

KIC 010663396

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})
010663396-01	OBS	2046.01	23.898946	151.400912	296.6	16.119	33.0	37.5	1.93	5511	3.52	108.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010663396-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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

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

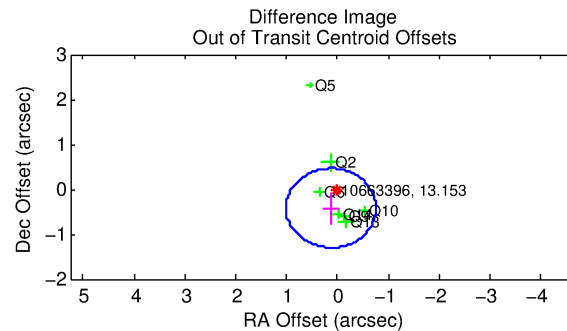
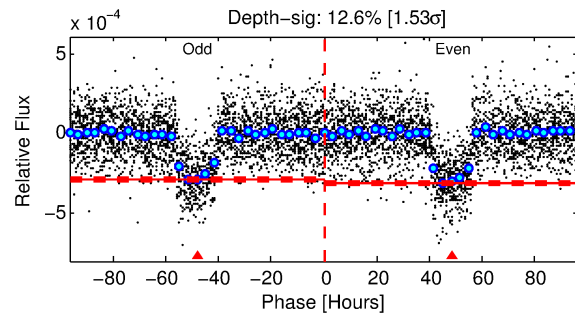
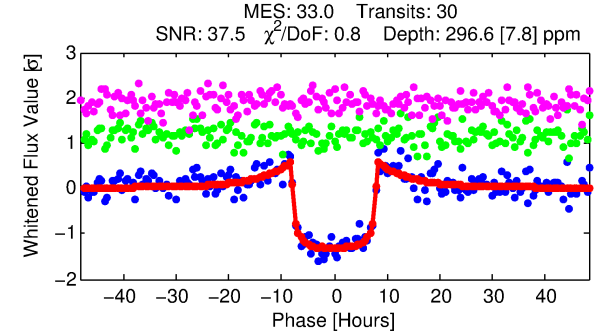
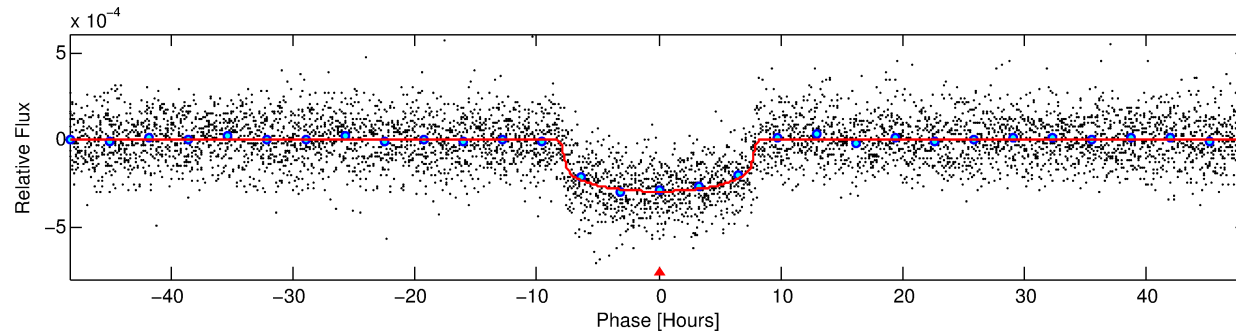
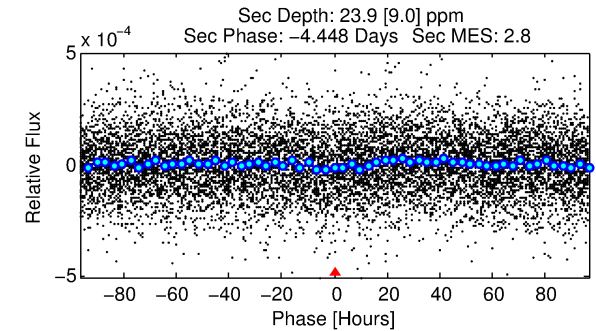
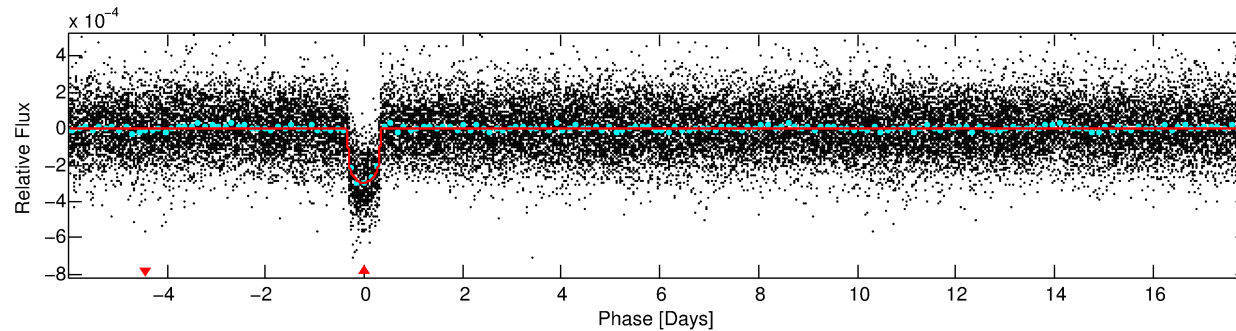
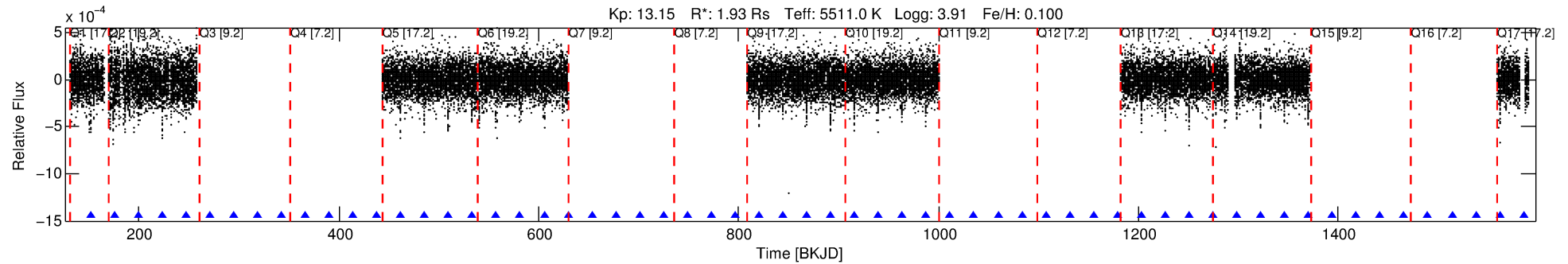
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010663396-01

No Significant Match Found

DV One-Page Summary

KIC: 10663396 Candidate: 1 of 1 Period: 23.899 d
KOI: K02046.01 Corr: 0.988



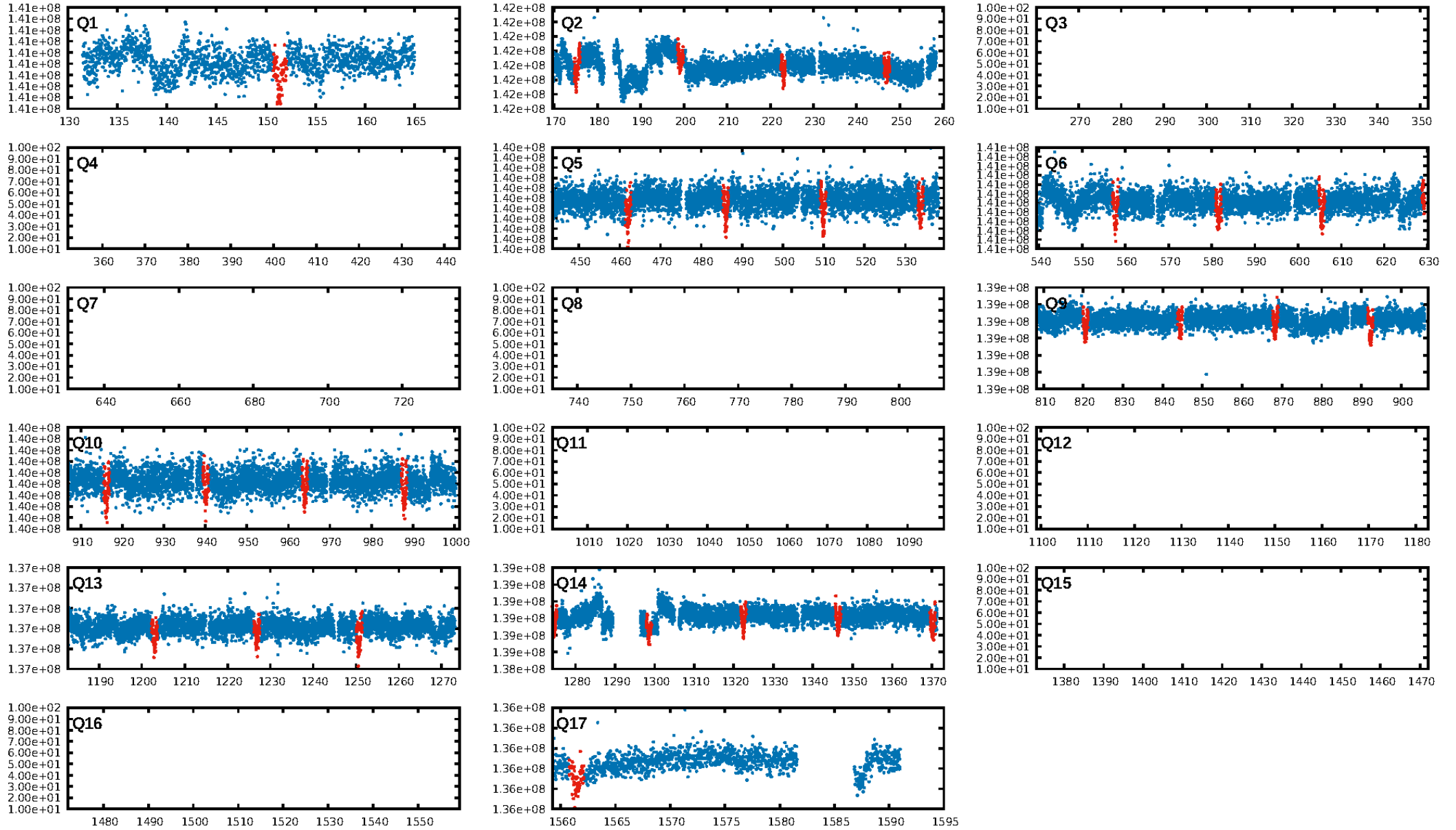
DV Fit Results:

Period = 23.89895 [0.00014] d
Epoch = 151.4009 [0.0047] BKJD
Rp/R* = 0.0167 [0.0014]
a/R* = 8.61 [2.82]
b = 0.68 [0.27]
Seff = 108.56 [40.40]
Teq = 823 [77] K
Rp = 3.52 [0.97] Re
a = 0.1684 [0.0402] AU
Ag = 30.05 [16.56] [1.75σ]
Teffp = 2979 [309] K [6.77σ]

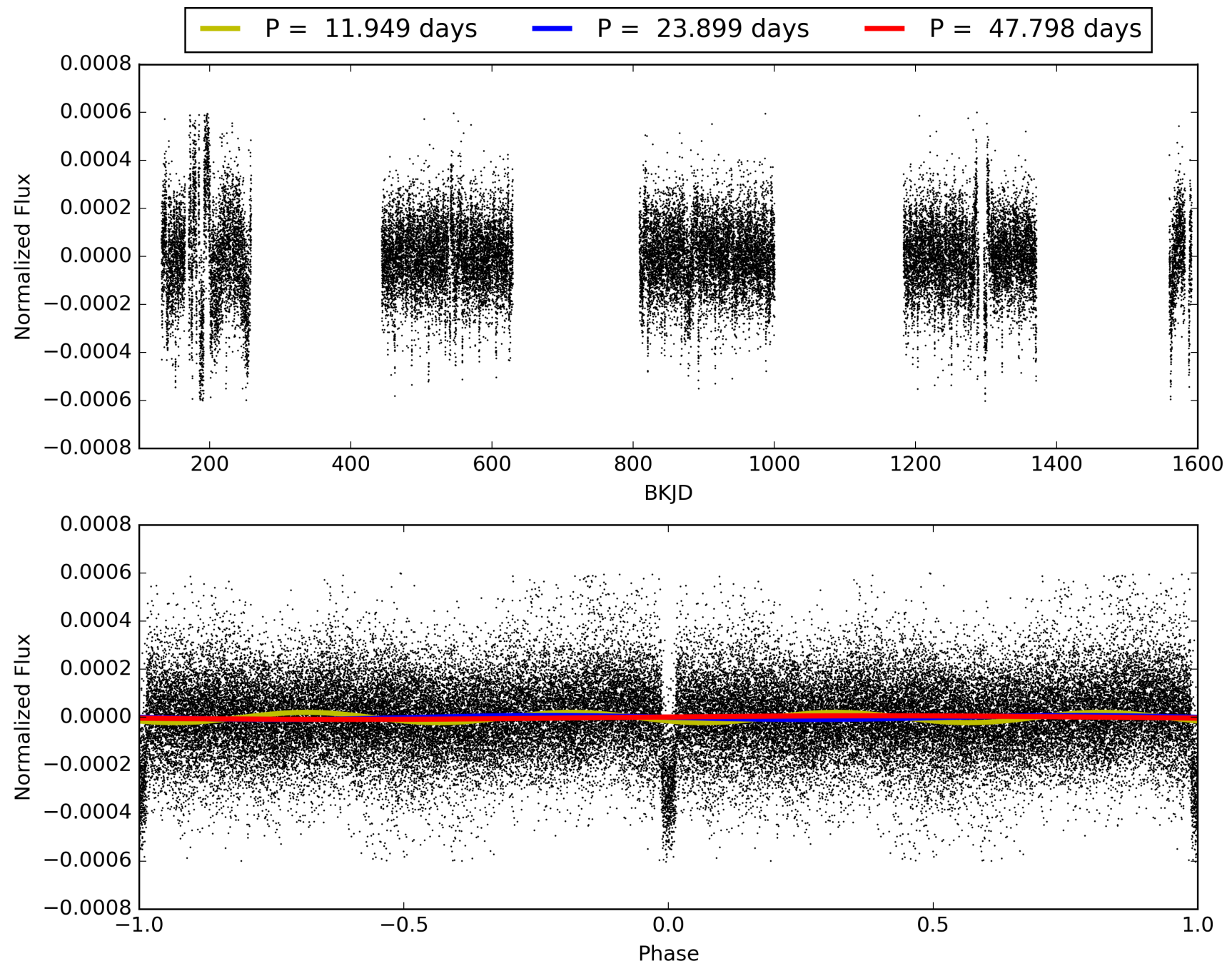
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 74.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.37e-168
RollingBand-fgt: 1.00 [28/28]
GhostDiagnostic-chr: -119.9
Centroid-sig: 28.2%
Centroid-so: 0.444 arcsec [1.61σ]
OotOffset-rm: 0.440 arcsec [1.50σ]
KicOffset-rm: 0.613 arcsec [1.58σ]
OotOffset-st: 4/0/0/3 [7]
KicOffset-st: 4/0/0/3 [7]
DiffImageQuality-fgm: 1.00 [7/7]
DiffImageOverlap-fno: 1.00 [8/8]

TCE 010663396-01, PDC Light Curves

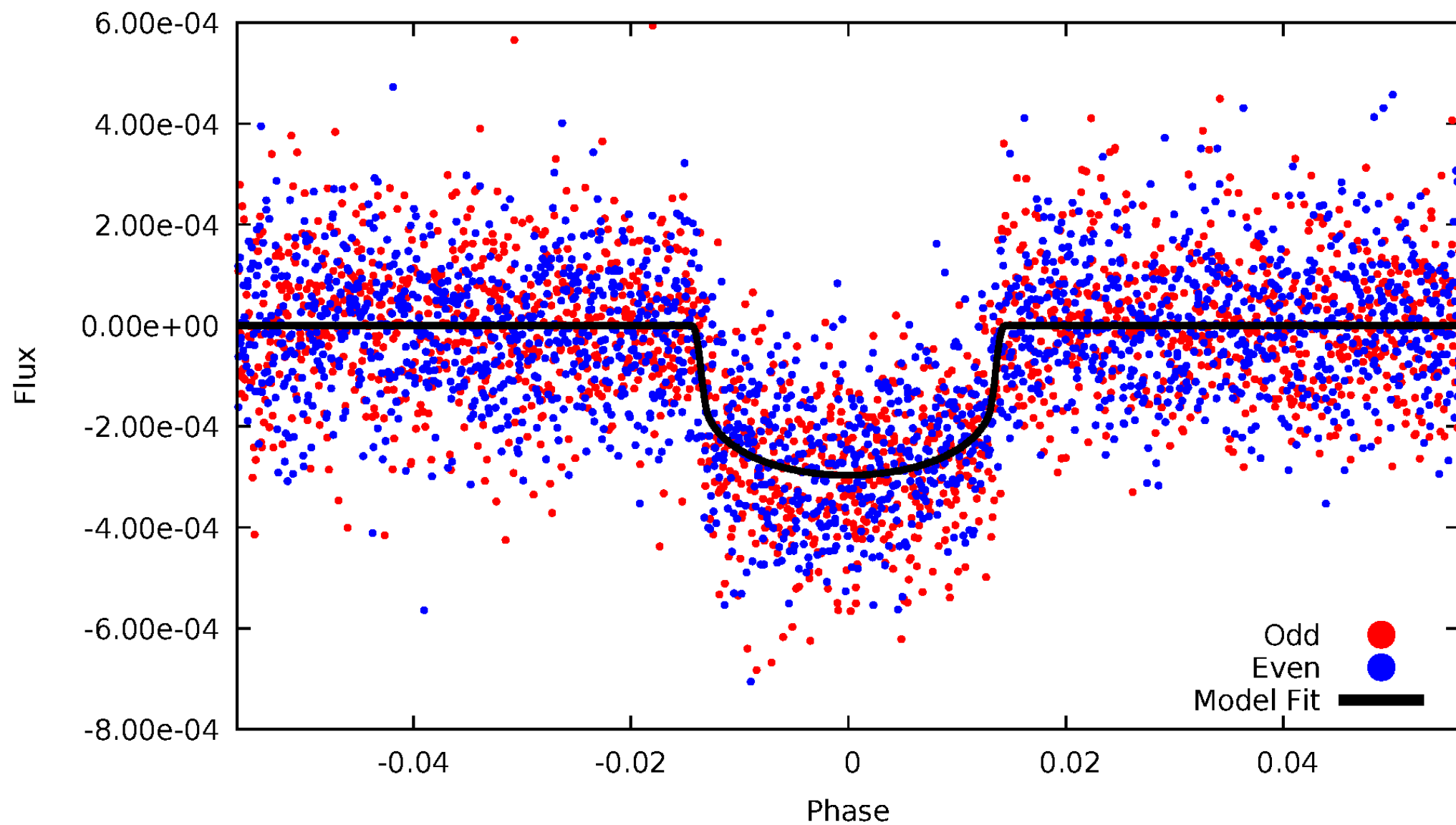


TCE 010663396-01



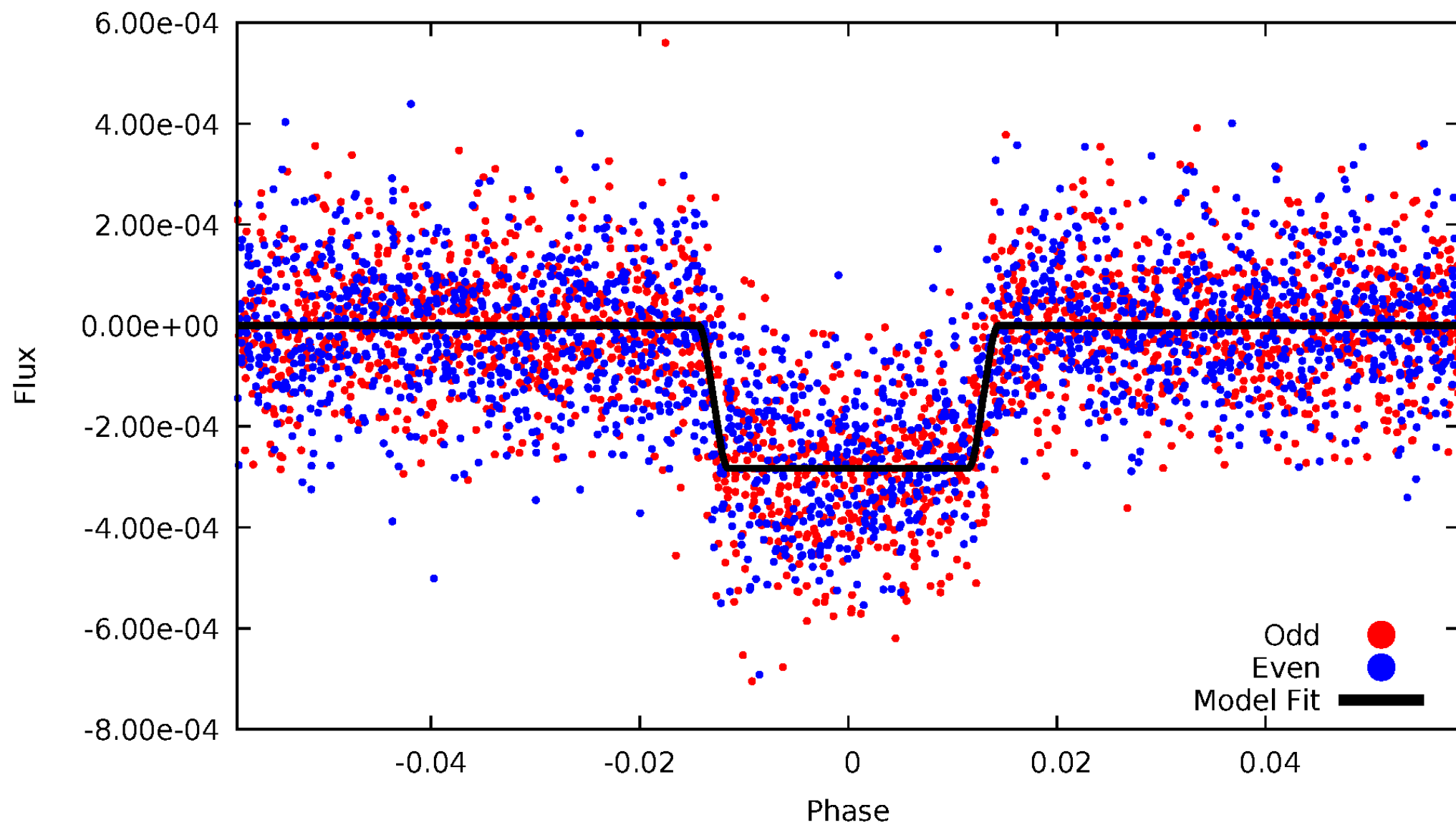
DV Odd/Even

TCE 010663396-01

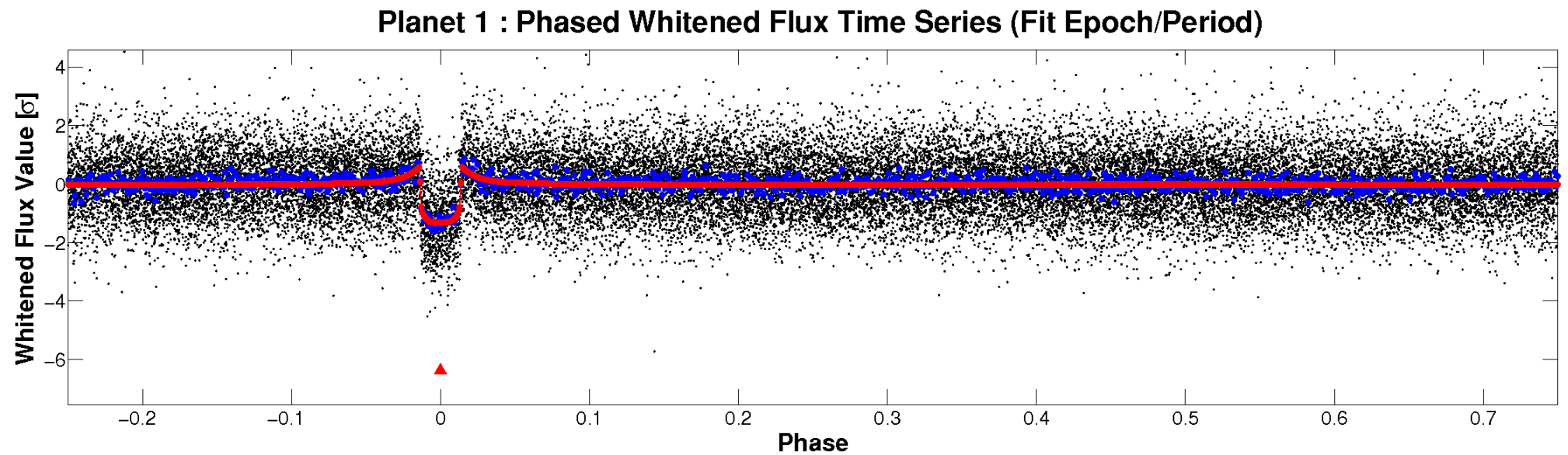
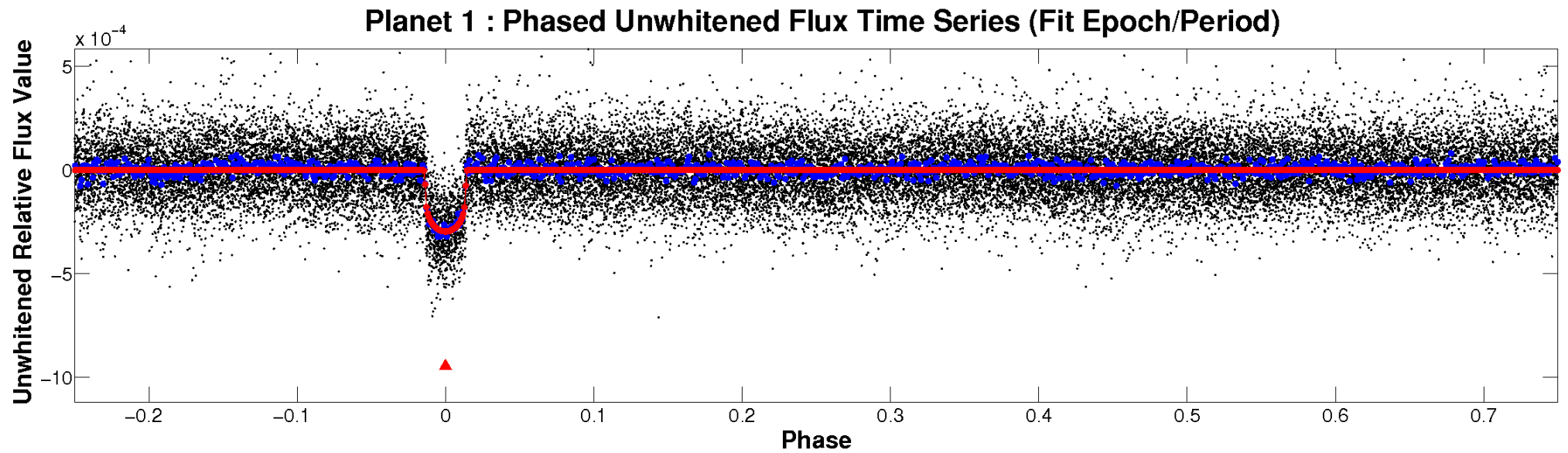


ALT Odd/Even

TCE 010663396-01

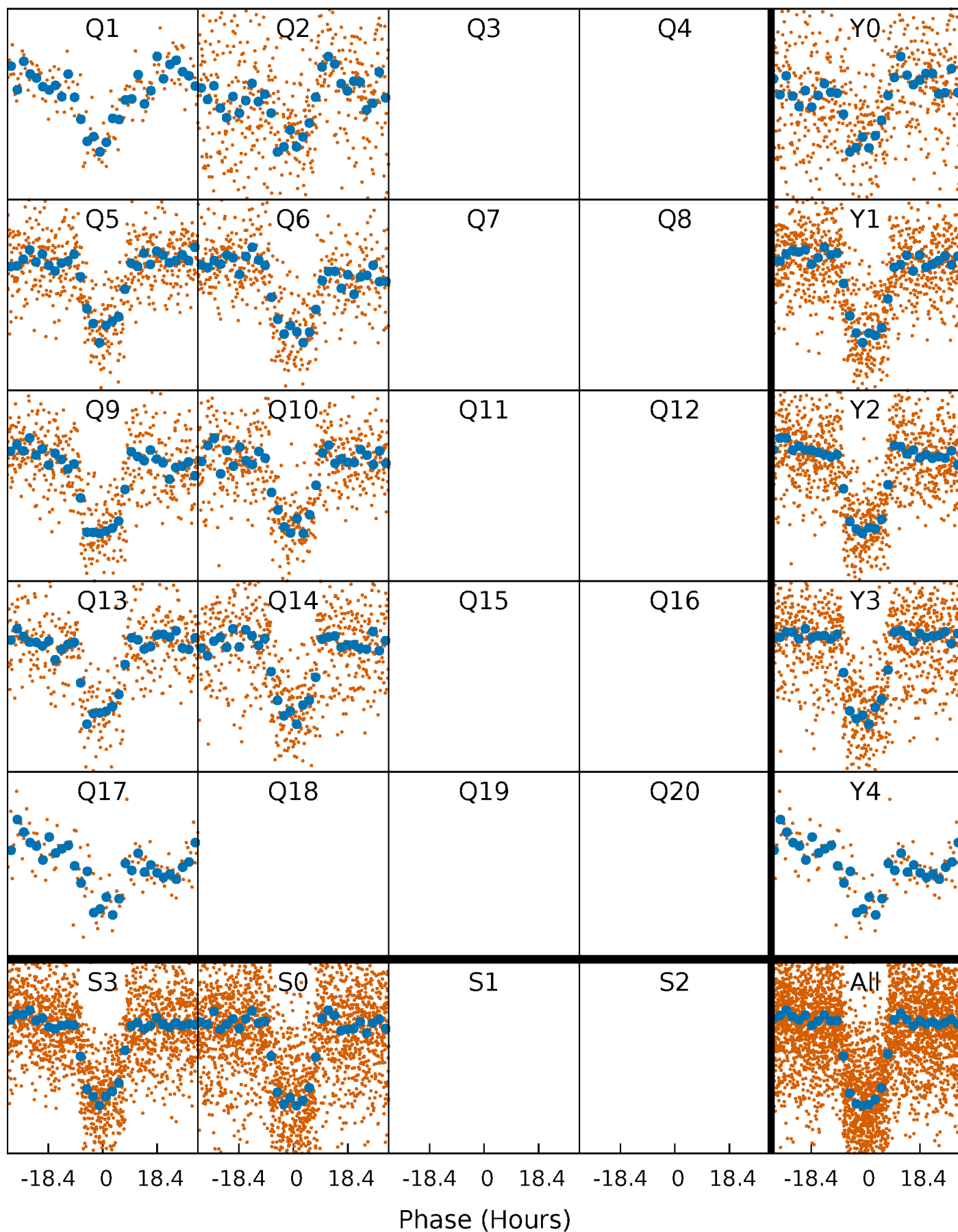


Non-Whitened Vs. Whitened Light Curve



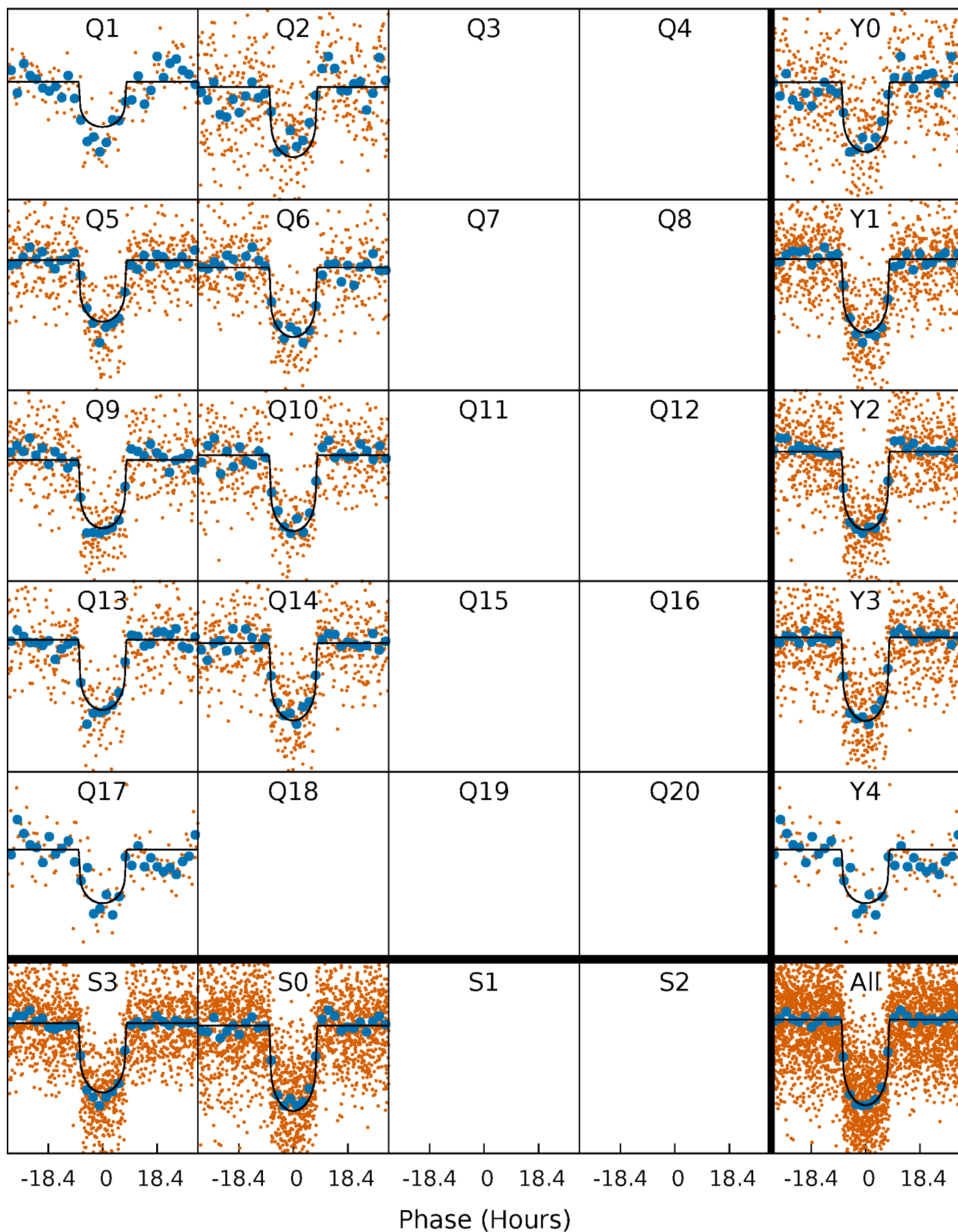
PDC Quarter-Phased Transit Curves

TCE 010663396-01 $P = 23.898946$ Days $T_0 = 151.400913$ (BKJD)



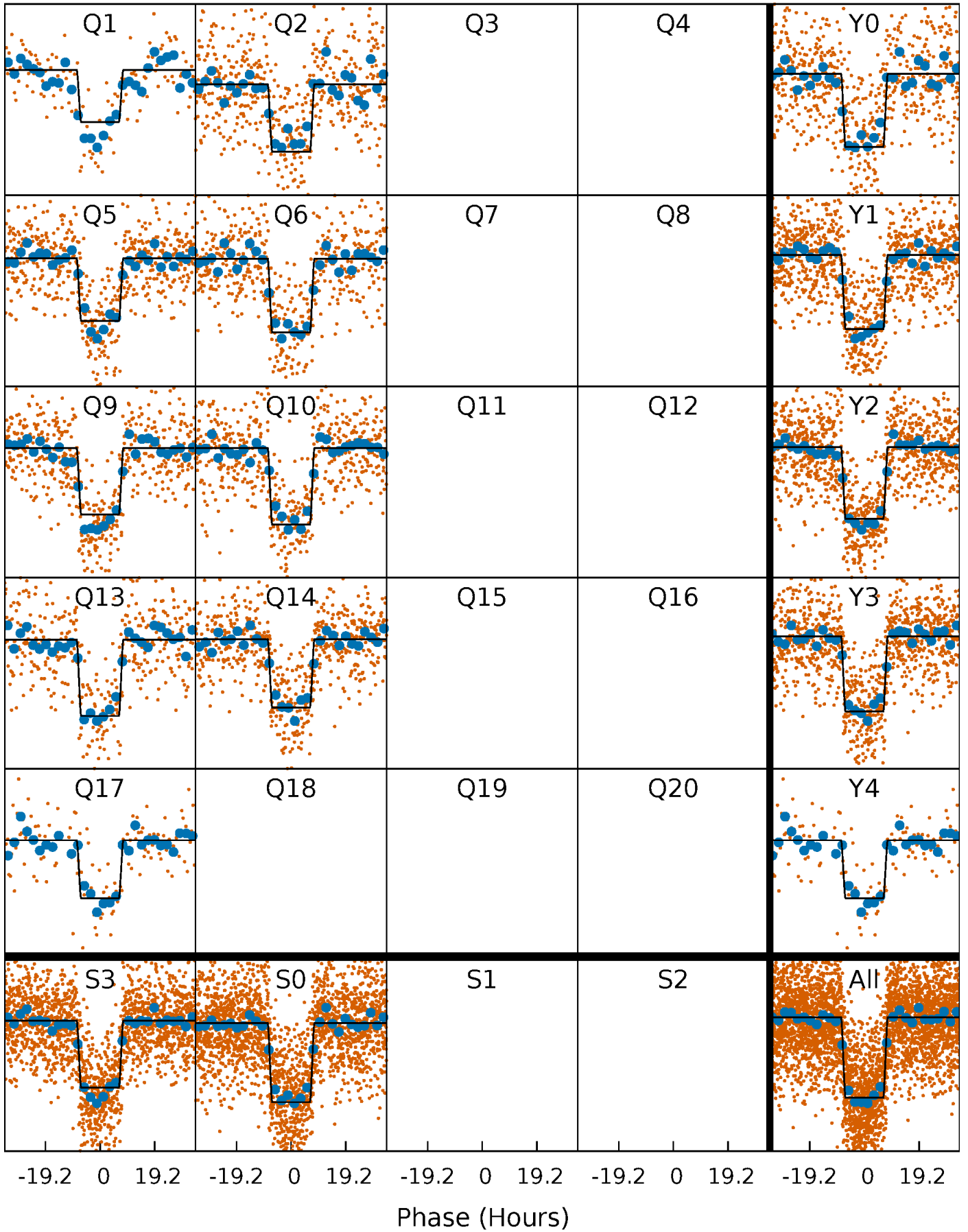
DV Quarter-Phased Transit Curves

TCE 010663396-01 P= 23.898946 Days $T_0=151.400913$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

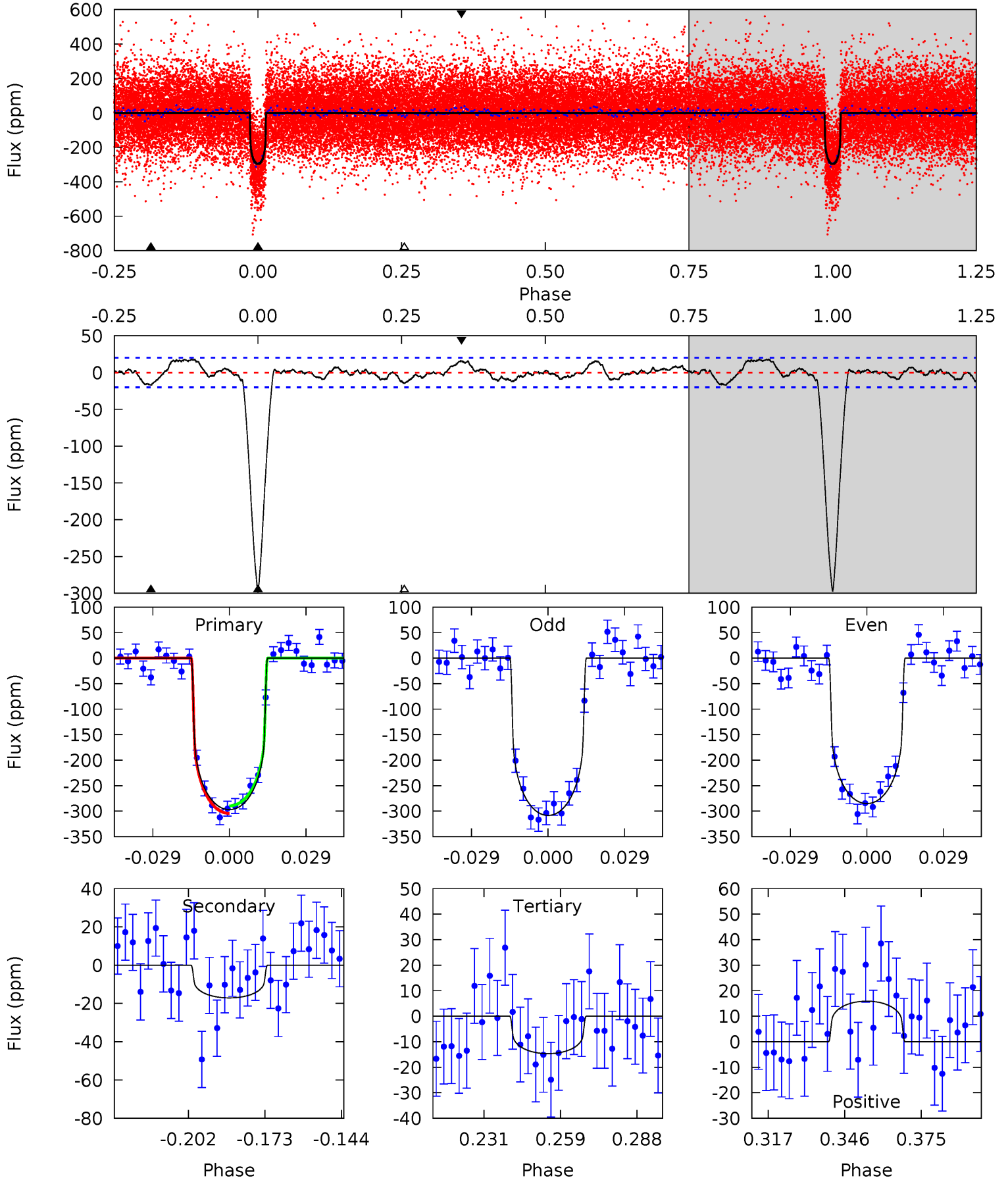
TCE 010663396-01 P= 23.898285 Days $T_0=151.420743$ (BKJD)



DV Model-Shift Uniqueness Test

010663396-01, $P = 23.898946$ Days, $E = 127.501967$ Days

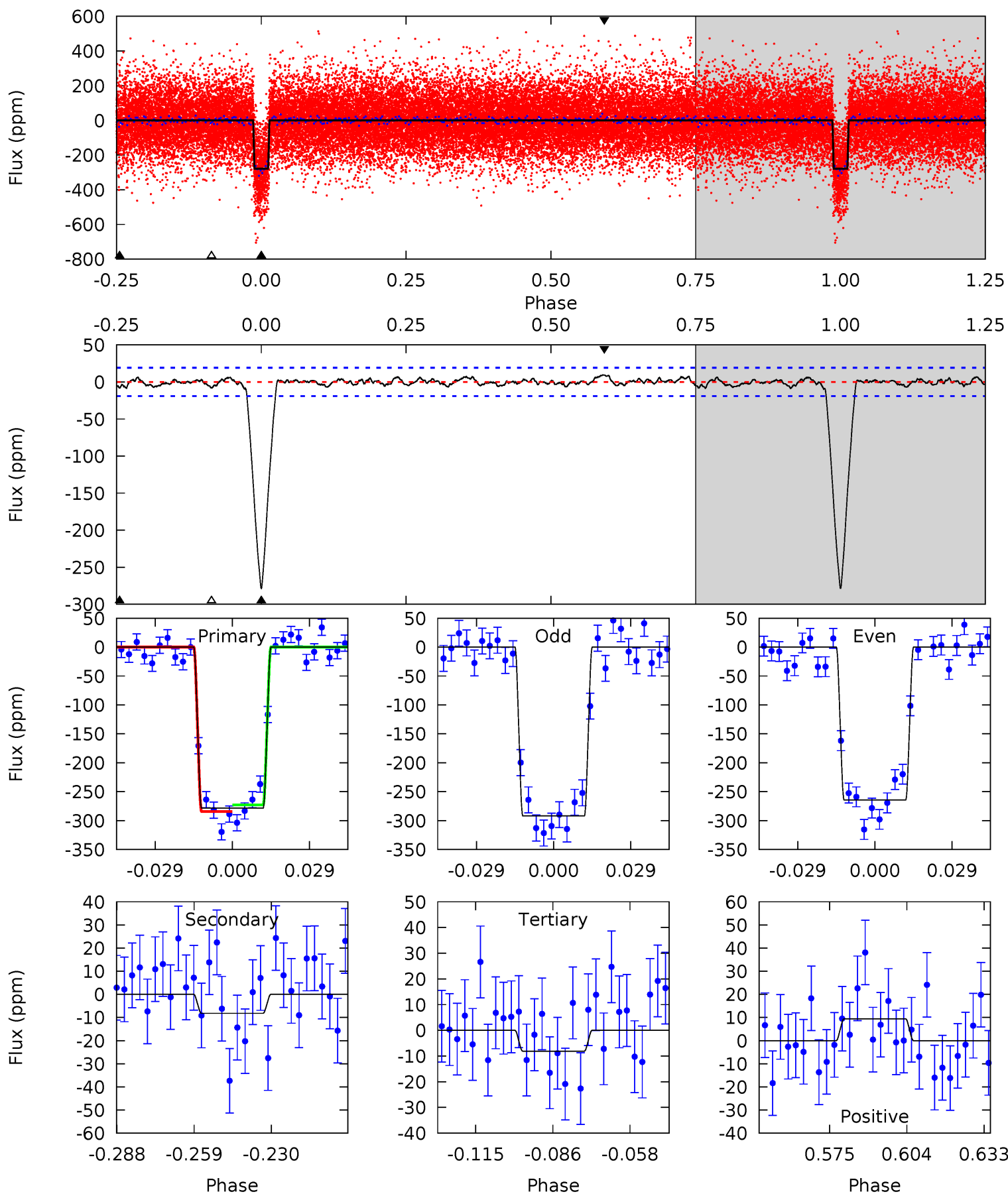
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
71.0	4.08	3.50	3.80	4.82	2.19	1.66	67.4	67.2	0.58	0.29	2.79	0.99	0.06	1.78



Alt Model-Shift Uniqueness Test

010663396-01, $P = 23.898285$ Days, $E = 127.522458$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
70.2	2.07	2.04	2.37	4.82	2.19	0.84	68.2	67.9	0.03	-0.30	3.47	0.98	0.03	1.44



Stellar Parameters For KIC 010663396

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5511^{+82}_{-74}	$3.914^{+0.210}_{-0.090}$	$0.100^{+0.150}_{-0.100}$	$1.930^{+0.340}_{-0.510}$	$1.115^{+0.110}_{-0.152}$	$0.218^{+0.264}_{-0.062}$
	+1%/-1%	+5%/-2%	+150%/-100%	+18%/-26%	+10%/-14%	+121%/-28%
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 010663396-01 / KOI 2046.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-17 ± 4	$3.42^{+0.47}_{-0.51}$	1140^{+58}_{-73}	3280^{+154}_{-156}	23^{+10}_{-7}
Alt.	-8 ± 4	$3.44^{+0.47}_{-0.51}$	1138^{+51}_{-72}	2949^{+184}_{-255}	11^{+7}_{-5}

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

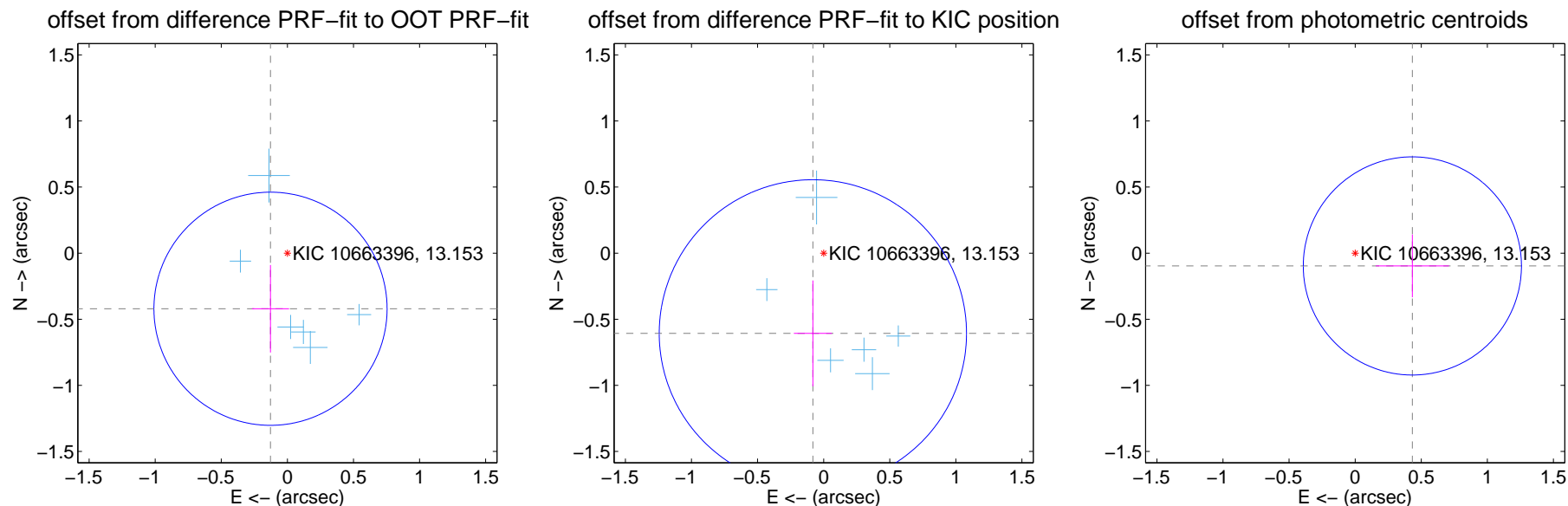
DV Centroid Data

Supplemental centroid analysis for 010663396-01. Kepler magnitude: 13.15. Transit SNR 37.53

There are 7 quarters with good PRF difference image offsets

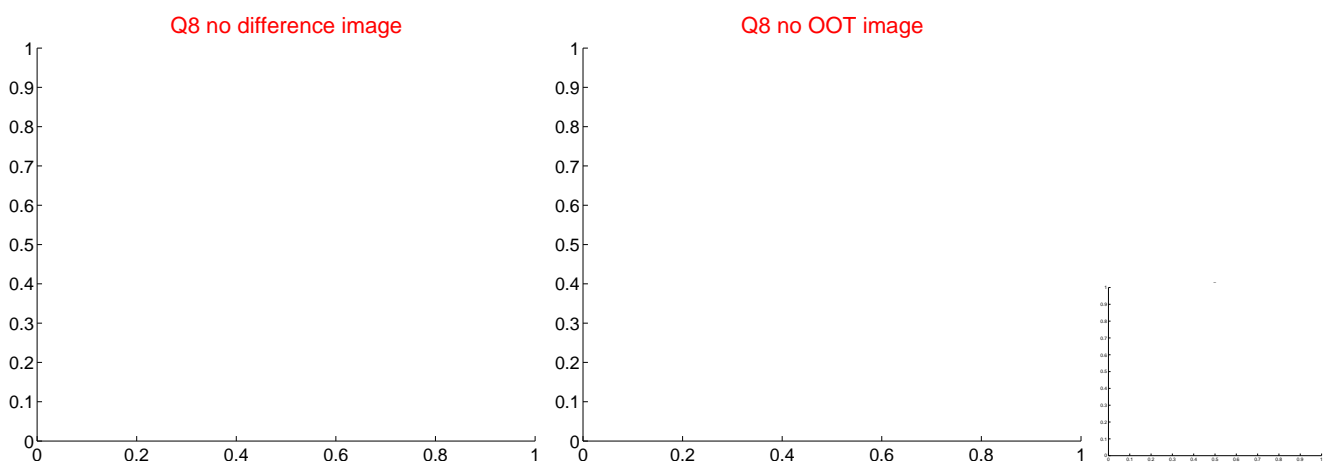
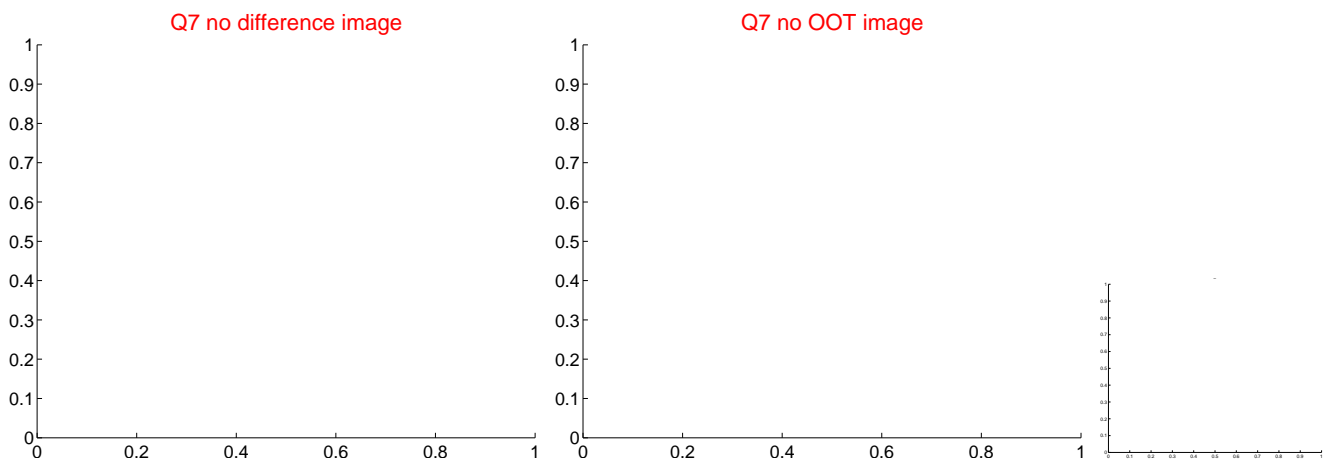
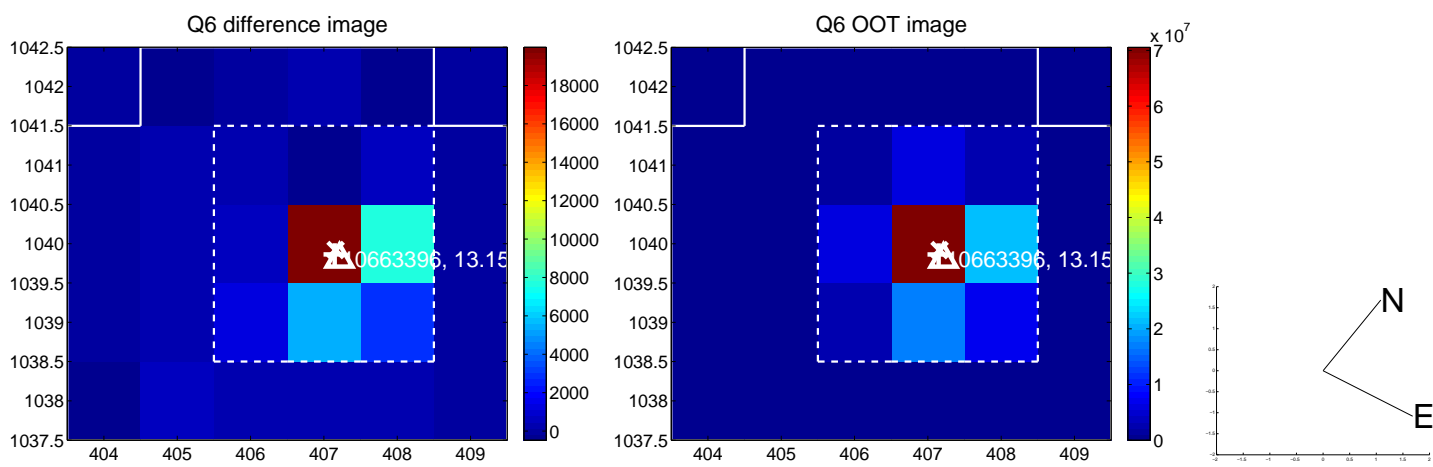
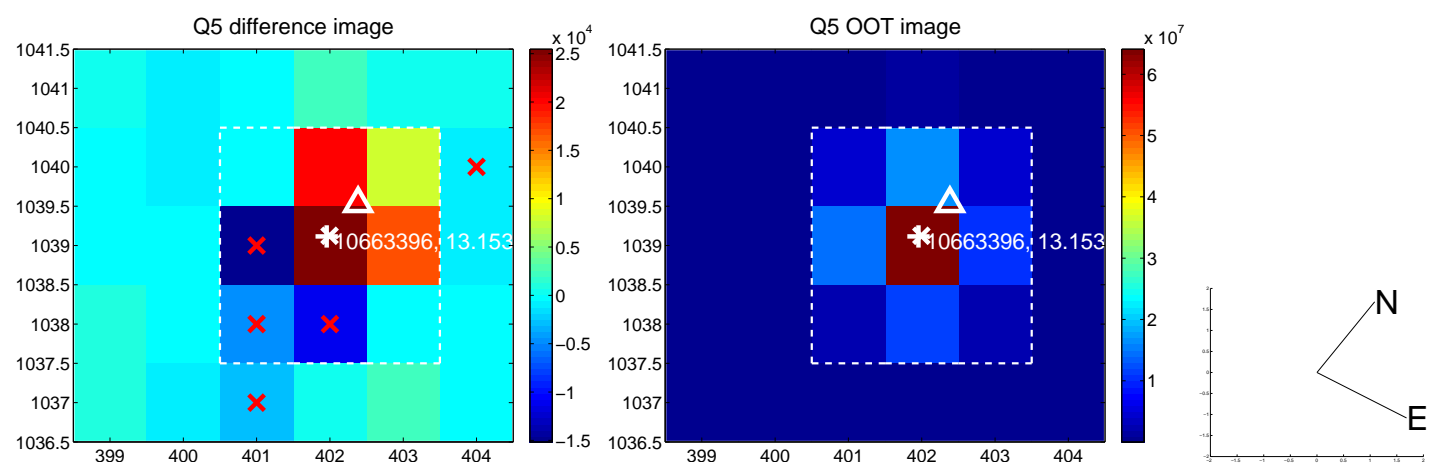
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.440 ± 0.294	1.50	0.128 ± 0.140	-0.421 ± 0.331
PRF-fit source offset from KIC position	0.613 ± 0.388	1.58	0.082 ± 0.144	-0.607 ± 0.400
photometric centroid source offset	0.44 ± 0.28	1.61	-0.43 ± 0.28	-0.10 ± 0.24

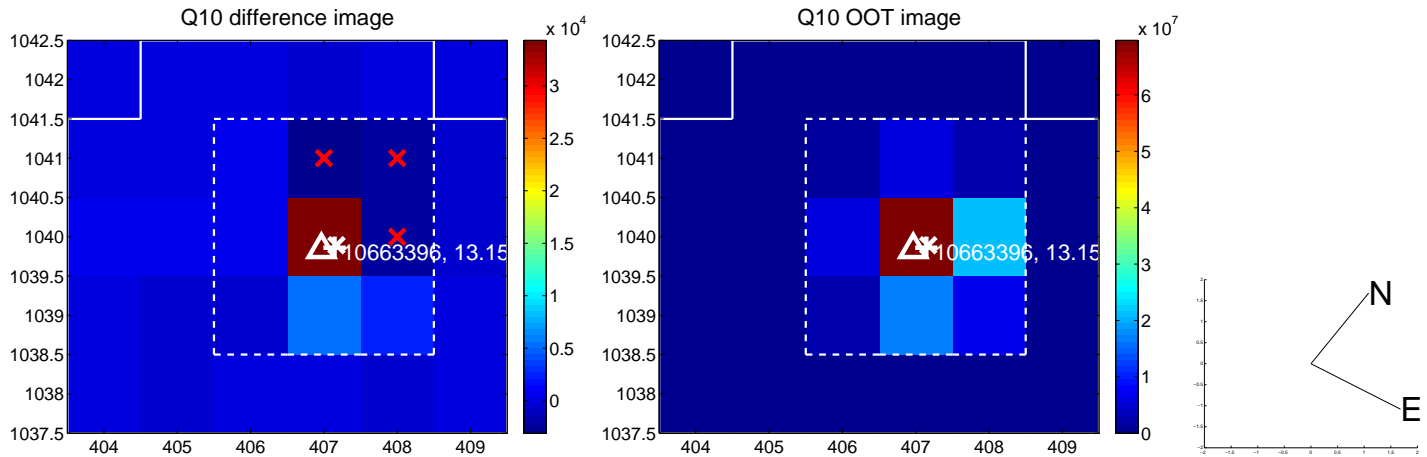
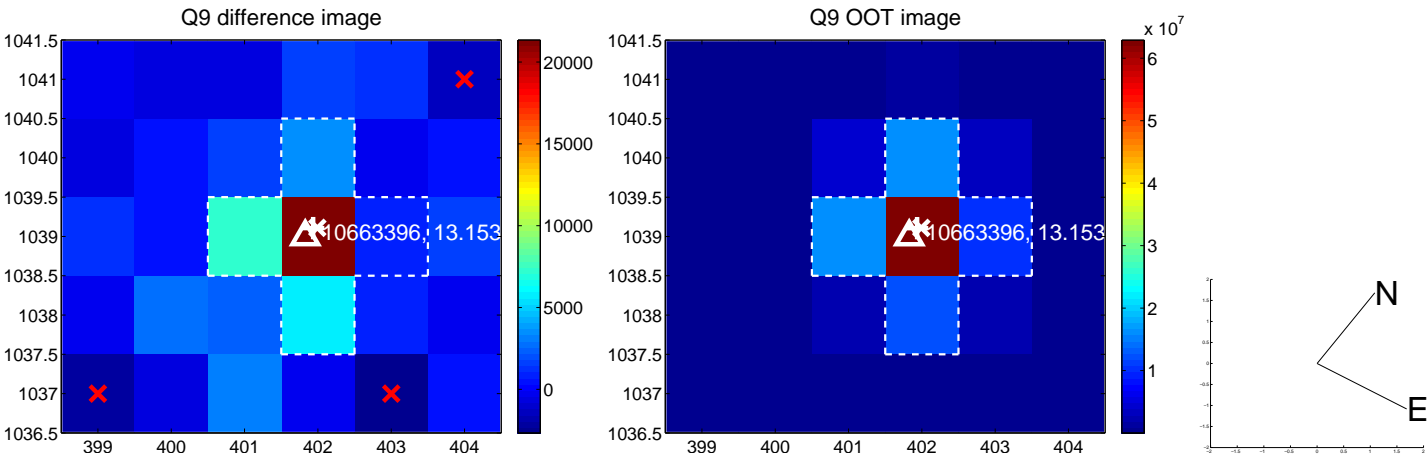


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

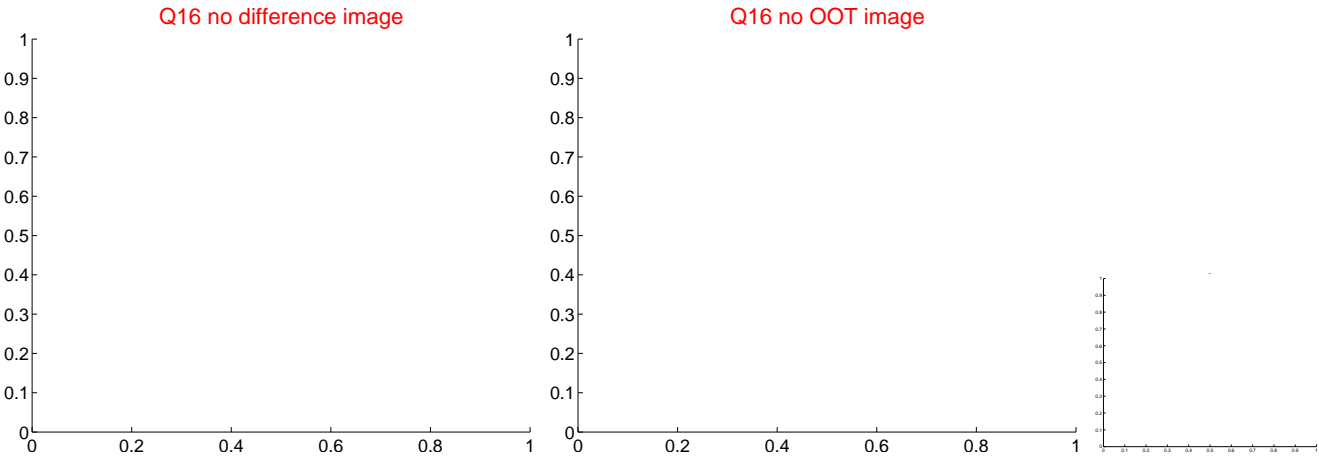
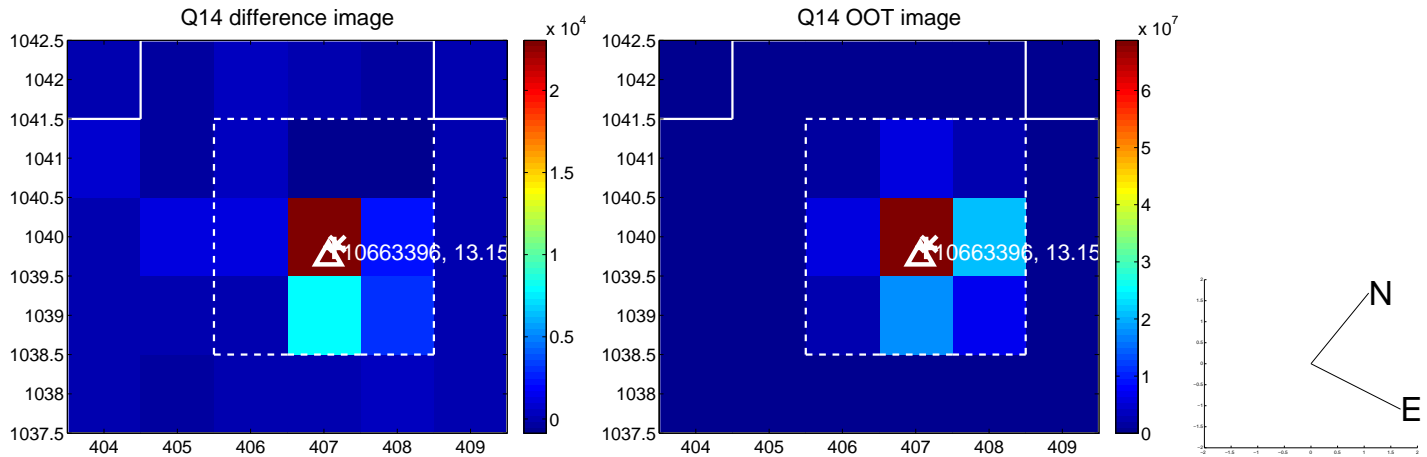
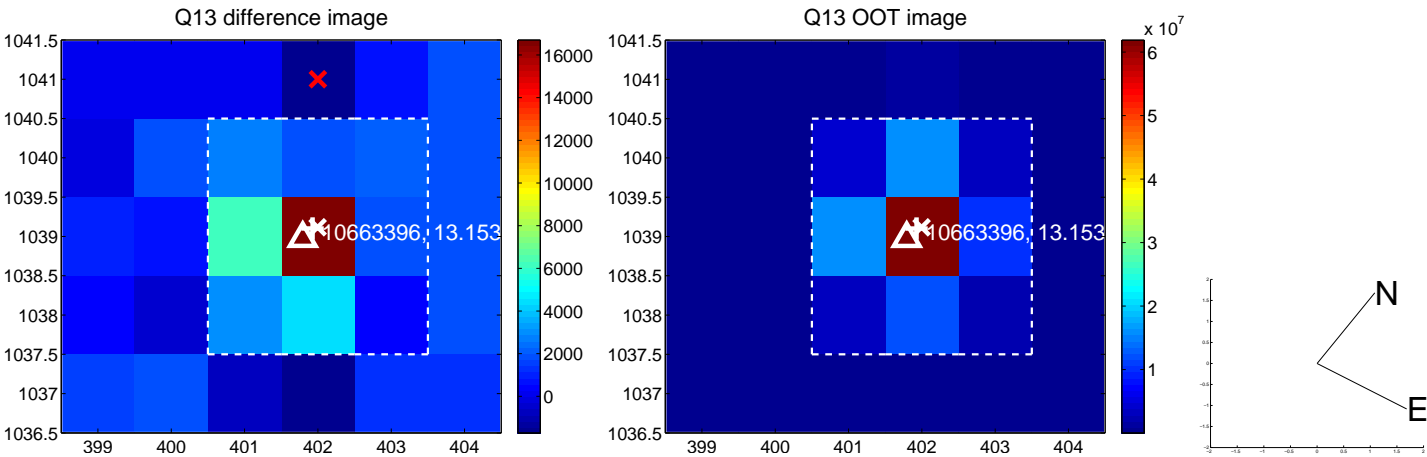
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



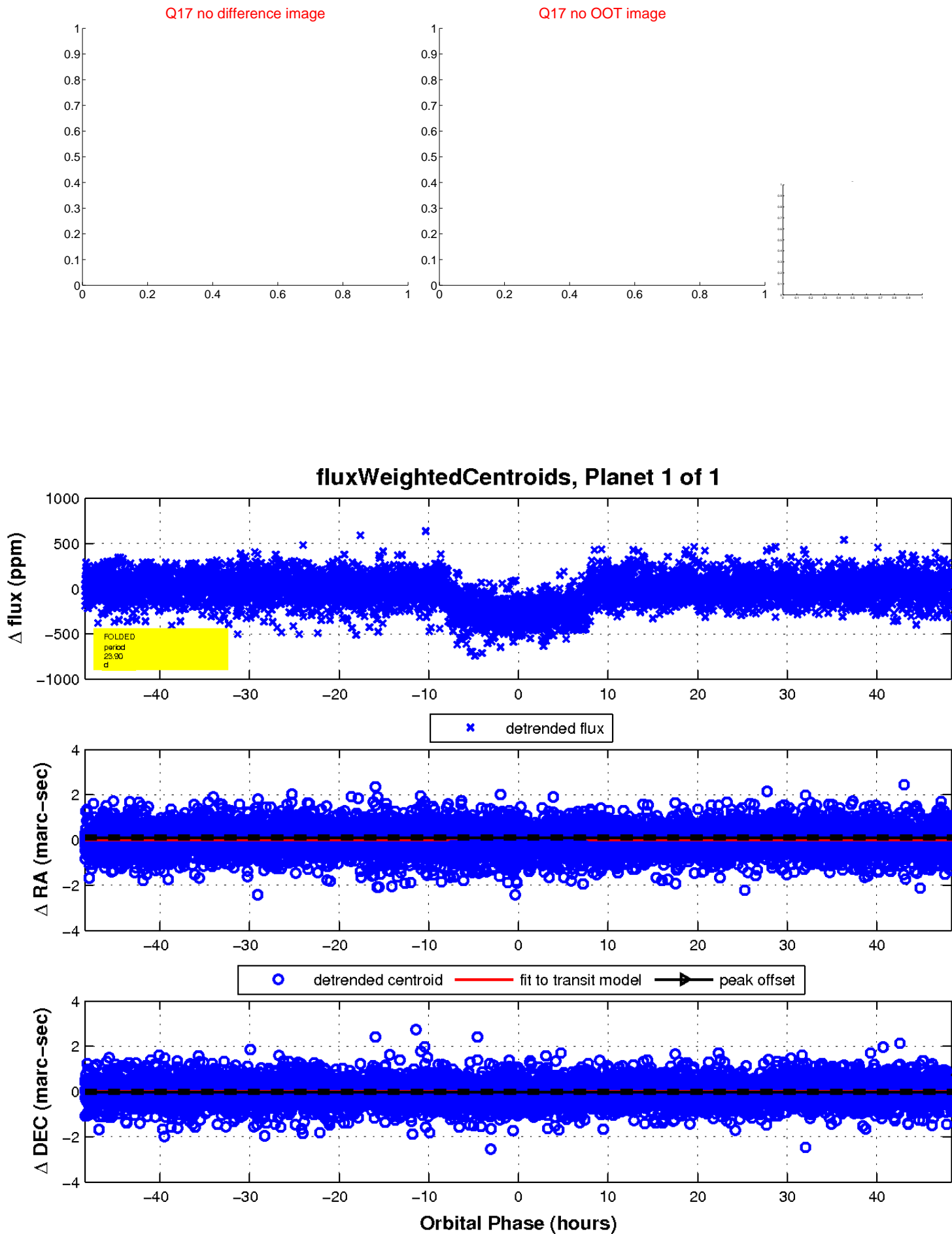
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

