

# KIC 004476011

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004476011-01	OBS	No	0.655856	131.622001	43.5	1.180	8.7	5.8	2.00	7286	1.54	33192.39

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004476011-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

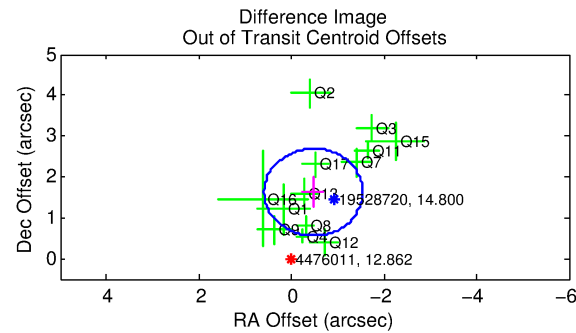
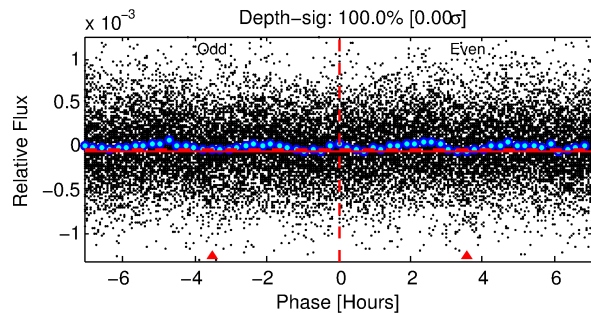
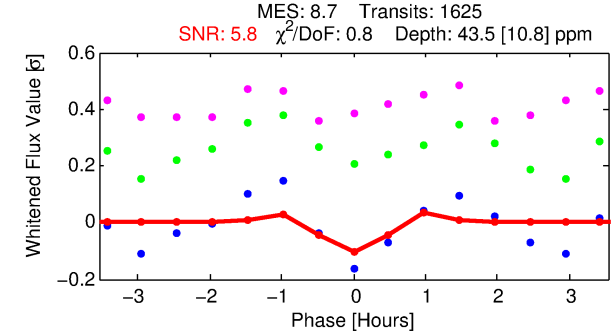
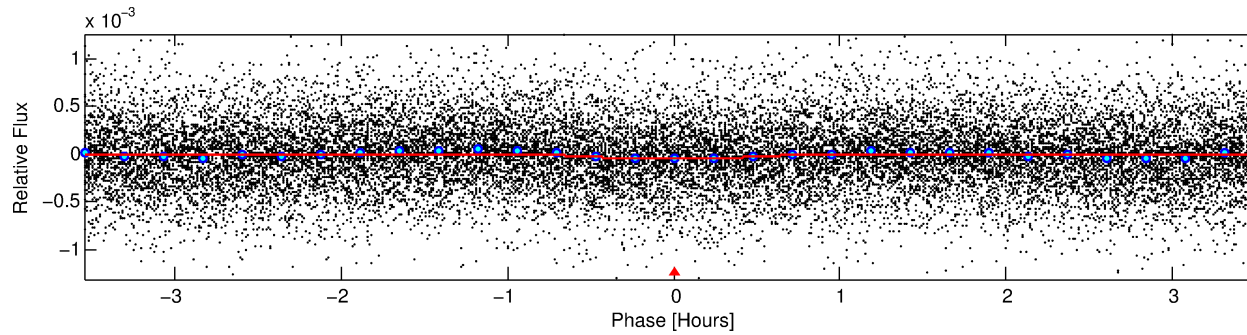
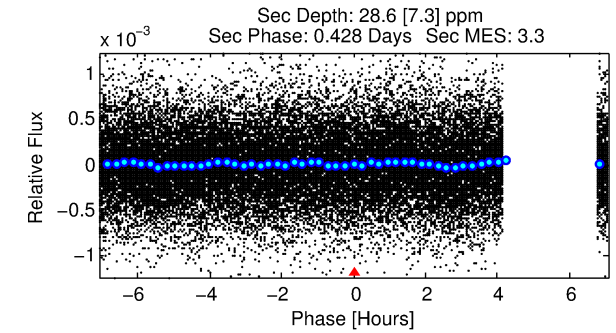
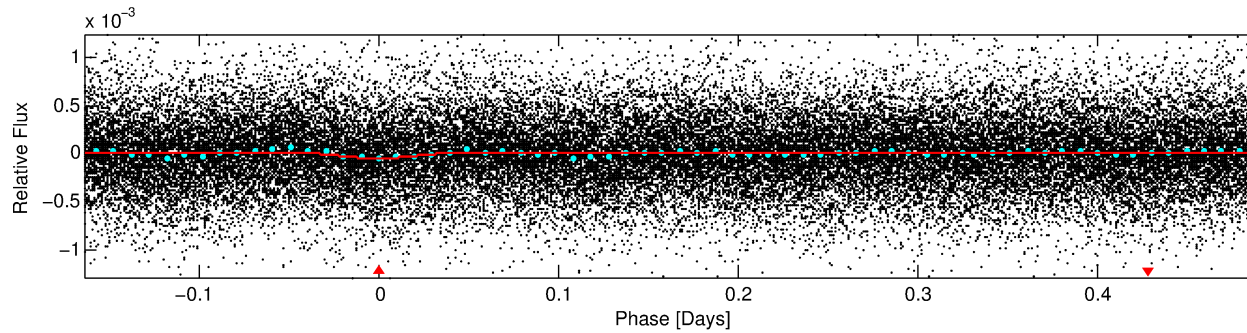
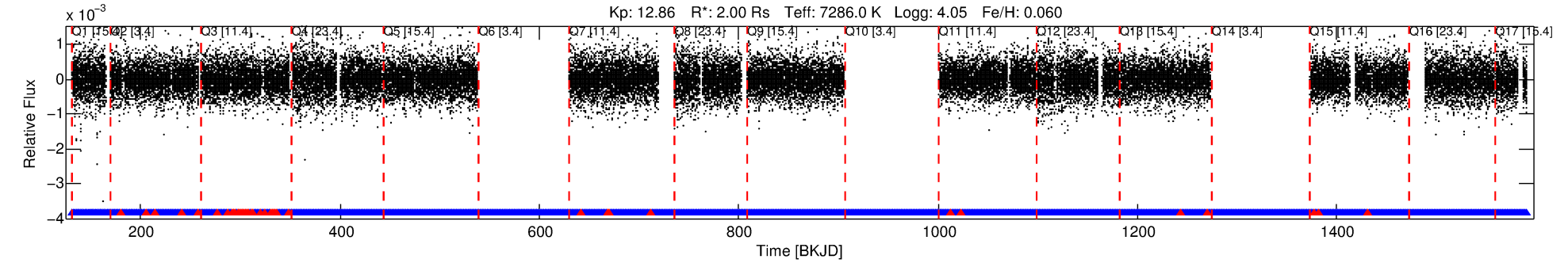
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004476011-01

No Significant Match Found

# DV One-Page Summary

KIC: 4476011 Candidate: 1 of 1 Period: 0.656 d



## DV Fit Results:

Period = 0.65586 [0.00002] d  
Epoch = 131.6220 [0.0025] BKJD  
Rp/R\* = 0.0070 [0.0024]  
a/R\* = 2.13 [3.42]  
b = 0.90 [0.44]  
Seff = 33192.39 [11873.33]  
Teff = 3442 [308] K  
Rp = 1.54 [0.68] Re  
a = 0.0175 [0.0039] AU  
Ag = 2.03 [1.61] [0.64σ]  
Teffp = 6349 [1194] K [2.36σ]

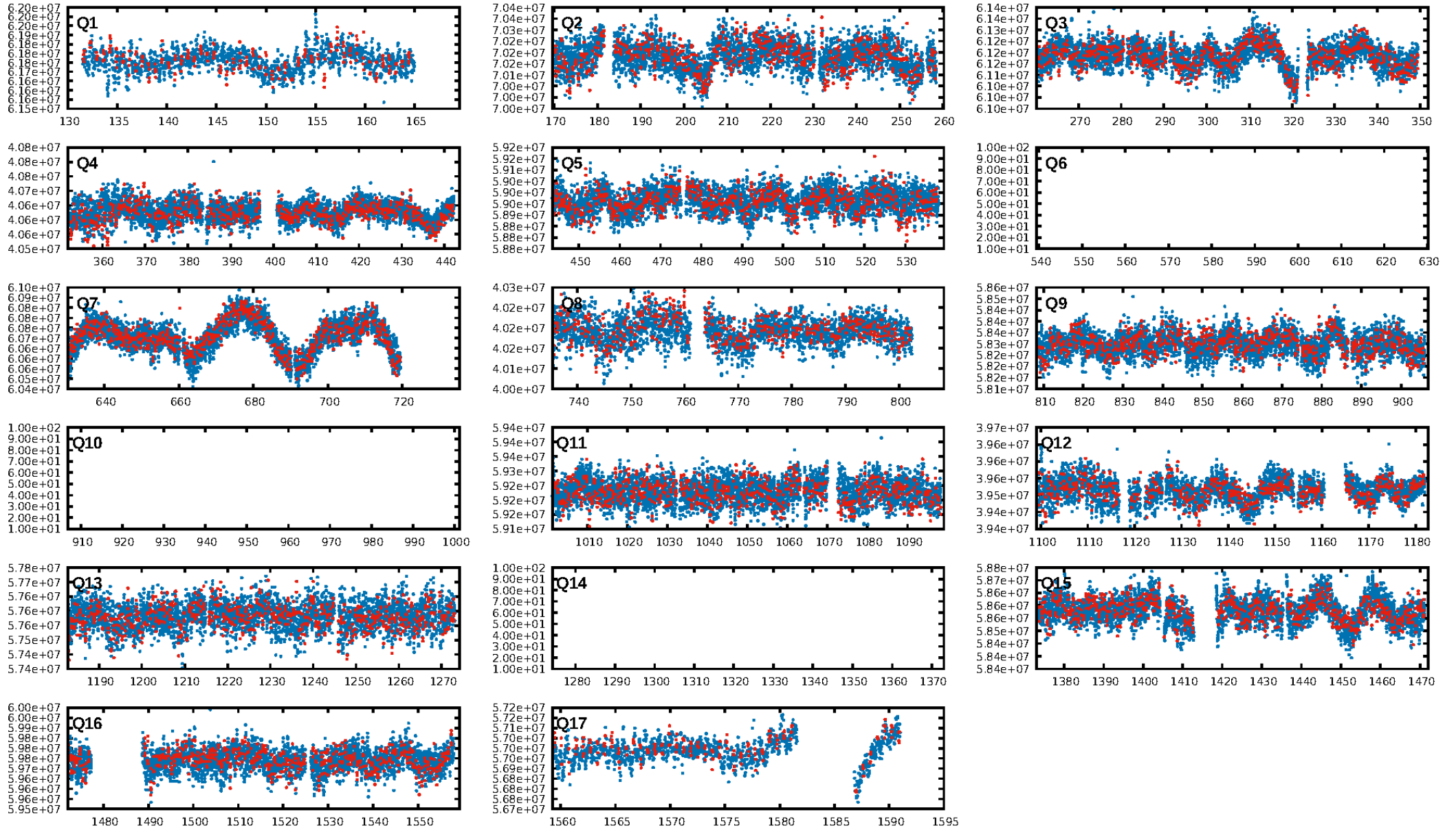
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.40e-20  
RollingBand-fgt: 0.97 [1484/1533]  
GhostDiagnostic-chr: 3.702  
Centroid-sig: 34.0%  
Centroid-so: 1.250 arcsec [1.14σ]  
OotOffset-rm: 1.691 arcsec [4.76σ]  
KicOffset-rm: 1.971 arcsec [13.14σ]  
OotOffset-st: 1/4/4/4 [13]  
KicOffset-st: 1/4/4/4 [13]  
DiffImageQuality-fgm: 0.38 [5/13]  
DiffImageOverlap-fno: 1.00 [14/14]

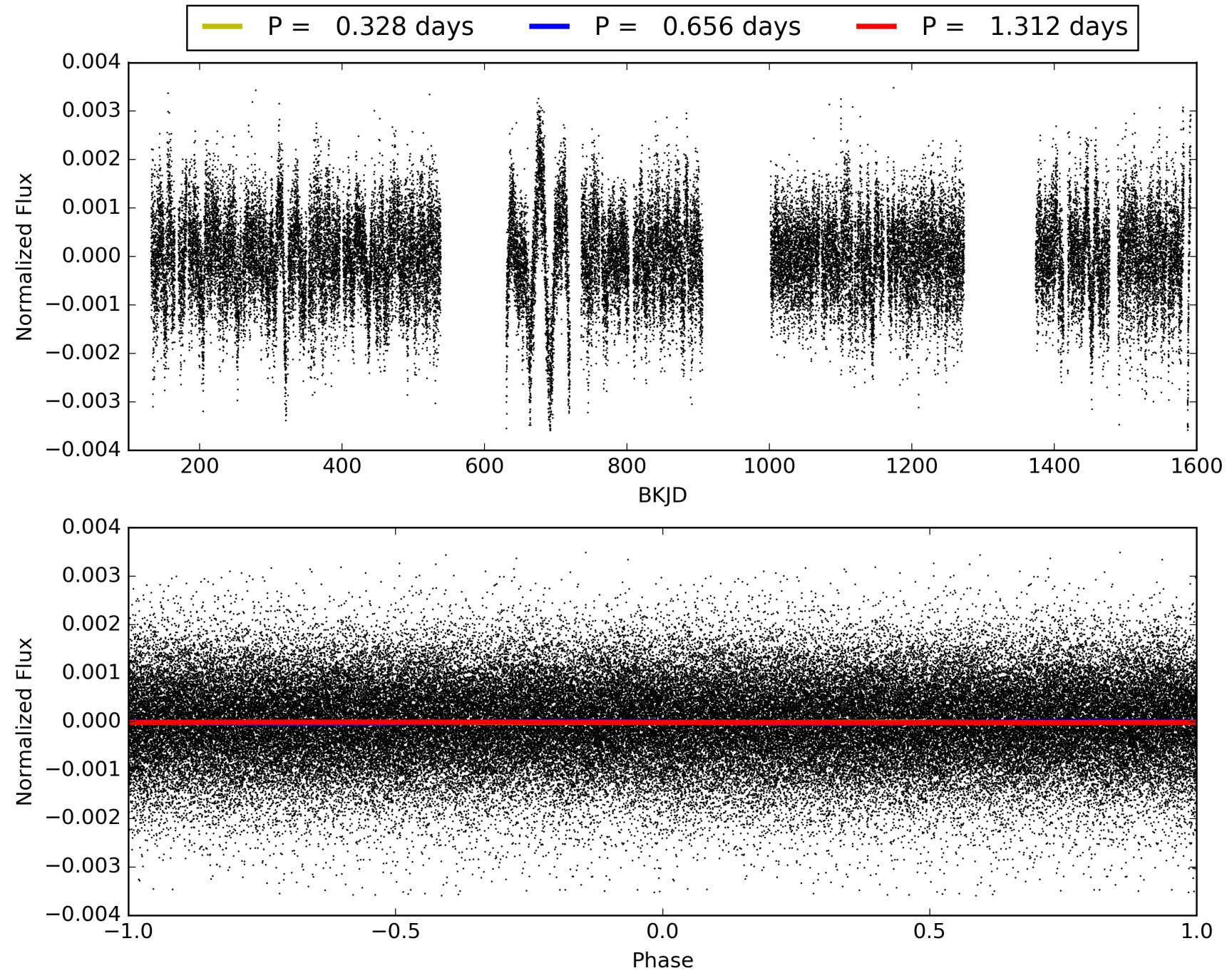
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:25:14 Z

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

# TCE 004476011-01, PDC Light Curves



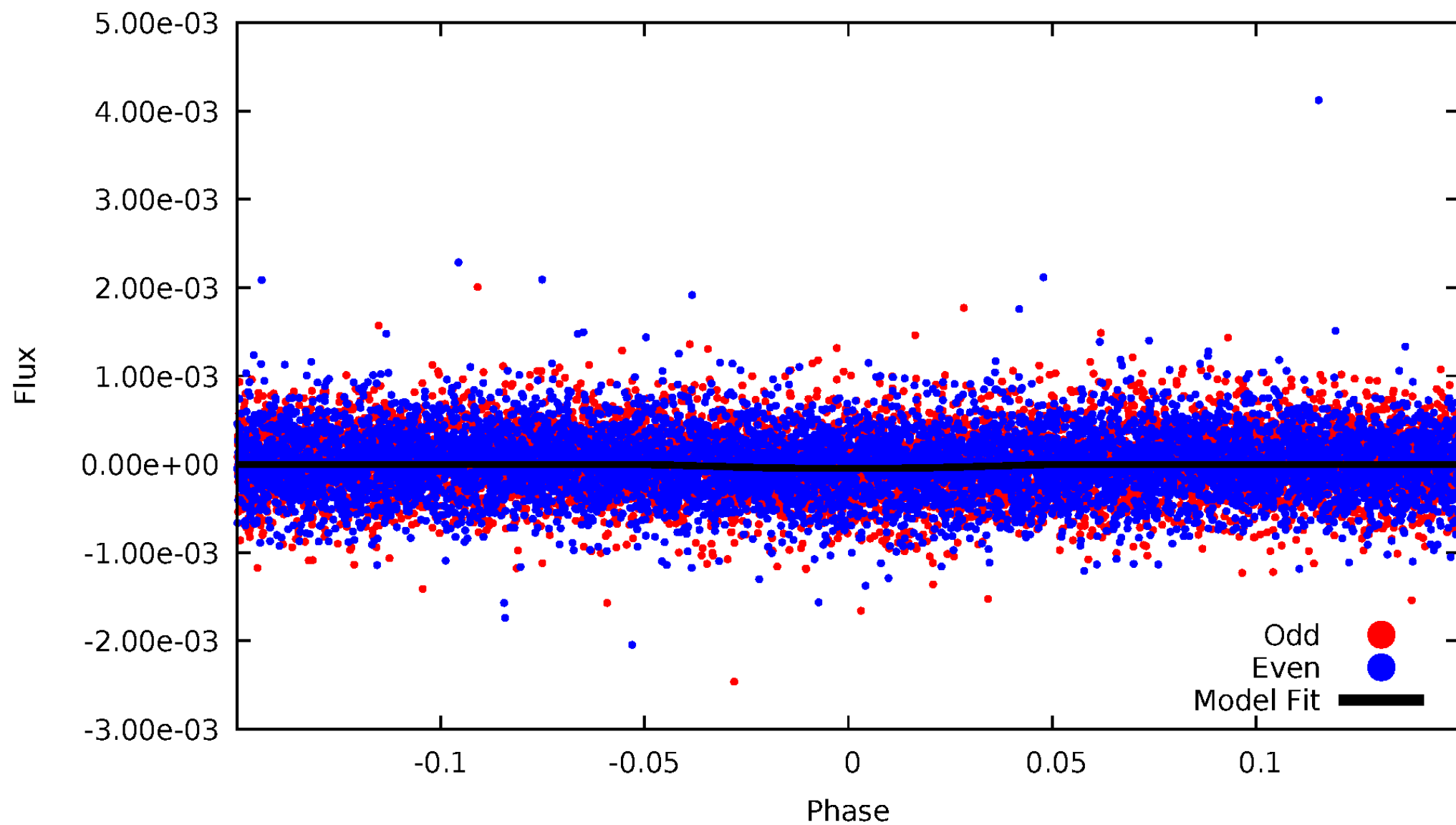
TCE 004476011-01





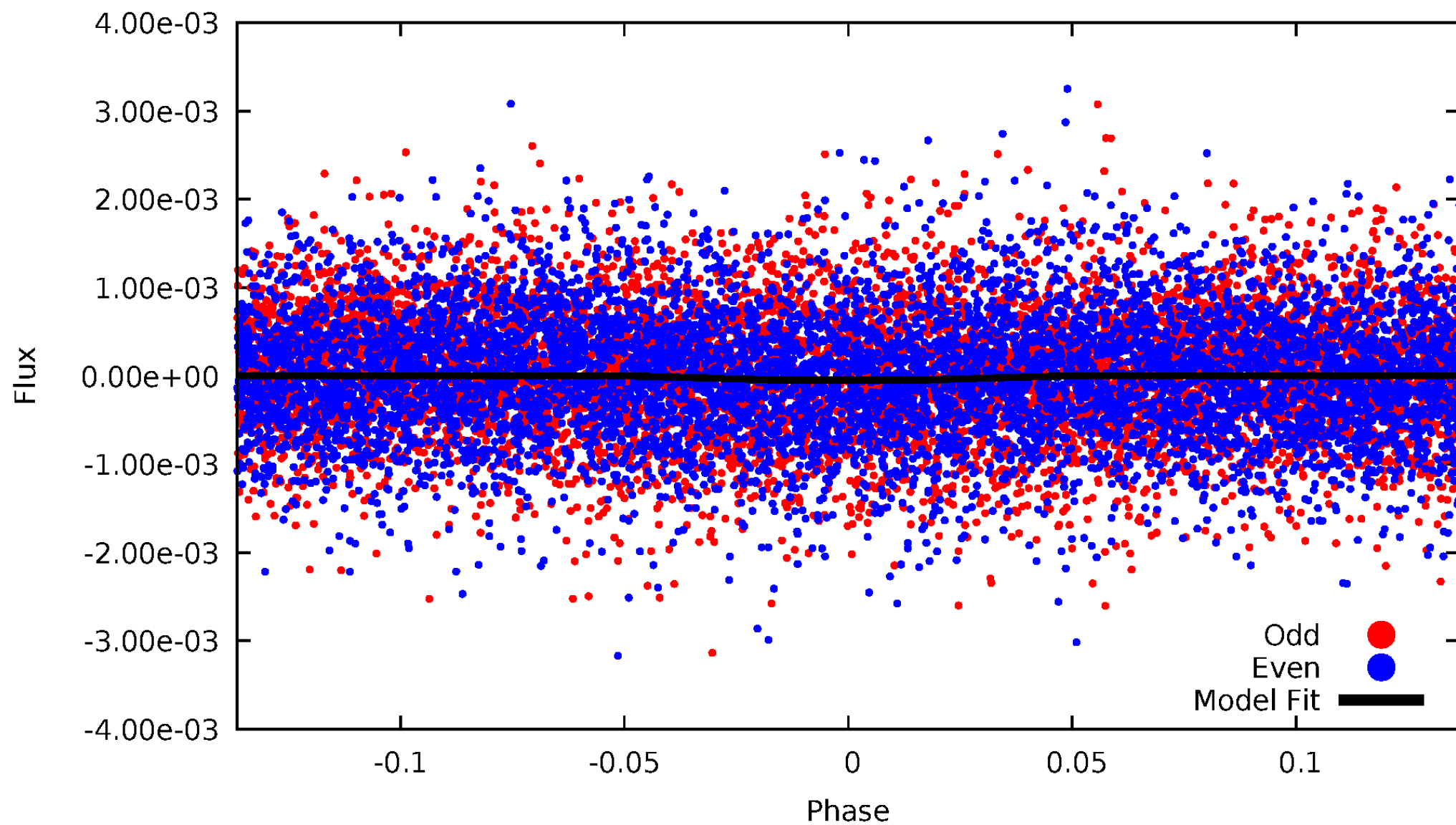
# DV Odd/Even

TCE 004476011-01

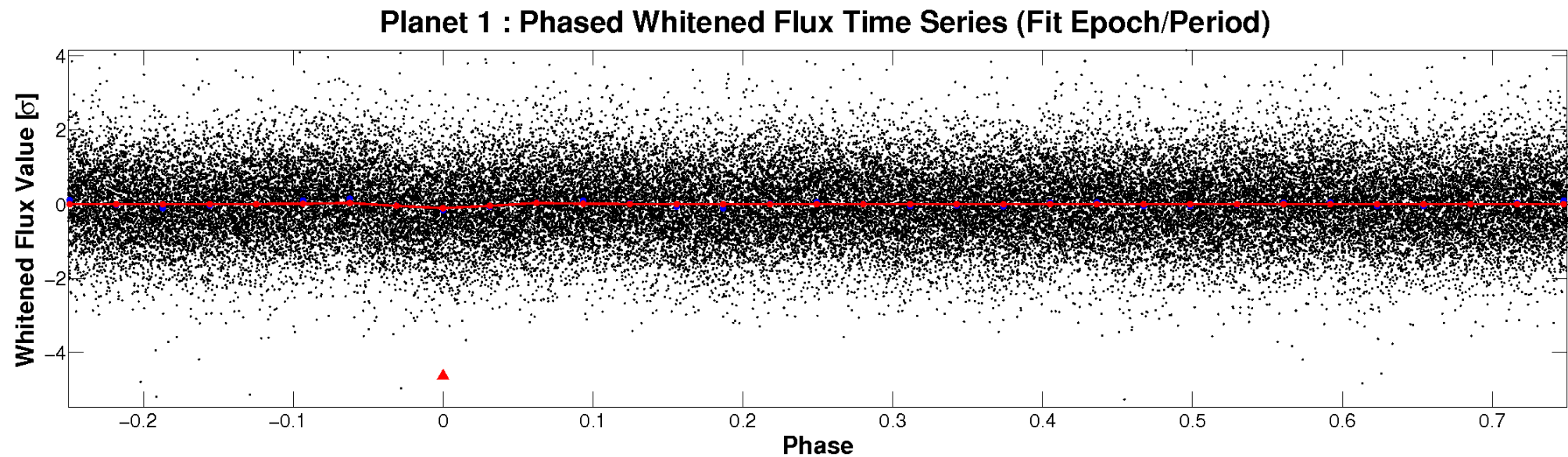
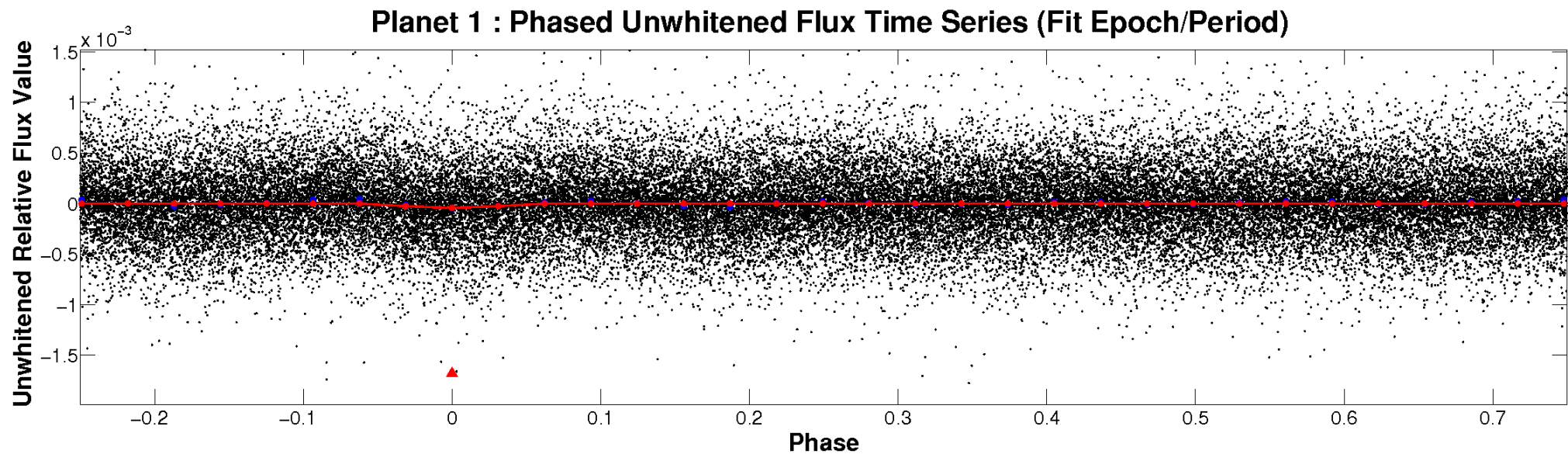


# ALT Odd/Even

TCE 004476011-01

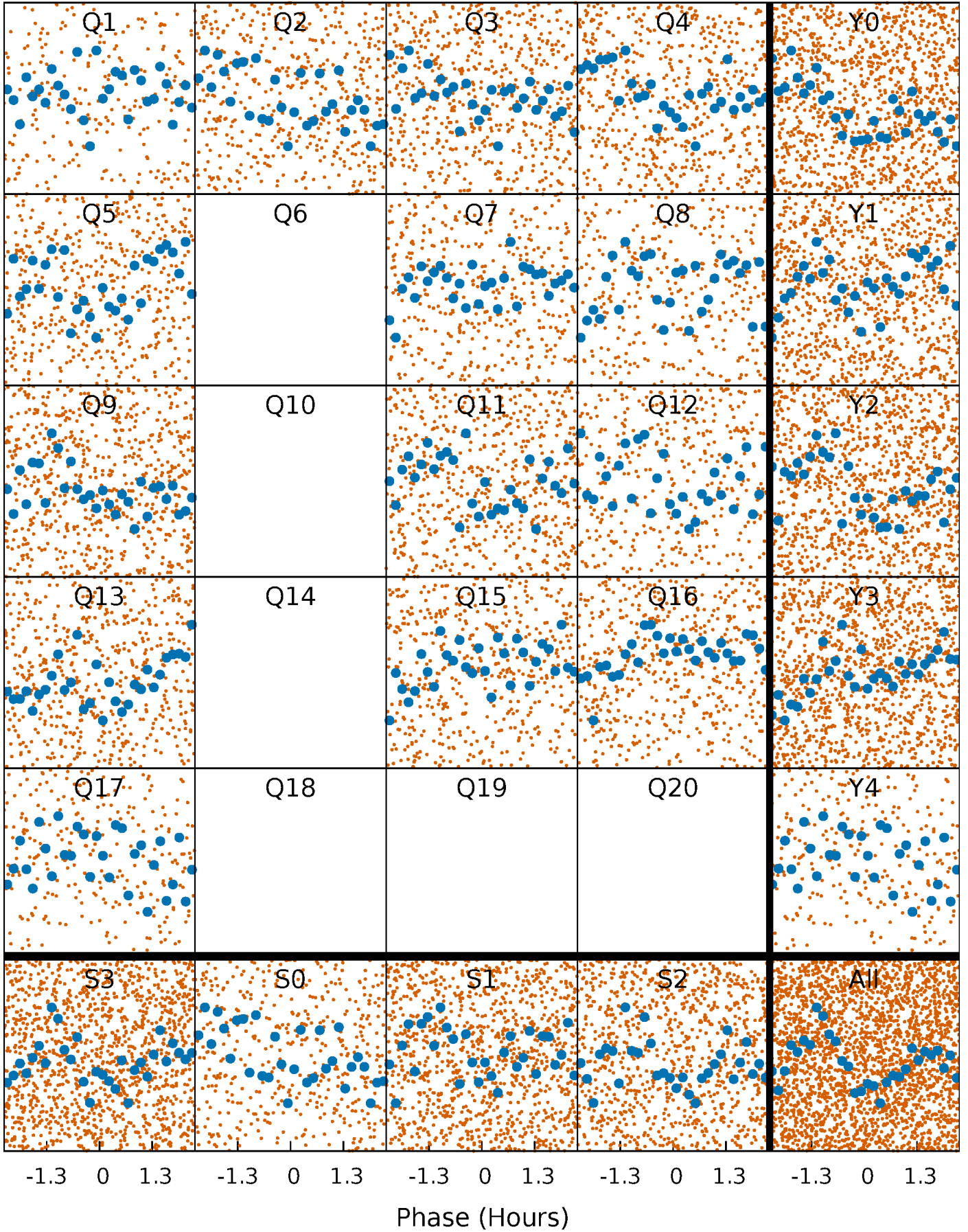


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

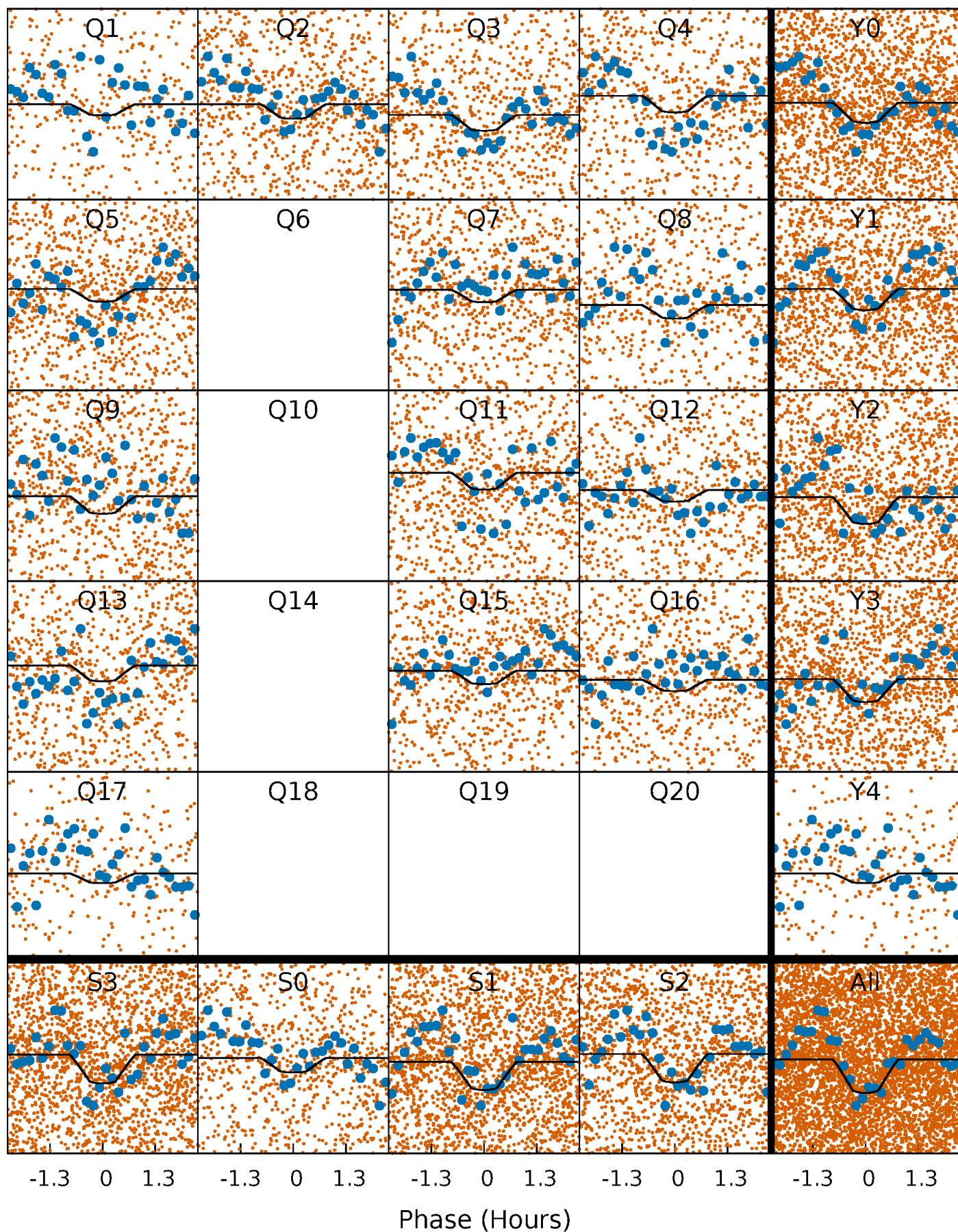
TCE 004476011-01 P= 0.655856 Days  $T_0=131.622001$  (BKJD)





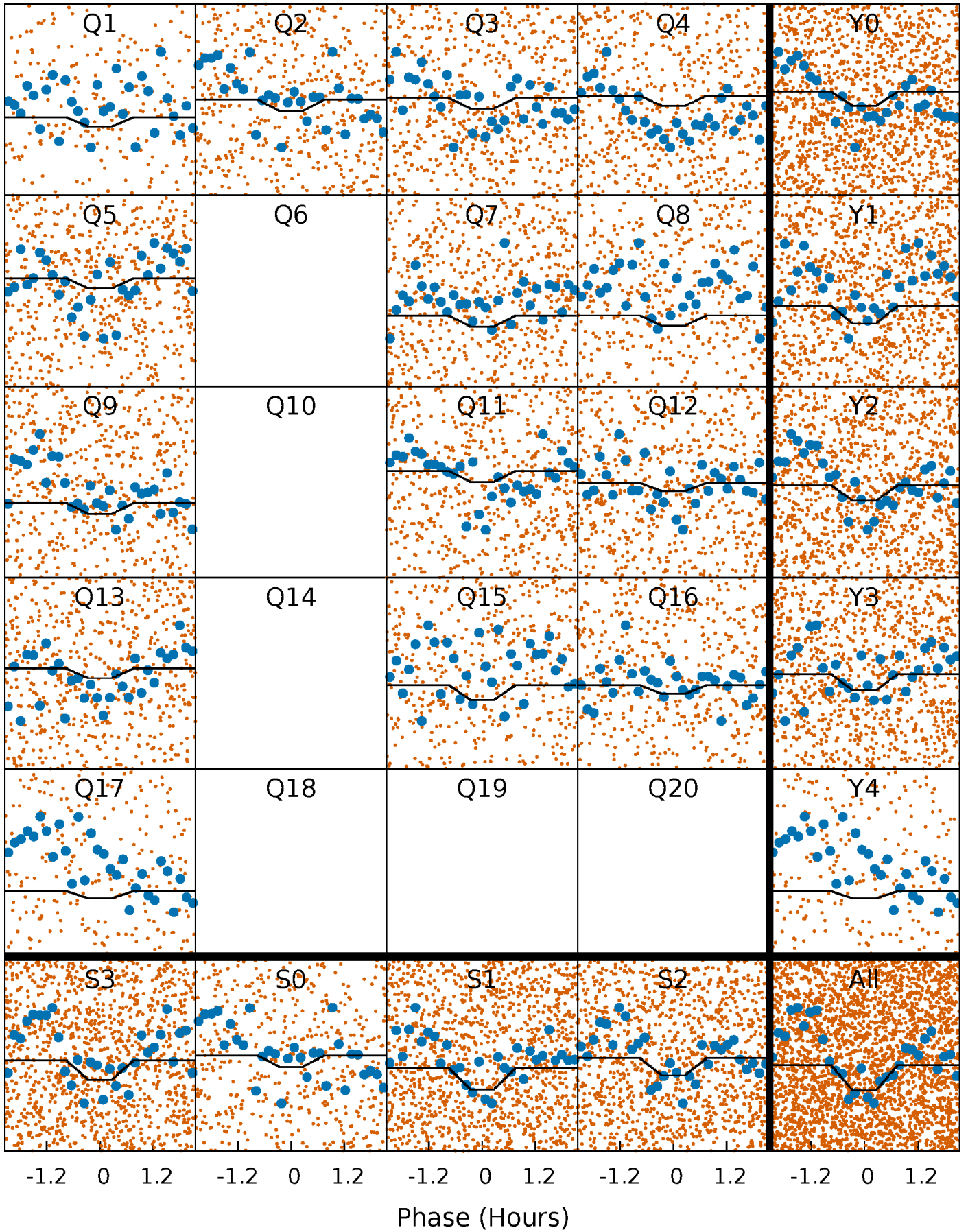
# DV Quarter-Phased Transit Curves

TCE 004476011-01 P= 0.655856 Days  $T_0=131.622001$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

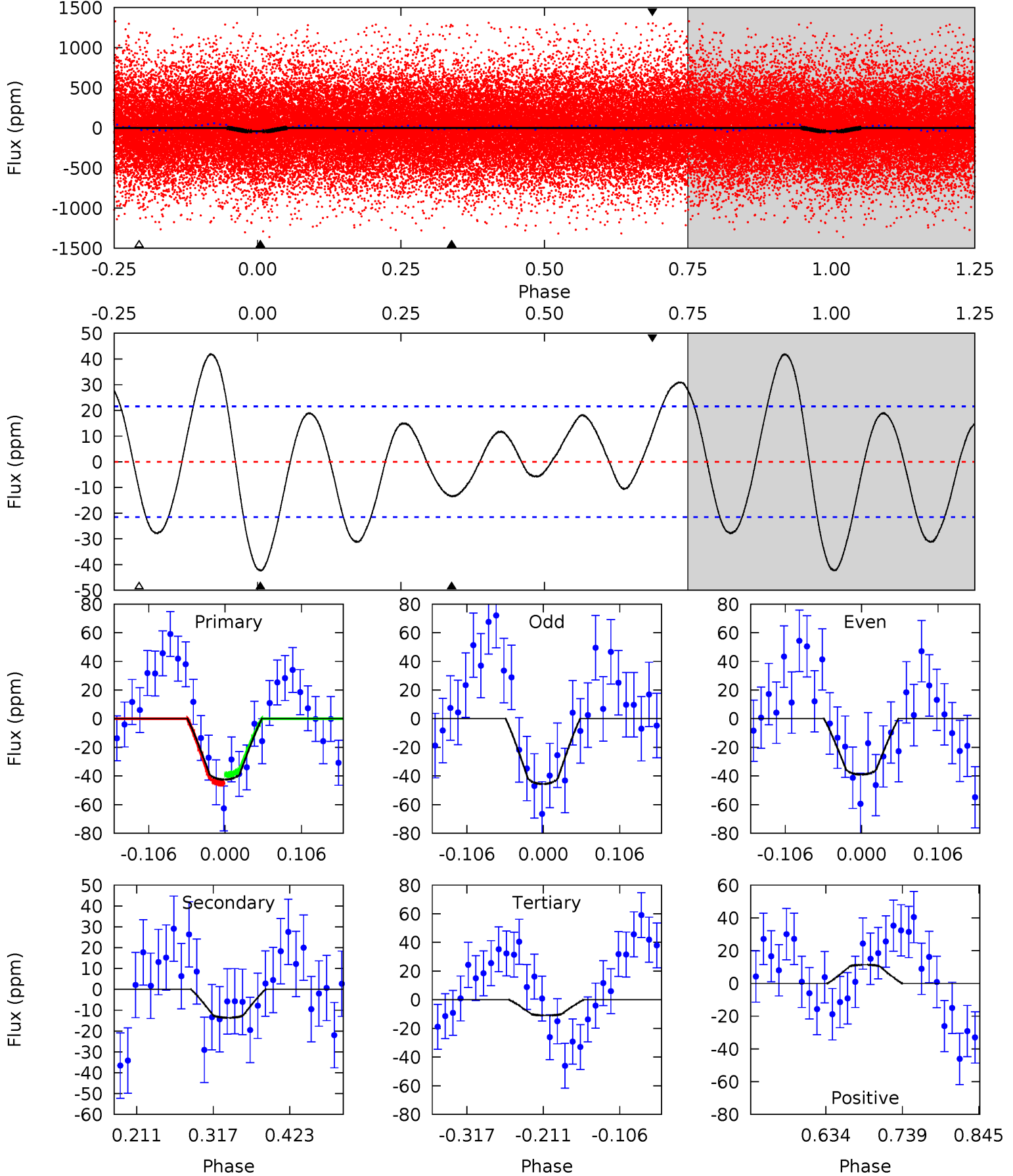
TCE 004476011-01   P= 0.655865 Days    $T_0=131.623175$  (BKJD)



# DV Model-Shift Uniqueness Test

004476011-01, P = 0.655856 Days, E = 130.966145 Days

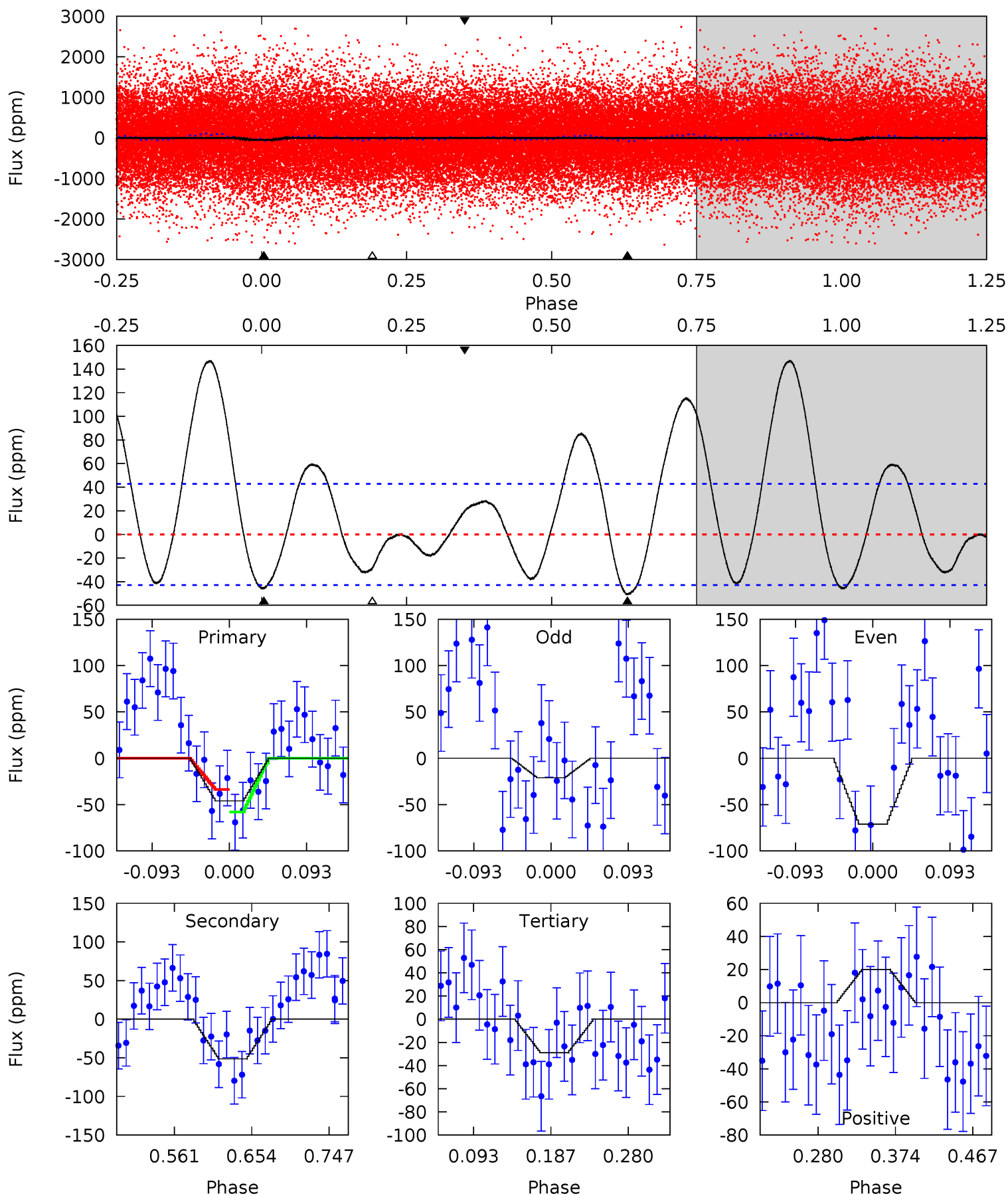
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.99	2.88	2.32	2.41	4.55	1.62	3.56	6.67	6.58	0.57	0.48	0.70	1.06	0.50	0.65



# Alt Model-Shift Uniqueness Test

004476011-01, P = 0.655865 Days, E = 130.967310 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
4.91	5.50	3.09	2.14	4.58	1.68	4.82	1.83	2.78	2.41	3.36	2.66	1.08	0.74	1.26





### Stellar Parameters For KIC 004476011

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7286^{+228}_{-314}$	$4.053^{+0.165}_{-0.165}$	$0.060^{+0.200}_{-0.350}$	$2.004^{+0.555}_{-0.505}$	$1.654^{+0.181}_{-0.272}$	$0.290^{+0.283}_{-0.132}$
	+3%/-4%	+4%/-4%	+333%/-583%	+28%/-25%	+11%/-16%	+98%/-46%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 004476011-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-14 \pm 5$	$1.57^{+0.56}_{-0.58}$	$4830^{+349}_{-357}$	$4731^{+1401}_{-1210}$	$0.907^{+1.372}_{-0.499}$
Alt.	$-51 \pm 9$	$1.46^{+0.57}_{-0.53}$	$4809^{+330}_{-350}$	$7423^{+2540}_{-1382}$	$4.176^{+5.986}_{-2.186}$

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

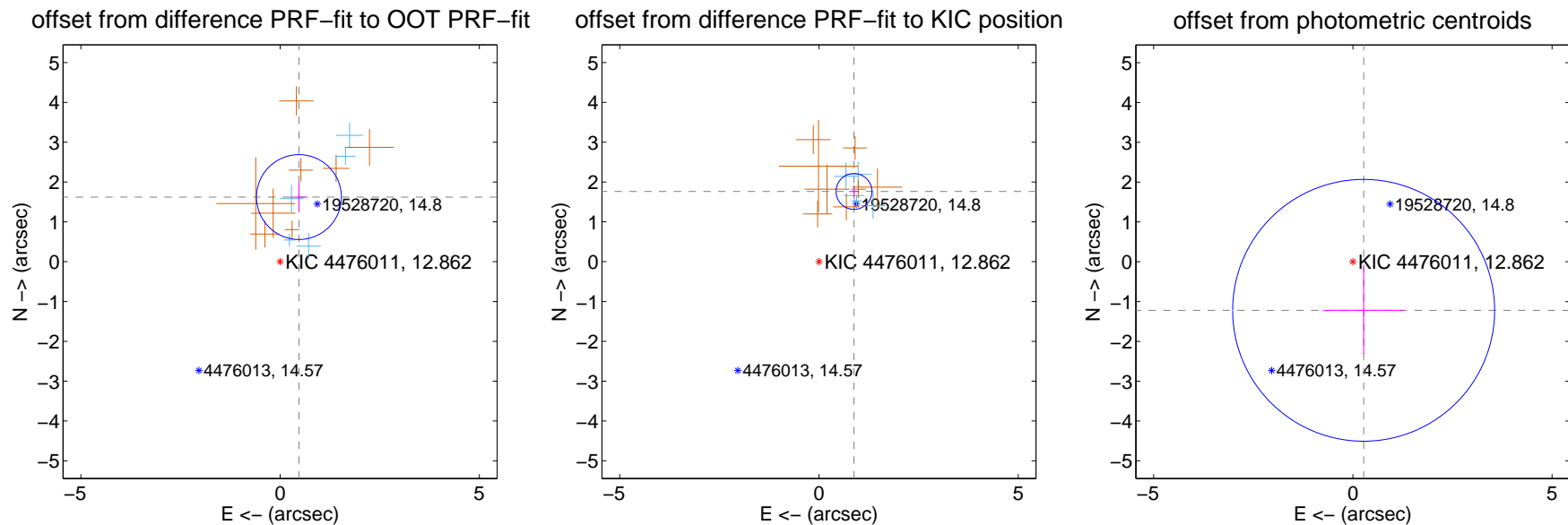
## DV Centroid Data

Supplemental centroid analysis for 004476011-01. Kepler magnitude: 12.86. Transit SNR 5.77

There are 5 quarters with good PRF difference image offsets

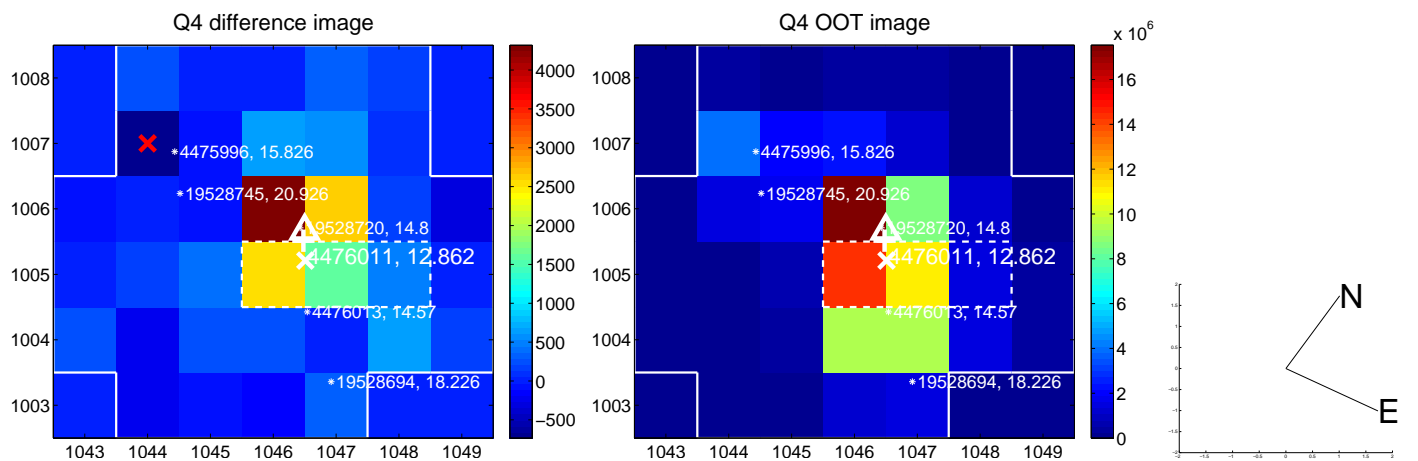
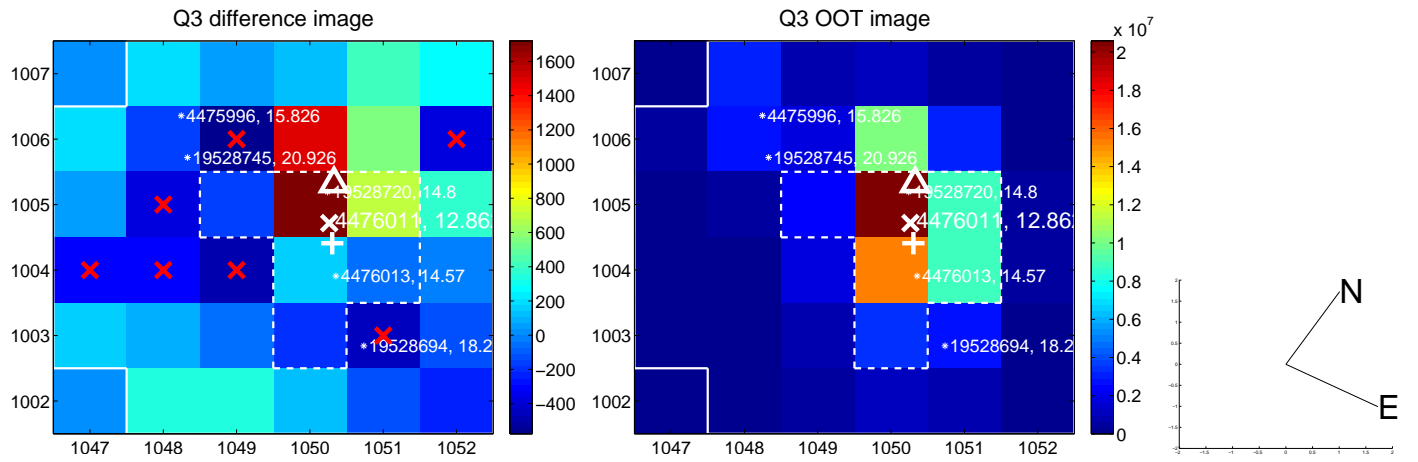
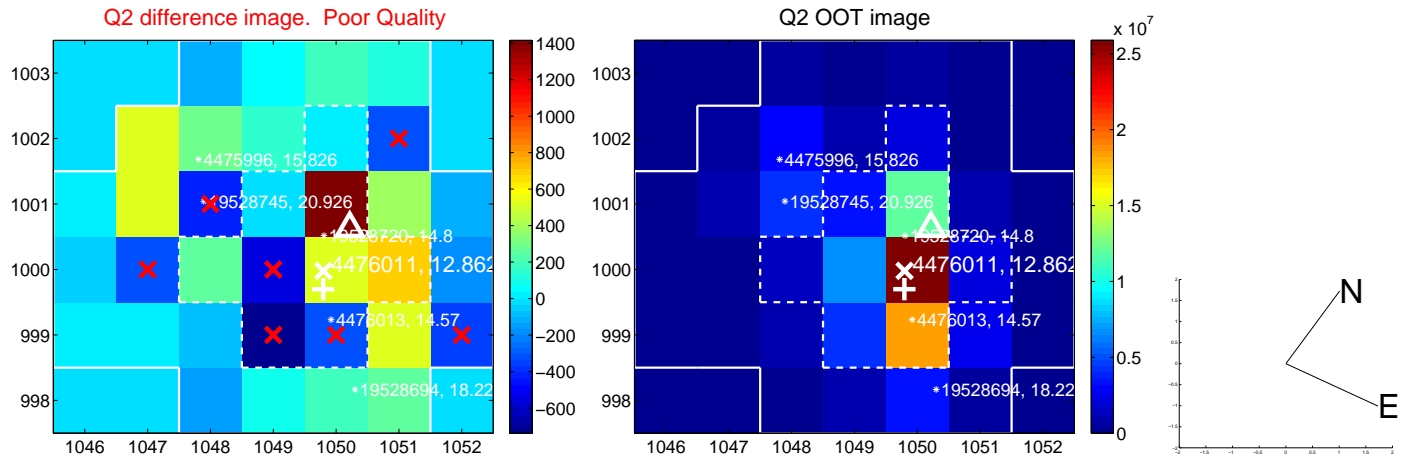
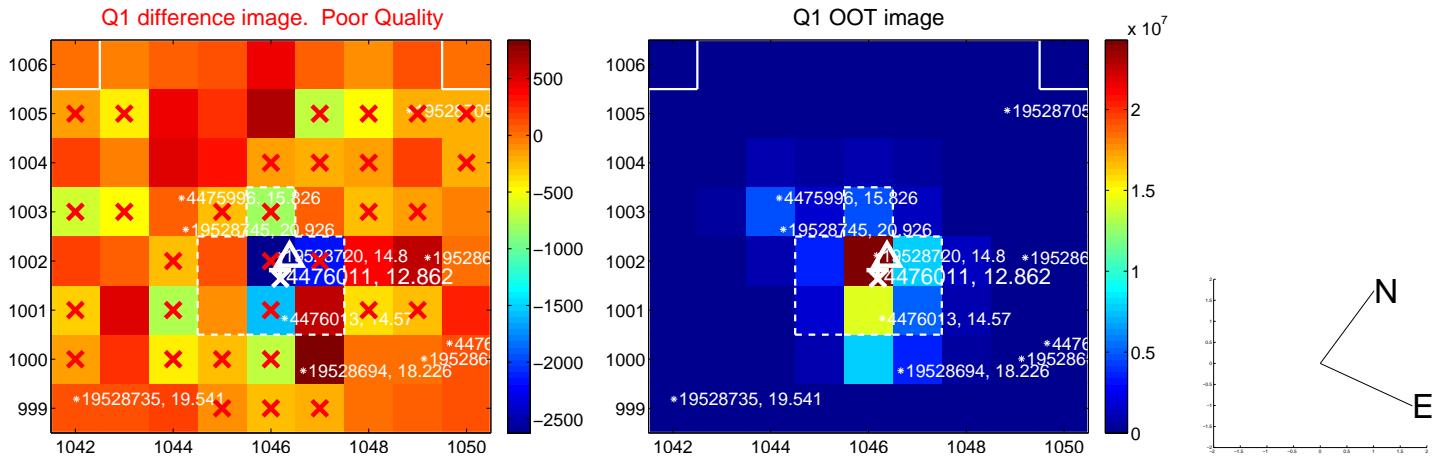
The direct PRF centroid is offset from the target star catalog position by about 0.68 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.691 \pm 0.355$	$4.76$	$-0.473 \pm 0.219$	$1.624 \pm 0.364$
PRF-fit source offset from KIC position	$1.971 \pm 0.150$	$13.14$	$-0.878 \pm 0.122$	$1.764 \pm 0.156$
photometric centroid source offset	$1.25 \pm 1.10$	1.14	$-0.27 \pm 1.01$	$-1.22 \pm 1.10$

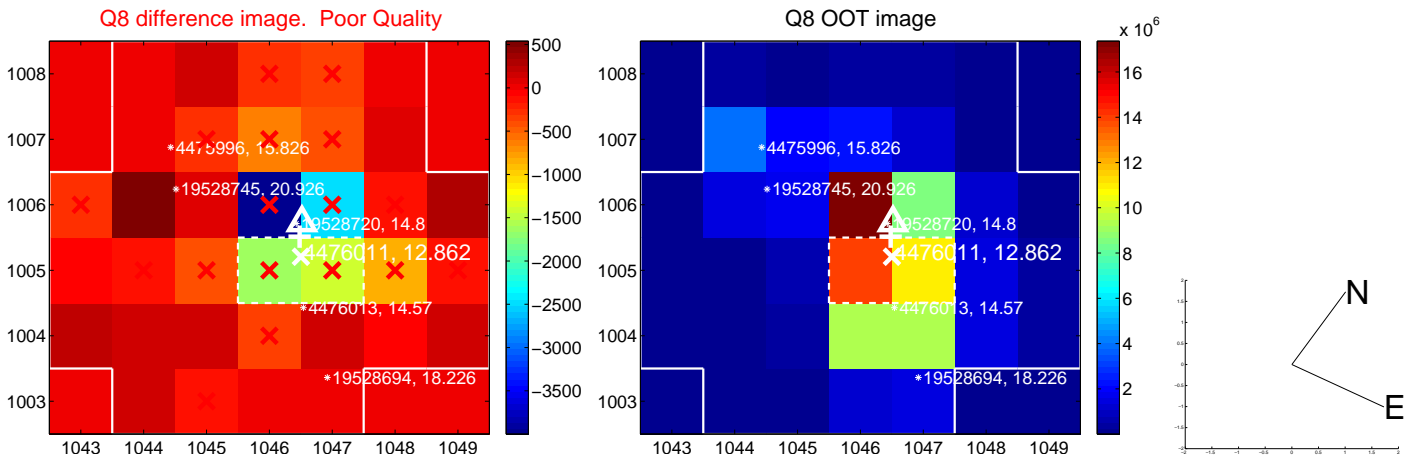
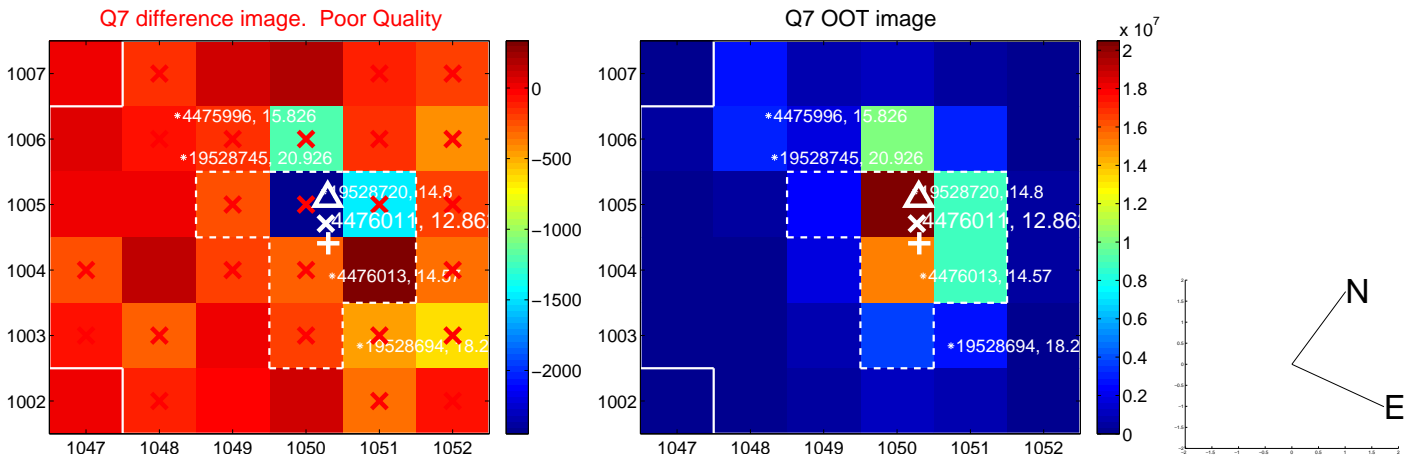
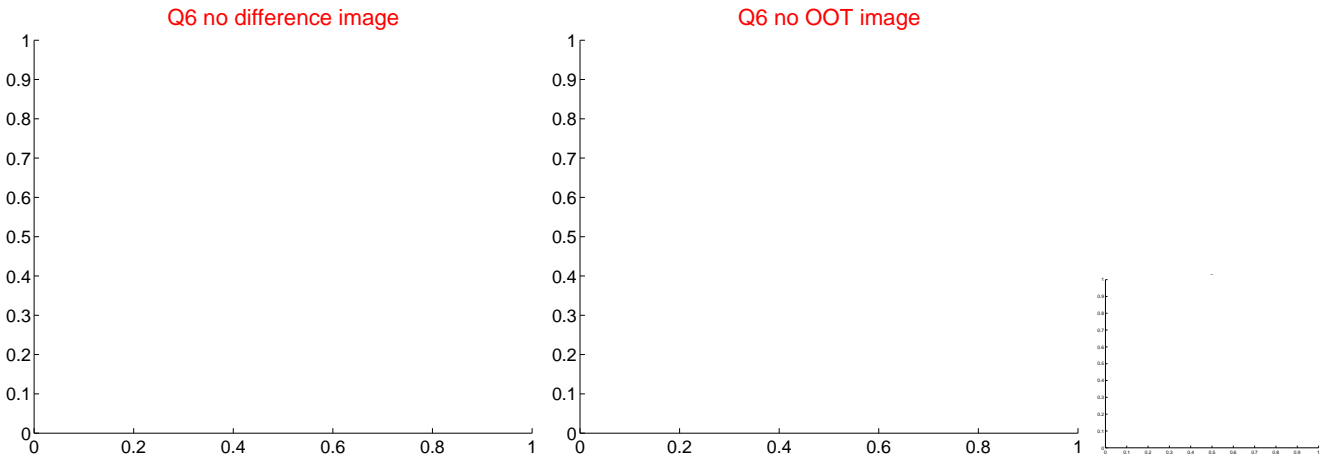
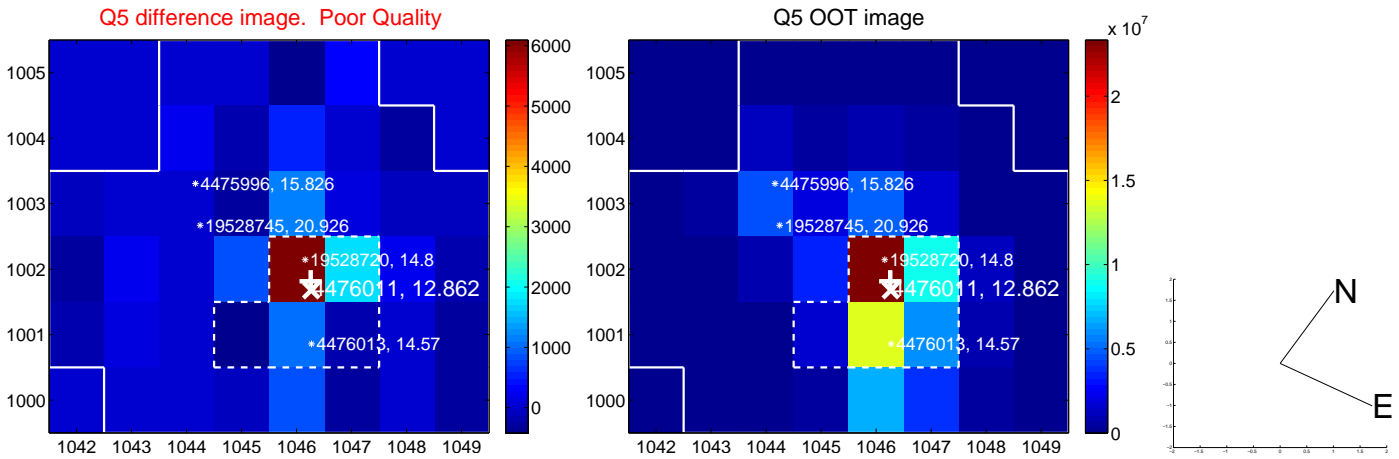


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

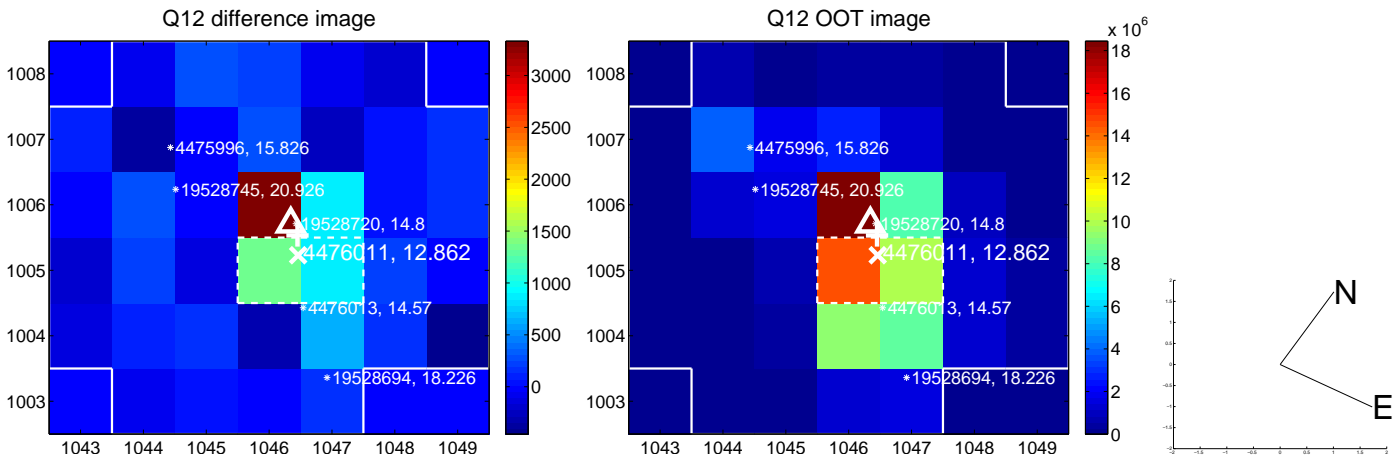
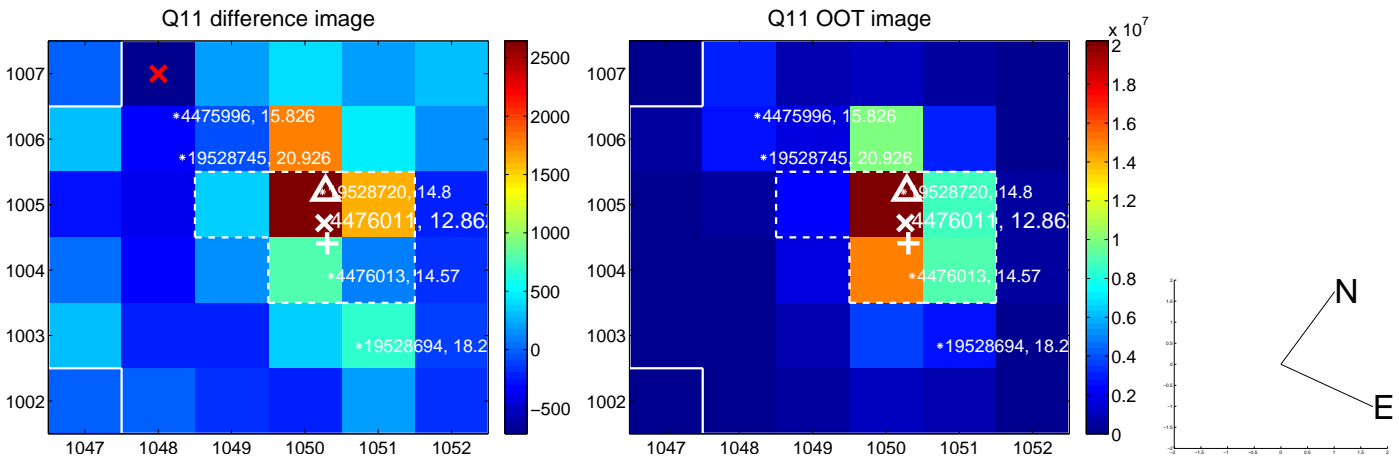
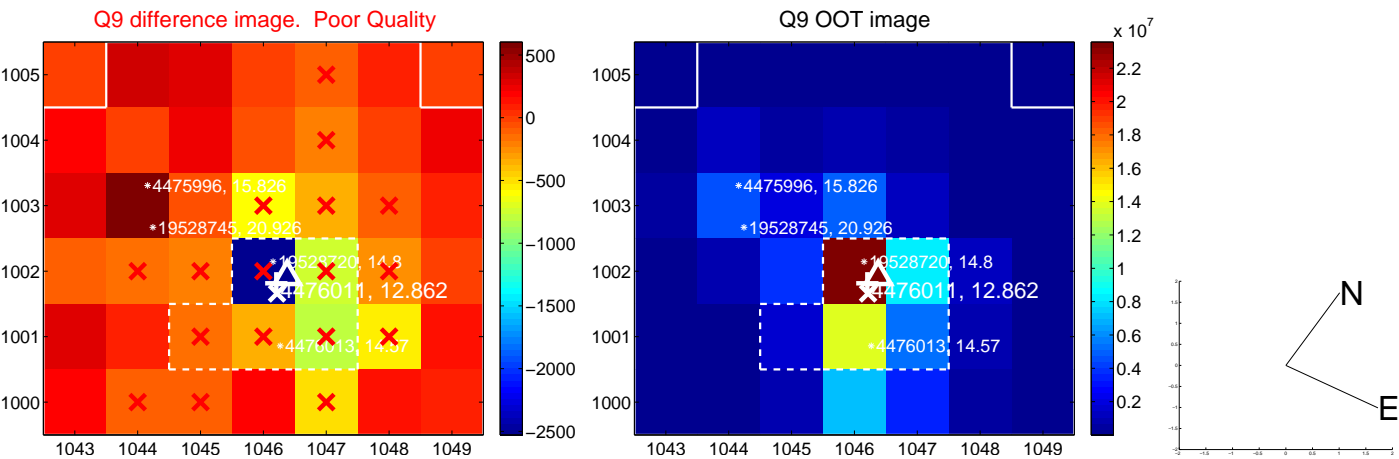


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

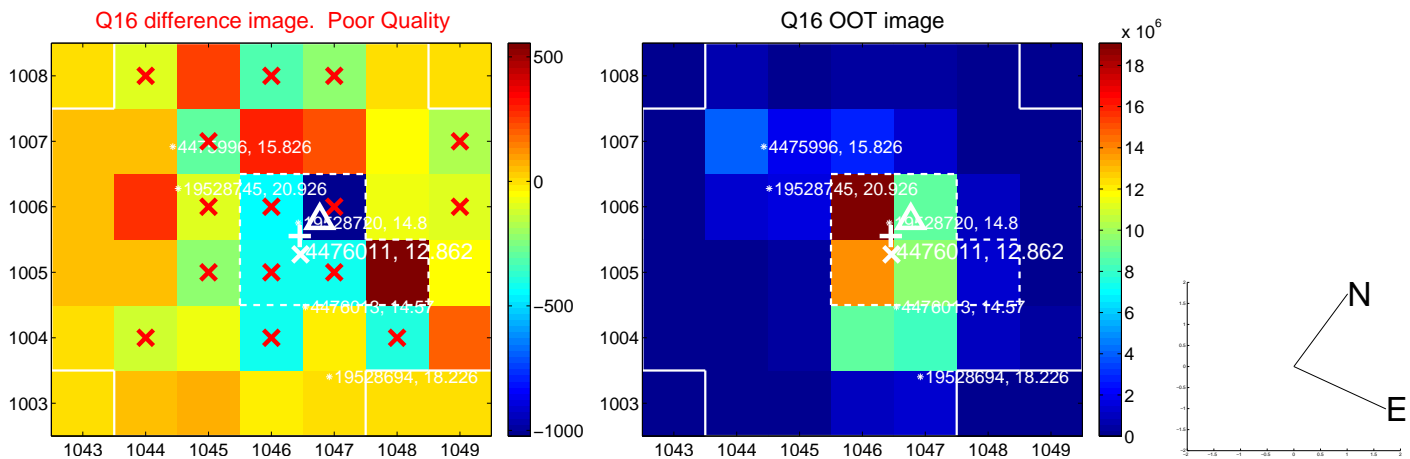
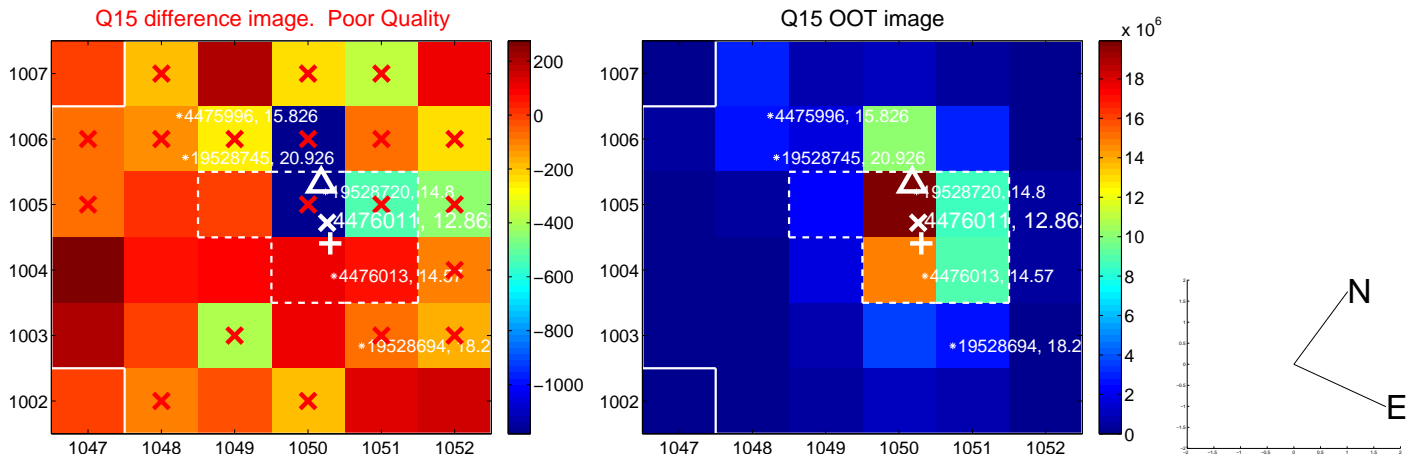
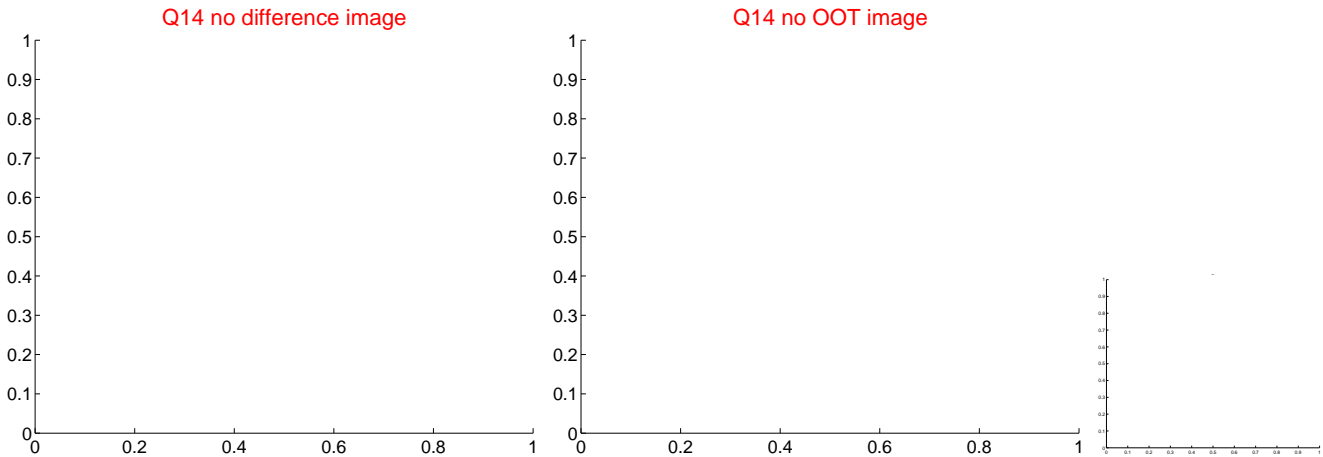
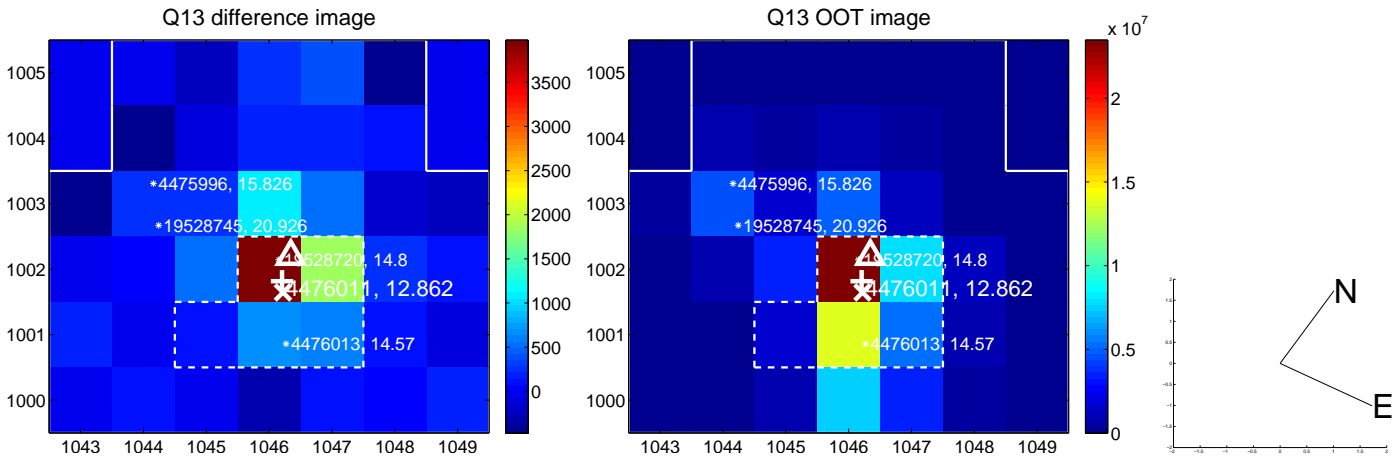




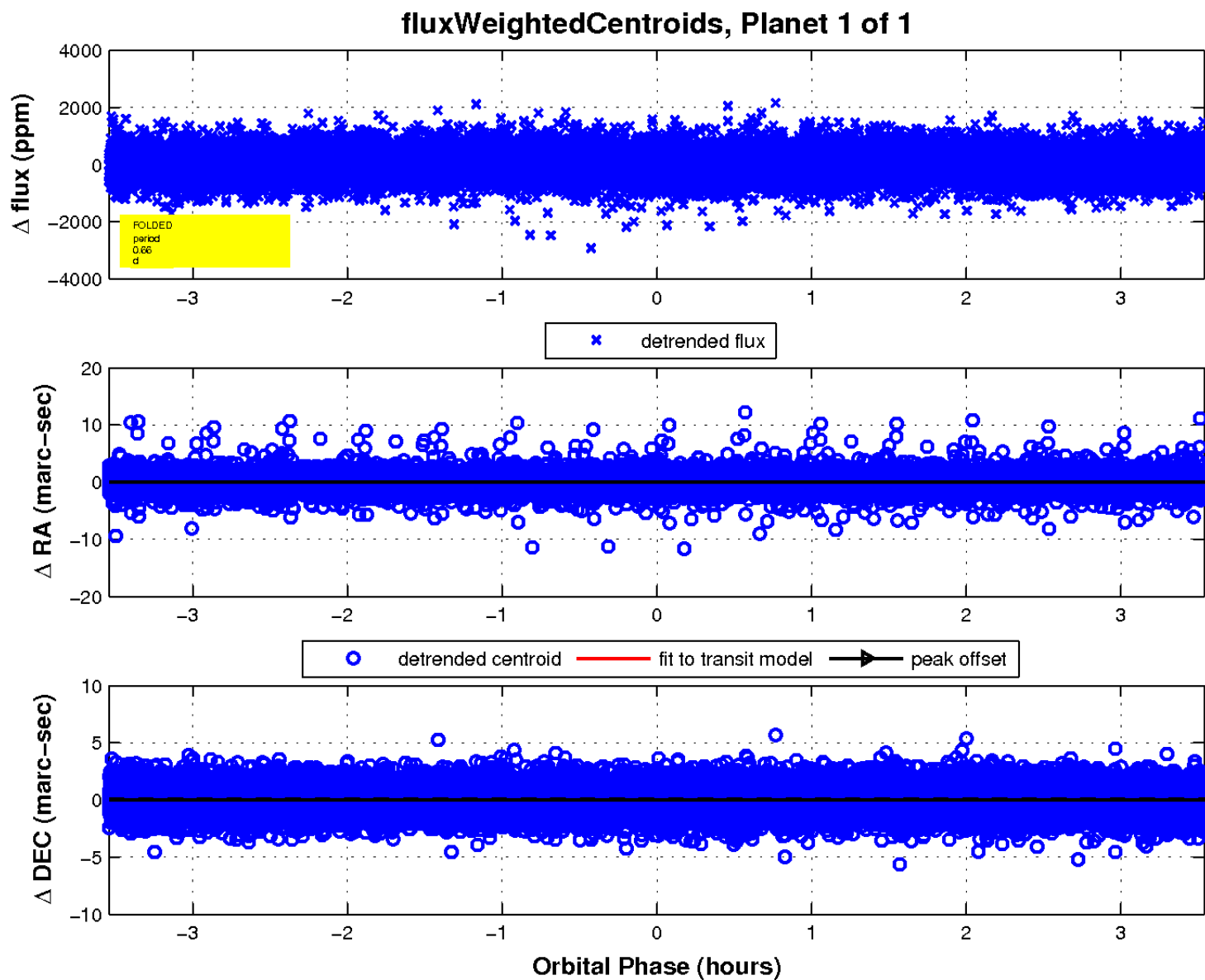
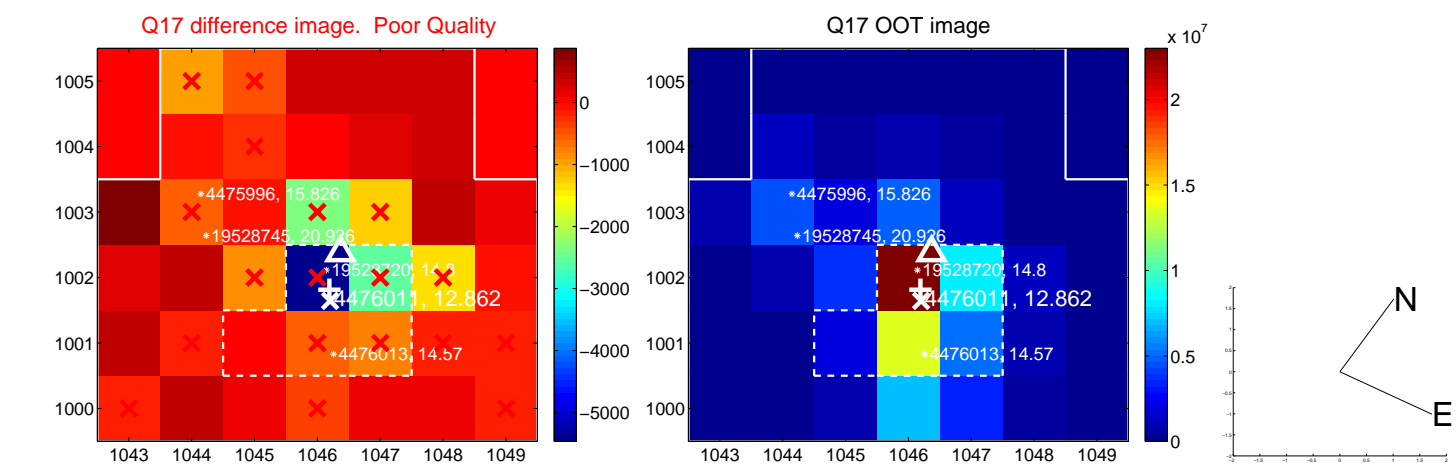
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

