

# KIC 005022535

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005022535-01	OBS	No	0.662587	131.580689	37.9	1.887	7.9	9.0	1.24	6636	0.90	10364.34

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005022535-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT

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

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

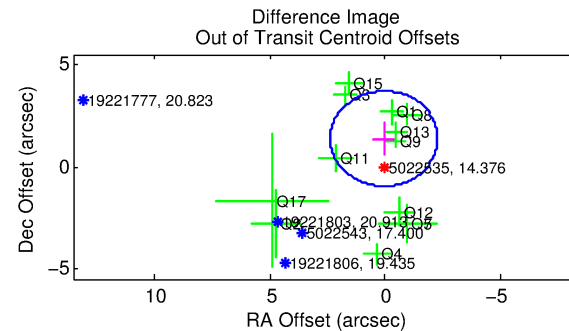
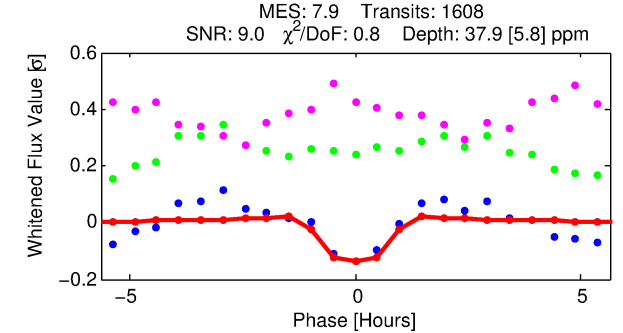
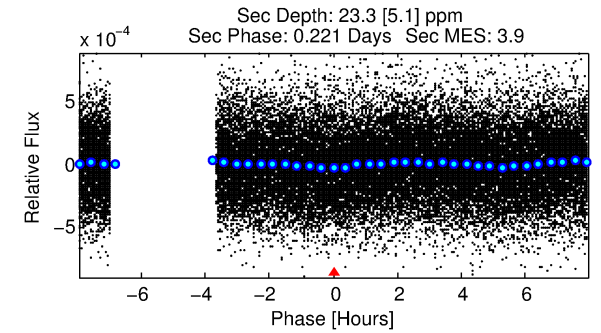
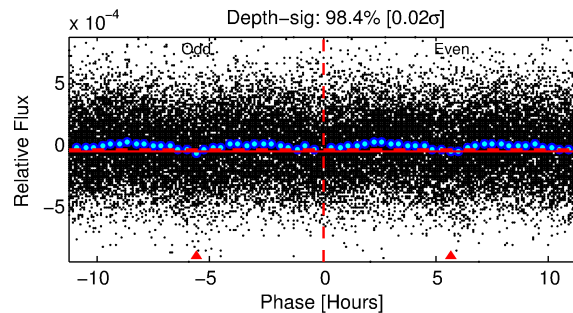
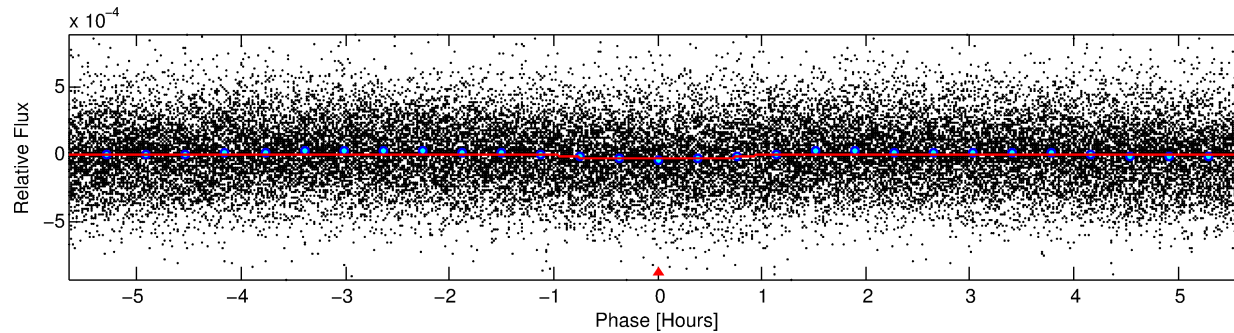
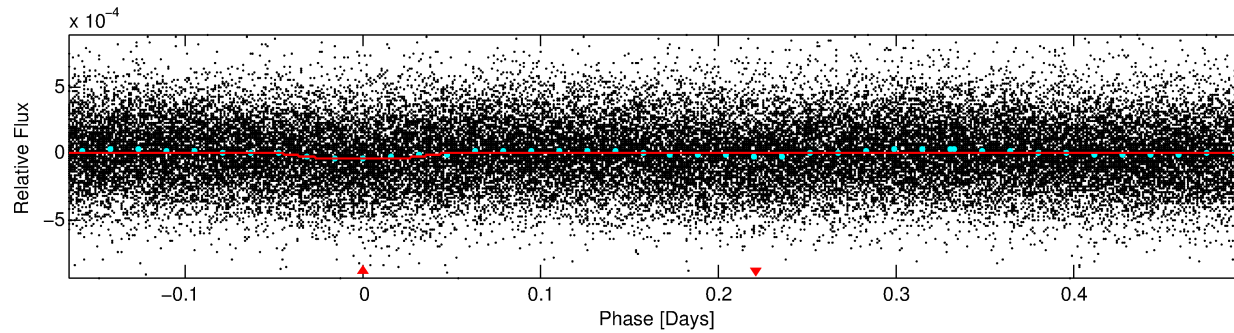
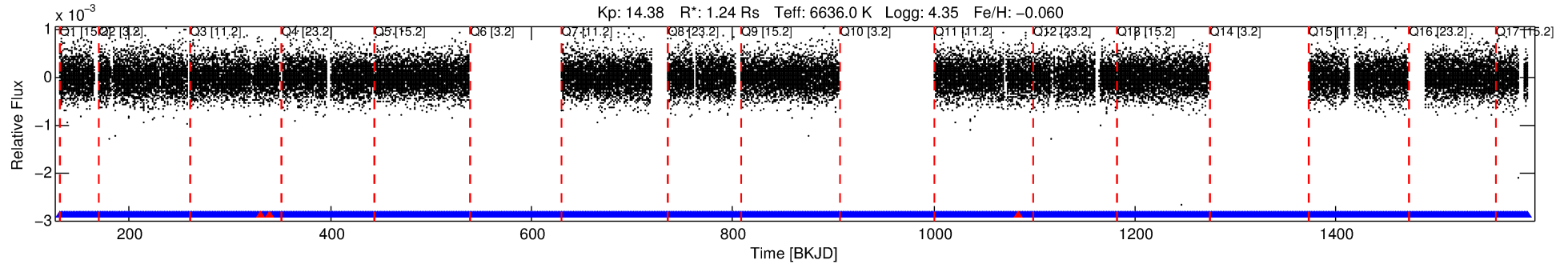
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005022535-01

No Significant Match Found

# DV One-Page Summary

KIC: 5022535 Candidate: 1 of 1 Period: 0.663 d



## DV Fit Results:

Period = 0.66259 [0.00001] d  
Epoch = 131.5807 [0.0026] BKJD  
Rp/R\* = 0.0067 [0.0033]  
a/R\* = 1.48 [2.32]  
b = 0.91 [0.53]  
Seff = 10364.34 [3938.87]  
Teq = 2573 [244] K  
Rp = 0.90 [0.52] Re  
a = 0.0160 [0.0039] AU  
Ag = 4.04 [4.32] [0.70 $\sigma$ ]  
Teffp = 5641 [1438] K [2.10 $\sigma$ ]

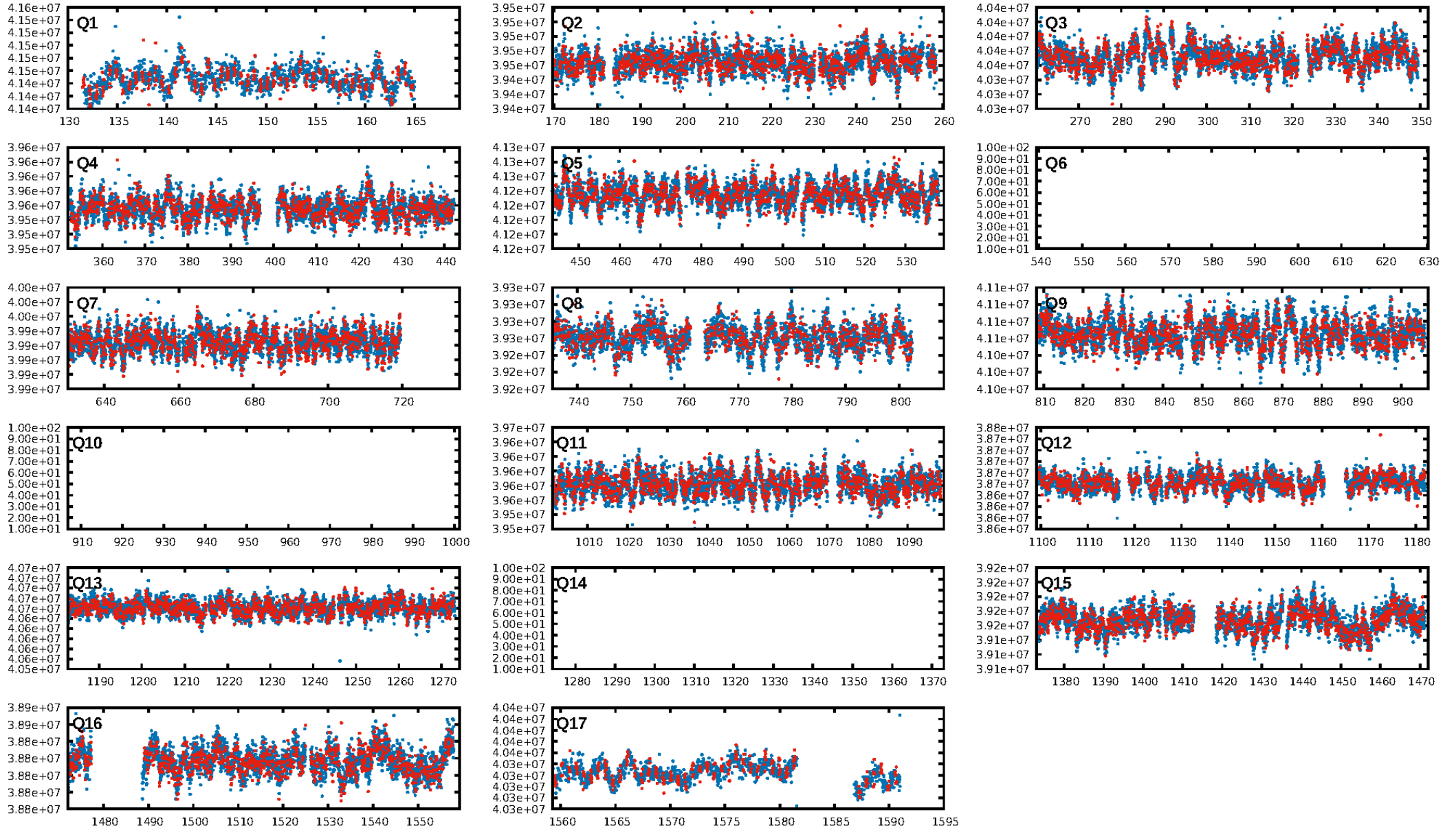
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.26e-14  
RollingBand-fgt: 1.00 [1514/1517]  
GhostDiagnostic-chr: 3.143  
Centroid-sig: 23.7%  
Centroid-so: 1.191 arcsec [1.00 $\sigma$ ]  
OotOffset-rm: 1.373 arcsec [1.77 $\sigma$ ]  
OotOffset-st: 1/4/3/5 [13]  
KicOffset-rm: 0.815 arcsec [1.00 $\sigma$ ]  
KicOffset-st: 1/4/3/5 [13]  
DiffImageQuality-fgm: 0.23 [3/13]  
DiffImageOverlap-fno: 1.00 [14/14]

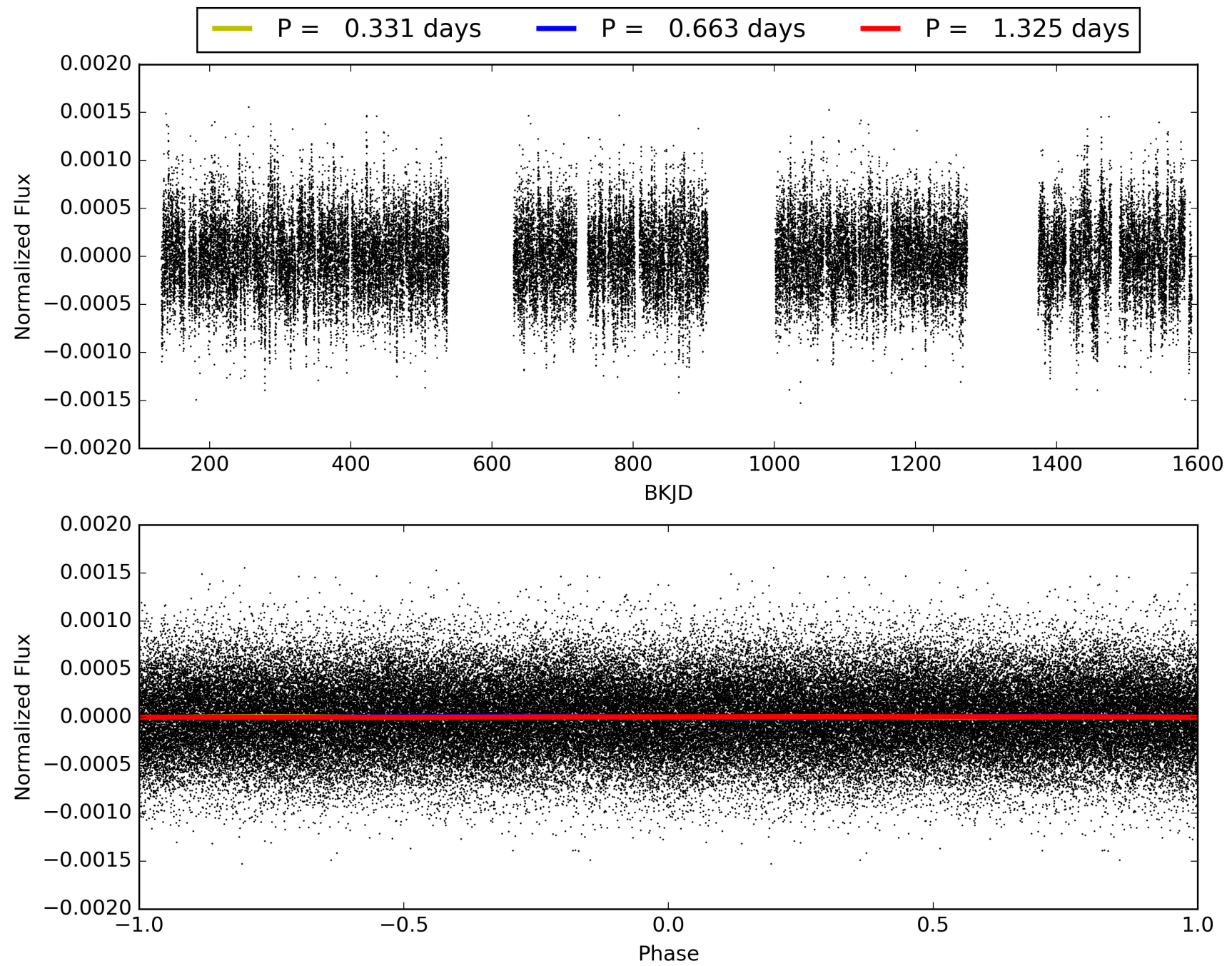
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:32:35 Z

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

# TCE 005022535-01, PDC Light Curves

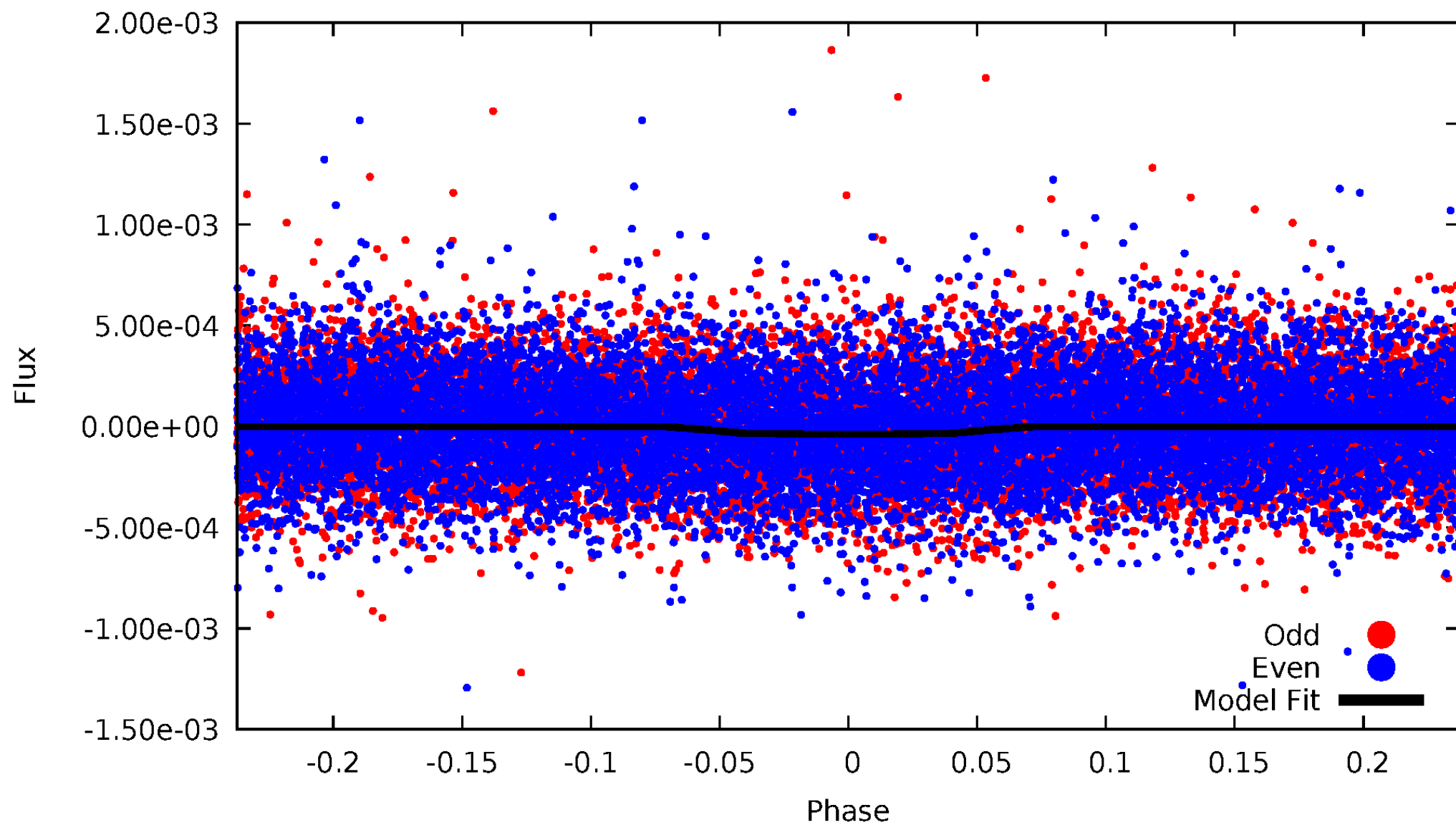


TCE 005022535-01



# DV Odd/Even

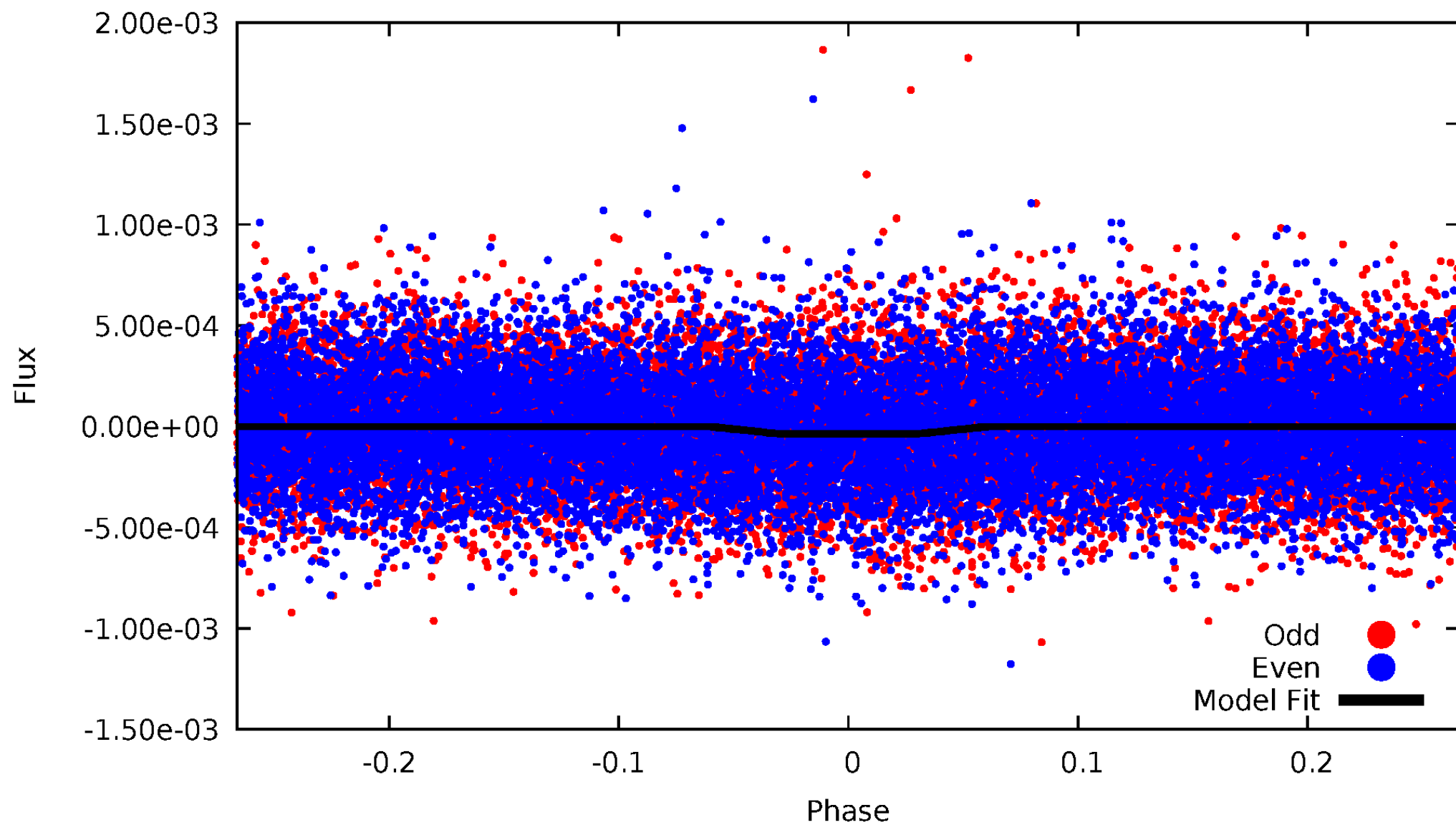
TCE 005022535-01





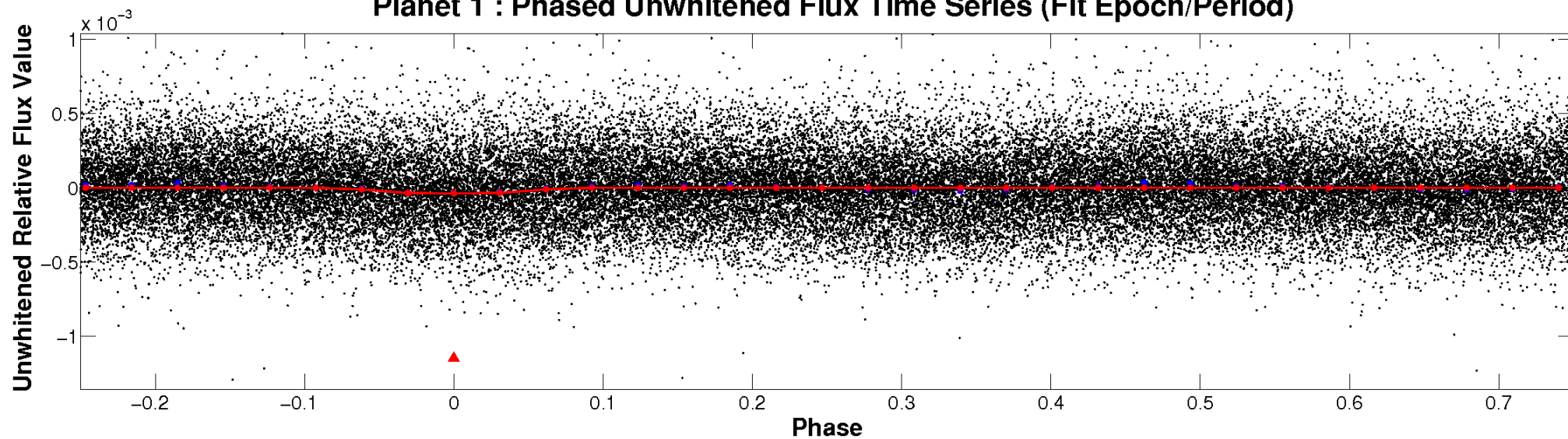
# ALT Odd/Even

TCE 005022535-01

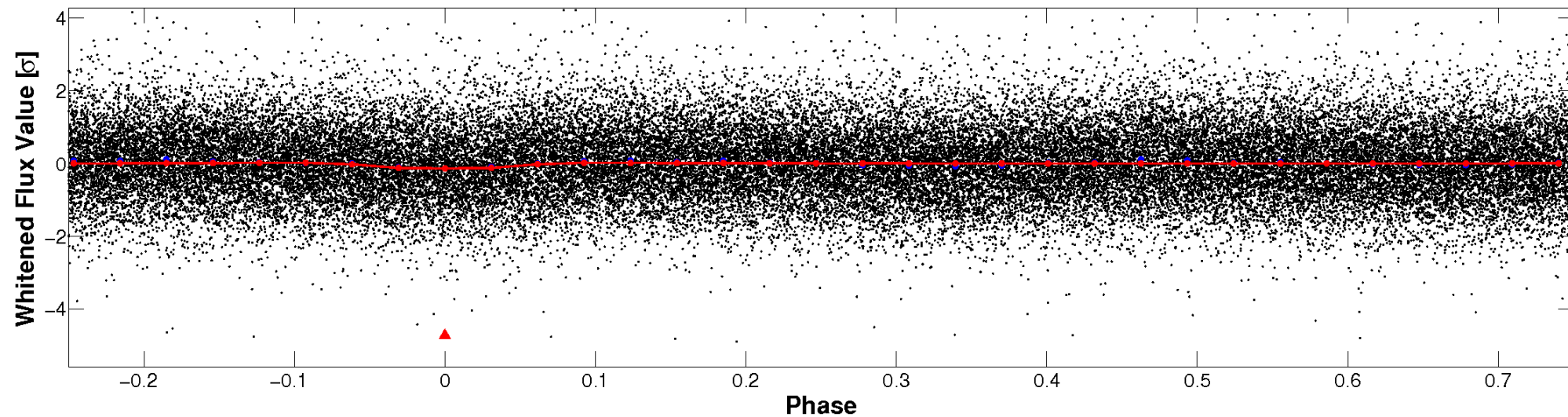


# Non-Whitened Vs. Whitened Light Curve

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

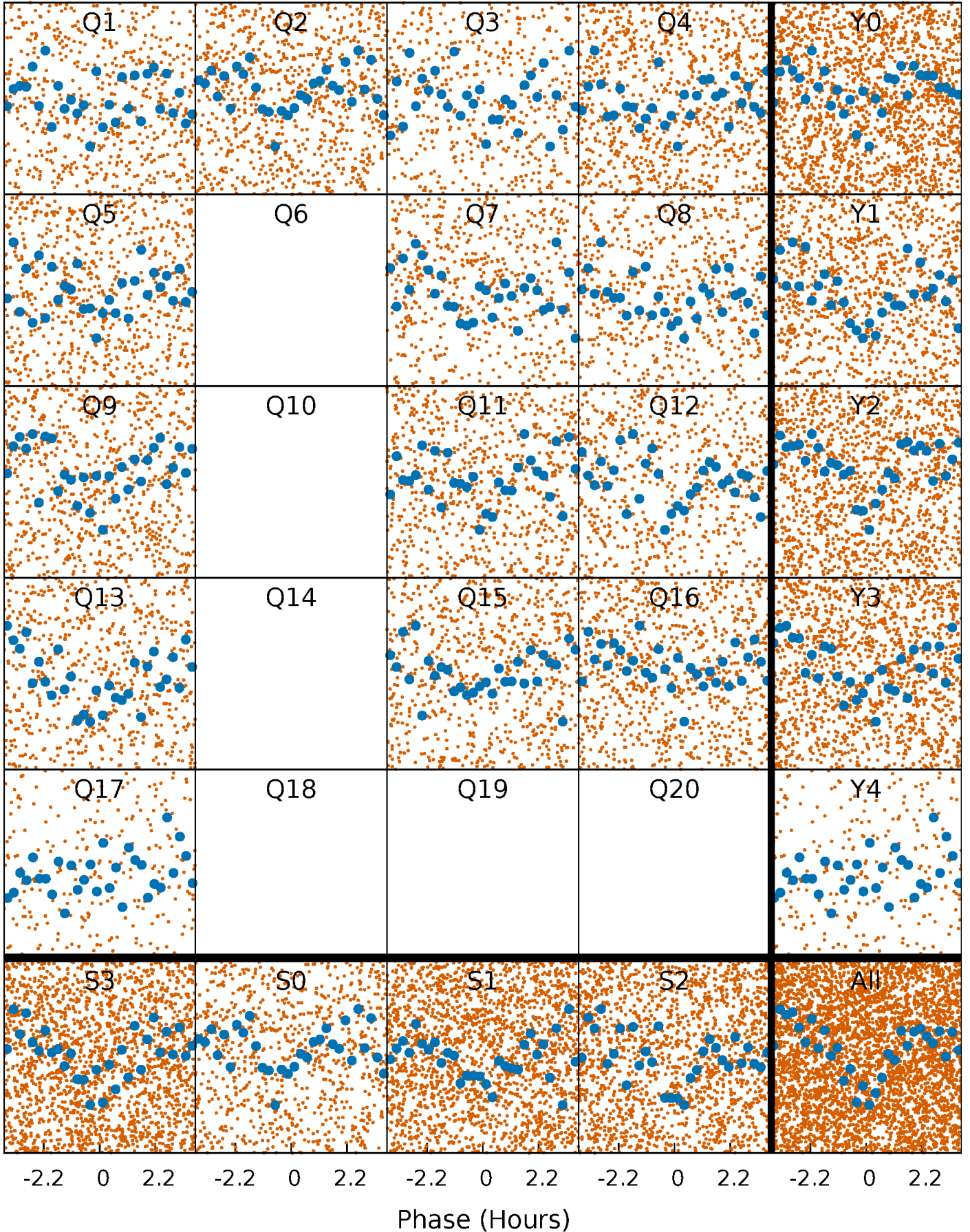


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

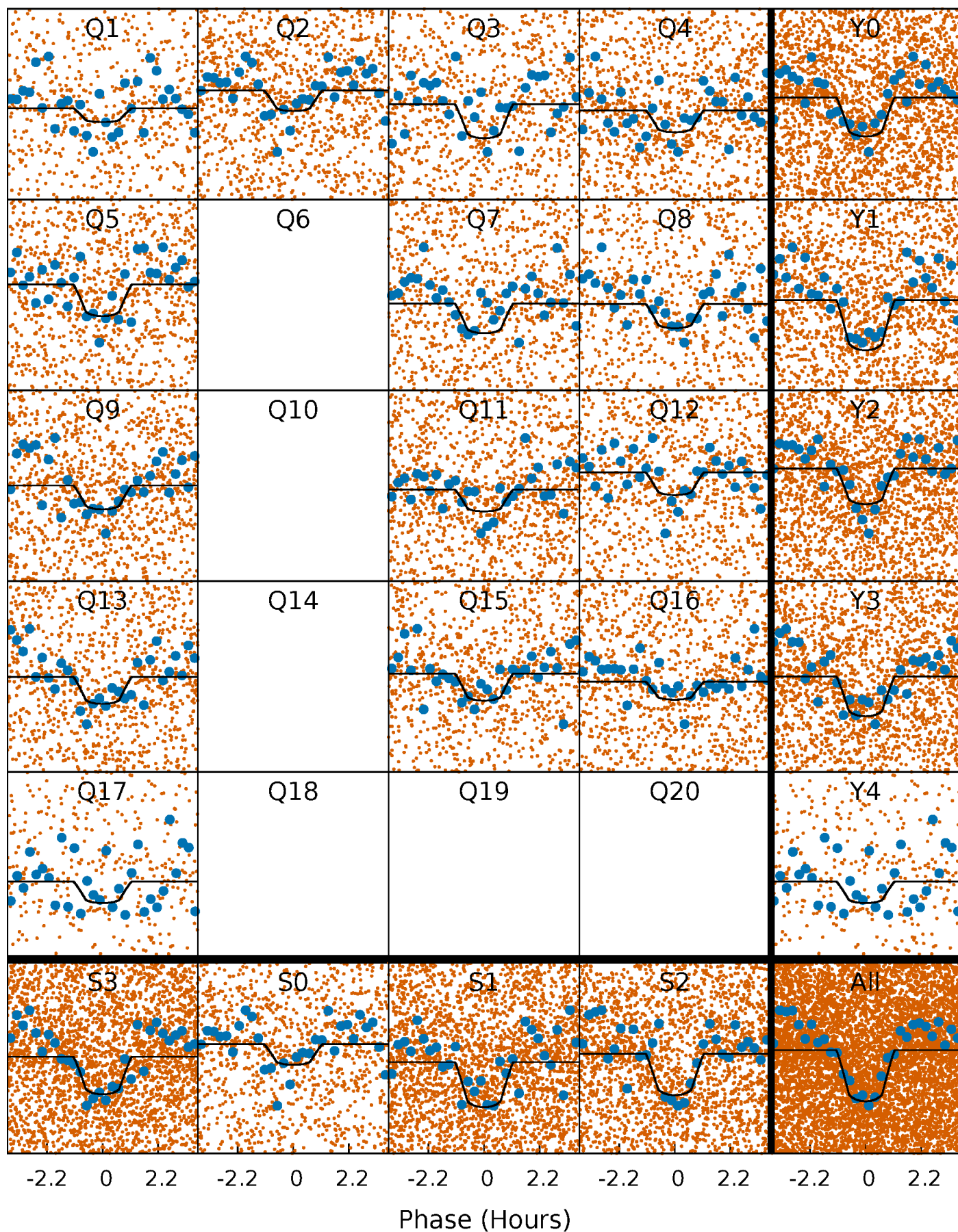
TCE 005022535-01   P= 0.662587 Days    $T_0=131.580689$  (BKJD)





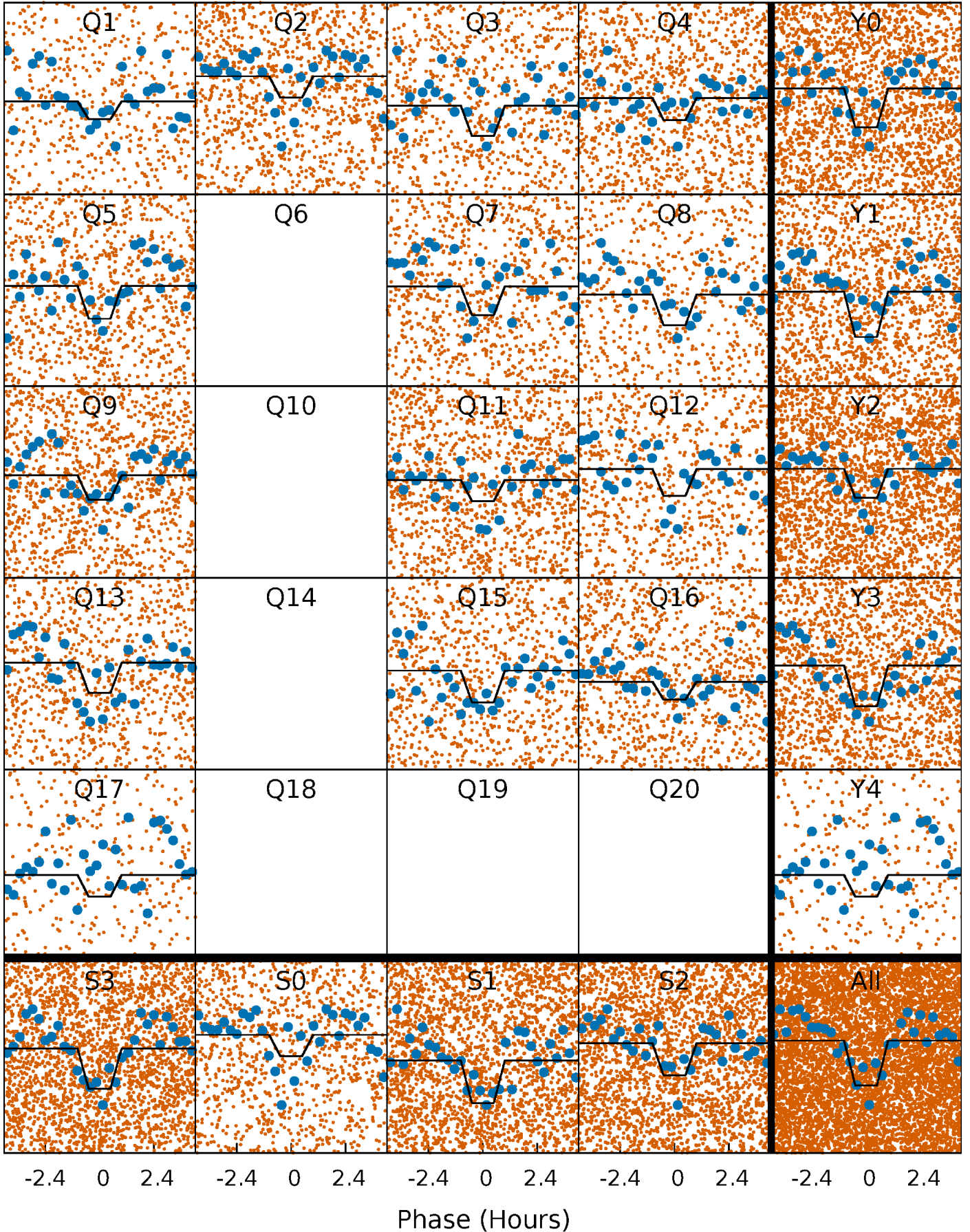
# DV Quarter-Phased Transit Curves

TCE 005022535-01 P= 0.662587 Days  $T_0=131.580689$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

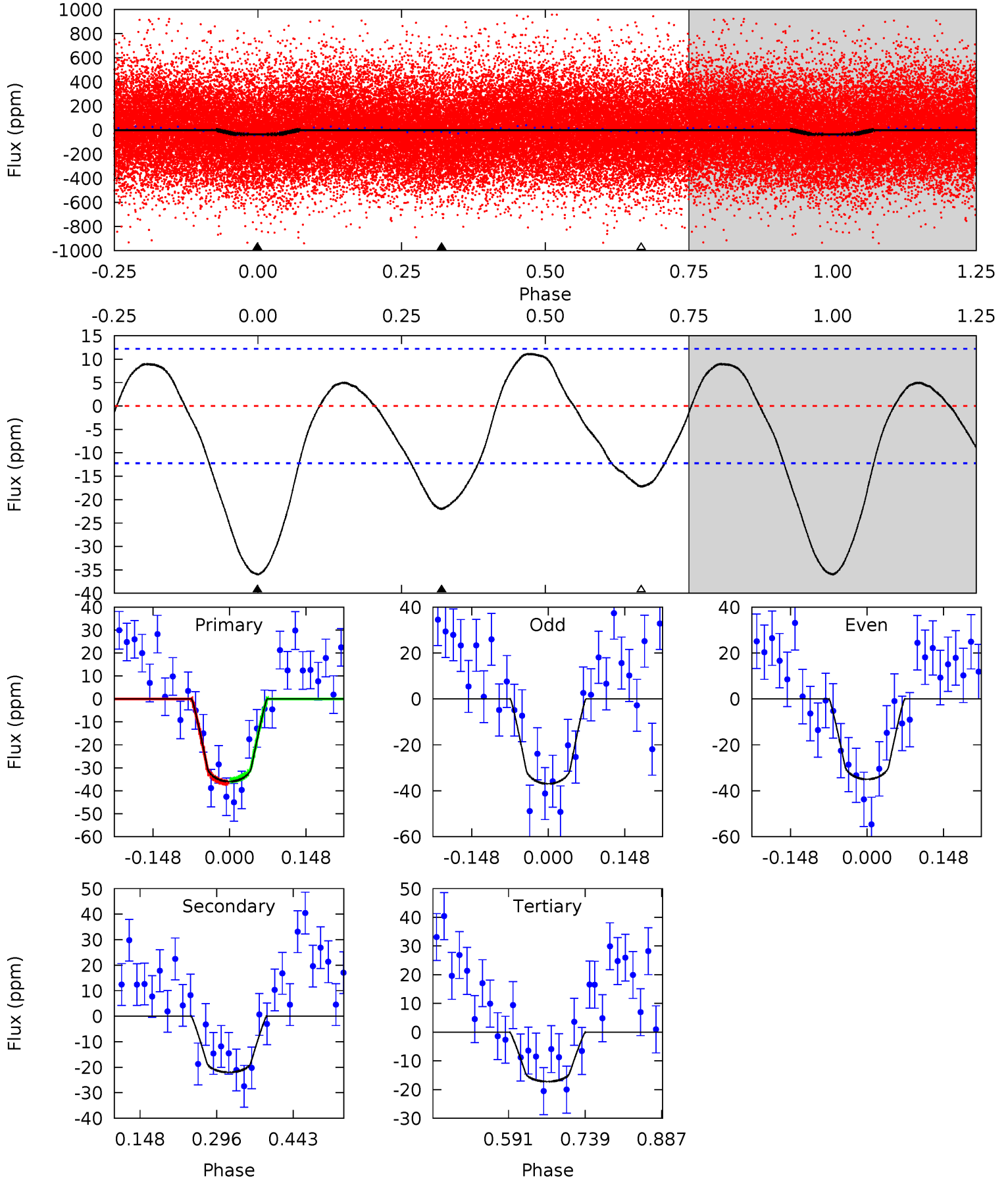
TCE 005022535-01 P= 0.662591 Days  $T_0=131.574938$  (BKJD)



# DV Model-Shift Uniqueness Test

005022535-01, P = 0.662587 Days, E = 130.918102 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
13.2	8.06	6.31	0	4.48	1.45	3.52	6.88	13.2	1.75	8.06	0.36	0.91	0.24	0.20

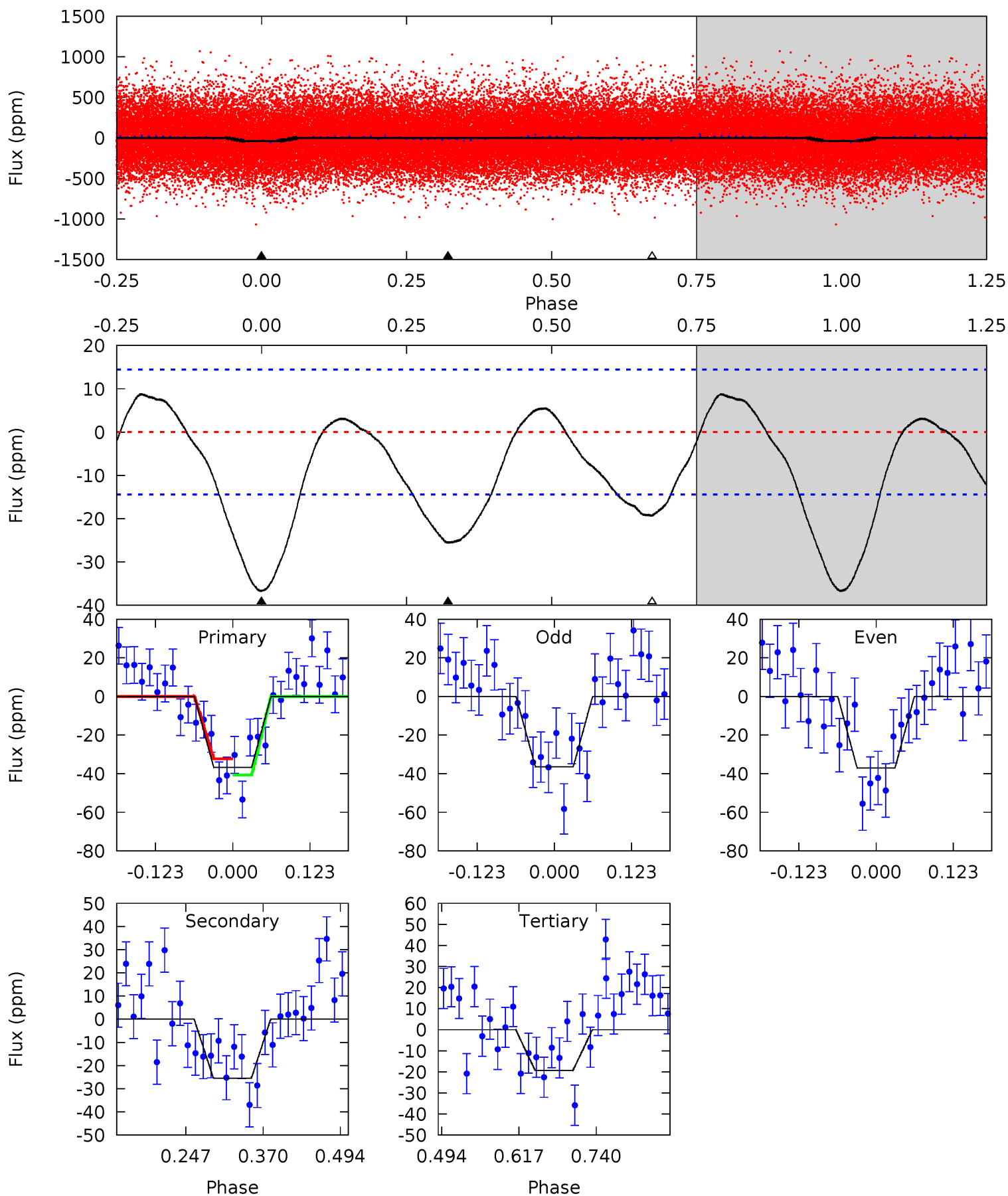




# Alt Model-Shift Uniqueness Test

005022535-01, P = 0.662591 Days, E = 130.912347 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
11.5	8.00	6.05	0	4.52	1.54	2.76	5.45	11.5	1.95	8.00	0.10	0.85	0.19	1.30





### Stellar Parameters For KIC 005022535

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6636^{+161}_{-241}$	$4.349^{+0.062}_{-0.188}$	$-0.060^{+0.250}_{-0.300}$	$1.236^{+0.371}_{-0.159}$	$1.251^{+0.174}_{-0.174}$	$0.933^{+0.319}_{-0.461}$
	+2%/-4%	+1%/-4%	+417%/-500%	+30%/-13%	+14%/-14%	+34%/-49%
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 005022535-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-22 \pm 3$	$0.98^{+0.47}_{-0.44}$	$3655^{+261}_{-186}$	$5297^{+2063}_{-887}$	$3.109^{+7.115}_{-1.703}$
Alt.	$-26 \pm 3$	$0.87^{+0.46}_{-0.44}$	$3657^{+242}_{-191}$	$5891^{+3017}_{-1134}$	$4.660^{+14.360}_{-2.668}$

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

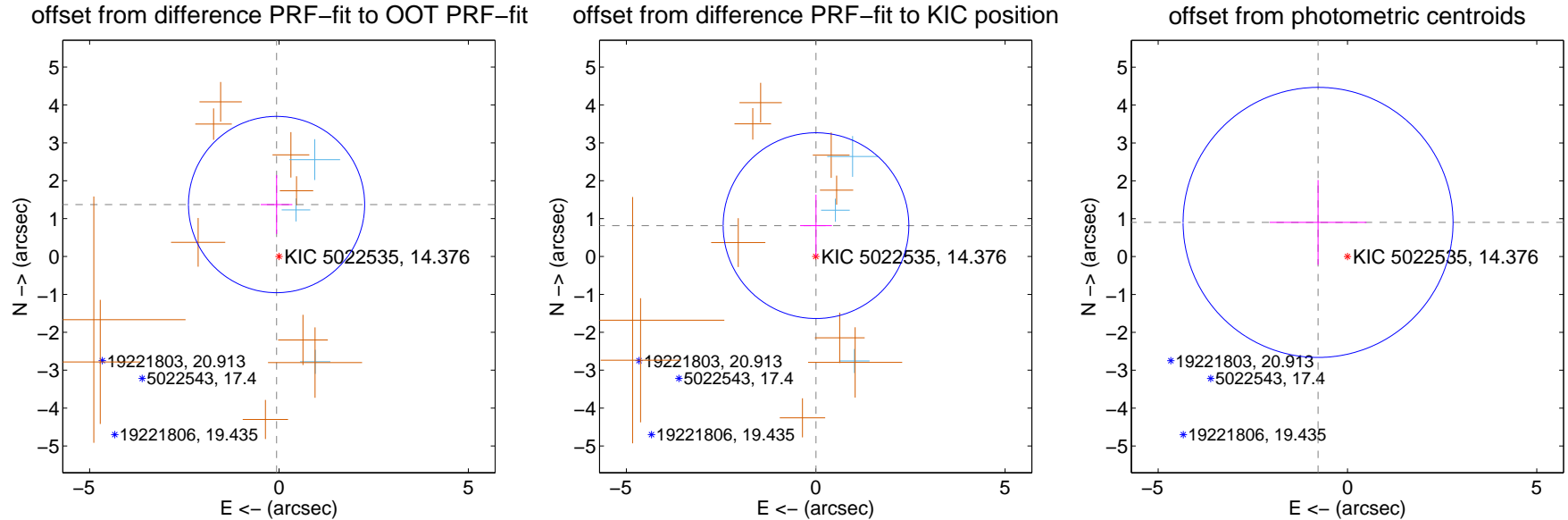
## DV Centroid Data

Supplemental centroid analysis for 005022535-01. Kepler magnitude: 14.38. Transit SNR 9.00

There are 3 quarters with good PRF difference image offsets

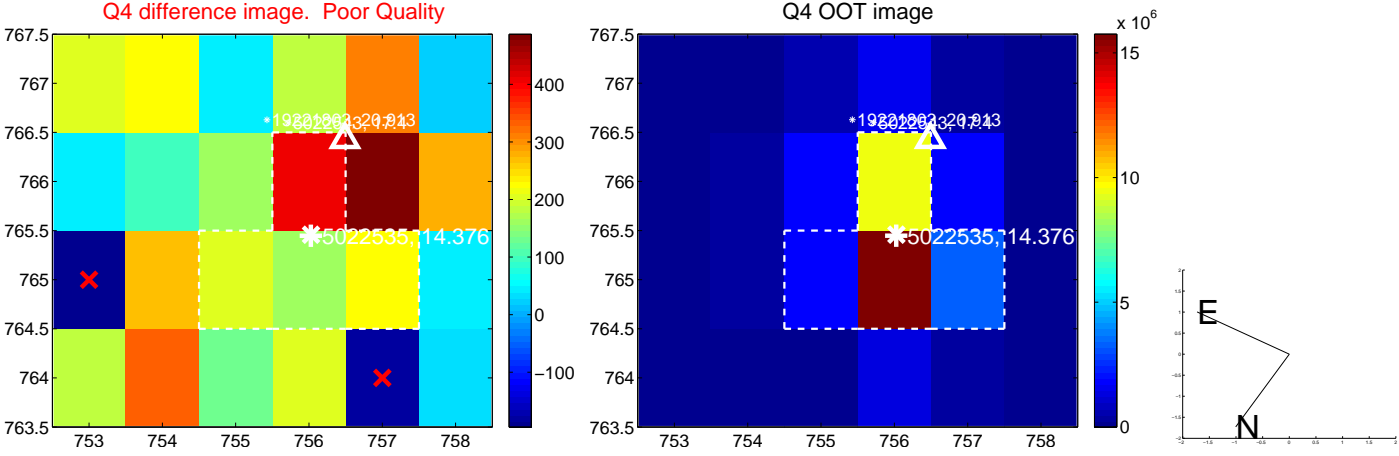
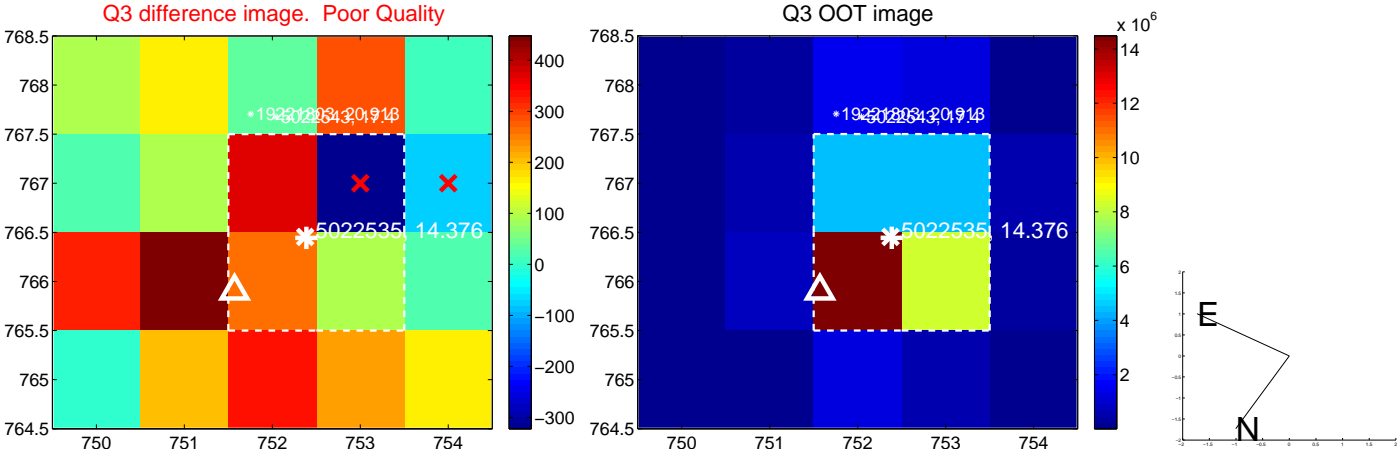
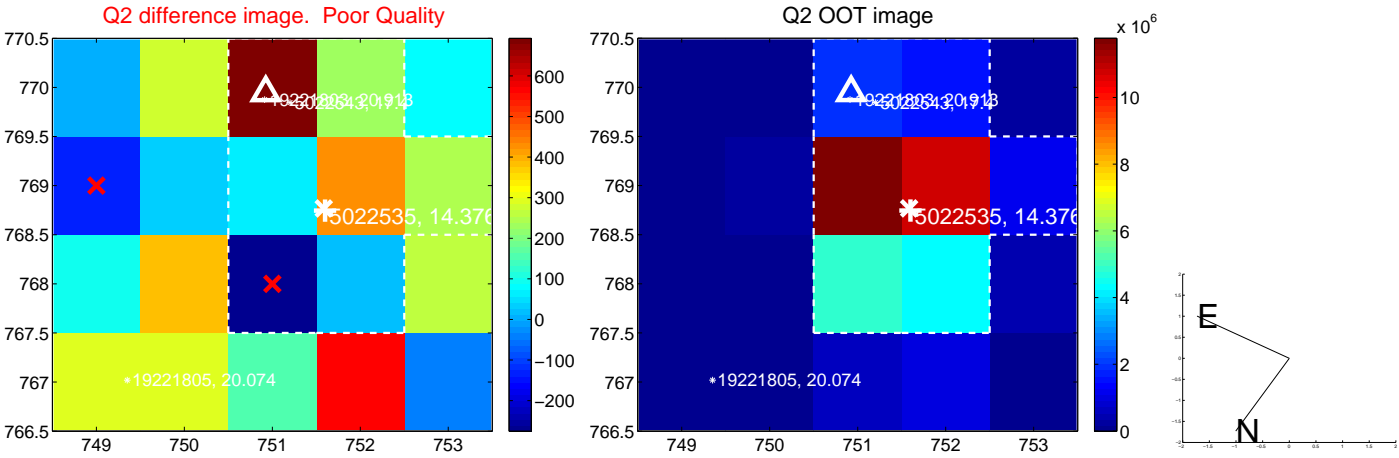
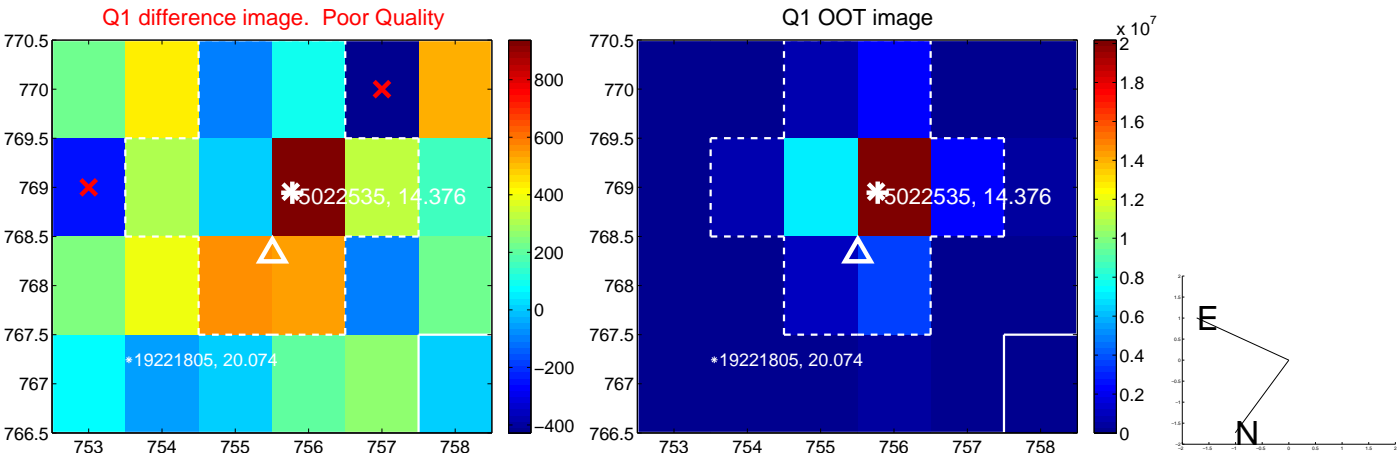
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.373 \pm 0.775$	1.77	$0.064 \pm 0.418$	$1.372 \pm 0.776$
PRF-fit source offset from KIC position	$0.815 \pm 0.817$	1.00	$-0.007 \pm 0.420$	$0.815 \pm 0.817$
photometric centroid source offset	$1.19 \pm 1.19$	1.00	$0.78 \pm 1.28$	$0.90 \pm 1.12$

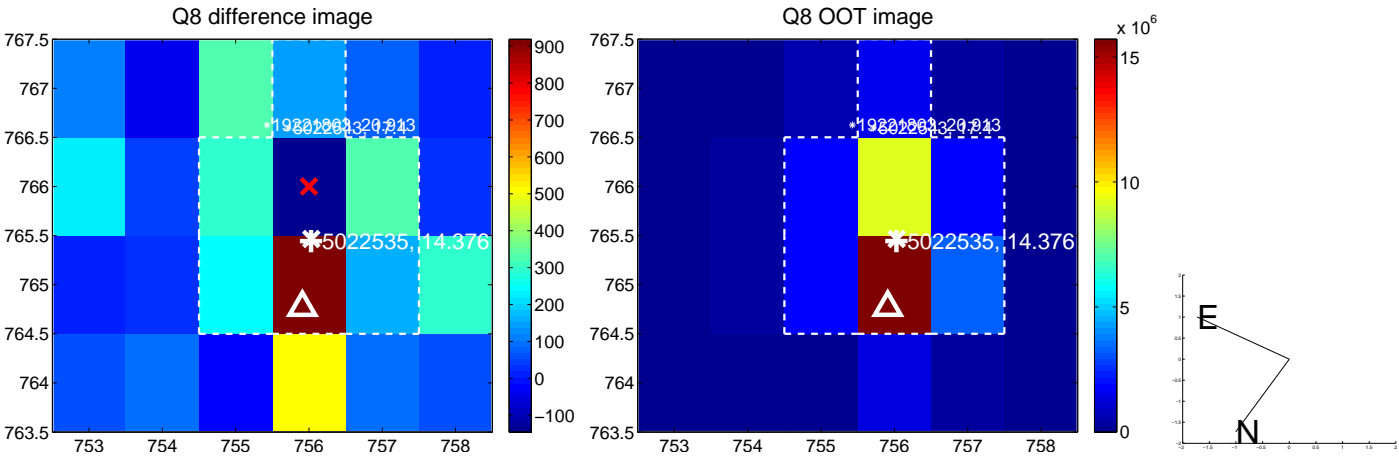
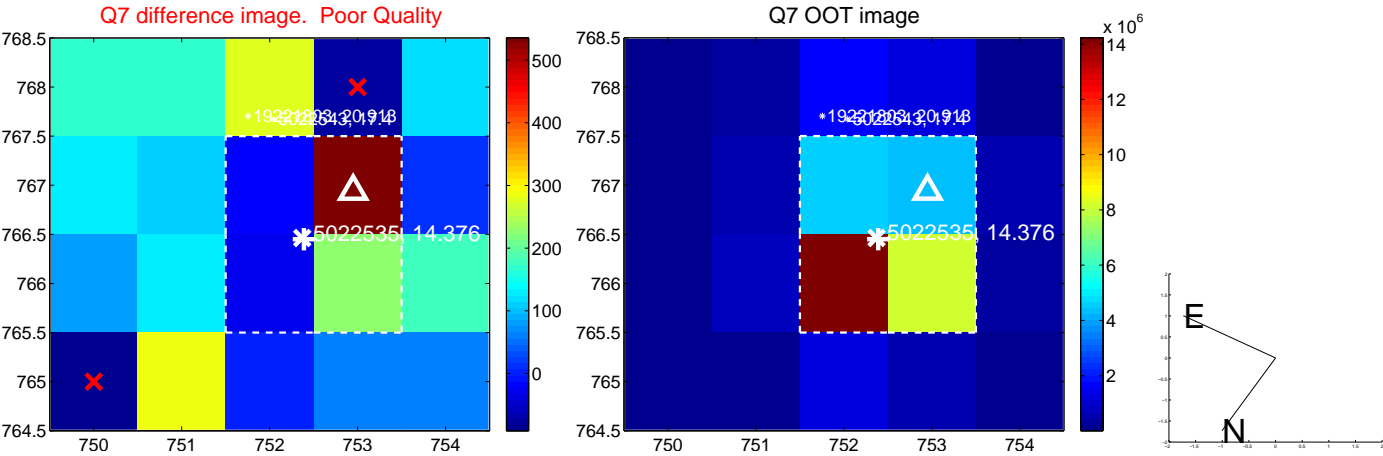
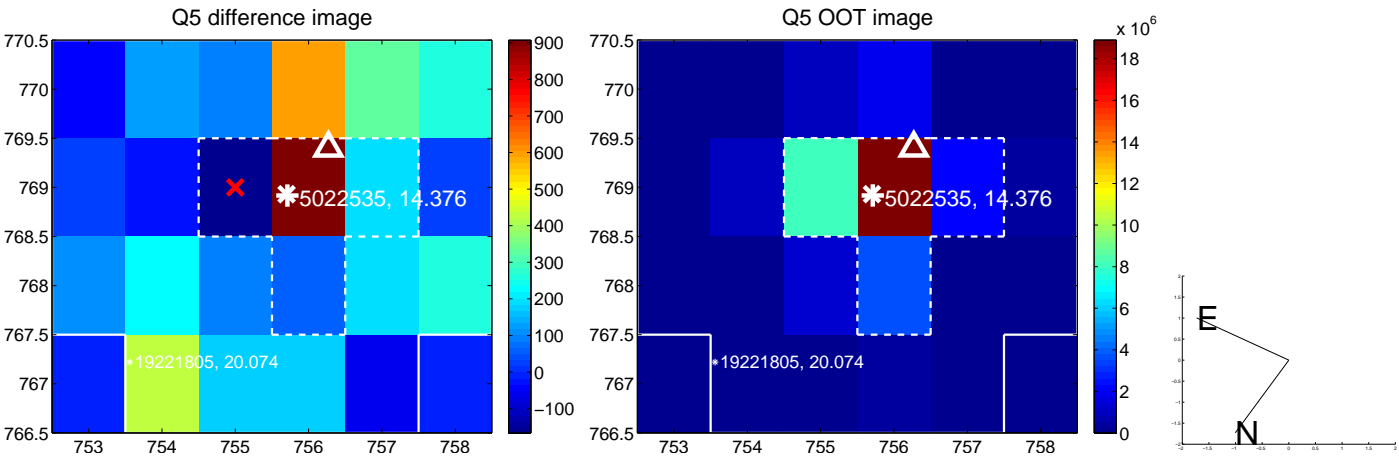


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

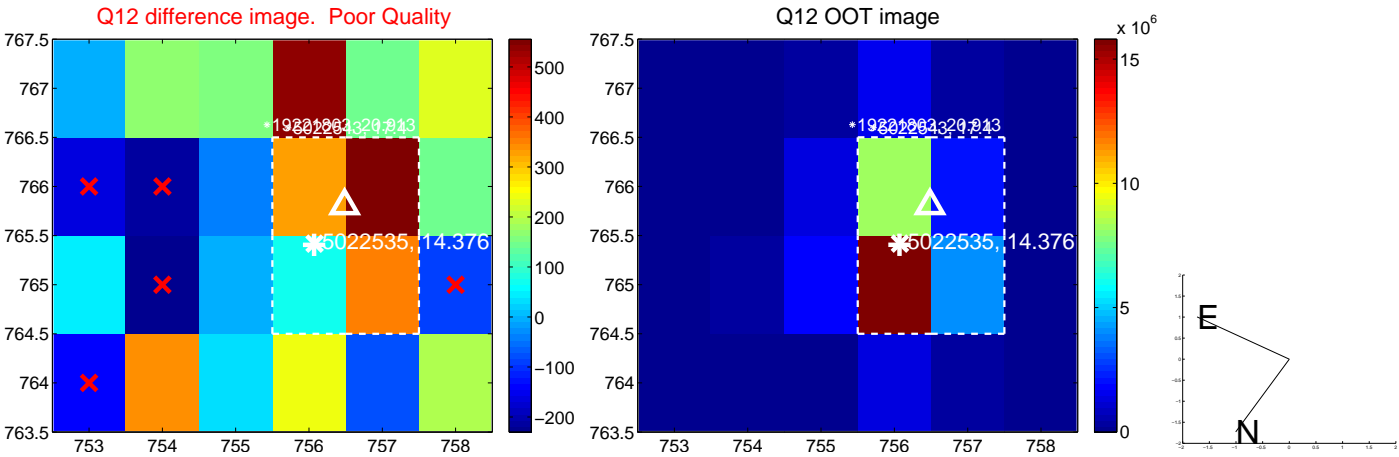
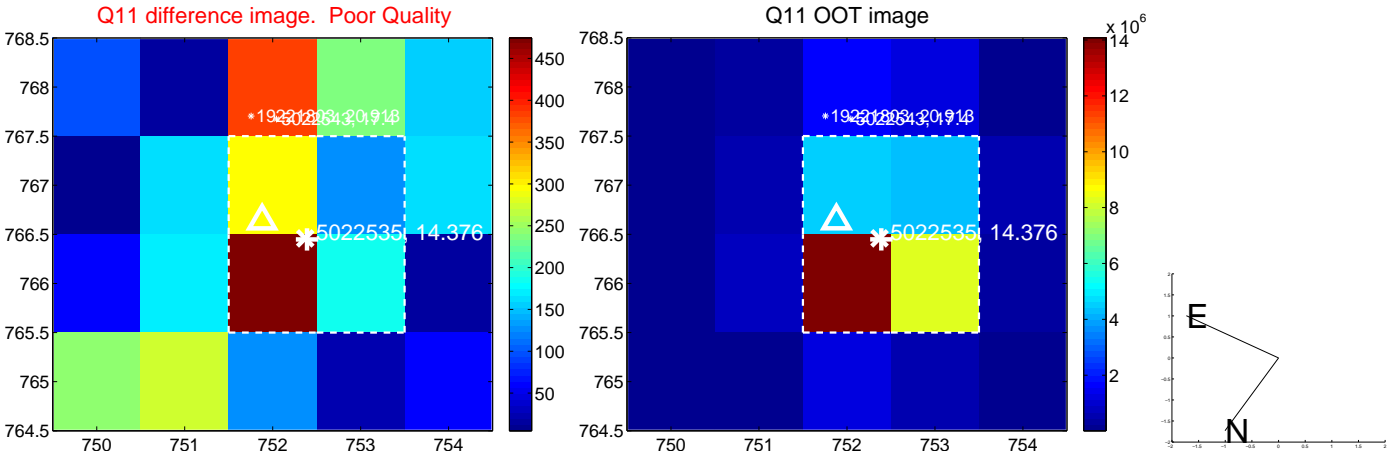
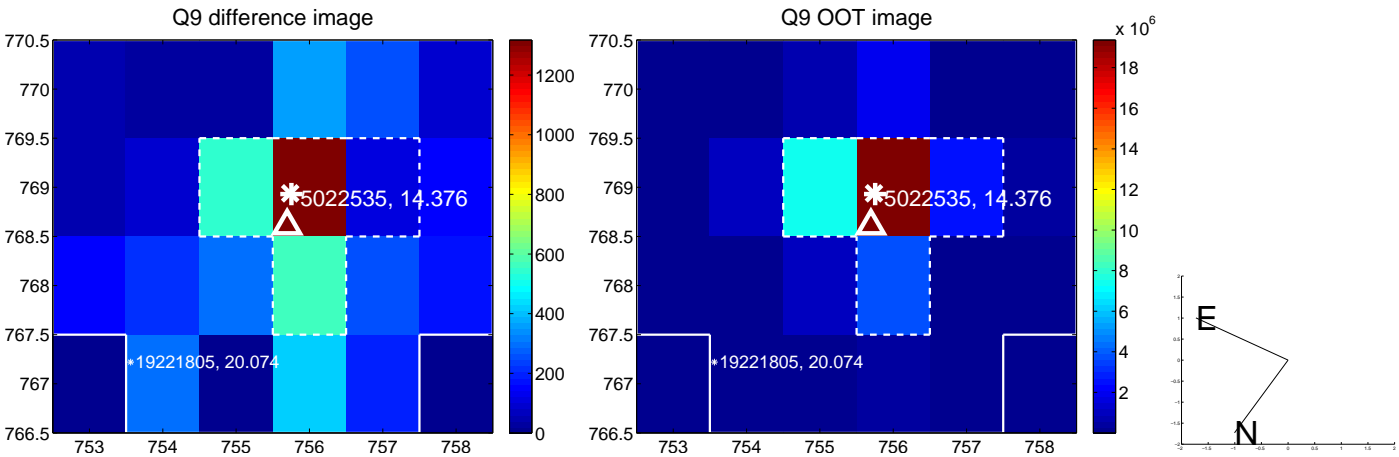


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

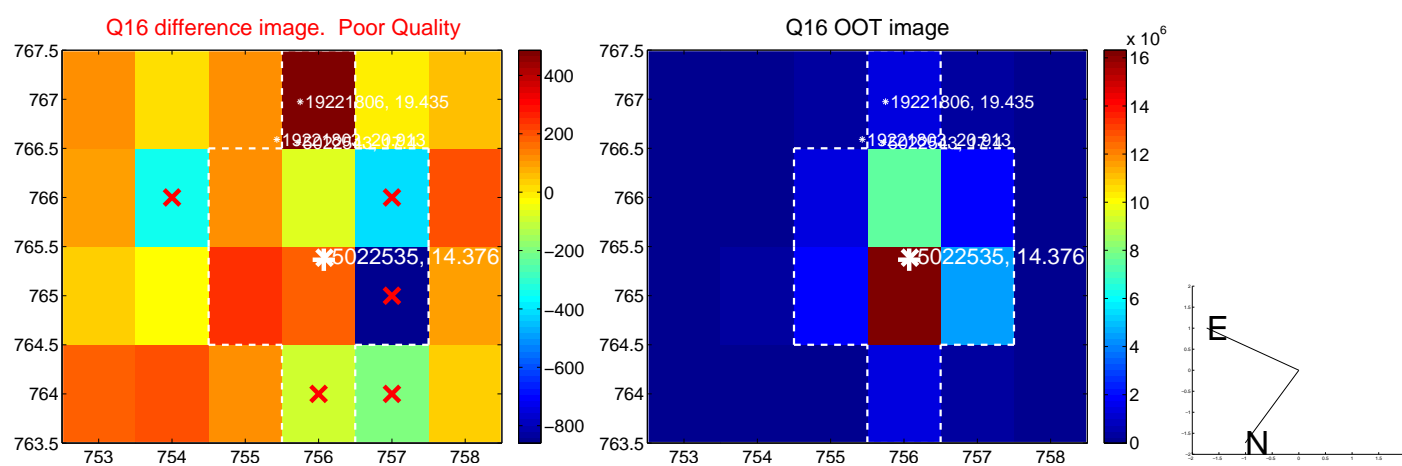
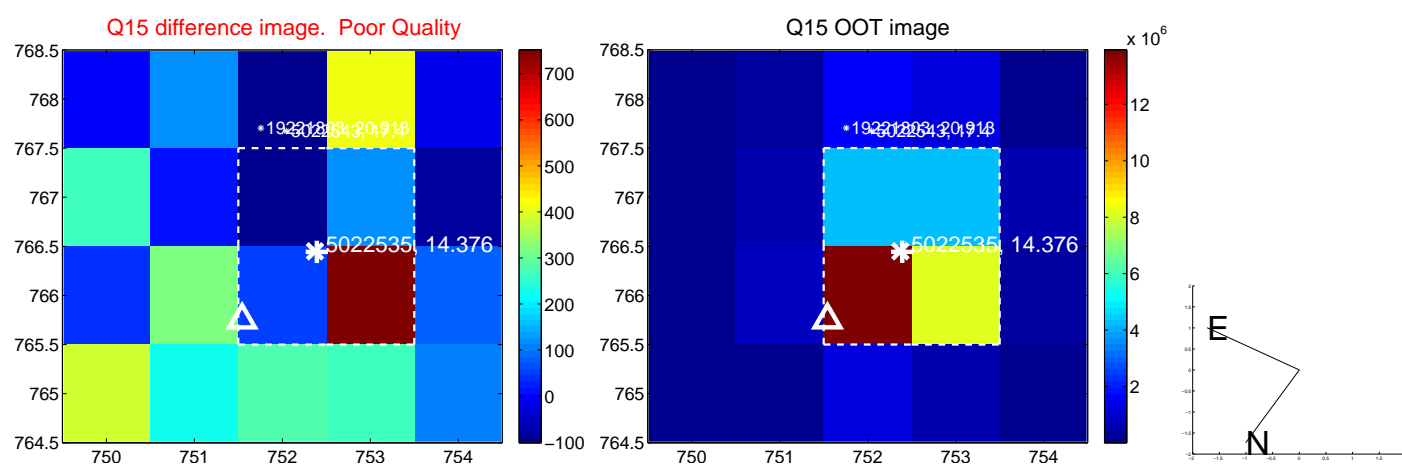
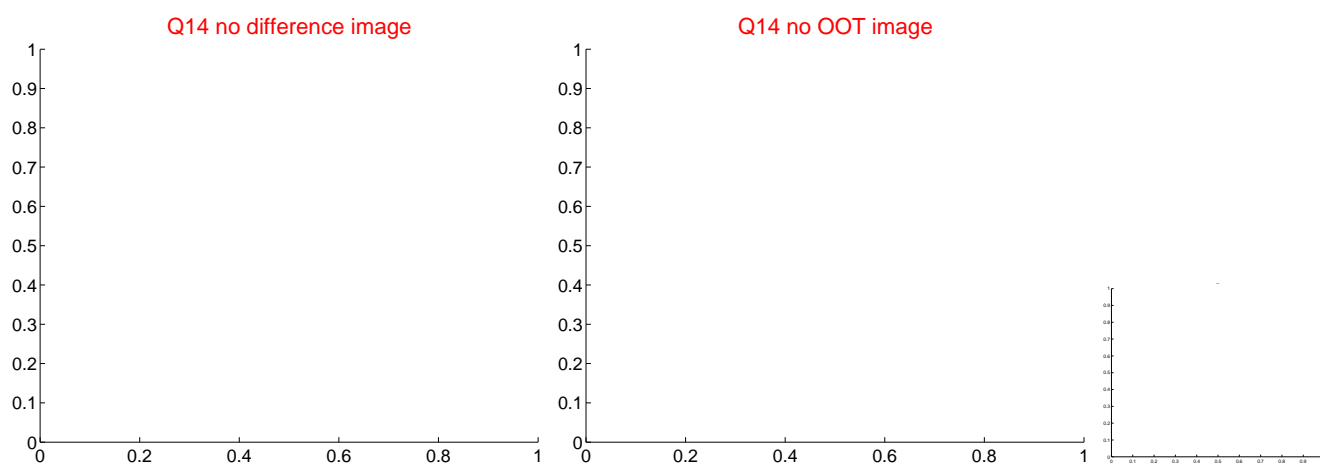
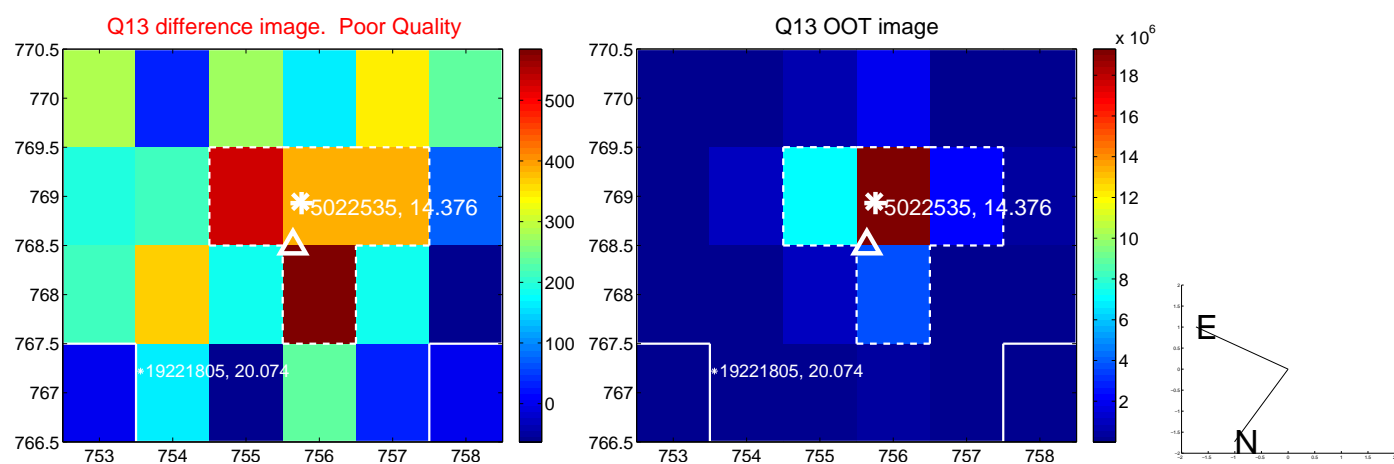




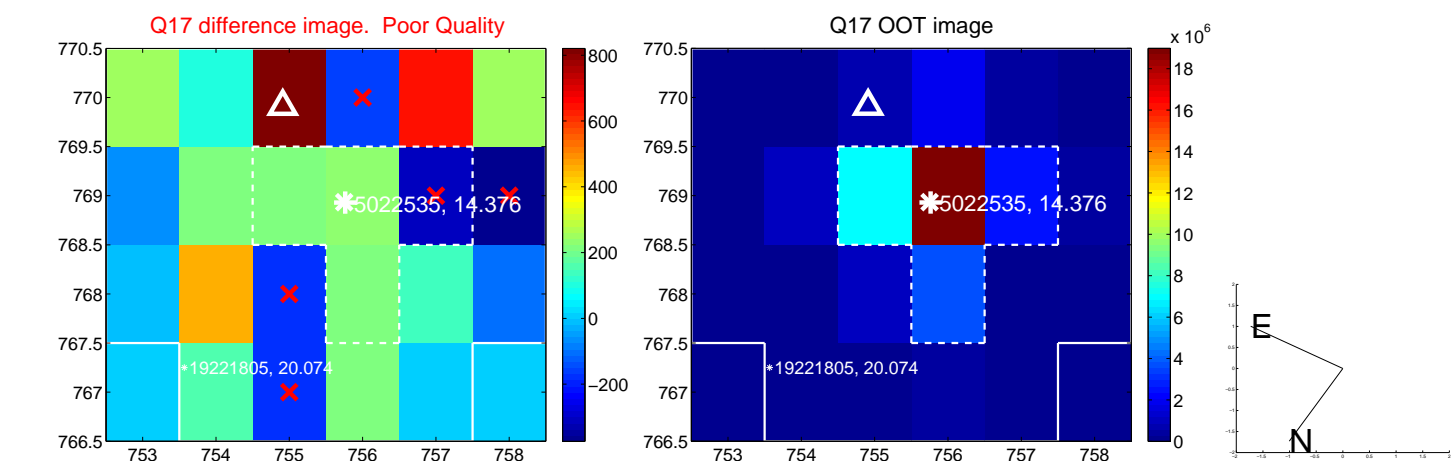
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



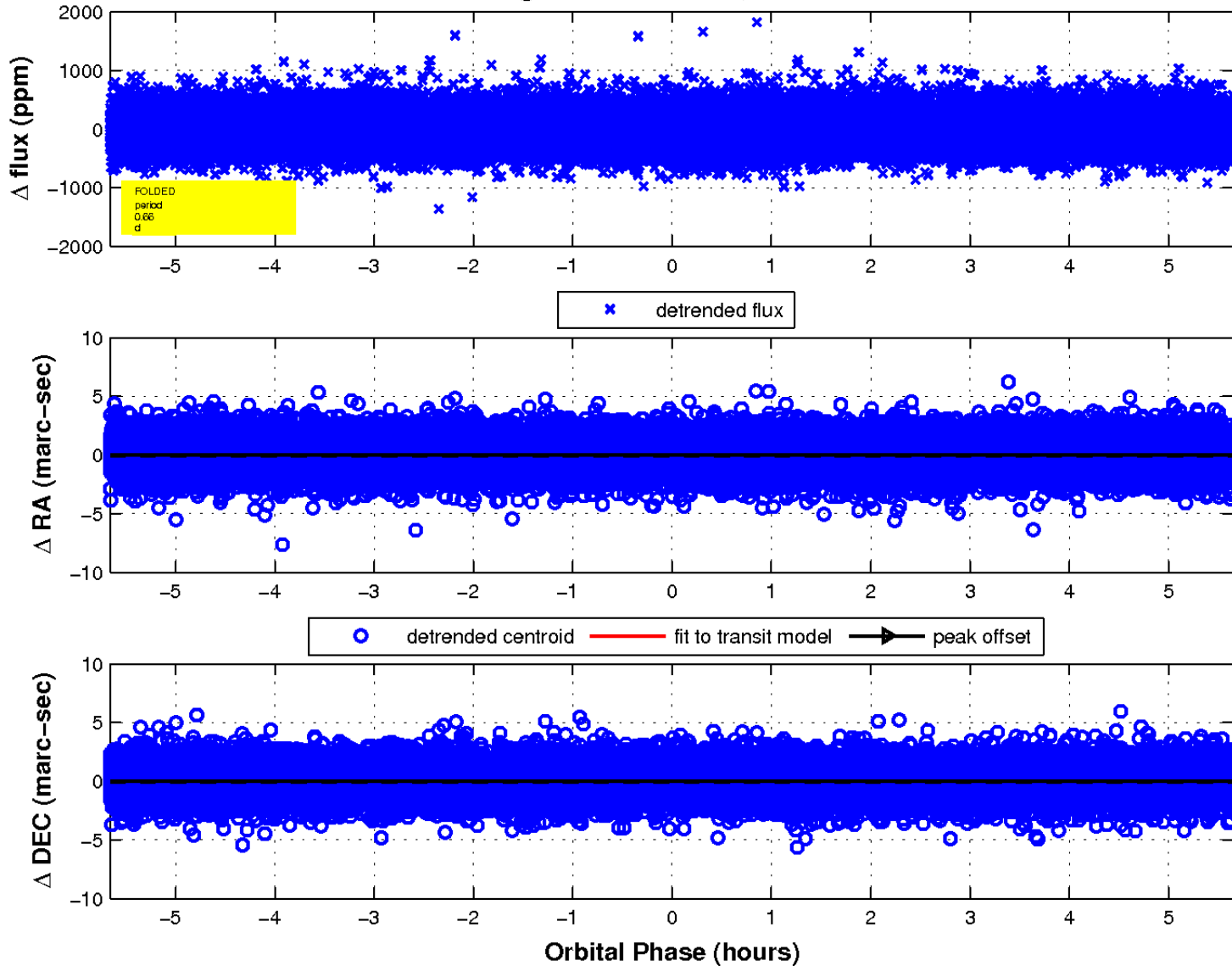
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

