

# KIC 005871985

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005871985-01	OBS	2703.01	213.259182	268.132272	2073.0	9.092	28.5	29.3	0.64	4477	3.57	0.40

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005871985-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

**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.

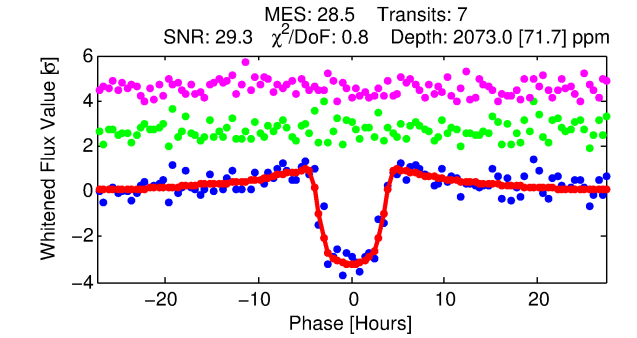
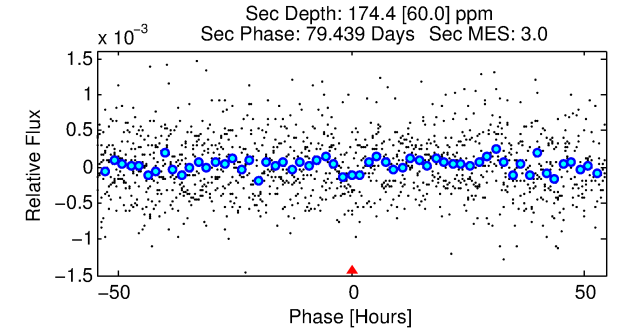
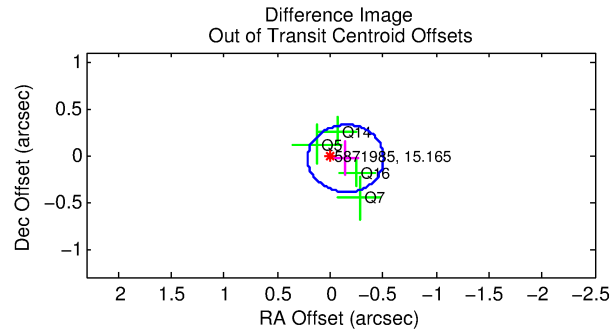
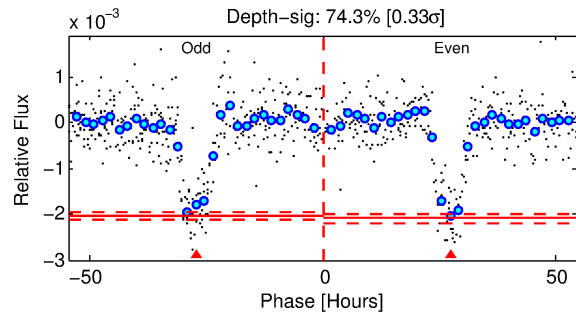
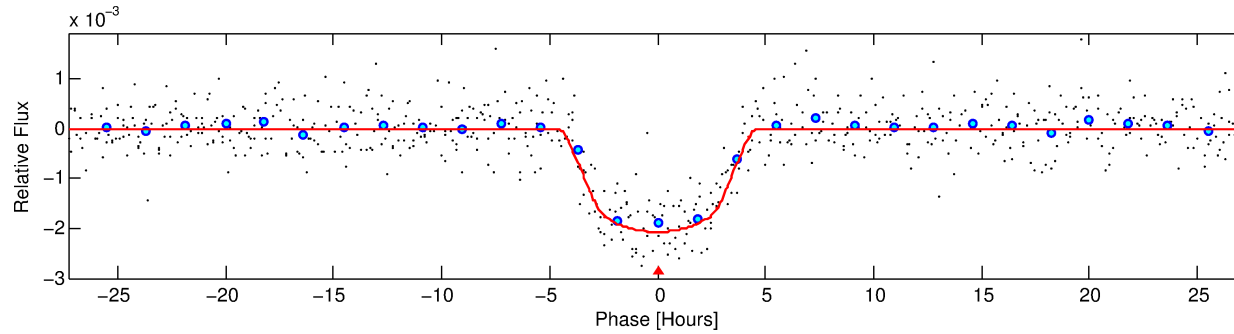
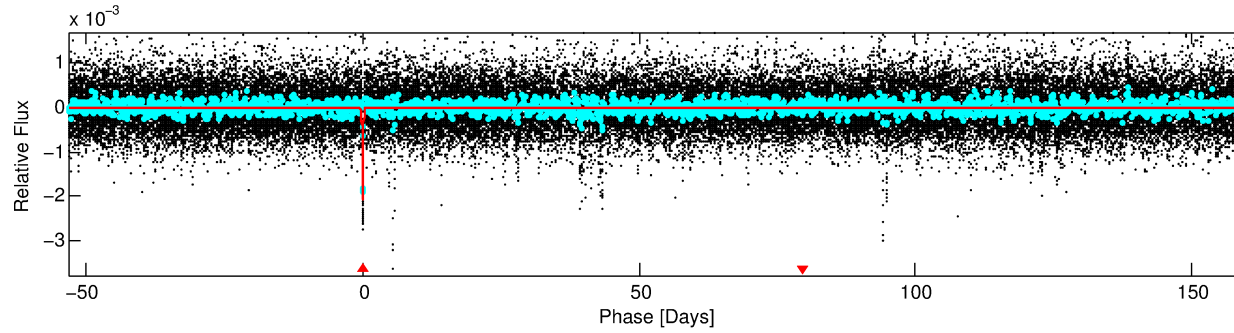
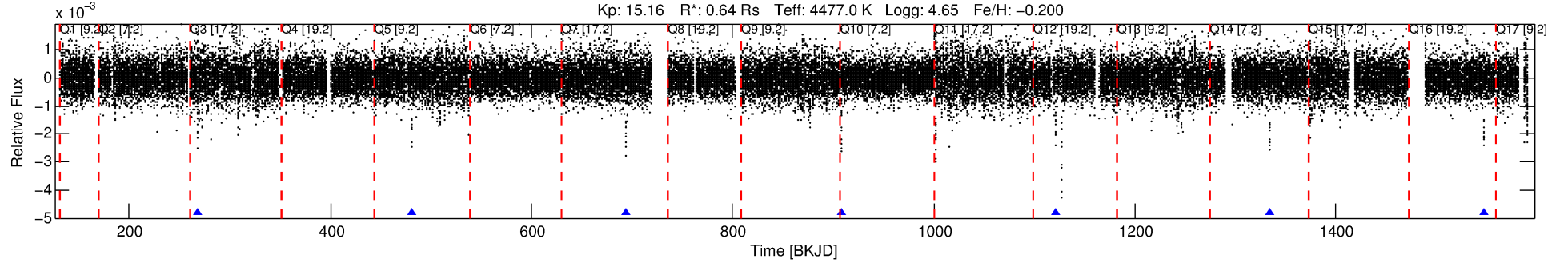
## Ephemeris Match Information For 005871985-01

No Significant Match Found

# DV One-Page Summary

KIC: 5871985 Candidate: 1 of 1 Period: 213.259 d

KOI: K02703.01 Corr: 0.923



## DV Fit Results:

Period = 213.25918 [0.00149] d  
Epoch = 268.1323 [0.0057] BKJD  
Rp/R\* = 0.0514 [0.0018]  
a/R\* = 97.77 [8.86]  
b = 0.90 [0.02]  
Seff = 0.39 [0.07]  
Teq = 202 [8] K  
Rp = 3.57 [0.34] Re  
a = 0.6082 [0.0400] AU  
Ag = 2783.23 [1004.14] [2.77 $\sigma$ ]  
Teffp = 2270 [215] K [9.62 $\sigma$ ]

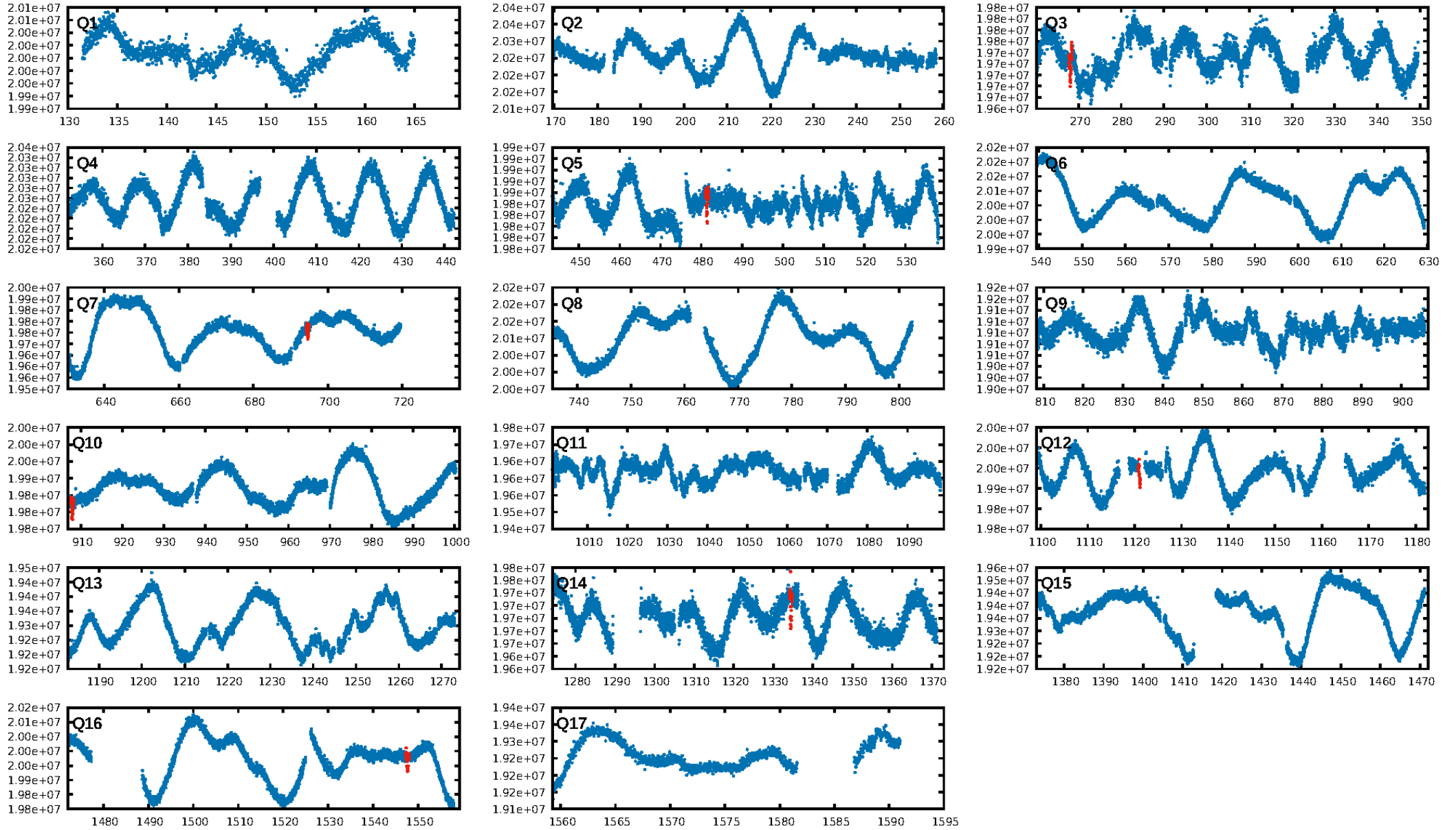
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 97.4%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.72e-101  
RollingBand-fgt: 1.00 [7/7]  
GhostDiagnostic-chr: 1.841  
Centroid-sig: 23.3%  
Centroid-so: 0.255 arcsec [0.54 $\sigma$ ]  
OotOffset-rm: 0.151 arcsec [1.26 $\sigma$ ]  
KicOffset-rm: 0.283 arcsec [2.08 $\sigma$ ]  
OotOffset-st: 1/1/1/1 [4]  
KicOffset-st: 1/1/1/1 [4]  
DiffImageQuality-fgm: 1.00 [4/4]  
DiffImageOverlap-fno: 1.00 [4/4]

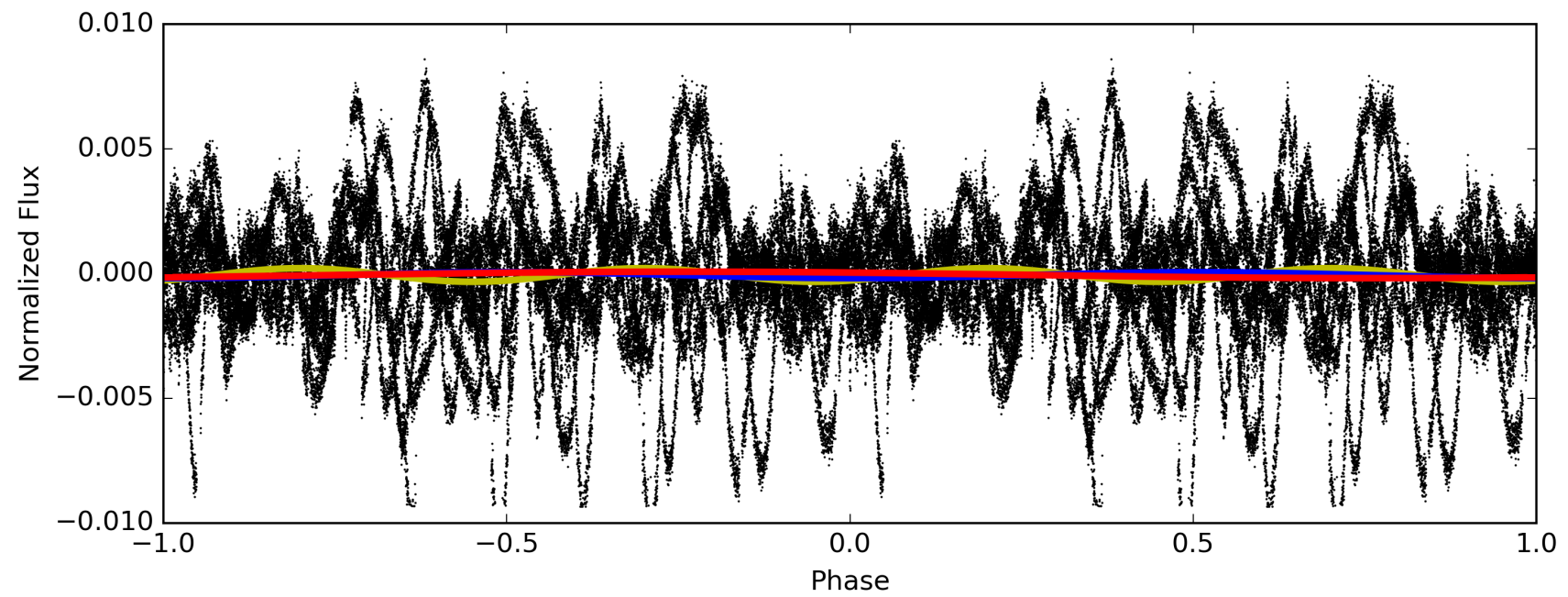
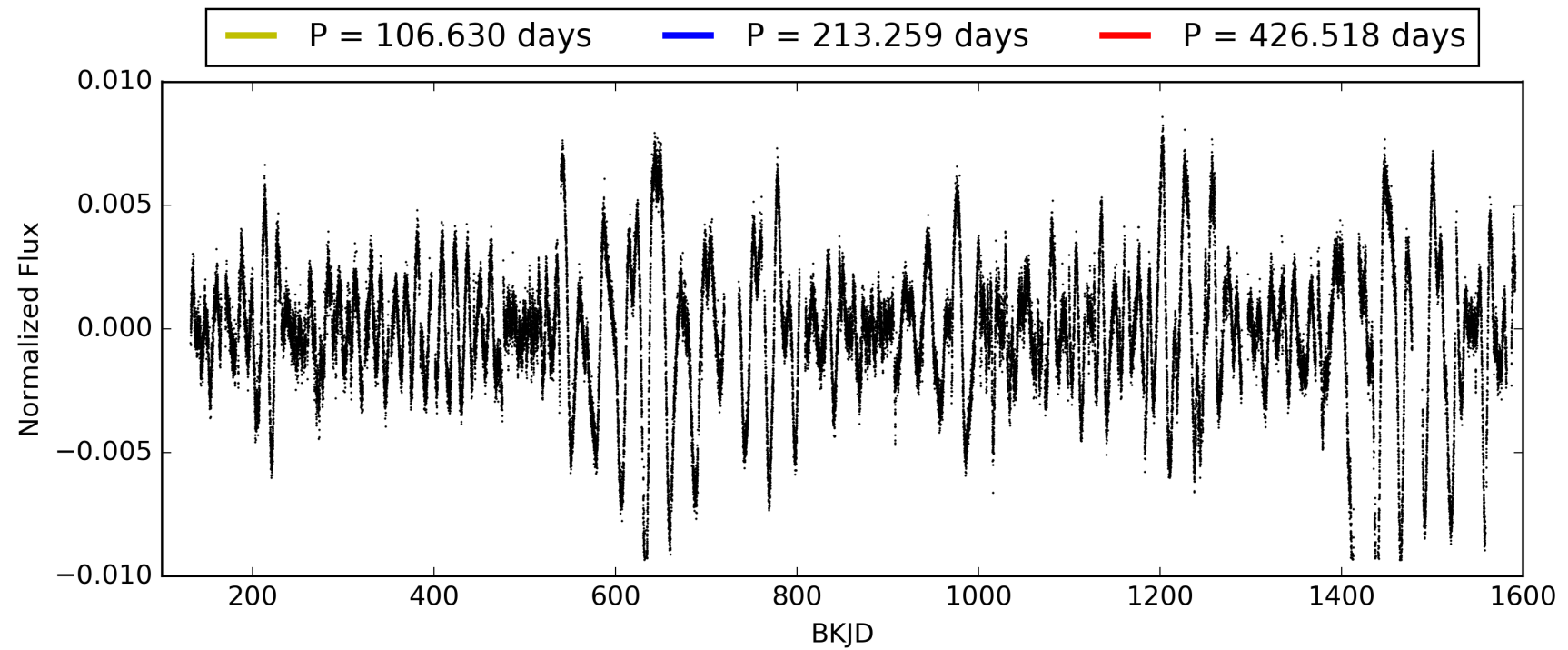
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:24:27 Z

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

# TCE 005871985-01, PDC Light Curves

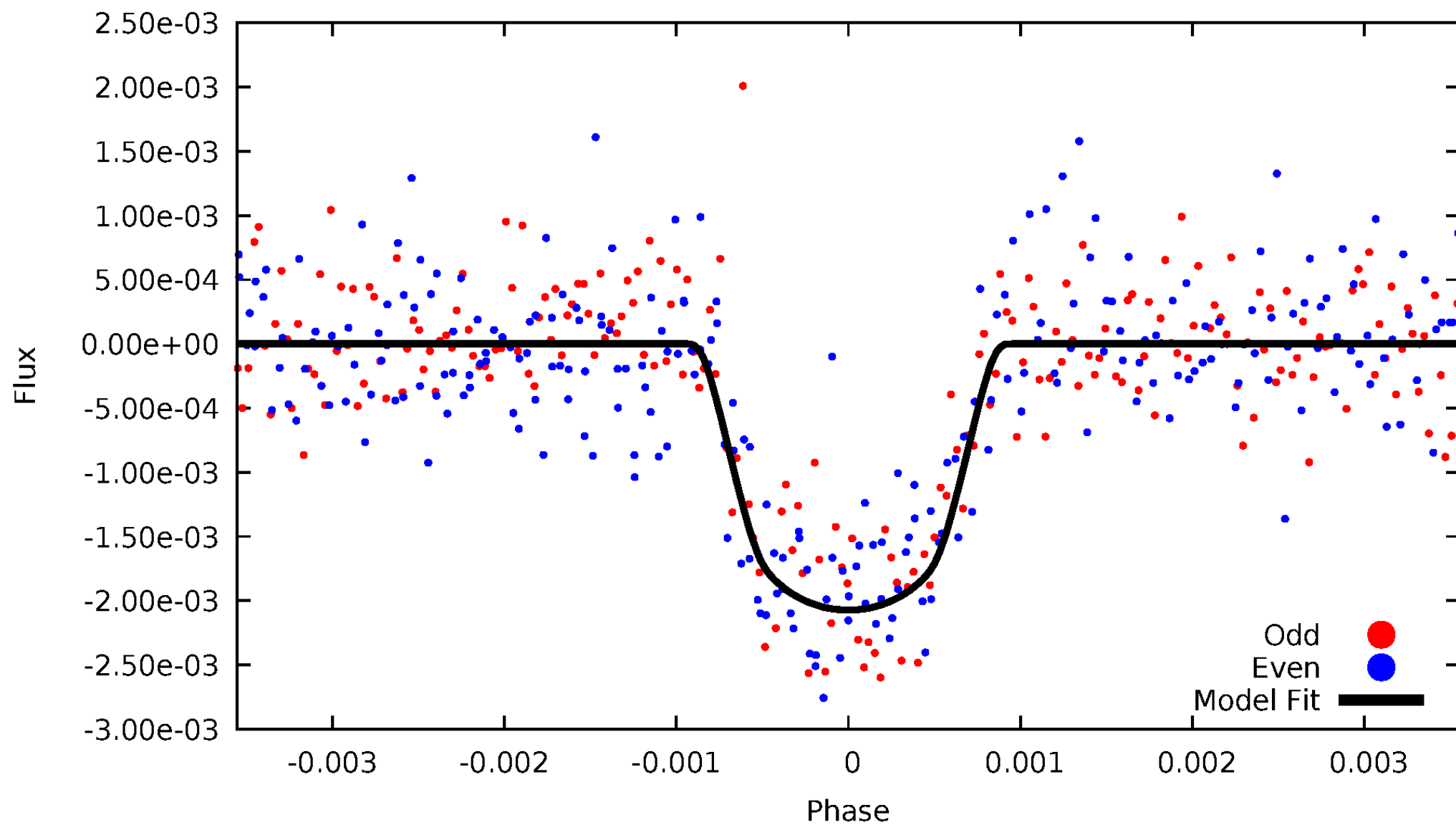


TCE 005871985-01



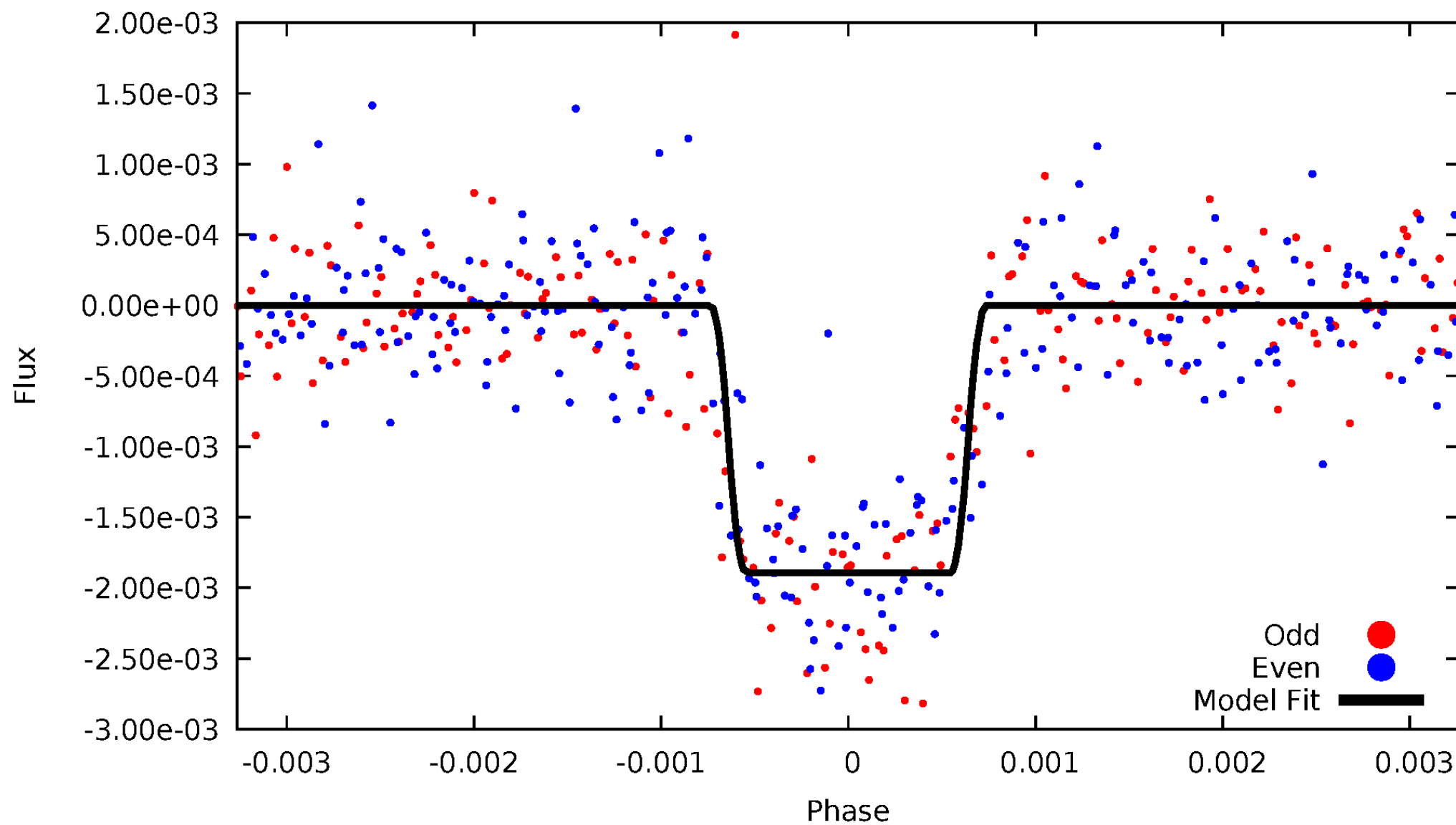
# DV Odd/Even

TCE 005871985-01



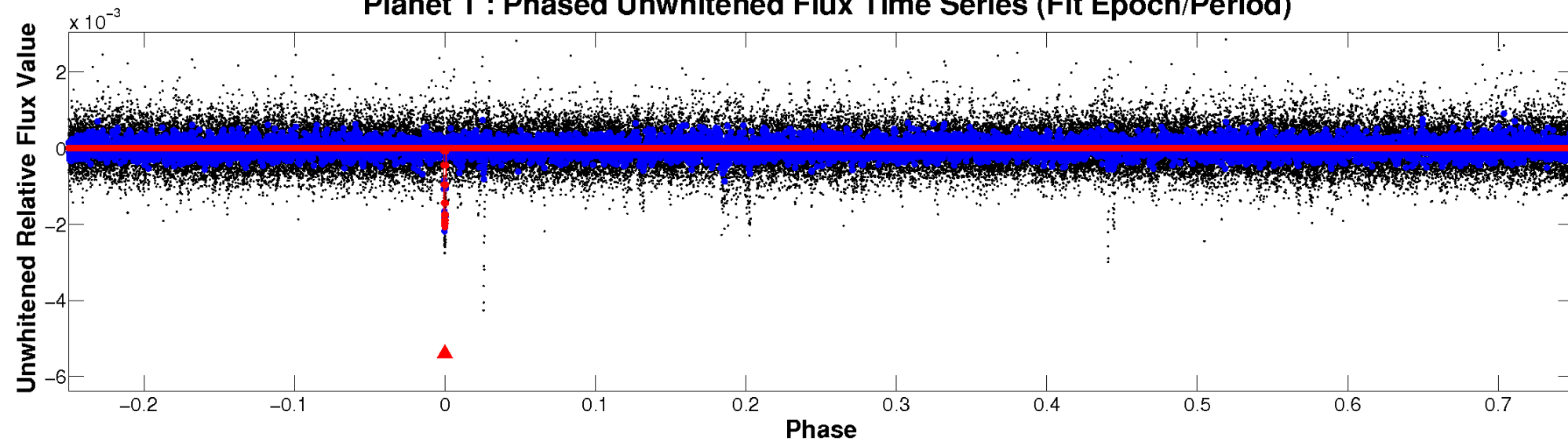
# ALT Odd/Even

TCE 005871985-01

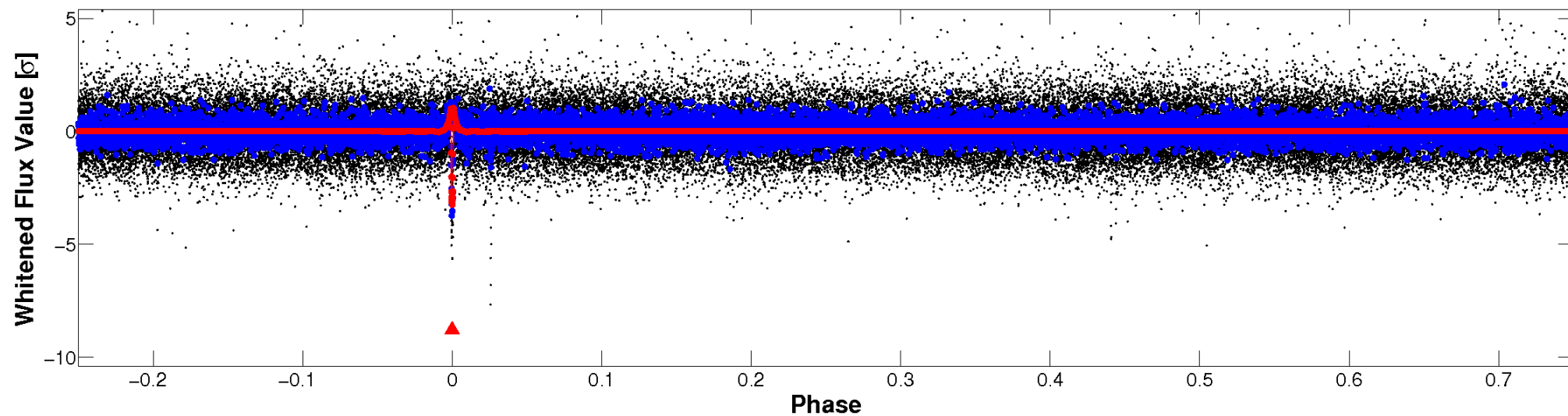


# Non-Whitened Vs. Whitened Light Curve

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

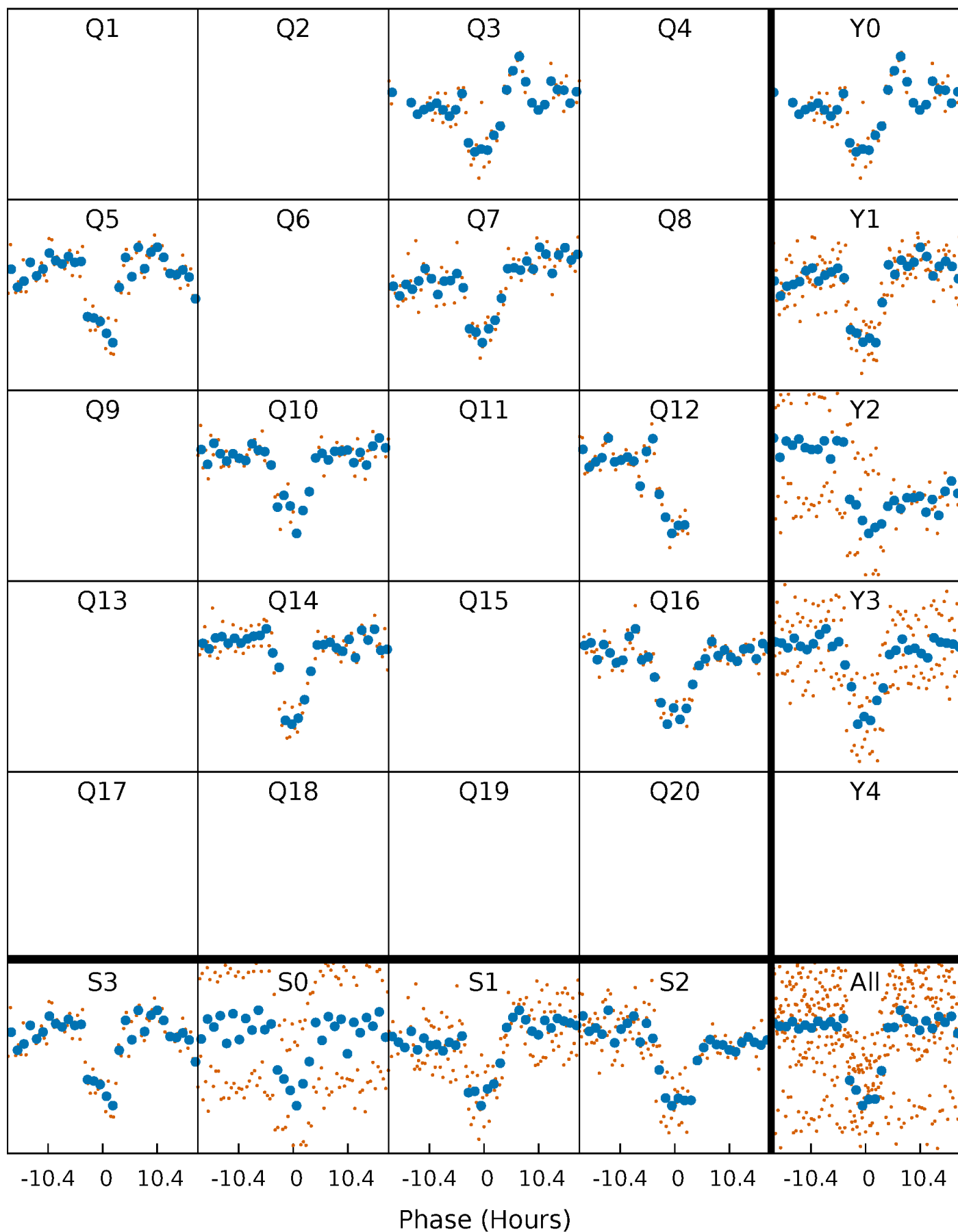


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

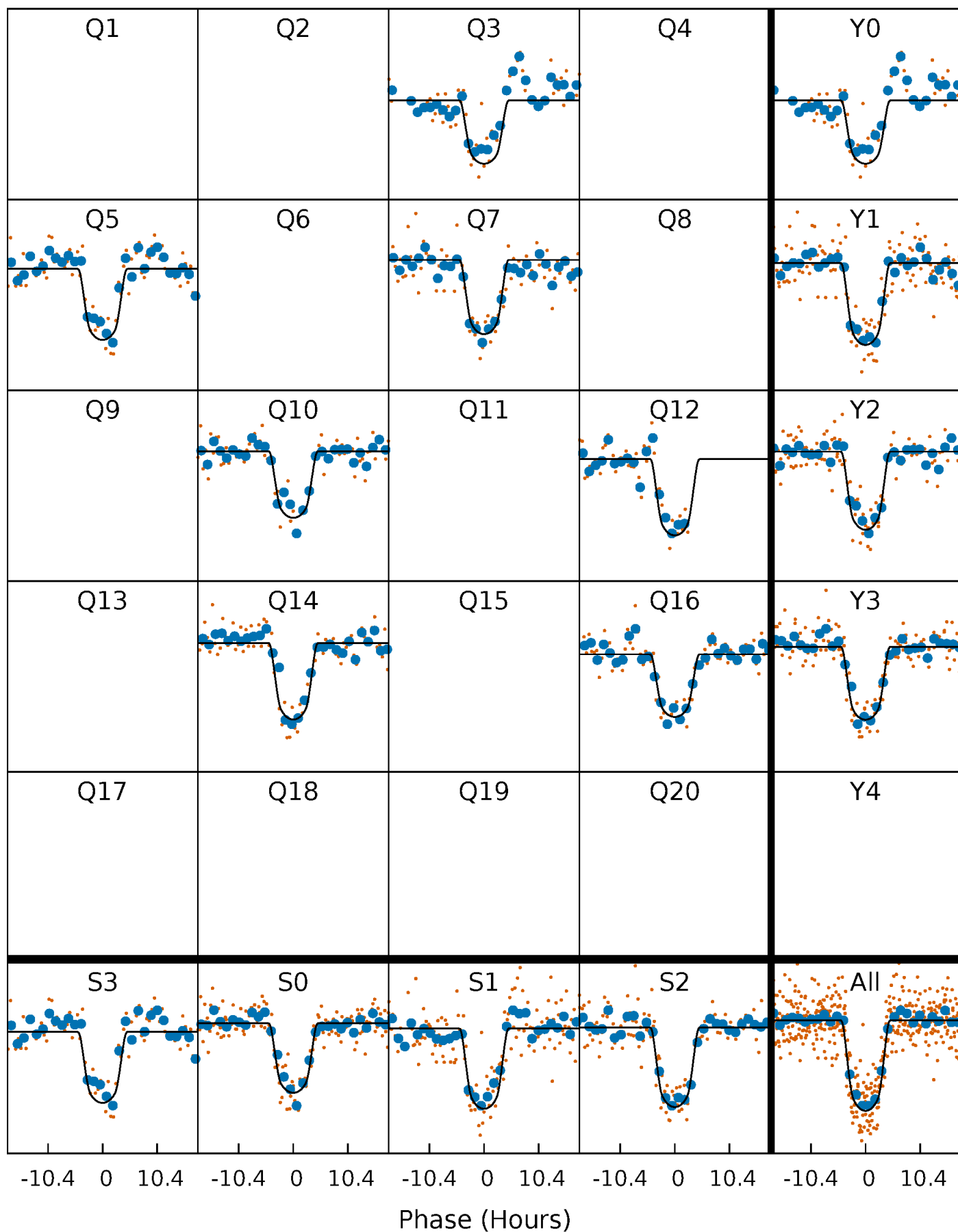
TCE 005871985-01 P=213.259182 Days  $T_0=268.132272$  (BKJD)





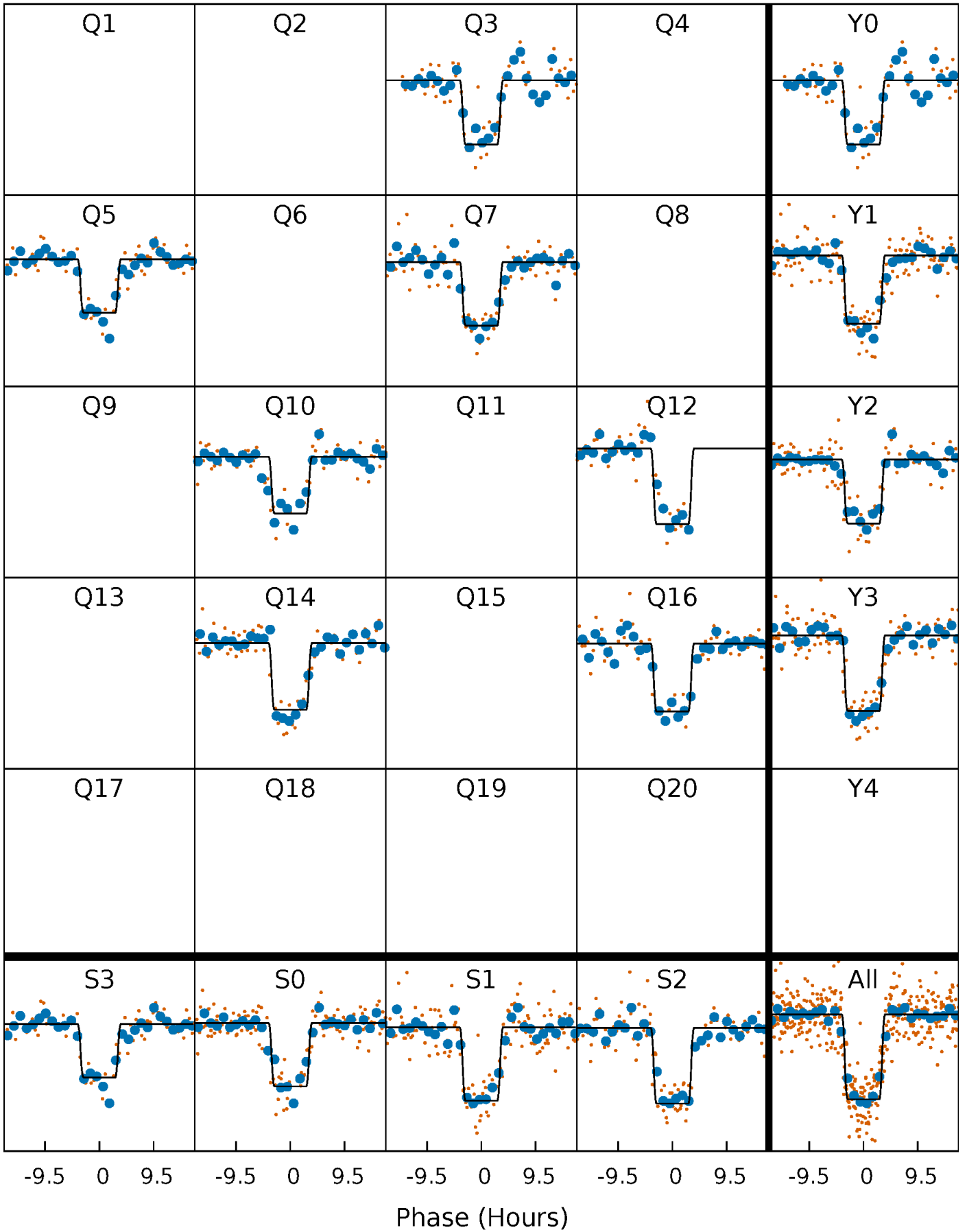
# DV Quarter-Phased Transit Curves

TCE 005871985-01   P=213.259182 Days    $T_0=268.132272$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

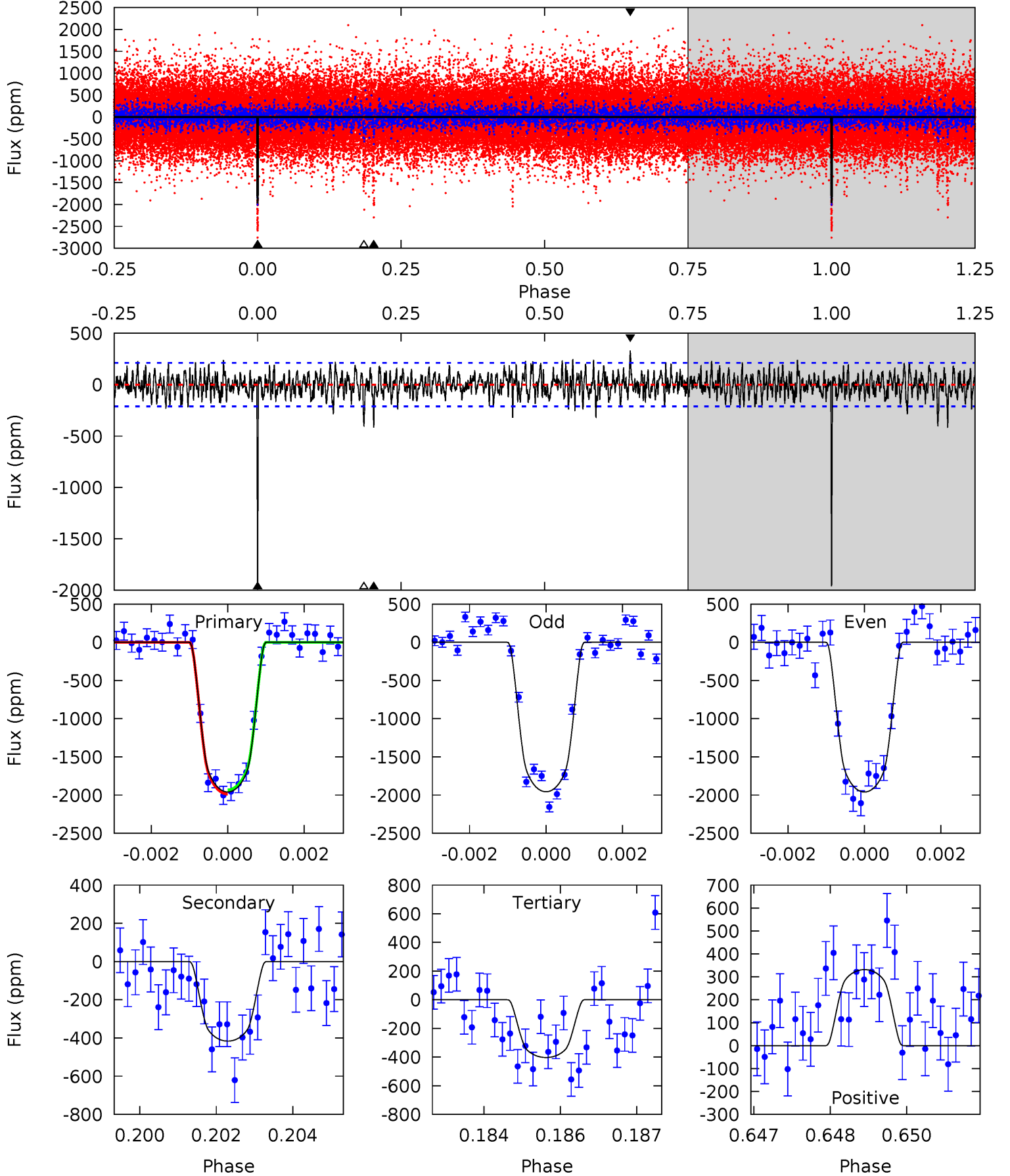
TCE 005871985-01 P=213.258254 Days  $T_0=268.134901$  (BKJD)



# DV Model-Shift Uniqueness Test

005871985-01,  $P = 213.259182$  Days,  $E = 54.873090$  Days

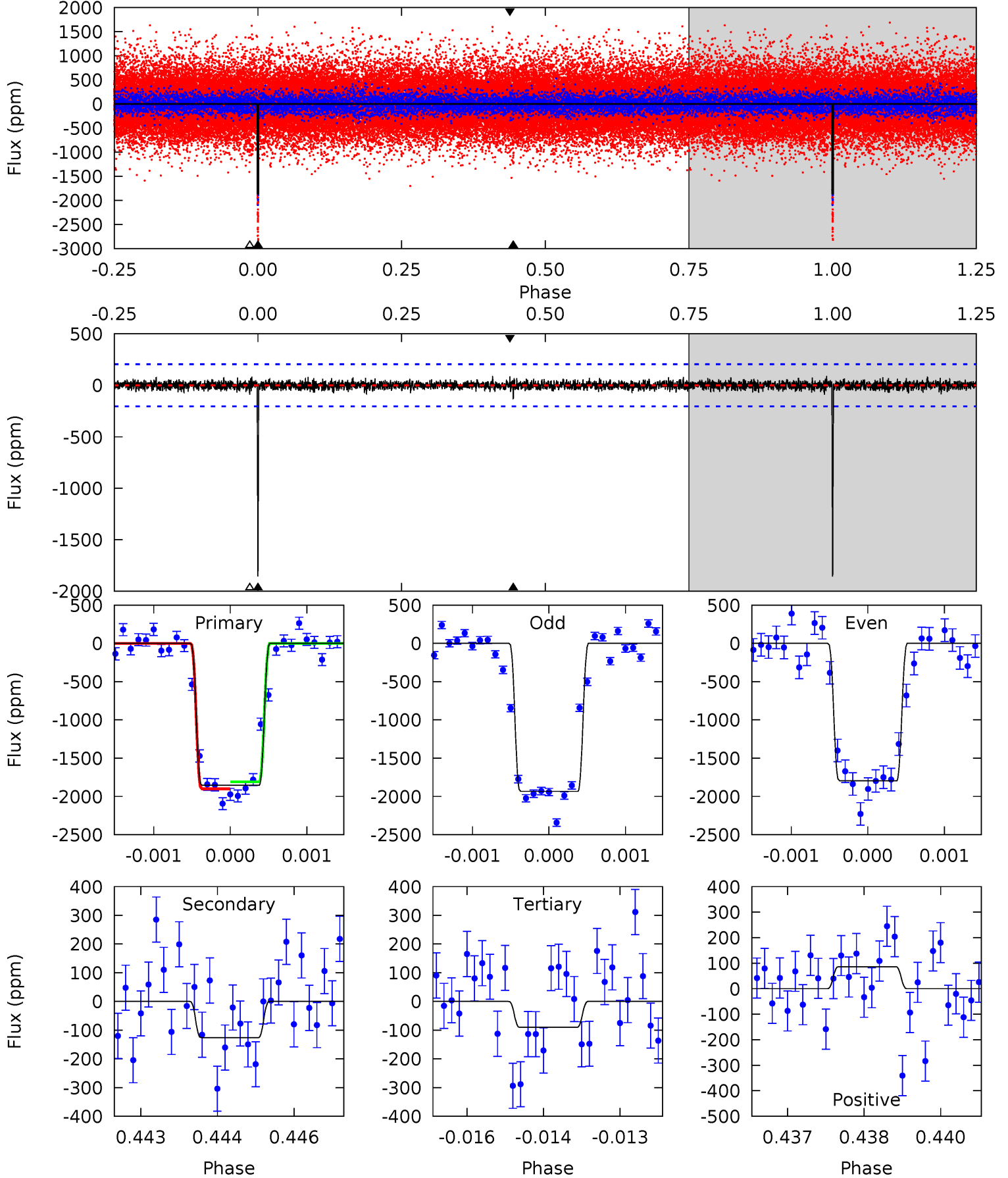
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
49.5	10.5	10.2	8.38	5.34	3.12	2.26	39.3	41.1	0.34	2.15	0.04	0.99	0.14	0.68



# Alt Model-Shift Uniqueness Test

005871985-01, P = 213.258254 Days, E = 54.876647 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
48.9	3.32	2.37	2.27	5.39	3.19	0.60	46.5	46.6	0.94	1.04	1.83	0.99	0.04	1.21



### Stellar Parameters For KIC 005871985

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4477^{+159}_{-159}$	$4.649^{+0.035}_{-0.039}$	$-0.200^{+0.300}_{-0.300}$	$0.637^{+0.056}_{-0.051}$	$0.659^{+0.063}_{-0.063}$	$3.596^{+0.607}_{-0.573}$
	+4%/-4%	+1%/-1%	+150%/-150%	+9%/-8%	+10%/-10%	+17%/-16%
Source	PHO16	PHO16	PHO16	DSEP		

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

### Secondary Eclipse Parameters for KIC 005871985-01 / KOI 2703.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-416 \pm 40$	$3.58^{+0.22}_{-0.19}$	$283^{+11}_{-11}$	$3263^{+107}_{-103}$	$6570^{+896}_{-887}$
Alt.	$-126 \pm 38$	$3.04^{+0.19}_{-0.20}$	$283^{+11}_{-11}$	$2890^{+131}_{-149}$	$2827^{+938}_{-881}$

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

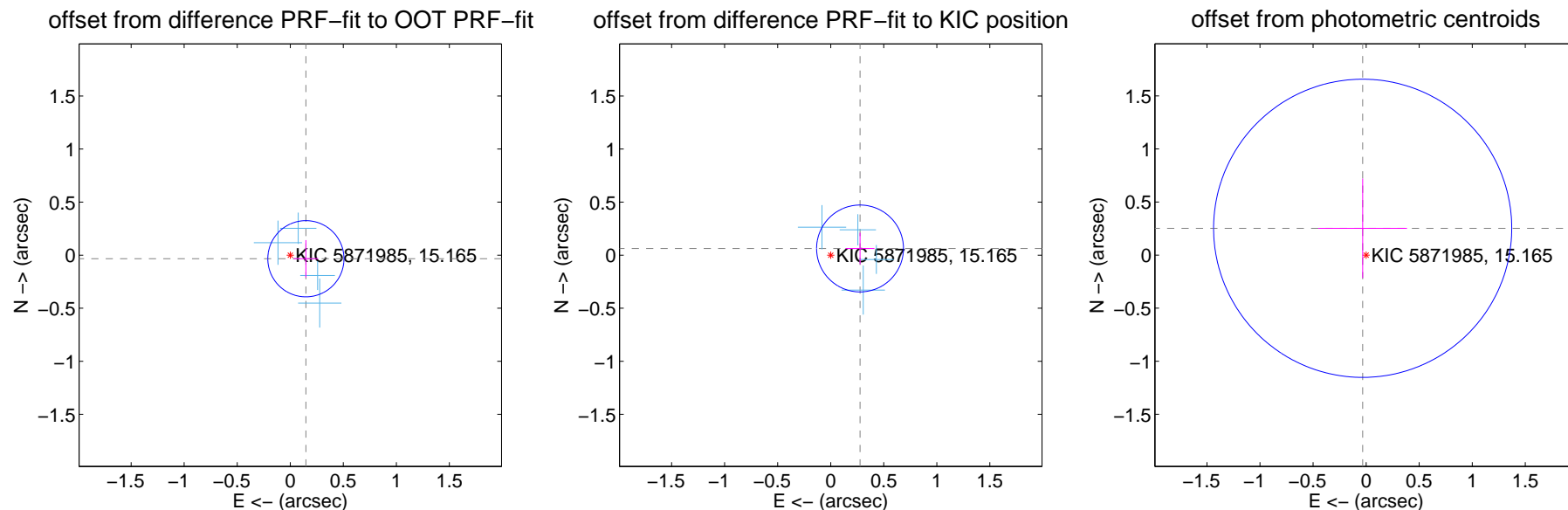
## DV Centroid Data

Supplemental centroid analysis for 005871985-01. Kepler magnitude: 15.16. Transit SNR 29.26

There are 4 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.151 \pm 0.120$	1.26	$-0.147 \pm 0.116$	$-0.034 \pm 0.175$
PRF-fit source offset from KIC position	$0.283 \pm 0.136$	2.08	$-0.276 \pm 0.136$	$0.063 \pm 0.149$
photometric centroid source offset	$0.25 \pm 0.47$	0.54	$0.03 \pm 0.42$	$0.25 \pm 0.47$

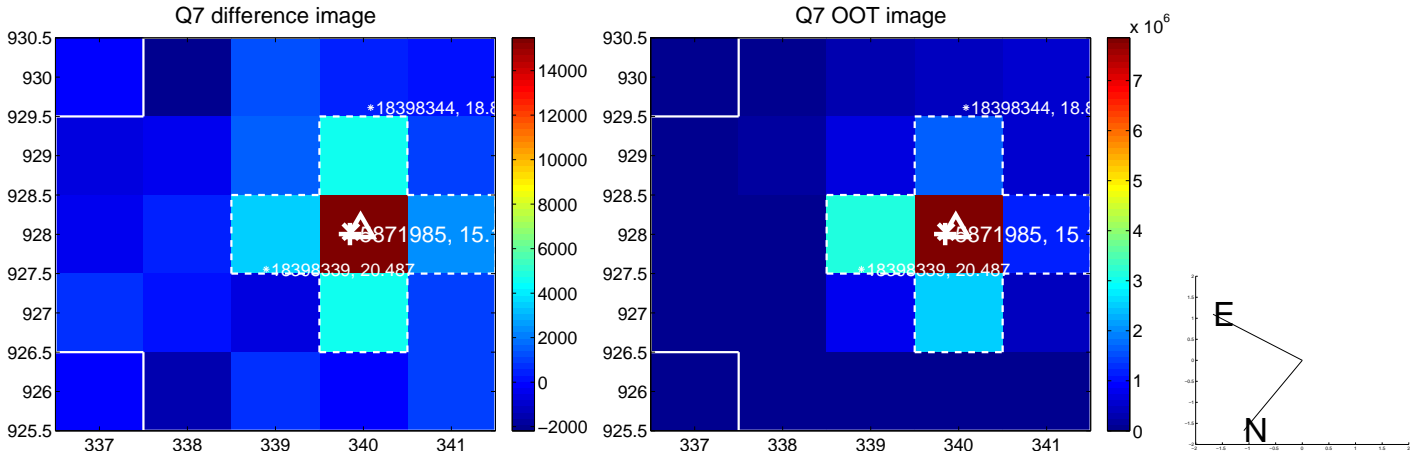
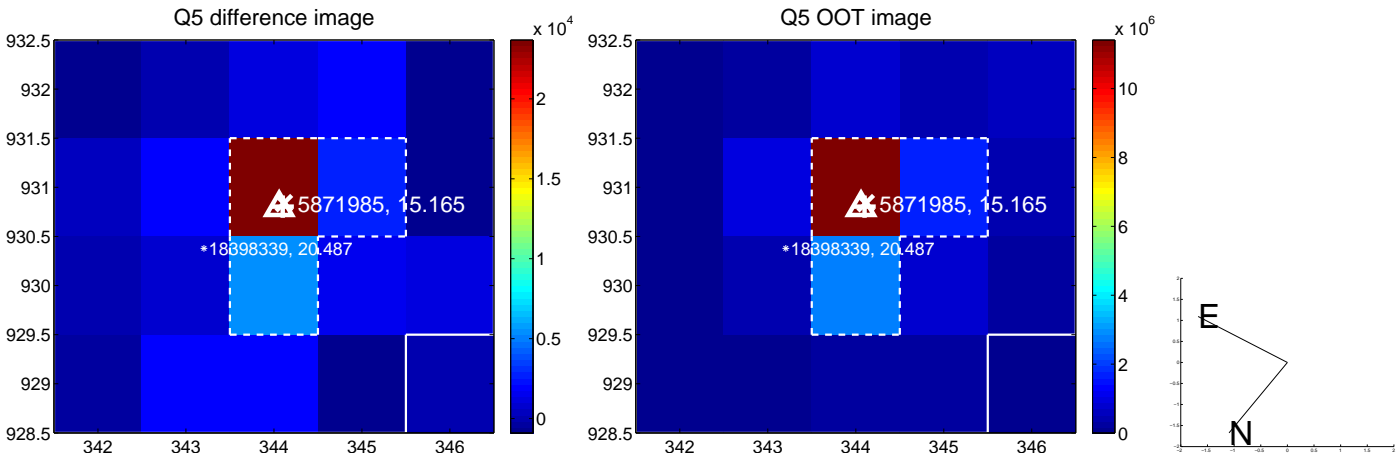


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

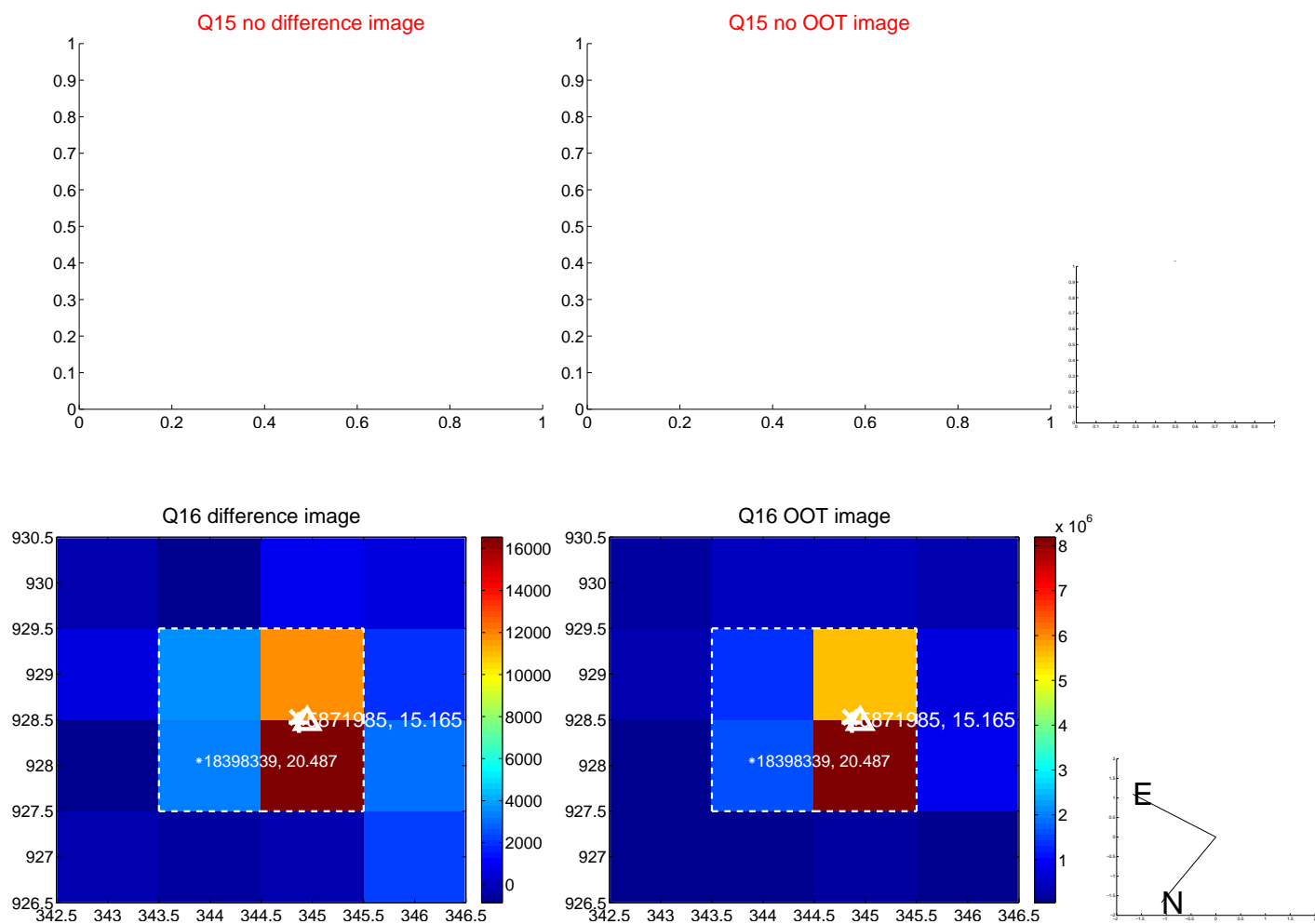
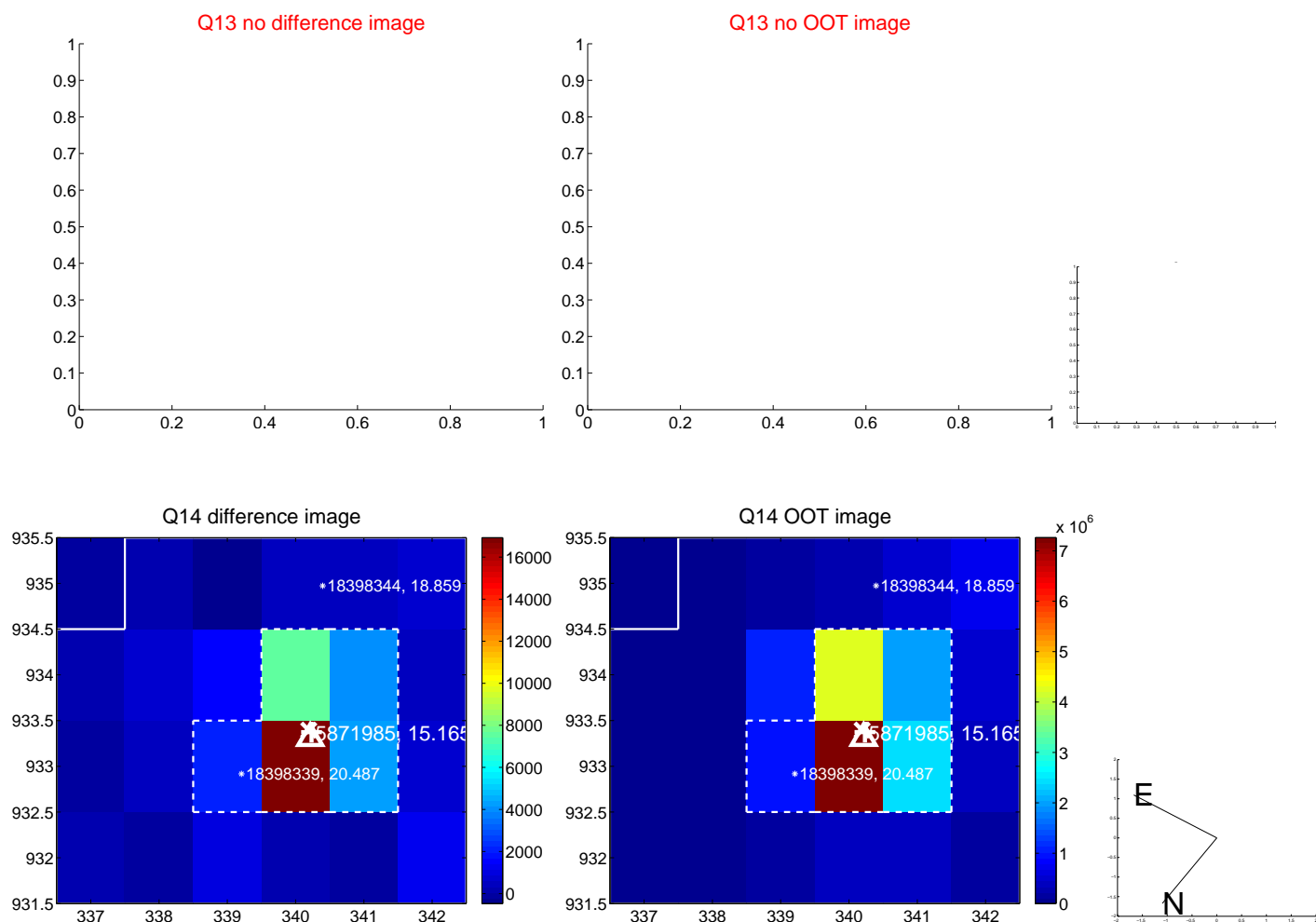




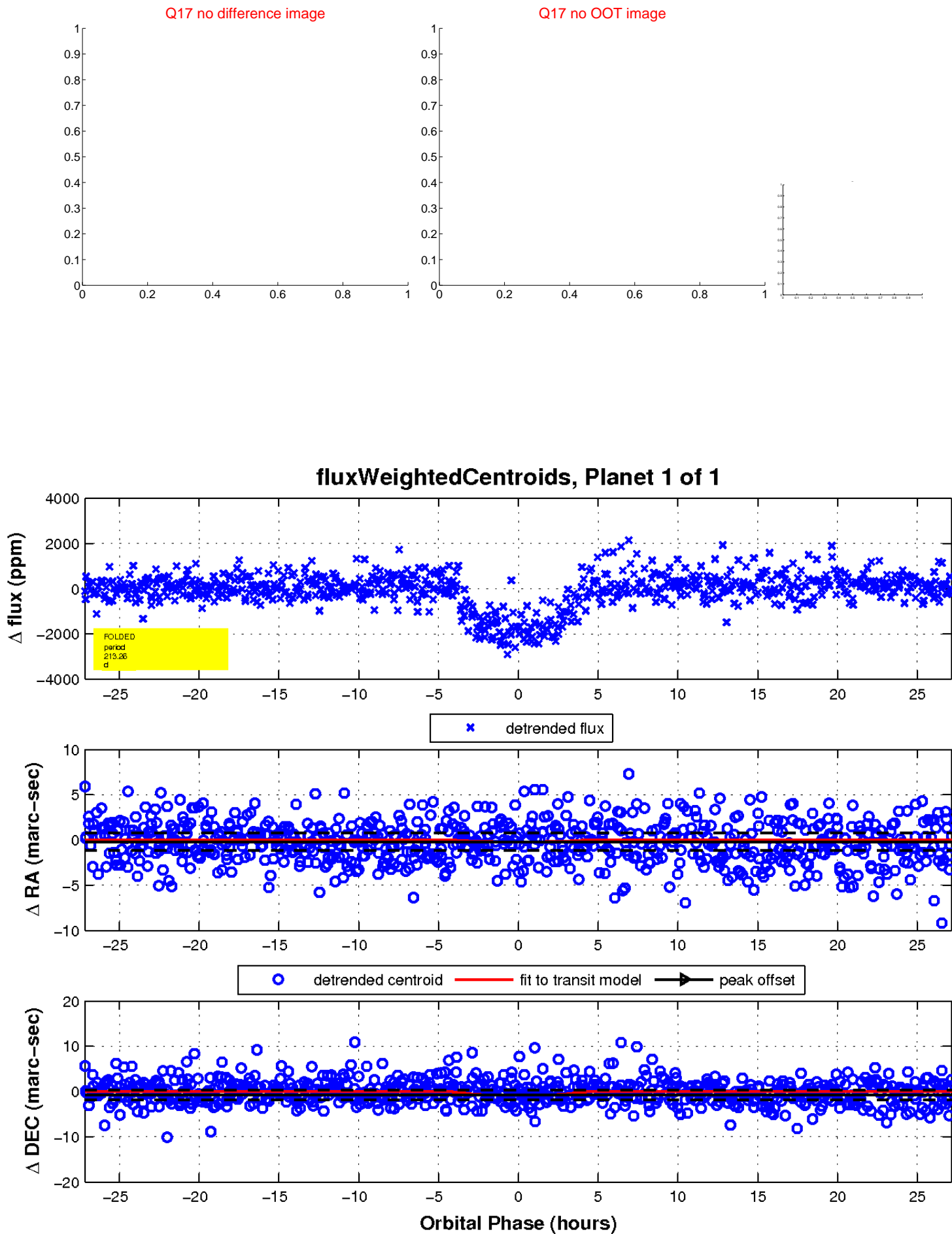
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UKIRT Image

Declination

