

# KIC 009941425

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009941425-01	OBS	7979.01	1.075174	131.700366	26.3	1.237	12.3	13.7	38.45	4067	25.16	0.00

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009941425-01	OBS	FP	0.00	0	0	1	0	PLANET_IN_STAR—CENT_RESOLVED_OFFSET—HALO_GHOST

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

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

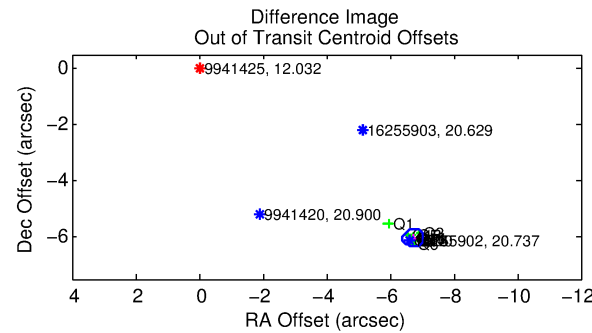
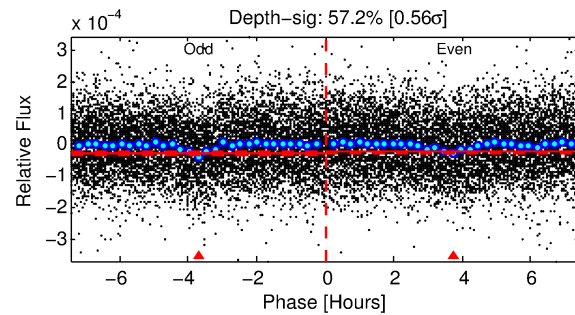
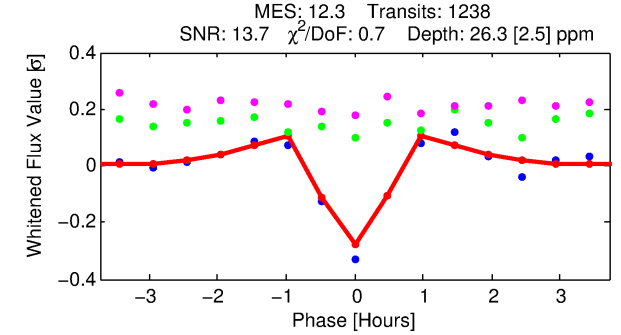
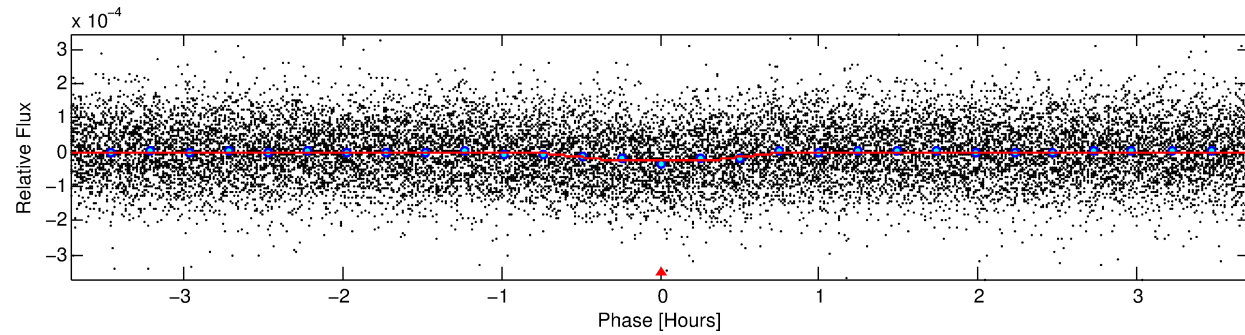
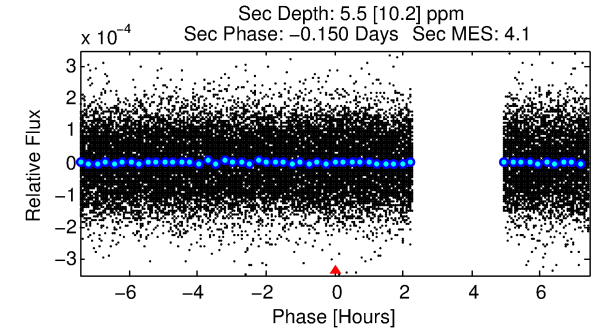
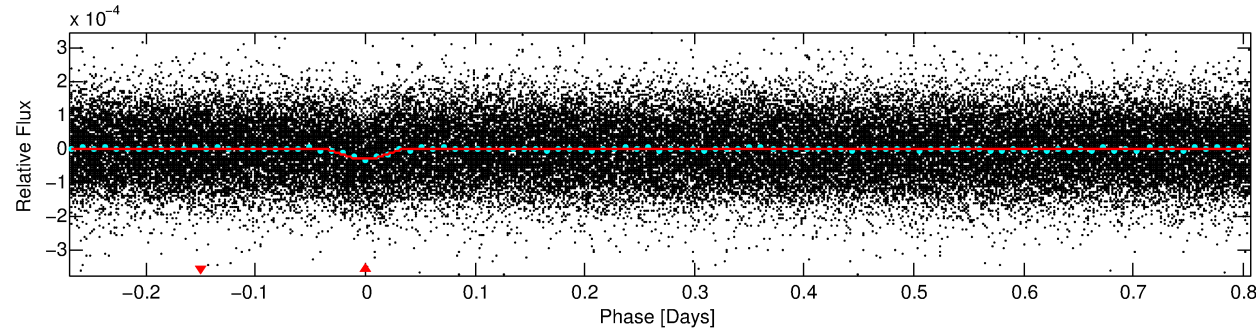
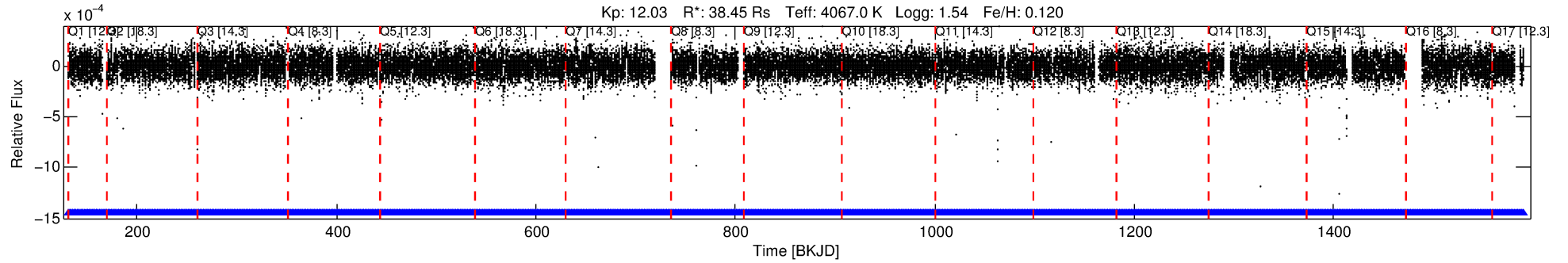
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009941425-01

No Significant Match Found

# DV One-Page Summary

KIC: 9941425 Candidate: 1 of 1 Period: 1.075 d



## DV Fit Results:

Period = 1.07517 [0.00001] d  
Epoch = 131.7004 [0.0011] BKJD  
Rp/R\* = 0.0060 [0.0016]  
a/R\* = 3.07 [2.42]  
b = 0.90 [0.18]  
Seff = N/A  
Teq = N/A  
Rp = 25.16 [8.50] Re  
a = N/A  
Ag = N/A  
Teffp = N/A

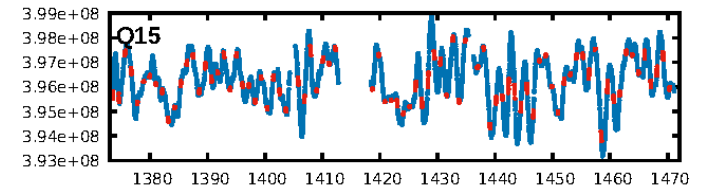
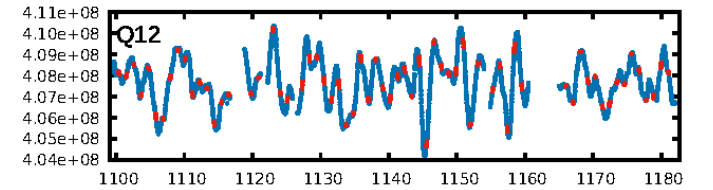
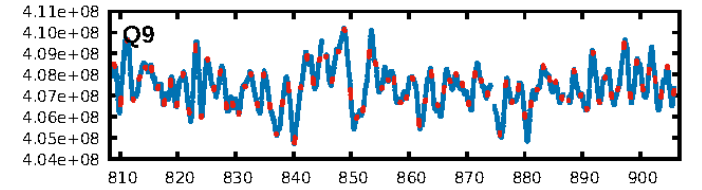
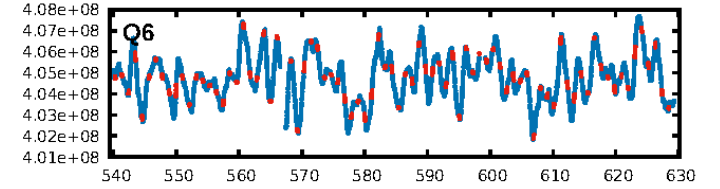
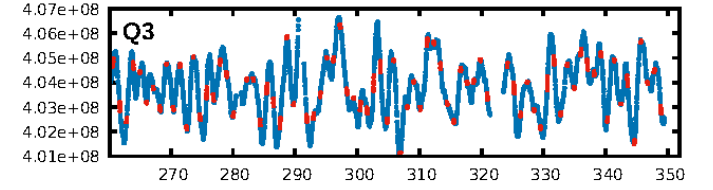
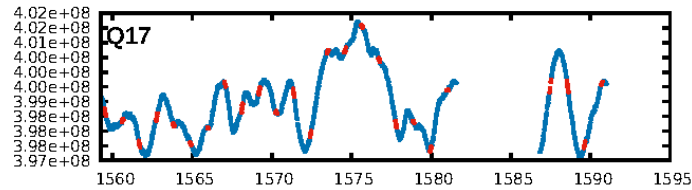
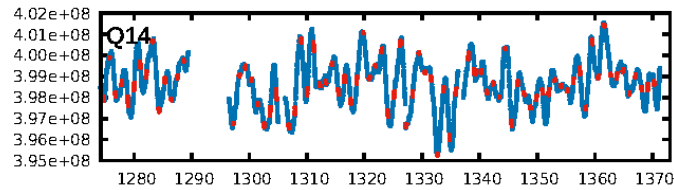
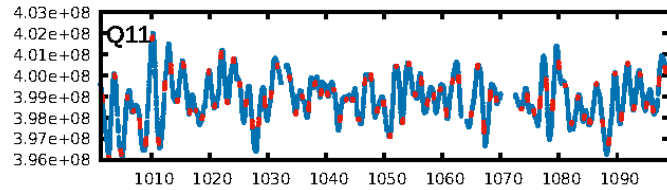
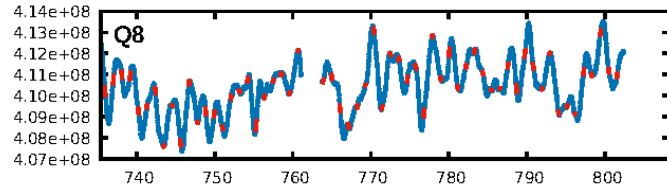
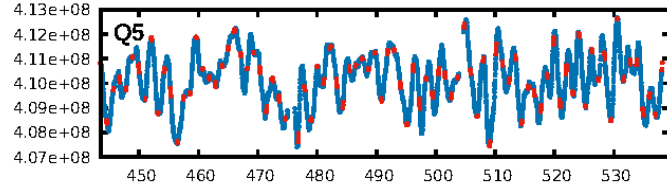
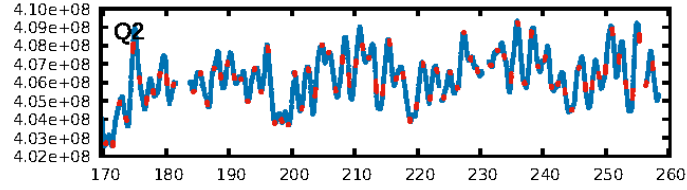
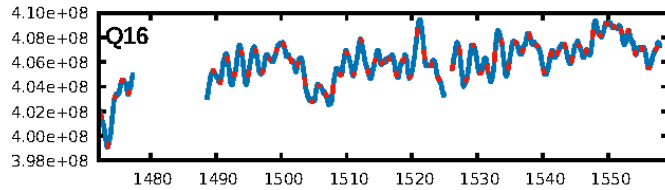
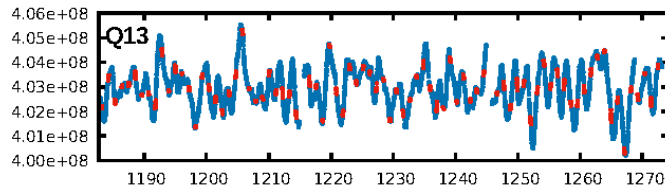
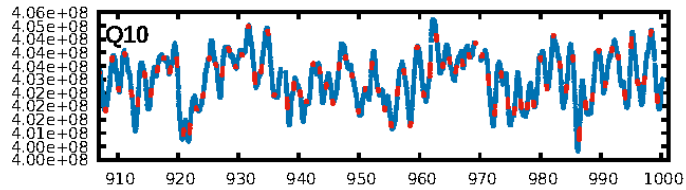
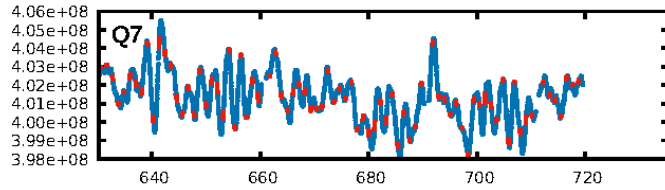
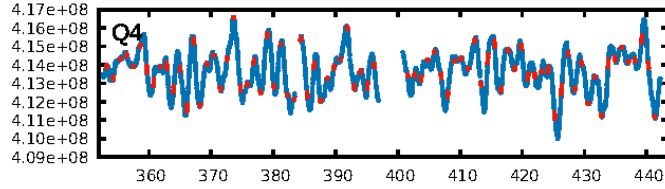
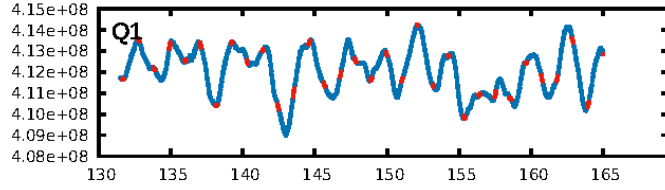
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.12e-33  
RollingBand-fgt: 1.00 [1182/1182]  
GhostDiagnostic-chr: 0.176  
Centroid-sig: 0.0%  
Centroid-so: 15.104 arcsec [26.76σ]  
OotOffset-rm: 9.032 arcsec [84.62σ]  
KicOffset-rm: 9.012 arcsec [91.34σ]  
OotOffset-st: 4/3/2/3 [12]  
KicOffset-st: 4/3/2/3 [12]  
DiffImageQuality-fgm: 0.92 [11/12]  
DiffImageOverlap-fno: 1.00 [17/17]

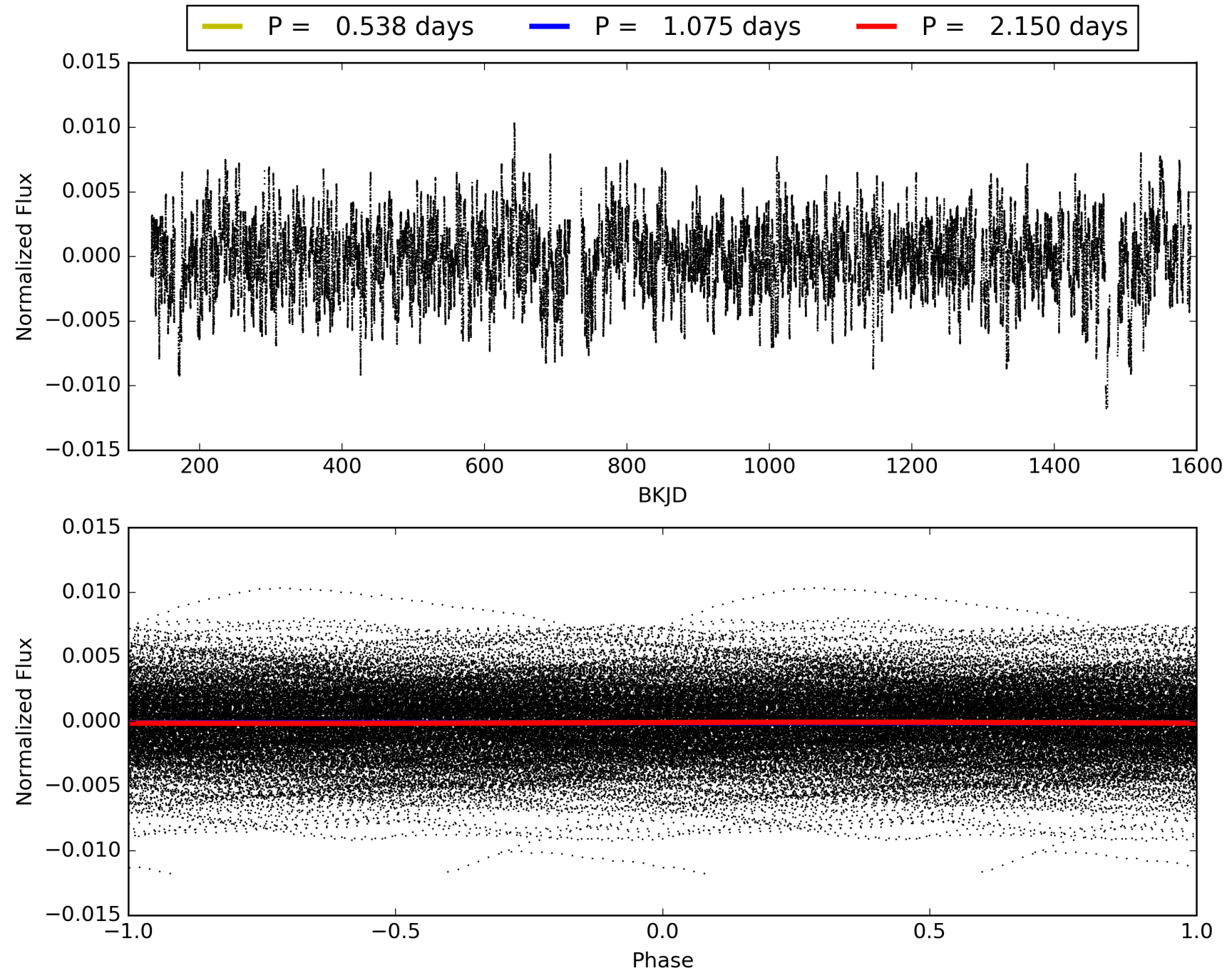
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 07:27:37 Z

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

# TCE 009941425-01, PDC Light Curves

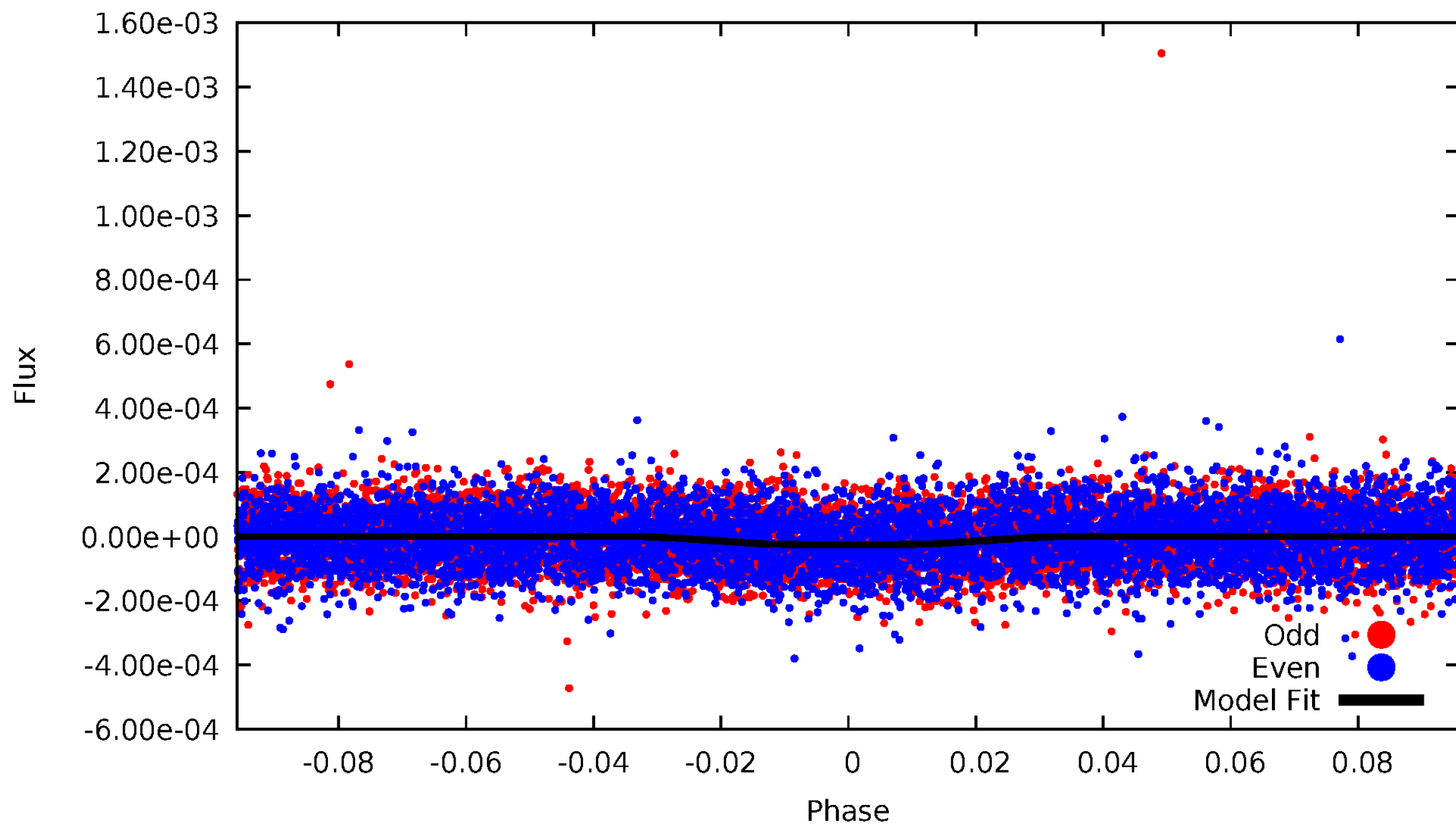


TCE 009941425-01



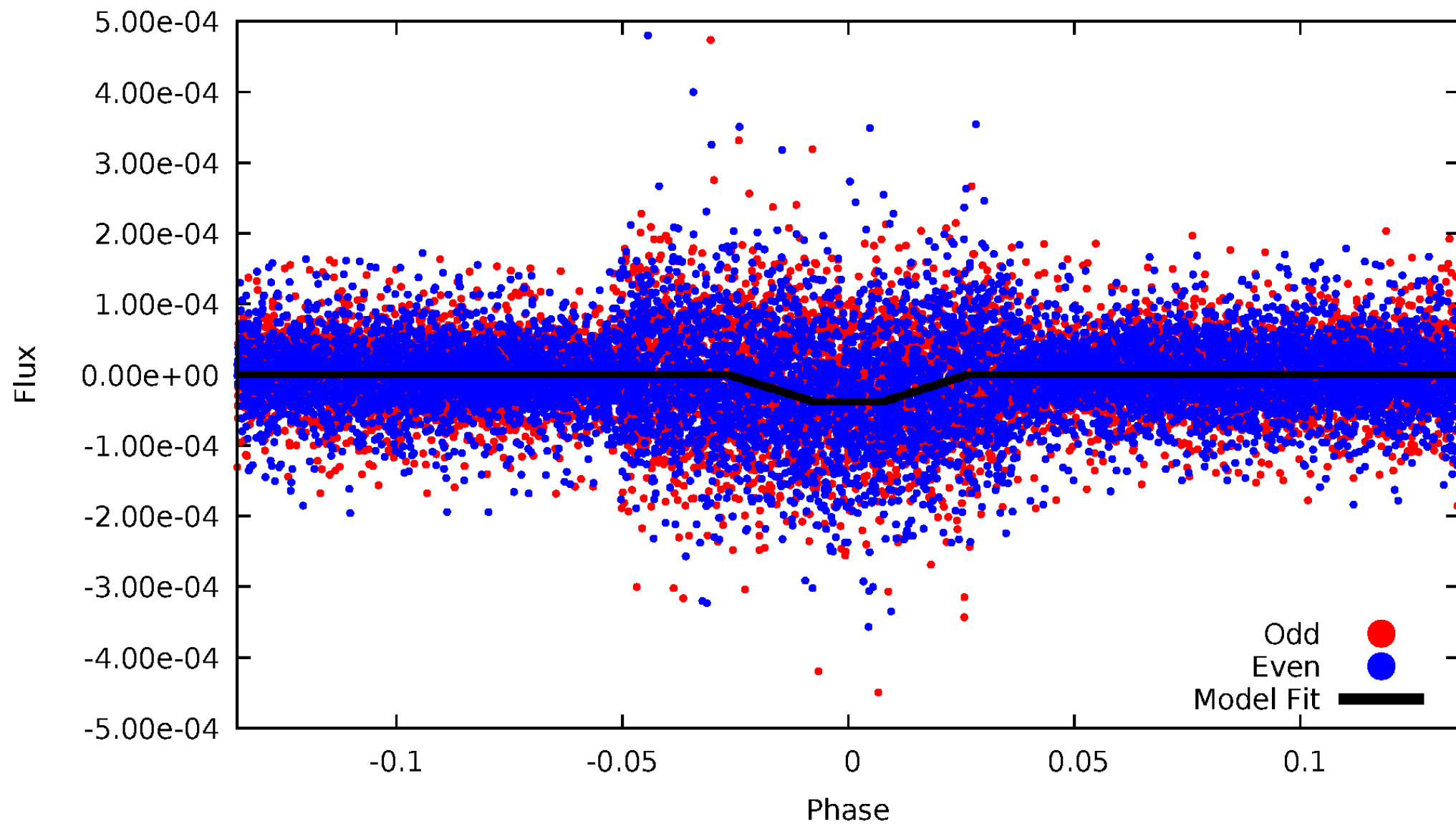
# DV Odd/Even

TCE 009941425-01



# ALT Odd/Even

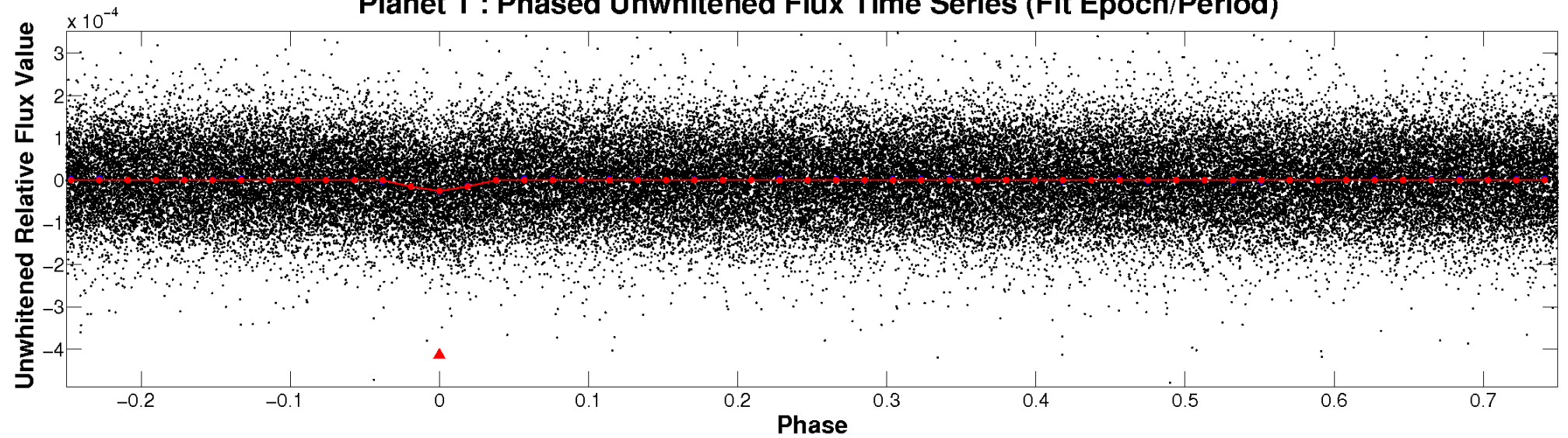
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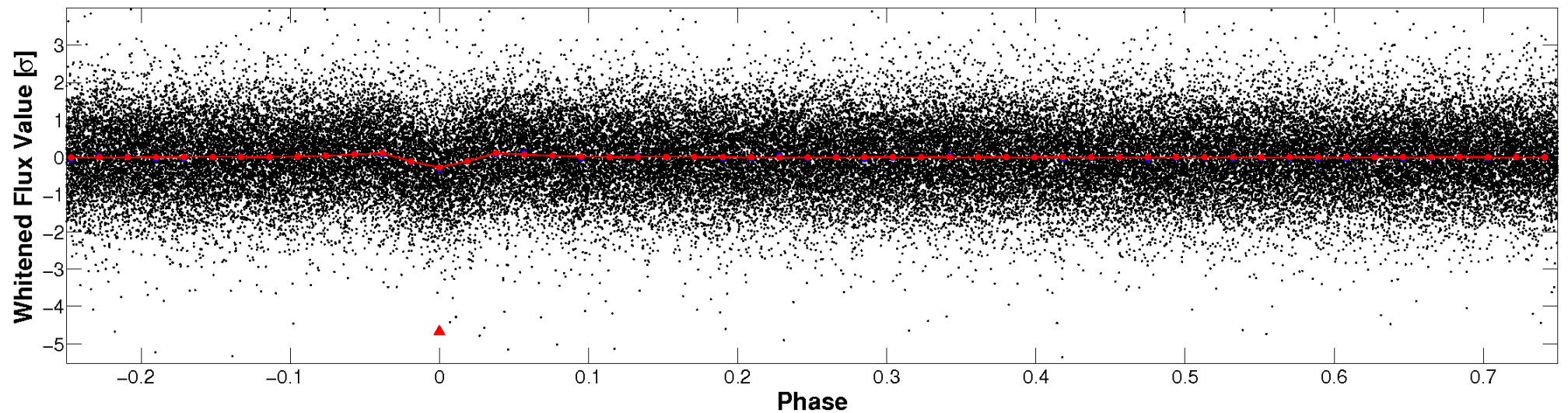


# Non-Whitened Vs. Whitened Light Curve

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

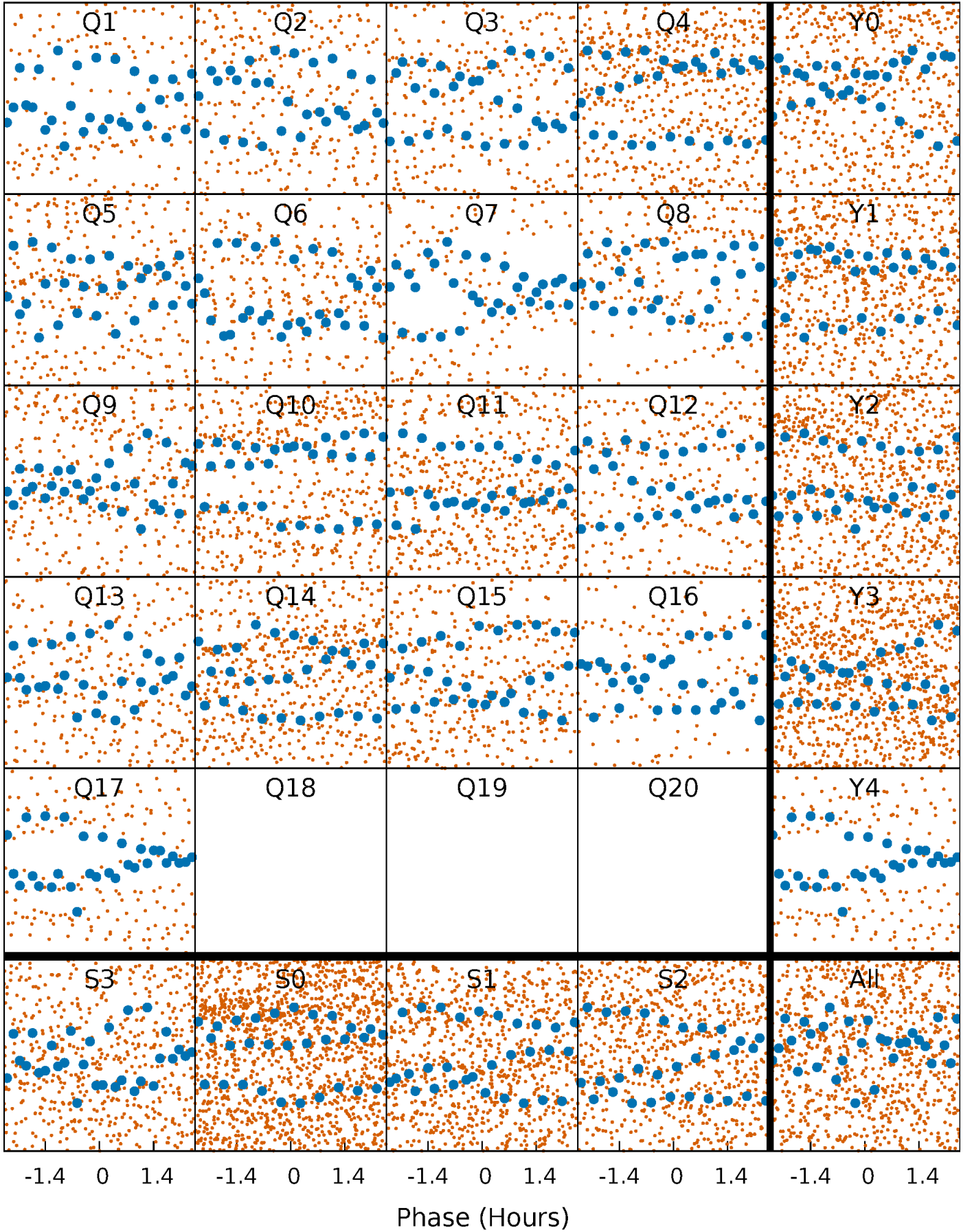


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

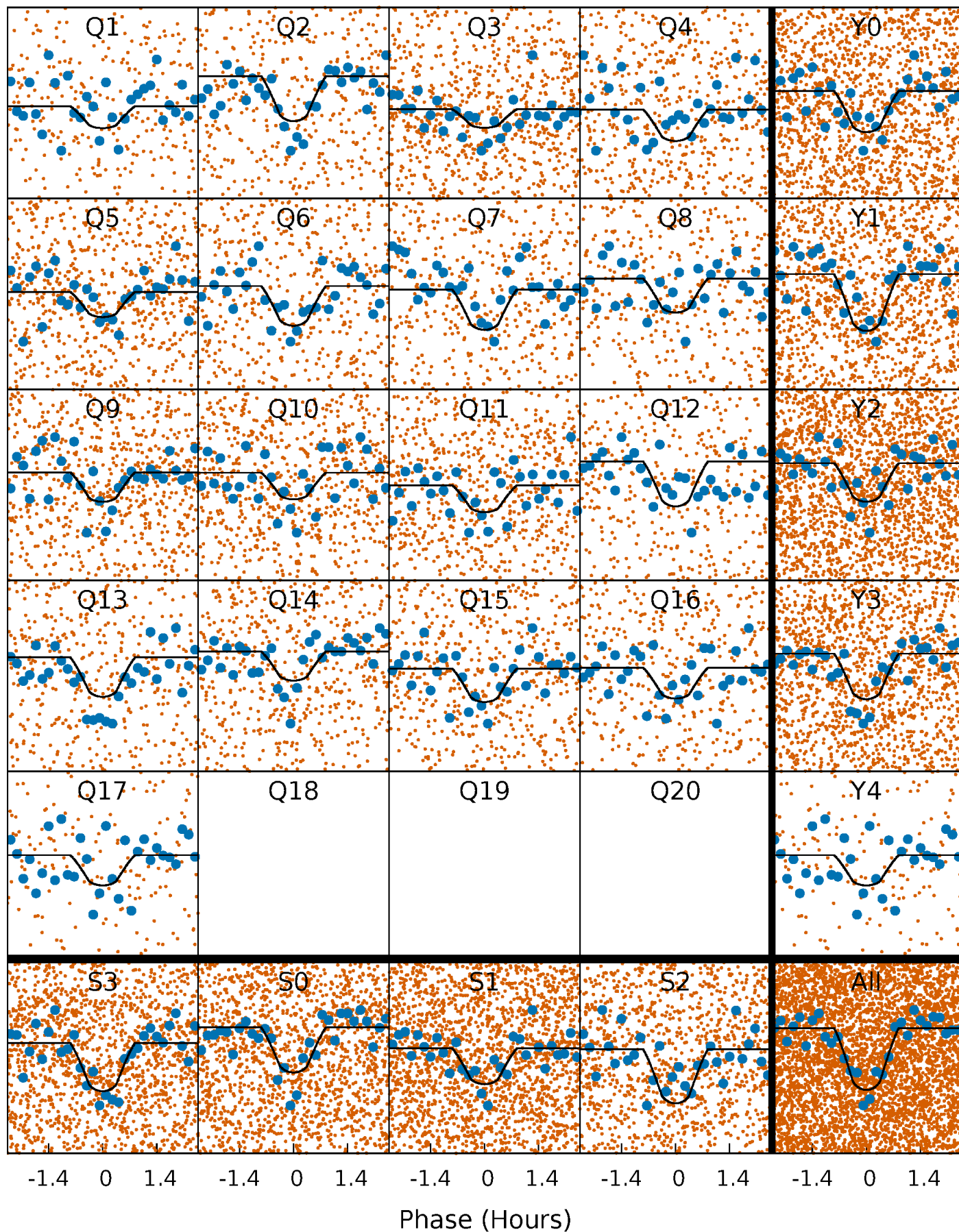
TCE 009941425-01   P= 1.075174 Days    $T_0=131.700366$  (BKJD)





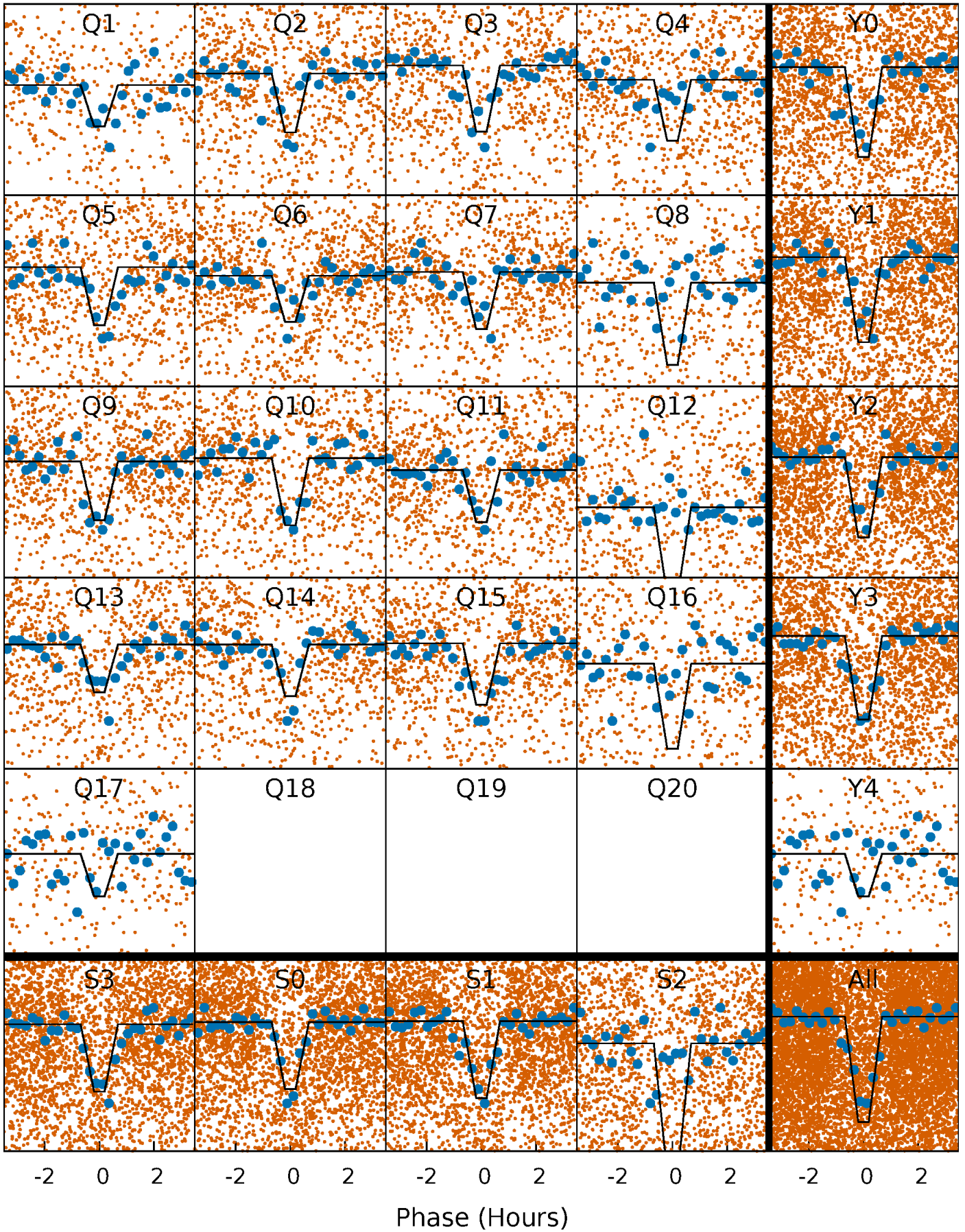
# DV Quarter-Phased Transit Curves

TCE 009941425-01 P= 1.075174 Days  $T_0=131.700366$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

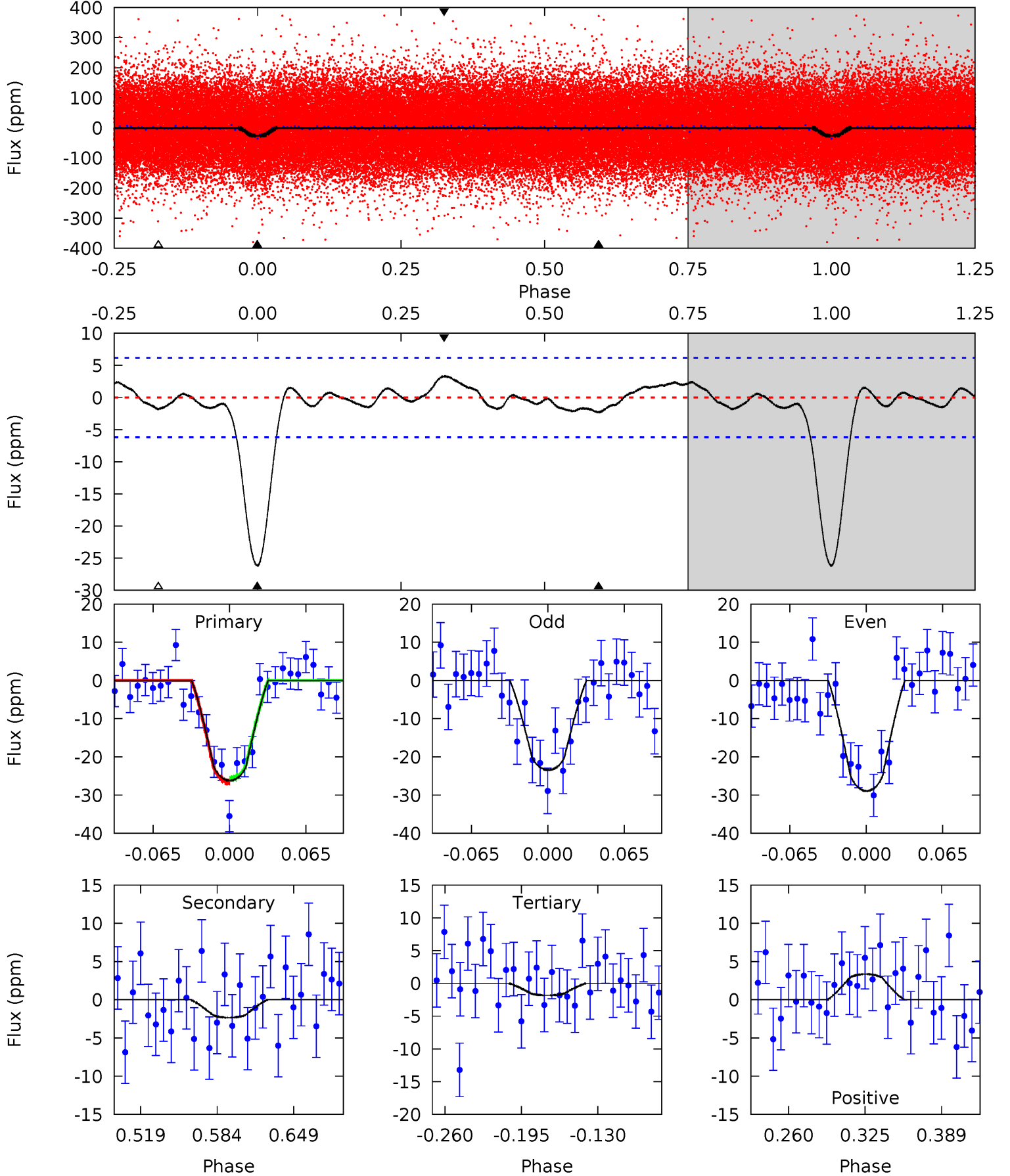
TCE 009941425-01 P= 1.075167 Days  $T_0=131.703793$  (BKJD)



# DV Model-Shift Uniqueness Test

009941425-01, P = 1.075174 Days, E = 130.625192 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
19.7	1.76	1.37	2.53	4.65	1.85	1.01	18.4	17.2	0.39	-0.76	2.07	0.85	0.11	0.34

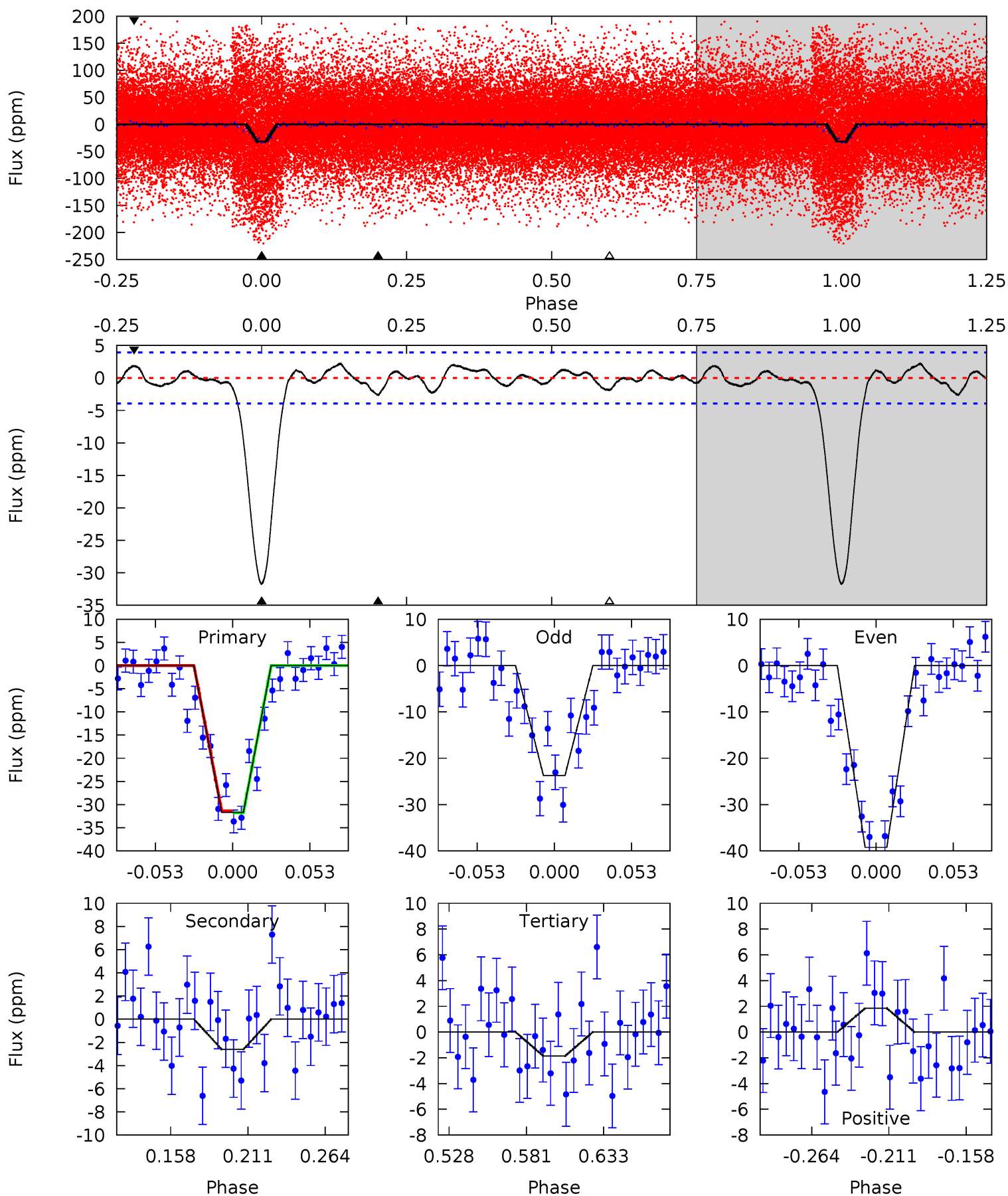




# Alt Model-Shift Uniqueness Test

009941425-01, P = 1.075167 Days, E = 130.628626 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
37.9	3.11	2.23	2.21	4.70	1.94	1.14	35.6	35.7	0.88	0.91	9.27	0.98	0.06	0.24



### Stellar Parameters For KIC 009941425

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4067^{+90}_{-107}$	$1.541^{+0.030}_{-0.030}$	$0.120^{+0.200}_{-0.250}$	$38.446^{+5.067}_{-7.963}$	$1.874^{+1.275}_{-0.686}$	$0.000^{+0.000}_{-0.000}$
	+2%/-3%	+2%/-2%	+167%/-208%	+13%/-21%	+68%/-37%	+32%/-9%
Source	PHO54	AST54	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 009941425-01 / KOI 7979.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-2\pm 1$	$24.34^{+8.34}_{-7.11}$	$9775^{+313}_{-365}$	$-7513^{+405}_{-361}$	$0.001^{+0.002}_{-0.001}$
Alt.	$-3\pm 1$	$25.89^{+7.88}_{-7.28}$	$9764^{+337}_{-360}$	$-7487^{+375}_{-392}$	$0.001^{+0.001}_{-0.001}$

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



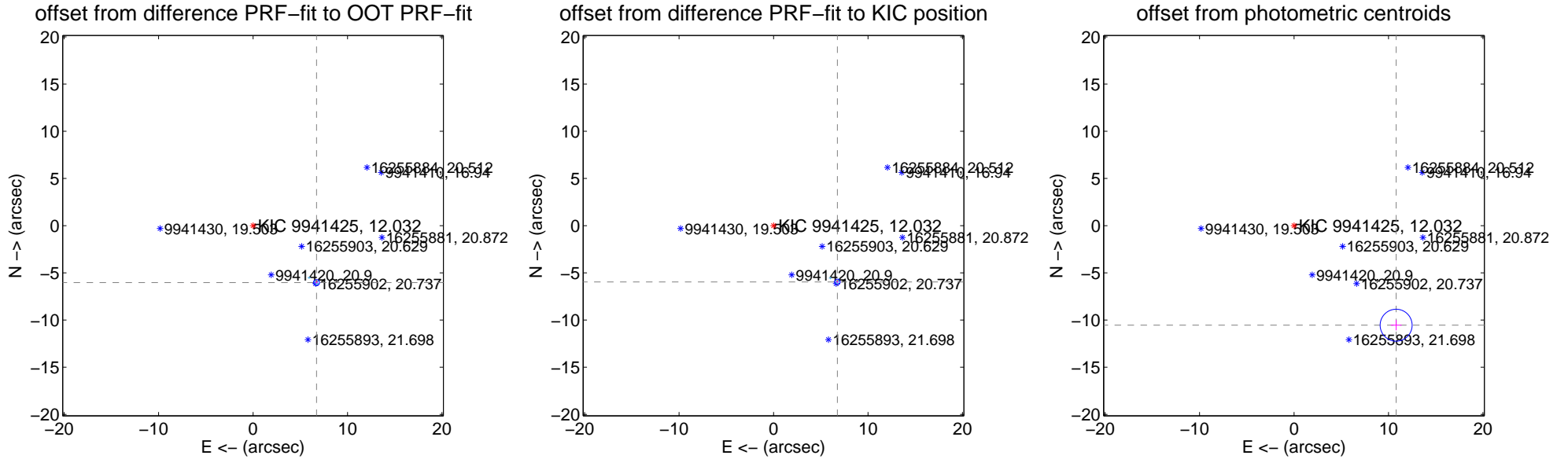
## DV Centroid Data

Supplemental centroid analysis for 009941425-01. Kepler magnitude: 12.03. Transit SNR 13.71

There are 11 quarters with good PRF difference image offsets

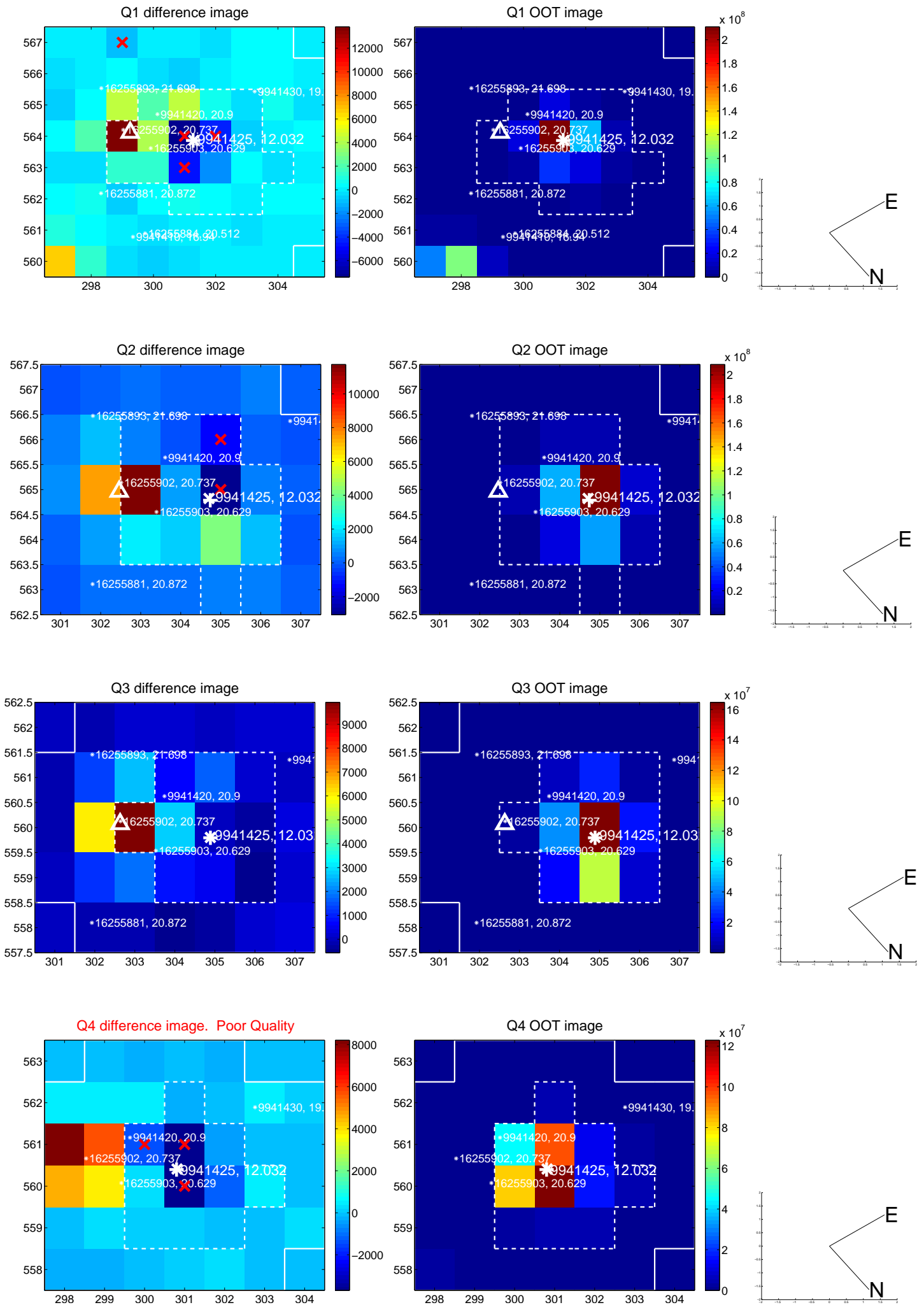
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$9.032 \pm 0.107$	84.62	$-6.719 \pm 0.097$	$-6.036 \pm 0.086$
PRF-fit source offset from KIC position	$9.012 \pm 0.099$	91.34	$-6.755 \pm 0.096$	$-5.965 \pm 0.082$
photometric centroid source offset	$15.10 \pm 0.56$	26.76	$-10.81 \pm 0.58$	$-10.55 \pm 0.55$

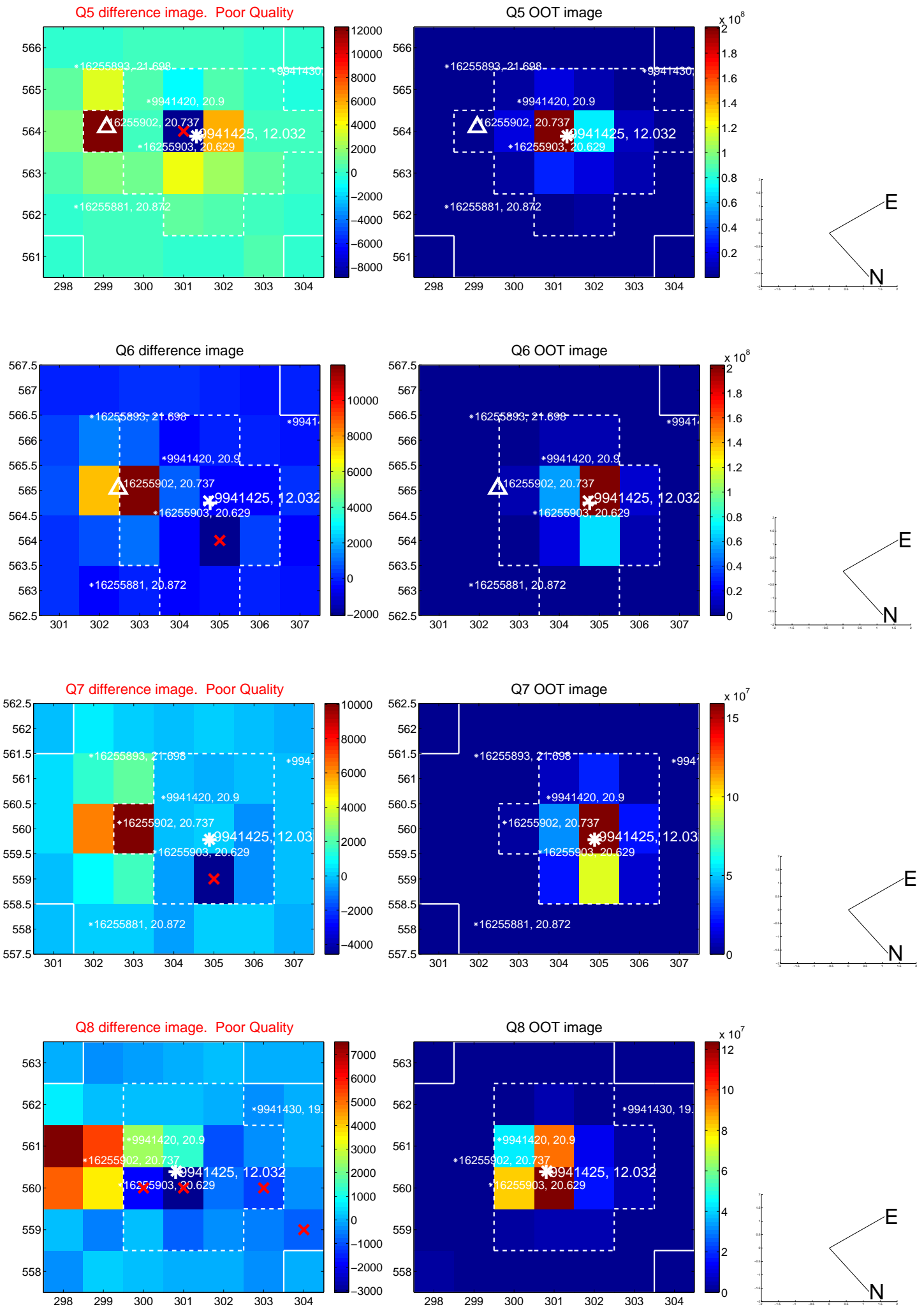


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

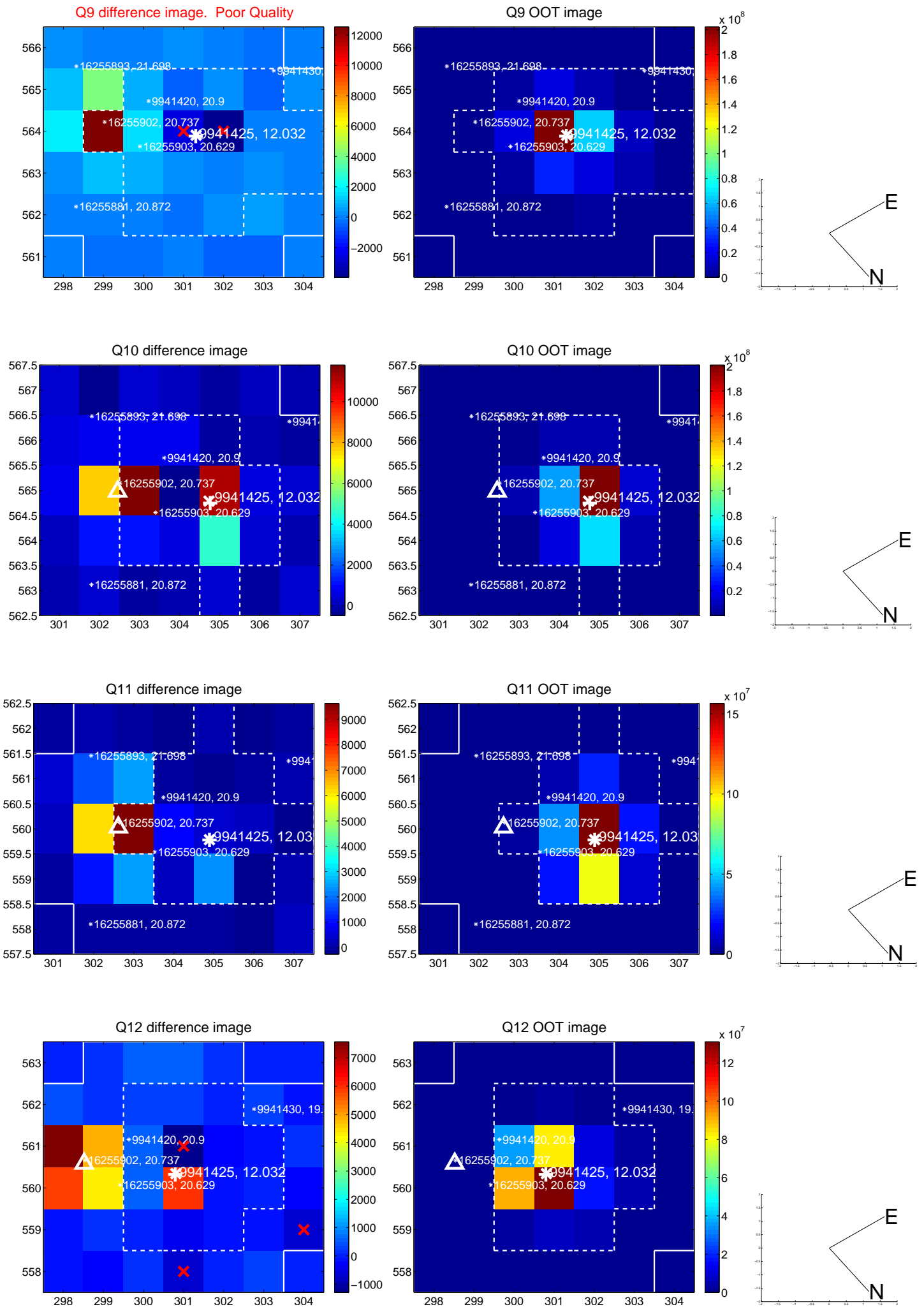
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



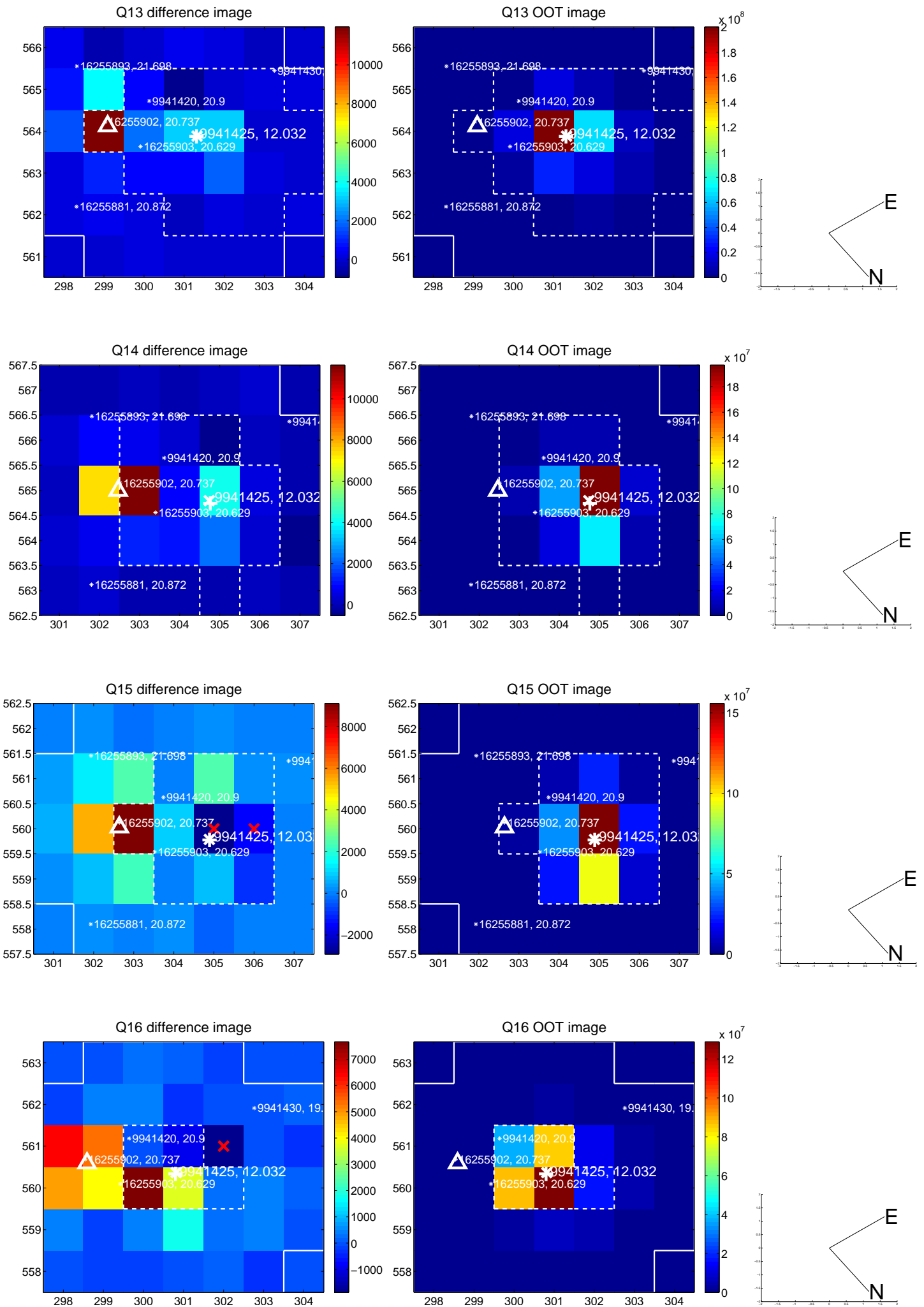
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white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

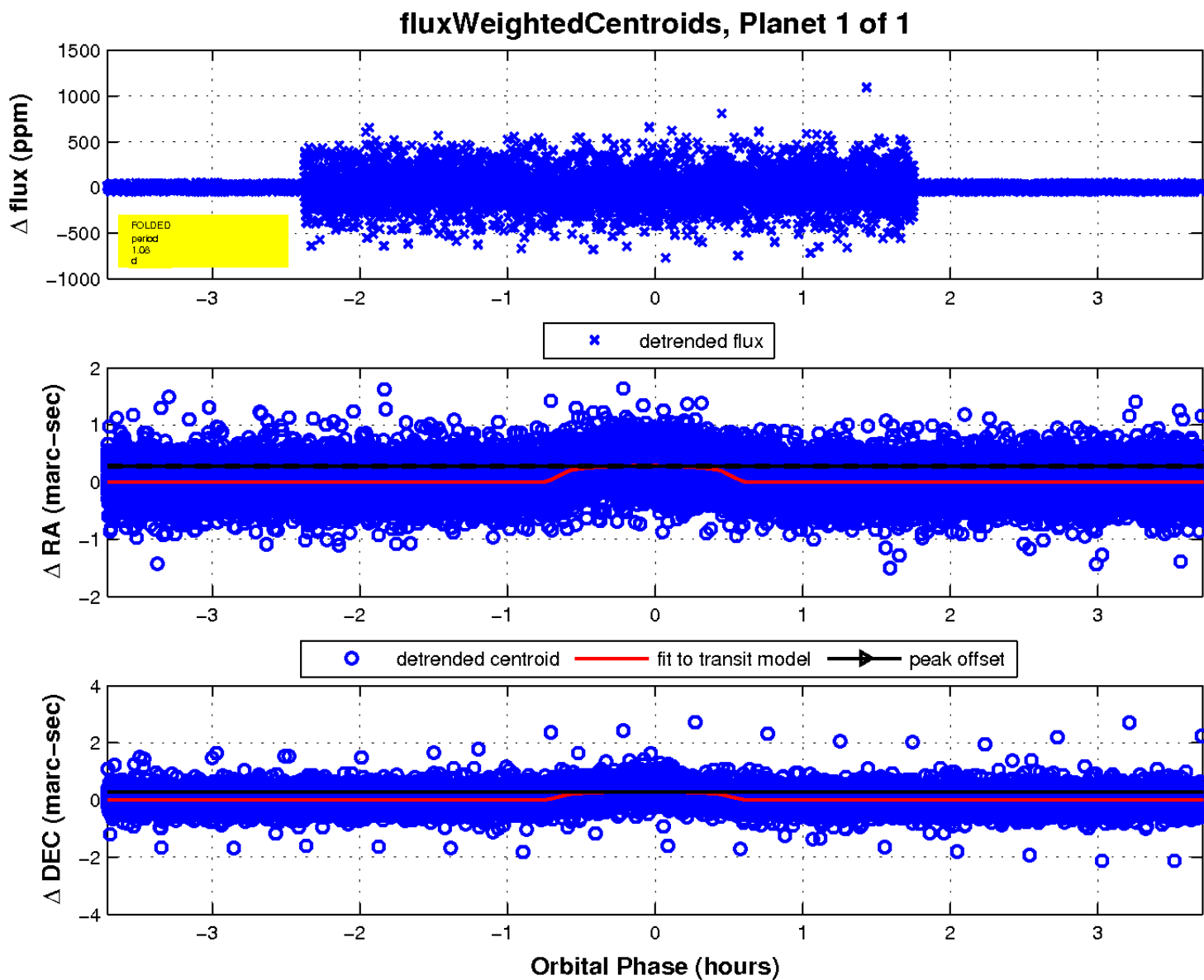
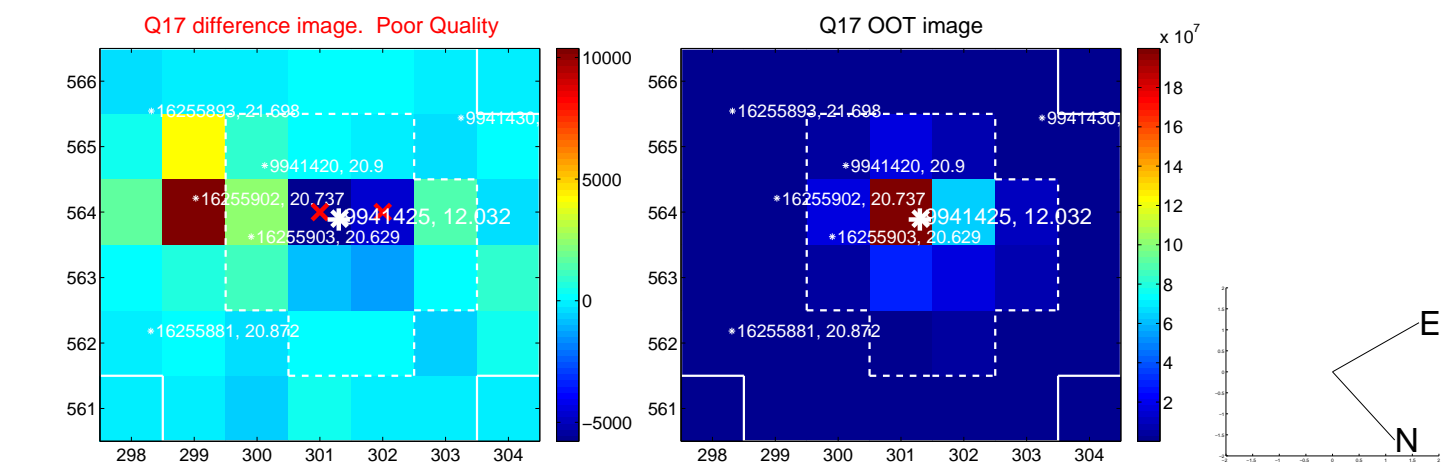


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

