

KIC 010405391

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})
010405391-01	OBS	No	0.933716	131.550140	30.4	3.268	8.6	7.0	1.12	5951	0.73	3758.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010405391-01	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST

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

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

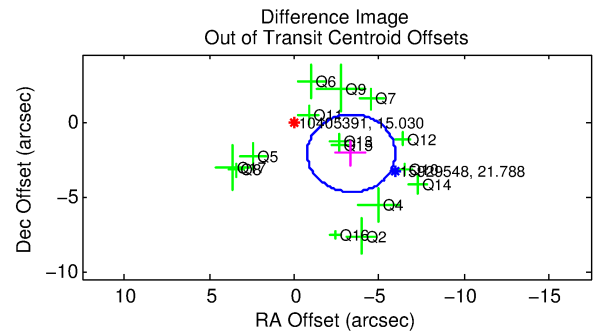
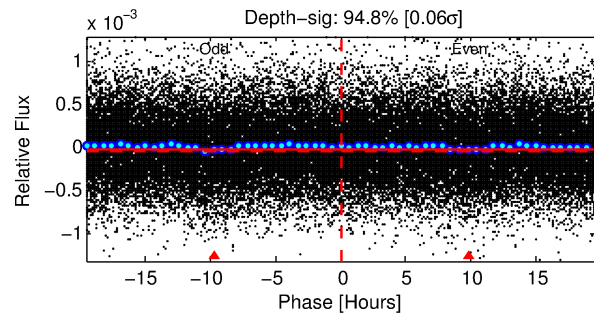
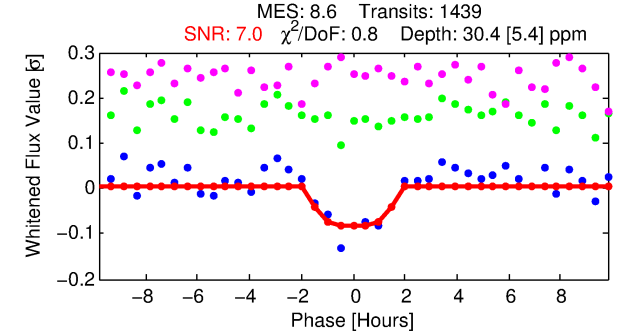
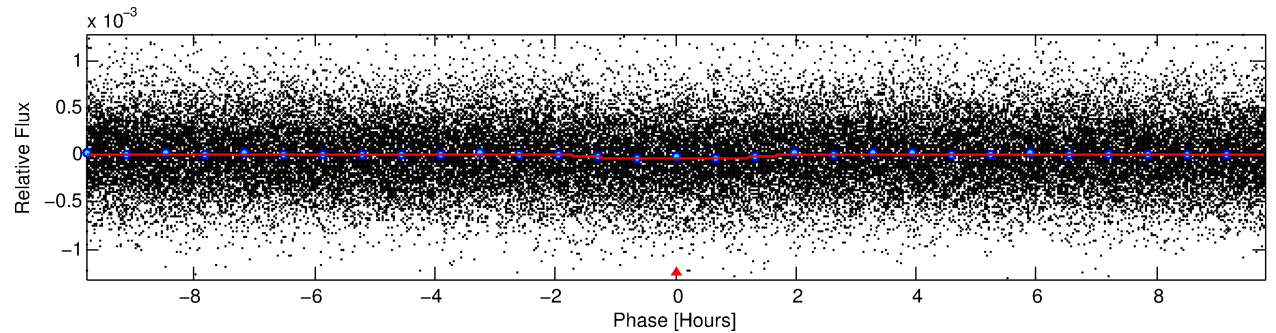
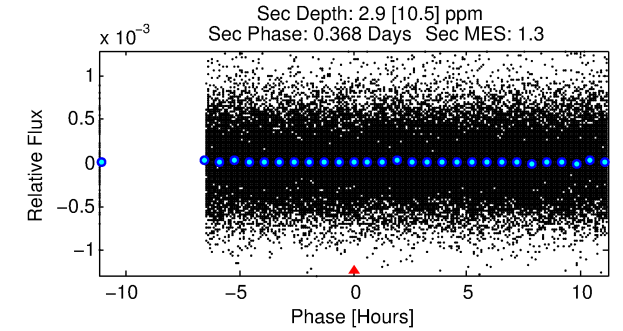
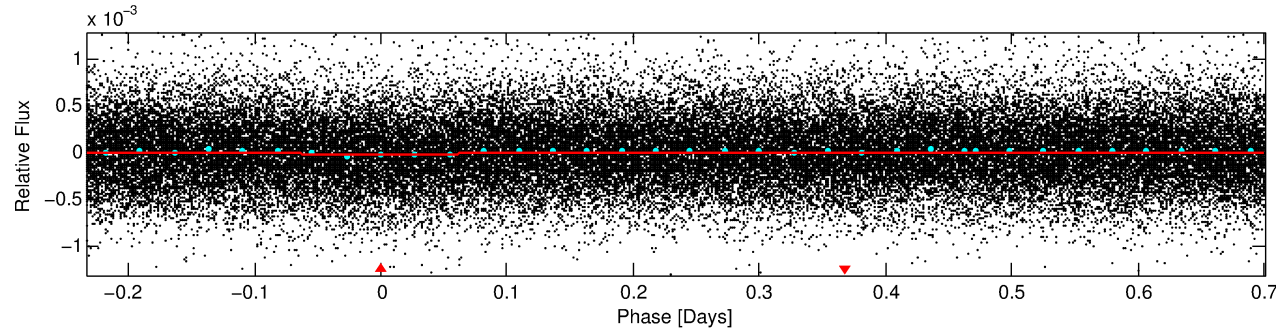
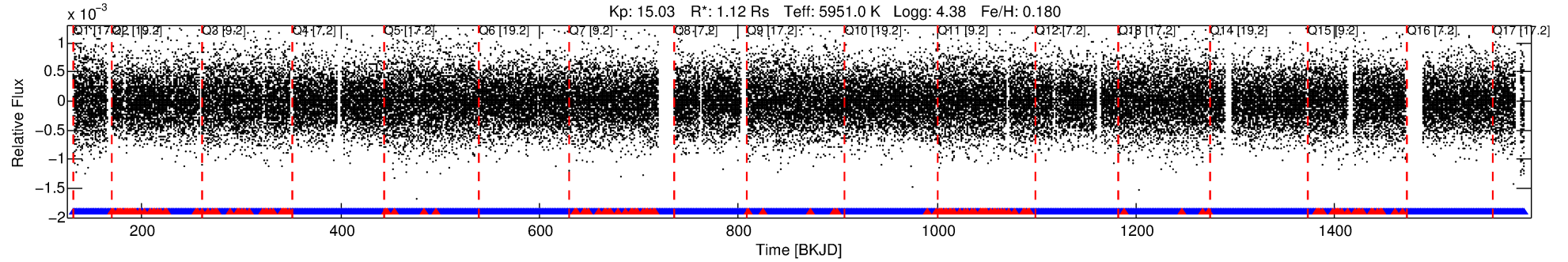
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010405391-01

No Significant Match Found

DV One-Page Summary

KIC: 10405391 Candidate: 1 of 1 Period: 0.934 d



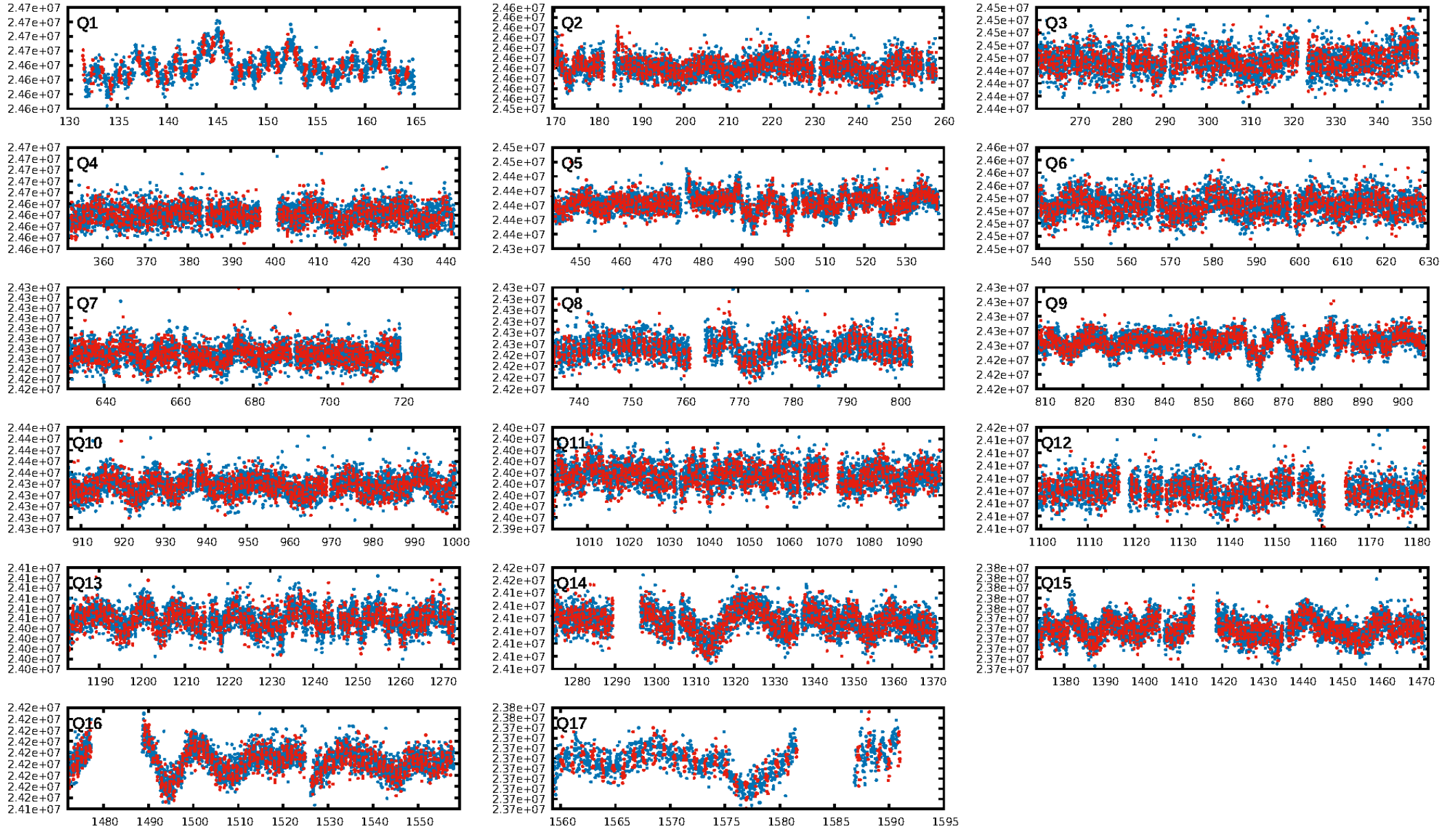
DV Fit Results:

Period = 0.93372 [0.00002] d
Epoch = 131.5501 [0.0057] BKJD
Rp/R* = 0.0060 [0.0055]
a/R* = 1.36 [2.82]
b = 0.90 [0.98]
Seff = 3758.40 [1481.80]
Teff = 1997 [197] K
Rp = 0.73 [0.70] Re
a = 0.0193 [0.0049] AU
Ag = 1.10 [4.52] [0.02 σ]
Teffp = 3160 [3239] K [0.36 σ]

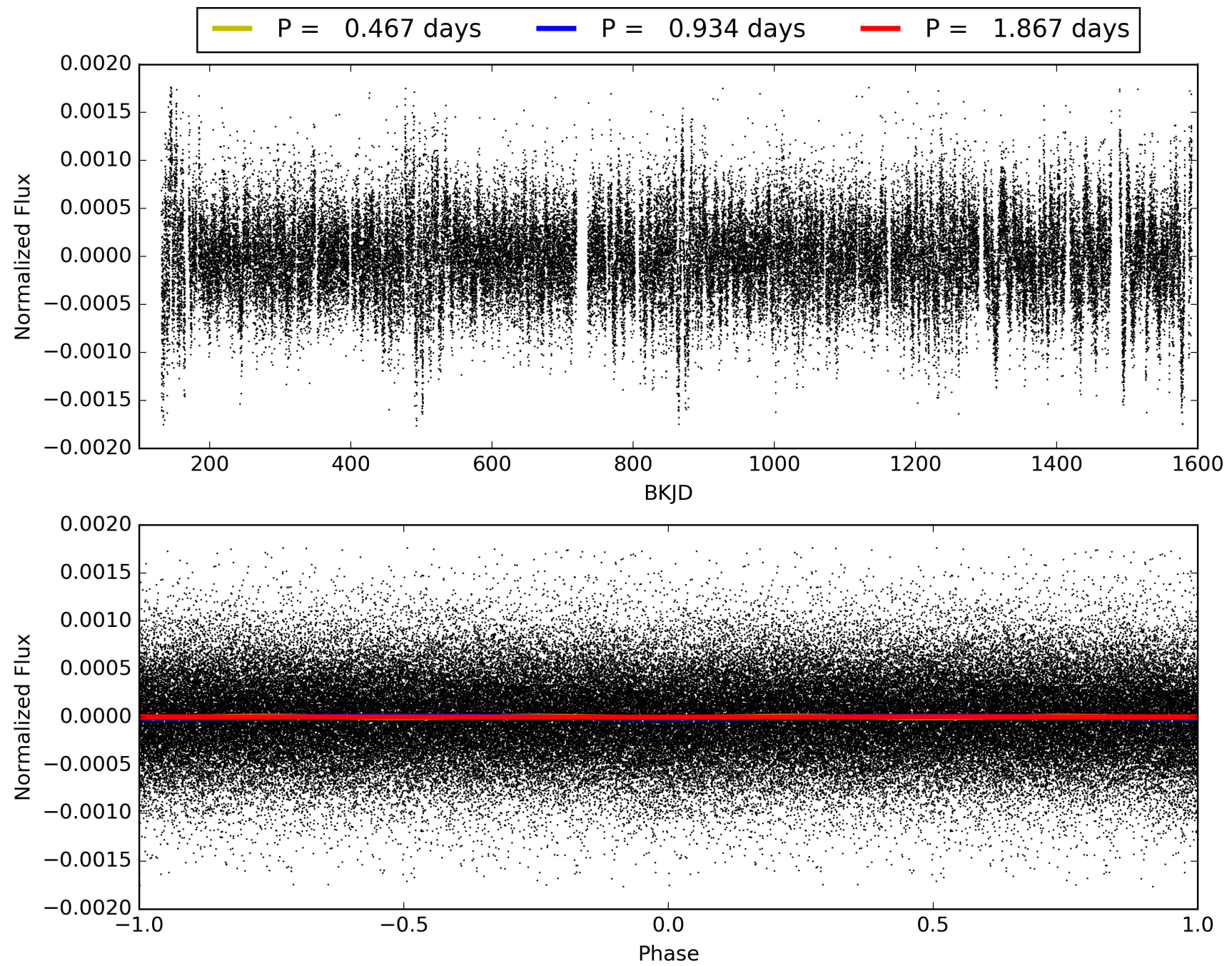
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.29e-17
RollingBand-fgt: 0.89 [1218/1373]
GhostDiagnostic-chr: 0.1961
Centroid-sig: 0.8%
Centroid-so: 3.850 arcsec [1.89 σ]
OotOffset-rm: 3.976 arcsec [4.59 σ]
KicOffset-rm: 3.872 arcsec [4.28 σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 0.07 [1/15]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 010405391-01, PDC Light Curves

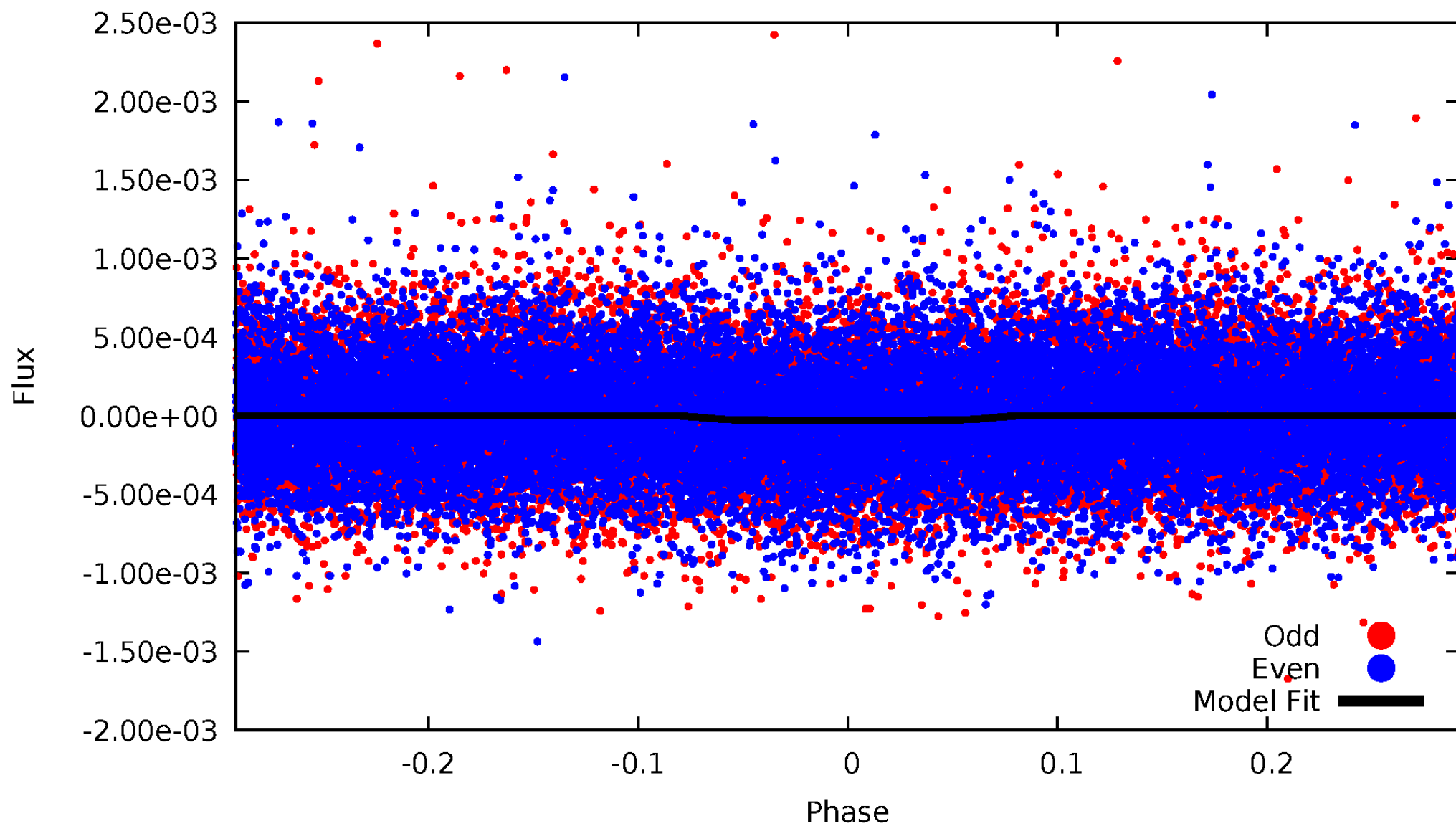


TCE 010405391-01



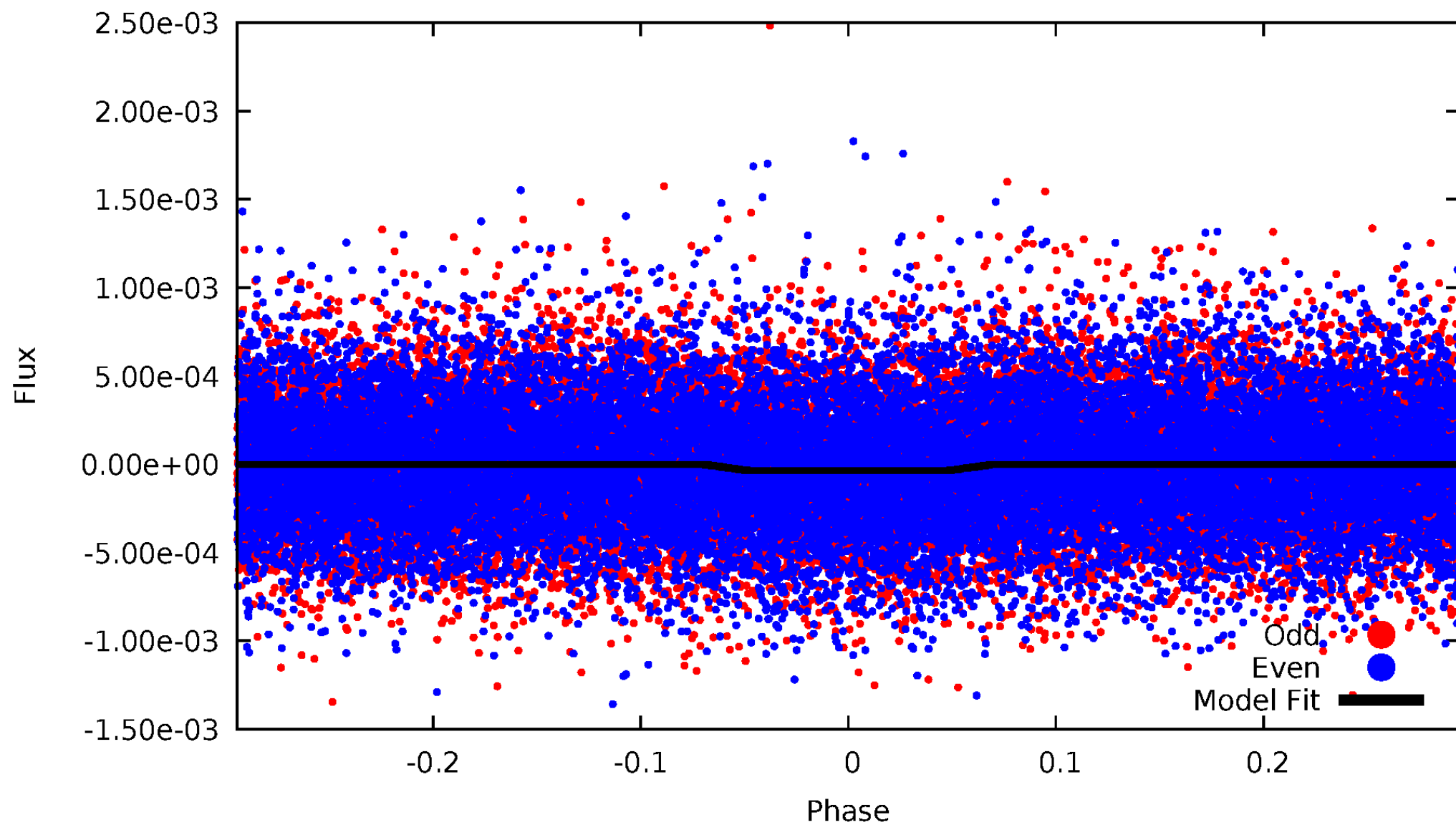
DV Odd/Even

TCE 010405391-01



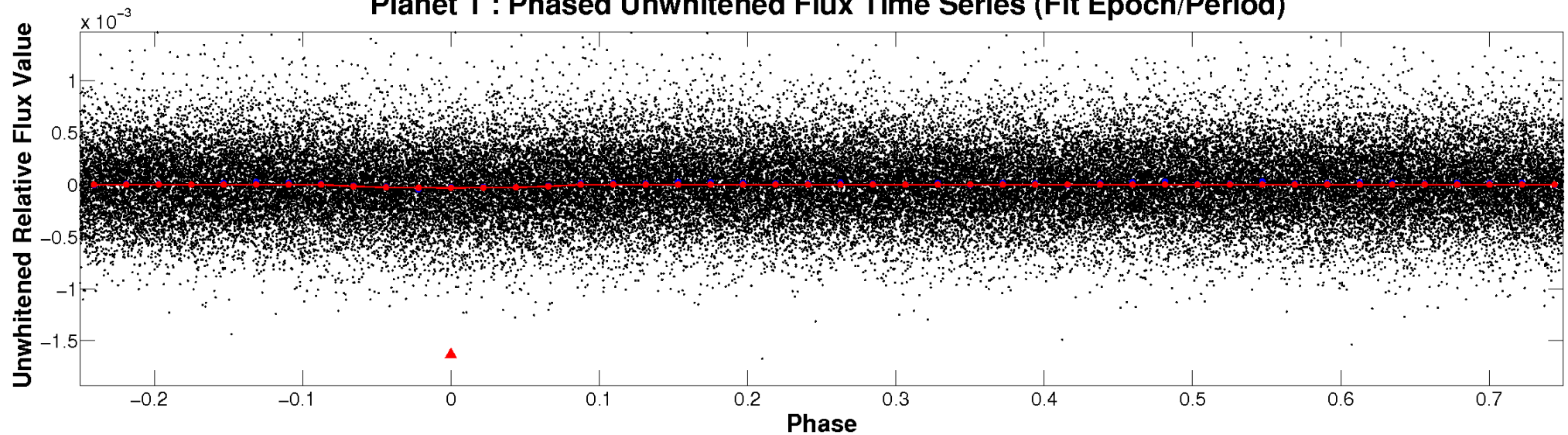
ALT Odd/Even

TCE 010405391-01

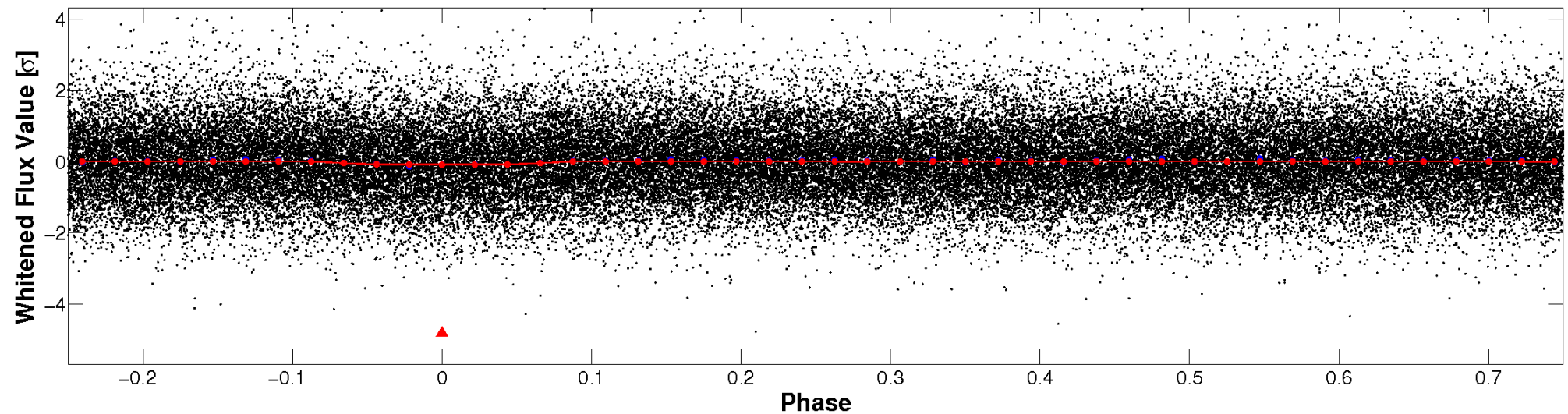


Non-Whitened Vs. Whitened Light Curve

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

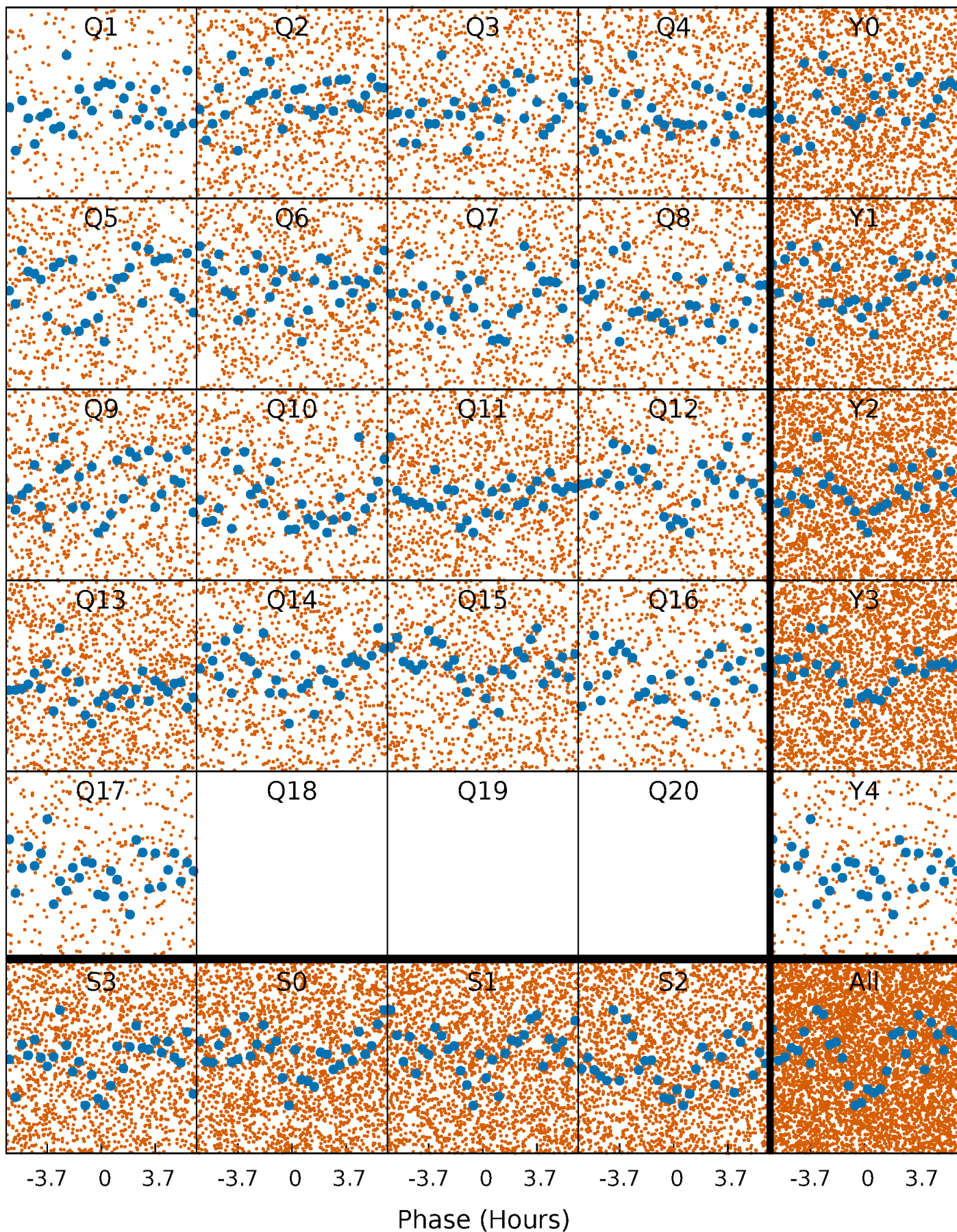


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



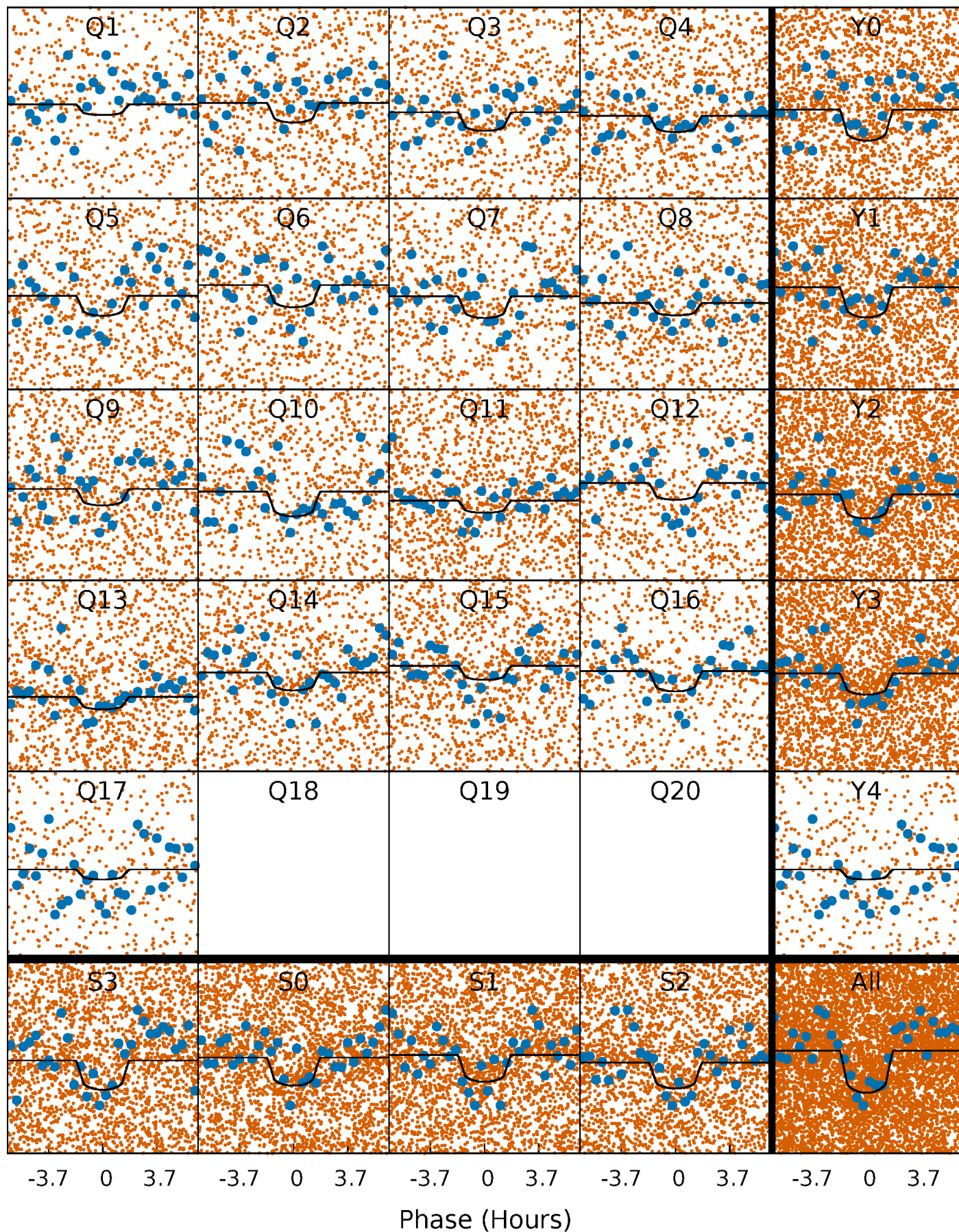
PDC Quarter-Phased Transit Curves

TCE 010405391-01 P= 0.933716 Days $T_0=131.550140$ (BKJD)



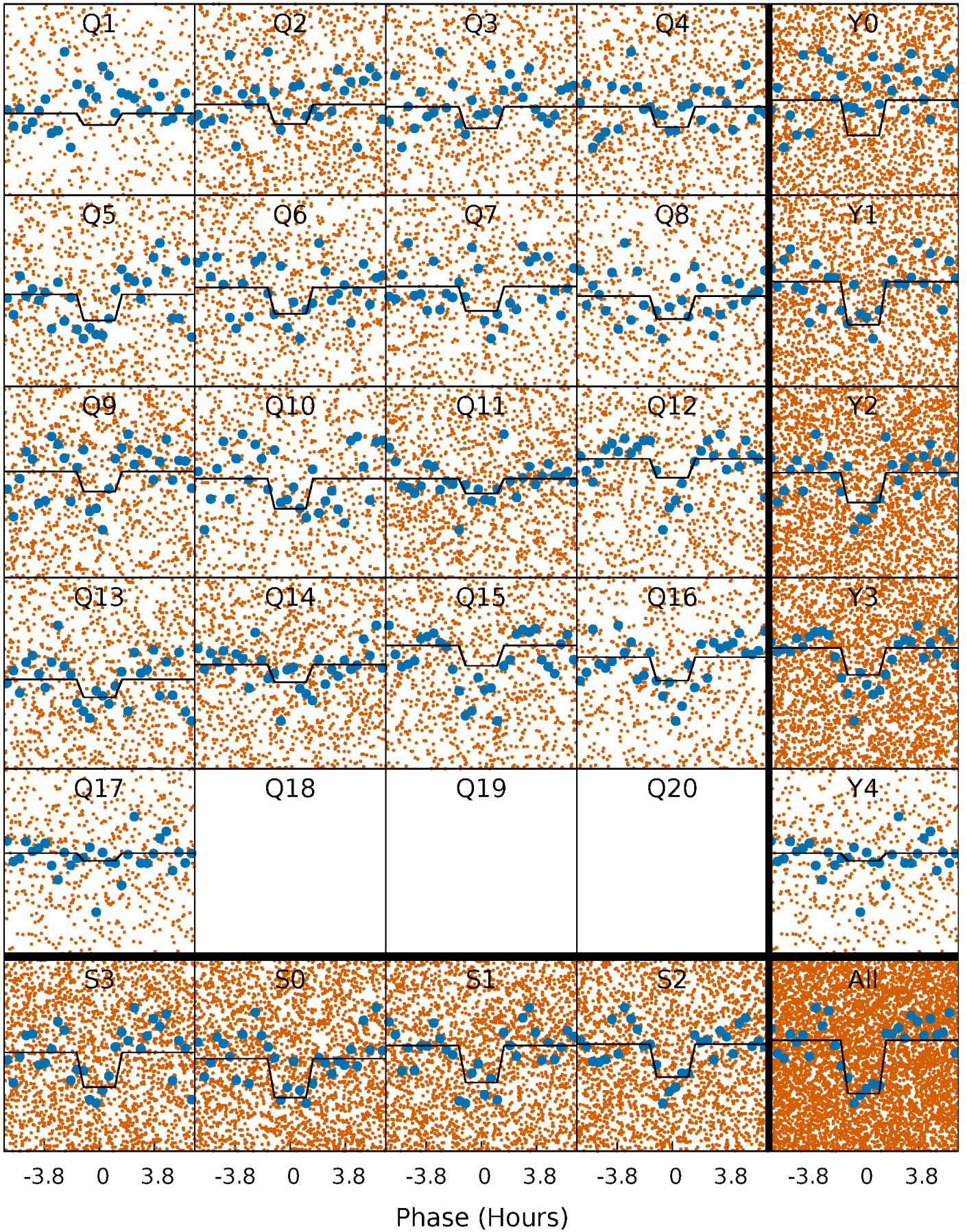
DV Quarter-Phased Transit Curves

TCE 010405391-01 P= 0.933716 Days $T_0=131.550140$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

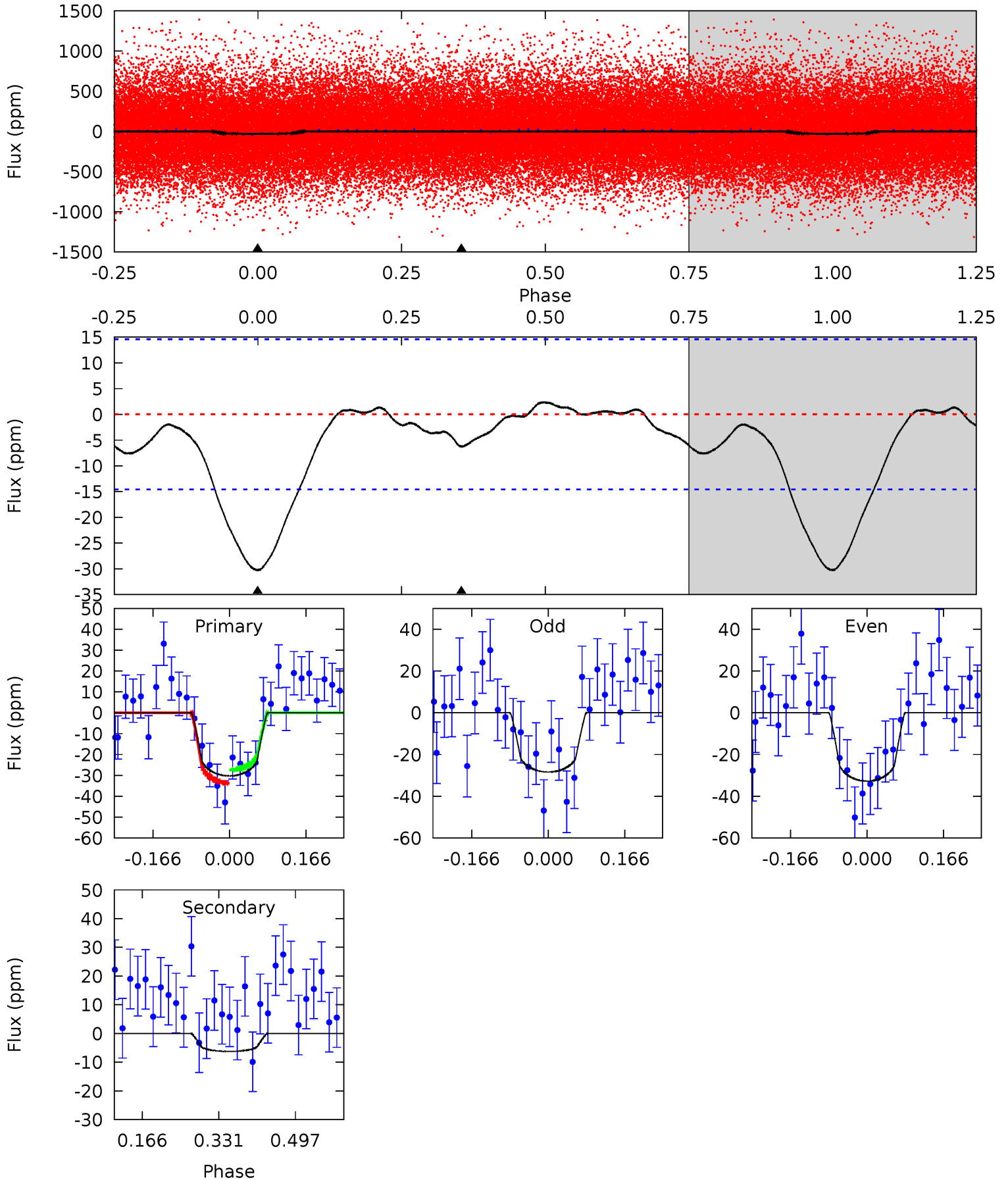
TCE 010405391-01 P= 0.933722 Days $T_0=131.550687$ (BKJD)



DV Model-Shift Uniqueness Test

010405391-01, P = 0.933716 Days, E = 130.616424 Days

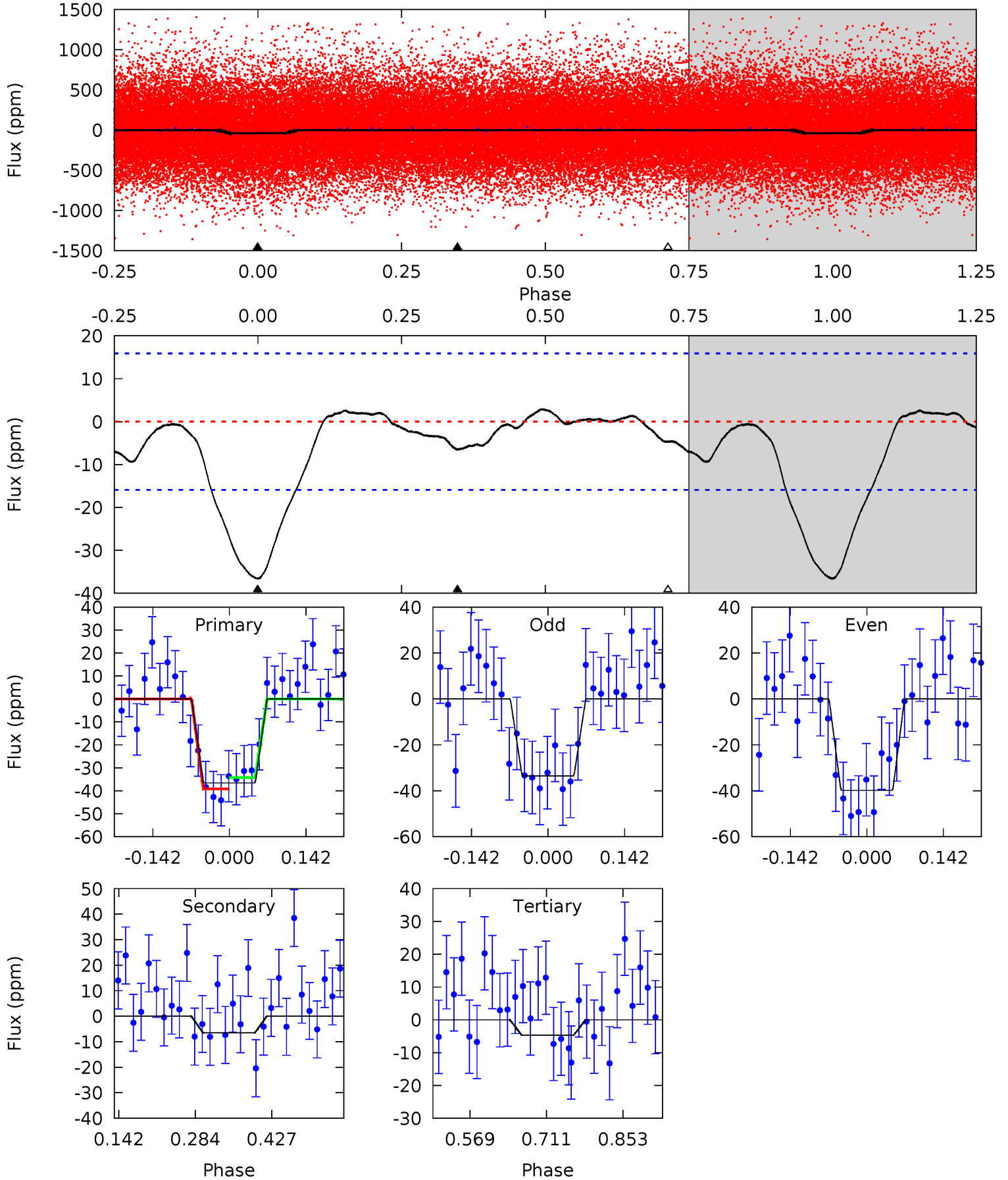
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.25	1.91	0	0	4.46	1.39	0.92	9.25	9.25	1.91	1.91	0.67	1.21	0.07	0.99



Alt Model-Shift Uniqueness Test

010405391-01, P = 0.933722 Days, E = 130.616965 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	1.83	1.33	0	4.49	1.47	0.95	8.99	10.3	0.50	1.83	0.89	1.11	0.07	0.70



Stellar Parameters For KIC 010405391

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5951^{+166}_{-208}	$4.384^{+0.087}_{-0.203}$	$0.180^{+0.200}_{-0.300}$	$1.117^{+0.330}_{-0.165}$	$1.102^{+0.136}_{-0.149}$	$1.113^{+0.499}_{-0.548}$
	+3%/-3%	+2%/-5%	+111%/-167%	+30%/-15%	+12%/-14%	+45%/-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 010405391-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-6 ± 3	$0.86^{+0.71}_{-0.54}$	2839^{+209}_{-164}	3712^{+1972}_{-1249}	$1.538^{+9.474}_{-1.179}$
Alt.	-6 ± 4	$0.84^{+0.66}_{-0.52}$	2838^{+195}_{-162}	3801^{+1966}_{-1130}	$1.712^{+10.135}_{-1.295}$

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

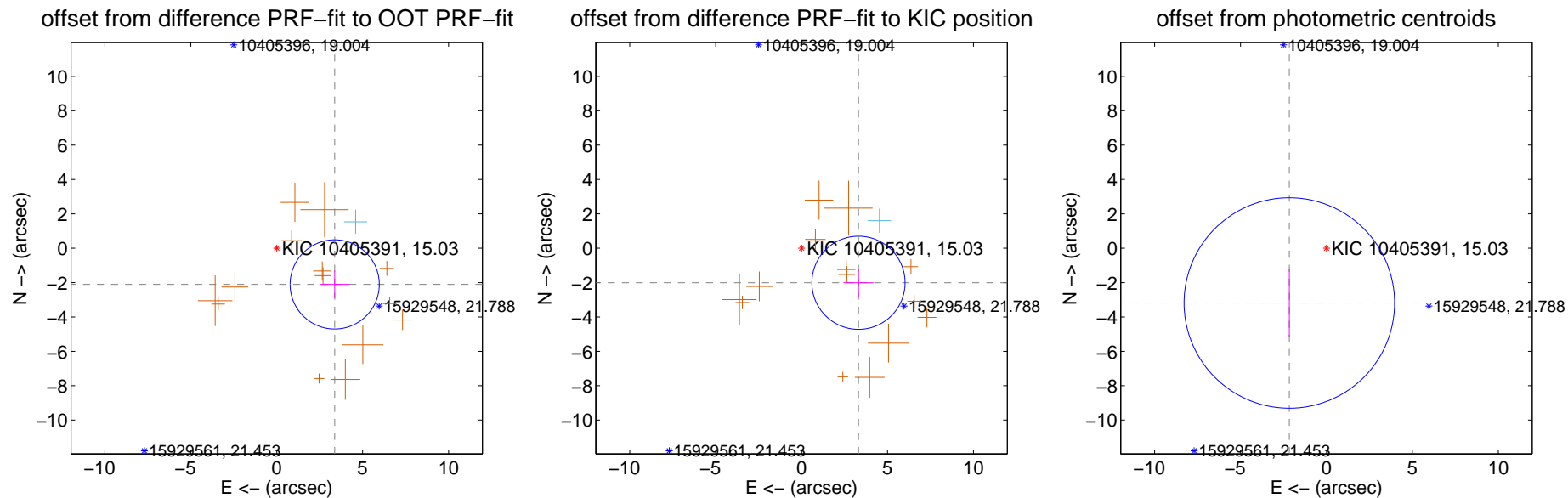
DV Centroid Data

Supplemental centroid analysis for 010405391-01. Kepler magnitude: 15.03. Transit SNR 6.99

There are 1 quarters with good PRF difference image offsets

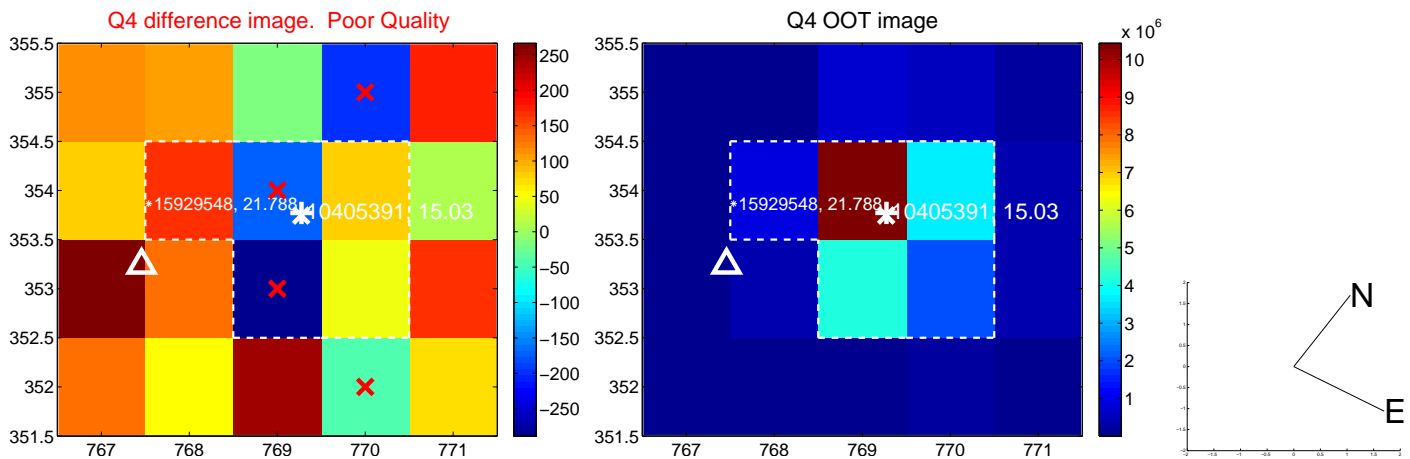
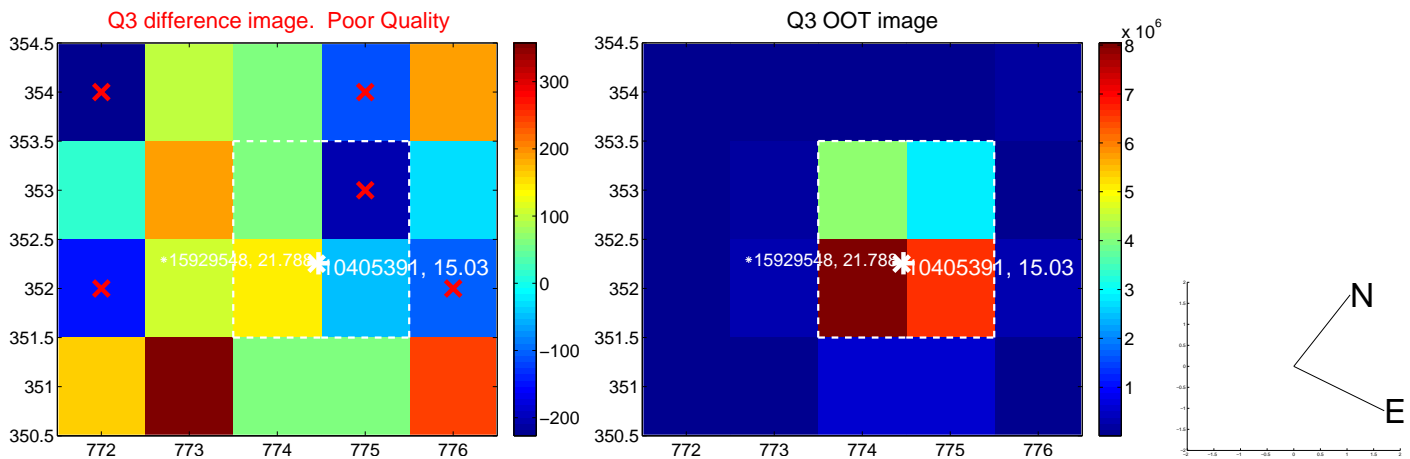
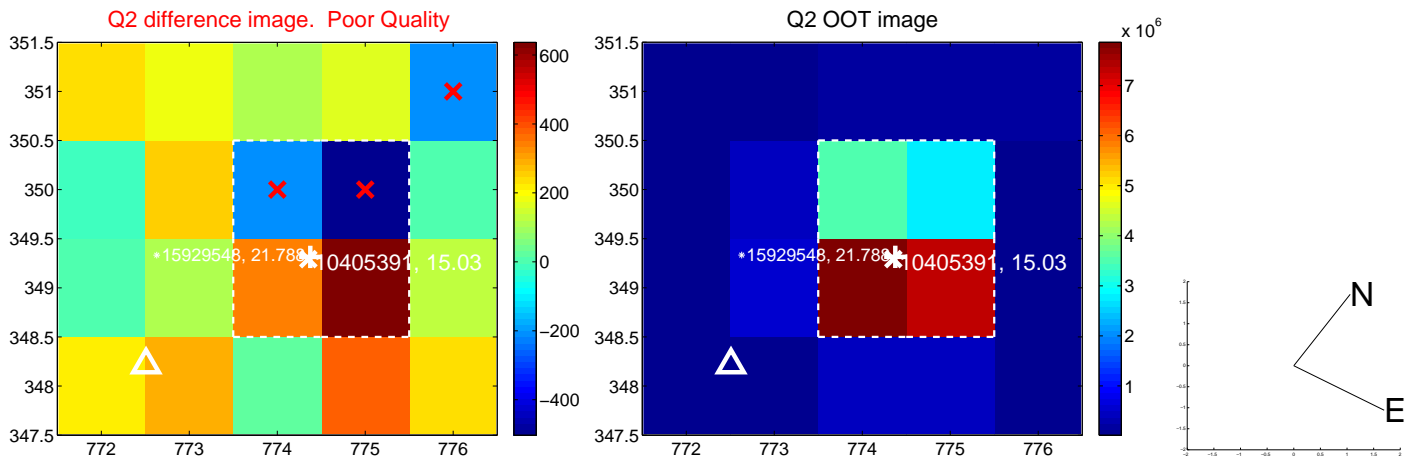
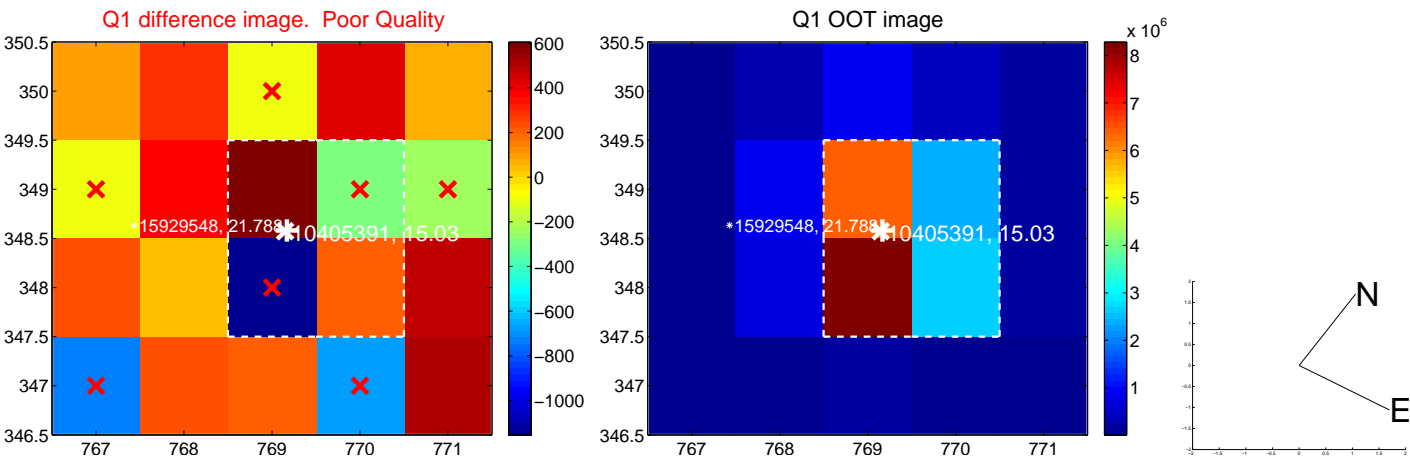
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.976 ± 0.865	4.59	-3.372 ± 0.882	-2.106 ± 0.805
PRF-fit source offset from KIC position	3.872 ± 0.904	4.28	-3.310 ± 0.874	-2.010 ± 0.826
photometric centroid source offset	3.85 ± 2.04	1.89	2.16 ± 2.22	-3.19 ± 1.95

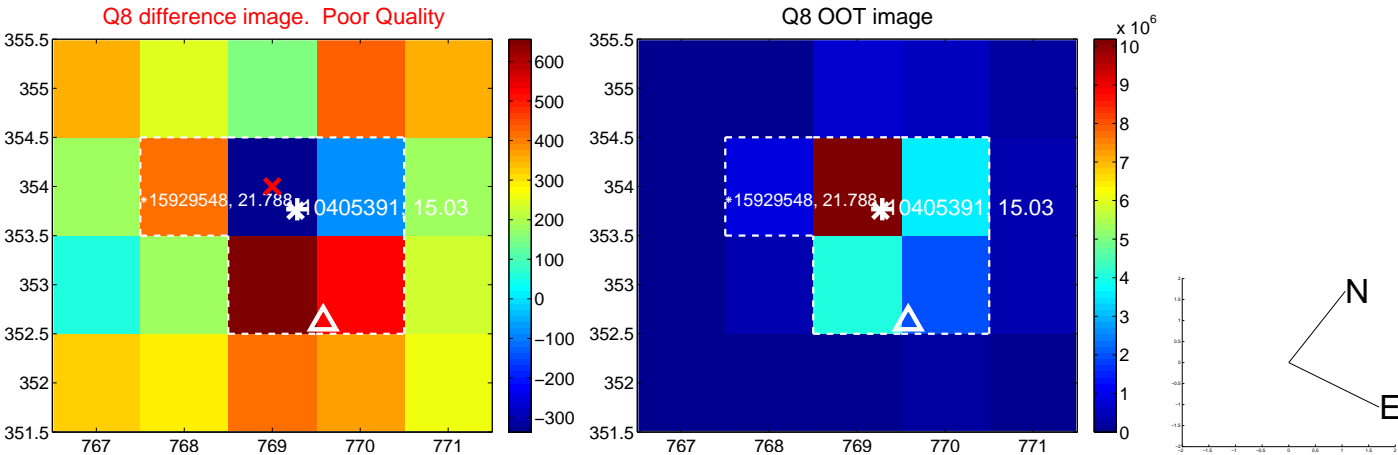
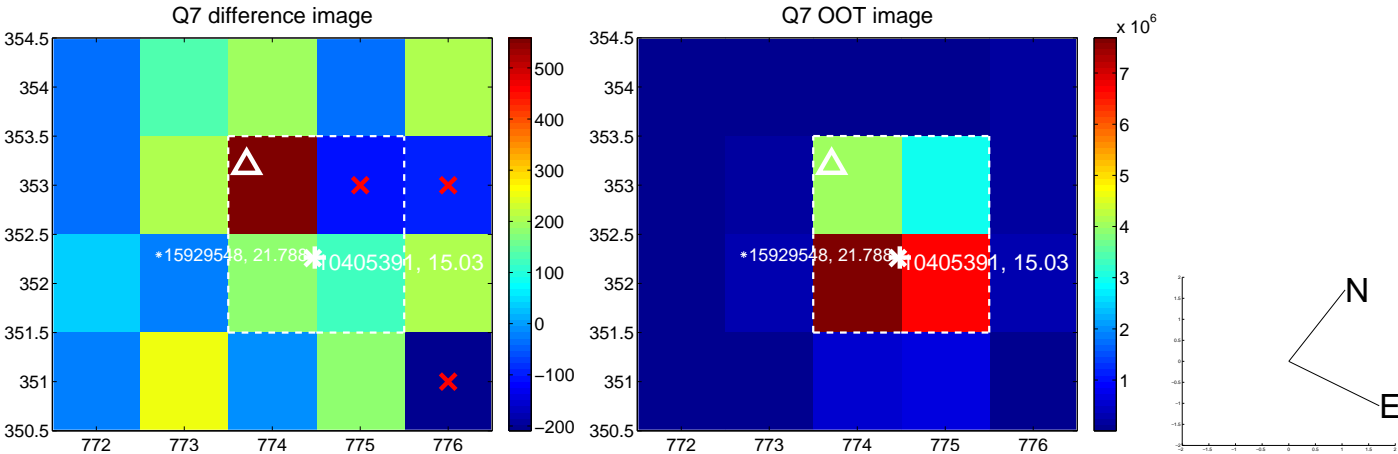
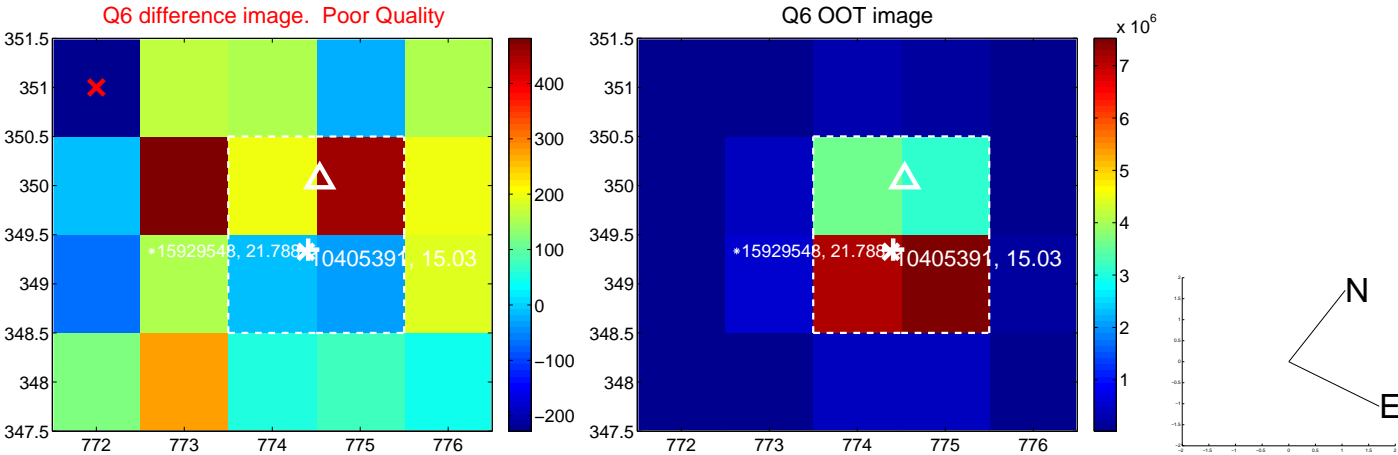
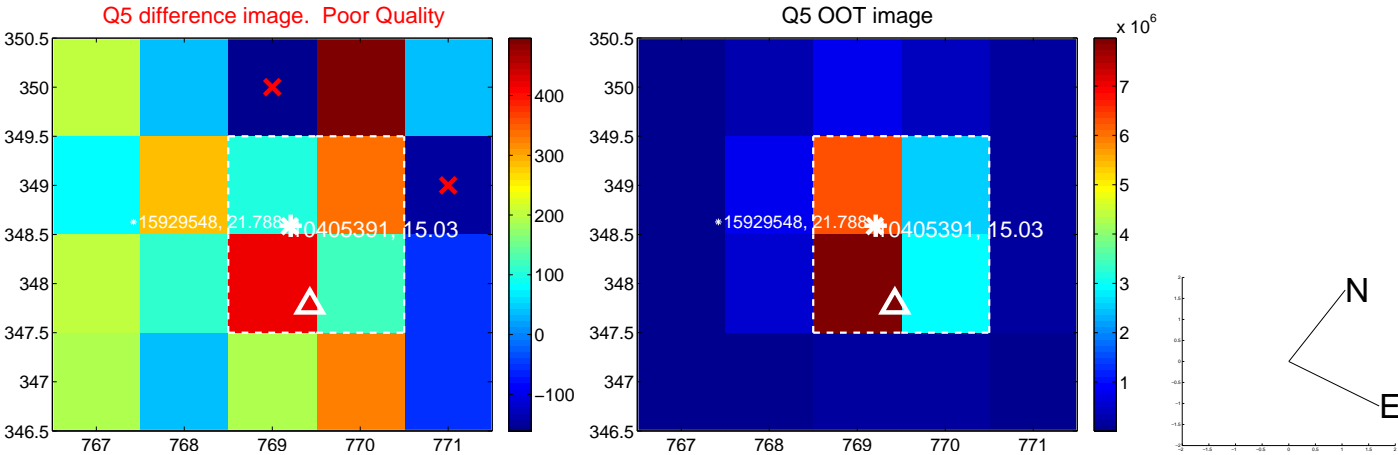


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

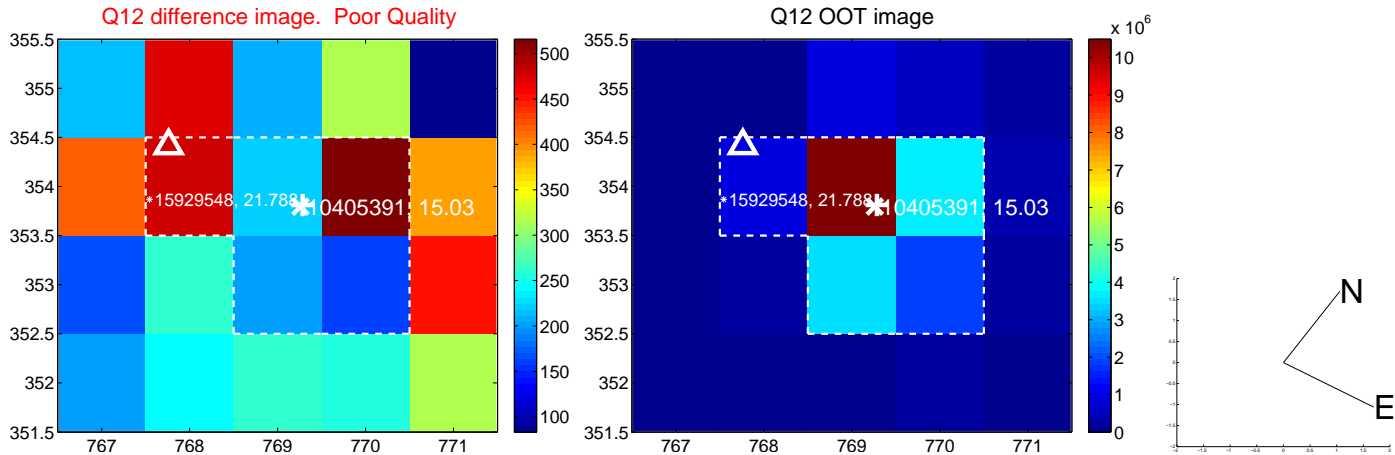
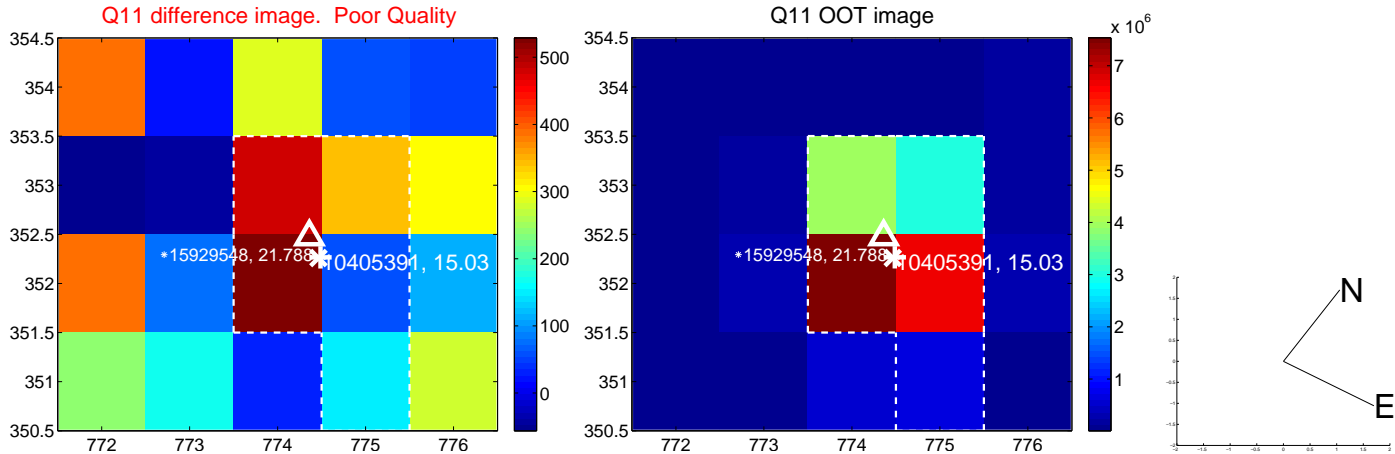
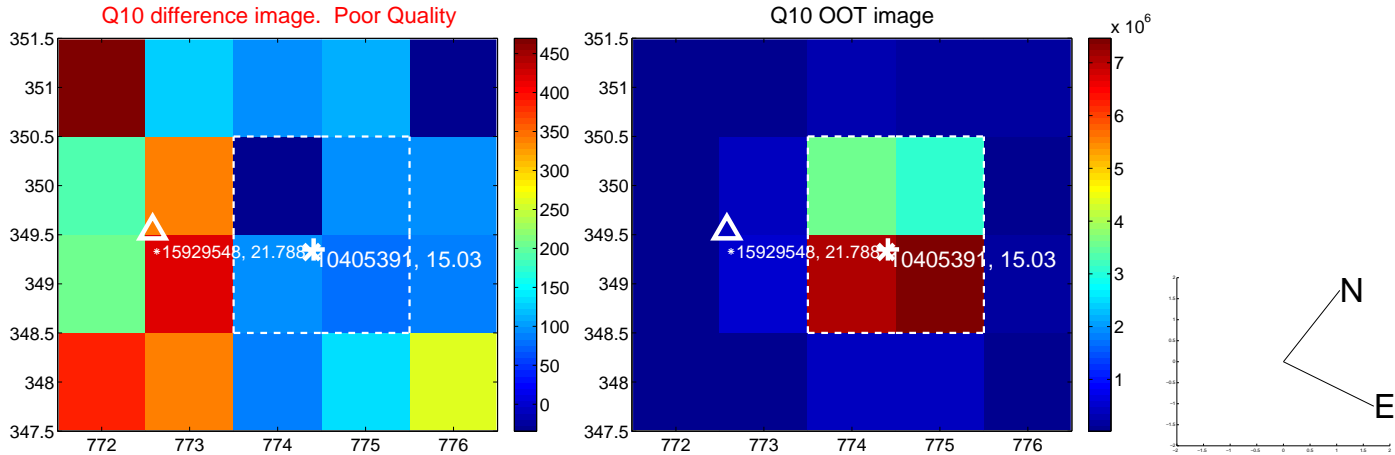
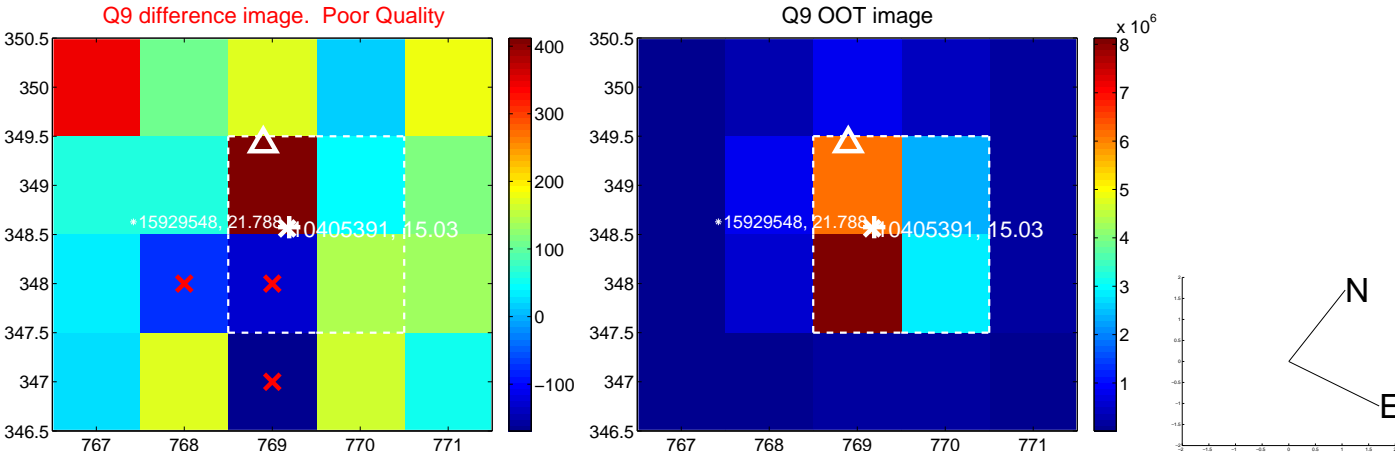
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



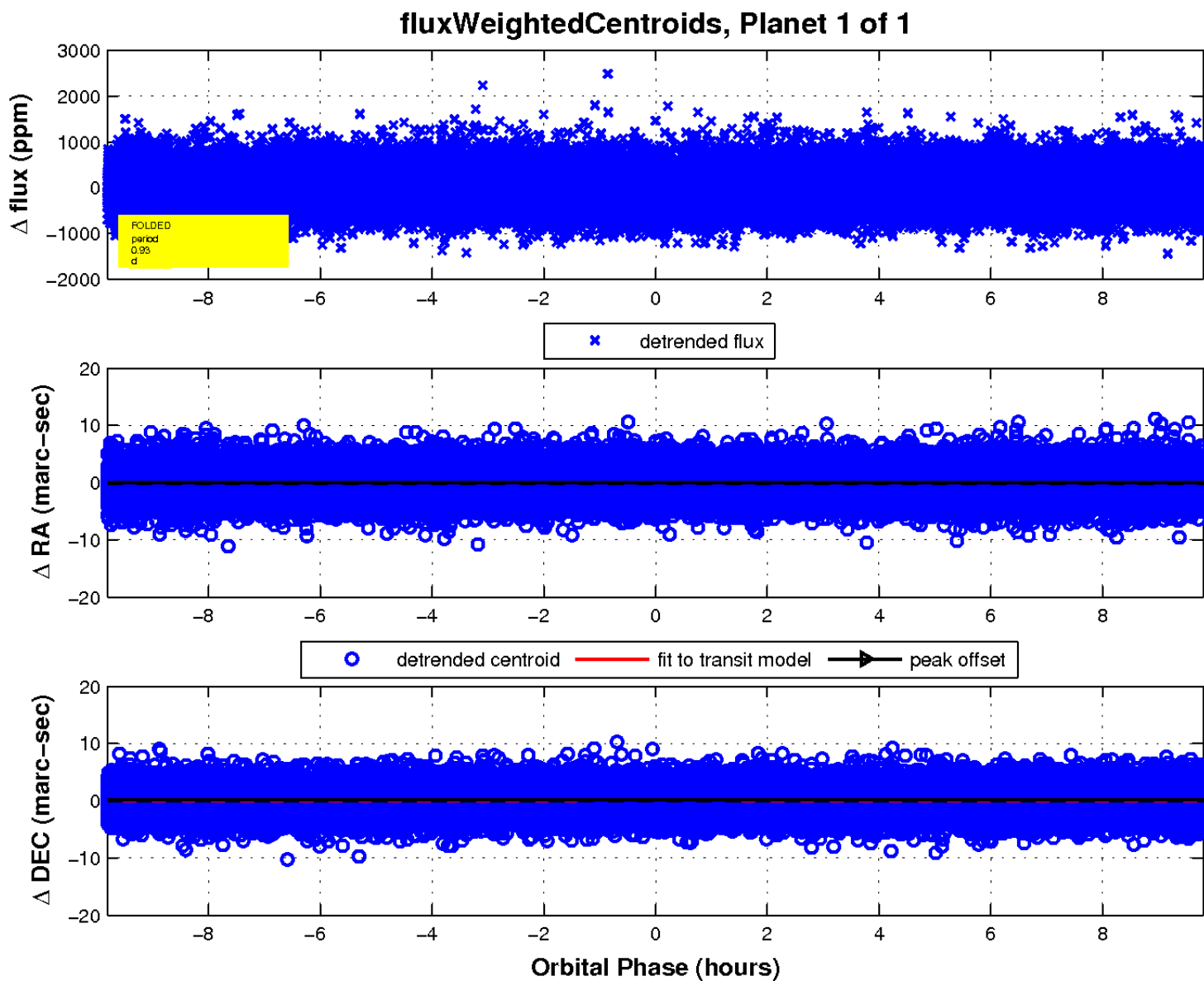
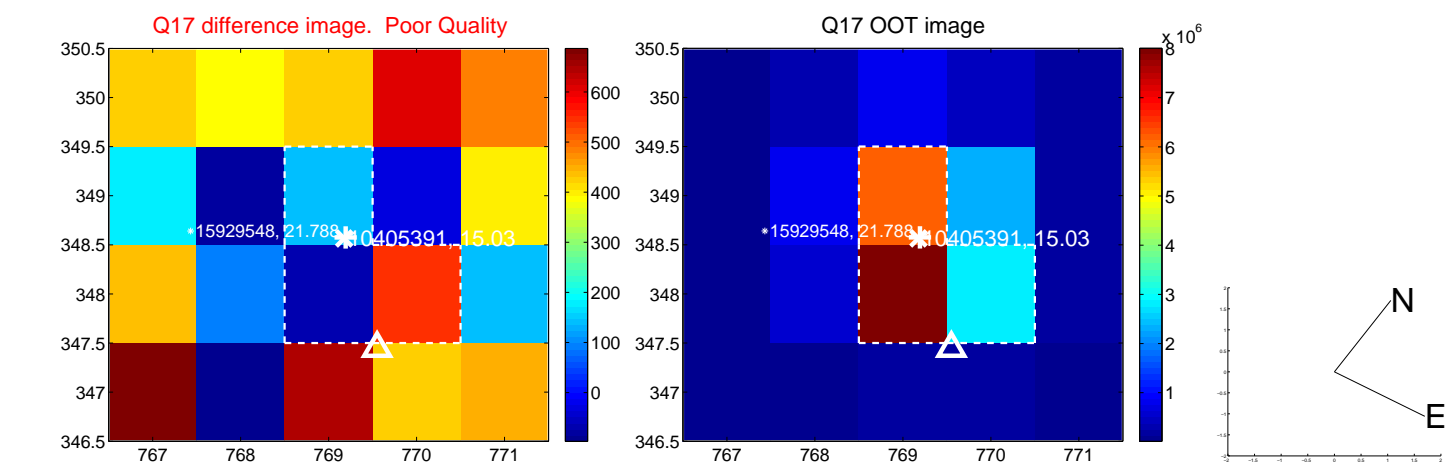
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

