

# KIC 008811922

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008811922-01	OBS	No	398.753094	142.737462	410.1	20.733	8.6	8.5	0.82	5863	2.28	0.68

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008811922-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—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.

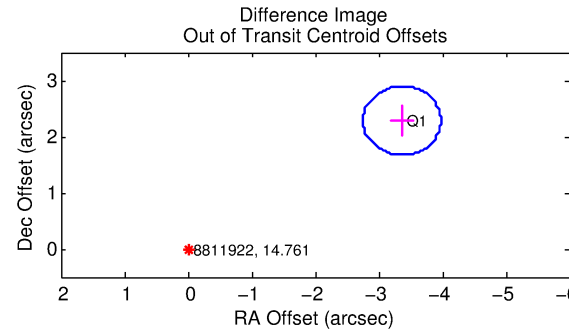
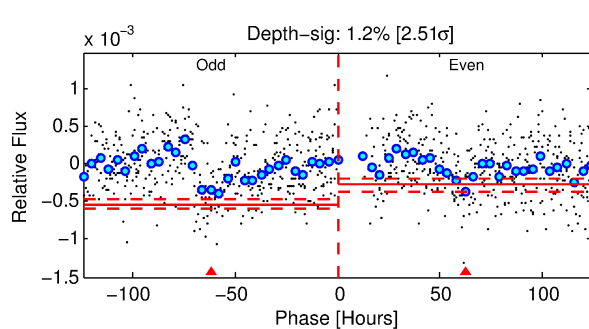
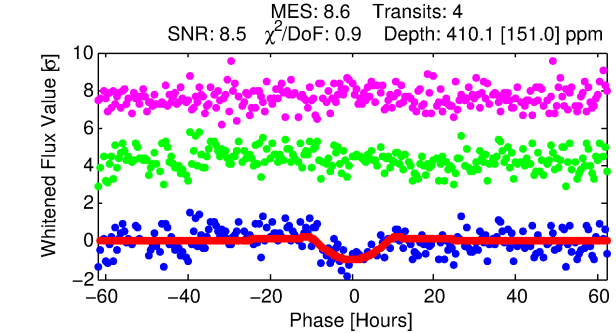
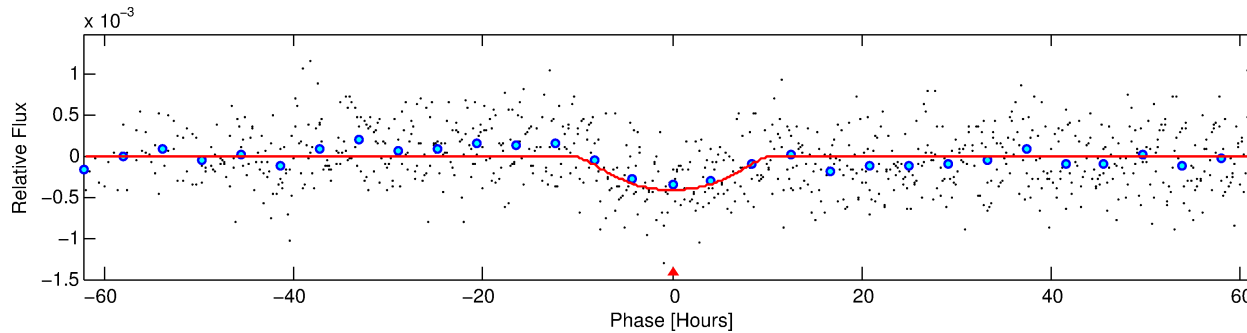
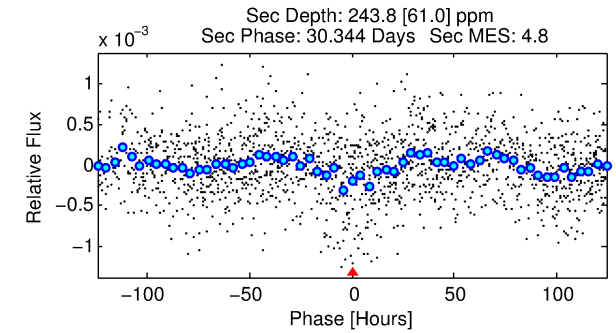
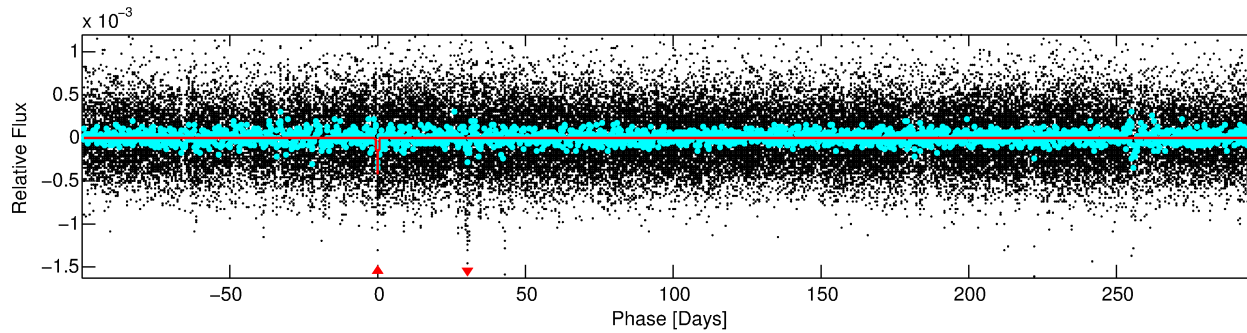
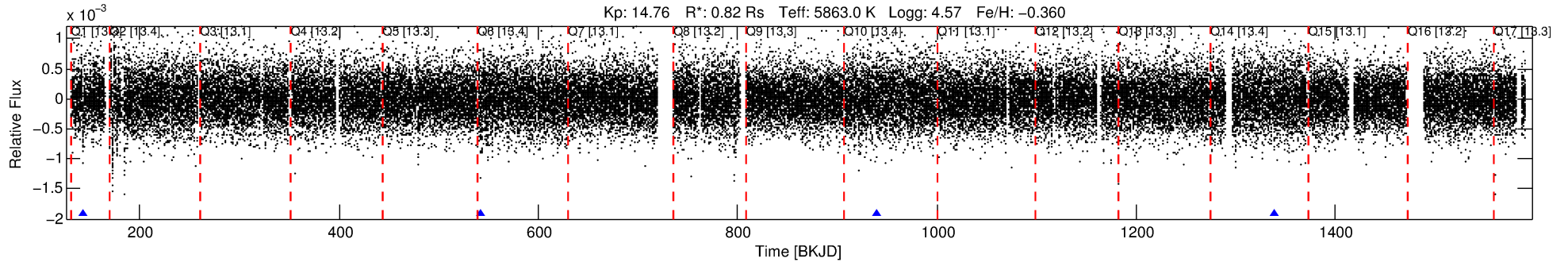
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008811922-01

No Significant Match Found

# DV One-Page Summary

KIC: 8811922 Candidate: 1 of 1 Period: 398.753 d



## DV Fit Results:

Period = 398.75309 [0.02286] d  
Epoch = 142.7375 [0.0407] BKJD  
Rp/R\* = 0.0254 [0.0093]  
a/R\* = 45.39 [14.10]  
b = 0.98 [0.03]  
Seff = 0.68 [0.20]  
Teq = 231 [17] K  
Rp = 2.28 [0.98] Re  
a = 1.0258 [0.1958] AU  
Ag = 27178.22 [22345.95] [1.22σ]  
Teffp = 4594 [897] K [4.86σ]

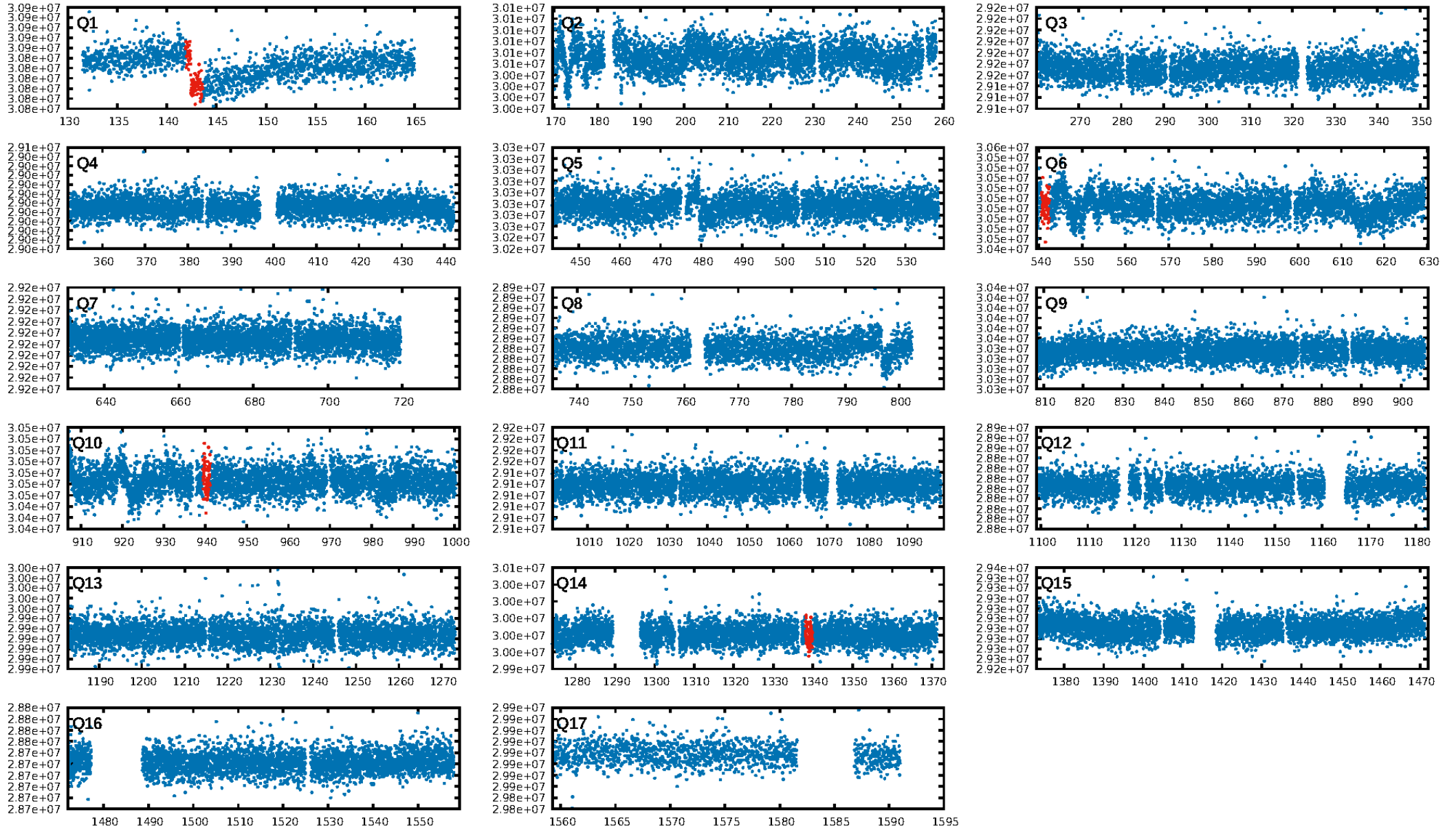
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.9%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 2.43e-12**  
RollingBand-fgt: 1.00 [3/3]  
**GhostDiagnostic-chr: 0.5778**  
Centroid-sig: 0.2%  
Centroid-so: 3.052 arcsec [1.88σ]  
OotOffset-rm: 4.065 arcsec [19.89σ]  
KicOffset-rm: 4.075 arcsec [20.05σ]  
OotOffset-st: 0/0/0/1 [1]  
KicOffset-st: 0/0/0/1 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [2/2]

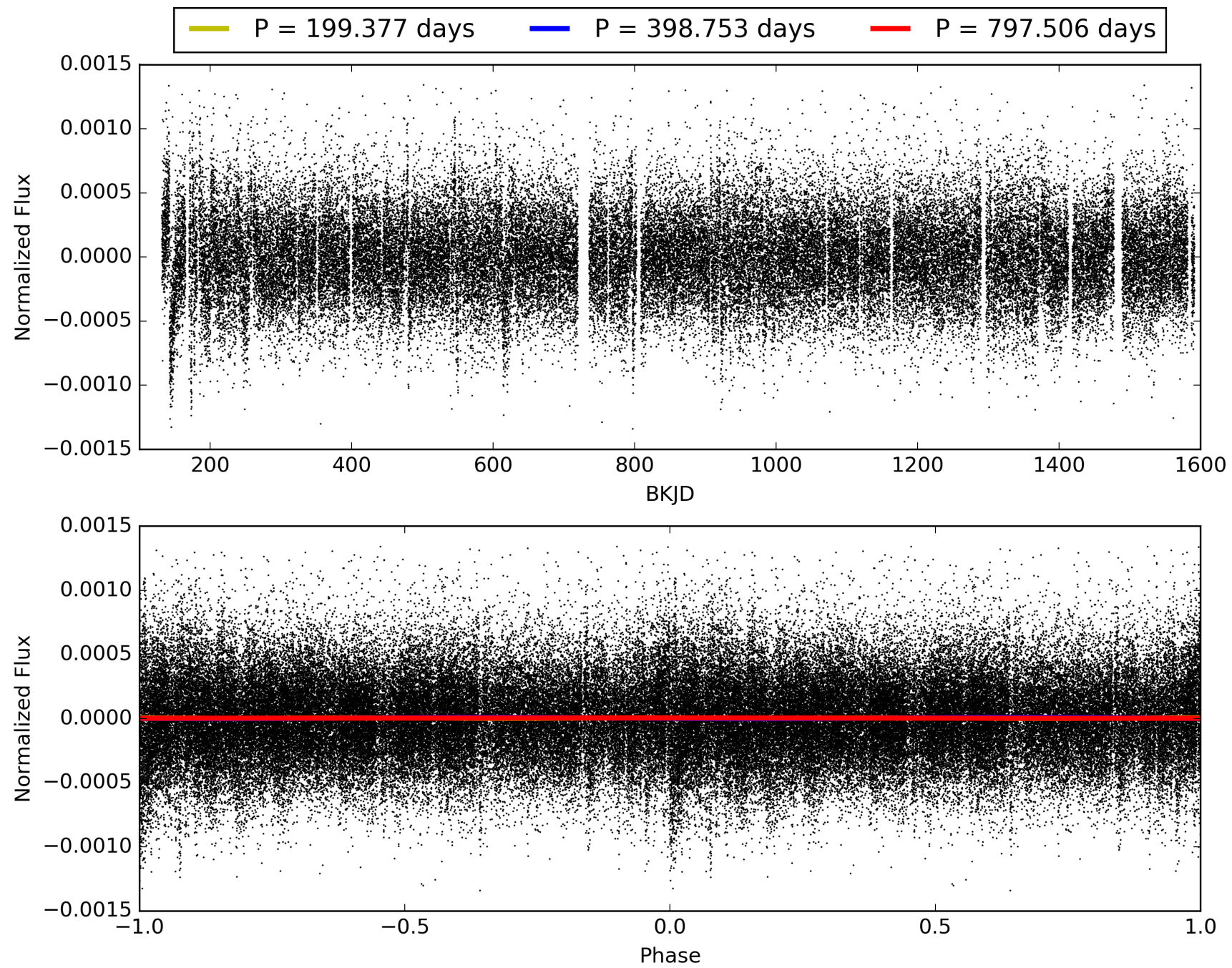
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:36:37 Z

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

# TCE 008811922-01, PDC Light Curves

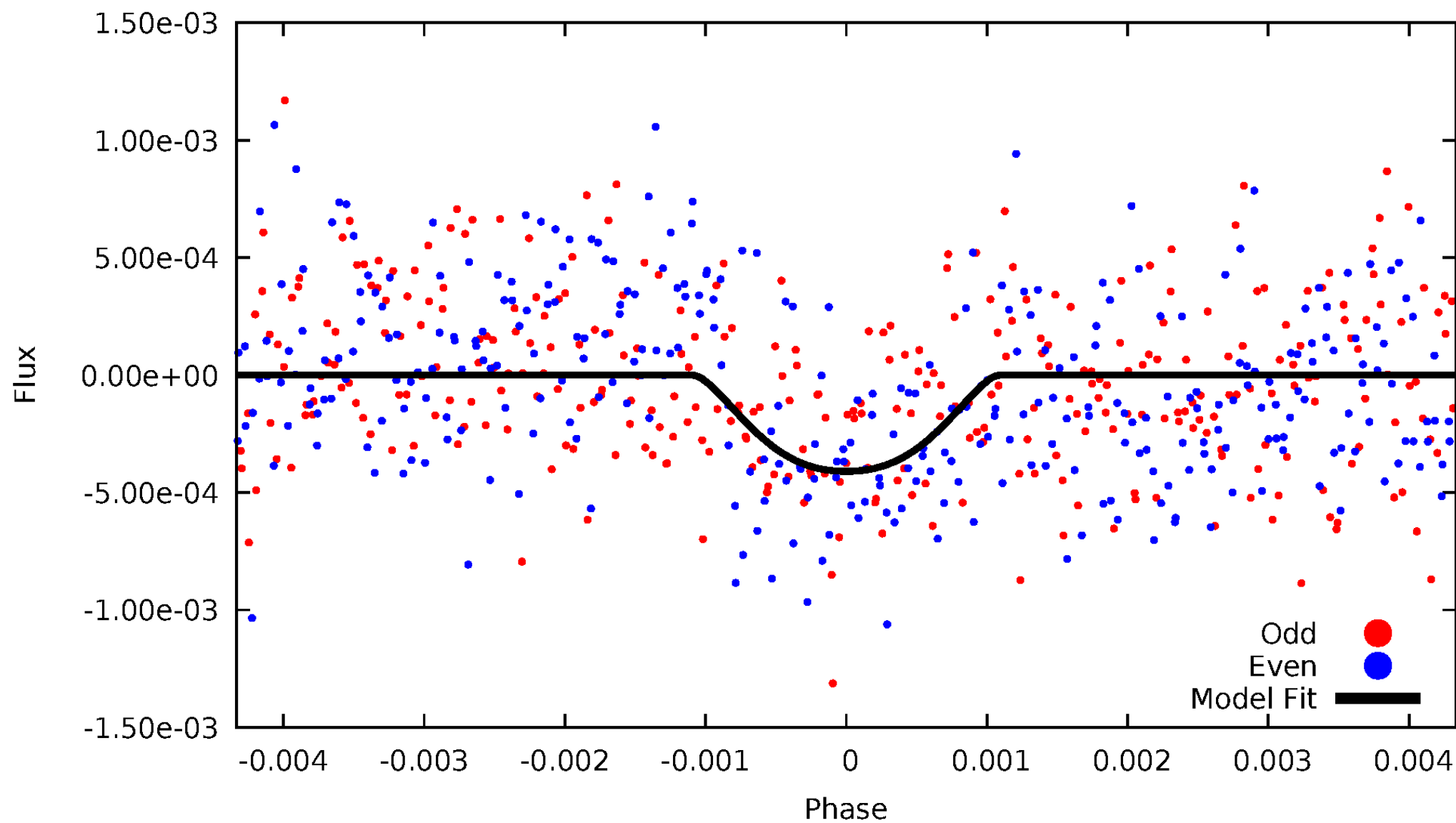


# TCE 008811922-01



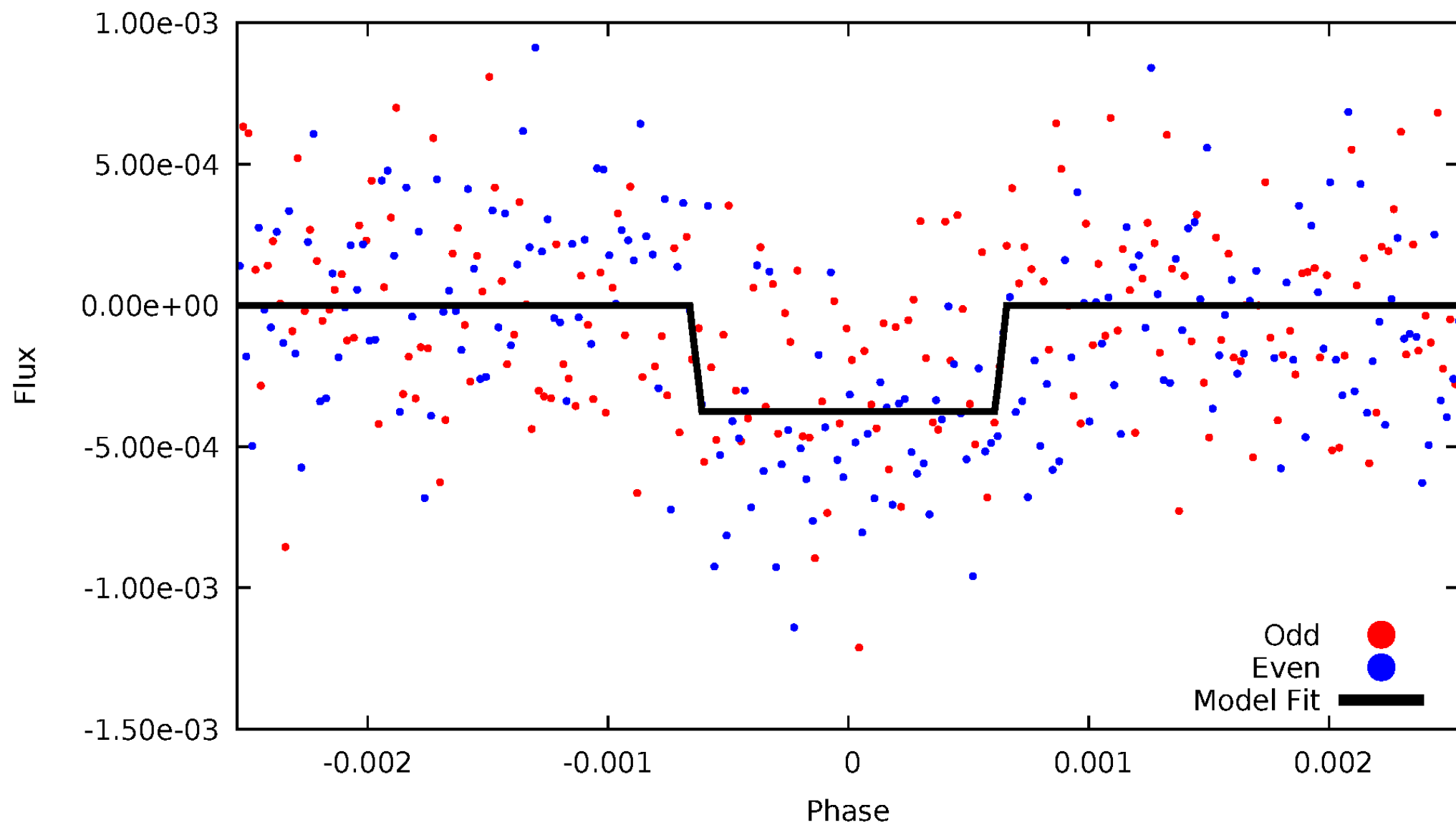
# DV Odd/Even

TCE 008811922-01



# ALT Odd/Even

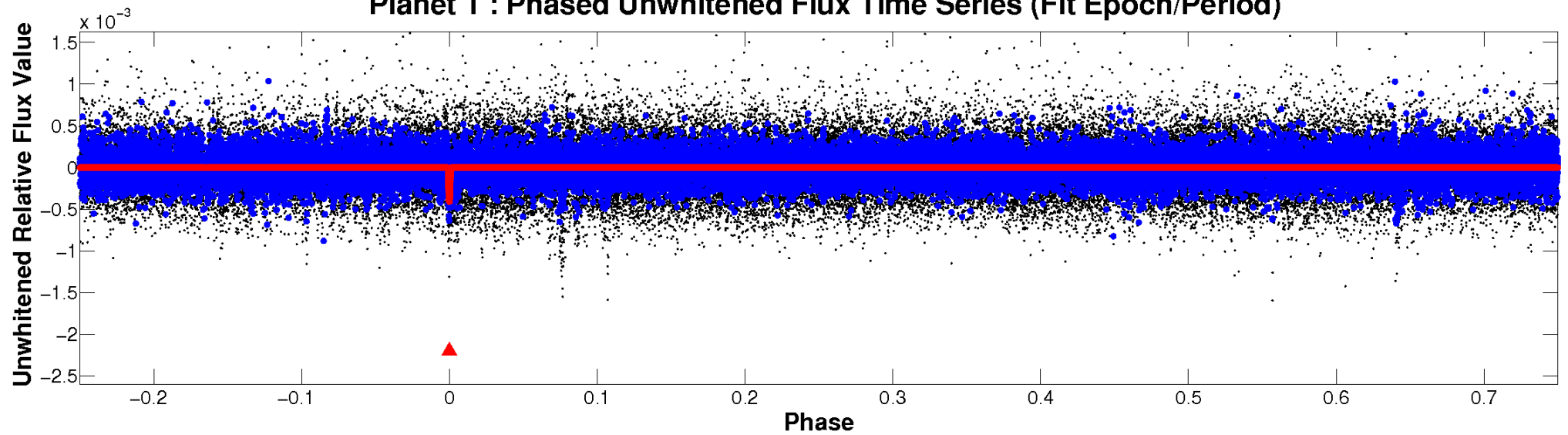
TCE 008811922-01



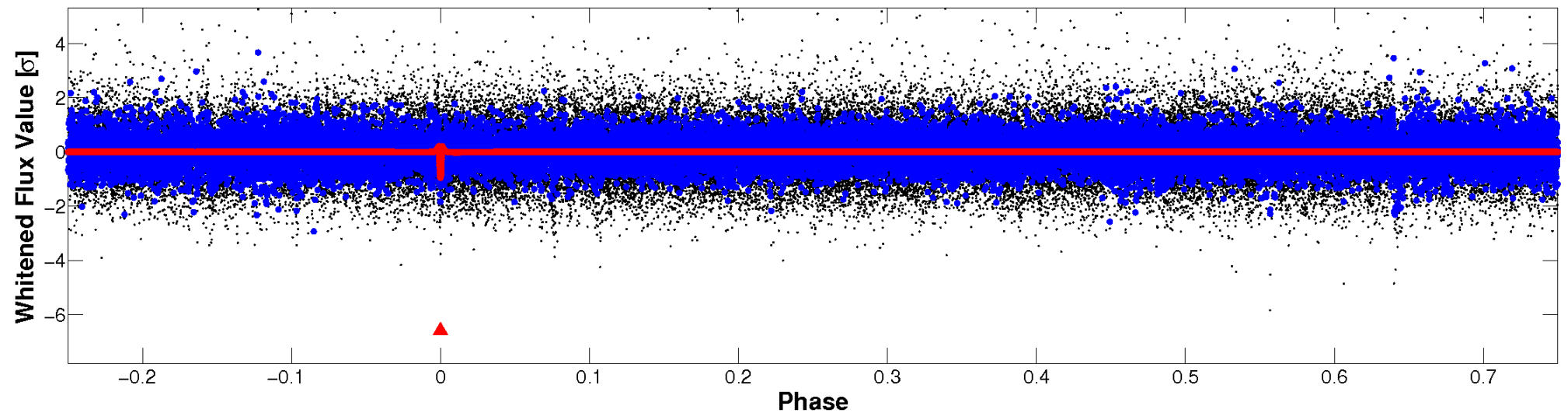


# Non-Whitened Vs. Whitened Light Curve

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

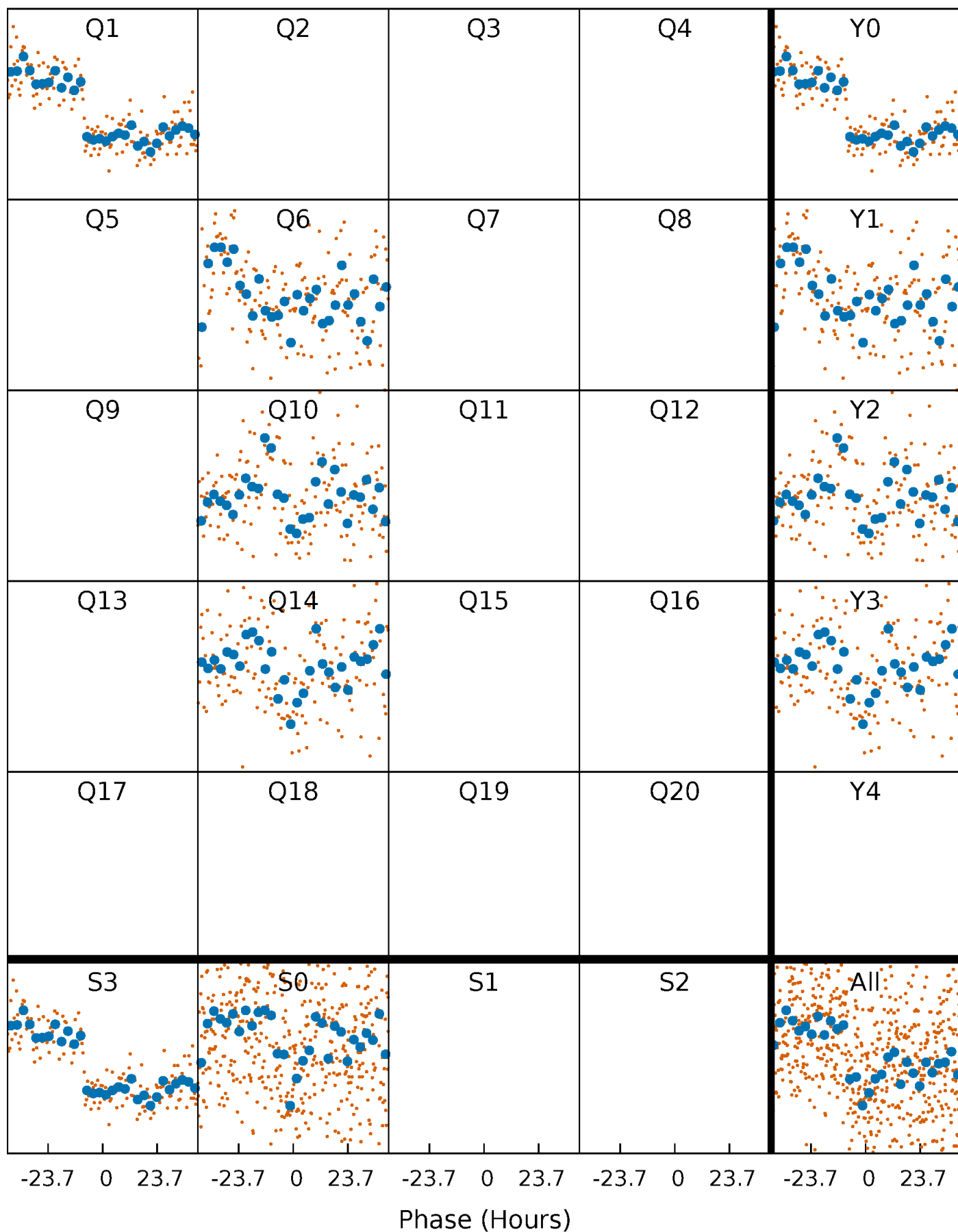


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

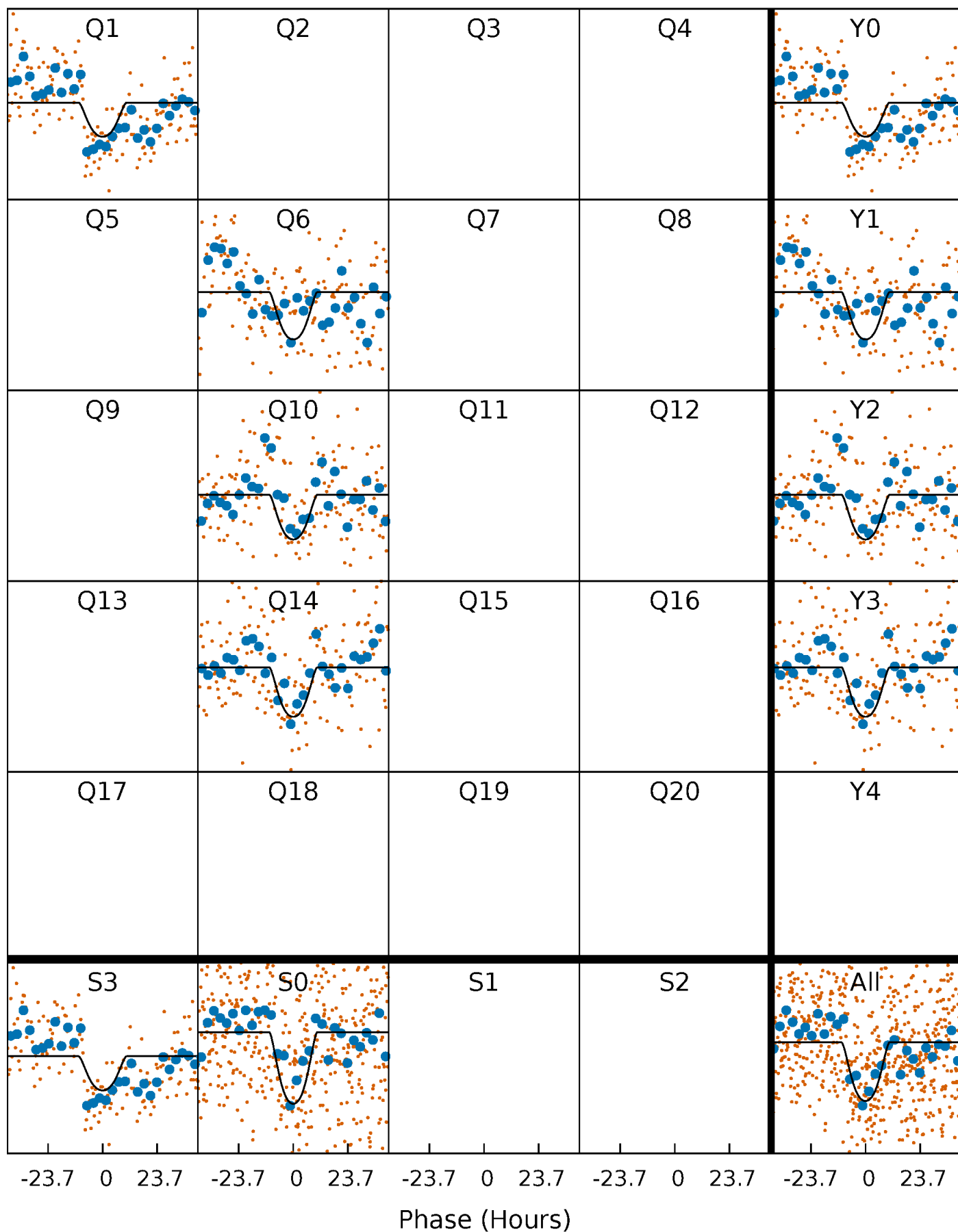
TCE 008811922-01 P=398.753094 Days  $T_0=142.737462$  (BKJD)





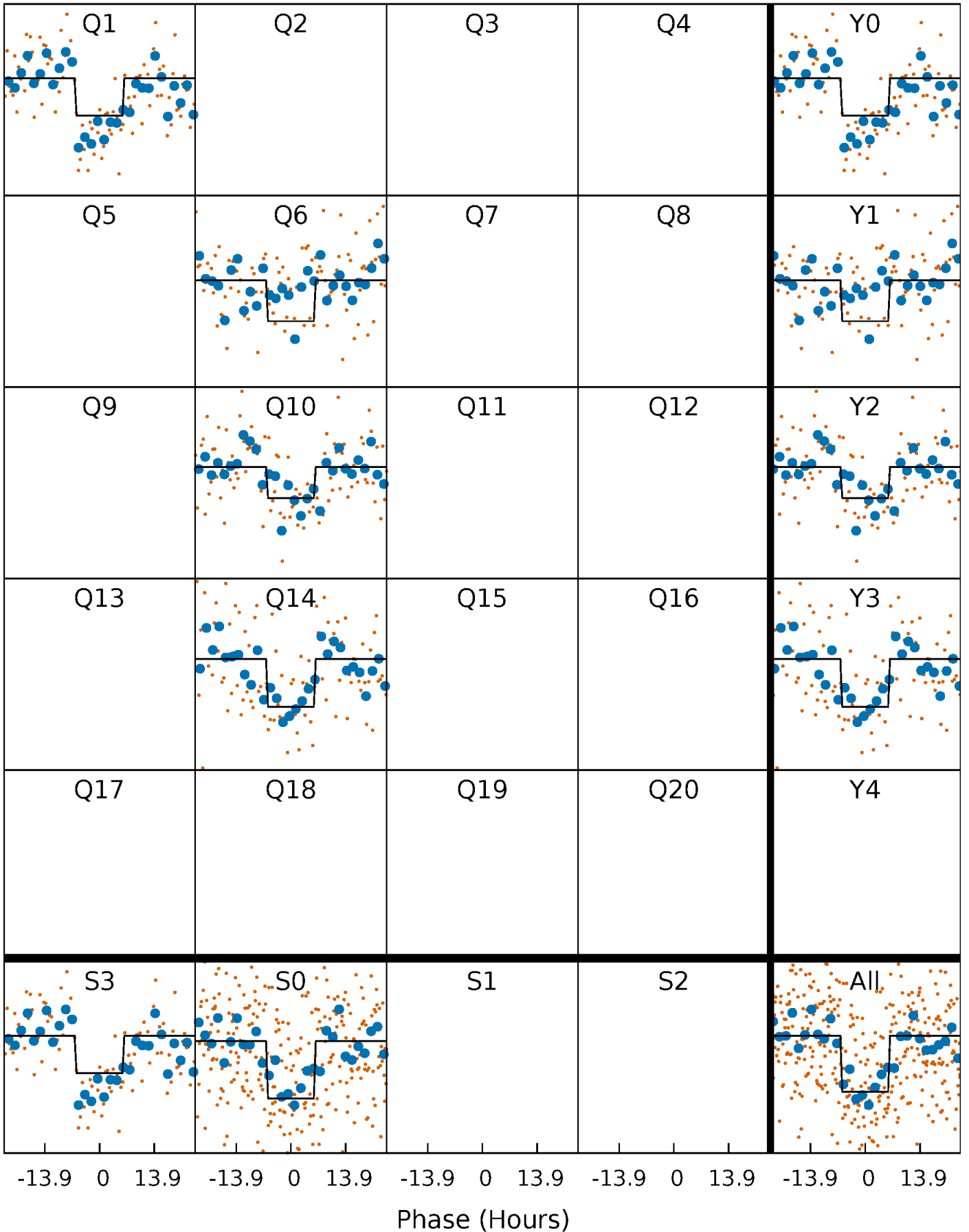
# DV Quarter-Phased Transit Curves

TCE 008811922-01 P=398.753094 Days  $T_0=142.737462$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

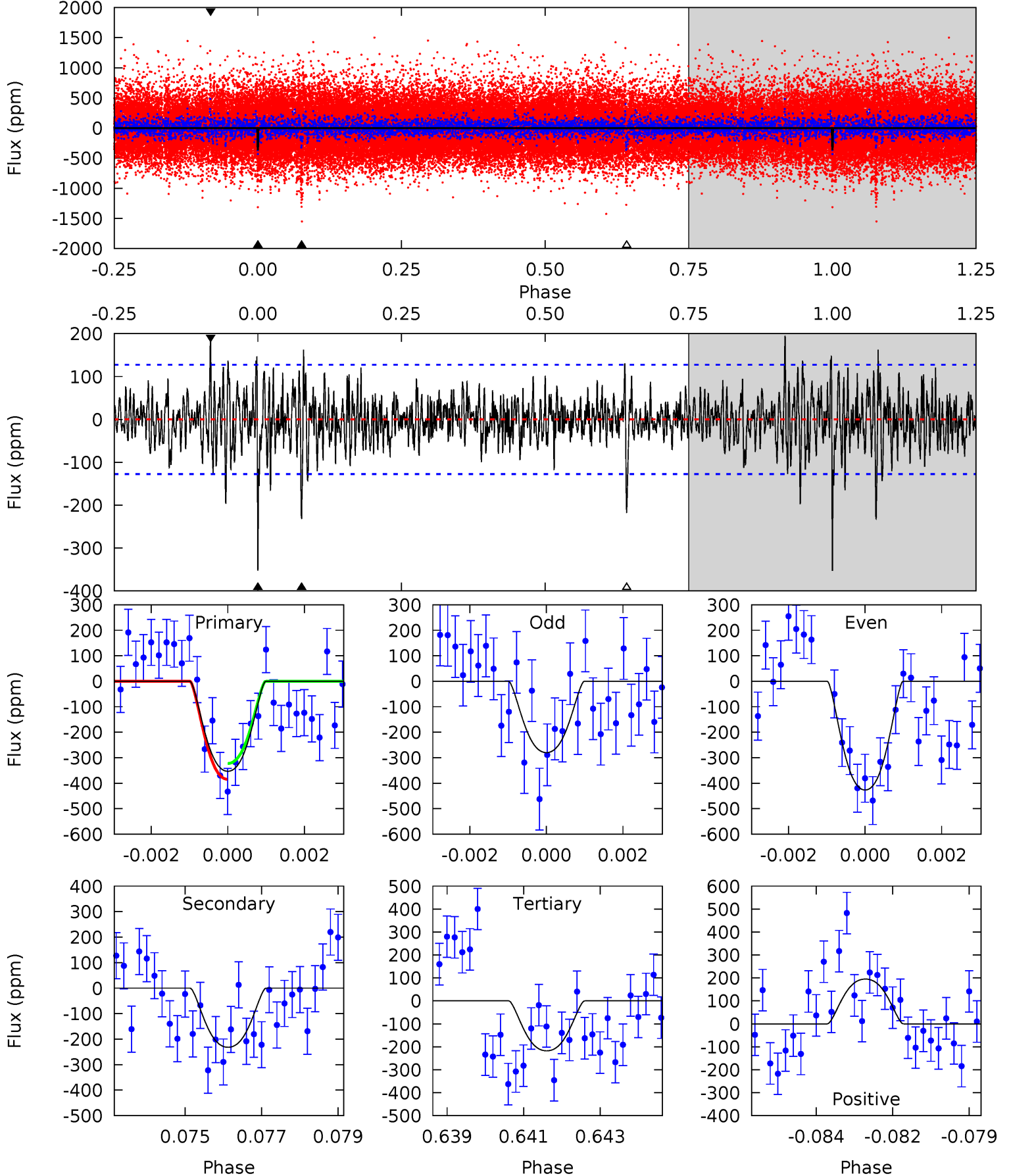
TCE 008811922-01 P=398.788168 Days  $T_0=142.646713$  (BKJD)



# DV Model-Shift Uniqueness Test

008811922-01, P = 398.753094 Days, E = 142.737462 Days

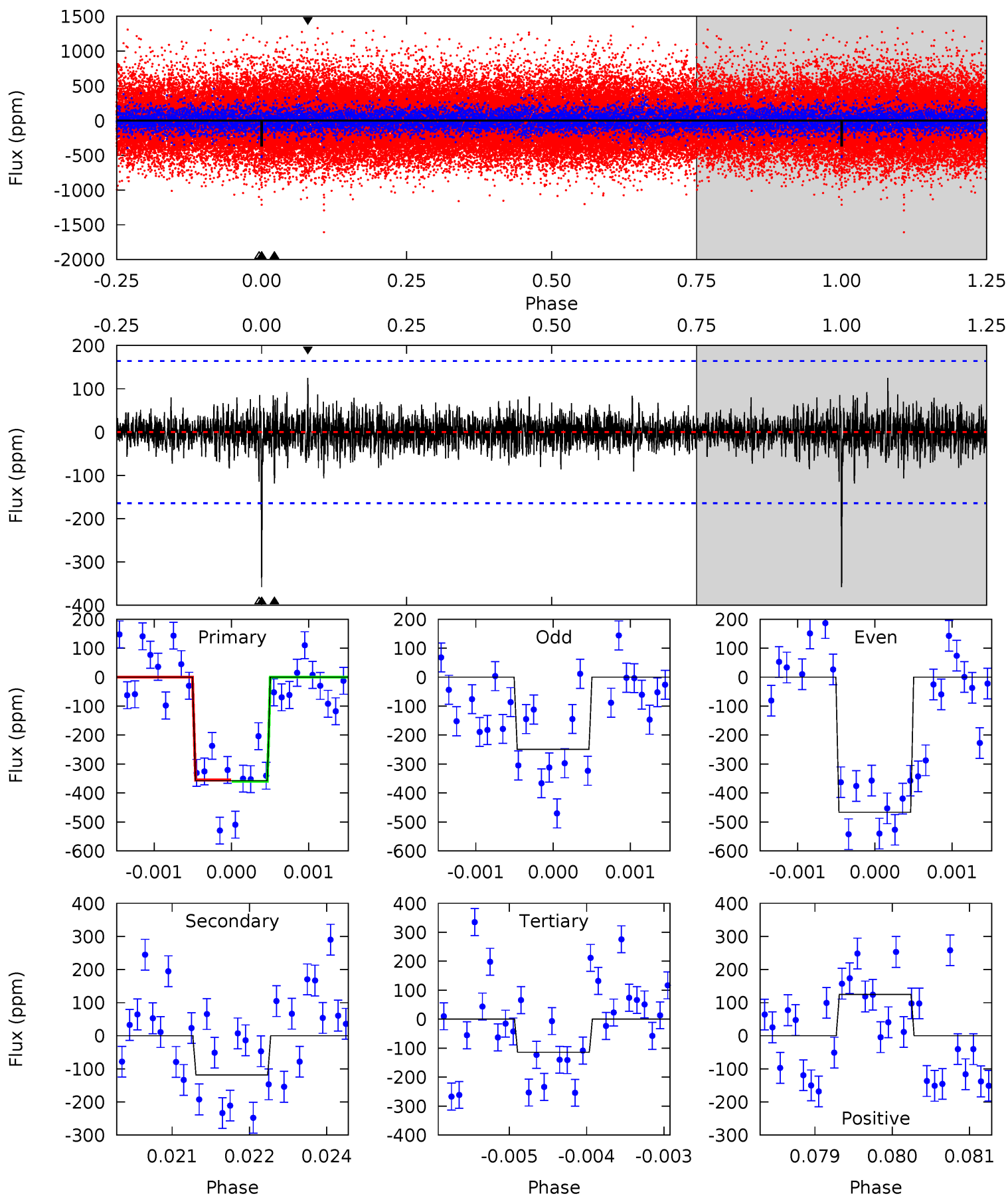
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.7	9.67	9.08	8.14	5.31	3.06	1.84	5.65	6.60	0.59	1.54	3.07	1.23	0.36	1.30



# Alt Model-Shift Uniqueness Test

008811922-01, P = 398.788168 Days, E = 142.646713 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
11.8	3.90	3.75	4.10	5.40	3.21	0.82	8.02	7.67	0.15	-0.20	3.58	0.97	0.26	0.08



### Stellar Parameters For KIC 008811922

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5863^{+140}_{-158}$	$4.566^{+0.038}_{-0.152}$	$-0.360^{+0.300}_{-0.300}$	$0.821^{+0.186}_{-0.074}$	$0.908^{+0.089}_{-0.109}$	$2.306^{+0.448}_{-0.950}$
	+2%/-3%	+1%/-3%	+83%/-83%	+23%/-9%	+10%/-12%	+19%/-41%
Source	PHO1	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 008811922-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-232 \pm 24$	$2.33^{+0.95}_{-0.82}$	$330^{+17}_{-14}$	$4686^{+1035}_{-543}$	$24164^{+33521}_{-11717}$
Alt.	$-119 \pm 30$	$1.83^{+0.85}_{-0.88}$	$329^{+17}_{-13}$	$4522^{+1494}_{-638}$	$19695^{+57765}_{-10859}$

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

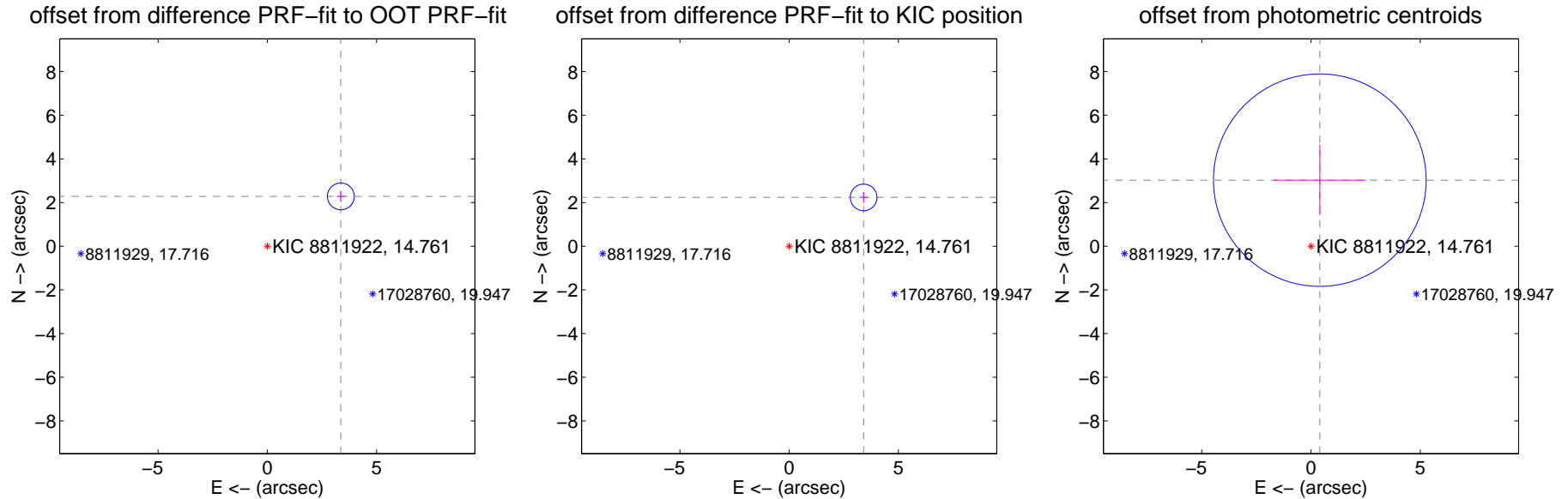
## DV Centroid Data

Supplemental centroid analysis for 008811922-01. Kepler magnitude: 14.76. Transit SNR 8.50

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

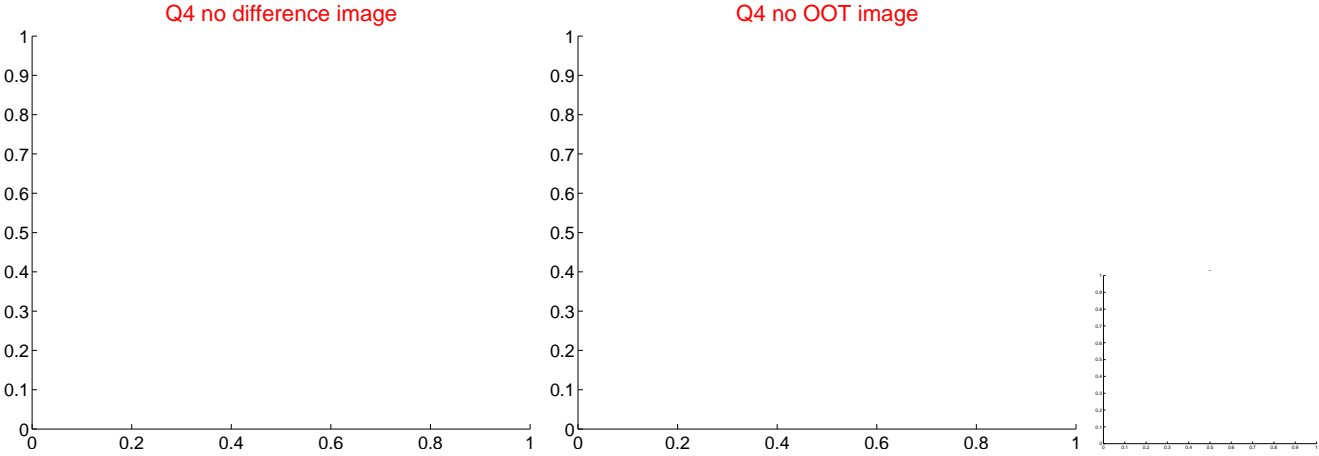
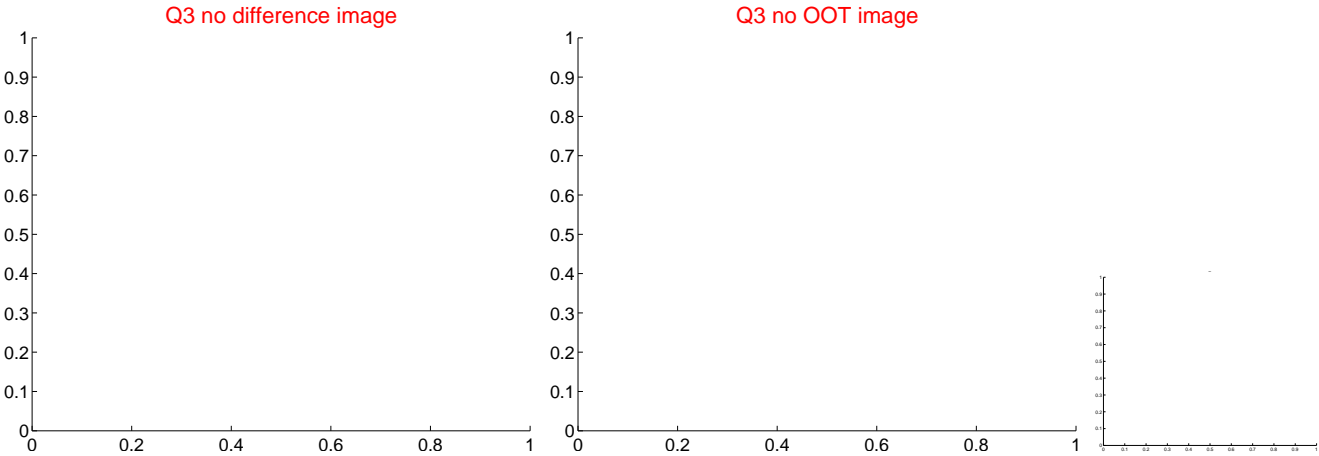
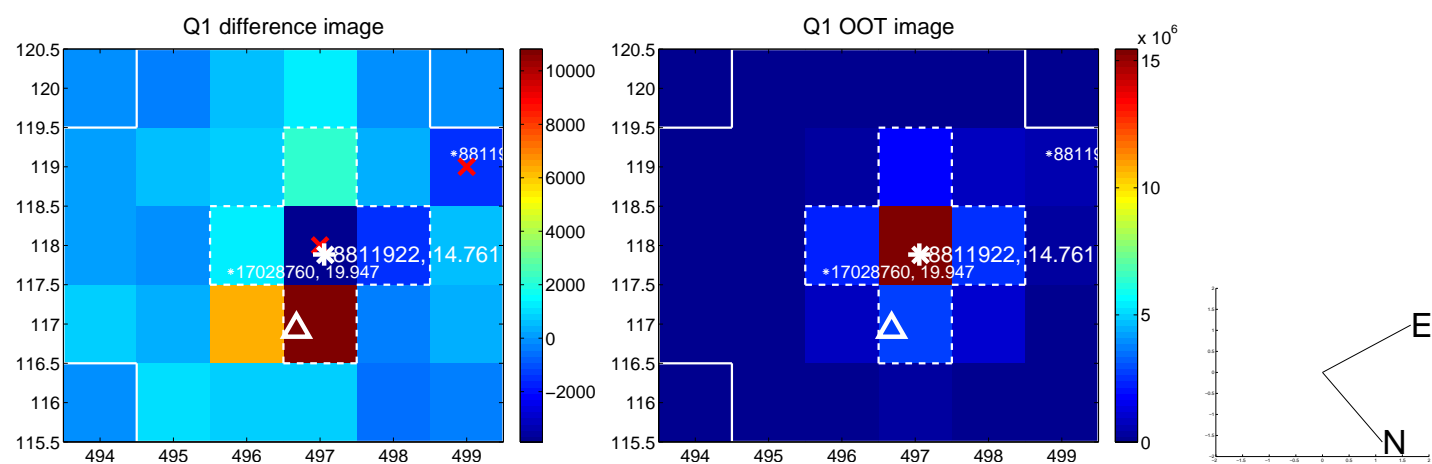
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.065 \pm 0.204$	19.89	$-3.363 \pm 0.176$	$2.283 \pm 0.255$
PRF-fit source offset from KIC position	$4.075 \pm 0.203$	20.05	$-3.407 \pm 0.176$	$2.235 \pm 0.255$
photometric centroid source offset	$3.05 \pm 1.62$	1.88	$-0.40 \pm 2.11$	$3.03 \pm 1.61$



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.



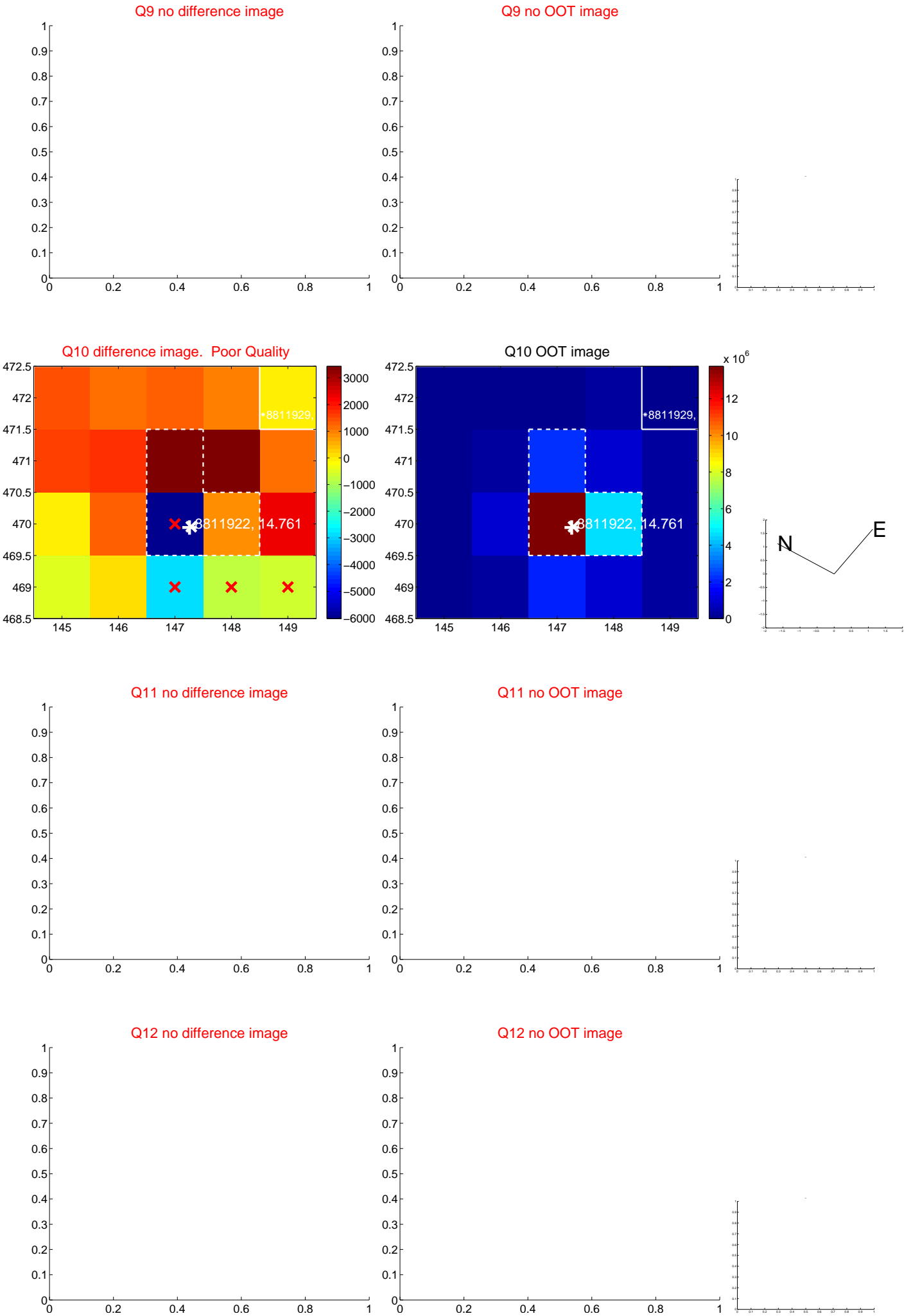
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



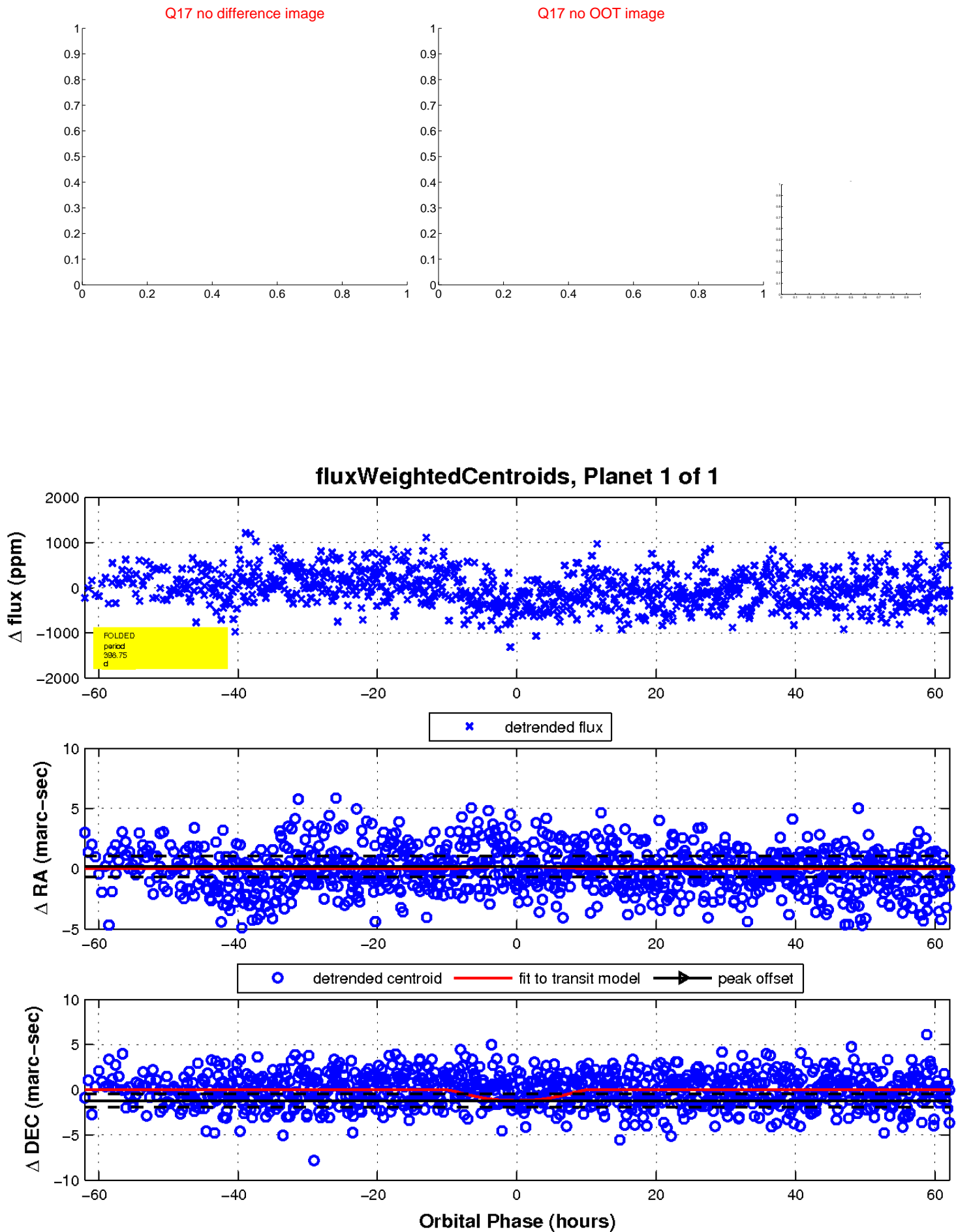
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

