

# KIC 006271953

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006271953-01	OBS	No	450.198639	361.971169	681.5	9.973	7.7	7.8	0.78	5366	2.19	0.39

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006271953-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_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.

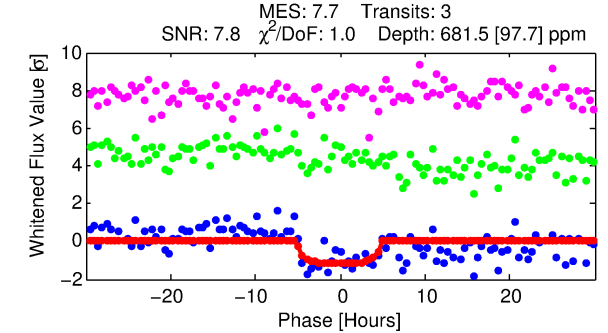
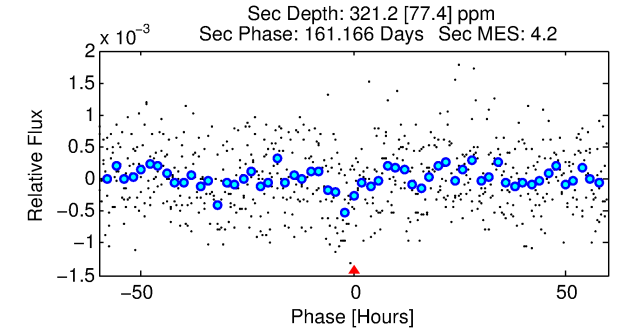
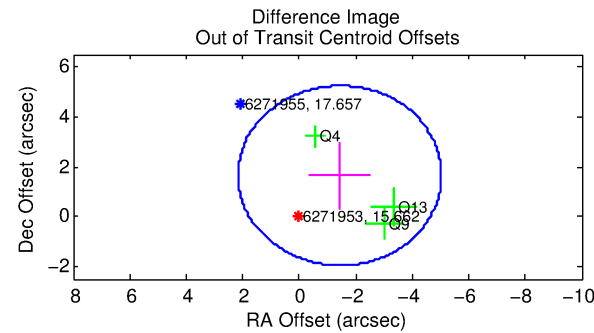
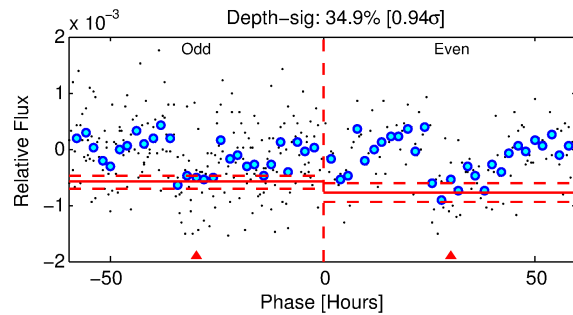
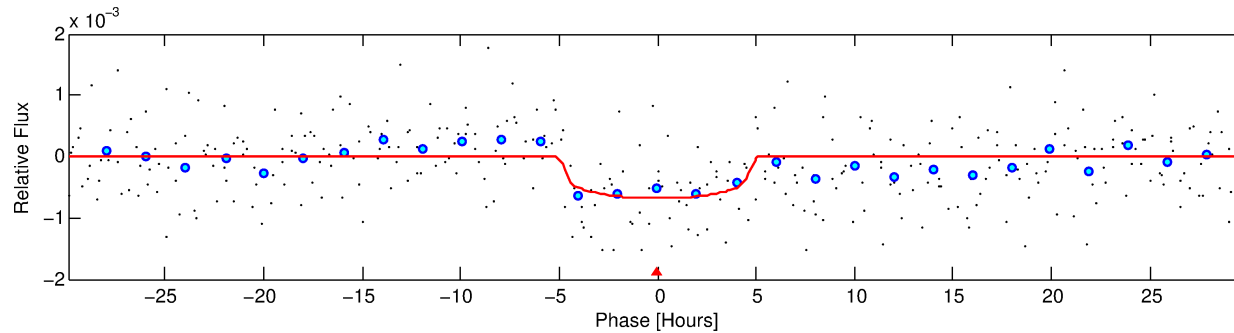
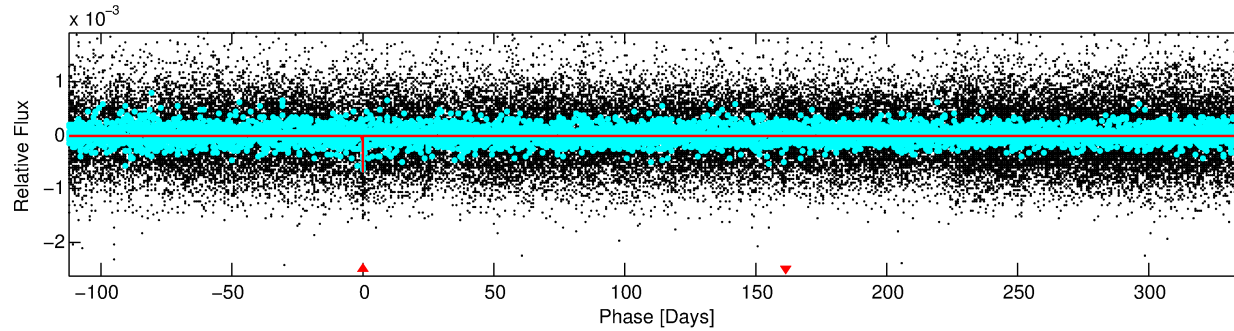
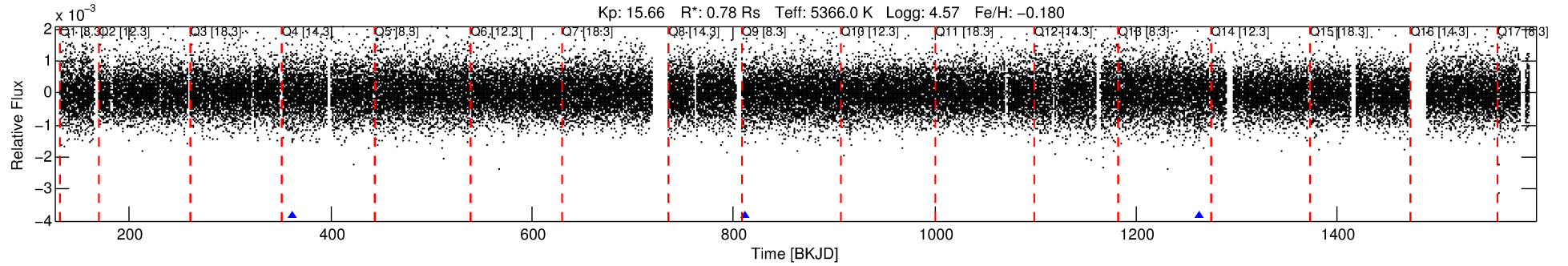
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006271953-01

No Significant Match Found

# DV One-Page Summary

KIC: 6271953 Candidate: 1 of 1 Period: 450.199 d



## DV Fit Results:

Period = 450.19864 [0.01713] d  
Epoch = 361.9712 [0.0211] BKJD  
Rp/R\* = 0.0257 [0.0169]  
a/R\* = 251.80 [655.65]  
b = 0.72 [1.76]  
Seff = 0.39 [0.09]  
Teq = 201 [12] K  
Rp = 2.19 [1.49] Re  
a = 1.0799 [0.1504] AU  
Ag = 42954.12 [58139.27] [0.74σ]  
Teff = 4481 [1507] K [2.84σ]

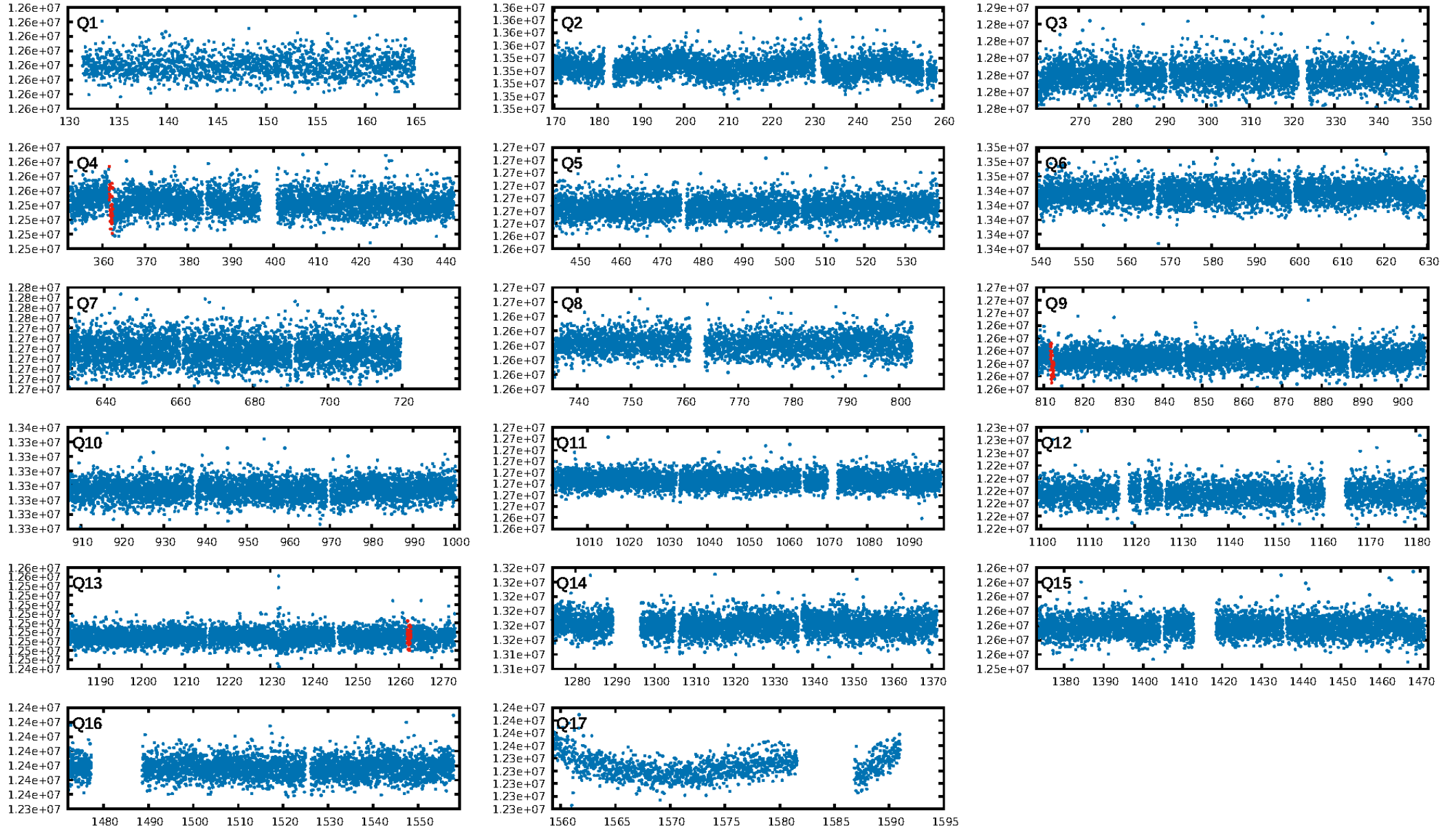
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 18.0%  
ModelChiSquareGof-sig: 97.5%  
Bootstrap-pfa: 9.90e-15  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 3.747  
Centroid-sig: 59.9%  
Centroid-so: 0.533 arcsec [0.26σ]  
OotOffset-rm: 2.178 arcsec [1.81σ]  
KicOffset-rm: 2.351 arcsec [1.75σ]  
OotOffset-st: 0/0/1/2 [3]  
KicOffset-st: 0/0/1/2 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

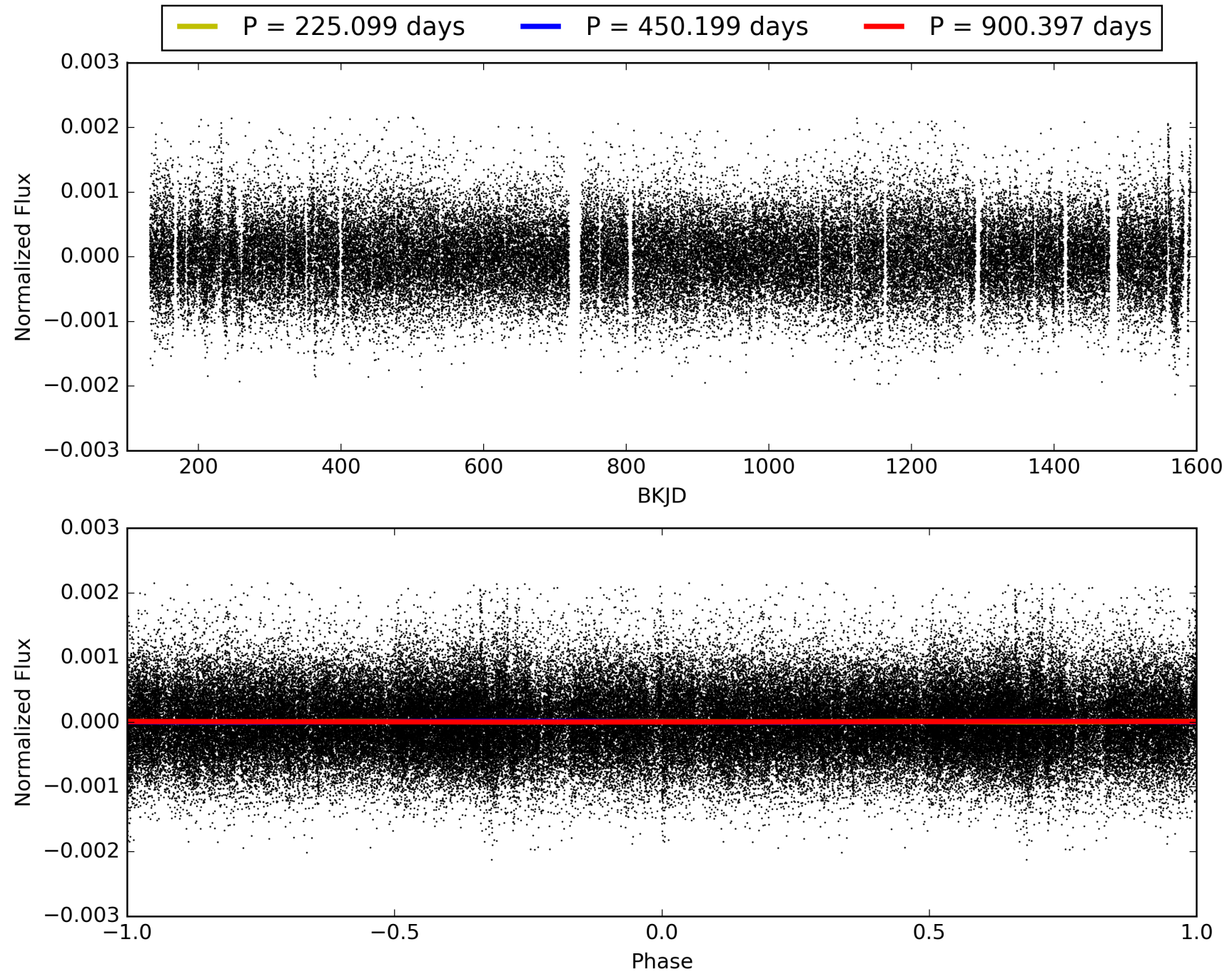
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:18:16 Z

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

# TCE 006271953-01, PDC Light Curves

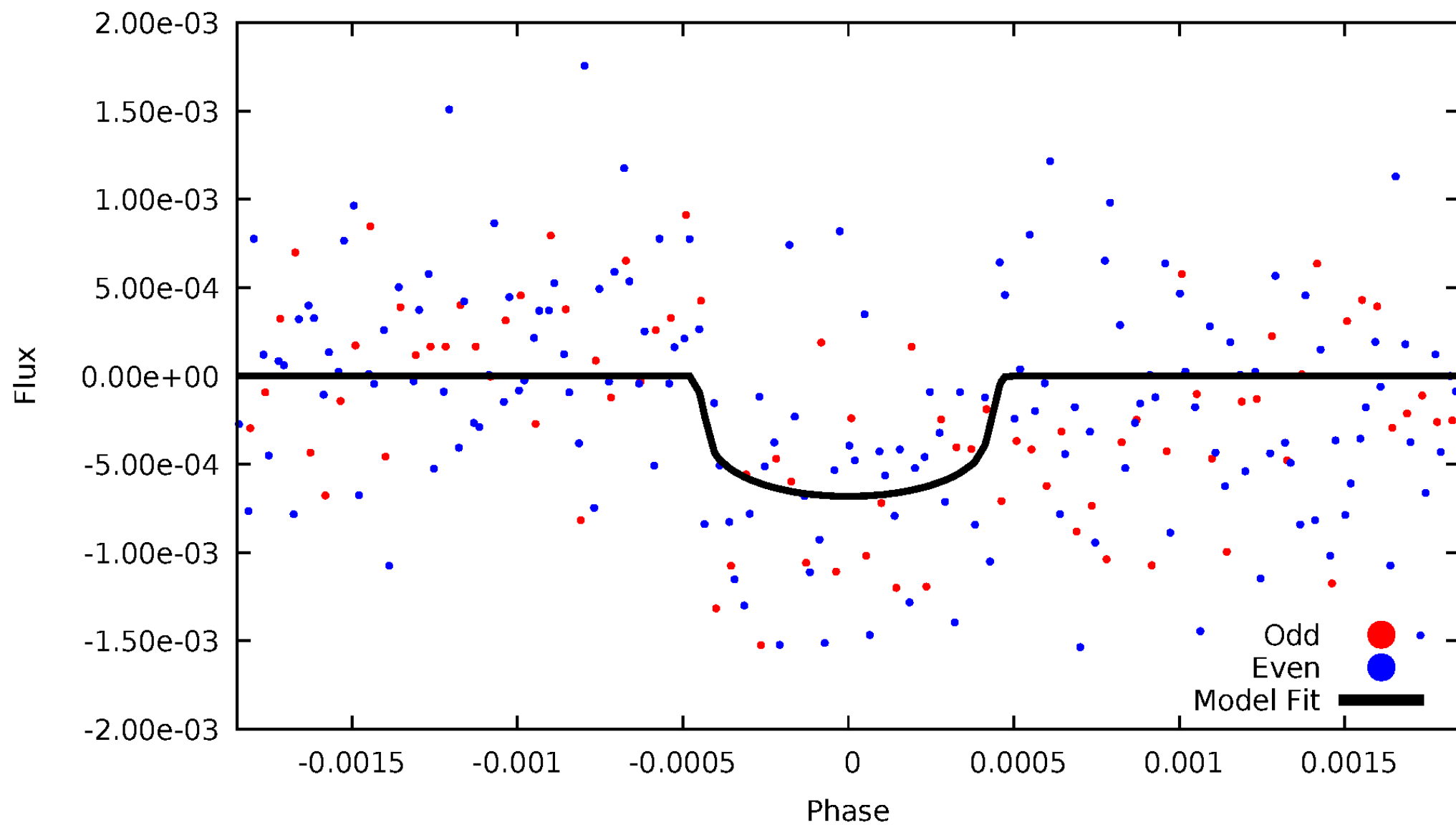


TCE 006271953-01



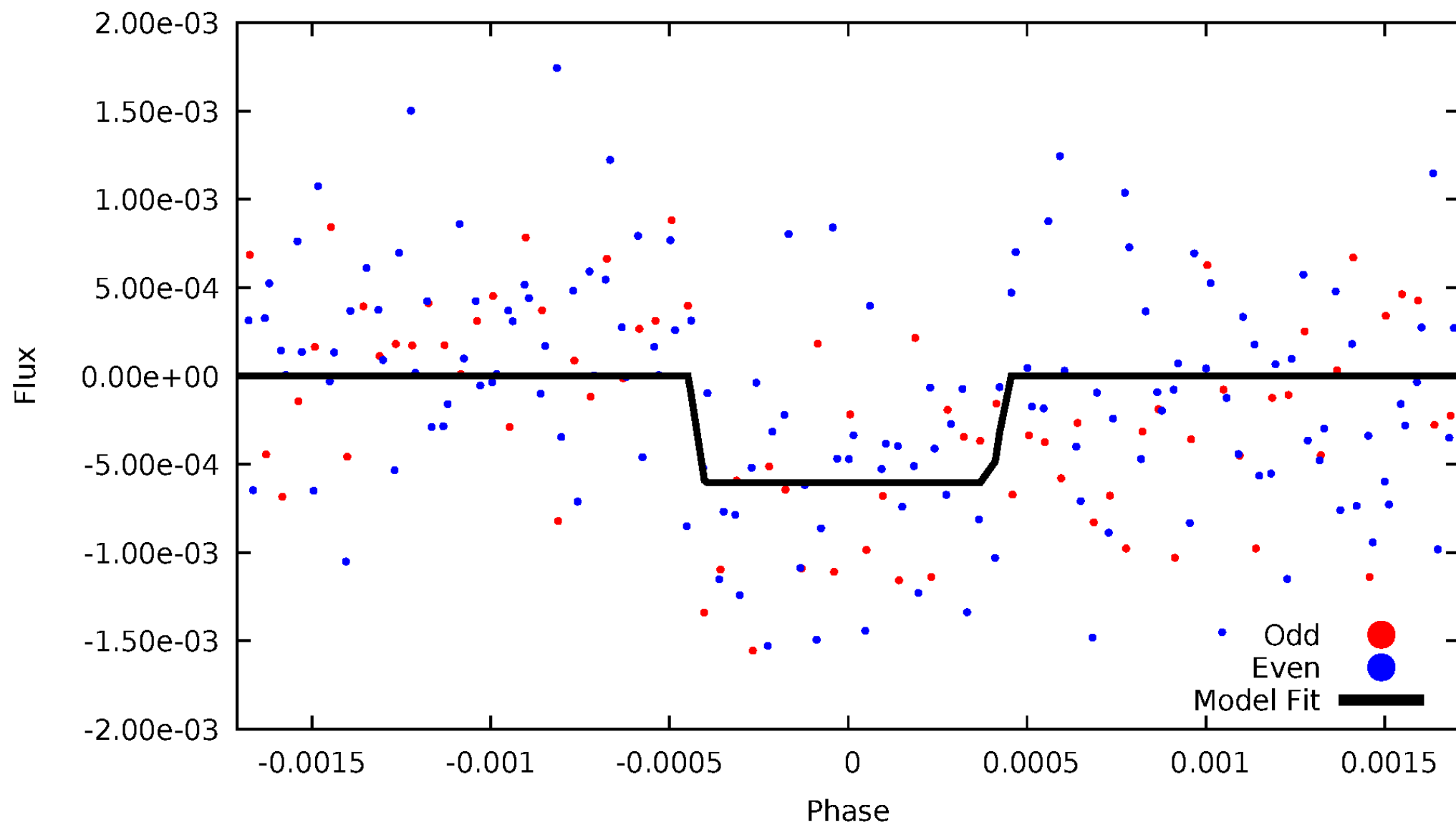
# DV Odd/Even

TCE 006271953-01



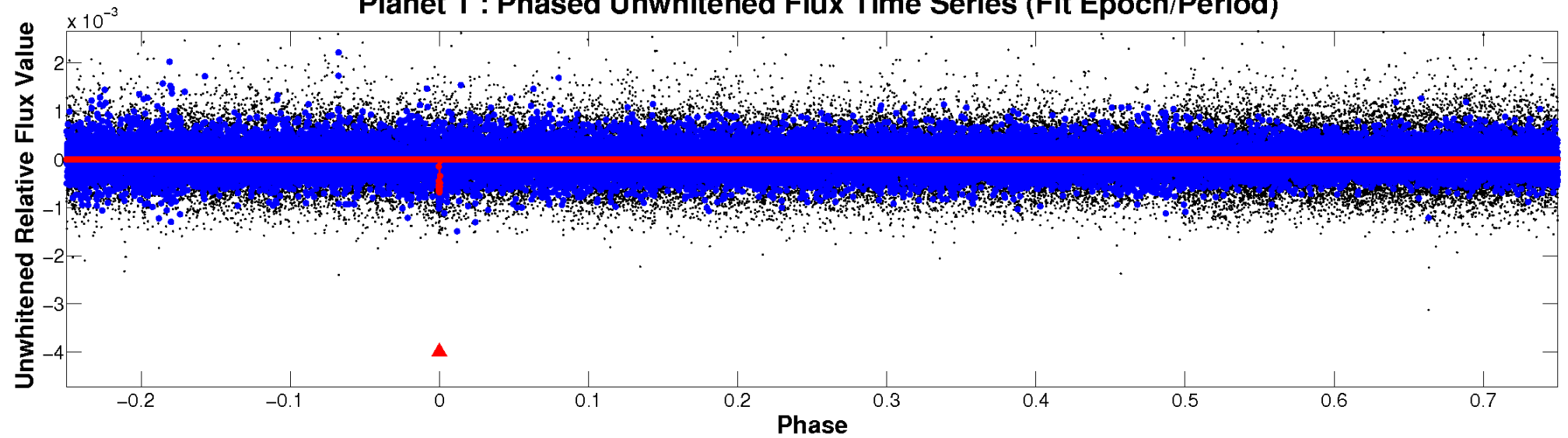
# ALT Odd/Even

TCE 006271953-01

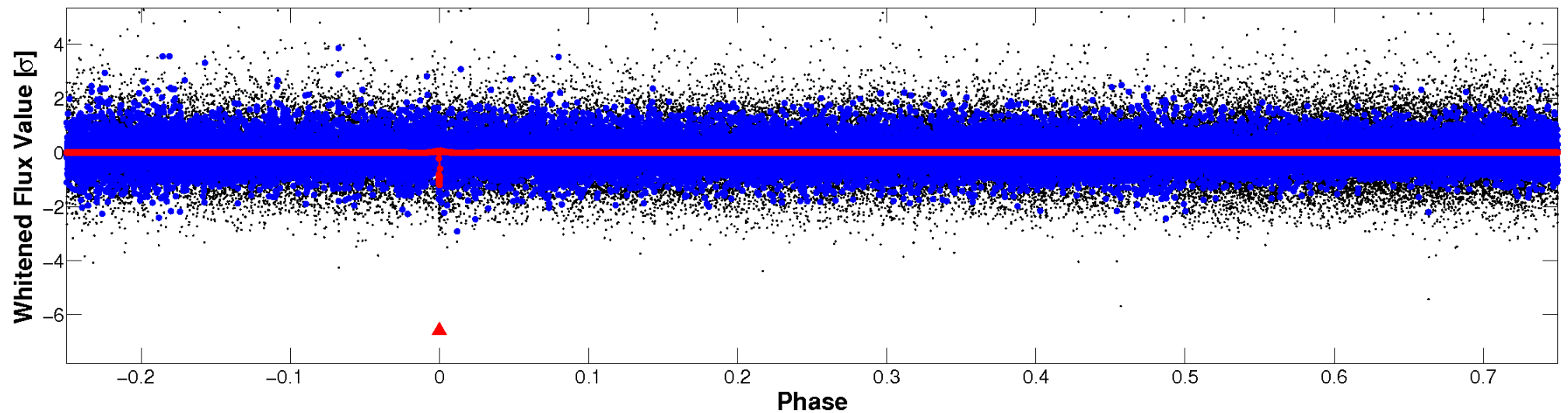


# Non-Whitened Vs. Whitened Light Curve

**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 006271953-01 P=450.198639 Days  $T_0=361.971169$  (BKJD)





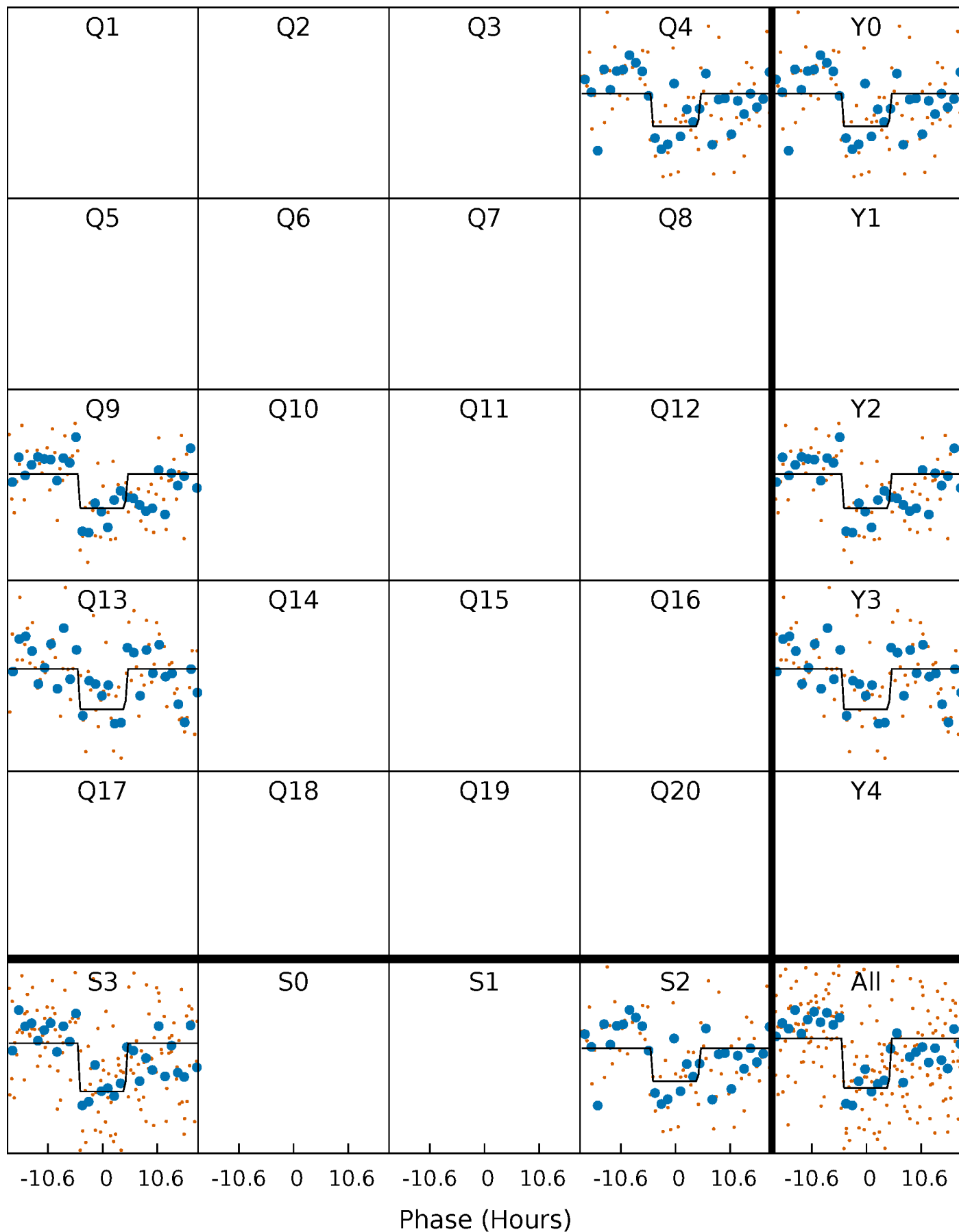
# DV Quarter-Phased Transit Curves

TCE 006271953-01 P=450.198639 Days  $T_0=361.971169$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

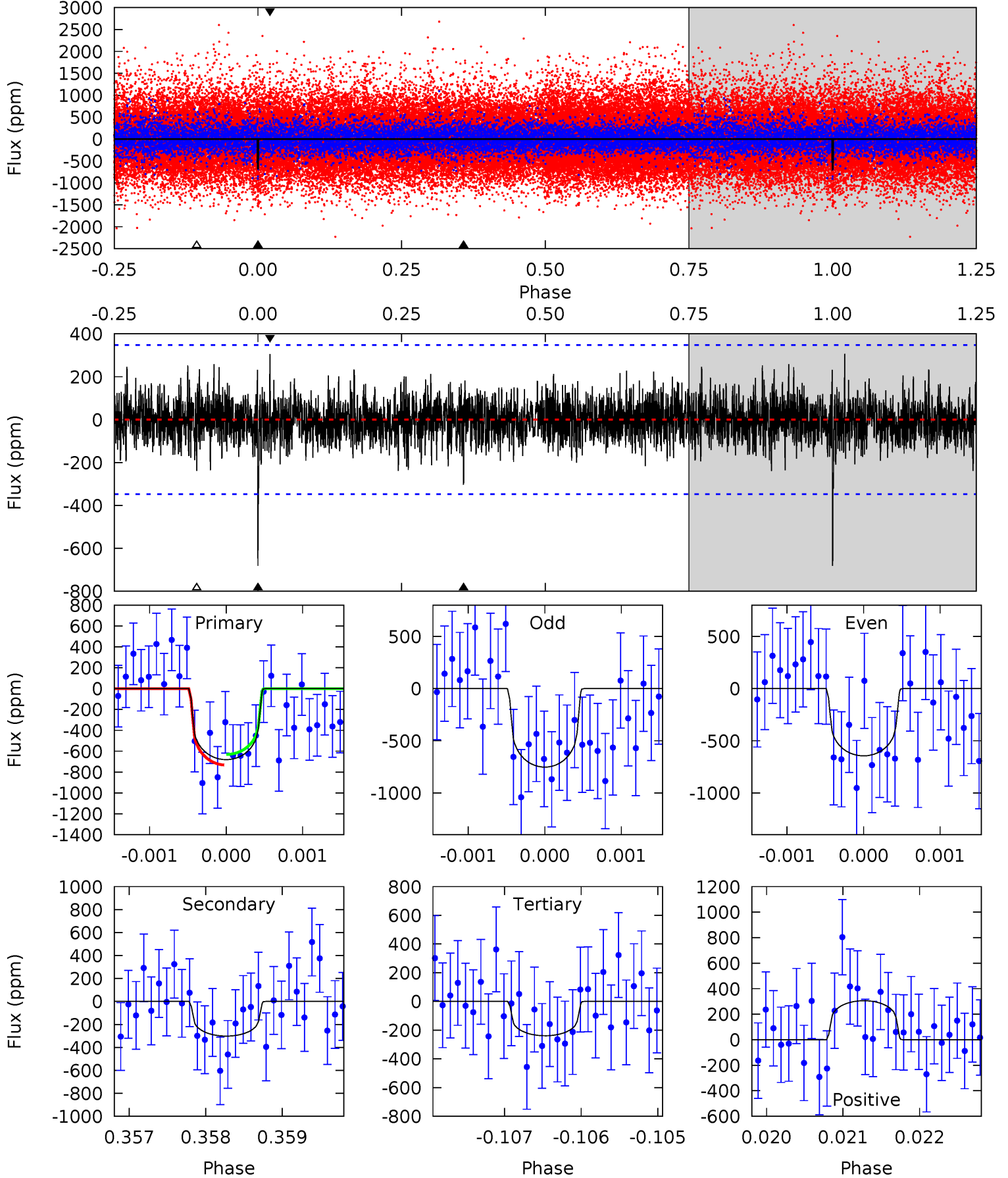
TCE 006271953-01 P=450.192194 Days  $T_0=361.979124$  (BKJD)



# DV Model-Shift Uniqueness Test

006271953-01, P = 450.198639 Days, E = 361.971169 Days

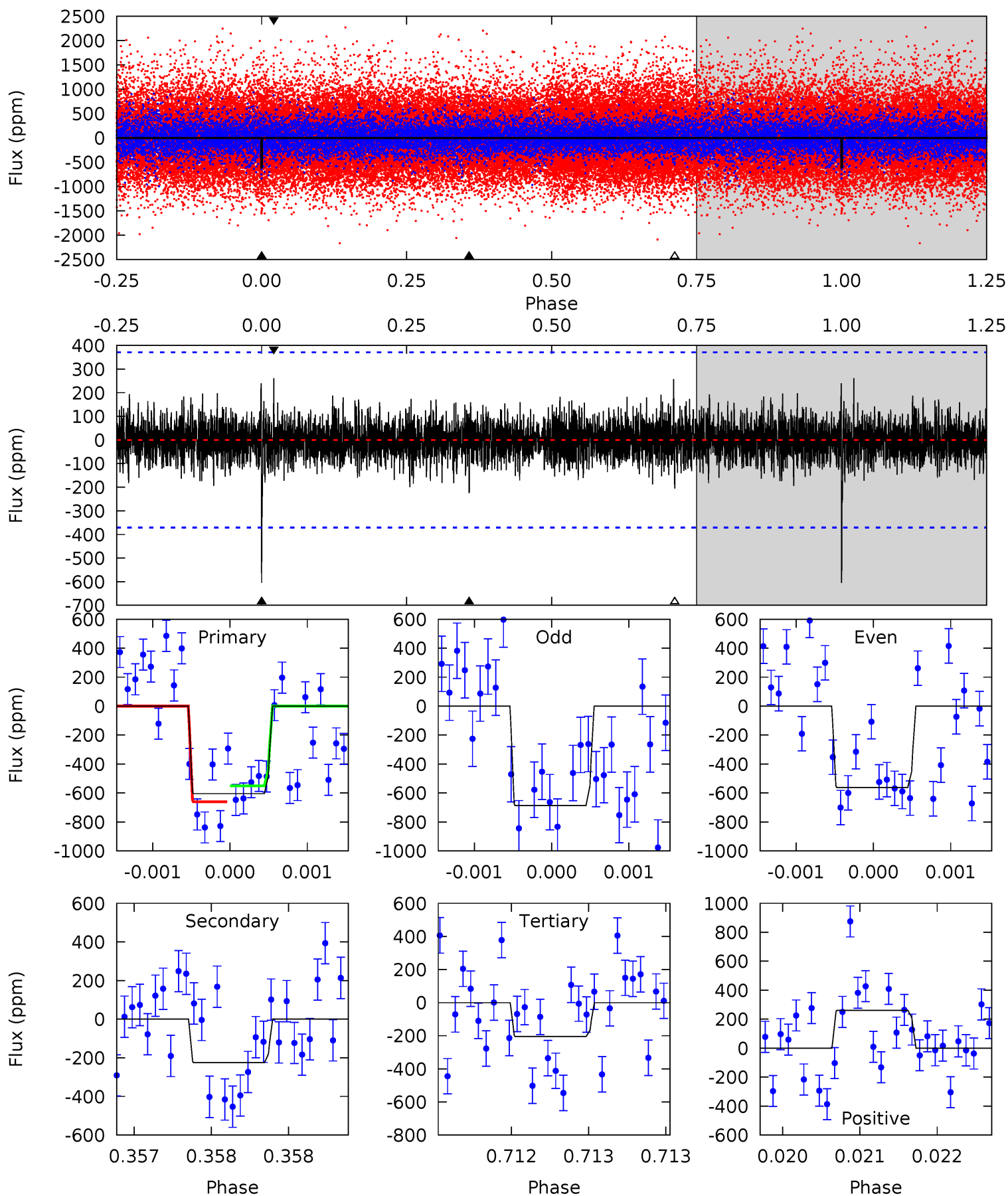
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	4.73	3.75	4.80	5.45	3.30	1.13	6.94	5.89	0.98	-0.07	0.82	0.92	0.31	0.79



# Alt Model-Shift Uniqueness Test

006271953-01, P = 450.192194 Days, E = 361.979124 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
8.94	3.32	3.03	3.87	5.48	3.34	0.85	5.91	5.07	0.29	-0.55	0.90	0.91	0.30	0.81



### Stellar Parameters For KIC 006271953

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5366^{+175}_{-159}$	$4.571^{+0.045}_{-0.105}$	$-0.180^{+0.300}_{-0.300}$	$0.781^{+0.133}_{-0.071}$	$0.829^{+0.087}_{-0.078}$	$2.449^{+0.483}_{-0.841}$
	+3%/-3%	+1%/-2%	+167%/-167%	+17%/-9%	+10%/-9%	+20%/-34%
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 006271953-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-302 \pm 64$	$2.39^{+1.46}_{-1.31}$	$284^{+14}_{-12}$	$4426^{+1952}_{-716}$	$33395^{+136677}_{-20613}$
Alt.	$-224 \pm 68$	$2.39^{+1.32}_{-1.37}$	$285^{+13}_{-12}$	$4174^{+1754}_{-608}$	$24123^{+103696}_{-14788}$

$T_{\text{max}}$  = 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

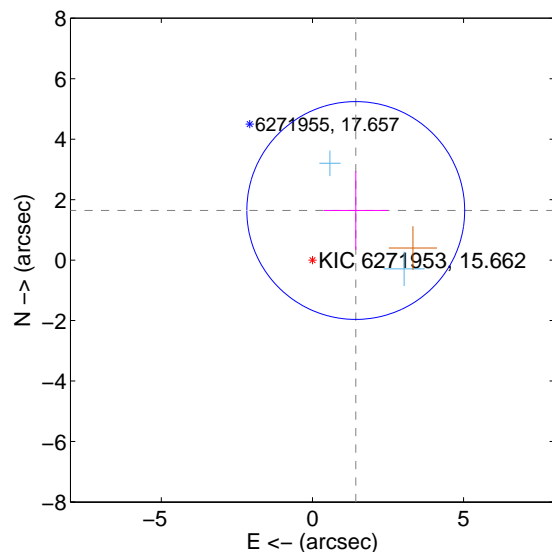
Supplemental centroid analysis for 006271953-01. Kepler magnitude: 15.66. Transit SNR 7.83

There are 2 quarters with good PRF difference image offsets

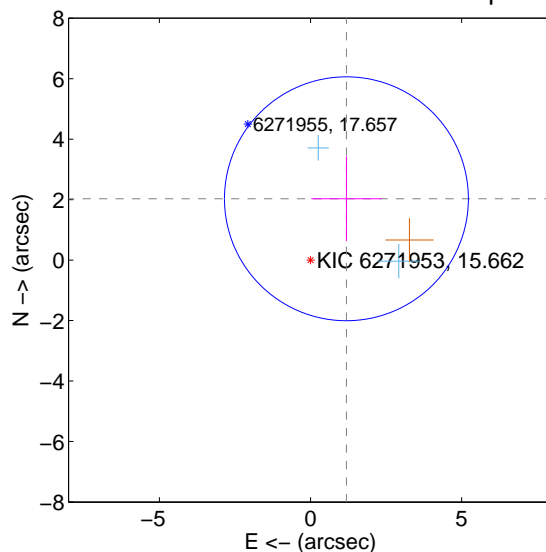
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.178 \pm 1.201$	1.81	$-1.433 \pm 1.057$	$1.640 \pm 1.300$
PRF-fit source offset from KIC position	$2.351 \pm 1.345$	1.75	$-1.187 \pm 1.160$	$2.029 \pm 1.402$
photometric centroid source offset	$0.53 \pm 2.05$	0.26	$-0.33 \pm 1.79$	$-0.42 \pm 2.19$

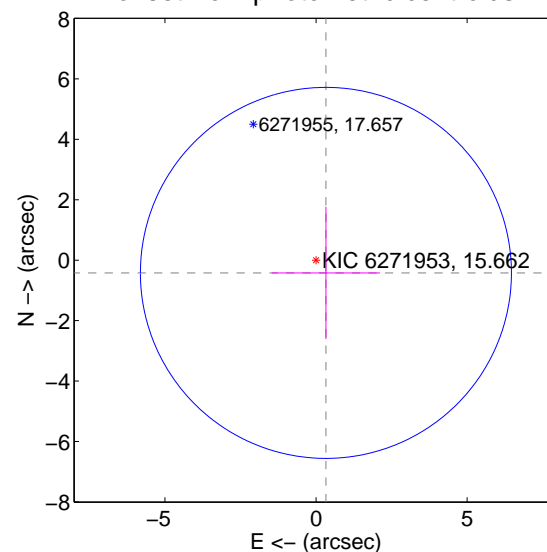
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

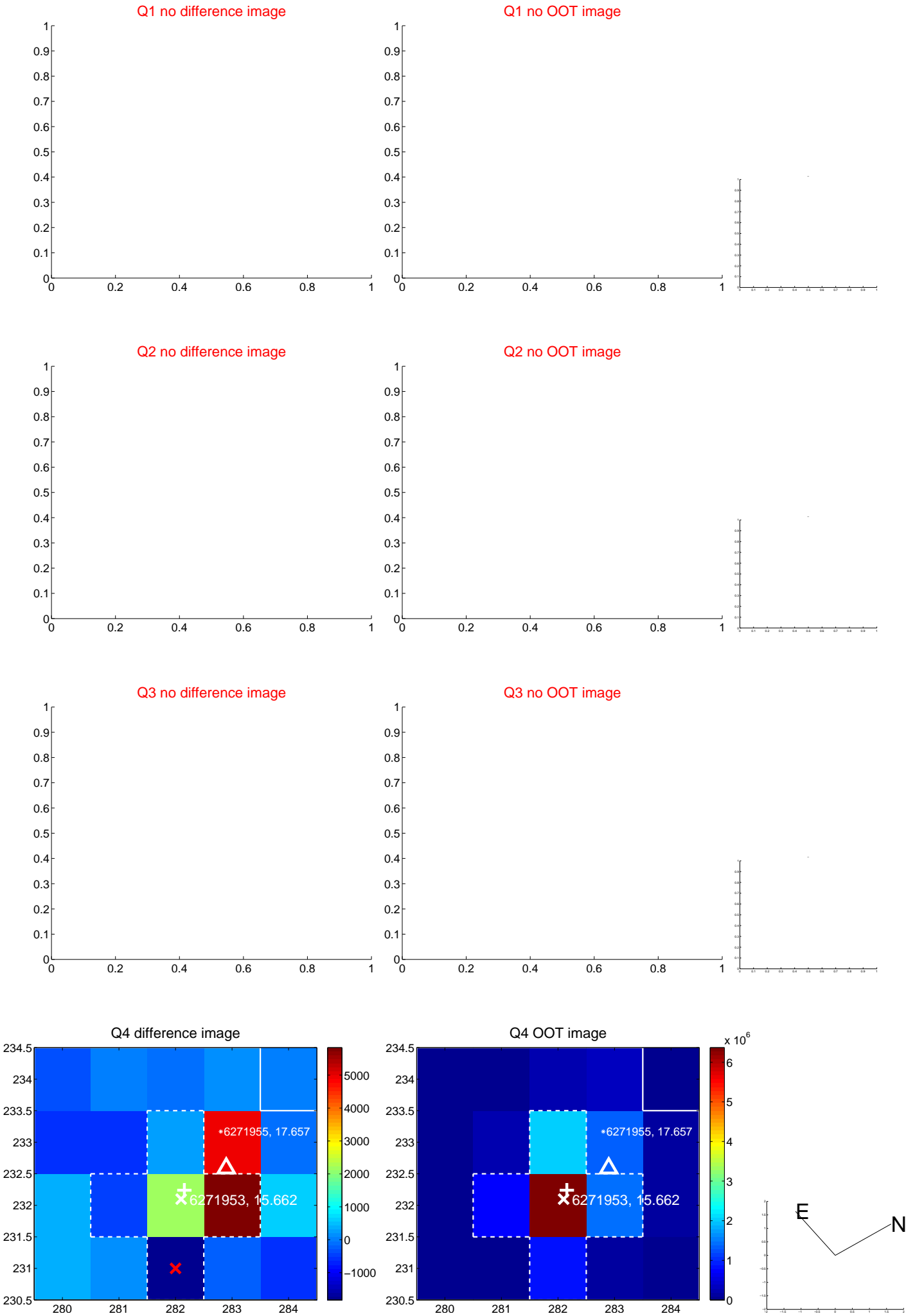


offset from photometric centroids



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.

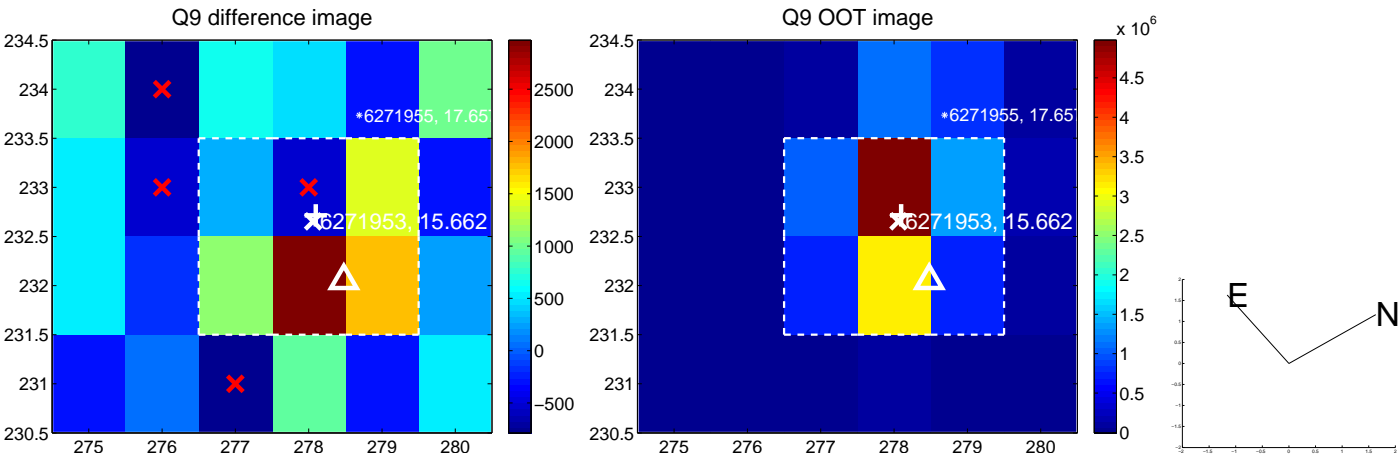




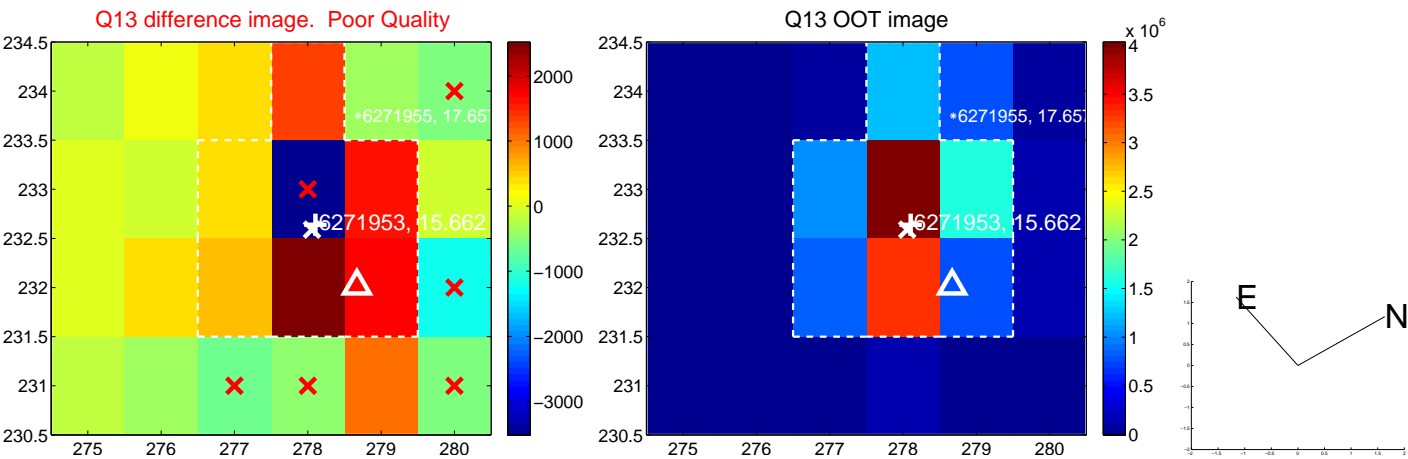
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



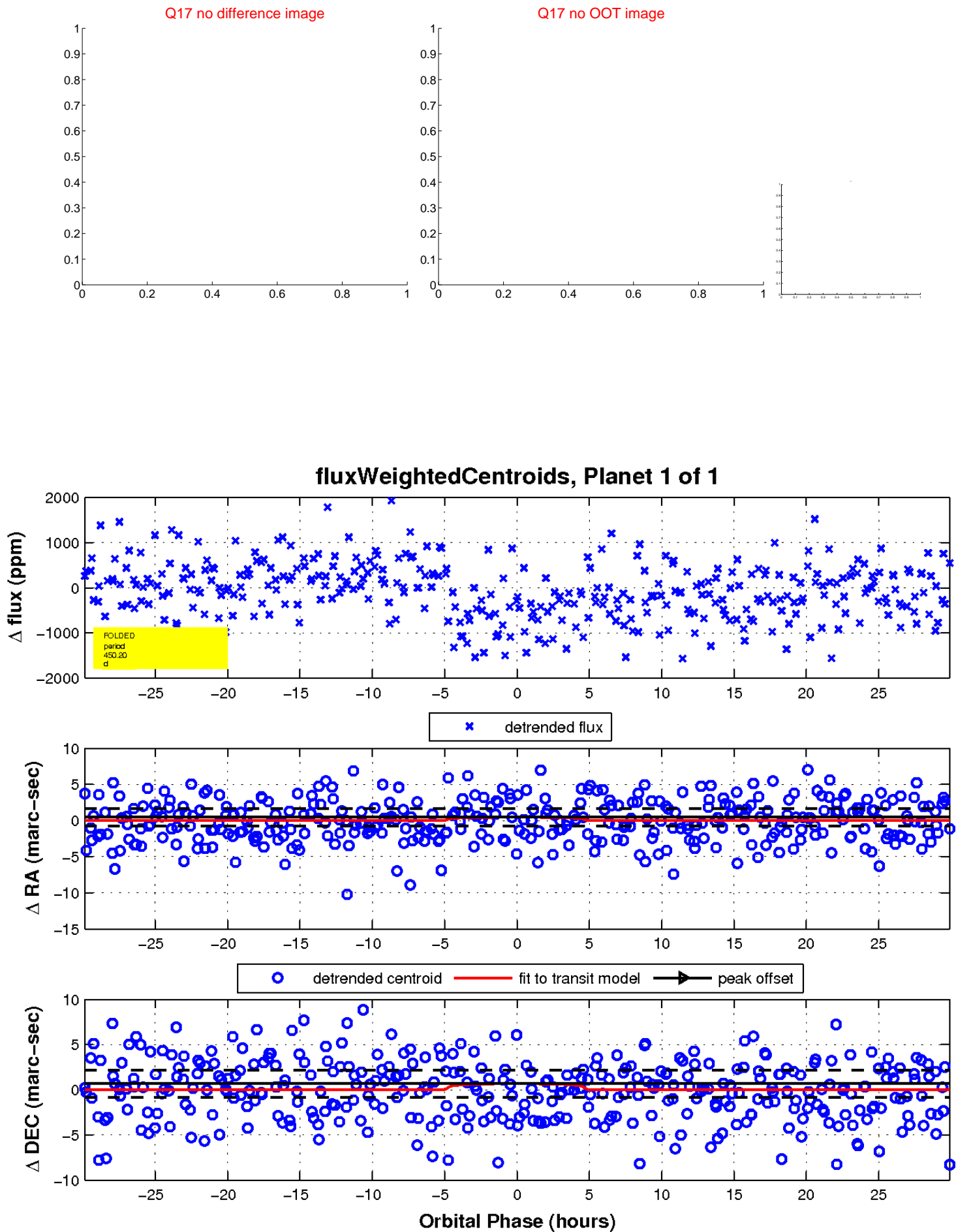
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

