

# KIC 005791529

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005791529-01	OBS	No	232.481436	309.336919	1260.3	3.526	7.6	7.2	0.65	4619	2.44	0.43

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005791529-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS

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

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

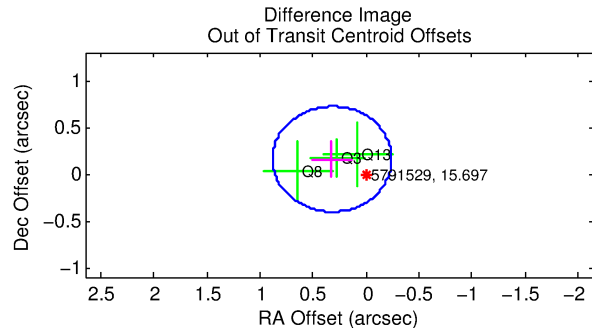
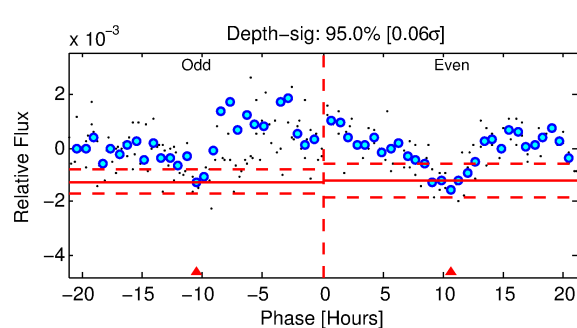
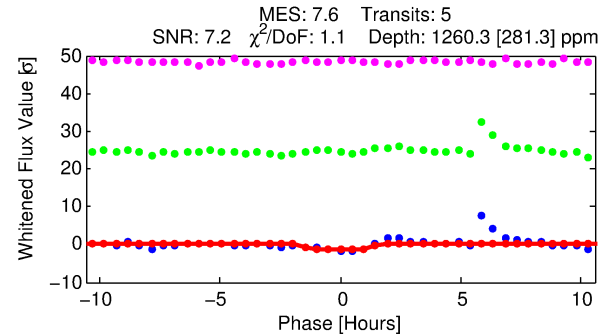
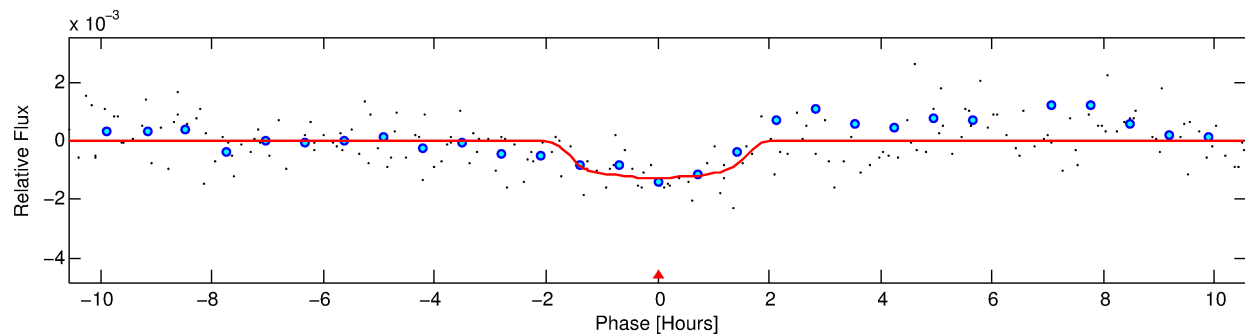
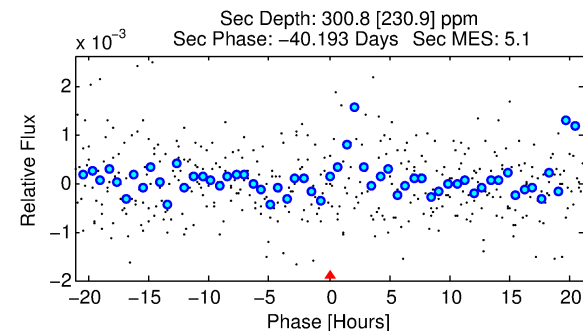
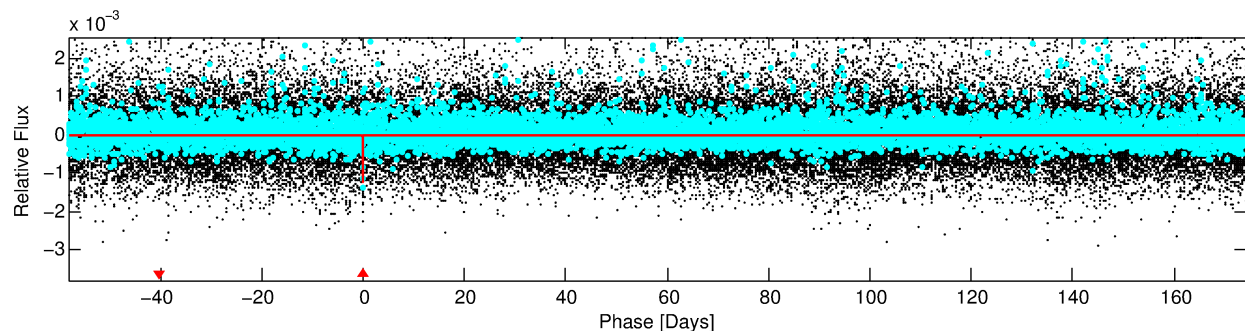
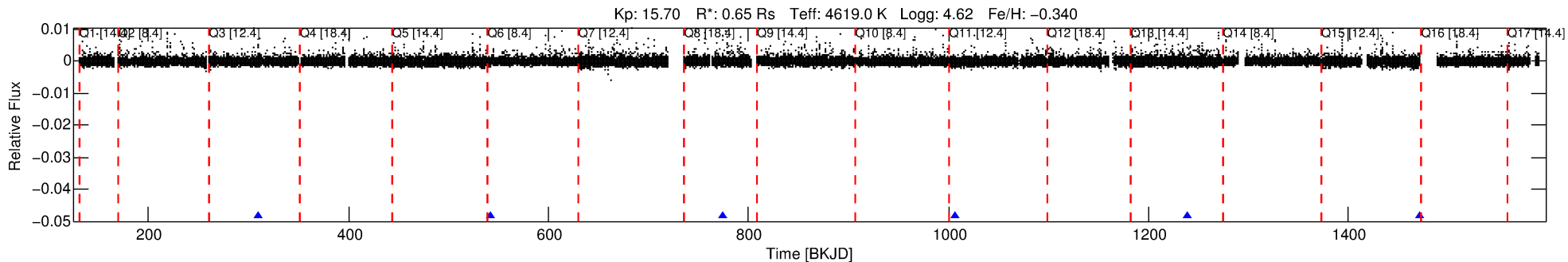
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005791529-01

No Significant Match Found

# DV One-Page Summary

KIC: 5791529 Candidate: 1 of 1 Period: 232.481 d



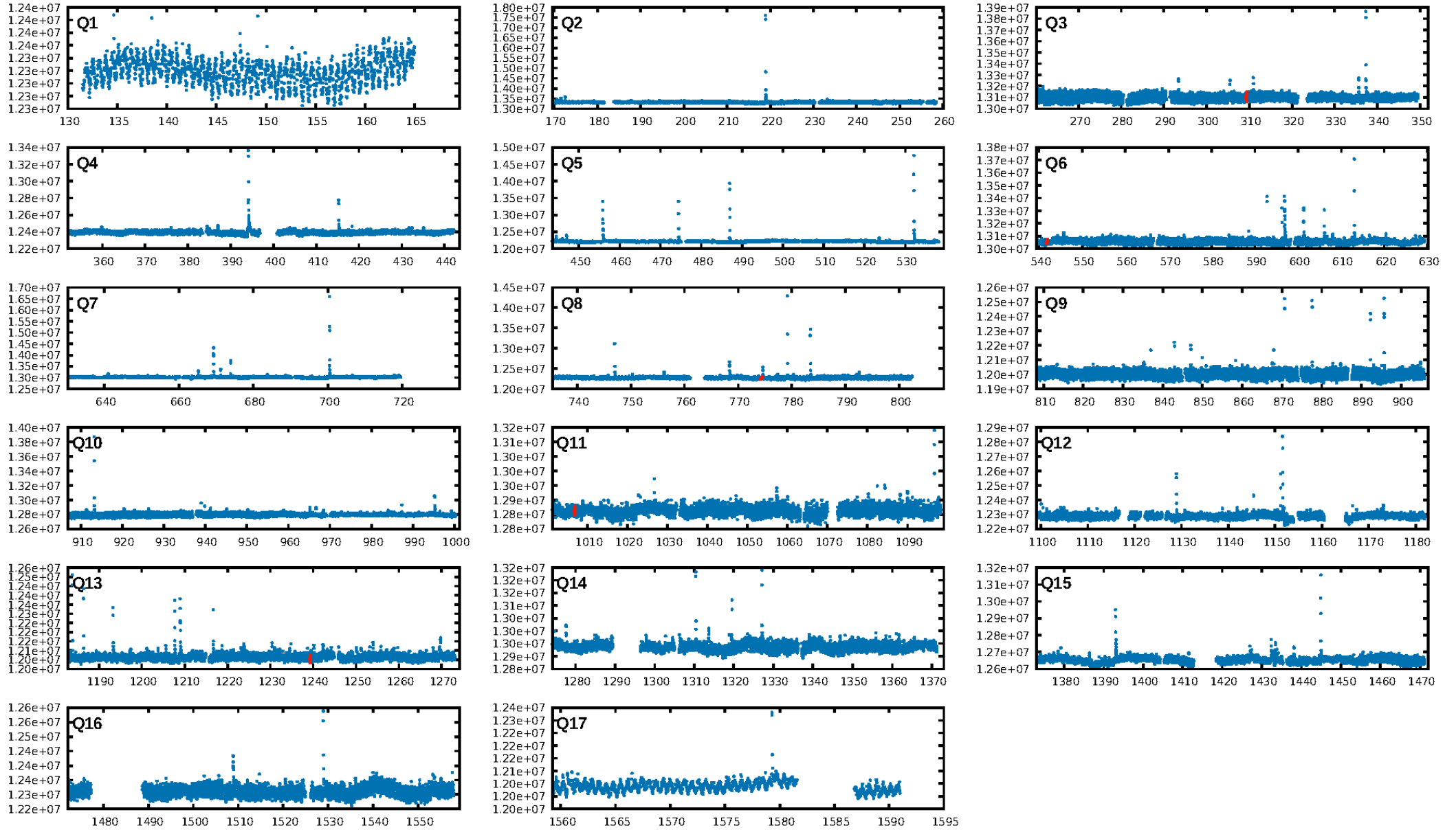
## DV Fit Results:

Period = 232.48144 [0.00545] d  
Epoch = 309.3369 [0.0124] BKJD  
Rp/R\* = 0.0343 [0.0857]  
a/R\* = 396.44 [3236.17]  
b = 0.67 [6.86]  
Seff = 0.43 [0.07]  
Teq = 206 [8] K  
Rp = 2.44 [6.09] Re  
a = 0.6362 [0.0456] AU  
Ag = 11284.61 [57023.82] [0.20σ]  
Teffp = 3282 [4147] K [0.74σ]

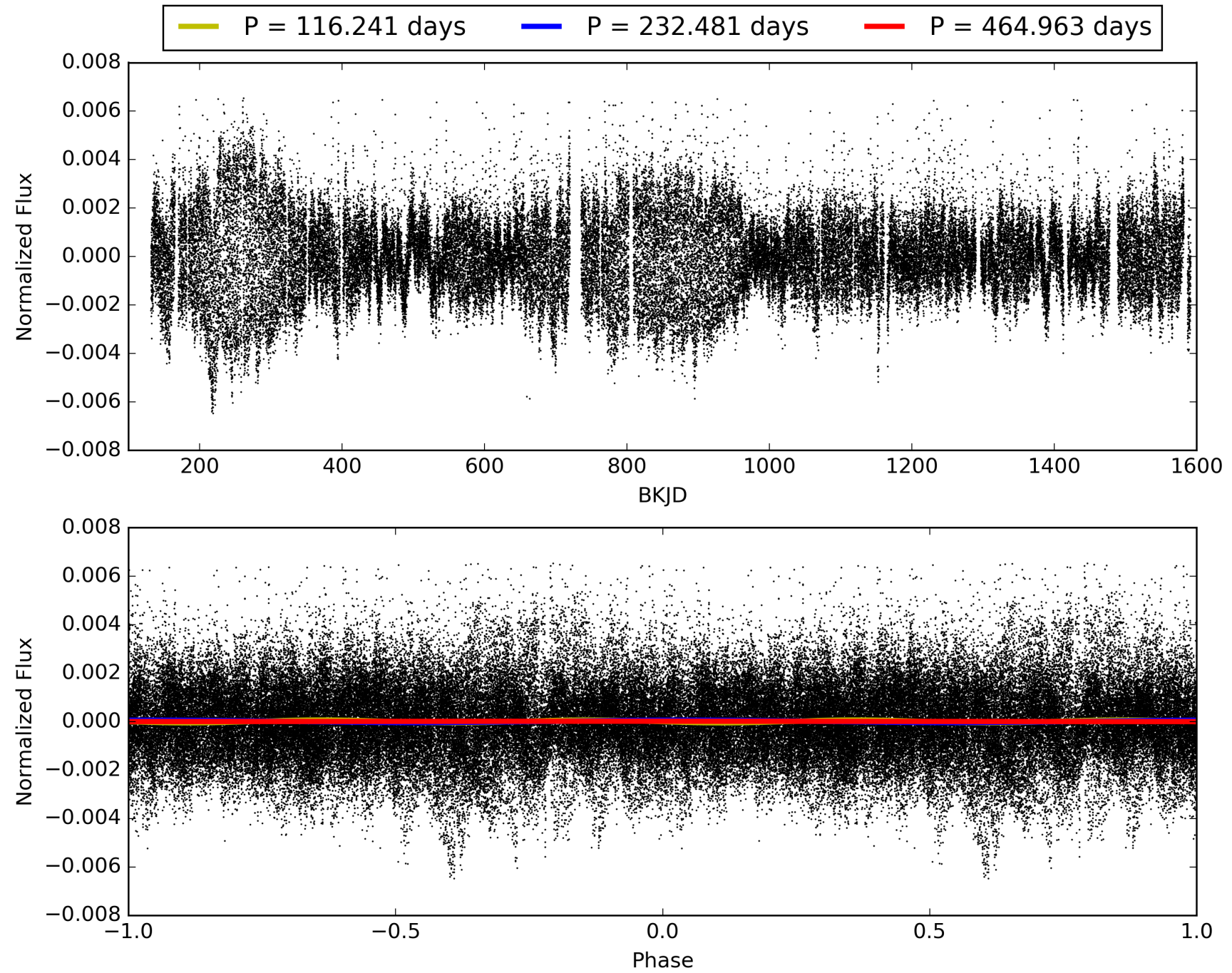
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 46.8%  
ModelChiSquareGof-sig: 98.8%  
**Bootstrap-pfa: 1.98e-09**  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: 6.792  
Centroid-sig: 45.8%  
Centroid-so: 0.849 arcsec [0.65σ]  
OotOffset-rm: 0.358 arcsec [1.91σ]  
KicOffset-rm: 0.162 arcsec [0.86σ]  
OotOffset-st: 0/1/1/1 [3]  
KicOffset-st: 0/1/1/1 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [5/5]

# TCE 005791529-01, PDC Light Curves

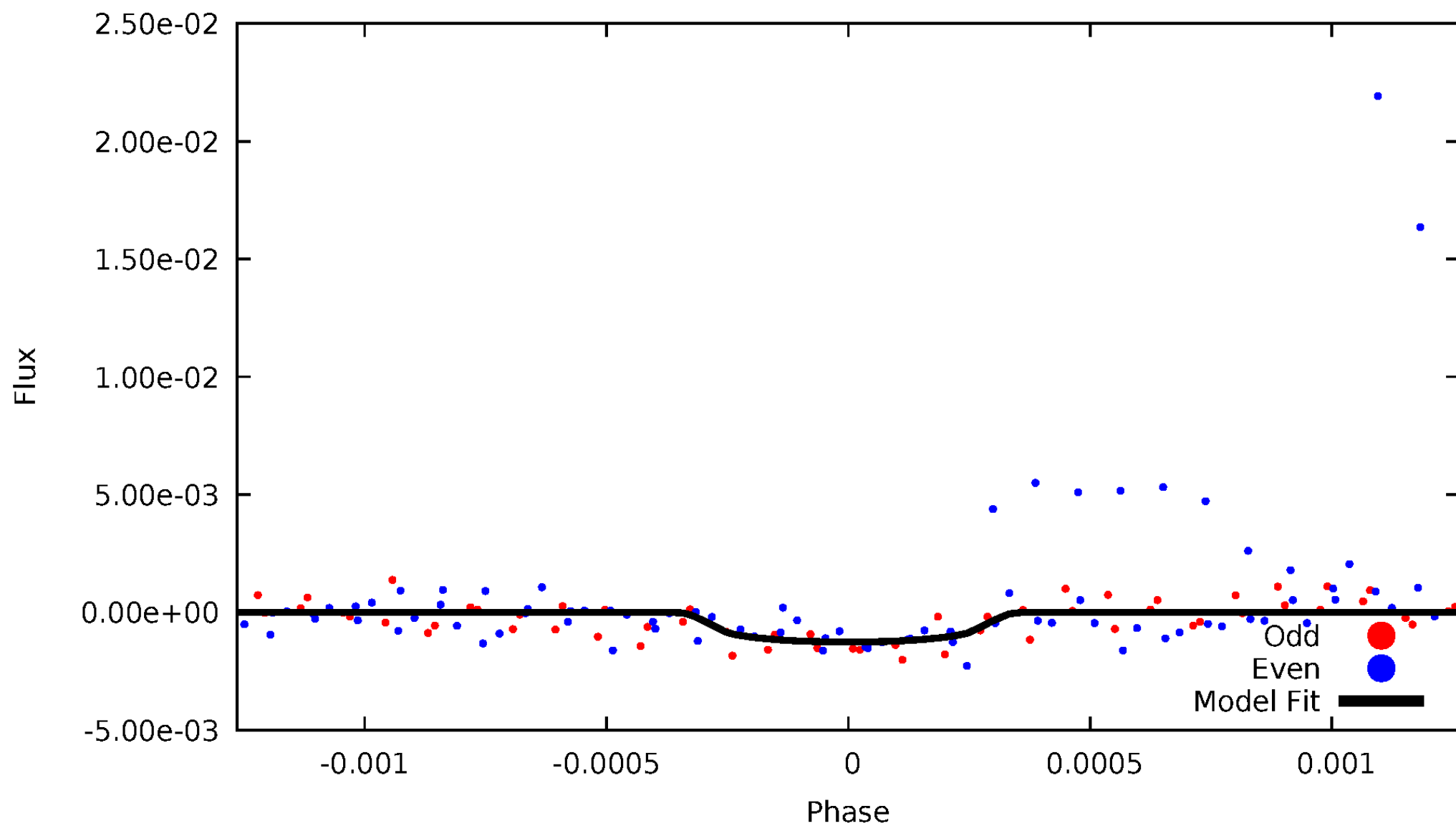


TCE 005791529-01



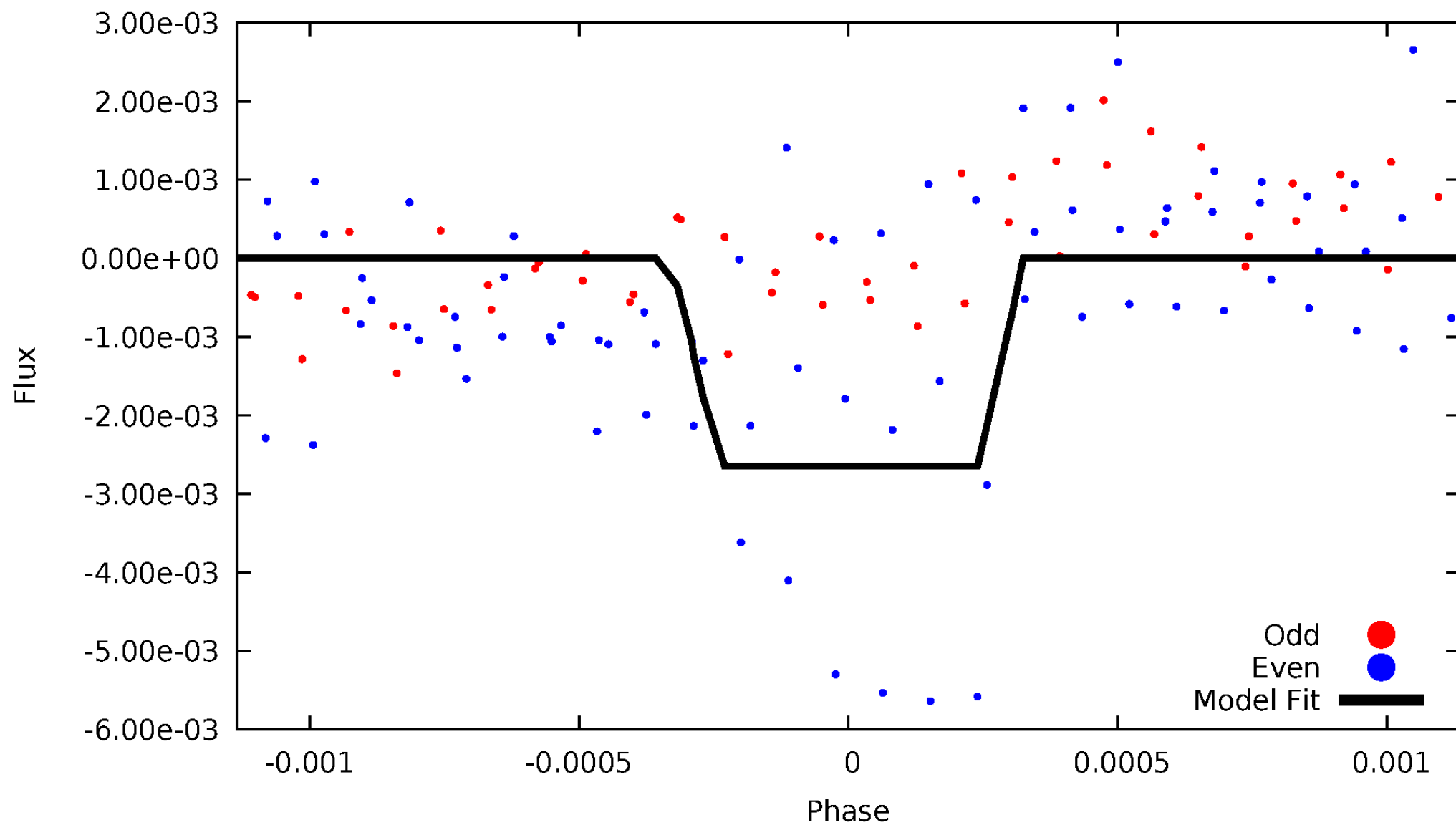
# DV Odd/Even

TCE 005791529-01



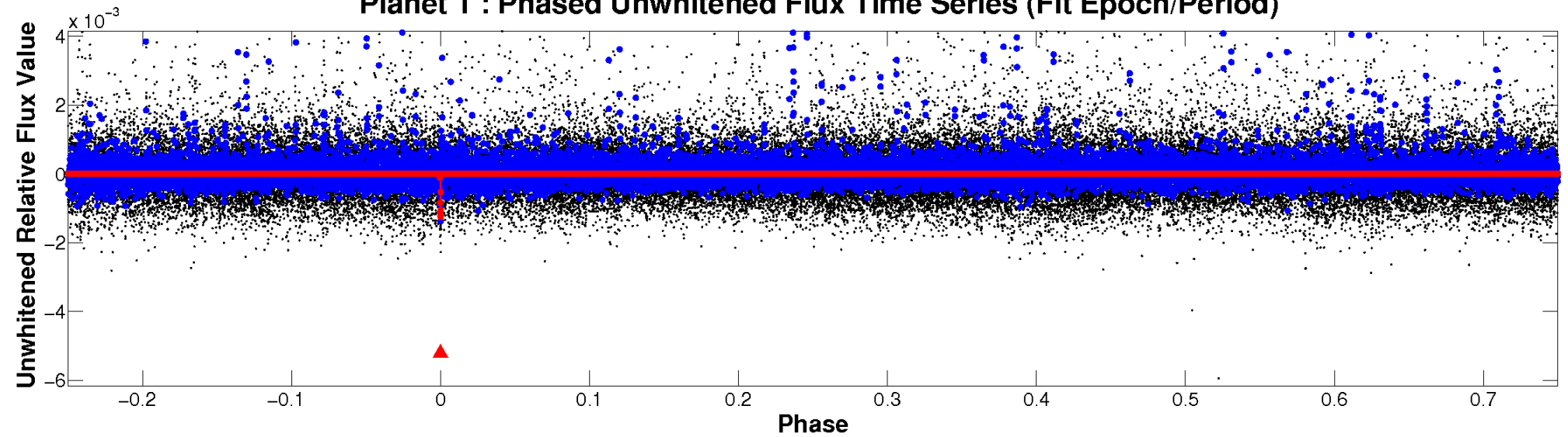
# ALT Odd/Even

TCE 005791529-01

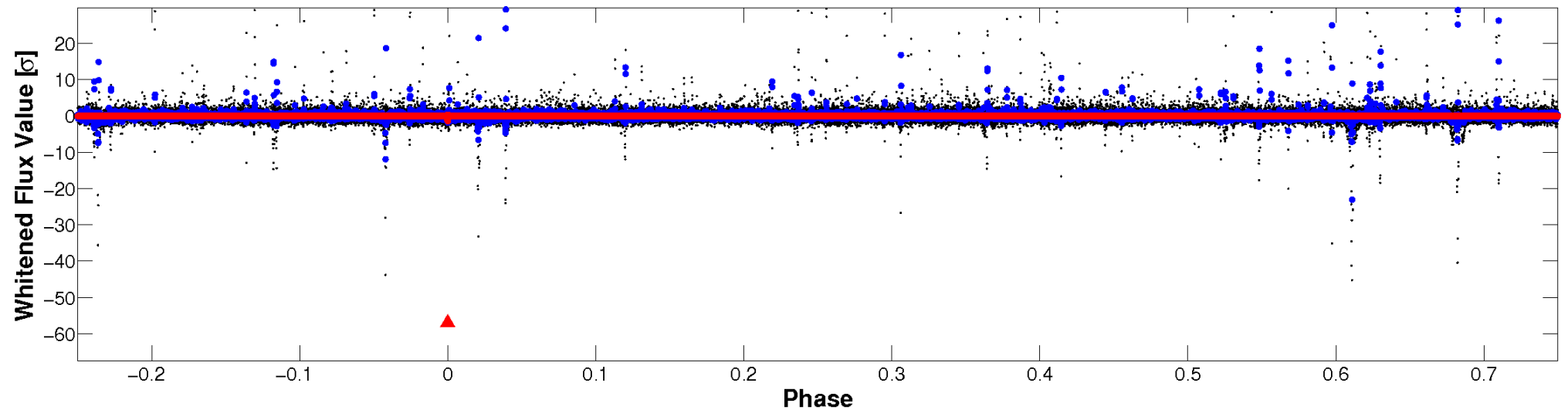


# Non-Whitened Vs. Whitened Light Curve

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

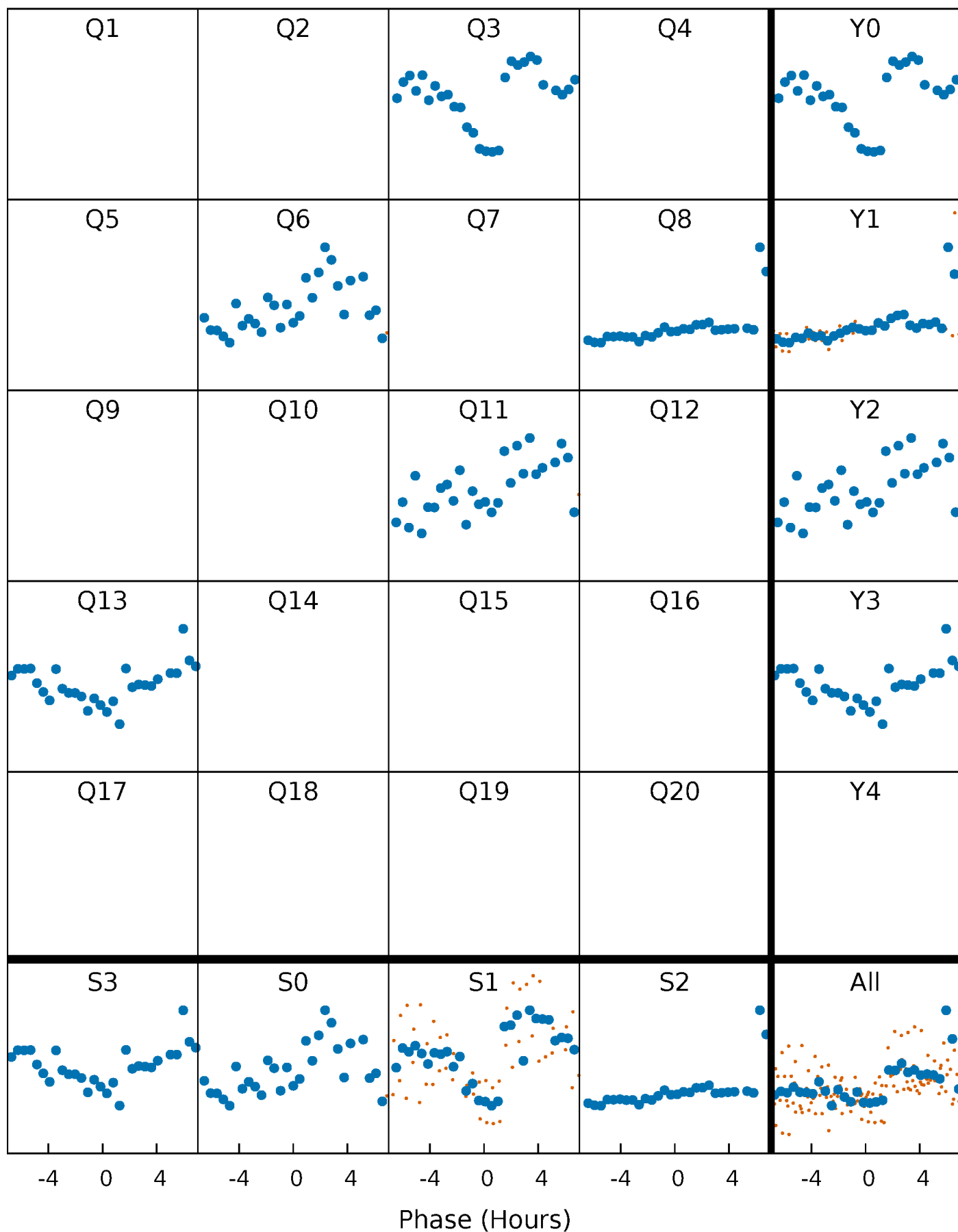


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

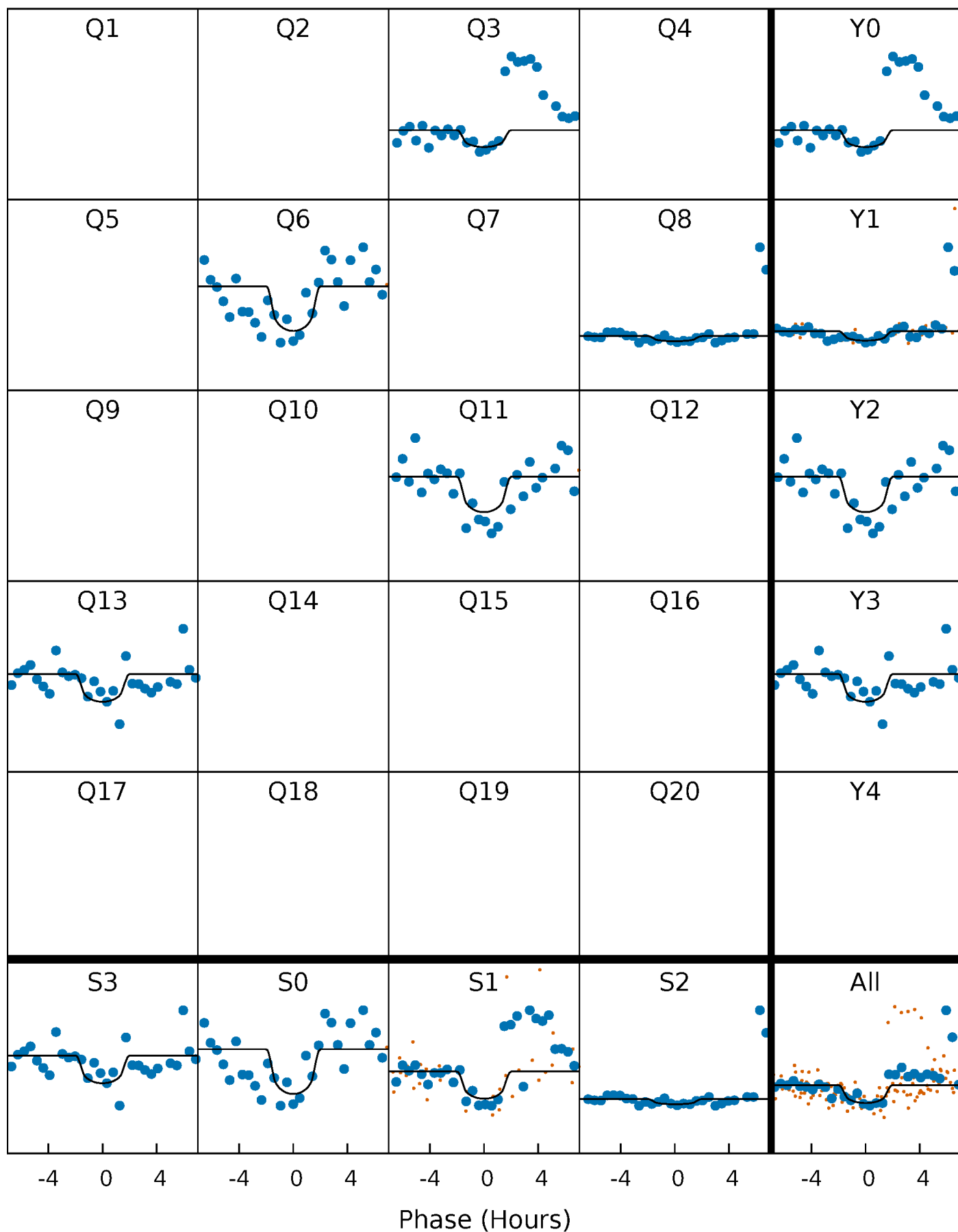
TCE 005791529-01 P=232.481436 Days  $T_0=309.336919$  (BKJD)





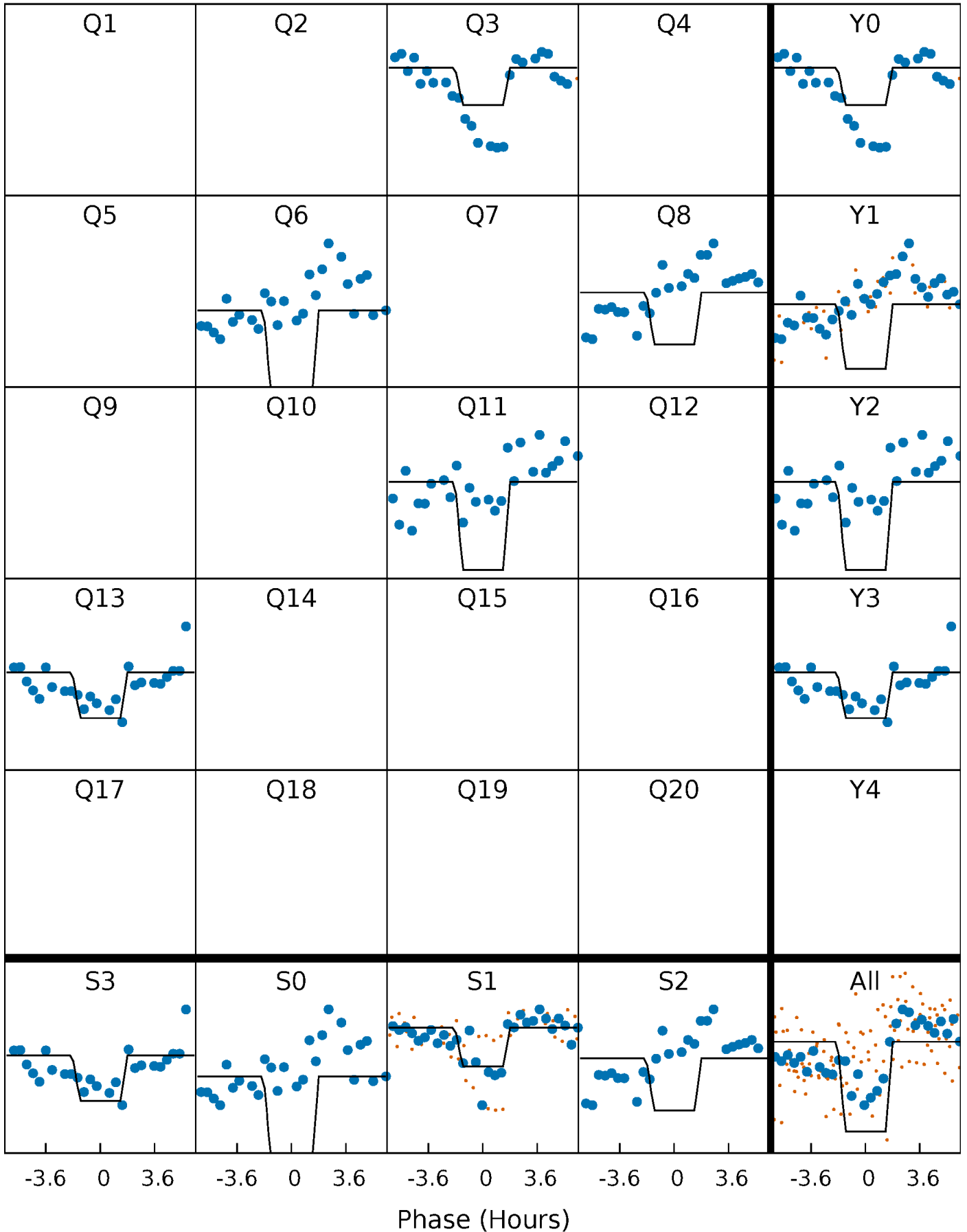
# DV Quarter-Phased Transit Curves

TCE 005791529-01 P=232.481436 Days  $T_0=309.336919$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

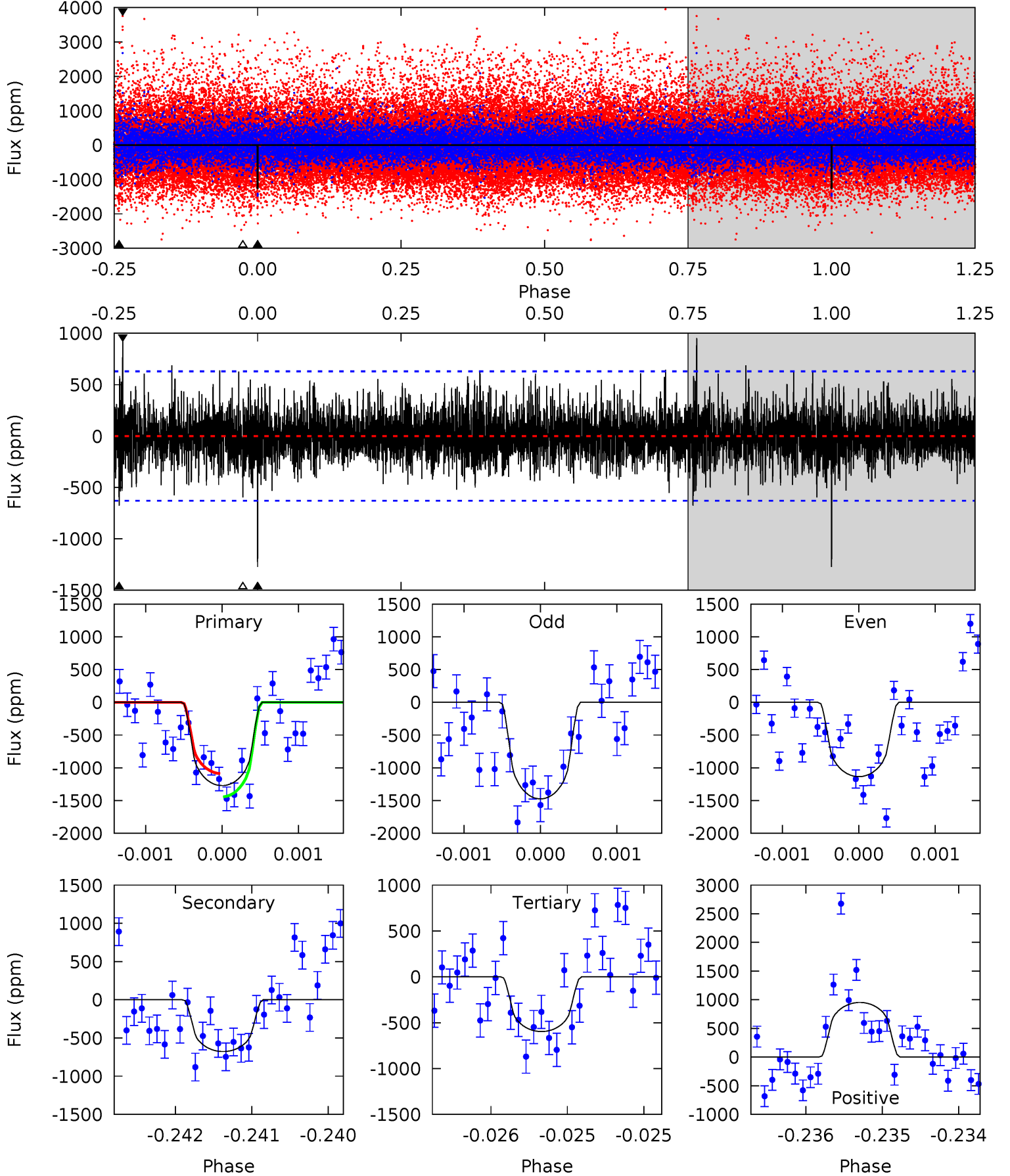
TCE 005791529-01 P=232.482382 Days  $T_0=309.330244$  (BKJD)



# DV Model-Shift Uniqueness Test

005791529-01, P = 232.481436 Days, E = 76.855483 Days

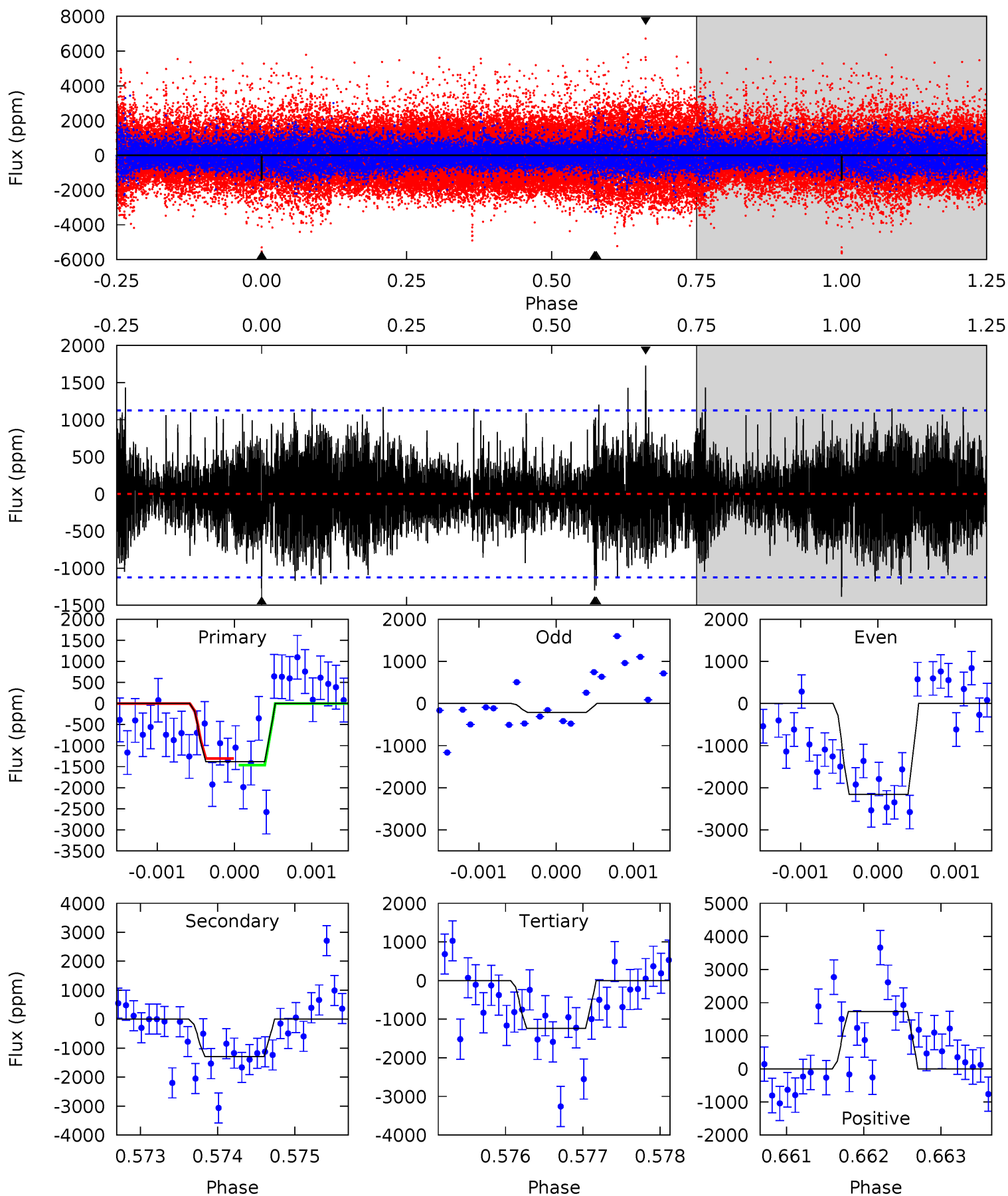
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	5.94	5.23	8.35	5.52	3.39	1.58	5.92	2.80	0.71	-2.41	1.42	1.12	0.43	1.56



# Alt Model-Shift Uniqueness Test

005791529-01, P = 232.482382 Days, E = 76.847862 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
6.80	6.38	6.09	8.51	5.54	3.42	1.93	0.71	-1.71	0.30	-2.13	4.70	2.34	0.56	0.39



### Stellar Parameters For KIC 005791529

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4619^{+138}_{-138}$	$4.615^{+0.056}_{-0.028}$	$-0.340^{+0.300}_{-0.300}$	$0.650^{+0.051}_{-0.056}$	$0.635^{+0.076}_{-0.047}$	$3.258^{+0.799}_{-0.391}$
	+3%/-3%	+1%/-1%	+88%/-88%	+8%/-9%	+12%/-7%	+25%/-12%
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 005791529-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-678 \pm 114$	$5.42^{+4.64}_{-3.55}$	$286^{+10}_{-9}$	$3178^{+1450}_{-502}$	$5103^{+37361}_{-3624}$
Alt.	$-1296 \pm 203$	$5.98^{+5.21}_{-4.12}$	$286^{+10}_{-10}$	$3435^{+1812}_{-600}$	$8255^{+71575}_{-5983}$

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

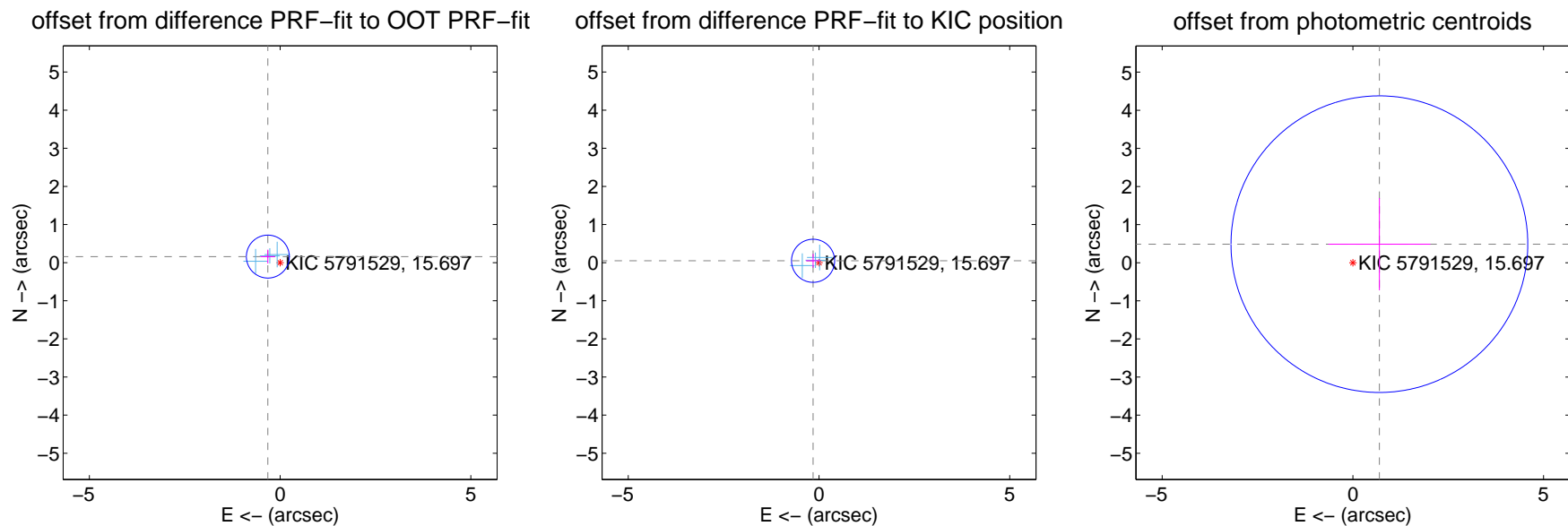
## DV Centroid Data

Supplemental centroid analysis for 005791529-01. Kepler magnitude: 15.70. Transit SNR 7.21

There are 3 quarters with good PRF difference image offsets

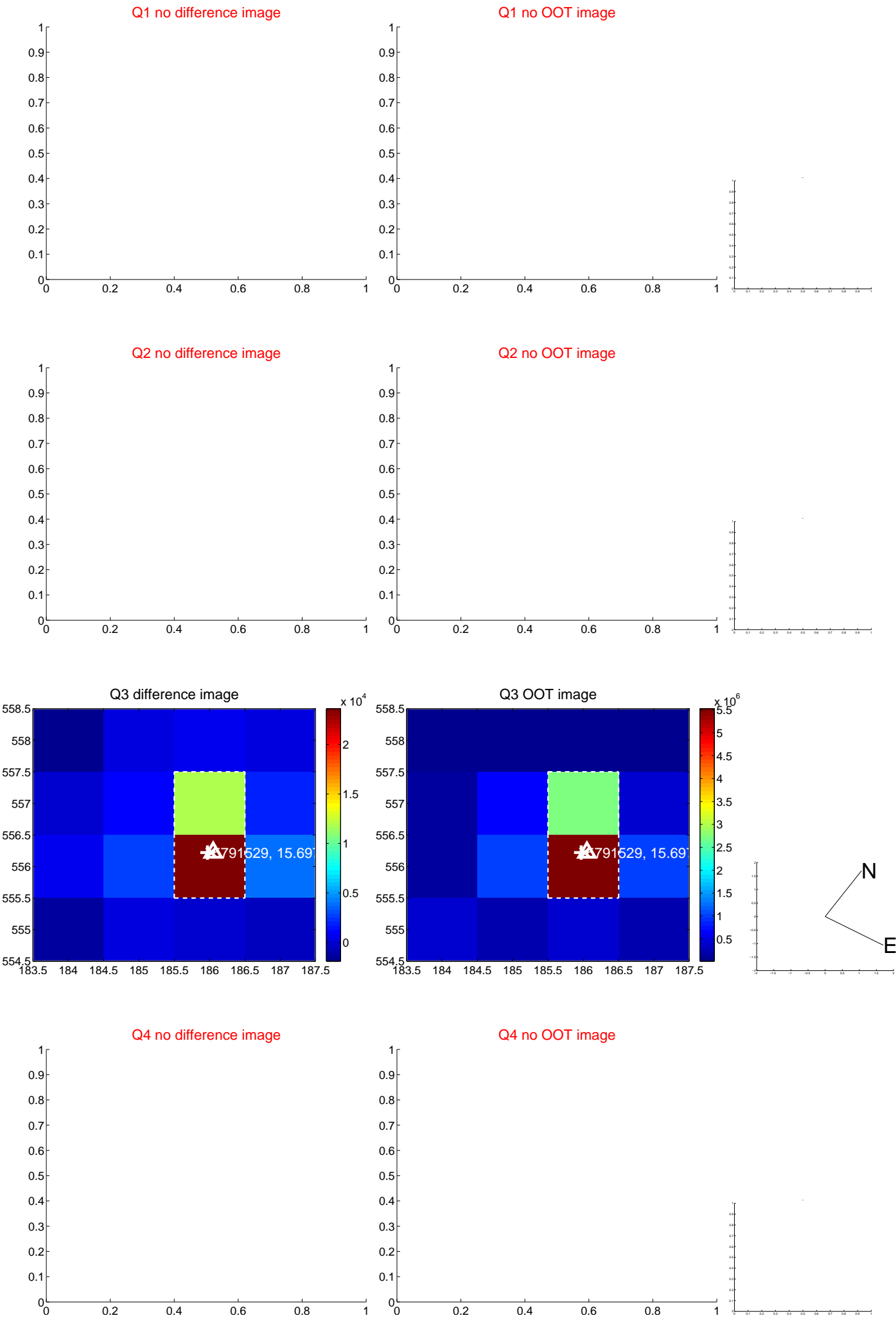
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.358 \pm 0.188$	1.91	$0.321 \pm 0.189$	$0.159 \pm 0.182$
PRF-fit source offset from KIC position	$0.162 \pm 0.188$	0.86	$0.155 \pm 0.189$	$0.049 \pm 0.182$
photometric centroid source offset	$0.85 \pm 1.30$	0.65	$-0.70 \pm 1.34$	$0.49 \pm 1.21$

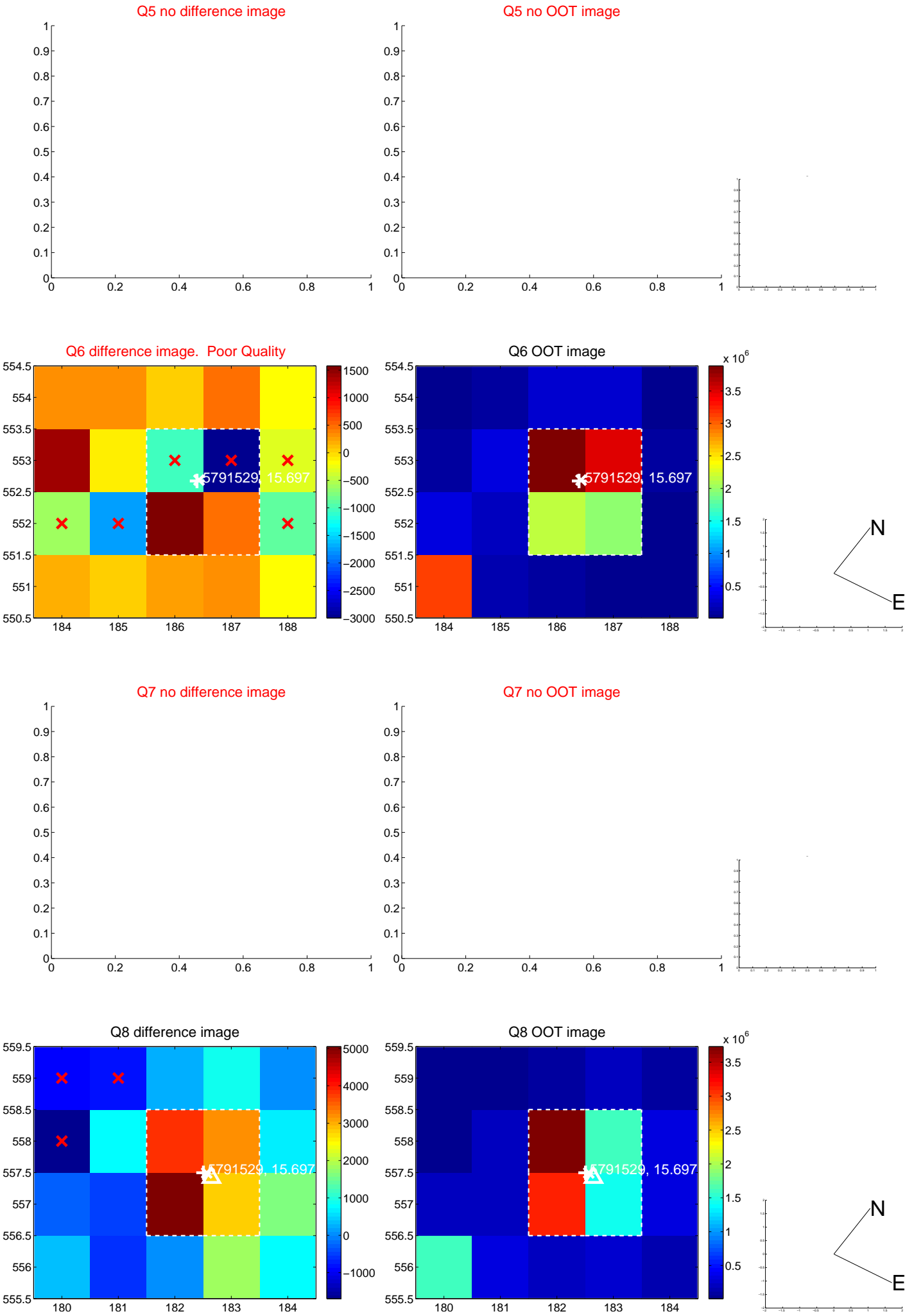


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



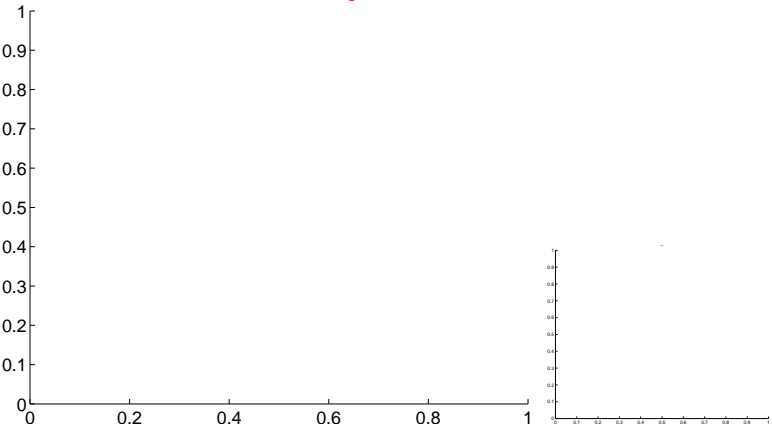


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

Q9 no difference image



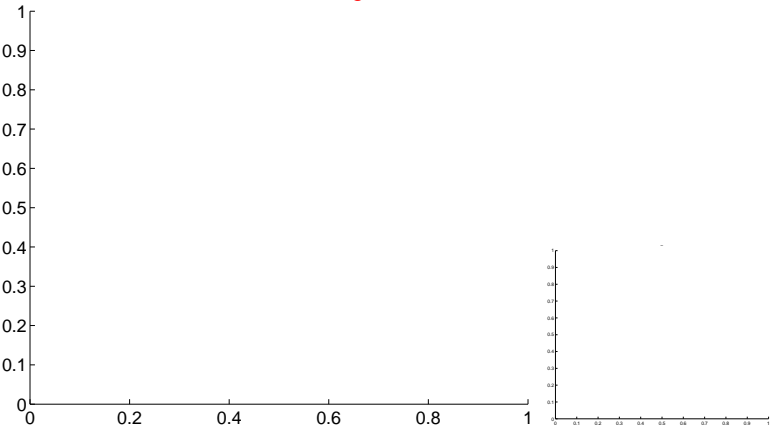
Q9 no OOT image



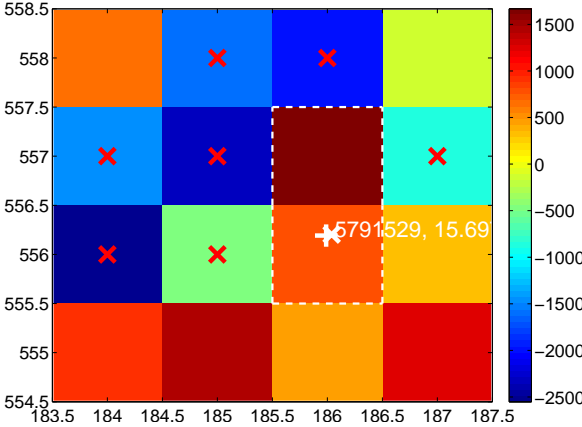
Q10 no difference image



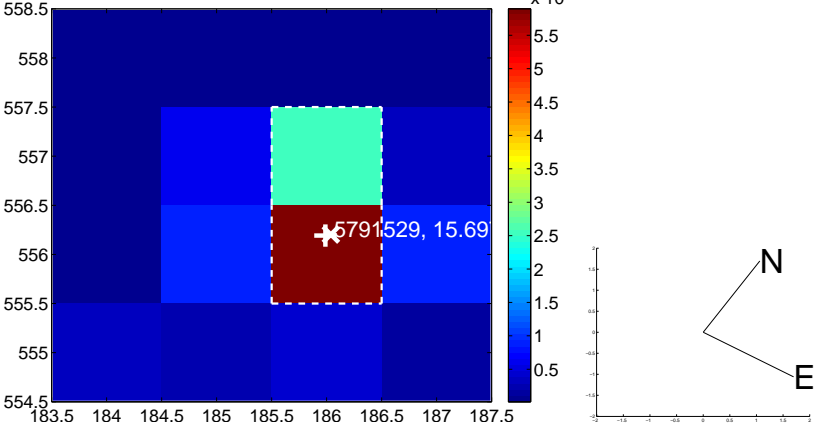
Q10 no OOT image



Q11 difference image. Poor Quality



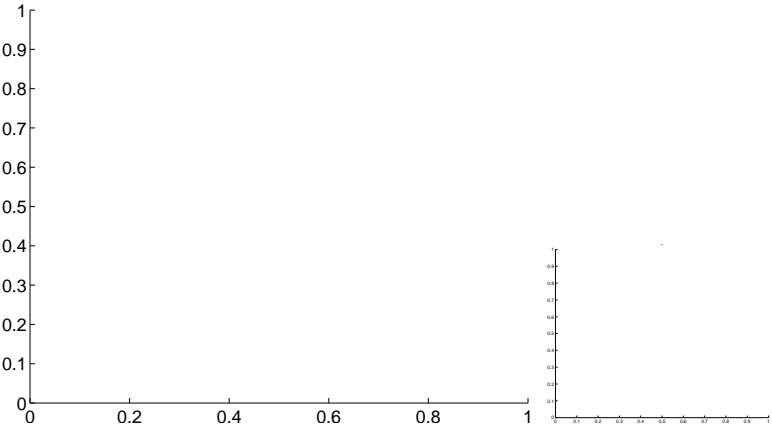
Q11 OOT image



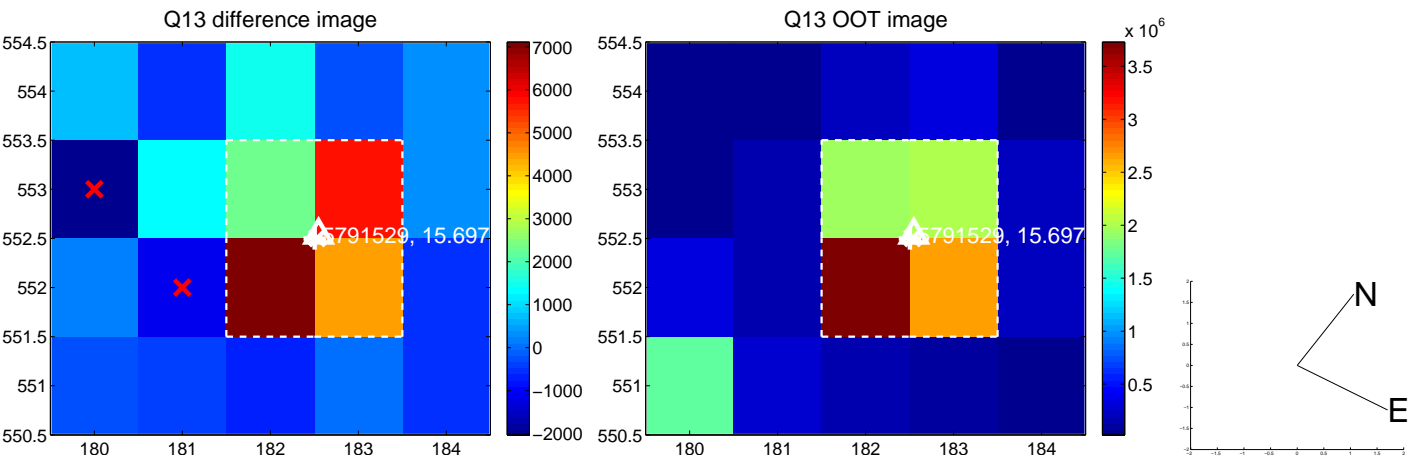
Q12 no difference image



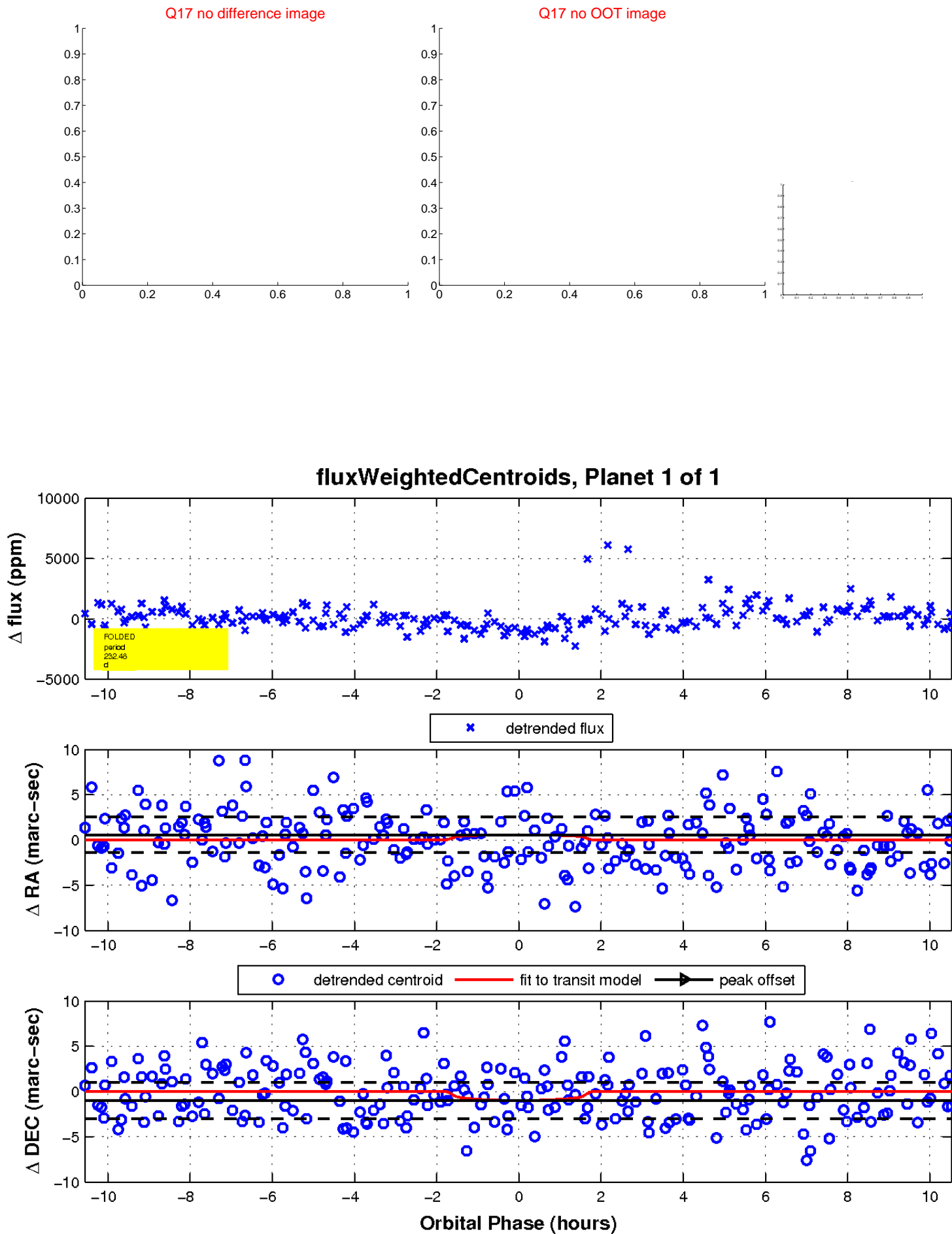
Q12 no OOT image



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.



# UKIRT Image

Declination

