

# KIC 004252322

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004252322-01	OBS	0396.01	14.591502	137.077133	1438.8	1.110	86.5	100.1	1.31	5940	6.86	141.21

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004252322-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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

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

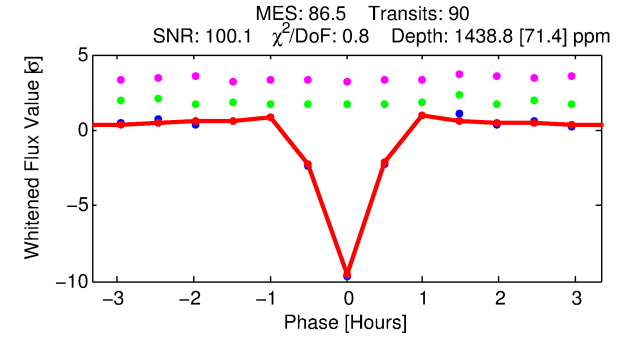
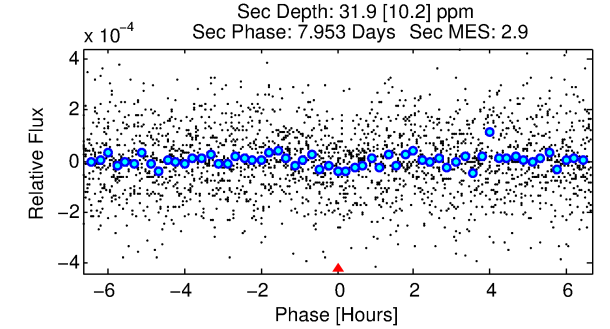
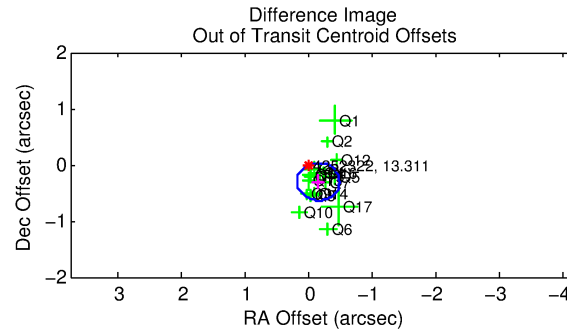
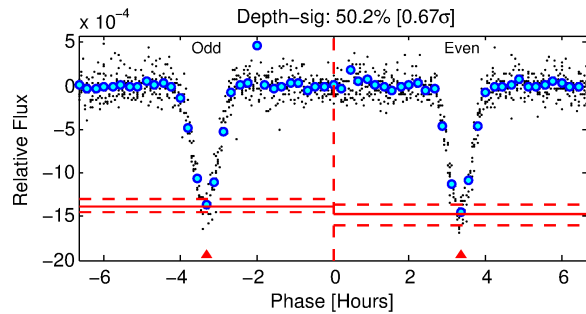
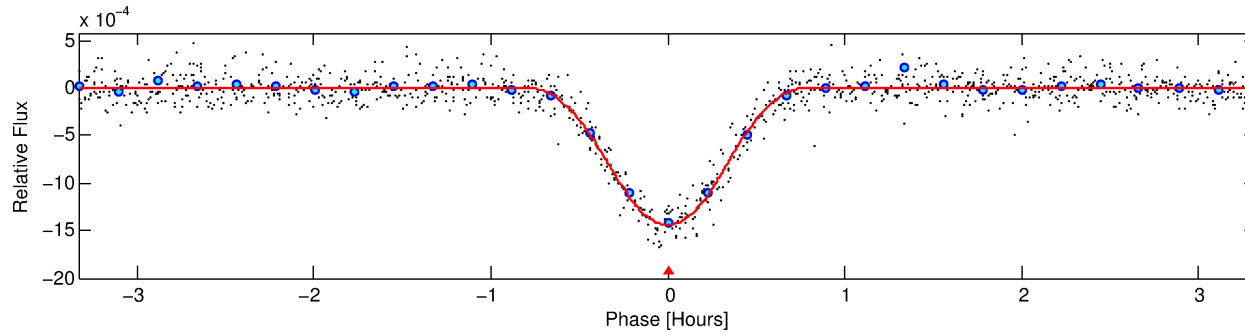
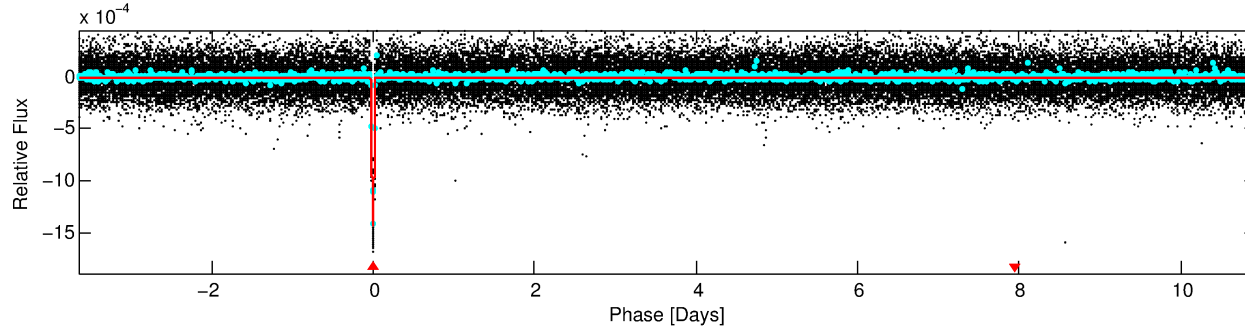
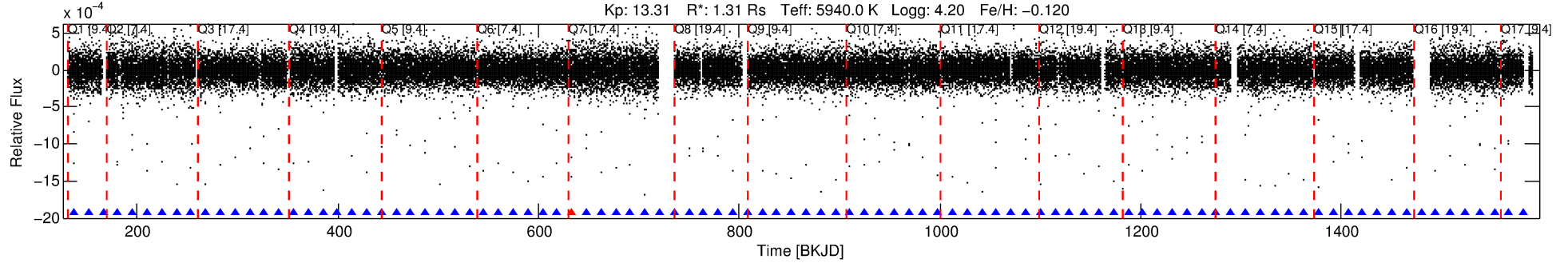
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004252322-01

No Significant Match Found

# DV One-Page Summary

KIC: 4252322 Candidate: 1 of 1 Period: 14.592 d  
KOI: K00396.01 Corr: 0.996



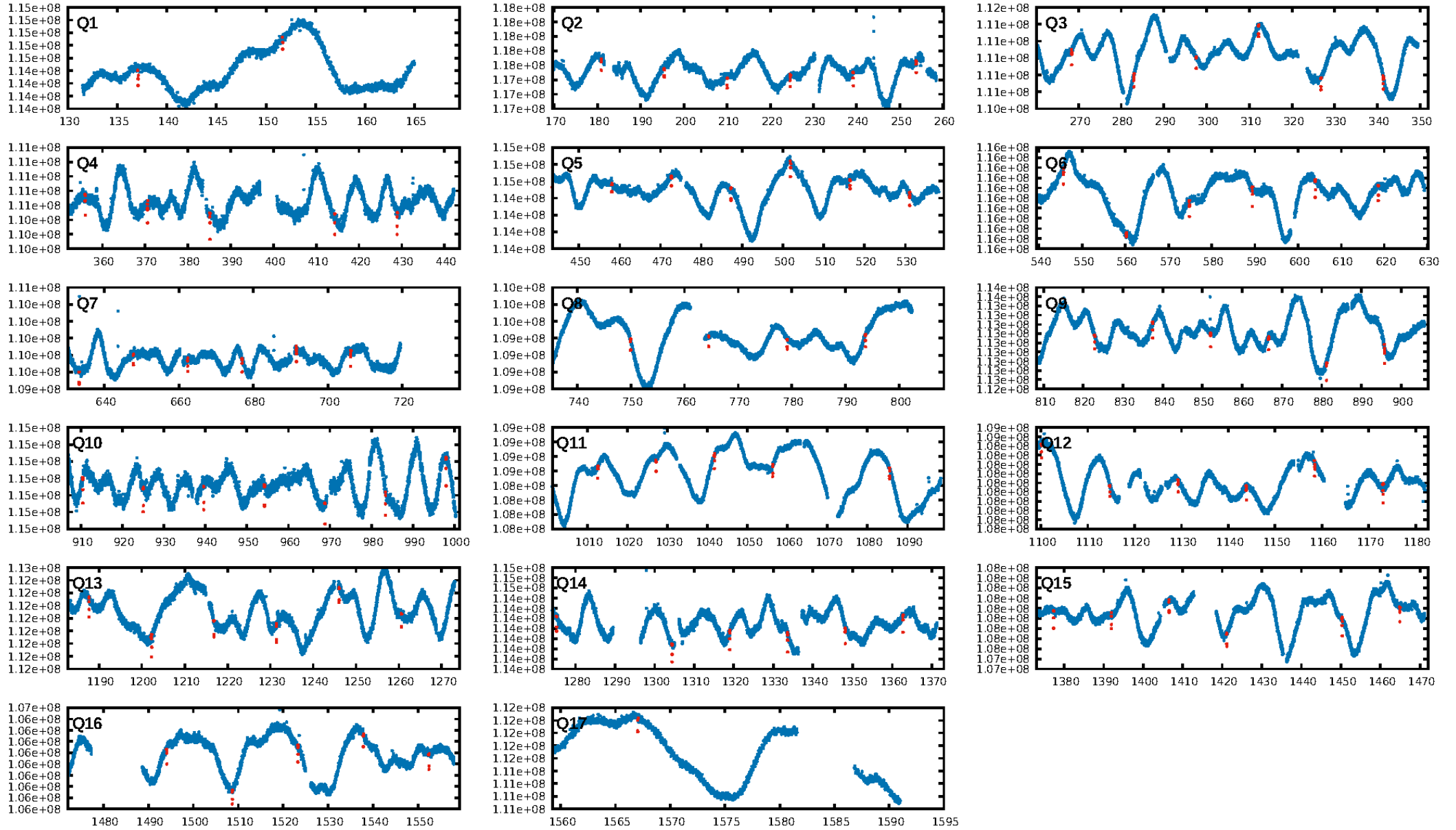
## DV Fit Results:

Period = 14.59150 [0.00001] d  
Epoch = 137.0771 [0.0003] BKJD  
Rp/R\* = 0.0479 [0.0108]  
a/R\* = 41.93 [6.47]  
b = 0.96 [0.03]  
Seff = 141.21 [61.47]  
Teq = 879 [96] K  
Rp = 6.86 [2.41] Re  
a = 0.1166 [0.0304] AU  
Ag = 5.07 [3.51] [1.16 $\sigma$ ]  
Teffp = 2039 [288] K [3.82 $\sigma$ ]

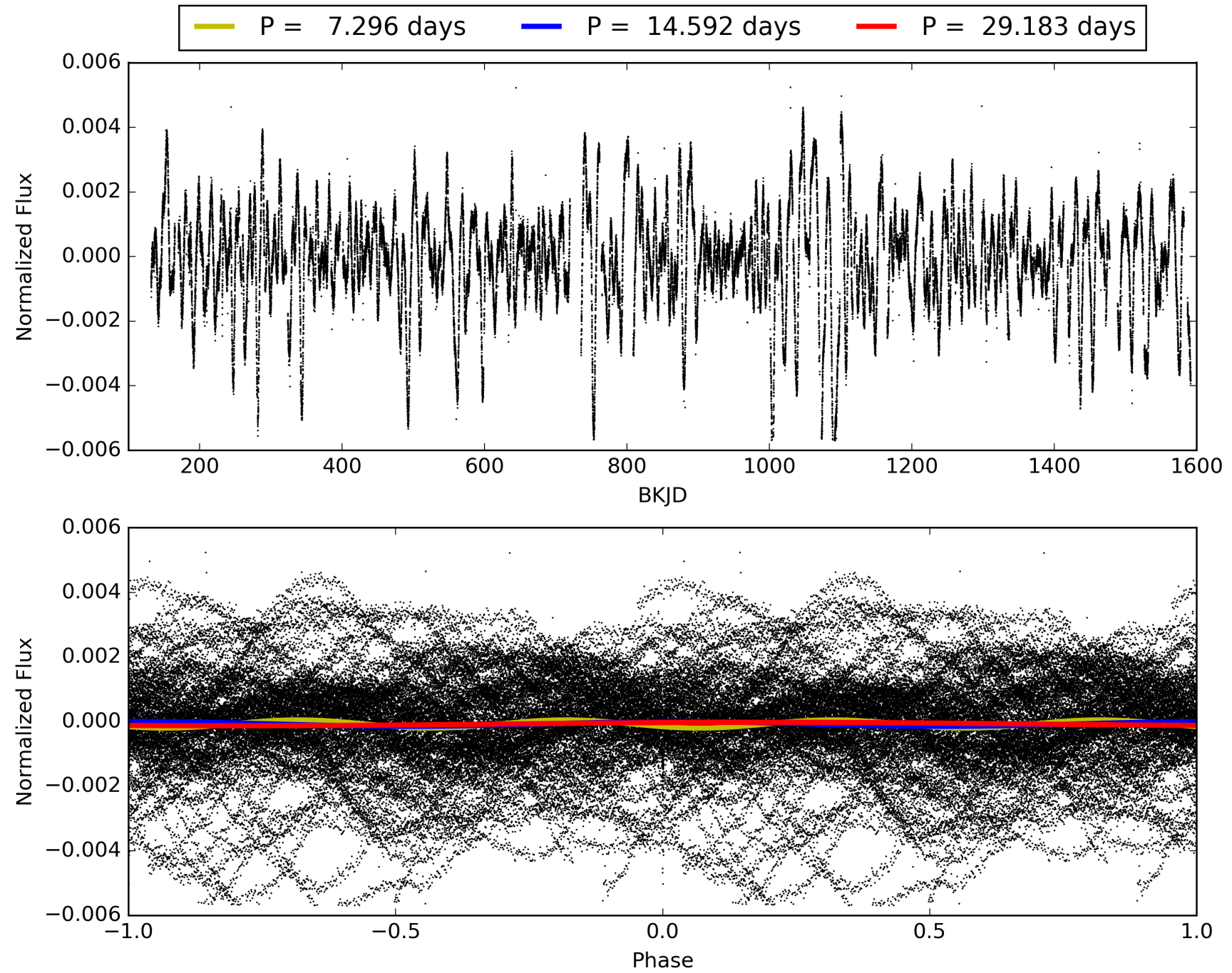
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 74.8%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 0.99 [86/87]  
GhostDiagnostic-chr: 10.11  
Centroid-sig: 0.0%  
Centroid-so: 0.683 arcsec [5.70 $\sigma$ ]  
OotOffset-rm: 0.339 arcsec [3.04 $\sigma$ ]  
KicOffset-rm: 0.414 arcsec [4.18 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 004252322-01, PDC Light Curves

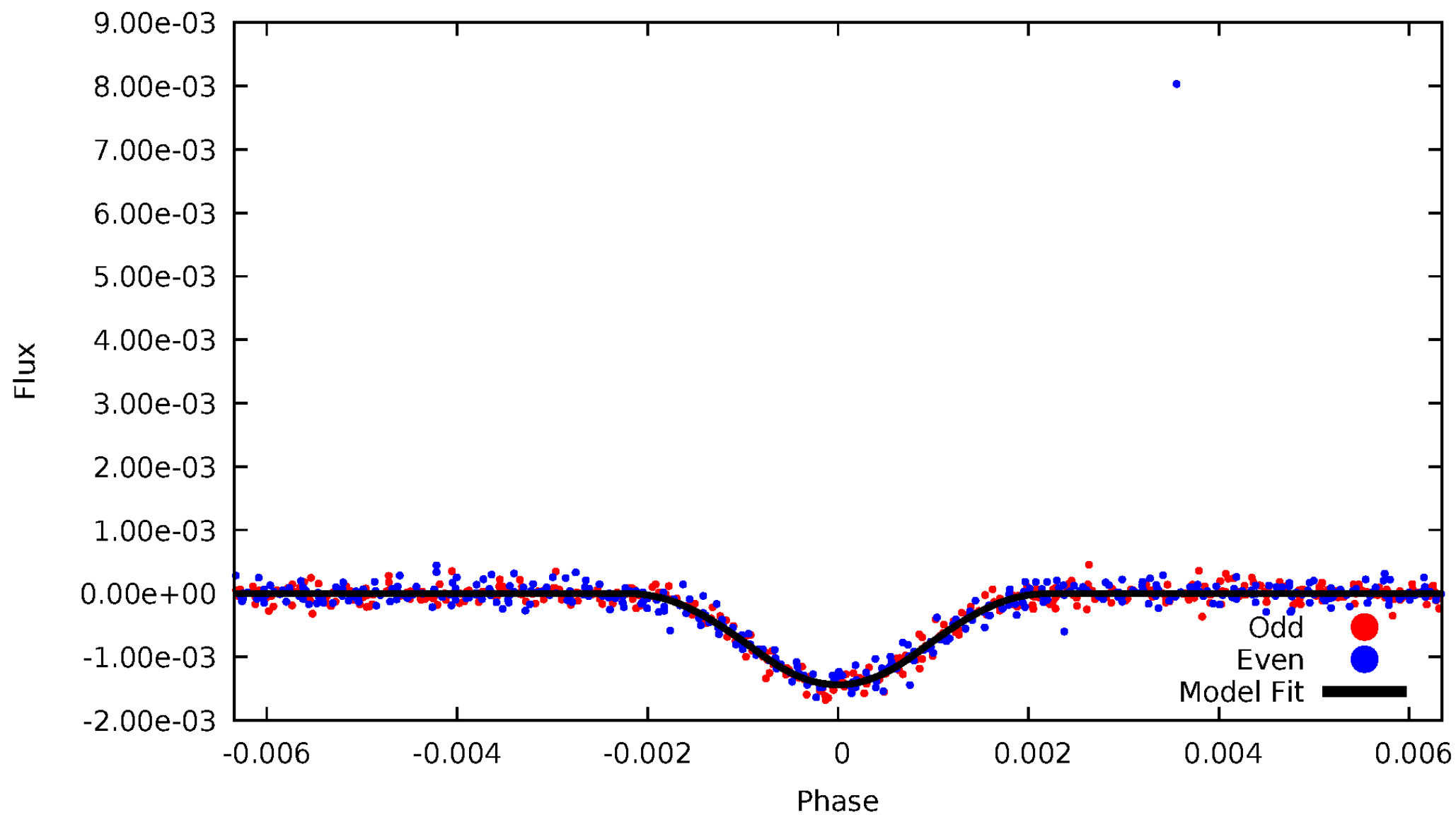


TCE 004252322-01



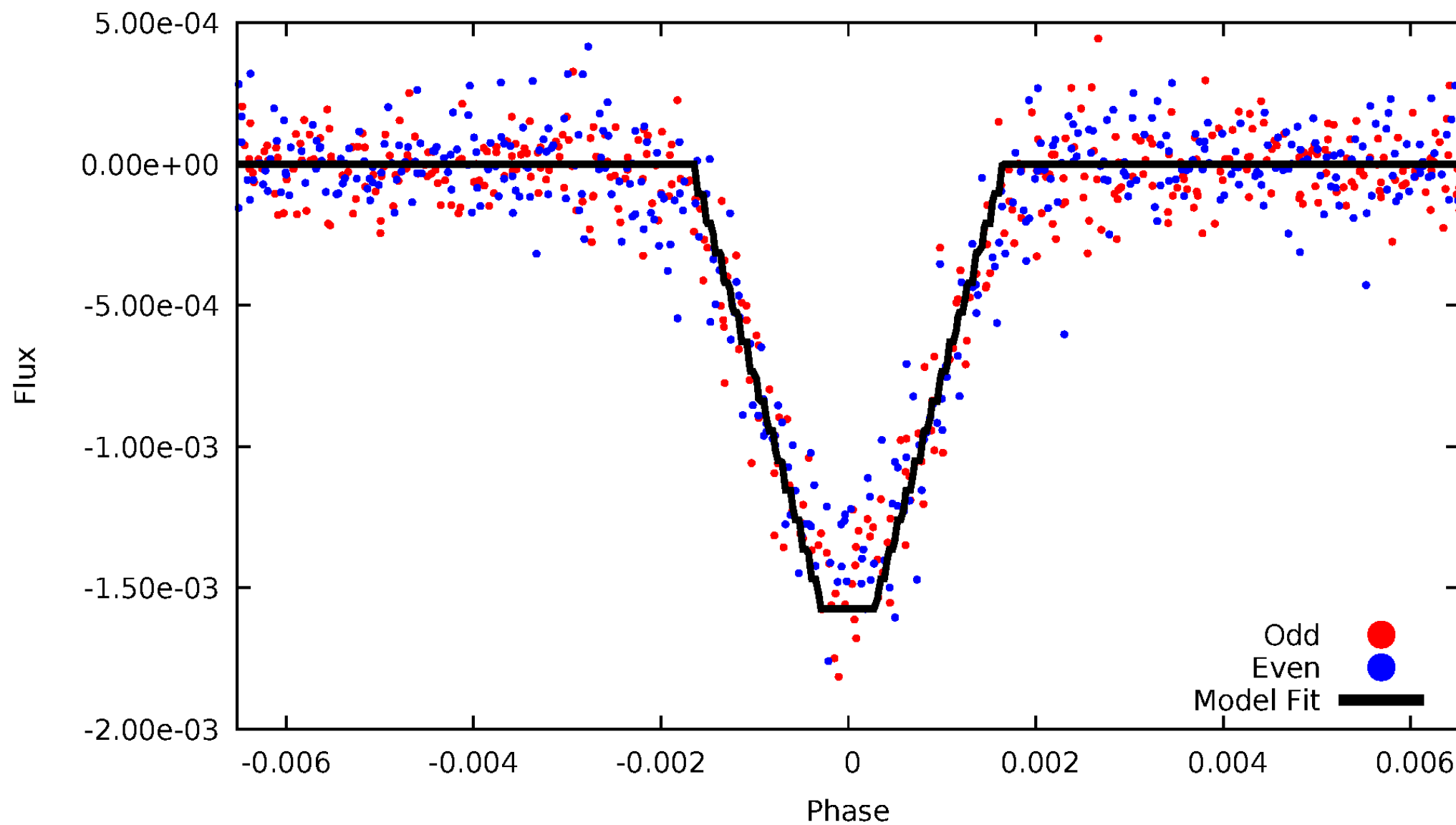
# DV Odd/Even

TCE 004252322-01



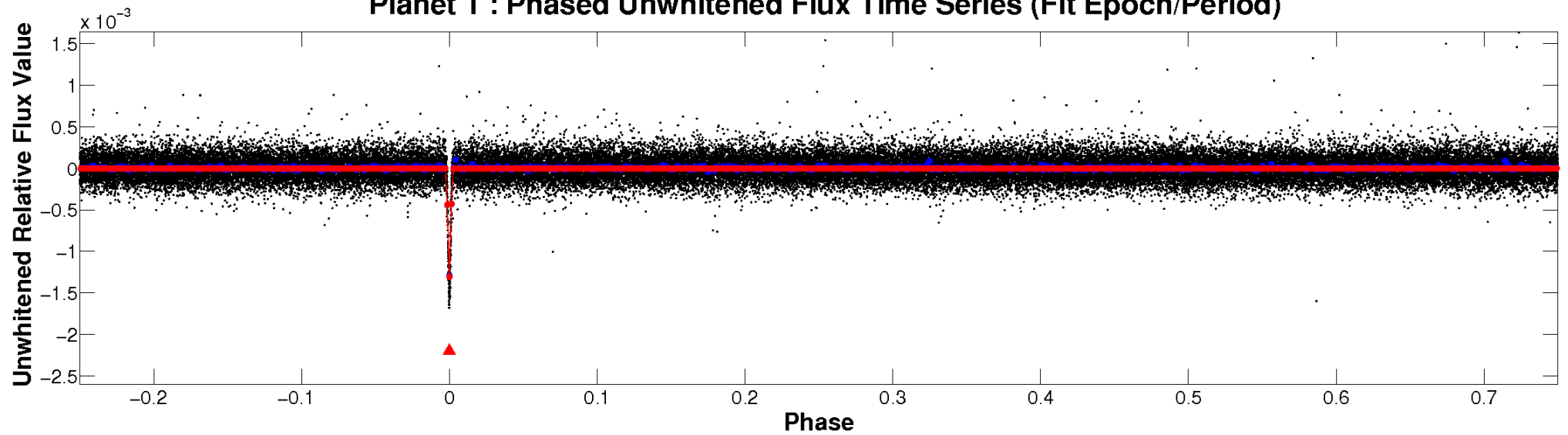
# ALT Odd/Even

TCE 004252322-01

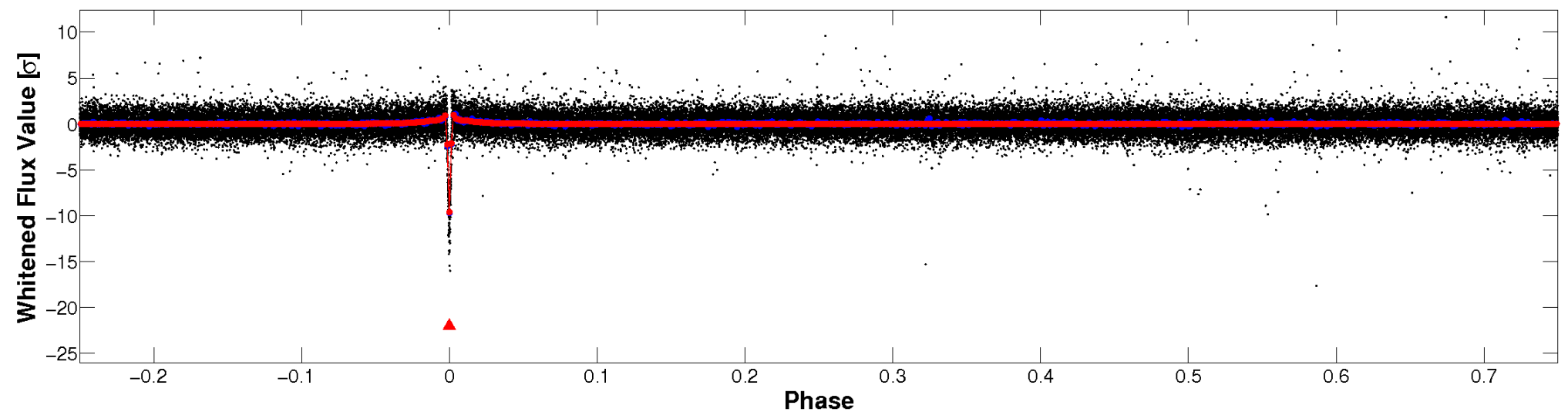


# Non-Whitened Vs. Whitened Light Curve

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

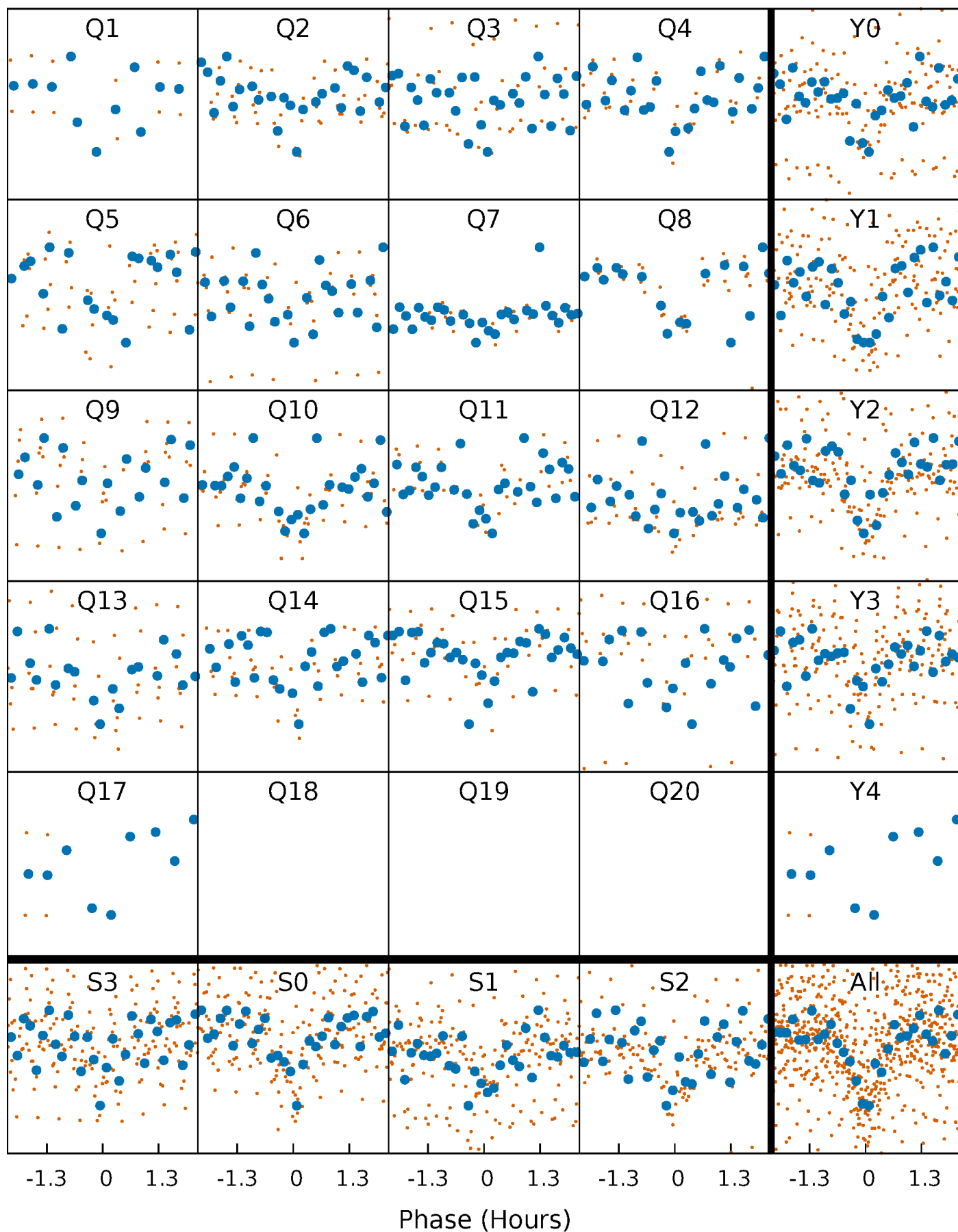


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

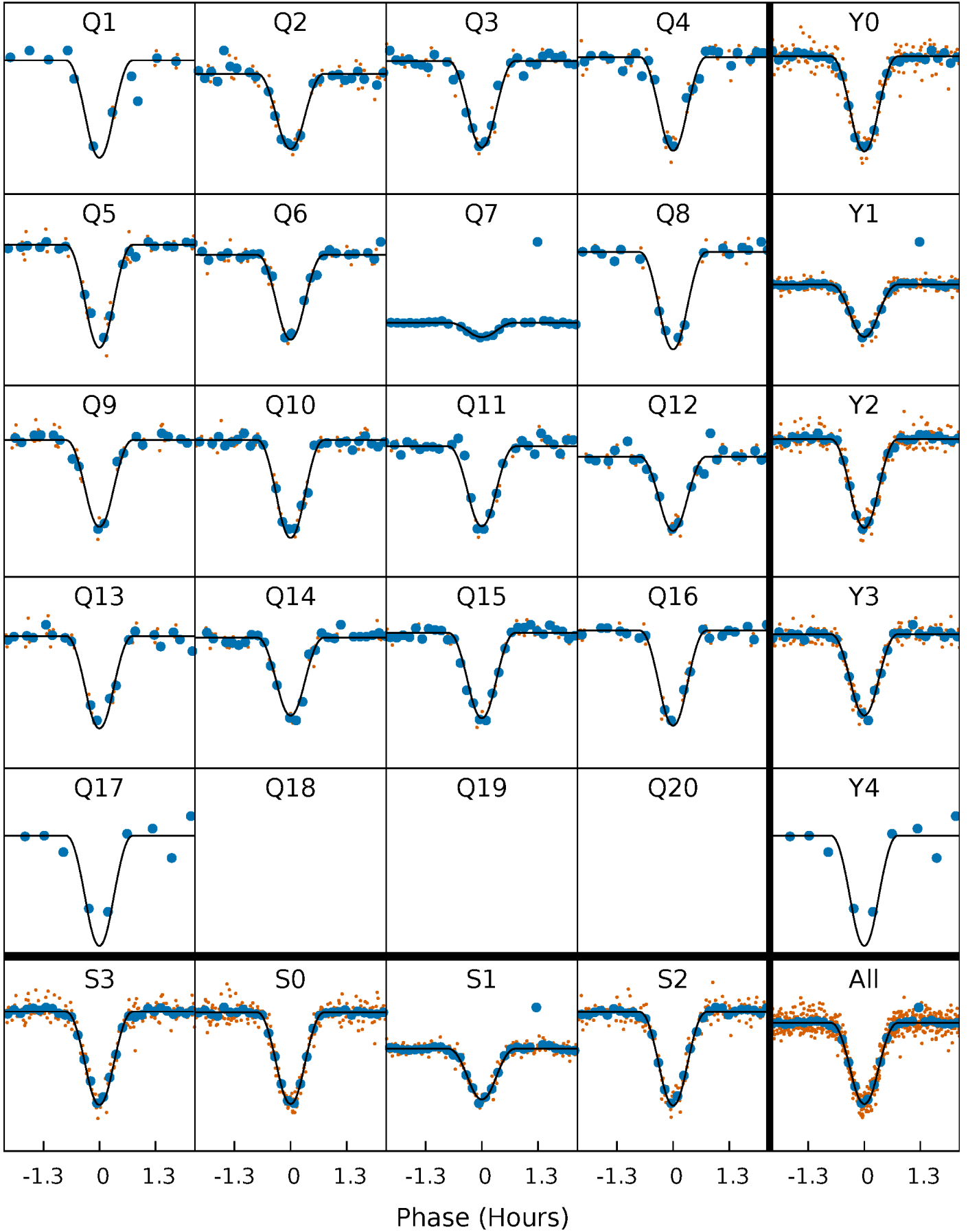
TCE 004252322-01 P= 14.591502 Days  $T_0=137.077133$  (BKJD)





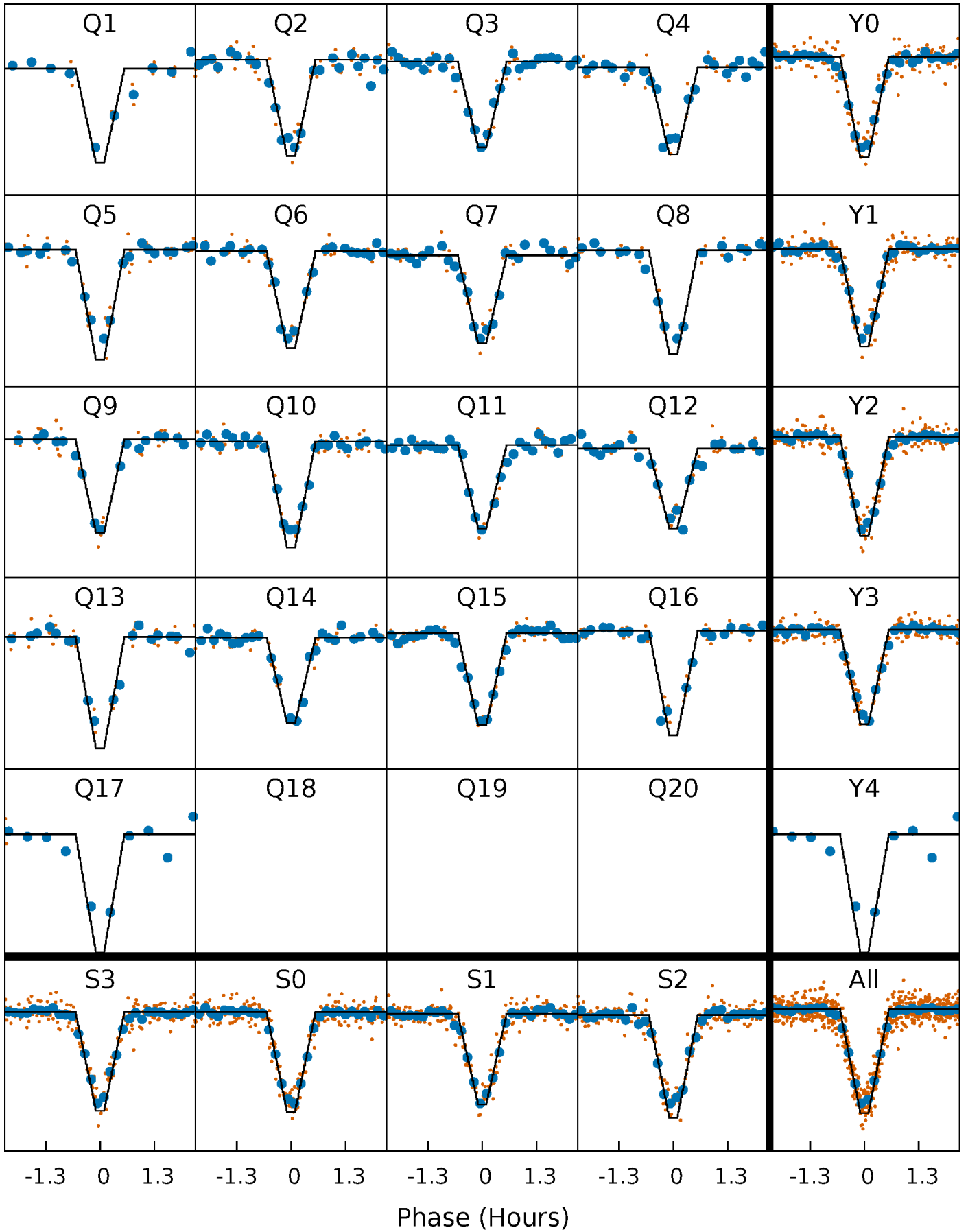
# DV Quarter-Phased Transit Curves

TCE 004252322-01 P= 14.591502 Days  $T_0=137.077133$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

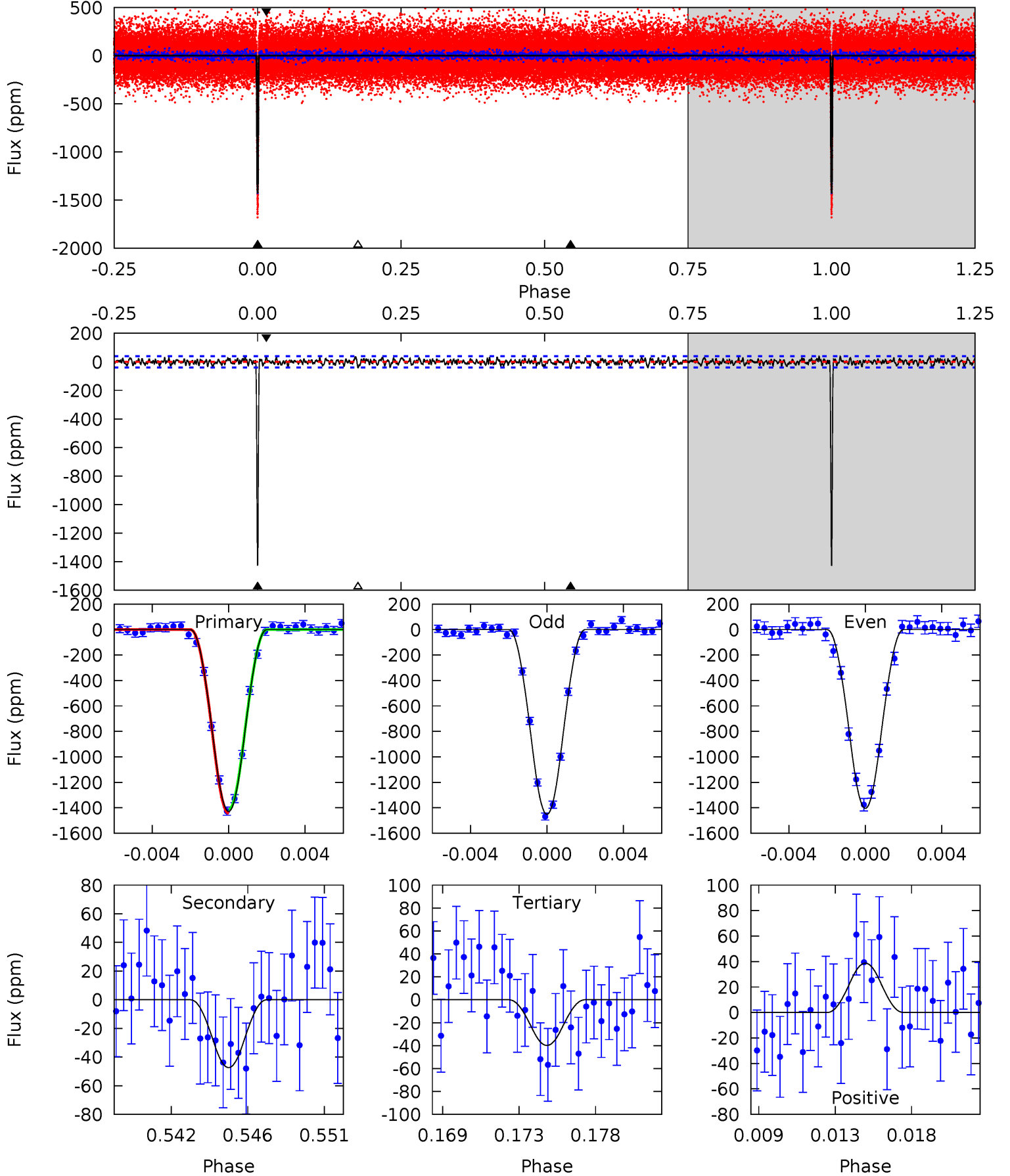
TCE 004252322-01 P= 14.591482 Days  $T_0=137.078197$  (BKJD)



# DV Model-Shift Uniqueness Test

004252322-01, P = 14.591502 Days, E = 122.485631 Days

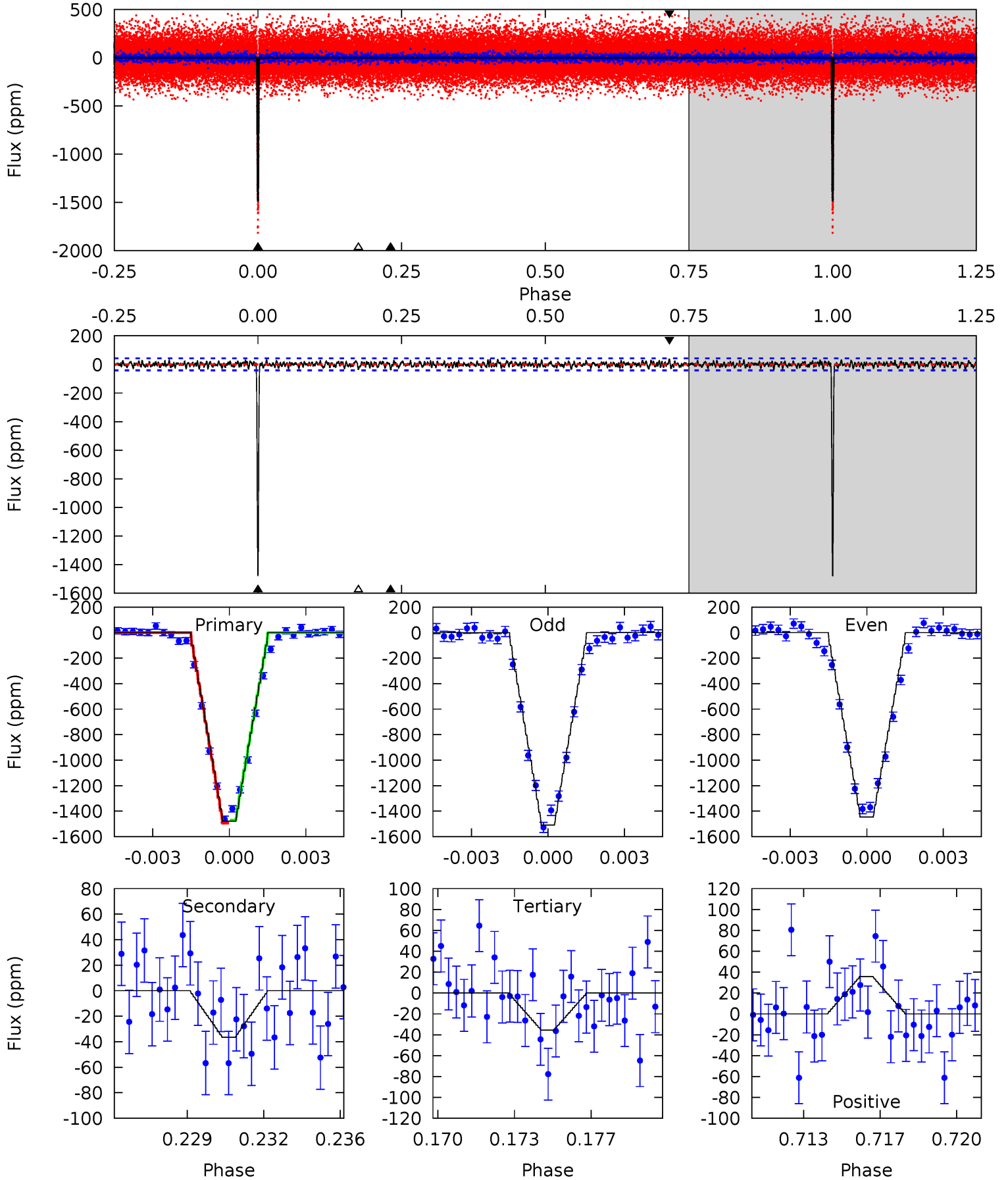
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
187.2	6.20	5.22	5.07	5.18	2.84	1.72	182.0	182.1	0.98	1.13	3.02	1.00	0.03	1.80



# Alt Model-Shift Uniqueness Test

004252322-01,  $P = 14.591482$  Days,  $E = 122.486715$  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
184.5	4.55	4.43	4.46	5.24	2.94	1.46	180.0	180.0	0.12	0.10	3.87	1.00	0.02	1.33



### Stellar Parameters For KIC 004252322

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5940^{+160}_{-178}$	$4.199^{+0.246}_{-0.164}$	$-0.120^{+0.300}_{-0.300}$	$1.312^{+0.355}_{-0.355}$	$0.993^{+0.159}_{-0.119}$	$0.619^{+0.857}_{-0.269}$
	+3%/-3%	+6%/-4%	+250%/-250%	+27%/-27%	+16%/-12%	+139%/-43%
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 004252322-01 / KOI 0396.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-47 \pm 8$	$6.83^{+1.97}_{-1.87}$	$1219^{+100}_{-98}$	$2910^{+270}_{-190}$	$7.653^{+7.107}_{-3.150}$
Alt.	$-37 \pm 8$	$5.56^{+1.82}_{-1.78}$	$1215^{+95}_{-89}$	$2985^{+322}_{-240}$	$8.857^{+11.019}_{-4.203}$

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

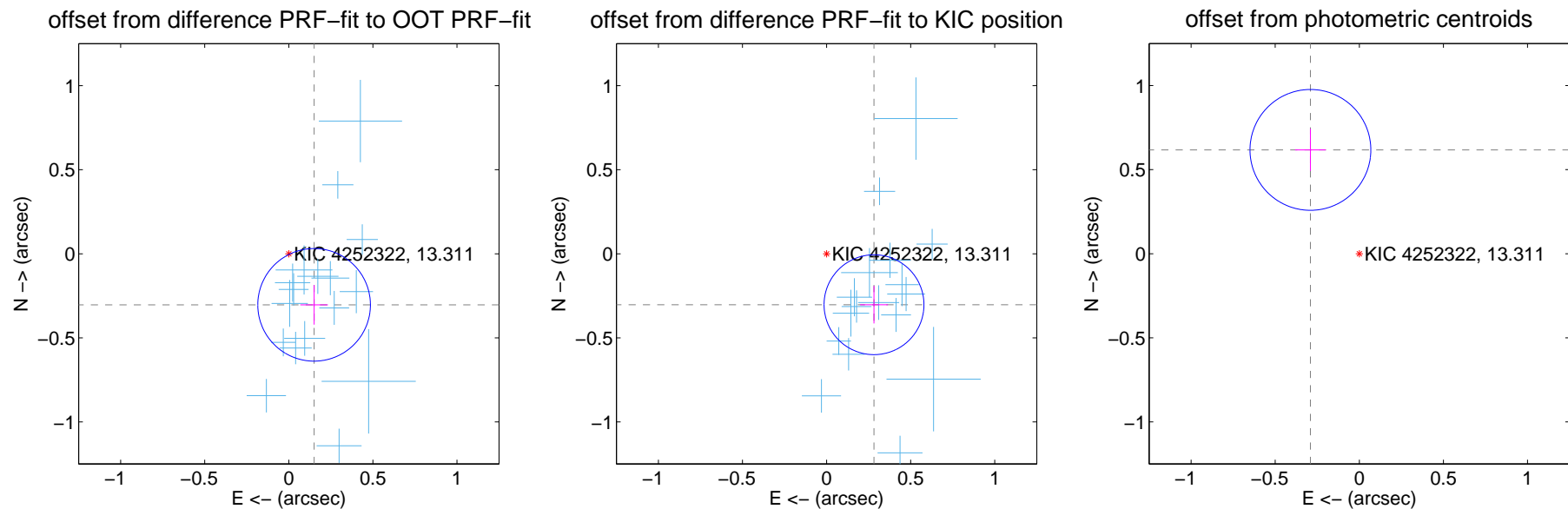
## DV Centroid Data

Supplemental centroid analysis for 004252322-01. Kepler magnitude: 13.31. Transit SNR 100.14

There are 17 quarters with good PRF difference image offsets

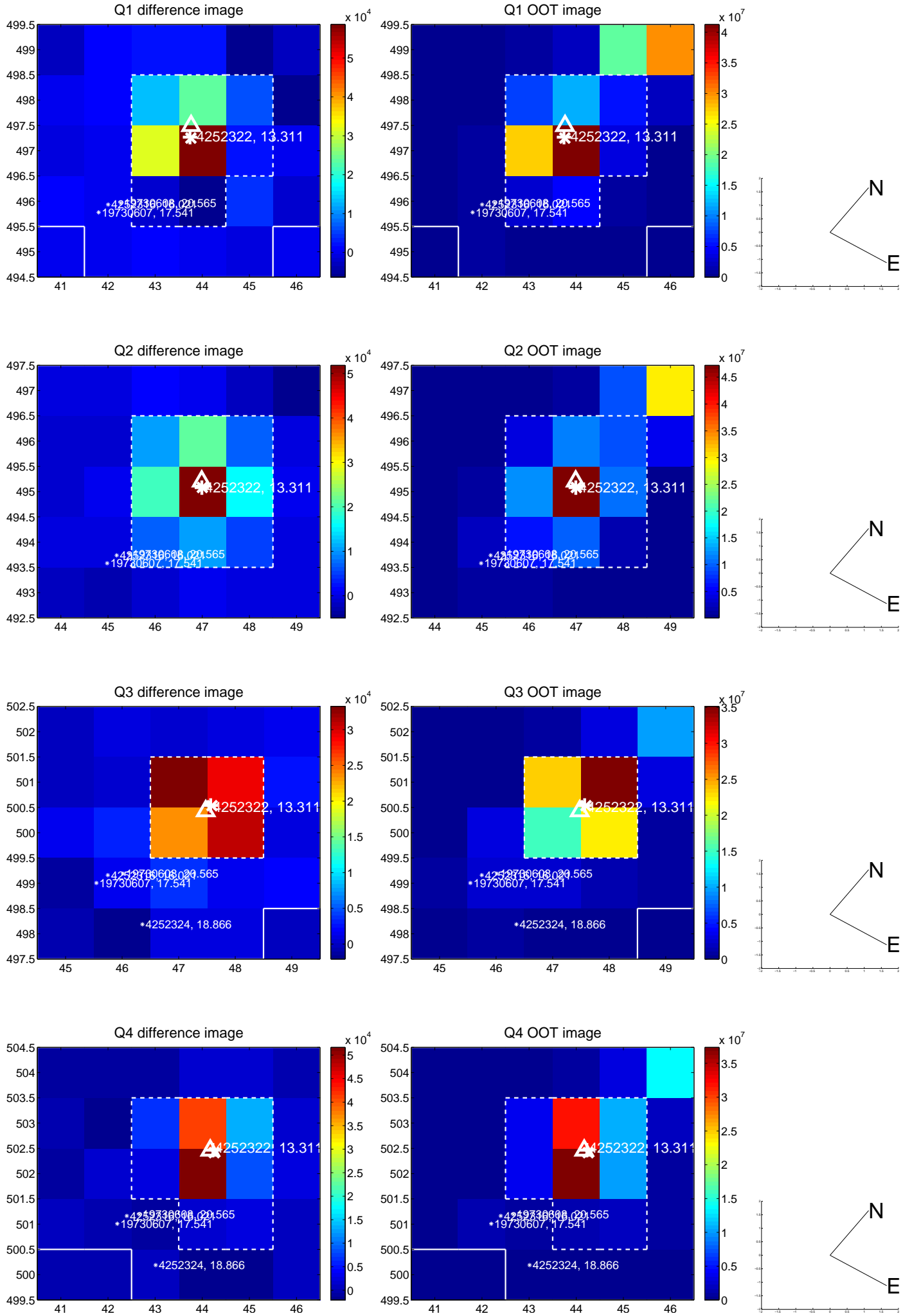
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.339 \pm 0.112$	3.04	$-0.150 \pm 0.082$	$-0.304 \pm 0.118$
PRF-fit source offset from KIC position	$0.414 \pm 0.099$	4.18	$-0.282 \pm 0.083$	$-0.303 \pm 0.111$
photometric centroid source offset	$0.68 \pm 0.12$	5.70	$0.29 \pm 0.09$	$0.62 \pm 0.13$

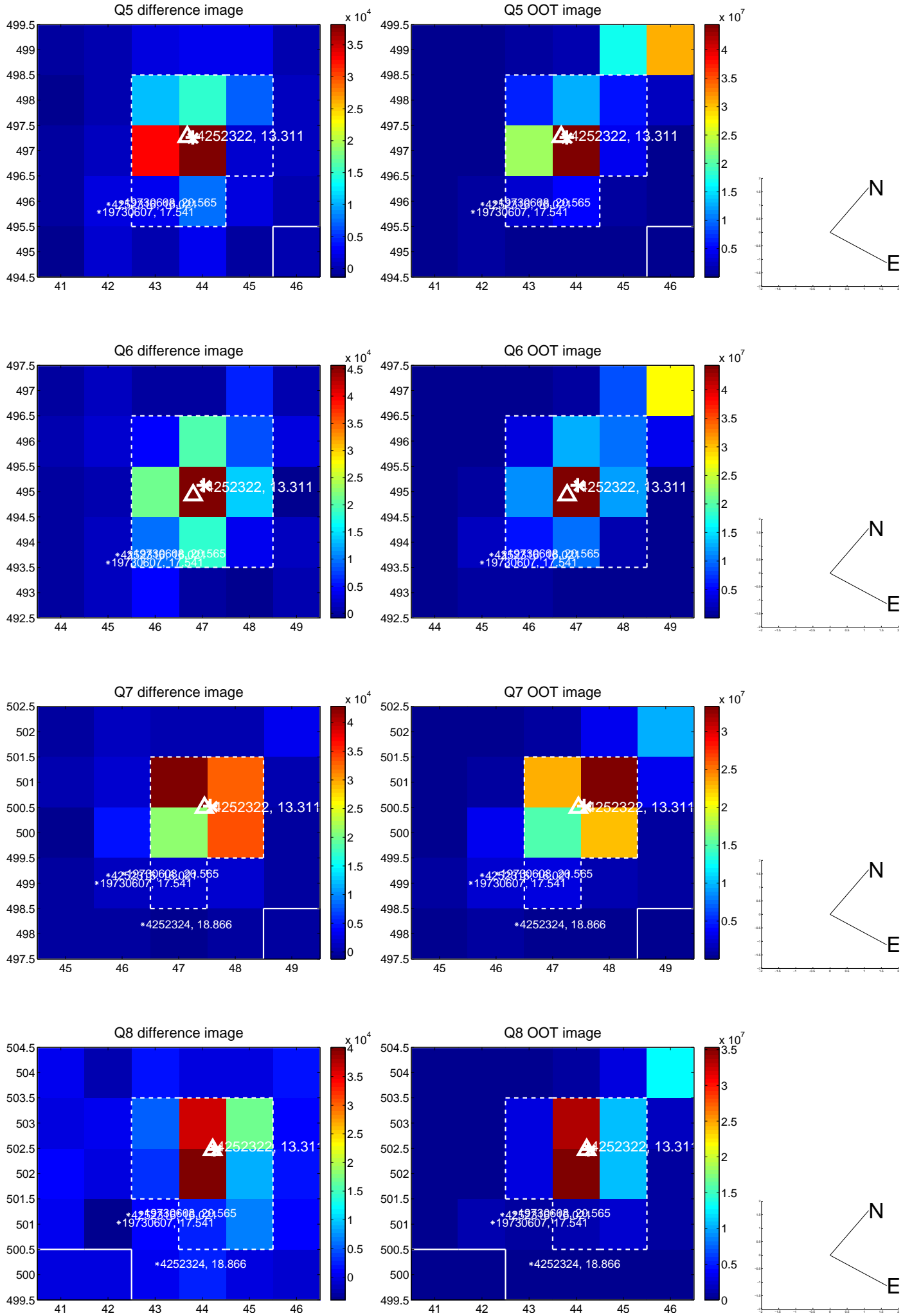


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

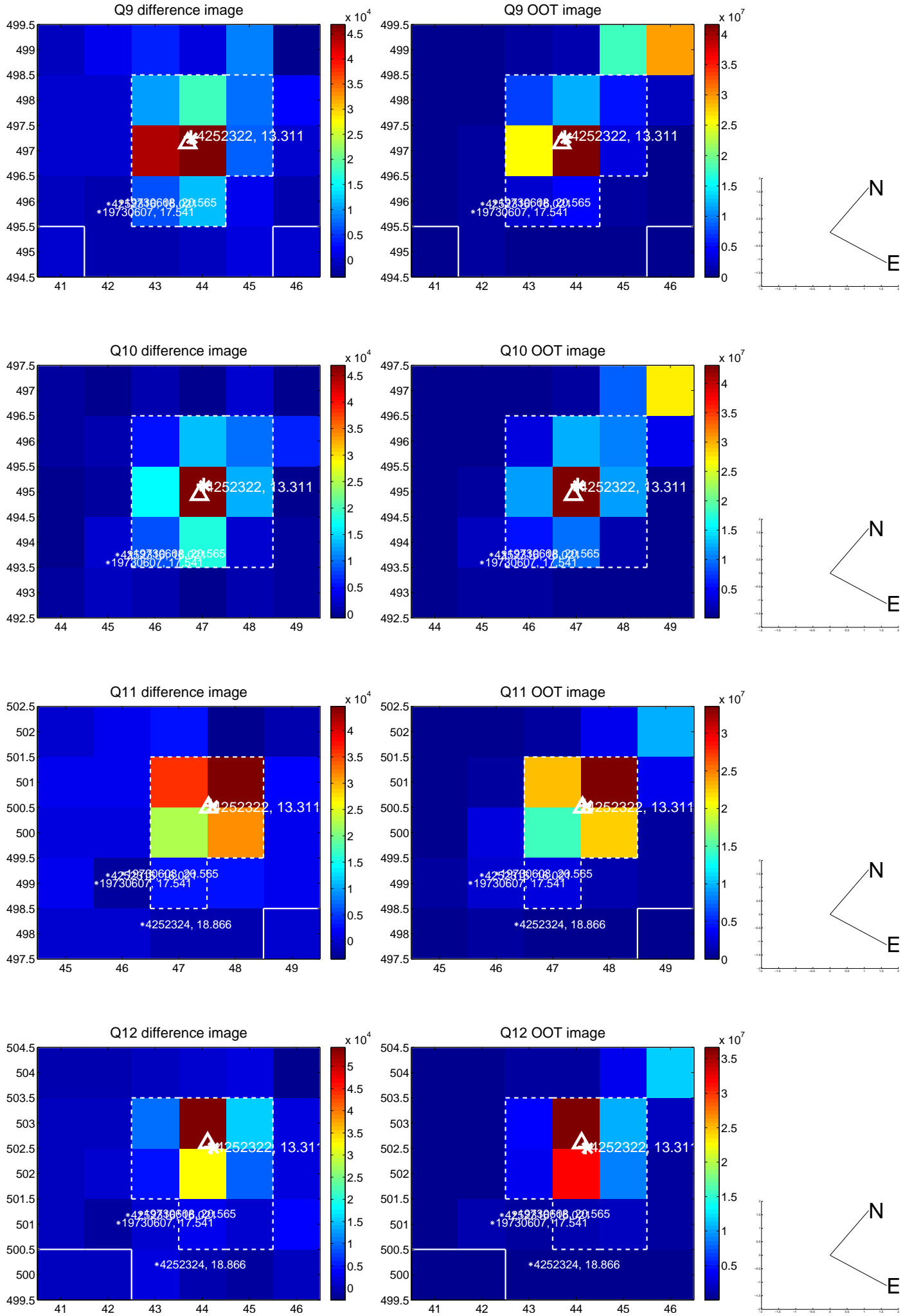


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

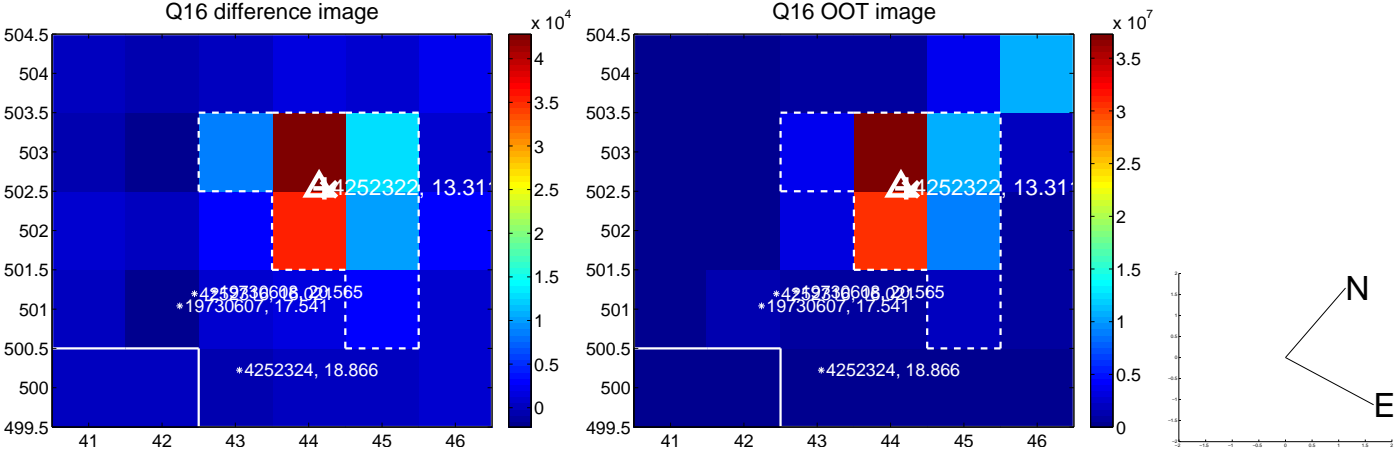
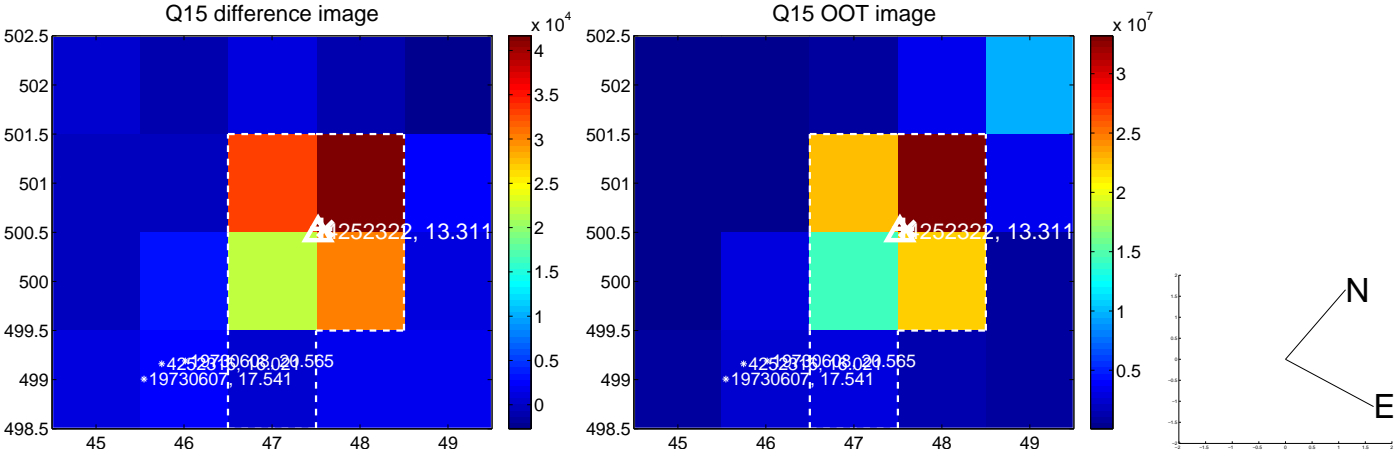
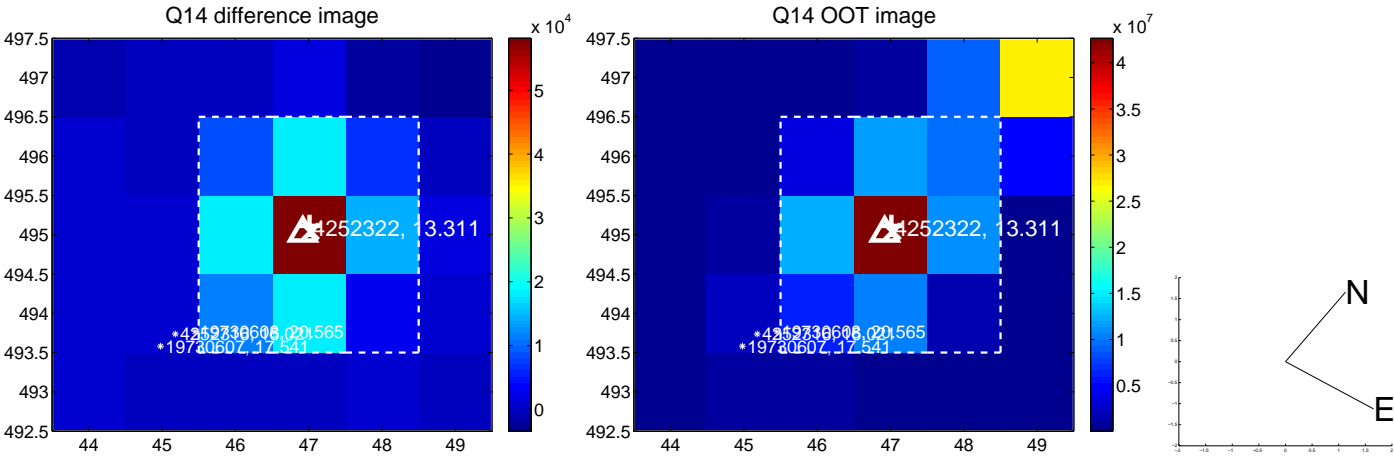
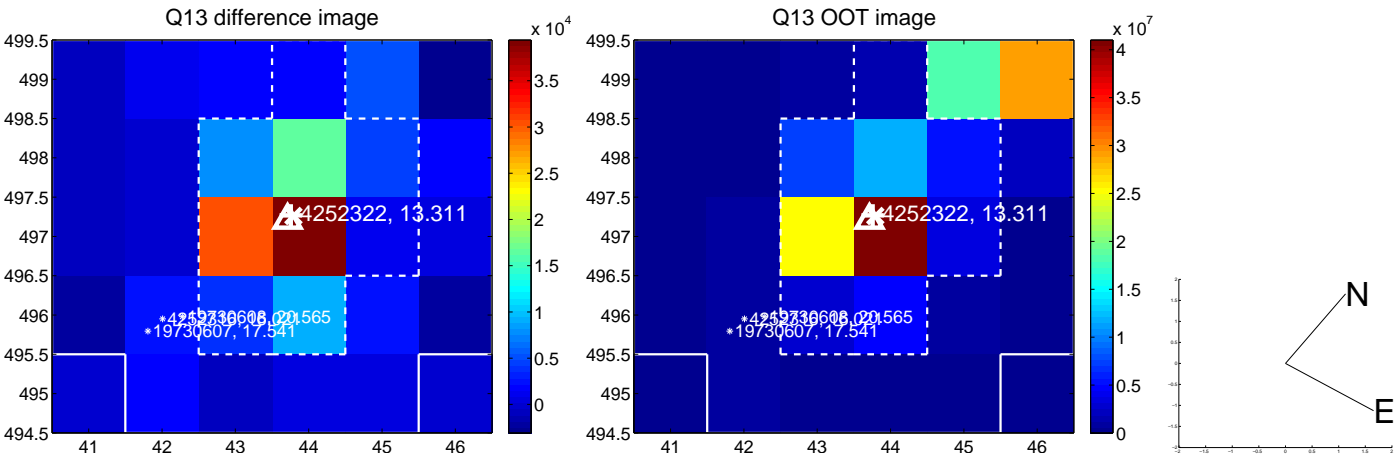




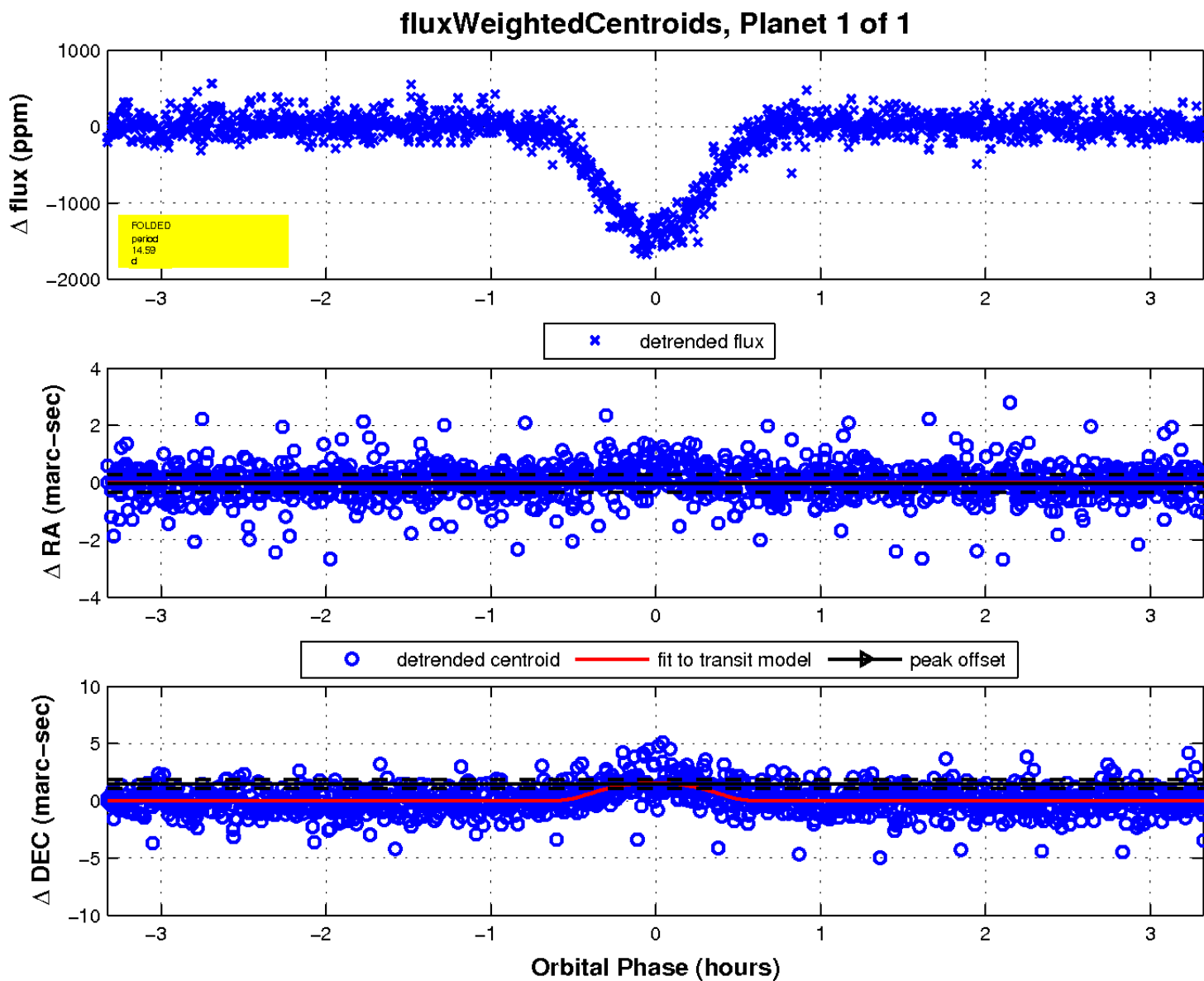
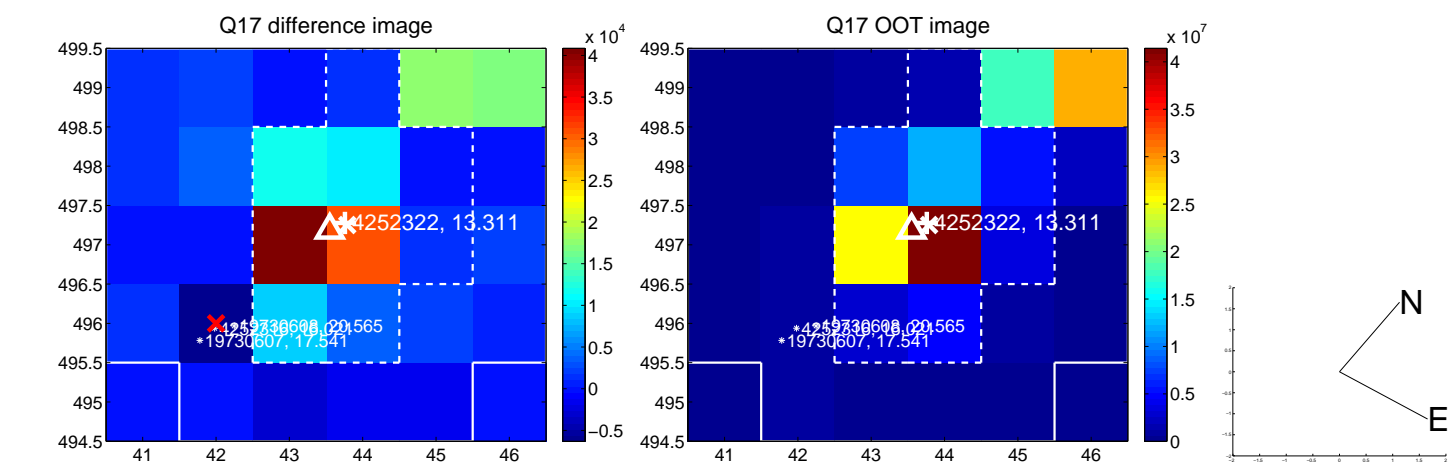
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UKIRT Image

