

# KIC 010265602

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010265602-01	OBS	2689.01	165.344589	174.296842	4971.8	3.200	46.2	48.8	0.81	5594	7.36	1.94

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010265602-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

**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 010265602-01

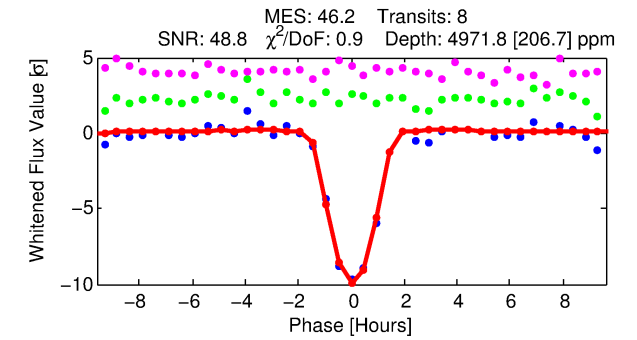
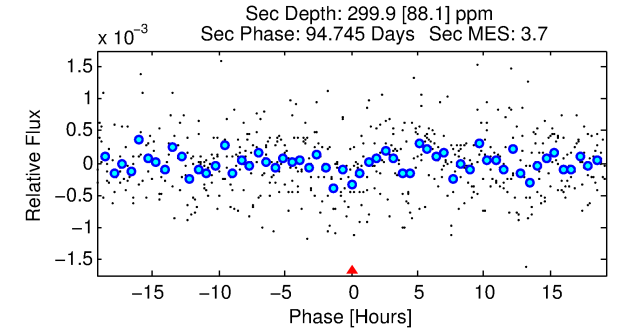
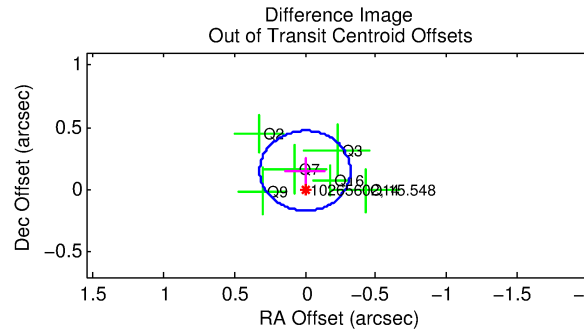
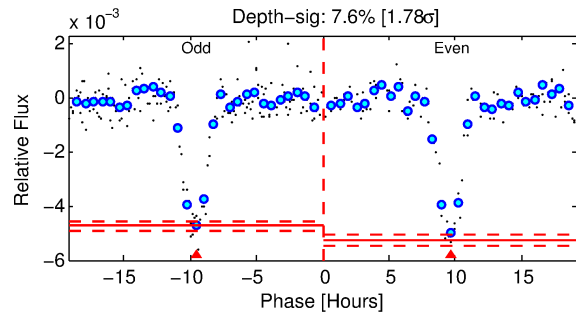
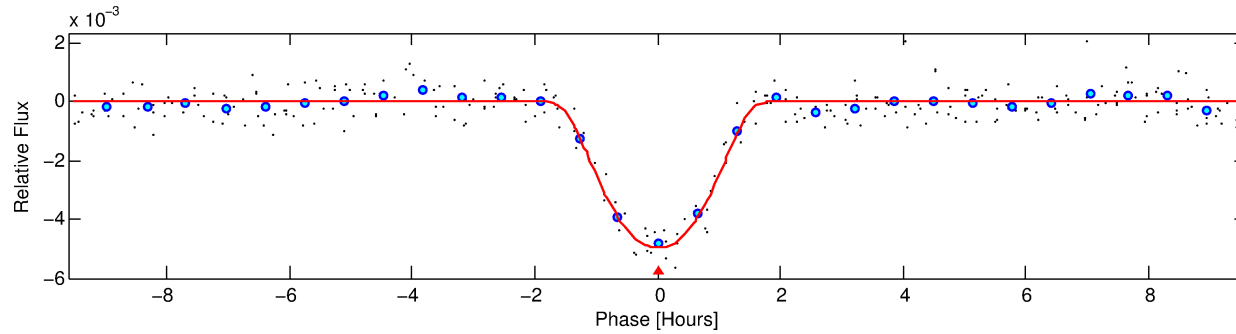
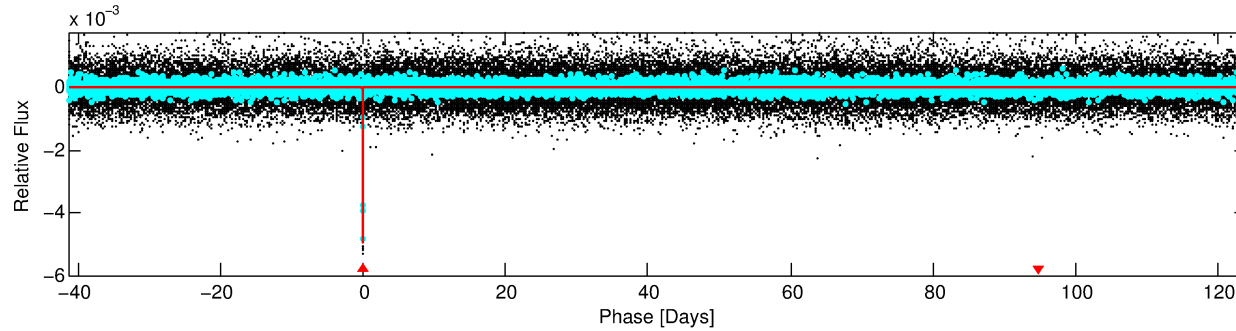
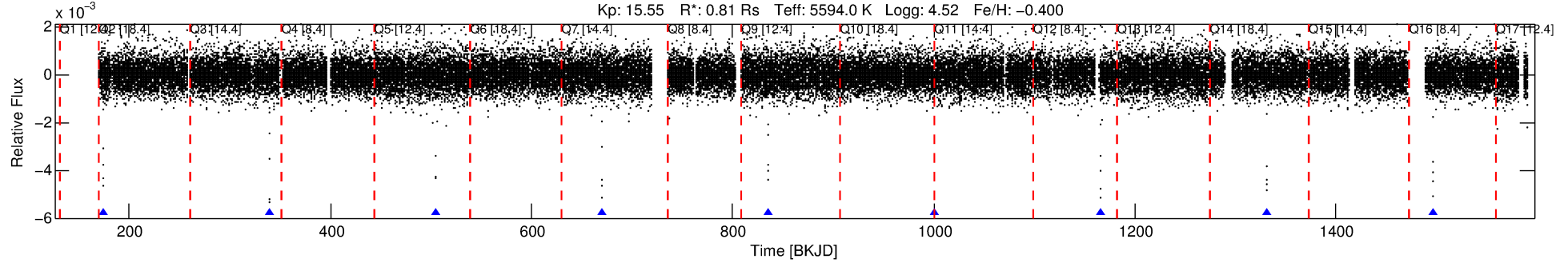
No Significant Match Found

# DV One-Page Summary

KIC: 10265602 Candidate: 1 of 1 Period: 165.345 d

KOI: K02689.01 Corr: 0.977

Kp: 15.55 R\*: 0.81 Rs Teff: 5594.0 K Logg: 4.52 Fe/H: -0.400



## DV Fit Results:

Period = 165.34459 [0.00031] d  
Epoch = 174.2968 [0.0016] BKJD  
Rp/R\* = 0.0830 [0.0107]  
a/R\* = 217.21 [17.72]  
b = 0.93 [0.03]  
Seff = 1.94 [0.57]  
Teq = 301 [22] K  
Rp = 7.36 [1.87] Re  
a = 0.5466 [0.0999] AU  
Ag = 910.45 [429.52] [2.12σ]  
Teffp = 2555 [264] K [8.51σ]

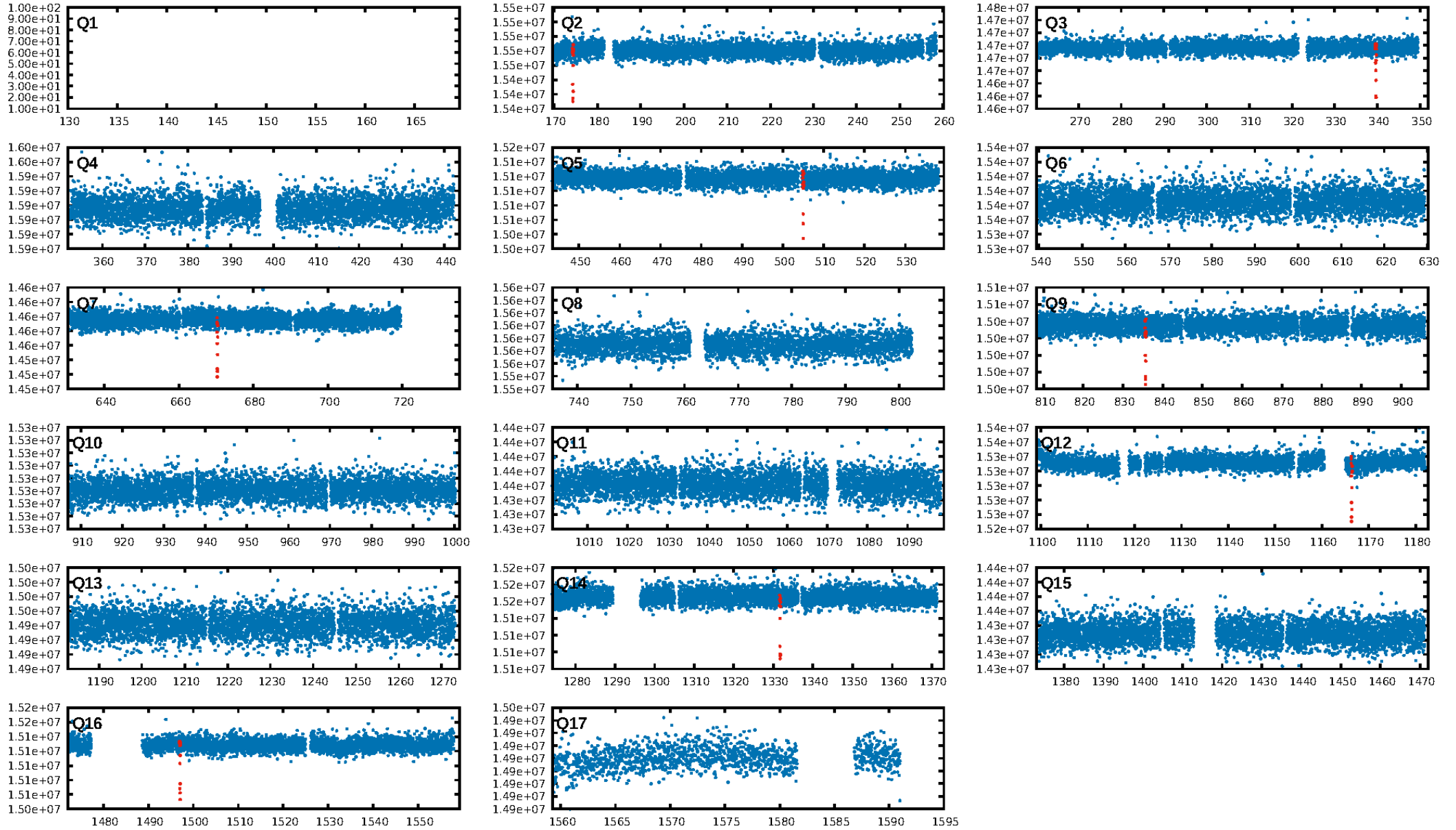
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 46.6%  
ModelChiSquareGof-sig: 98.7%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [8/8]  
GhostDiagnostic-chr: 4.64  
Centroid-sig: 1.9%  
Centroid-so: 0.304 arcsec [1.04σ]  
OotOffset-rm: 0.151 arcsec [1.41σ]  
KicOffset-rm: 0.030 arcsec [0.21σ]  
OotOffset-st: 2/2/1/1 [6]  
KicOffset-st: 2/2/1/1 [6]  
DiffImageQuality-fgm: 1.00 [6/6]  
DiffImageOverlap-fno: 1.00 [6/6]

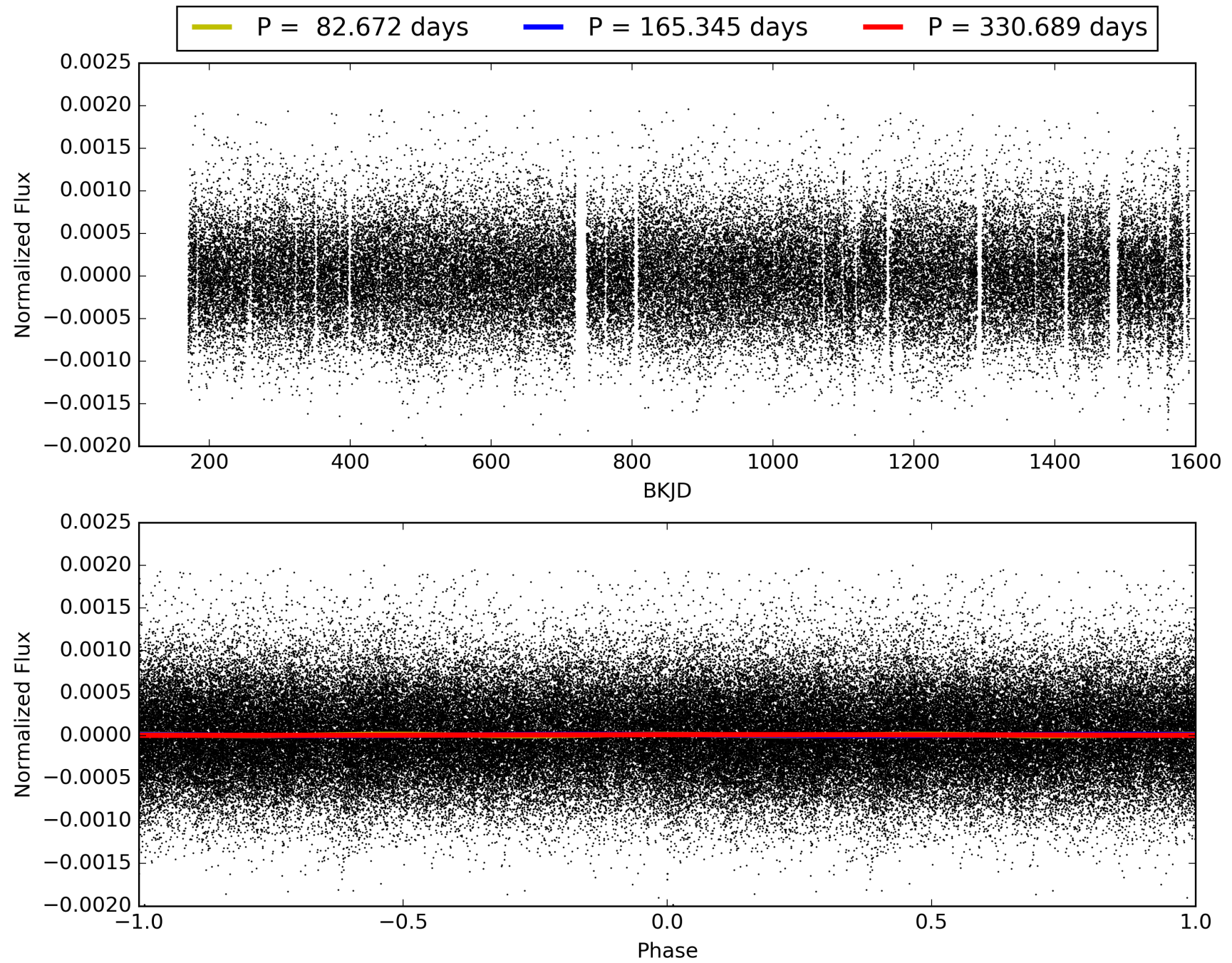
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:13:38 Z

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

# TCE 010265602-01, PDC Light Curves

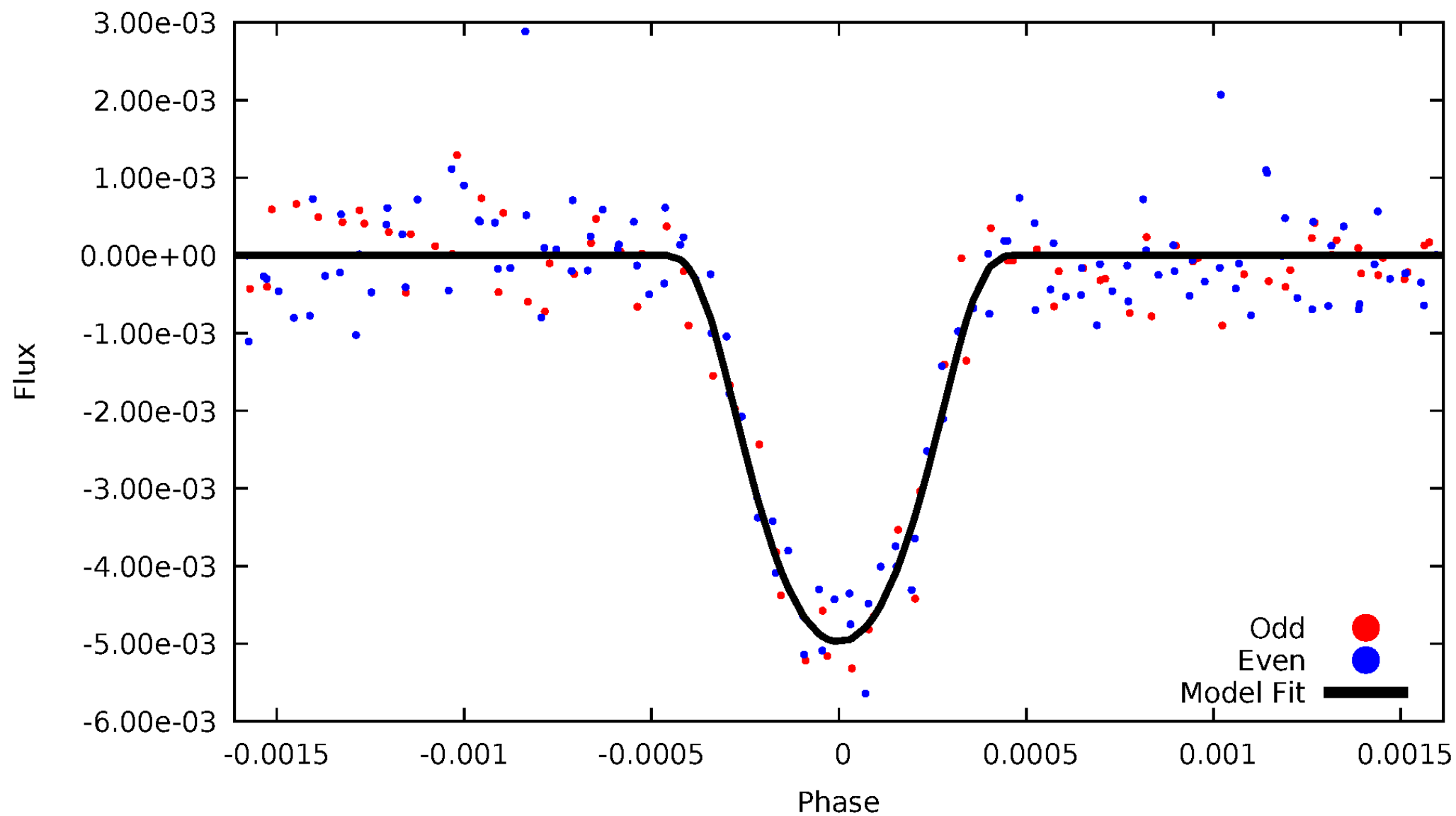


# TCE 010265602-01



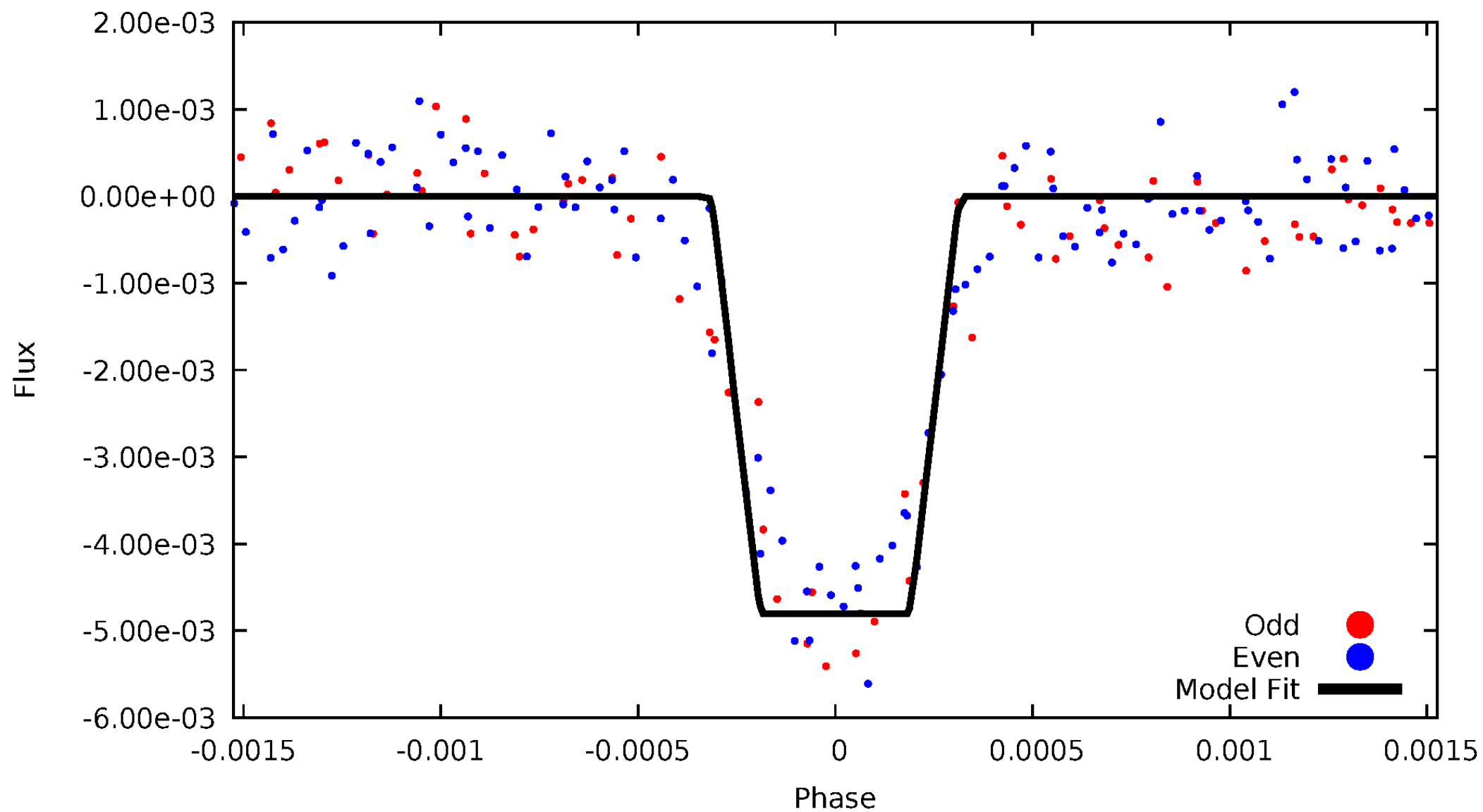
# DV Odd/Even

TCE 010265602-01



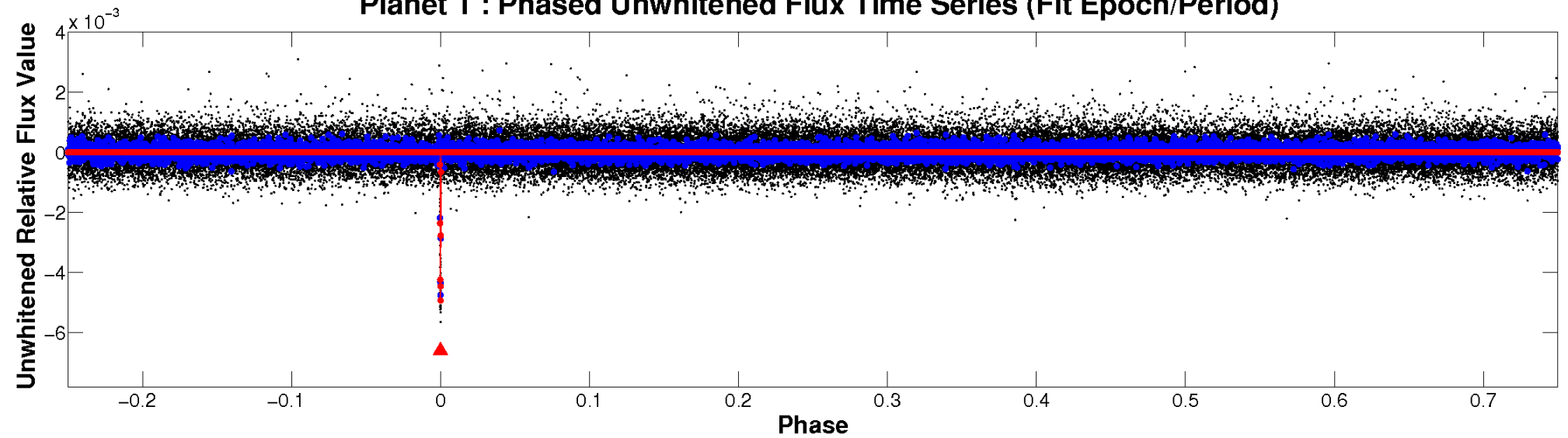
# ALT Odd/Even

TCE 010265602-01

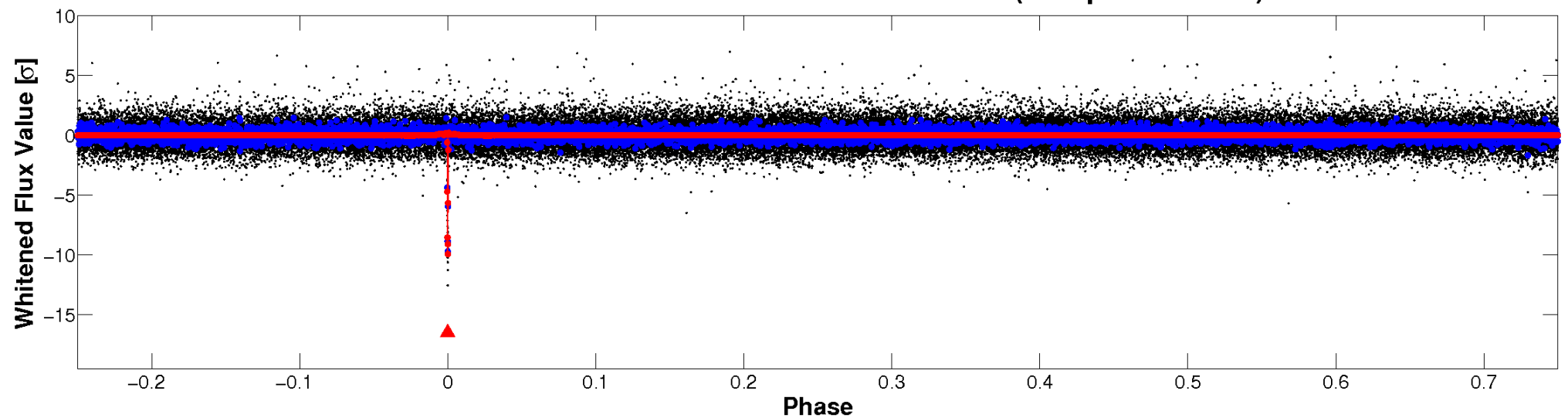


# Non-Whitened Vs. Whitened Light Curve

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



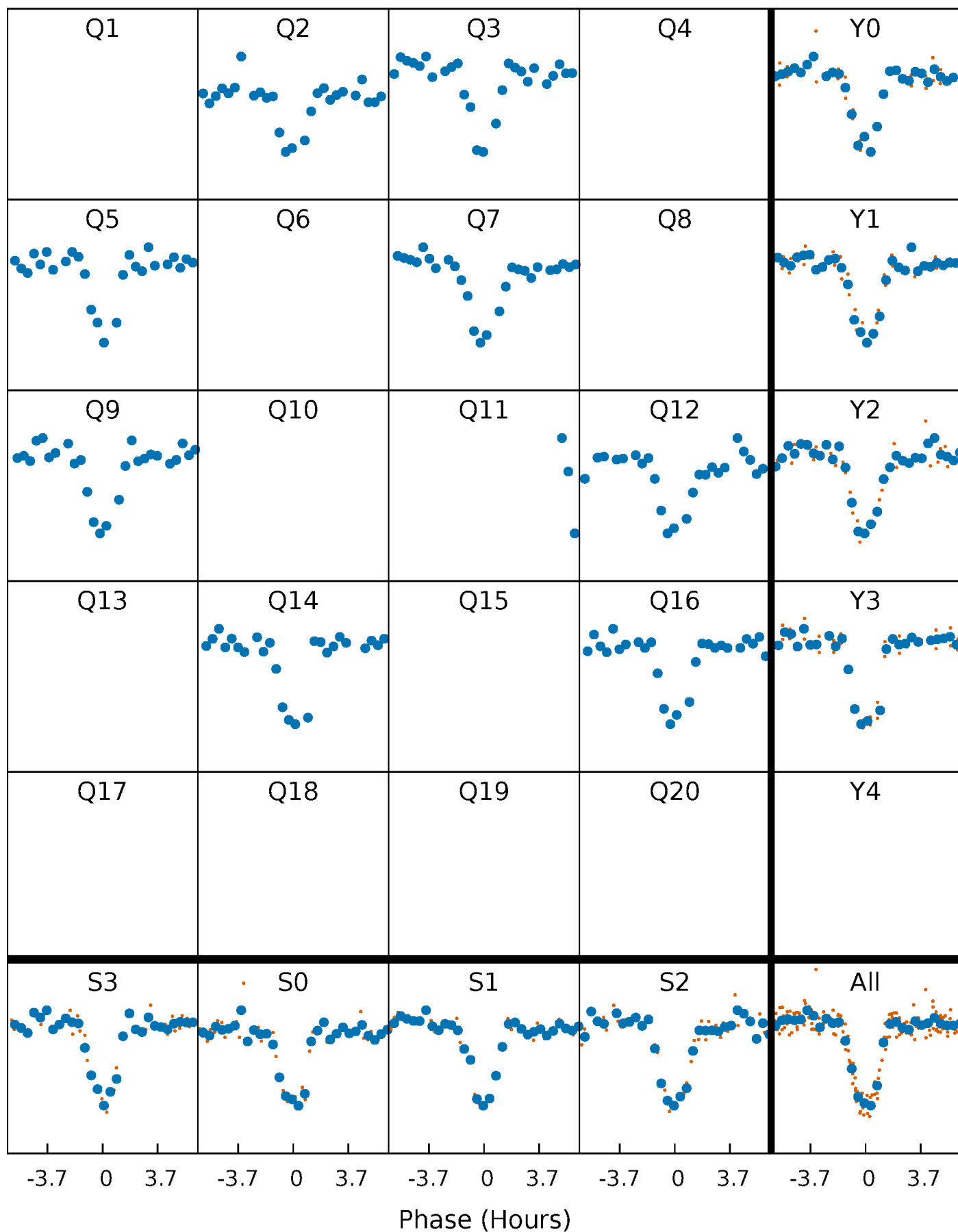
Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)





# PDC Quarter-Phased Transit Curves

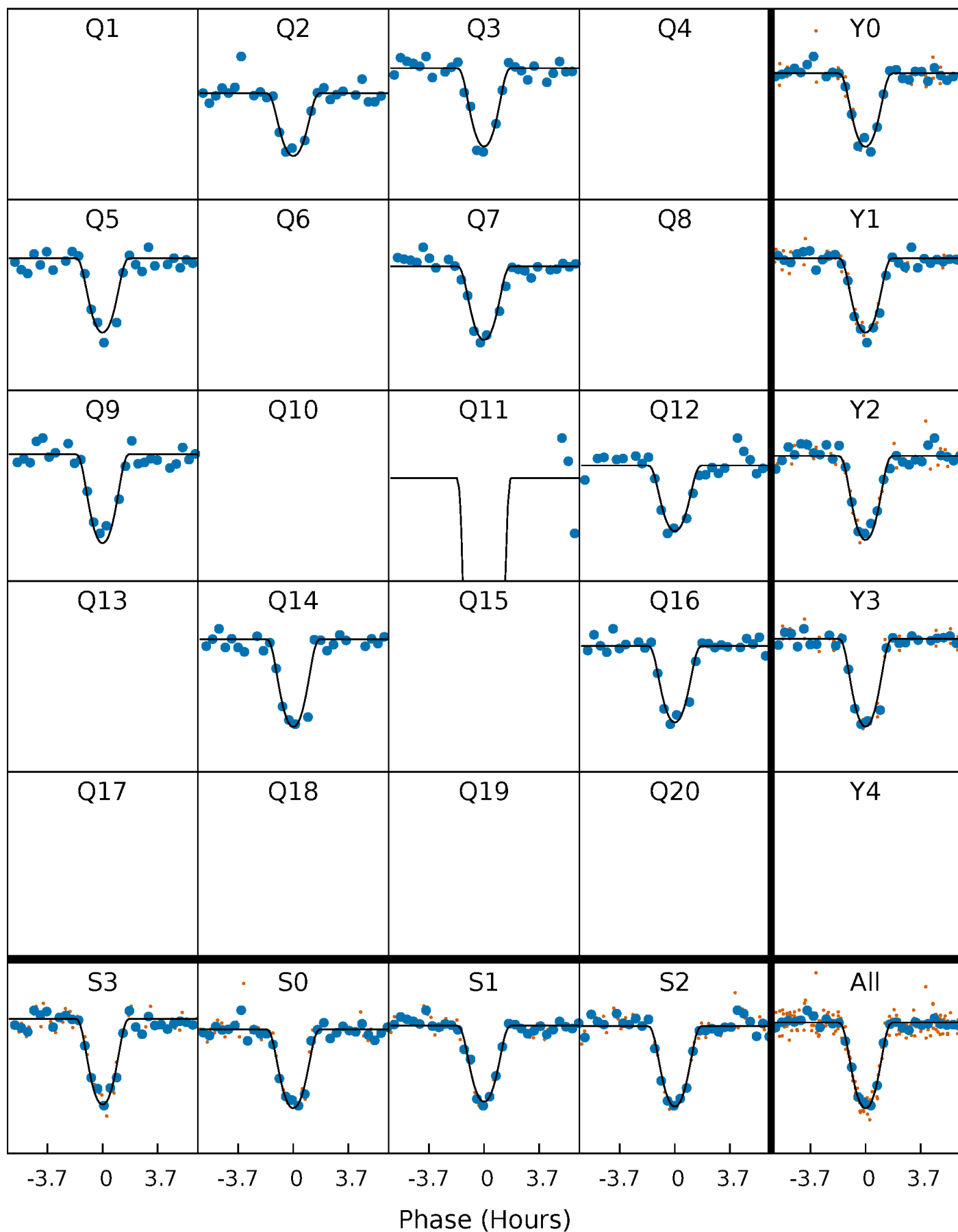
TCE 010265602-01 P=165.344589 Days  $T_0=174.296842$  (BKJD)





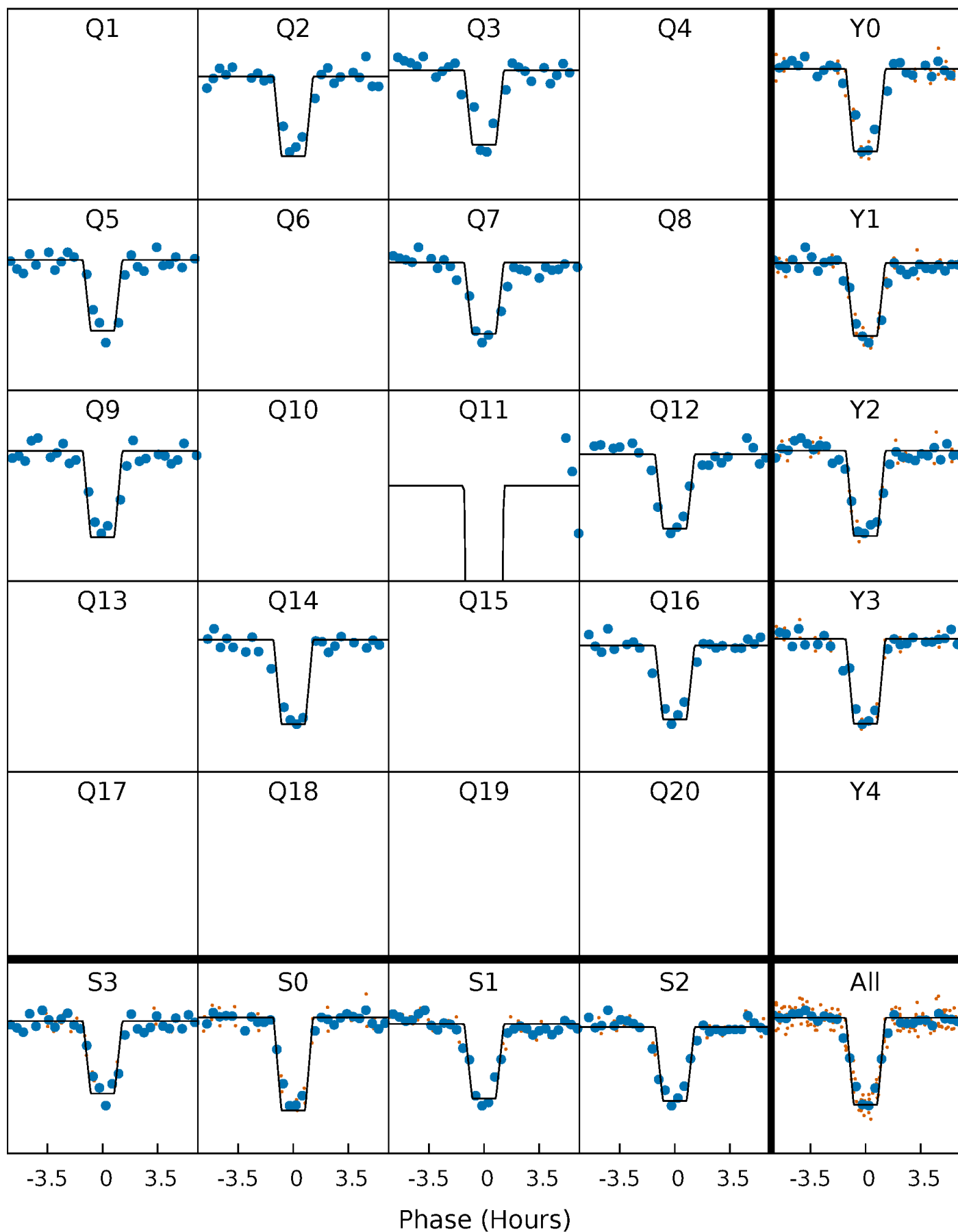
# DV Quarter-Phased Transit Curves

TCE 010265602-01 P=165.344589 Days  $T_0=174.296842$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

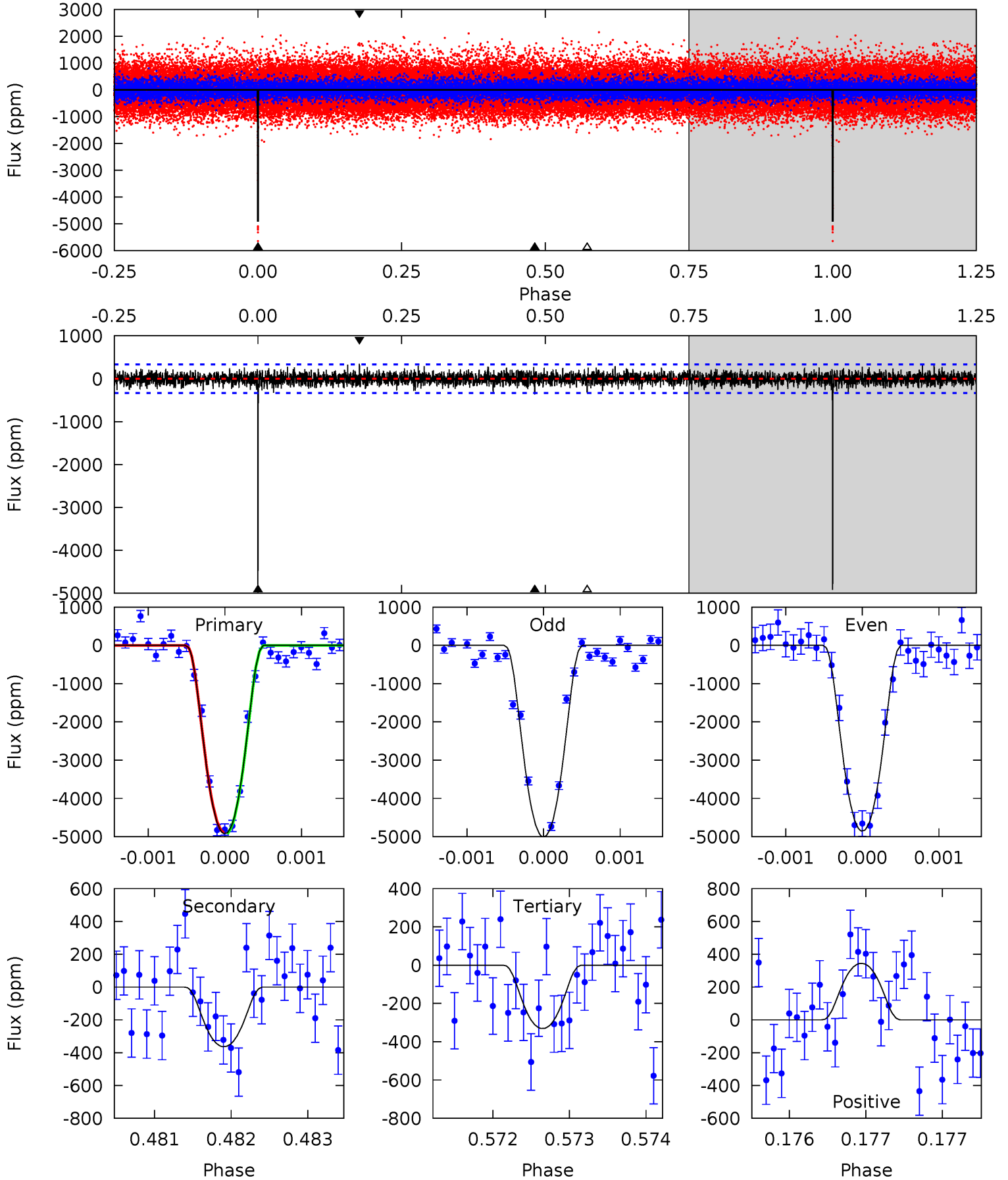
TCE 010265602-01 P=165.345513 Days  $T_0=174.292957$  (BKJD)



# DV Model-Shift Uniqueness Test

010265602-01, P = 165.344589 Days, E = 8.952253 Days

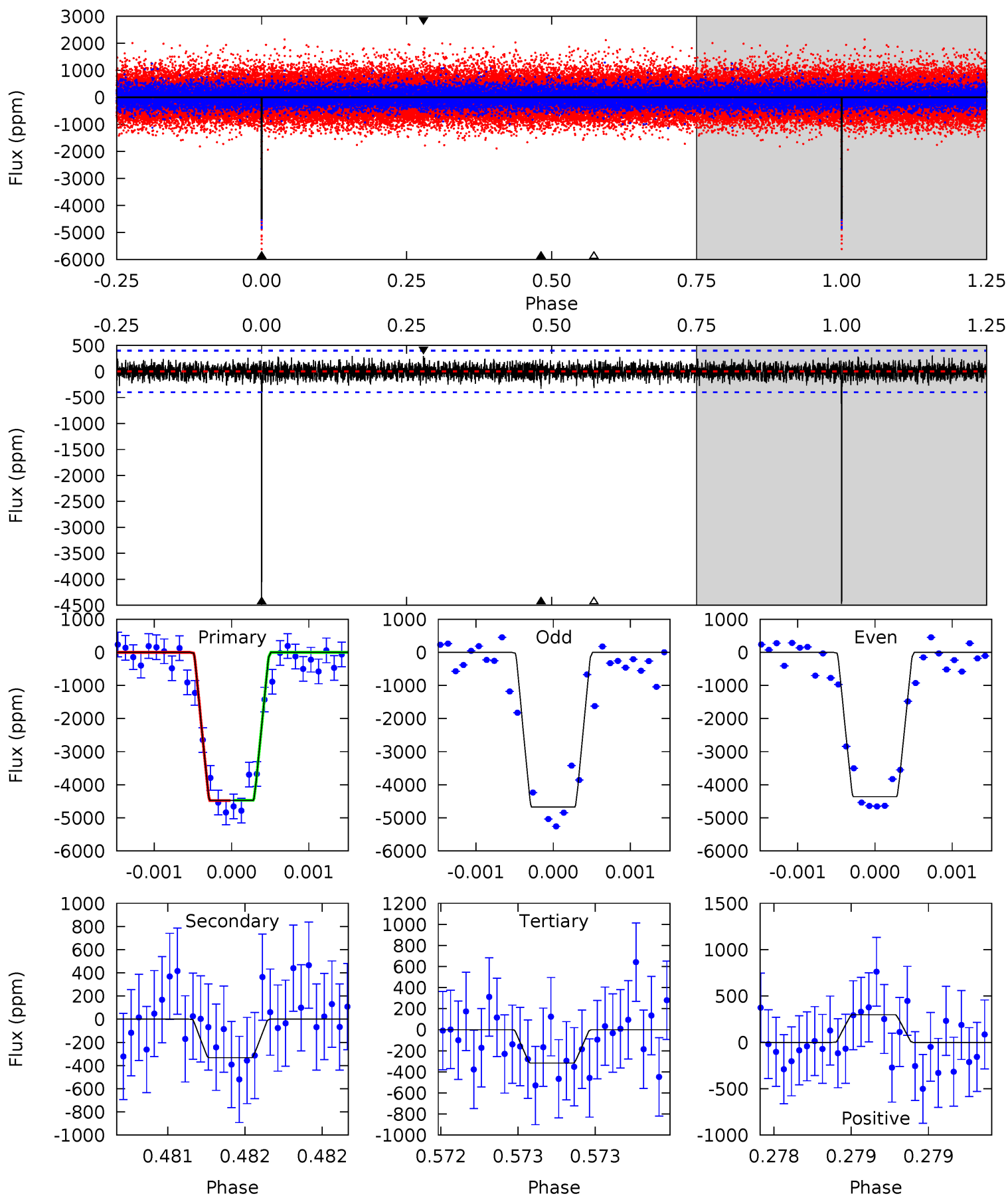
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
80.8	5.97	5.44	5.65	5.47	3.32	1.51	75.4	75.1	0.53	0.31	1.21	0.98	0.07	0.24



# Alt Model-Shift Uniqueness Test

010265602-01, P = 165.345513 Days, E = 8.947444 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
61.8	4.58	4.37	4.12	5.53	3.41	1.18	57.4	57.7	0.21	0.46	2.10	1.00	0.06	0.04



### Stellar Parameters For KIC 010265602

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5594^{+186}_{-186}$	$4.520^{+0.077}_{-0.143}$	$-0.400^{+0.300}_{-0.300}$	$0.812^{+0.178}_{-0.096}$	$0.798^{+0.106}_{-0.062}$	$2.097^{+0.686}_{-0.859}$
	+3%/-3%	+2%/-3%	+75%/-75%	+22%/-12%	+13%/-8%	+33%/-41%
Source	PHO16	PHO16	PHO16	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 010265602-01 / KOI 2689.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-363 \pm 61$	$7.51^{+1.26}_{-1.08}$	$424^{+25}_{-21}$	$3248^{+193}_{-167}$	$1057^{+437}_{-331}$
Alt.	$-332 \pm 72$	$6.28^{+1.23}_{-1.09}$	$424^{+26}_{-21}$	$3372^{+243}_{-204}$	$1342^{+748}_{-464}$

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

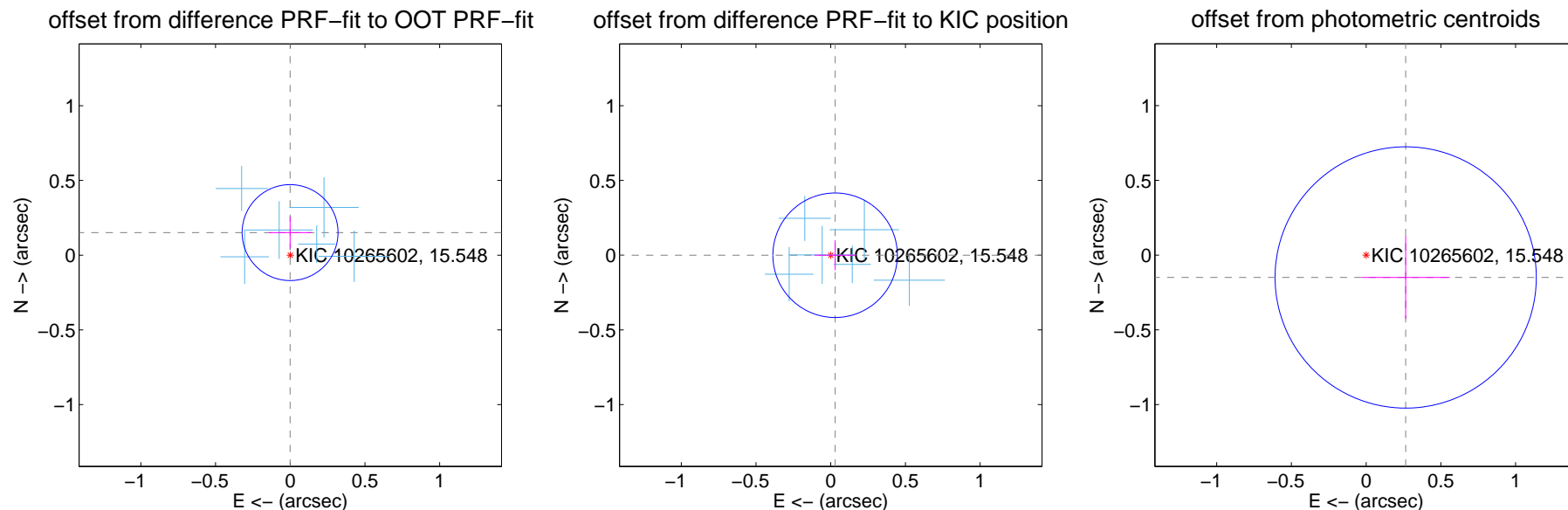
## DV Centroid Data

Supplemental centroid analysis for 010265602-01. Kepler magnitude: 15.55. Transit SNR 48.78

There are 6 quarters with good PRF difference image offsets

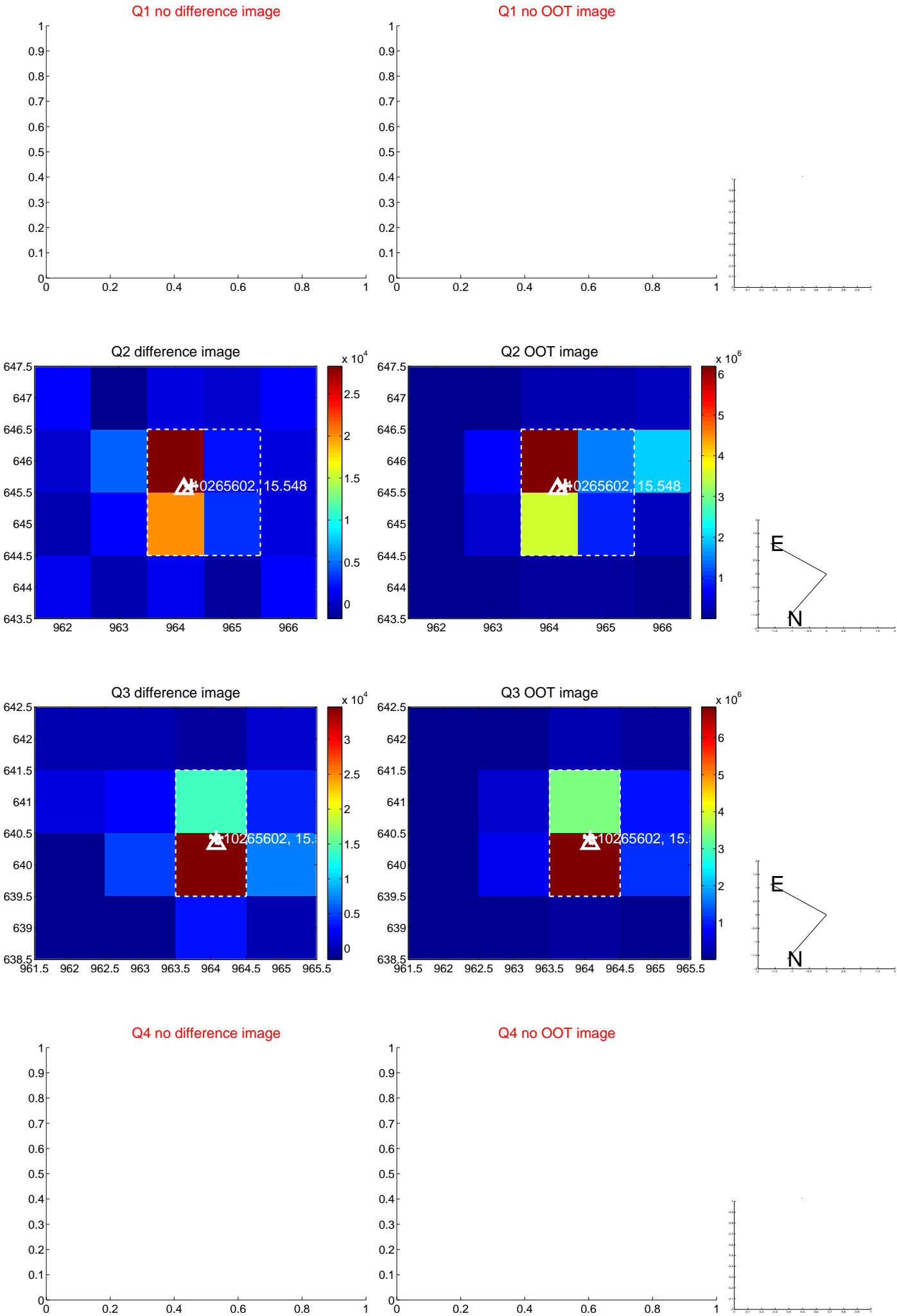
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.151 \pm 0.107$	1.41	$0.001 \pm 0.144$	$0.151 \pm 0.107$
PRF-fit source offset from KIC position	$0.030 \pm 0.139$	0.21	$-0.030 \pm 0.139$	$-0.001 \pm 0.100$
photometric centroid source offset	$0.30 \pm 0.29$	1.04	$-0.26 \pm 0.30$	$-0.15 \pm 0.28$



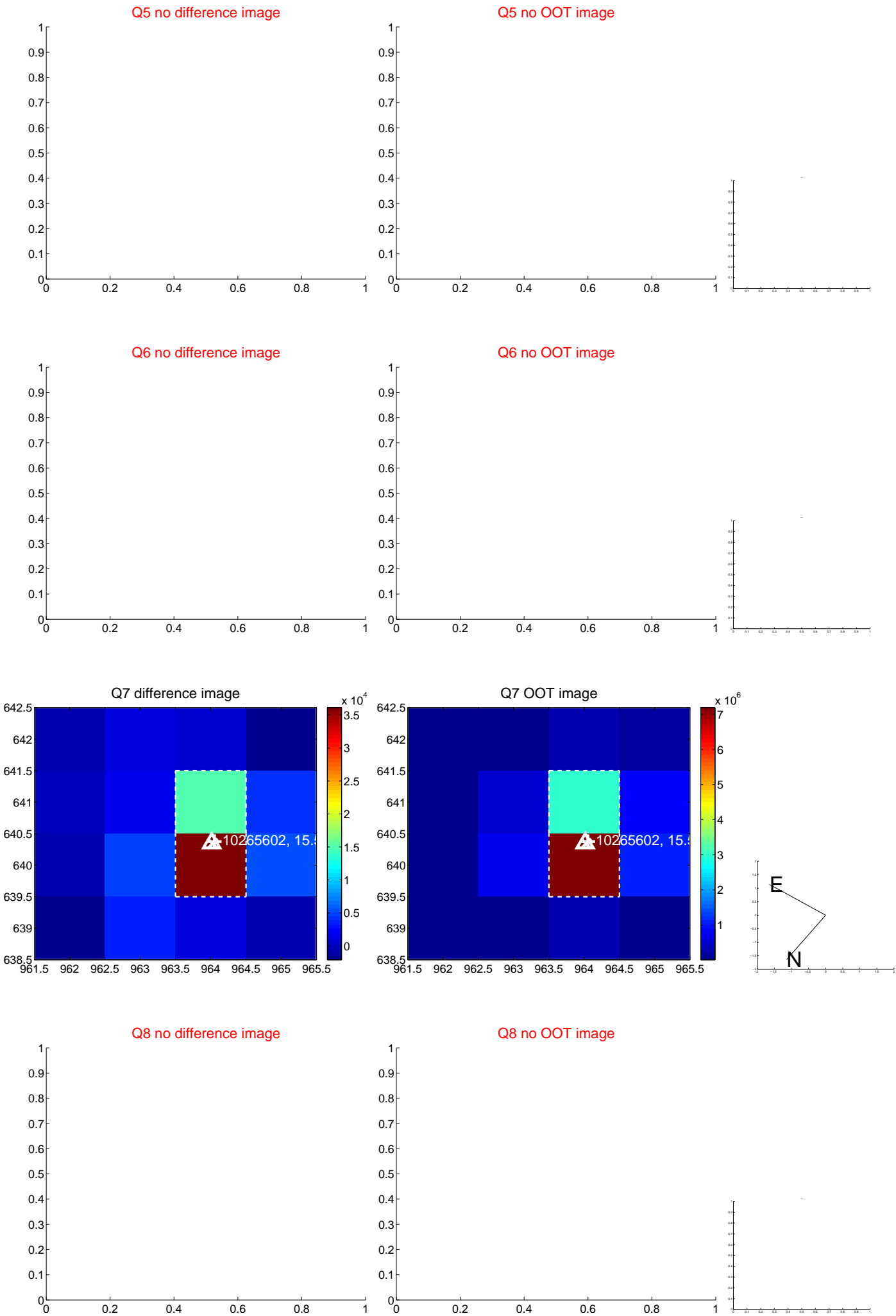
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

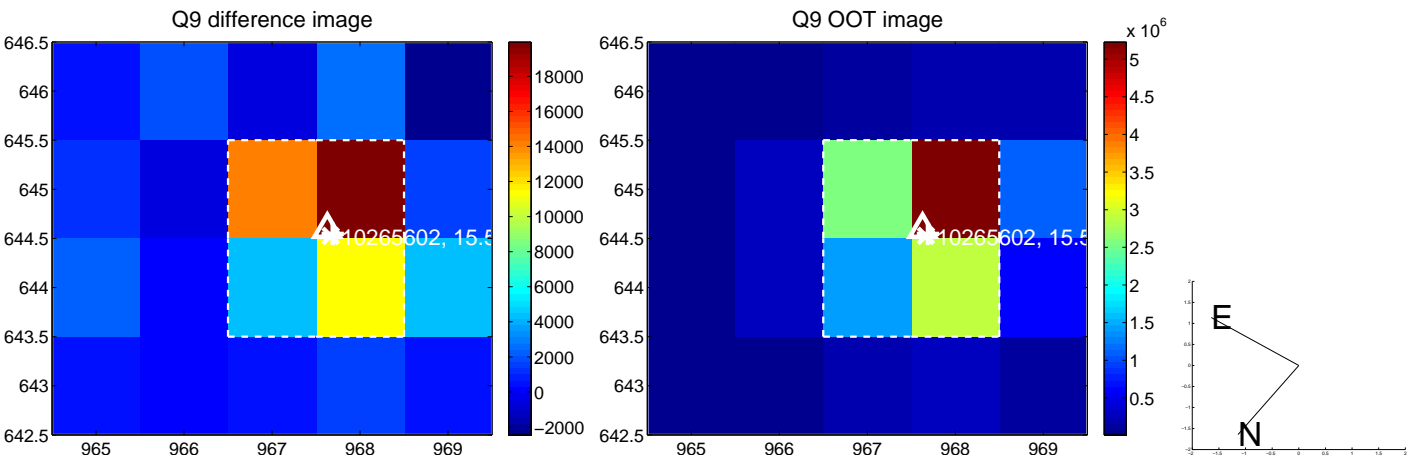




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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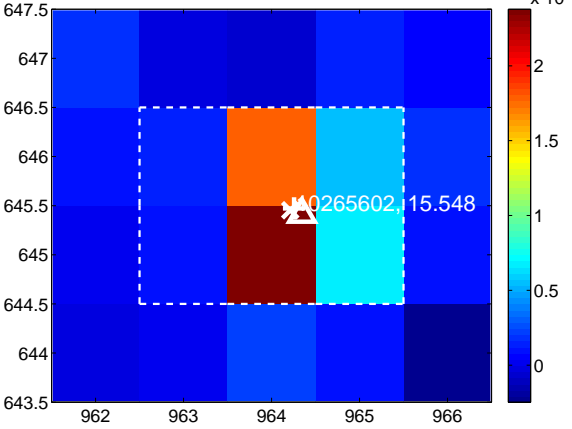
Q13 no difference image



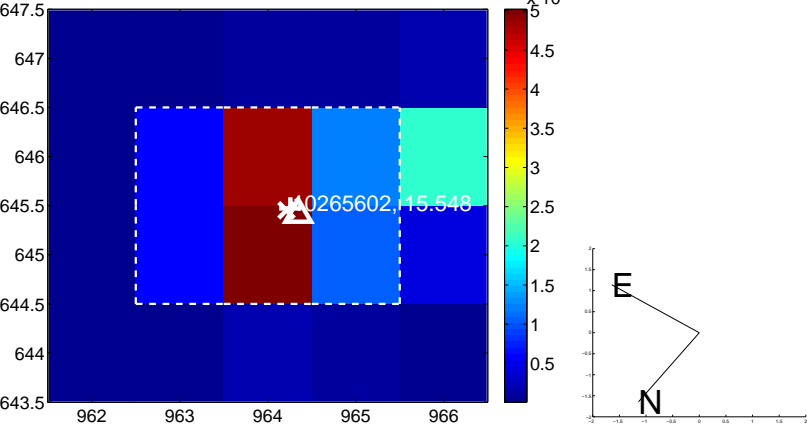
Q13 no OOT image



Q14 difference image



Q14 OOT image



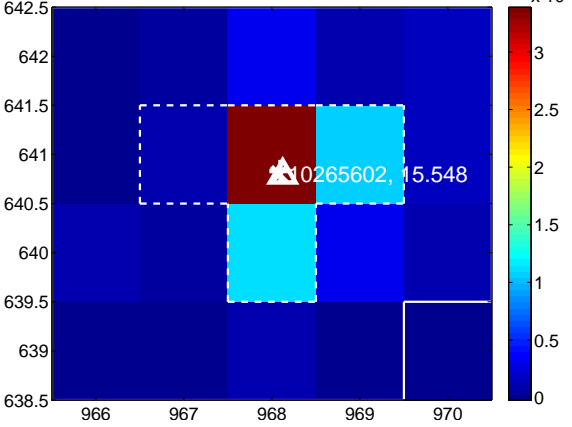
Q15 no difference image



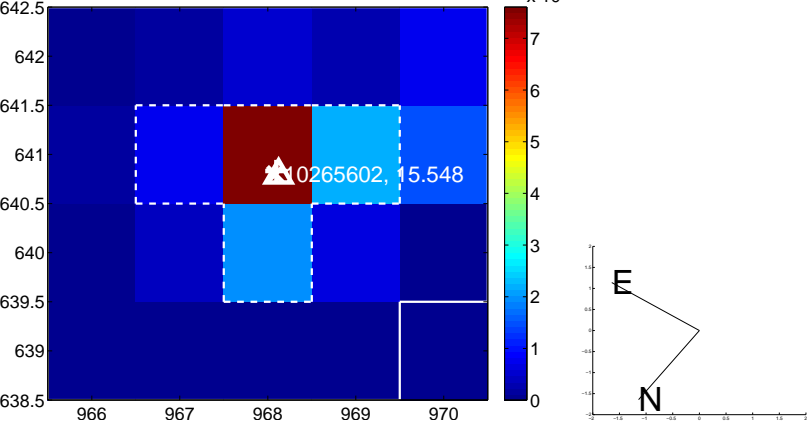
Q15 no OOT image



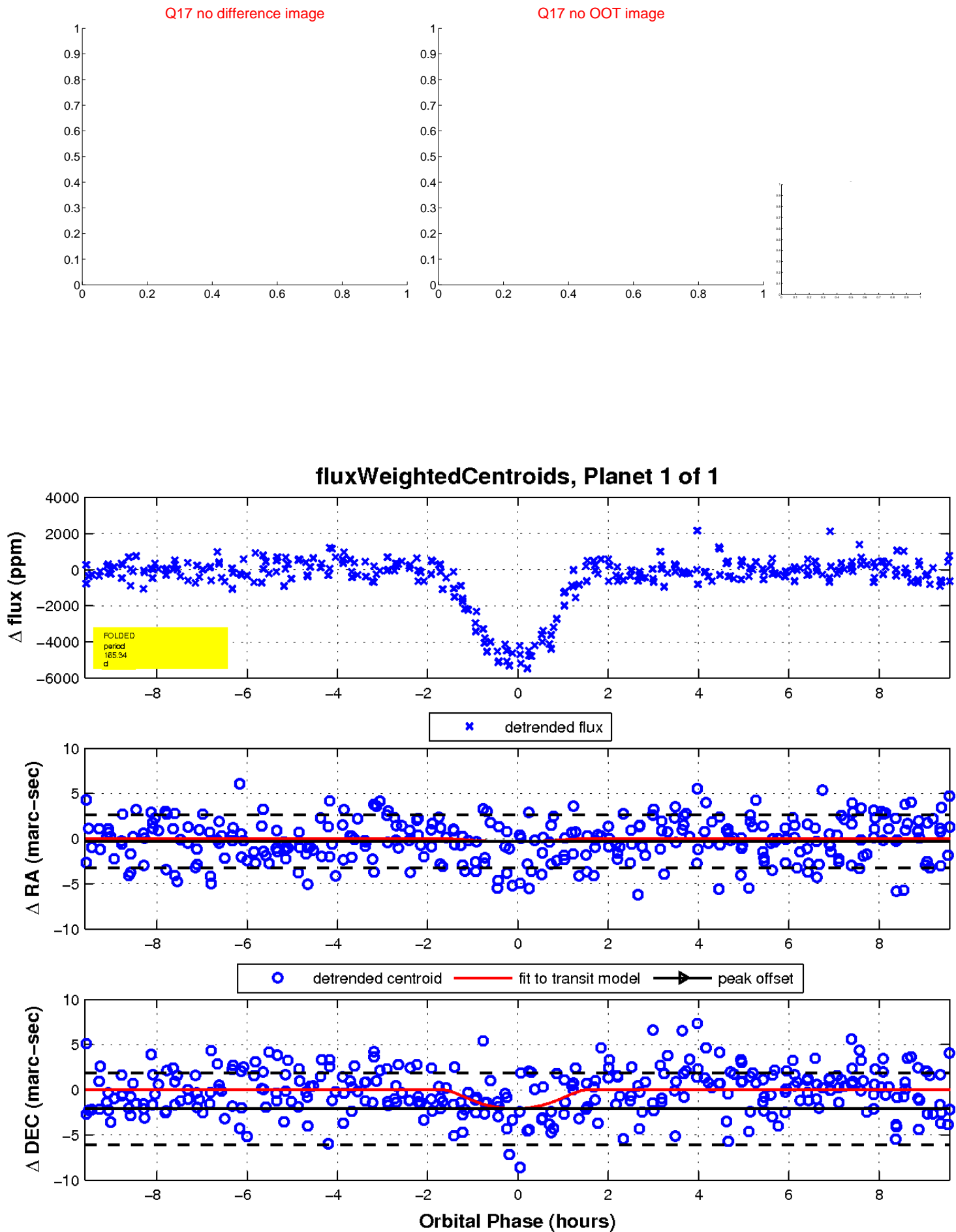
Q16 difference image



Q16 OOT image



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



UKIRT Image

Declination

