

# KIC 008703129

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008703129-01	OBS	2758.01	253.375643	235.738103	1198.2	23.040	20.4	35.5	5.95	5177	20.76	22.45

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008703129-01	OBS	PC	0.98	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.

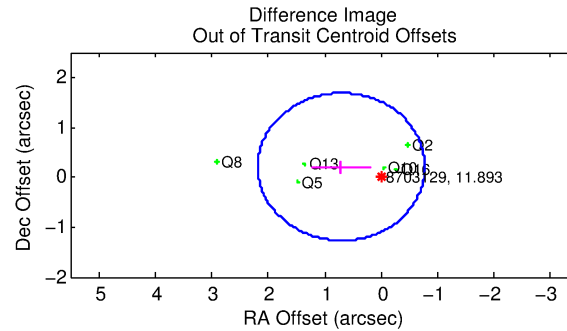
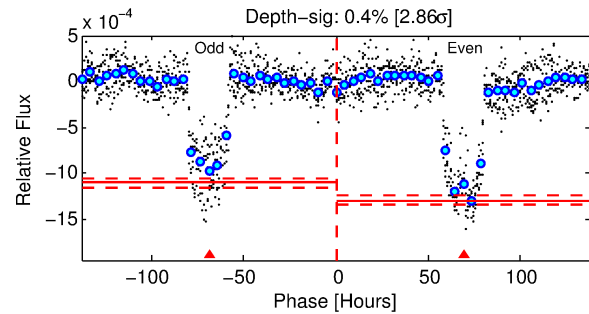
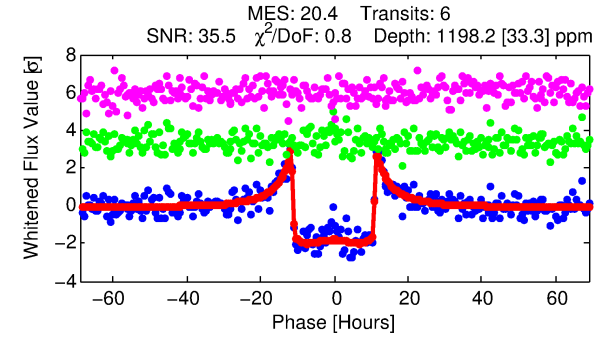
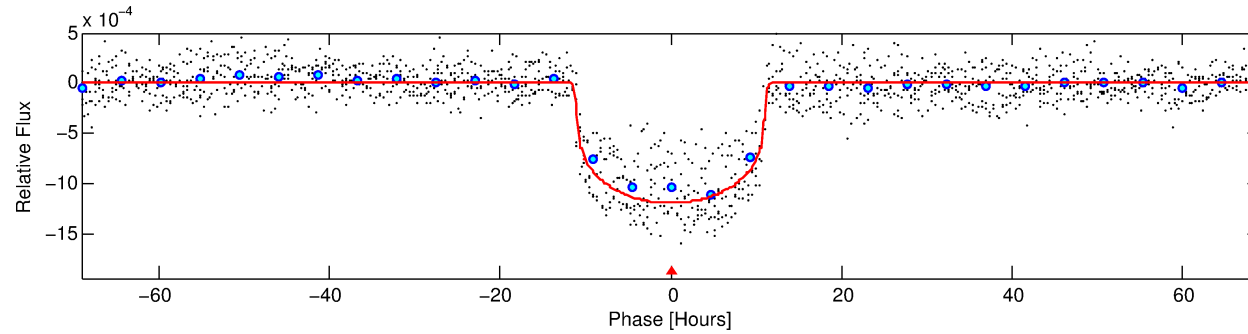
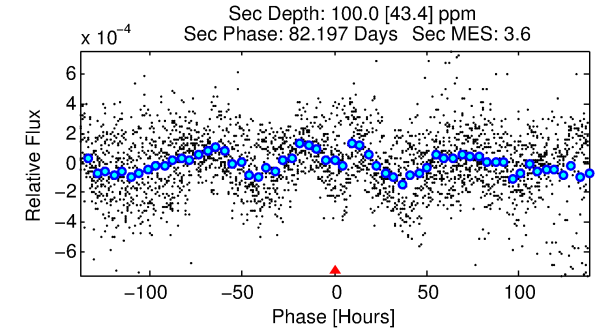
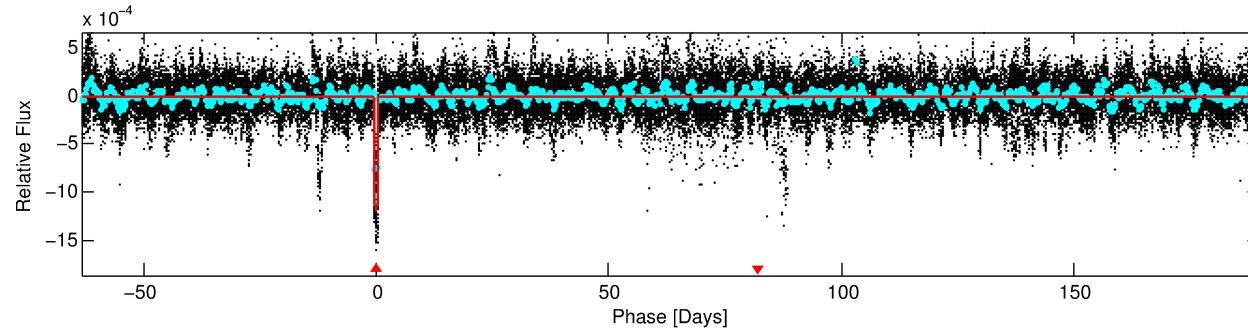
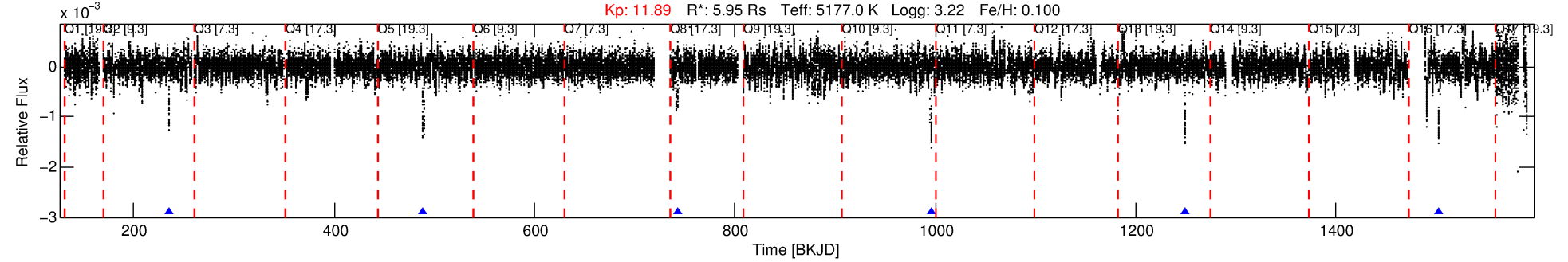
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008703129-01

No Significant Match Found

# DV One-Page Summary

KIC: 8703129 Candidate: 1 of 1 Period: 253.376 d  
KOI: K02758.01 Corr: 0.956



## DV Fit Results:

Period = 253.37564 [0.00099] d  
Epoch = 235.7381 [0.0029] BKJD  
 $R_p/R^* = 0.0320$  [0.0011]  
 $a/R^* = 76.64$  [8.64]  
 $b = 0.48$  [0.18]  
 $S_{\text{eff}} = 22.45$  [22.10]  
 $T_{\text{eq}} = 555$  [137] K  
 $R_p = 20.76$  [12.57]  $R_{\text{e}}$   
 $a = 1.0073$  [0.6036] AU  
 $A_g = 129.50$  [138.46] [0.93σ]  
 $T_{\text{eff}} = 2895$  [334] K [6.48σ]

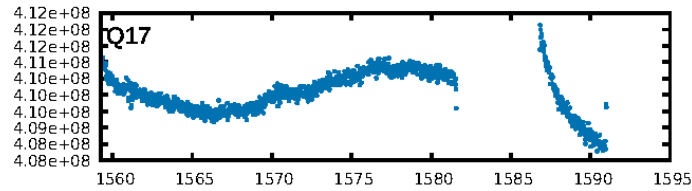
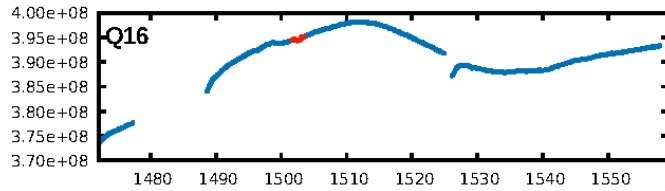
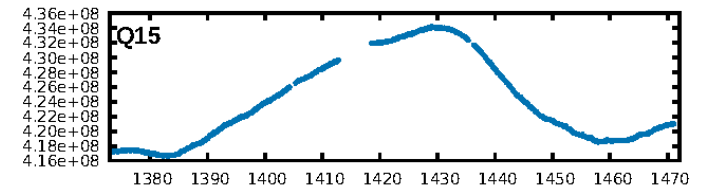
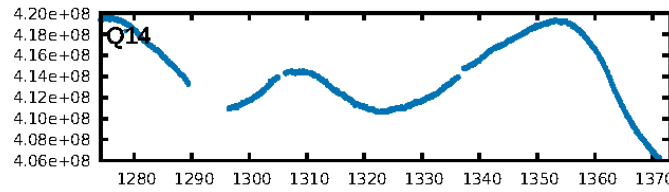
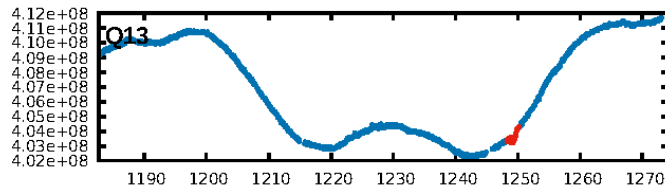
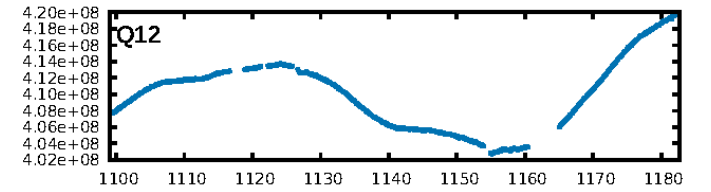
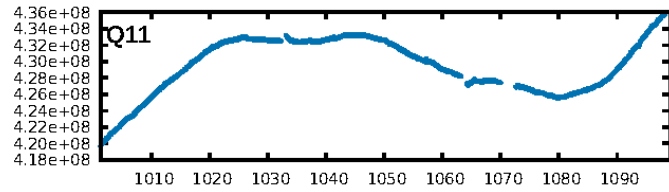
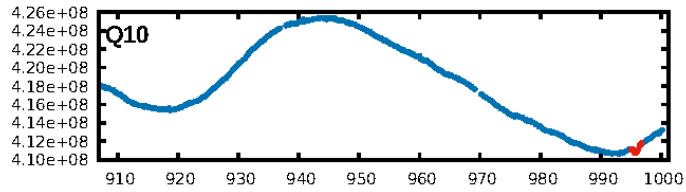
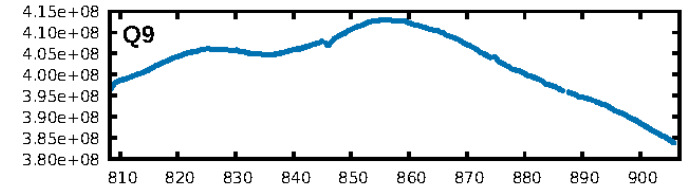
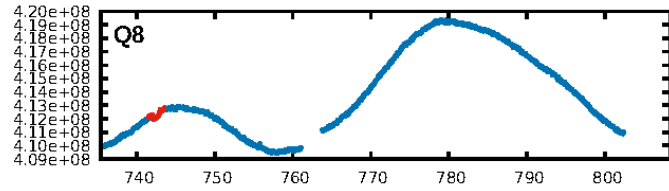
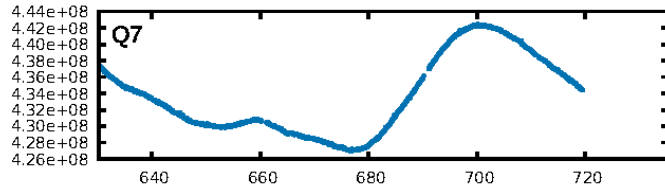
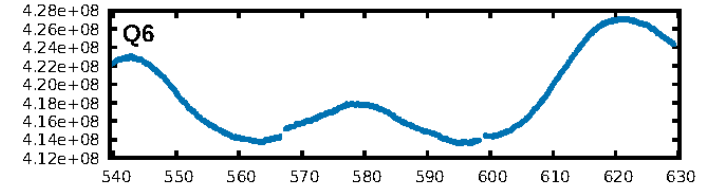
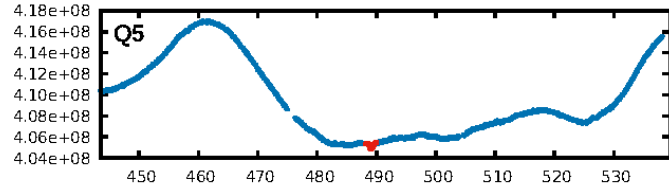
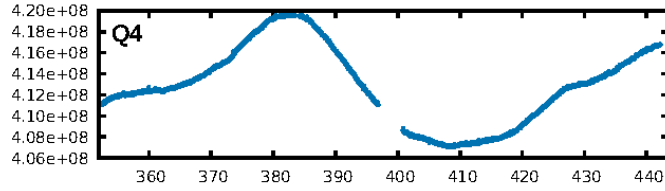
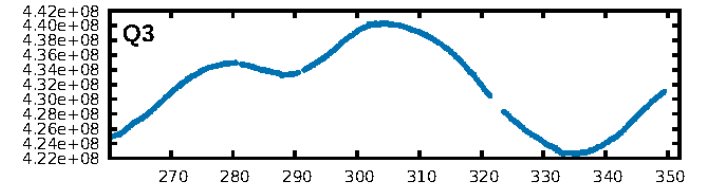
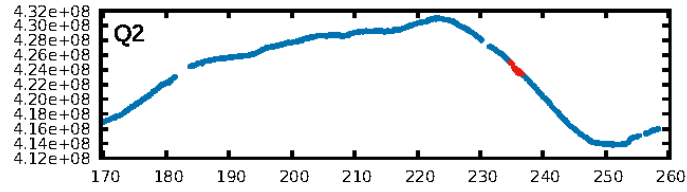
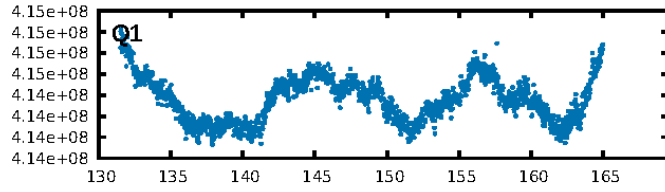
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.1%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.65e-84  
RollingBand-fgt: 1.00 [6/6]  
GhostDiagnostic-chr: 2.325  
Centroid-sig: 33.9%  
Centroid-so: 0.388 arcsec [5.57σ]  
OotOffset-rm: 0.736 arcsec [1.49σ]  
KicOffset-rm: 0.917 arcsec [2.35σ]  
OotOffset-st: 2/0/2/2 [6]  
KicOffset-st: 2/0/2/2 [6]  
DiffImageQuality-fgm: 1.00 [6/6]  
DiffImageOverlap-fno: 1.00 [6/6]

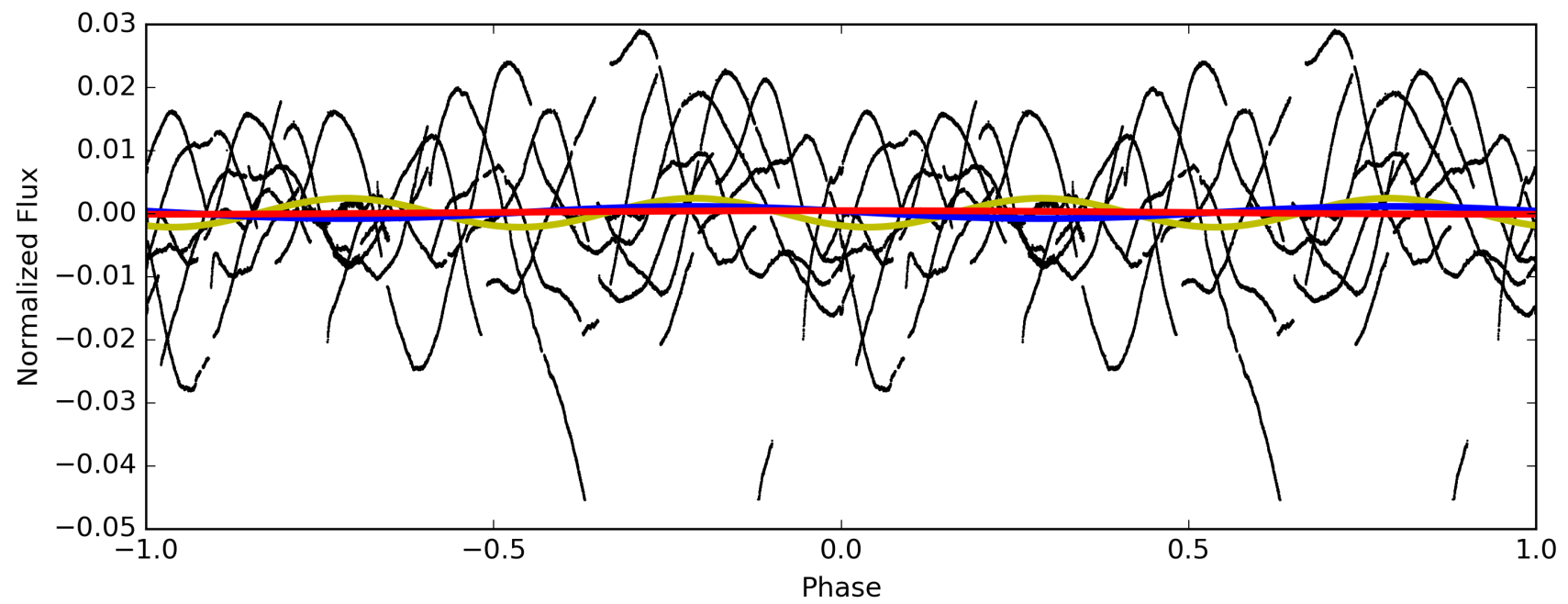
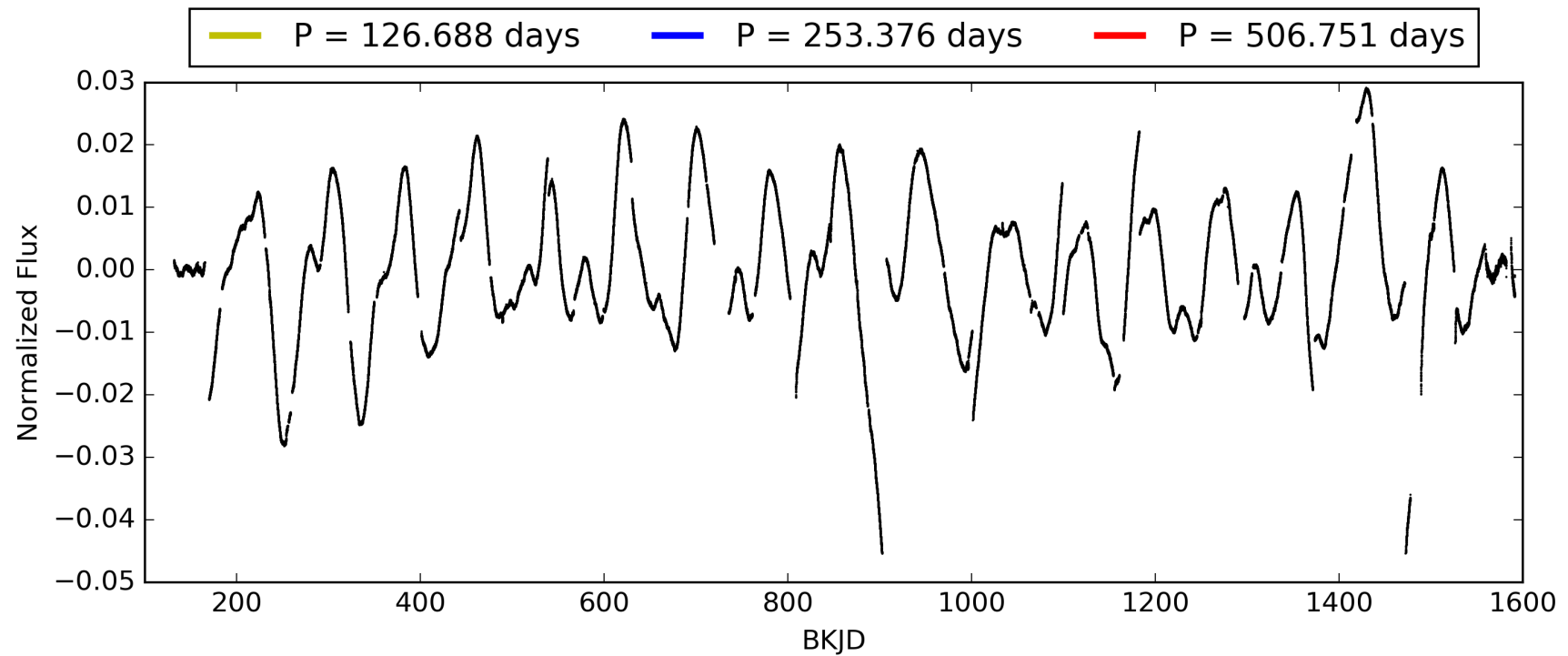
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:07:15 Z

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

# TCE 008703129-01, PDC Light Curves

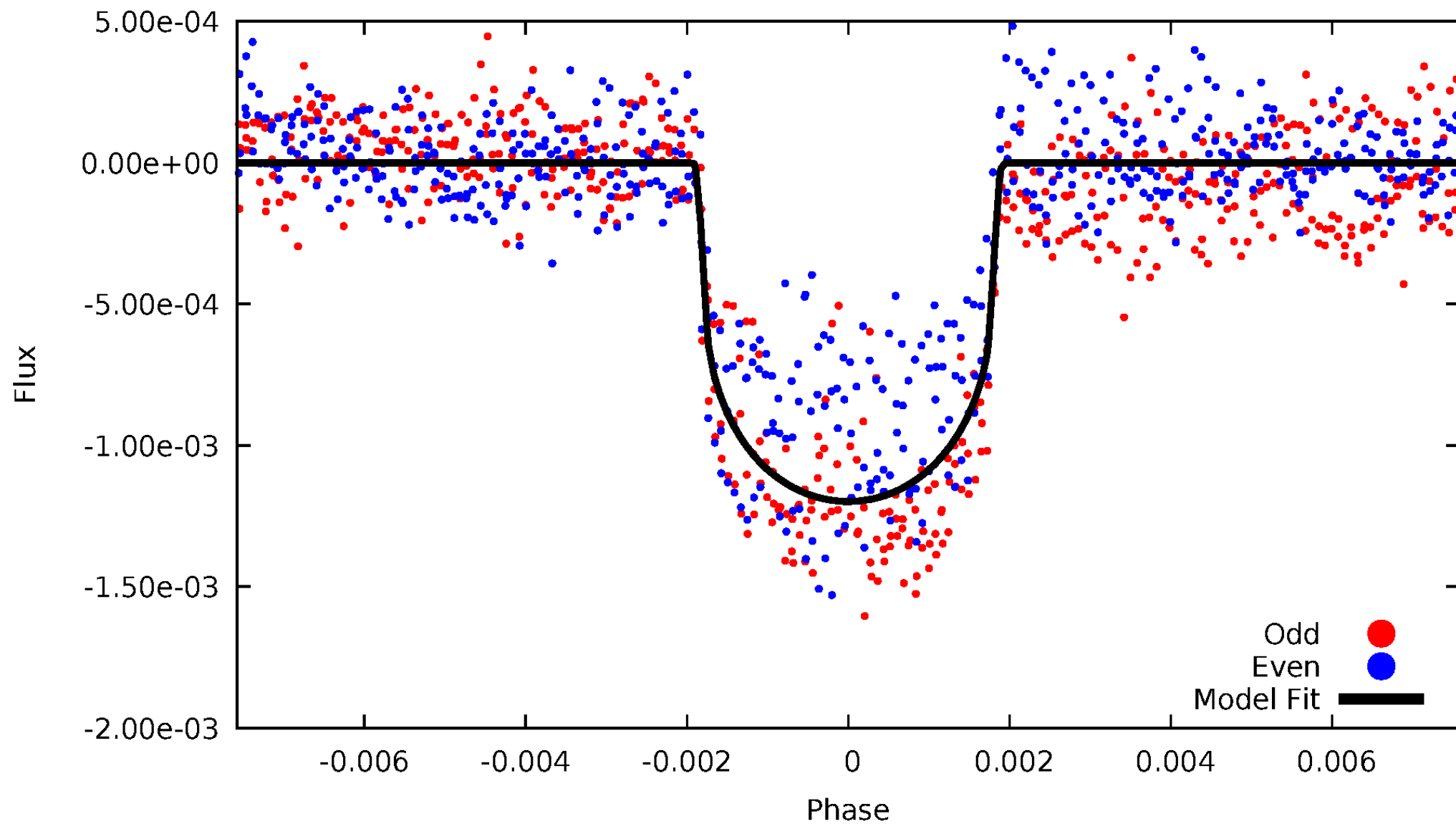


TCE 008703129-01



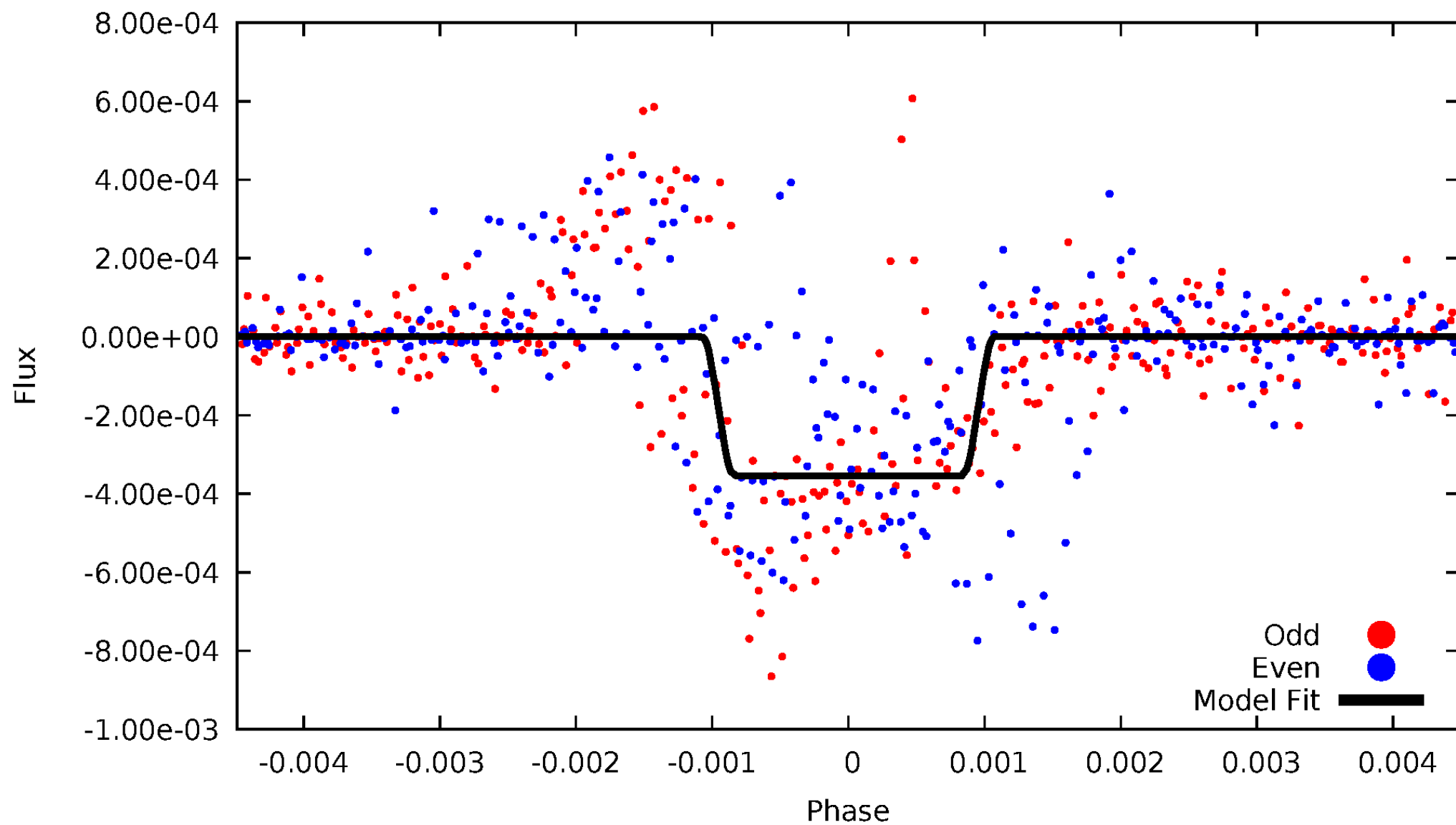
# DV Odd/Even

TCE 008703129-01



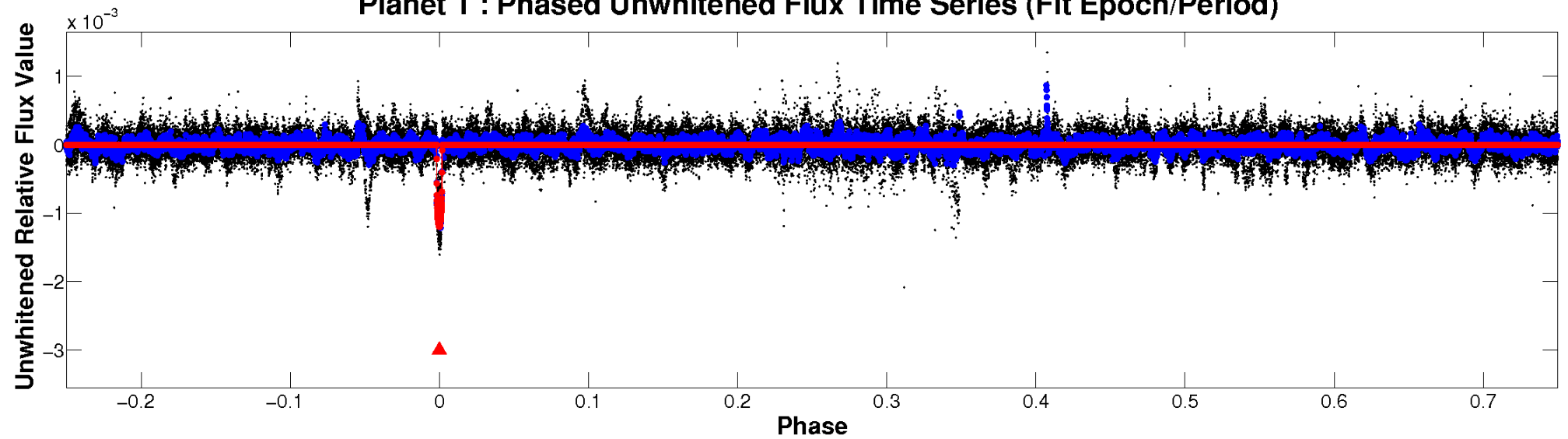
# ALT Odd/Even

TCE 008703129-01

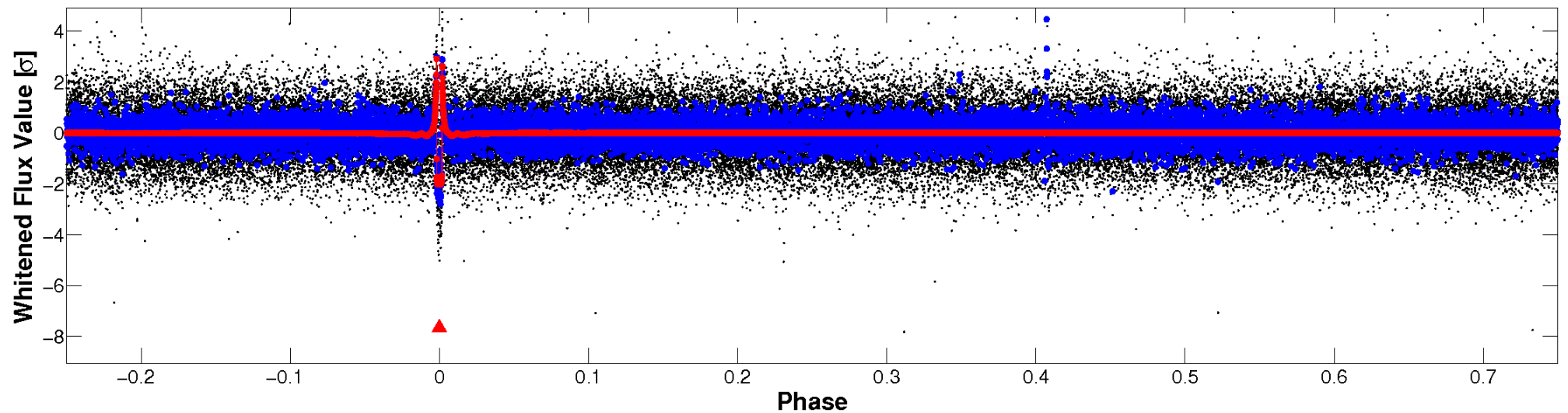


# Non-Whitened Vs. Whitened Light Curve

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

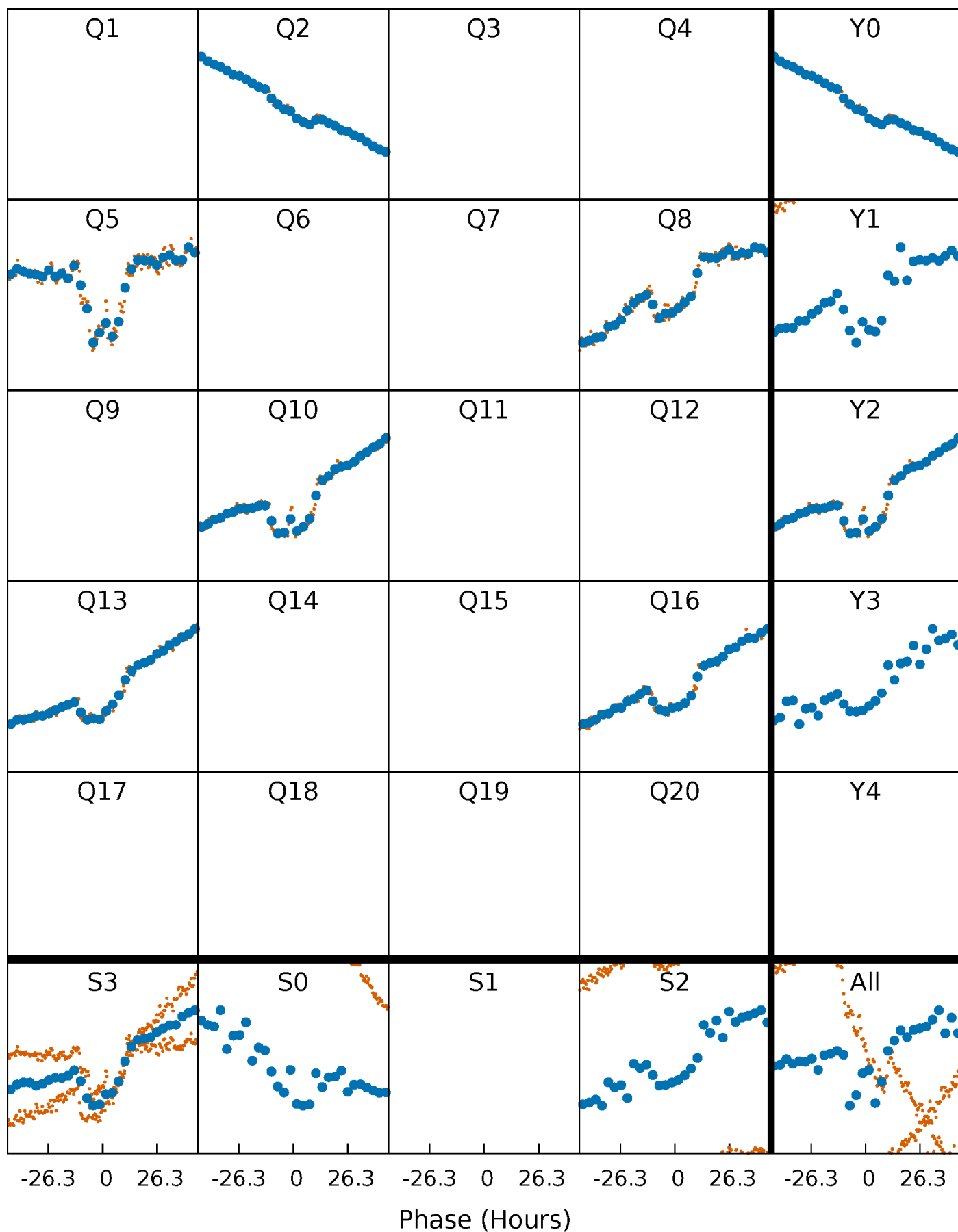


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

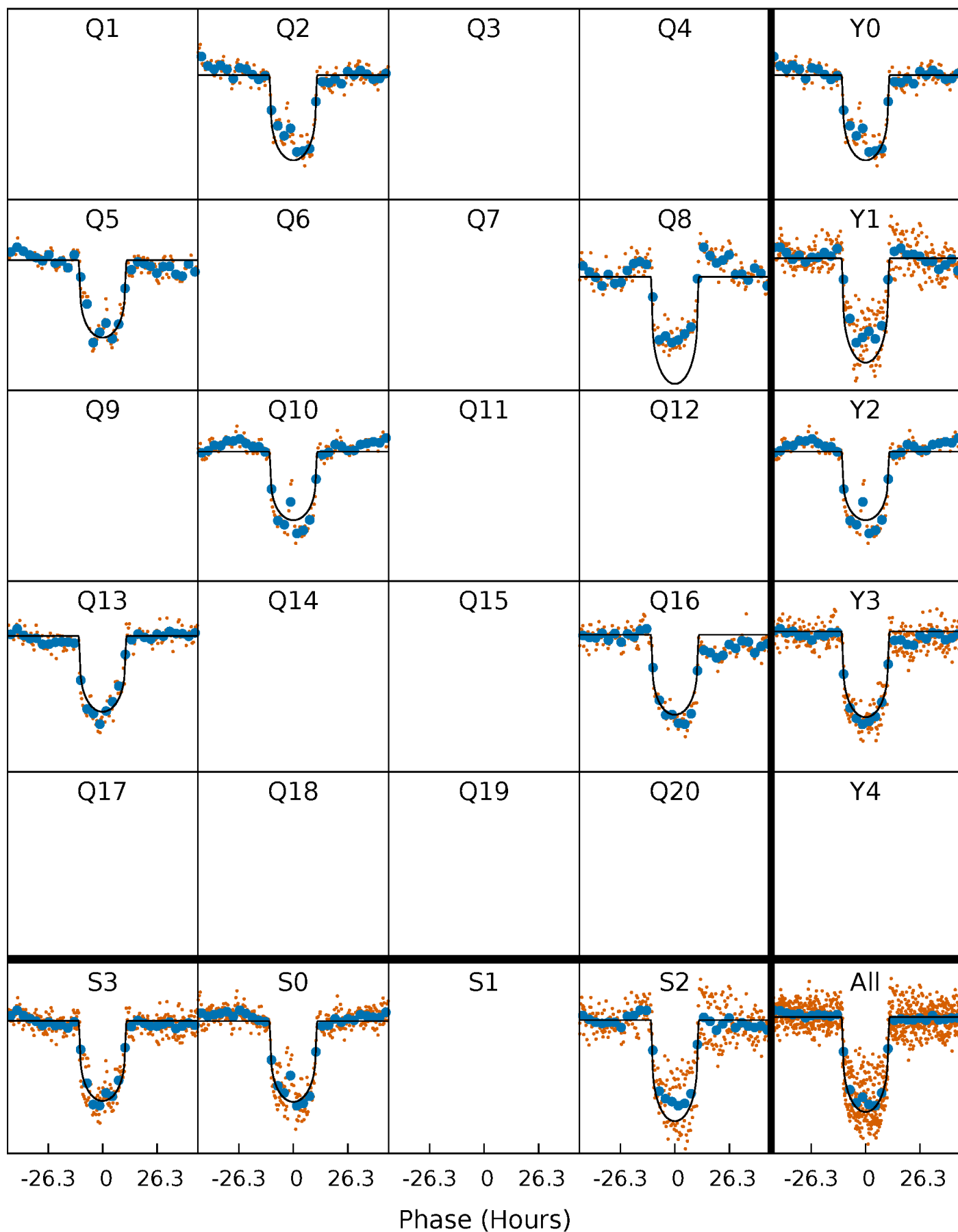
TCE 008703129-01 P=253.375643 Days  $T_0=235.738103$  (BKJD)





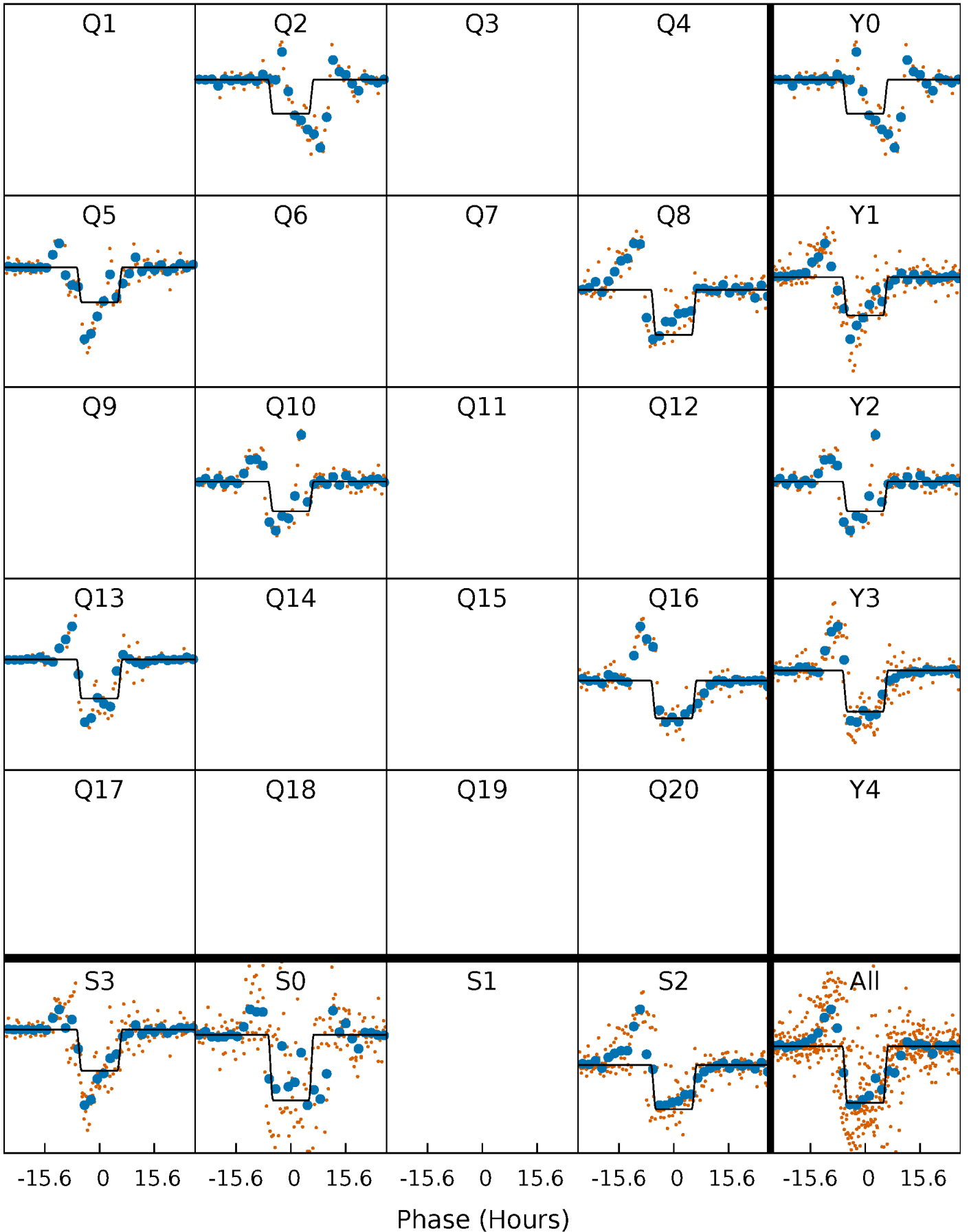
# DV Quarter-Phased Transit Curves

TCE 008703129-01 P=253.375643 Days  $T_0=235.738103$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

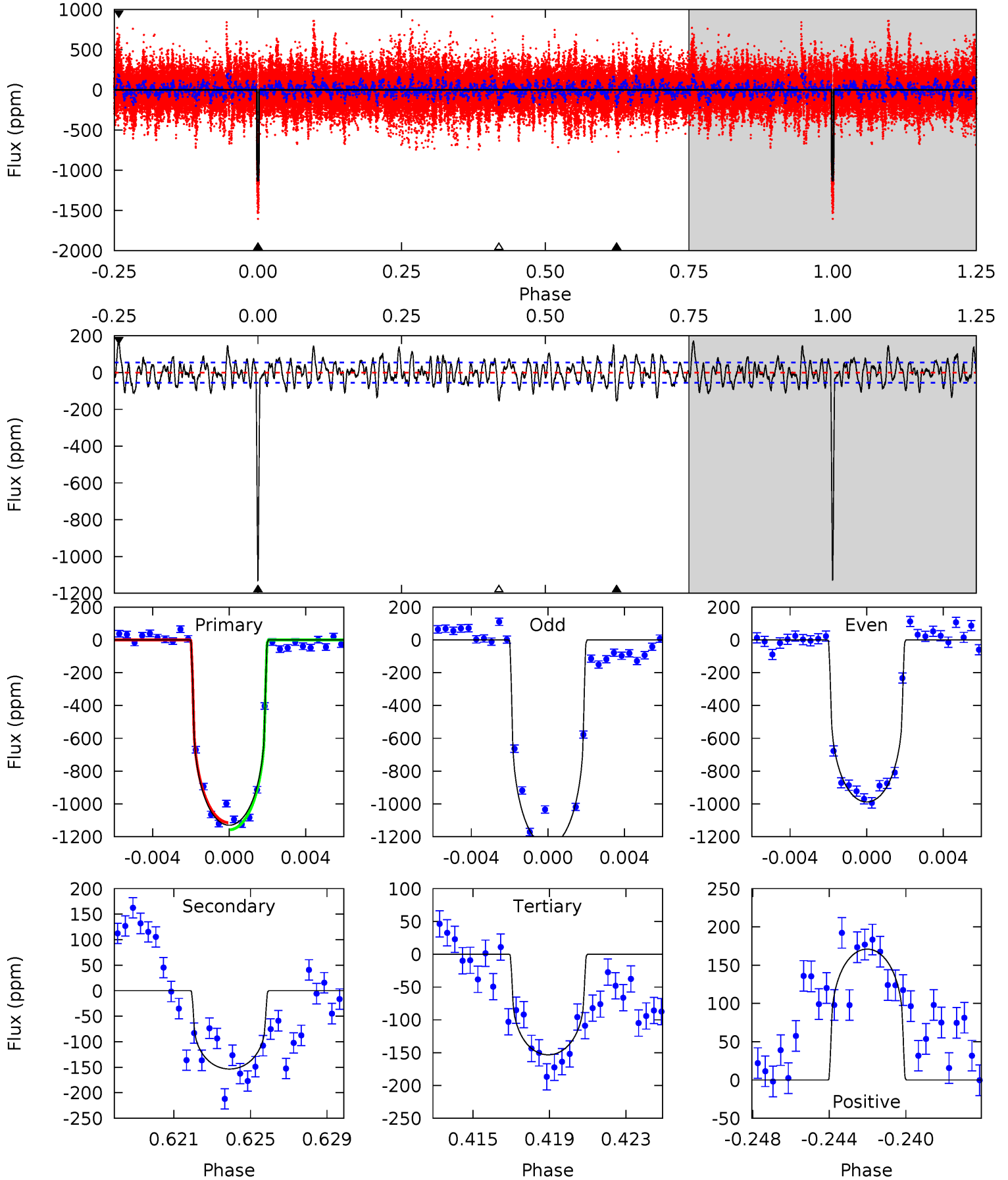
TCE 008703129-01 P=253.328466 Days  $T_0=235.730170$  (BKJD)



# DV Model-Shift Uniqueness Test

008703129-01, P = 253.375643 Days, E = 235.738103 Days

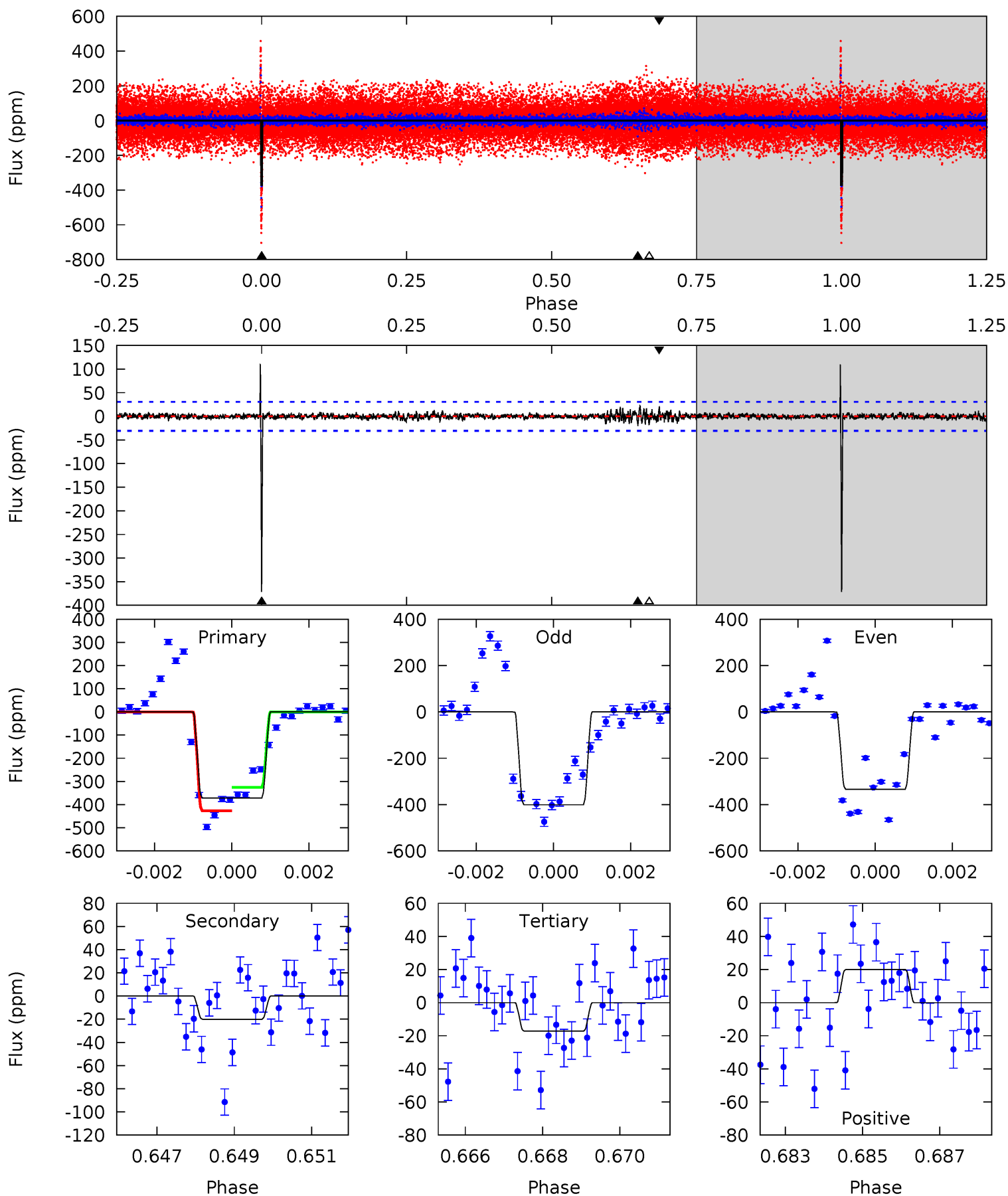
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
107.2	14.6	14.5	16.2	5.21	2.89	4.98	92.7	91.0	0.02	-1.66	12.8	0.95	0.13	2.05



# Alt Model-Shift Uniqueness Test

008703129-01, P = 253.328466 Days, E = 235.730170 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
64.6	3.49	2.99	3.49	5.31	3.07	0.76	61.6	61.1	0.50	-0.00	5.68	1.06	0.23	8.83



### Stellar Parameters For KIC 008703129

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5177^{+163}_{-181}$	$3.216^{+0.578}_{-0.193}$	$0.100^{+0.250}_{-0.400}$	$5.949^{+1.541}_{-3.595}$	$2.122^{+0.585}_{-1.087}$	$0.014^{+0.113}_{-0.007}$
	+3%/-3%	+18%/-6%	+250%/-400%	+26%/-60%	+28%/-51%	+796%/-53%
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 008703129-01 / KOI 2758.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-153 \pm 11$	$20.56^{+3.91}_{-6.99}$	$761^{+68}_{-120}$	$3623^{+116}_{-115}$	$214^{+204}_{-59}$
Alt.	$-20 \pm 6$	$12.04^{+2.45}_{-3.70}$	$759^{+69}_{-109}$	$3108^{+150}_{-174}$	$80^{+74}_{-31}$

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

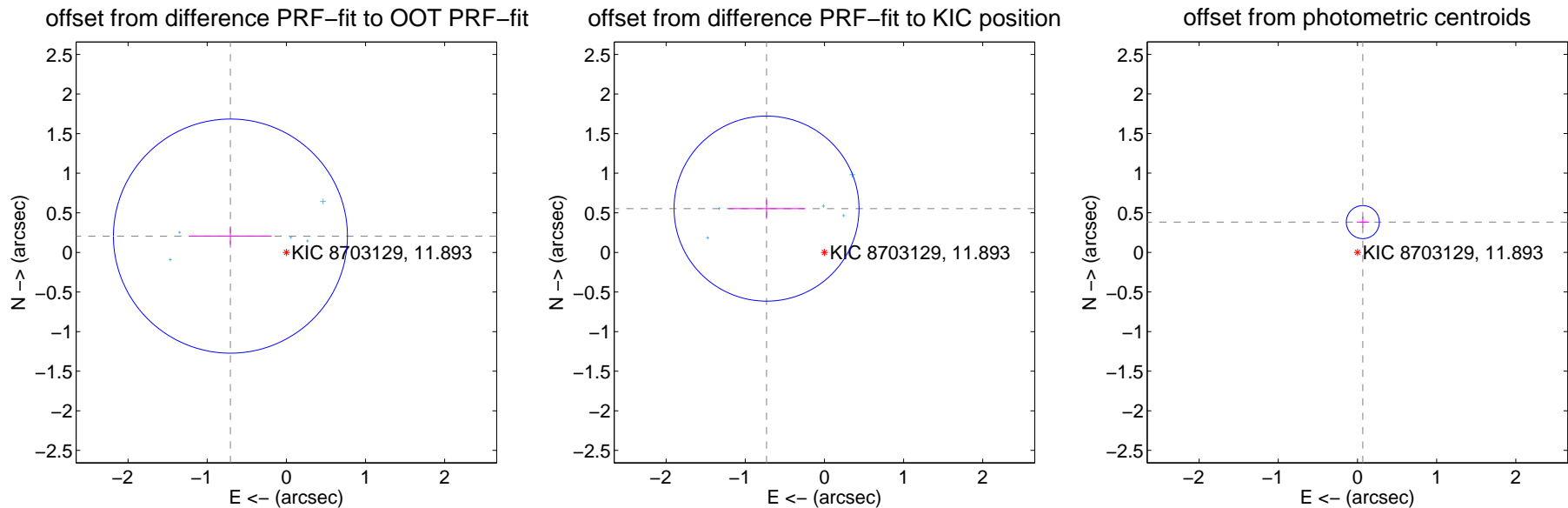
## DV Centroid Data

Supplemental centroid analysis for 008703129-01. **Kepler magnitude: 11.89.** Transit SNR 35.46

There are 6 quarters with good PRF difference image offsets

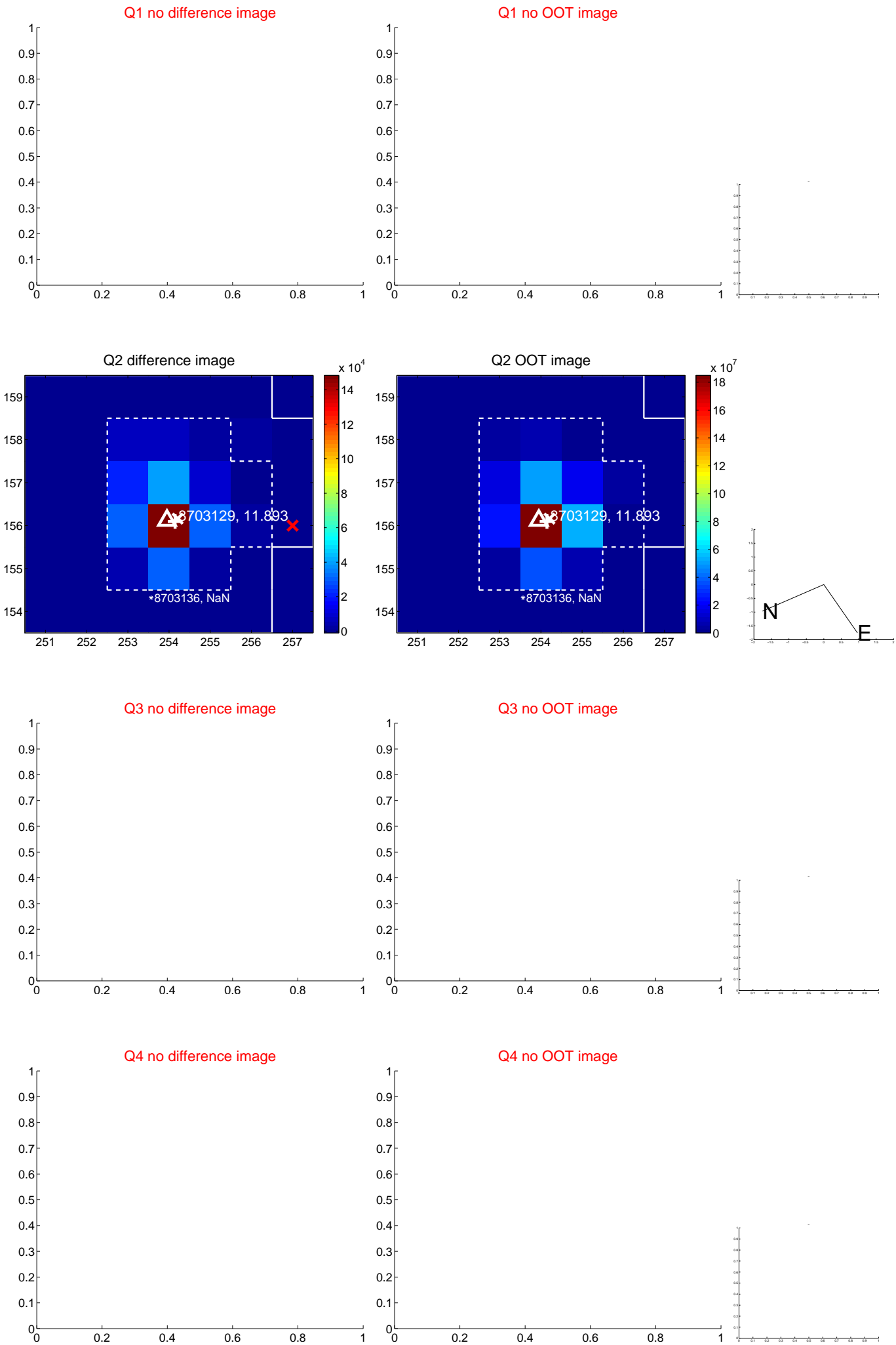
The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.736 \pm 0.493$	1.49	$0.707 \pm 0.521$	$0.206 \pm 0.108$
PRF-fit source offset from KIC position	$0.917 \pm 0.390$	2.35	$0.732 \pm 0.481$	$0.553 \pm 0.112$
photometric centroid source offset	$0.39 \pm 0.07$	<b>5.57</b>	$-0.07 \pm 0.08$	$0.38 \pm 0.07$

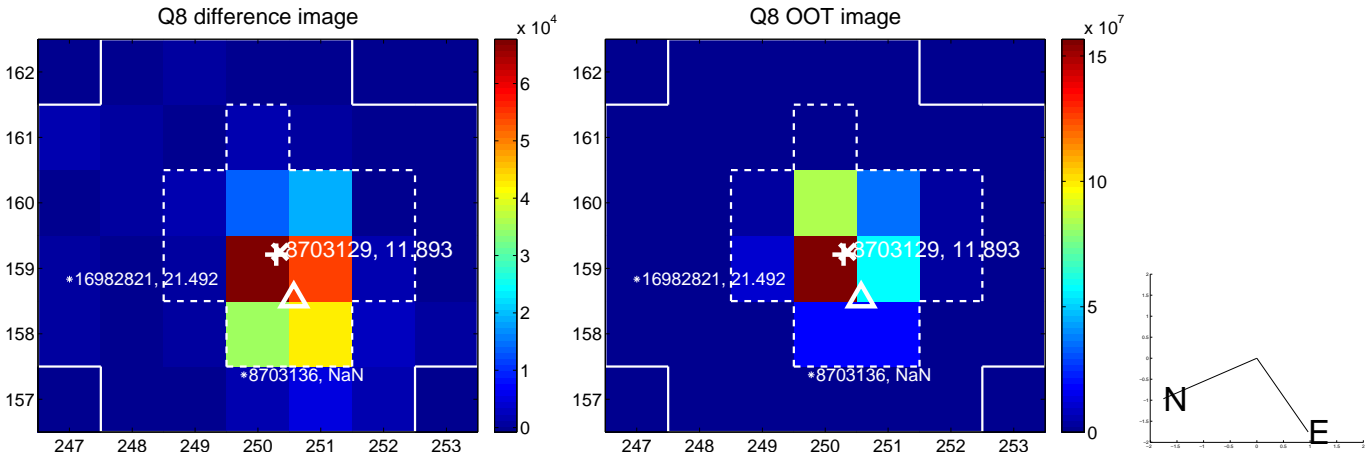
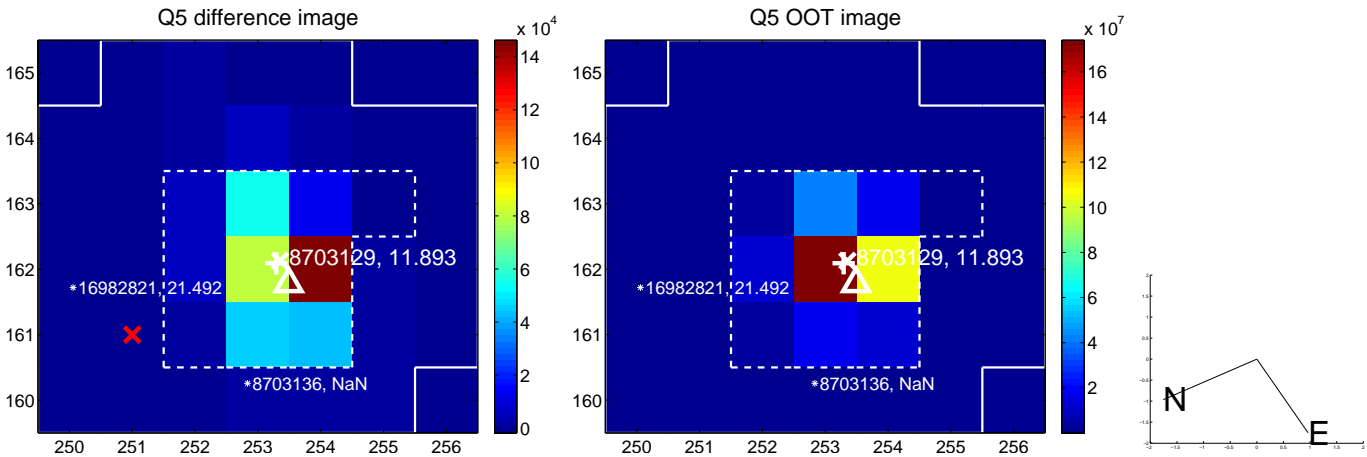


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

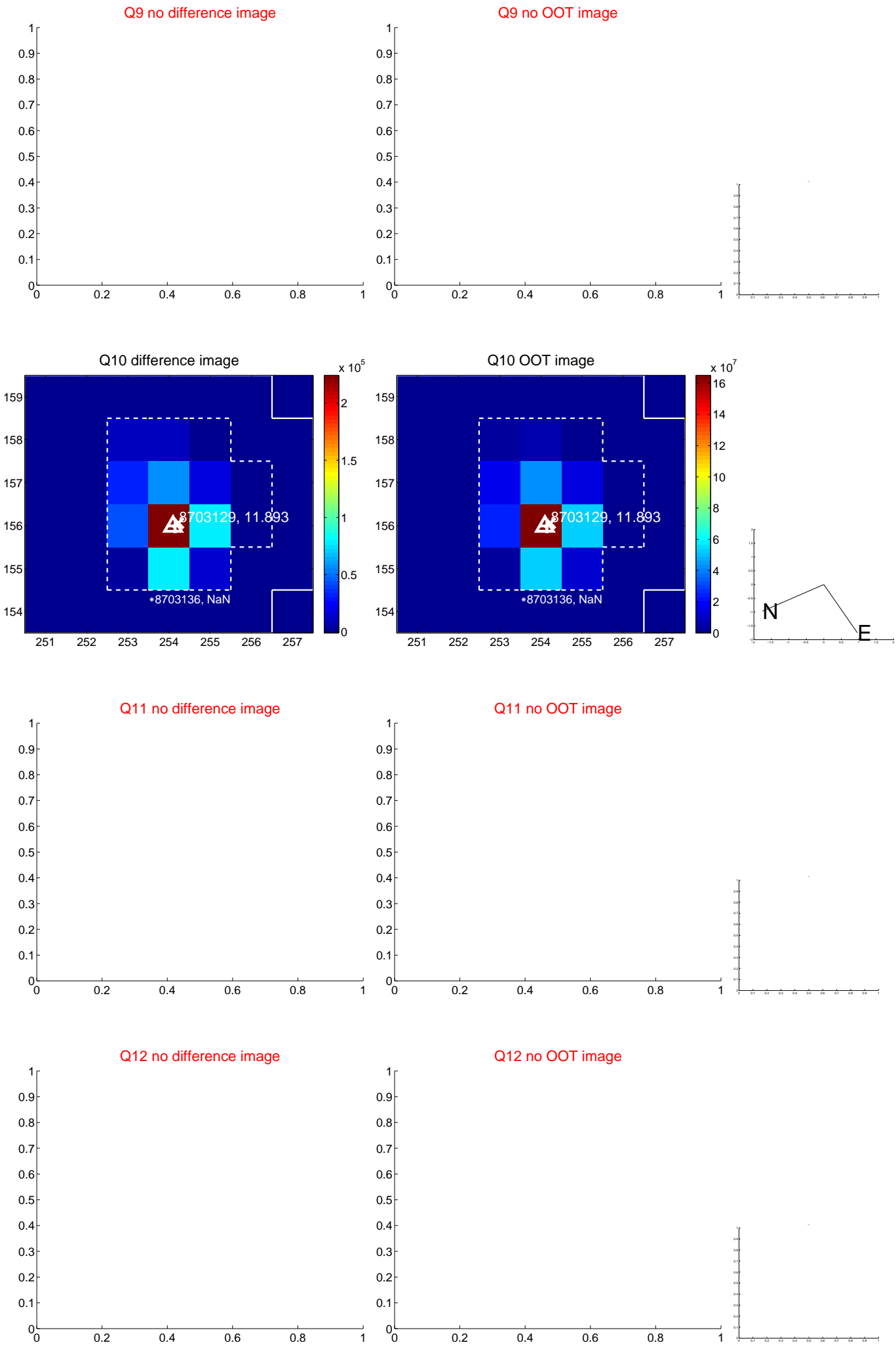


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

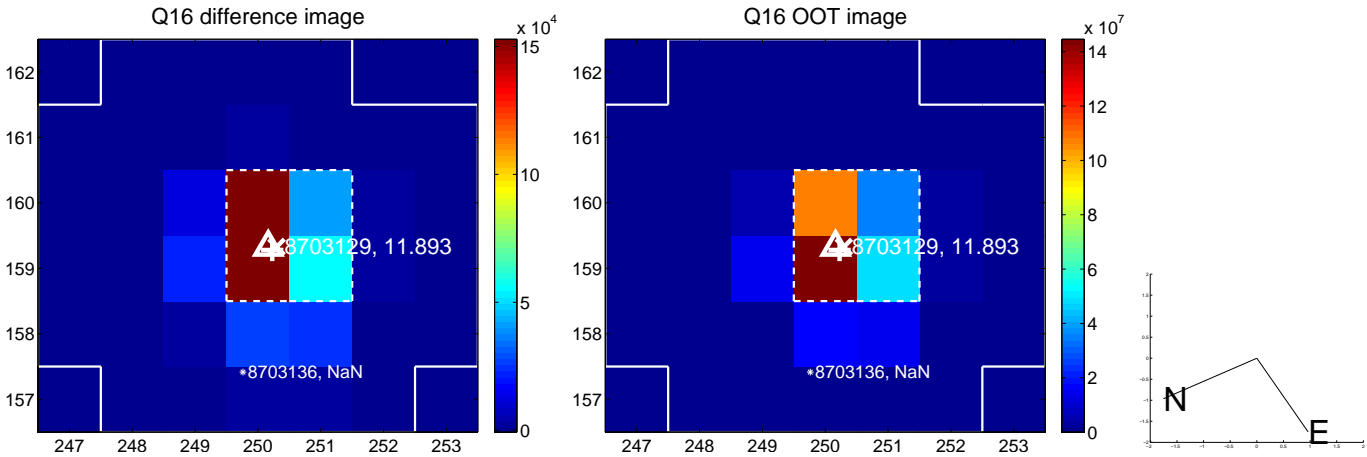
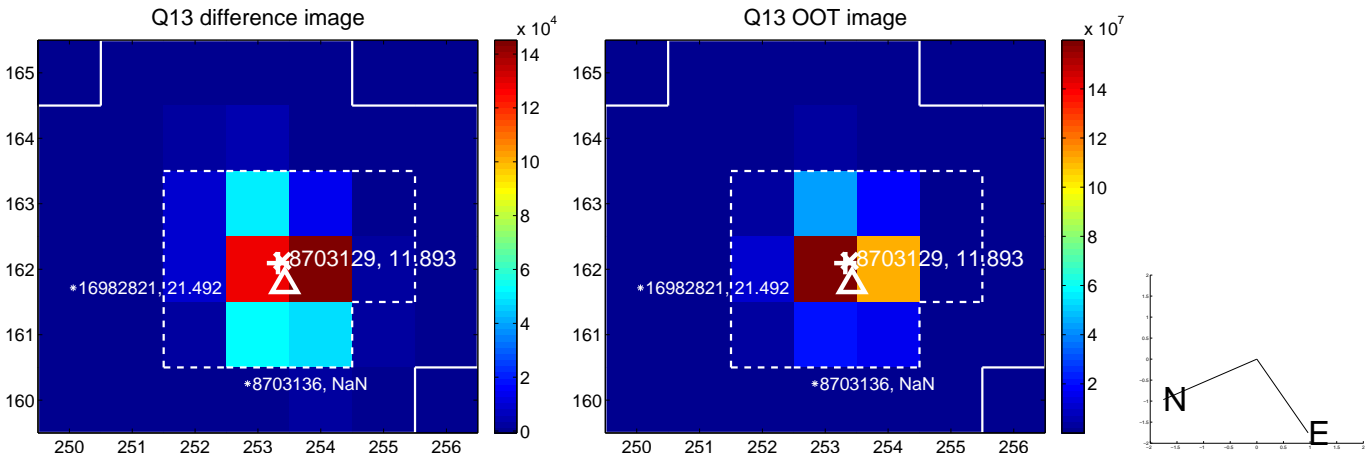




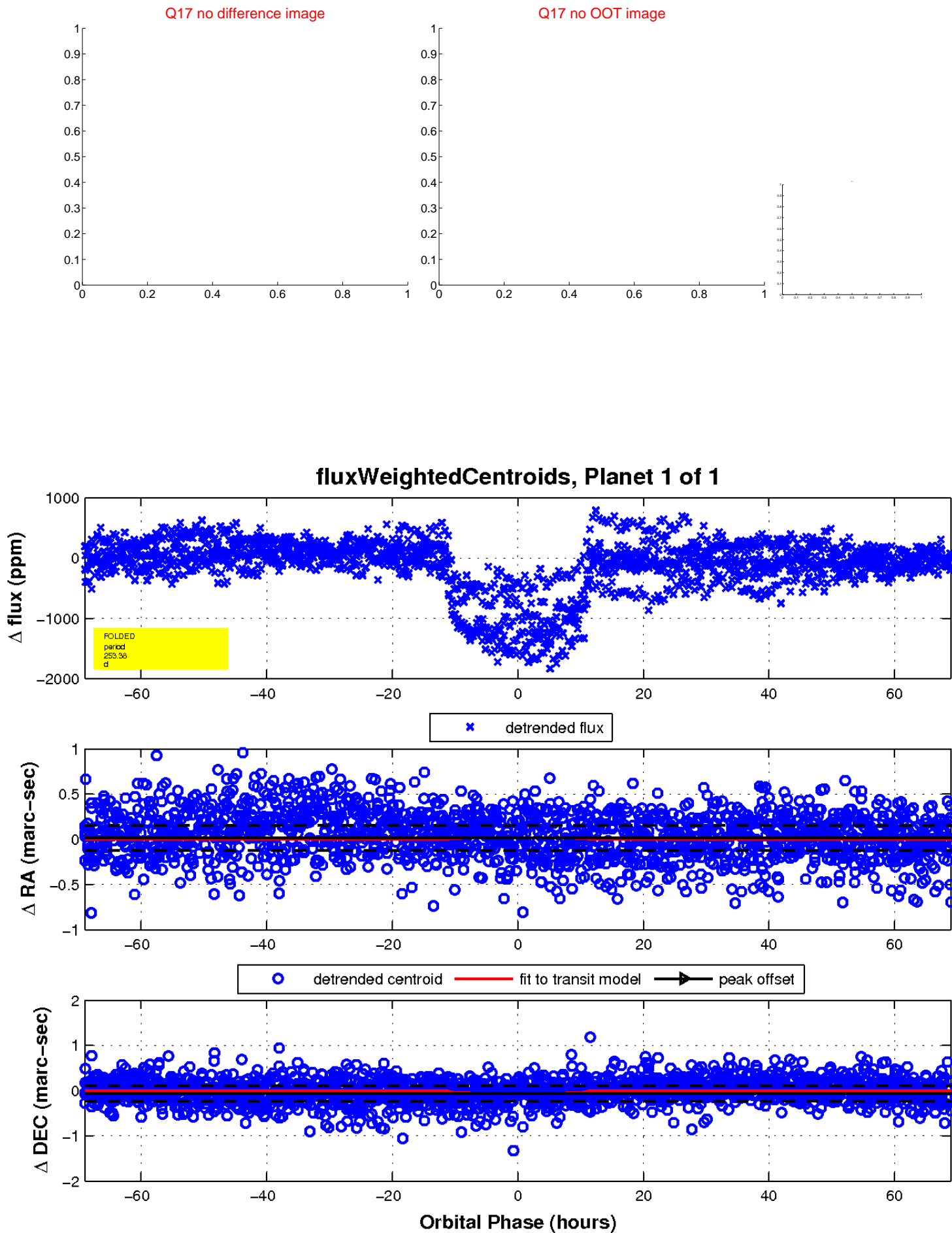
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination

