

# KIC 009150107

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009150107-01	OBS	No	372.106122	304.951516	586.9	9.838	8.8	5.9	0.91	5450	2.32	0.63

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009150107-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—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.

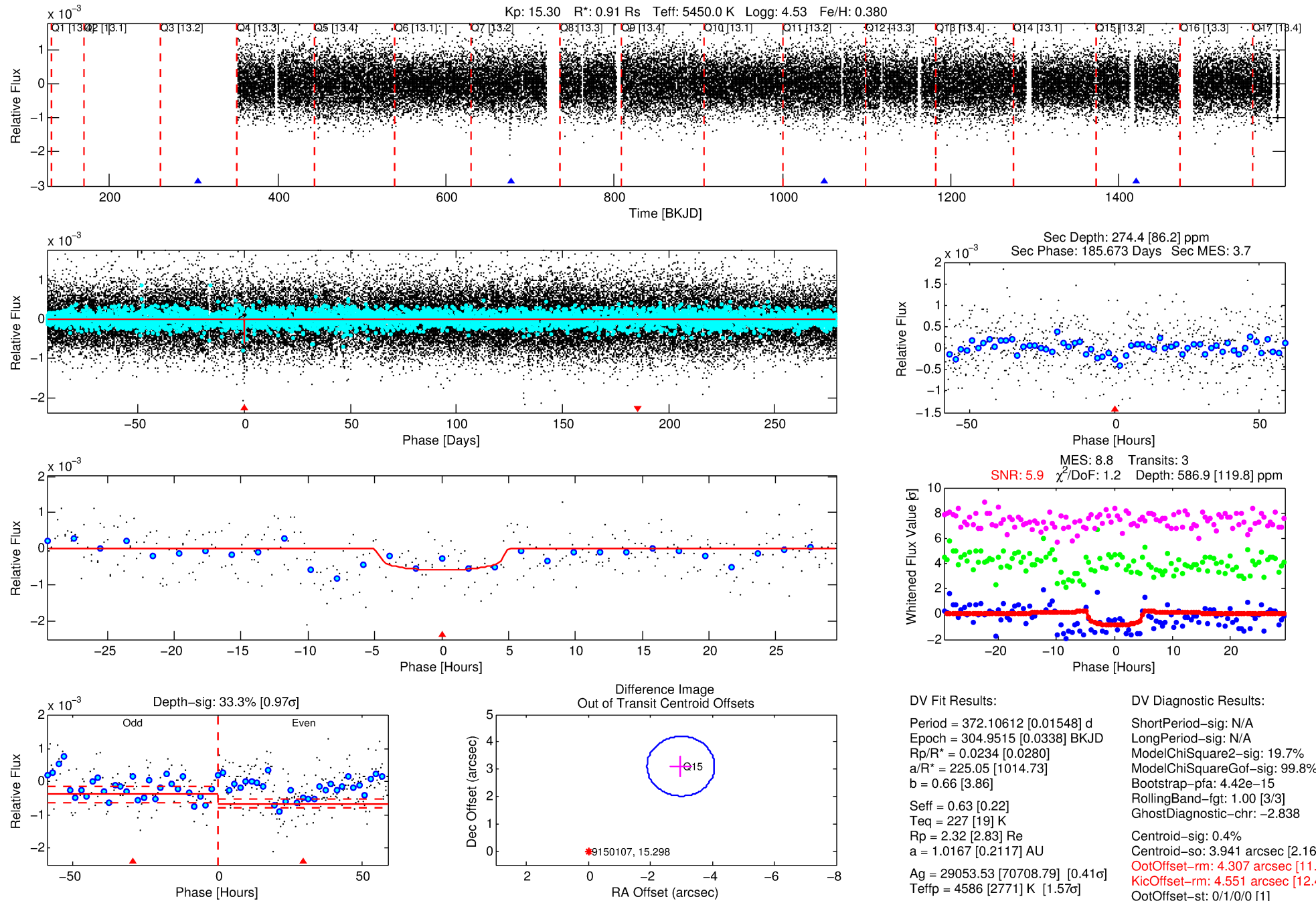
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009150107-01

No Significant Match Found

# DV One-Page Summary

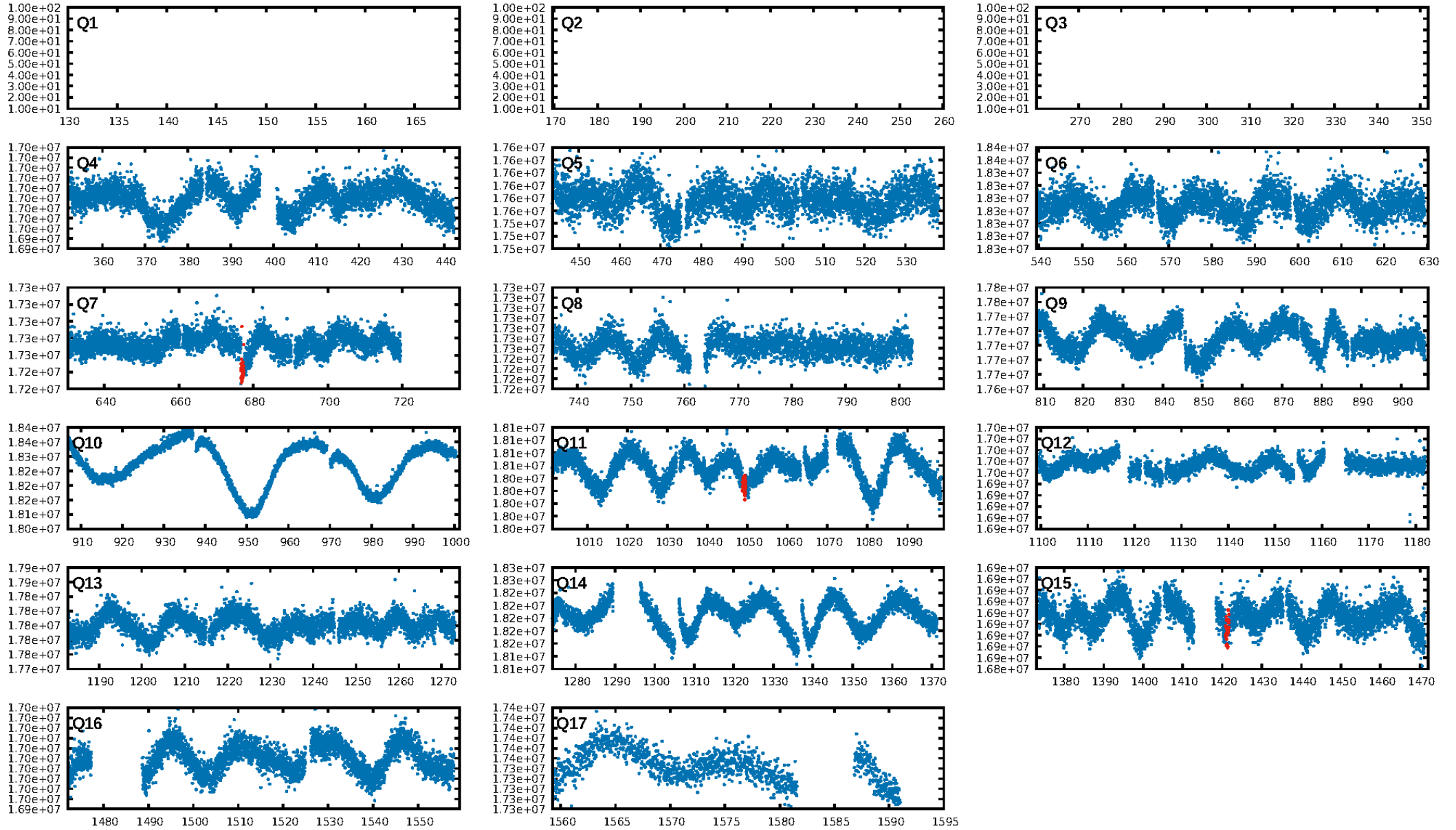
KIC: 9150107 Candidate: 1 of 1 Period: 372.106 d



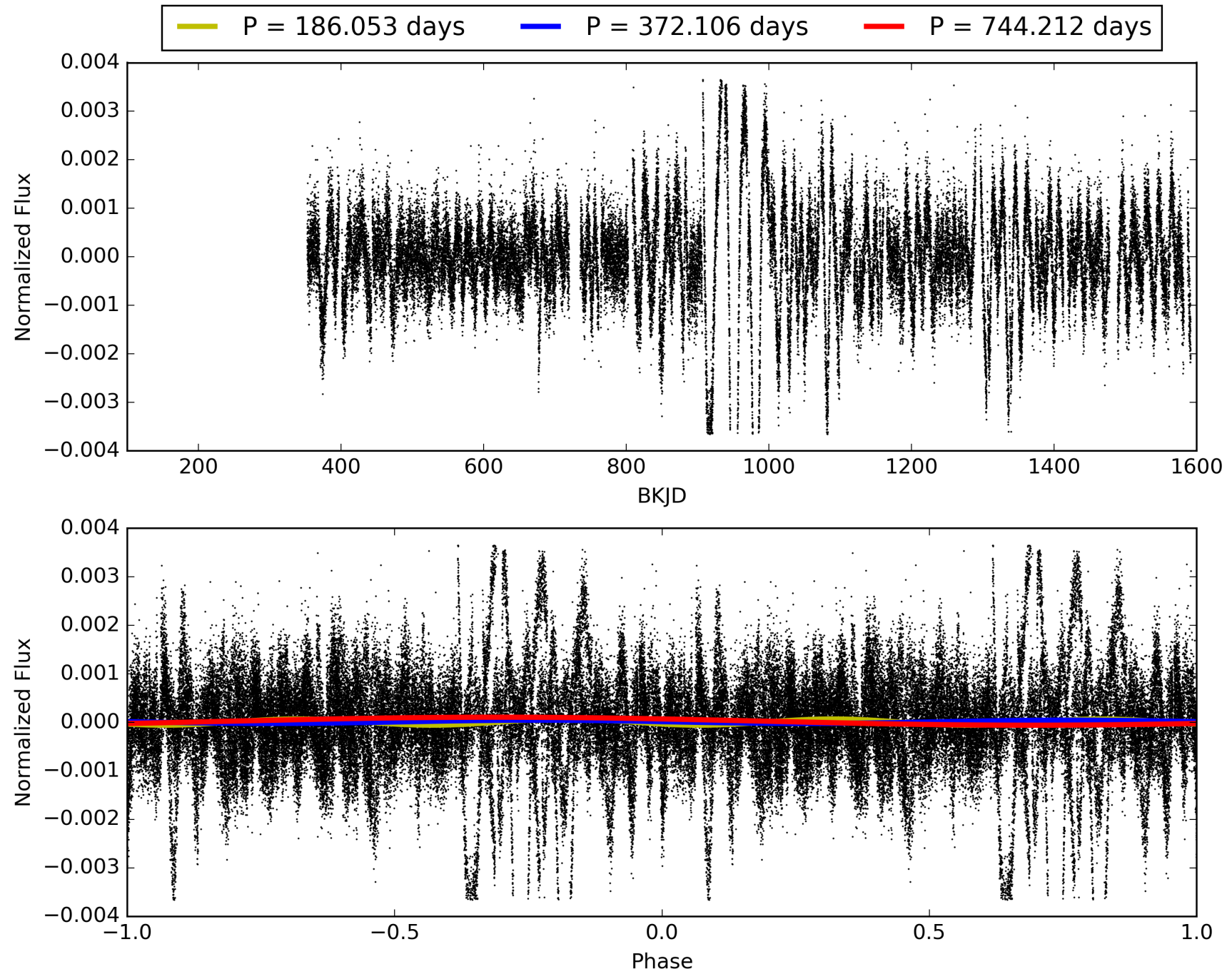
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:02:37 Z

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

# TCE 009150107-01, PDC Light Curves

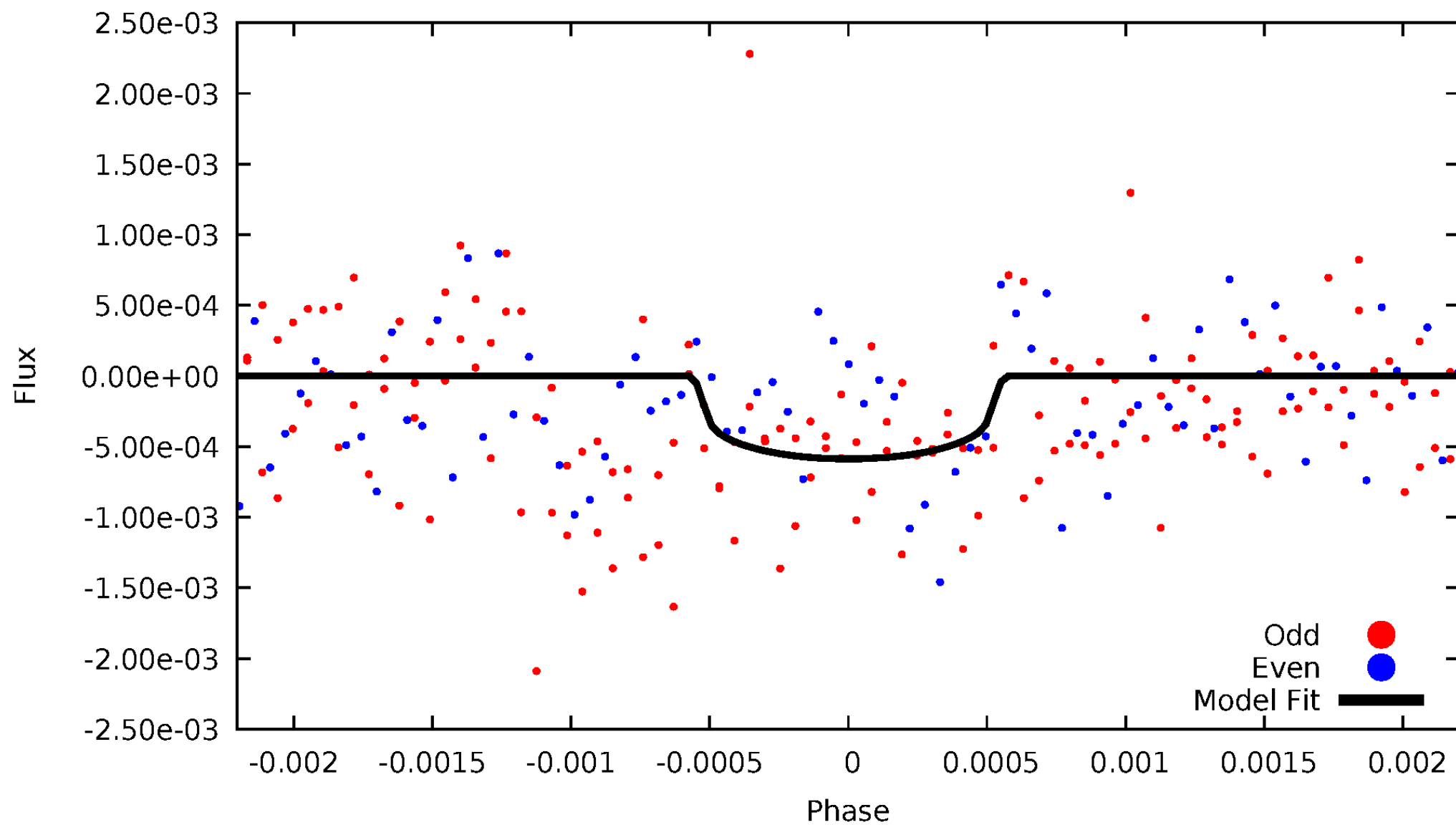


TCE 009150107-01



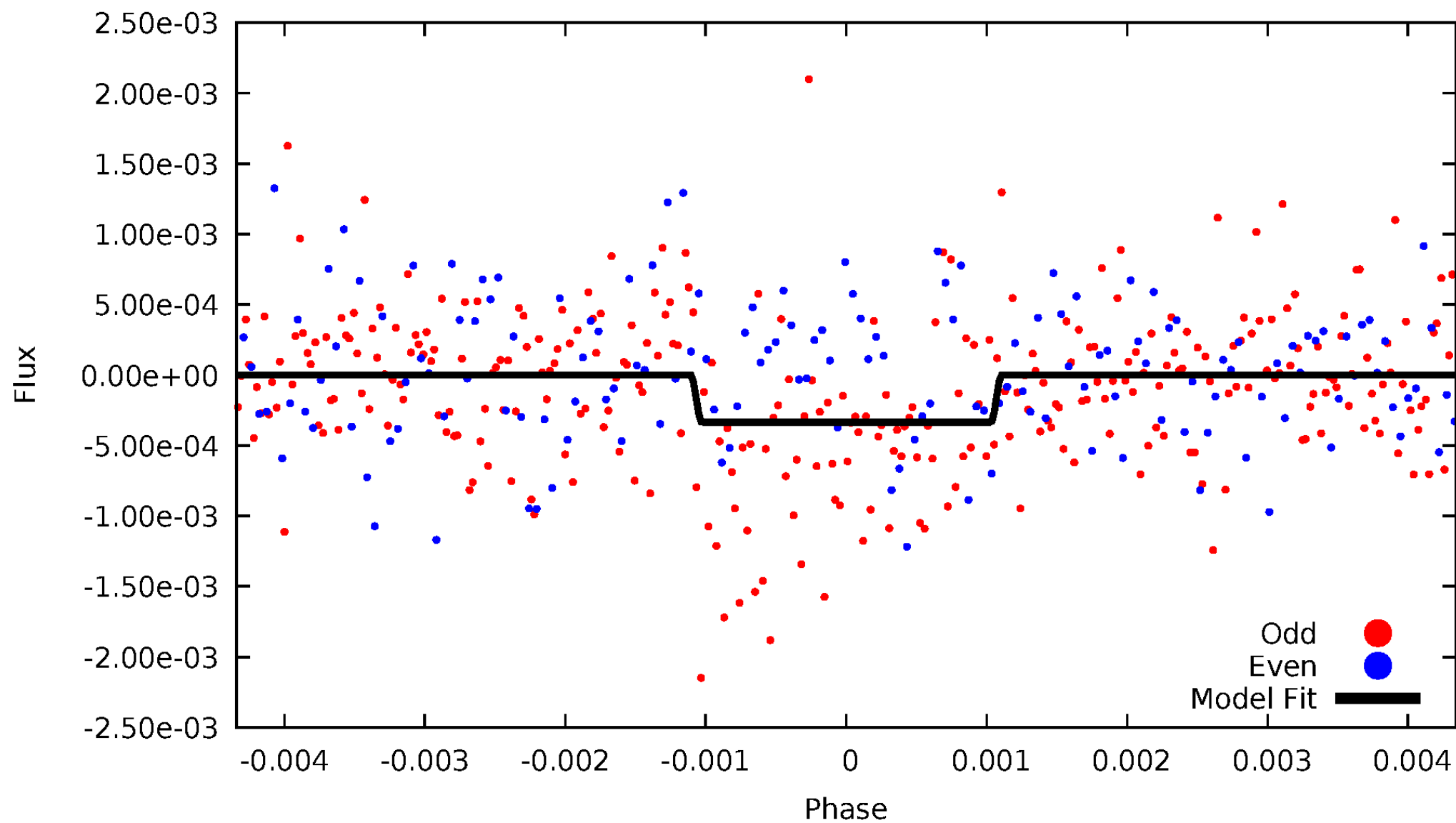
# DV Odd/Even

TCE 009150107-01

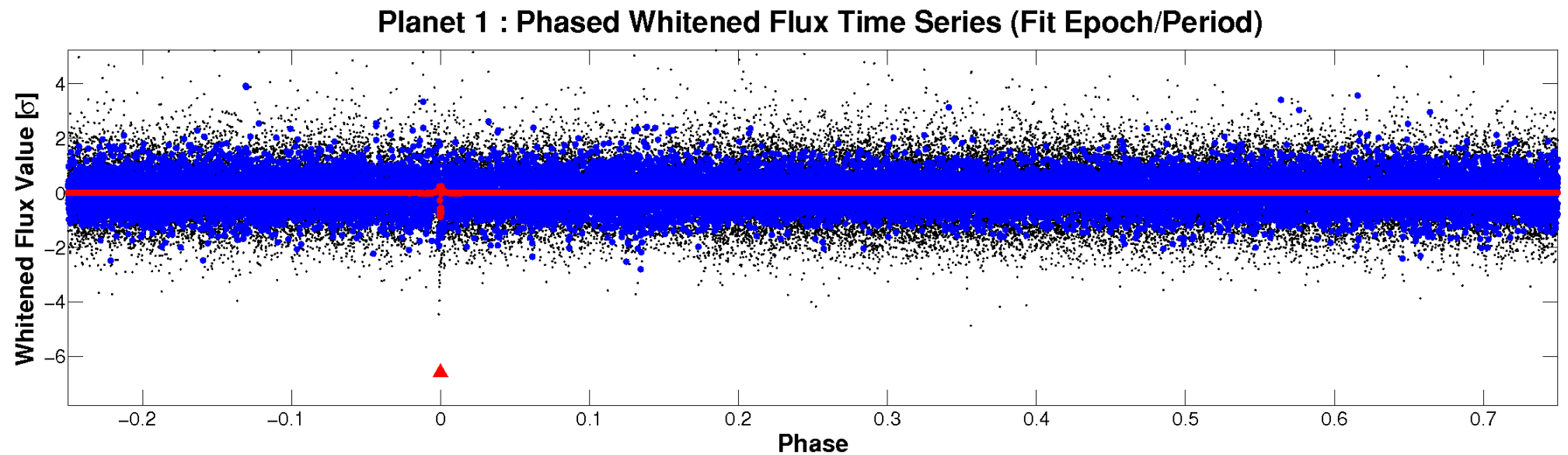
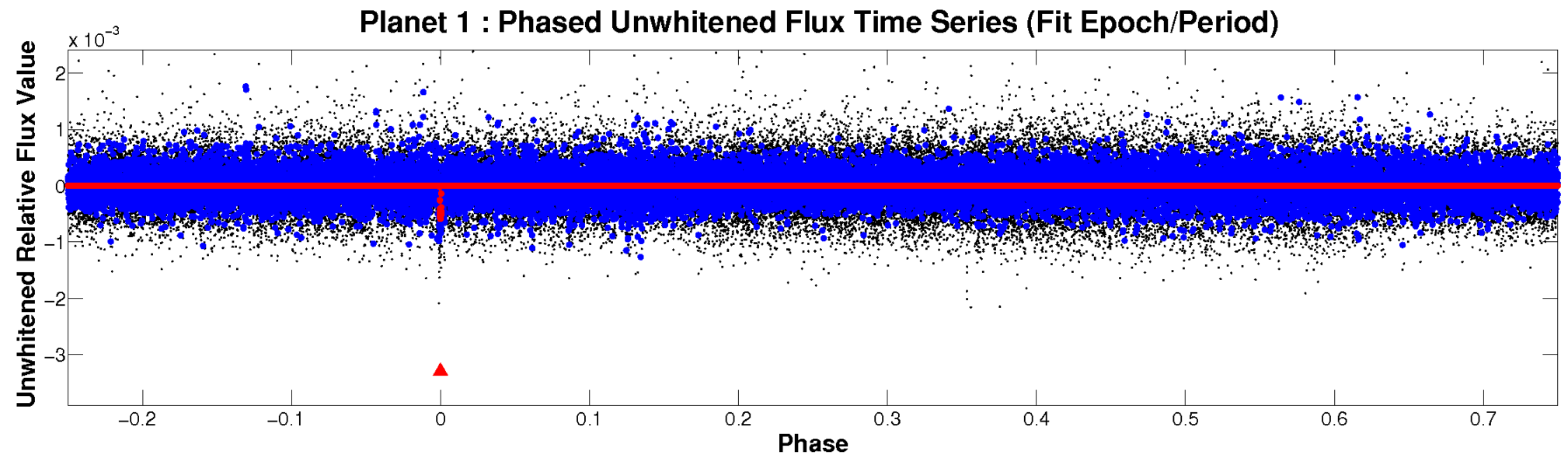


# ALT Odd/Even

TCE 009150107-01



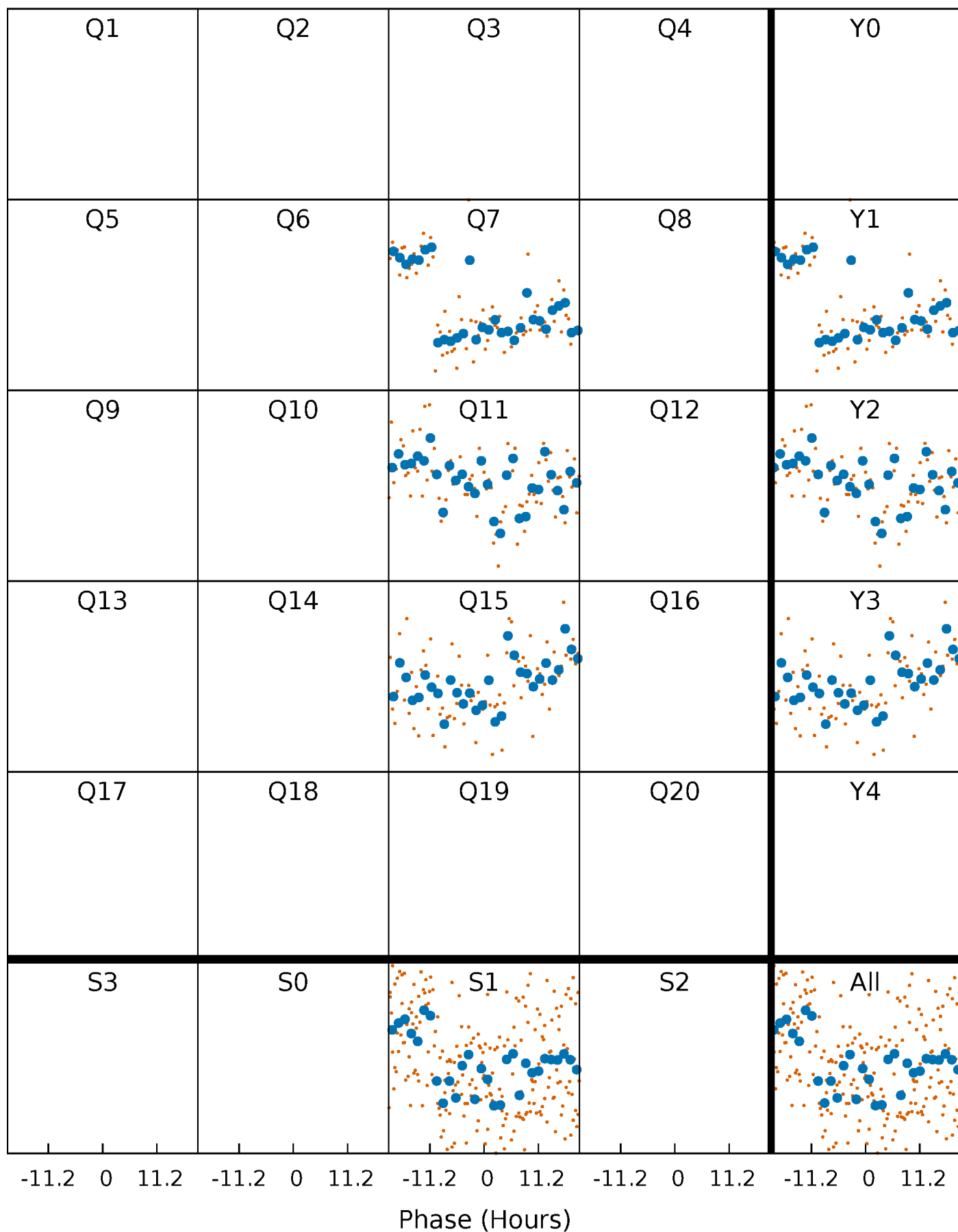
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

TCE 009150107-01 P=372.106122 Days  $T_0=304.951516$  (BKJD)





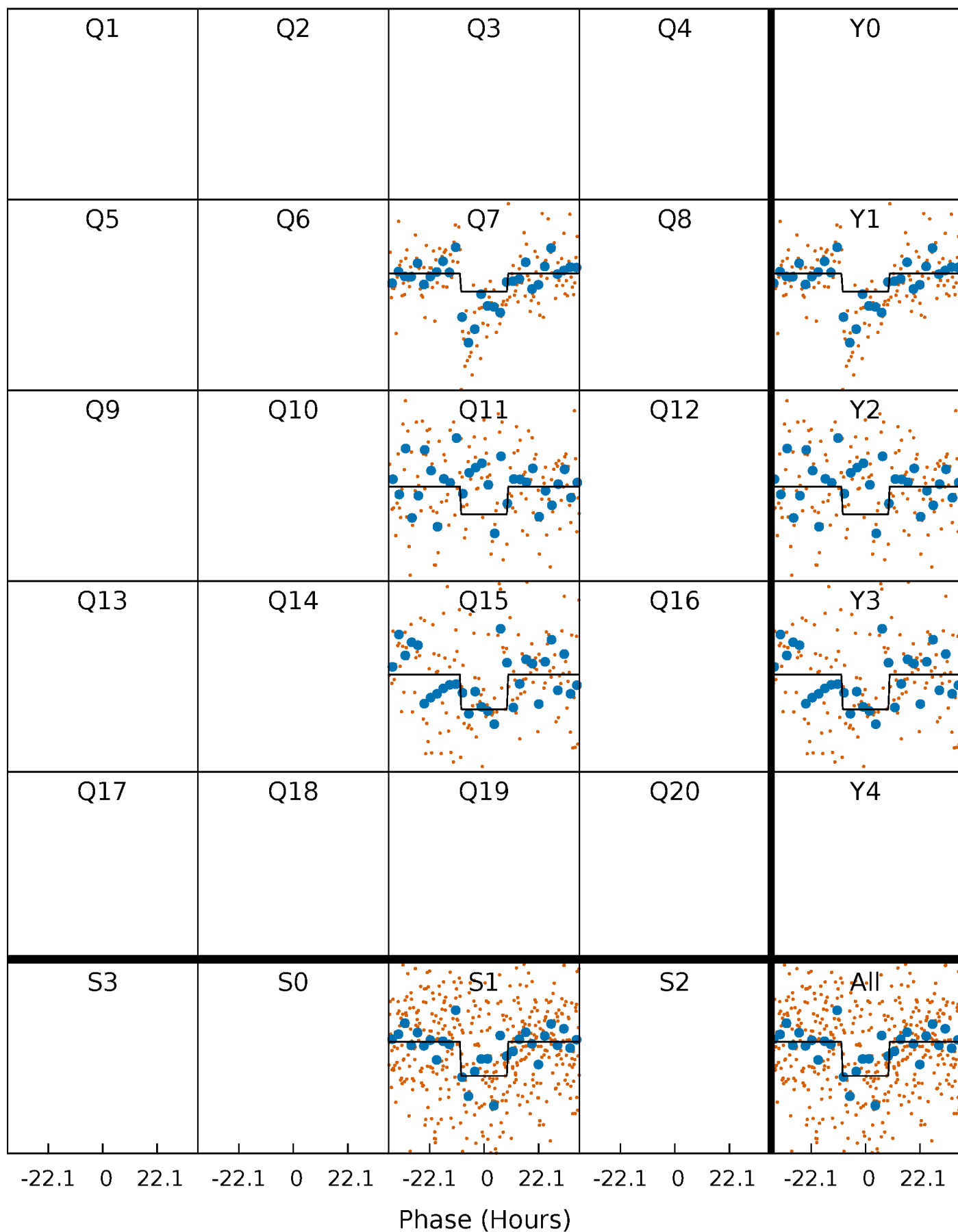
# DV Quarter-Phased Transit Curves

TCE 009150107-01 P=372.106122 Days  $T_0=304.951516$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

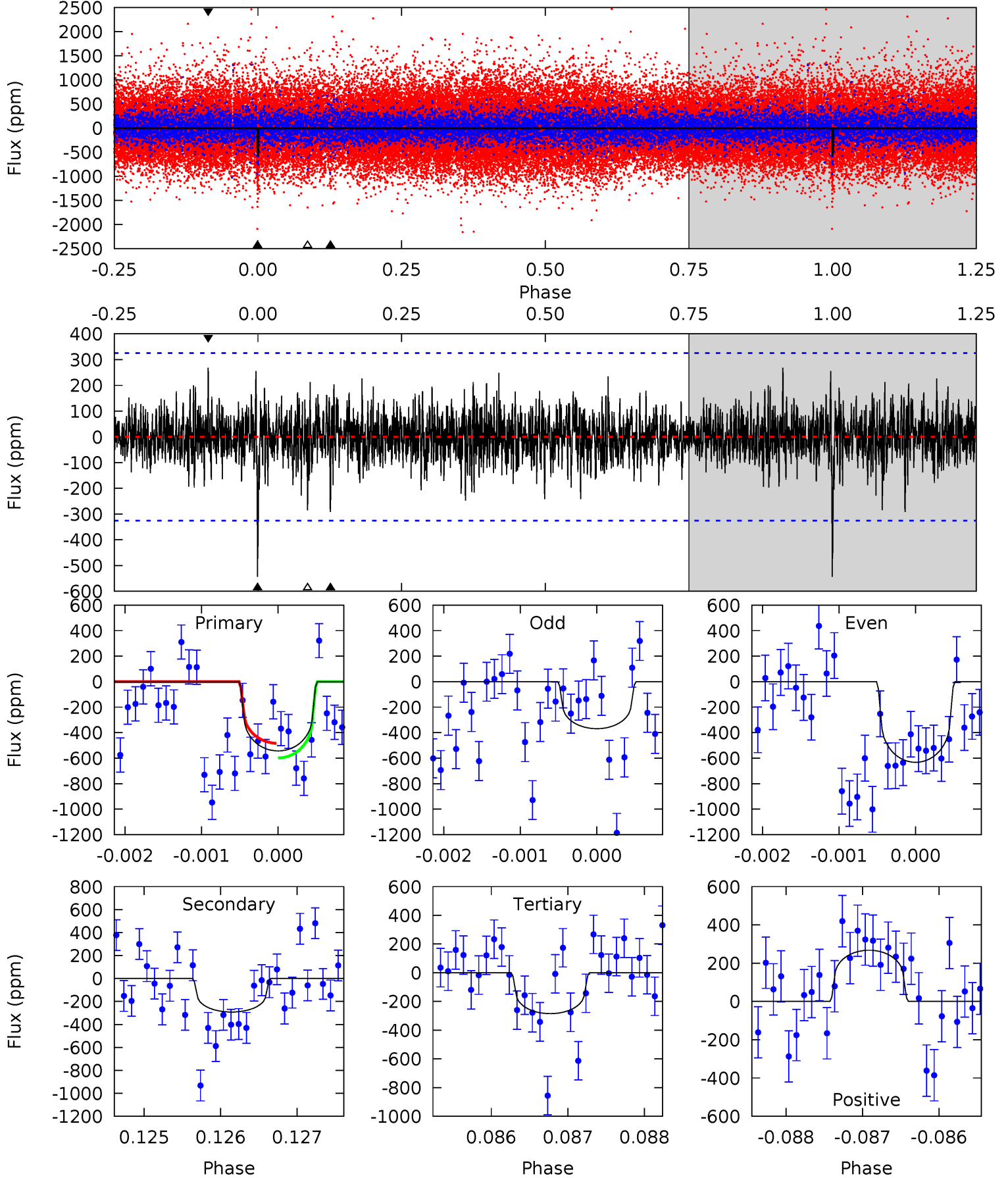
TCE 009150107-01 P=372.101939 Days  $T_0=304.922232$  (BKJD)



# DV Model-Shift Uniqueness Test

009150107-01, P = 372.106122 Days, E = 304.951516 Days

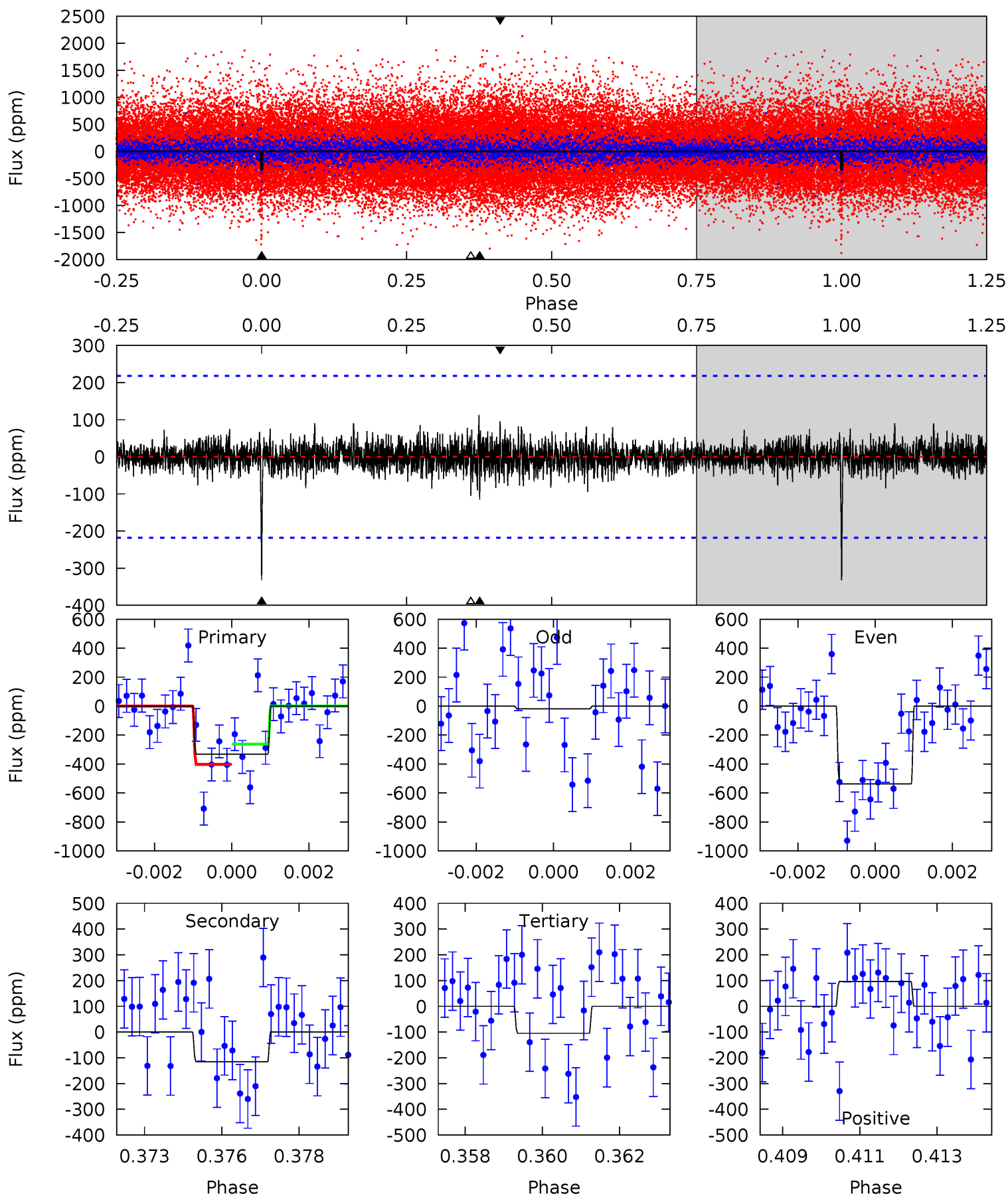
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.07	4.87	4.76	4.47	5.43	3.26	1.16	4.31	4.60	0.12	0.41	2.08	0.97	0.33	0.96



# Alt Model-Shift Uniqueness Test

009150107-01, P = 372.101939 Days, E = 304.922232 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
8.09	2.80	2.56	2.33	5.31	3.06	0.59	5.53	5.76	0.24	0.47	6.02	1.66	0.25	1.71



### Stellar Parameters For KIC 009150107

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5450^{+180}_{-180}$	$4.527^{+0.031}_{-0.178}$	$0.380^{+0.050}_{-0.300}$	$0.908^{+0.214}_{-0.071}$	$1.011^{+0.074}_{-0.110}$	$1.903^{+0.309}_{-0.857}$
	+3%/-3%	+1%/-4%	+13%/-79%	+24%/-8%	+7%/-11%	+16%/-45%
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 009150107-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-292 \pm 60$	$3.19^{+2.70}_{-2.05}$	$325^{+19}_{-15}$	$4258^{+2244}_{-816}$	$15764^{+101745}_{-11356}$
Alt.	$-115 \pm 41$	$2.85^{+2.86}_{-1.80}$	$324^{+21}_{-14}$	$3741^{+1630}_{-746}$	$7420^{+42233}_{-5752}$

$T_{max}$  = 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

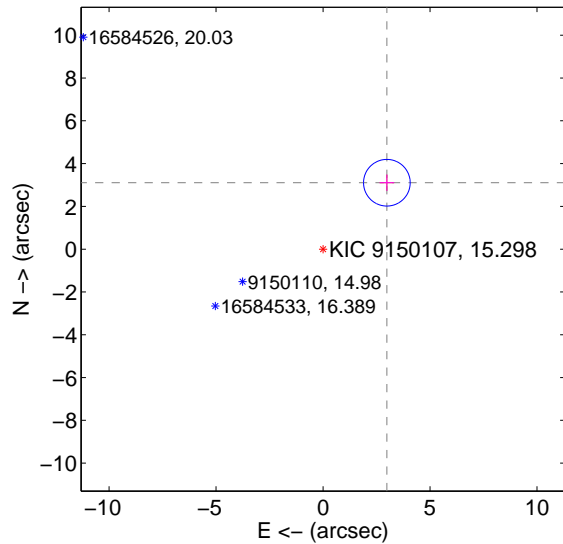
Supplemental centroid analysis for 009150107-01. Kepler magnitude: 15.30. Transit SNR 5.90

There are 0 quarters with good PRF difference image offsets

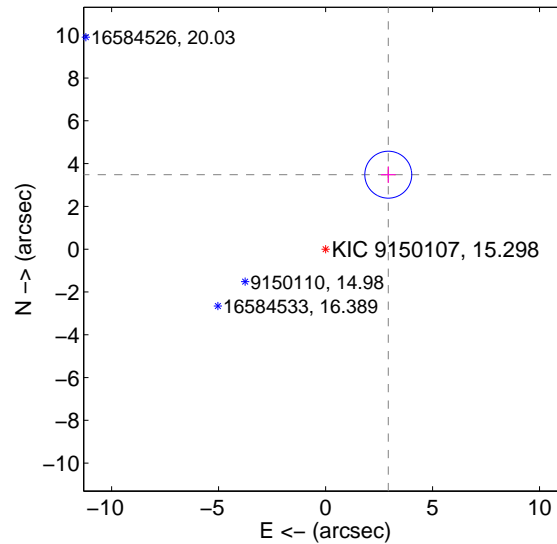
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.307 \pm 0.363$	11.85	$-2.983 \pm 0.344$	$3.106 \pm 0.380$
PRF-fit source offset from KIC position	$4.551 \pm 0.366$	12.45	$-2.930 \pm 0.344$	$3.482 \pm 0.380$
photometric centroid source offset	$3.94 \pm 1.83$	2.16	$3.42 \pm 1.94$	$1.95 \pm 1.43$

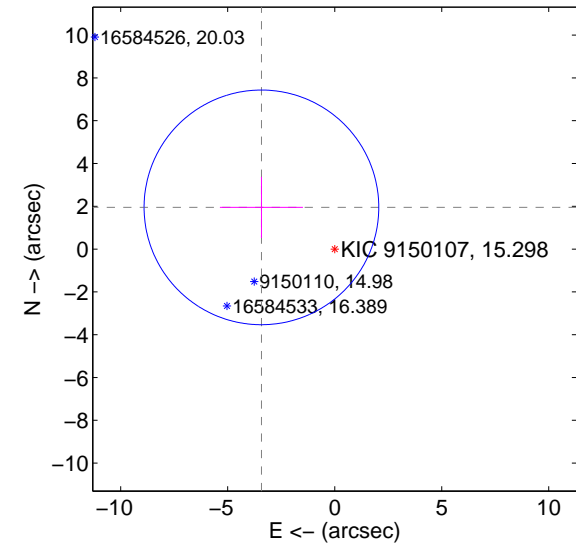
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

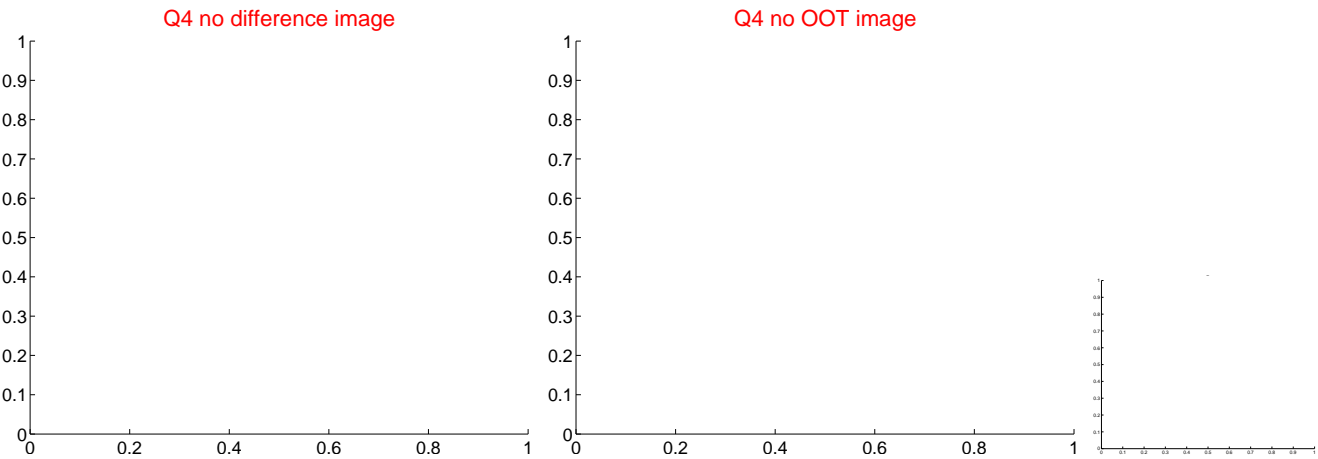
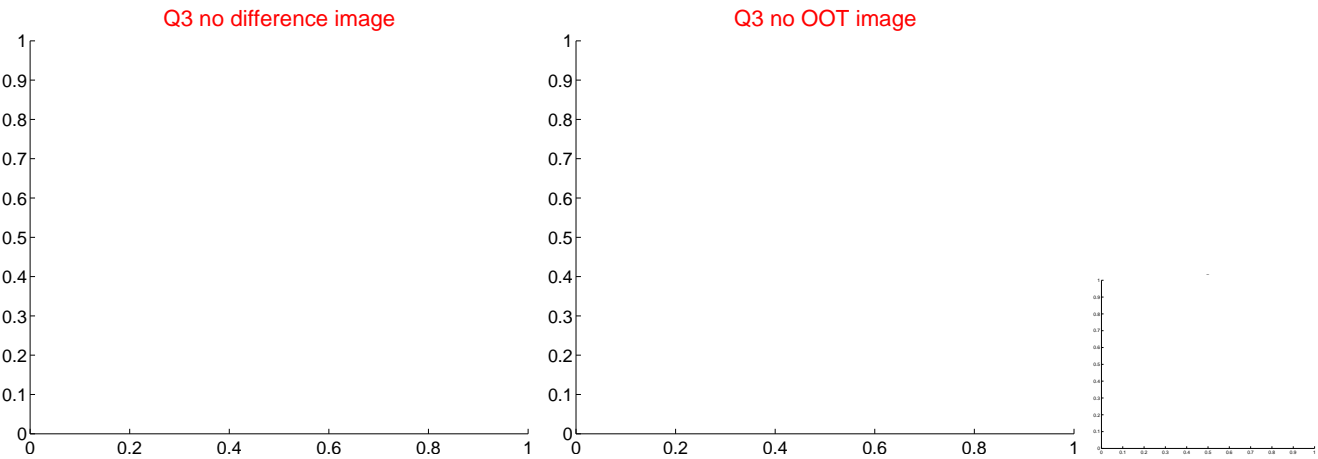
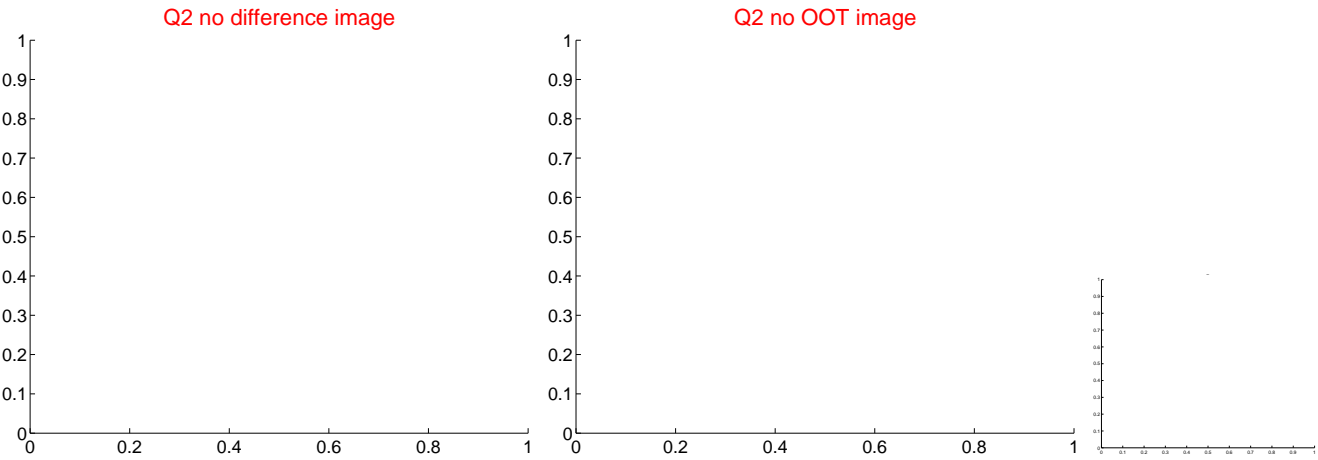
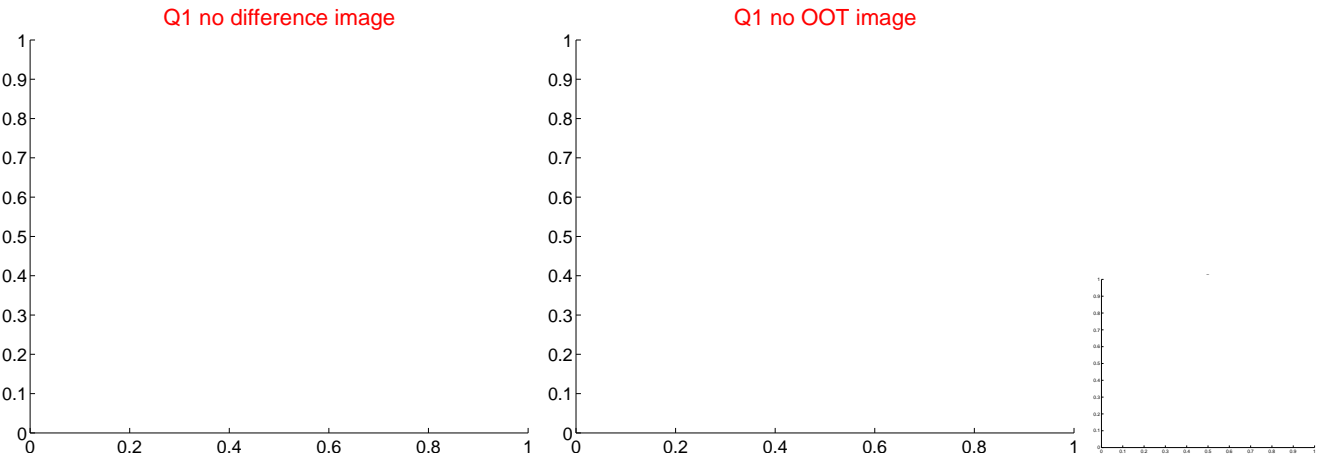


offset from photometric centroids



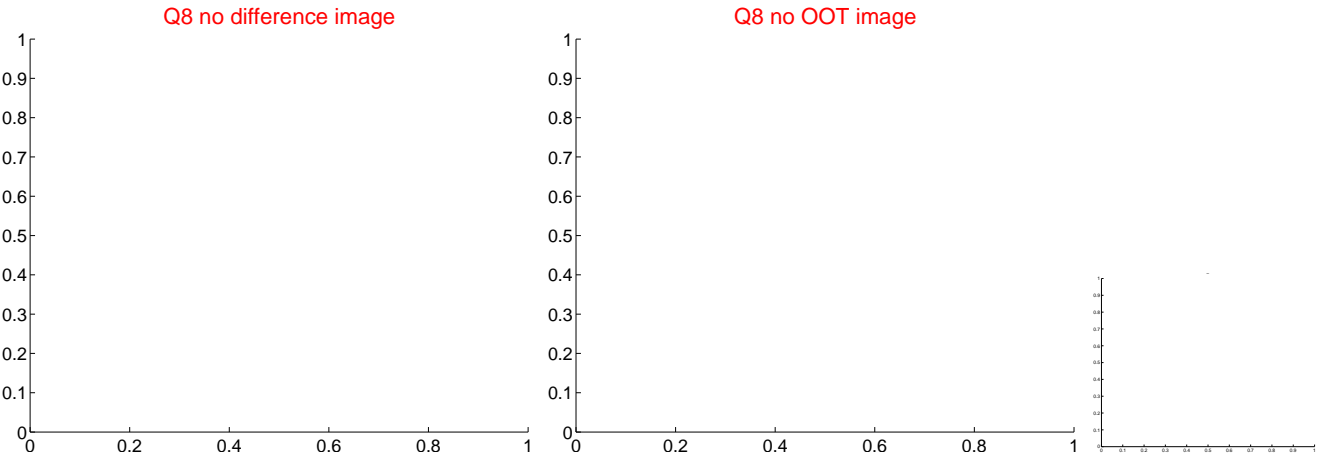
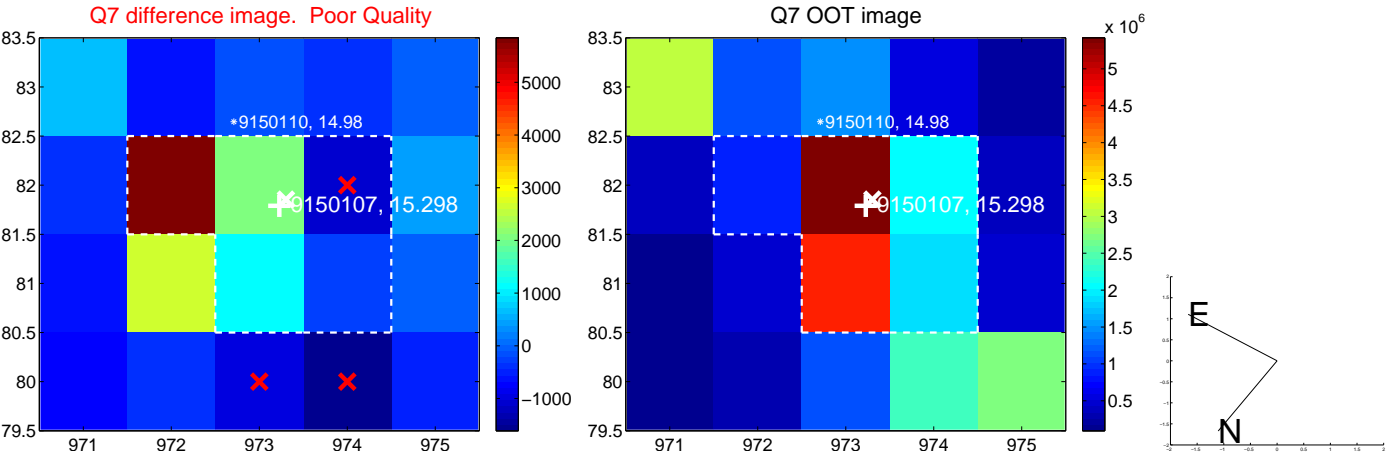
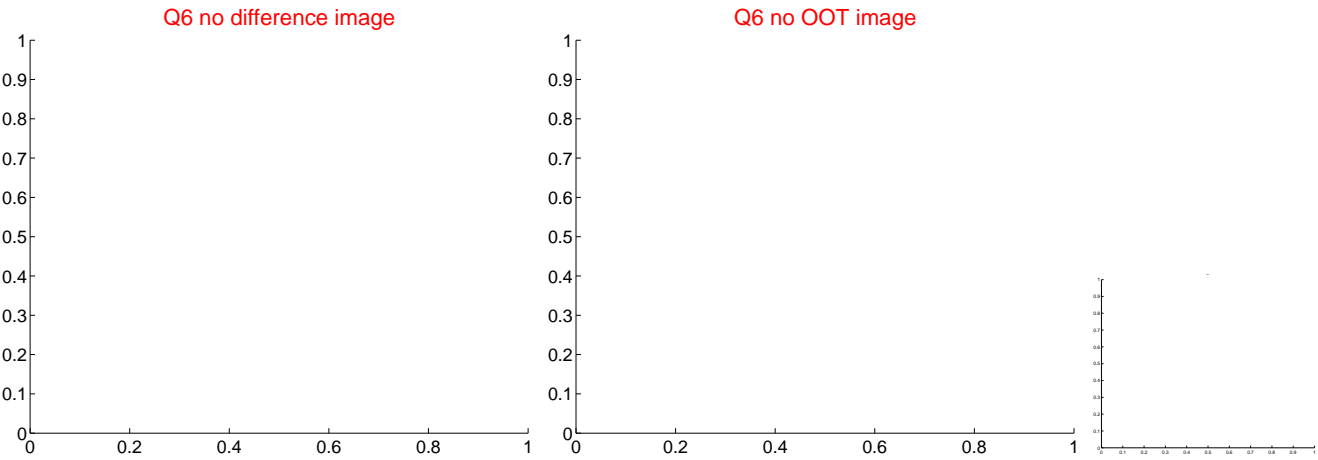
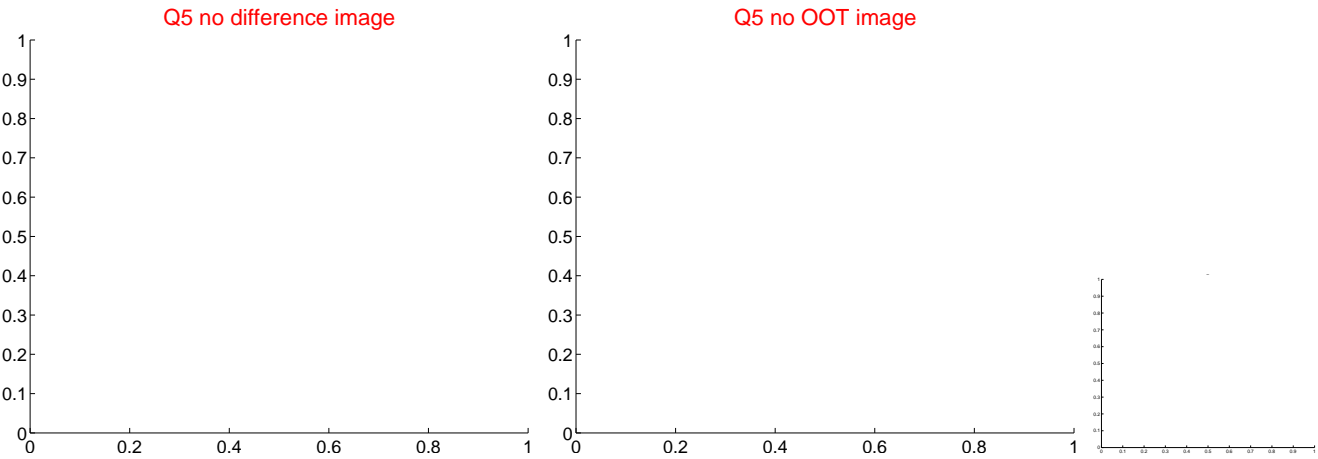
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000 are from the UKIRT catalog.

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



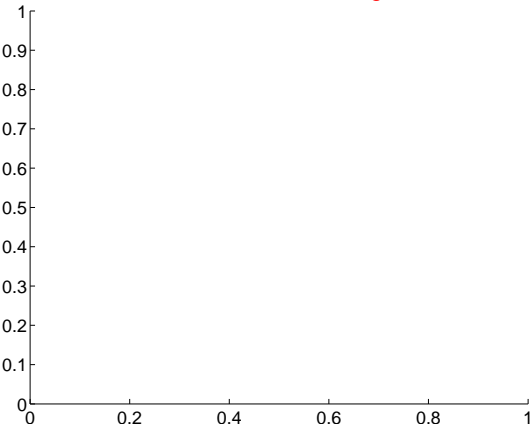


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

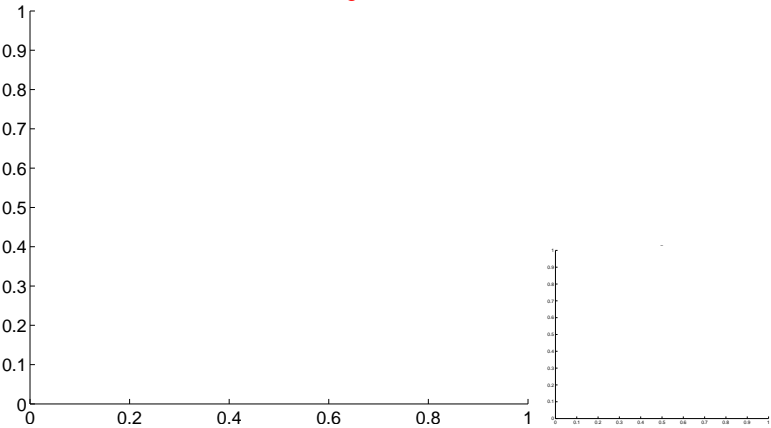


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

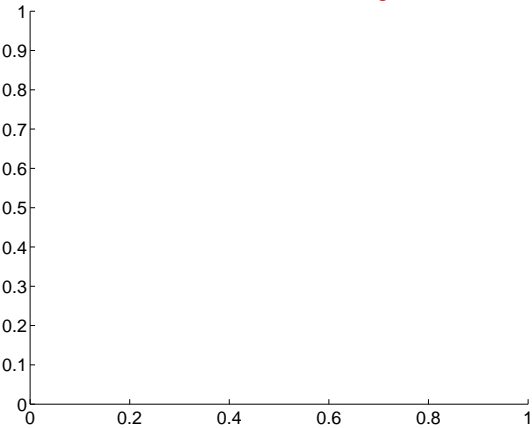
Q9 no difference image



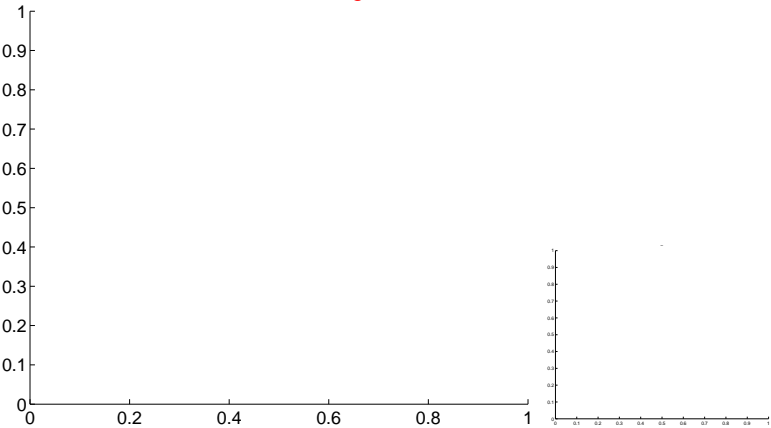
Q9 no OOT image



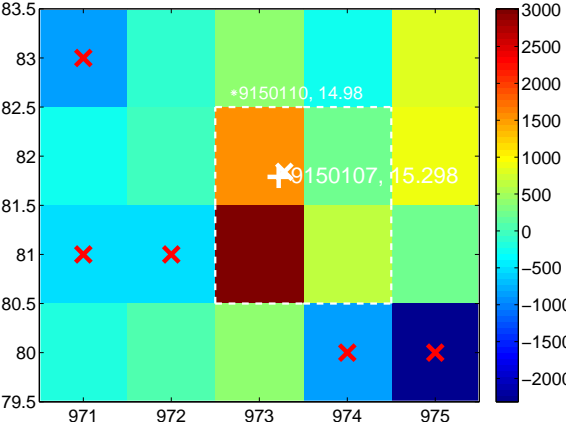
Q10 no difference image



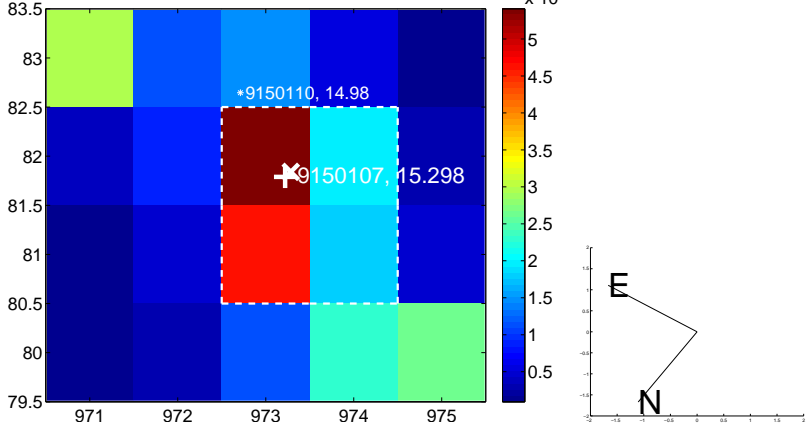
Q10 no OOT image



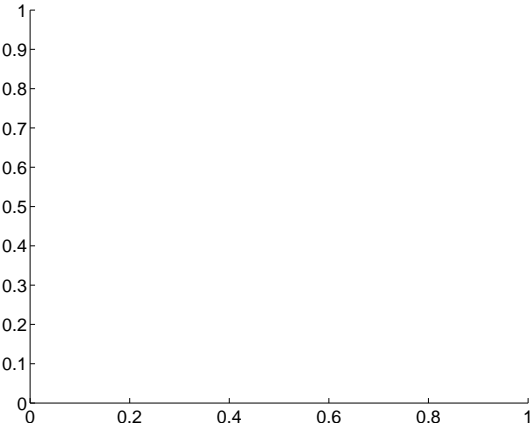
Q11 difference image. Poor Quality



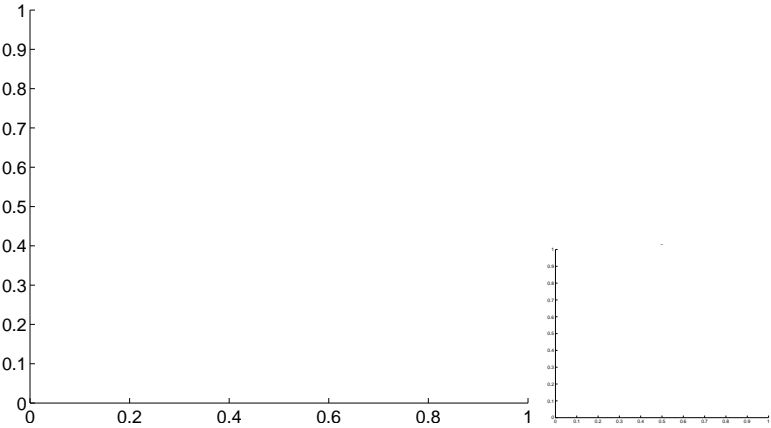
Q11 OOT image



Q12 no difference image

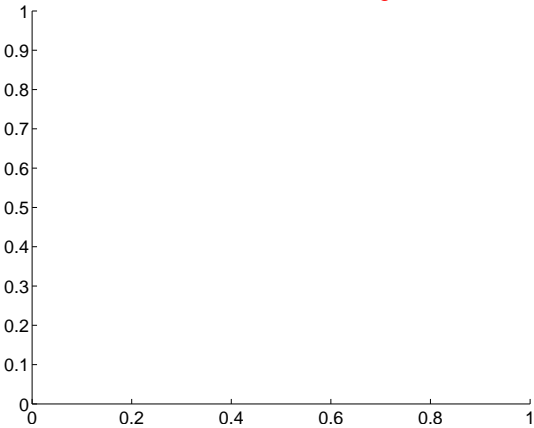


Q12 no OOT image

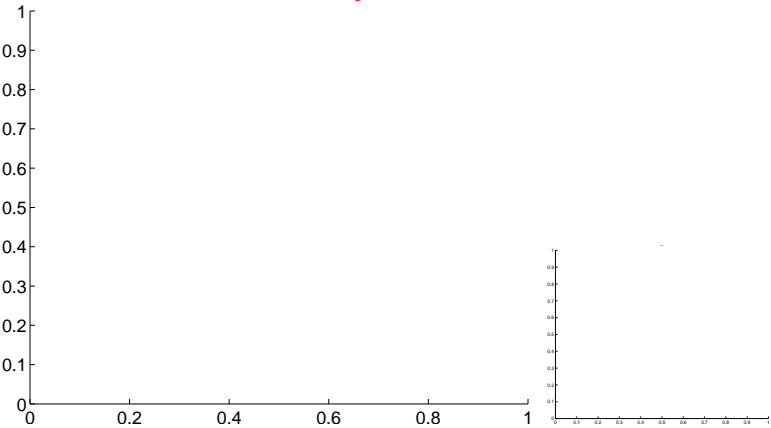


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

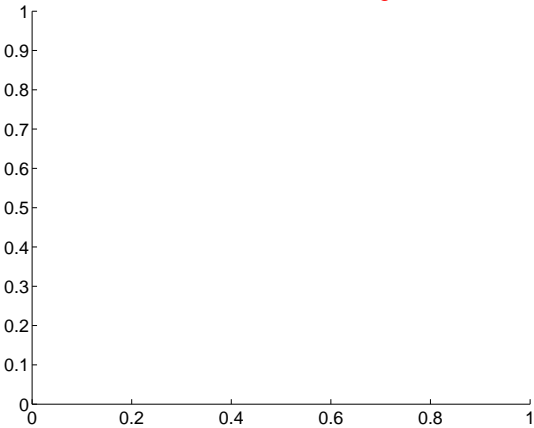
Q13 no difference image



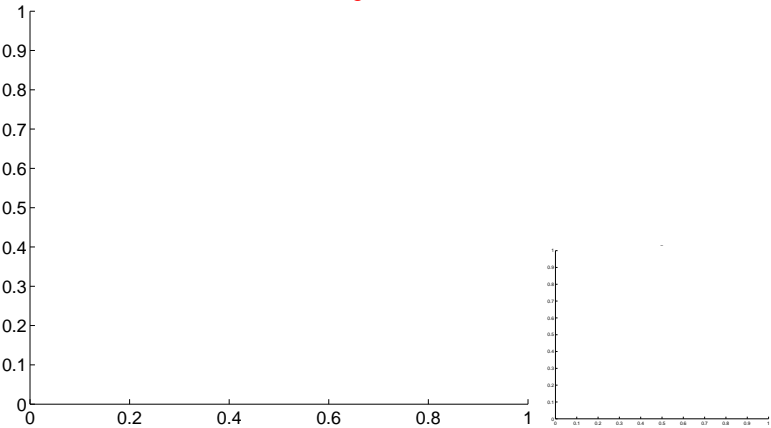
Q13 no OOT image



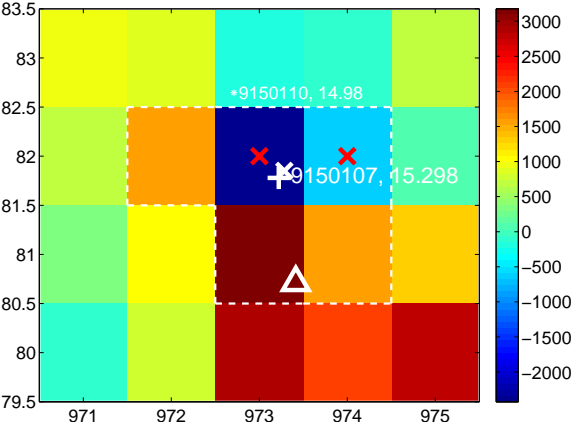
Q14 no difference image



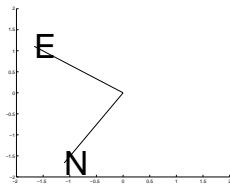
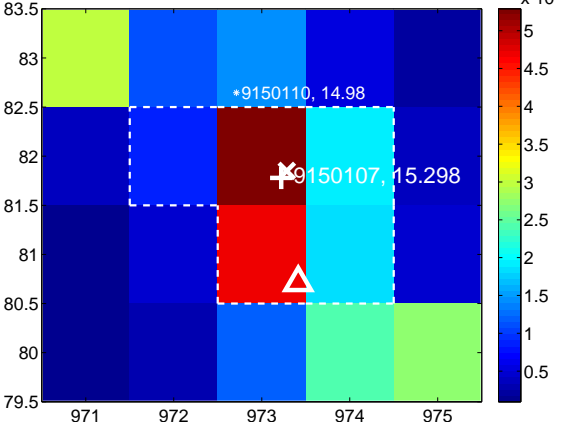
Q14 no OOT image



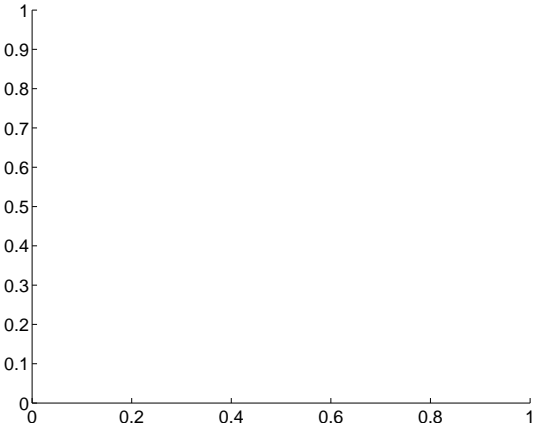
Q15 difference image. Poor Quality



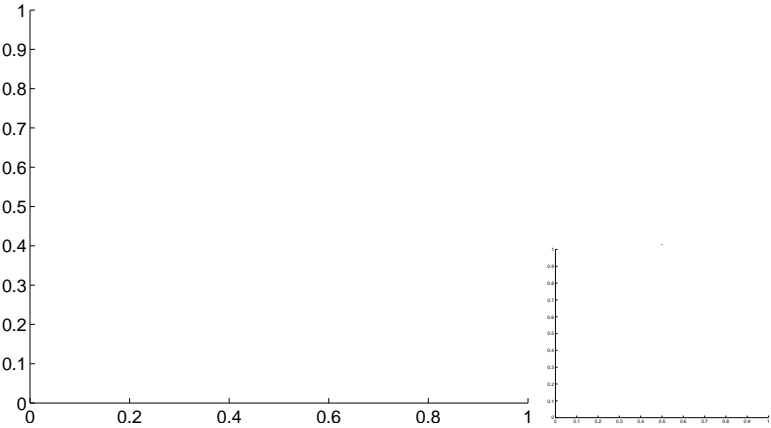
Q15 OOT image



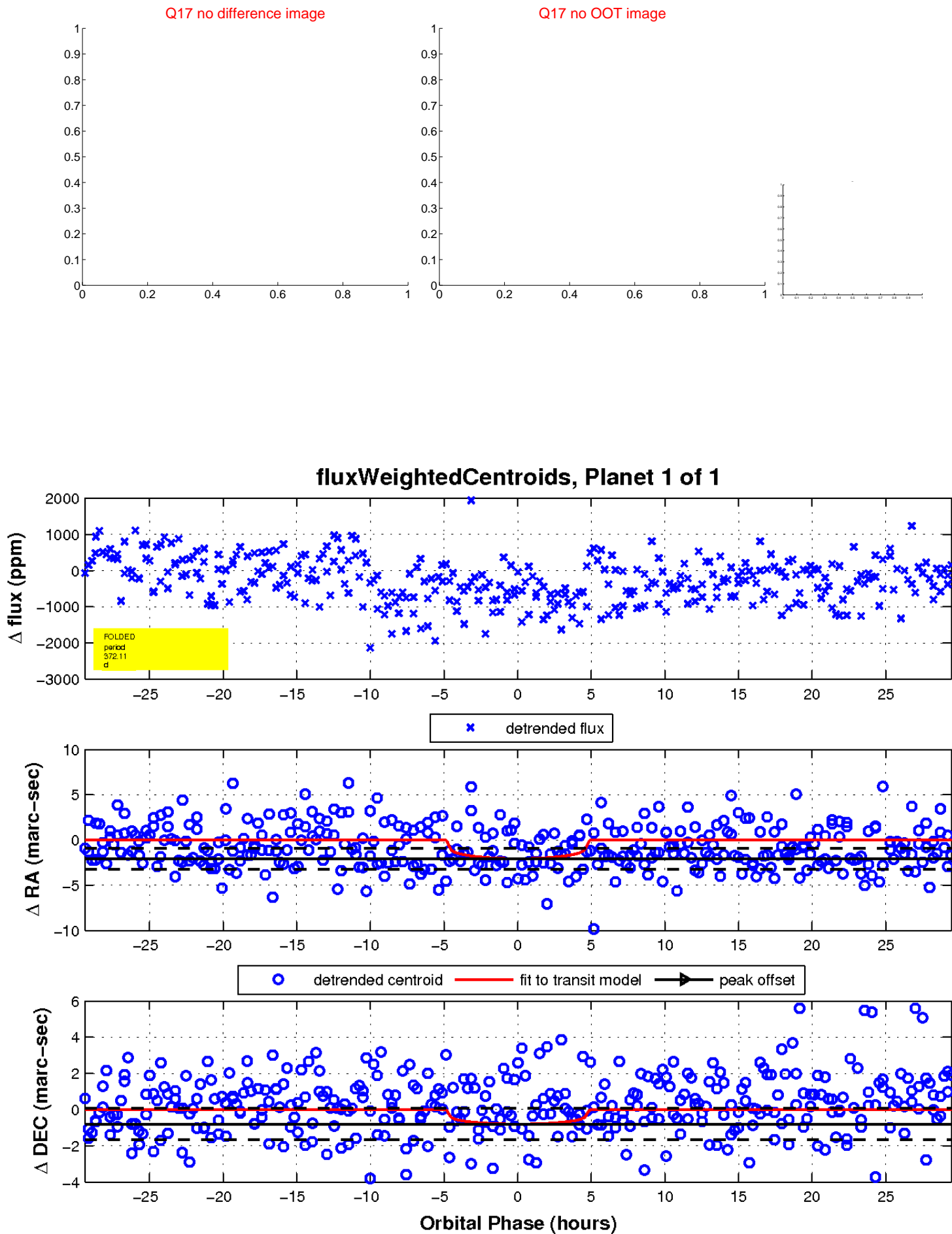
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

