

# KIC 007598831

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007598831-01	OBS	No	489.768135	154.323560	149.0	8.582	7.6	6.7	1.20	6204	1.69	1.34

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007598831-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—ALL_TRANS_CHASES—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.

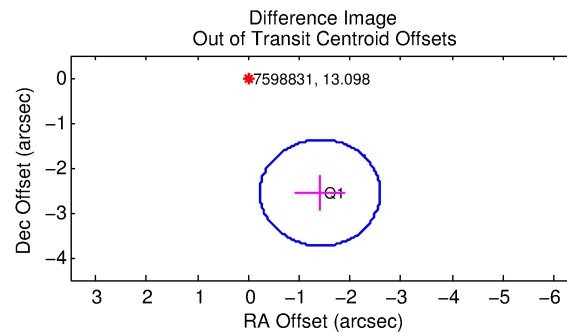
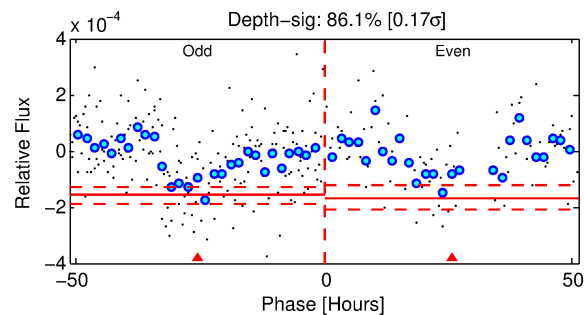
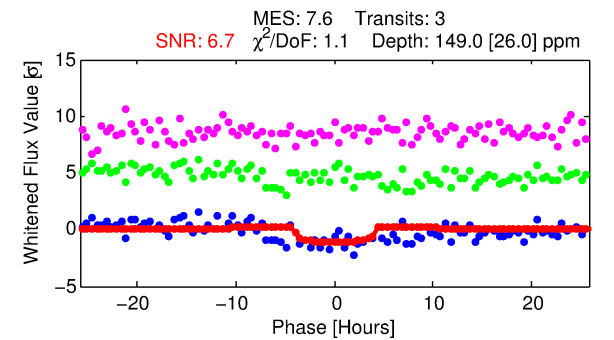
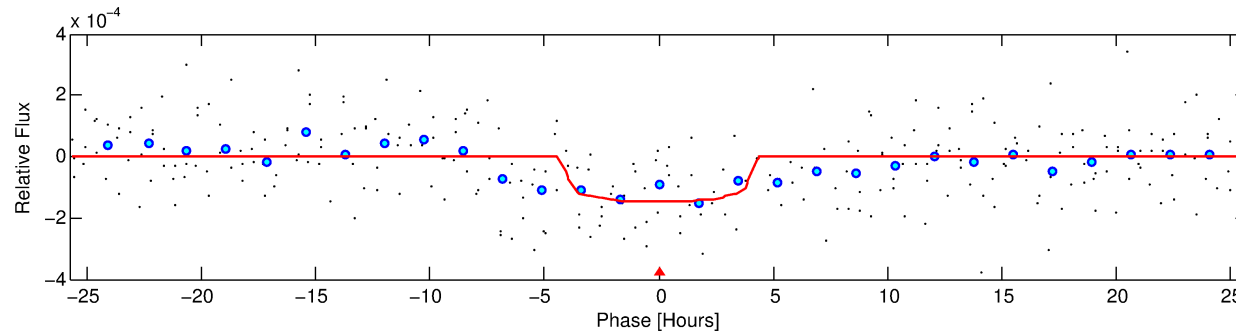
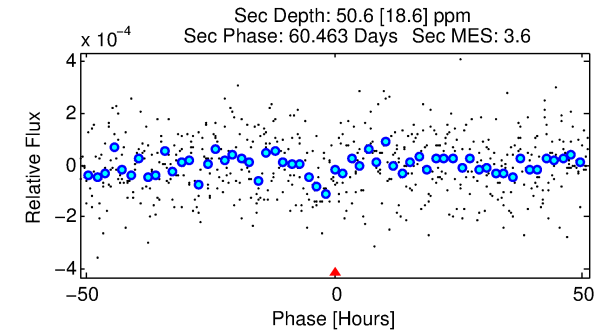
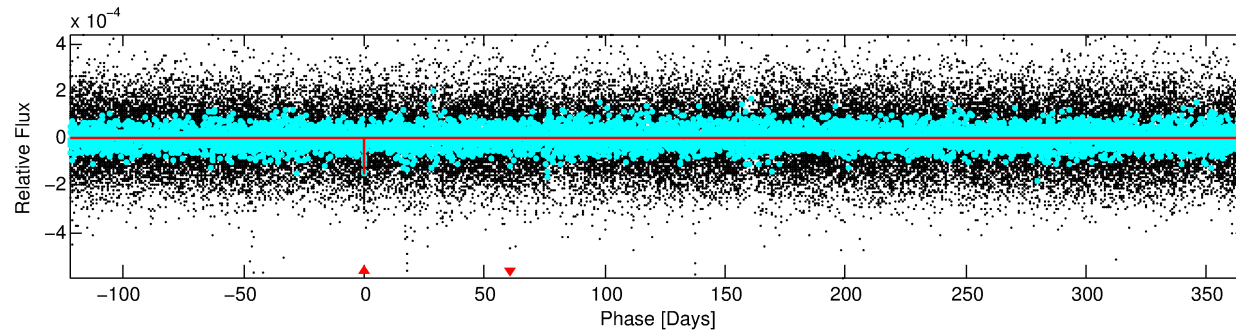
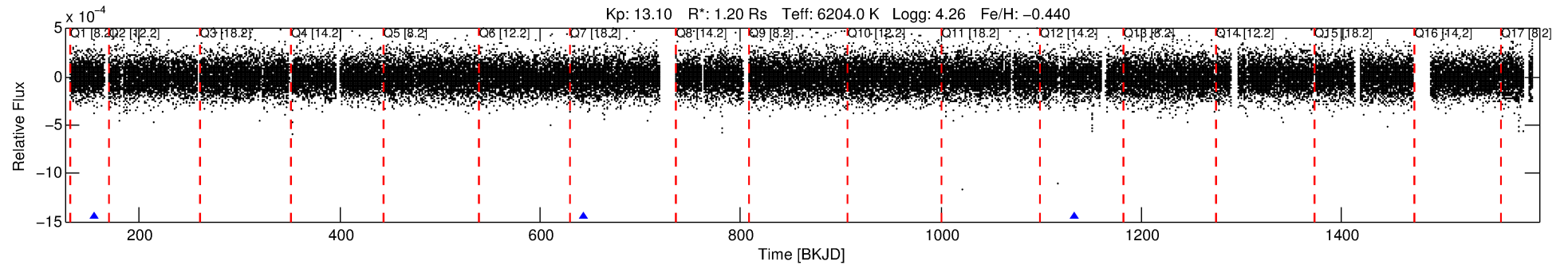
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007598831-01

No Significant Match Found

# DV One-Page Summary

KIC: 7598831 Candidate: 1 of 1 Period: 489.768 d



## DV Fit Results:

Period = 489.76813 [0.01424] d  
Epoch = 154.3236 [0.0202] BKJD  
Rp/R\* = 0.0129 [0.0070]  
a/R\* = 220.21 [661.23]  
b = 0.88 [0.79]  
Seff = 1.34 [0.46]  
Teq = 274 [23] K  
Rp = 1.69 [0.98] Re  
a = 1.1937 [0.2388] AU  
Ag = 13964.75 [16662.05] [0.84 $\sigma$ ]  
Teffp = 4610 [1333] K [3.25 $\sigma$ ]

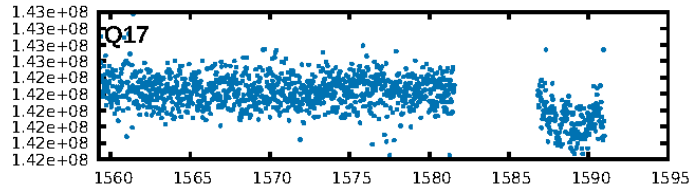
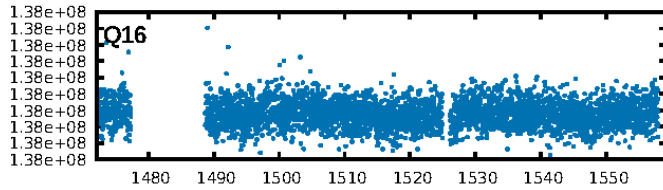
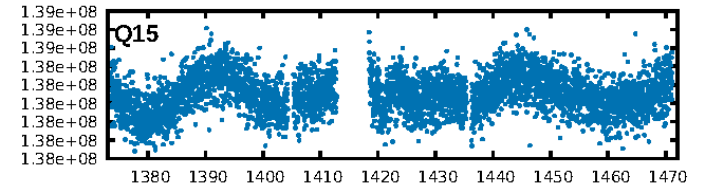
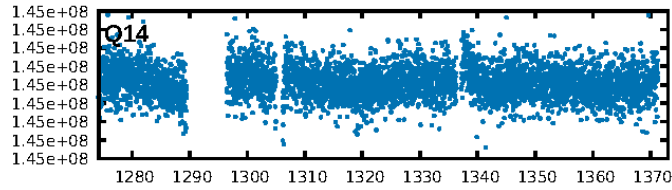
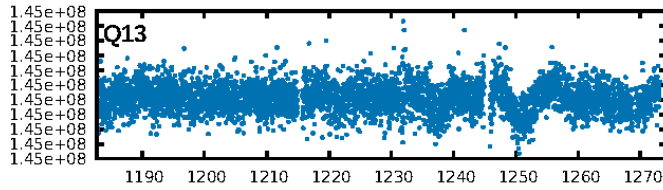
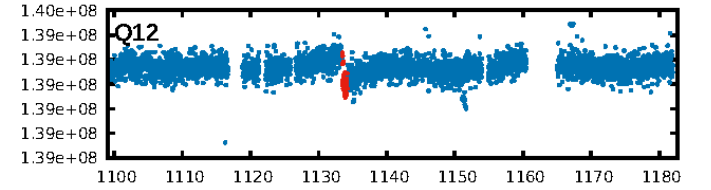
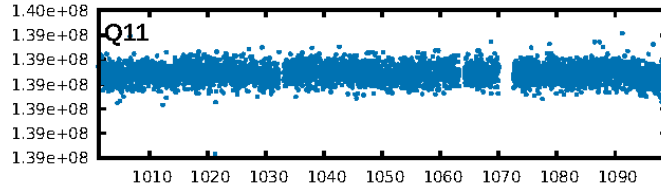
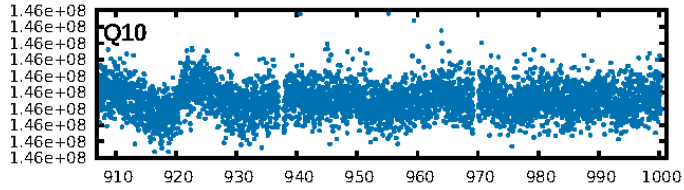
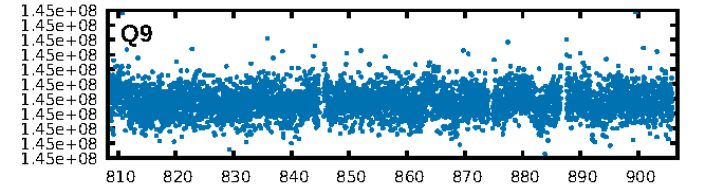
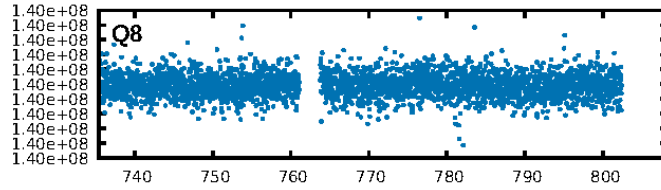
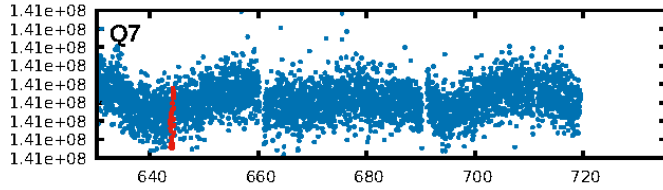
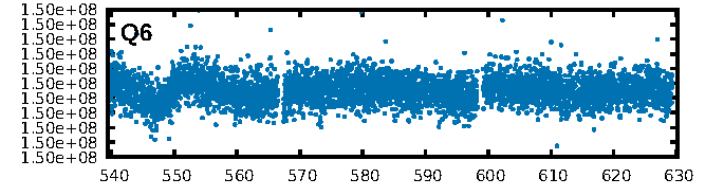
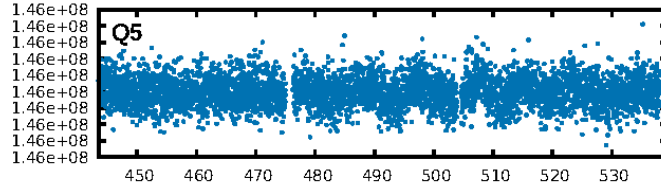
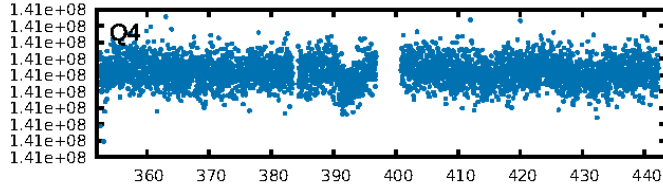
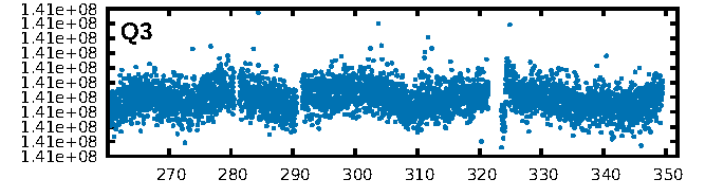
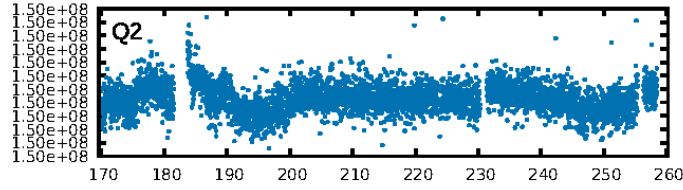
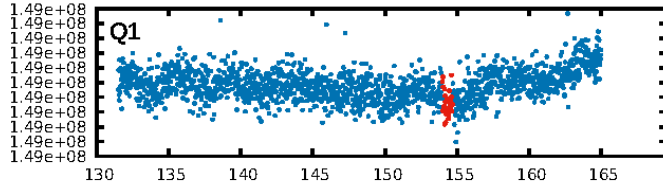
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 1.5%  
ModelChiSquareGof-sig: 99.8%  
**Bootstrap-pfa: 9.87e-10**  
RollingBand-fgt: 1.00 [2/2]  
GhostDiagnostic-chr: 1.112  
Centroid-sig: 1.9%  
Centroid-so: 3.203 arcsec [1.84 $\sigma$ ]  
**OotOffset-rm: 2.924 arcsec [7.42 $\sigma$ ]**  
**KicOffset-rm: 3.034 arcsec [7.68 $\sigma$ ]**  
OotOffset-st: 0/0/0/1 [1]  
KicOffset-st: 0/0/0/1 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [1/1]

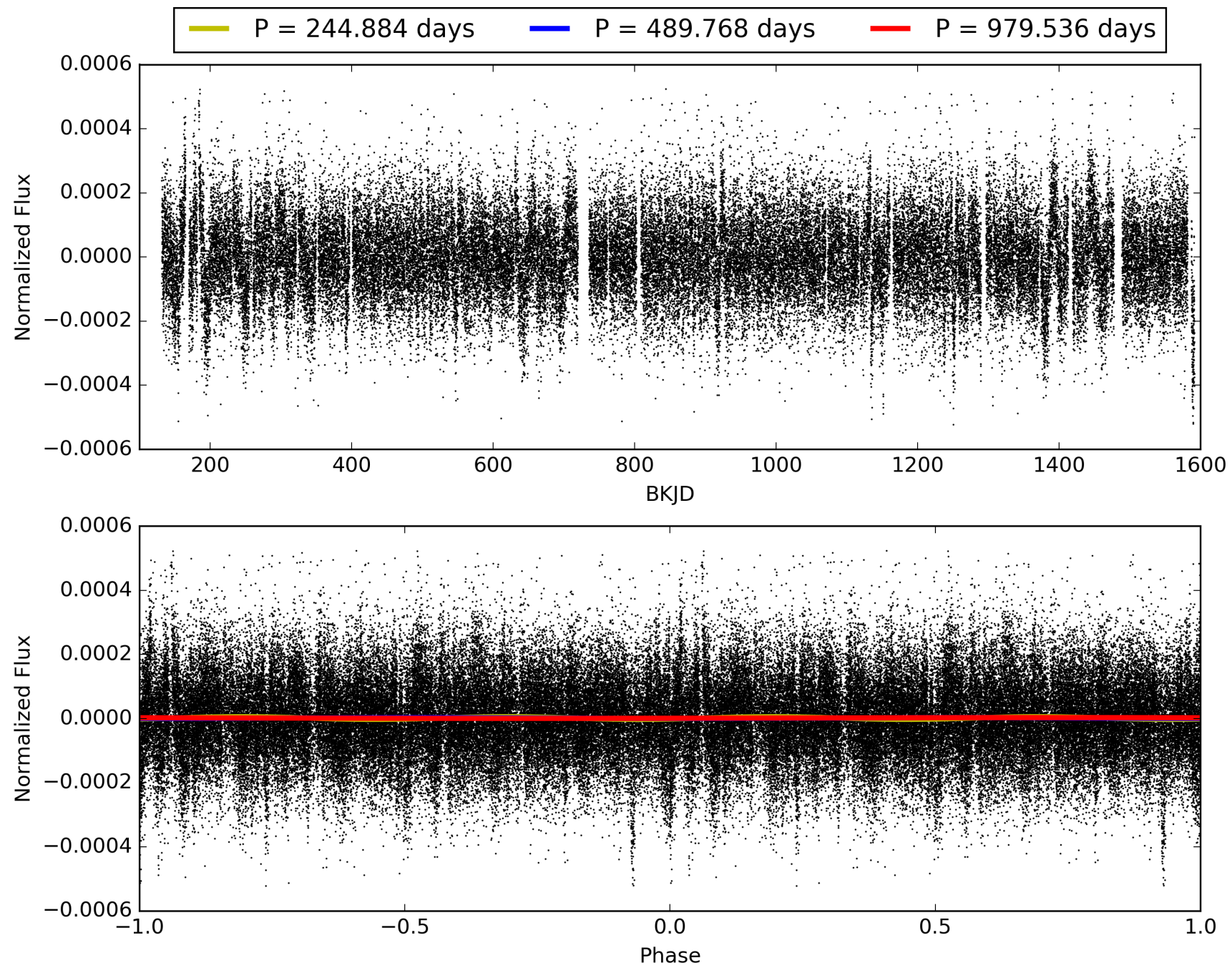
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:29:26 Z

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

# TCE 007598831-01, PDC Light Curves

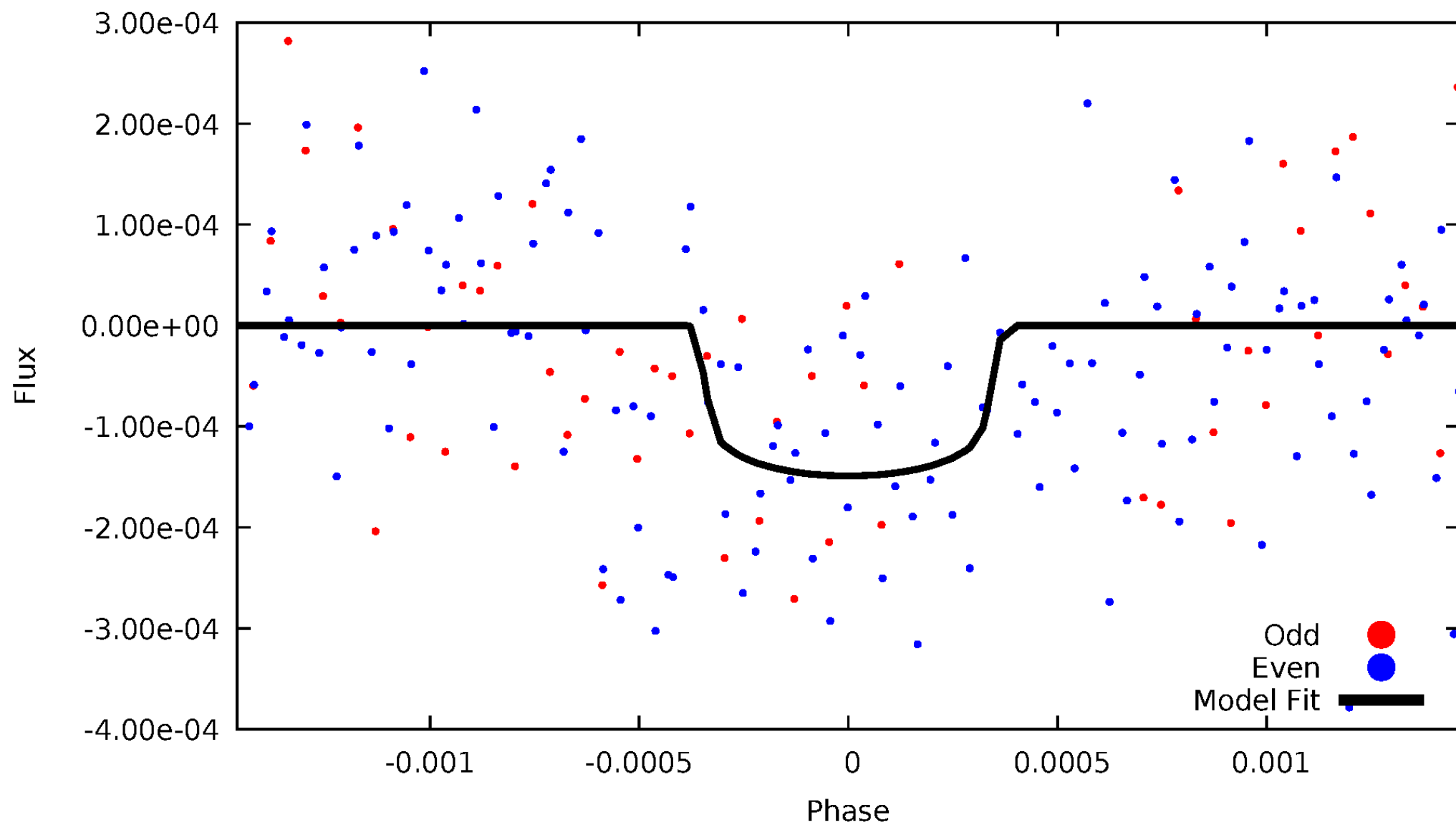


# TCE 007598831-01



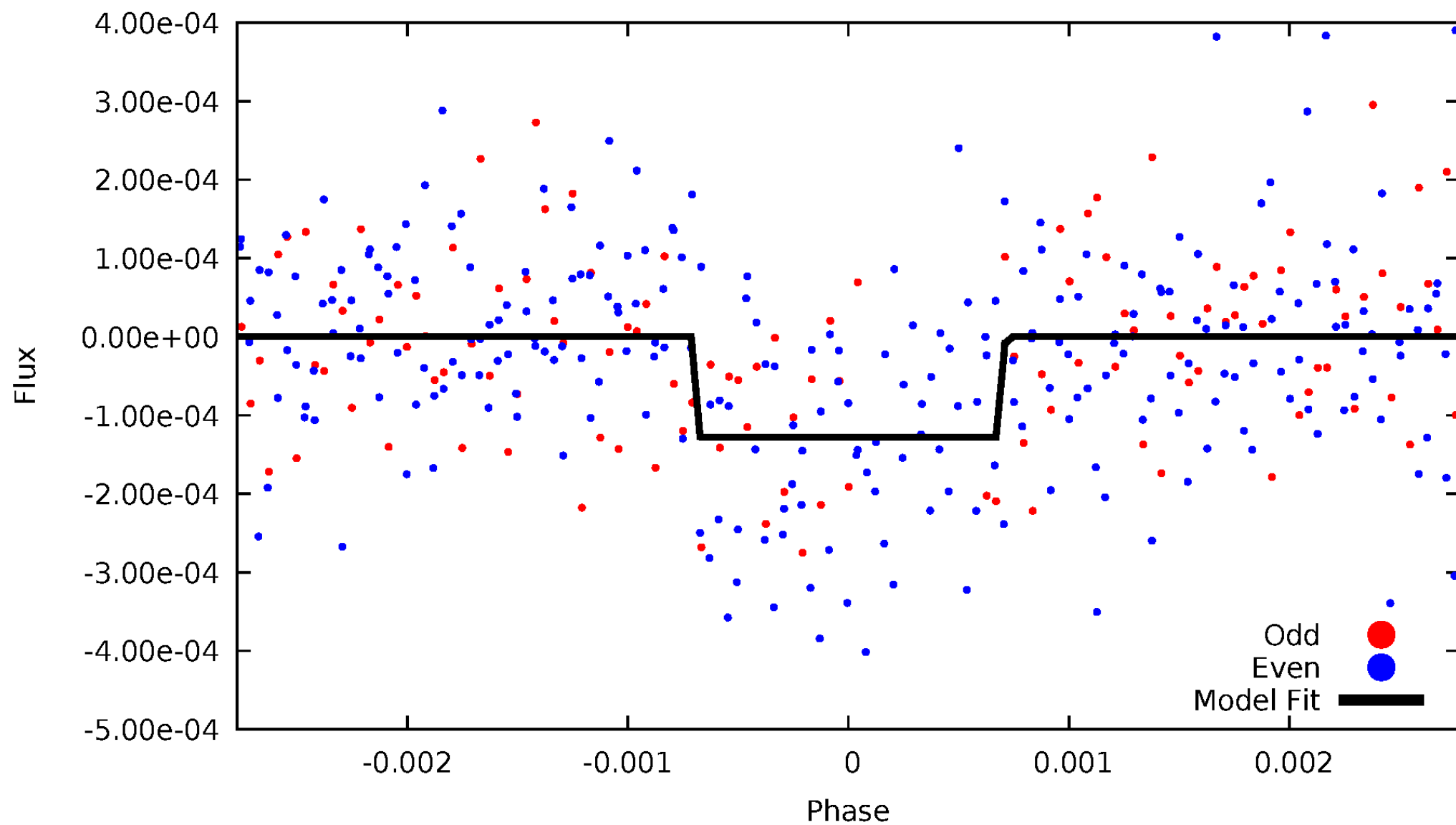
# DV Odd/Even

TCE 007598831-01



# ALT Odd/Even

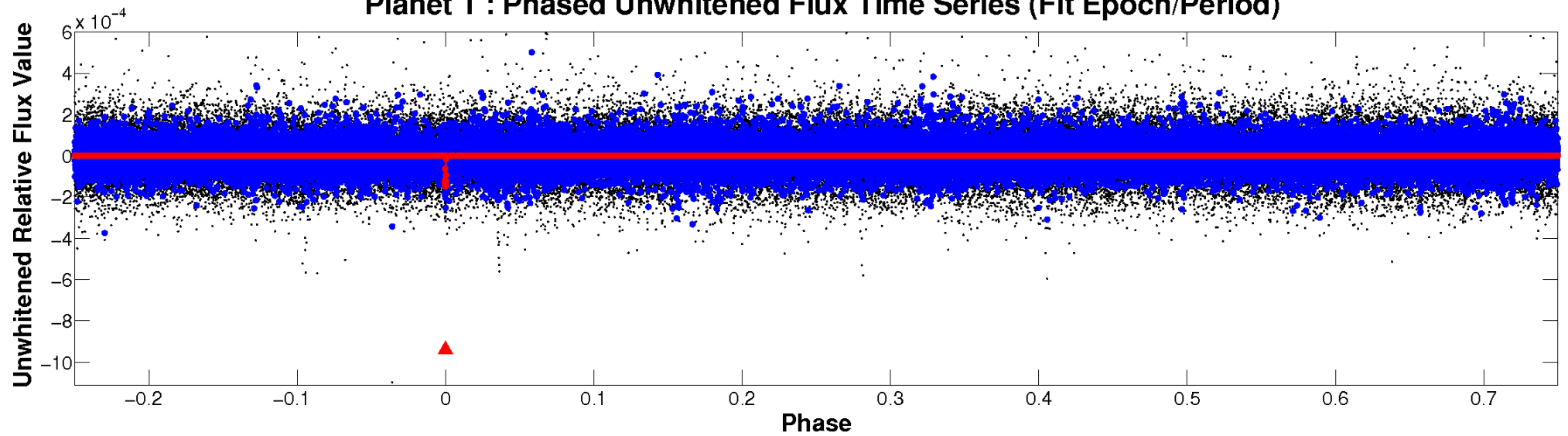
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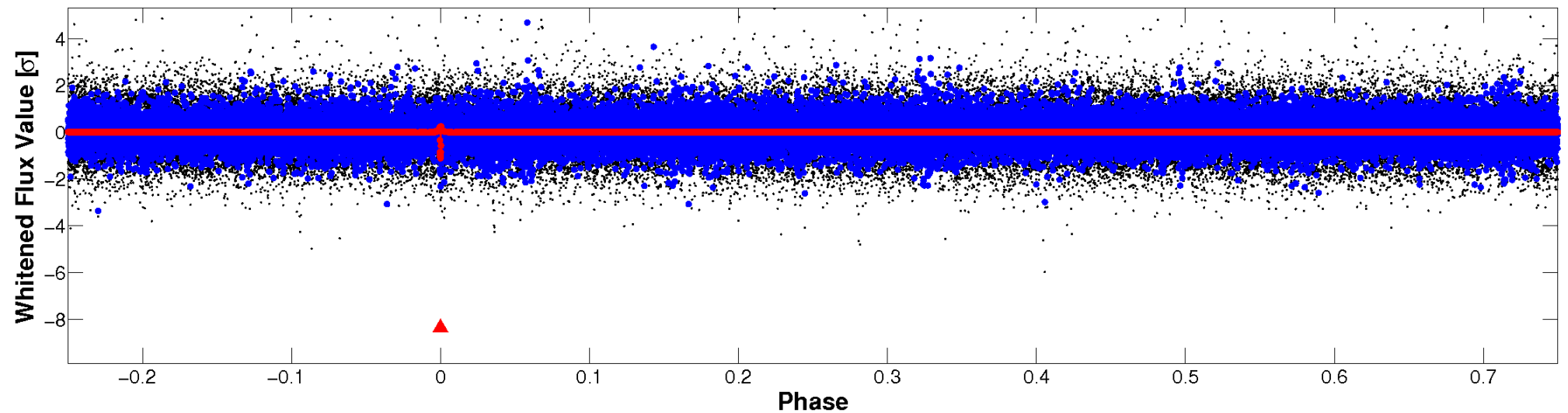


# Non-Whitened Vs. Whitened Light Curve

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

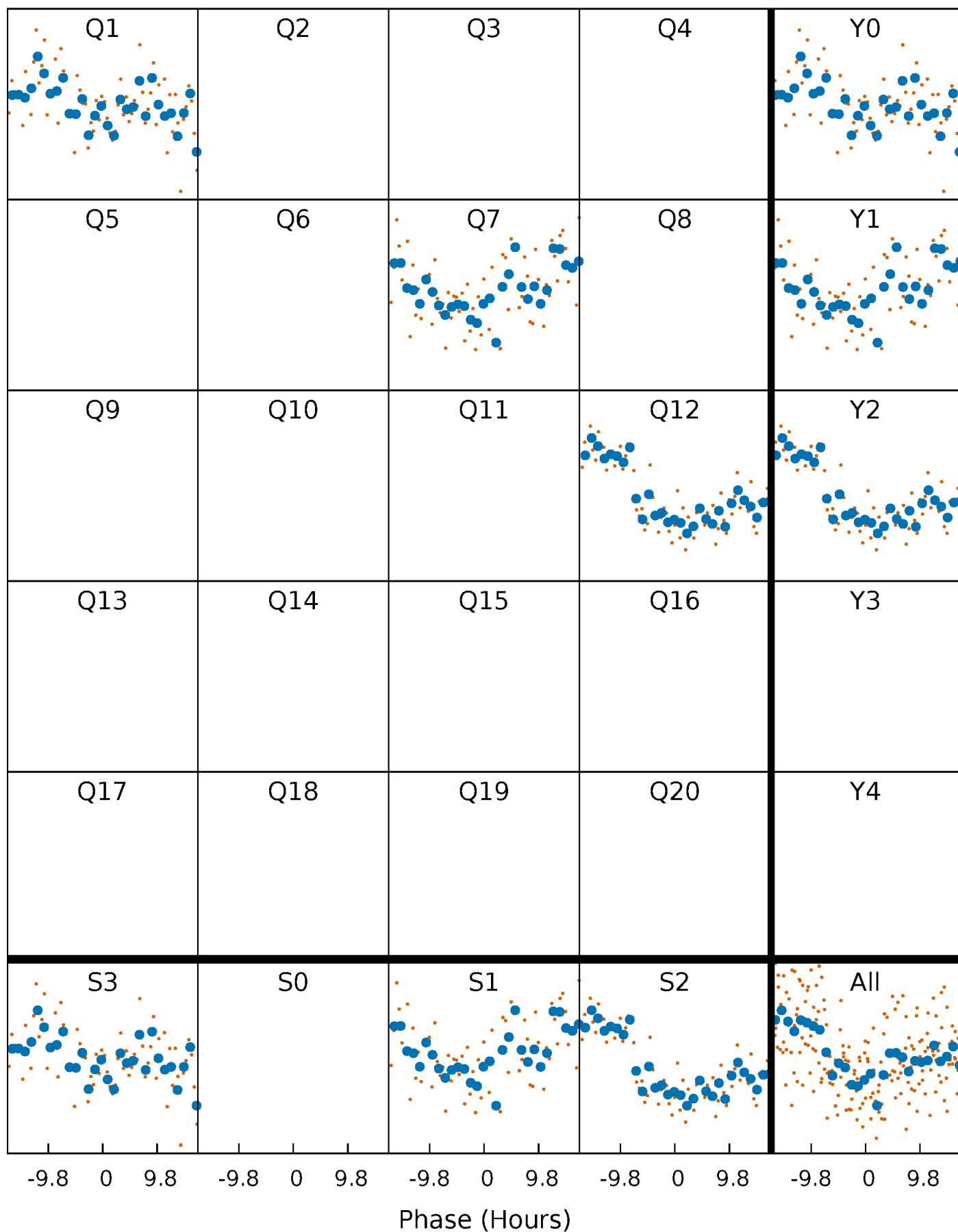


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

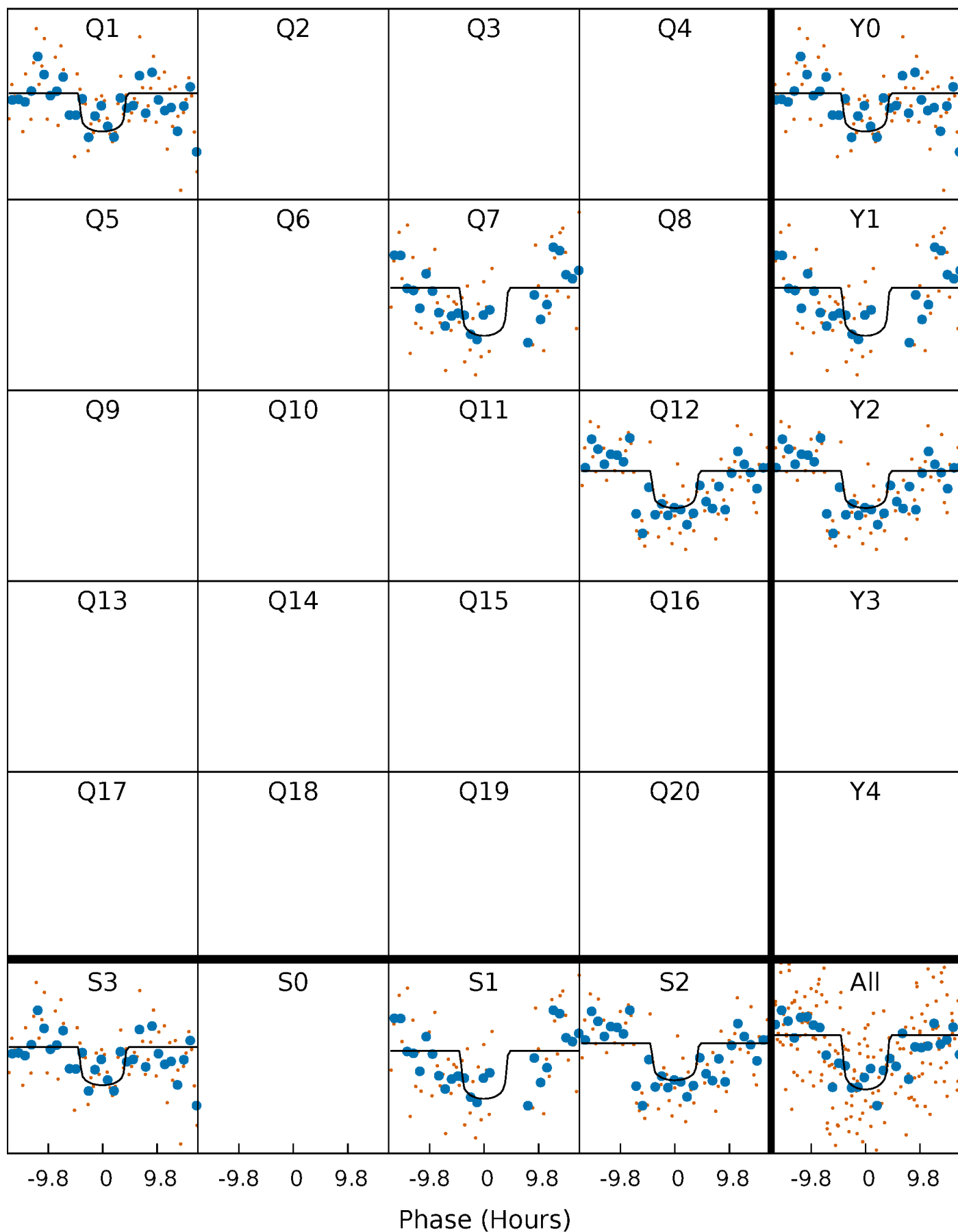
TCE 007598831-01 P=489.768135 Days  $T_0=154.323560$  (BKJD)





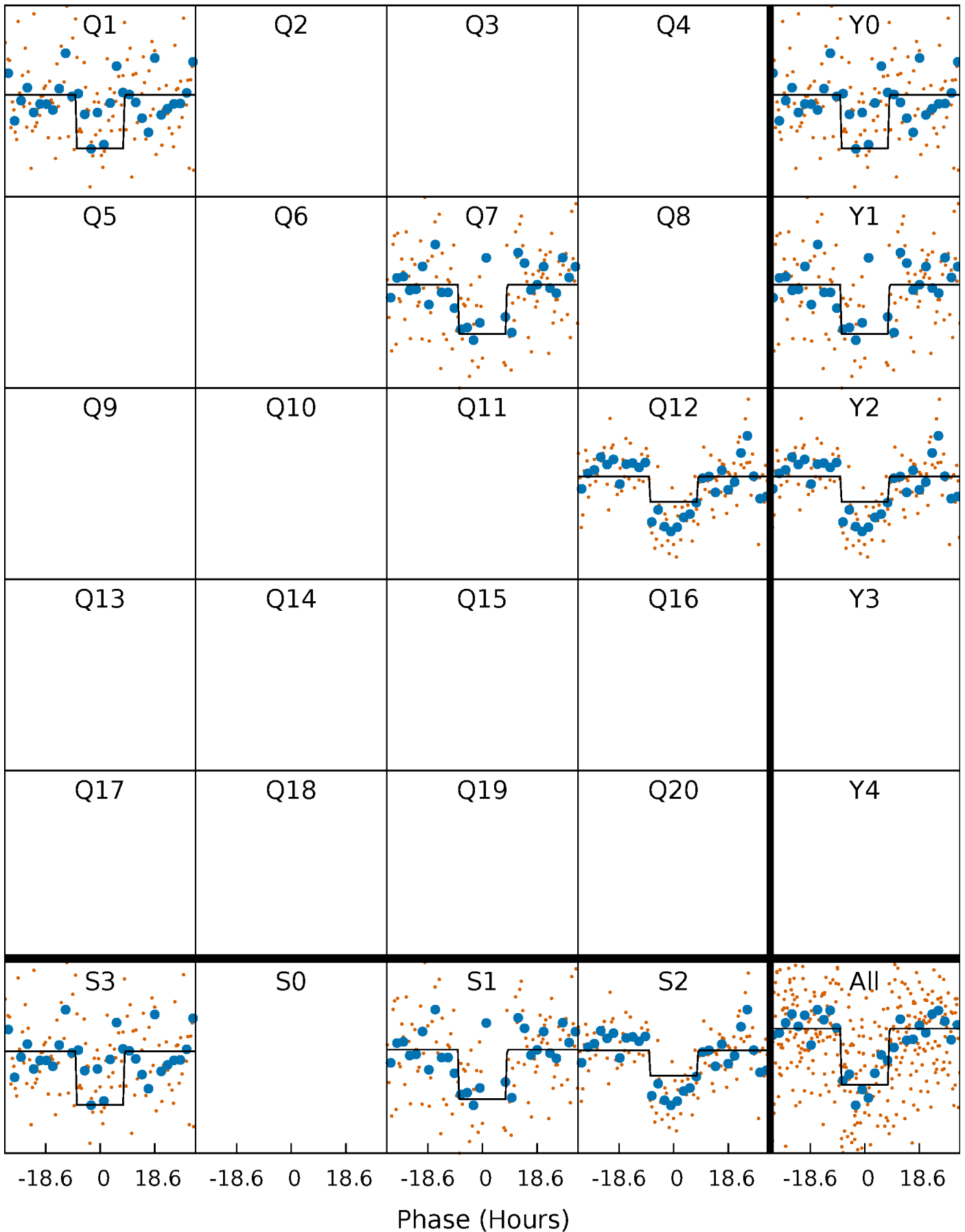
# DV Quarter-Phased Transit Curves

TCE 007598831-01 P=489.768135 Days  $T_0=154.323560$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

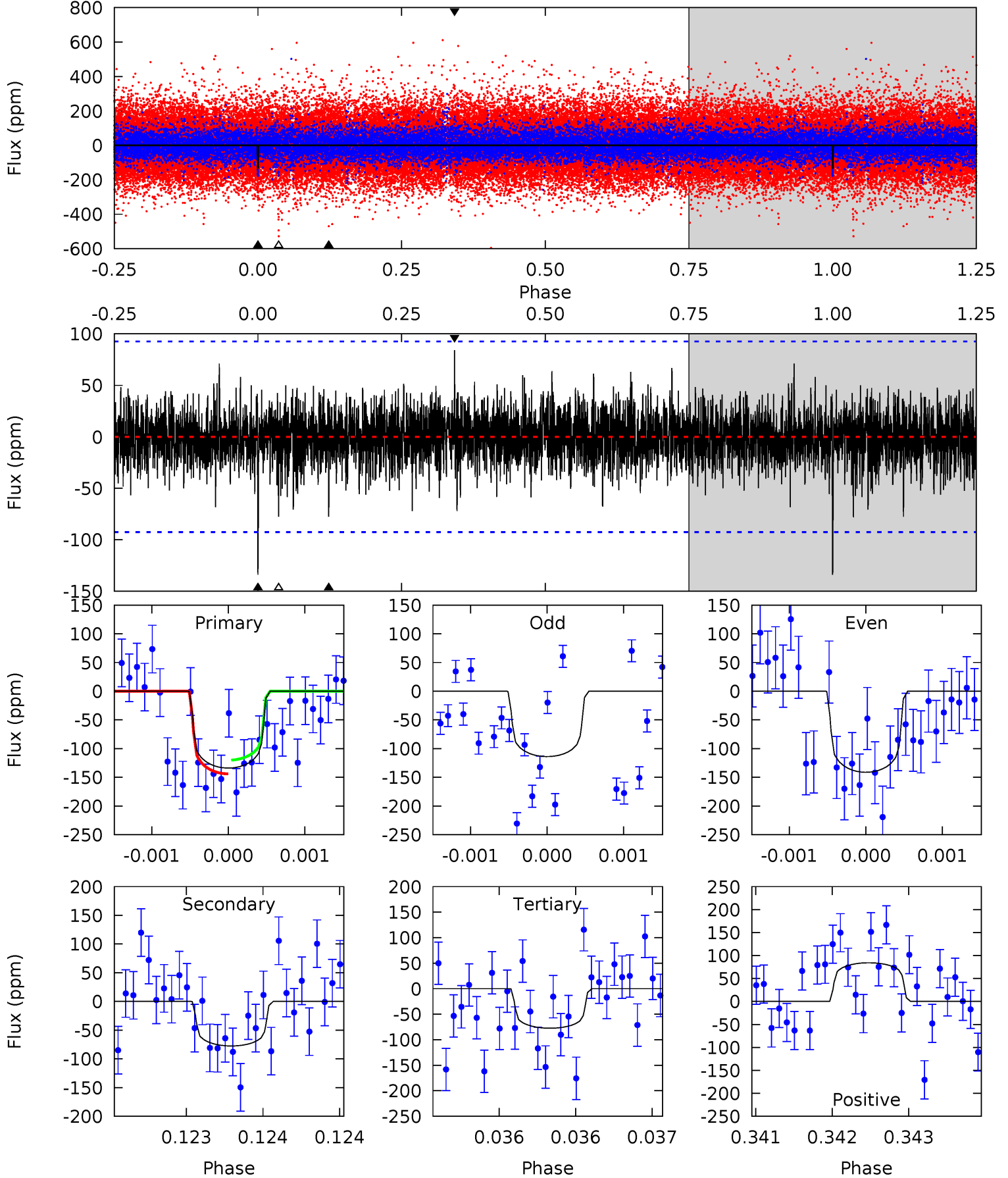
TCE 007598831-01 P=489.772000 Days  $T_0=154.358010$  (BKJD)



# DV Model-Shift Uniqueness Test

007598831-01, P = 489.768135 Days, E = 154.323560 Days

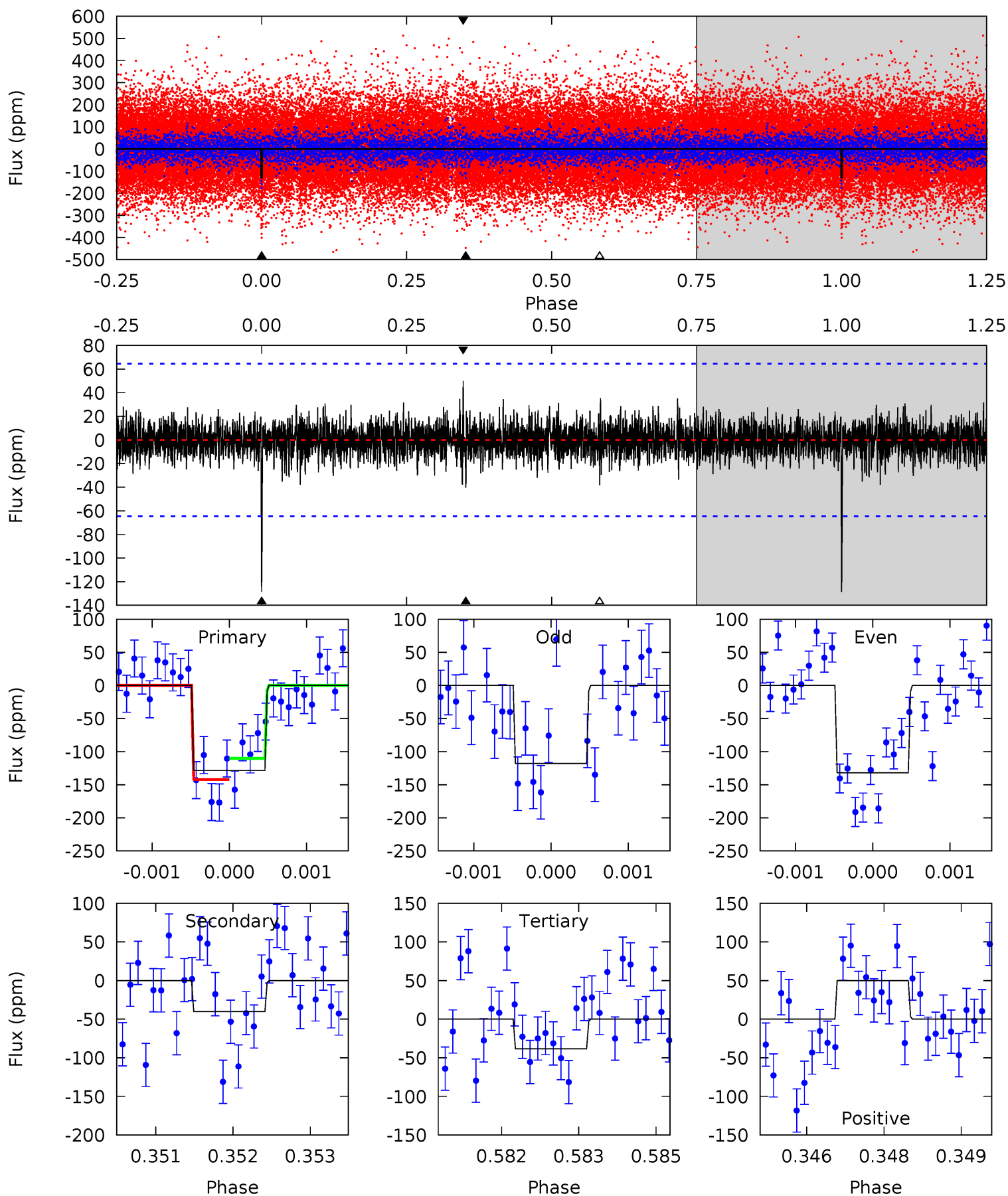
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.97	4.61	4.61	5.01	5.50	3.37	1.11	3.36	2.96	0.00	-0.40	0.72	1.16	0.39	0.70



# Alt Model-Shift Uniqueness Test

007598831-01, P = 489.772000 Days, E = 154.358010 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
10.7	3.35	3.20	4.16	5.38	3.18	0.80	7.53	6.57	0.16	-0.81	0.50	1.09	0.28	1.33



### Stellar Parameters For KIC 007598831

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6204^{+169}_{-188}$	$4.256^{+0.186}_{-0.140}$	$-0.440^{+0.300}_{-0.300}$	$1.199^{+0.252}_{-0.227}$	$0.945^{+0.136}_{-0.102}$	$0.773^{+0.675}_{-0.312}$
	+3%/-3%	+4%/-3%	+68%/-68%	+21%/-19%	+14%/-11%	+87%/-40%
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 007598831-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-78 \pm 17$	$1.71^{+0.92}_{-0.85}$	$381^{+27}_{-22}$	$5090^{+1964}_{-810}$	$20516^{+63414}_{-12484}$
Alt.	$-40 \pm 12$	$1.50^{+0.92}_{-0.83}$	$382^{+25}_{-25}$	$4721^{+2051}_{-803}$	$13759^{+54935}_{-8791}$

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

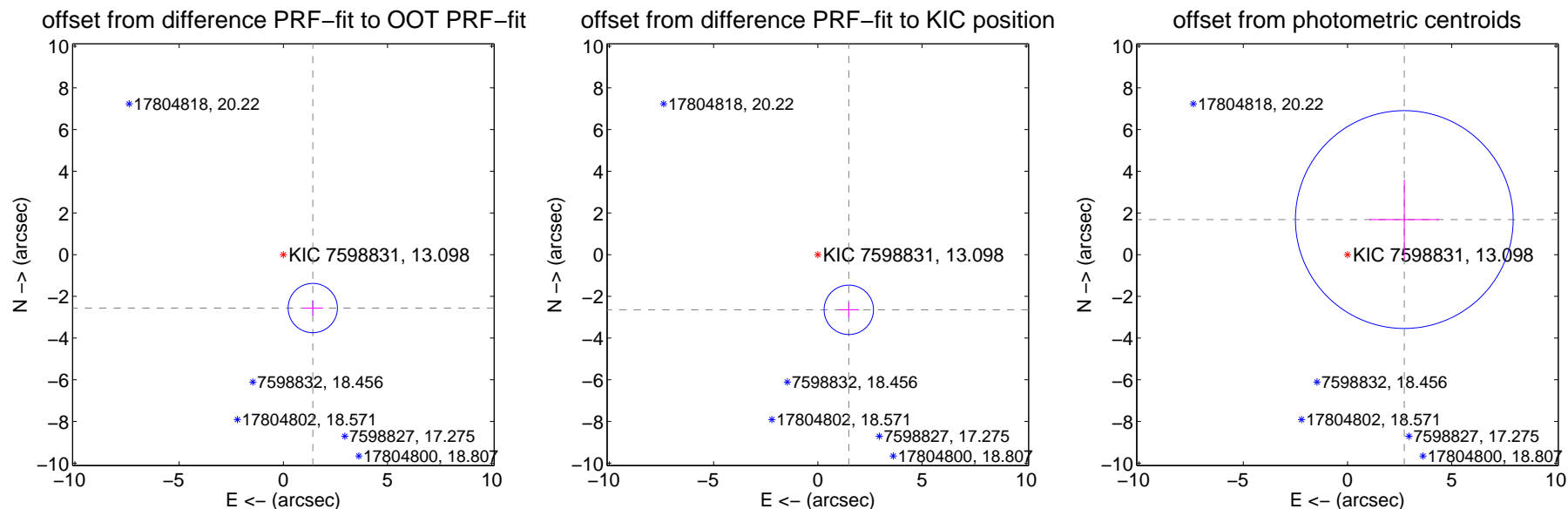
## DV Centroid Data

Supplemental centroid analysis for 007598831-01. Kepler magnitude: 13.10. Transit SNR 6.72

There are 1 quarters with good PRF difference image offsets

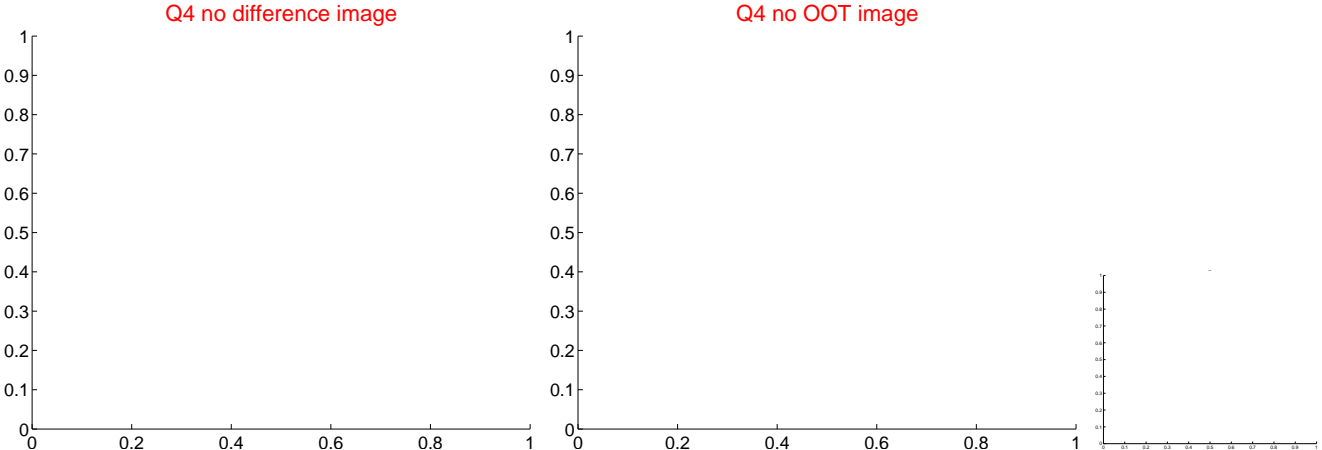
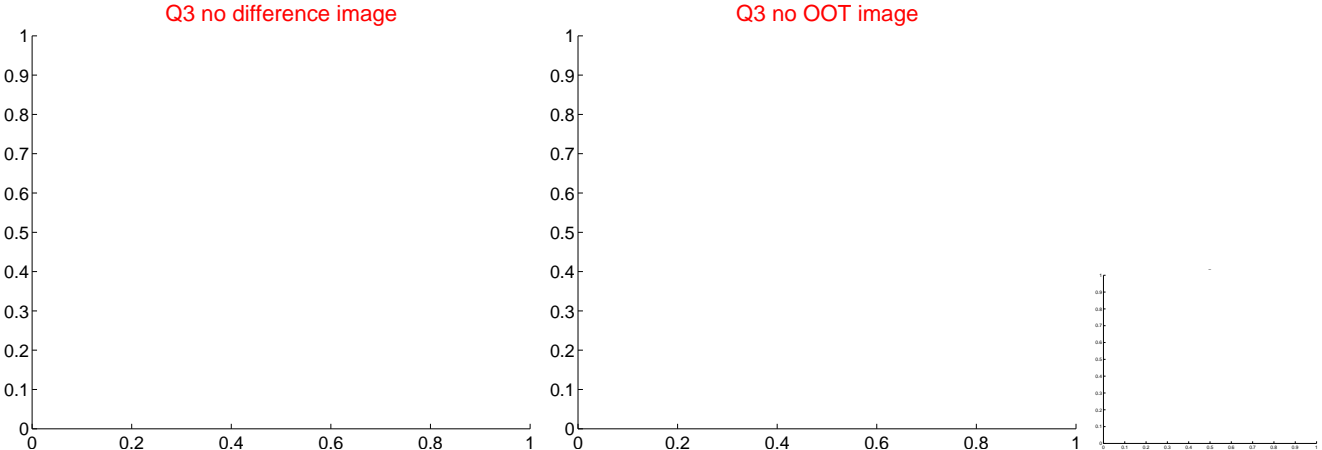
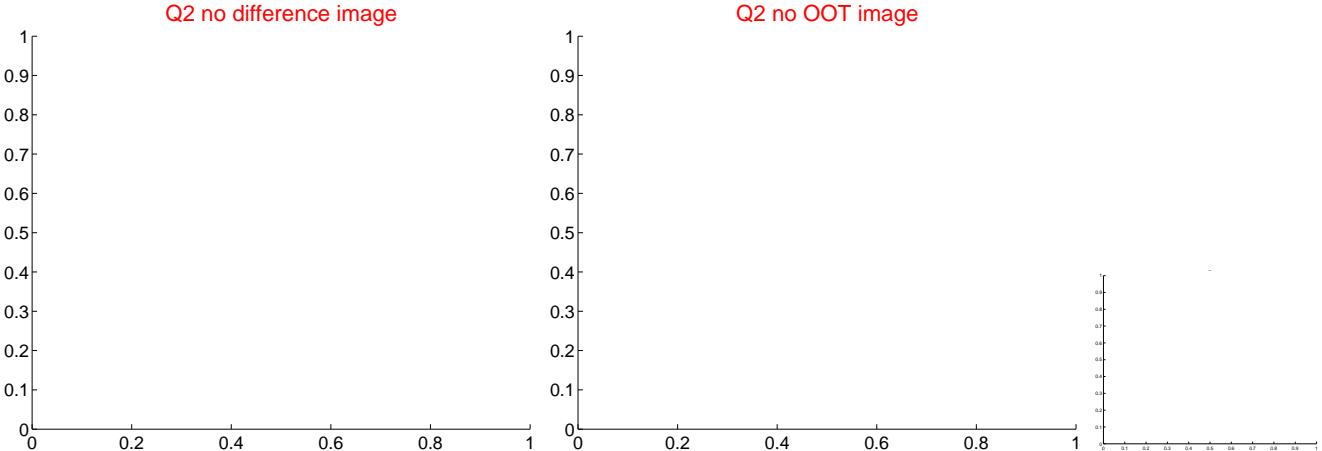
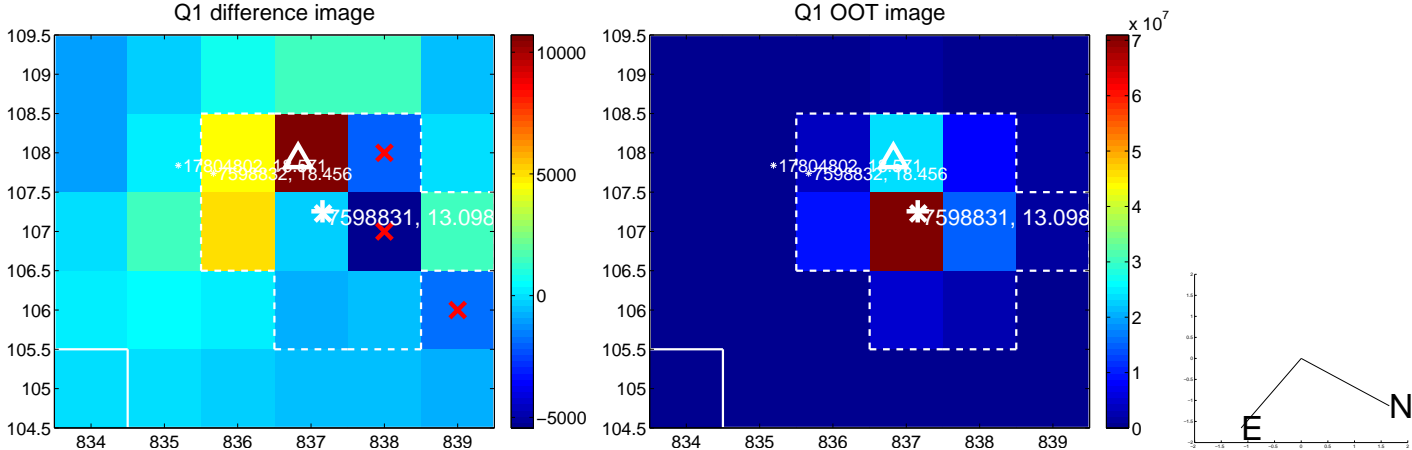
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.924 \pm 0.394$	7.42	$-1.412 \pm 0.483$	$-2.560 \pm 0.363$
PRF-fit source offset from KIC position	$3.034 \pm 0.395$	7.68	$-1.486 \pm 0.483$	$-2.645 \pm 0.363$
photometric centroid source offset	$3.20 \pm 1.74$	1.84	$-2.73 \pm 1.67$	$1.68 \pm 1.91$



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.



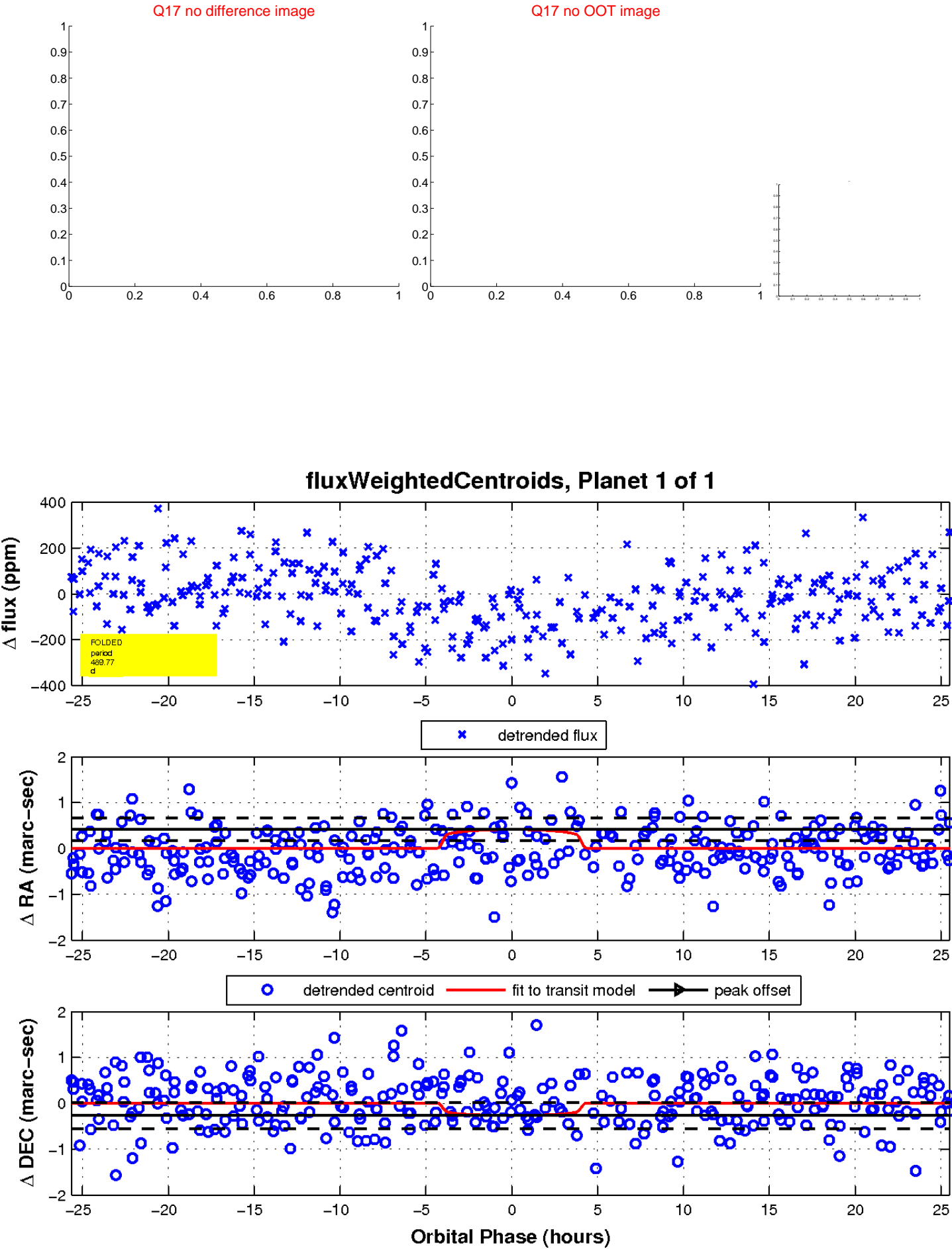
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

