

# KIC 007899070

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007899070-01	OBS	2683.01	126.446160	166.495855	3281.8	16.795	71.4	74.0	0.80	5613	4.54	2.52

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007899070-01	OBS	PC	1.00	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 007899070-01

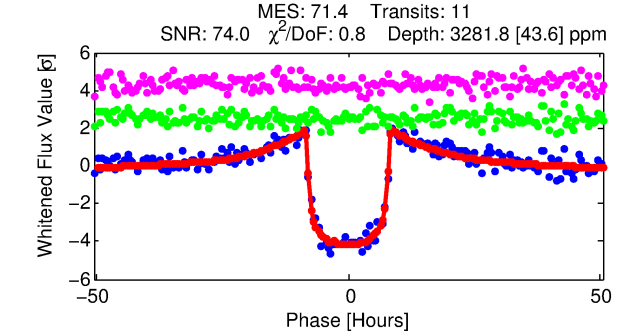
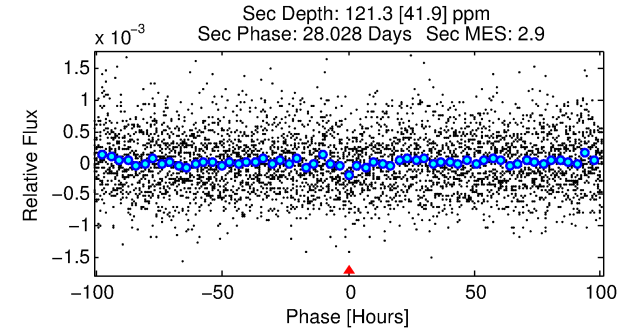
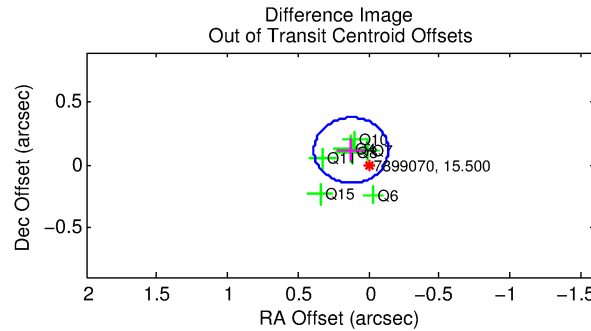
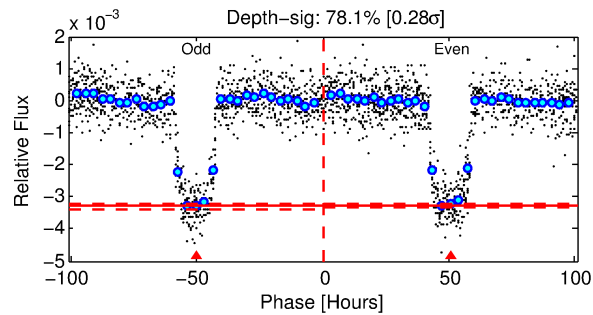
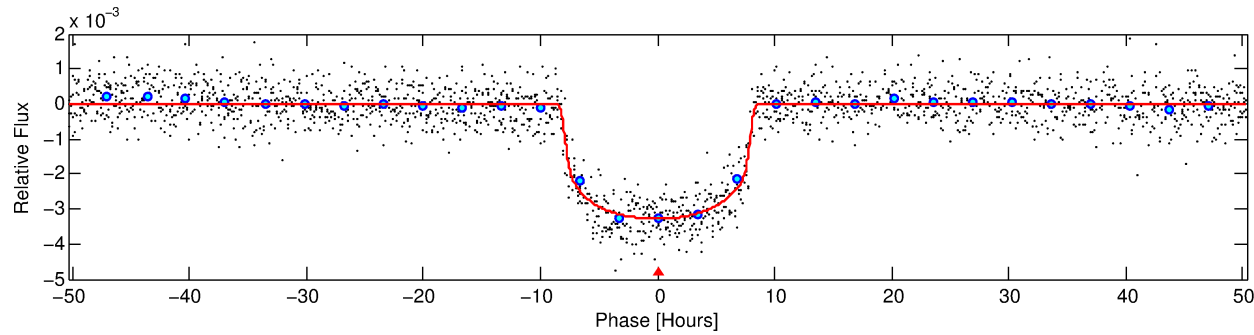
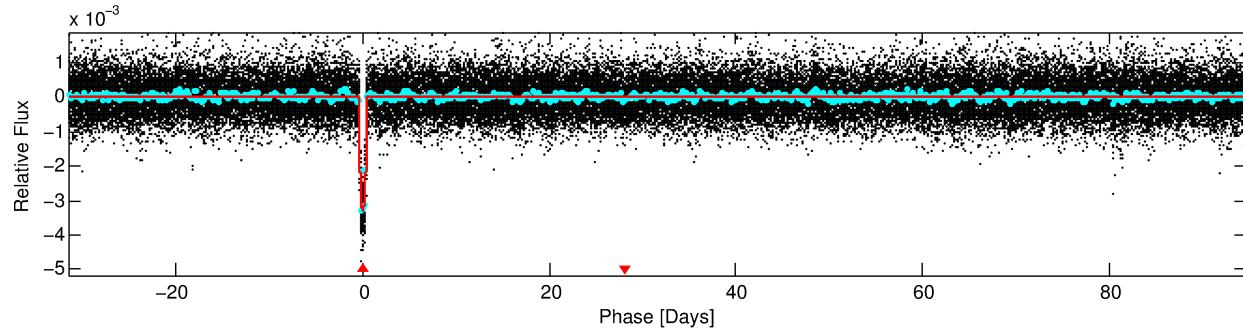
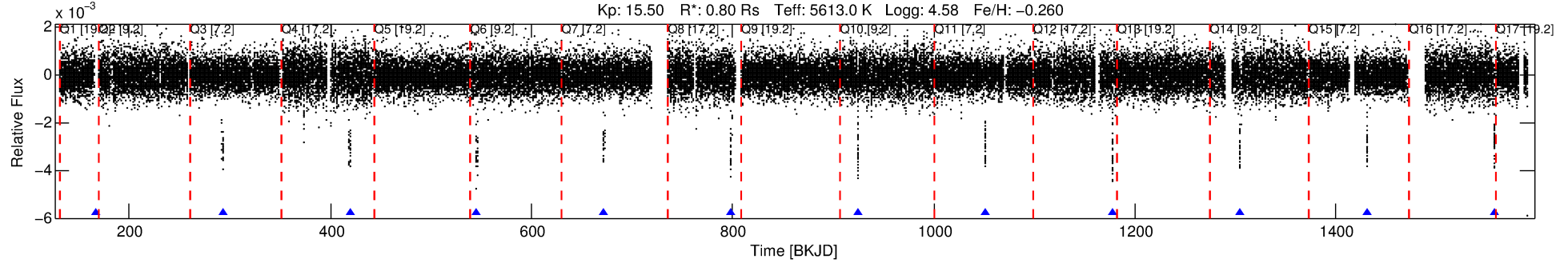
No Significant Match Found

# DV One-Page Summary

KIC: 7899070 Candidate: 1 of 1 Period: 126.446 d

KOI: K02683.01 Corr: 0.997

Kp: 15.50 R\*: 0.80 Rs Teff: 5613.0 K Logg: 4.58 Fe/H: -0.260



## DV Fit Results:

Period = 126.44616 [0.00044] d  
Epoch = 166.4959 [0.0029] BKJD  
Rp/R\* = 0.0523 [0.0015]  
a/R\* = 58.50 [7.11]  
b = 0.27 [0.42]  
Seff = 2.52 [0.68]  
Teq = 321 [22] K  
Rp = 4.54 [0.91] Re  
a = 0.4723 [0.0797] AU  
Ag = 722.70 [309.77] [2.33σ]  
Teffp = 2575 [236] K [9.51σ]

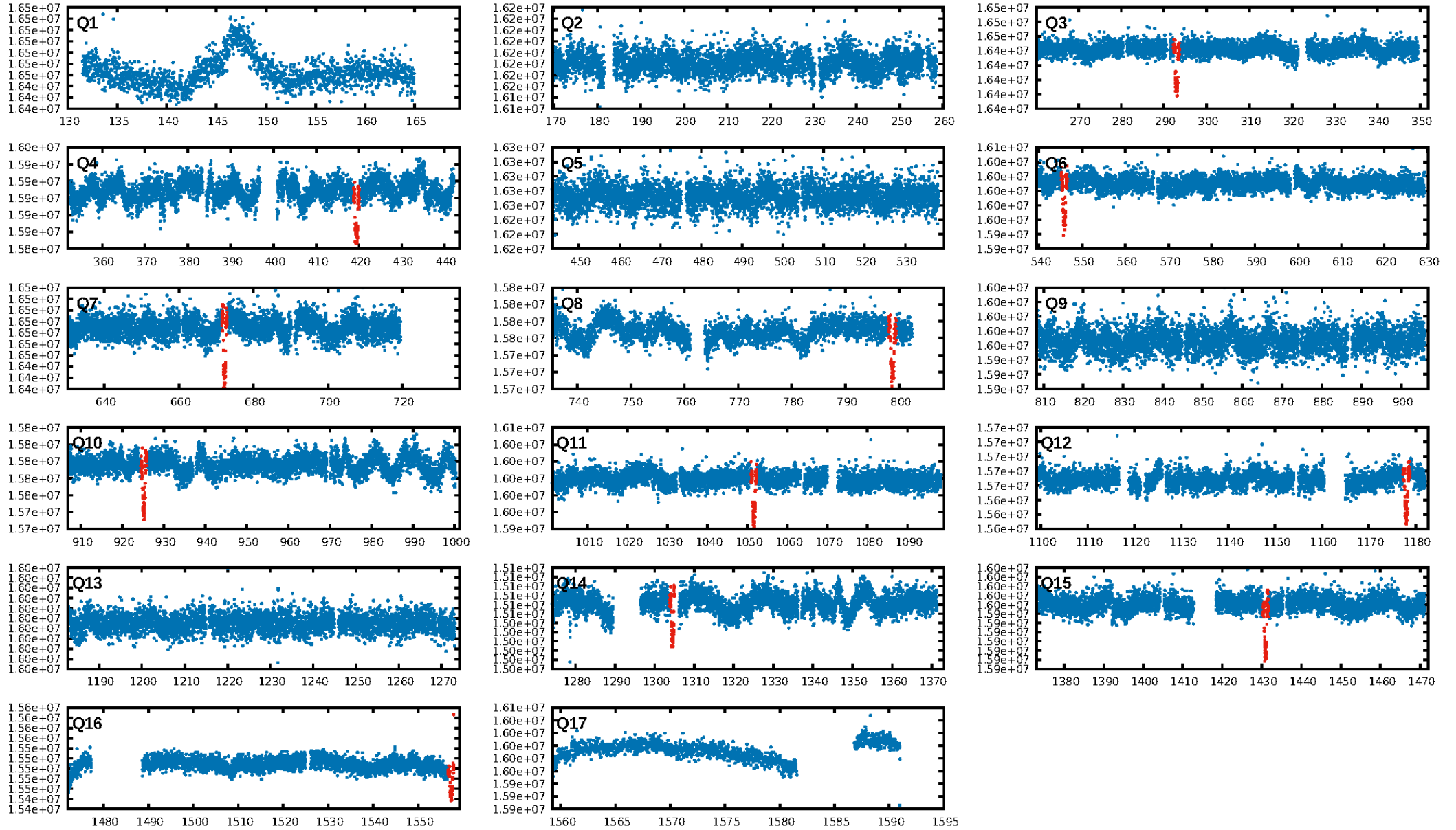
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 67.2%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [11/11]  
GhostDiagnostic-chr: 4.967  
Centroid-sig: 0.0%  
Centroid-so: 0.154 arcsec [0.93σ]  
OotOffset-rm: 0.171 arcsec [1.95σ]  
KicOffset-rm: 0.089 arcsec [0.93σ]  
OotOffset-st: 2/3/2/0 [7]  
KicOffset-st: 2/3/2/0 [7]  
DiffImageQuality-fgm: 1.00 [7/7]  
DiffImageOverlap-fno: 1.00 [7/7]

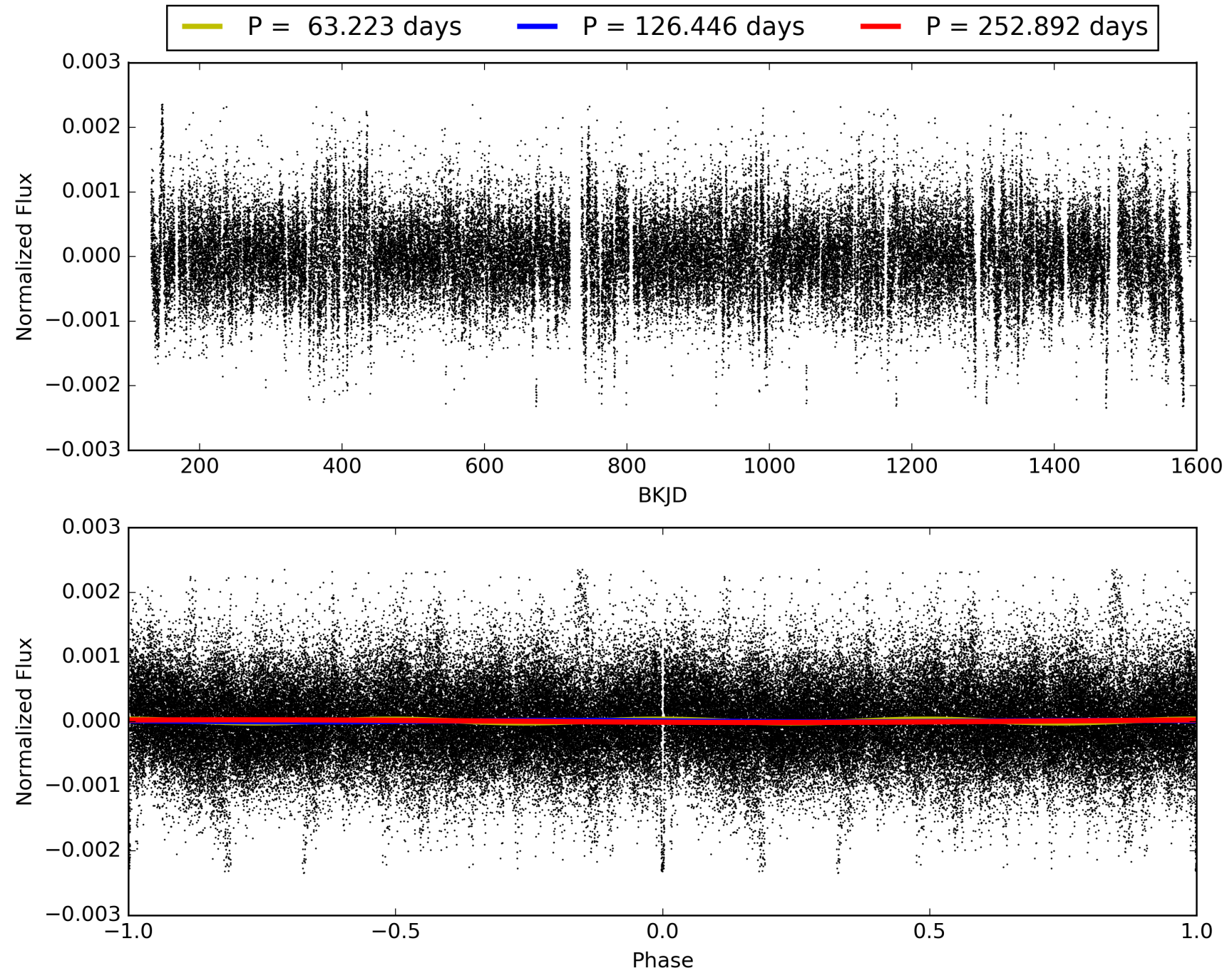
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:36:29 Z

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

# TCE 007899070-01, PDC Light Curves

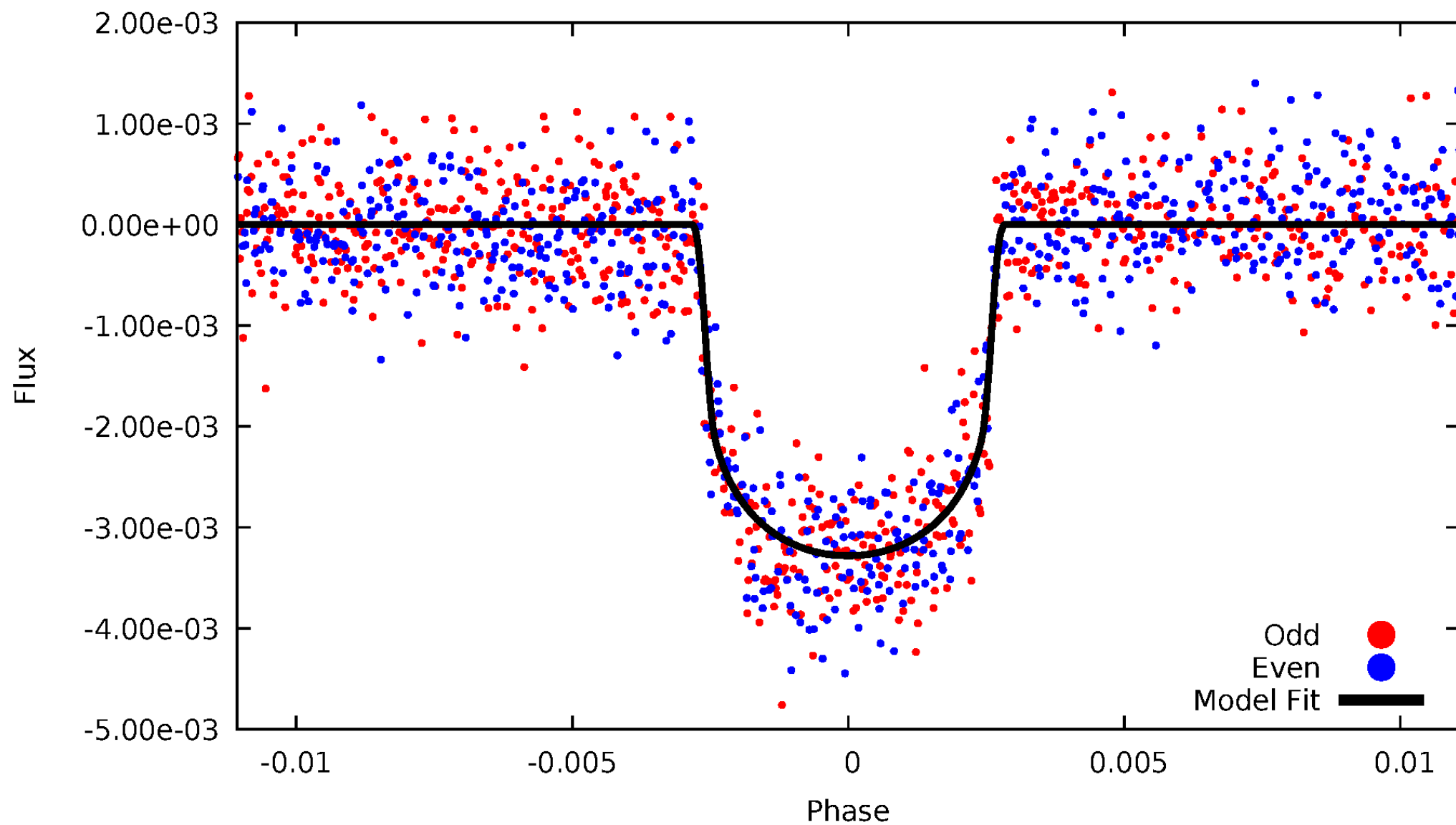


TCE 007899070-01



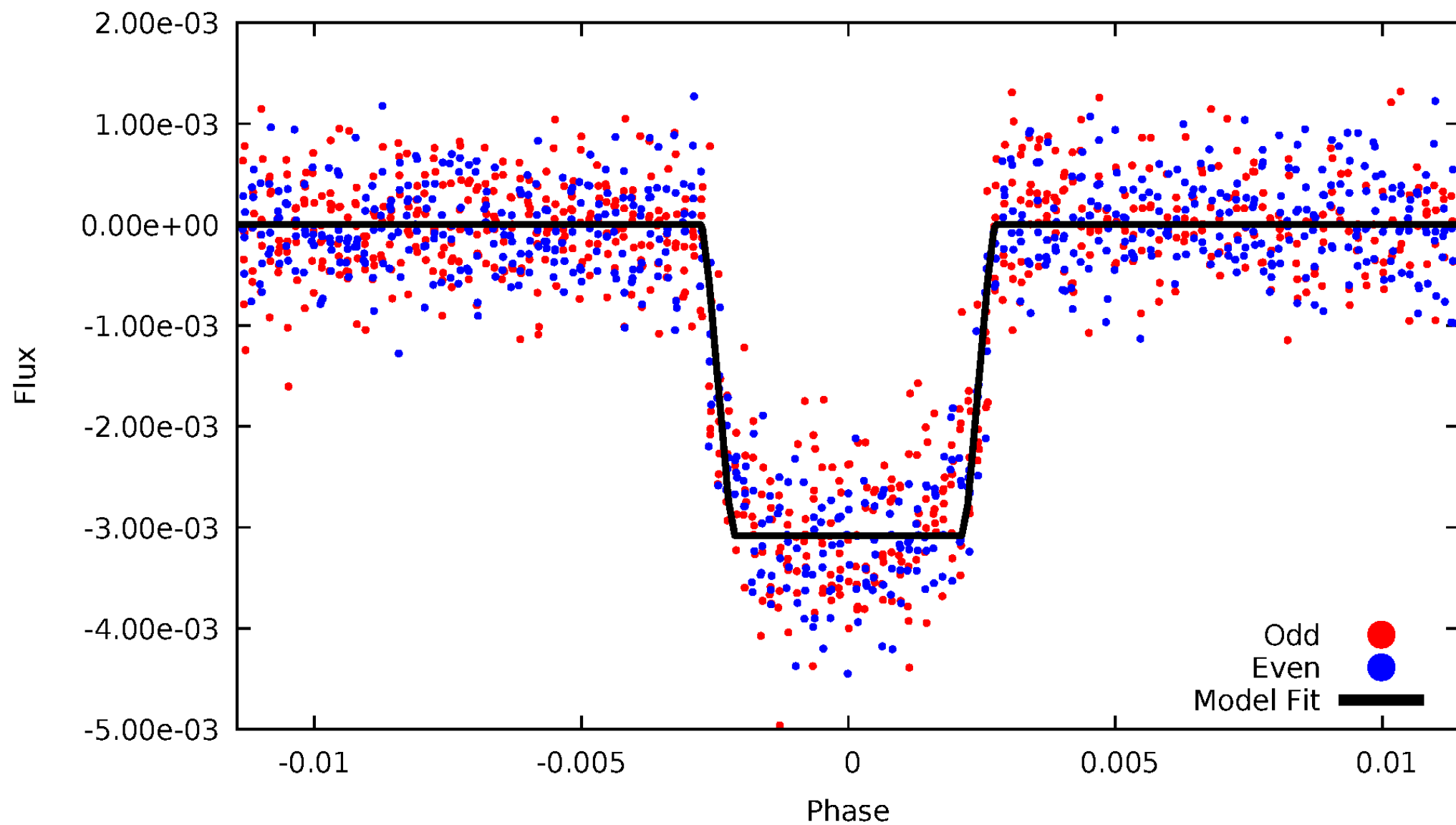
# DV Odd/Even

TCE 007899070-01



# ALT Odd/Even

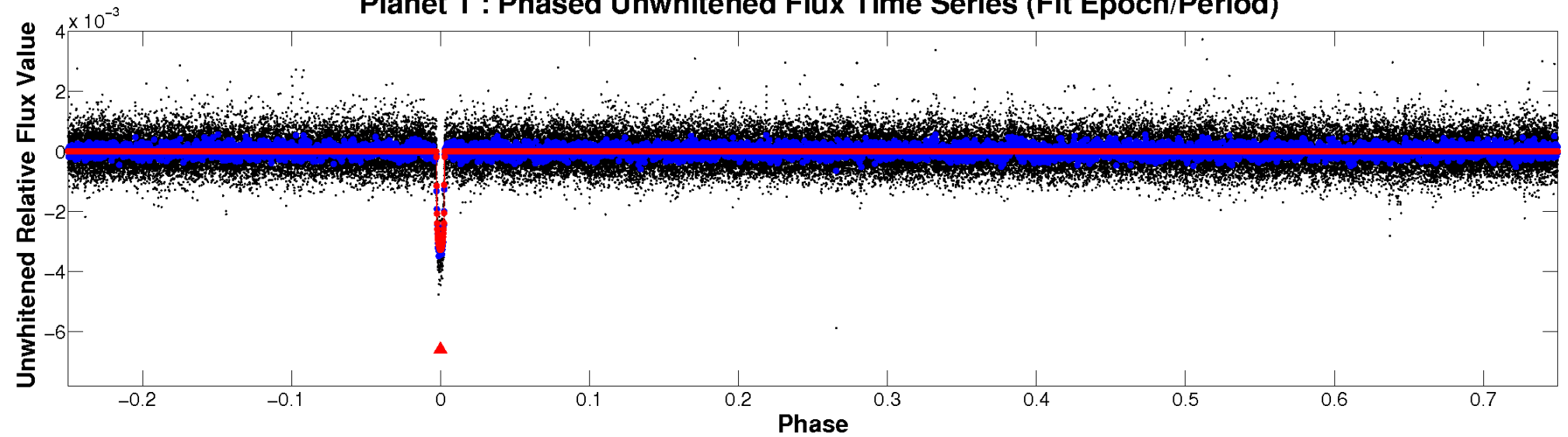
TCE 007899070-01



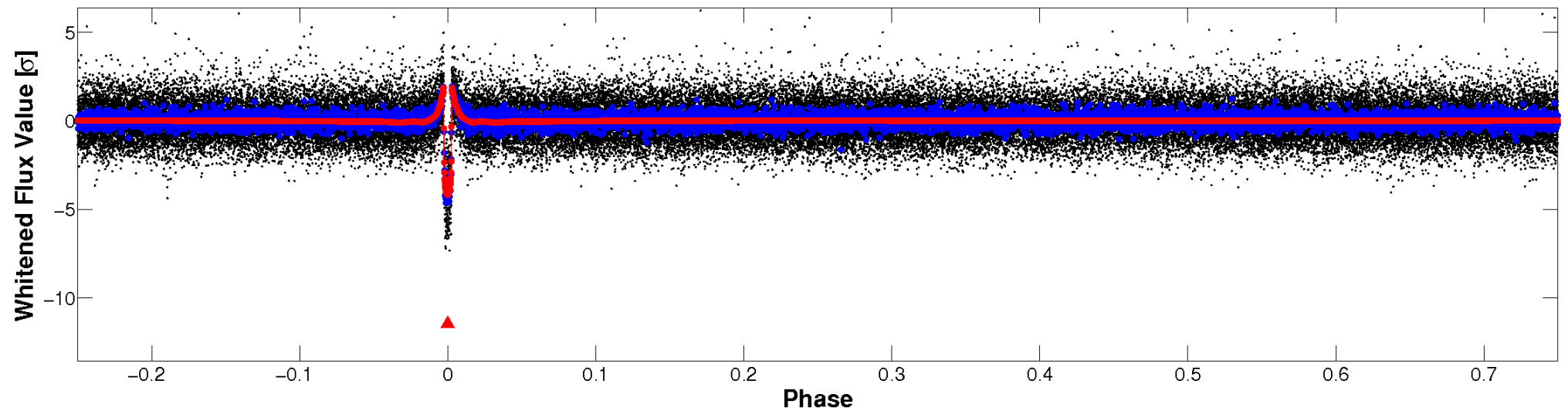


# Non-Whitened Vs. Whitened Light Curve

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

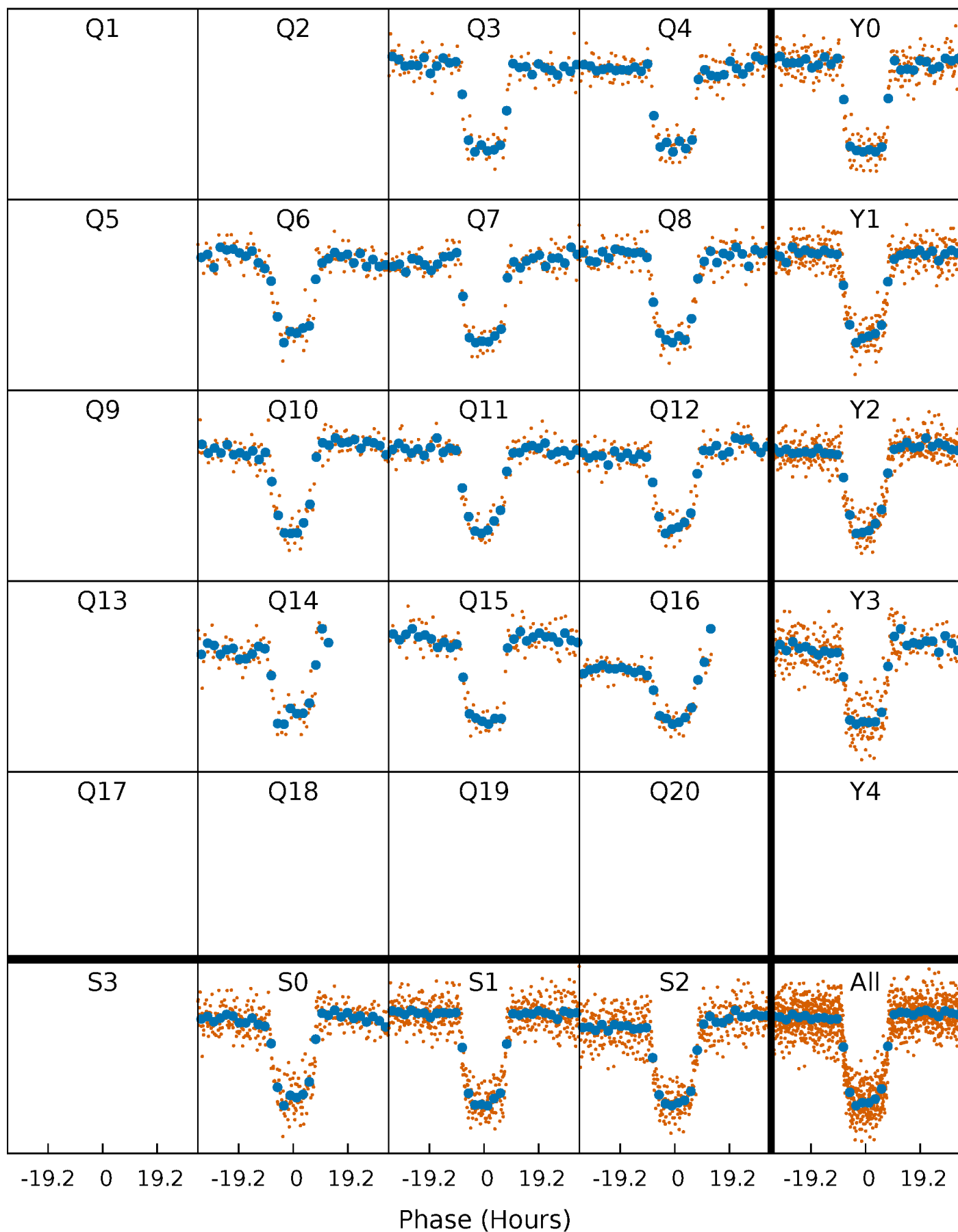


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

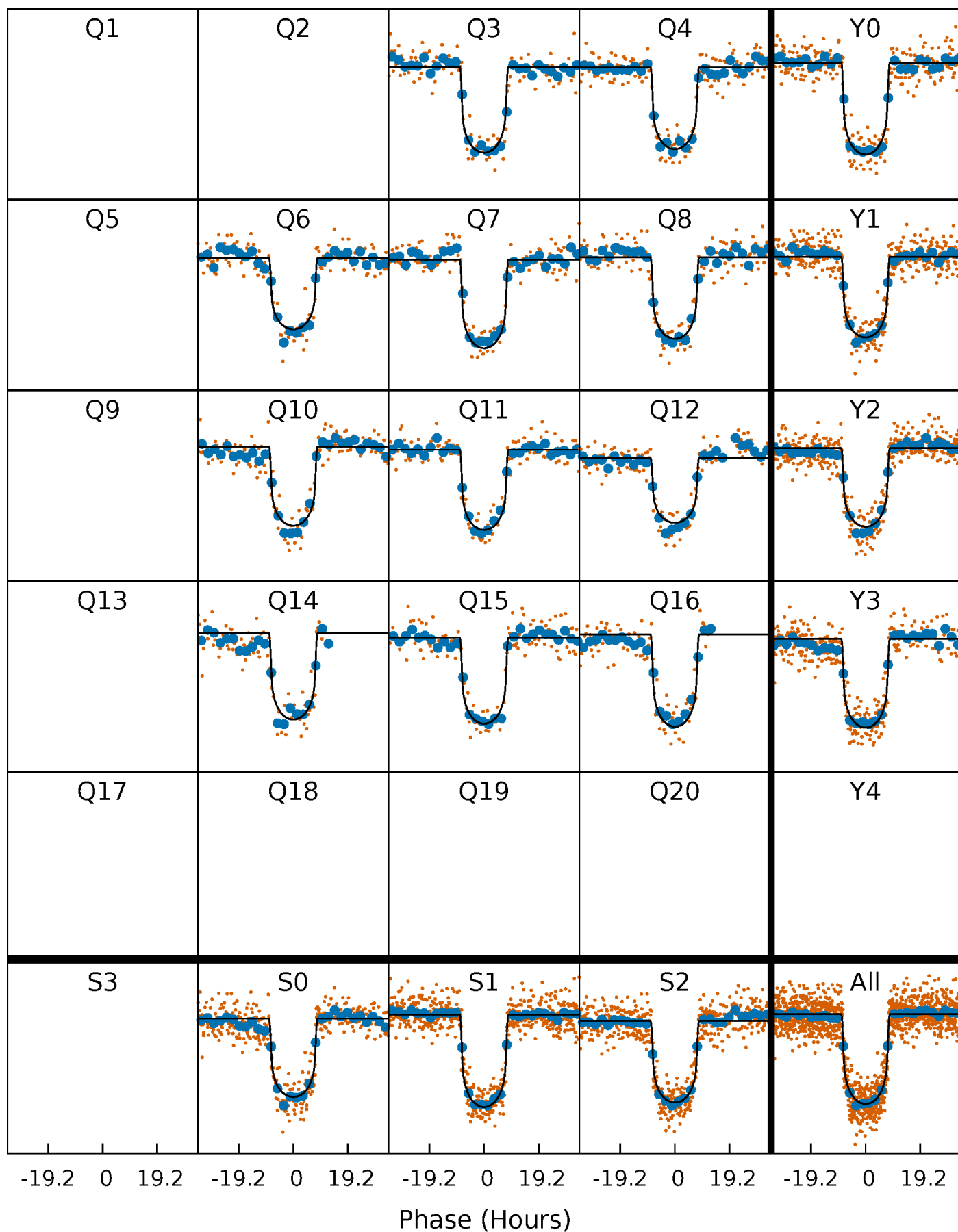
TCE 007899070-01 P=126.446160 Days  $T_0=166.495855$  (BKJD)





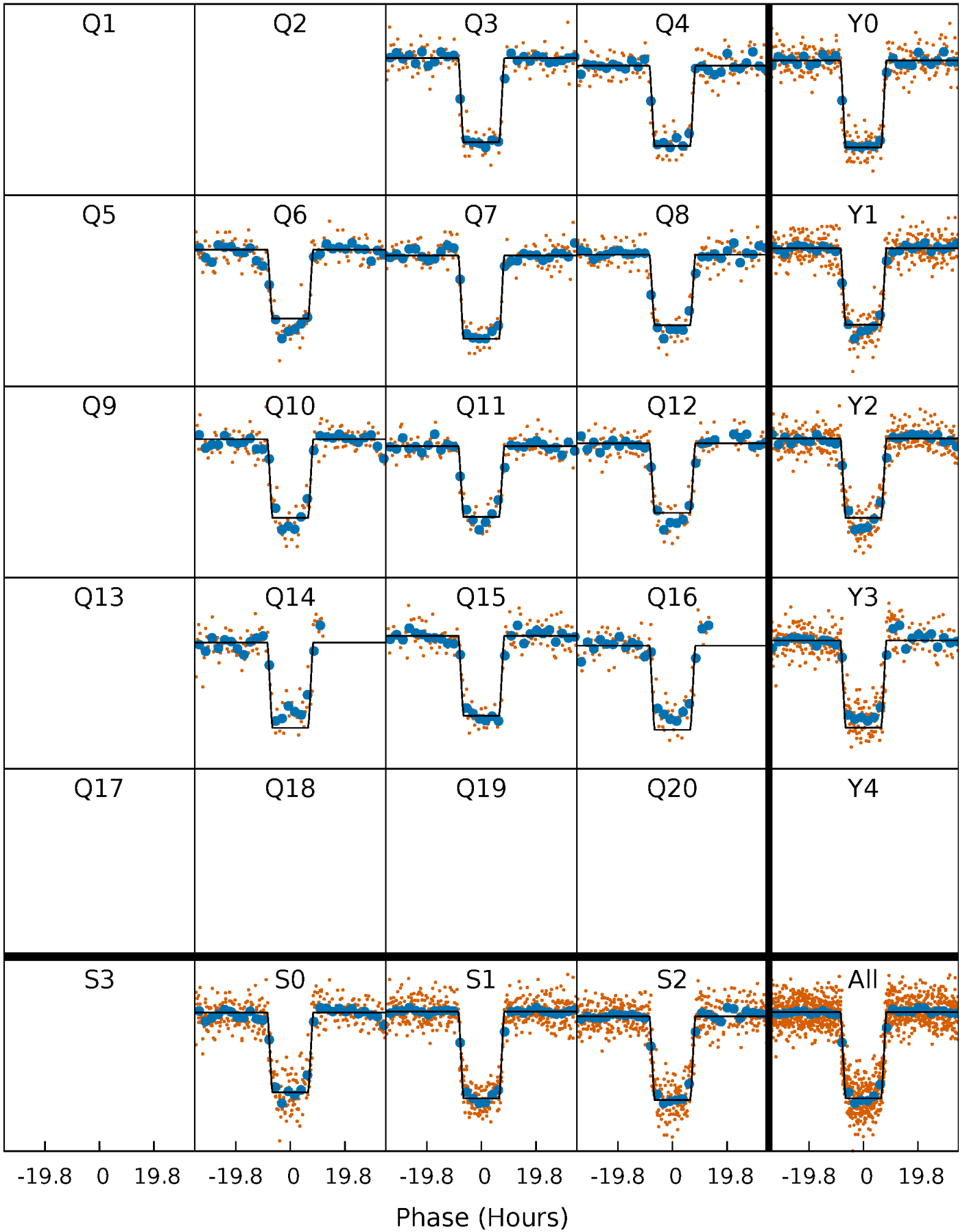
# DV Quarter-Phased Transit Curves

TCE 007899070-01 P=126.446160 Days  $T_0=166.495855$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

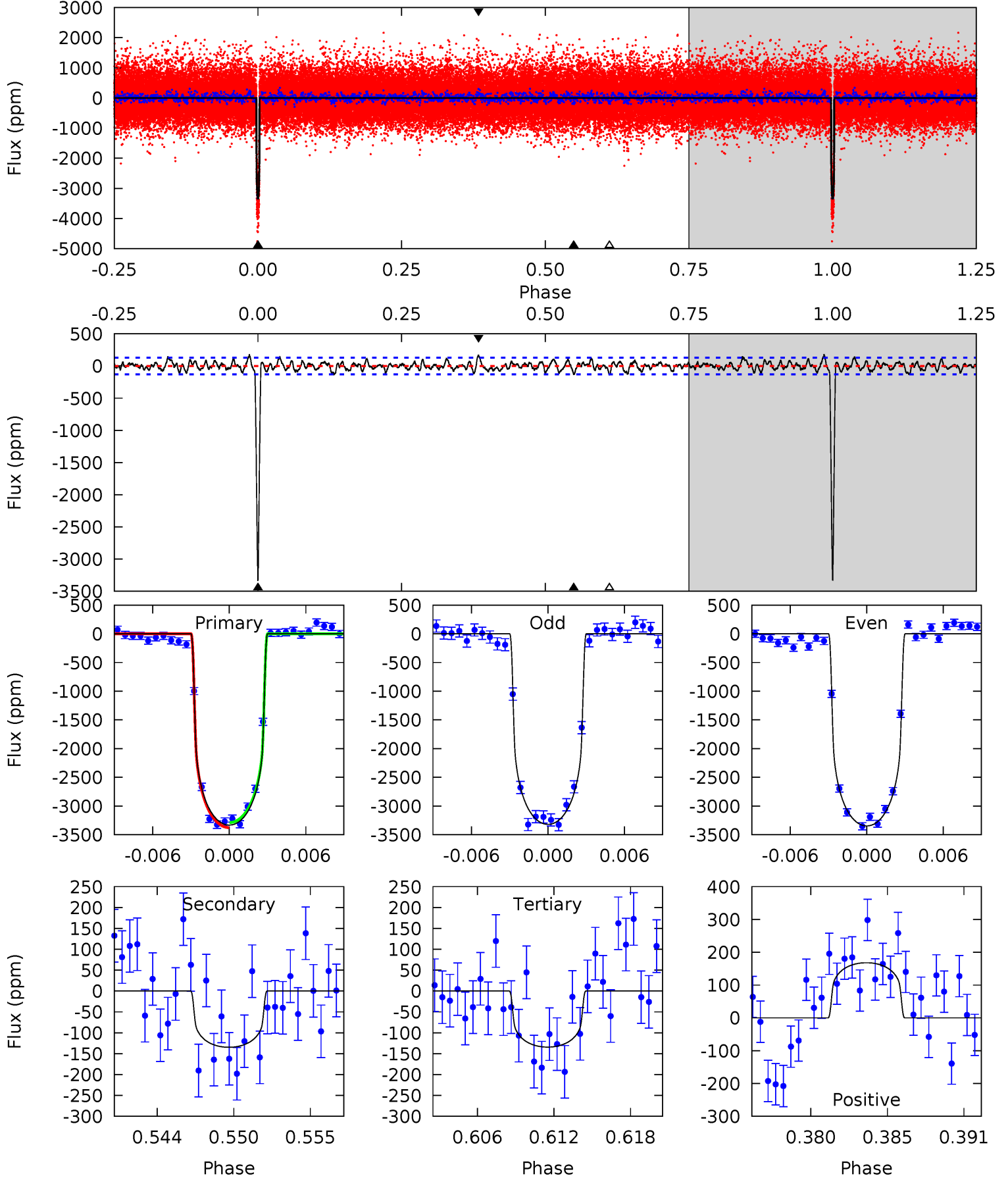
TCE 007899070-01 P=126.442869 Days  $T_0=166.515876$  (BKJD)



# DV Model-Shift Uniqueness Test

007899070-01,  $P = 126.446160$  Days,  $E = 40.049695$  Days

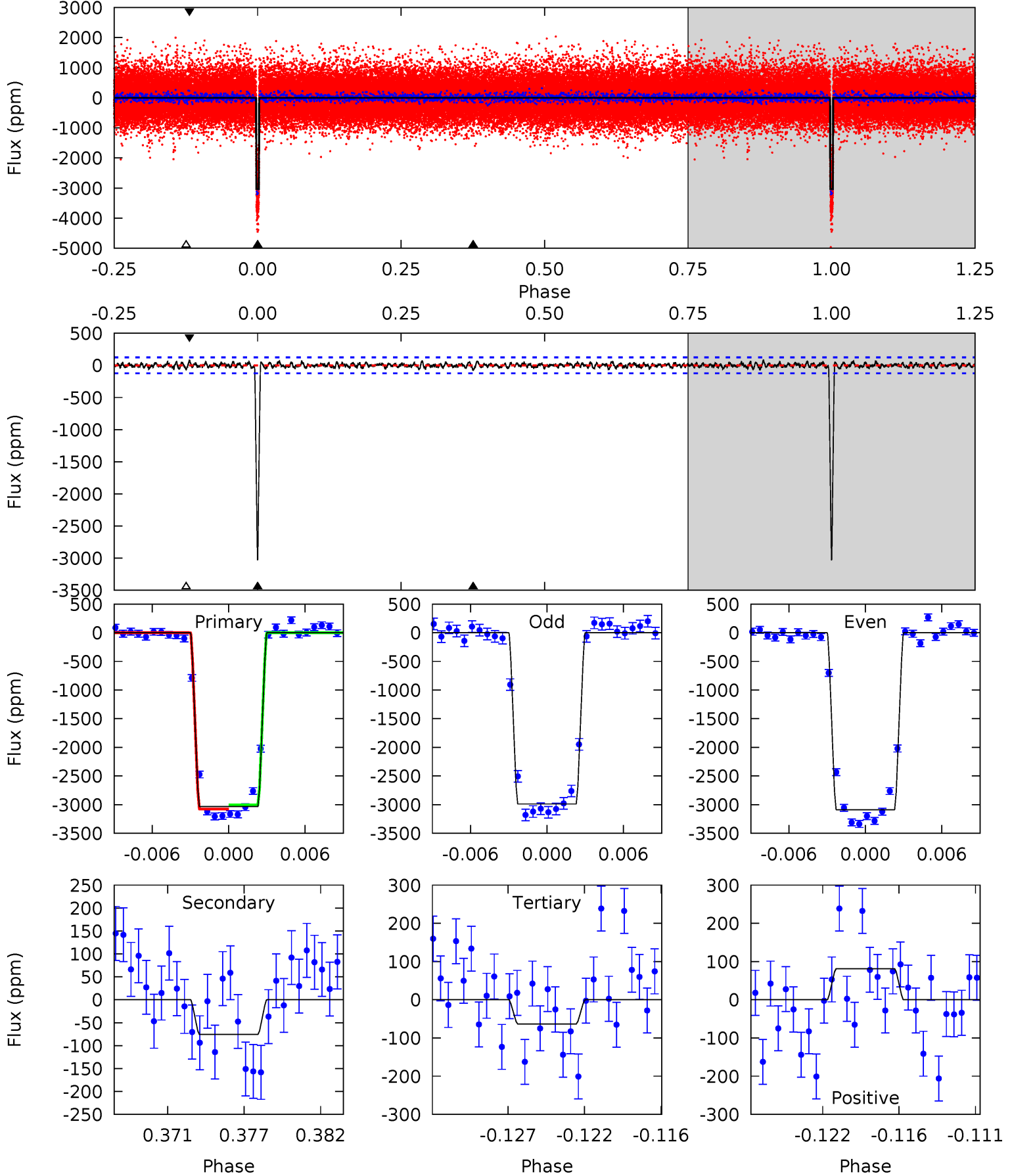
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
132.7	5.37	5.35	6.69	5.13	2.77	1.99	127.4	126.0	0.02	-1.33	0.53	1.00	0.05	1.75



# Alt Model-Shift Uniqueness Test

007899070-01,  $P = 126.442869$  Days,  $E = 40.073007$  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
126.5	3.16	2.65	3.39	5.14	2.77	0.96	123.9	123.2	0.51	-0.23	2.07	0.98	0.03	1.42



### Stellar Parameters For KIC 007899070

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5613^{+152}_{-152}$	$4.581^{+0.034}_{-0.136}$	$-0.260^{+0.300}_{-0.300}$	$0.795^{+0.158}_{-0.068}$	$0.888^{+0.088}_{-0.107}$	$2.492^{+0.436}_{-0.955}$
	+3%/-3%	+1%/-3%	+115%/-115%	+20%/-9%	+10%/-12%	+17%/-38%
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 007899070-01 / KOI 2683.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-135 \pm 25$	$4.65^{+0.53}_{-0.33}$	$457^{+23}_{-16}$	$3224^{+102}_{-107}$	$735^{+189}_{-164}$
Alt.	$-76 \pm 24$	$4.98^{+0.51}_{-0.37}$	$457^{+23}_{-18}$	$2917^{+118}_{-157}$	$359^{+134}_{-117}$

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

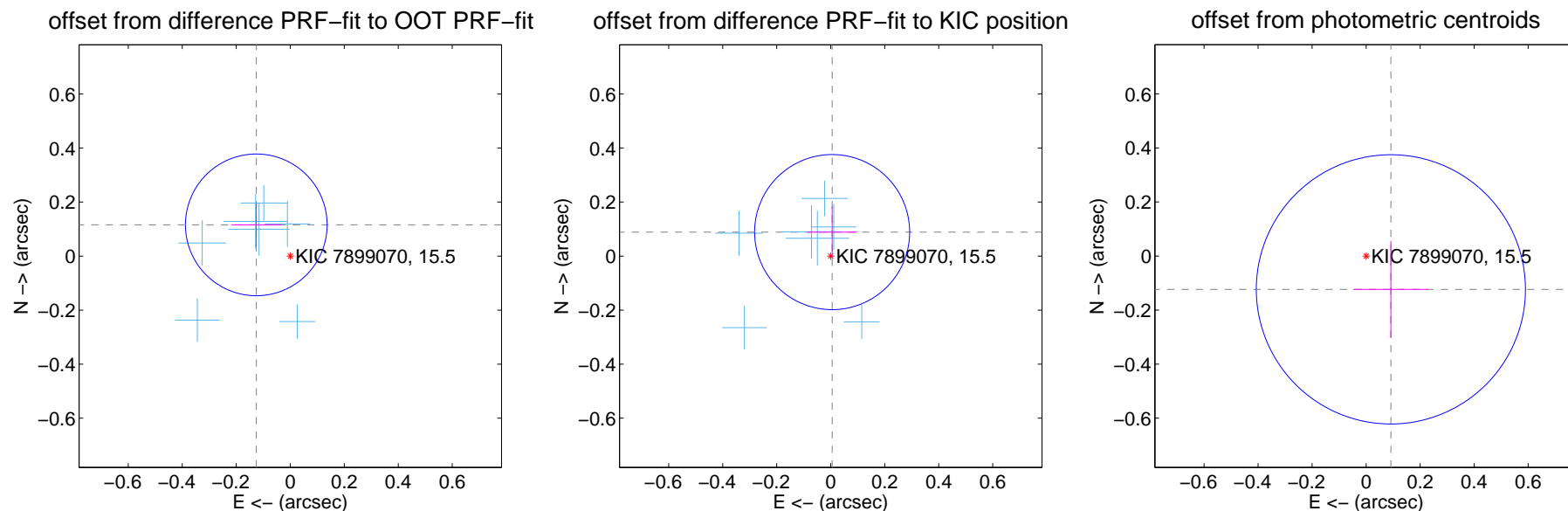
## DV Centroid Data

Supplemental centroid analysis for 007899070-01. Kepler magnitude: 15.50. Transit SNR 74.01

There are 7 quarters with good PRF difference image offsets

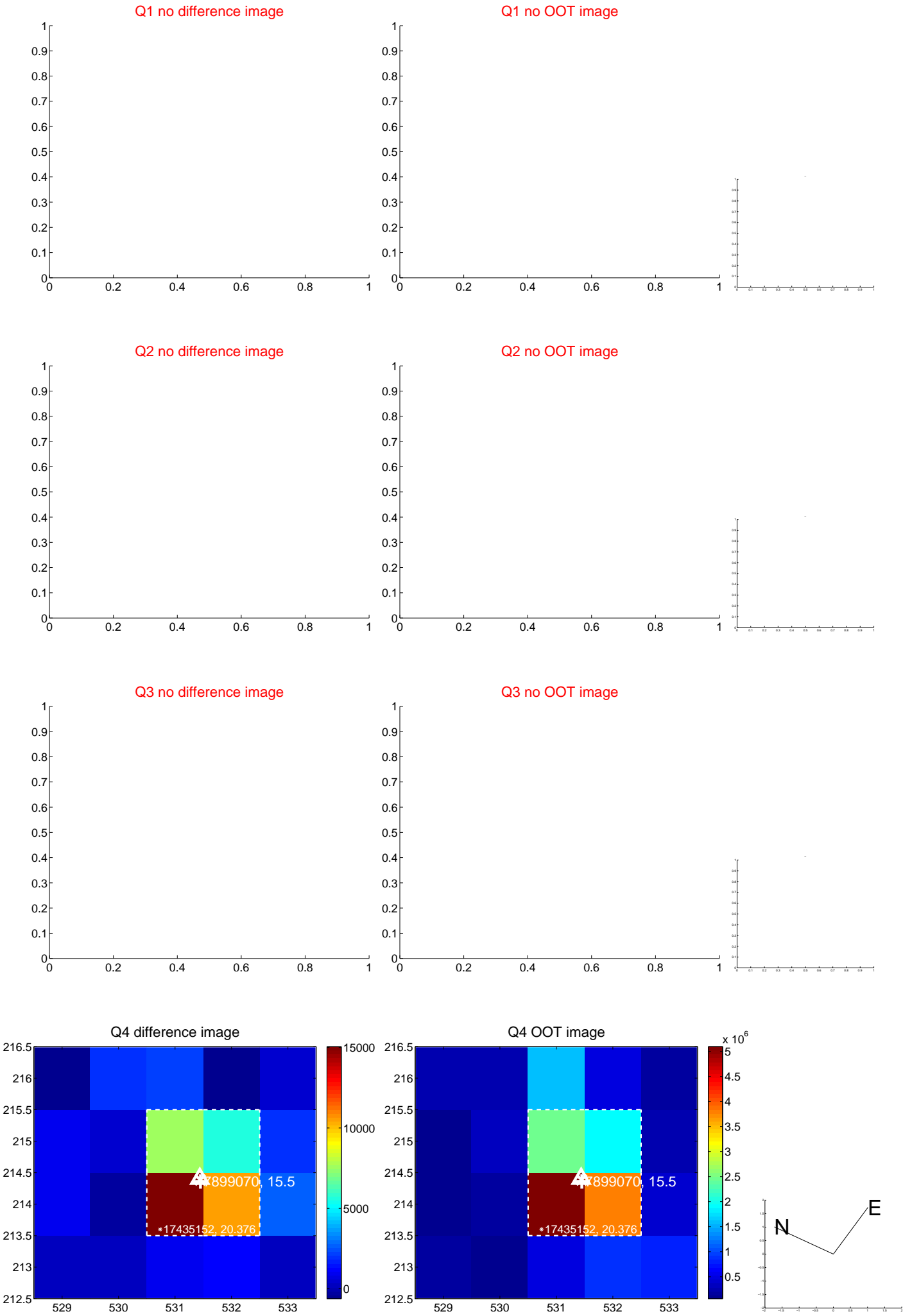
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.171 \pm 0.087$	1.95	$0.126 \pm 0.093$	$0.116 \pm 0.080$
PRF-fit source offset from KIC position	$0.089 \pm 0.096$	0.93	$-0.005 \pm 0.092$	$0.089 \pm 0.095$
photometric centroid source offset	$0.15 \pm 0.17$	0.93	$-0.09 \pm 0.14$	$-0.12 \pm 0.18$



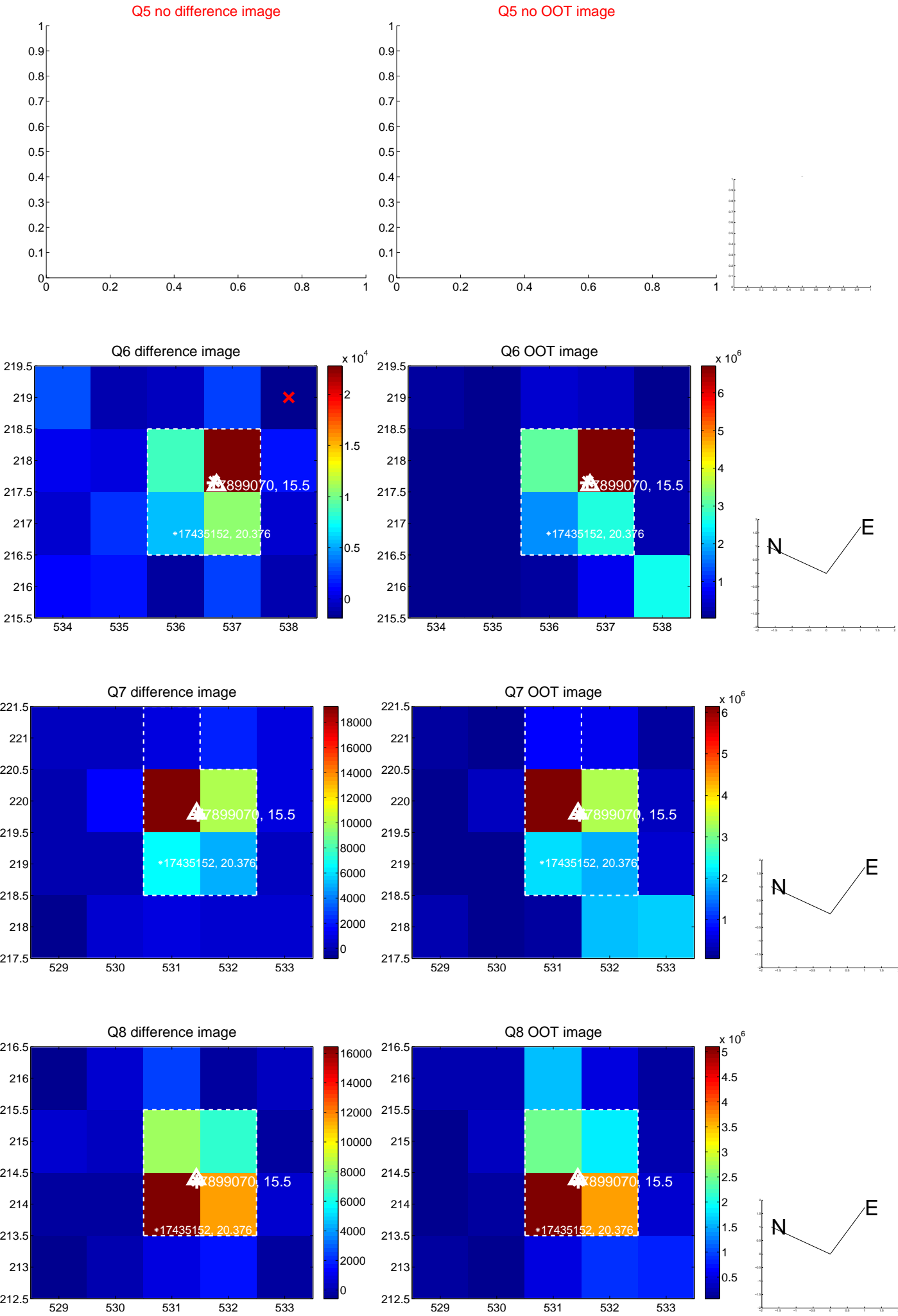
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



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

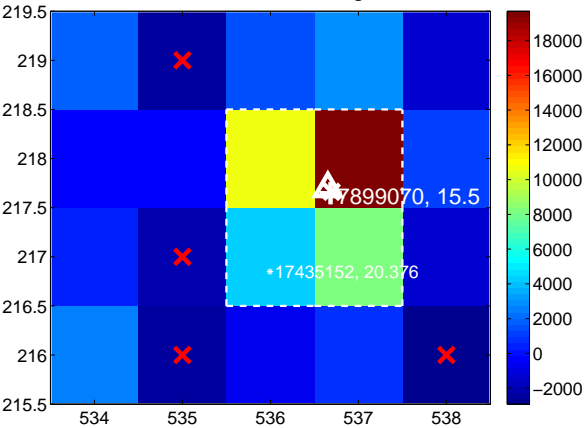
Q9 no difference image



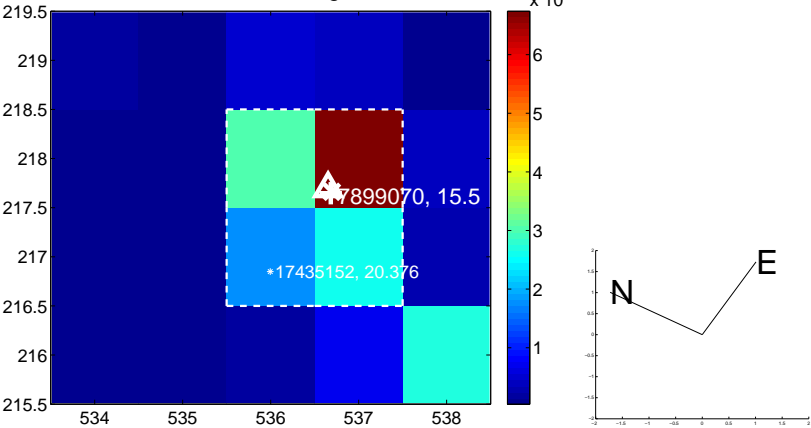
Q9 no OOT image



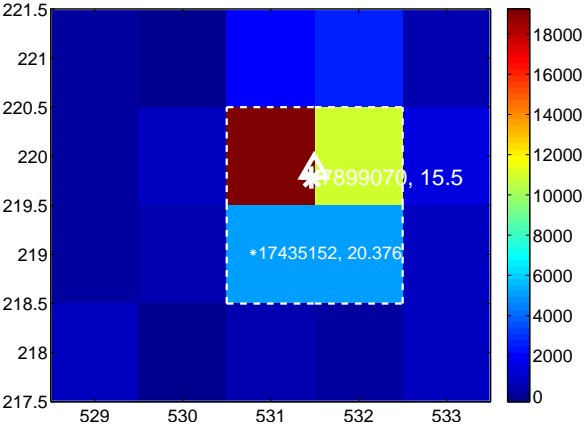
Q10 difference image



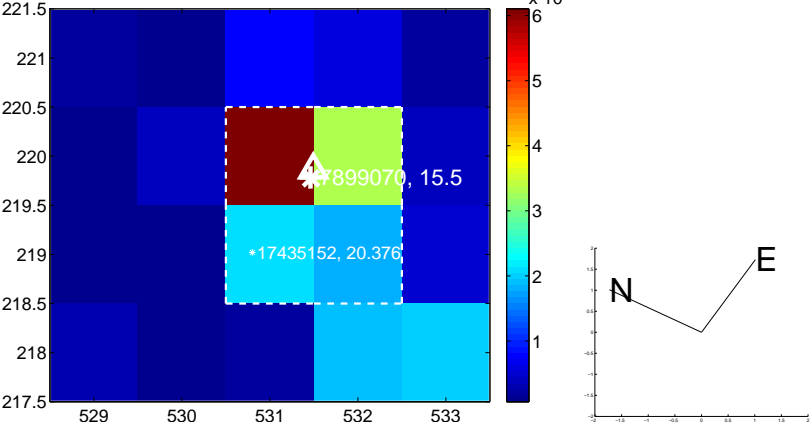
Q10 OOT image



Q11 difference image



Q11 OOT image



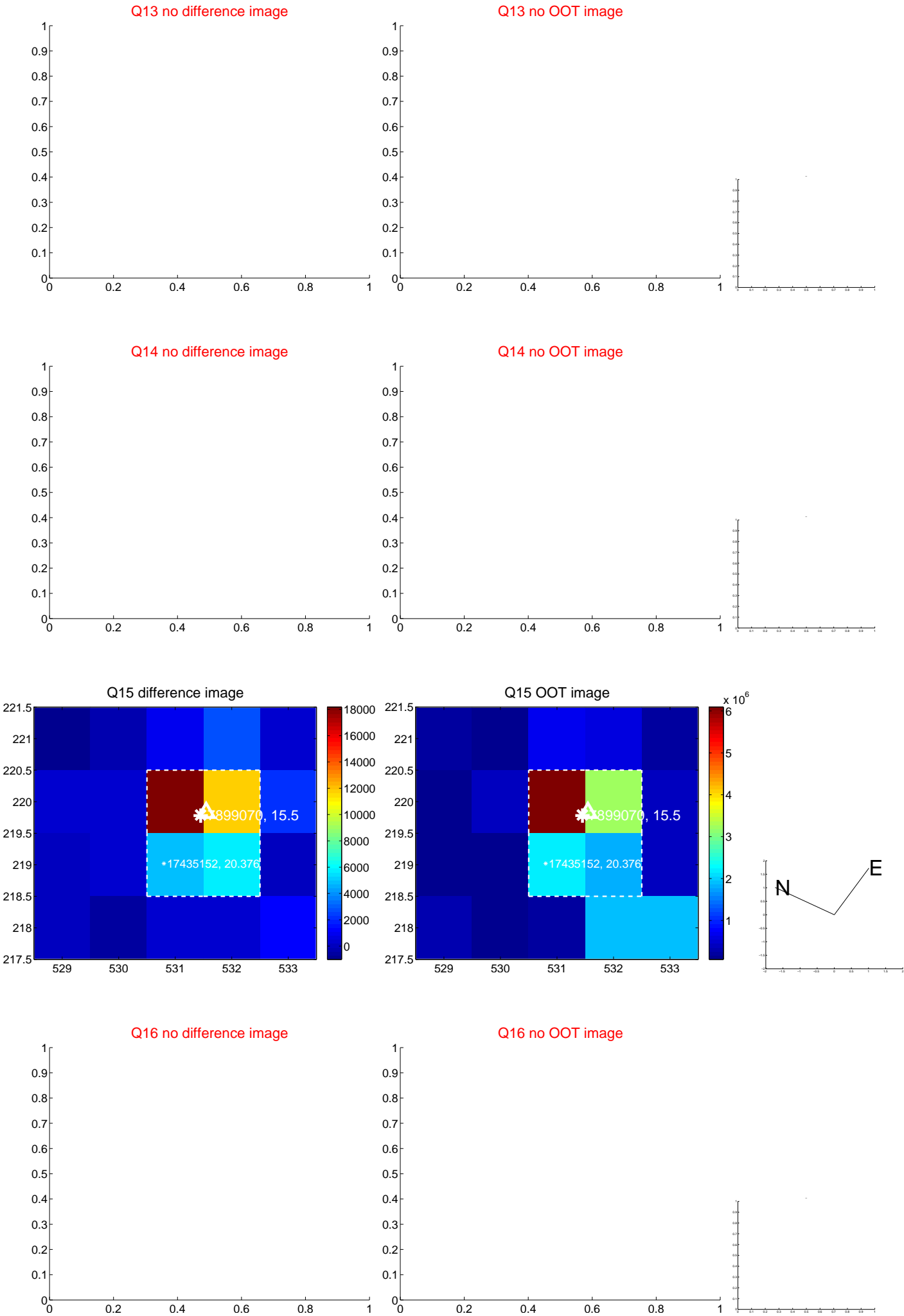
Q12 no difference image



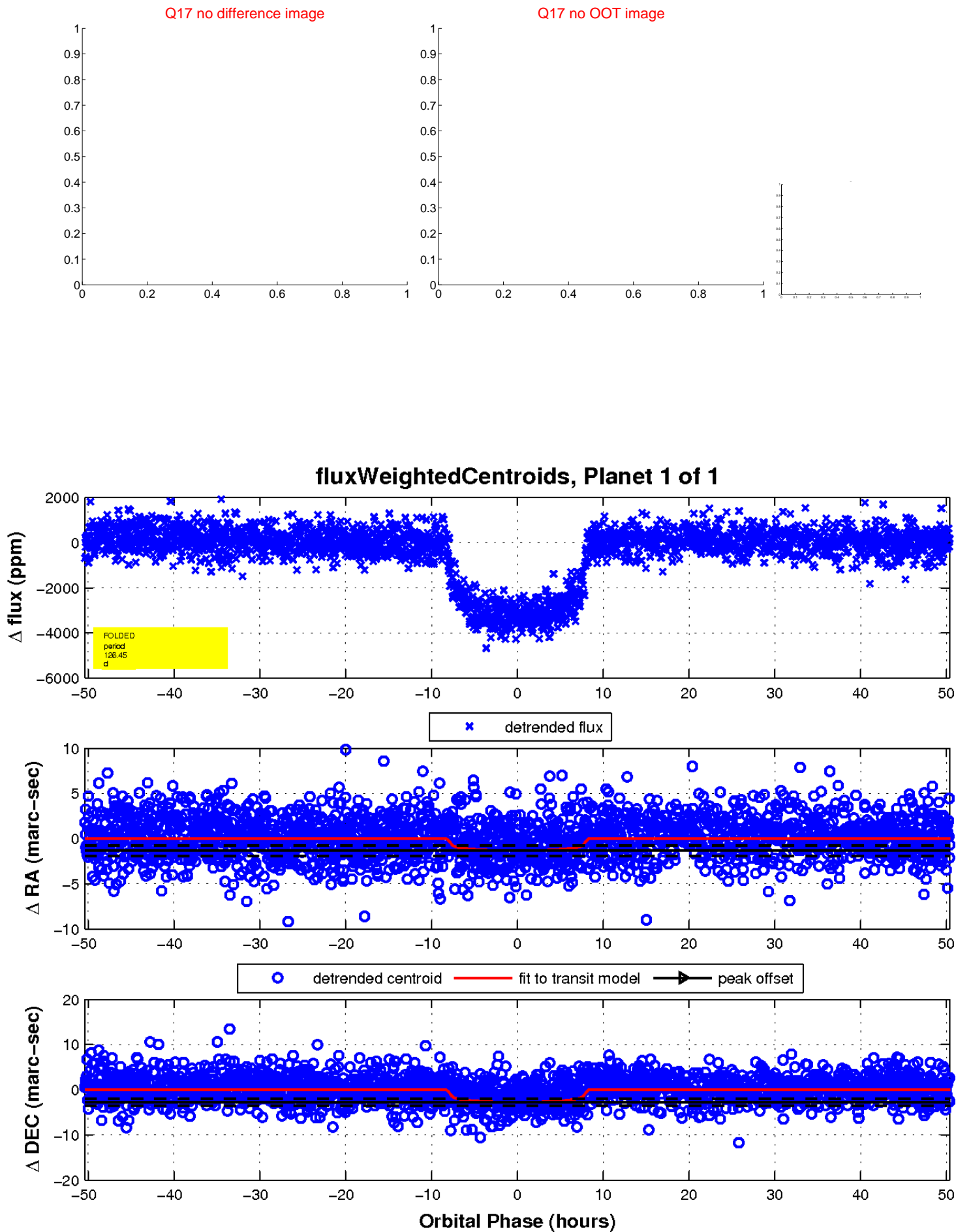
Q12 no OOT image



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



UKIRT Image

Declination

