

# KIC 008174072

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008174072-01	OBS	No	1.678753	132.401844	17.5	3.720	8.0	7.6	2.84	6756	1.39	14215.21

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008174072-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

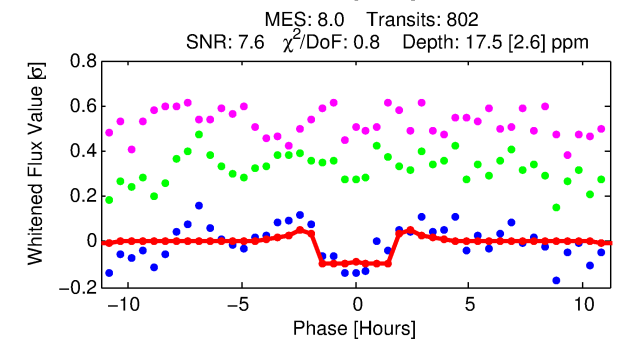
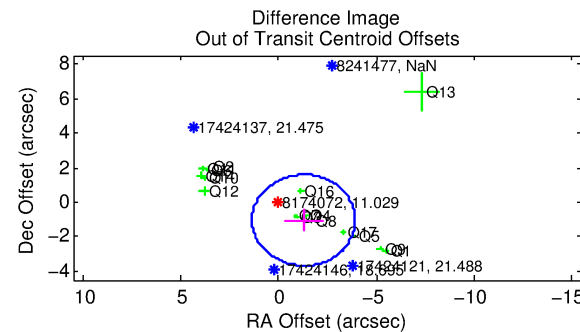
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

## Ephemeris Match Information For 008174072-01

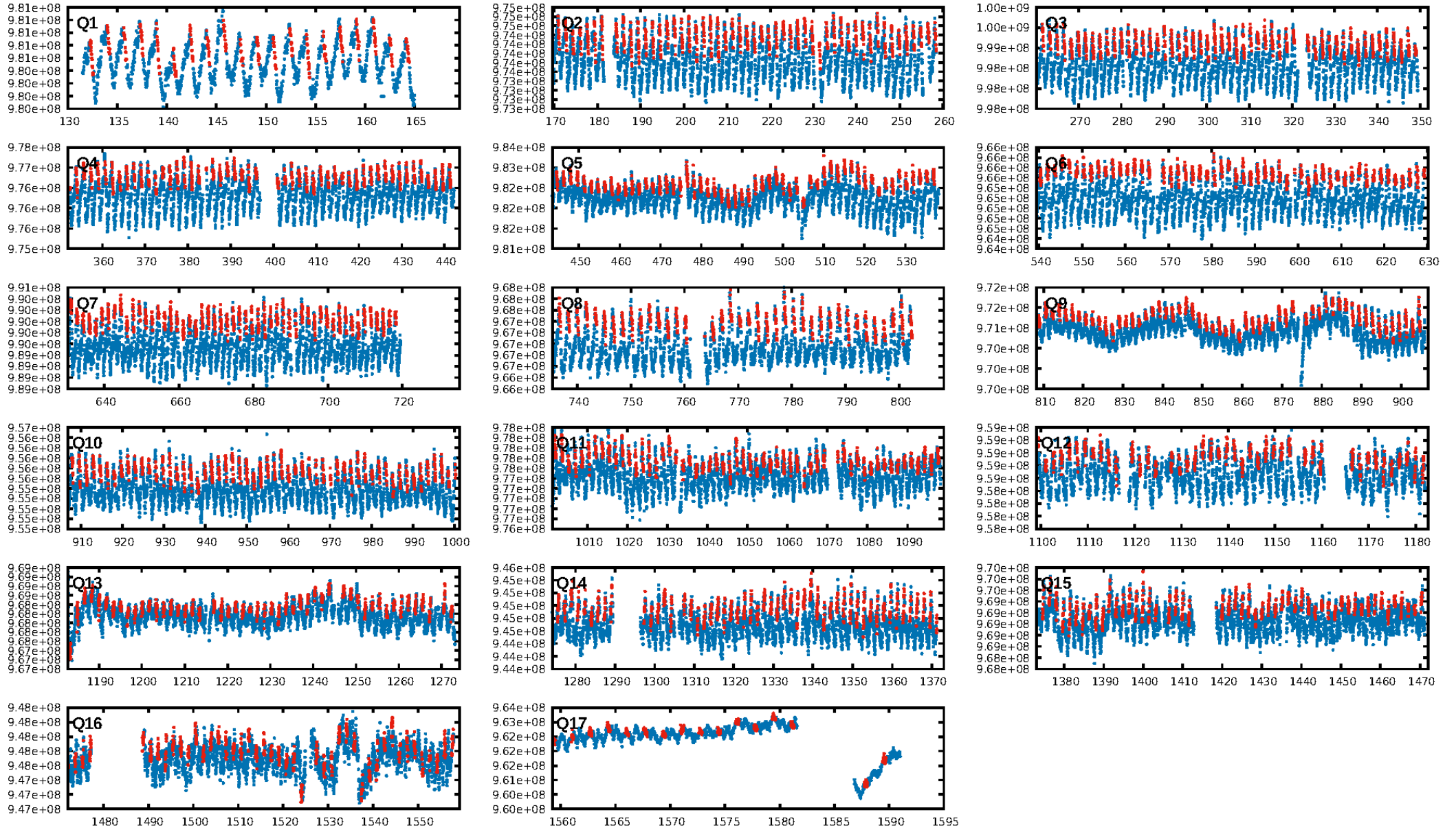
No Significant Match Found

## KIC: 8174072    Candidate: 1 of 1    Period: 1.679 d

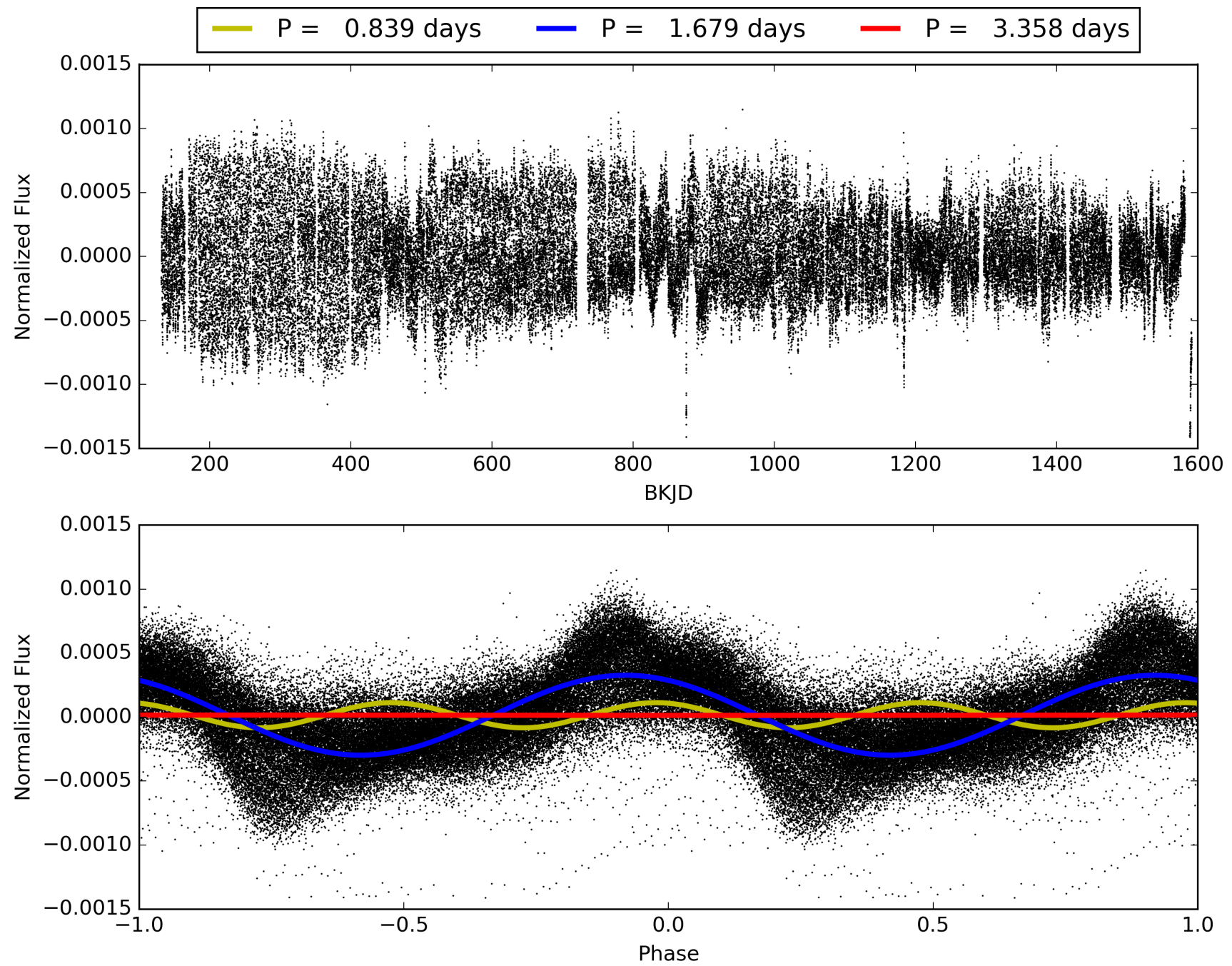


ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 6.27e-14  
RollingBand-fgt: 0.82 [625/766]  
GhostDiagnostic-chr: 1.032  
  
Centroid-sig: N/A  
Centroid-so: 0.360 arcsec [0.66σ]  
OotOffset-rm: 1.645 arcsec [1.87σ]  
KicOffset-rm: 1.787 arcsec [2.10σ]  
OotOffset-st: 4/3/4/5 [16]  
KicOffset-st: 4/3/4/5 [16]  
DiffImageQuality-fgm: 0.19 [3/16]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 008174072-01, PDC Light Curves



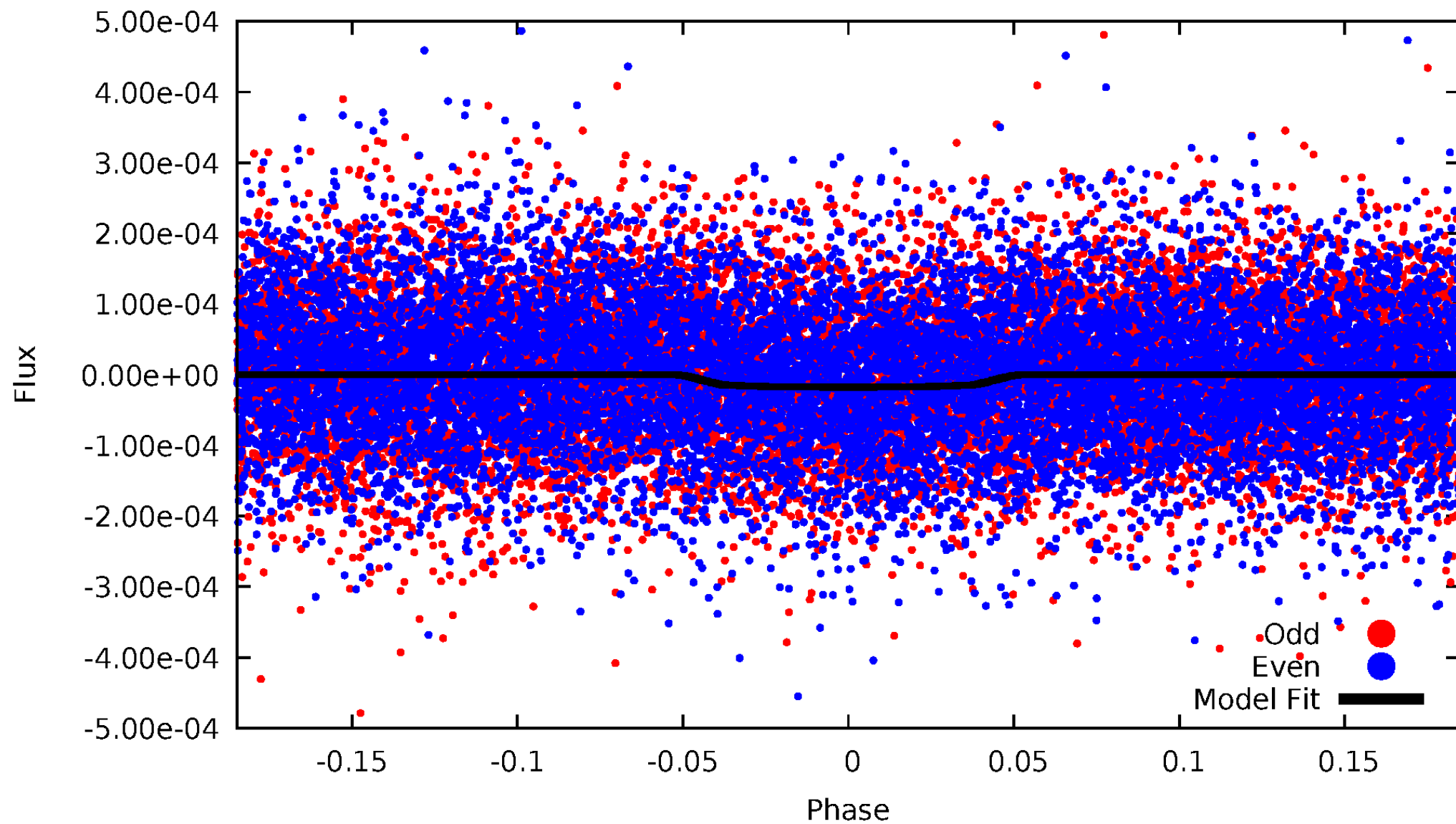
TCE 008174072-01





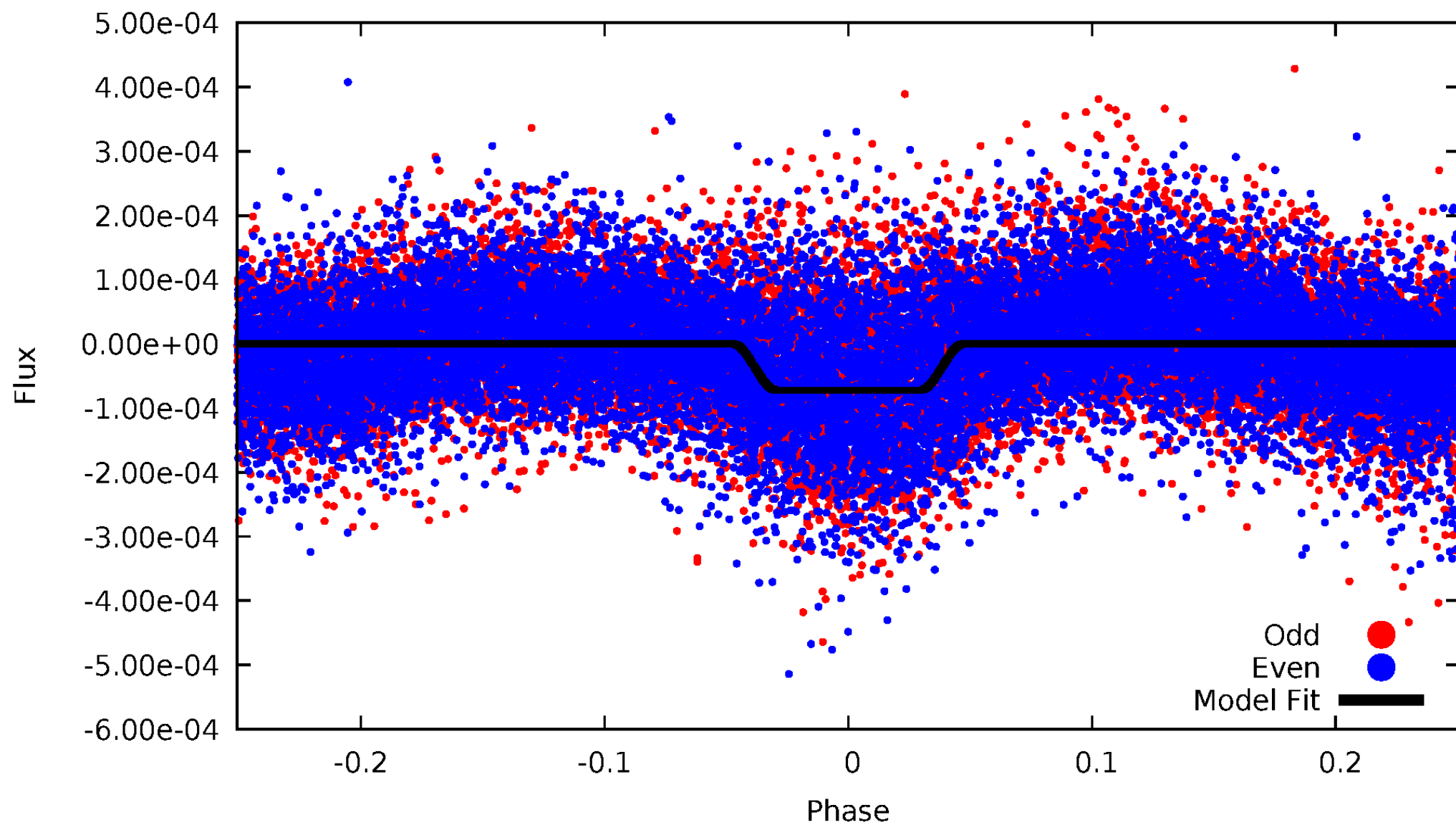
# DV Odd/Even

TCE 008174072-01



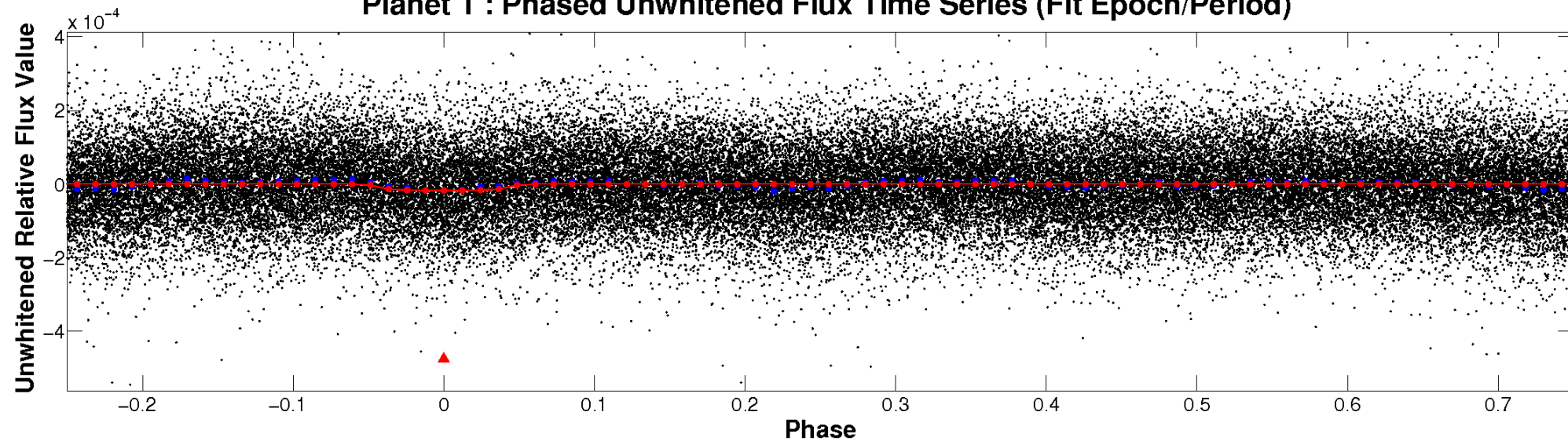
# ALT Odd/Even

TCE 008174072-01

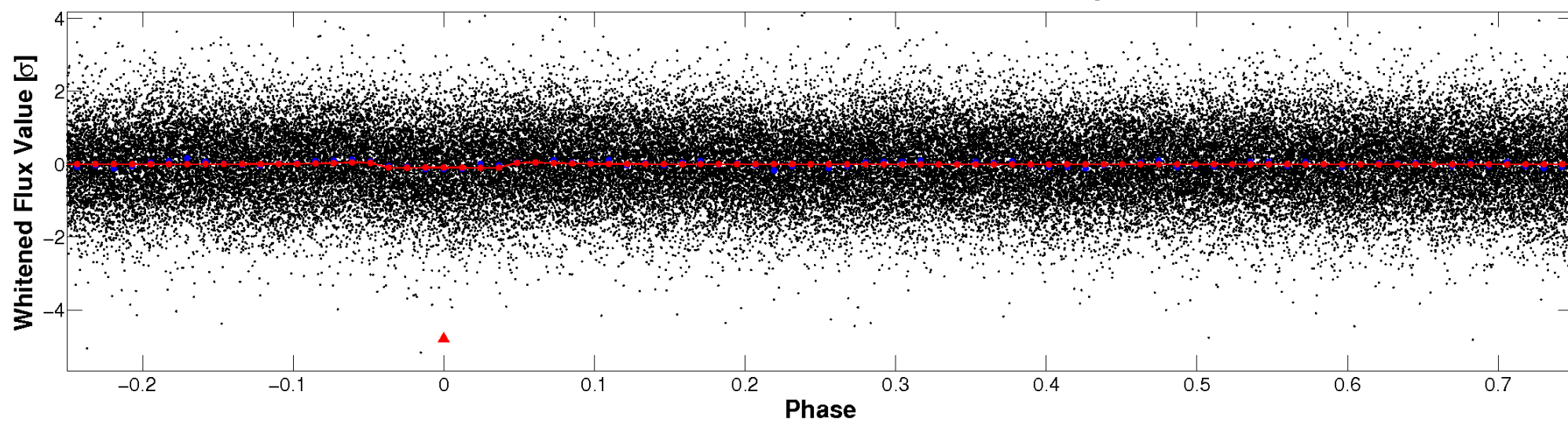


# Non-Whitened Vs. Whitened Light Curve

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

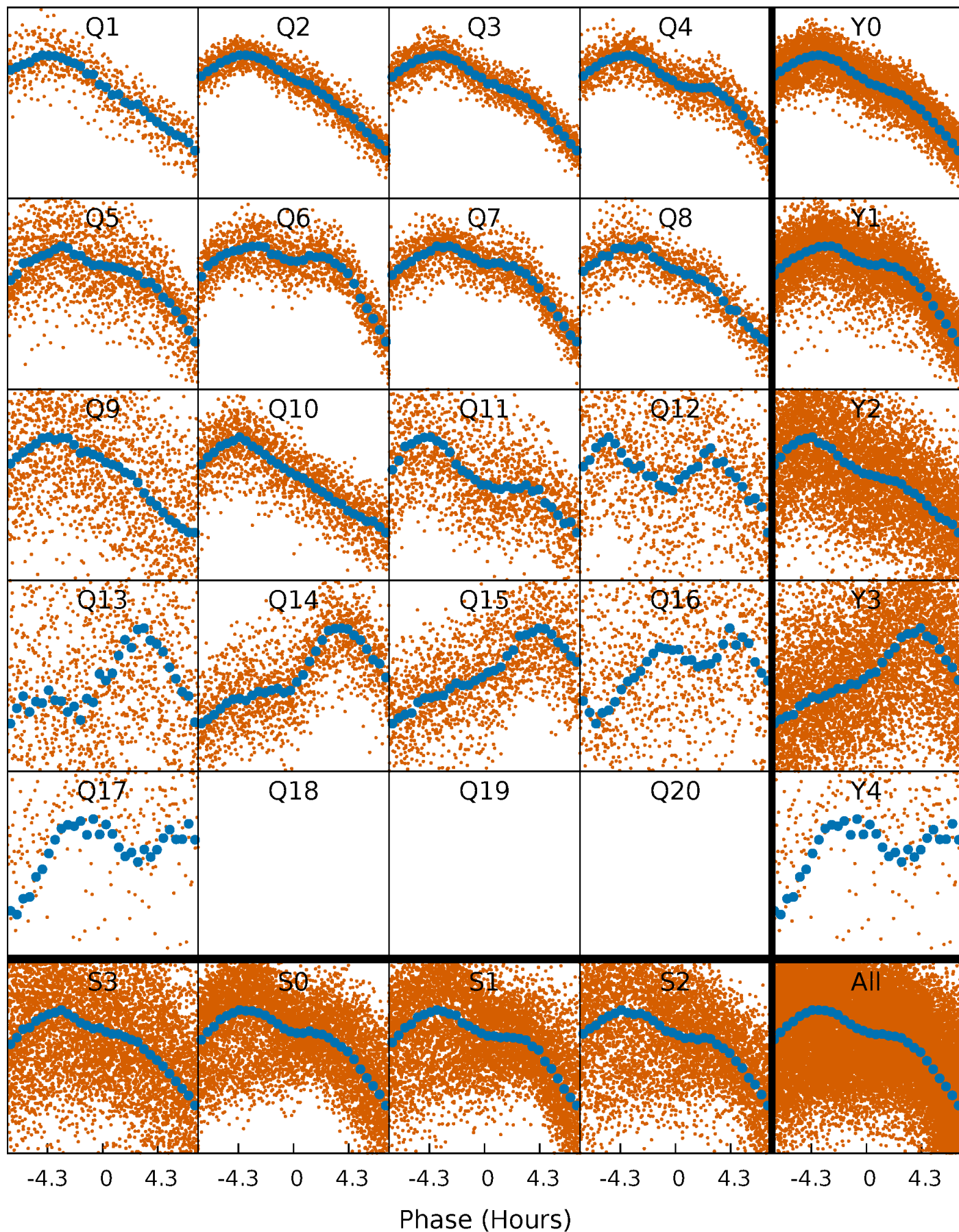


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

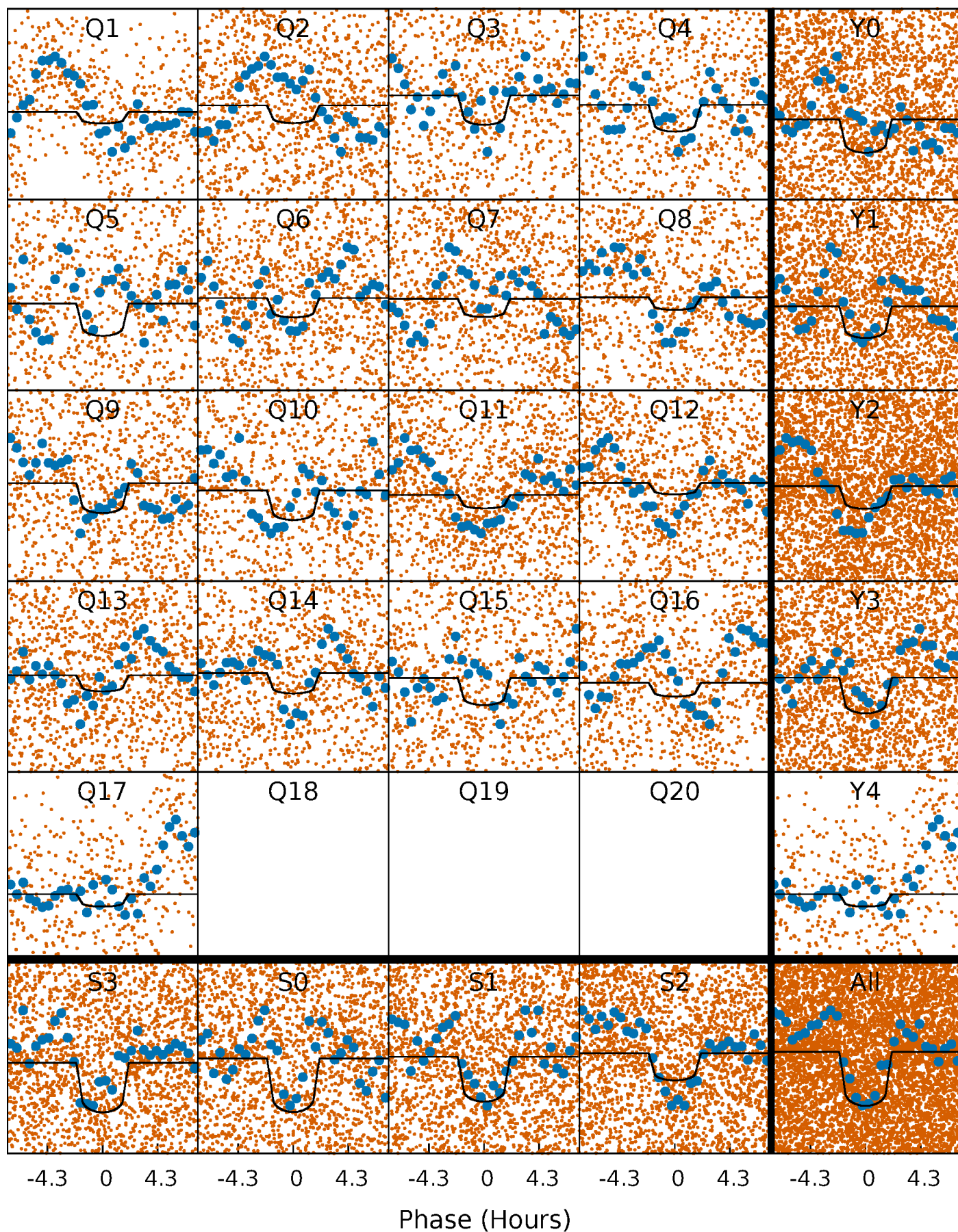
TCE 008174072-01 P= 1.678753 Days  $T_0=132.401844$  (BKJD)





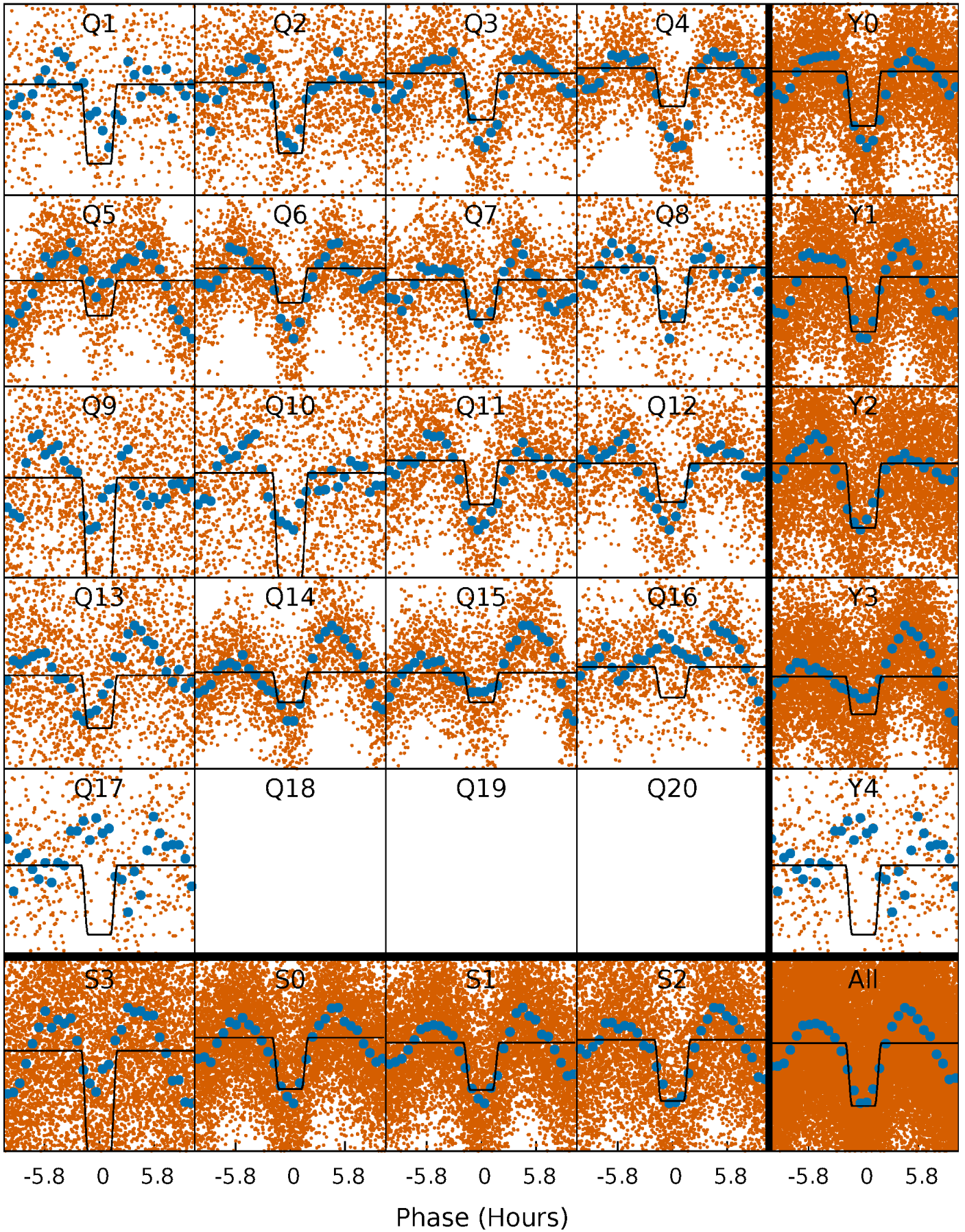
# DV Quarter-Phased Transit Curves

TCE 008174072-01 P= 1.678753 Days  $T_0=132.401844$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 008174072-01 P= 1.678757 Days  $T_0=132.384993$  (BKJD)

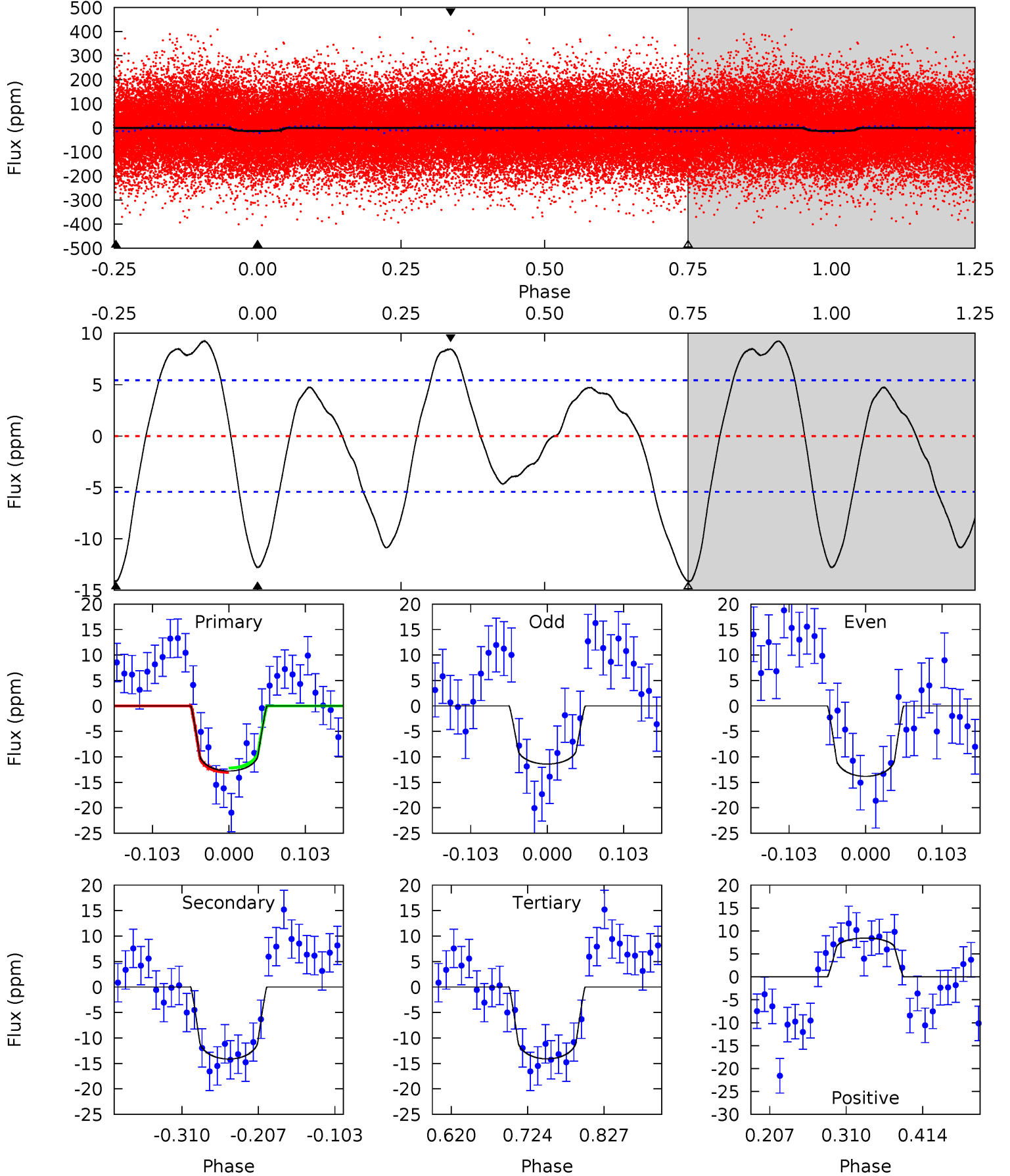




# DV Model-Shift Uniqueness Test

008174072-01, P = 1.678753 Days, E = 130.723091 Days

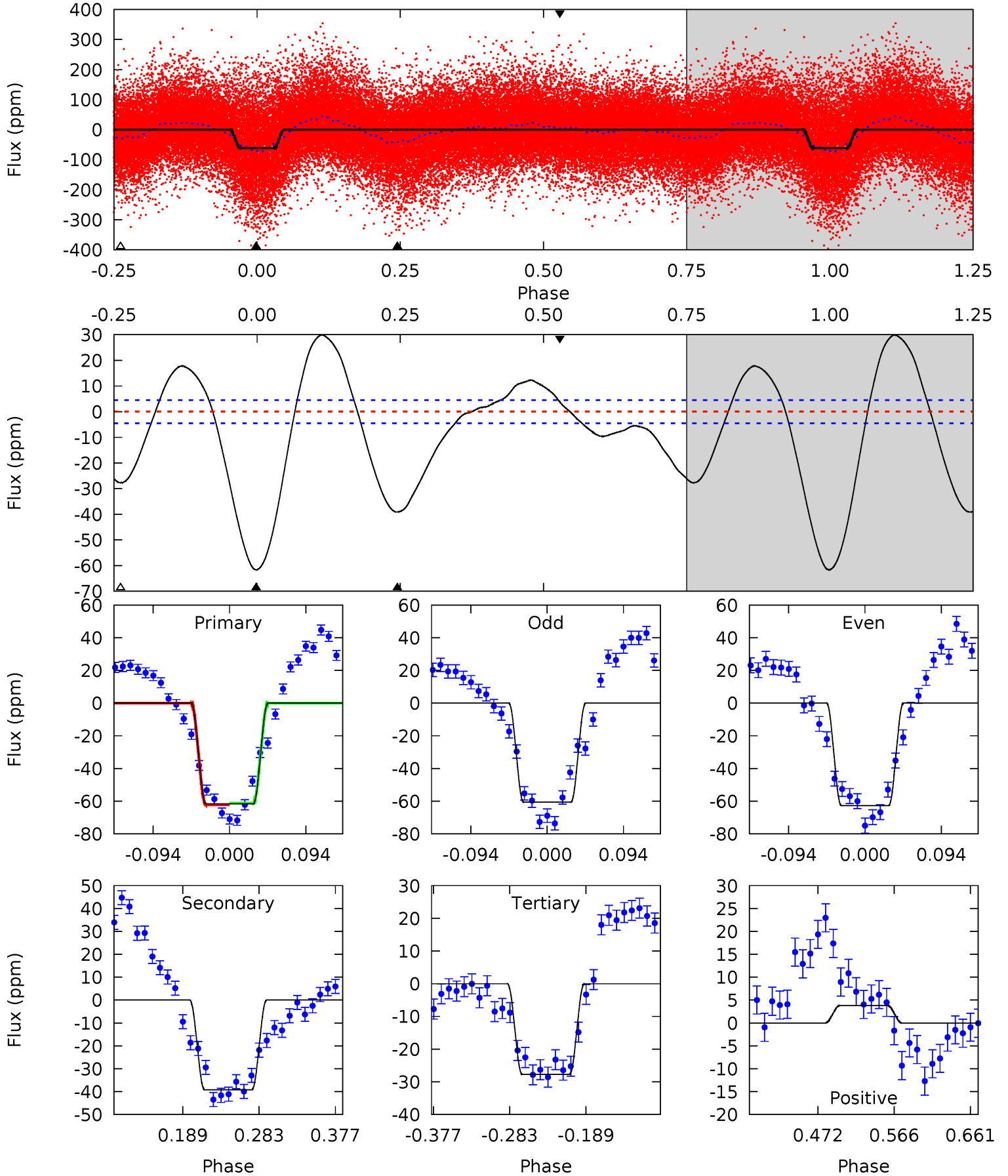
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	11.9	11.8	7.10	4.56	1.63	4.84	-1.12	3.63	0.02	4.77	1.01	0.94	0.40	0.36



# Alt Model-Shift Uniqueness Test

008174072-01, P = 1.678757 Days, E = 130.706236 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
62.5	39.7	28.1	3.87	4.58	1.67	14.4	34.4	58.6	11.6	35.8	1.08	0.99	0.33	0.50





### Stellar Parameters For KIC 008174072

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6756^{+168}_{-202}$	$3.744^{+0.285}_{-0.095}$	$-0.240^{+0.300}_{-0.250}$	$2.842^{+0.440}_{-1.026}$	$1.633^{+0.201}_{-0.373}$	$0.100^{+0.218}_{-0.030}$
	+2%/-3%	+8%/-3%	+125%/-104%	+15%/-36%	+12%/-23%	+218%/-30%
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 008174072-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-14 \pm 1$	$1.31^{+0.29}_{-0.32}$	$3819^{+225}_{-304}$	$6089^{+759}_{-571}$	$4.675^{+3.563}_{-1.454}$
Alt.	$-39 \pm 1$	$2.53^{+0.42}_{-0.48}$	$3806^{+240}_{-332}$	$5661^{+325}_{-279}$	$3.612^{+1.642}_{-0.905}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

$T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

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

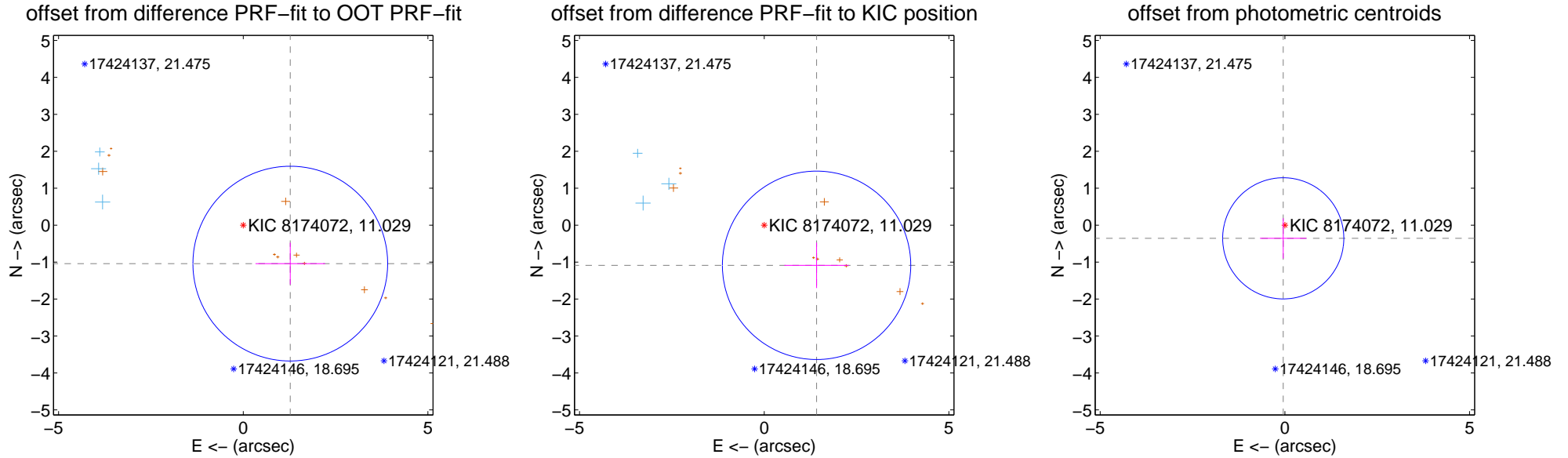
## DV Centroid Data

Supplemental centroid analysis for 008174072-01. **Kepler magnitude: 11.03.** Transit SNR 7.64

**There are 3 quarters with good PRF difference image offsets**

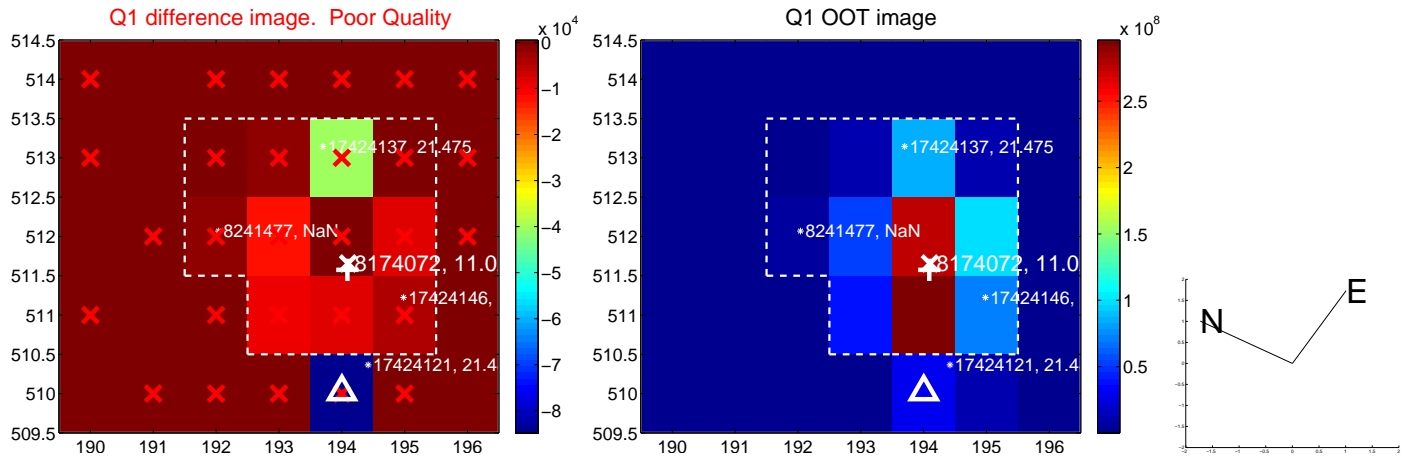
The direct PRF centroid is offset from the target star catalog position by about 0.40 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.645 \pm 0.879$	1.87	$-1.274 \pm 0.941$	$-1.041 \pm 0.565$
PRF-fit source offset from KIC position	$1.787 \pm 0.850$	2.10	$-1.418 \pm 0.872$	$-1.087 \pm 0.615$
photometric centroid source offset	$0.36 \pm 0.55$	0.66	$0.04 \pm 0.63$	$-0.36 \pm 0.55$

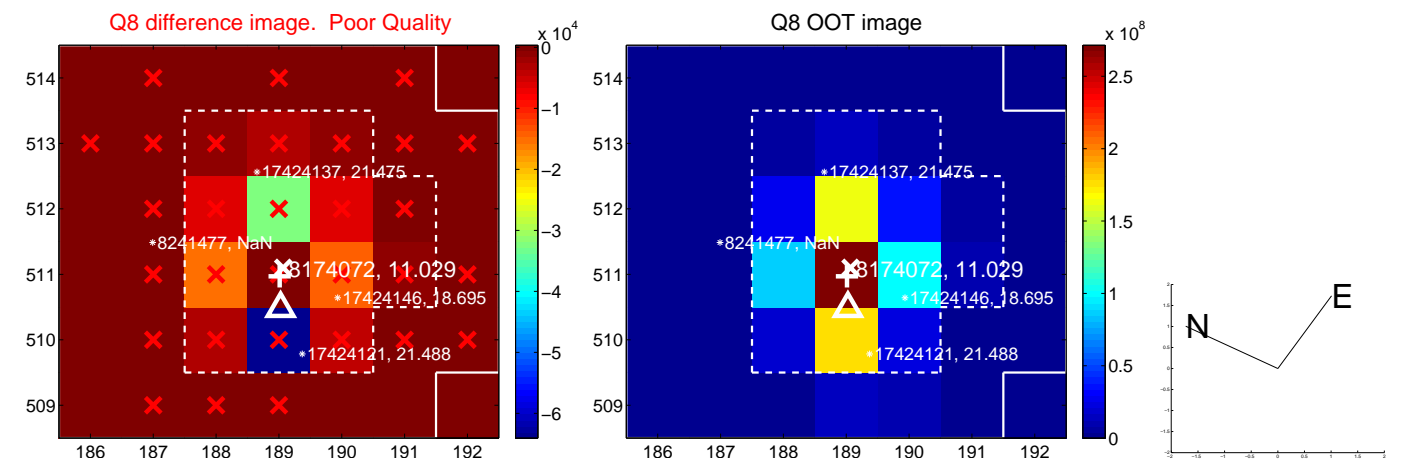
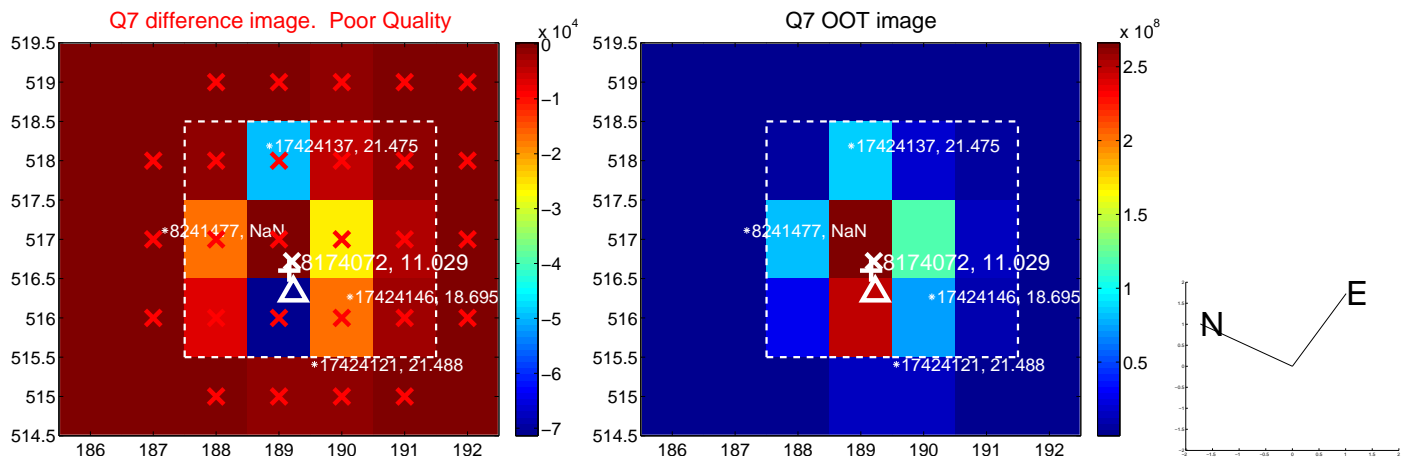
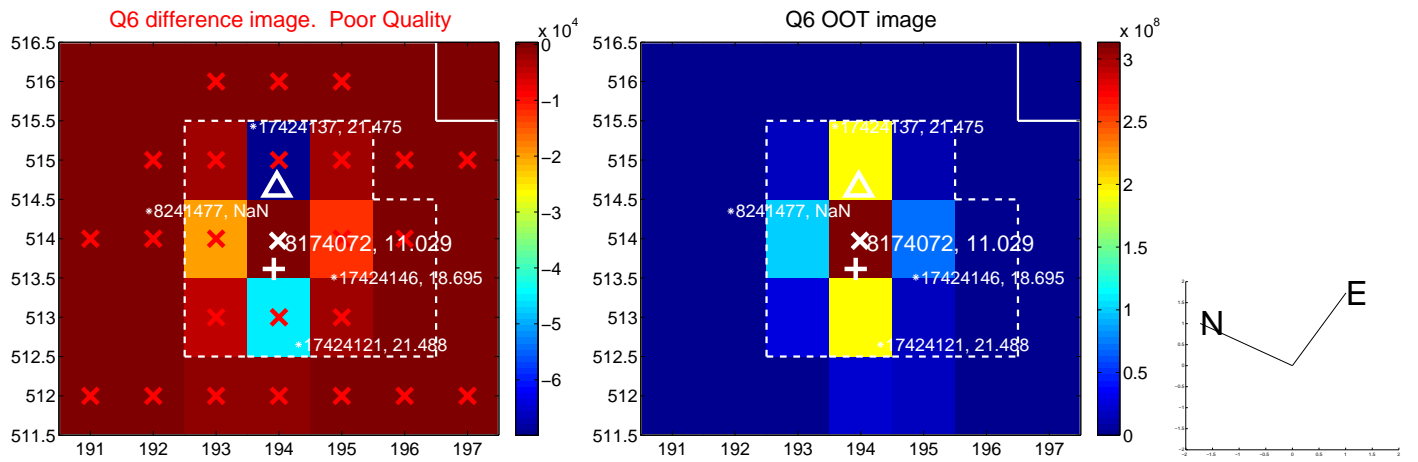
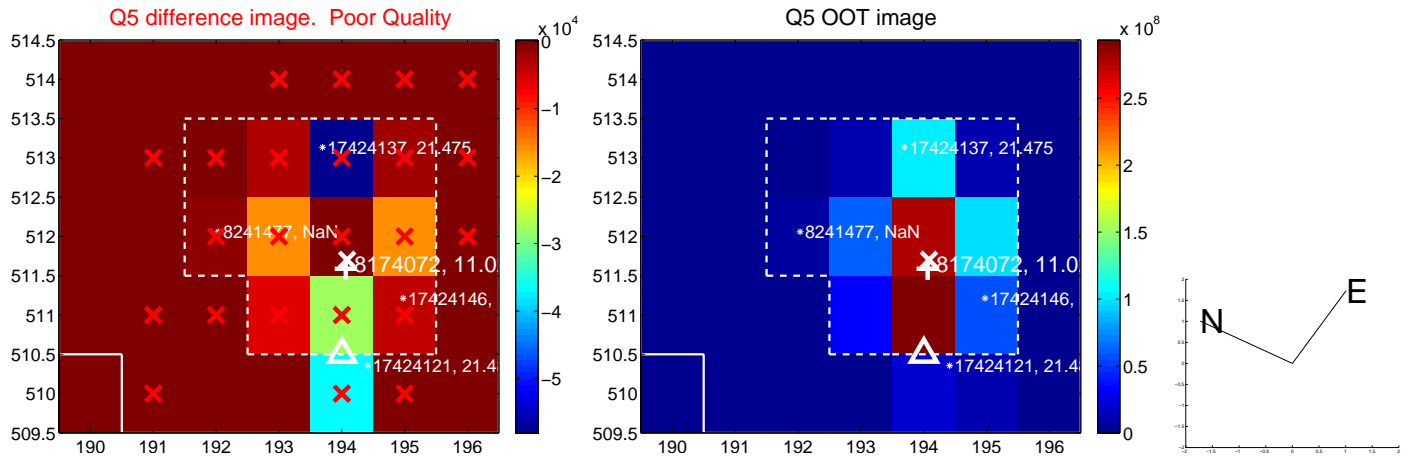


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

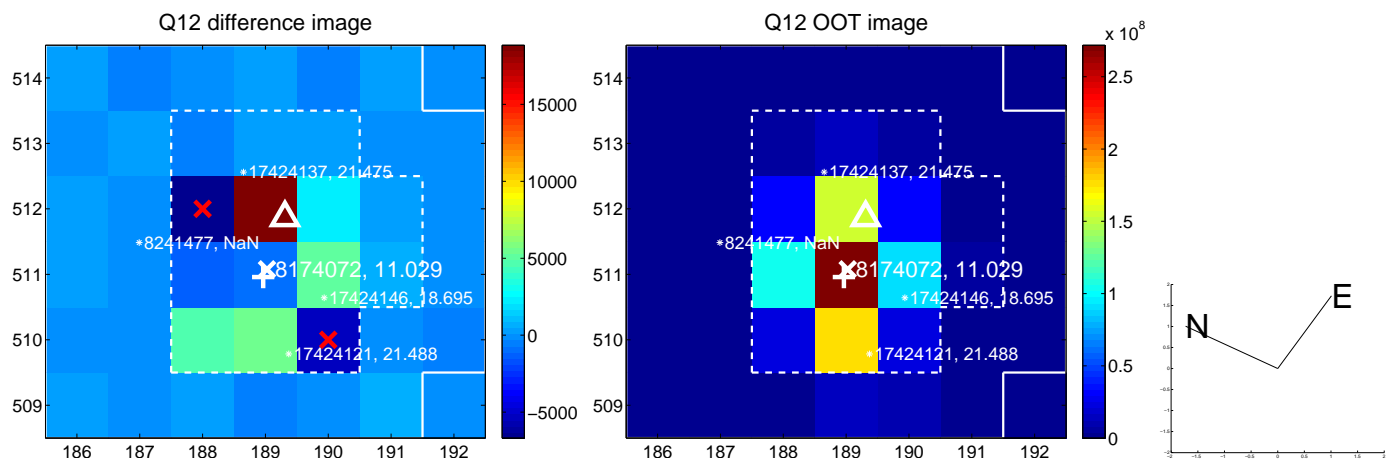
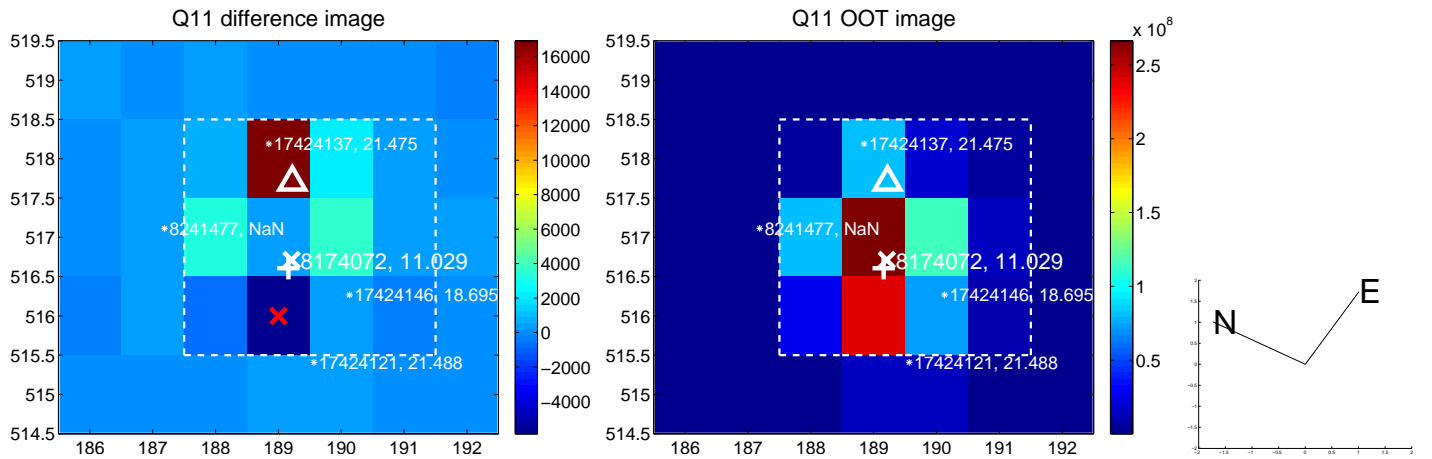
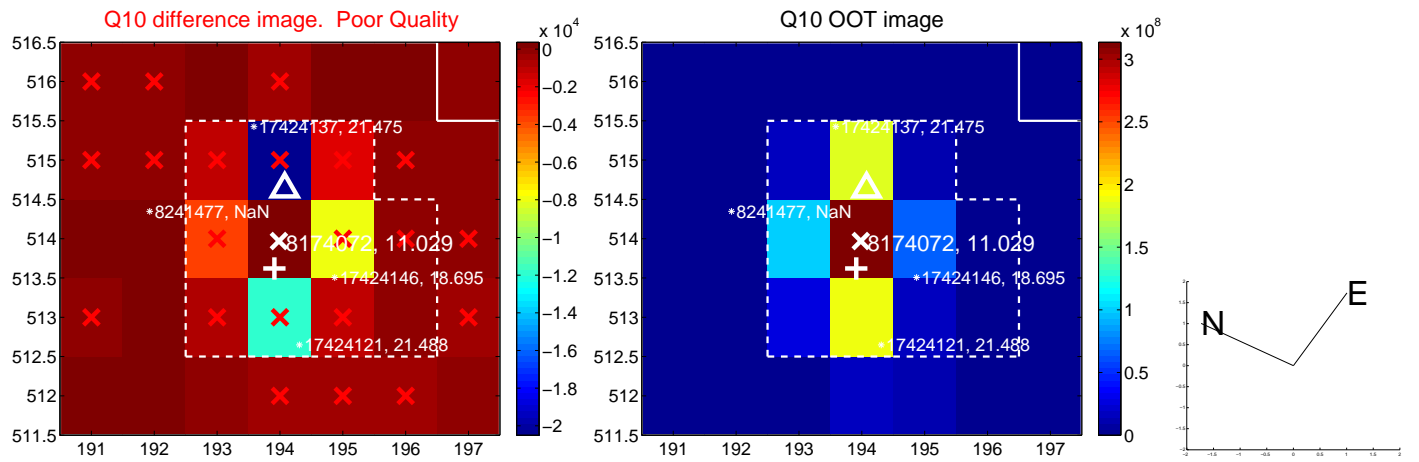
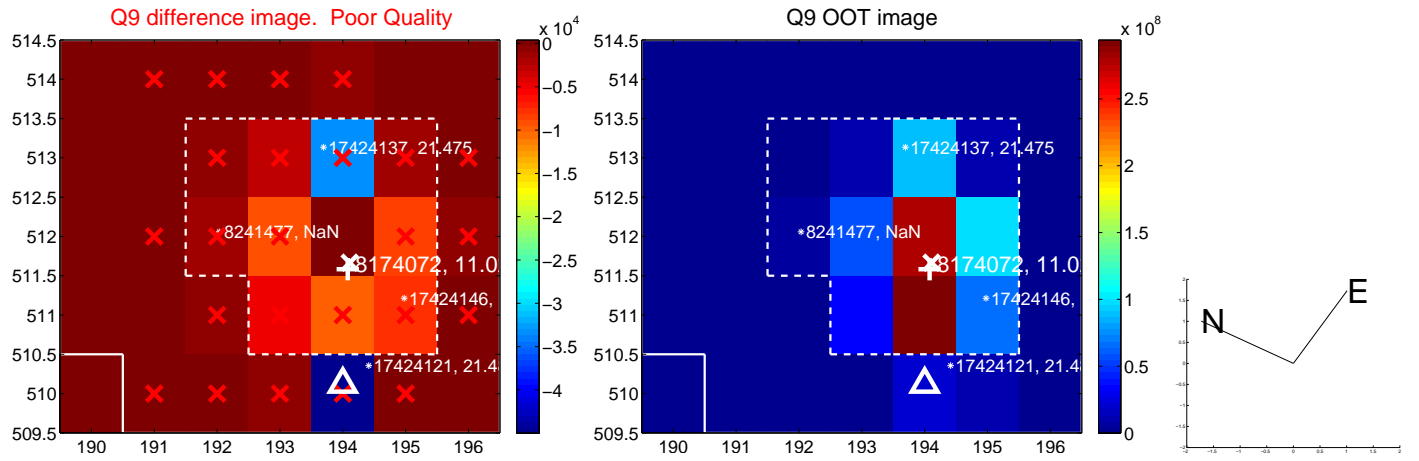


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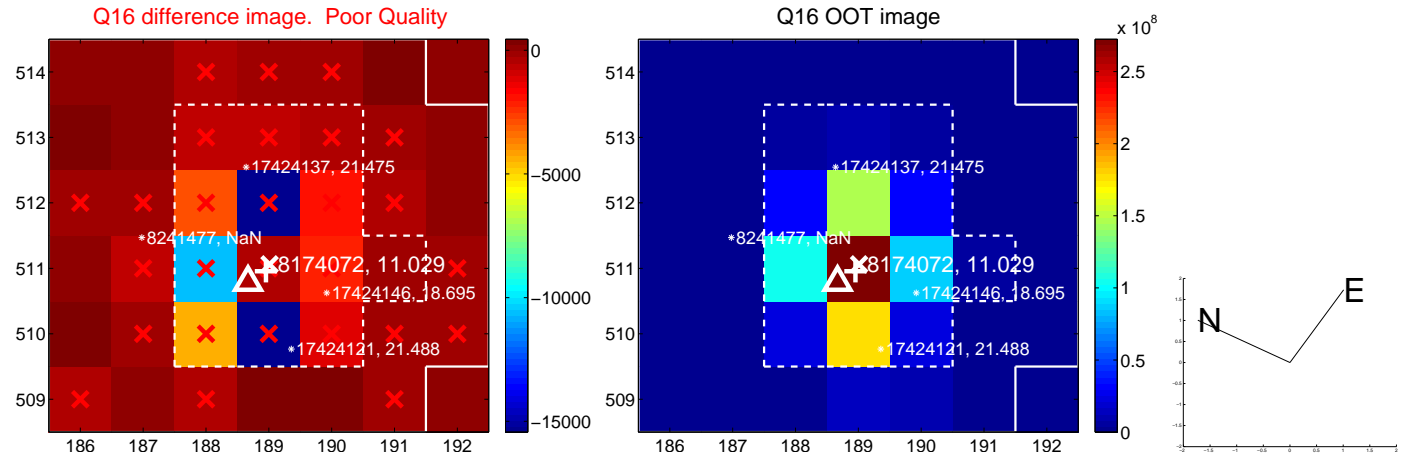
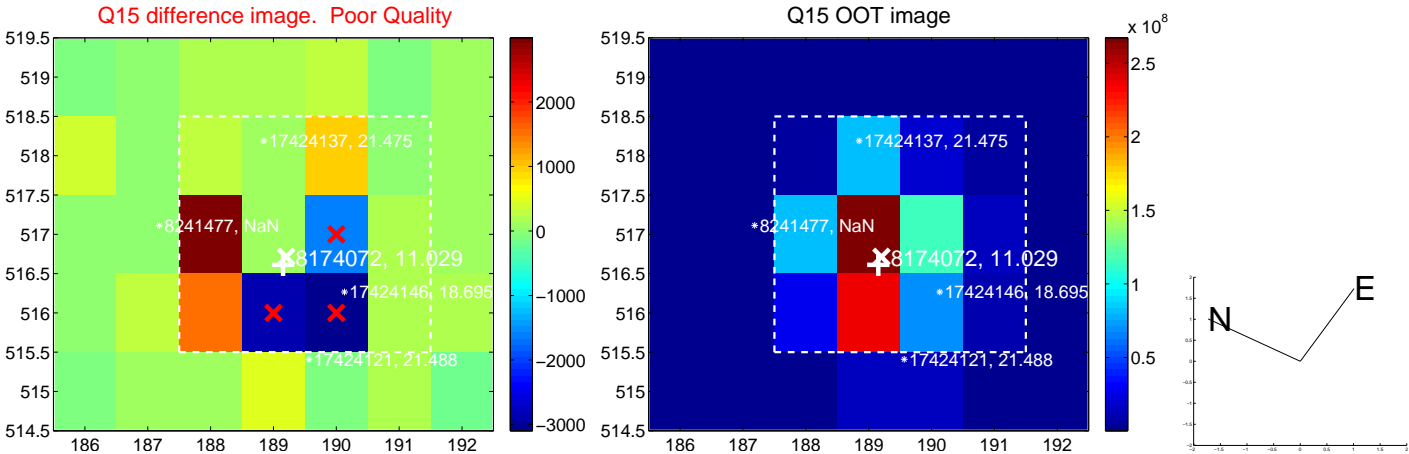
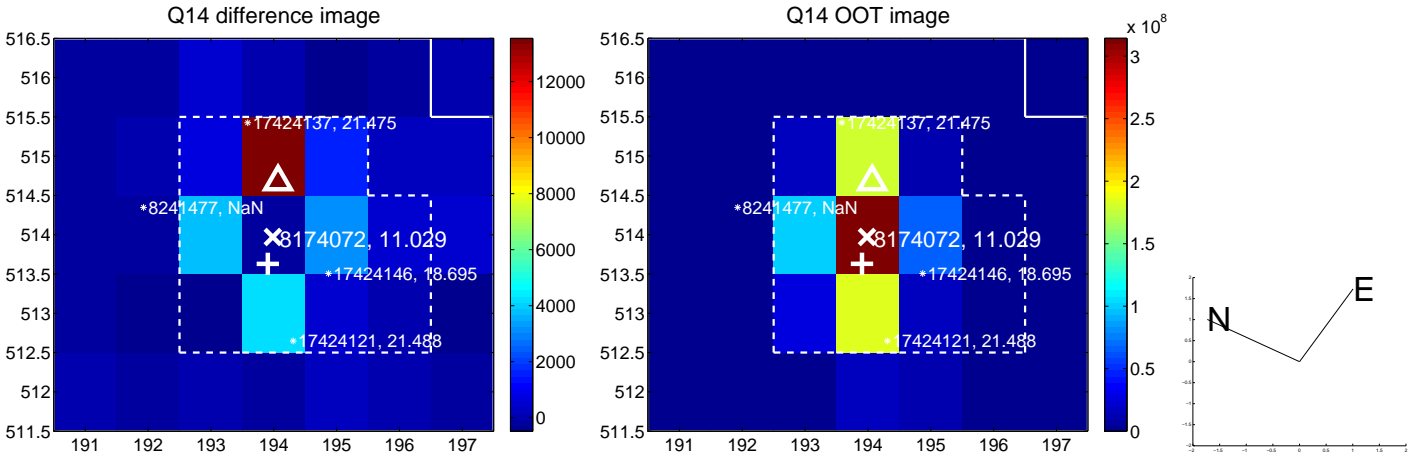
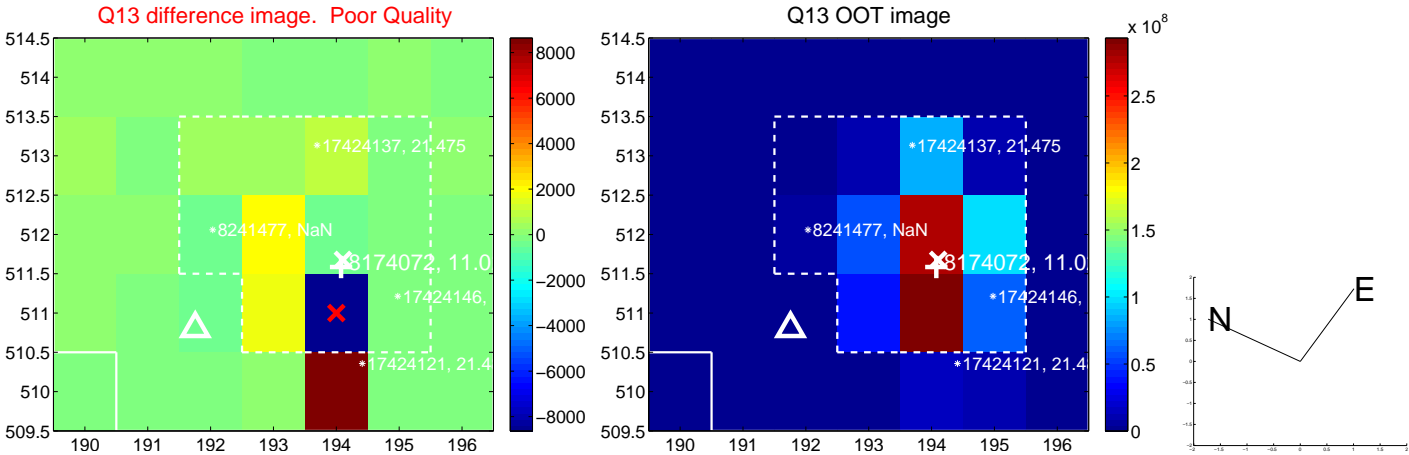




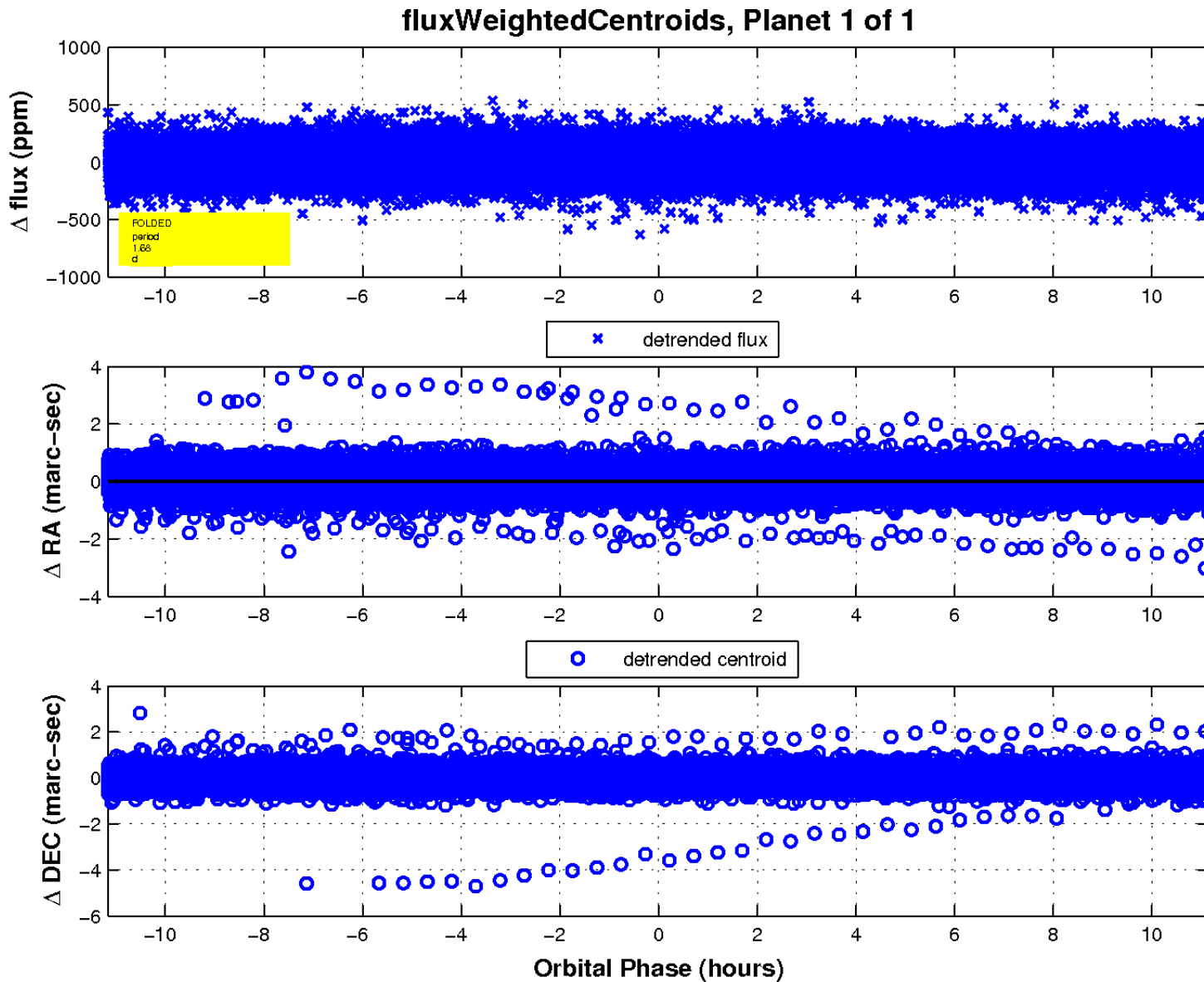
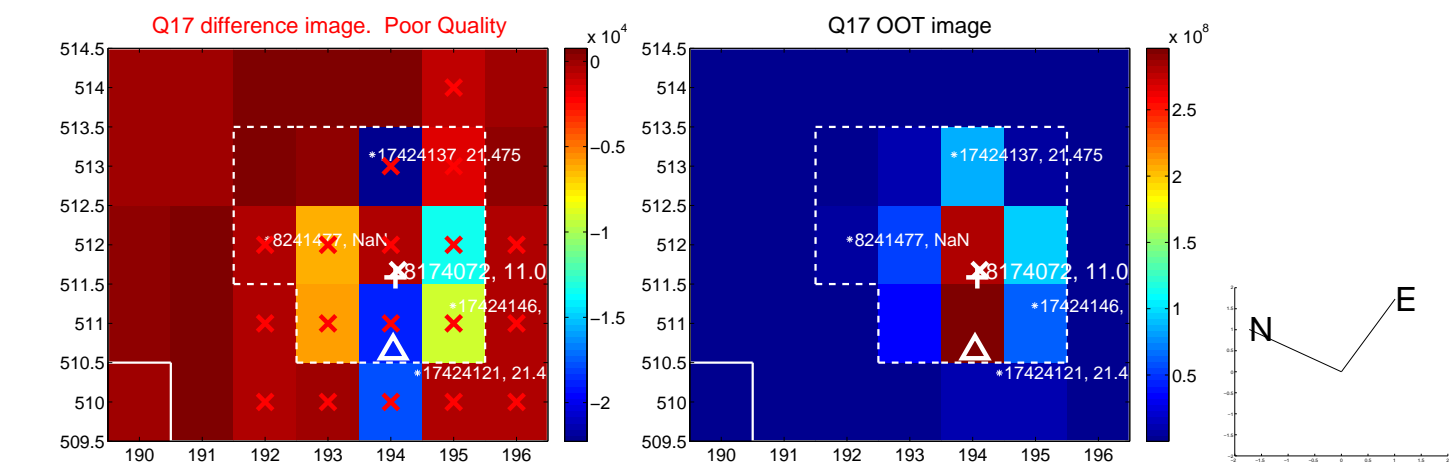
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UKIRT Image

