

# KIC 009775475

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009775475-01	OBS	5711.01	78.428523	169.312727	83563.2	3.765	189.1	139.9	1.00	5780	38.13	7.77

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009775475-01	OBS	FP	0.00	0	1	0	0	MOD_ODDEVEN_DV—DEEP_V_SHAPED—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 009775475-01

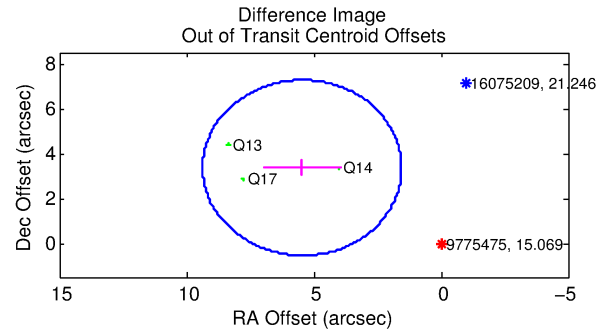
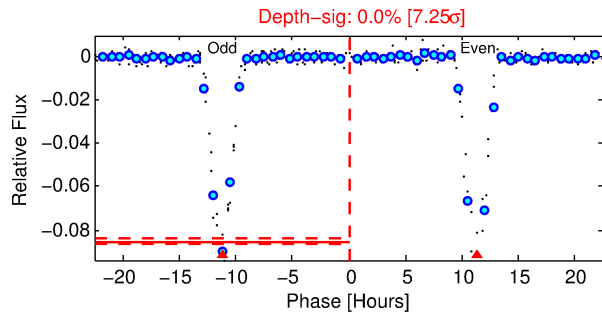
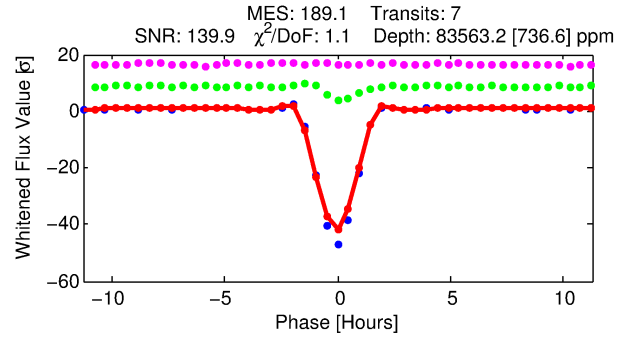
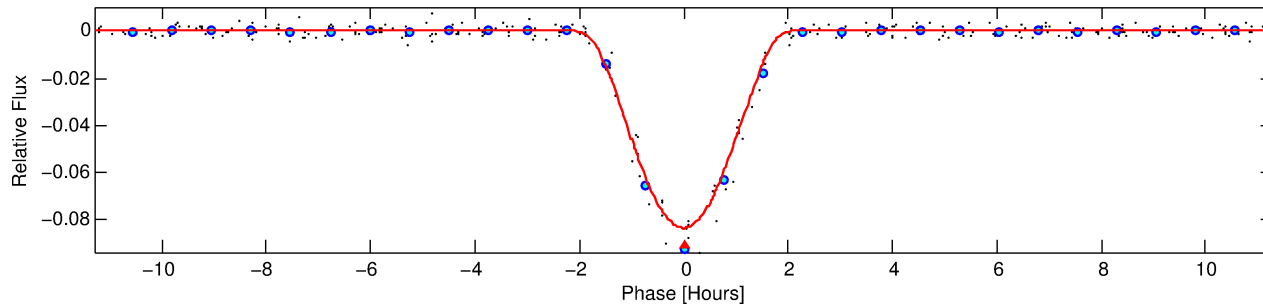
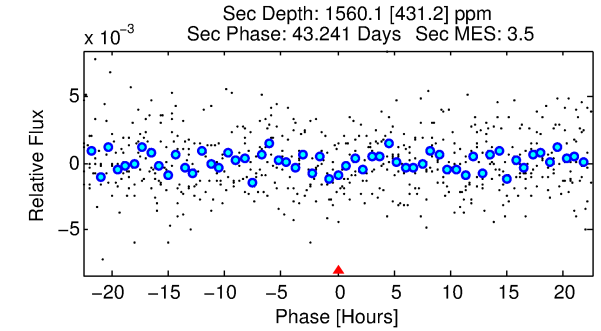
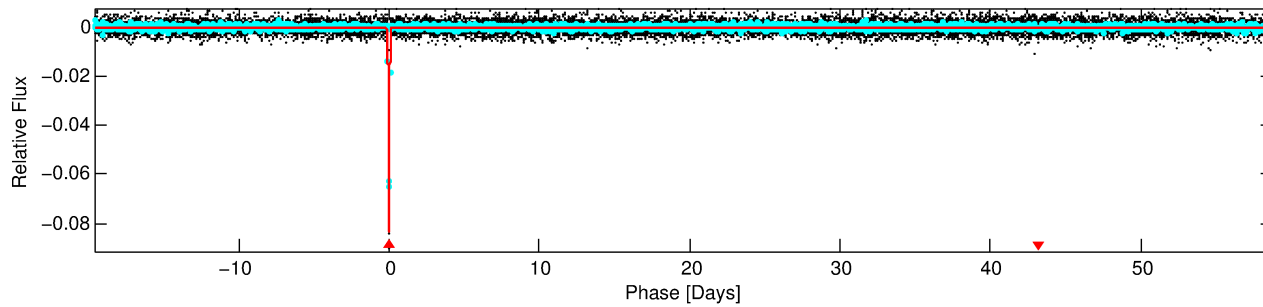
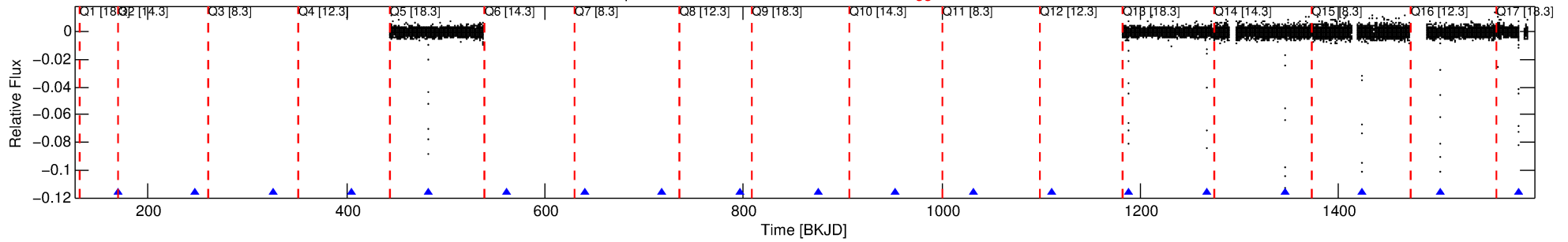
No Significant Match Found

# DV One-Page Summary

KIC: 9775475 Candidate: 1 of 1 Period: 78.429 d

KOI: K05711.01 Corr: 0.974

Kp: 15.07 R\*: 1.00 Rs Teff: 5780.0 K Logg: 4.44 Fe/H: 0.000



## DV Fit Results:

Period = 78.42852 [0.00006] d  
Epoch = 169.3127 [0.0008] BKJD  
Rp/R\* = 0.3495 [0.0937]  
a/R\* = 167.25 [3.39]  
b = 0.85 [0.16]  
Seff = 7.77 [0.00]  
Teq = 426 [0] K  
Rp = 38.13 [10.22] Re  
a = 0.3587 [0.0000] AU  
Ag = 75.92 [45.79] [1.64σ]  
Teffp = 1943 [293] K [5.18σ]

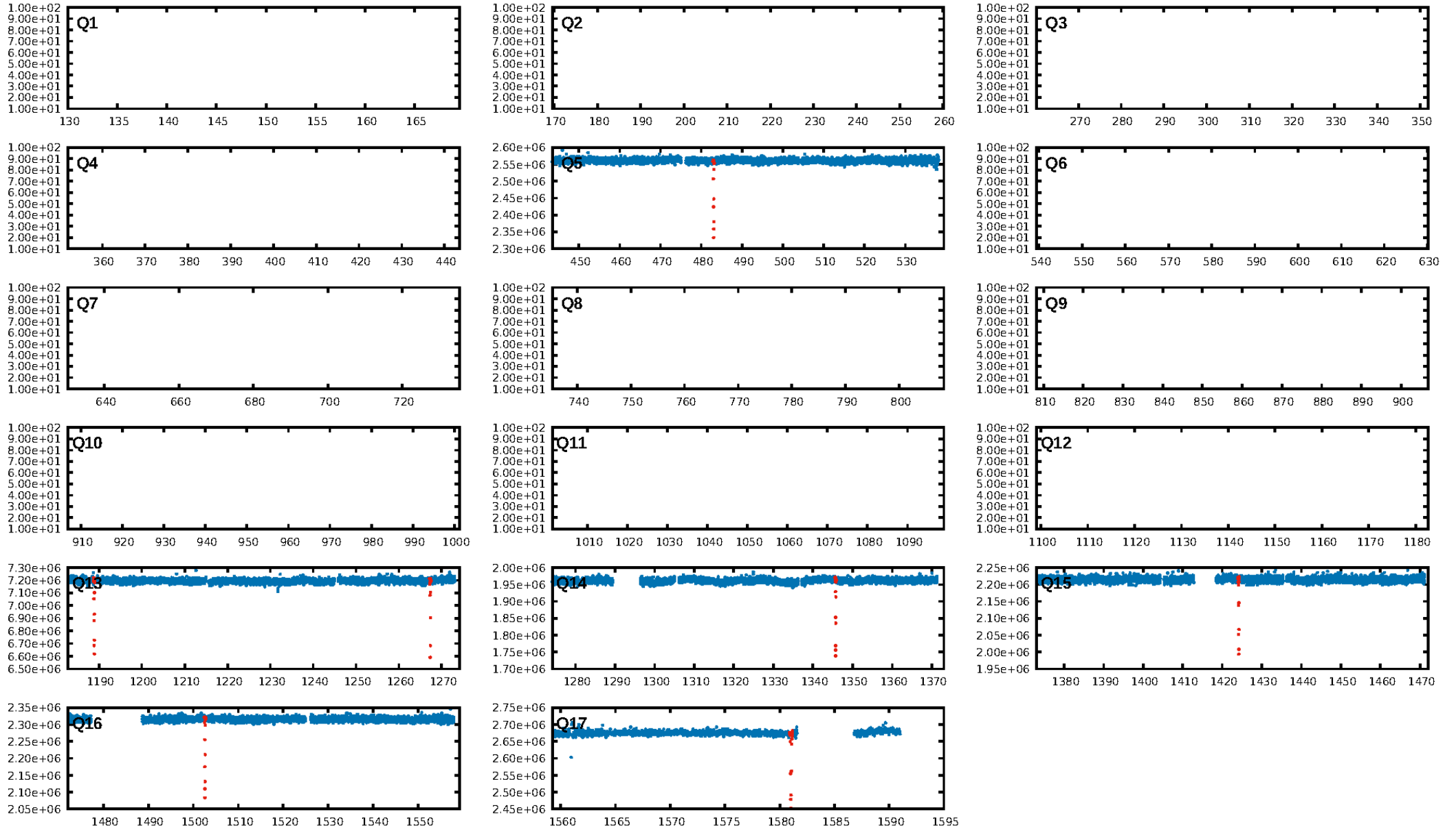
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 96.5%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [6/6]  
GhostDiagnostic-chr: 5.305  
Centroid-sig: 0.0%  
Centroid-so: 3.110 arcsec [2634.30σ]  
OotOffset-rm: 6.408 arcsec [4.92σ]  
KicOffset-rm: 7.319 arcsec [9.45σ]  
OotOffset-st: 1/0/0/2 [3]  
KicOffset-st: 1/0/0/2 [3]  
DiffImageQuality-fgm: 0.33 [1/3]  
DiffImageOverlap-fno: 1.00 [6/6]

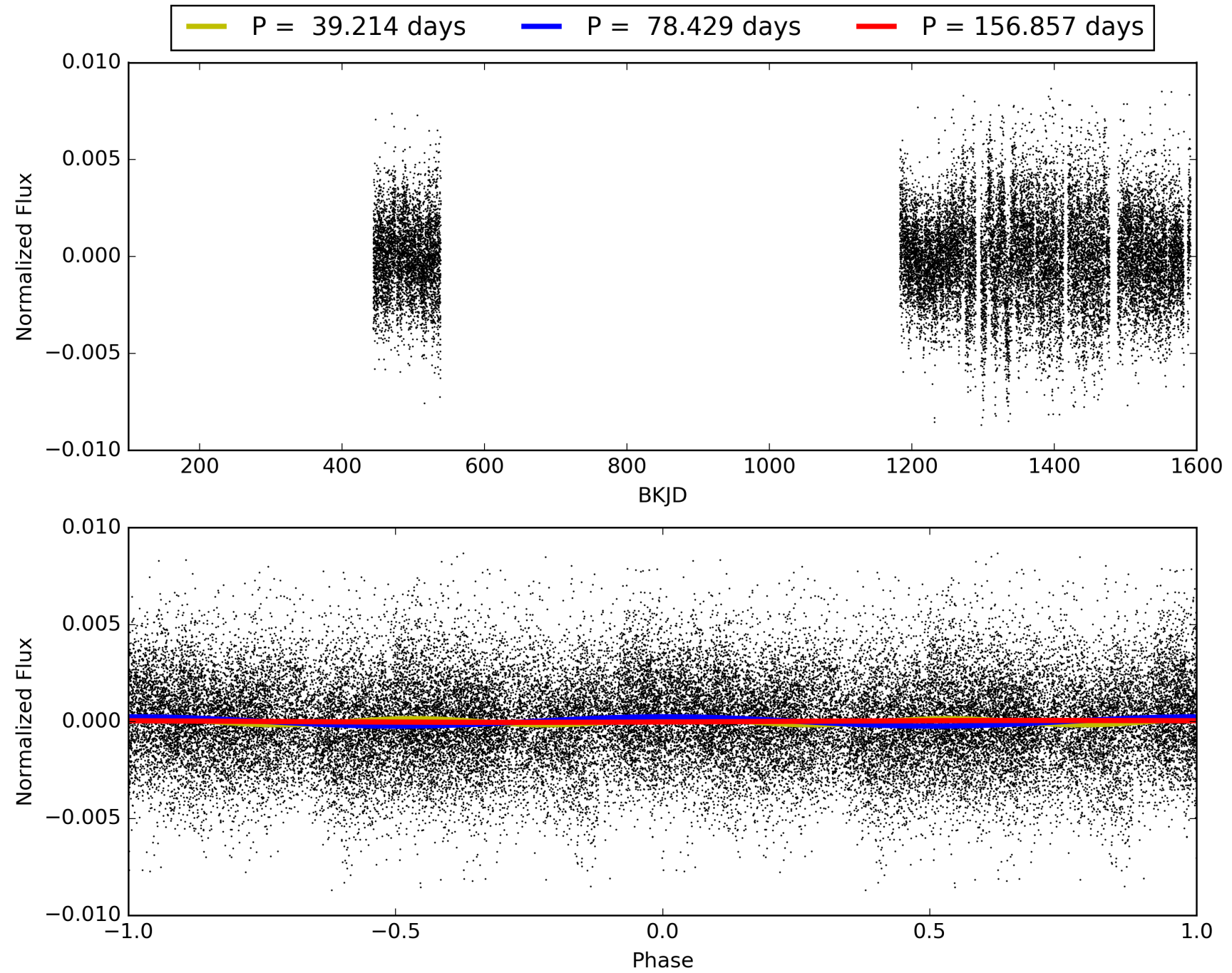
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:22:48 Z

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

# TCE 009775475-01, PDC Light Curves

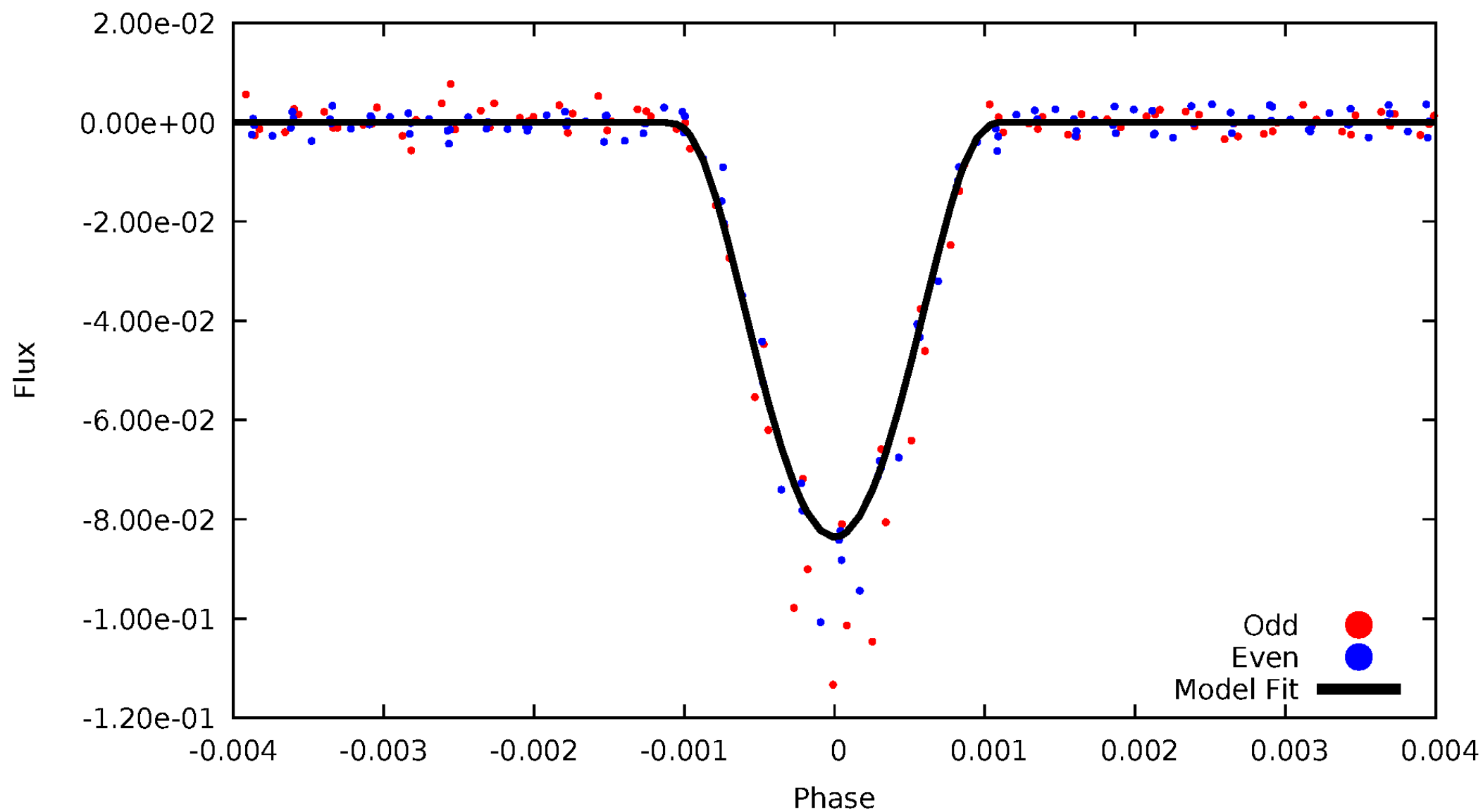


TCE 009775475-01



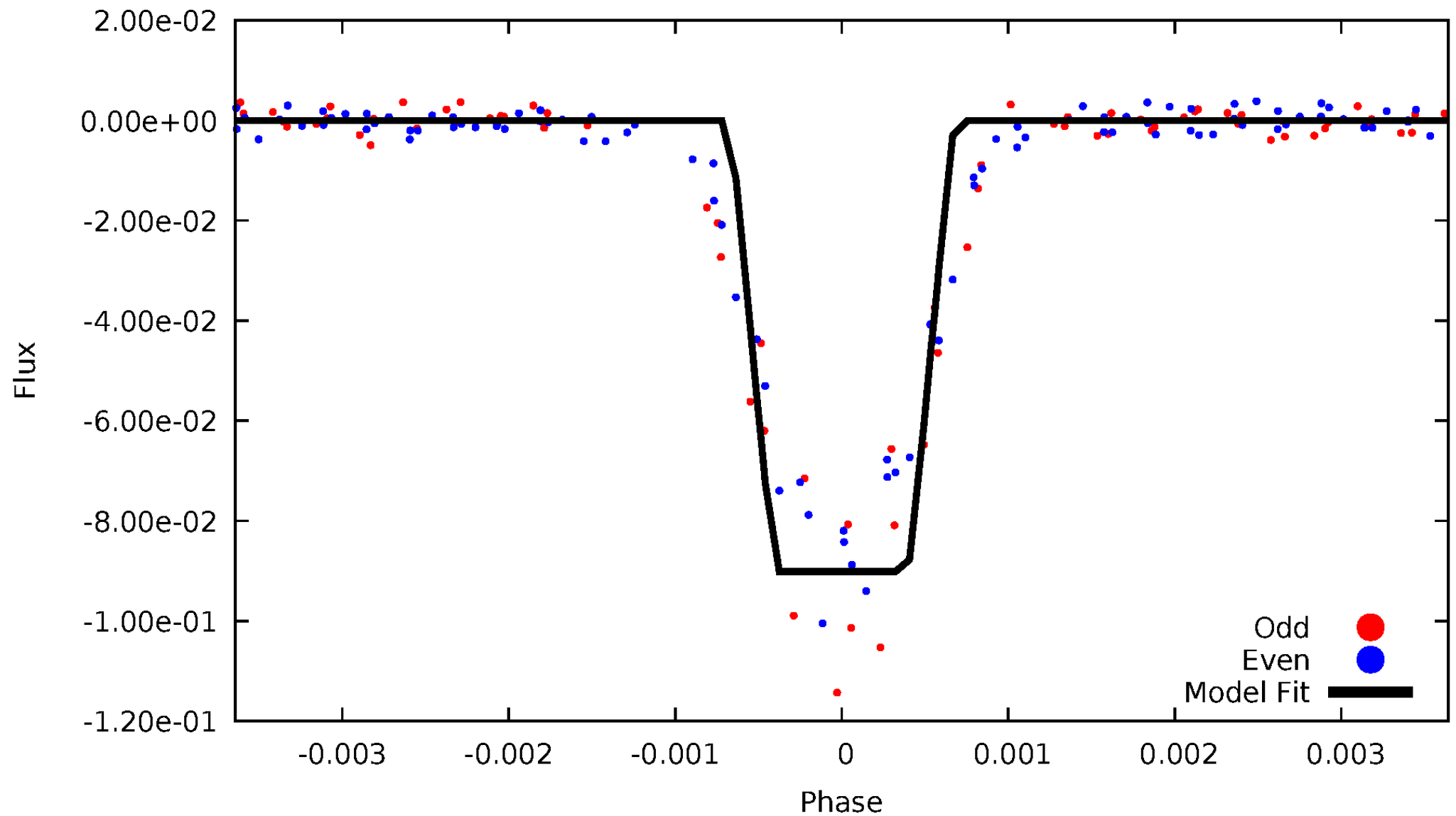
# DV Odd/Even

TCE 009775475-01



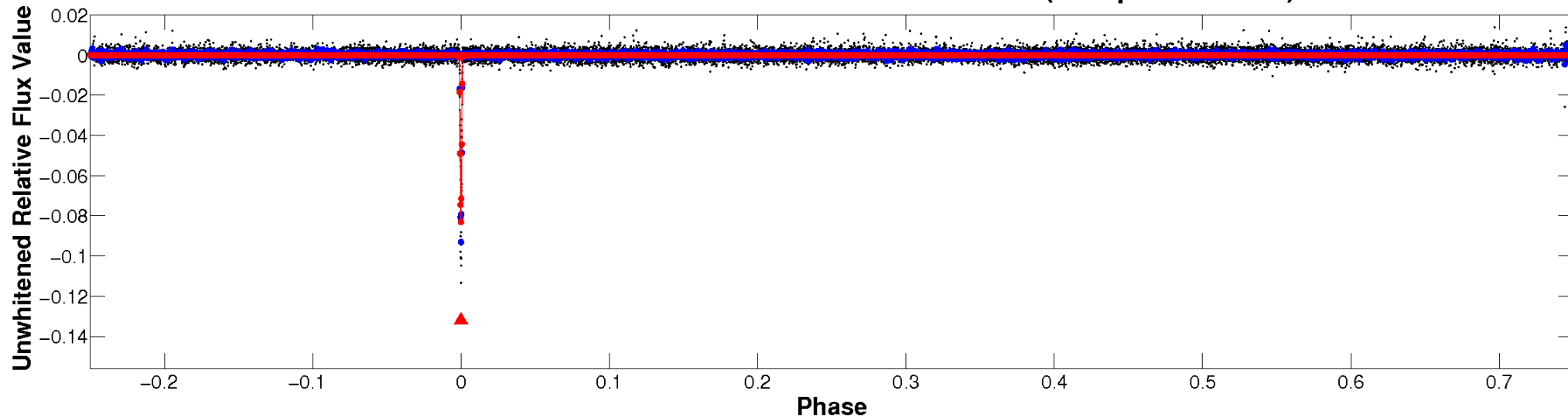
# ALT Odd/Even

TCE 009775475-01

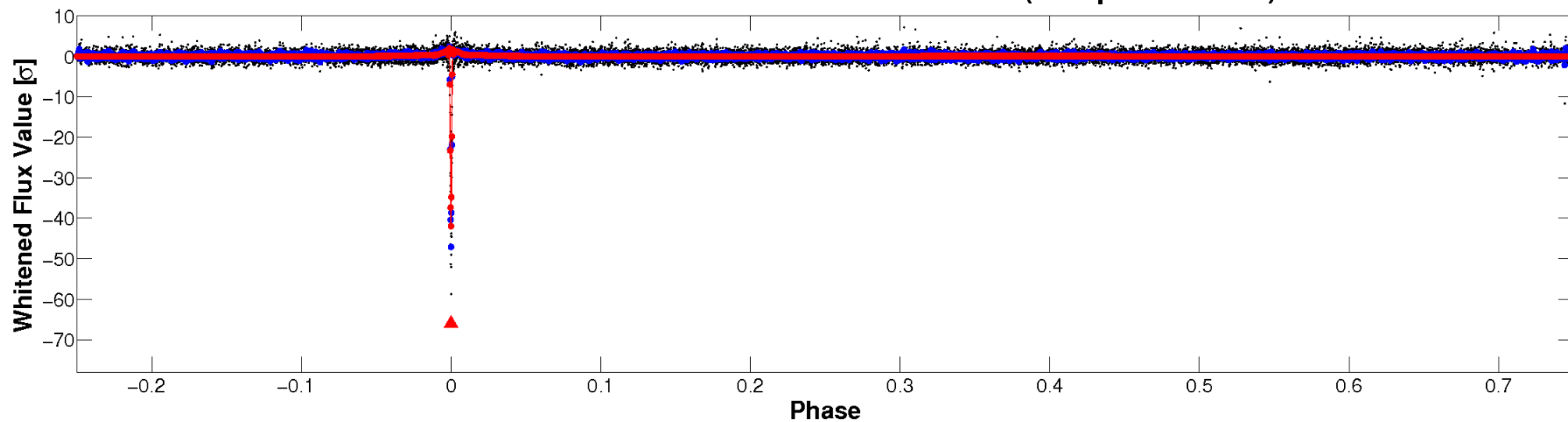


# Non-Whitened Vs. Whitened Light Curve

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

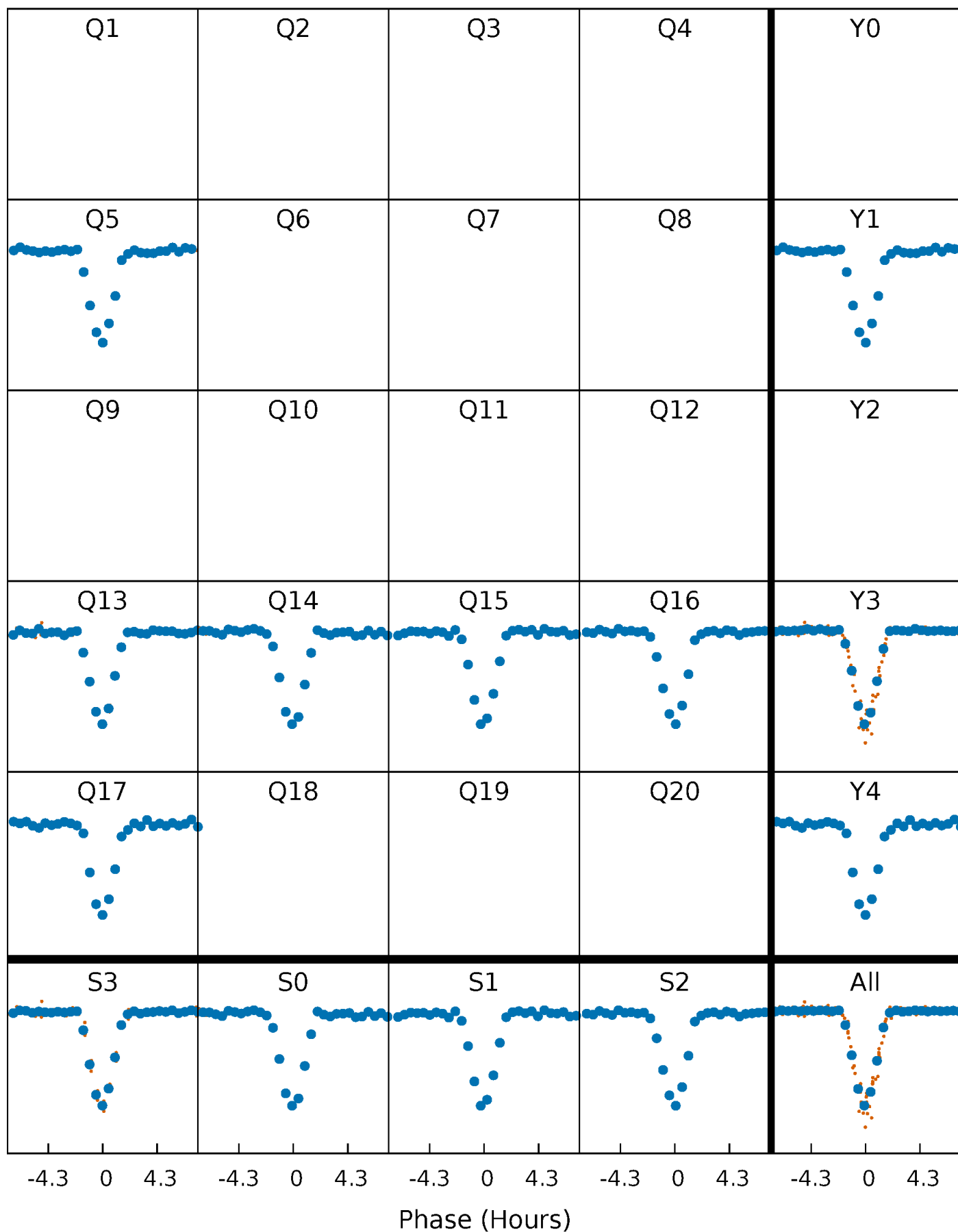


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

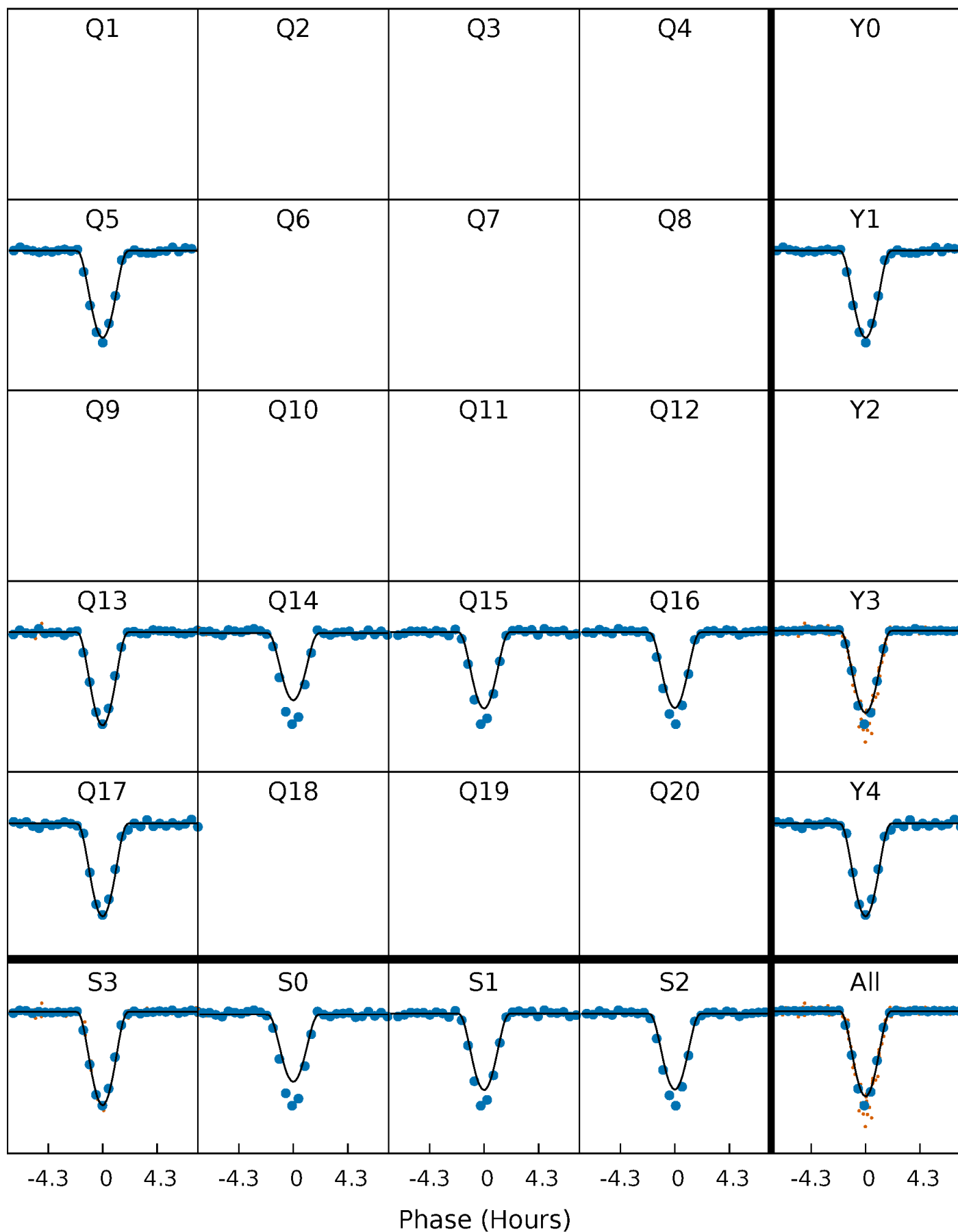
TCE 009775475-01 P= 78.428523 Days  $T_0=169.312727$  (BKJD)





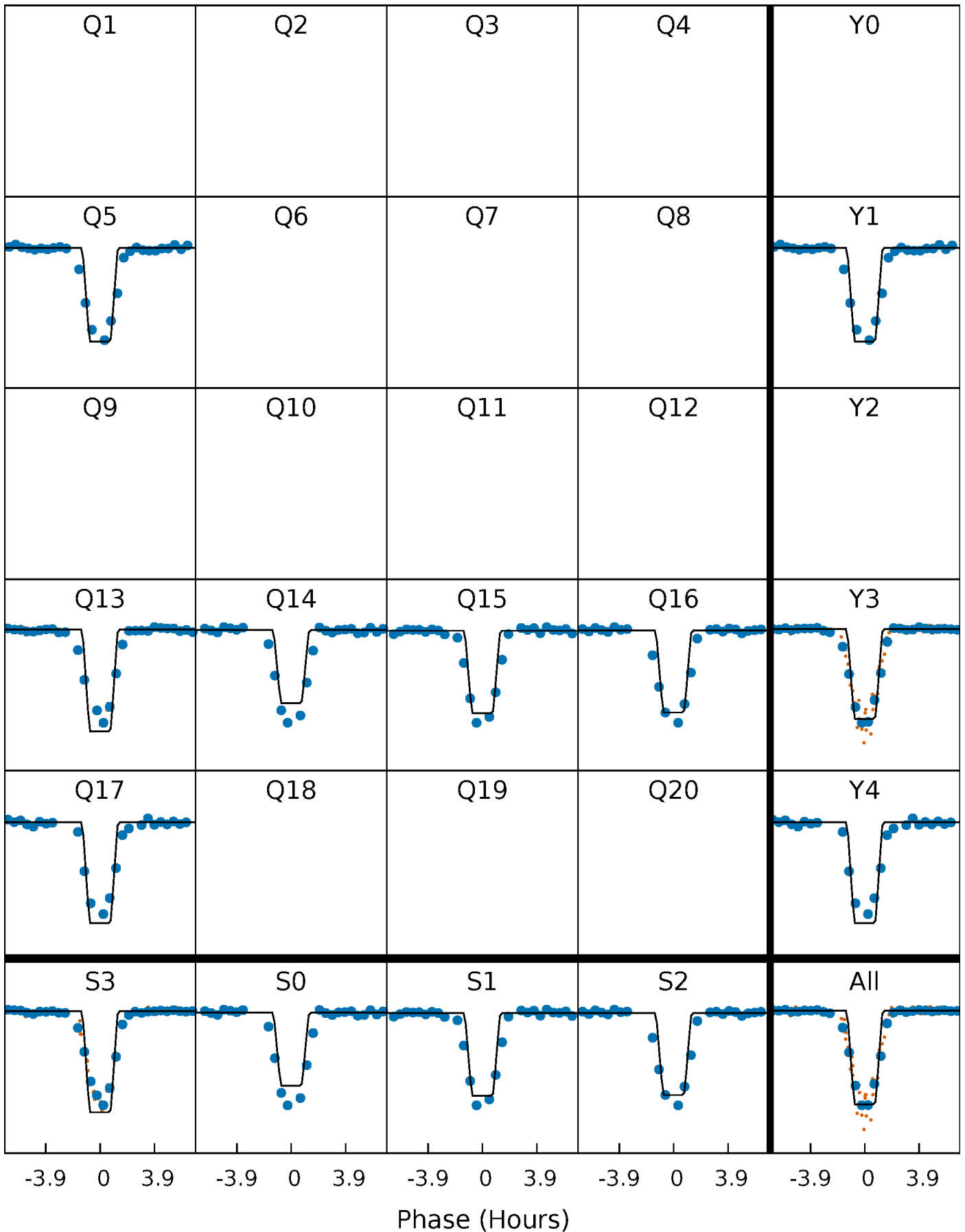
# DV Quarter-Phased Transit Curves

TCE 009775475-01 P= 78.428523 Days  $T_0=169.312727$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

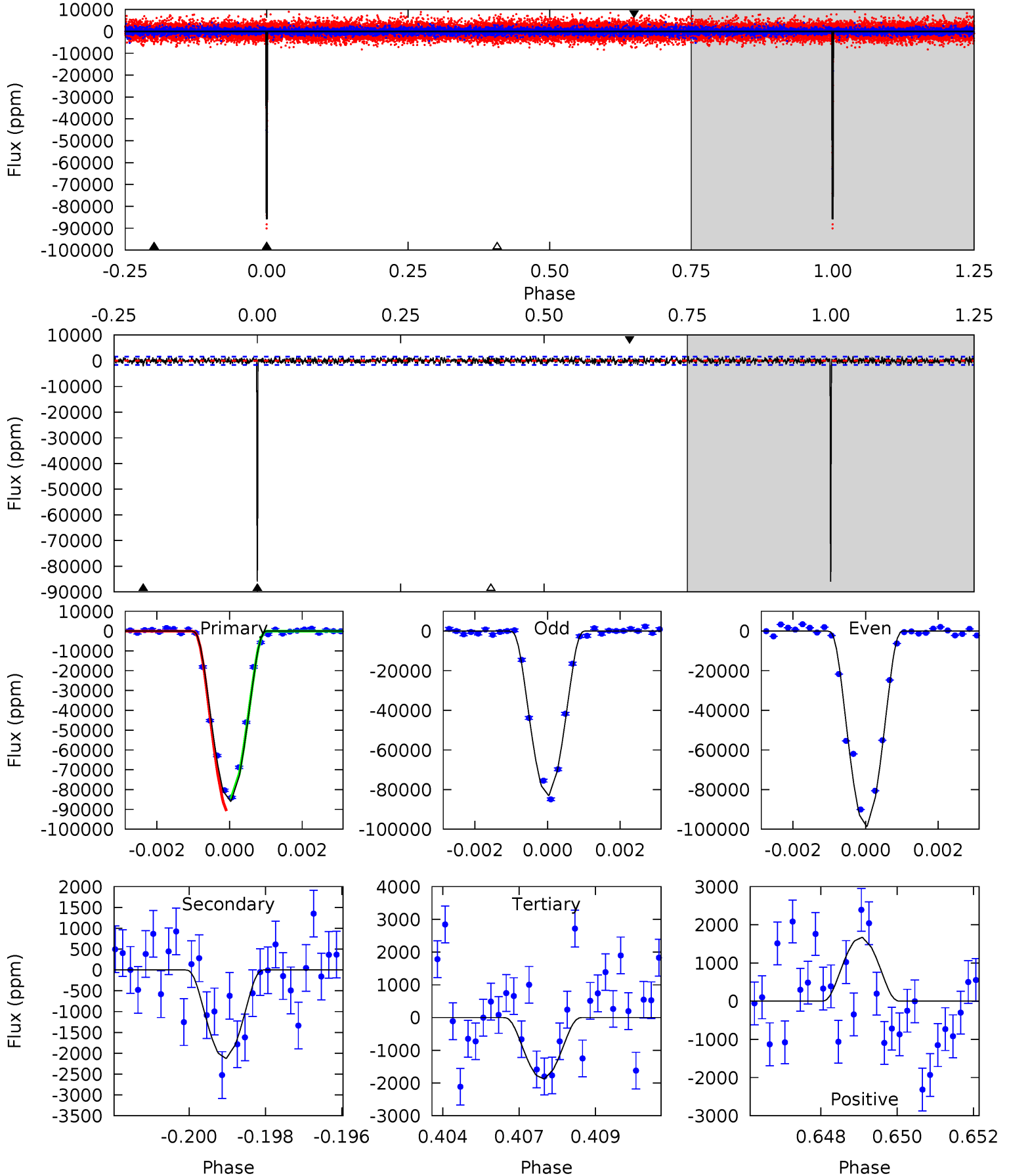
TCE 009775475-01 P= 78.428760 Days  $T_0=169.310642$  (BKJD)



# DV Model-Shift Uniqueness Test

009775475-01, P = 78.428523 Days, E = 169.312727 Days

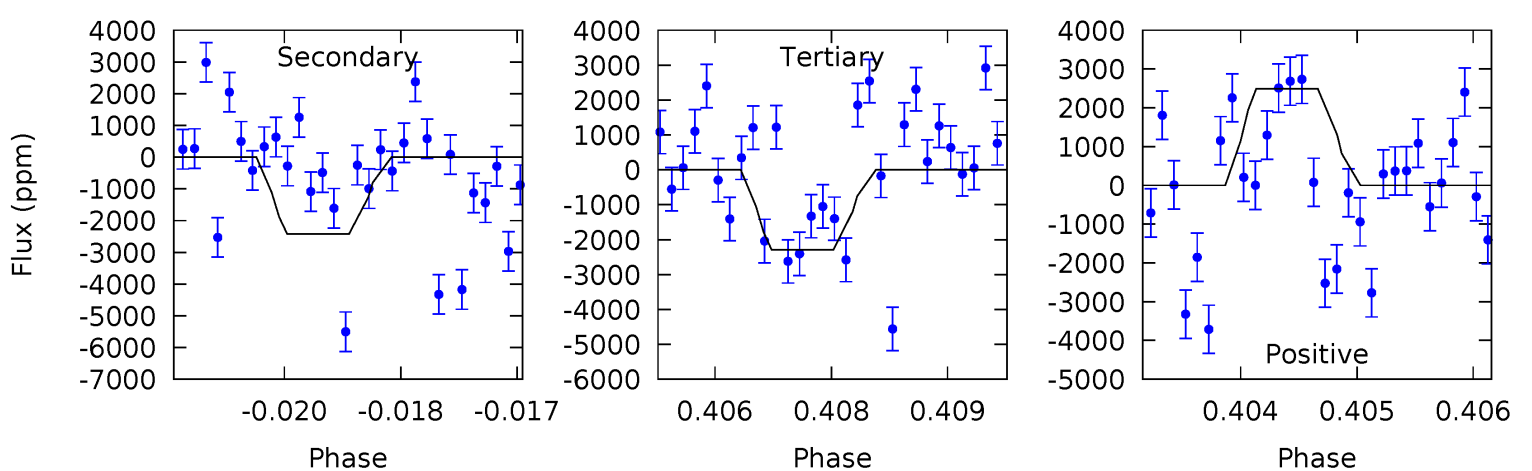
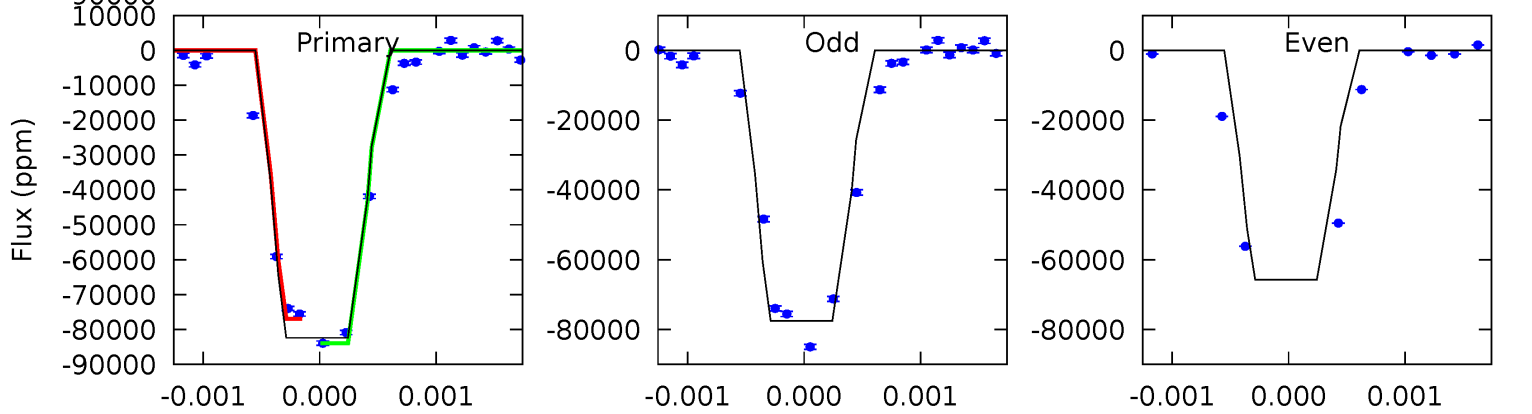
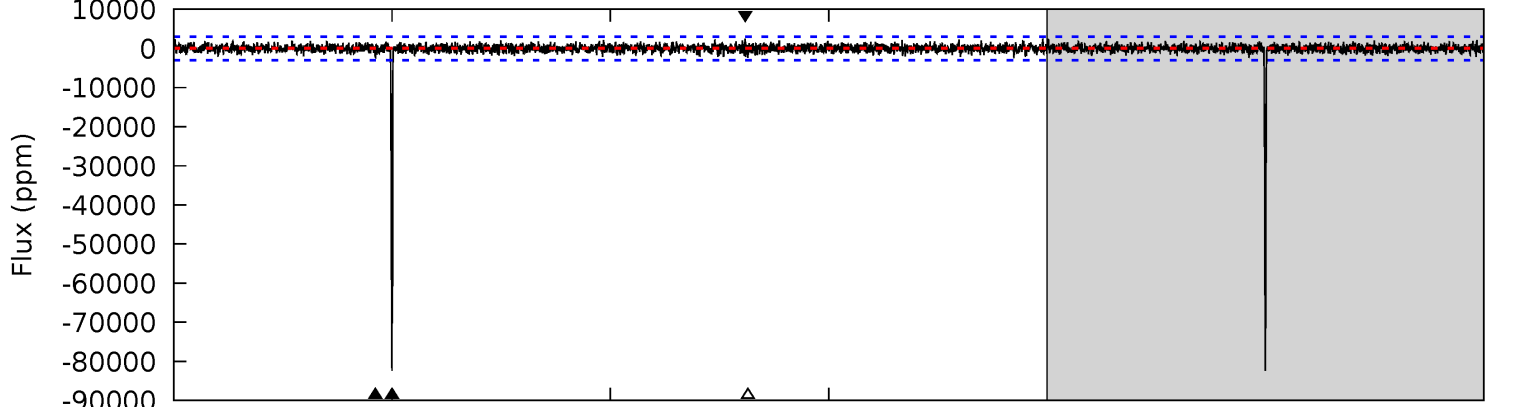
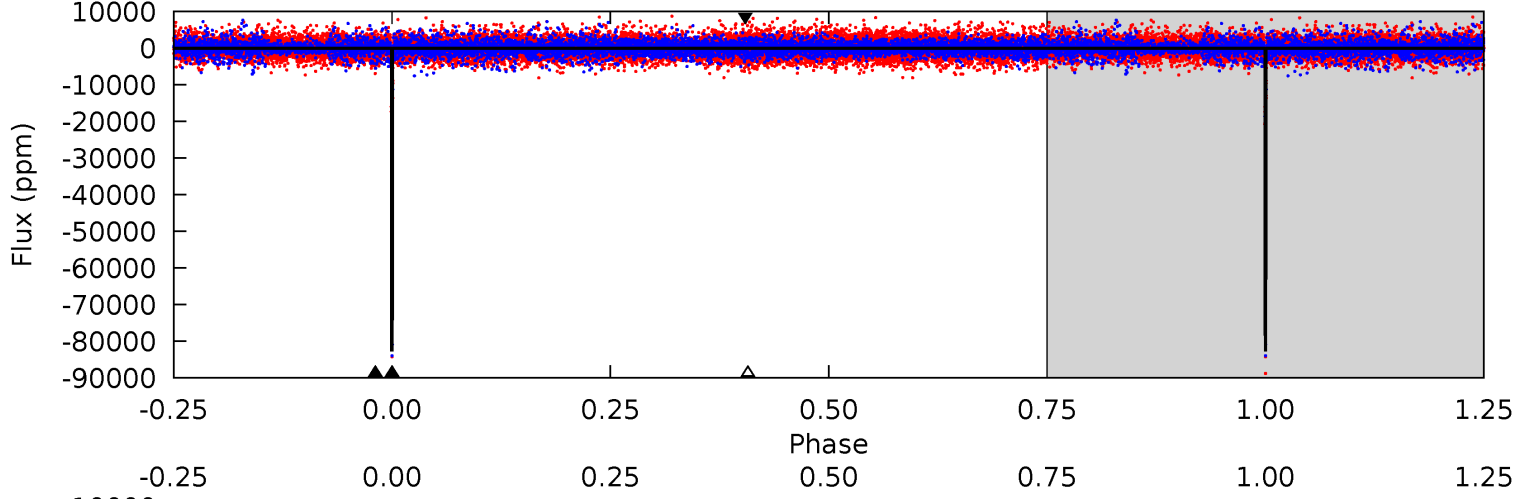
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
280.0	6.92	6.11	5.45	5.31	3.07	1.78	273.9	274.5	0.81	1.48	24.8	1.06	0.02	0



# Alt Model-Shift Uniqueness Test

009775475-01, P = 78.428760 Days, E = 169.310642 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
148.8	4.38	4.14	4.49	5.40	3.22	1.26	144.7	144.3	0.24	-0.11	9.68	1.06	0.03	0



### Stellar Parameters For KIC 009775475

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5780^{+1}_{-1}$	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 009775475-01 / KOI 5711.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-2124 \pm 307$	$38.43^{+10.27}_{-11.04}$	$594^{+28}_{-30}$	$2828^{+272}_{-186}$	$104^{+98}_{-42}$
Alt.	$-2425 \pm 554$	$32.60^{+10.53}_{-9.60}$	$595^{+29}_{-28}$	$2997^{+345}_{-240}$	$159^{+174}_{-74}$

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

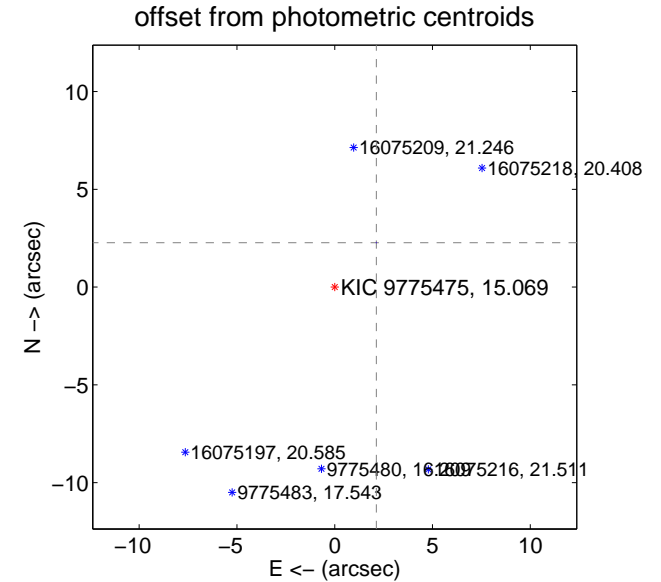
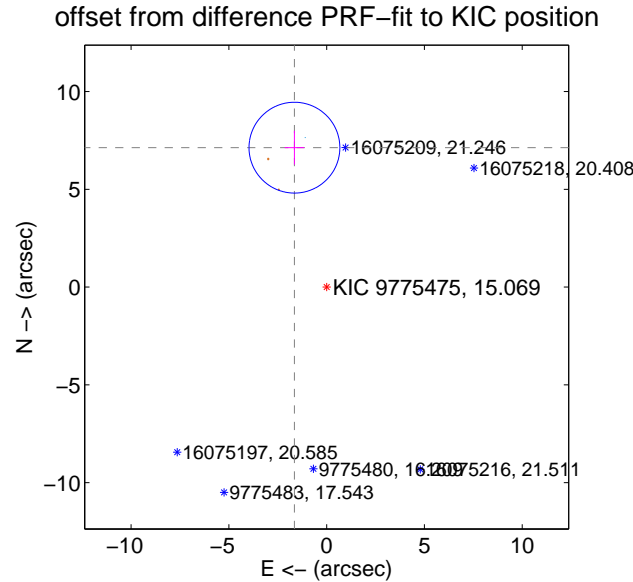
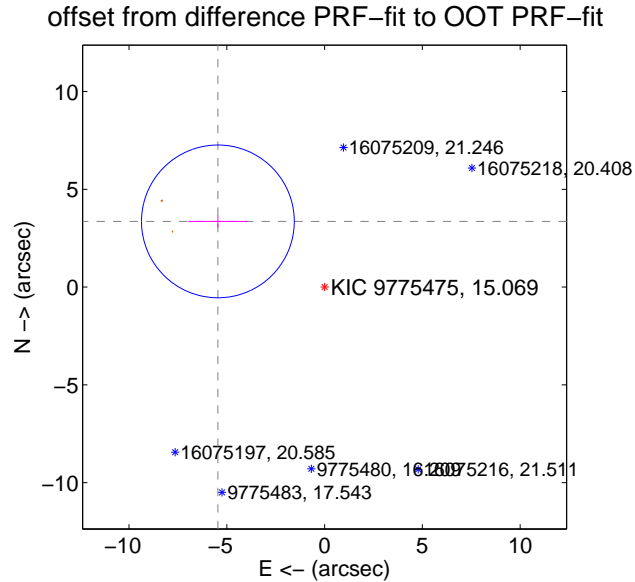
## DV Centroid Data

Supplemental centroid analysis for 009775475-01. Kepler magnitude: 15.07. Transit SNR 139.87

There are 1 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 5.75 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$6.408 \pm 1.302$	4.92	$5.456 \pm 1.517$	$3.360 \pm 0.311$
PRF-fit source offset from KIC position	$7.319 \pm 0.774$	9.45	$1.648 \pm 0.501$	$7.131 \pm 0.869$
photometric centroid source offset	$3.11 \pm 0.00$	2634.29	$-2.13 \pm 0.00$	$2.27 \pm 0.00$

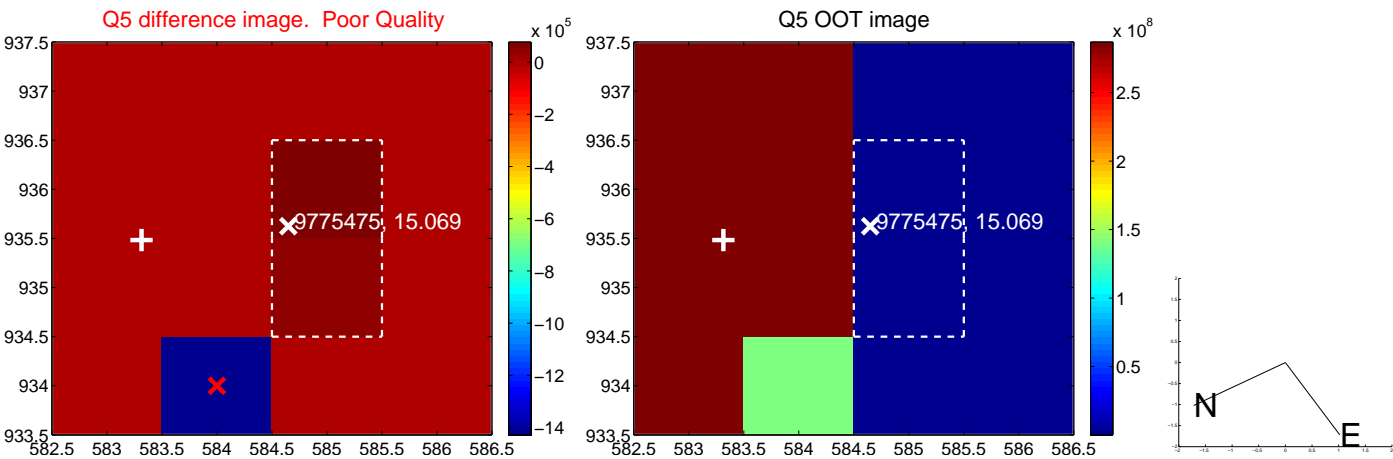


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

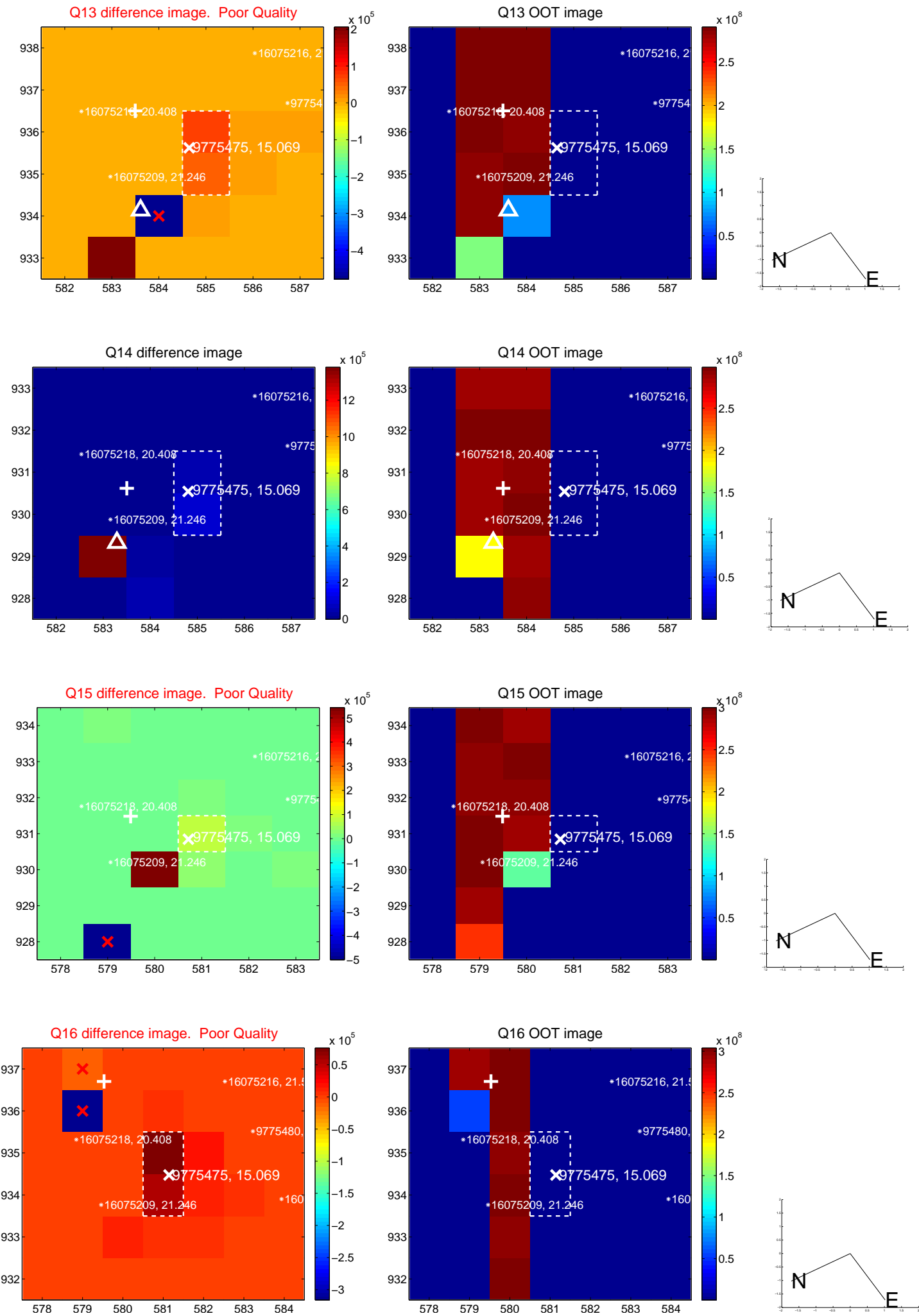




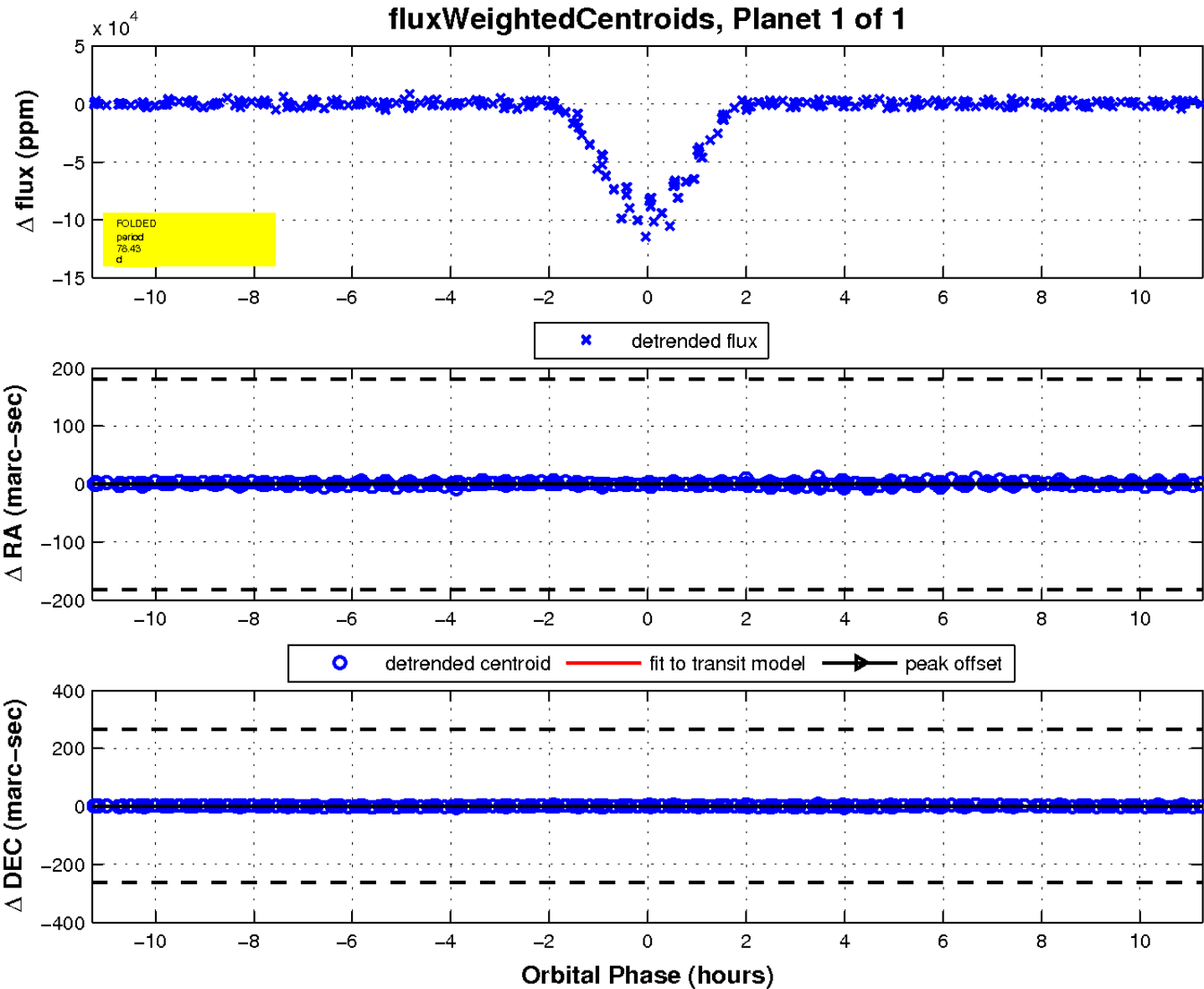
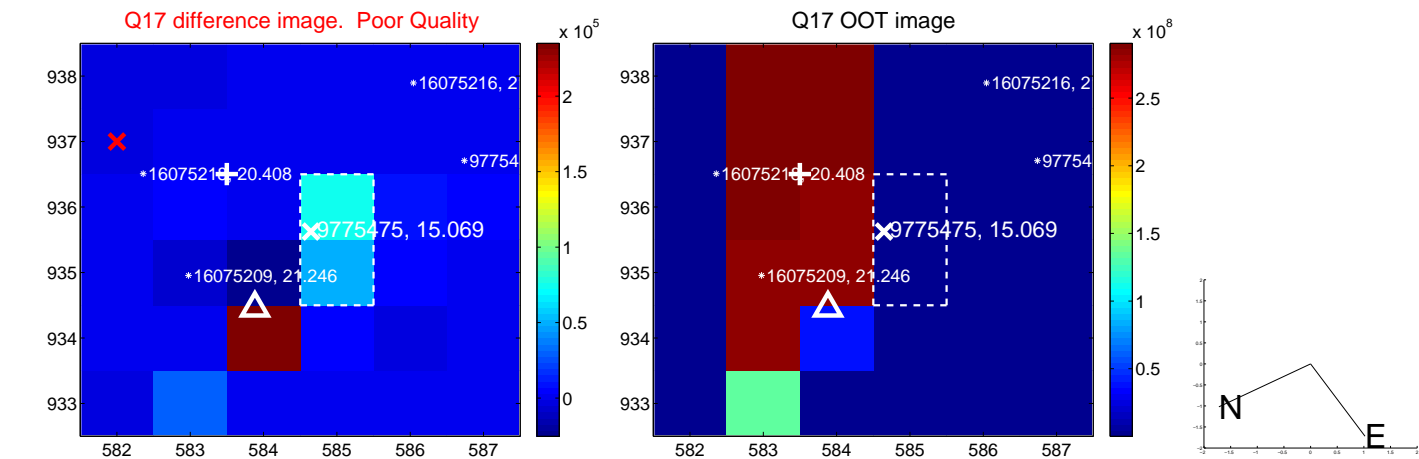
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

