

# KIC 008426985

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008426985-01	OBS	No	187.842339	171.209645	1092.3	39.258	7.5	8.5	0.95	6060	6.02	2.60

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008426985-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

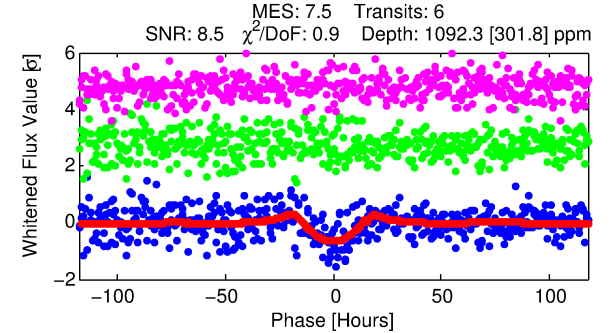
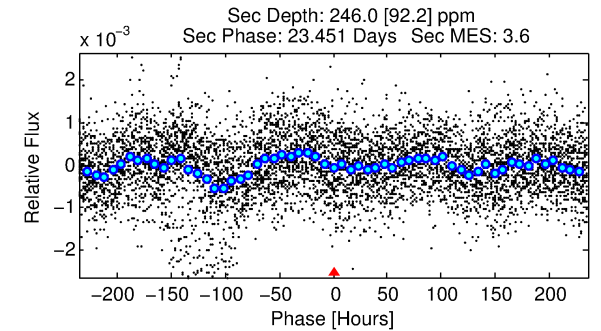
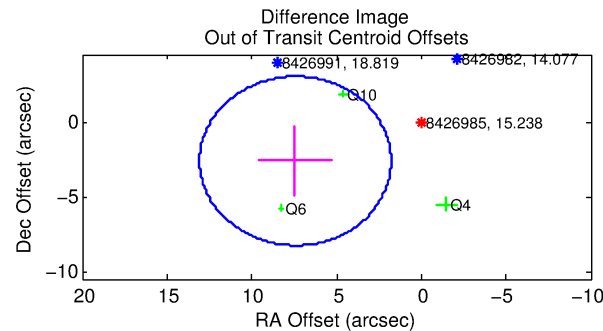
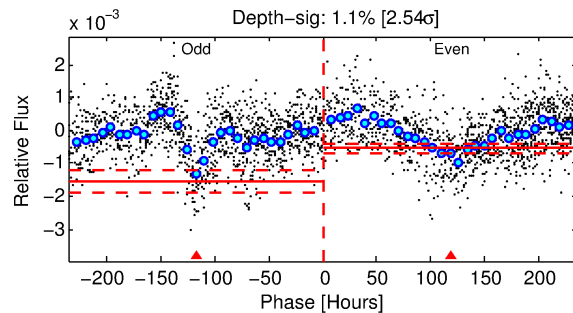
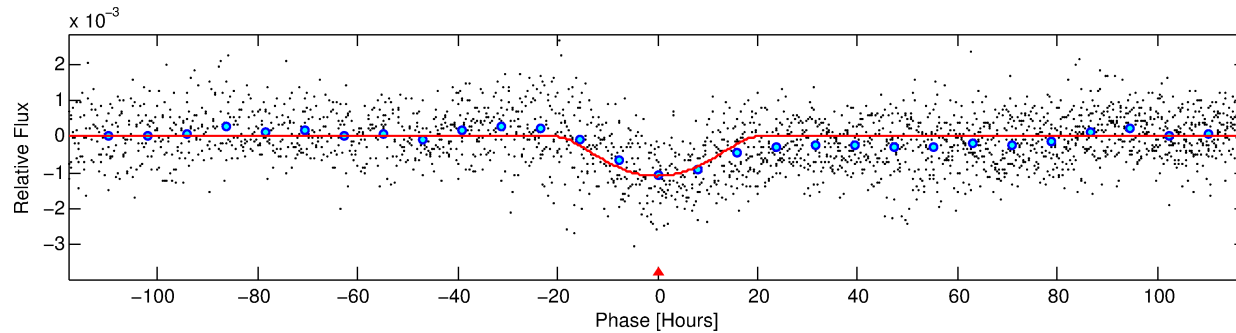
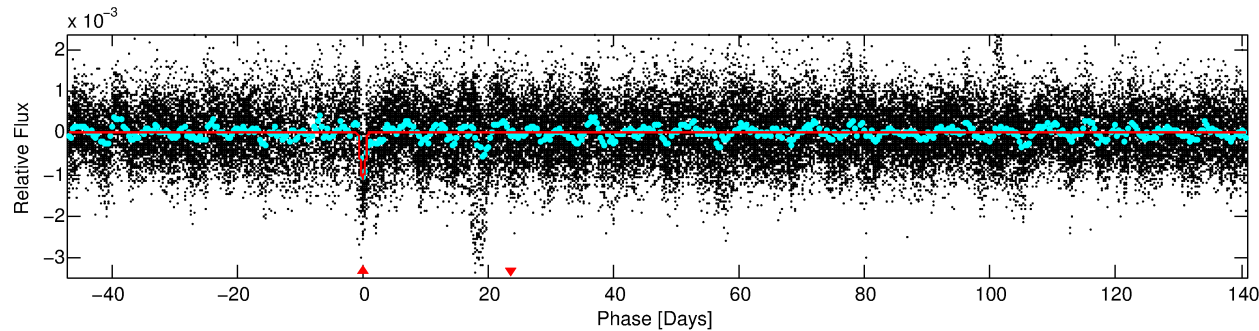
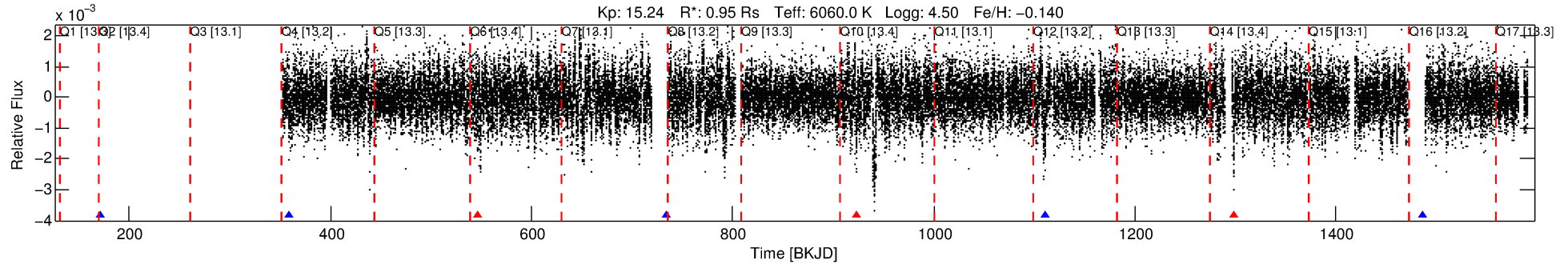
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008426985-01

No Significant Match Found

# DV One-Page Summary

KIC: 8426985 Candidate: 1 of 1 Period: 187.842 d



## DV Fit Results:

Period = 187.84234 [0.02021] d  
Epoch = 171.2096 [0.0848] BKJD  
Rp/R\* = 0.0579 [0.1170]  
a/R\* = 12.66 [5.92]  
b = 1.00 [0.16]  
Seff = 2.60 [1.04]  
Teq = 324 [32] K  
Rp = 6.02 [12.30] Re  
a = 0.6496 [0.1656] AU  
Ag = 1575.03 [6417.79] [0.25 $\sigma$ ]  
Teffp = 3154 [3202] K [0.88 $\sigma$ ]

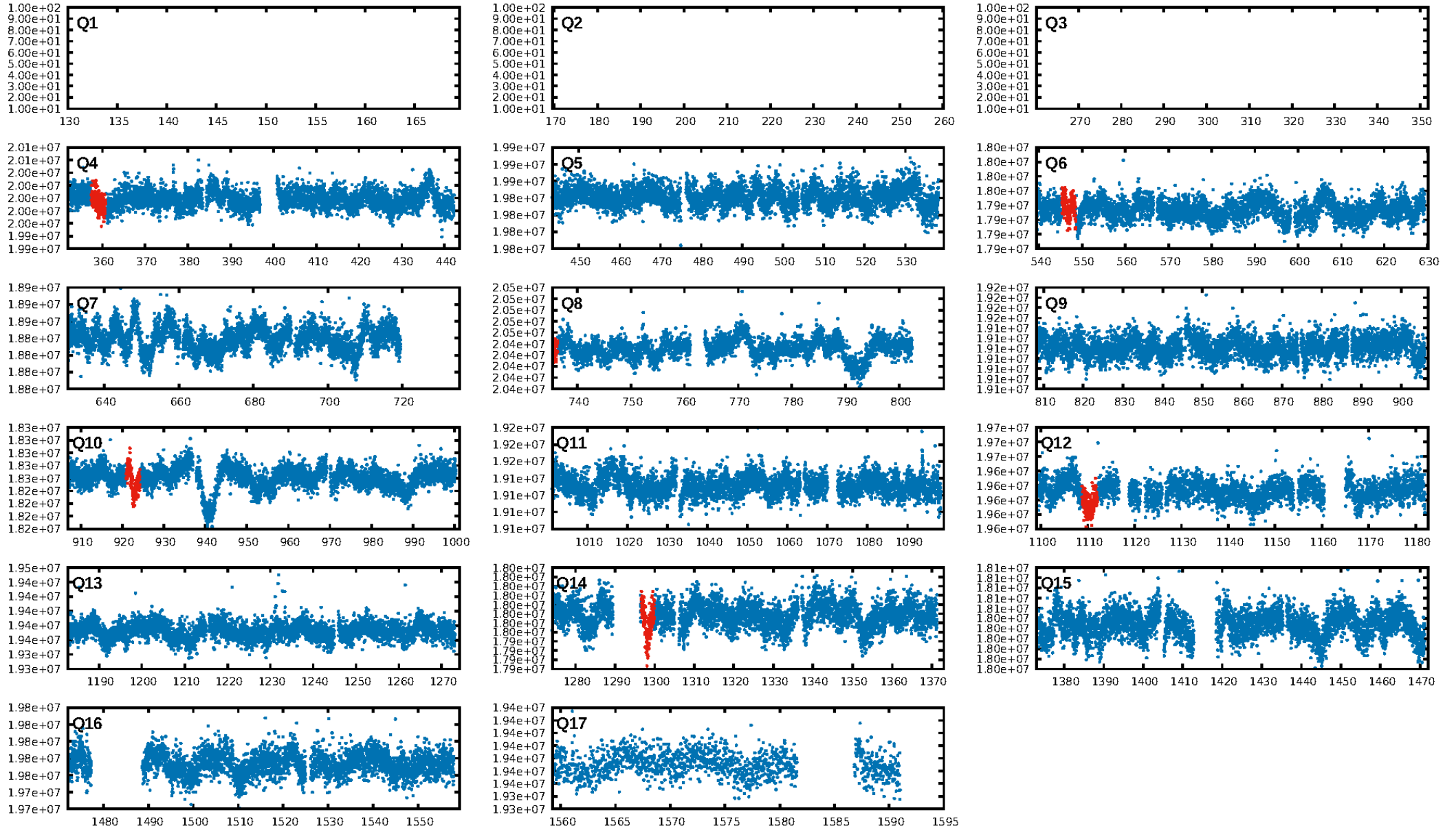
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 74.3%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.55e-12  
RollingBand-fgt: 0.50 [3/6]  
GhostDiagnostic-chr: -30.57  
Centroid-sig: 20.9%  
Centroid-so: 2.002 arcsec [5.35 $\sigma$ ]  
OotOffset-rm: 7.876 arcsec [4.19 $\sigma$ ]  
KicOffset-rm: 6.018 arcsec [3.56 $\sigma$ ]  
OotOffset-st: 2/0/1/0 [3]  
KicOffset-st: 2/0/1/0 [3]  
DiffImageQuality-fgm: 0.00 [0/3]  
DiffImageOverlap-fno: 1.00 [3/3]

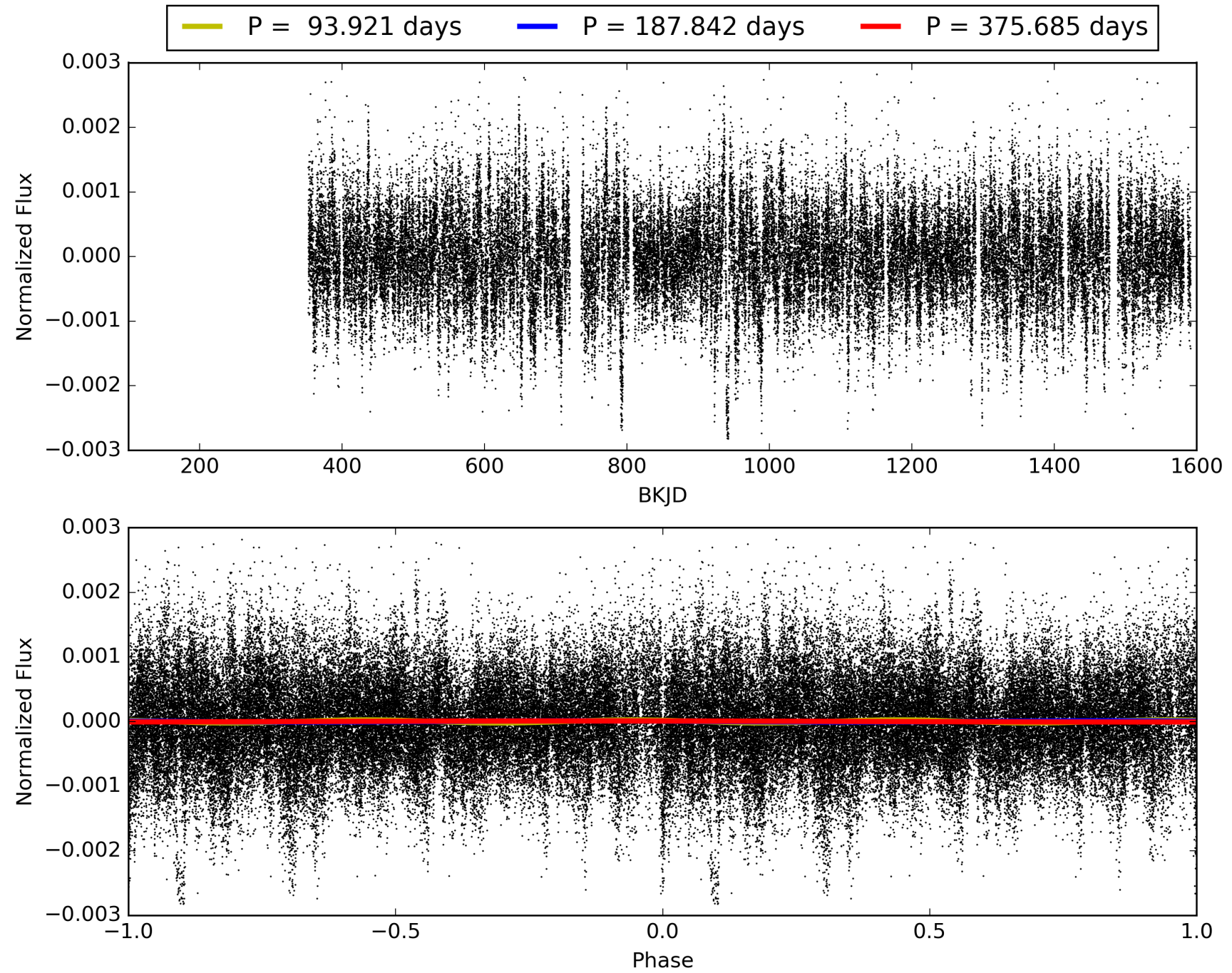
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:44:23 Z

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

# TCE 008426985-01, PDC Light Curves

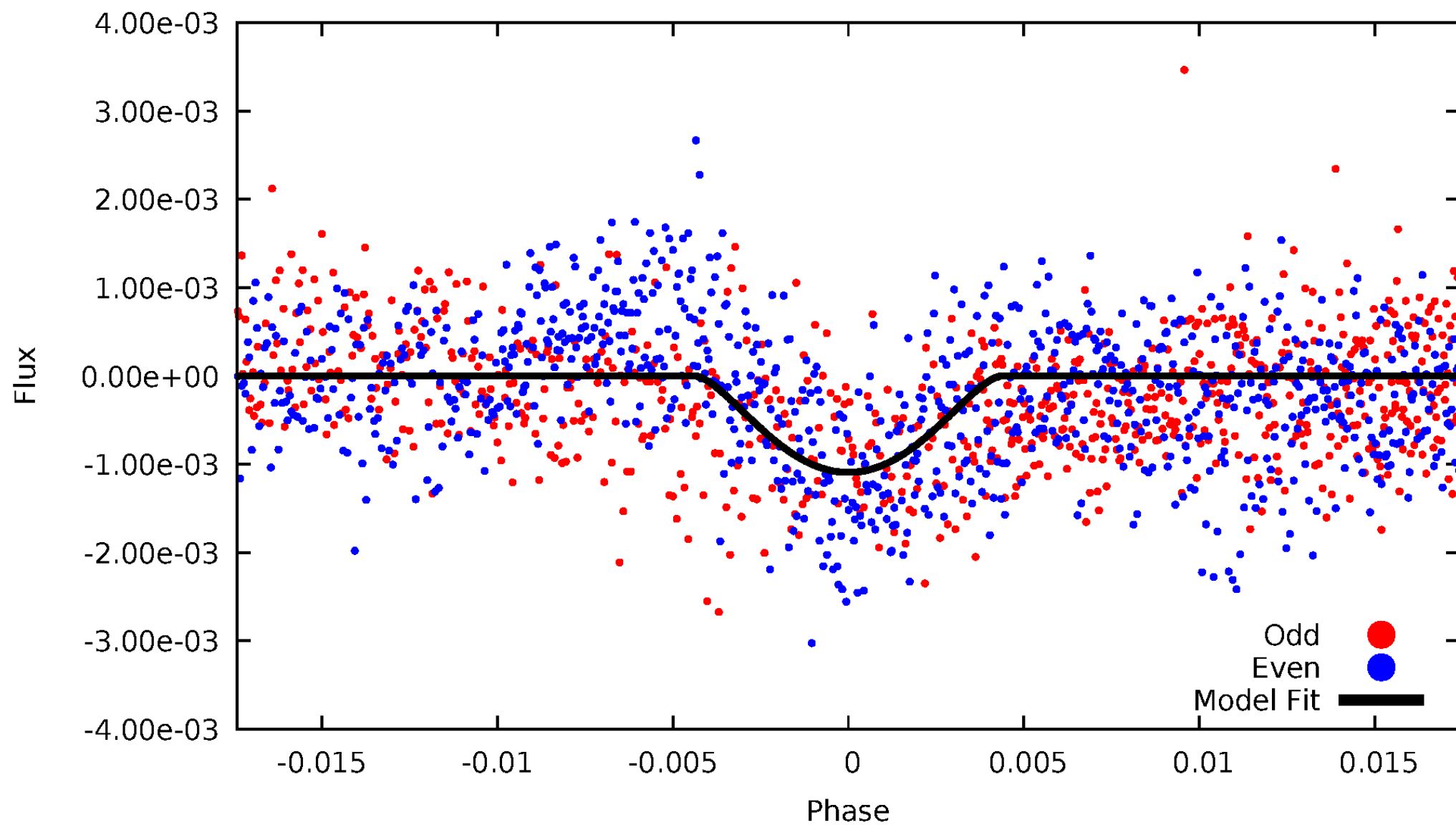


TCE 008426985-01



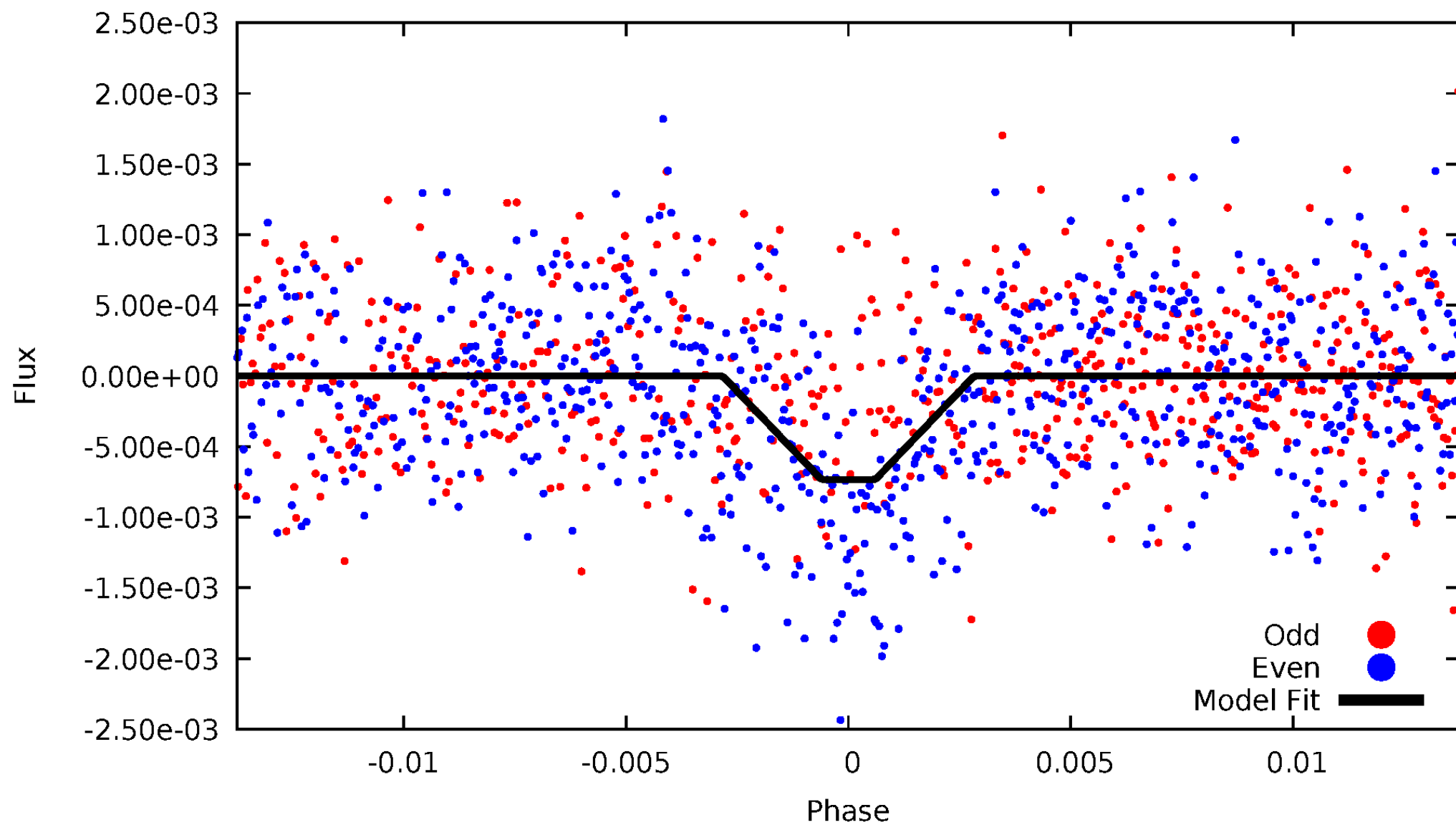
# DV Odd/Even

TCE 008426985-01



# ALT Odd/Even

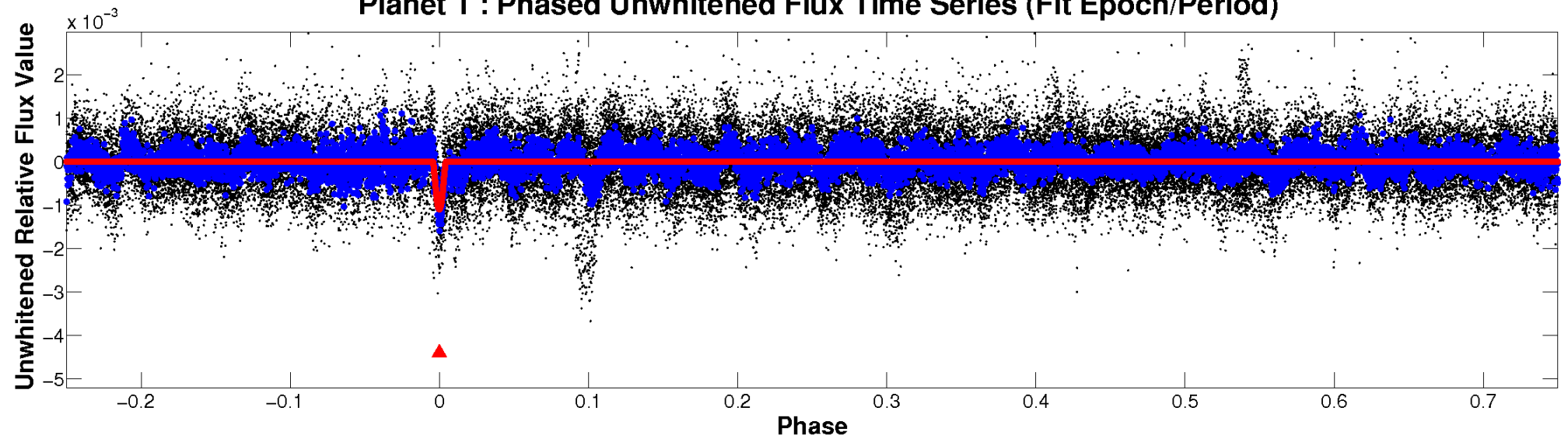
TCE 008426985-01



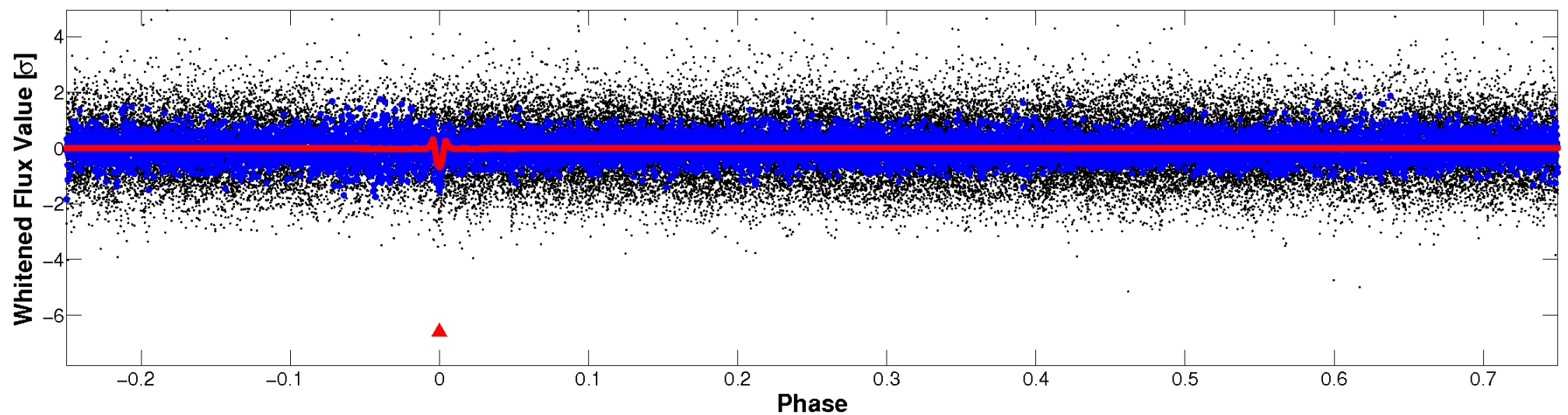


# Non-Whitened Vs. Whitened Light Curve

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

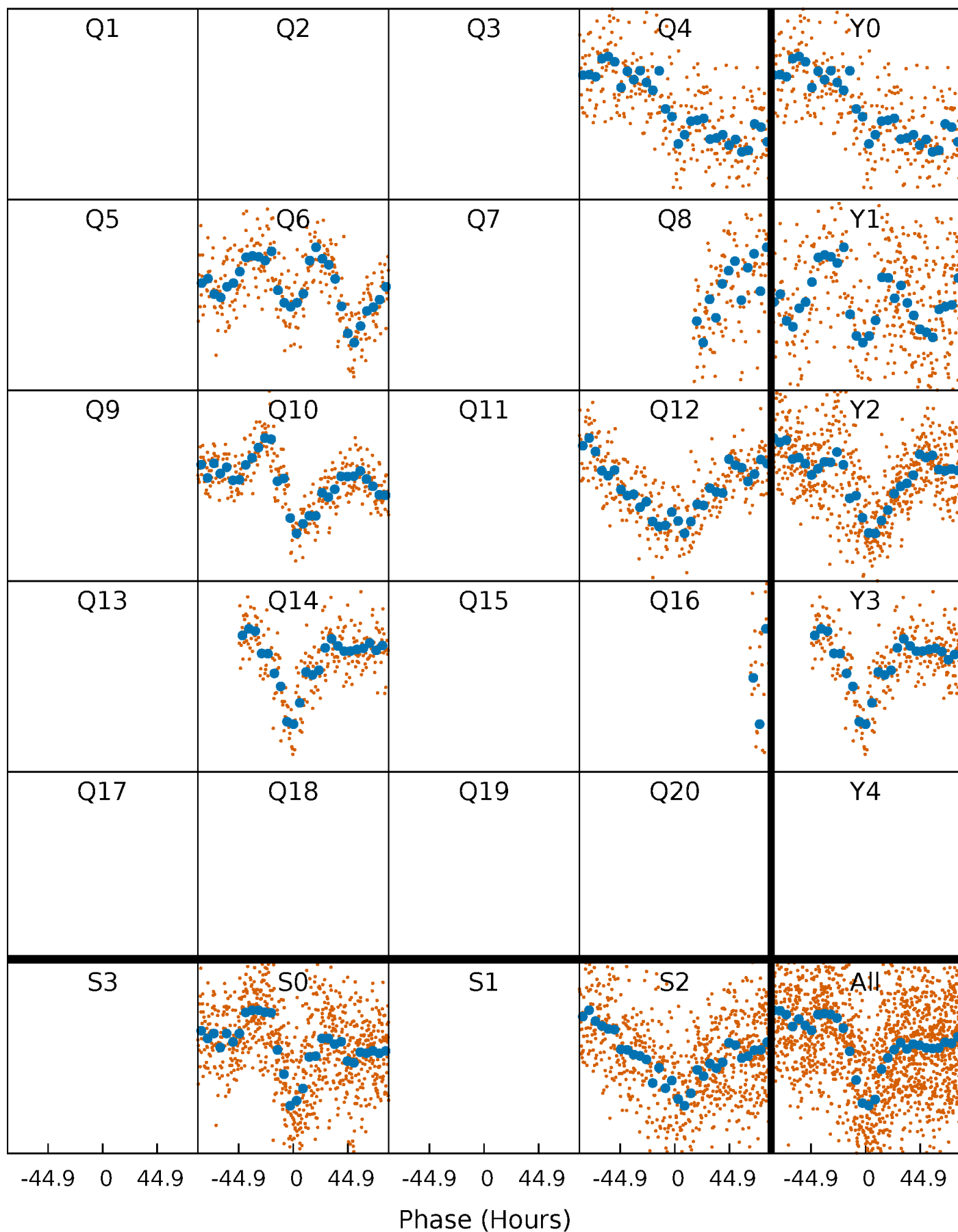


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

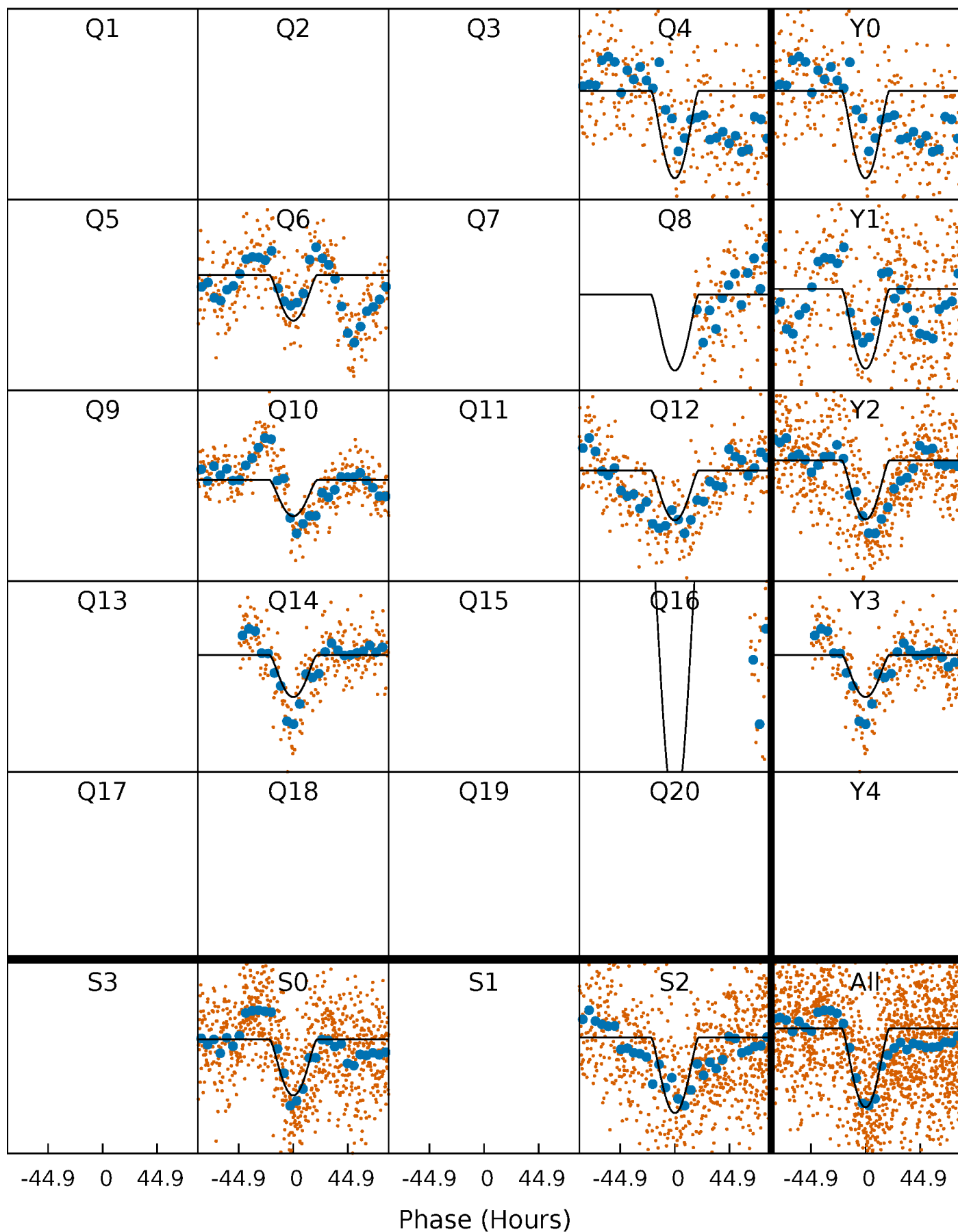
TCE 008426985-01 P=187.842339 Days  $T_0=171.209645$  (BKJD)





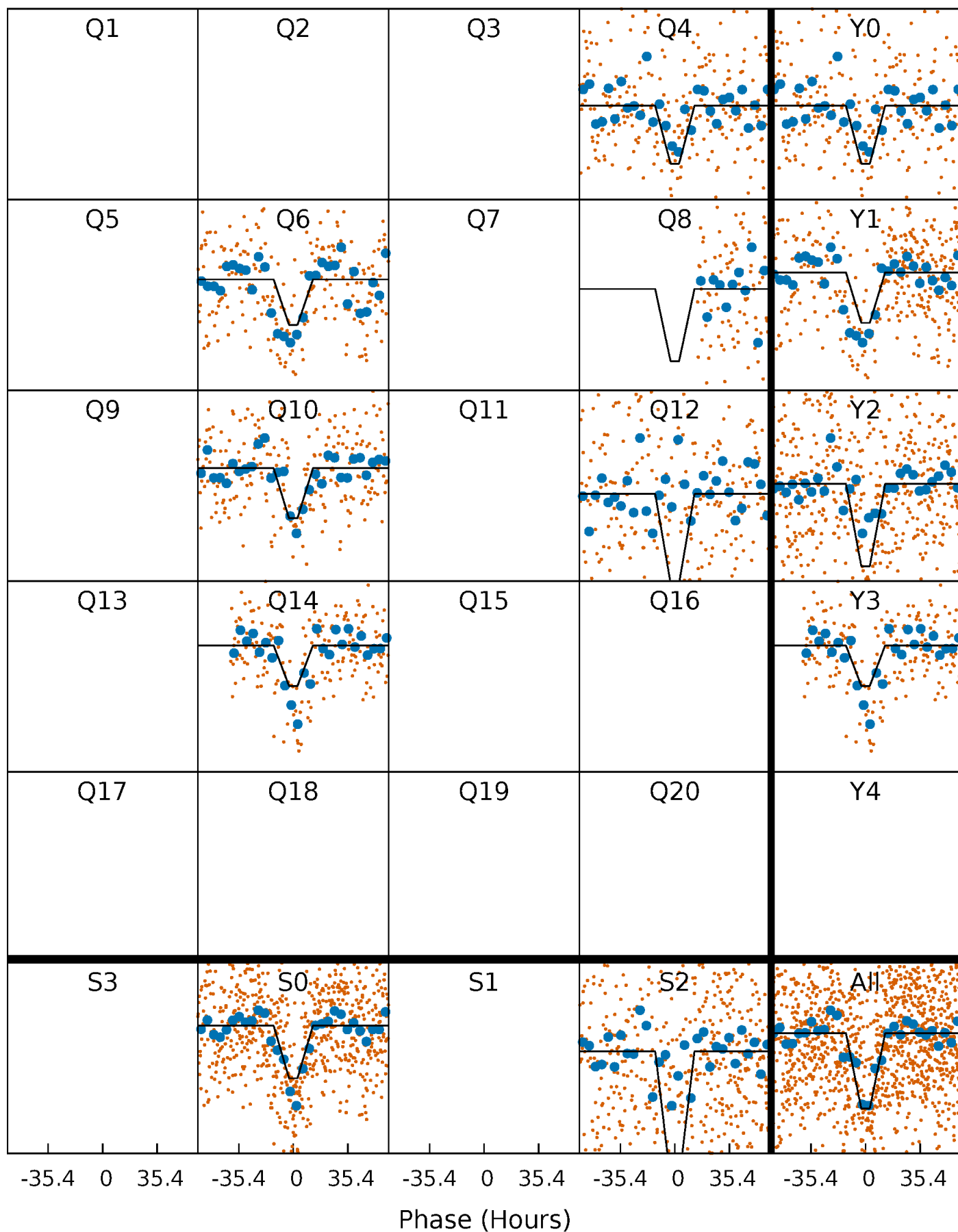
# DV Quarter-Phased Transit Curves

TCE 008426985-01 P=187.842339 Days  $T_0=171.209645$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

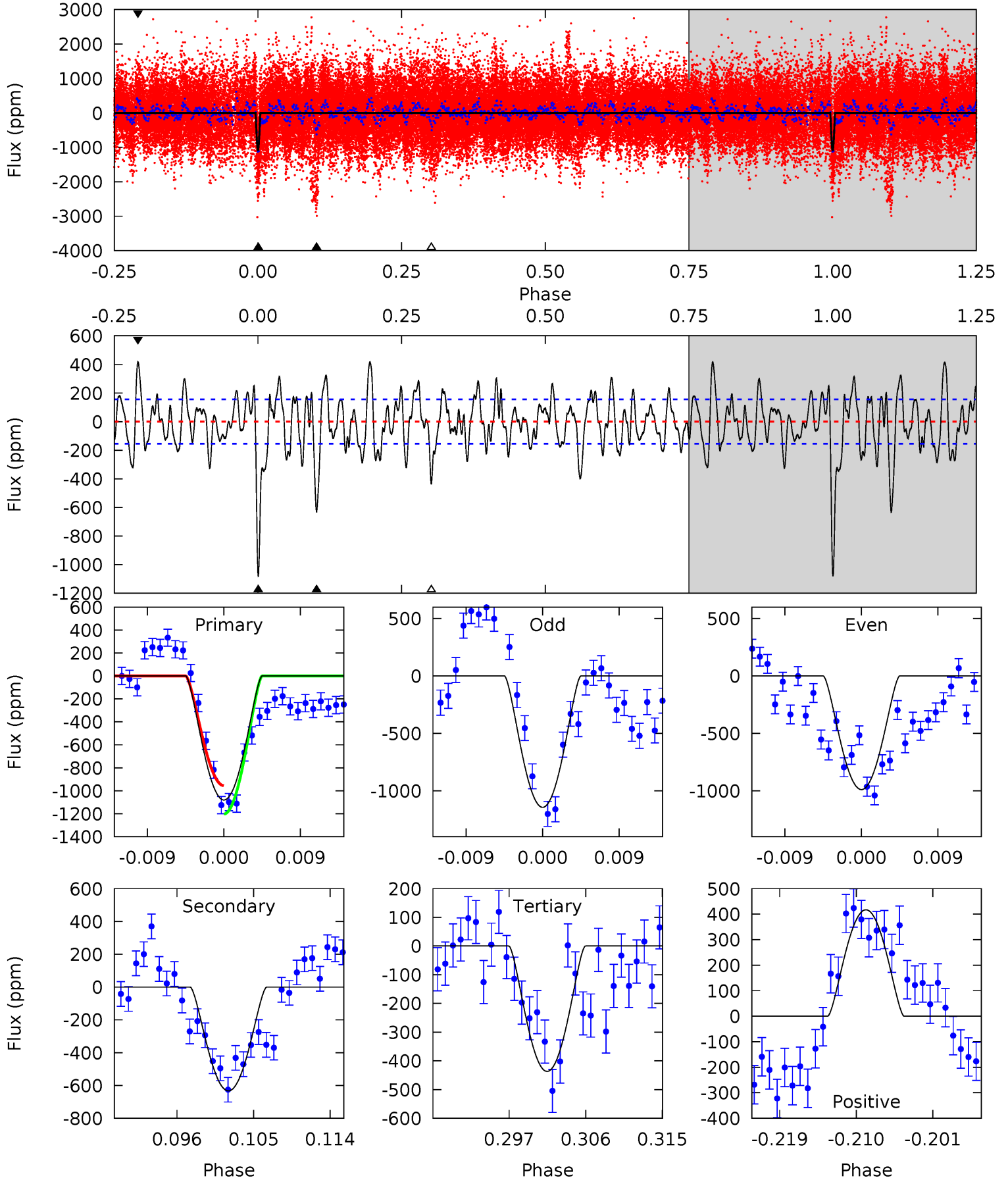
TCE 008426985-01 P=187.777605 Days  $T_0=171.435435$  (BKJD)



# DV Model-Shift Uniqueness Test

008426985-01, P = 187.842339 Days, E = 171.209645 Days

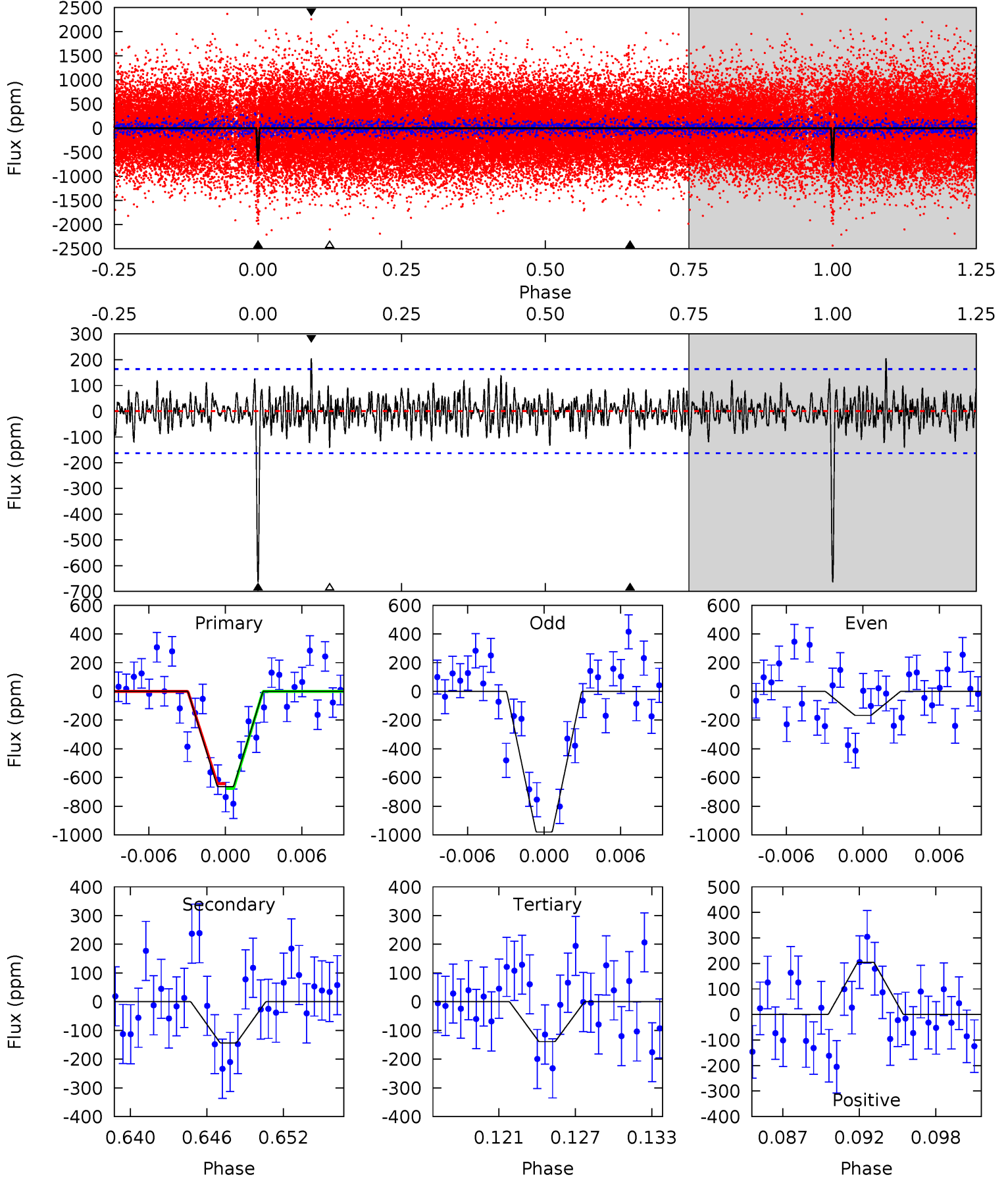
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.3	20.7	14.3	13.6	5.05	2.62	4.94	21.0	21.7	6.41	7.05	2.50	0.92	0.28	4.00



# Alt Model-Shift Uniqueness Test

008426985-01, P = 187.777605 Days, E = 171.435435 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
20.9	4.52	4.38	6.44	5.13	2.76	1.39	16.5	14.4	0.14	-1.92	12.5	0.88	0.24	0.54



### Stellar Parameters For KIC 008426985

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6060^{+189}_{-231}$	$4.495^{+0.050}_{-0.200}$	$-0.140^{+0.250}_{-0.350}$	$0.953^{+0.291}_{-0.097}$	$1.036^{+0.130}_{-0.143}$	$1.684^{+0.444}_{-0.846}$
	+3%/-4%	+1%/-4%	+179%/-250%	+31%/-10%	+13%/-14%	+26%/-50%
Source	KIC0	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 008426985-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-633 \pm 31$	$11.32^{+11.44}_{-7.53}$	$462^{+33}_{-24}$	$3467^{+1721}_{-631}$	$1128^{+8872}_{-848}$
Alt.	$-144 \pm 32$	$9.95^{+9.90}_{-6.99}$	$465^{+33}_{-27}$	$2921^{+1385}_{-495}$	$334^{+3425}_{-252}$

$T_{max}$  = 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

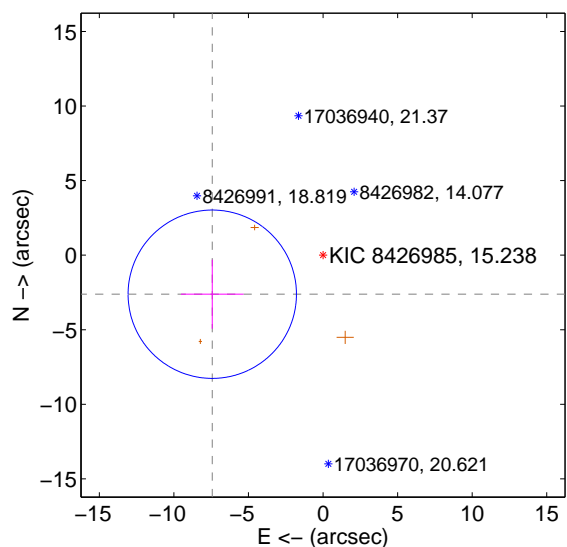
Supplemental centroid analysis for 008426985-01. Kepler magnitude: 15.24. Transit SNR 8.45

There are 0 quarters with good PRF difference image offsets

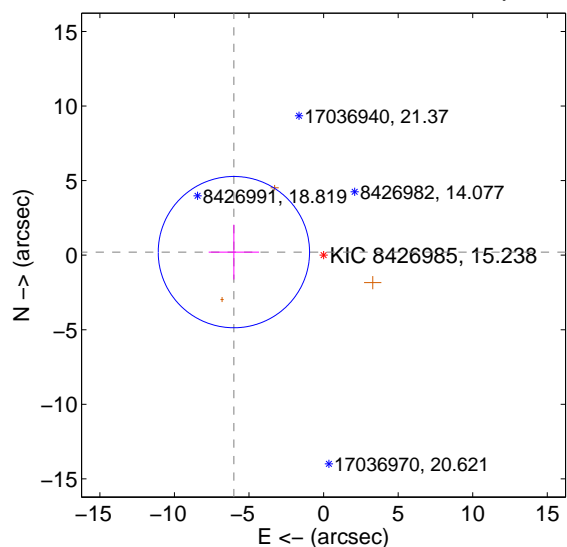
The OOT PRF centroid is offset from the target star catalog position by about 2.97 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$7.876 \pm 1.882$	4.19	$7.428 \pm 2.099$	$-2.618 \pm 2.313$
PRF-fit source offset from KIC position	$6.018 \pm 1.691$	3.56	$6.015 \pm 1.689$	$0.205 \pm 1.837$
photometric centroid source offset	$2.00 \pm 0.37$	5.35	$-0.84 \pm 0.30$	$1.82 \pm 0.39$

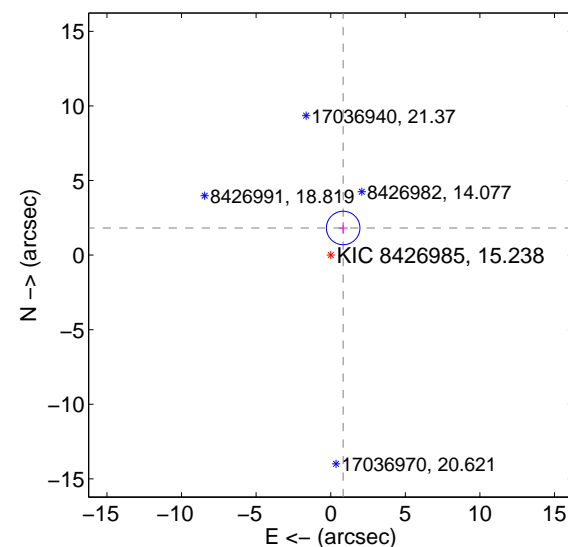
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



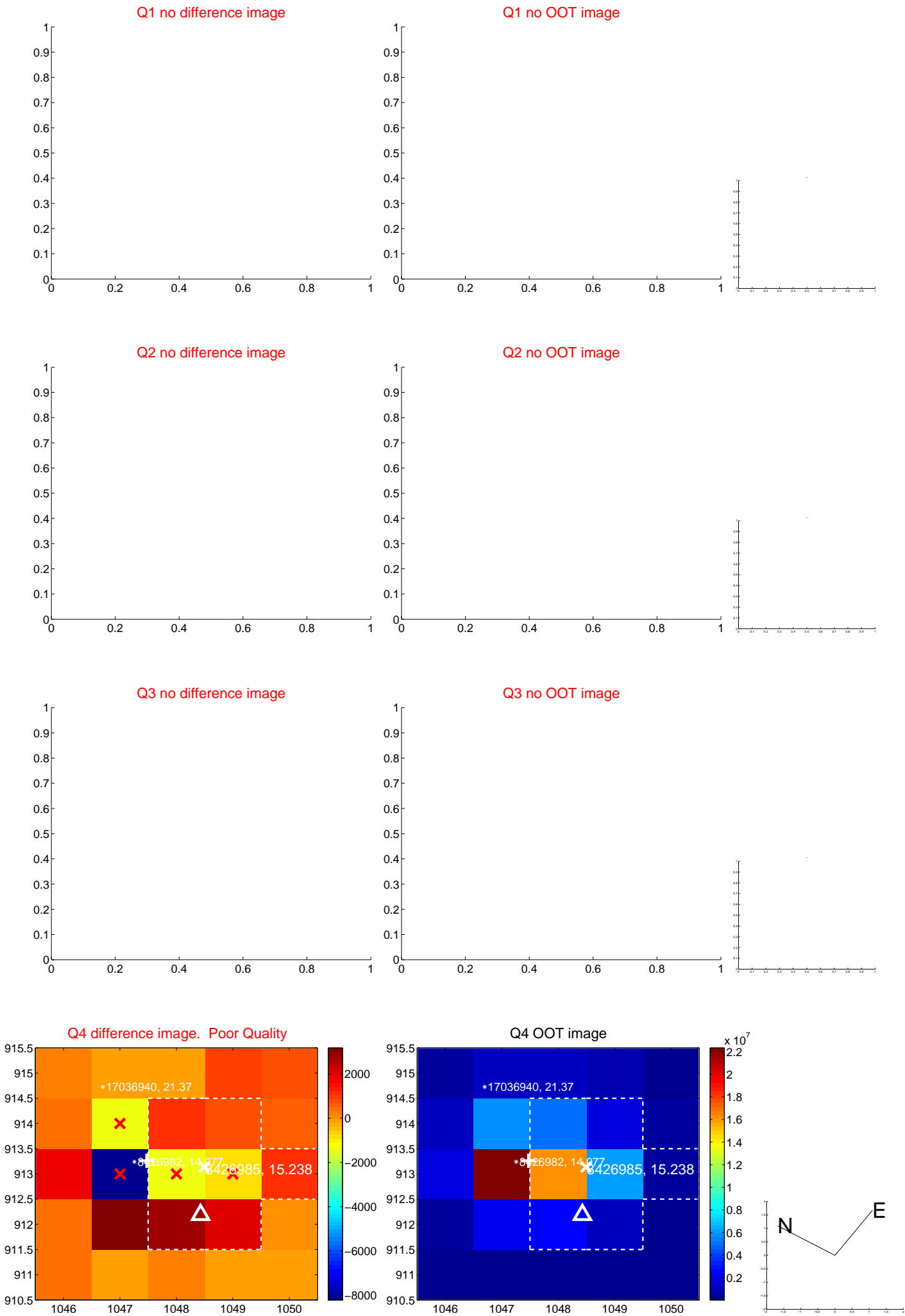
offset from photometric centroids



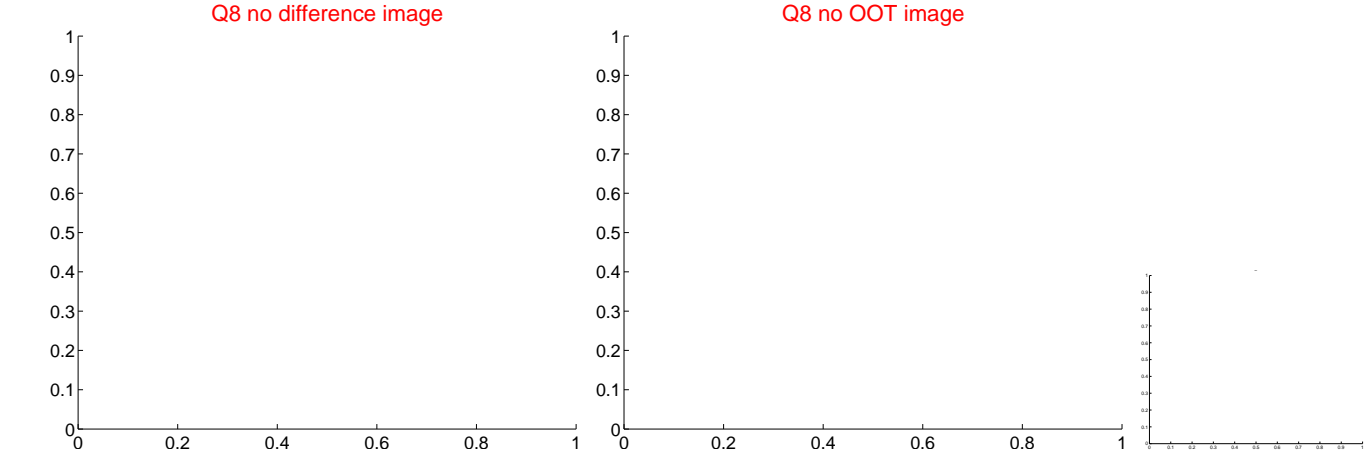
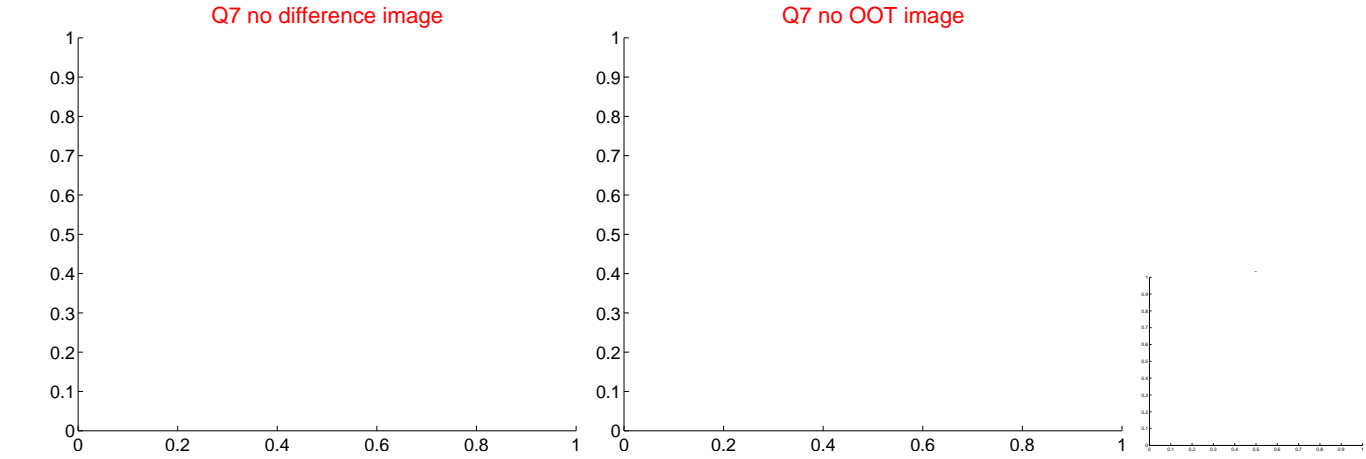
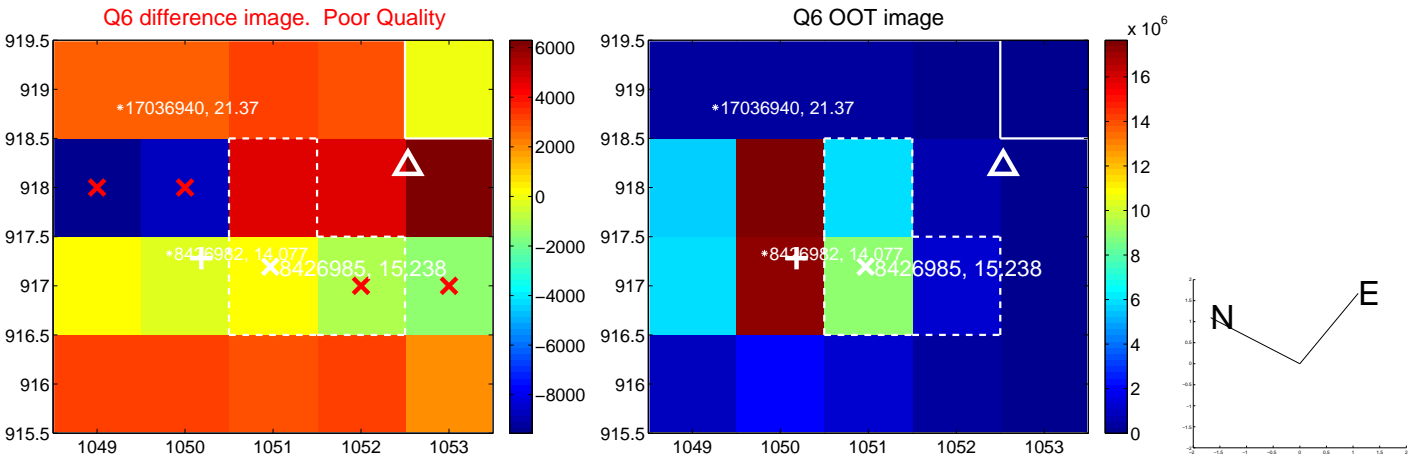
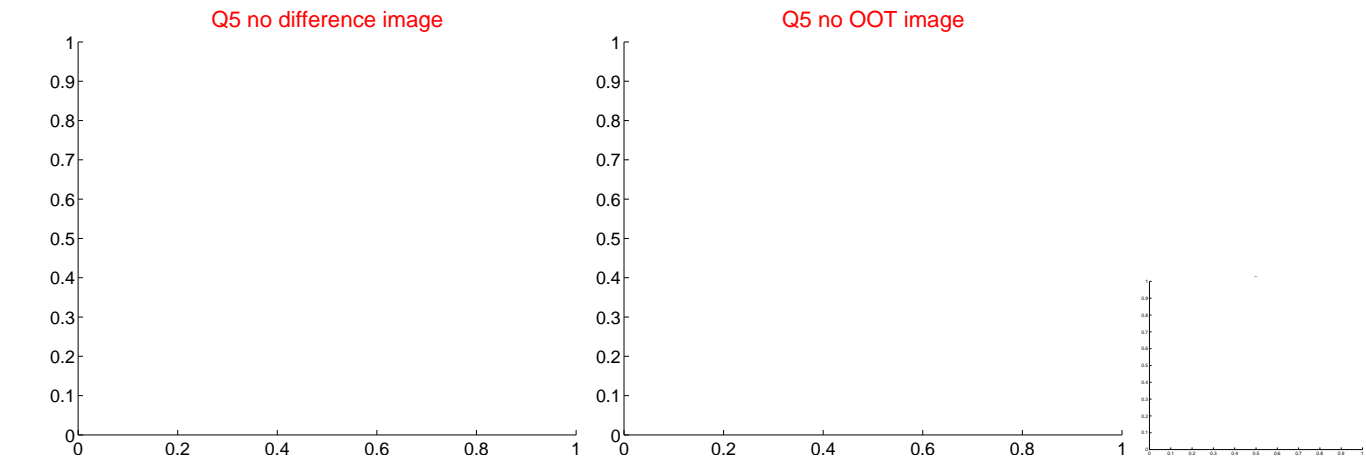
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



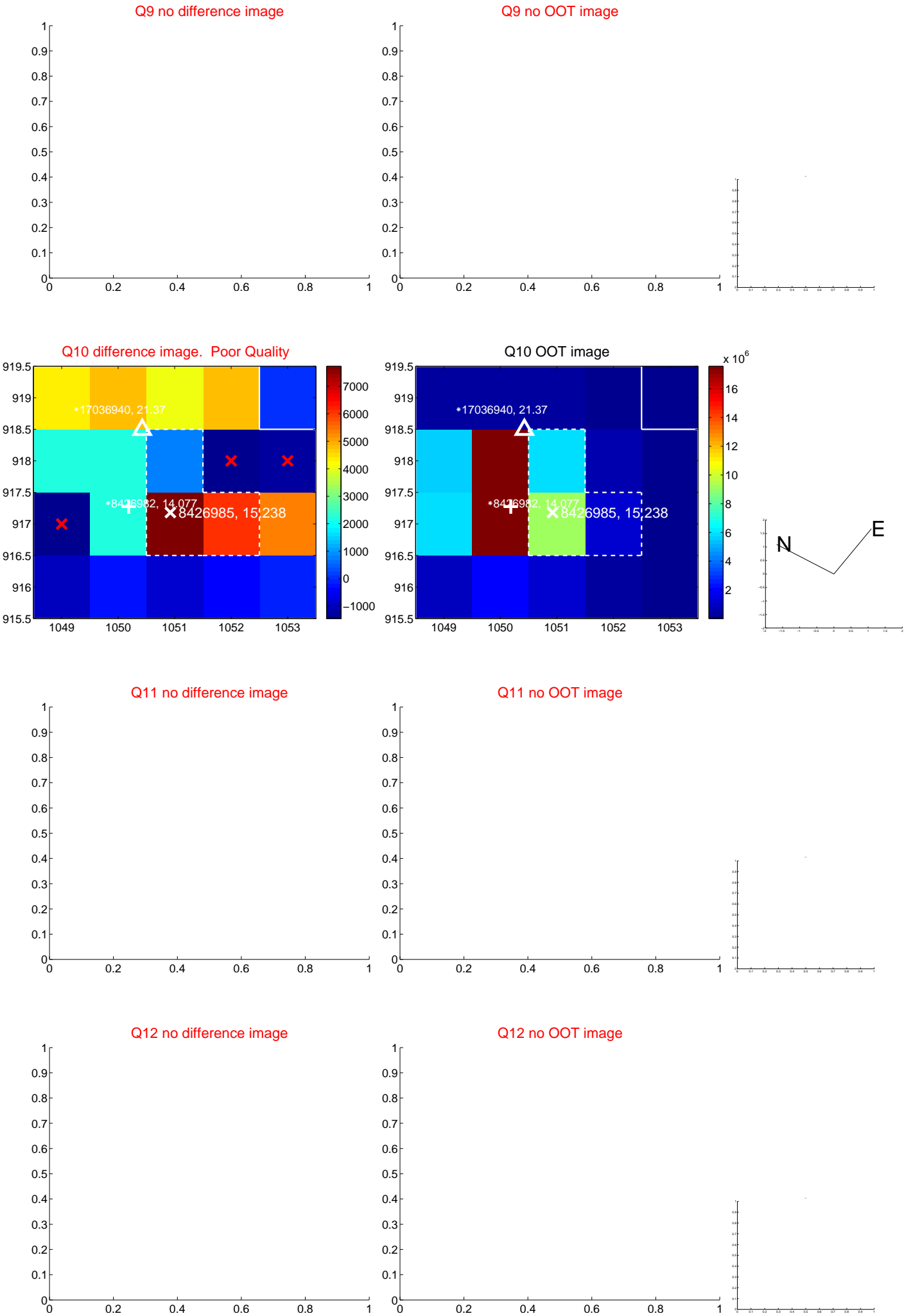
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



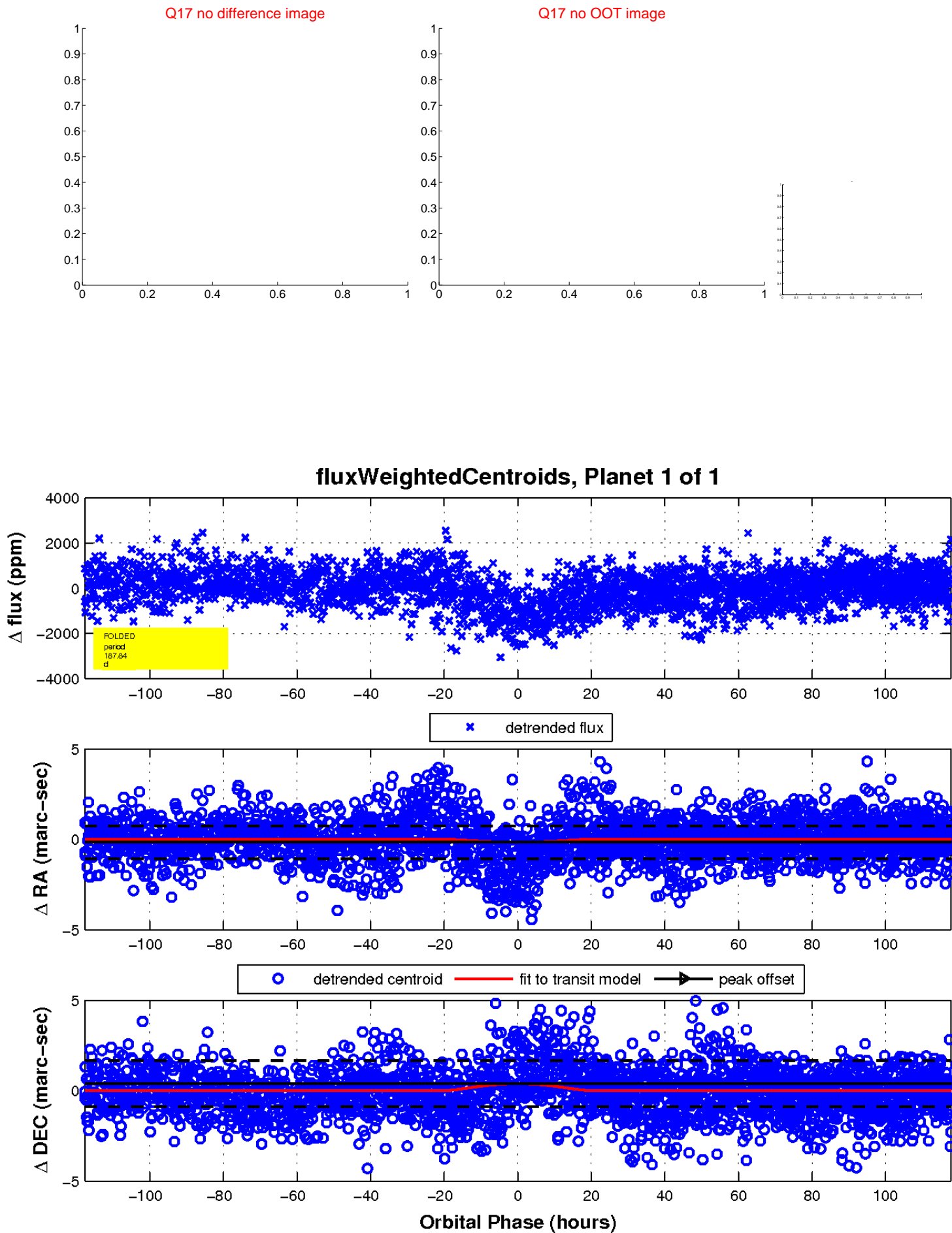
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

