

# KIC 010879038

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010879038-01	OBS	1641.01	4.853872	135.093880	198.0	3.689	13.2	13.8	0.97	5778	1.86	289.60

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010879038-01	OBS	PC	0.99	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.

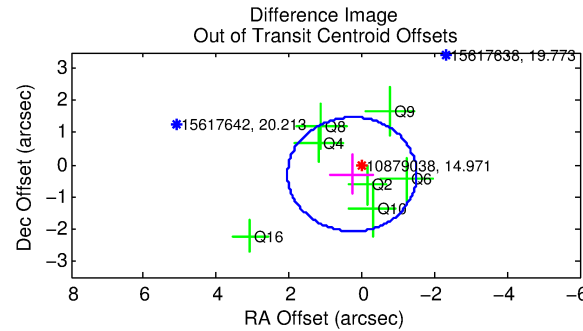
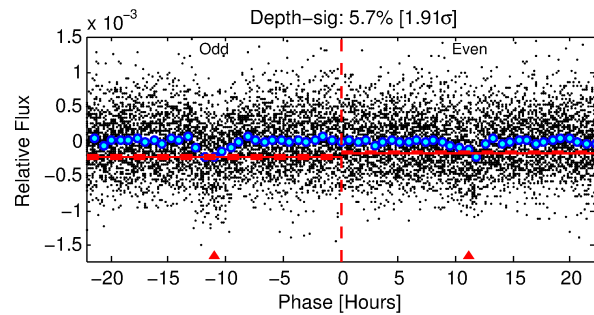
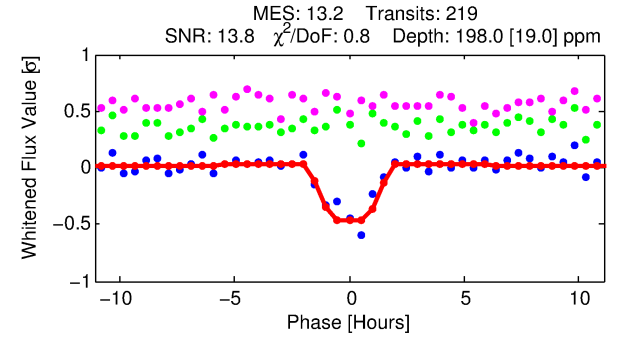
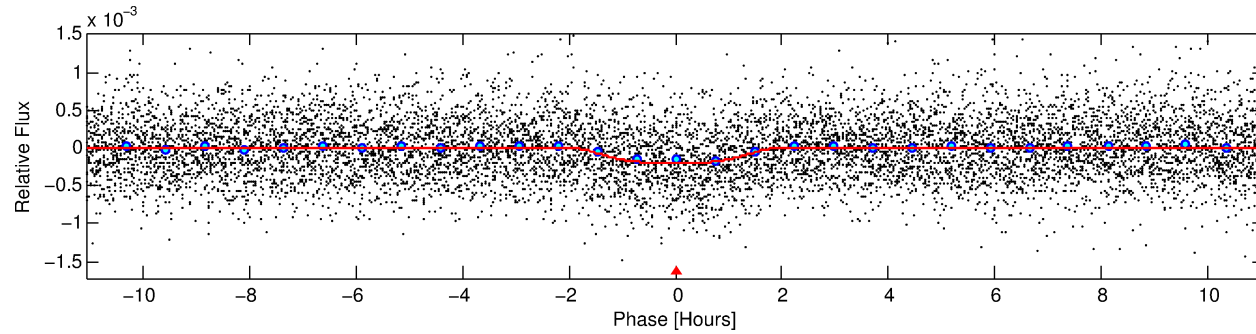
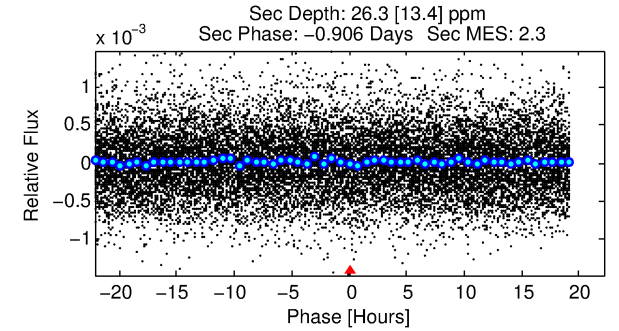
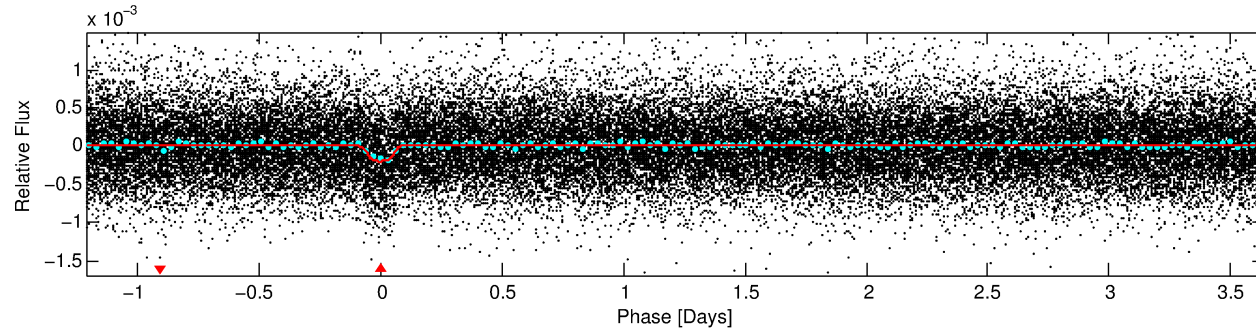
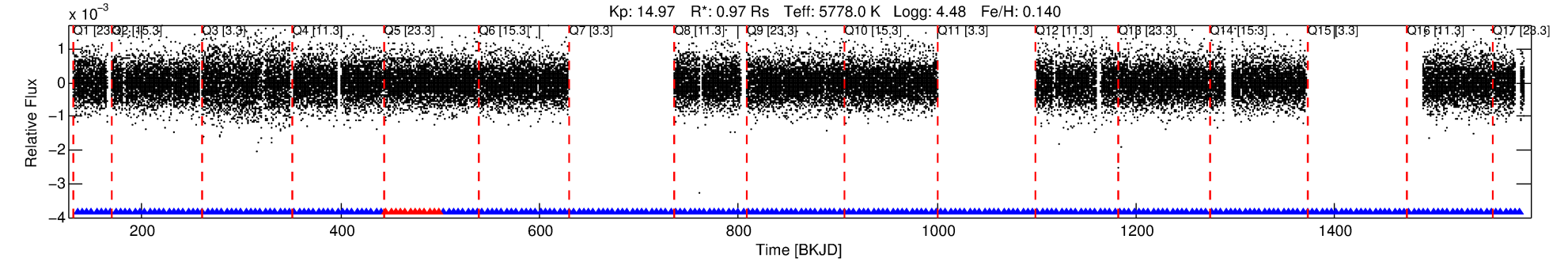
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010879038-01

No Significant Match Found

# DV One-Page Summary

KIC: 10879038 Candidate: 1 of 1 Period: 4.854 d  
KOI: K01641.01 Corr: 0.871



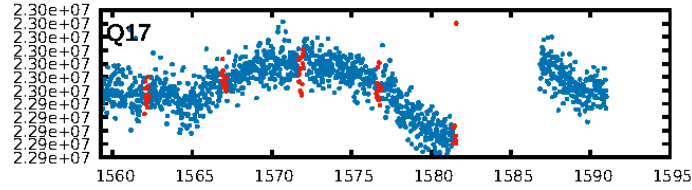
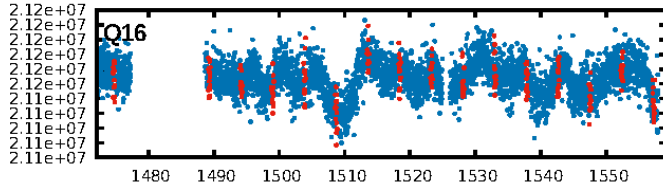
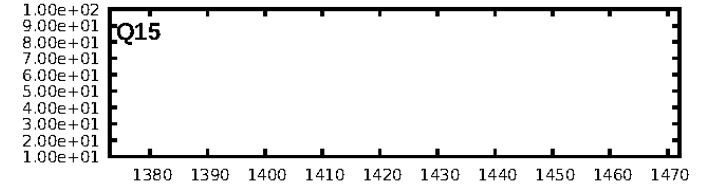
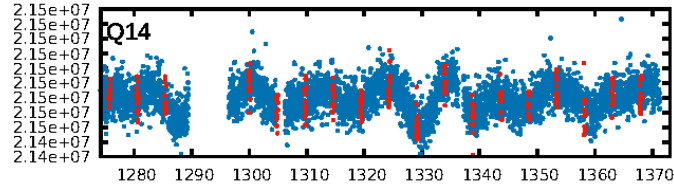
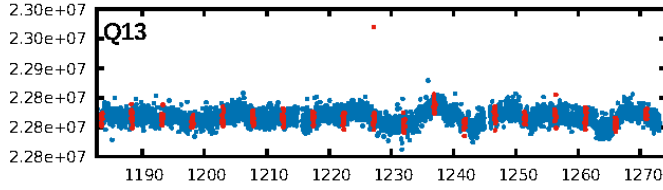
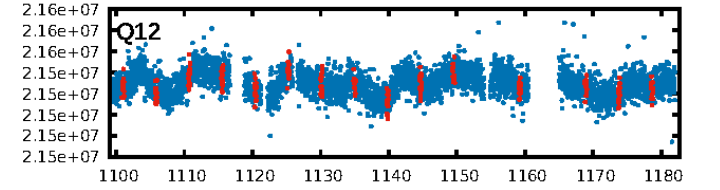
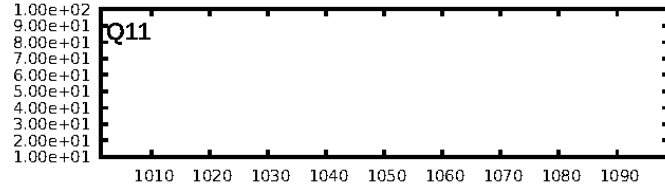
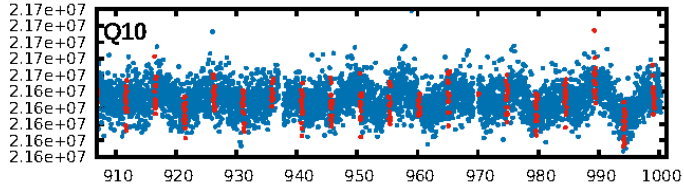
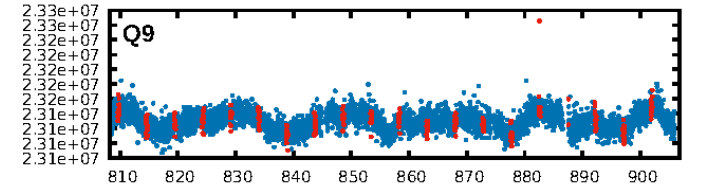
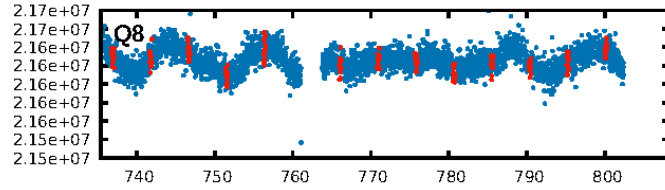
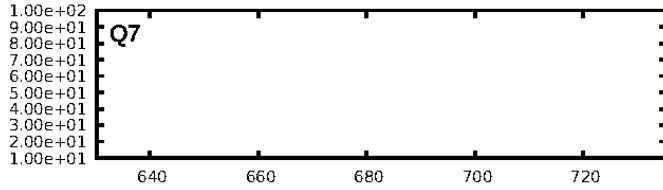
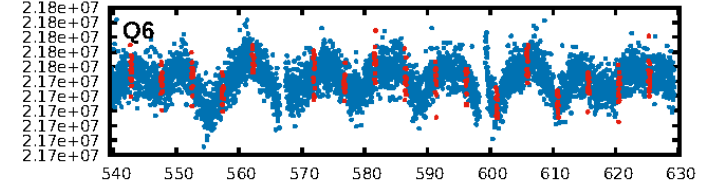
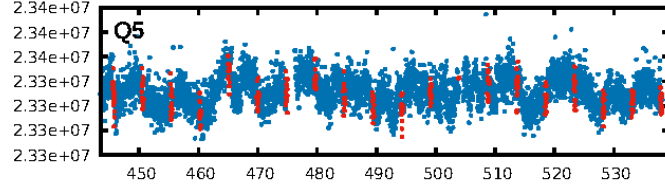
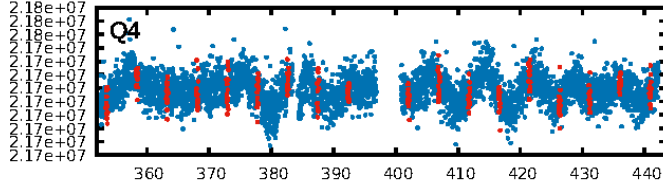
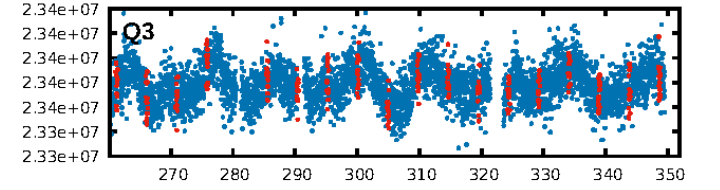
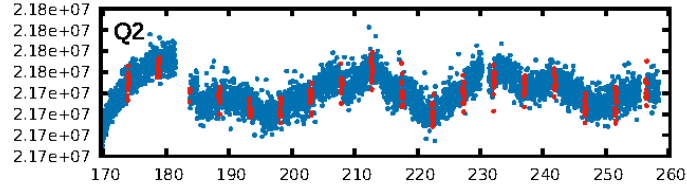
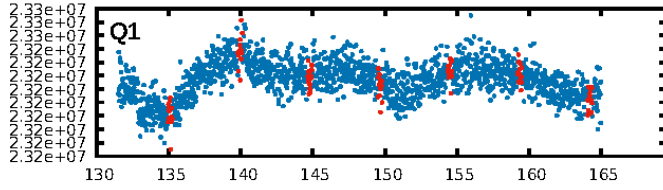
## DV Fit Results:

Period = 4.85387 [0.00004] d  
Epoch = 135.0939 [0.0053] BKJD  
Rp/R\* = 0.0176 [0.0013]  
a/R\* = 3.03 [0.55]  
b = 0.98 [0.01]  
Seff = 289.60 [62.90]  
Teff = 1052 [57] K  
Rp = 1.86 [0.31] Re  
a = 0.0568 [0.0077] AU  
Ag = 13.44 [7.67] [1.62σ]  
Teffp = 3114 [416] K [4.91σ]

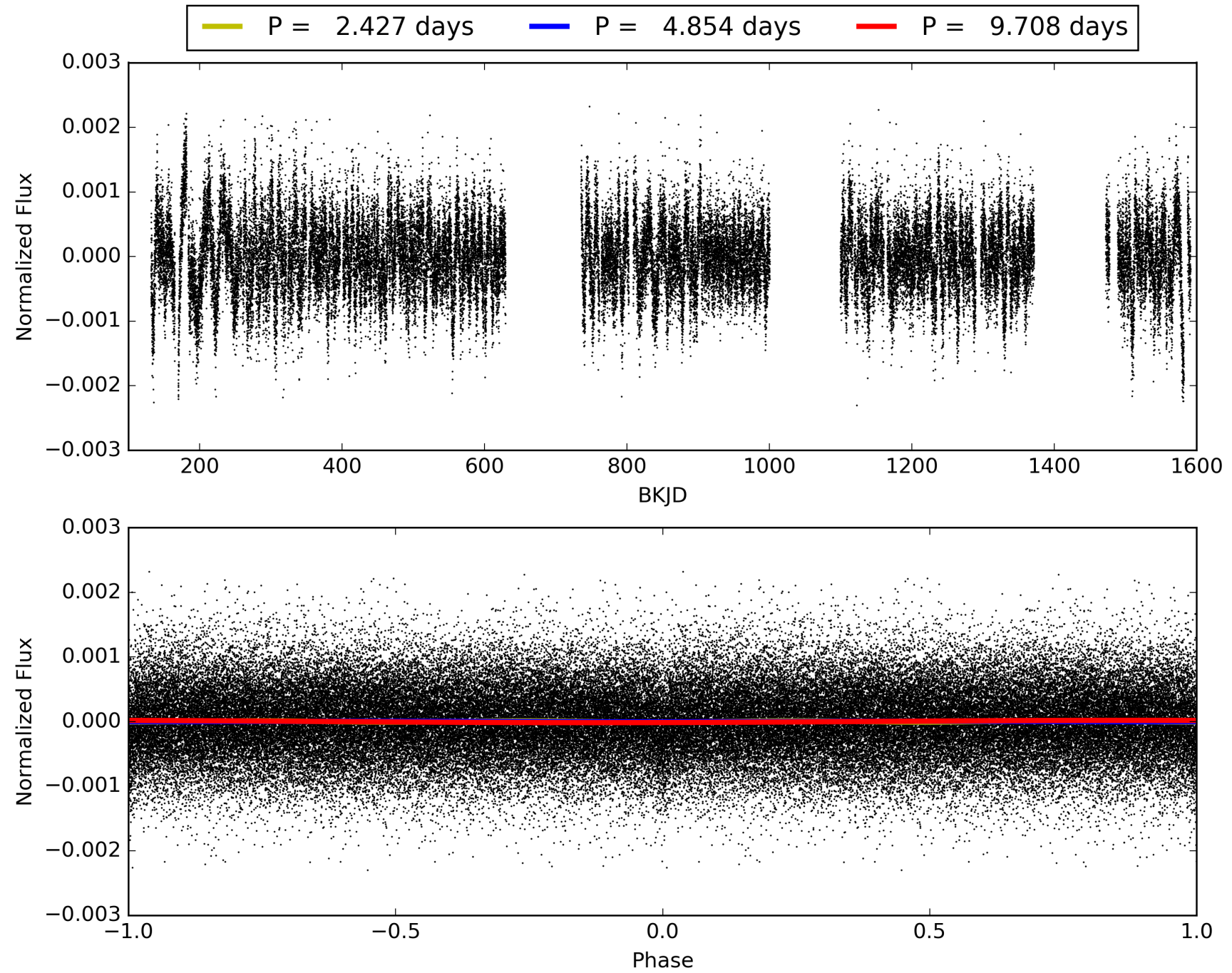
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.29e-38  
RollingBand-fgt: 0.94 [195/207]  
GhostDiagnostic-chr: -11.41  
Centroid-sig: 8.8%  
Centroid-so: 1.318 arcsec [1.20σ]  
OotOffset-rm: 0.402 arcsec [0.68σ]  
KicOffset-rm: 0.501 arcsec [0.72σ]  
OotOffset-st: 3/0/3/1 [7]  
KicOffset-st: 3/0/3/1 [7]  
DiffImageQuality-fgm: 0.71 [5/7]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 010879038-01, PDC Light Curves

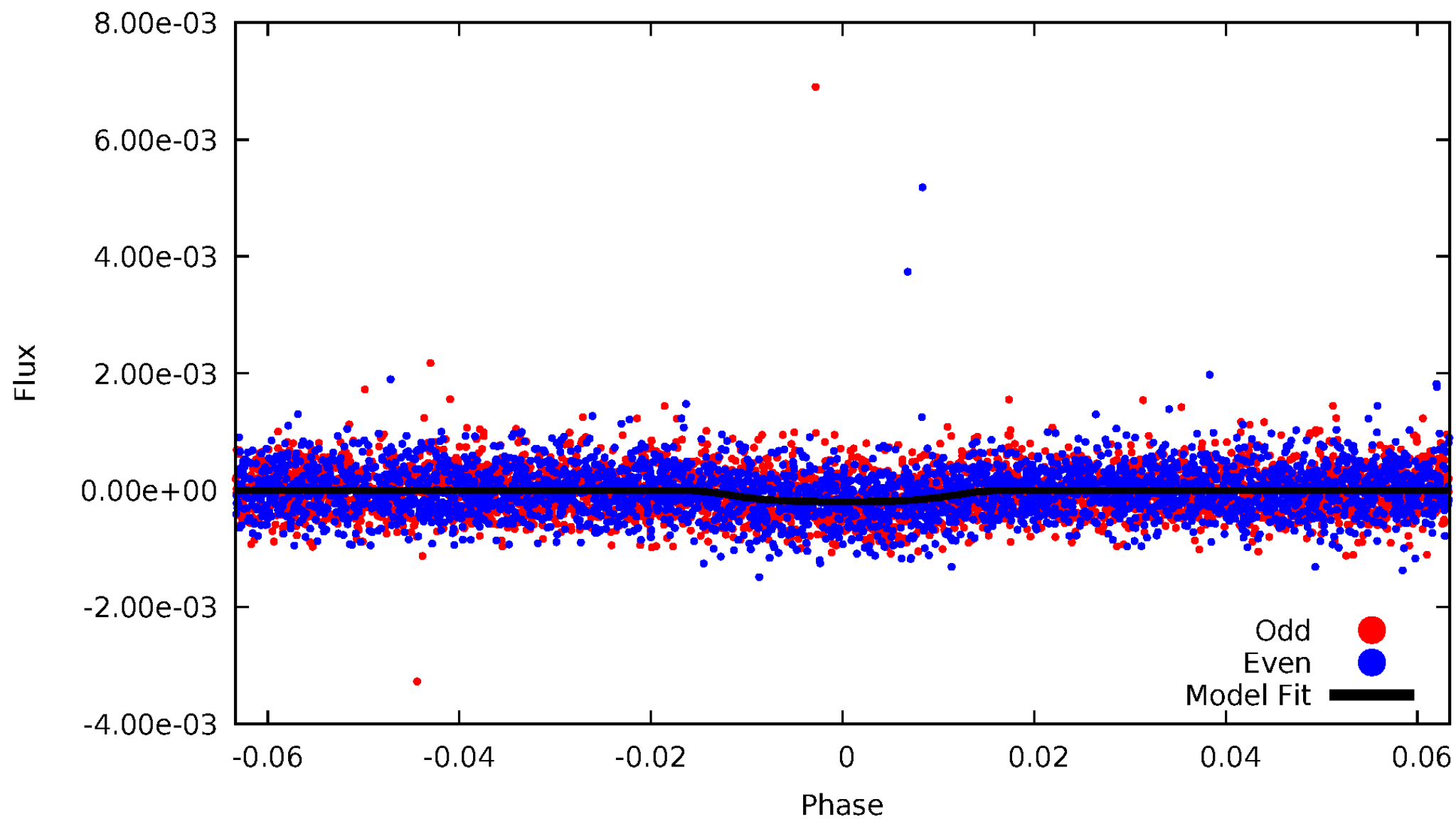


TCE 010879038-01



# DV Odd/Even

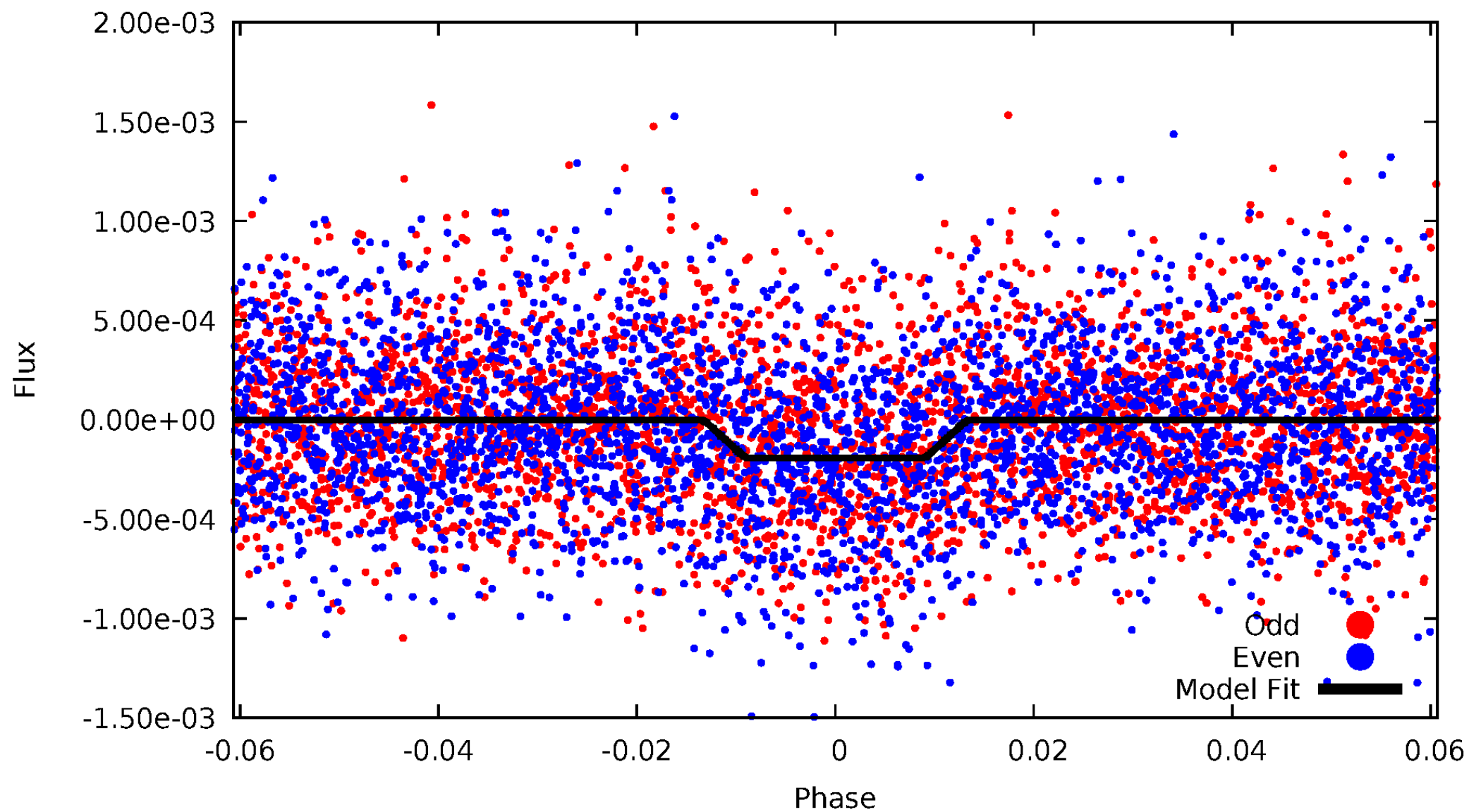
TCE 010879038-01



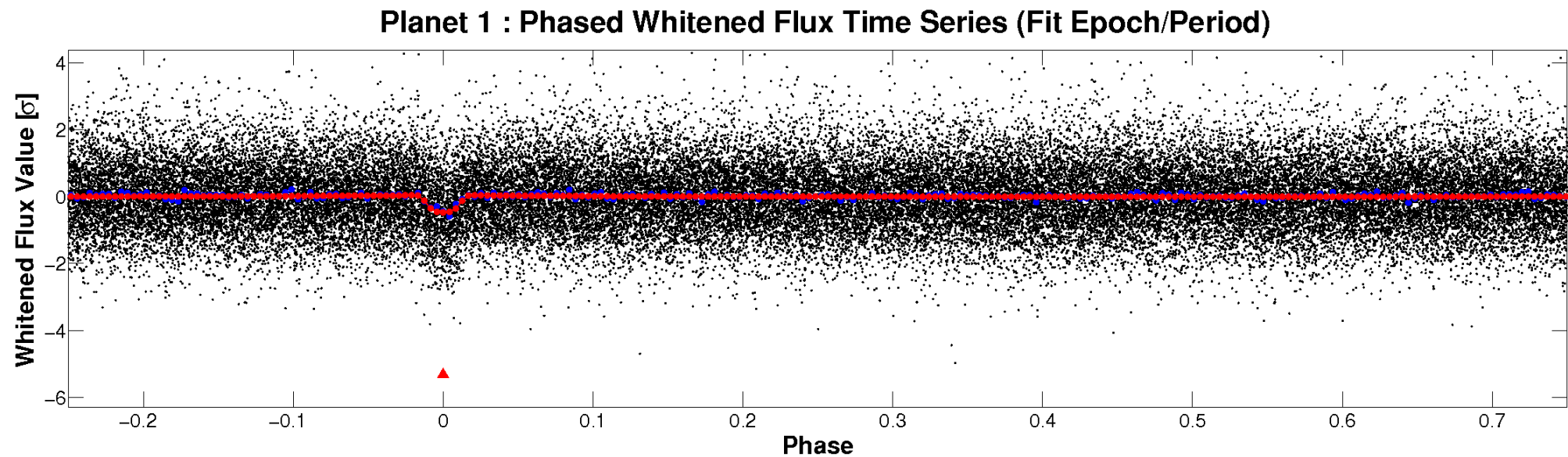
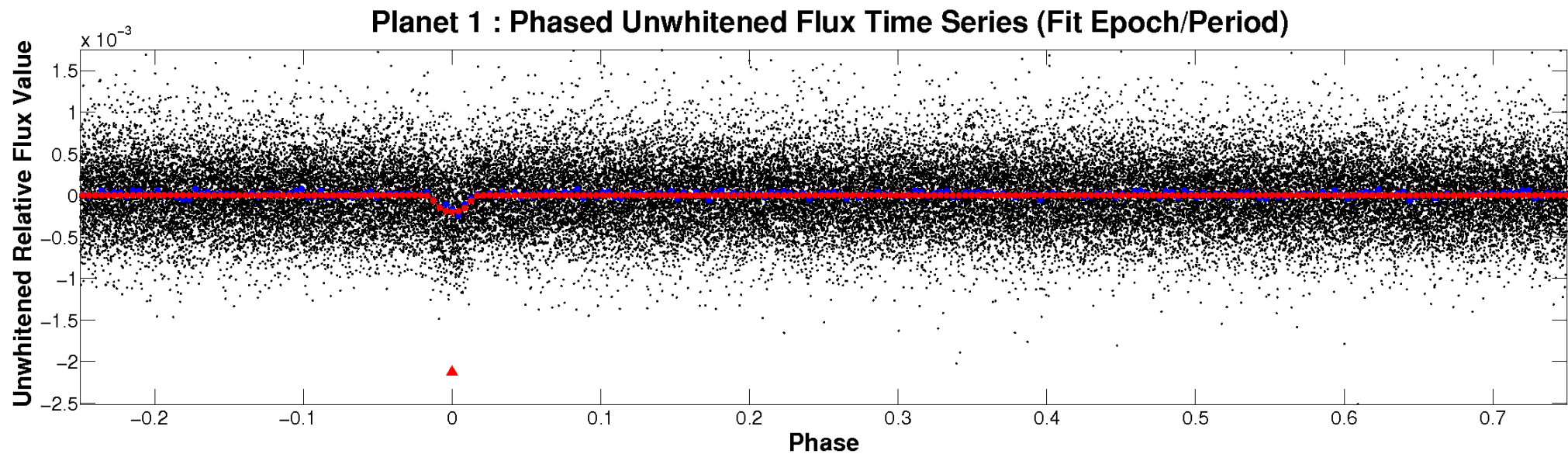


# ALT Odd/Even

TCE 010879038-01

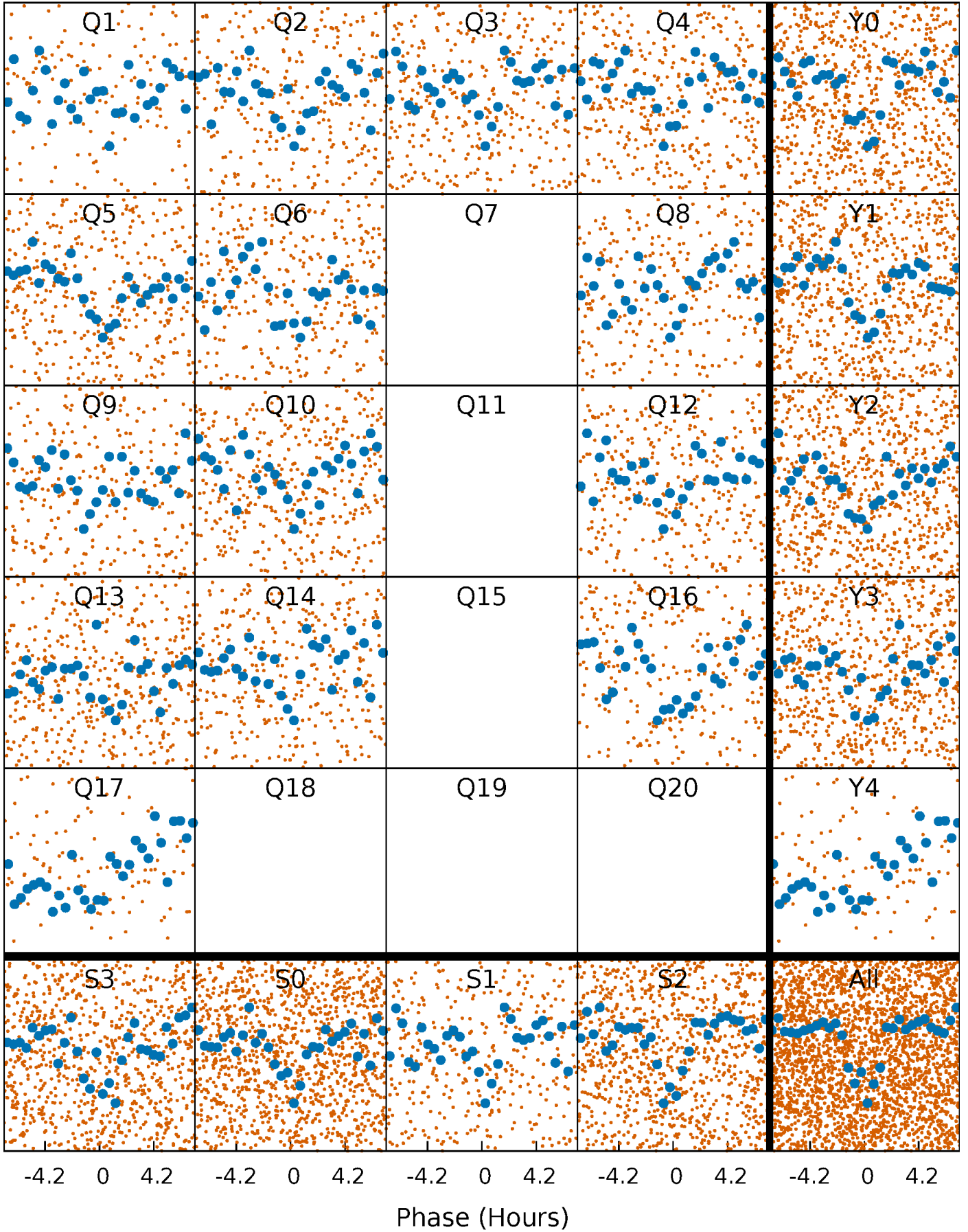


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

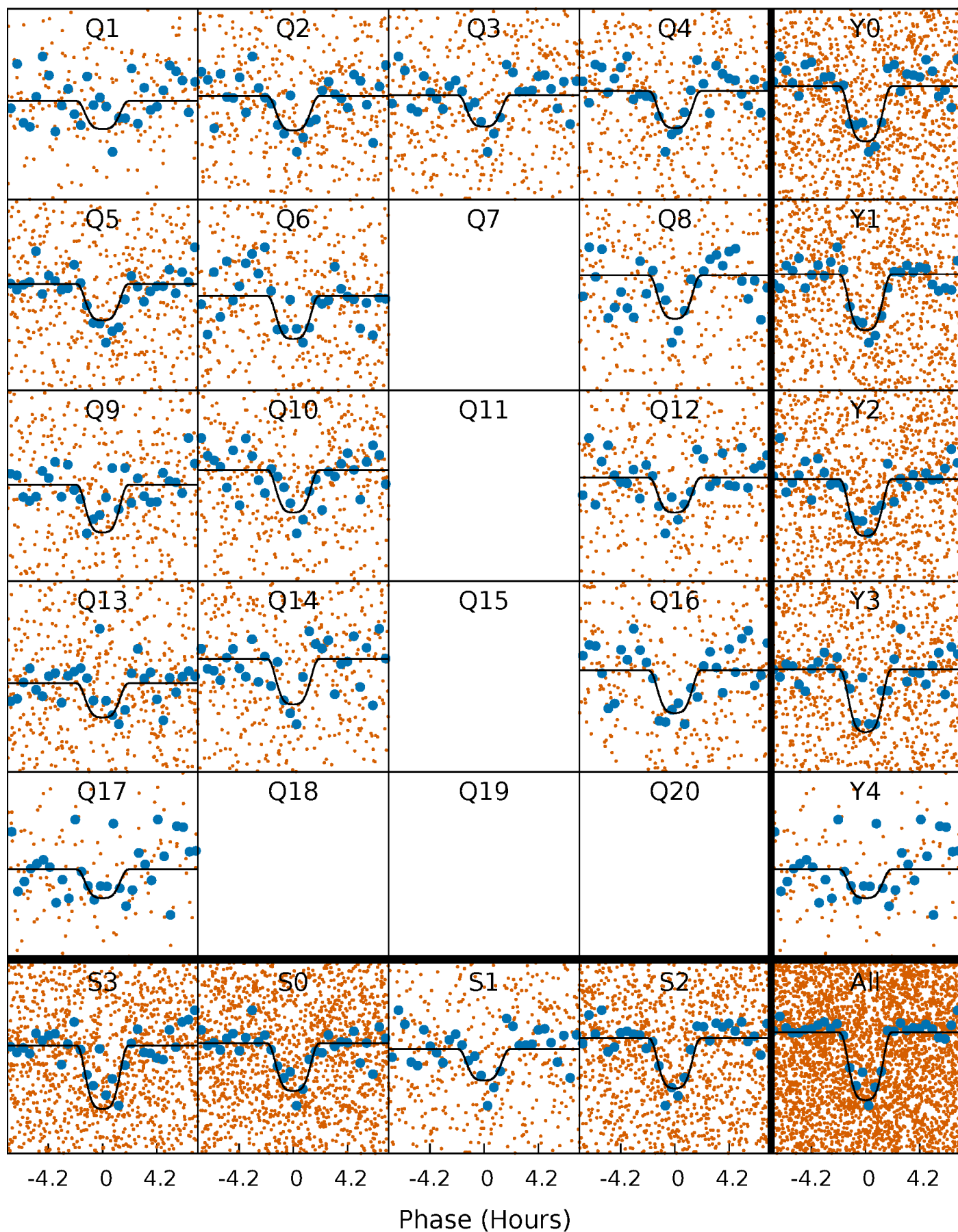
TCE 010879038-01   P= 4.853872 Days    $T_0=135.093880$  (BKJD)





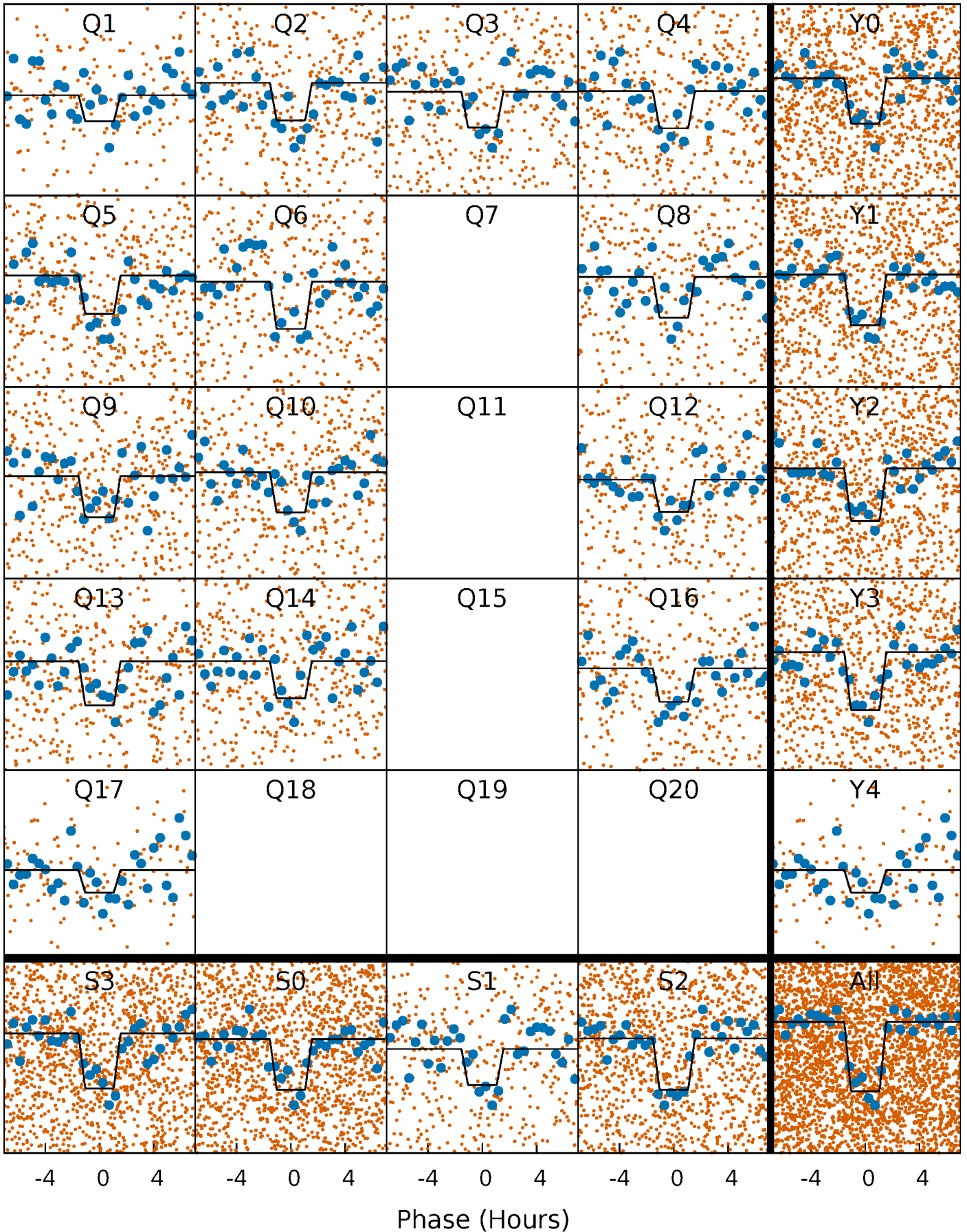
# DV Quarter-Phased Transit Curves

TCE 010879038-01 P= 4.853872 Days  $T_0=135.093880$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

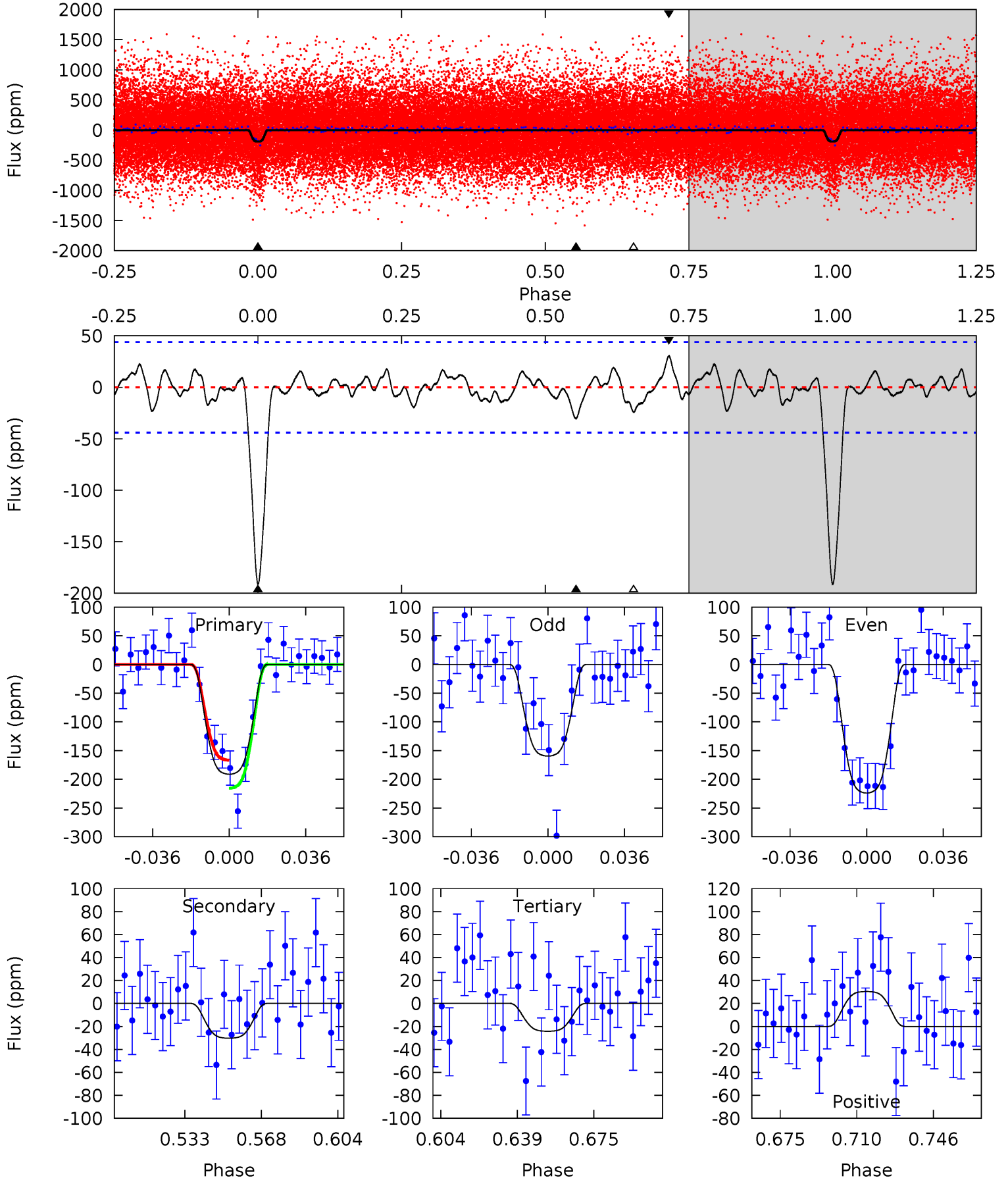
TCE 010879038-01 P= 4.853876 Days  $T_0=135.092564$  (BKJD)



# DV Model-Shift Uniqueness Test

010879038-01, P = 4.853872 Days, E = 130.240008 Days

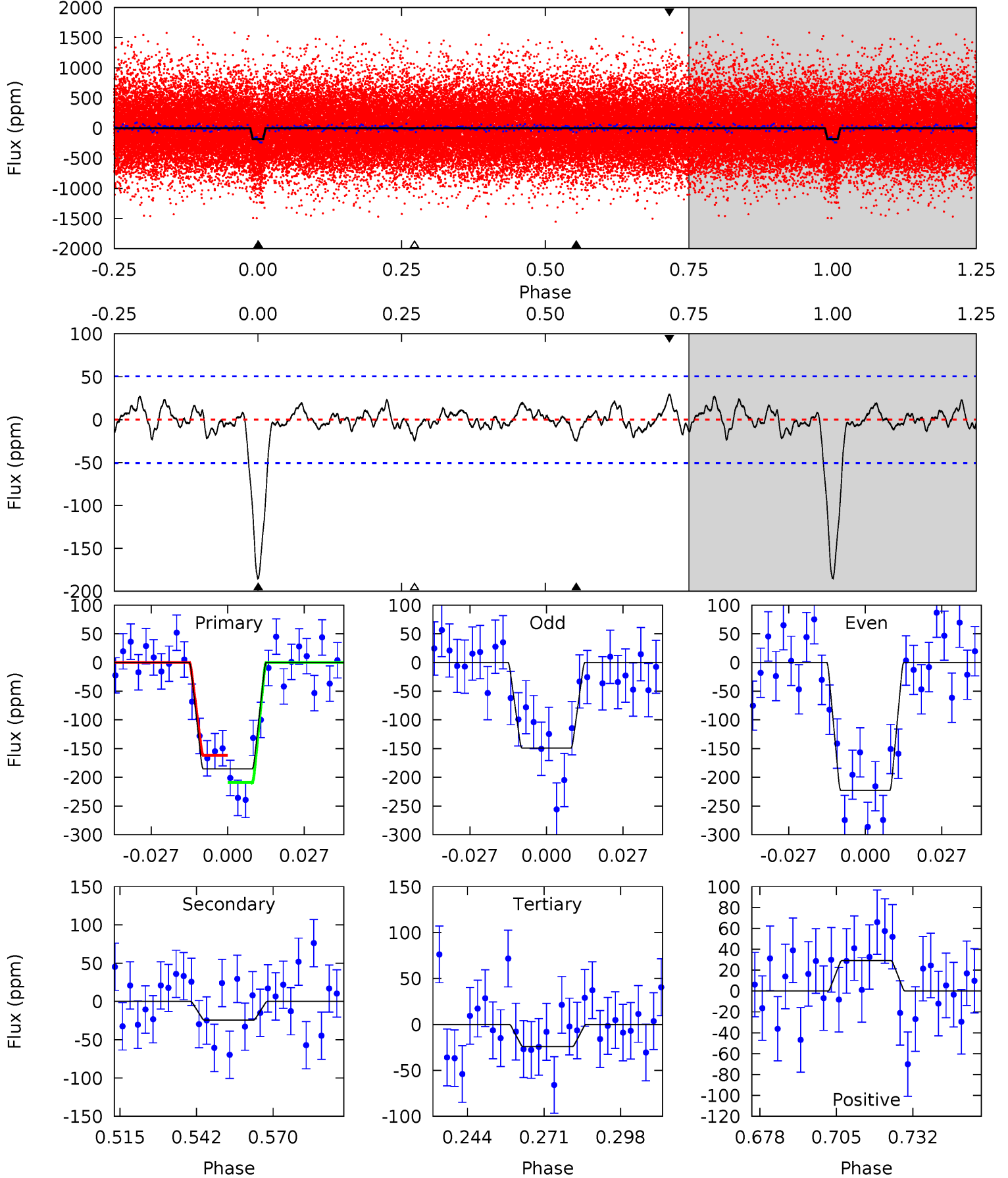
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.8	3.29	2.63	3.30	4.78	2.10	1.10	18.1	17.4	0.66	-0.02	3.50	0.89	0.14	2.65



# Alt Model-Shift Uniqueness Test

010879038-01, P = 4.853876 Days, E = 130.238688 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.7	2.32	2.32	2.78	4.83	2.21	0.92	15.4	14.9	0.00	-0.46	3.52	1.15	0.14	2.25



### Stellar Parameters For KIC 010879038

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5778^{+69}_{-86}$	$4.483^{+0.030}_{-0.120}$	$0.140^{+0.150}_{-0.150}$	$0.968^{+0.143}_{-0.057}$	$1.038^{+0.050}_{-0.068}$	$1.612^{+0.231}_{-0.563}$
	+1%/-1%	+1%/-3%	+107%/-107%	+15%/-6%	+5%/-7%	+14%/-35%
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 010879038-01 / KOI 1641.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-30 \pm 9$	$1.91^{+0.20}_{-0.18}$	$1487^{+61}_{-38}$	$3639^{+203}_{-220}$	$14^{+6}_{-5}$
Alt.	$-24 \pm 10$	$1.50^{+0.19}_{-0.16}$	$1485^{+57}_{-37}$	$3814^{+291}_{-344}$	$19^{+10}_{-8}$

$T_{max}$  = 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  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$



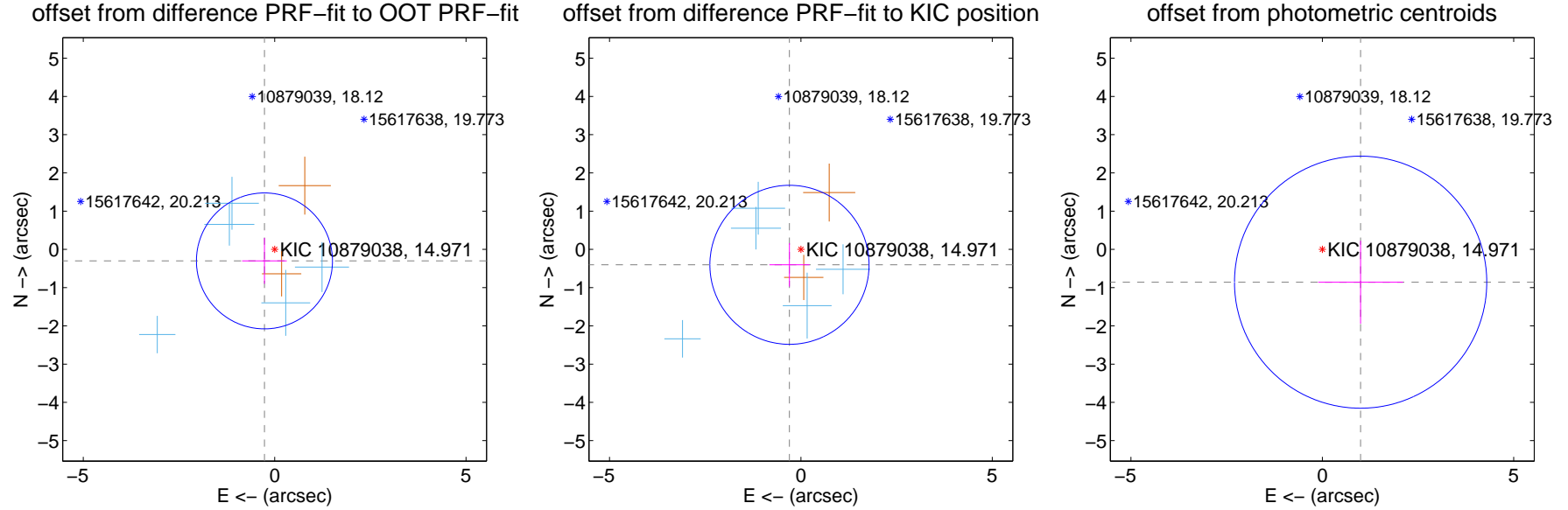
## DV Centroid Data

Supplemental centroid analysis for 010879038-01. Kepler magnitude: 14.97. Transit SNR 13.81

There are 5 quarters with good PRF difference image offsets

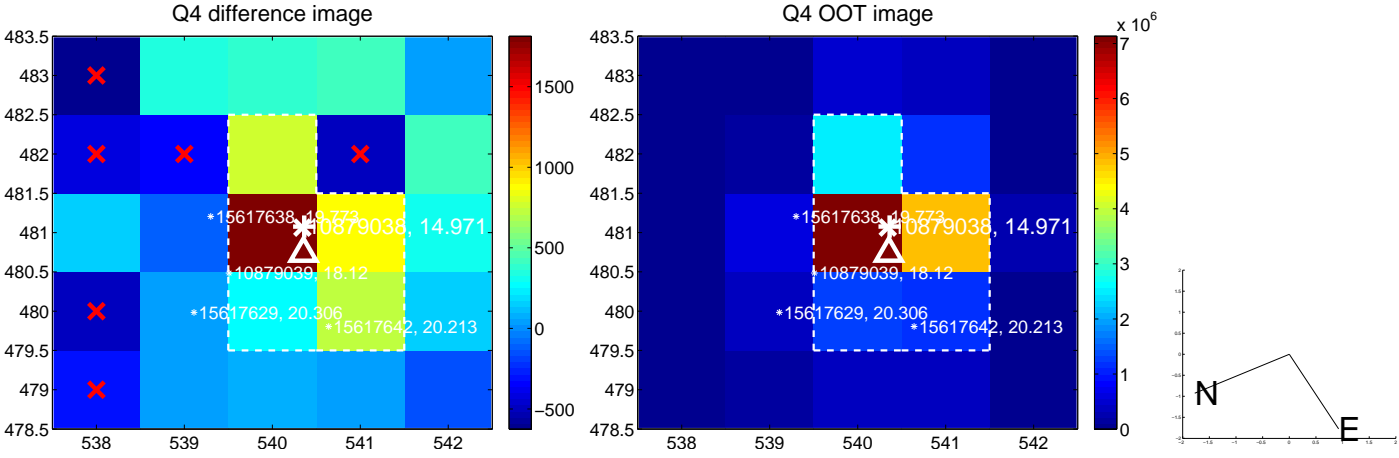
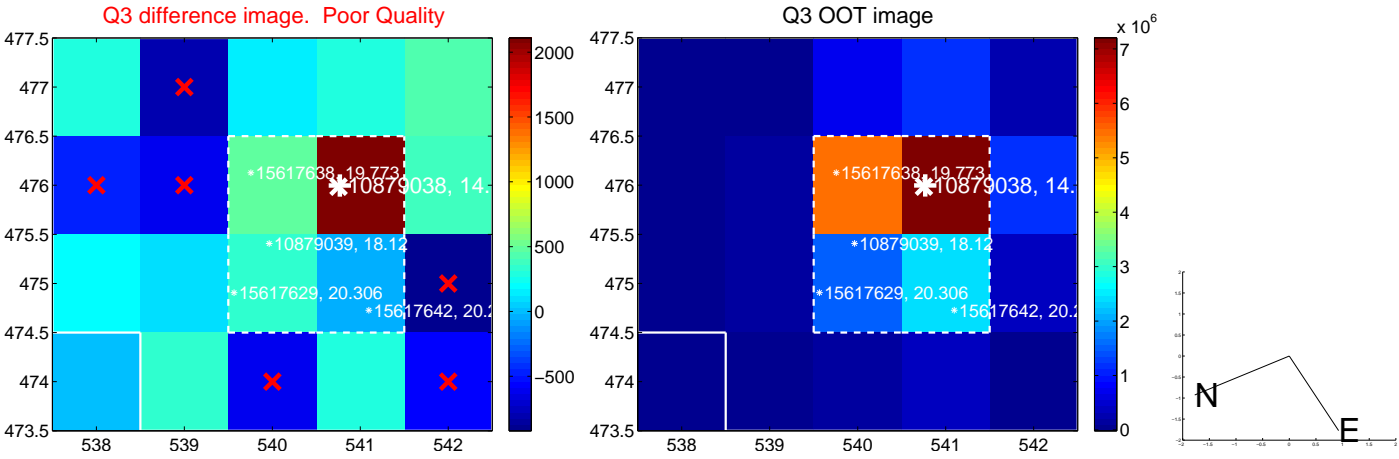
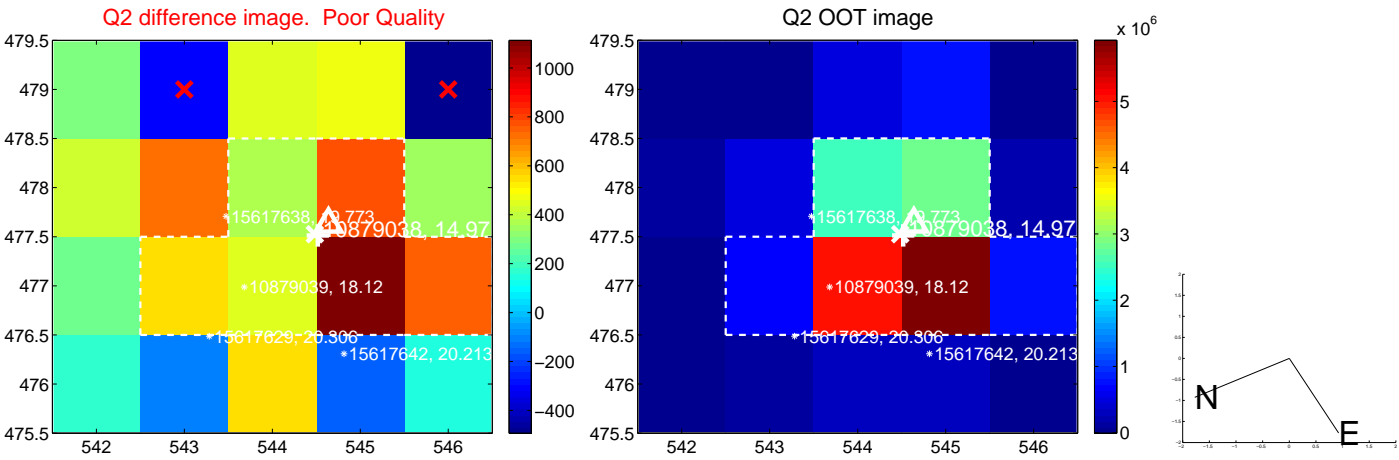
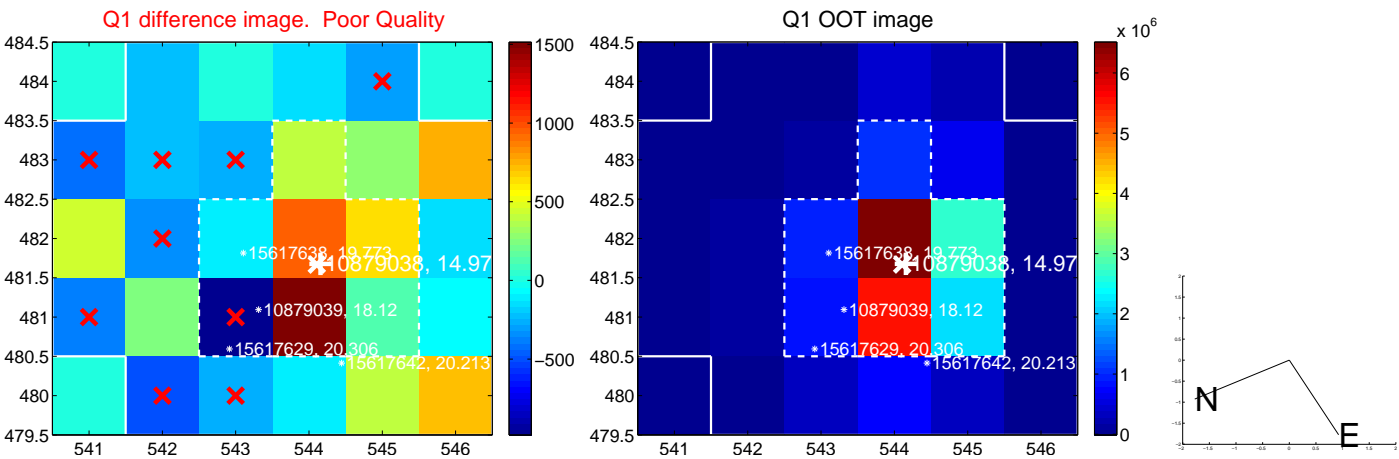
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.402 \pm 0.592$	0.68	$0.266 \pm 0.583$	$-0.300 \pm 0.599$
PRF-fit source offset from KIC position	$0.501 \pm 0.693$	0.72	$0.299 \pm 0.525$	$-0.403 \pm 0.567$
photometric centroid source offset	$1.32 \pm 1.10$	1.20	$-1.00 \pm 1.11$	$-0.86 \pm 1.08$

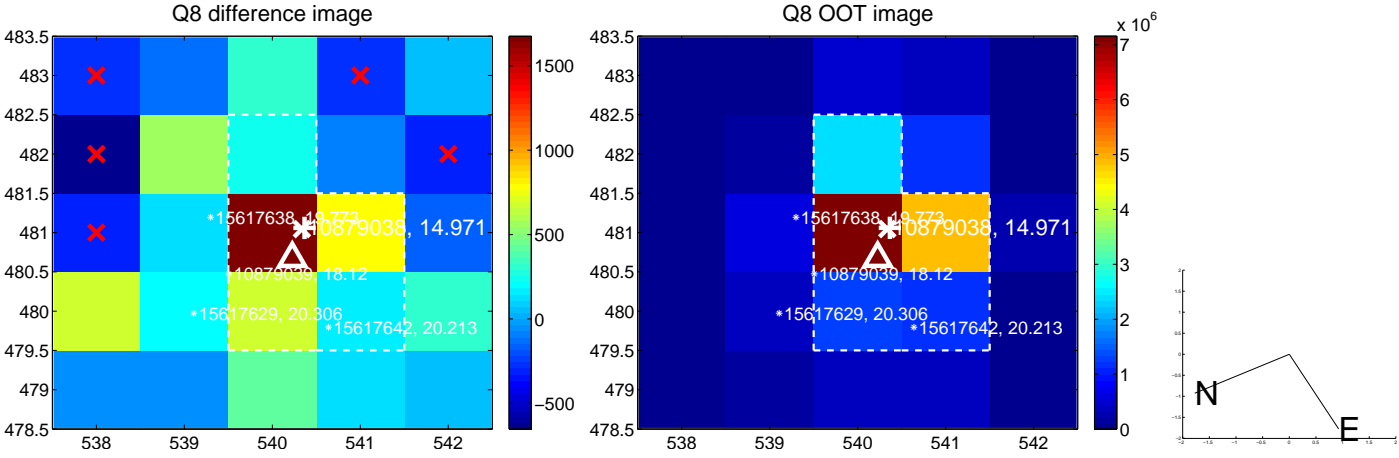
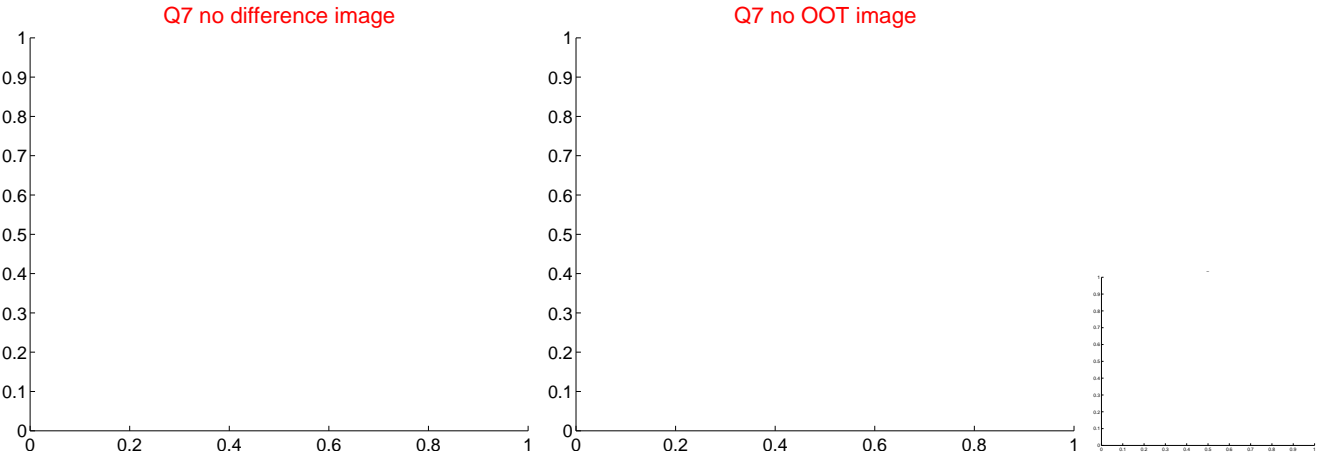
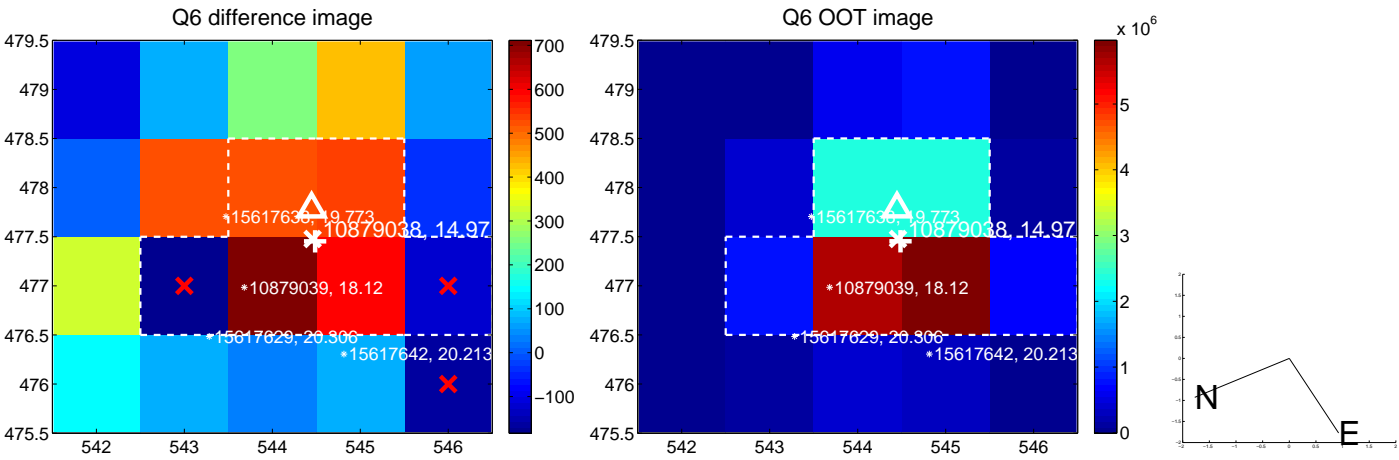
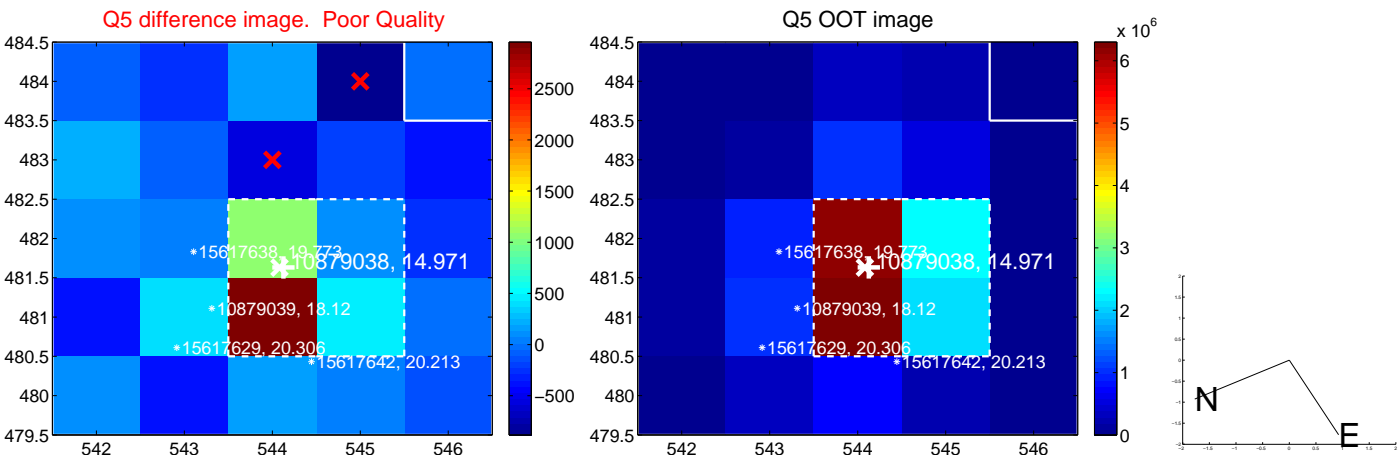


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

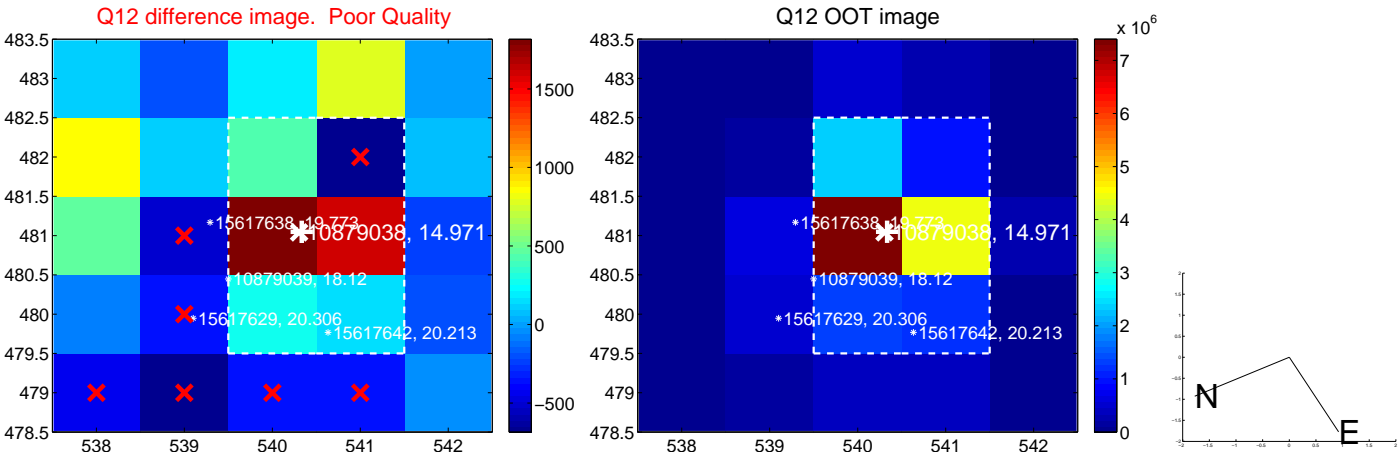
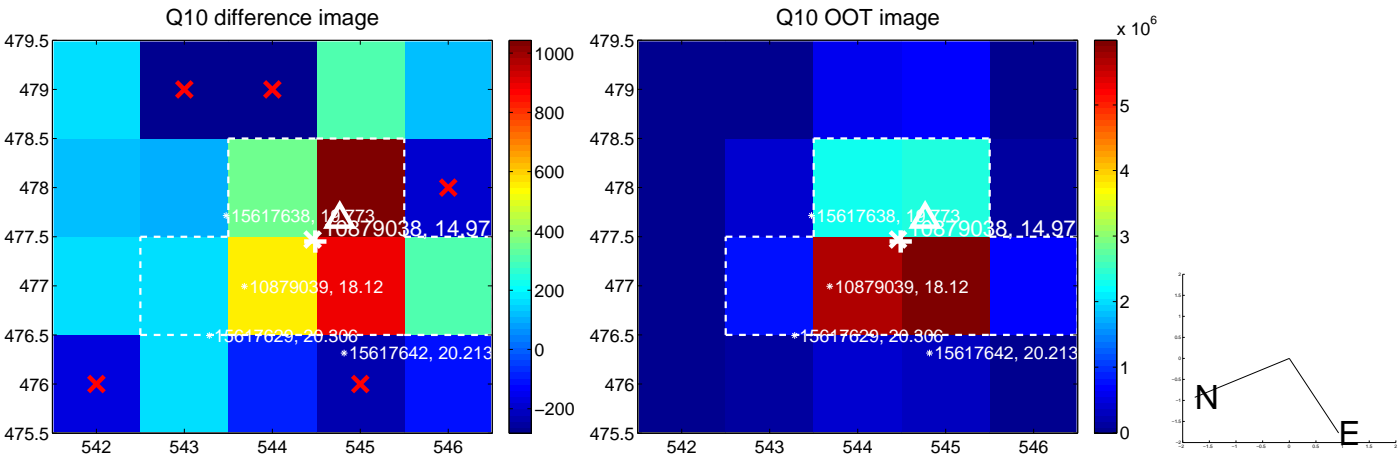
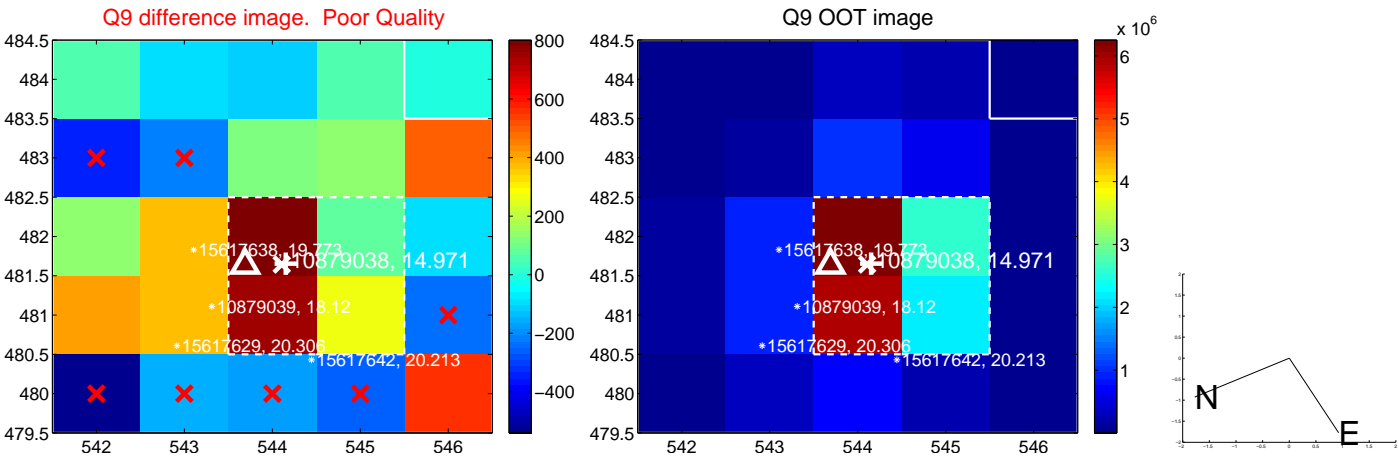
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



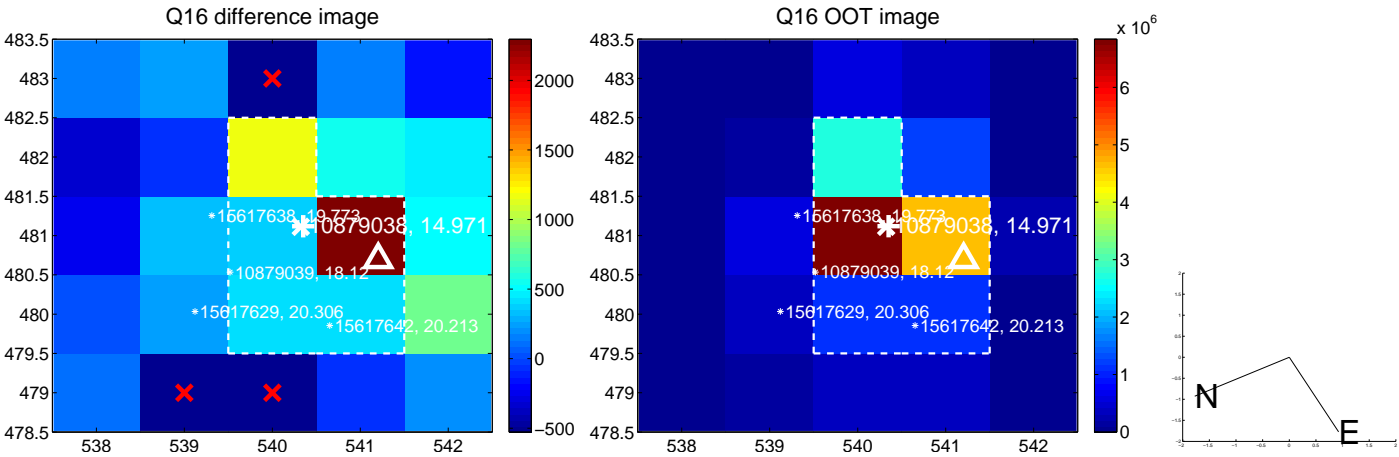
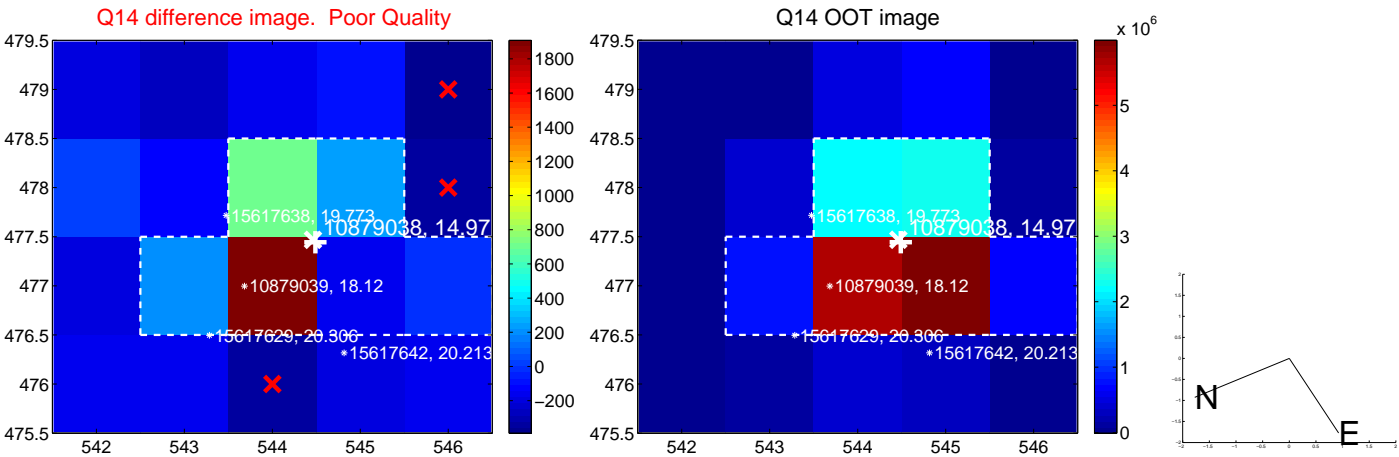
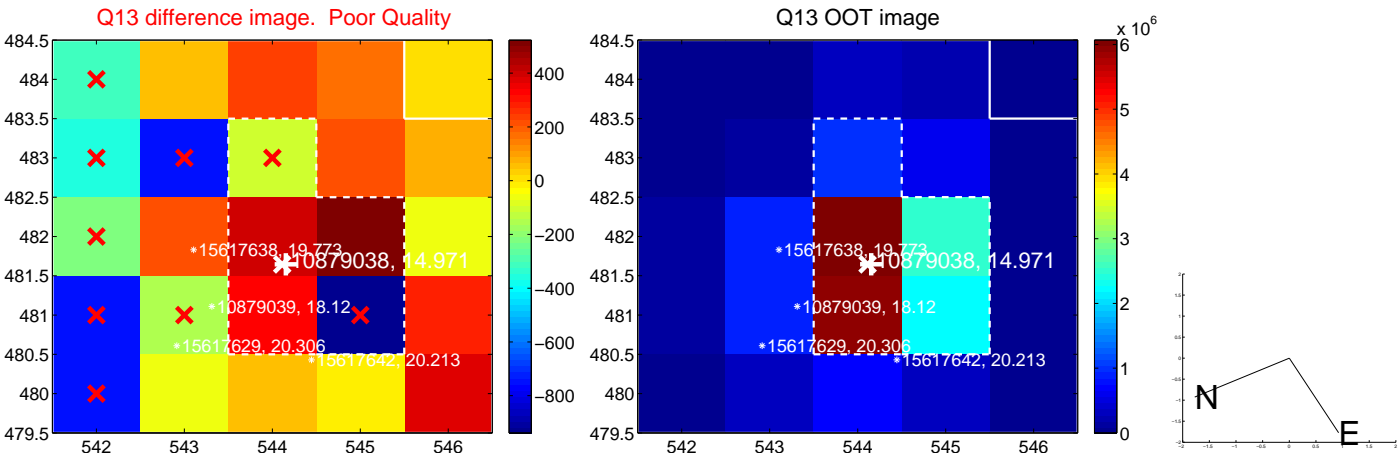
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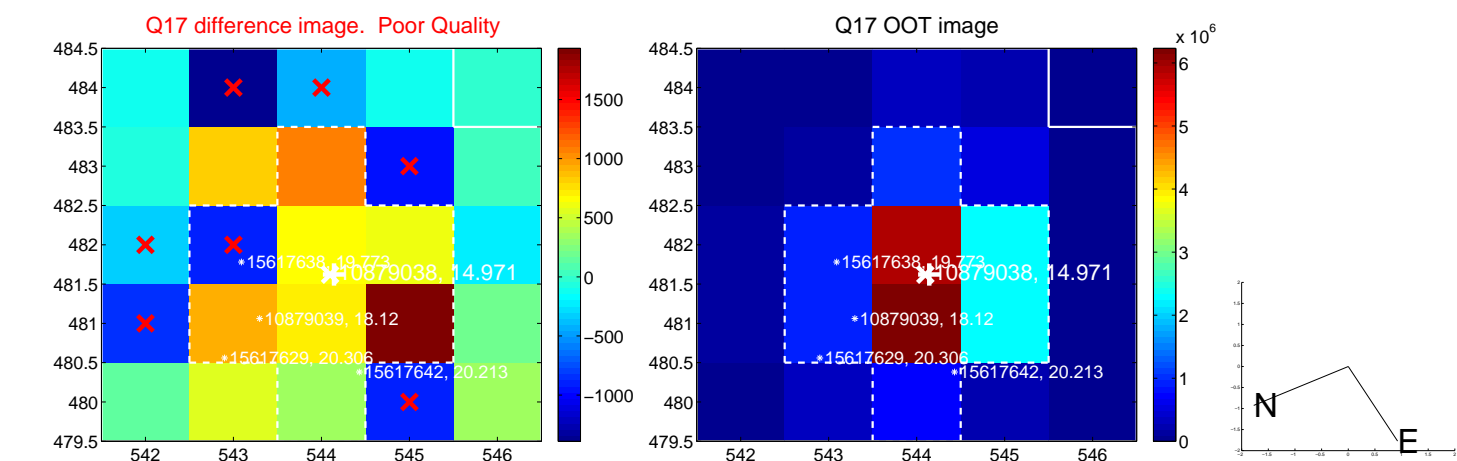


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

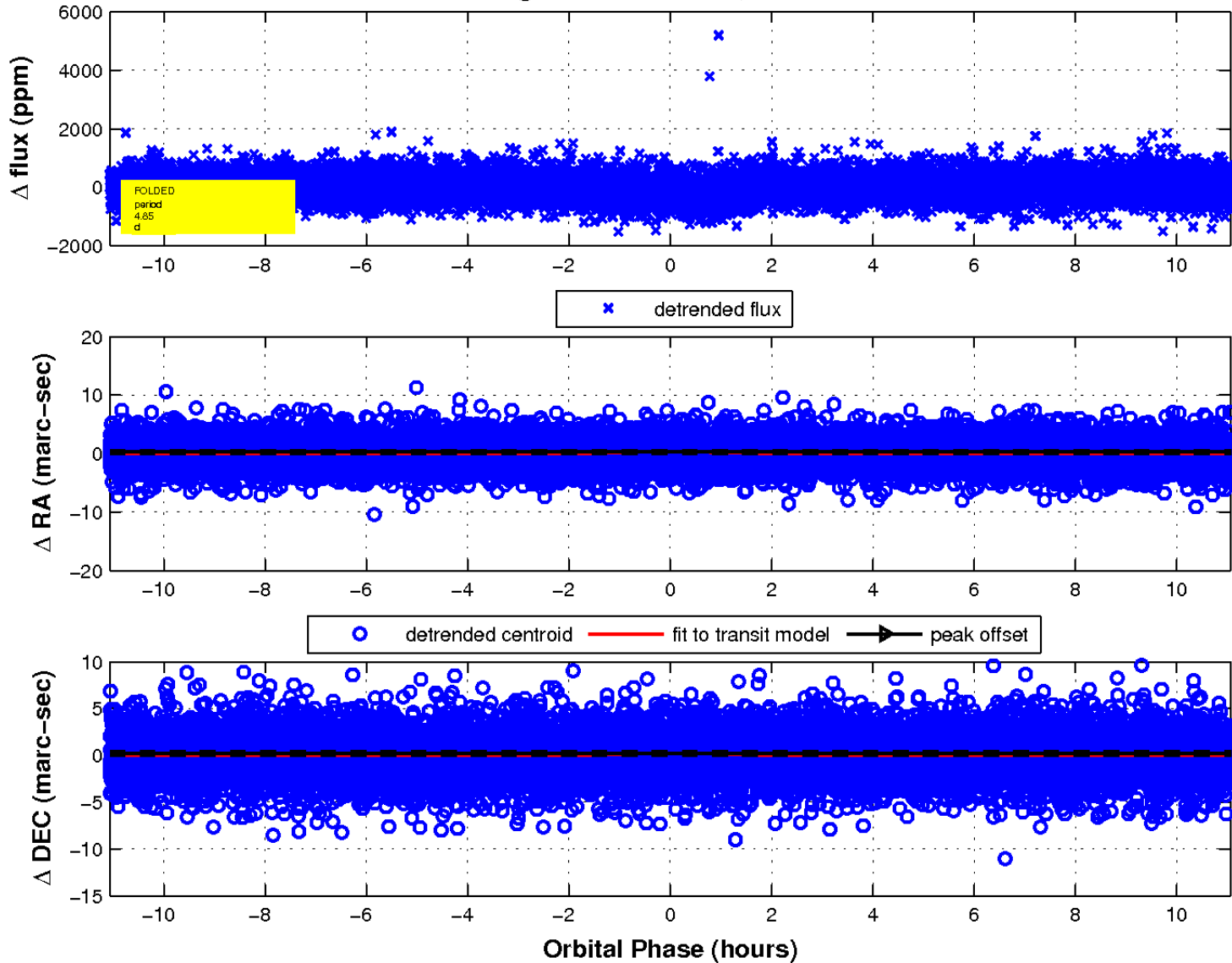




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

