

# KIC 005196851

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005196851-01	OBS	No	0.552745	131.538946	98.2	6.633	15.5	21.3	1.38	7118	1.59	21104.94

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005196851-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—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.

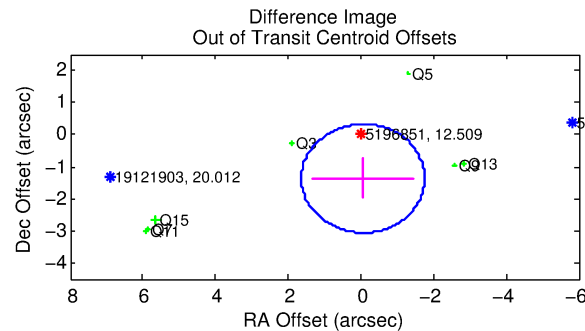
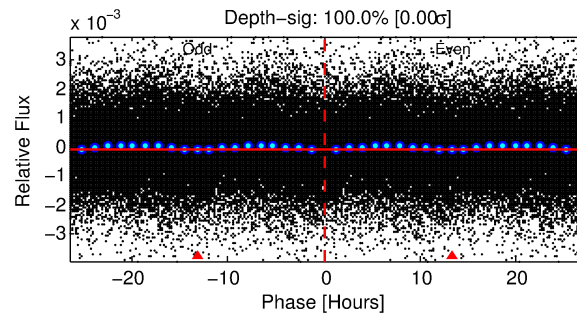
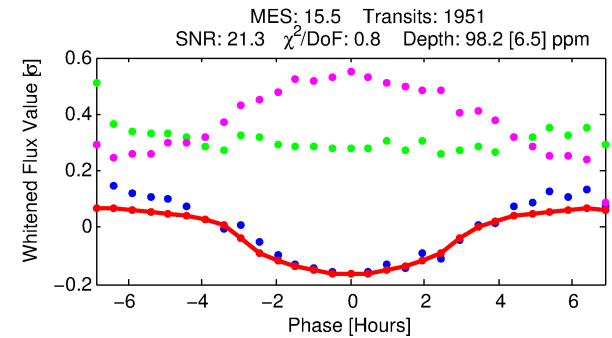
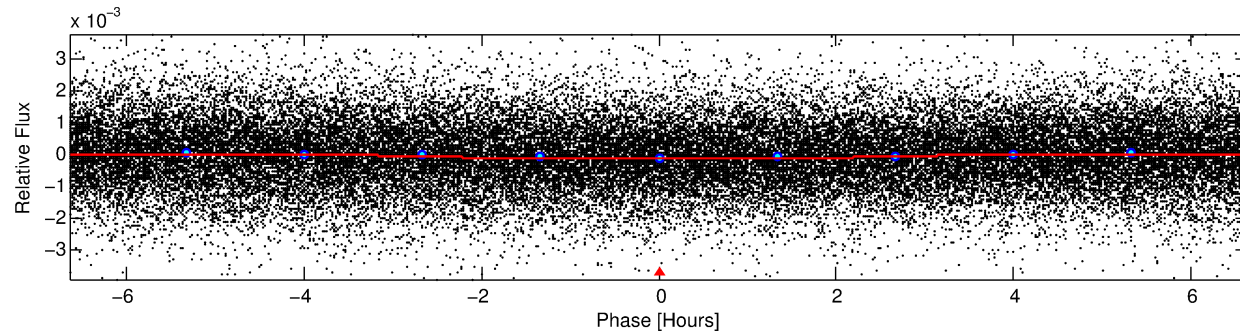
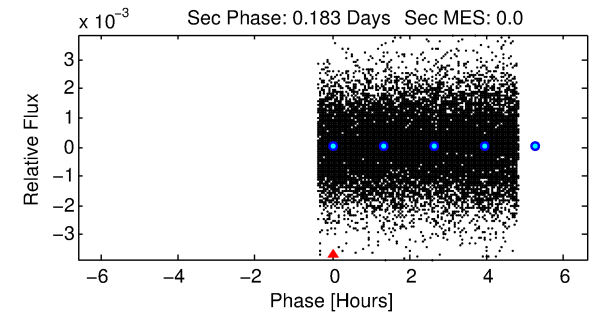
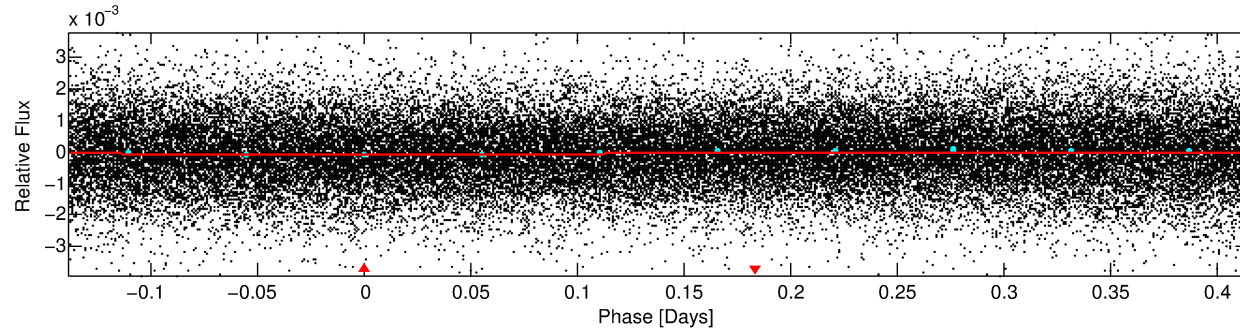
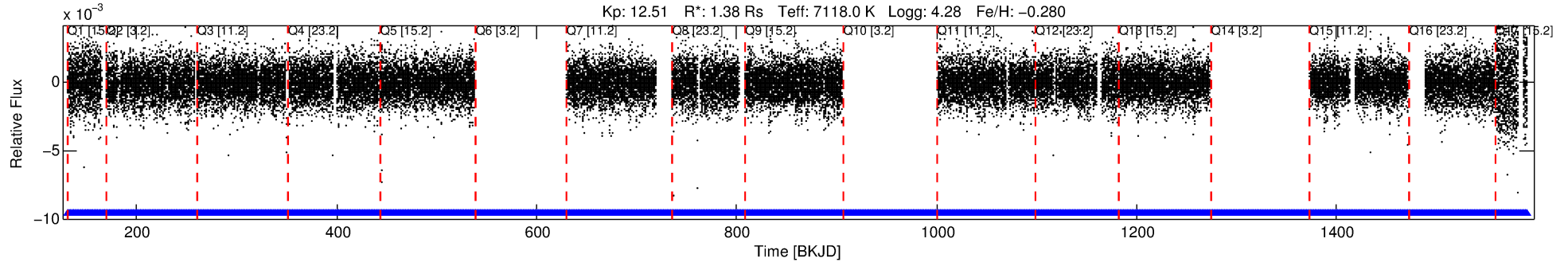
## Ephemeris Match Information For 005196851-01

No Significant Match Found

# DV One-Page Summary

KIC: 5196851 Candidate: 1 of 1 Period: 0.553 d  
KOI: K06539 Corr: No Ephemeris Match

Kp: 12.51 R\*: 1.38 Rs Teff: 7118.0 K Logg: 4.28 Fe/H: -0.280



## DV Fit Results:

Period = 0.55274 [0.00001] d  
Epoch = 131.5389 [0.0045] BKJD  
Rp/R\* = 0.0105 [0.0011]  
a/R\* = 1.00 [0.01]  
b = 0.90 [0.13]  
Seff = 21104.94 [8543.71]  
Teq = 3073 [311] K  
Rp = 1.59 [0.55] Re  
a = 0.0144 [0.0039] AU  
Ag = N/A  
Teffp = N/A

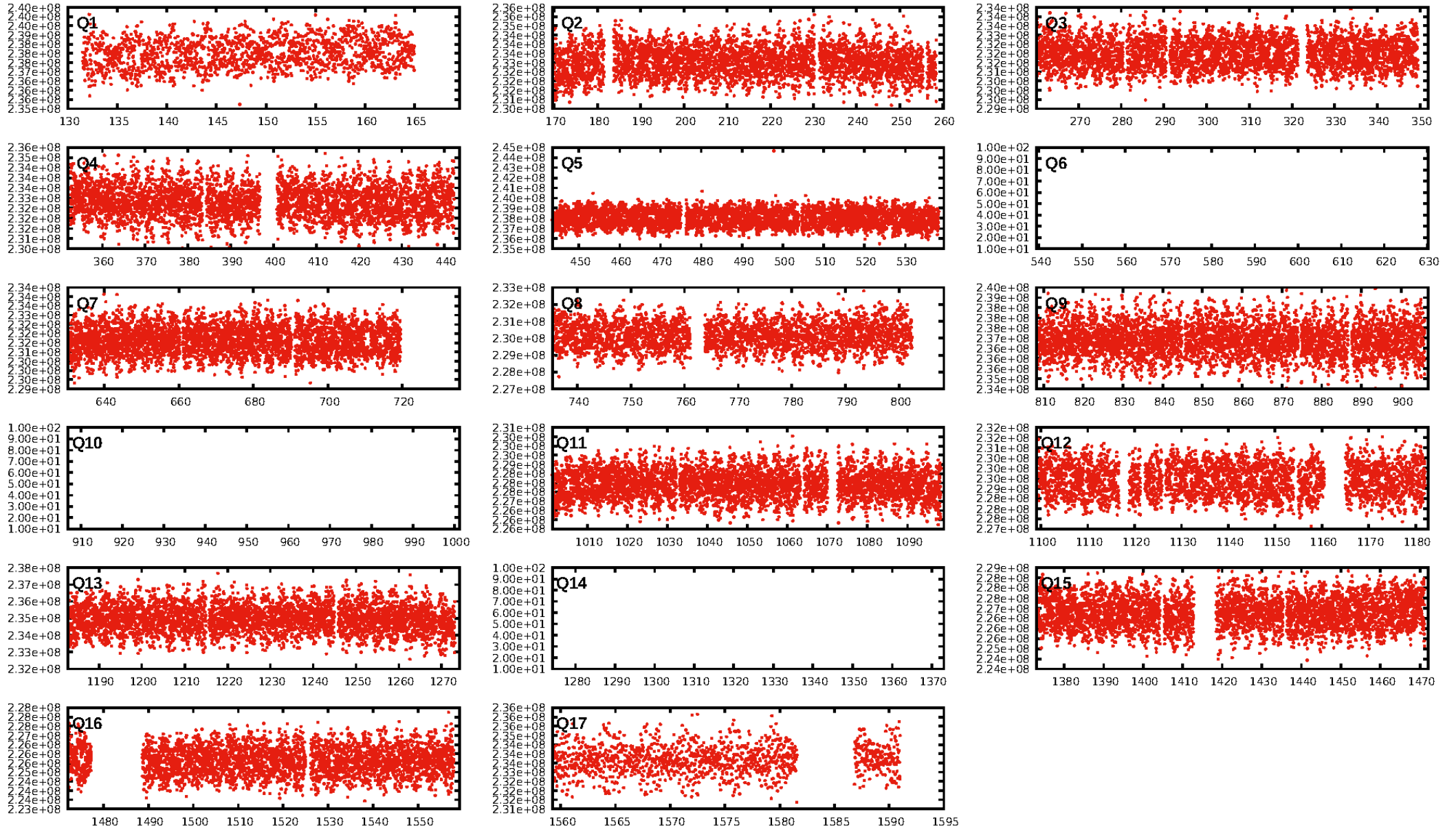
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1841/1841]  
GhostDiagnostic-chr: 1.244  
Centroid-sig: N/A  
Centroid-so: 0.082 arcsec [0.89σ]  
OotOffset-rm: 1.367 arcsec [2.42σ]  
KicOffset-rm: 1.402 arcsec [2.54σ]  
OotOffset-st: 0/4/0/3 [7]  
KicOffset-st: 0/4/0/3 [7]  
DiffImageQuality-fgm: 0.14 [1/7]  
DiffImageOverlap-fno: 1.00 [14/14]

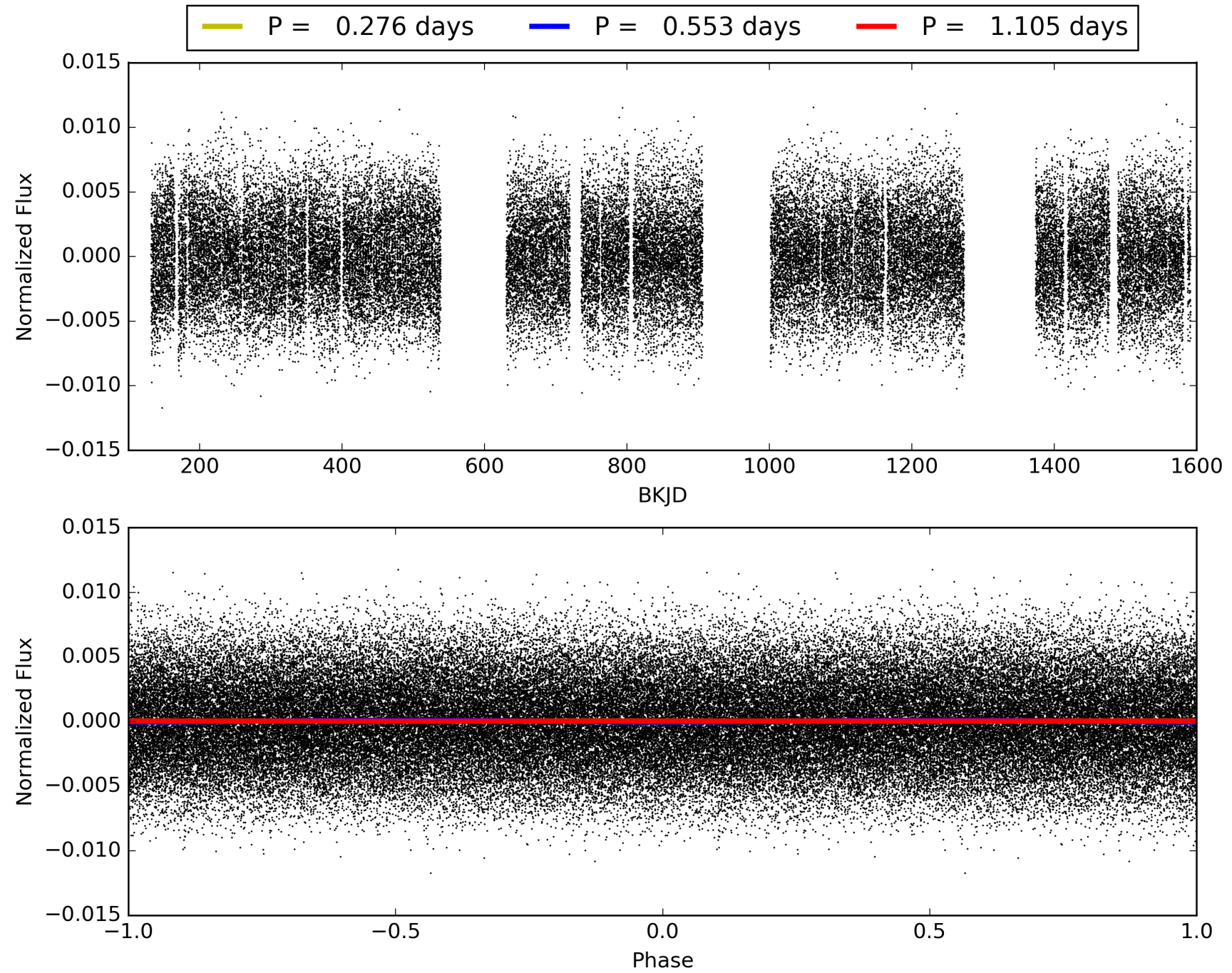
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:59:44 Z

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

# TCE 005196851-01, PDC Light Curves



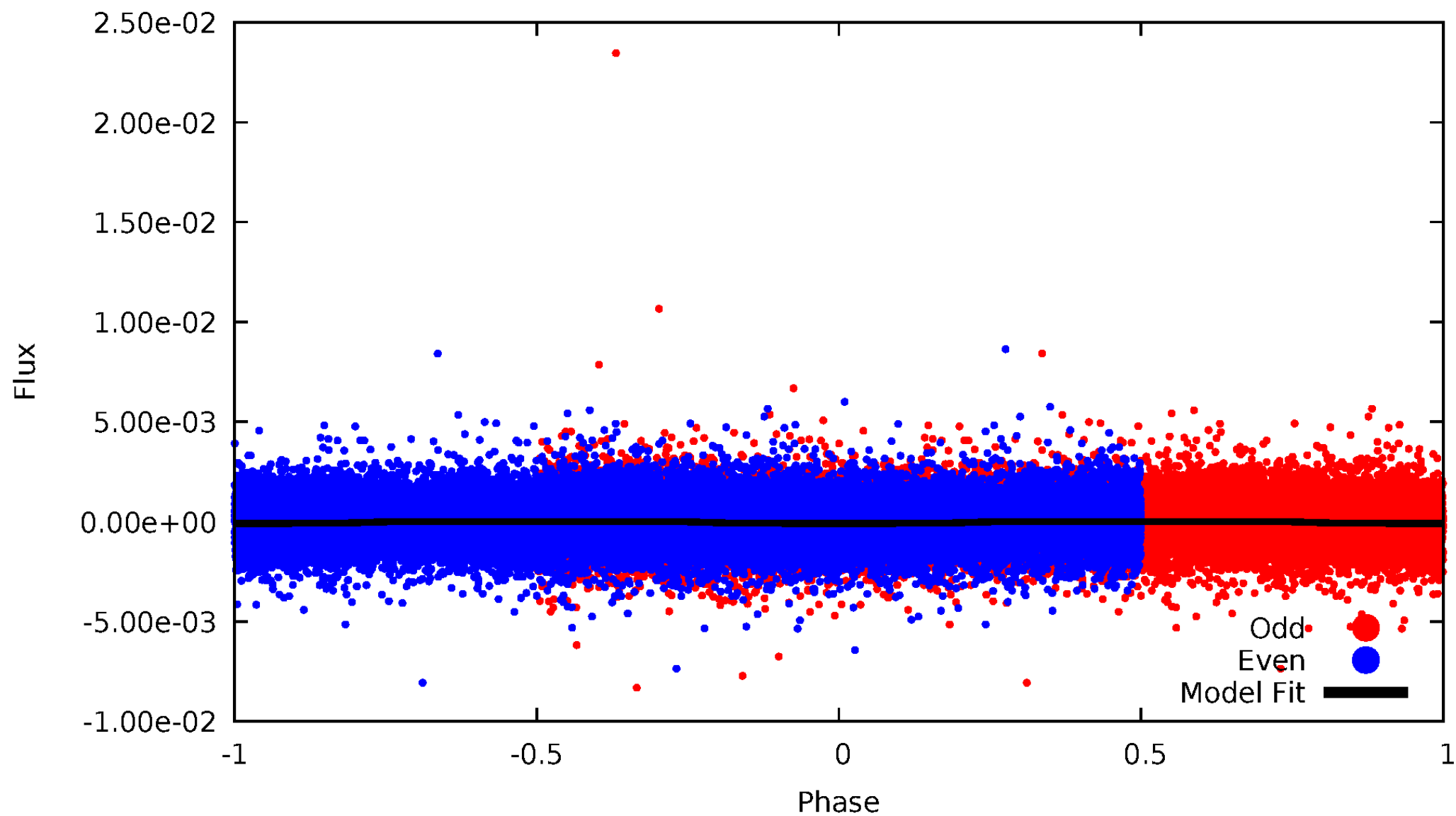
# TCE 005196851-01





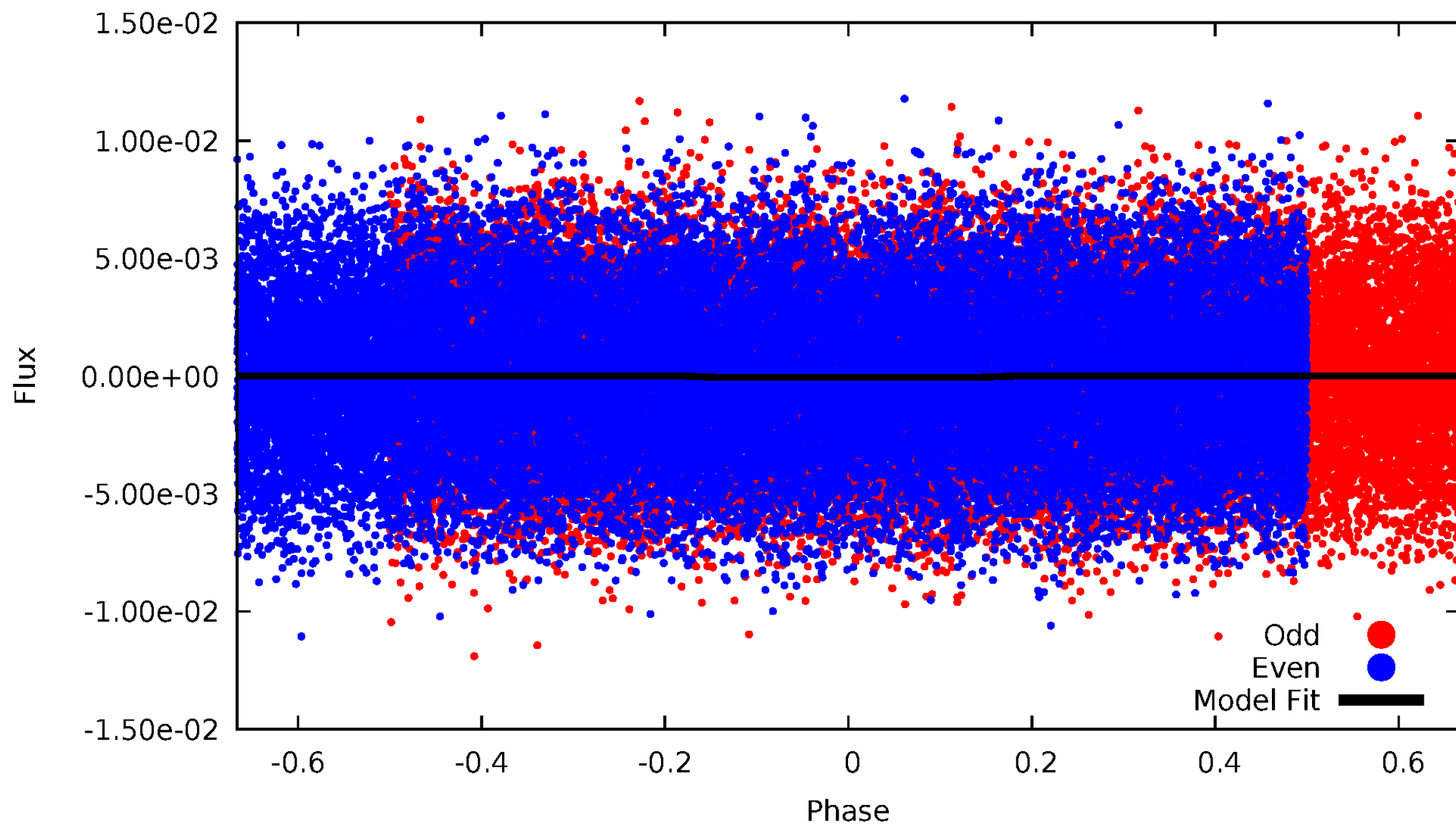
# DV Odd/Even

TCE 005196851-01



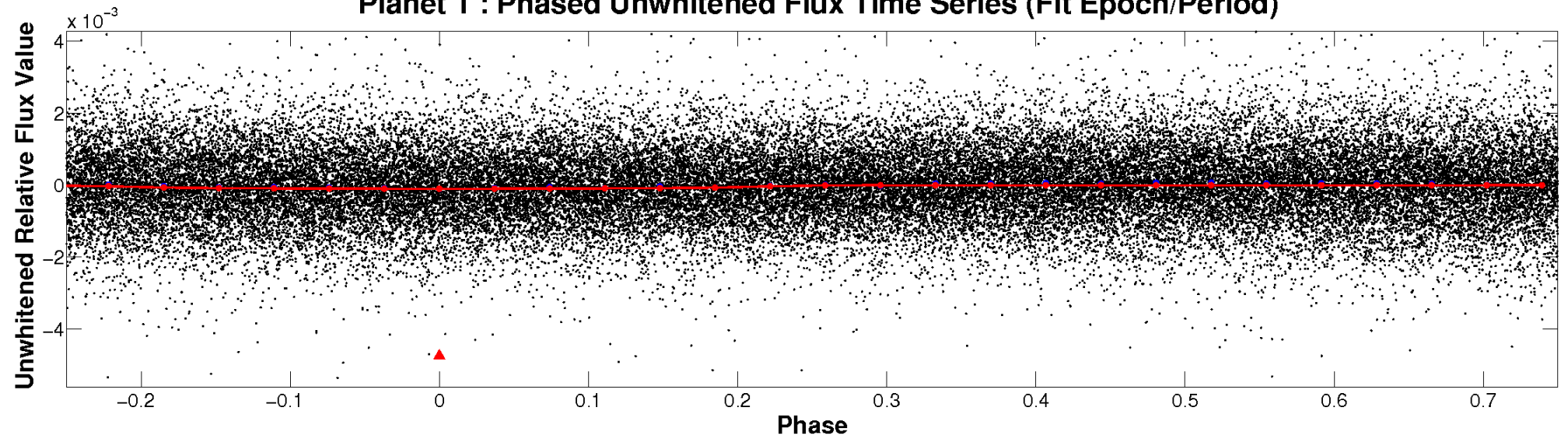
# ALT Odd/Even

TCE 005196851-01

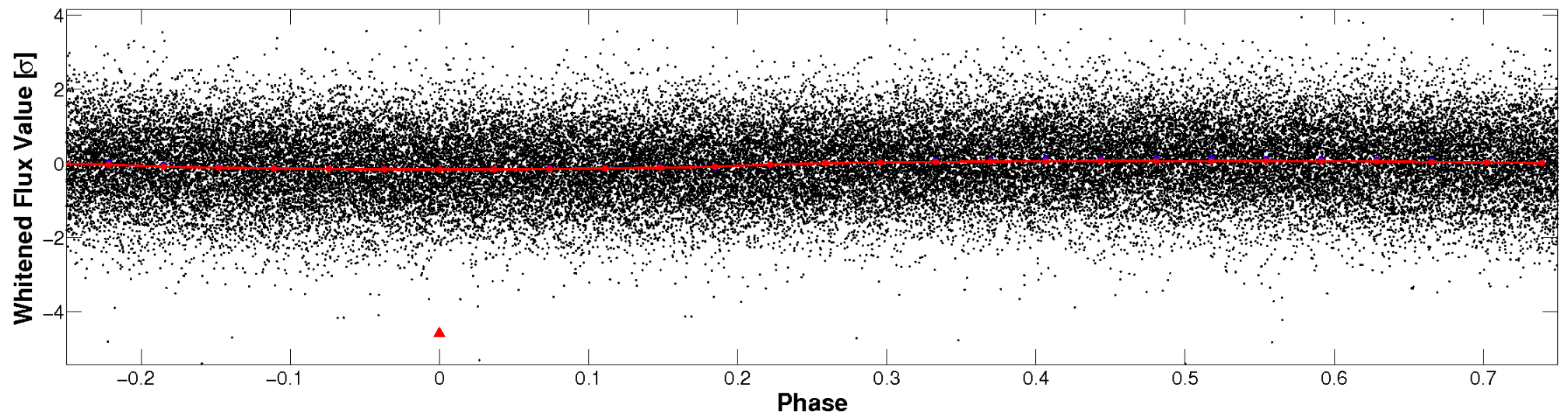


# Non-Whitened Vs. Whitened Light Curve

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

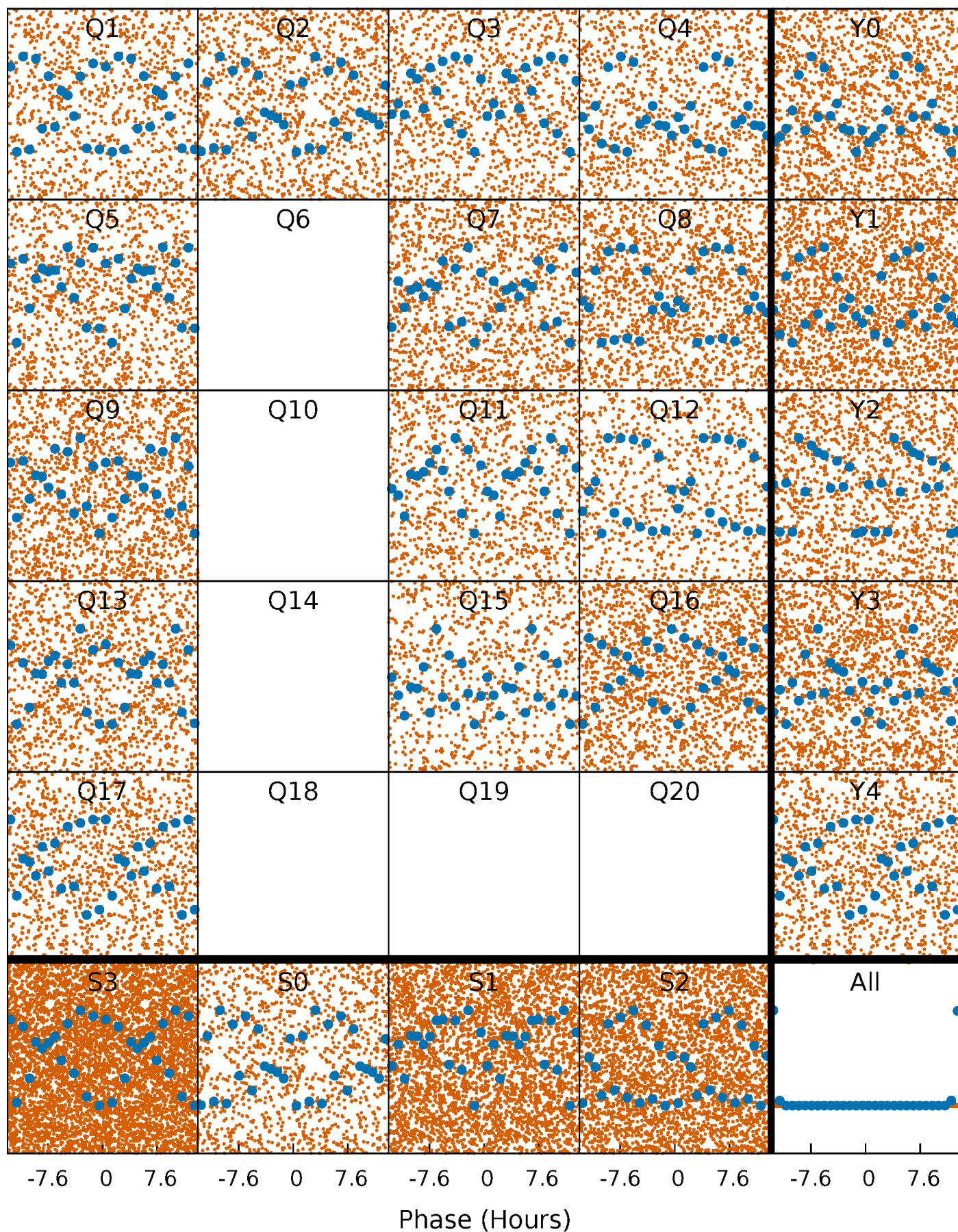


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

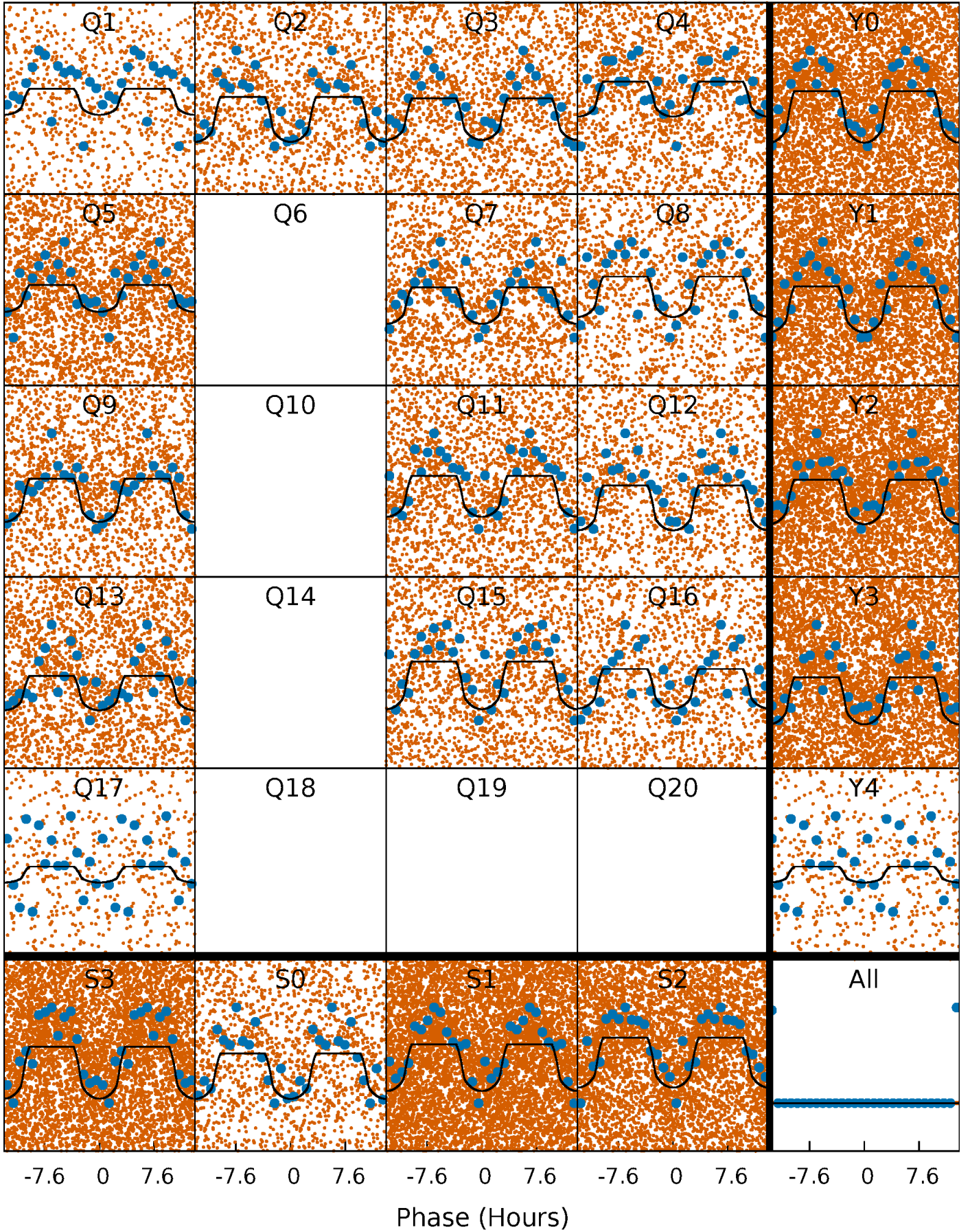
TCE 005196851-01 P= 0.552745 Days  $T_0=131.538946$  (BKJD)





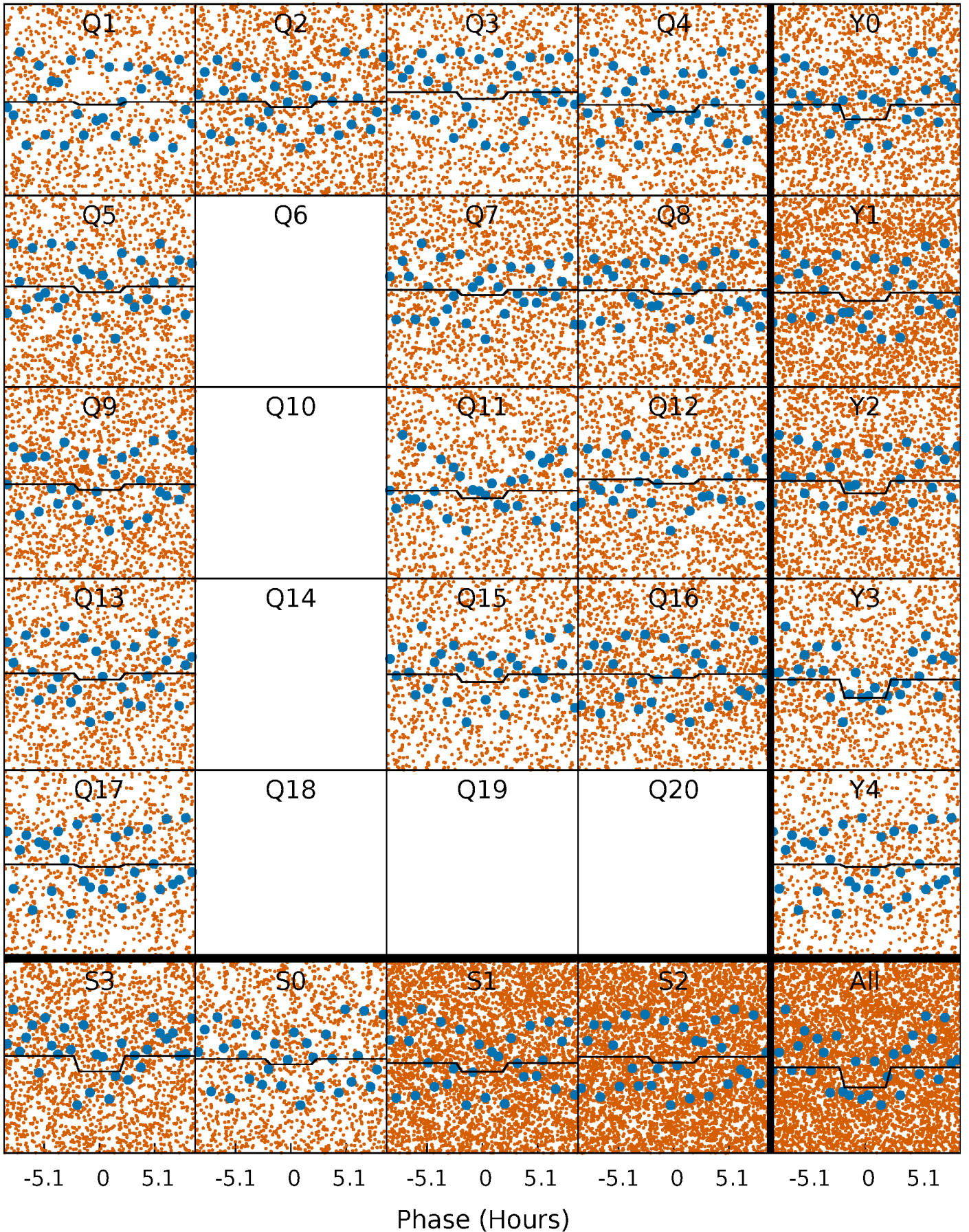
# DV Quarter-Phased Transit Curves

TCE 005196851-01   P= 0.552745 Days    $T_0=131.538946$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005196851-01 P= 0.552761 Days  $T_0=131.524027$  (BKJD)

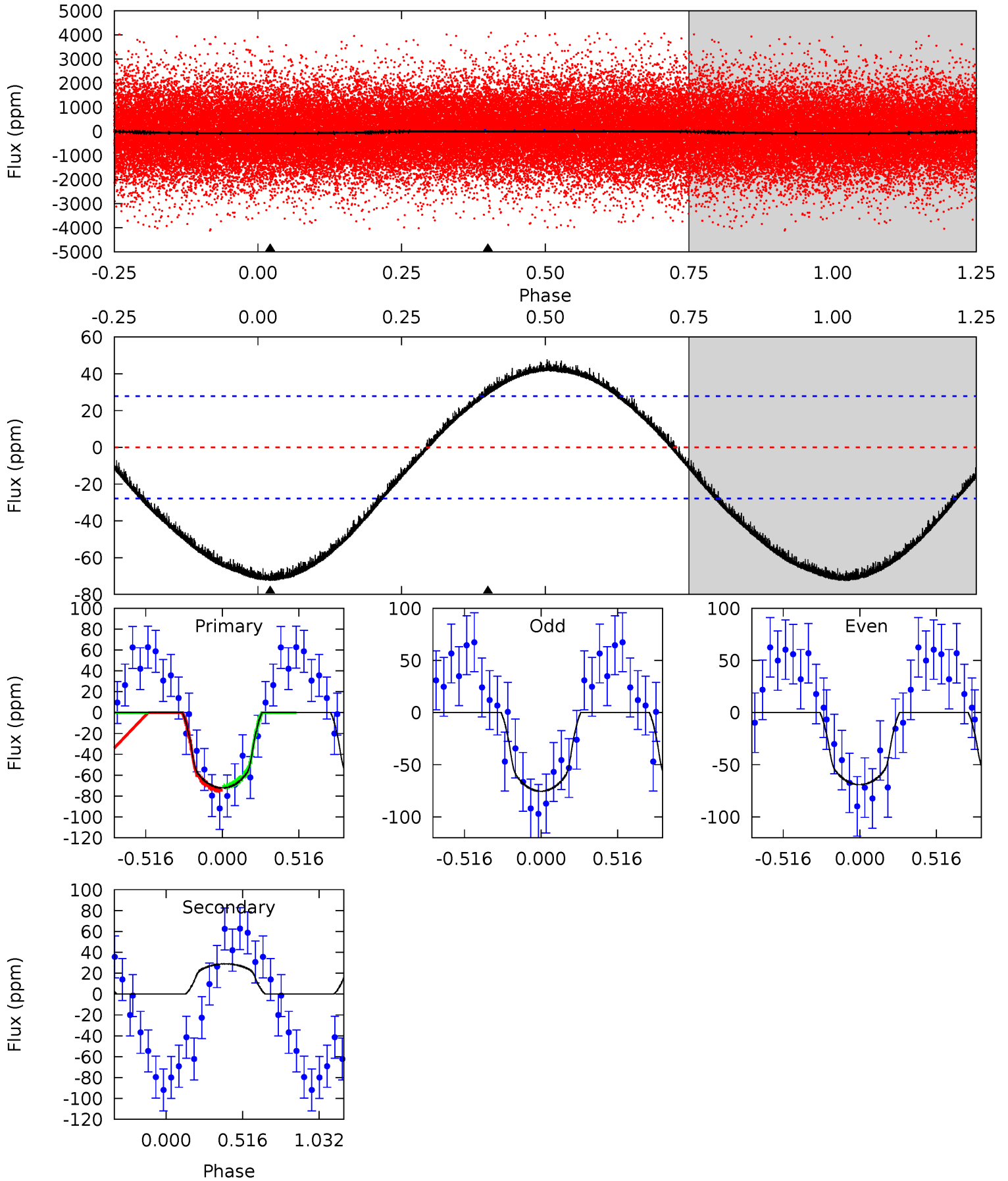




# DV Model-Shift Uniqueness Test

005196851-01, P = 0.552745 Days, E = 130.986201 Days

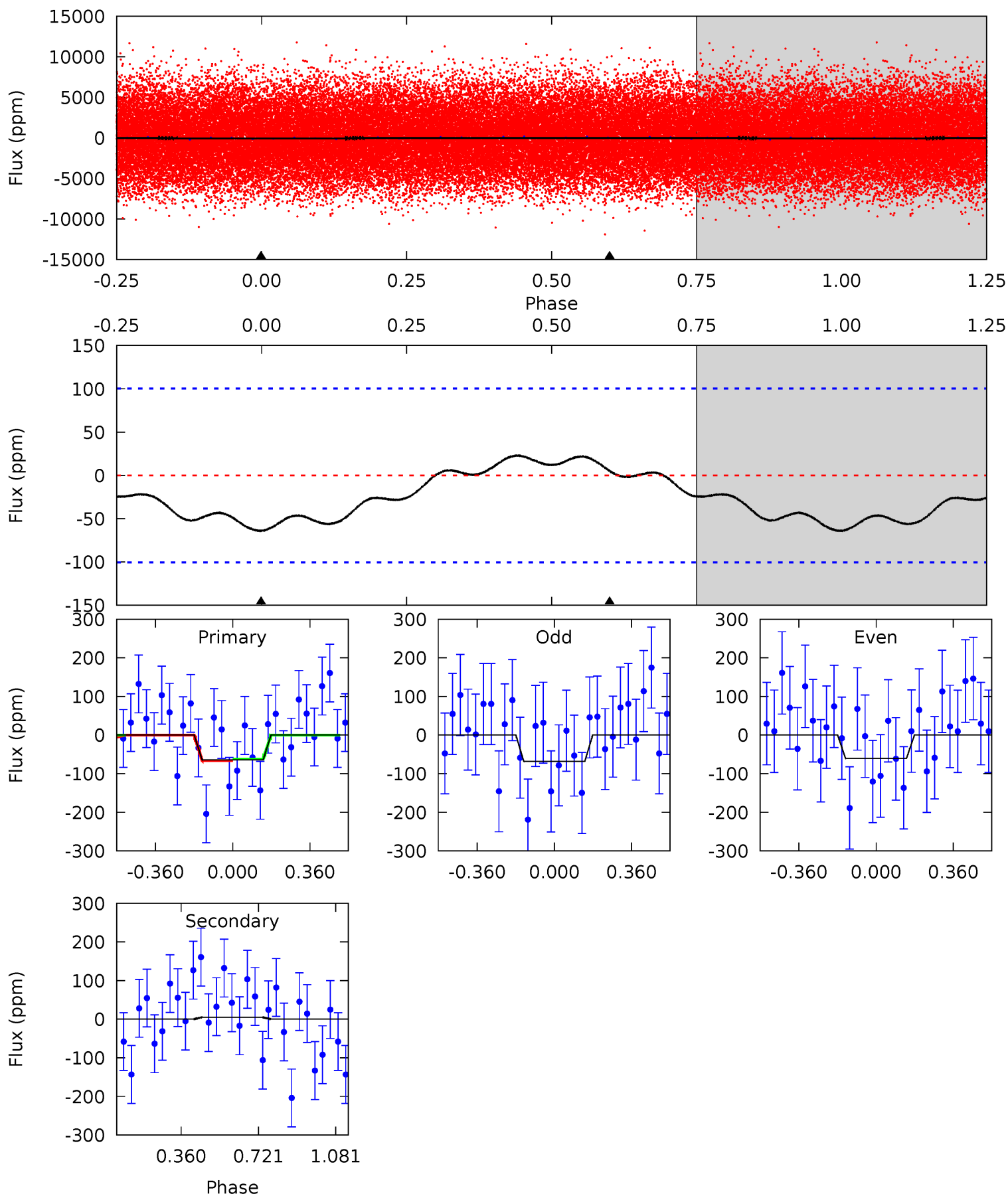
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	-4.37	0	0	4.21	0.65	1.60	10.9	10.9	-4.37	-4.37	0.51	1.03	0.40	0.27



# Alt Model-Shift Uniqueness Test

005196851-01, P = 0.552761 Days, E = 130.971266 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
2.74	-0.21	0	0	4.29	0.91	0.46	2.74	2.74	-0.21	-0.21	0.17	1.04	0.26	0.08





### Stellar Parameters For KIC 005196851

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7118^{+199}_{-249}$	$4.275^{+0.087}_{-0.203}$	$-0.280^{+0.250}_{-0.350}$	$1.384^{+0.451}_{-0.208}$	$1.323^{+0.200}_{-0.200}$	$0.703^{+0.286}_{-0.369}$
	+3%/-3%	+2%/-5%	+89%/-125%	+33%/-15%	+15%/-15%	+41%/-52%
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 005196851-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$29 \pm 7$	$1.63^{+0.31}_{-0.24}$	$4358^{+342}_{-239}$	$-5400^{+350}_{-326}$	$-1.222^{+0.416}_{-0.541}$
Alt.	$5 \pm 23$	$1.22^{+0.29}_{-0.20}$	$4368^{+342}_{-240}$	$-4523^{+9426}_{-1549}$	$-0.392^{+1.679}_{-1.837}$

$T_{max}$  = 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

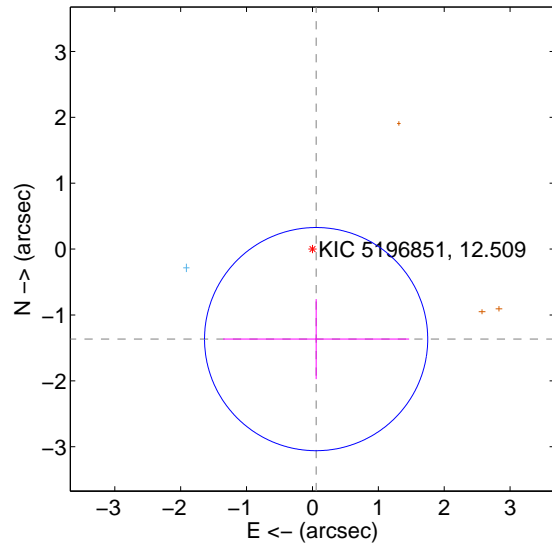
Supplemental centroid analysis for 005196851-01. Kepler magnitude: 12.51. Transit SNR 21.27

There are 1 quarters with good PRF difference image offsets

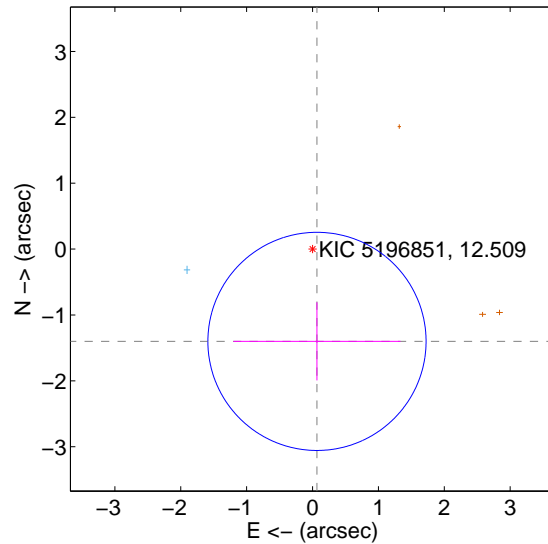
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.367 \pm 0.565$	2.42	$-0.056 \pm 1.411$	$-1.366 \pm 0.607$
PRF-fit source offset from KIC position	$1.402 \pm 0.552$	2.54	$-0.068 \pm 1.269$	$-1.401 \pm 0.592$
photometric centroid source offset	$0.08 \pm 0.09$	0.89	$-0.08 \pm 0.09$	$0.01 \pm 0.09$

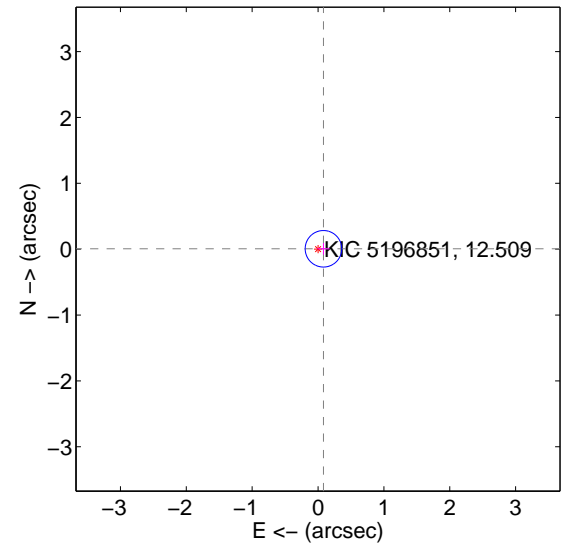
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

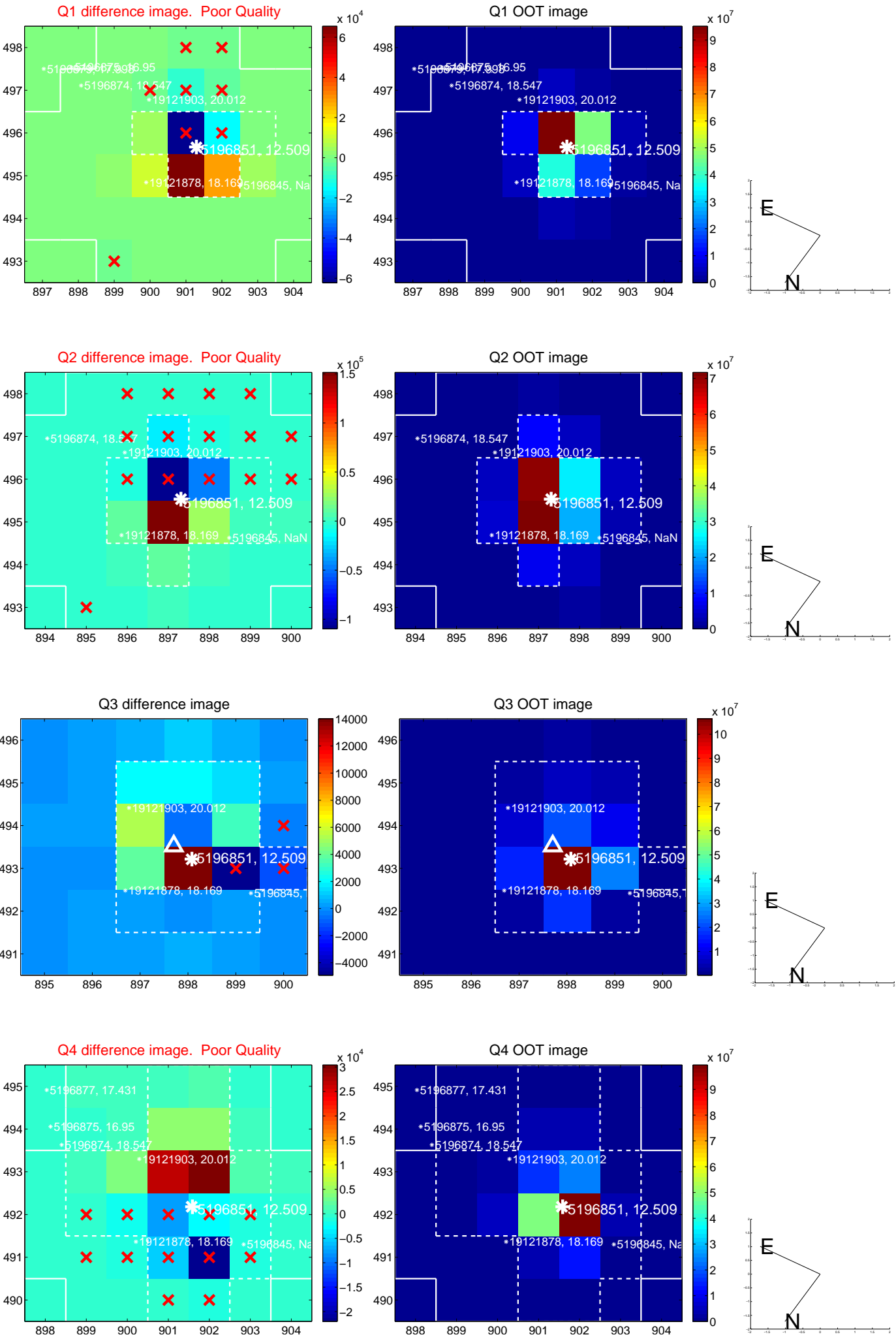


offset from photometric centroids

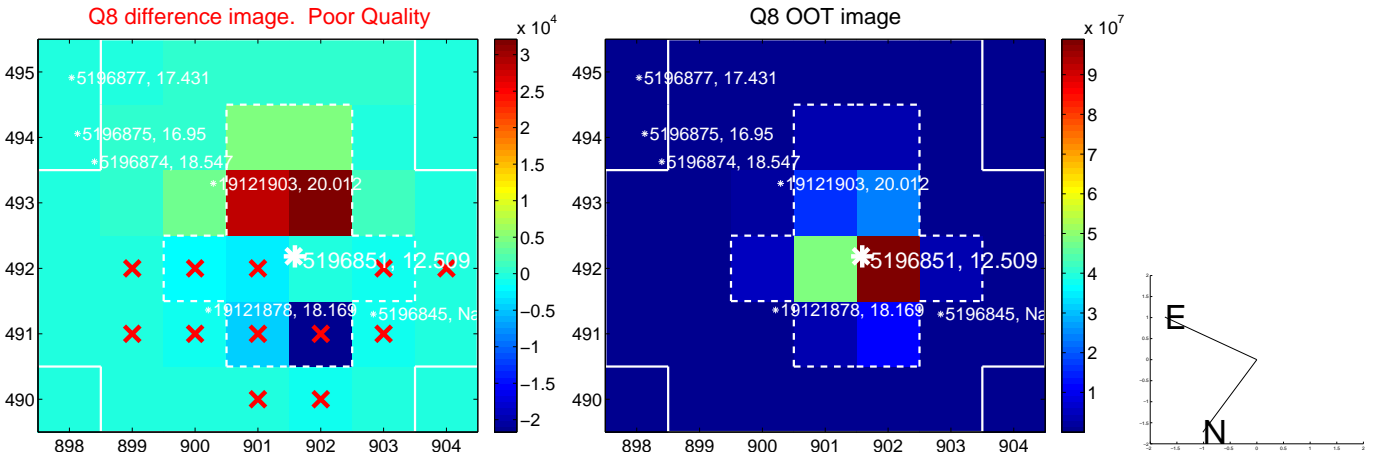
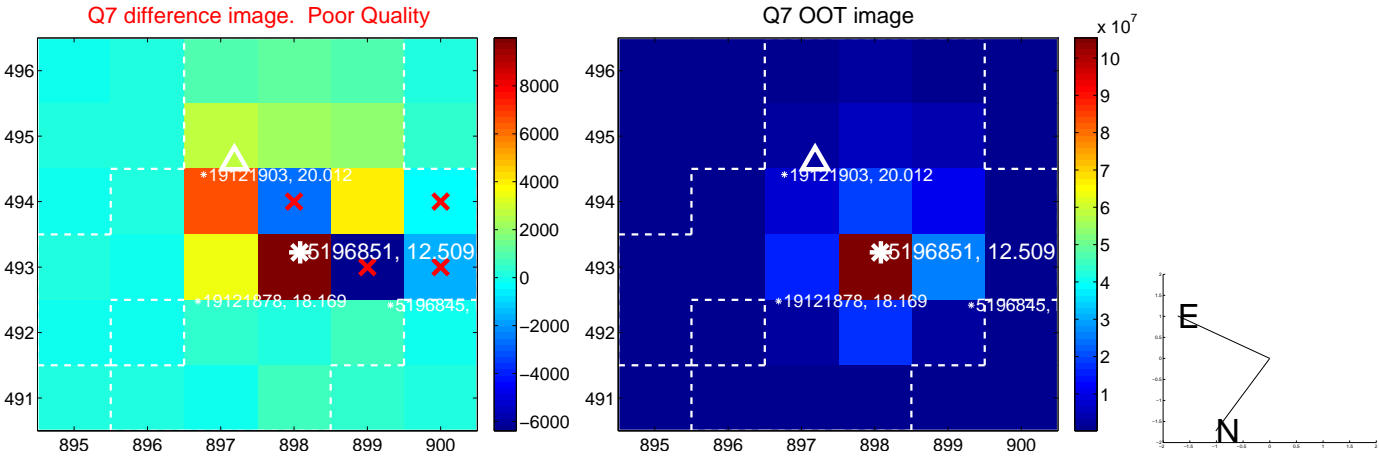
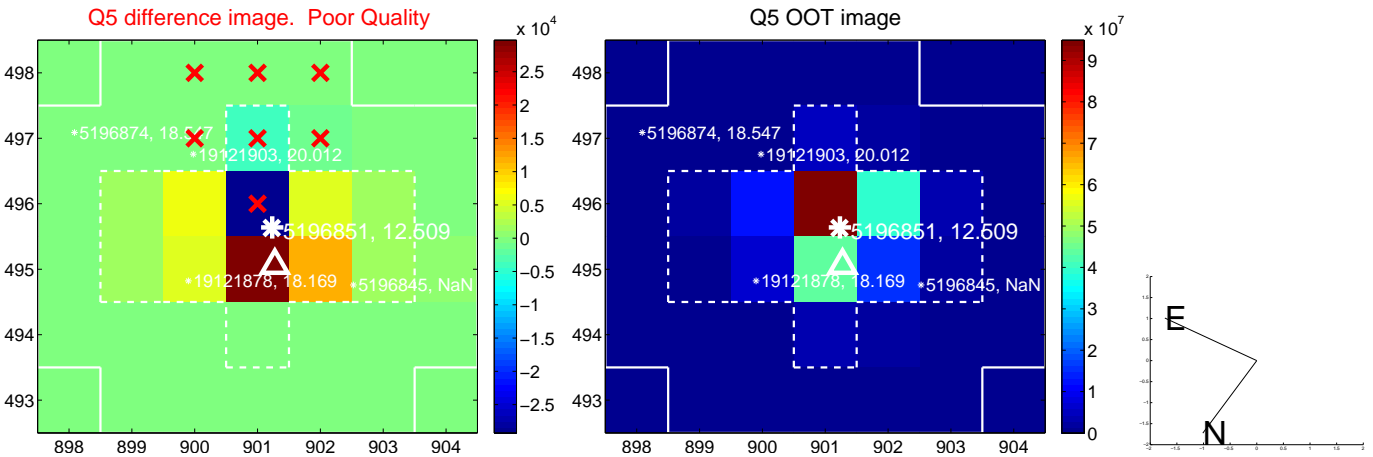


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

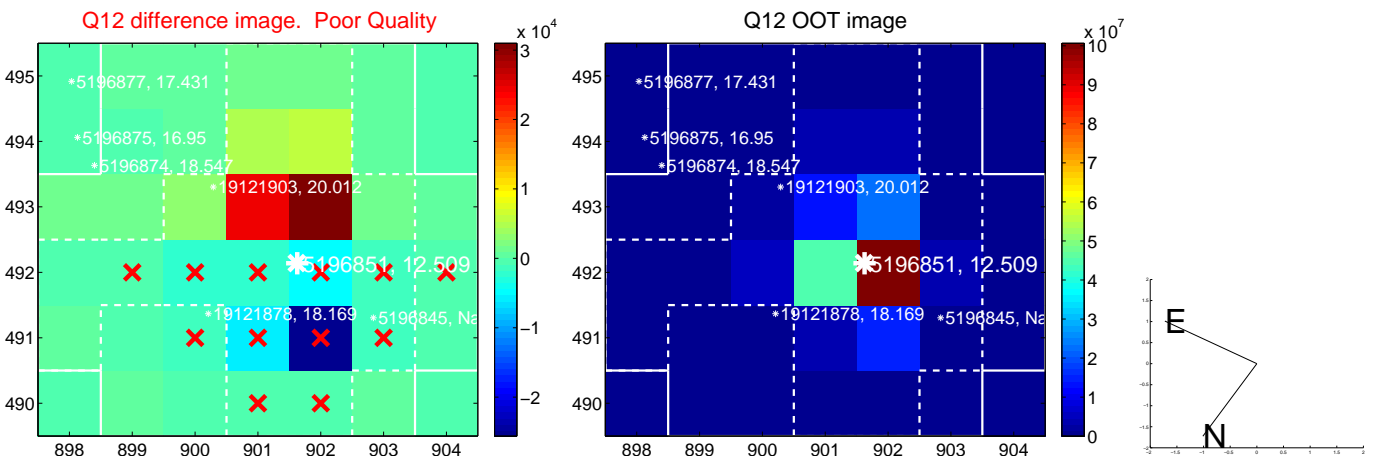
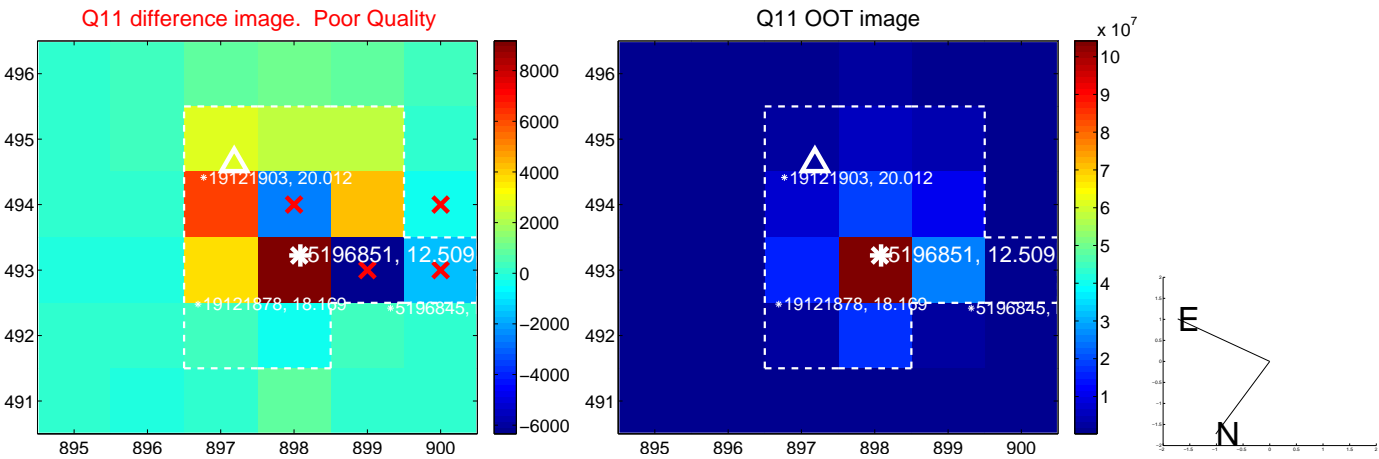
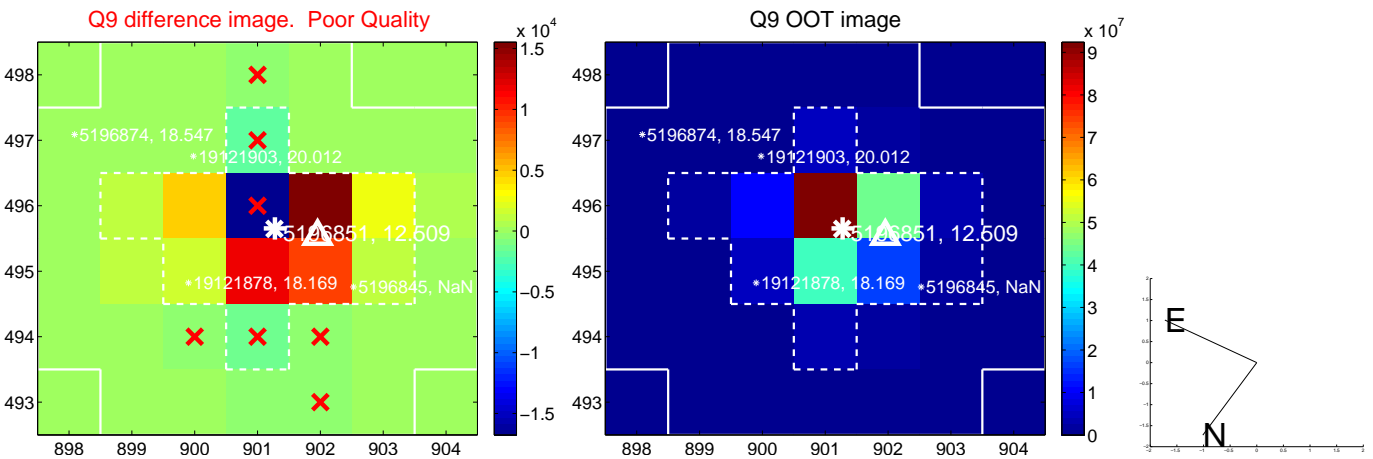


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

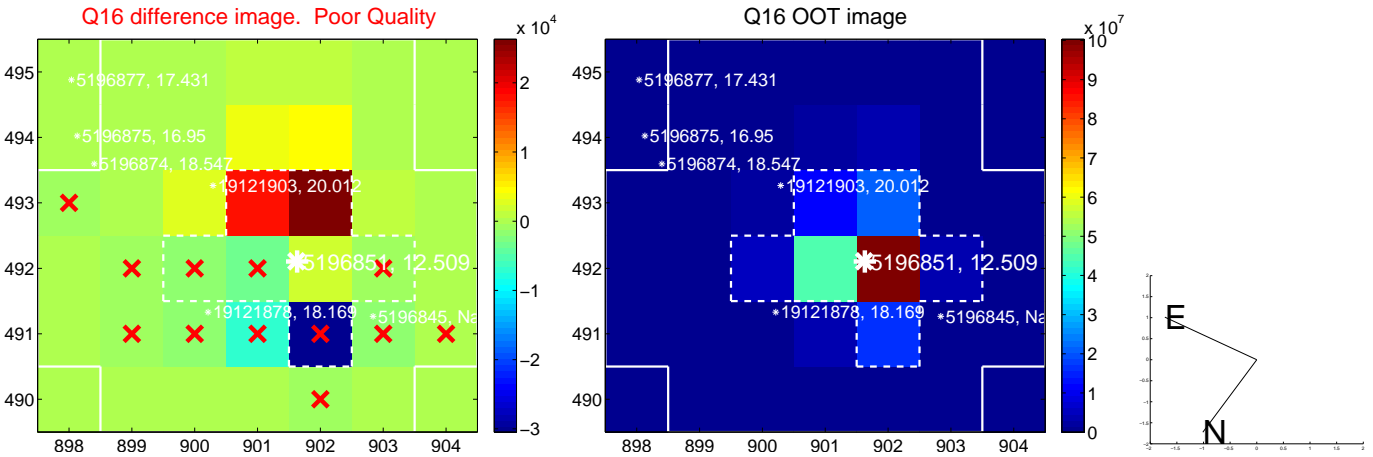
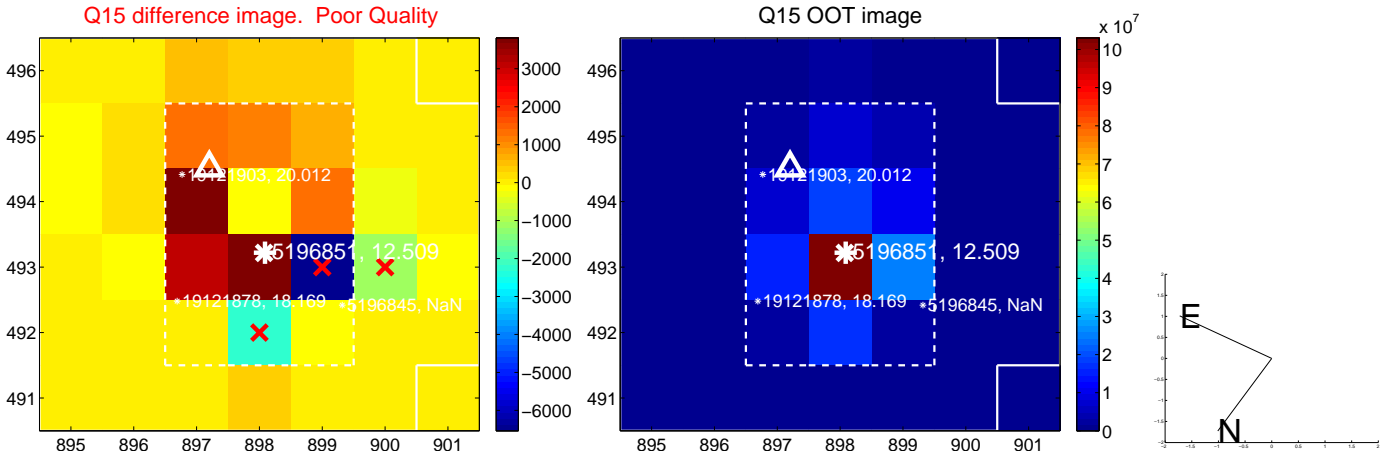
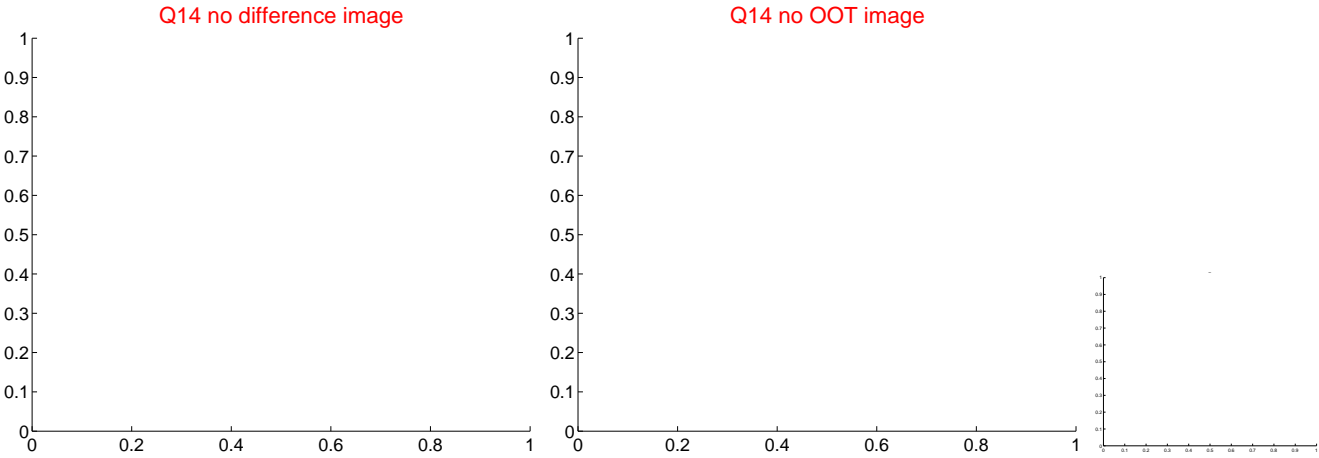
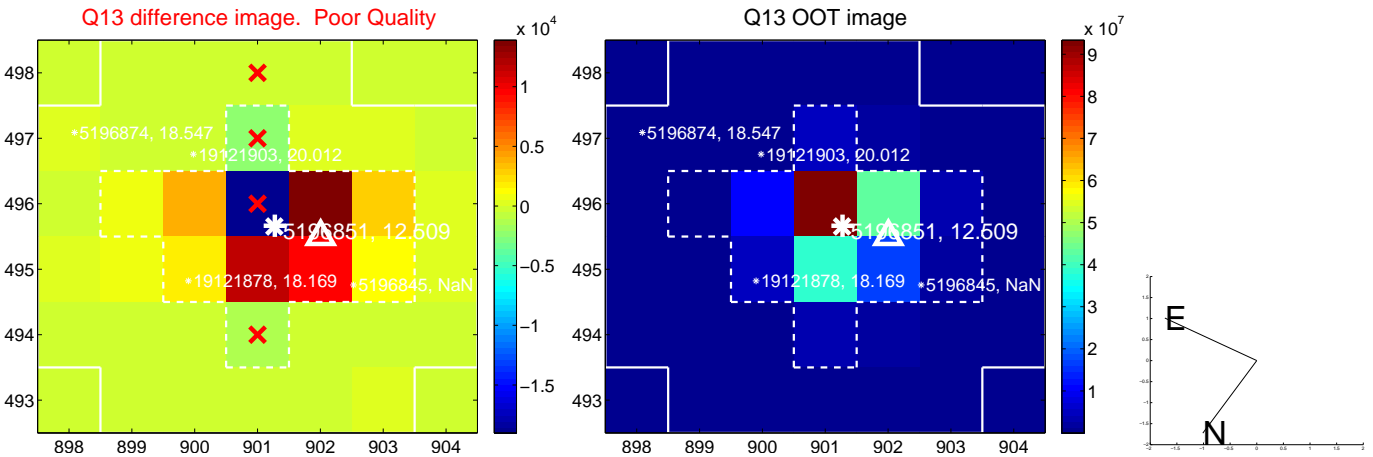




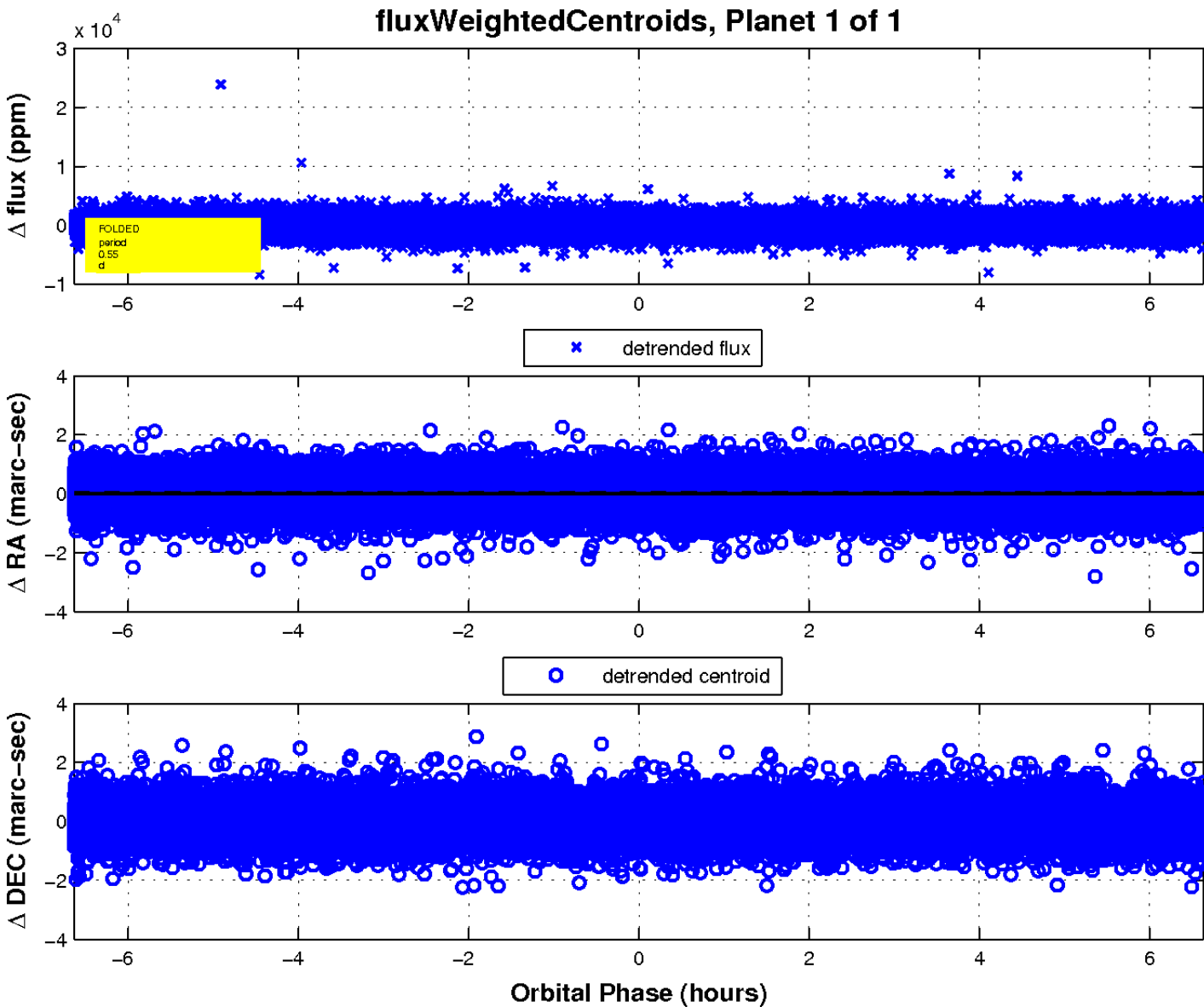
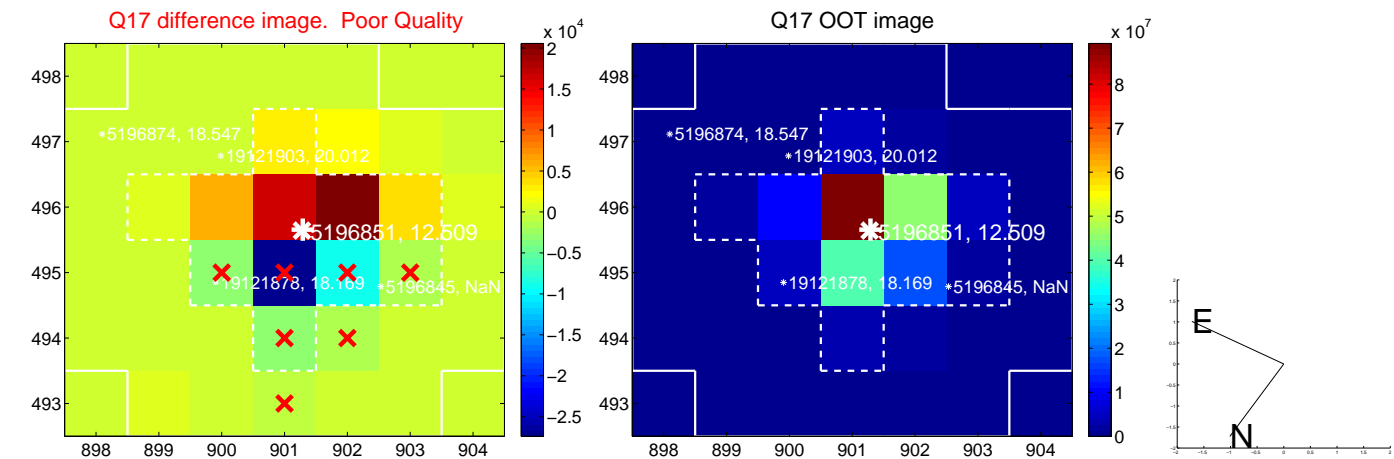
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

Declination

