

# KIC 008784359

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008784359-01	OBS	No	0.570097	131.800954	12.5	1.964	7.3	5.2	1.58	6187	0.66	18571.10

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008784359-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

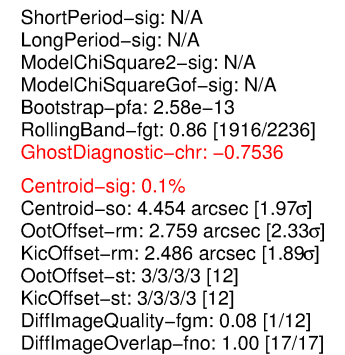
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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 008784359-01

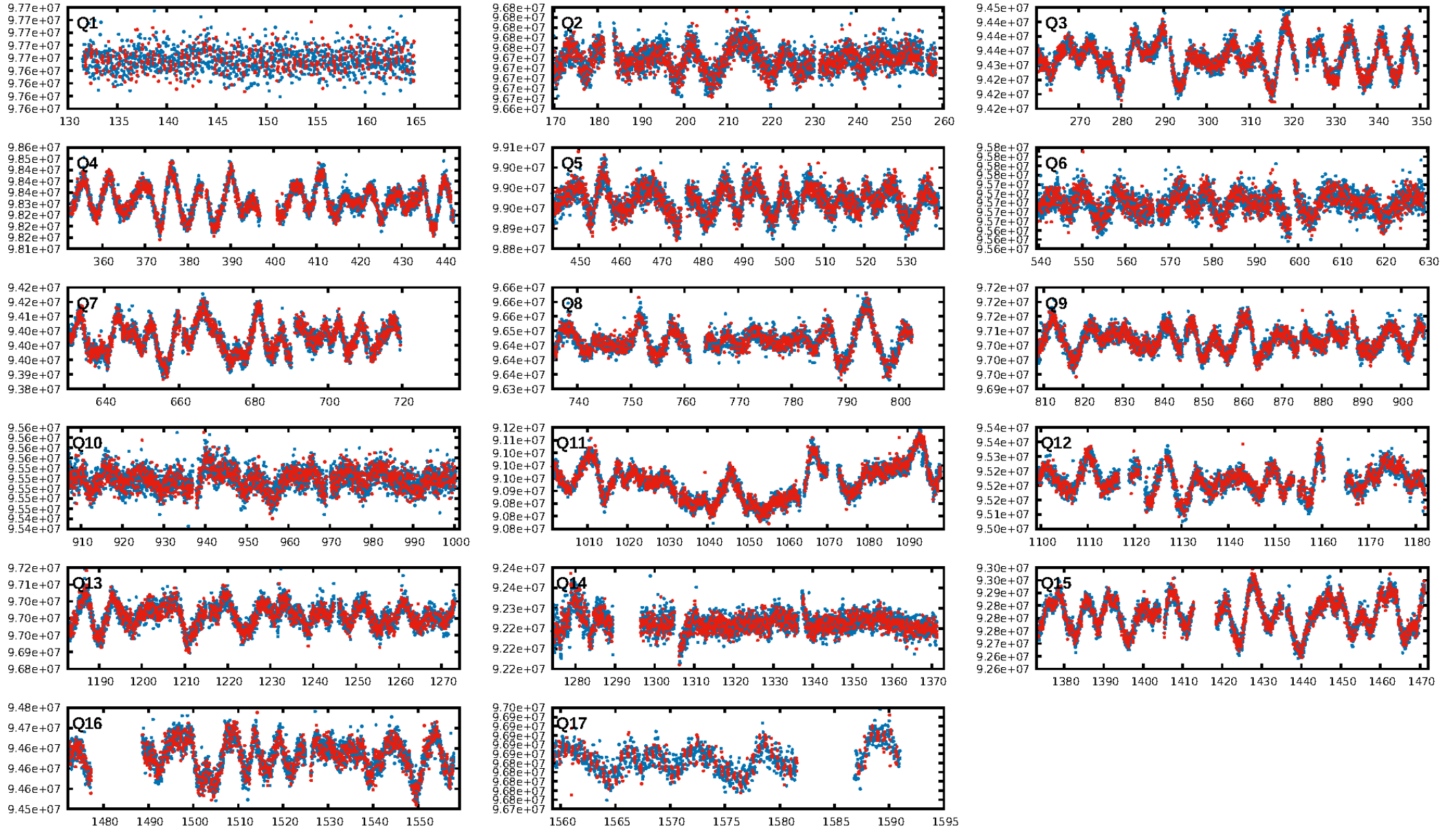
No Significant Match Found

## KIC: 8784359    Candidate: 1 of 1    Period: 0.570 d

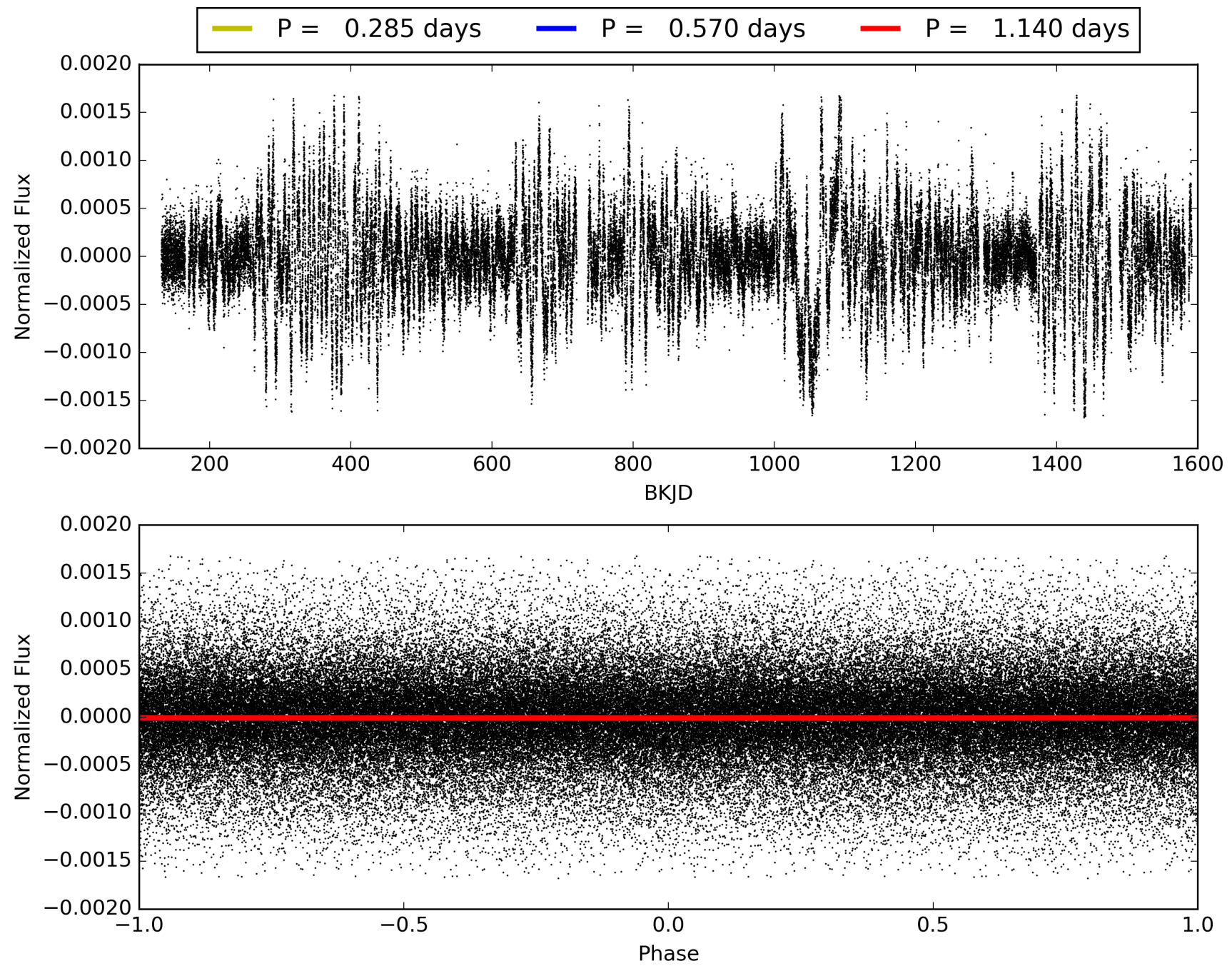


This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008784359-01, PDC Light Curves



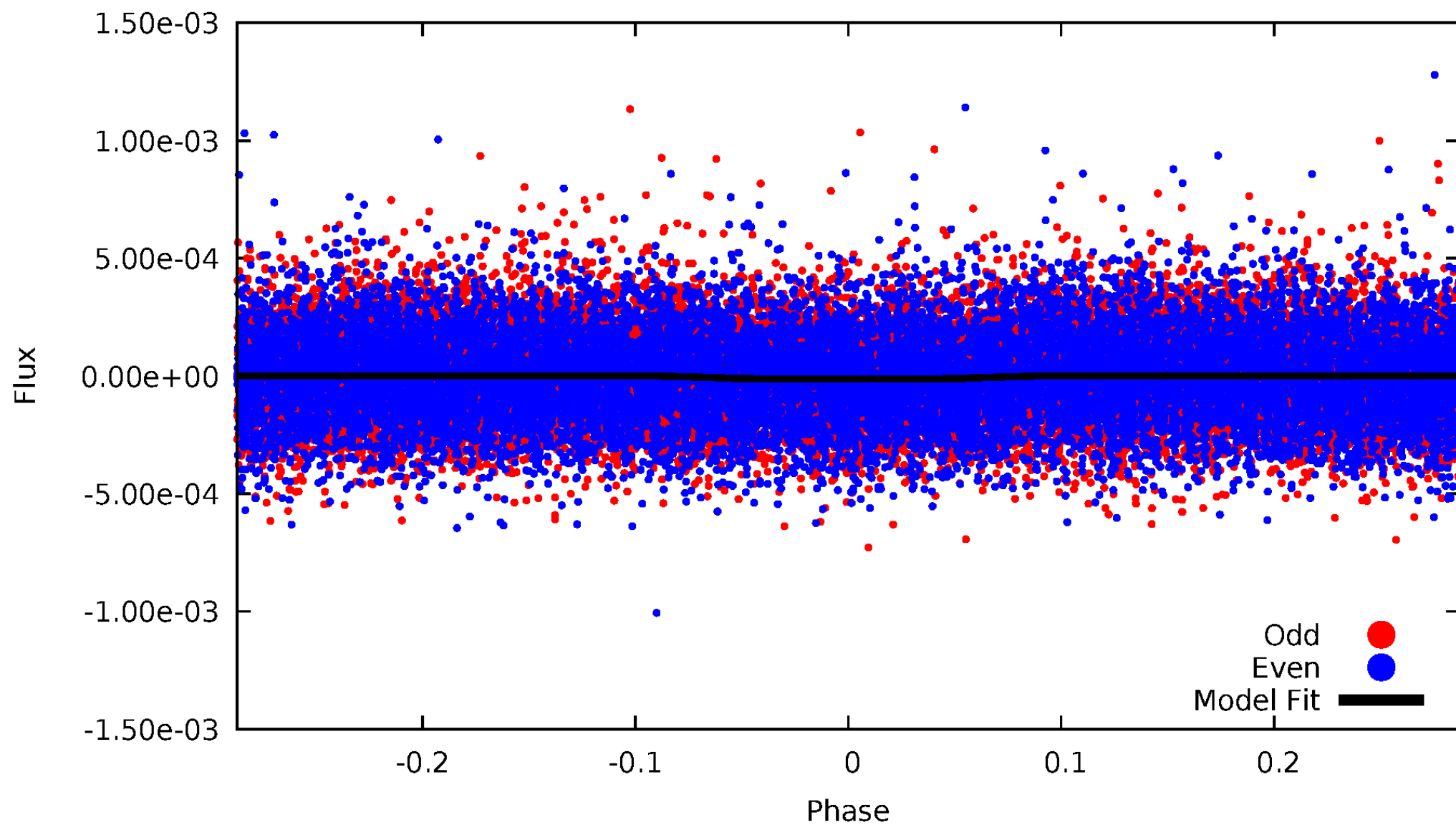
TCE 008784359-01





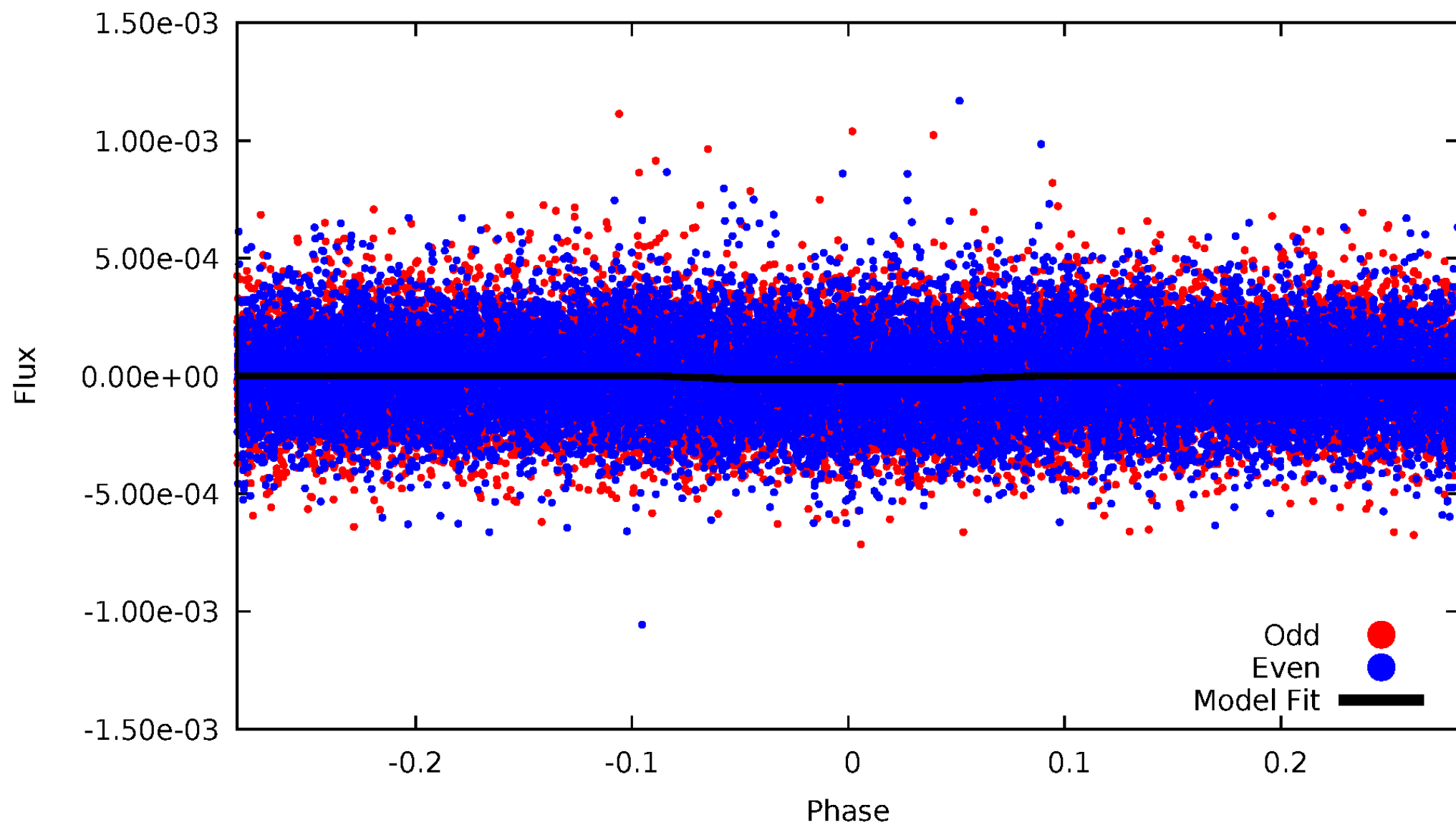
DV Odd/Even

TCE 008784359-01



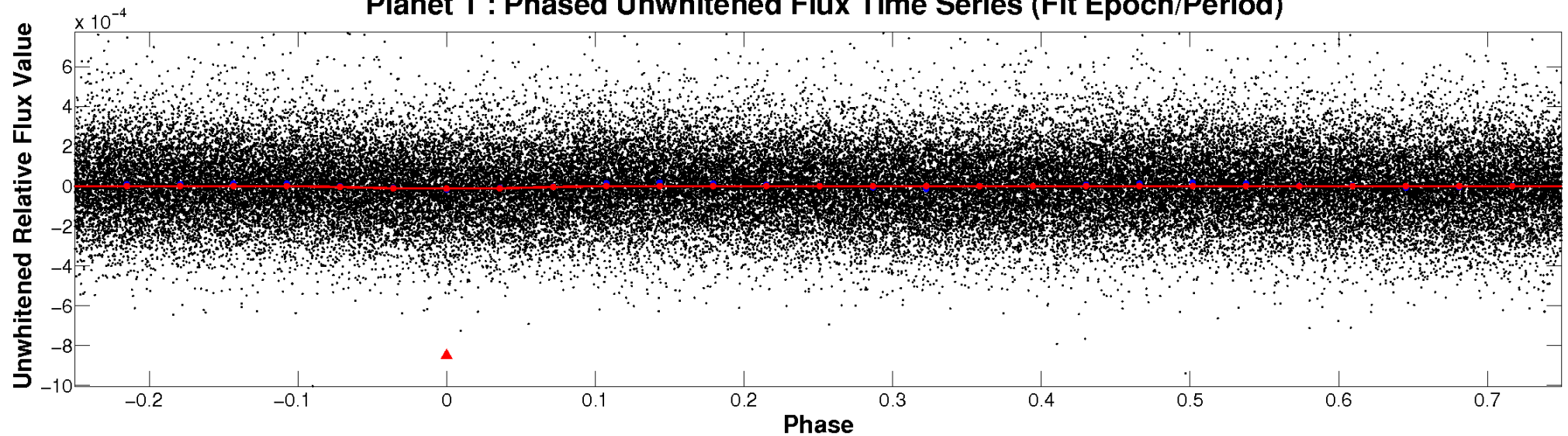
# ALT Odd/Even

TCE 008784359-01

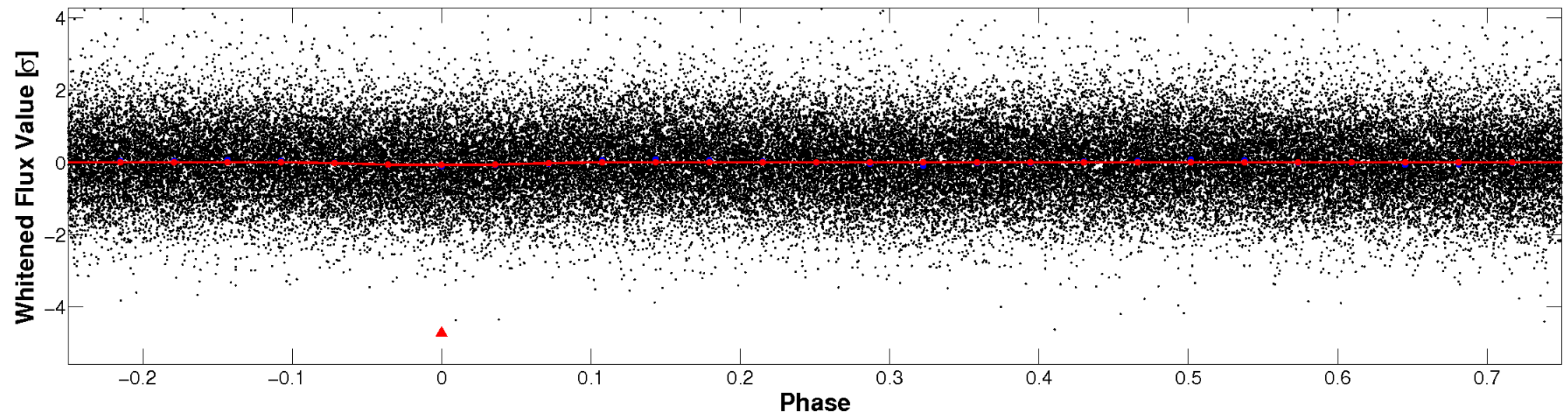


# Non-Whitened Vs. Whitened Light Curve

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

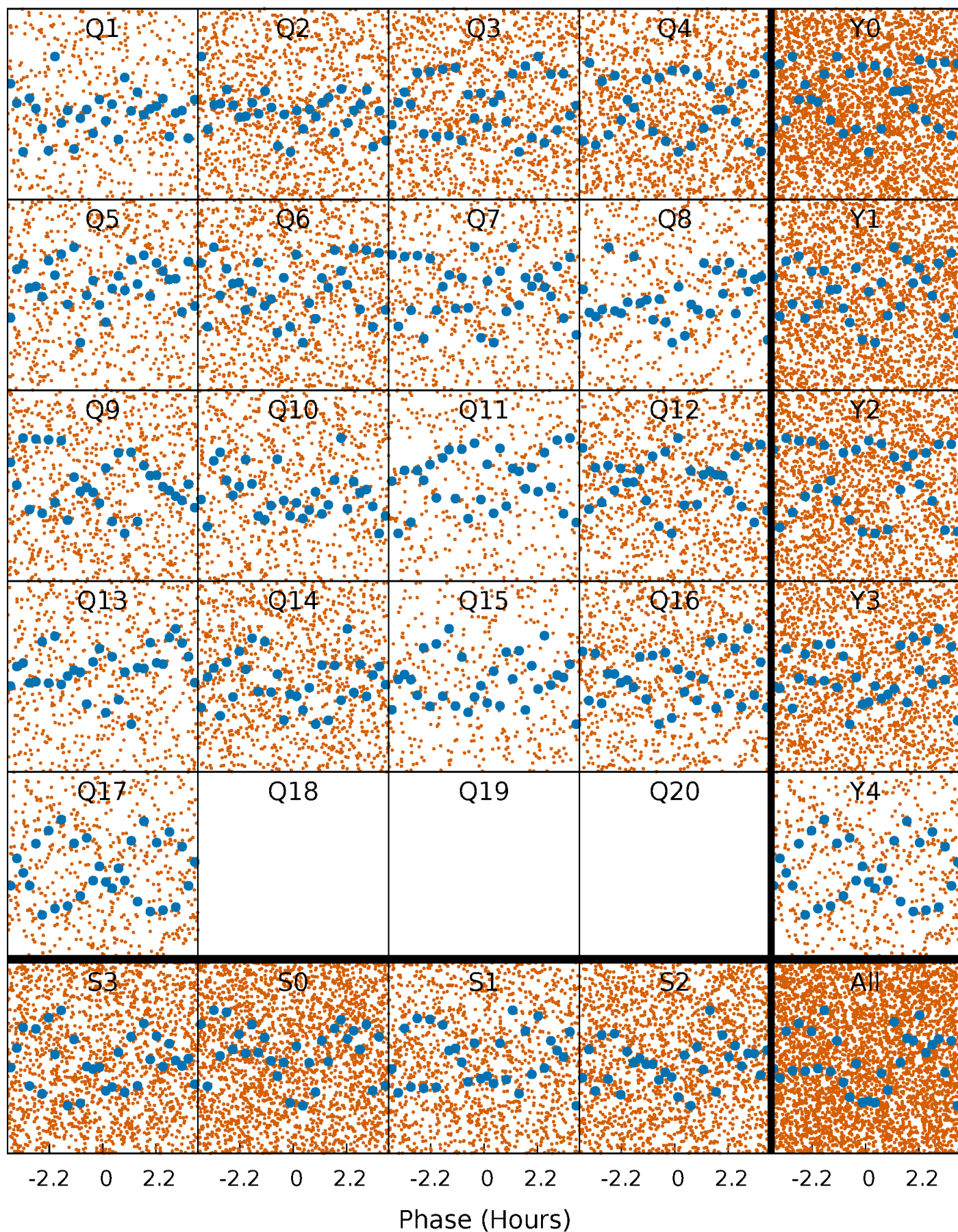


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

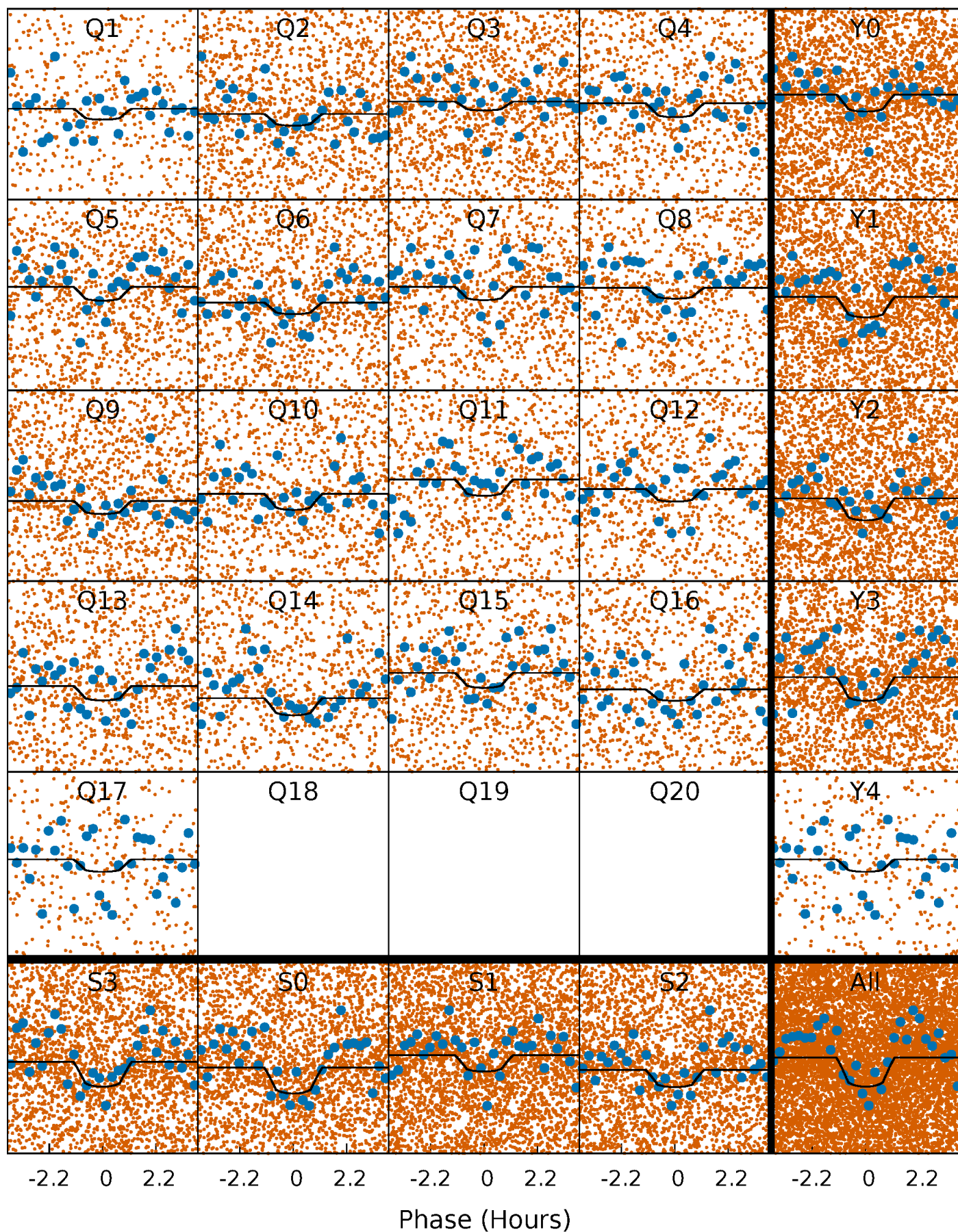
TCE 008784359-01 P= 0.570097 Days  $T_0=131.800954$  (BKJD)





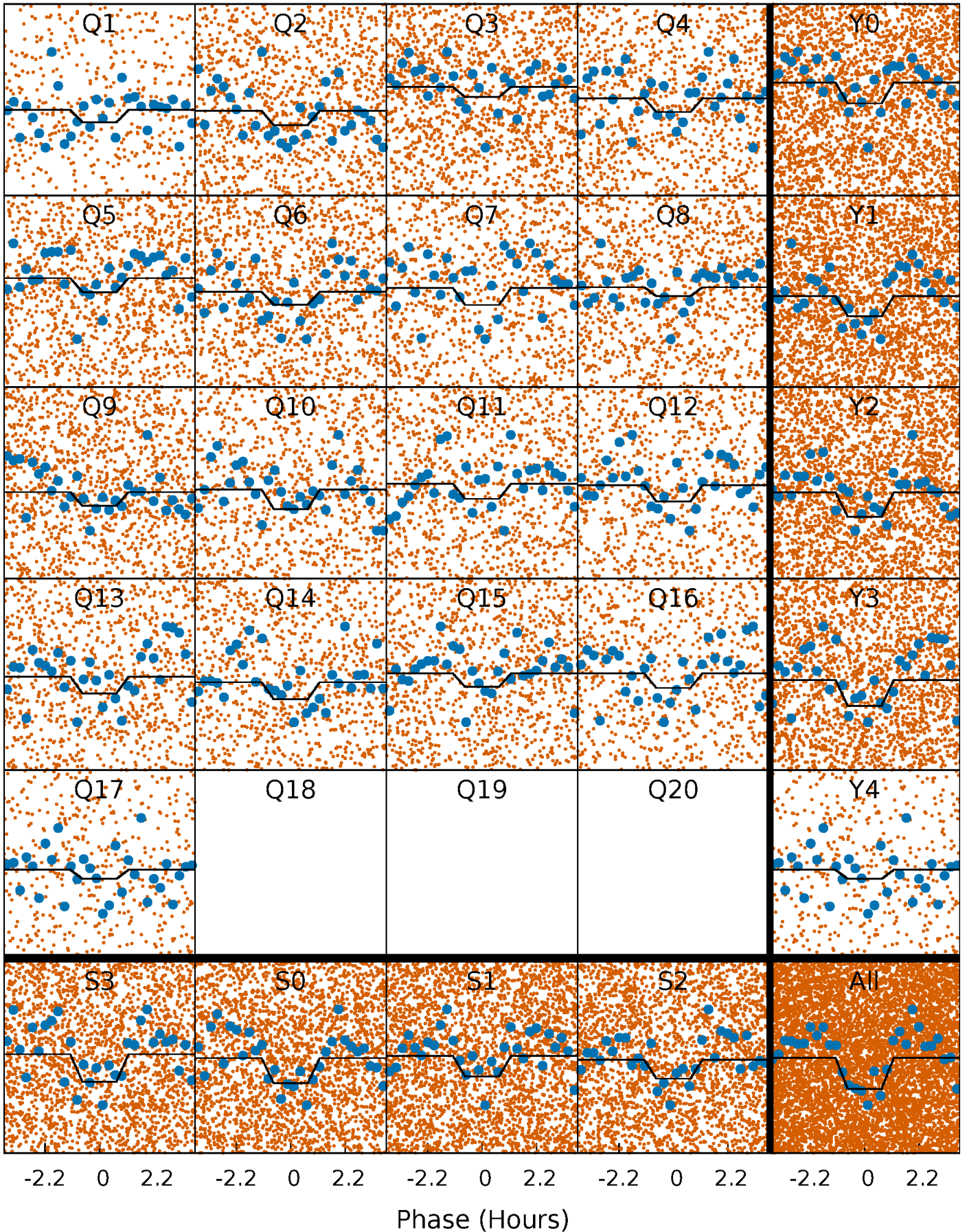
# DV Quarter-Phased Transit Curves

TCE 008784359-01 P= 0.570097 Days  $T_0=131.800954$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 008784359-01 P= 0.570098 Days  $T_0=131.801048$  (BKJD)

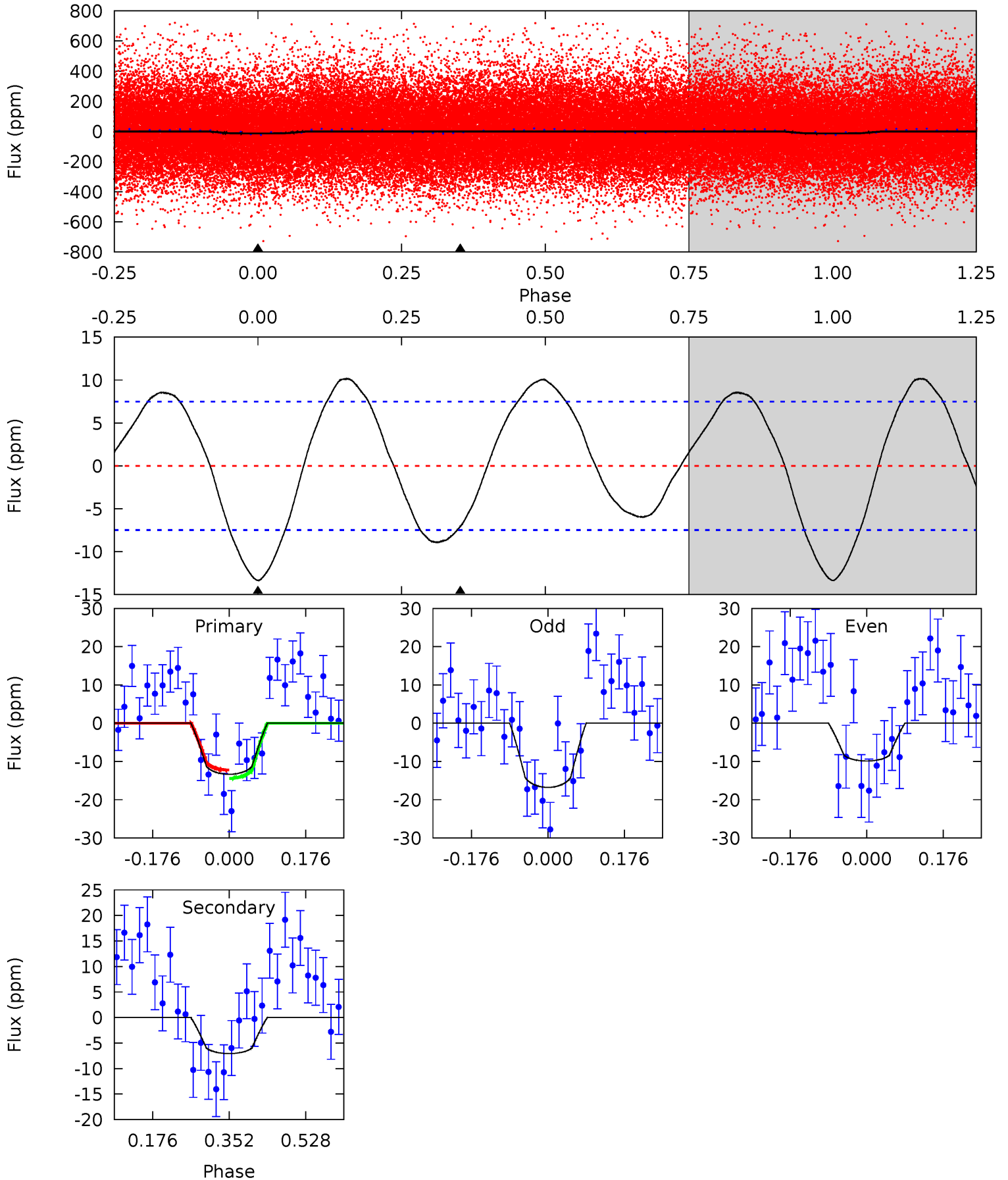




# DV Model-Shift Uniqueness Test

008784359-01, P = 0.570097 Days, E = 131.230857 Days

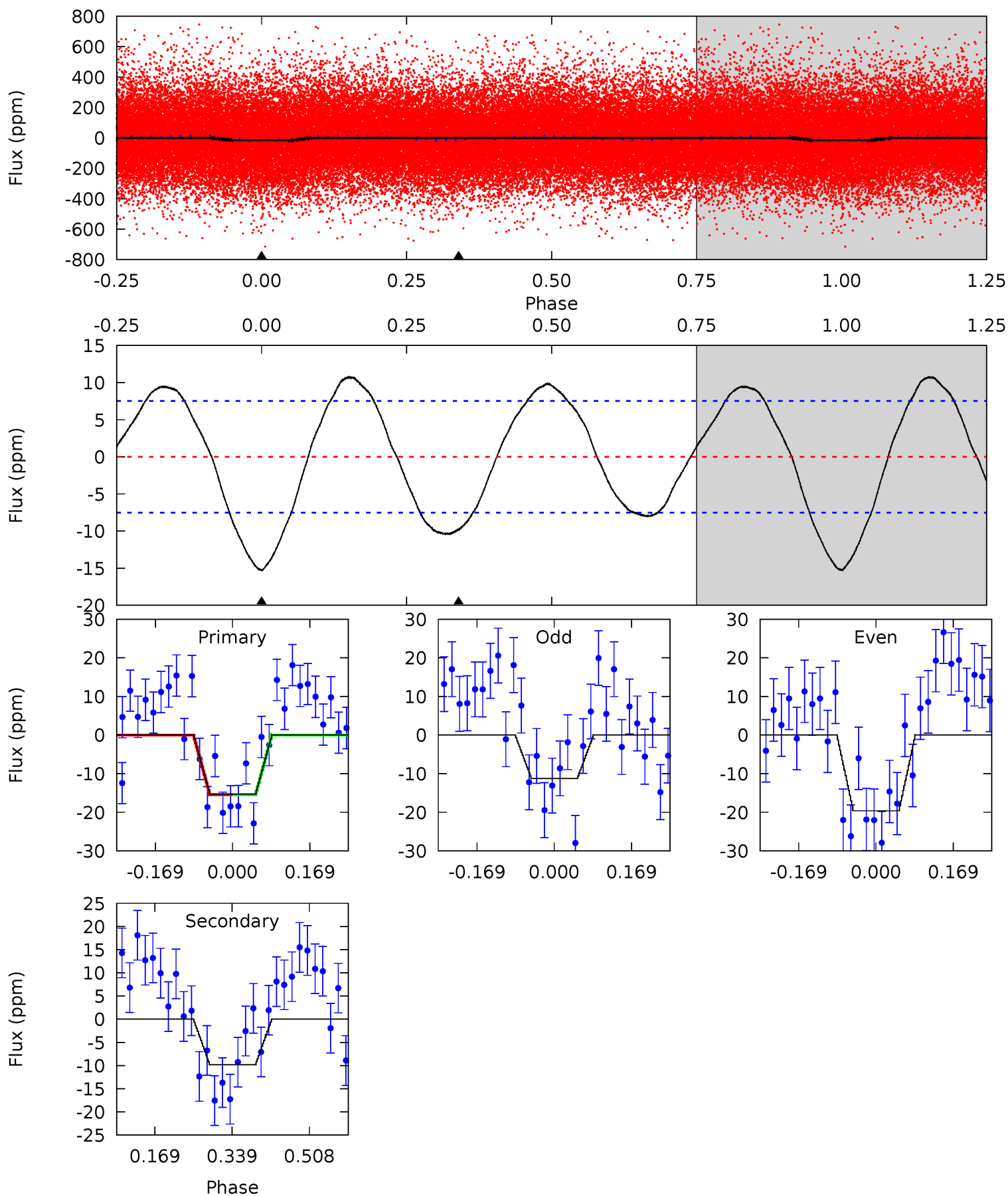
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.93	4.20	0	0	4.44	1.35	2.82	7.93	7.93	4.20	4.20	2.06	0.95	0.43	0.65



# Alt Model-Shift Uniqueness Test

008784359-01, P = 0.570098 Days, E = 131.230950 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
9.06	5.82	0	0	4.45	1.37	3.53	9.06	9.06	5.82	5.82	2.41	0.90	0.41	0.00





### Stellar Parameters For KIC 008784359

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6187^{+187}_{-187}$	$4.024^{+0.392}_{-0.168}$	$-0.540^{+0.300}_{-0.300}$	$1.581^{+0.415}_{-0.674}$	$0.963^{+0.139}_{-0.126}$	$0.344^{+1.082}_{-0.158}$
	+3%/-3%	+10%/-4%	+56%/-56%	+26%/-43%	+14%/-13%	+315%/-46%
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 008784359-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-7 \pm 2$	$0.63^{+0.29}_{-0.26}$	$4150^{+322}_{-474}$	$4976^{+1600}_{-823}$	$1.731^{+3.643}_{-0.922}$
Alt.	$-10 \pm 2$	$0.62^{+0.30}_{-0.25}$	$4099^{+319}_{-487}$	$5410^{+1708}_{-892}$	$2.500^{+4.677}_{-1.388}$

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

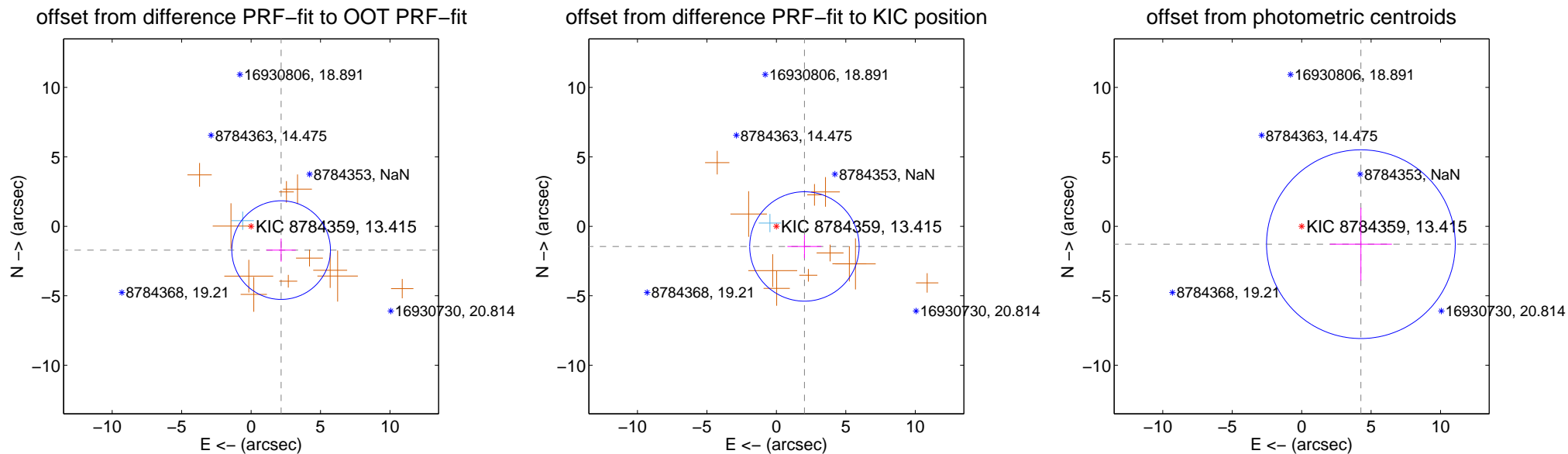
## DV Centroid Data

Supplemental centroid analysis for 008784359-01. Kepler magnitude: 13.41. Transit SNR 5.16

There are 1 quarters with good PRF difference image offsets

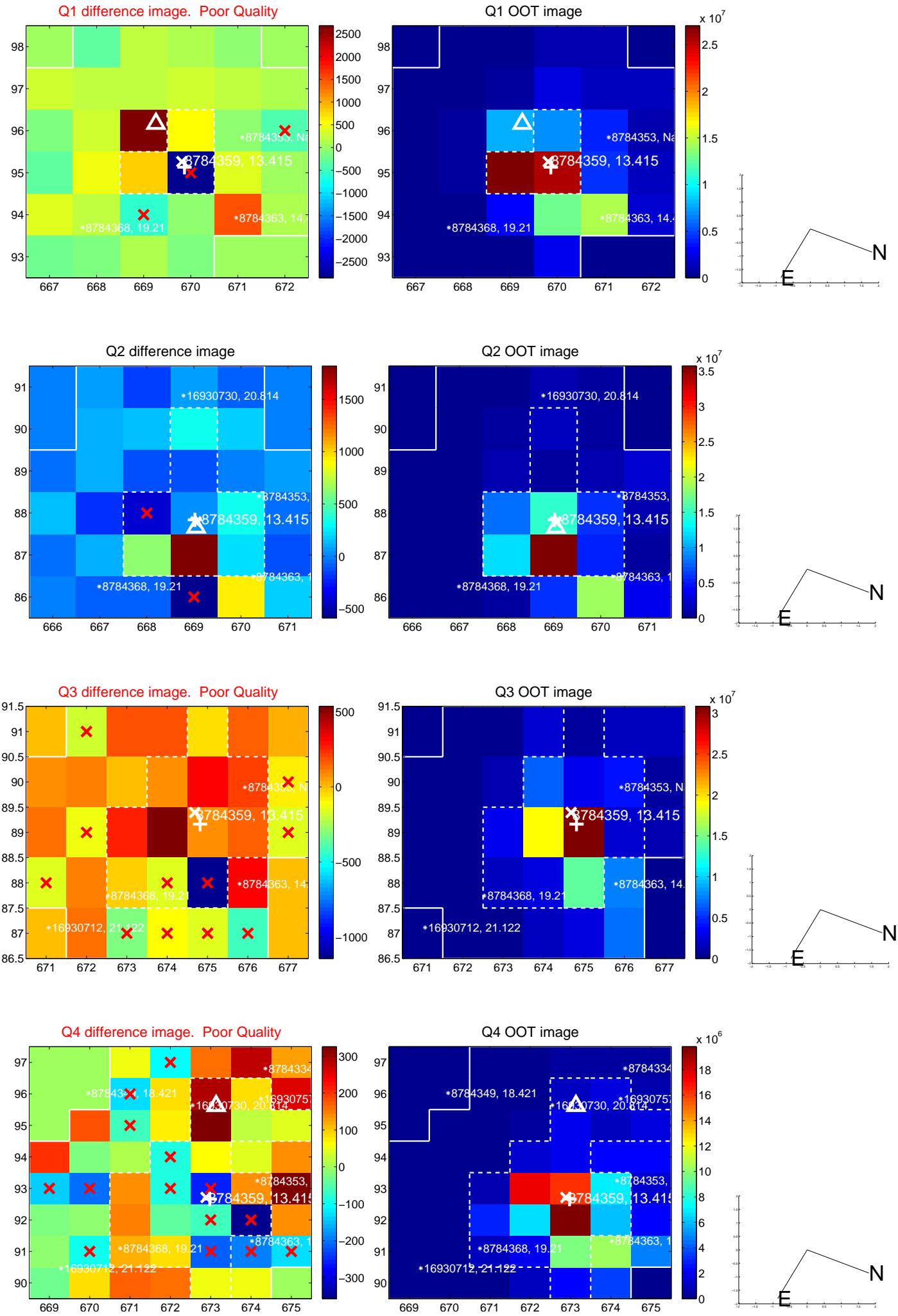
The direct PRF centroid is offset from the target star catalog position by about 0.46 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.759 \pm 1.183$	2.33	$-2.163 \pm 1.055$	$-1.712 \pm 0.831$
PRF-fit source offset from KIC position	$2.486 \pm 1.312$	1.89	$-2.019 \pm 1.224$	$-1.451 \pm 0.836$
photometric centroid source offset	$4.45 \pm 2.26$	1.97	$-4.26 \pm 2.23$	$-1.29 \pm 2.62$



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.

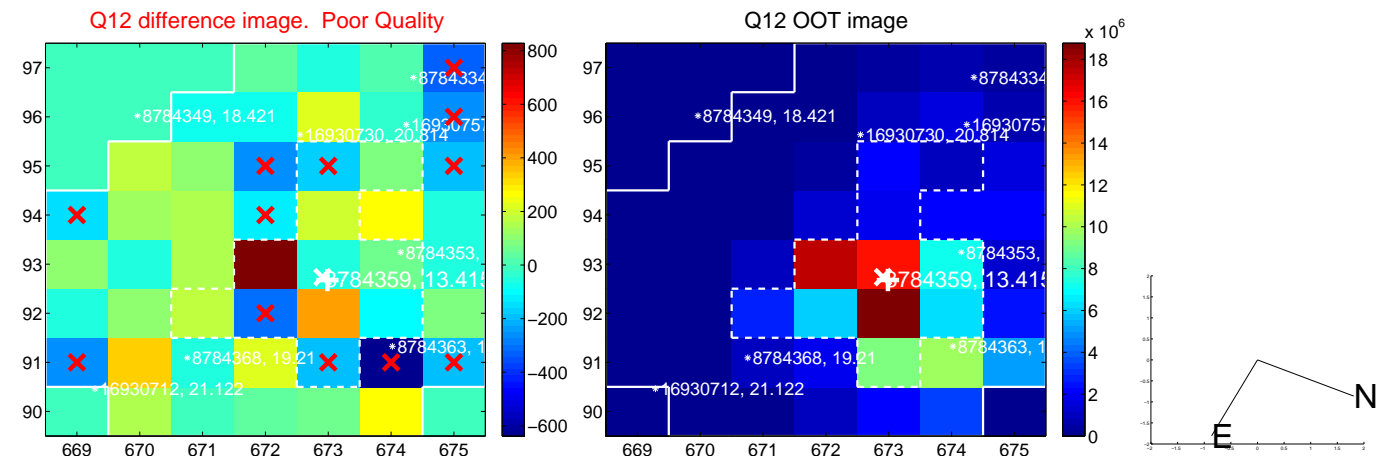
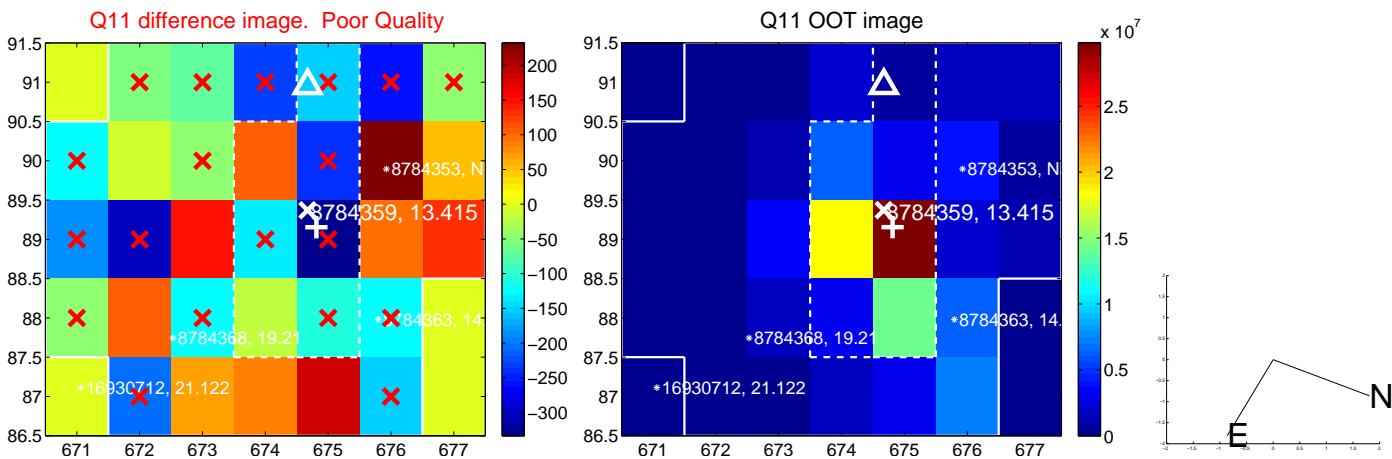
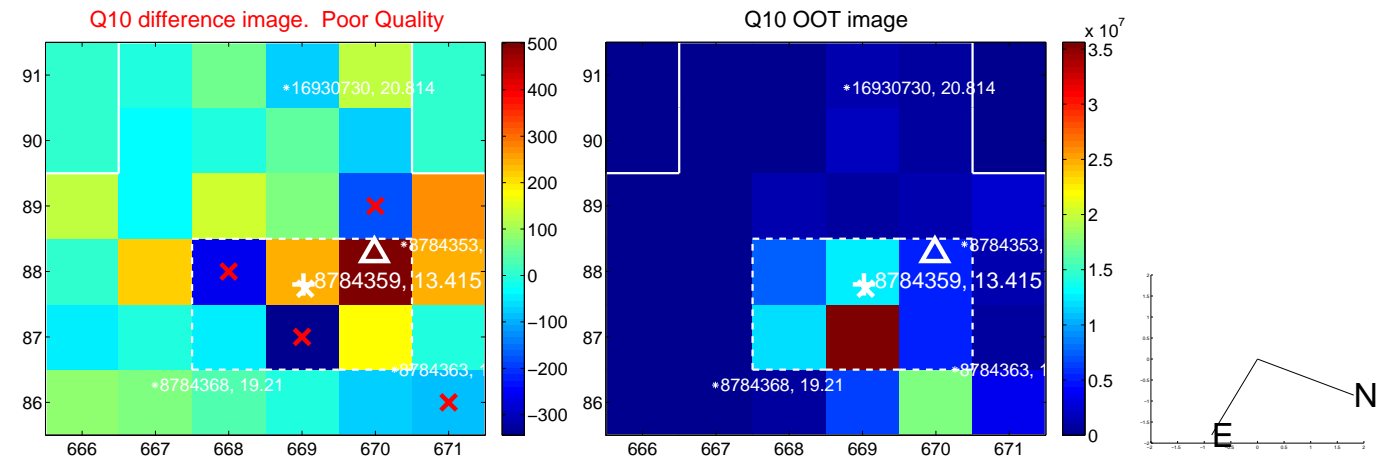
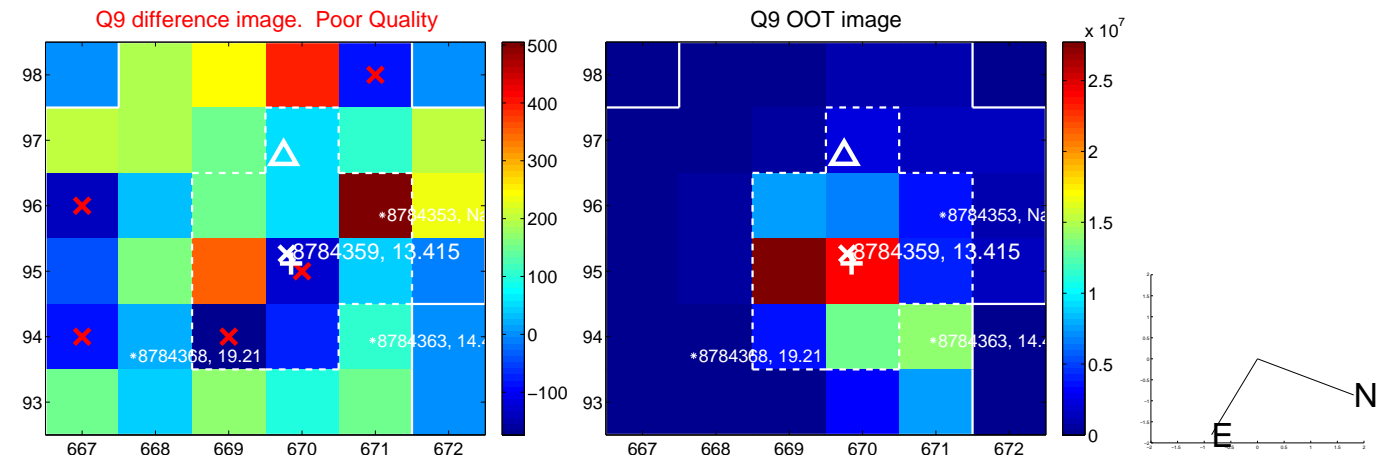
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



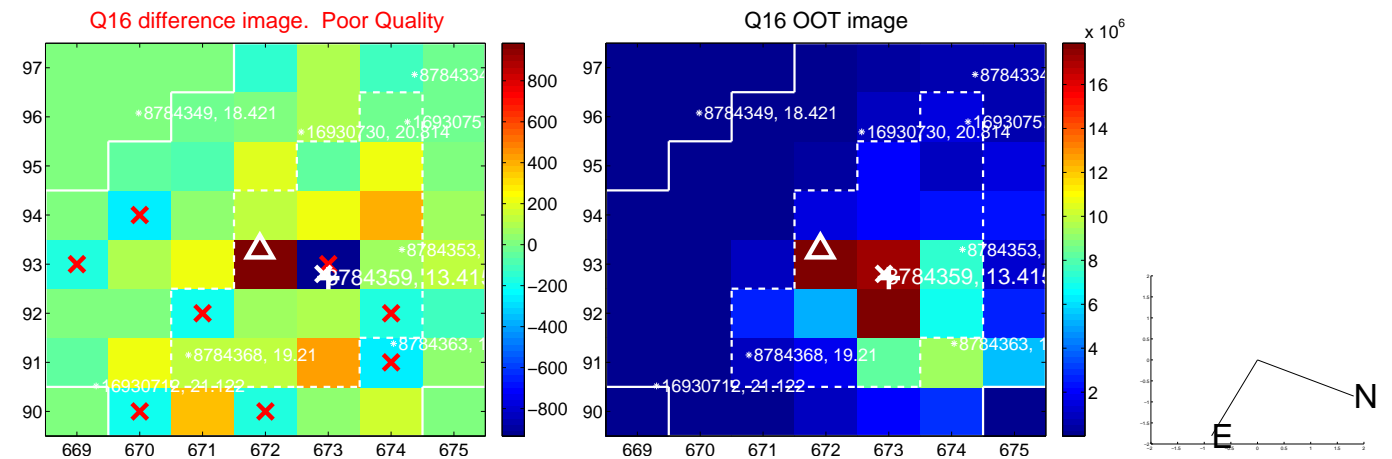
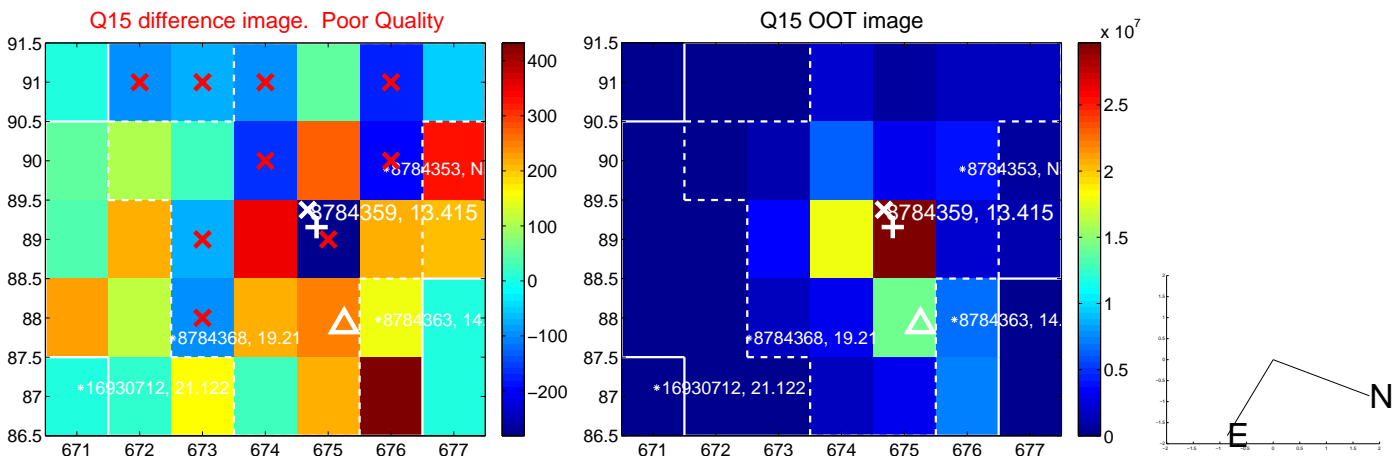
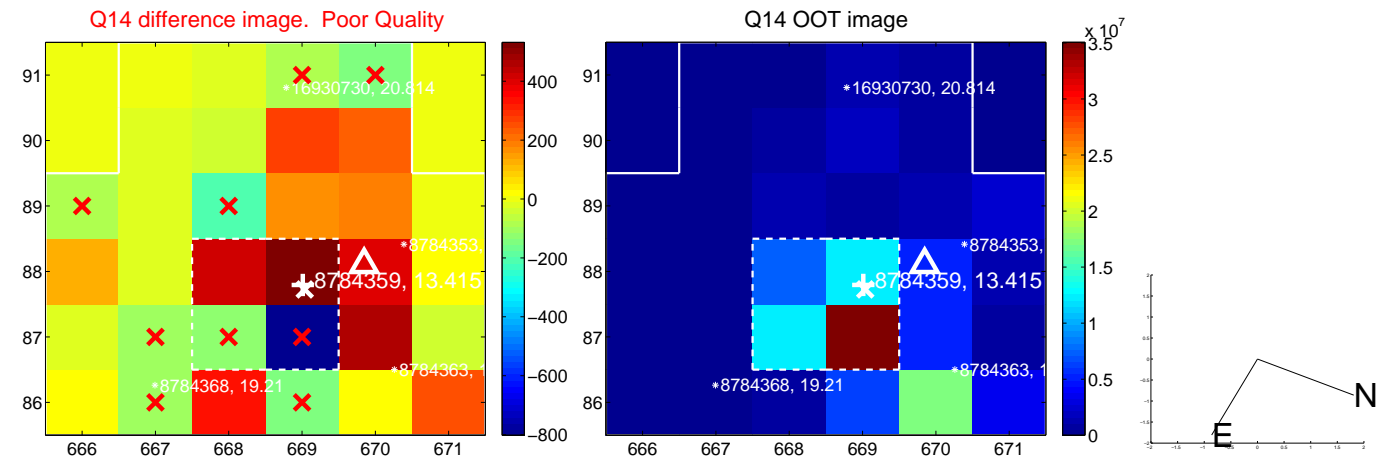
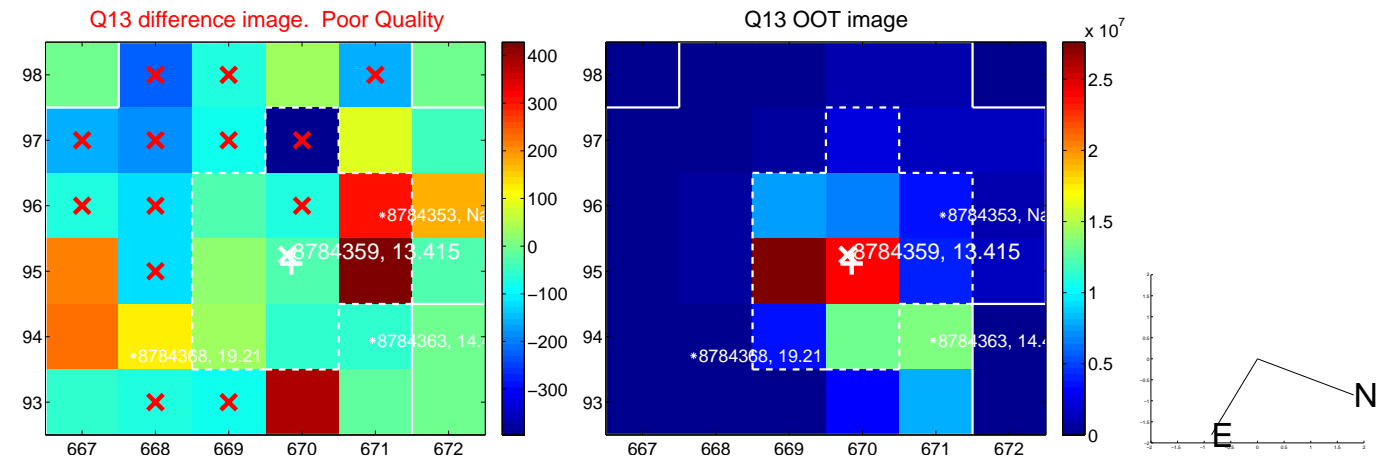




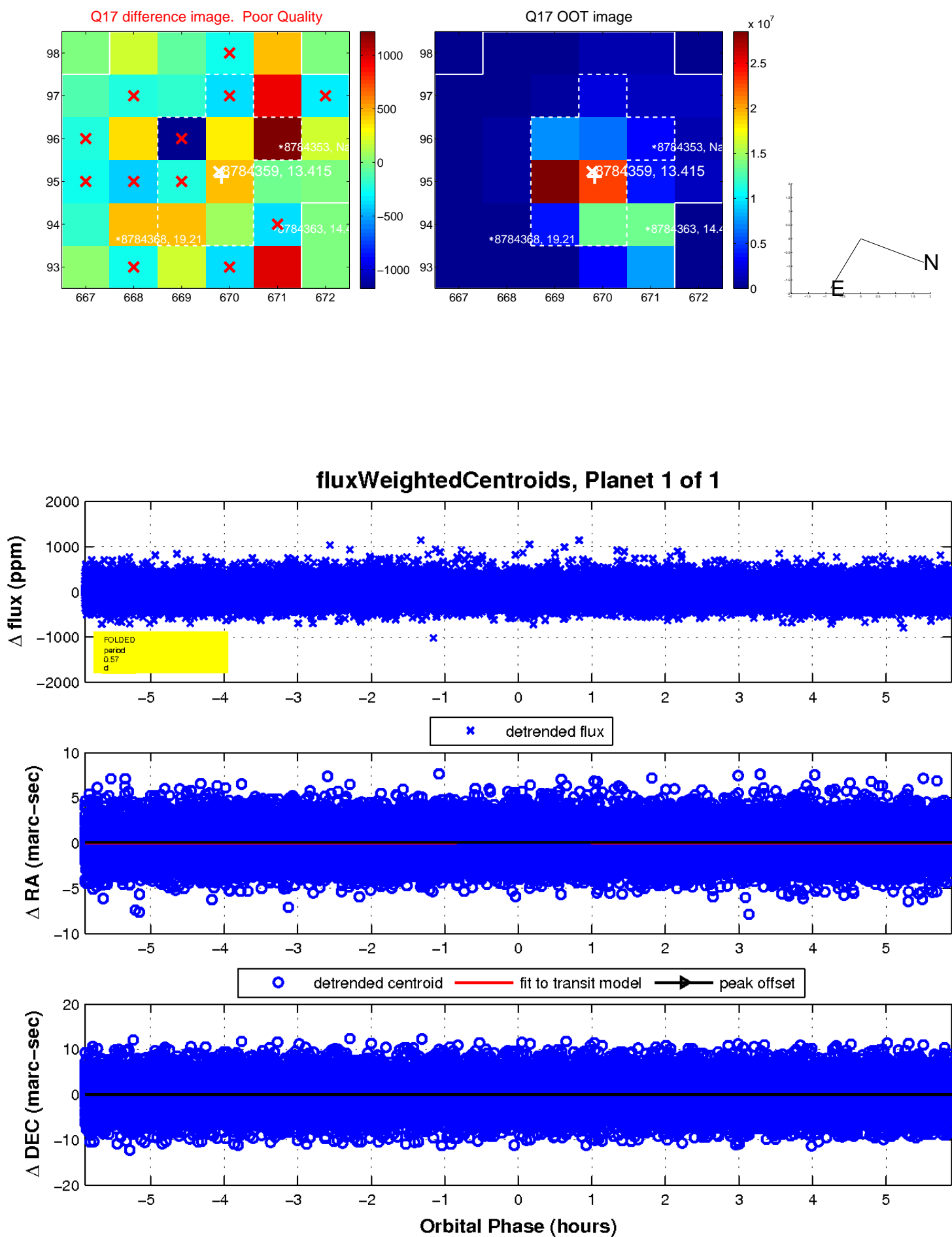
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UKIRT Image

Declination

