

# KIC 007939761

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007939761-01	OBS	6934.01	22.254301	142.272215	75.2	13.000	8.1	8.5	2.39	5349	2.36	154.69

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007939761-01	OBS	PC	1.00	0	0	0	0	CENT_FEW_MEAS

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

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

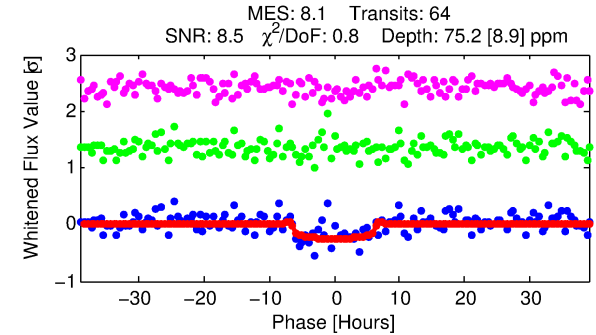
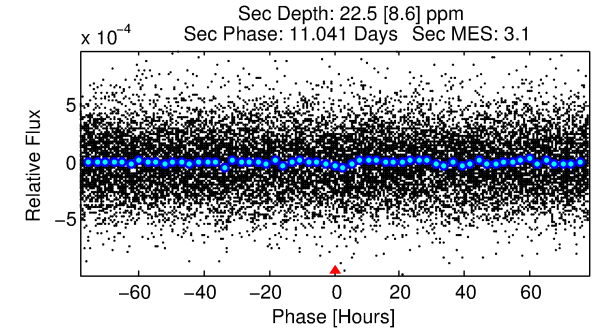
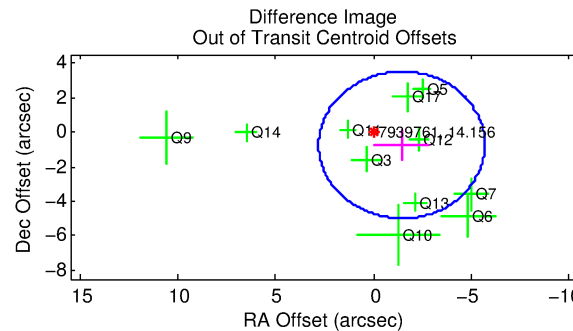
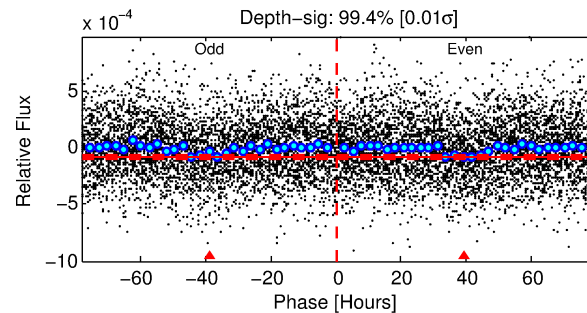
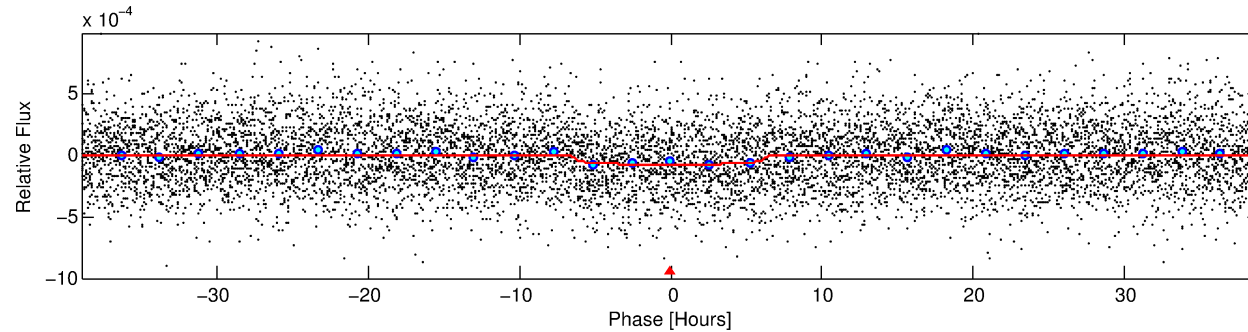
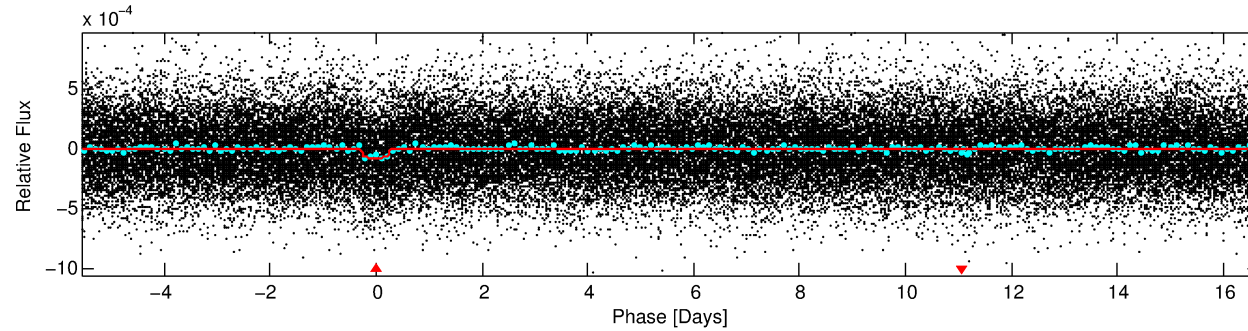
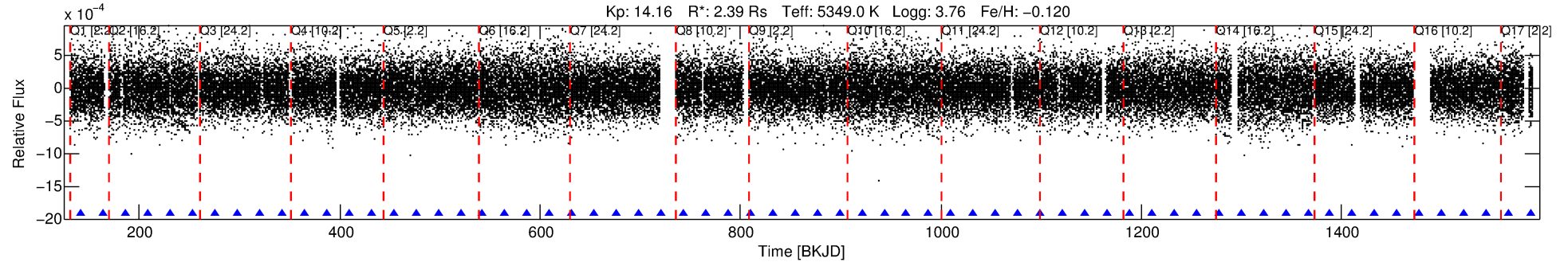
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007939761-01

No Significant Match Found

# DV One-Page Summary

KIC: 7939761 Candidate: 1 of 1 Period: 22.254 d  
KOI: K06934.01 Corr: 0.960



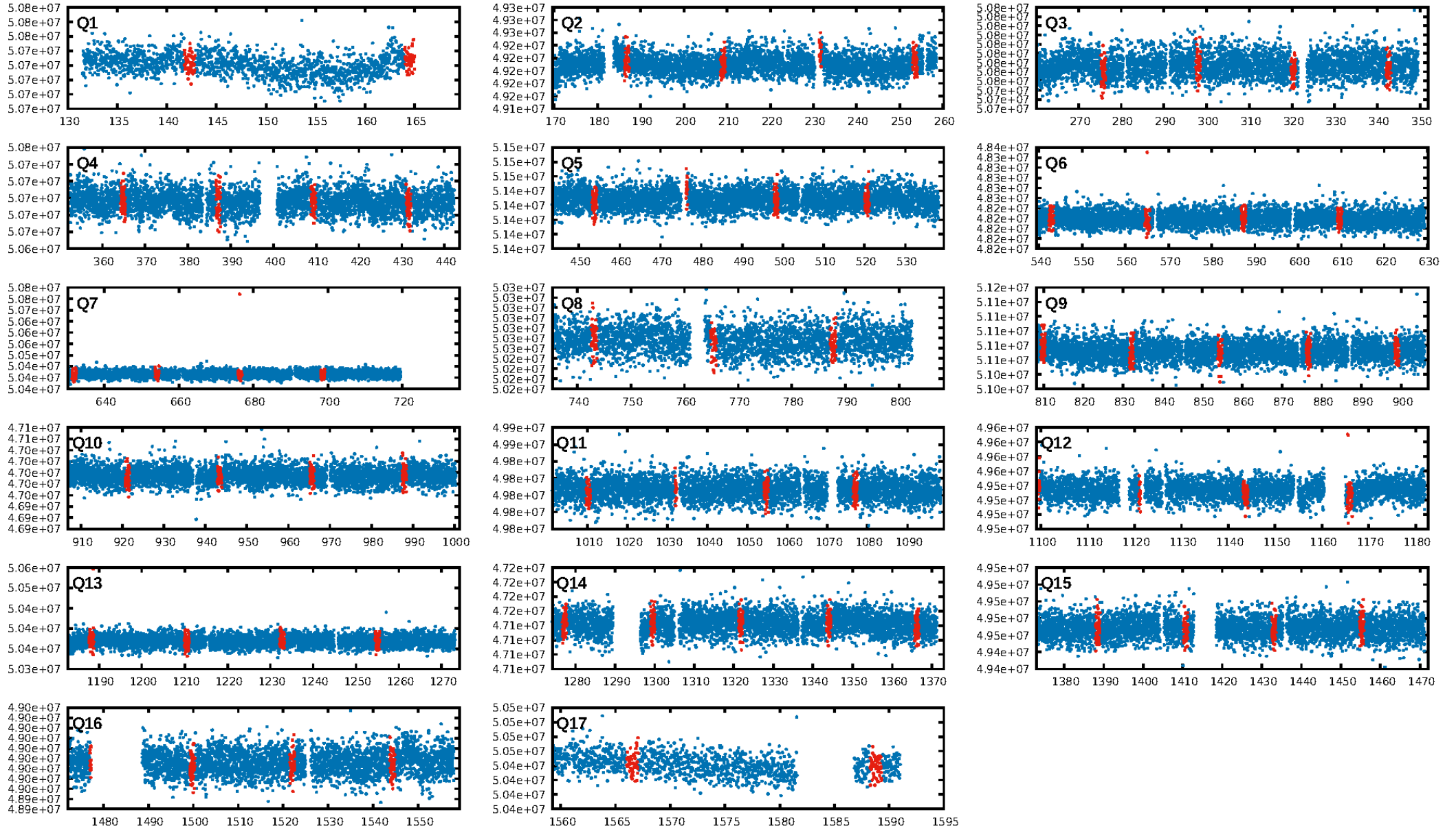
## DV Fit Results:

Period = 22.25430 [0.00058] d  
Epoch = 142.2722 [0.0221] BKJD  
Rp/R\* = 0.0090 [0.0036]  
a/R\* = 7.42 [12.13]  
b = 0.84 [0.60]  
Seff = 154.69 [185.94]  
Teq = 899 [270] K  
Rp = 2.36 [1.77] Re  
a = 0.1644 [0.1153] AU  
Ag = 60.22 [89.28] [0.66 $\sigma$ ]  
Teffp = 3873 [861] K [3.29 $\sigma$ ]

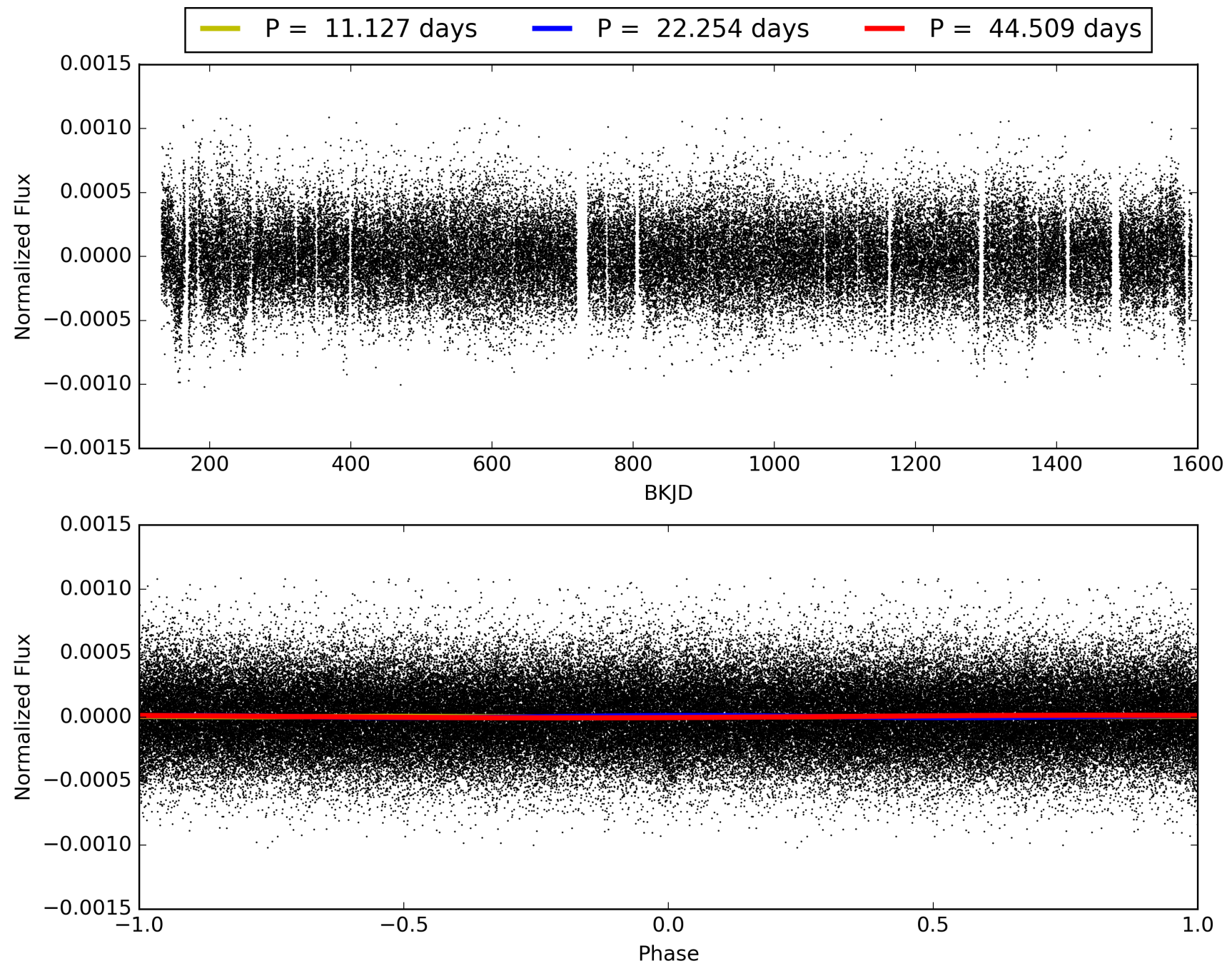
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 99.2%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.10e-16  
RollingBand-fgt: 1.00 [60/60]  
GhostDiagnostic-chr: 3.546  
Centroid-sig: 7.8%  
Centroid-so: 2.744 arcsec [1.66 $\sigma$ ]  
OotOffset-rm: 1.623 arcsec [1.15 $\sigma$ ]  
OotOffset-st: 3/3/1/4 [11]  
KicOffset-rm: 1.762 arcsec [1.25 $\sigma$ ]  
KicOffset-st: 3/3/1/4 [11]  
DiffImageQuality-fgm: 0.36 [4/11]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 007939761-01, PDC Light Curves

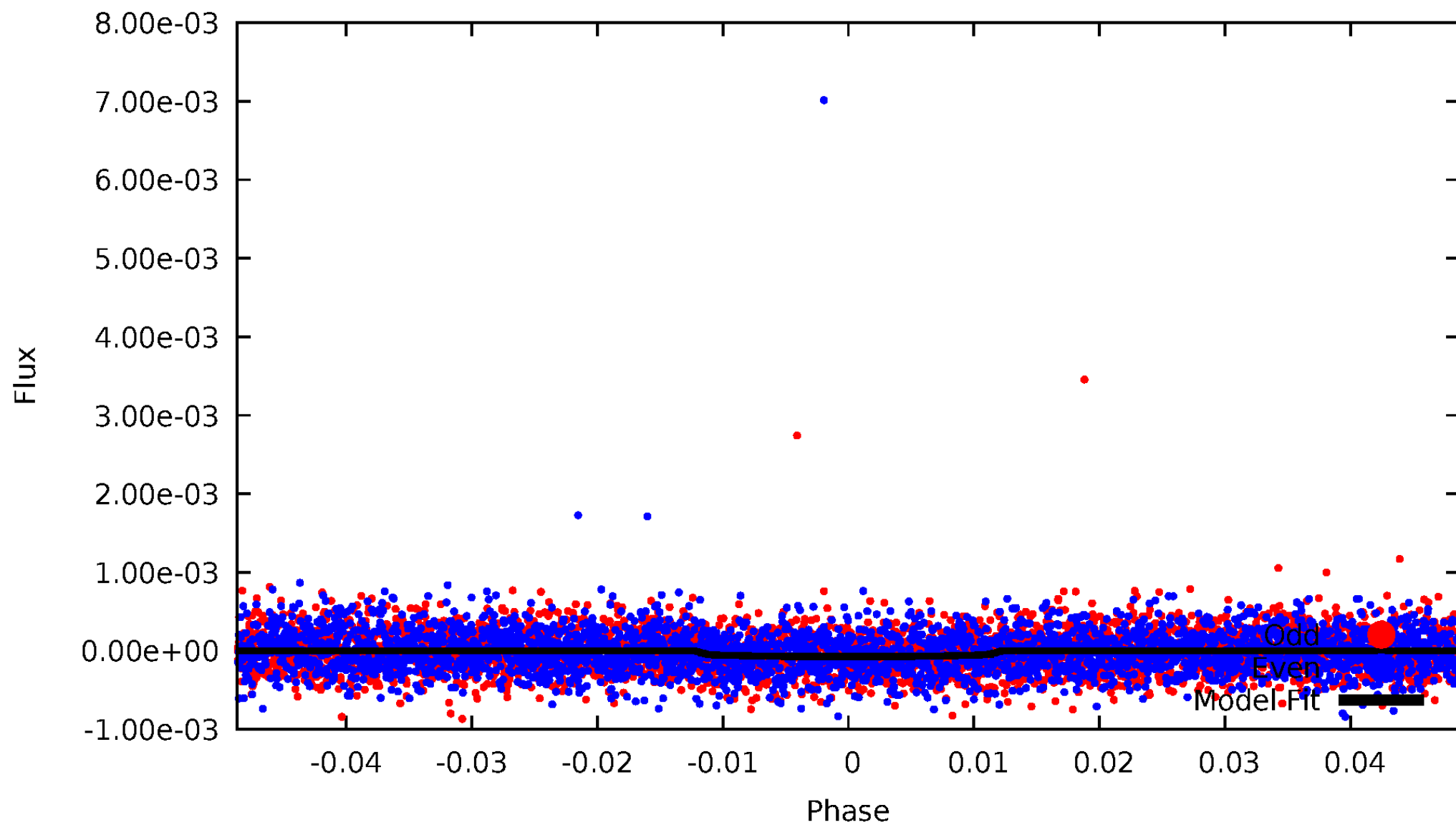


TCE 007939761-01



# DV Odd/Even

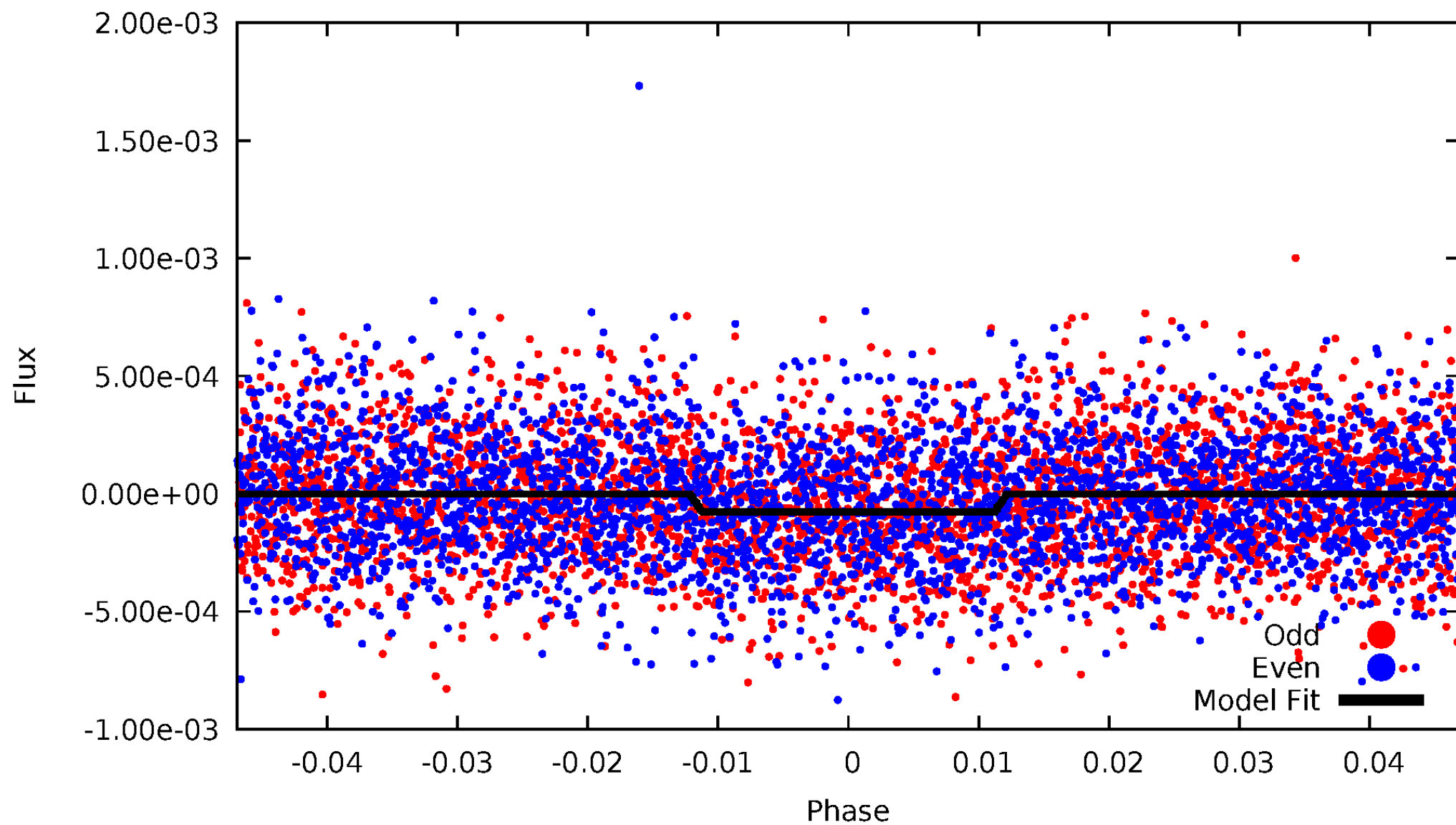
TCE 007939761-01



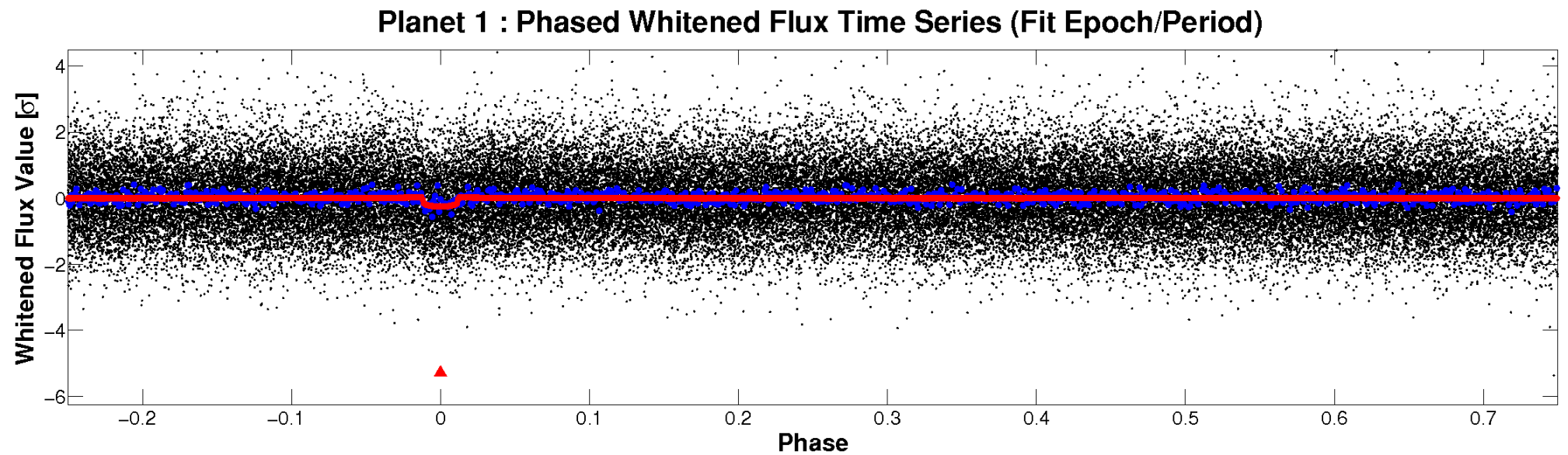
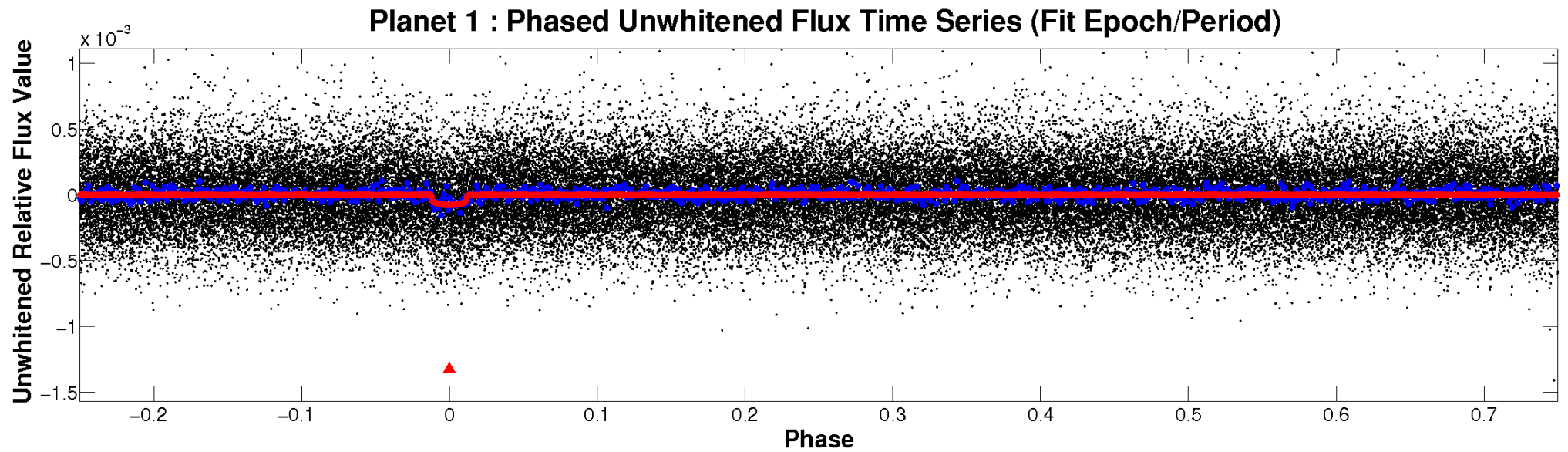


# ALT Odd/Even

TCE 007939761-01

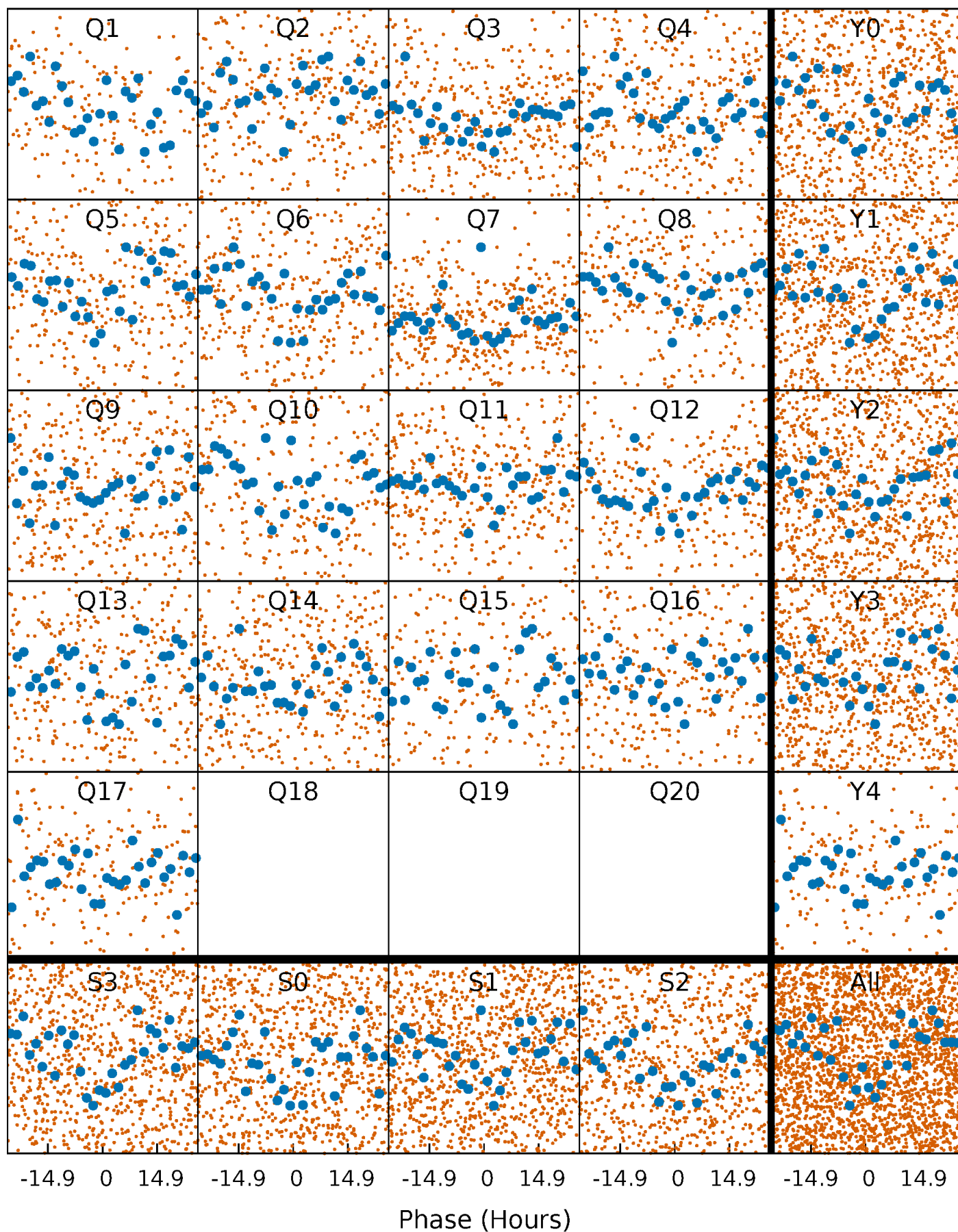


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

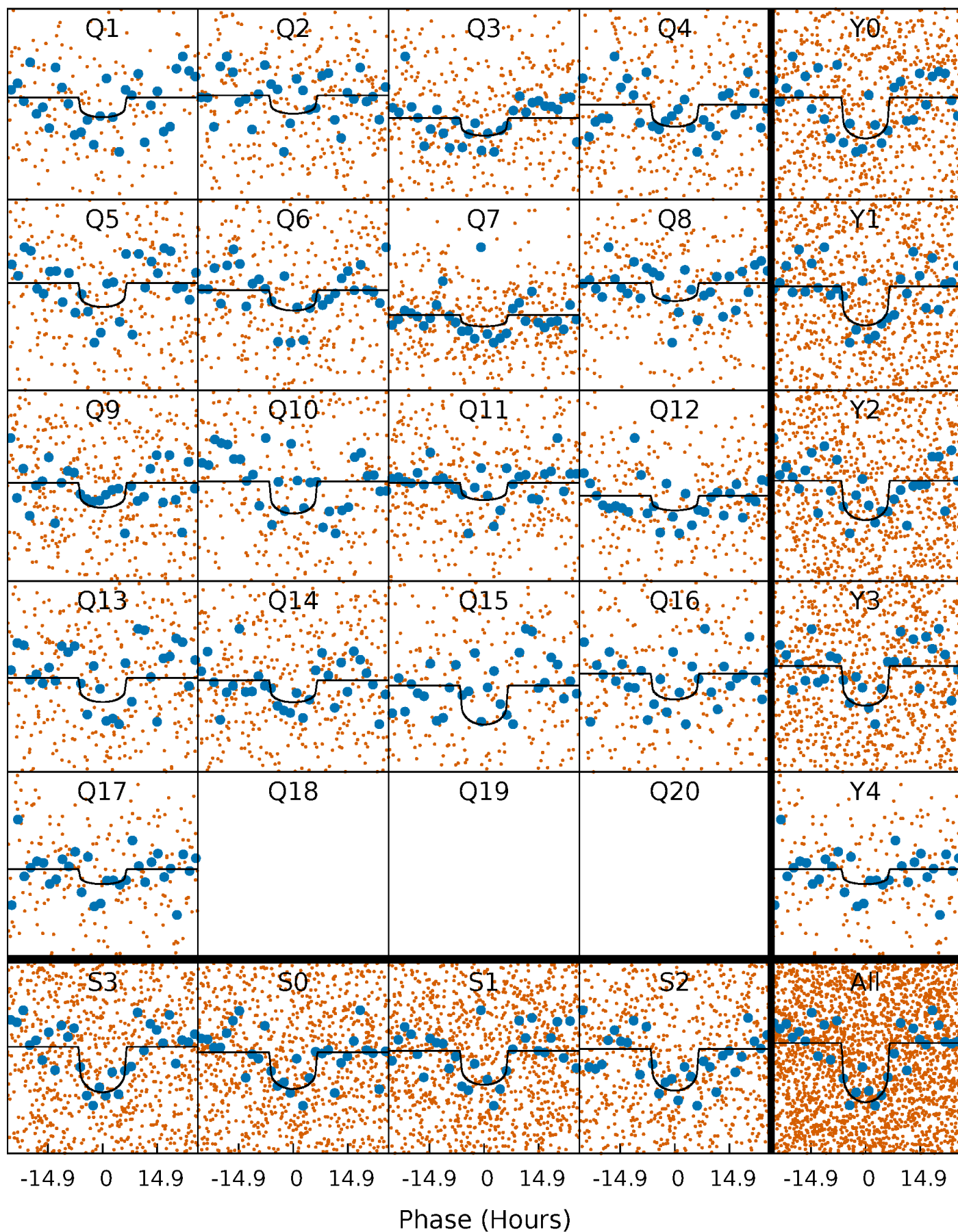
TCE 007939761-01 P= 22.254301 Days  $T_0=142.272215$  (BKJD)





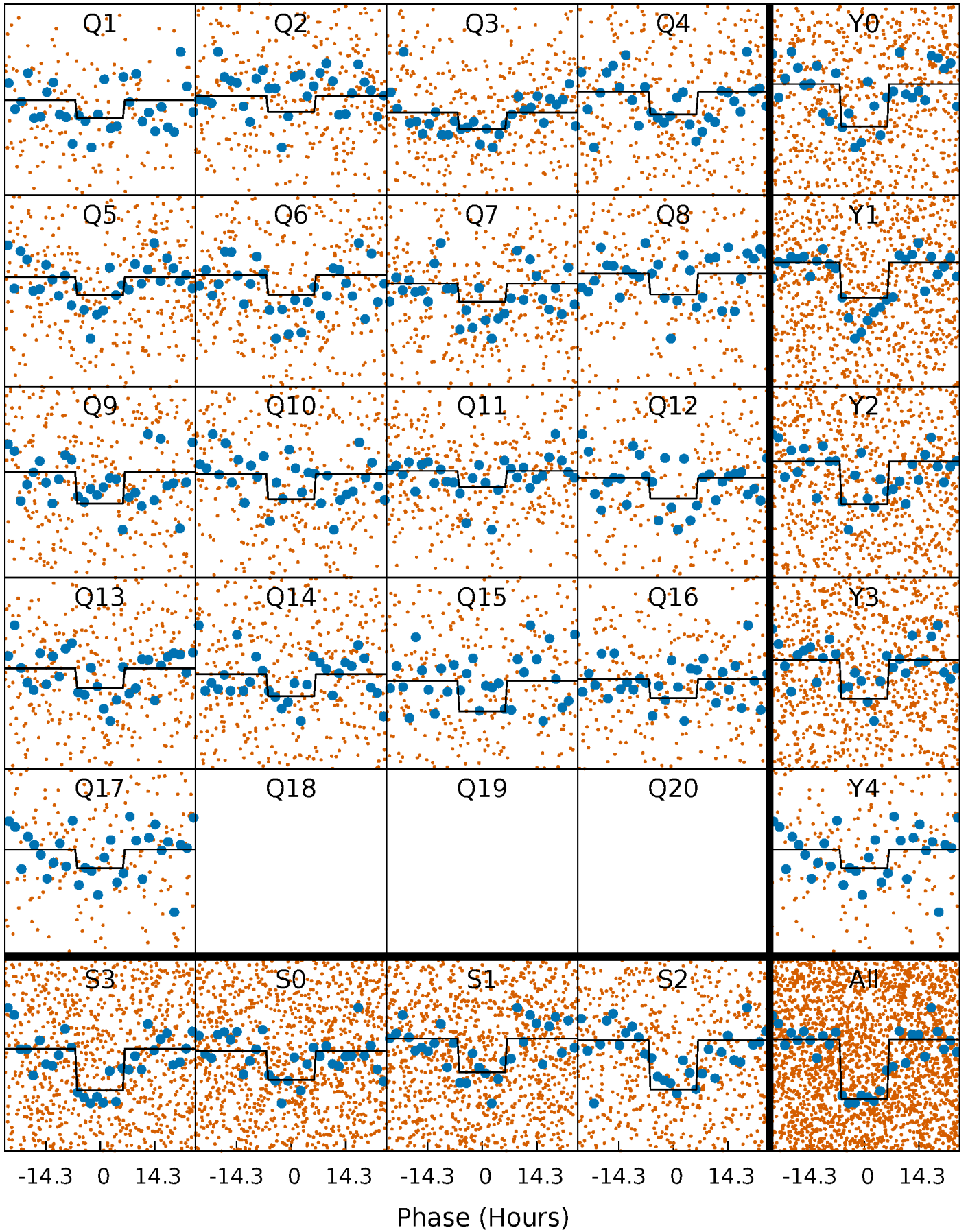
# DV Quarter-Phased Transit Curves

TCE 007939761-01 P= 22.254301 Days  $T_0=142.272215$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

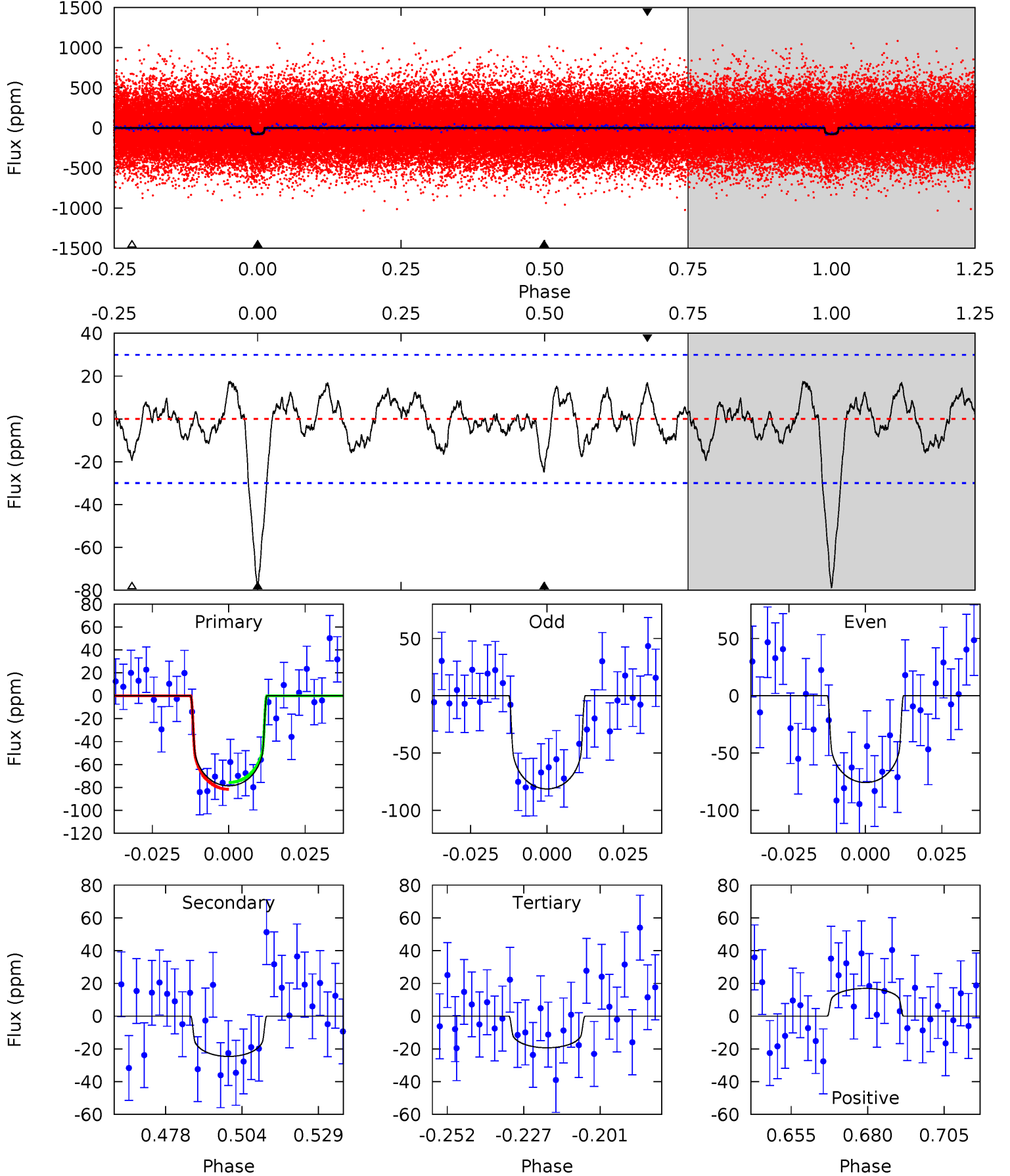
TCE 007939761-01 P= 22.254375 Days  $T_0=142.269560$  (BKJD)



# DV Model-Shift Uniqueness Test

007939761-01,  $P = 22.254301$  Days,  $E = 120.017914$  Days

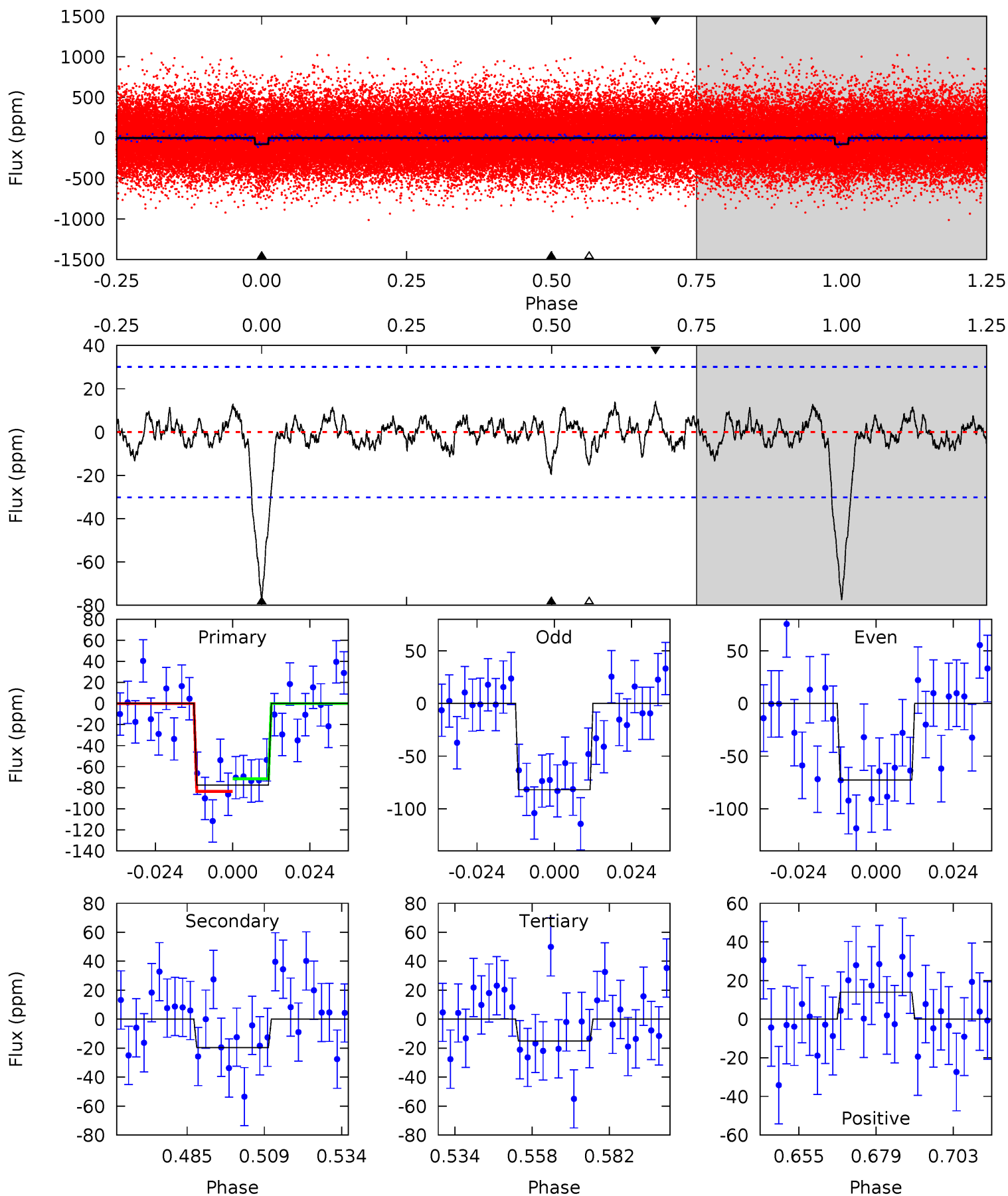
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.7	3.99	3.13	2.74	4.85	2.24	1.24	9.61	10.0	0.86	1.25	0.45	0.95	0.18	0.48



# Alt Model-Shift Uniqueness Test

007939761-01, P = 22.254375 Days, E = 120.015185 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
12.5	3.15	2.43	2.25	4.85	2.25	0.80	10.1	10.2	0.73	0.90	0.75	0.99	0.15	0.98



### Stellar Parameters For KIC 007939761

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5349^{+185}_{-148}$	$3.760^{+0.727}_{-0.242}$	$-0.120^{+0.350}_{-0.250}$	$2.388^{+0.819}_{-1.521}$	$1.197^{+0.177}_{-0.353}$	$0.124^{+1.763}_{-0.077}$
	+3%/-3%	+19%/-6%	+292%/-208%	+34%/-64%	+15%/-29%	+1424%/-62%
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 007939761-01 / KOI 6934.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-25 \pm 6$	$2.10^{+1.13}_{-0.99}$	$1247^{+143}_{-203}$	$4207^{+1014}_{-539}$	$78^{+208}_{-46}$
Alt.	$-20 \pm 6$	$2.15^{+1.13}_{-1.14}$	$1247^{+136}_{-224}$	$4044^{+957}_{-517}$	$63^{+209}_{-37}$

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



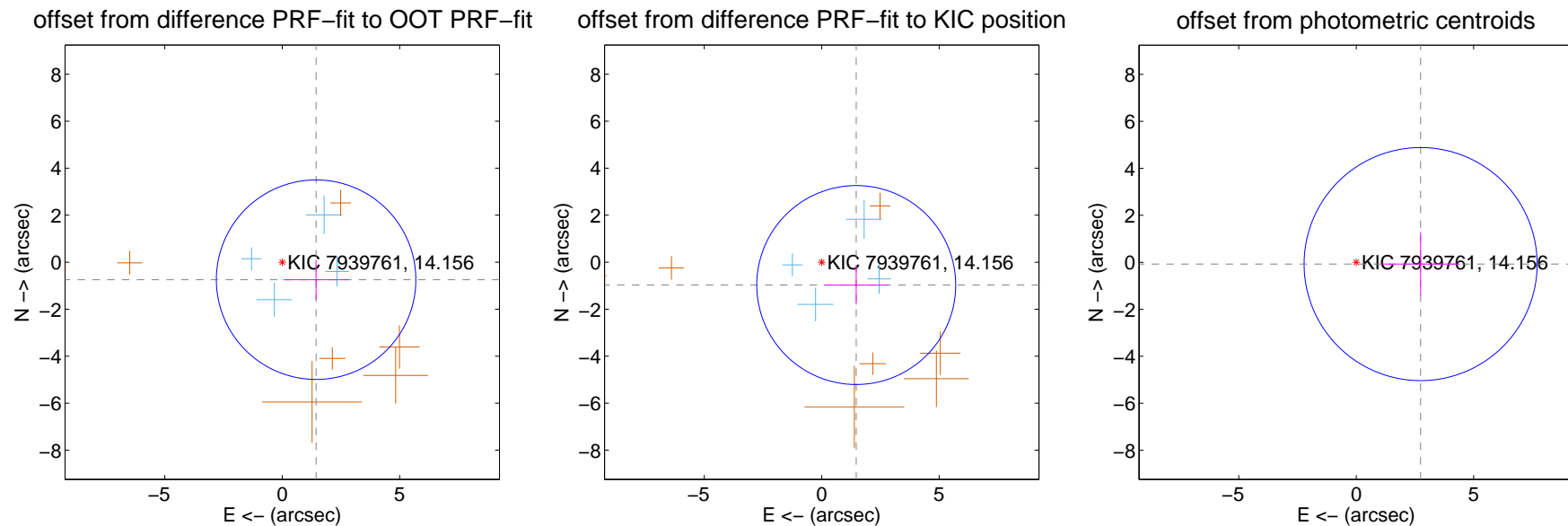
## DV Centroid Data

Supplemental centroid analysis for 007939761-01. Kepler magnitude: 14.16. Transit SNR 8.45

There are 4 quarters with good PRF difference image offsets

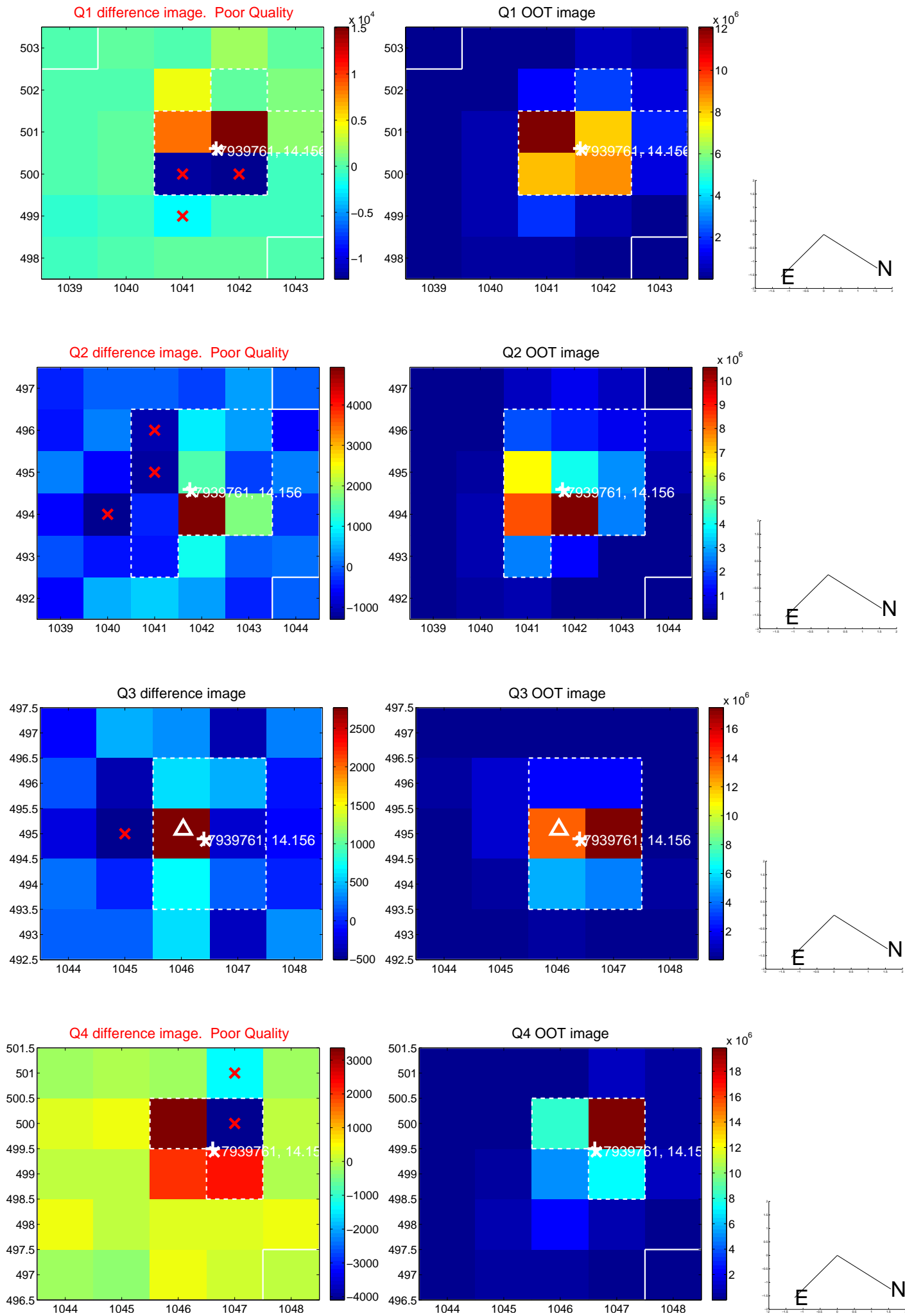
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.623 \pm 1.415$	1.15	$-1.442 \pm 1.390$	$-0.745 \pm 0.837$
PRF-fit source offset from KIC position	$1.762 \pm 1.411$	1.25	$-1.469 \pm 1.360$	$-0.973 \pm 0.829$
photometric centroid source offset	$2.74 \pm 1.65$	1.66	$-2.74 \pm 1.65$	$-0.08 \pm 1.35$

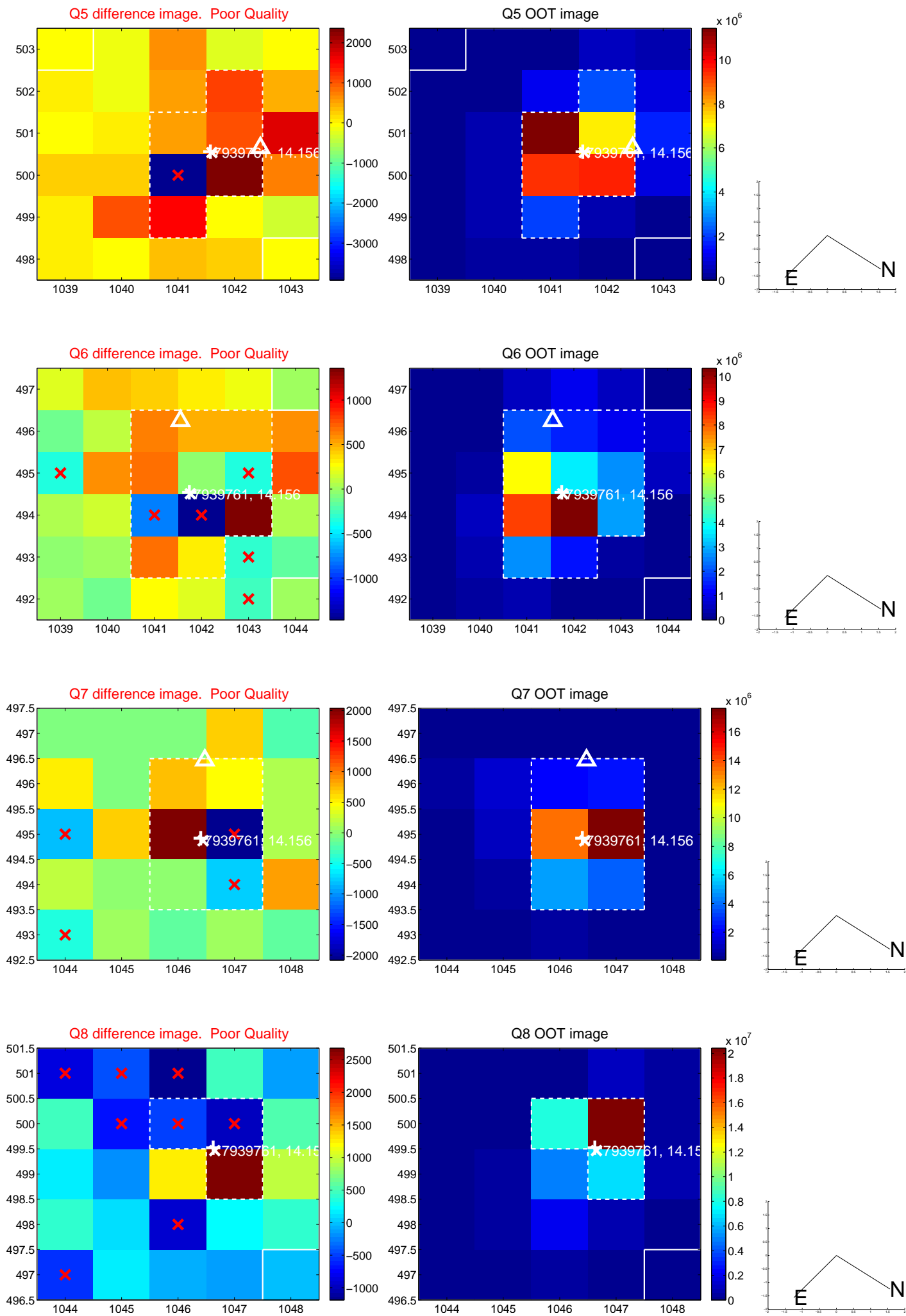


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

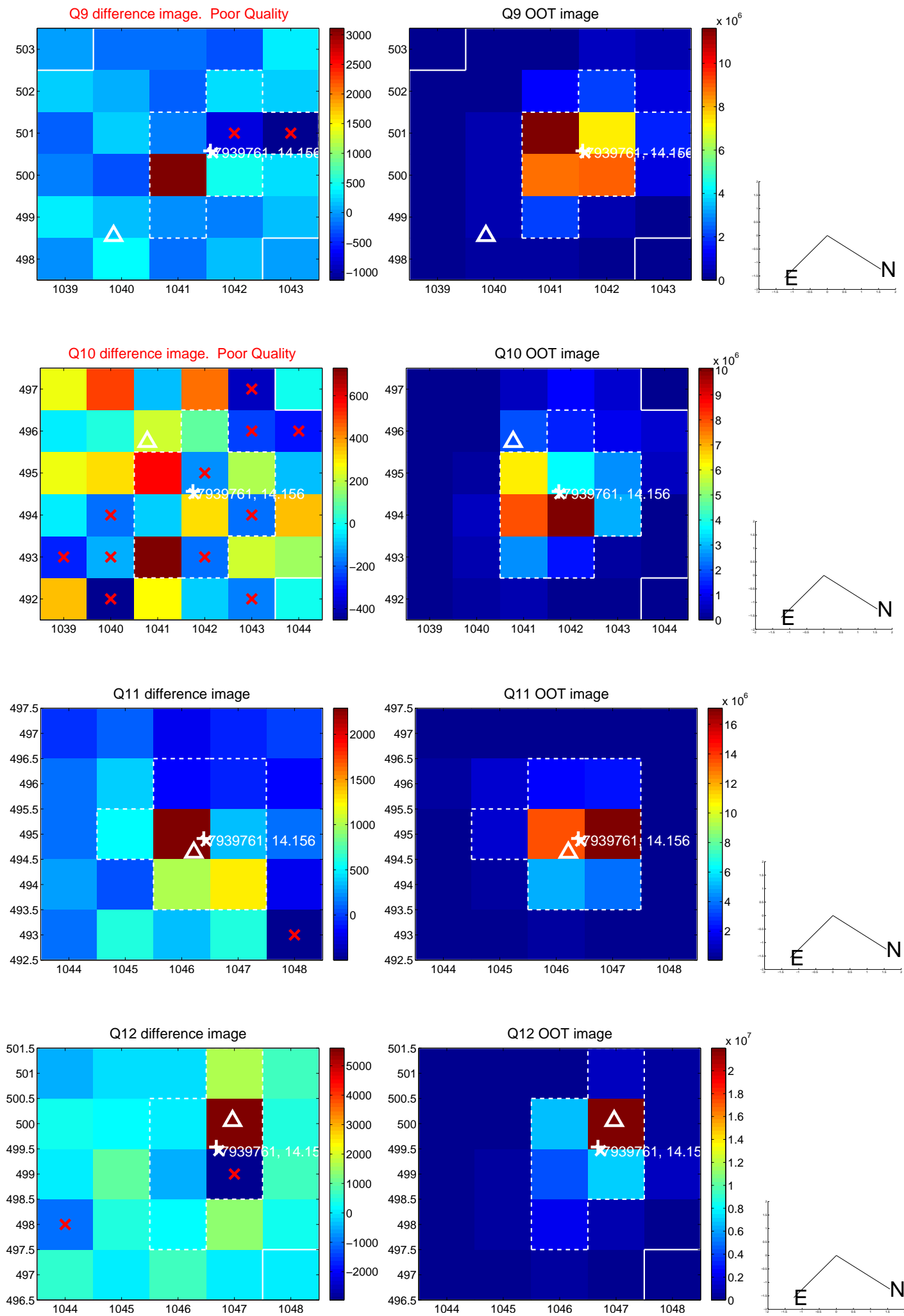
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



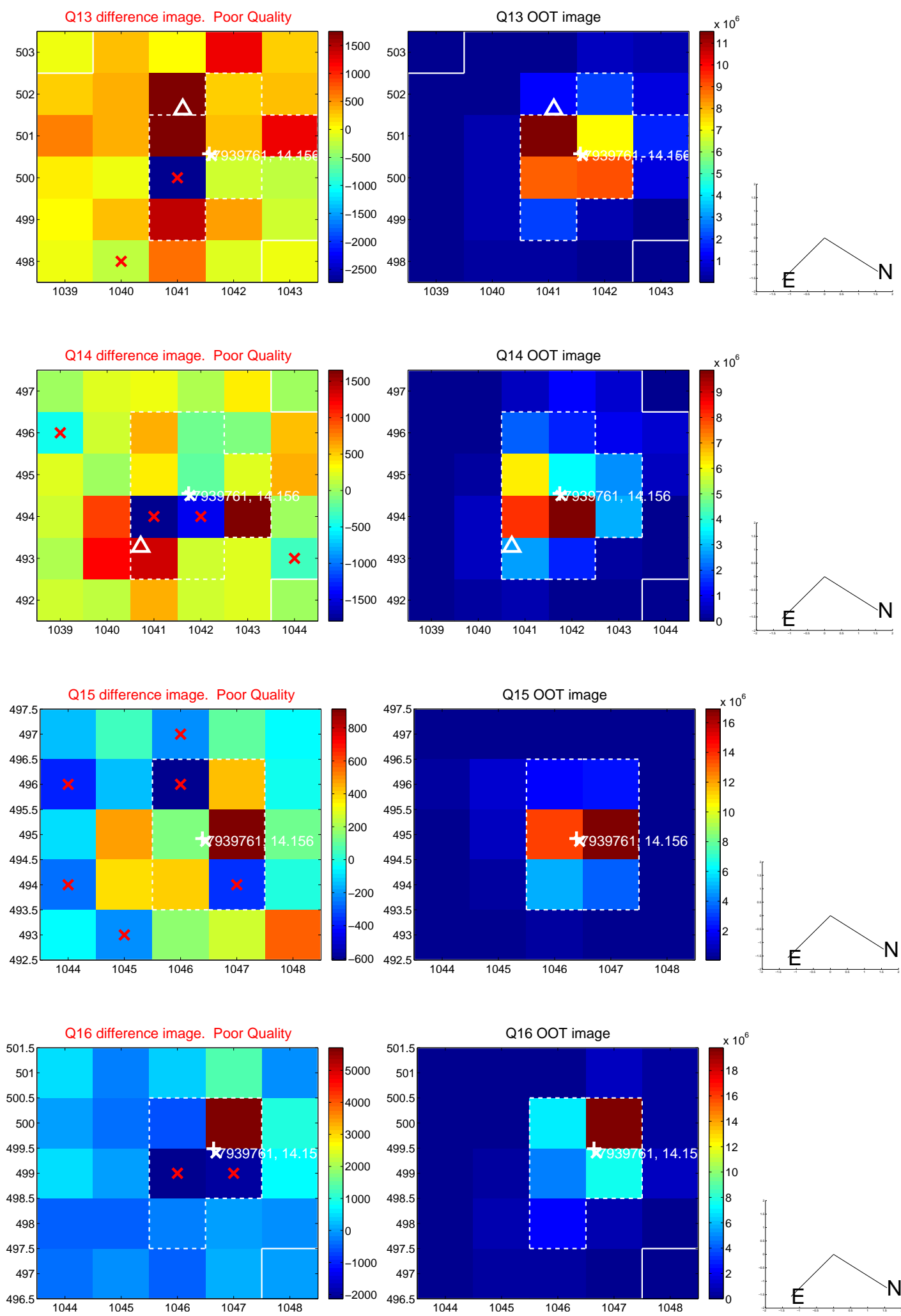
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

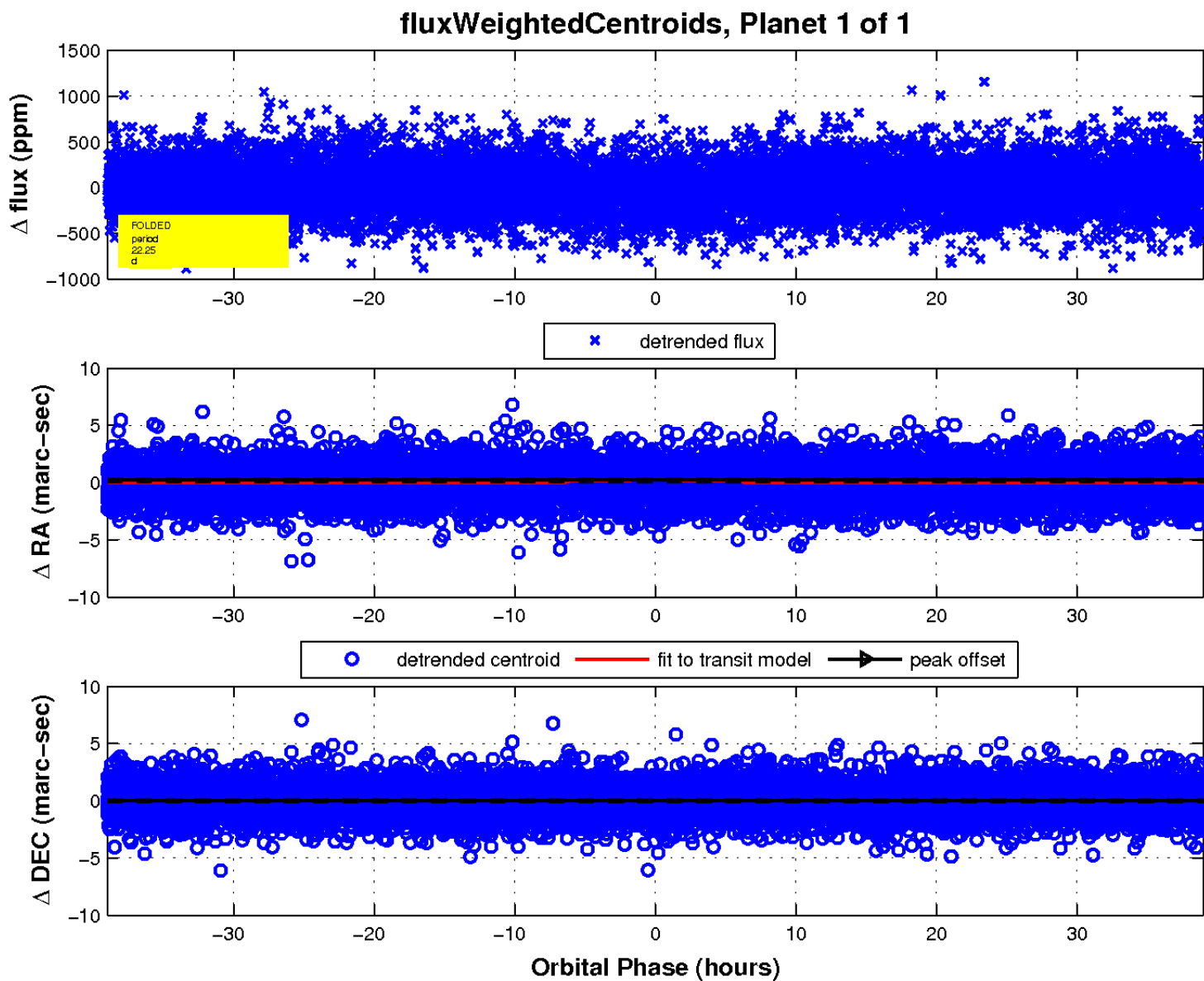
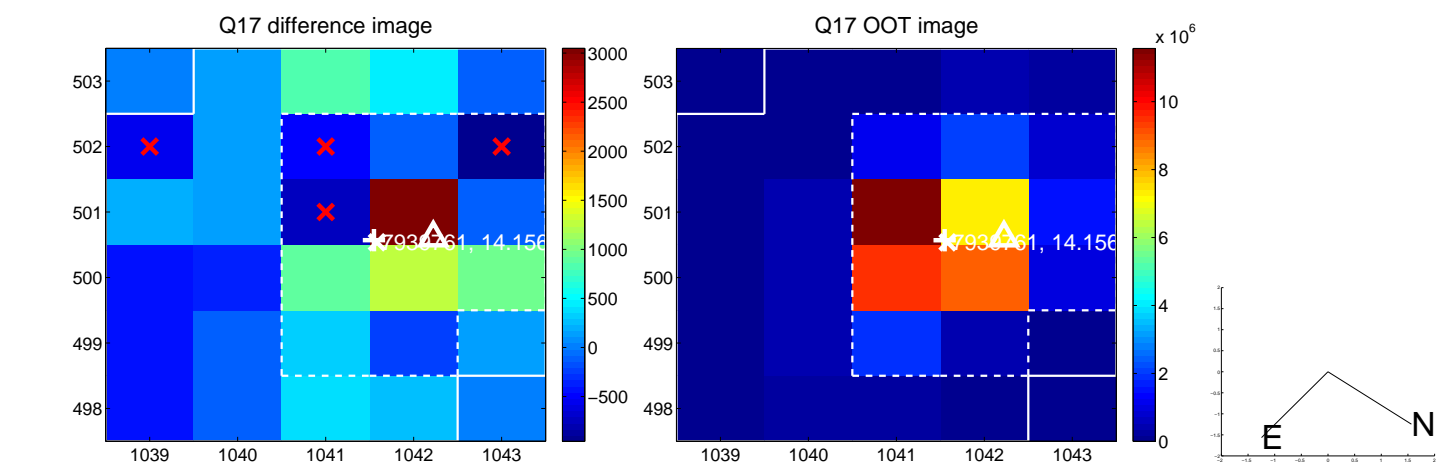


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



# UKIRT Image

Declination

