

# KIC 010207025

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010207025-01	OBS	No	105.482891	177.968368	744.6	12.158	9.1	10.1	3.66	10939	12.05	411.91

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010207025-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT

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

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

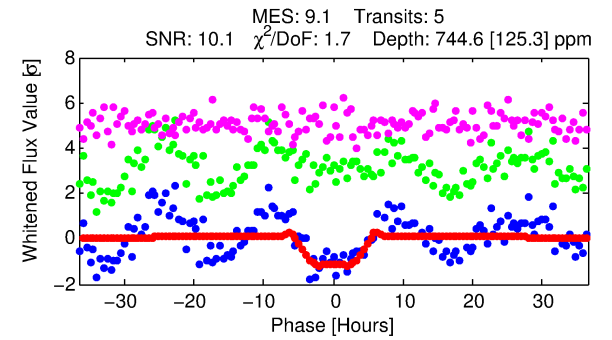
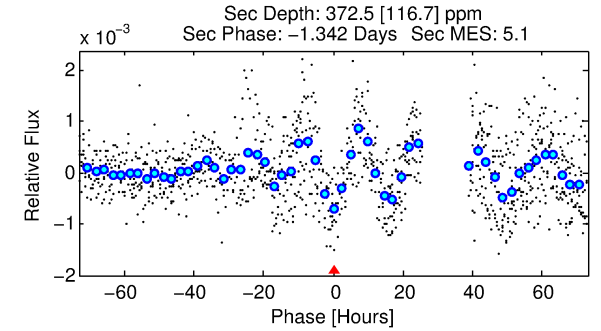
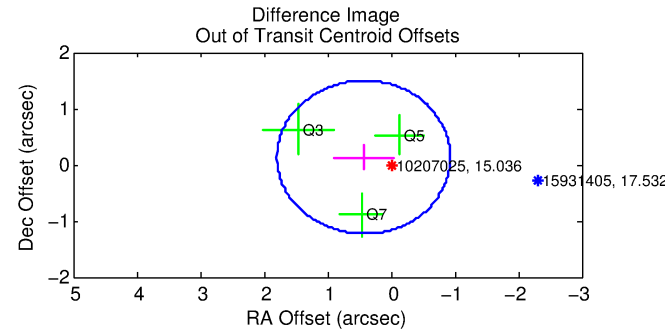
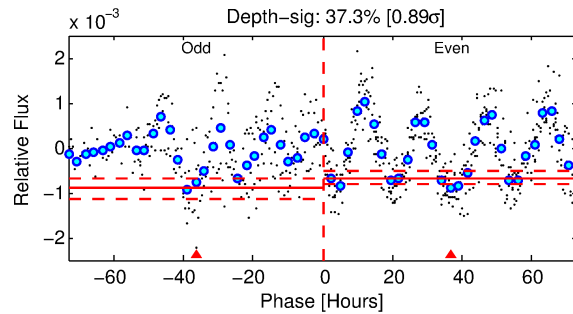
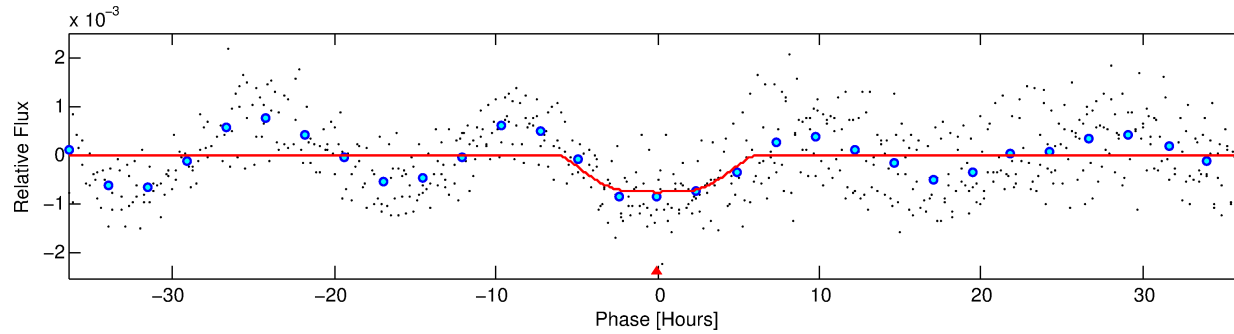
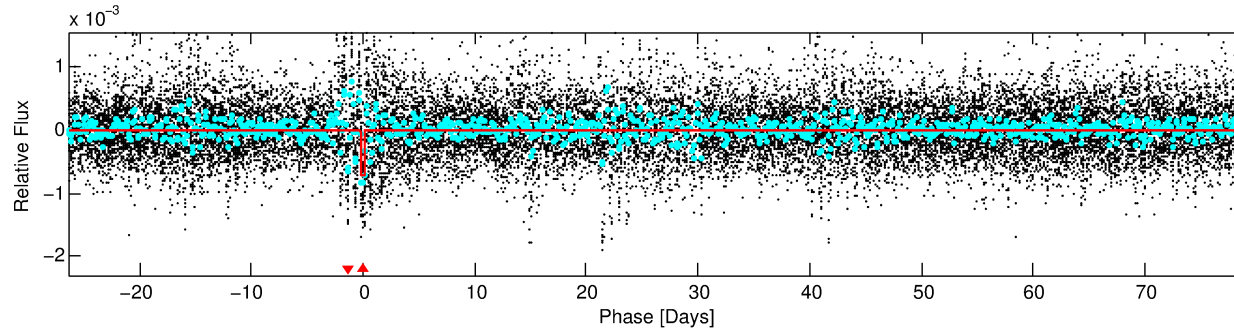
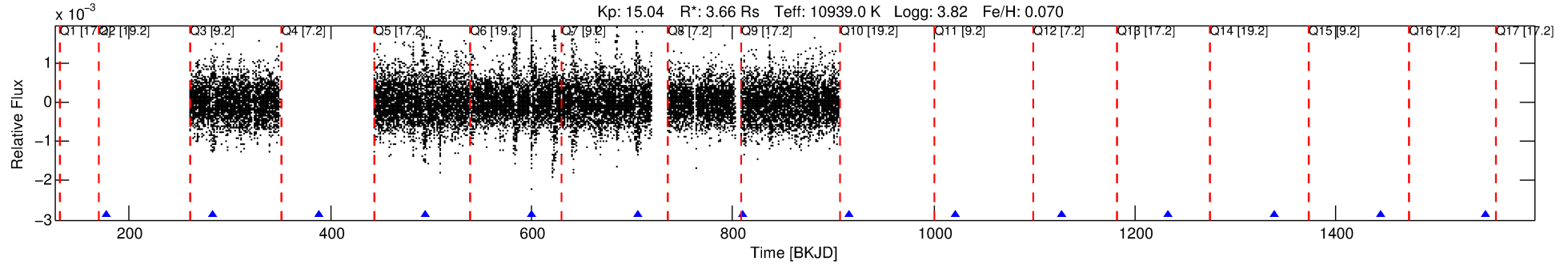
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010207025-01

No Significant Match Found

# DV One-Page Summary

KIC: 10207025 Candidate: 1 of 1 Period: 105.483 d



## DV Fit Results:

Period = 105.48289 [0.00962] d  
Epoch = 177.9684 [0.0390] BKJD  
Rp/R\* = 0.0302 [0.0029]  
a/R\* = 24.50 [4.86]  
b = 0.96 [0.02]  
Seff = 411.91 [286.95]  
Teq = 1149 [200] K  
Rp = 12.05 [5.97] Re  
a = 0.6457 [0.2829] AU  
Ag = 588.53 [451.45] [1.30 $\sigma$ ]  
Teffp = 8748 [898] K [8.26 $\sigma$ ]

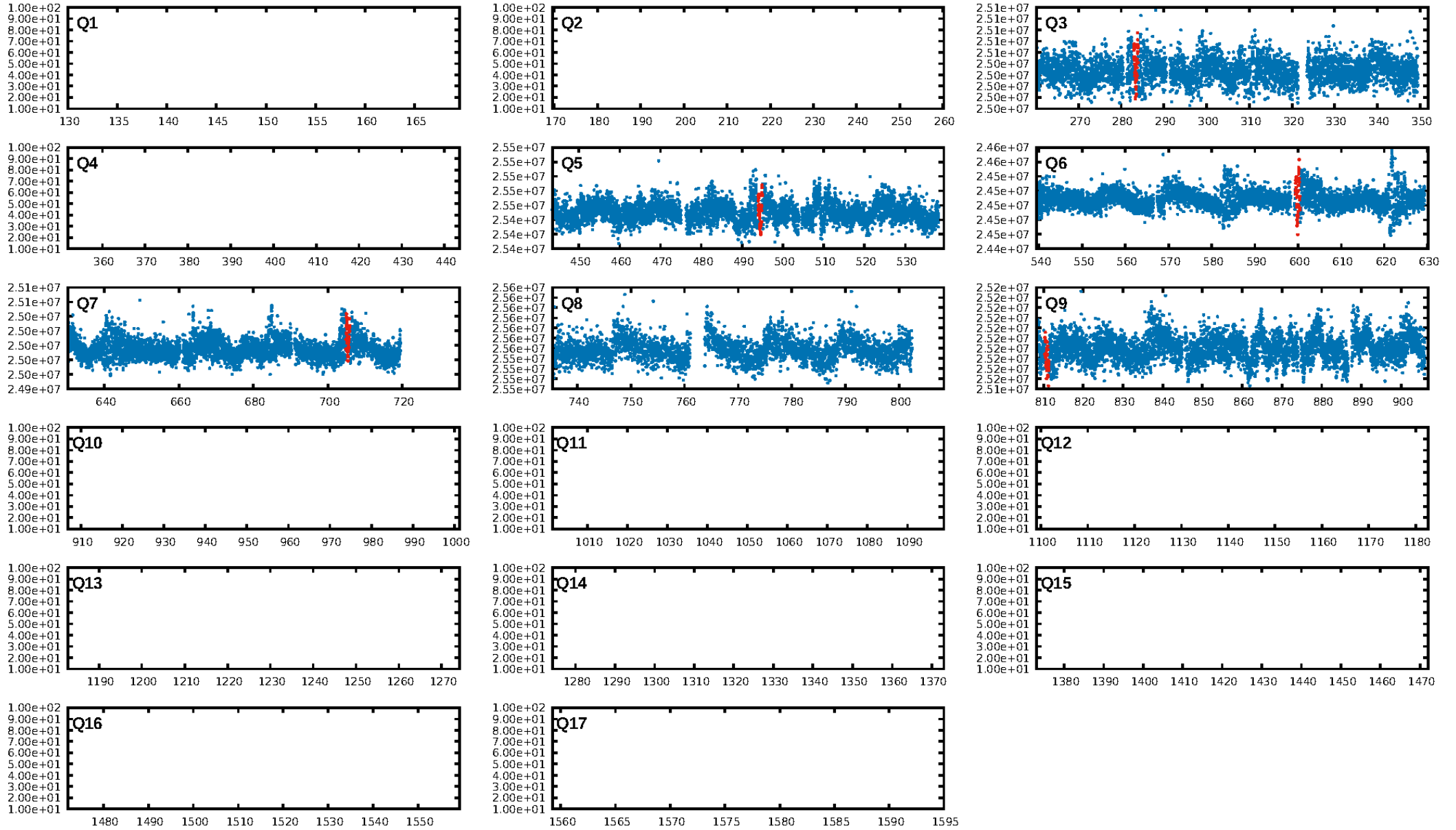
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.6%  
ModelChiSquareGof-sig: 68.3%  
**Bootstrap-pfa: 2.92e-10**  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: 5.04  
Centroid-sig: 15.7%  
Centroid-so: 1.124 arcsec [1.04 $\sigma$ ]  
OotOffset-rm: 0.451 arcsec [0.99 $\sigma$ ]  
KicOffset-rm: 0.599 arcsec [1.14 $\sigma$ ]  
OotOffset-st: 0/2/0/1 [3]  
KicOffset-st: 0/2/0/1 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [4/4]

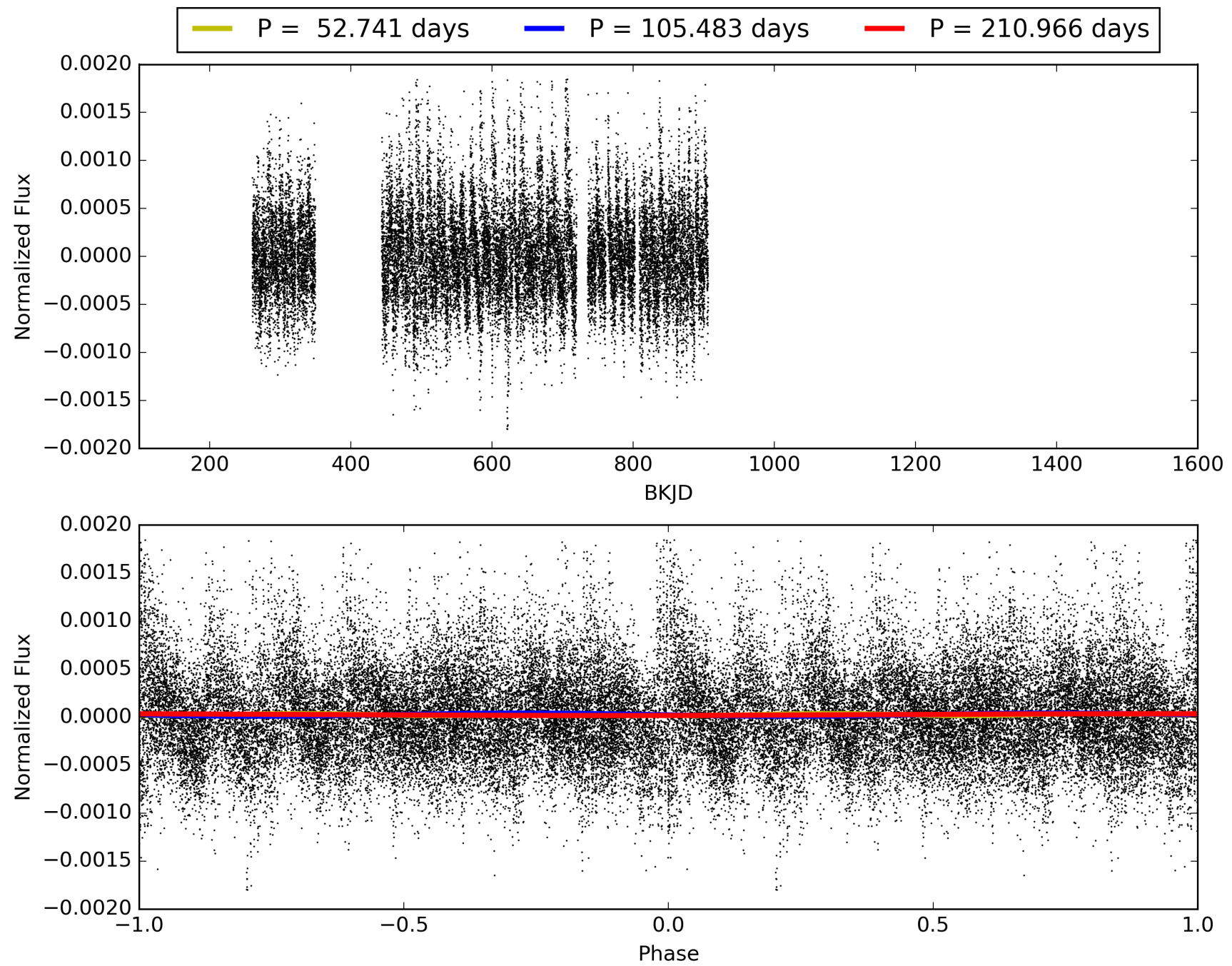
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:27:38 Z

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

# TCE 010207025-01, PDC Light Curves

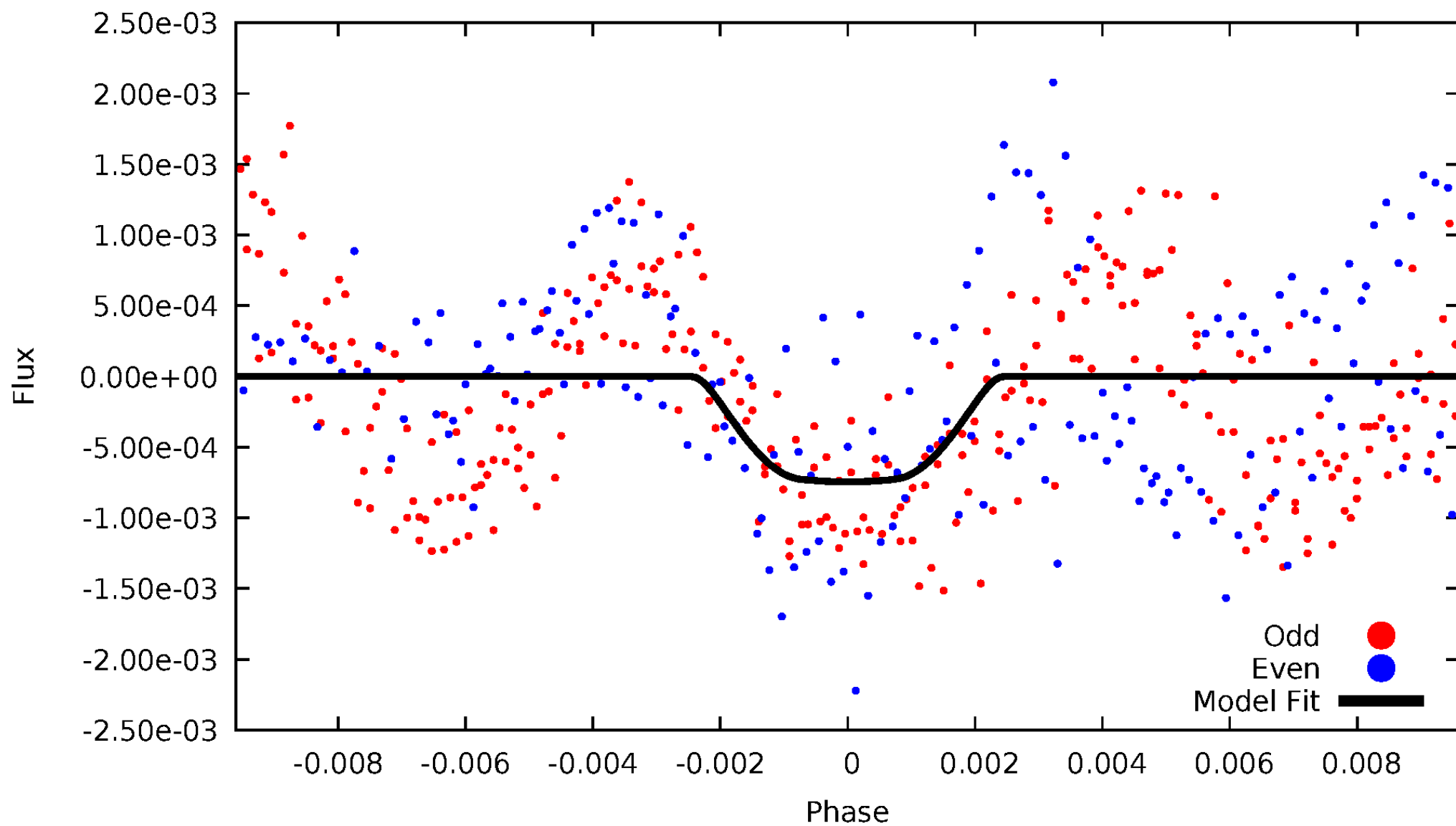


# TCE 010207025-01



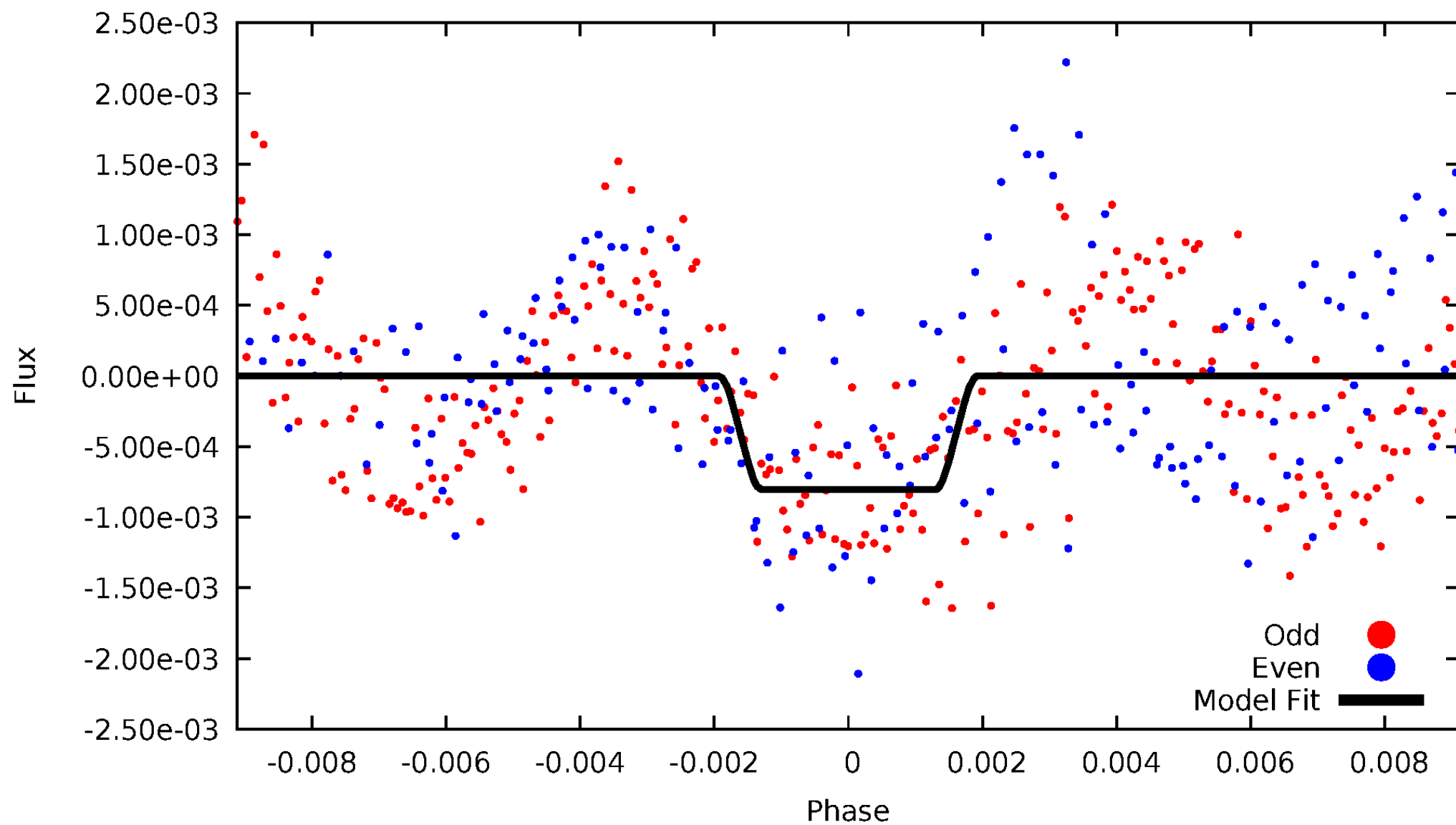
# DV Odd/Even

TCE 010207025-01



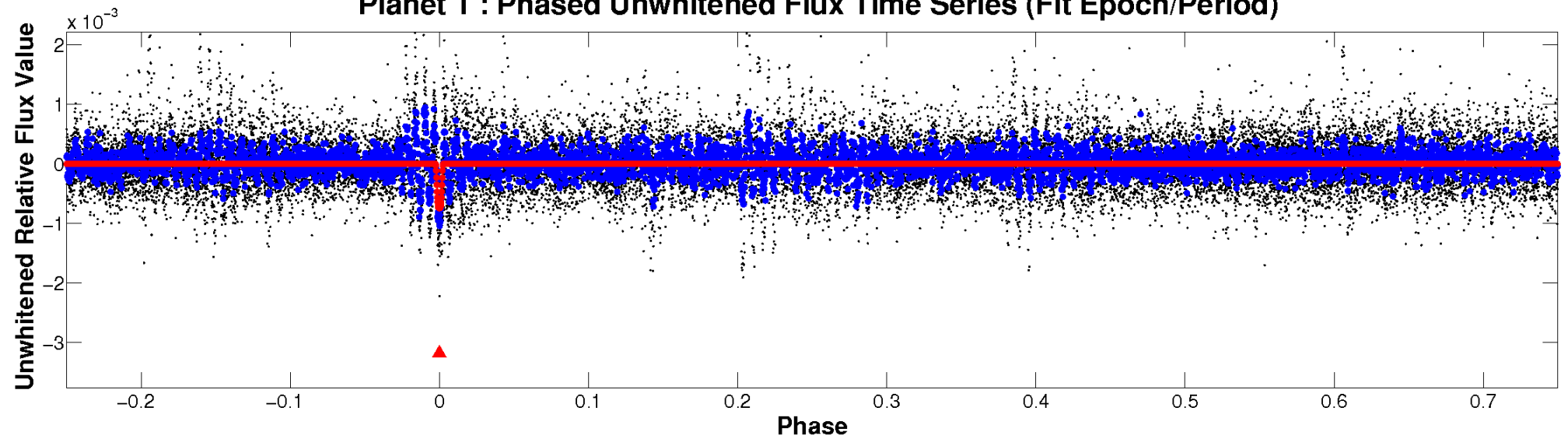
# ALT Odd/Even

TCE 010207025-01

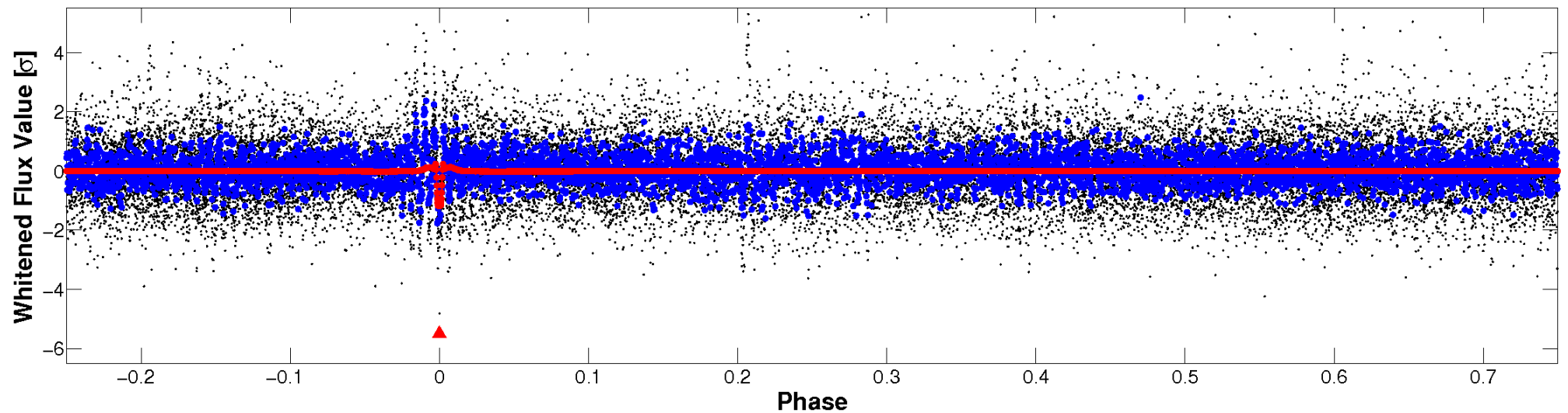


# Non-Whitened Vs. Whitened Light Curve

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

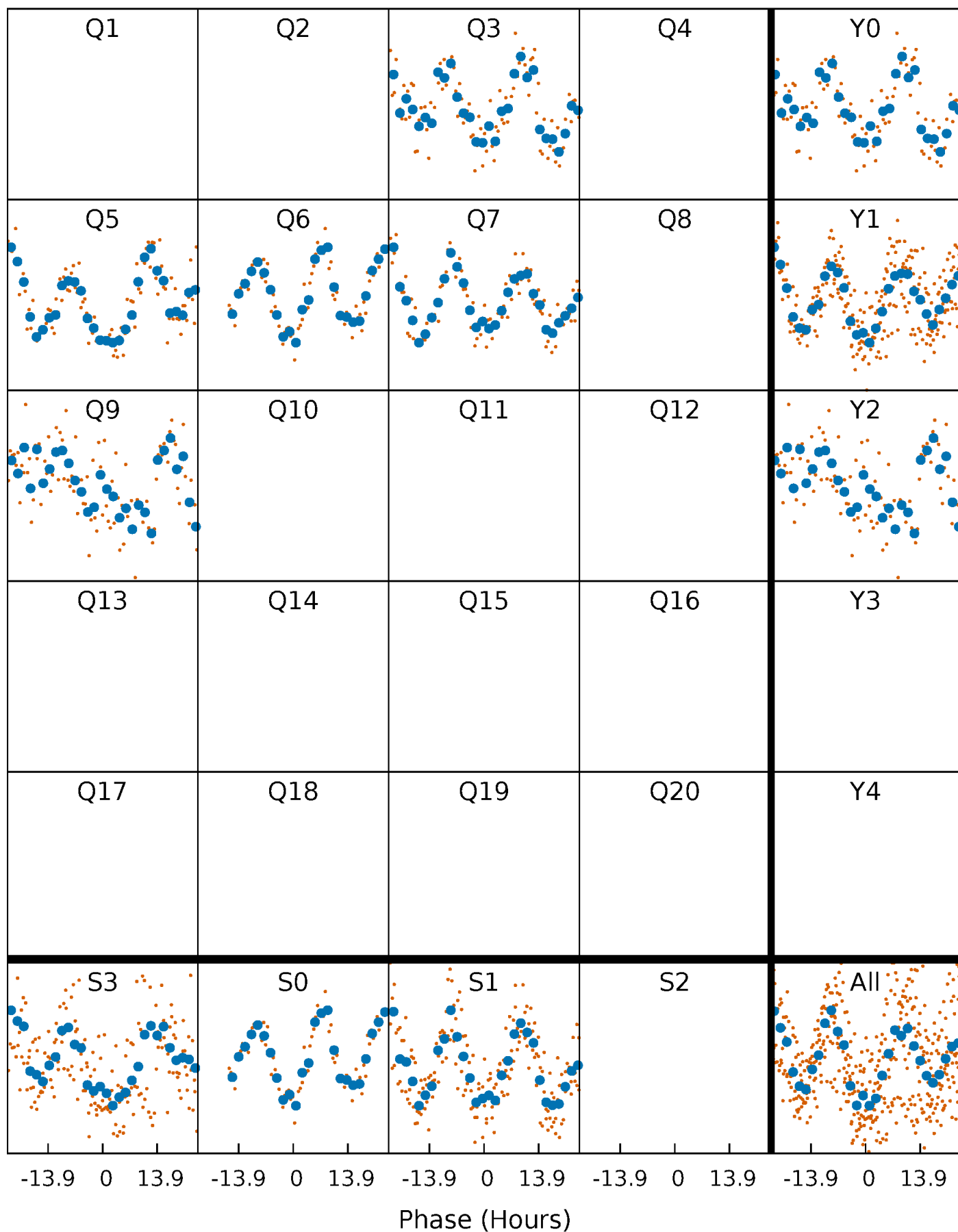


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

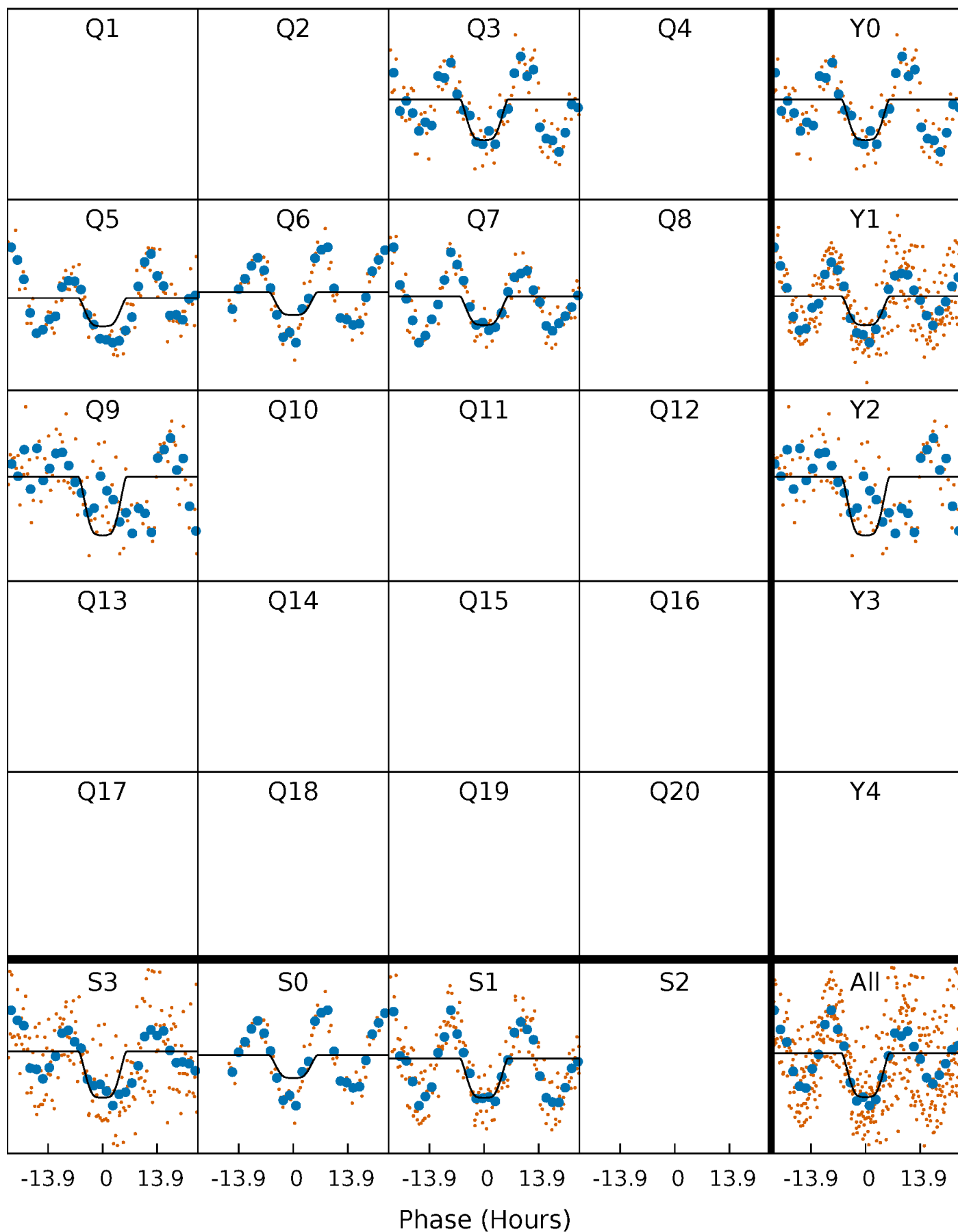
TCE 010207025-01 P=105.482891 Days  $T_0=177.968368$  (BKJD)





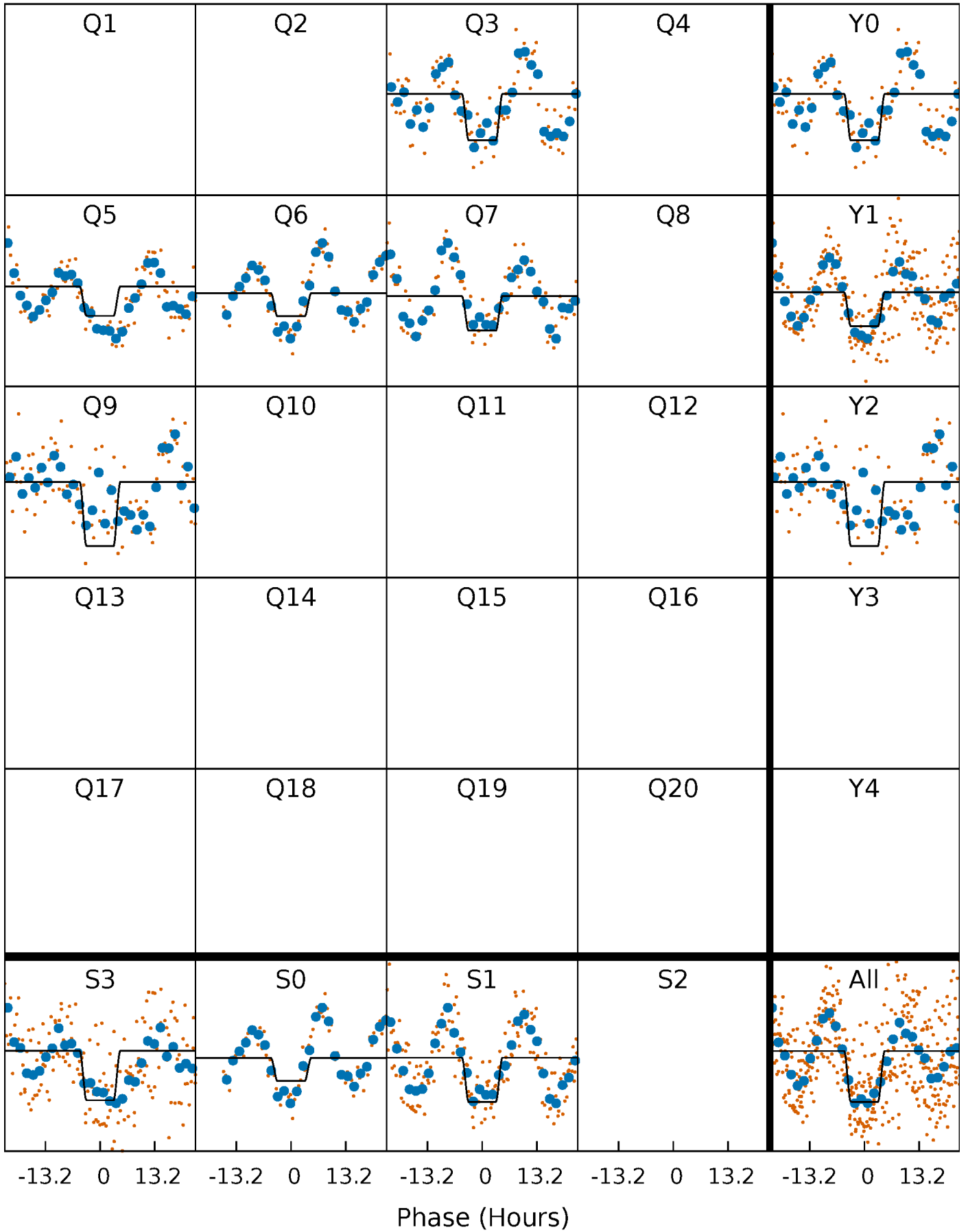
# DV Quarter-Phased Transit Curves

TCE 010207025-01 P=105.482891 Days  $T_0=177.968368$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

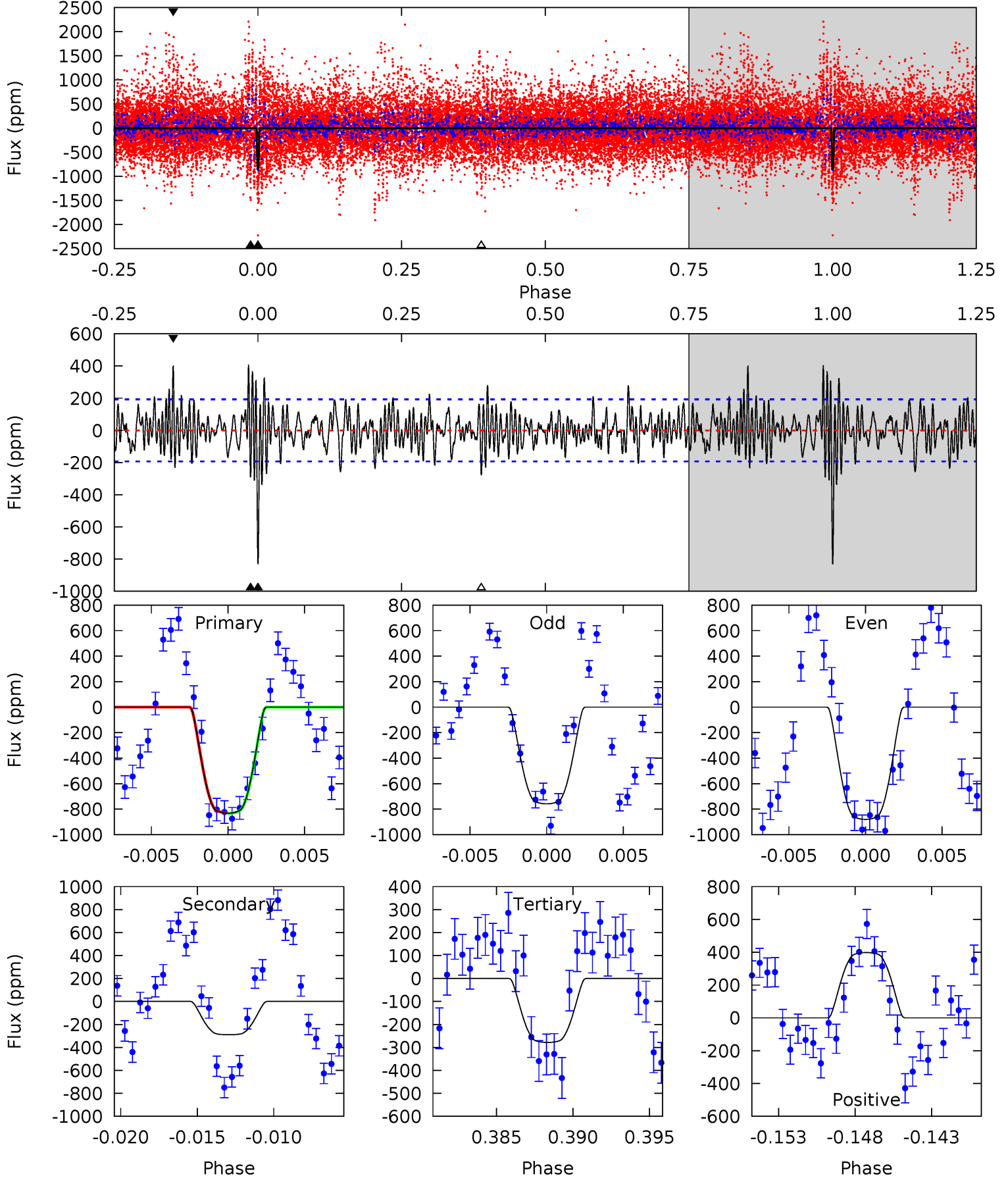
TCE 010207025-01   P=105.484848 Days    $T_0=177.958322$  (BKJD)



# DV Model-Shift Uniqueness Test

010207025-01, P = 105.482891 Days, E = 177.968368 Days

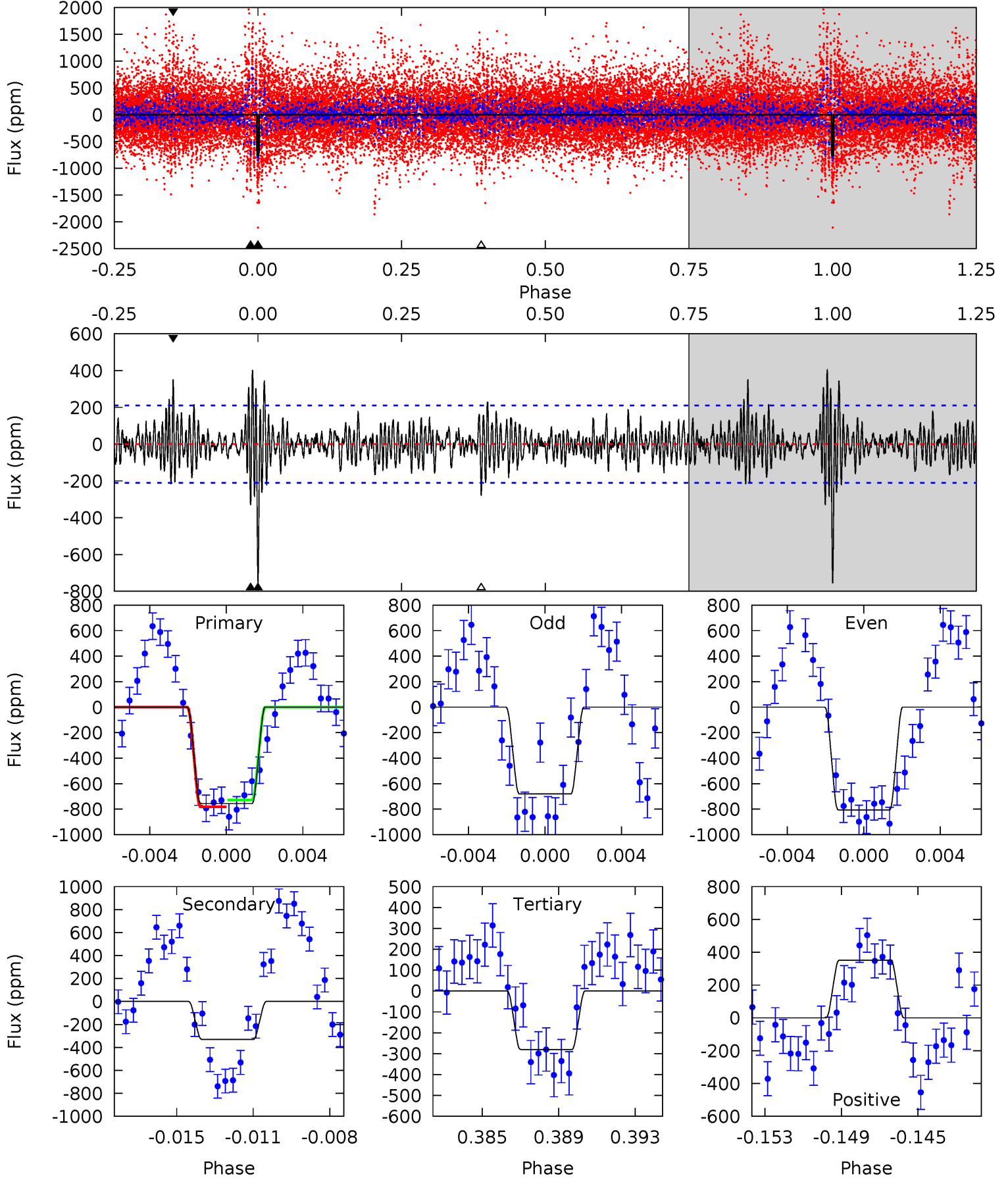
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.2	7.75	7.44	10.6	5.16	2.81	2.45	14.8	11.6	0.32	-2.88	1.59	1.07	0.33	0.05



# Alt Model-Shift Uniqueness Test

010207025-01, P = 105.484848 Days, E = 177.958322 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
18.7	8.19	6.94	8.71	5.21	2.89	1.88	11.8	10.0	1.25	-0.53	1.51	1.10	0.35	0.68



### Stellar Parameters For KIC 010207025

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$10939^{+266}_{-495}$	$3.820^{+0.384}_{-0.072}$	$0.070^{+0.150}_{-0.600}$	$3.659^{+0.419}_{-1.779}$	$3.225^{+0.113}_{-1.018}$	$0.093^{+0.350}_{-0.023}$
	+2%/-5%	+10%/-2%	+214%/-857%	+11%/-49%	+4%/-32%	+377%/-24%
Source	KIC0	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 010207025-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-290 \pm 37$	$11.38^{+1.89}_{-2.92}$	$1563^{+90}_{-178}$	$7390^{+635}_{-500}$	$507^{+359}_{-139}$
Alt.	$-330 \pm 40$	$10.39^{+1.94}_{-2.51}$	$1548^{+104}_{-174}$	$7966^{+726}_{-597}$	$684^{+452}_{-202}$

$T_{max}$  = 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

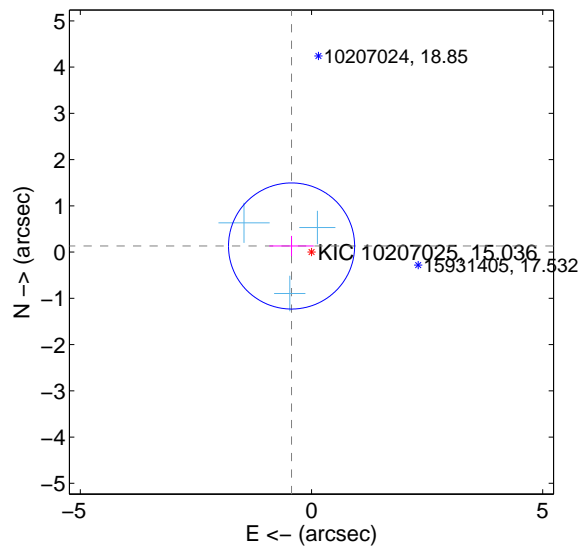
Supplemental centroid analysis for 010207025-01. Kepler magnitude: 15.04. Transit SNR 10.06

There are 3 quarters with good PRF difference image offsets

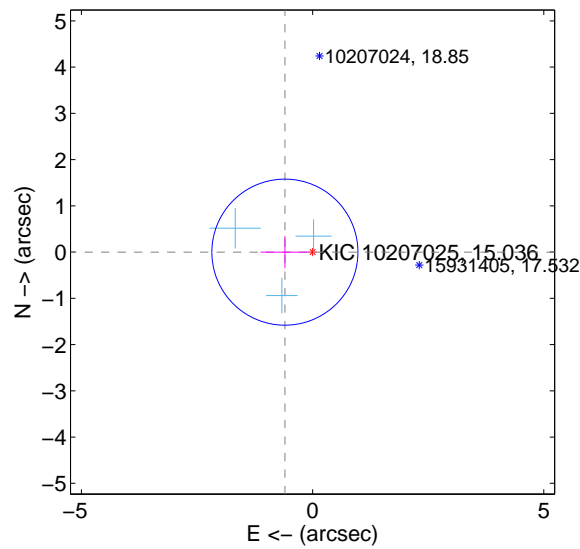
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.451 \pm 0.454$	0.99	$0.431 \pm 0.480$	$0.132 \pm 0.219$
PRF-fit source offset from KIC position	$0.599 \pm 0.526$	1.14	$0.599 \pm 0.527$	$-0.001 \pm 0.346$
photometric centroid source offset	$1.12 \pm 1.08$	1.04	$0.08 \pm 1.09$	$-1.12 \pm 1.08$

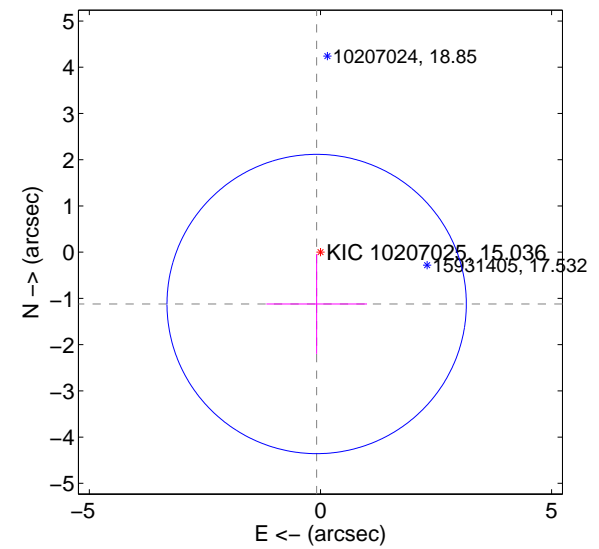
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

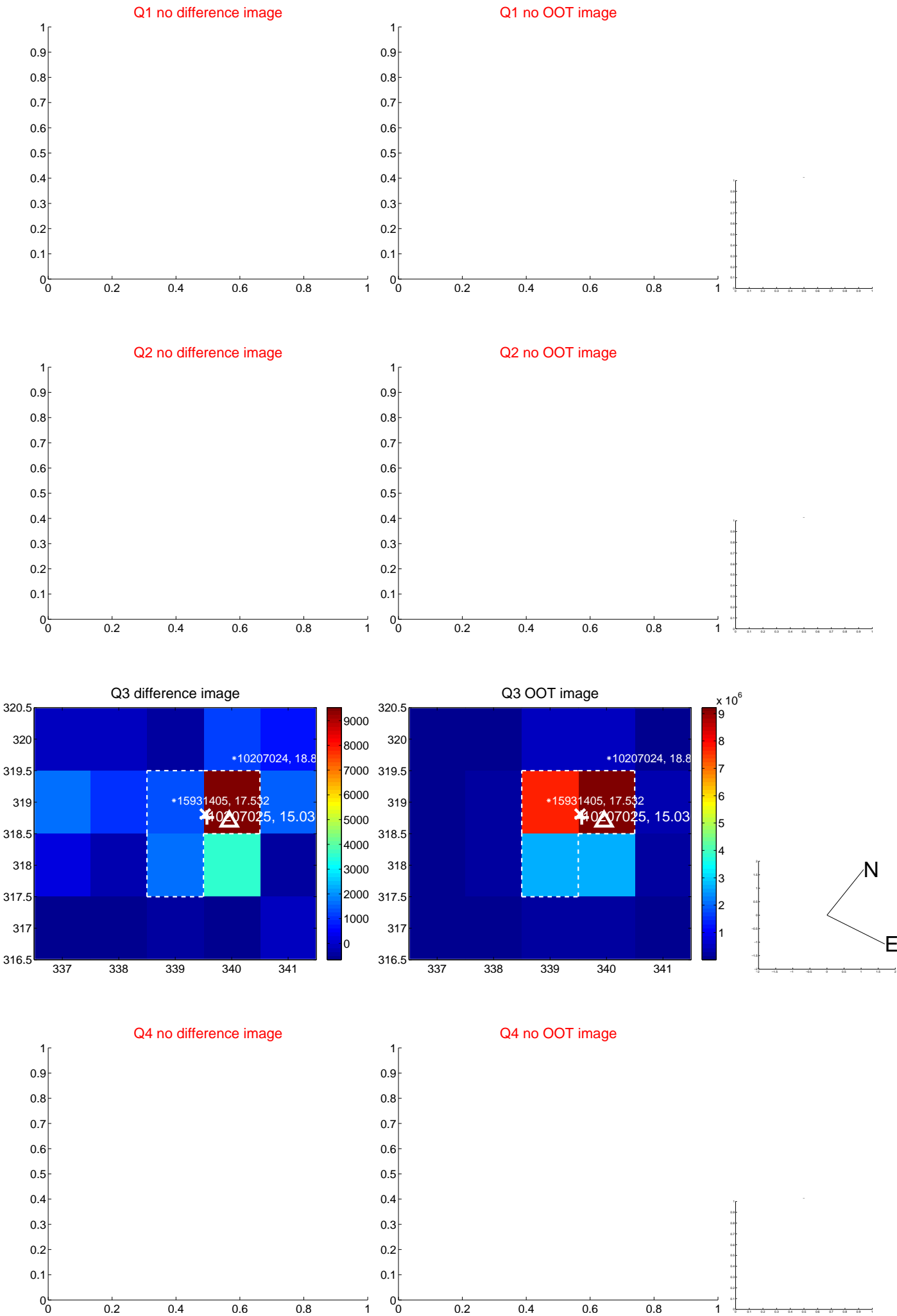


offset from photometric centroids

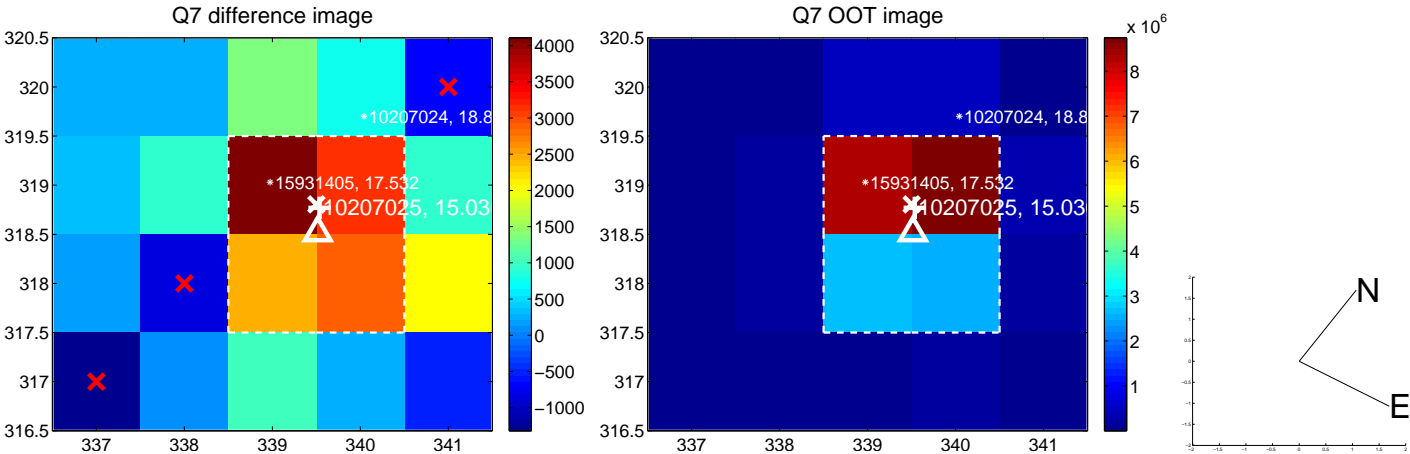
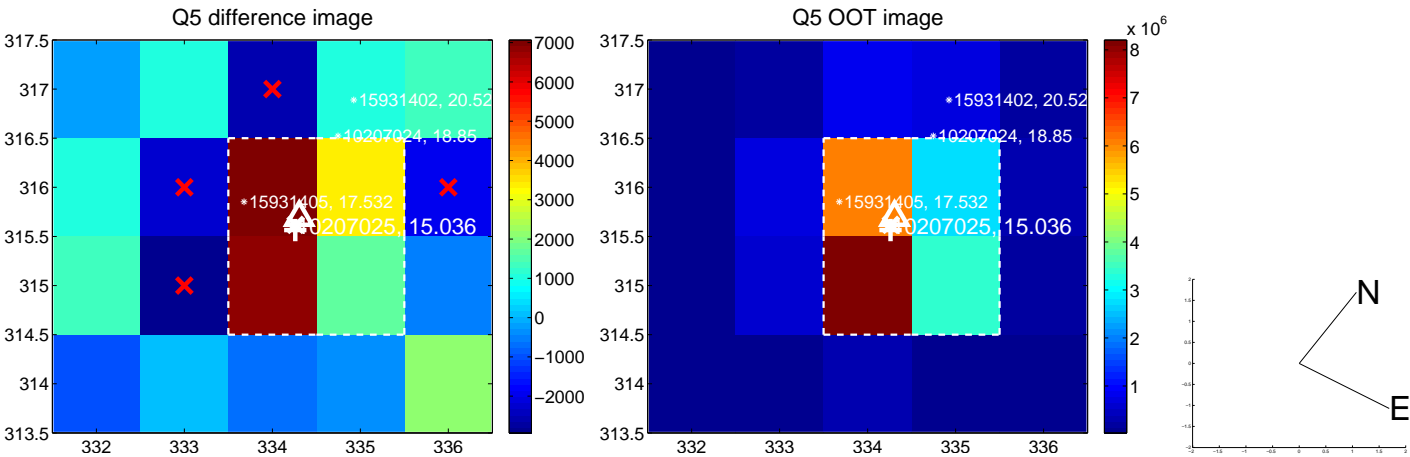


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

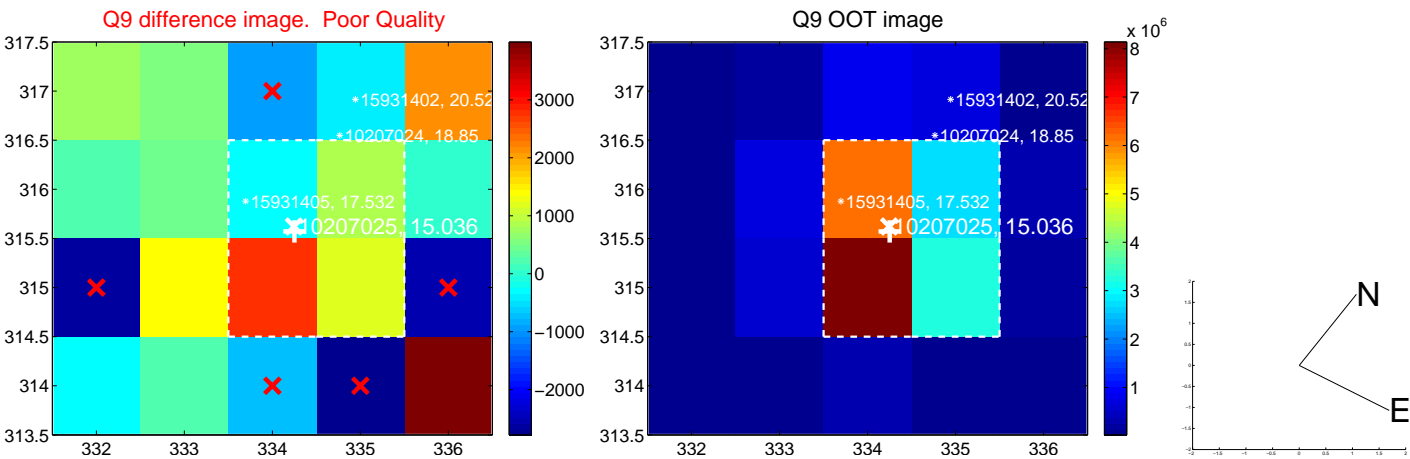


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





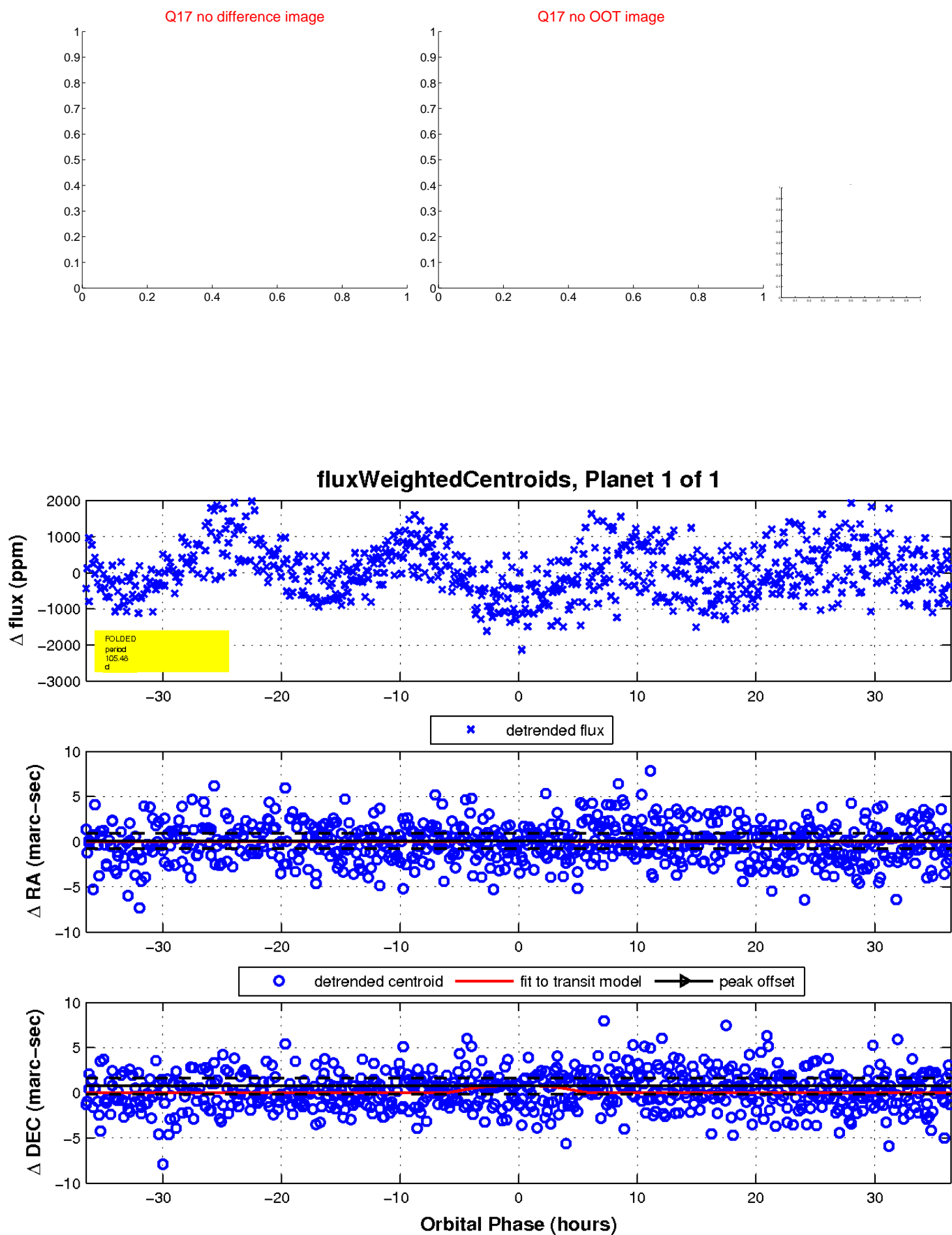
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

