

# KIC 009592705

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009592705-01	OBS	0288.01	10.275305	136.172477	210.4	6.376	63.5	70.0	2.09	6150	3.25	509.19

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009592705-01	OBS	PC	1.00	0	0	0	0	CENT_SATURATED

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

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

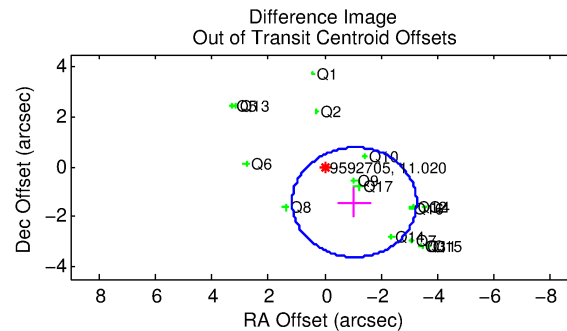
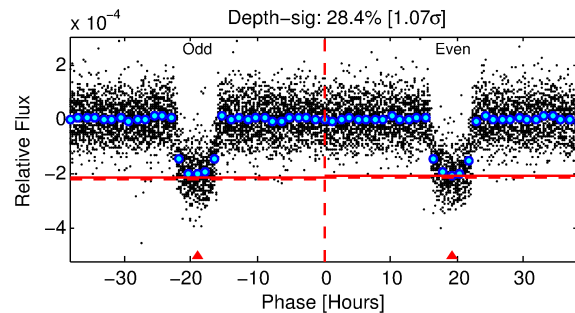
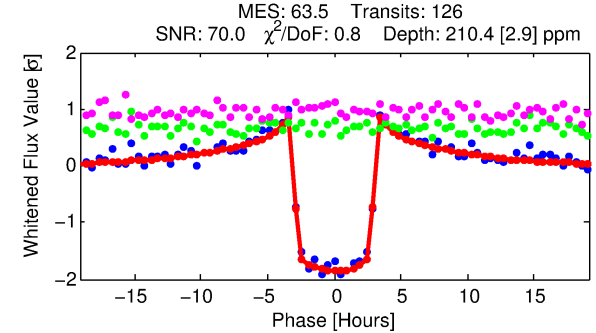
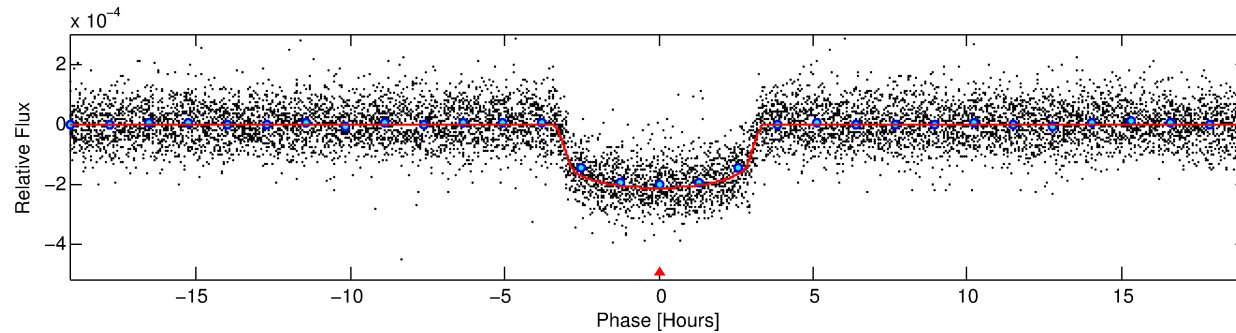
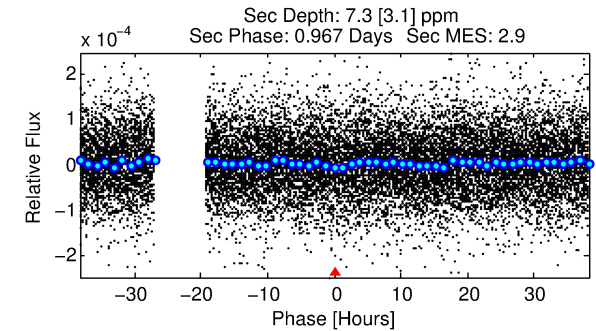
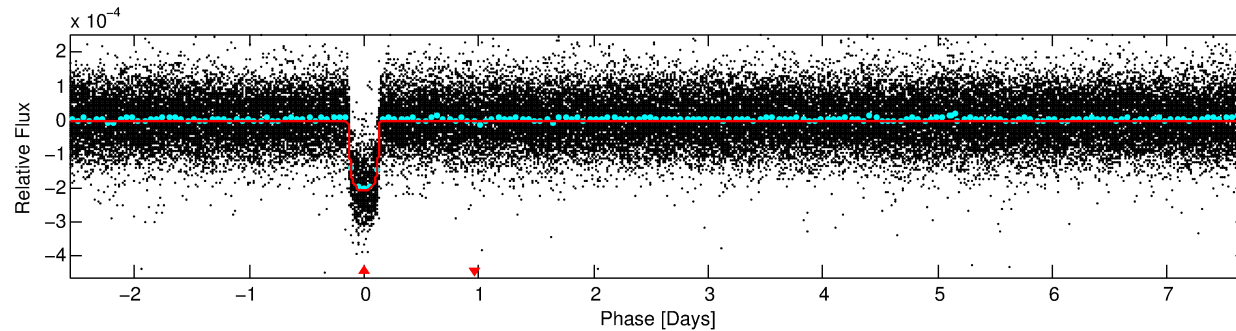
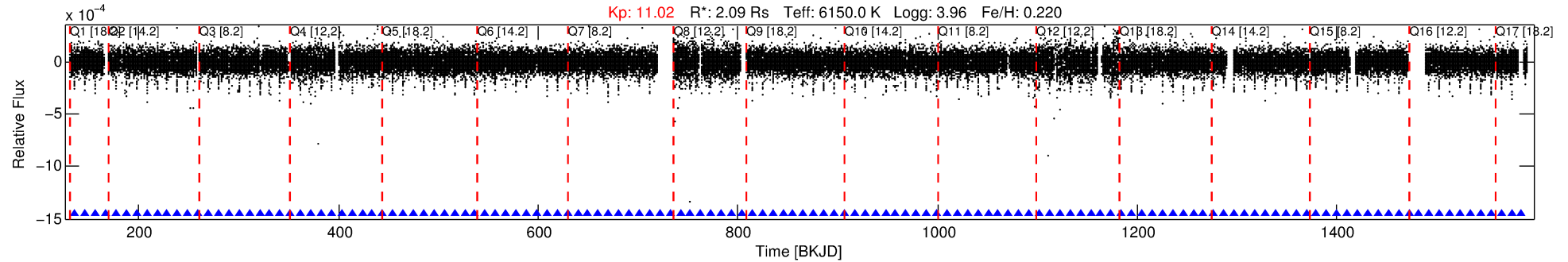
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009592705-01

No Significant Match Found

# DV One-Page Summary

KIC: 9592705 Candidate: 1 of 1 Period: 10.275 d  
KOI: K00288.01 Corr: 0.996



## DV Fit Results:

Period = 10.27531 [0.00001] d  
Epoch = 136.1725 [0.0010] BKJD  
Rp/R\* = 0.0143 [0.0010]  
a/R\* = 8.81 [2.94]  
b = 0.72 [0.23]  
Seff = 509.19 [43.76]  
Teq = 1211 [26] K  
Rp = 3.25 [0.32] Re  
a = 0.1047 [0.0055] AU  
Ag = 4.13 [1.88] [1.67σ]  
Teffp = 2670 [302] K [4.80σ]

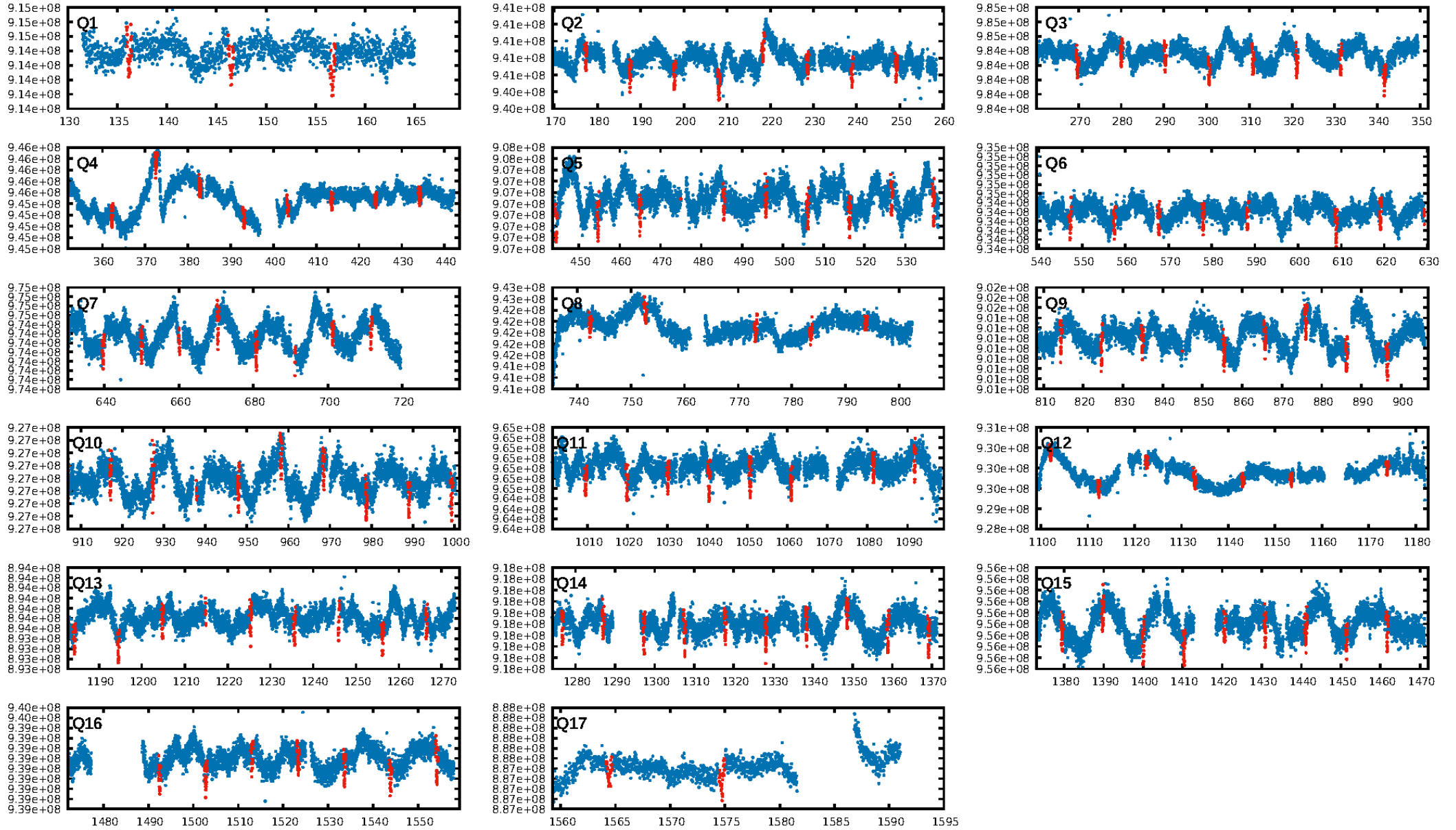
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 35.9%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [121/121]  
GhostDiagnostic-chr: 18.22  
Centroid-sig: 0.0%  
Centroid-so: 0.670 arcsec [5.10σ]  
OotOffset-rm: 1.775 arcsec [2.42σ]  
KicOffset-rm: 1.843 arcsec [2.89σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.76 [13/17]  
DiffImageOverlap-fno: 1.00 [17/17]

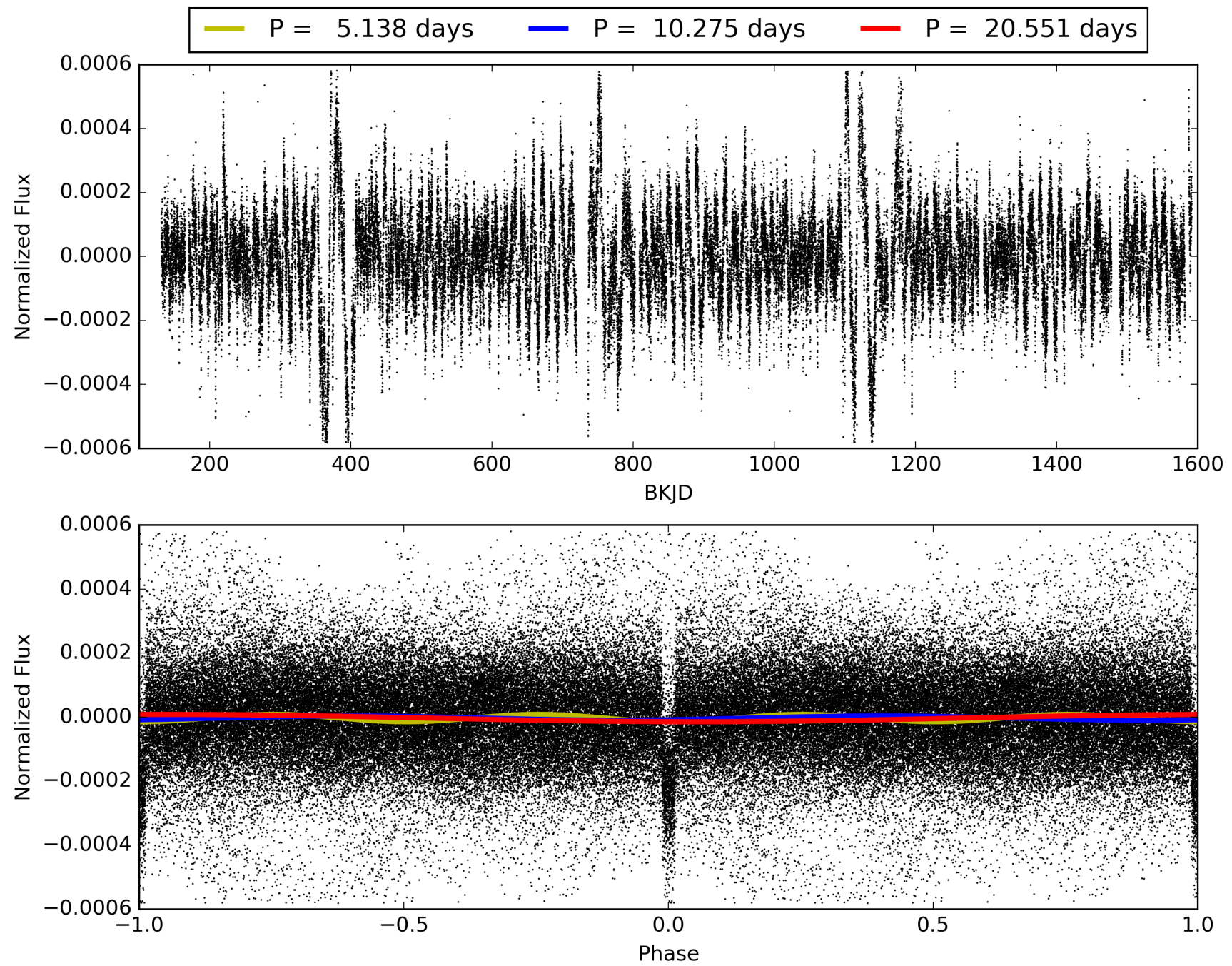
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:07:47 Z

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

# TCE 009592705-01, PDC Light Curves

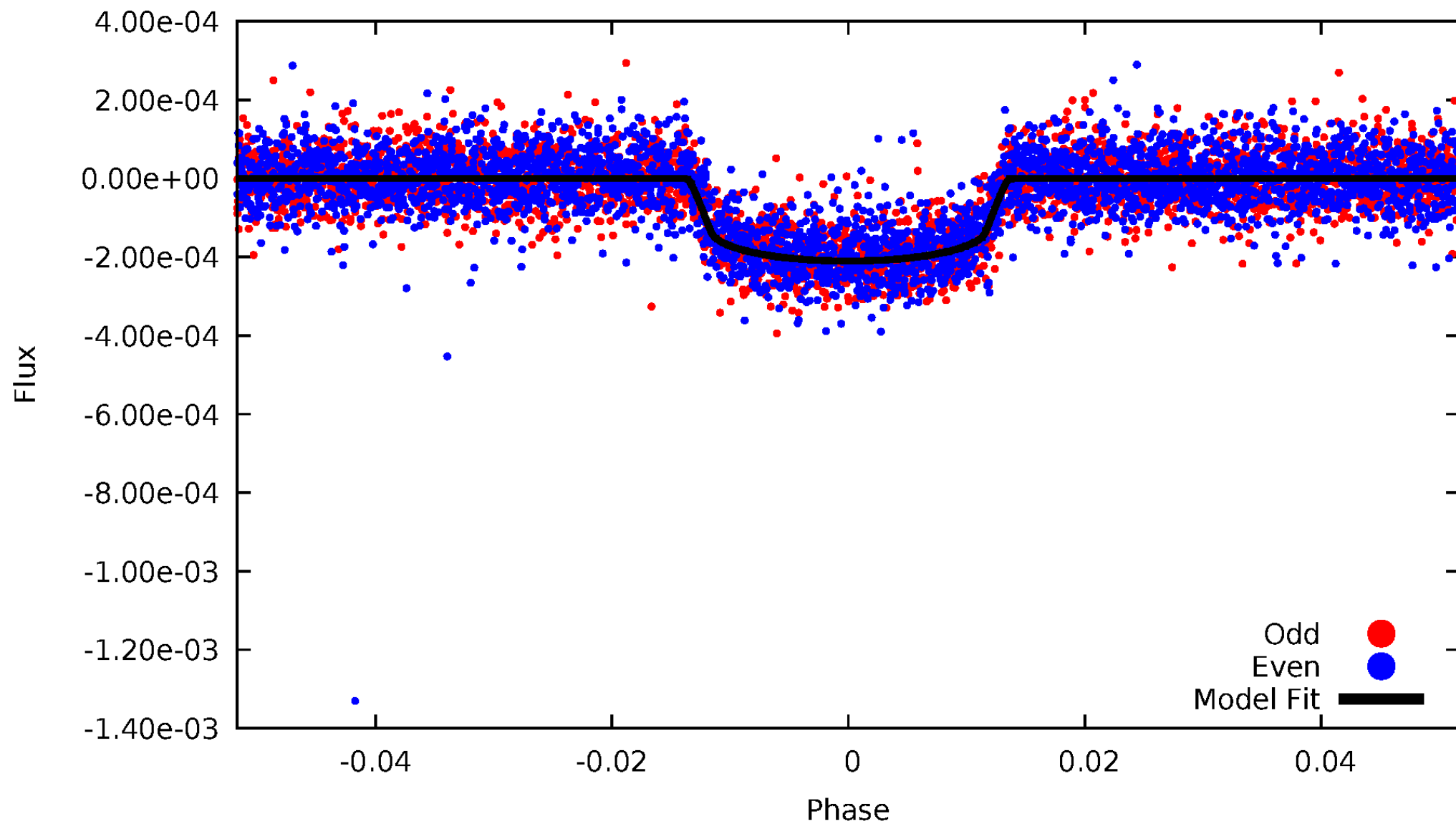


TCE 009592705-01



# DV Odd/Even

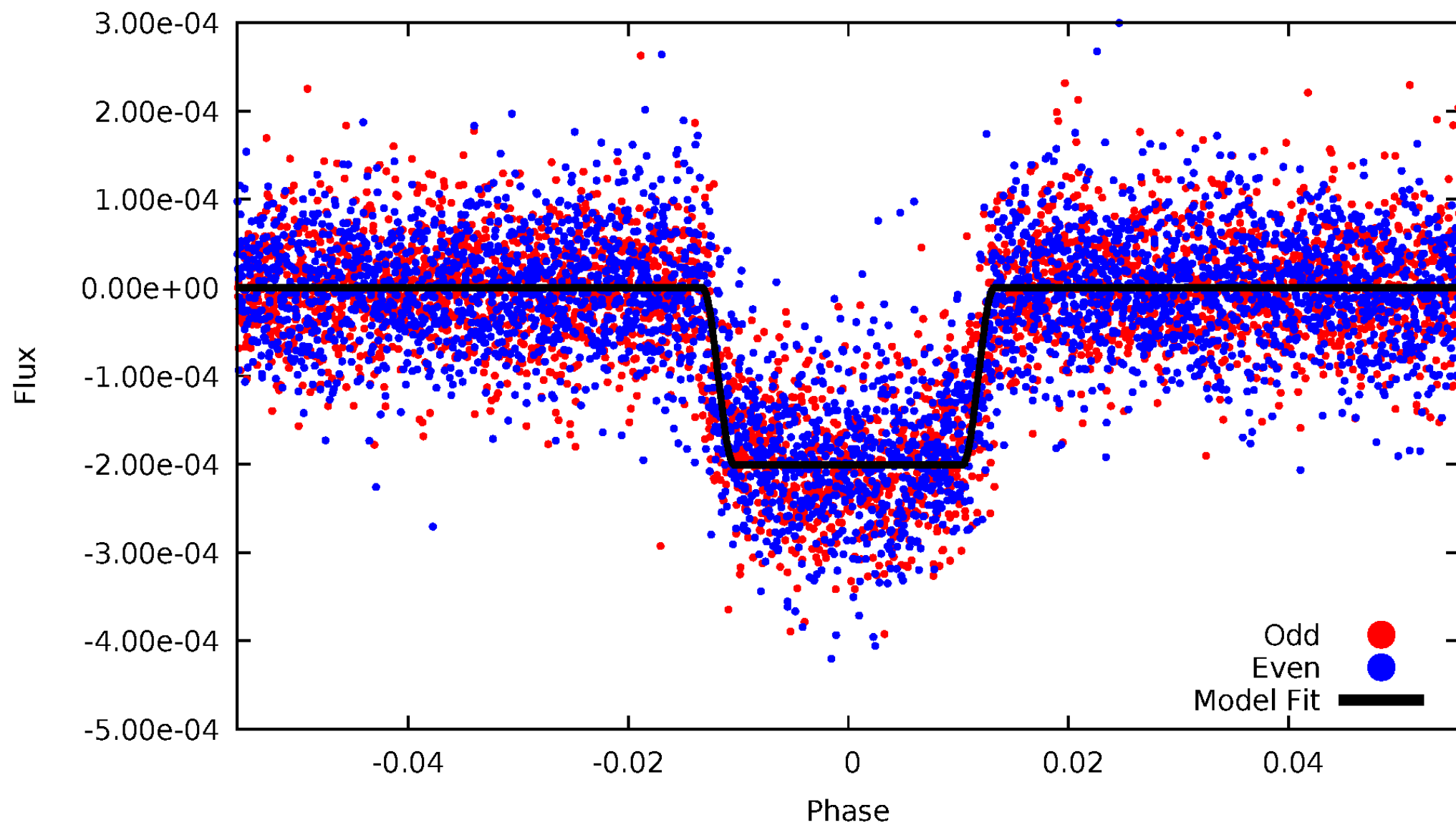
TCE 009592705-01





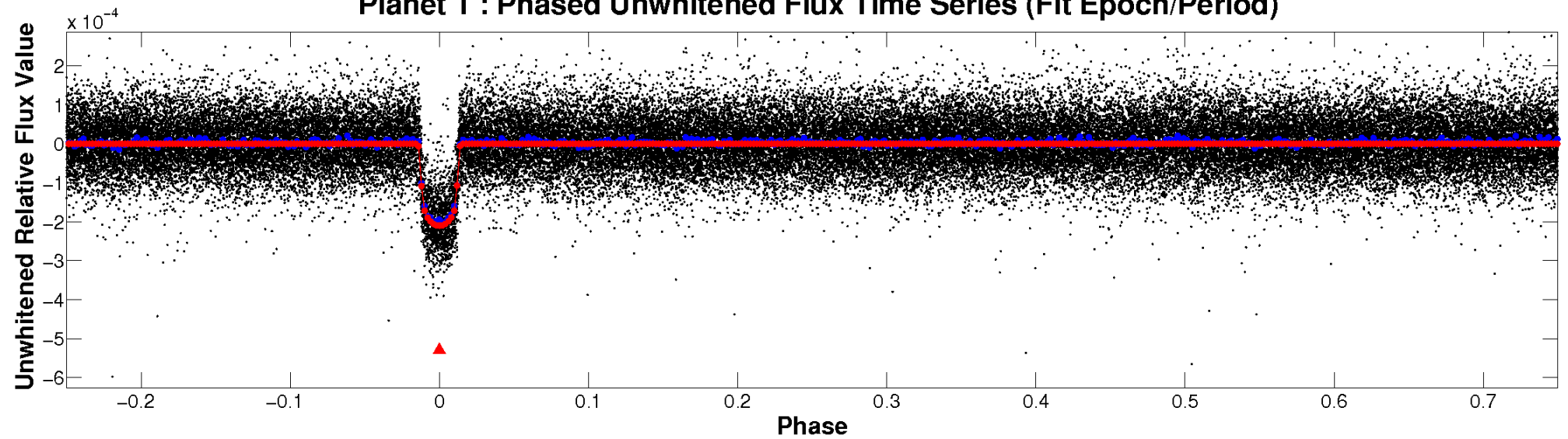
# ALT Odd/Even

TCE 009592705-01

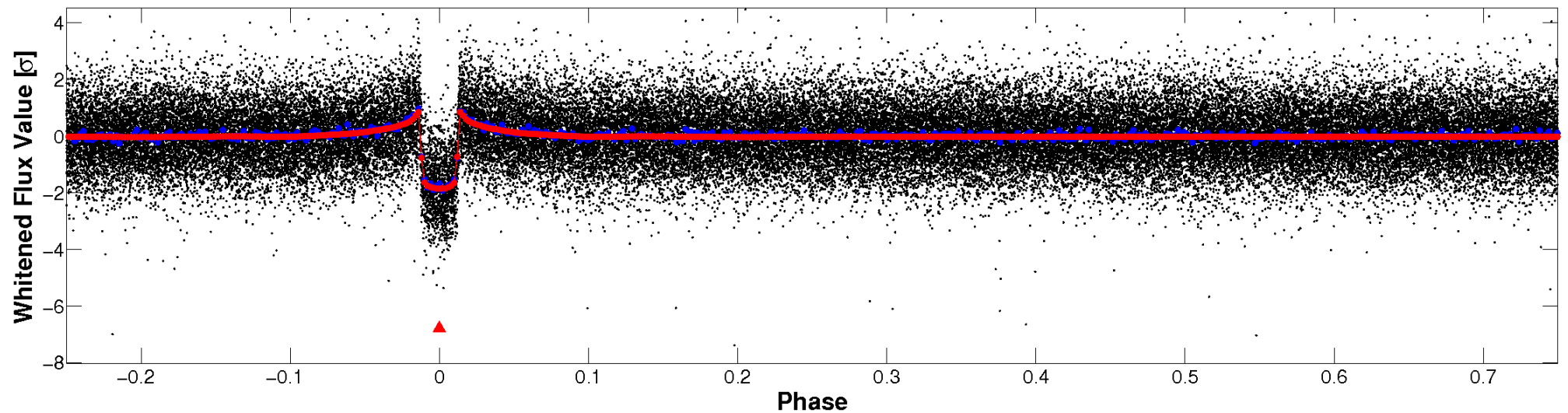


# Non-Whitened Vs. Whitened Light Curve

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

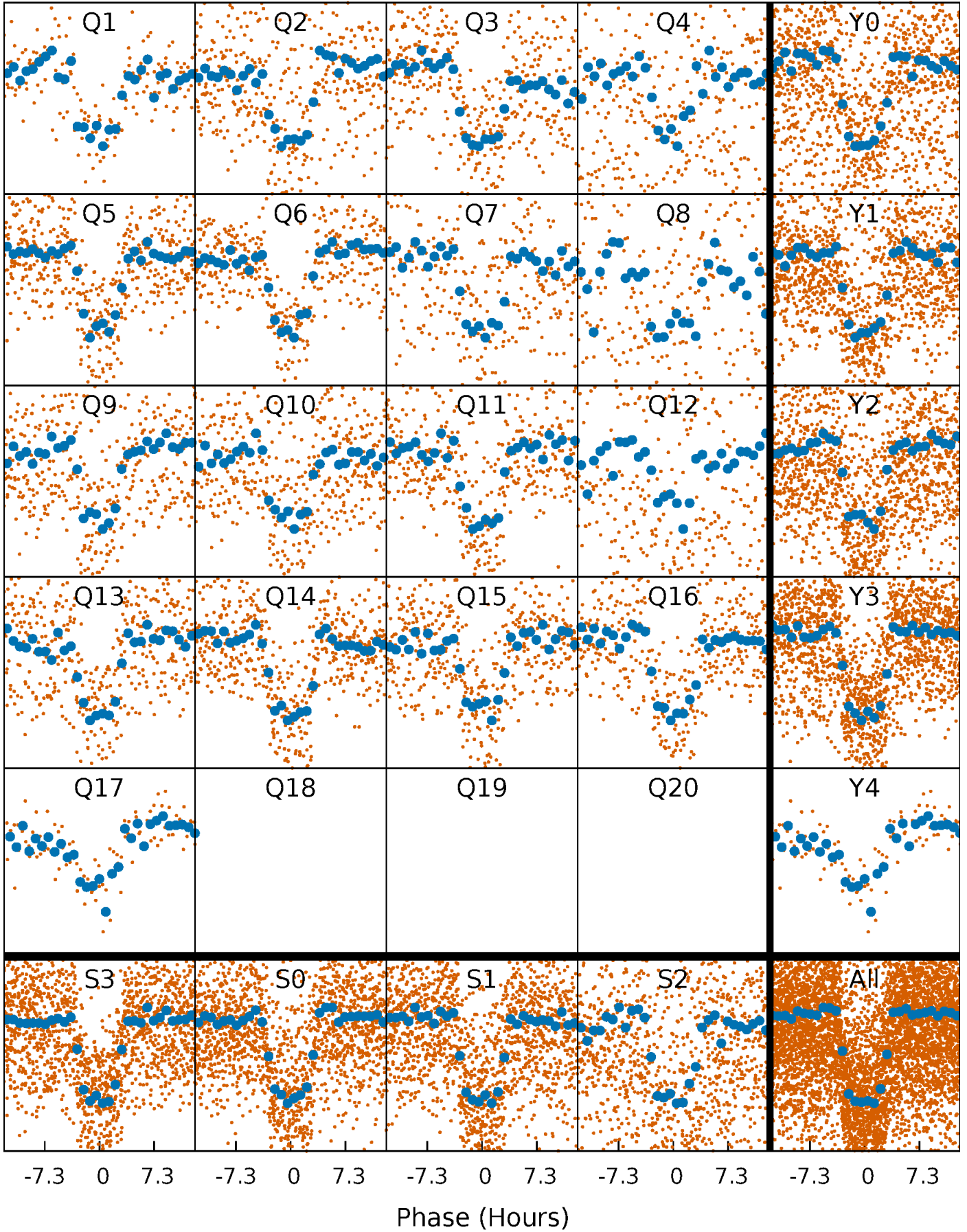


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

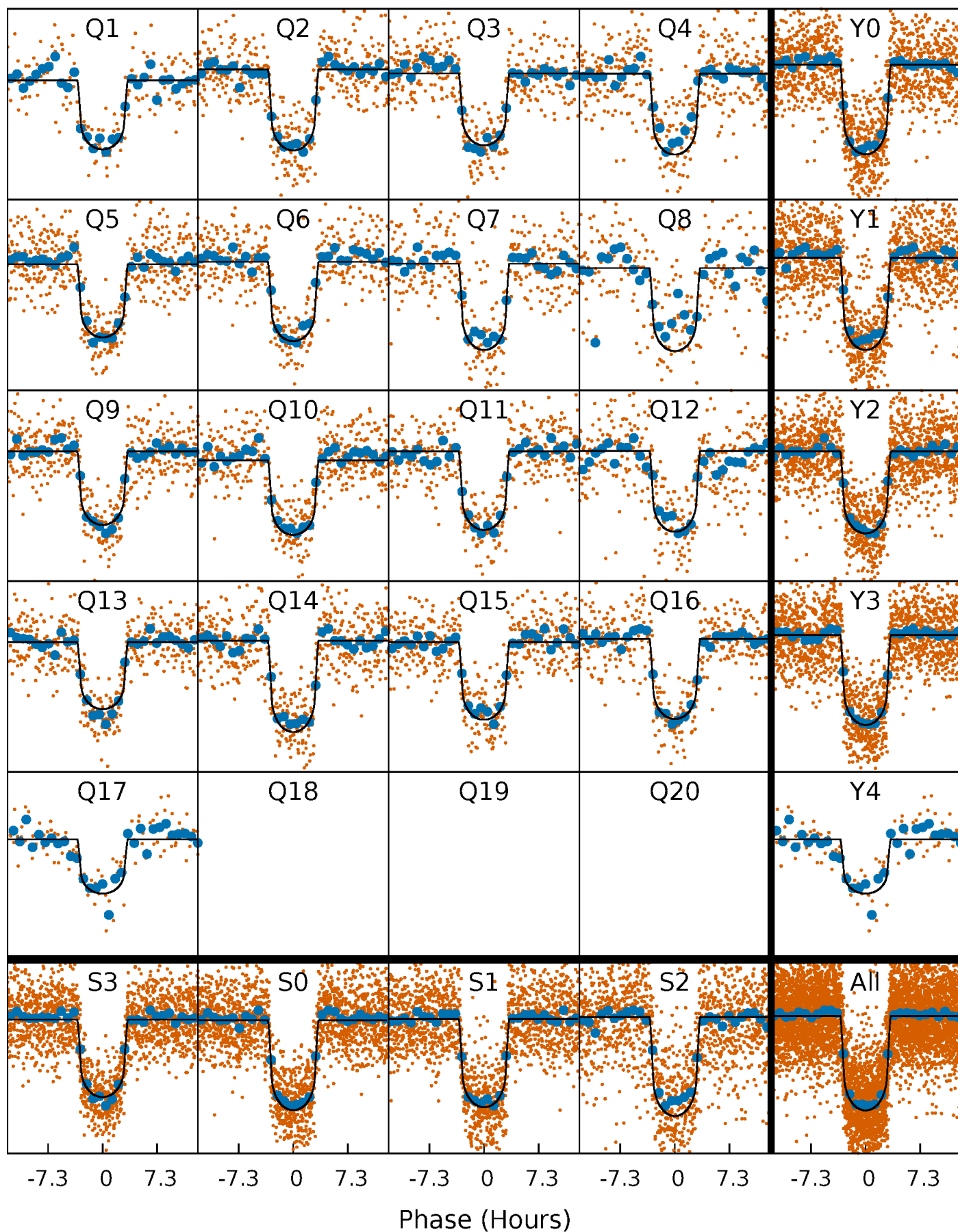
TCE 009592705-01     $P = 10.275305$  Days     $T_0 = 136.172477$  (BKJD)





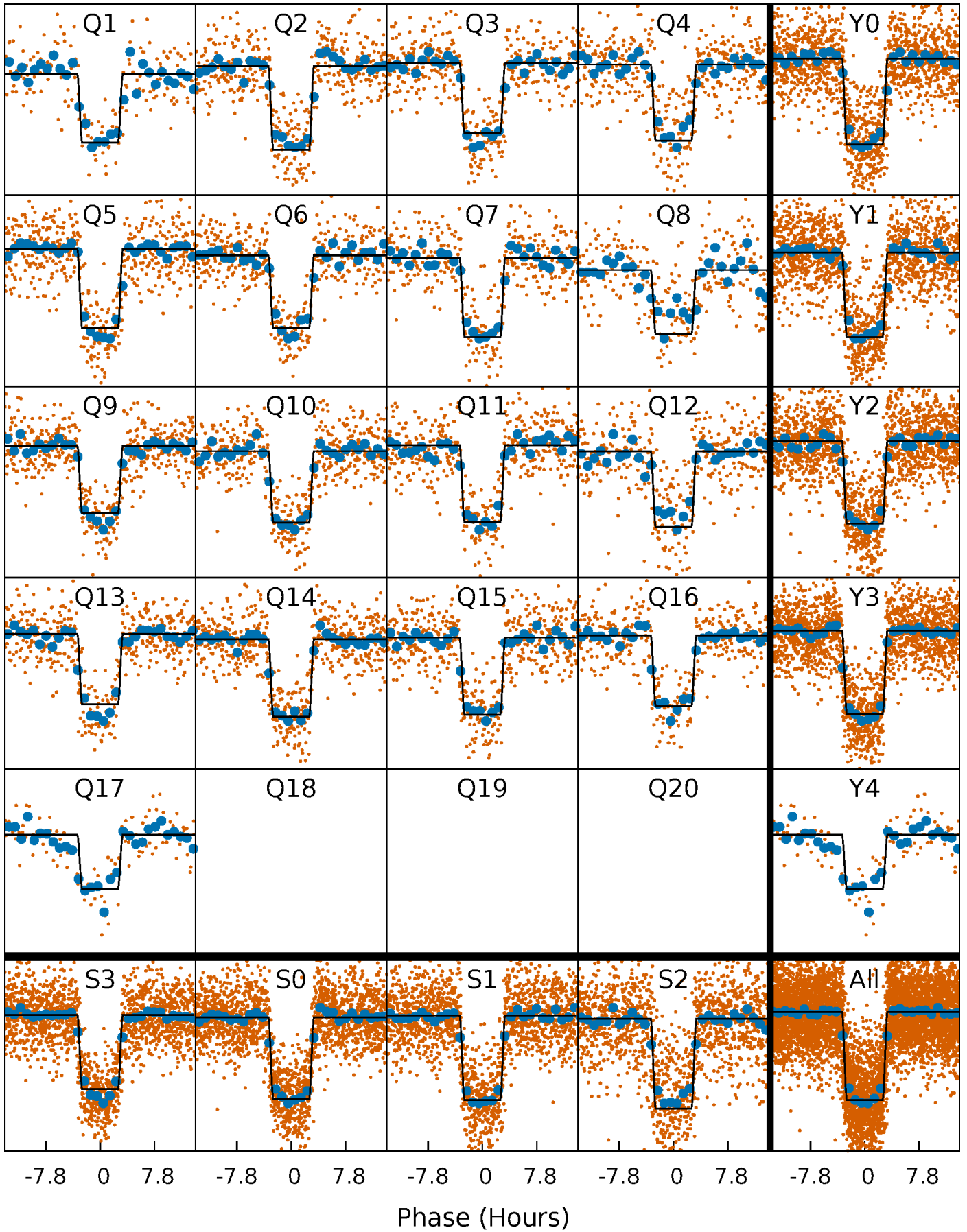
# DV Quarter-Phased Transit Curves

TCE 009592705-01 P= 10.275305 Days  $T_0=136.172477$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

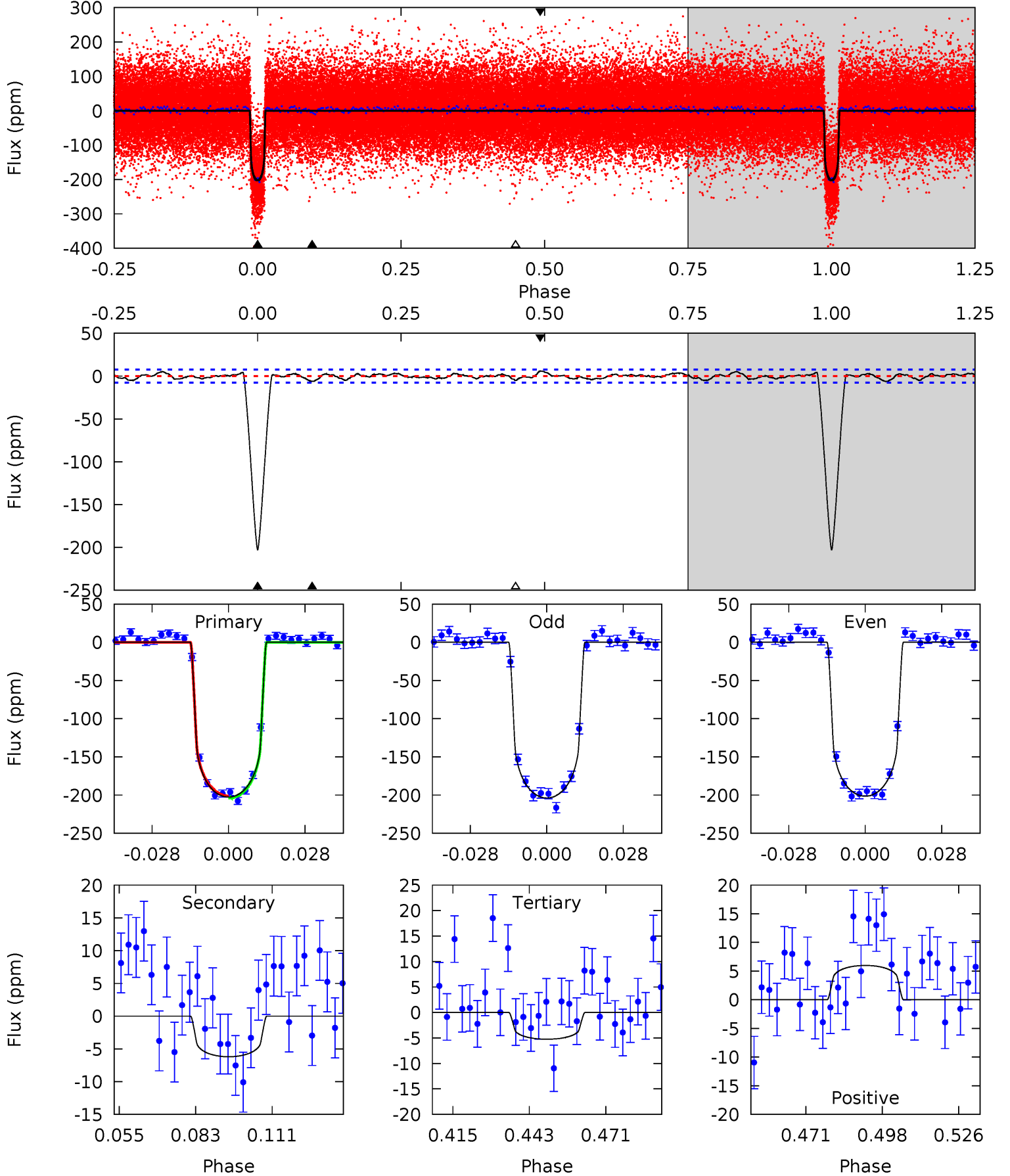
TCE 009592705-01 P= 10.275461 Days  $T_0=136.160905$  (BKJD)



# DV Model-Shift Uniqueness Test

009592705-01, P = 10.275305 Days, E = 125.897172 Days

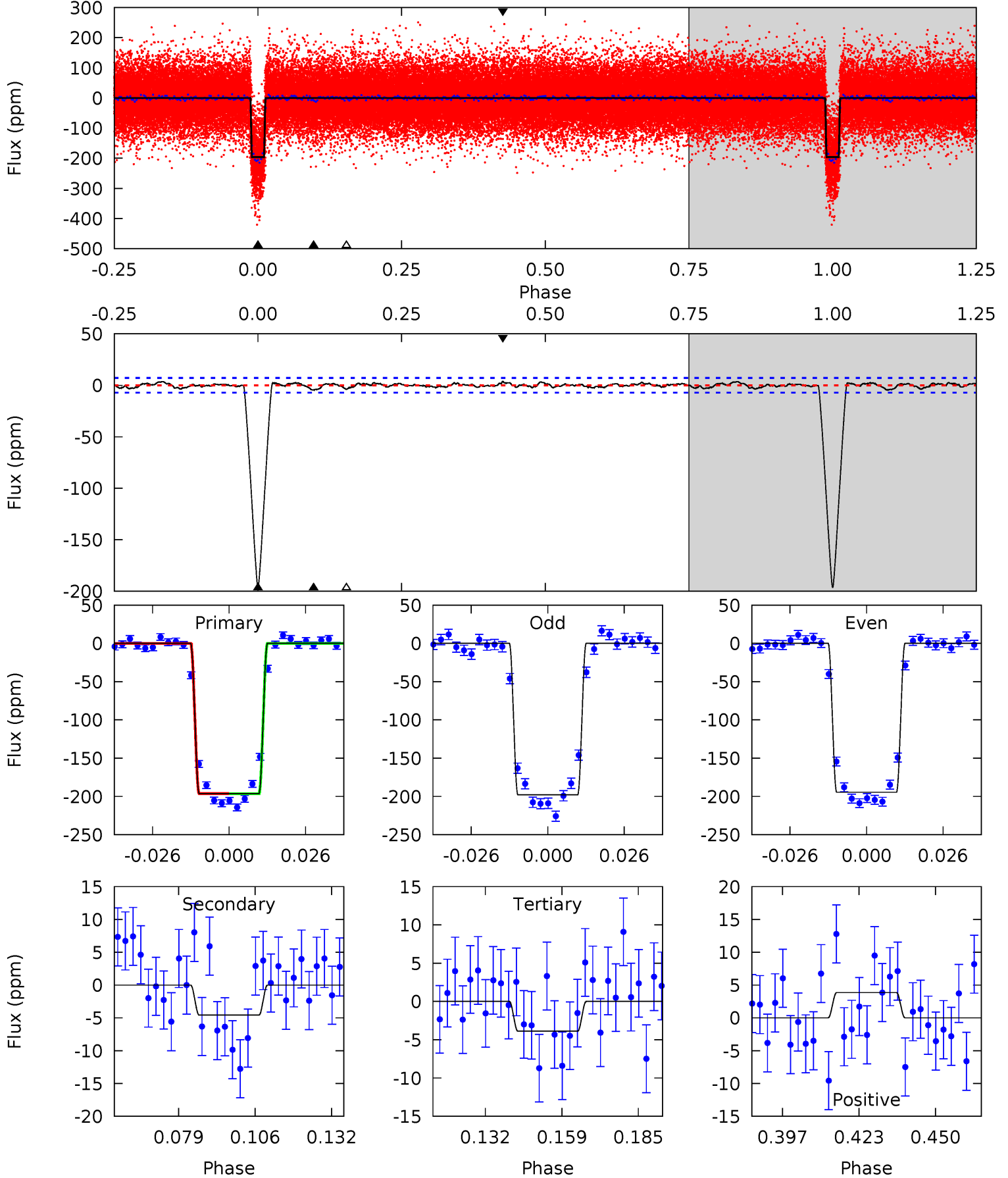
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
128.5	3.93	3.33	3.80	4.83	2.20	1.36	125.2	124.7	0.61	0.14	0.75	0.98	0.03	0.84



# Alt Model-Shift Uniqueness Test

009592705-01, P = 10.275461 Days, E = 125.885444 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
133.0	3.11	2.63	2.62	4.84	2.22	0.97	130.4	130.4	0.47	0.49	1.13	1.00	0.02	0.02



### Stellar Parameters For KIC 009592705

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6150^{+73}_{-85}$	$3.960^{+0.030}_{-0.027}$	$0.220^{+0.150}_{-0.150}$	$2.086^{+0.098}_{-0.147}$	$1.448^{+0.059}_{-0.148}$	$0.225^{+0.034}_{-0.024}$
	+1%/-1%	+1%/-1%	+68%/-68%	+5%/-7%	+4%/-10%	+15%/-11%
Source	SPE72	AST69	SPE72	DSEP		

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

### Secondary Eclipse Parameters for KIC 009592705-01 / KOI 0288.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-6 \pm 2$	$3.25^{+0.26}_{-0.28}$	$1691^{+31}_{-33}$	$3129^{+149}_{-148}$	$3.550^{+1.142}_{-0.936}$
Alt.	$-5 \pm 1$	$3.20^{+0.27}_{-0.25}$	$1690^{+31}_{-28}$	$2994^{+159}_{-194}$	$2.664^{+1.004}_{-0.909}$

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



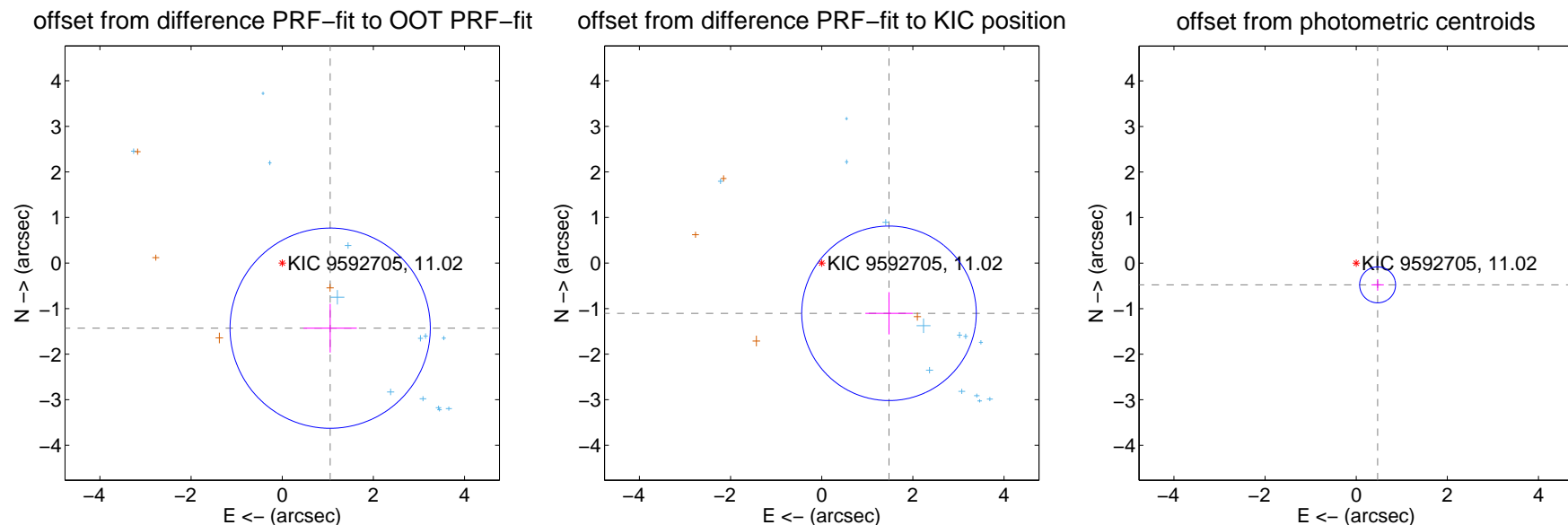
## DV Centroid Data

Supplemental centroid analysis for 009592705-01. **Kepler magnitude: 11.02.** Transit SNR 70.04

There are 13 quarters with good PRF difference image offsets

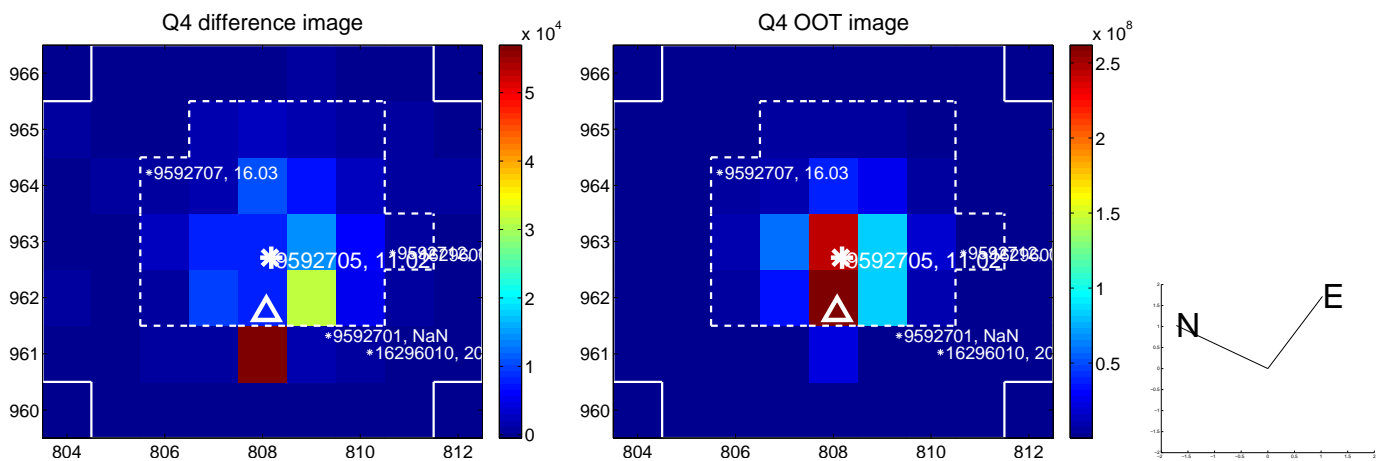
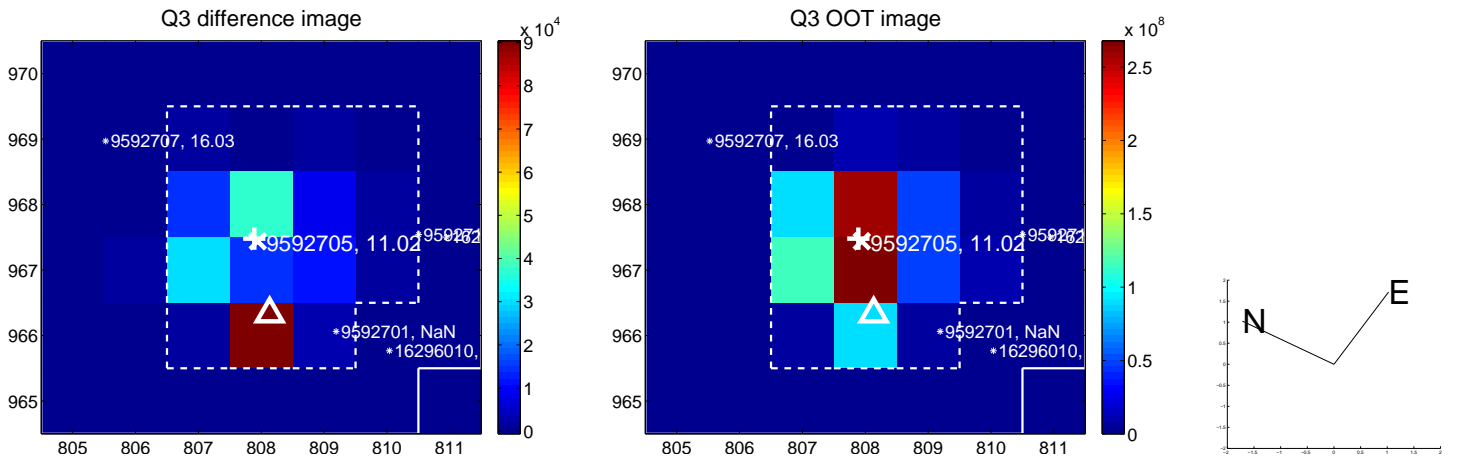
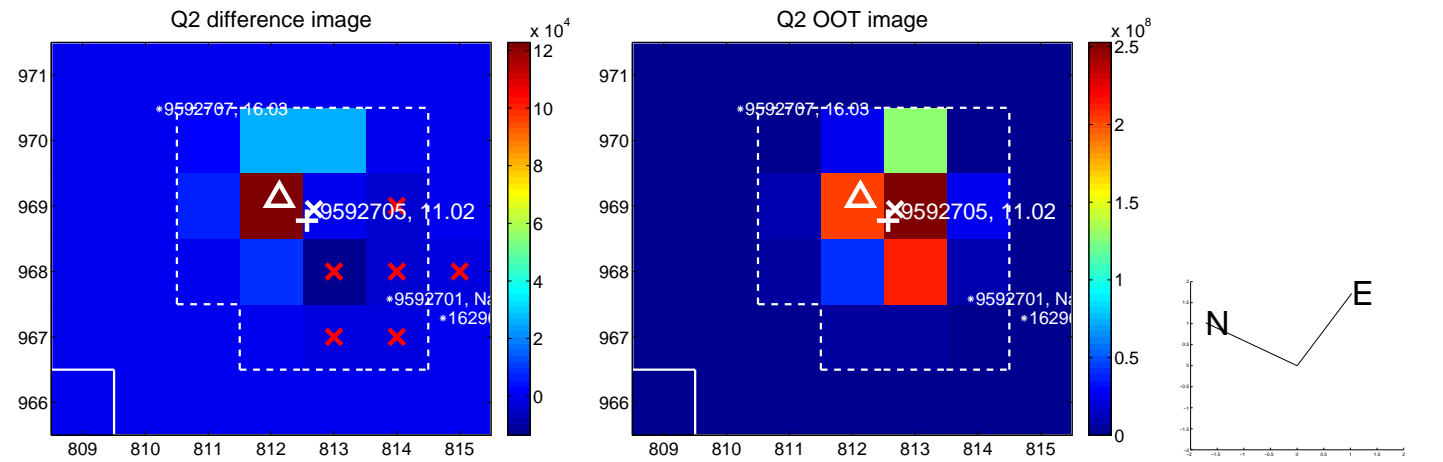
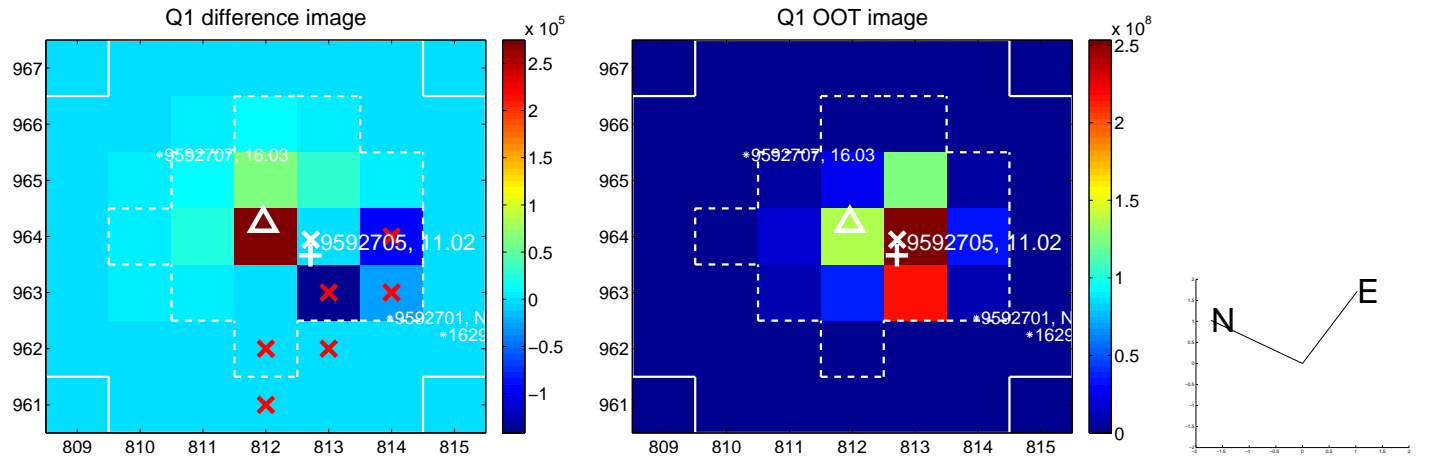
The direct PRF centroid is offset from the target star catalog position by about 1.20 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.775 \pm 0.732$	2.42	$-1.052 \pm 0.585$	$-1.430 \pm 0.534$
PRF-fit source offset from KIC position	$1.843 \pm 0.638$	2.89	$-1.476 \pm 0.520$	$-1.103 \pm 0.465$
photometric centroid source offset	$0.67 \pm 0.13$	5.10	$-0.47 \pm 0.14$	$-0.48 \pm 0.13$

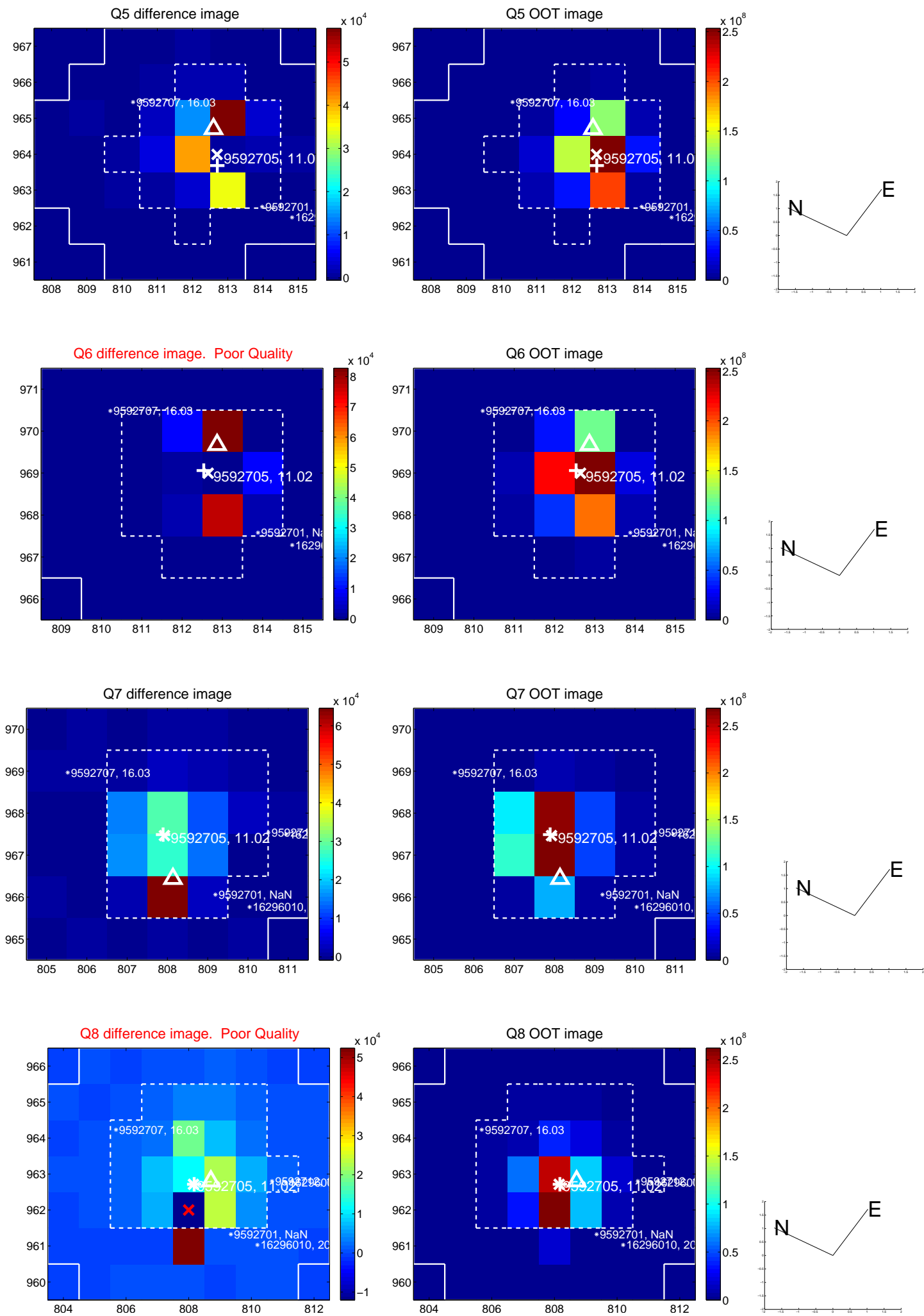


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

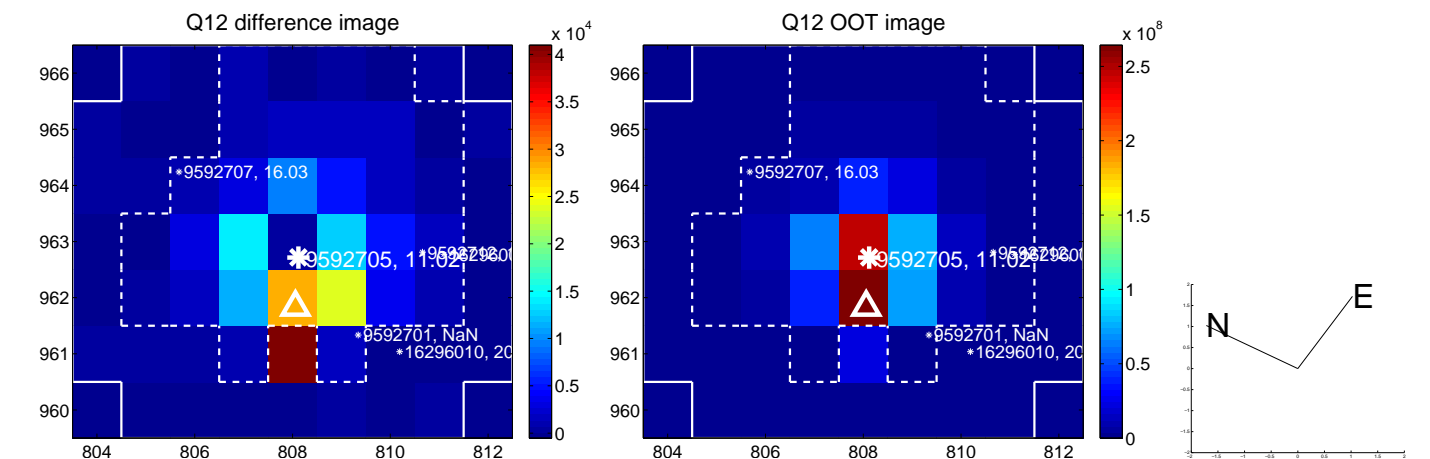
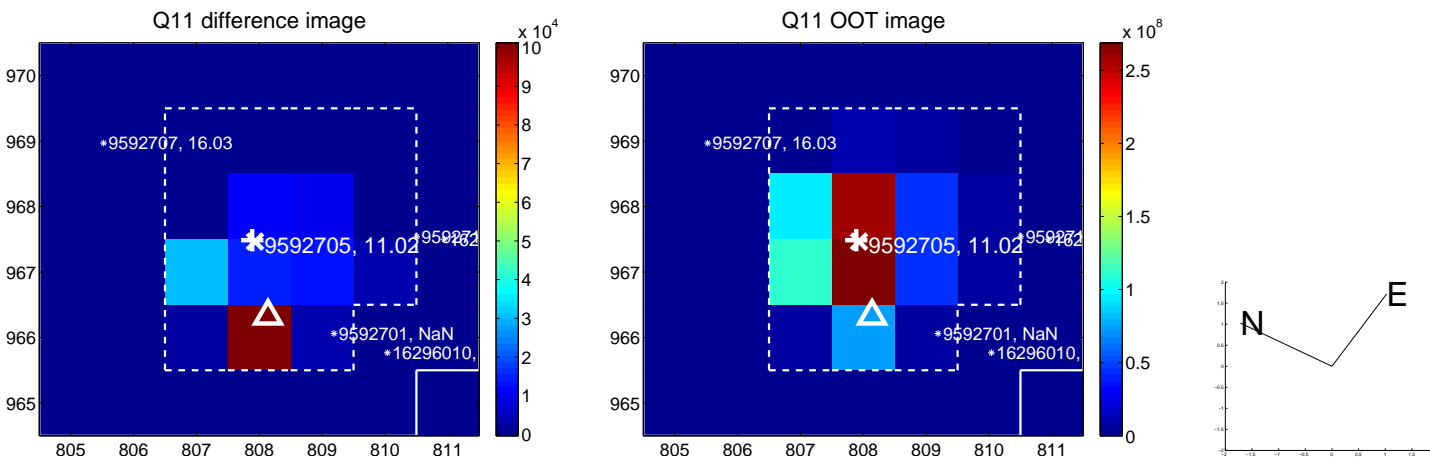
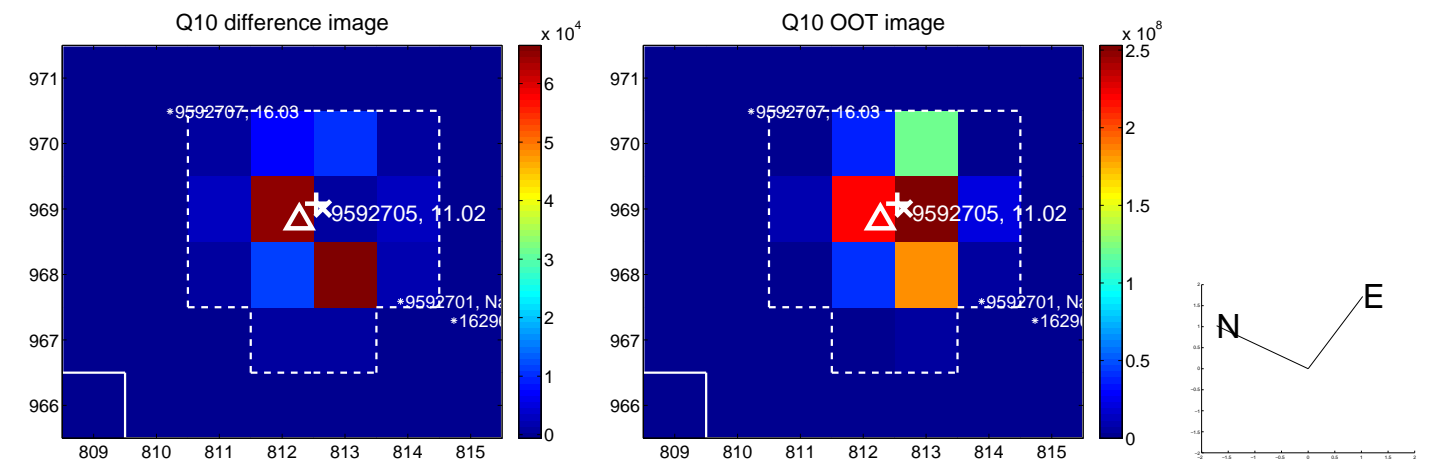
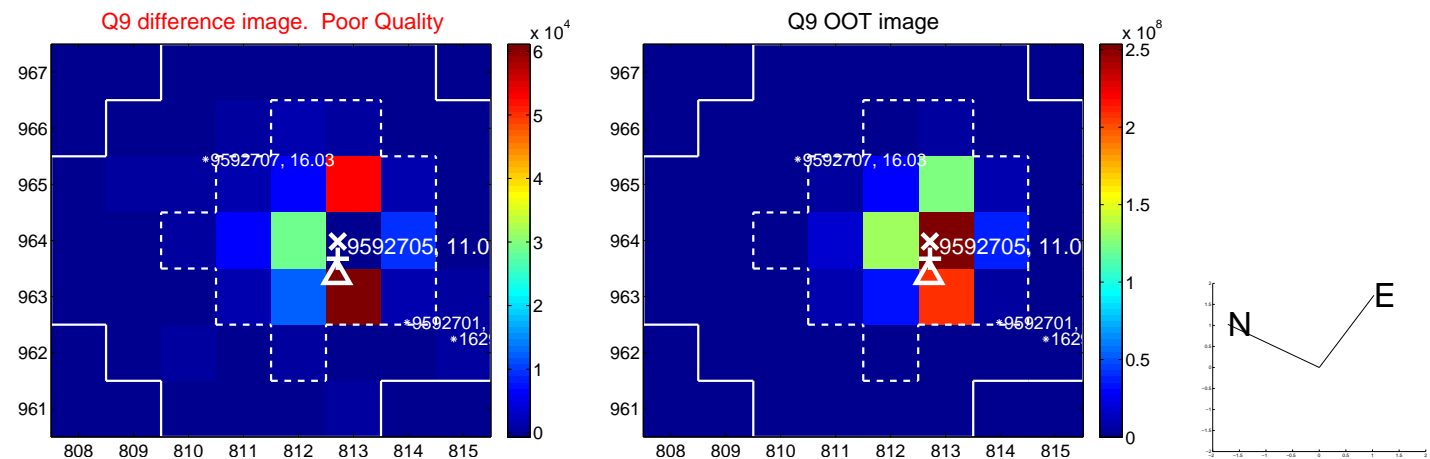
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



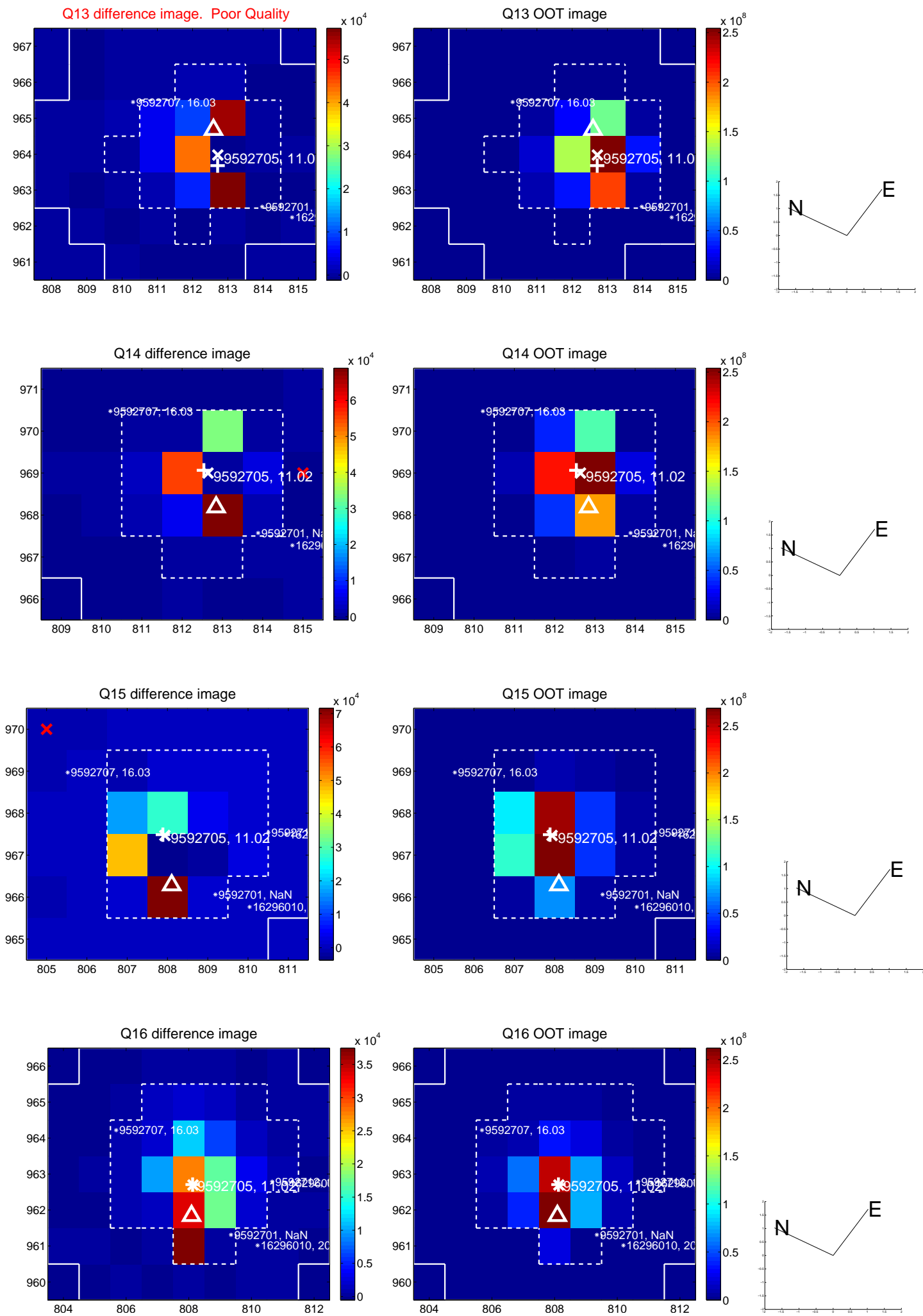
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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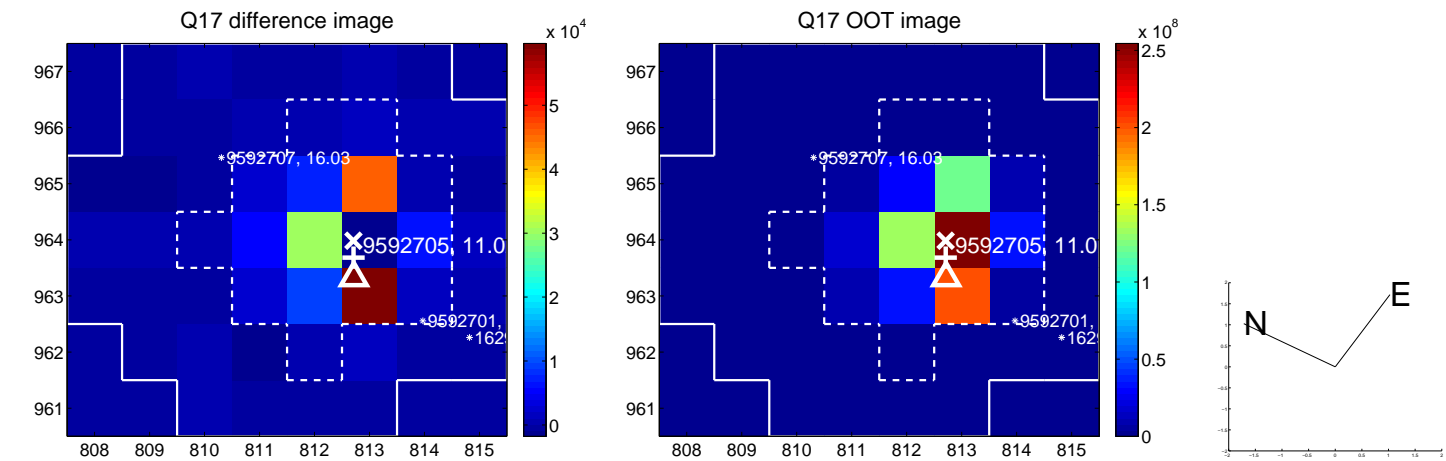


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

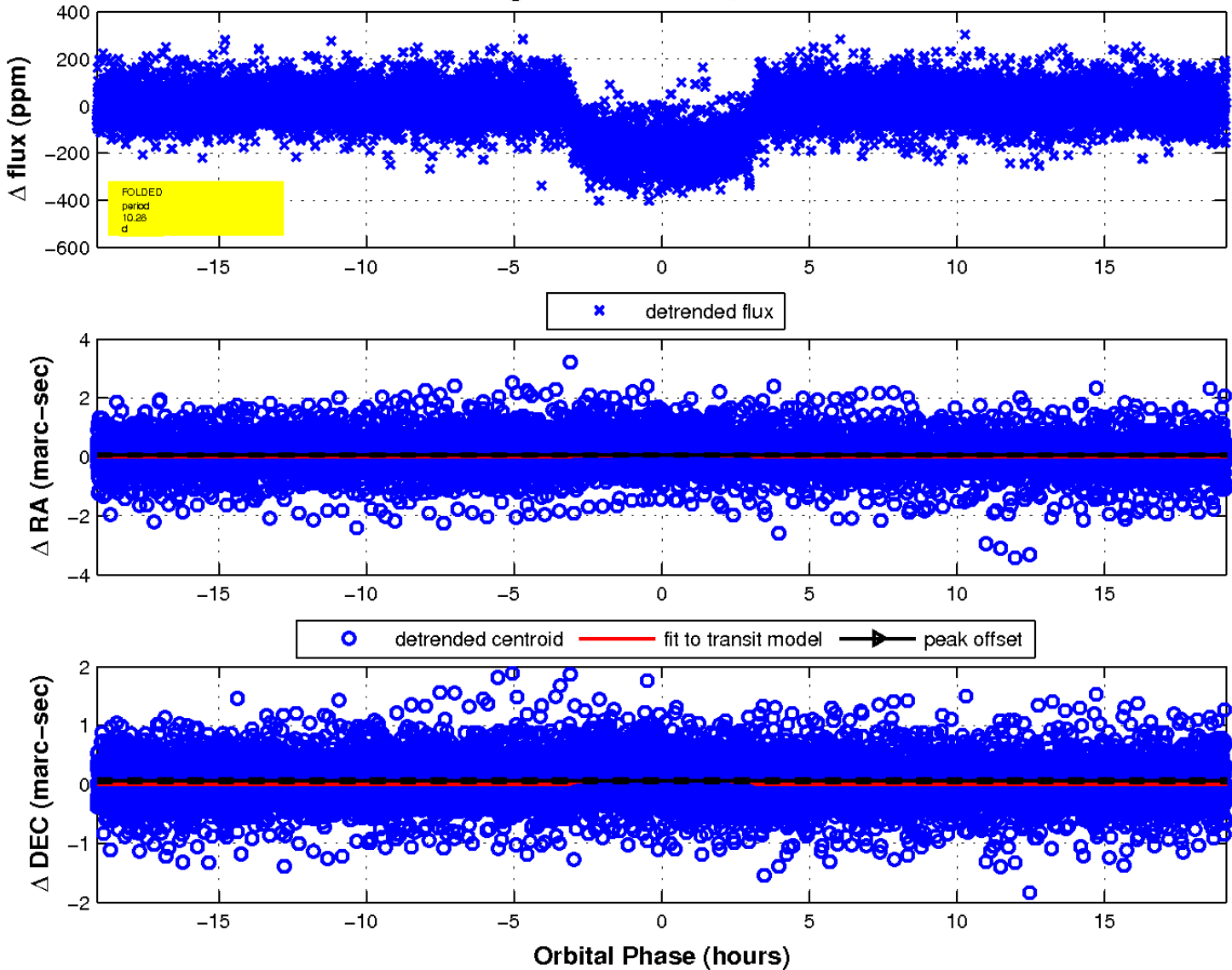




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

