

# KIC 010811496

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010811496-01	OBS	0753.01	19.899143	136.051960	10630.4	1.776	187.4	181.6	0.87	5853	12.27	39.35

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010811496-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED

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

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

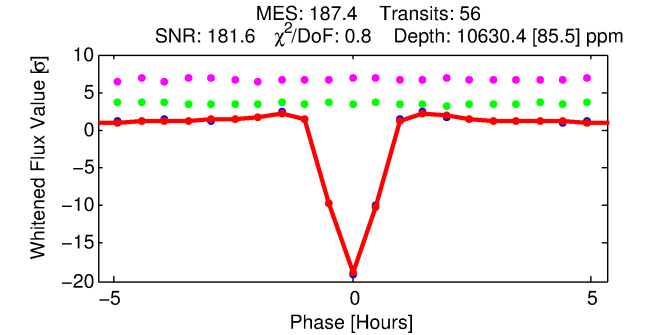
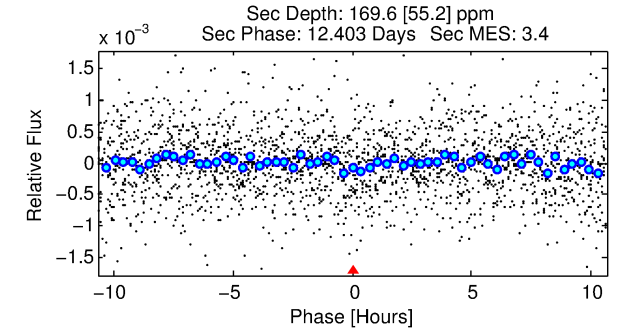
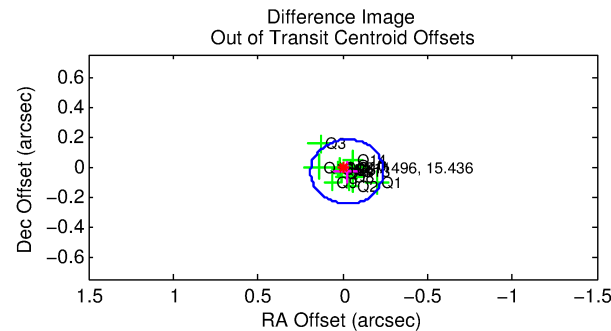
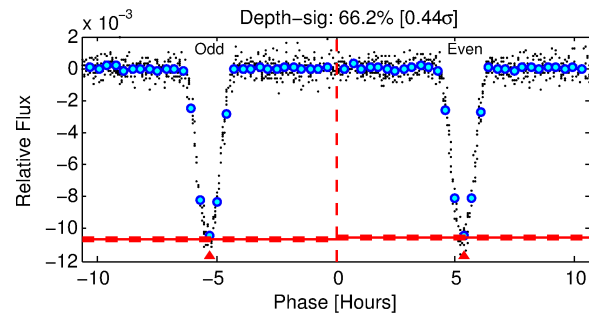
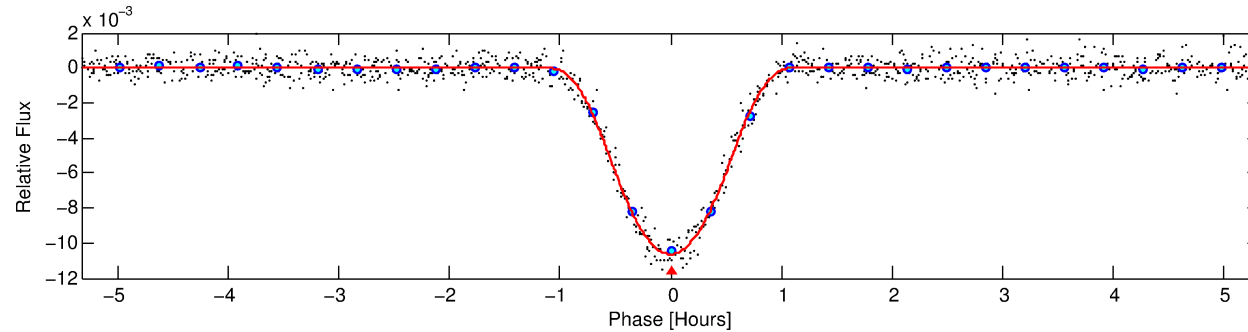
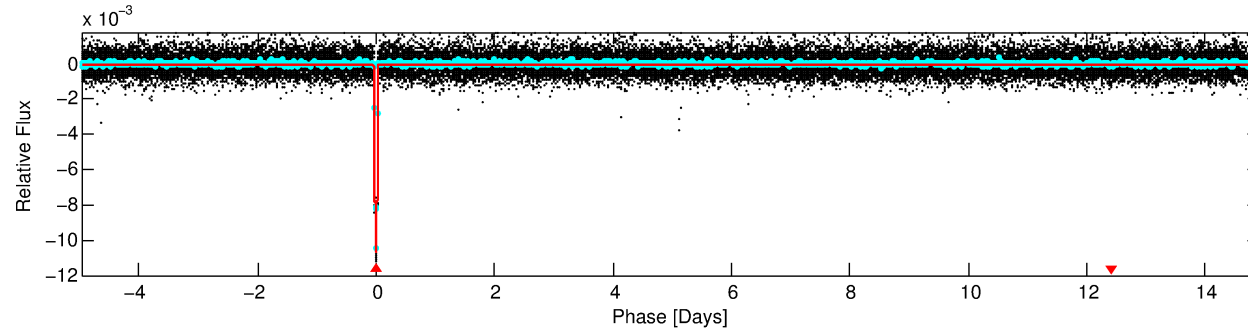
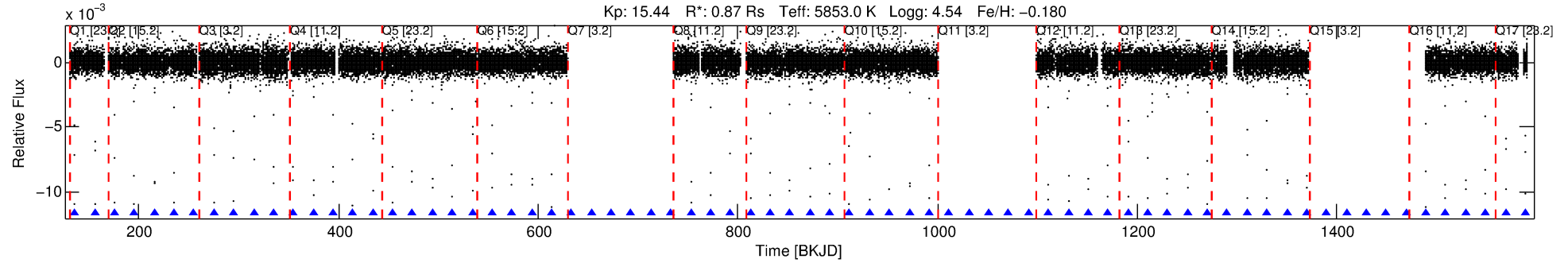
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010811496-01

No Significant Match Found

# DV One-Page Summary

KIC: 10811496 Candidate: 1 of 1 Period: 19.899 d  
KOI: K00753.01 Corr: 0.997



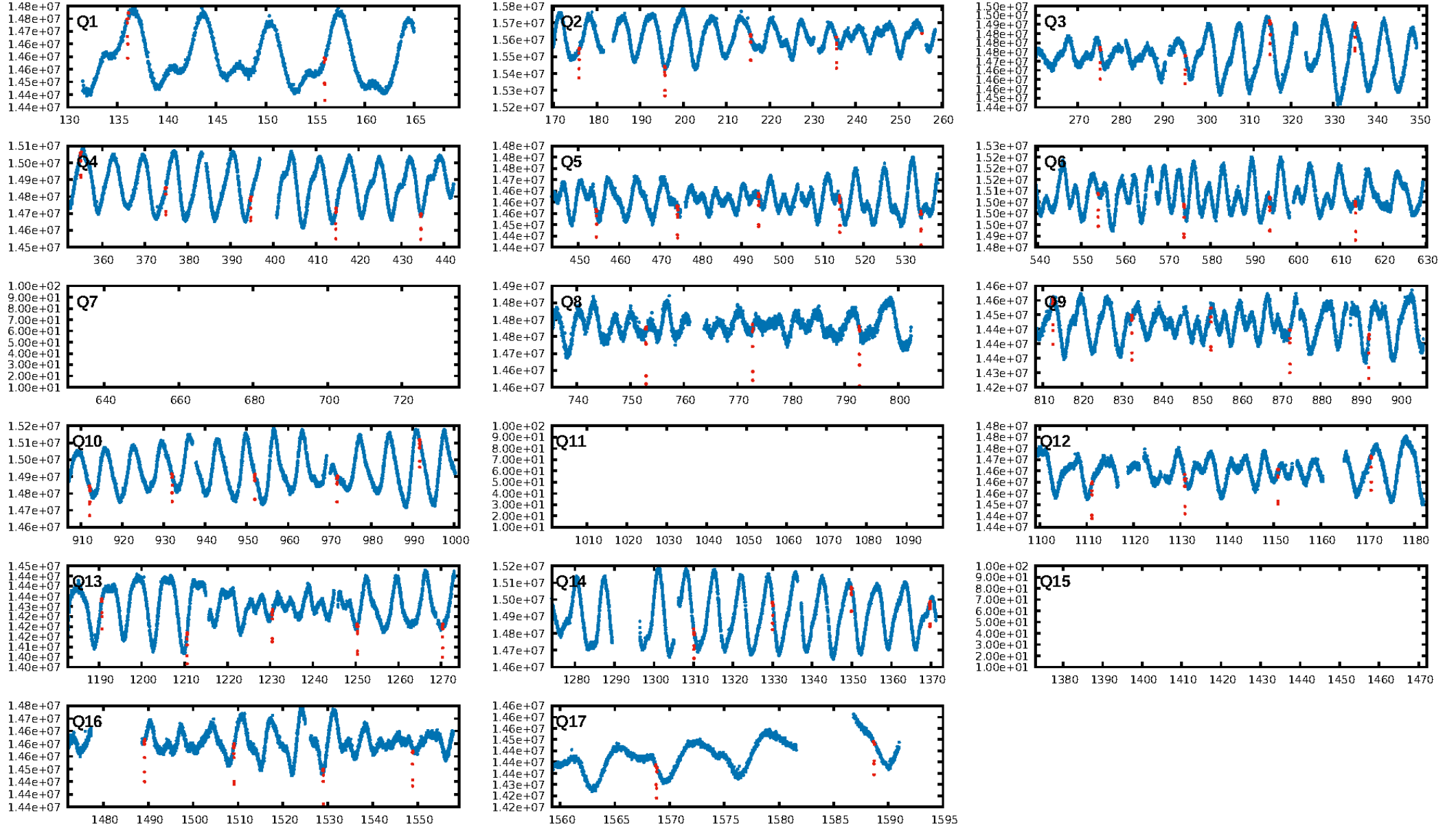
## DV Fit Results:

Period = 19.89914 [0.00000] d  
Epoch = 136.0520 [0.0002] BKJD  
Rp/R\* = 0.1295 [0.0158]  
a/R\* = 54.88 [2.30]  
b = 0.93 [0.03]  
Seff = 39.35 [13.60]  
Teq = 639 [55] K  
Rp = 12.27 [3.62] Re  
a = 0.1419 [0.0318] AU  
Ag = 12.49 [6.50] [1.77 $\sigma$ ]  
Teffp = 1856 [197] K [5.95 $\sigma$ ]

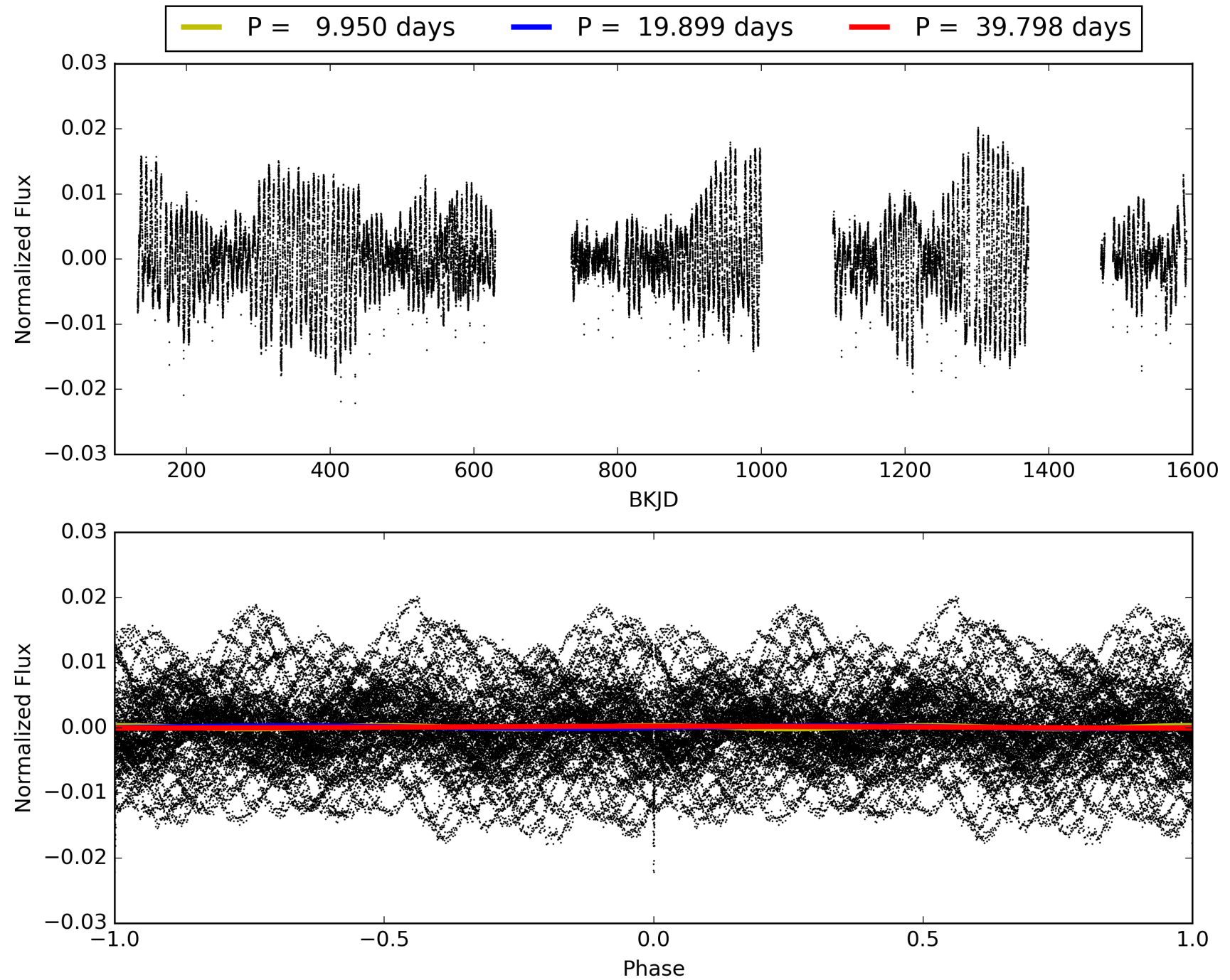
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 85.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [52/52]  
GhostDiagnostic-chr: 3.947  
Centroid-sig: 27.8%  
Centroid-so: 0.043 arcsec [0.61 $\sigma$ ]  
OotOffset-rm: 0.042 arcsec [0.59 $\sigma$ ]  
KicOffset-rm: 0.027 arcsec [0.36 $\sigma$ ]  
OotOffset-st: 4/1/4/5 [14]  
KicOffset-st: 4/1/4/5 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 010811496-01, PDC Light Curves

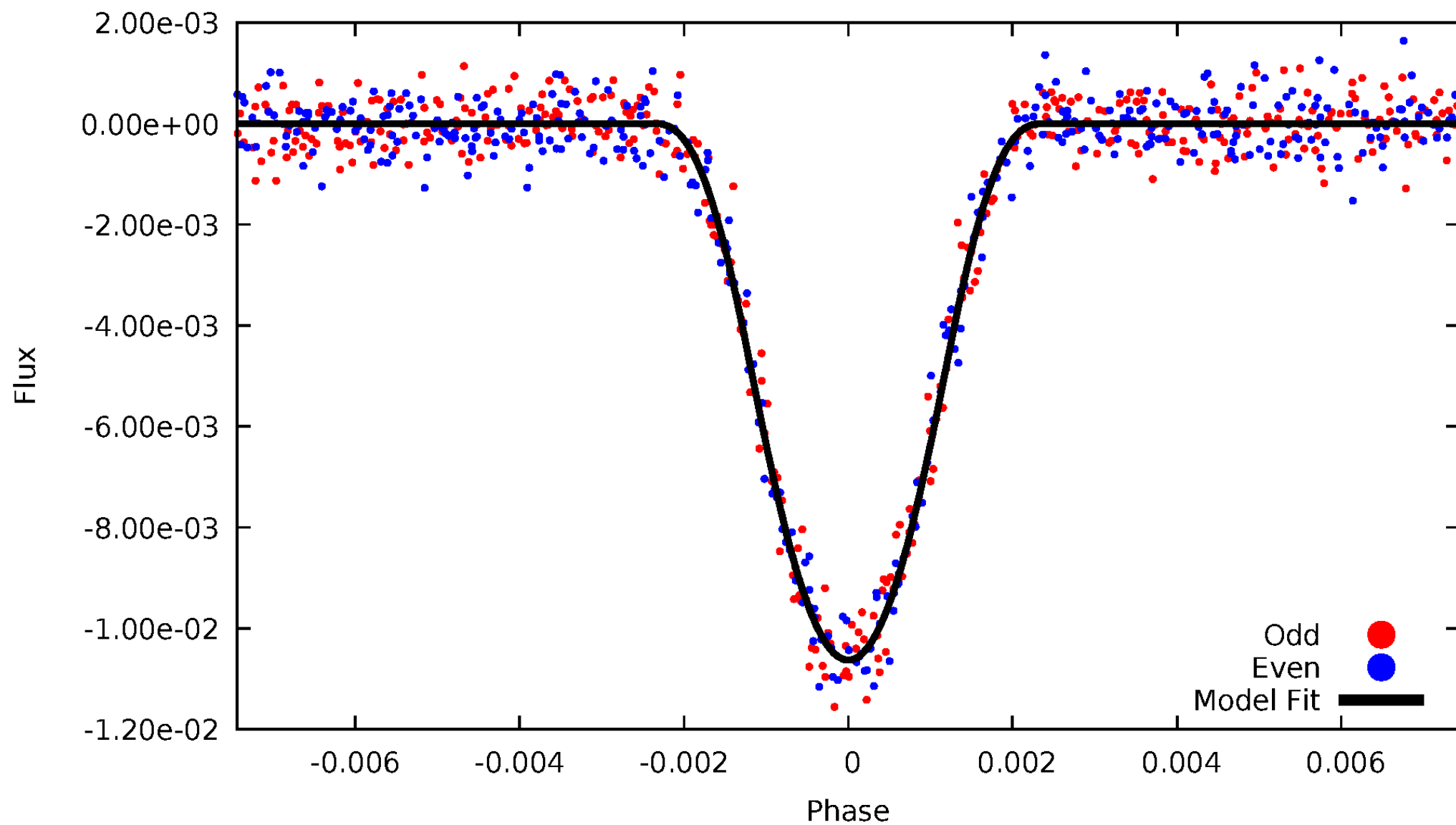


# TCE 010811496-01



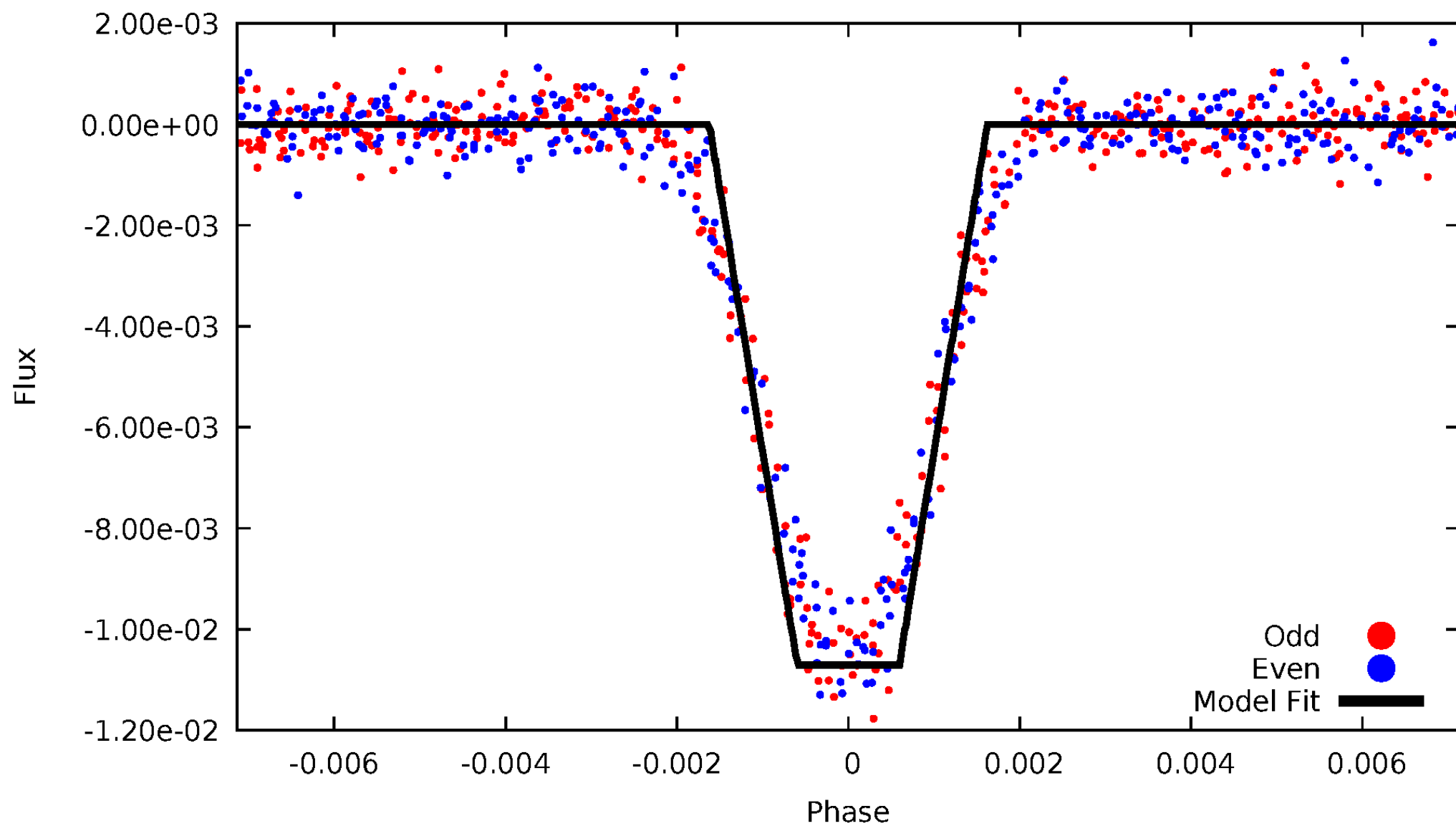
# DV Odd/Even

TCE 010811496-01



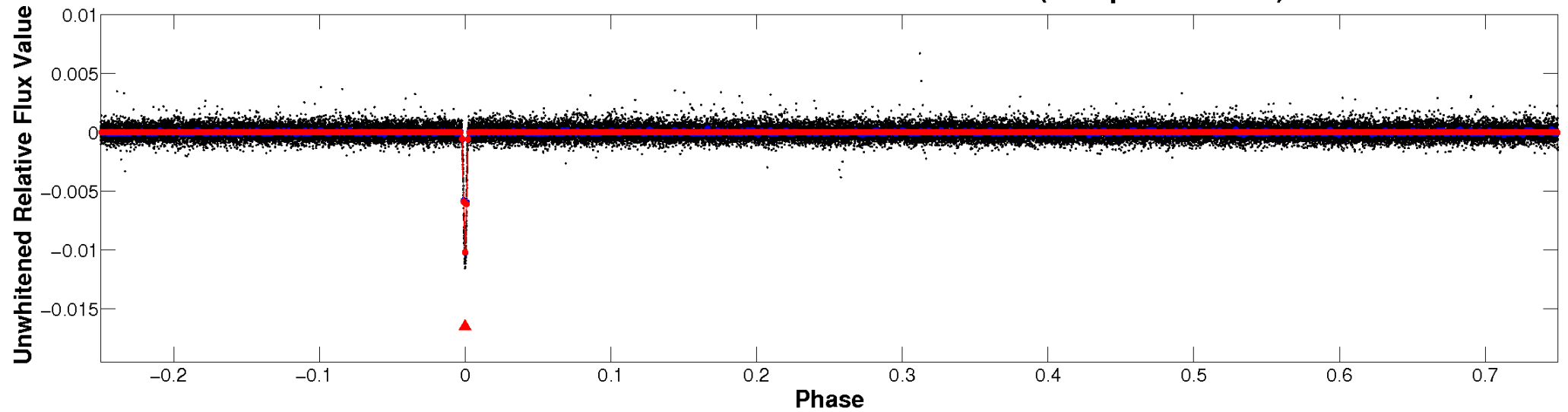
# ALT Odd/Even

TCE 010811496-01

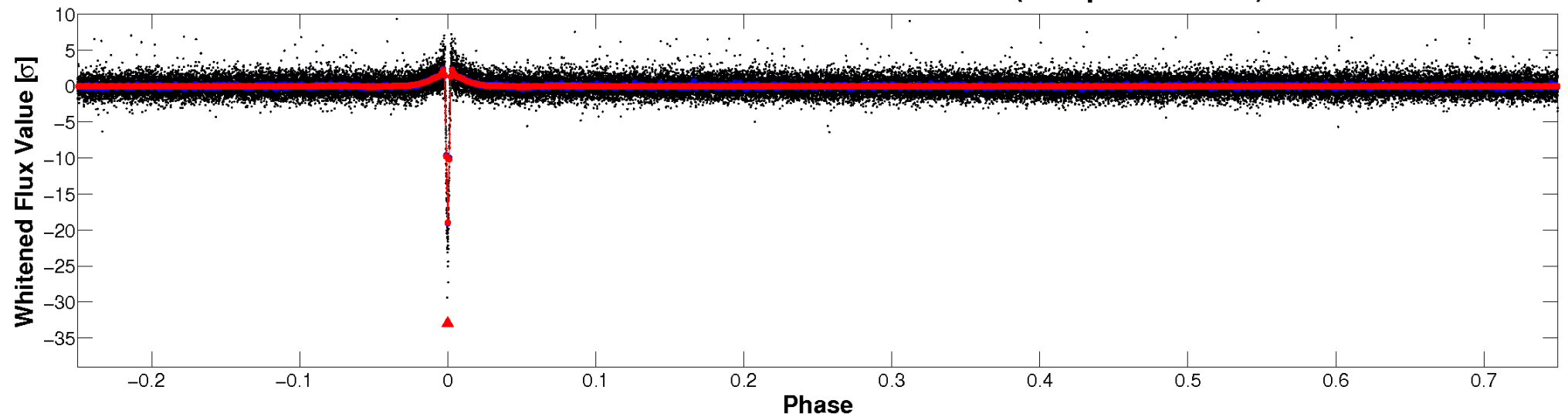


# Non-Whitened Vs. Whitened Light Curve

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

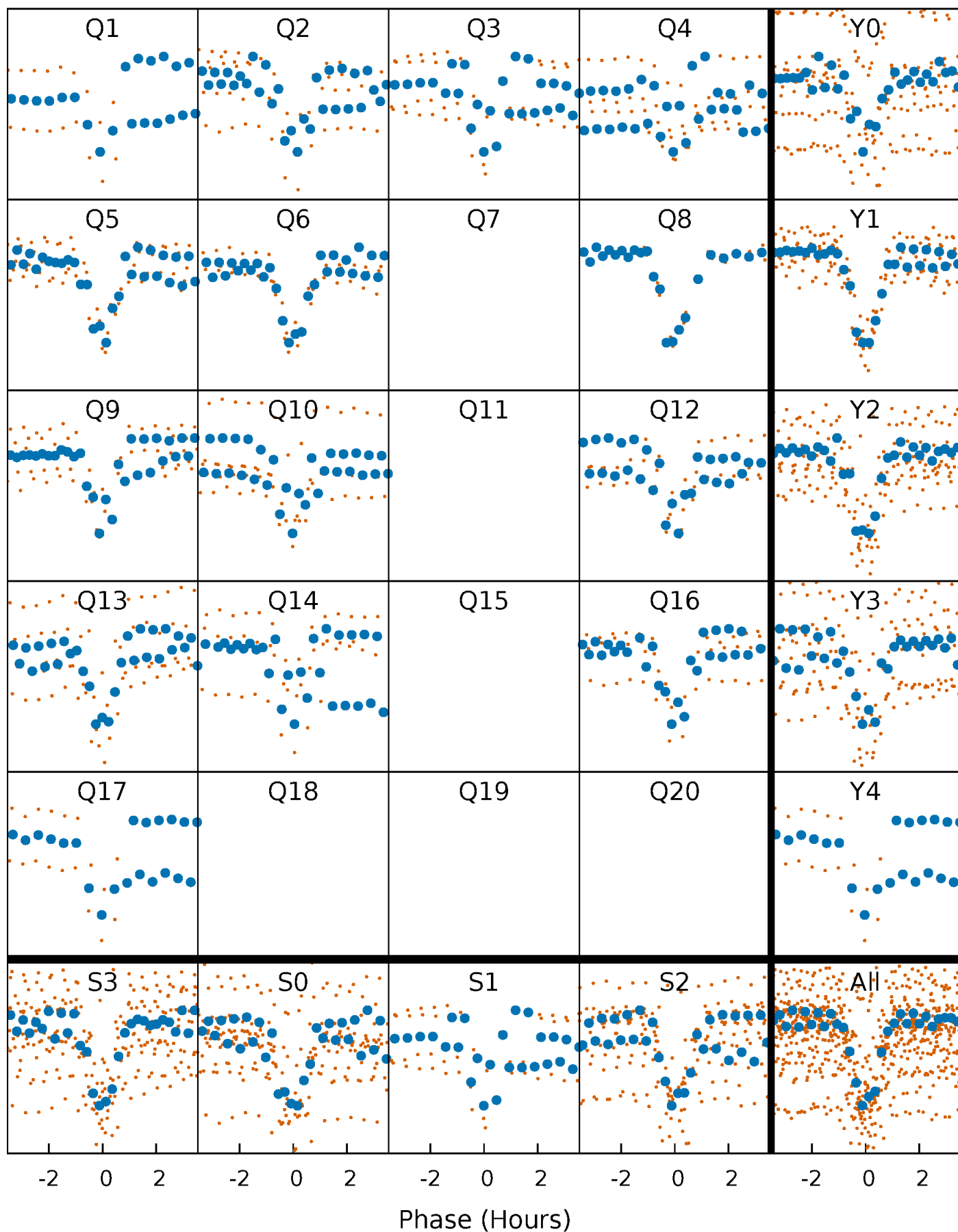


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

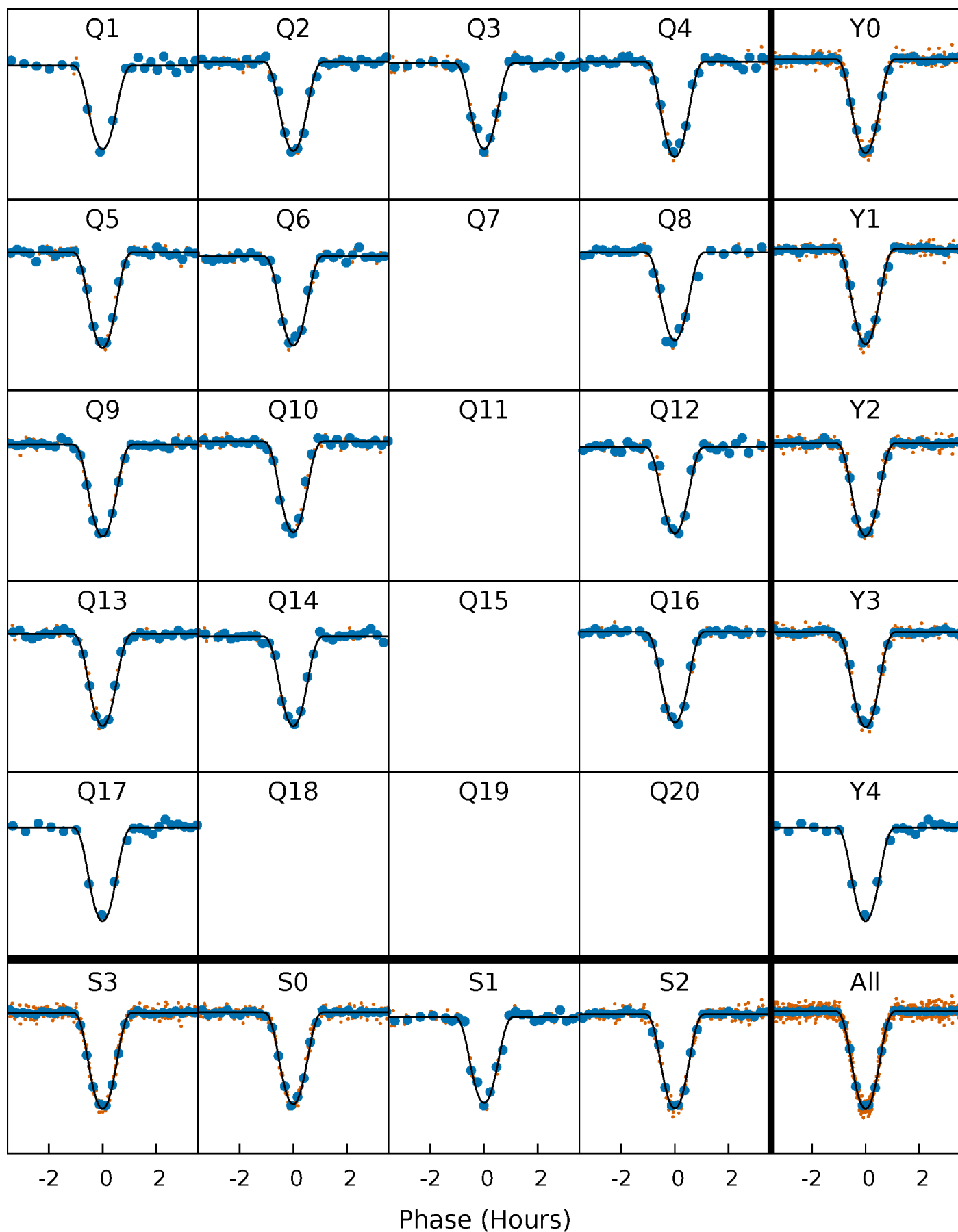
TCE 010811496-01   P= 19.899143 Days    $T_0=136.051960$  (BKJD)





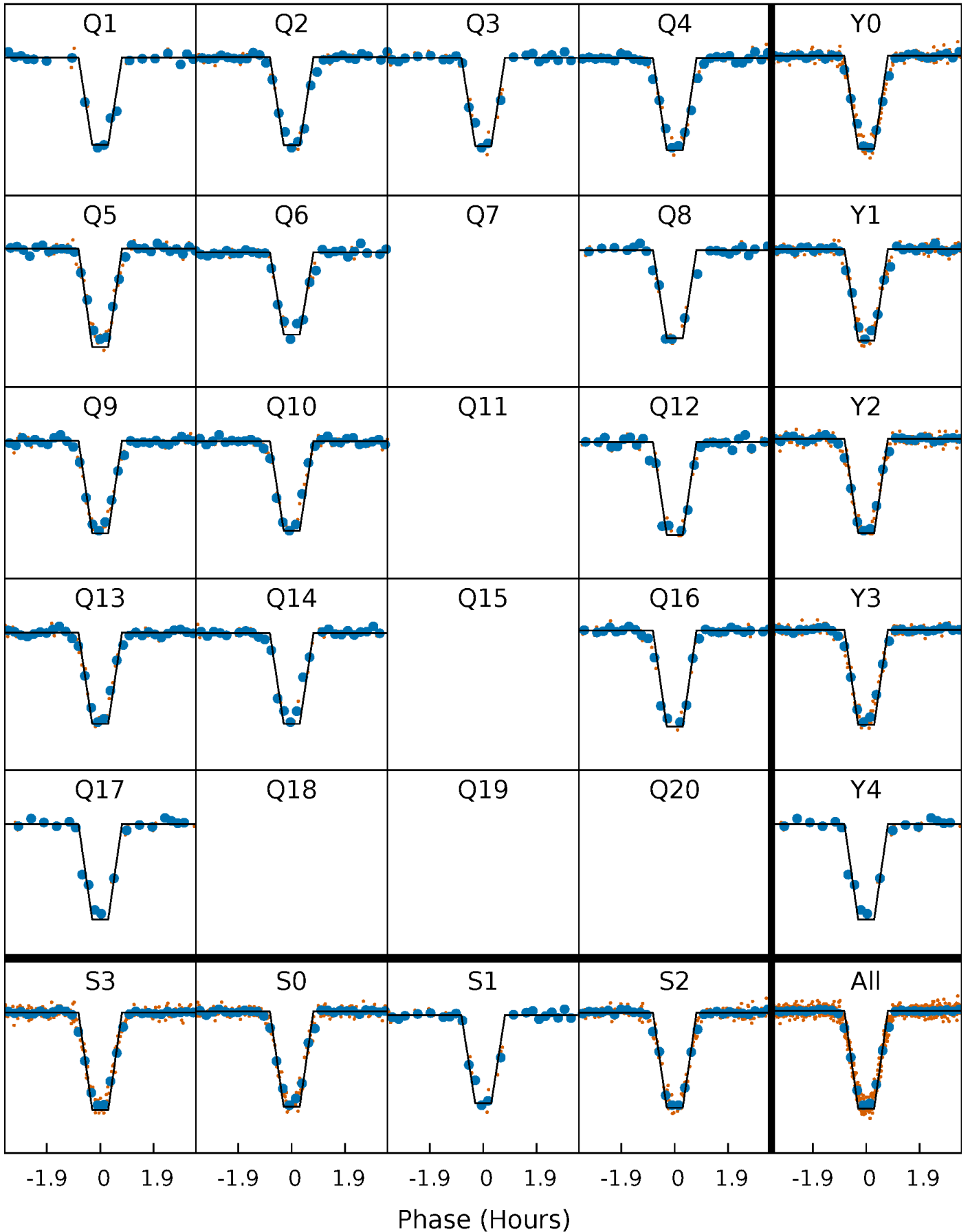
# DV Quarter-Phased Transit Curves

TCE 010811496-01 P= 19.899143 Days  $T_0=136.051960$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

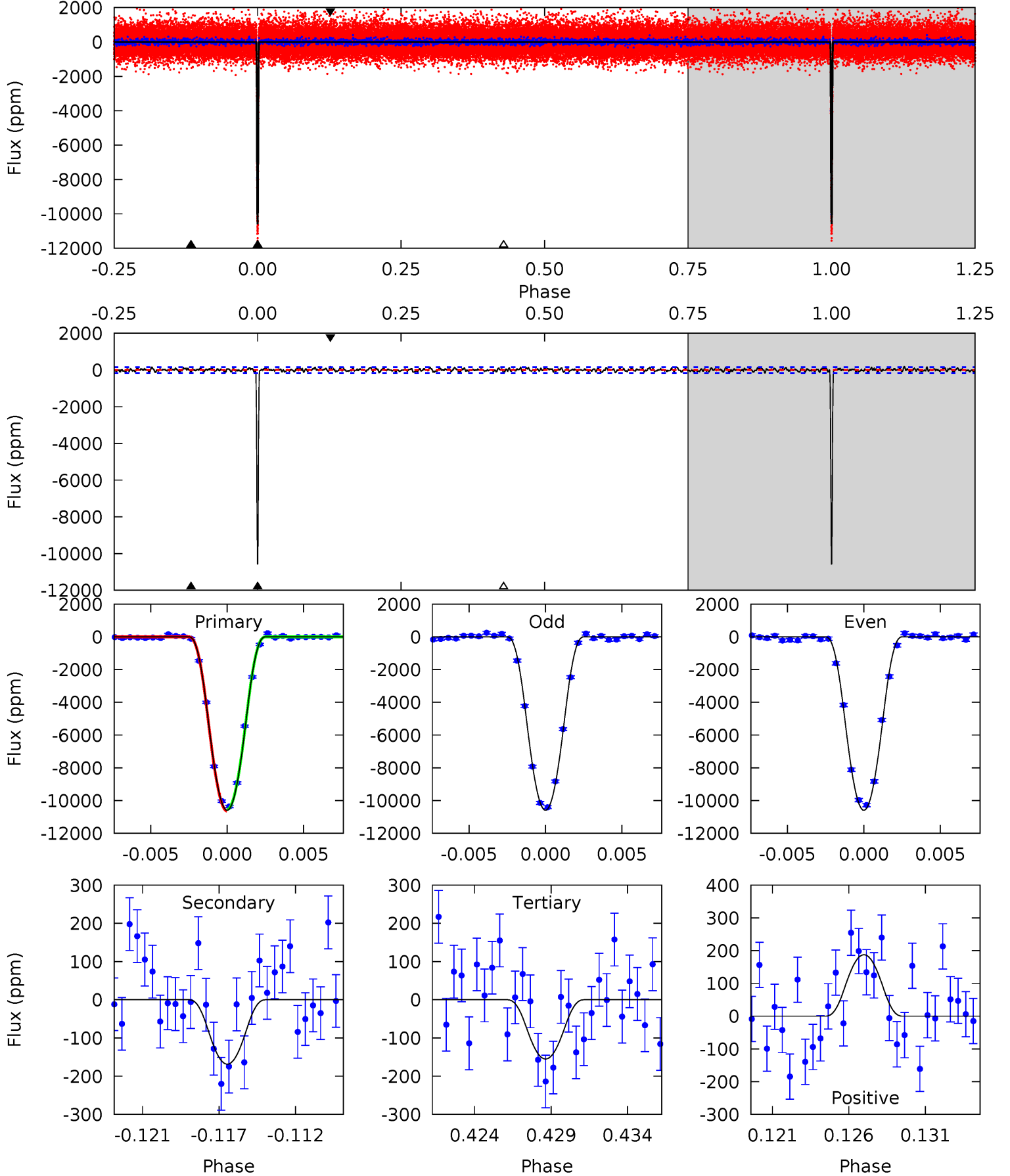
TCE 010811496-01     $P = 19.899201$  Days     $T_0 = 136.050014$  (BKJD)



# DV Model-Shift Uniqueness Test

010811496-01,  $P = 19.899143$  Days,  $E = 116.152817$  Days

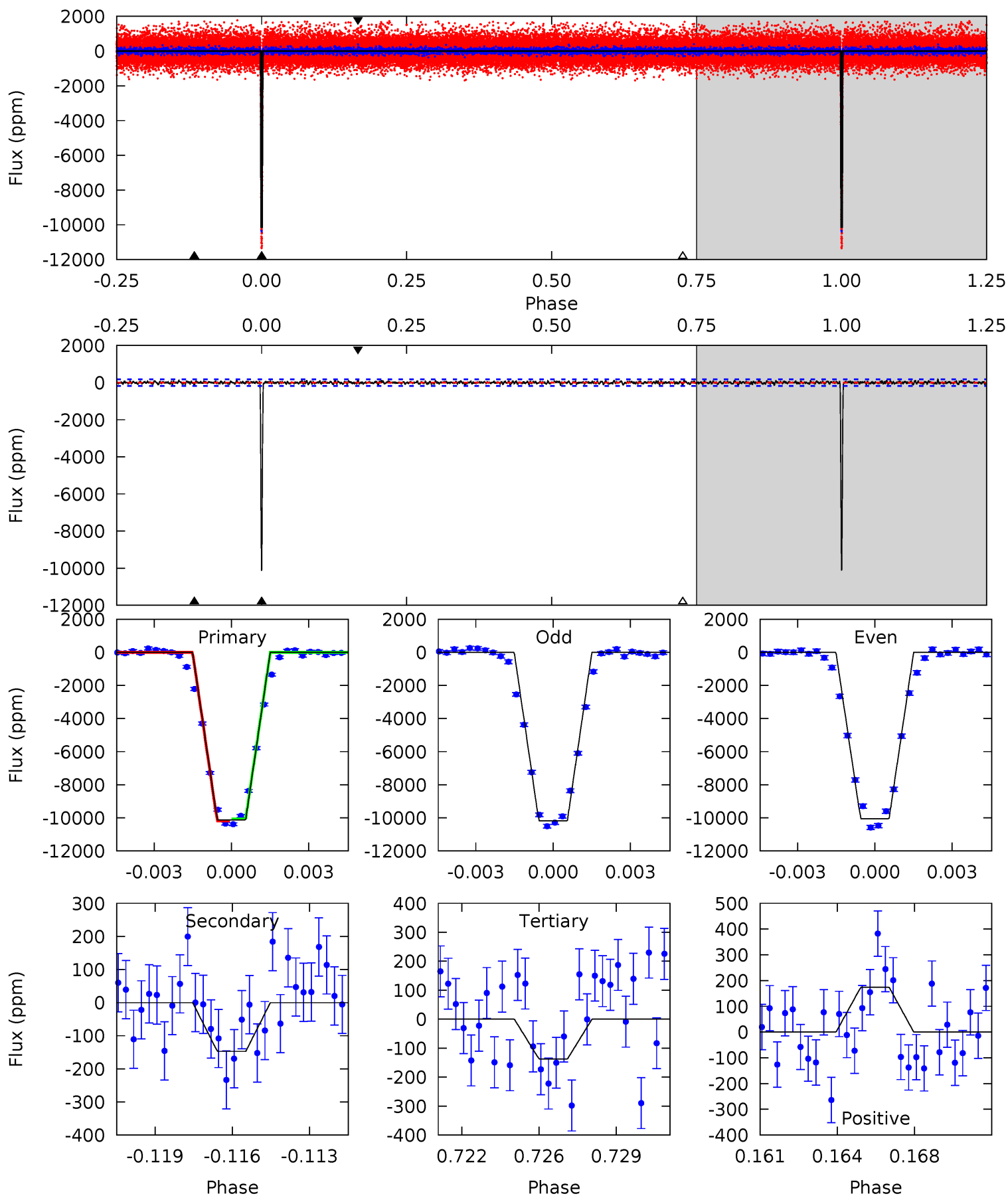
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
339.7	5.40	4.97	6.01	5.17	2.83	1.75	334.7	333.7	0.43	-0.61	0.02	1.00	0.02	1.57



# Alt Model-Shift Uniqueness Test

010811496-01, P = 19.899201 Days, E = 116.150813 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
296.3	4.31	4.02	5.08	5.24	2.95	1.18	292.2	291.2	0.29	-0.77	1.91	0.99	0.02	1.91



### Stellar Parameters For KIC 010811496

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5853^{+158}_{-176}$	$4.544^{+0.044}_{-0.176}$	$-0.180^{+0.300}_{-0.300}$	$0.868^{+0.233}_{-0.078}$	$0.961^{+0.110}_{-0.121}$	$2.069^{+0.370}_{-0.950}$
	+3%/-3%	+1%/-4%	+167%/-167%	+27%/-9%	+11%/-13%	+18%/-46%
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 010811496-01 / KOI 0753.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-169 \pm 31$	$12.71^{+2.13}_{-1.72}$	$913^{+46}_{-41}$	$2641^{+121}_{-114}$	$11^{+4}_{-3}$
Alt.	$-147 \pm 34$	$10.15^{+2.00}_{-1.86}$	$909^{+55}_{-39}$	$2741^{+167}_{-129}$	$15^{+8}_{-5}$

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

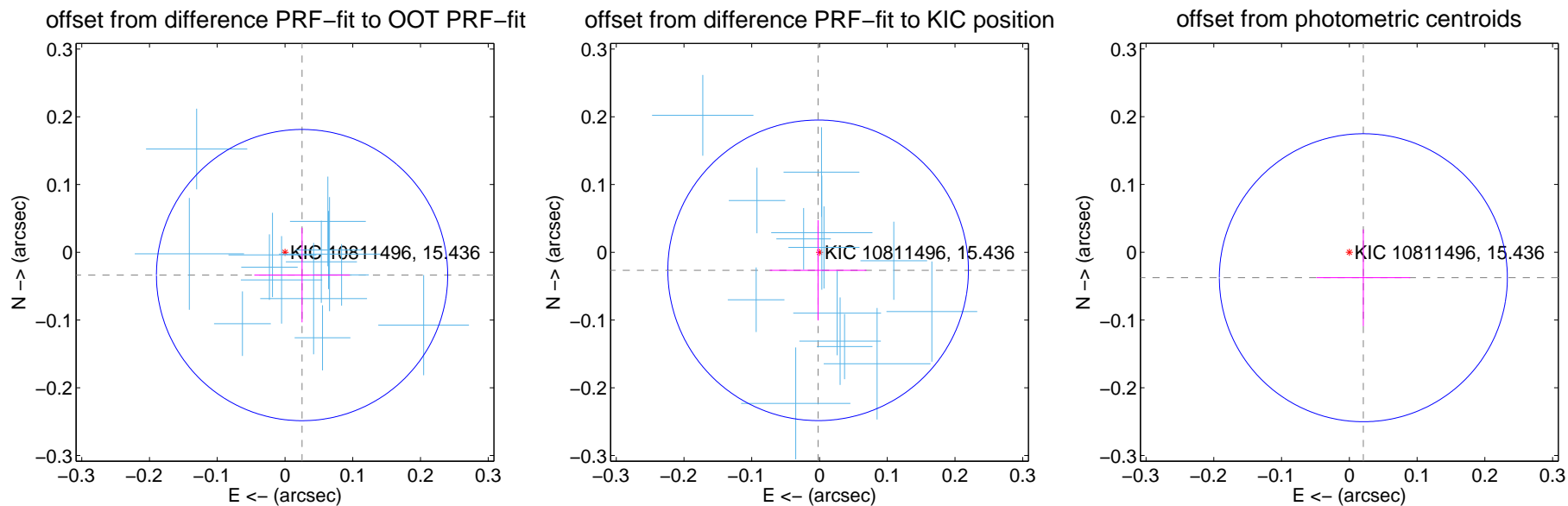
## DV Centroid Data

Supplemental centroid analysis for 010811496-01. Kepler magnitude: 15.44. Transit SNR 181.56

There are 14 quarters with good PRF difference image offsets

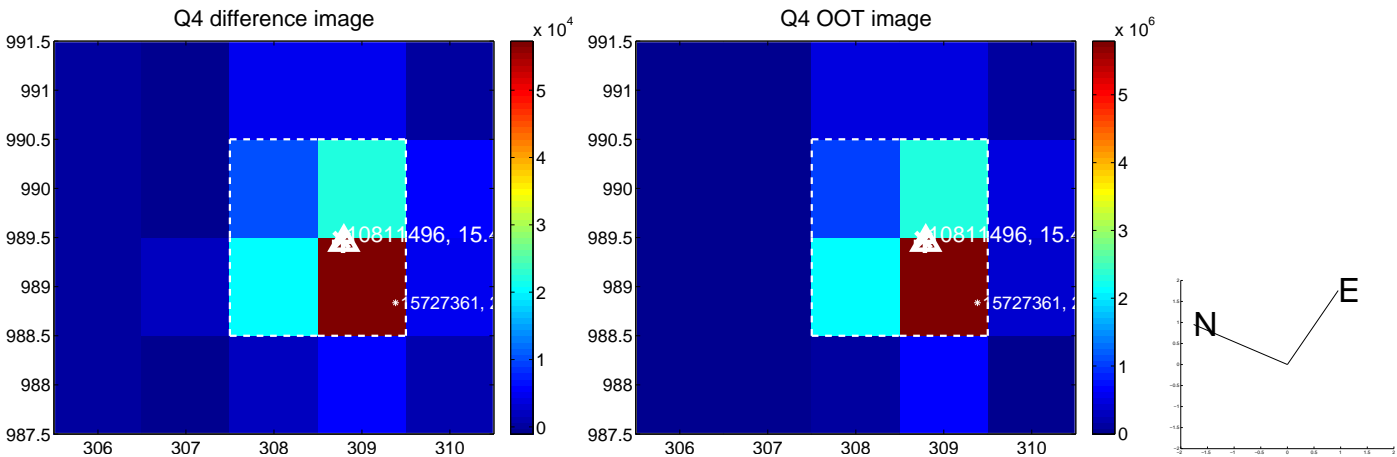
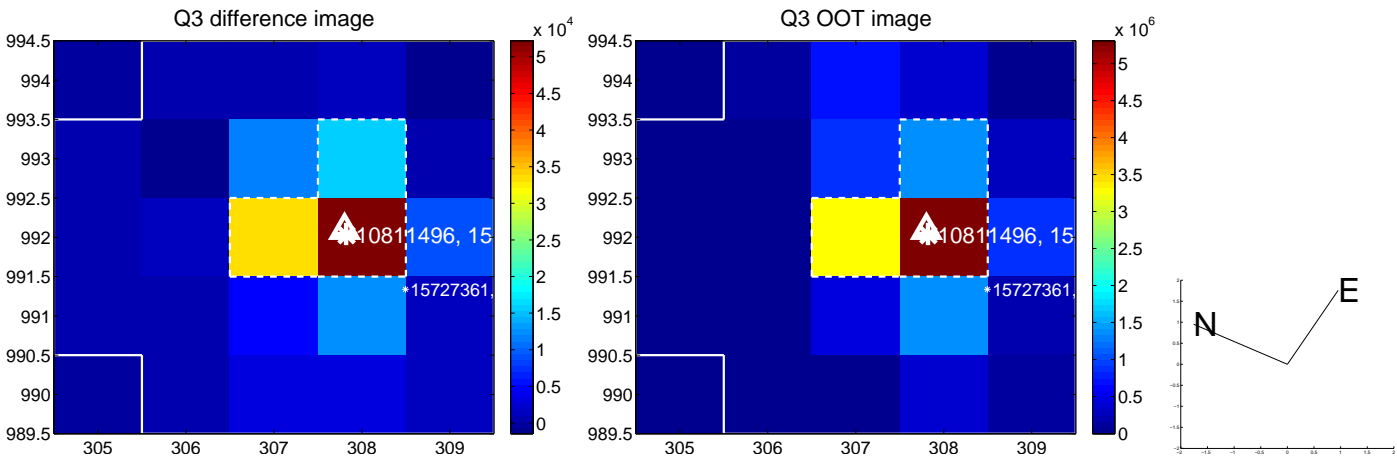
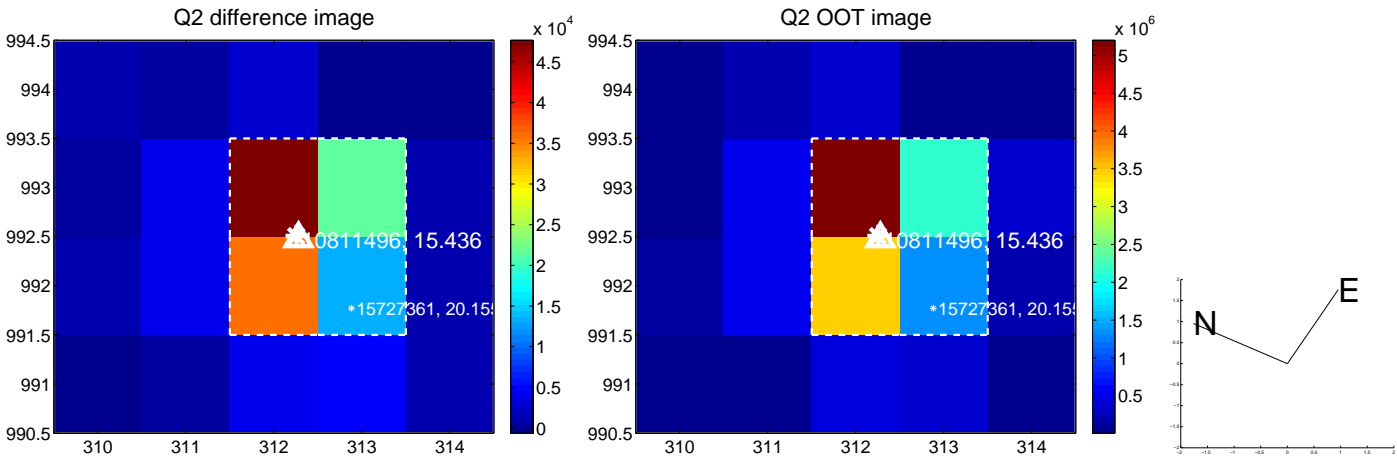
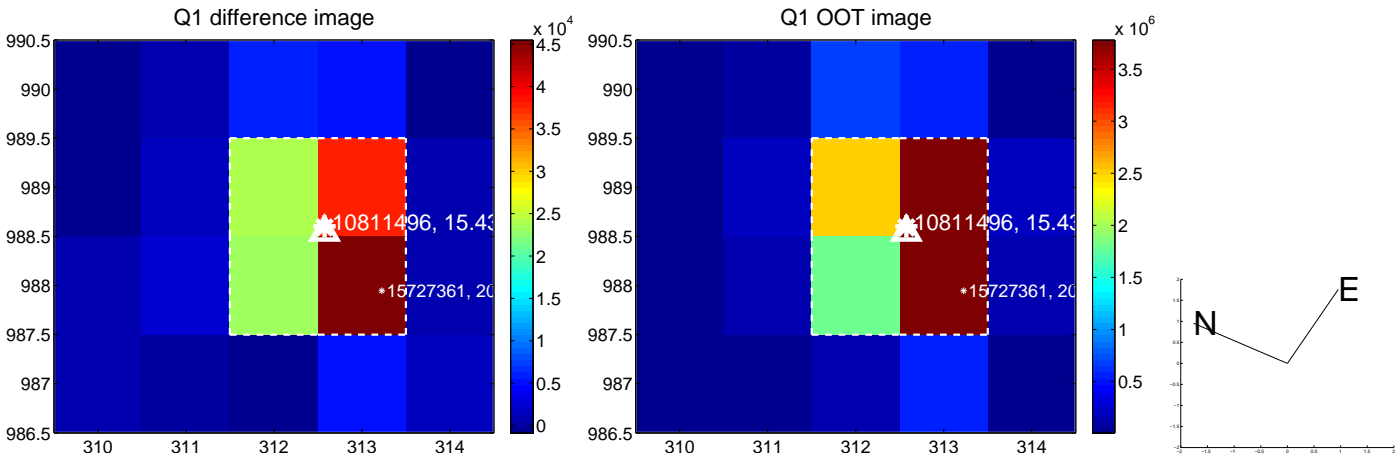
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.042 \pm 0.072$	0.59	$-0.025 \pm 0.070$	$-0.034 \pm 0.070$
PRF-fit source offset from KIC position	$0.027 \pm 0.074$	0.36	$0.002 \pm 0.071$	$-0.027 \pm 0.074$
photometric centroid source offset	$0.04 \pm 0.07$	0.61	$-0.02 \pm 0.07$	$-0.04 \pm 0.07$

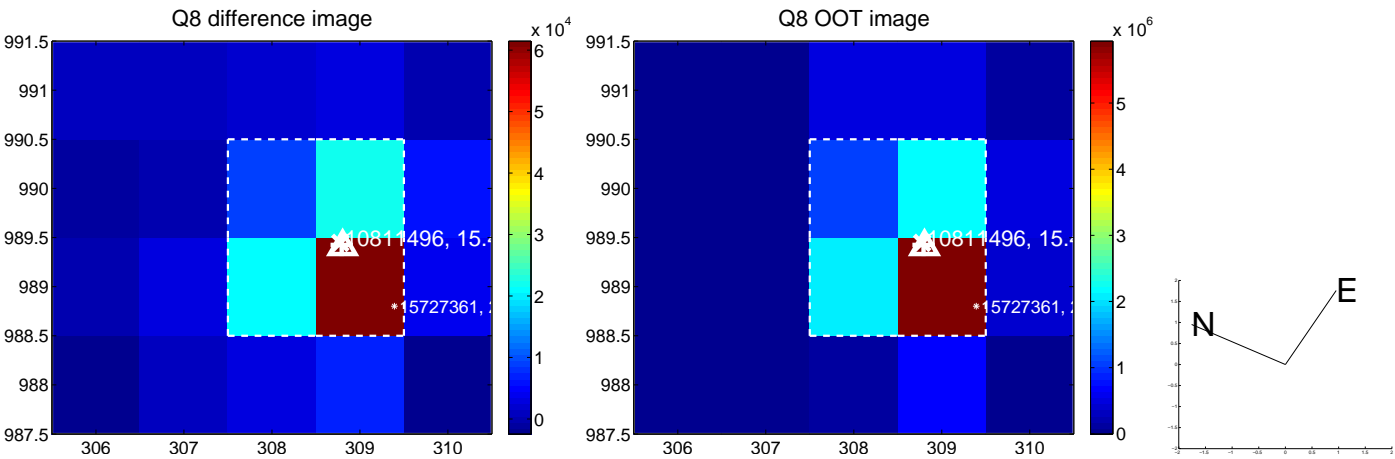
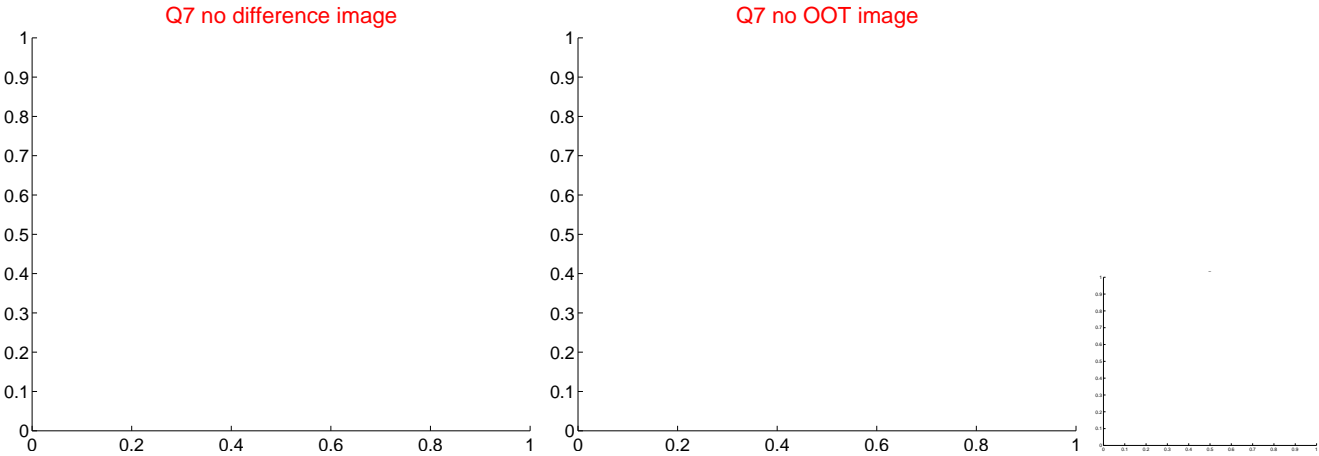
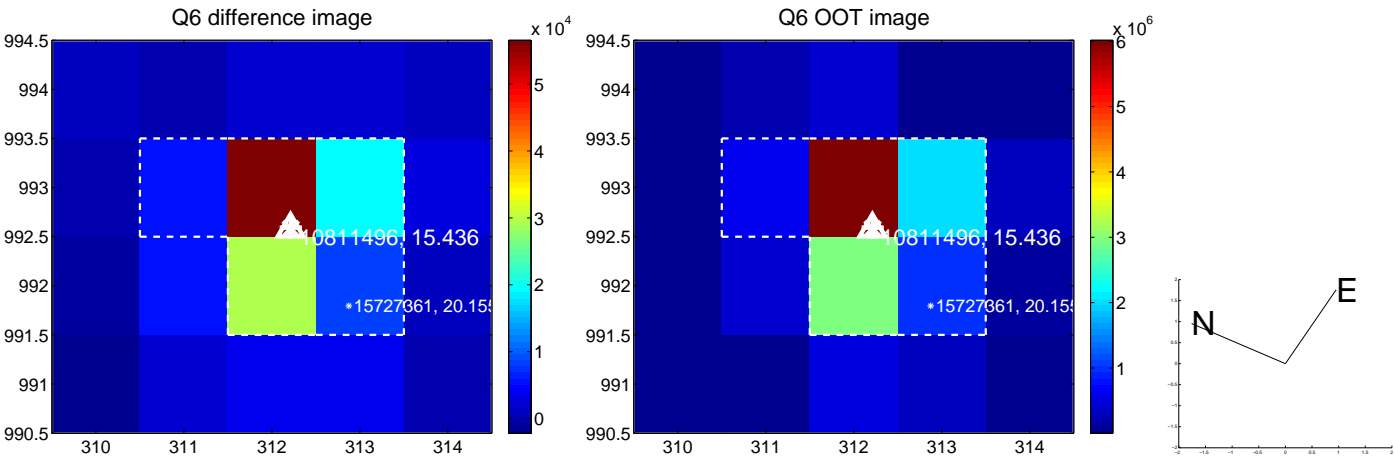
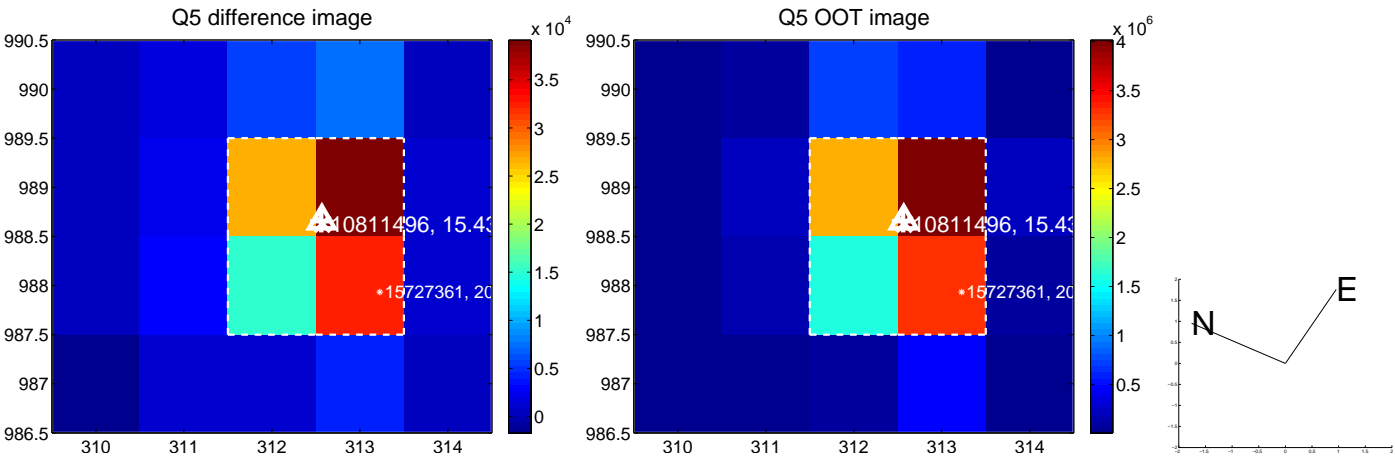


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

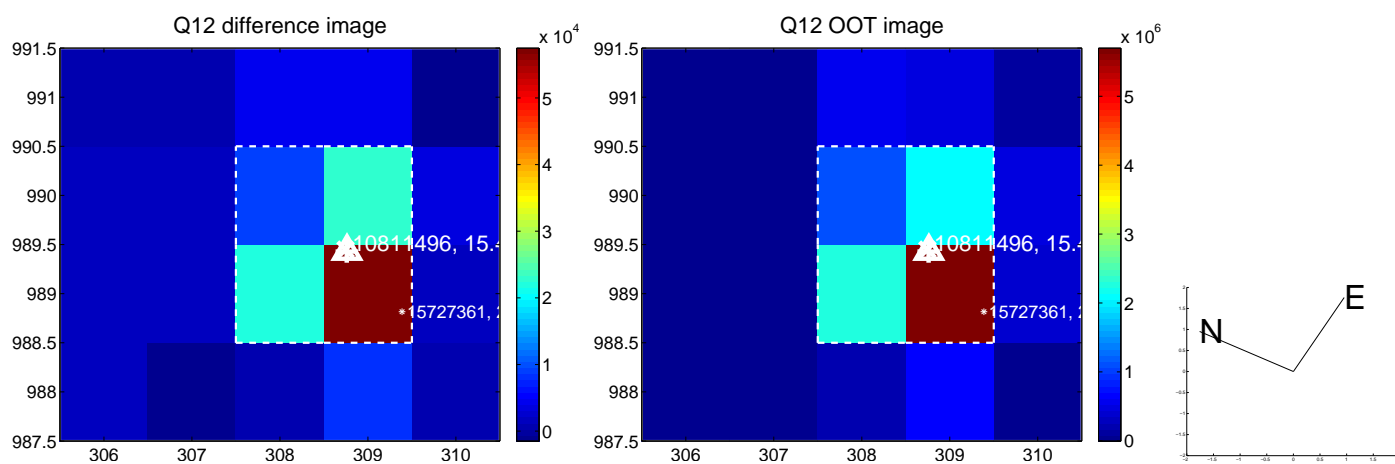
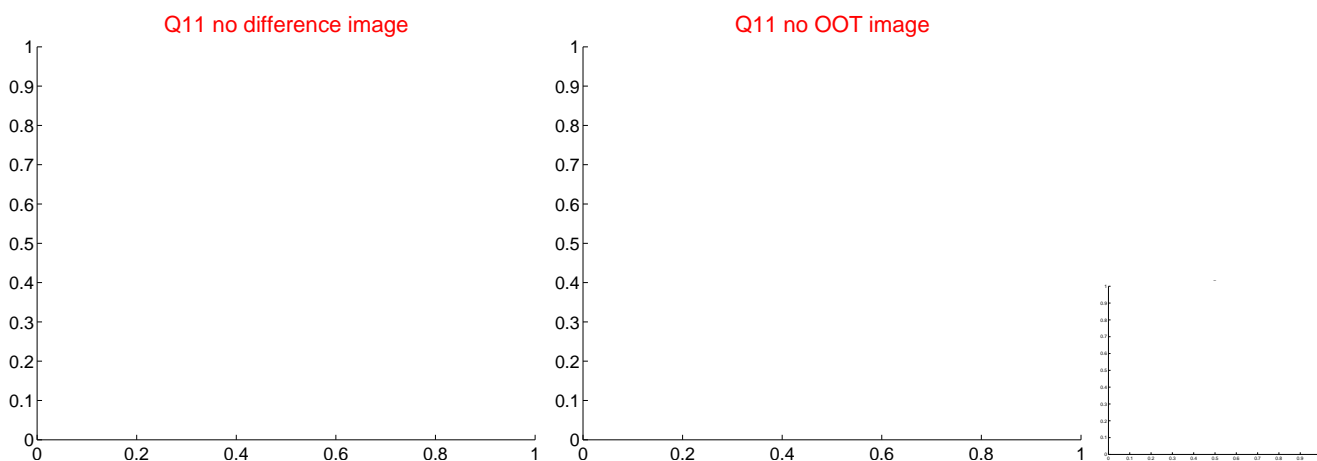
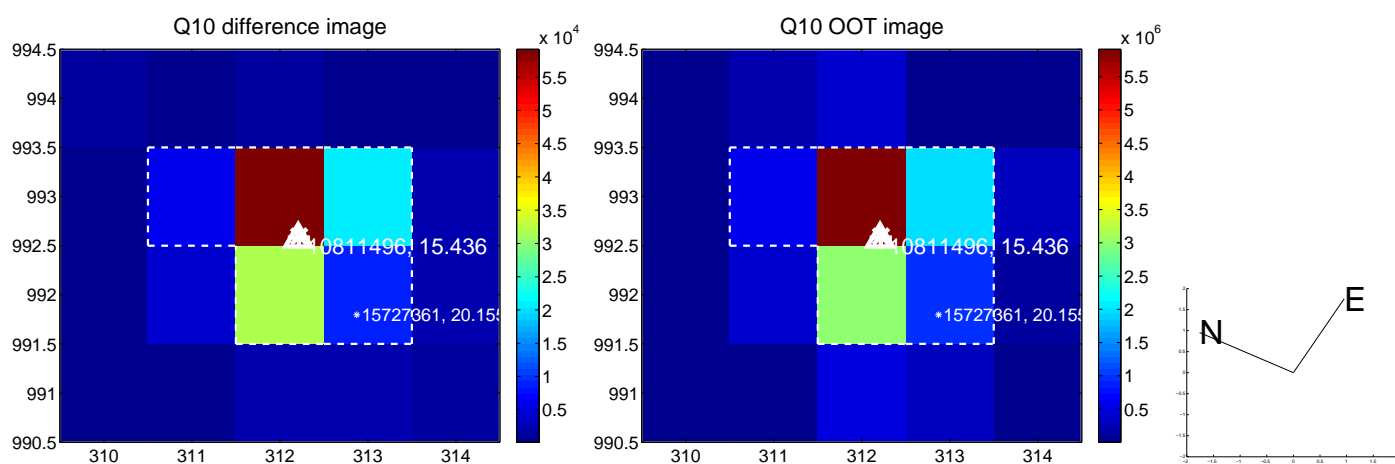
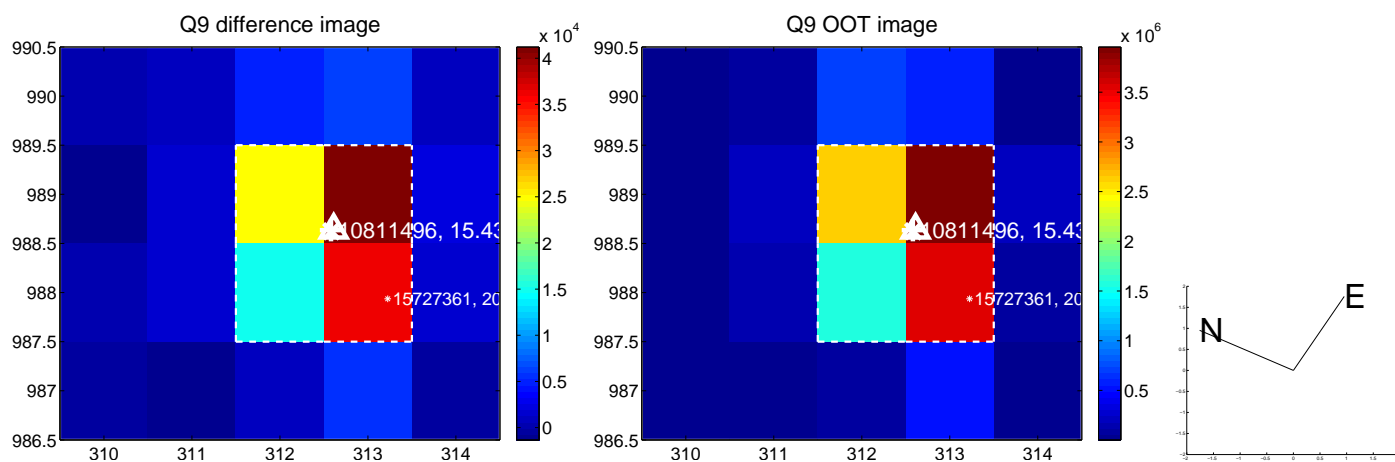


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

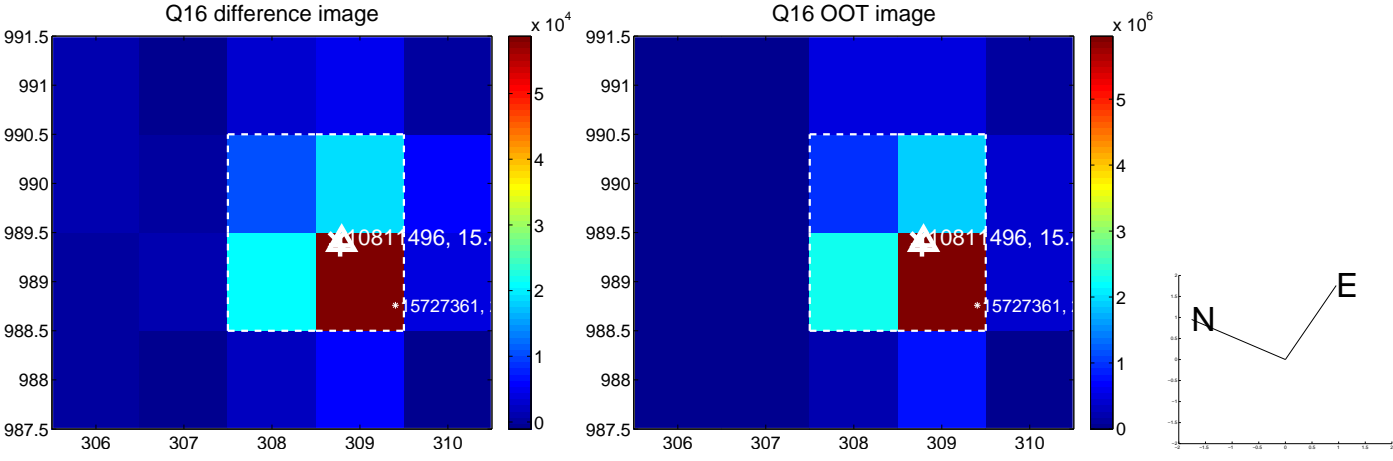
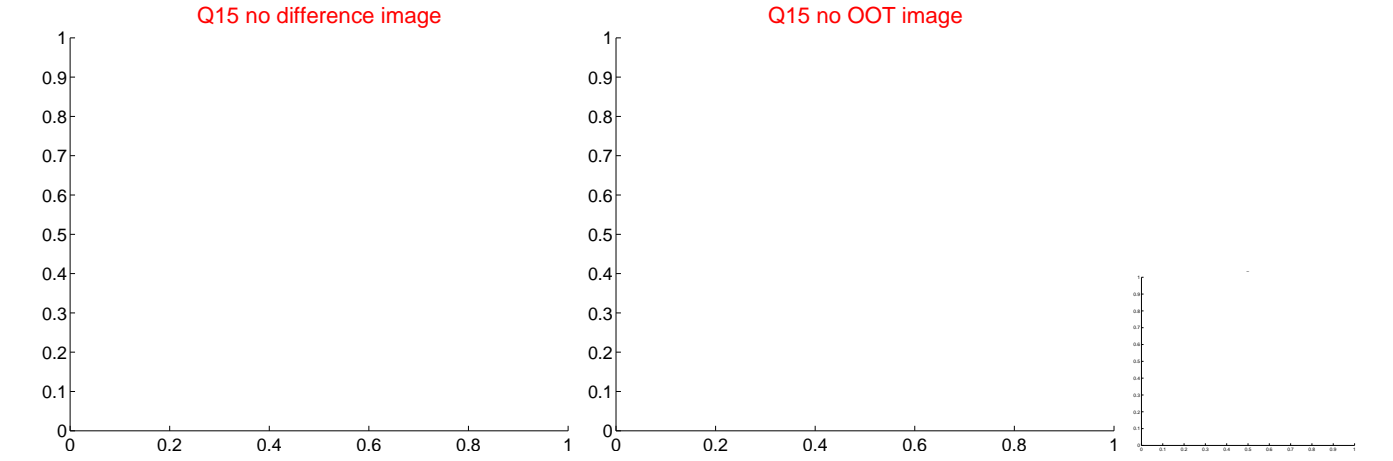
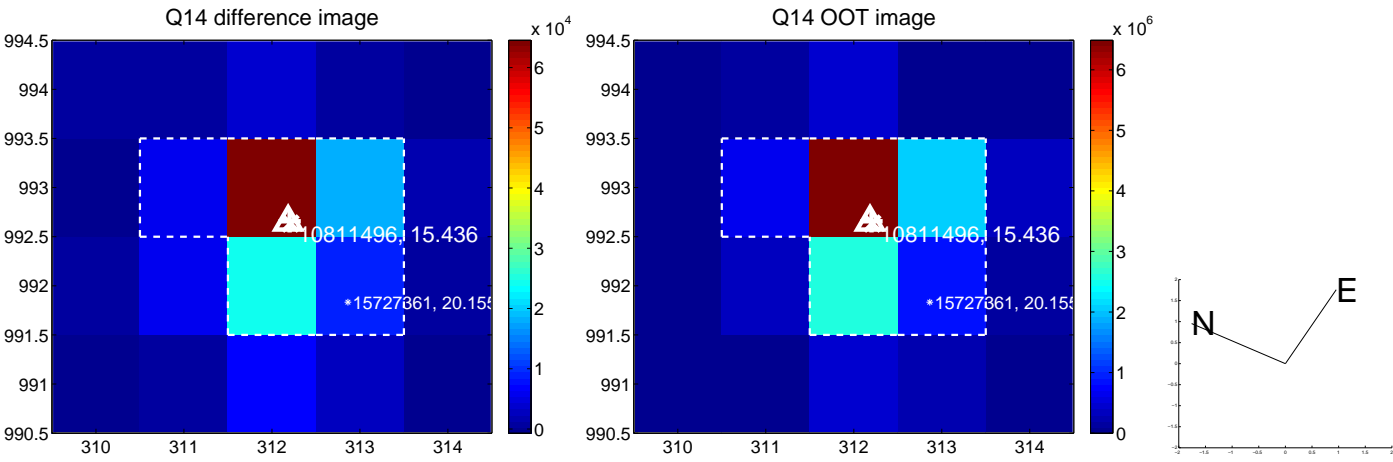
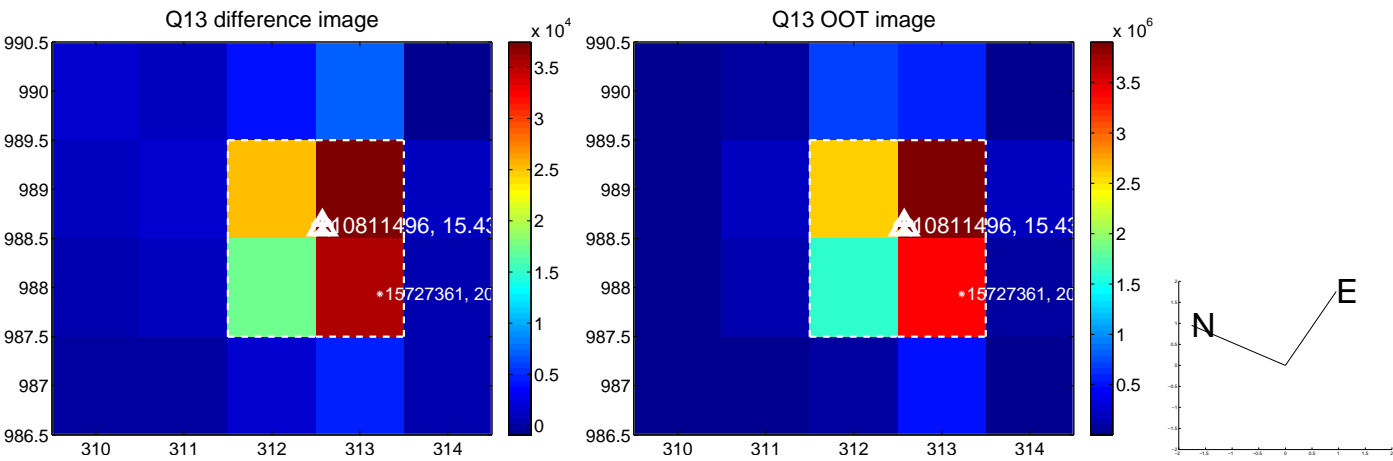




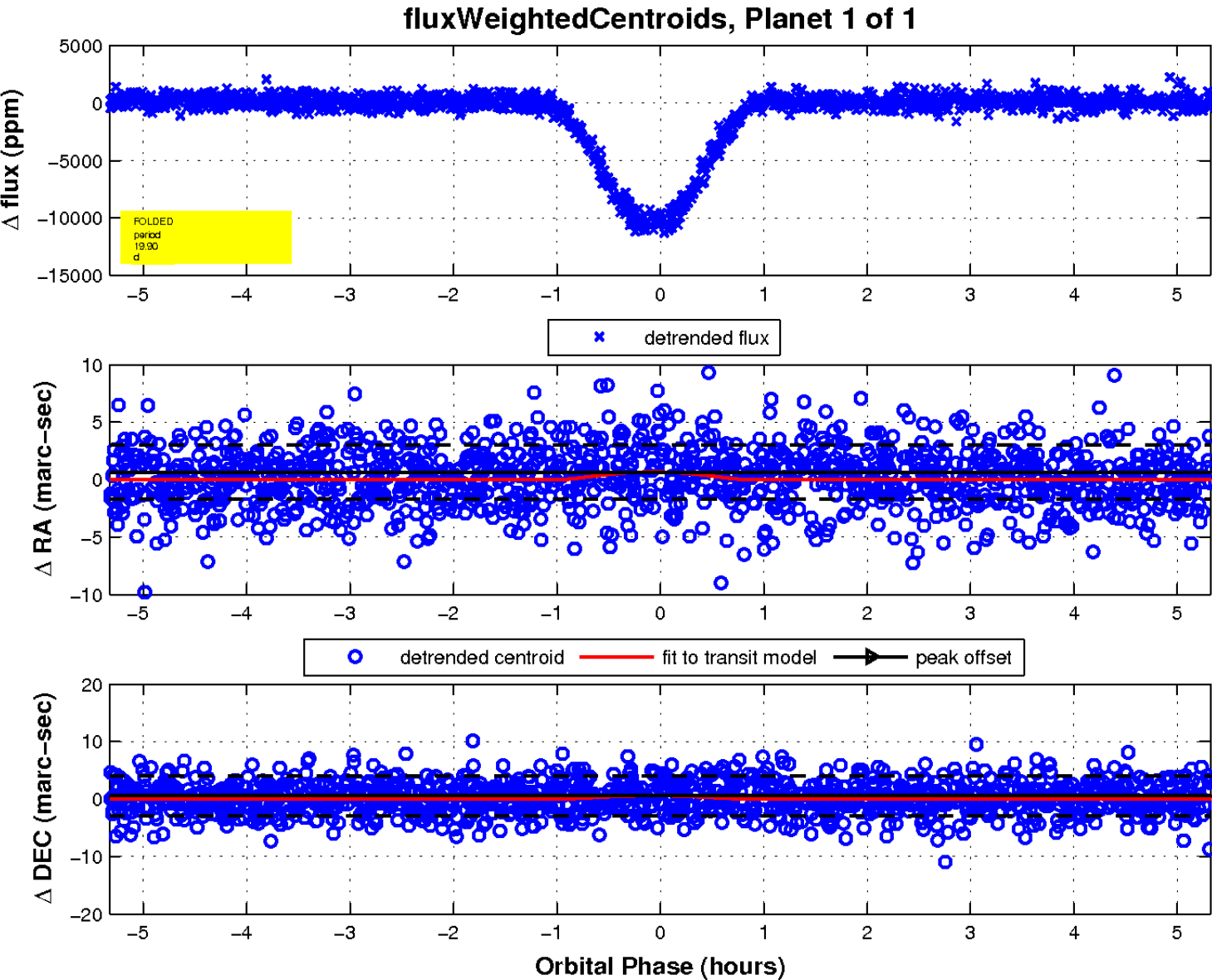
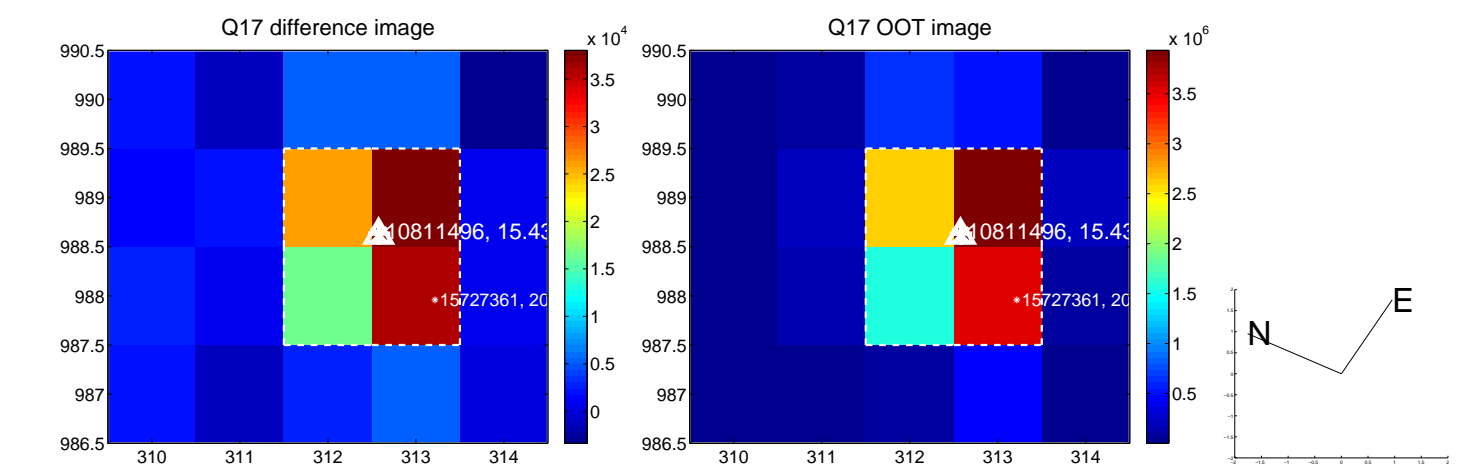
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

