

# KIC 007257180

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007257180-01	OBS	No	446.973924	240.804413	300.0	27.244	7.5	7.0	0.80	5807	1.53	0.54

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007257180-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—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.

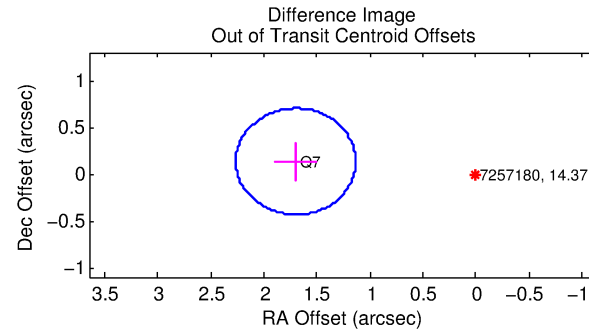
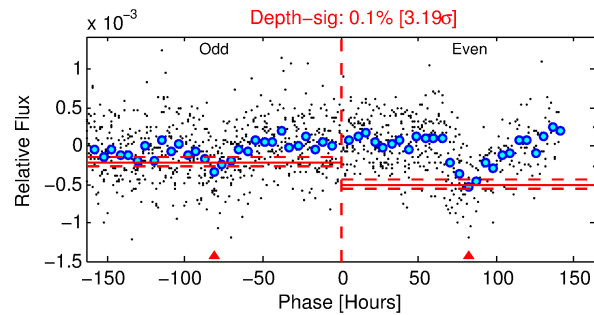
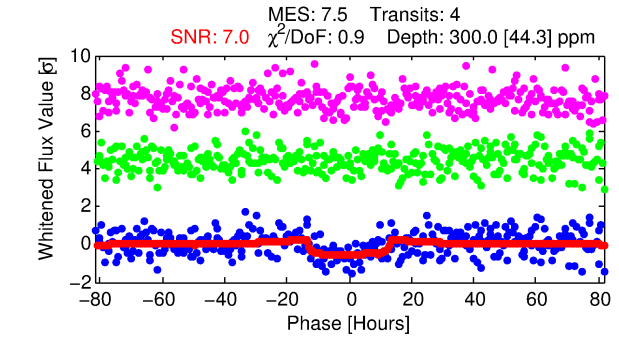
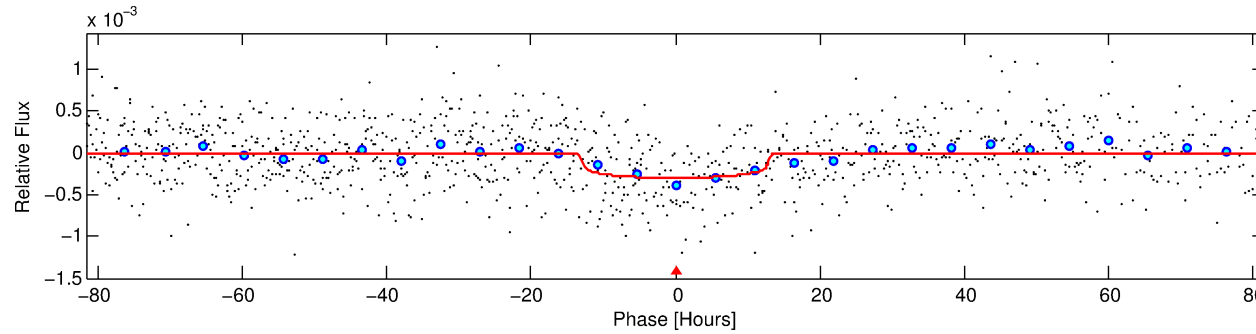
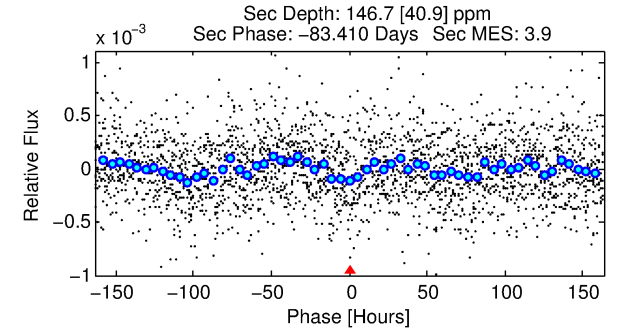
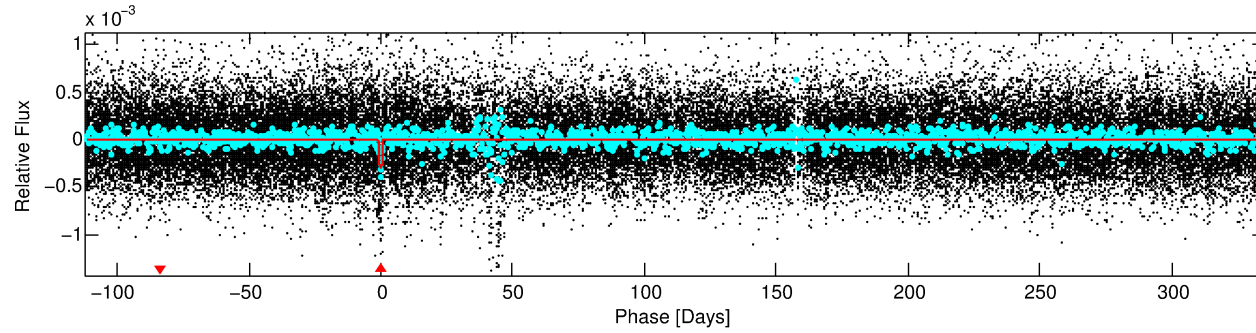
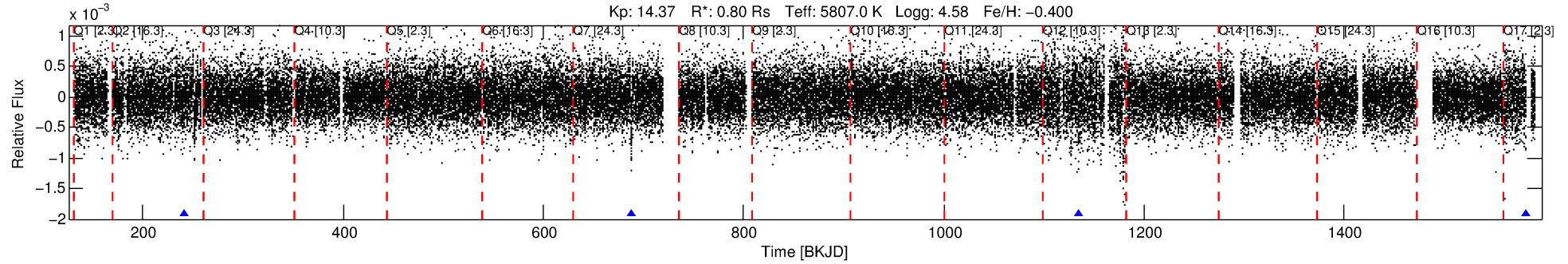
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007257180-01

No Significant Match Found

# DV One-Page Summary

KIC: 7257180 Candidate: 1 of 1 Period: 446.974 d



## DV Fit Results:

Period = 446.97392 [0.02131] d  
Epoch = 240.8044 [0.0331] BKJD  
Rp/R\* = 0.0175 [0.0034]  
a/R\* = 79.62 [68.72]  
b = 0.79 [0.40]  
Seff = 0.54 [0.15]  
Teq = 219 [16] K  
Rp = 1.53 [0.44] Re  
a = 1.0963 [0.1956] AU  
Ag = 41411.14 [22686.18] [1.83 $\sigma$ ]  
Teffp = 4827 [595] K [7.74 $\sigma$ ]

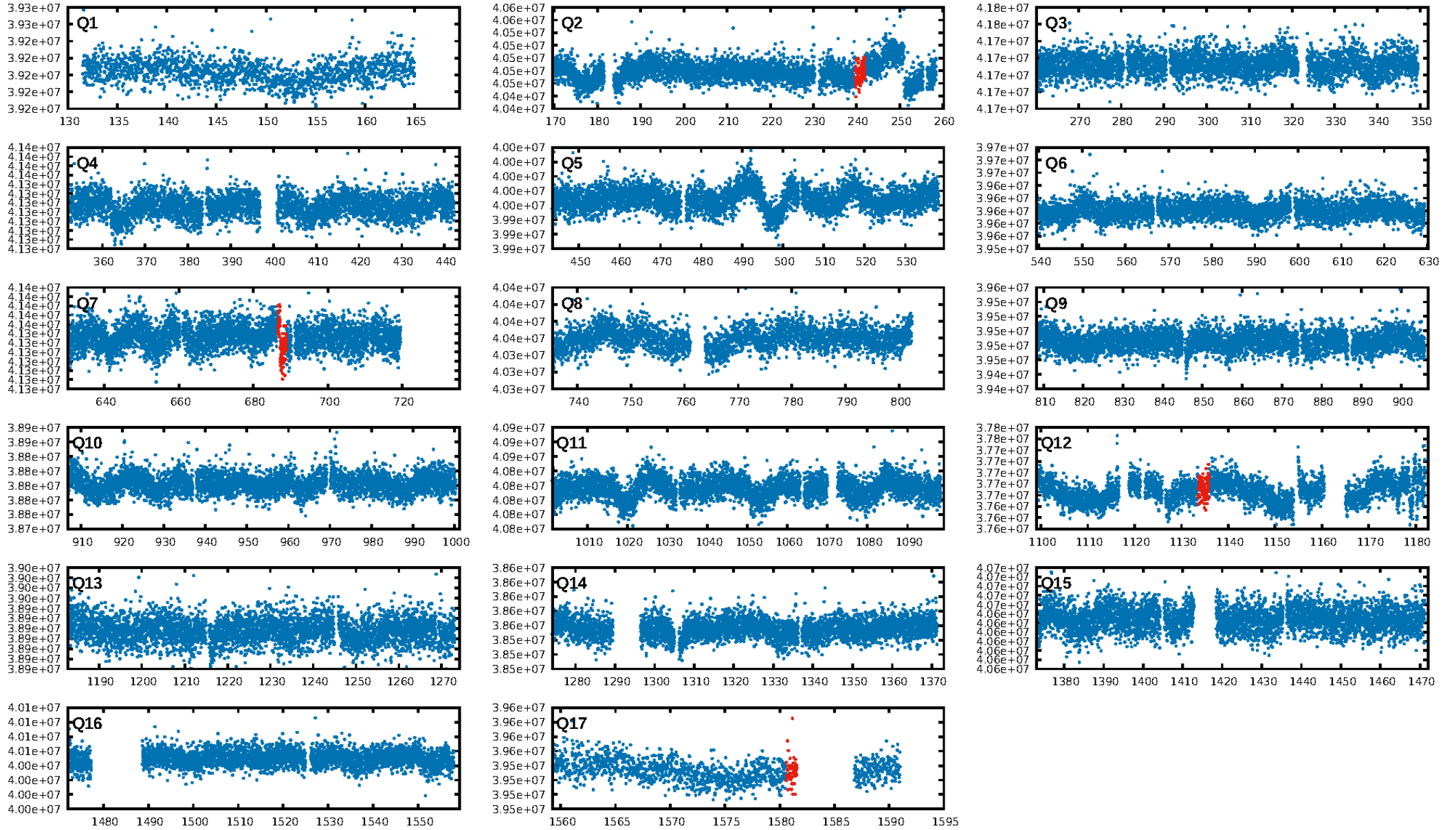
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.7%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 2.00e-10**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.518  
Centroid-sig: 69.2%  
Centroid-so: 1.187 arcsec [0.93 $\sigma$ ]  
**OotOffset-rm: 1.705 arcsec [9.03 $\sigma$ ]**  
**KicOffset-rm: 1.628 arcsec [8.62 $\sigma$ ]**  
OotOffset-st: 0/1/0/0 [1]  
KicOffset-st: 0/1/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [2/2]

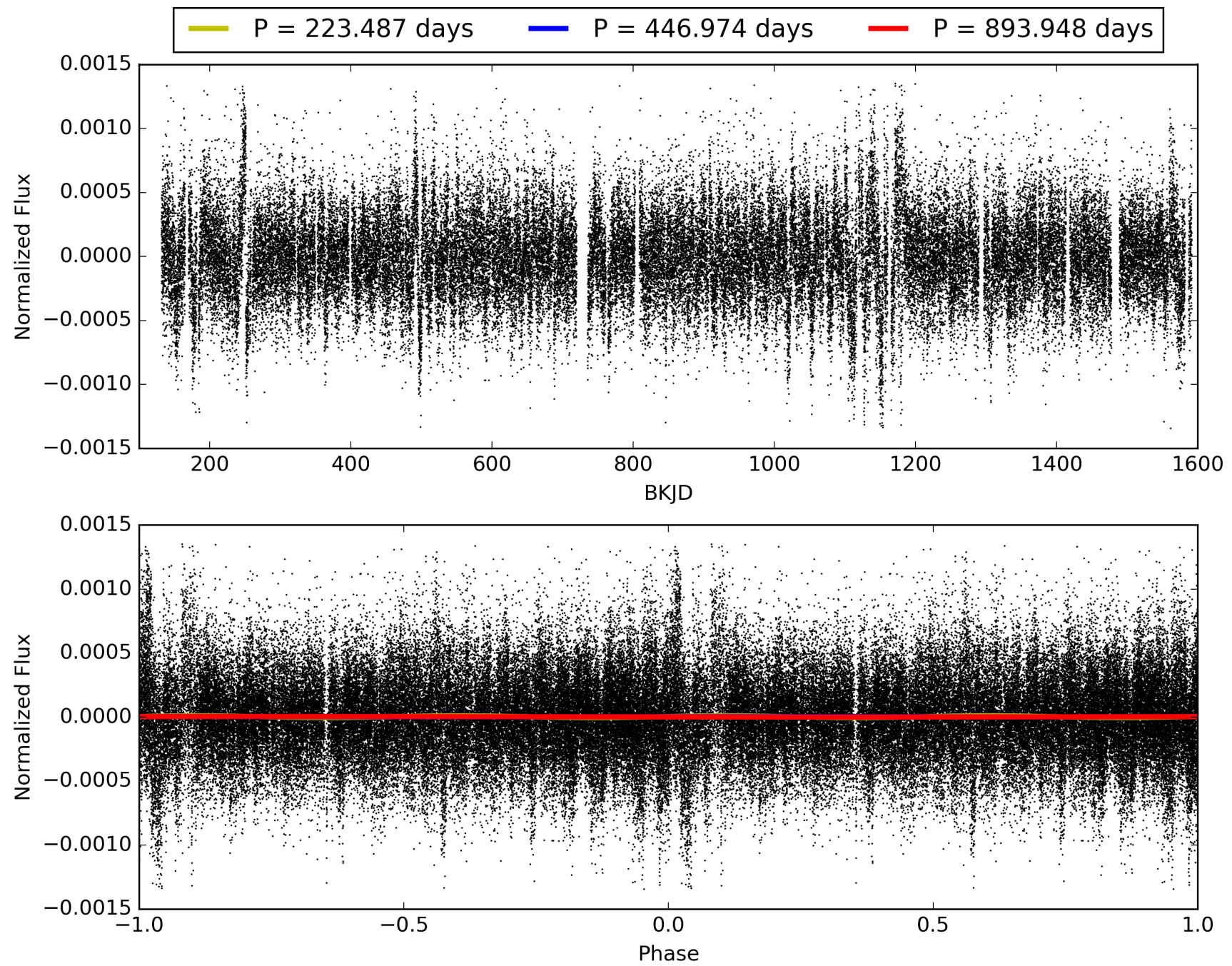
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:50:28 Z

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

# TCE 007257180-01, PDC Light Curves

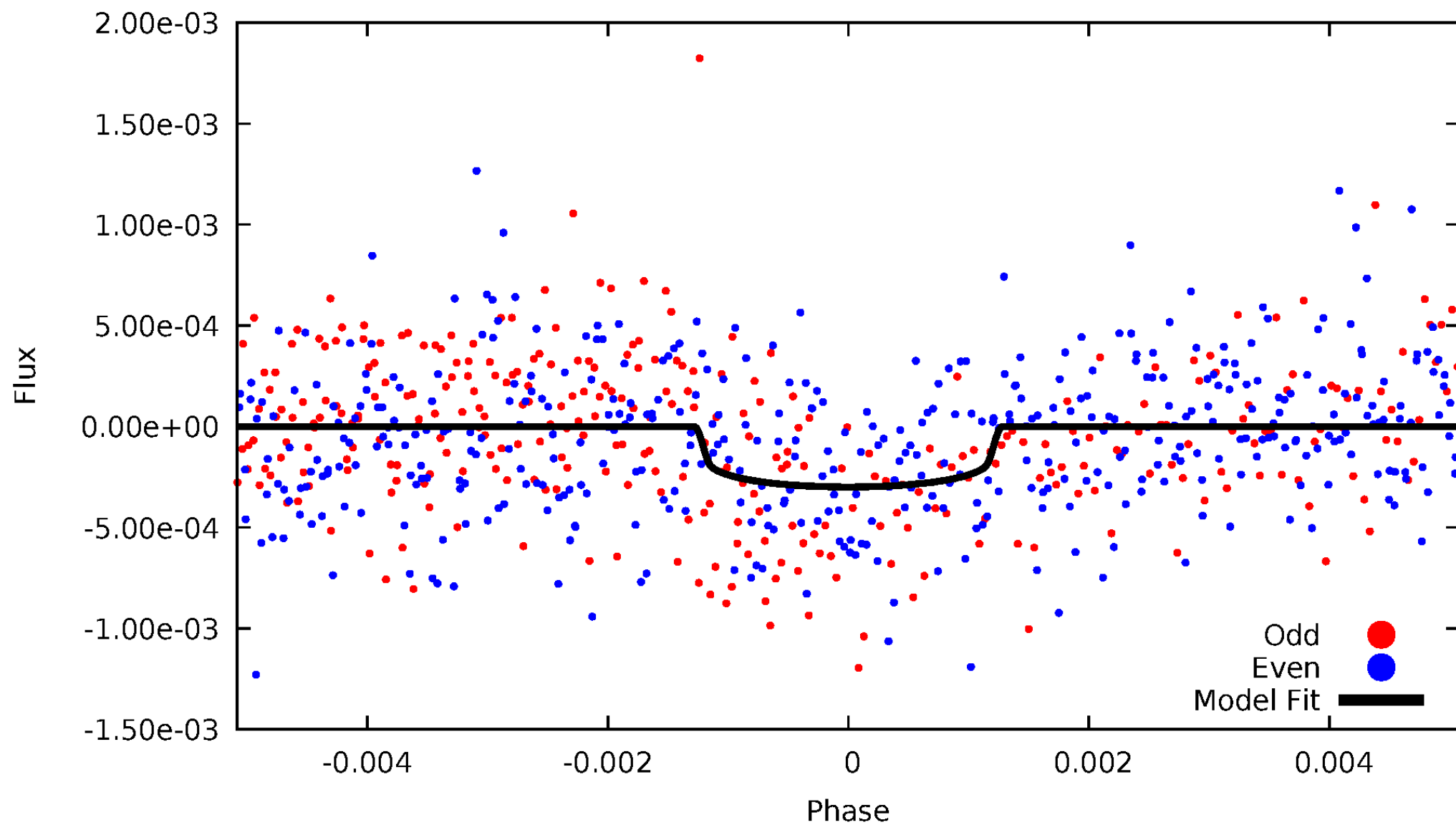


TCE 007257180-01



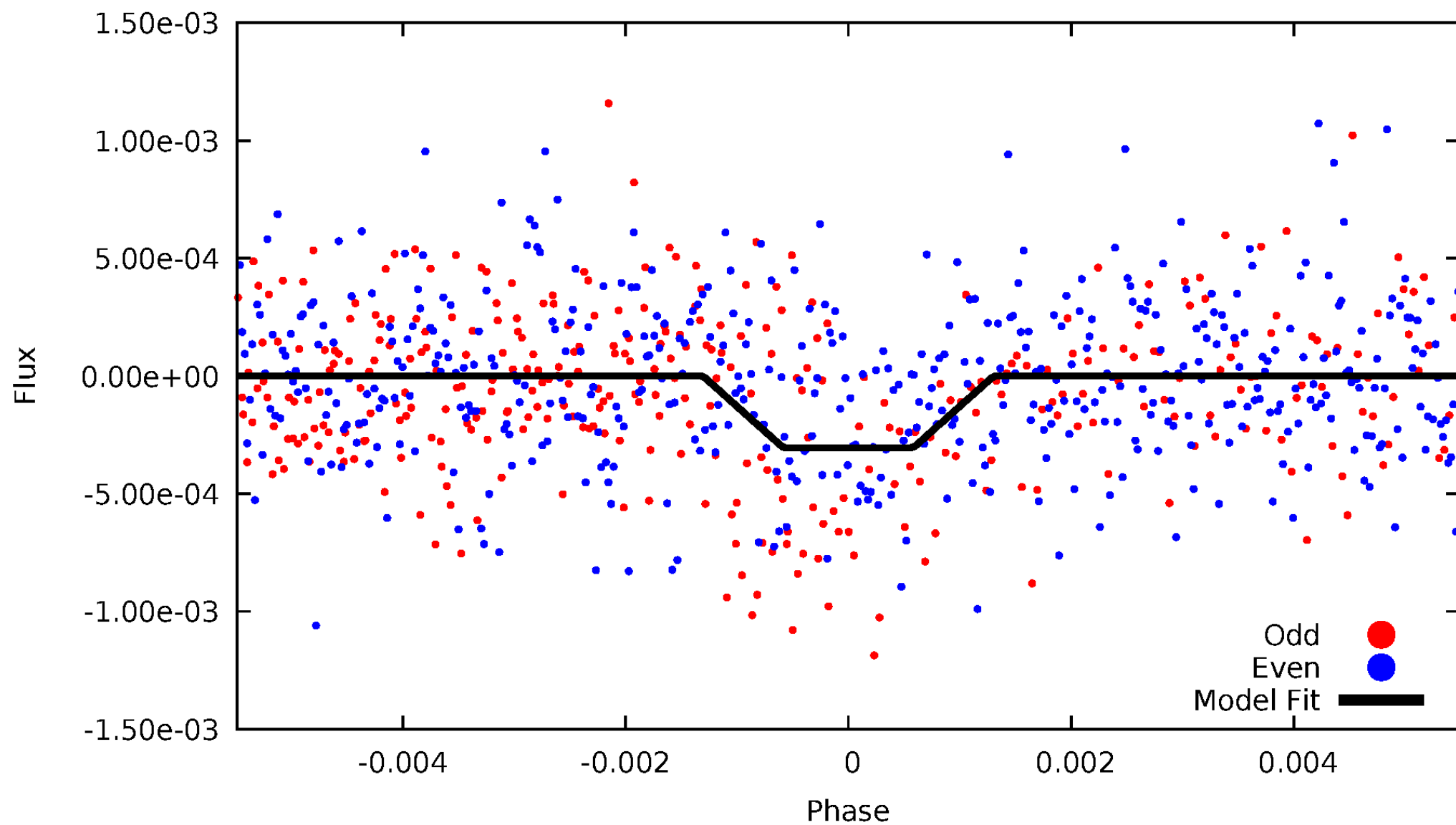
# DV Odd/Even

TCE 007257180-01



# ALT Odd/Even

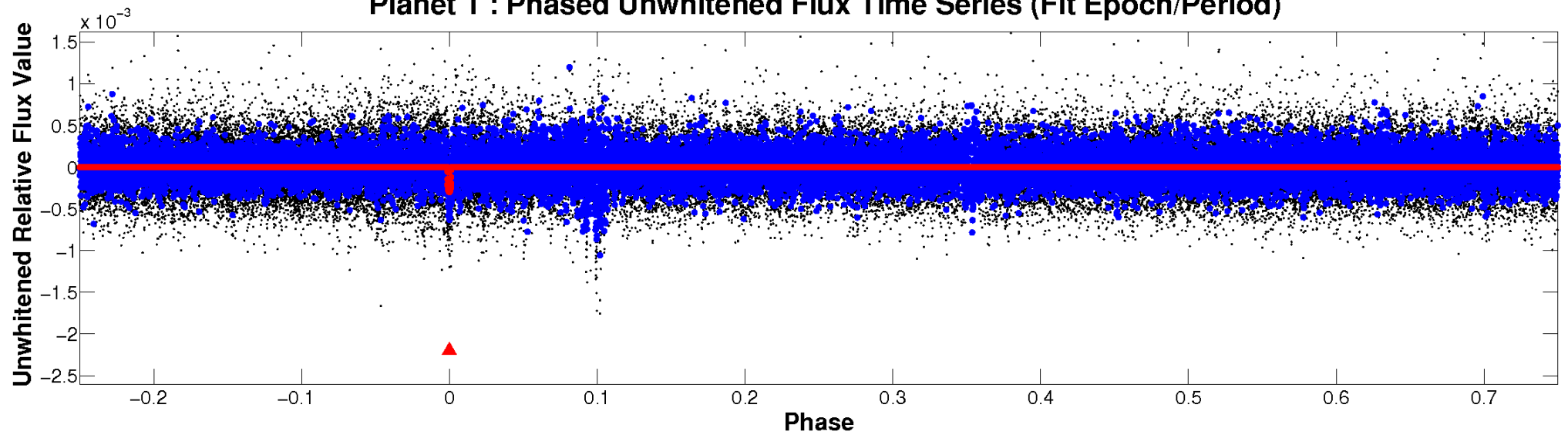
TCE 007257180-01



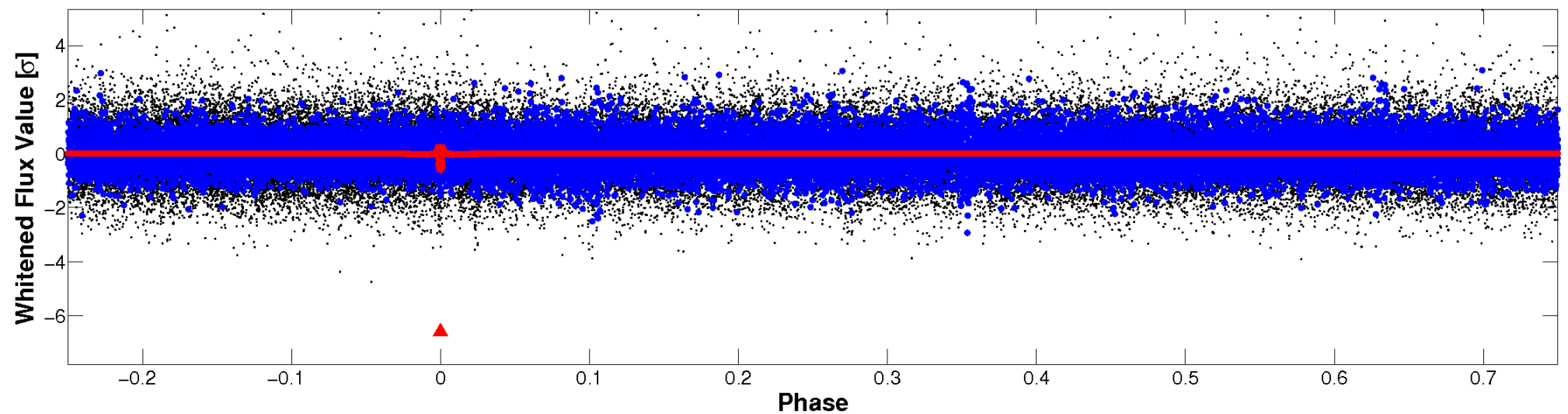


# Non-Whitened Vs. Whitened Light Curve

**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

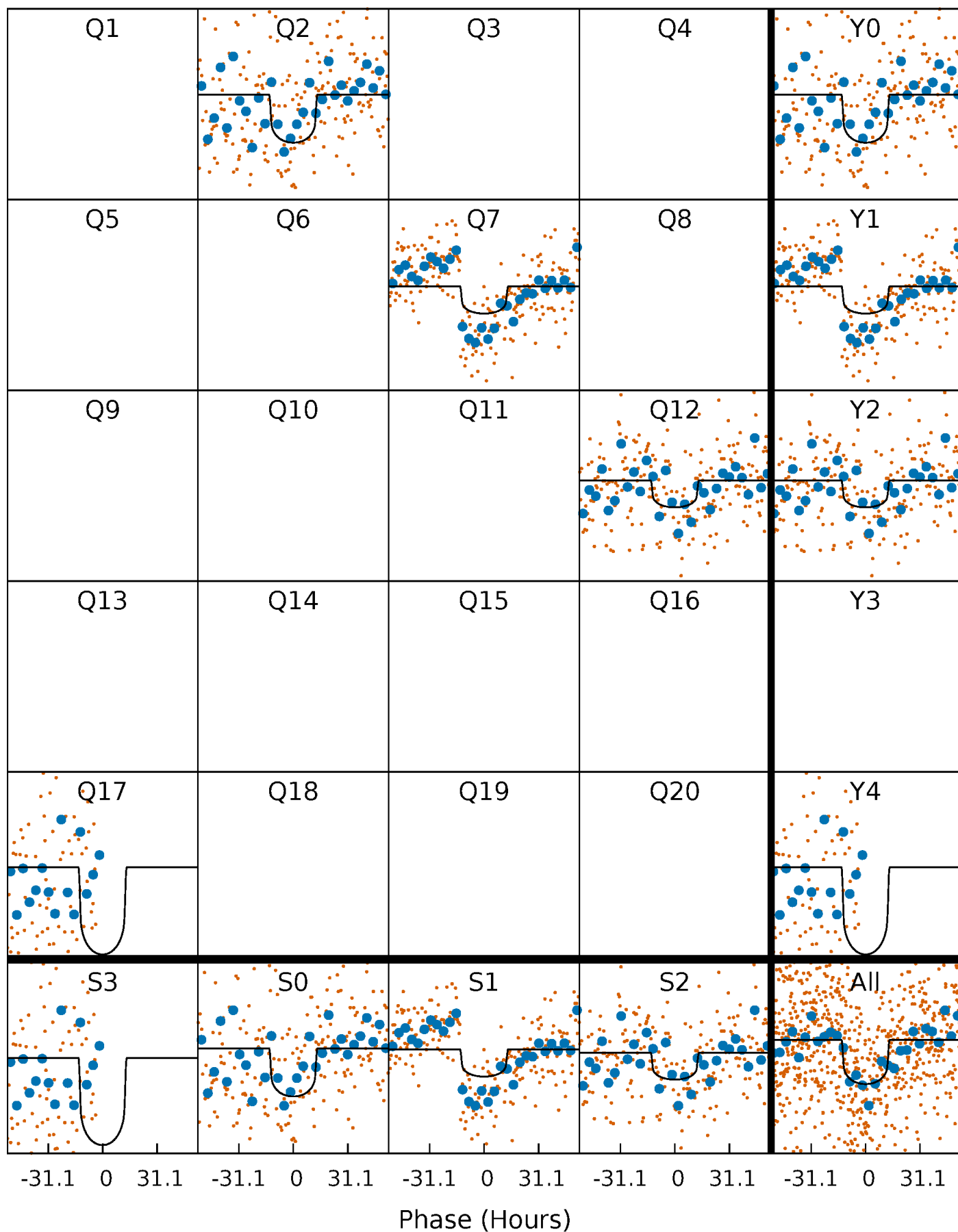
TCE 007257180-01 P=446.973924 Days  $T_0=240.804413$  (BKJD)





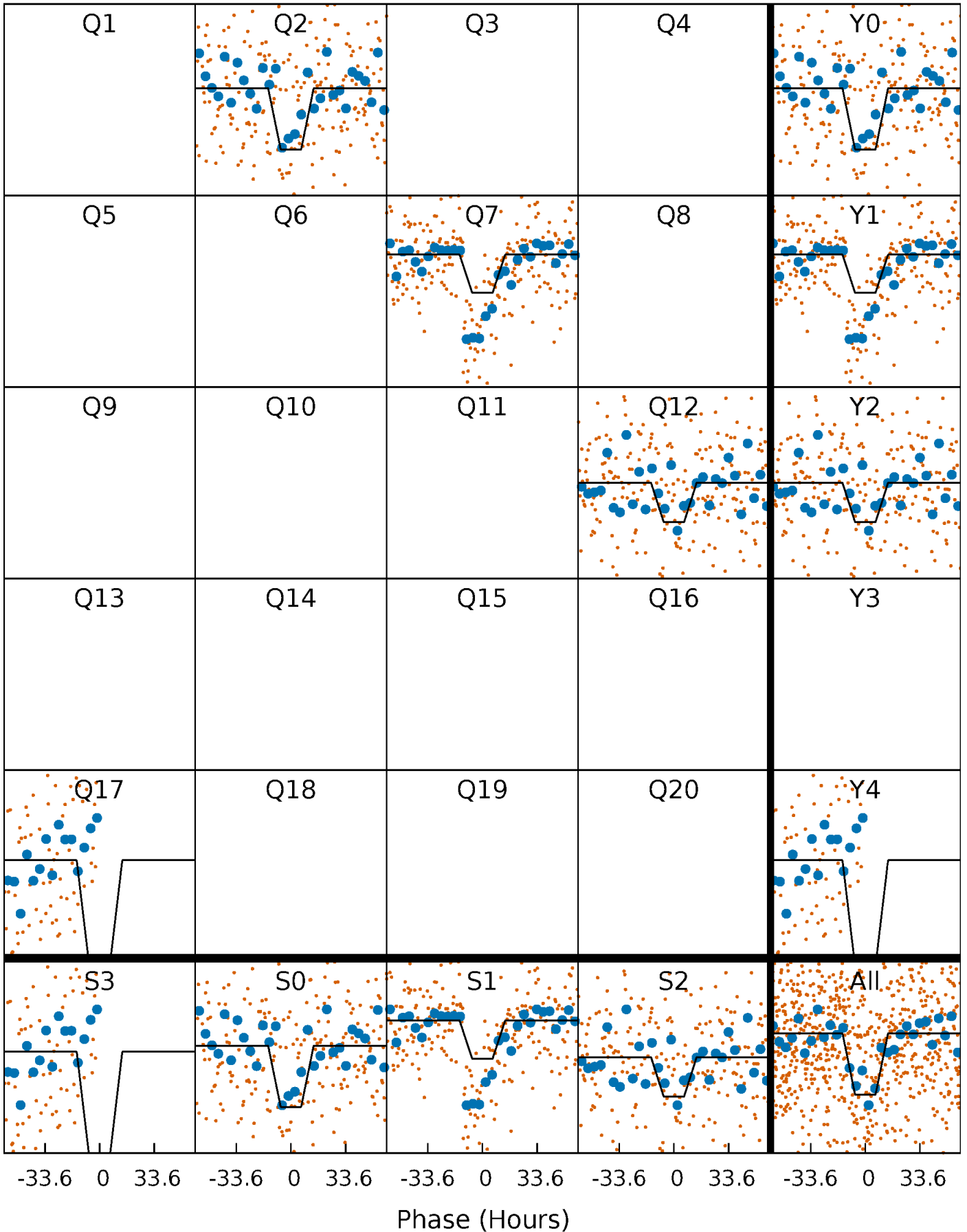
# DV Quarter-Phased Transit Curves

TCE 007257180-01 P=446.973924 Days  $T_0=240.804413$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

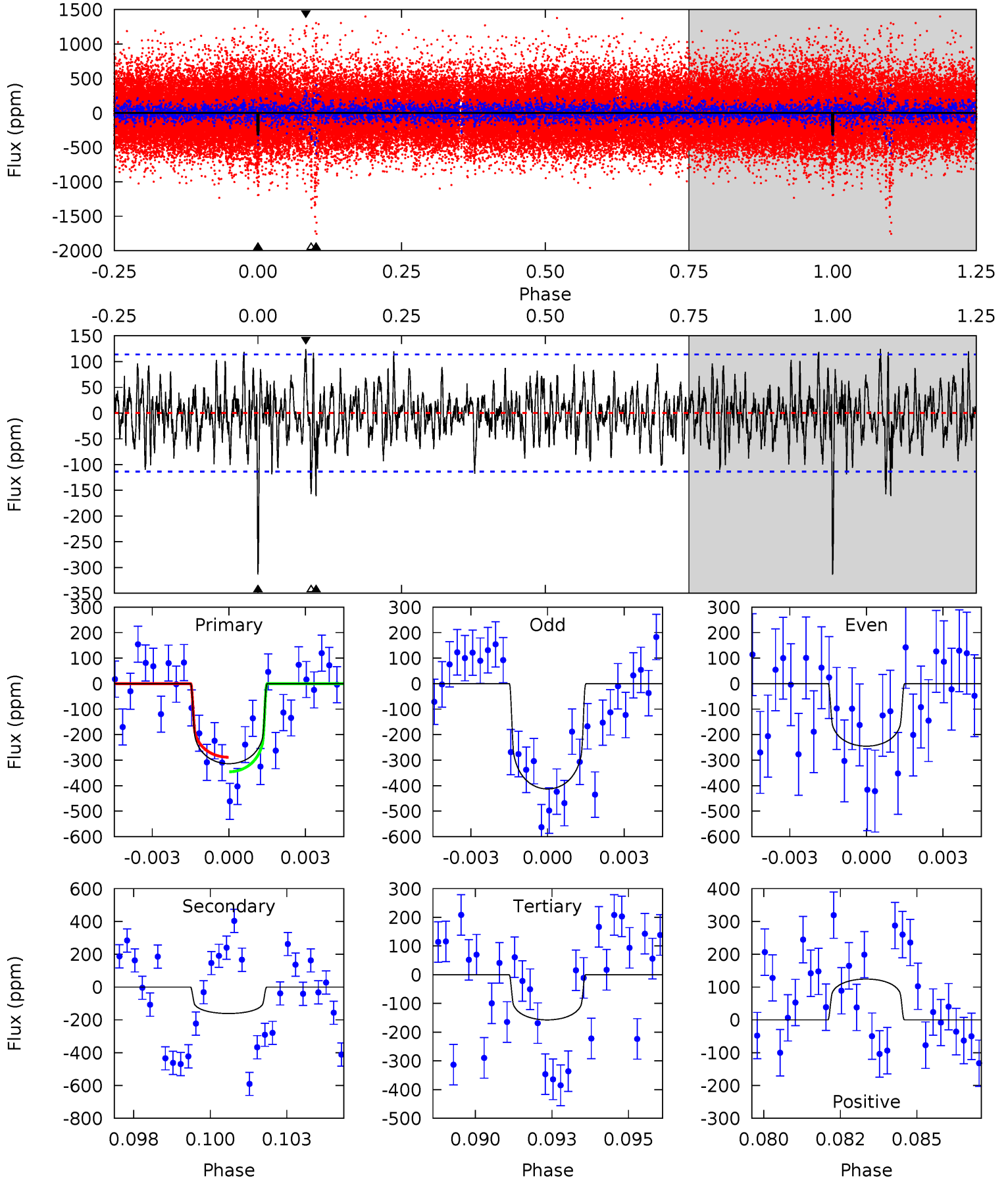
TCE 007257180-01 P=446.977314 Days  $T_0=240.733924$  (BKJD)



# DV Model-Shift Uniqueness Test

007257180-01, P = 446.973924 Days, E = 240.804413 Days

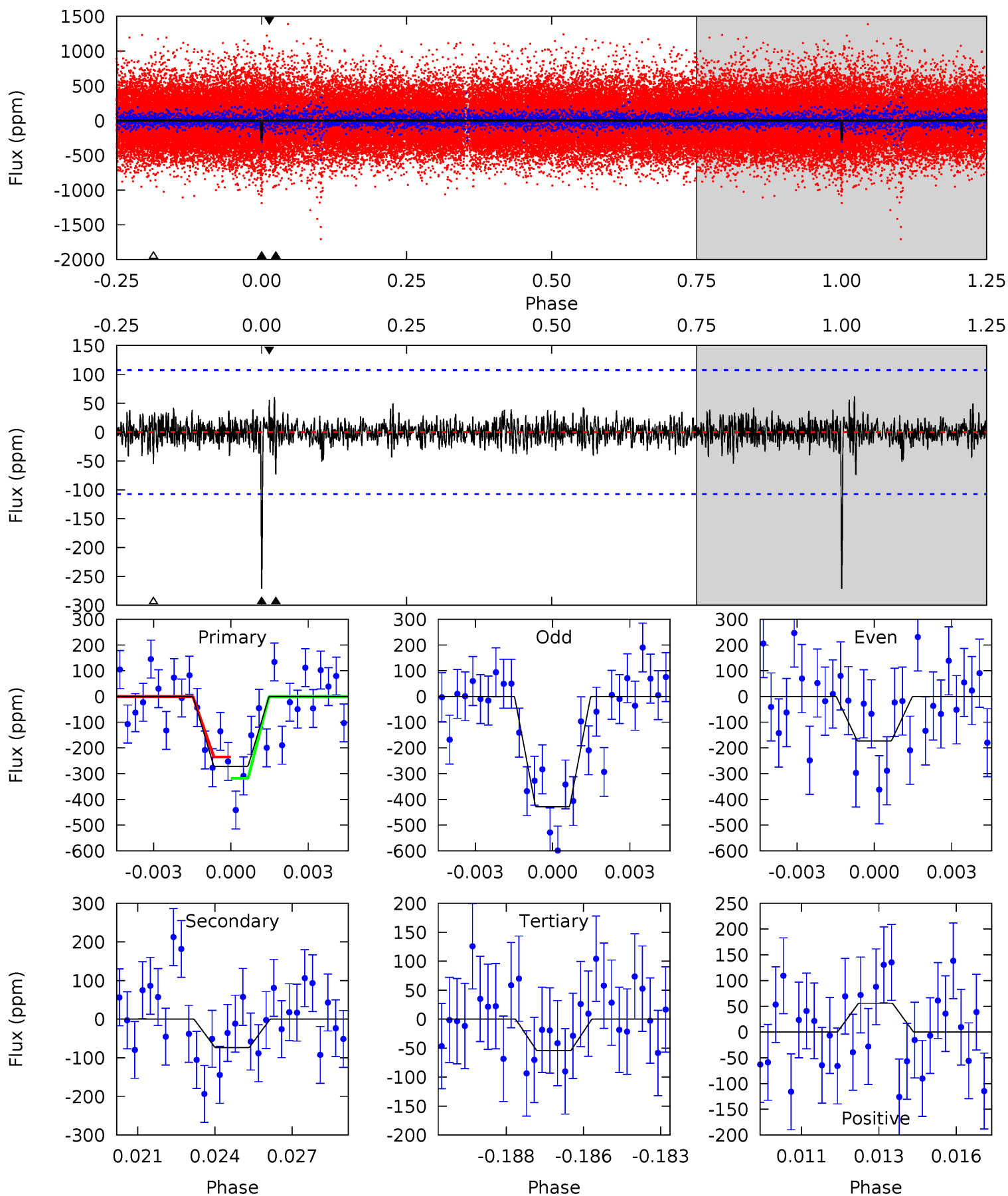
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.6	7.49	7.31	5.78	5.28	3.01	1.79	7.28	8.80	0.18	1.71	3.86	1.10	0.28	1.31



# Alt Model-Shift Uniqueness Test

007257180-01, P = 446.977314 Days, E = 240.733924 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
13.3	3.61	2.67	2.74	5.28	3.01	0.71	10.7	10.6	0.94	0.87	6.19	1.25	0.18	2.02



### Stellar Parameters For KIC 007257180

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5807^{+144}_{-158}$	$4.576^{+0.036}_{-0.144}$	$-0.400^{+0.300}_{-0.300}$	$0.800^{+0.168}_{-0.067}$	$0.886^{+0.087}_{-0.096}$	$2.439^{+0.444}_{-0.962}$
	+2%/-3%	+1%/-3%	+75%/-75%	+21%/-8%	+10%/-11%	+18%/-39%
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 007257180-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-161 \pm 22$	$1.60^{+0.36}_{-0.32}$	$311^{+17}_{-12}$	$5016^{+515}_{-387}$	$41657^{+22722}_{-13639}$
Alt.	$-73 \pm 20$	$1.60^{+0.33}_{-0.35}$	$312^{+15}_{-14}$	$4298^{+432}_{-376}$	$18921^{+13062}_{-7506}$

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

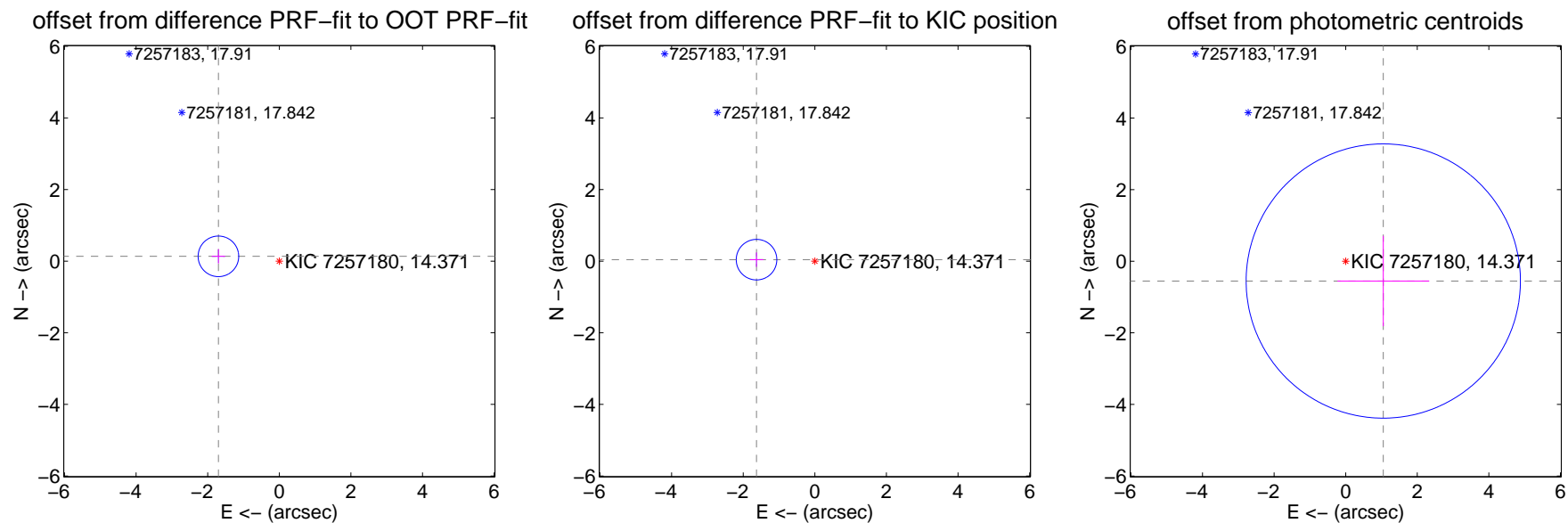
## DV Centroid Data

Supplemental centroid analysis for 007257180-01. Kepler magnitude: 14.37. Transit SNR 6.98

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.705 \pm 0.189$	9.03	$1.700 \pm 0.189$	$0.134 \pm 0.202$
PRF-fit source offset from KIC position	$1.628 \pm 0.189$	8.62	$1.628 \pm 0.189$	$0.041 \pm 0.202$
photometric centroid source offset	$1.19 \pm 1.28$	0.93	$-1.05 \pm 1.28$	$-0.55 \pm 1.26$



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.

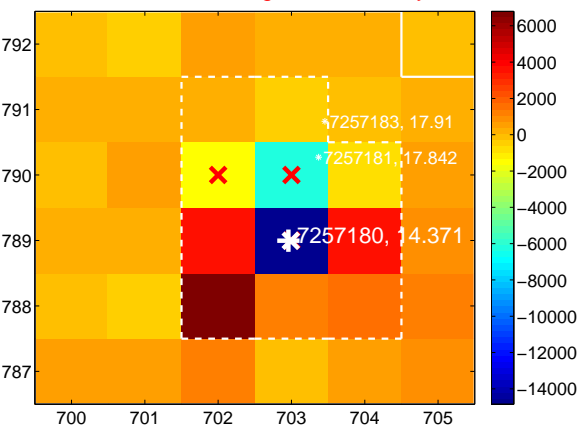
Q1 no difference image



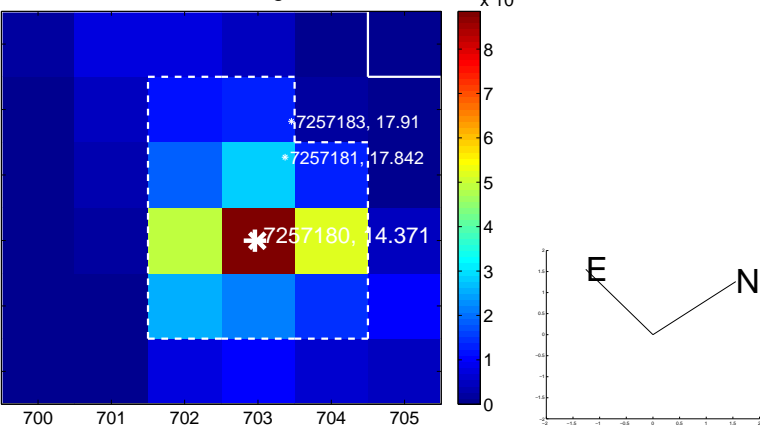
Q1 no OOT image



Q2 difference image. Poor Quality



Q2 OOT image



Q3 no difference image



Q3 no OOT image



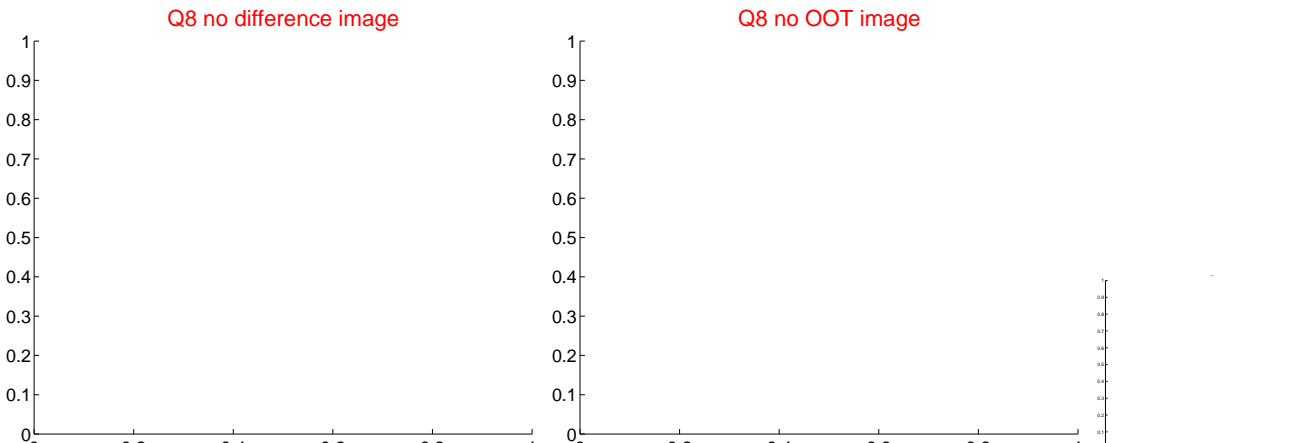
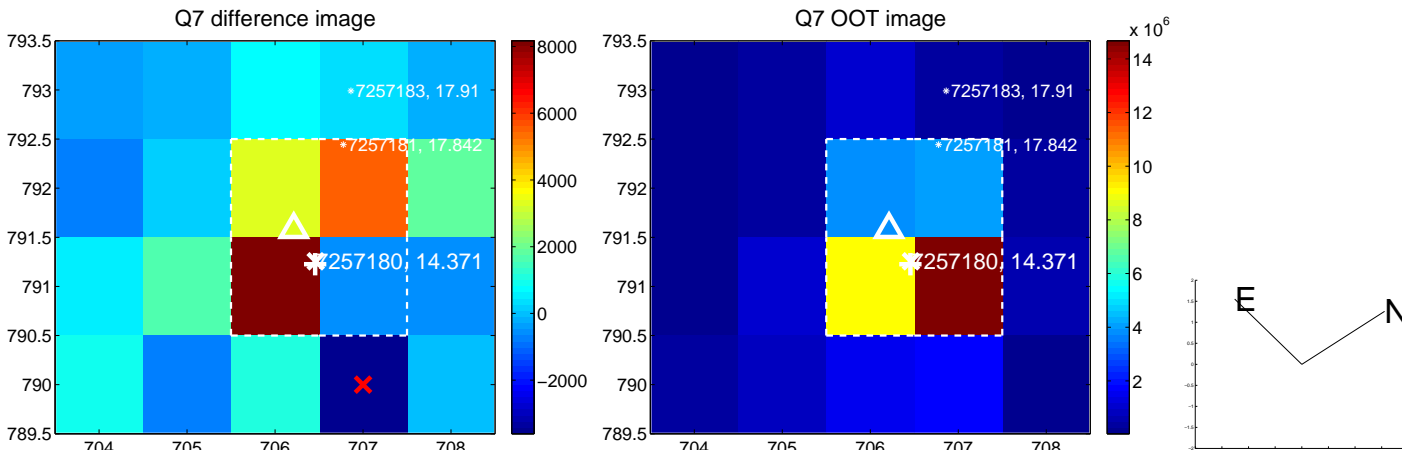
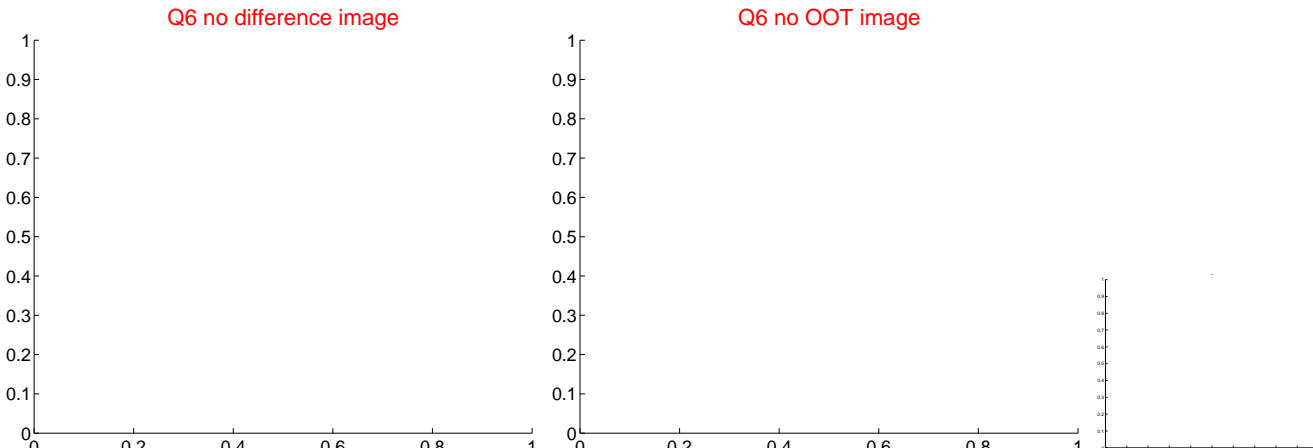
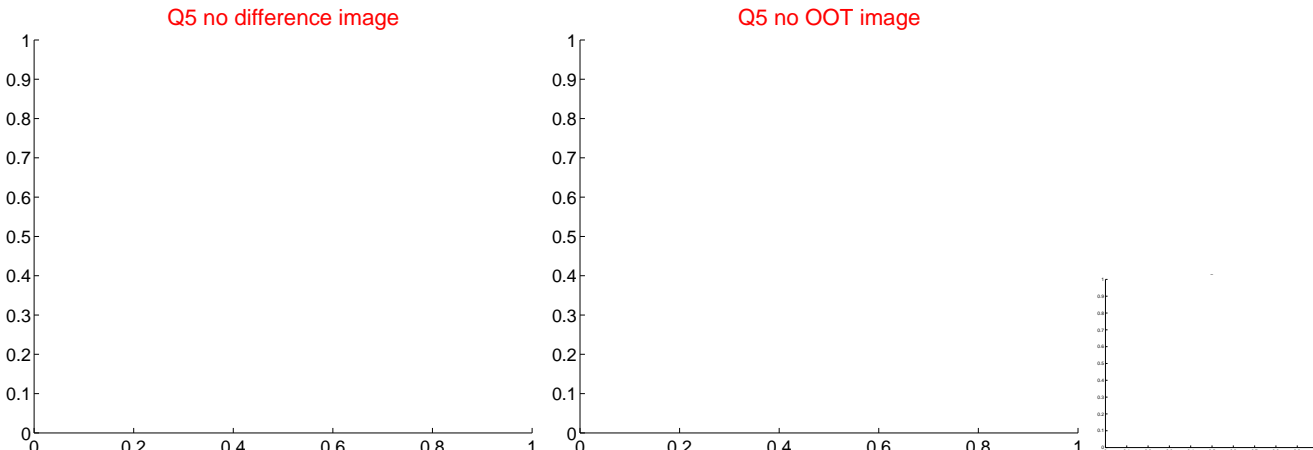
Q4 no difference image



Q4 no OOT image



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



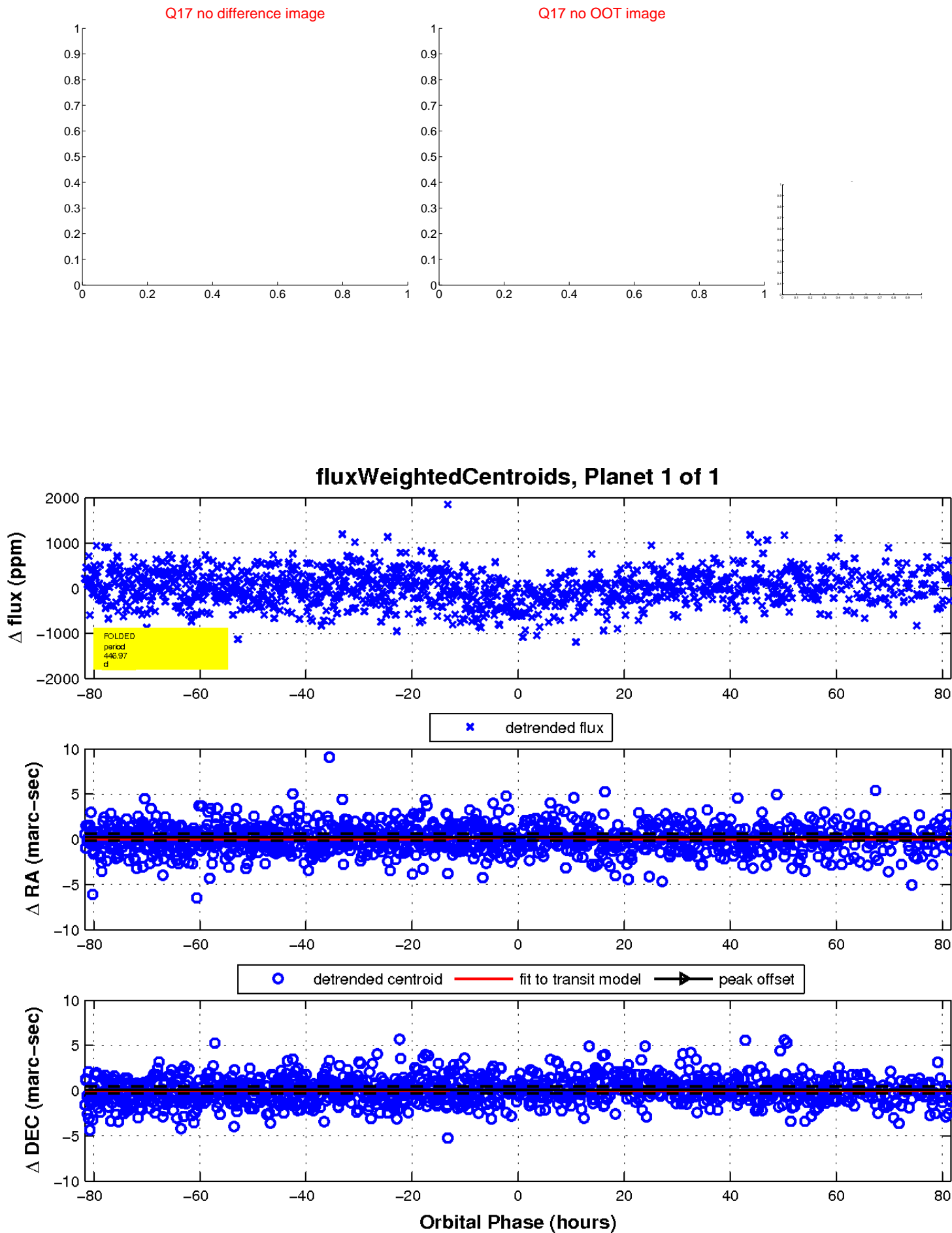
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

