

# KIC 007176375

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007176375-01	OBS	No	289.150032	226.865279	52.4	13.208	11.4	5.1	1.11	6329	0.90	2.46

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007176375-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_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.

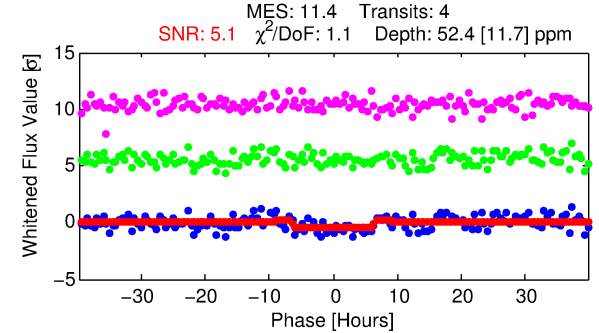
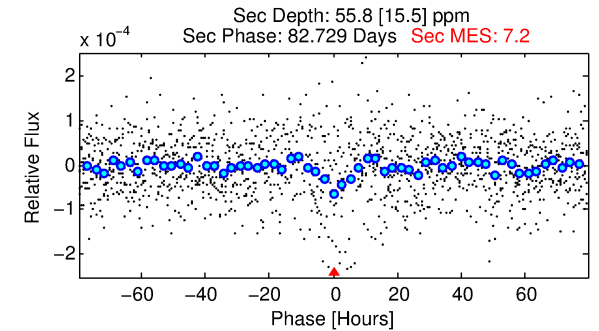
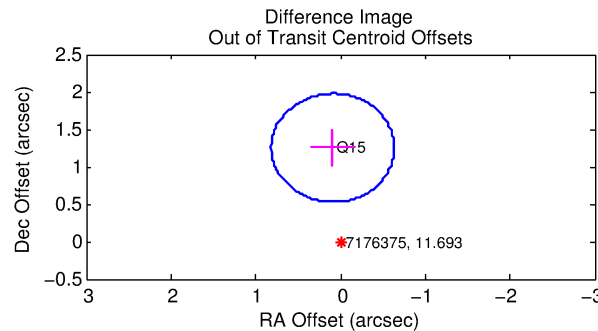
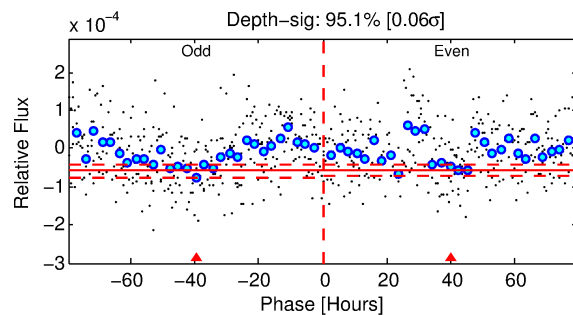
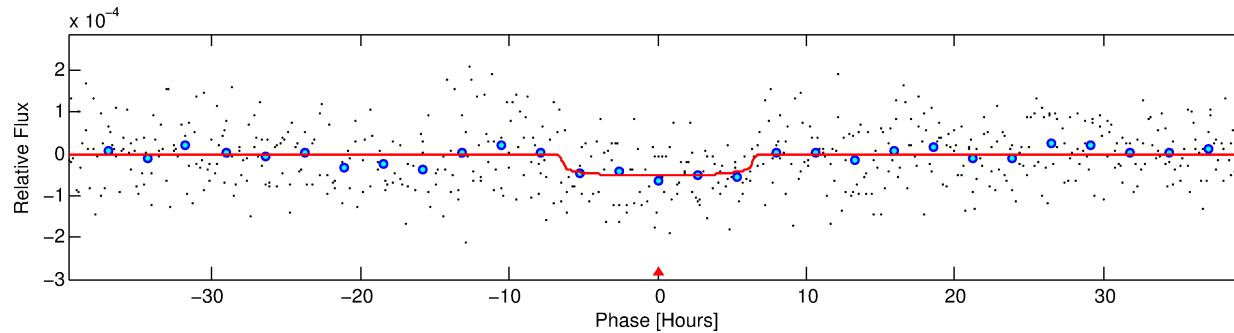
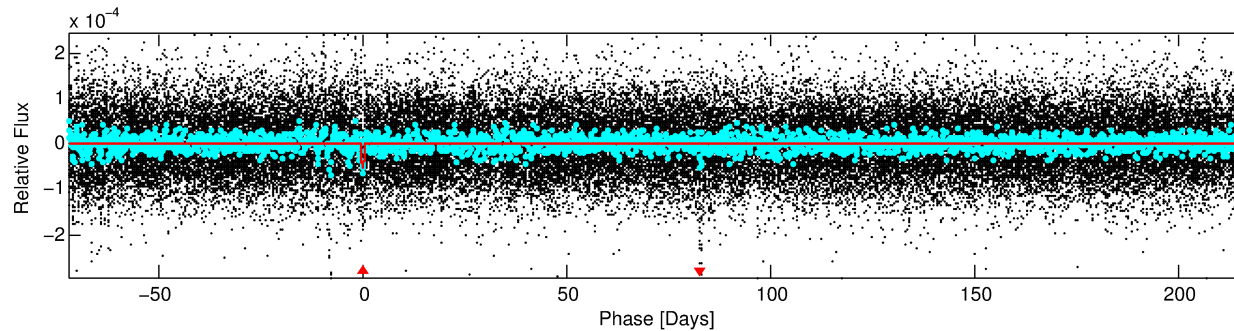
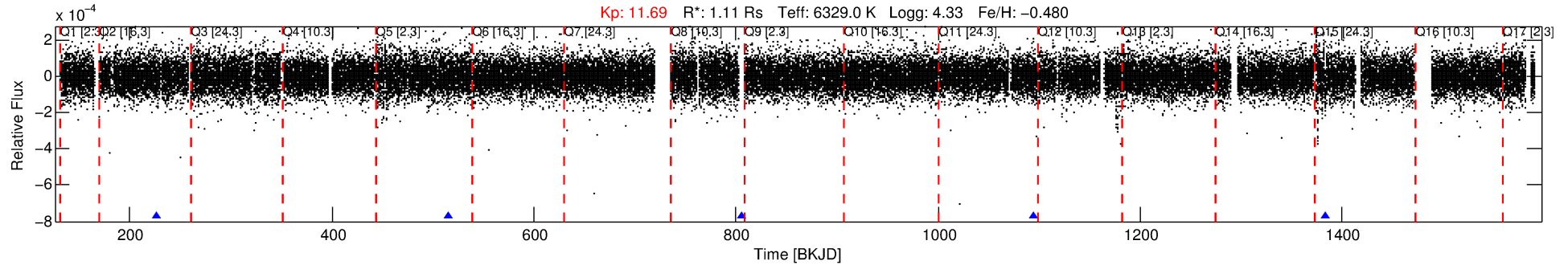
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007176375-01

No Significant Match Found

# DV One-Page Summary

KIC: 7176375 Candidate: 1 of 1 Period: 289.150 d



## DV Fit Results:

Period = 289.15003 [0.01151] d  
Epoch = 226.8653 [0.0294] BKJD  
Rp/R\* = 0.0075 [0.0031]  
a/R\* = 91.27 [207.42]  
b = 0.85 [0.76]  
Seff = 2.46 [0.65]  
Teq = 319 [21] K  
Rp = 0.90 [0.42] Re  
a = 0.8458 [0.1371] AU  
Ag = 26901.35 [24656.18] [1.09σ]  
Teffp = 6322 [1412] K [4.25σ]

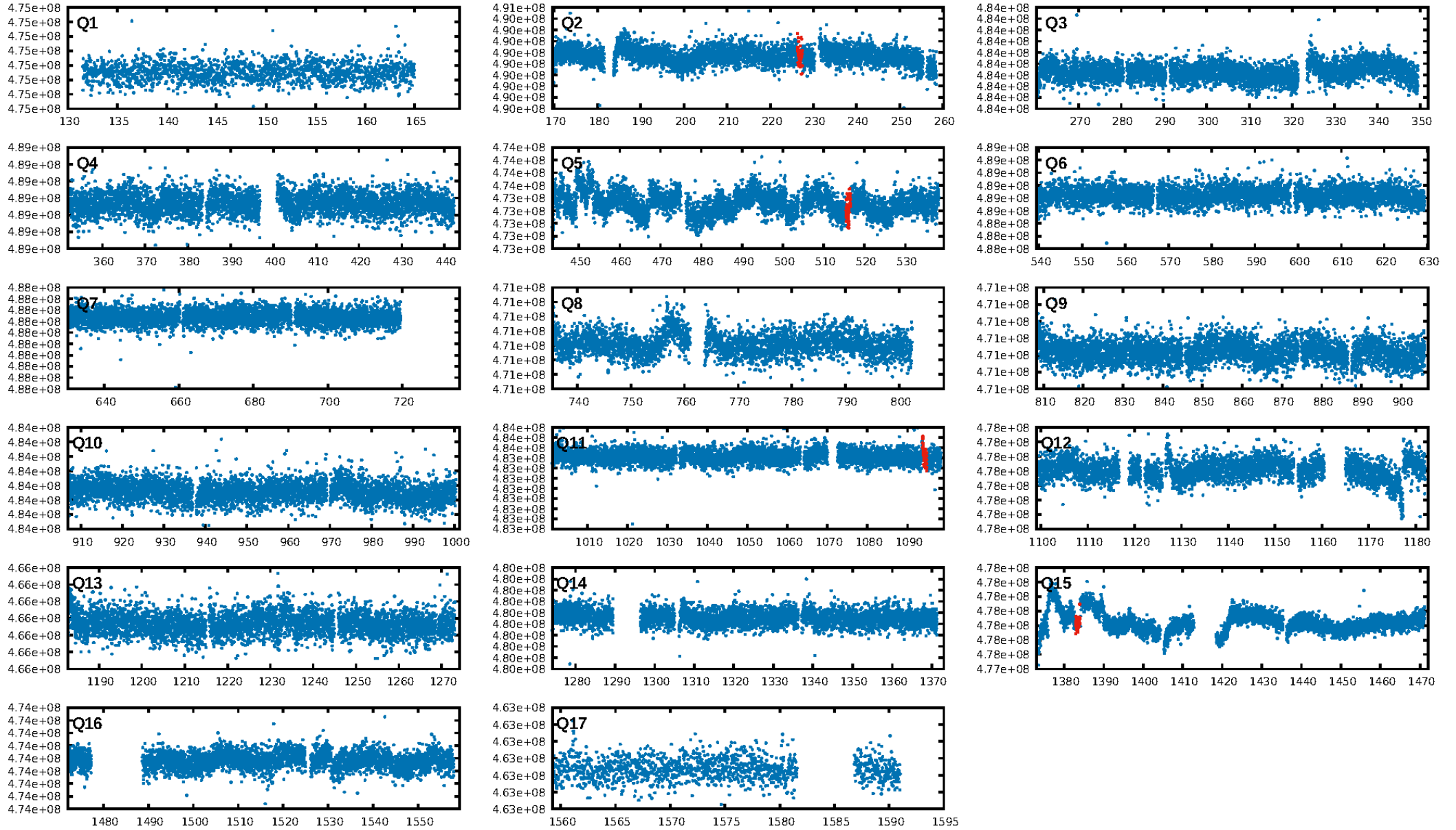
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 99.7%  
Bootstrap-pfa: 2.89e-18  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -6.904  
Centroid-sig: 10.4%  
Centroid-so: 3.903 arcsec [1.14σ]  
OotOffset-rm: 1.255 arcsec [5.19σ]  
KicOffset-rm: 1.418 arcsec [5.79σ]  
OotOffset-st: 0/1/0/0 [1]  
KicOffset-st: 0/1/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [3/3]

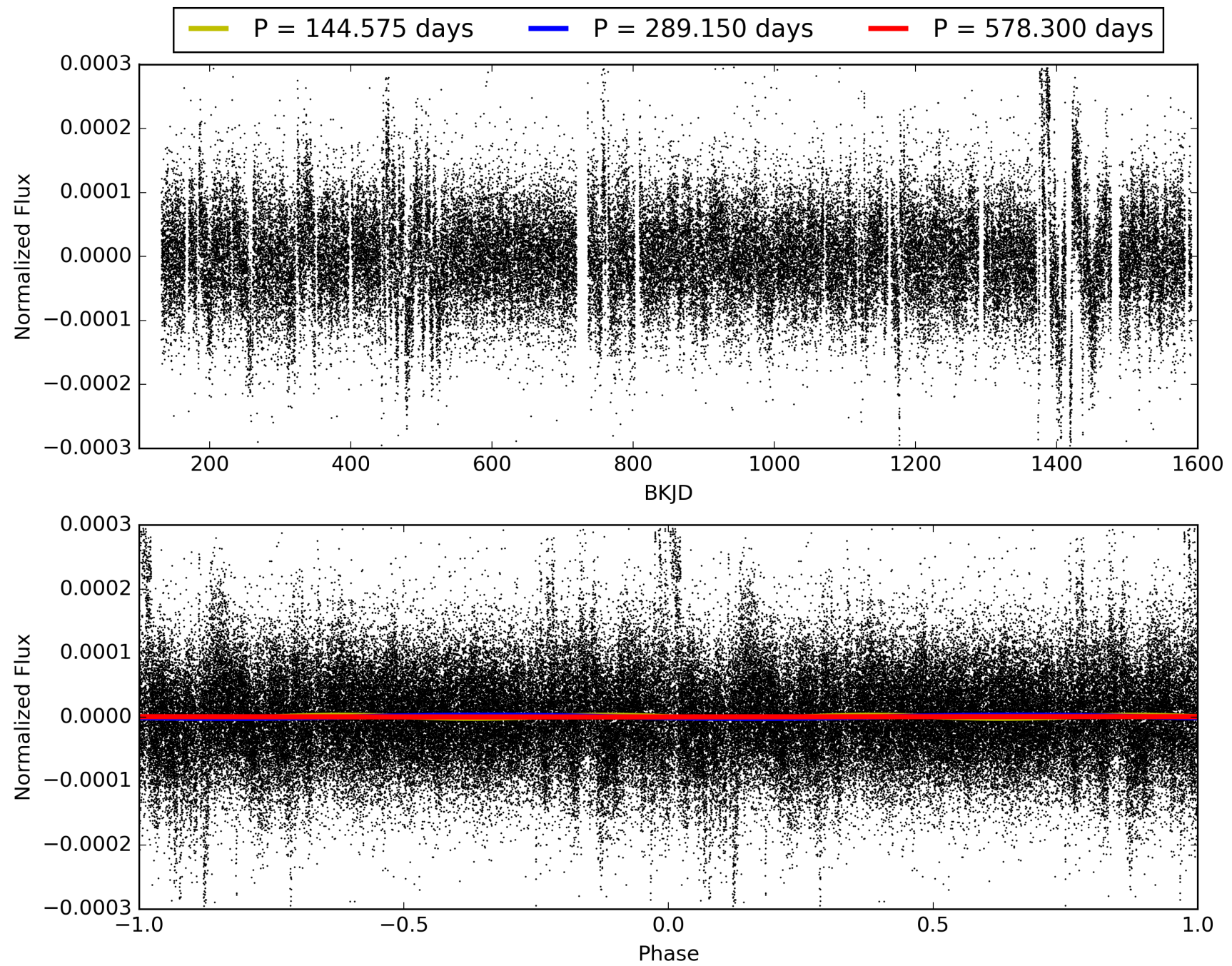
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:56:22 Z

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

# TCE 007176375-01, PDC Light Curves

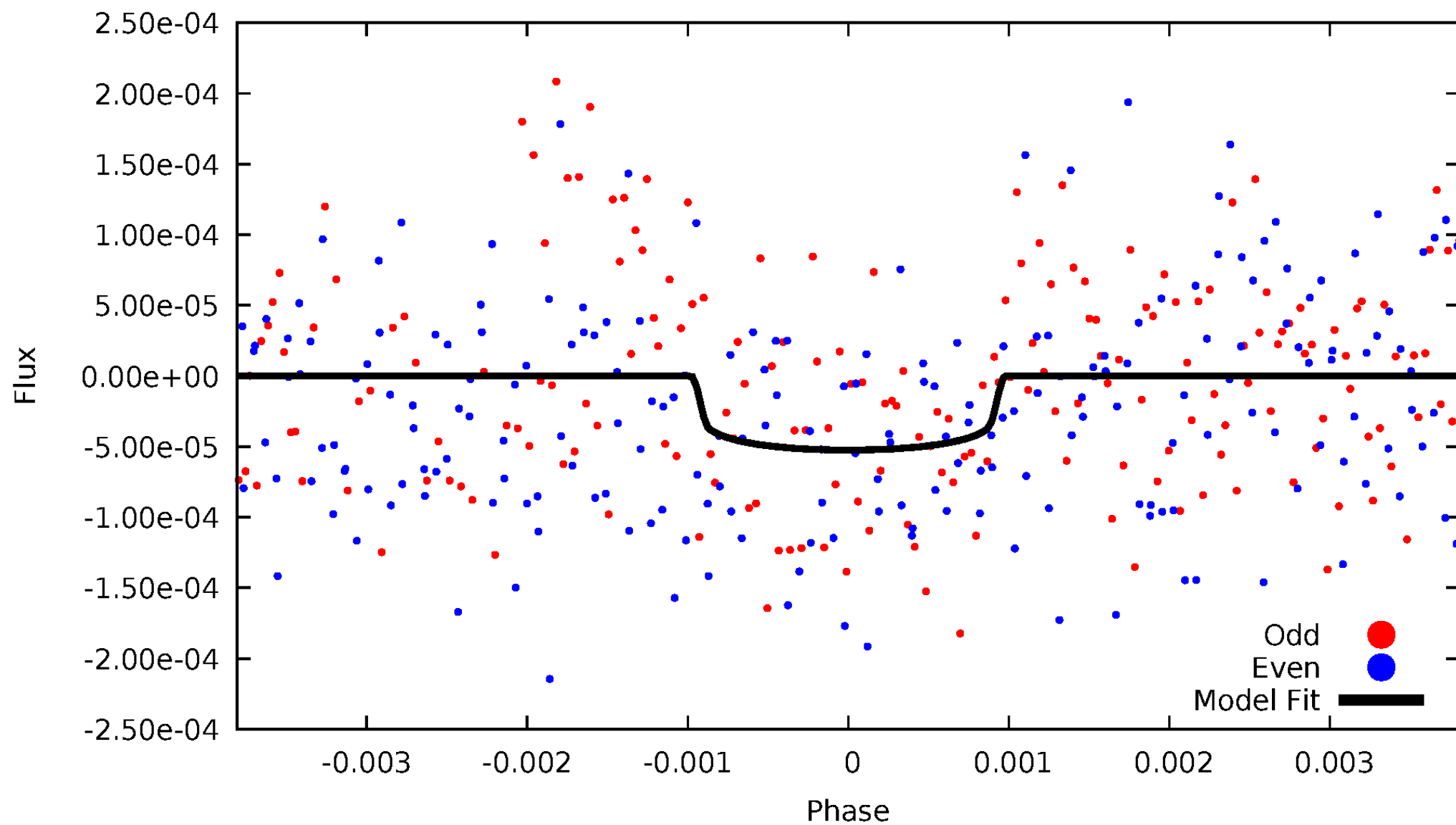


# TCE 007176375-01



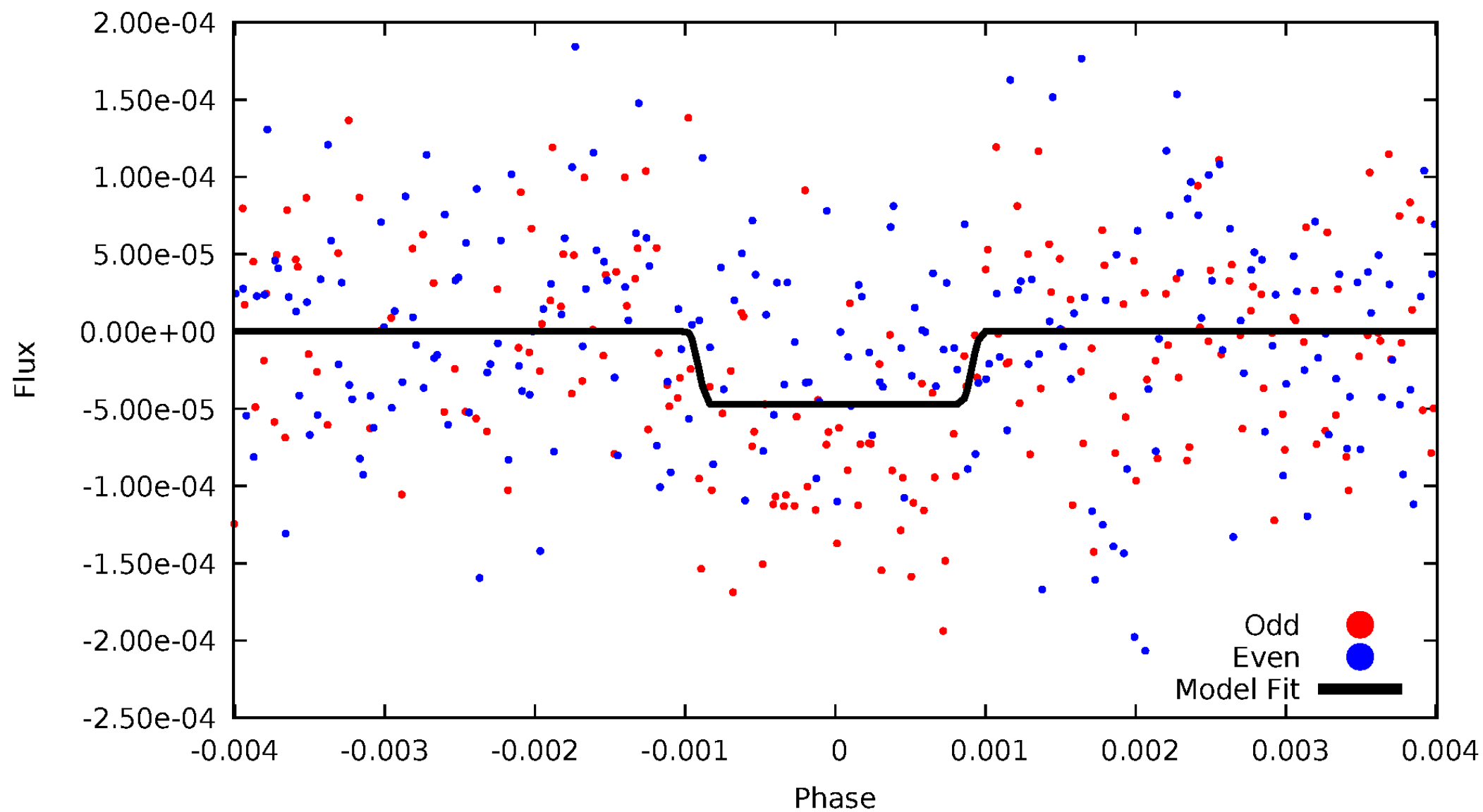
# DV Odd/Even

TCE 007176375-01



# ALT Odd/Even

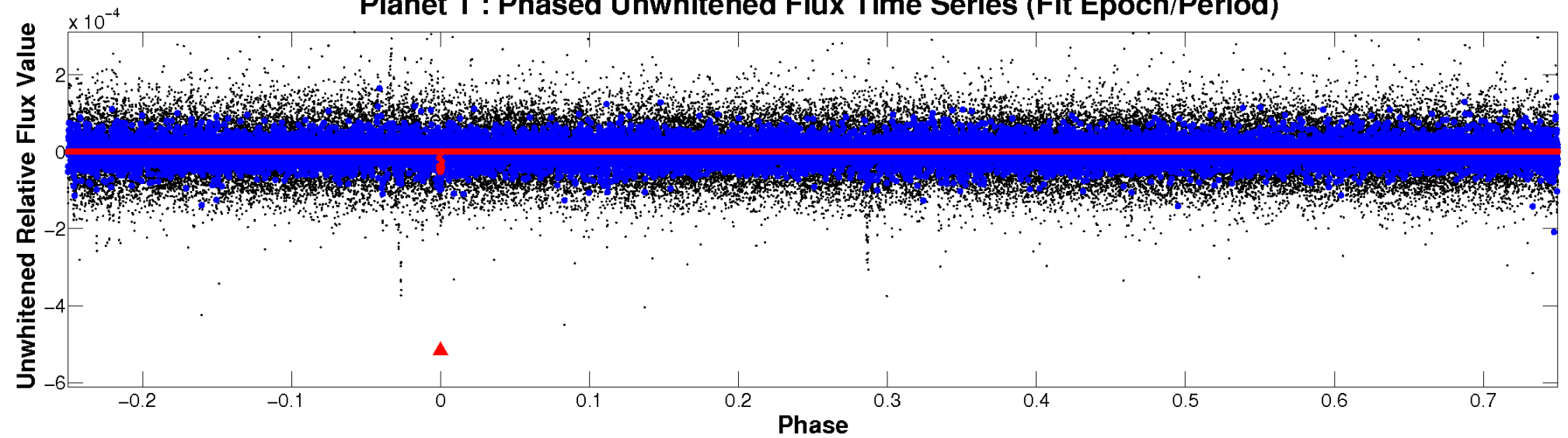
TCE 007176375-01



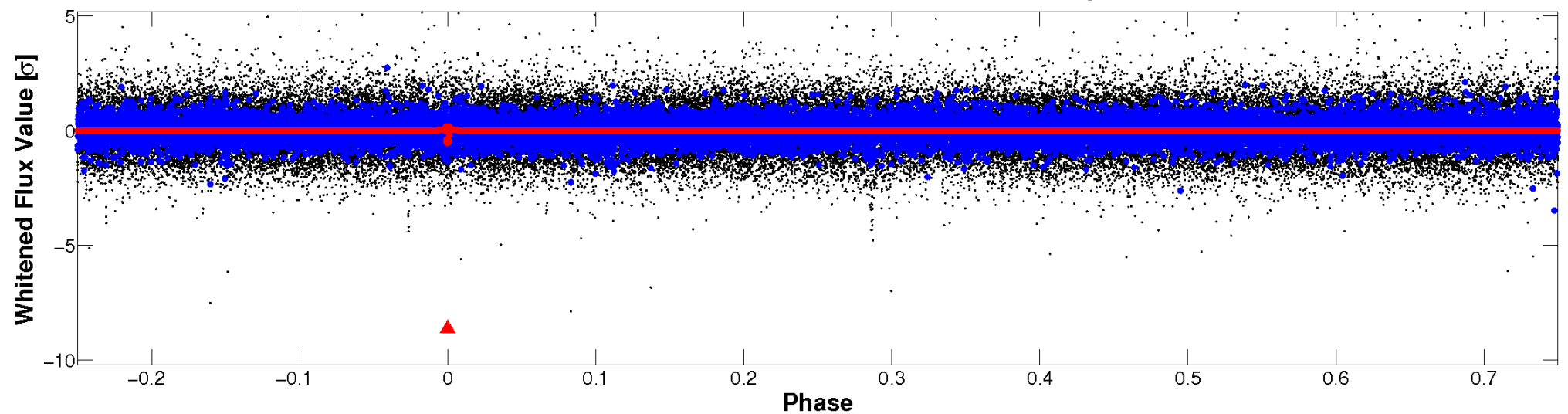


# Non-Whitened Vs. Whitened Light Curve

**Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)**

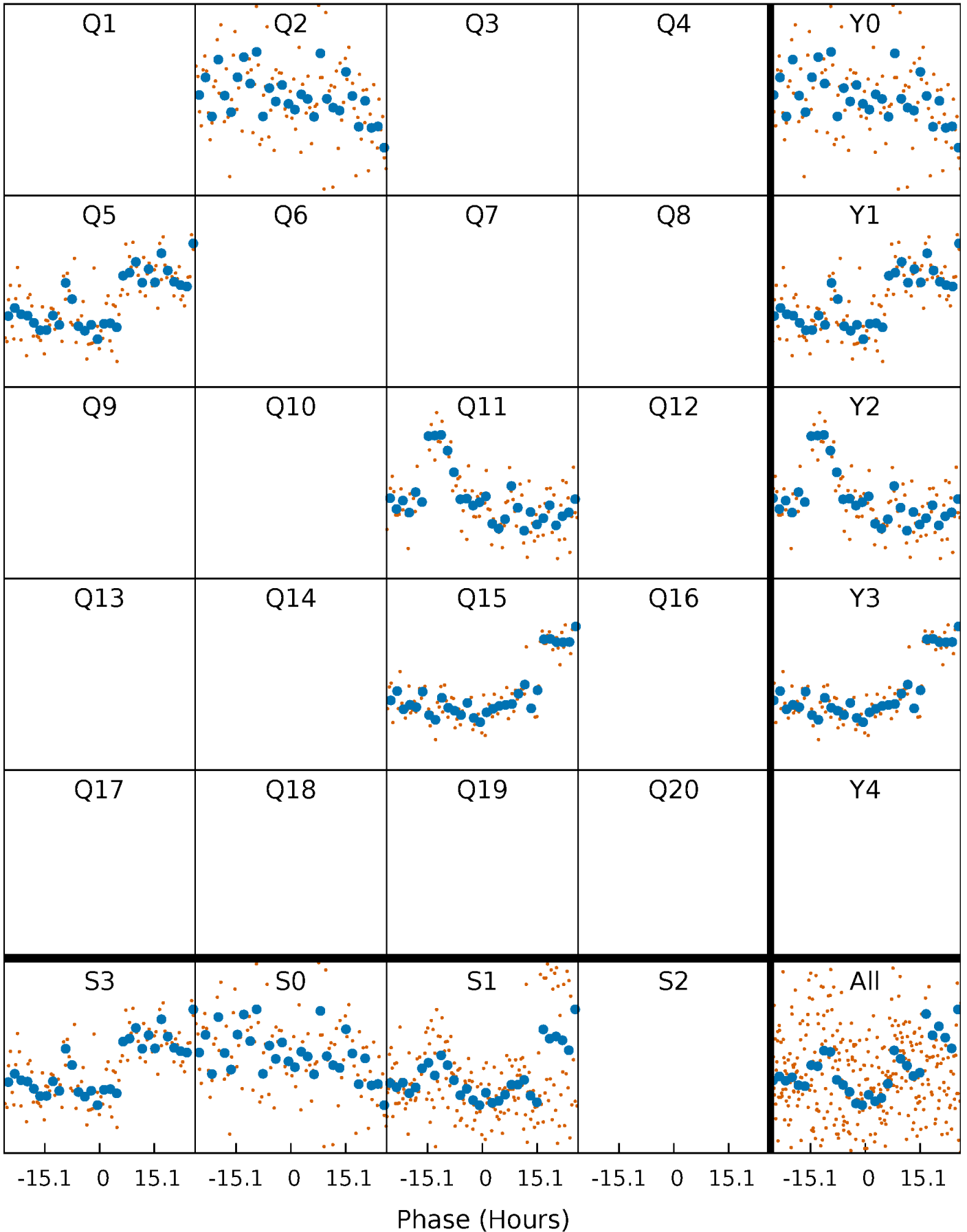


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

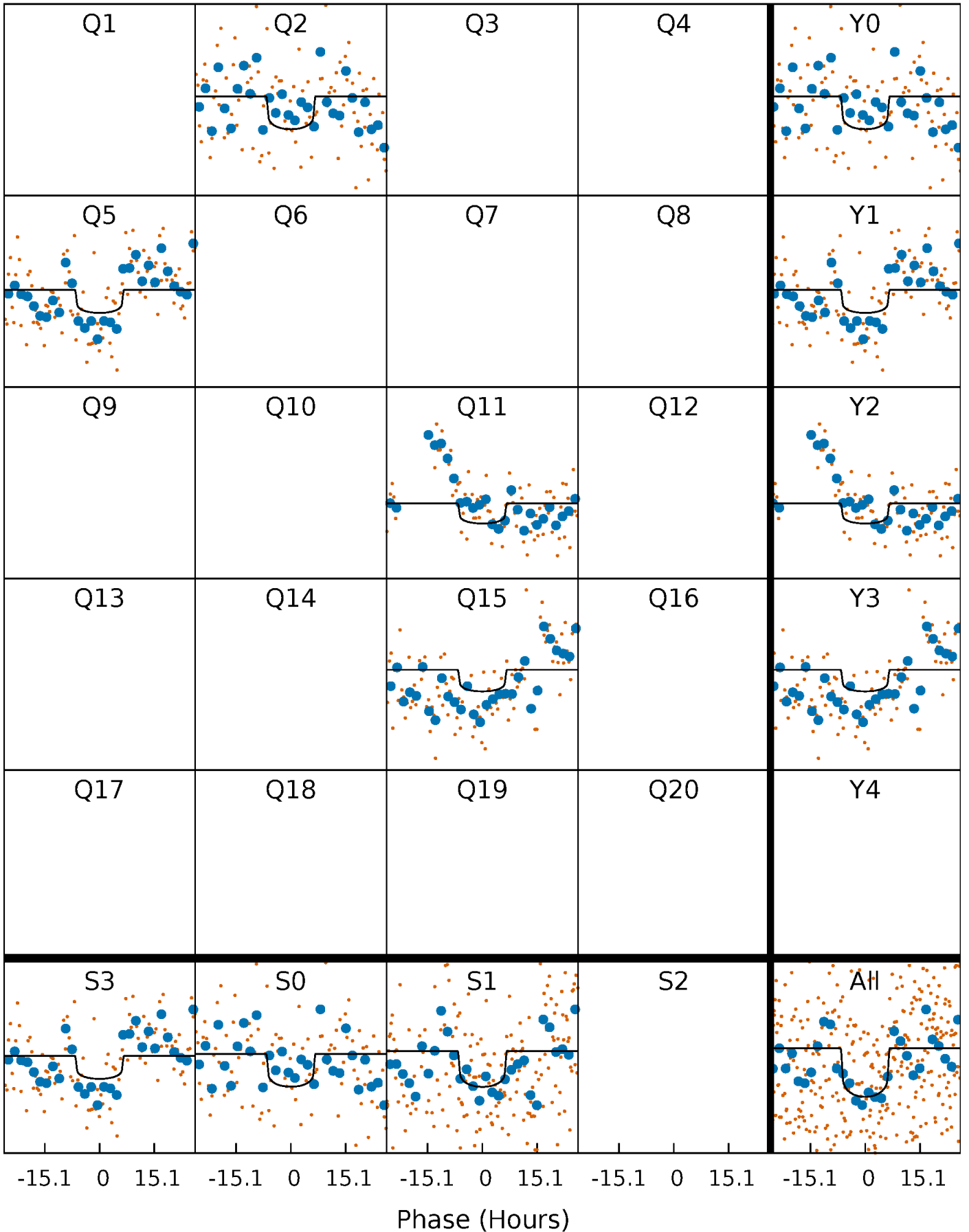
TCE 007176375-01 P=289.150032 Days  $T_0=226.865279$  (BKJD)





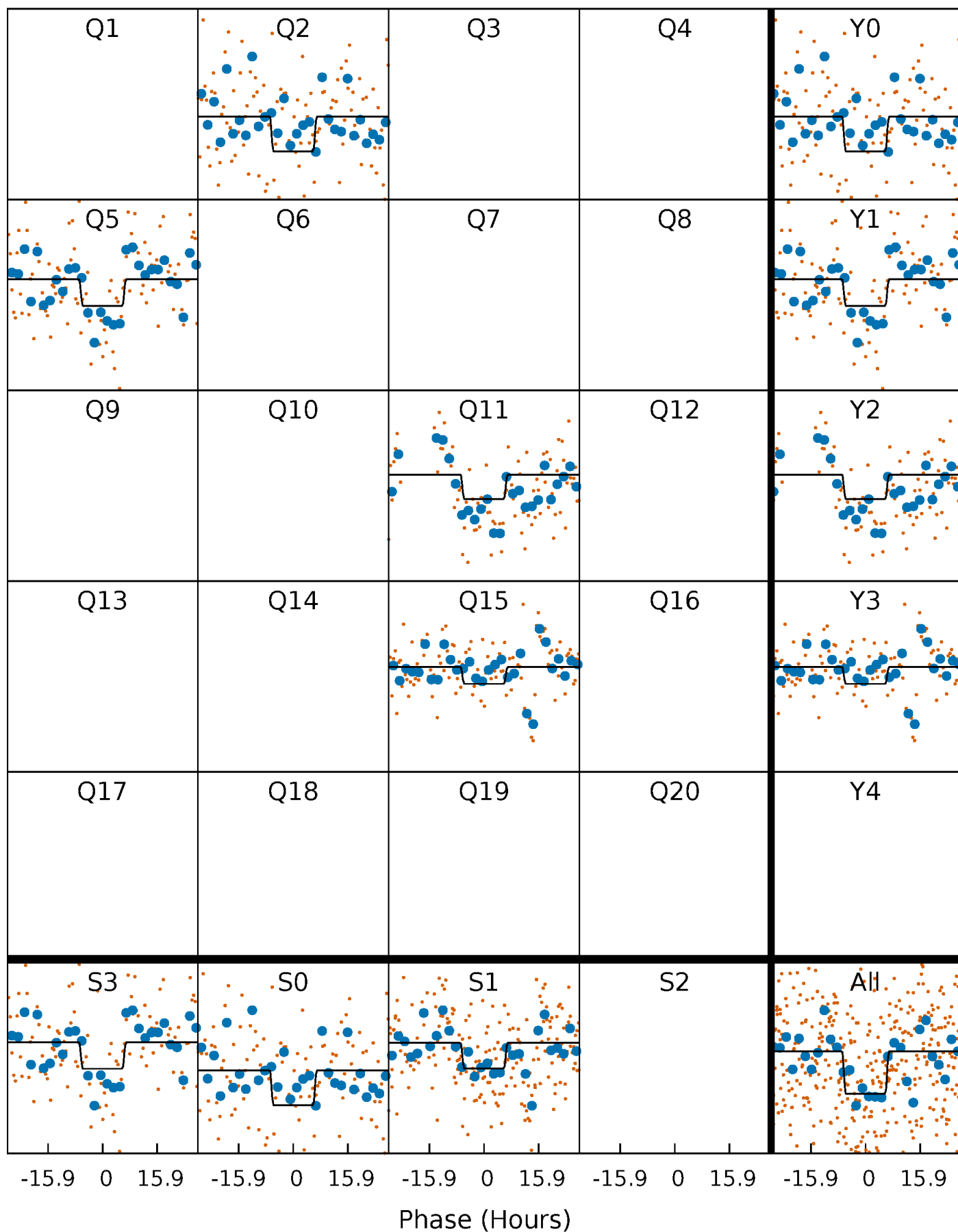
# DV Quarter-Phased Transit Curves

TCE 007176375-01 P=289.150032 Days  $T_0=226.865279$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

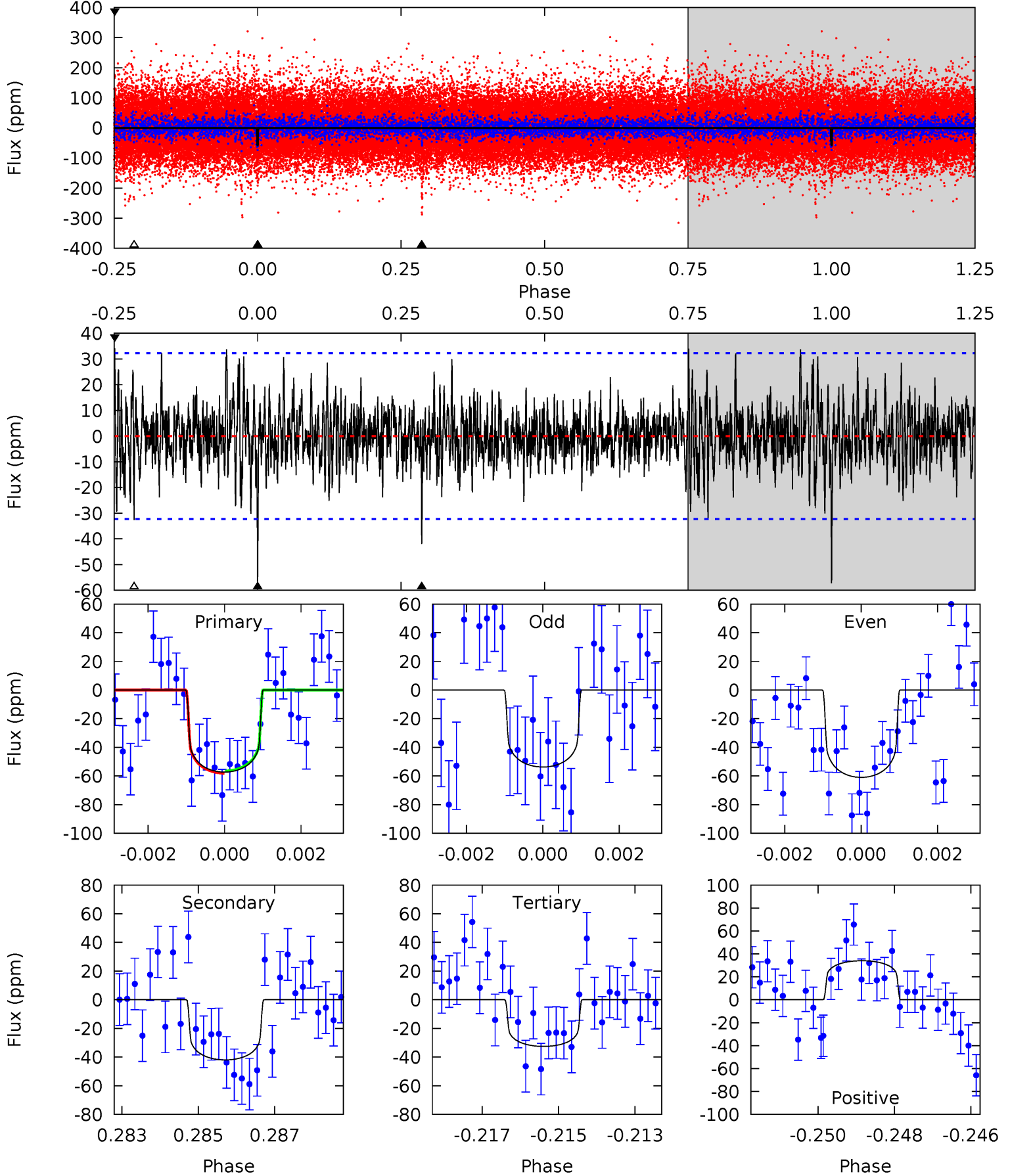
TCE 007176375-01 P=289.162119 Days  $T_0=226.847150$  (BKJD)



# DV Model-Shift Uniqueness Test

007176375-01,  $P = 289.150032$  Days,  $E = 226.865279$  Days

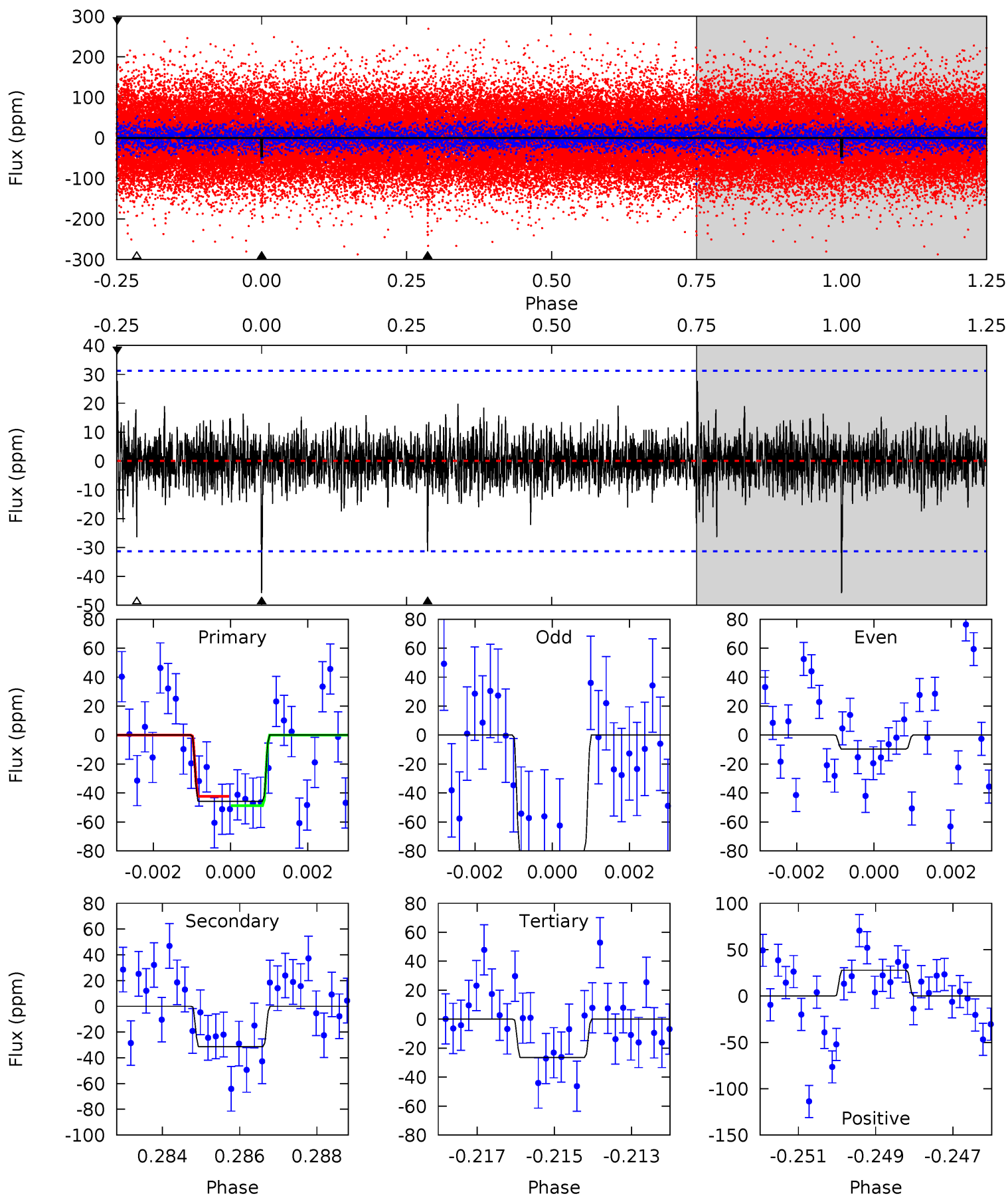
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.47	6.94	5.38	5.63	5.33	3.10	1.45	4.08	3.84	1.56	1.32	0.60	1.05	0.37	0.13



# Alt Model-Shift Uniqueness Test

007176375-01, P = 289.162119 Days, E = 226.847150 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
7.79	5.34	4.50	4.73	5.33	3.09	0.93	3.29	3.06	0.83	0.60	6.03	1.00	0.38	0.55



### Stellar Parameters For KIC 007176375

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6329^{+158}_{-190}$	$4.335^{+0.130}_{-0.130}$	$-0.480^{+0.300}_{-0.300}$	$1.106^{+0.212}_{-0.173}$	$0.965^{+0.134}_{-0.100}$	$1.004^{+0.592}_{-0.369}$
	+2%/-3%	+3%/-3%	+62%/-62%	+19%/-16%	+14%/-10%	+59%/-37%
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 007176375-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-42 \pm 6$	$0.93^{+0.42}_{-0.37}$	$444^{+28}_{-23}$	$5796^{+1825}_{-832}$	$19272^{+33844}_{-10103}$
Alt.	$-31 \pm 6$	$0.83^{+0.38}_{-0.34}$	$445^{+26}_{-23}$	$5685^{+1839}_{-885}$	$17935^{+34328}_{-9964}$

$T_{\text{max}}$  = 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

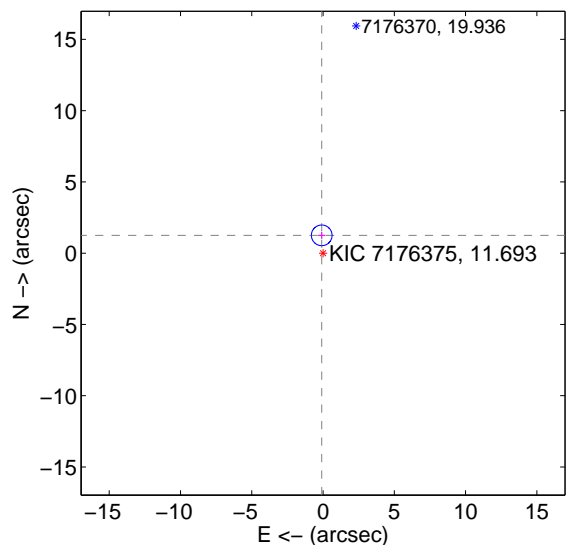
Supplemental centroid analysis for 007176375-01. **Kepler magnitude: 11.69.** Transit SNR 5.12

**There are 1 quarters with good PRF difference image offsets**

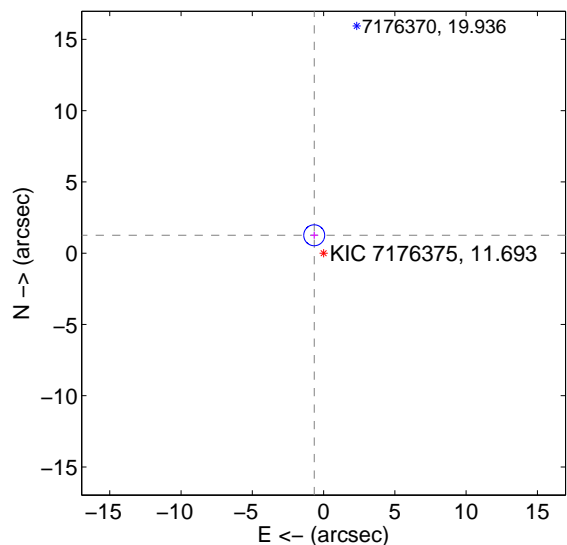
The direct PRF centroid is offset from the target star catalog position by about 0.57 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>1.255 \pm 0.242</math></b>	<b>5.19</b>	$0.092 \pm 0.256$	$1.251 \pm 0.242$
PRF-fit source offset from KIC position	<b><math>1.418 \pm 0.245</math></b>	<b>5.79</b>	$0.658 \pm 0.256$	$1.256 \pm 0.242$
photometric centroid source offset	$3.90 \pm 3.41$	1.14	$-3.20 \pm 3.48$	$2.23 \pm 3.28$

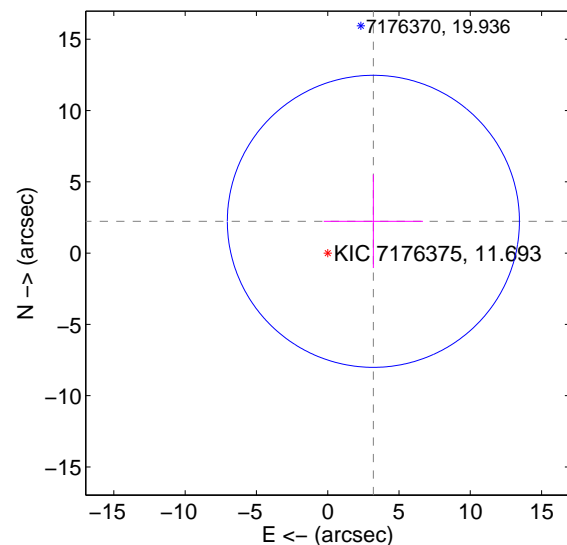
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



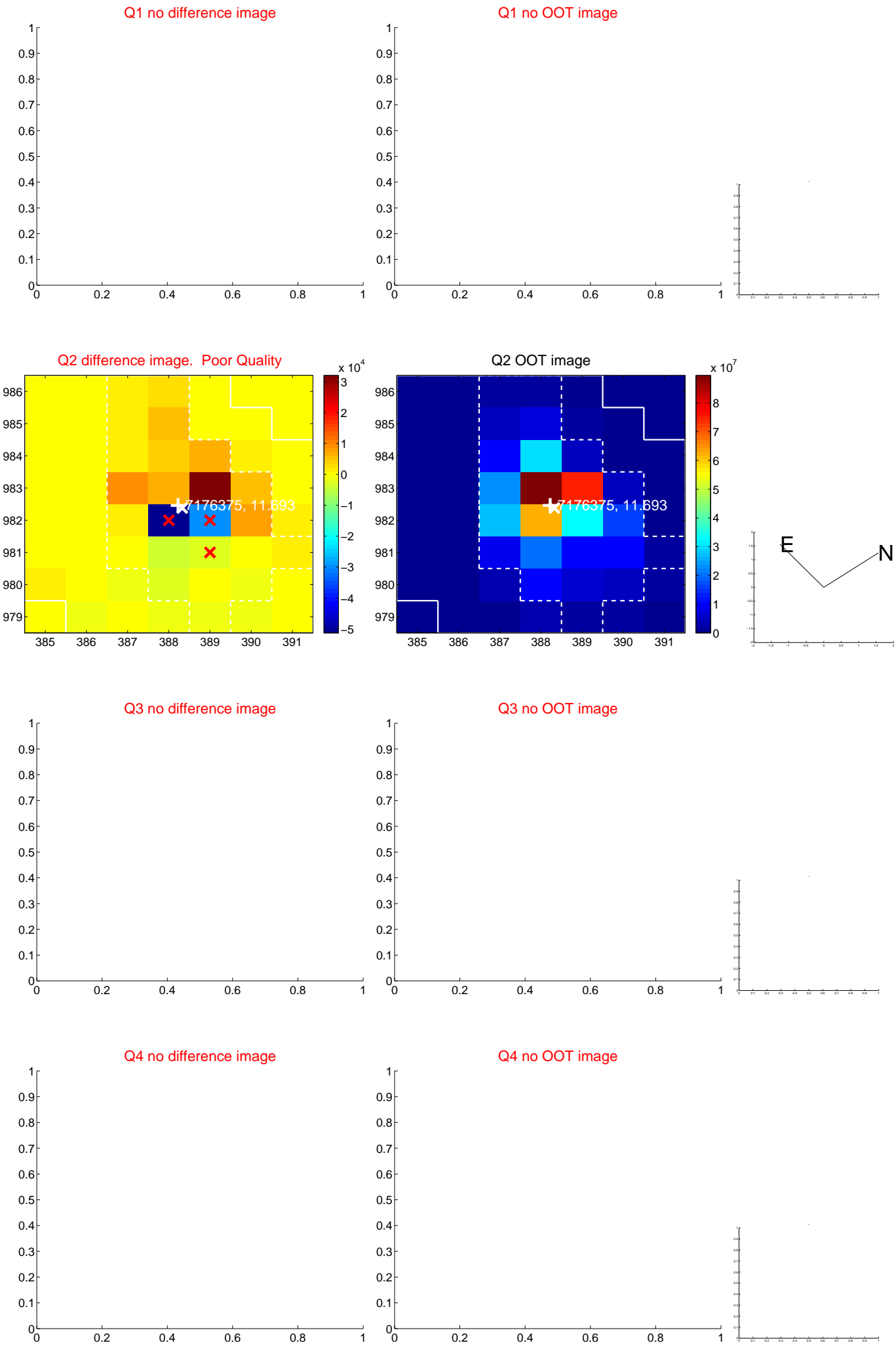
offset from photometric centroids



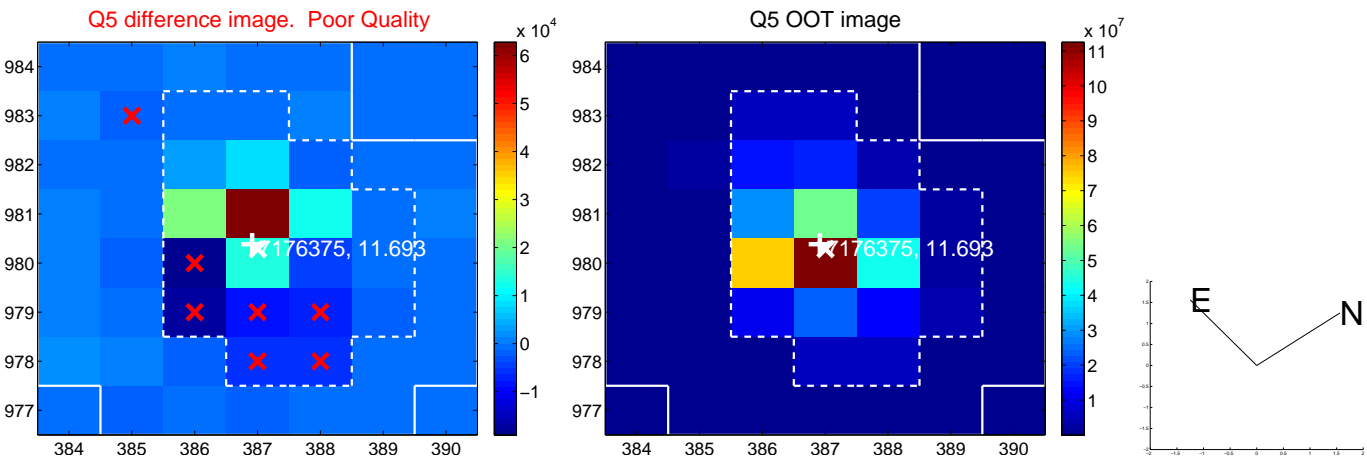
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



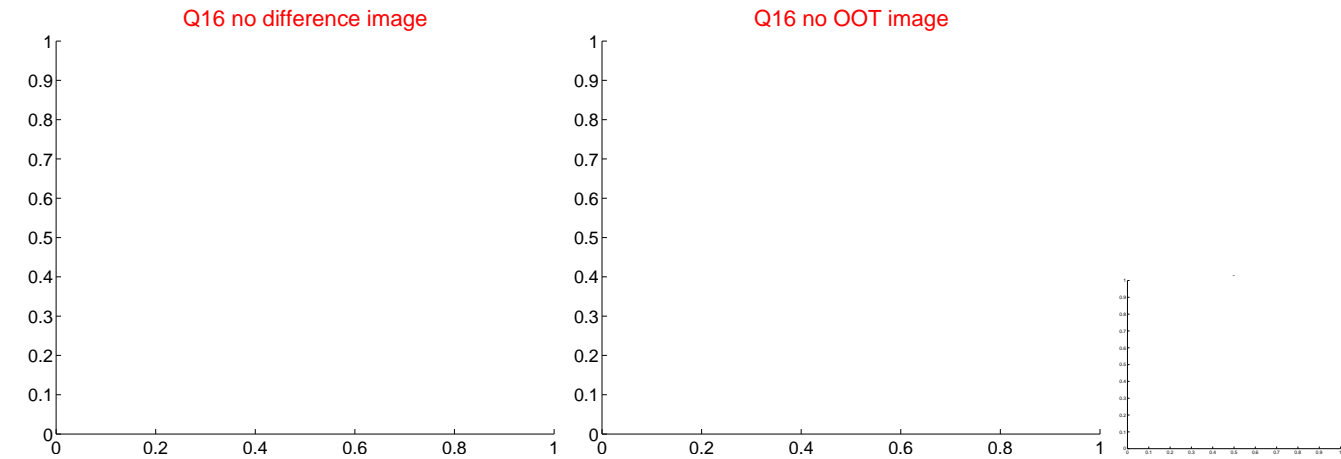
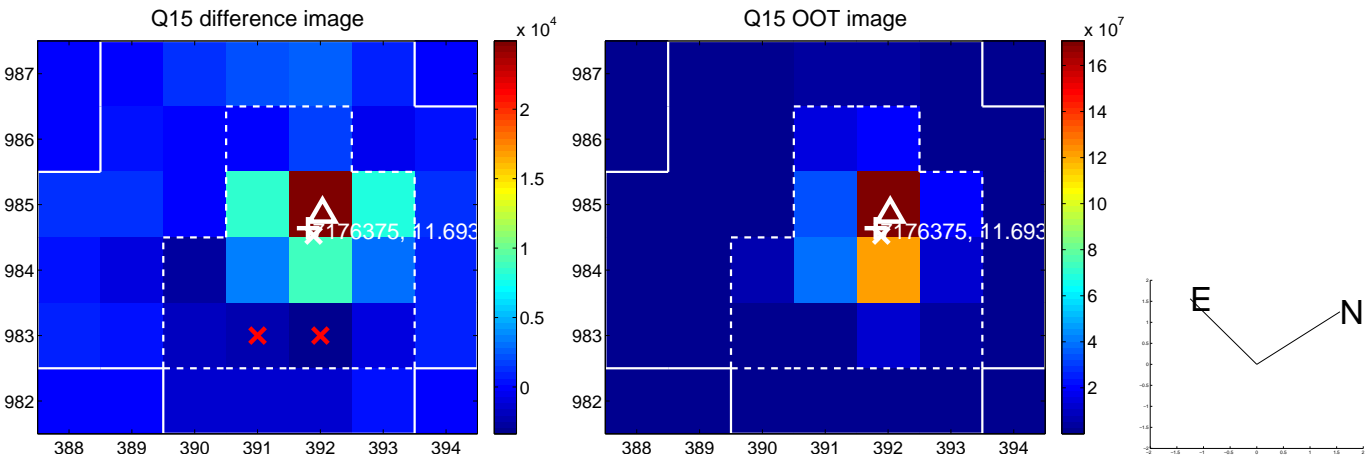
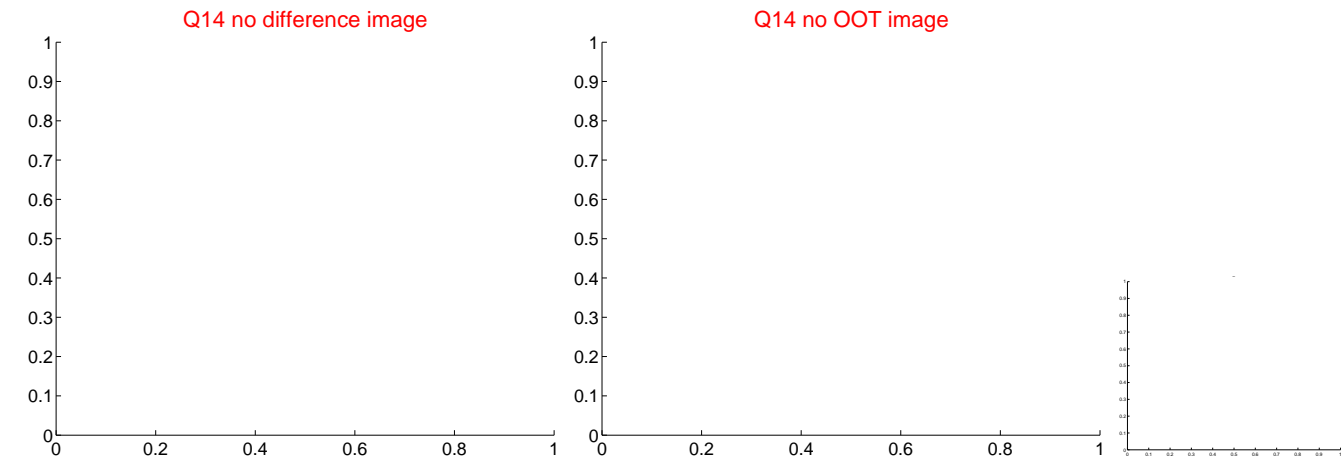
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



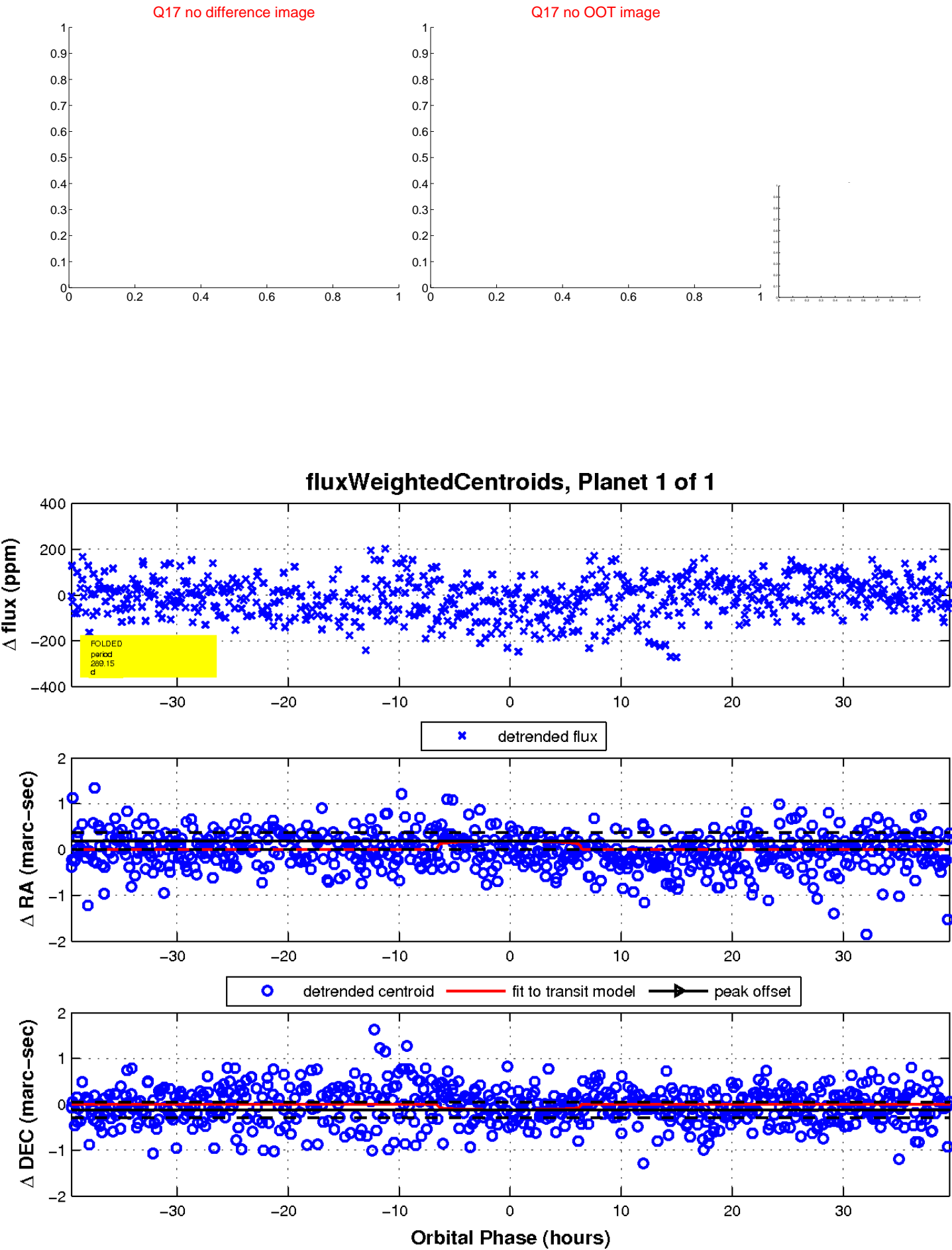
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

