

# KIC 005283728

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005283728-01	OBS	5149.01	43.686105	168.842919	241.4	14.448	8.3	9.1	0.83	5726	1.37	11.88

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005283728-01	OBS	PC	1.00	0	0	0	0	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 005283728-01

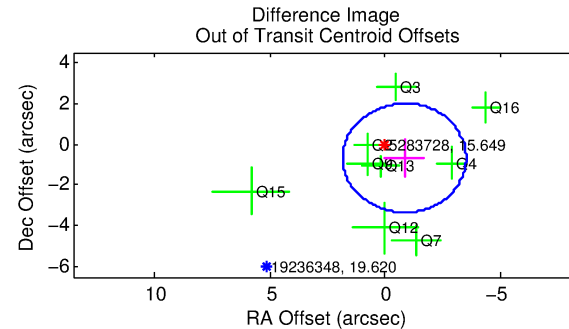
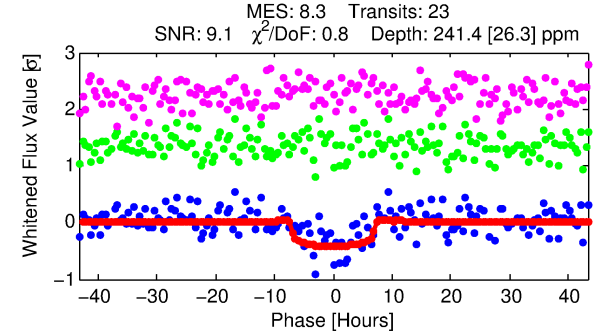
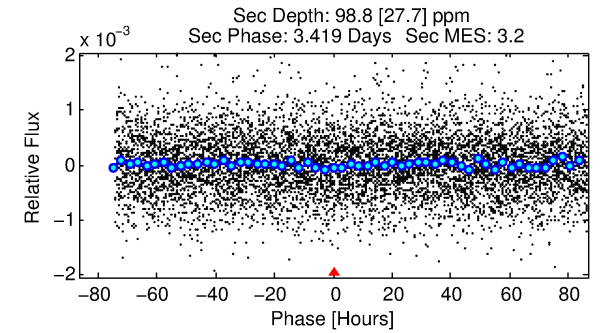
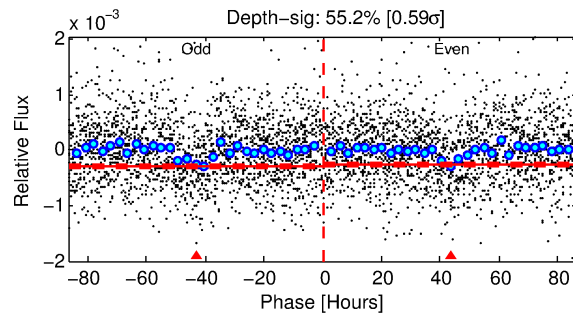
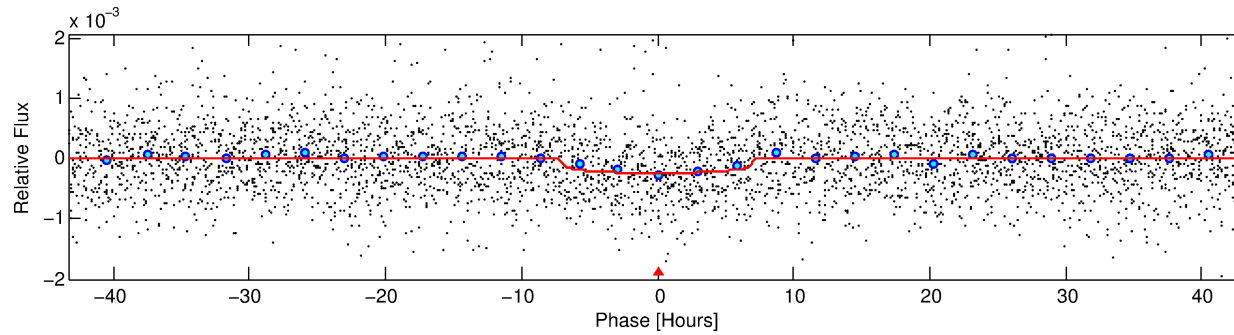
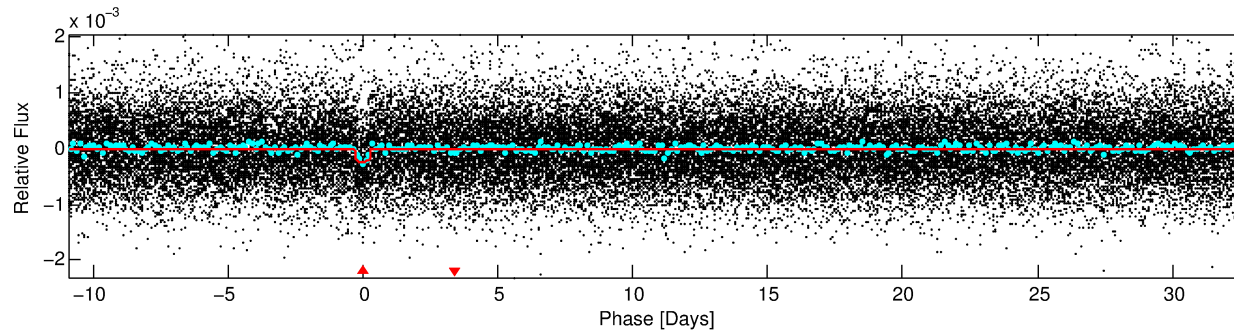
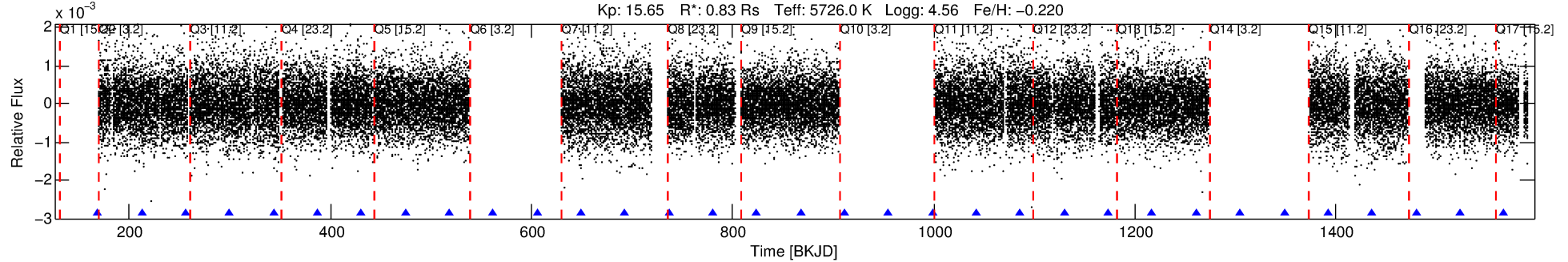
No Significant Match Found

# DV One-Page Summary

KIC: 5283728 Candidate: 1 of 1 Period: 43.686 d

KOI: K05149.01 Corr: 0.873

Kp: 15.65 R\*: 0.83 Rs Teff: 5726.0 K Logg: 4.56 Fe/H: -0.220



## DV Fit Results:

Period = 43.68611 [0.00130] d  
Epoch = 168.8429 [0.0237] BKJD  
Rp/R\* = 0.0152 [0.0084]  
a/R\* = 17.21 [42.87]  
b = 0.69 [1.91]  
Seff = 11.88 [4.46]  
Teq = 473 [44] K  
Rp = 1.37 [0.86] Re  
a = 0.2360 [0.0575] AU  
Ag = 1611.59 [1934.71] [0.83σ]  
Teffp = 4638 [1337] K [3.11σ]

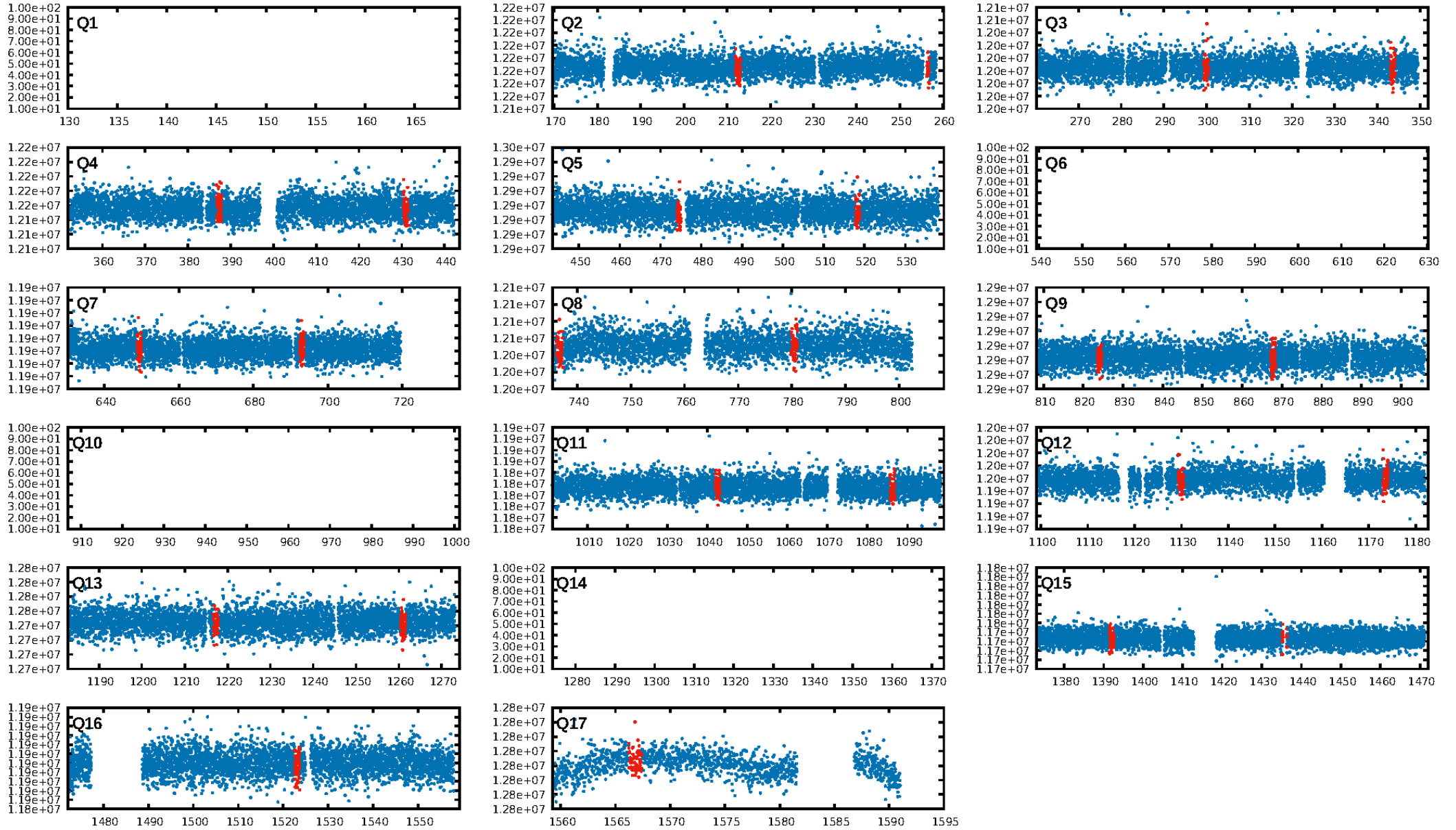
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 75.8%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.15e-16  
RollingBand-fgt: 1.00 [22/22]  
GhostDiagnostic-chr: 2.201  
Centroid-sig: 6.8%  
Centroid-so: 2.111 arcsec [1.38σ]  
OotOffset-rm: 1.066 arcsec [1.20σ]  
KicOffset-rm: 1.049 arcsec [1.19σ]  
OotOffset-st: 1/3/3/2 [9]  
KicOffset-st: 1/3/3/2 [9]  
DiffImageQuality-fgm: 0.44 [4/9]  
DiffImageOverlap-fno: 1.00 [13/13]

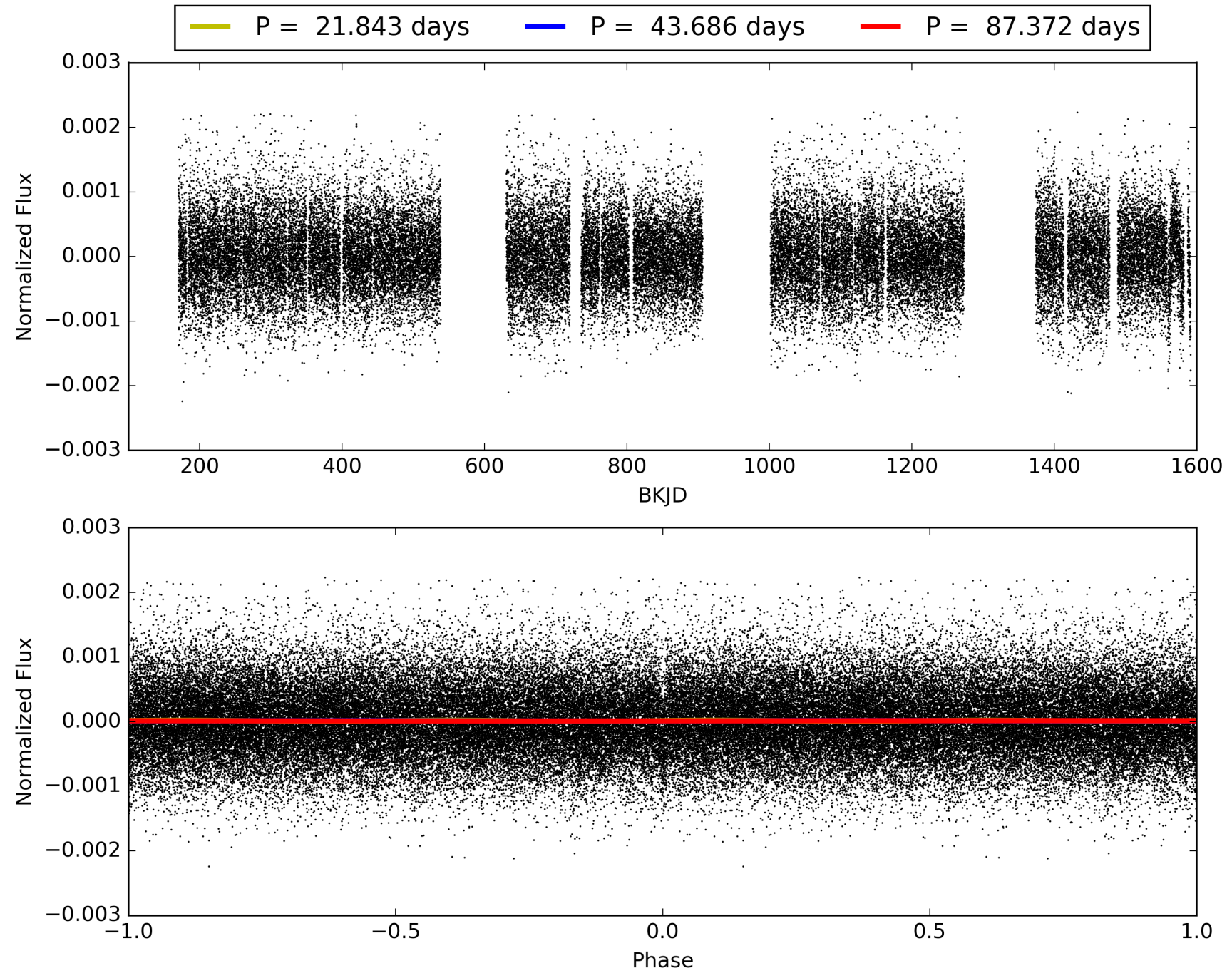
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:55:49 Z

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

# TCE 005283728-01, PDC Light Curves

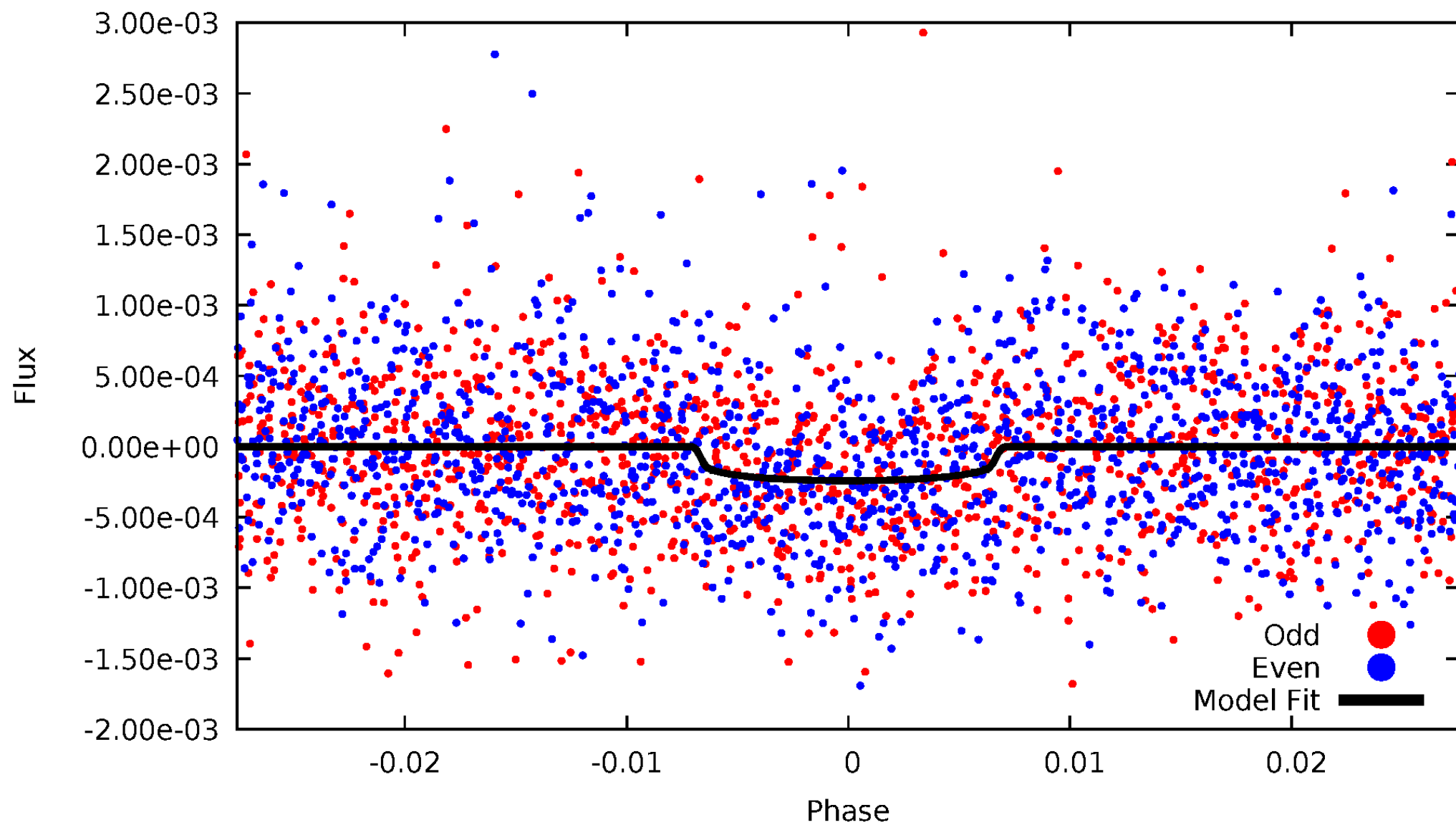


TCE 005283728-01



# DV Odd/Even

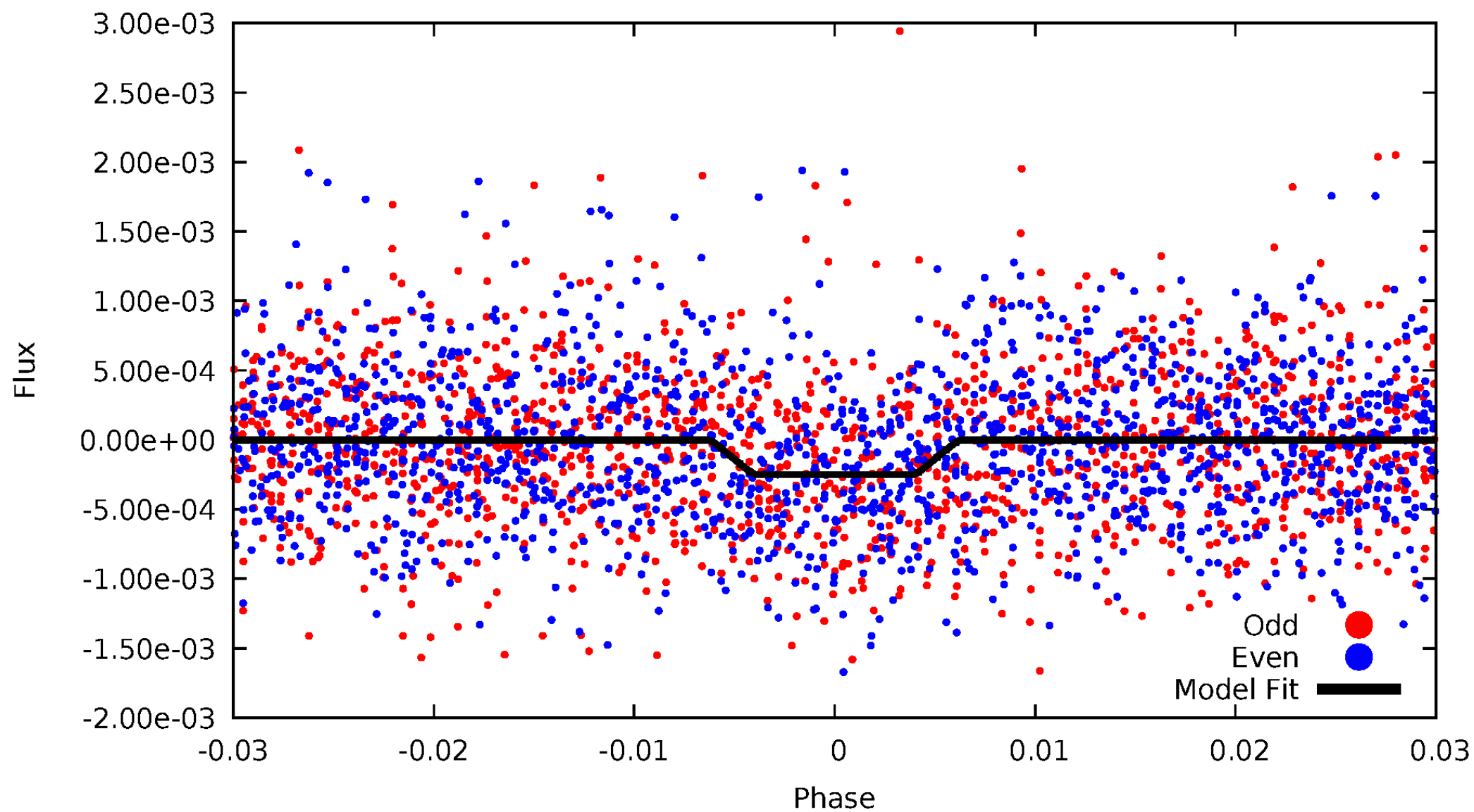
TCE 005283728-01





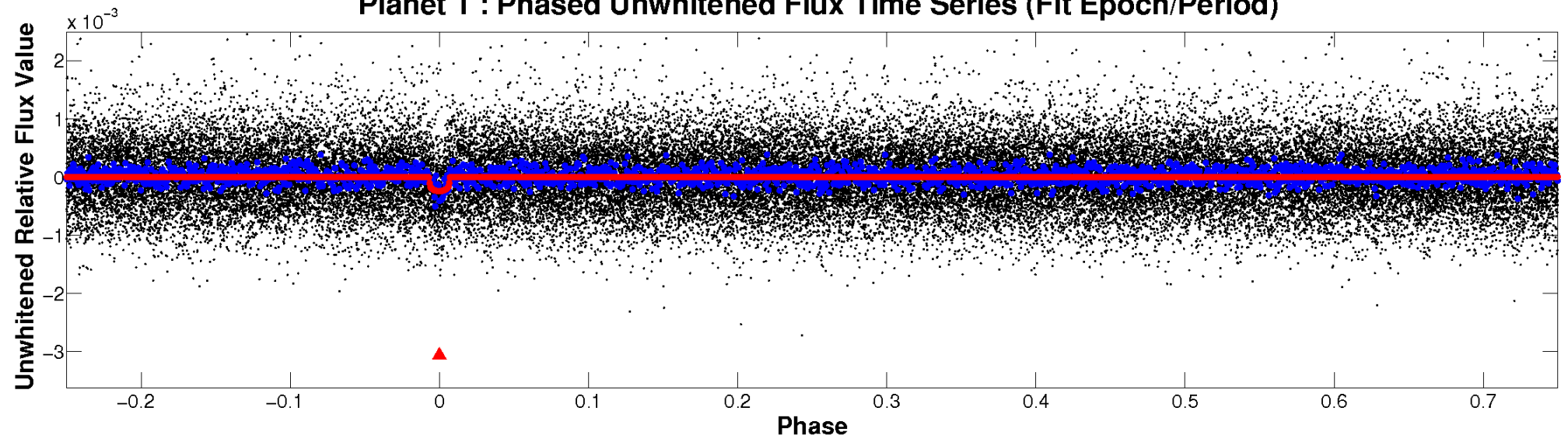
# ALT Odd/Even

TCE 005283728-01

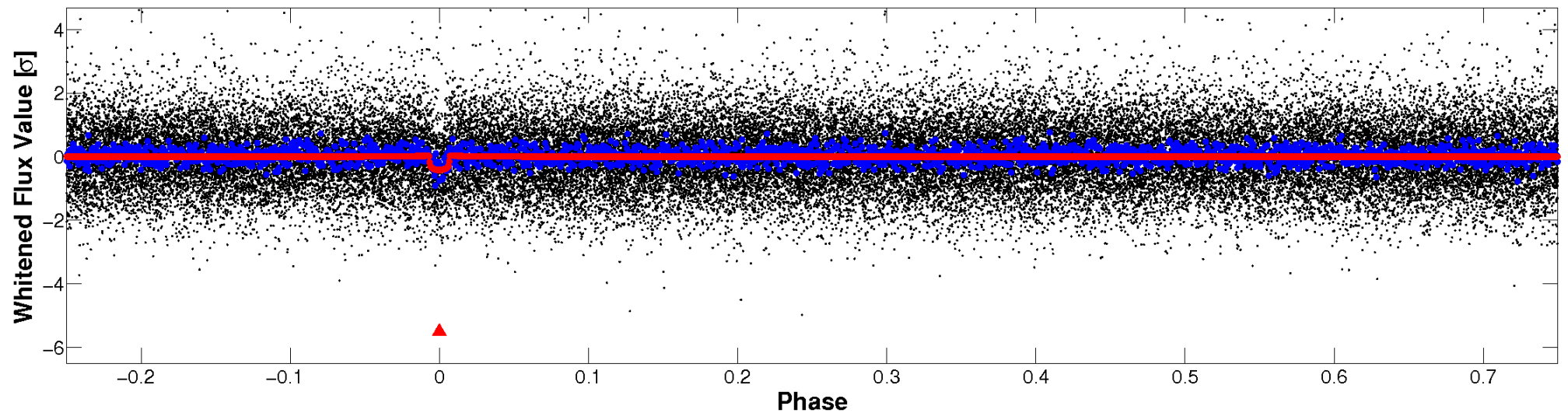


# Non-Whitened Vs. Whitened Light Curve

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

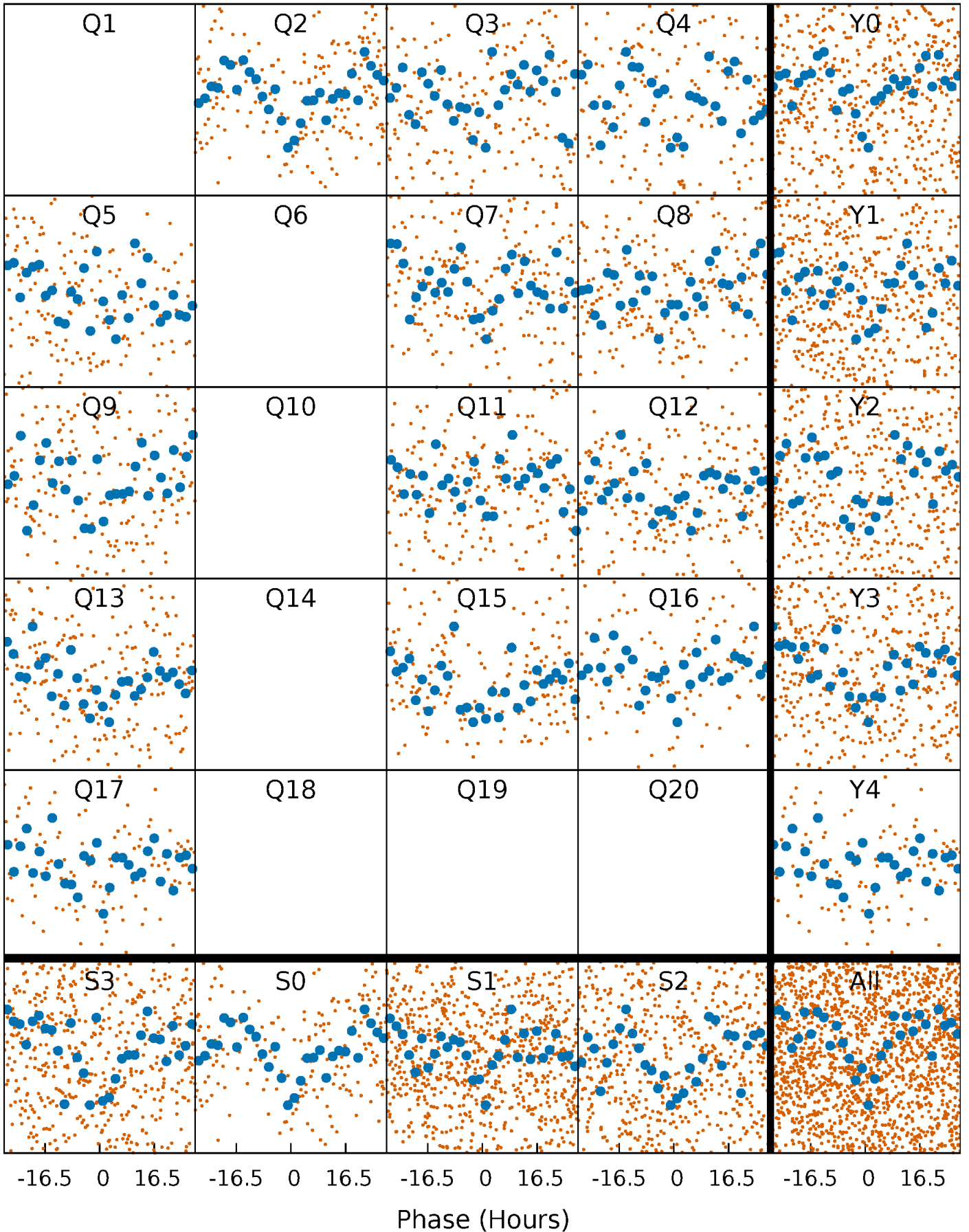


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

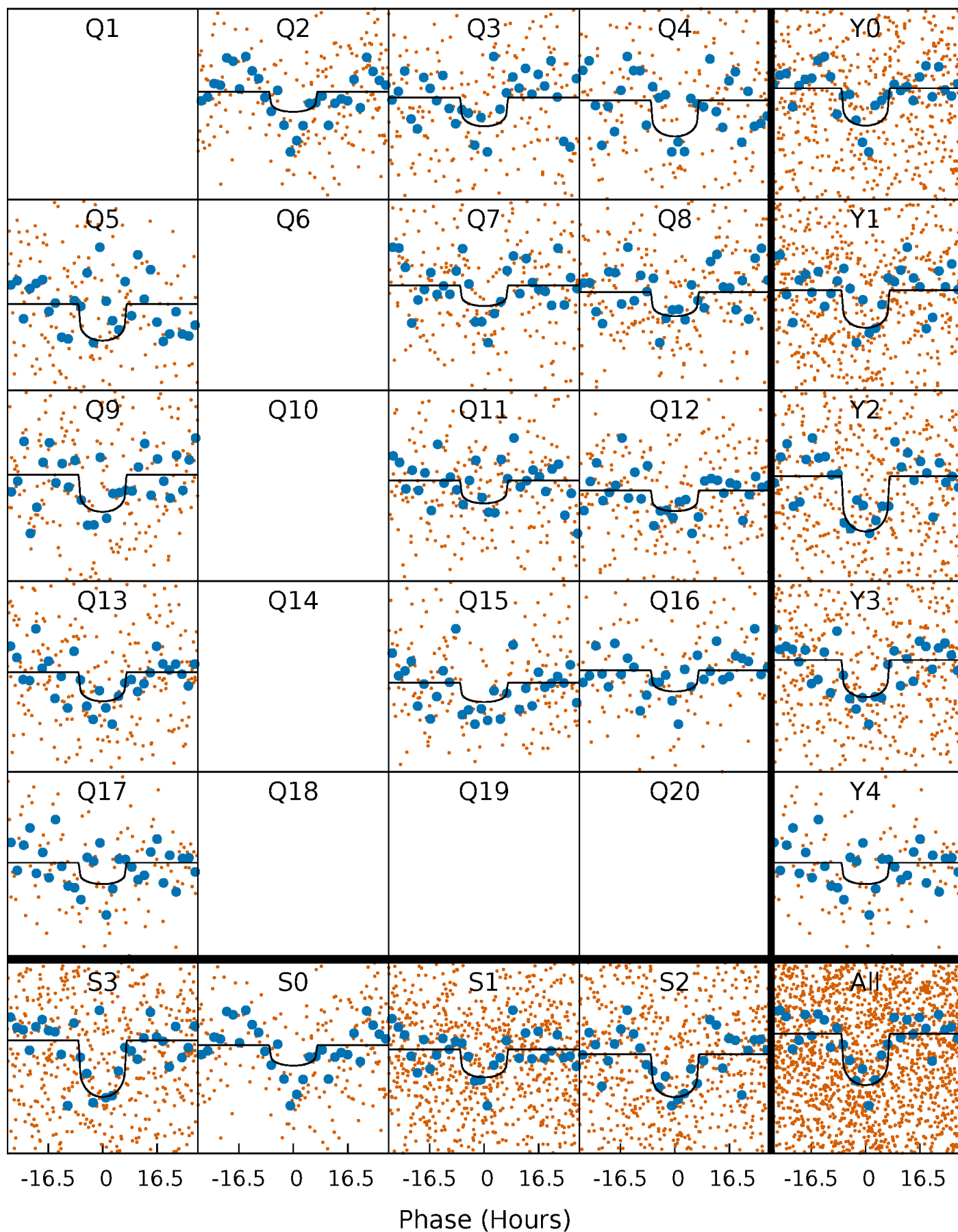
TCE 005283728-01 P= 43.686105 Days  $T_0=168.842919$  (BKJD)





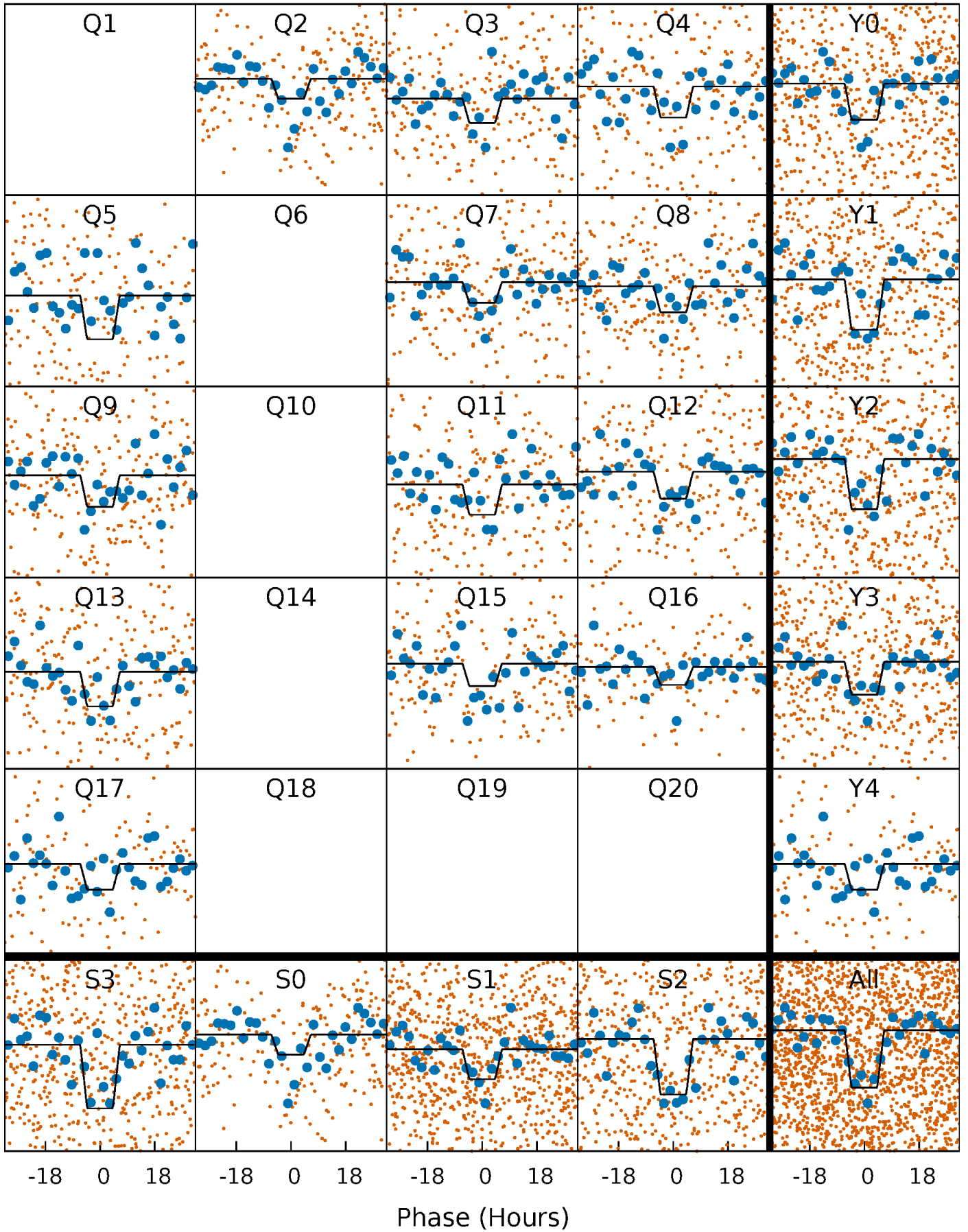
# DV Quarter-Phased Transit Curves

TCE 005283728-01 P= 43.686105 Days  $T_0=168.842919$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

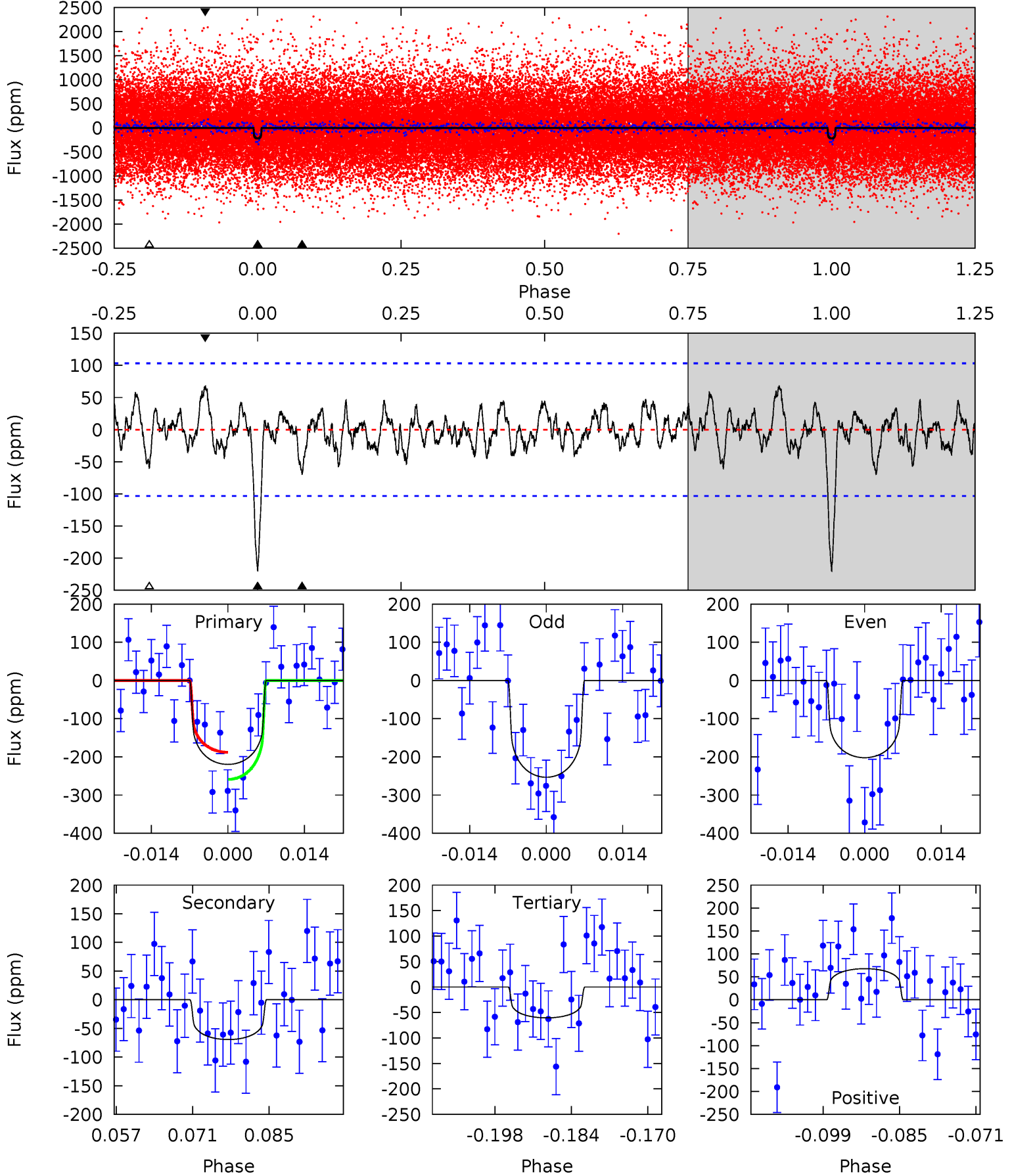
TCE 005283728-01 P= 43.684751 Days  $T_0=168.852283$  (BKJD)



# DV Model-Shift Uniqueness Test

005283728-01, P = 43.686105 Days, E = 168.842919 Days

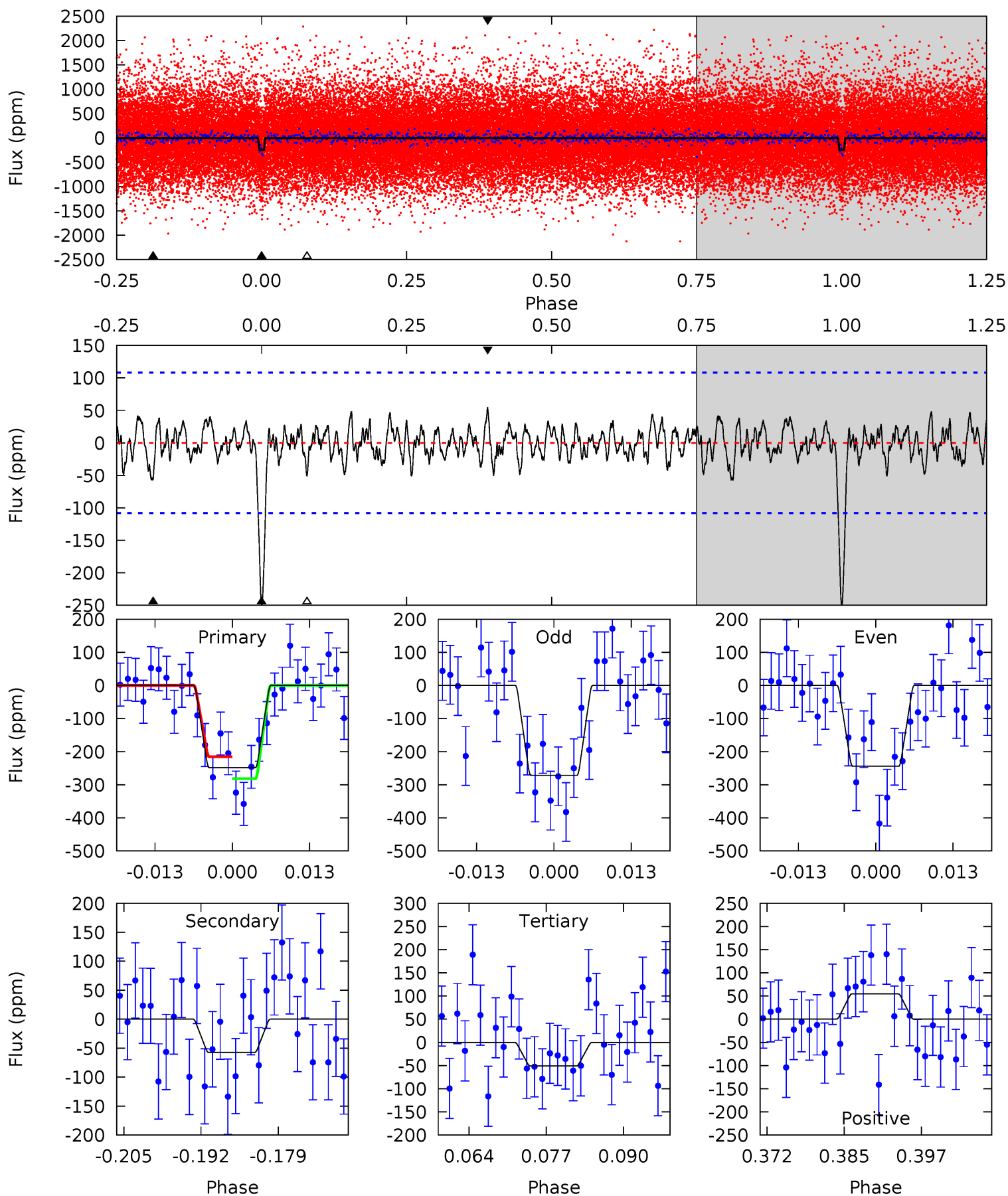
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	3.33	2.91	3.25	4.96	2.45	1.08	7.64	7.29	0.43	0.08	1.23	0.89	0.24	1.71



# Alt Model-Shift Uniqueness Test

005283728-01,  $P = 43.684751$  Days,  $E = 168.852283$  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
11.4	2.63	2.35	2.51	4.98	2.49	0.88	9.09	8.93	0.29	0.12	0.63	0.98	0.18	1.52



### Stellar Parameters For KIC 005283728

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5726^{+172}_{-172}$	$4.564^{+0.034}_{-0.195}$	$-0.220^{+0.300}_{-0.300}$	$0.829^{+0.239}_{-0.075}$	$0.923^{+0.098}_{-0.109}$	$2.283^{+0.419}_{-1.115}$
	+3%/-3%	+1%/-4%	+136%/-136%	+29%/-9%	+11%/-12%	+18%/-49%
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 005283728-01 / KOI 5149.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-69 \pm 21$	$1.50^{+0.83}_{-0.73}$	$677^{+46}_{-32}$	$4377^{+1349}_{-726}$	$903^{+2649}_{-562}$
Alt.	$-57 \pm 22$	$1.56^{+0.85}_{-0.75}$	$679^{+46}_{-30}$	$4142^{+1243}_{-641}$	$701^{+1741}_{-460}$

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



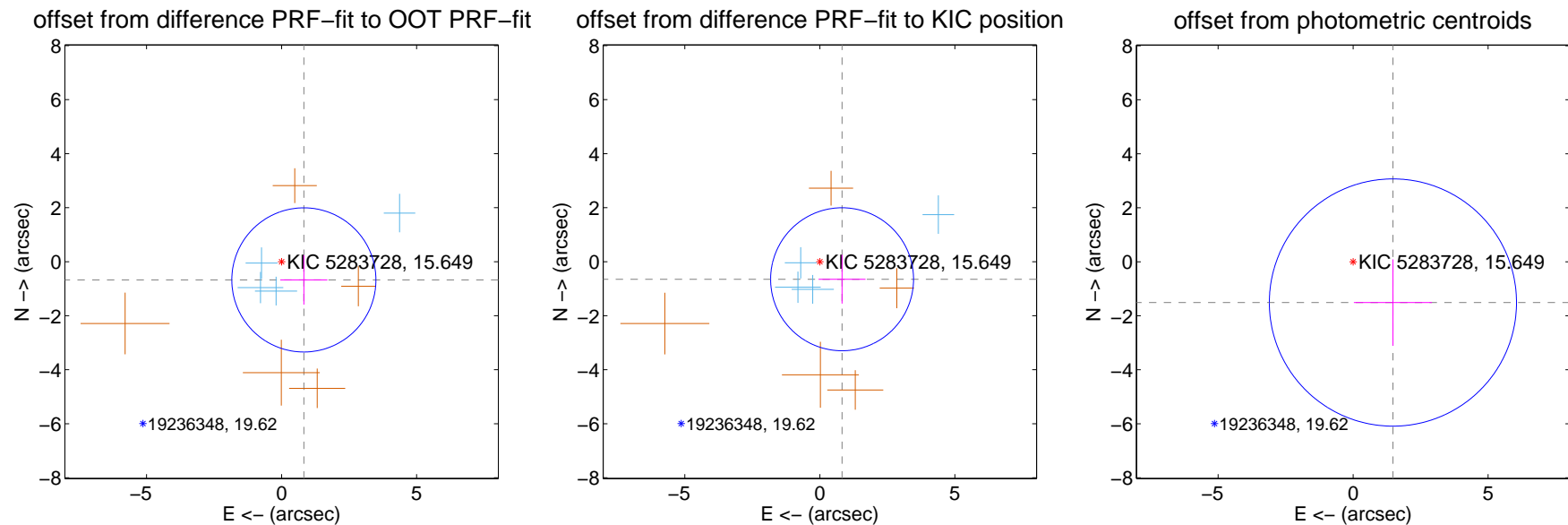
## DV Centroid Data

Supplemental centroid analysis for 005283728-01. Kepler magnitude: 15.65. Transit SNR 9.14

There are 4 quarters with good PRF difference image offsets

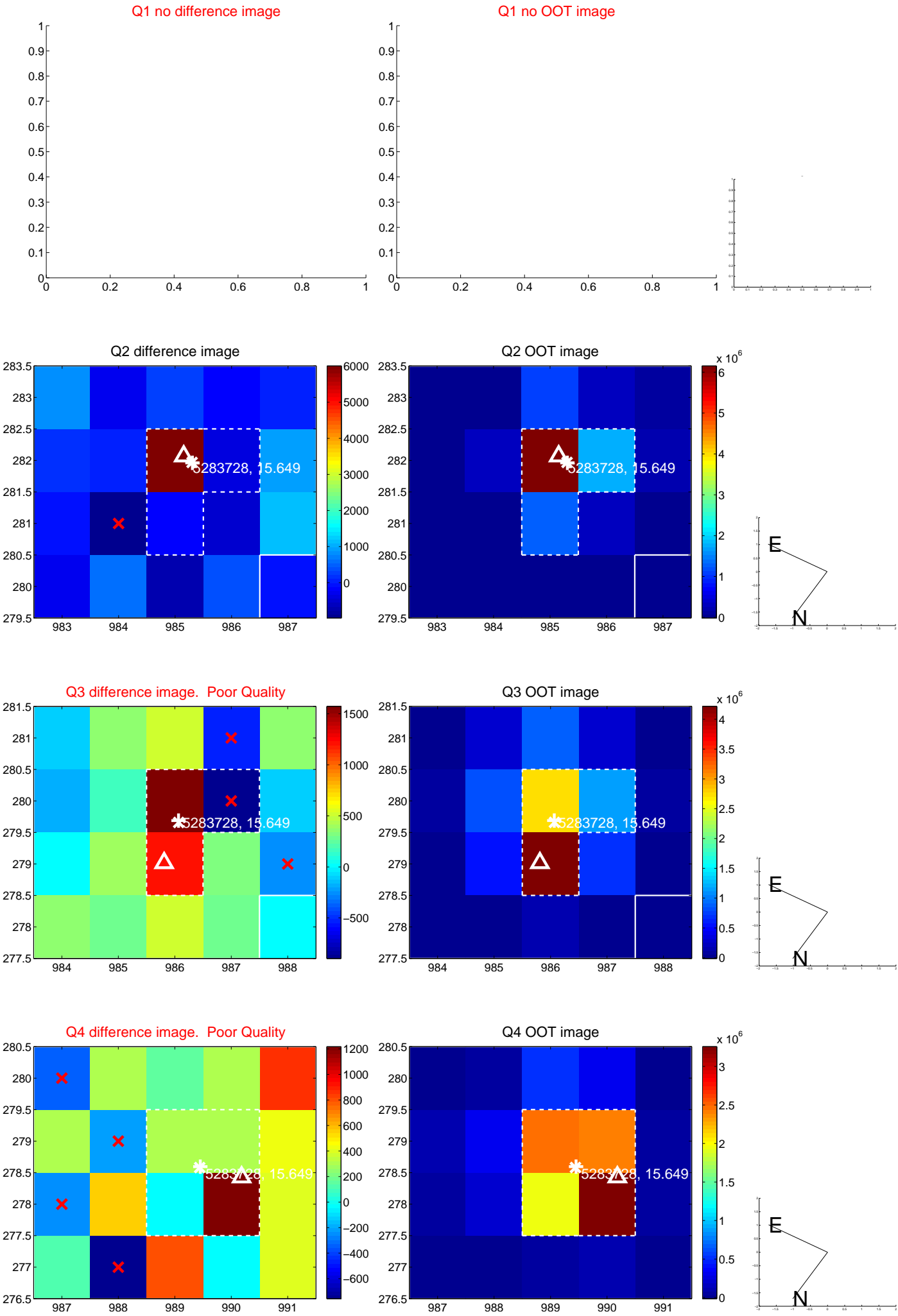
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.066 \pm 0.890$	1.20	$-0.826 \pm 0.872$	$-0.675 \pm 0.916$
PRF-fit source offset from KIC position	$1.049 \pm 0.882$	1.19	$-0.824 \pm 0.870$	$-0.650 \pm 0.902$
photometric centroid source offset	$2.11 \pm 1.53$	1.38	$-1.48 \pm 1.45$	$-1.51 \pm 1.60$

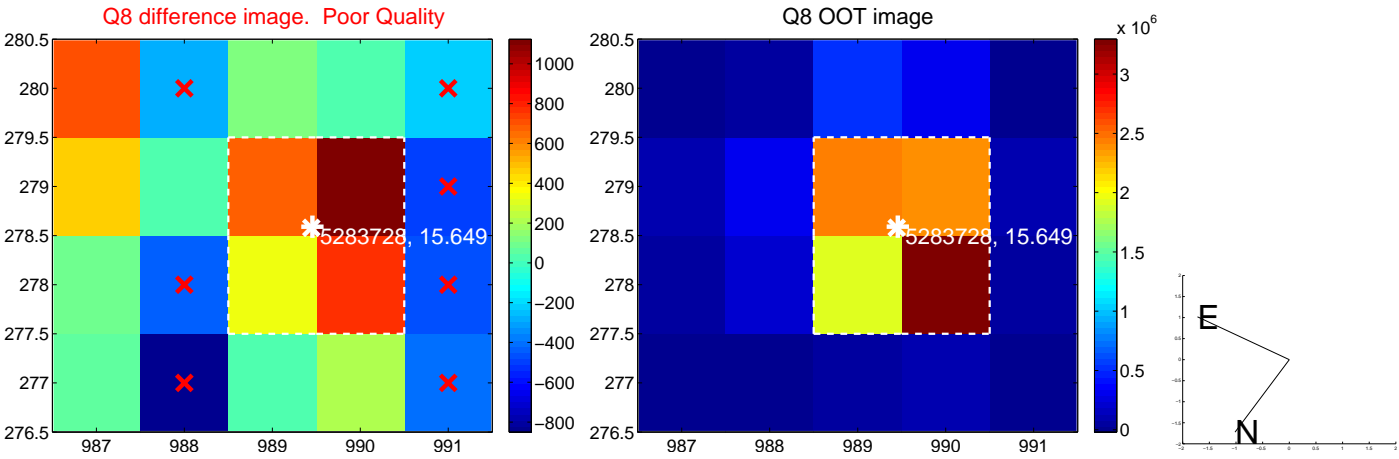
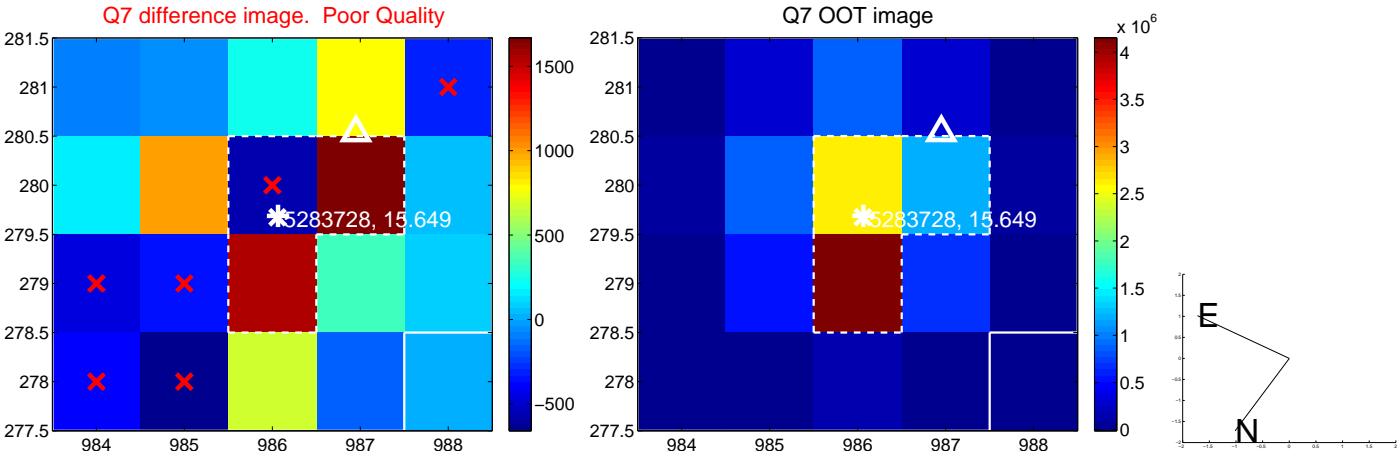
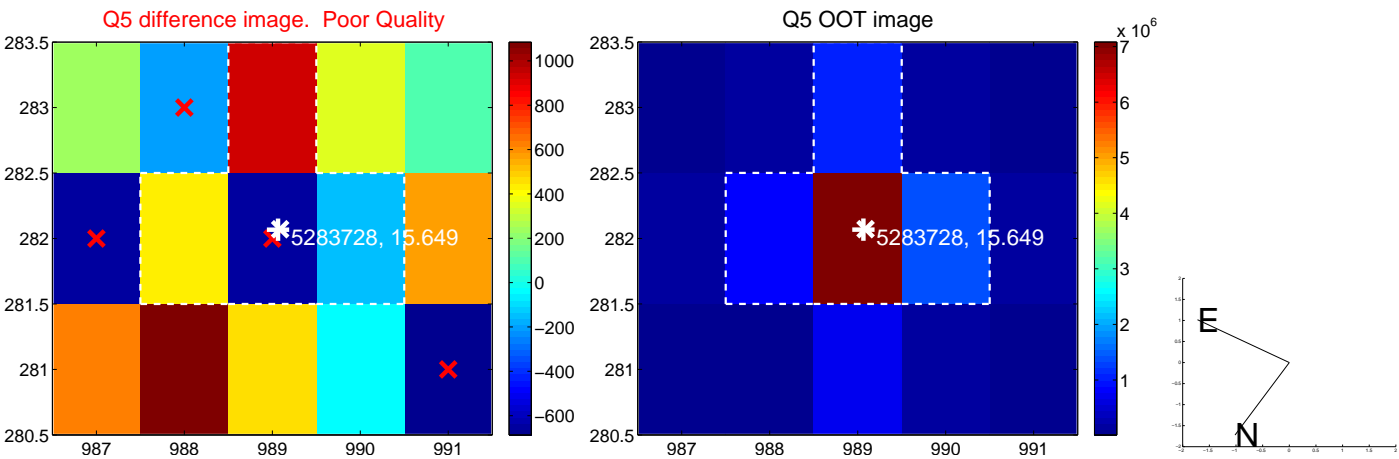


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

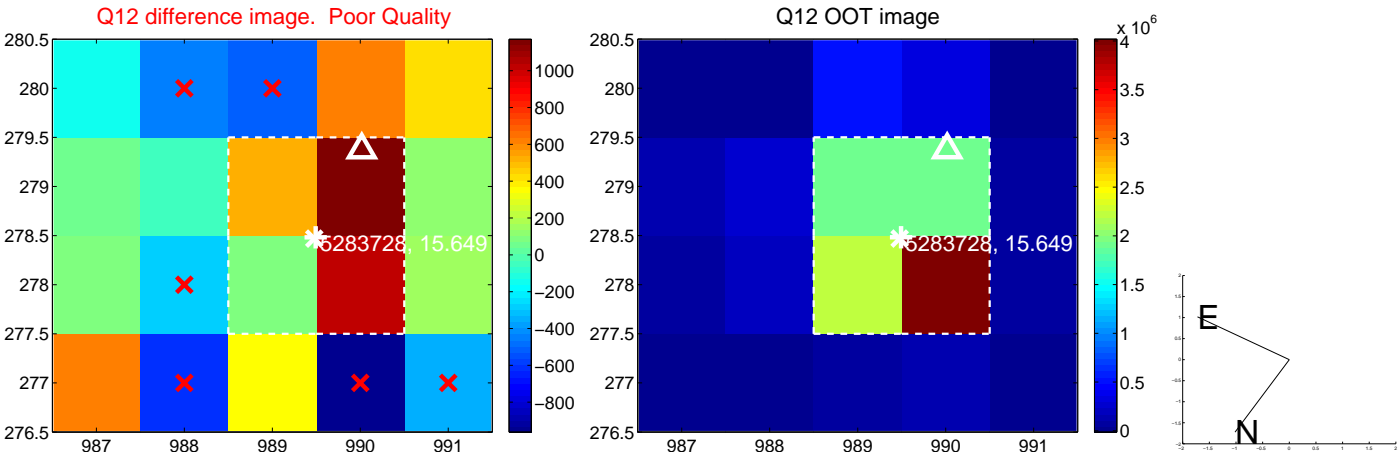
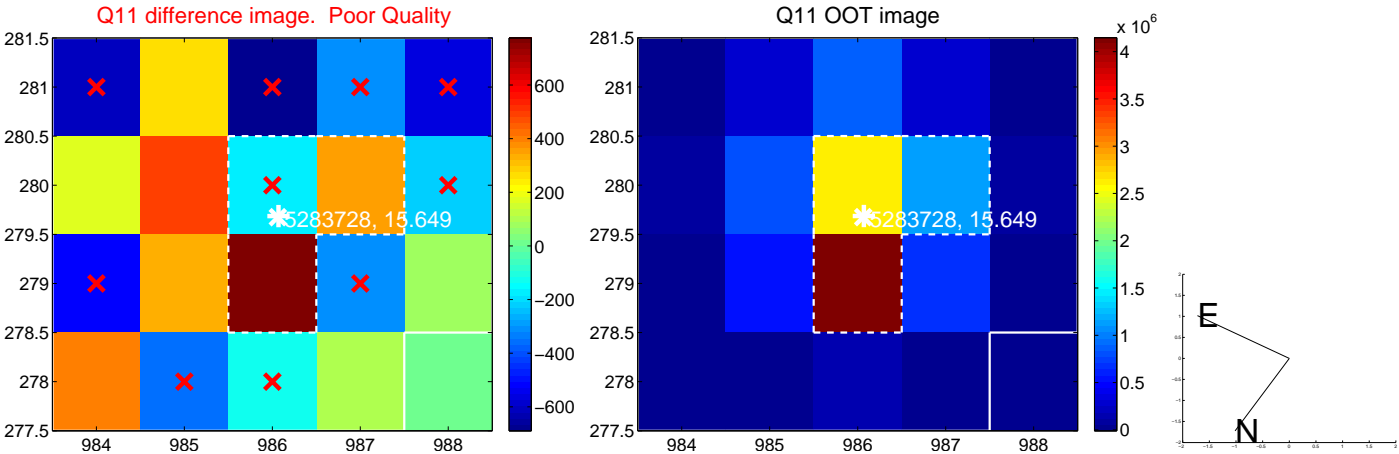
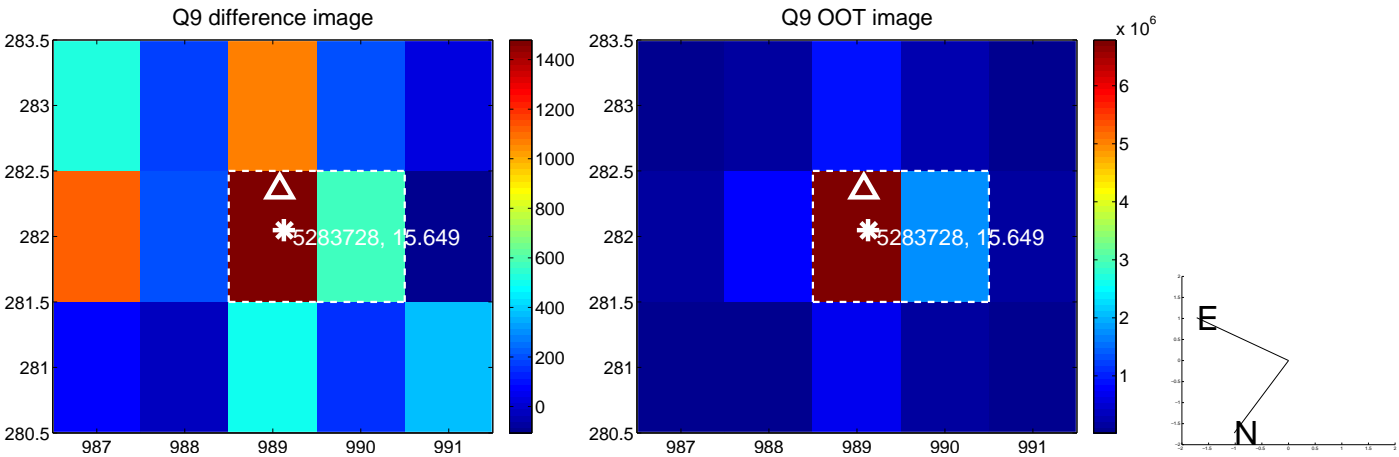
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



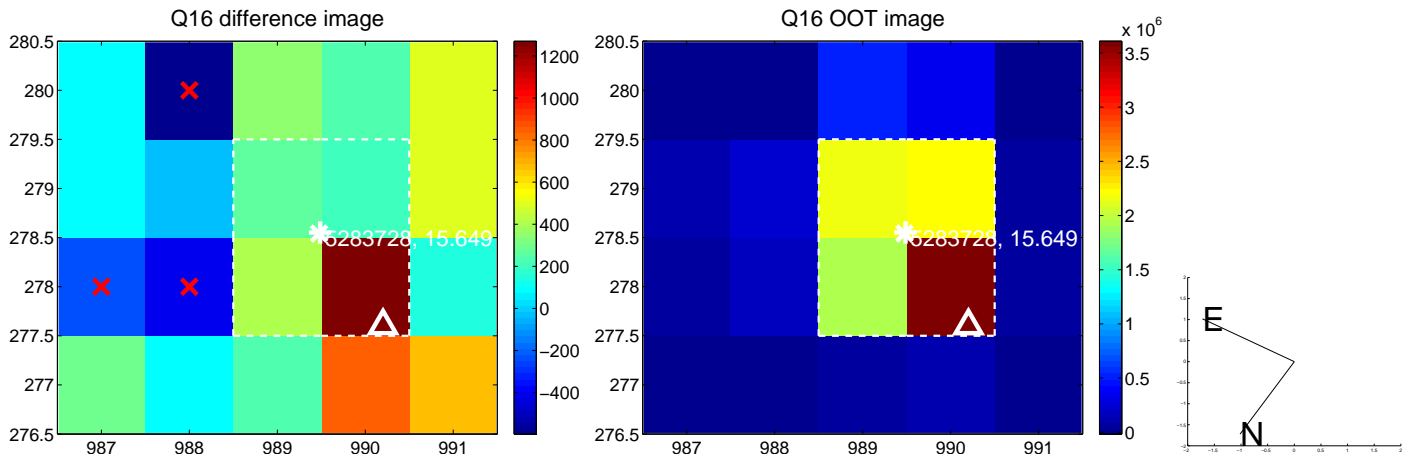
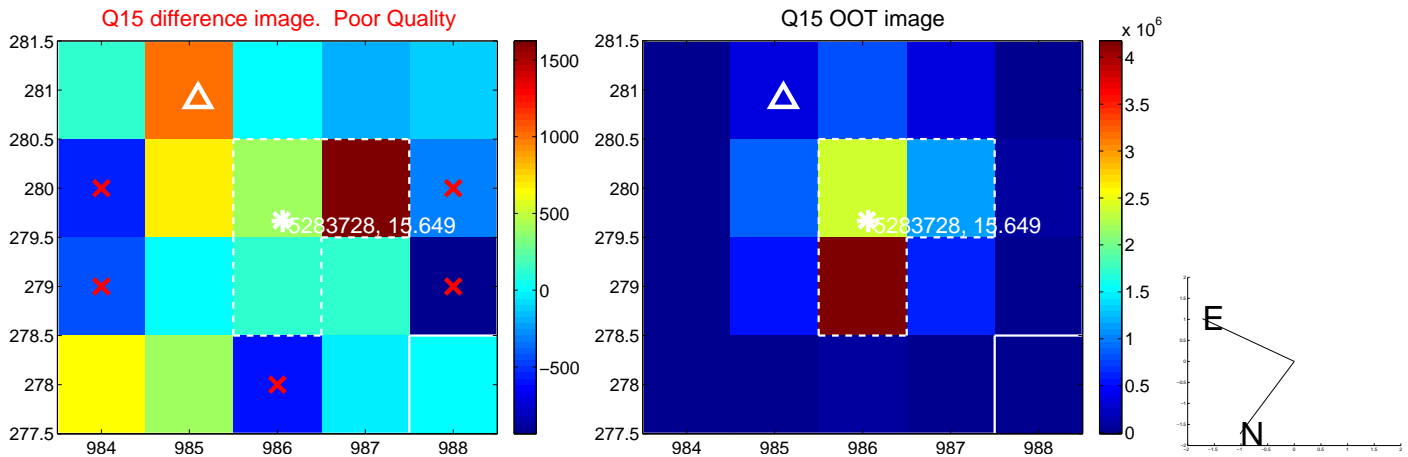
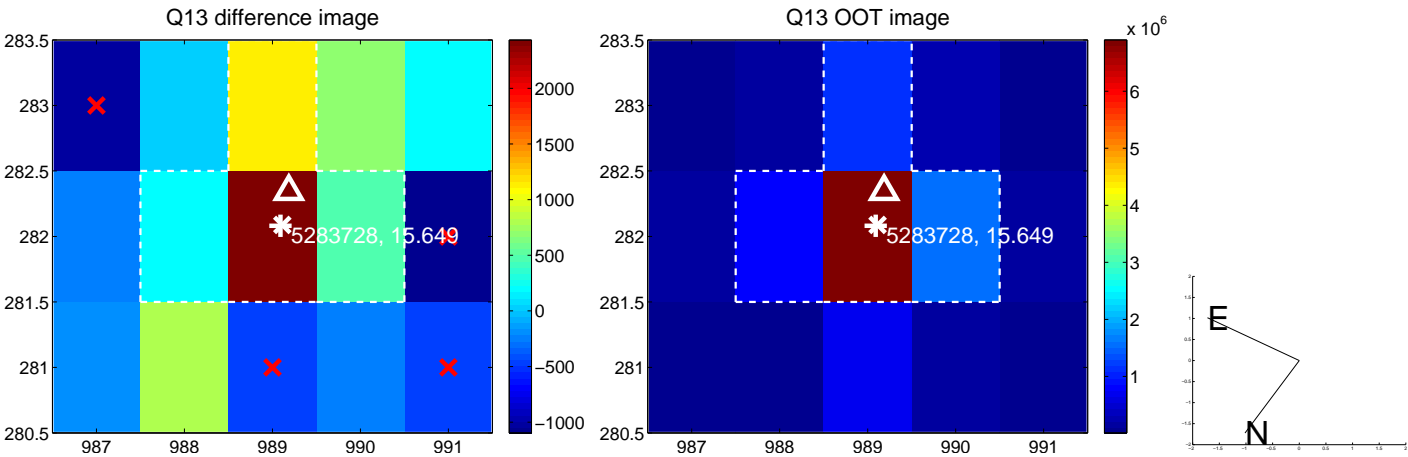
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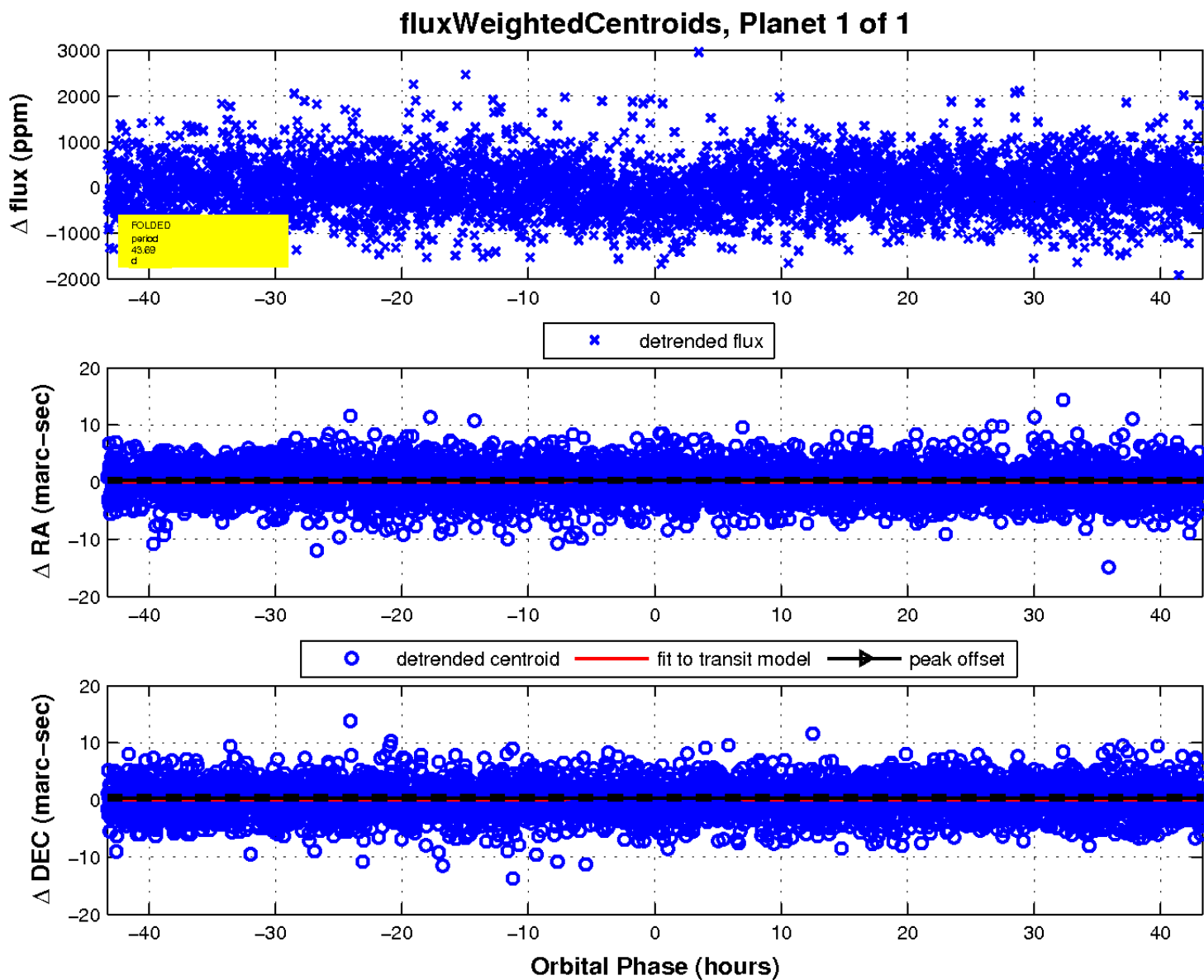
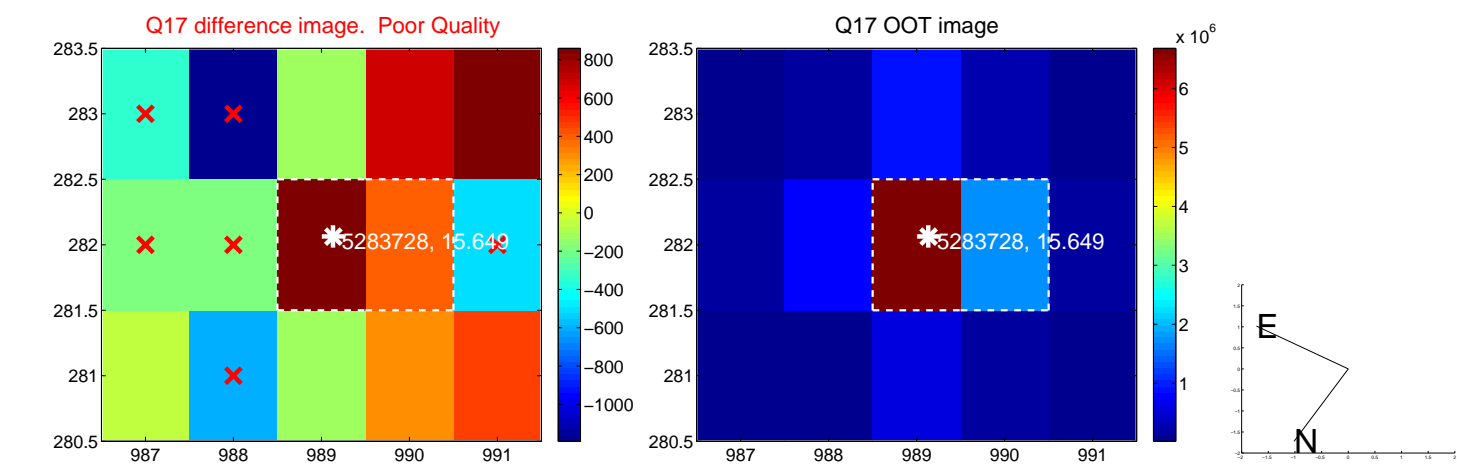


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



## UKIRT Image

Declination

