

# KIC 006697716

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006697716-01	OBS	6758.01	0.721626	131.858790	197517.8	2.588	11569.0	7074.4	0.71	5067	37.14	1566.82

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006697716-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—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.

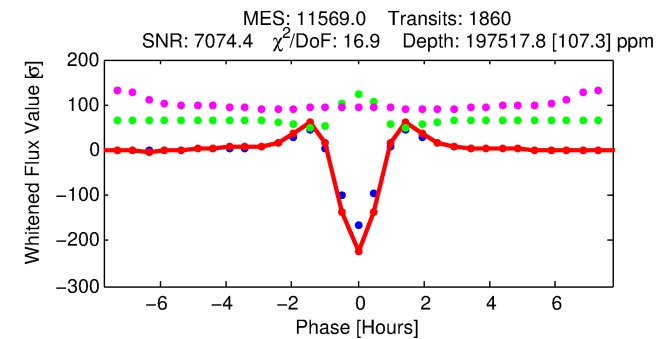
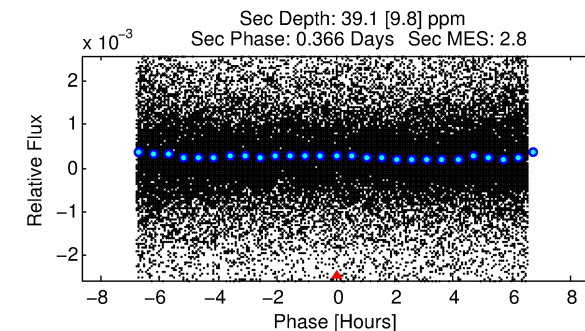
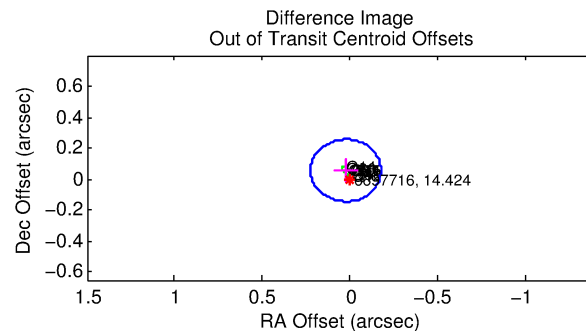
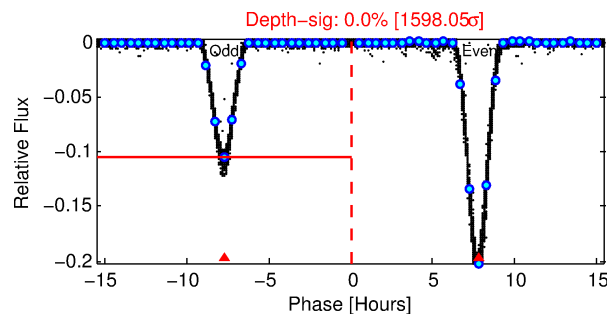
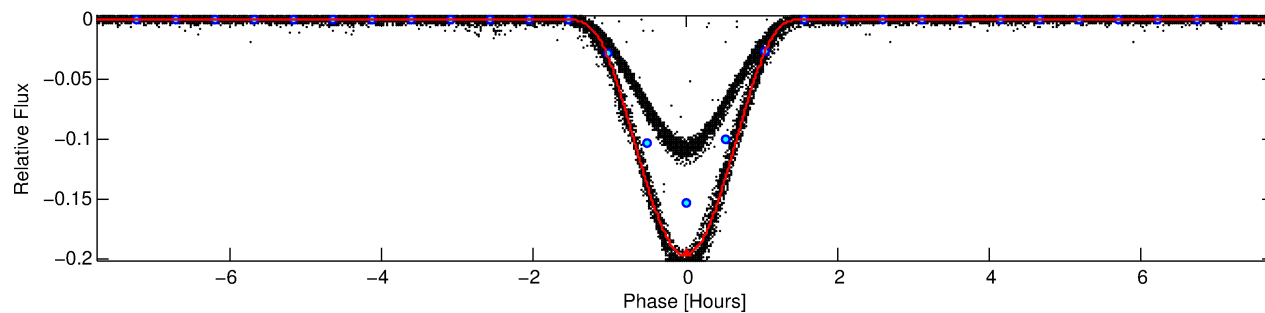
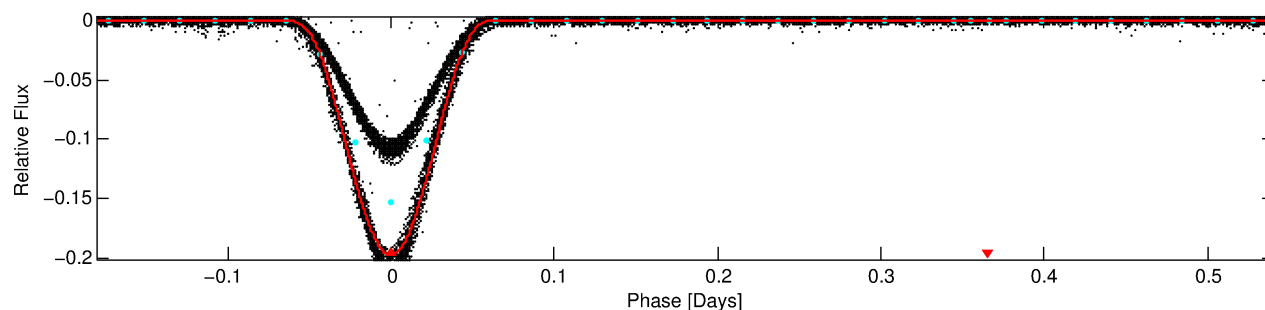
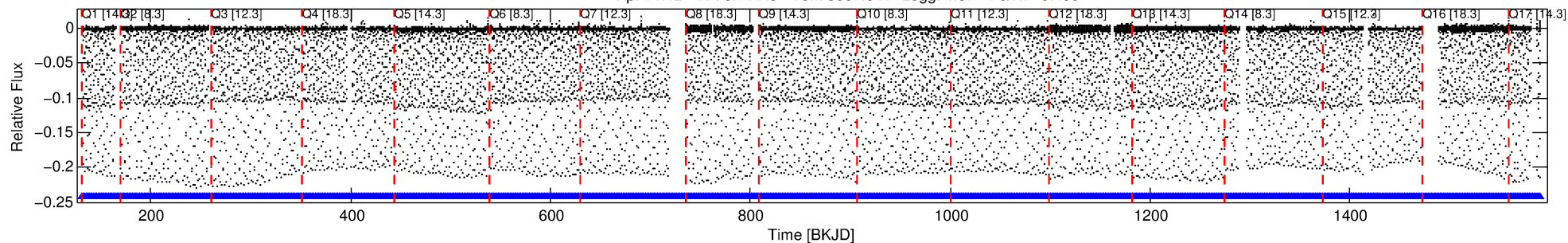
## Ephemeris Match Information For 006697716-01

No Significant Match Found

# DV One-Page Summary

KIC: 6697716 Candidate: 1 of 1 Period: 0.722 d  
KOI: K06758.01 Corr: 0.977

Kp: 14.42 R\*: 0.71 Rs Teff: 5067.0 K Logg: 4.57 Fe/H: -0.400



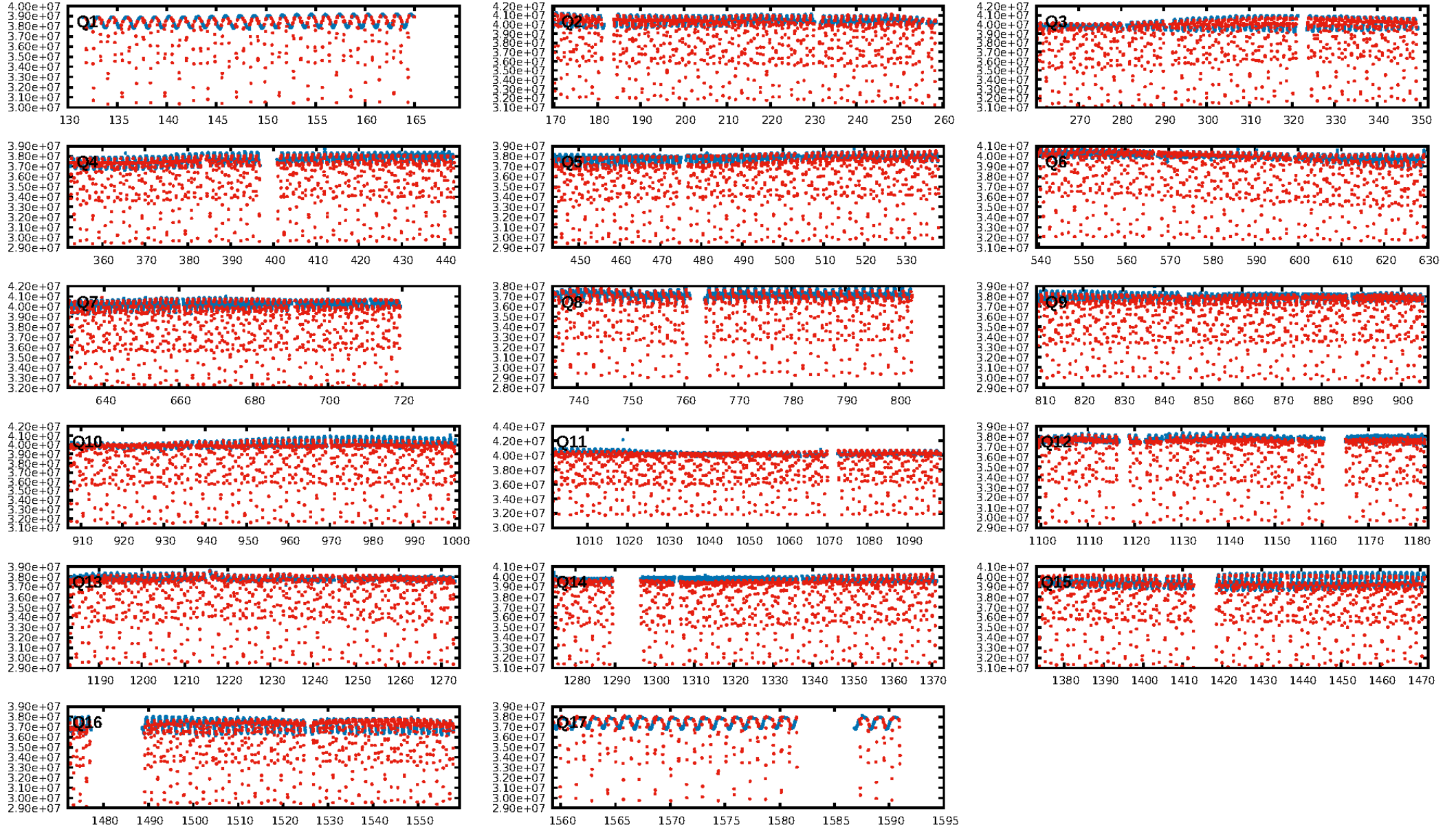
## DV Fit Results:

Period = 0.72163 [0.00000] d  
Epoch = 131.8588 [0.0000] BKJD  
Rp/R\* = 0.4760 [0.0037]  
a/R\* = 2.99 [0.00]  
b = 0.67 [0.01]  
Seff = 1566.82 [283.19]  
Teq = 1604 [72] K  
Rp = 37.14 [4.53] Re  
a = 0.0139 [0.0014] AU  
Ag = 0.00 [0.00] [-1159.90σ]  
Teffp = 581 [40] K [-12.33σ]

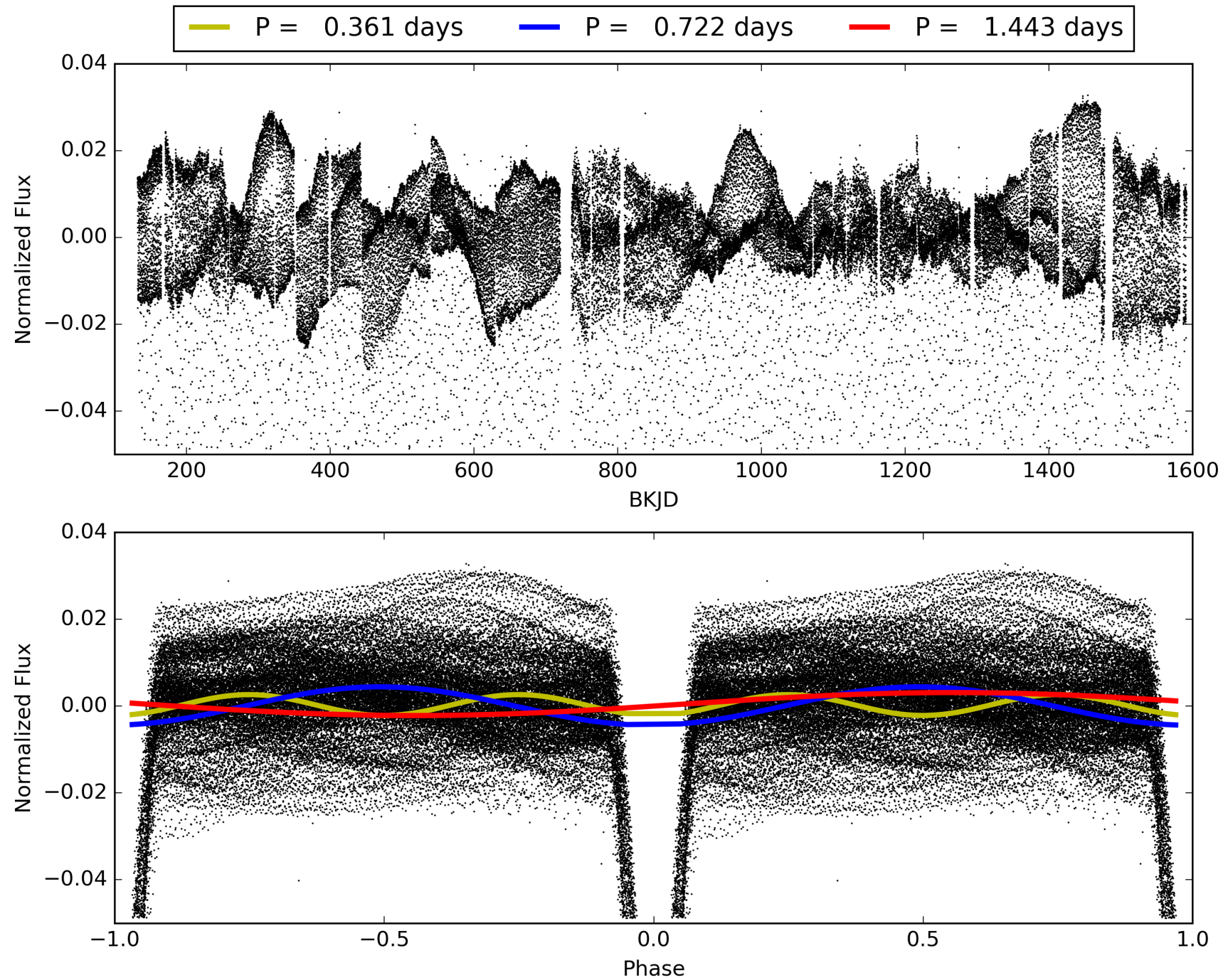
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [1776/1776]  
GhostDiagnostic-chr: 1.264  
Centroid-sig: 0.0%  
Centroid-so: 0.288 arcsec [658.17σ]  
OotOffset-rm: 0.062 arcsec [0.93σ]  
KicOffset-rm: 0.246 arcsec [3.65σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 006697716-01, PDC Light Curves

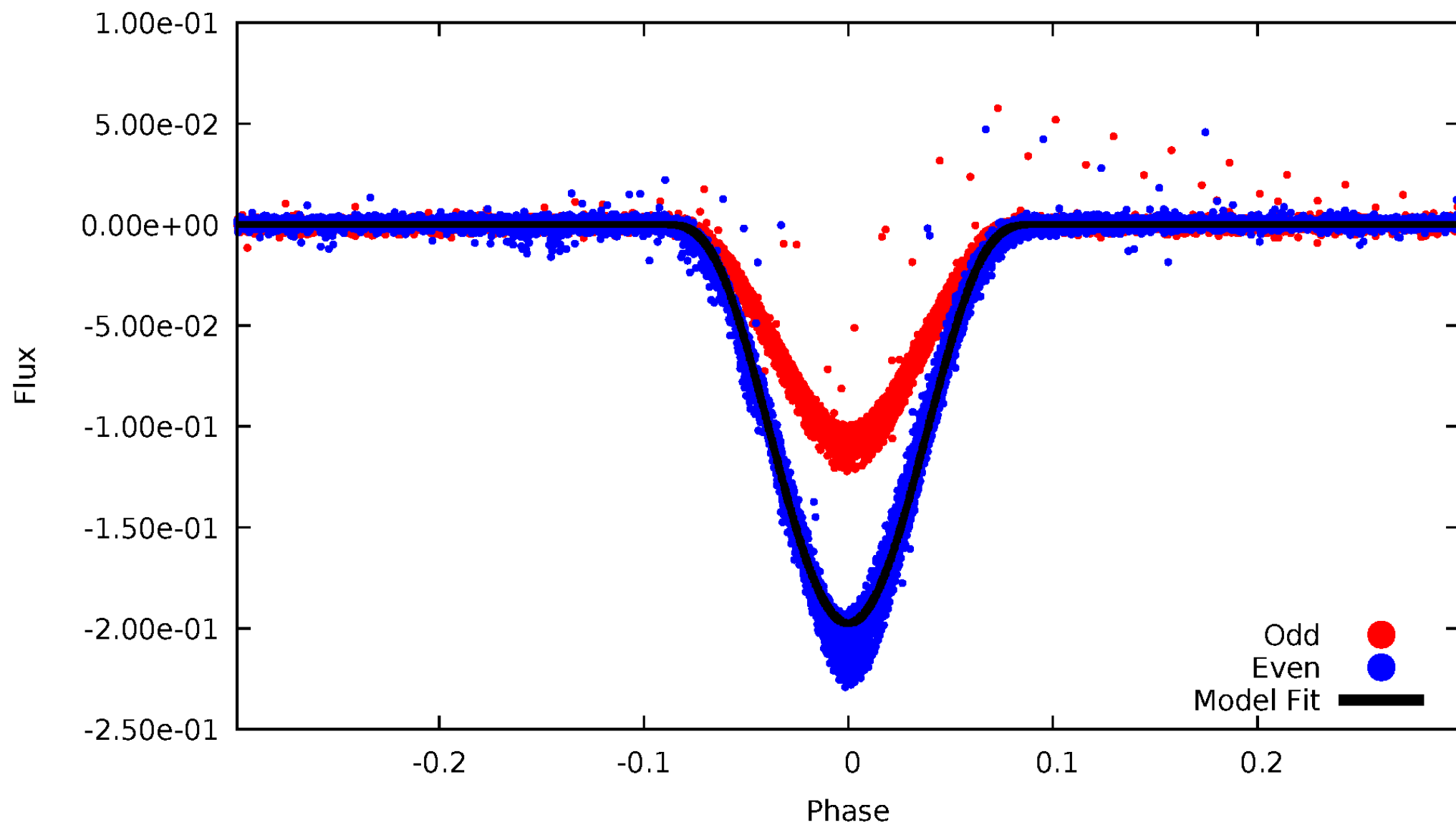


TCE 006697716-01



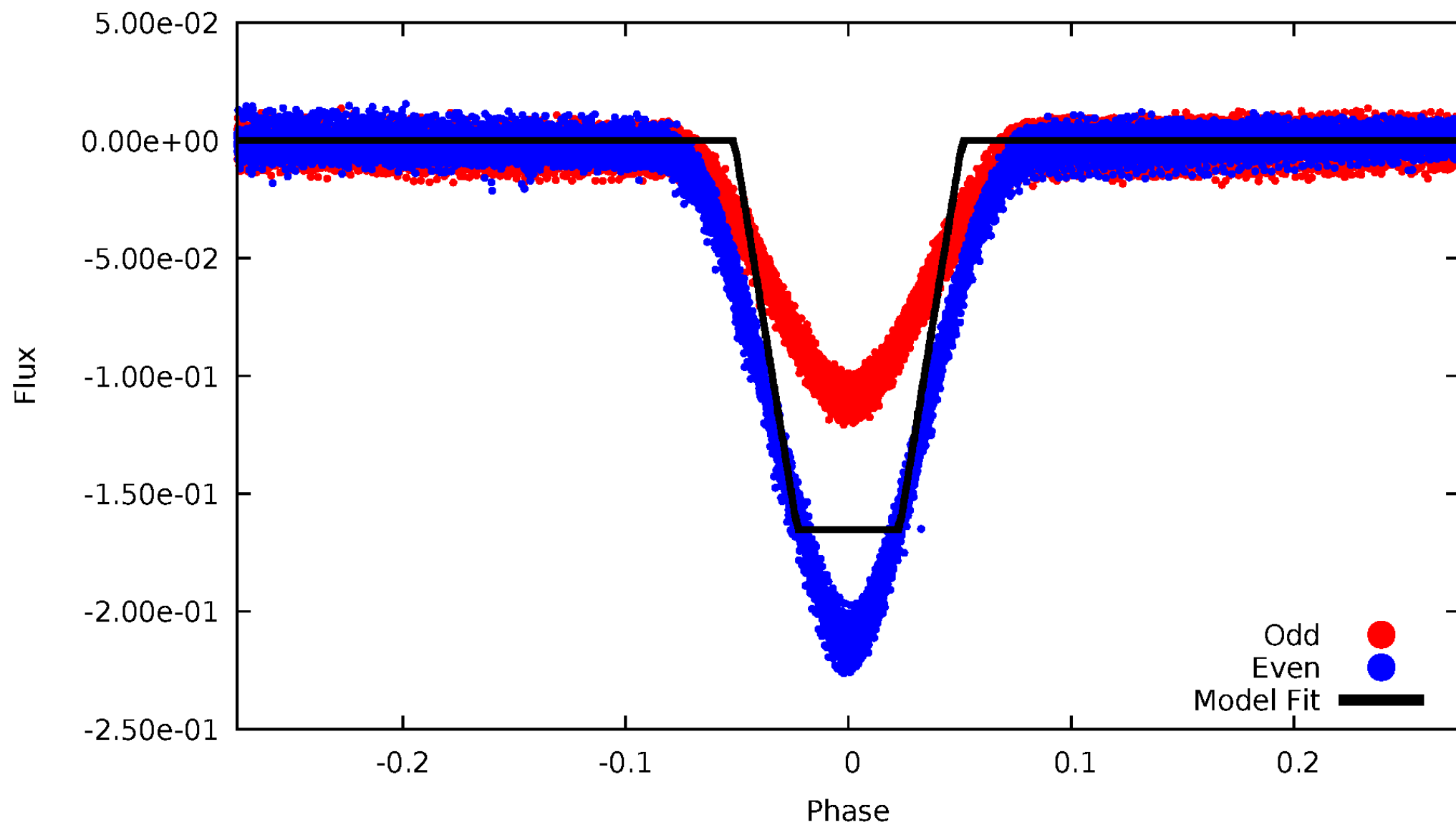
# DV Odd/Even

TCE 006697716-01



# ALT Odd/Even

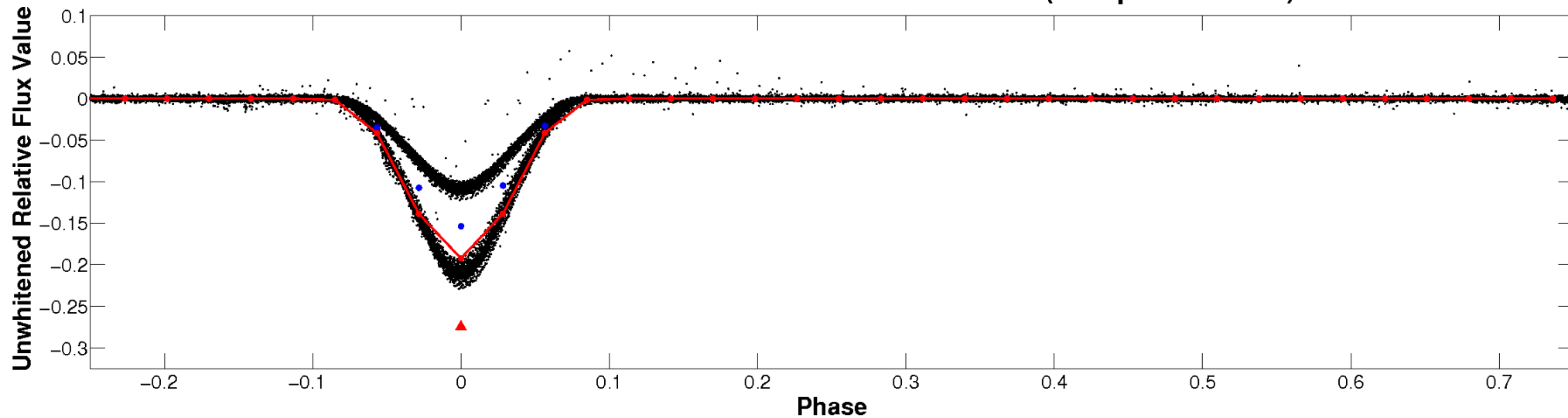
TCE 006697716-01



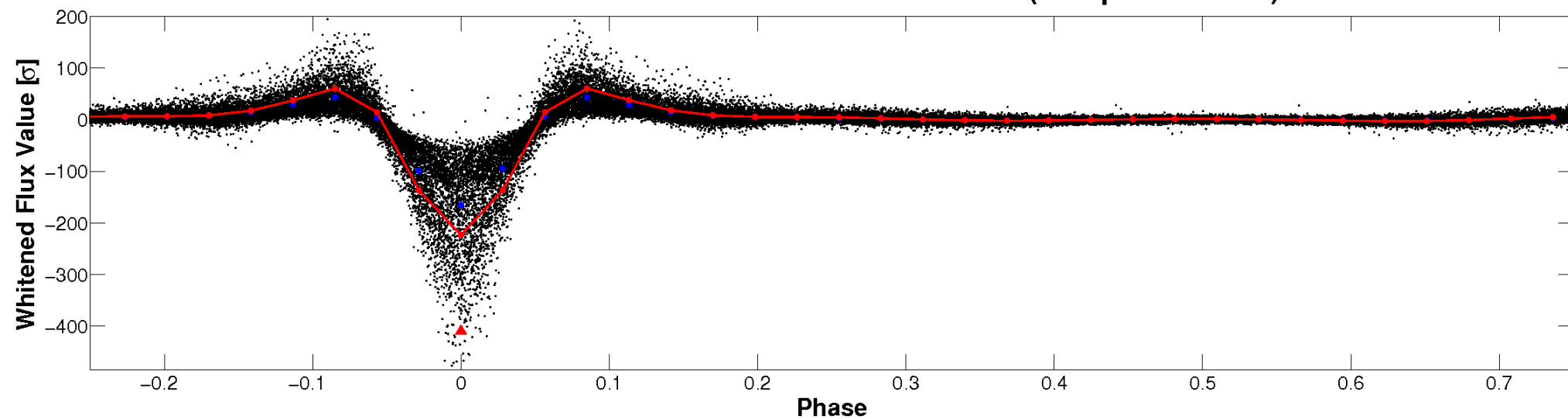


# Non-Whitened Vs. Whitened Light Curve

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

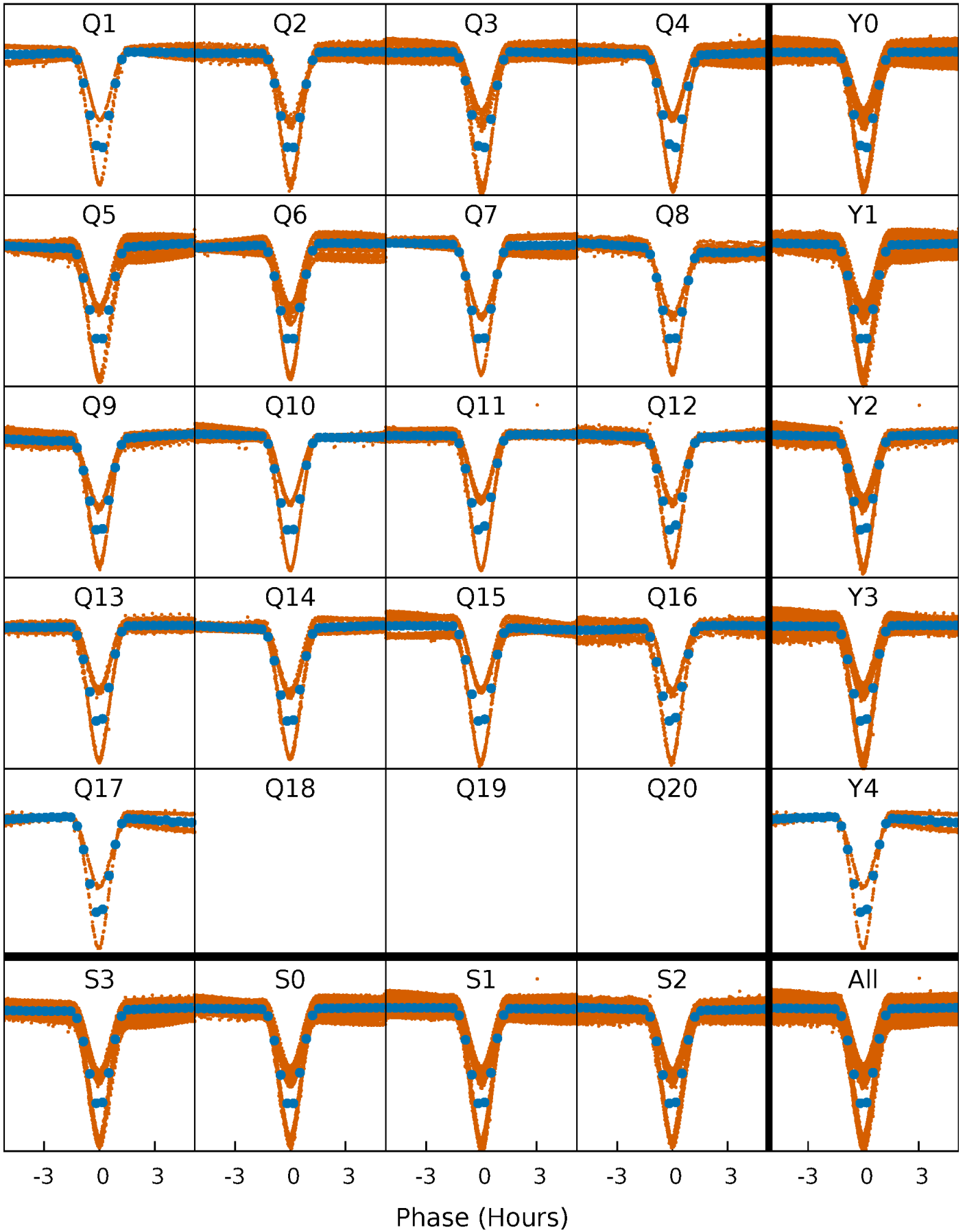


## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

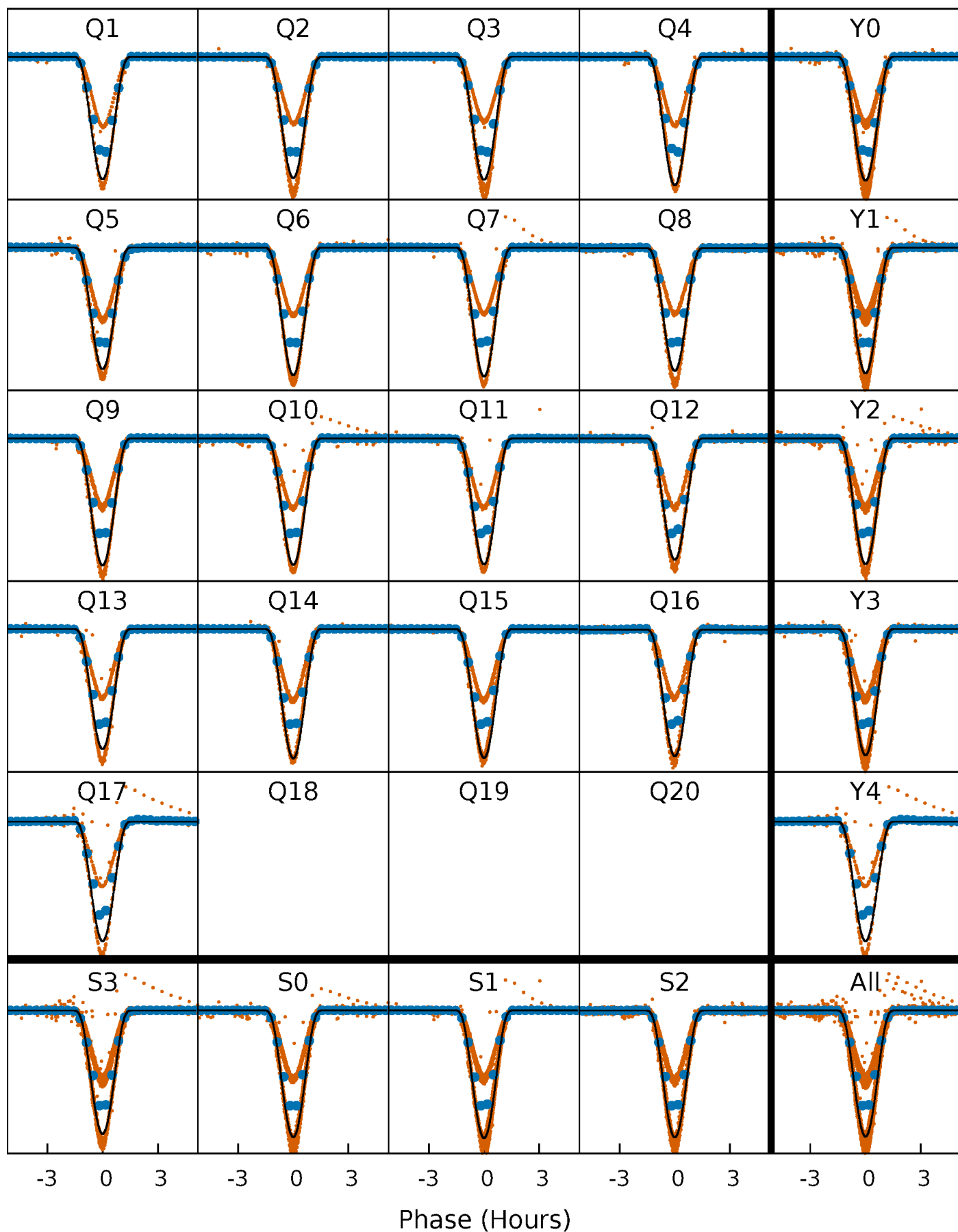
TCE 006697716-01 P= 0.721626 Days  $T_0=131.858790$  (BKJD)





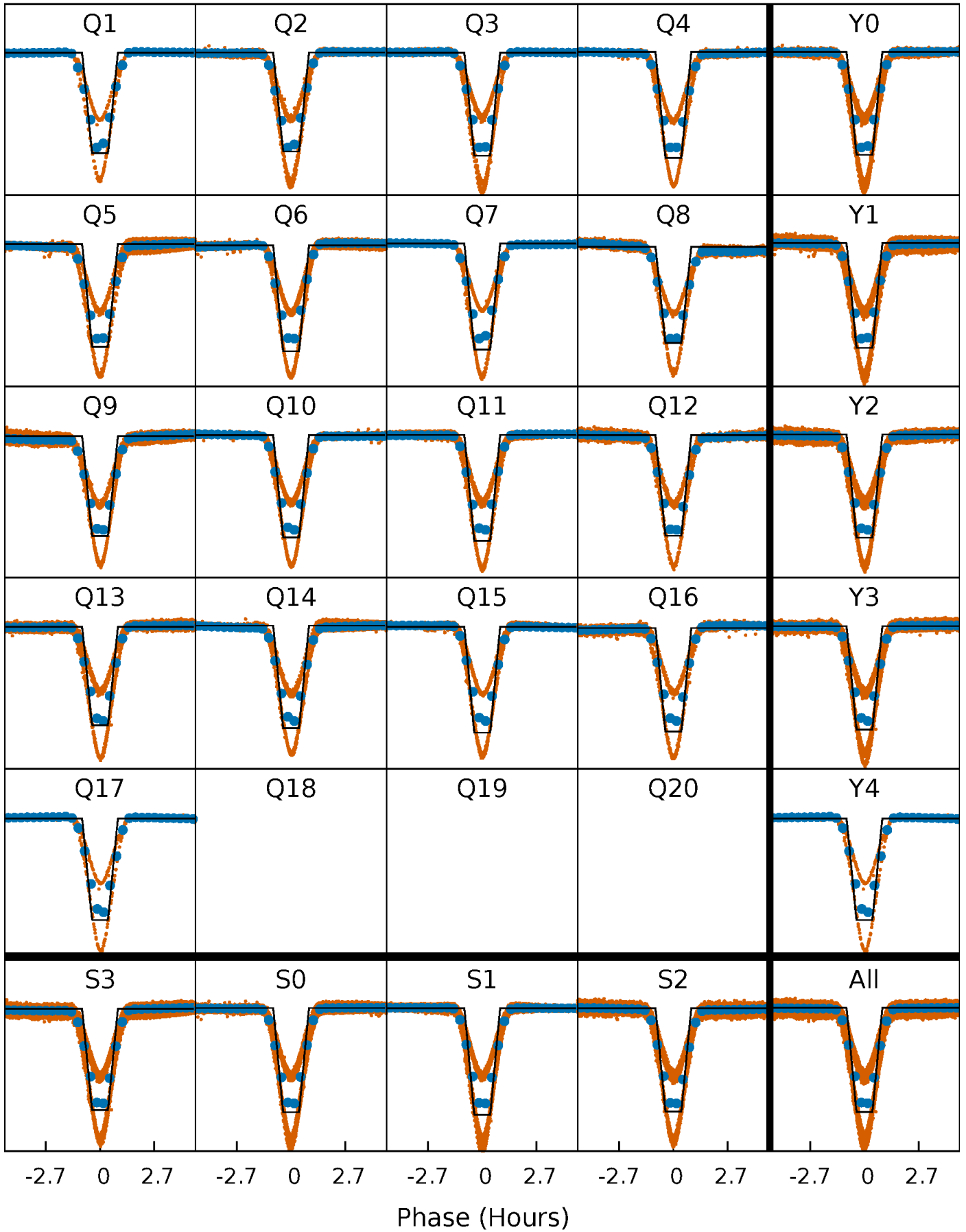
# DV Quarter-Phased Transit Curves

TCE 006697716-01 P= 0.721626 Days  $T_0=131.858790$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

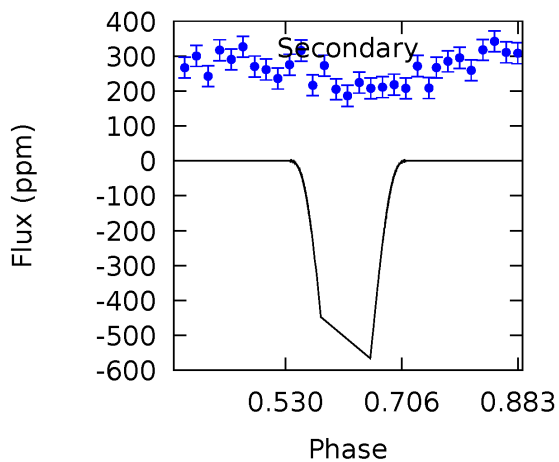
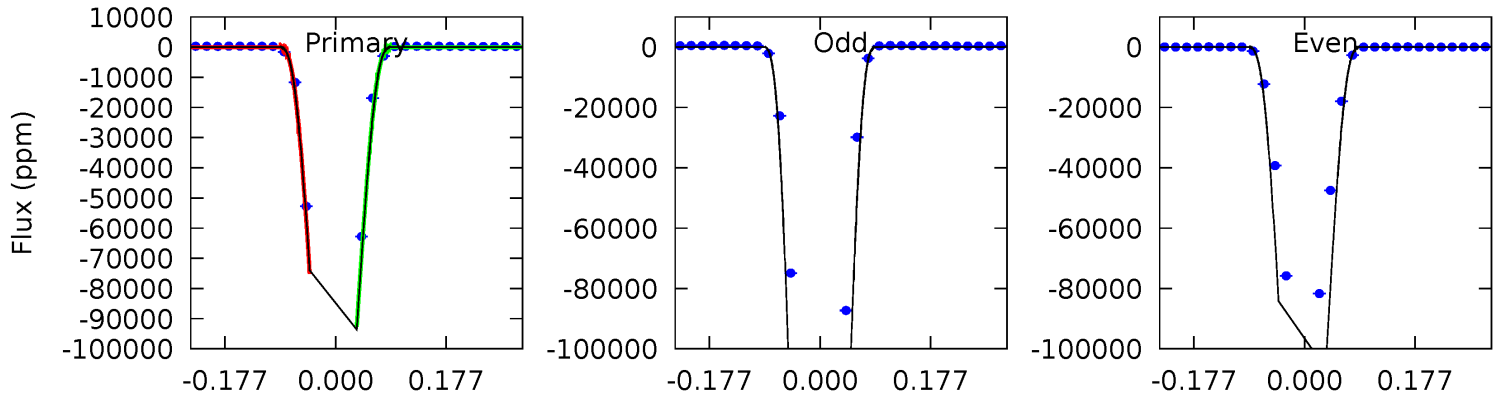
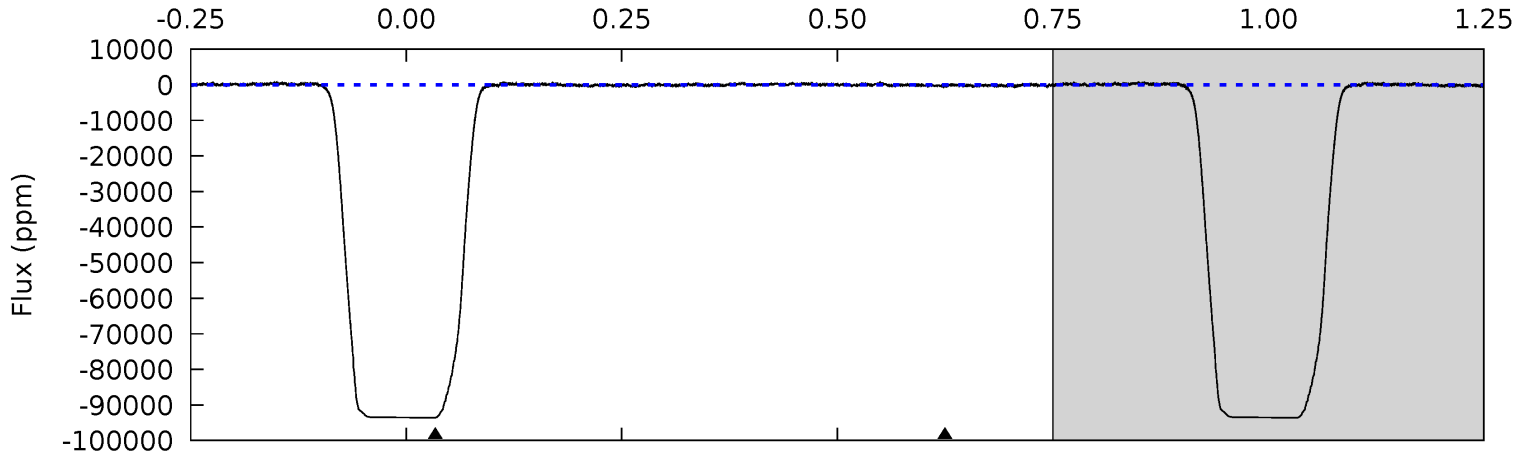
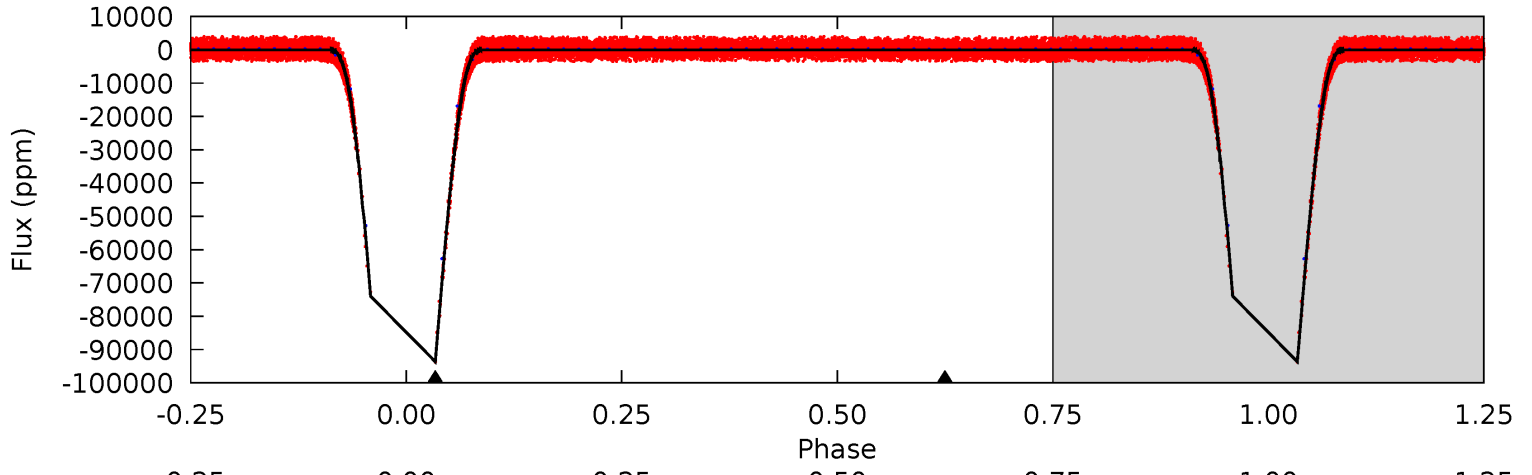
TCE 006697716-01   P= 0.721624 Days    $T_0=131.860213$  (BKJD)



# DV Model-Shift Uniqueness Test

006697716-01, P = 0.721626 Days, E = 131.137164 Days

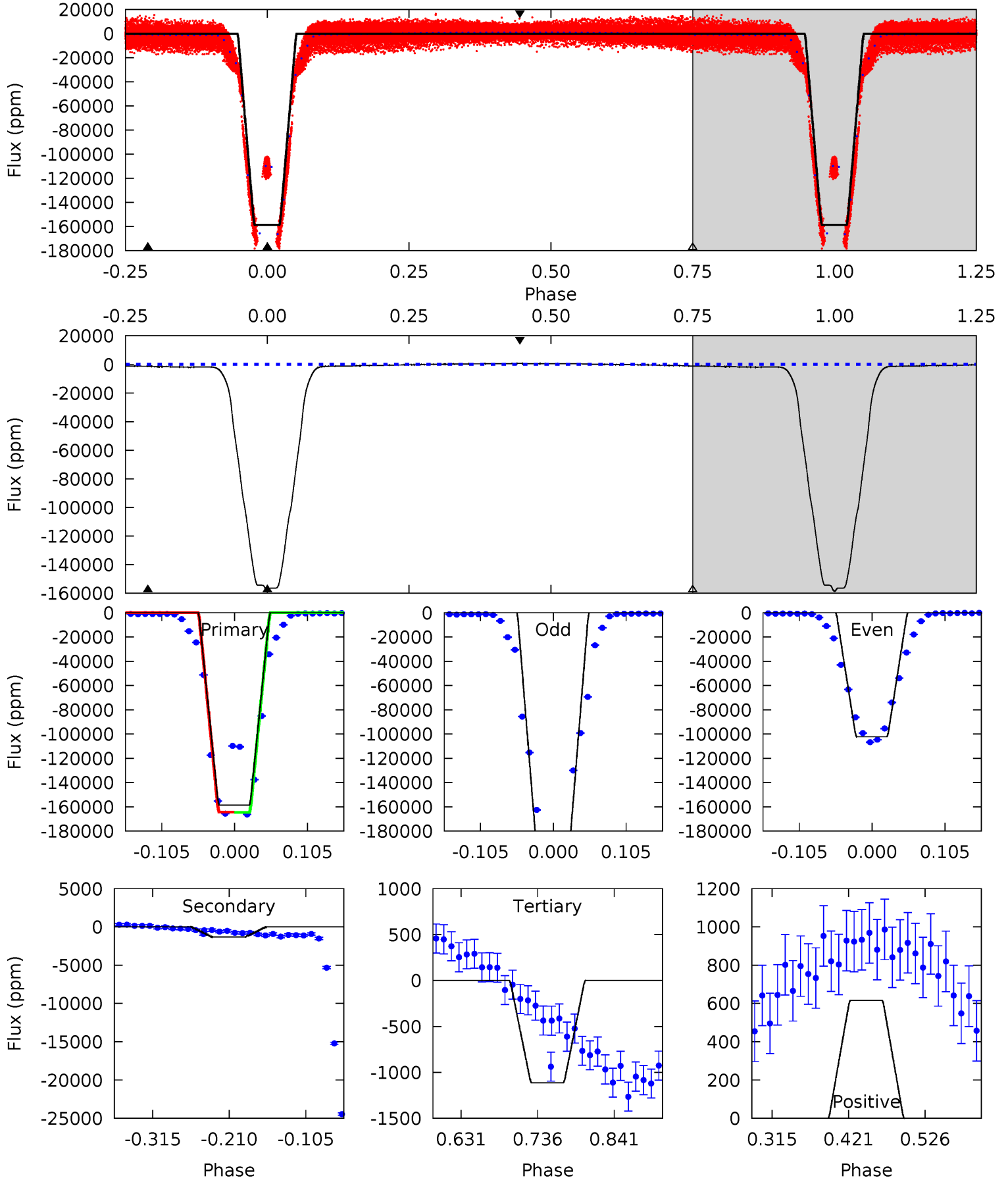
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5033	30.4	0	0	4.44	1.35	11.0	5033	5033	30.4	30.4	4068	1.26	0.01	0



# Alt Model-Shift Uniqueness Test

006697716-01, P = 0.721624 Days, E = 131.138589 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
2057	17.1	14.4	7.99	4.55	1.62	7.47	2042	2049	2.65	9.10	840.5	1.26	0.00	0



### Stellar Parameters For KIC 006697716

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5067^{+151}_{-151}$	$4.565^{+0.071}_{-0.065}$	$-0.400^{+0.350}_{-0.300}$	$0.715^{+0.087}_{-0.071}$	$0.686^{+0.103}_{-0.040}$	$2.641^{+0.770}_{-0.598}$
	+3%/-3%	+2%/-1%	+87%/-75%	+12%/-10%	+15%/-6%	+29%/-23%
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 006697716-01 / KOI 6758.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-566 \pm 19$	$37.11^{+2.66}_{-1.91}$	$2240^{+88}_{-86}$	$-2569^{+59}_{-58}$	$0.044^{+0.005}_{-0.005}$
Alt.	$-1318 \pm 77$	$31.97^{+2.25}_{-1.98}$	$2238^{+85}_{-89}$	$-2426^{+74}_{-71}$	$0.138^{+0.019}_{-0.016}$

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

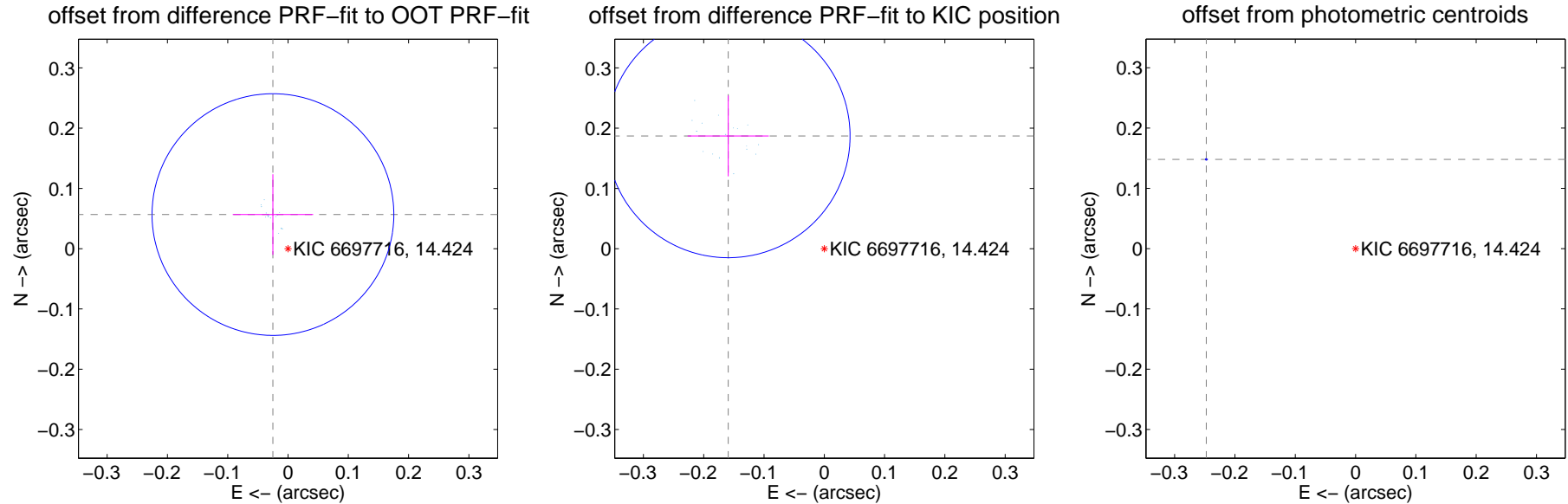
## DV Centroid Data

Supplemental centroid analysis for 006697716-01. Kepler magnitude: 14.42. Transit SNR 7074.43

There are 17 quarters with good PRF difference image offsets

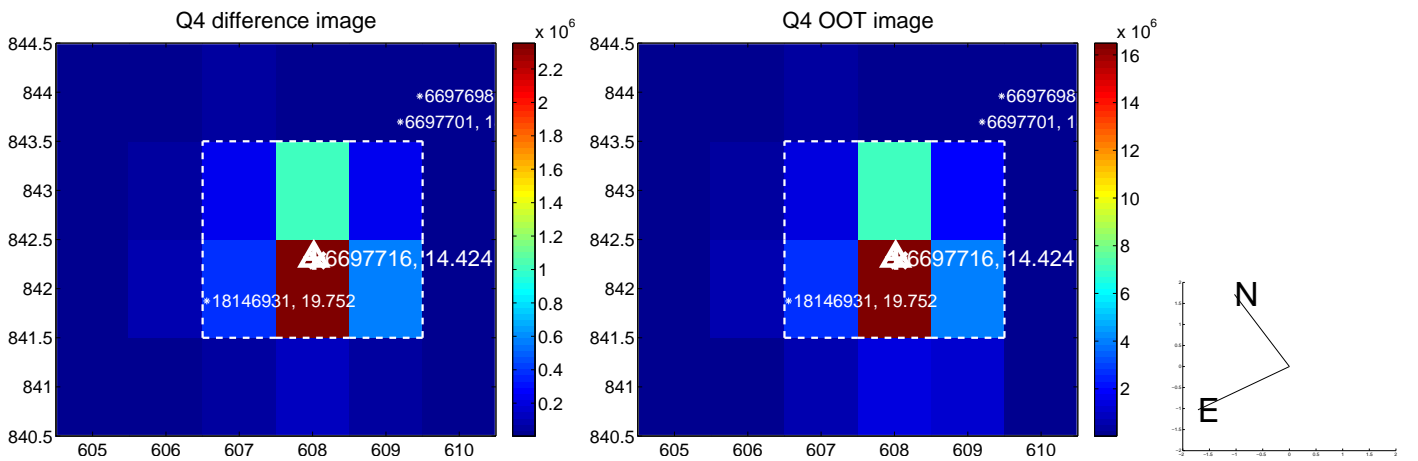
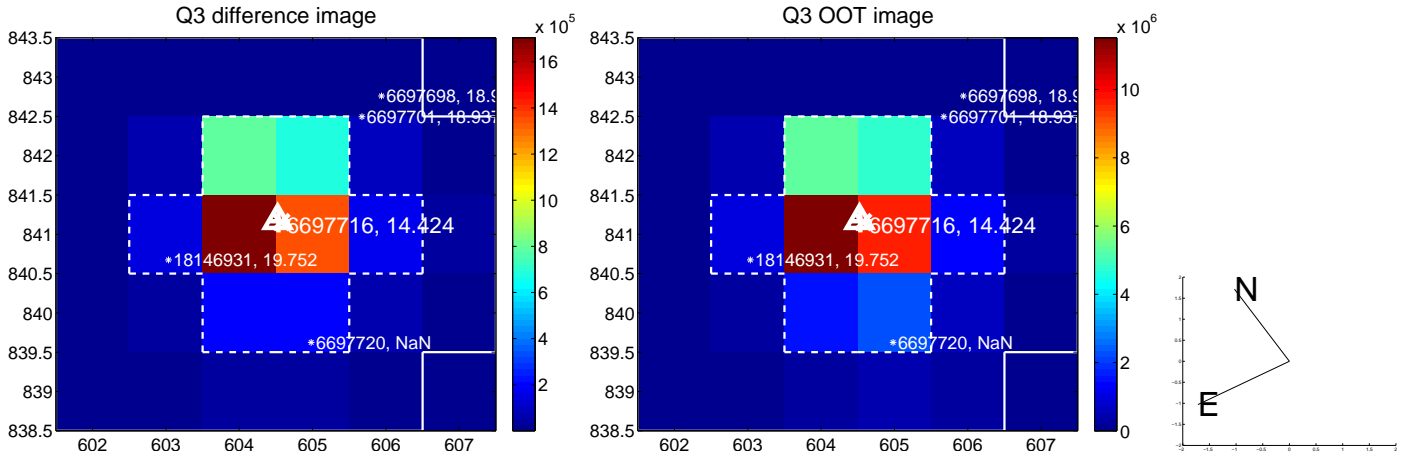
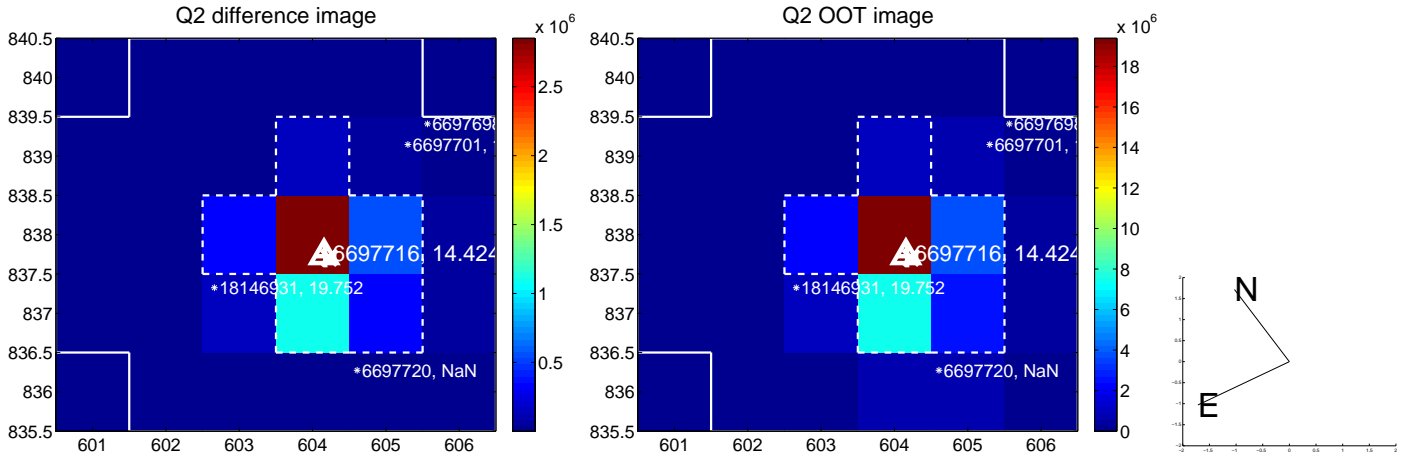
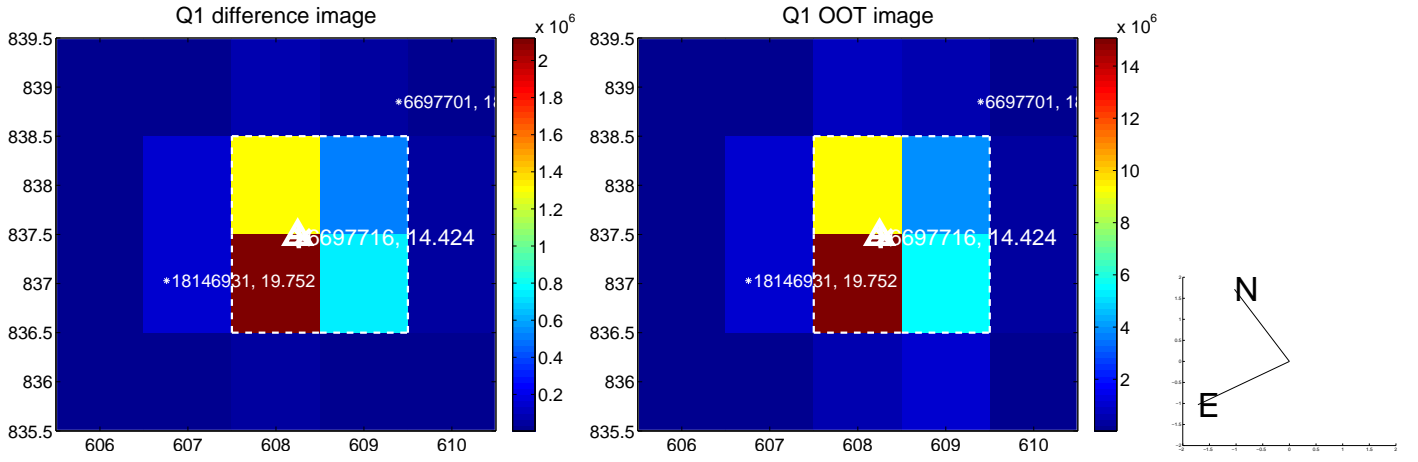
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.062 \pm 0.067$	0.93	$0.025 \pm 0.067$	$0.057 \pm 0.067$
PRF-fit source offset from KIC position	$0.246 \pm 0.067$	3.65	$0.159 \pm 0.067$	$0.187 \pm 0.067$
photometric centroid source offset	$0.29 \pm 0.00$	658.17	$0.25 \pm 0.00$	$0.15 \pm 0.00$



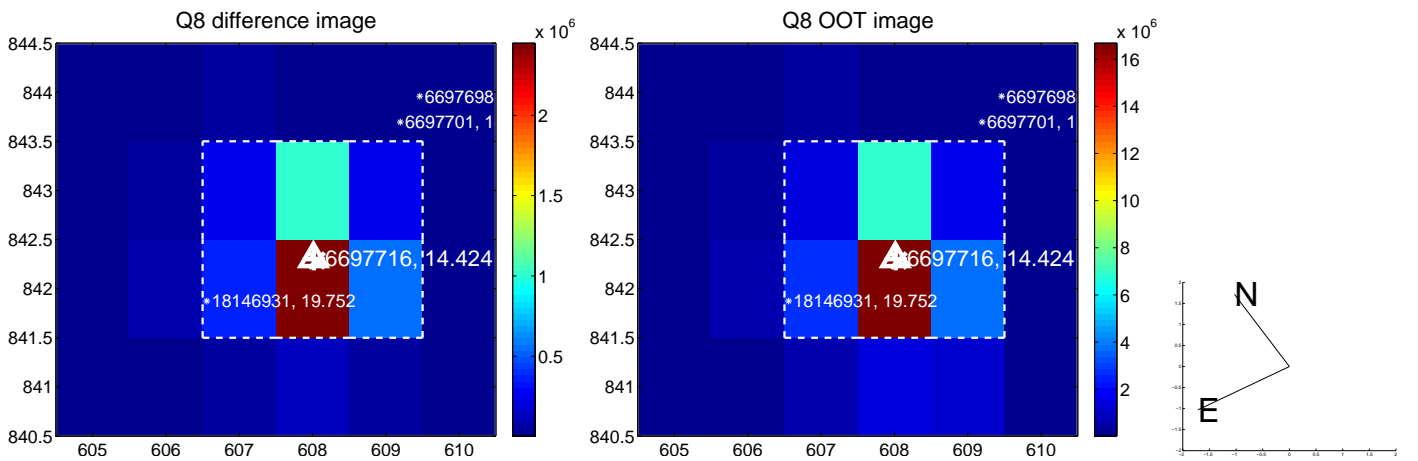
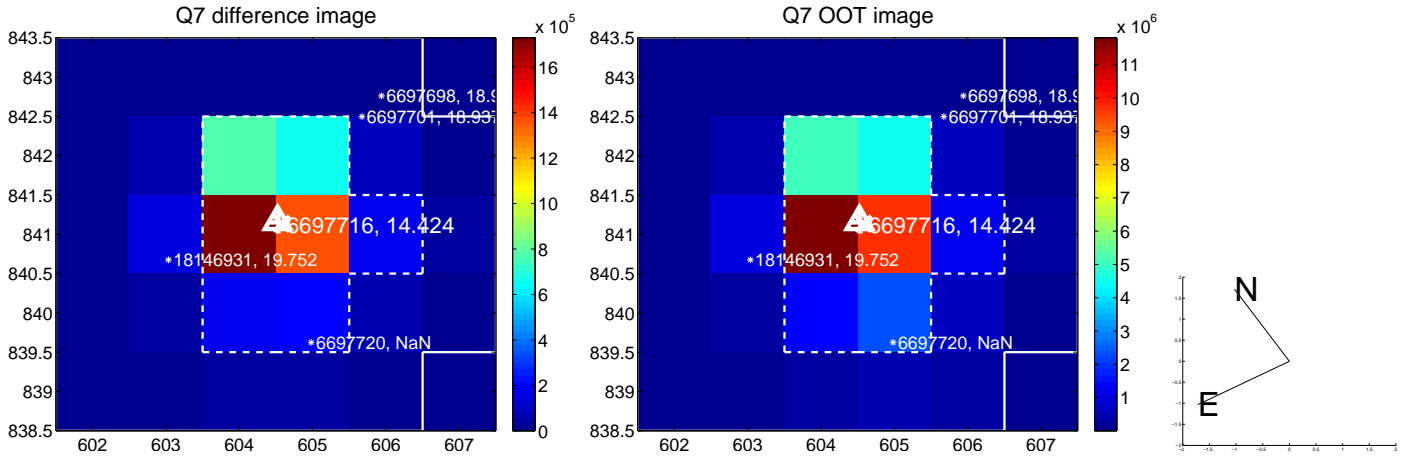
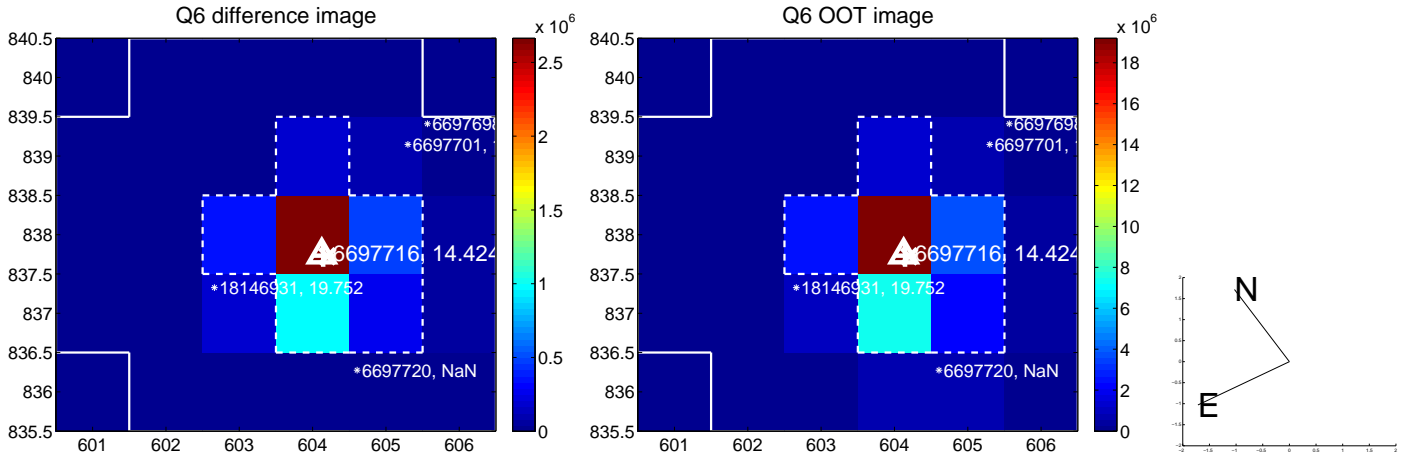
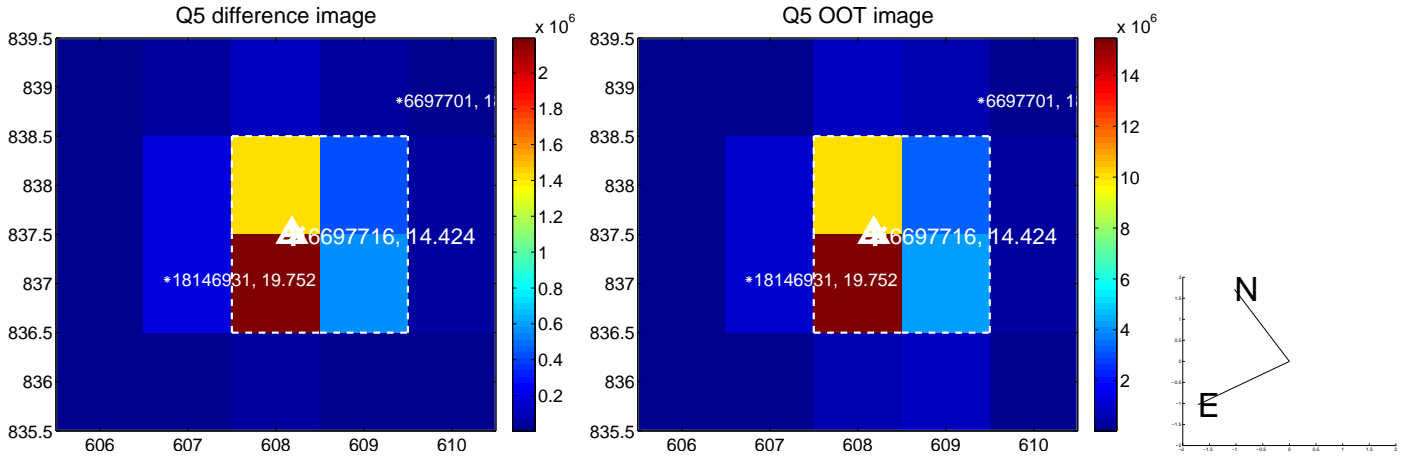
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

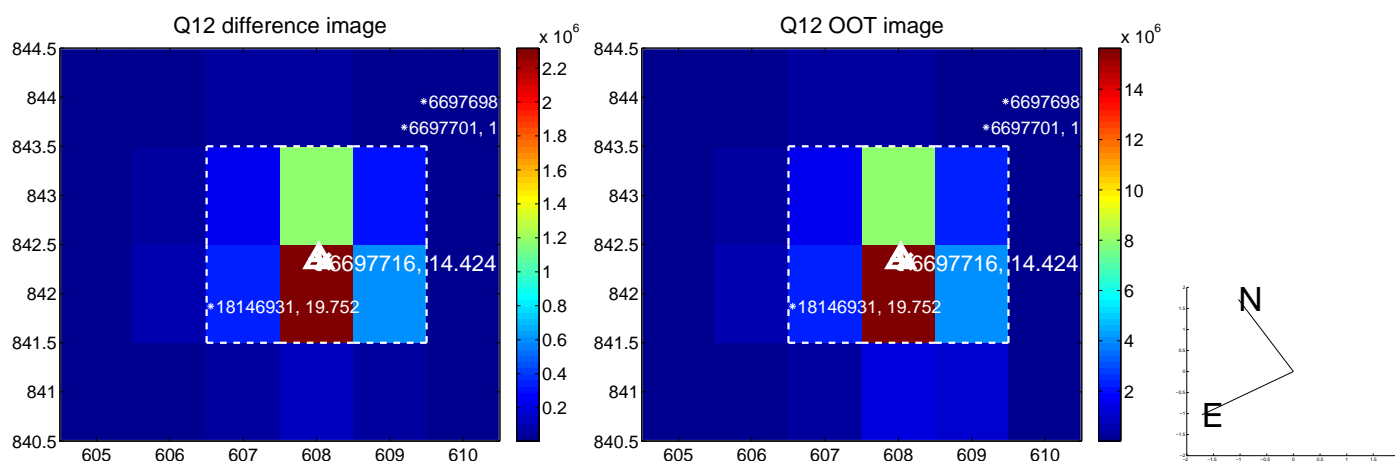
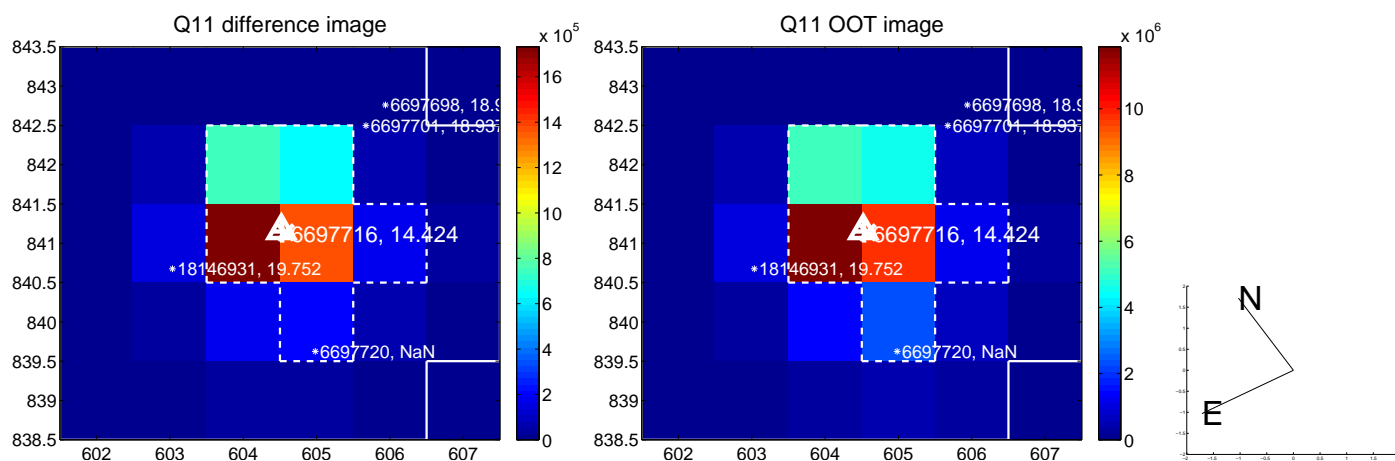
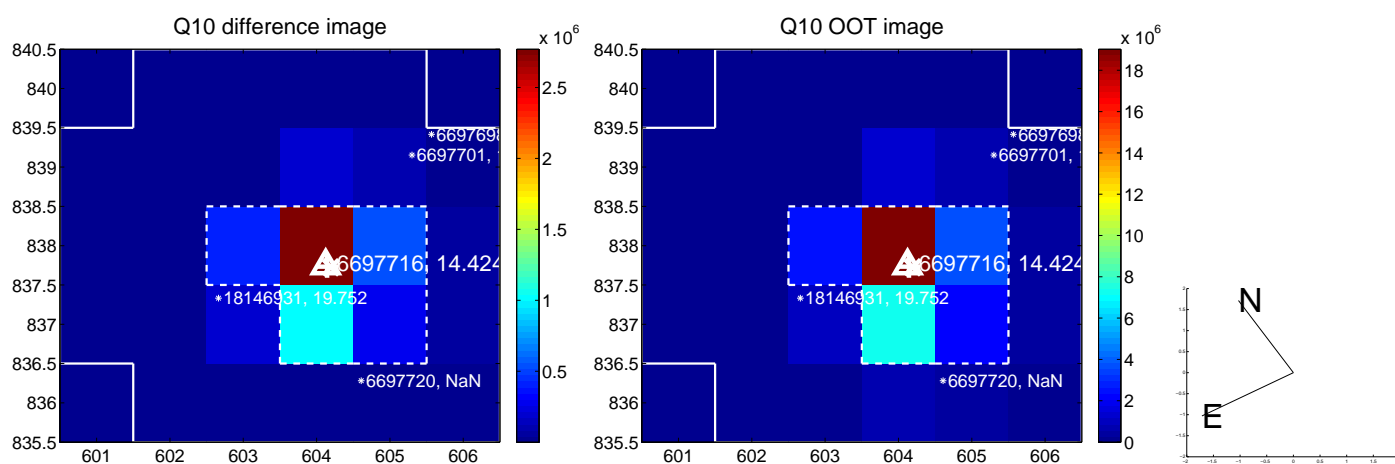
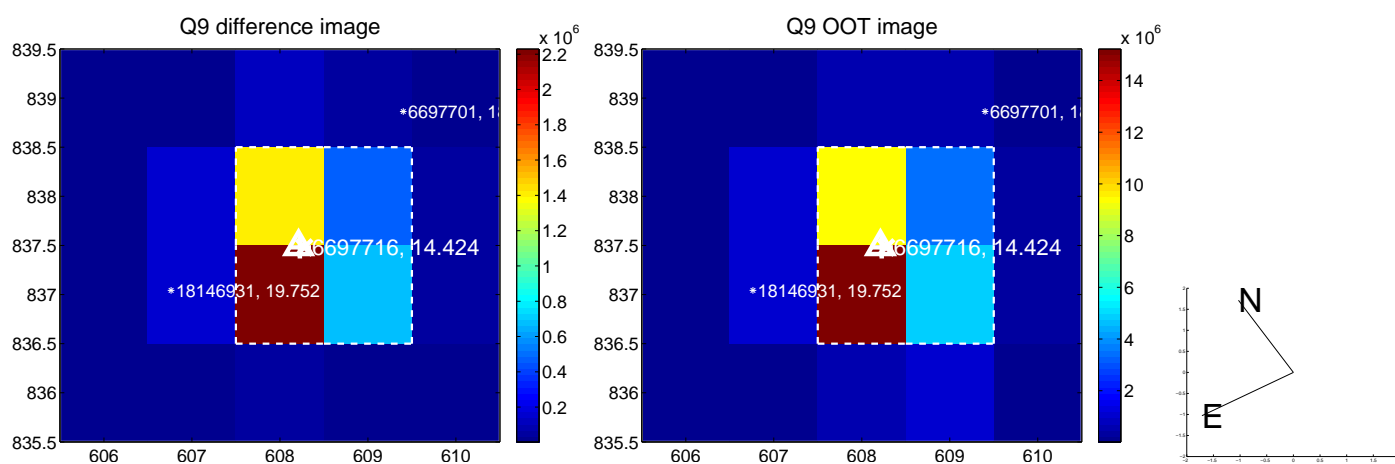




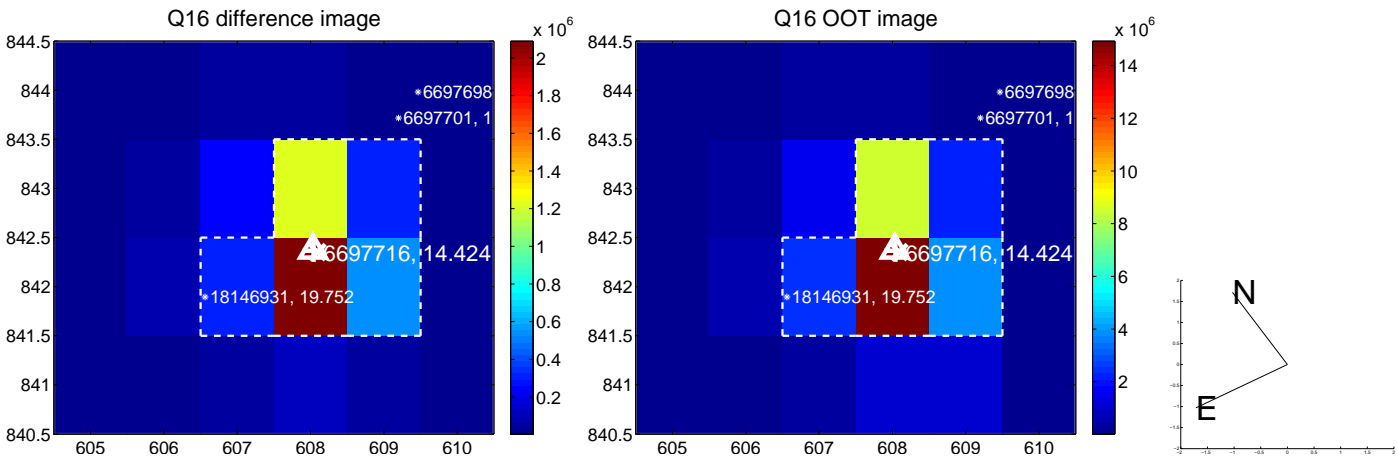
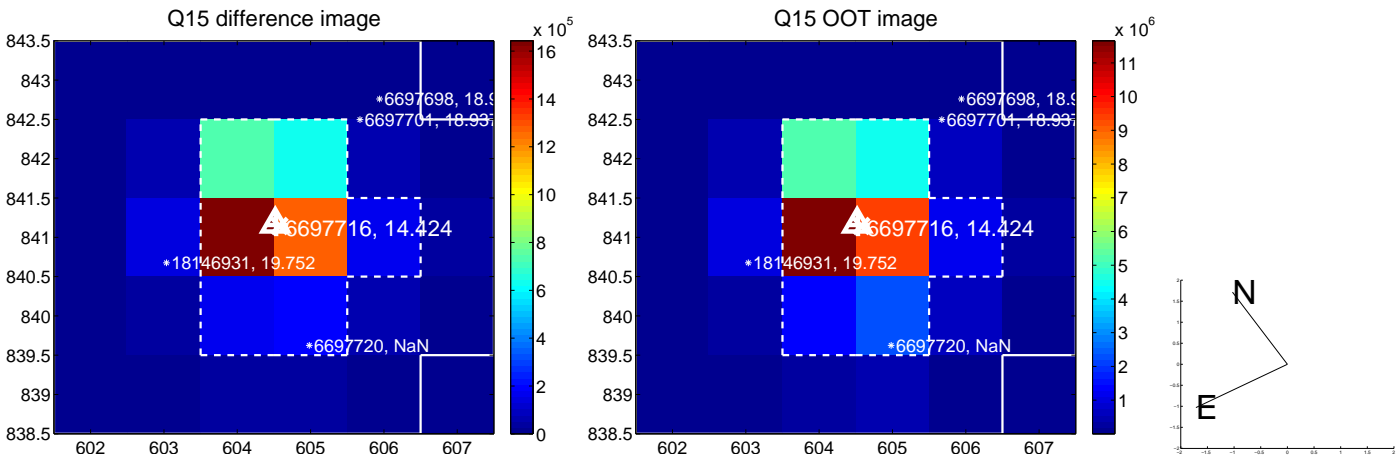
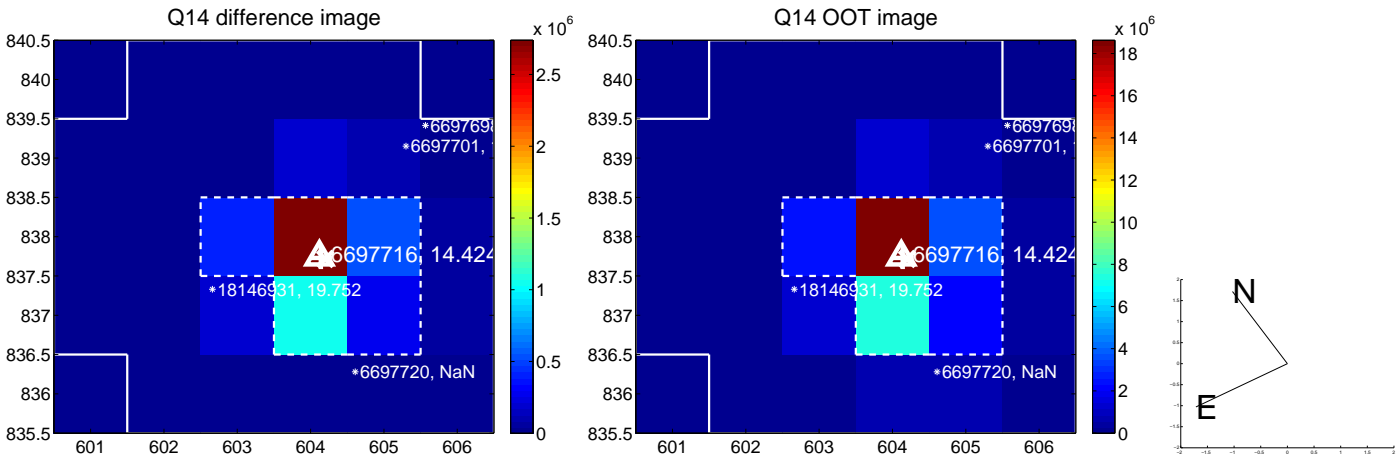
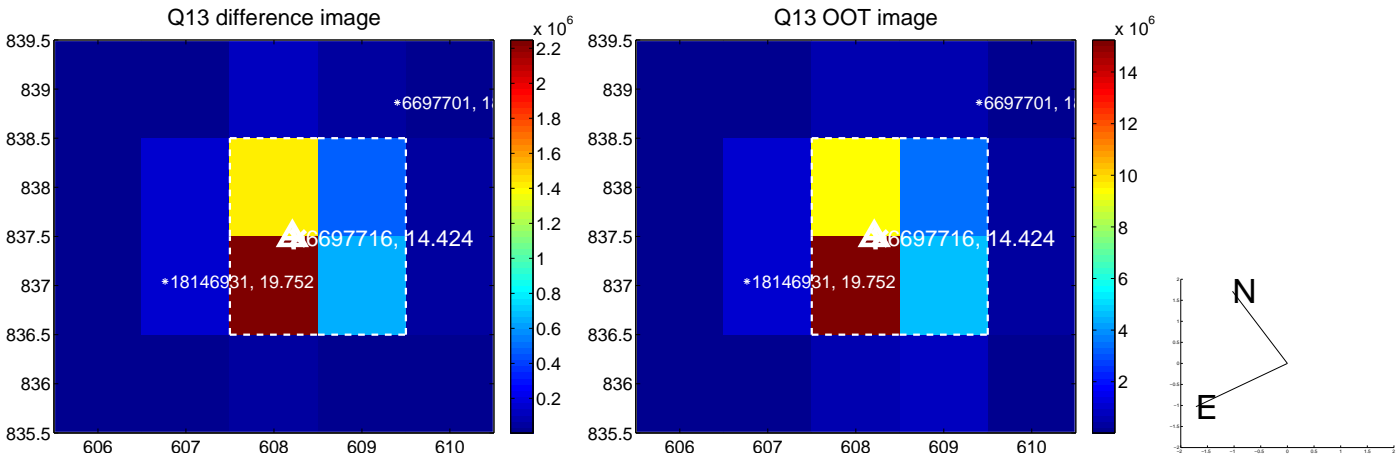
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



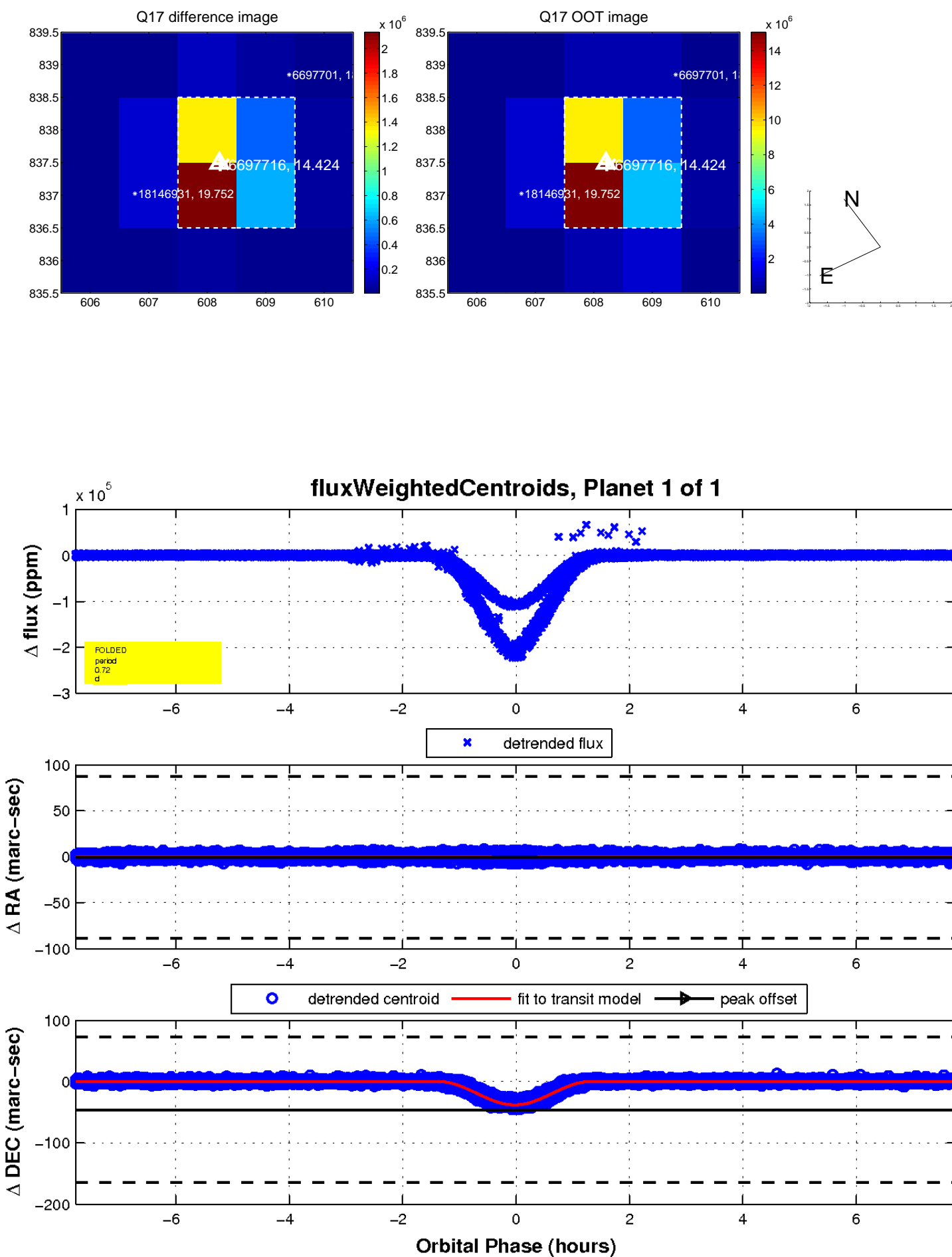
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UKIRT Image

Declination

