

# KIC 011559725

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011559725-01	OBS	No	424.922547	209.530218	80.9	16.539	10.4	8.5	0.81	5653	0.84	0.56

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011559725-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—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.

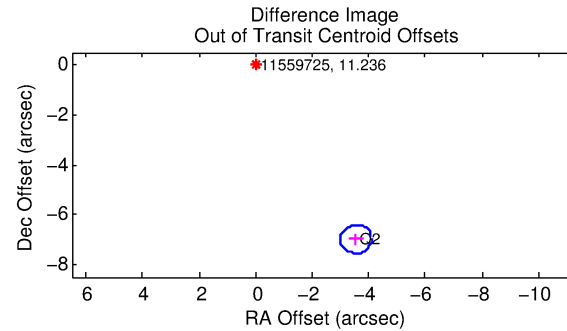
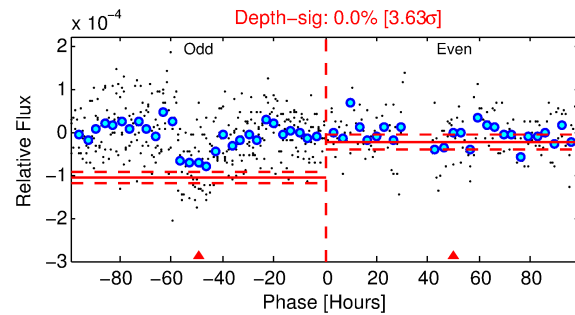
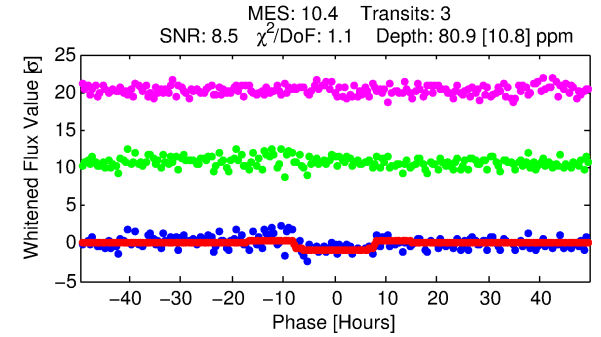
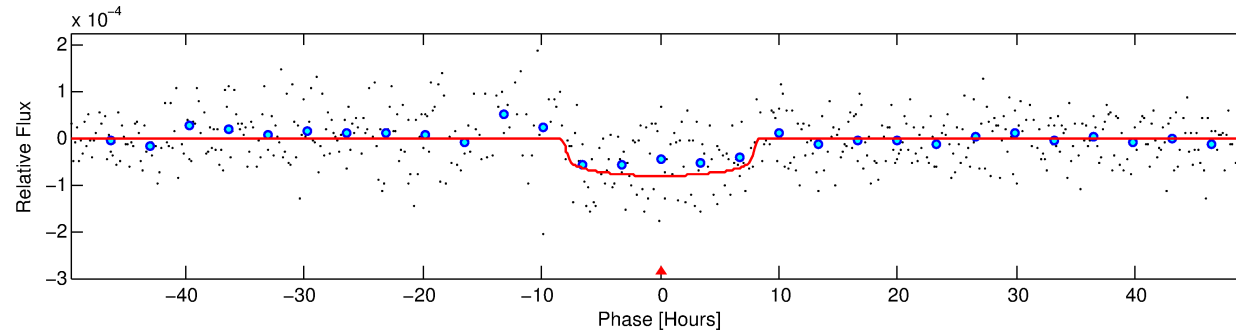
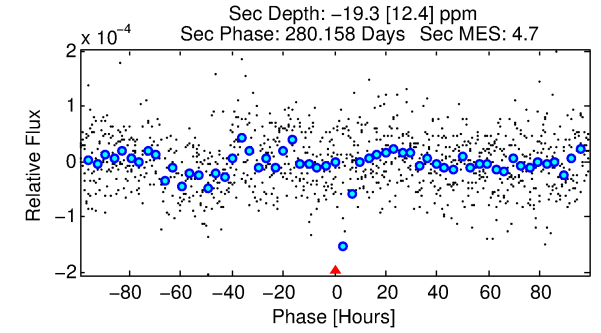
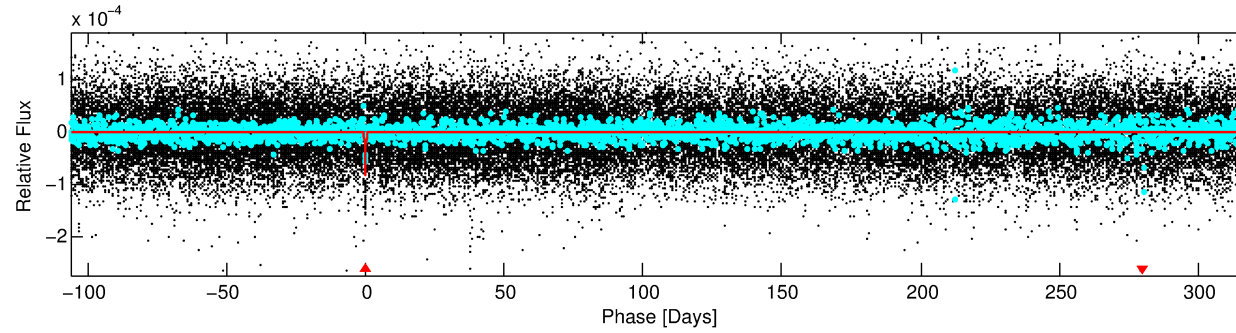
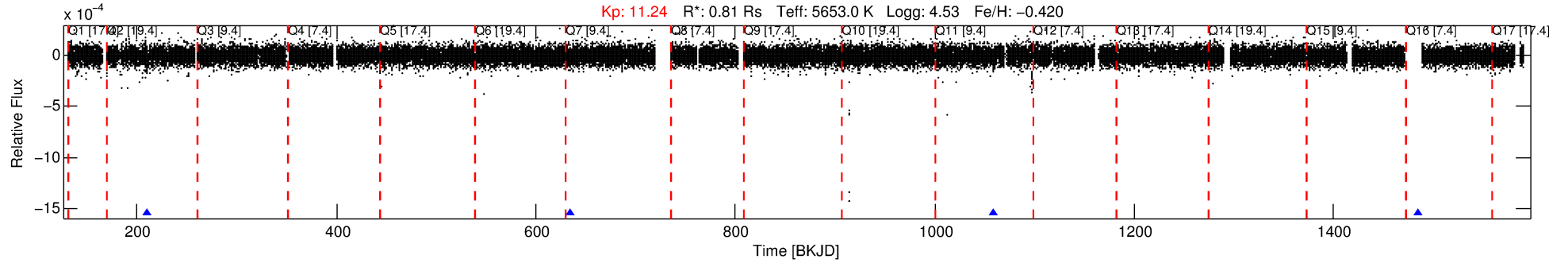
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011559725-01

No Significant Match Found

# DV One-Page Summary

KIC: 11559725 Candidate: 1 of 1 Period: 424.923 d



## DV Fit Results:

Period = 424.92255 [0.01424] d  
Epoch = 209.5302 [0.0187] BKJD  
Rp/R\* = 0.0095 [0.0020]  
a/R\* = 102.04 [95.43]  
b = 0.87 [0.27]  
Seff = 0.56 [0.13]  
Teq = 221 [13] K  
Rp = 0.84 [0.22] Re  
a = 1.0325 [0.1448] AU  
Ag = N/A  
Teffp = N/A

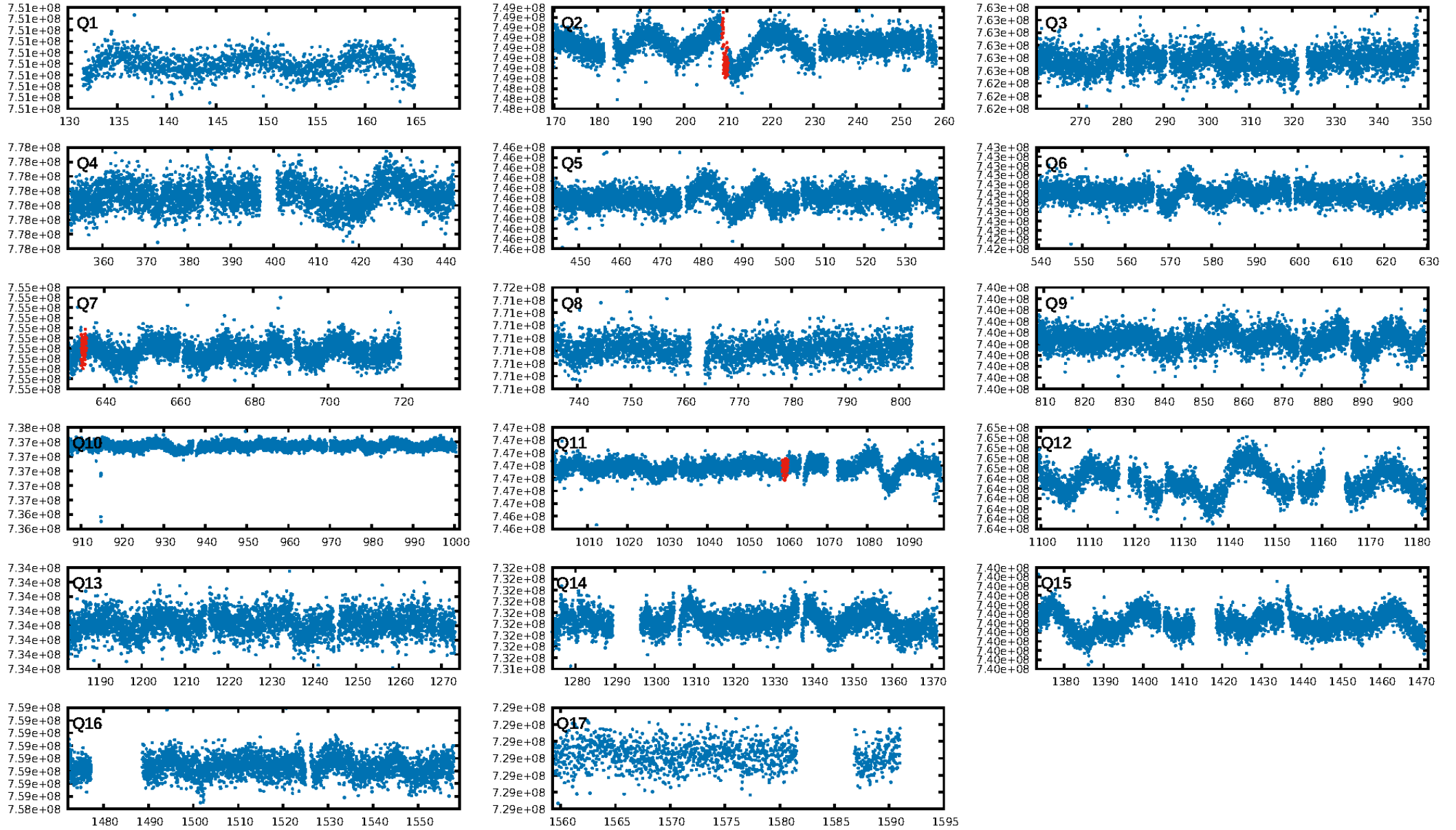
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 59.2%  
Bootstrap-pfa: 1.14e-20  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 2.591  
Centroid-sig: 46.5%  
Centroid-so: 2.168 arcsec [0.93σ]  
OotOffset-rm: 7.832 arcsec [41.89σ]  
KicOffset-rm: 7.292 arcsec [38.93σ]  
OotOffset-st: 1/0/0/0 [1]  
KicOffset-st: 1/0/0/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [2/2]

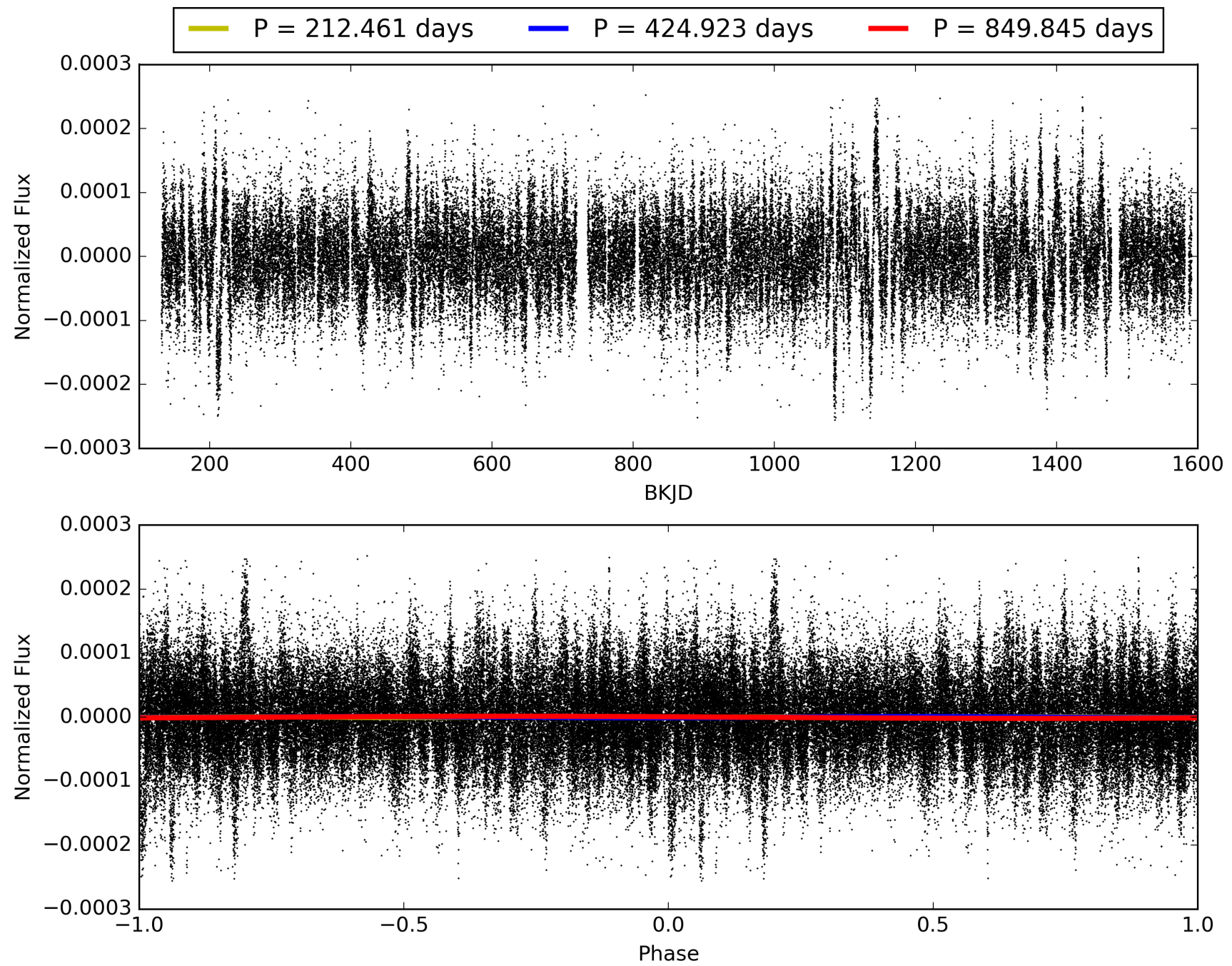
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:46:02 Z

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

# TCE 011559725-01, PDC Light Curves

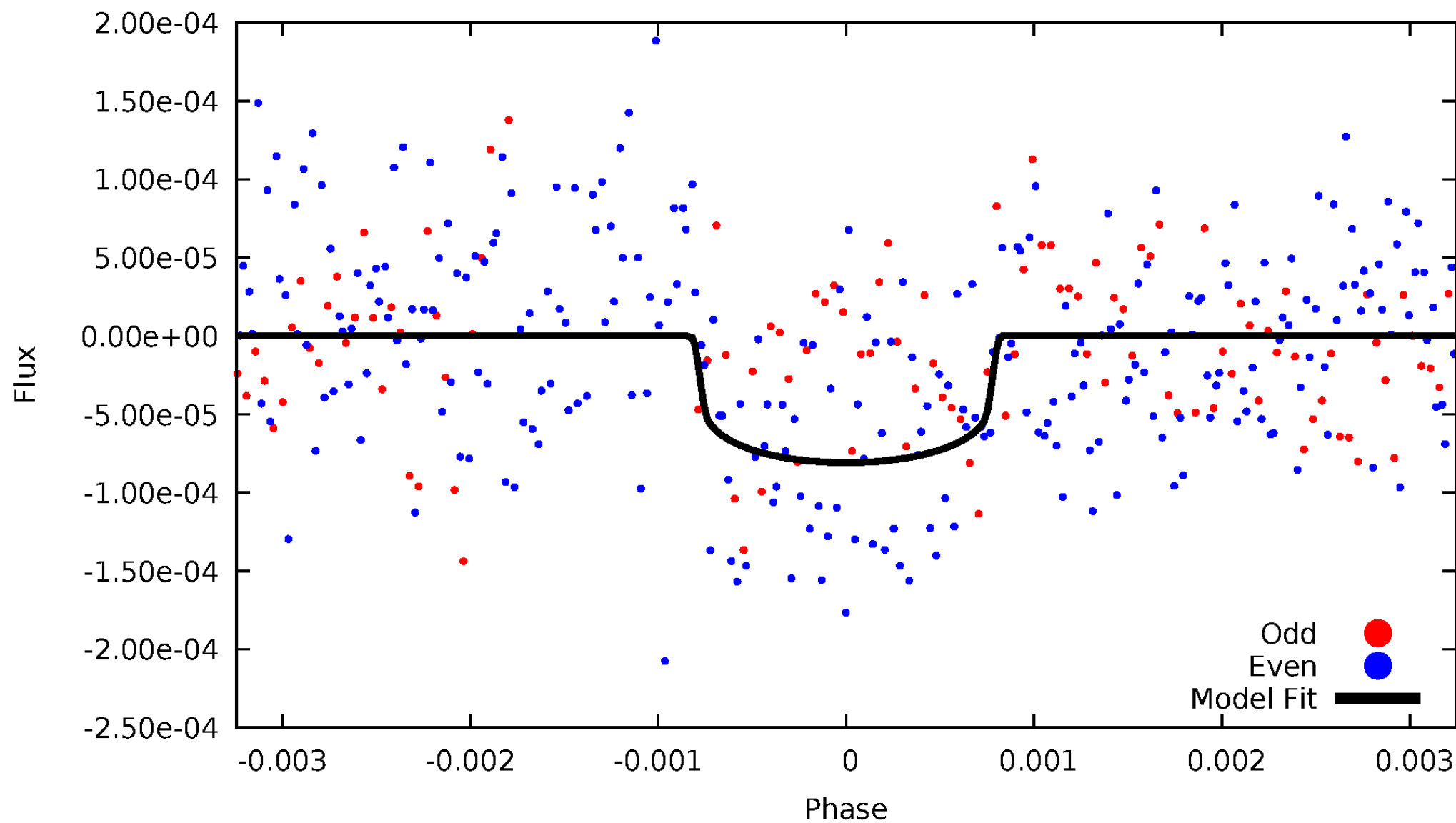


# TCE 011559725-01



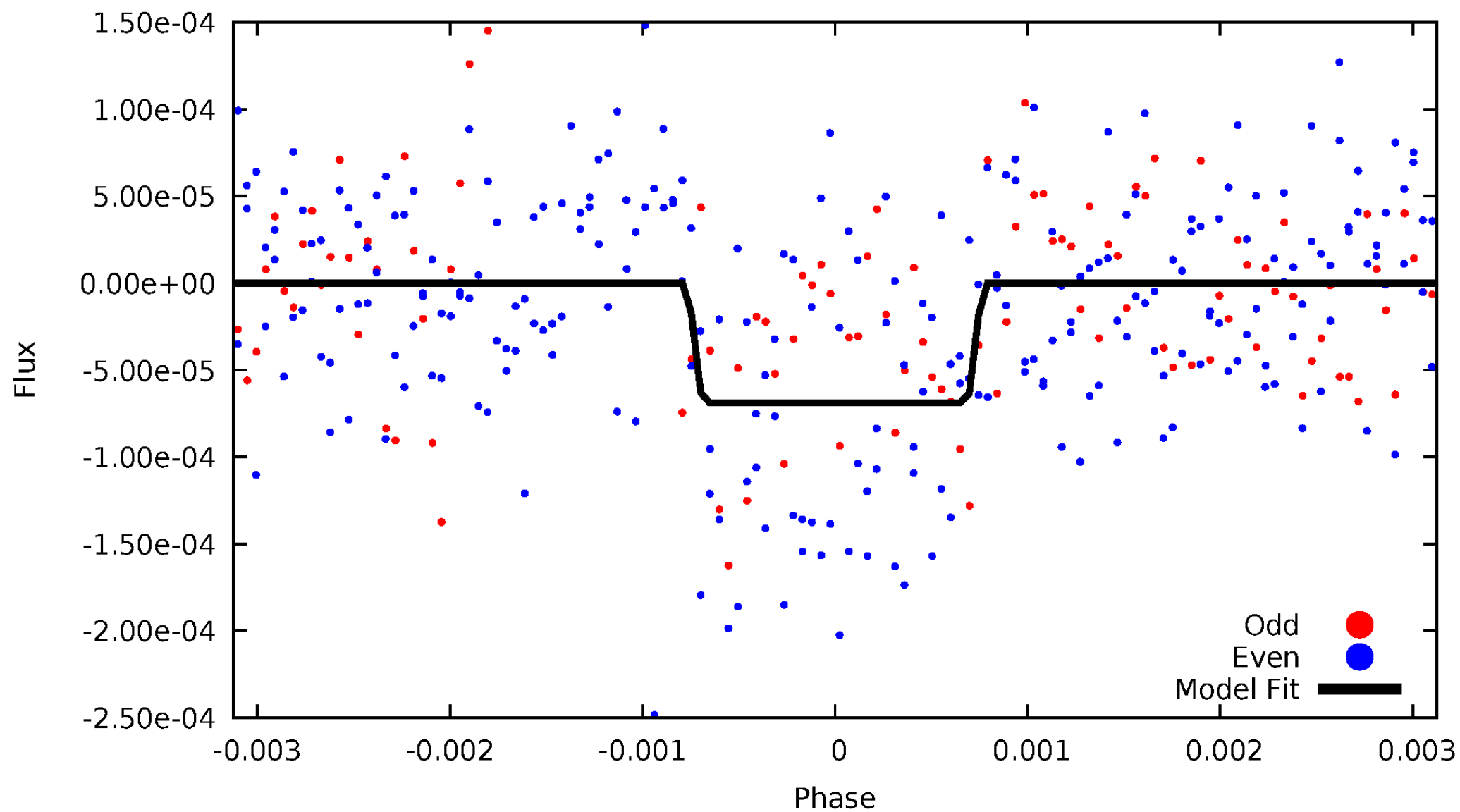
# DV Odd/Even

TCE 011559725-01



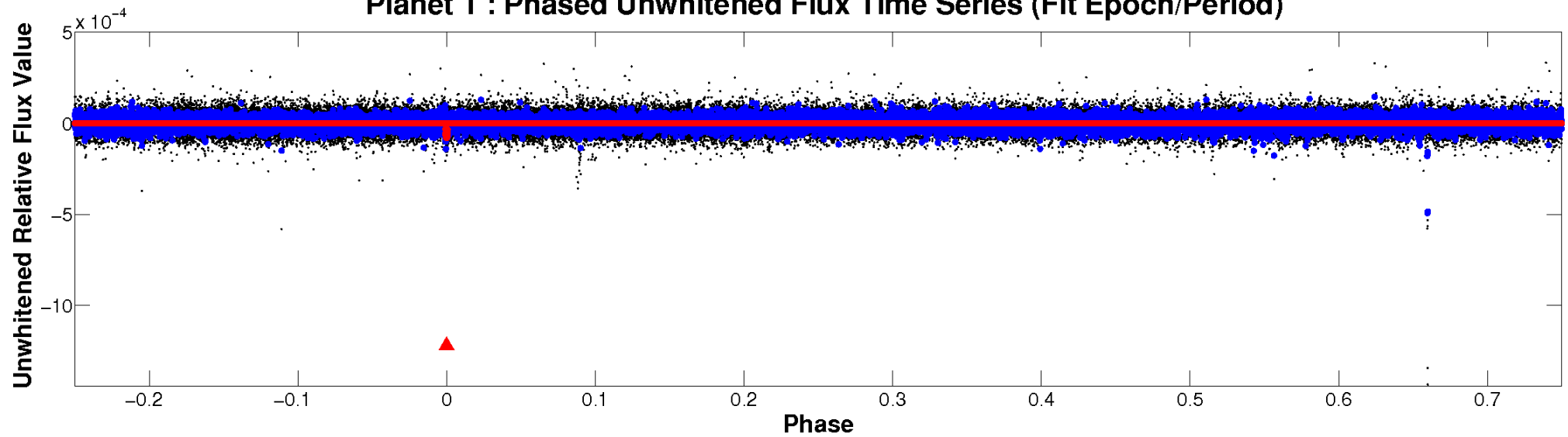
# ALT Odd/Even

TCE 011559725-01

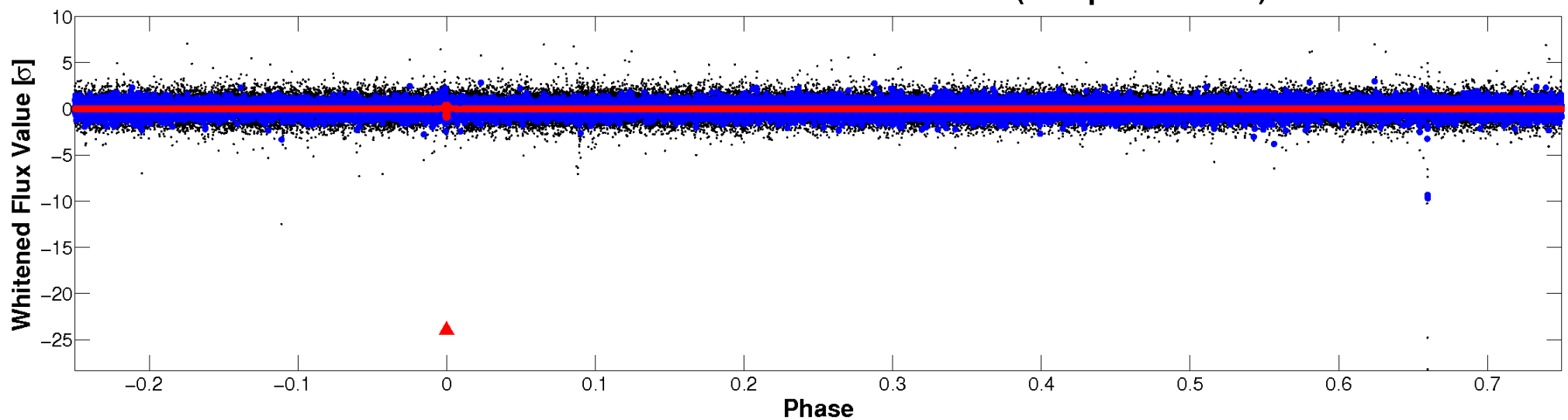


# Non-Whitened Vs. Whitened Light Curve

**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 011559725-01 P=424.922548 Days  $T_0=209.530218$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 011559725-01 P=424.922548 Days  $T_0=209.530218$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

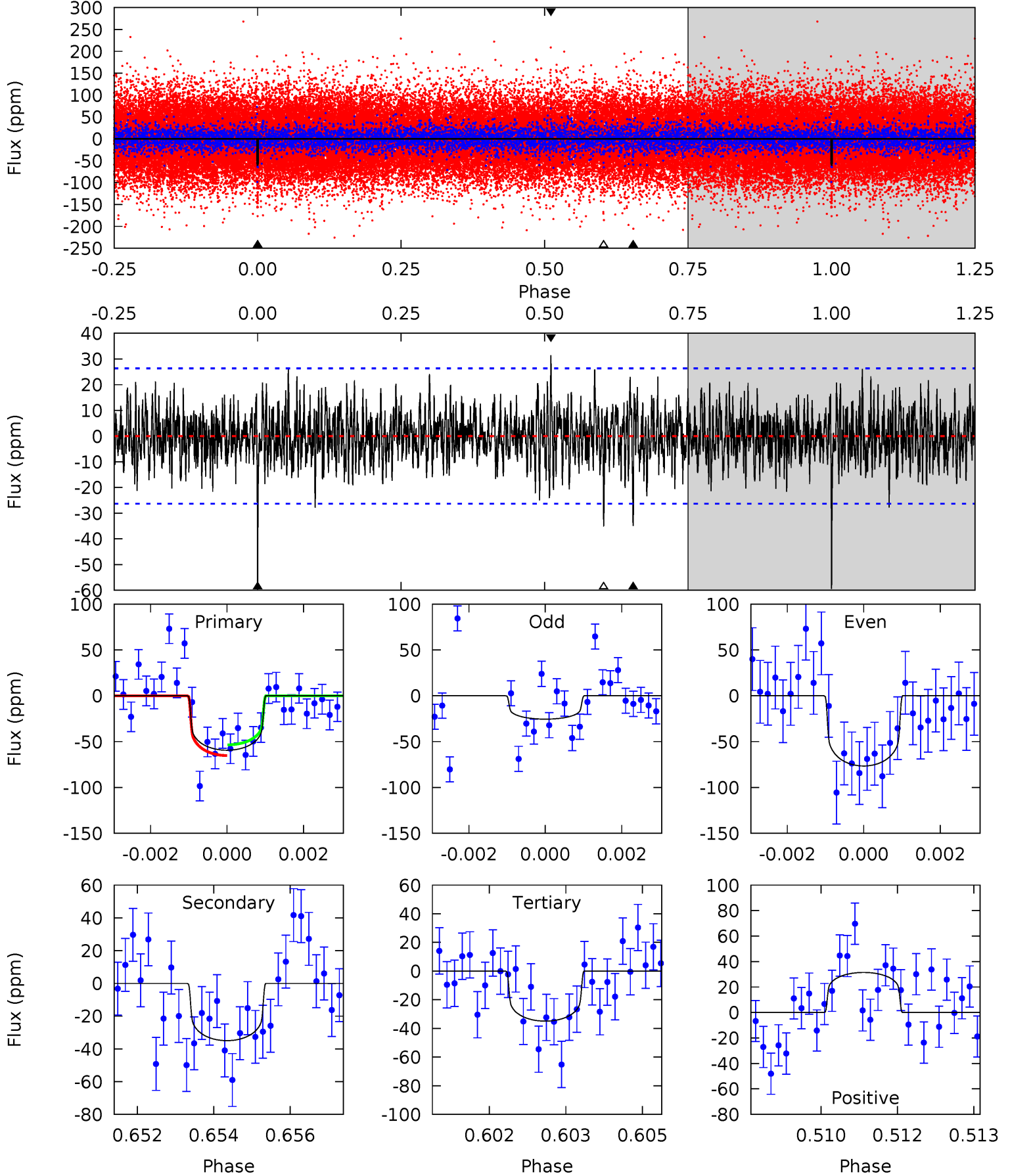
TCE 011559725-01 P=424.936314 Days  $T_0=209.519200$  (BKJD)



# DV Model-Shift Uniqueness Test

011559725-01, P = 424.922548 Days, E = 209.530218 Days

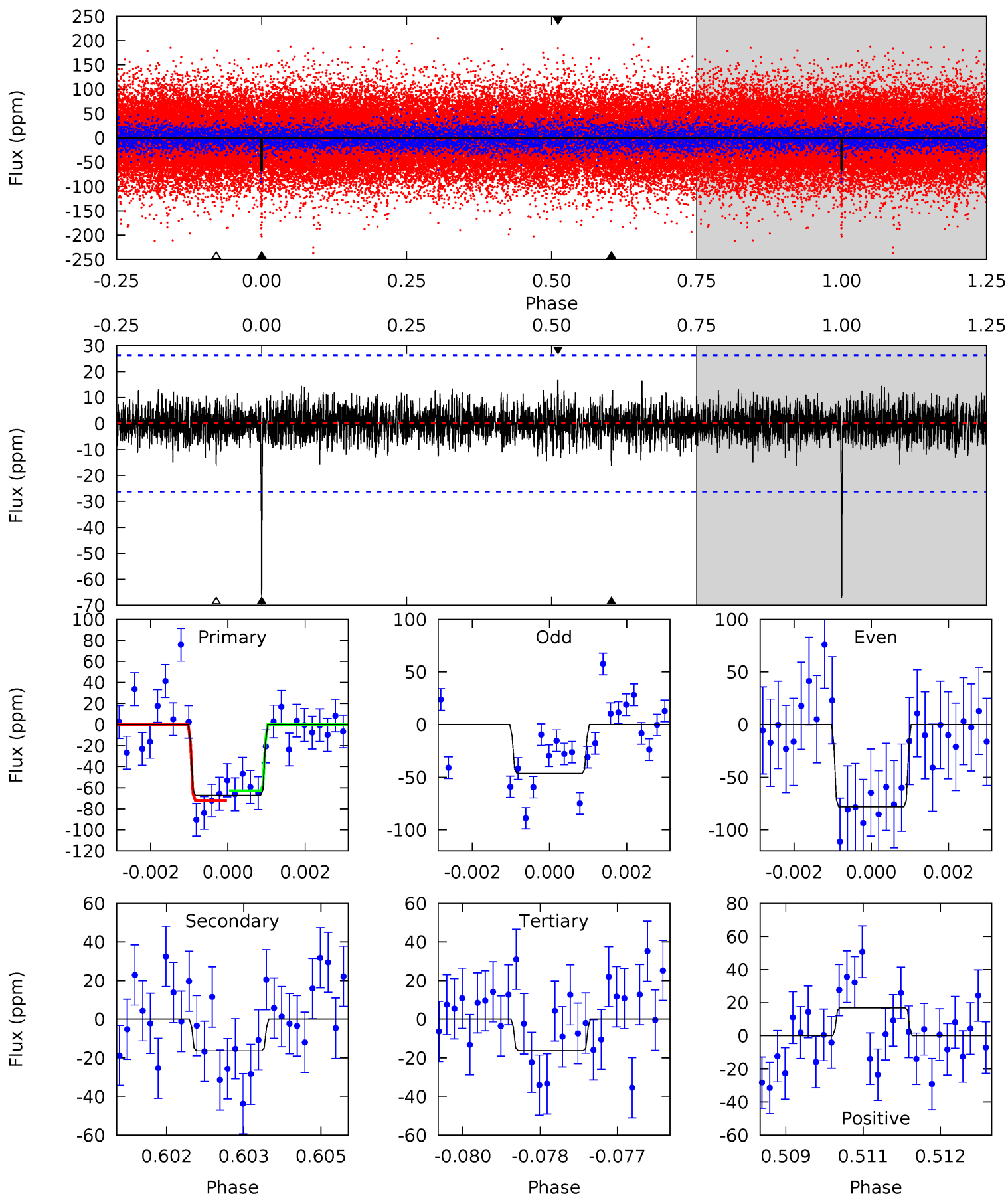
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	7.13	7.11	6.40	5.36	3.15	1.64	4.99	5.70	0.01	0.72	4.93	1.32	0.35	1.19



# Alt Model-Shift Uniqueness Test

011559725-01, P = 424.936314 Days, E = 209.519200 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	3.34	3.33	3.44	5.37	3.17	0.89	10.4	10.3	0.01	-0.10	3.09	1.44	0.20	0.94



### Stellar Parameters For KIC 011559725

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5653^{+152}_{-152}$	$4.531^{+0.068}_{-0.110}$	$-0.420^{+0.300}_{-0.300}$	$0.810^{+0.136}_{-0.079}$	$0.811^{+0.096}_{-0.072}$	$2.153^{+0.630}_{-0.687}$
	+3%/-3%	+2%/-2%	+71%/-71%	+17%/-10%	+12%/-9%	+29%/-32%
Source	PHO1	FLK73	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 011559725-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-35 \pm 5$	$0.84^{+0.20}_{-0.18}$	$311^{+15}_{-13}$	$4635^{+470}_{-372}$	$28449^{+18360}_{-9720}$
Alt.	$-16 \pm 5$	$0.75^{+0.19}_{-0.21}$	$310^{+14}_{-12}$	$4211^{+533}_{-451}$	$17521^{+15717}_{-8217}$

$T_{max}$  = 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

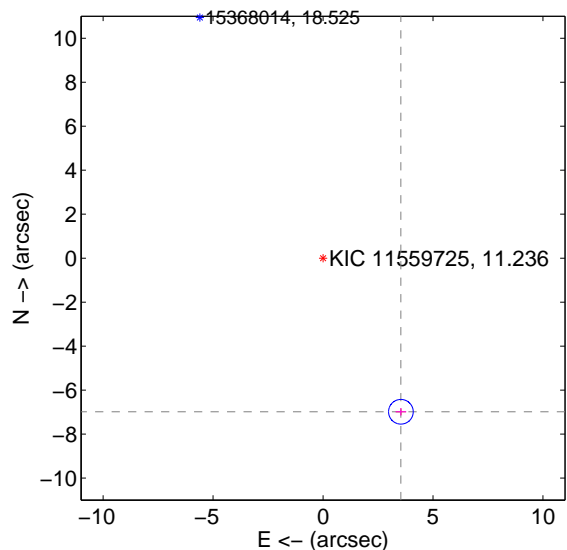
Supplemental centroid analysis for 011559725-01. **Kepler magnitude: 11.24.** Transit SNR 8.52

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

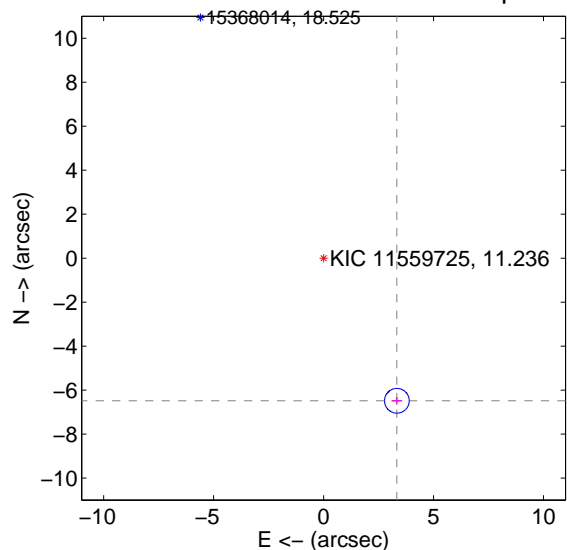
The direct PRF centroid is offset from the target star catalog position by about 0.54 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>7.832 \pm 0.187</math></b>	<b>41.89</b>	$-3.541 \pm 0.241$	$-6.985 \pm 0.170$
PRF-fit source offset from KIC position	<b><math>7.292 \pm 0.187</math></b>	<b>38.93</b>	$-3.332 \pm 0.241$	$-6.486 \pm 0.170$
photometric centroid source offset	$2.17 \pm 2.33$	0.93	$-1.50 \pm 1.94$	$1.56 \pm 2.65$

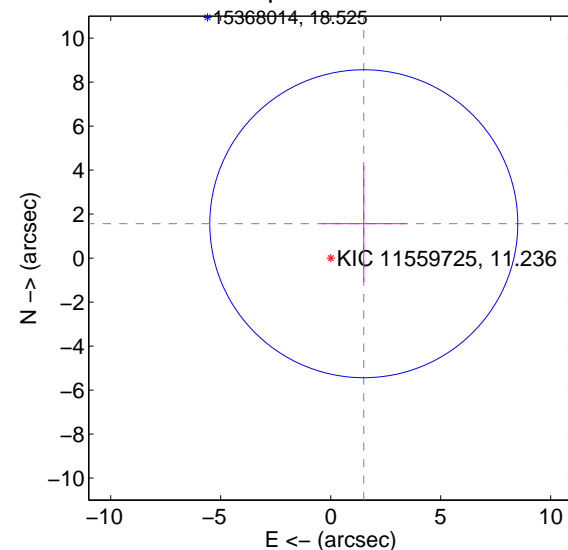
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

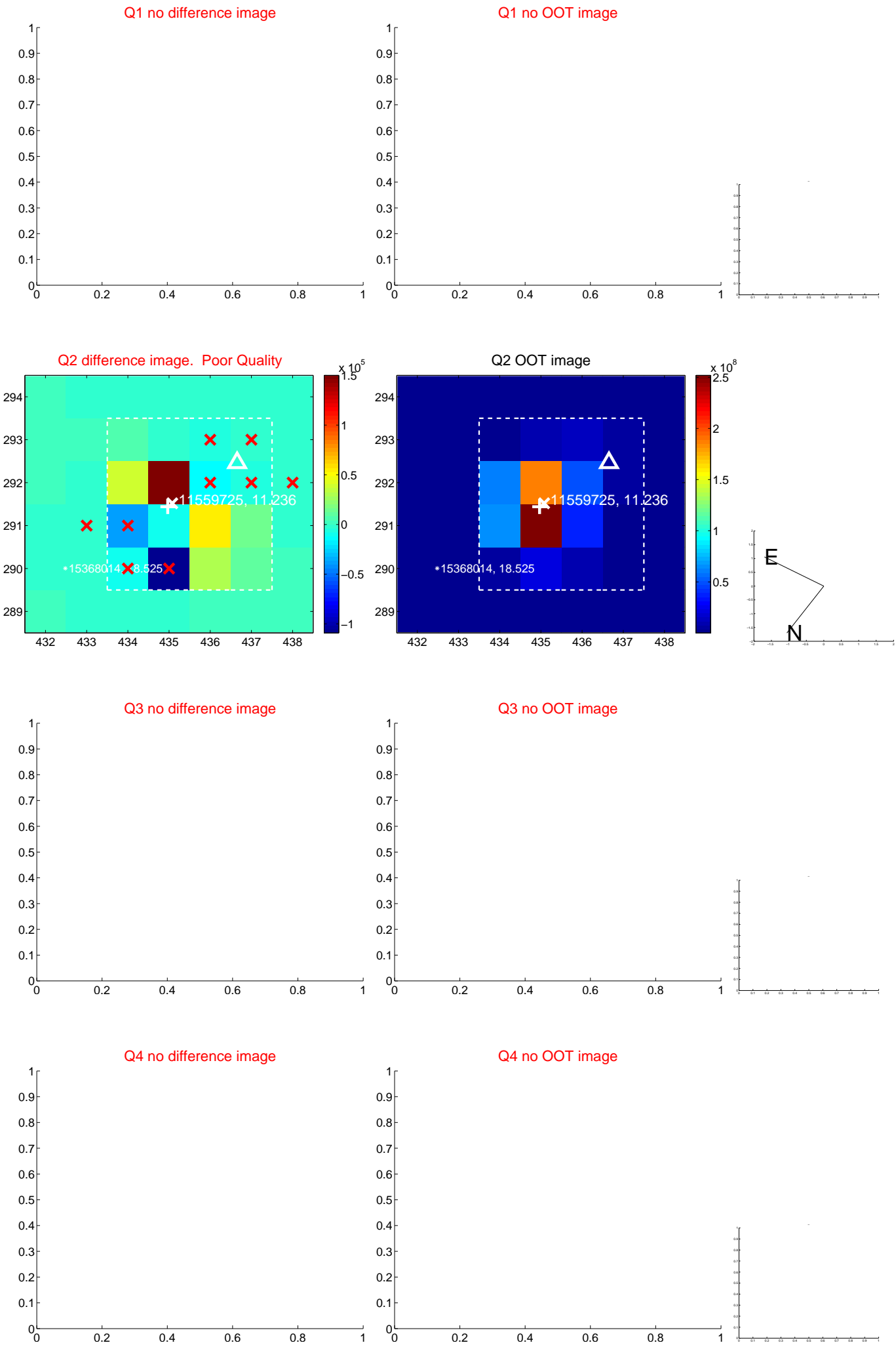


offset from photometric centroids



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.

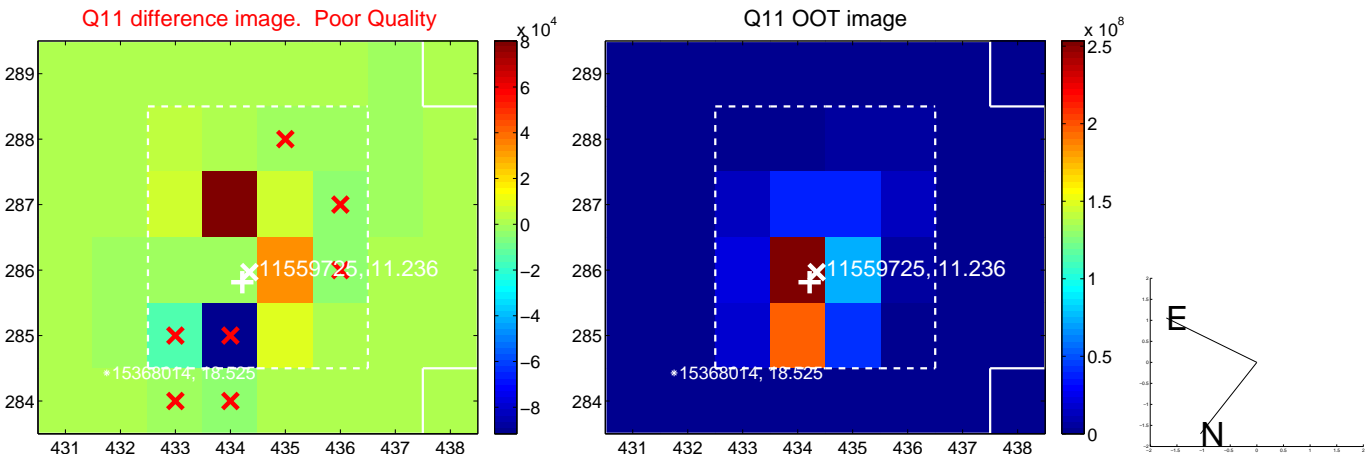


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





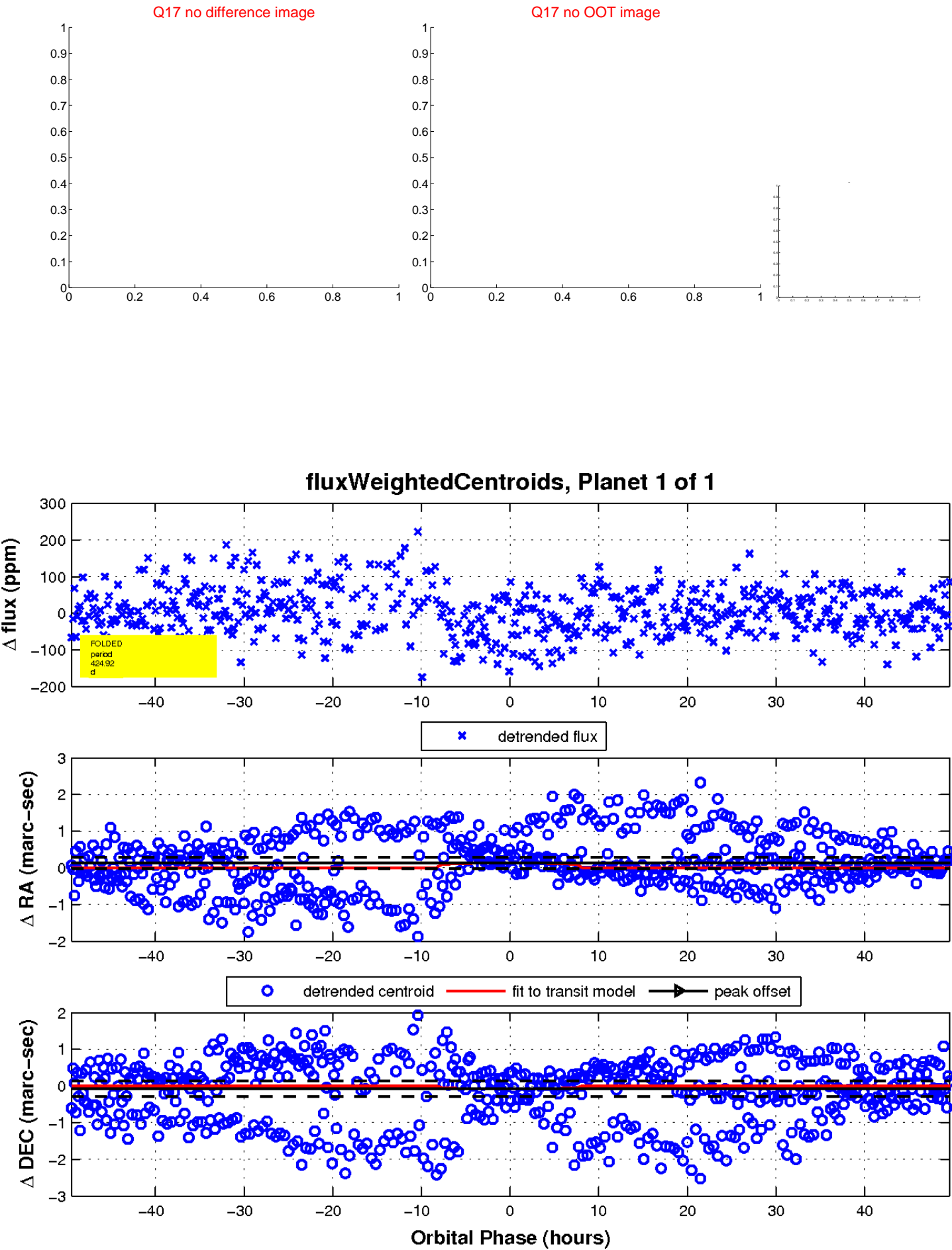
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

