

# KIC 007365529

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007365529-01	OBS	No	362.679439	187.181376	512.4	7.745	7.5	7.6	0.96	6122	2.33	1.27

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007365529-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—CENT_FEW_DIFFS

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

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

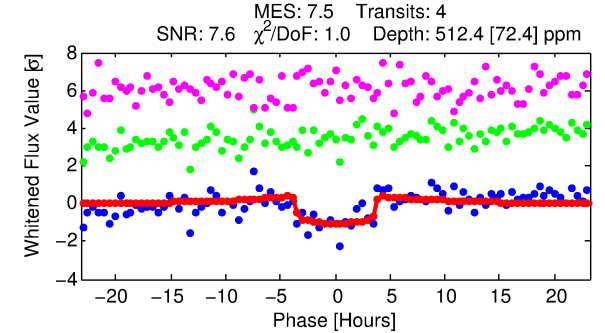
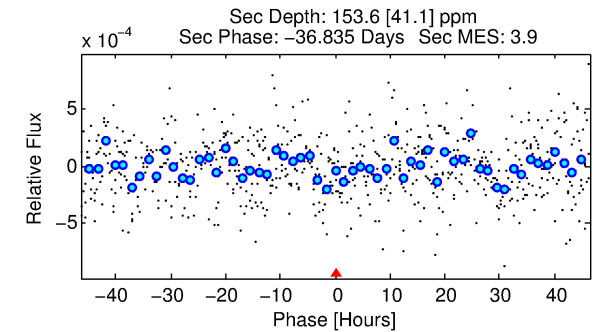
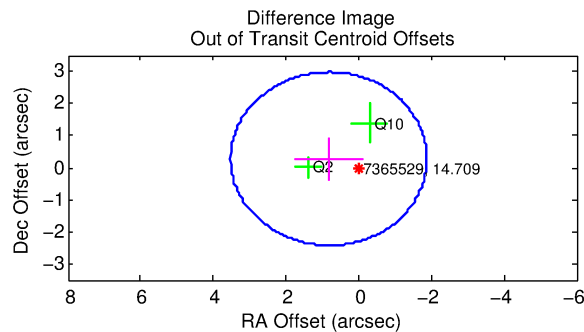
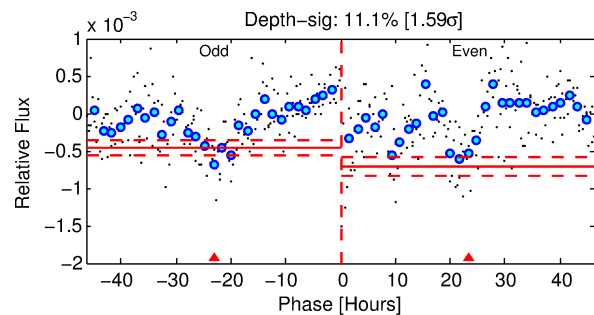
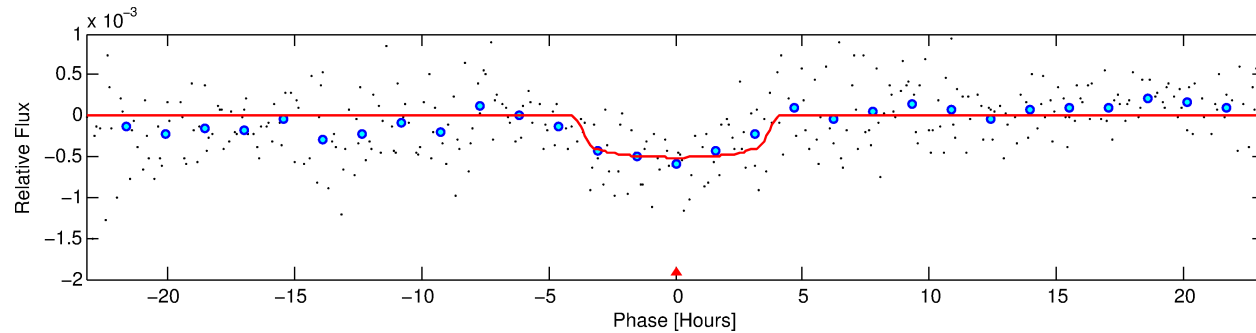
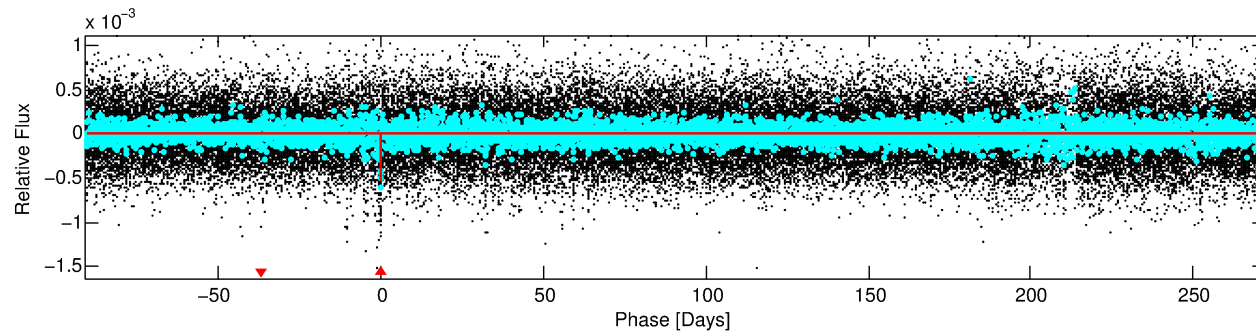
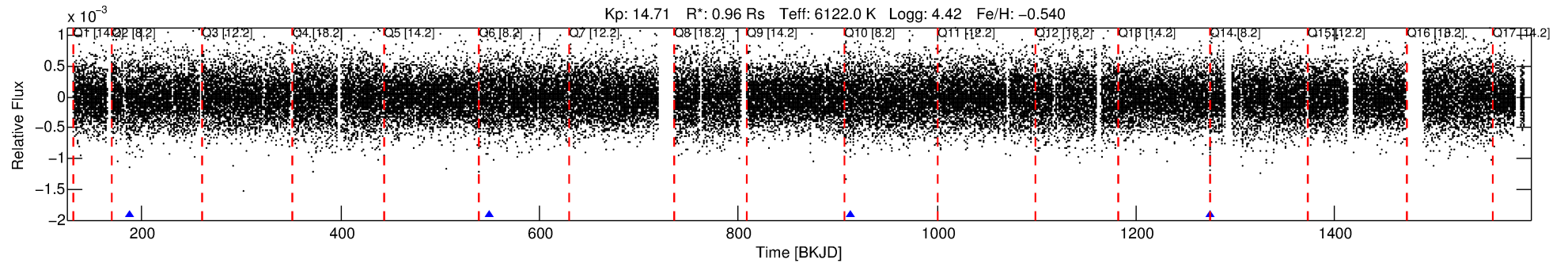
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007365529-01

No Significant Match Found

# DV One-Page Summary

KIC: 7365529 Candidate: 1 of 1 Period: 362.679 d



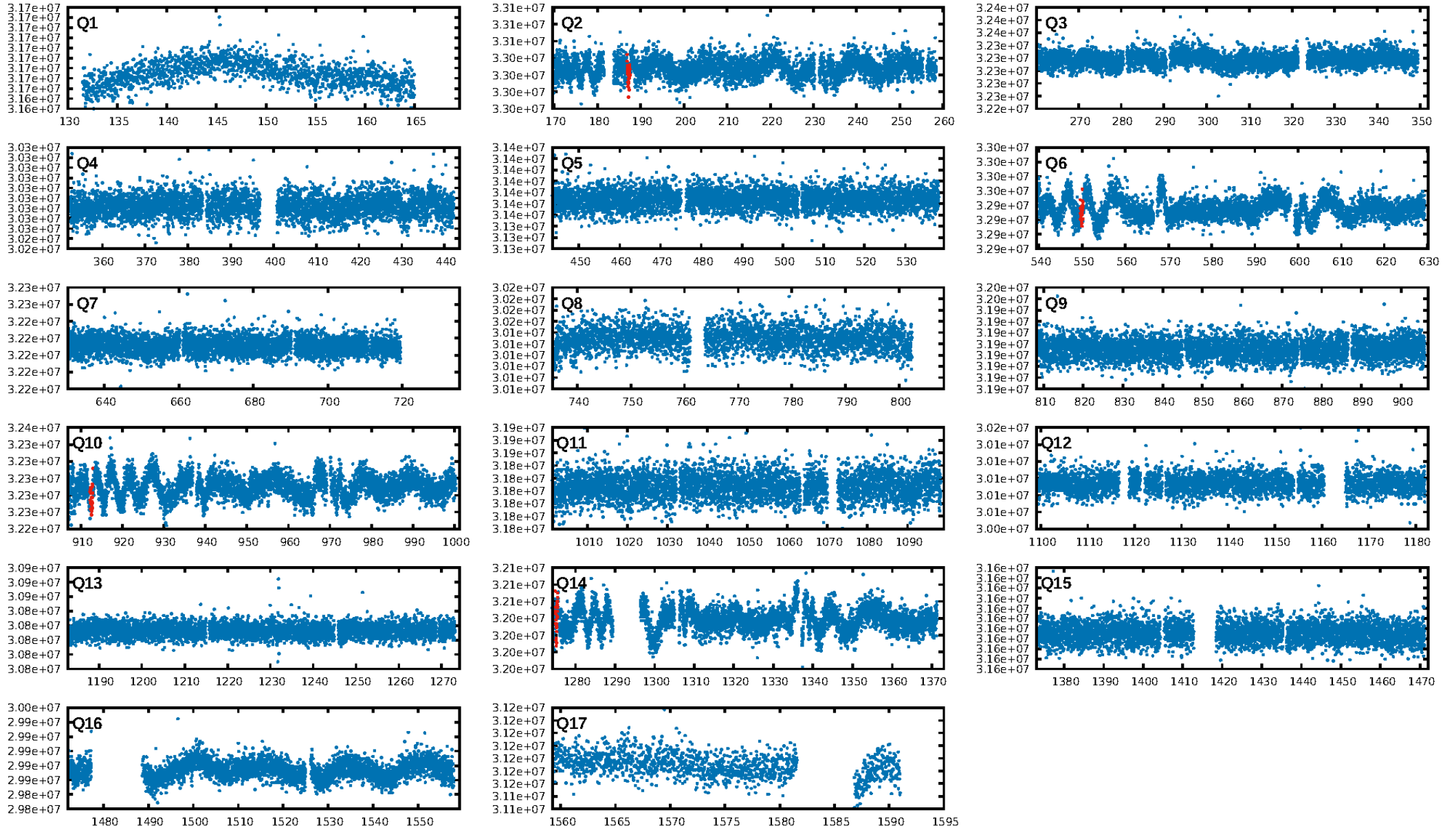
## DV Fit Results:

Period = 362.67944 [0.00717] d  
Epoch = 187.1814 [0.0113] BKJD  
Rp/R\* = 0.0222 [0.0175]  
a/R\* = 265.18 [1091.83]  
b = 0.70 [2.97]  
Seff = 1.27 [0.45]  
Teq = 271 [24] K  
Rp = 2.33 [1.95] Re  
a = 0.9590 [0.2197] AU  
Ag = 14260.64 [23271.30] [0.61 $\sigma$ ]  
Teff = 4573 [1832] K [2.35 $\sigma$ ]

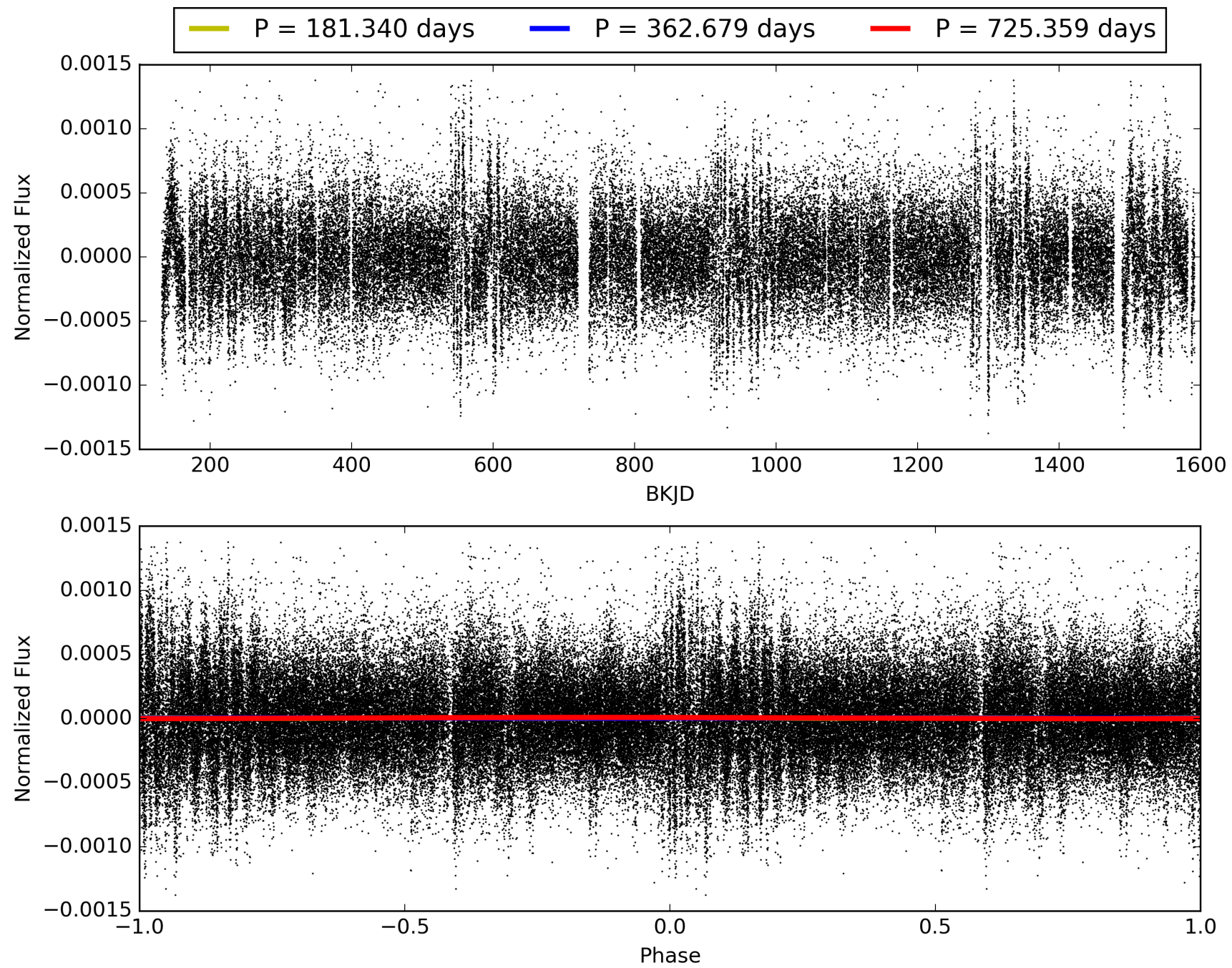
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 38.0%  
ModelChiSquareGof-sig: 97.8%  
**Bootstrap-pfa: 3.81e-10**  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -11.68  
**Centroid-sig: 0.1%**  
Centroid-so: 3.119 arcsec [1.99 $\sigma$ ]  
OotOffset-rm: 0.870 arcsec [0.97 $\sigma$ ]  
KicOffset-rm: 0.855 arcsec [0.95 $\sigma$ ]  
OotOffset-st: 2/0/0/0 [2]  
KicOffset-st: 2/0/0/0 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [3/3]

# TCE 007365529-01, PDC Light Curves

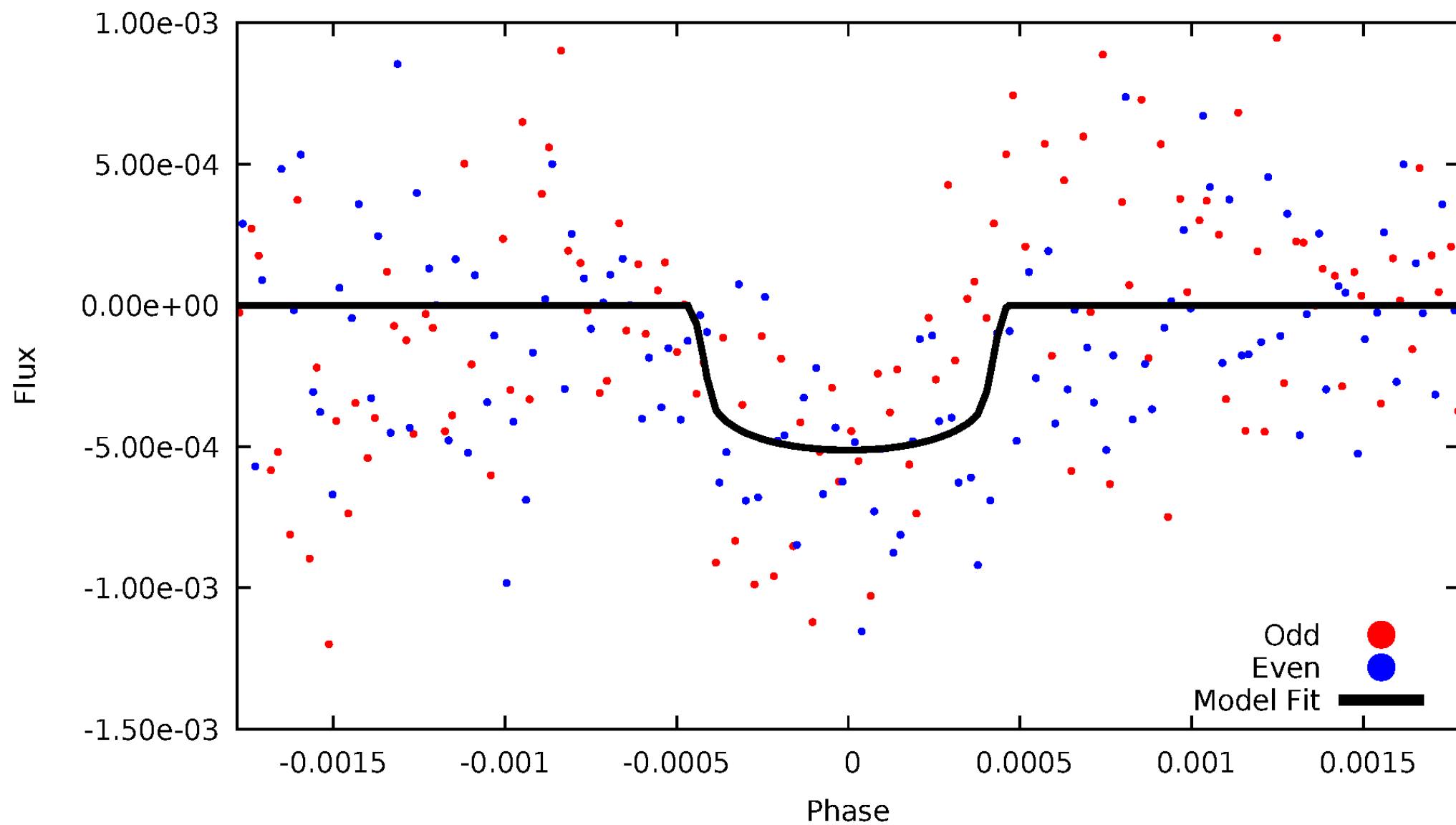


# TCE 007365529-01



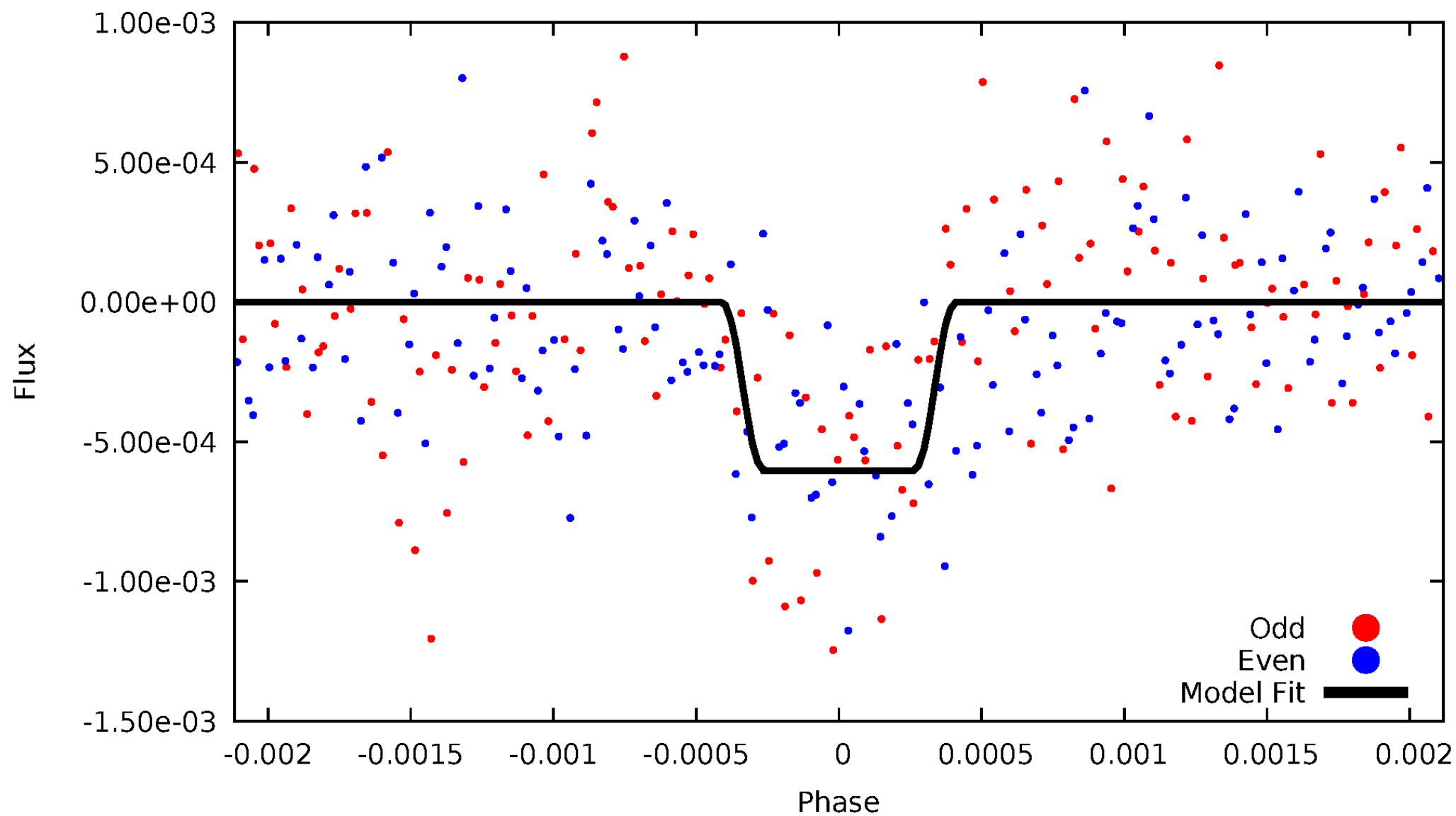
# DV Odd/Even

TCE 00736529-01



# ALT Odd/Even

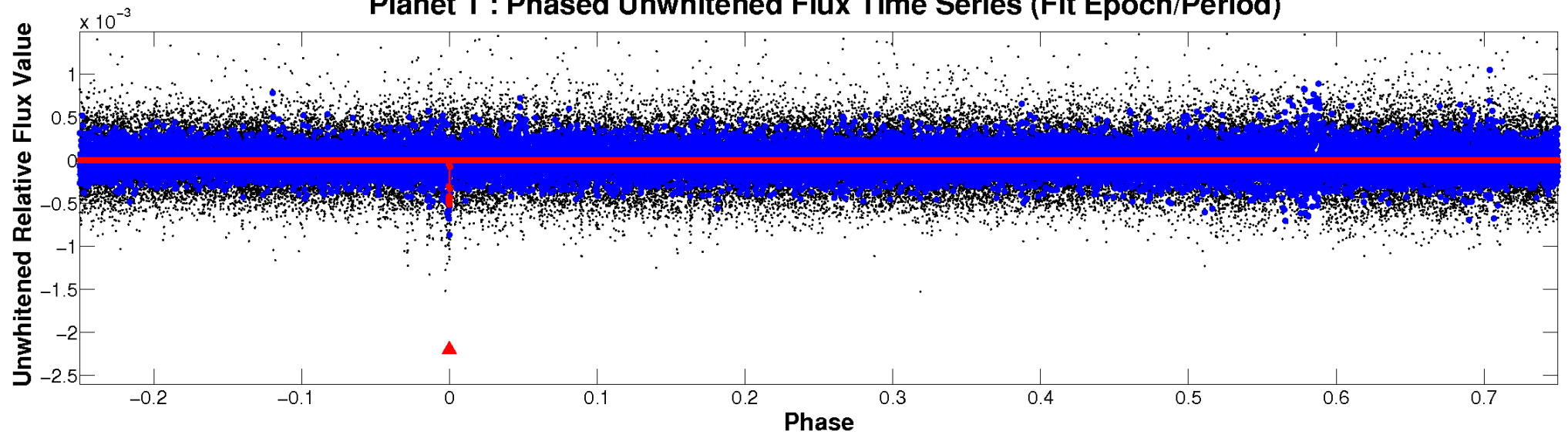
TCE 007365529-01



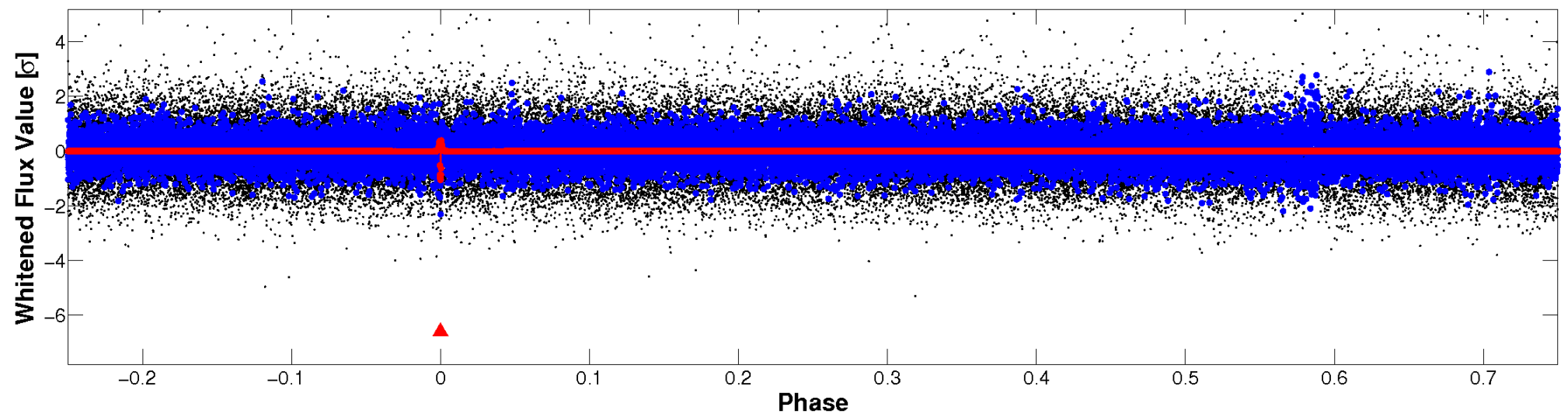


# Non-Whitened Vs. Whitened Light Curve

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

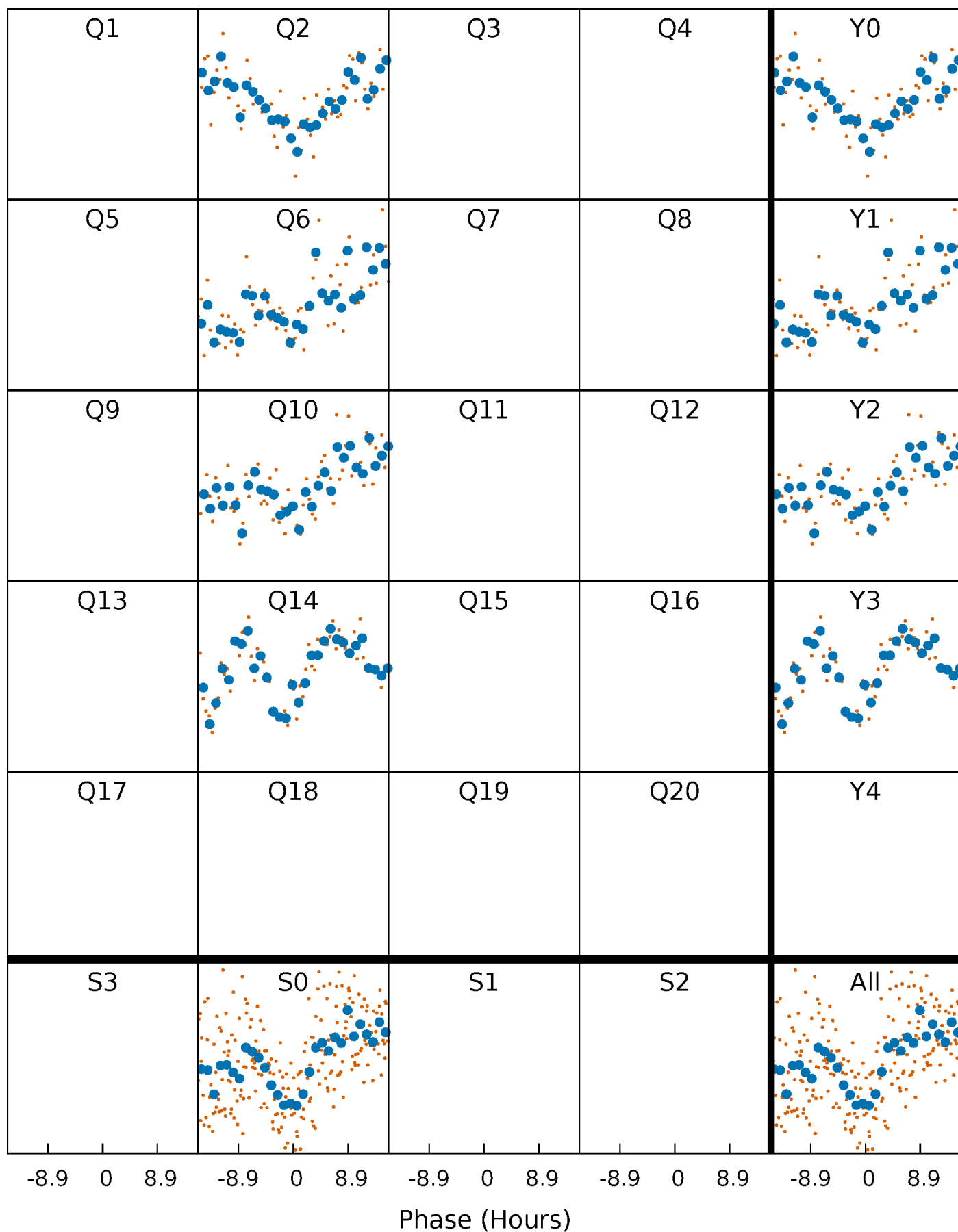


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

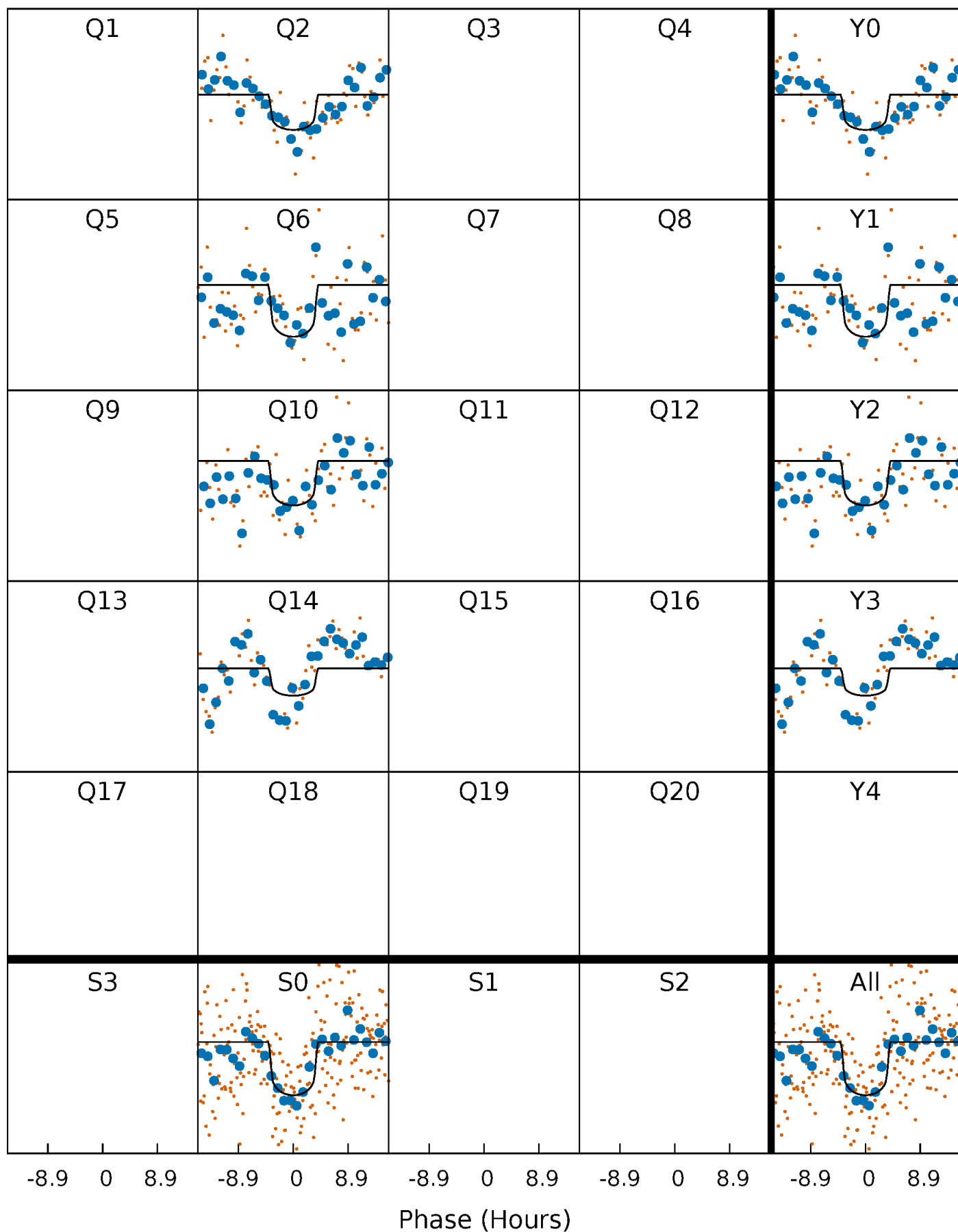
TCE 007365529-01 P=362.679439 Days  $T_0=187.181376$  (BKJD)





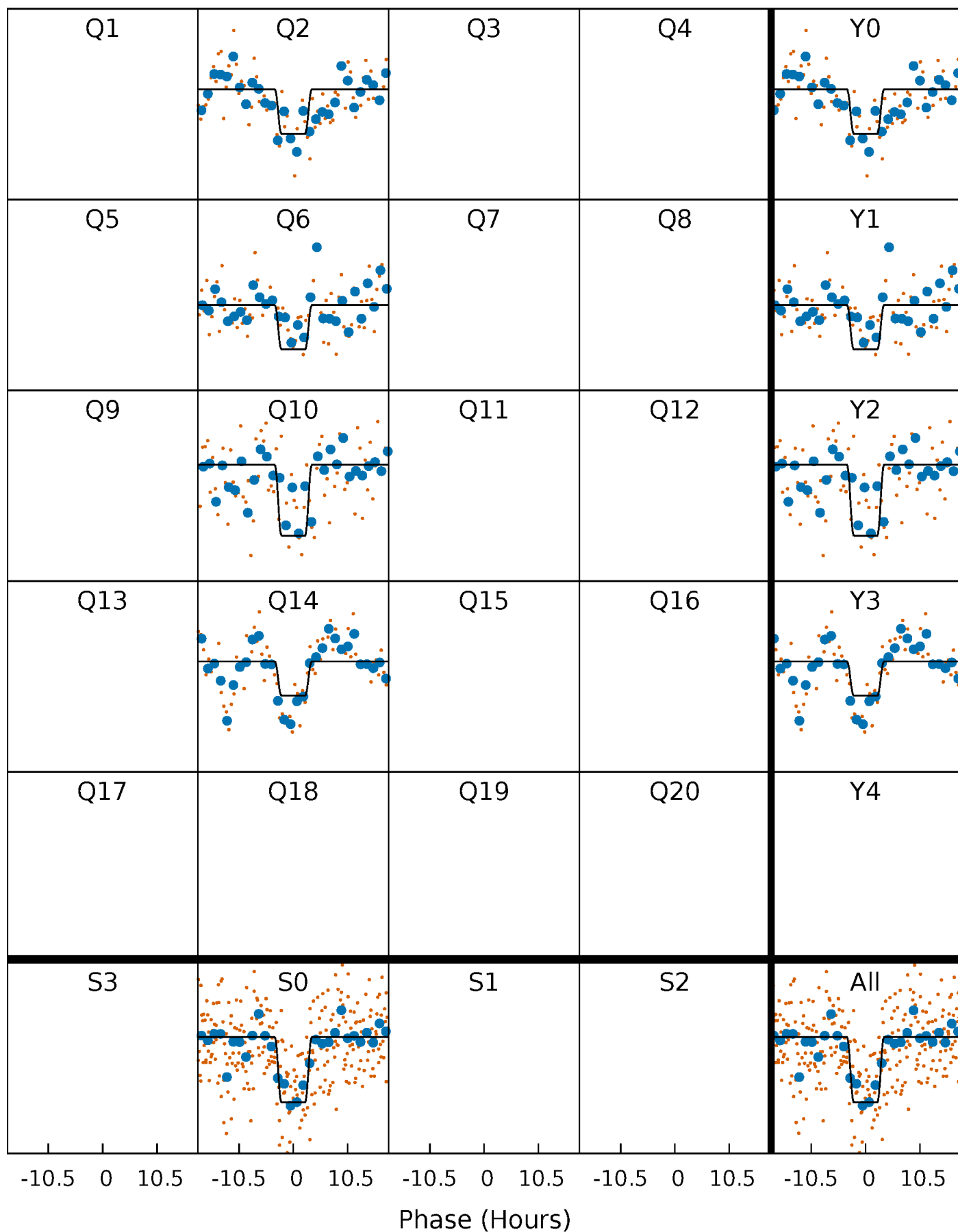
# DV Quarter-Phased Transit Curves

TCE 007365529-01 P=362.679439 Days  $T_0=187.181376$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

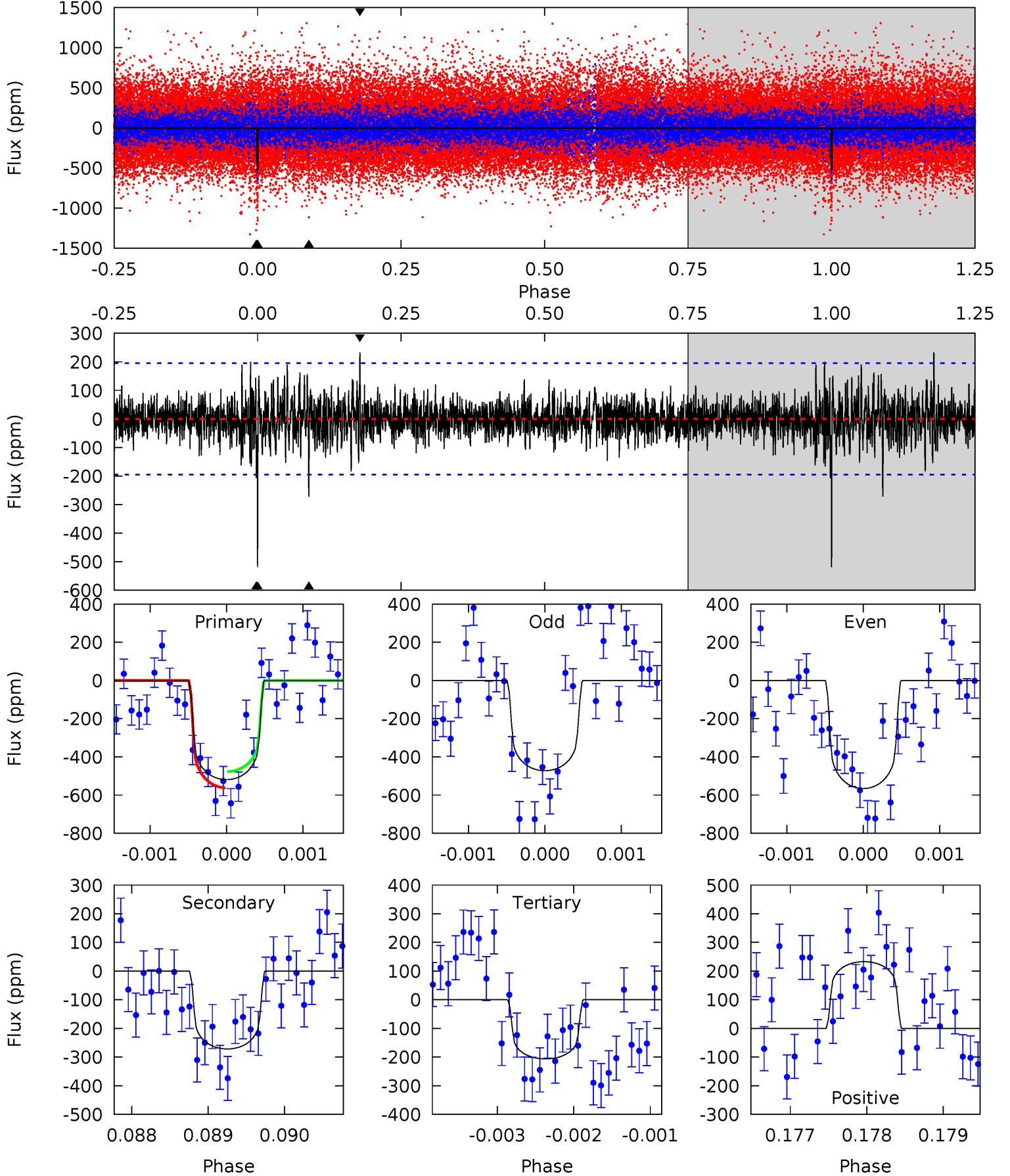
TCE 007365529-01 P=362.668445 Days  $T_0=187.183791$  (BKJD)



# DV Model-Shift Uniqueness Test

007365529-01, P = 362.679439 Days, E = 187.181376 Days

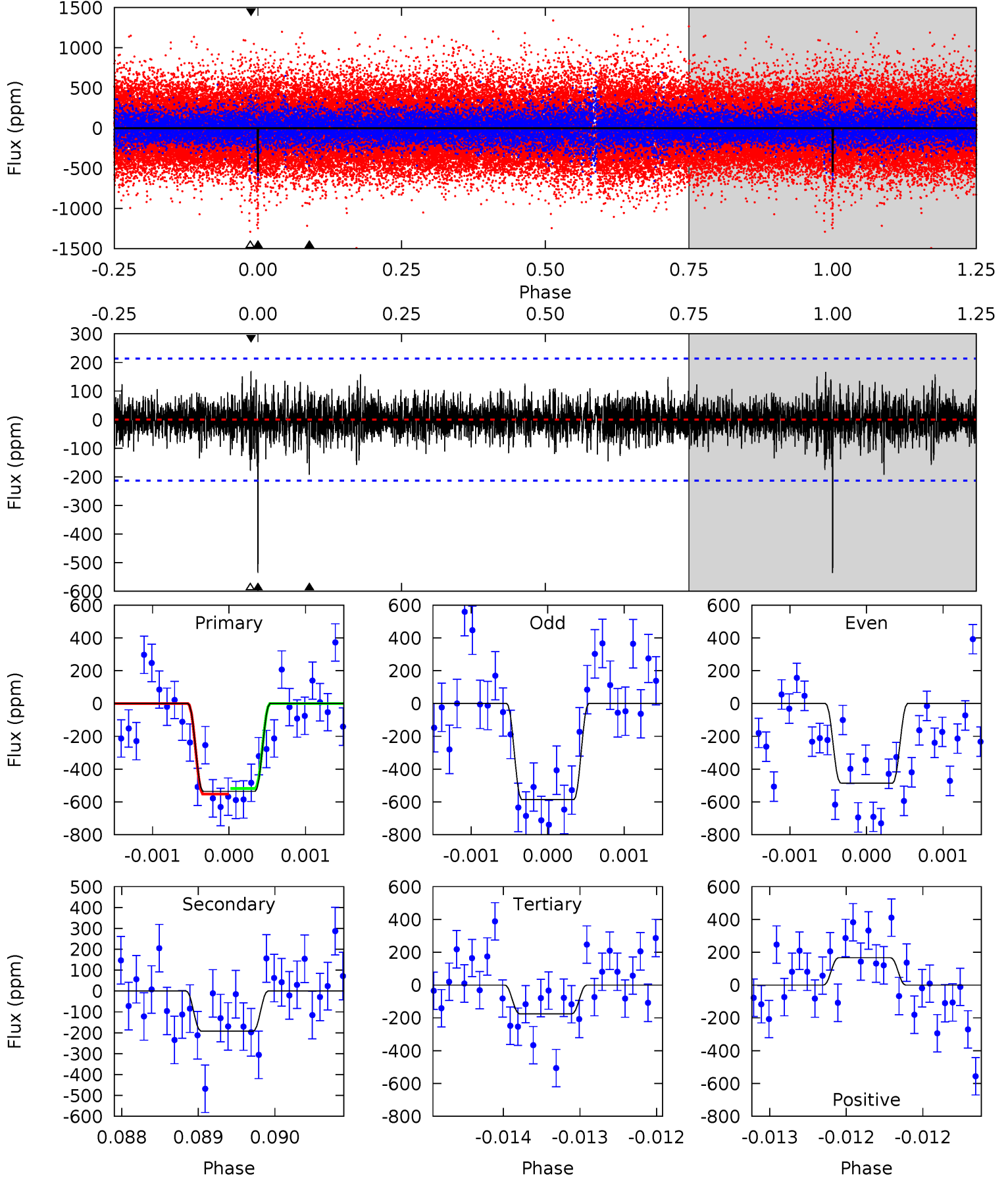
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	7.61	5.78	6.52	5.46	3.31	1.31	8.76	8.01	1.83	1.09	1.31	0.92	0.31	1.19



# Alt Model-Shift Uniqueness Test

007365529-01, P = 362.668445 Days, E = 187.183791 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
13.8	4.95	4.52	4.29	5.50	3.36	1.06	9.28	9.51	0.43	0.66	1.30	1.10	0.24	0.43



### Stellar Parameters For KIC 007365529

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6122^{+185}_{-185}$	$4.422^{+0.105}_{-0.180}$	$-0.540^{+0.300}_{-0.300}$	$0.963^{+0.264}_{-0.132}$	$0.894^{+0.116}_{-0.087}$	$1.410^{+0.737}_{-0.657}$
	+3%/-3%	+2%/-4%	+56%/-56%	+27%/-14%	+13%/-10%	+52%/-47%
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 007365529-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-272 \pm 36$	$2.68^{+1.78}_{-1.54}$	$382^{+28}_{-20}$	$5032^{+2793}_{-863}$	$18964^{+88473}_{-12066}$
Alt.	$-192 \pm 39$	$2.78^{+1.85}_{-1.57}$	$380^{+27}_{-21}$	$4618^{+2110}_{-795}$	$12363^{+54540}_{-8003}$

$T_{\text{max}}$  = 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

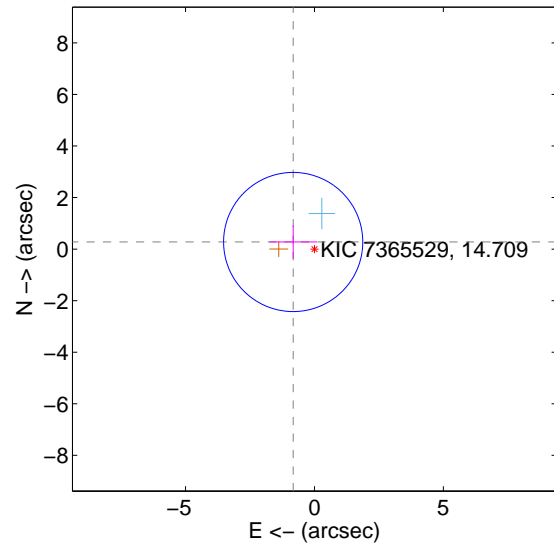
Supplemental centroid analysis for 007365529-01. Kepler magnitude: 14.71. Transit SNR 7.61

There are 1 quarters with good PRF difference image offsets

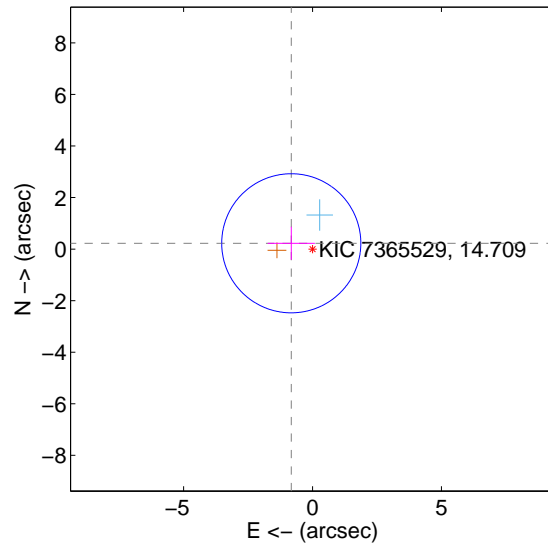
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.870 \pm 0.900$	0.97	$0.825 \pm 0.924$	$0.276 \pm 0.647$
PRF-fit source offset from KIC position	$0.855 \pm 0.900$	0.95	$0.825 \pm 0.916$	$0.225 \pm 0.643$
photometric centroid source offset	$3.12 \pm 1.57$	1.99	$-1.11 \pm 1.77$	$-2.91 \pm 1.54$

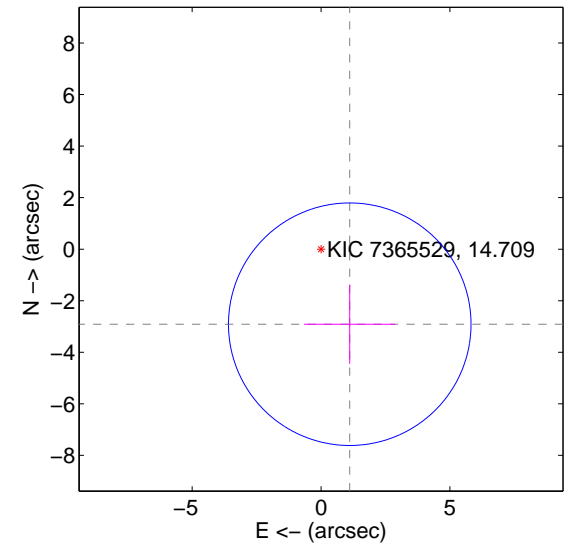
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

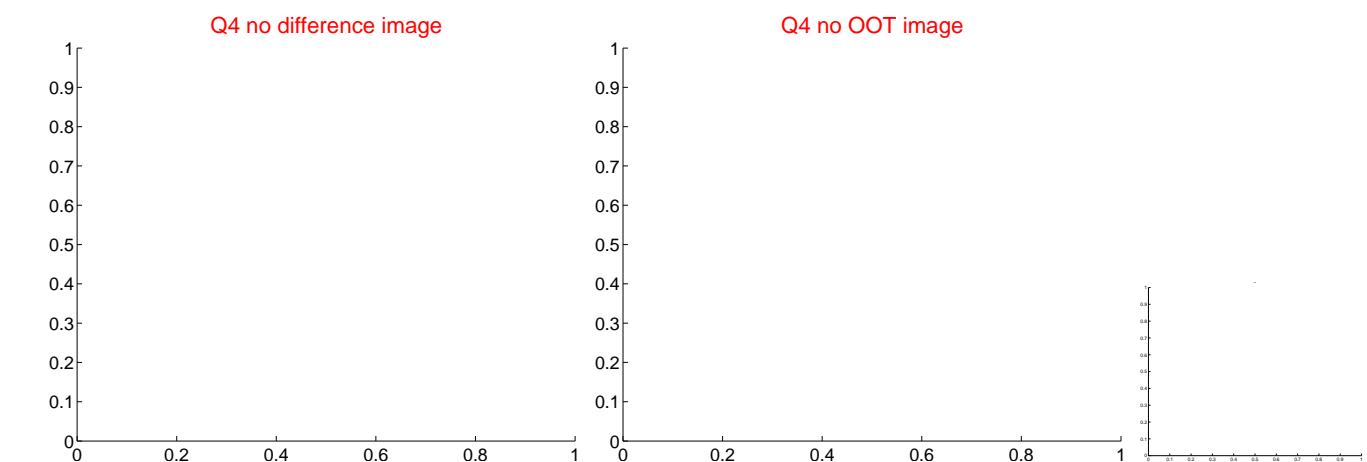
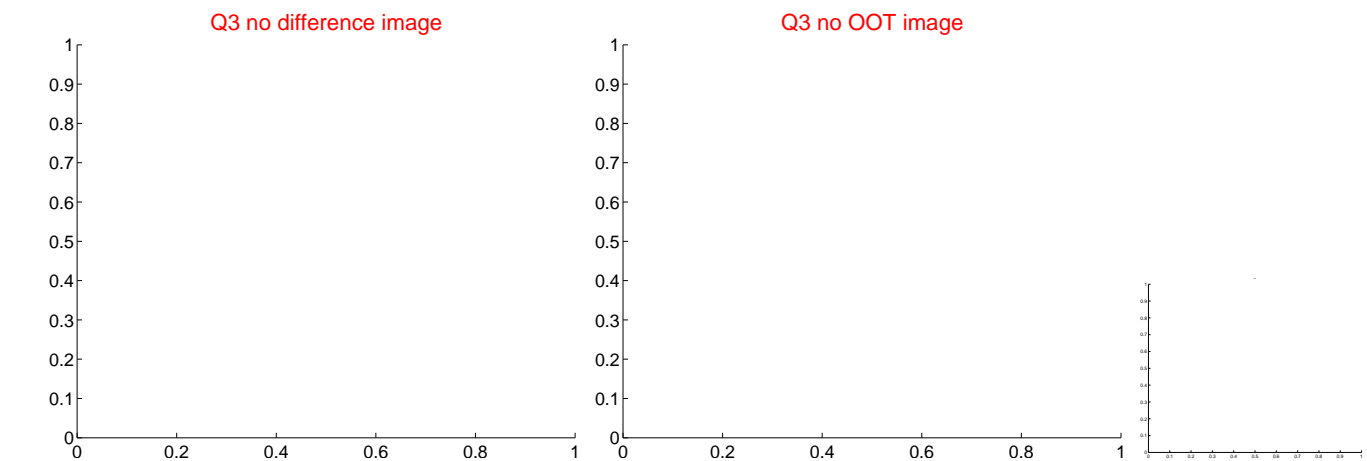
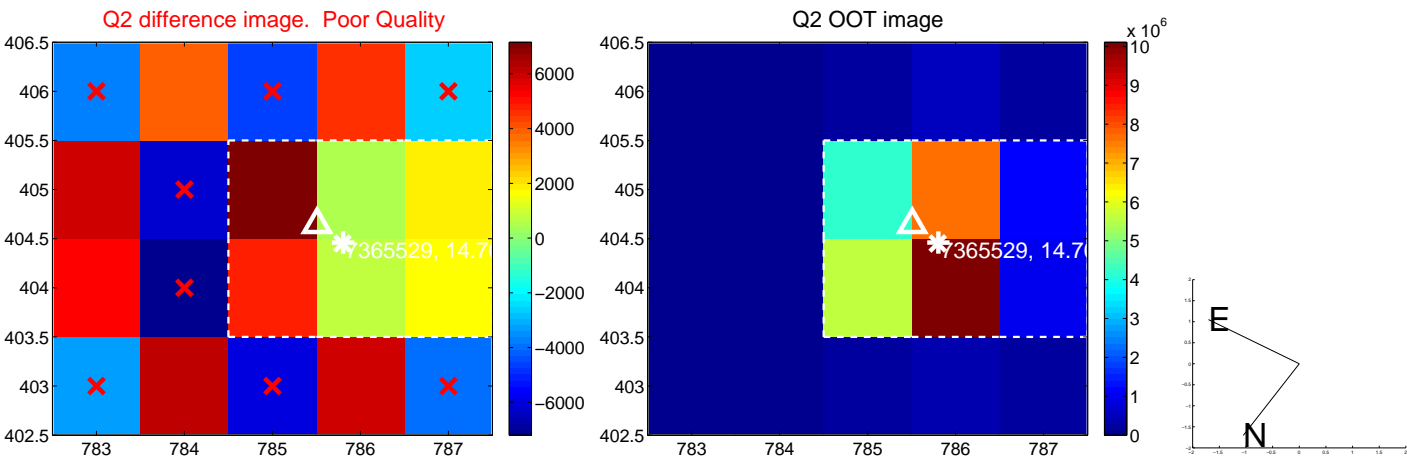
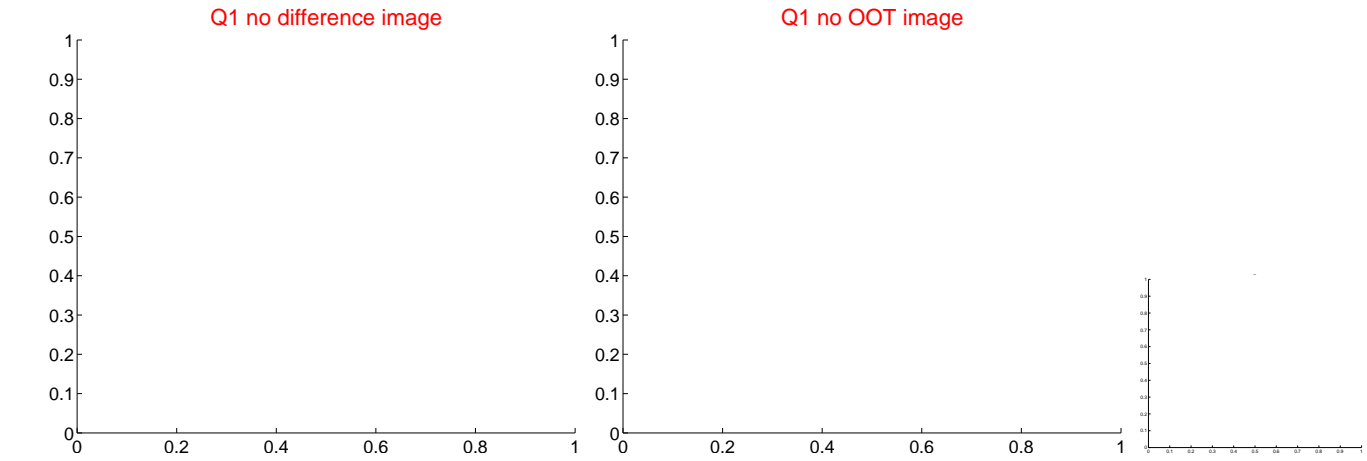


offset from photometric centroids



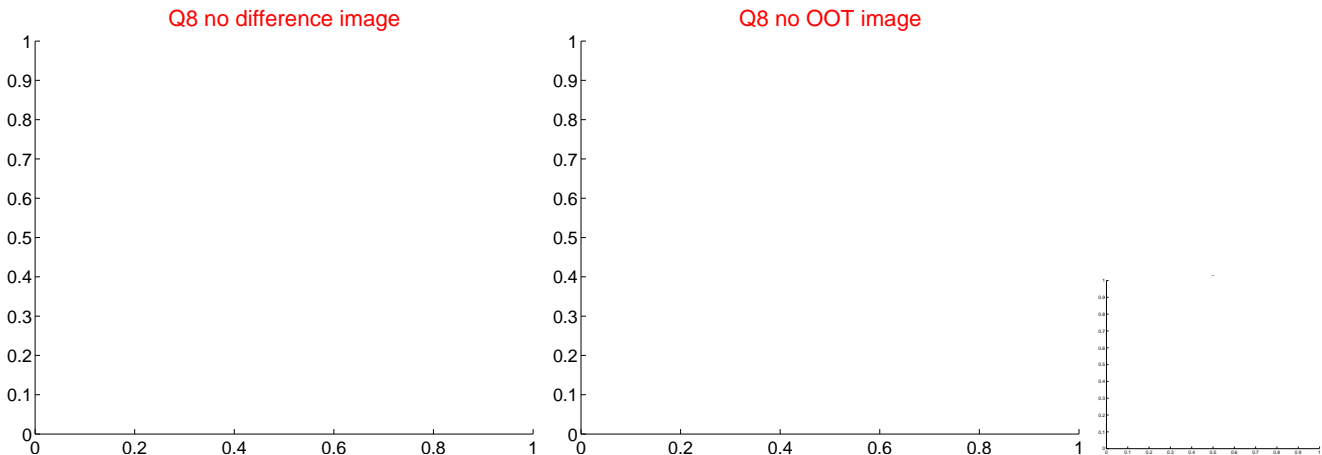
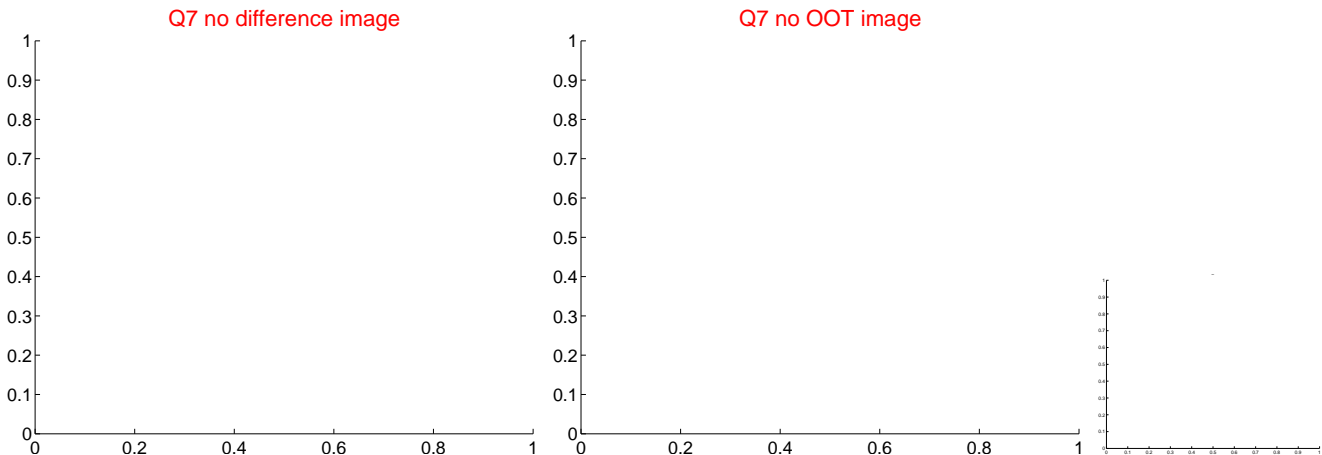
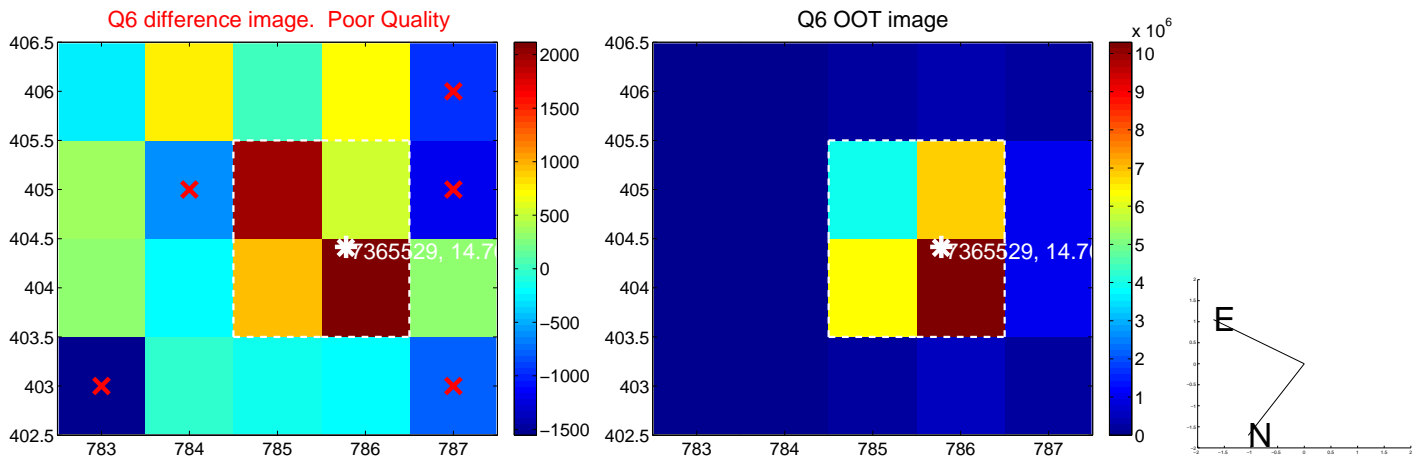
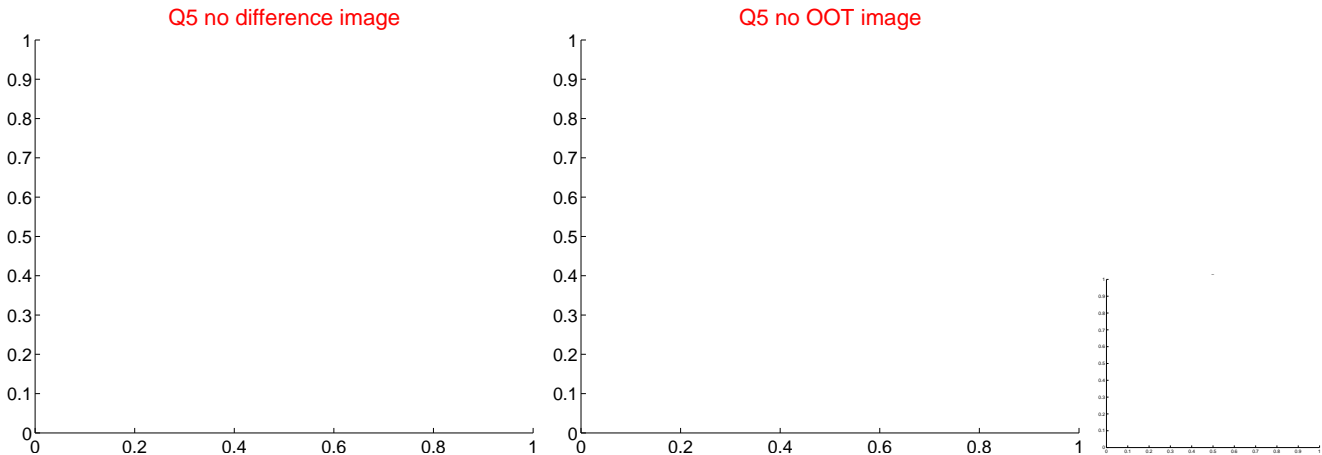
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

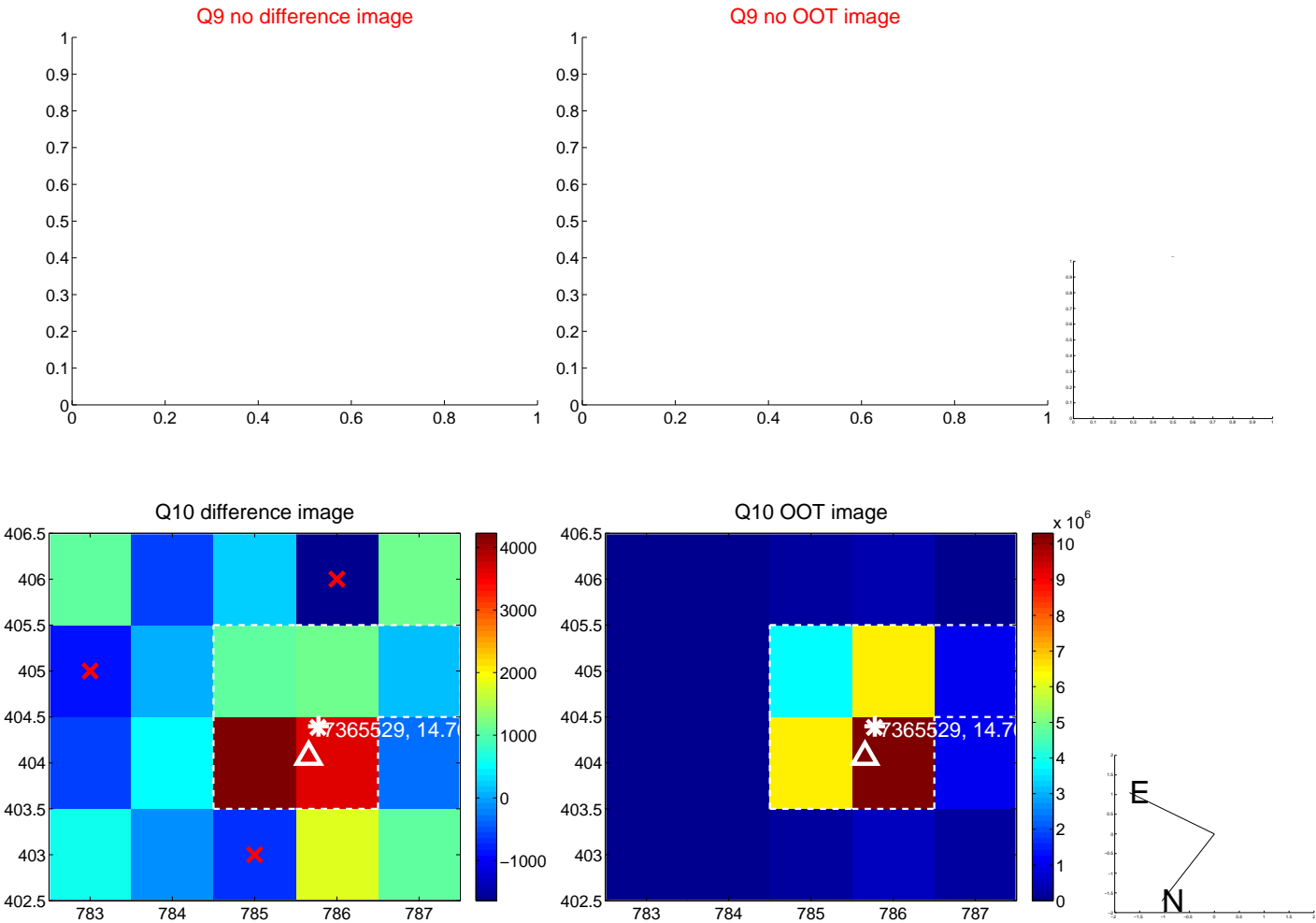




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



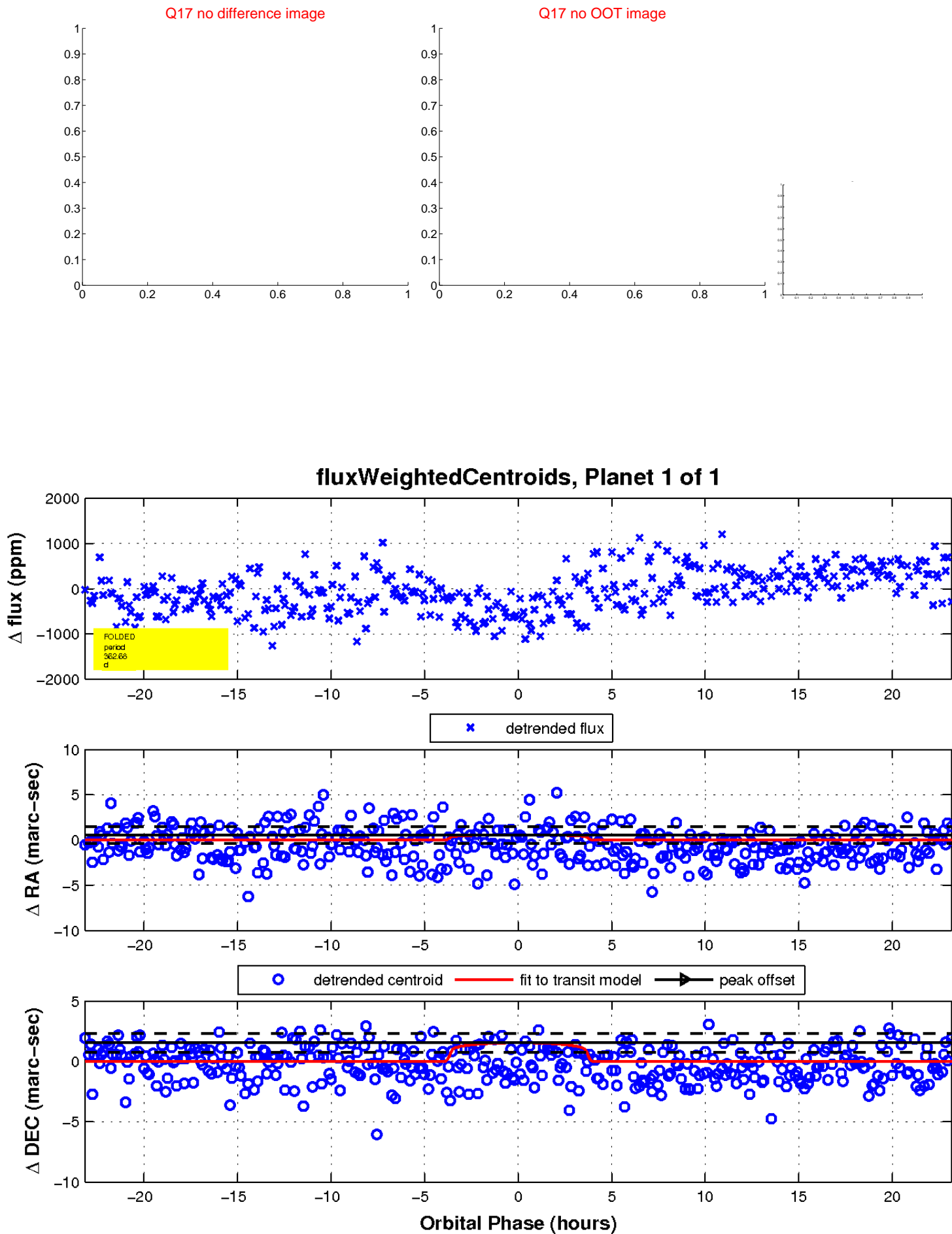
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



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



# UKIRT Image

Declination

