

# KIC 009541089

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009541089-01	OBS	4182.01	0.536762	131.777810	0.0	2.721	13.1	0.0	0.88	5819	0.00	5182.78

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009541089-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—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.

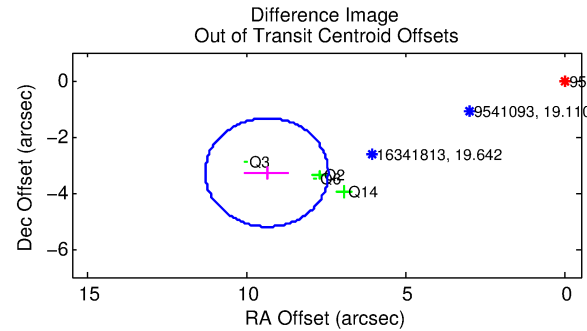
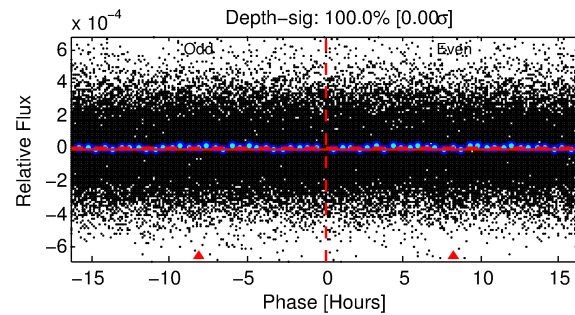
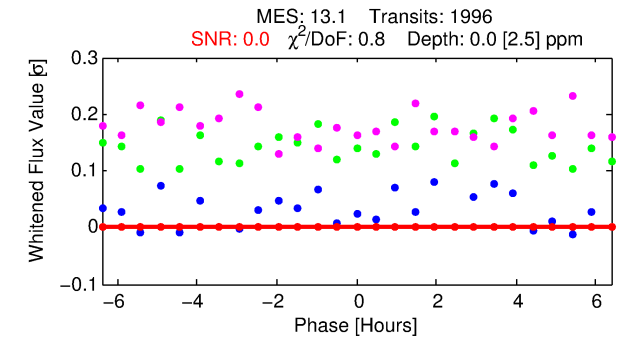
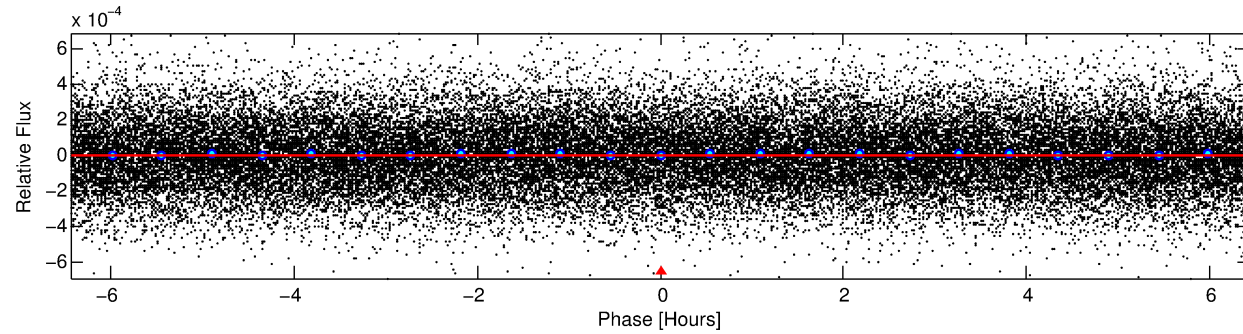
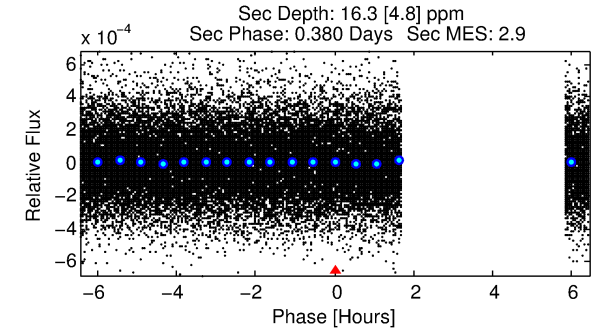
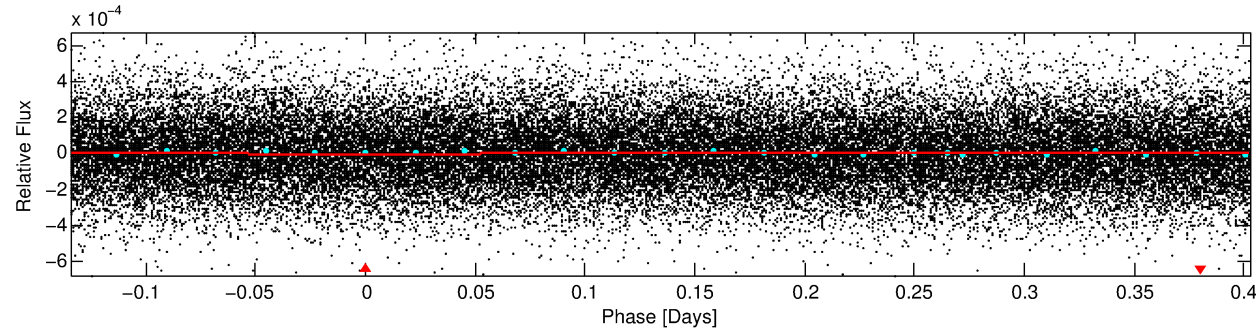
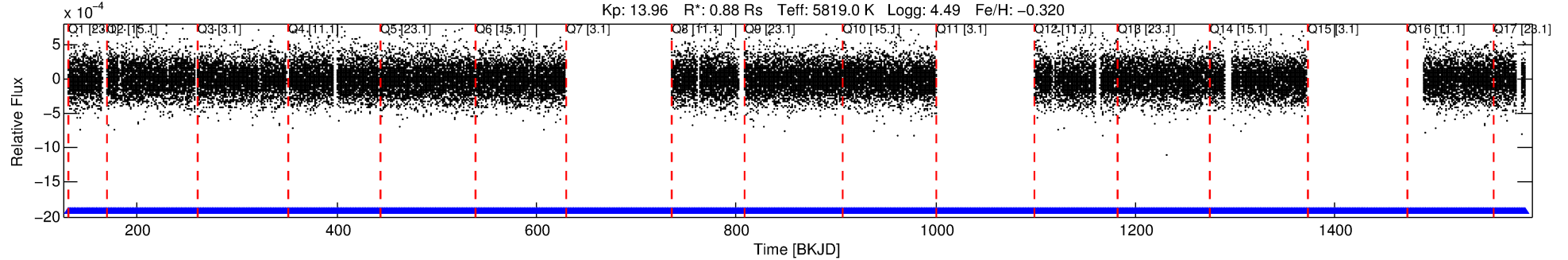
## Ephemeris Match Information For 009541089-01

No Significant Match Found

# DV One-Page Summary

KIC: 9541089 Candidate: 1 of 1 Period: 0.537 d  
KOI: K04182 Corr: No Ephemeris Match

Kp: 13.96 R\*: 0.88 Rs Teff: 5819.0 K Logg: 4.49 Fe/H: -0.320



## DV Fit Results:

Period = 0.53676 [0.54216] d  
Epoch = 131.7778 [190.1906] BKJD  
Rp/R\* = 0.0000 [0.0602]  
a/R\* = 1.60 [478.71]  
b = 0.22 [2737.58]  
Seff = 5182.78 [7219.67]  
Teq = 2164 [753] K  
Rp = 0.00 [5.79] Re  
a = 0.0124 [0.0088] AU  
Ag = 466528.41 [3137171571.40] [0.00σ]  
Teffp = 87423 [146988010] K [0.00σ]

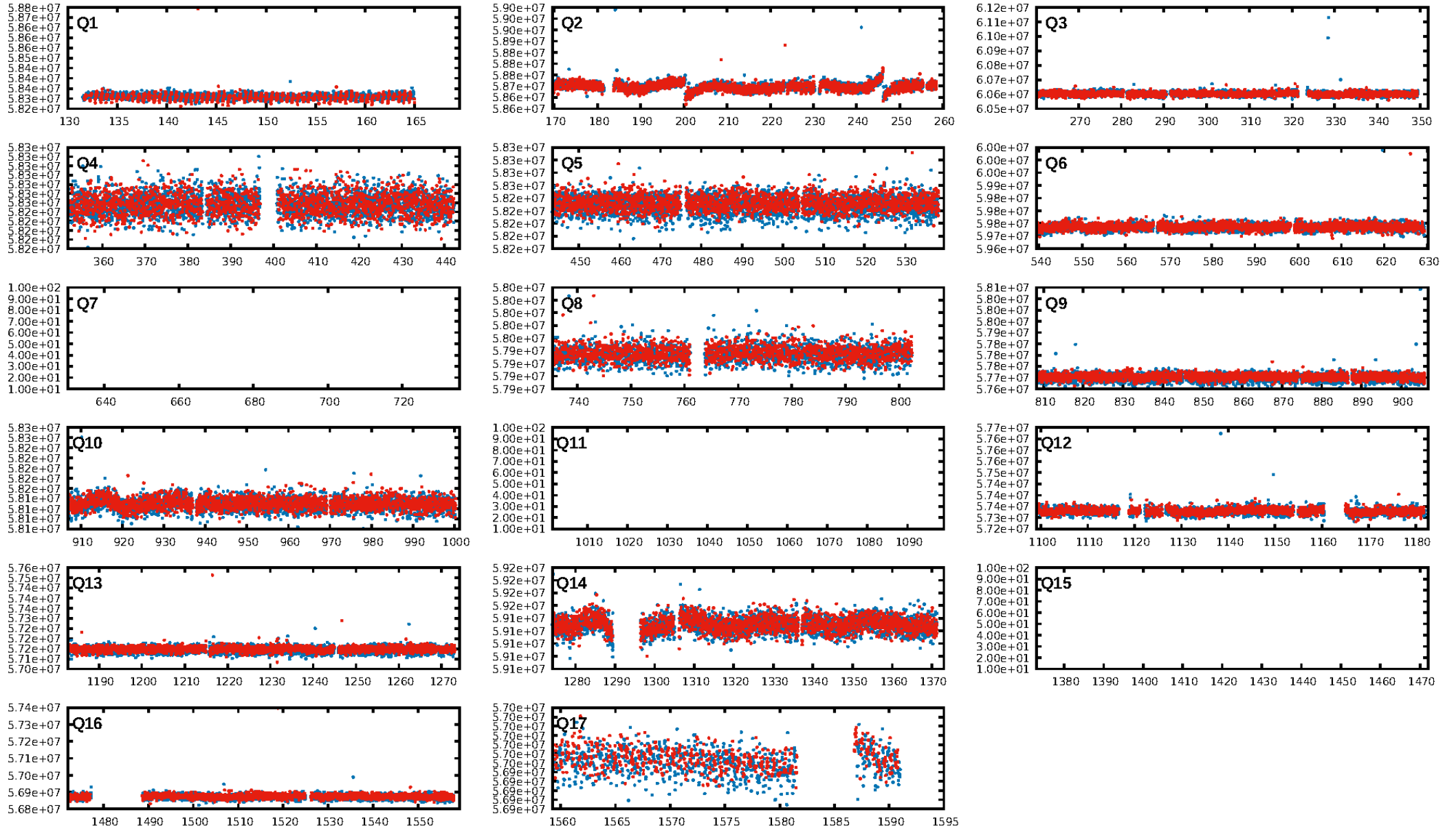
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 6.70e-32  
RollingBand-fgt: 1.00 [1884/1884]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 9.929 arcsec [15.41σ]  
KicOffset-rm: 9.973 arcsec [15.49σ]  
OotOffset-st: 3/1/0/0 [4]  
KicOffset-st: 3/1/0/0 [4]  
DiffImageQuality-fgm: 0.00 [0/4]  
DiffImageOverlap-fno: 1.00 [14/14]

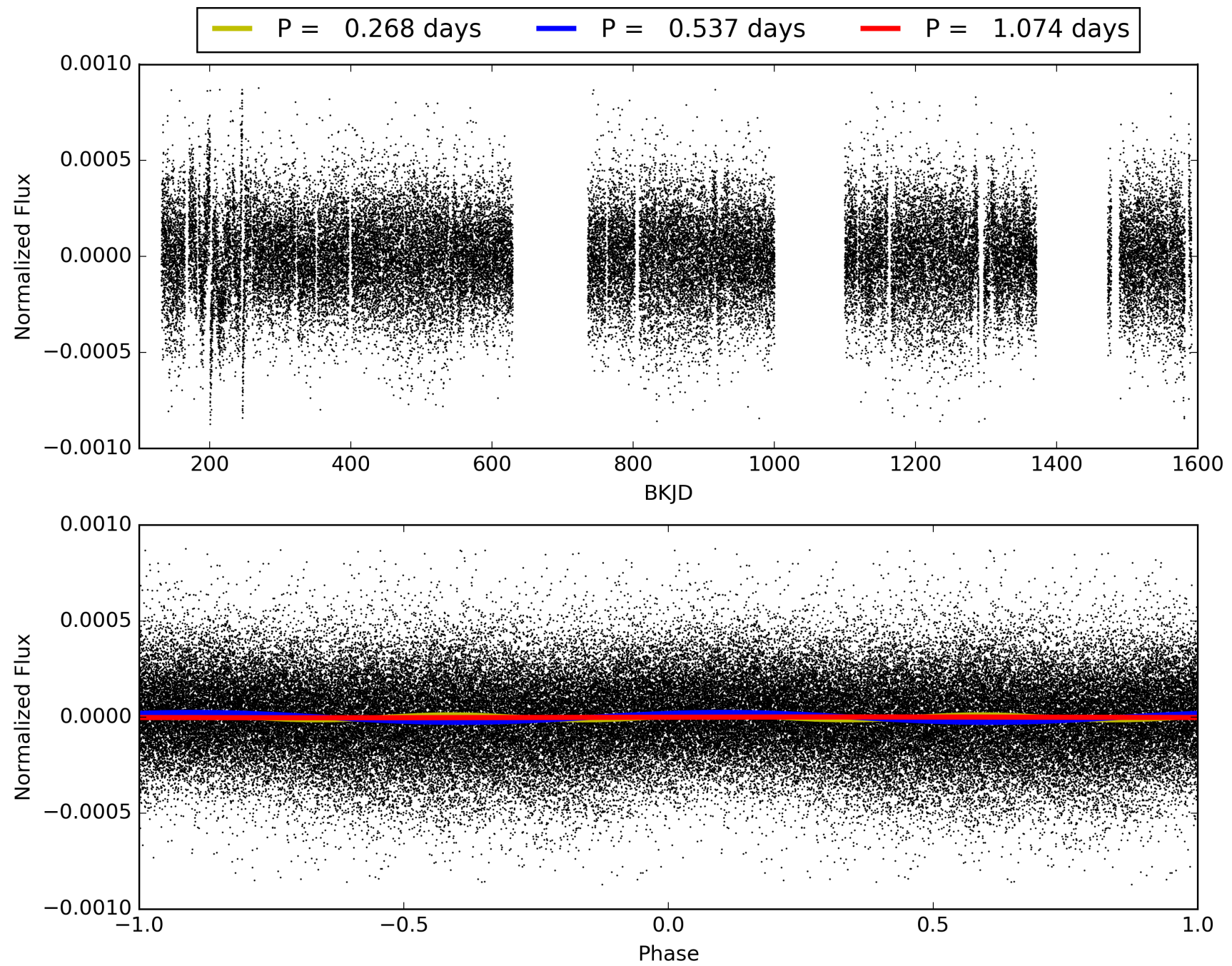
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 13:54:52 Z

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

# TCE 009541089-01, PDC Light Curves

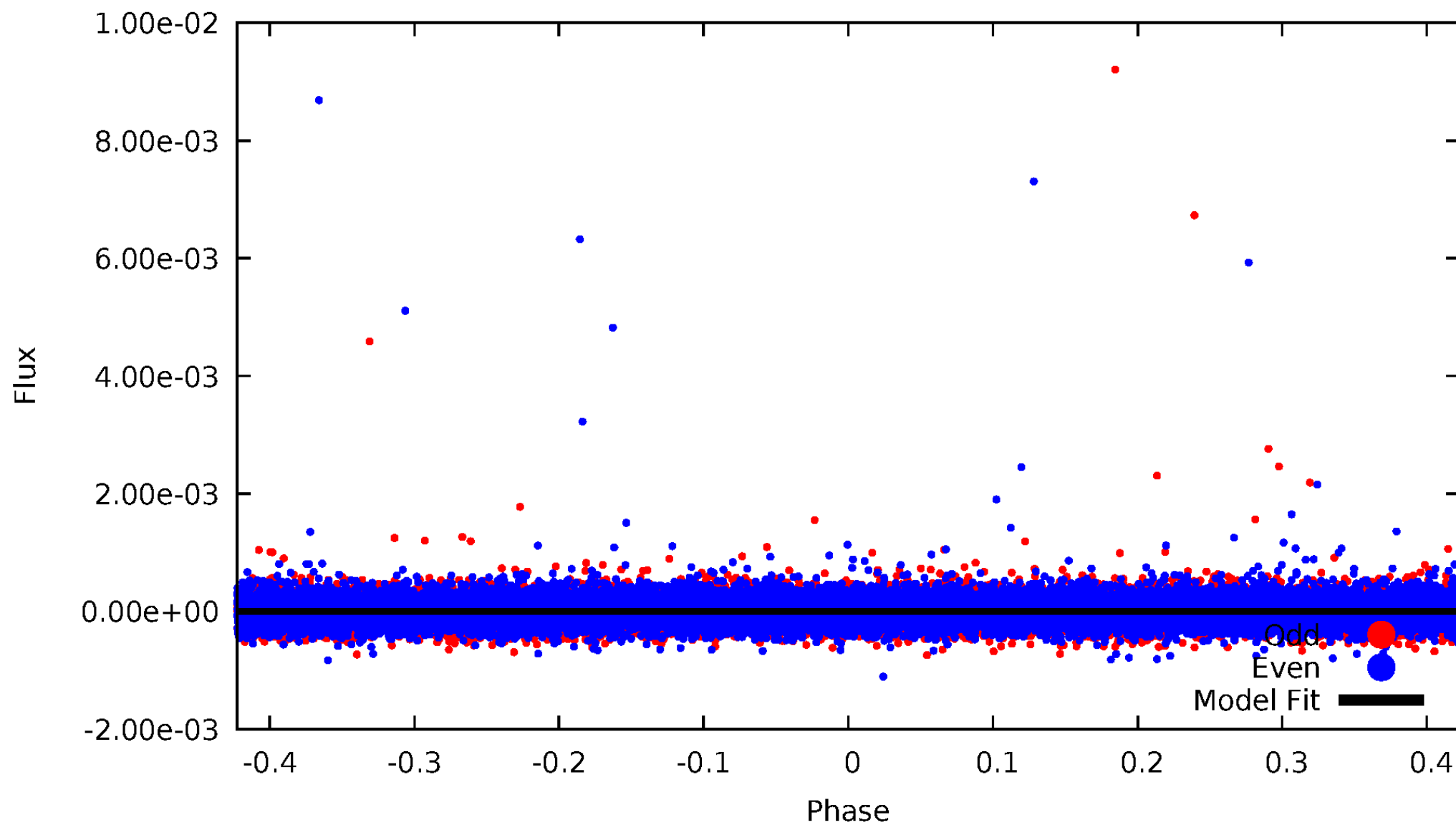


TCE 009541089-01



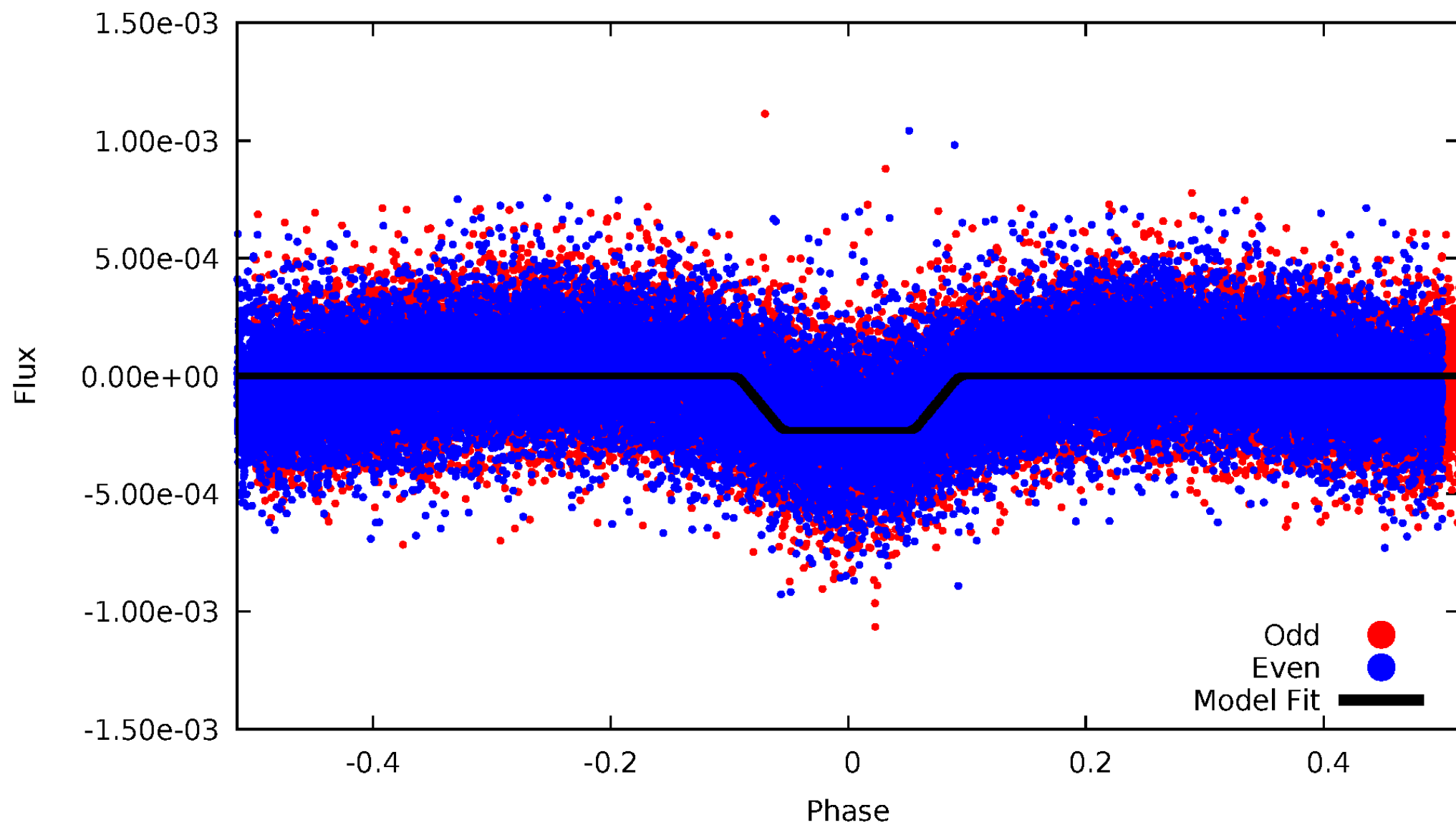
# DV Odd/Even

TCE 009541089-01



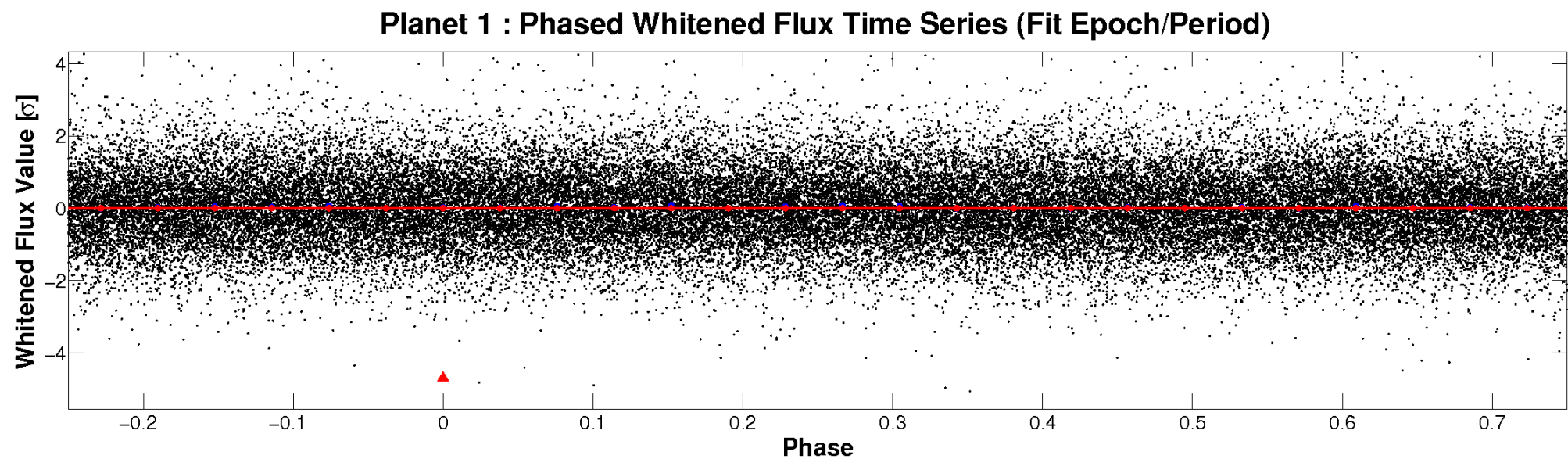
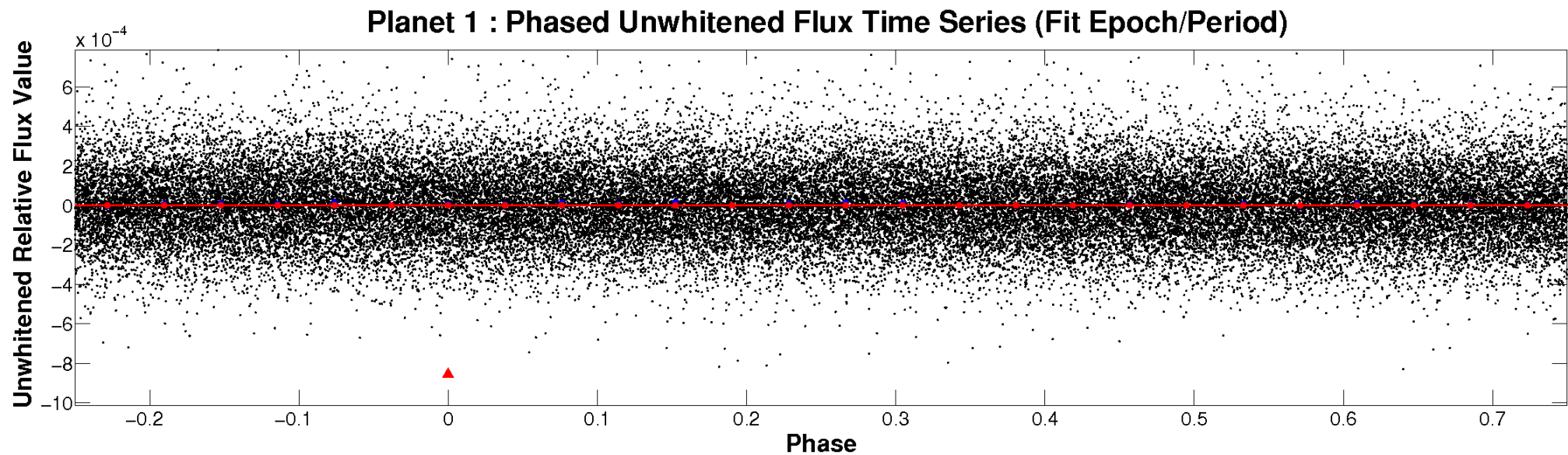
# ALT Odd/Even

TCE 009541089-01



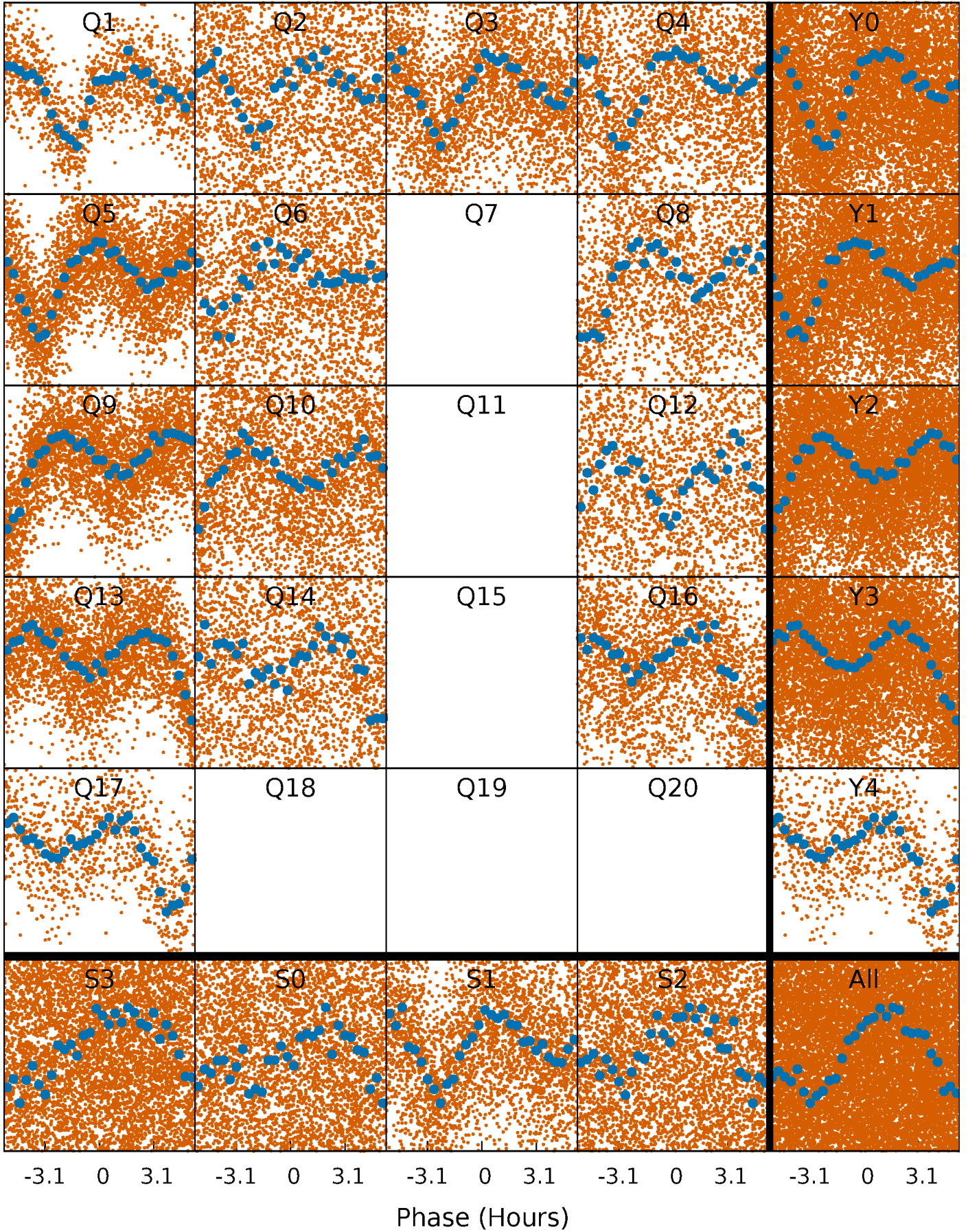


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

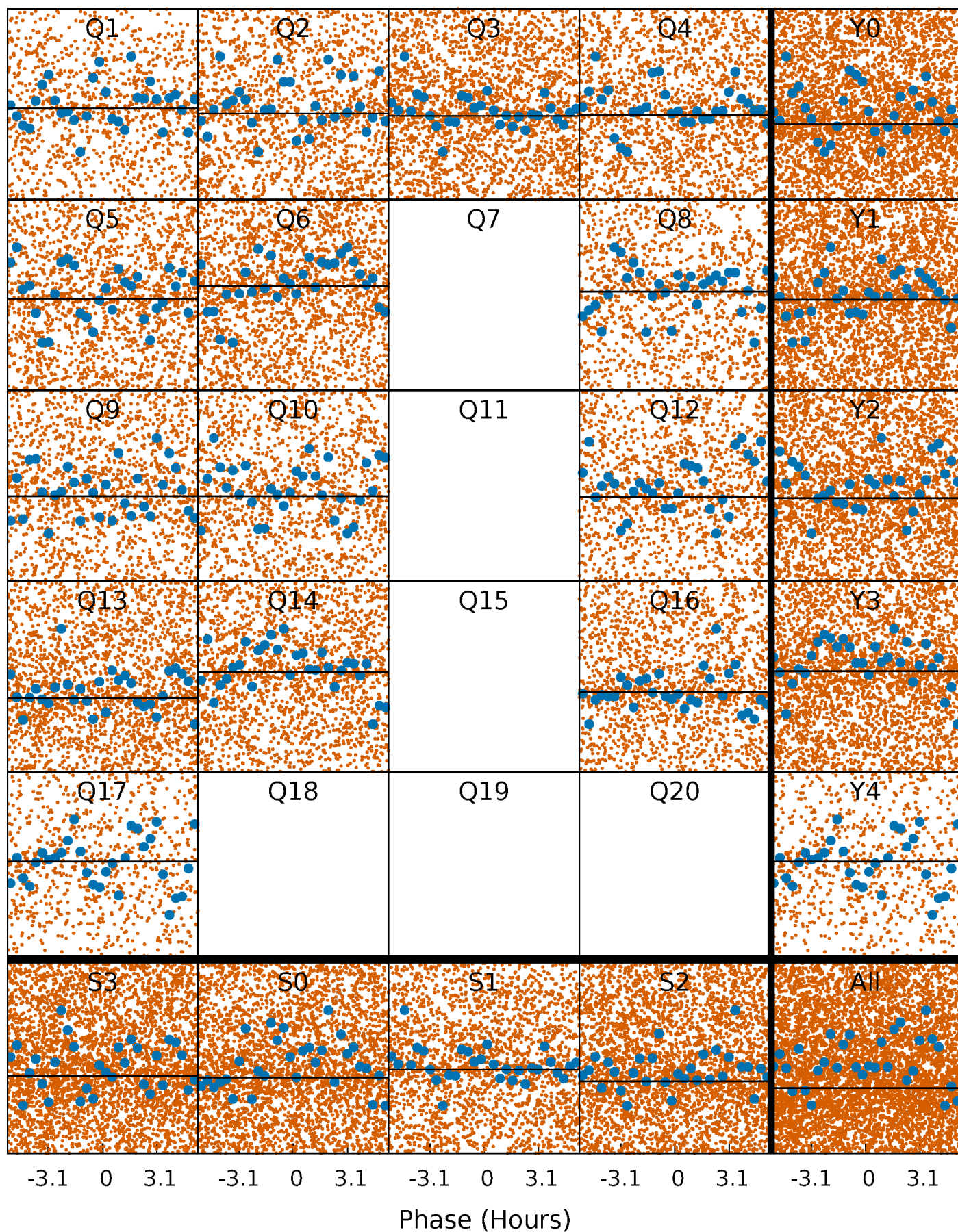
TCE 009541089-01   P= 0.536762 Days    $T_0=131.777810$  (BKJD)





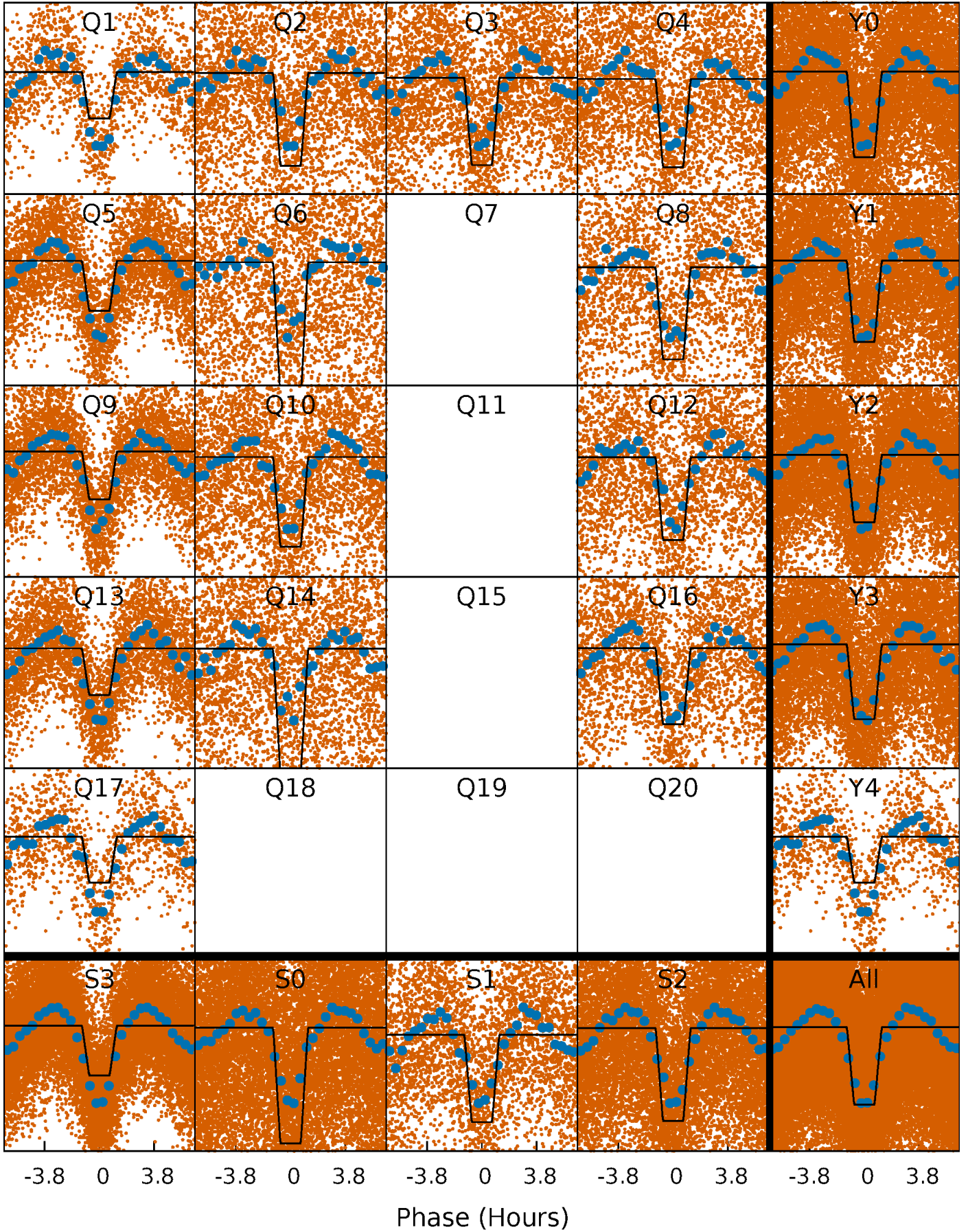
# DV Quarter-Phased Transit Curves

TCE 009541089-01 P= 0.536762 Days  $T_0=131.777810$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 009541089-01 P= 0.536650 Days  $T_0=131.710390$  (BKJD)

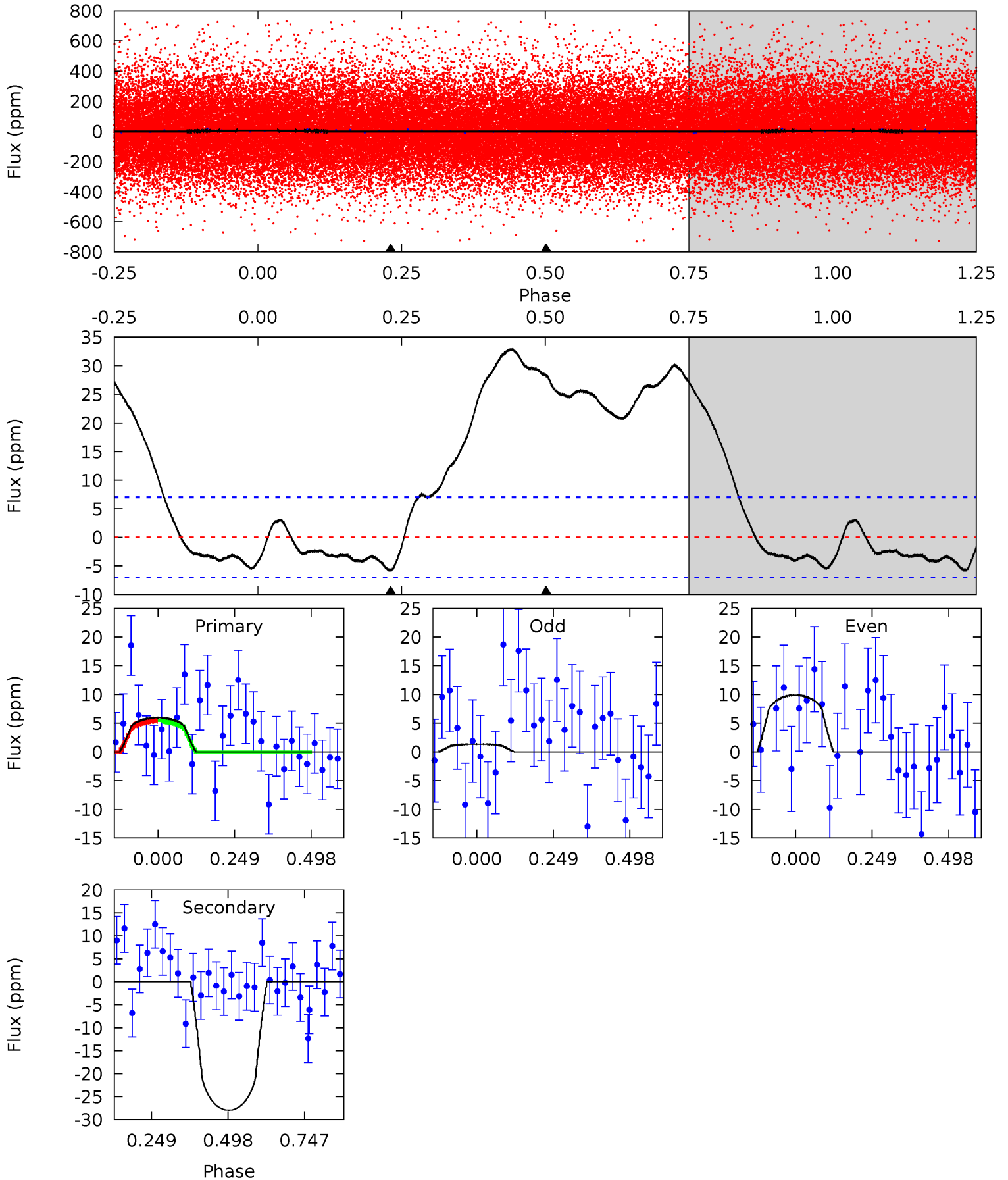




# DV Model-Shift Uniqueness Test

009541089-01, P = 0.536762 Days, E = 131.241048 Days

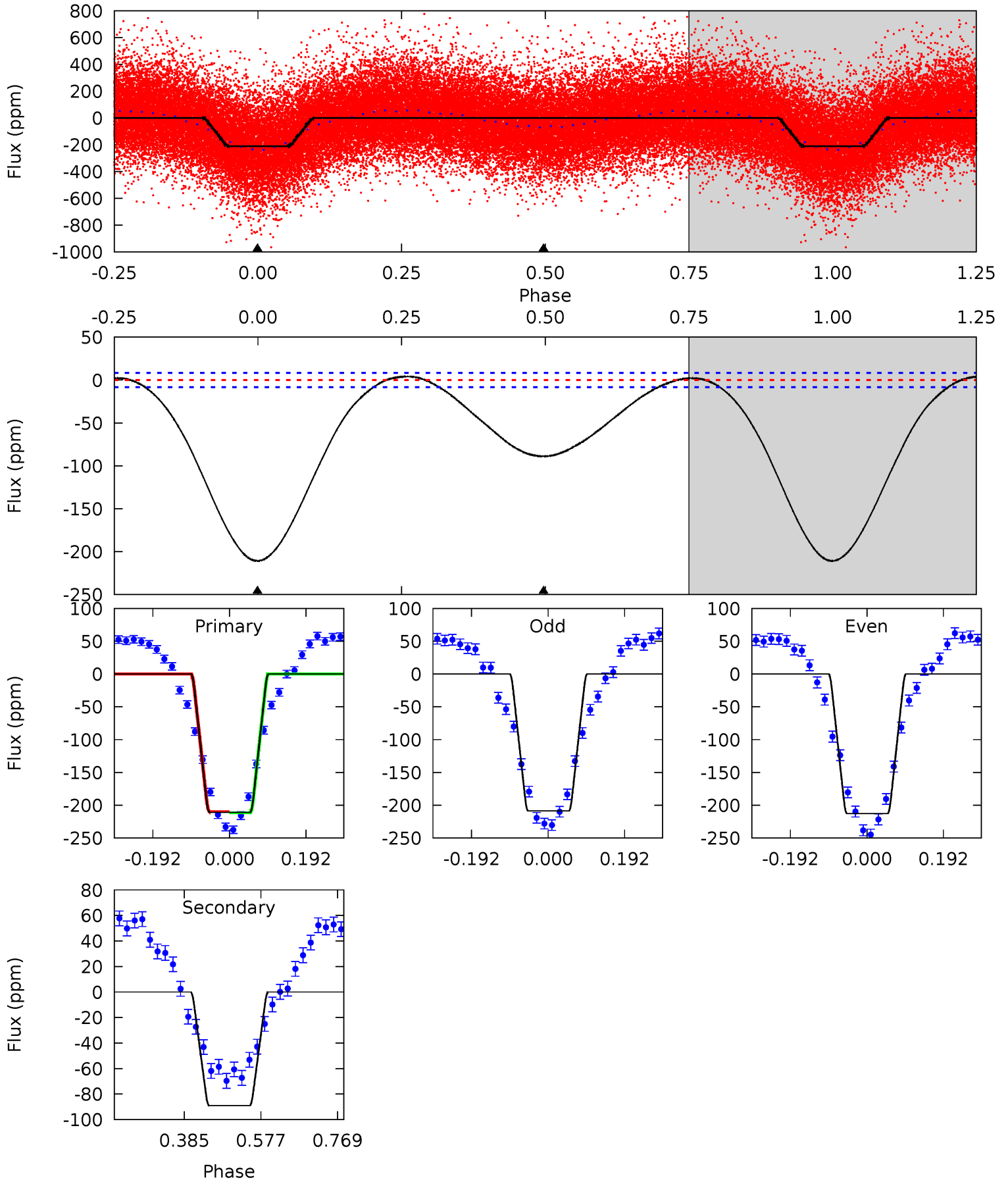
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.72	-17.4	0	0	4.37	1.15	6.66	3.72	3.72	-17.4	-17.4	2.69	1.20	0.85	0.01



# Alt Model-Shift Uniqueness Test

009541089-01, P = 0.536650 Days, E = 131.173740 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
112.5	47.5	0	0	4.43	1.30	2.26	112.5	112.5	47.5	47.5	1.05	1.03	0.02	0.56





### Stellar Parameters For KIC 009541089

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5819^{+145}_{-160}$	$4.494^{+0.075}_{-0.188}$	$-0.320^{+0.300}_{-0.300}$	$0.881^{+0.234}_{-0.100}$	$0.884^{+0.111}_{-0.090}$	$1.818^{+0.578}_{-0.863}$
	+2%/-3%	+2%/-4%	+94%/-94%	+27%/-11%	+13%/-10%	+32%/-47%
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 009541089-01 / KOI 4182.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$28 \pm 2$	$4.27^{+4.21}_{-2.99}$	$2968^{+1110}_{-550}$	$-3493^{+487}_{-1340}$	$-0.139^{+0.118}_{-1.707}$
Alt.	$-89 \pm 2$	$4.69^{+5.01}_{-3.16}$	$2950^{+1123}_{-549}$	$2516^{+1948}_{-5887}$	$0.396^{+3.641}_{-0.335}$

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

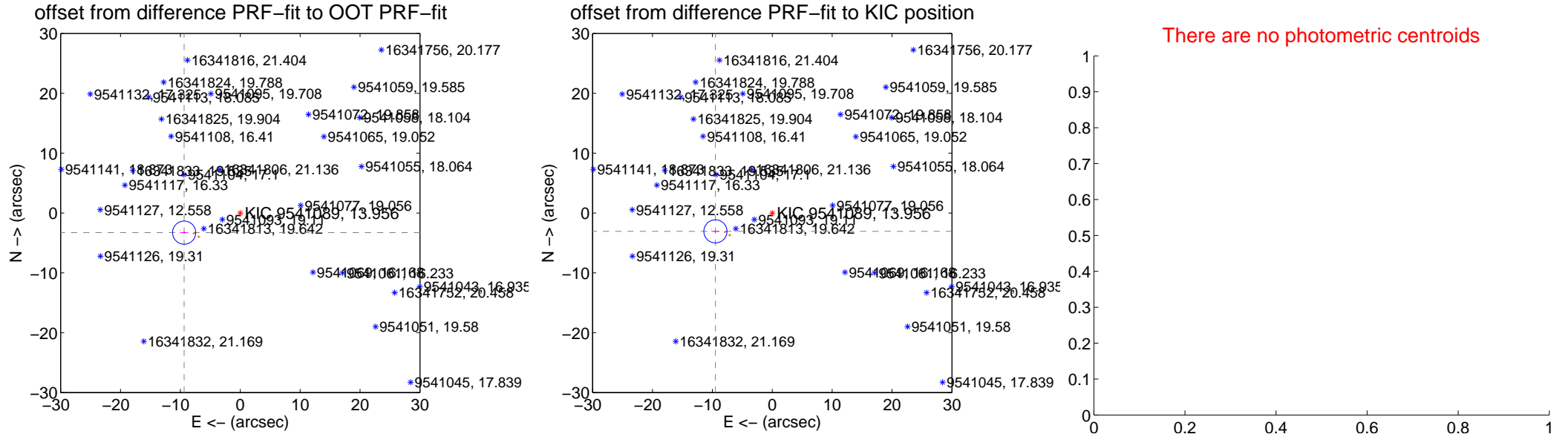
## DV Centroid Data

Supplemental centroid analysis for 009541089-01. Kepler magnitude: 13.96. Transit SNR 0.00

There are 0 quarters with good PRF difference image offsets

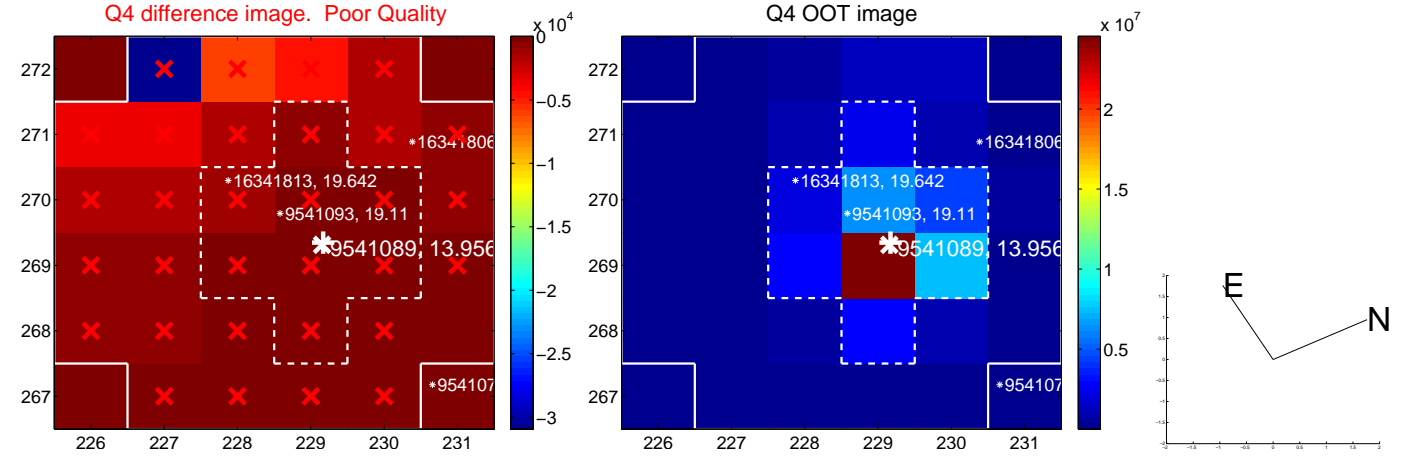
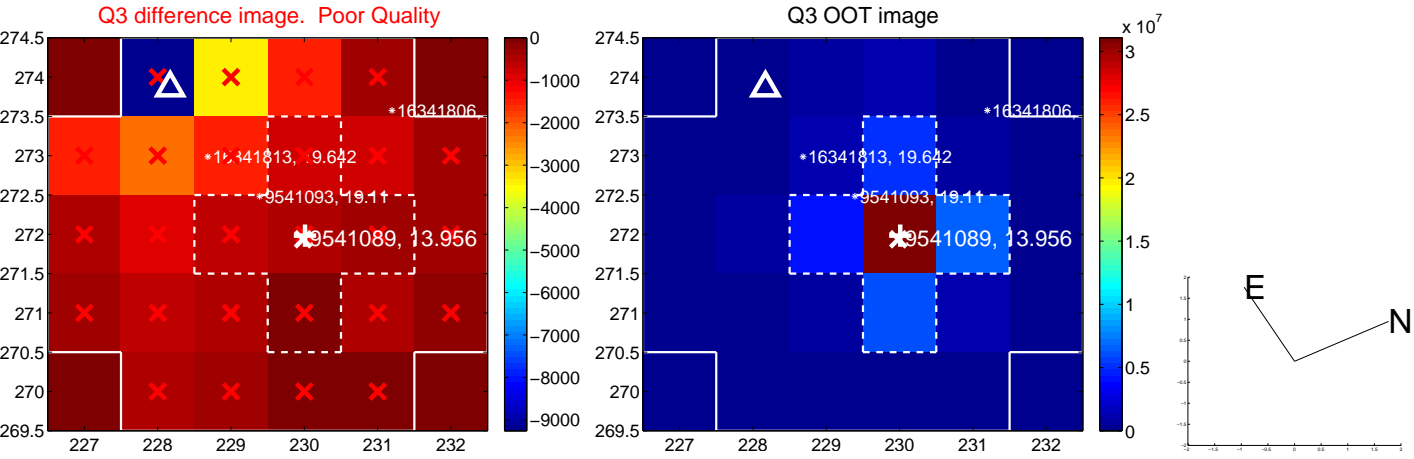
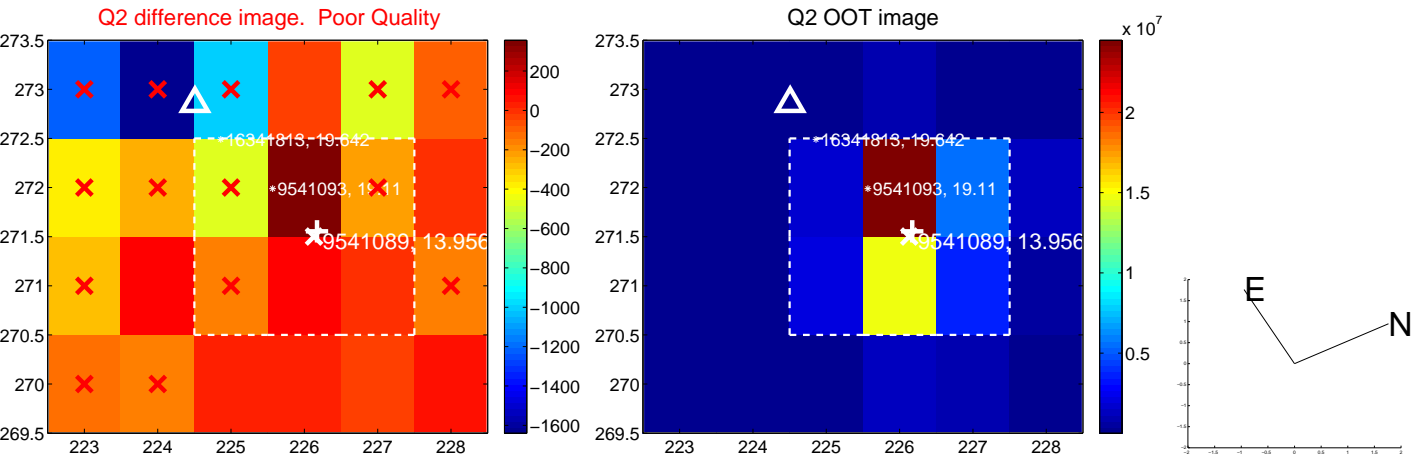
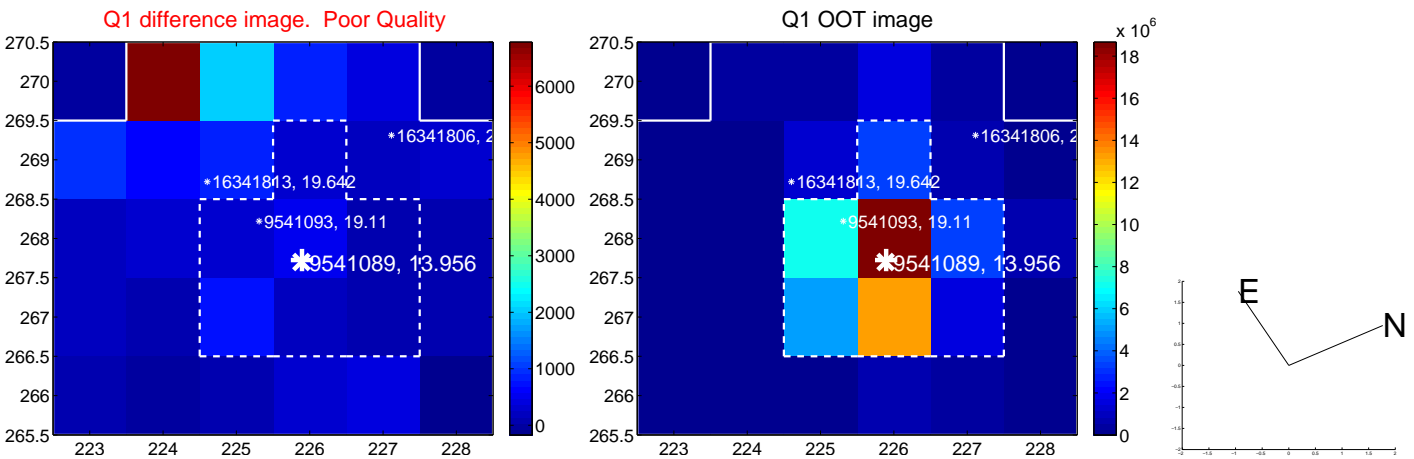
The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	9.929 $\pm$ 0.644	15.41	9.372 $\pm$ 0.679	-3.277 $\pm$ 0.208
PRF-fit source offset from KIC position	9.973 $\pm$ 0.644	15.49	9.491 $\pm$ 0.674	-3.063 $\pm$ 0.192
photometric centroid source offset	—	—	—	—

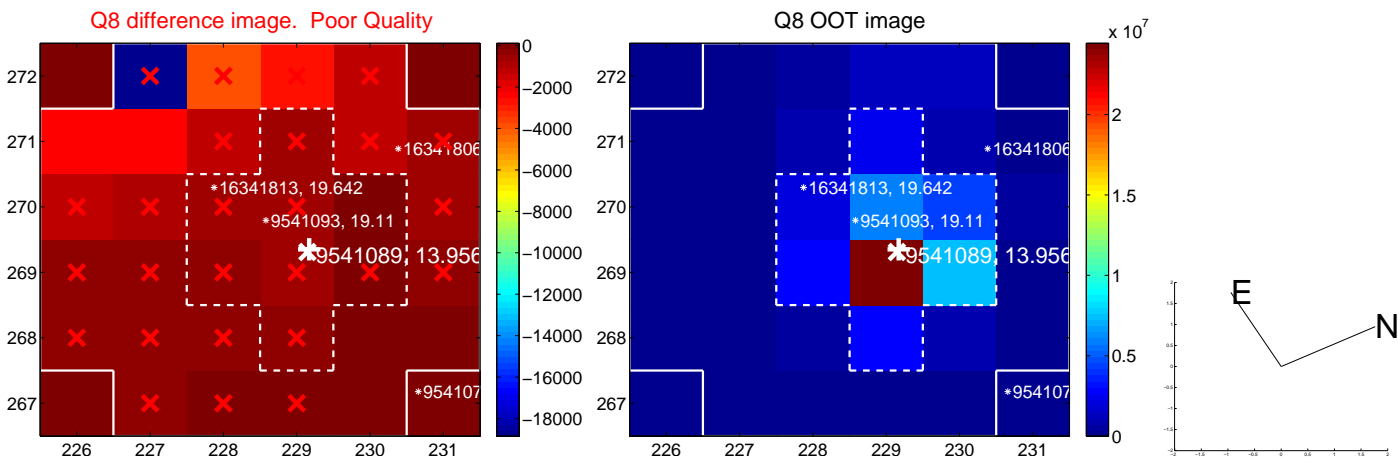
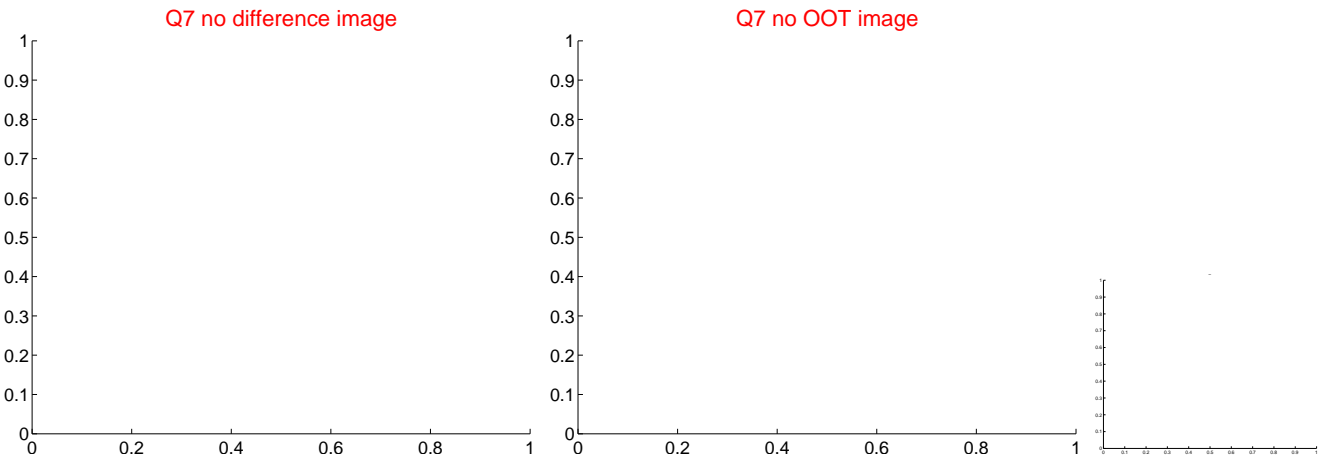
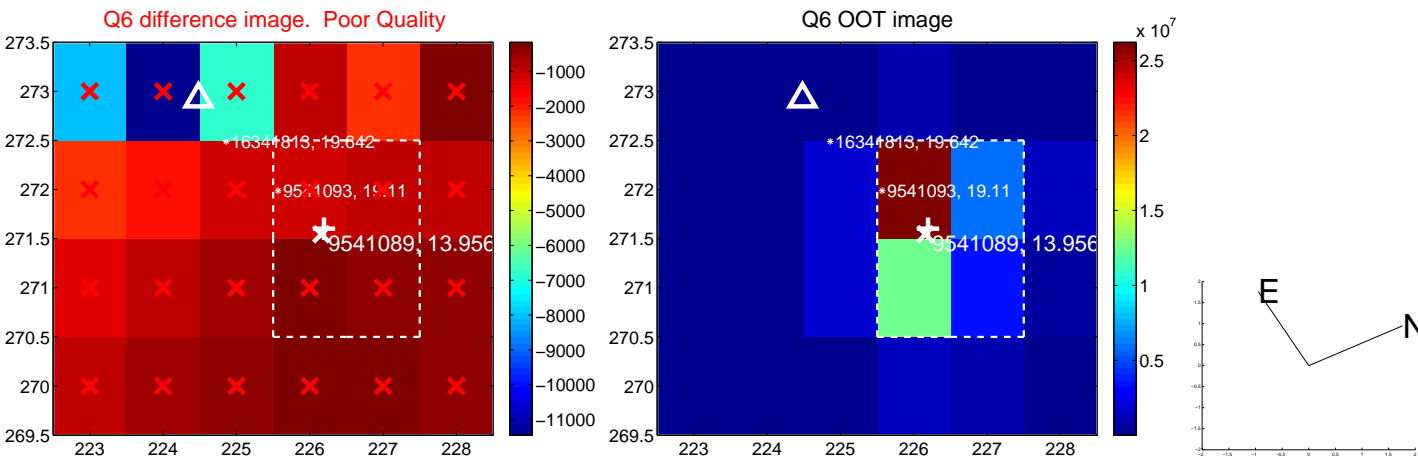
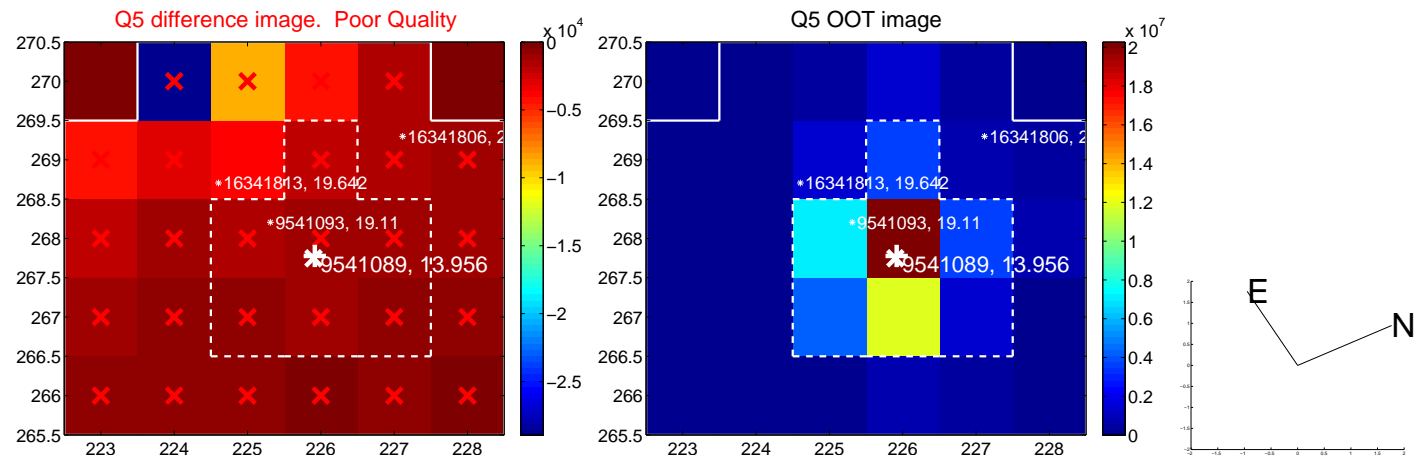


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

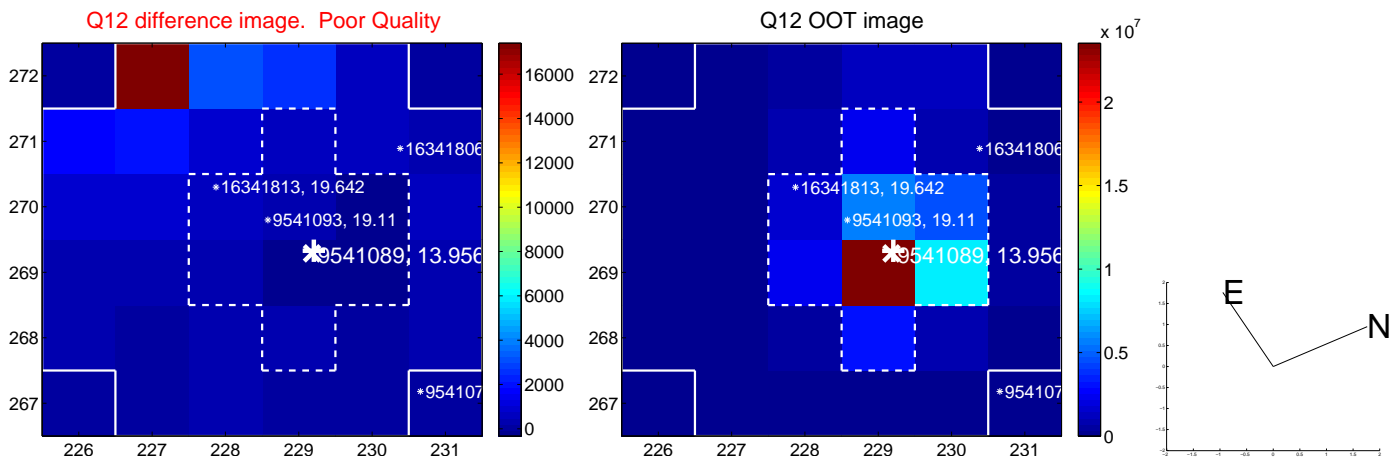
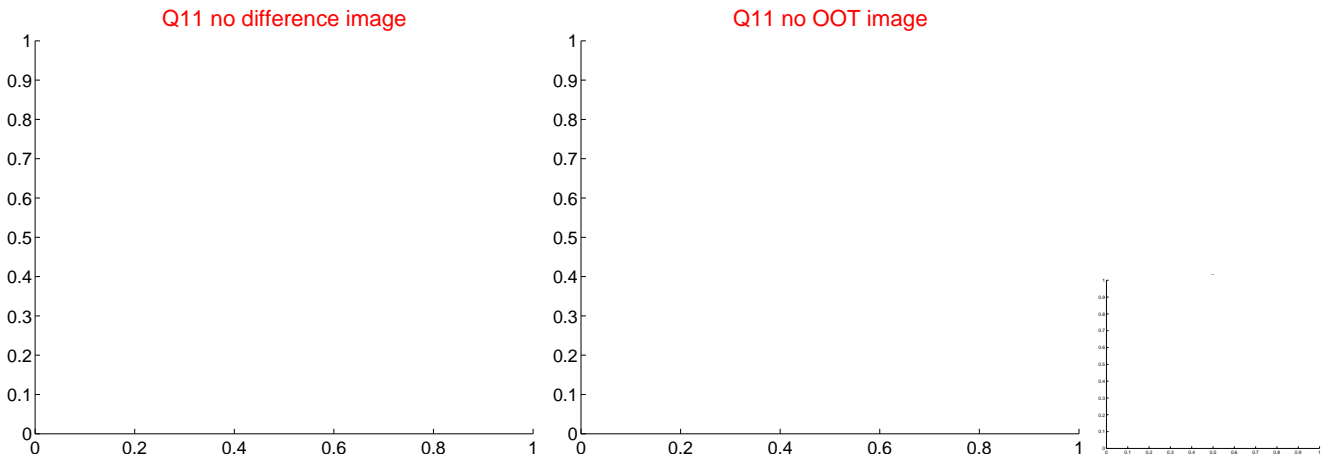
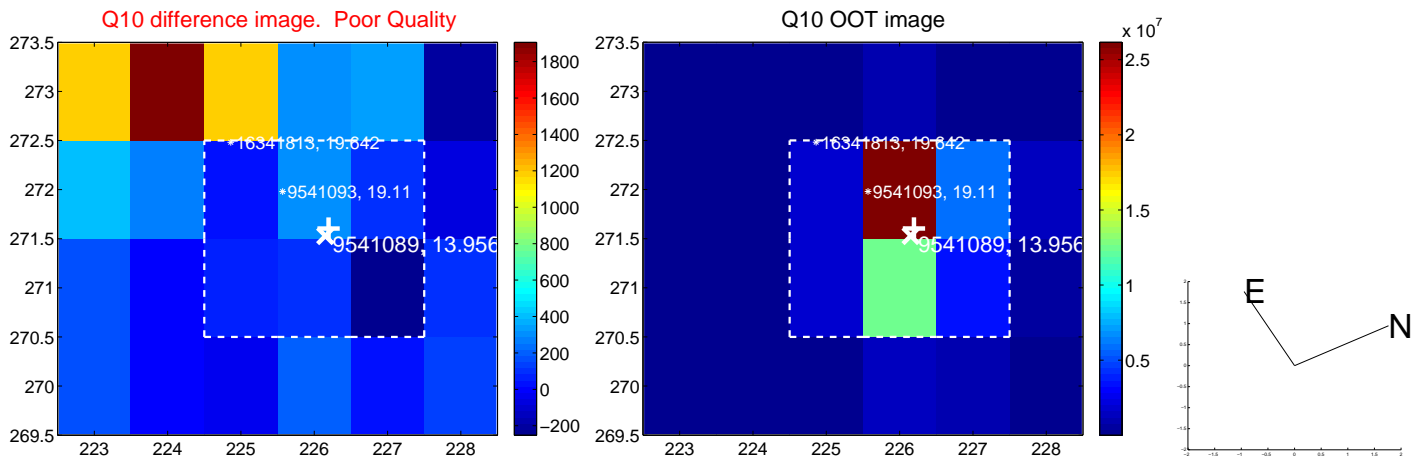
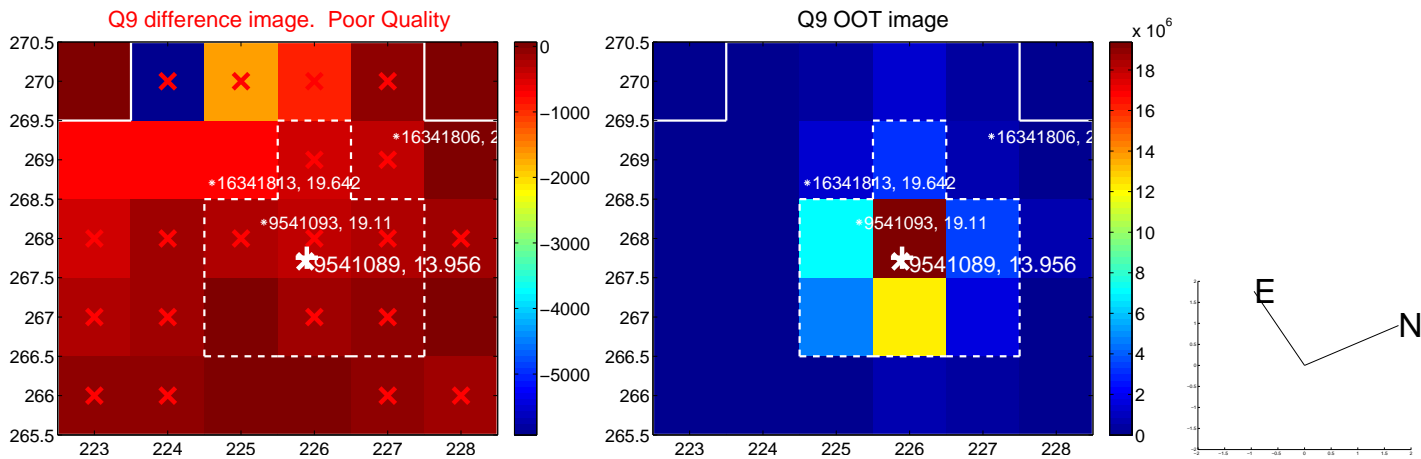


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

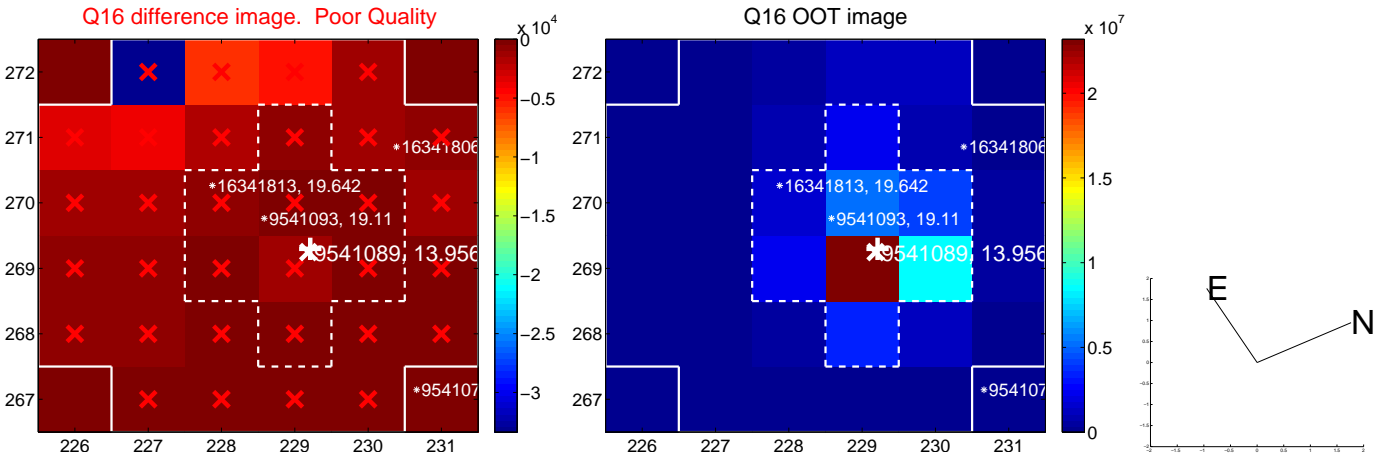
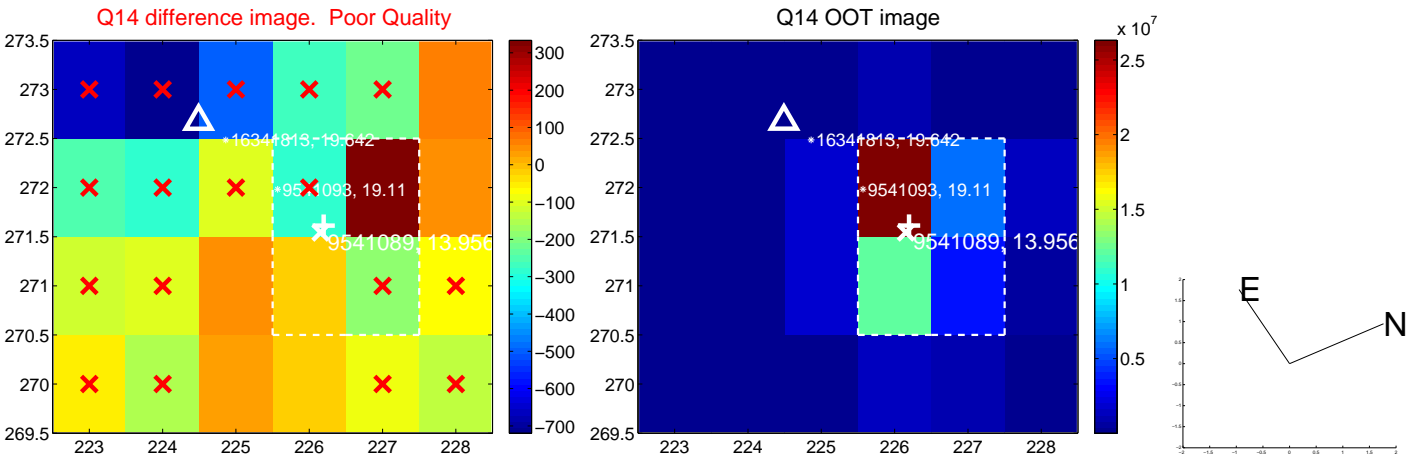
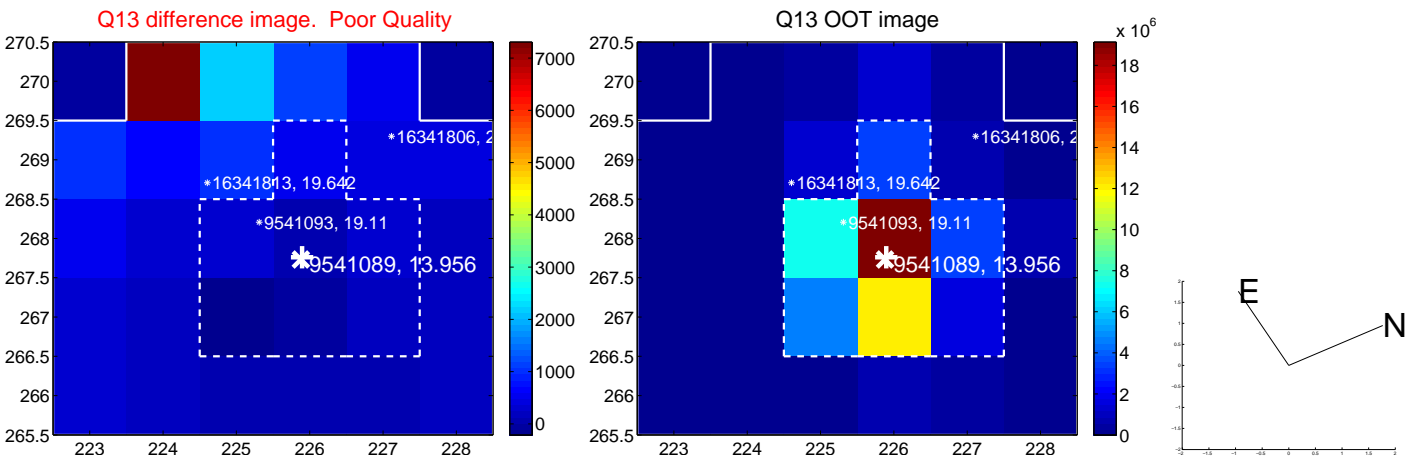




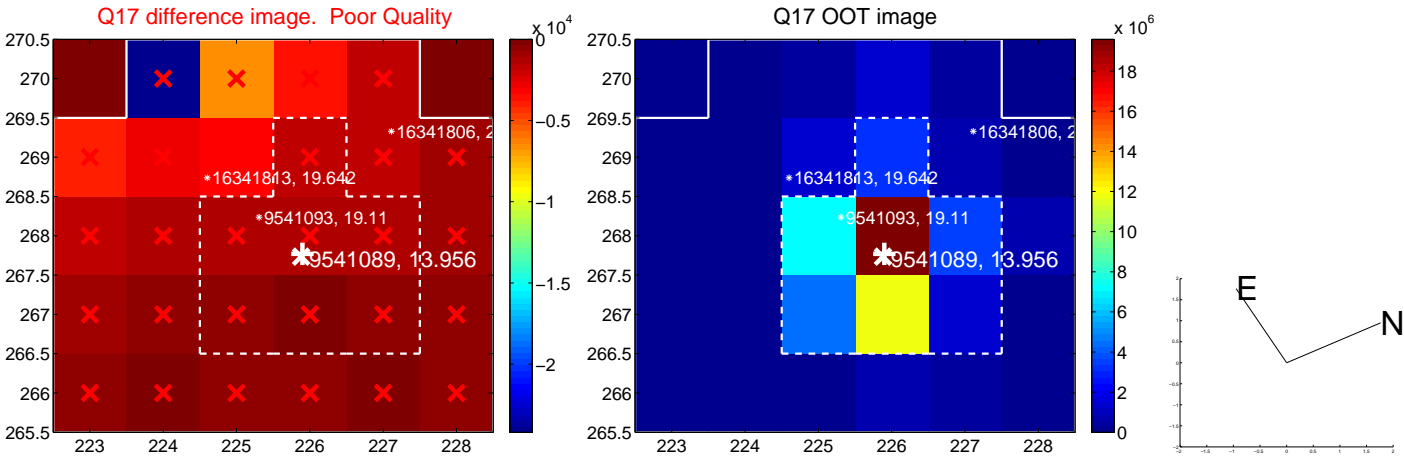
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



folded centroid time series figure for this object.

UKIRT Image

Declination

