

# KIC 005559651

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005559651-01	OBS	4660.01	0.514763	131.954842	36.1	1.440	9.7	10.4	0.87	5730	0.63	4724.79

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005559651-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—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.

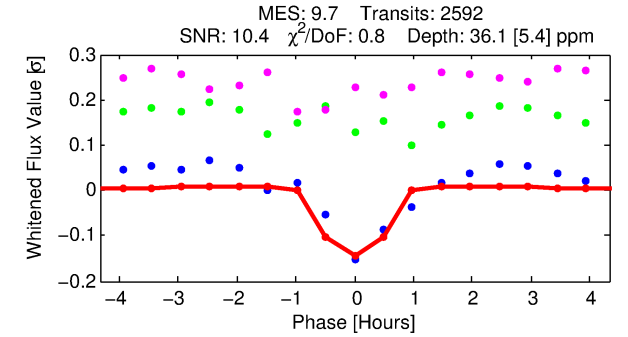
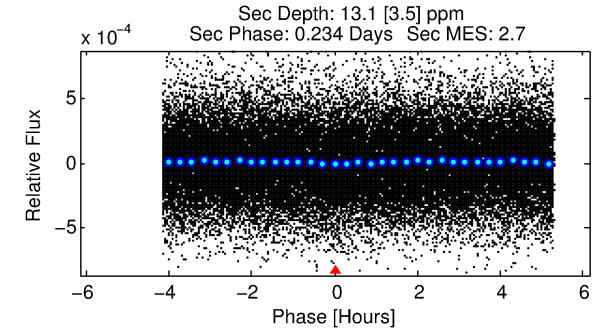
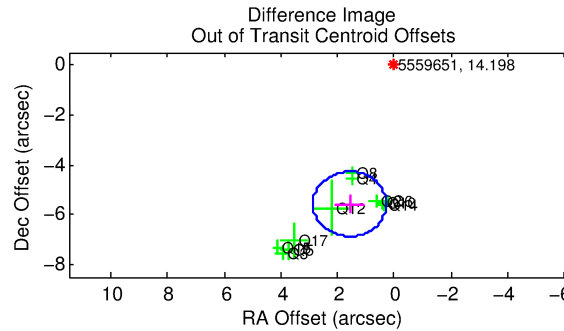
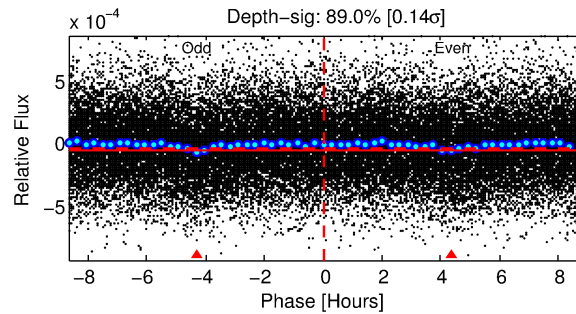
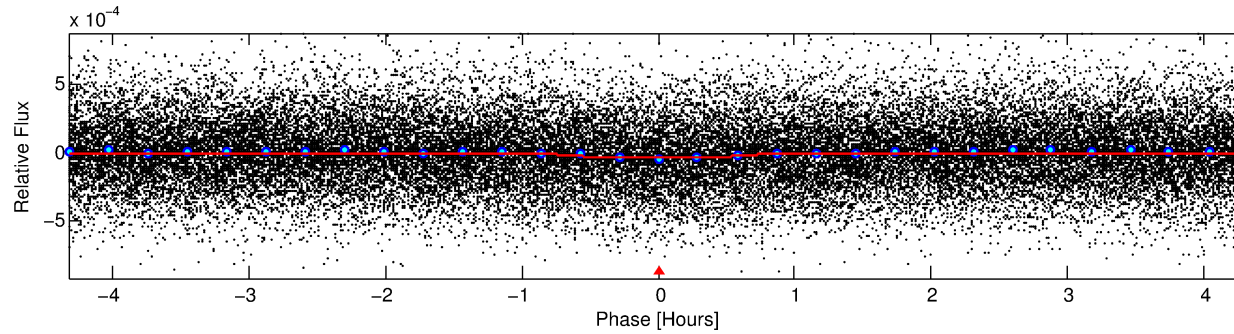
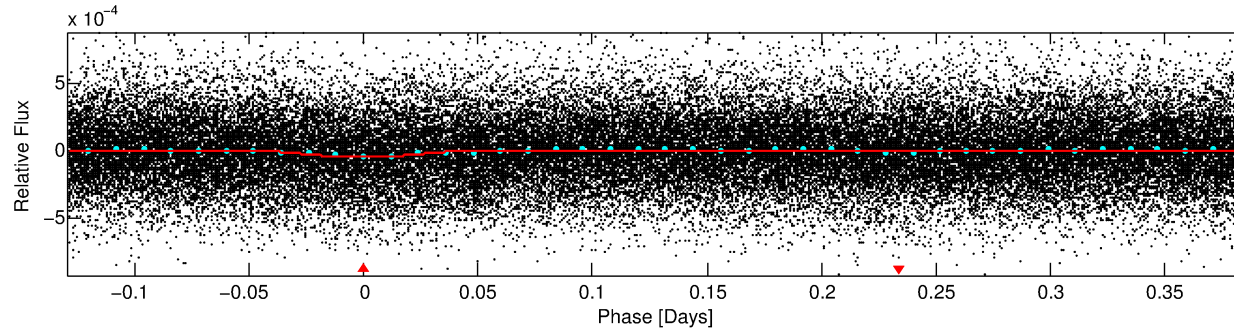
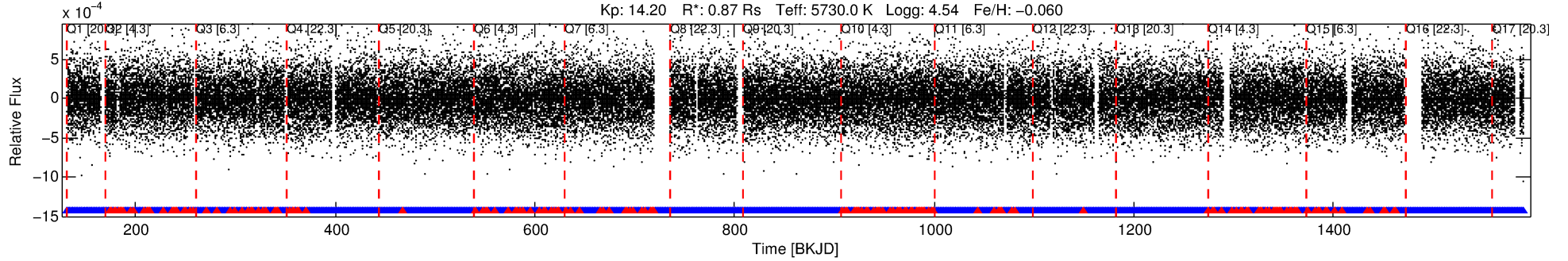
## Ephemeris Match Information For 005559651-01

No Significant Match Found

# DV One-Page Summary

KIC: 5559651 Candidate: 1 of 1 Period: 0.515 d  
KOI: K04660.01 Corr: 0.852

Kp: 14.20 R\*: 0.87 Rs Teff: 5730.0 K Logg: 4.54 Fe/H: -0.060



## DV Fit Results:

Period = 0.51476 [0.00001] d  
Epoch = 131.9548 [0.0021] BKJD  
Rp/R\* = 0.0066 [0.0035]  
a/R\* = 1.53 [2.18]  
b = 0.91 [0.51]  
Seff = 4724.79 [1677.23]  
Teq = 2114 [188] K  
Rp = 0.63 [0.37] Re  
a = 0.0124 [0.0028] AU  
Ag = 2.84 [3.21] [0.57σ]  
Teffp = 4245 [1152] K [1.82σ]

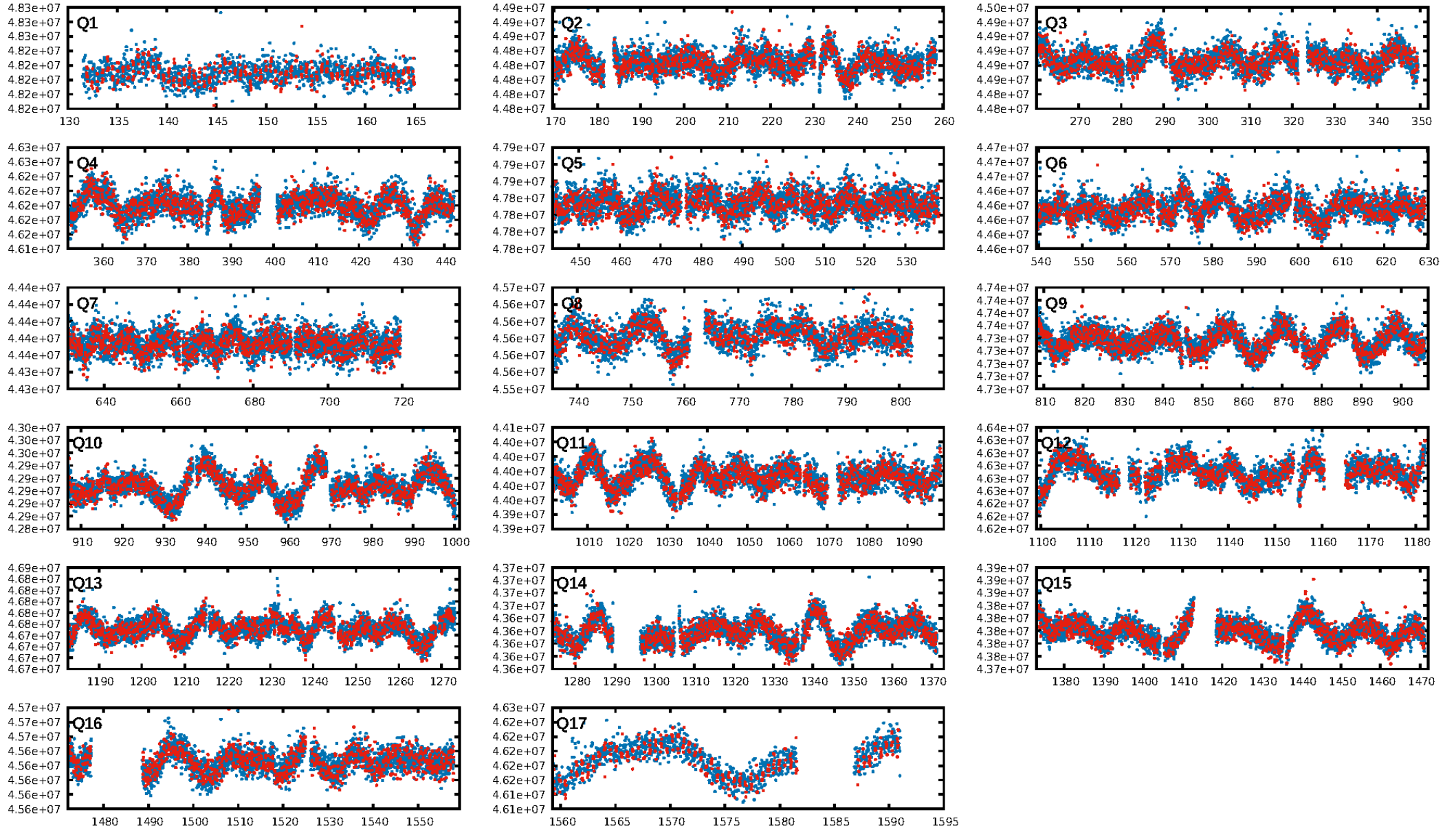
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.34e-20  
RollingBand-fgt: 0.93 [2294/2475]  
GhostDiagnostic-chr: -0.2478  
Centroid-sig: 0.0%  
Centroid-so: 15.988 arcsec [13.01σ]  
OotOffset-rm: 5.794 arcsec [13.39σ]  
KicOffset-rm: 5.918 arcsec [14.82σ]  
OotOffset-st: 4/2/3/2 [11]  
KicOffset-st: 4/2/3/2 [11]  
DiffImageQuality-fgm: 1.00 [11/11]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:32:23 Z

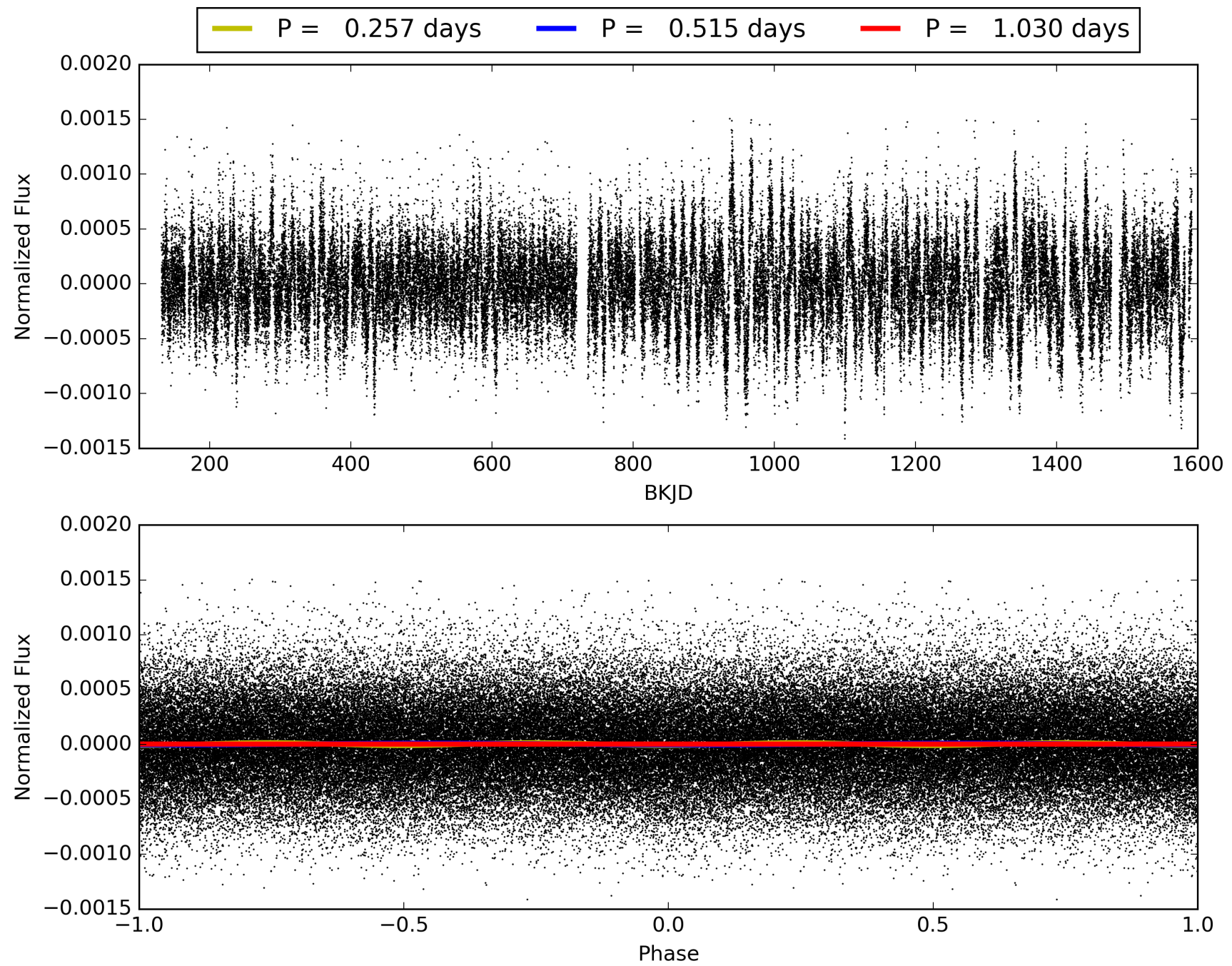
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005559651-01, PDC Light Curves



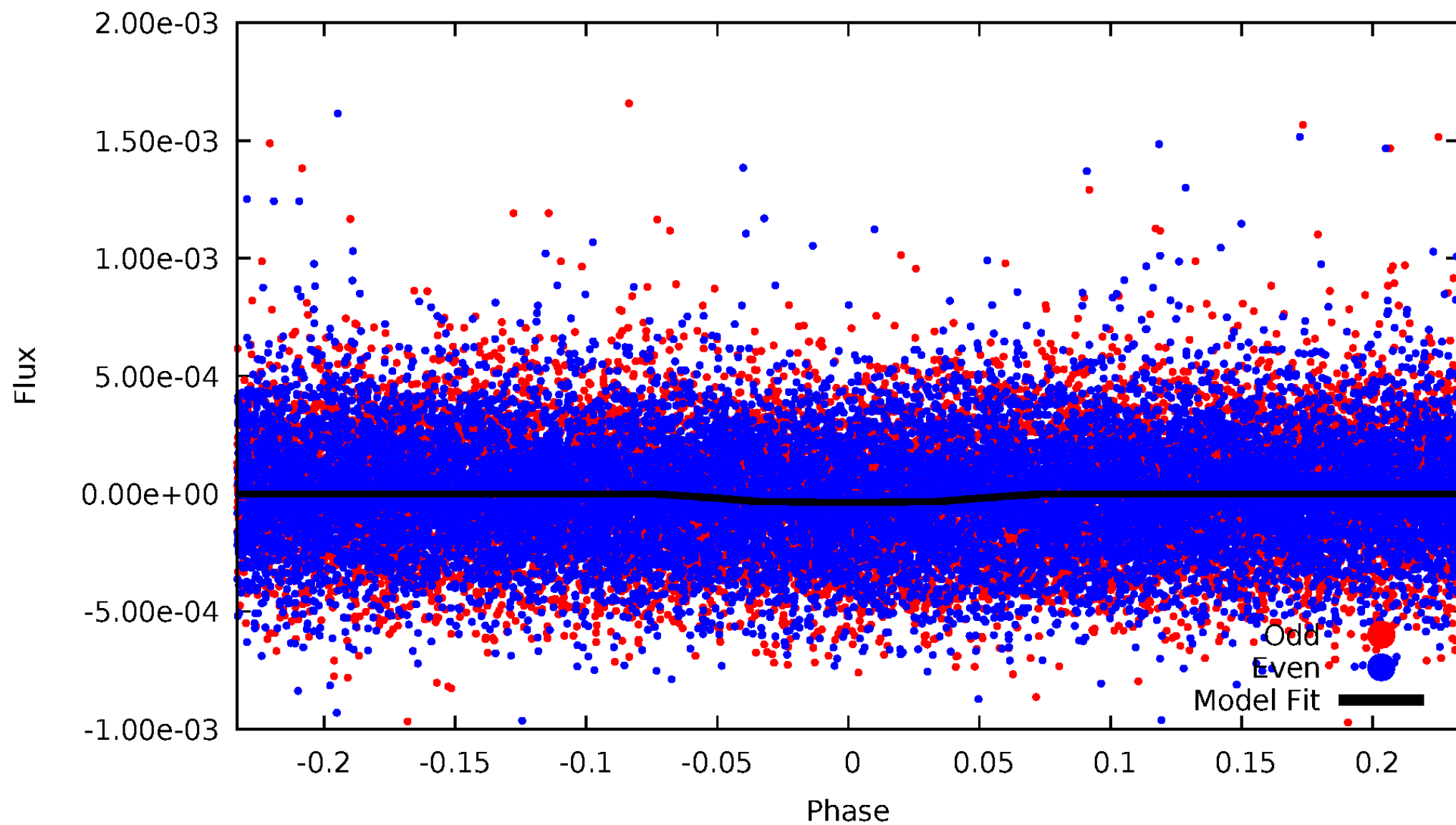


TCE 005559651-01



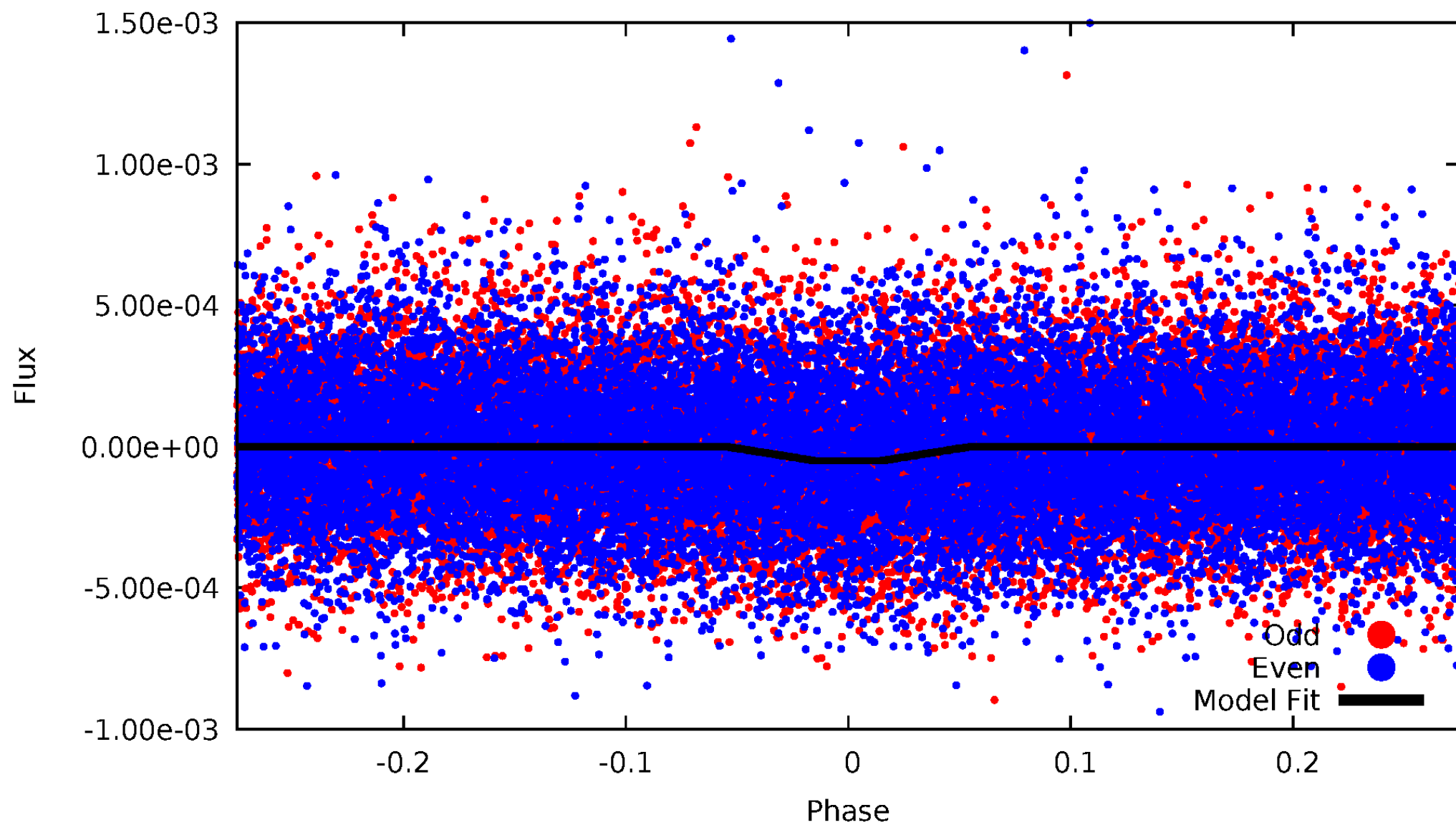
# DV Odd/Even

TCE 005559651-01

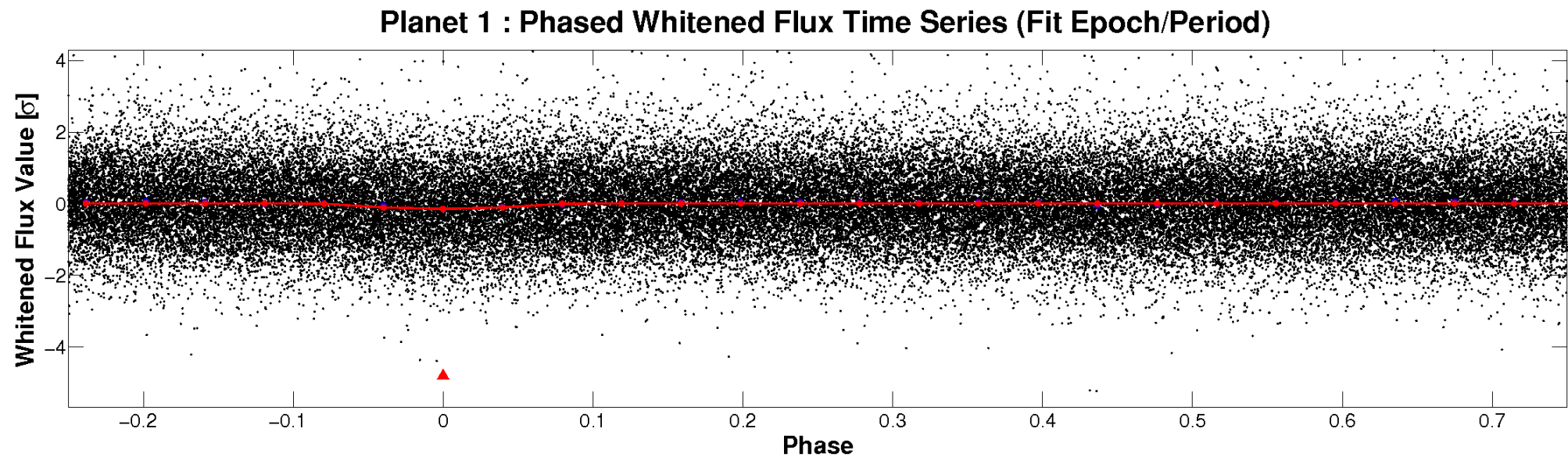
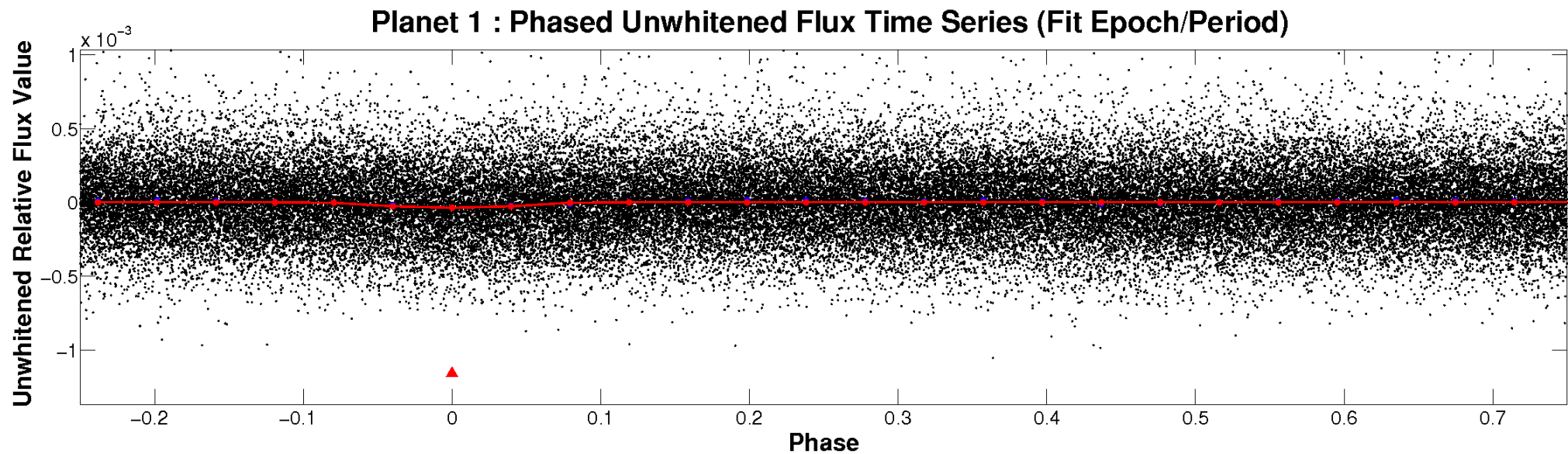


# ALT Odd/Even

TCE 005559651-01



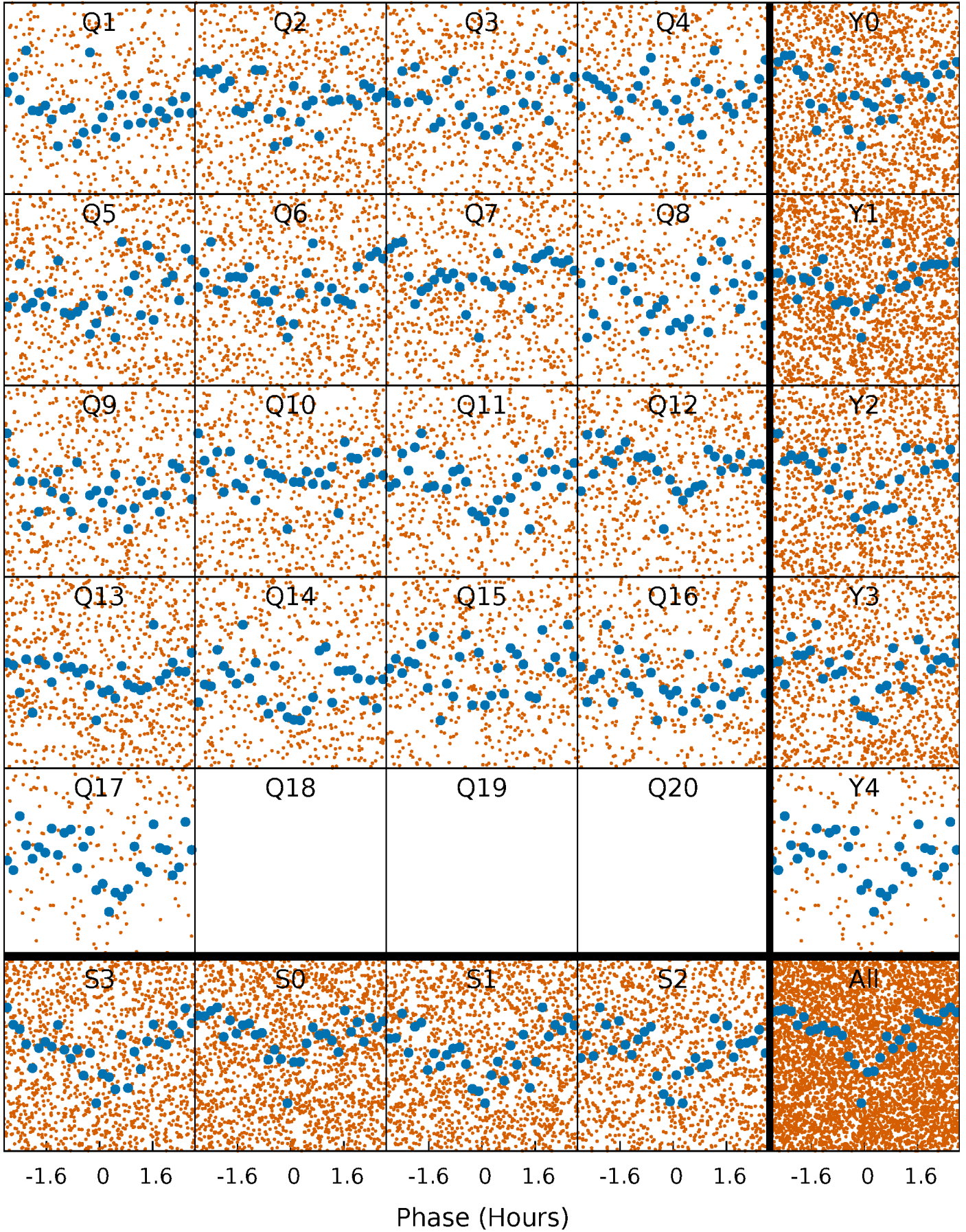
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

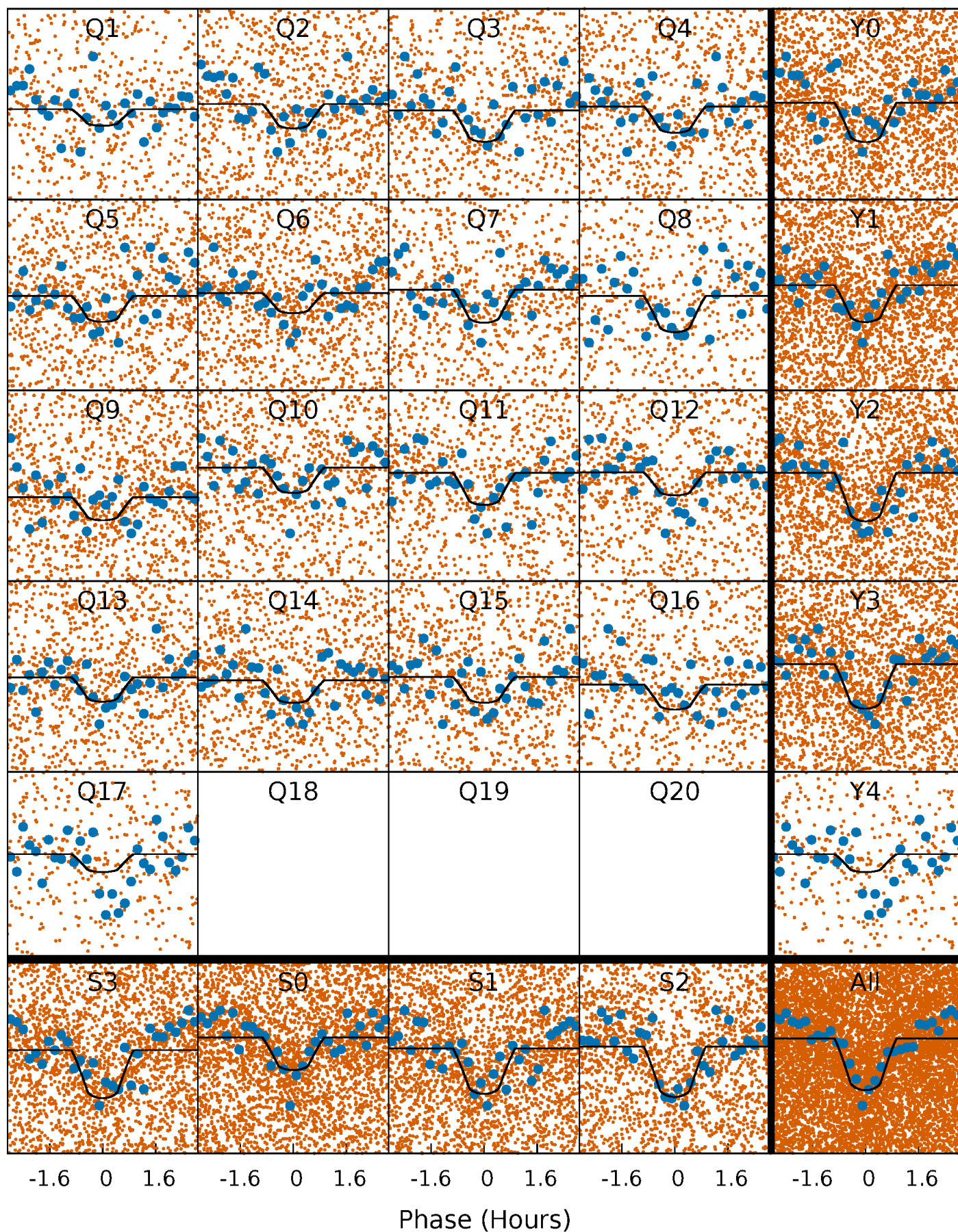
TCE 005559651-01 P= 0.514763 Days  $T_0=131.954842$  (BKJD)





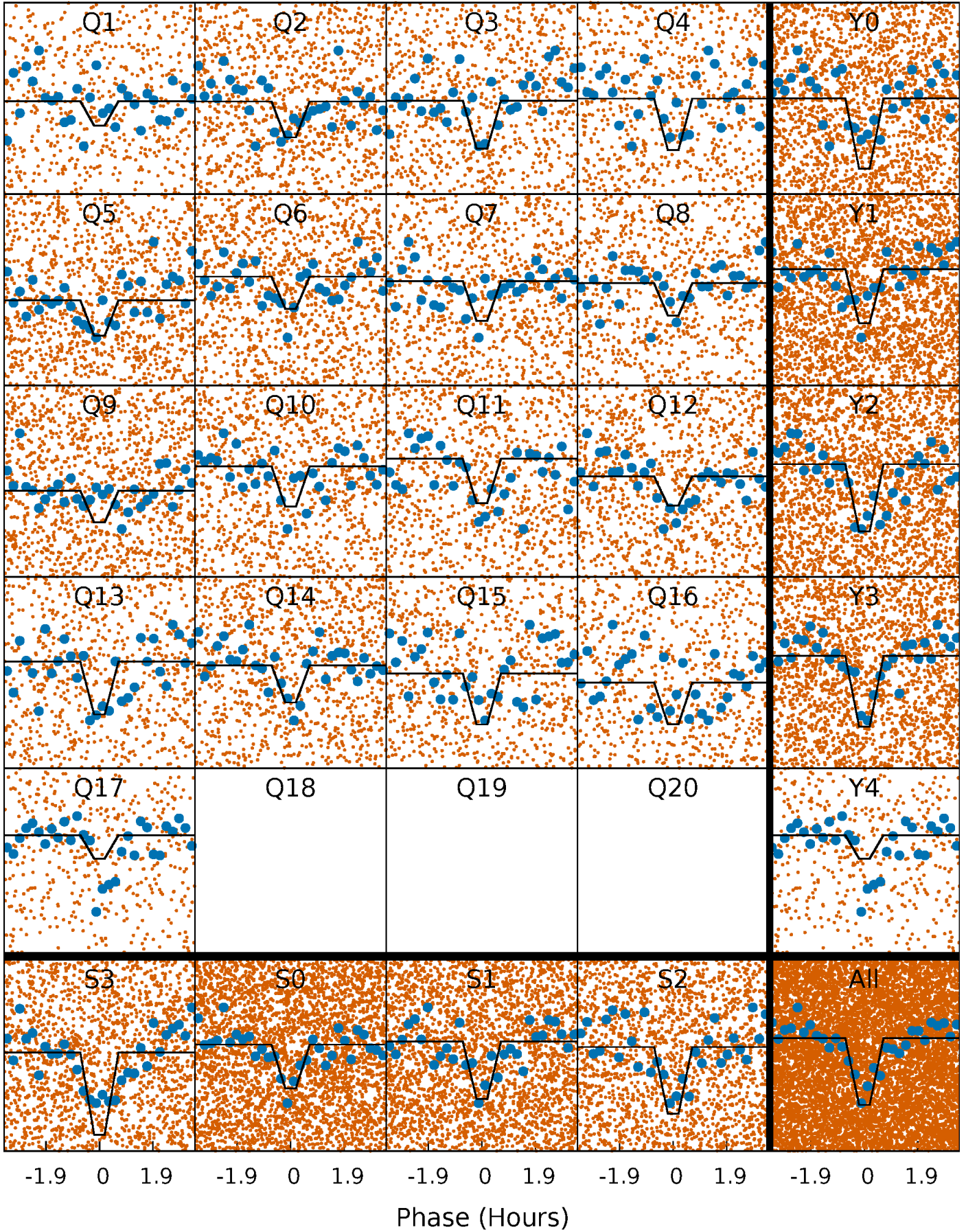
# DV Quarter-Phased Transit Curves

TCE 005559651-01   P= 0.514763 Days    $T_0=131.954842$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005559651-01   P= 0.514767 Days    $T_0=131.951471$  (BKJD)

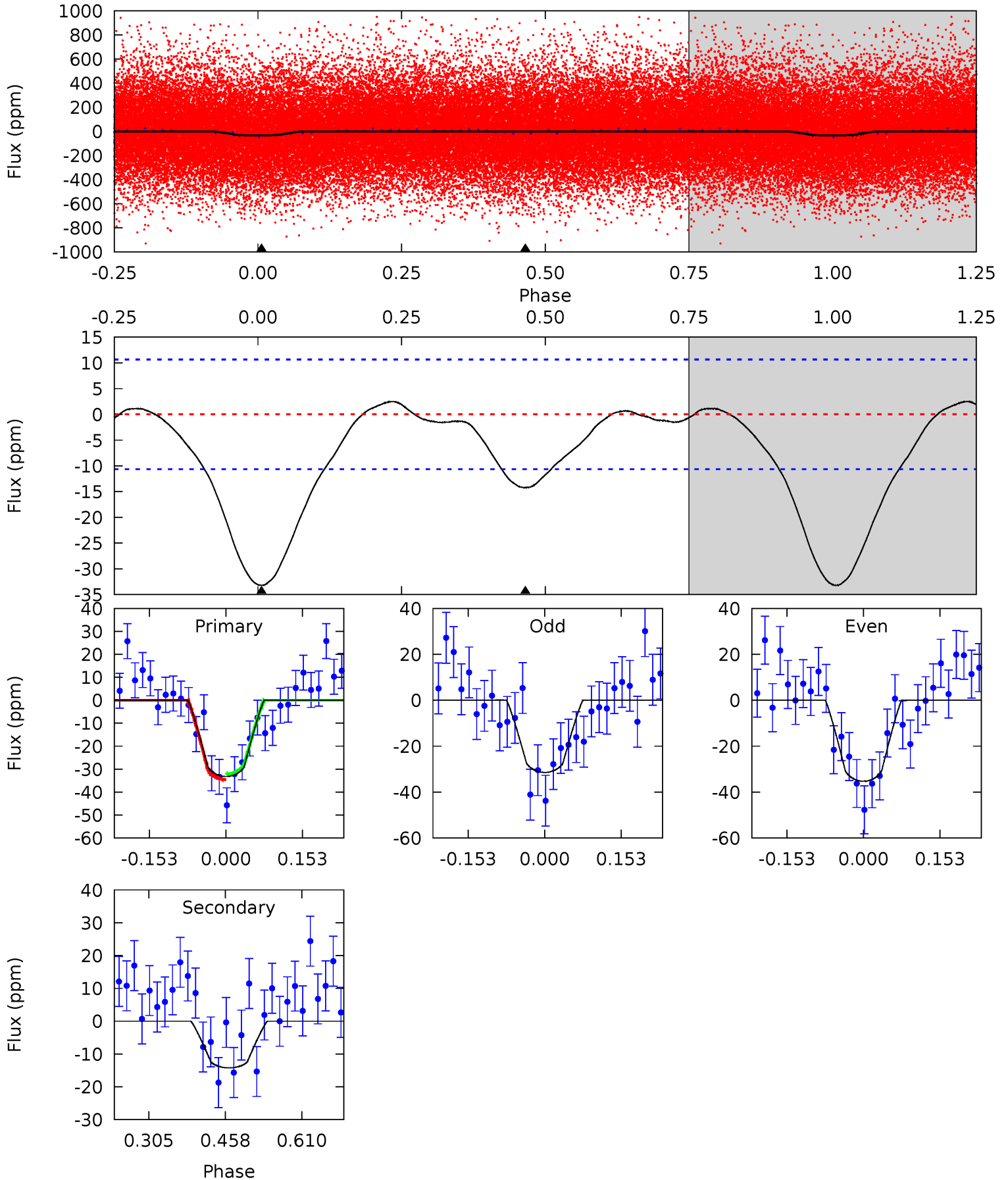




# DV Model-Shift Uniqueness Test

005559651-01, P = 0.514763 Days, E = 131.440079 Days

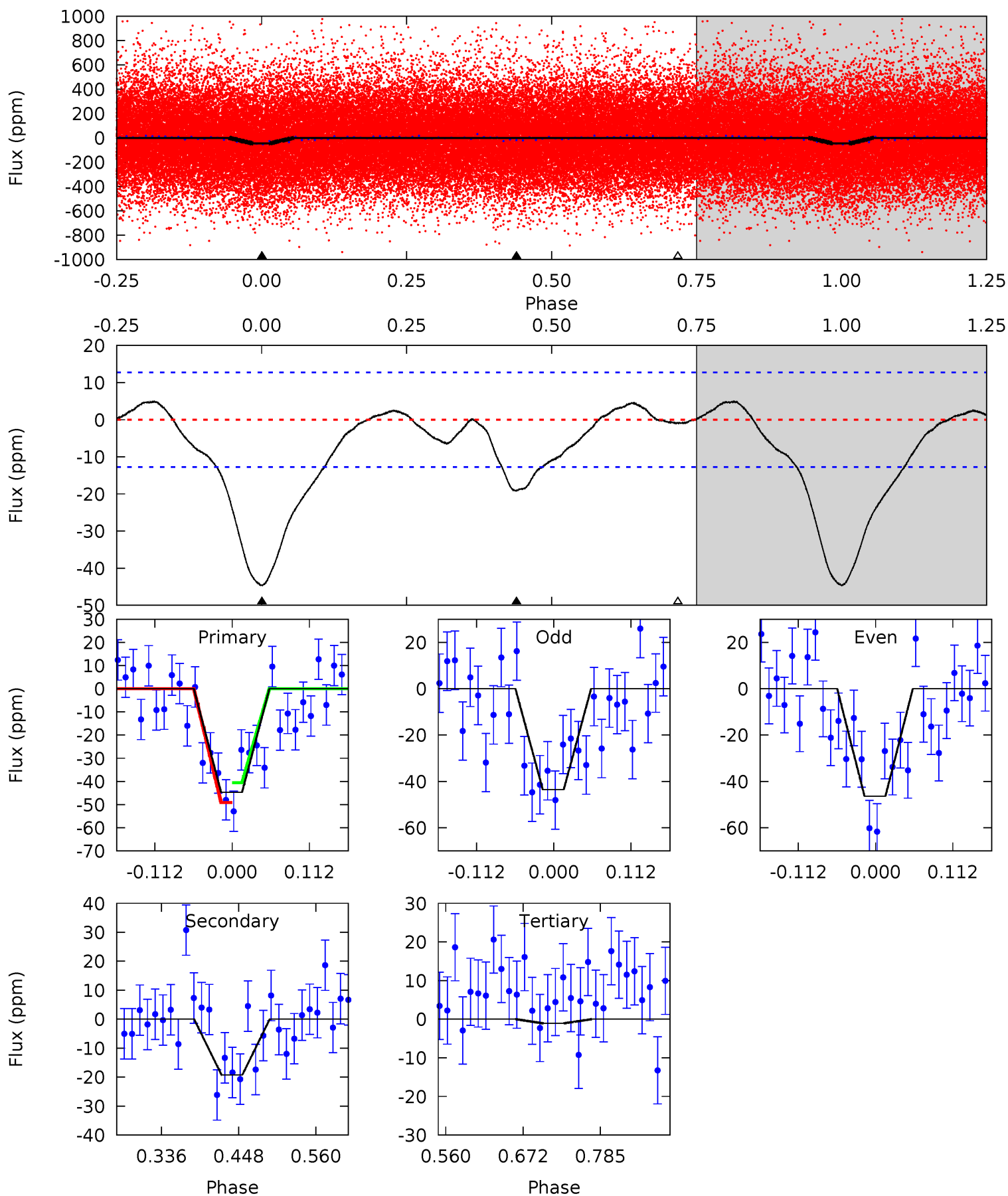
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.0	5.99	0	0	4.48	1.43	0.53	14.0	14.0	5.99	5.99	0.81	1.06	0.07	0.50



# Alt Model-Shift Uniqueness Test

005559651-01, P = 0.514767 Days, E = 131.436704 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
15.9	6.84	0.38	0	4.54	1.59	1.26	15.5	15.9	6.46	6.84	0.50	0.90	0.10	1.53





### Stellar Parameters For KIC 005559651

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5730^{+153}_{-170}$	$4.545^{+0.034}_{-0.184}$	$-0.060^{+0.250}_{-0.300}$	$0.870^{+0.234}_{-0.078}$	$0.968^{+0.095}_{-0.116}$	$2.069^{+0.379}_{-0.963}$
	+3%/-3%	+1%/-4%	+417%/-500%	+27%/-9%	+10%/-12%	+18%/-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 005559651-01 / KOI 4660.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-14 \pm 2$	$0.69^{+0.35}_{-0.36}$	$3023^{+200}_{-127}$	$4334^{+1585}_{-739}$	$2.553^{+7.811}_{-1.480}$
Alt.	$-19 \pm 3$	$0.70^{+0.36}_{-0.31}$	$3029^{+187}_{-139}$	$4554^{+1335}_{-731}$	$3.258^{+6.869}_{-1.871}$

$T_{max}$  = 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

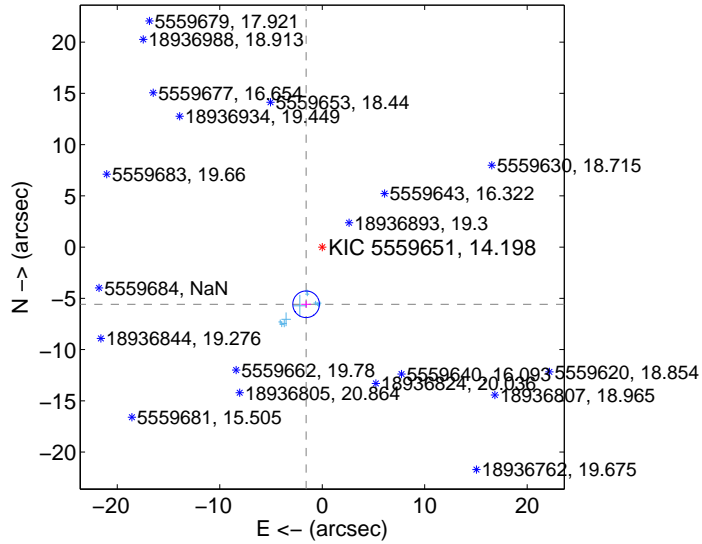
Supplemental centroid analysis for 005559651-01. Kepler magnitude: 14.20. Transit SNR 10.44

There are 11 quarters with good PRF difference image offsets

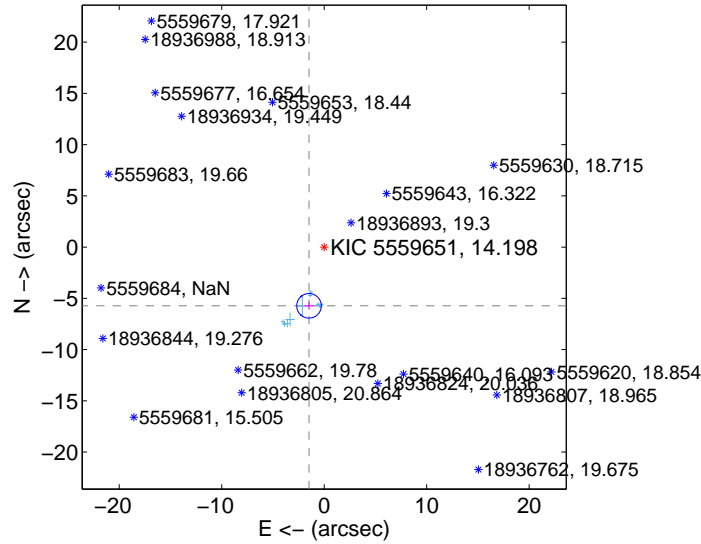
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>5.794 <math>\pm</math> 0.433</b>	<b>13.39</b>	1.573 $\pm$ 0.475	-5.577 $\pm$ 0.338
PRF-fit source offset from KIC position	<b>5.918 <math>\pm</math> 0.399</b>	<b>14.82</b>	1.482 $\pm$ 0.517	-5.729 $\pm$ 0.390
photometric centroid source offset	<b>15.99 <math>\pm</math> 1.23</b>	<b>13.01</b>	8.01 $\pm$ 1.22	-13.84 $\pm$ 1.23

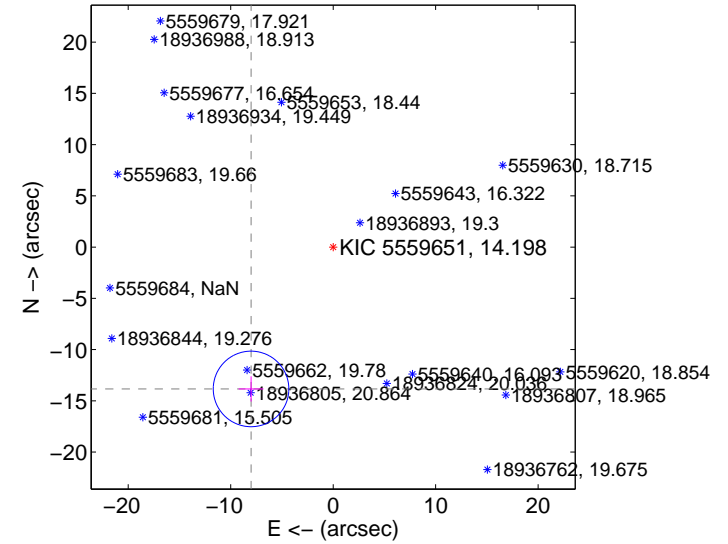
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

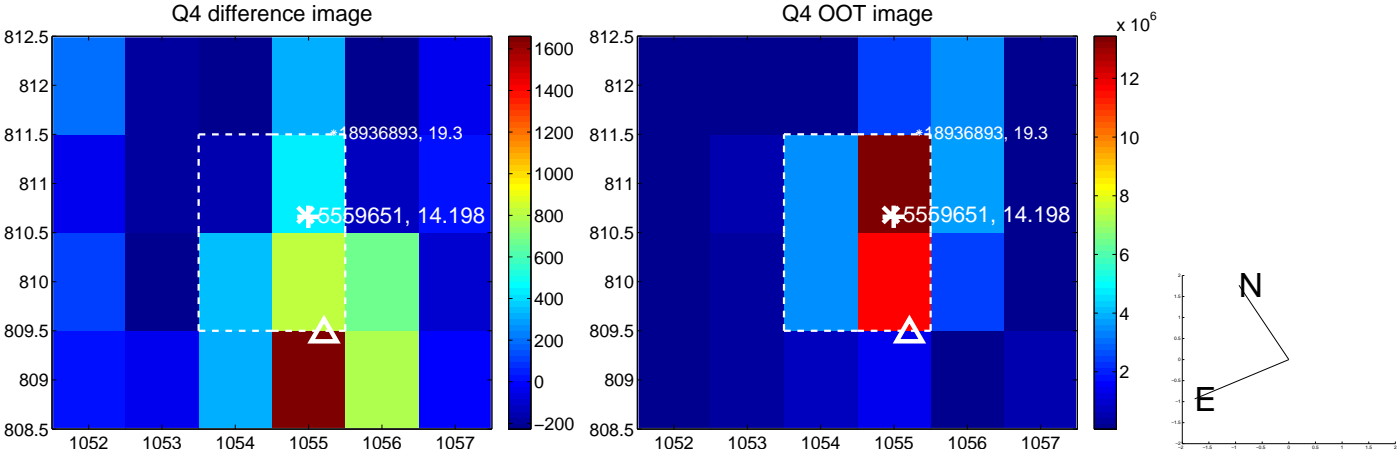
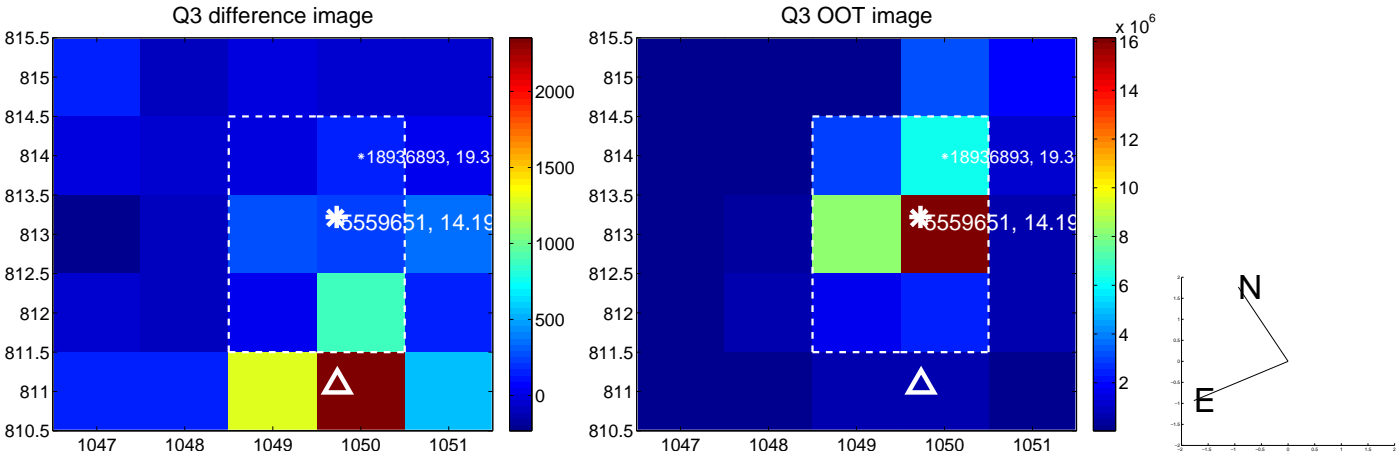
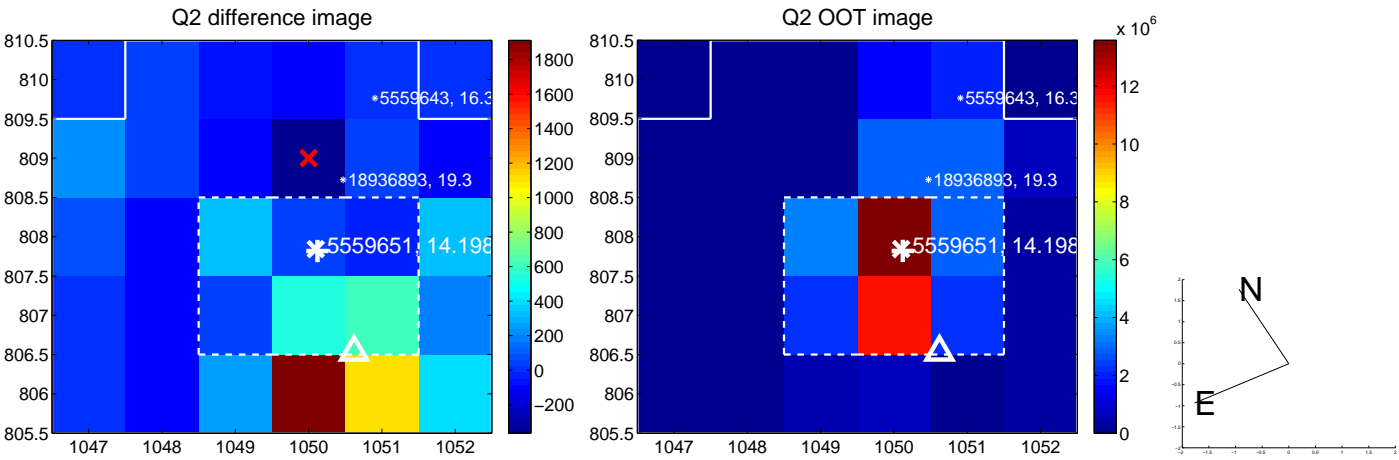
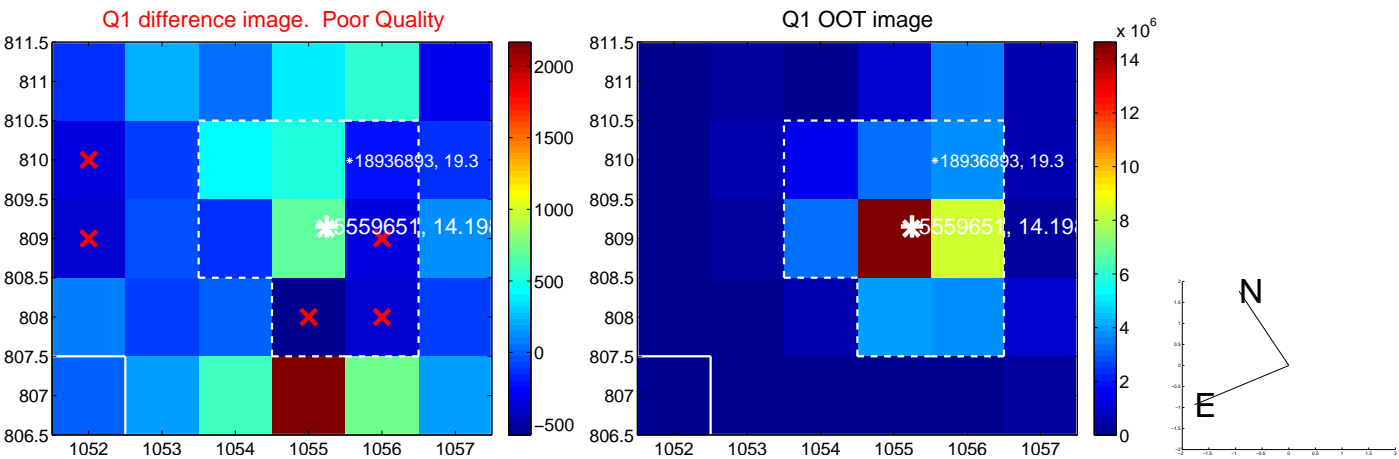


offset from photometric centroids

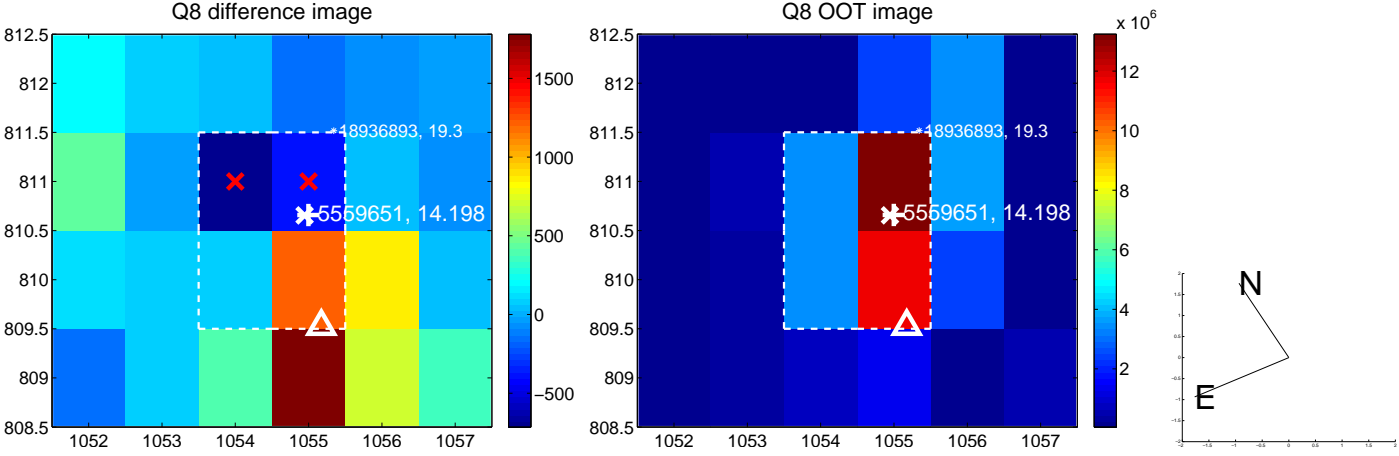
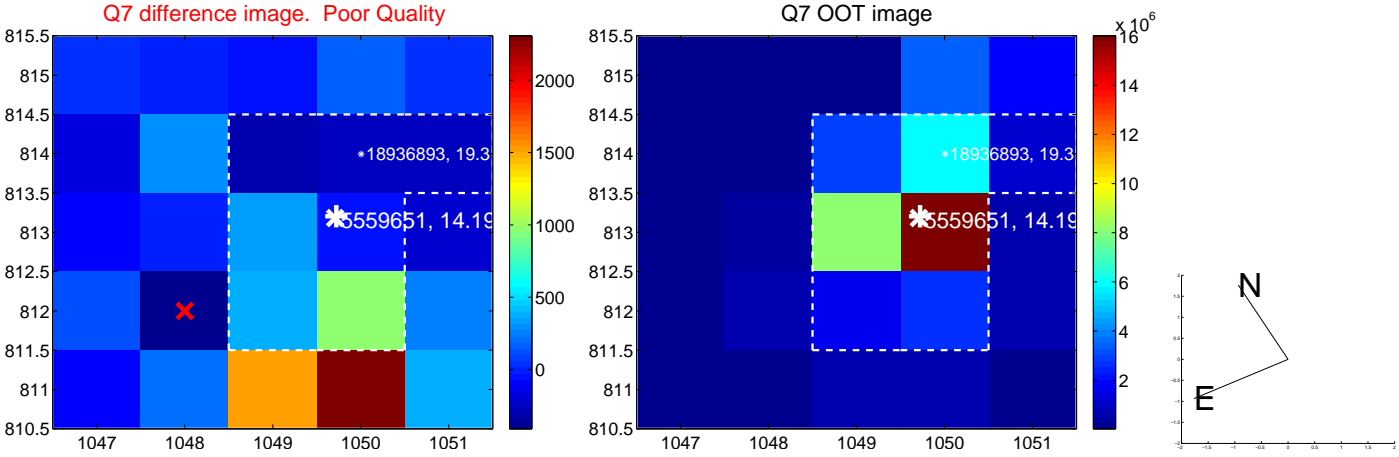
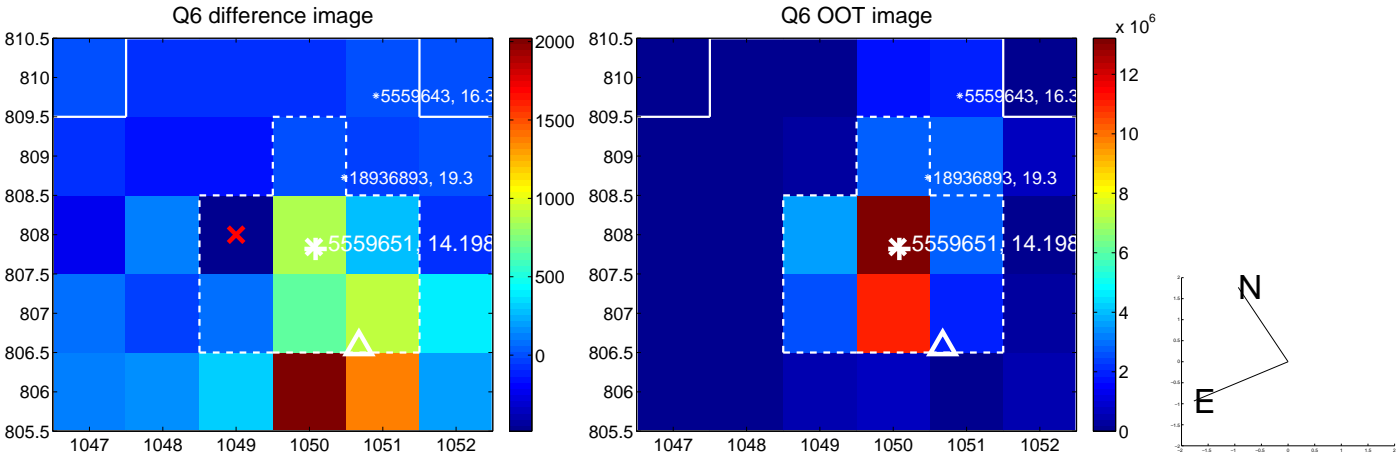
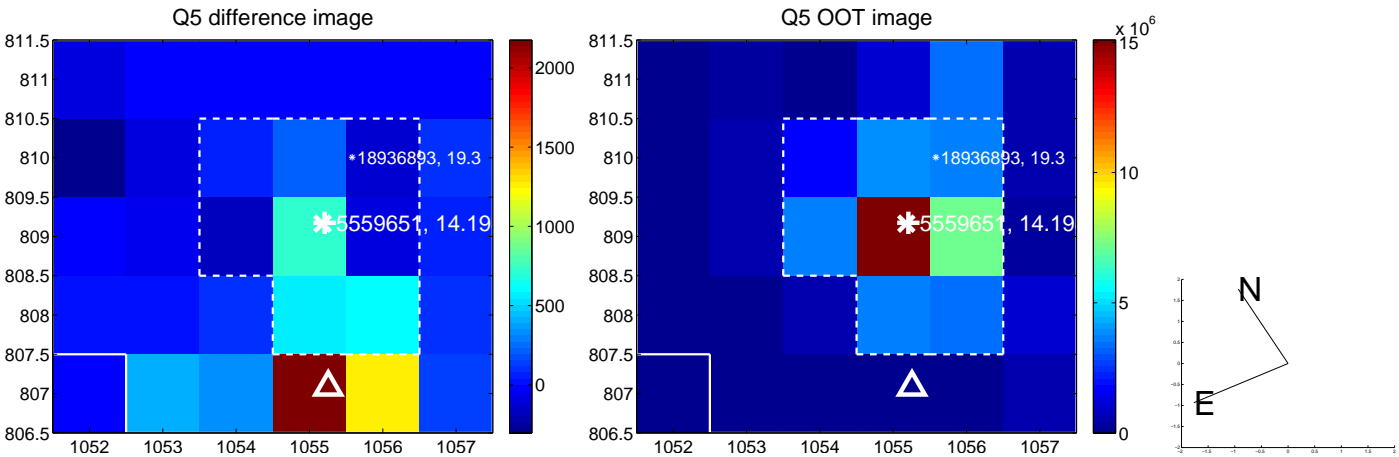


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

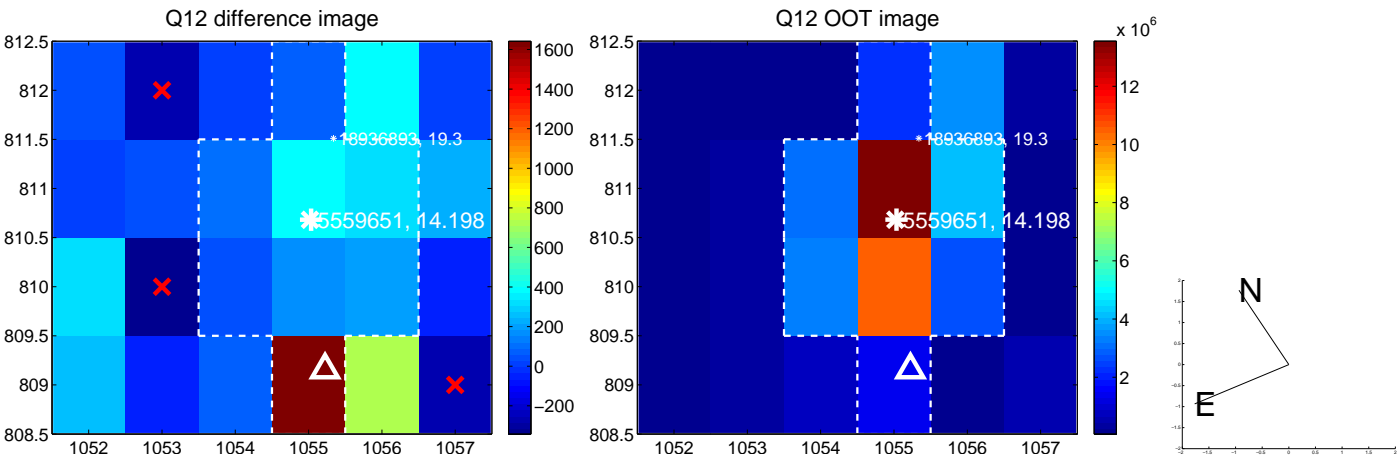
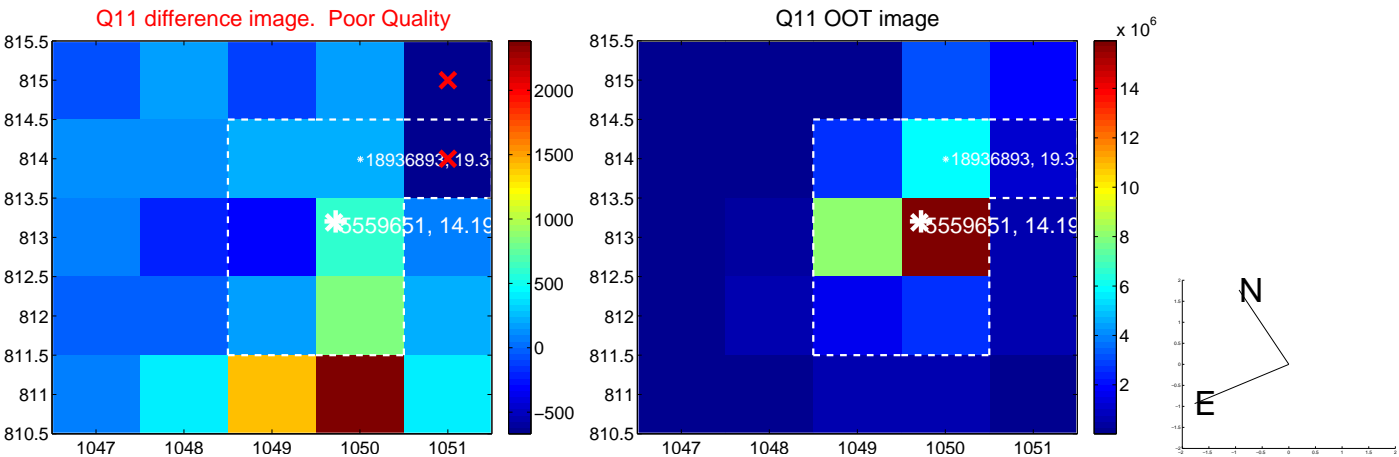
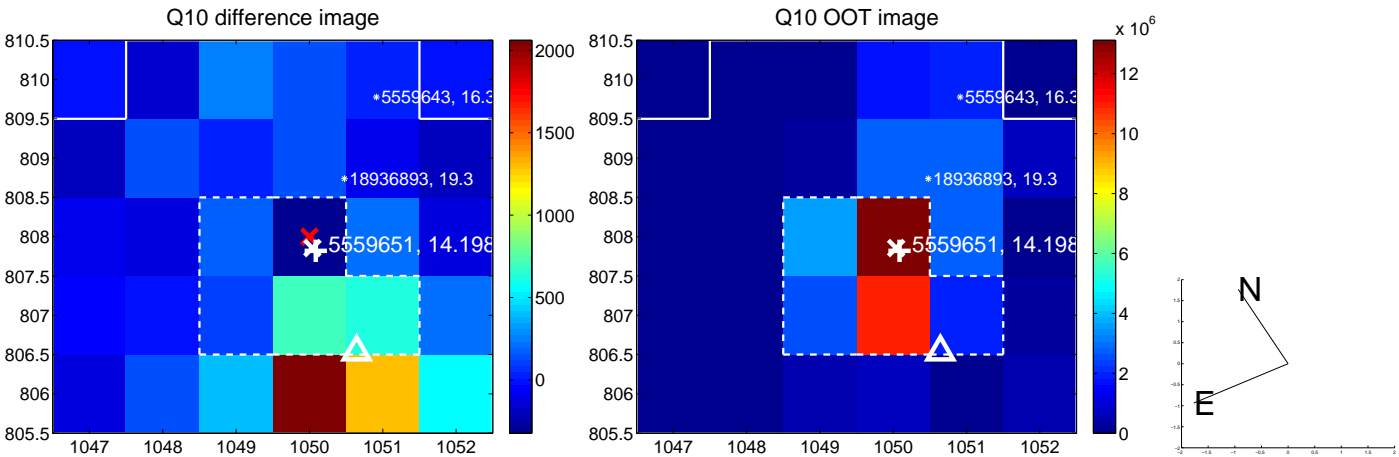
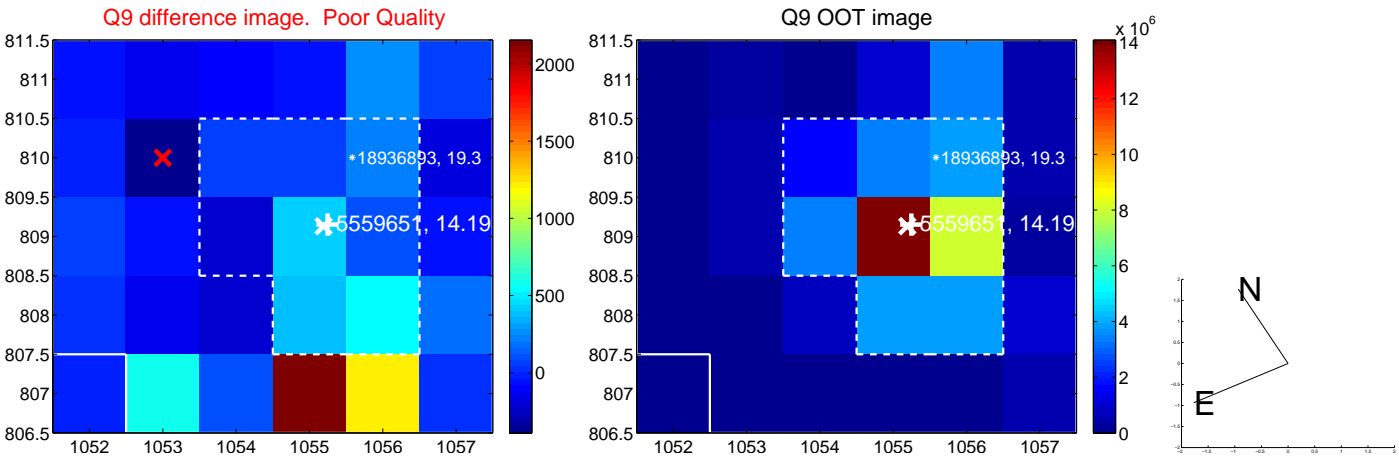


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

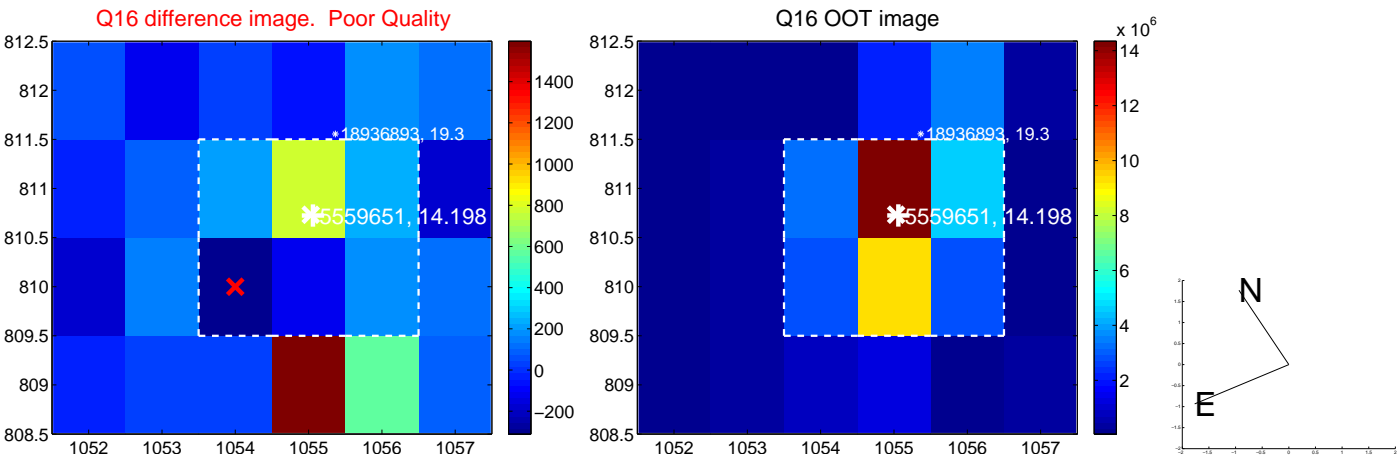
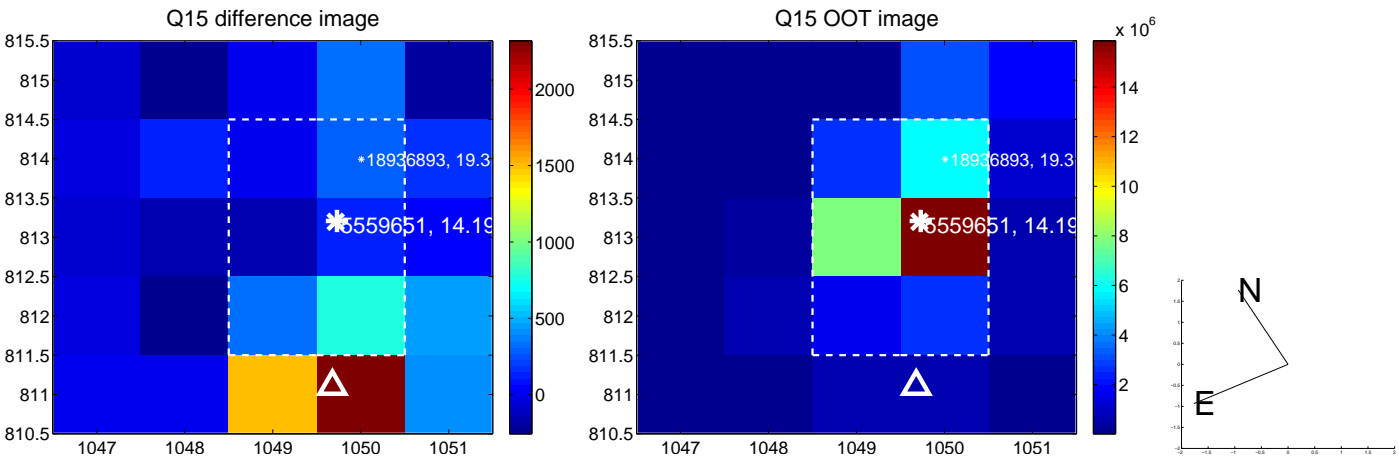
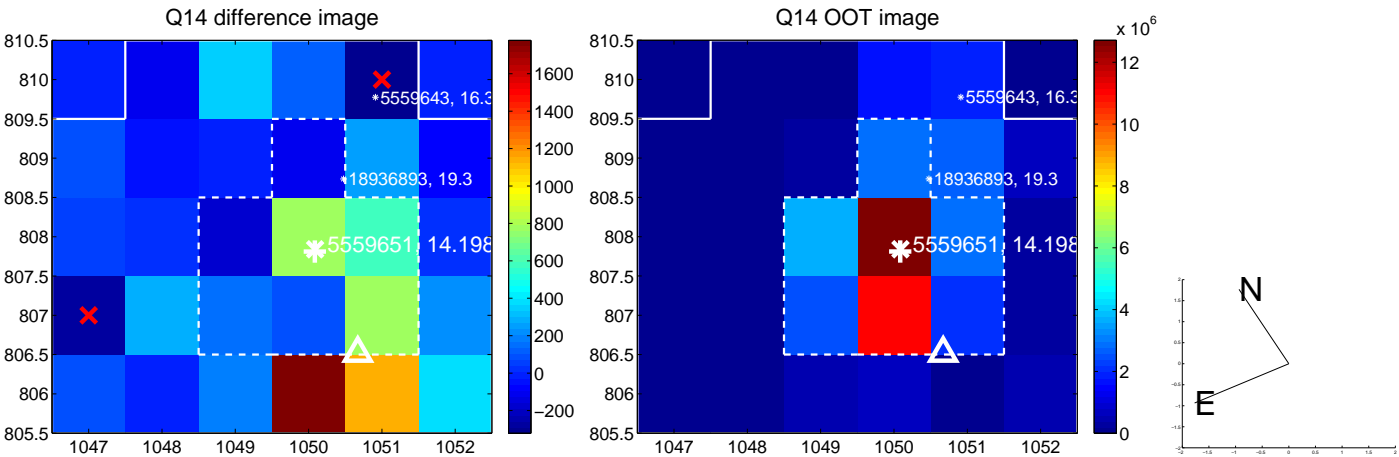
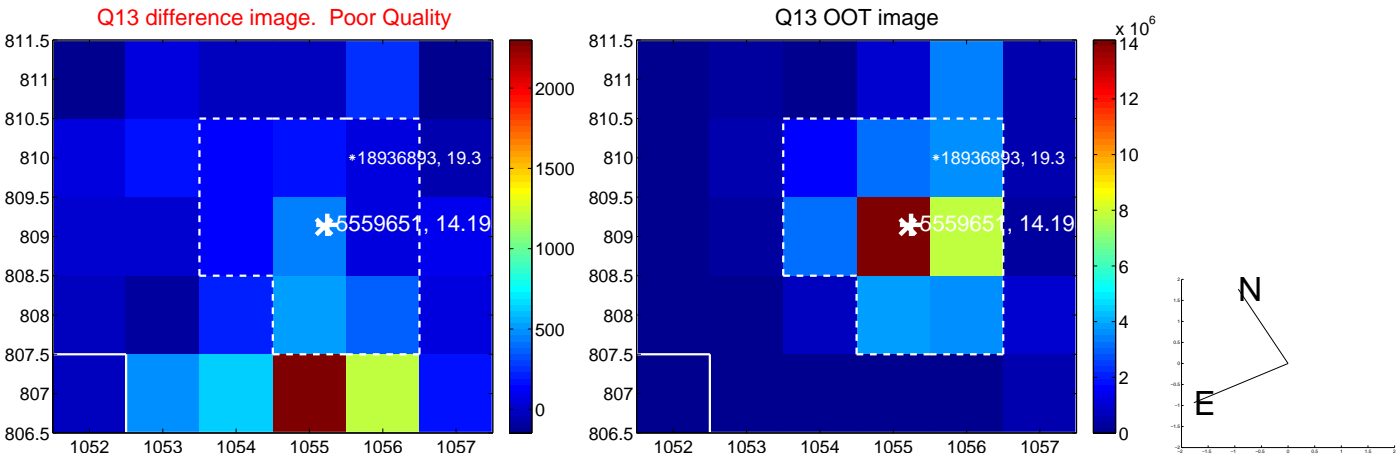




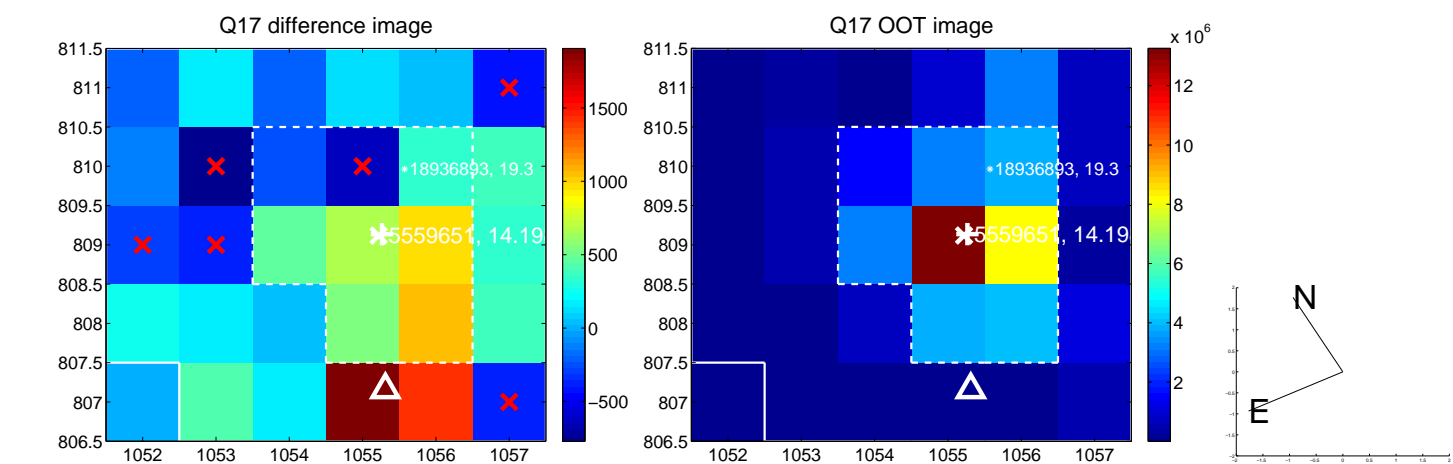
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



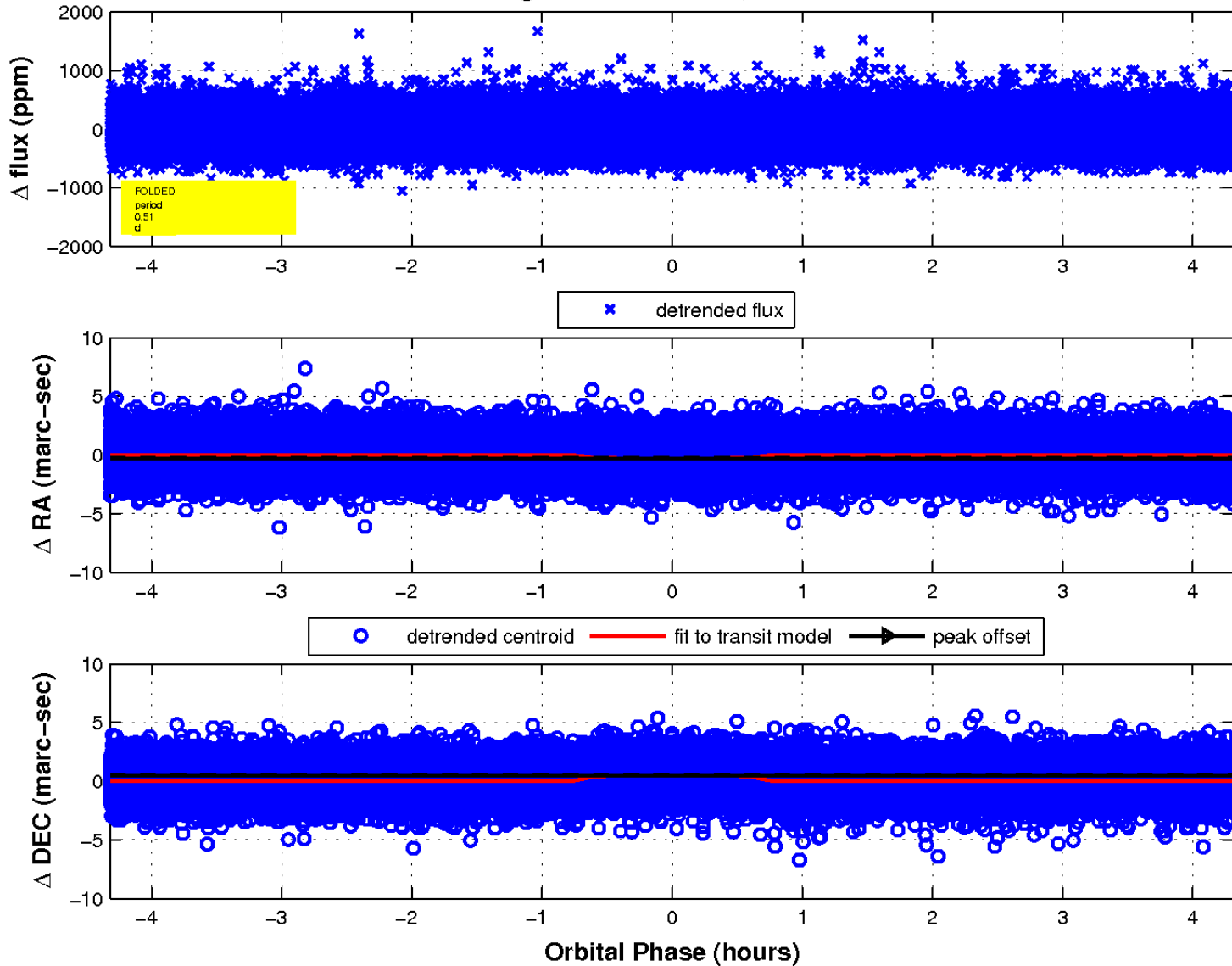
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

