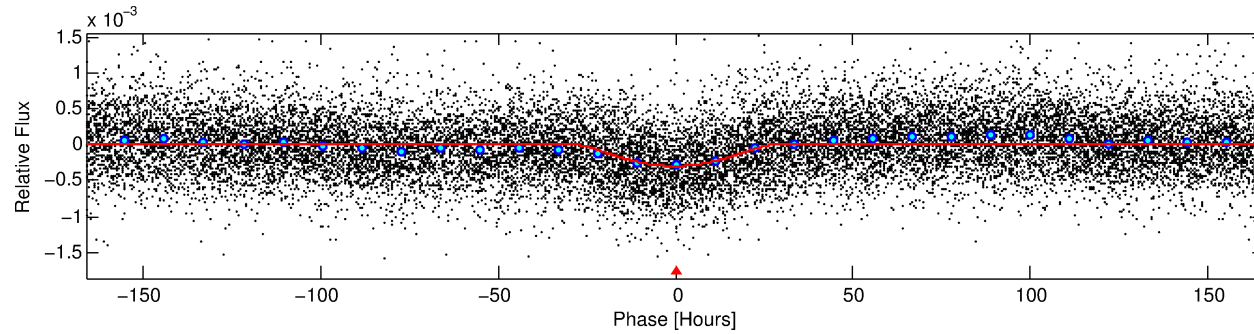
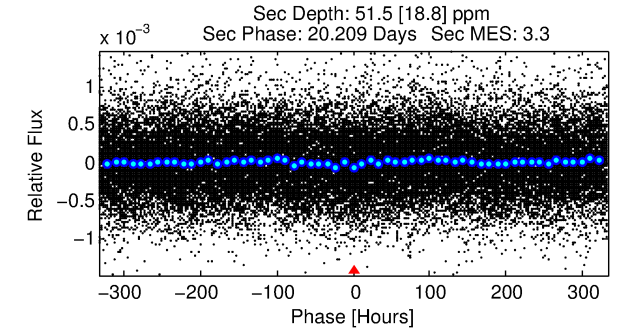
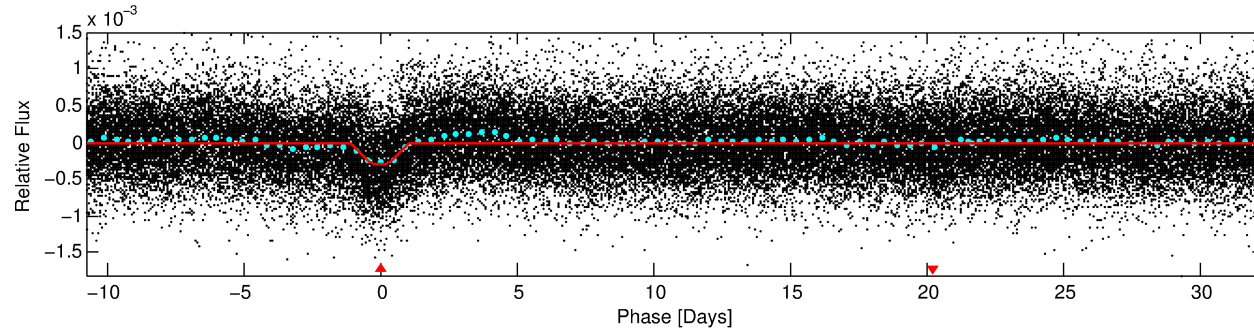
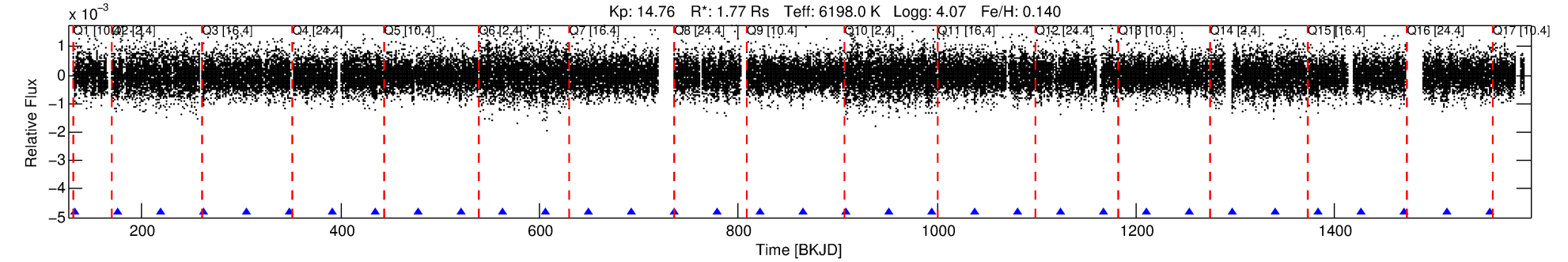
Ephemeris Match Information For 001870398-01

No Significant Match Found

DV One-Page Summary

KIC: 1870398 Candidate: 1 of 1 Period: 43.139 d

KOI: K04927 Corr: No Ephemeris Match



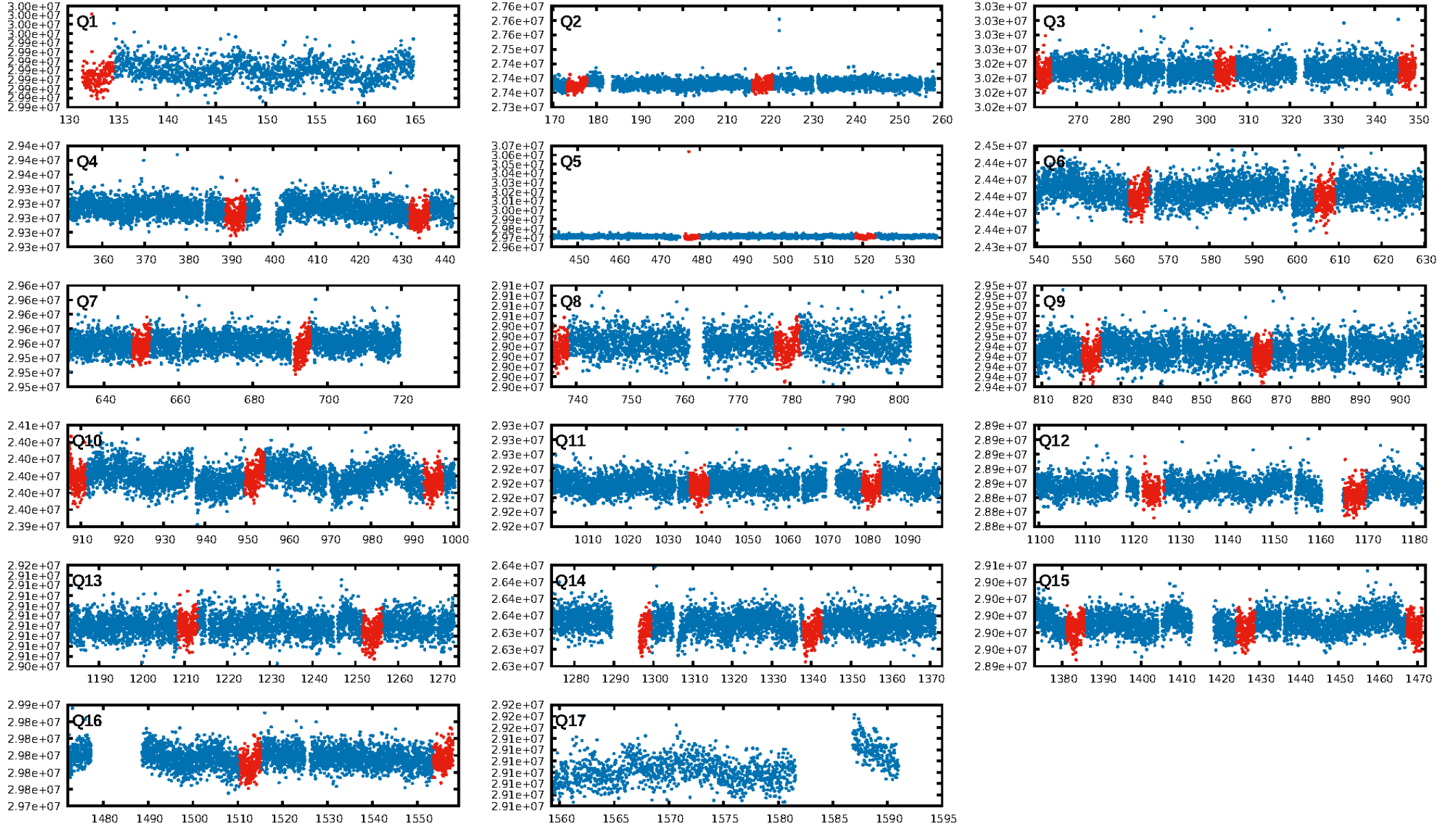
DV Fit Results:

Period = 43.13909 [0.00296] d
Epoch = 132.3207 [0.0560] BKJD
Rp/R* = 0.0306 [0.0336]
a/R* = 1.82 [0.35]
b = 1.00 [0.05]
Seff = 58.78 [18.23]
T_{eq} = 706 [55] K
Rp = 5.90 [6.62] Re
a = 0.2653 [0.0531] AU
Ag = 57.34 [128.99] [0.44 σ]
T_{eff} = 3004 [1674] K [1.37 σ]

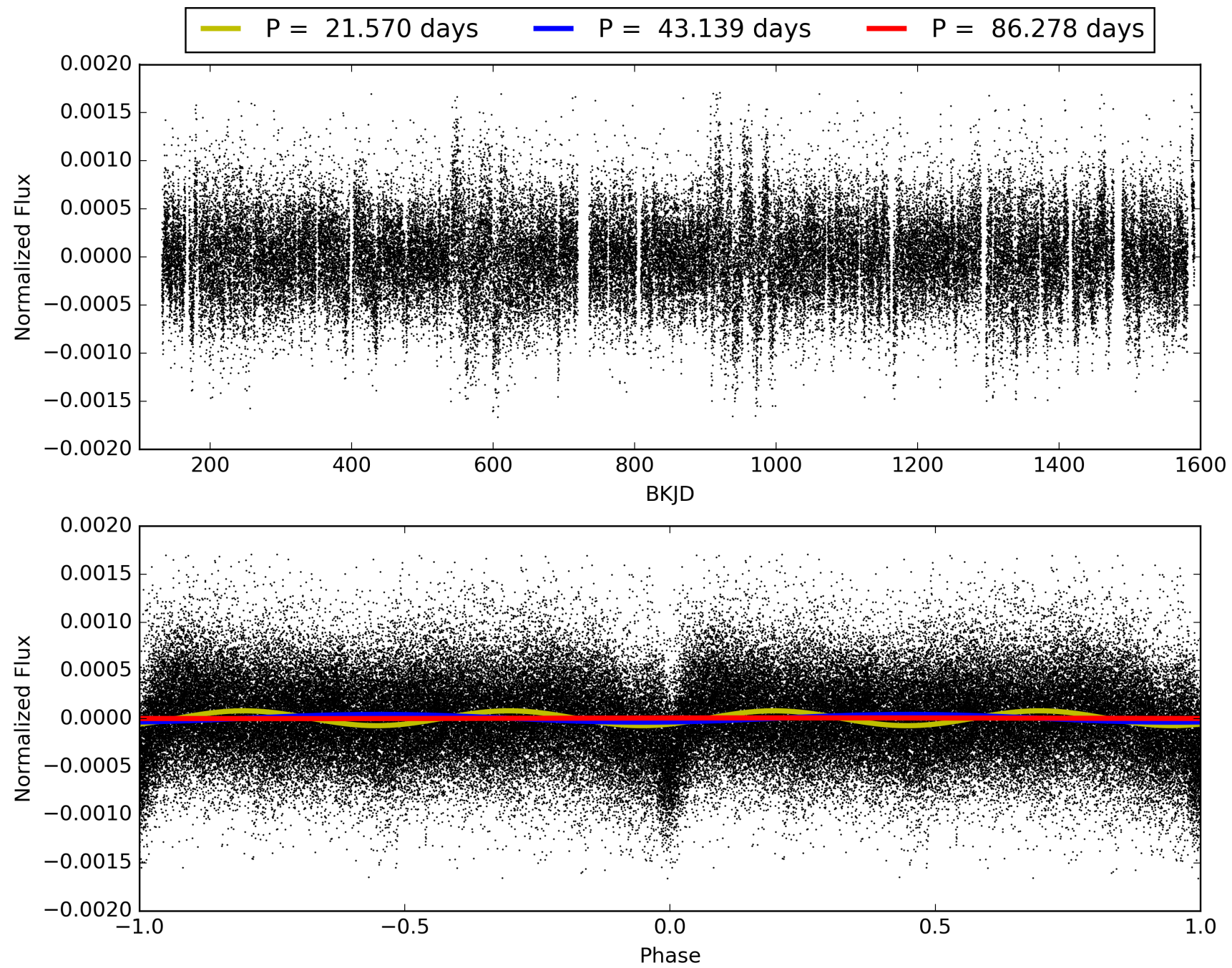
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 40.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.57e-17
RollingBand-fgt: 1.00 [33/33]
GhostDiagnostic-chr: 9.776
Centroid-sig: 5.5%
Centroid-so: 1.278 arcsec [3.06 σ]
OotOffset-rm: 1.994 arcsec [2.82 σ]
KicOffset-rm: 2.002 arcsec [3.25 σ]
OotOffset-st: 3/3/1/3 [10]
KicOffset-st: 3/3/1/3 [10]
DiffImageQuality-fgm: 0.50 [5/10]
DiffImageOverlap-fno: 1.00 [11/11]

TCE 001870398-01, PDC Light Curves

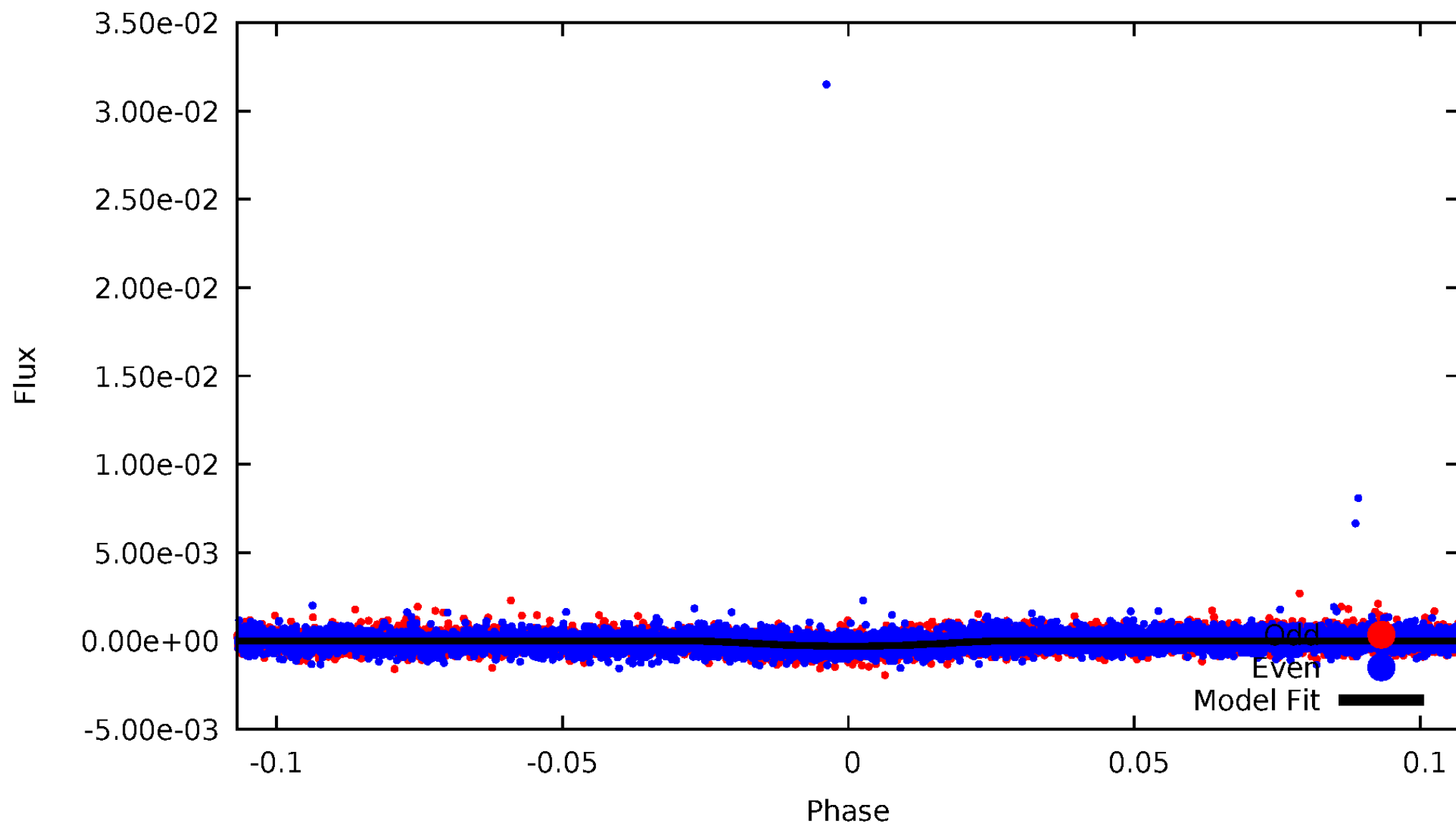


TCE 001870398-01



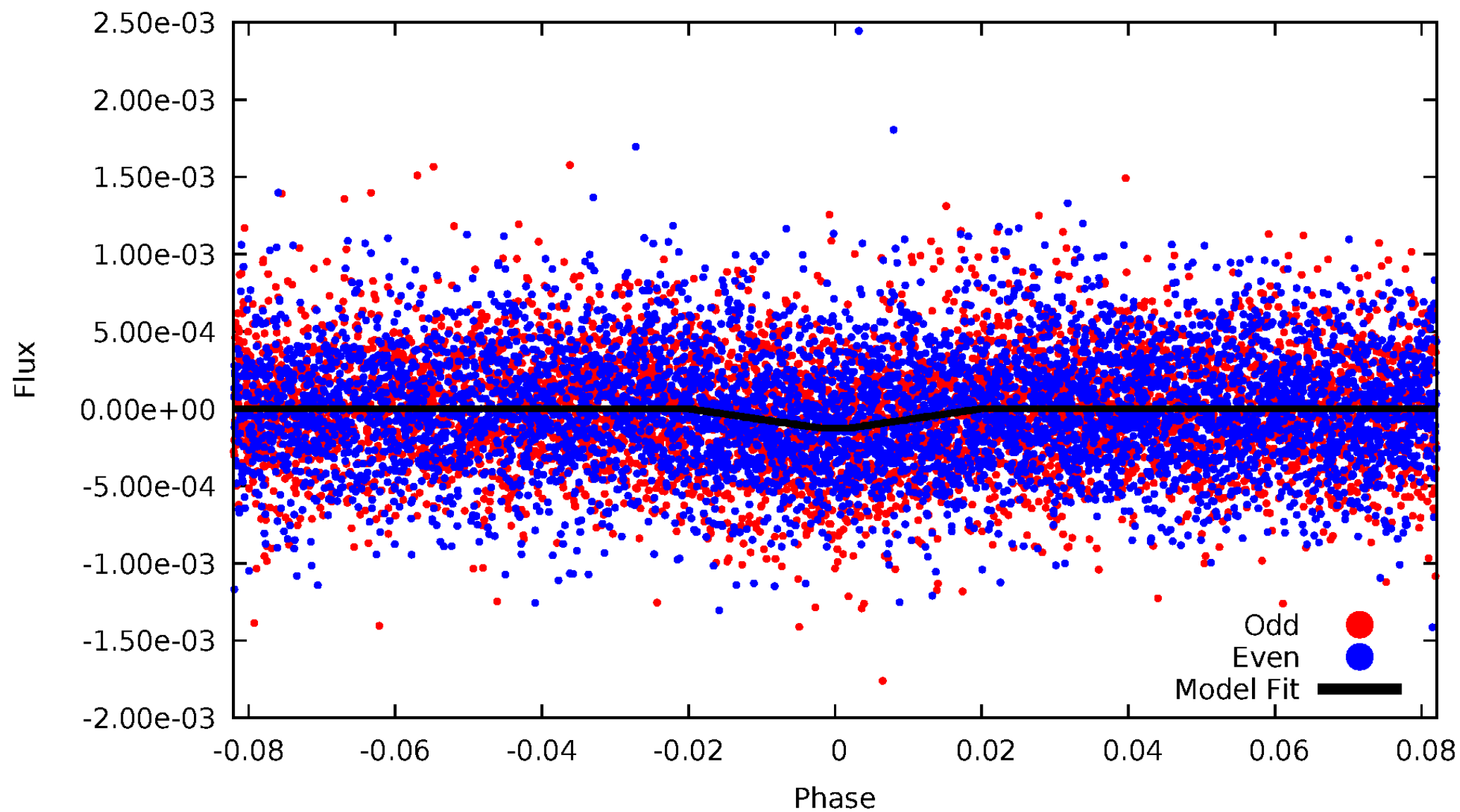
DV Odd/Even

TCE 001870398-01

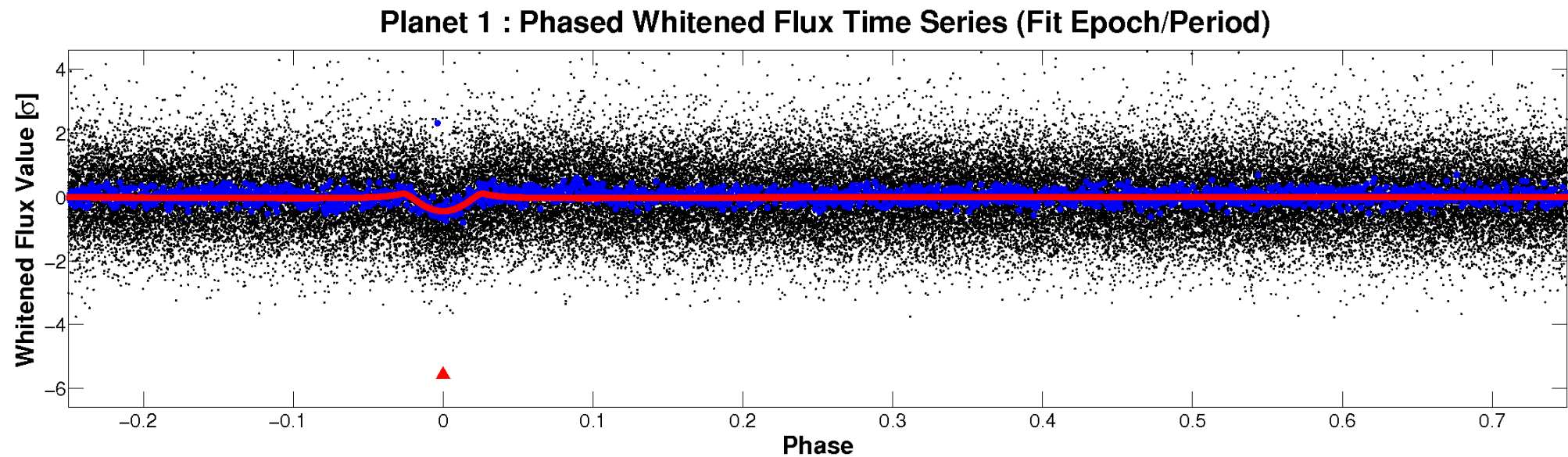
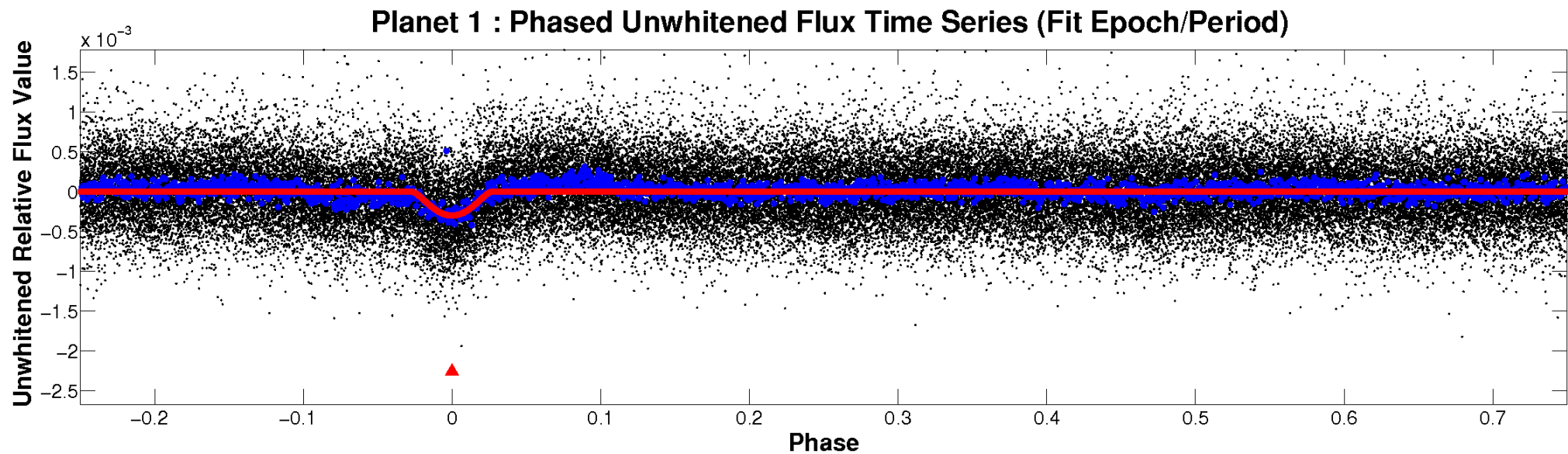


ALT Odd/Even

TCE 001870398-01

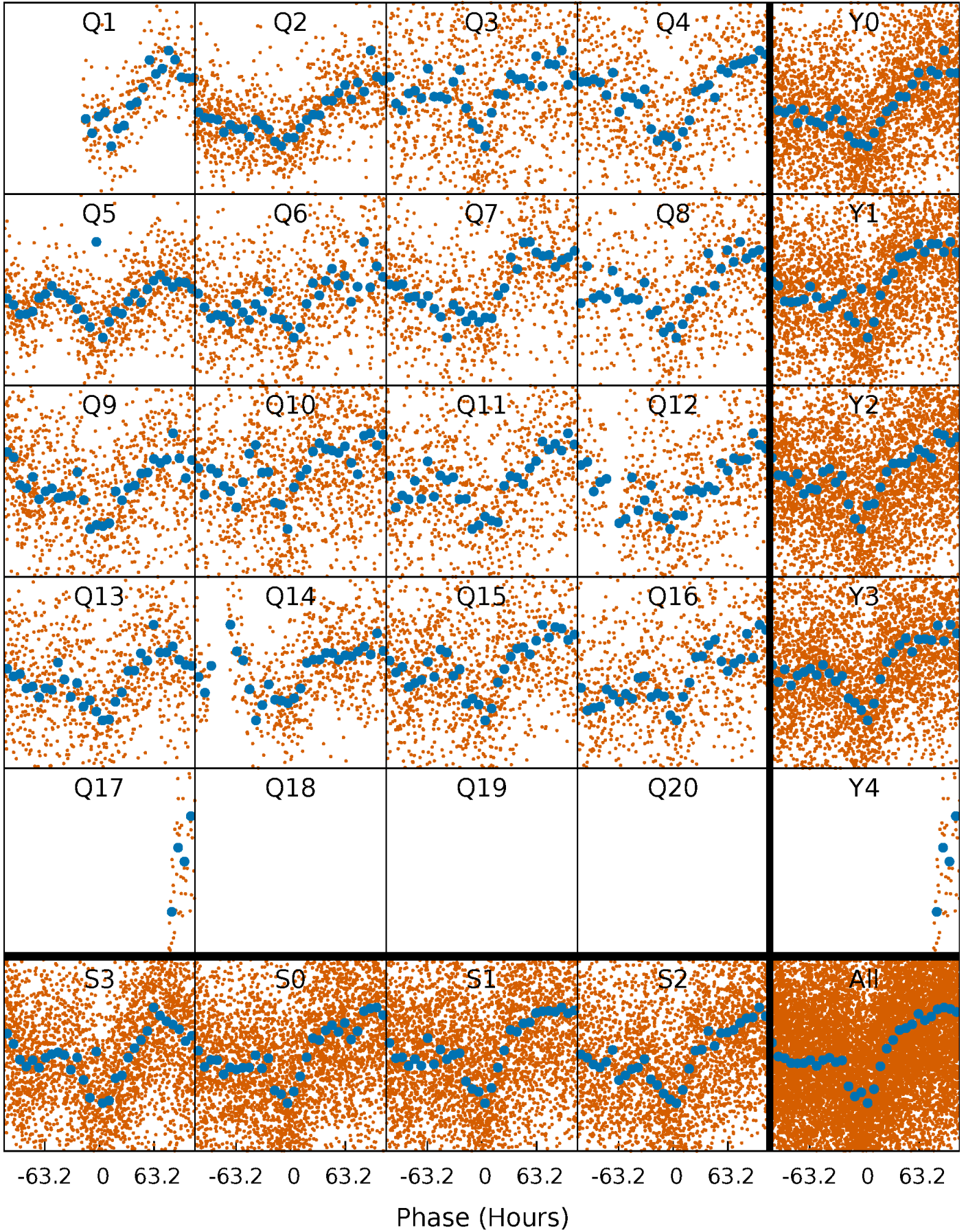


Non-Whitened Vs. Whitened Light Curve



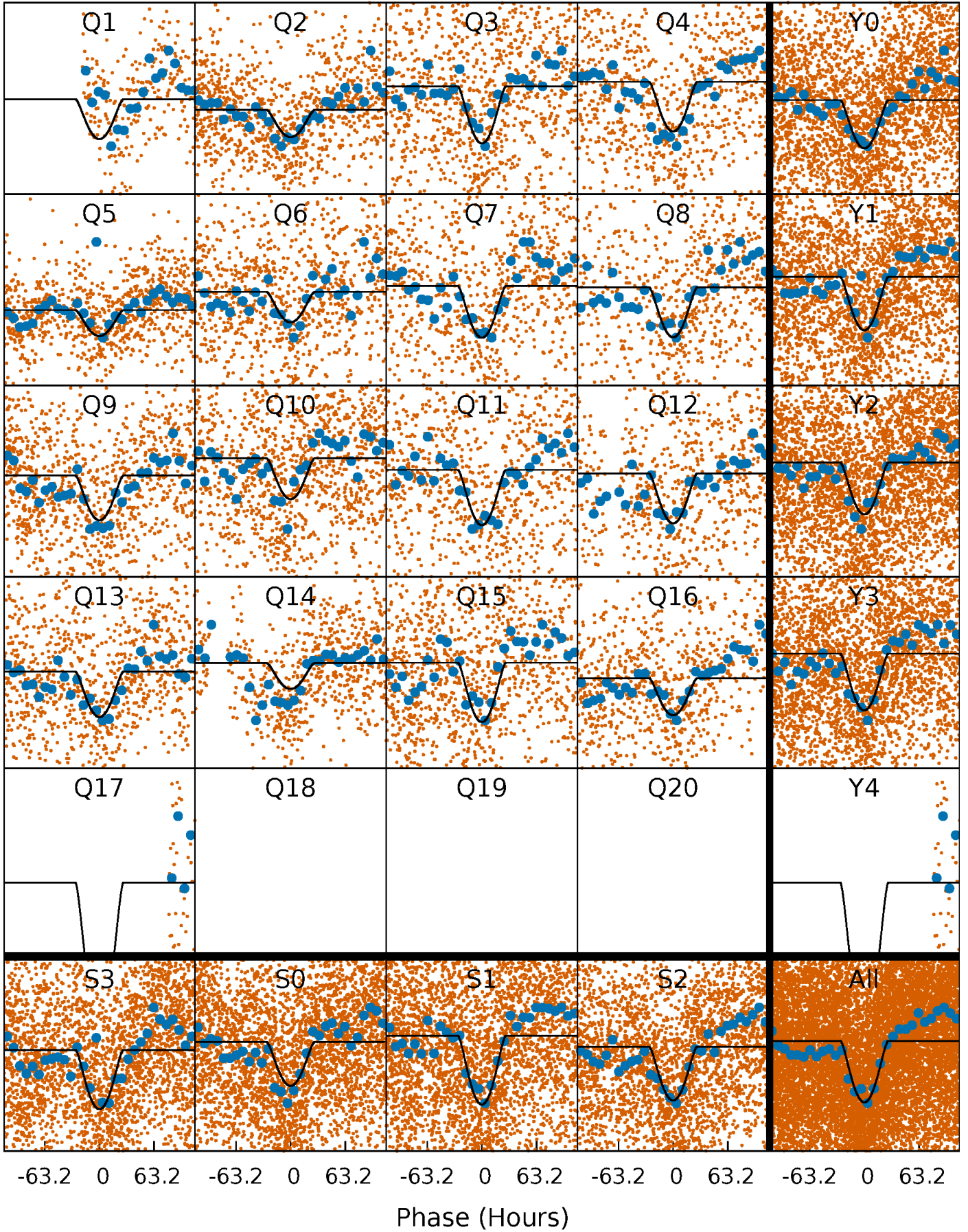
PDC Quarter-Phased Transit Curves

TCE 001870398-01 P= 43.139088 Days $T_0=132.320664$ (BKJD)



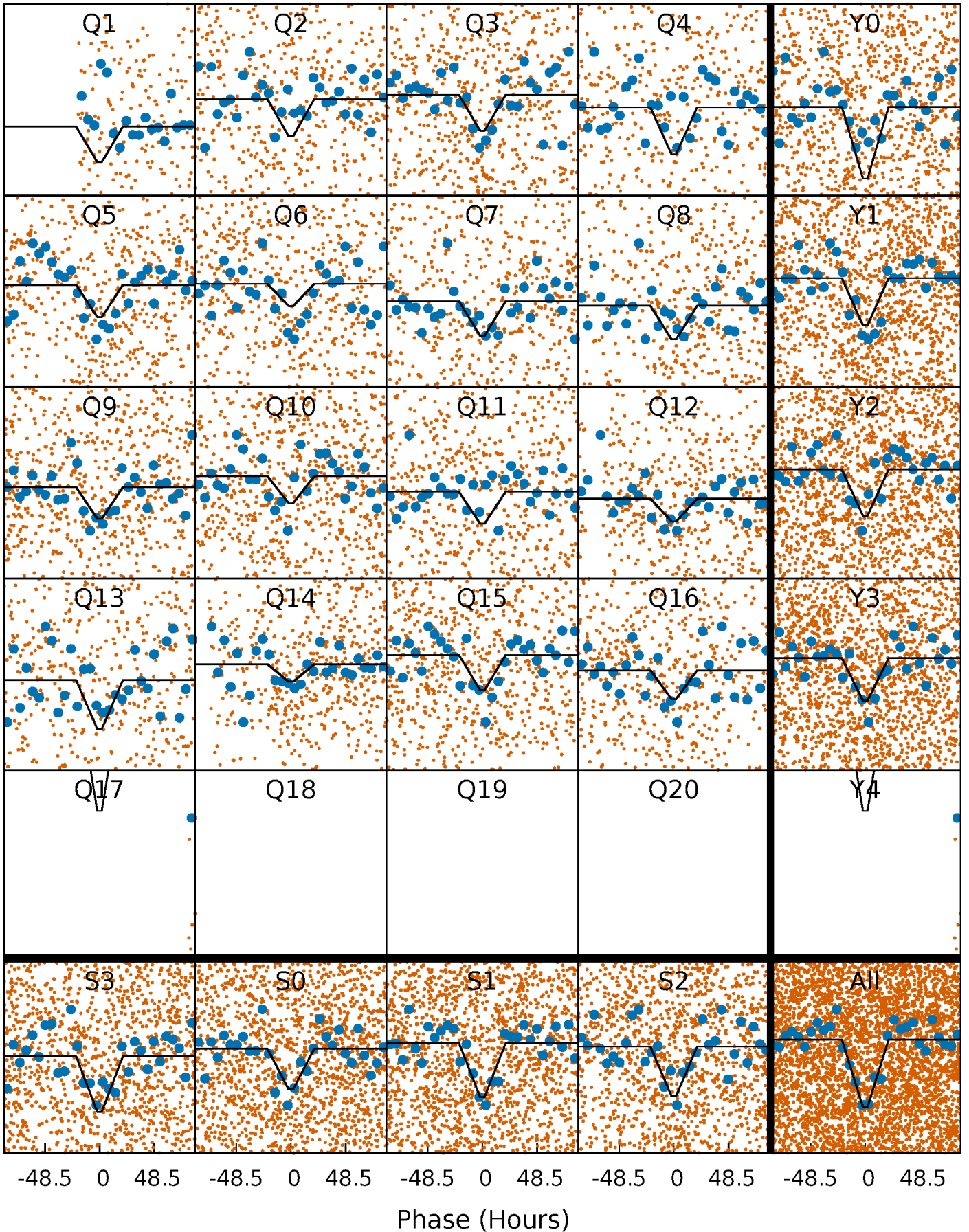
DV Quarter-Phased Transit Curves

TCE 001870398-01 P= 43.139088 Days $T_0=132.320664$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

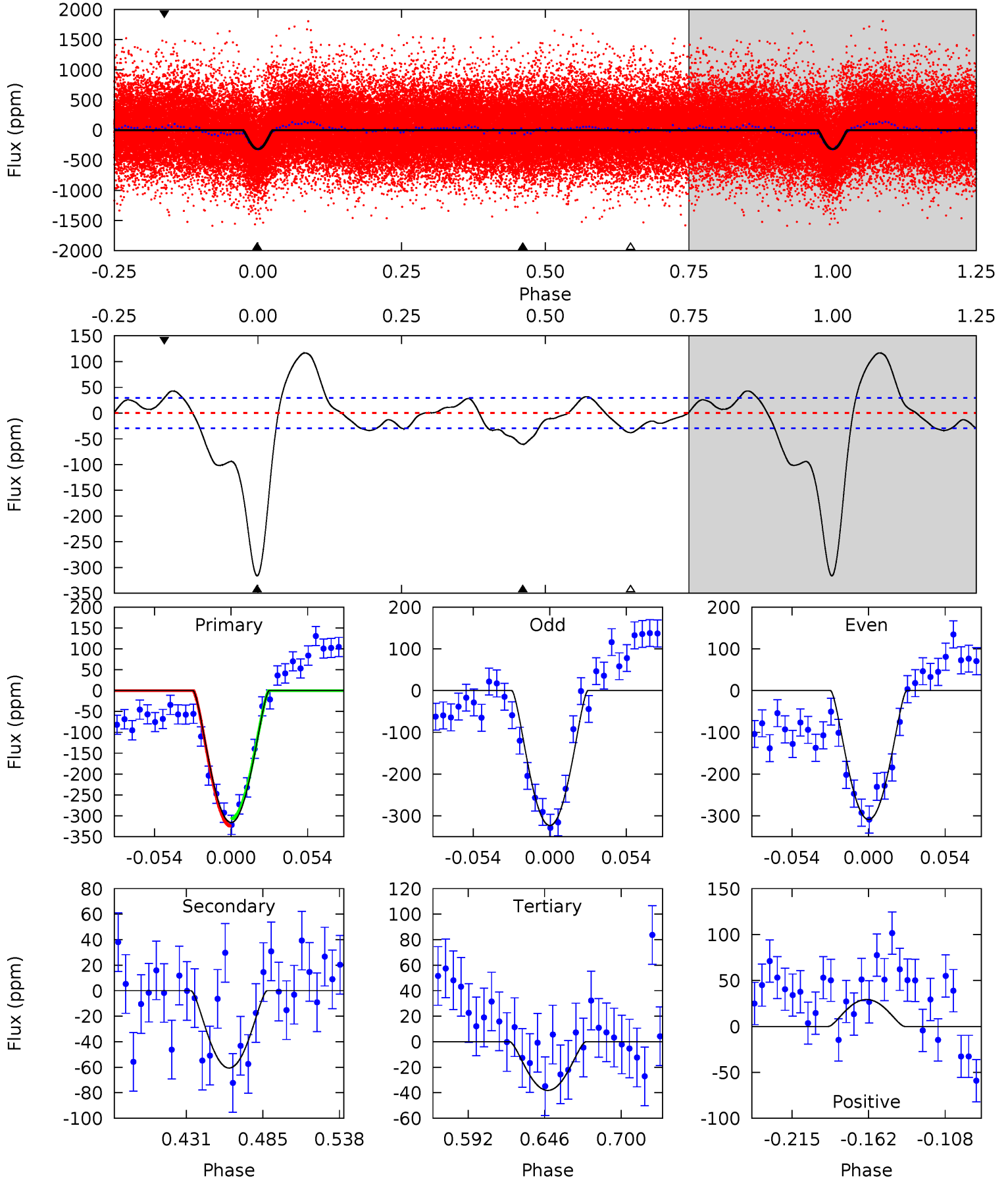
TCE 001870398-01 P= 43.141372 Days $T_0=132.291863$ (BKJD)



DV Model-Shift Uniqueness Test

001870398-01, P = 43.139088 Days, E = 89.181576 Days

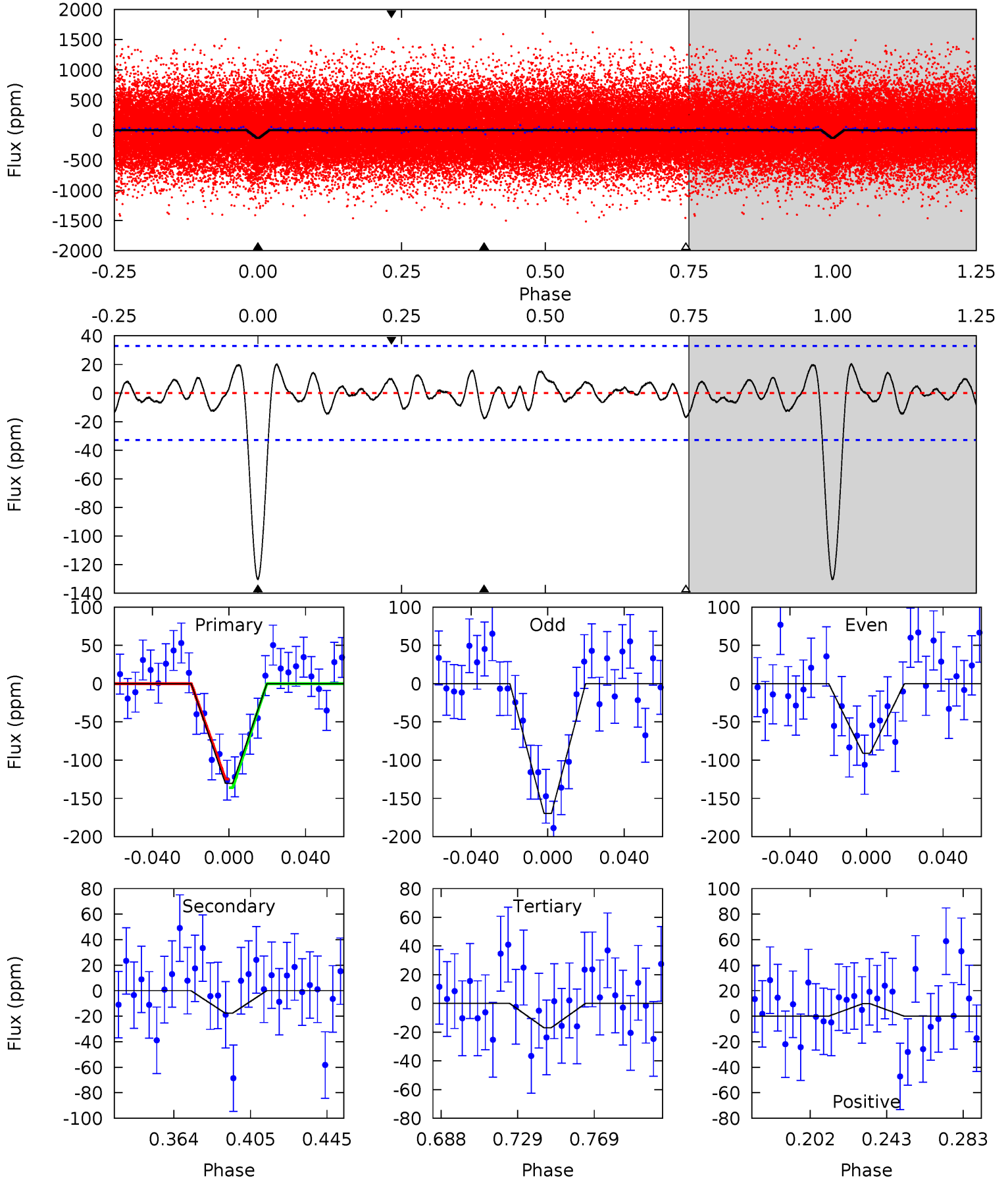
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.4	9.67	6.08	4.67	4.69	1.93	6.18	44.3	45.7	3.58	5.00	1.14	0.91	0.27	1.38



Alt Model-Shift Uniqueness Test

001870398-01, P = 43.141372 Days, E = 89.150491 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.9	2.55	2.45	1.42	4.75	2.05	0.94	16.4	17.4	0.11	1.13	5.71	0.83	0.13	0.83



Stellar Parameters For KIC 001870398

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6198^{+74}_{-80}	$4.069^{+0.174}_{-0.116}$	$0.140^{+0.150}_{-0.150}$	$1.769^{+0.324}_{-0.395}$	$1.338^{+0.119}_{-0.159}$	$0.341^{+0.349}_{-0.106}$
	+1%/-1%	+4%/-3%	+107%/-107%	+18%/-22%	+9%/-12%	+102%/-31%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 001870398-01 / KOI 4927.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-61 ± 6	$7.40^{+6.06}_{-4.49}$	982^{+51}_{-56}	3310^{+1251}_{-513}	41^{+234}_{-28}
Alt.	-18 ± 7	$5.24^{+5.61}_{-3.63}$	981^{+49}_{-53}	3005^{+1389}_{-552}	23^{+214}_{-18}

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

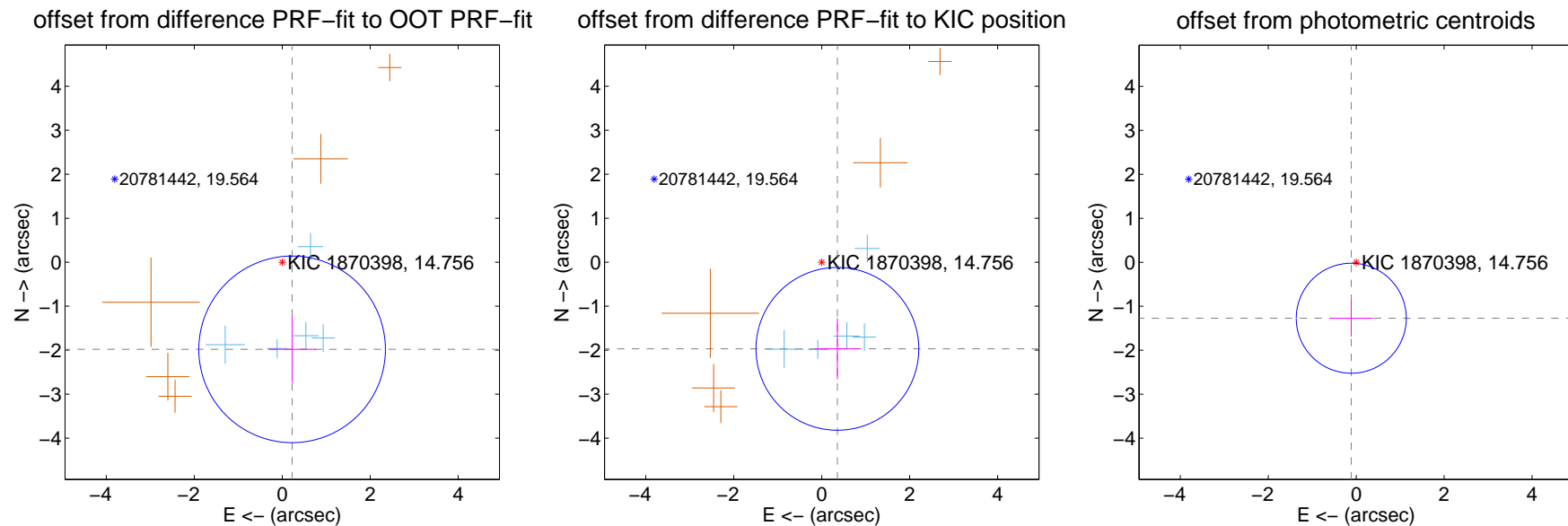
DV Centroid Data

Supplemental centroid analysis for 001870398-01. Kepler magnitude: 14.76. Transit SNR 17.39

There are 5 quarters with good PRF difference image offsets

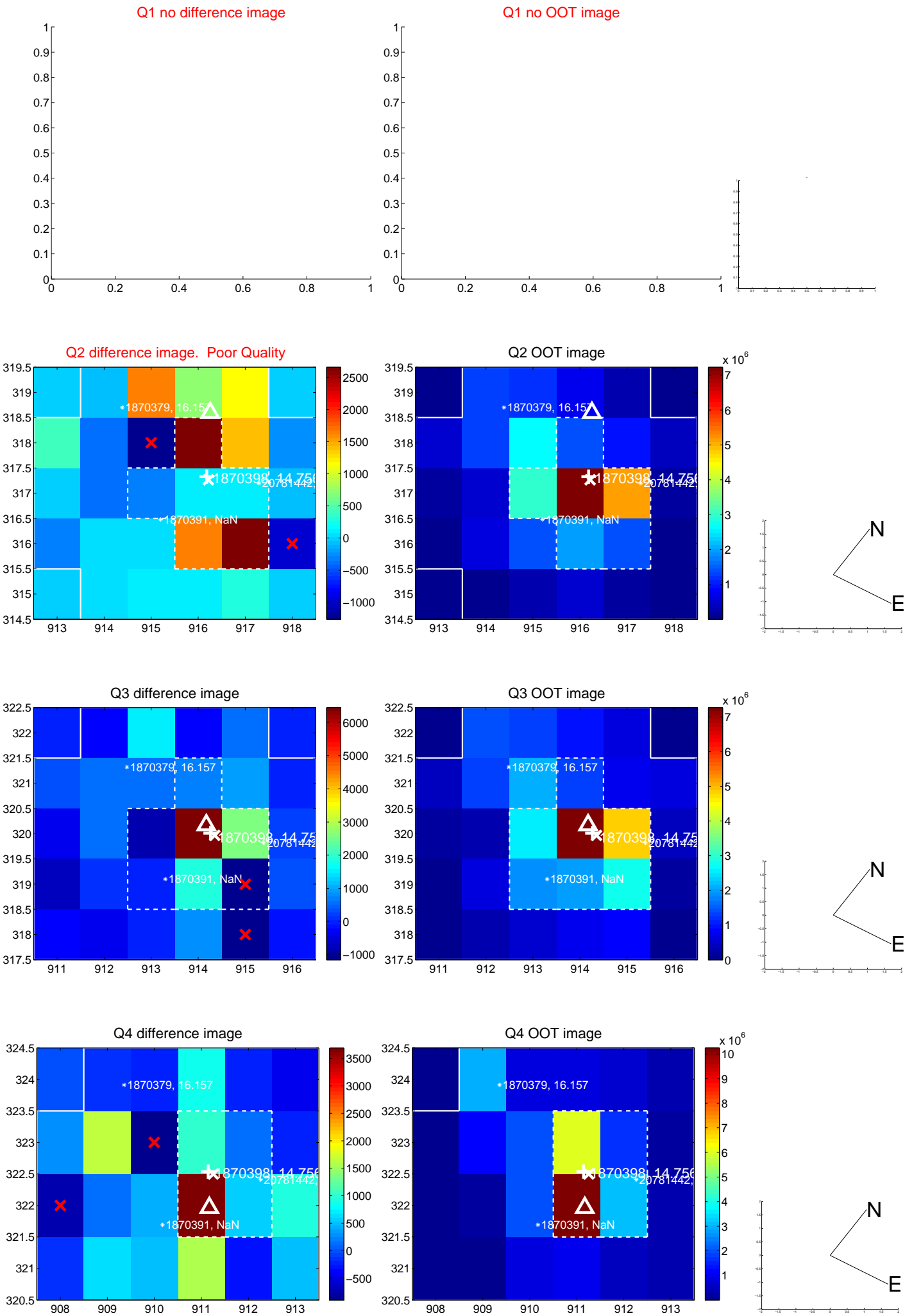
The direct PRF centroid is offset from the target star catalog position by about 0.47 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.994 ± 0.707	2.82	-0.225 ± 0.546	-1.981 ± 0.758
PRF-fit source offset from KIC position	2.002 ± 0.617	3.25	-0.356 ± 0.508	-1.970 ± 0.695
photometric centroid source offset	1.28 ± 0.42	3.06	0.11 ± 0.49	-1.27 ± 0.42

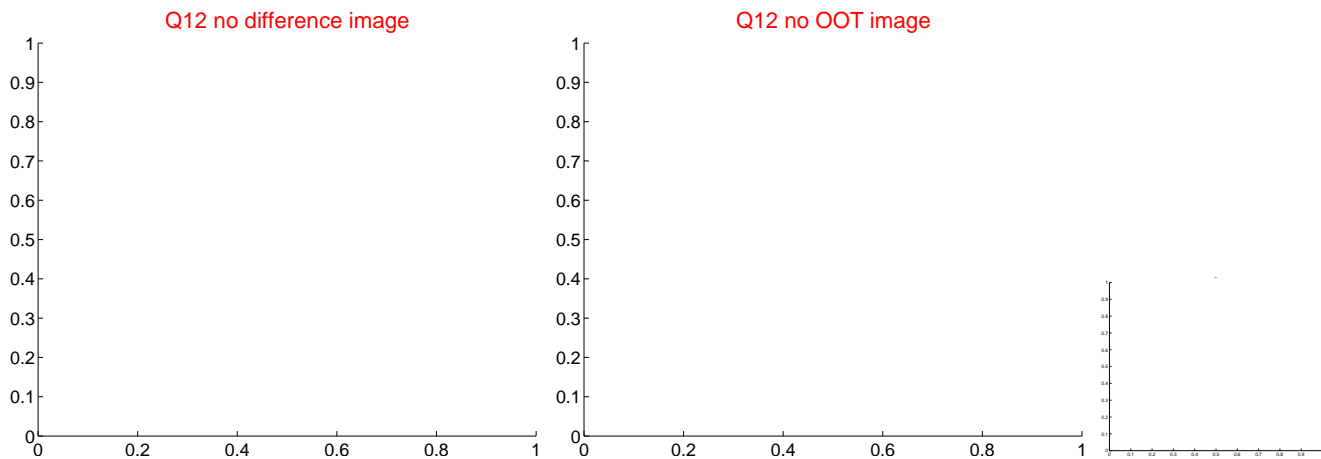
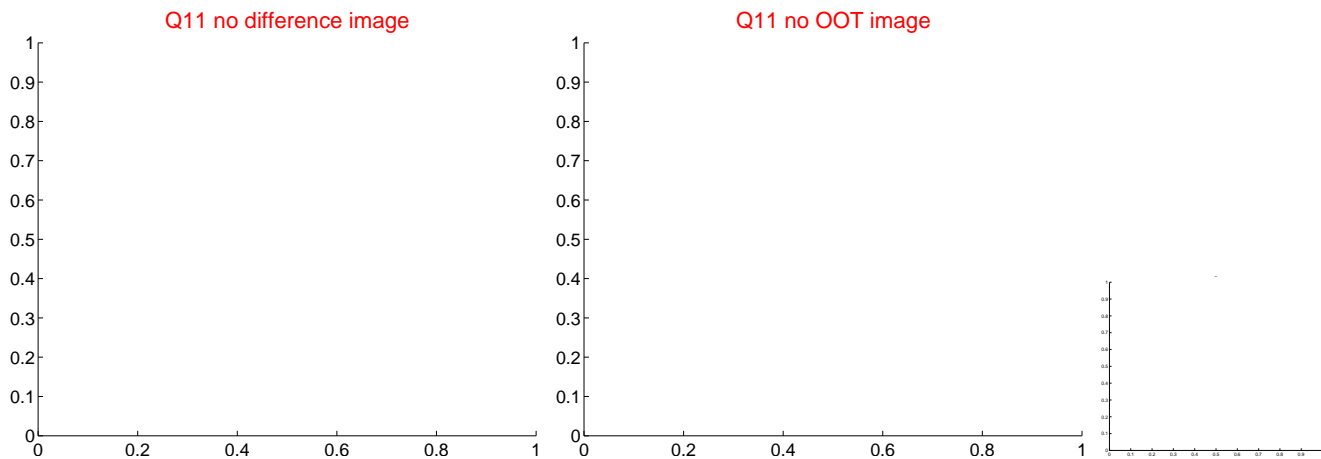
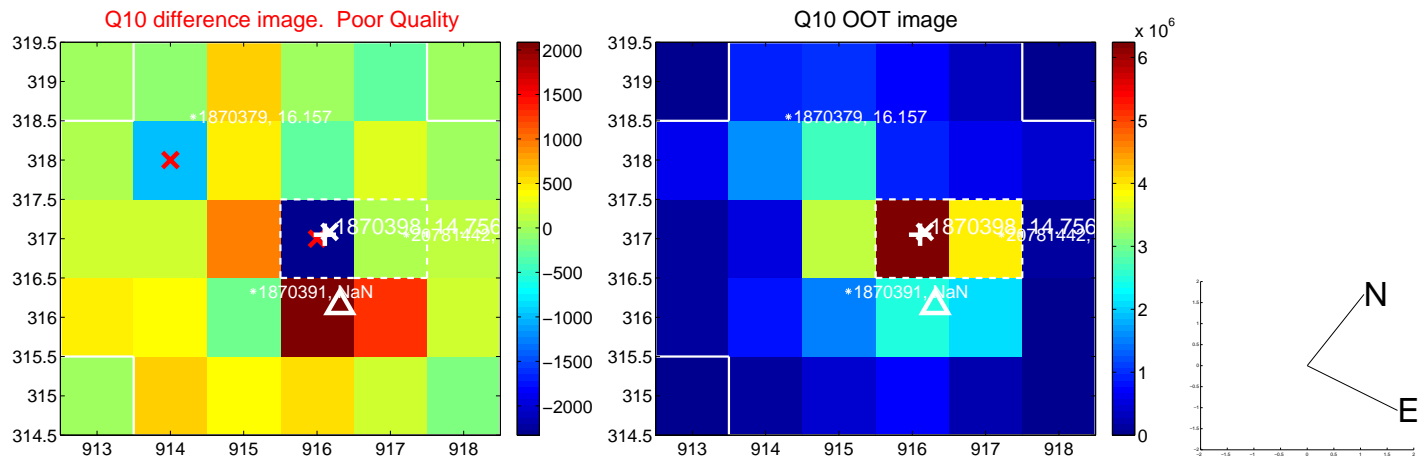
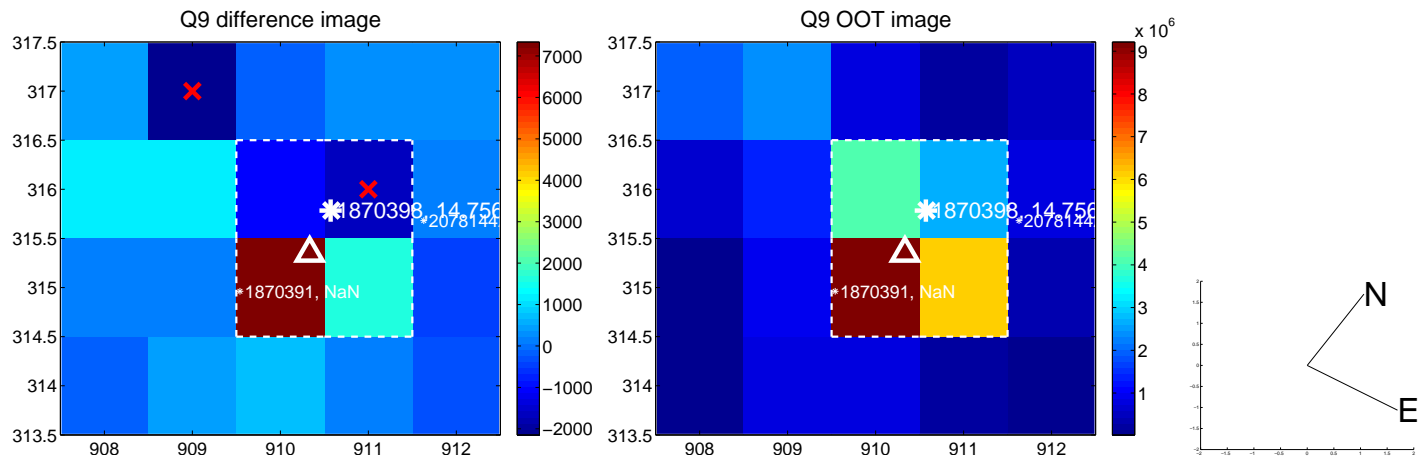


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

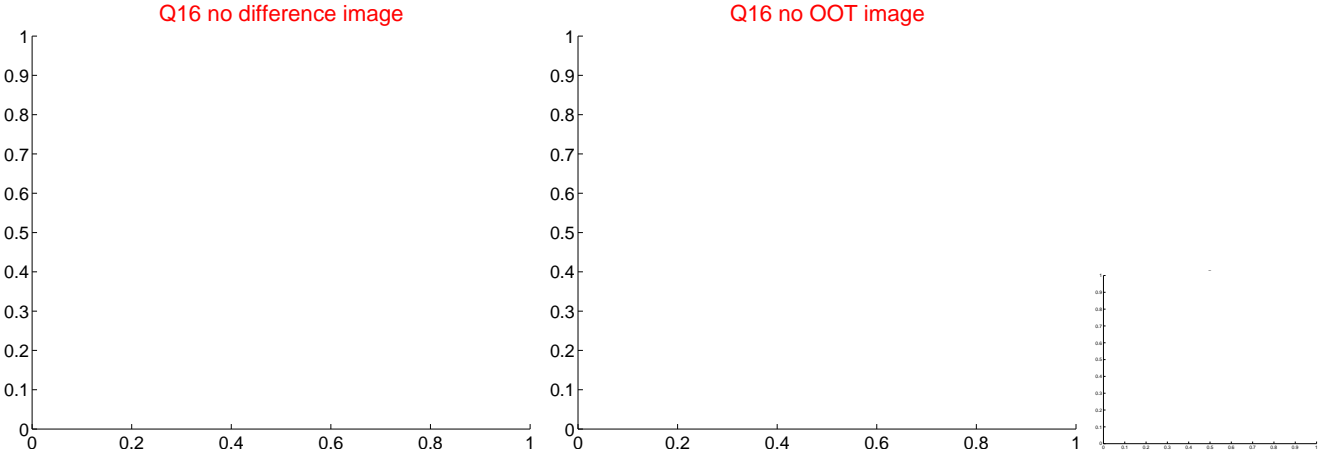
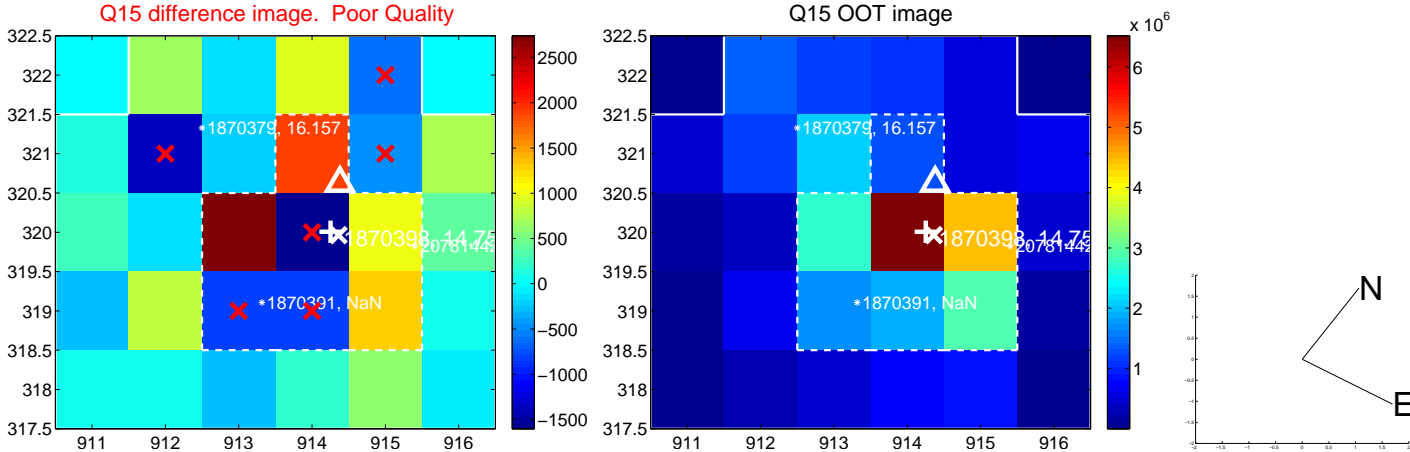
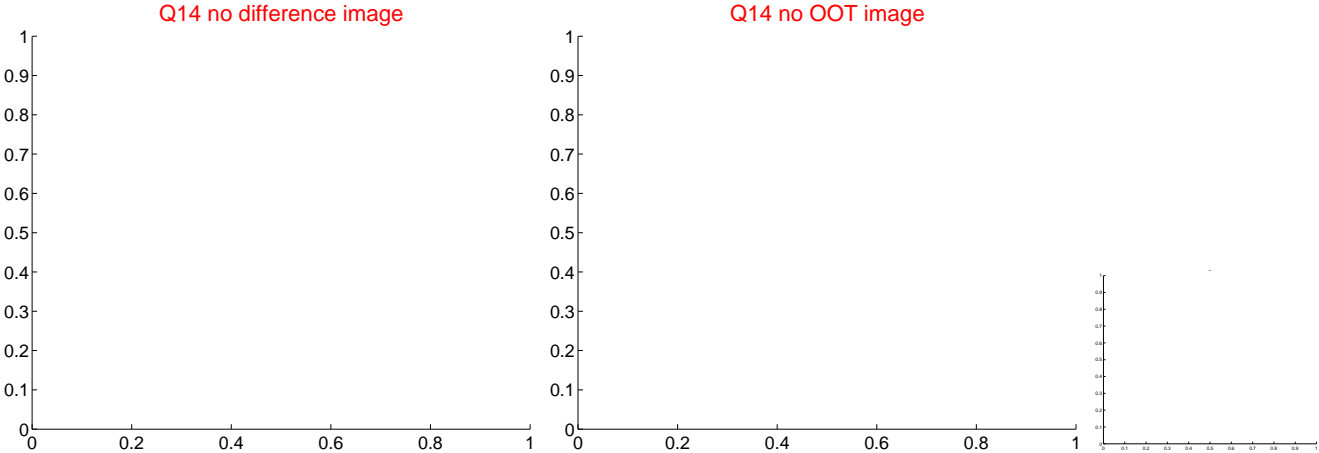
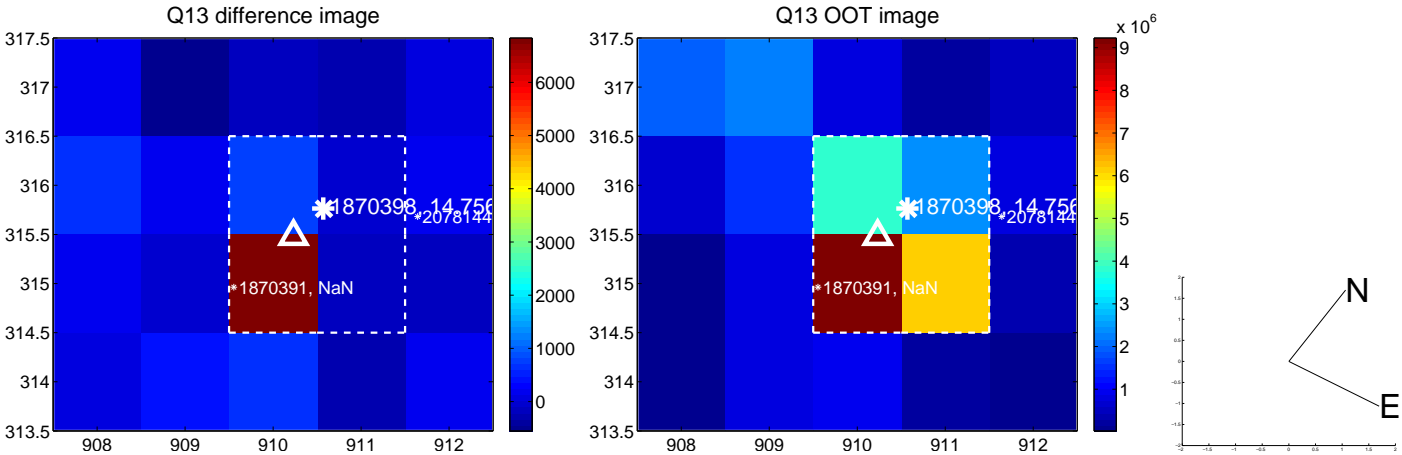
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



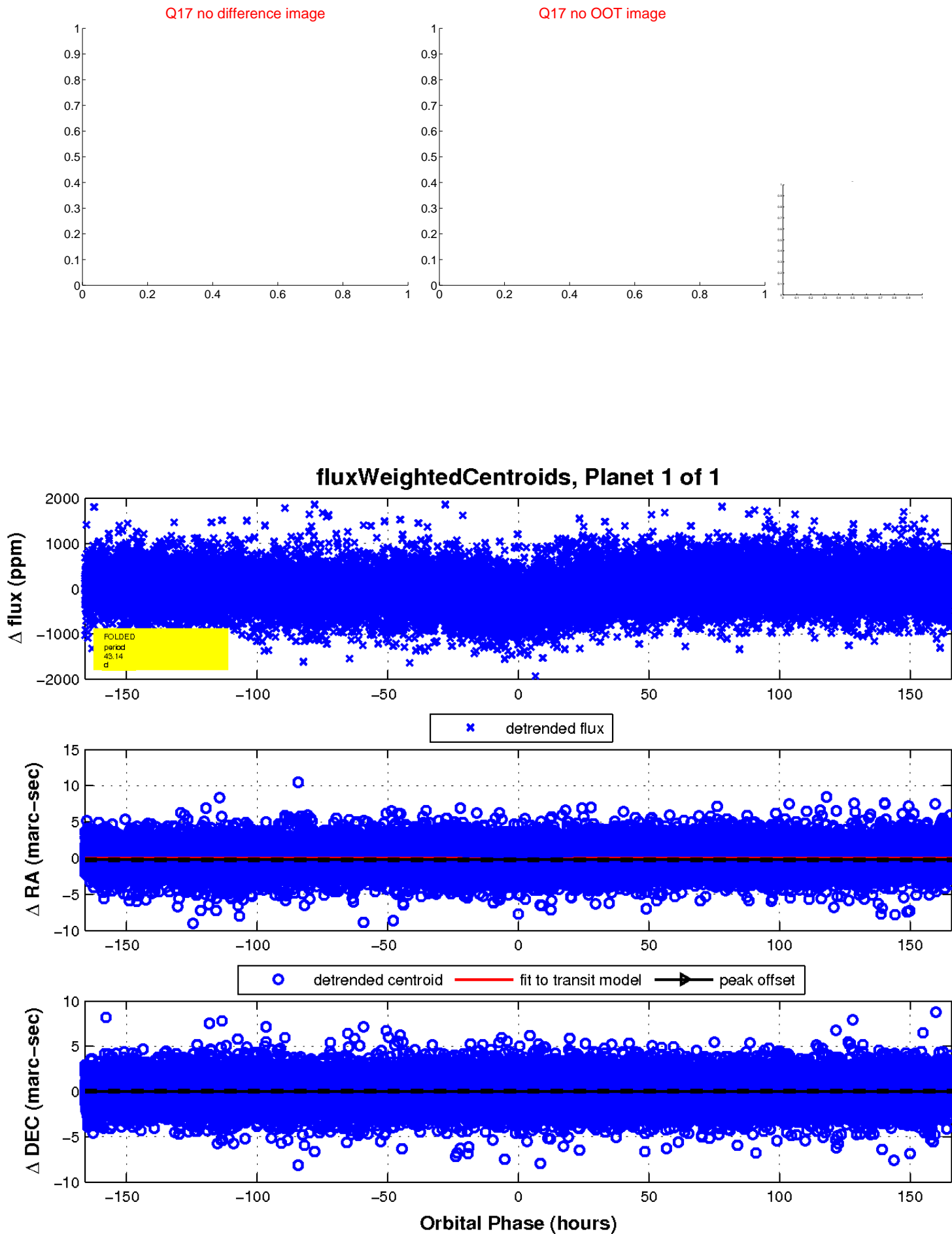
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



UKIRT Image

Declination

