

# KIC 006196108

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006196108-01	OBS	No	371.059612	309.743756	970.6	21.901	8.8	8.7	3.46	5269	12.38	9.54

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006196108-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE--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.

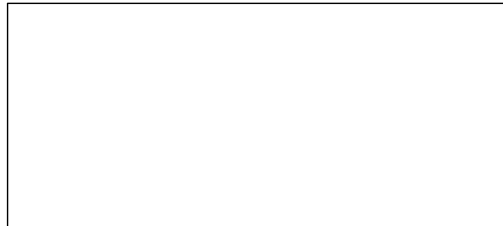
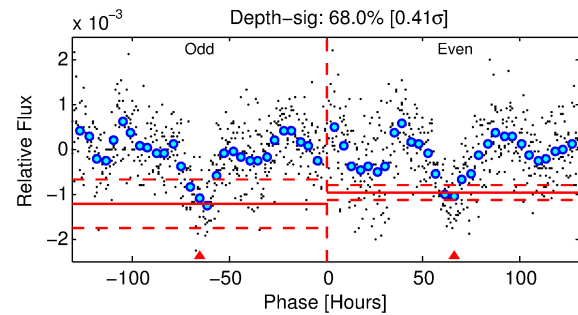
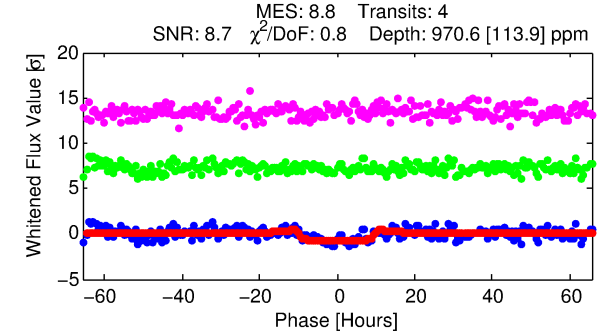
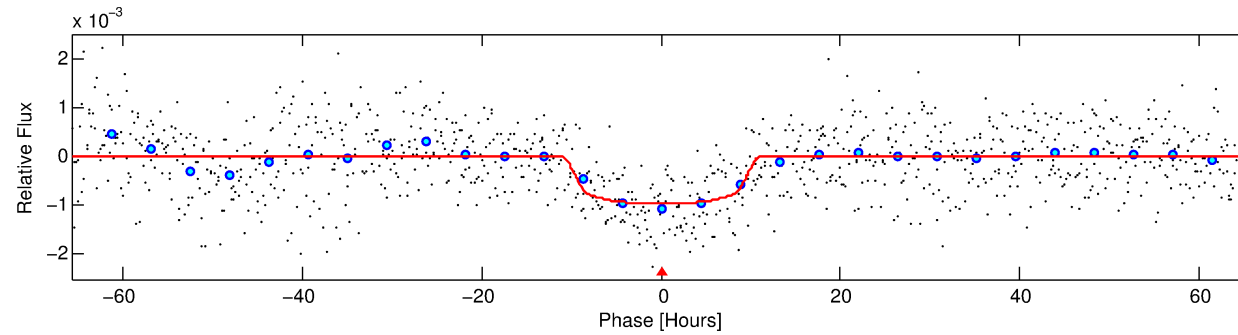
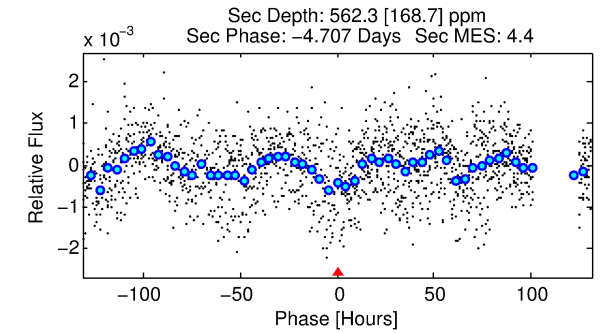
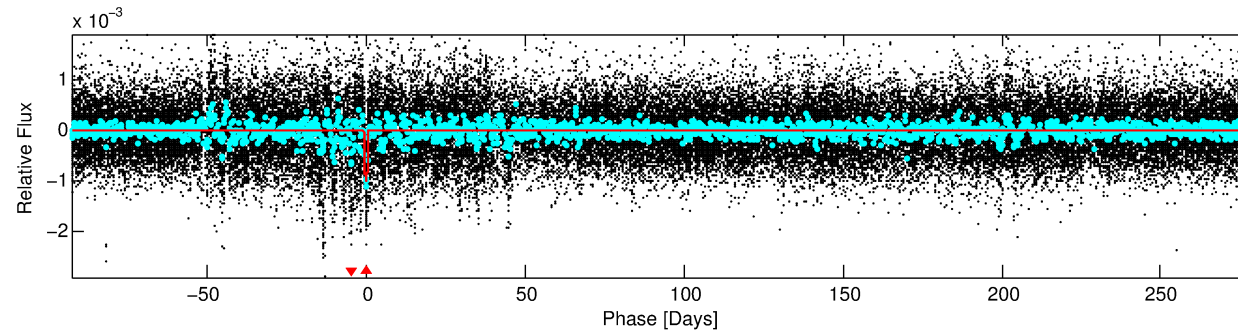
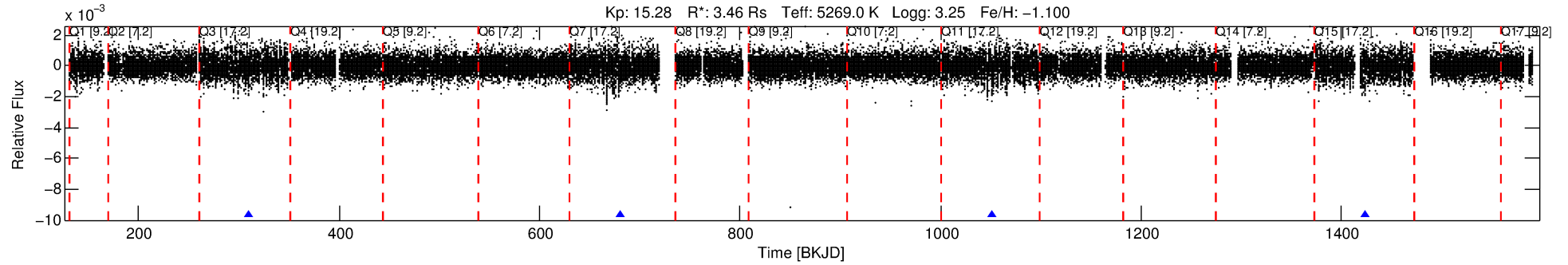
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006196108-01

No Significant Match Found

# DV One-Page Summary

KIC: 6196108 Candidate: 1 of 1 Period: 371.060 d



## DV Fit Results:

Period = 371.05961 [0.01327] d  
Epoch = 309.7438 [0.0245] BKJD  
Rp/R\* = 0.0327 [0.0030]  
a/R\* = 73.95 [21.73]  
b = 0.86 [0.09]  
Seff = 9.54 [1.10]  
Teq = 448 [13] K  
Rp = 12.38 [1.80] Re  
a = 0.9321 [0.0740] AU  
Ag = 1752.71 [635.89] [2.75σ]  
Teffp = 4483 [402] K [10.04σ]

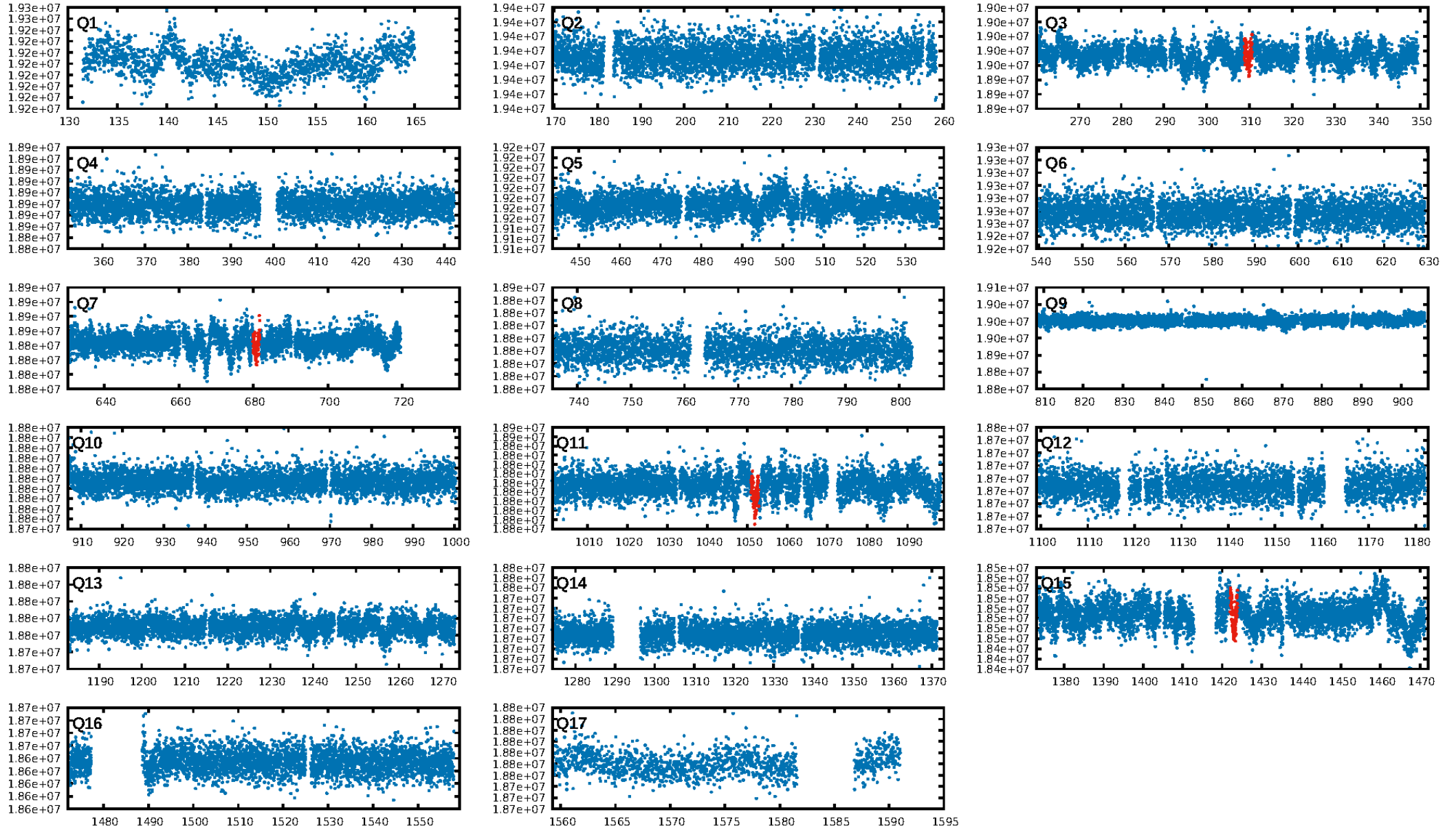
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 98.7%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 3.67e-11**  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 1.448  
**Centroid-sig: 0.0%**  
**Centroid-so: 5.789 arcsec [3.12σ]**  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0 [0]  
KicOffset-st: 0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [4/4]

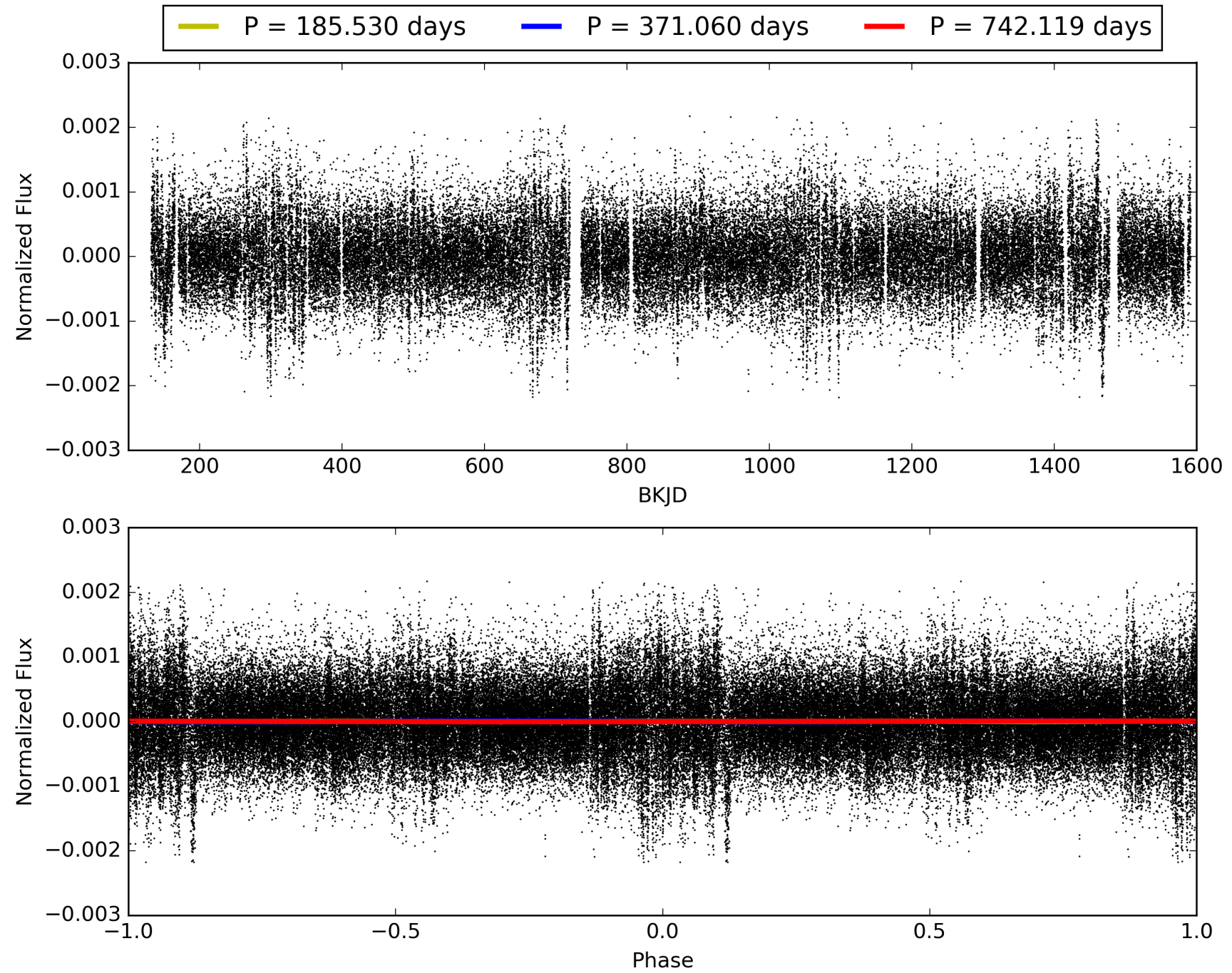
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 15:44:03 Z

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

# TCE 006196108-01, PDC Light Curves

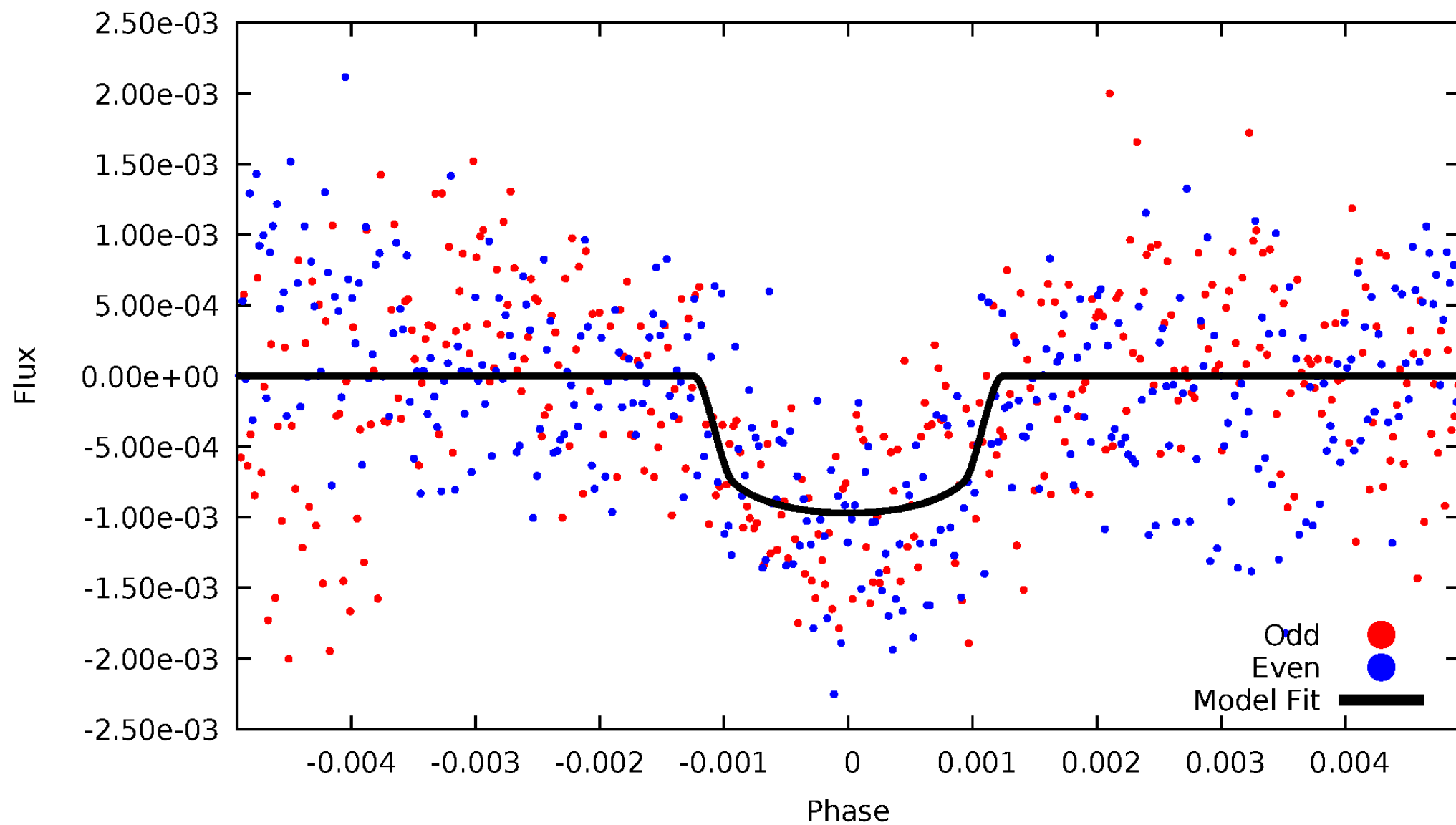


TCE 006196108-01



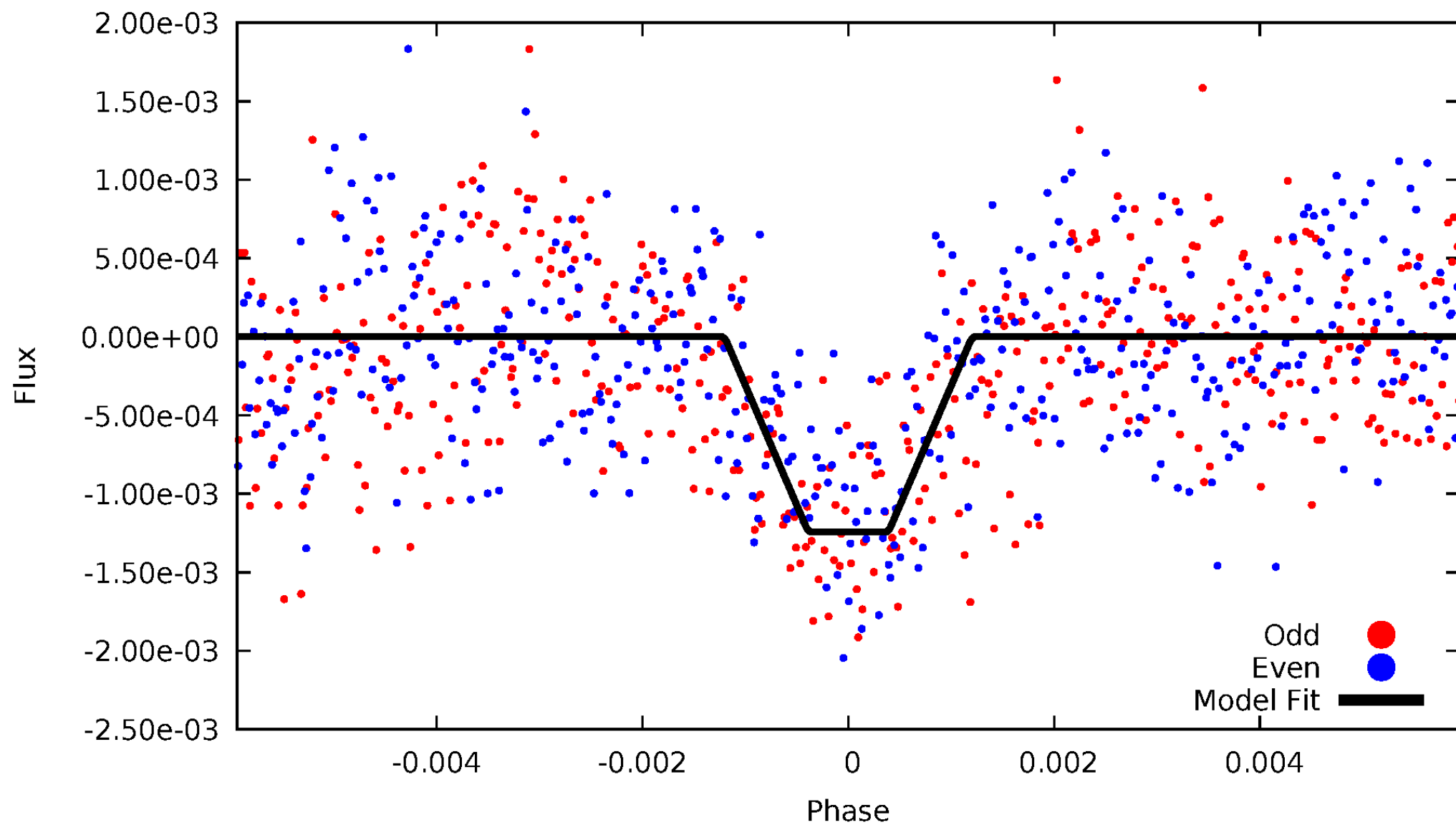
# DV Odd/Even

TCE 006196108-01



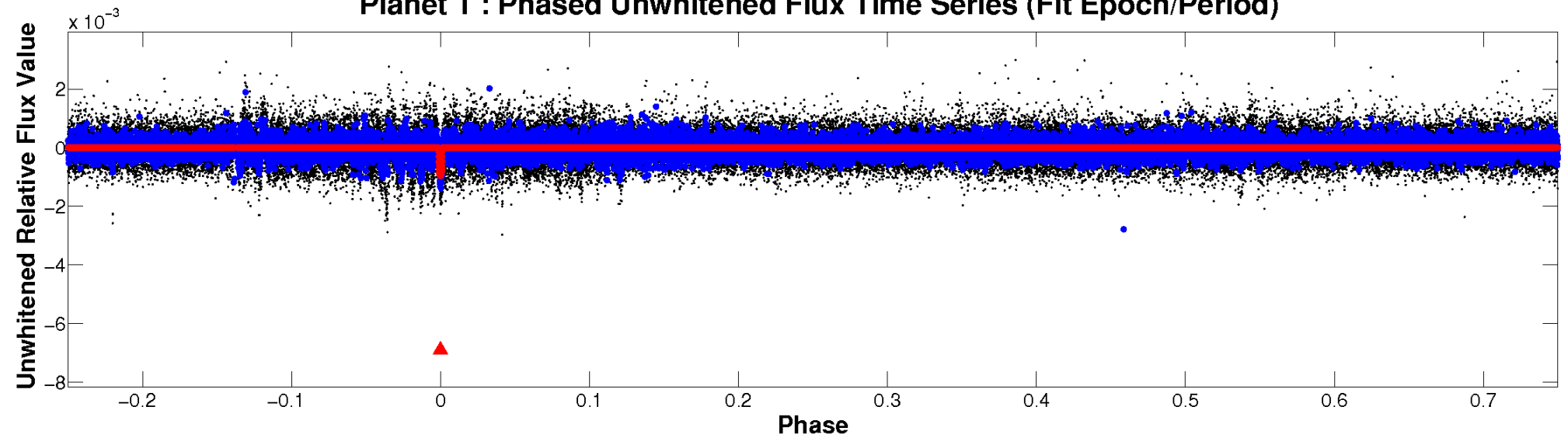
# ALT Odd/Even

TCE 006196108-01

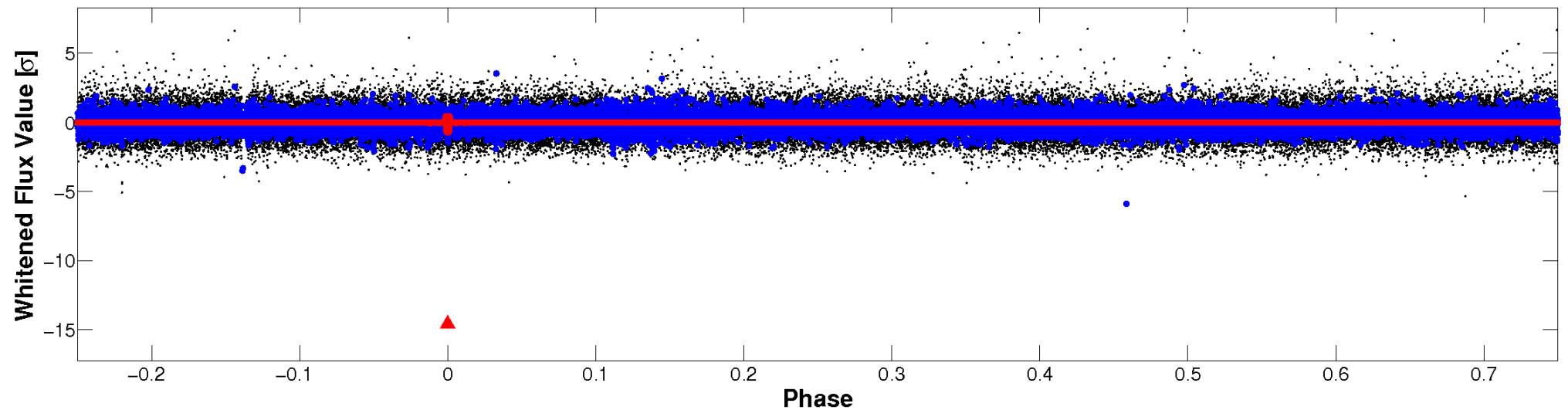


# Non-Whitened Vs. Whitened Light Curve

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



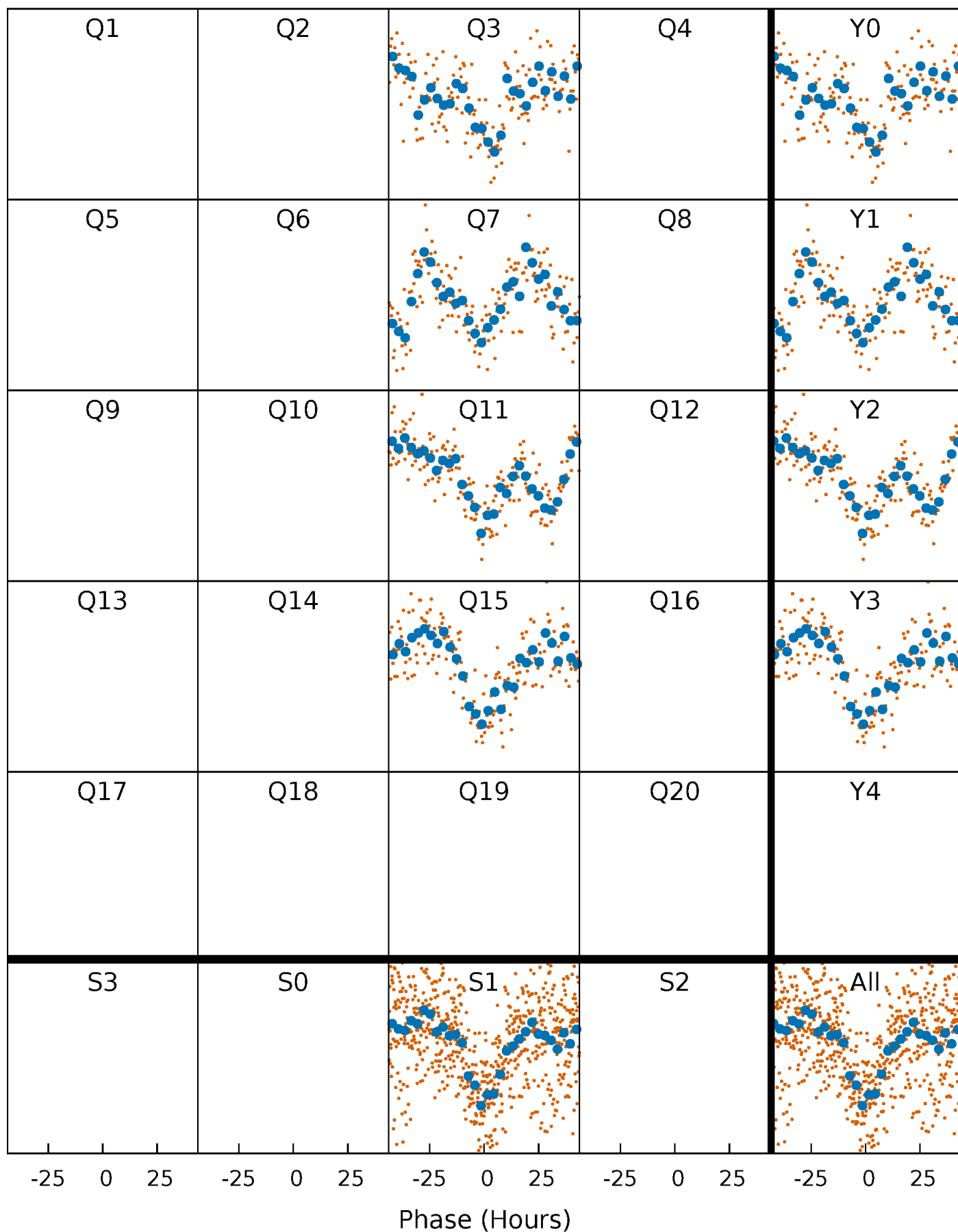
Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)





# PDC Quarter-Phased Transit Curves

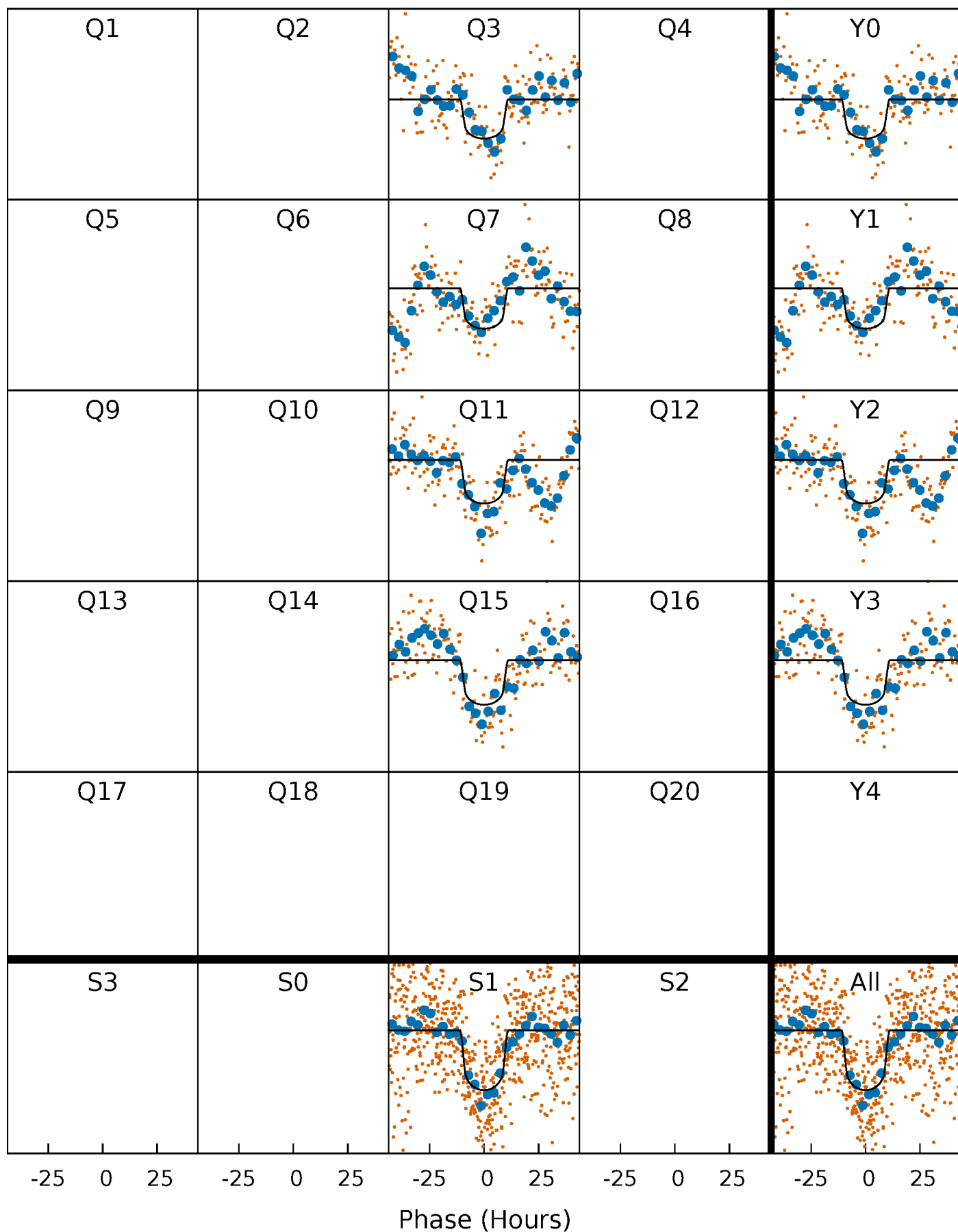
TCE 006196108-01 P=371.059612 Days  $T_0=309.743756$  (BKJD)





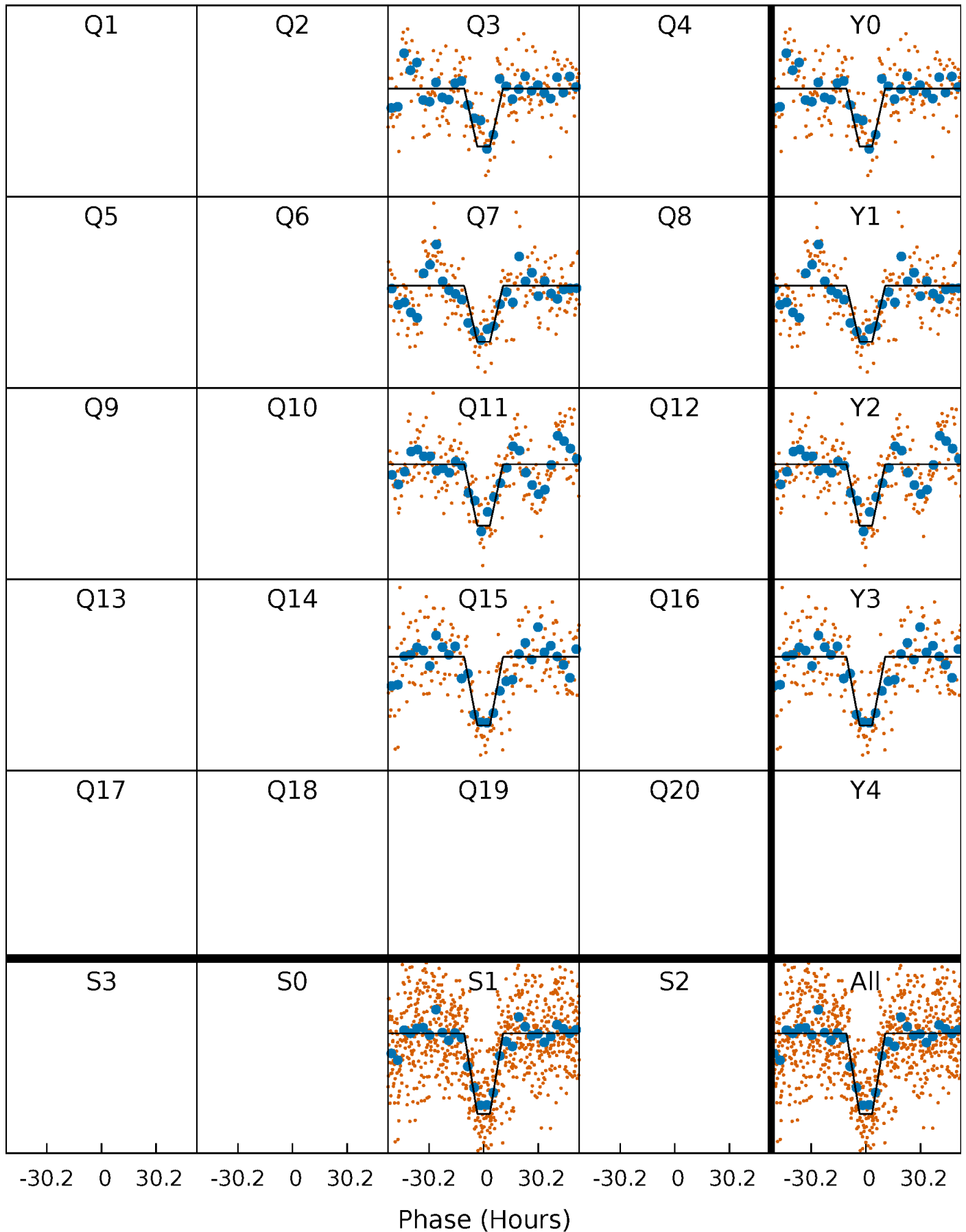
# DV Quarter-Phased Transit Curves

TCE 006196108-01 P=371.059612 Days  $T_0=309.743756$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

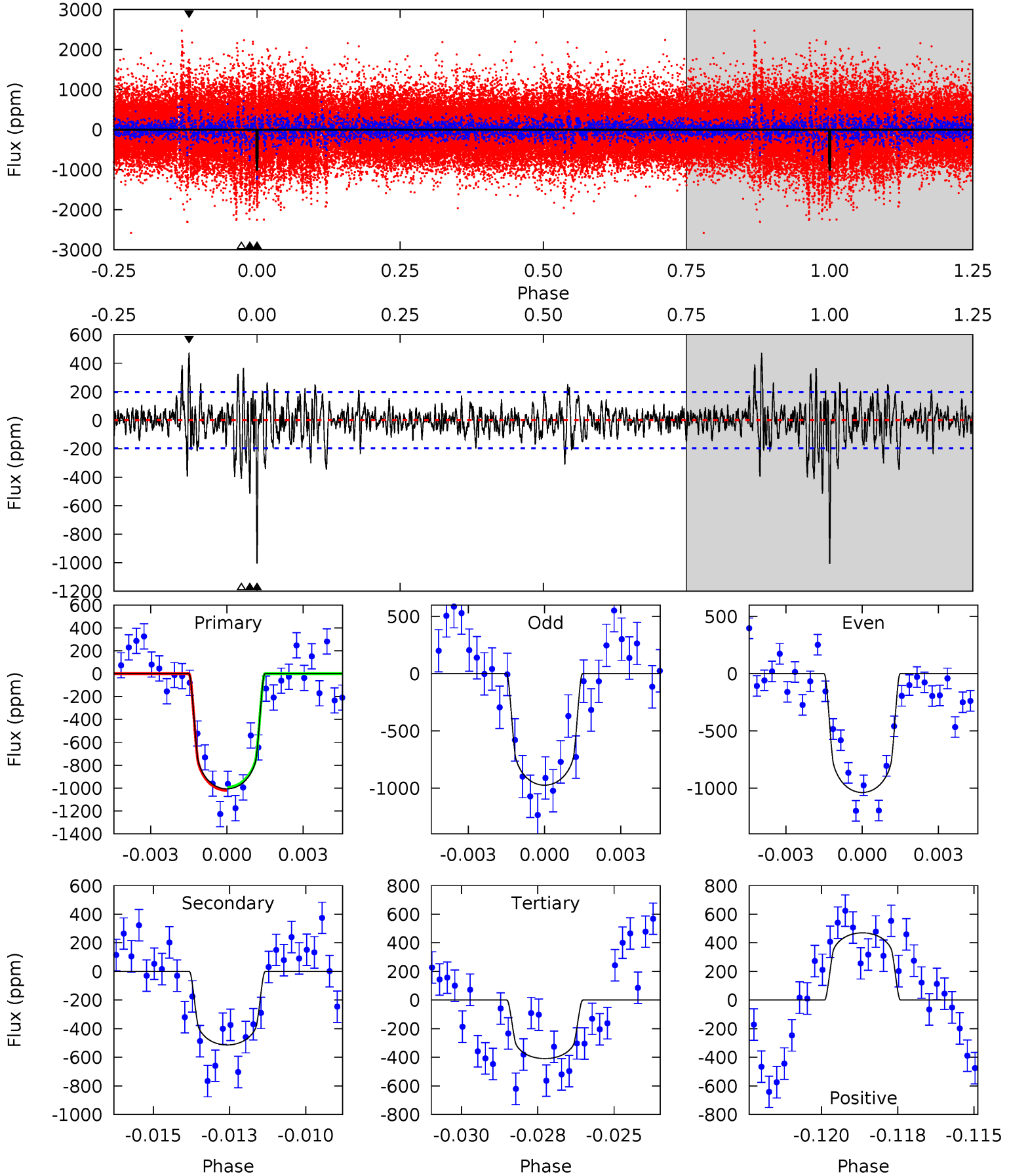
TCE 006196108-01 P=371.005338 Days  $T_0=309.827509$  (BKJD)



# DV Model-Shift Uniqueness Test

006196108-01, P = 371.059612 Days, E = 309.743756 Days

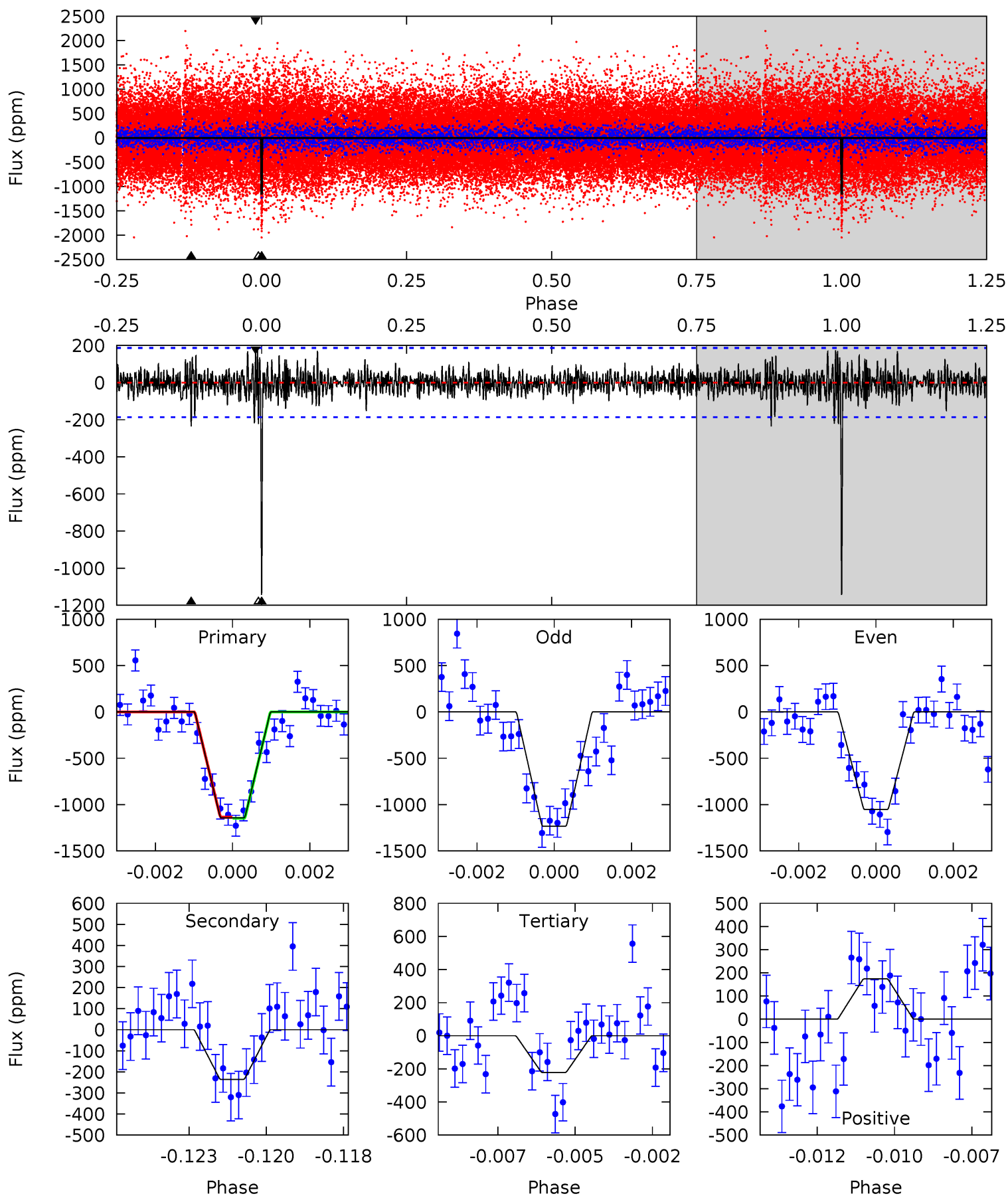
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.9	13.8	11.0	12.6	5.29	3.02	2.53	16.0	14.4	2.80	1.18	0.86	0.97	0.32	0.36



# Alt Model-Shift Uniqueness Test

006196108-01, P = 371.005338 Days, E = 309.827509 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
32.4	6.67	6.30	4.93	5.29	3.03	1.26	26.1	27.4	0.37	1.74	2.56	0.99	0.13	0.18



### Stellar Parameters For KIC 006196108

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5269^{+94}_{-94}$	$3.253^{+0.033}_{-0.027}$	$-1.100^{+0.300}_{-0.300}$	$3.465^{+0.391}_{-0.098}$	$0.784^{+0.157}_{-0.017}$	$0.027^{+0.003}_{-0.004}$
	+2%/-2%	+1%/-1%	+27%/-27%	+11%/-3%	+20%/-2%	+11%/-14%
Source	PHO1	AST71	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 006196108-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-514 \pm 37$	$12.40^{+1.23}_{-1.18}$	$625^{+13}_{-14}$	$4529^{+197}_{-178}$	$1621^{+375}_{-294}$
Alt.	$-235 \pm 35$	$13.36^{+1.26}_{-1.26}$	$626^{+13}_{-12}$	$3830^{+166}_{-148}$	$646^{+161}_{-135}$

$T_{max}$  = 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

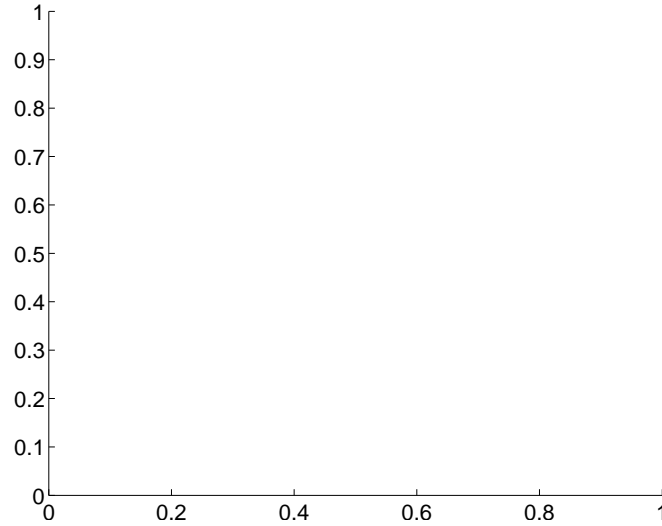
Supplemental centroid analysis for 006196108-01. Kepler magnitude: 15.28. Transit SNR 8.74

There are 0 quarters with good PRF difference image offsets

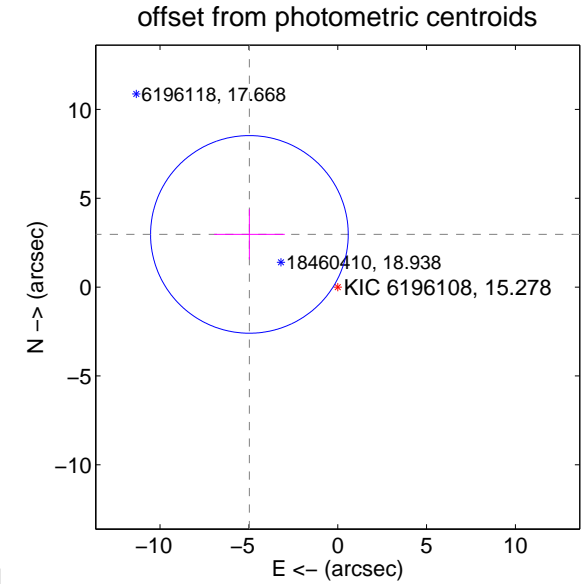
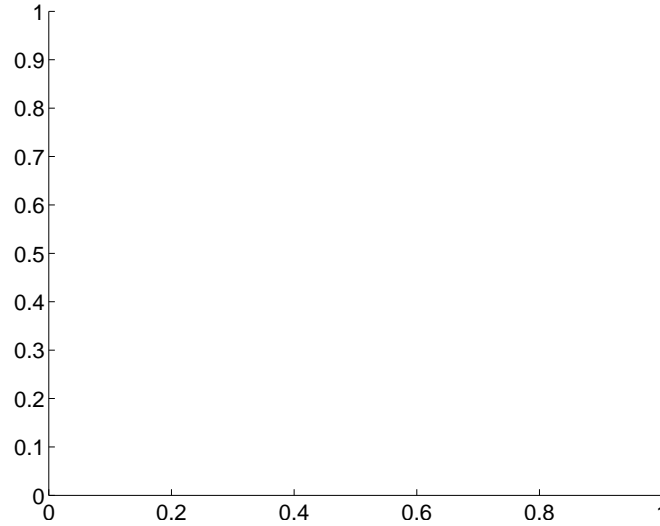
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	$5.79 \pm 1.85$	3.12	$4.97 \pm 1.99$	$2.97 \pm 1.41$

There is no PRF-fit offset from OOT-fit



There is no PRF-fit offset from KIC



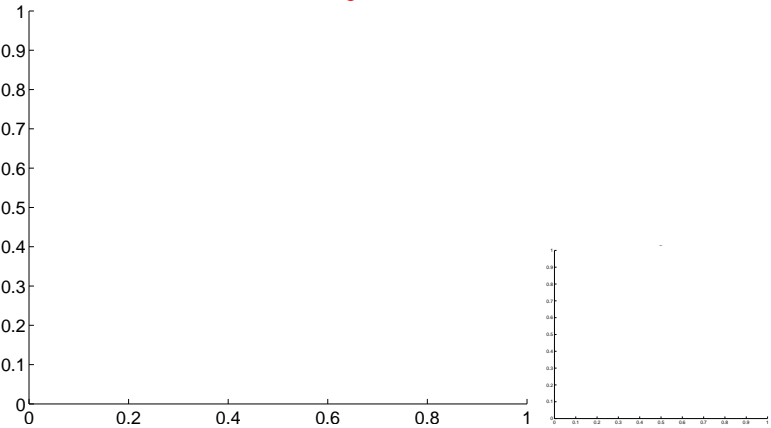
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



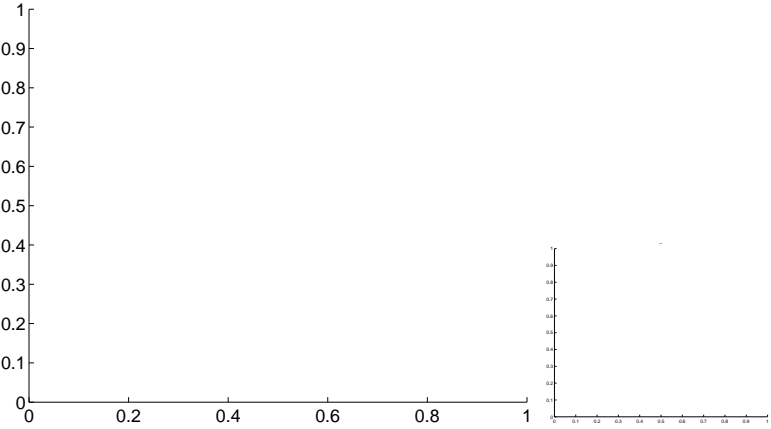
Q1 no OOT image



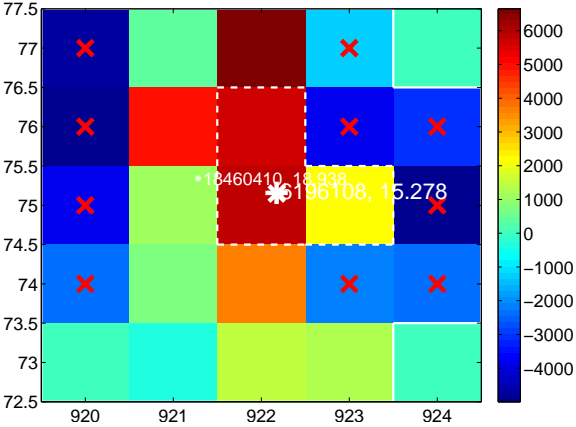
Q2 no difference image



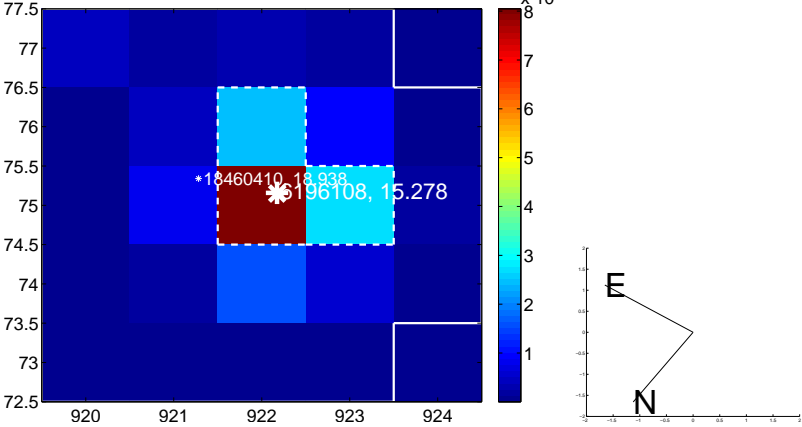
Q2 no OOT image



Q3 difference image. Poor Quality



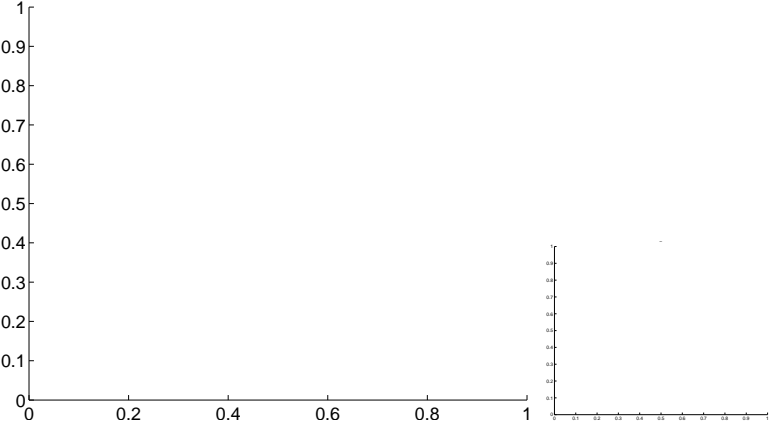
Q3 OOT image



Q4 no difference image

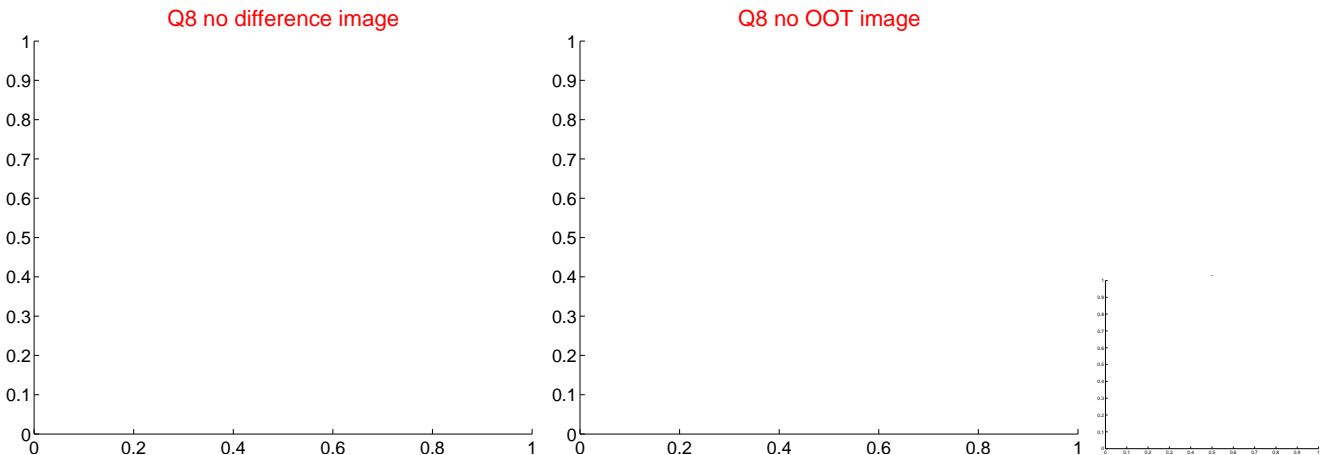
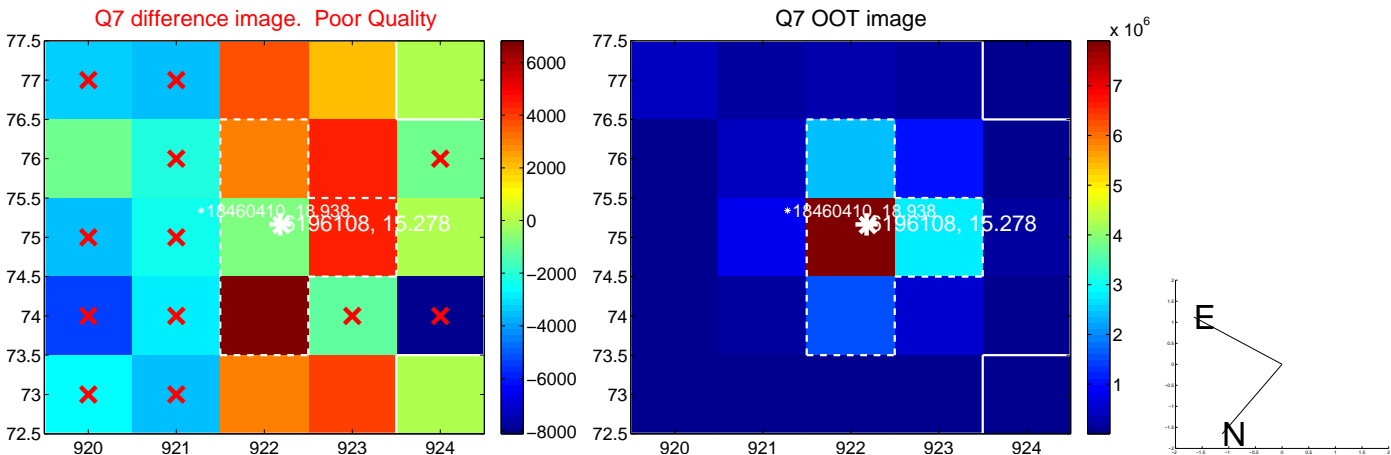
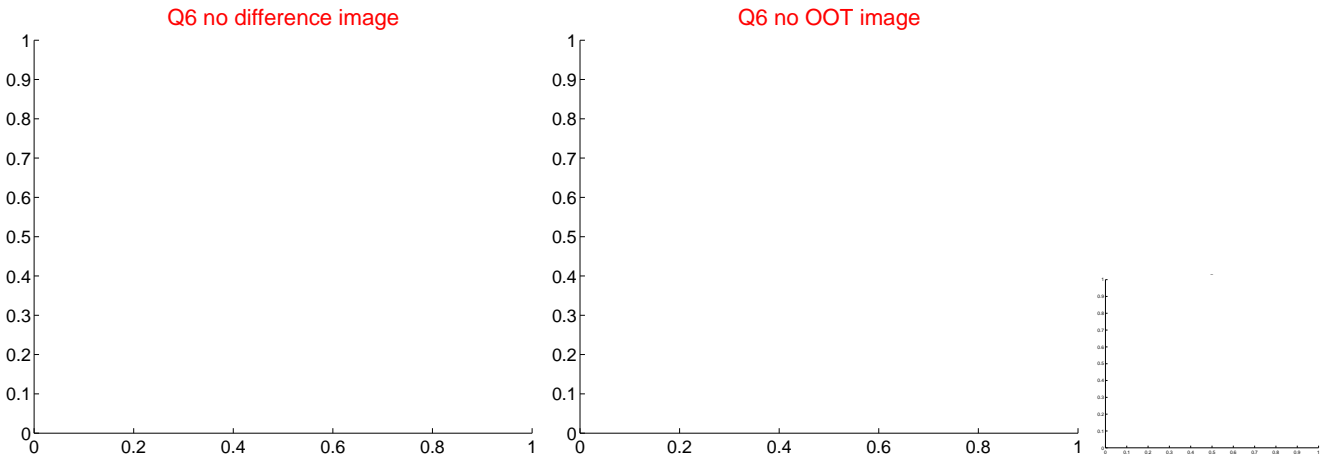
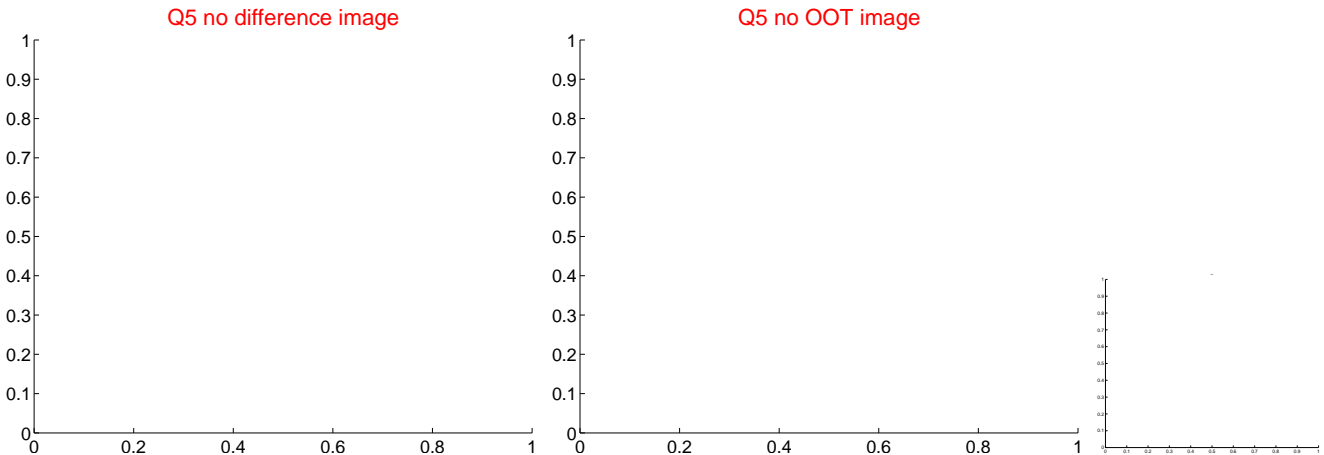


Q4 no OOT image

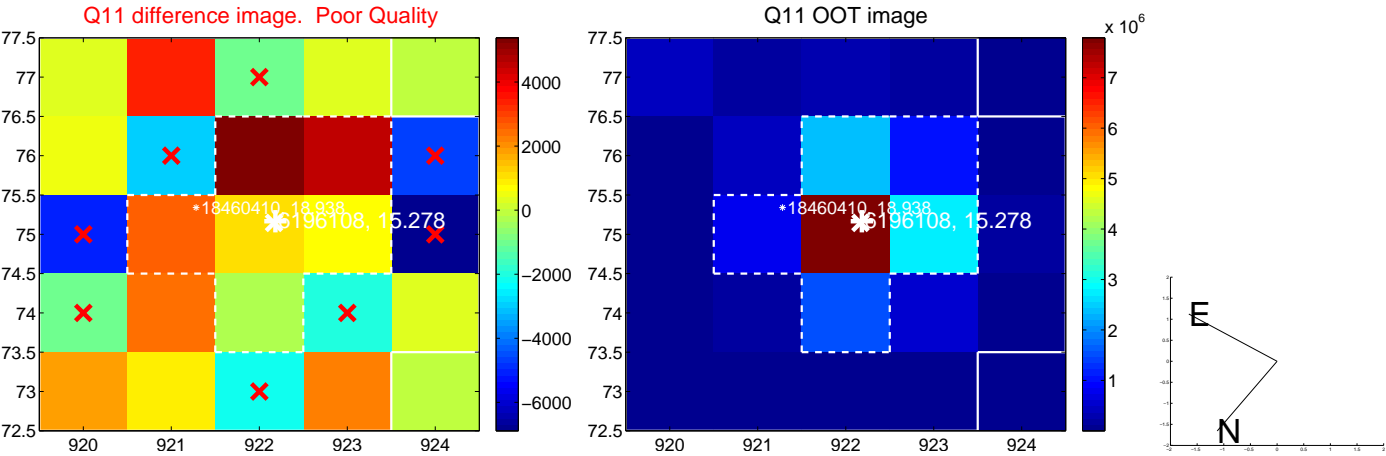




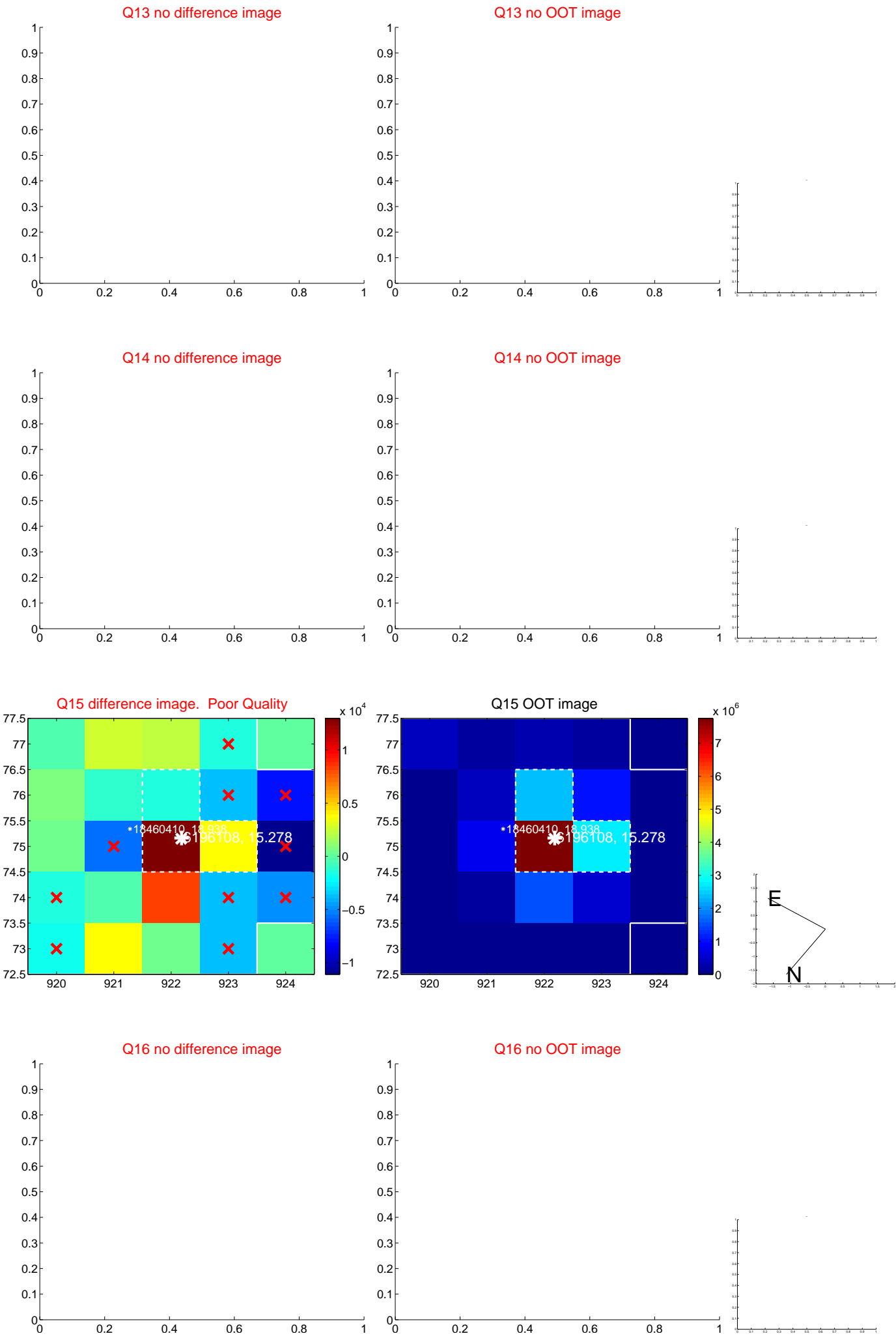
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



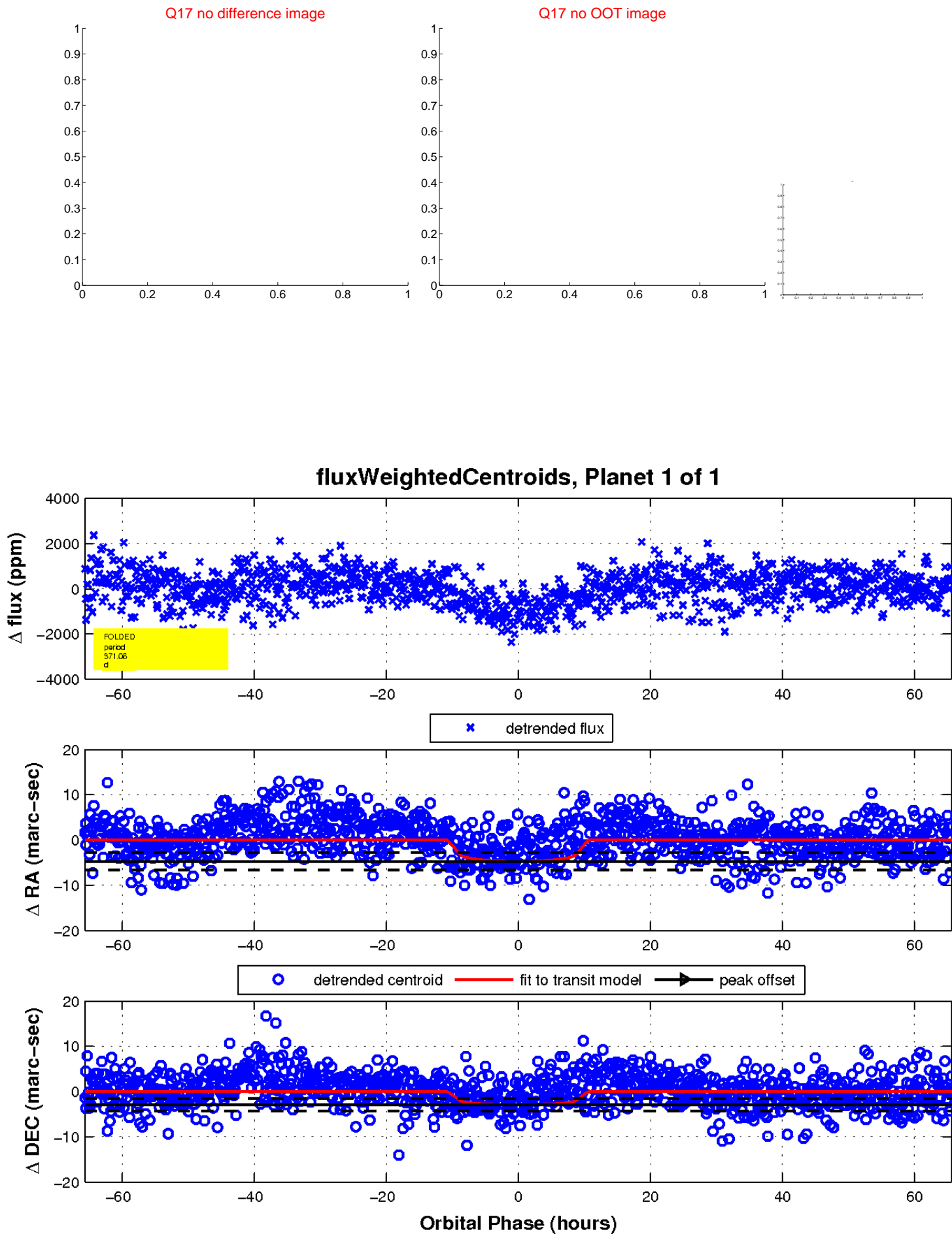
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

