

# KIC 007522911

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007522911-01	OBS	1705.01	20.499818	131.823514	417.8	6.034	18.3	18.3	1.08	6249	2.52	67.77

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007522911-01	OBS	PC	1.00	0	0	0	0	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.

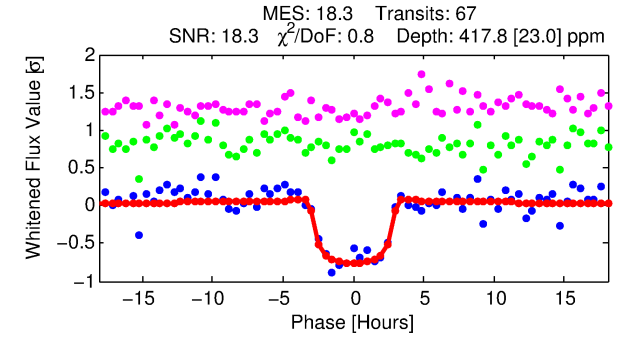
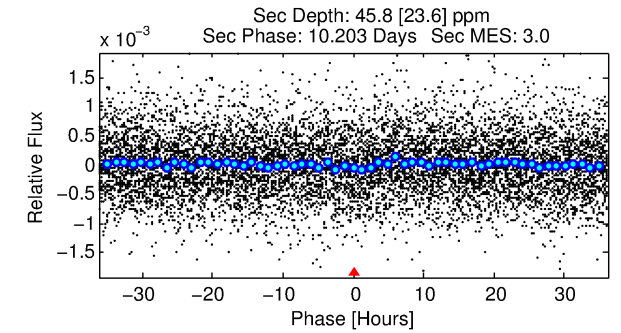
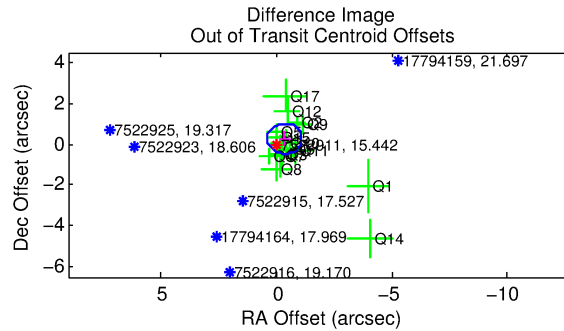
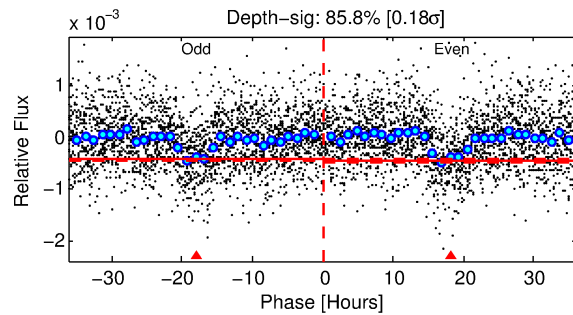
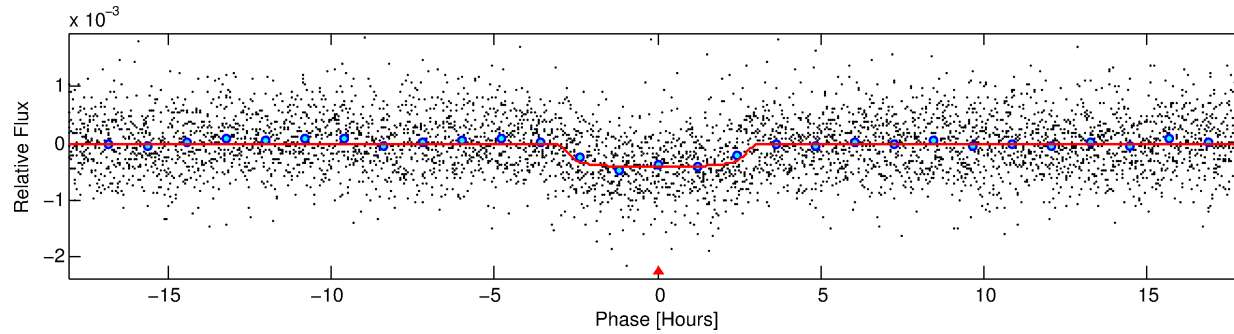
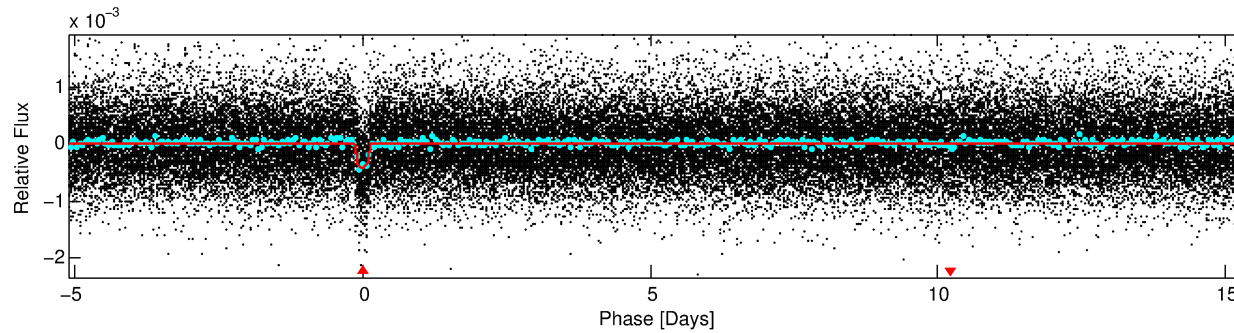
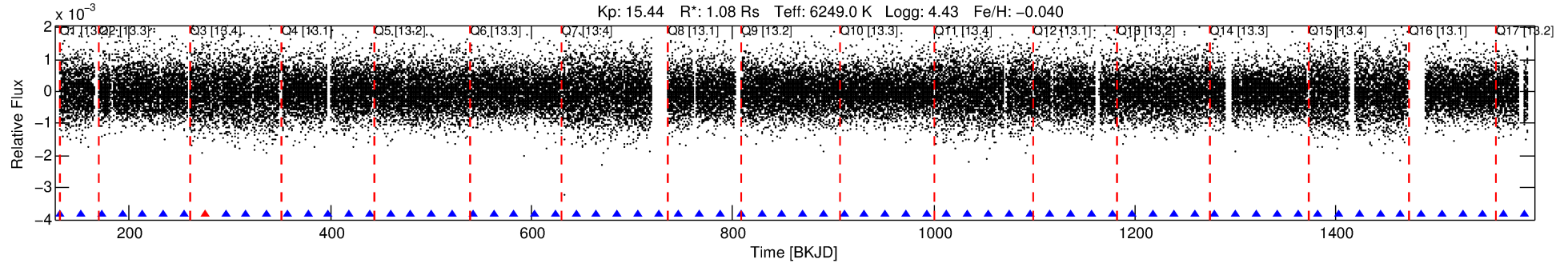
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007522911-01

No Significant Match Found

# DV One-Page Summary

KIC: 7522911 Candidate: 1 of 1 Period: 20.500 d  
KOI: K01705.01 Corr: 0.946



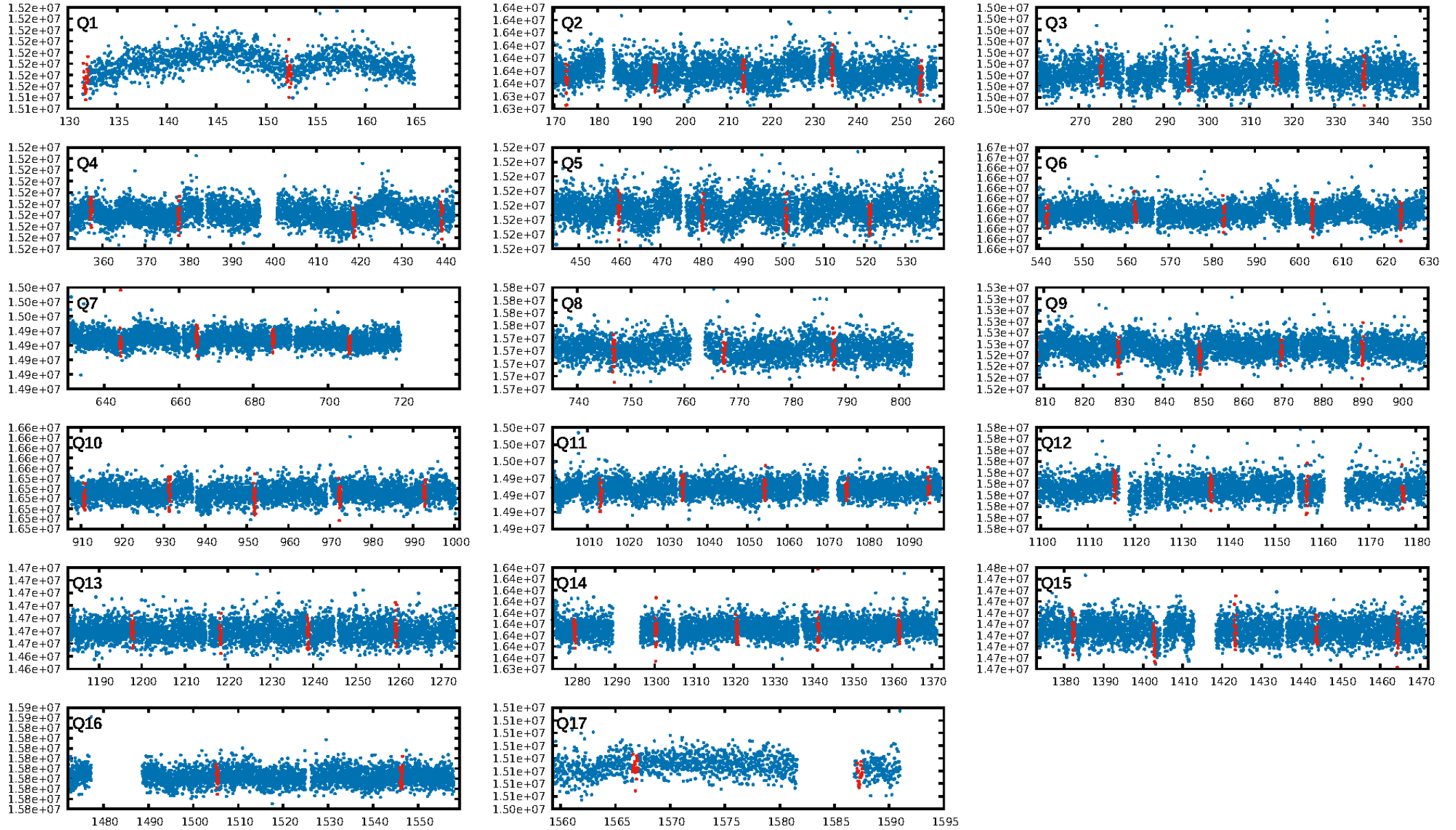
## DV Fit Results:

Period = 20.49982 [0.00015] d  
Epoch = 131.8235 [0.0062] BKJD  
Rp/R\* = 0.0215 [0.0026]  
a/R\* = 13.91 [8.56]  
b = 0.87 [0.17]  
Seff = 67.77 [27.38]  
Teq = 732 [74] K  
Rp = 2.53 [0.88] Re  
a = 0.1528 [0.0410] AU  
Ag = 92.15 [63.13] [1.44 $\sigma$ ]  
Teff = 3505 [514] K [5.34 $\sigma$ ]

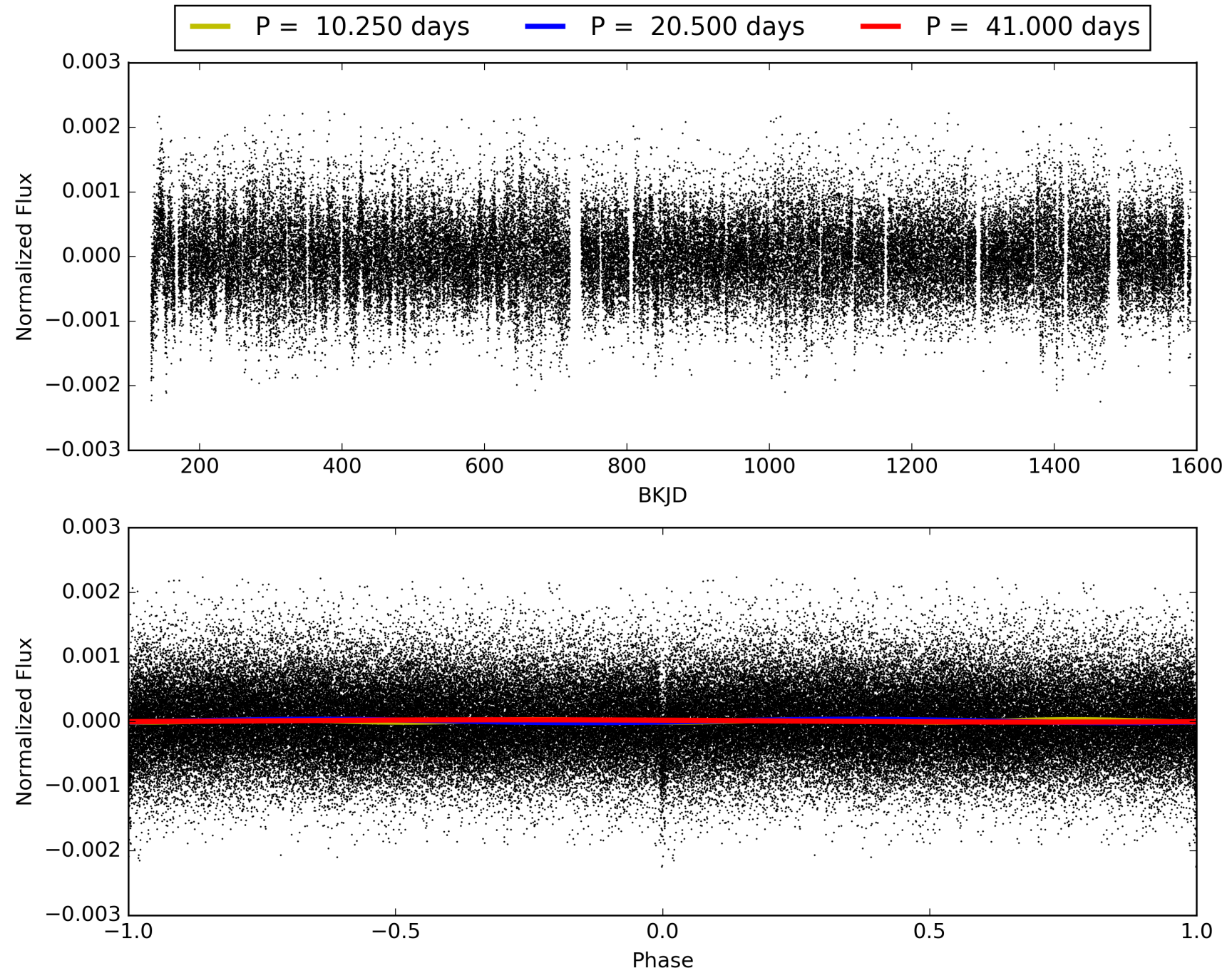
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 98.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 6.99e-73  
RollingBand-fgt: 0.98 [62/63]  
GhostDiagnostic-chr: 5.126  
Centroid-sig: 0.0%  
Centroid-so: 1.359 arcsec [1.84 $\sigma$ ]  
OotOffset-rm: 0.452 arcsec [1.83 $\sigma$ ]  
KicOffset-rm: 0.373 arcsec [1.01 $\sigma$ ]  
OotOffset-st: 4/4/3/4 [15]  
KicOffset-st: 4/4/3/4 [15]  
DiffImageQuality-fgm: 0.80 [12/15]  
DiffImageOverlap-fno: 1.00 [16/16]

# TCE 007522911-01, PDC Light Curves

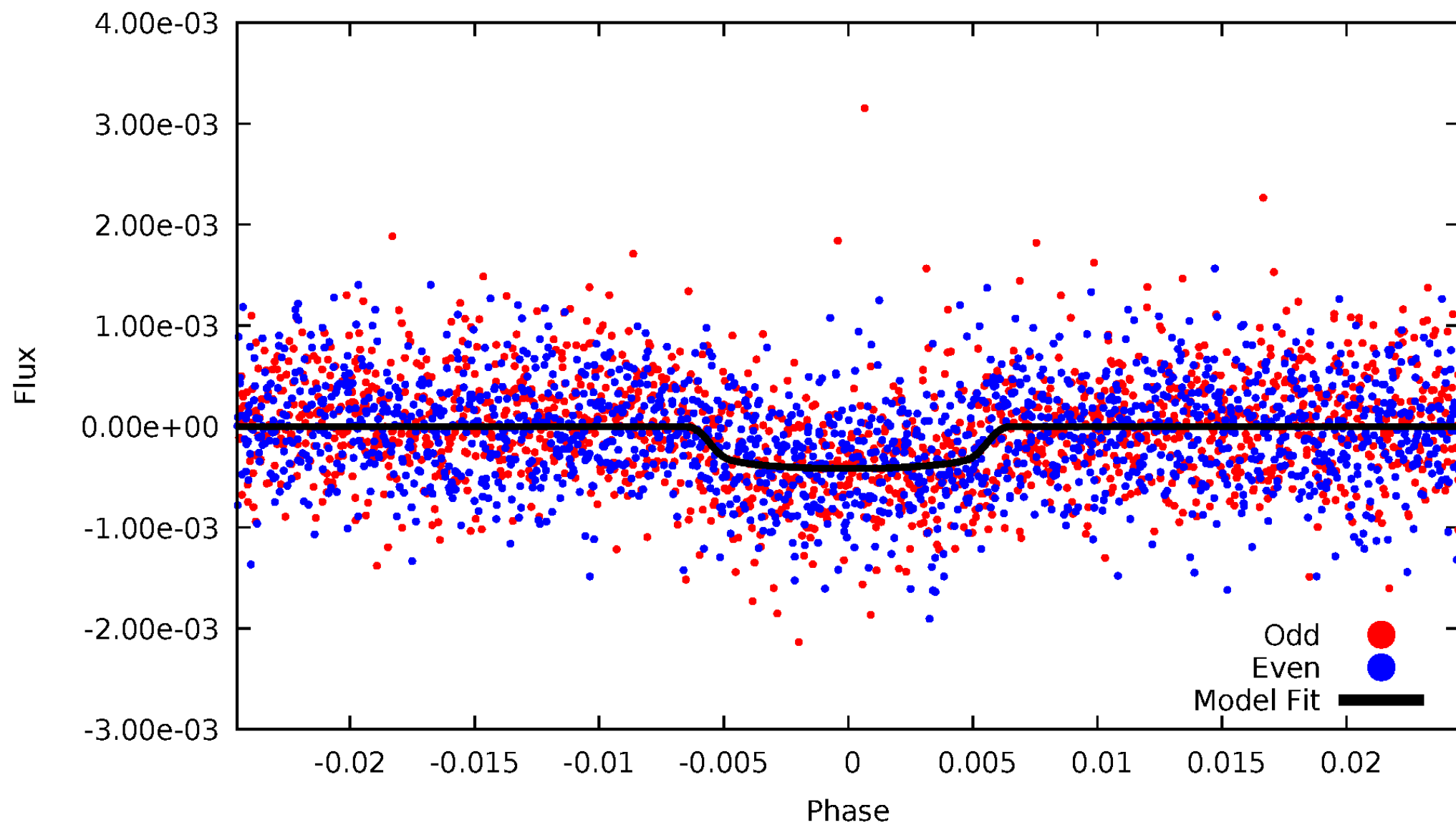


TCE 007522911-01



# DV Odd/Even

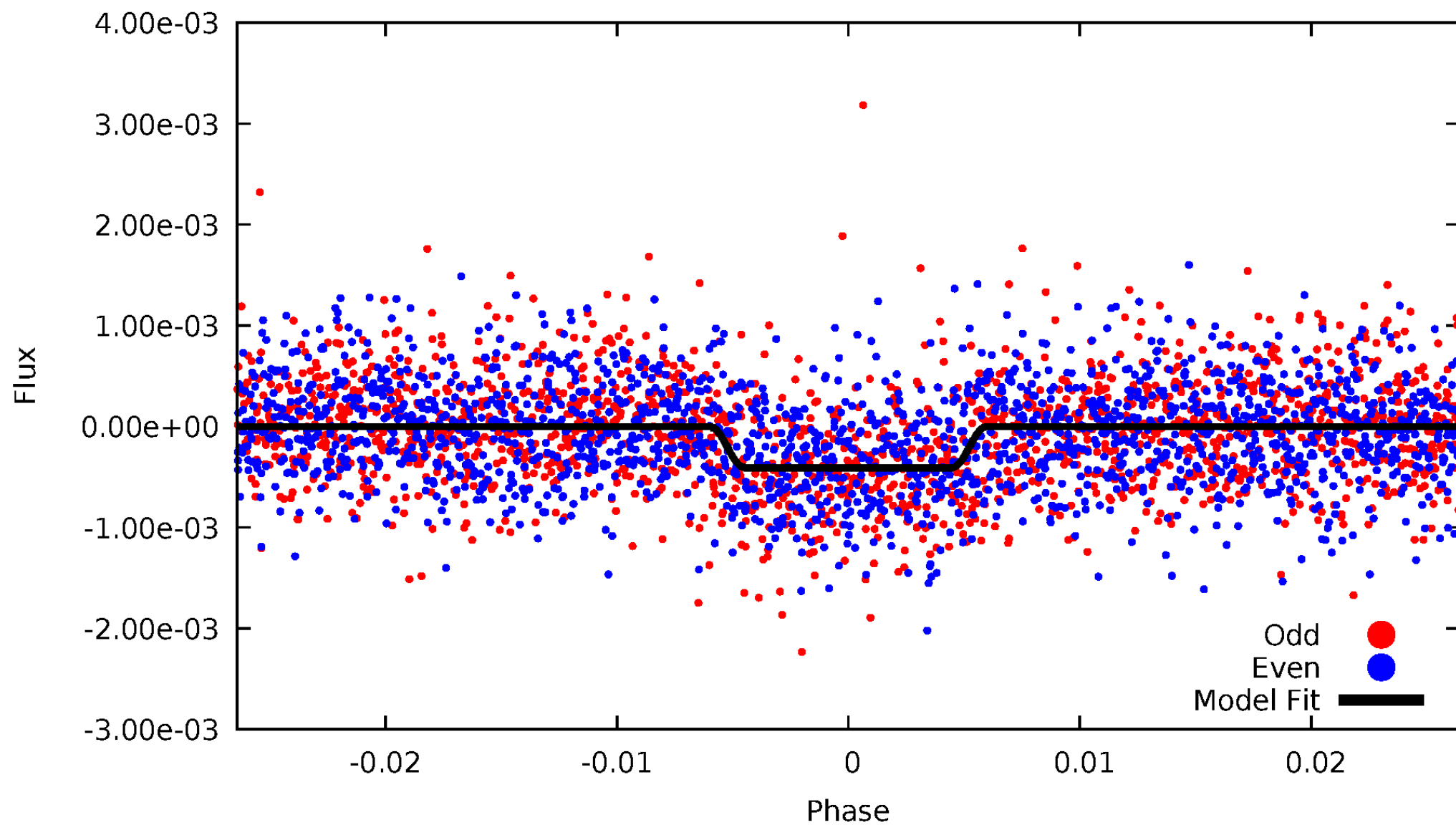
TCE 007522911-01



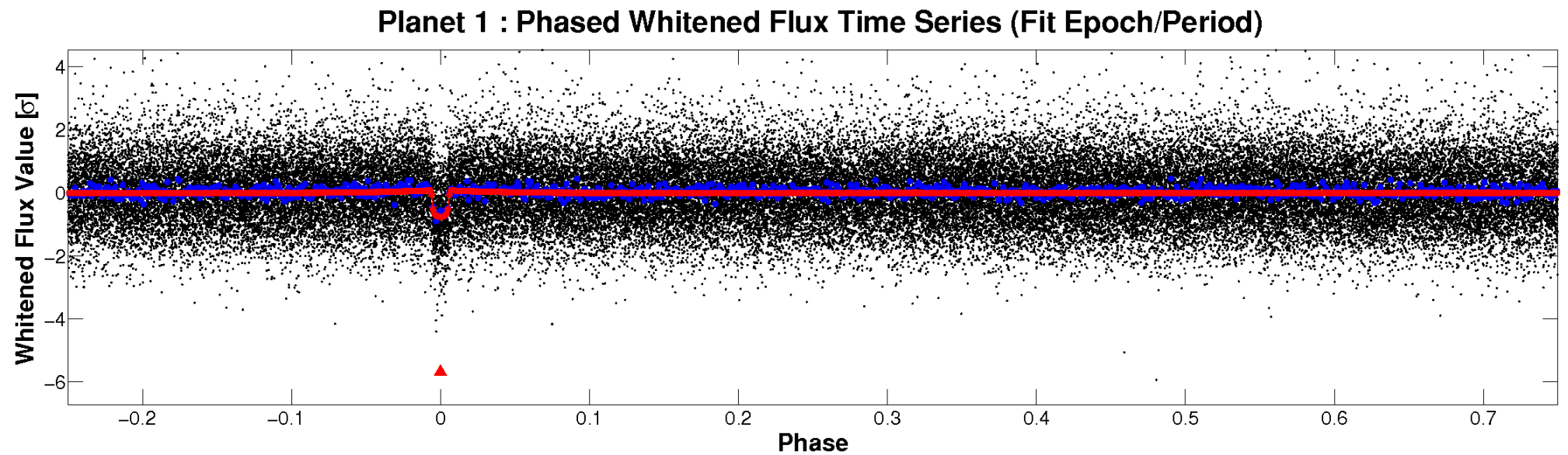
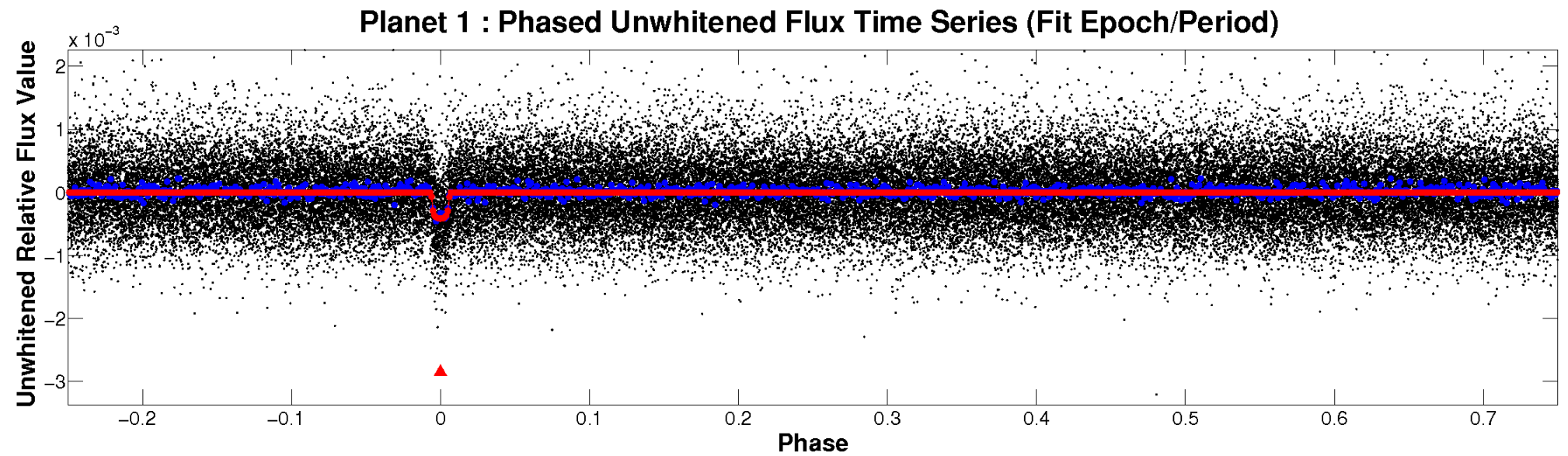


# ALT Odd/Even

TCE 007522911-01

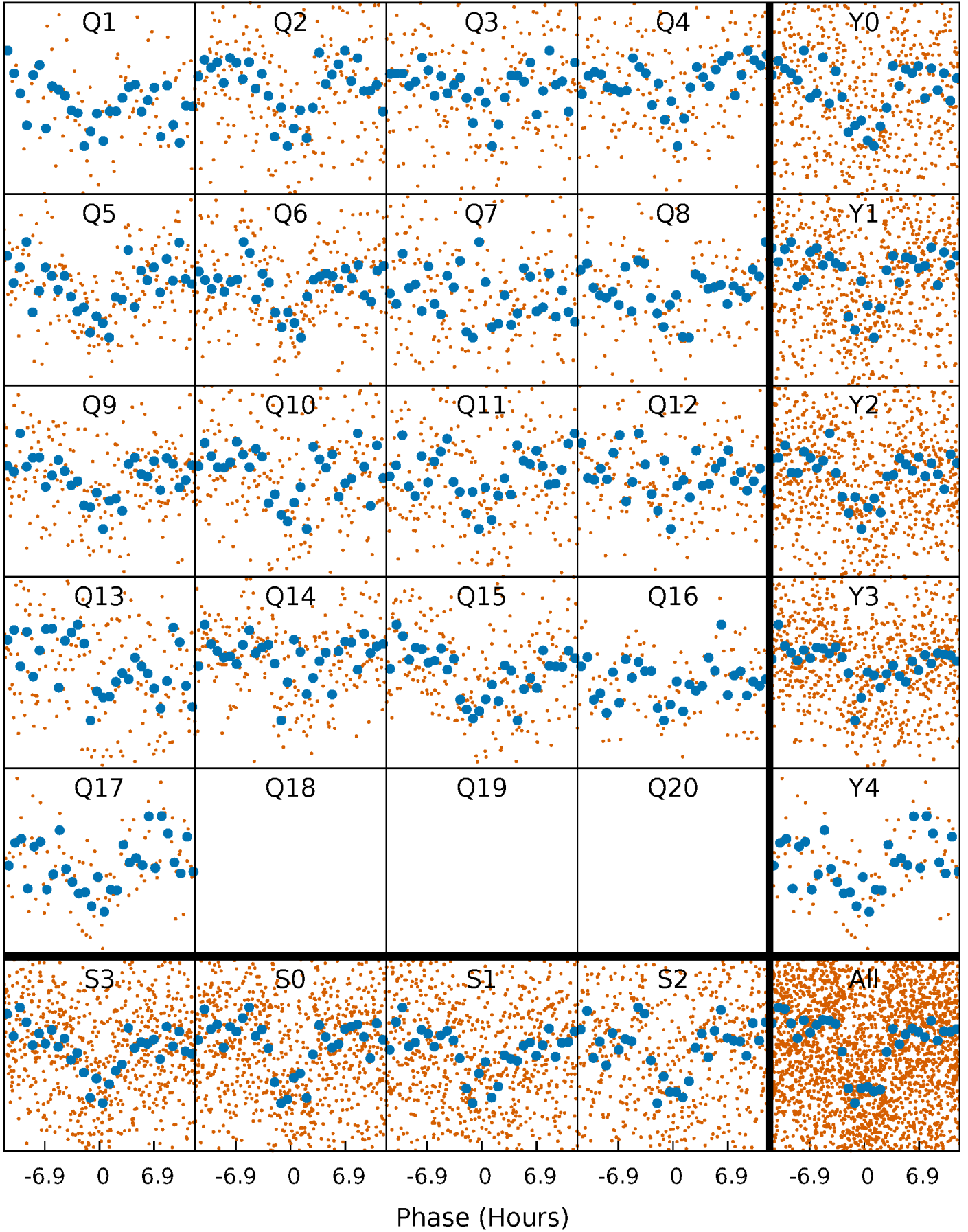


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

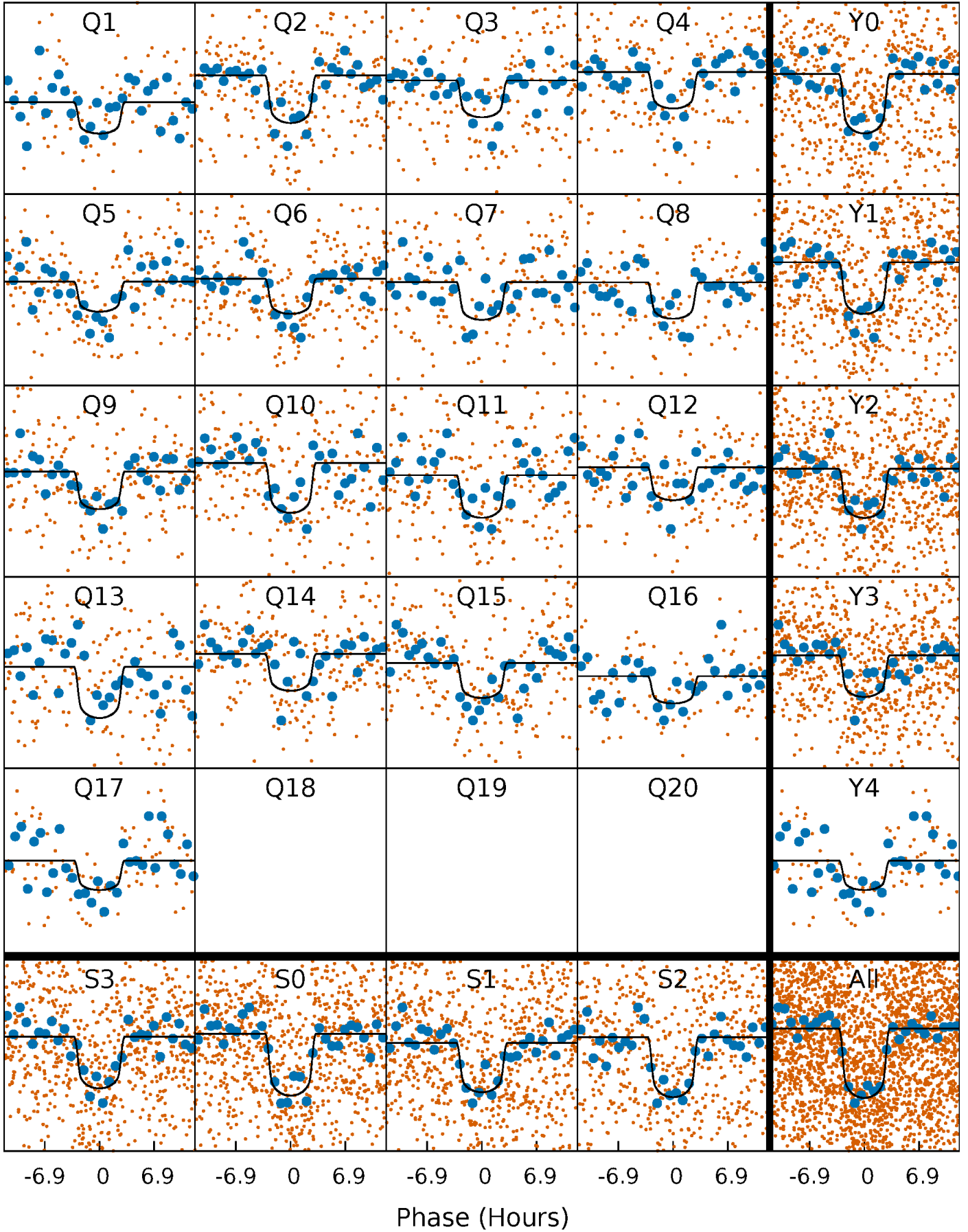
TCE 007522911-01 P= 20.499818 Days  $T_0=131.823514$  (BKJD)





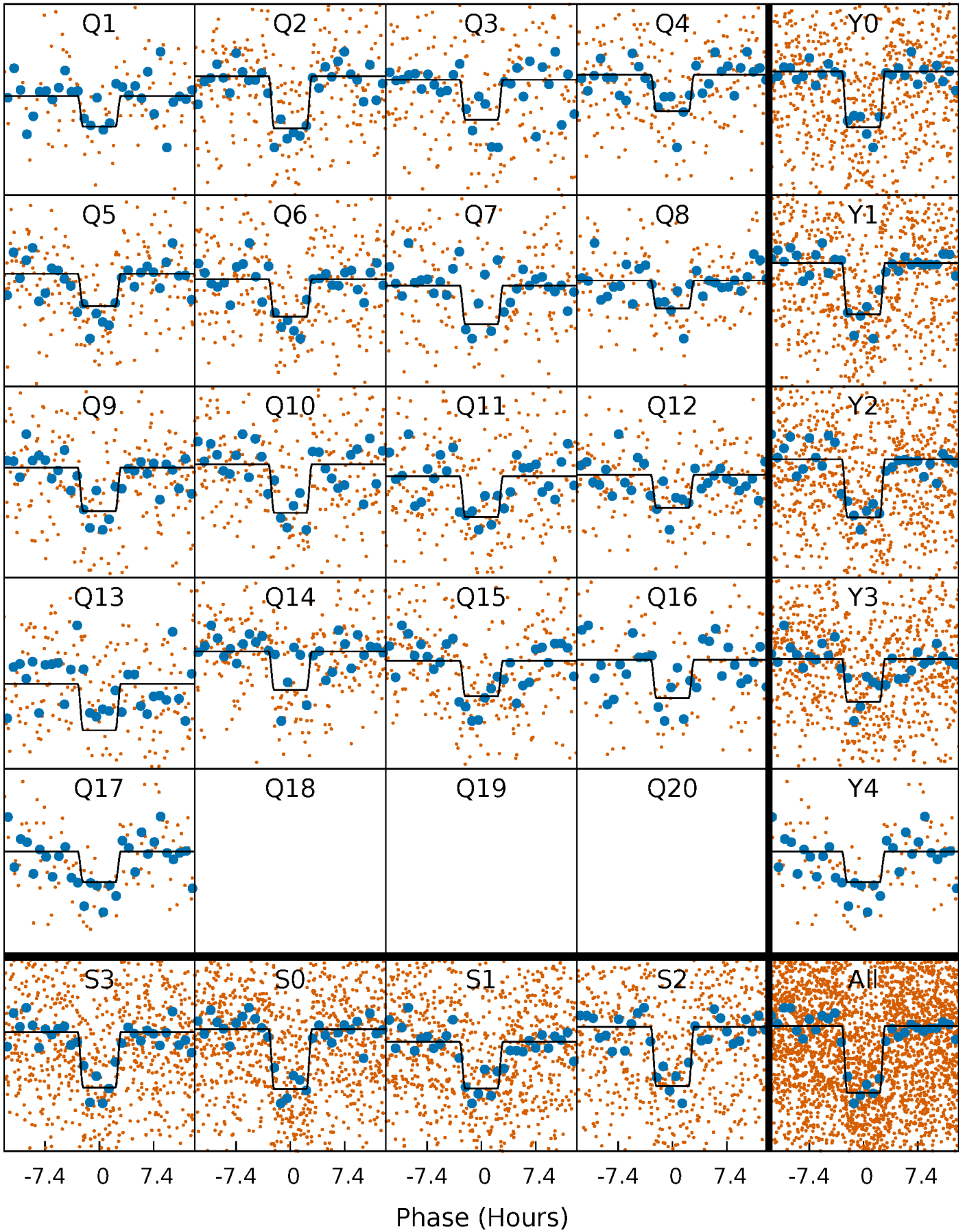
# DV Quarter-Phased Transit Curves

TCE 007522911-01    P= 20.499818 Days     $T_0=131.823514$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

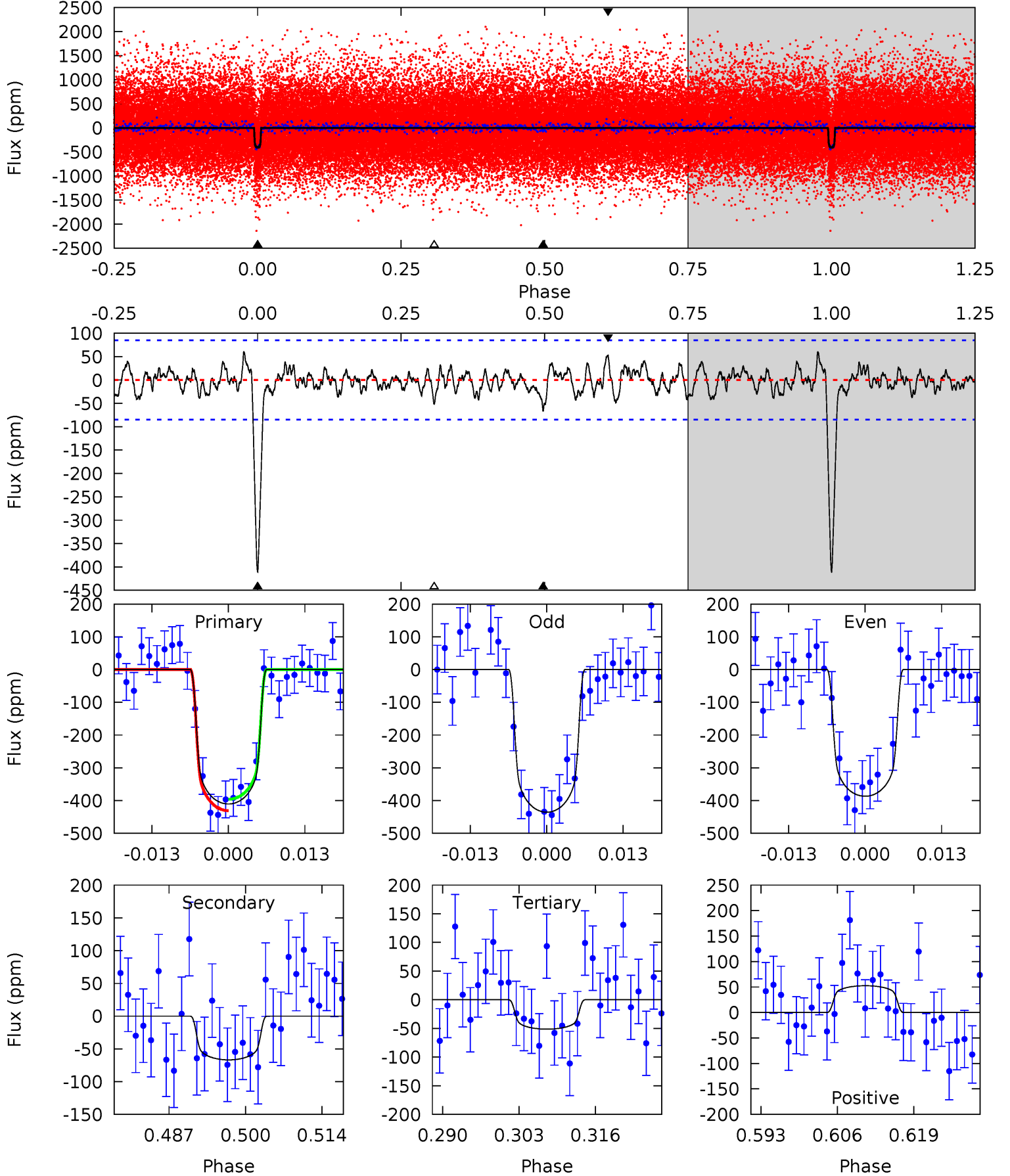
TCE 007522911-01 P= 20.499885 Days  $T_0=131.819906$  (BKJD)



# DV Model-Shift Uniqueness Test

007522911-01,  $P = 20.499818$  Days,  $E = 111.323696$  Days

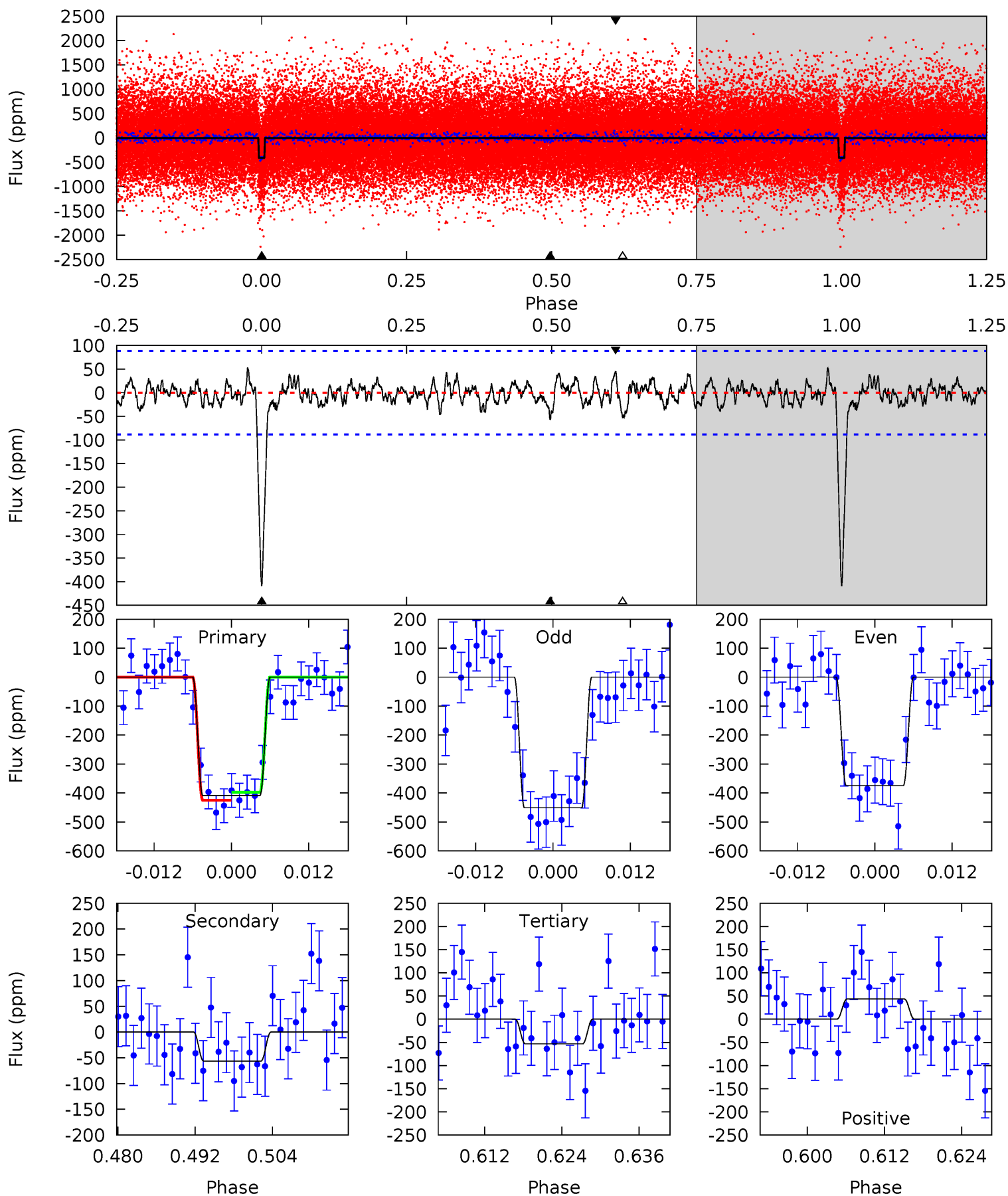
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.1	3.92	3.01	3.08	4.97	2.48	1.12	21.1	21.0	0.91	0.83	1.43	1.03	0.13	1.02



# Alt Model-Shift Uniqueness Test

007522911-01, P = 20.499885 Days, E = 111.320021 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
23.1	3.18	3.00	2.45	4.99	2.51	1.01	20.1	20.6	0.18	0.73	2.16	1.00	0.11	0.78



### Stellar Parameters For KIC 007522911

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6249^{+174}_{-217}$	$4.428^{+0.067}_{-0.202}$	$-0.040^{+0.250}_{-0.300}$	$1.076^{+0.353}_{-0.118}$	$1.130^{+0.157}_{-0.141}$	$1.279^{+0.372}_{-0.686}$
	+3%/-3%	+2%/-5%	+625%/-750%	+33%/-11%	+14%/-12%	+29%/-54%
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 007522911-01 / KOI 1705.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-67 \pm 17$	$2.63^{+0.51}_{-0.41}$	$1039^{+69}_{-56}$	$4109^{+275}_{-261}$	$120^{+60}_{-41}$
Alt.	$-56 \pm 18$	$2.45^{+0.49}_{-0.39}$	$1036^{+77}_{-52}$	$4094^{+323}_{-351}$	$118^{+63}_{-49}$

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



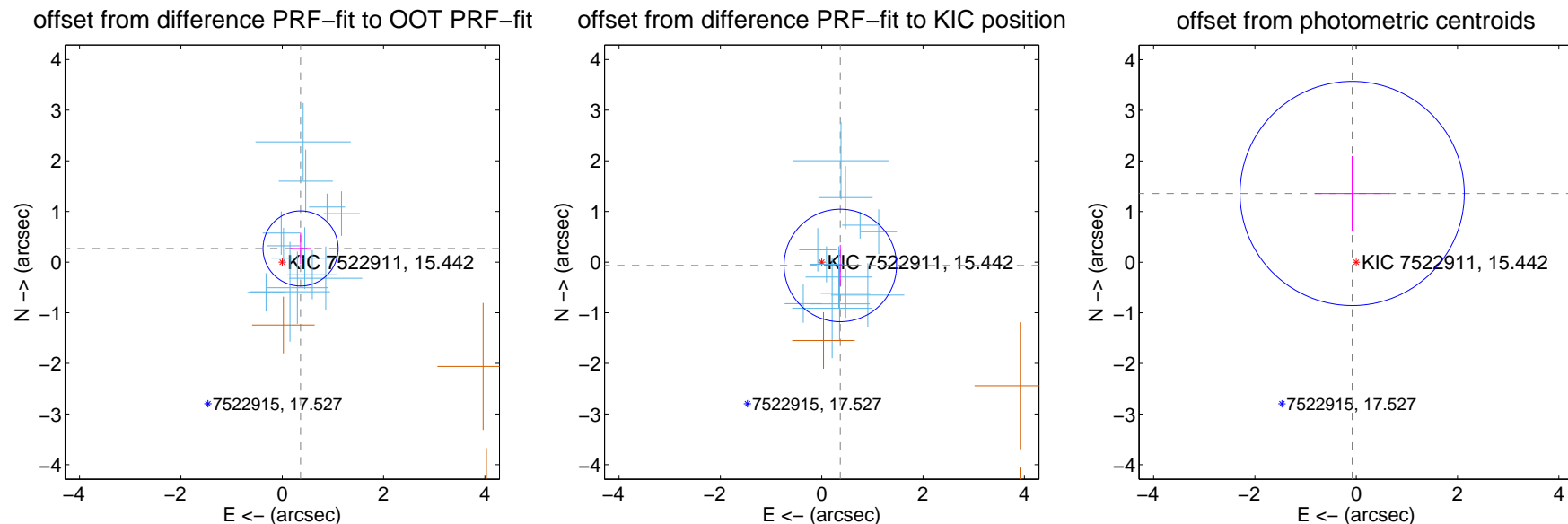
## DV Centroid Data

Supplemental centroid analysis for 007522911-01. Kepler magnitude: 15.44. Transit SNR 18.27

There are 12 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.37 arcsec

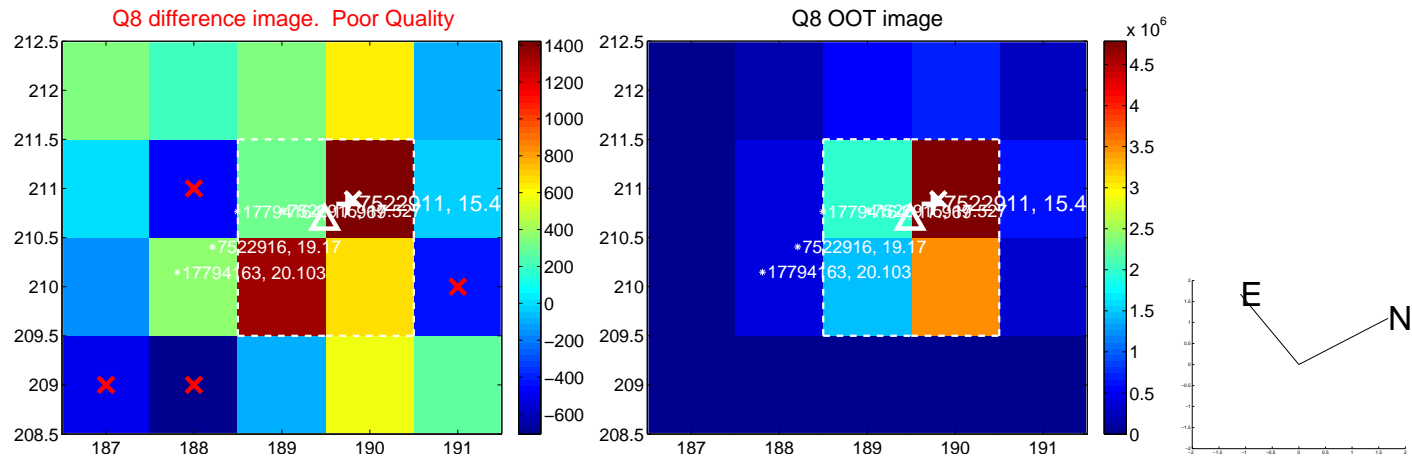
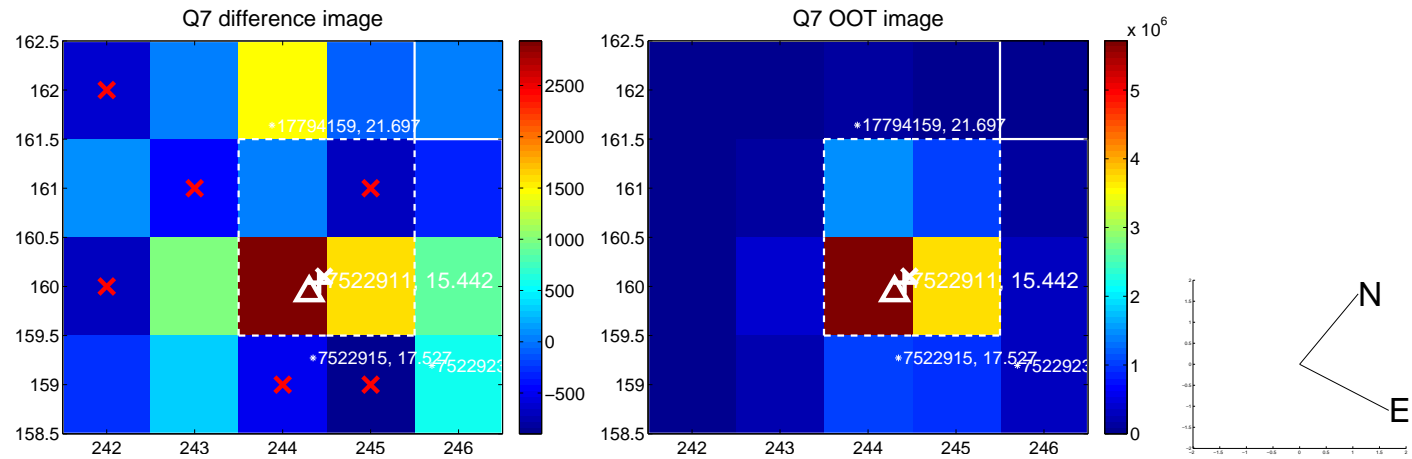
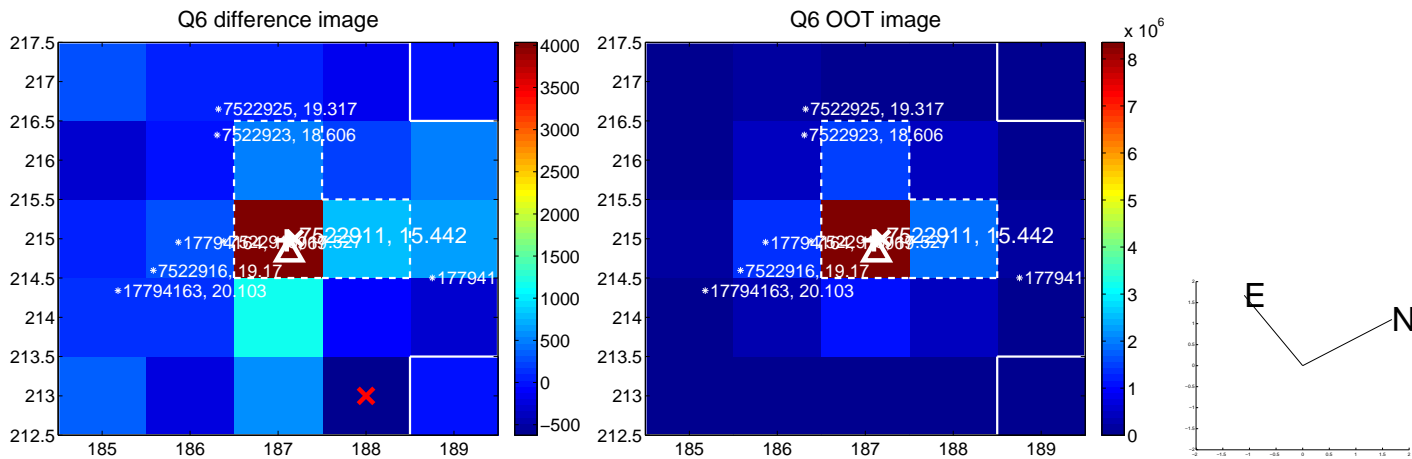
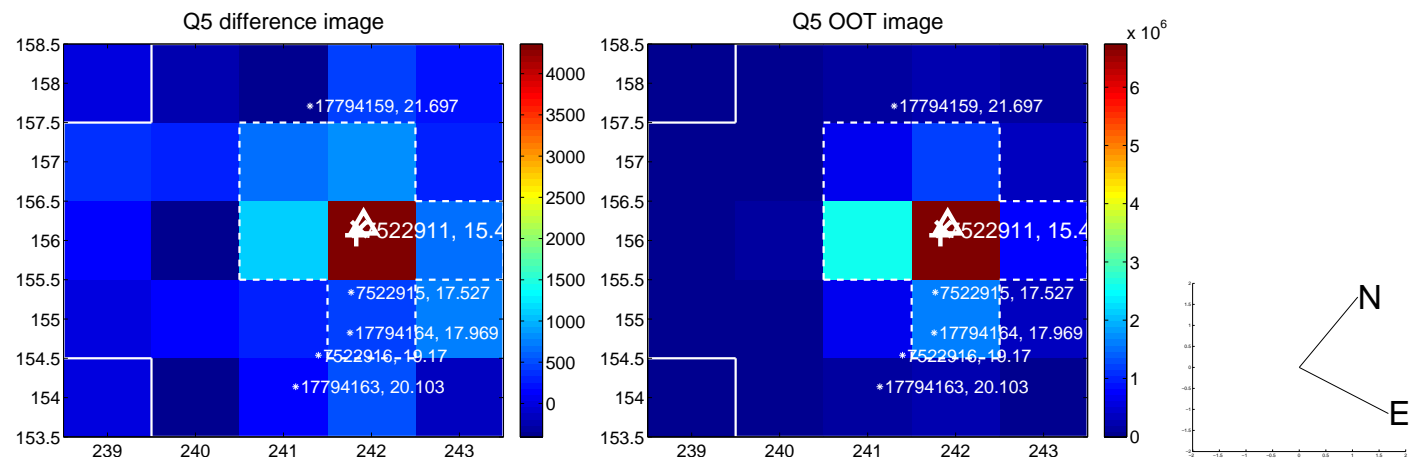
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.452 \pm 0.247$	1.83	$-0.363 \pm 0.205$	$0.269 \pm 0.310$
PRF-fit source offset from KIC position	$0.373 \pm 0.370$	1.01	$-0.367 \pm 0.323$	$-0.066 \pm 0.405$
photometric centroid source offset	$1.36 \pm 0.74$	1.84	$0.08 \pm 0.74$	$1.36 \pm 0.74$



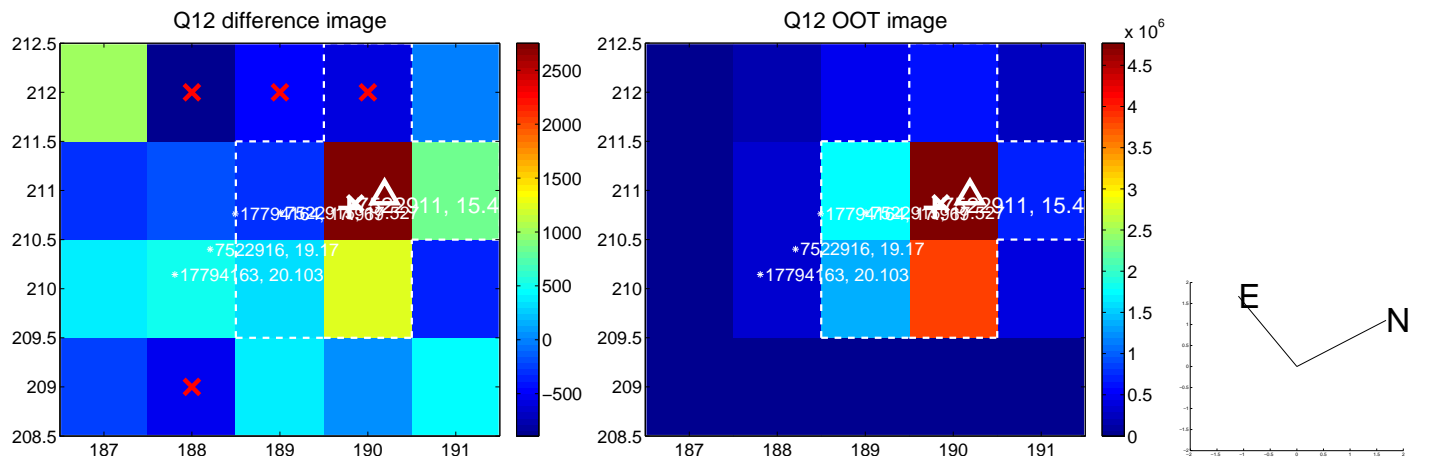
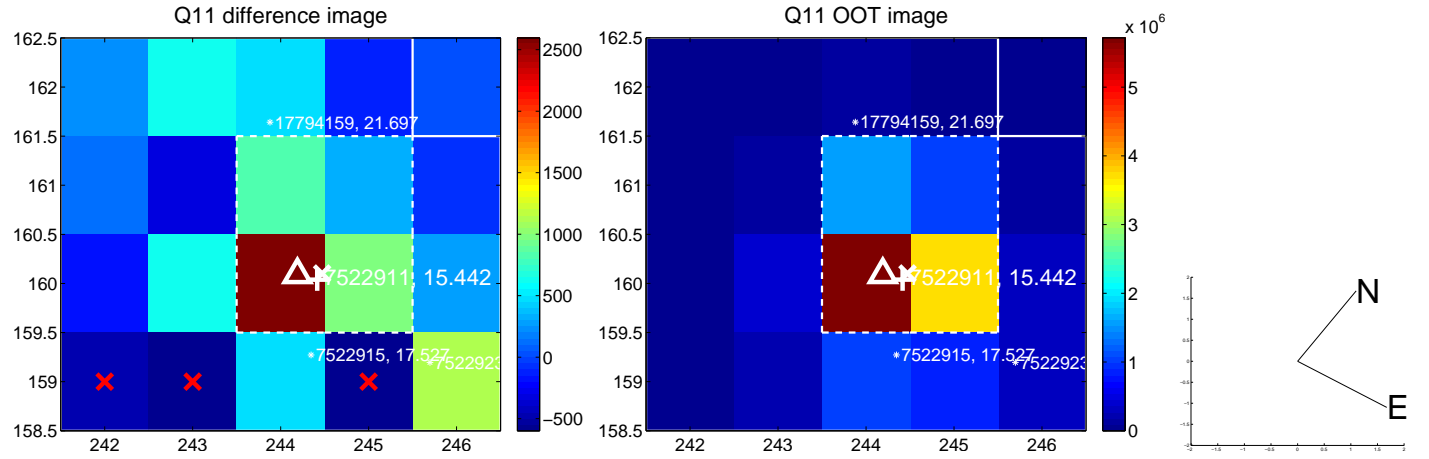
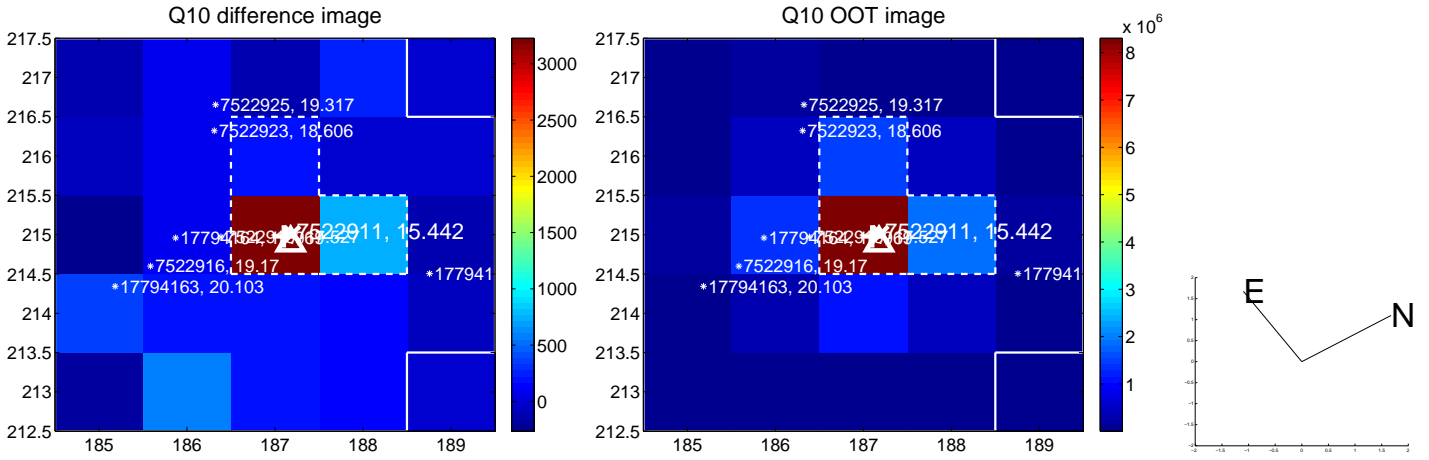
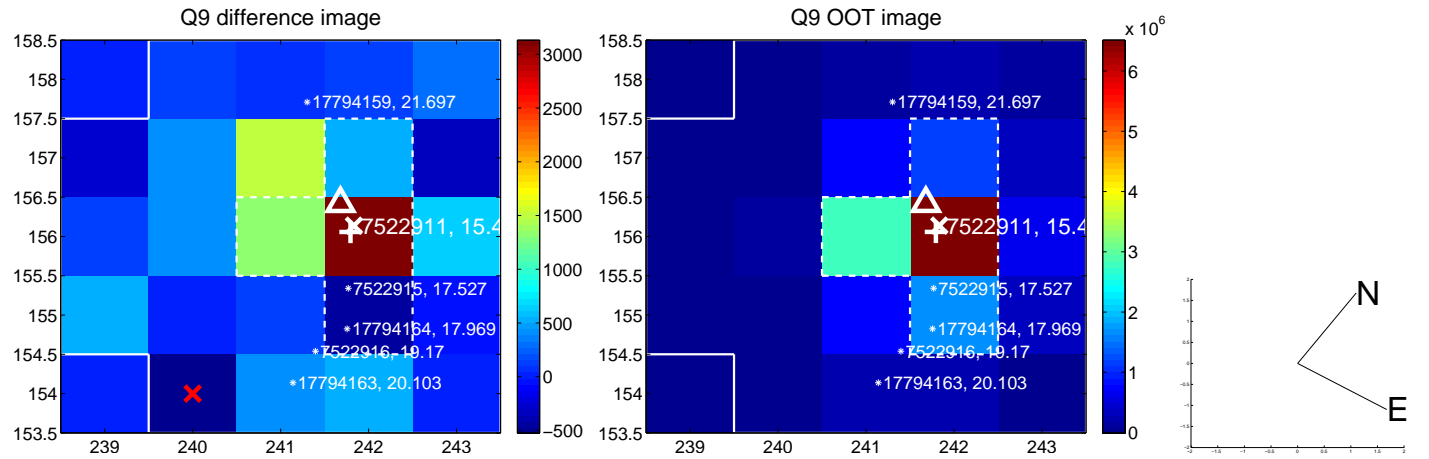
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



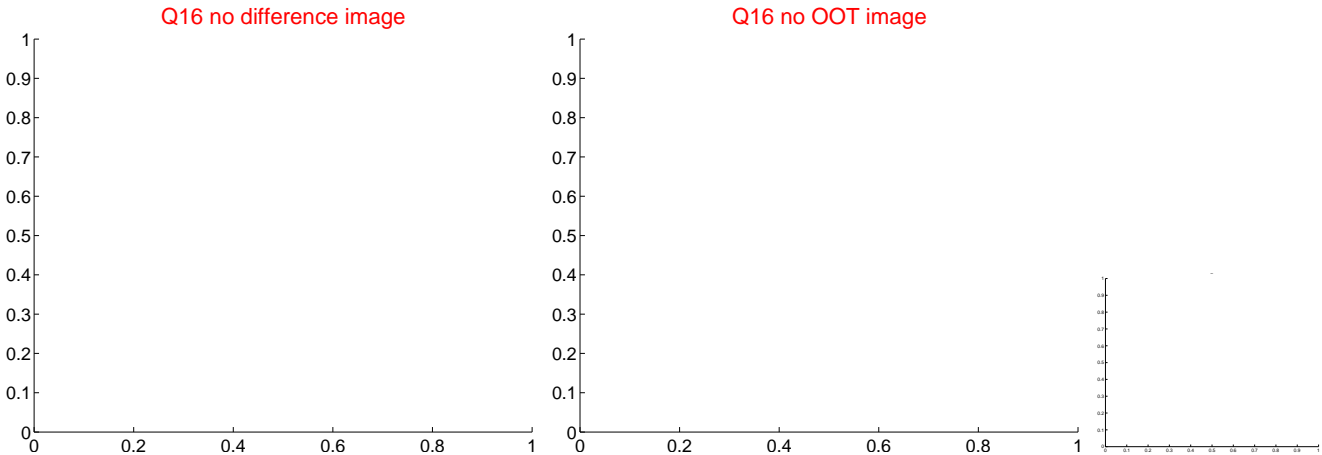
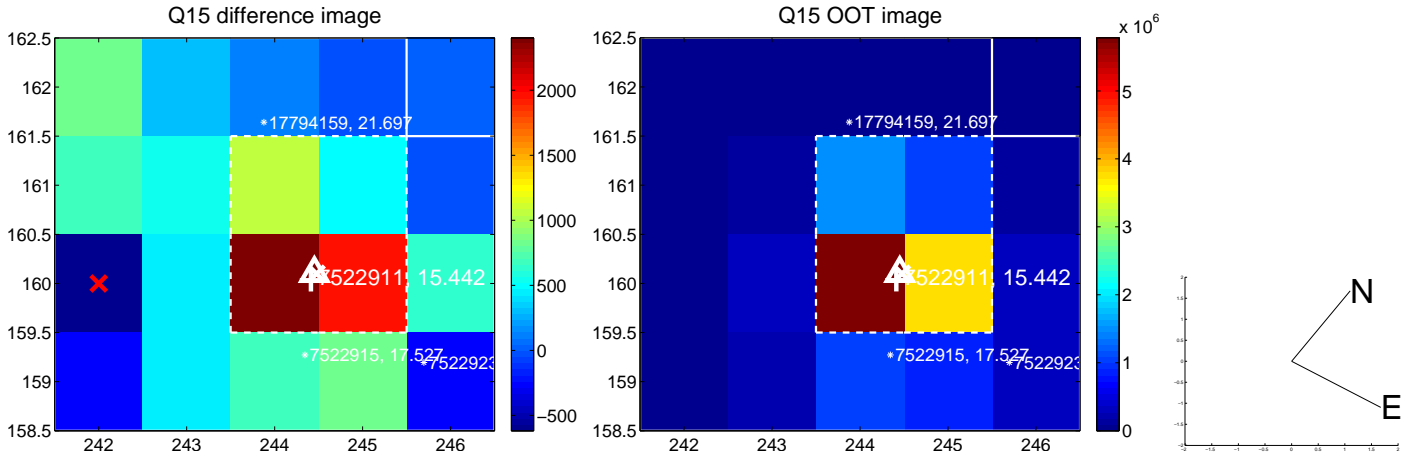
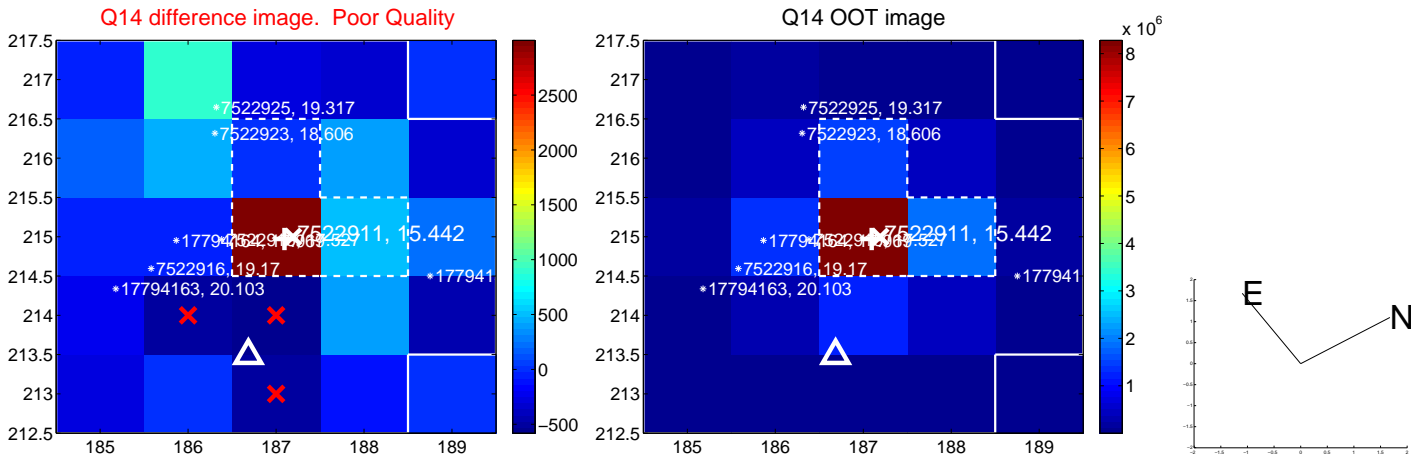
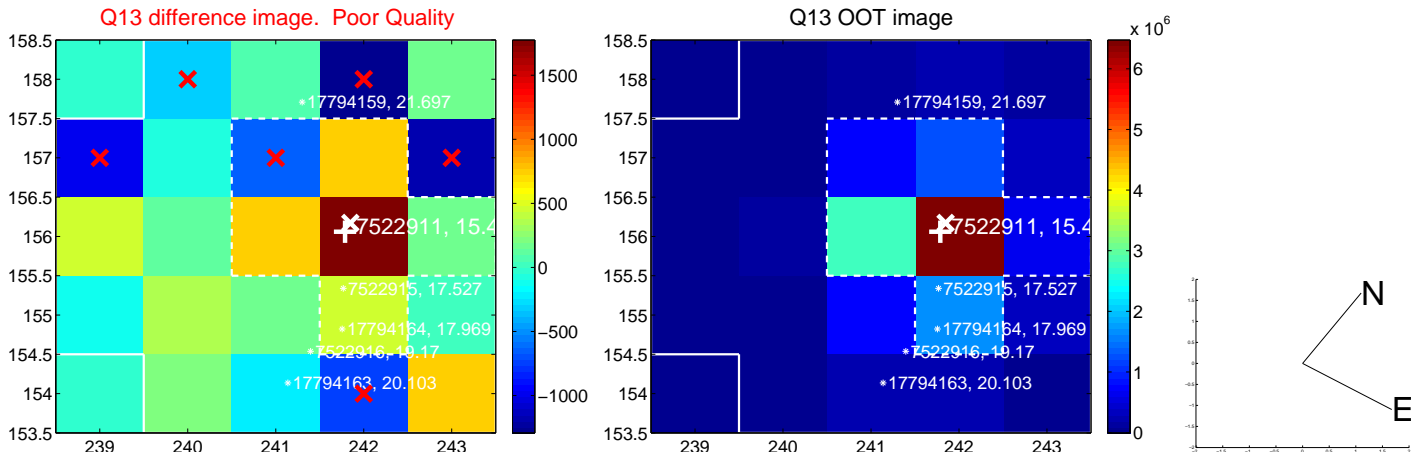
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

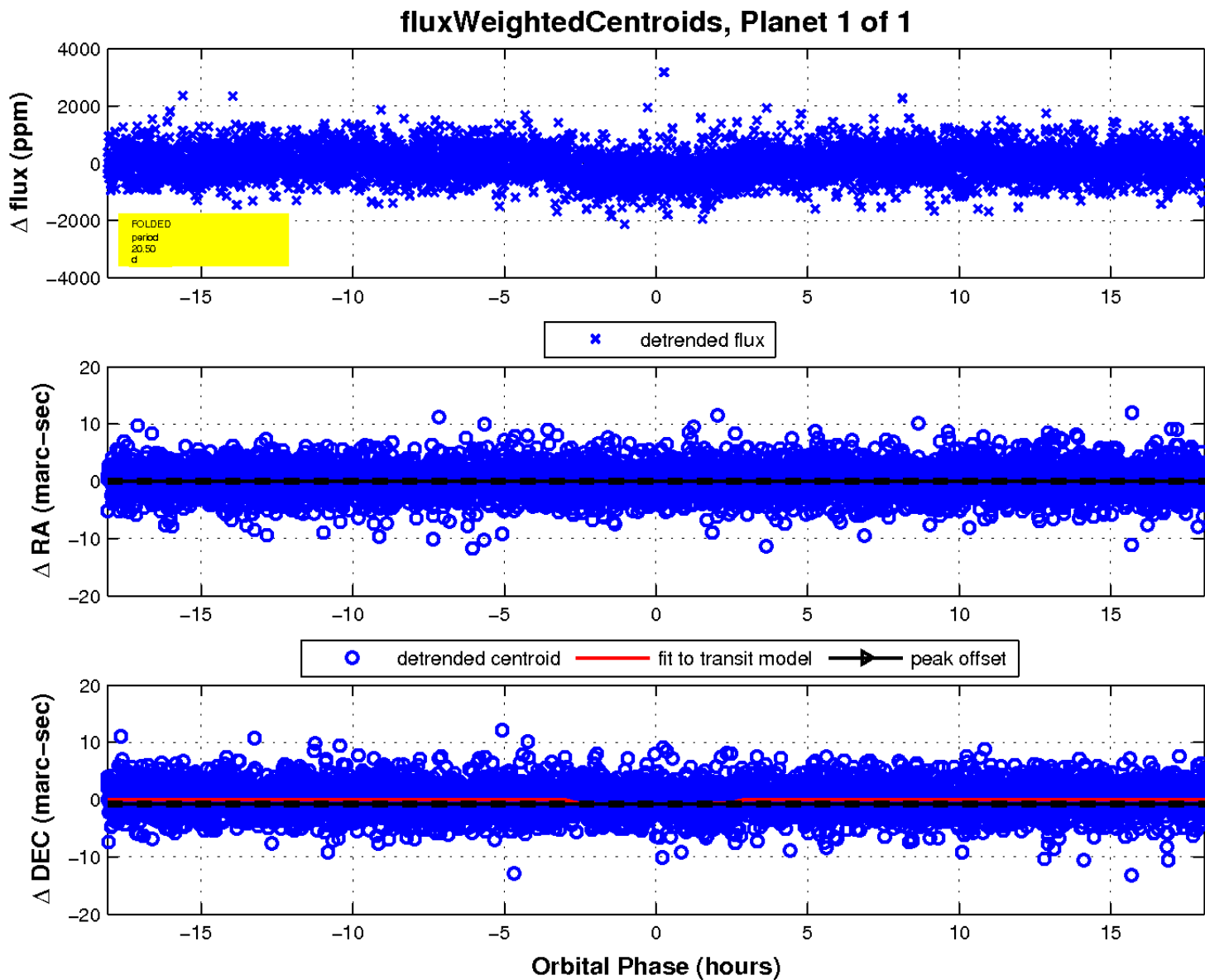
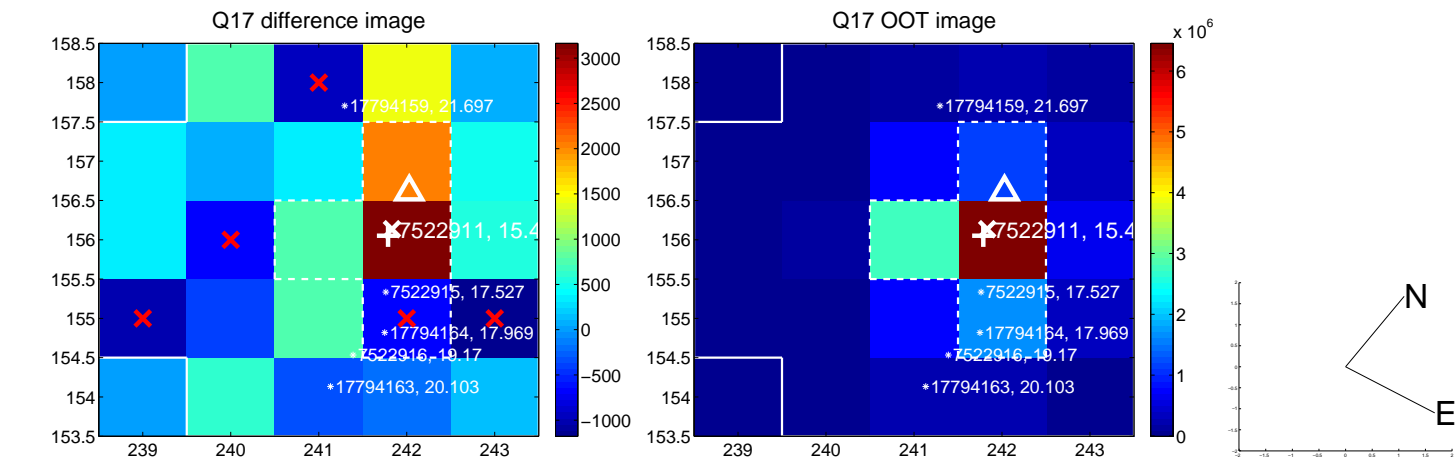


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

