

# KIC 004680543

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004680543-01	OBS	No	0.980171	132.096923	39.7	7.763	10.3	11.9	3.41	6718	2.16	41722.13

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004680543-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_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.

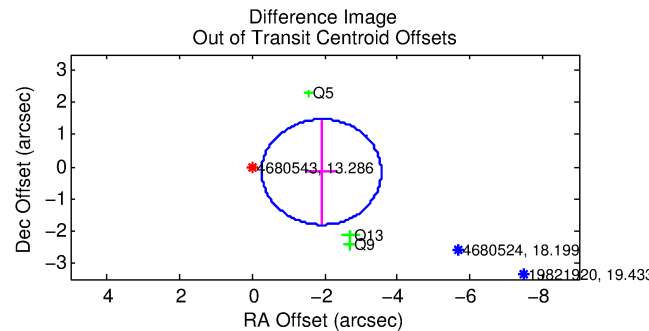
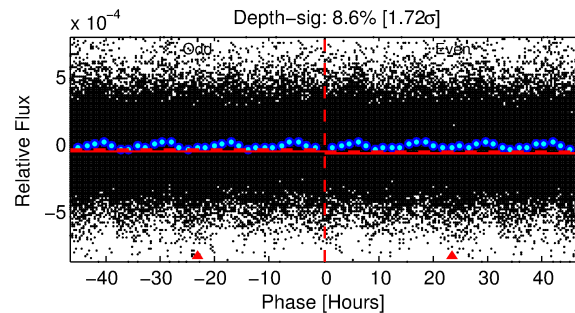
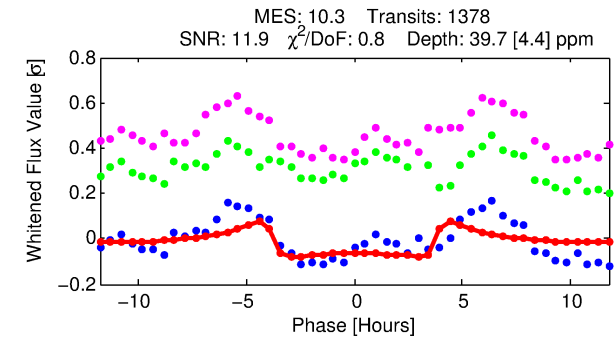
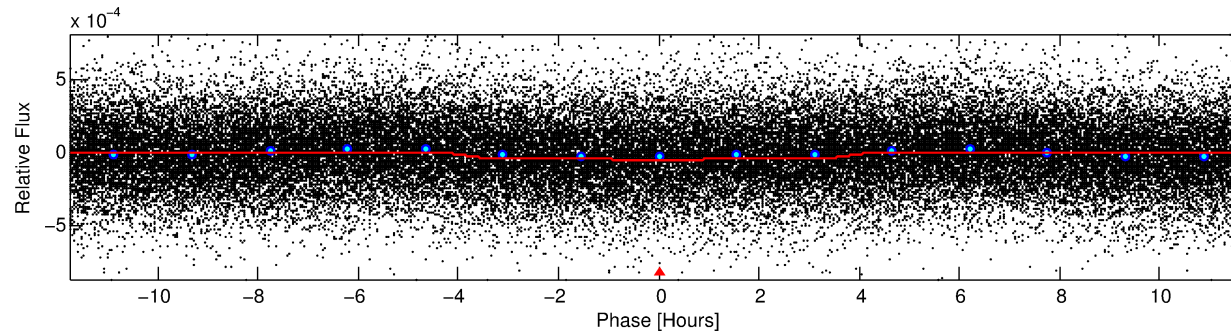
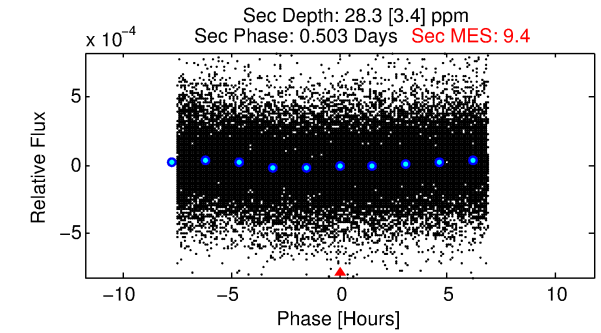
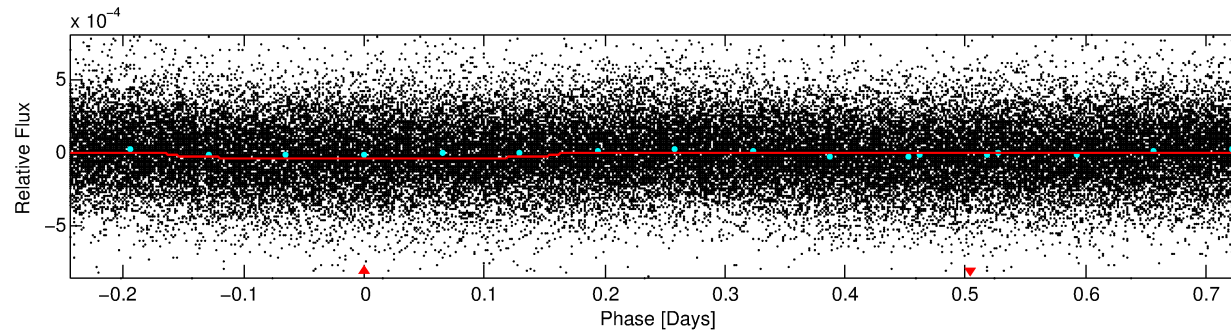
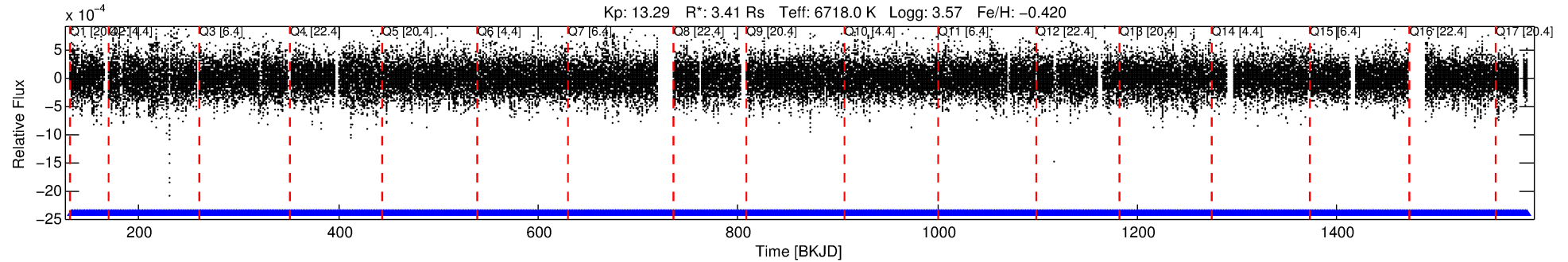
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004680543-01

No Significant Match Found

# DV One-Page Summary

KIC: 4680543 Candidate: 1 of 1 Period: 0.980 d



## DV Fit Results:

Period = 0.98017 [0.00001] d  
Epoch = 132.0969 [0.0026] BKJD  
Rp/R\* = 0.0058 [0.0018]  
a/R\* = 1.17 [0.53]  
b = 0.00 [7351.76]  
Seff = 41722.13 [26918.56]  
Teq = 3644 [588] K  
Rp = 2.16 [1.14] Re  
a = 0.0225 [0.0090] AU  
Ag = 1.69 [1.51] [0.45σ]  
Teffp = 6422 [1044] K [2.32σ]

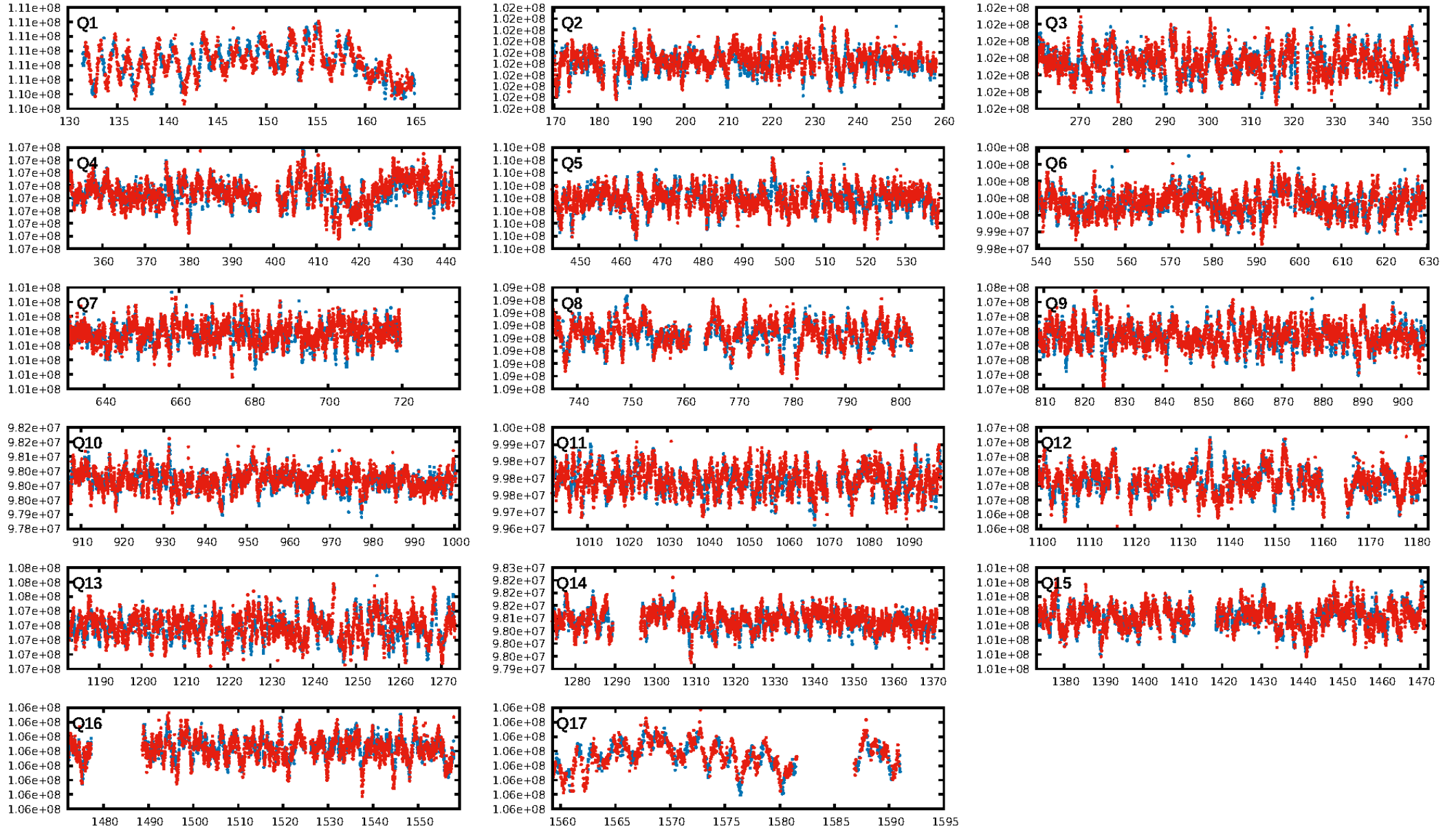
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1316/1316]  
GhostDiagnostic-chr: 1.057  
**Centroid-sig: 0.0%**  
Centroid-so: 0.977 arcsec [2.26σ]  
**OotOffset-rm: 1.920 arcsec [3.50σ]**  
**KicOffset-rm: 2.003 arcsec [3.34σ]**  
OotOffset-st: 0/0/0/3 [3]  
KicOffset-st: 0/0/0/3 [3]  
DiffImageQuality-fgm: 0.00 [0/3]  
DiffImageOverlap-fno: 1.00 [17/17]

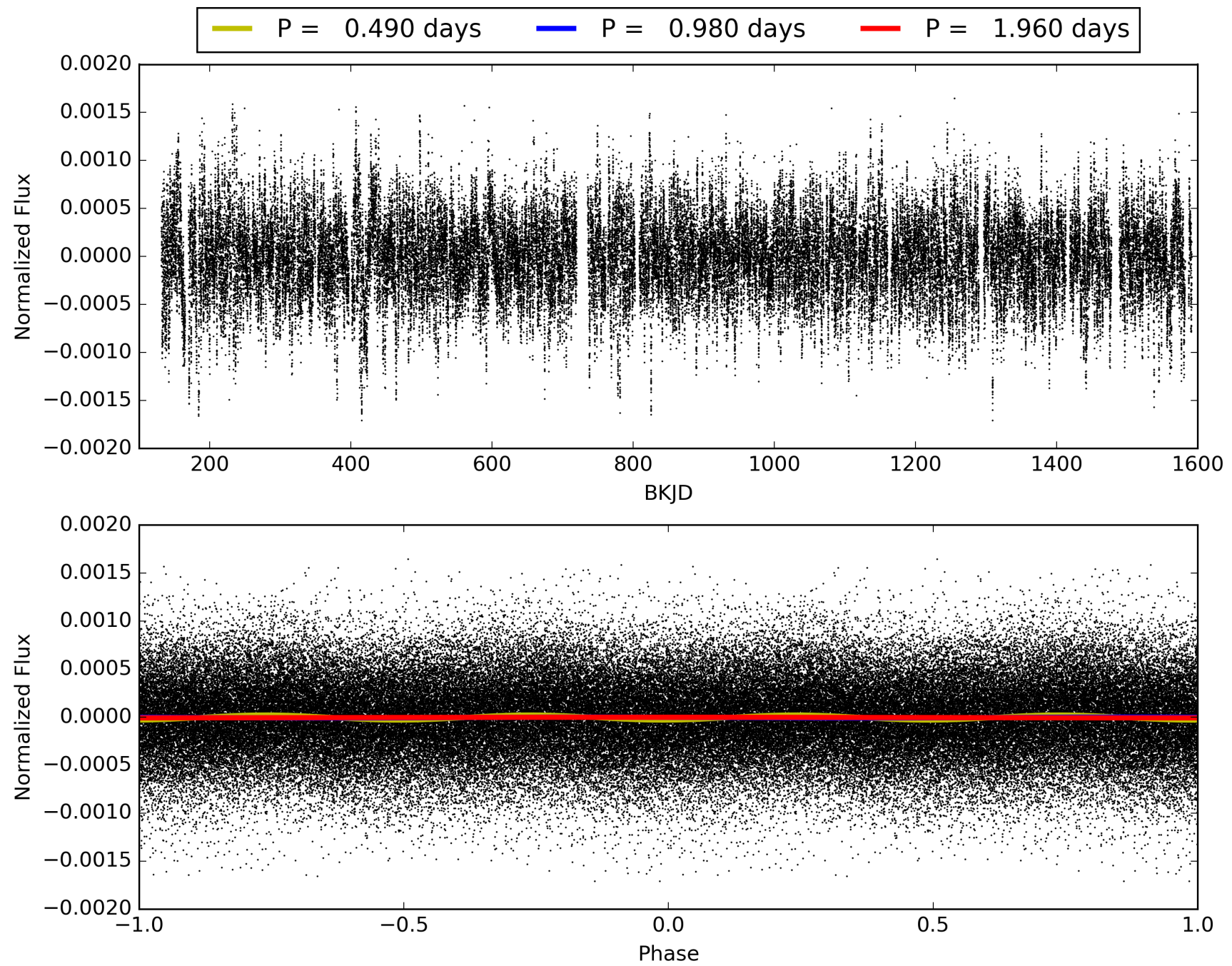
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 11:07:37 Z

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

# TCE 004680543-01, PDC Light Curves



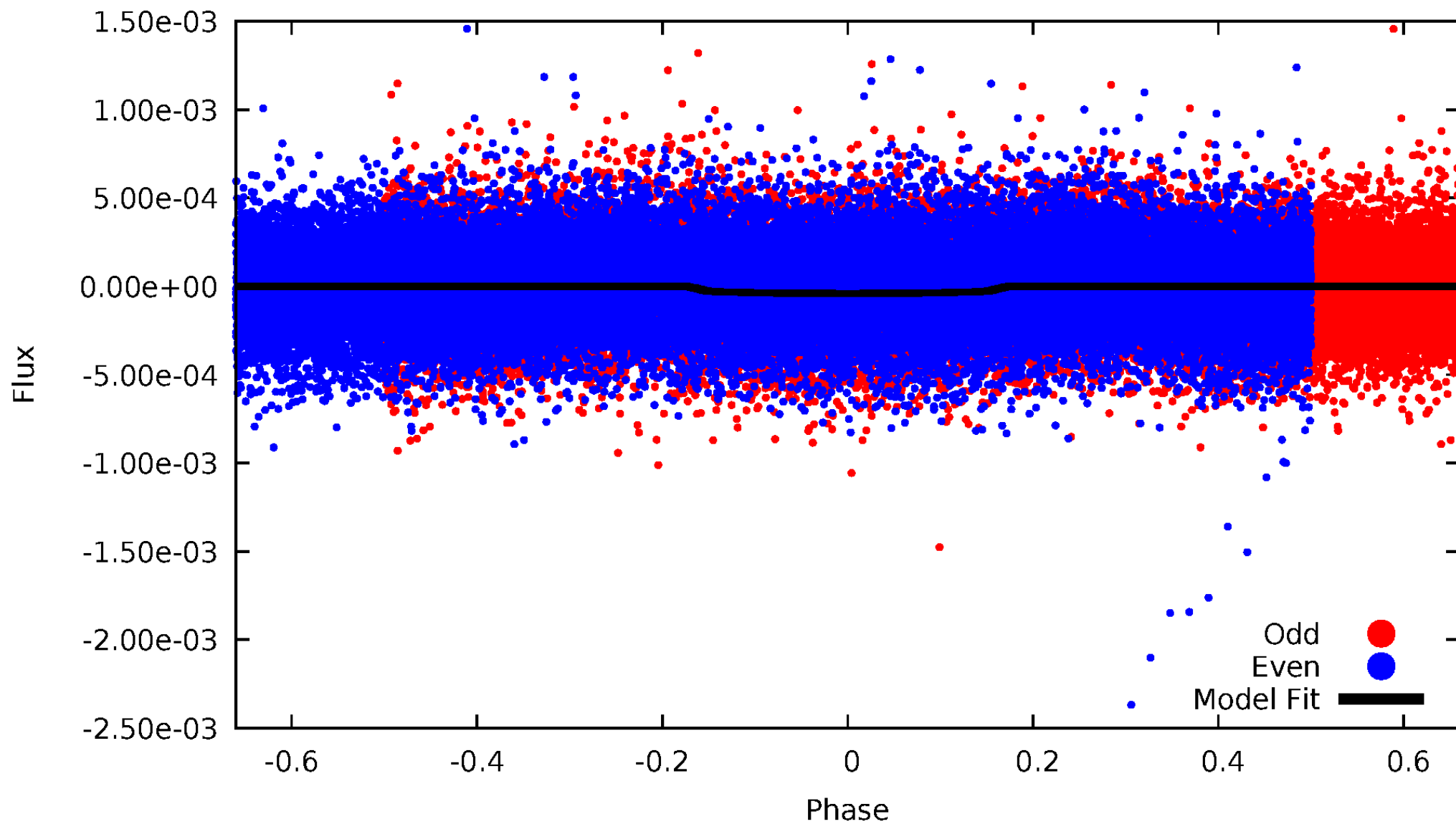
TCE 004680543-01





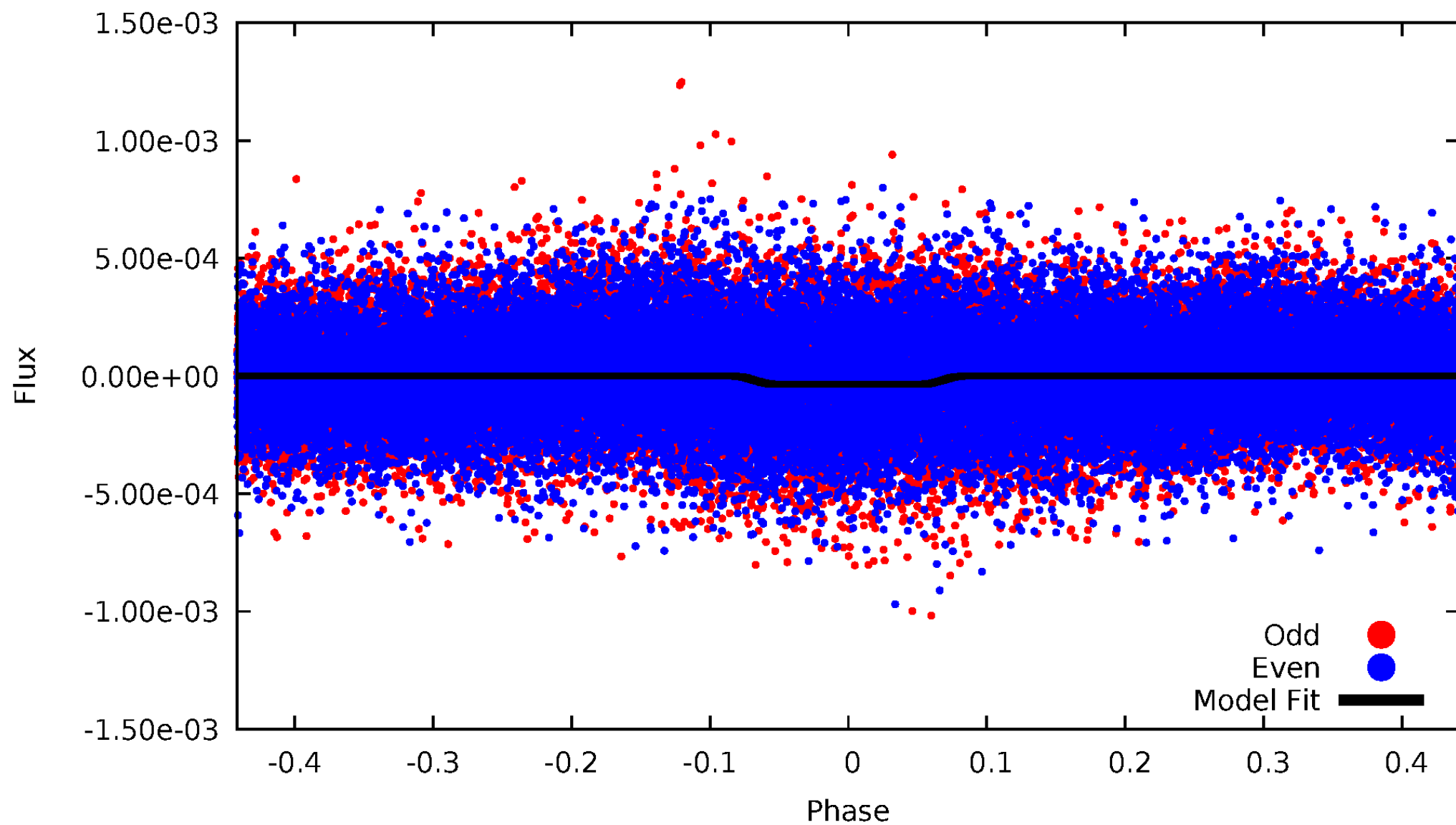
# DV Odd/Even

TCE 004680543-01

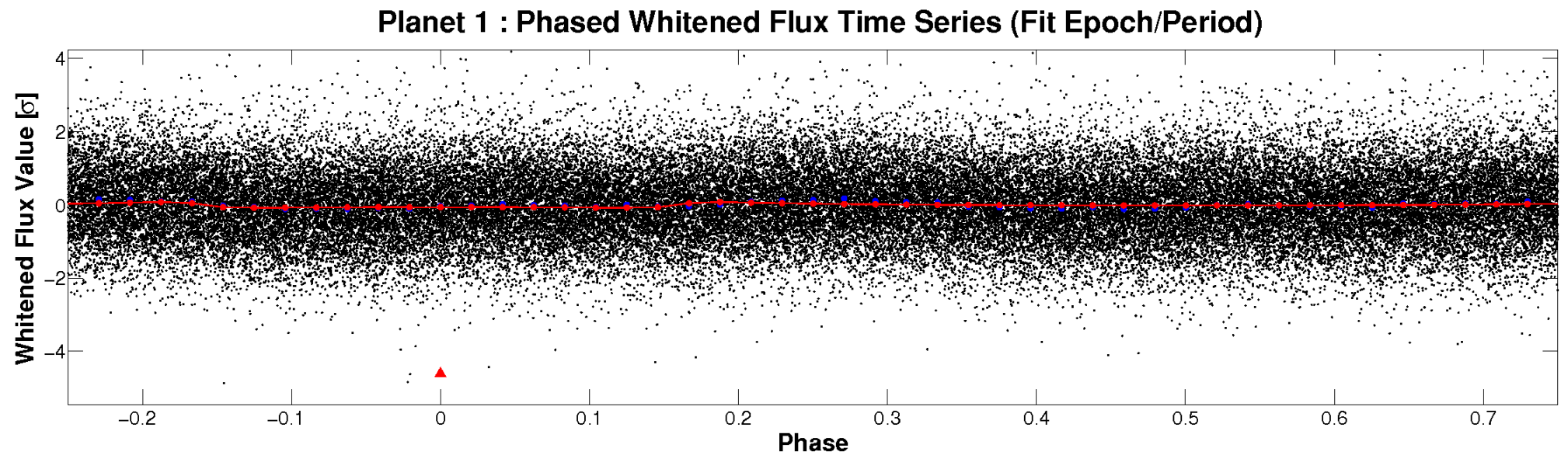
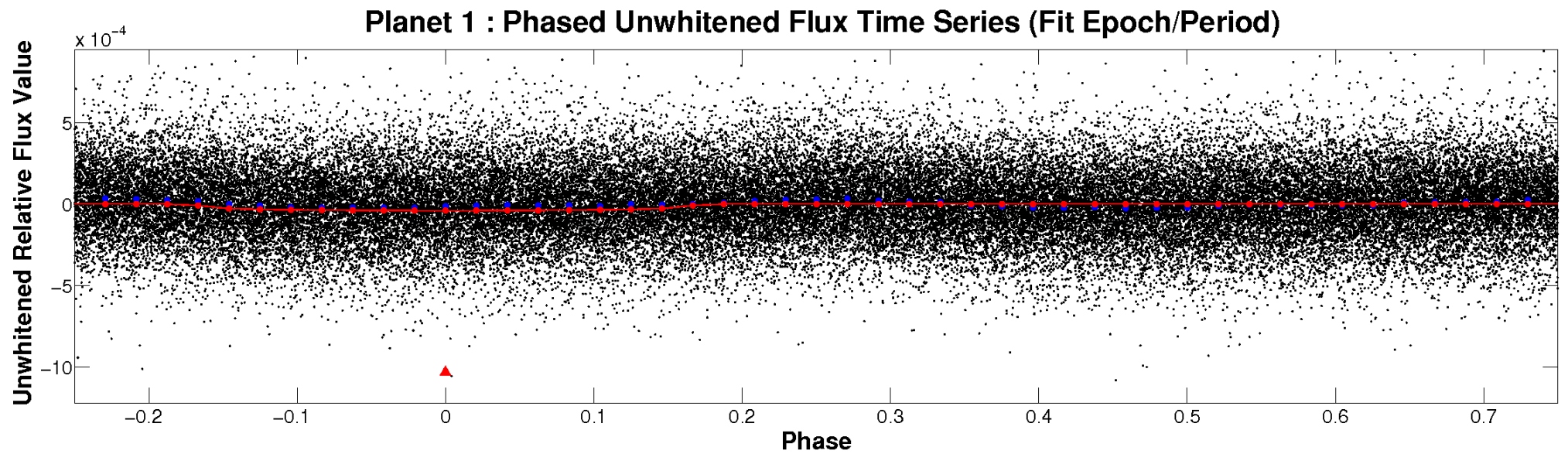


# ALT Odd/Even

TCE 004680543-01

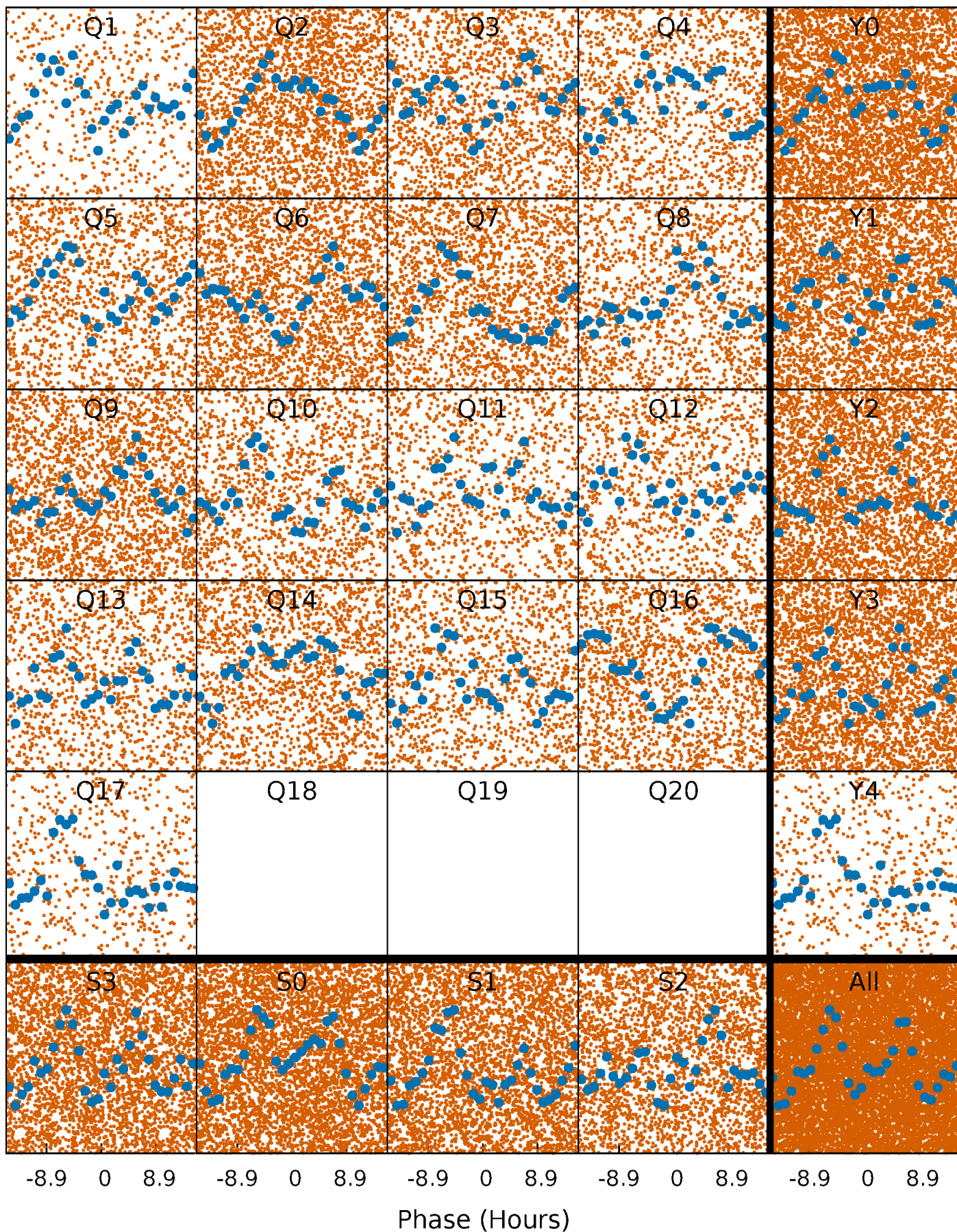


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

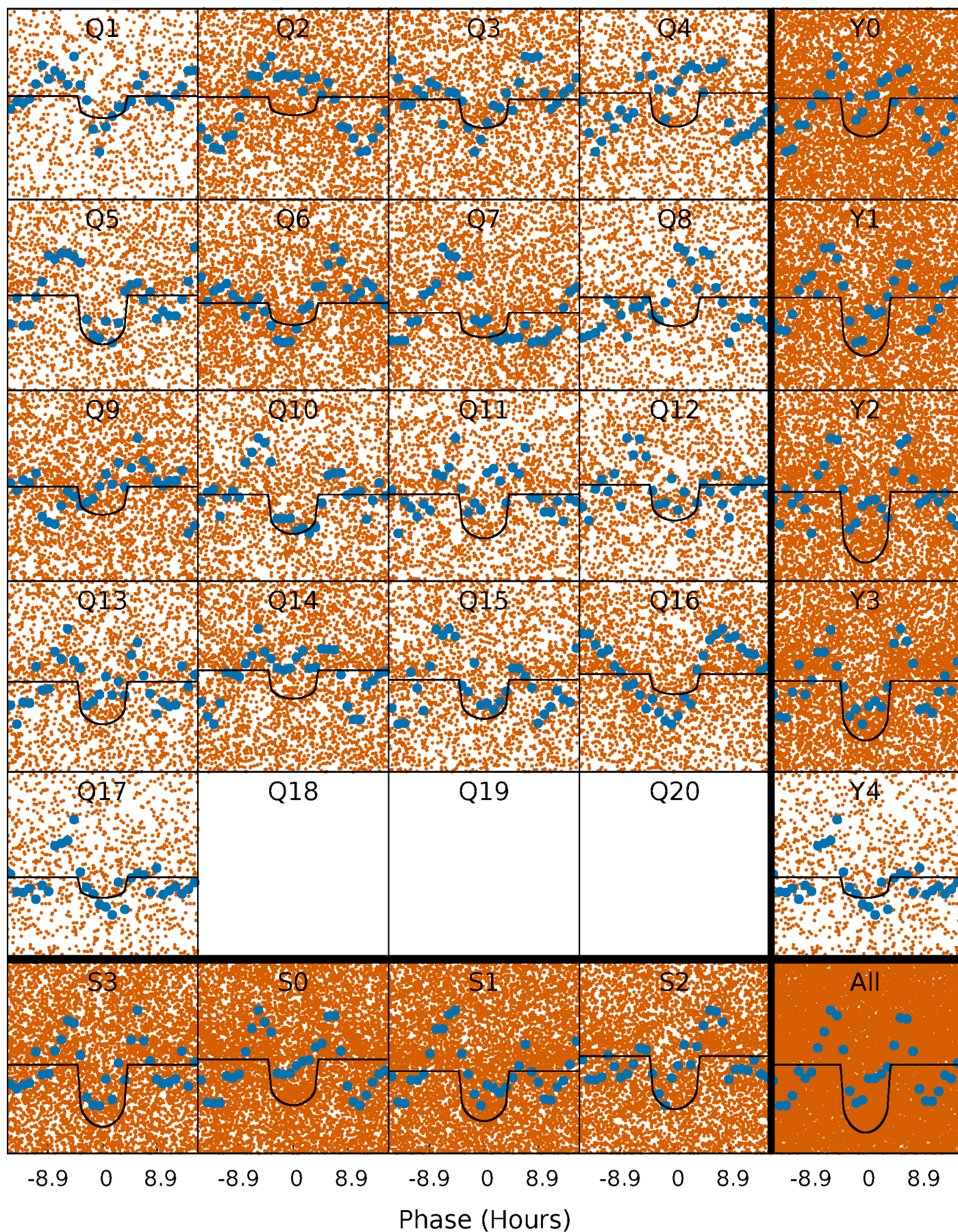
TCE 004680543-01 P= 0.980171 Days  $T_0=132.096923$  (BKJD)





# DV Quarter-Phased Transit Curves

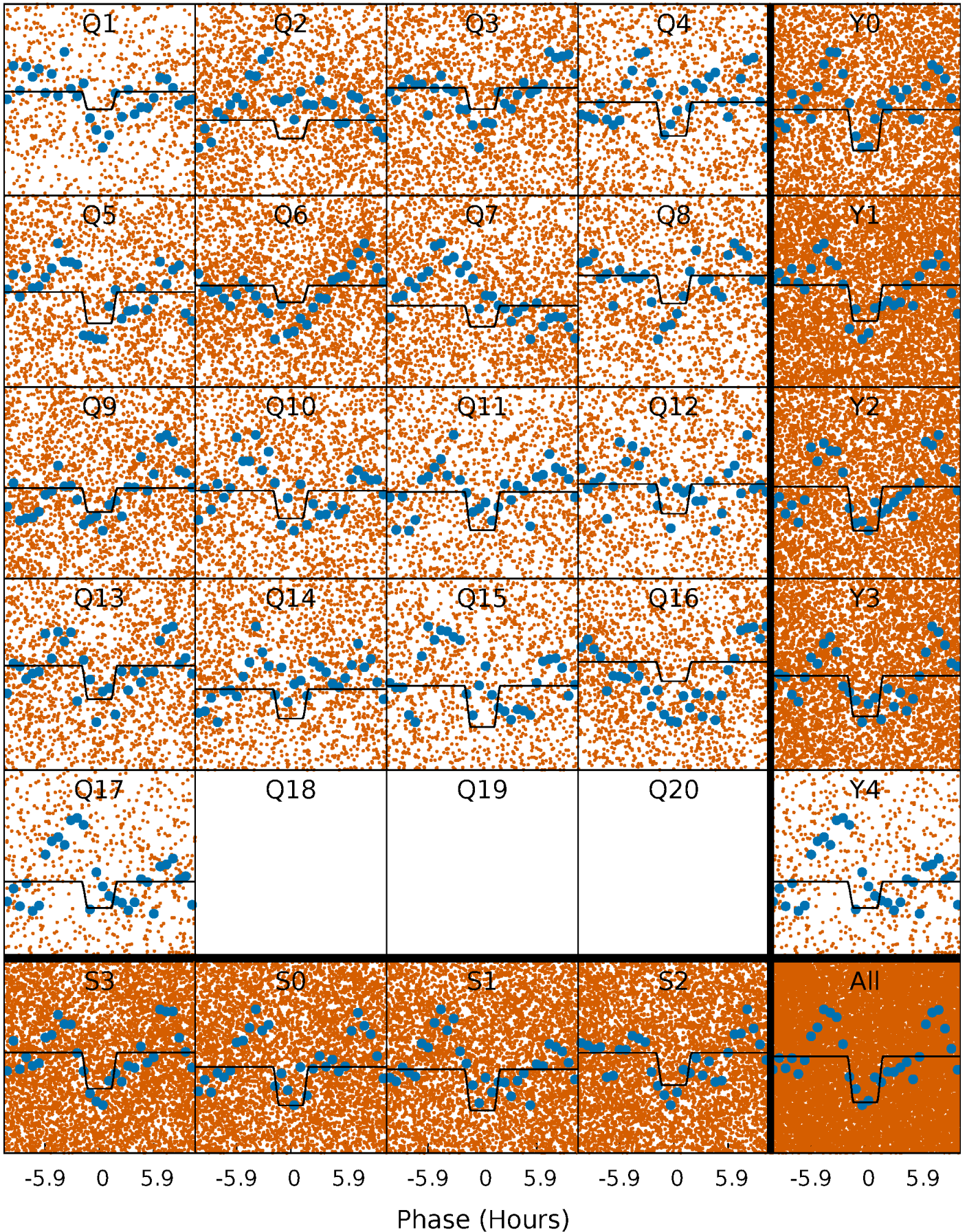
TCE 004680543-01 P= 0.980171 Days  $T_0=132.096923$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

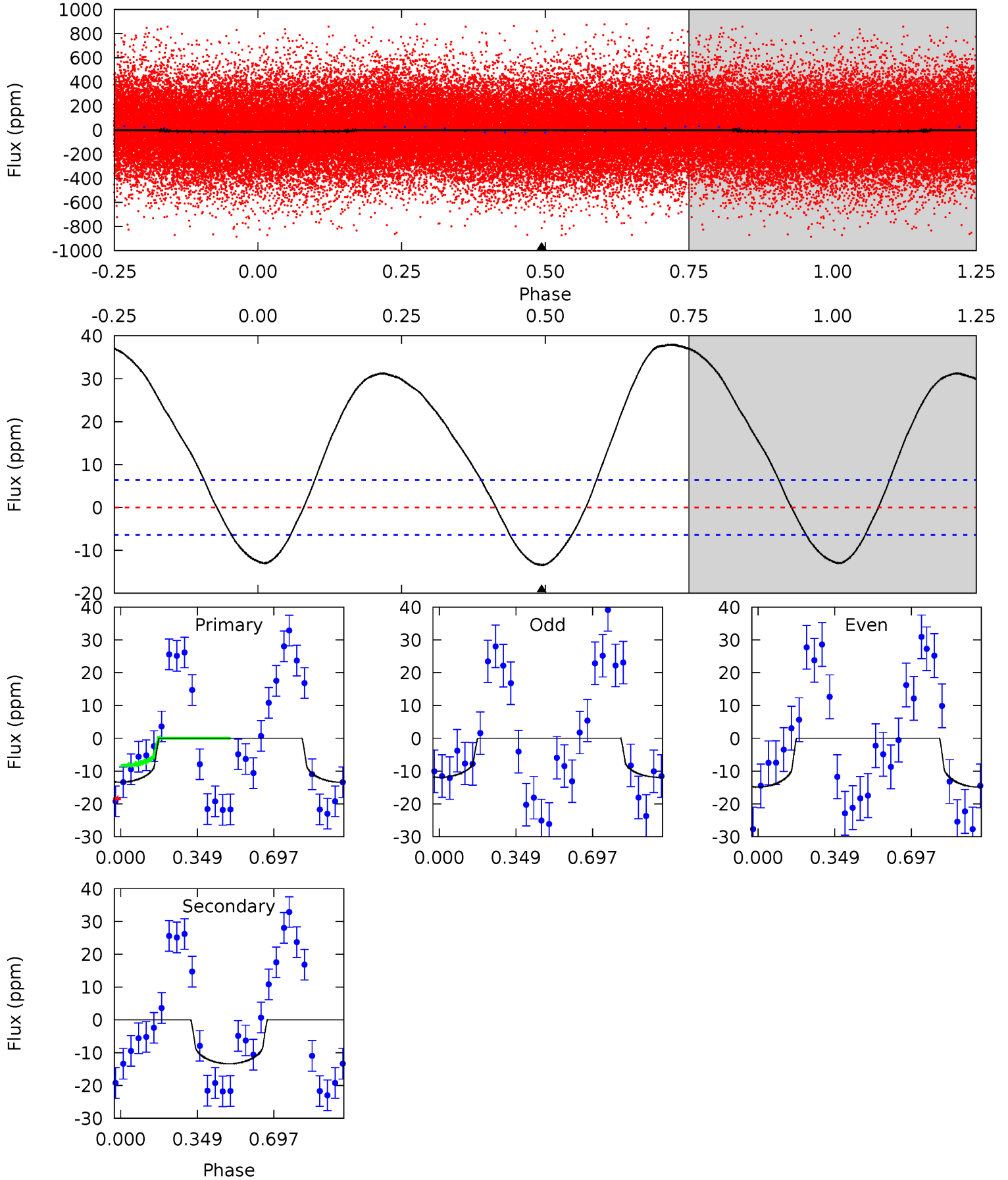
TCE 004680543-01 P= 0.980128 Days  $T_0=132.067884$  (BKJD)



# DV Model-Shift Uniqueness Test

004680543-01, P = 0.980171 Days, E = 131.116752 Days

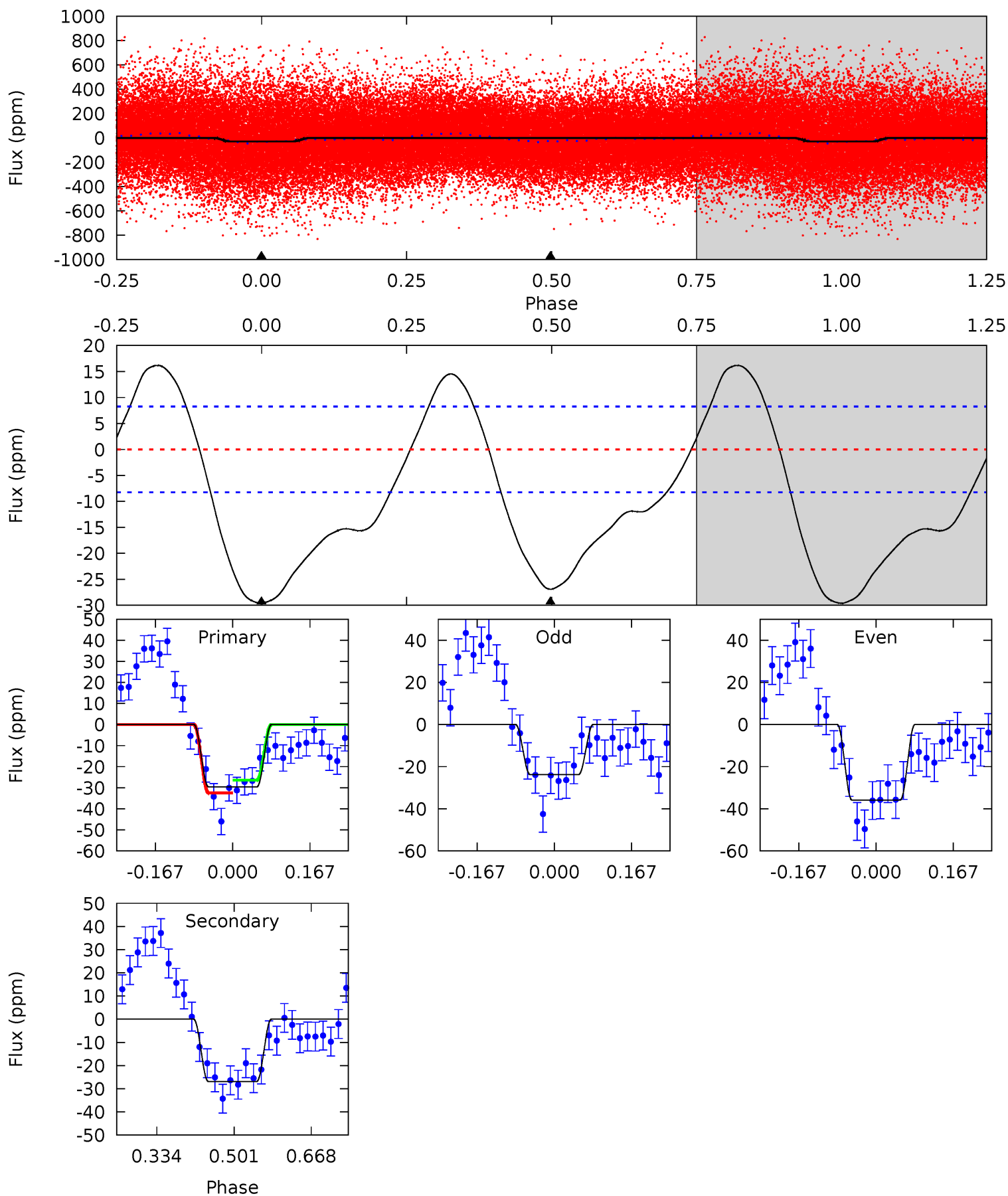
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.01	9.01	0	0	4.30	0.94	7.48	9.01	9.01	9.01	9.01	1.00	0.86	0.74	3.40



# Alt Model-Shift Uniqueness Test

004680543-01, P = 0.980128 Days, E = 131.087756 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
16.0	14.5	0	0	4.46	1.38	5.61	16.0	16.0	14.5	14.5	3.26	1.02	0.35	1.63





### Stellar Parameters For KIC 004680543

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6718^{+201}_{-221}$	$3.574^{+0.368}_{-0.092}$	$-0.420^{+0.350}_{-0.250}$	$3.407^{+0.451}_{-1.444}$	$1.588^{+0.212}_{-0.363}$	$0.057^{+0.178}_{-0.016}$
	+3%/-3%	+10%/-3%	+83%/-60%	+13%/-42%	+13%/-23%	+314%/-28%
Source	PHO1	FLK73	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 004680543-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-13 \pm 1$	$2.04^{+0.77}_{-0.72}$	$4973^{+311}_{-491}$	$4864^{+1170}_{-954}$	$0.895^{+1.197}_{-0.423}$
Alt.	$-27 \pm 2$	$2.04^{+0.76}_{-0.69}$	$5012^{+286}_{-566}$	$5925^{+1647}_{-863}$	$1.832^{+2.378}_{-0.853}$

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

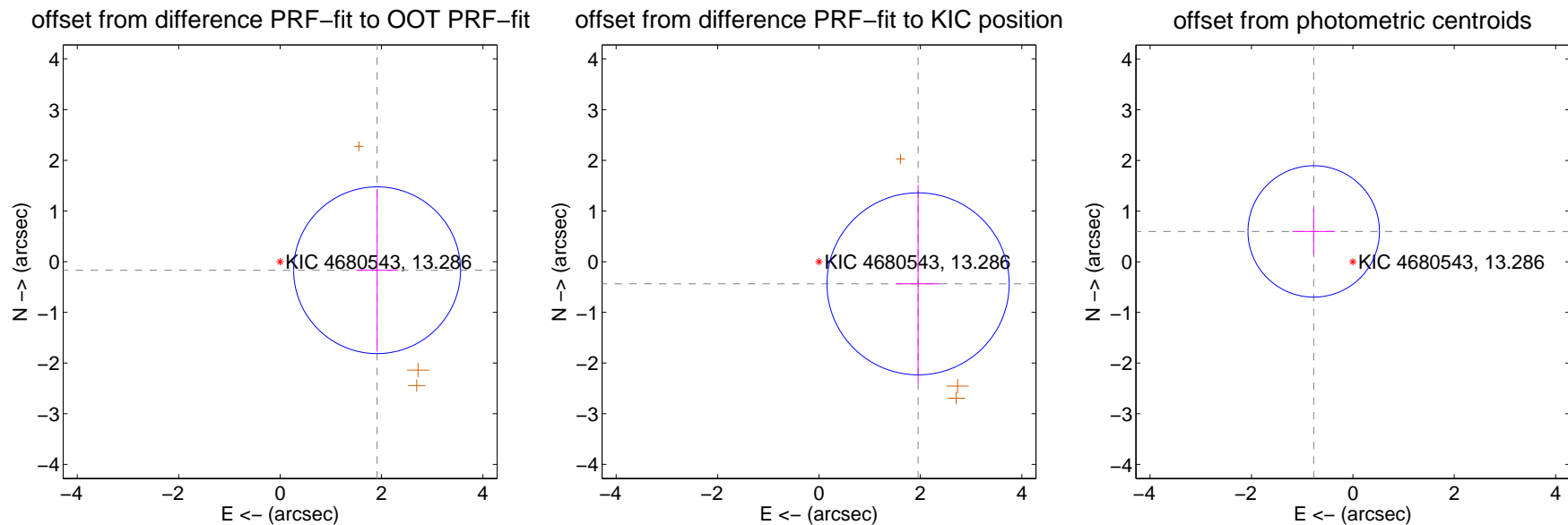
## DV Centroid Data

Supplemental centroid analysis for 004680543-01. Kepler magnitude: 13.29. Transit SNR 11.94

There are 0 quarters with good PRF difference image offsets

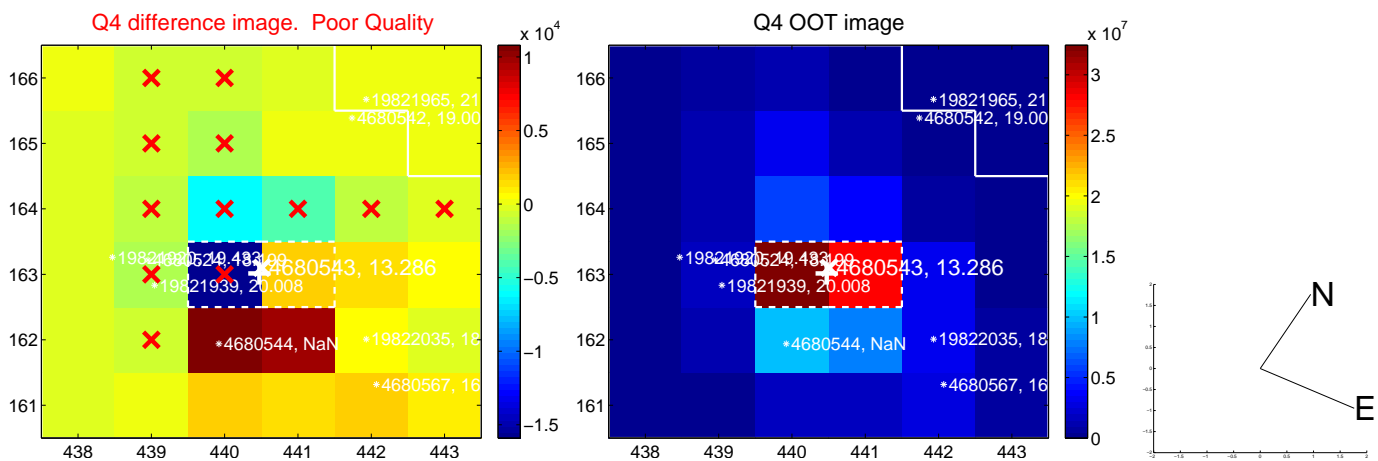
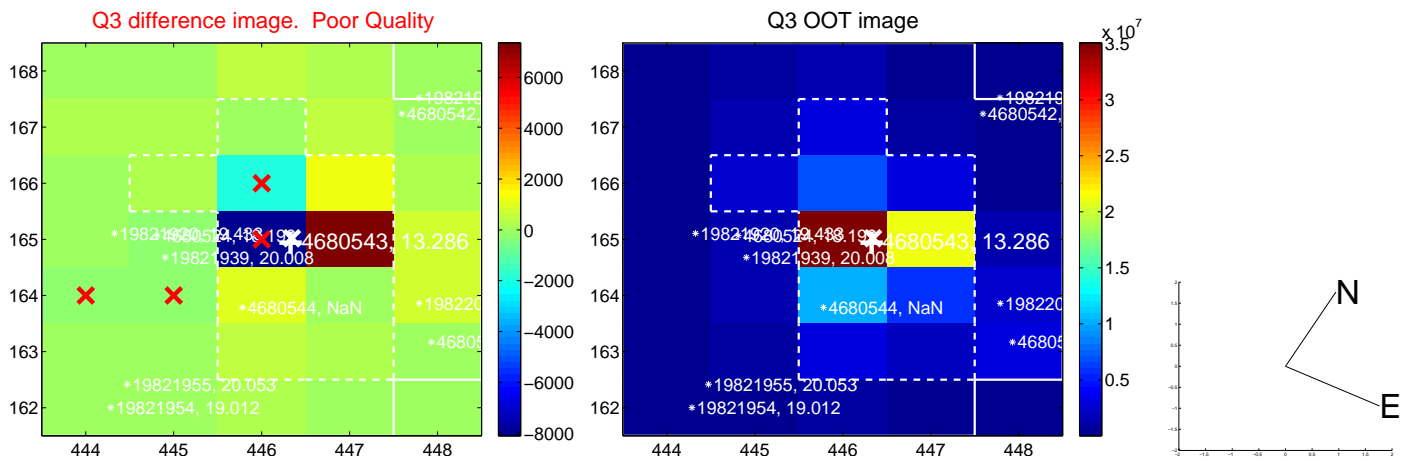
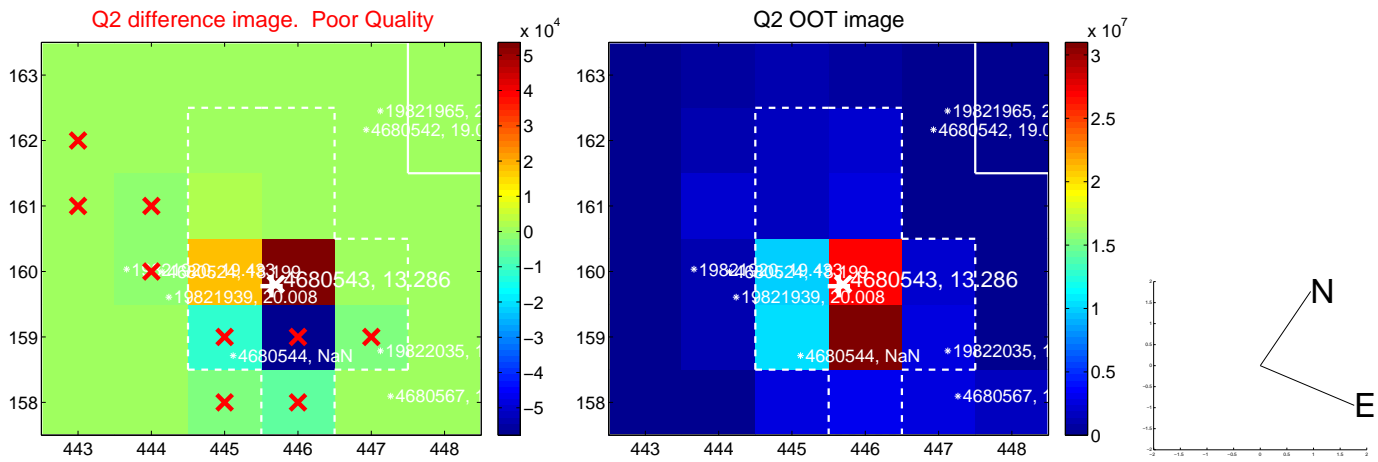
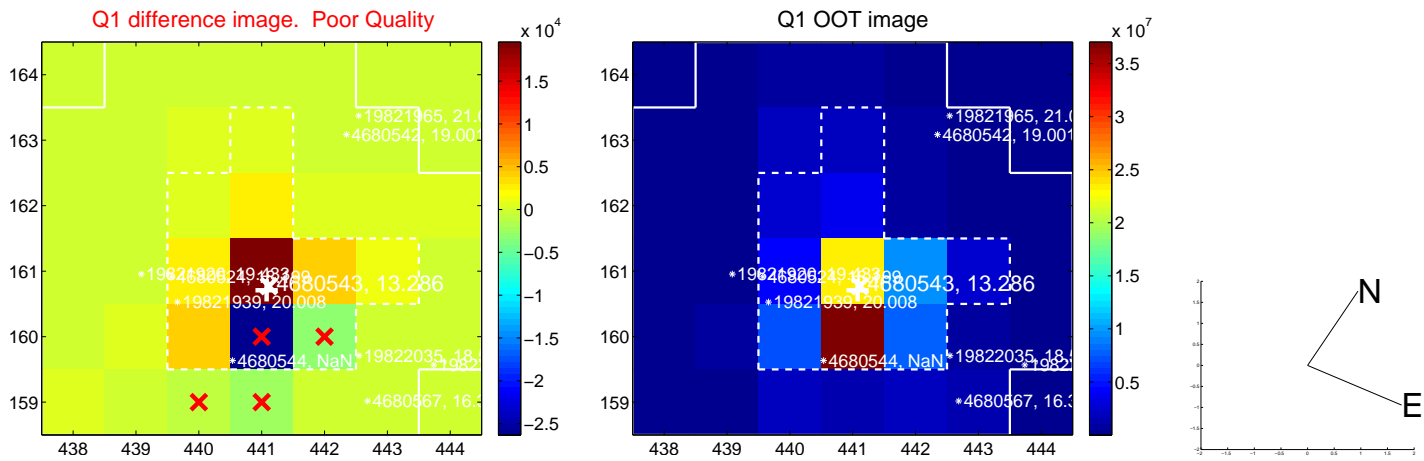
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.920 \pm 0.548$	3.50	$-1.913 \pm 0.411$	$-0.169 \pm 1.603$
PRF-fit source offset from KIC position	$2.003 \pm 0.599$	3.34	$-1.954 \pm 0.431$	$-0.437 \pm 1.950$
photometric centroid source offset	$0.98 \pm 0.43$	2.26	$0.77 \pm 0.42$	$0.60 \pm 0.45$

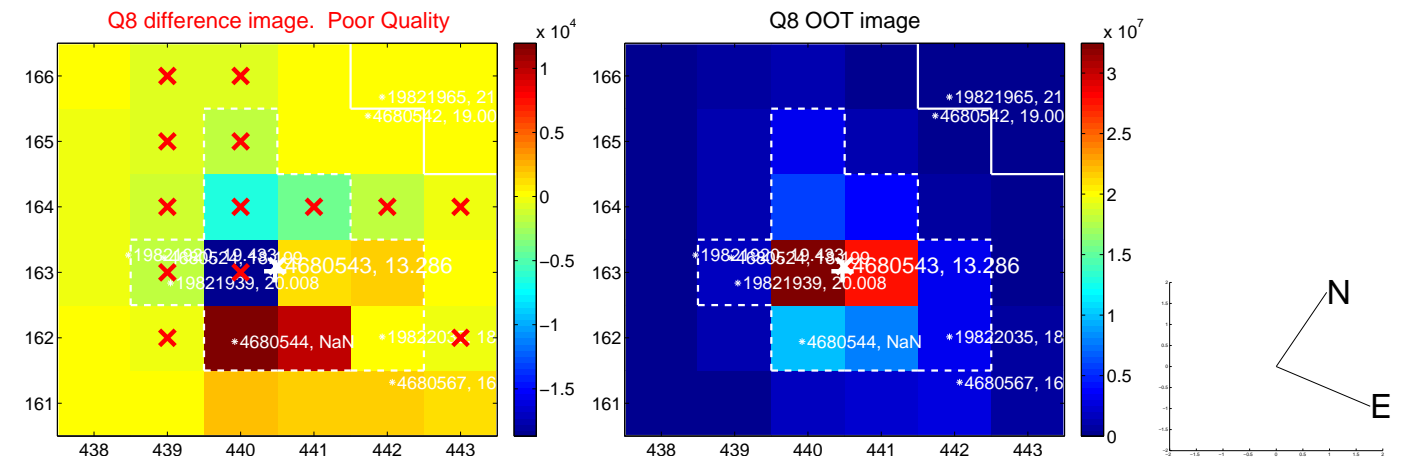
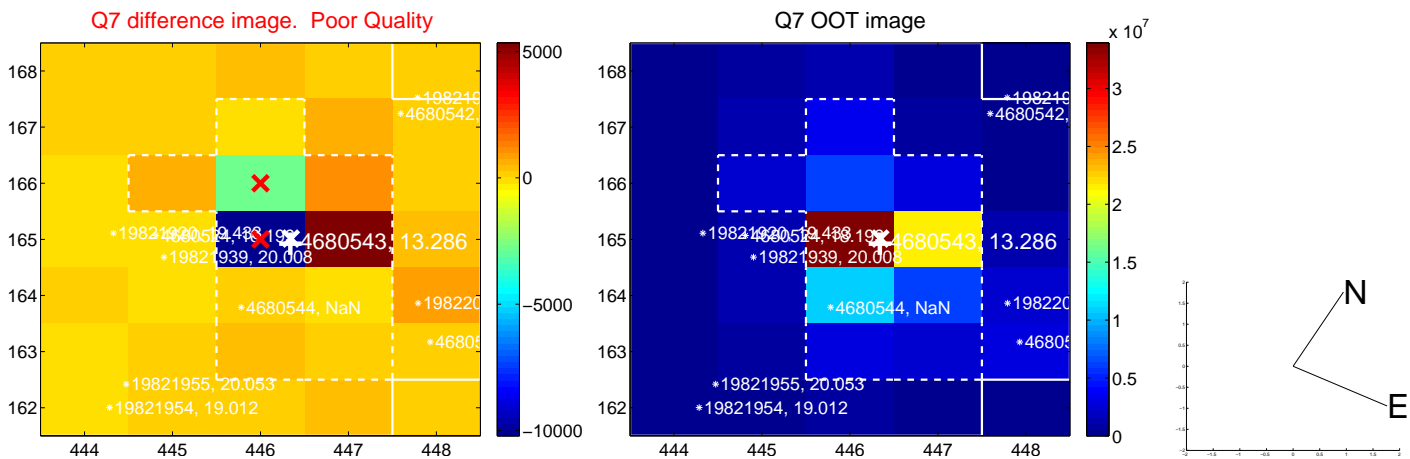
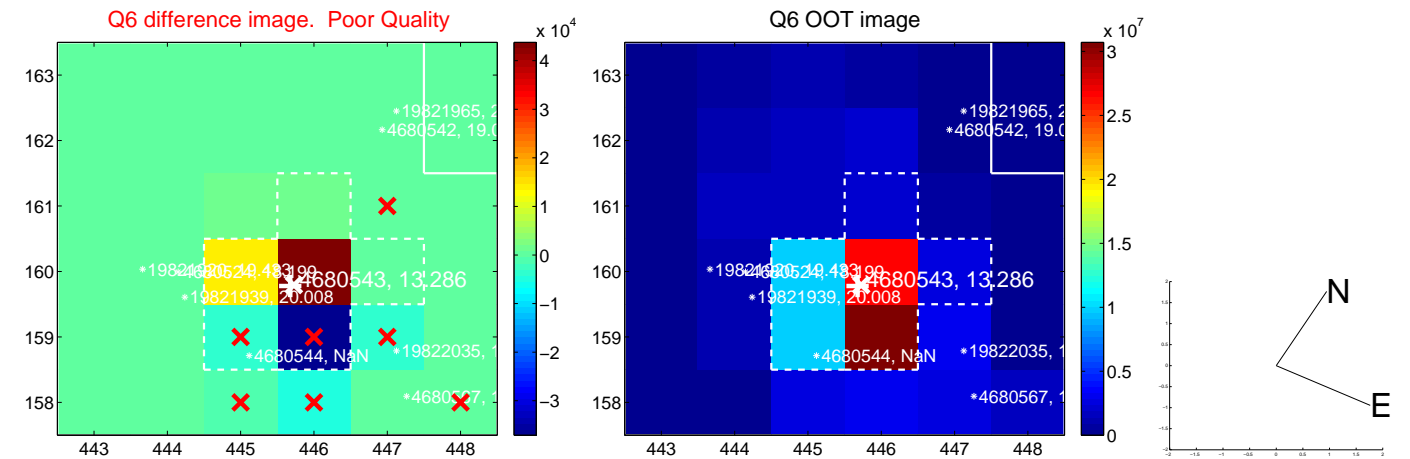
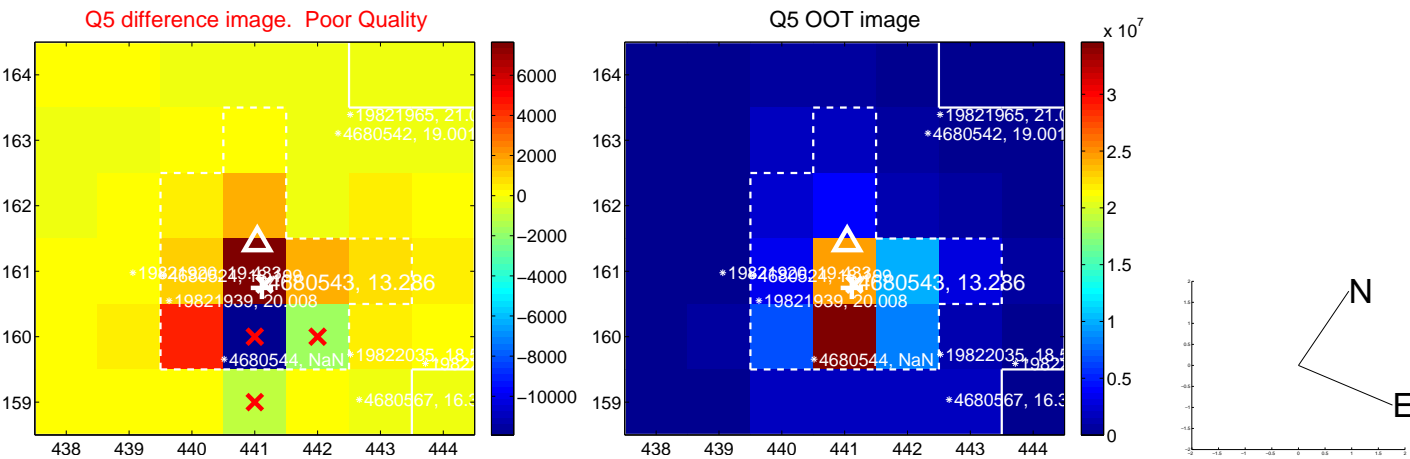


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

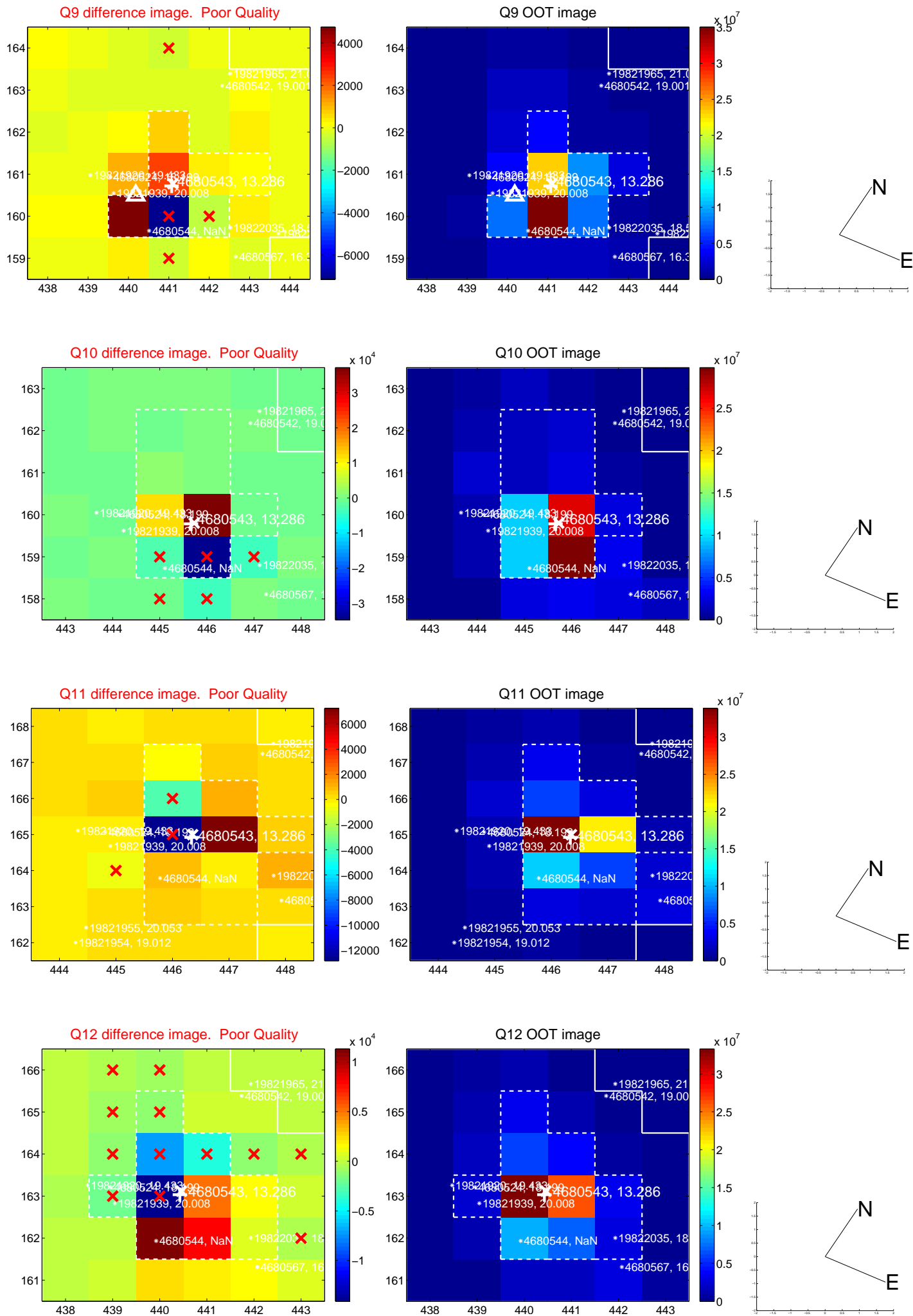


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

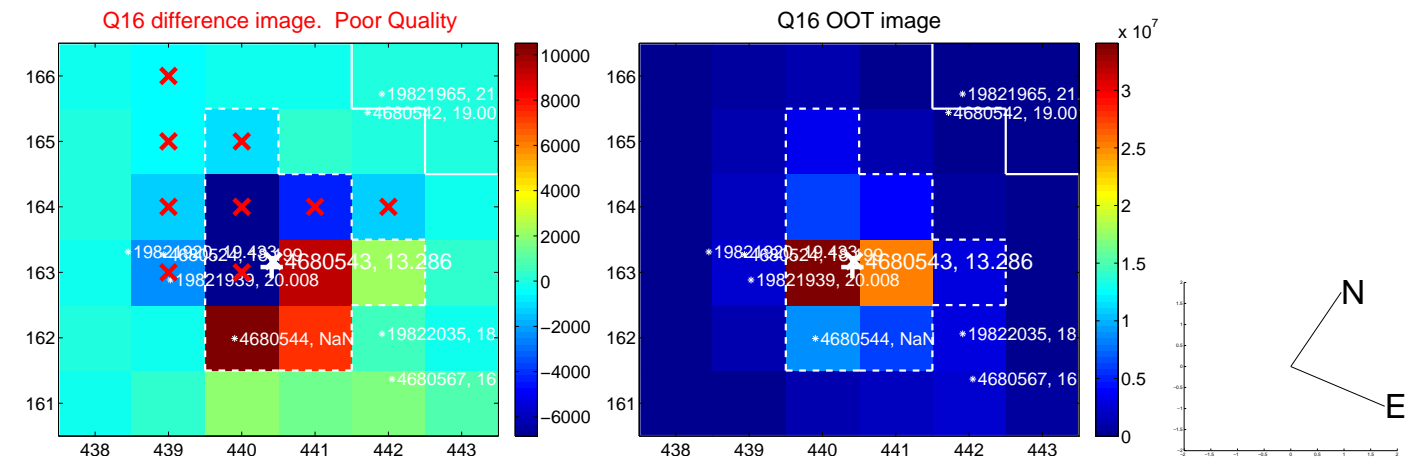
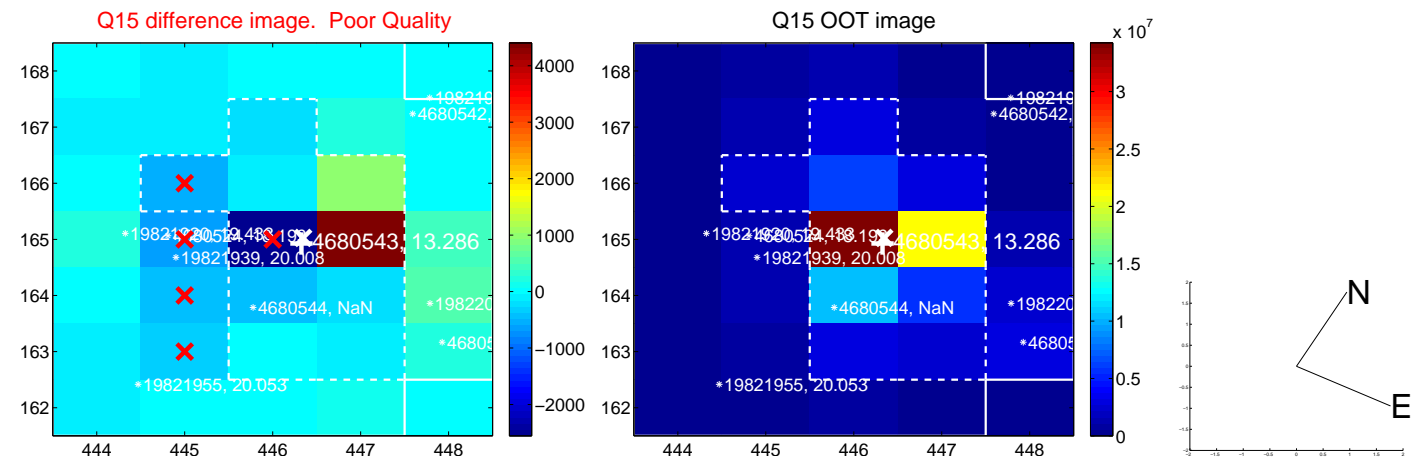
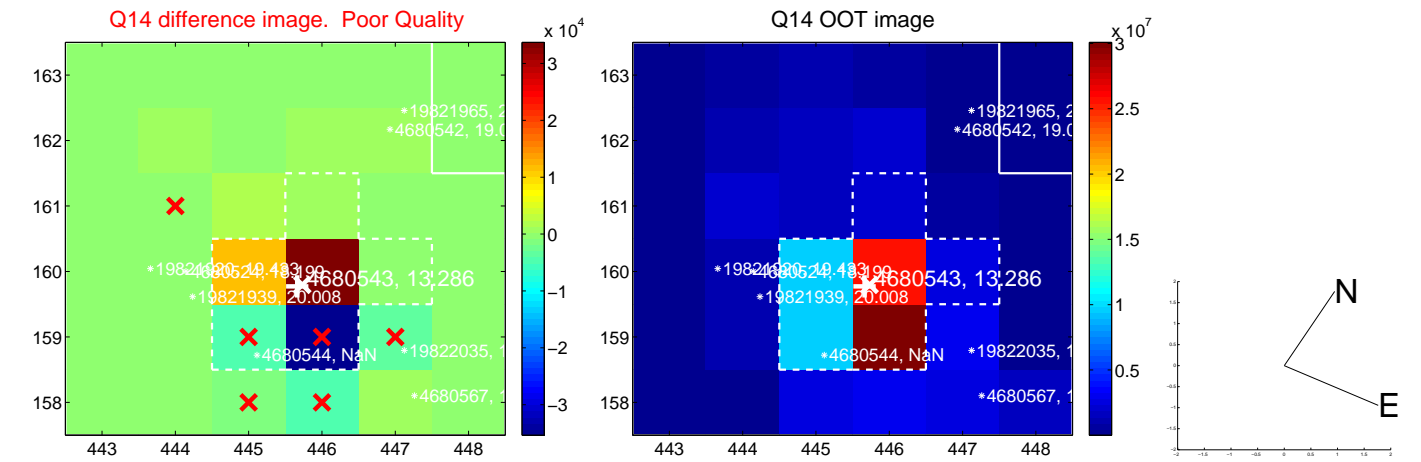
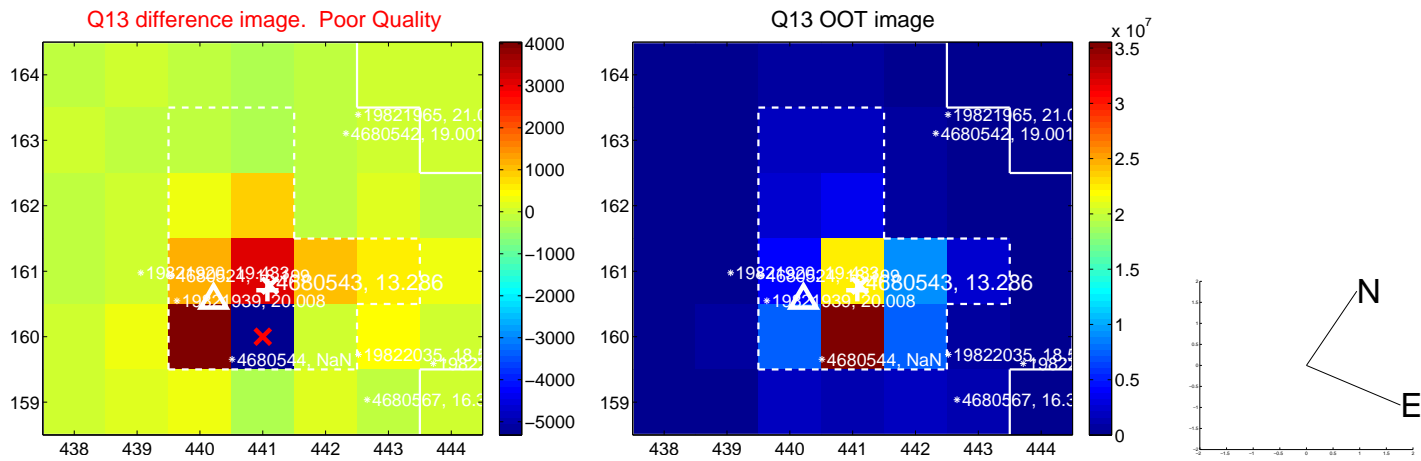




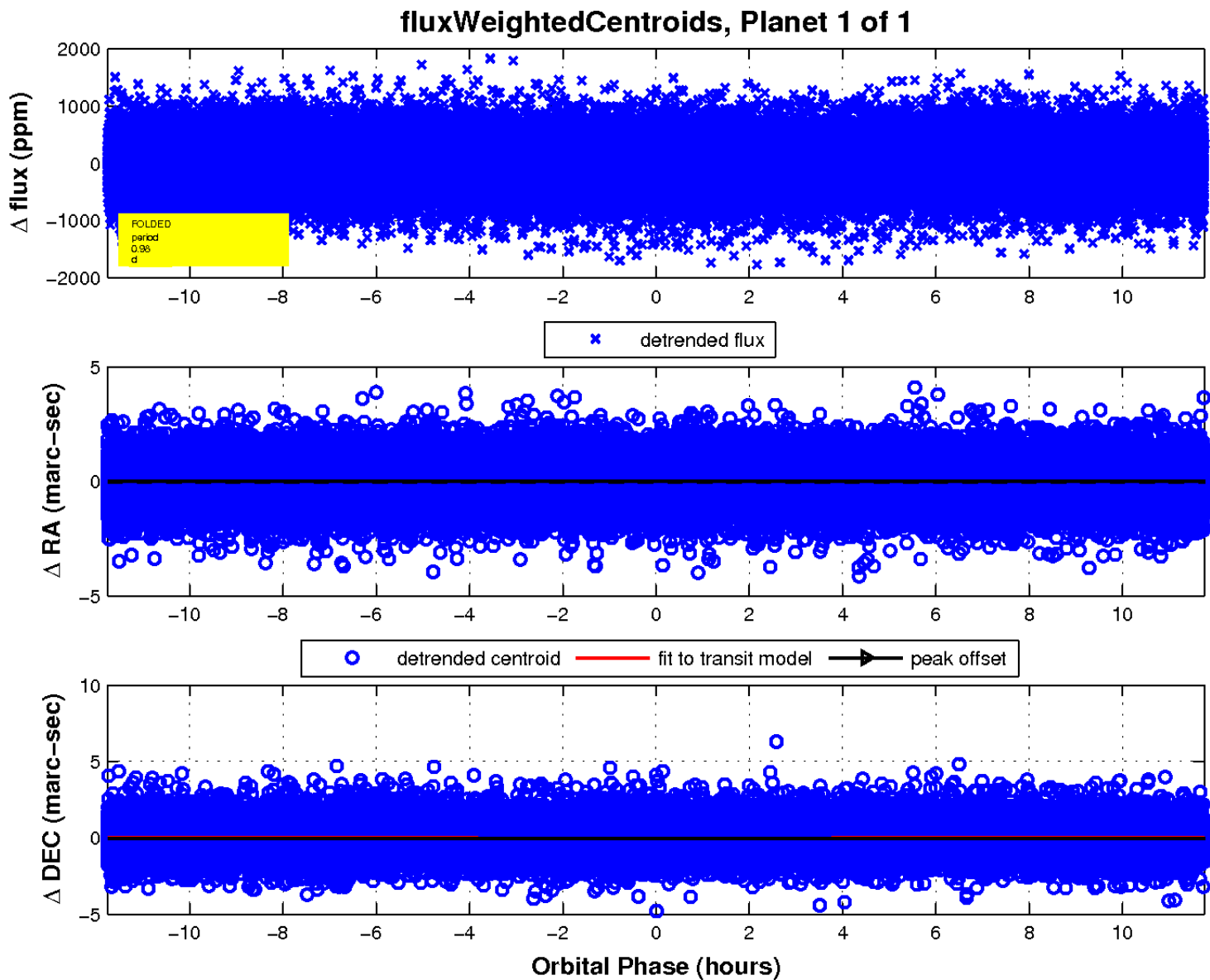
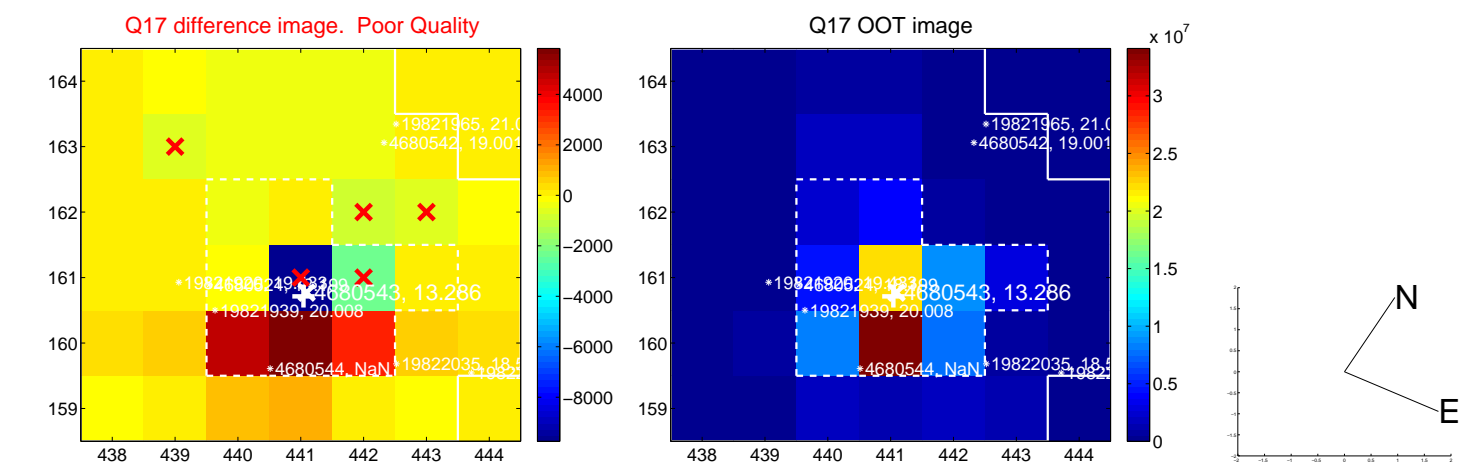
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

