

# KIC 005702405

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005702405-01	OBS	No	0.544530	131.766655	46.7	0.929	7.5	9.0	0.69	4359	0.47	1160.93

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005702405-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

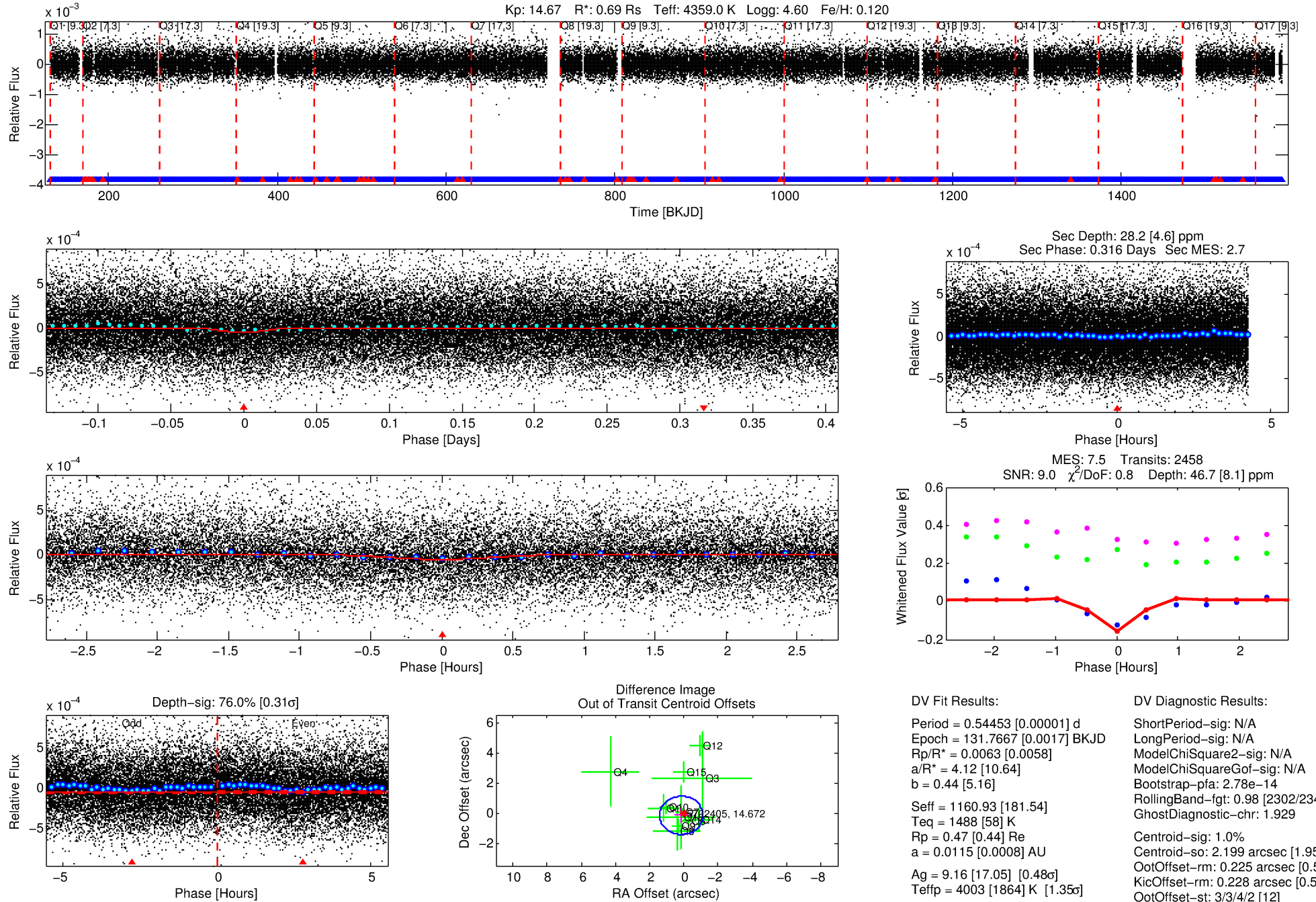
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005702405-01

No Significant Match Found

# DV One-Page Summary

KIC: 5702405 Candidate: 1 of 1 Period: 0.545 d



## DV Fit Results:

Period = 0.54453 [0.00001] d  
Epoch = 131.7667 [0.0017] BKJD  
Rp/R\* = 0.0063 [0.0058]  
a/R\* = 4.12 [10.64]  
b = 0.44 [5.16]  
Seff = 1160.93 [181.54]  
Teq = 1488 [58] K  
Rp = 0.47 [0.44] Re  
a = 0.0115 [0.0008] AU  
Ag = 9.16 [17.05] [0.48 $\sigma$ ]  
Teffp = 4003 [1864] K [1.35 $\sigma$ ]

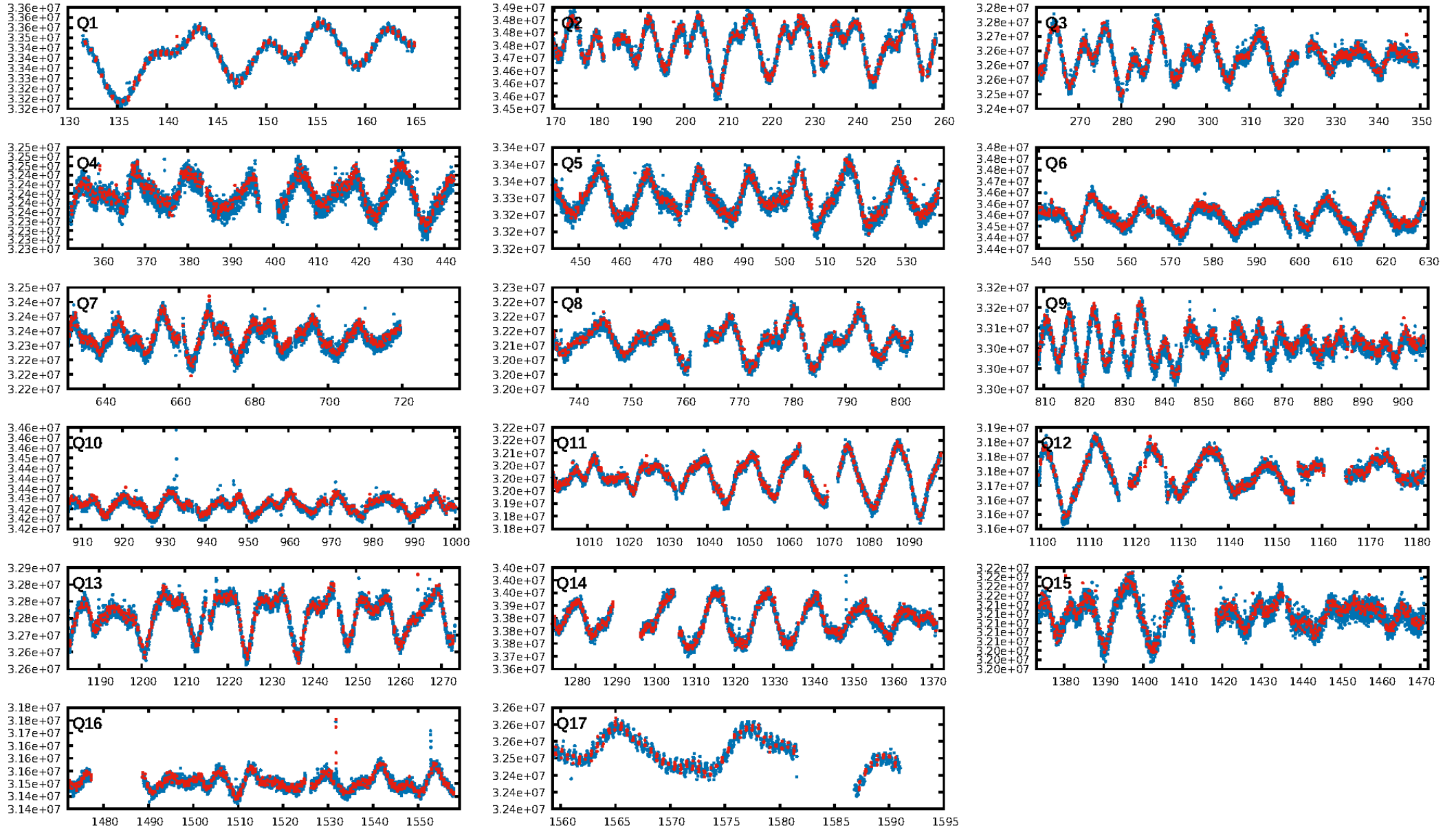
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.78e-14  
RollingBand-fgt: 0.98 [2302/2348]  
GhostDiagnostic-chr: 1.929  
Centroid-sig: 1.0%  
Centroid-so: 2.199 arcsec [1.95 $\sigma$ ]  
OotOffset-rm: 0.225 arcsec [0.53 $\sigma$ ]  
KicOffset-rm: 0.228 arcsec [0.58 $\sigma$ ]  
OotOffset-st: 3/3/4/2 [12]  
KicOffset-st: 3/3/4/2 [12]  
DiffImageQuality-fgm: 0.08 [1/12]  
DiffImageOverlap-fno: 1.00 [17/17]

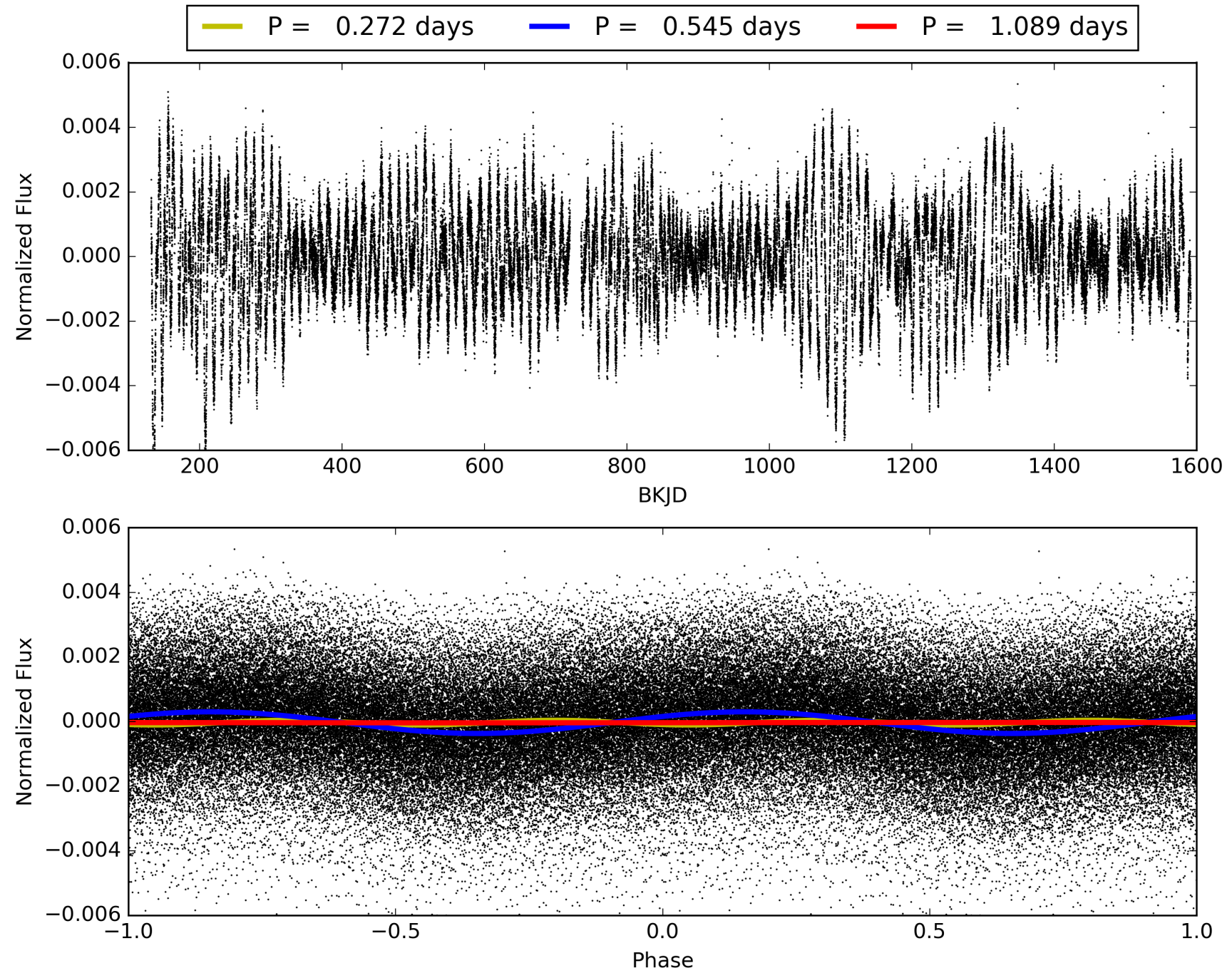
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:03:46 Z

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

# TCE 005702405-01, PDC Light Curves

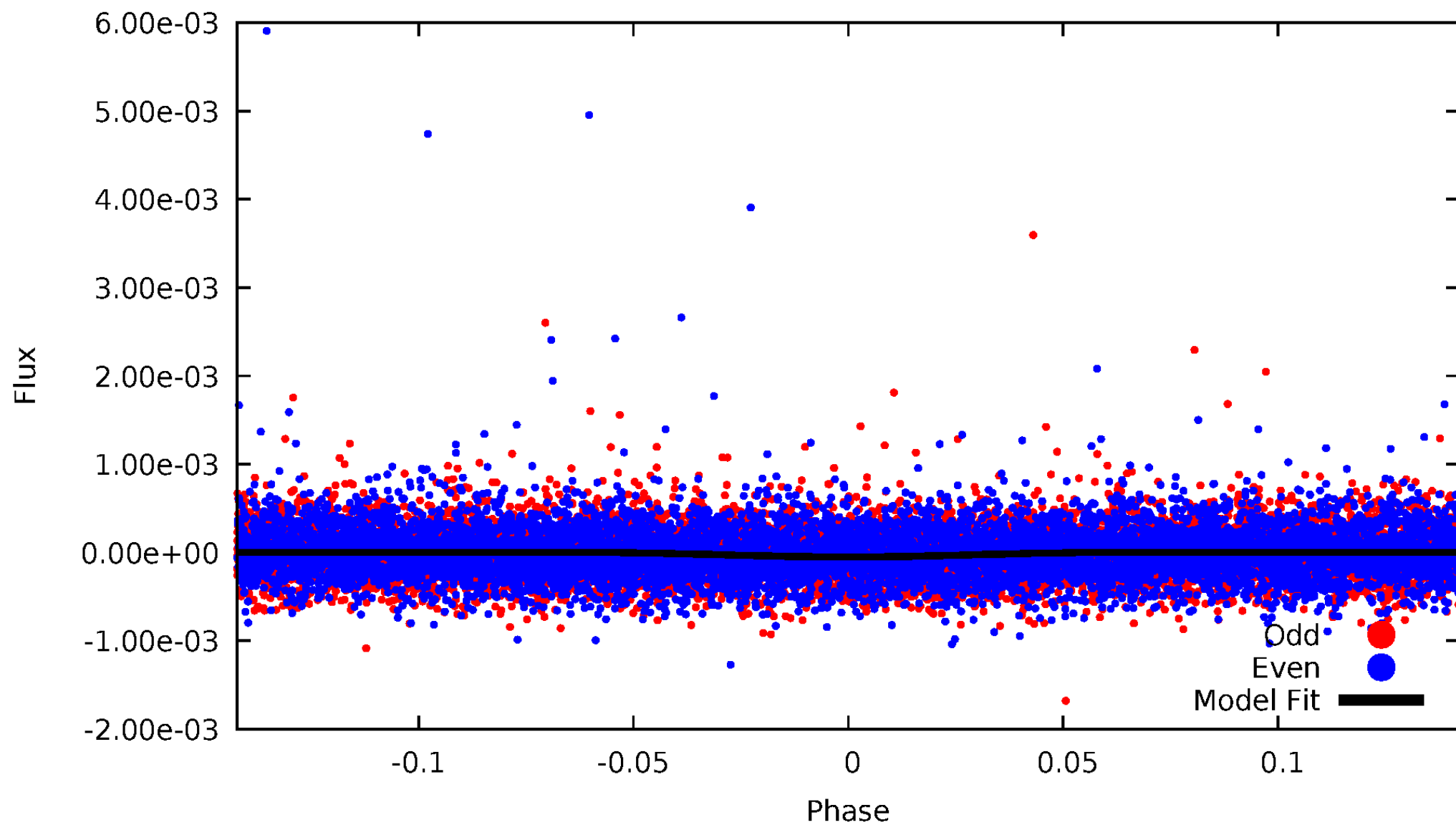


TCE 005702405-01



# DV Odd/Even

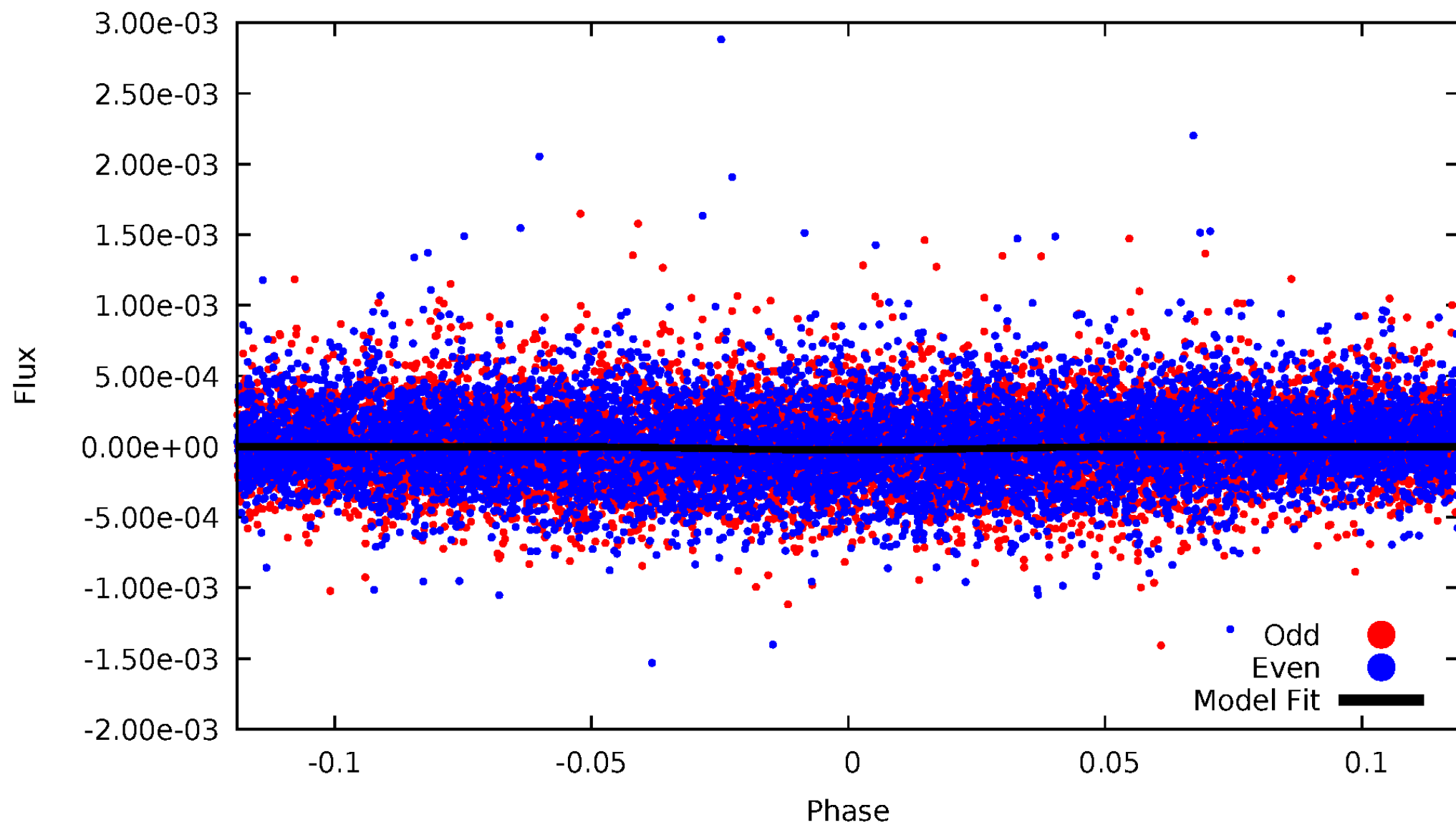
TCE 005702405-01





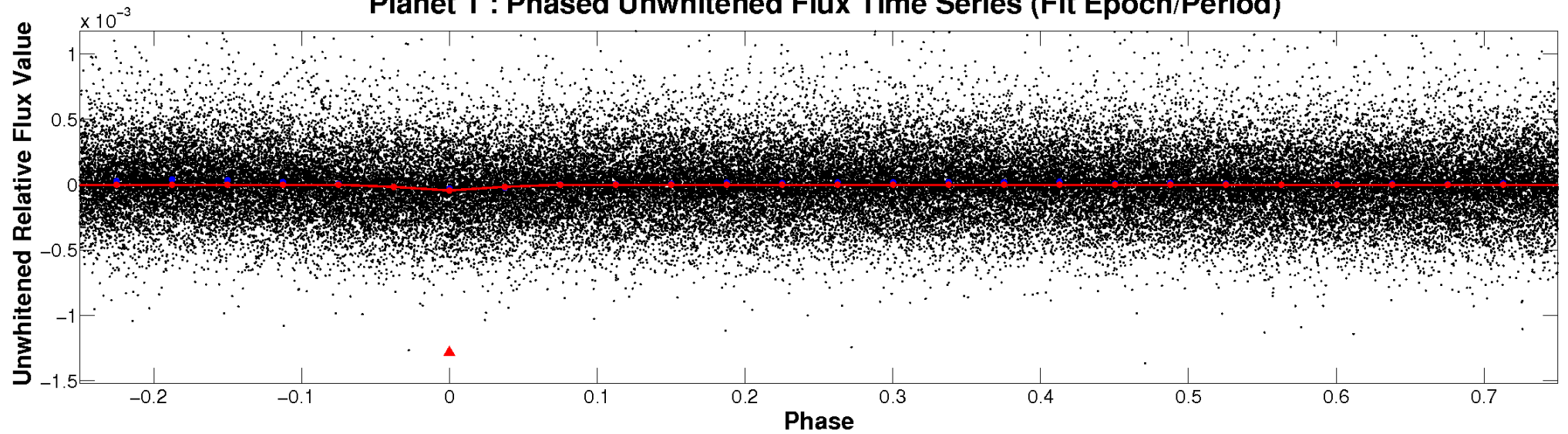
# ALT Odd/Even

TCE 005702405-01

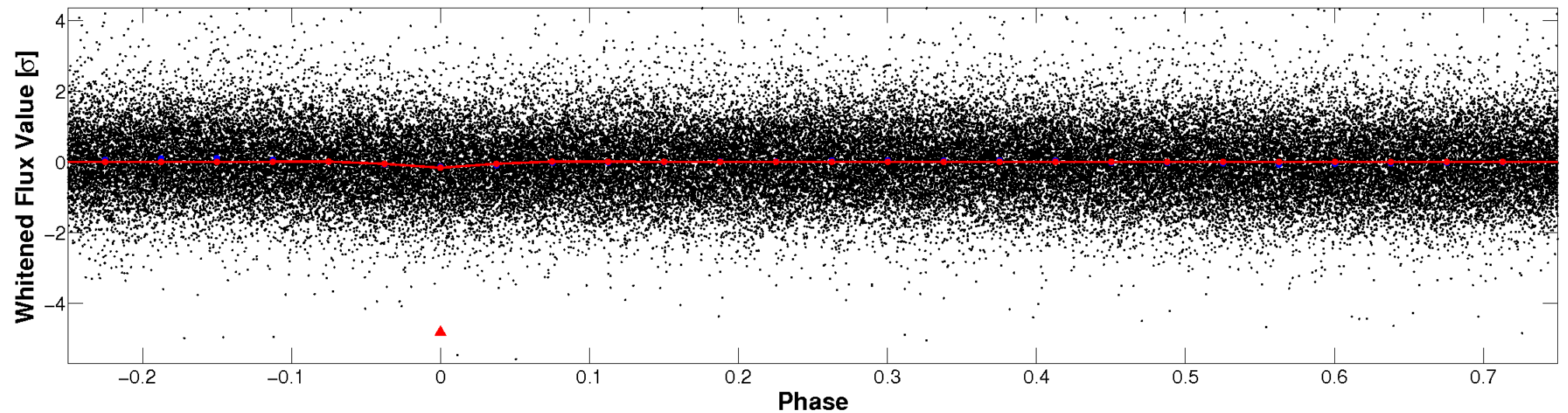


# Non-Whitened Vs. Whitened Light Curve

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

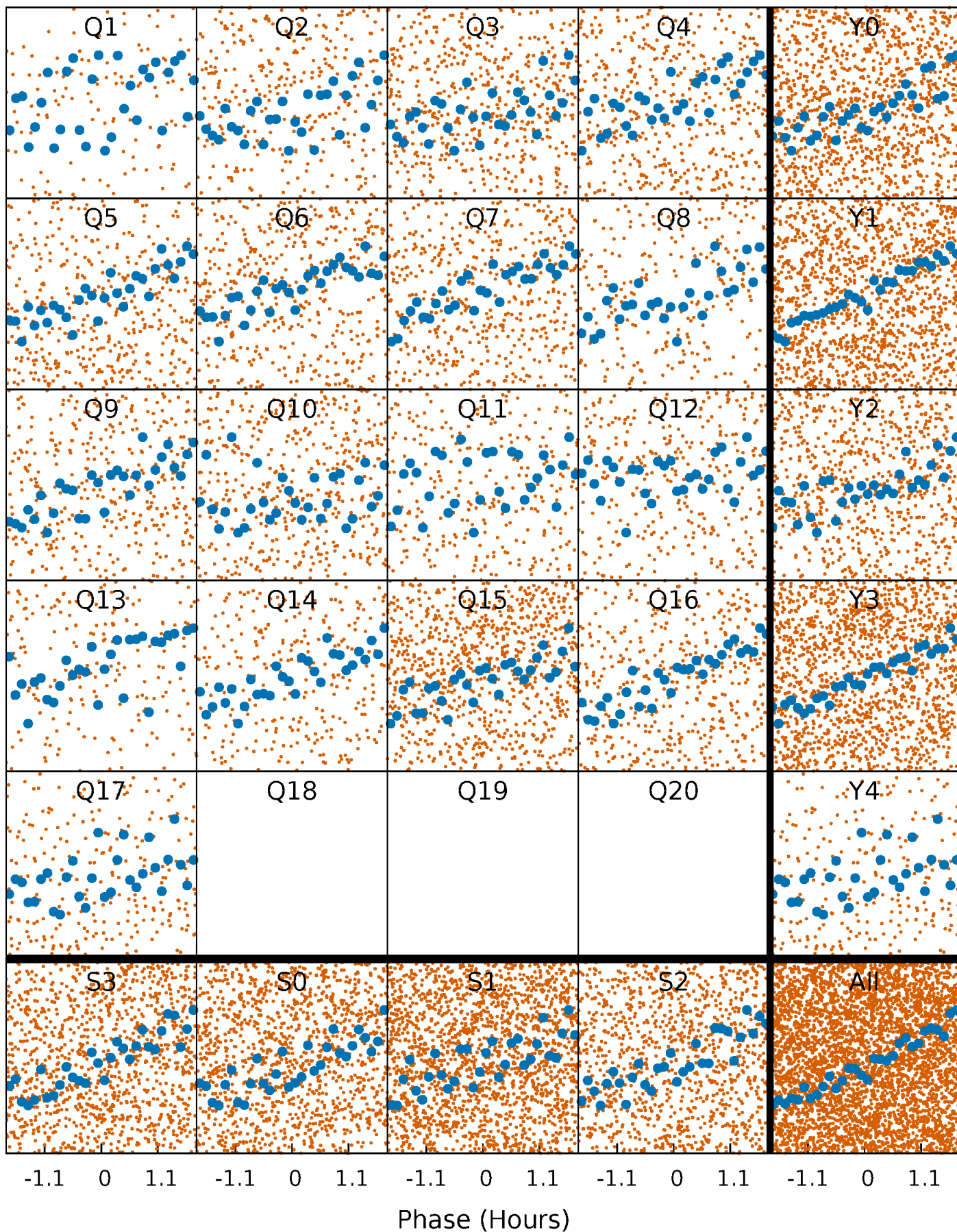


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

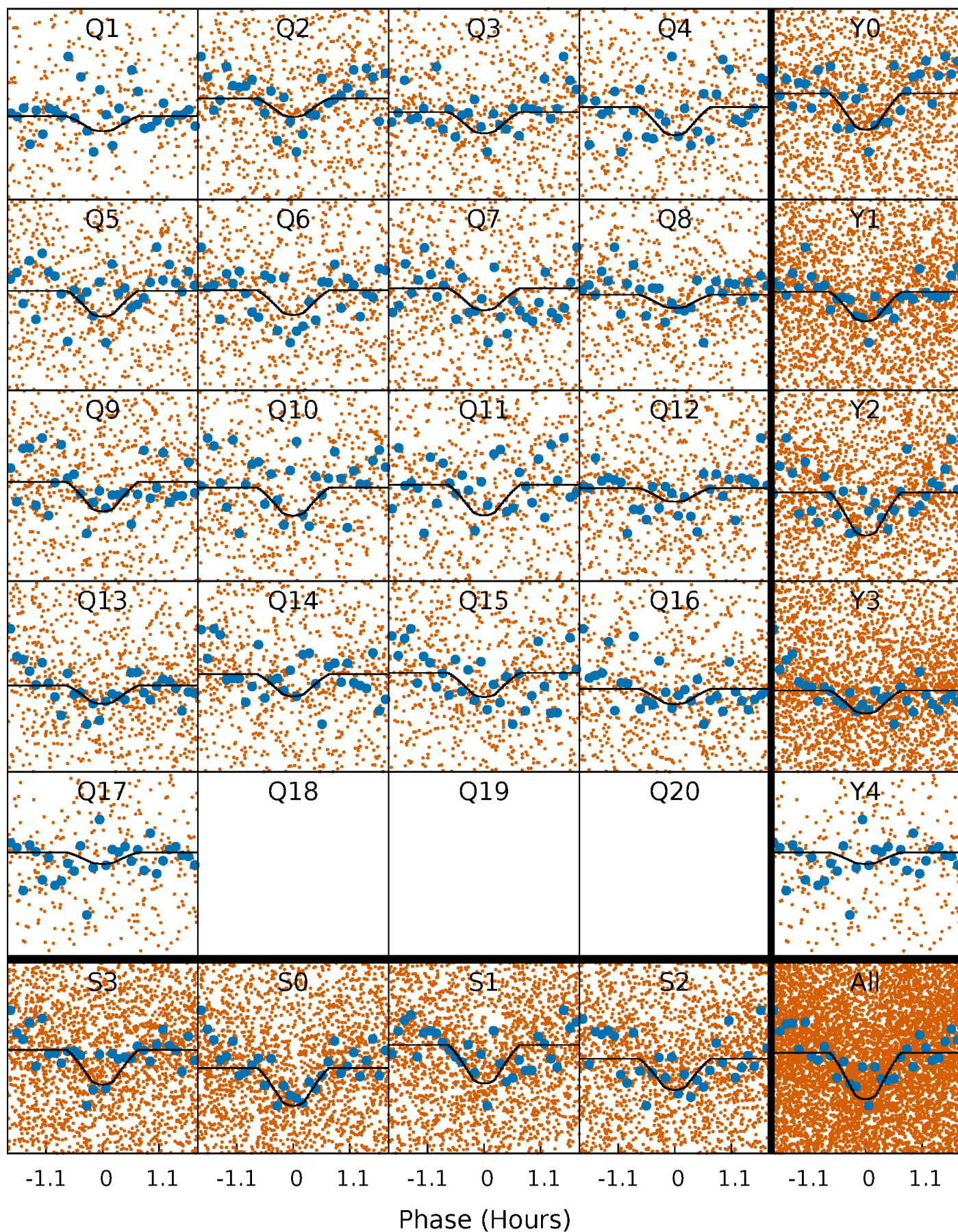
TCE 005702405-01 P= 0.544530 Days  $T_0=131.766655$  (BKJD)





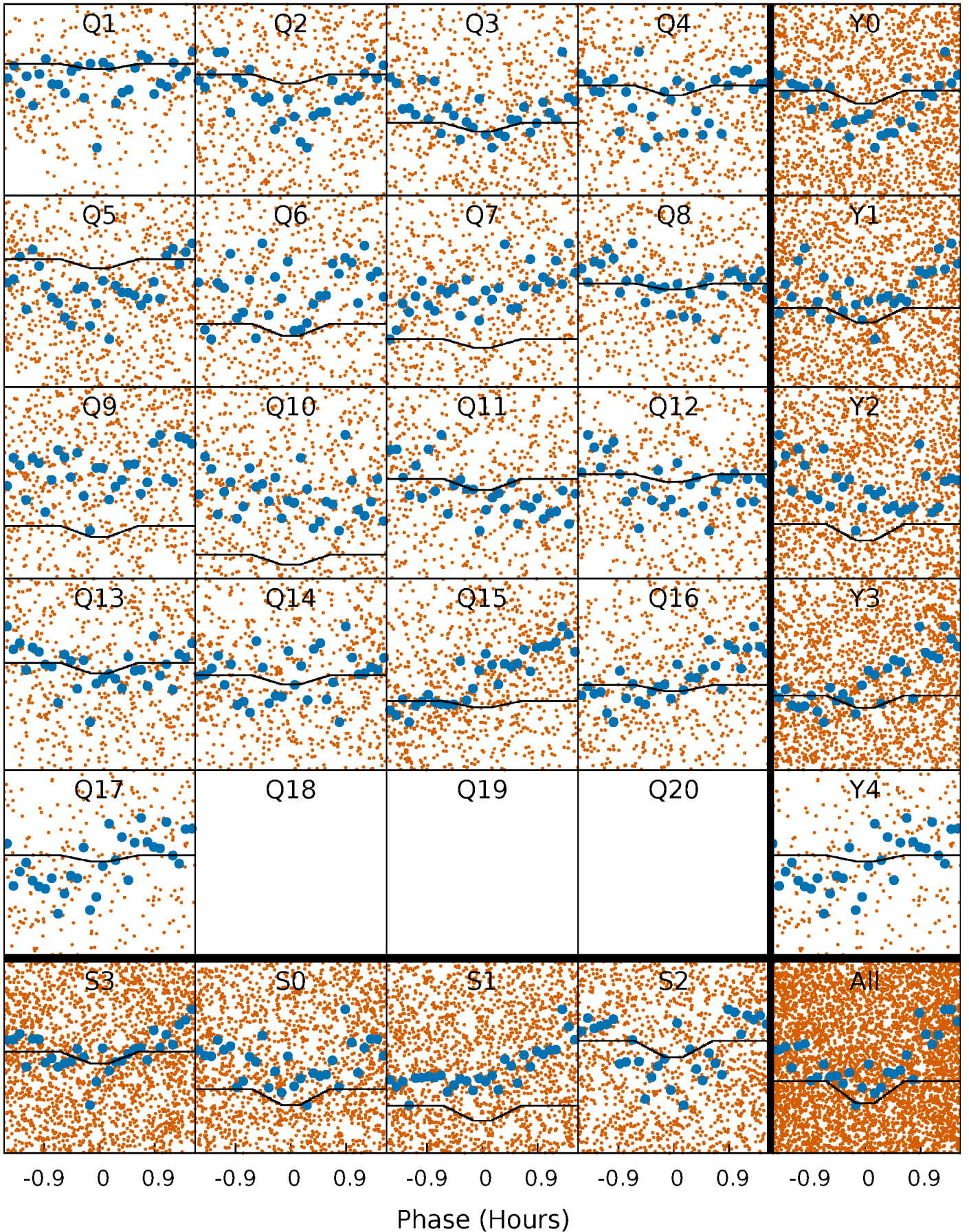
# DV Quarter-Phased Transit Curves

TCE 005702405-01   P= 0.544530 Days    $T_0=131.766655$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

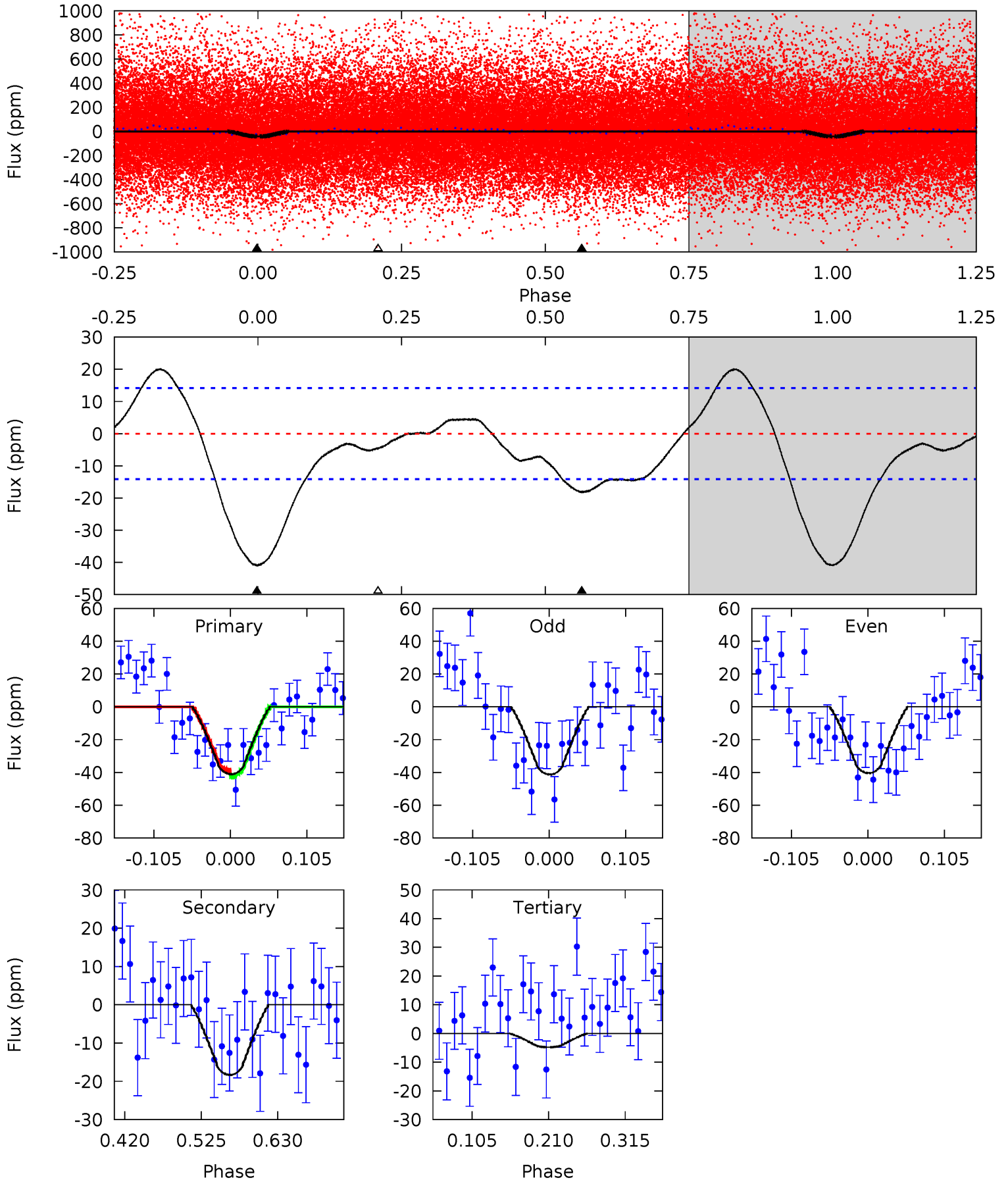
TCE 005702405-01 P= 0.544529 Days  $T_0=131.762559$  (BKJD)



# DV Model-Shift Uniqueness Test

005702405-01, P = 0.544530 Days, E = 131.222125 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
13.2	5.91	1.55	0	4.55	1.62	2.59	11.7	13.2	4.36	5.91	0.14	0.80	0.33	0.51

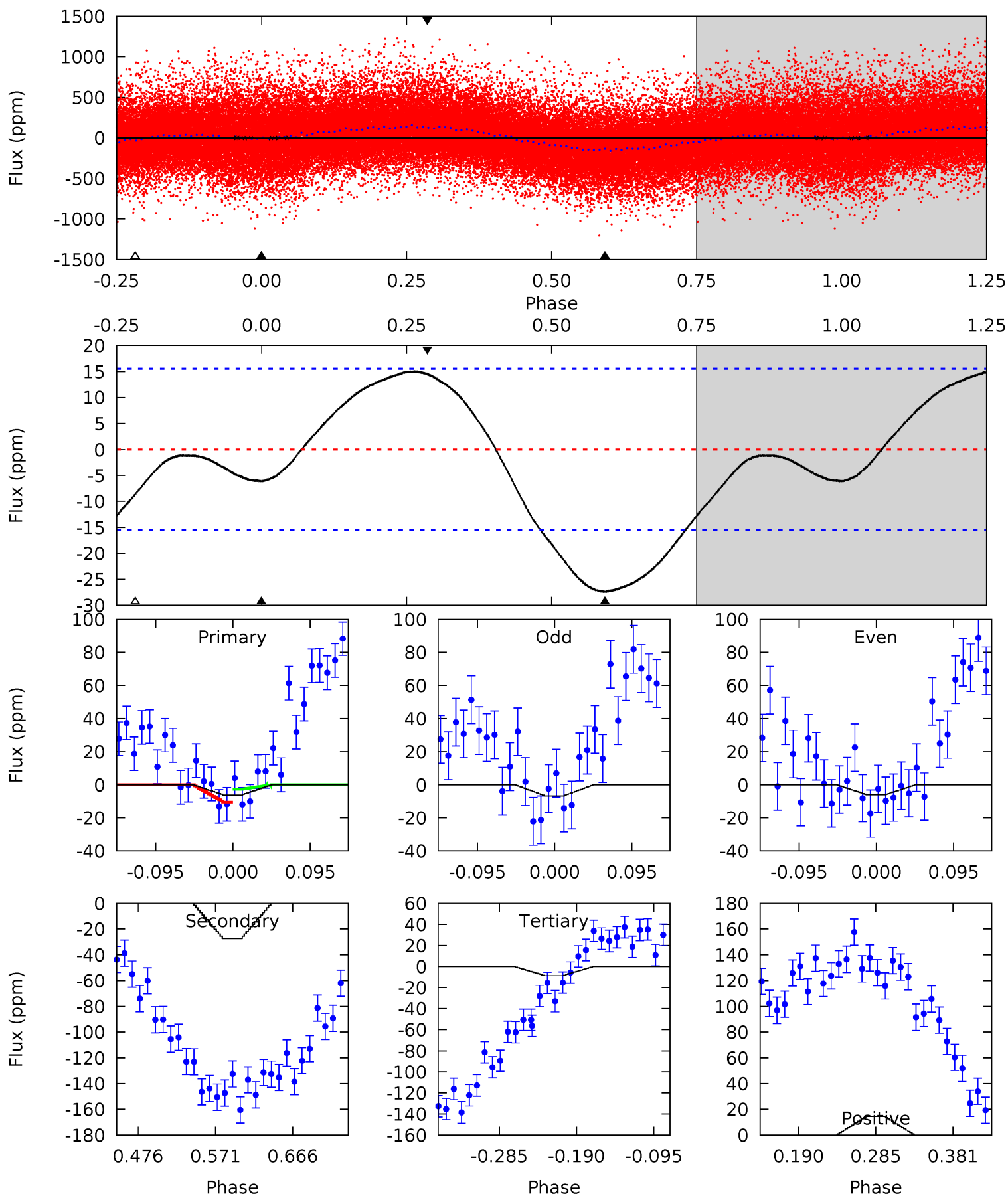




# Alt Model-Shift Uniqueness Test

005702405-01, P = 0.544529 Days, E = 131.218030 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
1.81	8.07	2.55	4.29	4.58	1.67	3.21	-0.74	-2.48	5.52	3.79	0.10	0.25	0.35	1.08





### Stellar Parameters For KIC 005702405

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4359^{+129}_{-129}$	$4.596^{+0.056}_{-0.016}$	$0.120^{+0.250}_{-0.300}$	$0.688^{+0.028}_{-0.057}$	$0.679^{+0.052}_{-0.052}$	$2.940^{+0.680}_{-0.235}$
	+3%/-3%	+1%/-0%	+208%/-250%	+4%/-8%	+8%/-8%	+23%/-8%
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 005702405-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-18 \pm 3$	$0.54^{+0.42}_{-0.31}$	$2063^{+67}_{-64}$	$3567^{+1323}_{-620}$	$4.531^{+21.320}_{-3.064}$
Alt.	$-27 \pm 3$	$0.46^{+0.41}_{-0.29}$	$2061^{+68}_{-69}$	$4015^{+2147}_{-773}$	$9.048^{+58.399}_{-6.477}$

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

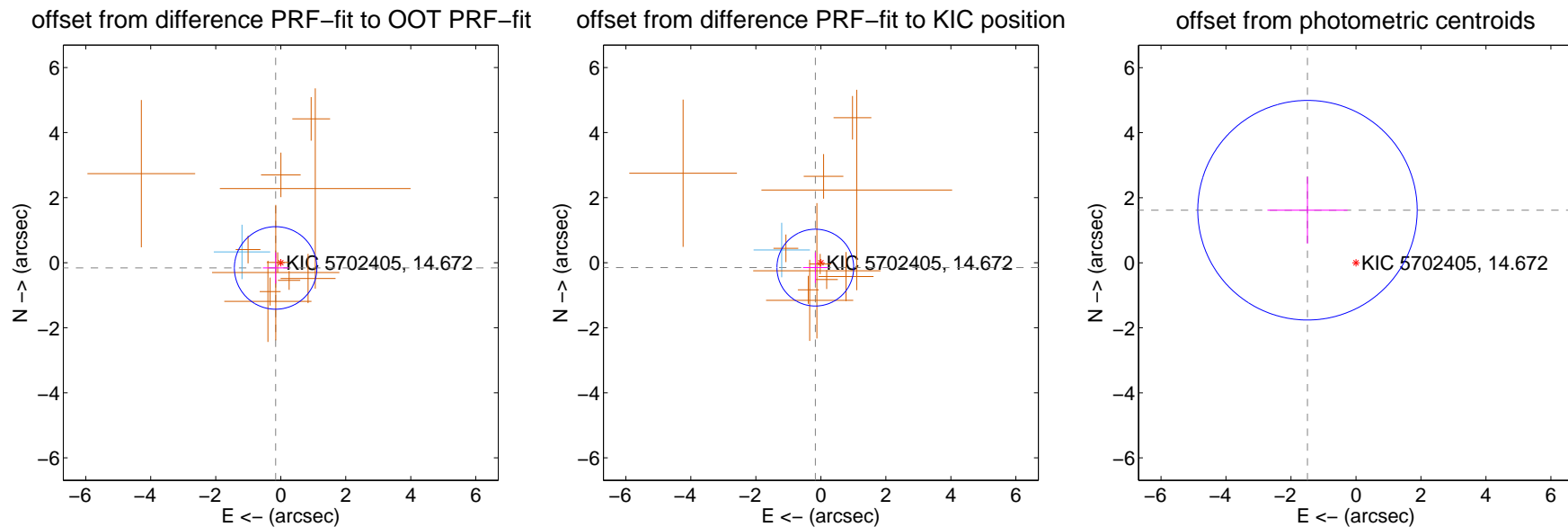
## DV Centroid Data

Supplemental centroid analysis for 005702405-01. Kepler magnitude: 14.67. Transit SNR 9.05

There are 1 quarters with good PRF difference image offsets

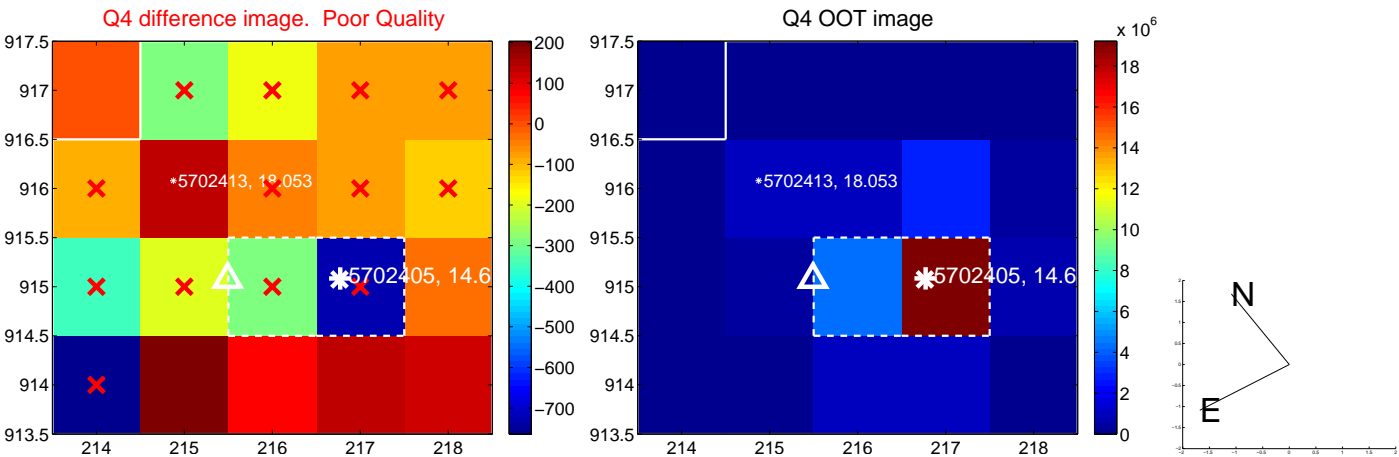
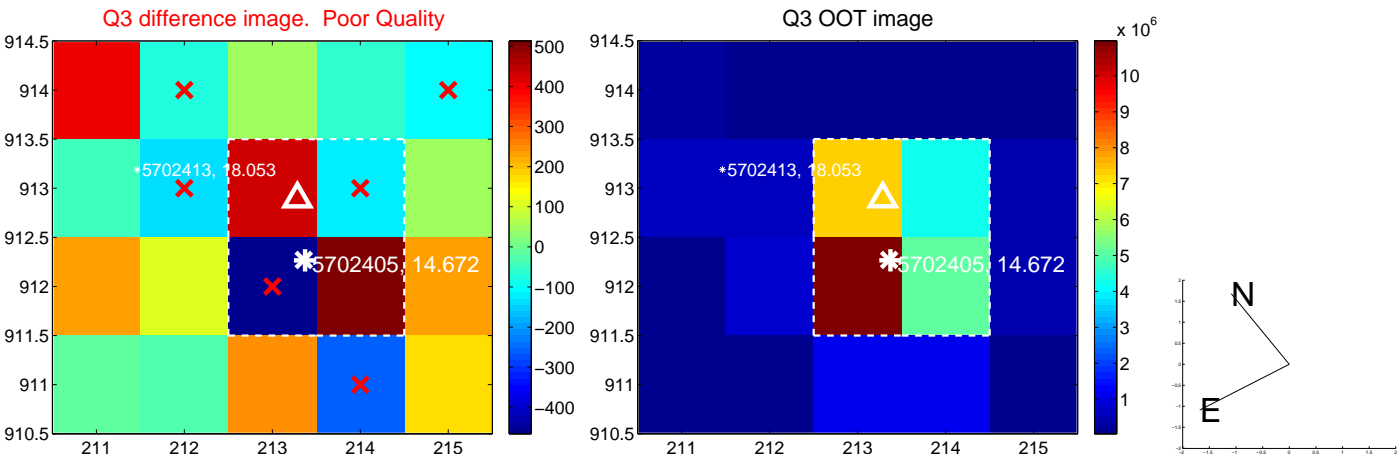
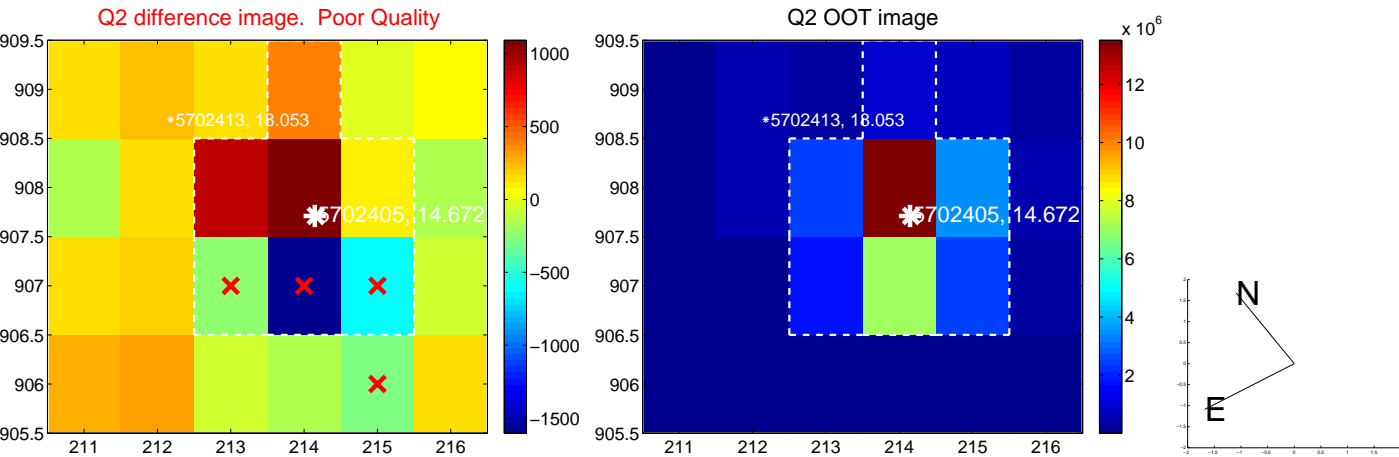
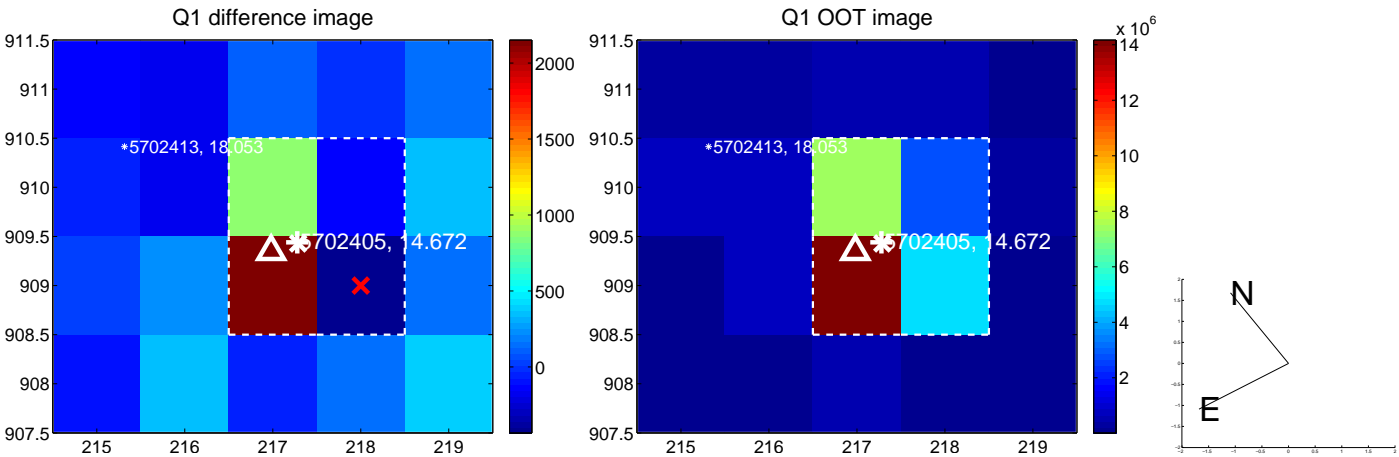
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.225 \pm 0.423$	0.53	$0.158 \pm 0.391$	$-0.161 \pm 0.479$
PRF-fit source offset from KIC position	$0.228 \pm 0.394$	0.58	$0.171 \pm 0.378$	$-0.151 \pm 0.471$
photometric centroid source offset	$2.20 \pm 1.13$	1.95	$1.49 \pm 1.23$	$1.62 \pm 1.03$

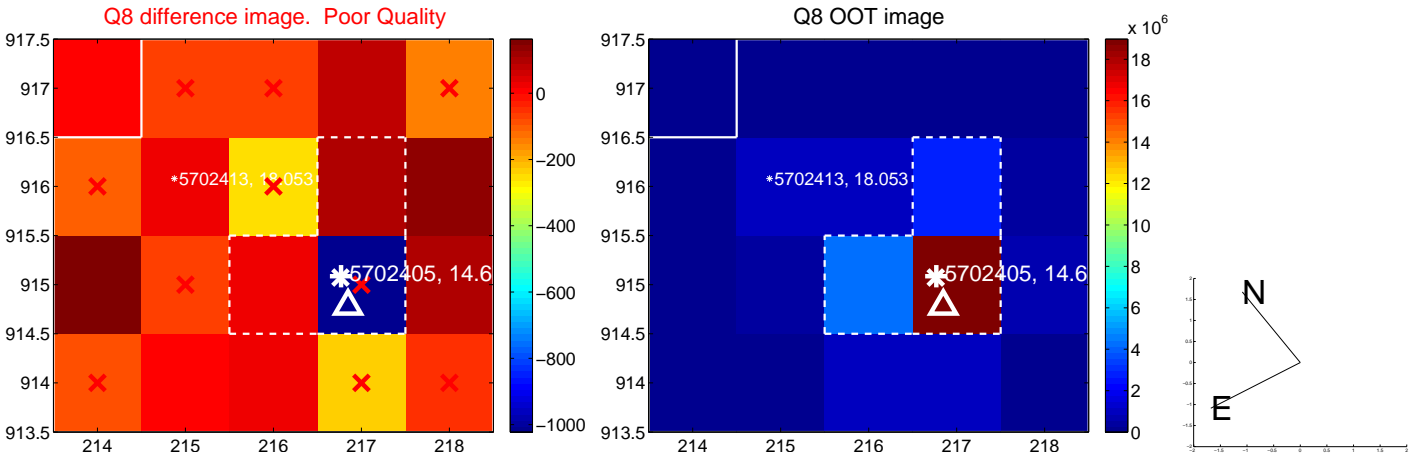
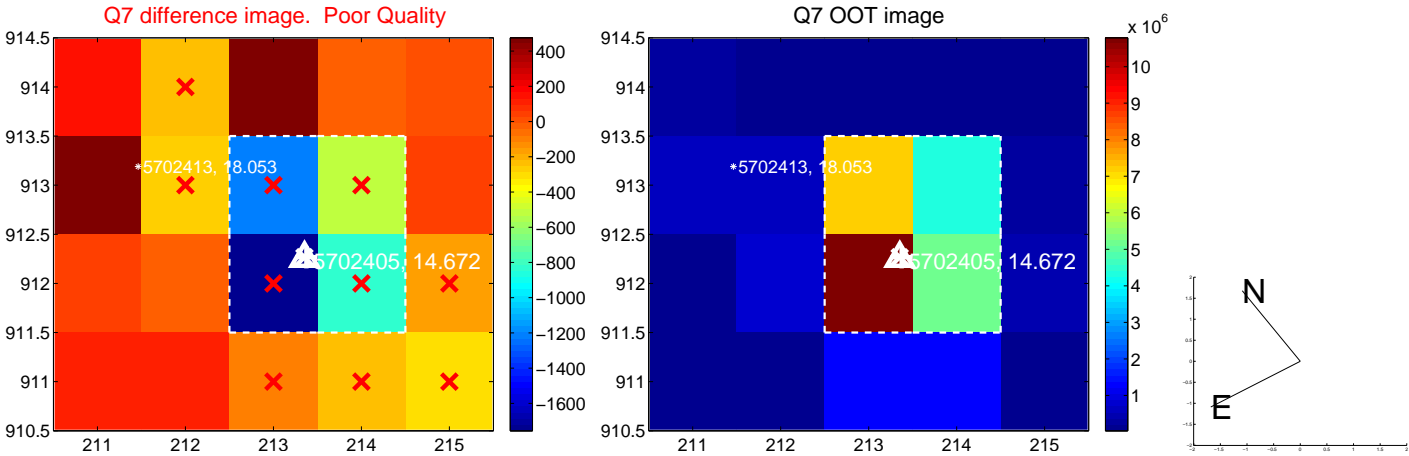
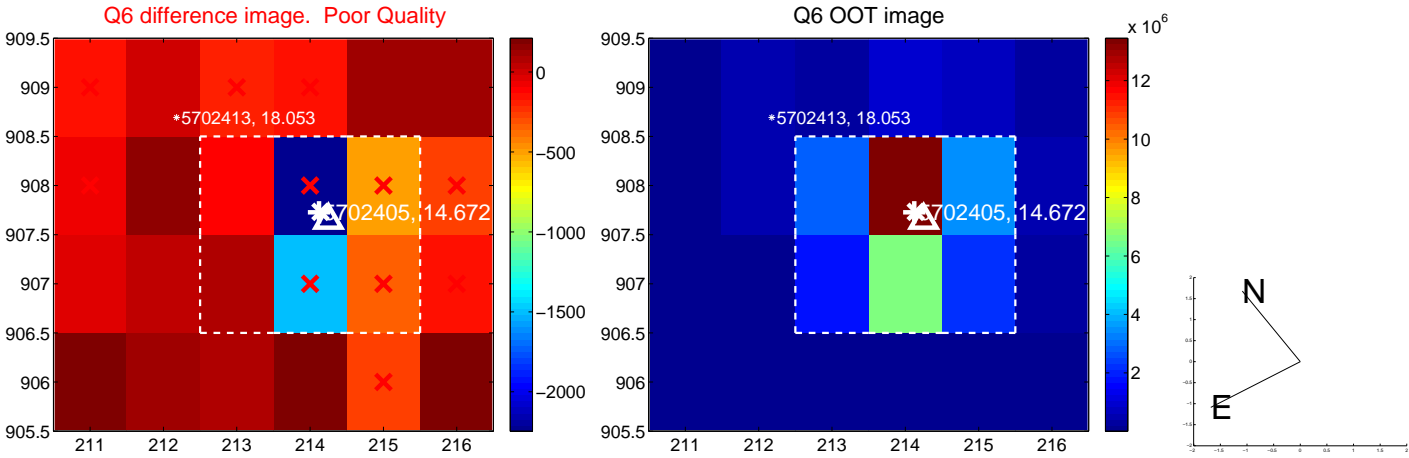
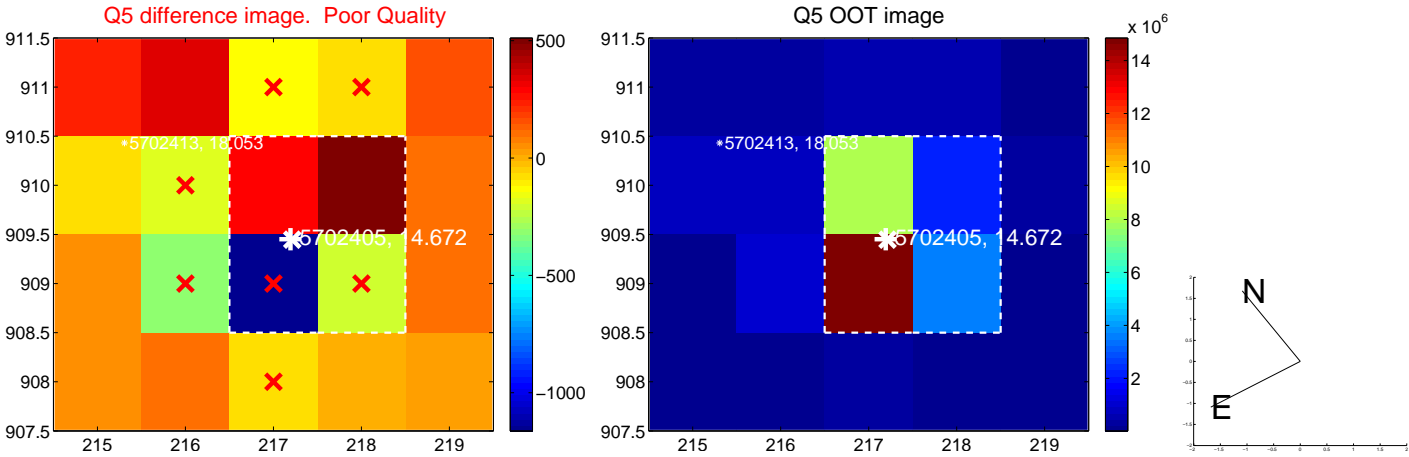


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

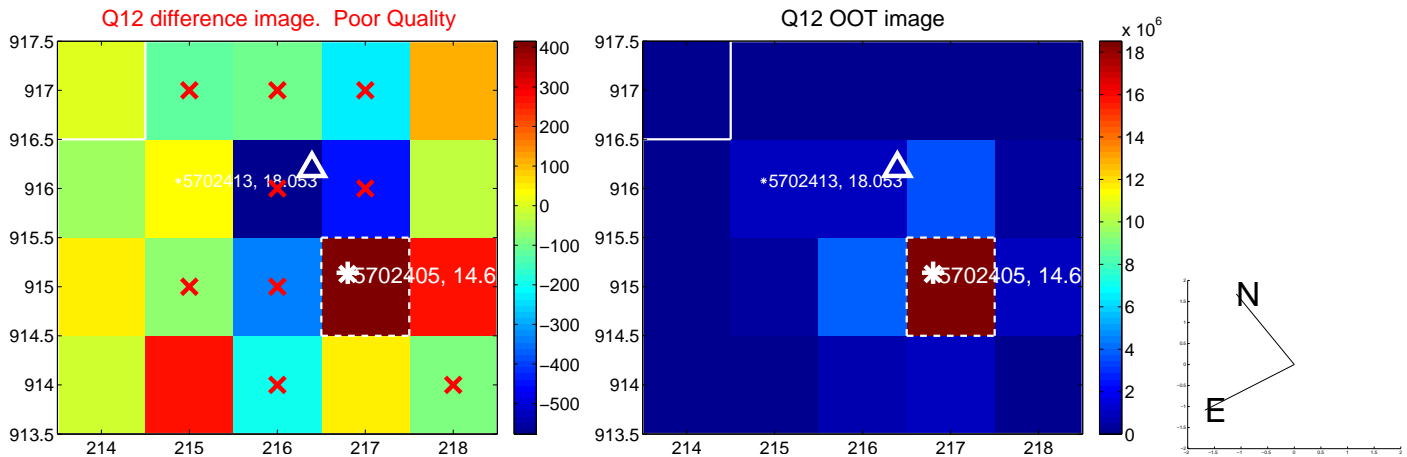
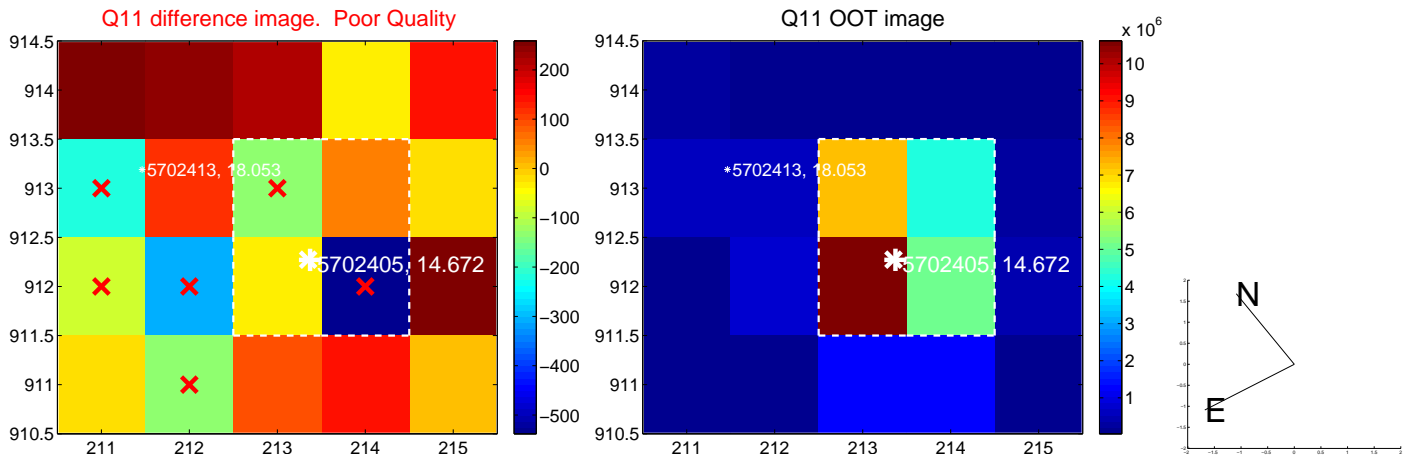
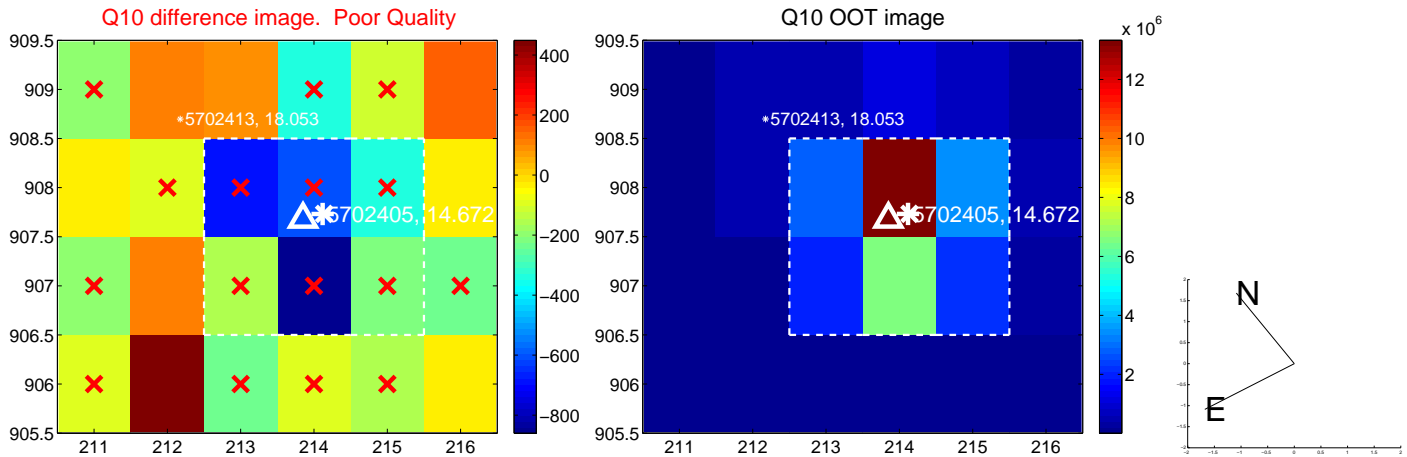
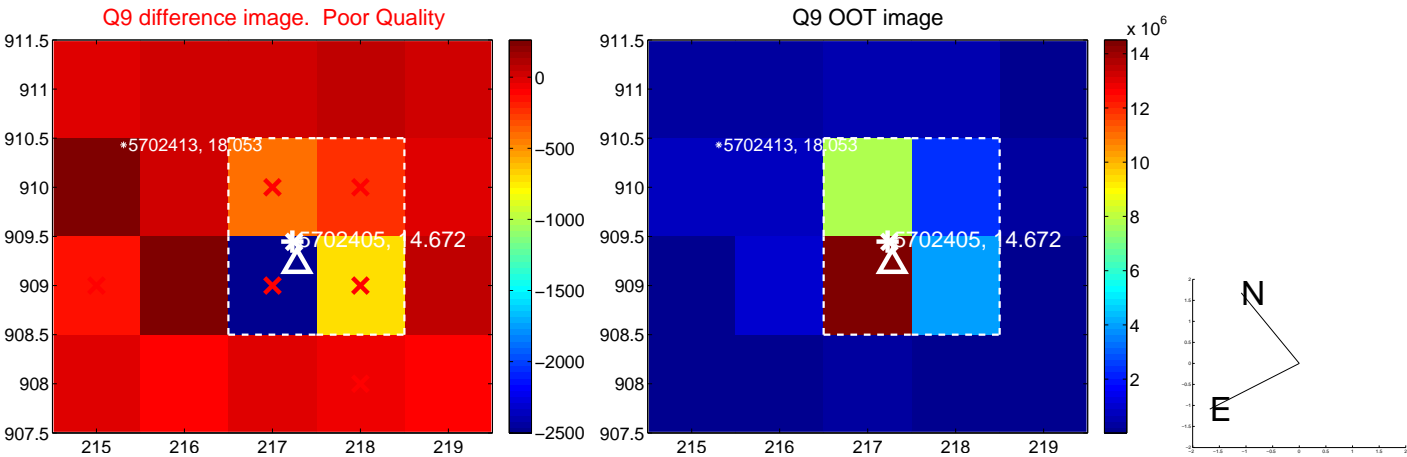


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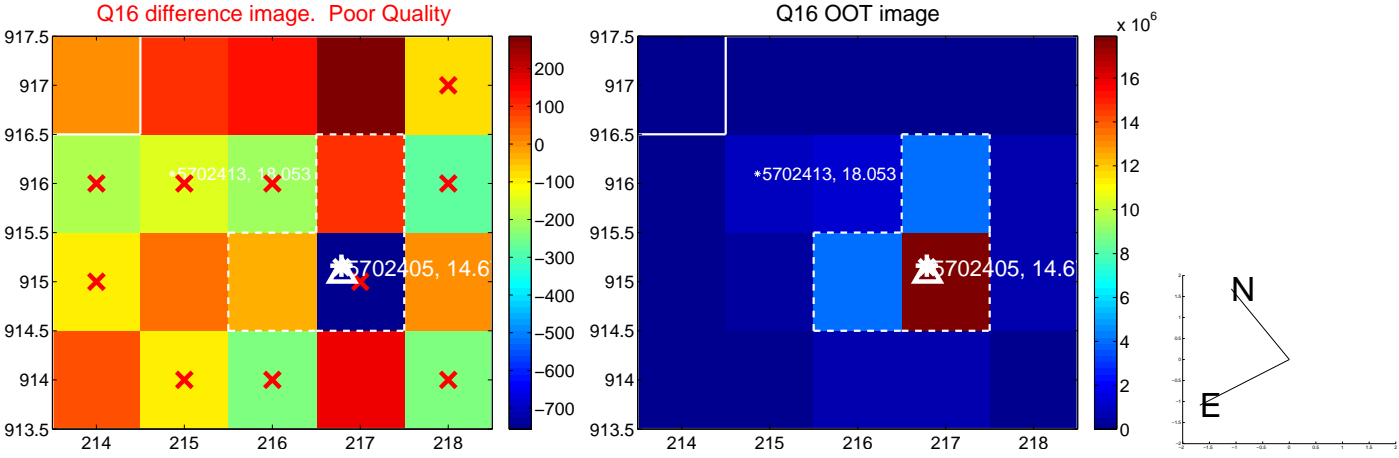
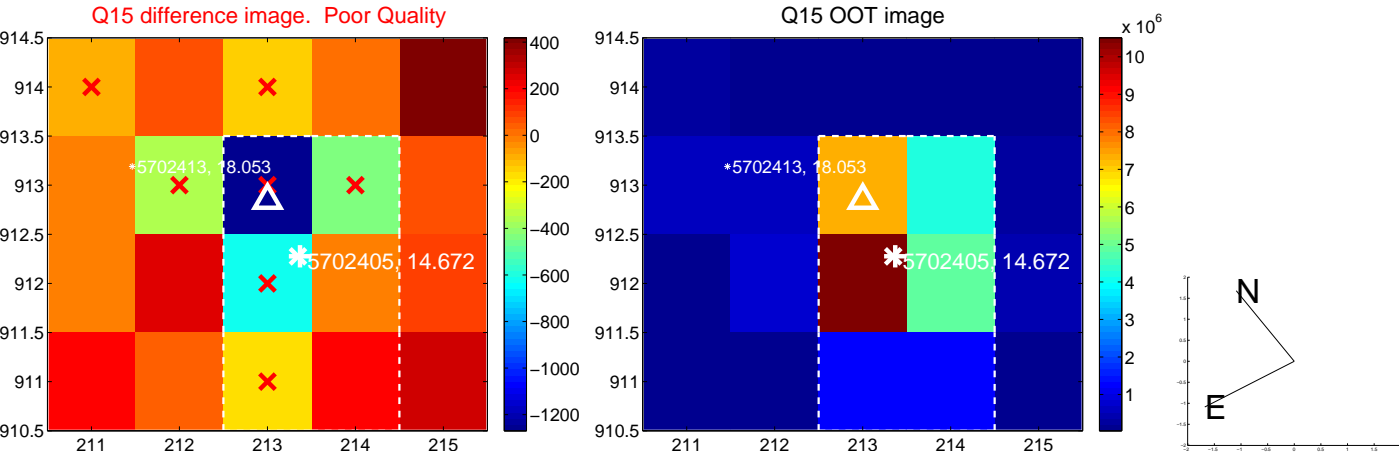
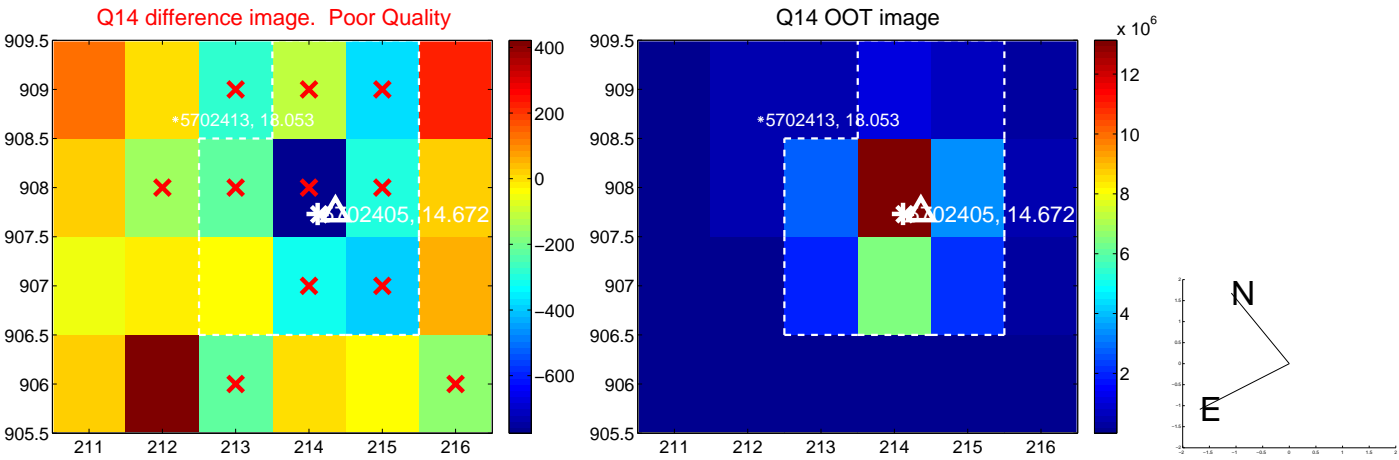
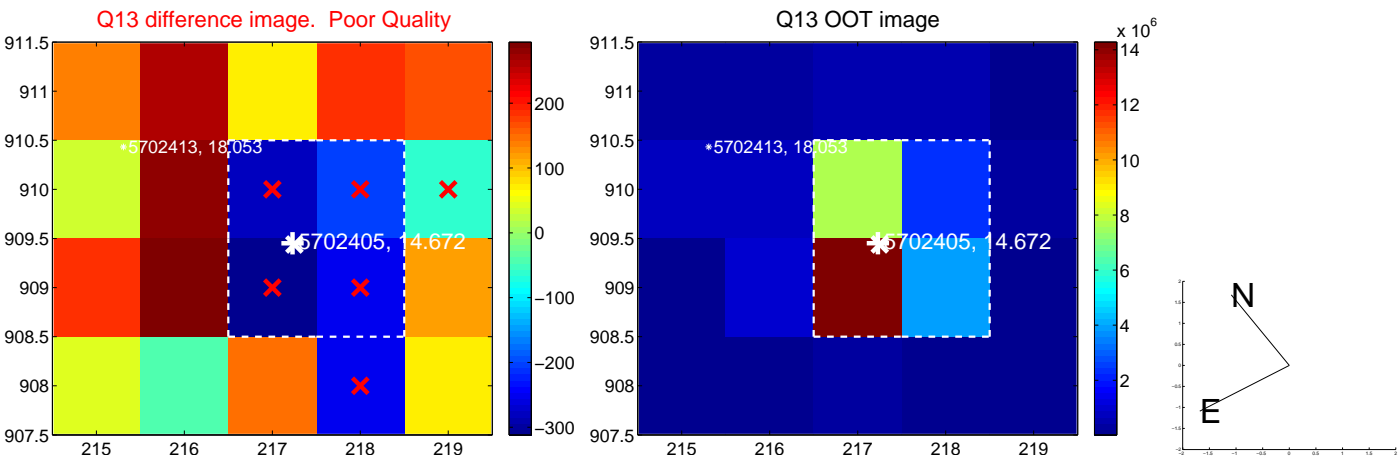




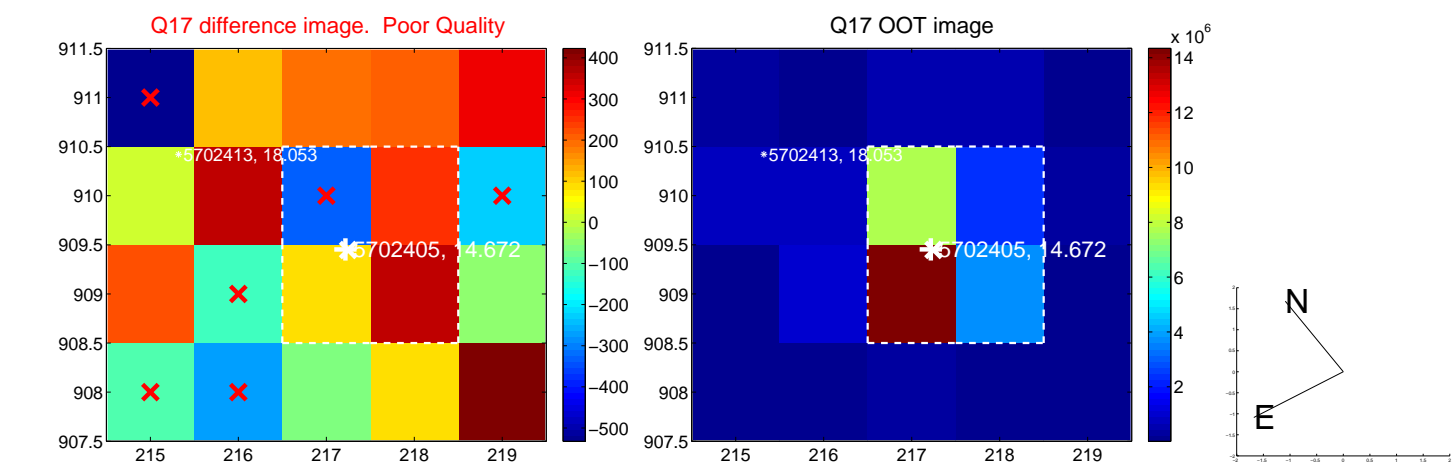
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



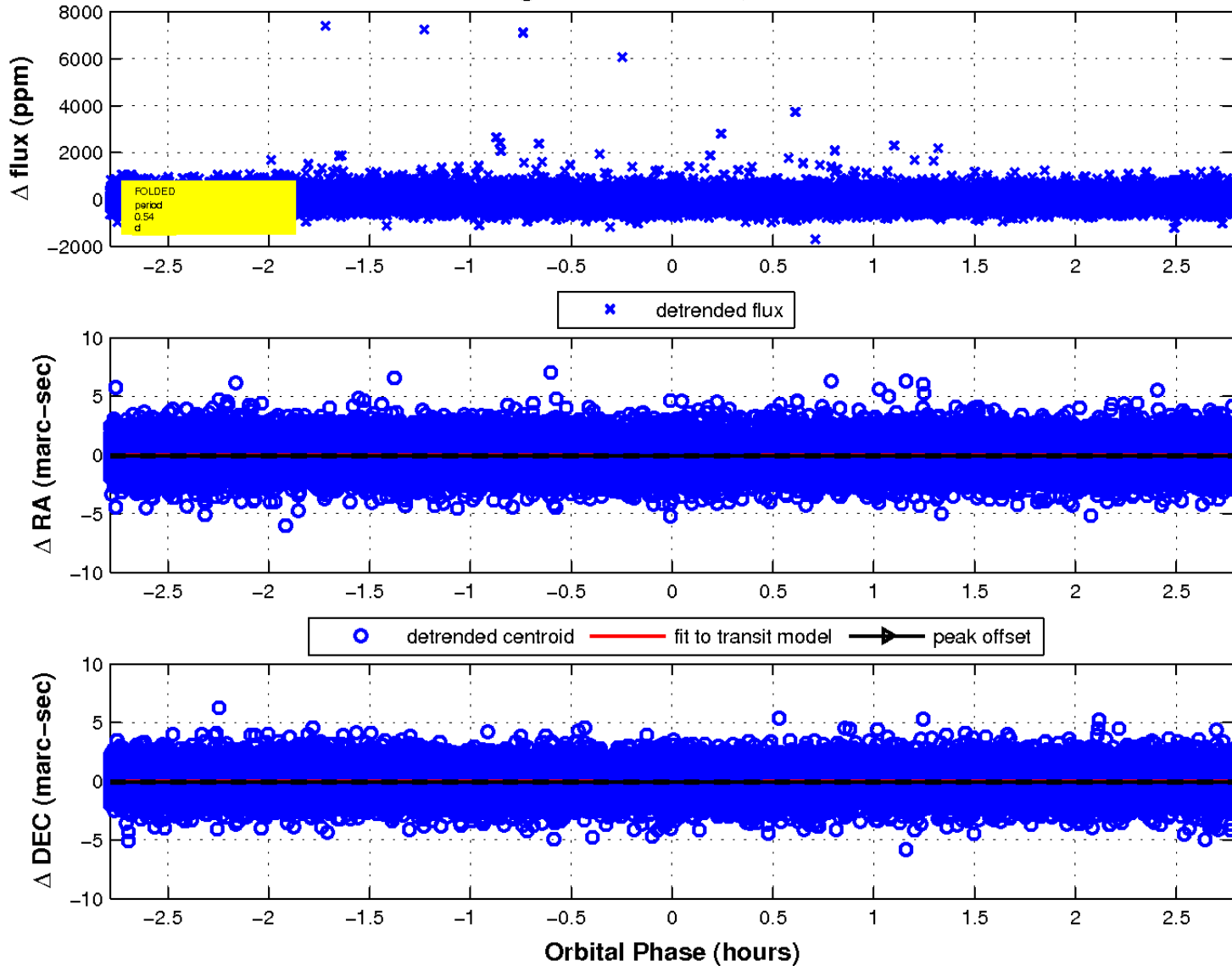
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

