

# KIC 010287149

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010287149-01	OBS	No	646.843767	267.566966	125.0	24.905	7.6	6.5	0.83	5651	0.99	0.31

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010287149-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—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.

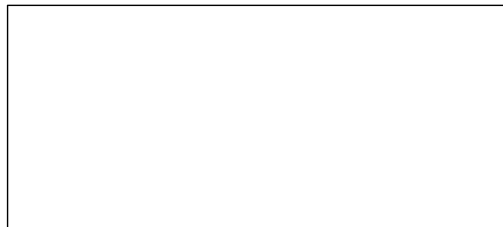
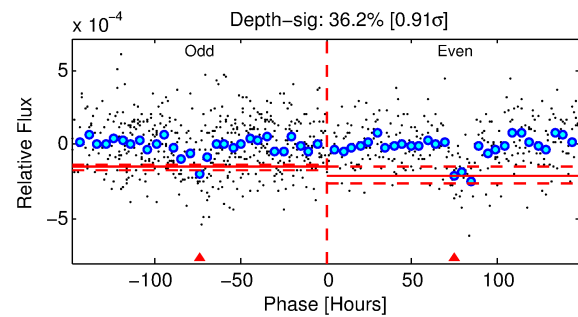
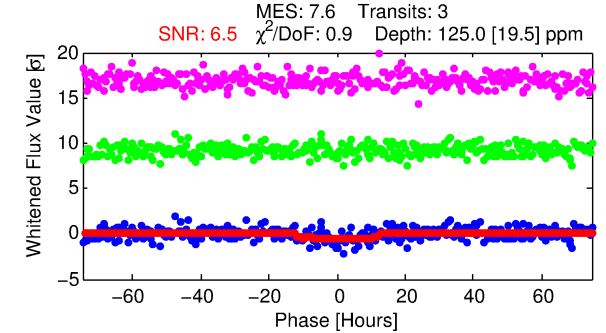
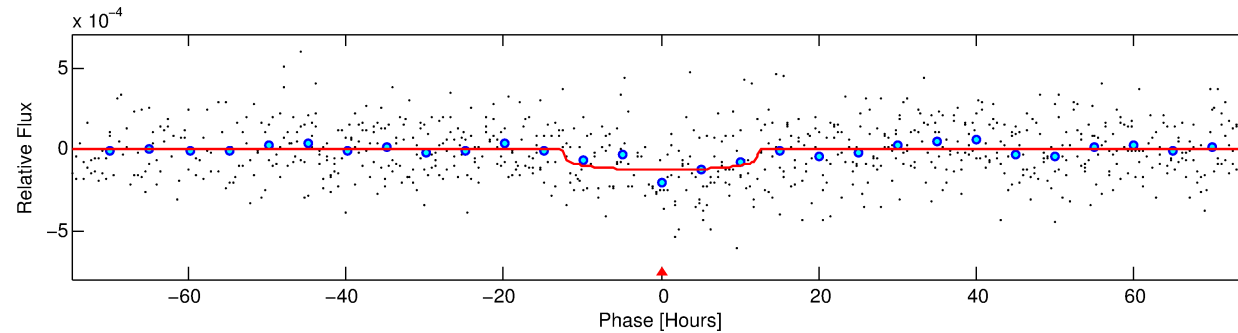
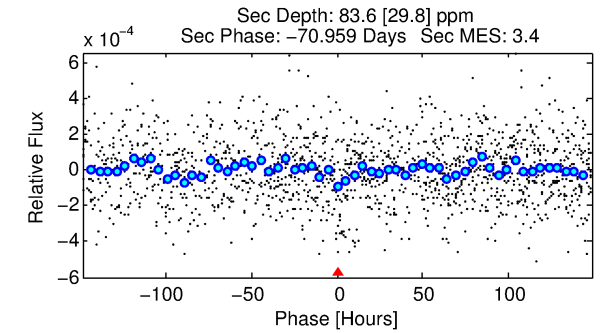
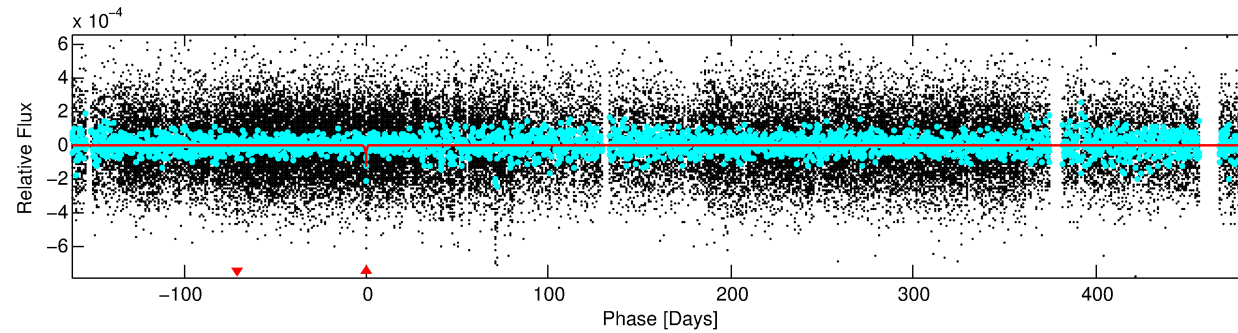
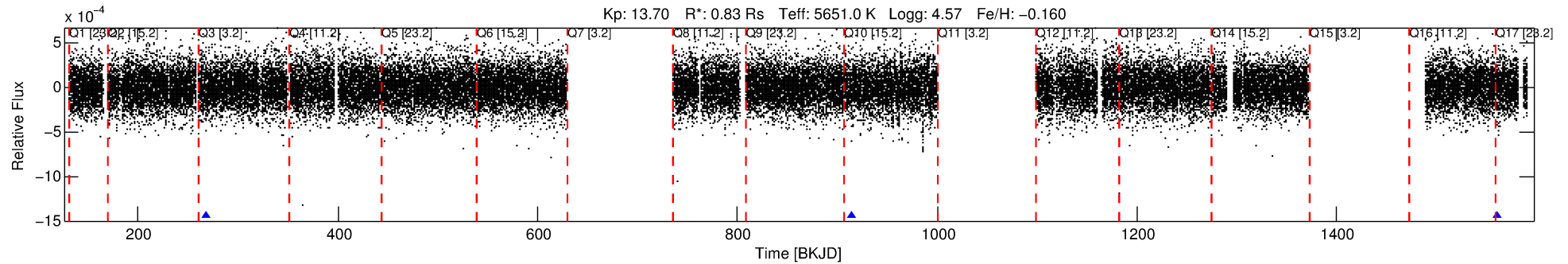
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010287149-01

No Significant Match Found

# DV One-Page Summary

KIC: 10287149 Candidate: 1 of 1 Period: 646.844 d



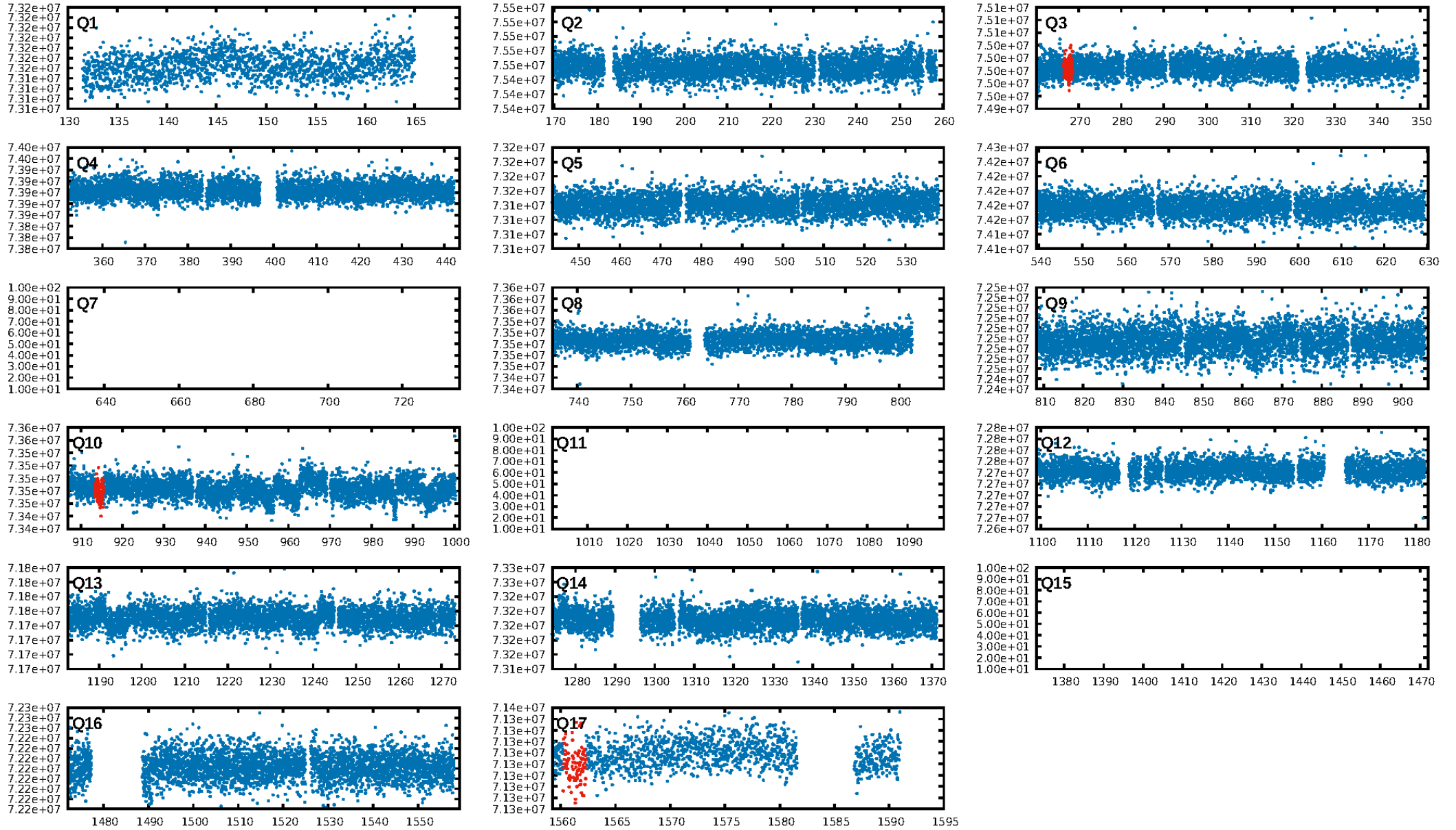
## DV Fit Results:

Period = 646.84377 [0.02921] d  
Epoch = 267.5670 [0.0414] BKJD  
Rp/R\* = 0.0110 [0.0053]  
a/R\* = 143.49 [303.26]  
b = 0.71 [1.51]  
Seff = 0.31 [0.10]  
Teq = 190 [15] K  
Rp = 0.99 [0.53] Re  
a = 1.4220 [0.2828] AU  
Ag = 95163.60 [101894.29] [0.93σ]  
Teffp = 5163 [1337] K [3.72σ]

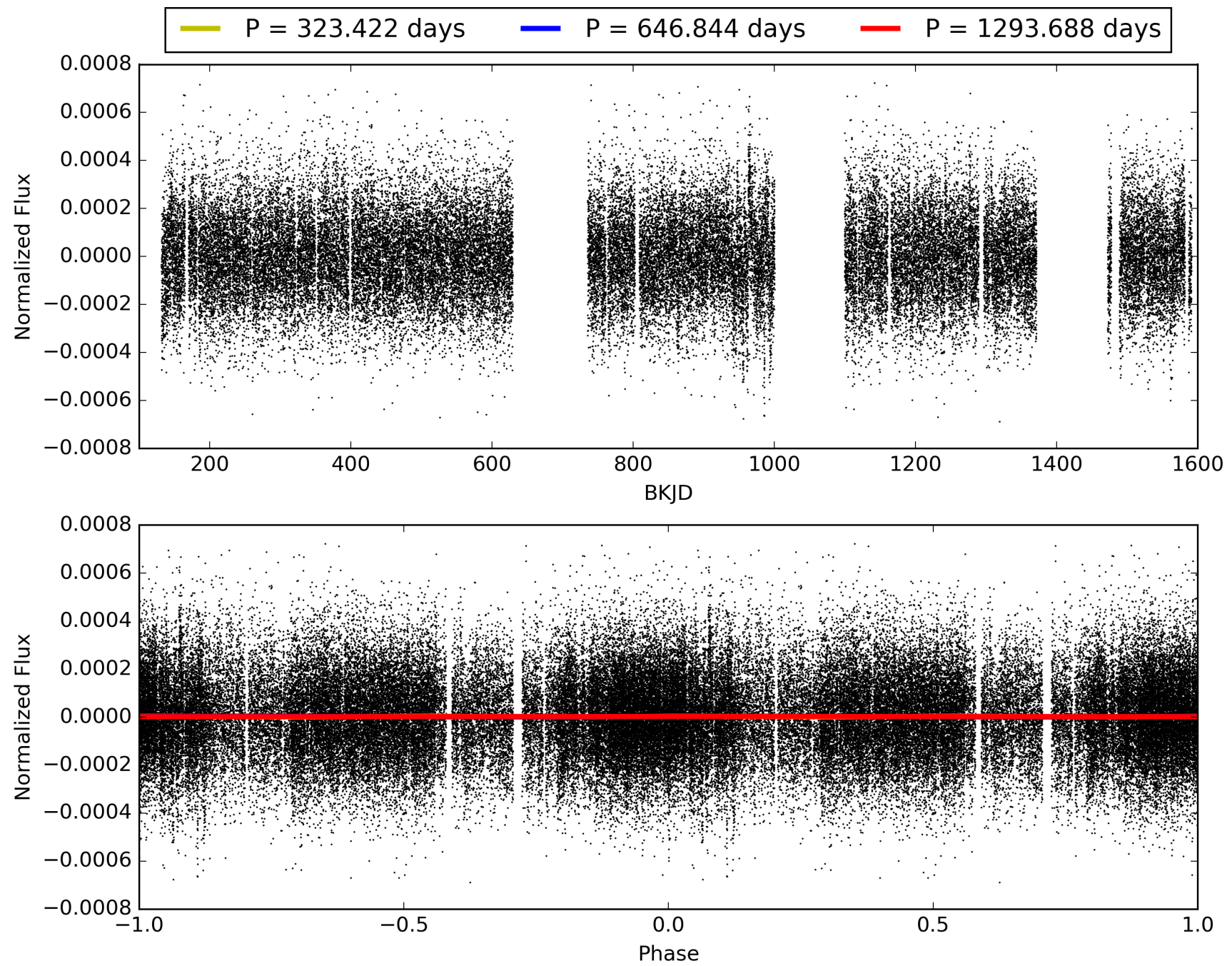
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 82.2%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 8.41e-09**  
RollingBand-fgt: 1.00 [2/2]  
GhostDiagnostic-chr: 1.656  
Centroid-sig: 17.2%  
Centroid-so: 2.621 arcsec [1.26σ]  
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 [1/1]

# TCE 010287149-01, PDC Light Curves

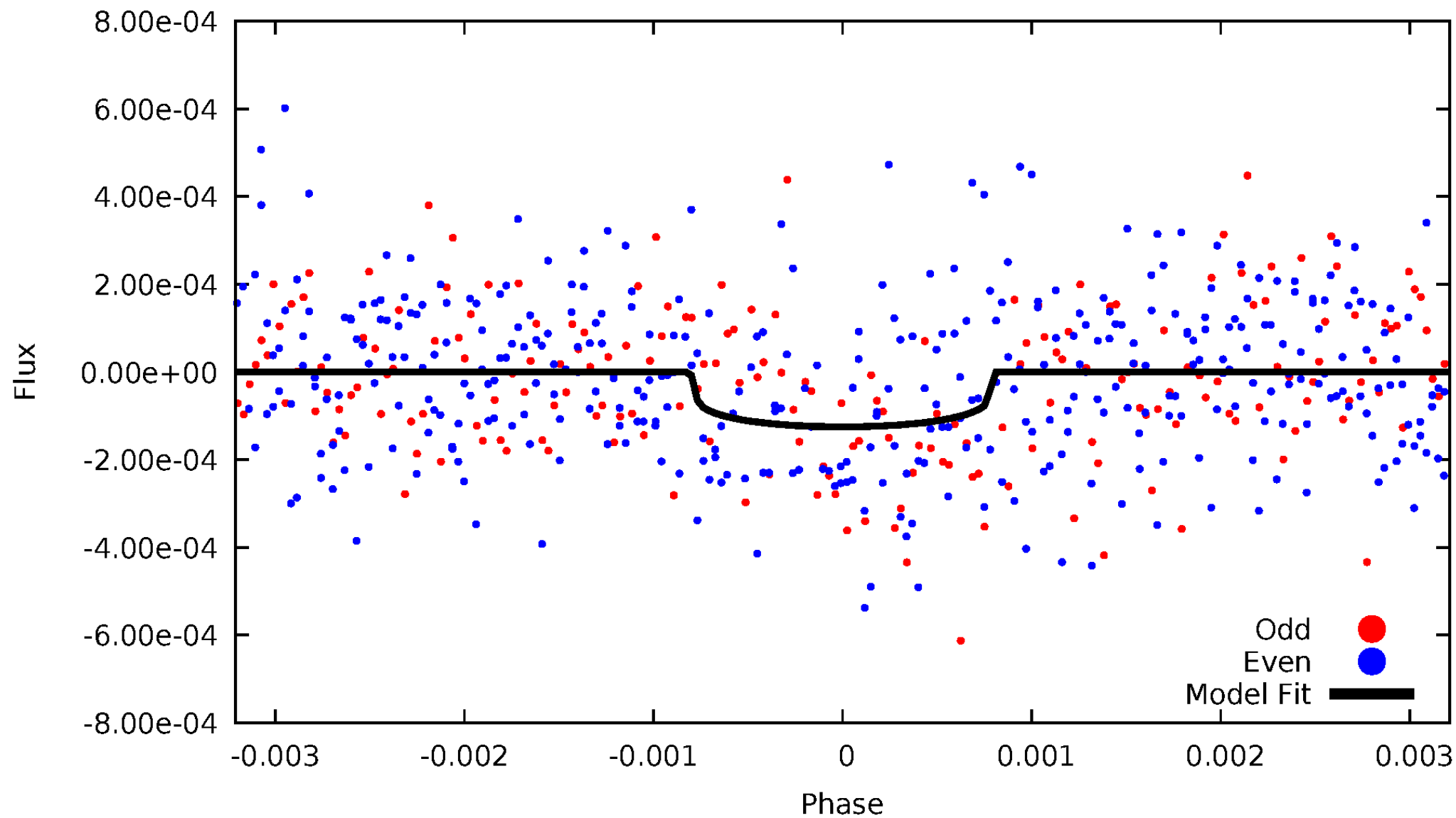


TCE 010287149-01



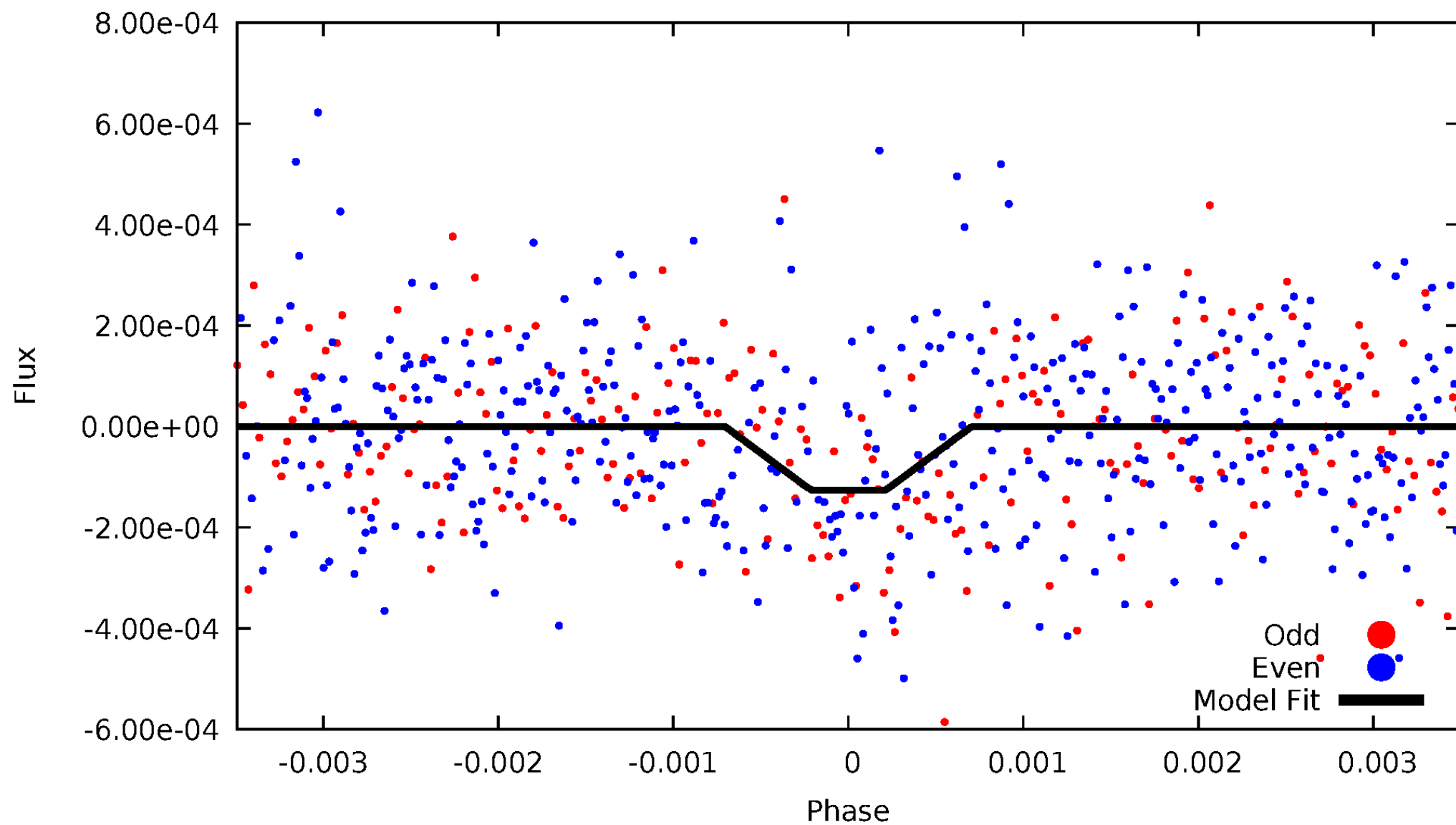
# DV Odd/Even

TCE 010287149-01



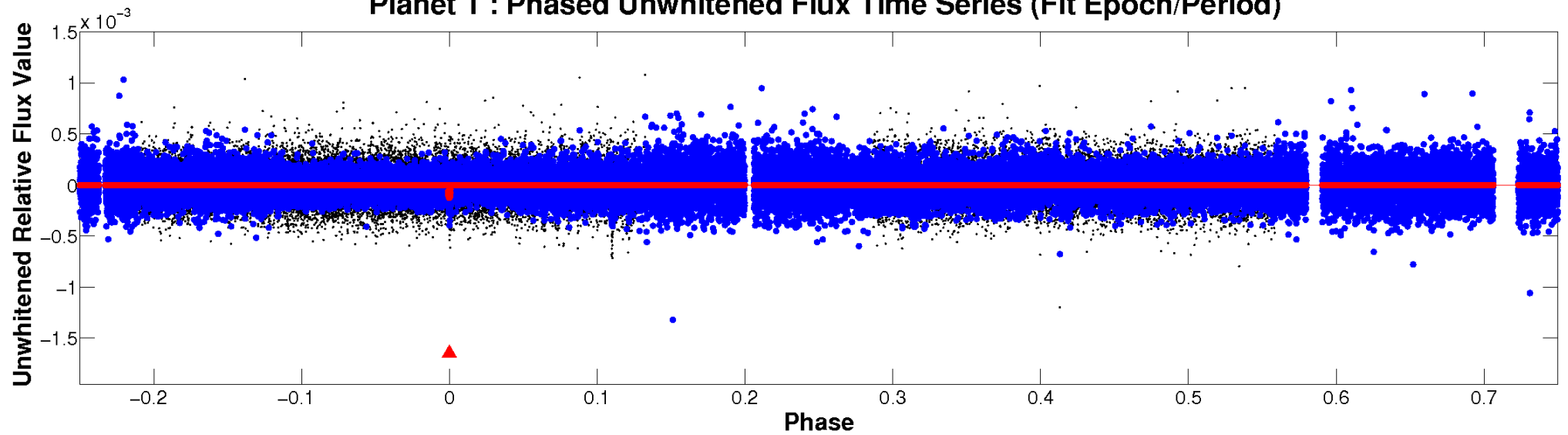
# ALT Odd/Even

TCE 010287149-01

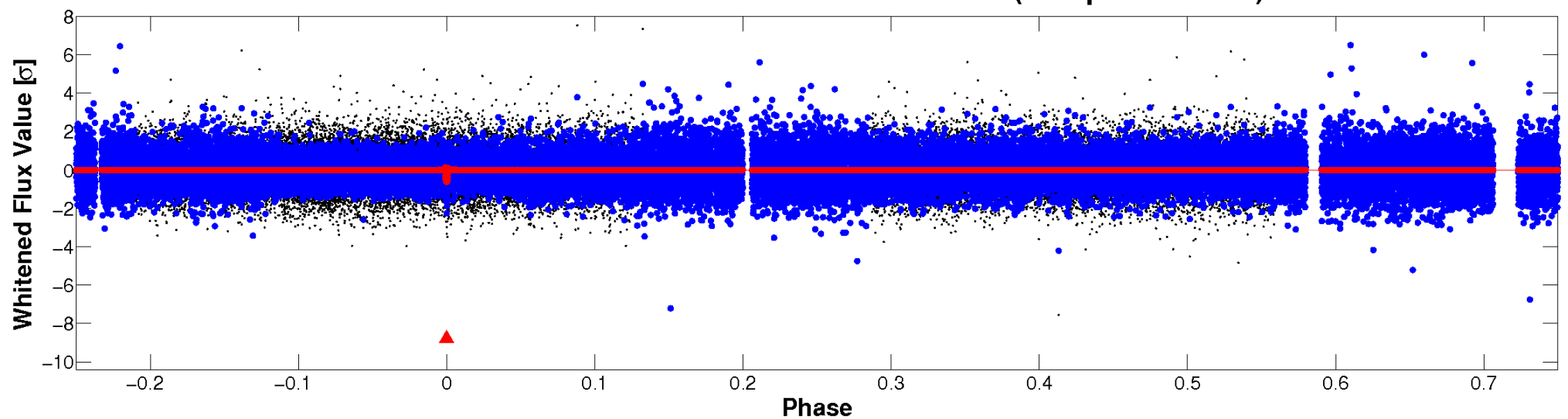


# Non-Whitened Vs. Whitened Light Curve

**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 010287149-01 P=646.843767 Days  $T_0=267.566966$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 010287149-01 P=646.843767 Days  $T_0=267.566966$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

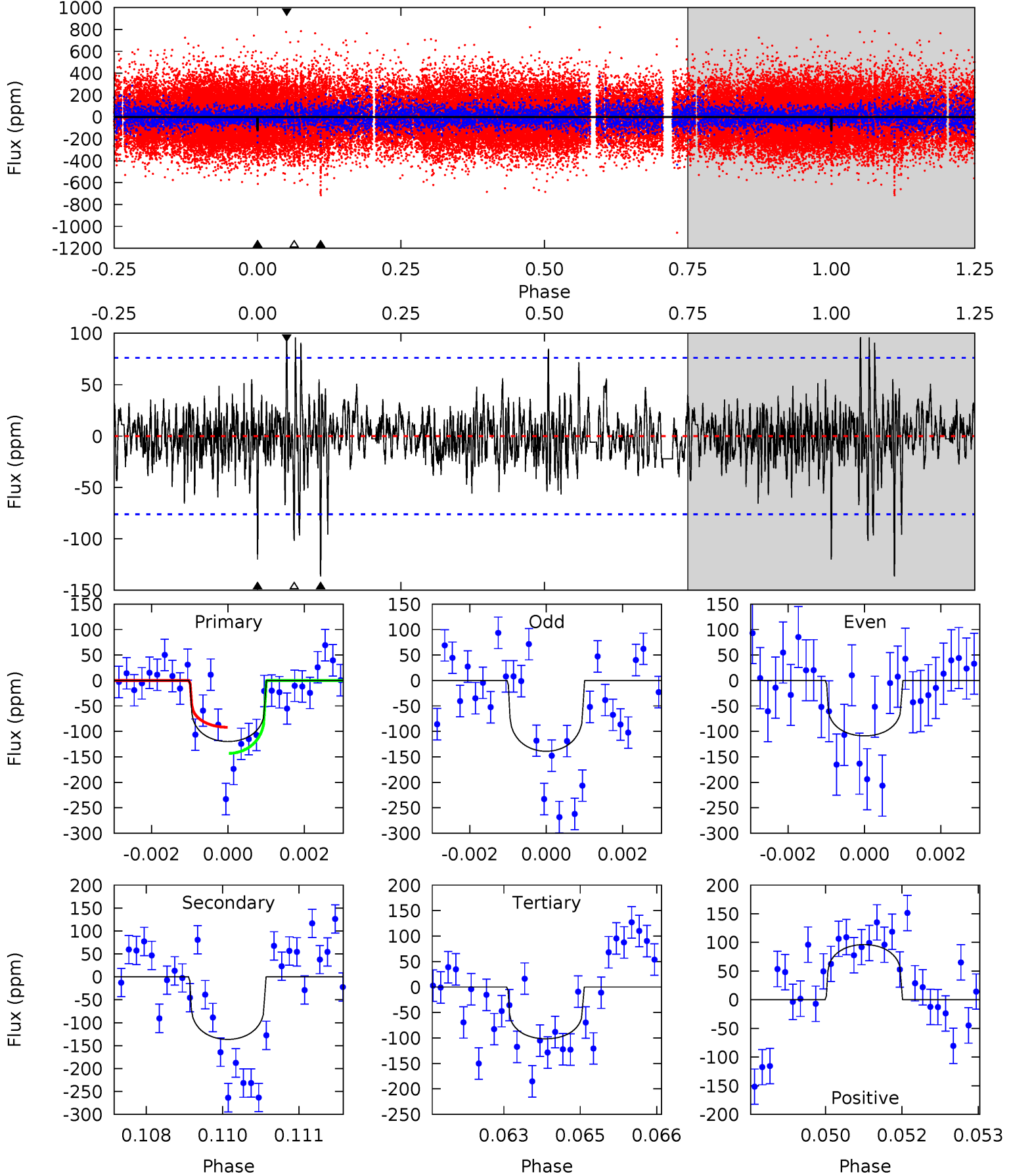
TCE 010287149-01 P=646.837964 Days  $T_0=267.620941$  (BKJD)



# DV Model-Shift Uniqueness Test

010287149-01, P = 646.843767 Days, E = 267.566966 Days

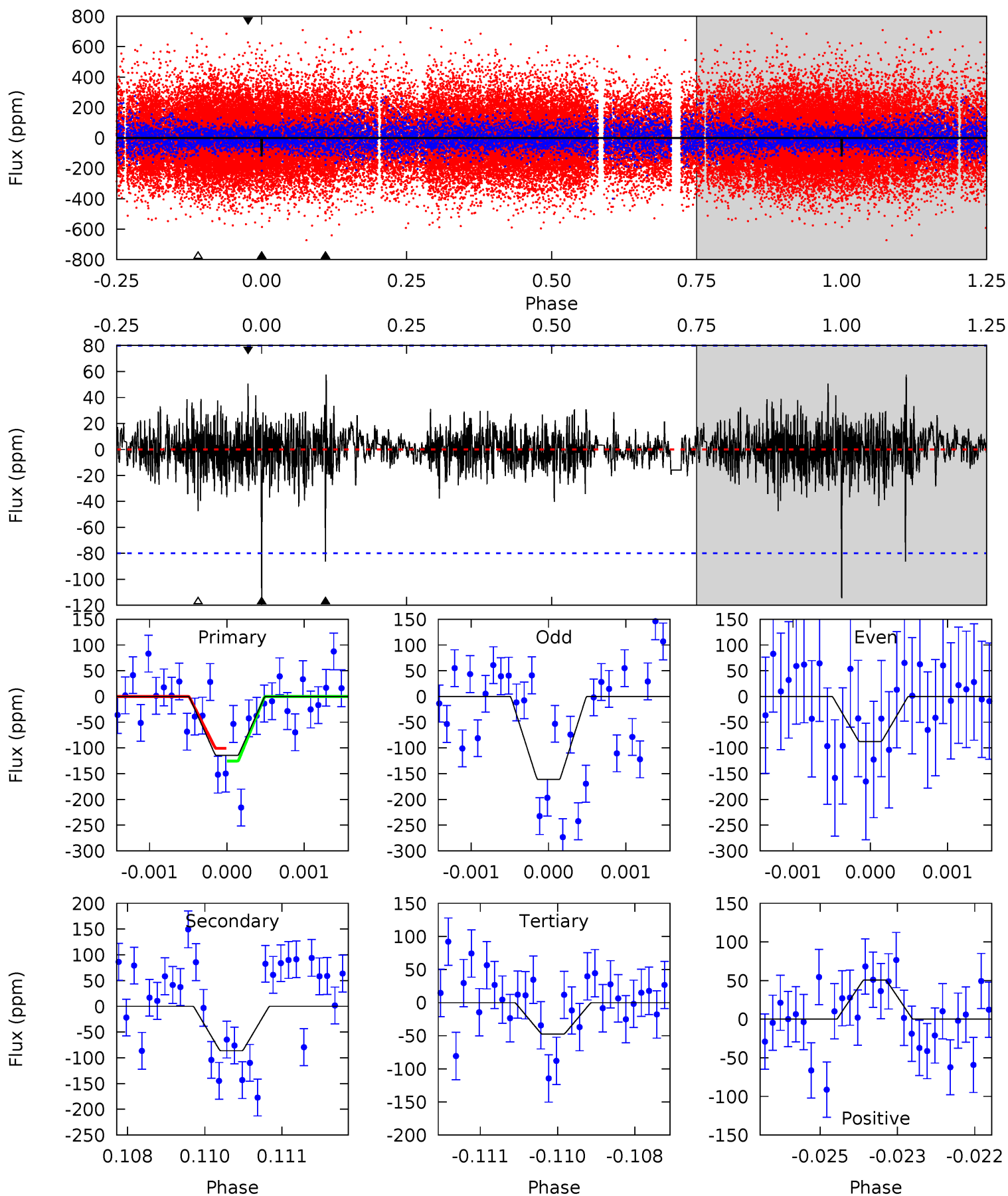
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.45	9.62	7.17	6.79	5.37	3.15	1.51	1.29	1.66	2.46	2.83	1.01	1.01	0.41	1.81



# Alt Model-Shift Uniqueness Test

010287149-01, P = 646.837964 Days, E = 267.620941 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
7.72	5.81	3.20	3.42	5.39	3.19	0.83	4.52	4.30	2.61	2.40	2.39	0.80	0.33	0.82



### Stellar Parameters For KIC 010287149

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5651^{+152}_{-152}$	$4.565^{+0.040}_{-0.160}$	$-0.160^{+0.300}_{-0.300}$	$0.827^{+0.194}_{-0.078}$	$0.924^{+0.083}_{-0.104}$	$2.299^{+0.473}_{-0.983}$
	+3%/-3%	+1%/-4%	+188%/-188%	+23%/-9%	+9%/-11%	+21%/-43%
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 010287149-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-136 \pm 14$	$1.06^{+0.52}_{-0.49}$	$271^{+16}_{-11}$	$5735^{+2202}_{-896}$	$135427^{+328649}_{-74388}$
Alt.	$-86 \pm 15$	$1.06^{+0.53}_{-0.47}$	$272^{+15}_{-12}$	$5158^{+1684}_{-763}$	$82098^{+189509}_{-45464}$

$T_{\text{max}}$  = 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

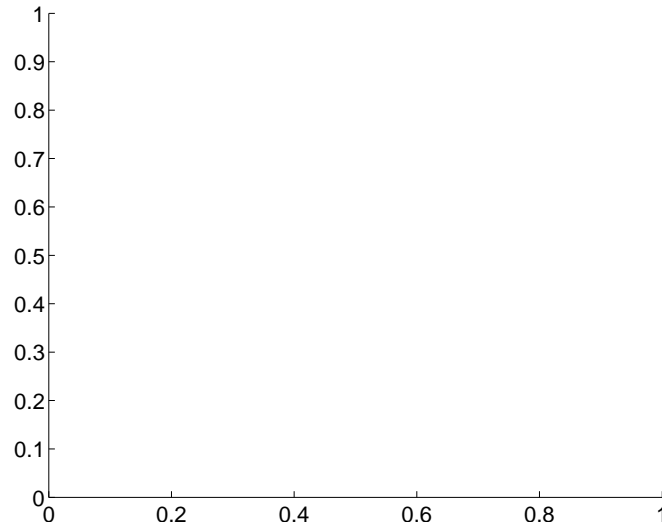
Supplemental centroid analysis for 010287149-01. Kepler magnitude: 13.70. Transit SNR 6.46

There are 0 quarters with good PRF difference image offsets

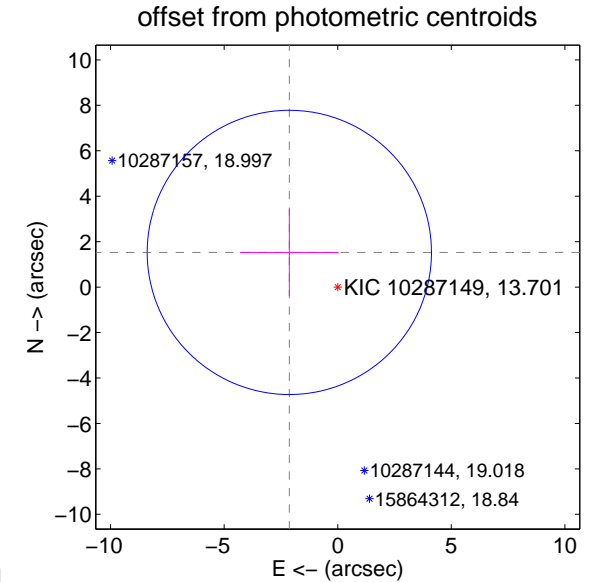
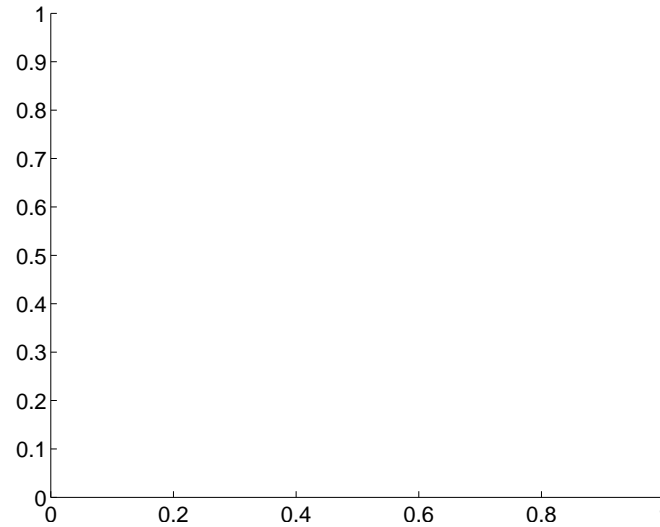
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	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	$2.62 \pm 2.09$	1.26	$2.13 \pm 2.17$	$1.53 \pm 1.92$

There is no PRF-fit offset from OOT-fit



There is no PRF-fit offset from KIC



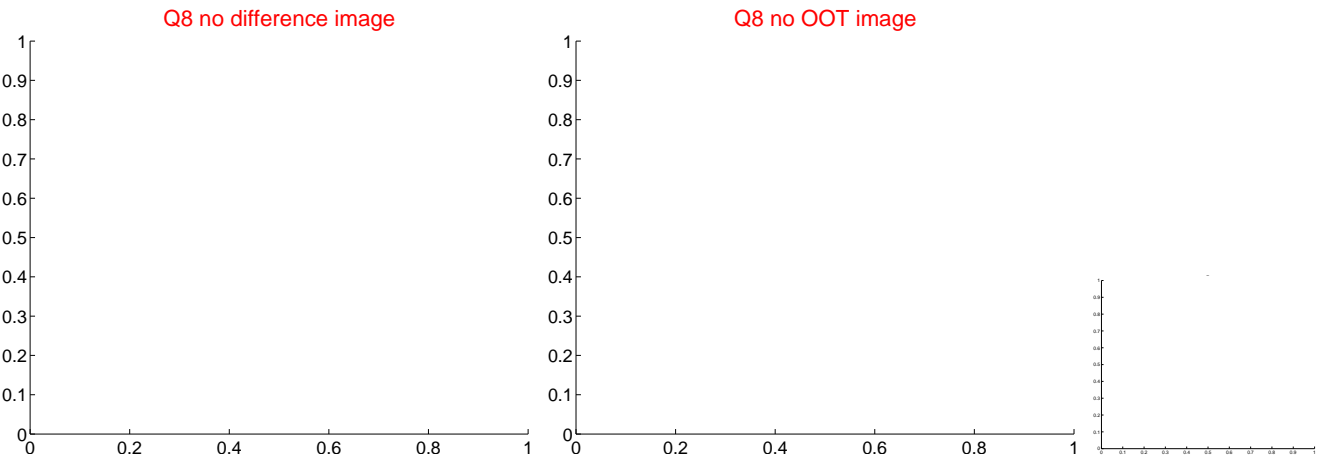
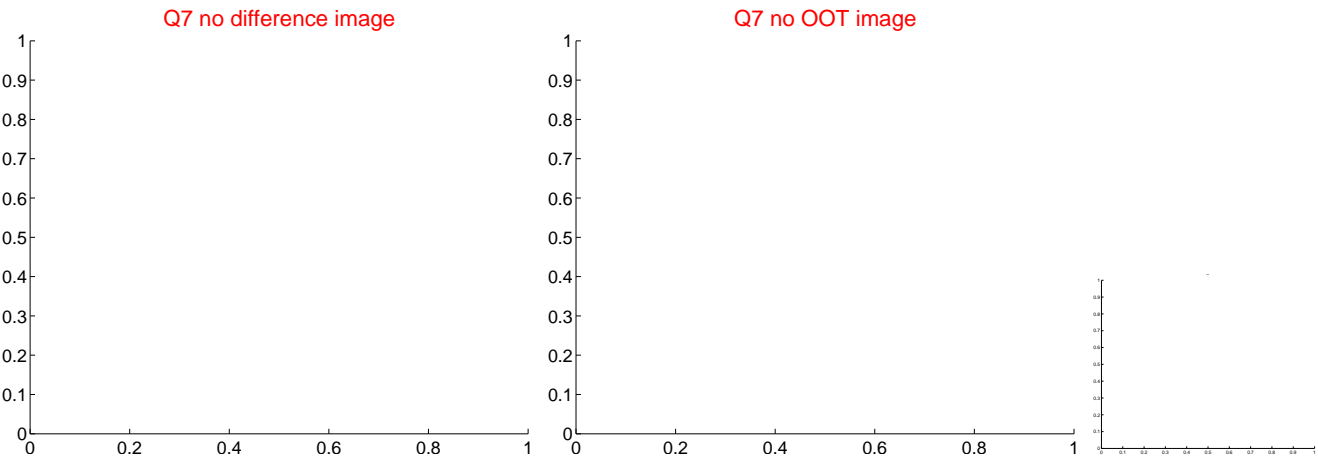
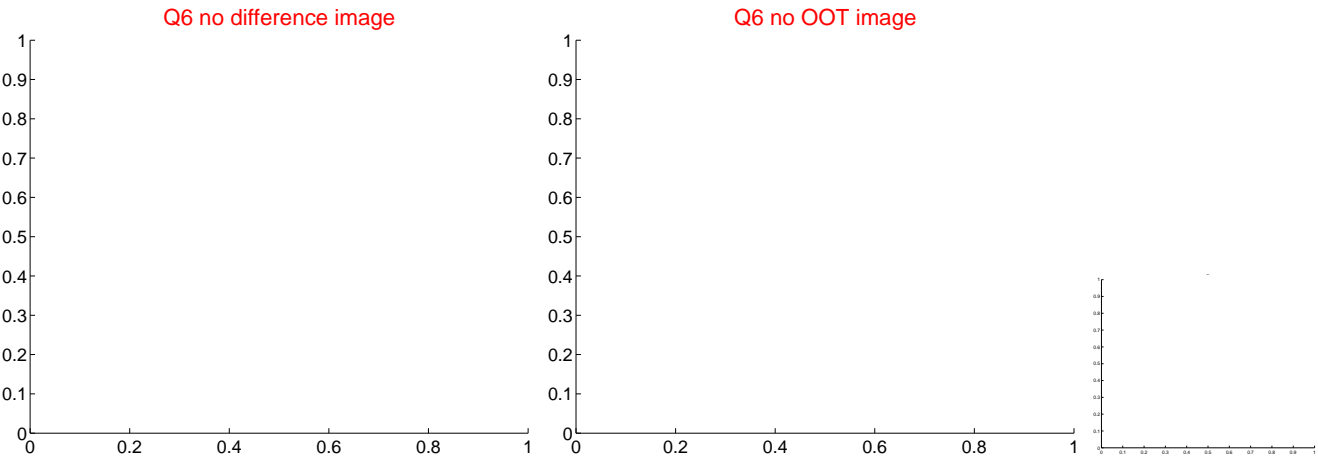
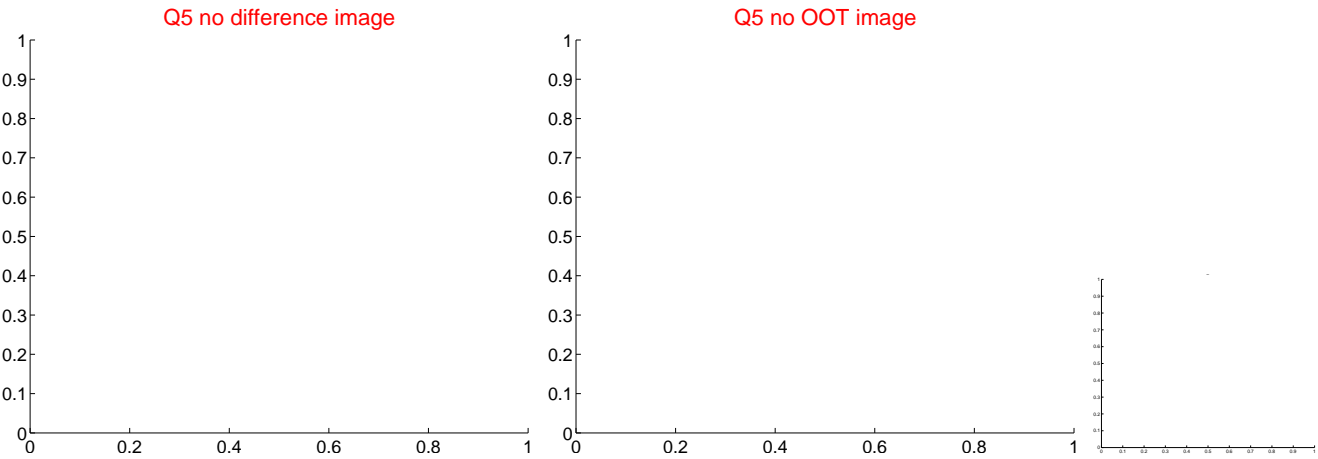
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



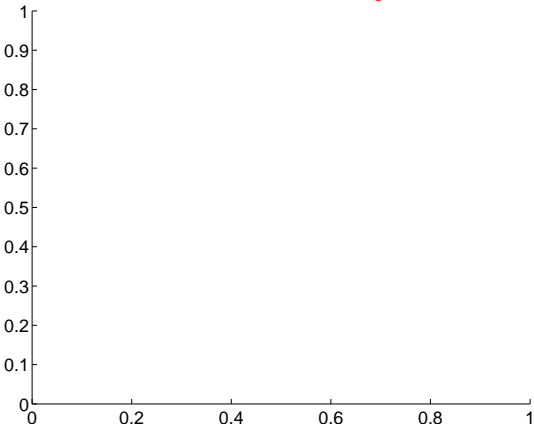


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

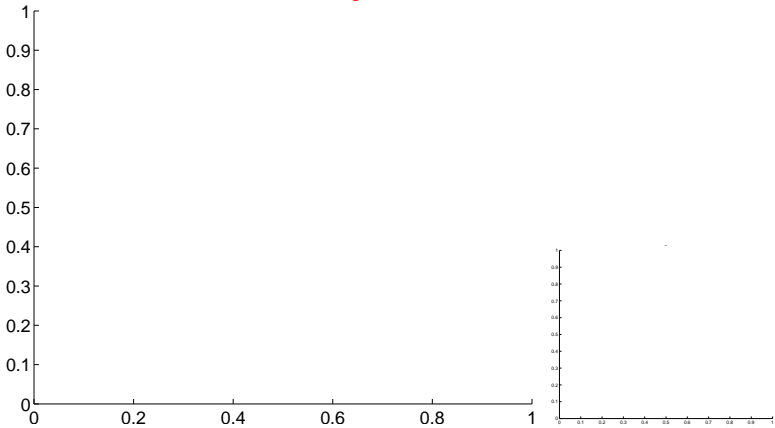


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

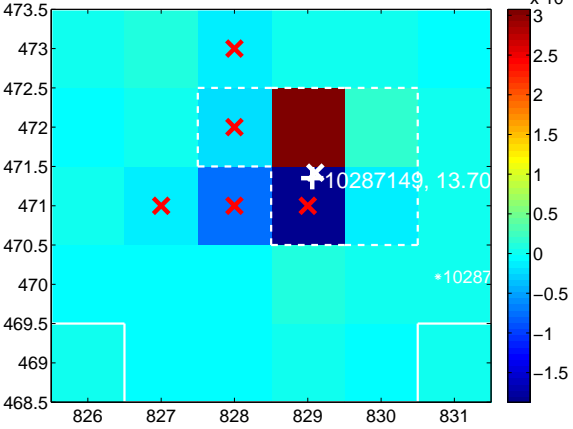
Q9 no difference image



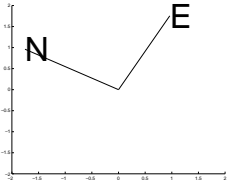
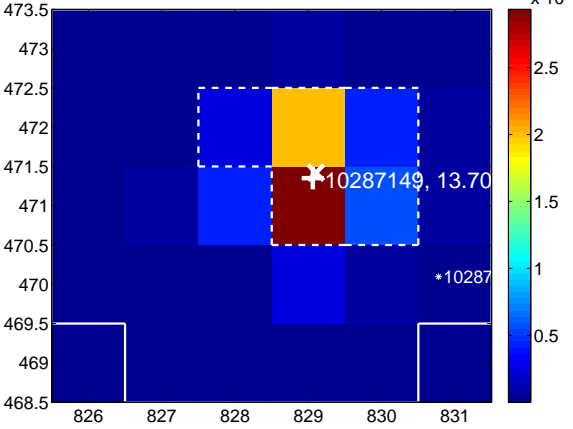
Q9 no OOT image



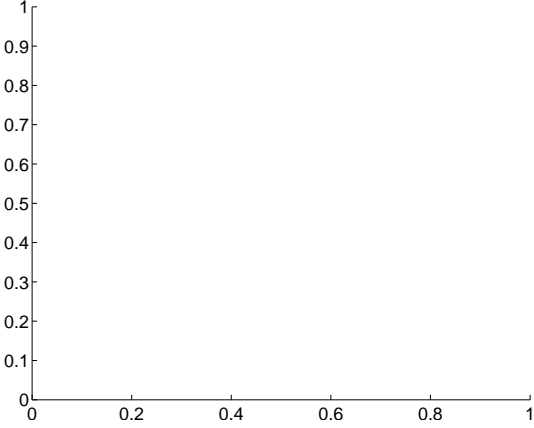
Q10 difference image. Poor Quality



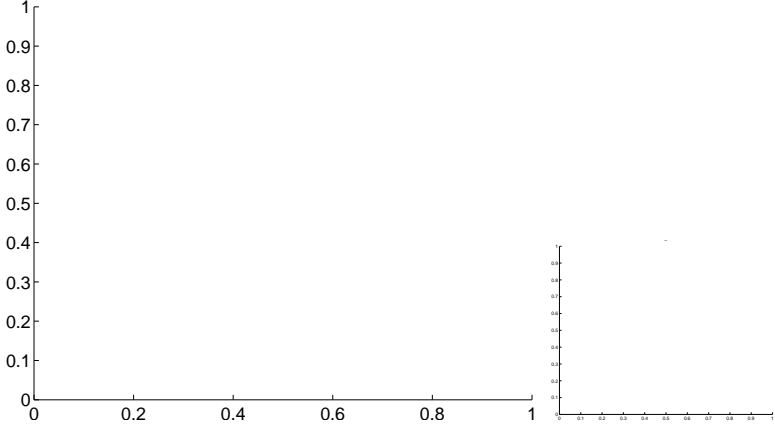
Q10 OOT image



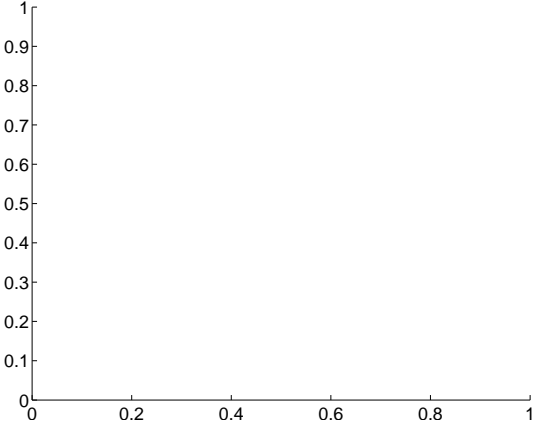
Q11 no difference image



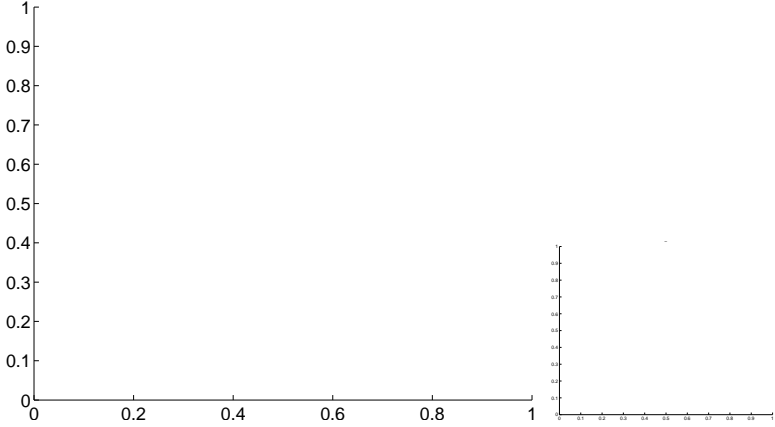
Q11 no OOT image



Q12 no difference image



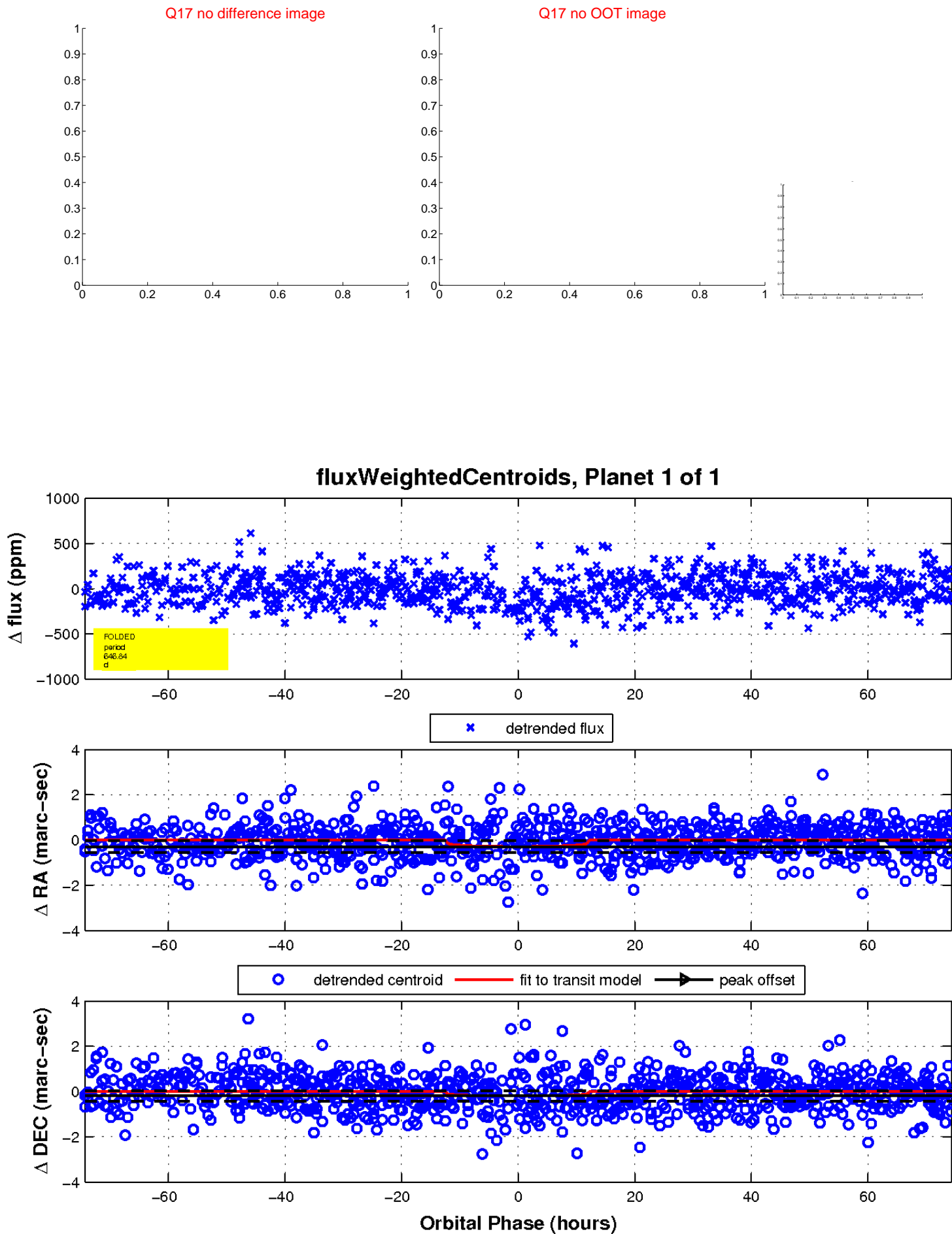
Q12 no OOT image



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

