

# KIC 007811397

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007811397-01	OBS	1477.01	169.492679	229.018061	12293.5	7.550	72.3	94.0	0.79	5270	8.50	1.29

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007811397-01	OBS	PC	0.92	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.

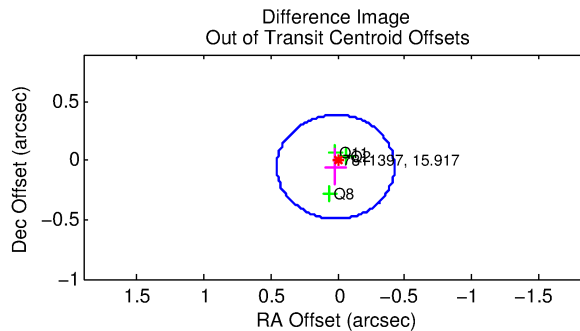
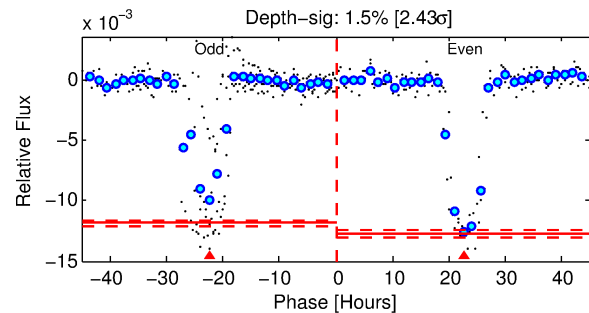
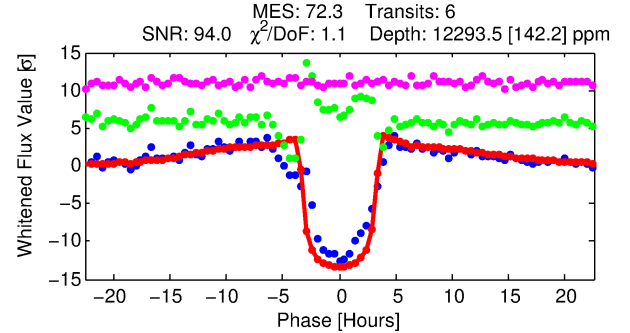
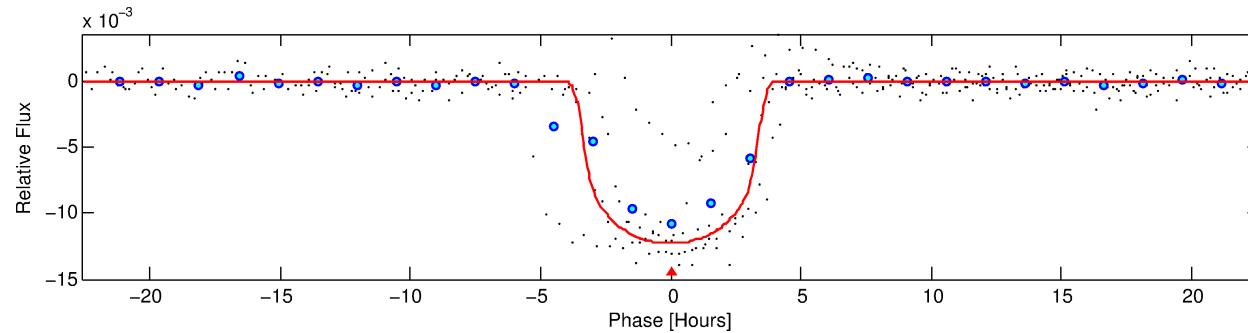
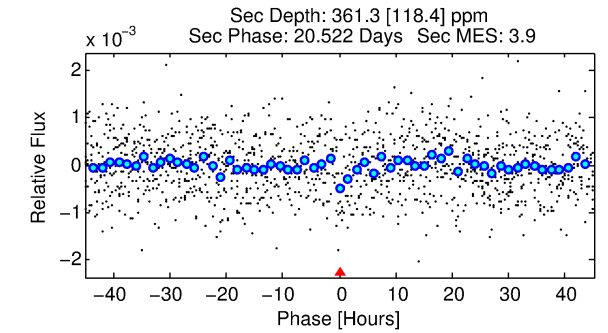
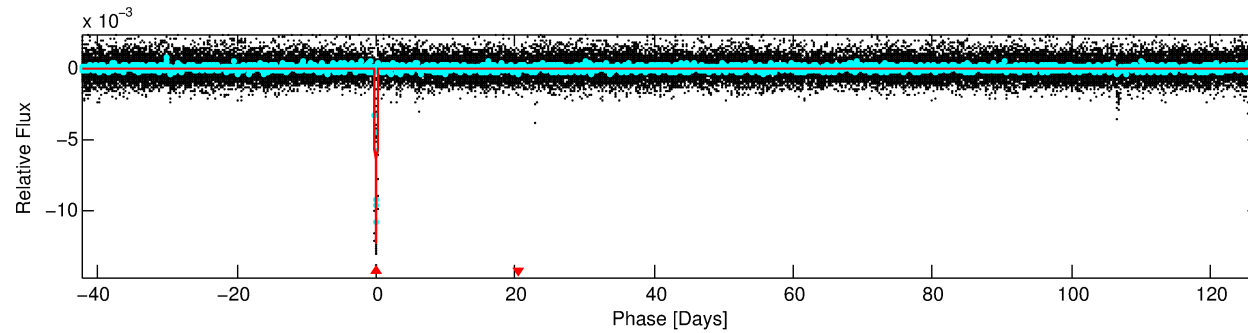
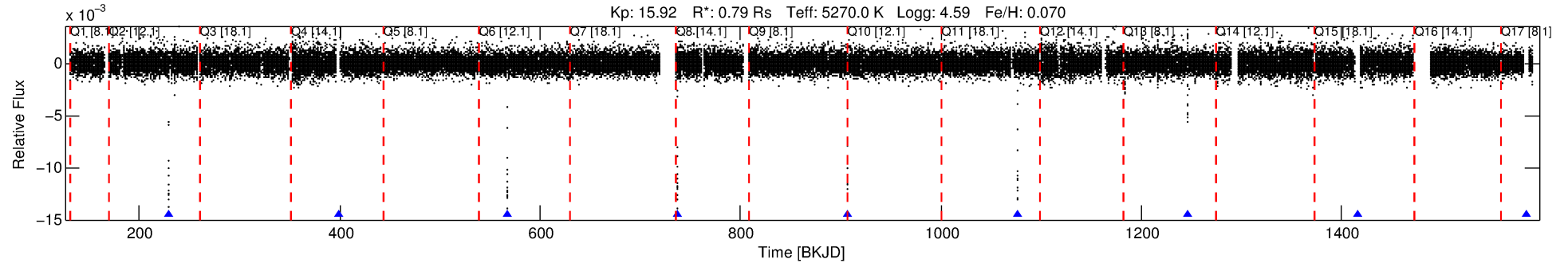
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007811397-01

No Significant Match Found

# DV One-Page Summary

KIC: 7811397 Candidate: 1 of 1 Period: 169.493 d  
KOI: K01477.01 Corr: 0.929



## DV Fit Results:

Period = 169.49268 [0.00042] d  
Epoch = 229.0181 [0.0016] BKJD  
Rp/R\* = 0.0990 [0.0033]  
a/R\* = 188.49 [22.05]  
b = 0.00 [252.82]  
Seff = 1.29 [0.19]  
Teq = 272 [10] K  
Rp = 8.50 [0.89] Re  
a = 0.5751 [0.0510] AU  
Ag = 909.59 [328.32] [2.77 $\sigma$ ]  
Teffp = 2309 [197] K [10.35 $\sigma$ ]

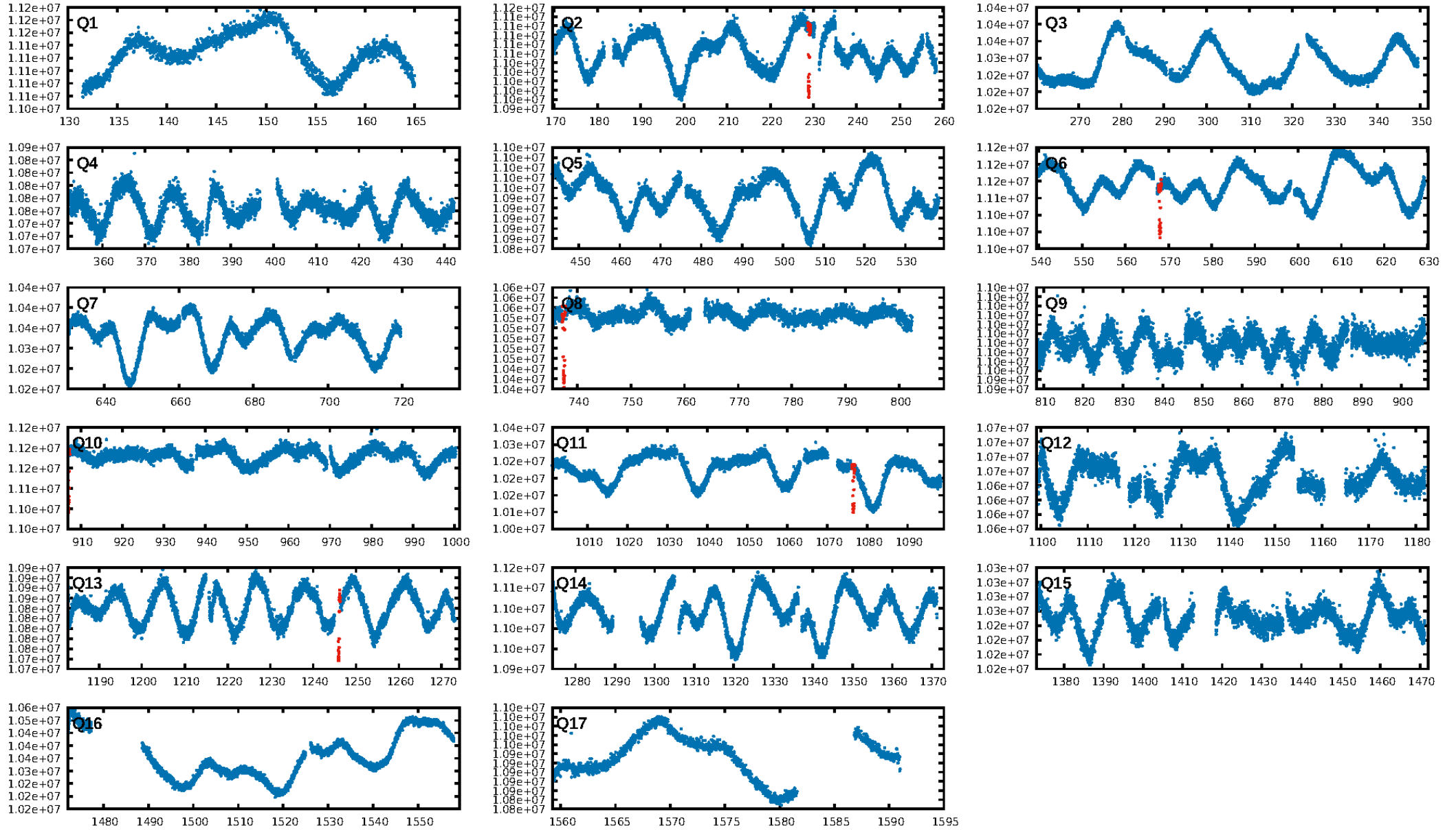
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 6.5%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [6/6]  
GhostDiagnostic-chr: 4.589  
Centroid-sig: 0.1%  
Centroid-so: 0.289 arcsec [2.74 $\sigma$ ]  
OotOffset-rm: 0.054 arcsec [0.37 $\sigma$ ]  
KicOffset-rm: 0.021 arcsec [0.22 $\sigma$ ]  
OotOffset-st: 1/1/1/0 [3]  
KicOffset-st: 1/1/1/0 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [3/3]

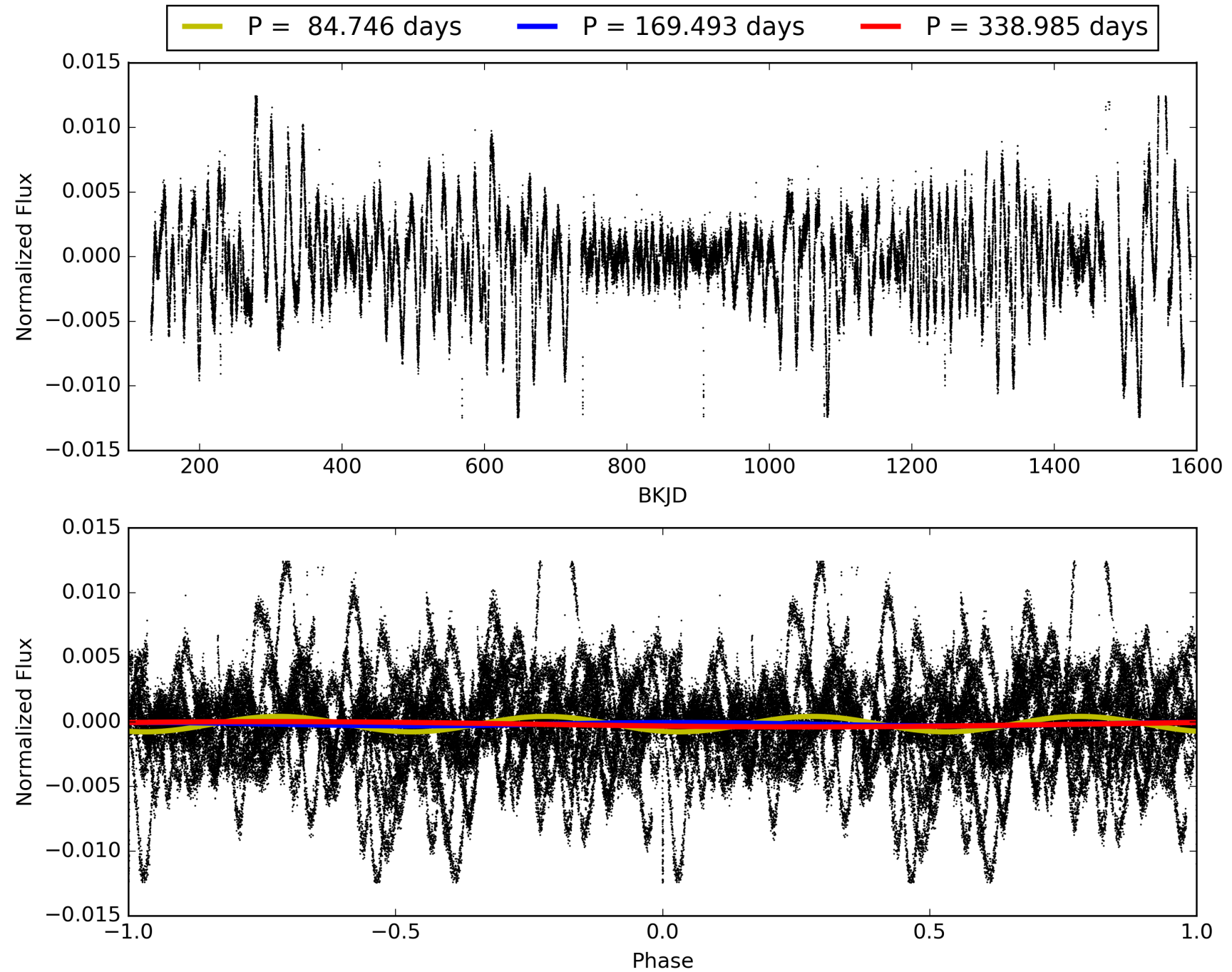
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 01:22:22 Z

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

# TCE 007811397-01, PDC Light Curves

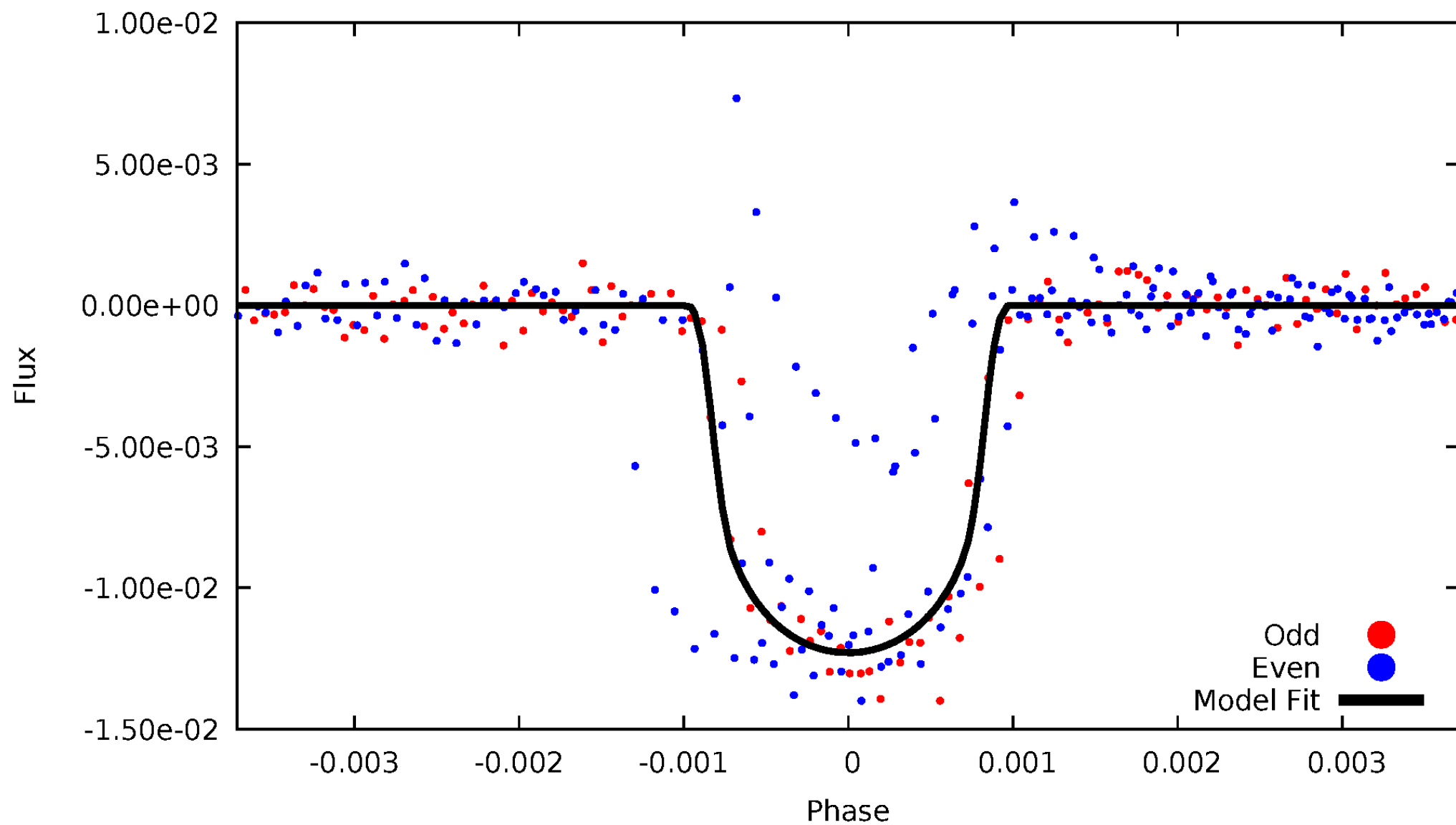


# TCE 007811397-01



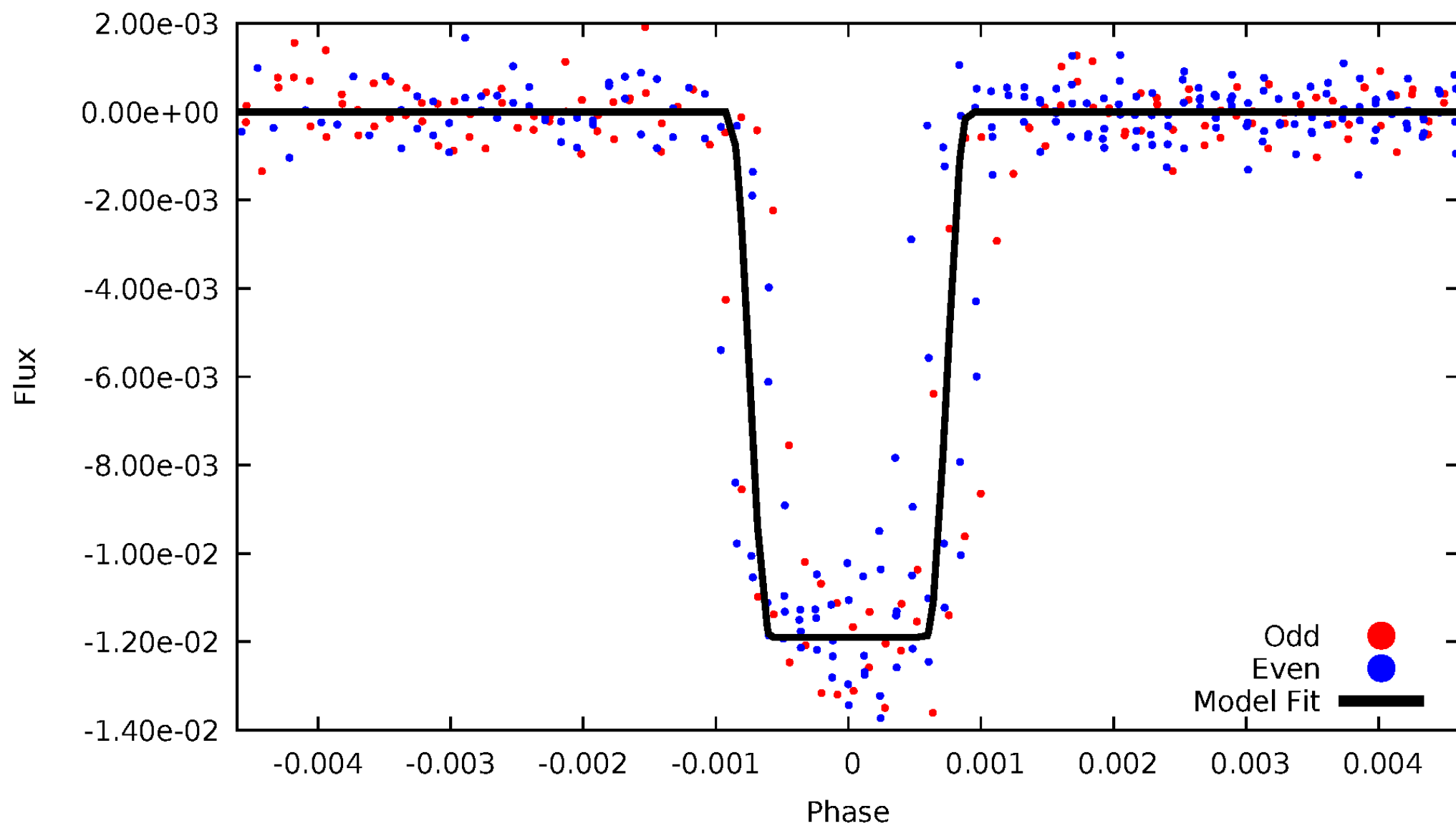
# DV Odd/Even

TCE 007811397-01



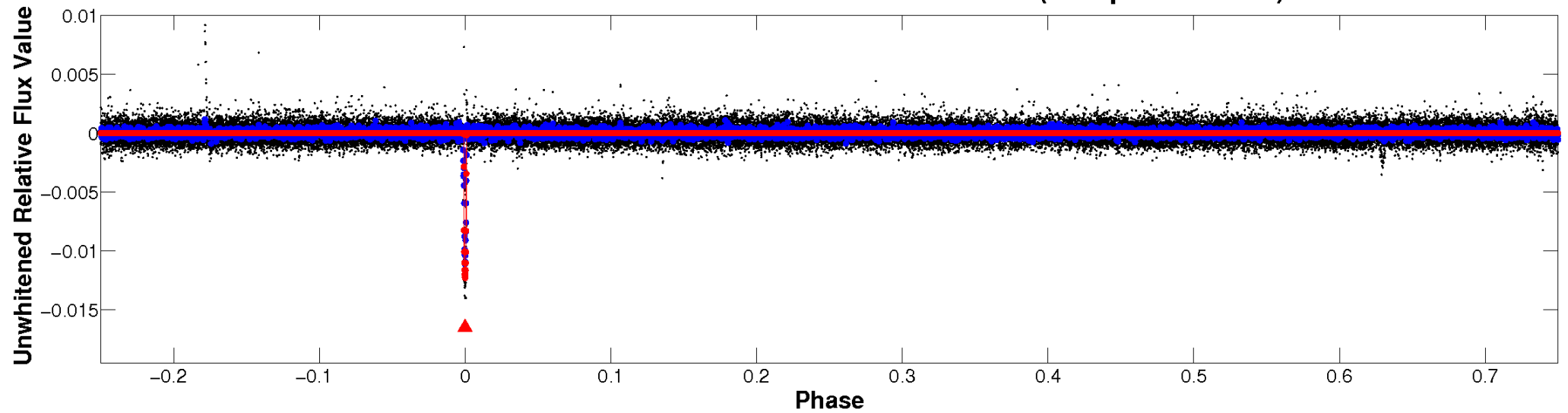
# ALT Odd/Even

TCE 007811397-01

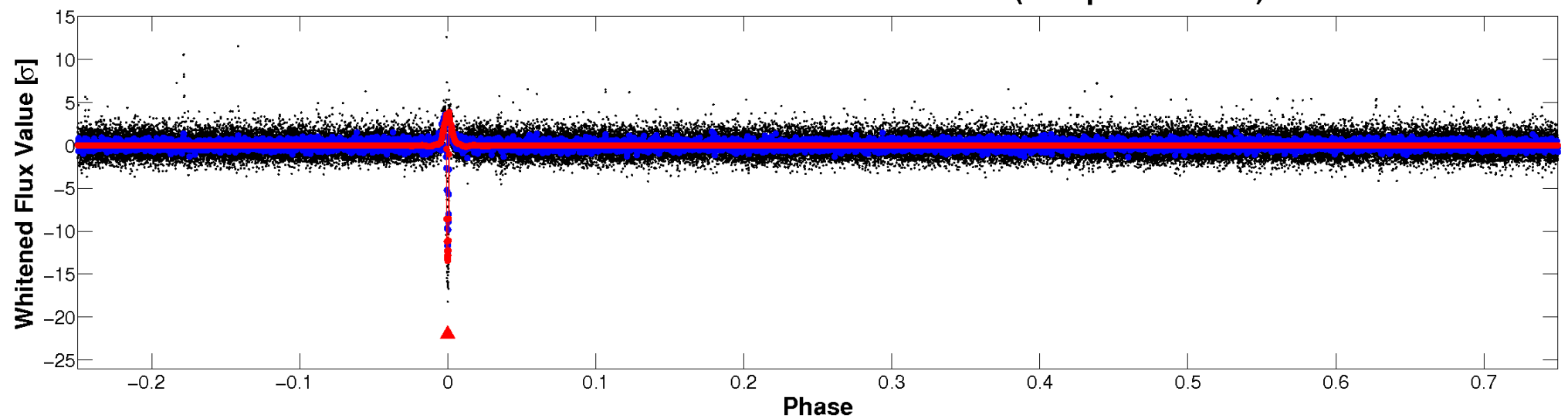


# Non-Whitened Vs. Whitened Light Curve

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

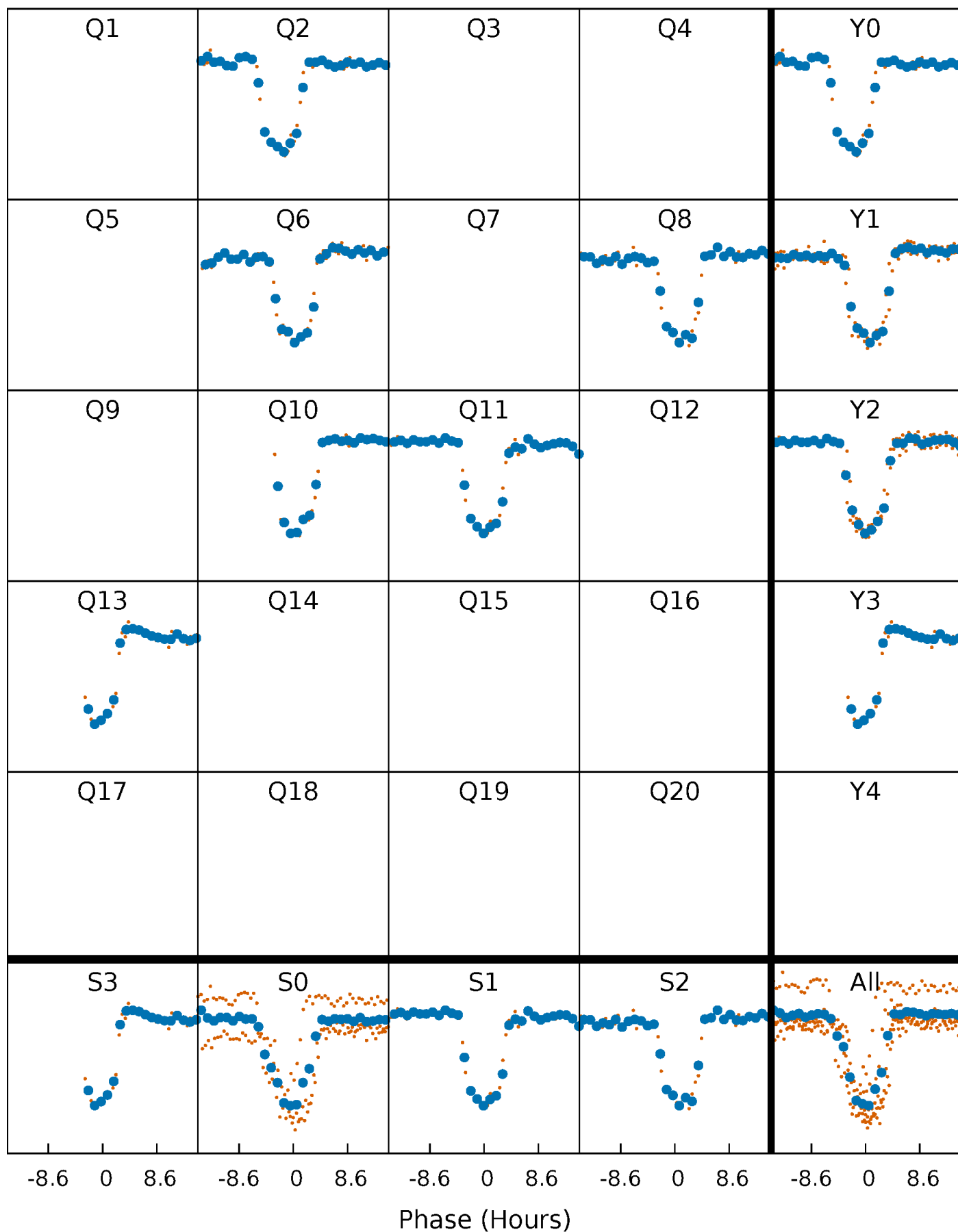


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

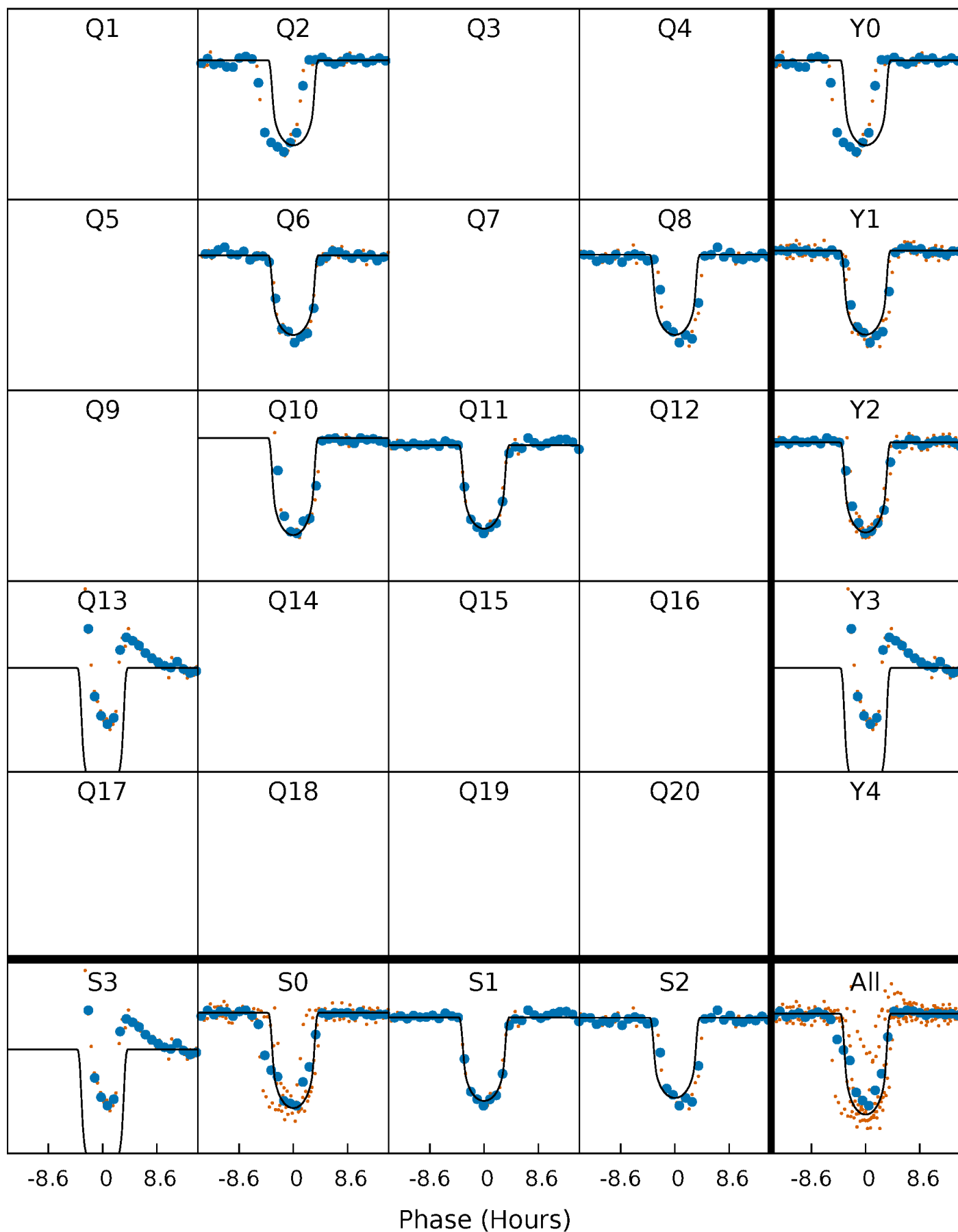
TCE 007811397-01 P=169.492679 Days  $T_0=229.018061$  (BKJD)





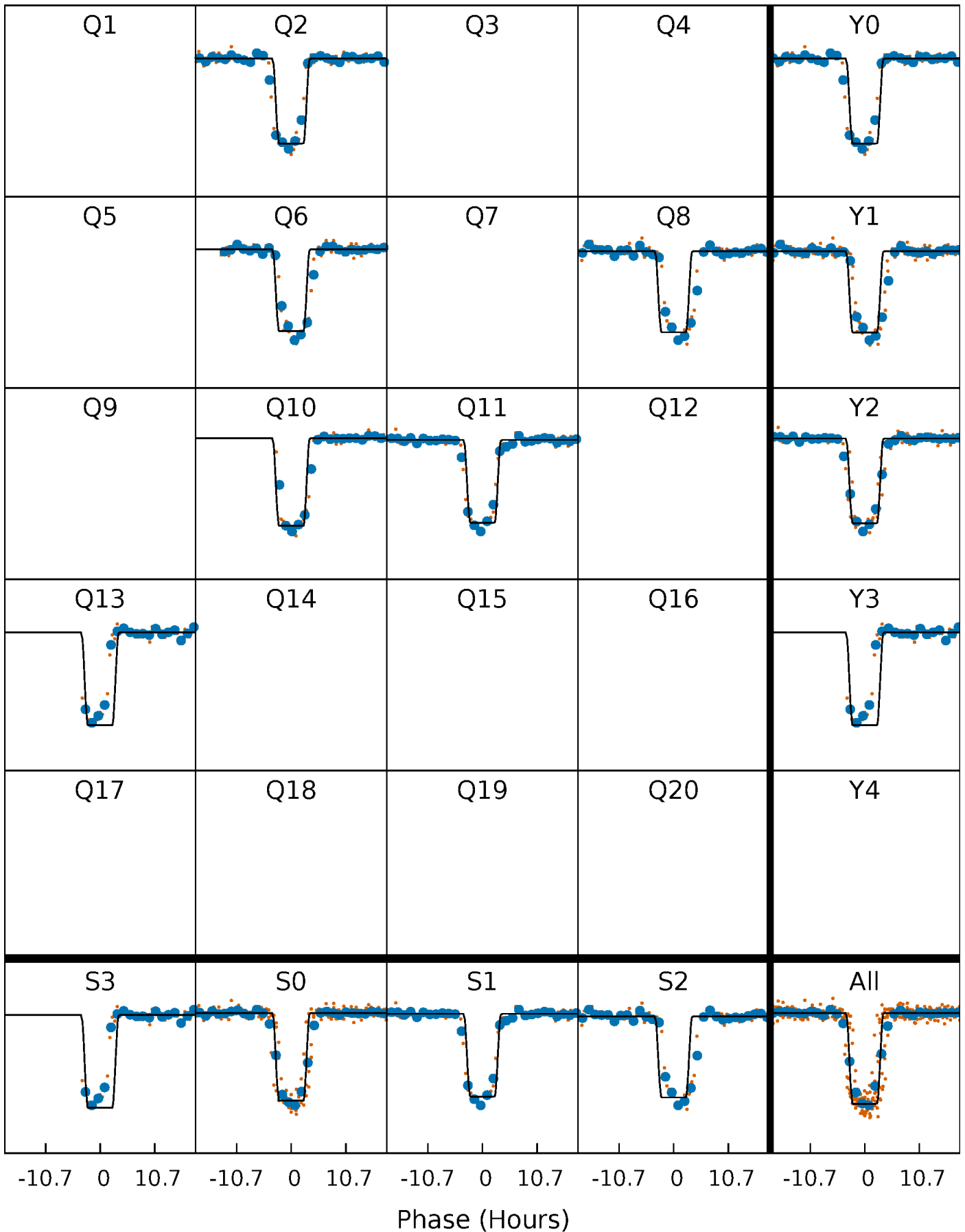
# DV Quarter-Phased Transit Curves

TCE 007811397-01 P=169.492679 Days  $T_0=229.018061$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

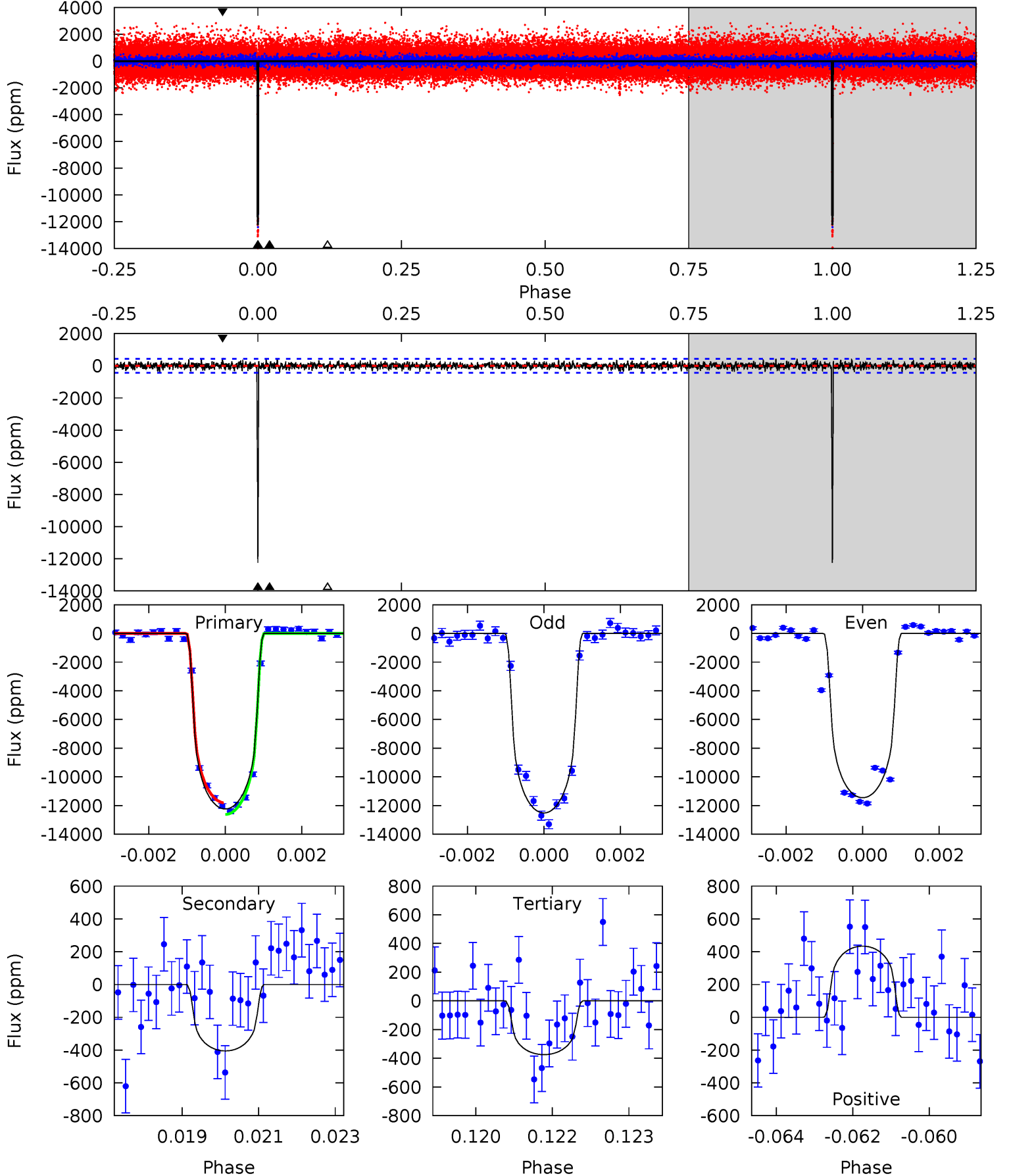
TCE 007811397-01 P=169.506981 Days  $T_0=228.961472$  (BKJD)



# DV Model-Shift Uniqueness Test

007811397-01,  $P = 169.492679$  Days,  $E = 59.525382$  Days

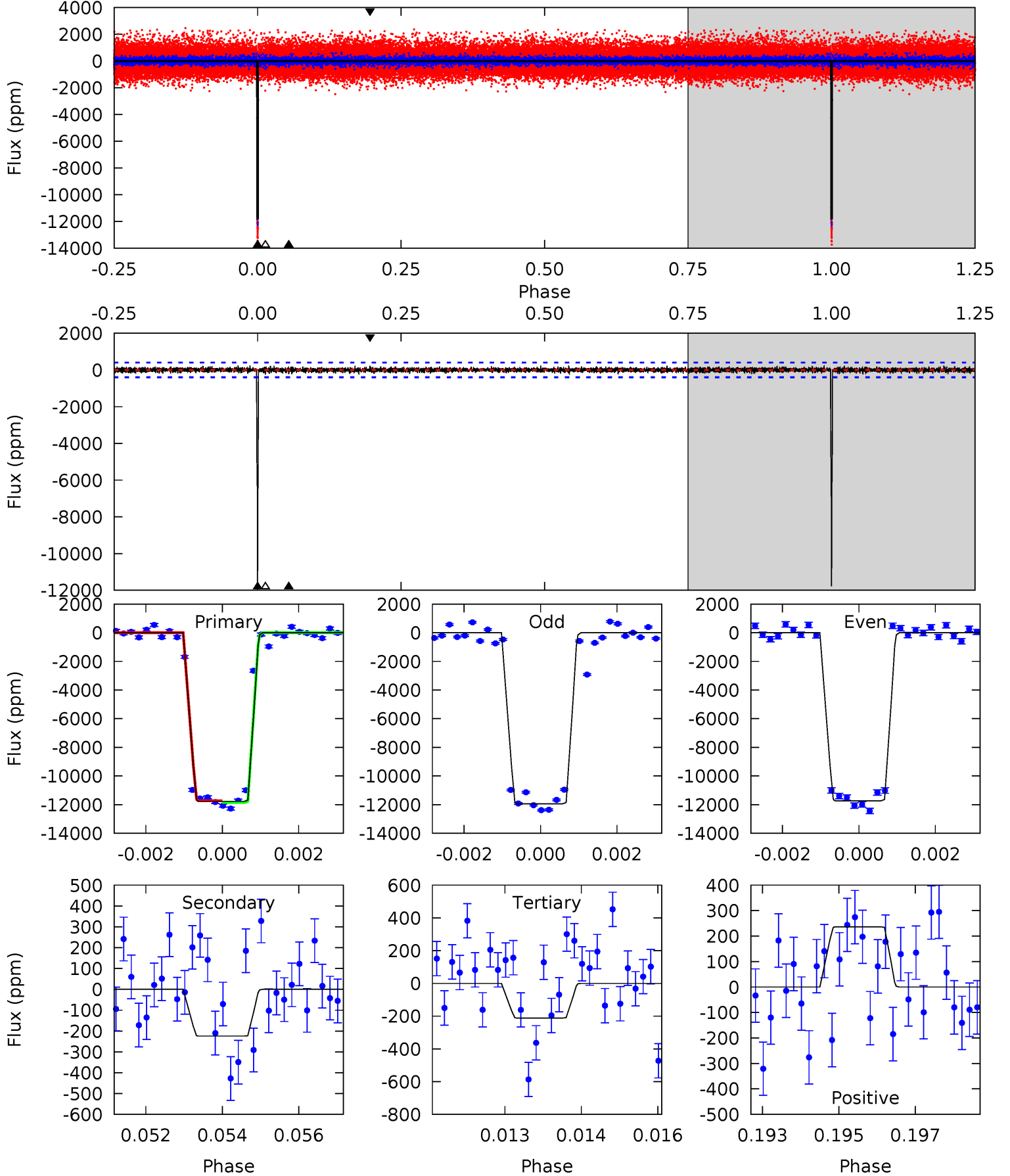
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
150.5	4.98	4.61	5.33	5.33	3.10	1.33	145.9	145.2	0.37	-0.35	6.66	0.87	0.03	4.96



# Alt Model-Shift Uniqueness Test

007811397-01,  $P = 169.506981$  Days,  $E = 59.454491$  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
156.1	2.98	2.81	3.13	5.35	3.12	0.79	153.3	153.0	0.17	-0.16	1.30	0.97	0.02	0.85



### Stellar Parameters For KIC 007811397

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$5270^{+84}_{-73}$	$4.592^{+0.009}_{-0.077}$	$0.070^{+0.150}_{-0.150}$	$0.787^{+0.078}_{-0.024}$	$0.900^{+0.033}_{-0.060}$	$2.605^{+0.129}_{-0.657}$
	+2%/-1%	+0%/-2%	+214%/-214%	+10%/-3%	+4%/-7%	+5%/-25%
Source	SPE90	SPE90	SPE90	DSEP		

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

### Secondary Eclipse Parameters for KIC 007811397-01 / KOI 1477.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-405 \pm 81$	$8.70^{+0.52}_{-0.41}$	$385^{+10}_{-8}$	$3017^{+91}_{-97}$	$948^{+231}_{-191}$
Alt.	$-224 \pm 75$	$9.57^{+0.55}_{-0.45}$	$385^{+10}_{-7}$	$2720^{+103}_{-143}$	$445^{+151}_{-156}$

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

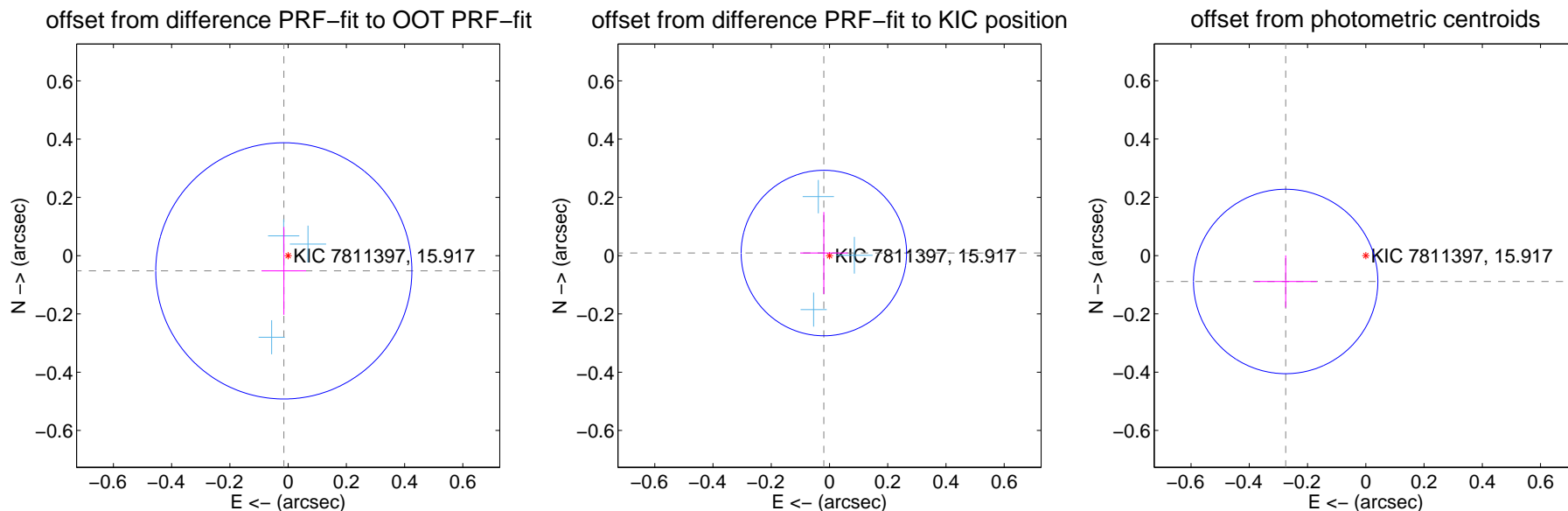
## DV Centroid Data

Supplemental centroid analysis for 007811397-01. Kepler magnitude: 15.92. Transit SNR 94.00

There are 3 quarters with good PRF difference image offsets

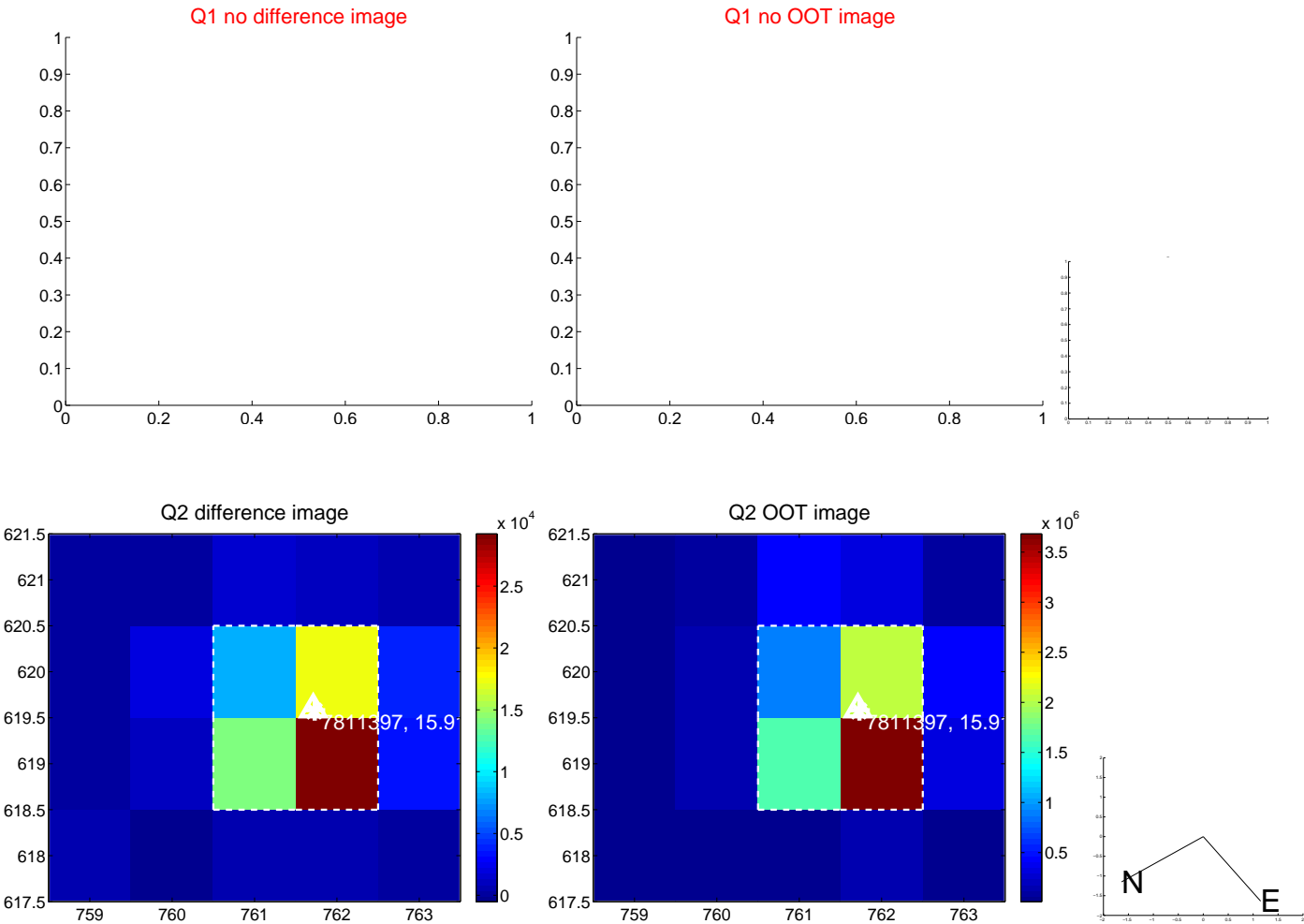
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.054 \pm 0.147$	0.37	$0.015 \pm 0.077$	$-0.052 \pm 0.151$
PRF-fit source offset from KIC position	$0.021 \pm 0.095$	0.22	$0.019 \pm 0.081$	$0.009 \pm 0.141$
photometric centroid source offset	$0.29 \pm 0.11$	2.74	$0.28 \pm 0.11$	$-0.09 \pm 0.09$

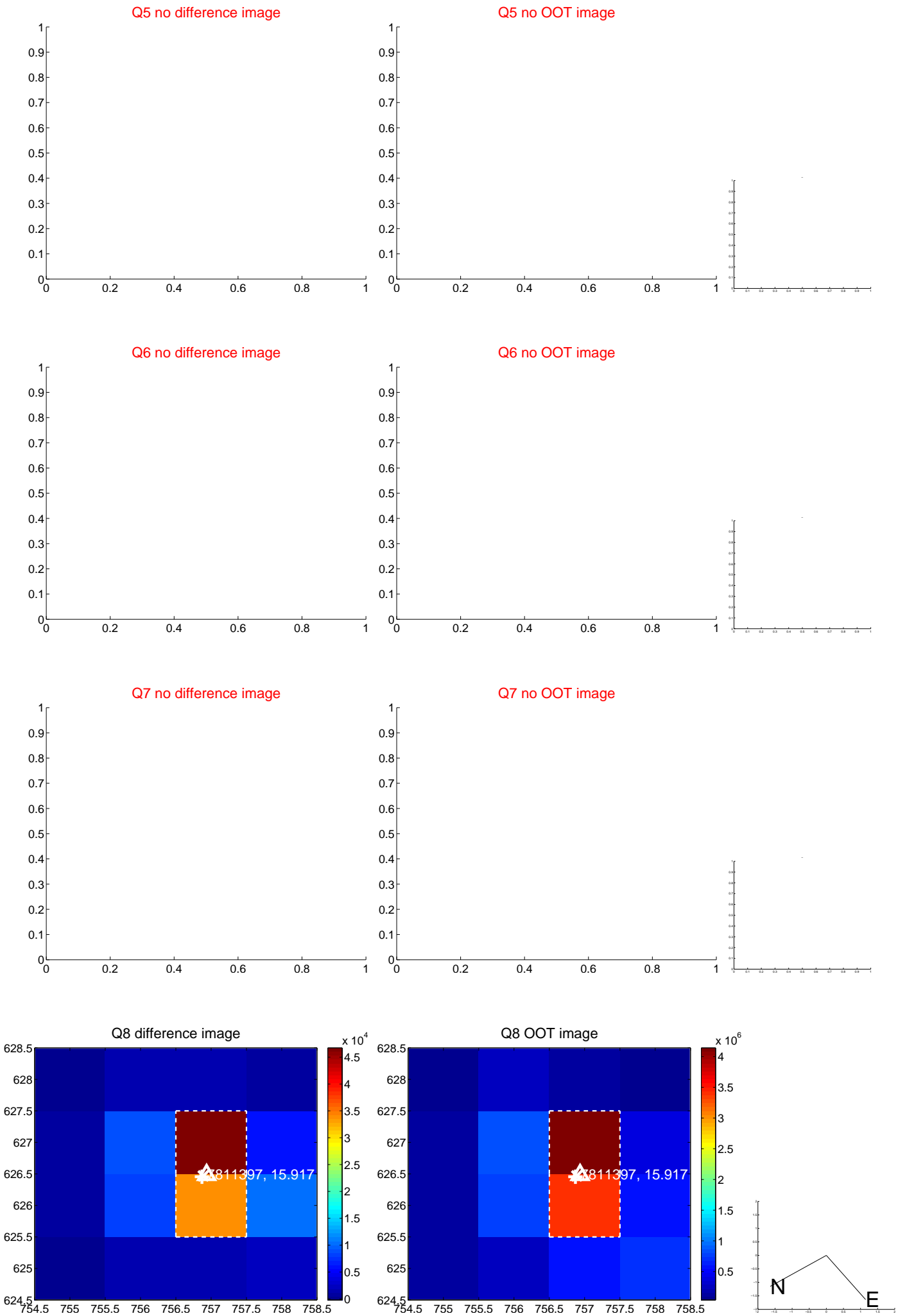


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

Q9 no difference image



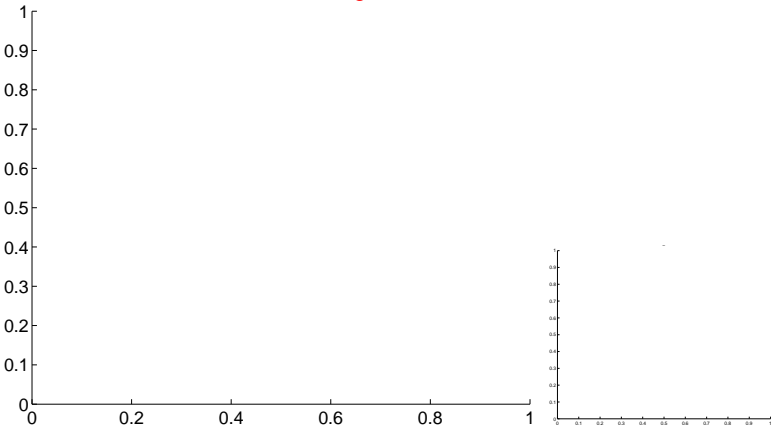
Q9 no OOT image



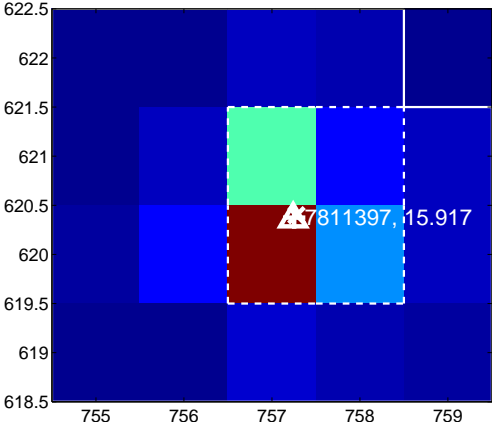
Q10 no difference image



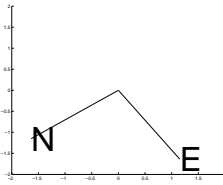
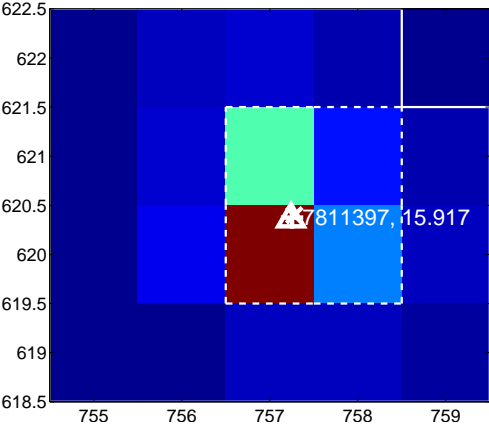
Q10 no OOT image



Q11 difference image



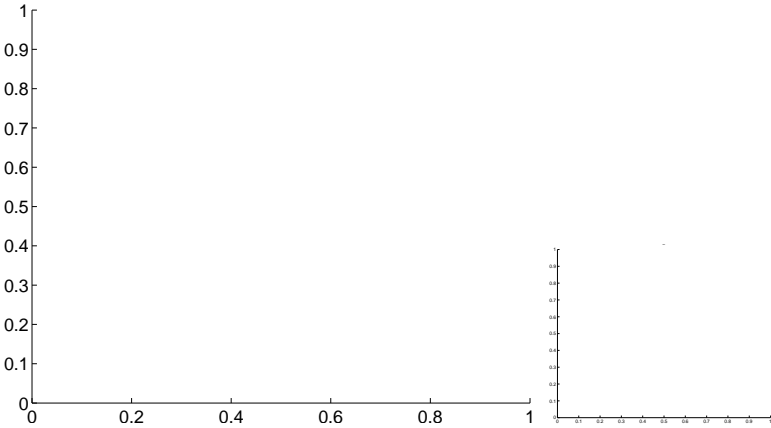
Q11 OOT image



Q12 no difference image



Q12 no OOT image



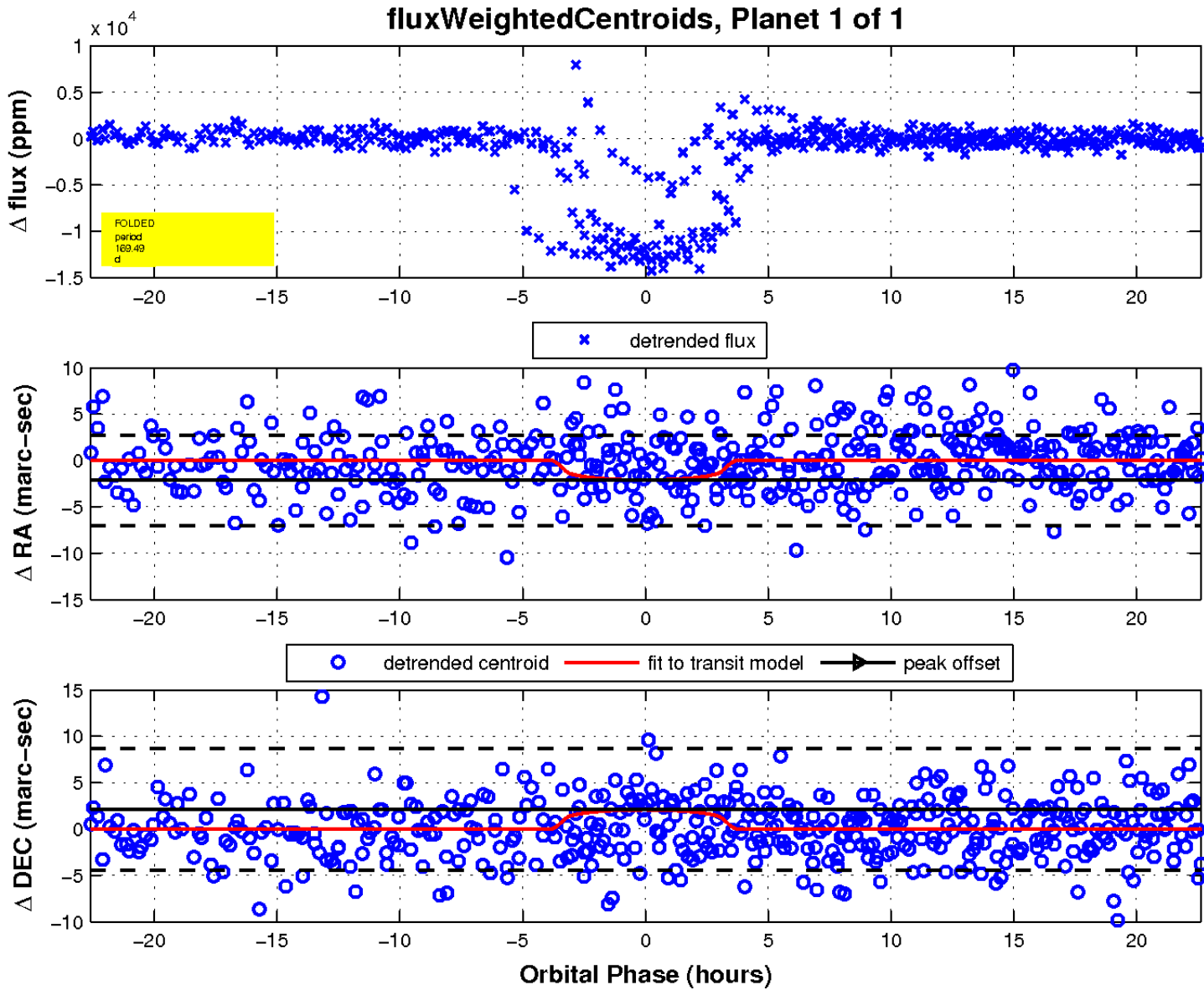
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

Q17 no difference image

Q17 no OOT image



# UKIRT Image

Declination

