

# KIC 008508493

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008508493-01	OBS	7890.01	349.857206	285.643818	841.7	5.452	8.2	8.0	0.89	5941	2.74	0.94

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008508493-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

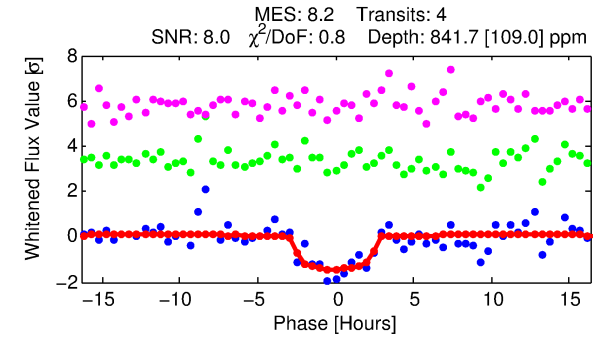
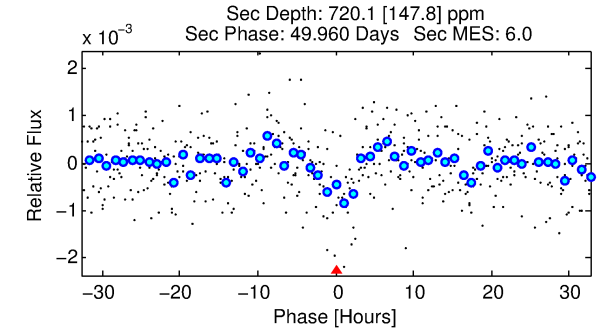
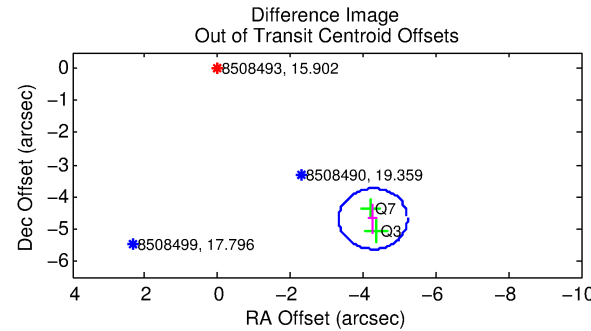
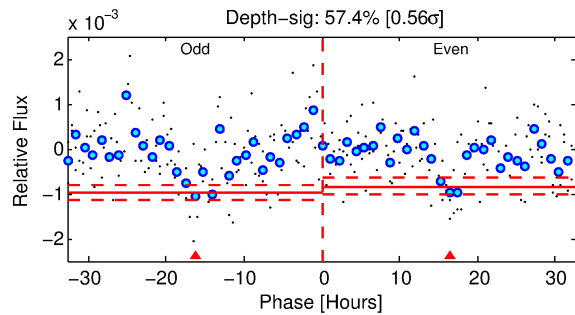
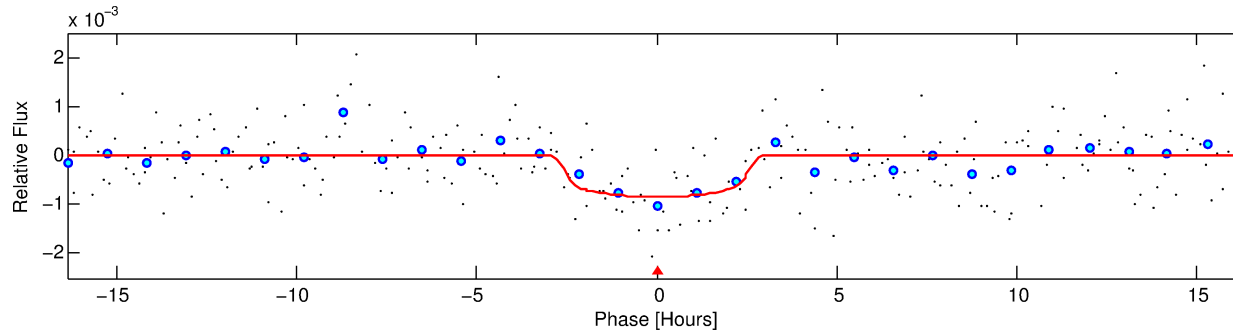
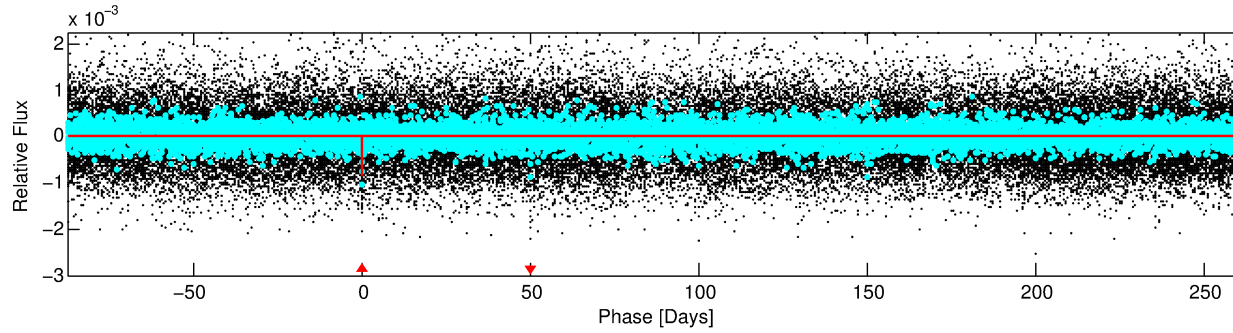
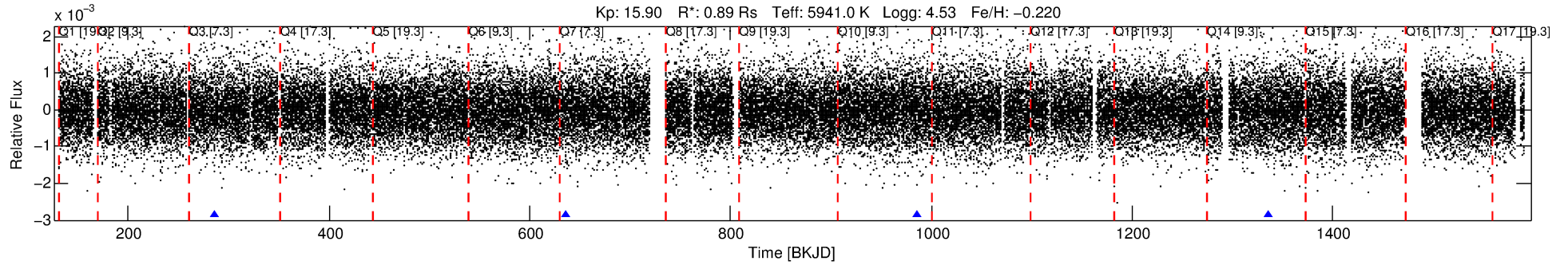
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008508493-01

No Significant Match Found

# DV One-Page Summary

KIC: 8508493 Candidate: 1 of 1 Period: 349.857 d



## DV Fit Results:

Period = 349.85721 [0.00649] d  
Epoch = 285.6438 [0.0120] BKJD  
Rp/R\* = 0.0283 [0.0269]  
a/R\* = 373.27 [1680.34]  
b = 0.69 [3.44]  
Seff = 0.94 [0.36]  
Teq = 251 [24] K  
Rp = 2.74 [2.72] Re  
a = 0.9637 [0.2364] AU  
Ag = 49117.69 [95388.26] [0.51 $\sigma$ ]  
Teff = 5781 [2765] K [2.00 $\sigma$ ]

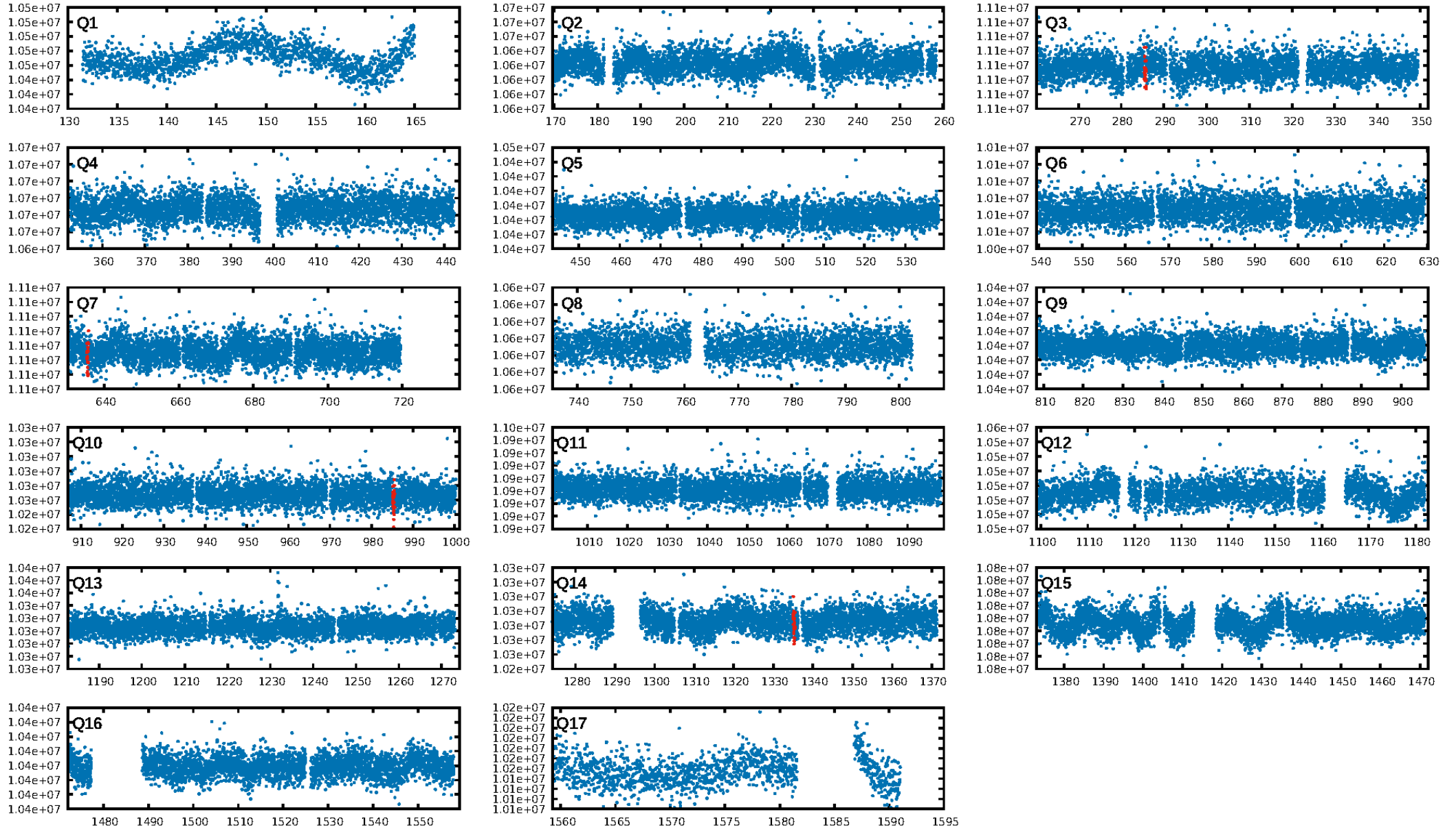
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 70.1%  
ModelChiSquareGoF-sig: 99.7%  
Bootstrap-pfa: 9.86e-15  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 0.2272  
Centroid-sig: 0.0%  
Centroid-so: 9.403 arcsec [5.75 $\sigma$ ]  
OotOffset-rm: 6.343 arcsec [20.14 $\sigma$ ]  
KicOffset-rm: 6.456 arcsec [20.20 $\sigma$ ]  
OotOffset-st: 0/2/0/0 [2]  
KicOffset-st: 0/2/0/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [4/4]

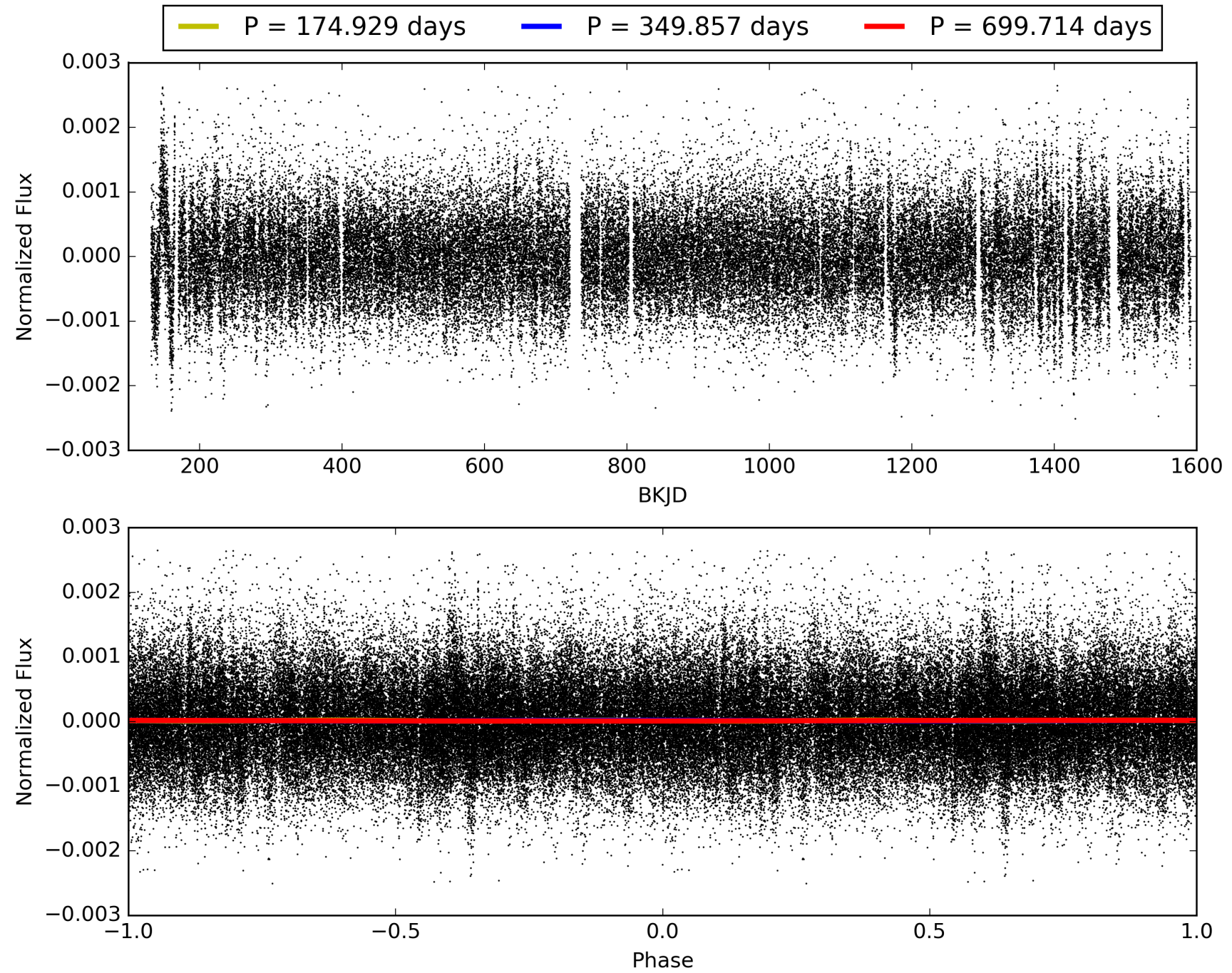
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:30:42 Z

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

# TCE 008508493-01, PDC Light Curves

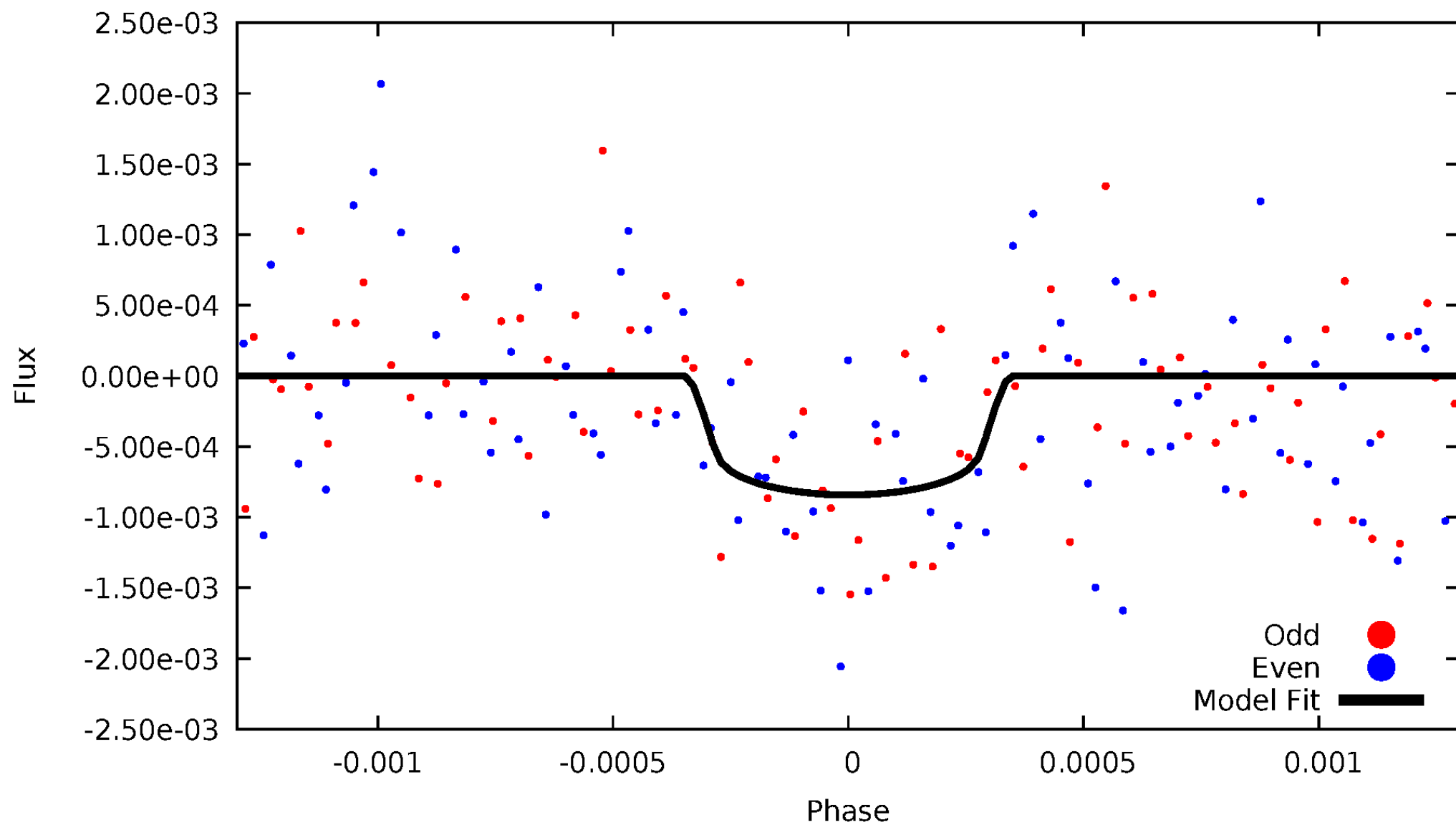


TCE 008508493-01



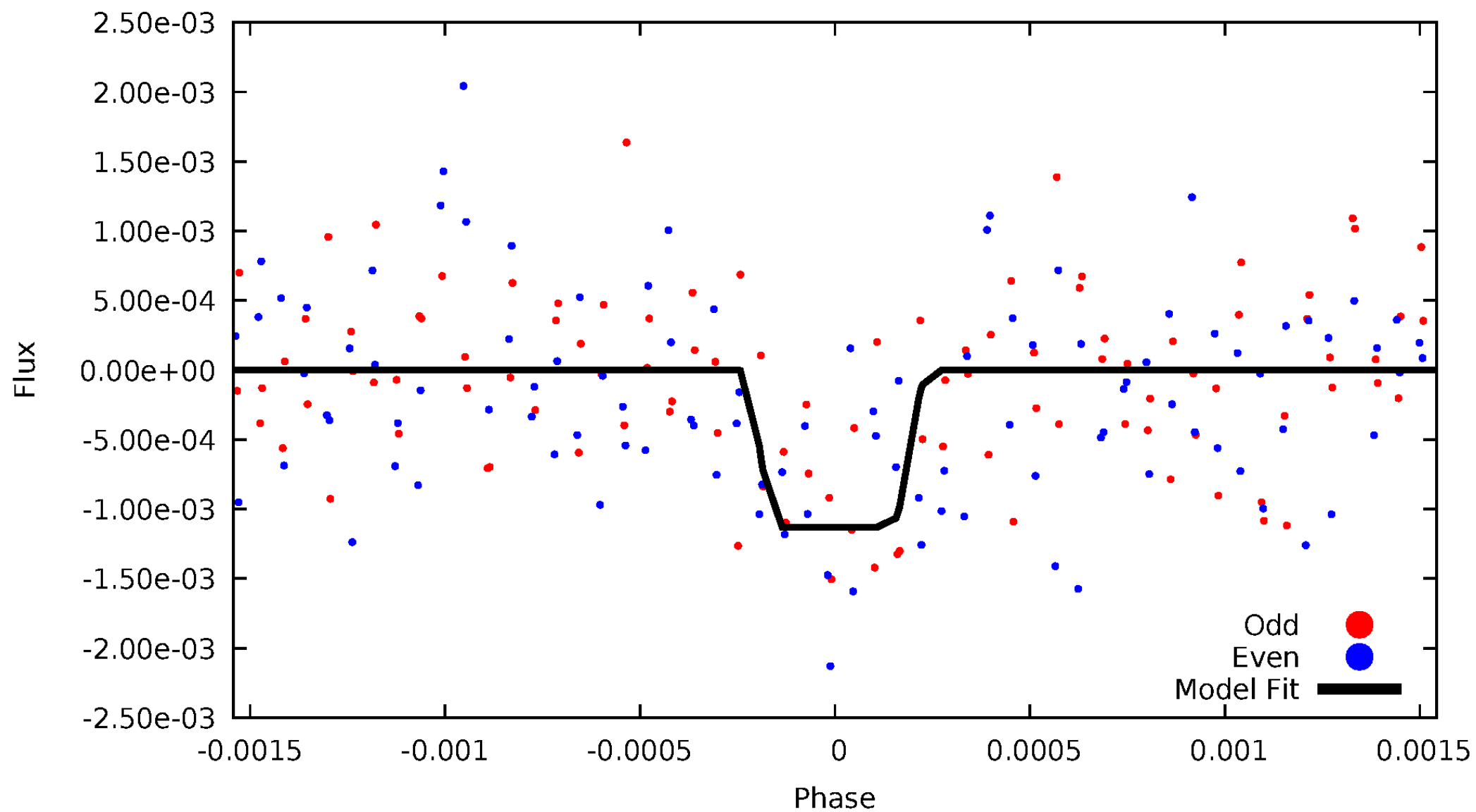
# DV Odd/Even

TCE 008508493-01



# ALT Odd/Even

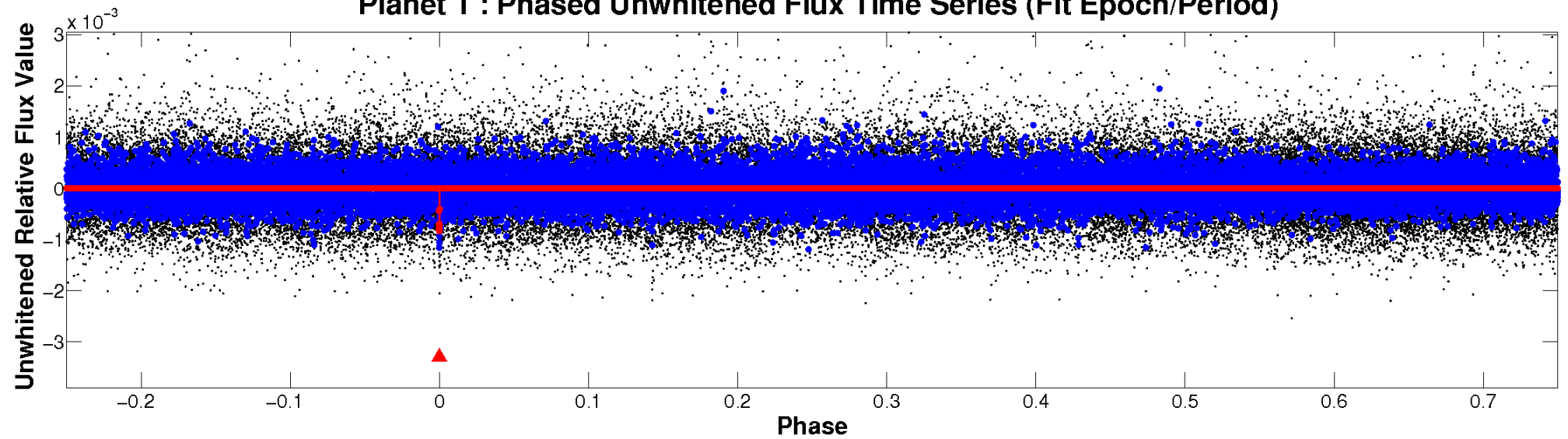
TCE 008508493-01



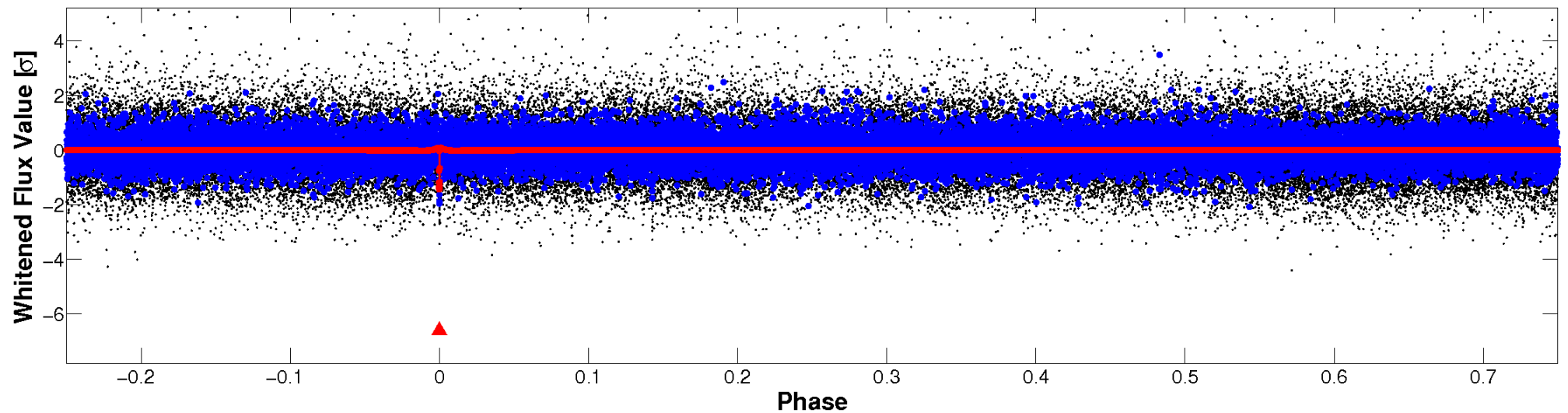


# Non-Whitened Vs. Whitened Light Curve

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

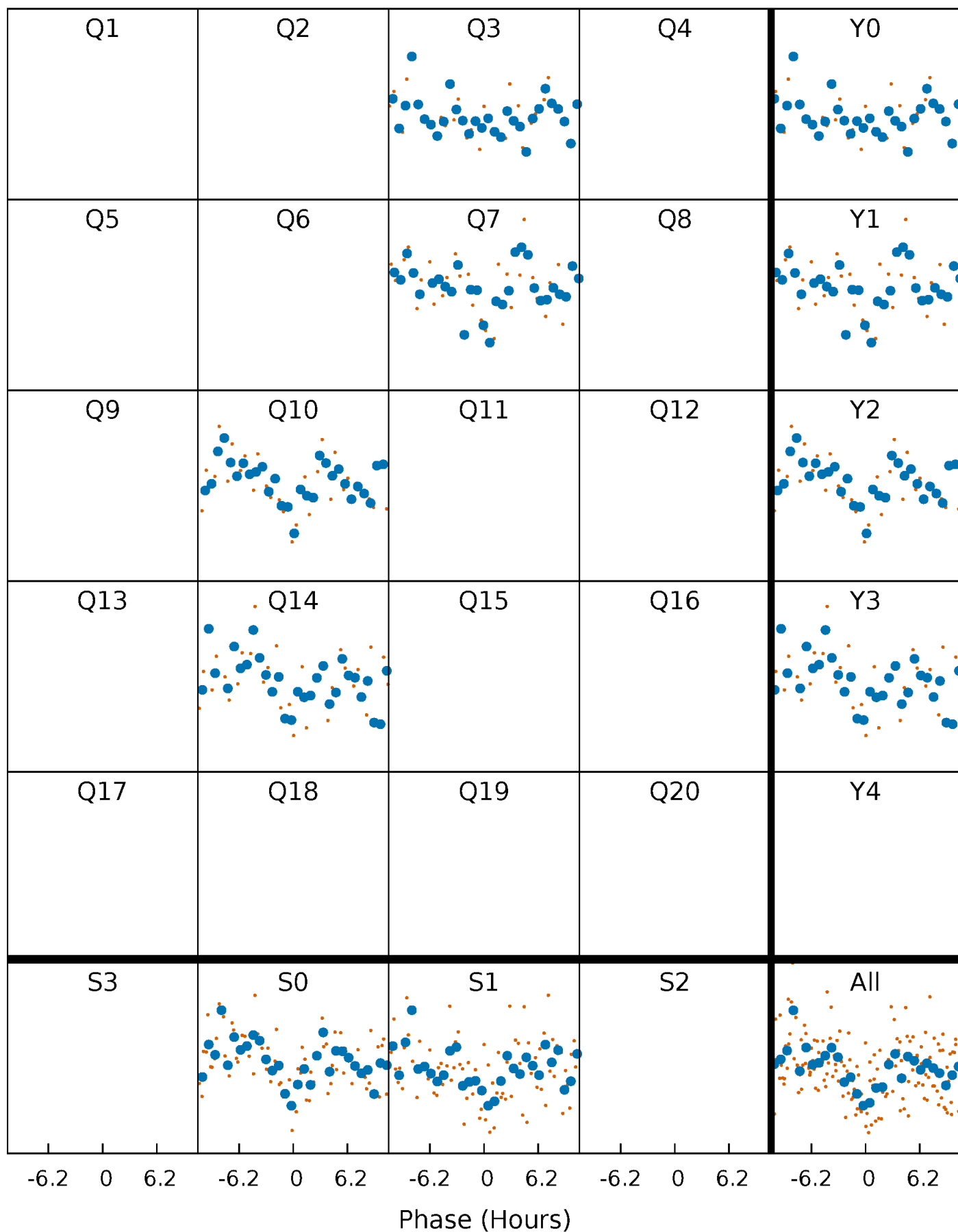


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

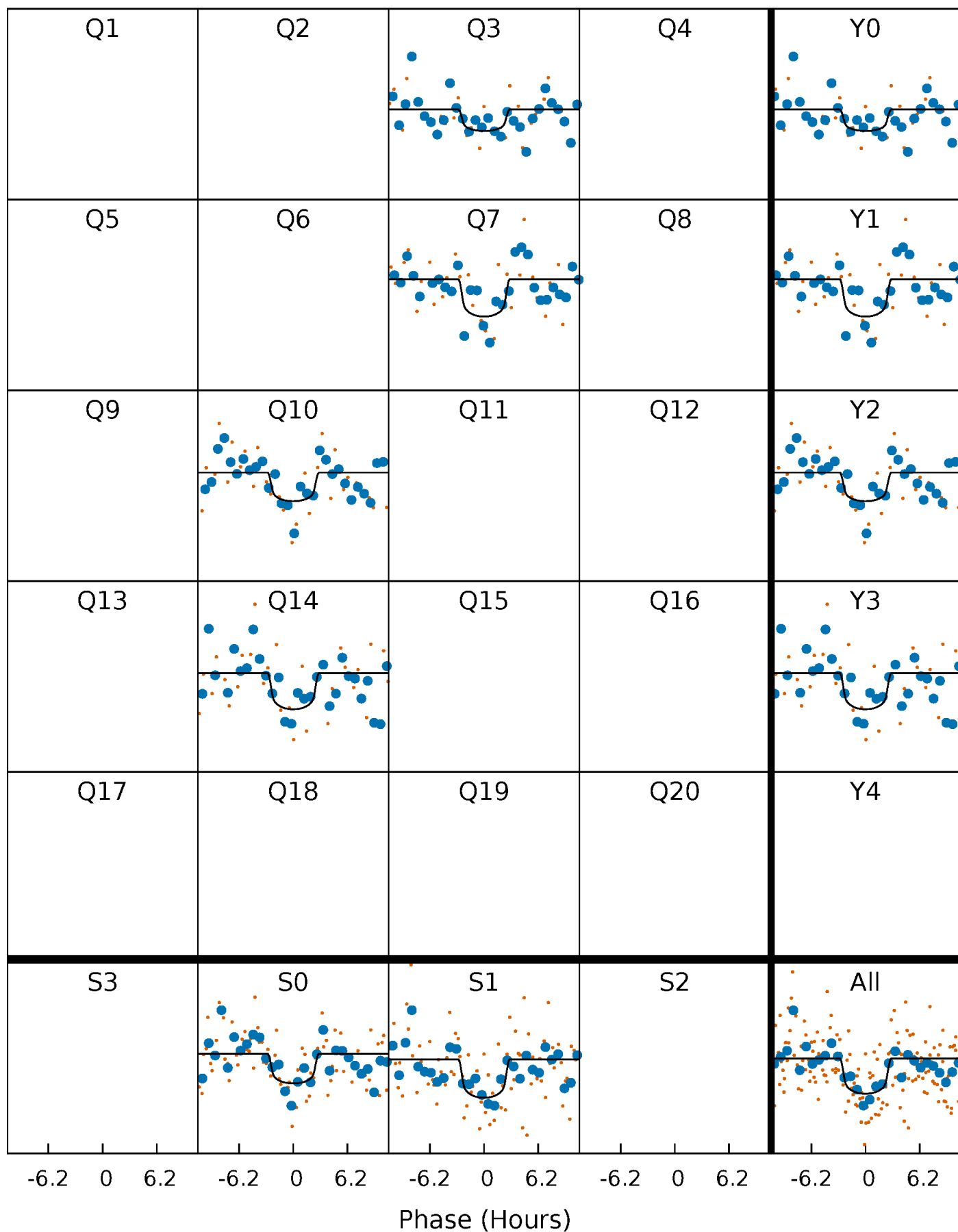
TCE 008508493-01   P=349.857206 Days    $T_0=285.643818$  (BKJD)





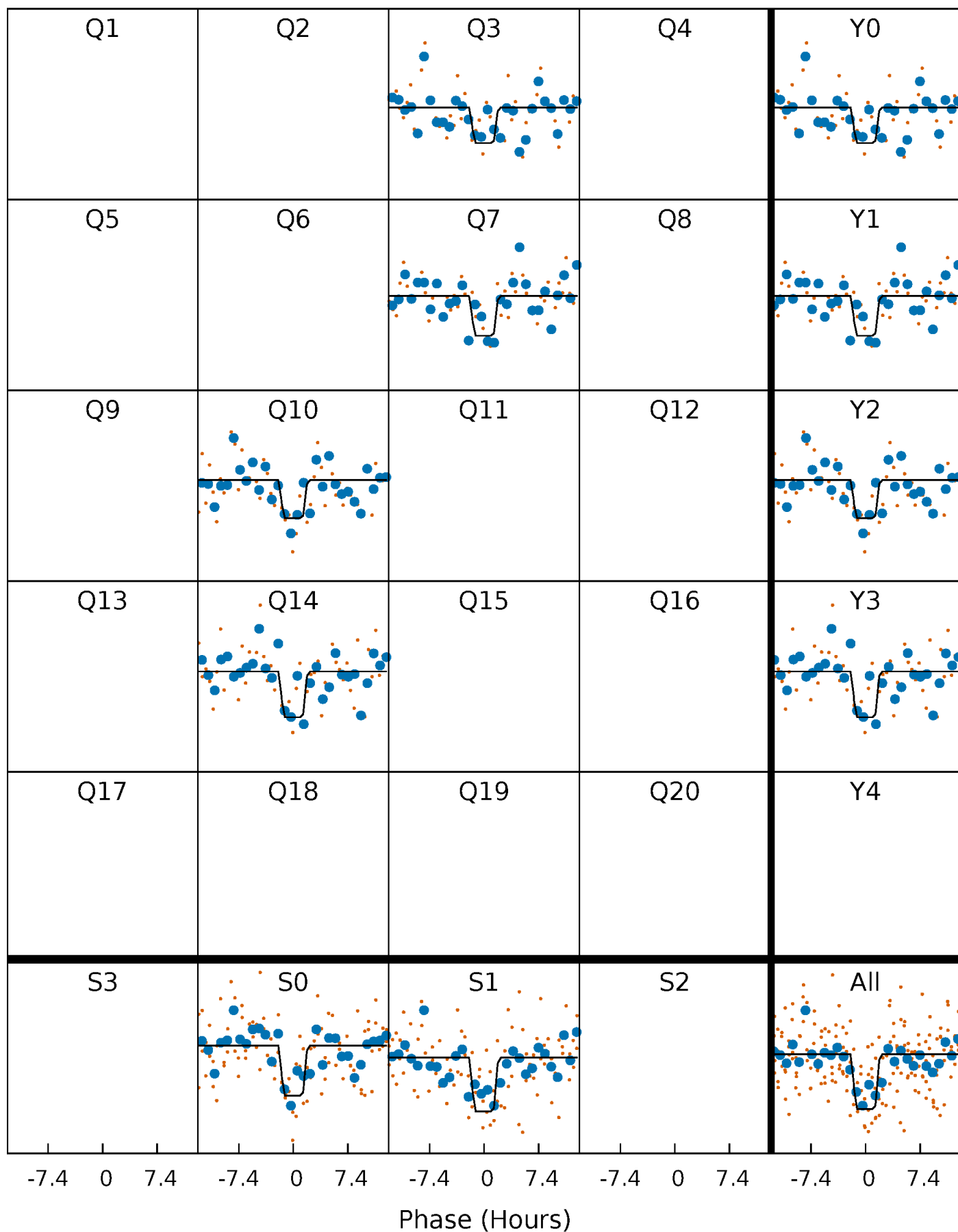
# DV Quarter-Phased Transit Curves

TCE 008508493-01   P=349.857206 Days    $T_0=285.643818$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

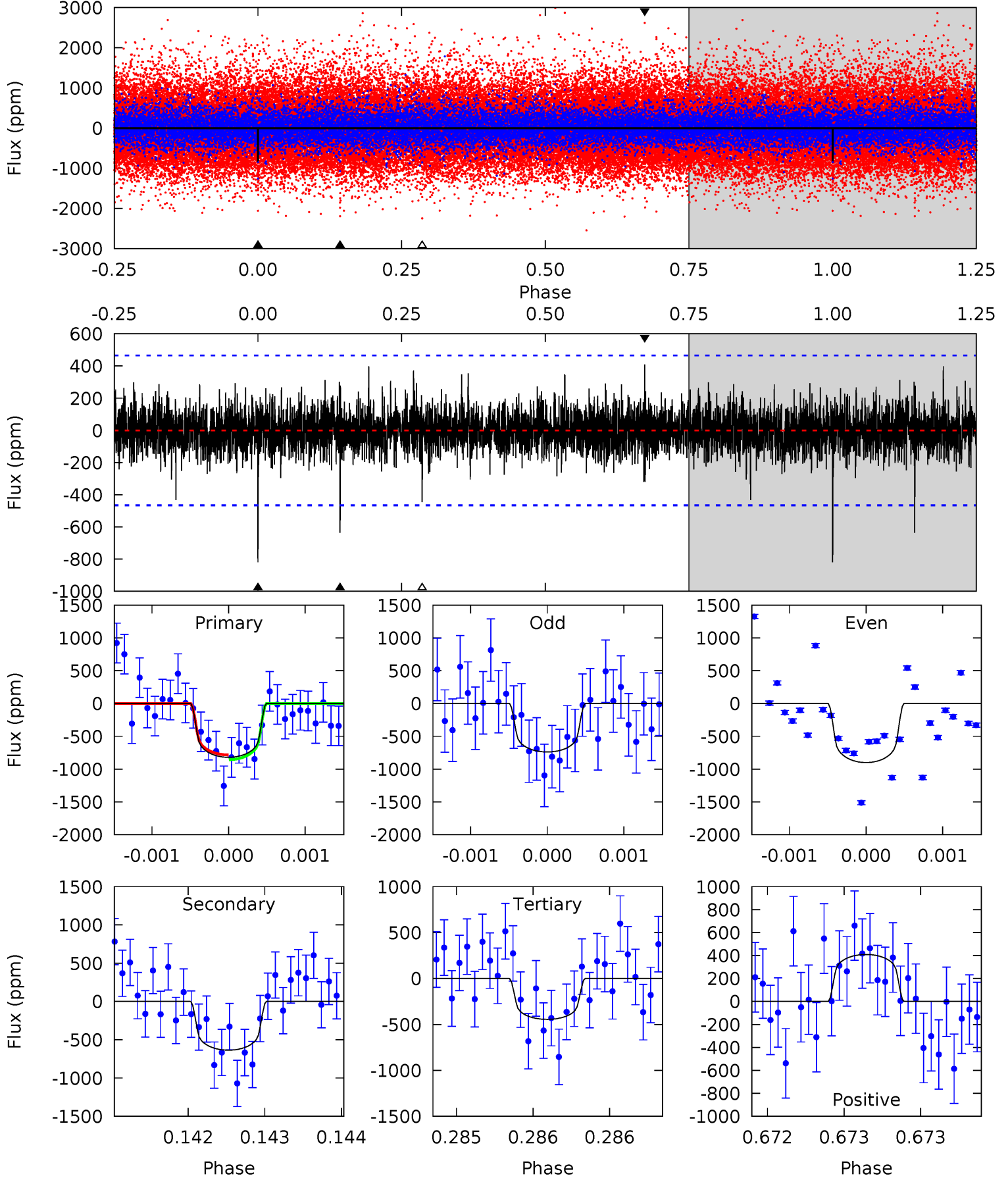
TCE 008508493-01 P=349.863414 Days  $T_0=285.629788$  (BKJD)



# DV Model-Shift Uniqueness Test

008508493-01, P = 349.857206 Days, E = 285.643818 Days

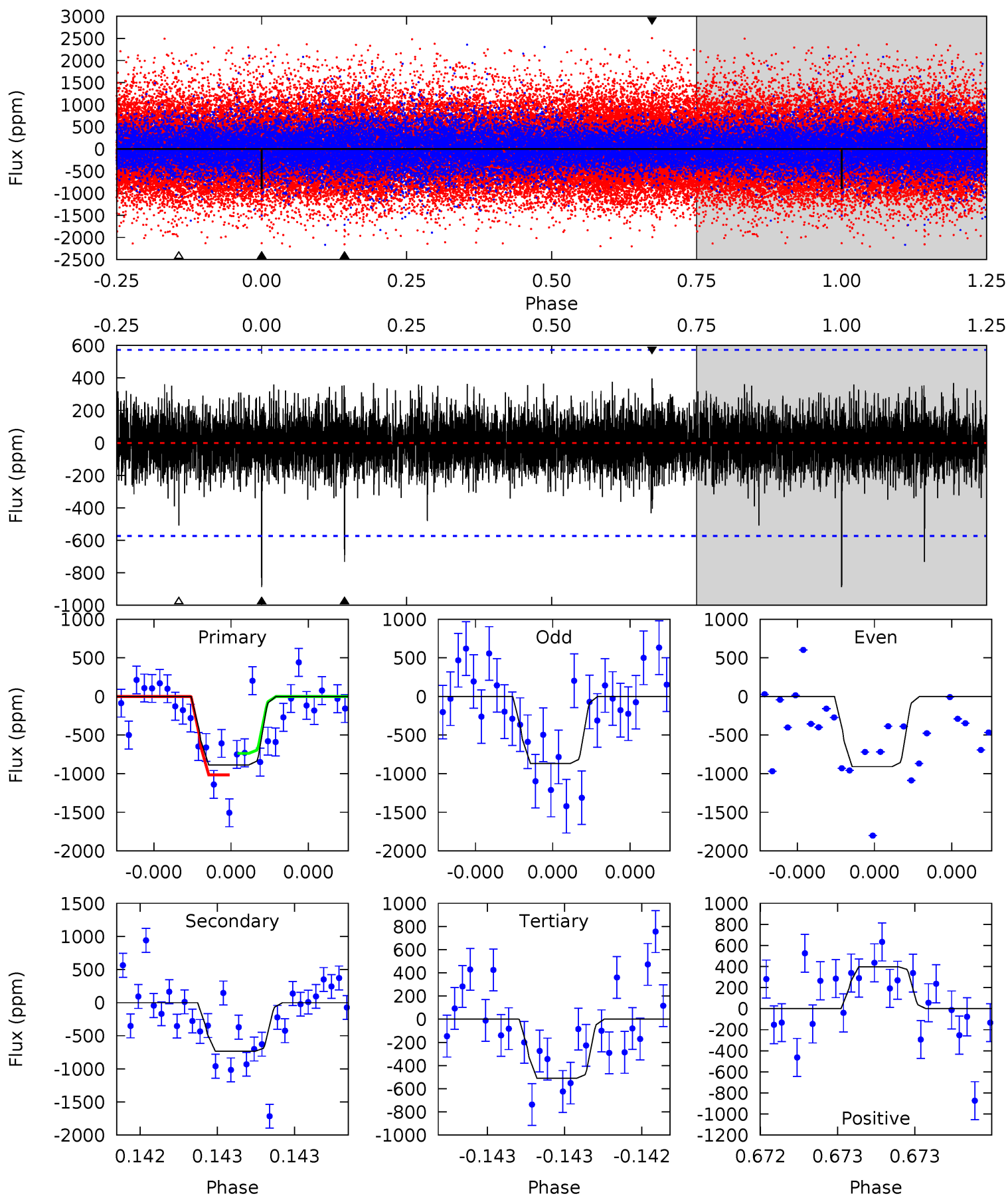
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.70	7.53	5.27	4.84	5.51	3.39	1.11	4.43	4.86	2.26	2.69	0.96	1.03	0.33	0.43



# Alt Model-Shift Uniqueness Test

008508493-01, P = 349.863414 Days, E = 285.629788 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
8.64	7.14	4.96	3.86	5.58	3.50	1.05	3.69	4.78	2.18	3.27	0.21	1.02	0.31	1.35



### Stellar Parameters For KIC 008508493

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5941^{+166}_{-187}$	$4.533^{+0.034}_{-0.195}$	$-0.220^{+0.300}_{-0.300}$	$0.885^{+0.258}_{-0.086}$	$0.975^{+0.119}_{-0.119}$	$1.980^{+0.377}_{-0.991}$
	+3%/-3%	+1%/-4%	+136%/-136%	+29%/-10%	+12%/-12%	+19%/-50%
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 008508493-01 / KOI 7890.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-636 \pm 85$	$3.41^{+2.60}_{-2.00}$	$359^{+22}_{-16}$	$5221^{+2970}_{-1074}$	$26959^{+131456}_{-18180}$
Alt.	$-733 \pm 103$	$3.80^{+2.66}_{-2.29}$	$361^{+24}_{-17}$	$5139^{+3181}_{-967}$	$25731^{+128112}_{-16952}$

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

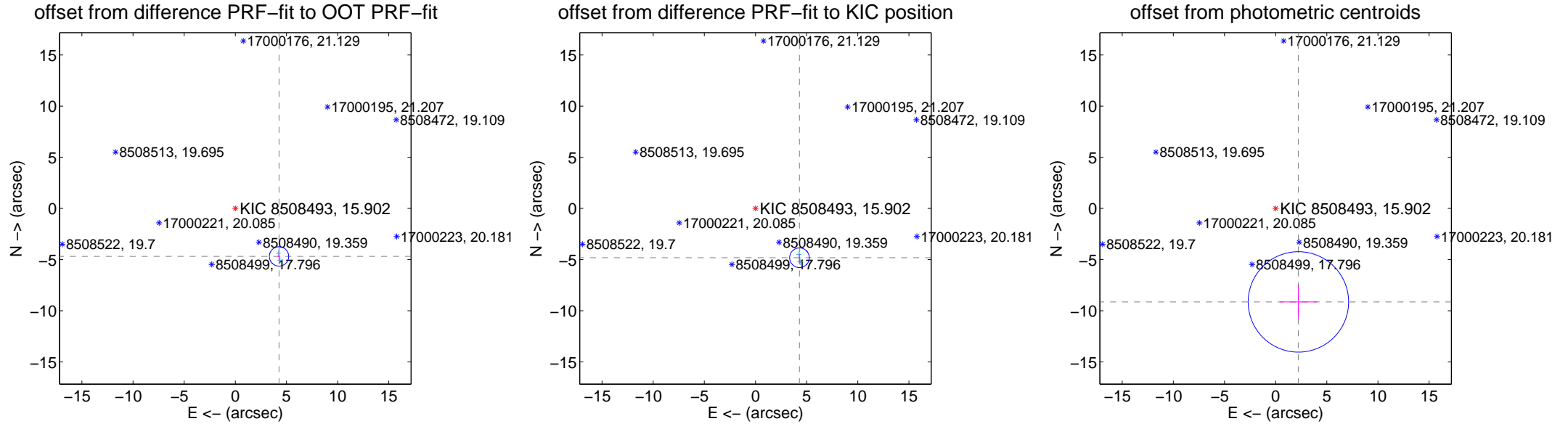
## DV Centroid Data

Supplemental centroid analysis for 008508493-01. Kepler magnitude: 15.90. Transit SNR 8.00

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

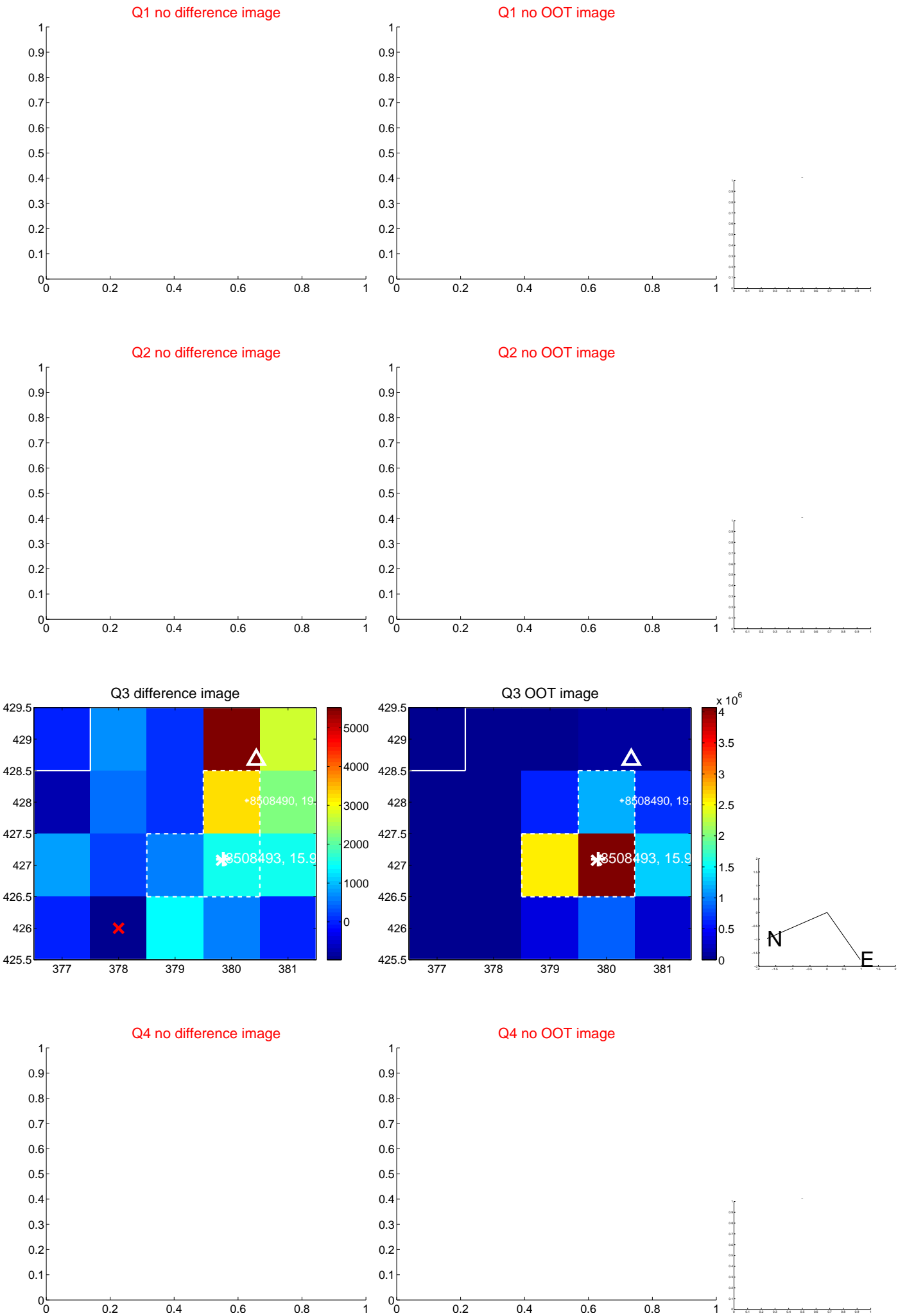
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$6.343 \pm 0.315$	20.14	$-4.271 \pm 0.117$	$-4.689 \pm 0.412$
PRF-fit source offset from KIC position	$6.456 \pm 0.320$	20.20	$-4.298 \pm 0.094$	$-4.817 \pm 0.420$
photometric centroid source offset	$9.40 \pm 1.64$	5.75	$-2.22 \pm 1.82$	$-9.14 \pm 1.62$



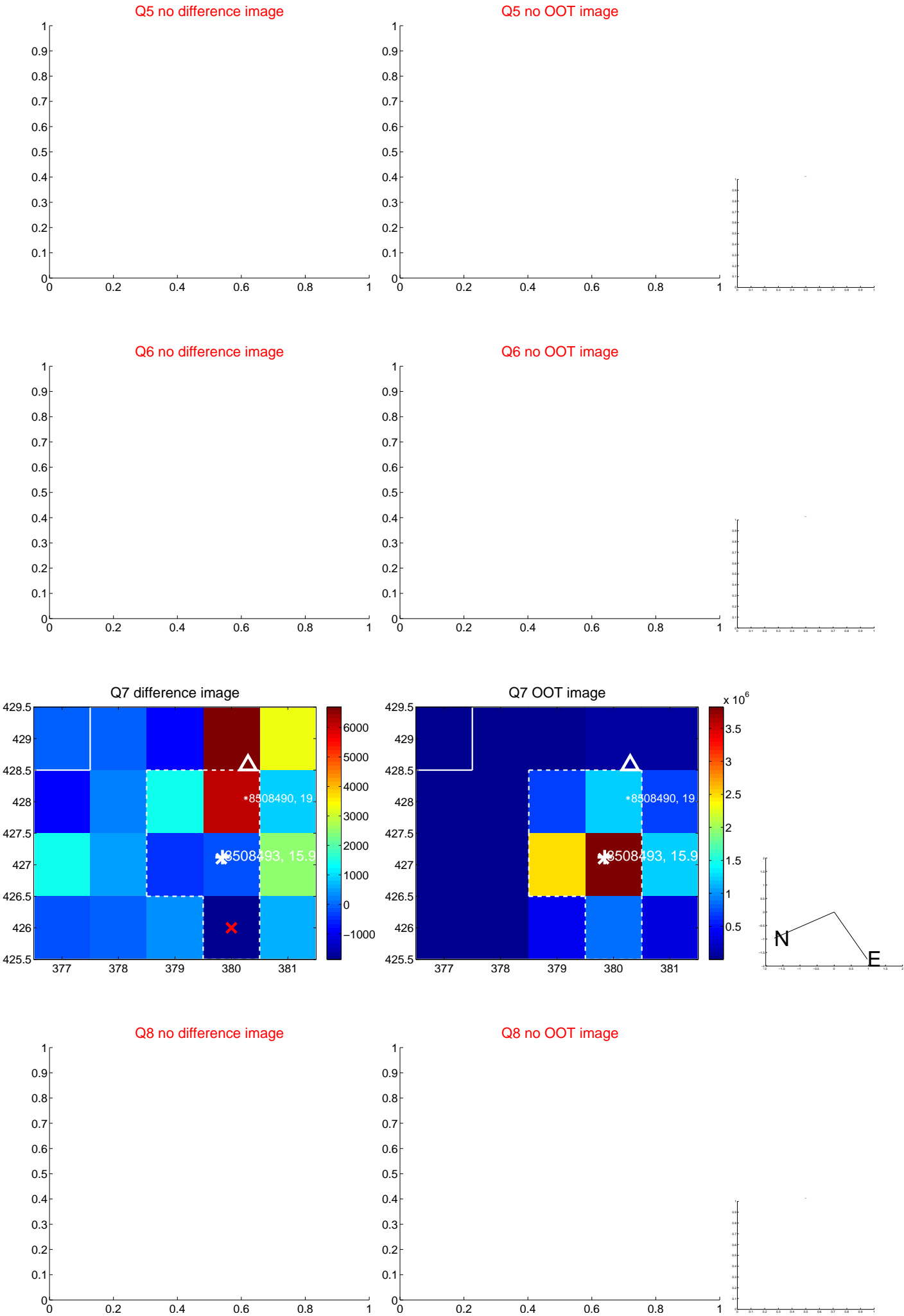
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



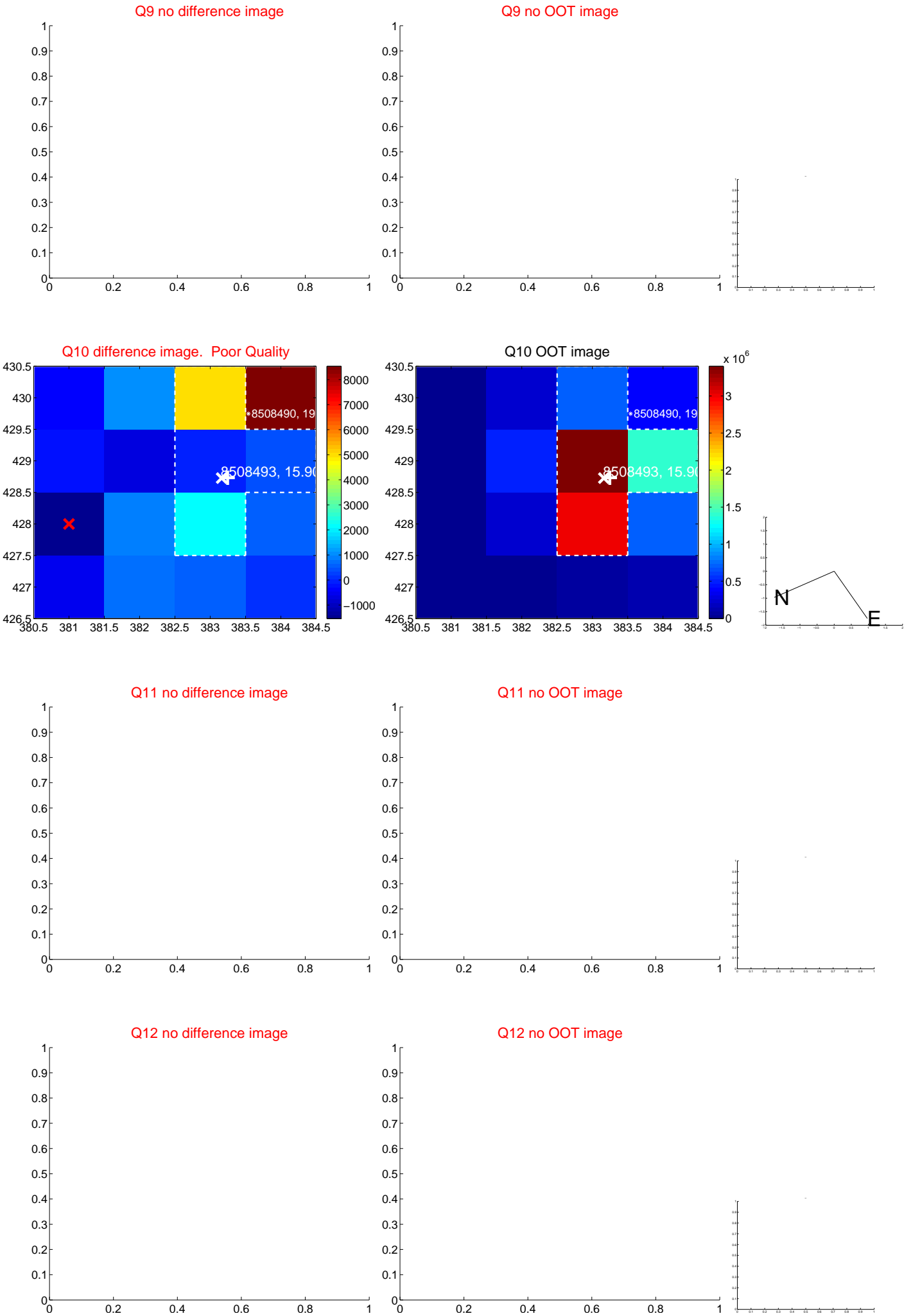
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



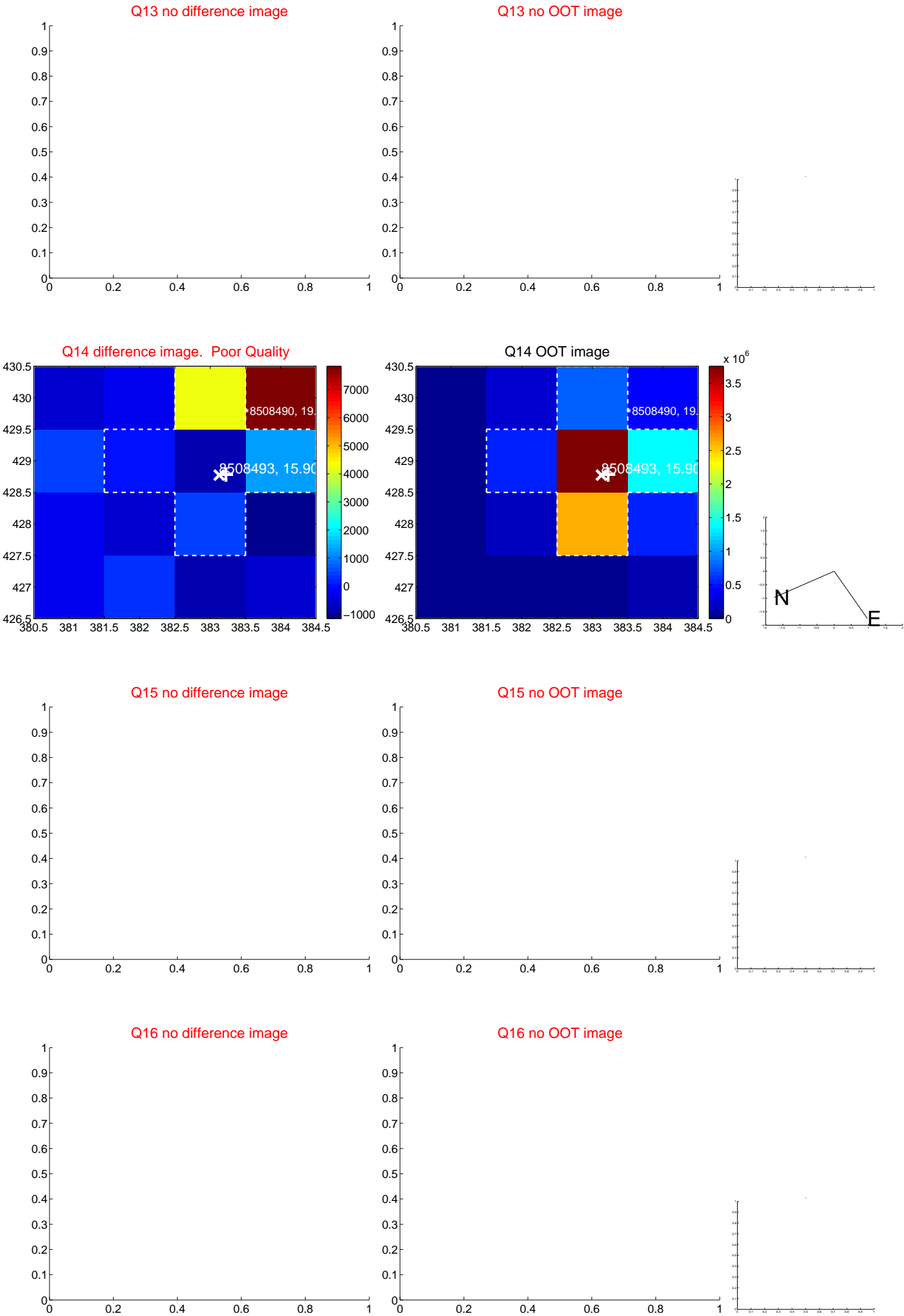
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



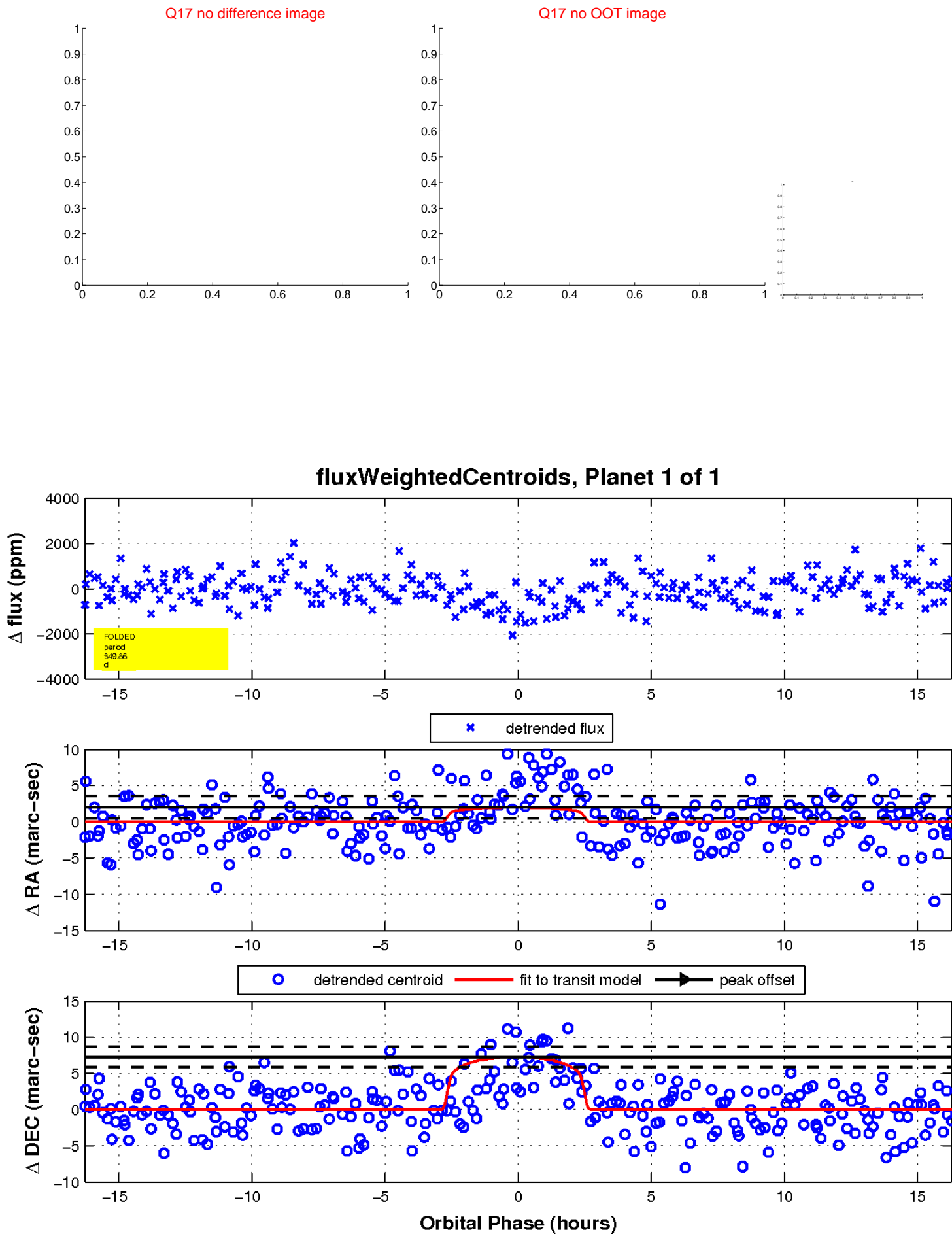
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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.



# UKIRT Image

Declination

