

# KIC 002861394

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
002861394-01	OBS	No	259.129831	148.687392	688.5	8.046	7.3	6.3	1.11	6325	3.12	2.54

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002861394-01	OBS	FP	0.00	1	0	1	0	MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

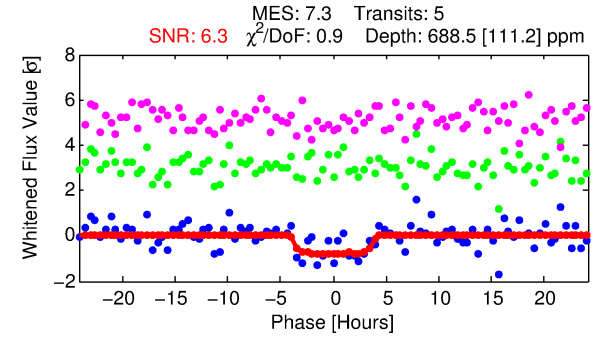
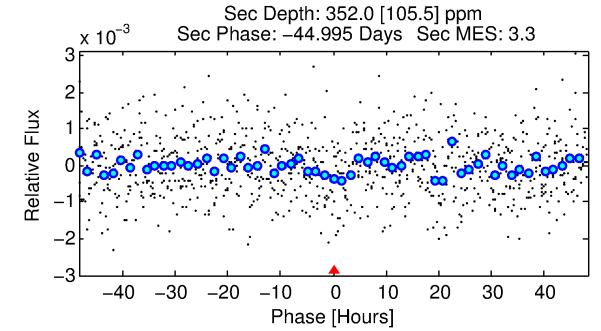
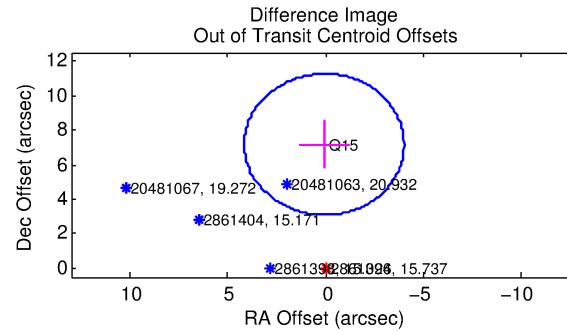
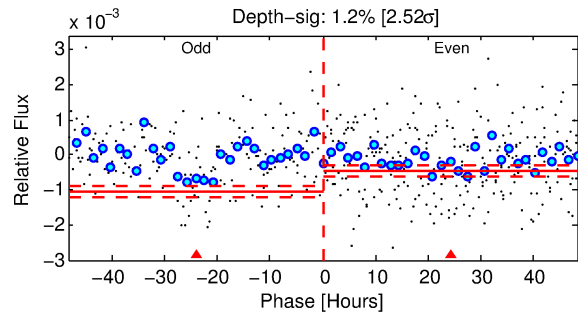
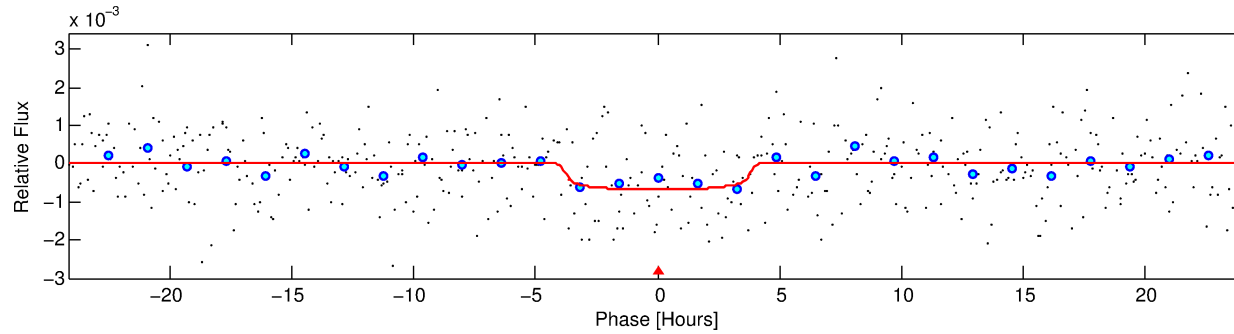
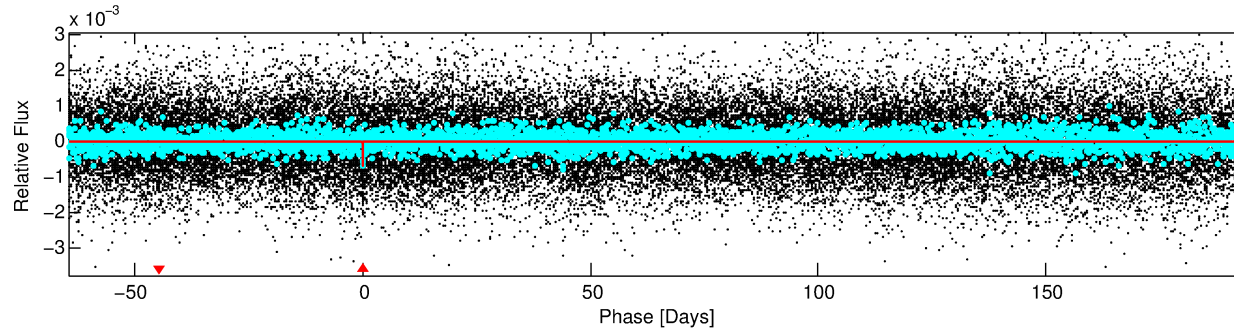
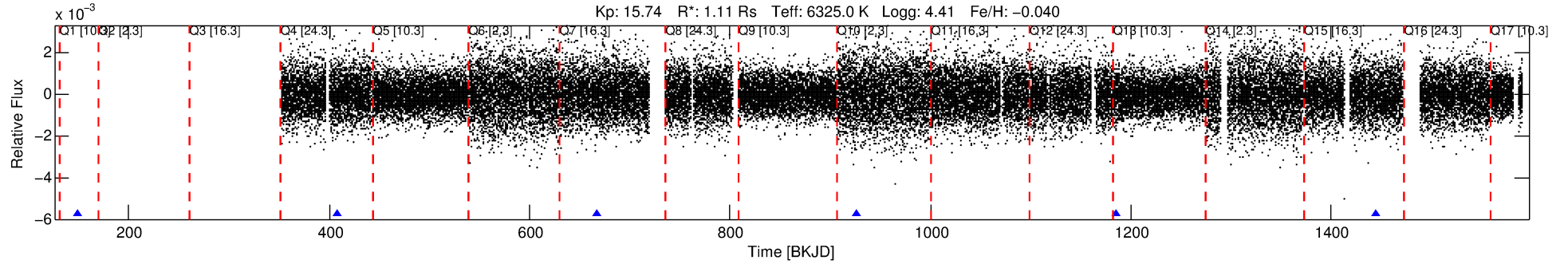
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 002861394-01

No Significant Match Found

# DV One-Page Summary

KIC: 2861394 Candidate: 1 of 1 Period: 259.130 d



## DV Fit Results:

Period = 259.12983 [0.00896] d  
Epoch = 148.6874 [0.0299] BKJD  
Rp/R\* = 0.0257 [0.0199]  
a/R\* = 184.62 [730.50]  
b = 0.70 [2.92]  
Seff = 2.54 [1.00]  
Teff = 322 [32] K  
Rp = 3.12 [2.58] Re  
a = 0.8352 [0.2068] AU  
Ag = 13877.59 [22424.44] [0.62 $\sigma$ ]  
Teffp = 5403 [2140] K [2.37 $\sigma$ ]

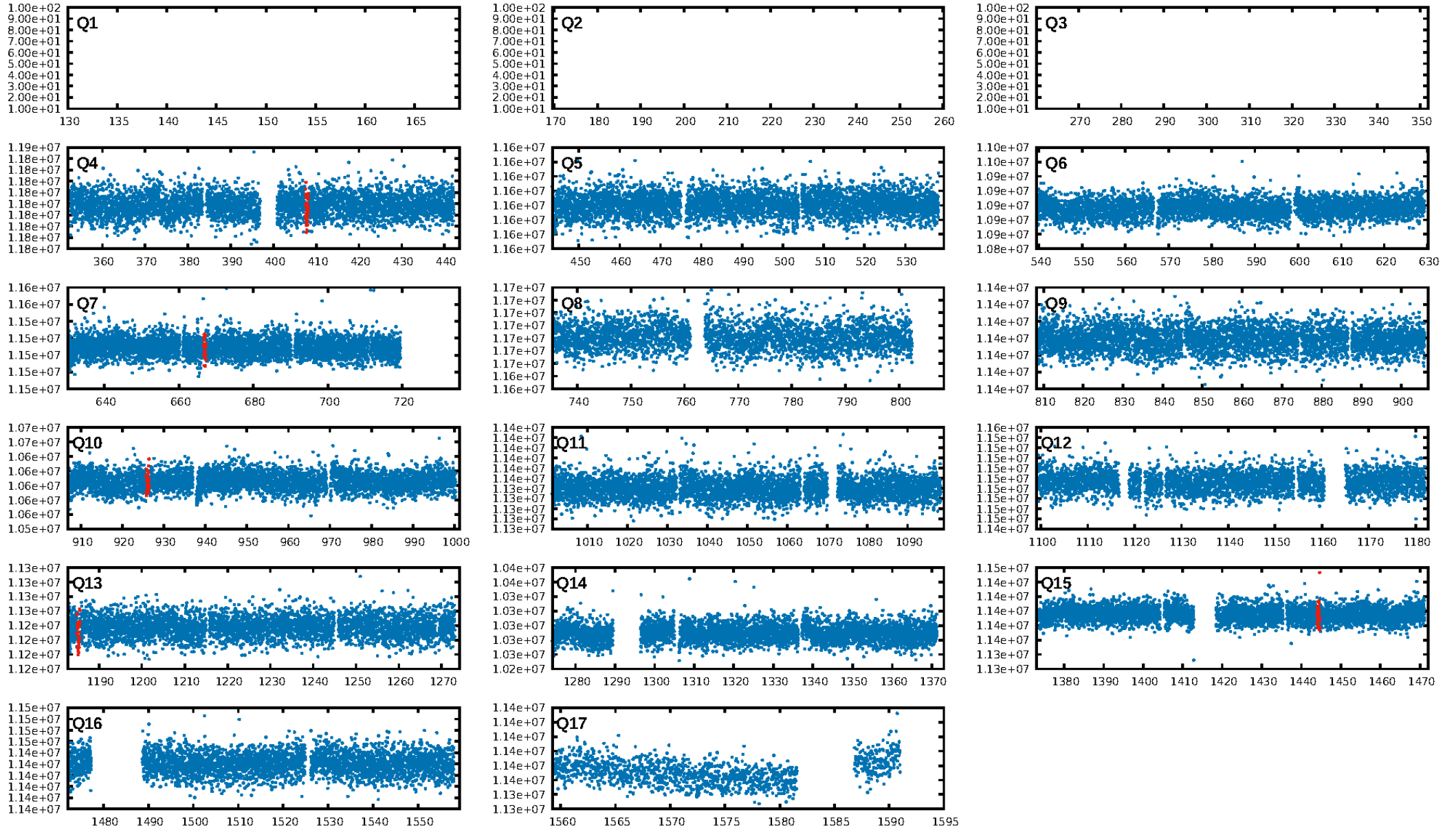
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 2.7%  
ModelChiSquareGof-sig: 99.1%  
Bootstrap-pfa: 1.73e-13  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: 0.1256  
Centroid-sig: 2.1%  
Centroid-so: 1.009 arcsec [0.89 $\sigma$ ]  
OotOffset-rm: 7.167 arcsec [5.26 $\sigma$ ]  
KicOffset-rm: 9.877 arcsec [7.36 $\sigma$ ]  
OotOffset-st: 0/1/0/0 [1]  
KicOffset-st: 0/1/0/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [4/4]

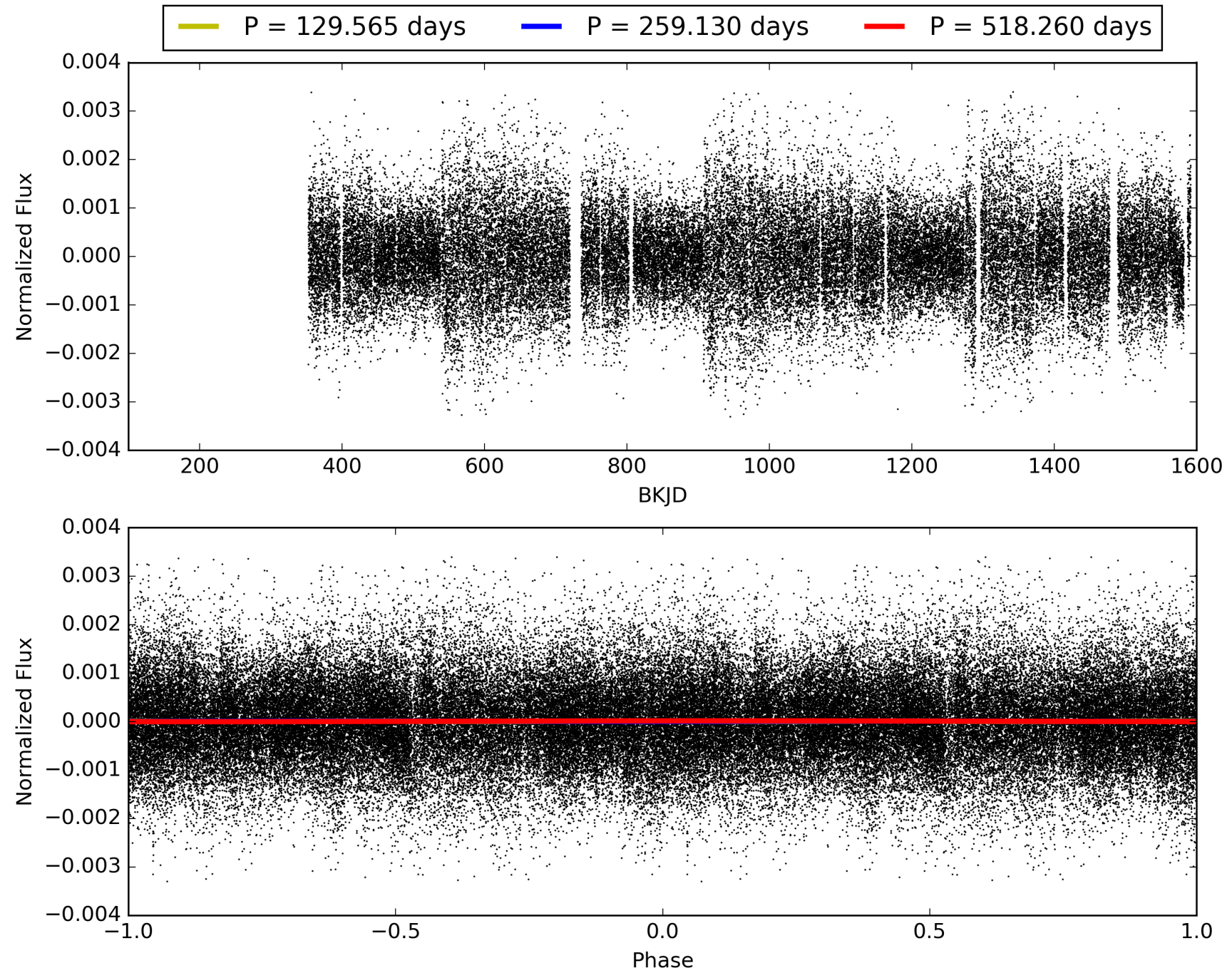
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:48:05 Z

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

# TCE 002861394-01, PDC Light Curves

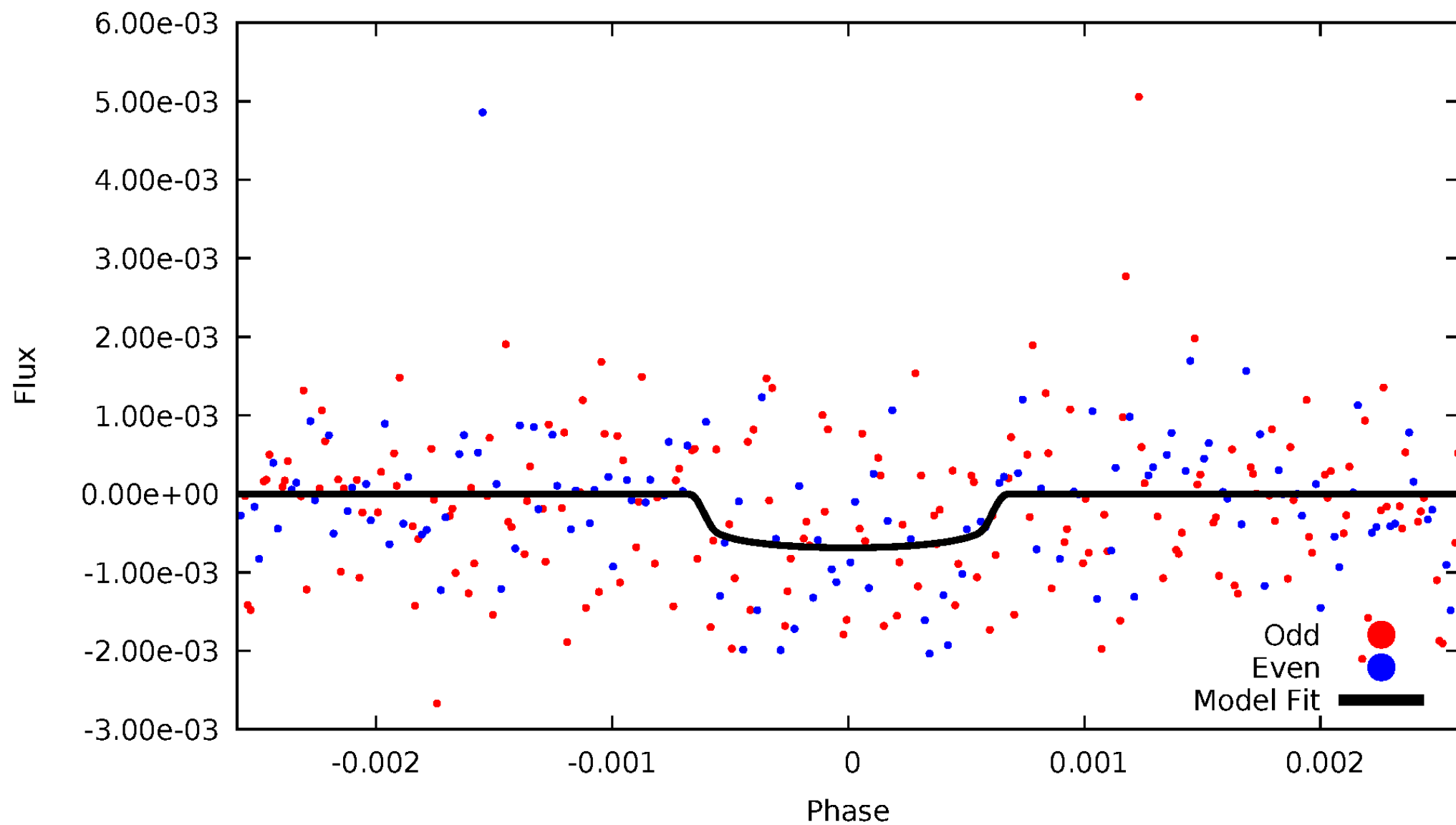


TCE 002861394-01



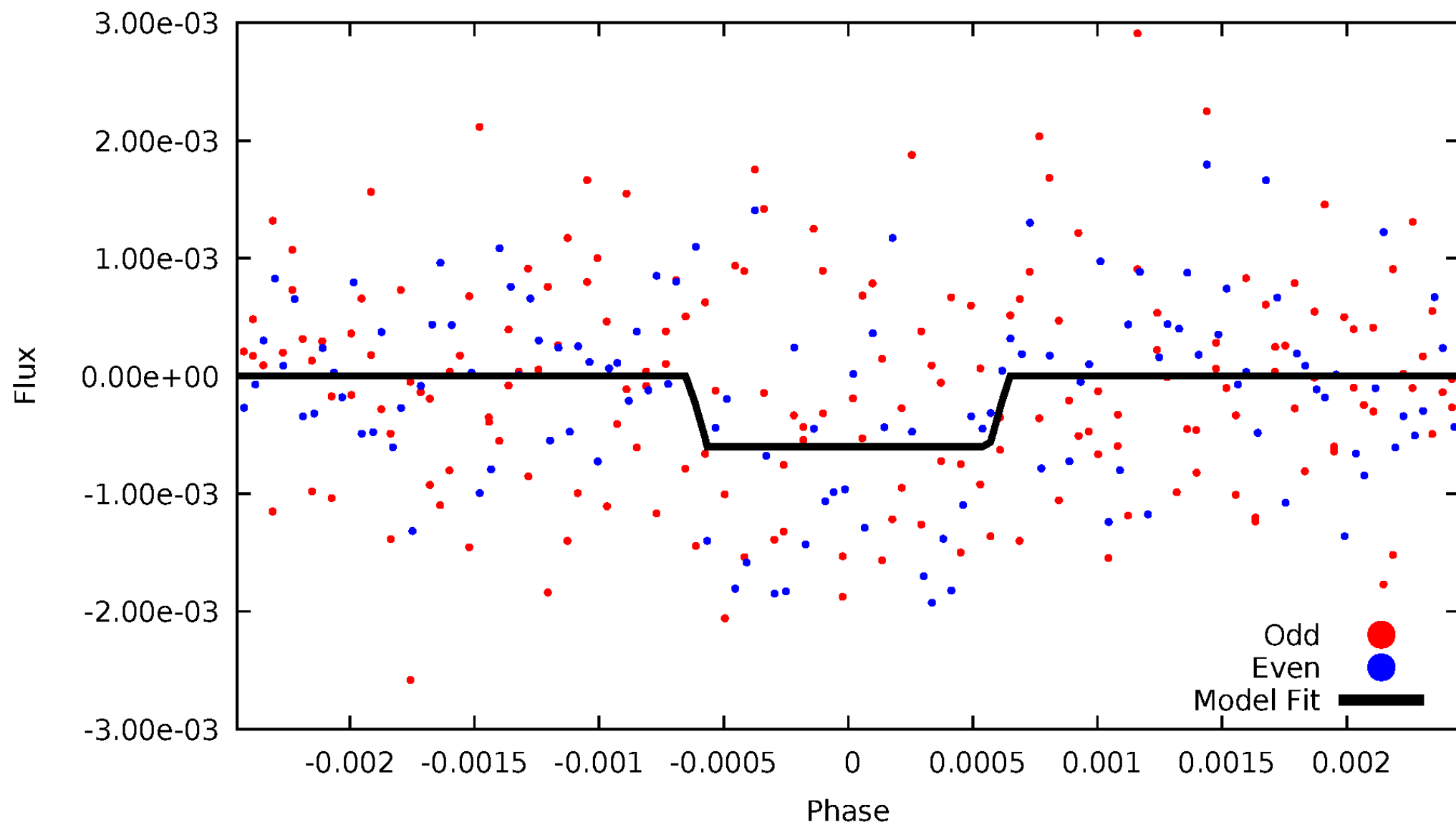
# DV Odd/Even

TCE 002861394-01



# ALT Odd/Even

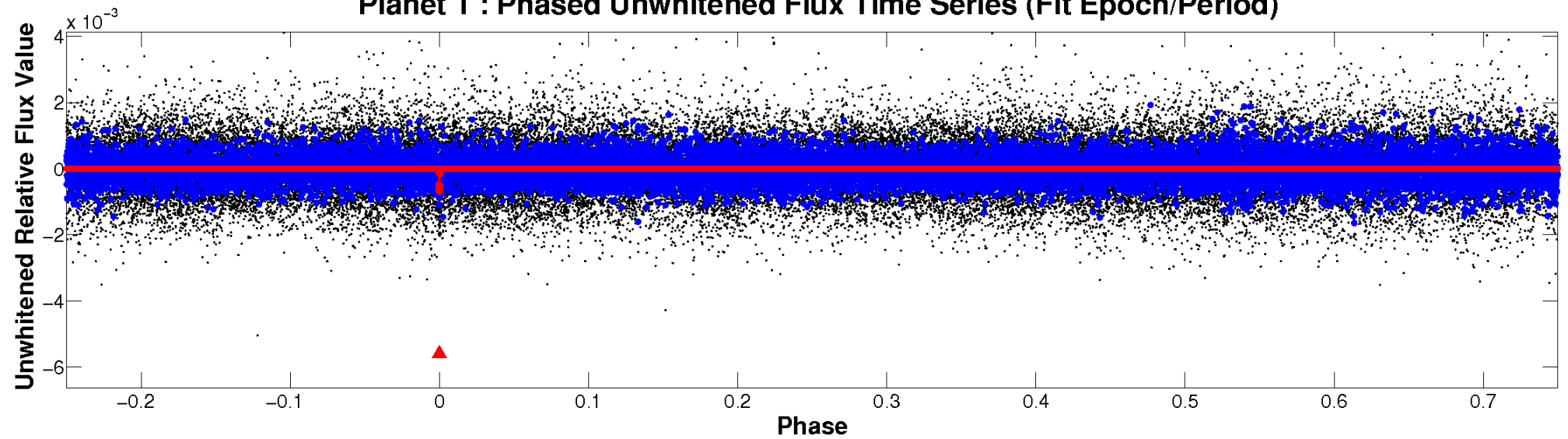
TCE 002861394-01



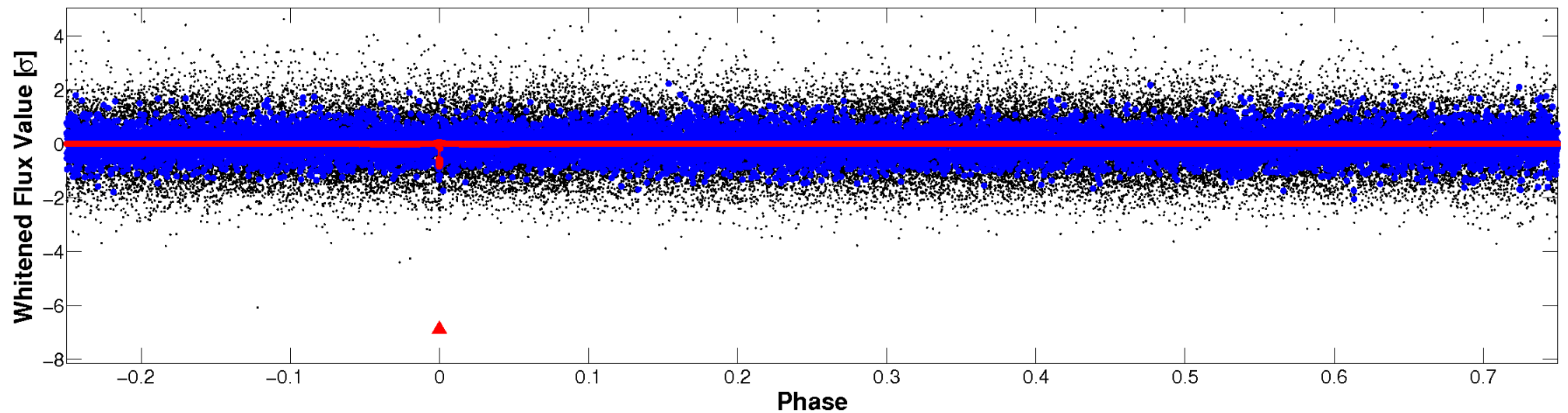


# Non-Whitened Vs. Whitened Light Curve

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

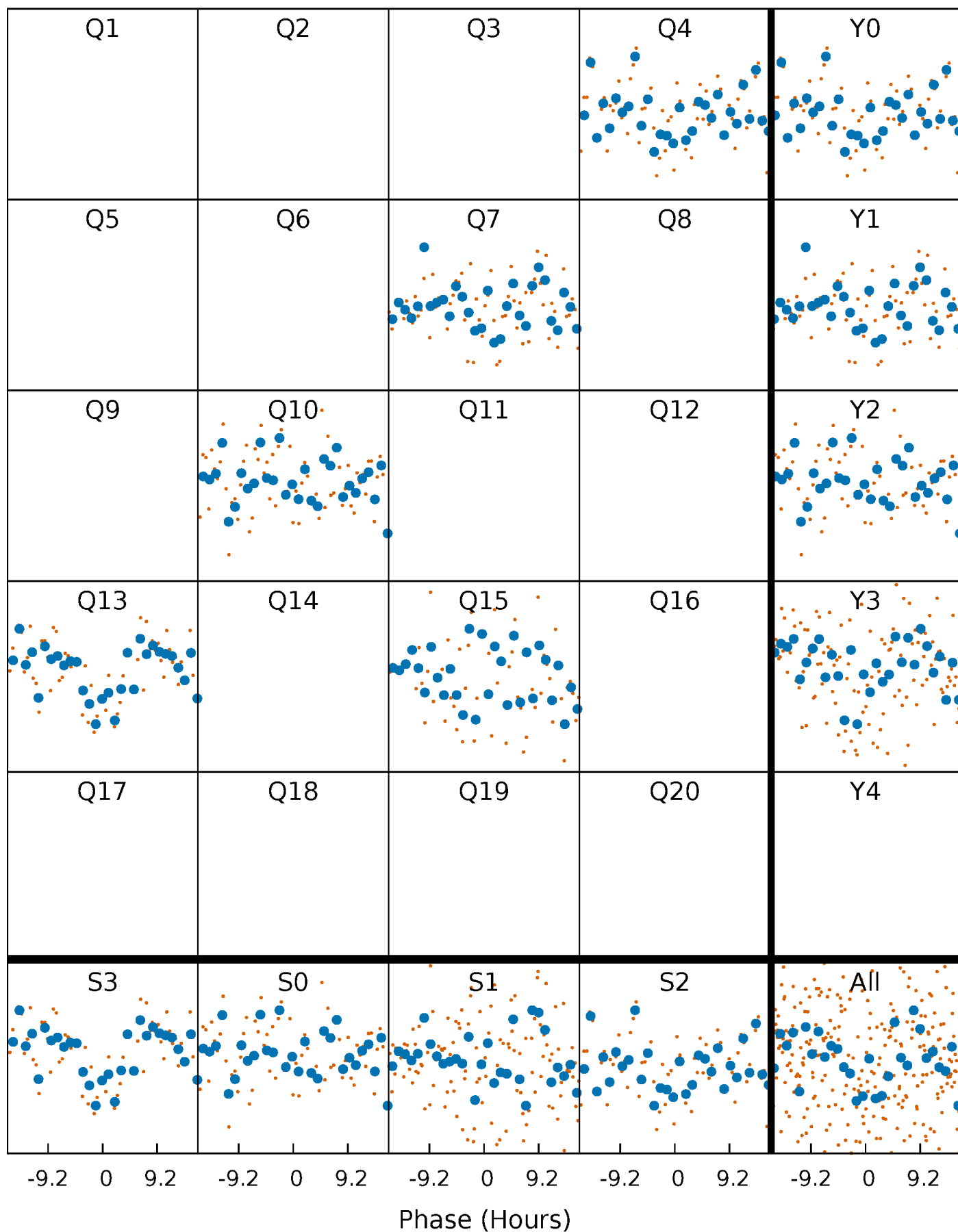


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

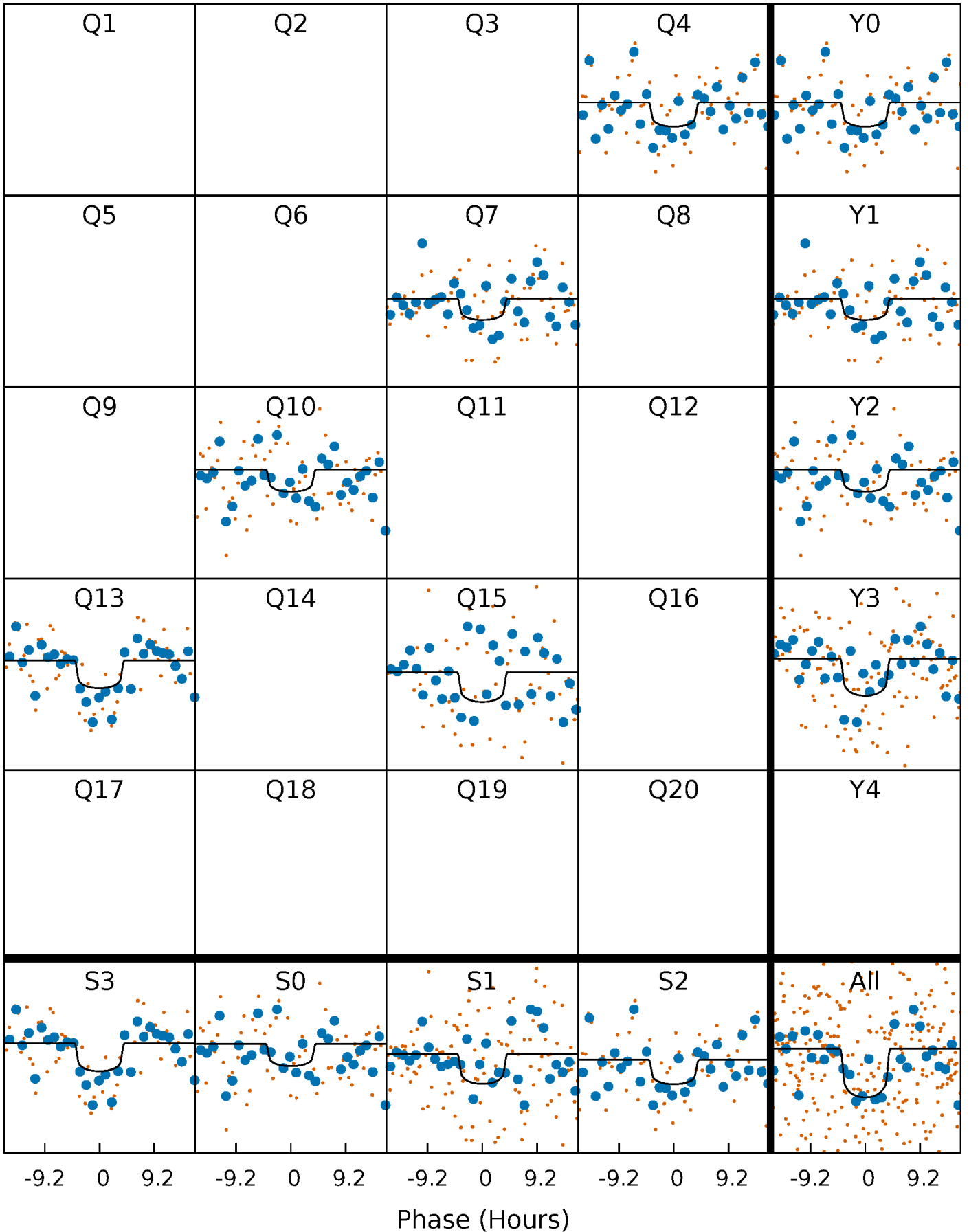
TCE 002861394-01 P=259.129831 Days  $T_0=148.687392$  (BKJD)





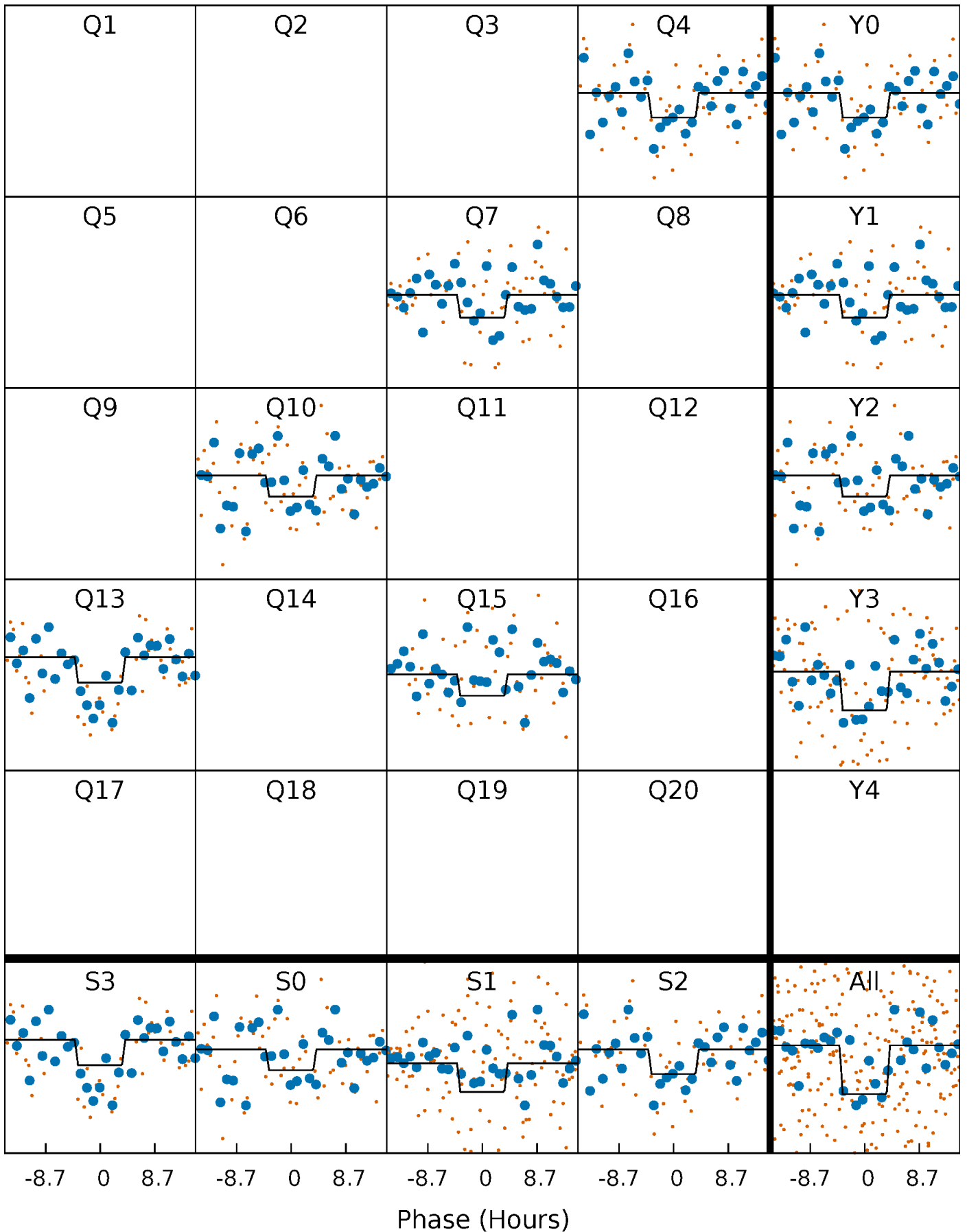
# DV Quarter-Phased Transit Curves

TCE 002861394-01 P=259.129831 Days  $T_0=148.687392$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

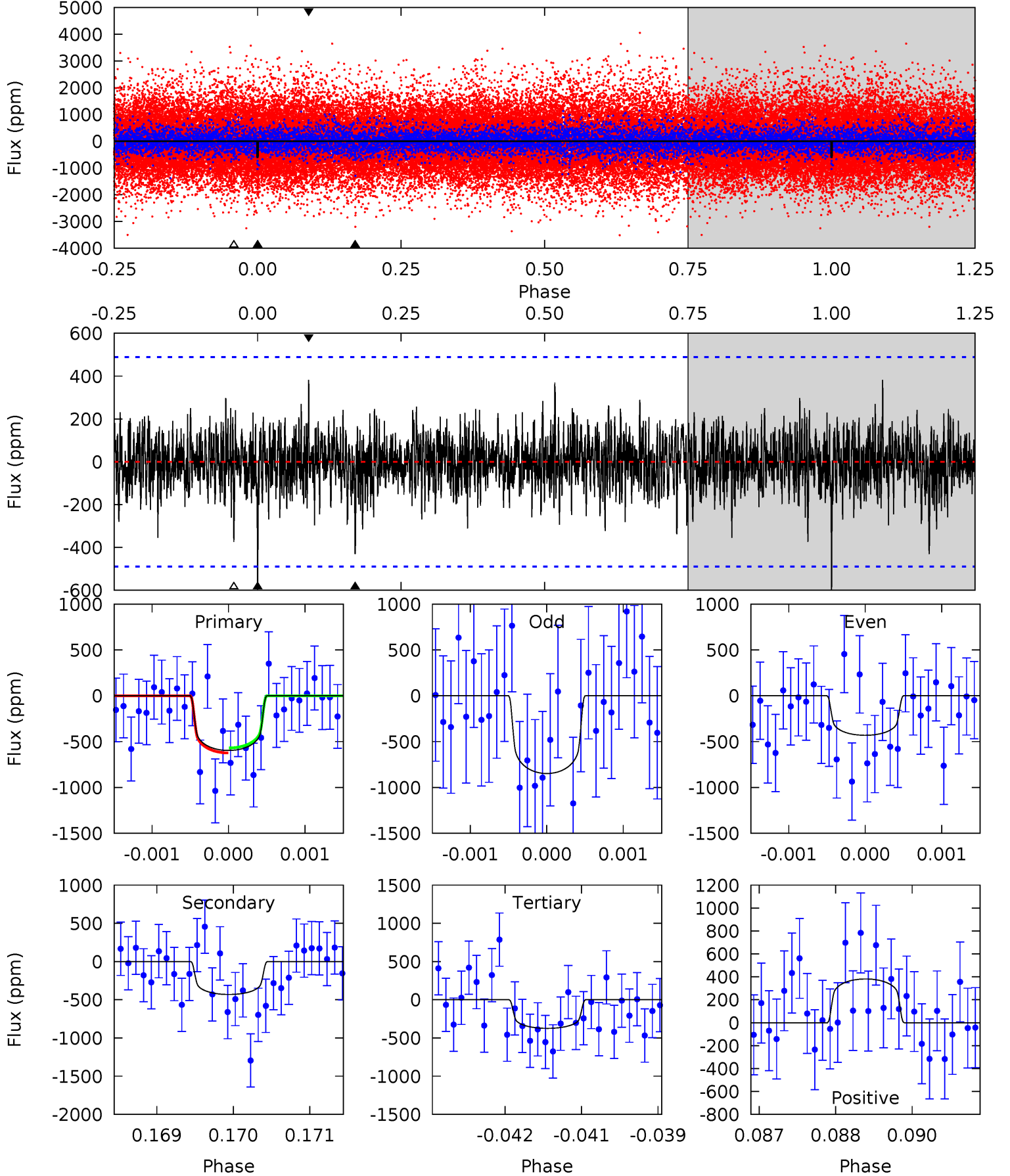
TCE 002861394-01 P=259.131597 Days  $T_0=148.686152$  (BKJD)



# DV Model-Shift Uniqueness Test

002861394-01, P = 259.129831 Days, E = 148.687392 Days

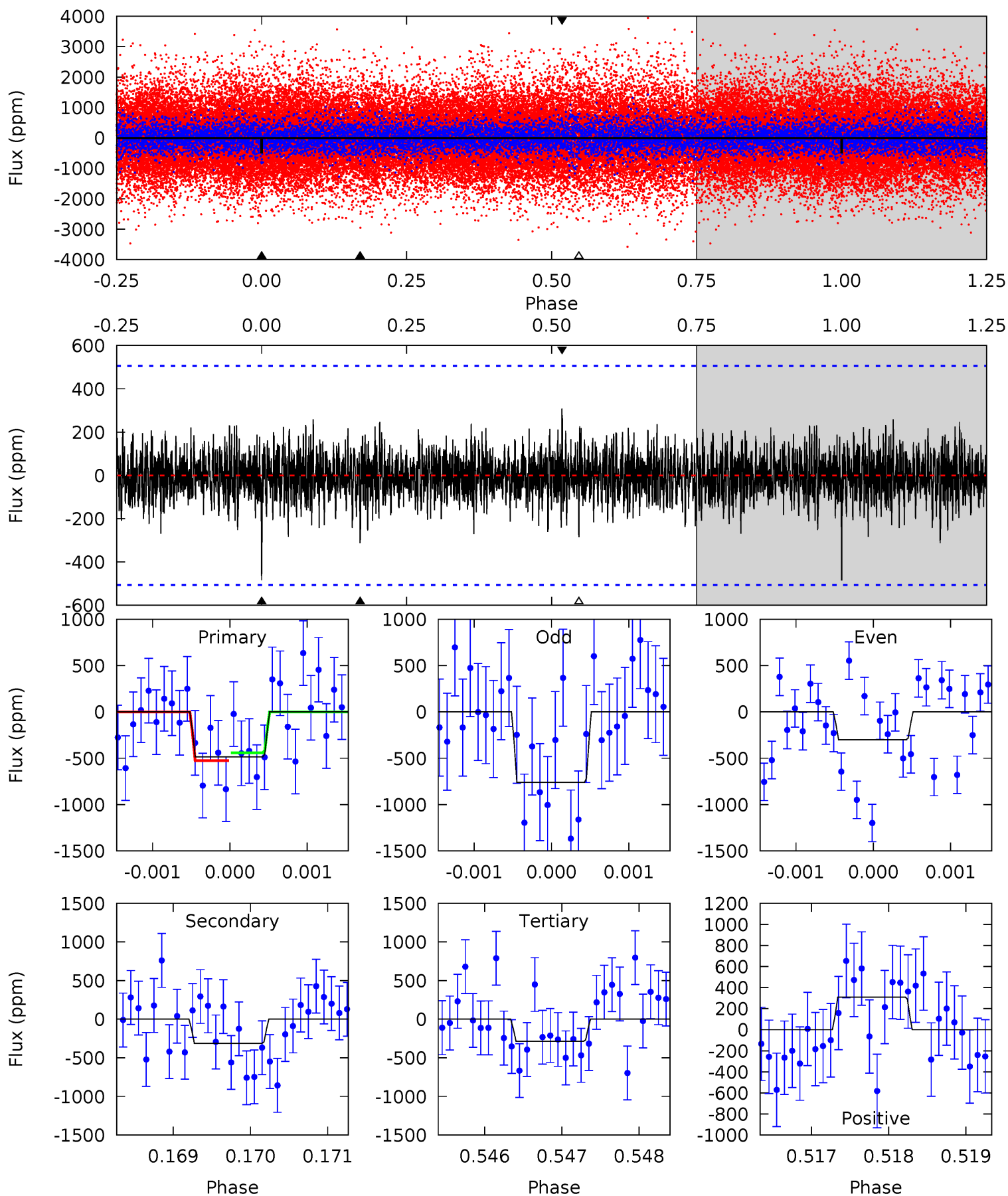
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.58	4.76	4.13	4.21	5.40	3.20	1.09	2.45	2.37	0.63	0.55	2.23	0.98	0.39	0.30



# Alt Model-Shift Uniqueness Test

002861394-01, P = 259.131597 Days, E = 148.686152 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
5.18	3.35	3.06	3.30	5.41	3.22	0.87	2.12	1.88	0.29	0.06	2.40	1.08	0.39	0.45



### Stellar Parameters For KIC 002861394

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6325^{+174}_{-261}$	$4.409^{+0.065}_{-0.195}$	$-0.040^{+0.250}_{-0.300}$	$1.112^{+0.329}_{-0.141}$	$1.157^{+0.157}_{-0.157}$	$1.184^{+0.405}_{-0.620}$
	+3%/-4%	+1%/-4%	+625%/-750%	+30%/-13%	+14%/-14%	+34%/-52%
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 002861394-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-431 \pm 91$	$3.55^{+2.15}_{-2.19}$	$456^{+28}_{-24}$	$5442^{+3535}_{-1040}$	$12990^{+73175}_{-8342}$
Alt.	$-313 \pm 93$	$3.39^{+2.50}_{-2.01}$	$457^{+32}_{-24}$	$5120^{+3183}_{-1032}$	$9833^{+52465}_{-6805}$

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

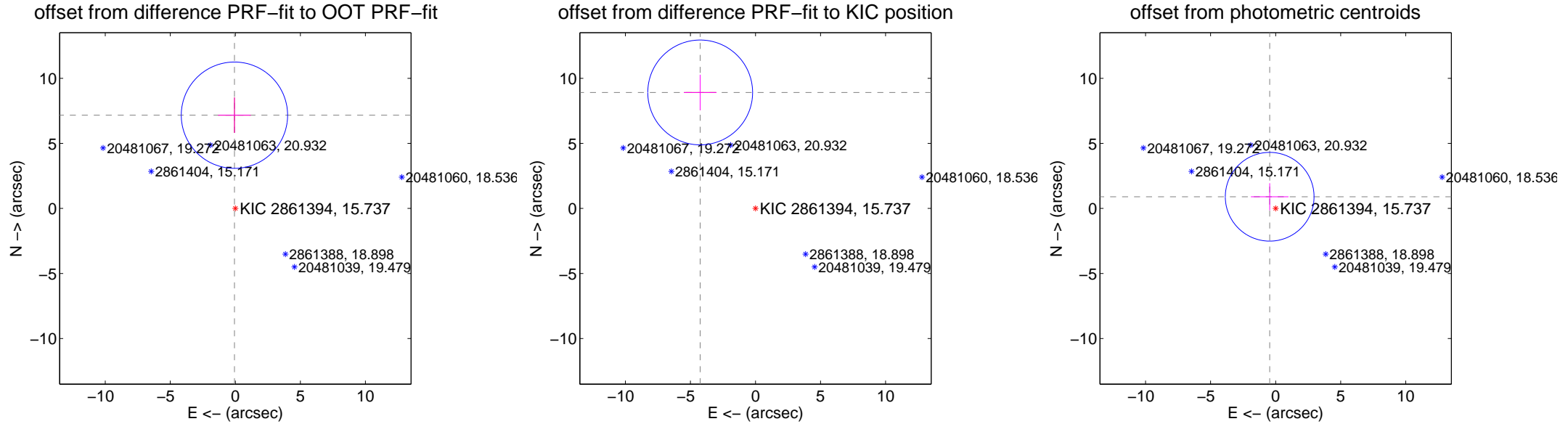
## DV Centroid Data

Supplemental centroid analysis for 002861394-01. Kepler magnitude: 15.74. Transit SNR 6.33

There are 0 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 4.53 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	$7.167 \pm 1.362$	5.26	$0.069 \pm 1.255$	$7.167 \pm 1.362$
PRF-fit source offset from KIC position	$9.877 \pm 1.343$	7.36	$4.251 \pm 1.255$	$8.915 \pm 1.362$
photometric centroid source offset	$1.01 \pm 1.14$	0.89	$0.46 \pm 1.44$	$0.90 \pm 1.04$



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.

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



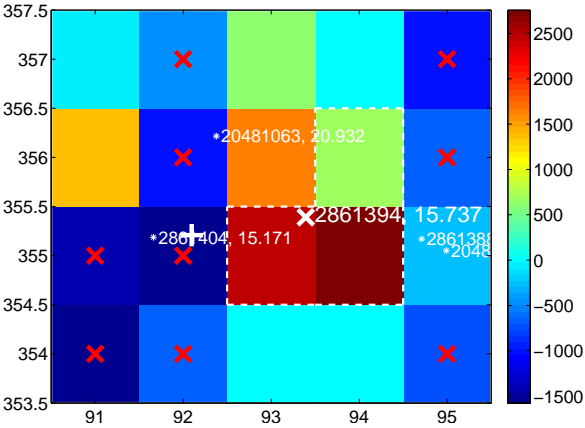
Q3 no difference image



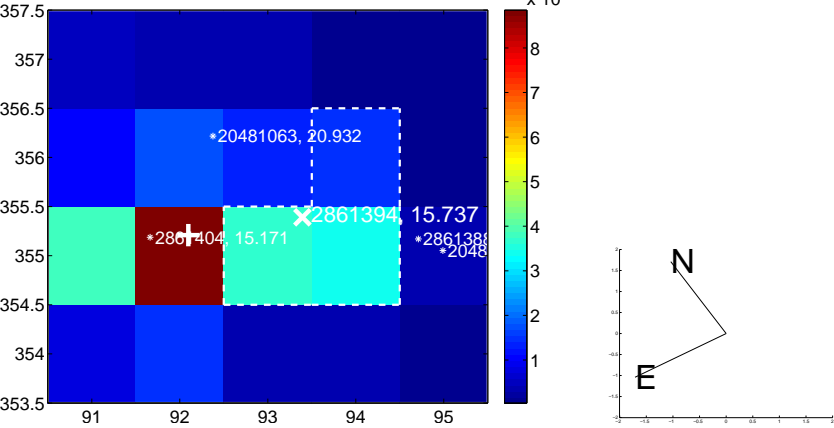
Q3 no OOT image



Q4 difference image. Poor Quality

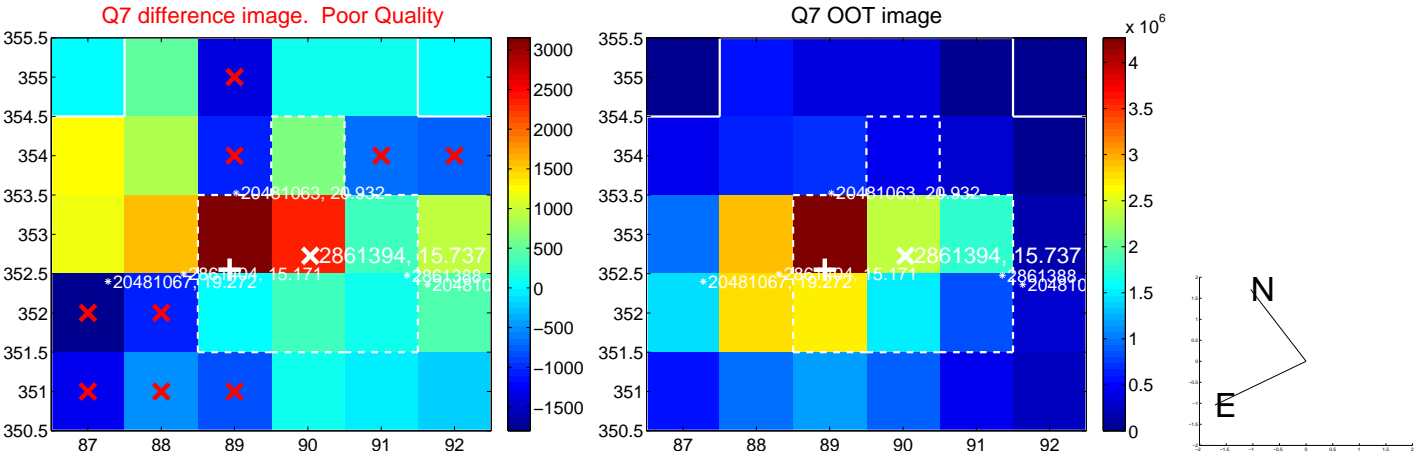


Q4 OOT image





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



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

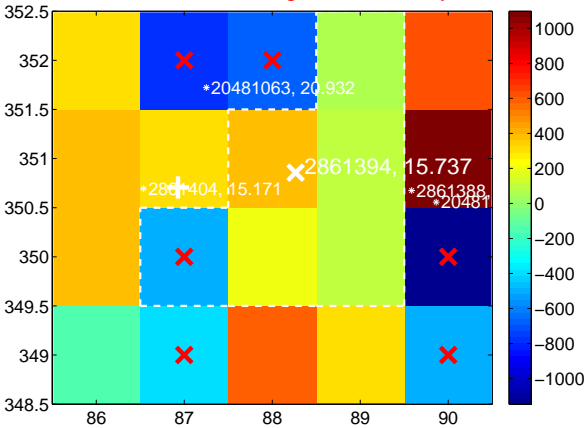
Q9 no difference image



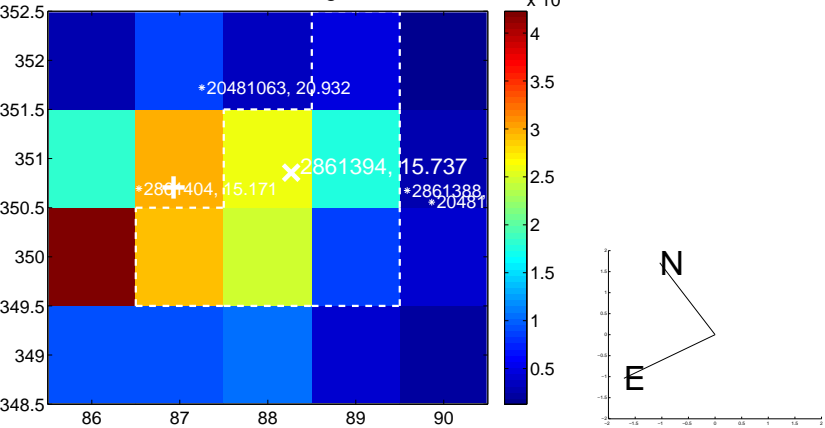
Q9 no OOT image



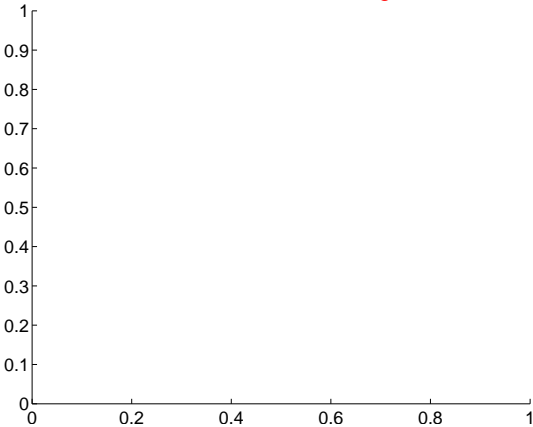
Q10 difference image. Poor Quality



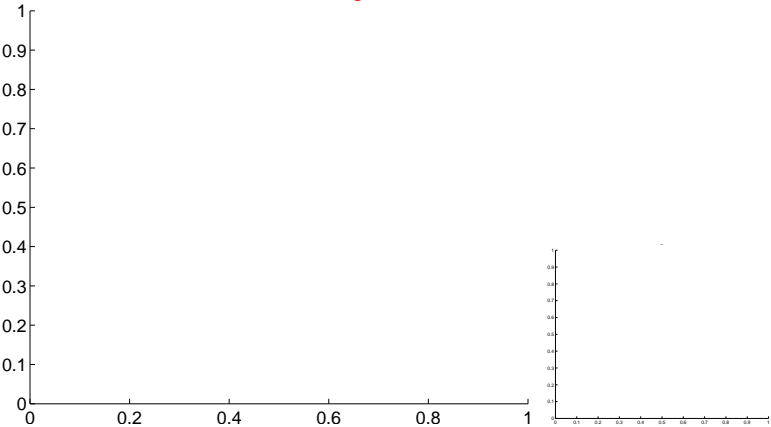
Q10 OOT image



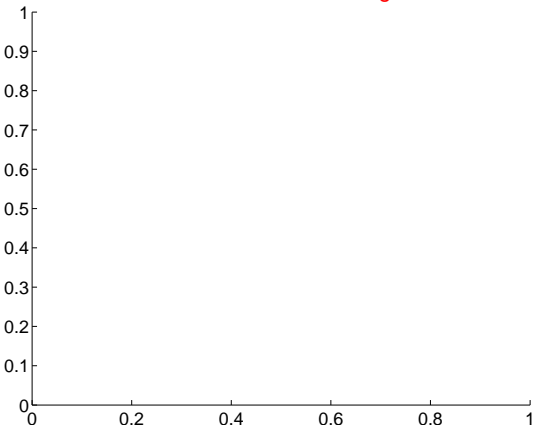
Q11 no difference image



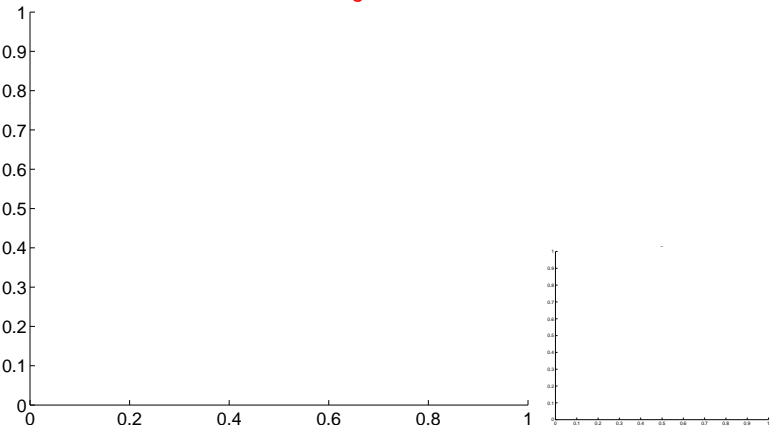
Q11 no OOT image



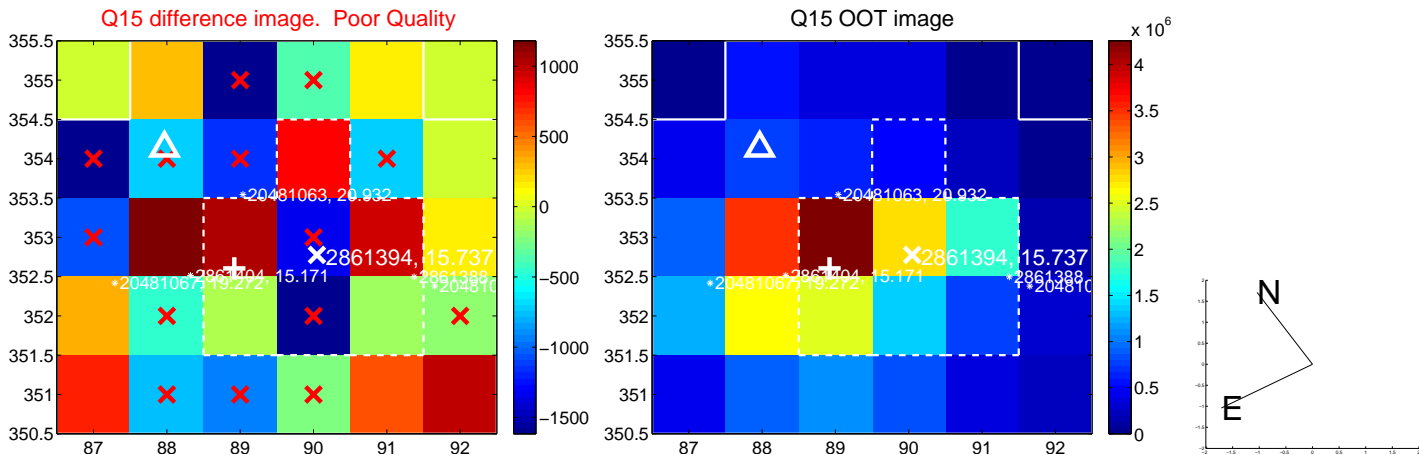
Q12 no difference image



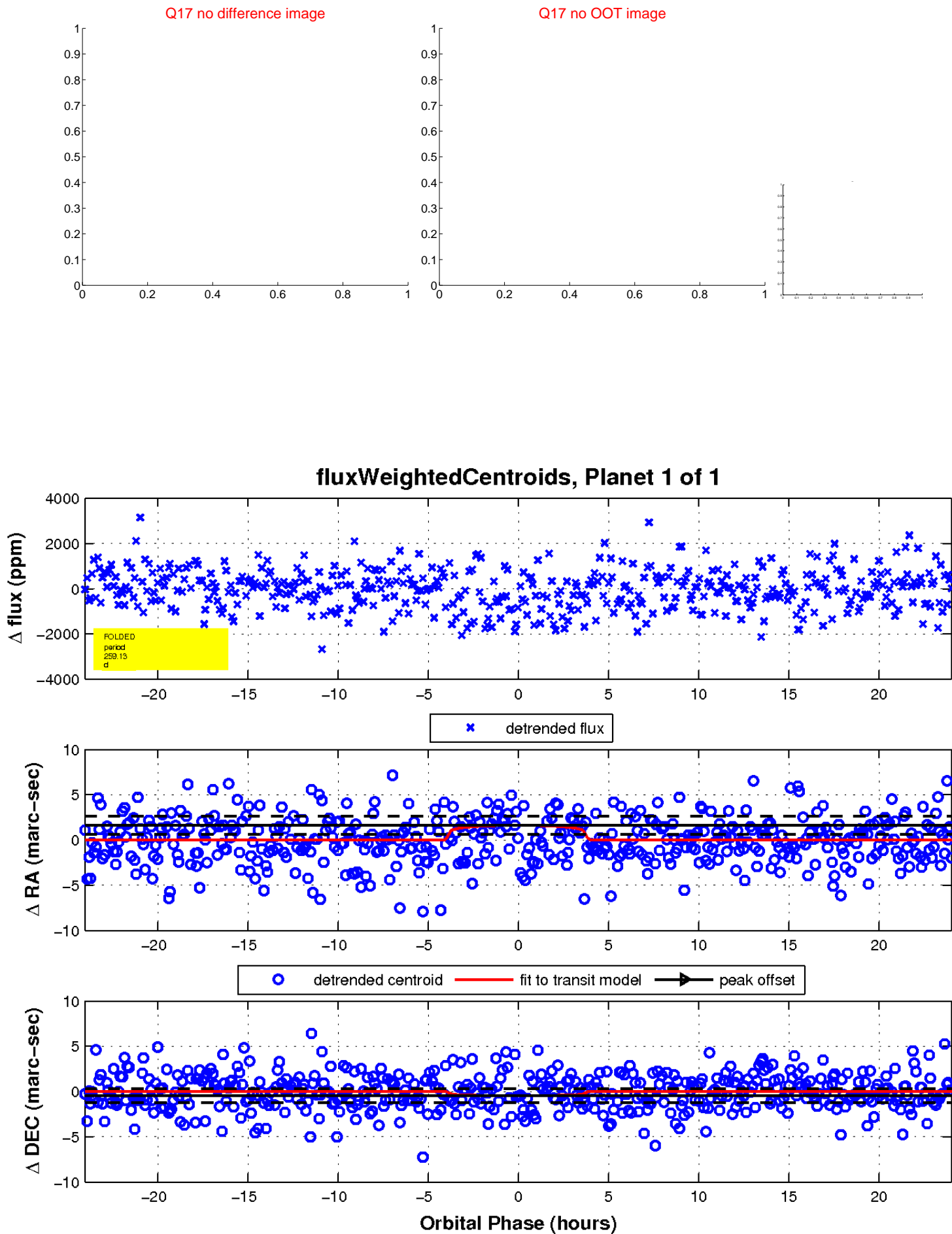
Q12 no OOT image



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

