

# KIC 008172649

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008172649-01	OBS	No	572.400217	345.857912	1041.6	44.562	11.9	16.3	0.76	5146	2.37	0.22

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008172649-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—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.

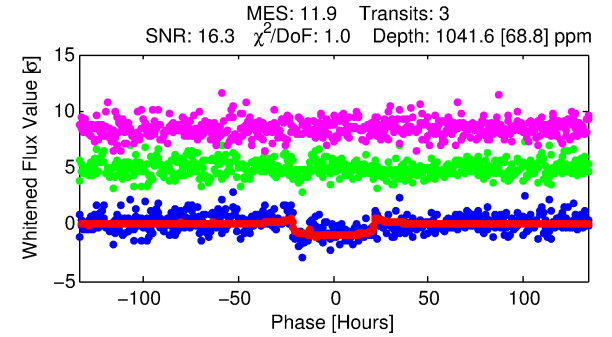
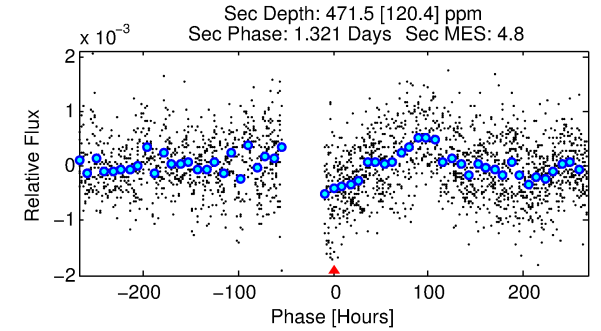
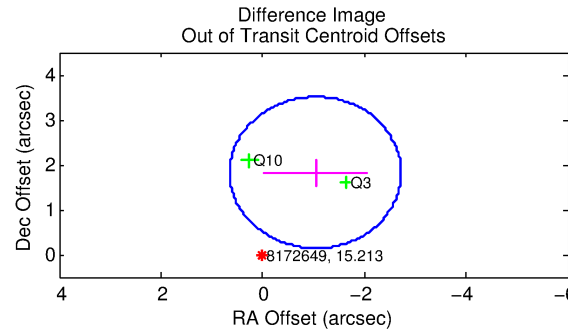
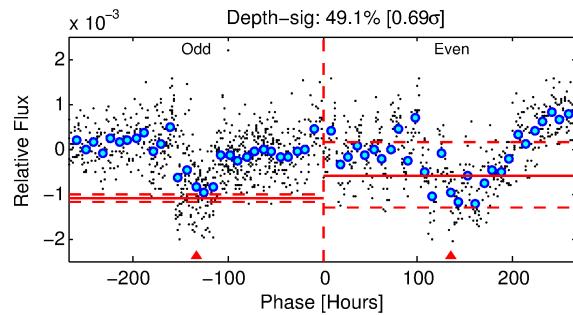
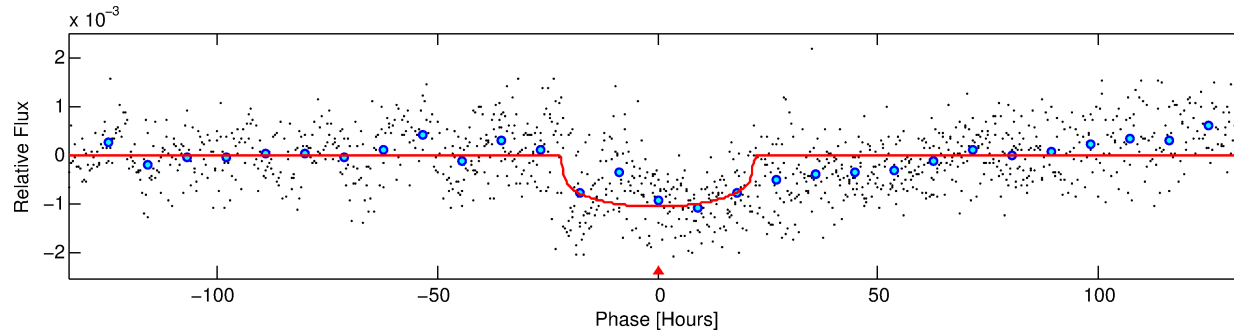
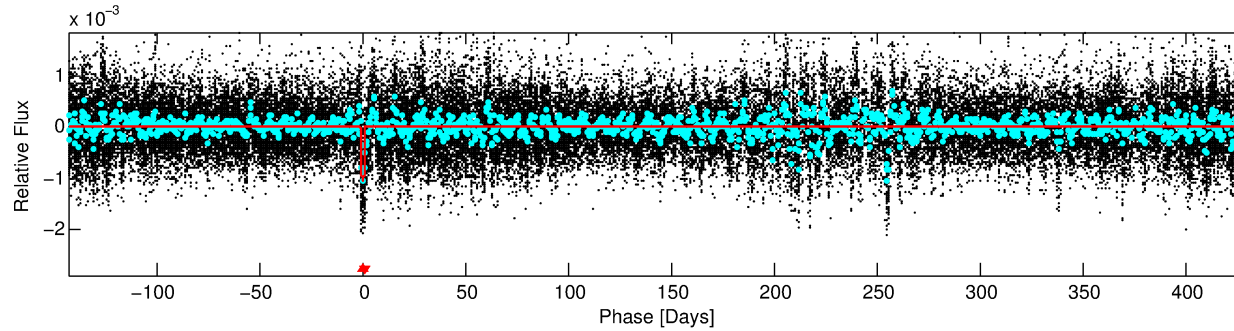
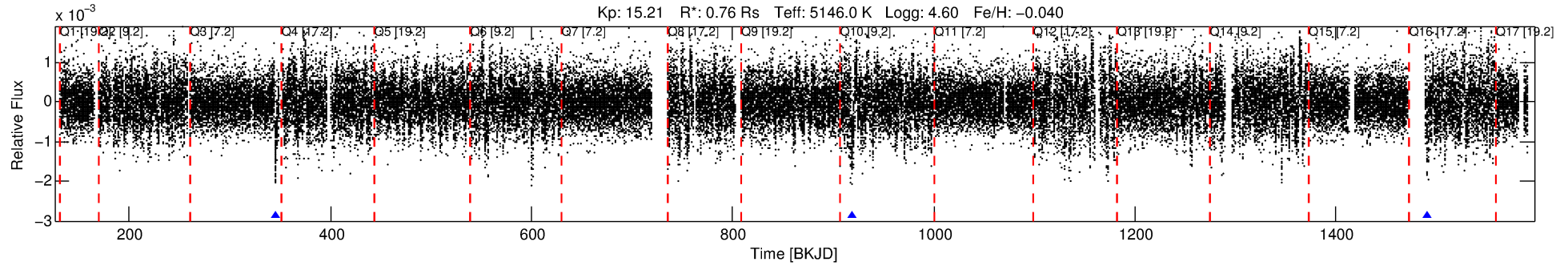
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008172649-01

No Significant Match Found

# DV One-Page Summary

KIC: 8172649 Candidate: 1 of 1 Period: 572.400 d



## DV Fit Results:

Period = 572.40022 [0.01624] d  
Epoch = 345.8579 [0.0193] BKJD  
Rp/R\* = 0.0288 [0.0057]  
a/R\* = 99.89 [70.36]  
b = 0.15 [4.63]  
Seff = 0.22 [0.04]  
Teq = 175 [9] K  
Rp = 2.37 [0.58] Re  
a = 1.2700 [0.1429] AU  
Ag = 74223.89 [37003.37] [2.01 $\sigma$ ]  
Teffp = 4467 [545] K [7.88 $\sigma$ ]

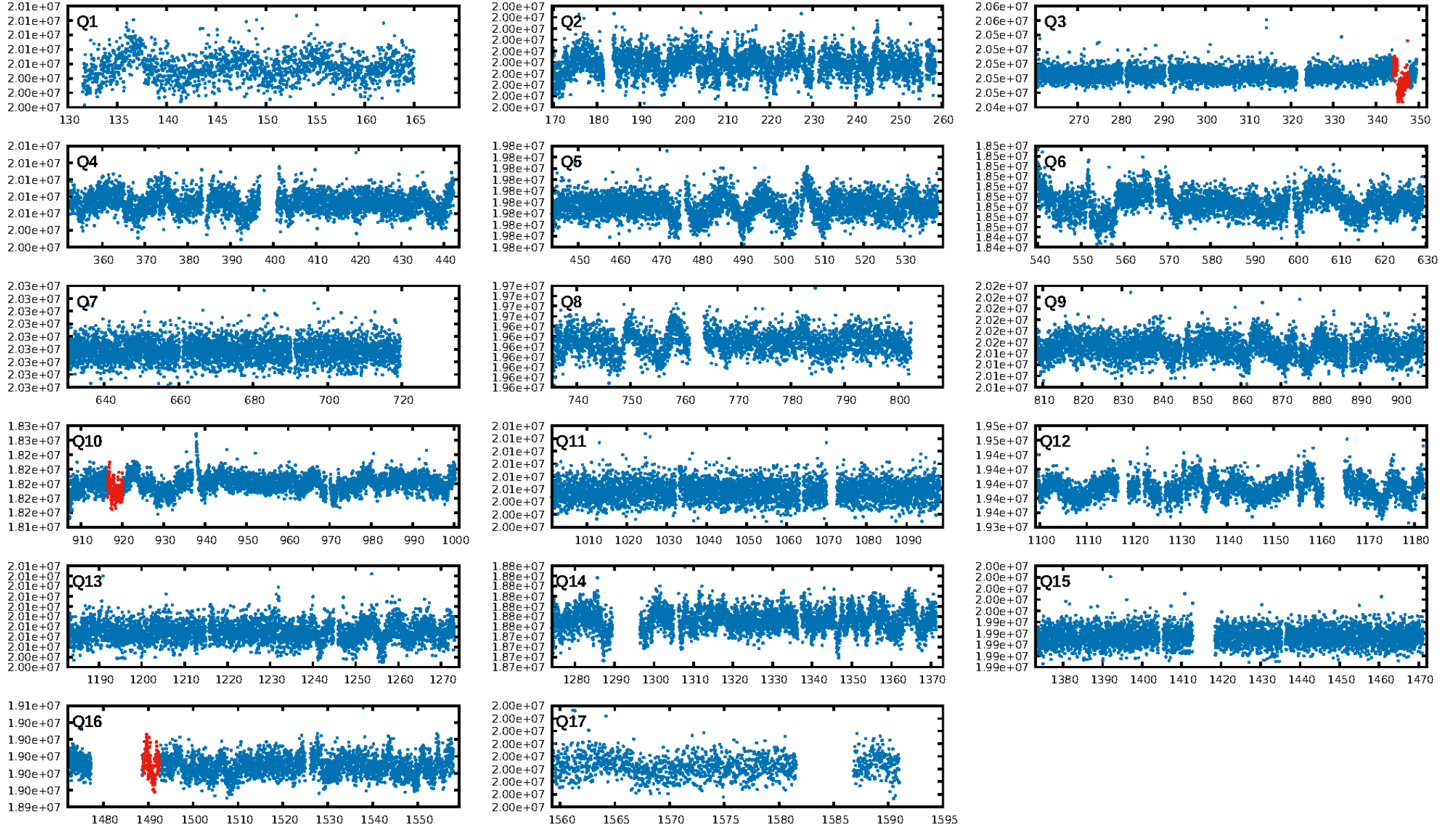
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 29.9%  
ModelChiSquareGof-sig: 99.9%  
Bootstrap-pfa: 6.36e-19  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 16.98  
Centroid-sig: 0.0%  
Centroid-so: 1.724 arcsec [2.43 $\sigma$ ]  
OotOffset-rm: 2.099 arcsec [3.74 $\sigma$ ]  
KicOffset-rm: 1.846 arcsec [3.88 $\sigma$ ]  
OotOffset-st: 1/1/0/0 [2]  
KicOffset-st: 1/1/0/0 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [2/2]

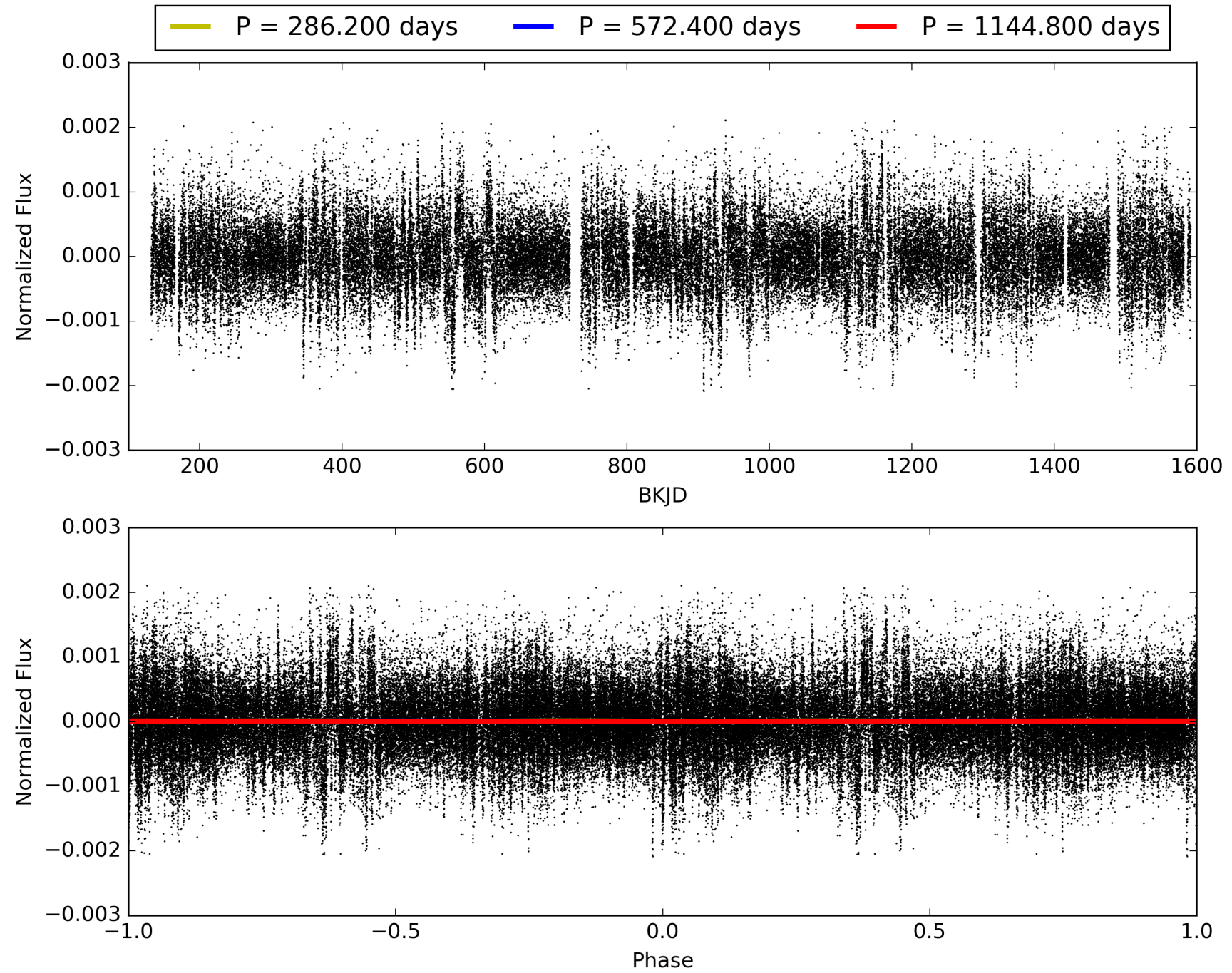
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:02:33 Z

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

# TCE 008172649-01, PDC Light Curves

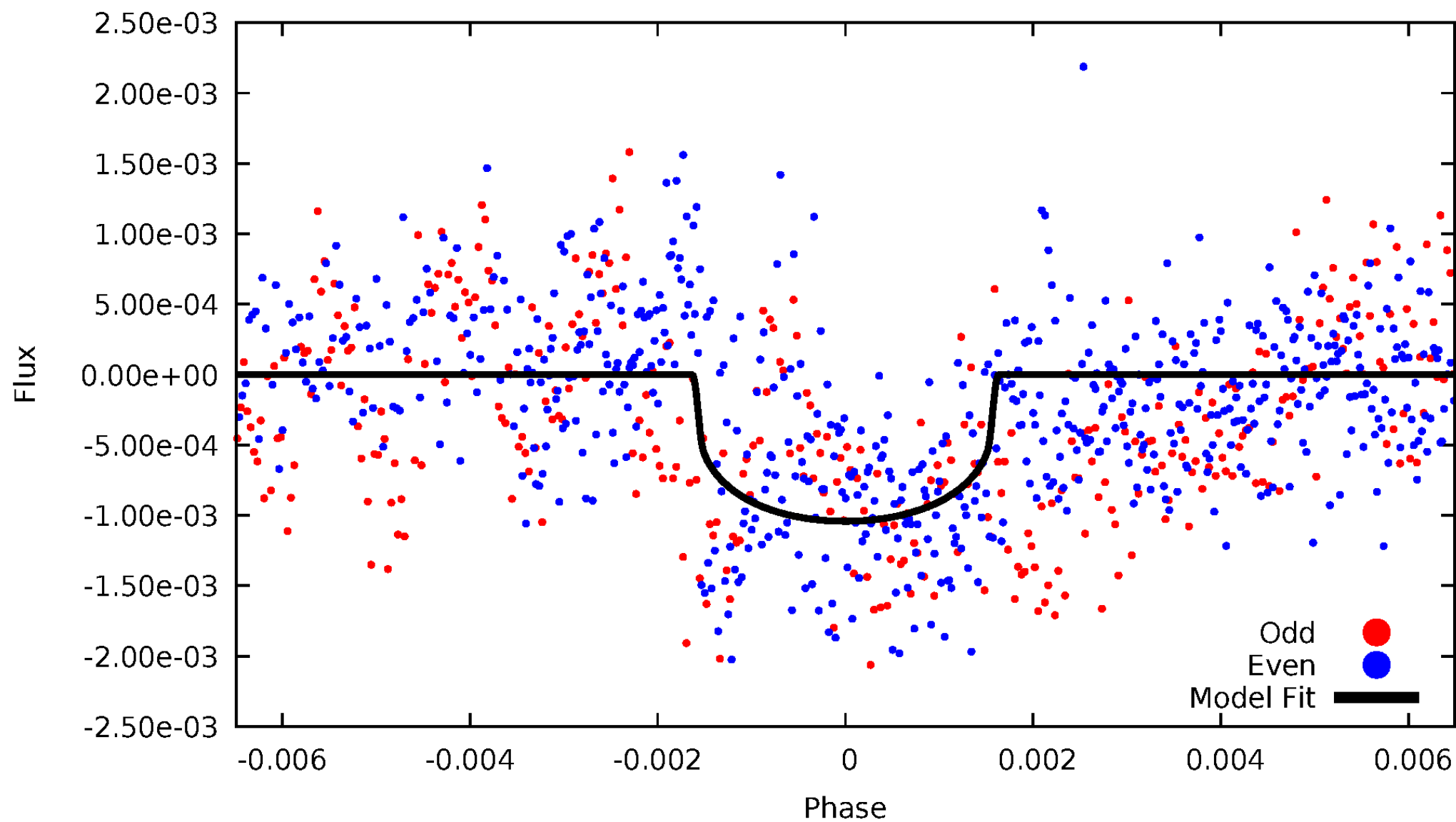


TCE 008172649-01



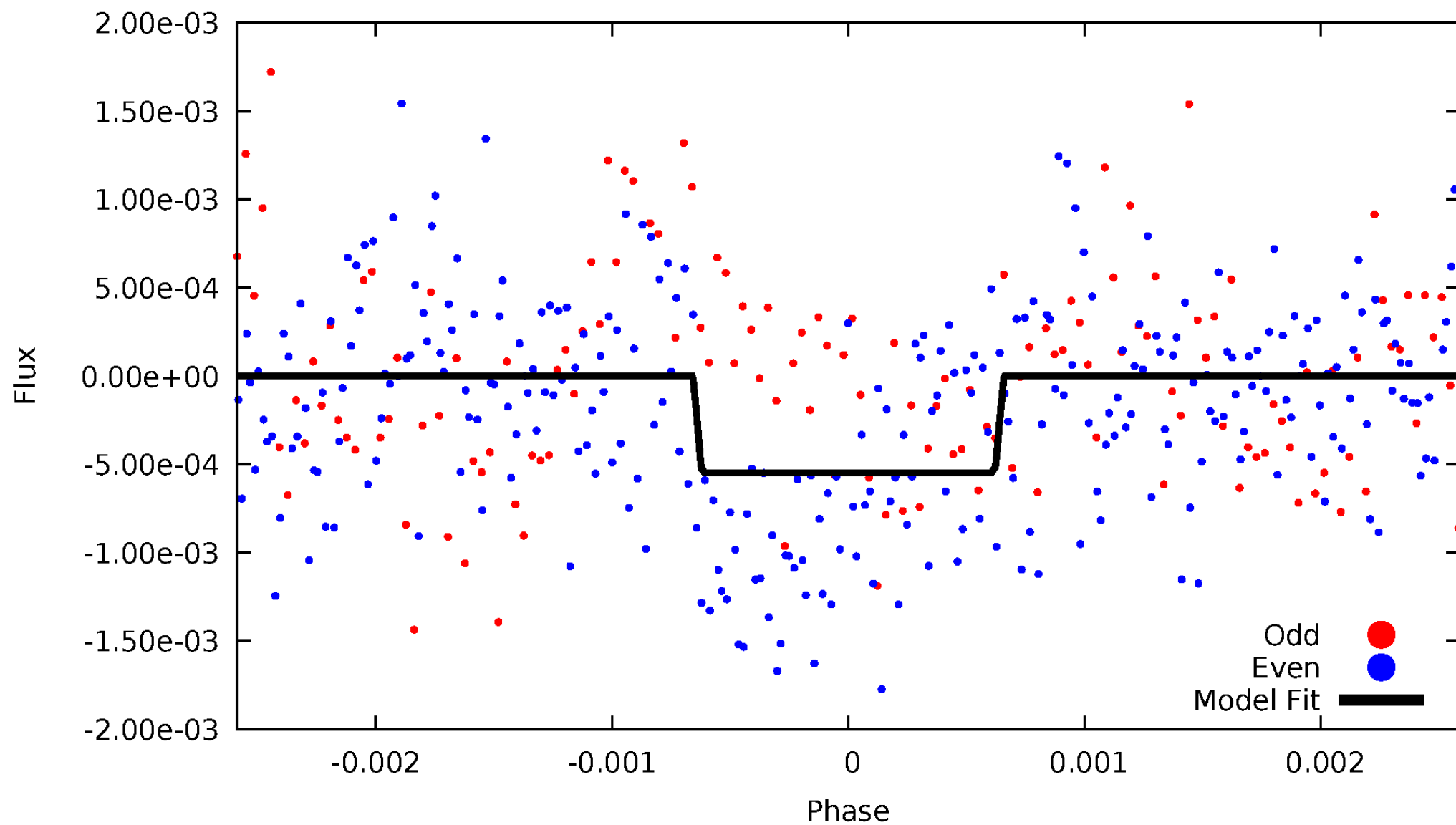
# DV Odd/Even

TCE 008172649-01



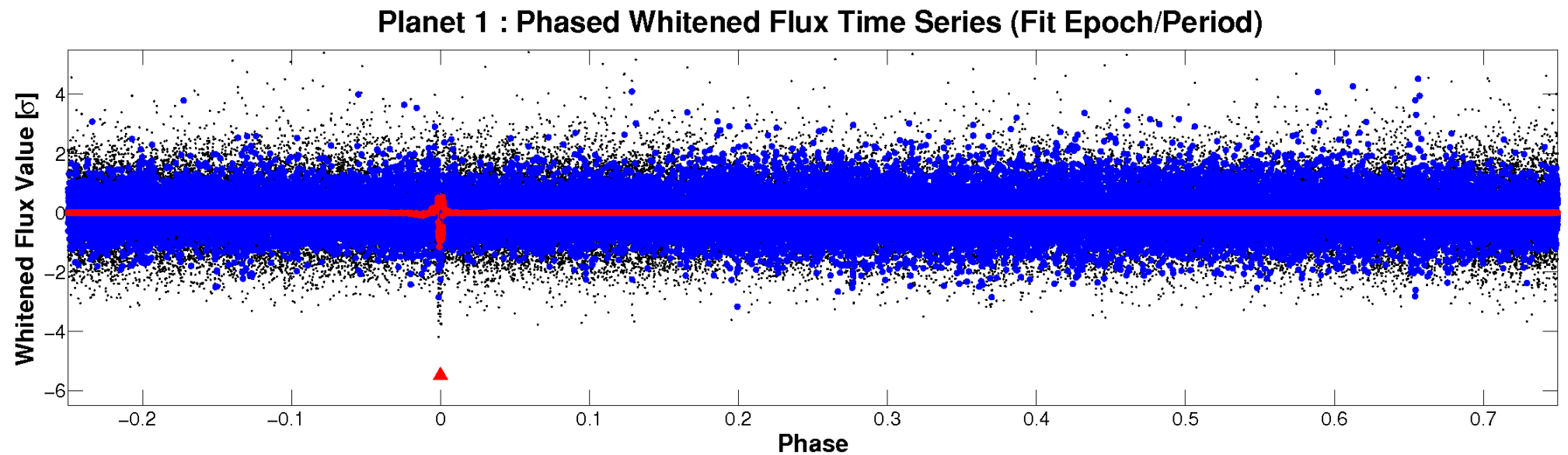
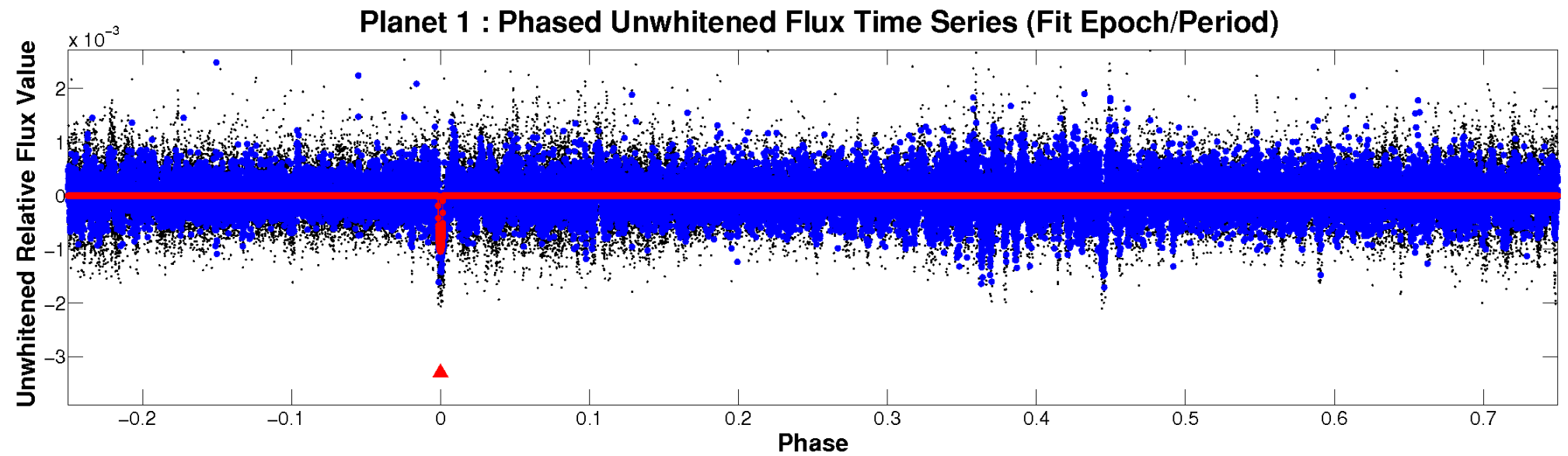
# ALT Odd/Even

TCE 008172649-01





# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

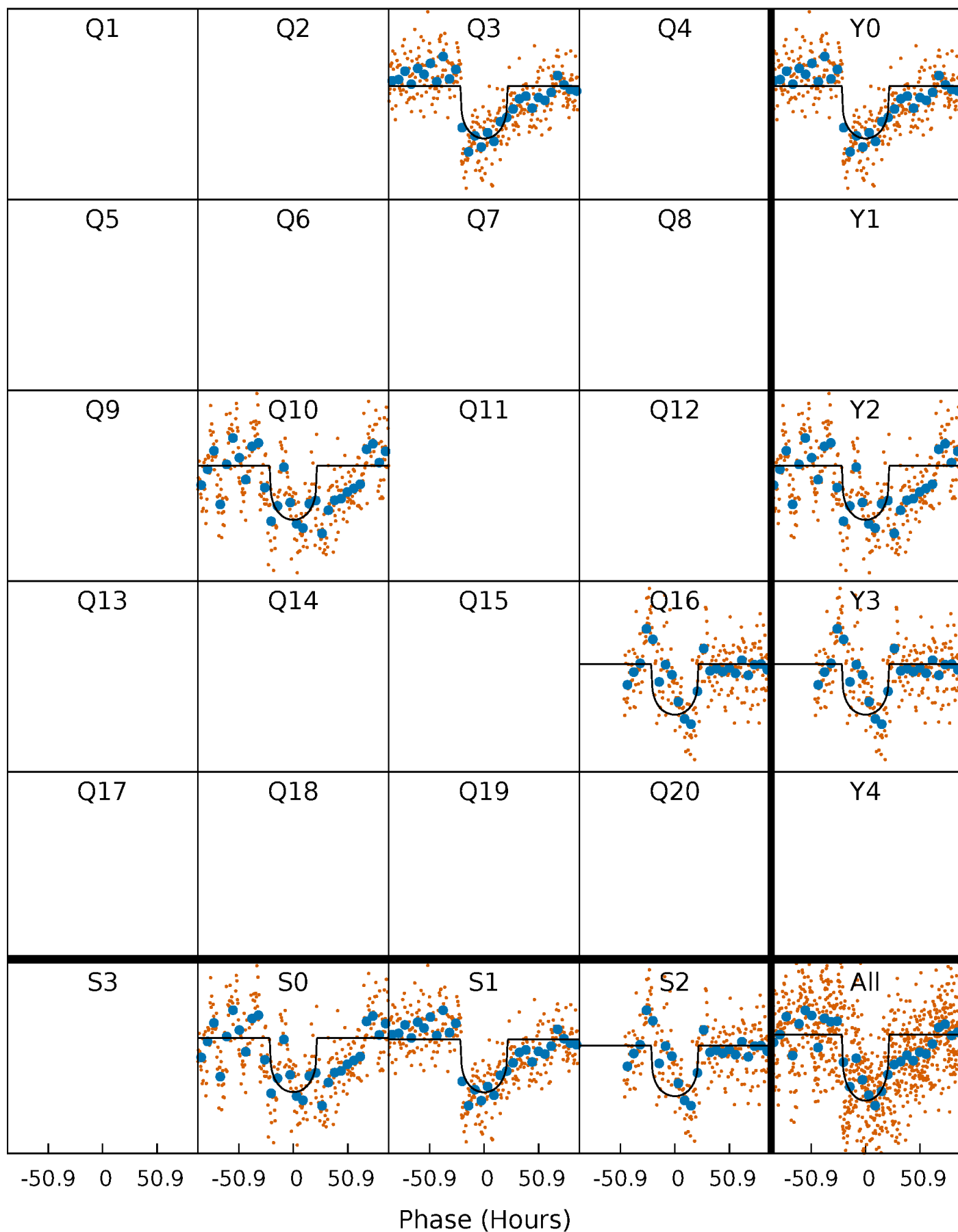
TCE 008172649-01 P=572.400217 Days  $T_0=345.857912$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 008172649-01 P=572.400217 Days  $T_0=345.857912$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

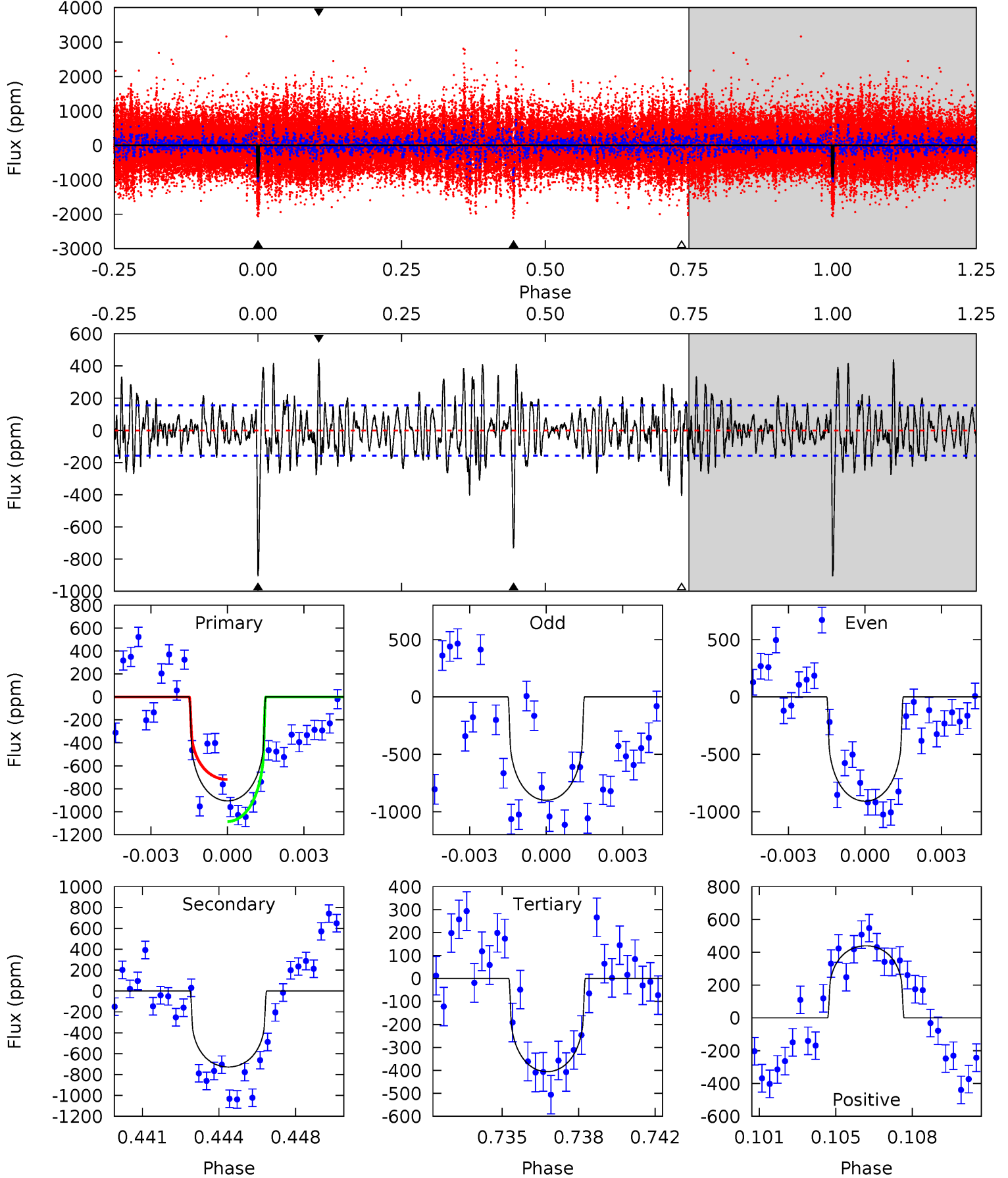
TCE 008172649-01 P=573.004701 Days  $T_0=345.336295$  (BKJD)



# DV Model-Shift Uniqueness Test

008172649-01, P = 572.400217 Days, E = 345.857912 Days

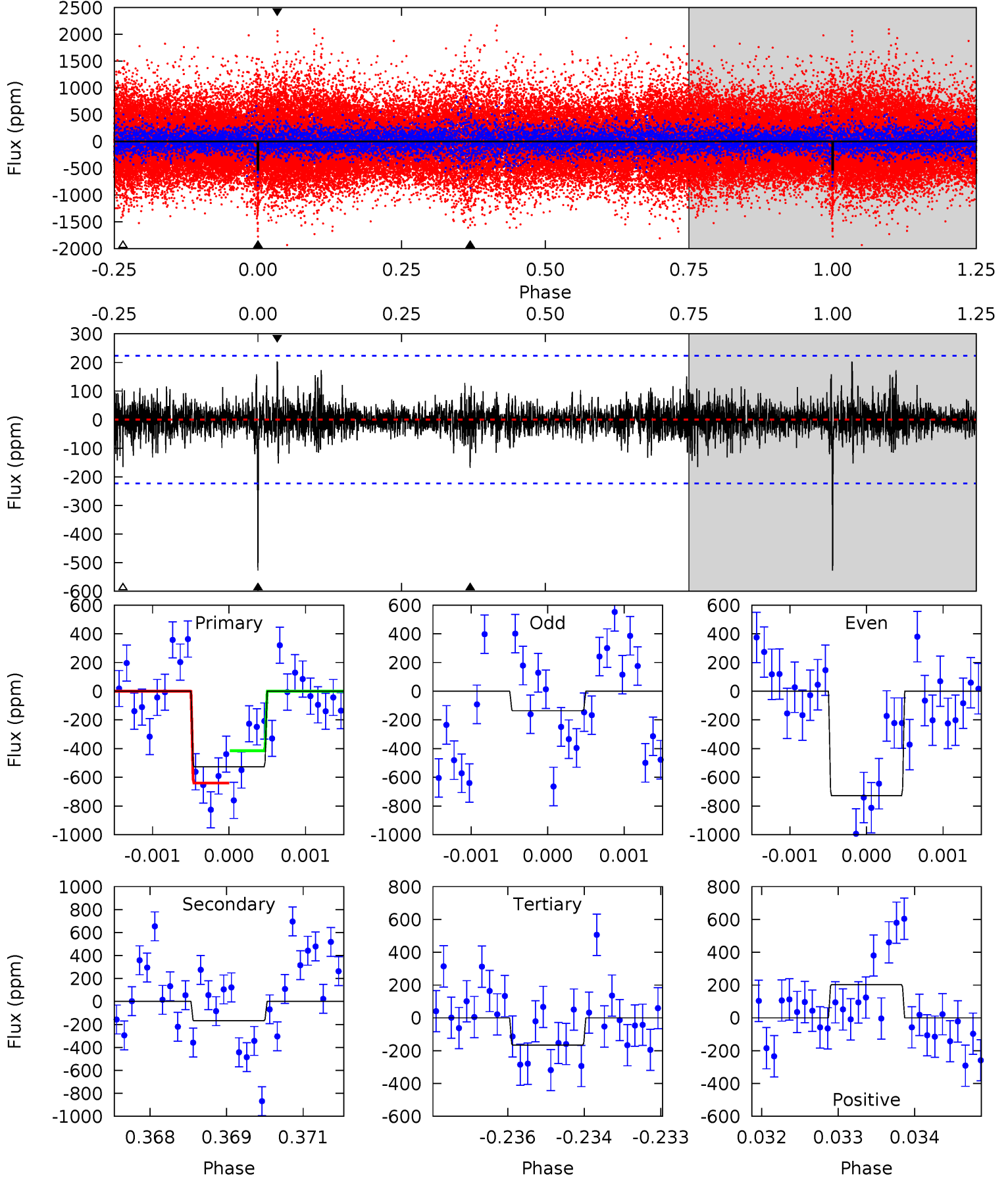
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.4	24.4	13.6	14.7	5.24	2.94	4.12	16.8	15.6	10.8	9.67	0.13	1.01	0.33	6.10



# Alt Model-Shift Uniqueness Test

008172649-01, P = 573.004701 Days, E = 345.336295 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
12.8	4.07	4.01	4.91	5.40	3.21	0.91	8.76	7.87	0.06	-0.83	6.77	0.75	0.28	2.73



### Stellar Parameters For KIC 008172649

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5146^{+153}_{-153}$	$4.603^{+0.028}_{-0.083}$	$-0.040^{+0.300}_{-0.300}$	$0.755^{+0.105}_{-0.057}$	$0.848^{+0.057}_{-0.098}$	$2.780^{+0.411}_{-0.764}$
	+3%/-3%	+1%/-2%	+750%/-750%	+14%/-8%	+7%/-12%	+15%/-27%
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 008172649-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-728 \pm 30$	$2.43^{+0.52}_{-0.50}$	$248^{+9}_{-9}$	$4990^{+532}_{-366}$	$108101^{+63666}_{-34184}$
Alt.	$-168 \pm 41$	$1.97^{+0.52}_{-0.44}$	$247^{+10}_{-9}$	$4075^{+466}_{-362}$	$37760^{+27178}_{-15655}$

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

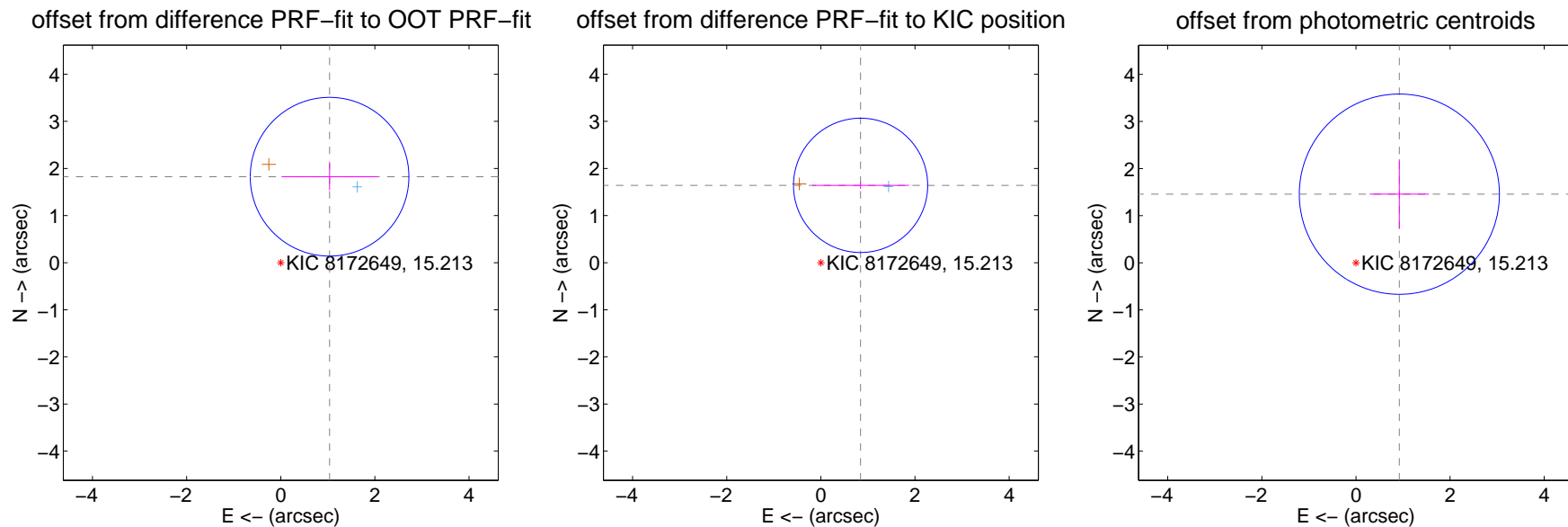
## DV Centroid Data

Supplemental centroid analysis for 008172649-01. Kepler magnitude: 15.21. Transit SNR 16.33

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.46 arcsec

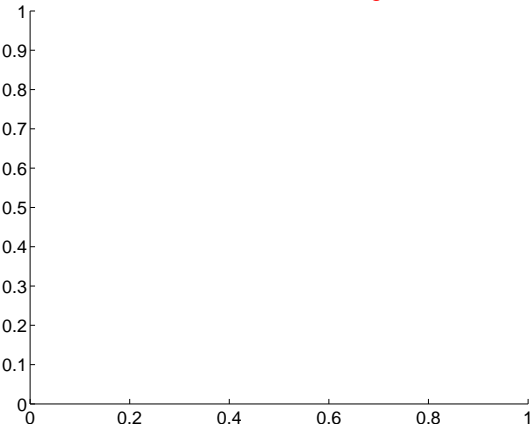
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.099 \pm 0.562$	3.74	$-1.037 \pm 1.020$	$1.825 \pm 0.285$
PRF-fit source offset from KIC position	$1.846 \pm 0.475$	3.88	$-0.844 \pm 1.029$	$1.642 \pm 0.074$
photometric centroid source offset	$1.72 \pm 0.71$	2.43	$-0.92 \pm 0.63$	$1.46 \pm 0.74$



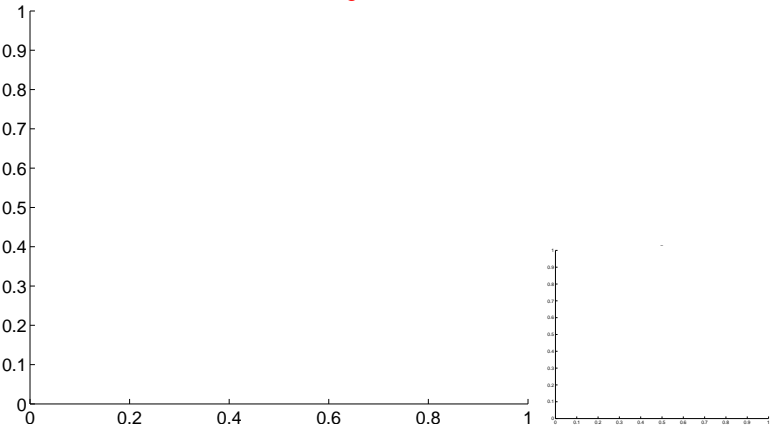
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

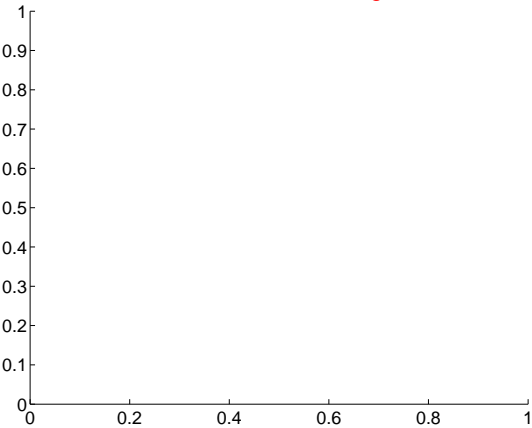
Q1 no difference image



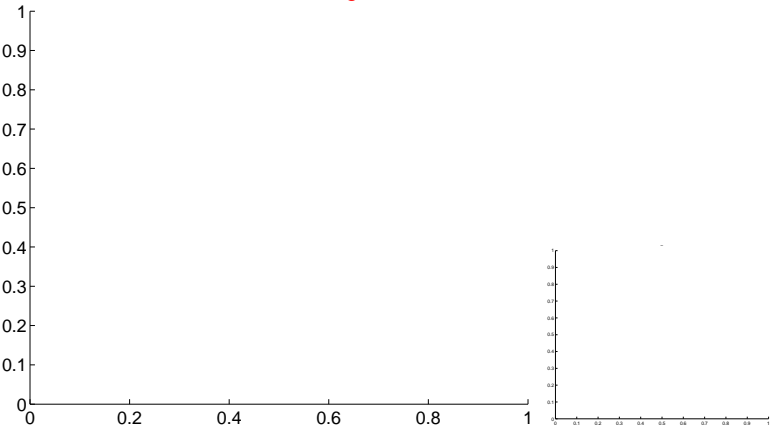
Q1 no OOT image



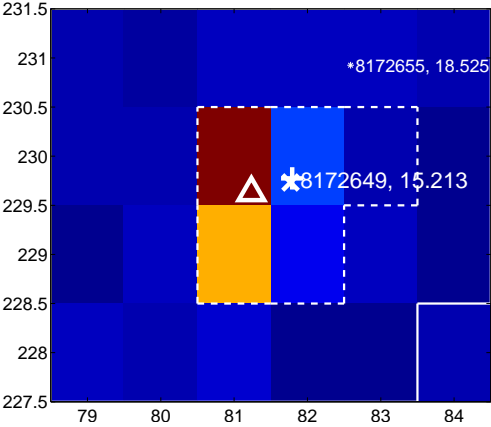
Q2 no difference image



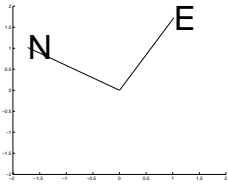
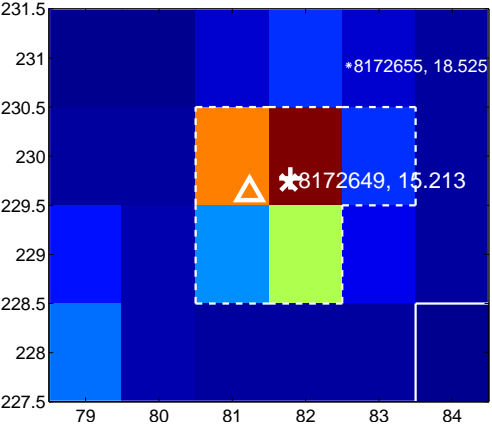
Q2 no OOT image



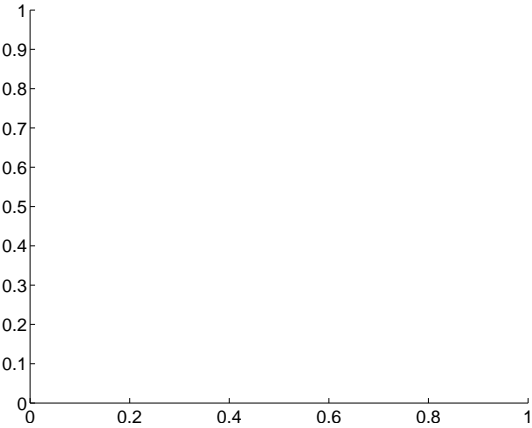
Q3 difference image



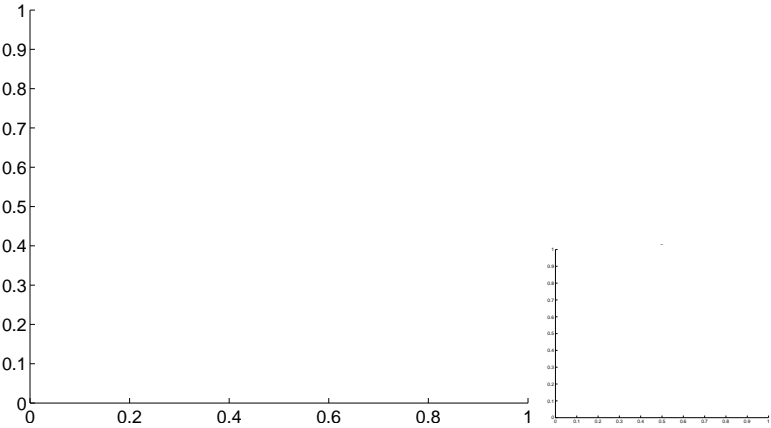
Q3 OOT image



Q4 no difference image



Q4 no OOT image

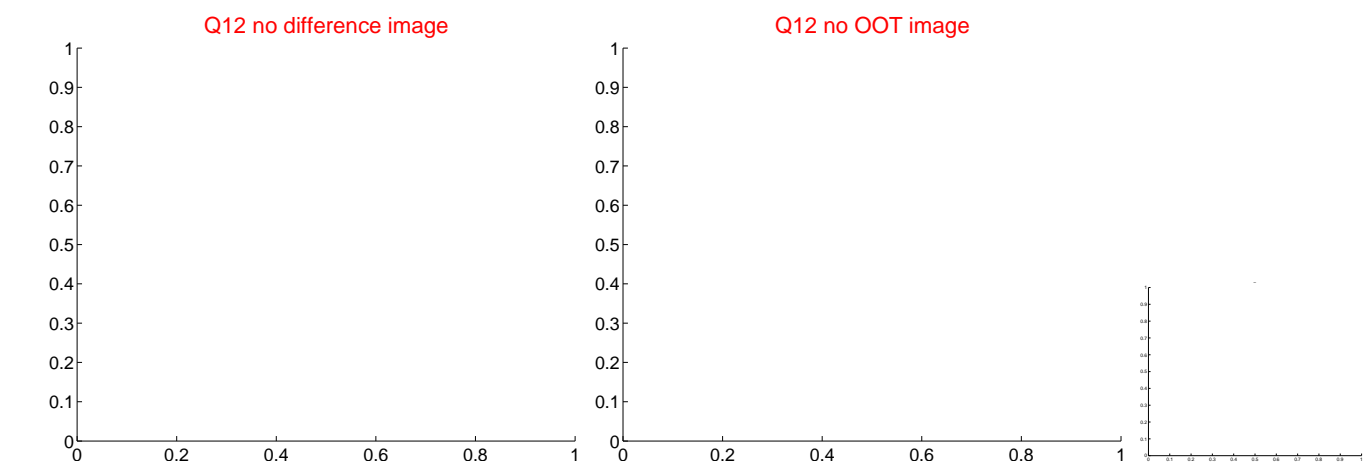
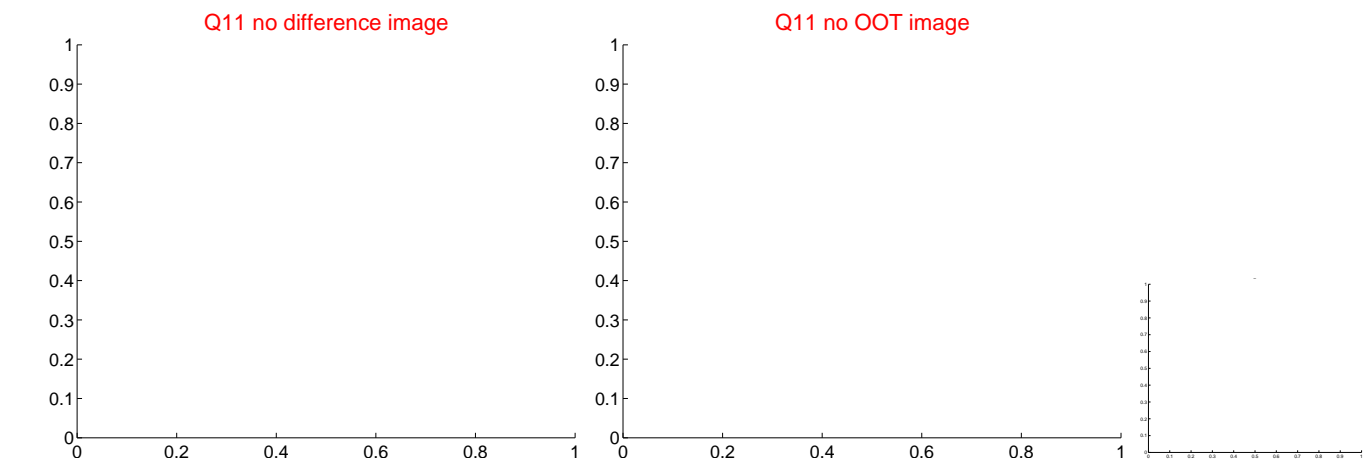
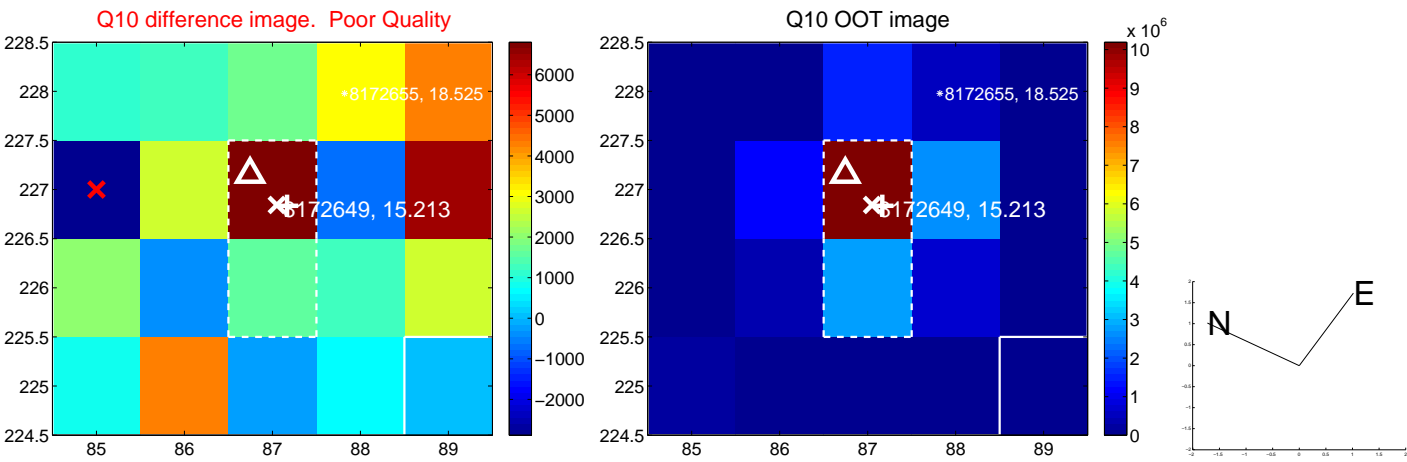
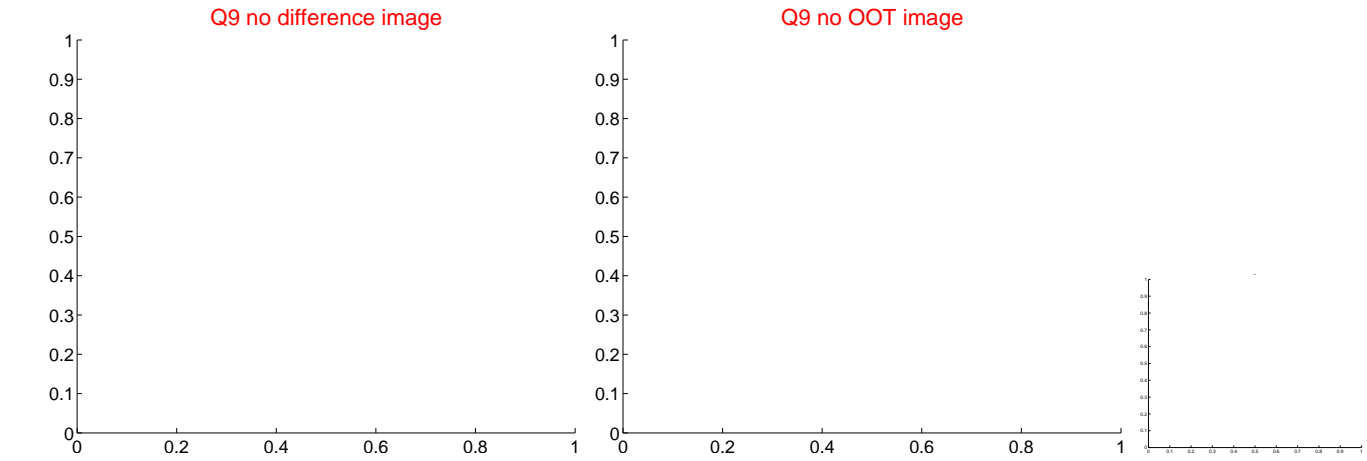




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



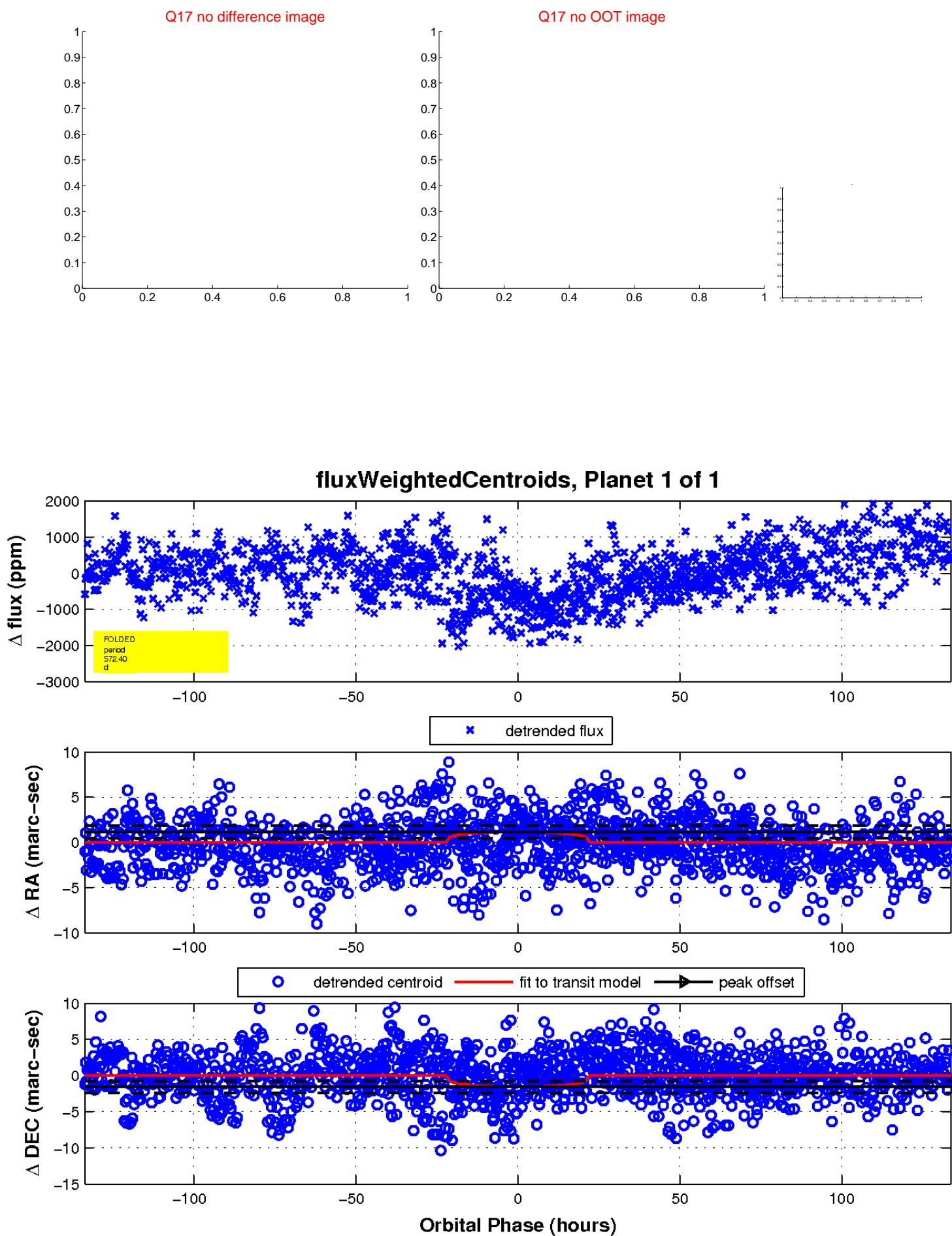
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

