

# KIC 008029197

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R <sub>★</sub> (R <sub>☉</sub> )	T <sub>★</sub> (K)	R <sub>p</sub> (R <sub>⊕</sub> )	S <sub>p</sub> (S <sub>⊕</sub> )
008029197-01	OBS	4147.01	2.152906	132.372063	36.5	2.839	12.1	16.9	1.55	5851	0.98	2718.12

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008029197-01	OBS	FP	0.00	0	0	0	1	EPHEM_MATCH

**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.

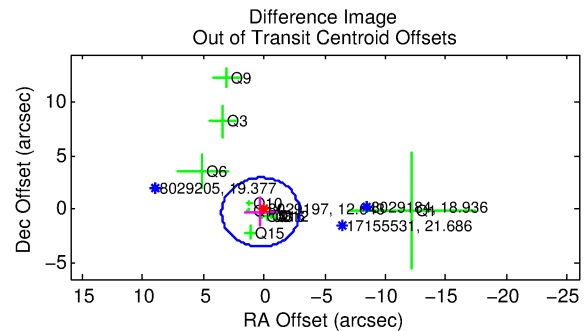
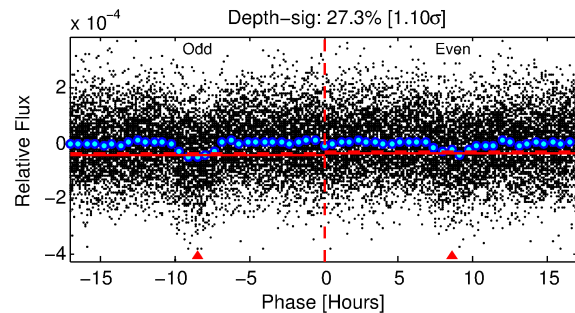
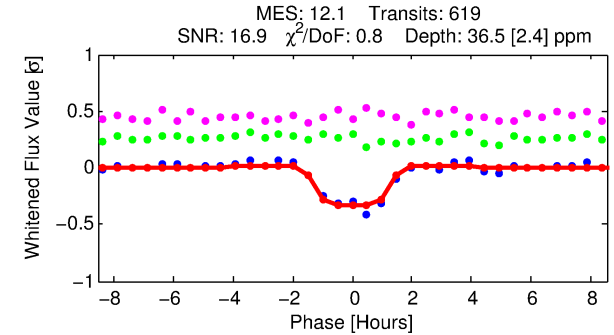
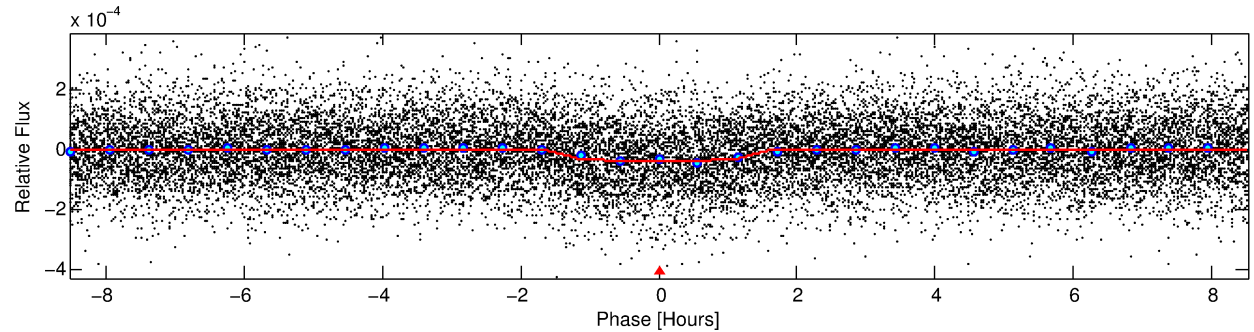
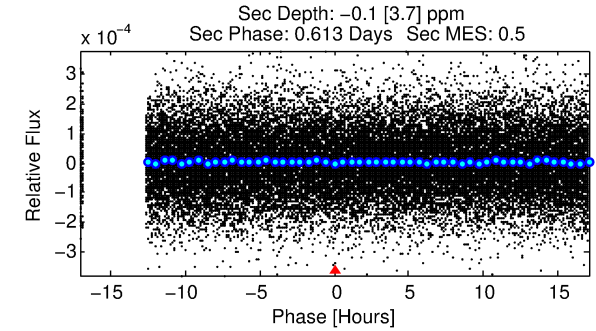
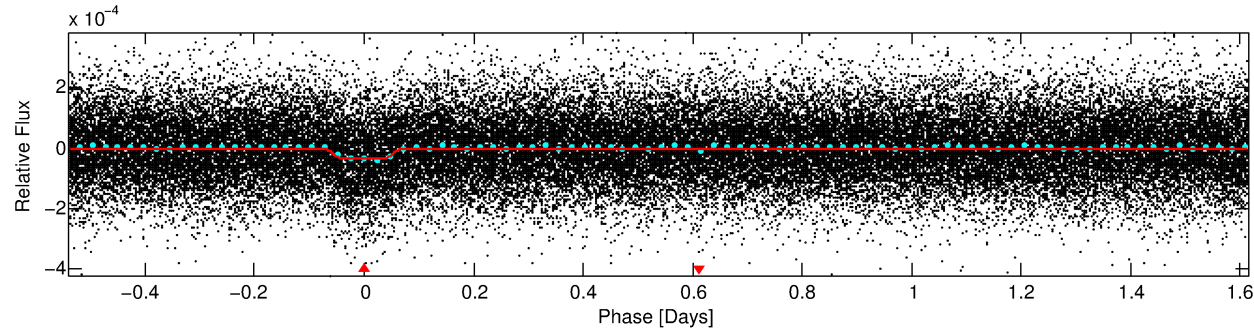
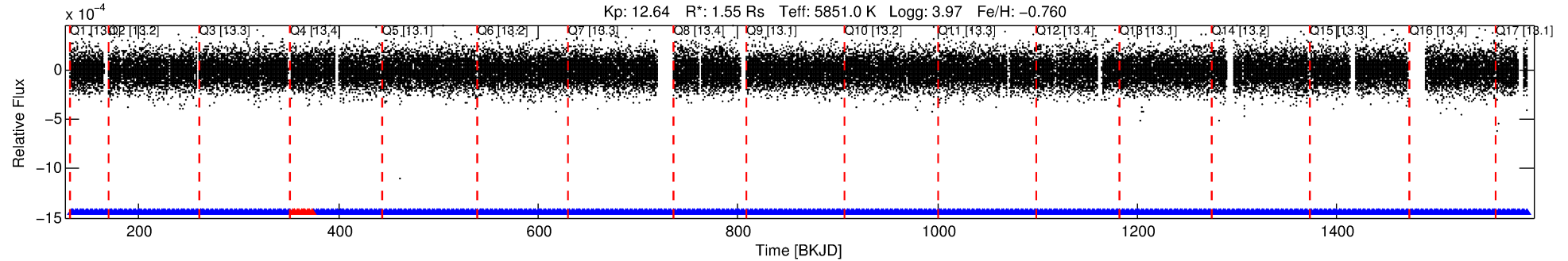
## Ephemeris Match Information For 008029197-01

TCE (1)	KIC	Parent (2)	Parent KIC	P <sub>1</sub> :P <sub>2</sub>	Dist (″)	ΔRow	ΔCol	m <sub>2</sub>	m <sub>1</sub>	D <sub>2</sub> /D <sub>1</sub>	Mechanism	Flag	σ <sub>P</sub>	σ <sub>T</sub>
008029197-01	8029197	6964.01	8098300	1:2	293.3	74	-1	12.82	12.65	10188.00	Col-Anomaly	0	3.40	1.21

**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m<sub>2</sub> and m<sub>1</sub> are the magnitudes of the parent and child. D<sub>2</sub>/D<sub>1</sub> is the parent's transit depth divided by the child's. σ<sub>P</sub> and σ<sub>T</sub> are the significance of the match in period and epoch. For a match to be considered significant σ<sub>P</sub> < 5.0 and σ<sub>T</sub> < 5.0. Matches which have σ<sub>P</sub> and σ<sub>T</sub> very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 8029197 Candidate: 1 of 1 Period: 2.153 d  
KOI: K04147.01 Corr: 0.954



## DV Fit Results:

Period = 2.15291 [0.00001] d  
Epoch = 132.3721 [0.0025] BKJD  
Rp/R\* = 0.0058 [0.0011]  
a/R\* = 4.80 [4.38]  
b = 0.58 [1.08]  
Seff = 2718.12 [1659.73]  
Teq = 1841 [281] K  
Rp = 0.98 [0.40] Re  
a = 0.0306 [0.0112] AU  
Ag = N/A  
Teffp = N/A

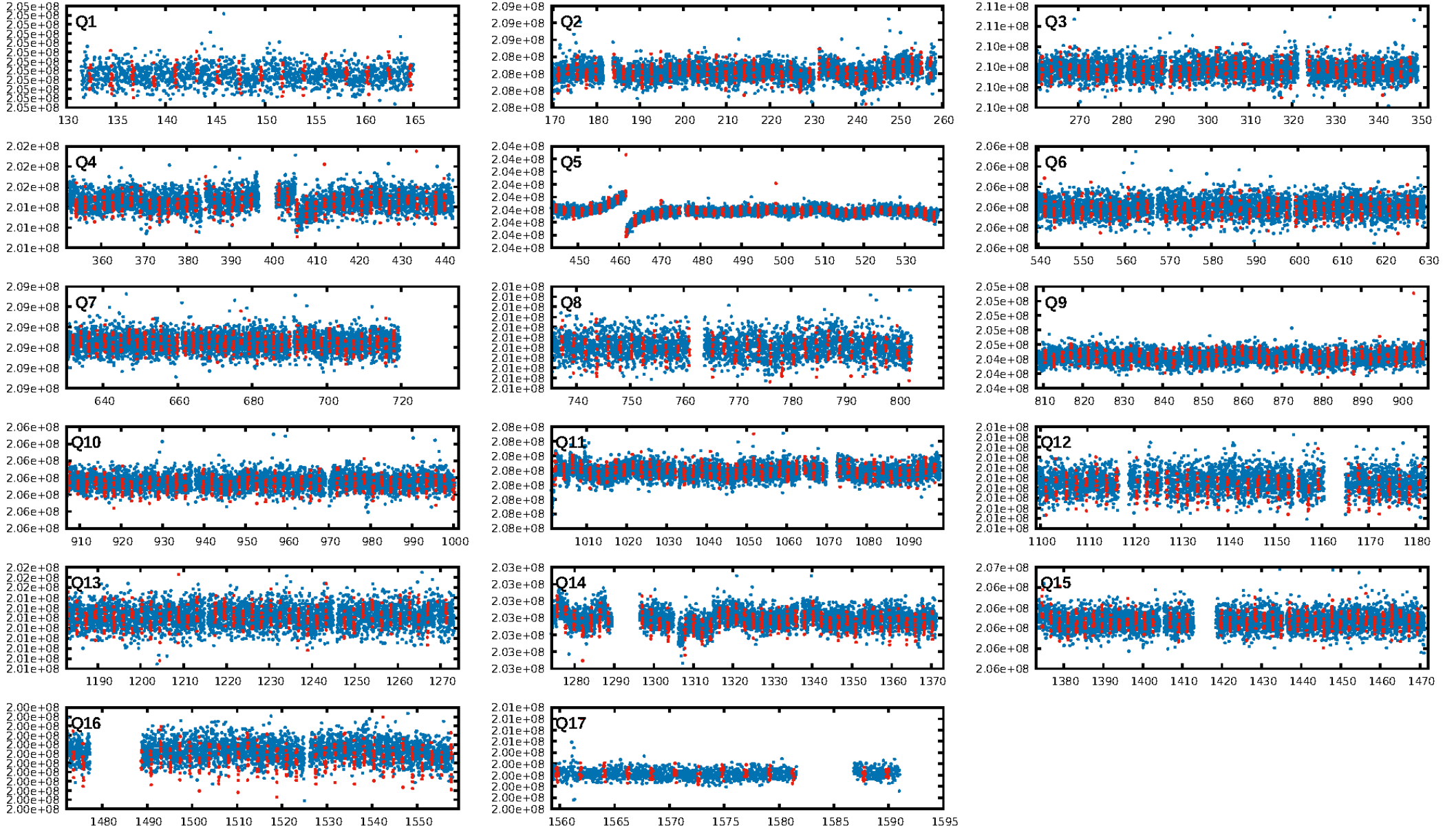
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGoF-sig: N/A  
Bootstrap-pfa: 1.99e-32  
RollingBand-fgt: 0.98 [580/590]  
GhostDiagnostic-chr: 3.819  
Centroid-sig: 0.1%  
Centroid-so: 1.738 arcsec [2.52σ]  
OotOffset-rm: 0.392 arcsec [0.36σ]  
KicOffset-rm: 0.226 arcsec [0.21σ]  
OotOffset-st: 3/2/4/2 [11]  
KicOffset-st: 3/2/4/2 [11]  
DiffImageQuality-fgm: 0.64 [7/11]  
DiffImageOverlap-fno: 1.00 [17/17]

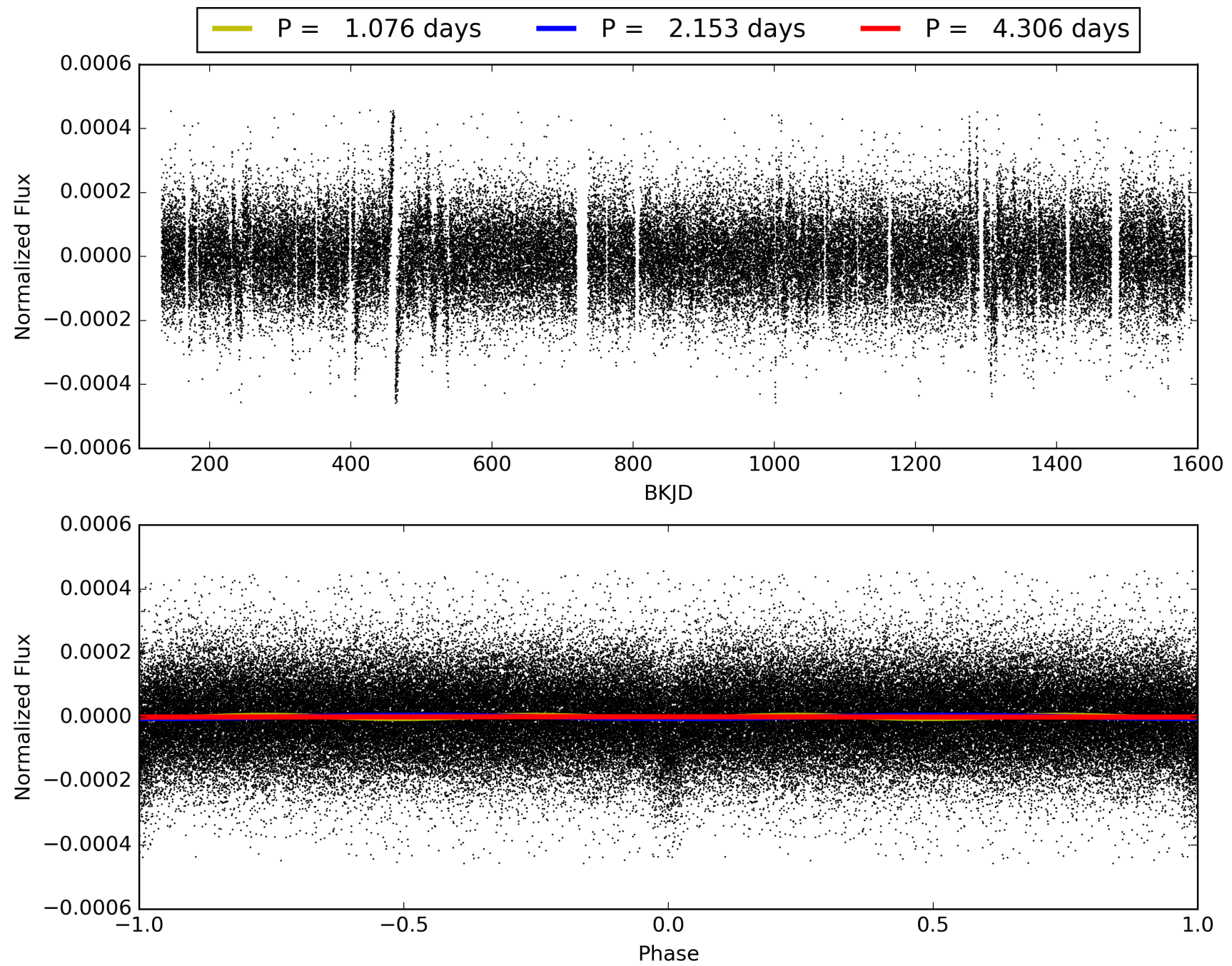
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:04:18 Z

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

# TCE 008029197-01, PDC Light Curves

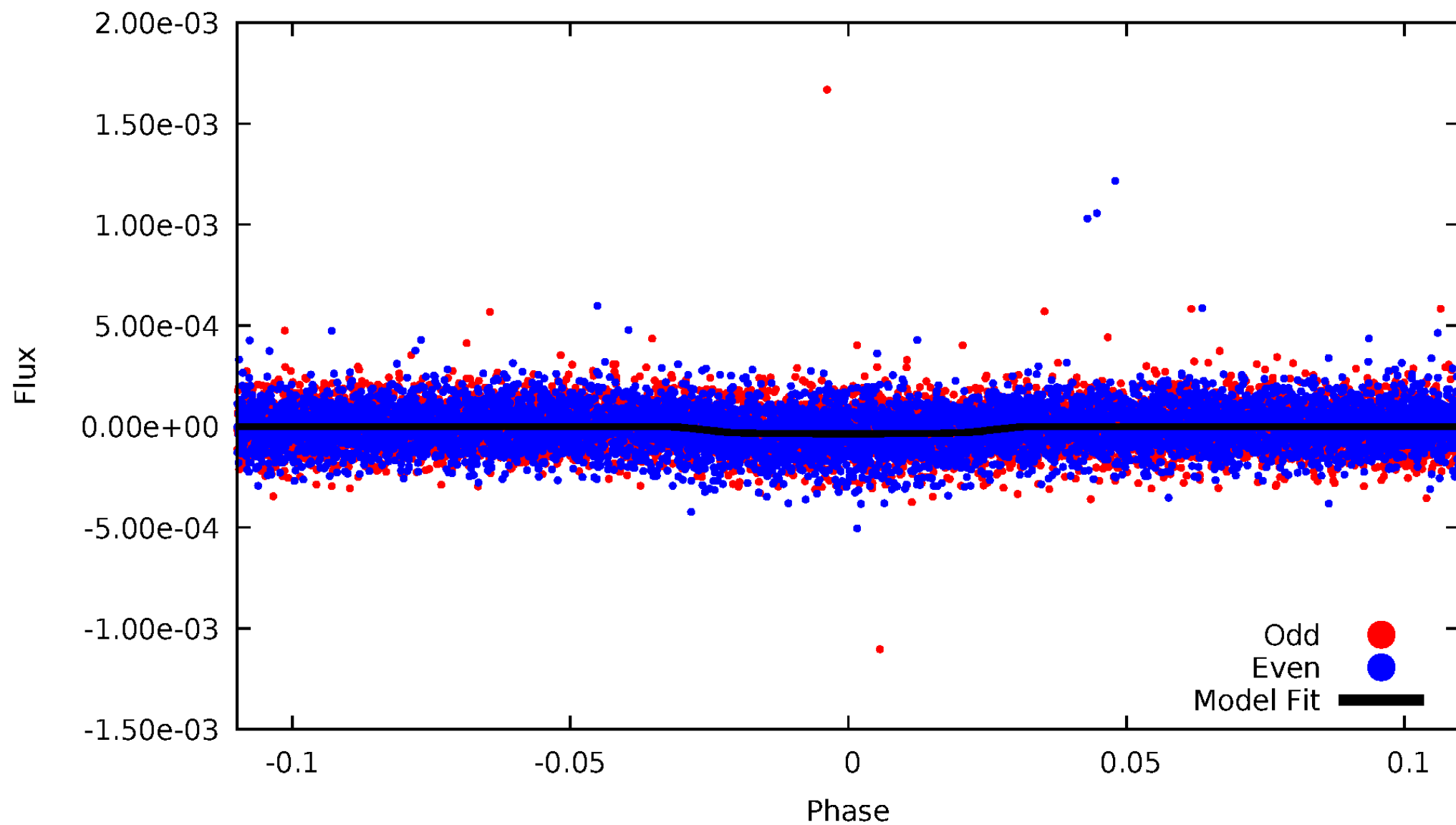


TCE 008029197-01



# DV Odd/Even

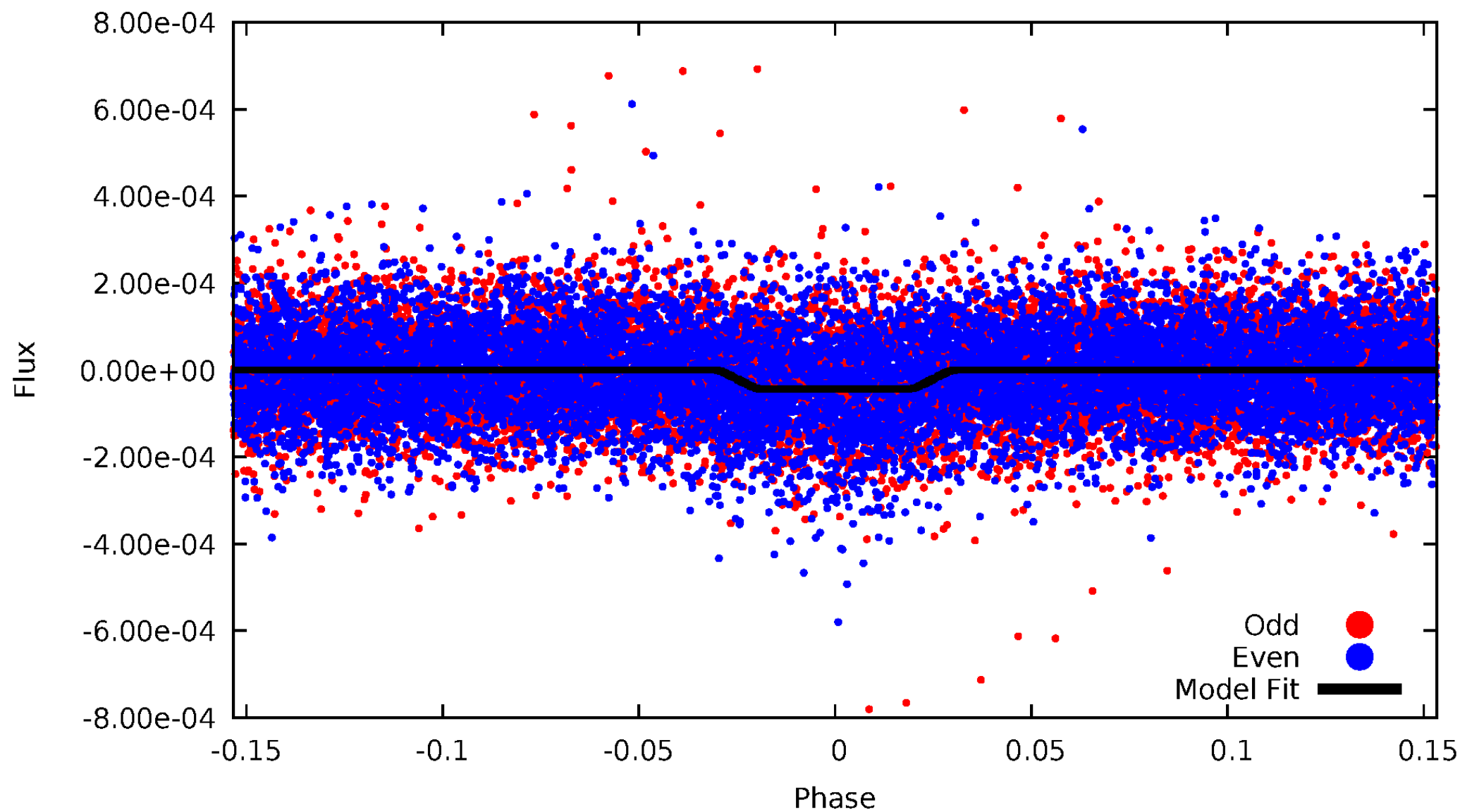
TCE 008029197-01





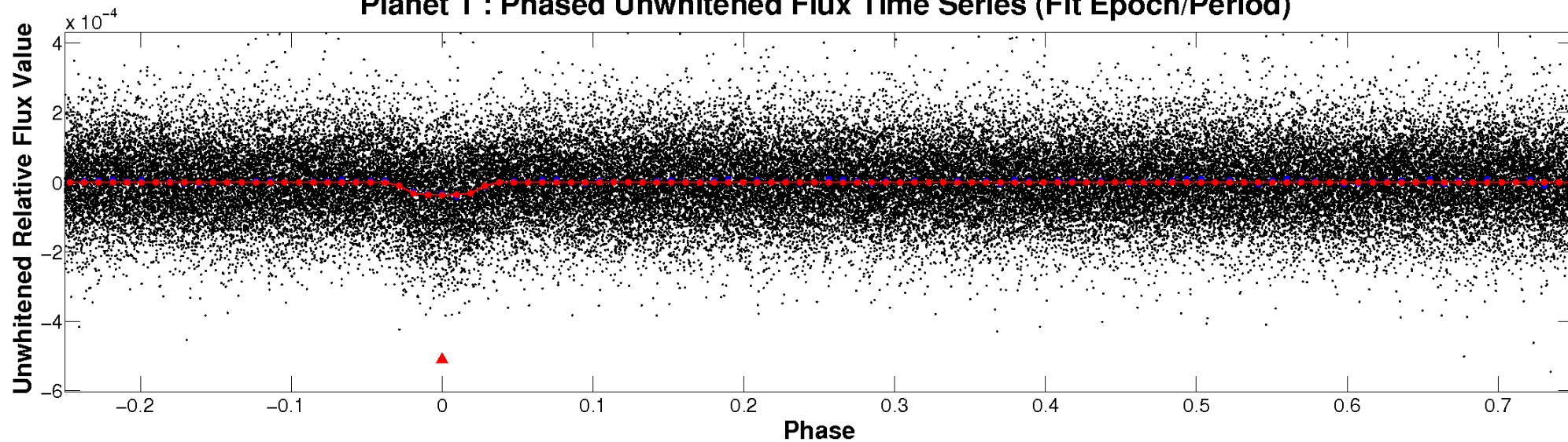
# ALT Odd/Even

TCE 008029197-01

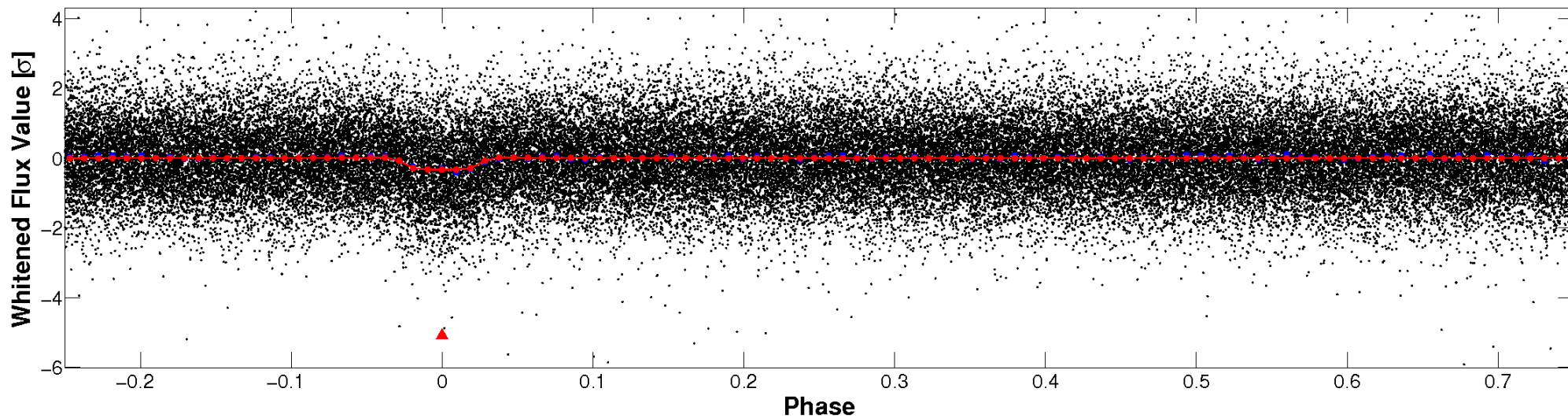


# Non-Whitened Vs. Whitened Light Curve

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

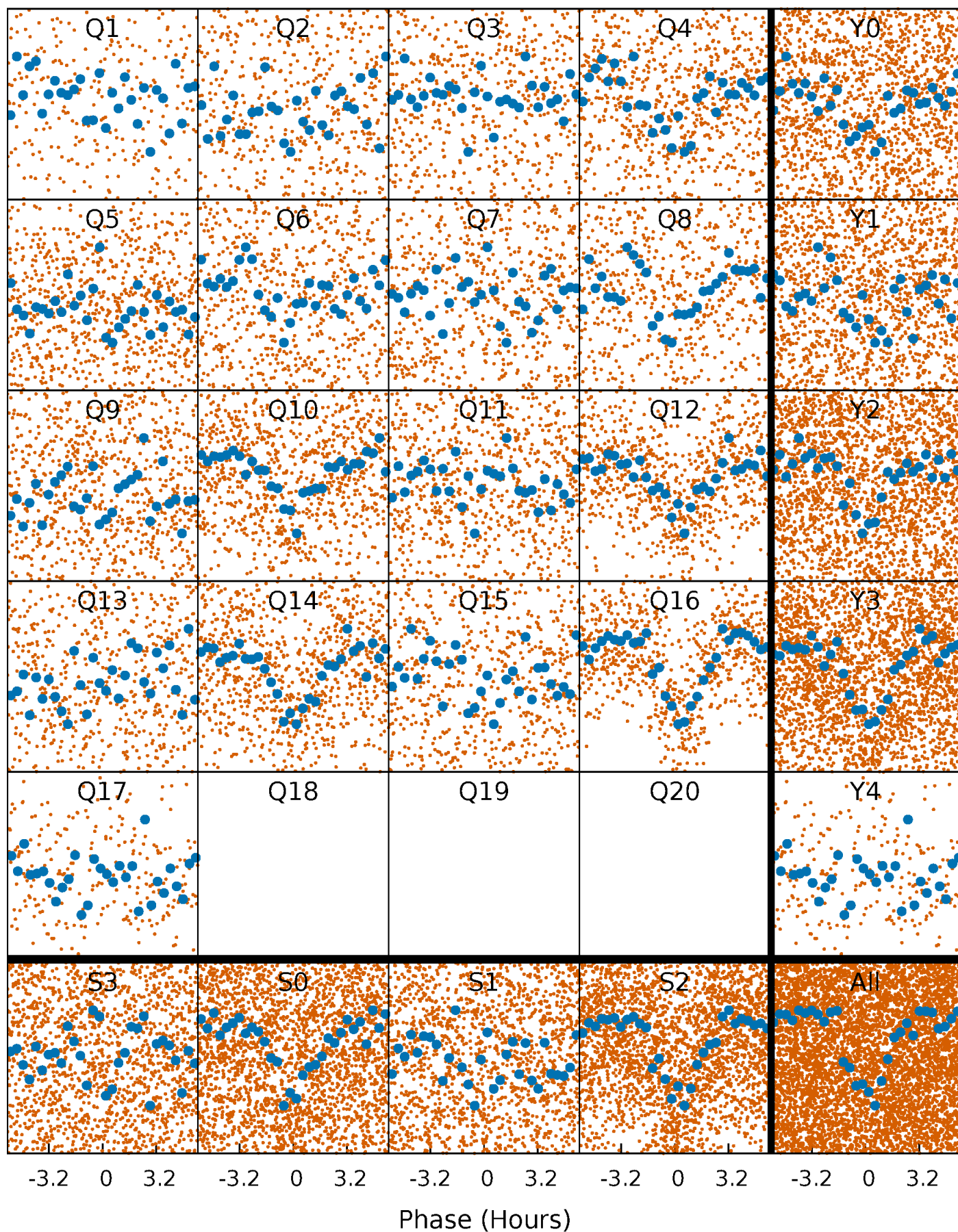


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

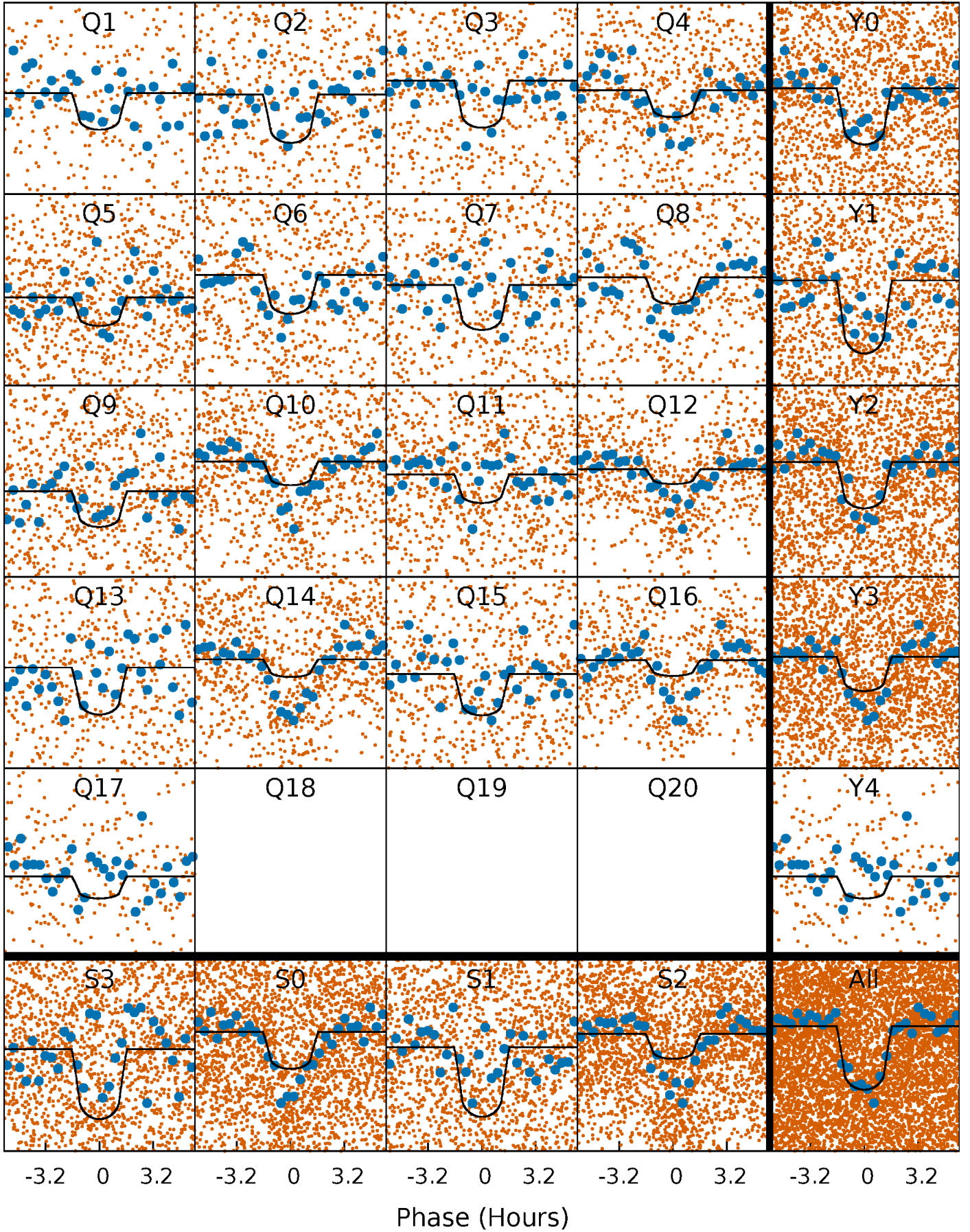
TCE 008029197-01 P= 2.152906 Days  $T_0=132.372063$  (BKJD)





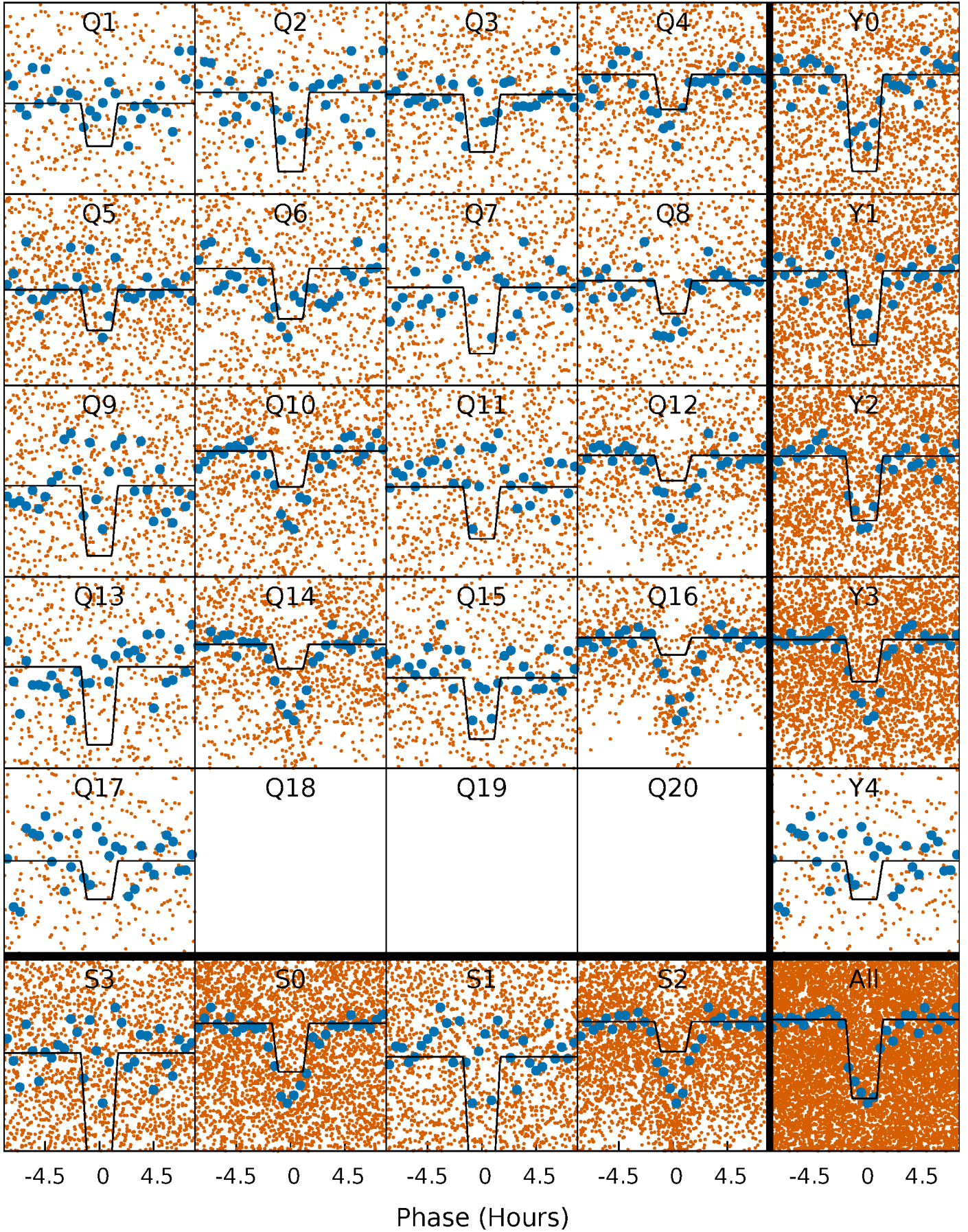
# DV Quarter-Phased Transit Curves

TCE 008029197-01 P= 2.152906 Days  $T_0=132.372063$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

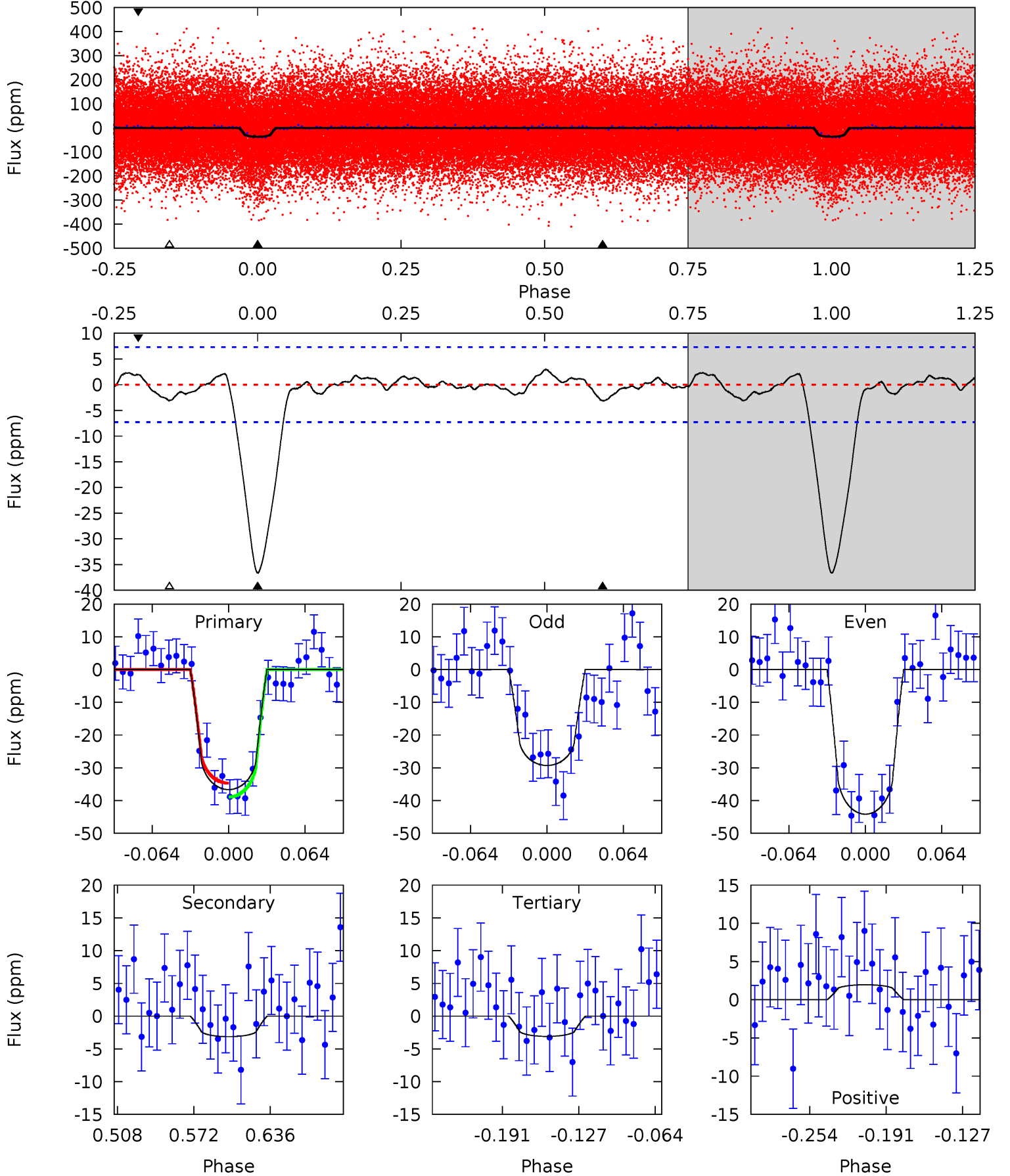
TCE 008029197-01 P= 2.152874 Days  $T_0=132.390809$  (BKJD)



# DV Model-Shift Uniqueness Test

008029197-01, P = 2.152906 Days, E = 130.219157 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
23.4	2.00	1.98	1.25	4.66	1.86	0.78	21.4	22.1	0.02	0.75	4.75	0.98	0.08	1.35

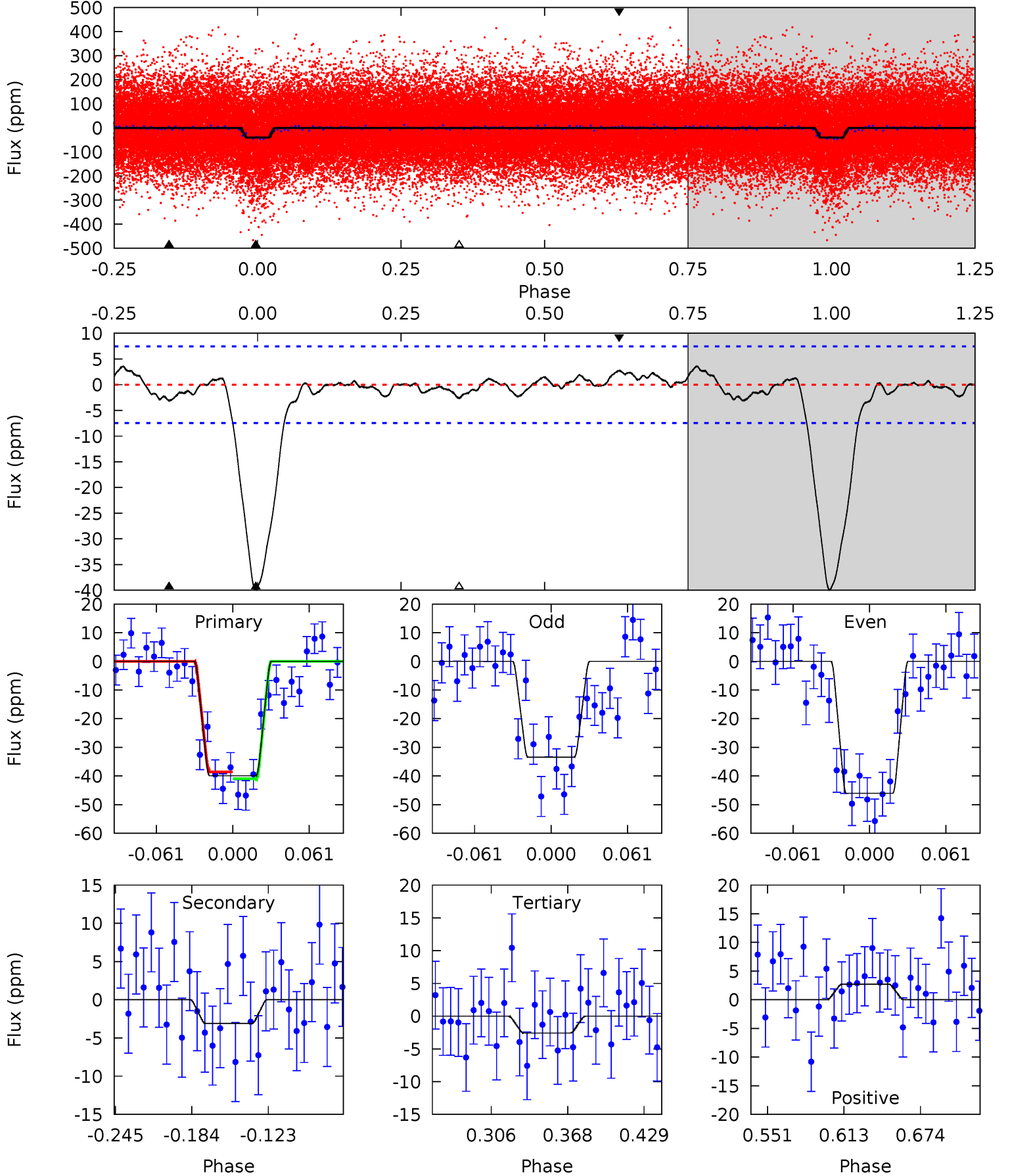




# Alt Model-Shift Uniqueness Test

008029197-01, P = 2.152874 Days, E = 130.237935 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
25.0	1.93	1.62	1.70	4.67	1.87	0.83	23.4	23.3	0.31	0.23	3.96	1.12	0.08	0.76





### Stellar Parameters For KIC 008029197

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5851^{+176}_{-132}$	$3.969^{+0.357}_{-0.153}$	$-0.760^{+0.350}_{-0.200}$	$1.555^{+0.375}_{-0.562}$	$0.821^{+0.120}_{-0.045}$	$0.308^{+0.786}_{-0.130}$
	+3%/-2%	+9%/-4%	+46%/-26%	+24%/-36%	+15%/-5%	+255%/-42%
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 008029197-01 / KOI 4147.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-3 \pm 2$	$0.94^{+0.26}_{-0.24}$	$2555^{+173}_{-265}$	$3546^{+424}_{-519}$	$1.745^{+1.853}_{-0.967}$
Alt.	$-3 \pm 2$	$1.08^{+0.30}_{-0.25}$	$2547^{+186}_{-237}$	$3362^{+390}_{-602}$	$1.337^{+1.274}_{-0.808}$

$T_{\text{max}}$  = 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

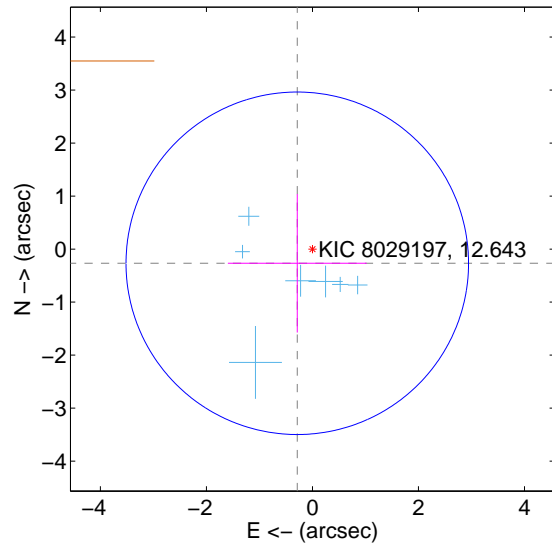
Supplemental centroid analysis for 008029197-01. Kepler magnitude: 12.64. Transit SNR 16.89

There are 7 quarters with good PRF difference image offsets

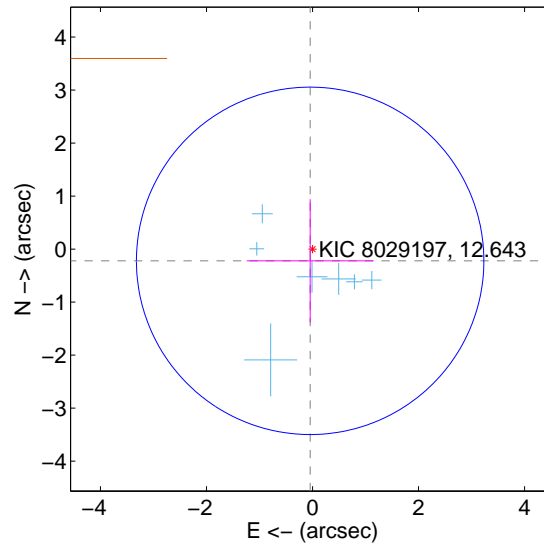
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.392 \pm 1.077$	0.36	$0.286 \pm 1.309$	$-0.268 \pm 1.307$
PRF-fit source offset from KIC position	$0.226 \pm 1.092$	0.21	$0.045 \pm 1.196$	$-0.221 \pm 1.162$
photometric centroid source offset	$1.74 \pm 0.69$	2.52	$1.62 \pm 0.67$	$-0.64 \pm 0.80$

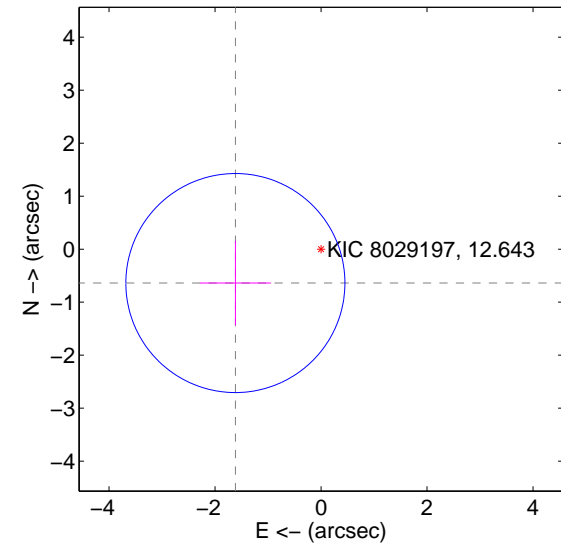
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

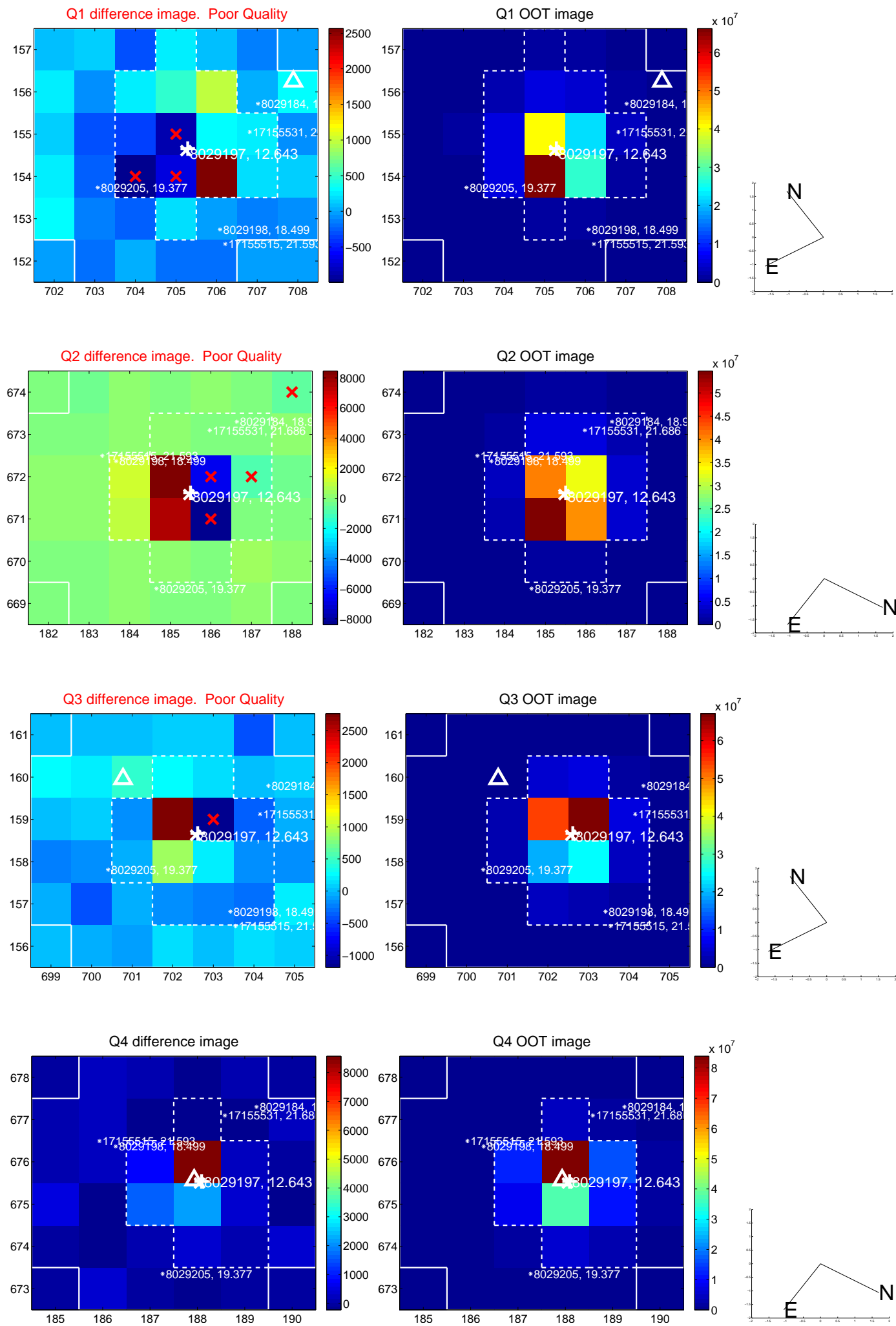


offset from photometric centroids

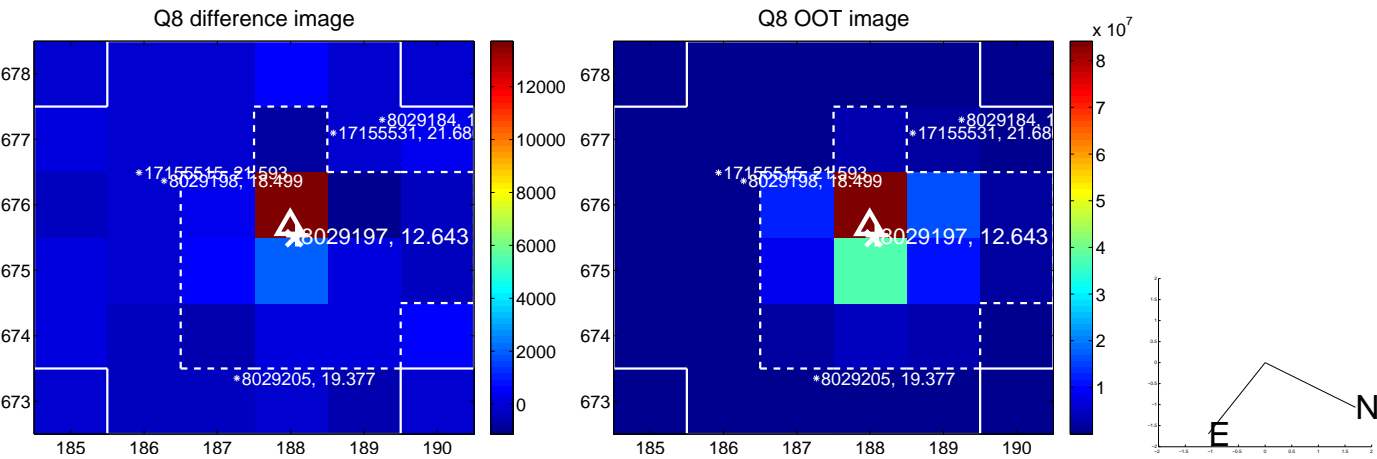
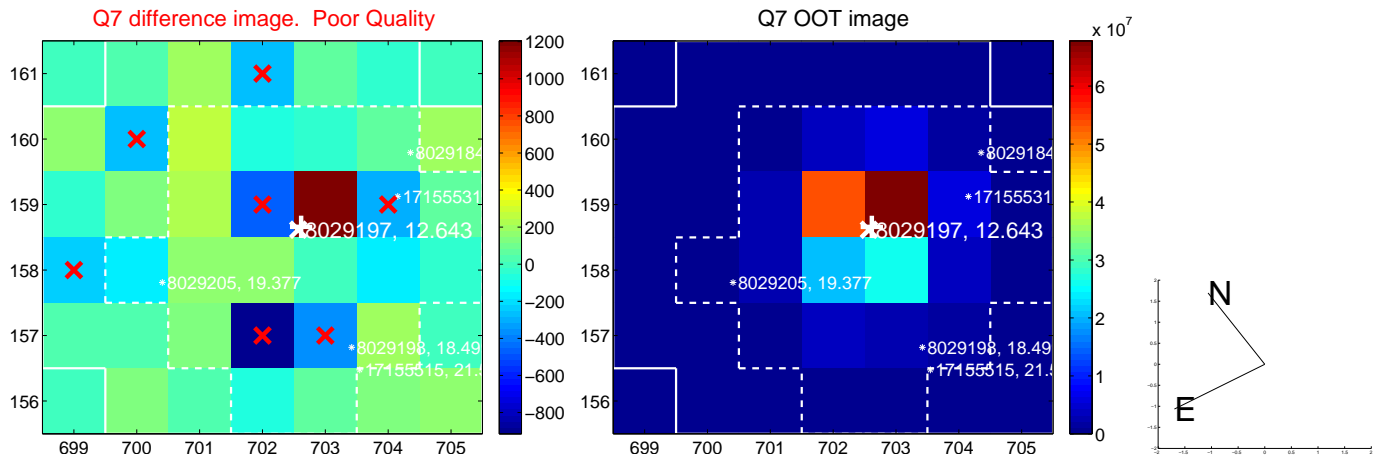
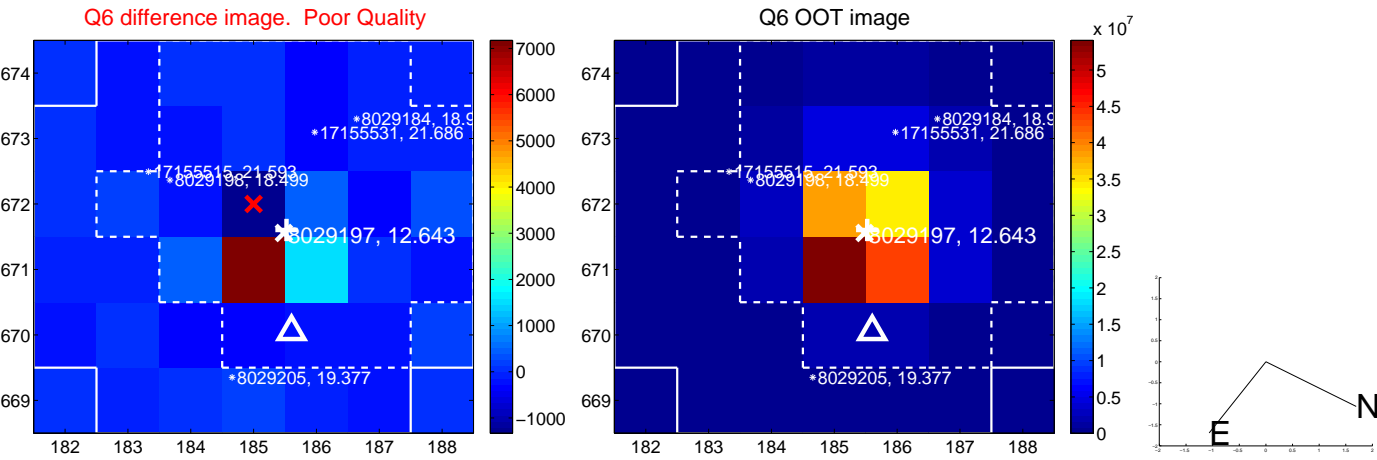
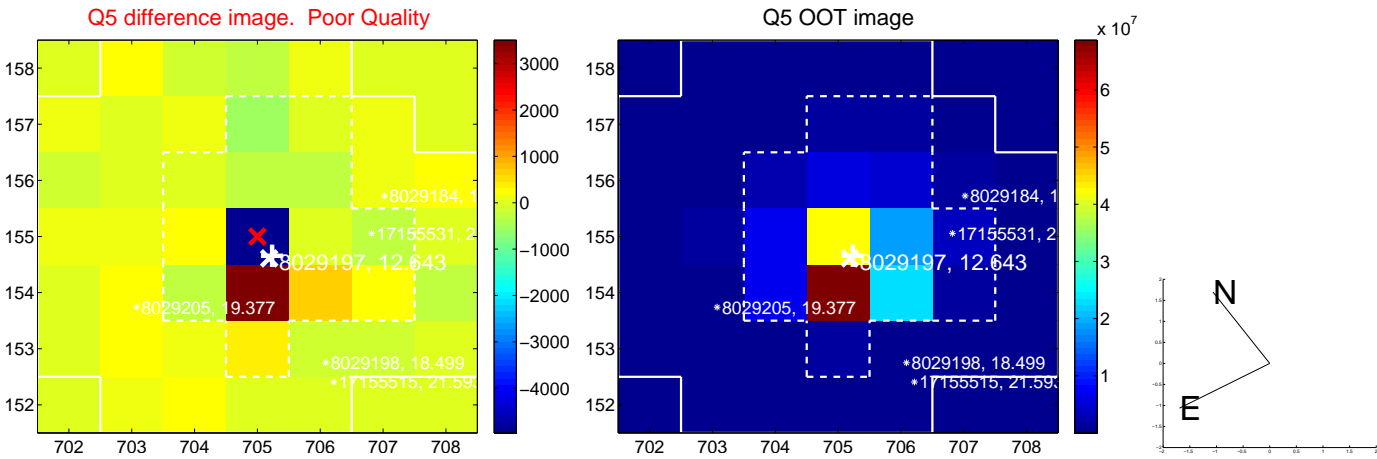


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

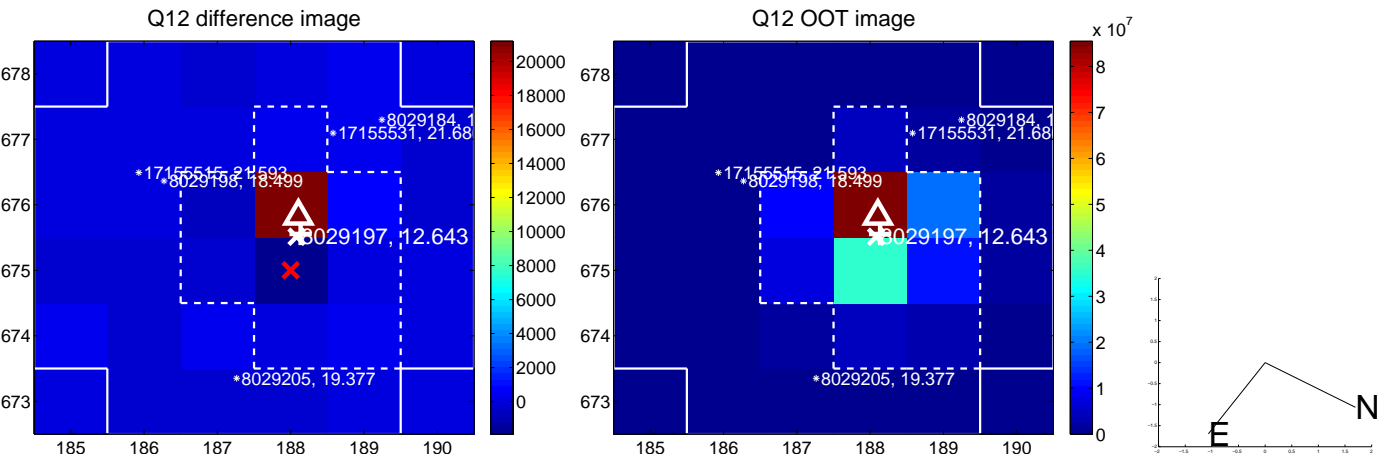
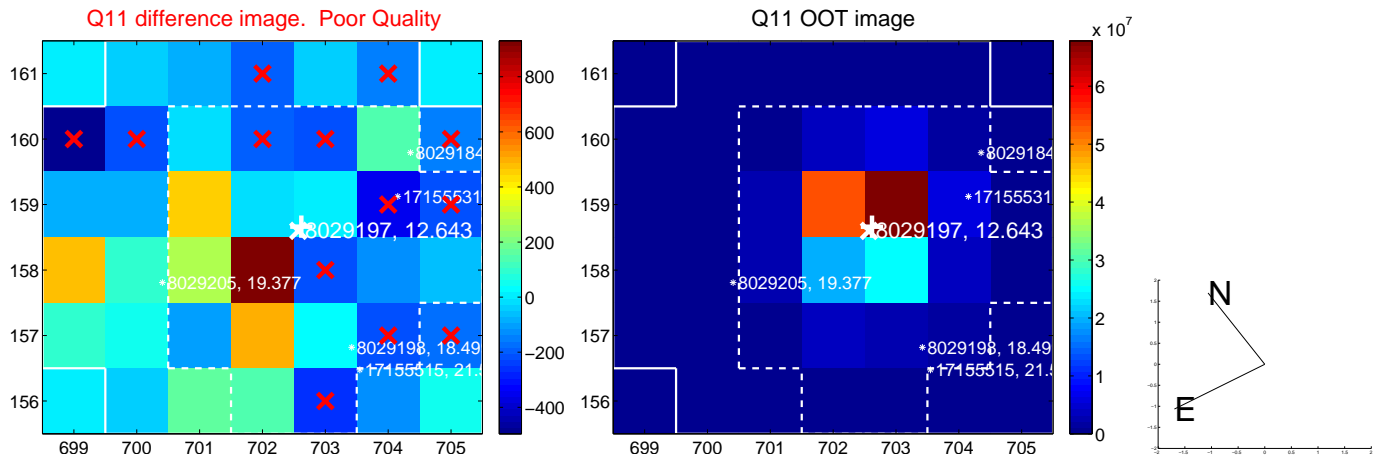
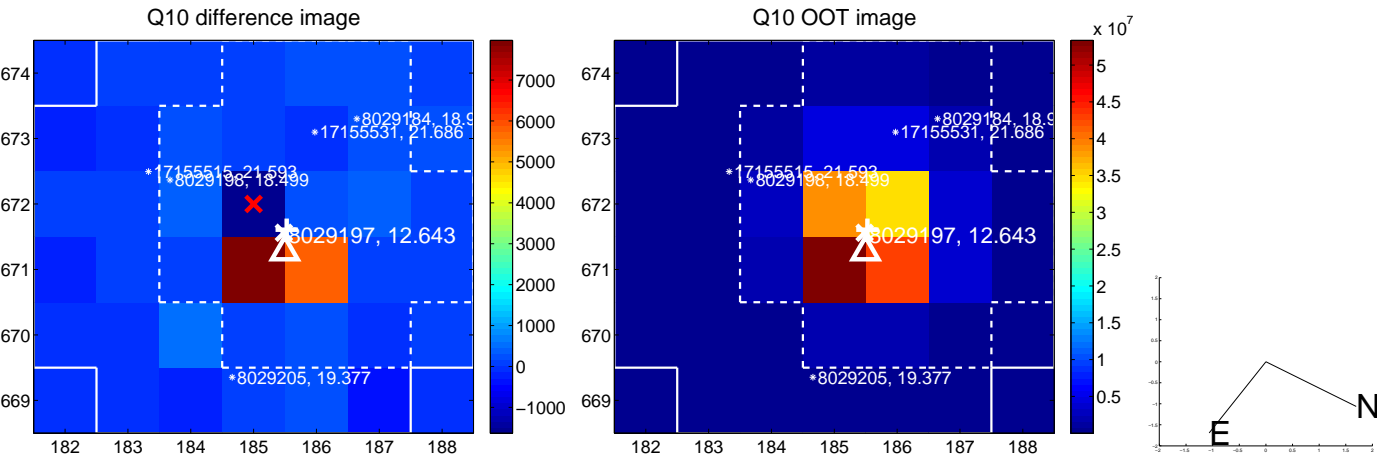
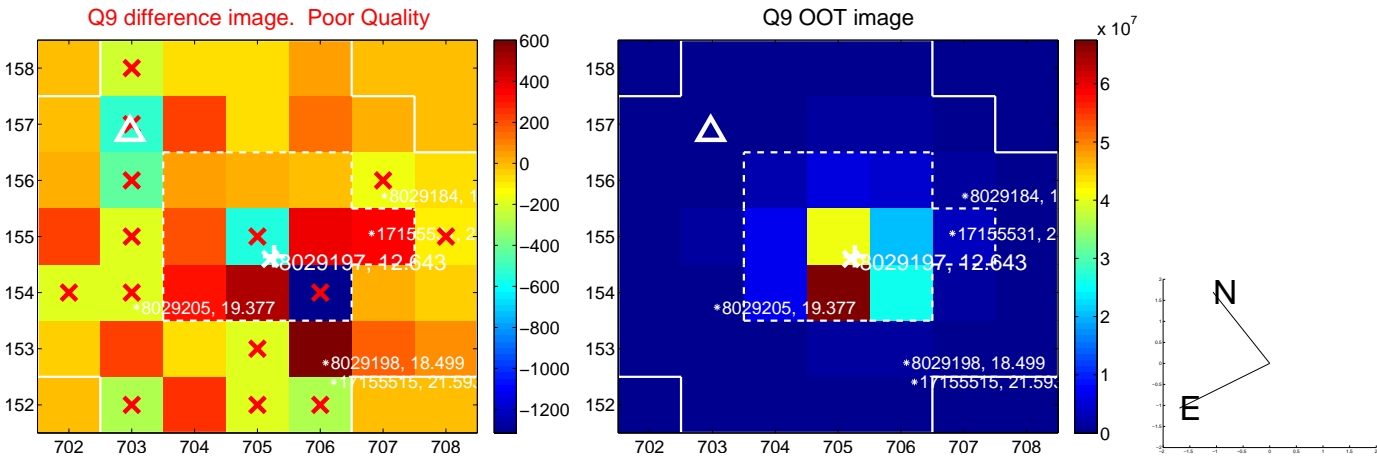


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

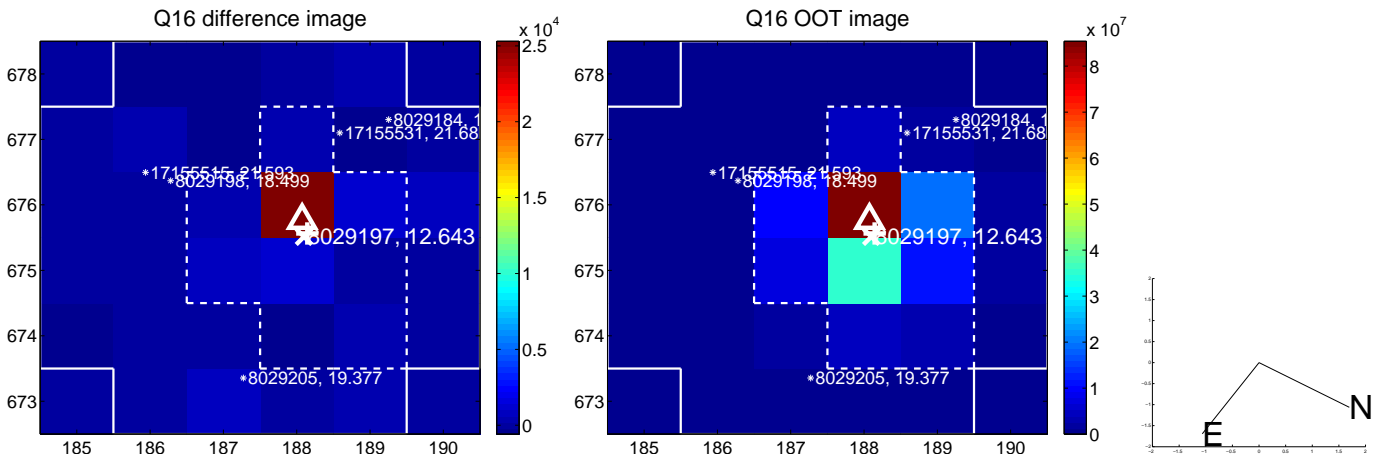
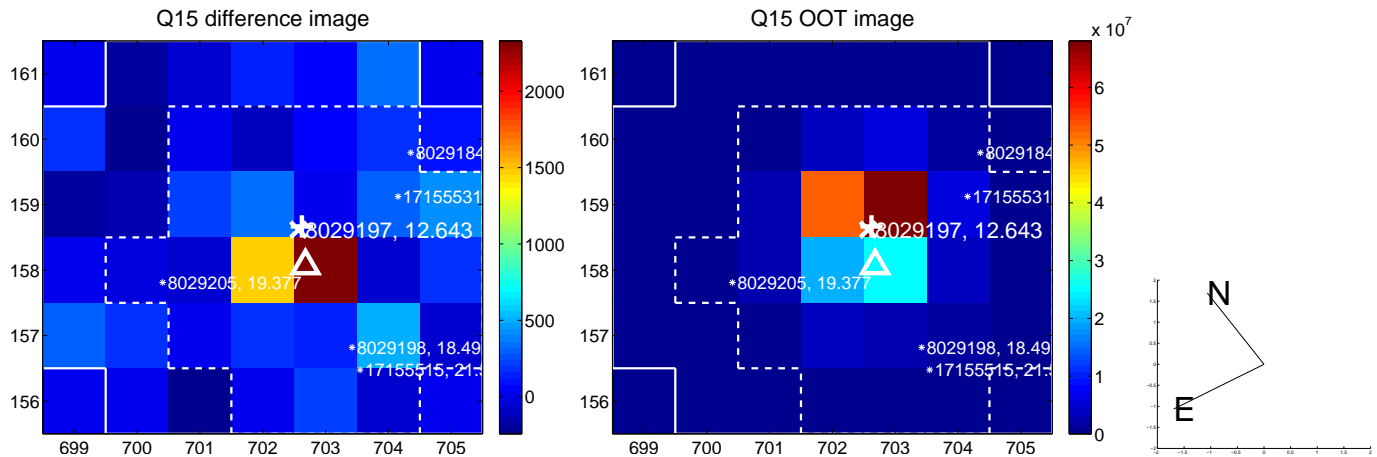
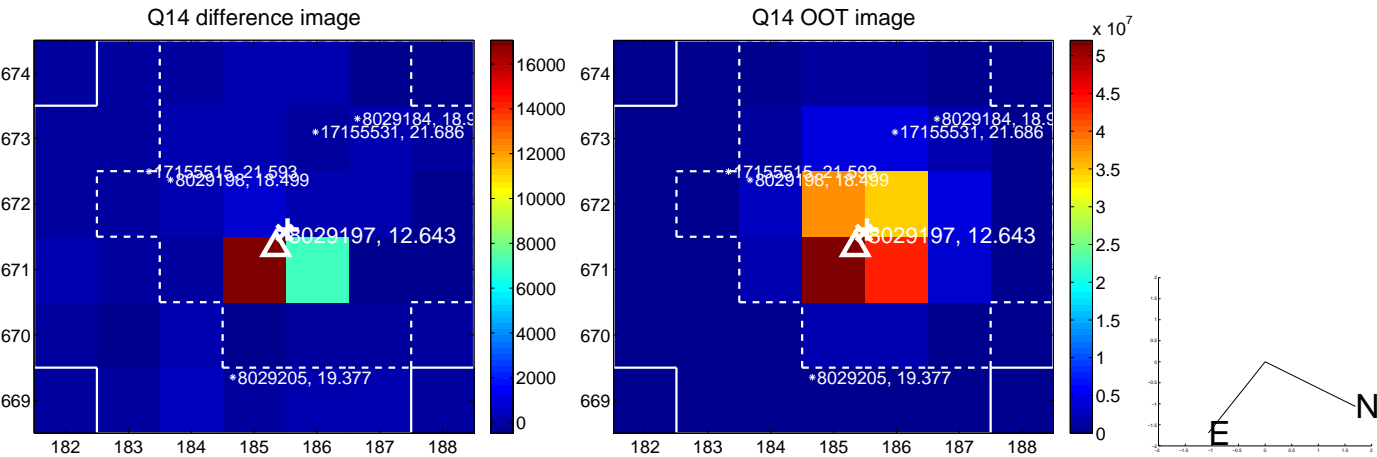
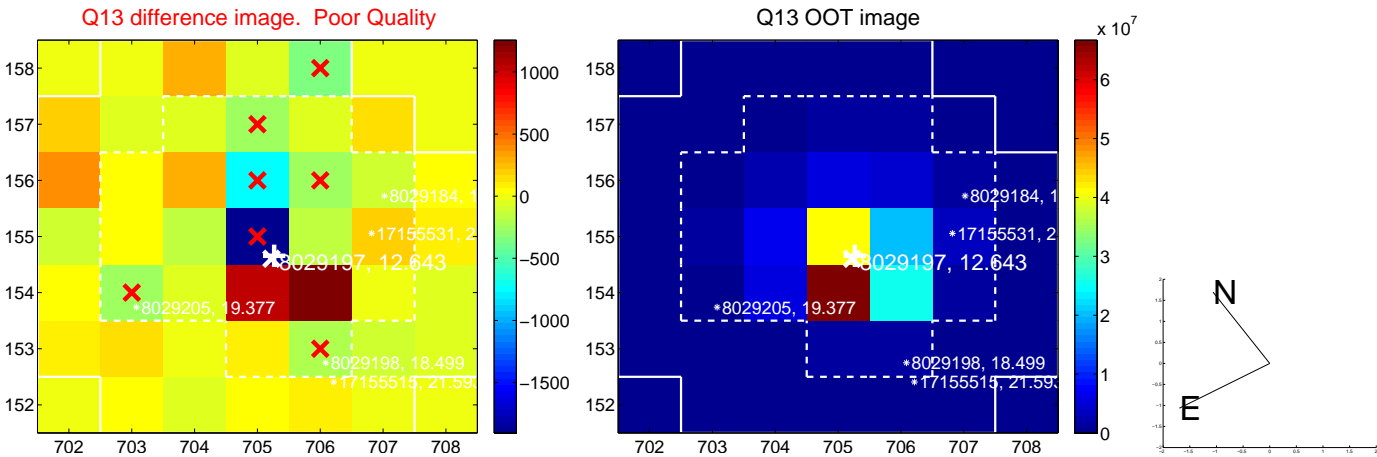




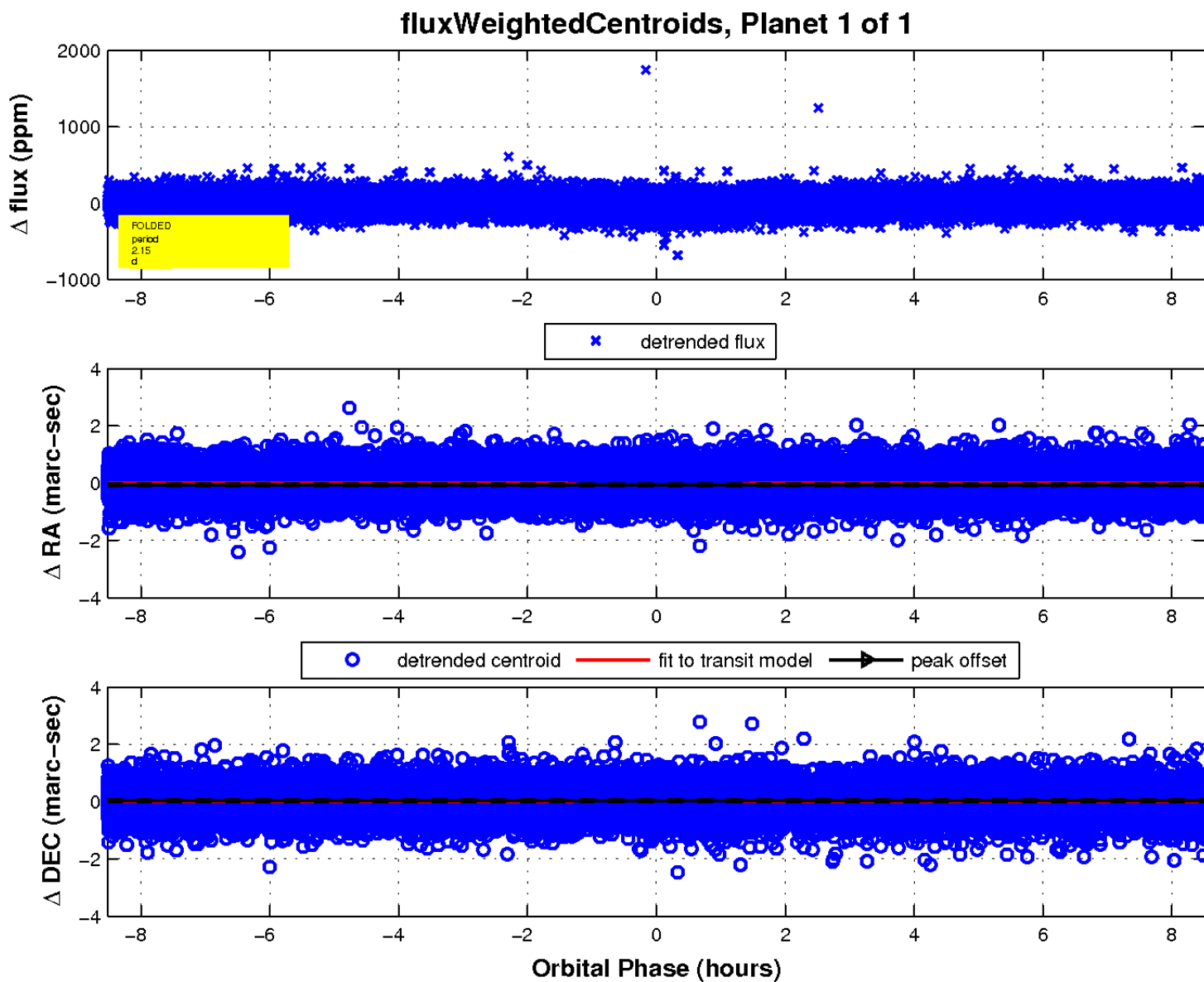
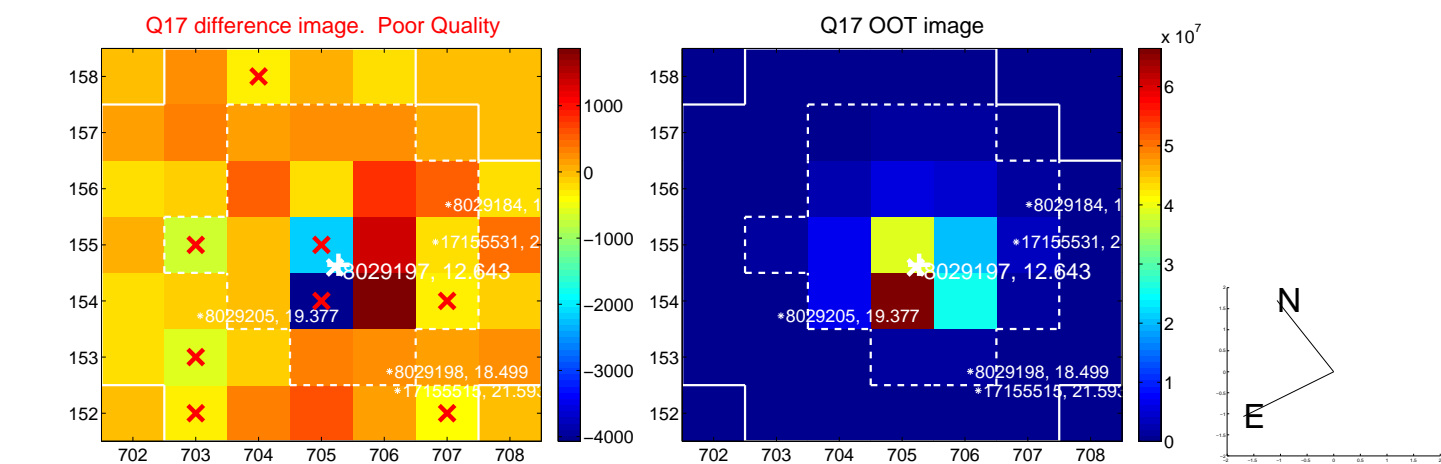
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

