

# KIC 009074898

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009074898-01	OBS	No	534.641195	424.409323	227.5	12.600	9.3	9.2	0.71	4930	1.08	0.20

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009074898-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—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.

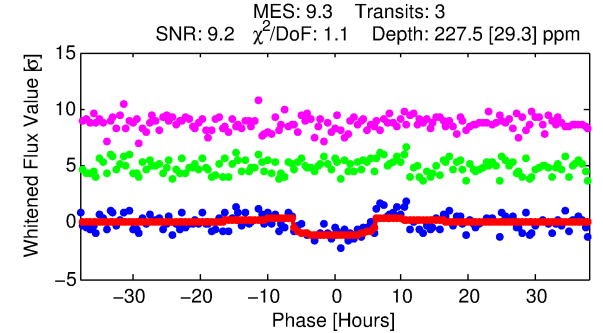
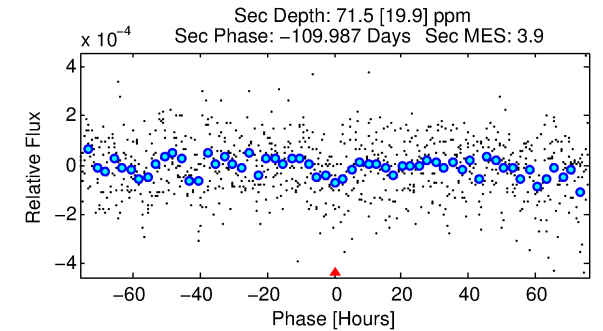
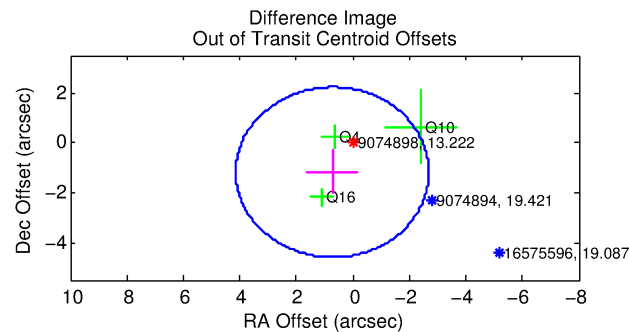
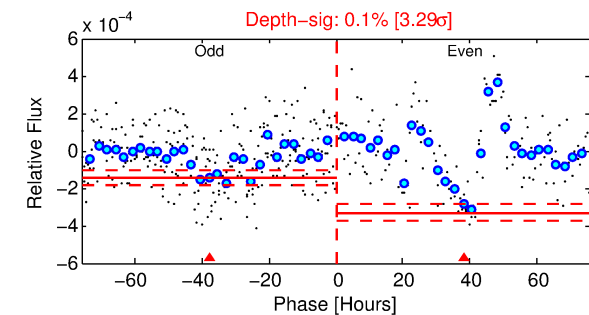
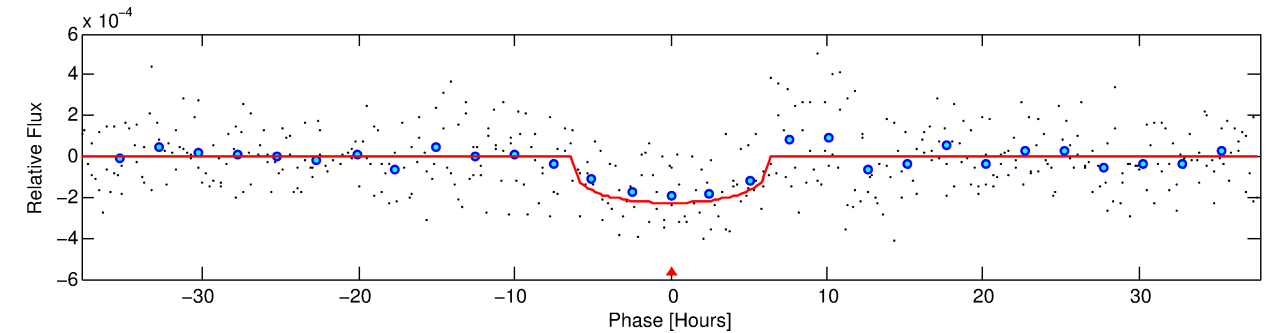
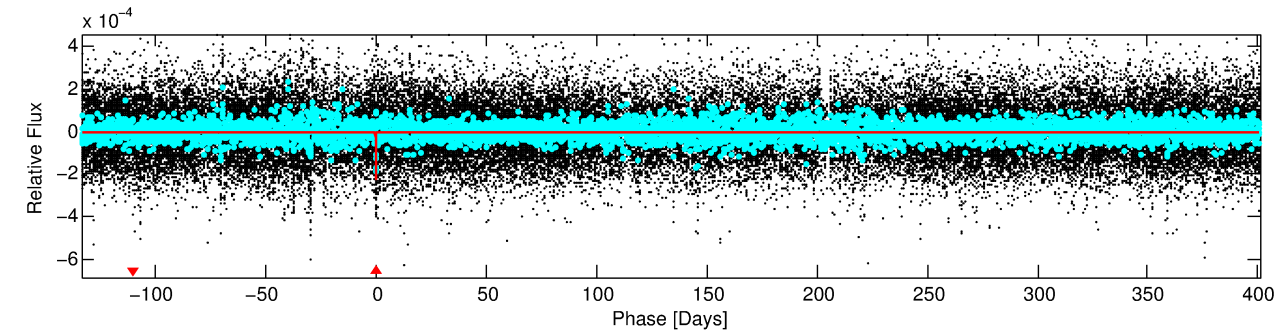
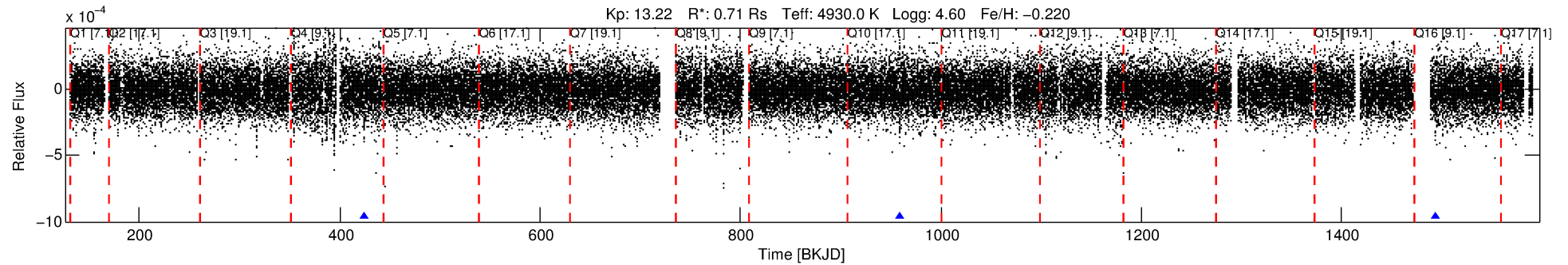
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009074898-01

No Significant Match Found

# DV One-Page Summary

KIC: 9074898 Candidate: 1 of 1 Period: 534.641 d



## DV Fit Results:

Period = 534.64120 [0.01217] d  
Epoch = 424.4093 [0.0152] BKJD  
Rp/R\* = 0.0141 [0.0112]  
a/R\* = 277.24 [766.42]  
b = 0.54 [3.60]  
Seff = 0.20 [0.03]  
Teq = 170 [7] K  
Rp = 1.09 [0.87] Re  
a = 1.1570 [0.0862] AU  
Ag = 44693.92 [72486.60] [0.62σ]  
Teffp = 3822 [1551] K [2.35σ]

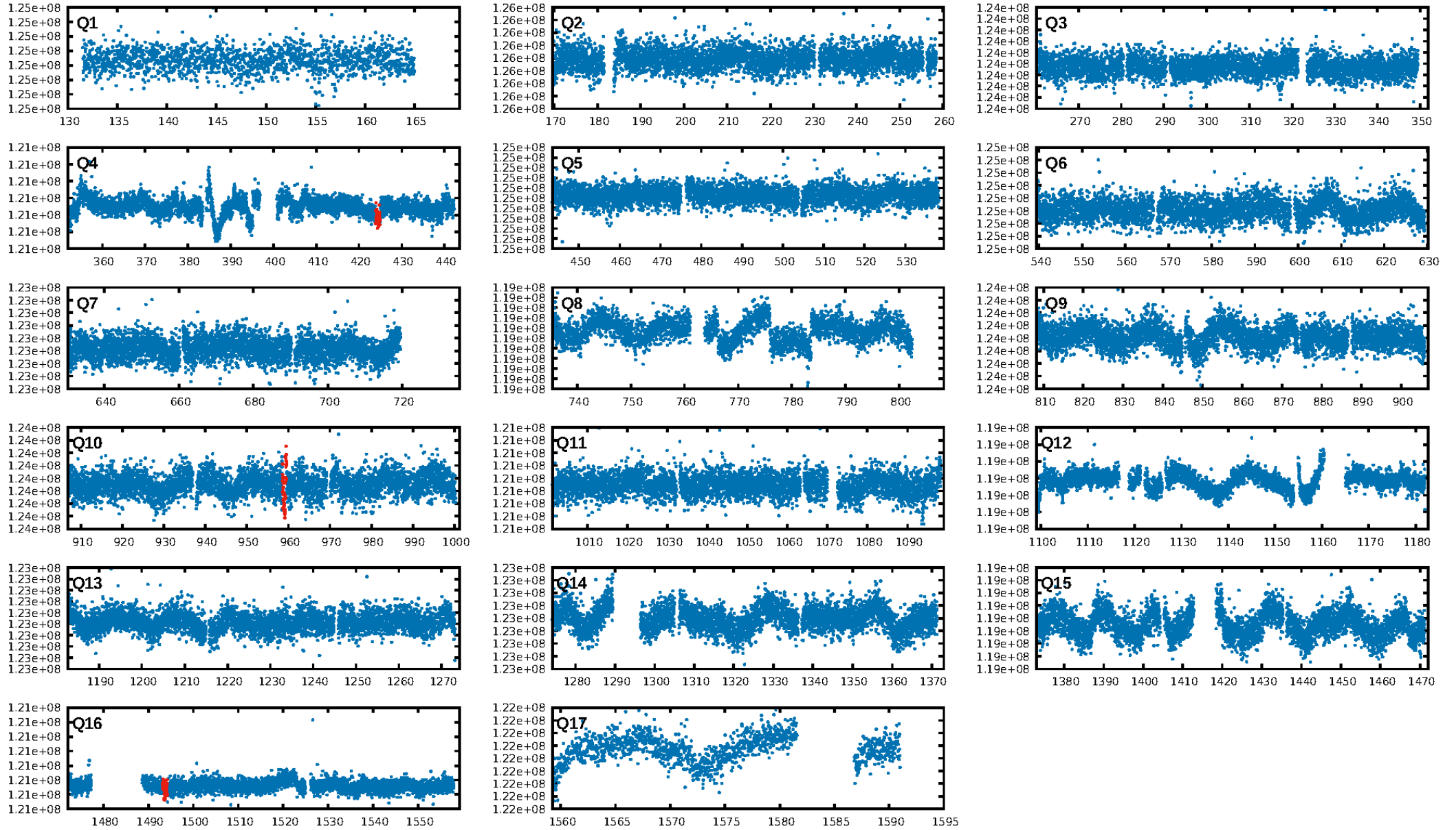
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 8.9%  
ModelChiSquareGof-sig: 93.1%  
Bootstrap-pfa: 6.82e-16  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 2.563  
Centroid-sig: 44.0%  
Centroid-so: 1.381 arcsec [1.48σ]  
OotOffset-rm: 1.391 arcsec [1.22σ]  
OotOffset-st: 1/0/2/0 [3]  
KicOffset-rm: 1.516 arcsec [1.65σ]  
KicOffset-st: 1/0/2/0 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

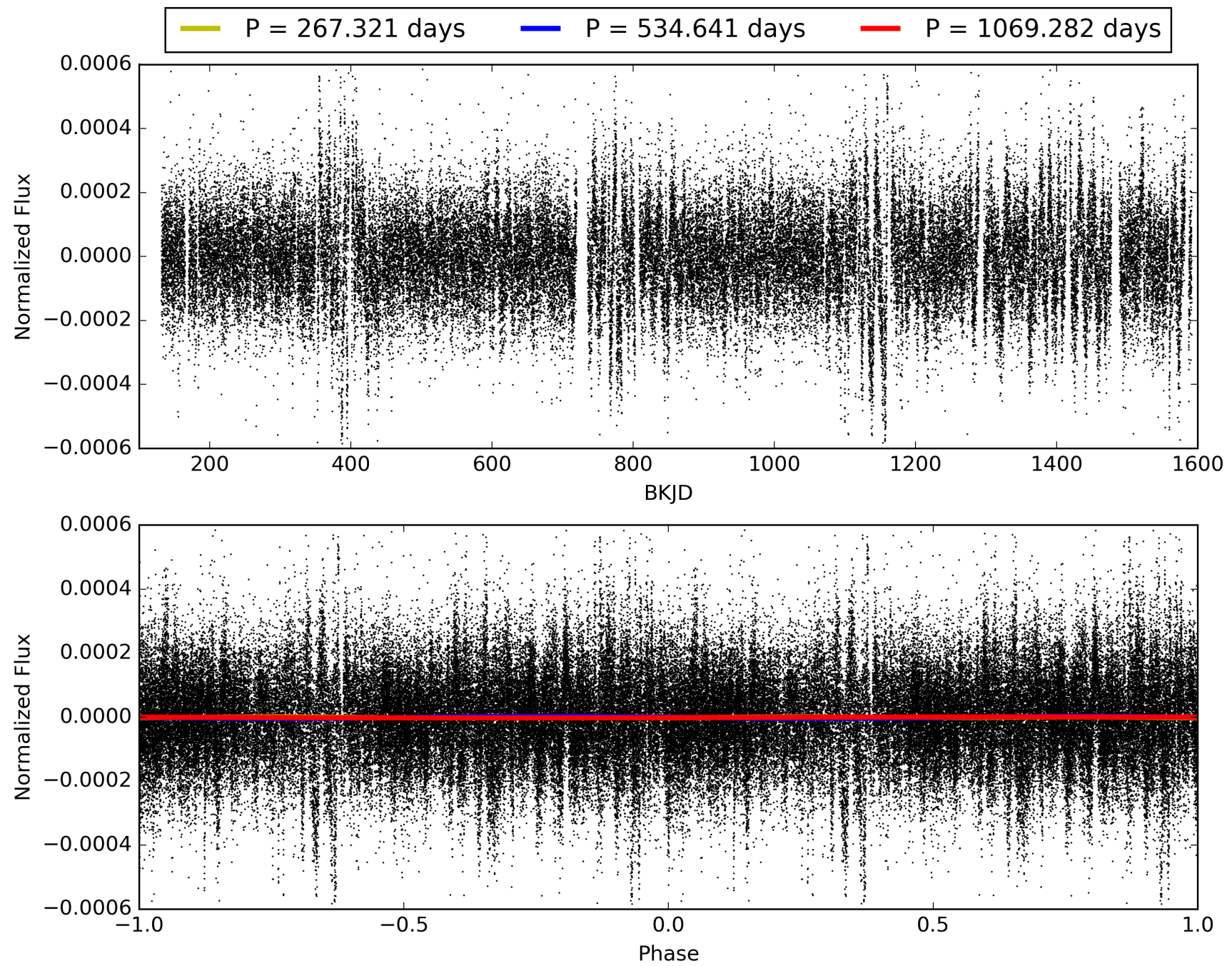
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:26:21 Z

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

# TCE 009074898-01, PDC Light Curves

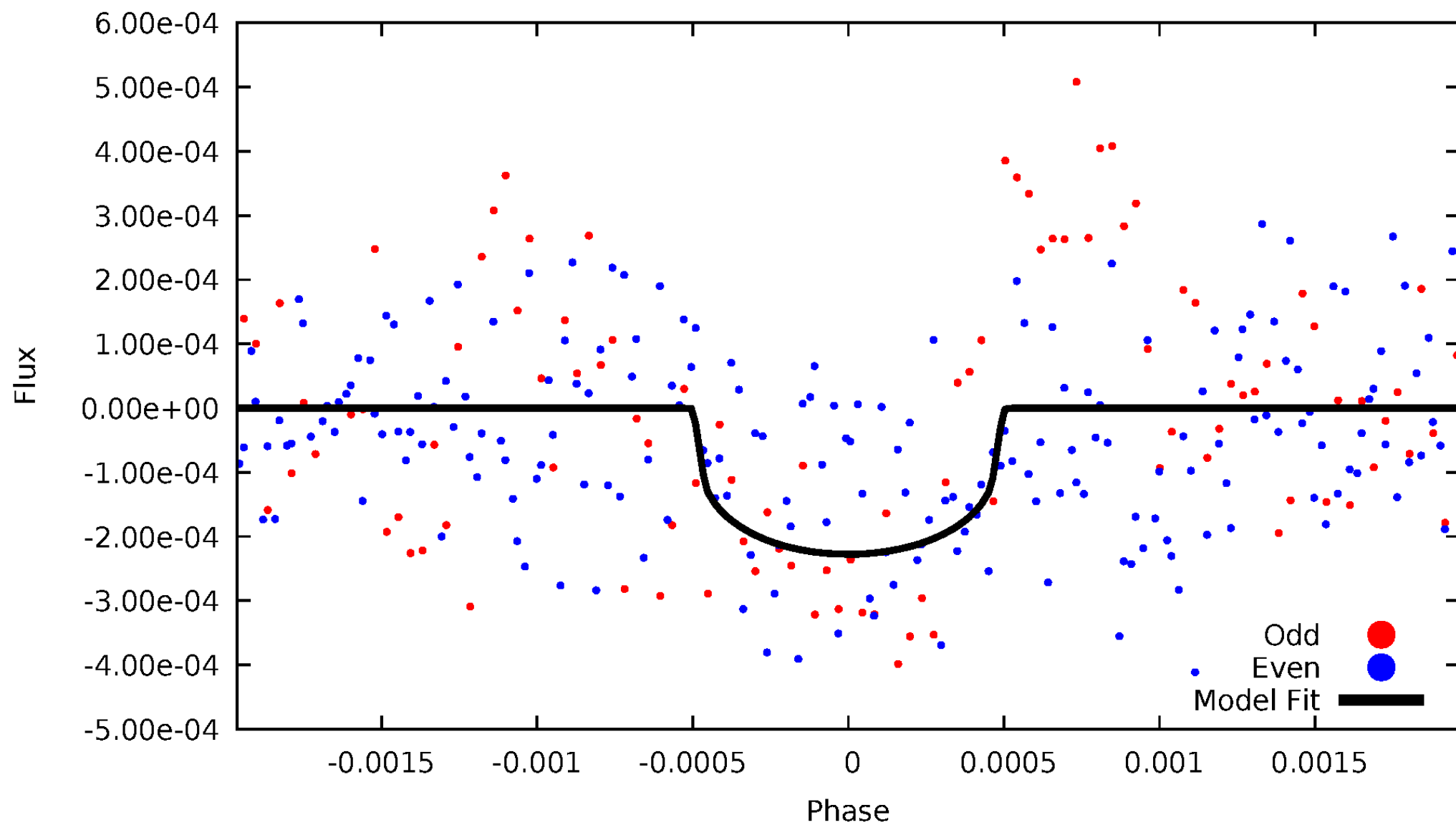


TCE 009074898-01



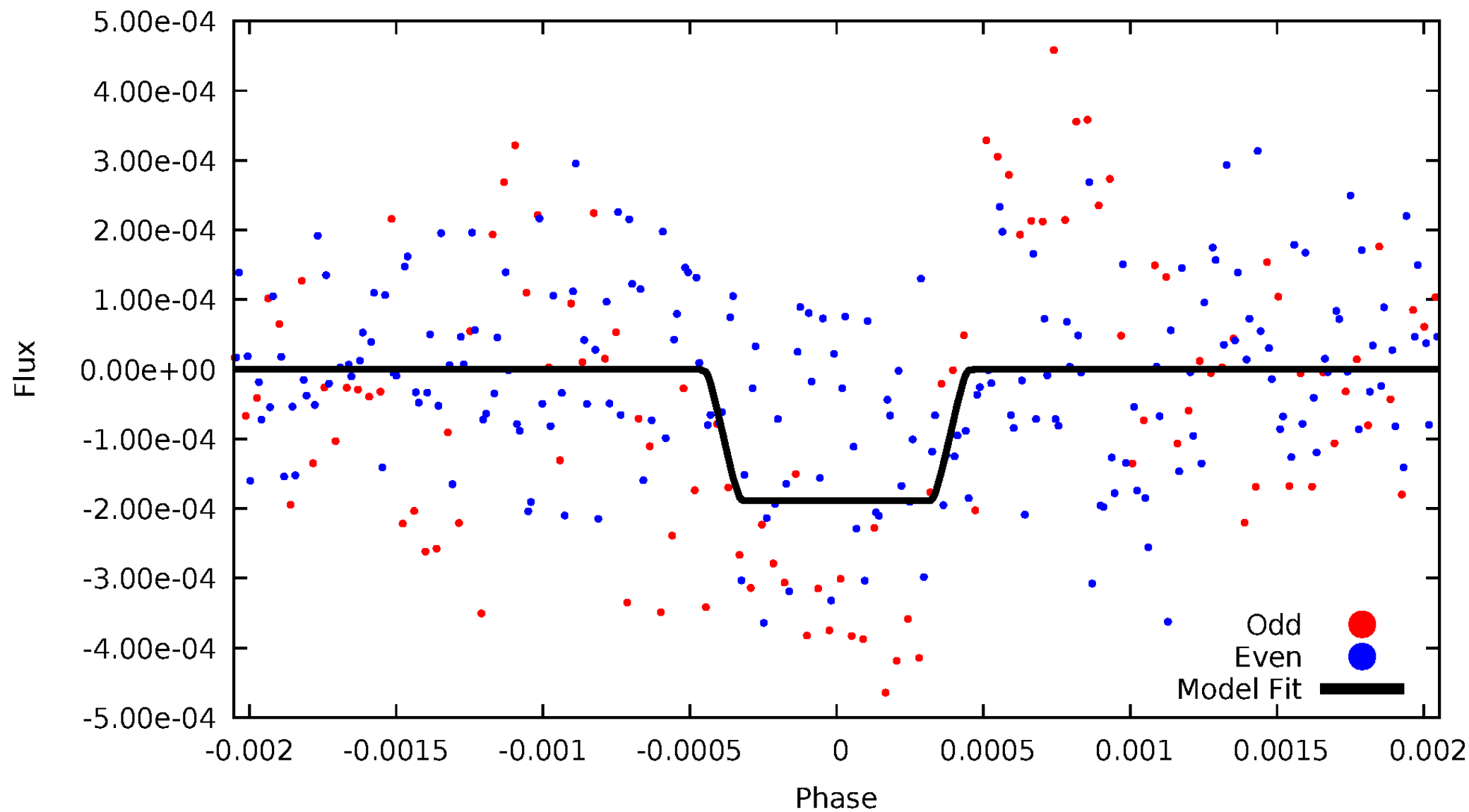
# DV Odd/Even

TCE 009074898-01



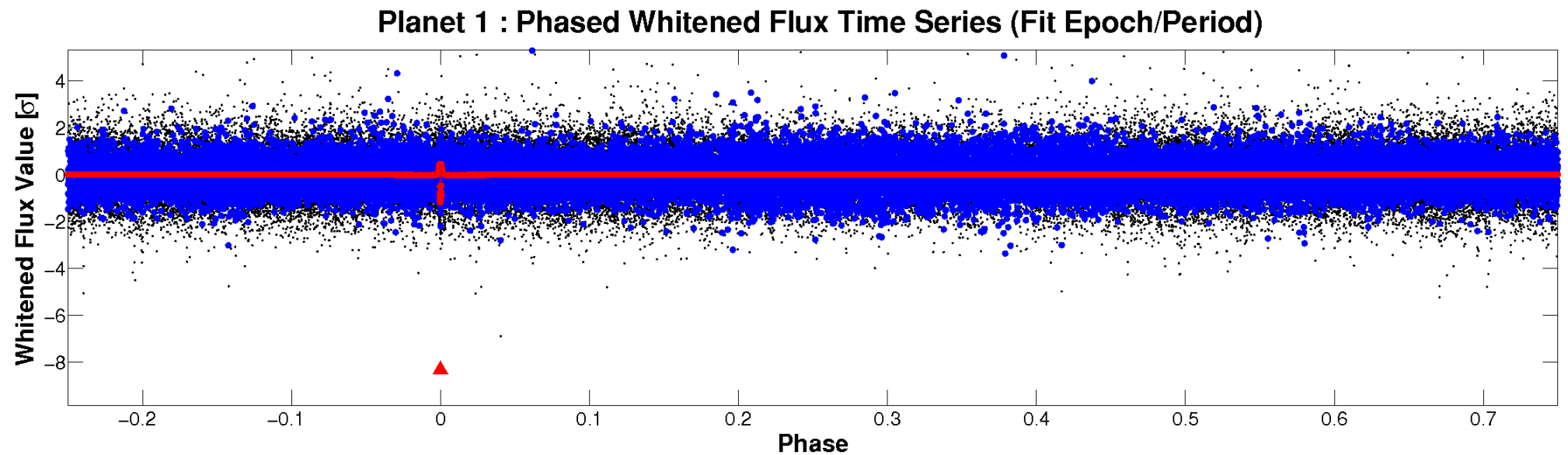
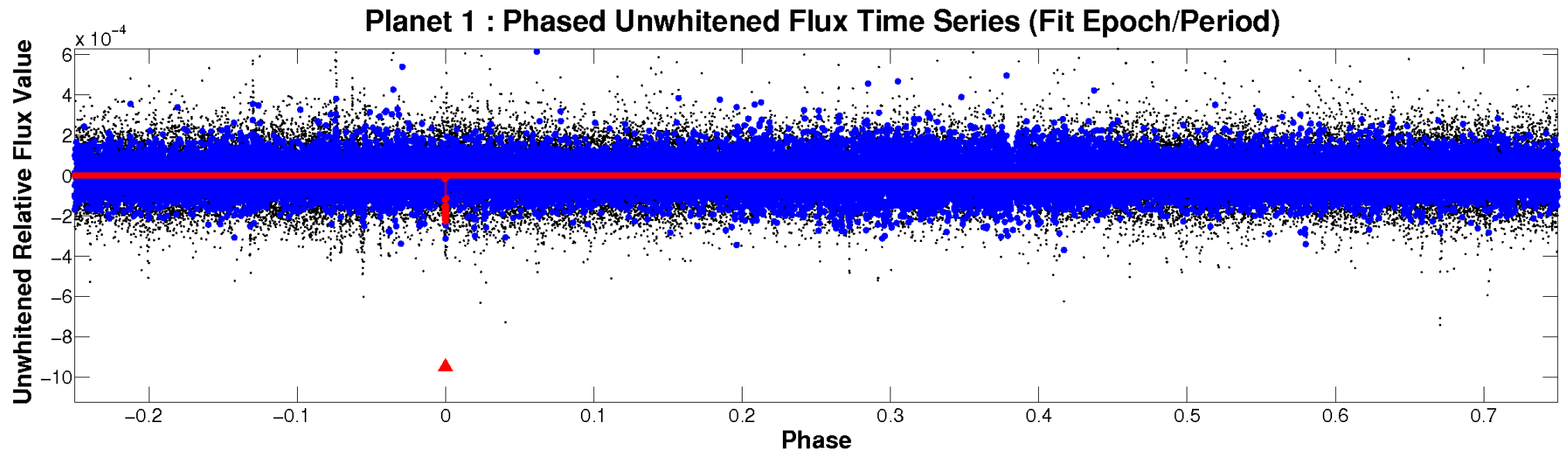
# ALT Odd/Even

TCE 009074898-01





# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

TCE 009074898-01 P=534.641195 Days  $T_0=424.409323$  (BKJD)





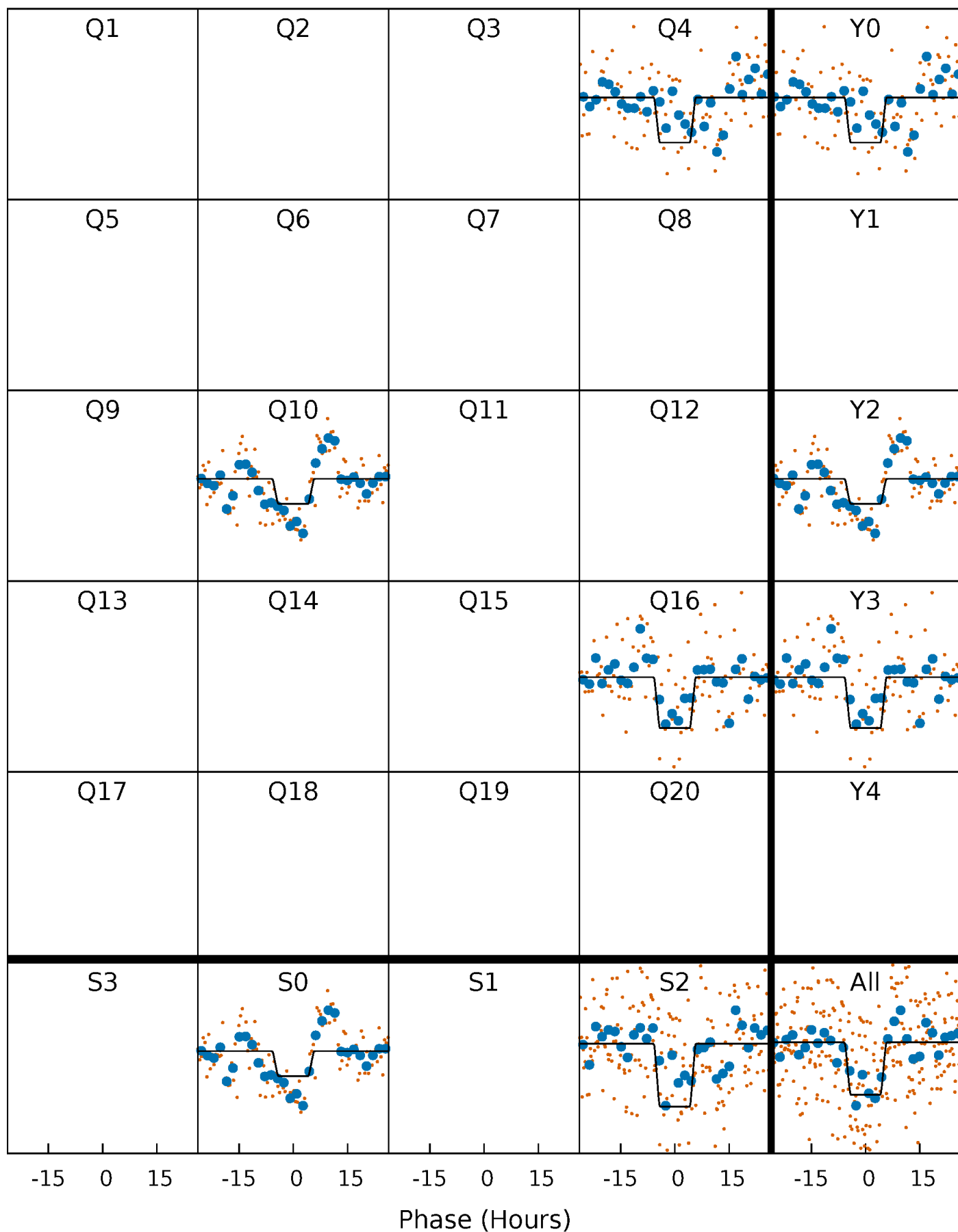
# DV Quarter-Phased Transit Curves

TCE 009074898-01     $P=534.641195$  Days     $T_0=424.409323$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

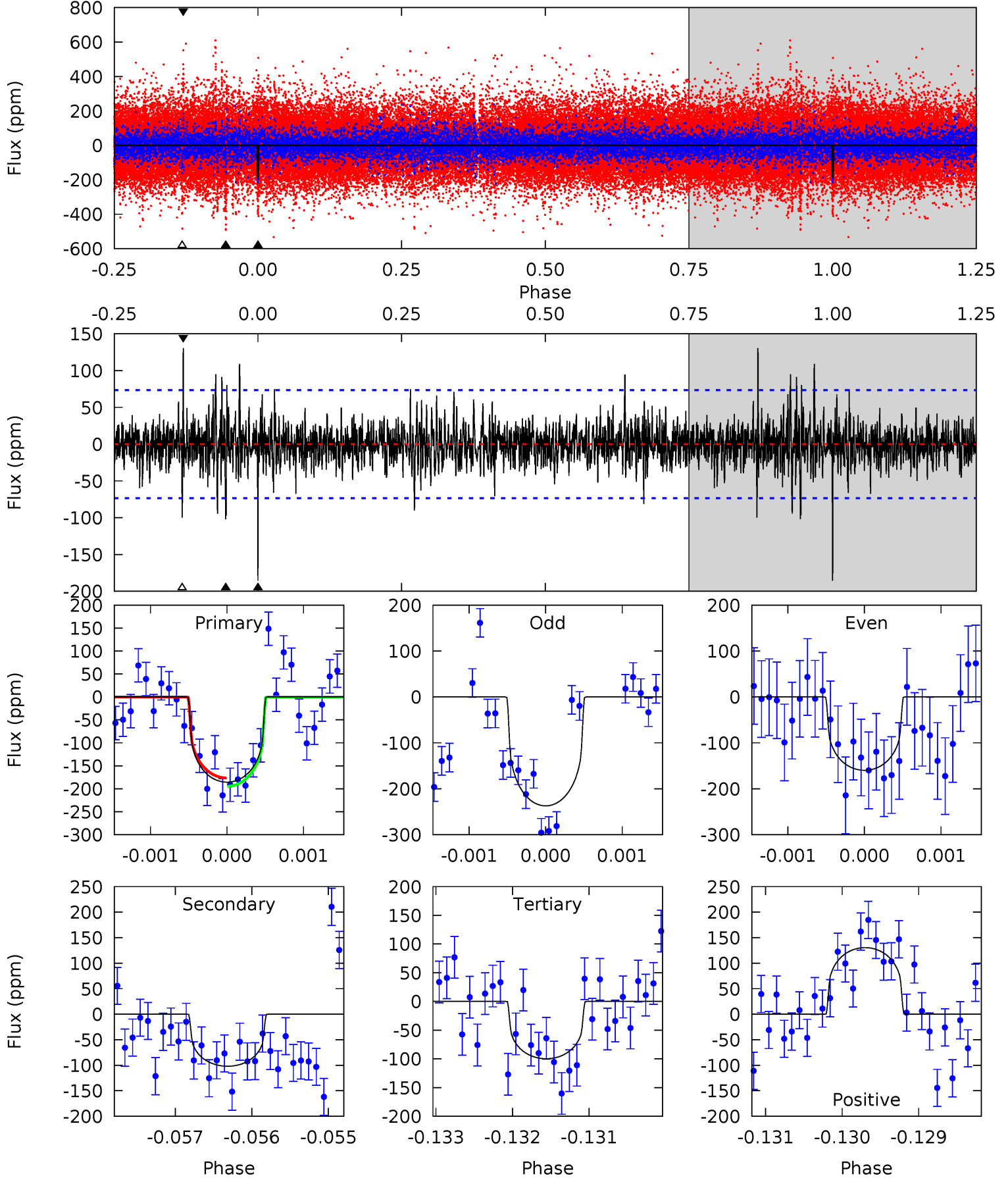
TCE 009074898-01     $P=534.637286$  Days     $T_0=424.409769$  (BKJD)



# DV Model-Shift Uniqueness Test

009074898-01, P = 534.641195 Days, E = 424.409323 Days

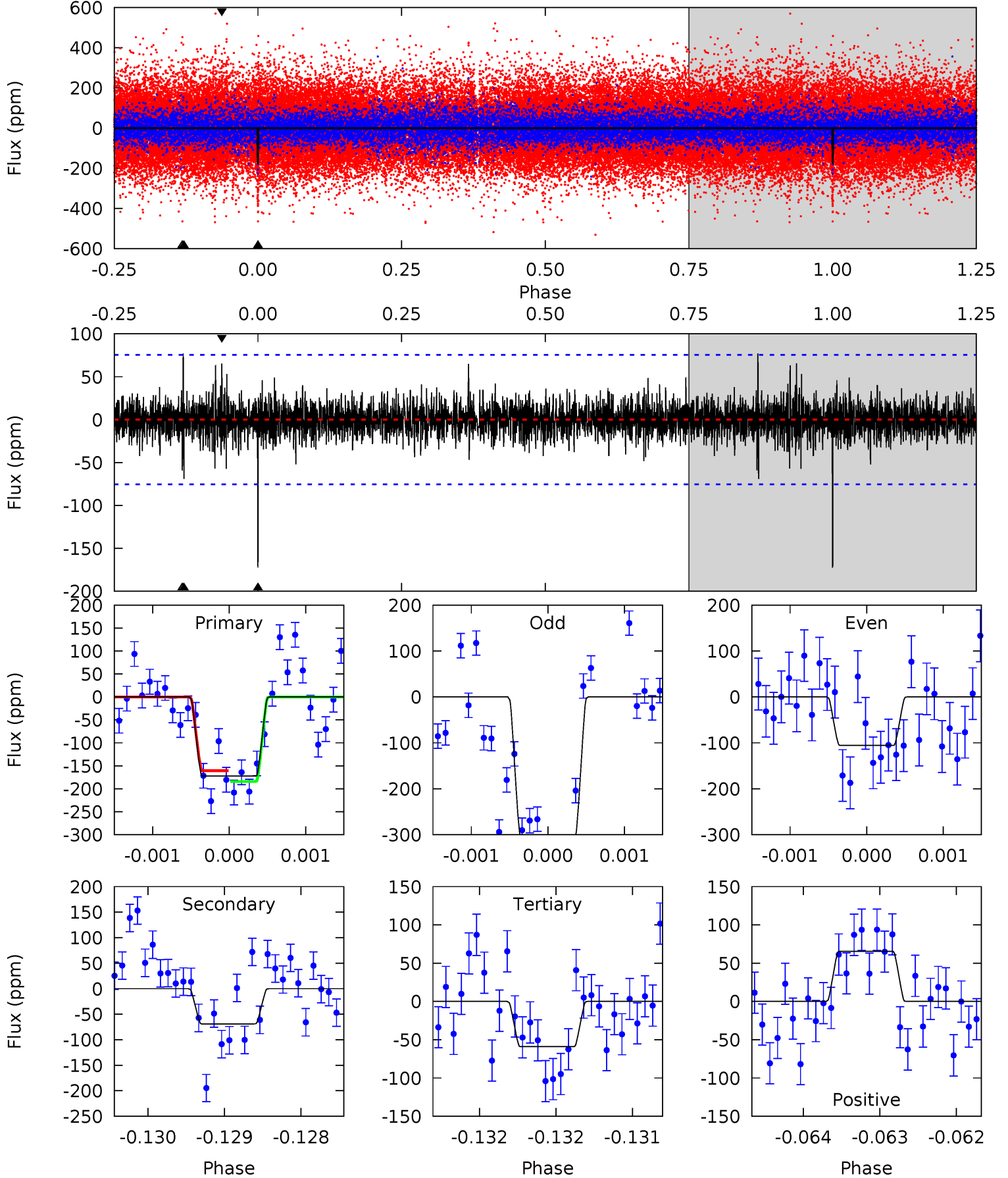
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	7.57	7.41	9.68	5.45	3.29	1.59	6.37	4.10	0.16	-2.12	2.71	1.11	0.41	0.67



# Alt Model-Shift Uniqueness Test

009074898-01, P = 534.637286 Days, E = 424.409769 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
12.5	5.00	4.28	4.75	5.47	3.32	1.02	8.20	7.74	0.71	0.25	6.81	1.35	0.31	0.86



### Stellar Parameters For KIC 009074898

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4930^{+148}_{-133}$	$4.598^{+0.045}_{-0.045}$	$-0.220^{+0.300}_{-0.300}$	$0.707^{+0.070}_{-0.063}$	$0.722^{+0.076}_{-0.062}$	$2.879^{+0.624}_{-0.513}$
	+3%/-3%	+1%/-1%	+136%/-136%	+10%/-9%	+11%/-9%	+22%/-18%
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 009074898-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-102 \pm 13$	$1.23^{+0.77}_{-0.68}$	$238^{+9}_{-8}$	$4148^{+1664}_{-679}$	$49746^{+199290}_{-31366}$
Alt.	$-69 \pm 14$	$1.19^{+0.86}_{-0.72}$	$238^{+9}_{-8}$	$3874^{+1741}_{-618}$	$34626^{+178627}_{-23054}$

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

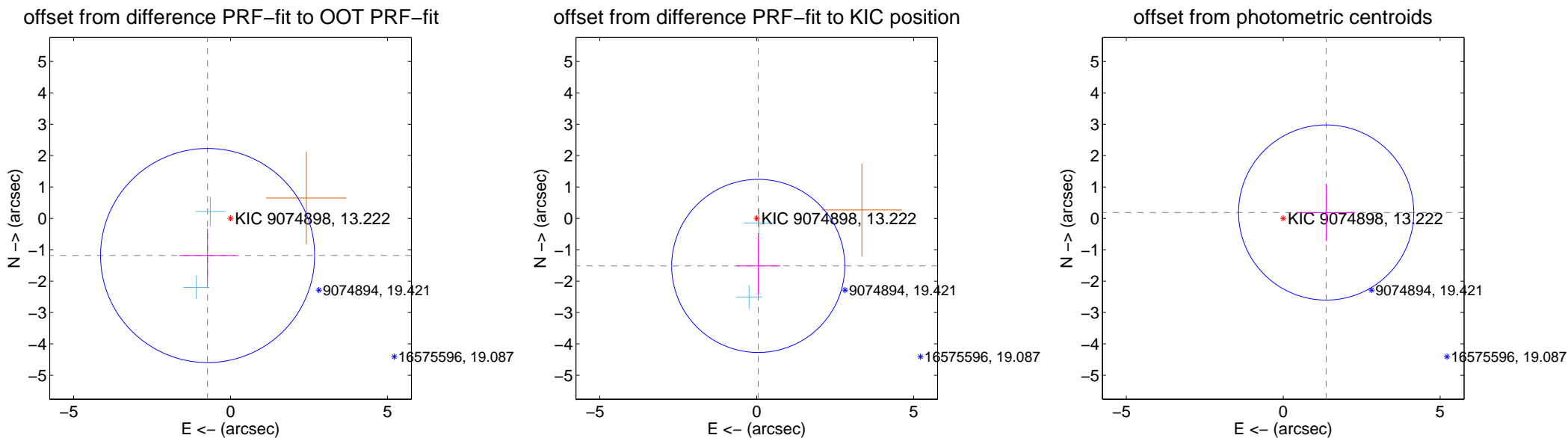
## DV Centroid Data

Supplemental centroid analysis for 009074898-01. Kepler magnitude: 13.22. Transit SNR 9.20

There are 2 quarters with good PRF difference image offsets

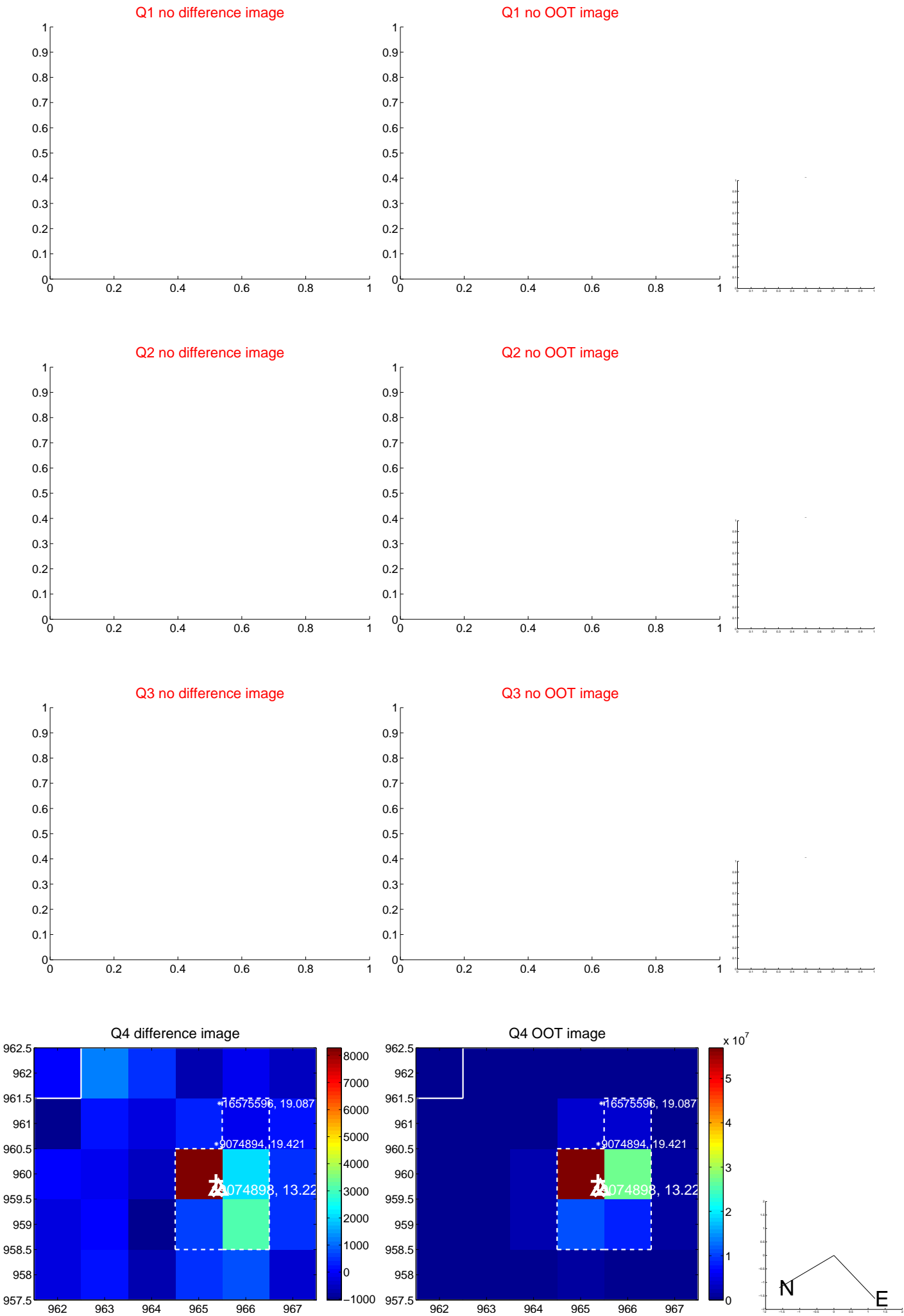
The direct PRF centroid is offset from the target star catalog position by about 0.90 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.391 \pm 1.137$	1.22	$0.731 \pm 0.896$	$-1.183 \pm 0.860$
PRF-fit source offset from KIC position	$1.516 \pm 0.919$	1.65	$-0.047 \pm 0.699$	$-1.515 \pm 0.920$
photometric centroid source offset	$1.38 \pm 0.93$	1.48	$-1.37 \pm 0.93$	$0.19 \pm 0.91$



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.

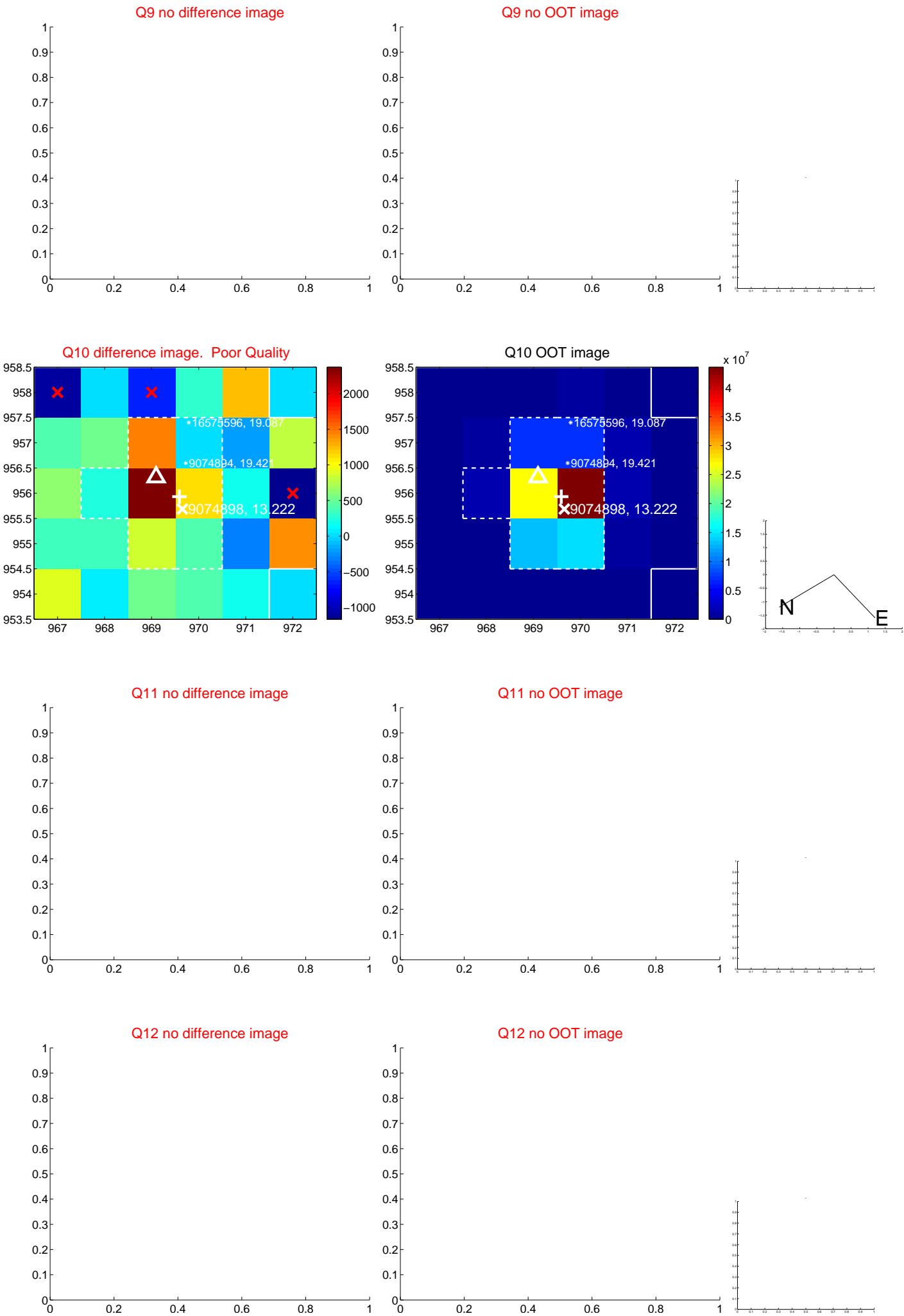




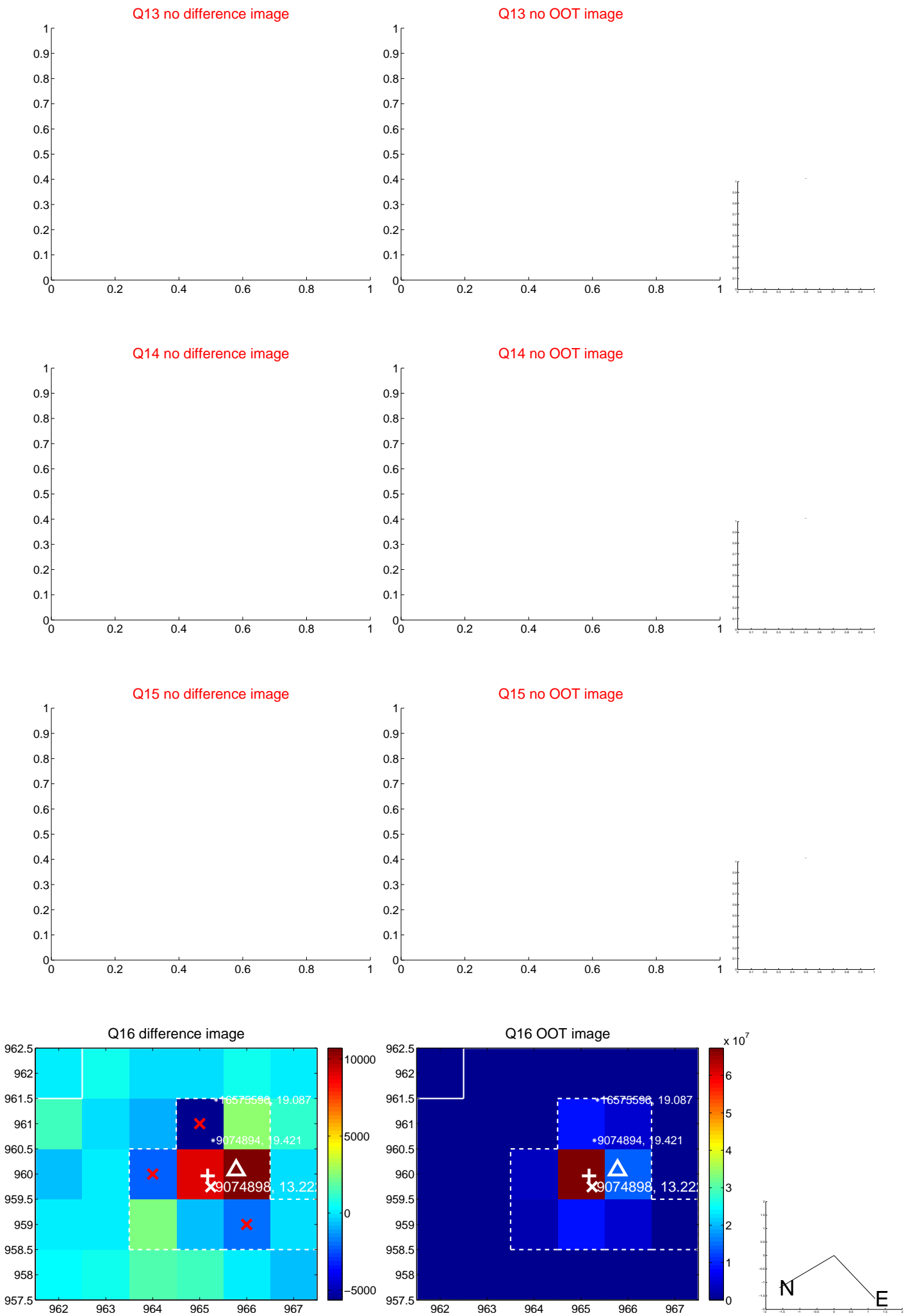
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



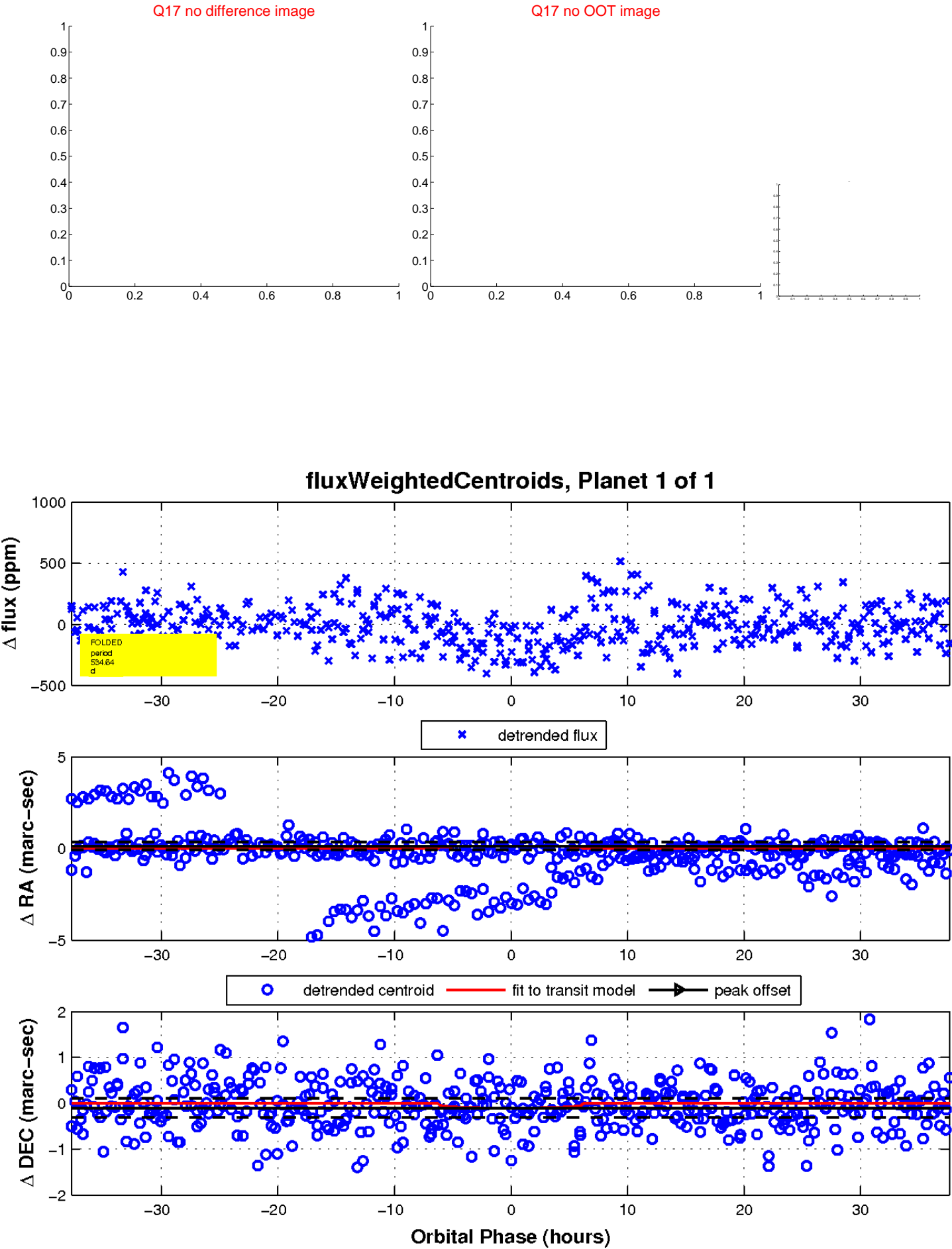
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

