

KIC 010202859

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})
010202859-01	OBS	No	4.588738	132.494744	13.7	24.561	8.4	8.0	1.54	6860	0.59	1354.83

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010202859-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_SATURATED

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

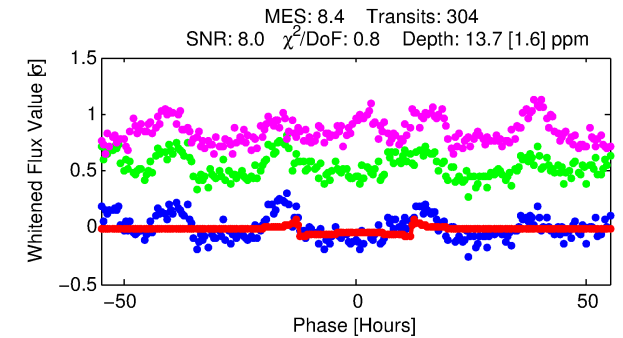
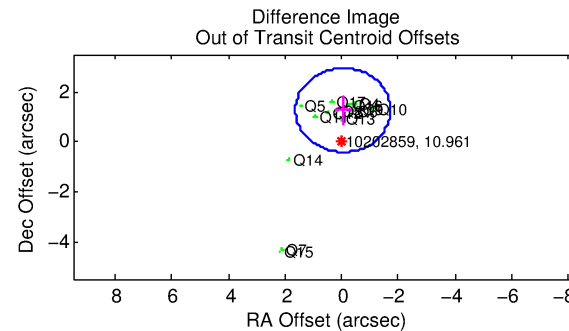
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

Ephemeris Match Information For 010202859-01

No Significant Match Found

KIC: 10202859 Candidate: 1 of 1 Period: 4.589 d



ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.44e-17
RollingBand-fgt: 1.00 [290/290]
GhostDiagnostic-chr: 2.913

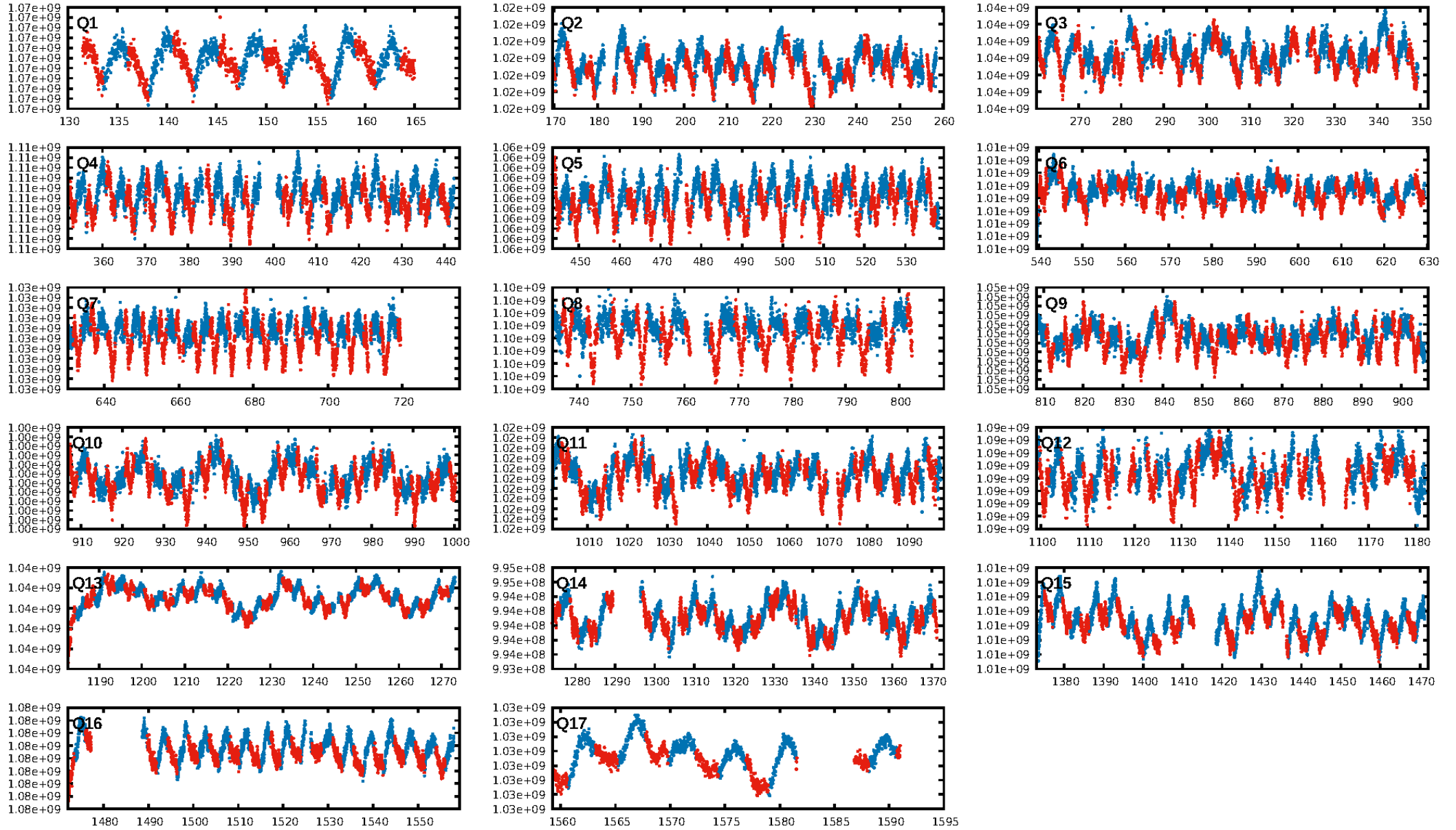
Centroid-sig: 0.0%

Centroid-so: 5.504 arcsec [5.99σ]

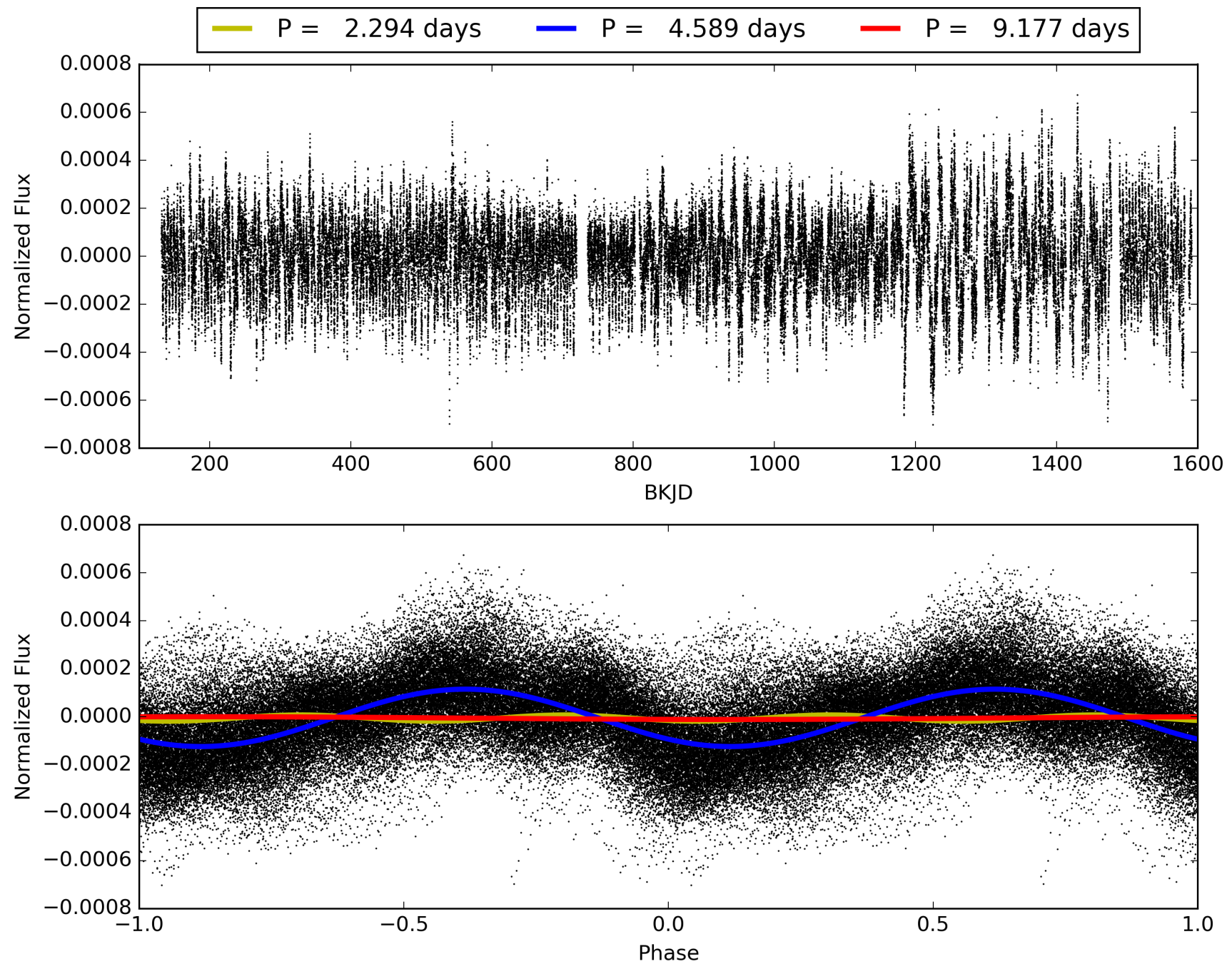
OotOffset-rm: 1.265 arcsec [2.26σ]
KicOffset-rm: 1.394 arcsec [2.63σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]

DiffImageQuality-fgm: 0.86 [12/14]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 010202859-01, PDC Light Curves

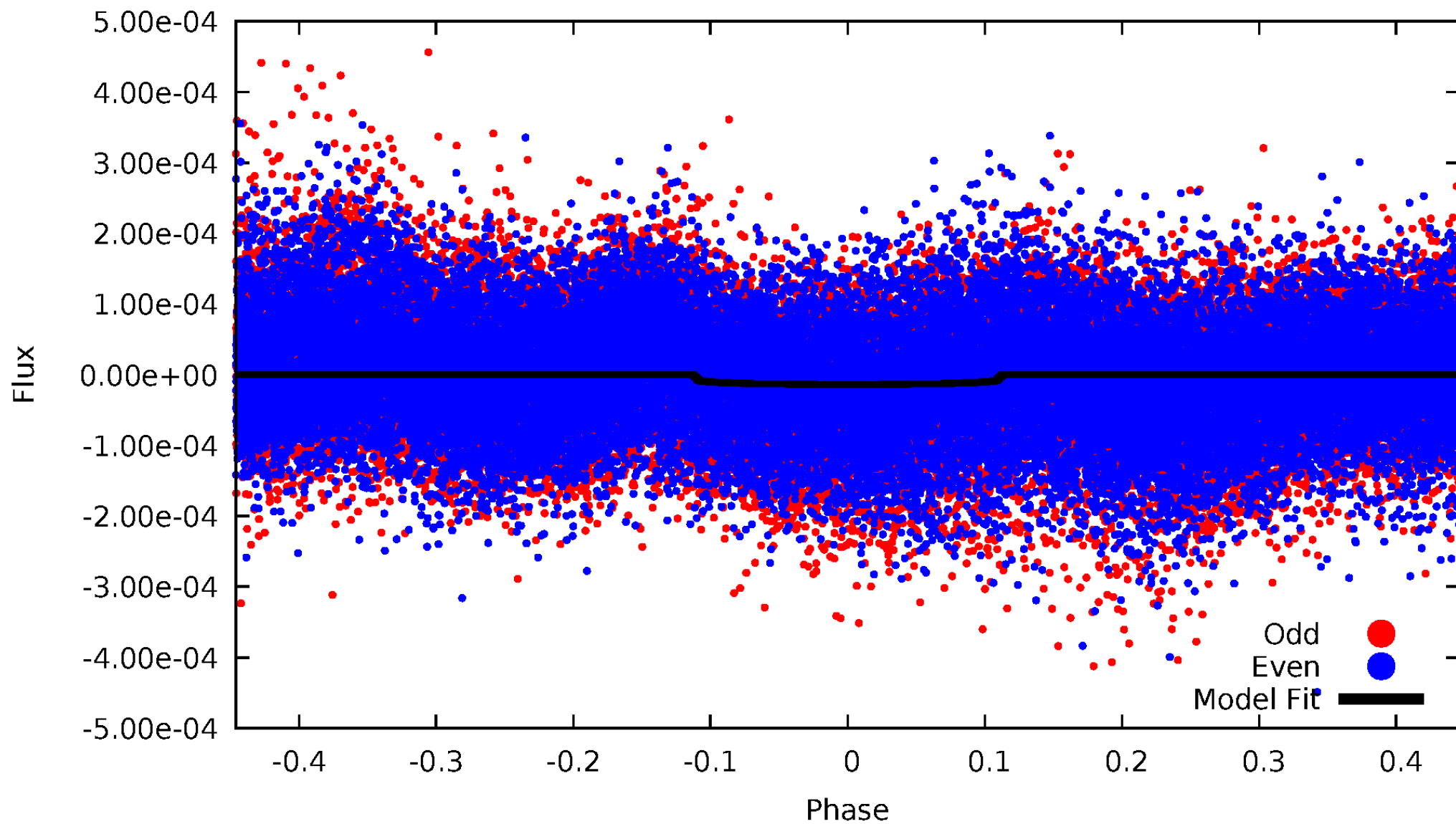


TCE 010202859-01



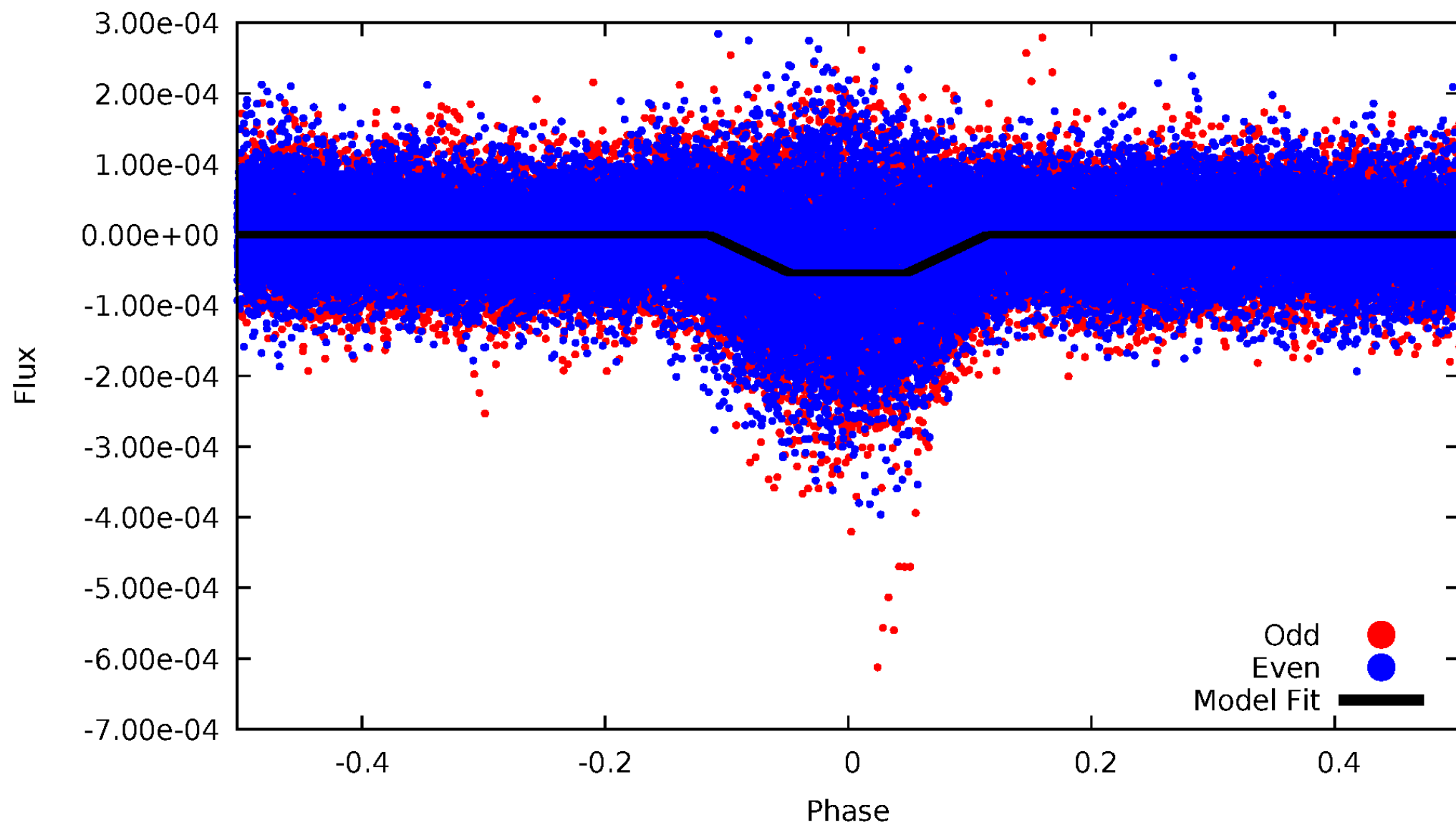
DV Odd/Even

TCE 010202859-01



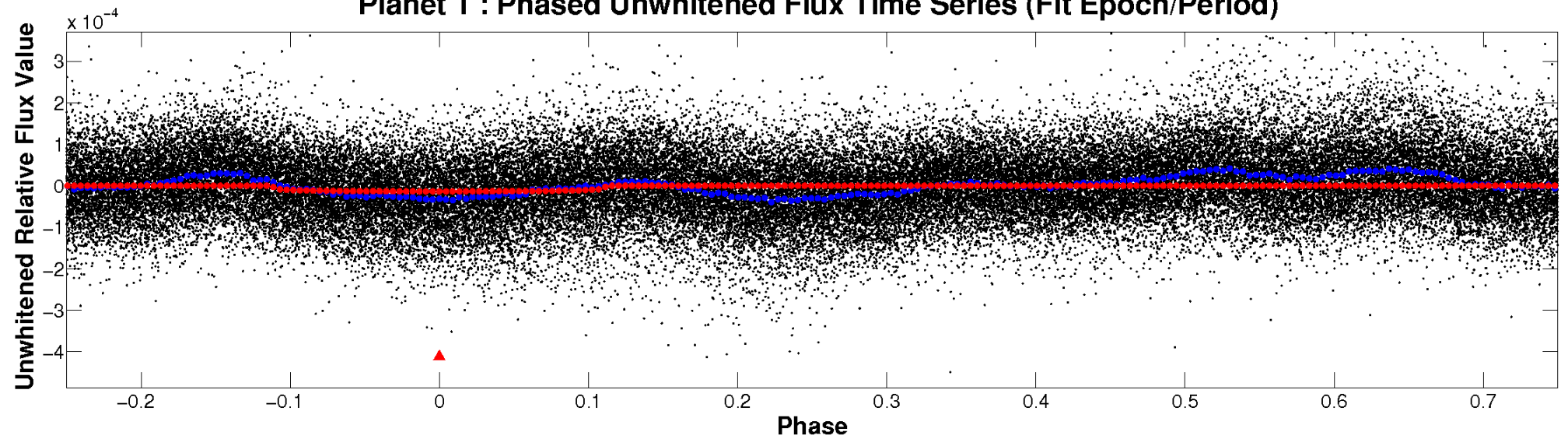
ALT Odd/Even

TCE 010202859-01

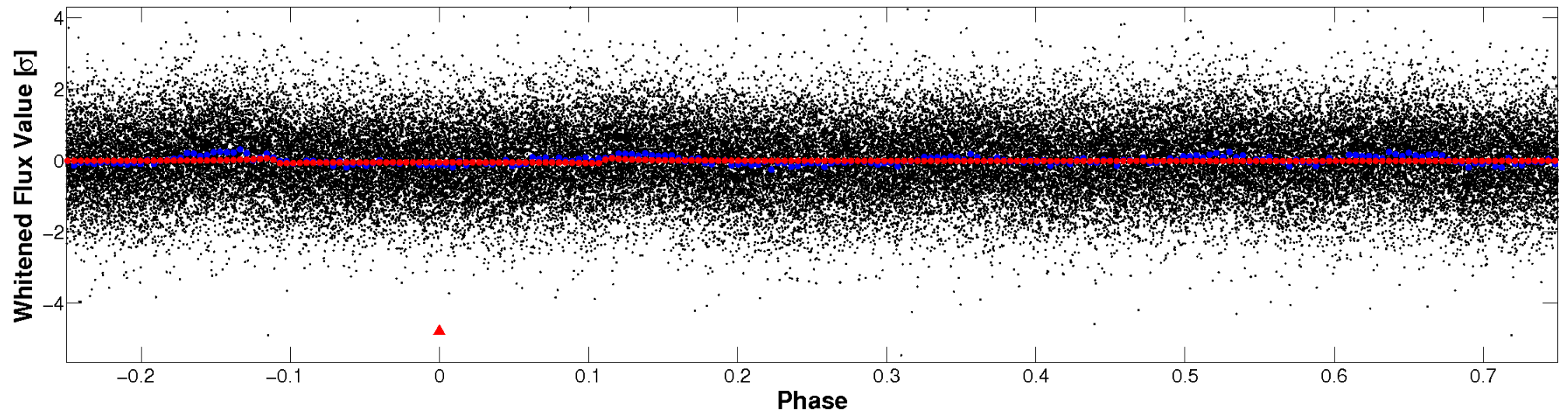


Non-Whitened Vs. Whitened Light Curve

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

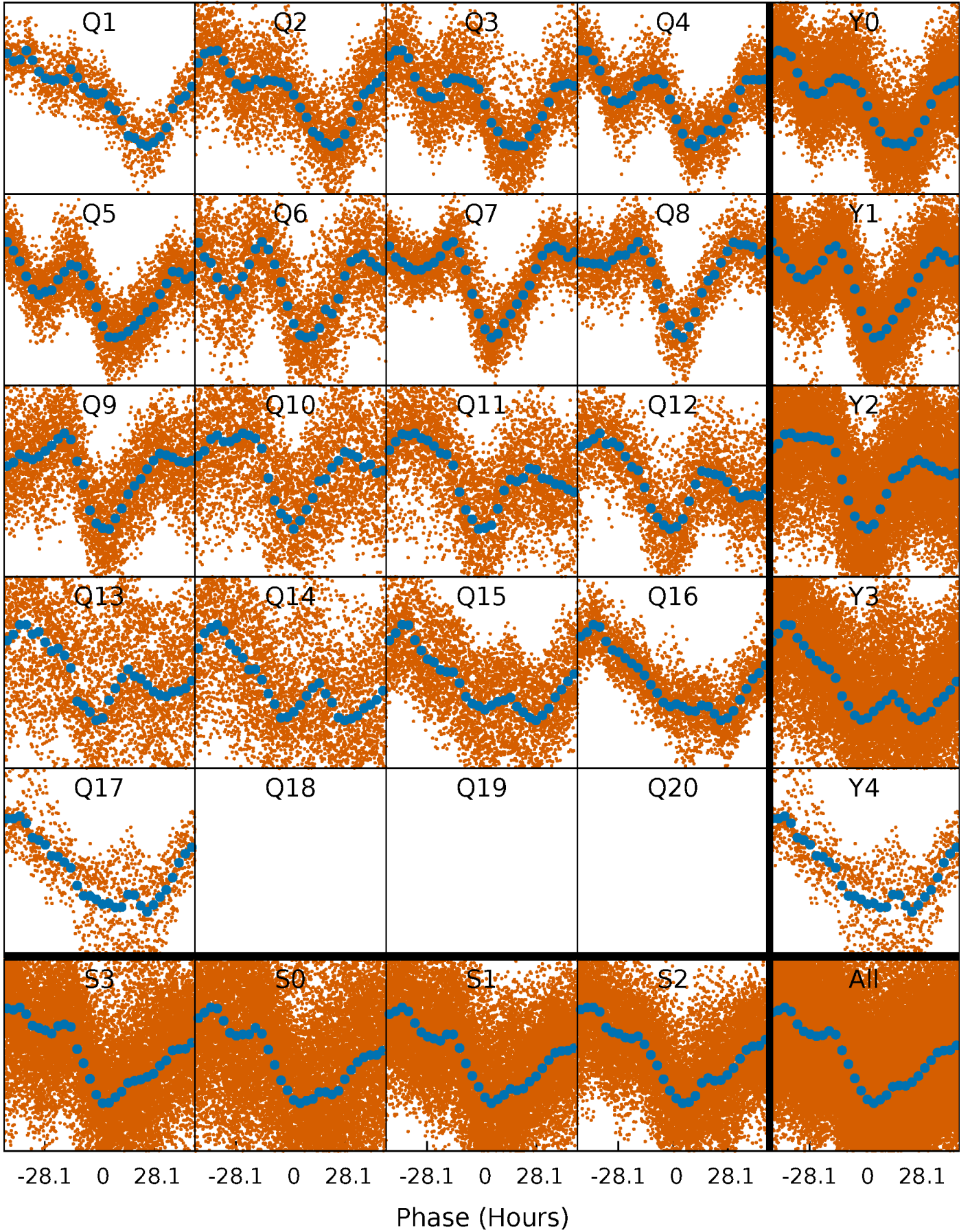


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



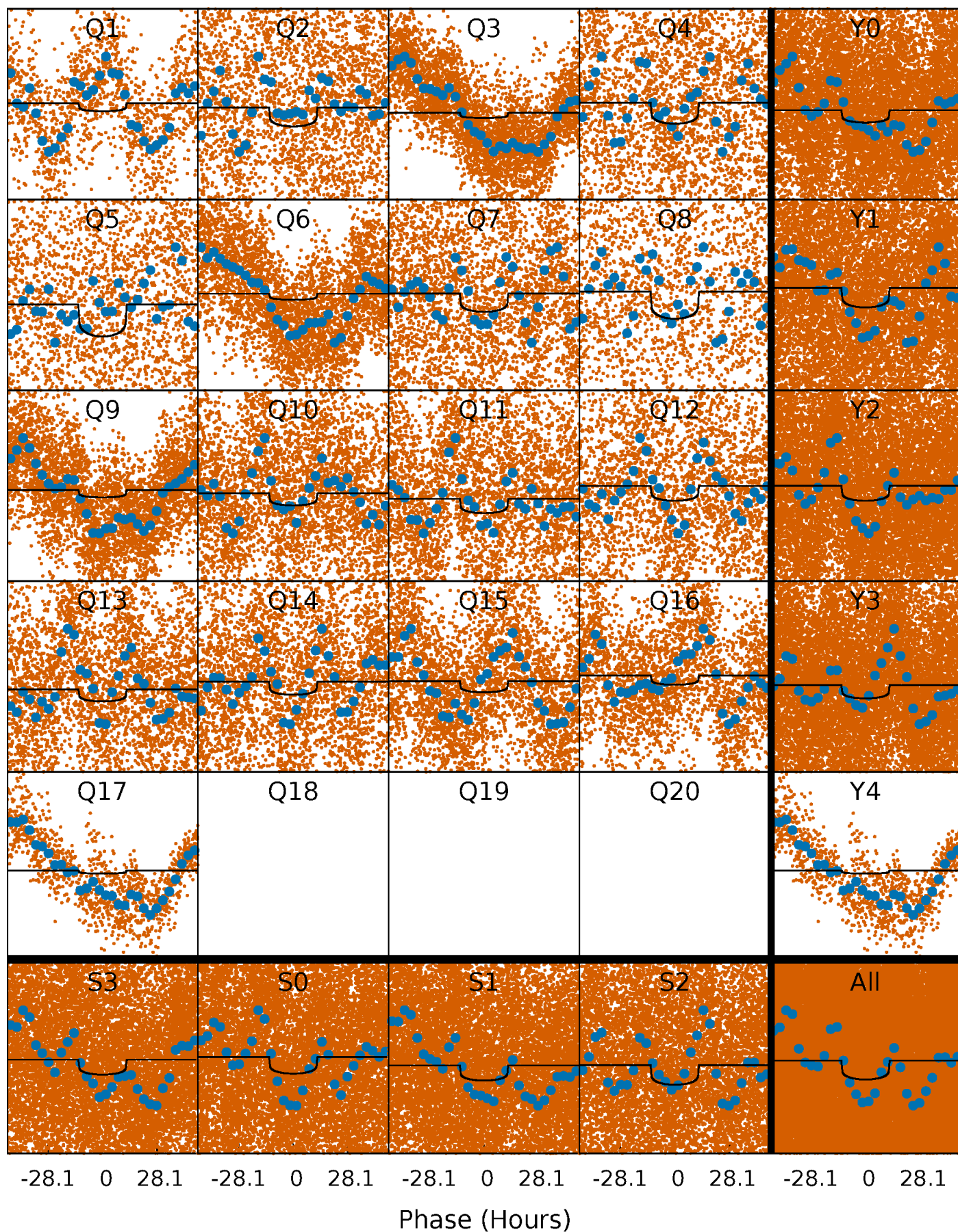
PDC Quarter-Phased Transit Curves

TCE 010202859-01 P= 4.588738 Days $T_0=132.494744$ (BKJD)



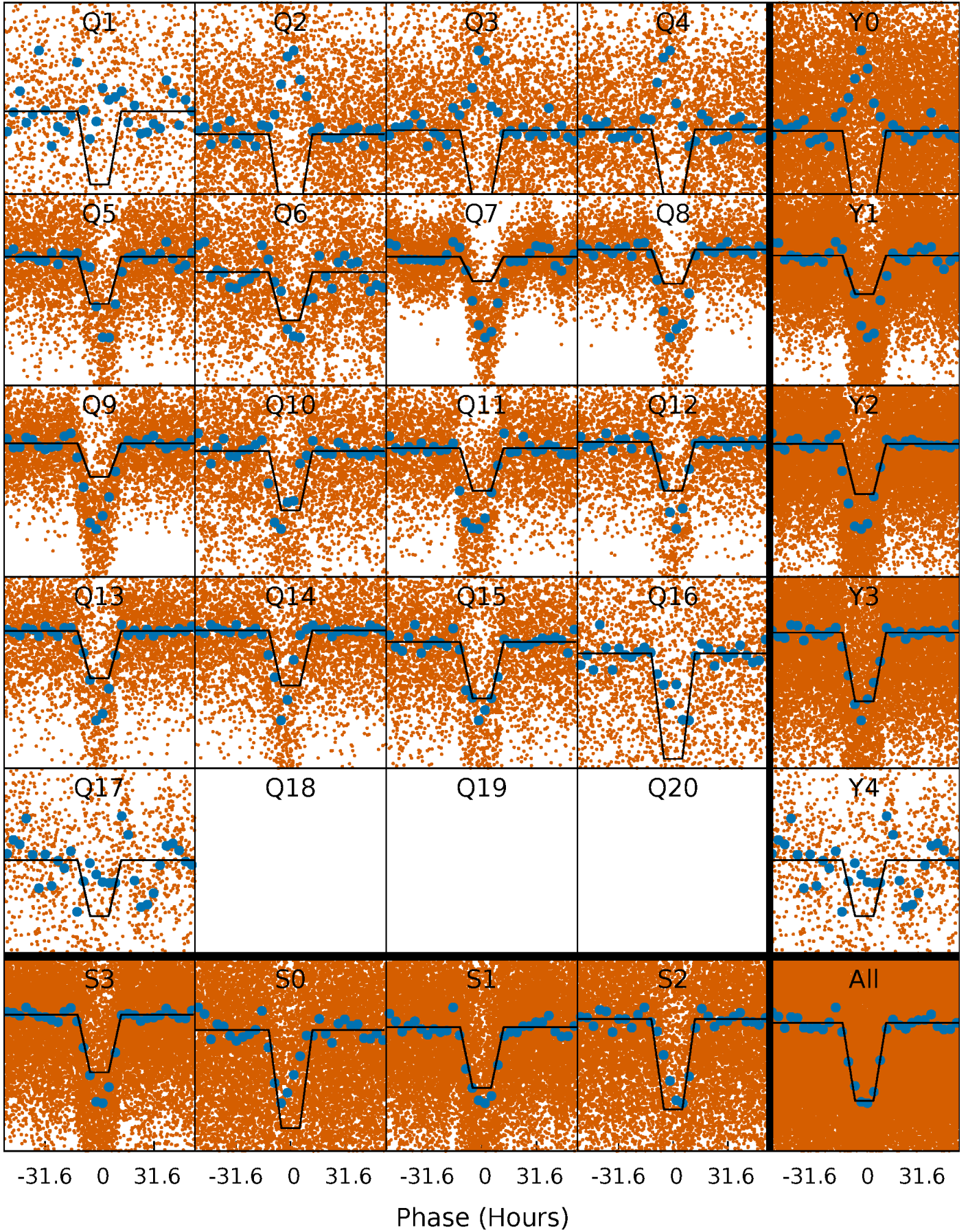
DV Quarter-Phased Transit Curves

TCE 010202859-01 P= 4.588738 Days $T_0=132.494744$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

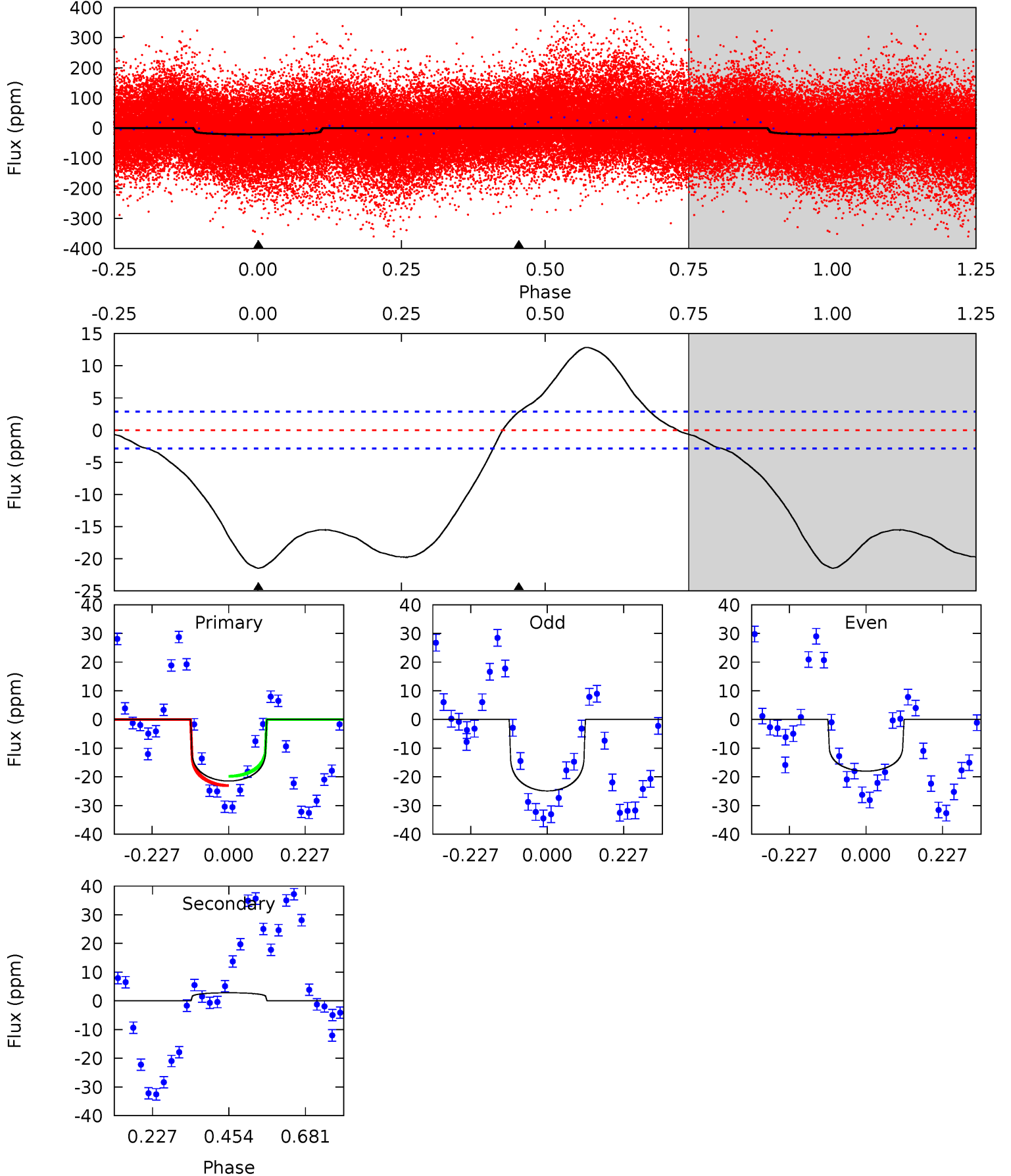
TCE 010202859-01 P= 4.589135 Days $T_0=132.449956$ (BKJD)



DV Model-Shift Uniqueness Test

010202859-01, P = 4.588738 Days, E = 127.906006 Days

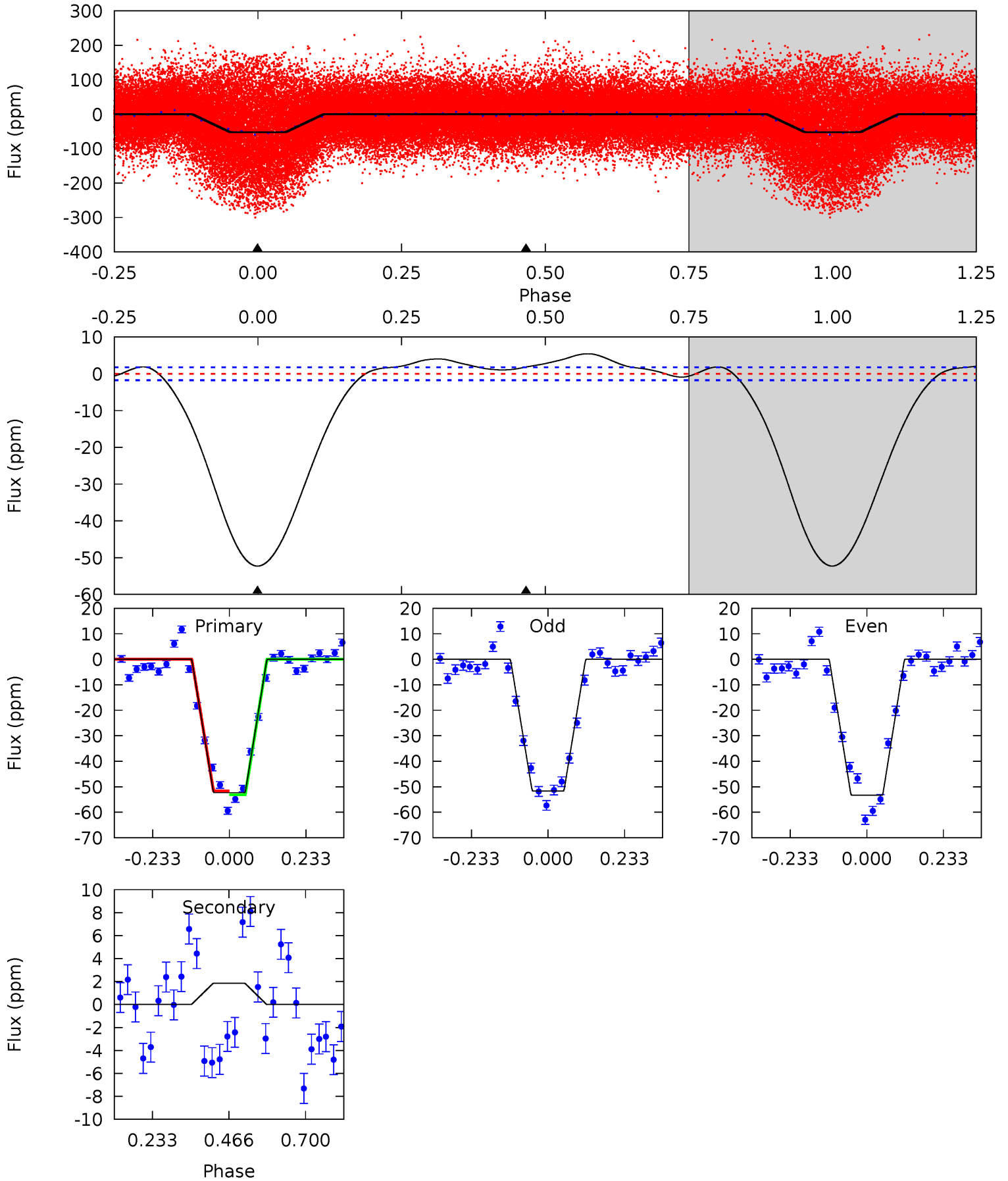
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.8	-4.34	0	0	4.39	1.21	7.26	32.8	32.8	-4.34	-4.34	5.37	1.30	0.37	2.47



Alt Model-Shift Uniqueness Test

010202859-01, P = 4.589135 Days, E = 127.860821 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
130.0	-4.60	0	0	4.38	1.19	2.28	130.0	130.0	-4.60	-4.60	1.99	0.91	0.09	1.88



Stellar Parameters For KIC 010202859

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6860^{+246}_{-339}	$4.177^{+0.140}_{-0.140}$	$-0.240^{+0.250}_{-0.300}$	$1.545^{+0.319}_{-0.319}$	$1.319^{+0.158}_{-0.237}$	$0.504^{+0.396}_{-0.206}$
	+4%/-5%	+3%/-3%	+104%/-125%	+21%/-21%	+12%/-18%	+79%/-41%
Source	PHO1	FLK73	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 010202859-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	3 ± 1	$0.58^{+0.16}_{-0.13}$	2167^{+136}_{-160}	-4853^{+465}_{-593}	$-15.433^{+6.218}_{-12.510}$
Alt.	2 ± 0	$1.24^{+0.20}_{-0.18}$	2153^{+156}_{-140}	-3501^{+163}_{-188}	$-2.316^{+0.742}_{-0.936}$

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

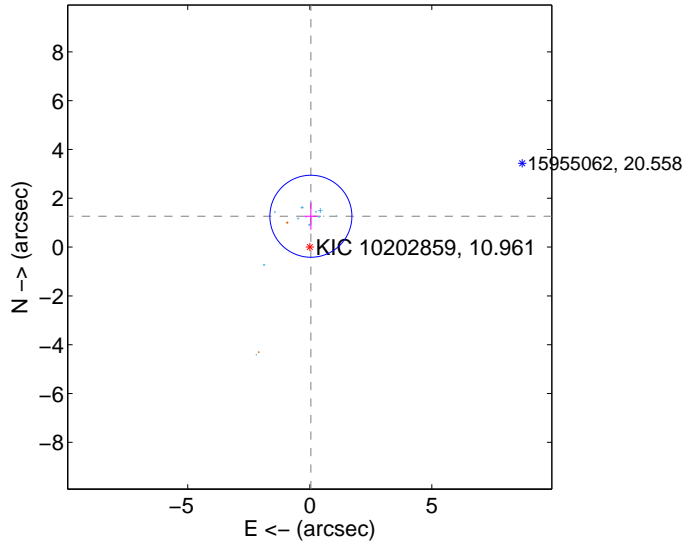
Supplemental centroid analysis for 010202859-01. **Kepler magnitude: 10.96.** Transit SNR 8.04

There are 12 quarters with good PRF difference image offsets

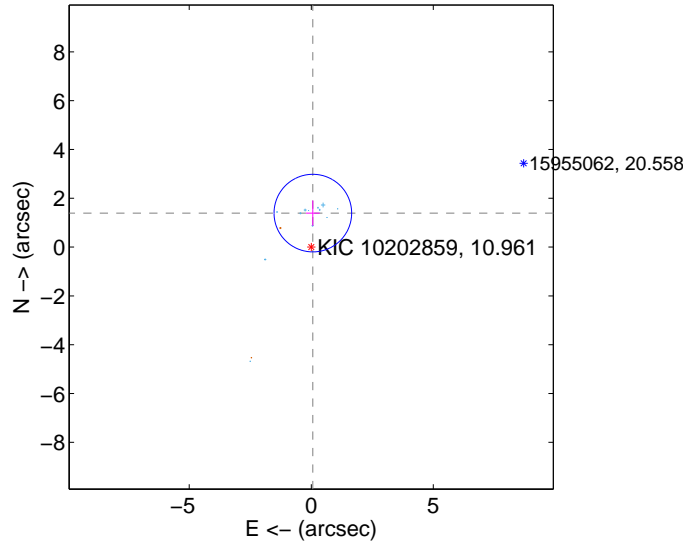
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.265 ± 0.560	2.26	-0.045 ± 0.271	1.264 ± 0.554
PRF-fit source offset from KIC position	1.394 ± 0.530	2.63	-0.065 ± 0.279	1.393 ± 0.521
photometric centroid source offset	5.50 ± 0.92	5.99	-0.27 ± 0.76	5.50 ± 0.92

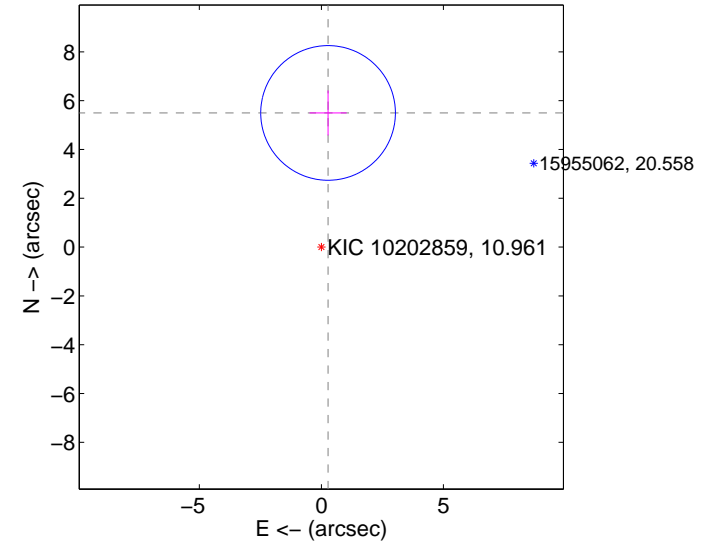
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

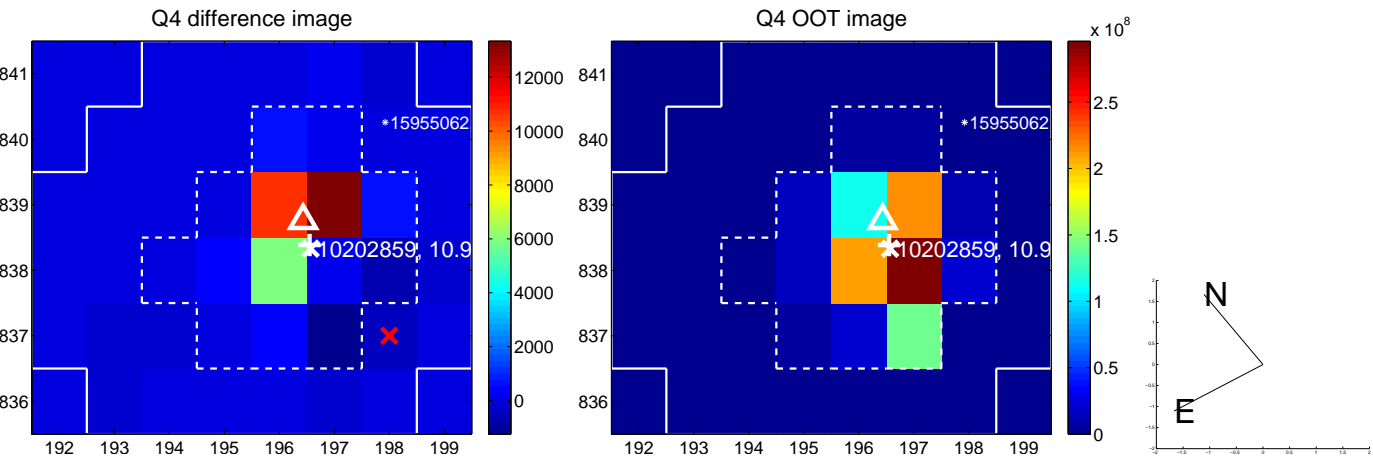
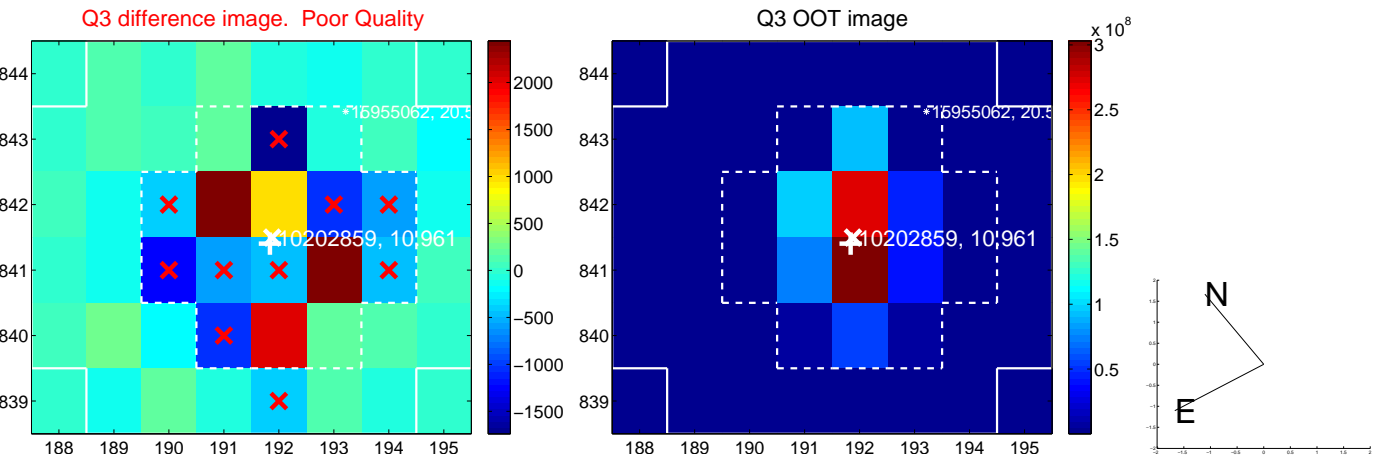
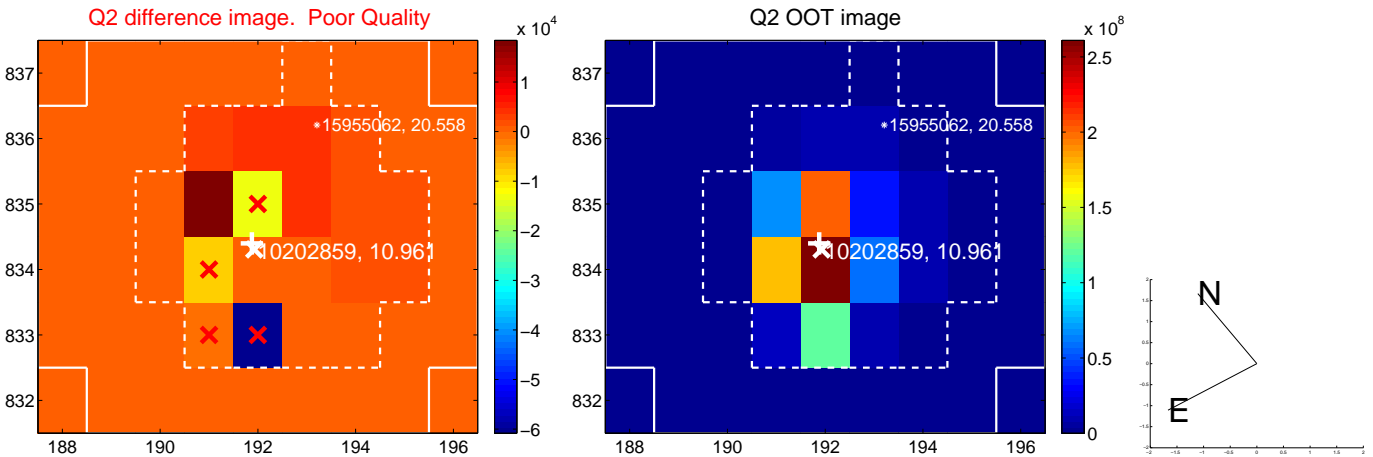
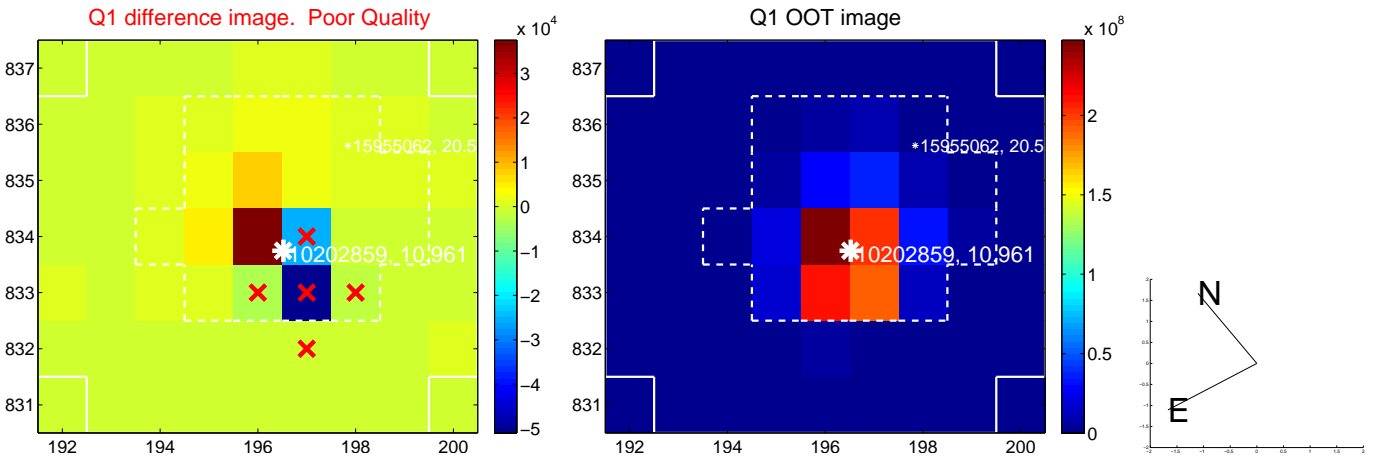


offset from photometric centroids

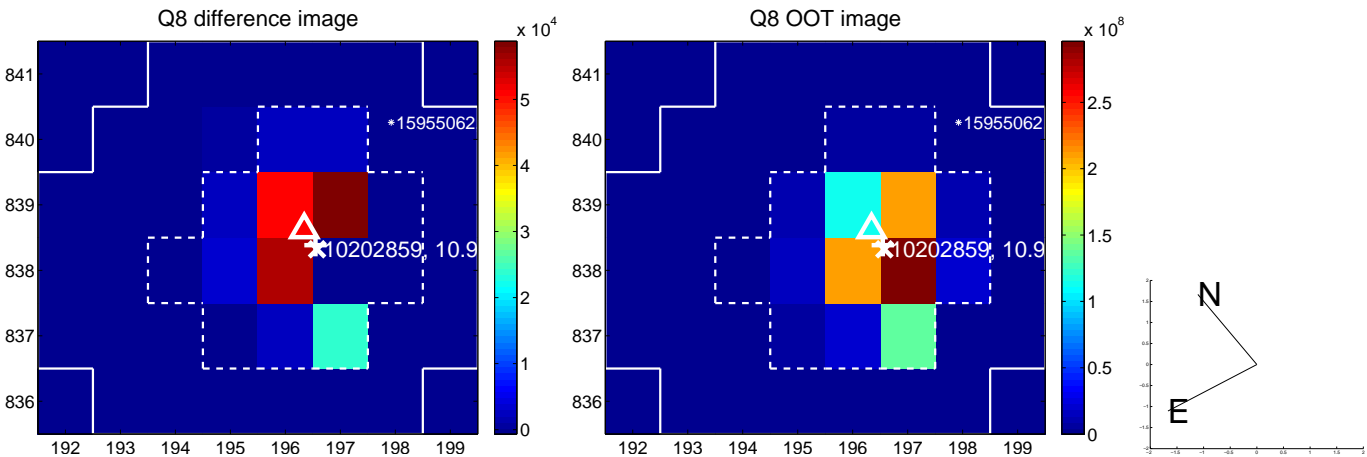
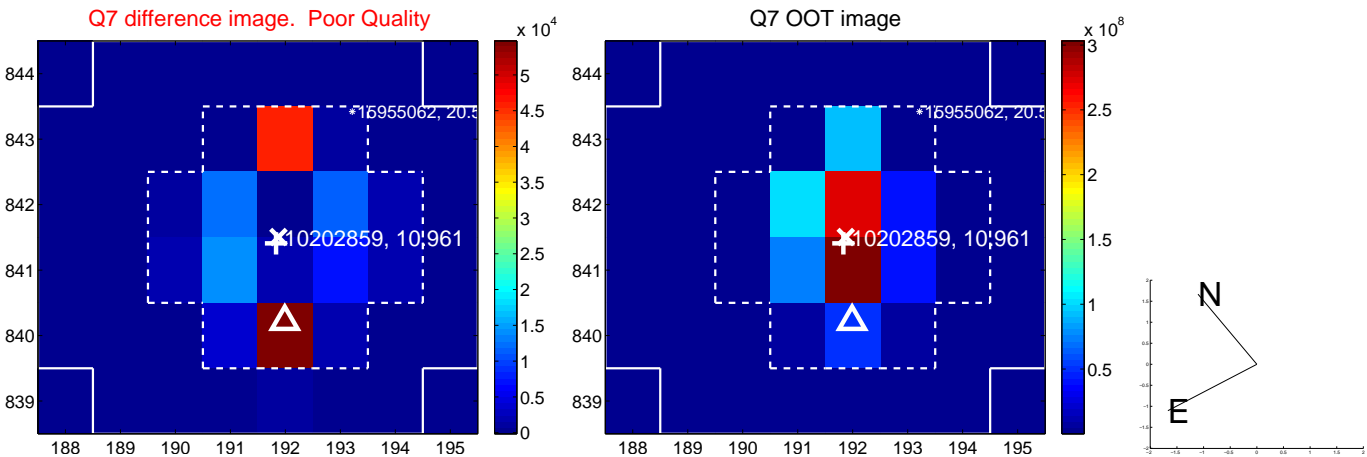
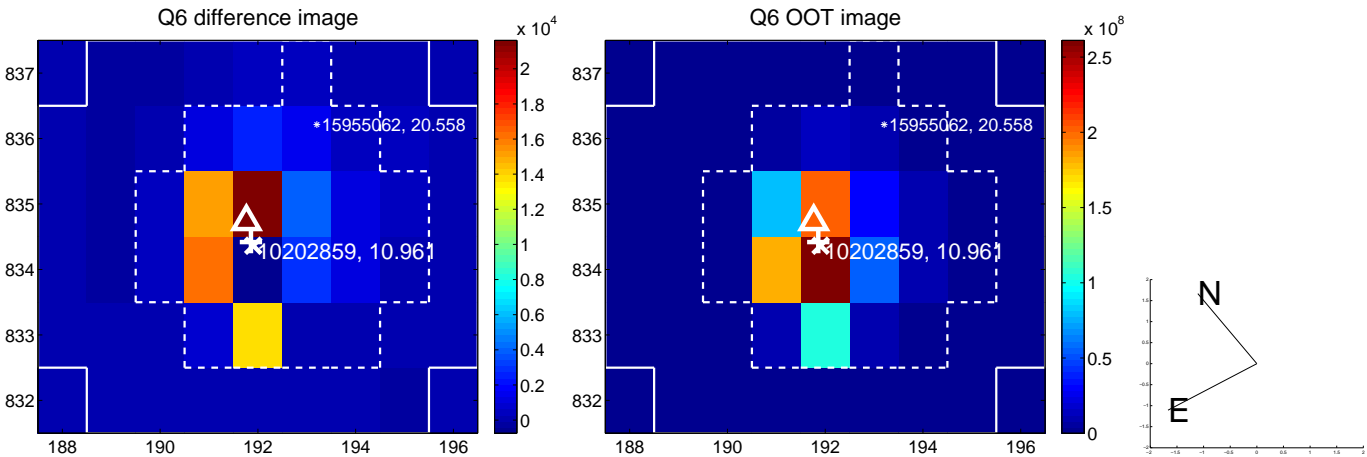
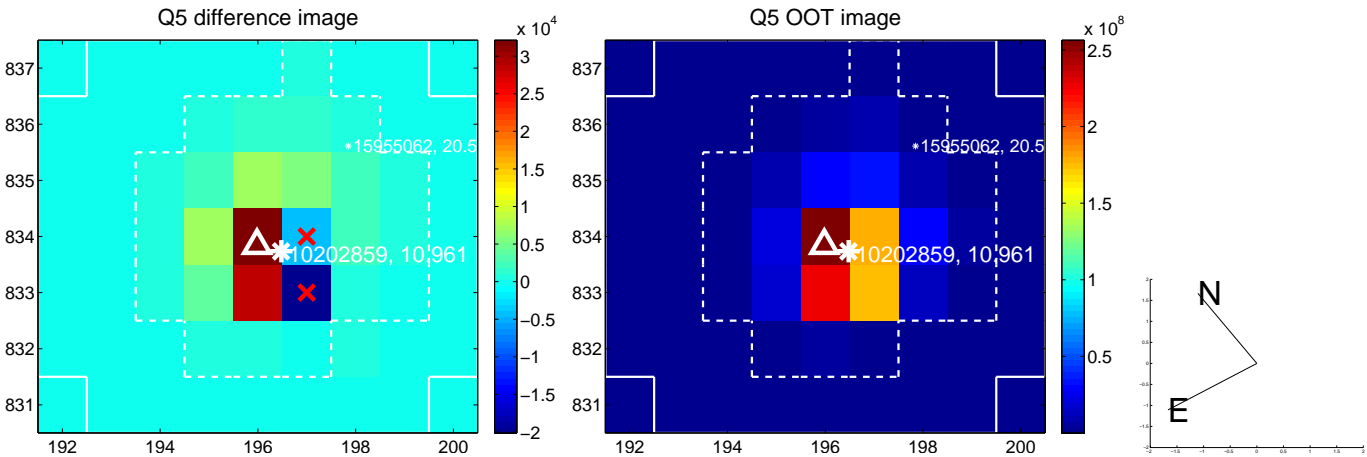


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

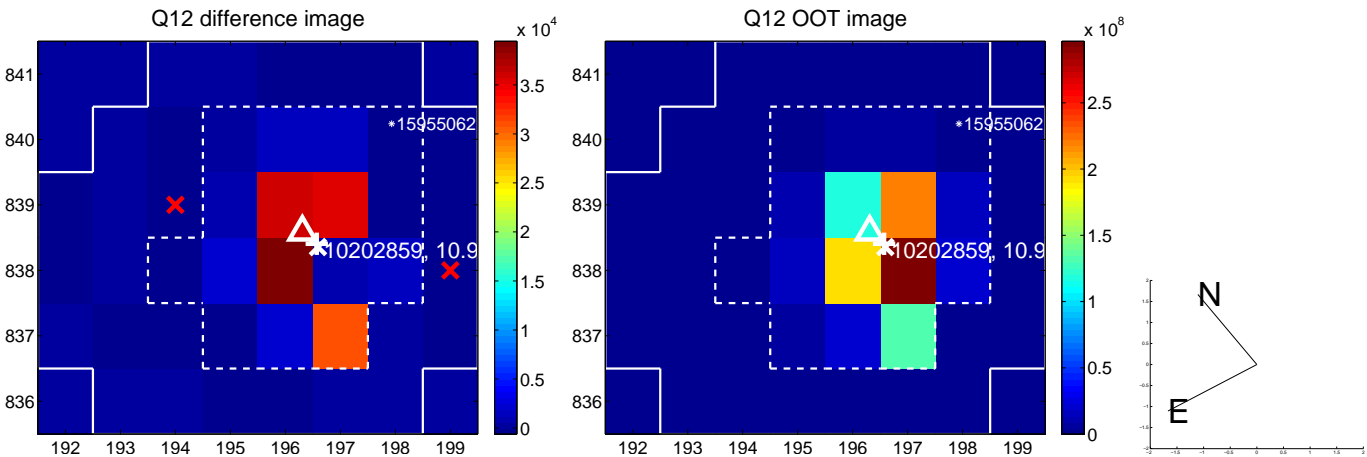
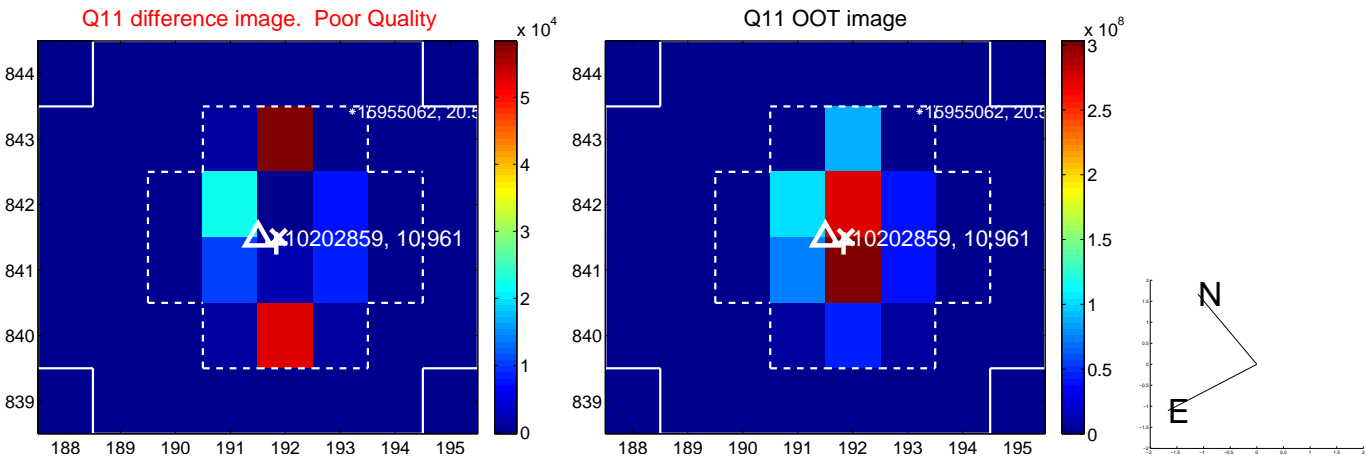
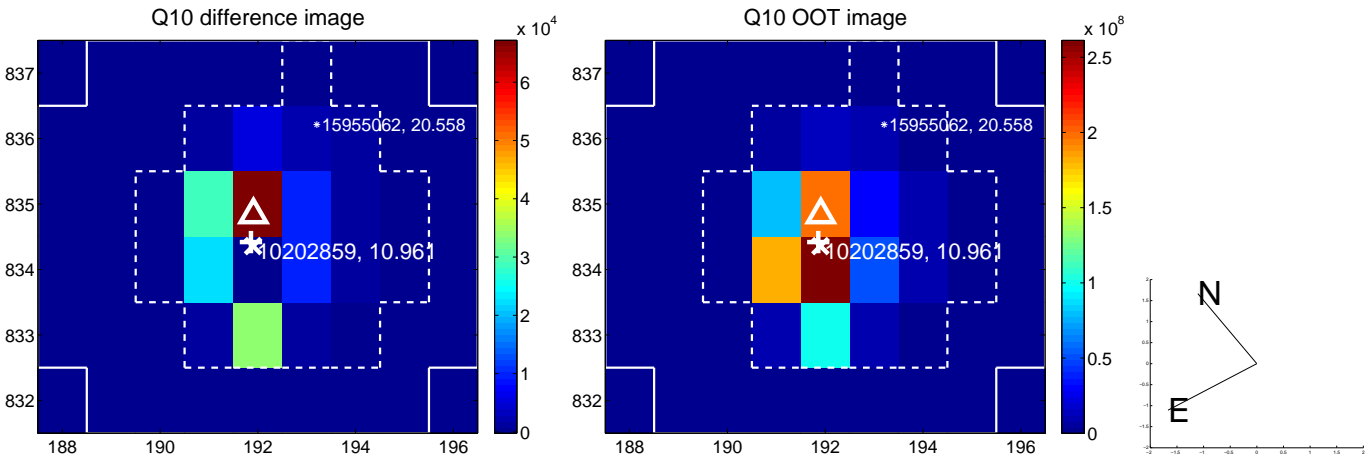
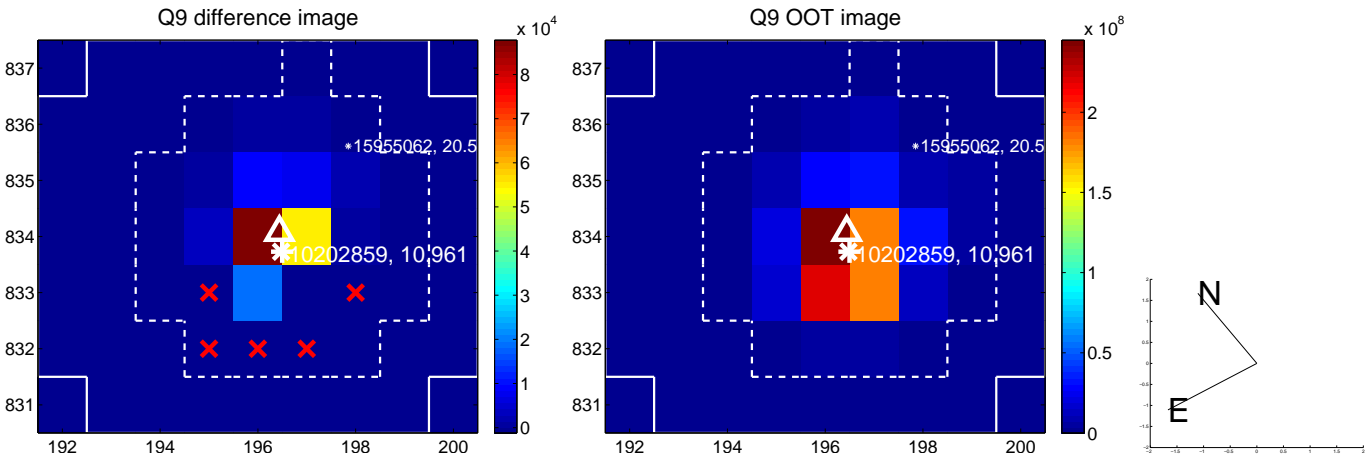
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



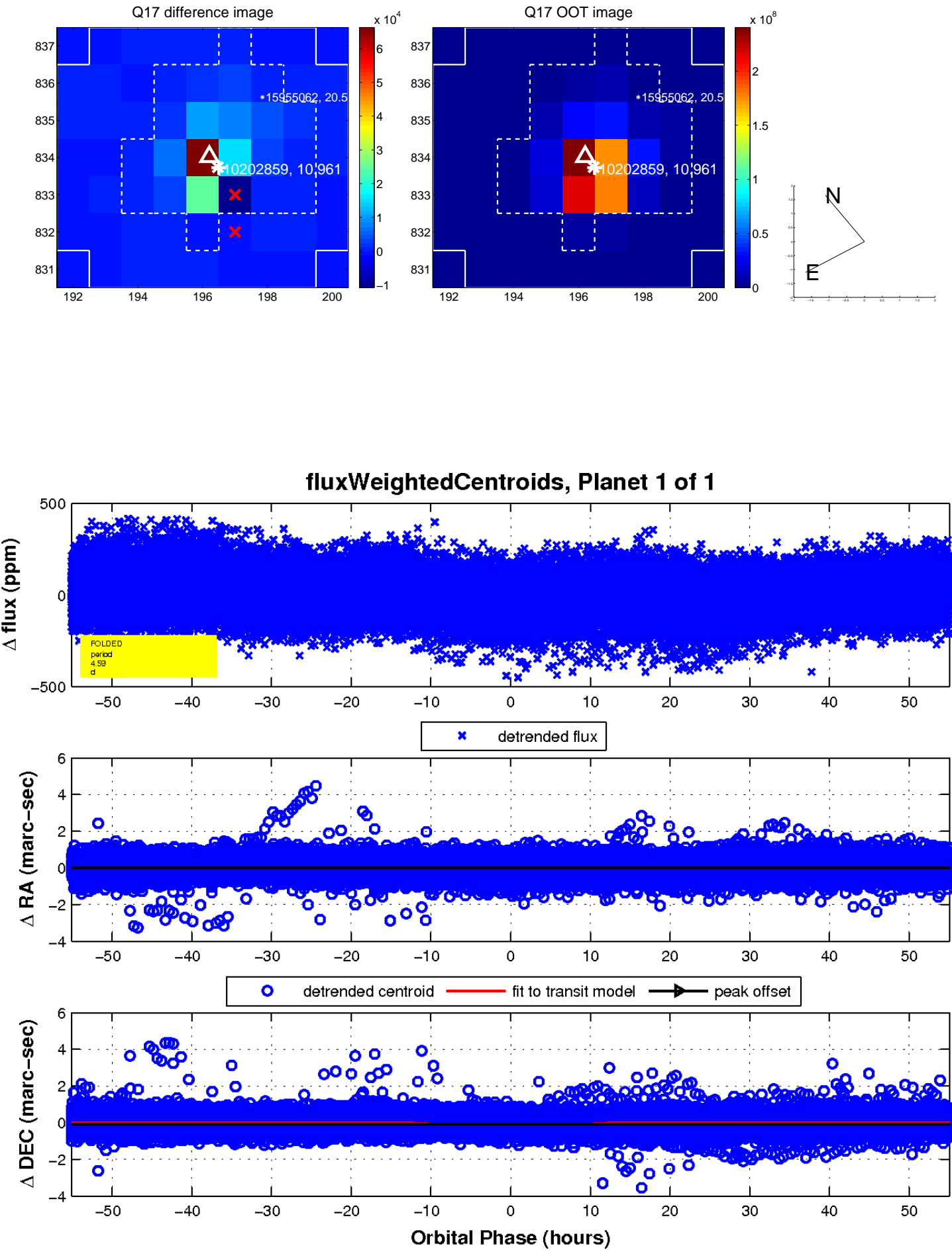
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

