

# KIC 010910310

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010910310-01	OBS	No	377.495907	254.422862	36.2	29.191	9.5	9.1	2.91	8679	1.90	23.55

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010910310-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED

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

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

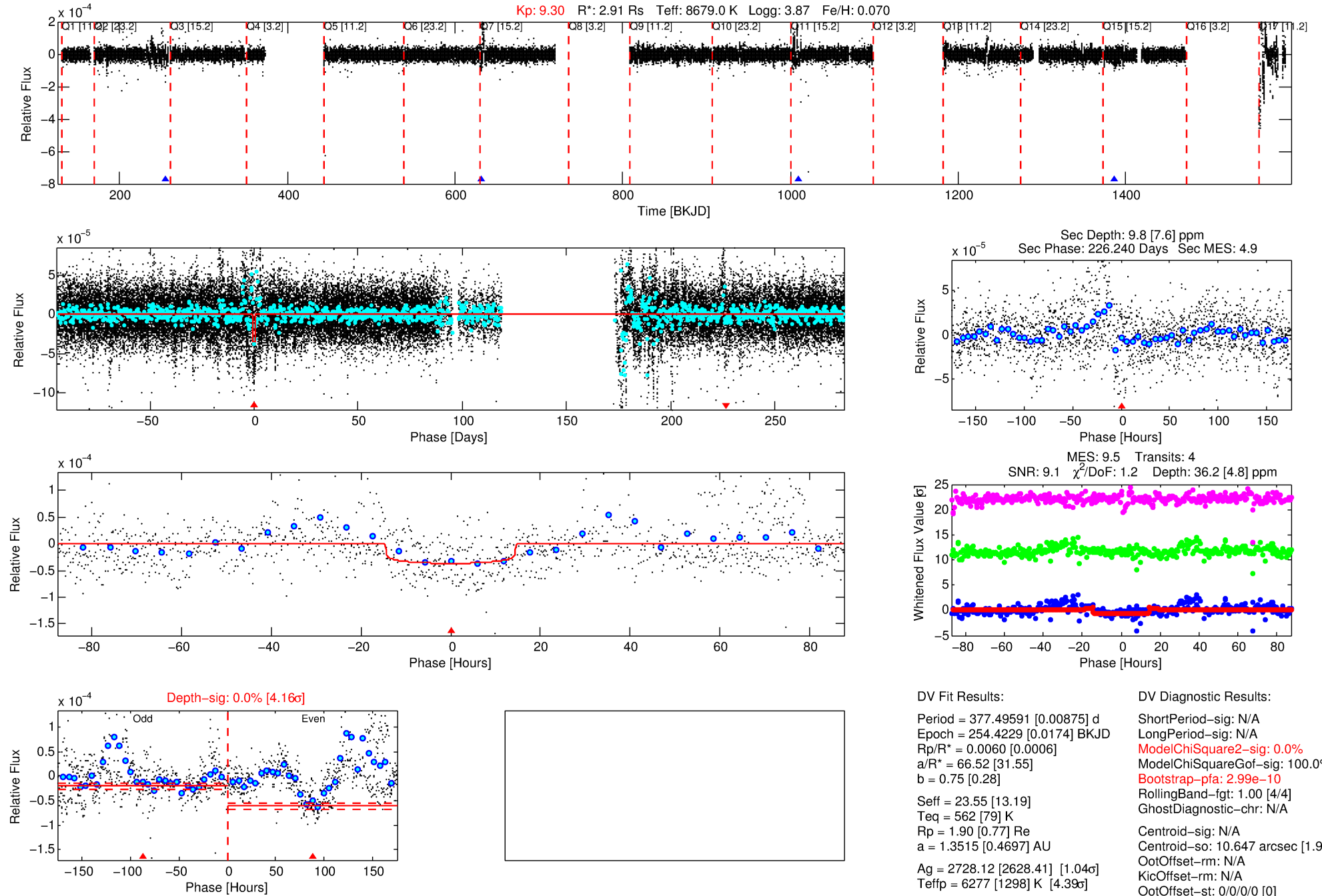
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010910310-01

No Significant Match Found

# DV One-Page Summary

KIC: 10910310 Candidate: 1 of 1 Period: 377.496 d



## DV Fit Results:

Period = 377.49591 [0.00875] d  
Epoch = 254.4229 [0.0174] BKJD  
Rp/R\* = 0.0060 [0.0006]  
a/R\* = 66.52 [31.55]  
b = 0.75 [0.28]  
Seff = 23.55 [13.19]  
Teq = 562 [79] K  
Rp = 1.90 [0.77] Re  
a = 1.3515 [0.4697] AU  
Ag = 2728.12 [2628.41] [1.04σ]  
Teffp = 6277 [1298] K [4.39σ]

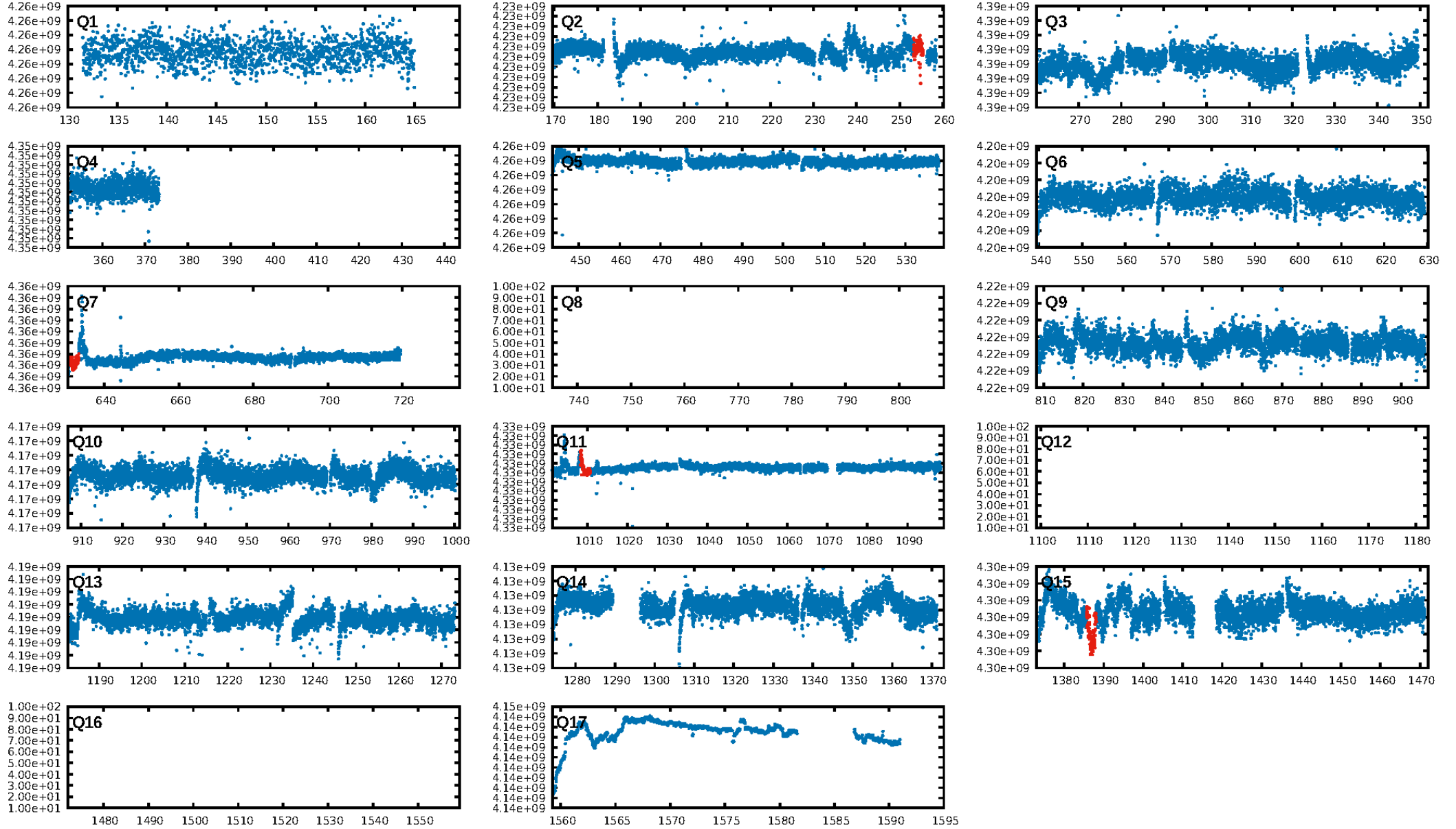
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.99e-10  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: 10.647 arcsec [1.99σ]  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0 [0]  
KicOffset-st: 0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: N/A

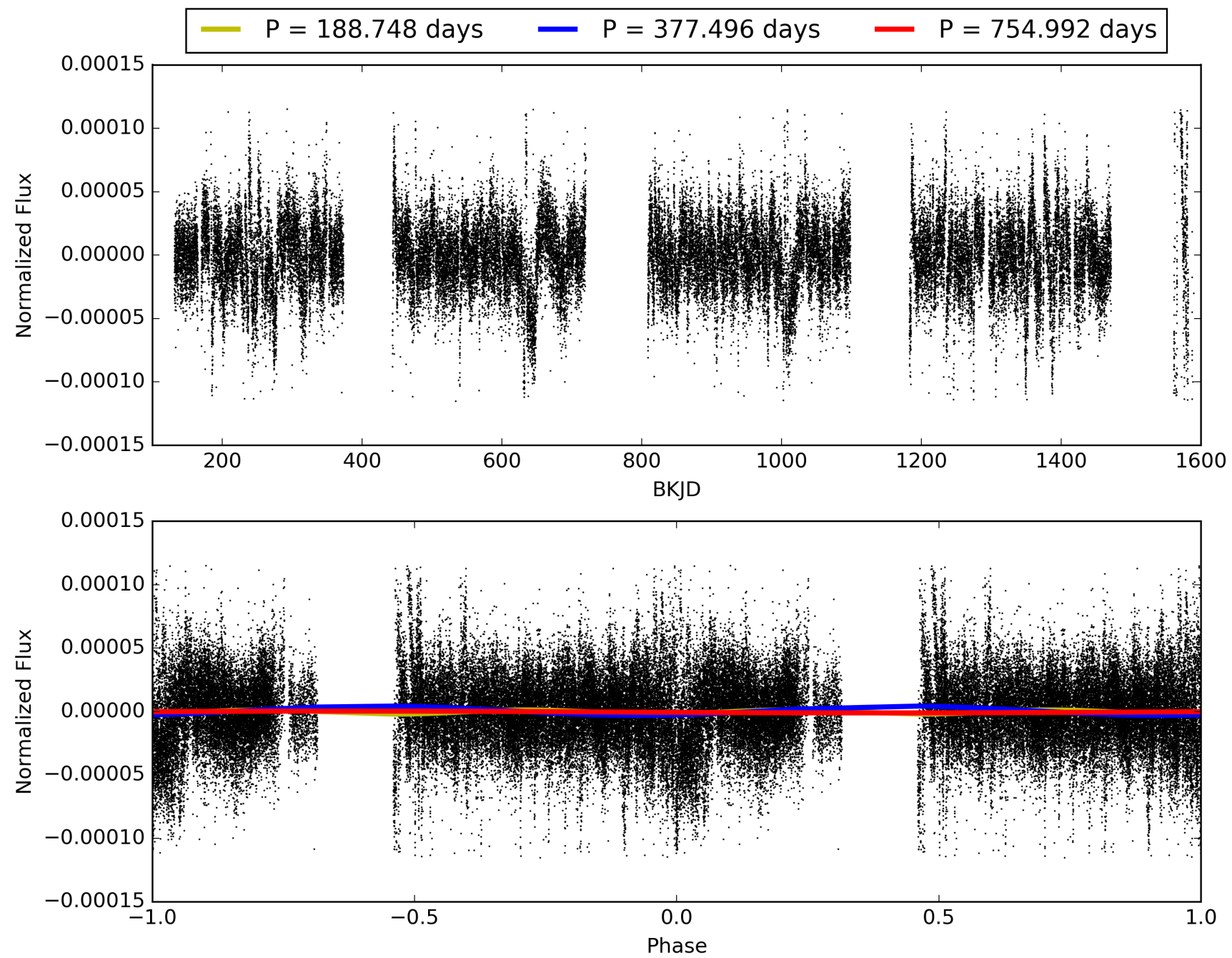
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 05:55:52 Z

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

# TCE 010910310-01, PDC Light Curves

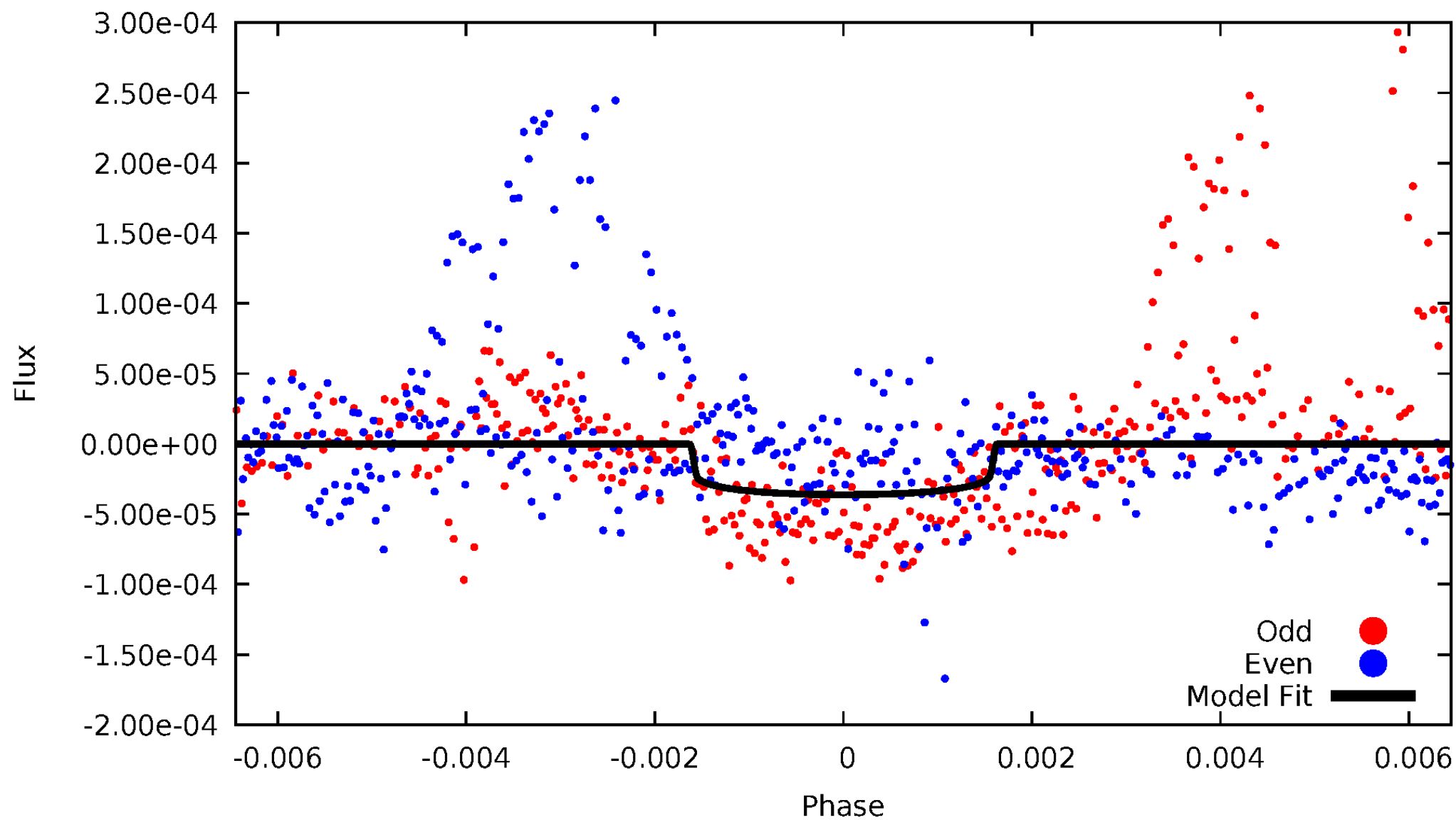


# TCE 010910310-01



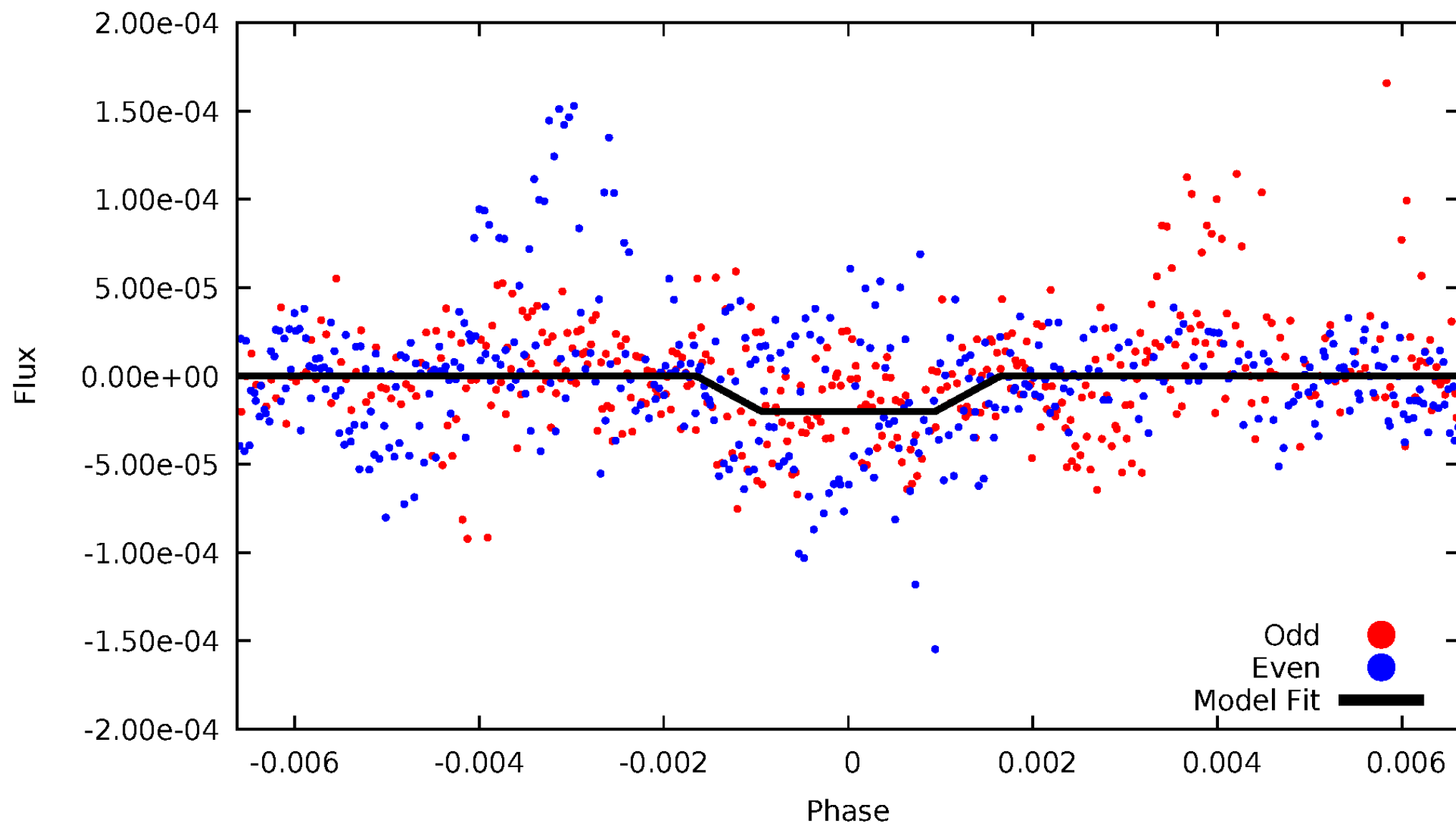
# DV Odd/Even

TCE 010910310-01

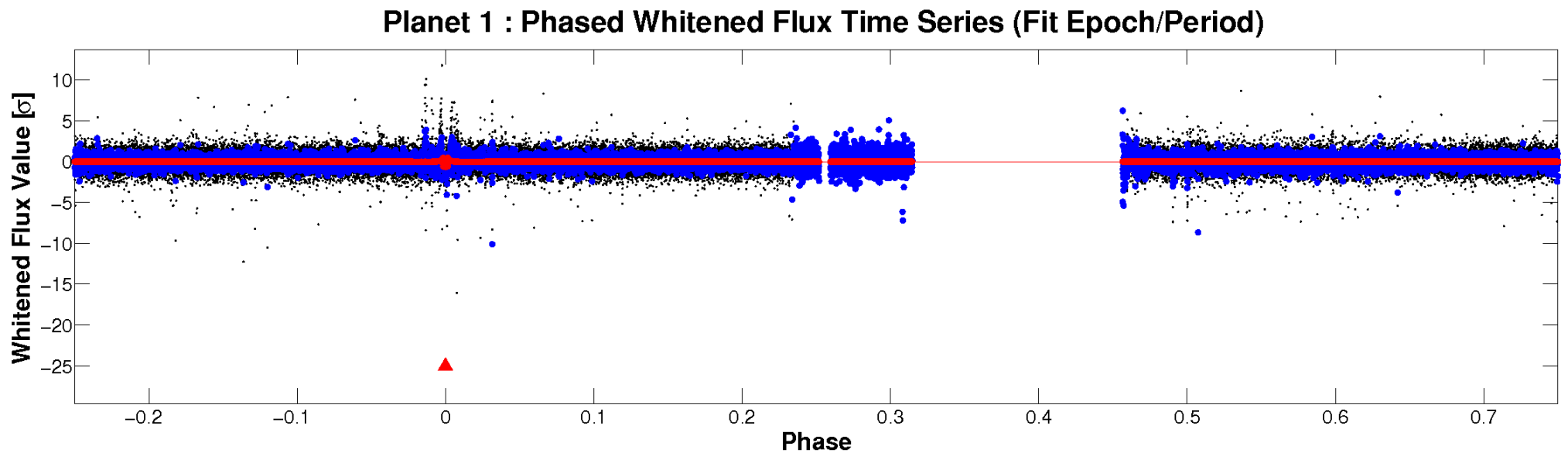
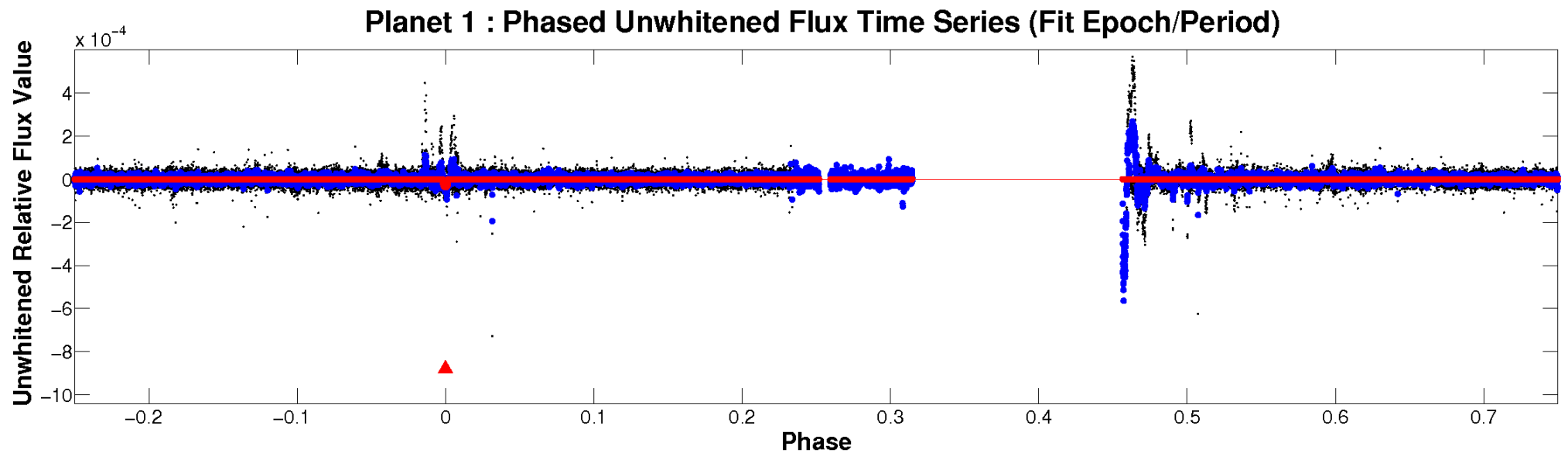


# ALT Odd/Even

TCE 010910310-01



# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

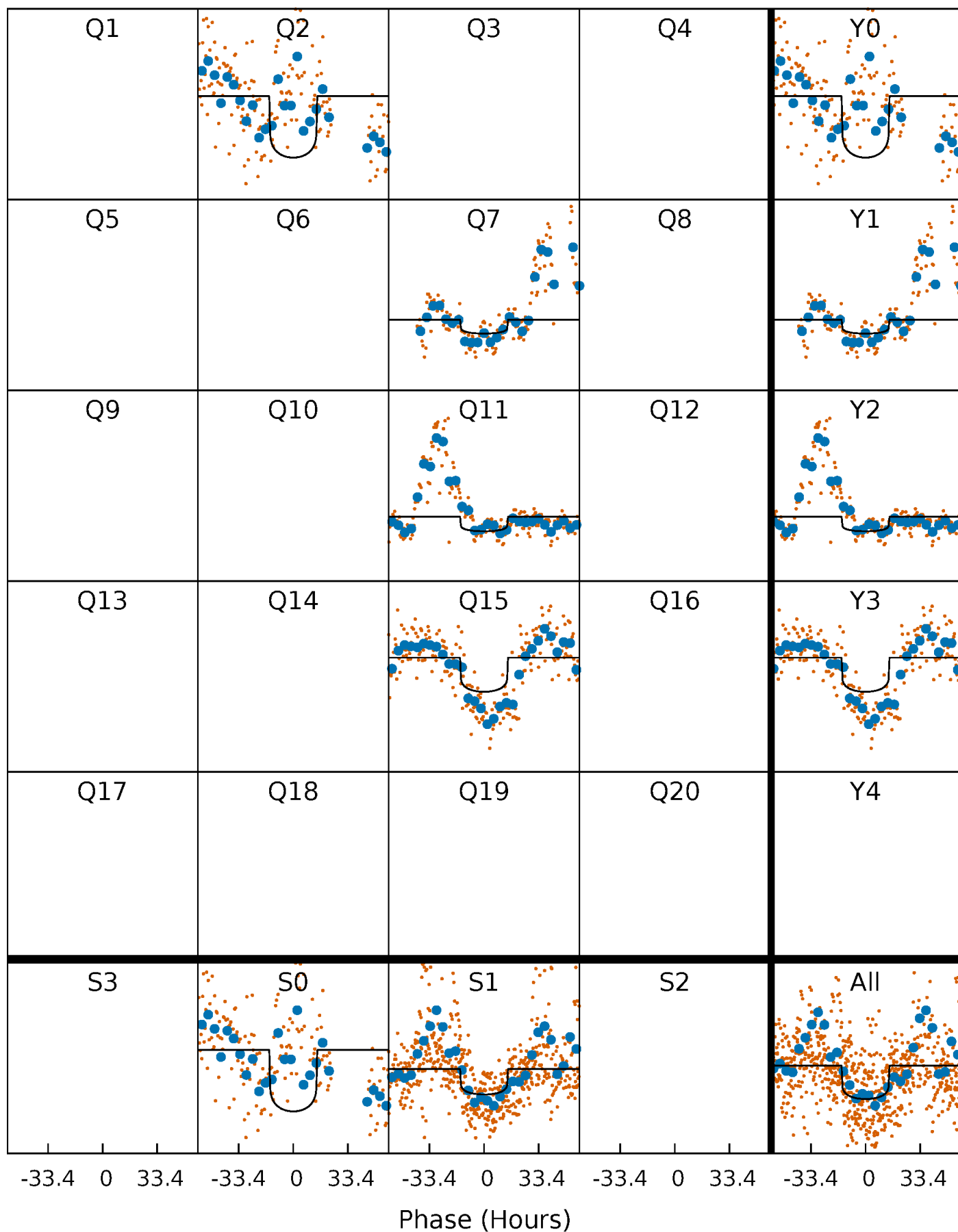
TCE 010910310-01 P=377.495907 Days  $T_0=254.422862$  (BKJD)





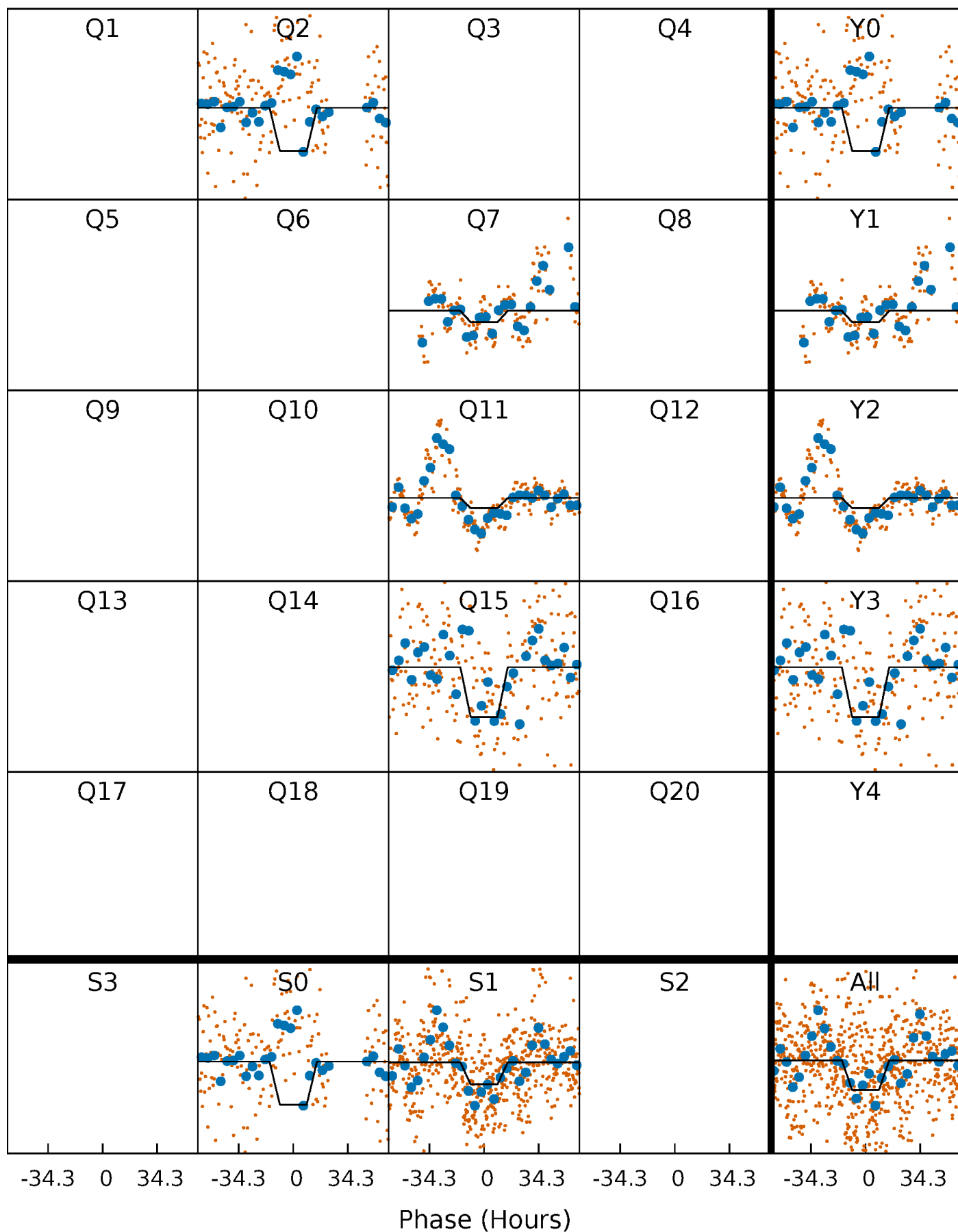
# DV Quarter-Phased Transit Curves

TCE 010910310-01 P=377.495907 Days  $T_0=254.422862$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

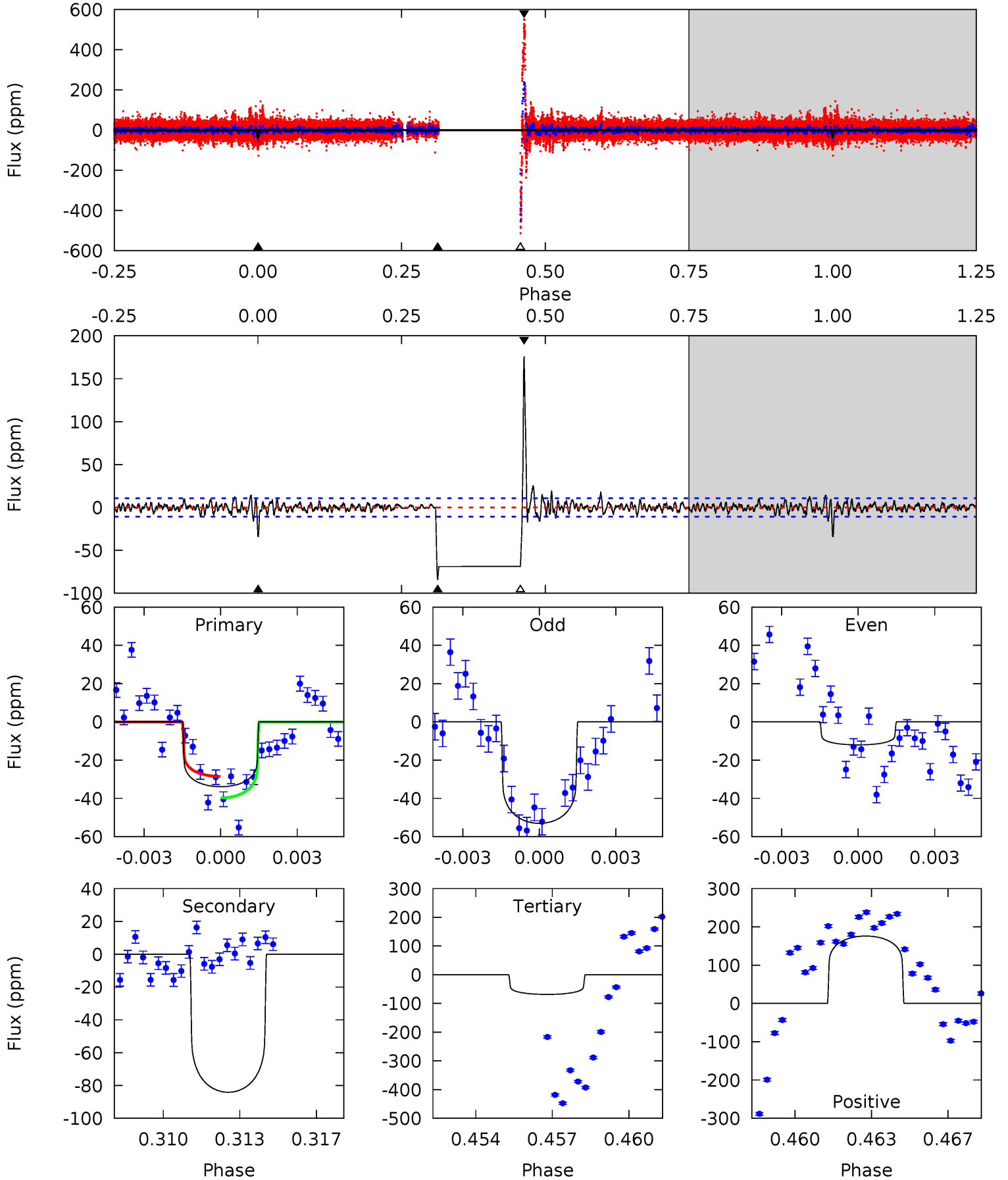
TCE 010910310-01 P=377.441909 Days  $T_0=254.474605$  (BKJD)



# DV Model-Shift Uniqueness Test

010910310-01, P = 377.495907 Days, E = 254.422862 Days

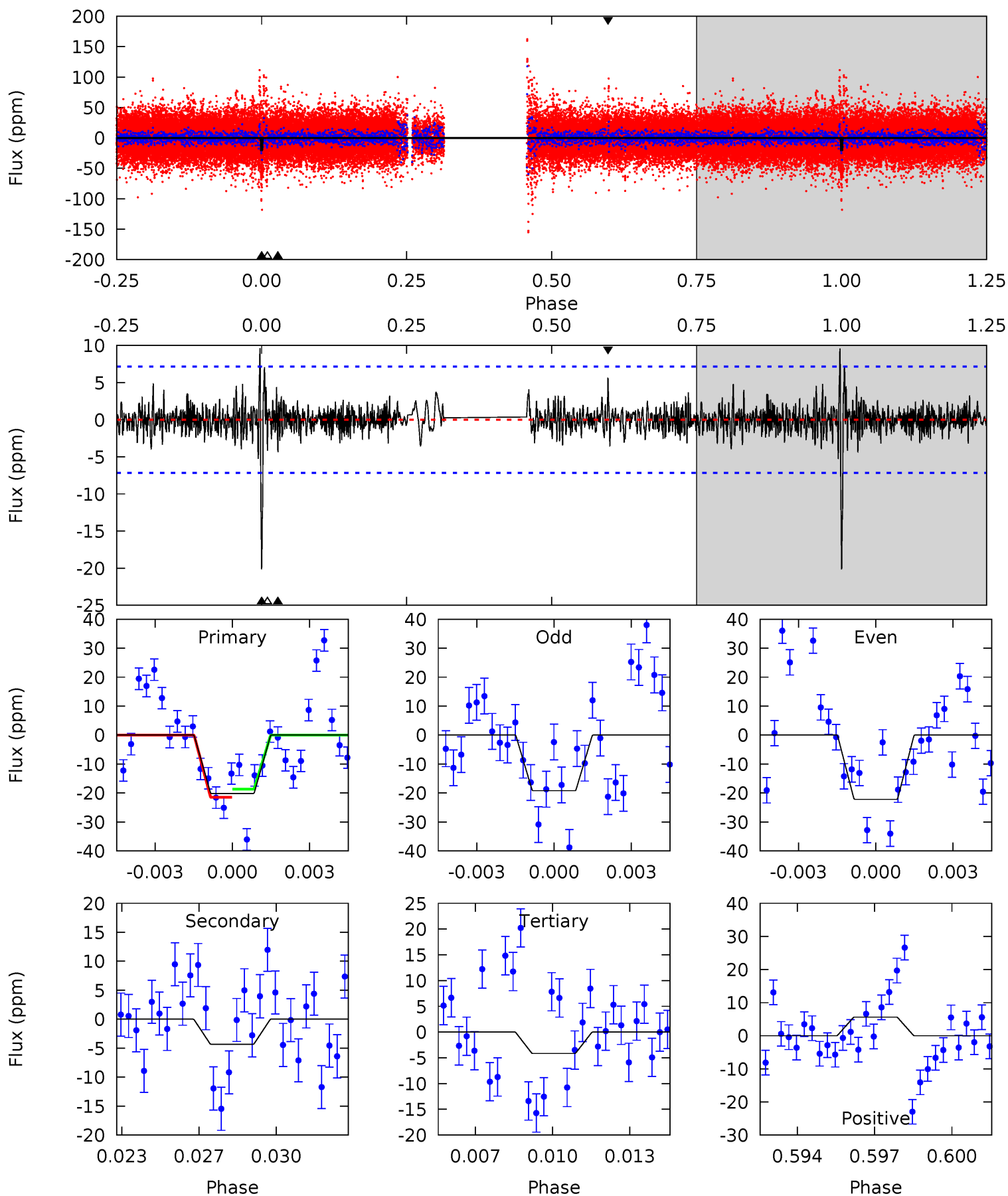
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.6	41.2	33.6	86.2	5.24	2.94	4.54	-17.0	-69.6	7.59	-45.0	10.1	0.91	0.68	2.55



# Alt Model-Shift Uniqueness Test

010910310-01, P = 377.441909 Days, E = 254.474605 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
14.7	3.16	3.04	4.12	5.23	2.94	0.96	11.7	10.6	0.12	-0.97	1.08	1.05	0.32	1.03



### Stellar Parameters For KIC 010910310

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$8679^{+236}_{-406}$	$3.874^{+0.299}_{-0.161}$	$0.070^{+0.250}_{-0.550}$	$2.909^{+0.932}_{-1.139}$	$2.307^{+0.299}_{-0.648}$	$0.132^{+0.303}_{-0.062}$
	+3%/-5%	+8%/-4%	+357%/-786%	+32%/-39%	+13%/-28%	+230%/-47%
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 010910310-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-84 \pm 2$	$1.81^{+0.40}_{-0.41}$	$766^{+63}_{-74}$	$11747^{+1269}_{-1068}$	$25129^{+14603}_{-7731}$
Alt.	$-4 \pm 1$	$1.35^{+0.34}_{-0.31}$	$767^{+65}_{-78}$	$5617^{+592}_{-555}$	$2286^{+1589}_{-990}$

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

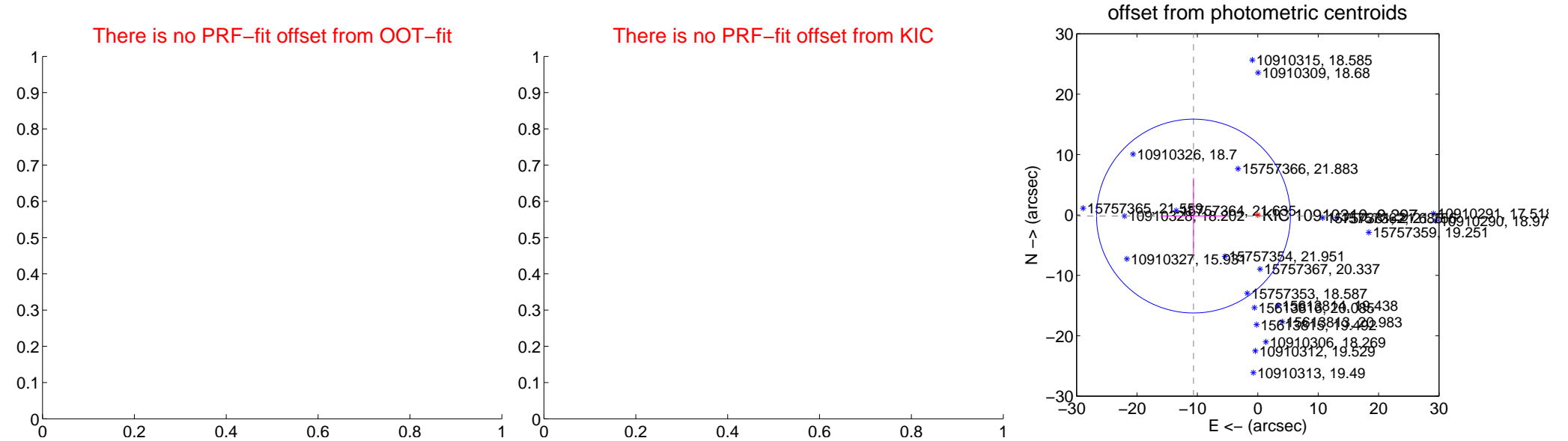
## DV Centroid Data

Supplemental centroid analysis for 010910310-01. **Kepler magnitude: 9.30.** Transit SNR 9.06

**There are 0 quarters with good PRF difference image offsets**

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

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	$10.65 \pm 5.35$	1.99	$10.65 \pm 5.35$	$-0.18 \pm 6.28$



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 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.





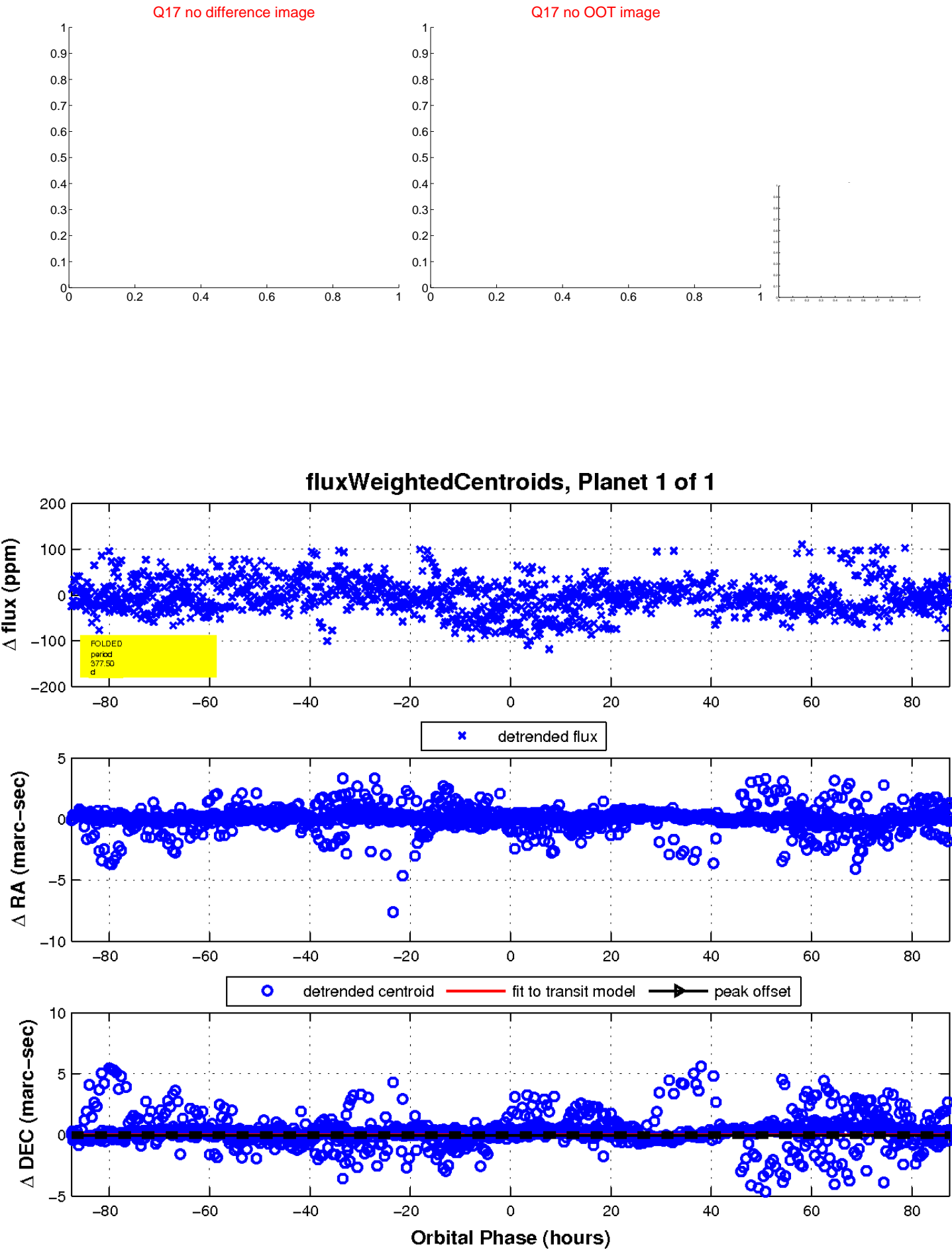
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

