

# KIC 008423550

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008423550-01	OBS	No	560.779283	188.297937	282.9	20.904	7.5	9.0	1.72	6326	3.08	1.94

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008423550-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—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.

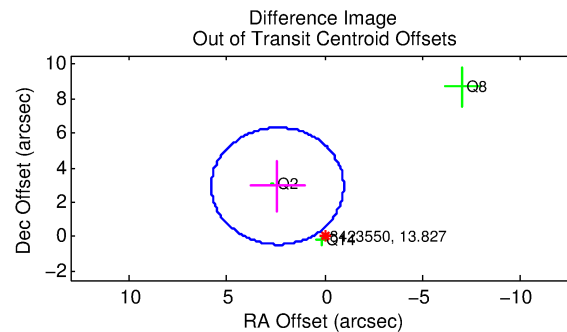
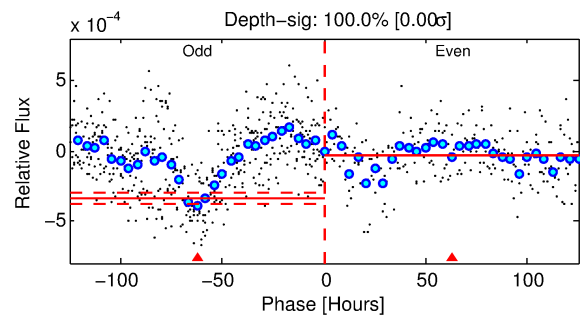
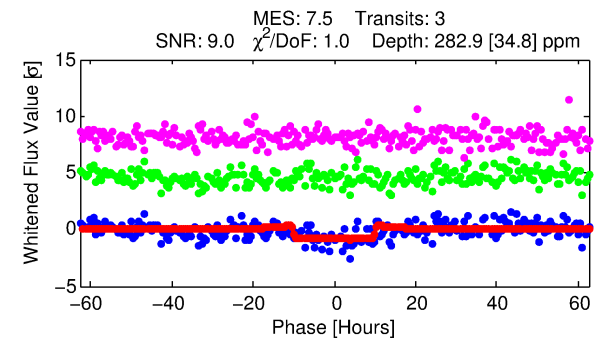
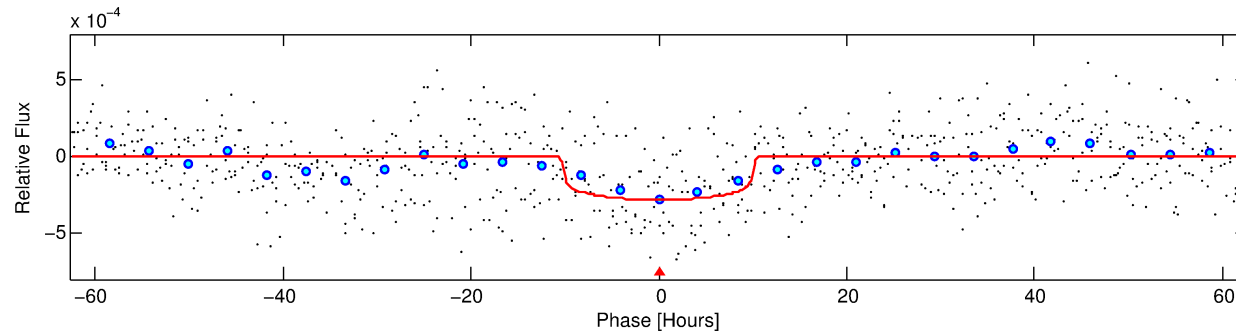
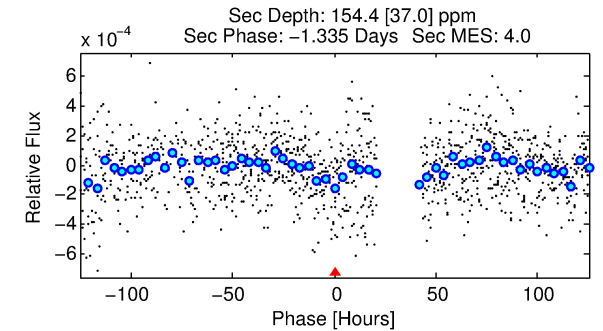
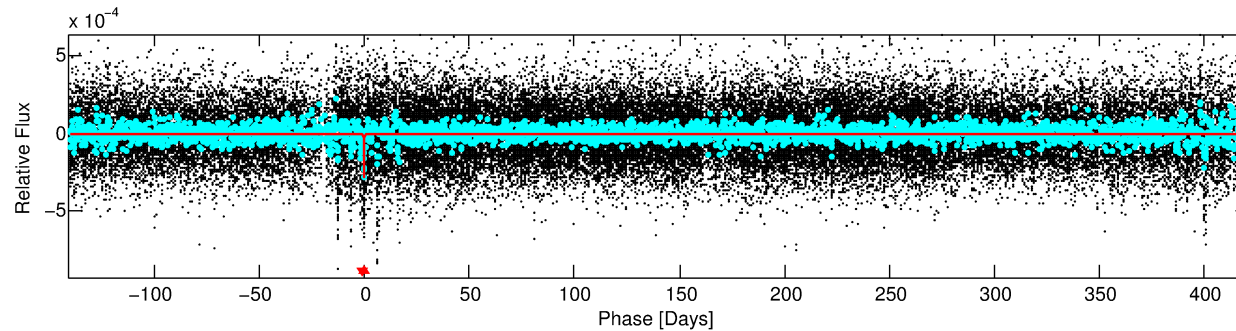
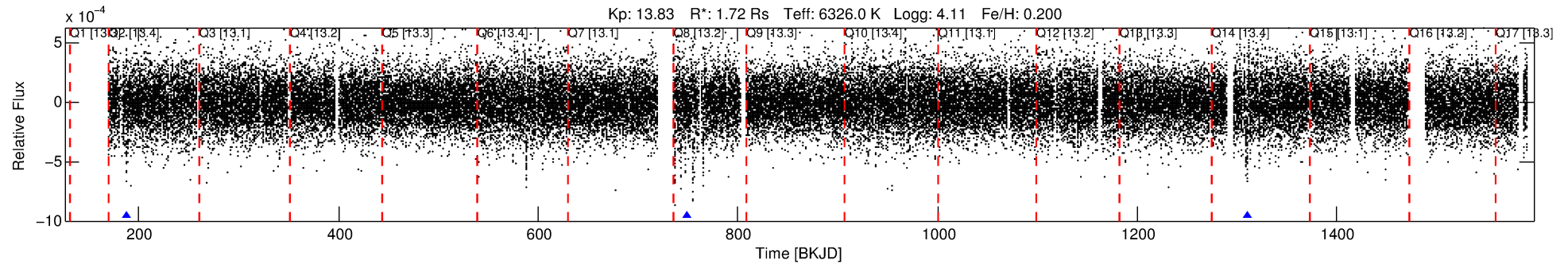
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008423550-01

No Significant Match Found

# DV One-Page Summary

KIC: 8423550 Candidate: 1 of 1 Period: 560.779 d



## DV Fit Results:

Period = 560.77928 [0.01432] d  
Epoch = 188.2979 [0.0187] BKJD  
Rp/R\* = 0.0164 [0.0033]  
a/R\* = 153.23 [146.67]  
b = 0.69 [0.74]  
Seff = 1.94 [0.82]  
Teff = 301 [32] K  
Rp = 3.08 [1.12] Re  
a = 1.4776 [0.3877] AU  
Ag = 19608.91 [12045.19] [1.63σ]  
Teffp = 5502 [683] K [7.61σ]

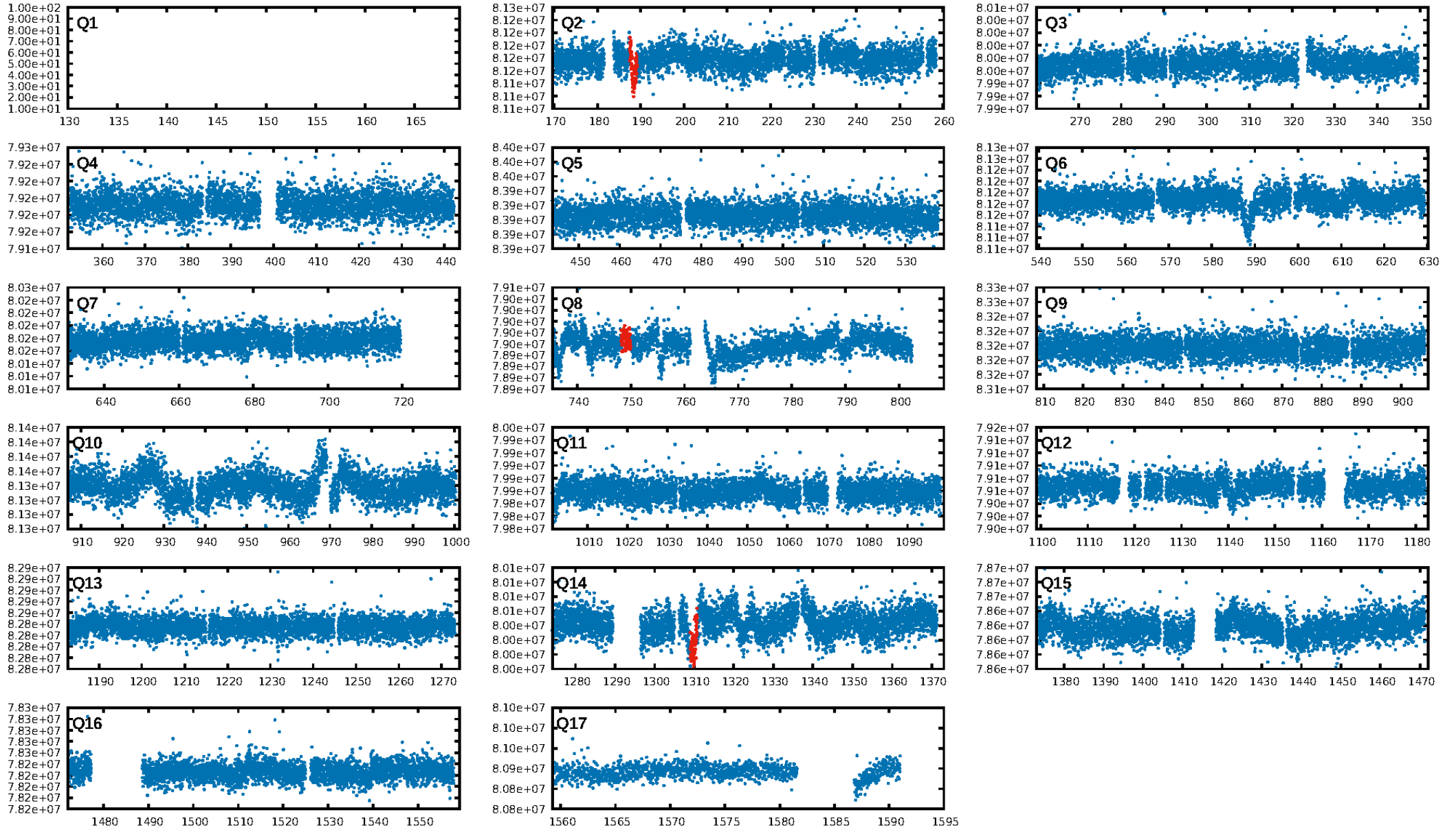
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.1%  
ModelChiSquareGof-sig: 99.1%  
Bootstrap-pfa: 4.73e-10  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.257  
Centroid-sig: 59.7%  
Centroid-so: 0.797 arcsec [0.64σ]  
OotOffset-rm: 3.792 arcsec [3.37σ]  
KicOffset-rm: 3.792 arcsec [3.09σ]  
OotOffset-st: 2/0/1/0 [3]  
KicOffset-st: 2/0/1/0 [3]  
DiffImageQuality-fgm: 0.33 [1/3]  
DiffImageOverlap-fno: 1.00 [3/3]

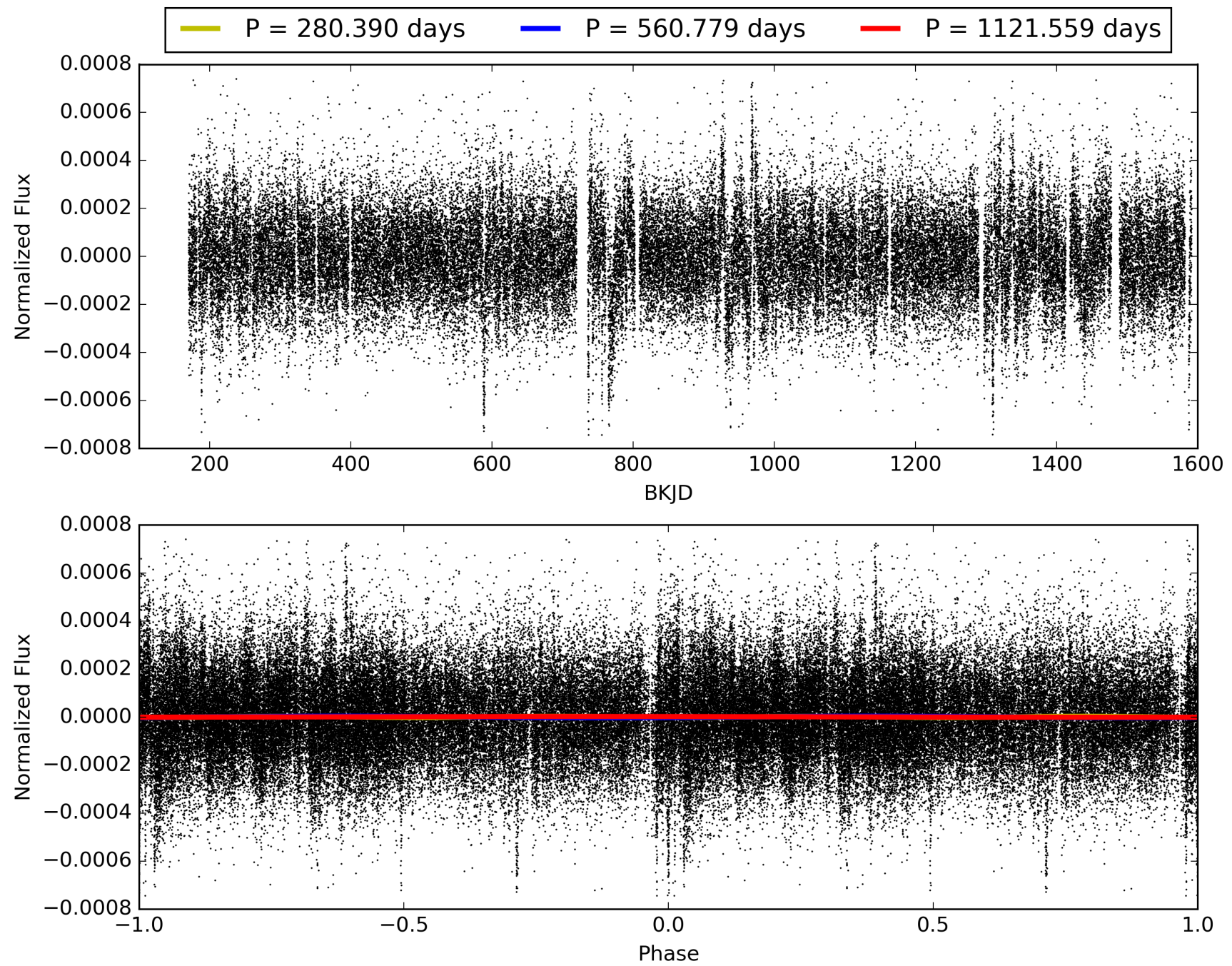
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:38:22 Z

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

# TCE 008423550-01, PDC Light Curves

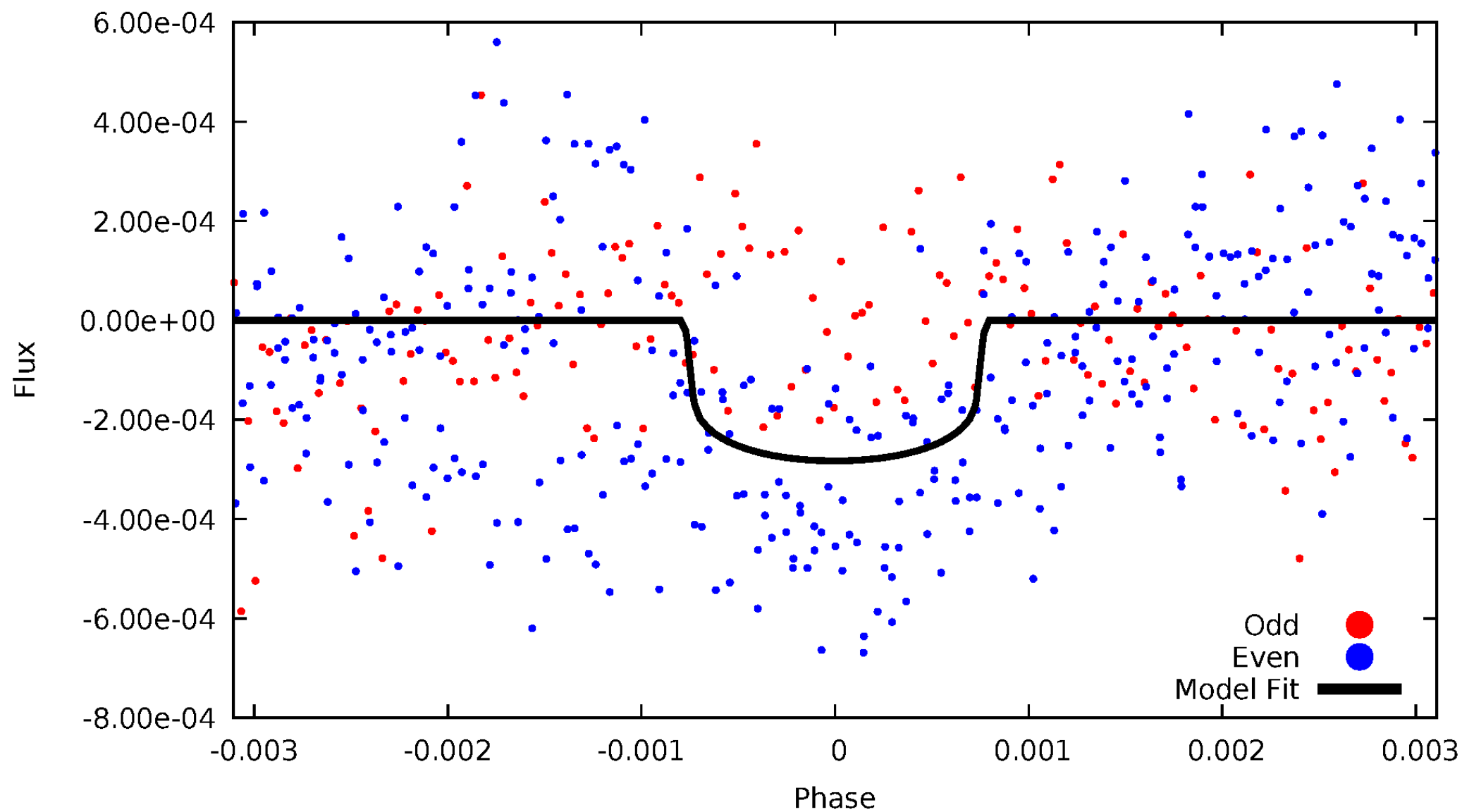


TCE 008423550-01



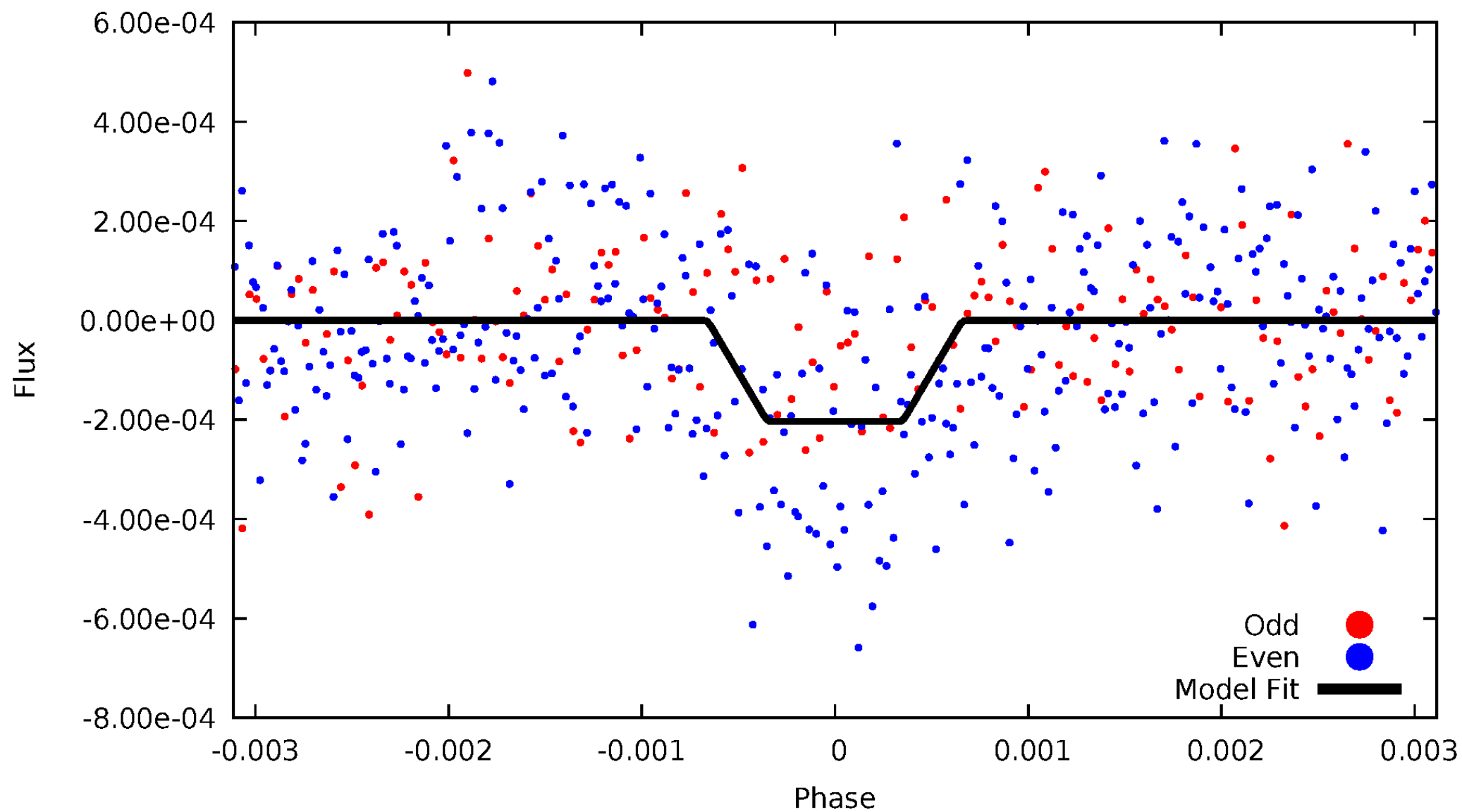
# DV Odd/Even

TCE 008423550-01



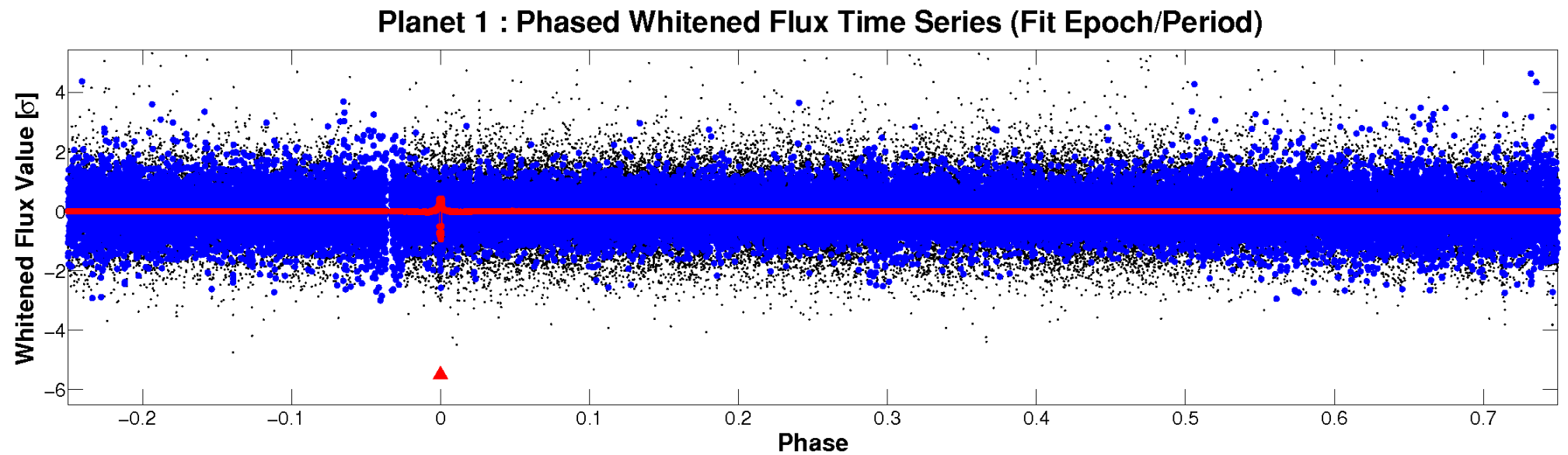
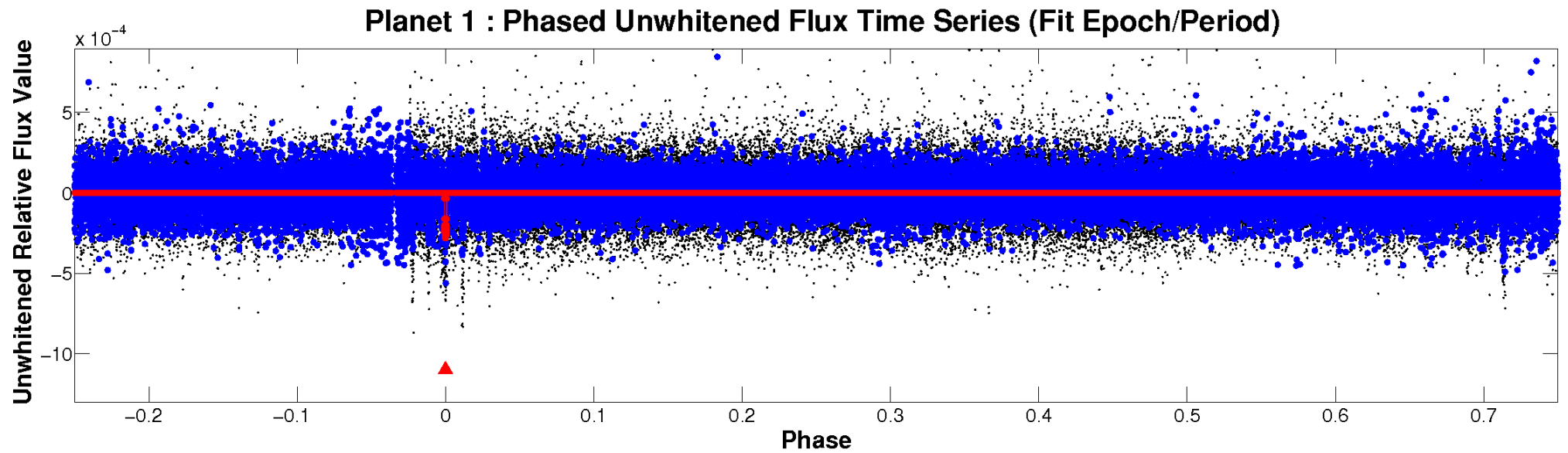
# ALT Odd/Even

TCE 008423550-01



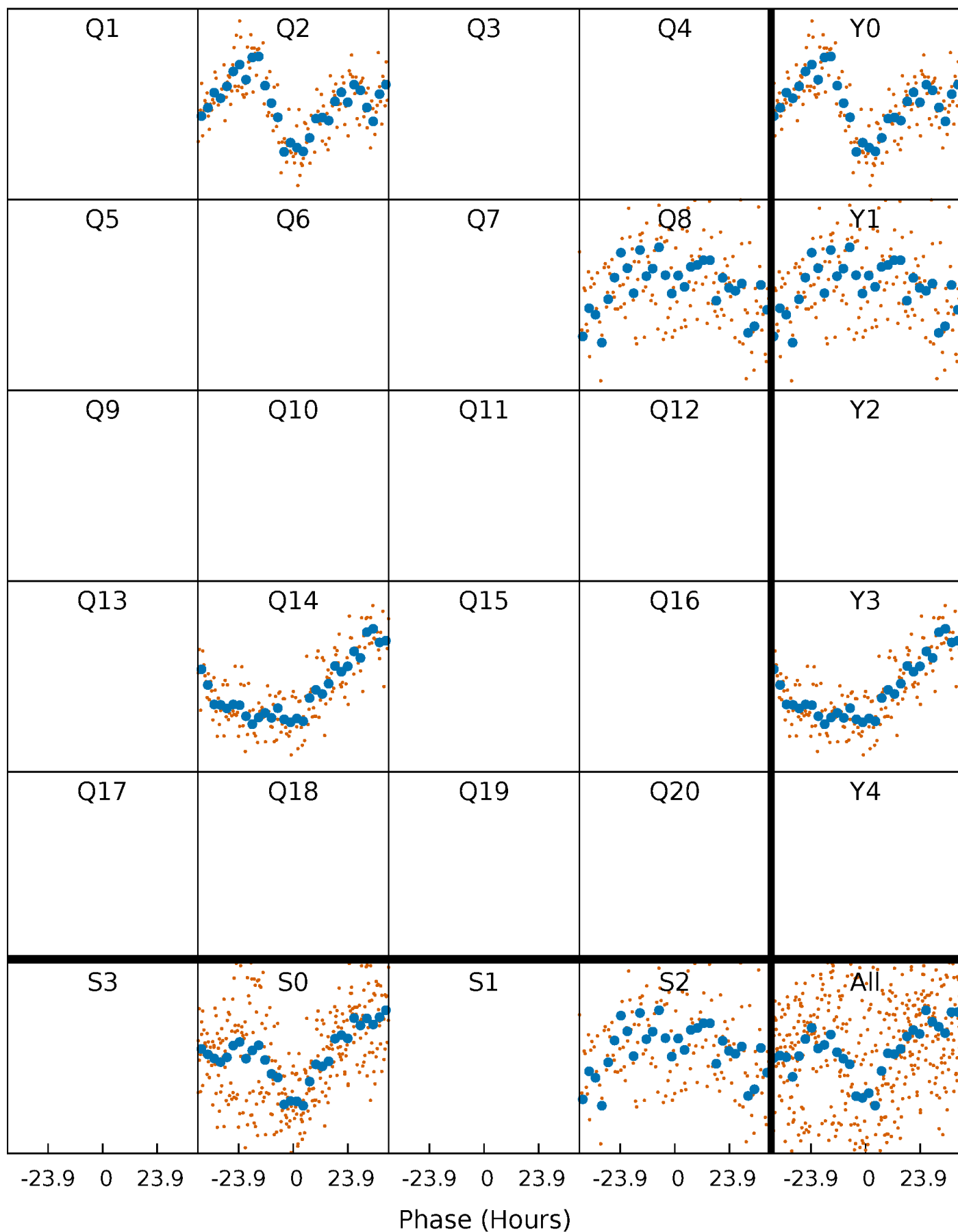


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

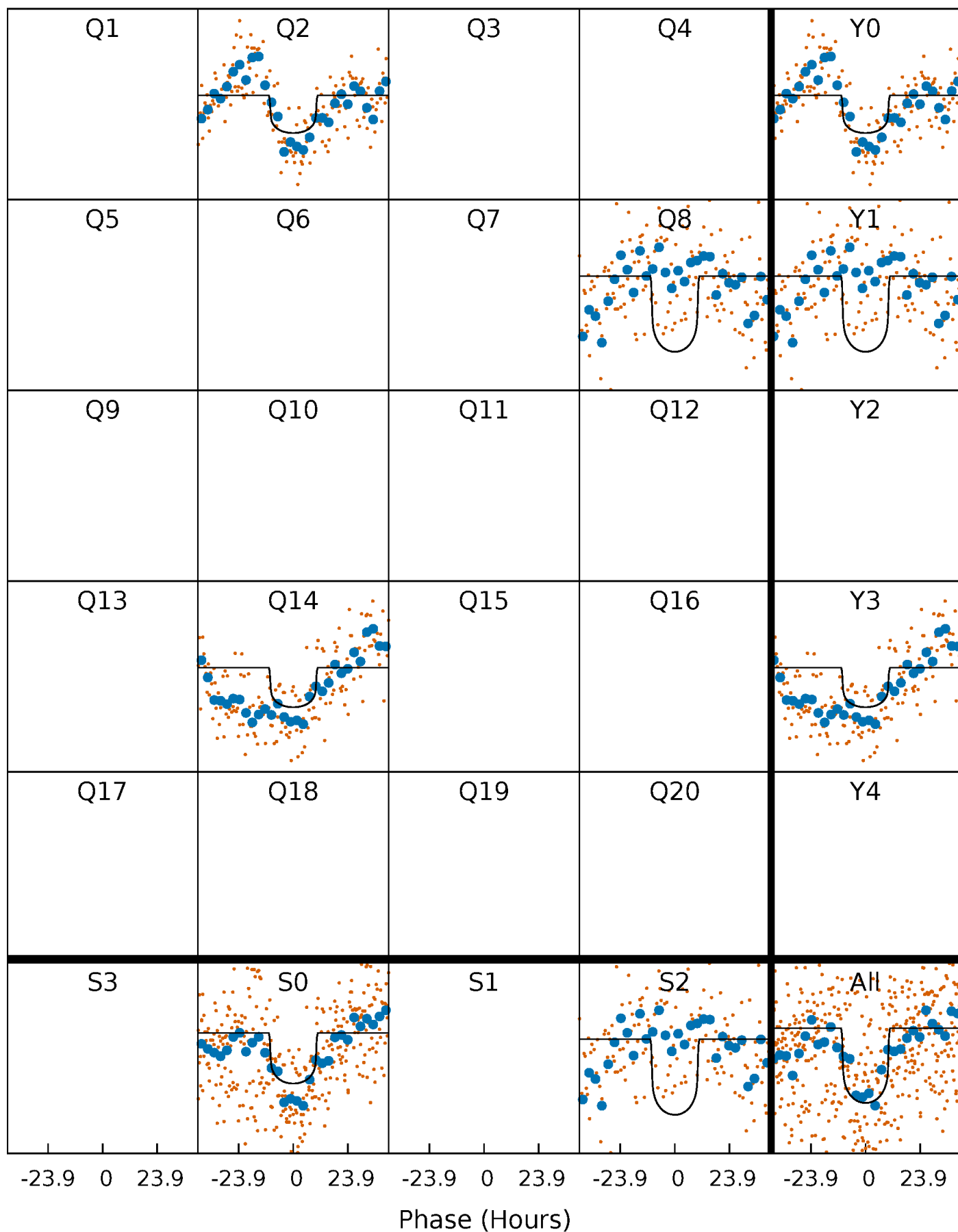
TCE 008423550-01 P=560.779283 Days  $T_0=188.297937$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 008423550-01 P=560.779283 Days  $T_0=188.297937$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

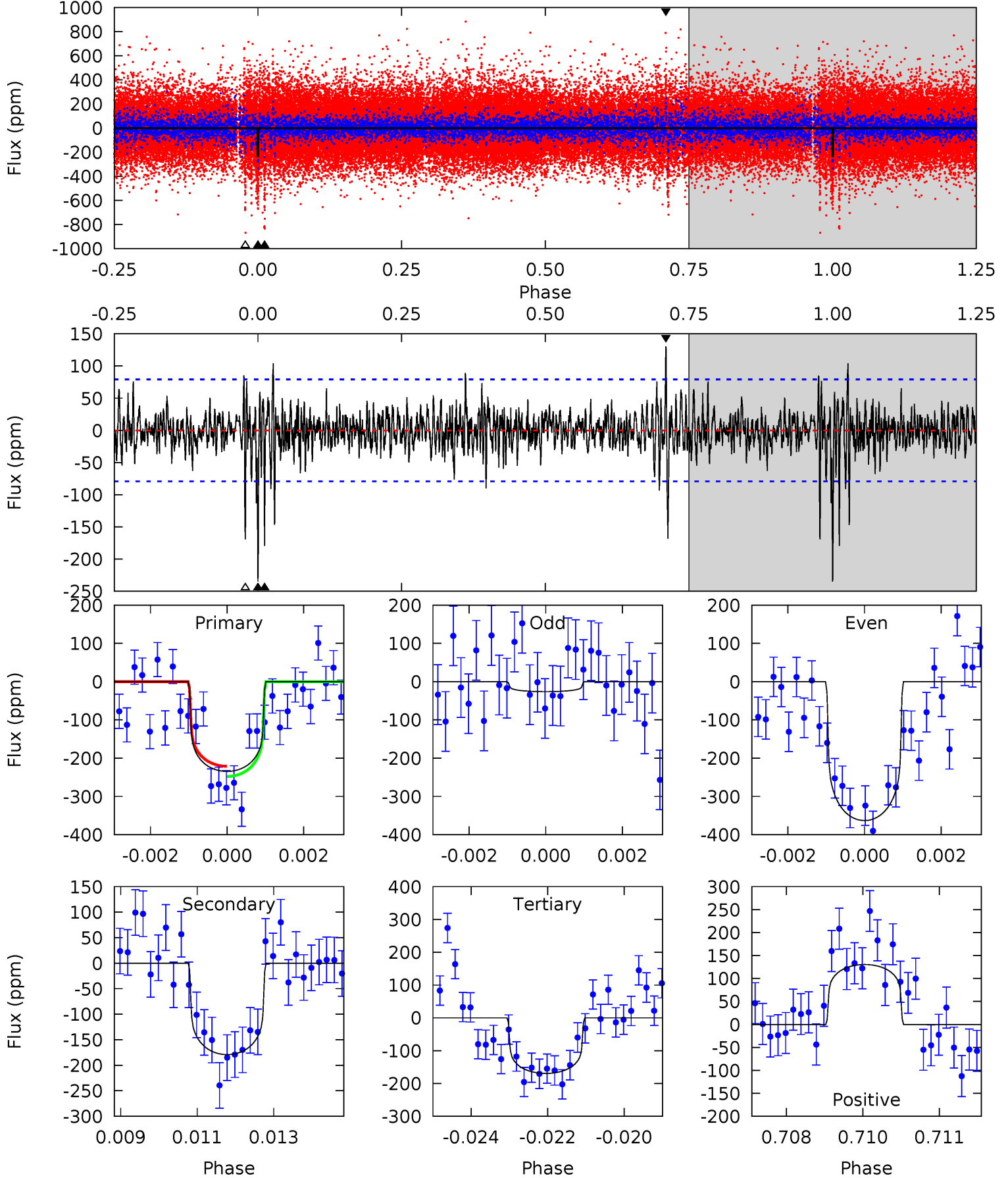
TCE 008423550-01 P=560.805865 Days  $T_0=188.312631$  (BKJD)



# DV Model-Shift Uniqueness Test

008423550-01, P = 560.779283 Days, E = 188.297937 Days

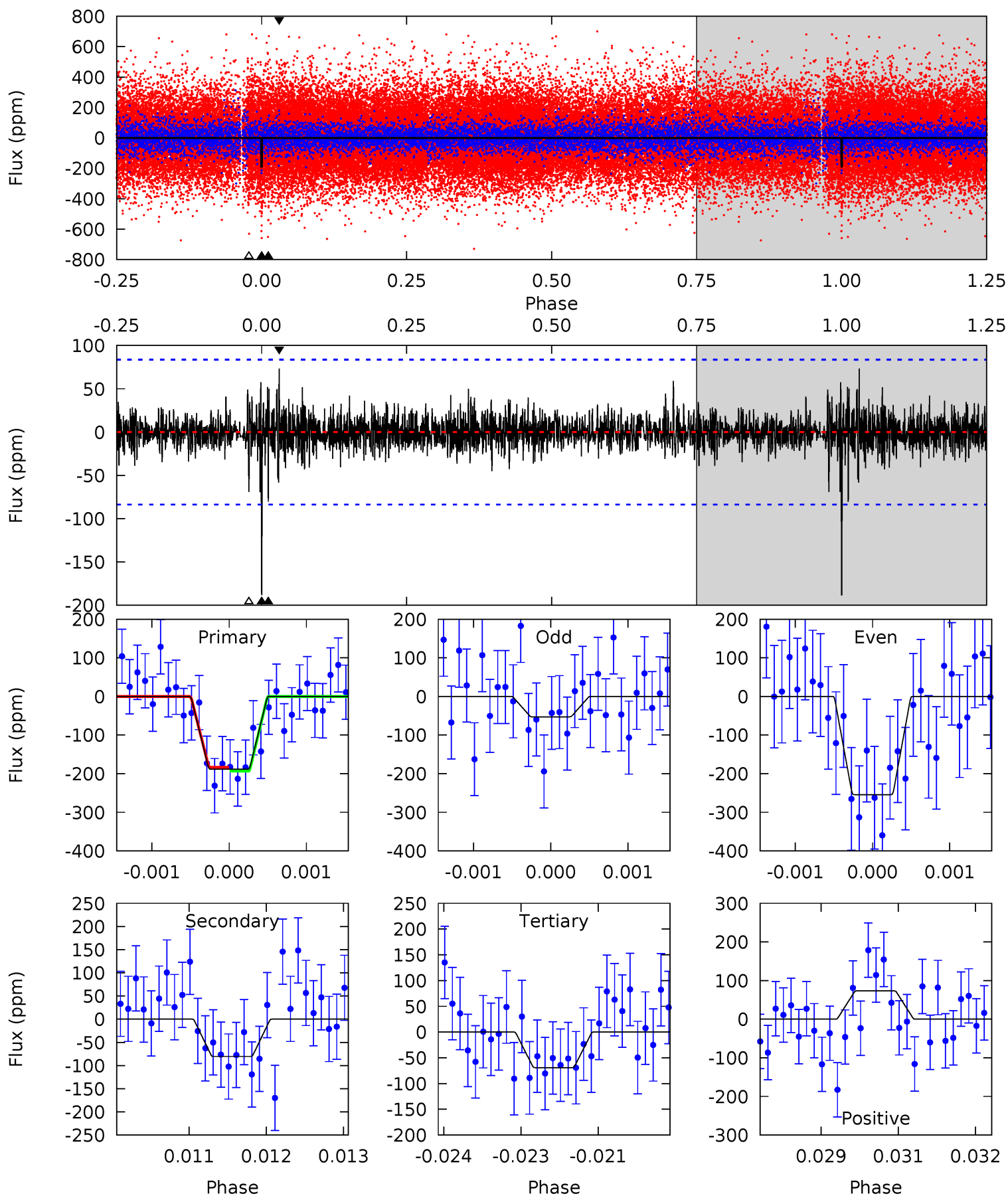
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	12.2	11.5	8.85	5.37	3.16	1.77	4.43	7.07	0.66	3.31	10.6	0.65	0.36	0.91



# Alt Model-Shift Uniqueness Test

008423550-01, P = 560.805865 Days, E = 188.312631 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
12.2	5.19	4.46	4.74	5.40	3.21	0.91	7.71	7.44	0.73	0.46	6.14	1.78	0.28	0.32



### Stellar Parameters For KIC 008423550

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6326^{+177}_{-243}$	$4.105^{+0.220}_{-0.180}$	$0.200^{+0.200}_{-0.300}$	$1.716^{+0.517}_{-0.466}$	$1.368^{+0.201}_{-0.246}$	$0.381^{+0.507}_{-0.190}$
	+3%/-4%	+5%/-4%	+100%/-150%	+30%/-27%	+15%/-18%	+133%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 008423550-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-179 \pm 15$	$3.04^{+0.82}_{-0.76}$	$417^{+35}_{-36}$	$5671^{+792}_{-496}$	$23009^{+19436}_{-8745}$
Alt.	$-80 \pm 15$	$2.61^{+0.80}_{-0.71}$	$417^{+35}_{-33}$	$5081^{+674}_{-483}$	$14066^{+13087}_{-6140}$

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

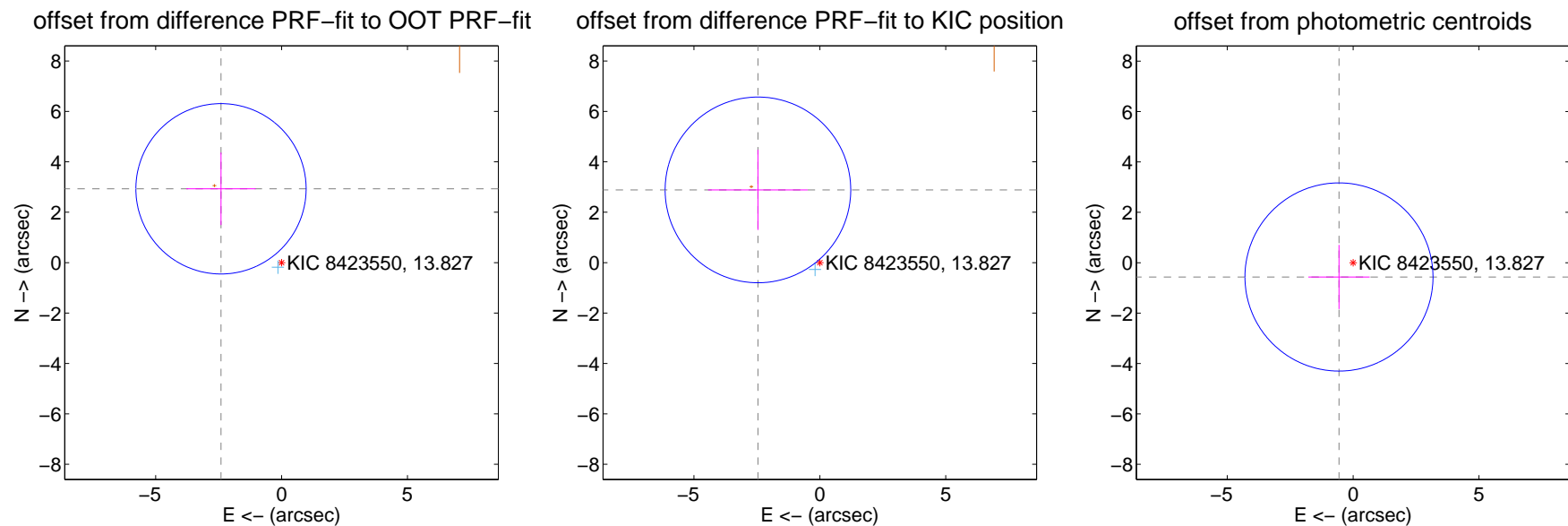
## DV Centroid Data

Supplemental centroid analysis for 008423550-01. Kepler magnitude: 13.83. Transit SNR 9.01

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

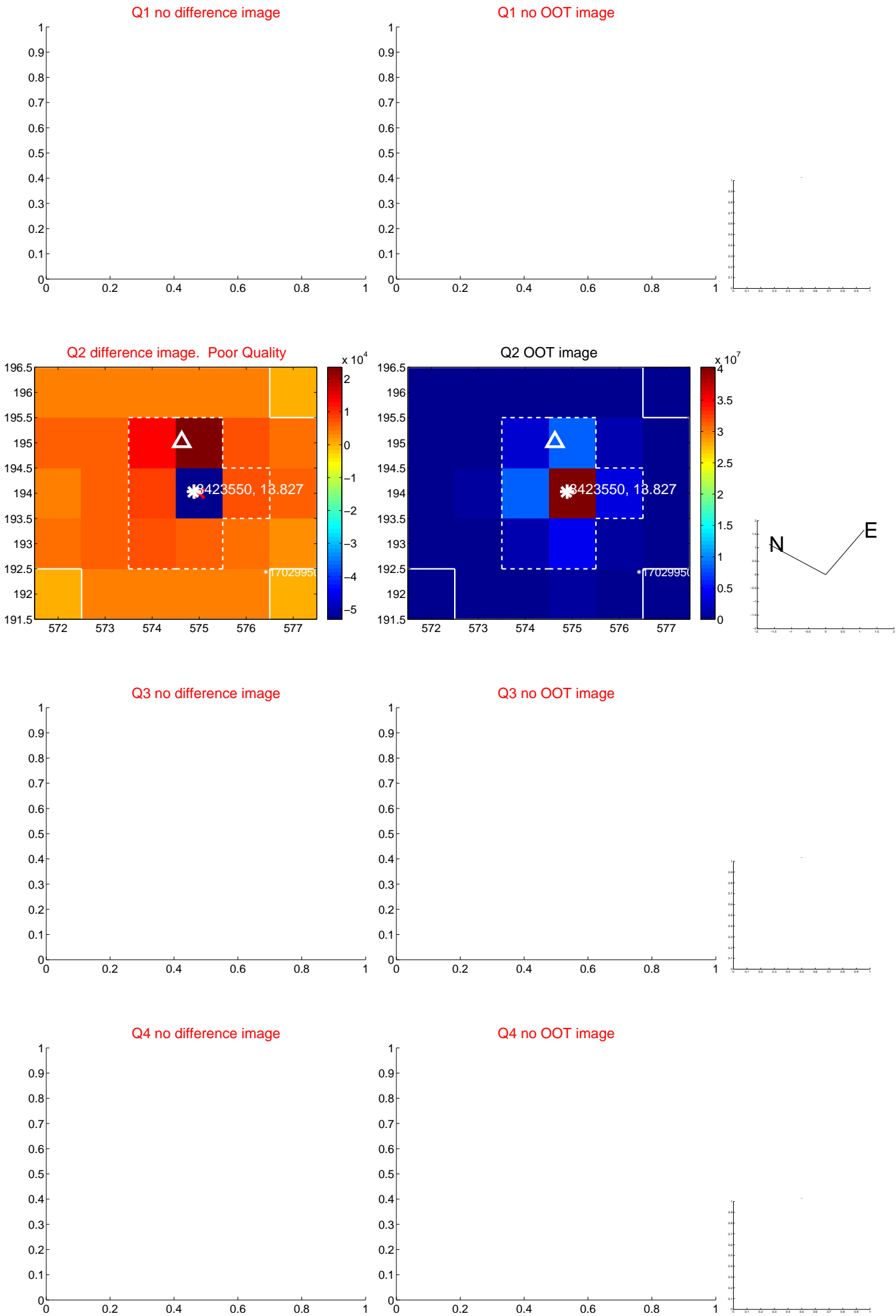
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.792 \pm 1.127$	3.37	$2.406 \pm 1.378$	$2.931 \pm 1.436$
PRF-fit source offset from KIC position	$3.792 \pm 1.228$	3.09	$2.458 \pm 1.977$	$2.887 \pm 1.591$
photometric centroid source offset	$0.80 \pm 1.24$	0.64	$0.56 \pm 1.22$	$-0.57 \pm 1.27$



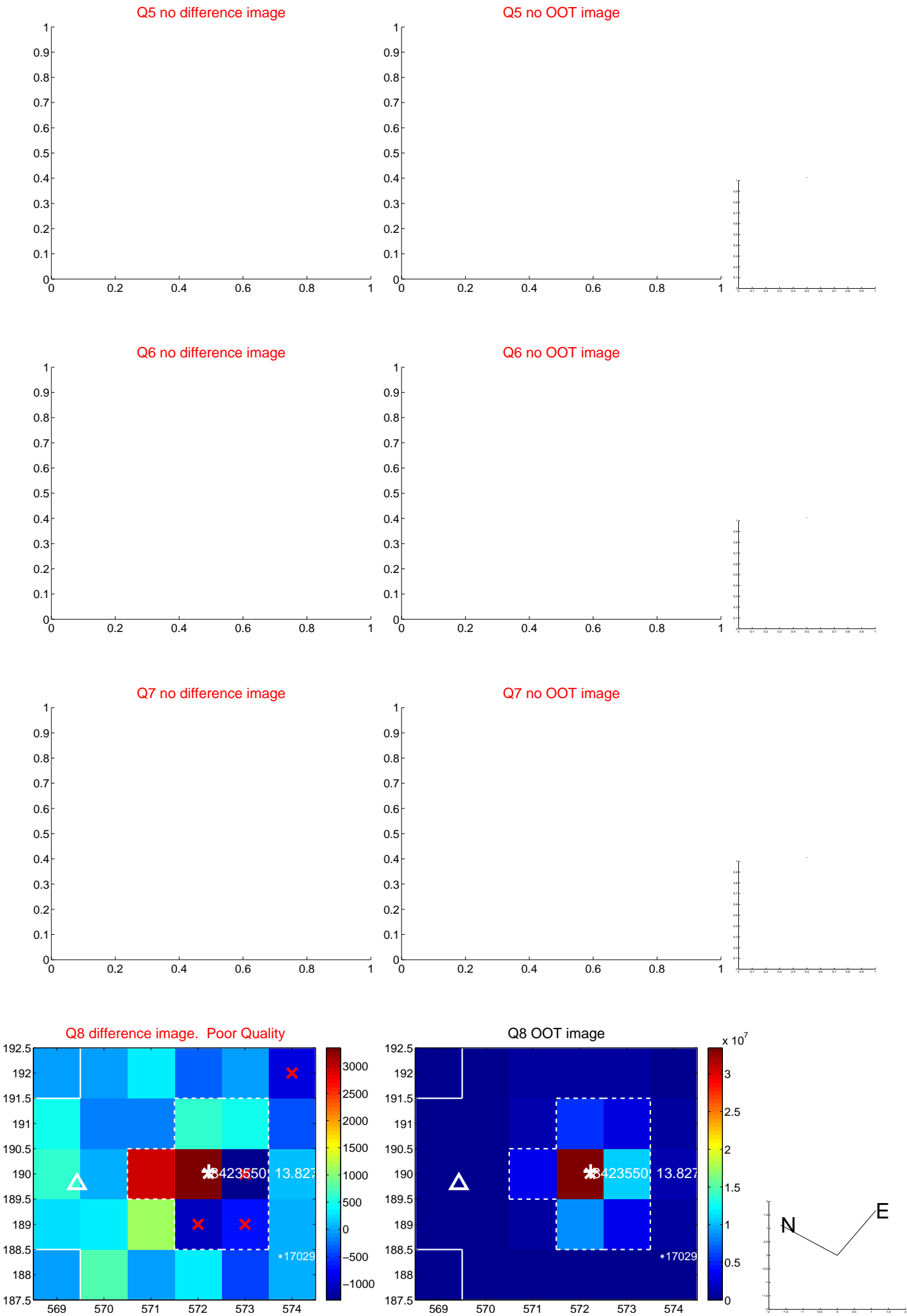
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



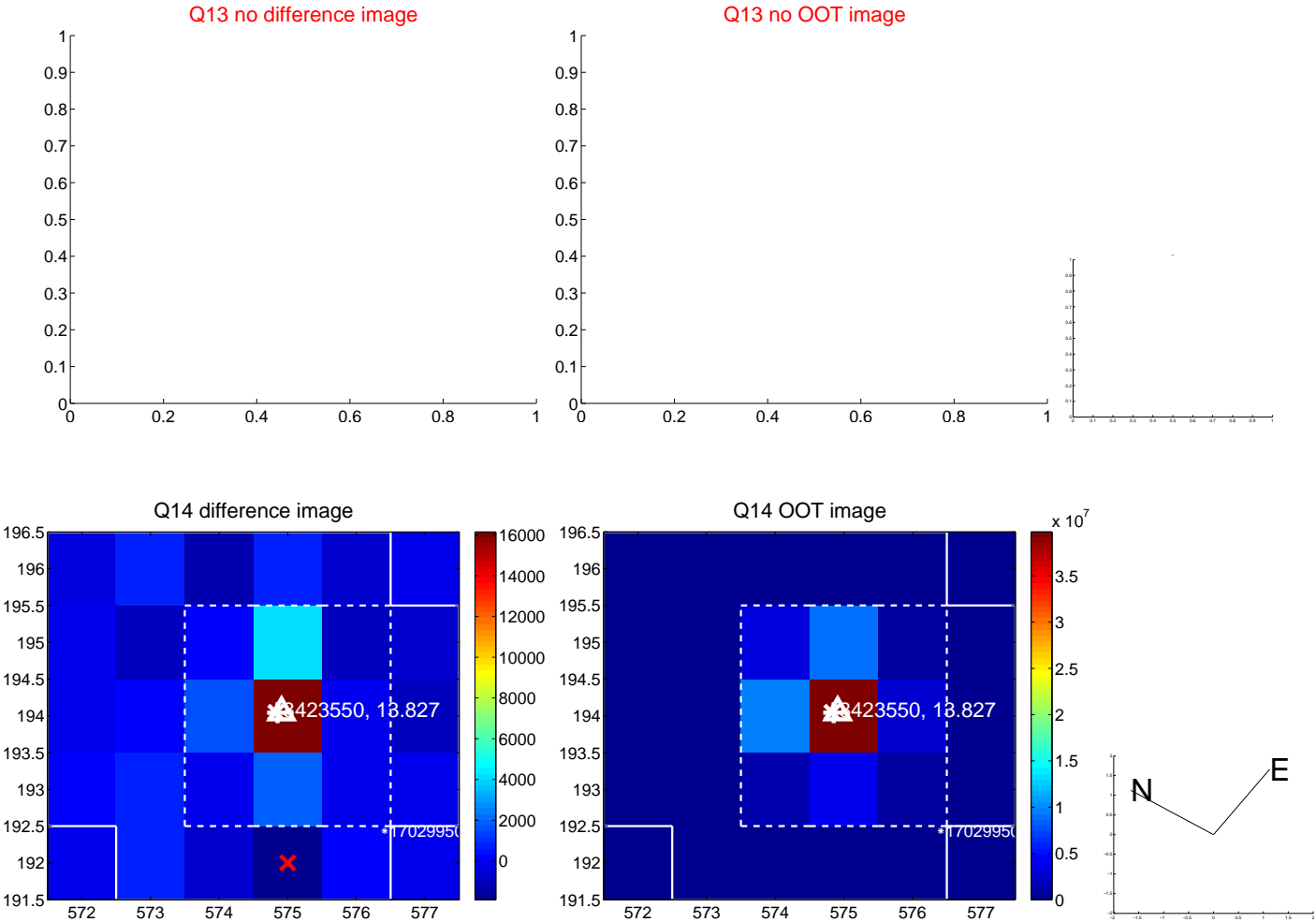
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



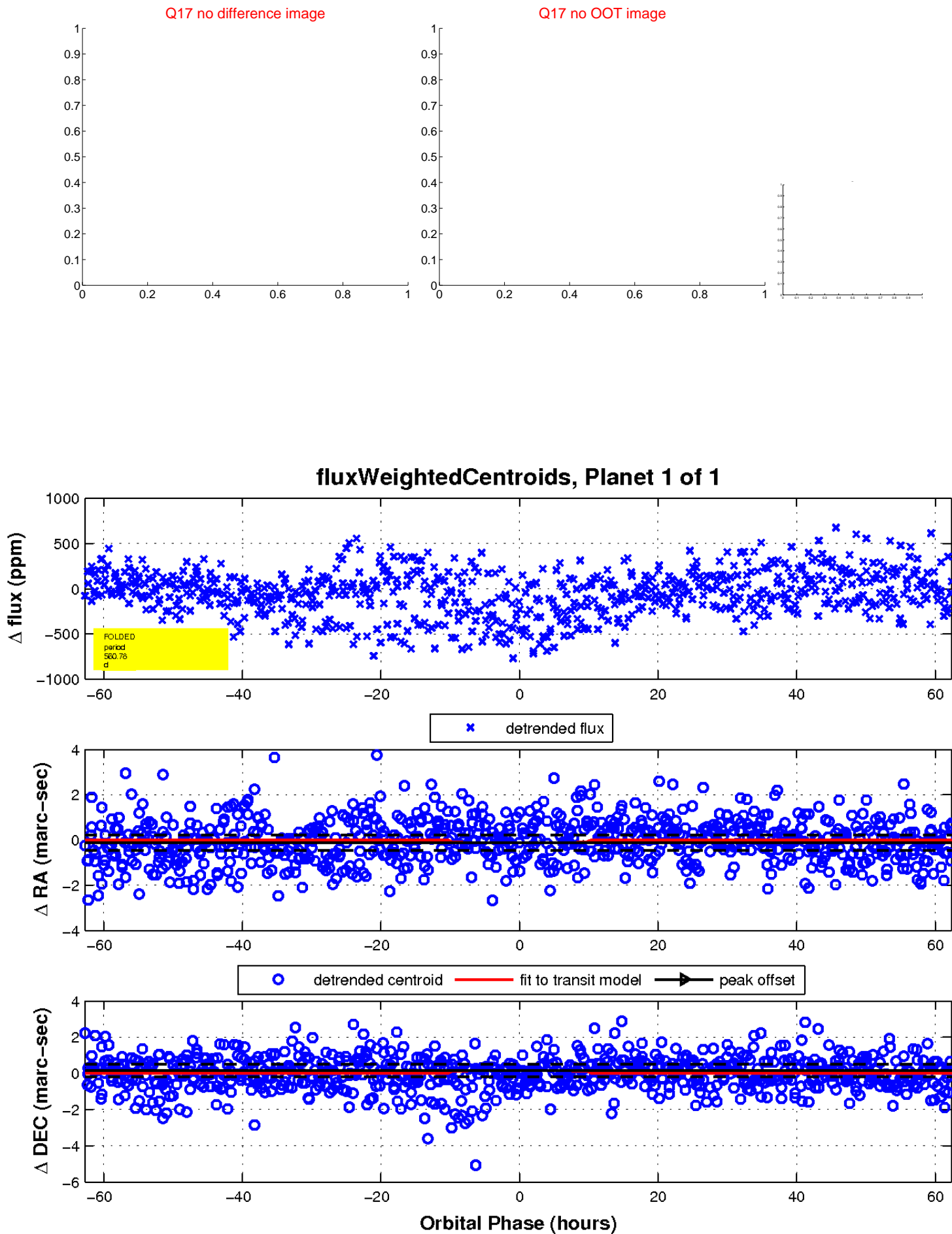
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

