

# KIC 010207055

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010207055-01	OBS	No	410.945433	147.701913	454.7	25.781	9.0	10.0	1.02	6126	2.23	1.06

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010207055-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

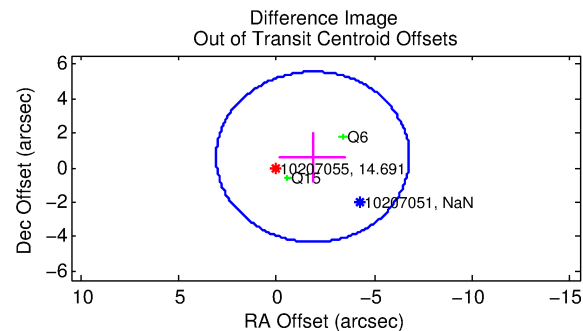
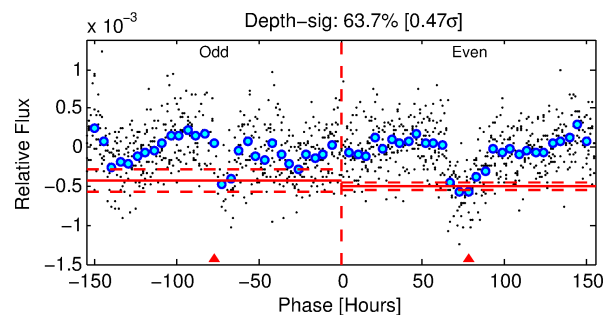
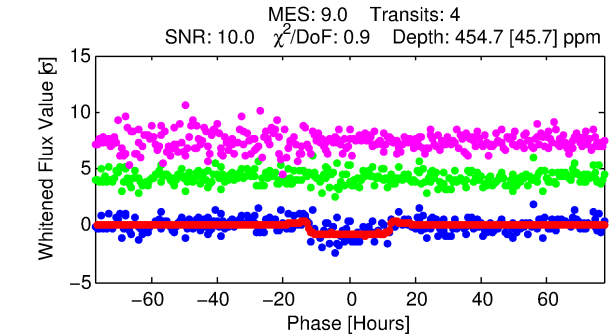
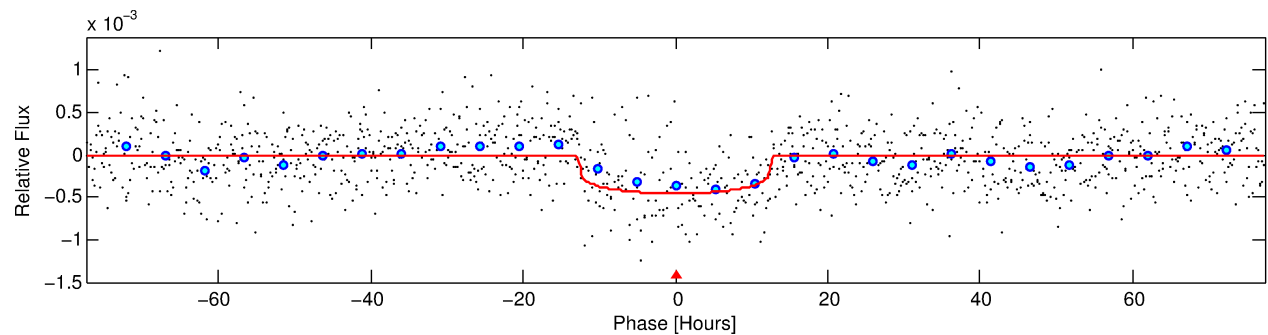
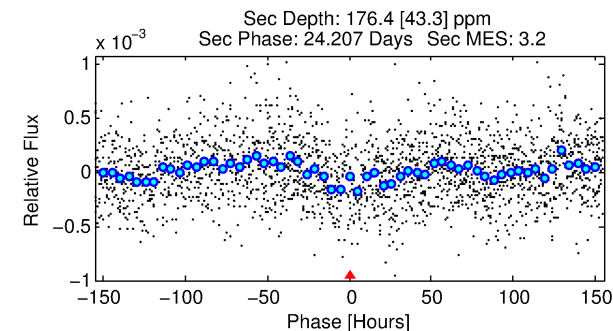
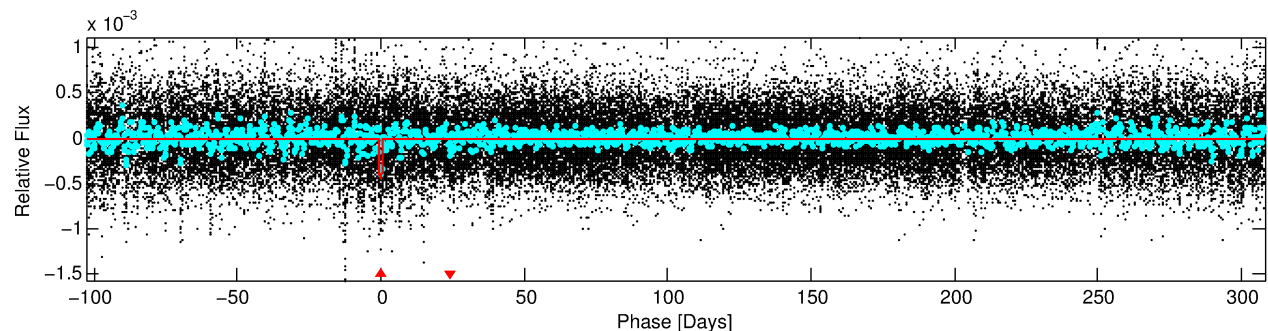
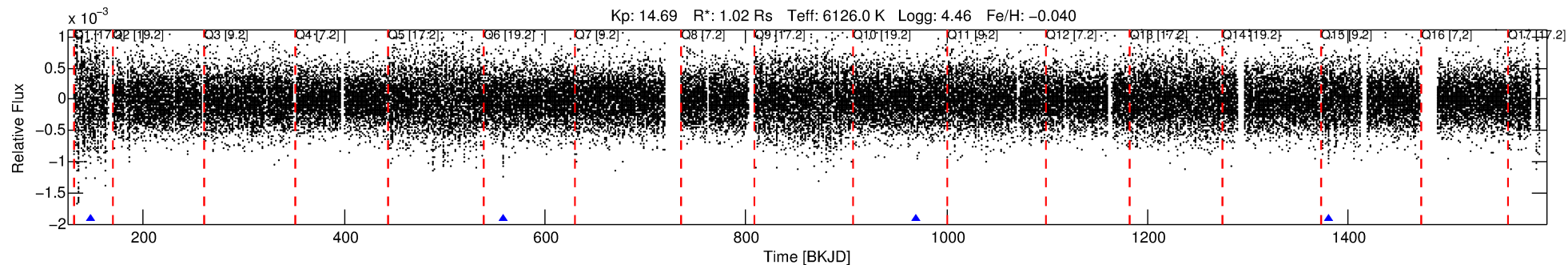
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010207055-01

No Significant Match Found

# DV One-Page Summary

KIC: 10207055 Candidate: 1 of 1 Period: 410.945 d



## DV Fit Results:

Period = 410.94543 [0.00998] d  
Epoch = 147.7019 [0.0189] BKJD  
Rp/R\* = 0.0200 [0.0049]  
a/R\* = 109.71 [127.81]  
b = 0.48 [1.89]  
Seff = 1.06 [0.46]  
Teff = 259 [28] K  
Rp = 2.23 [0.93] Re  
a = 1.1140 [0.3134] AU  
Ag = 24211.99 [16606.34] [1.46 $\sigma$ ]  
Teffp = 4990 [709] K [6.67 $\sigma$ ]

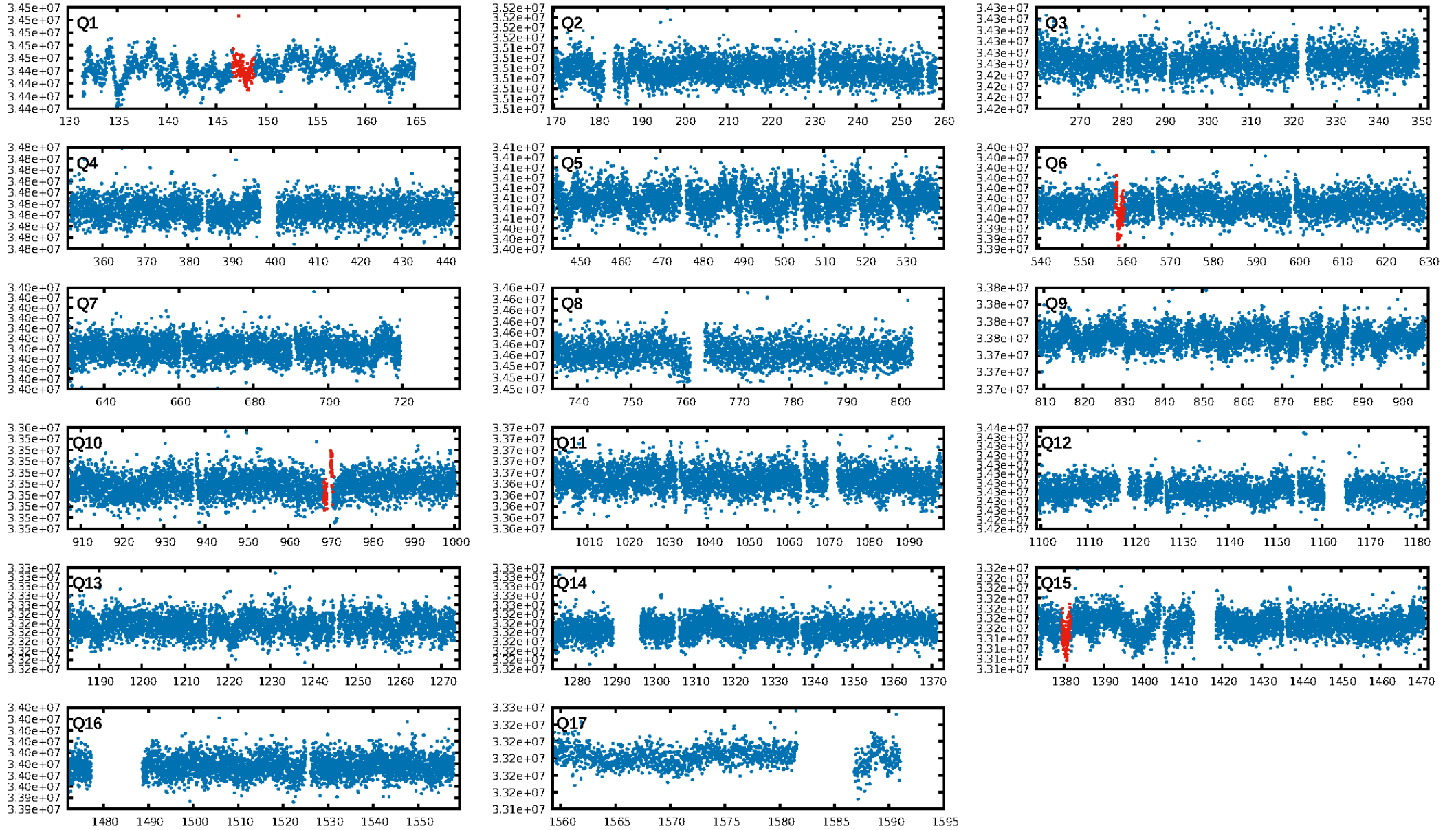
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 72.9%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 1.01e-11**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -2.294  
Centroid-sig: 74.6%  
Centroid-so: 0.878 arcsec [0.55 $\sigma$ ]  
OotOffset-rm: 1.954 arcsec [1.19 $\sigma$ ]  
OotOffset-st: 1/1/0/0 [2]  
KicOffset-rm: 2.001 arcsec [1.25 $\sigma$ ]  
KicOffset-st: 1/1/0/0 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [3/3]

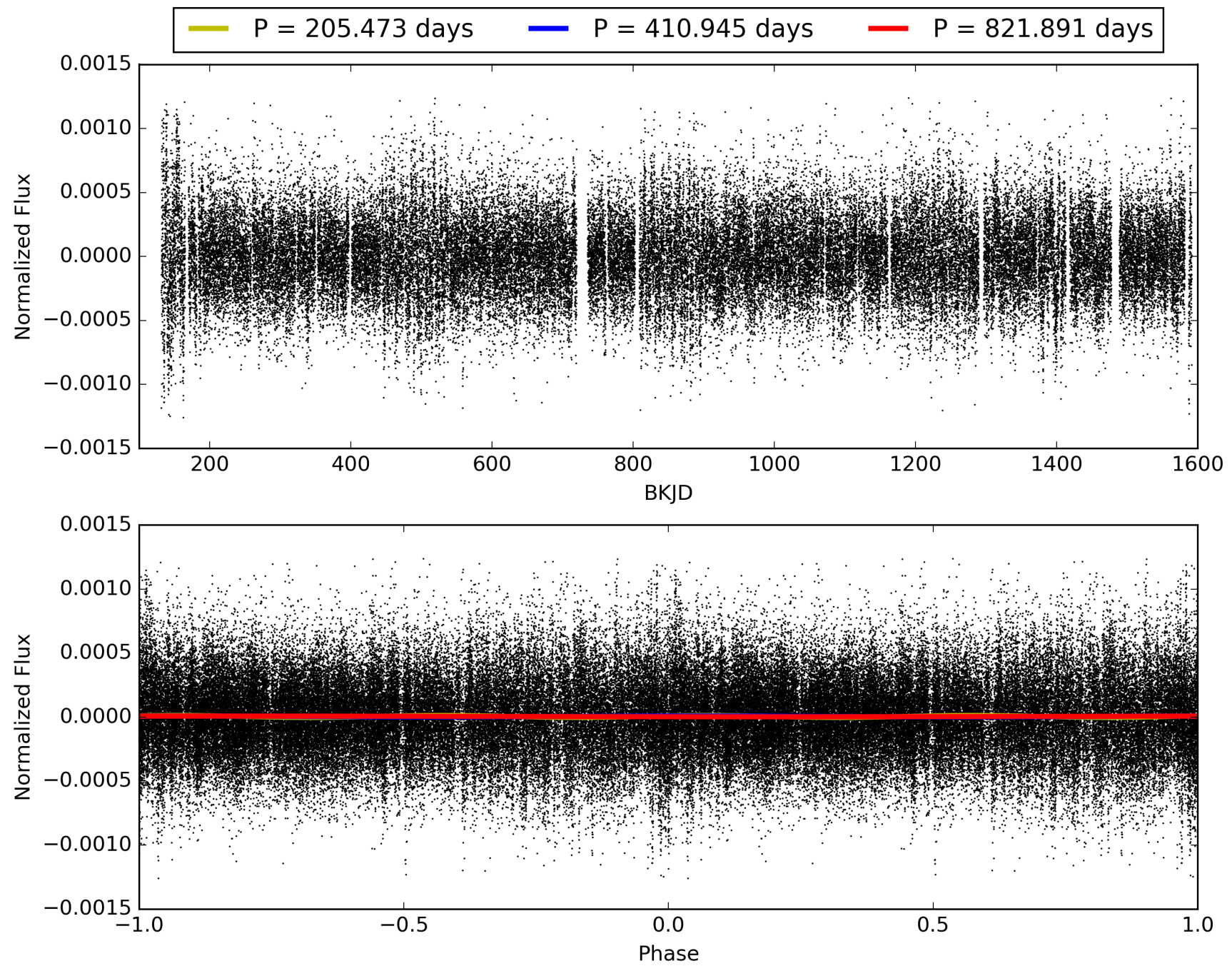
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 22:19:03 Z

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

# TCE 010207055-01, PDC Light Curves

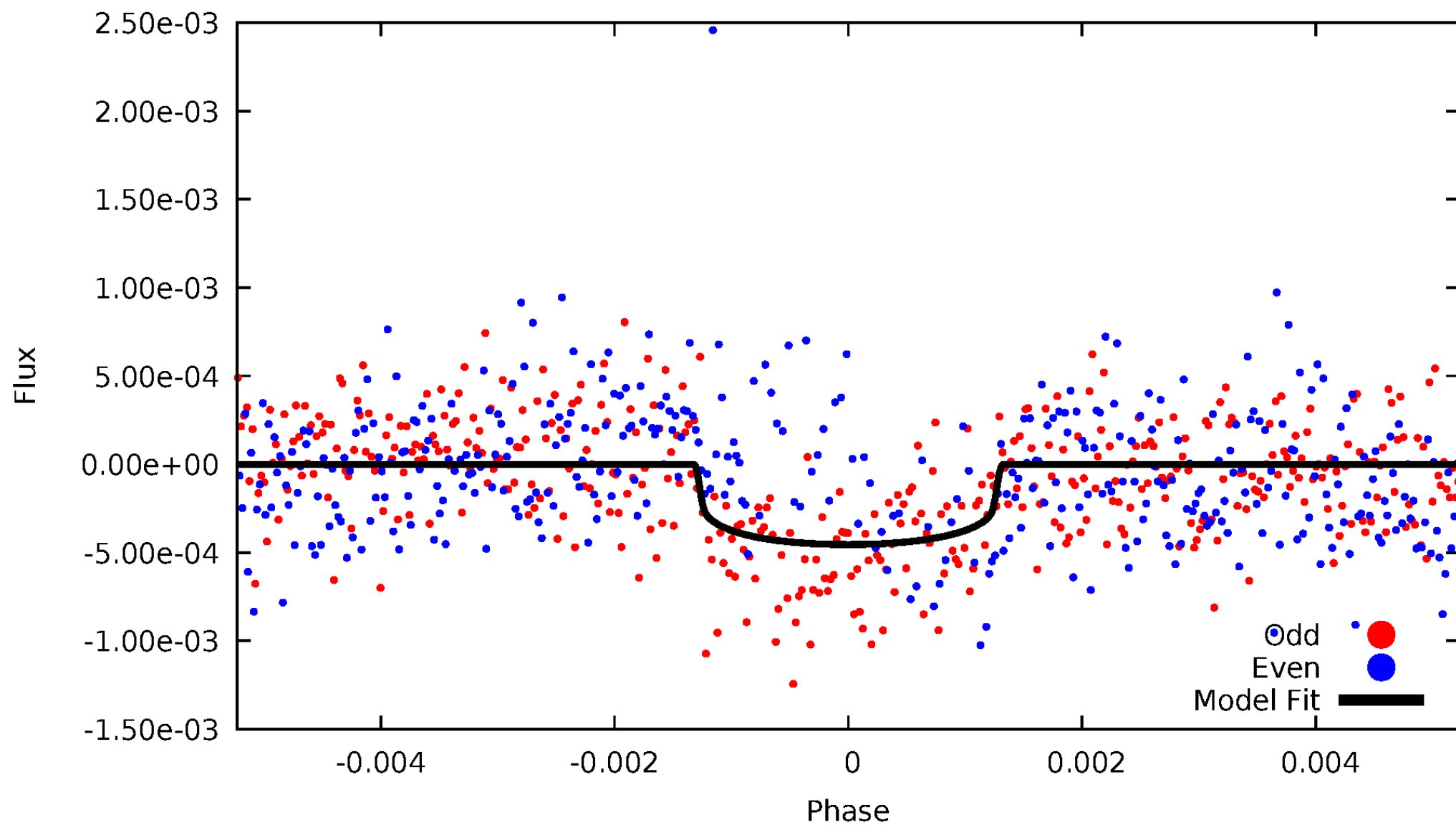


TCE 010207055-01



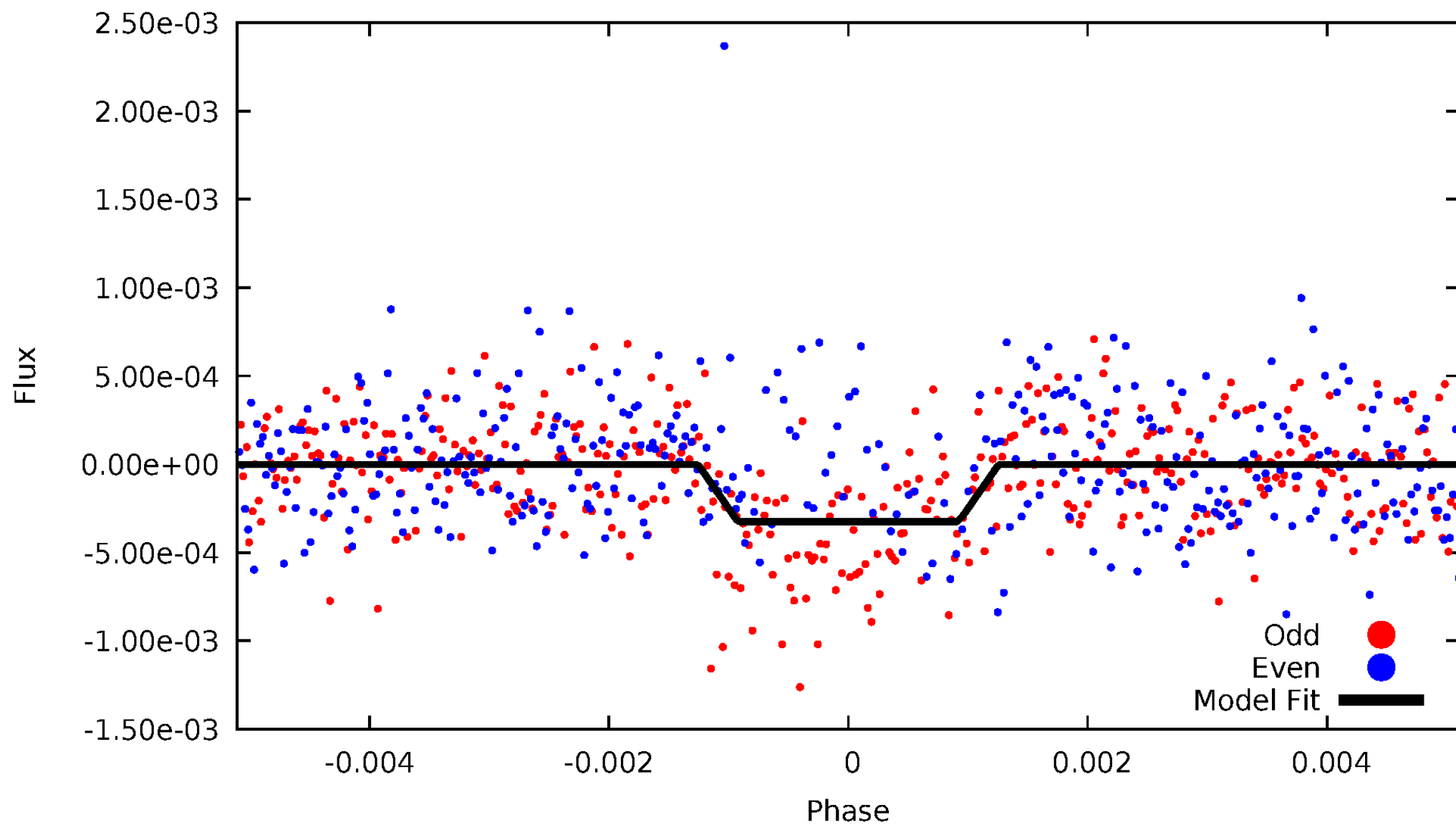
# DV Odd/Even

TCE 010207055-01



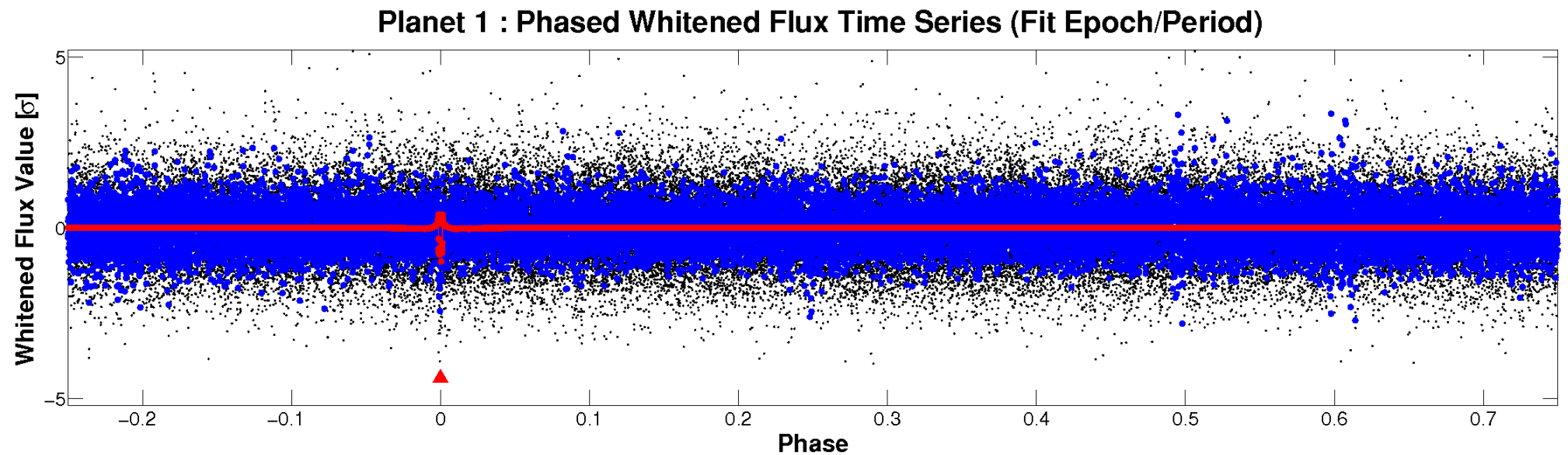
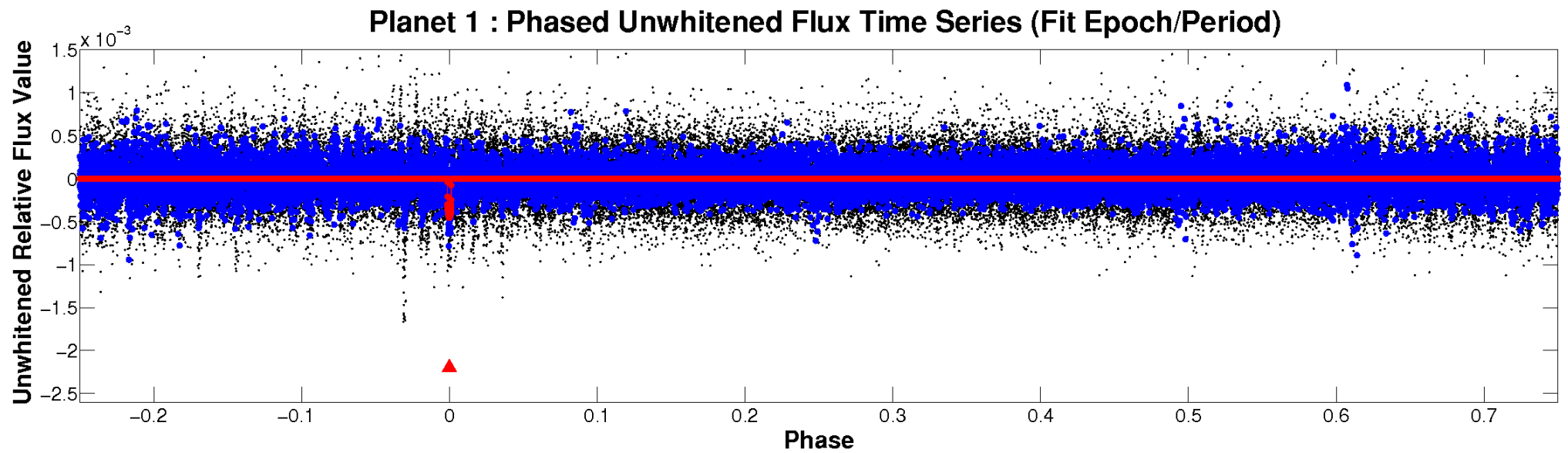
# ALT Odd/Even

TCE 010207055-01



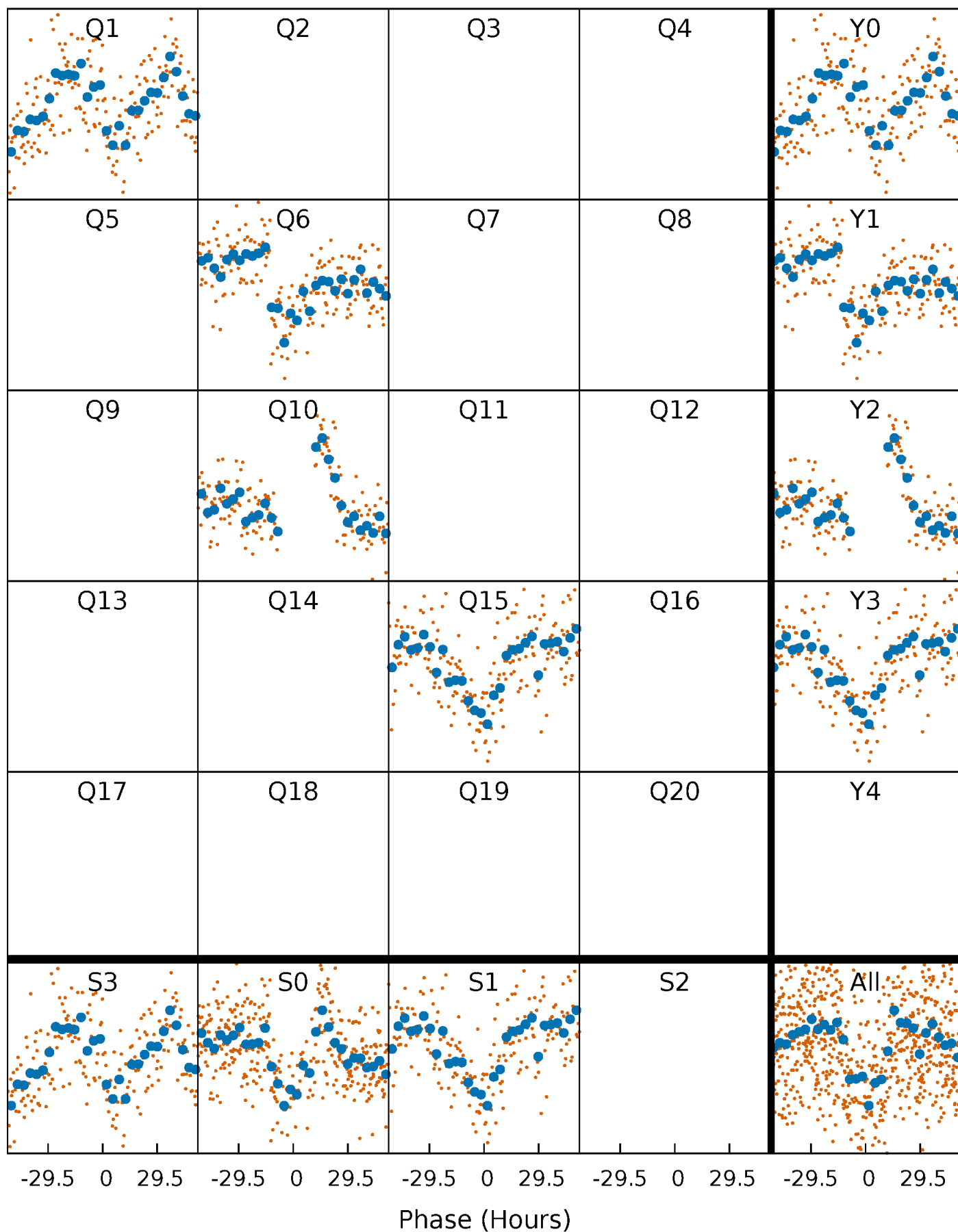


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

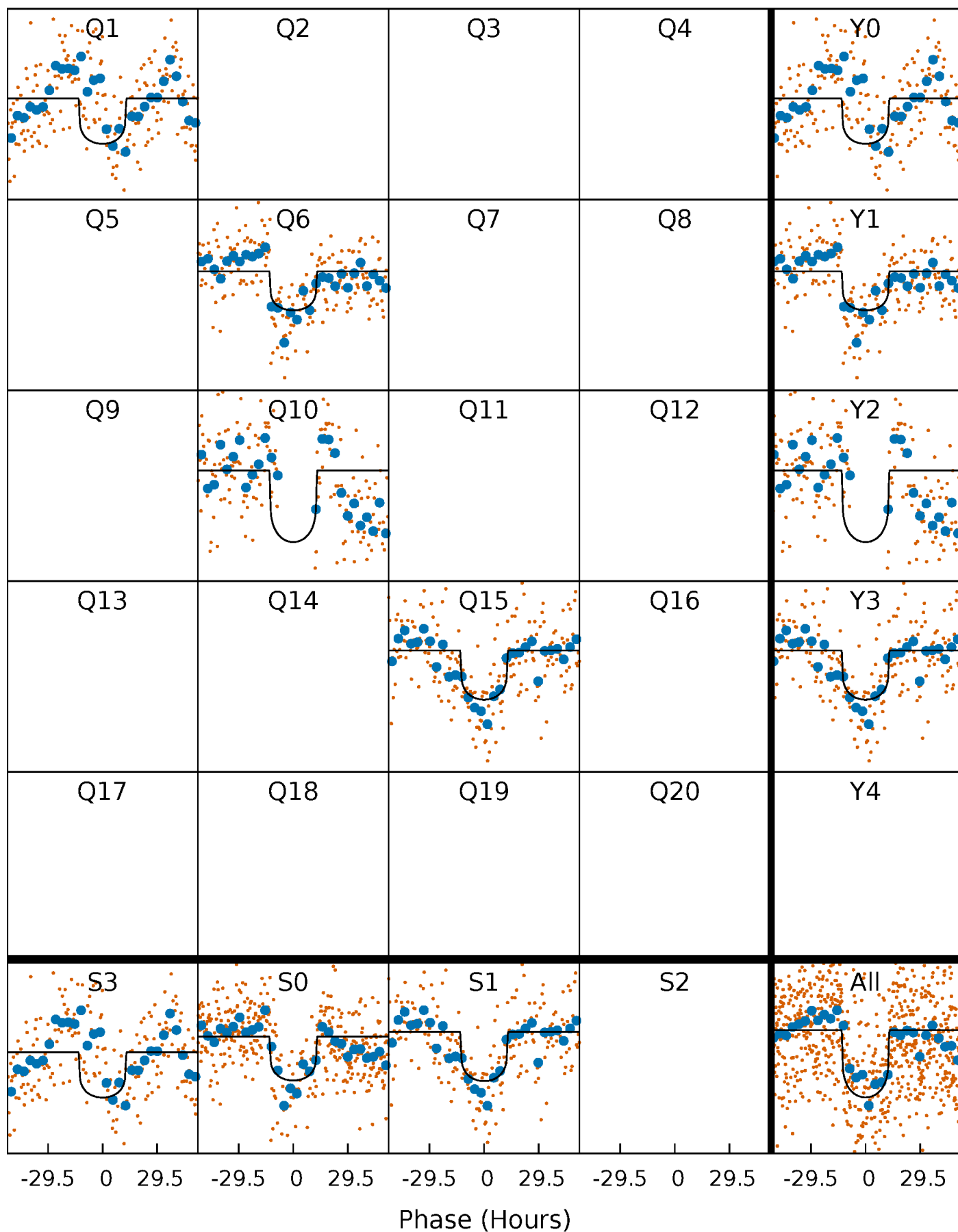
TCE 010207055-01 P=410.945433 Days  $T_0=147.701913$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 010207055-01 P=410.945433 Days  $T_0=147.701913$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

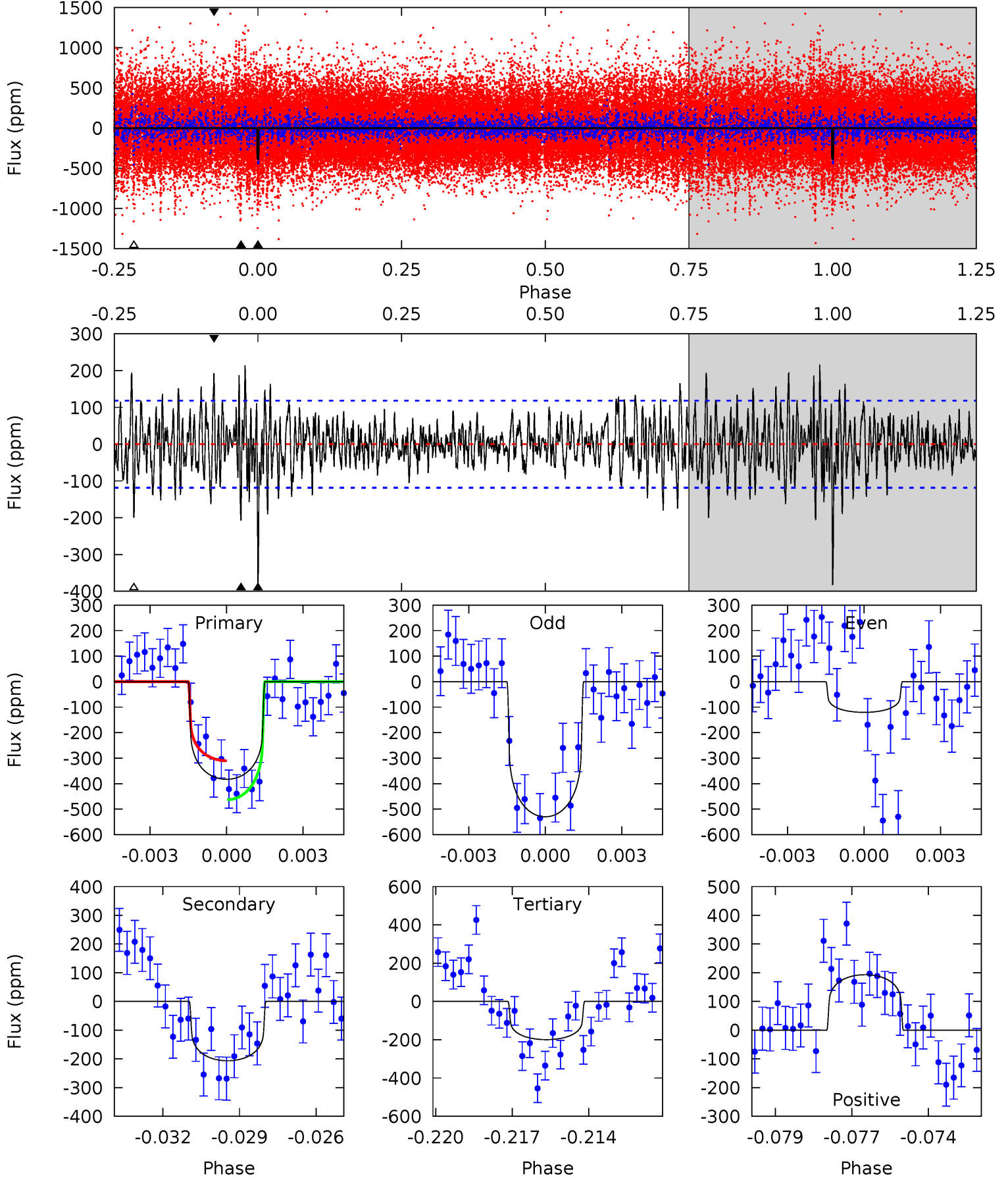
TCE 010207055-01 P=410.966570 Days  $T_0=147.652517$  (BKJD)



# DV Model-Shift Uniqueness Test

010207055-01, P = 410.945433 Days, E = 147.701913 Days

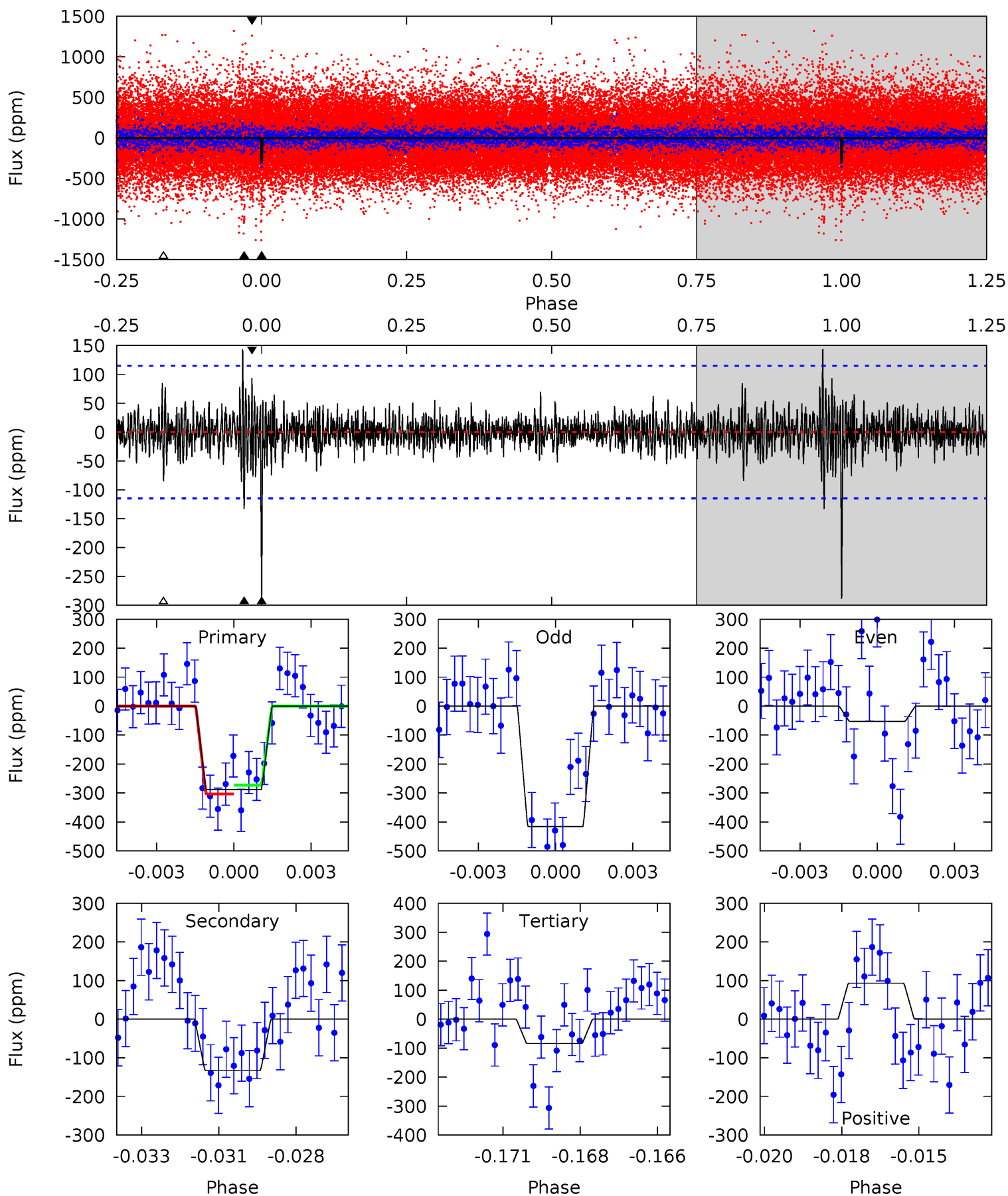
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.1	9.21	8.90	8.62	5.28	3.01	2.42	8.18	8.46	0.31	0.59	8.82	1.02	0.36	3.40



# Alt Model-Shift Uniqueness Test

010207055-01, P = 410.966570 Days, E = 147.652517 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
13.3	6.13	3.87	4.30	5.28	3.02	1.02	9.42	8.99	2.26	1.83	8.10	1.00	0.33	0.71



### Stellar Parameters For KIC 010207055

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6126^{+165}_{-220}$	$4.458^{+0.056}_{-0.224}$	$-0.040^{+0.250}_{-0.350}$	$1.021^{+0.341}_{-0.114}$	$1.090^{+0.151}_{-0.151}$	$1.442^{+0.425}_{-0.776}$
	+3%/-4%	+1%/-5%	+625%/-875%	+33%/-11%	+14%/-14%	+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 010207055-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-207 \pm 22$	$2.36^{+0.69}_{-0.61}$	$370^{+27}_{-19}$	$5214^{+747}_{-466}$	$24923^{+19457}_{-9942}$
Alt.	$-133 \pm 22$	$2.12^{+0.67}_{-0.61}$	$369^{+27}_{-19}$	$4966^{+810}_{-518}$	$19876^{+19968}_{-8750}$

$T_{max}$  = 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

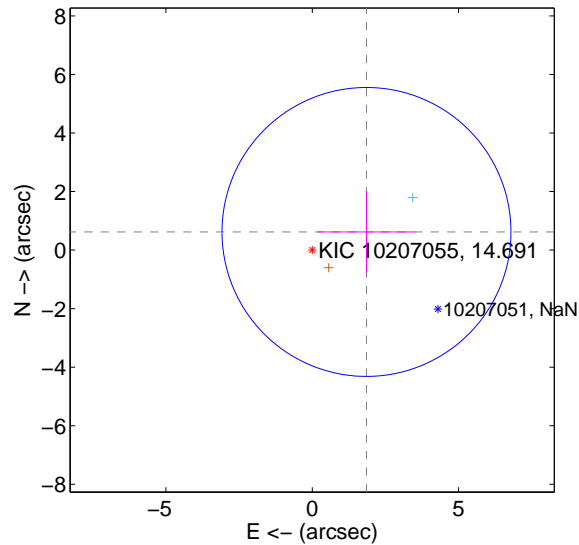
Supplemental centroid analysis for 010207055-01. Kepler magnitude: 14.69. Transit SNR 10.00

There are 1 quarters with good PRF difference image offsets

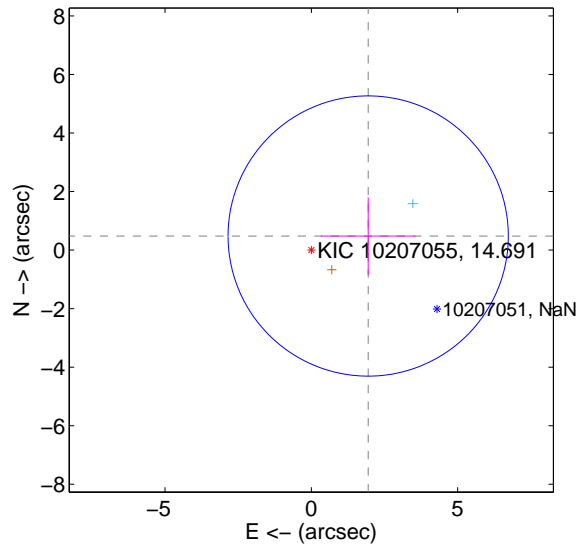
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.954 \pm 1.645$	1.19	$-1.853 \pm 1.670$	$0.620 \pm 1.400$
PRF-fit source offset from KIC position	$2.001 \pm 1.596$	1.25	$-1.942 \pm 1.611$	$0.481 \pm 1.322$
photometric centroid source offset	$0.88 \pm 1.60$	0.55	$0.85 \pm 1.62$	$0.23 \pm 1.13$

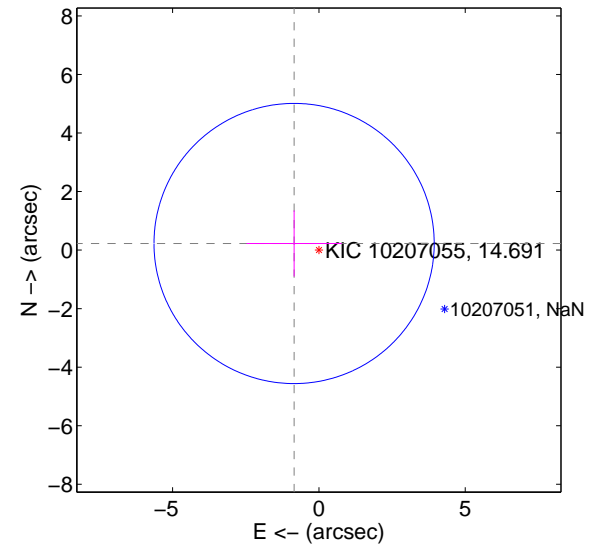
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



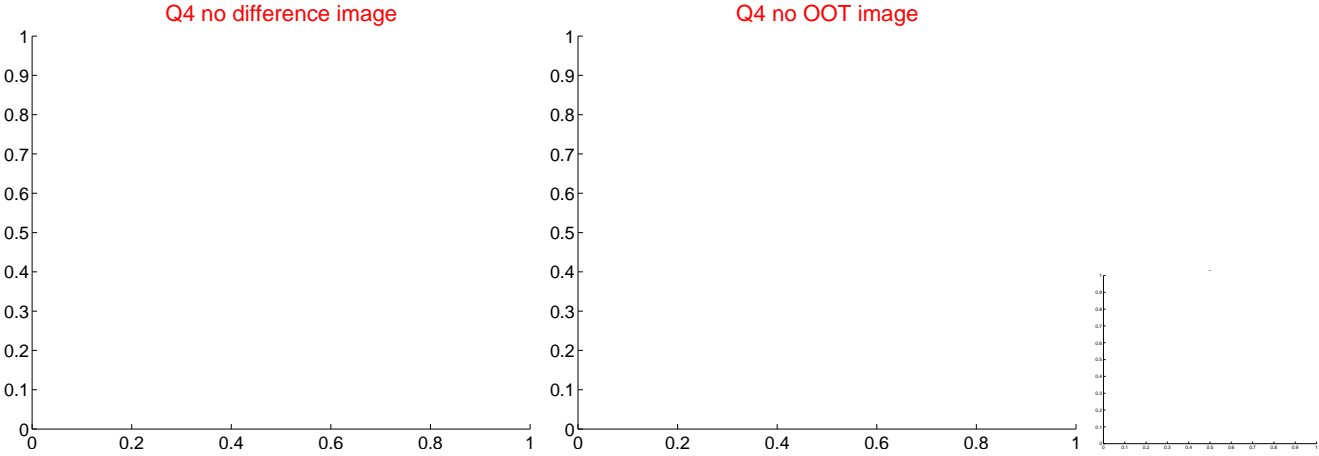
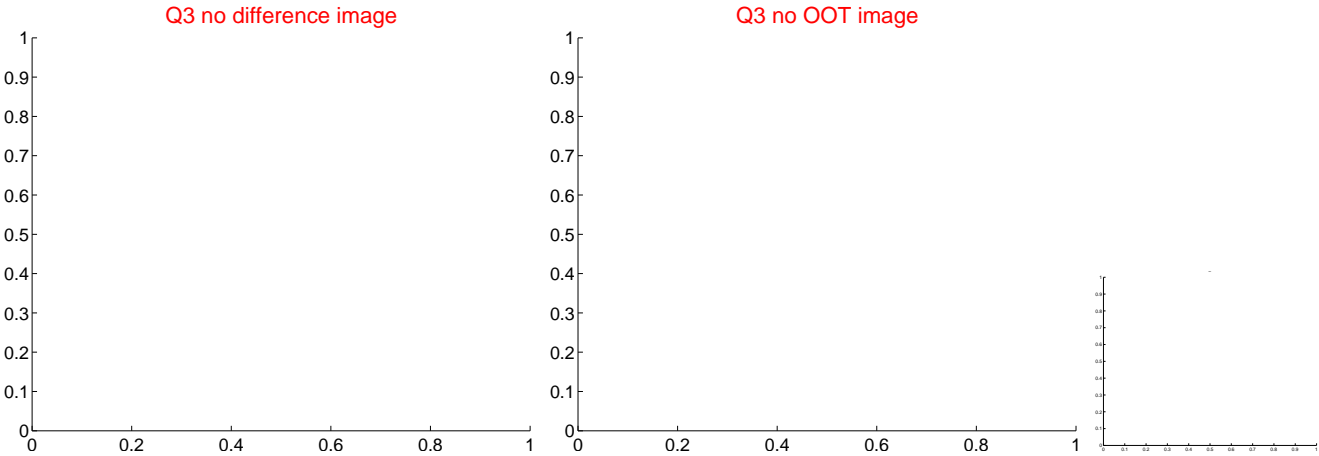
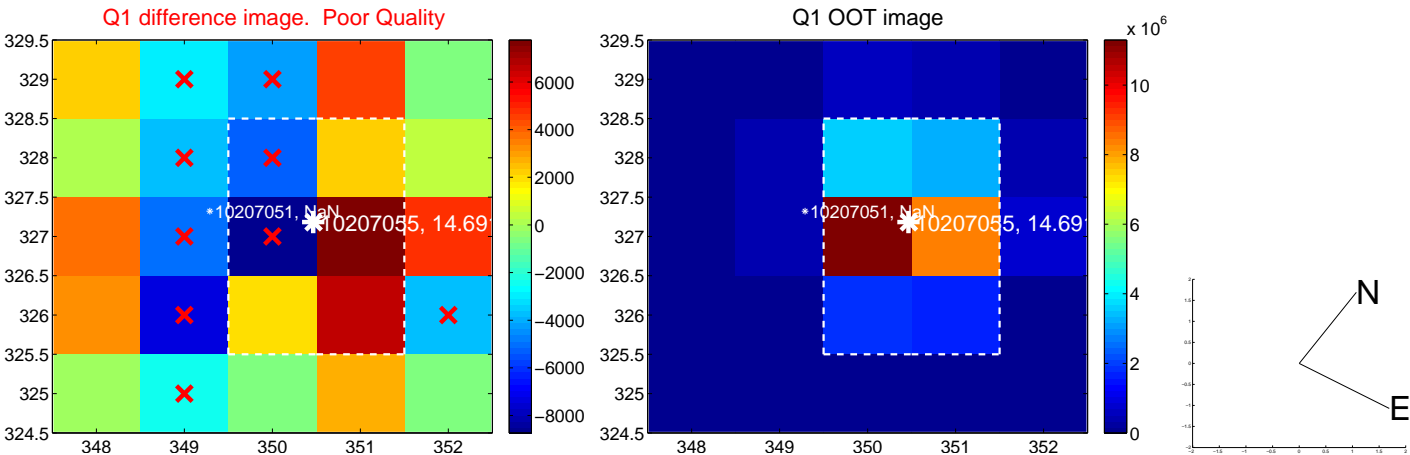
offset from photometric centroids



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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

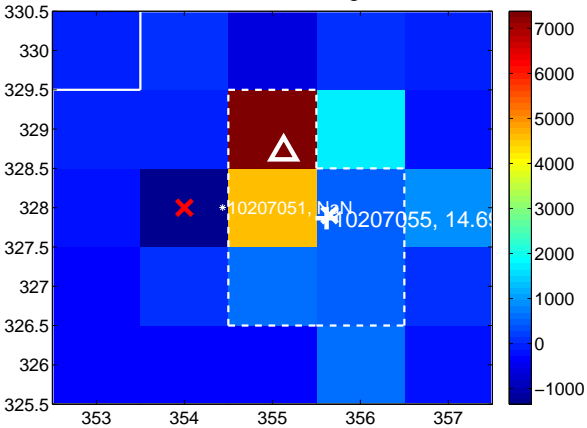
Q5 no difference image



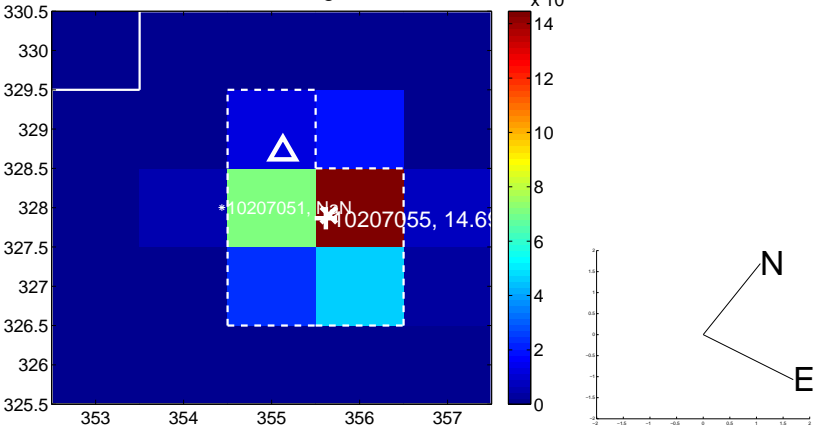
Q5 no OOT image



Q6 difference image



Q6 OOT image



Q7 no difference image



Q7 no OOT image



Q8 no difference image



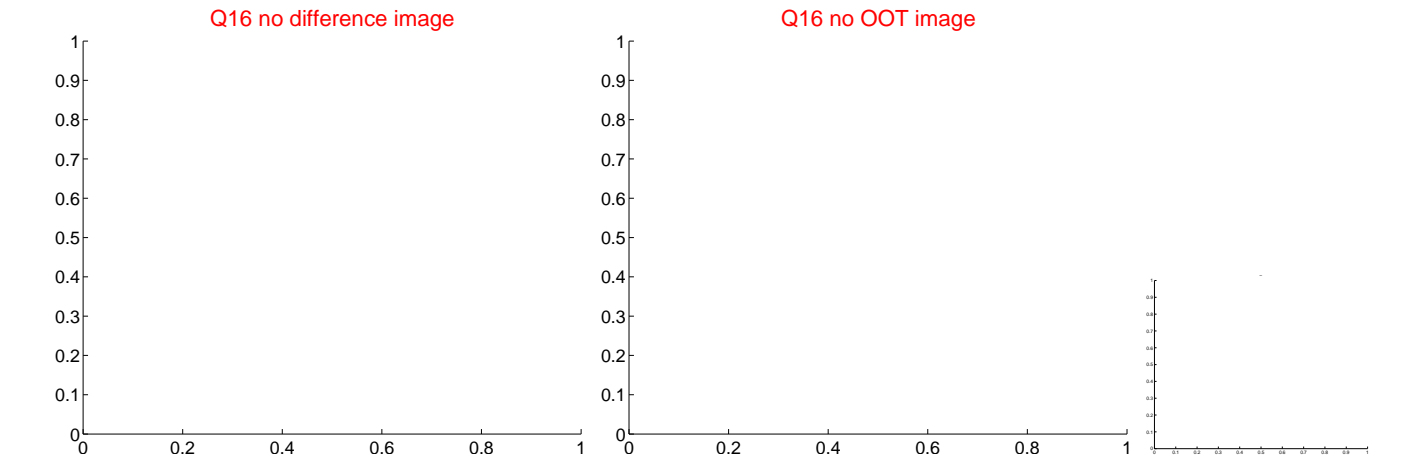
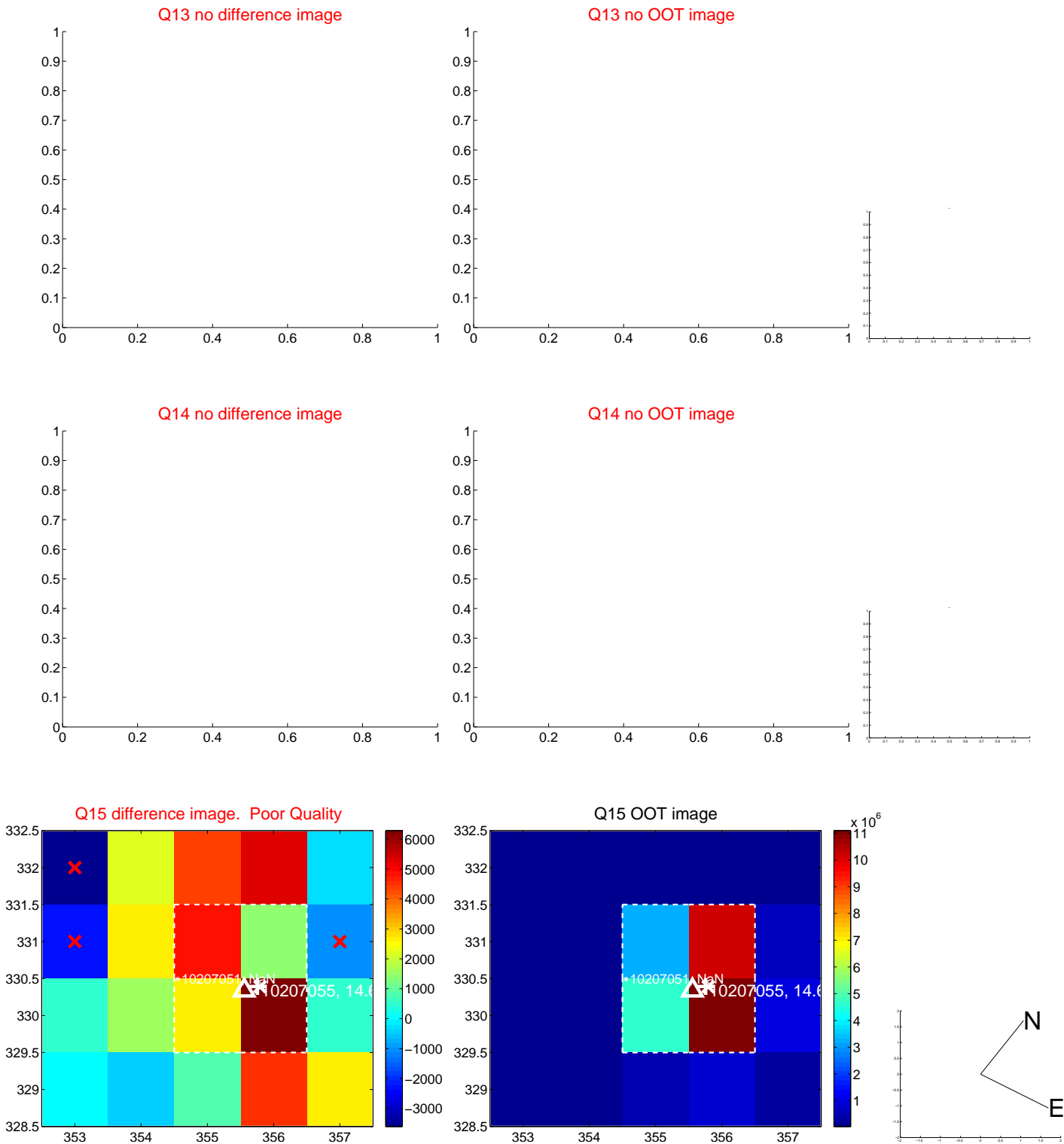
Q8 no OOT image



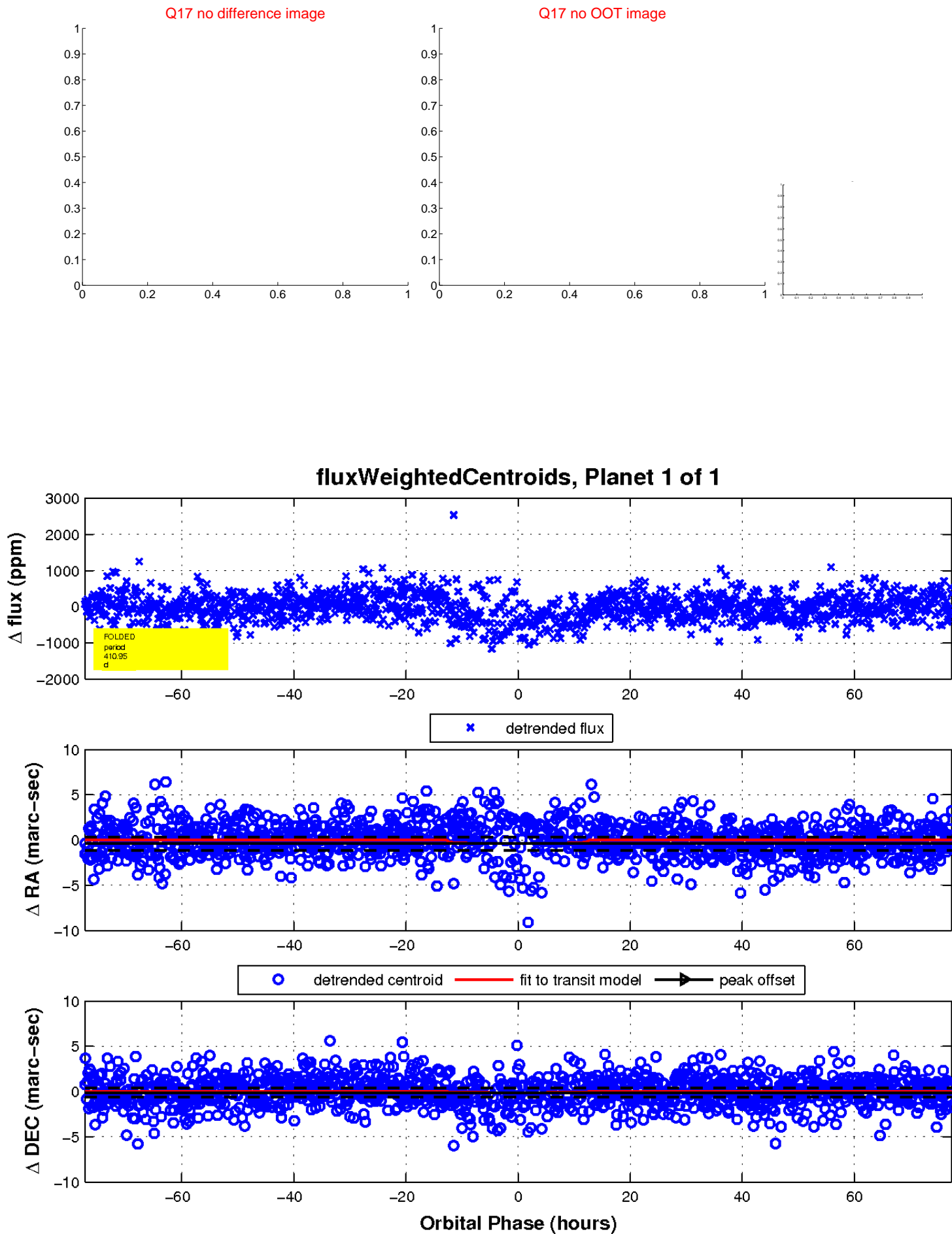
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



UKIRT Image

Declination

