

# KIC 005394705

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005394705-01	OBS	No	549.957518	454.385624	859.1	4.018	8.0	6.8	2.40	5030	8.62	2.05

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005394705-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

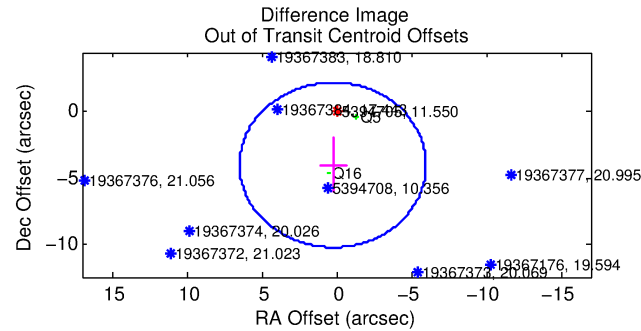
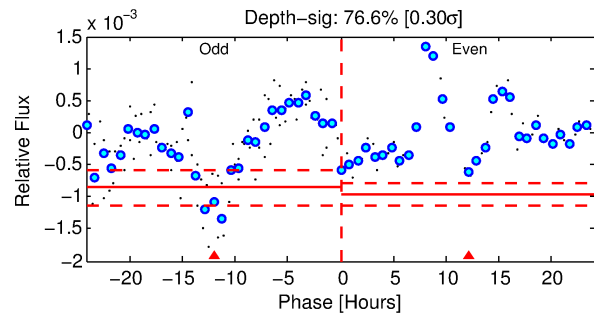
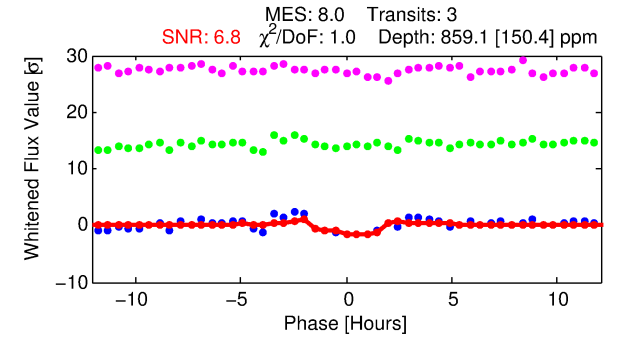
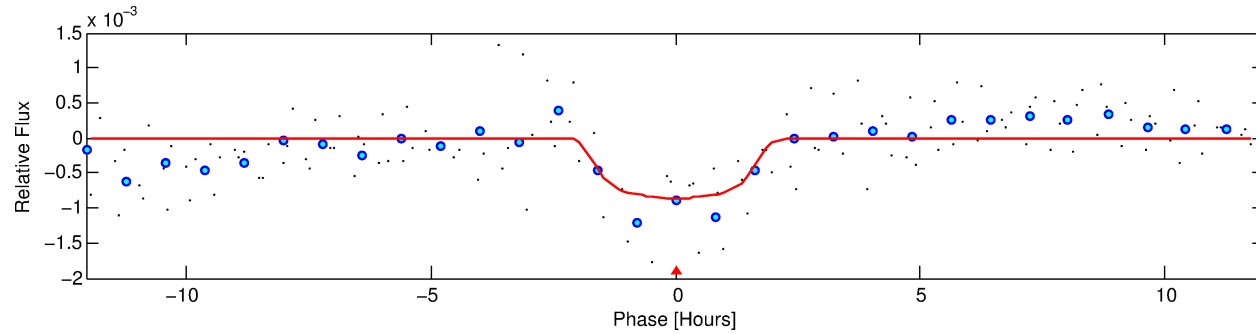
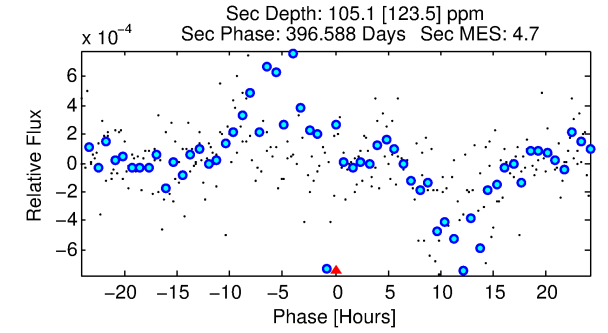
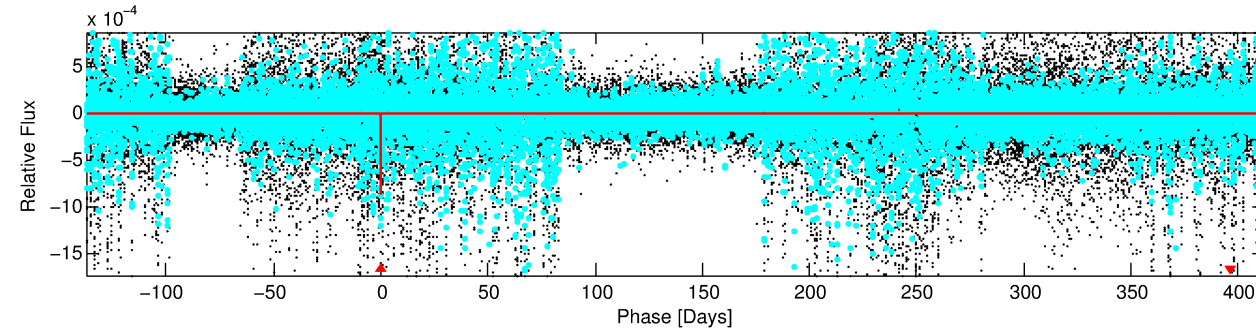
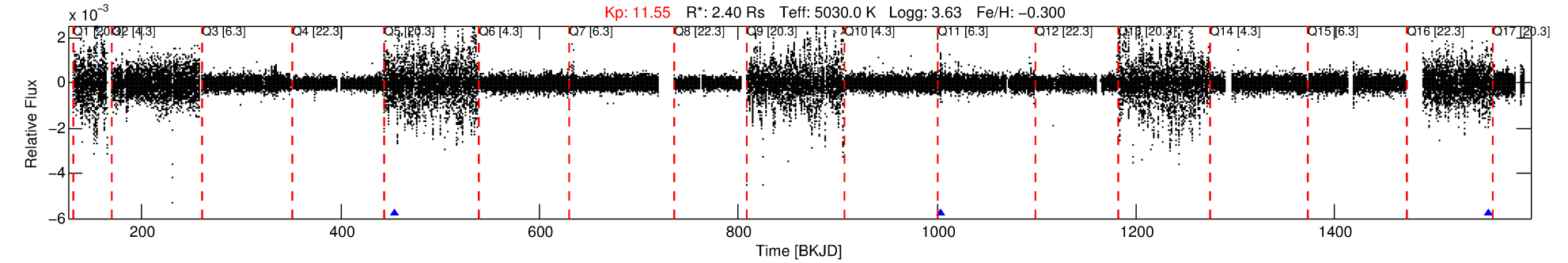
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005394705-01

No Significant Match Found

# DV One-Page Summary

KIC: 5394705 Candidate: 1 of 1 Period: 549.958 d



## DV Fit Results:

Period = 549.95752 [0.00723] d  
Epoch = 454.3856 [0.0087] BKJD  
Rp/R\* = 0.0329 [0.0059]  
a/R\* = 513.65 [285.97]  
b = 0.91 [0.11]  
Seff = 2.05 [0.64]  
Teq = 305 [24] K  
Rp = 8.62 [2.89] Re  
a = 1.2691 [0.2837] AU  
Ag = 1253.33 [1586.48] [0.79σ]  
Teffp = 2808 [863] K [2.90σ]

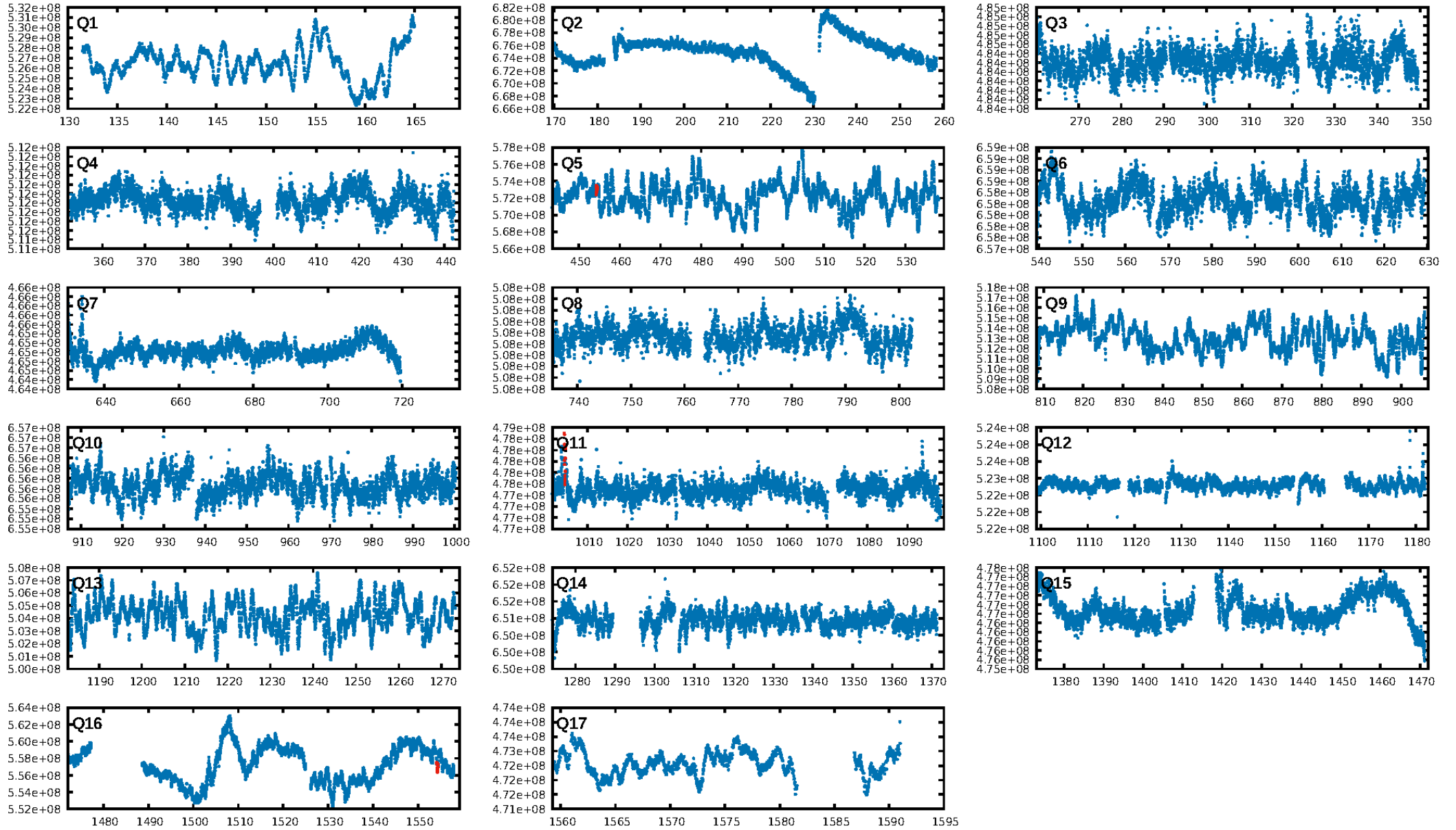
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 24.3%  
ModelChiSquareGof-sig: 99.9%  
Bootstrap-pfa: 3.62e-06  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 0.2919  
Centroid-sig: 3.4%  
Centroid-so: 2.546 arcsec [7.09σ]  
OotOffset-rm: 4.032 arcsec [1.94σ]  
KicOffset-rm: 7.957 arcsec [2.99σ]  
OotOffset-st: 0/0/1/1 [2]  
KicOffset-st: 0/0/1/1 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [2/2]

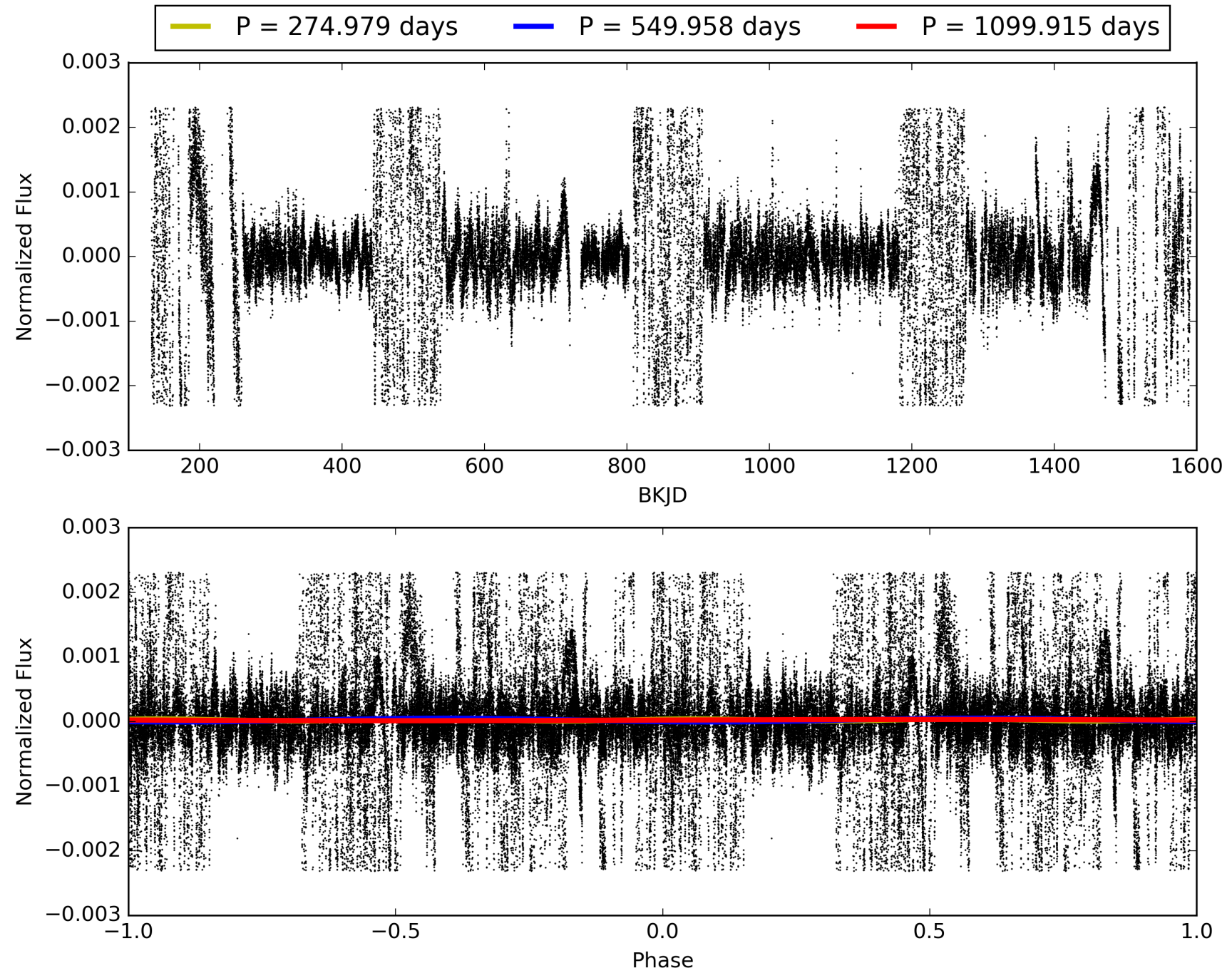
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 13:37:57 Z

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

# TCE 005394705-01, PDC Light Curves

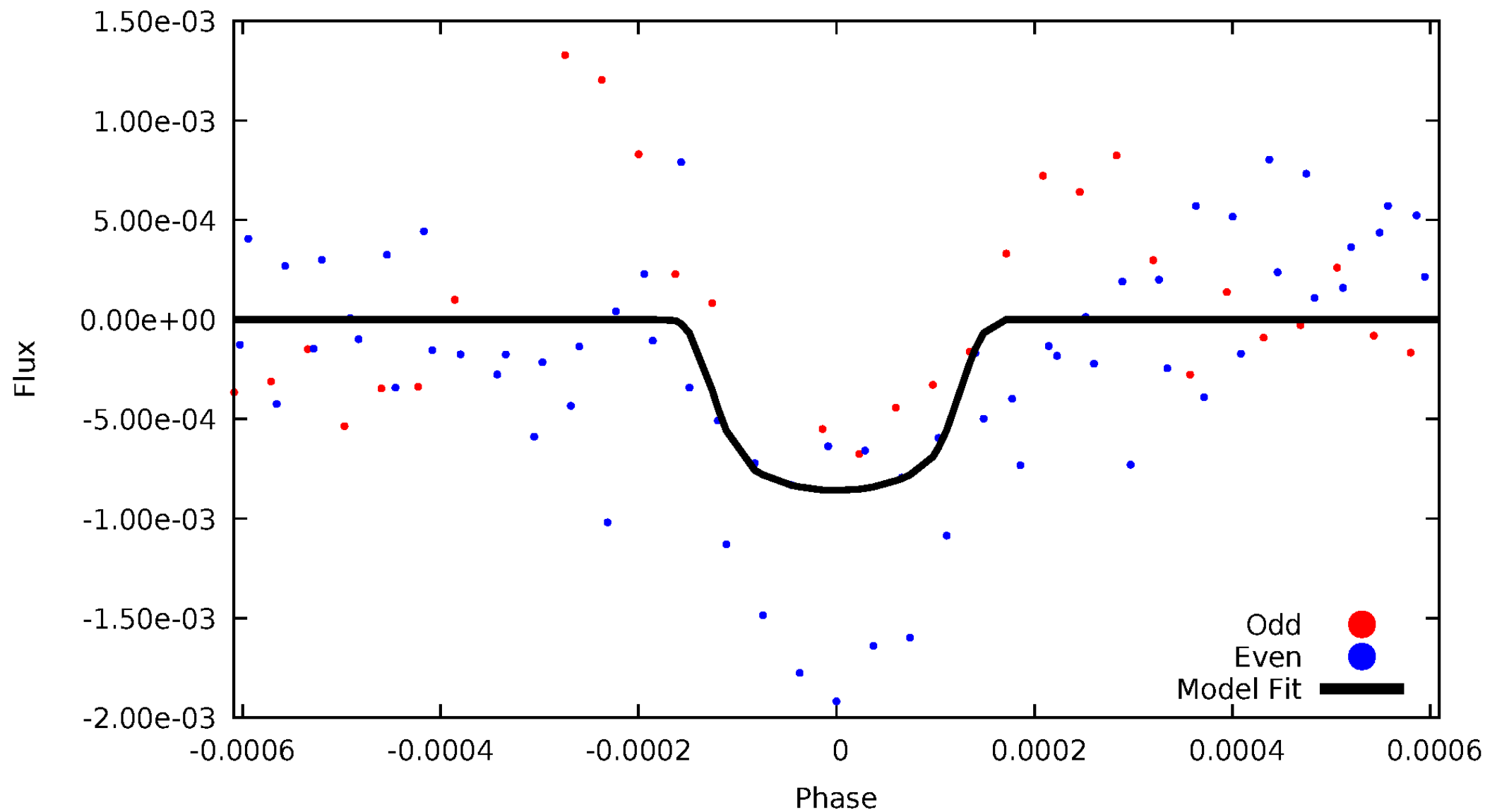


TCE 005394705-01



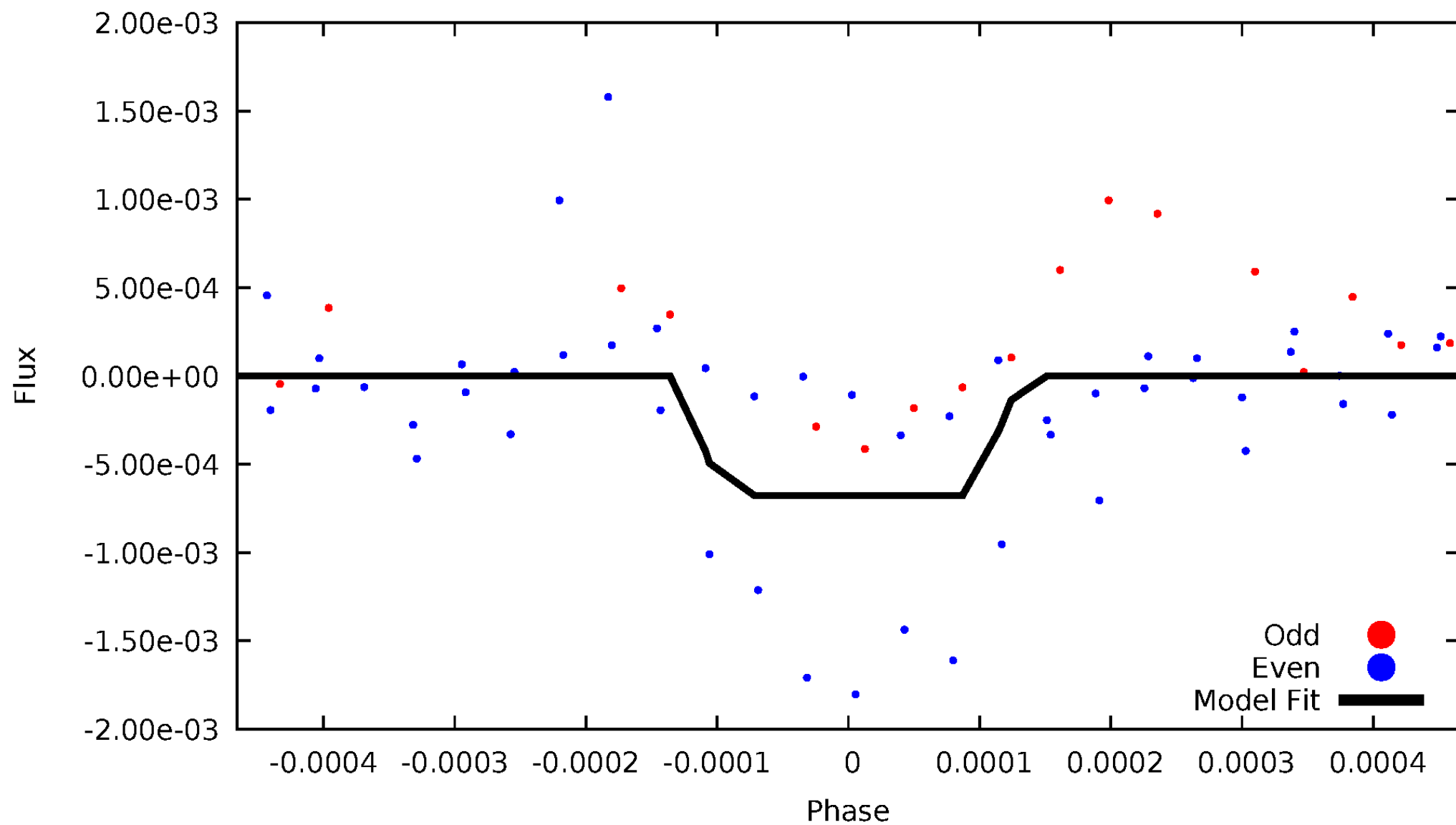
# DV Odd/Even

TCE 005394705-01



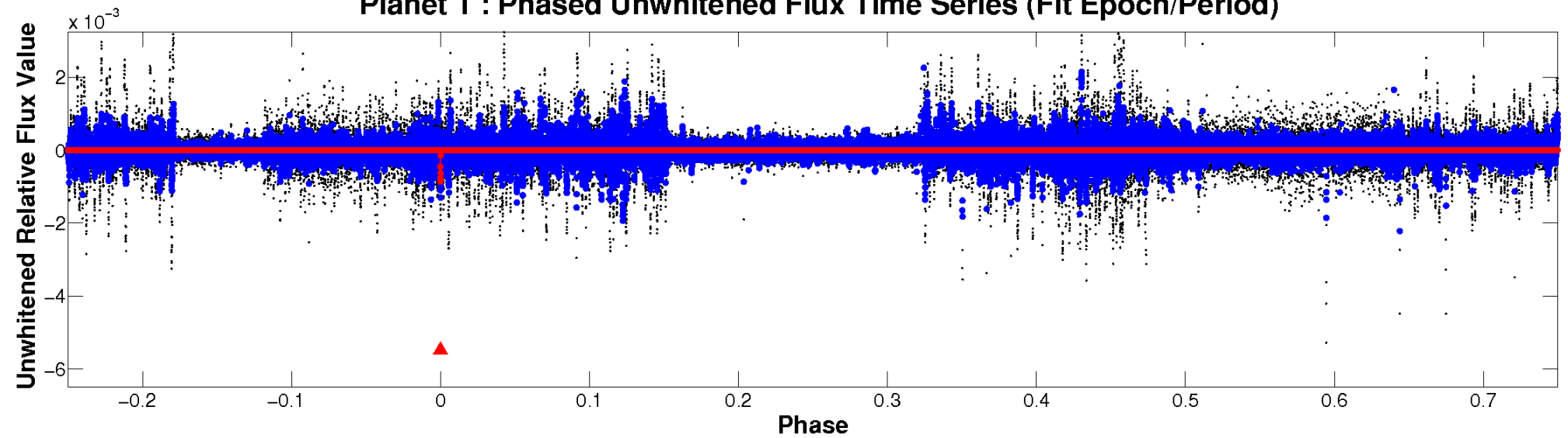
# ALT Odd/Even

TCE 005394705-01

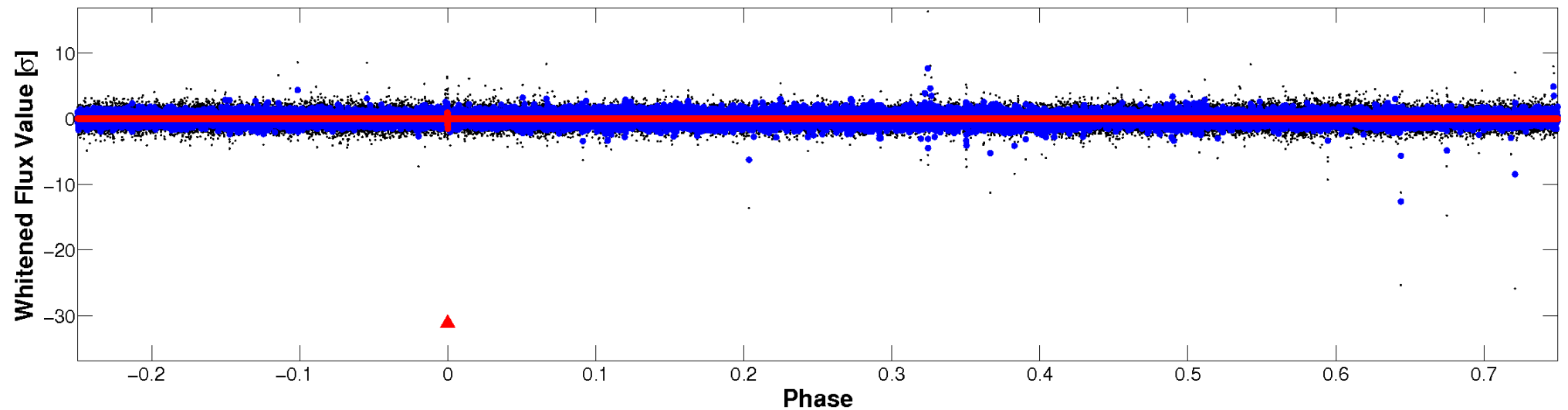


# Non-Whitened Vs. Whitened Light Curve

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

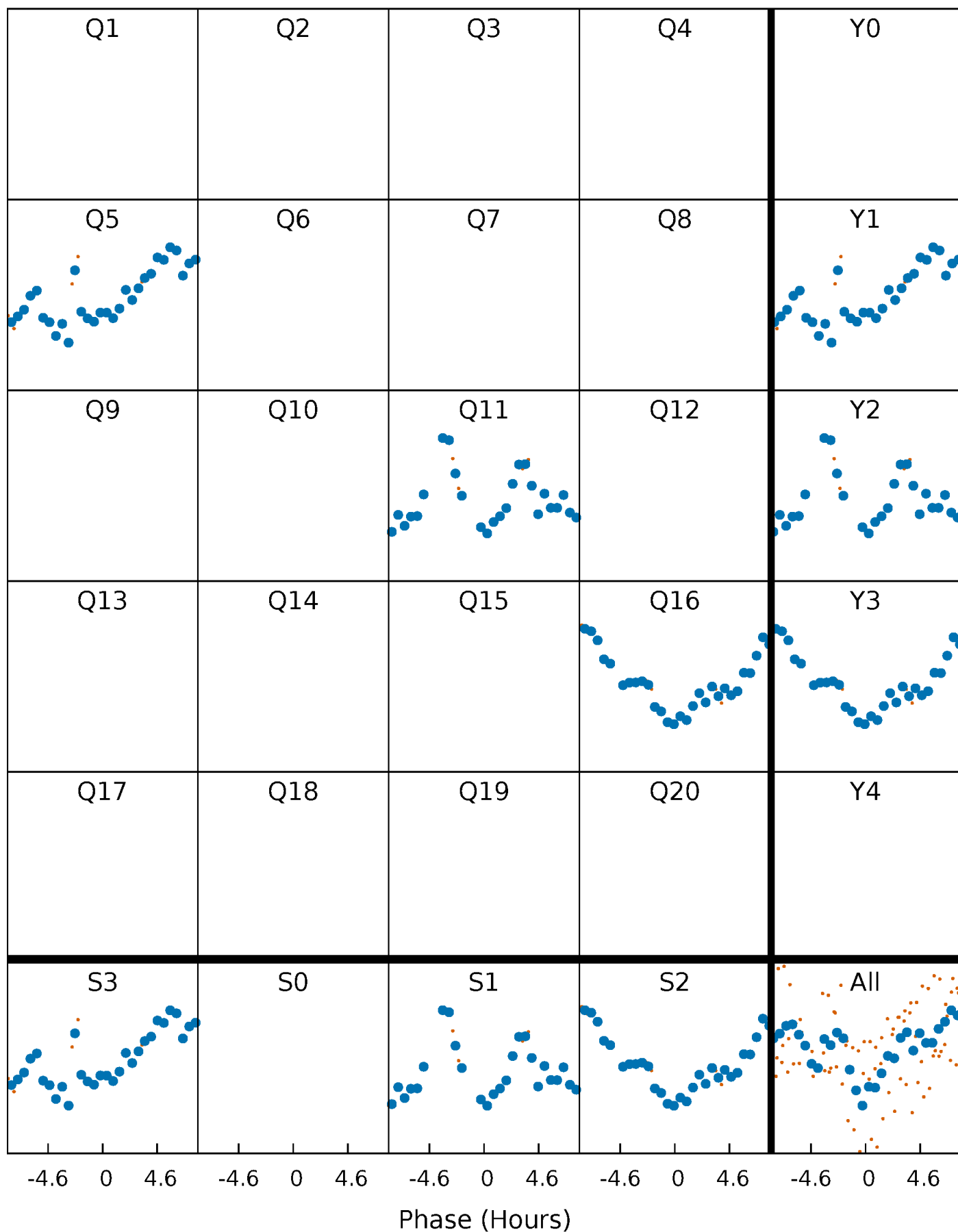


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

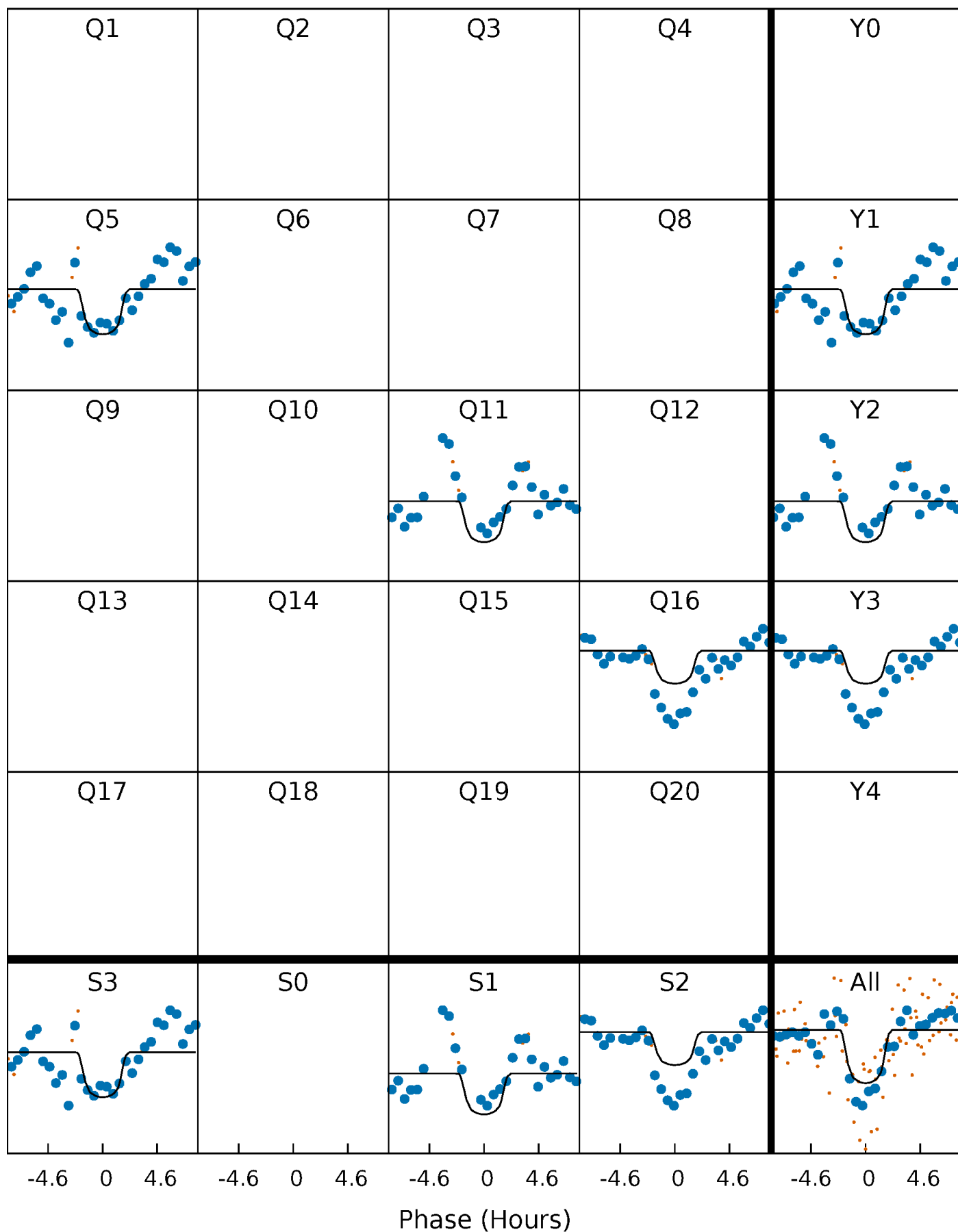
TCE 005394705-01 P=549.957518 Days  $T_0=454.385624$  (BKJD)





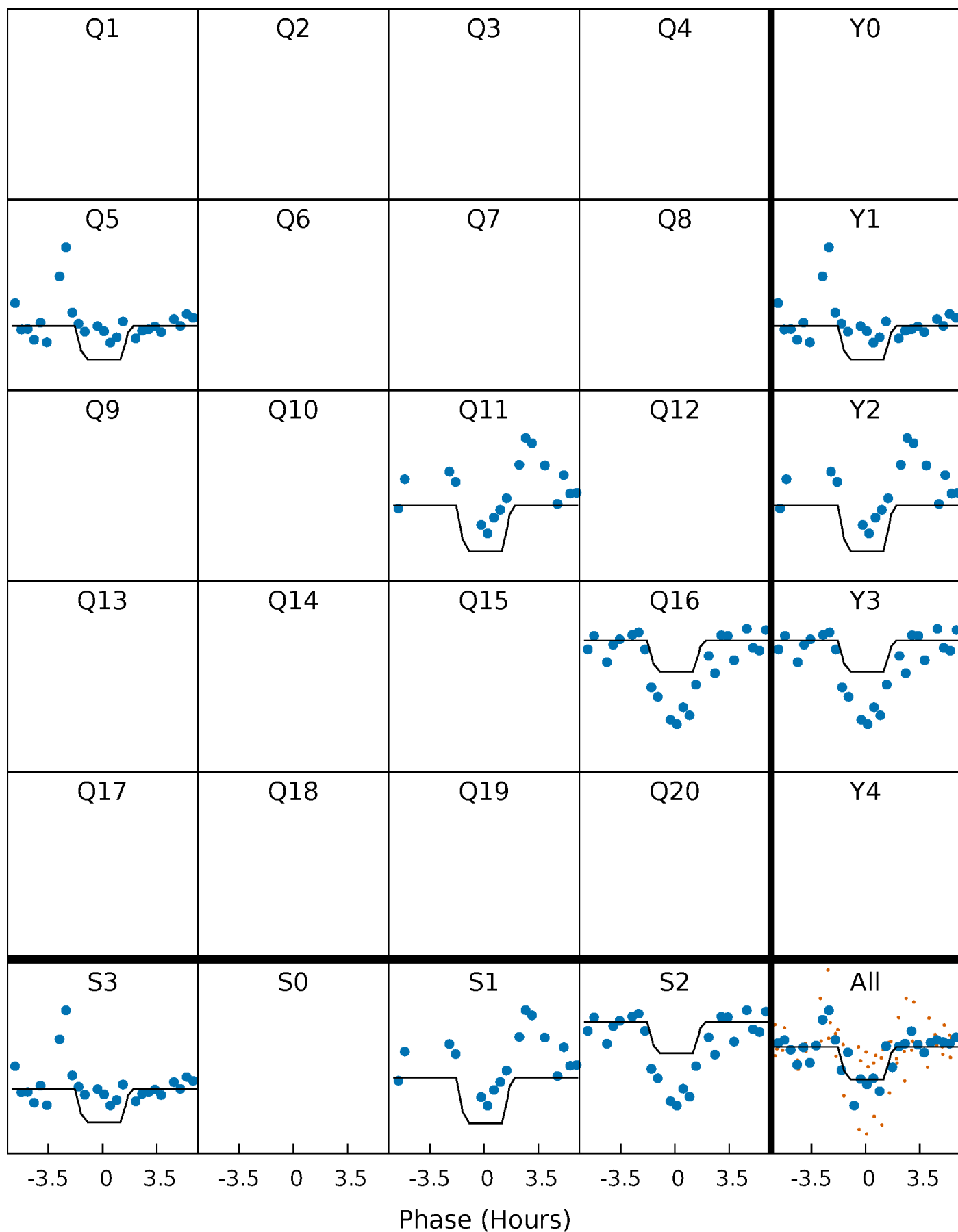
# DV Quarter-Phased Transit Curves

TCE 005394705-01 P=549.957518 Days  $T_0=454.385624$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

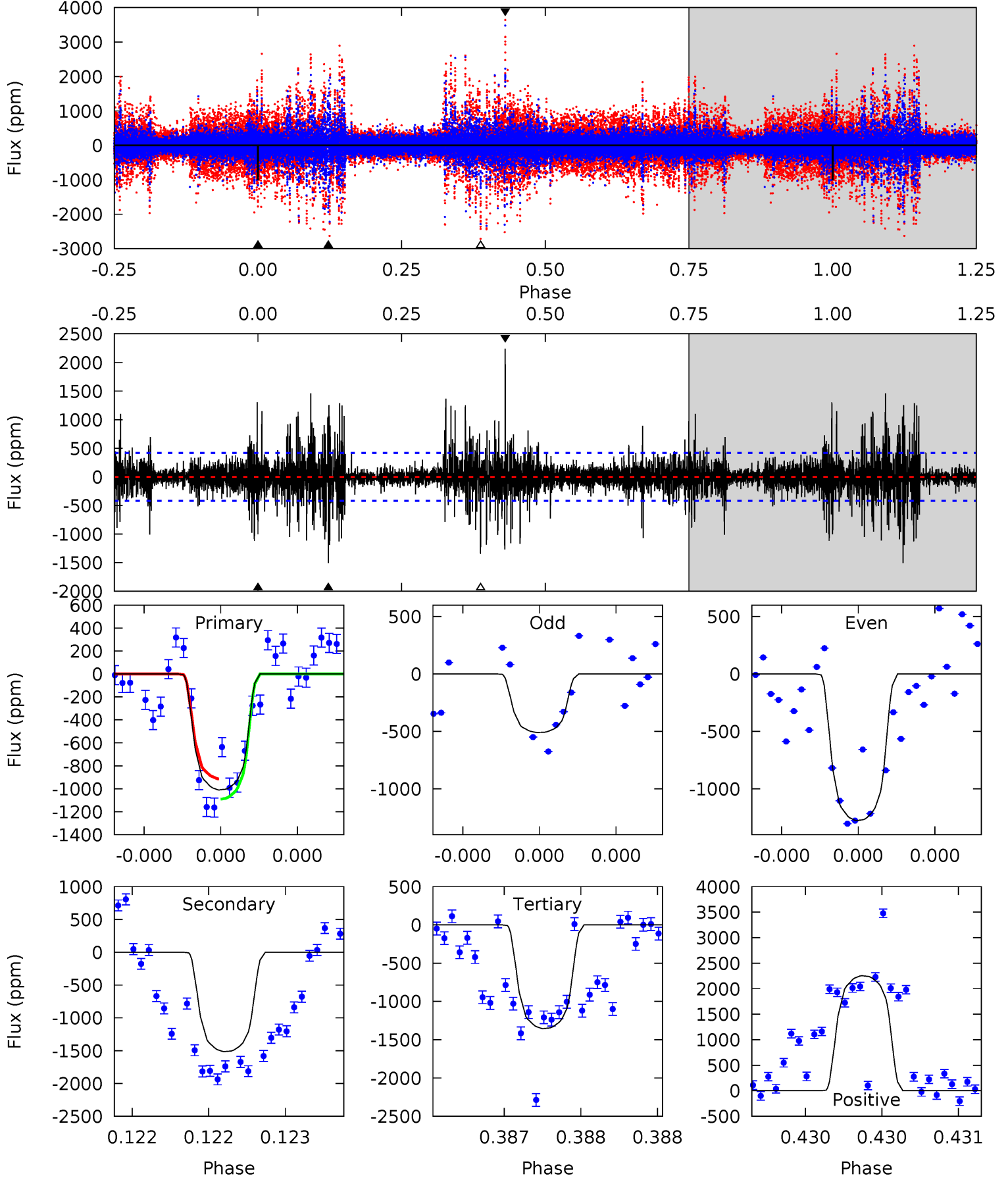
TCE 005394705-01 P=549.948834 Days  $T_0=454.399991$  (BKJD)



# DV Model-Shift Uniqueness Test

005394705-01, P = 549.957518 Days, E = 454.385624 Days

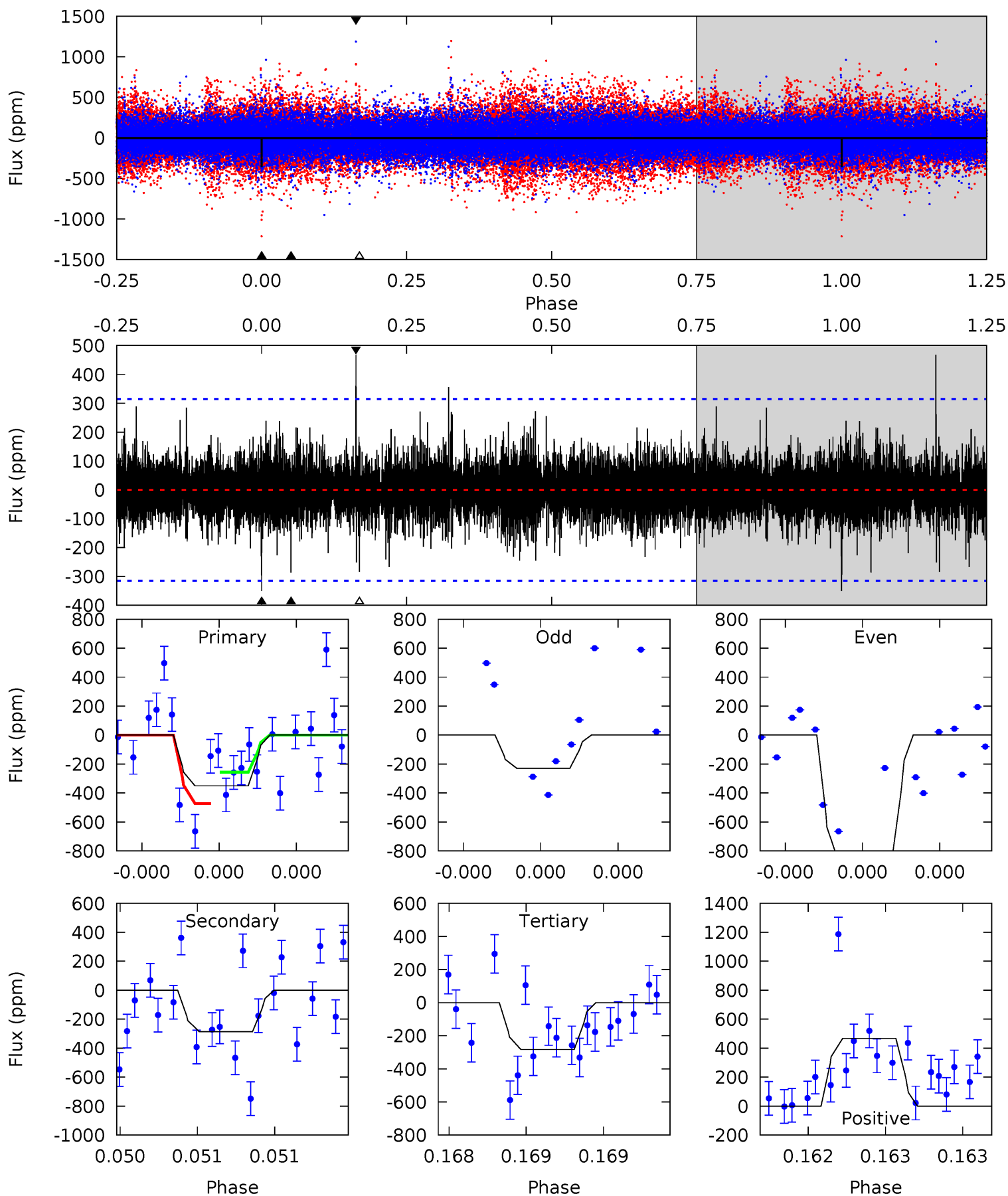
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.5	20.2	18.1	30.1	5.64	3.59	2.94	-4.60	-16.6	2.14	-9.89	3.52	1.31	0.60	1.19



# Alt Model-Shift Uniqueness Test

005394705-01, P = 549.948834 Days, E = 454.399991 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
6.36	5.19	5.14	8.46	5.71	3.68	1.11	1.22	-2.11	0.05	-3.27	5.82	2.79	0.57	1.87



### Stellar Parameters For KIC 005394705

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5030^{+75}_{-52}$	$3.632^{+0.096}_{-0.156}$	$-0.300^{+0.150}_{-0.100}$	$2.401^{+0.680}_{-0.227}$	$0.902^{+0.181}_{-0.034}$	$0.092^{+0.034}_{-0.040}$
	+1%/-1%	+3%/-4%	+50%/-33%	+28%/-9%	+20%/-4%	+37%/-44%
Source	SPE74	SPE74	SPE74	DSEP		

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

### Secondary Eclipse Parameters for KIC 005394705-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-1505 \pm 74$	$9.04^{+1.95}_{-1.81}$	$429^{+24}_{-16}$	$5385^{+535}_{-387}$	$16865^{+9323}_{-5480}$
Alt.	$-287 \pm 55$	$7.07^{+1.81}_{-1.66}$	$427^{+28}_{-16}$	$4236^{+457}_{-339}$	$5135^{+4190}_{-1902}$

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

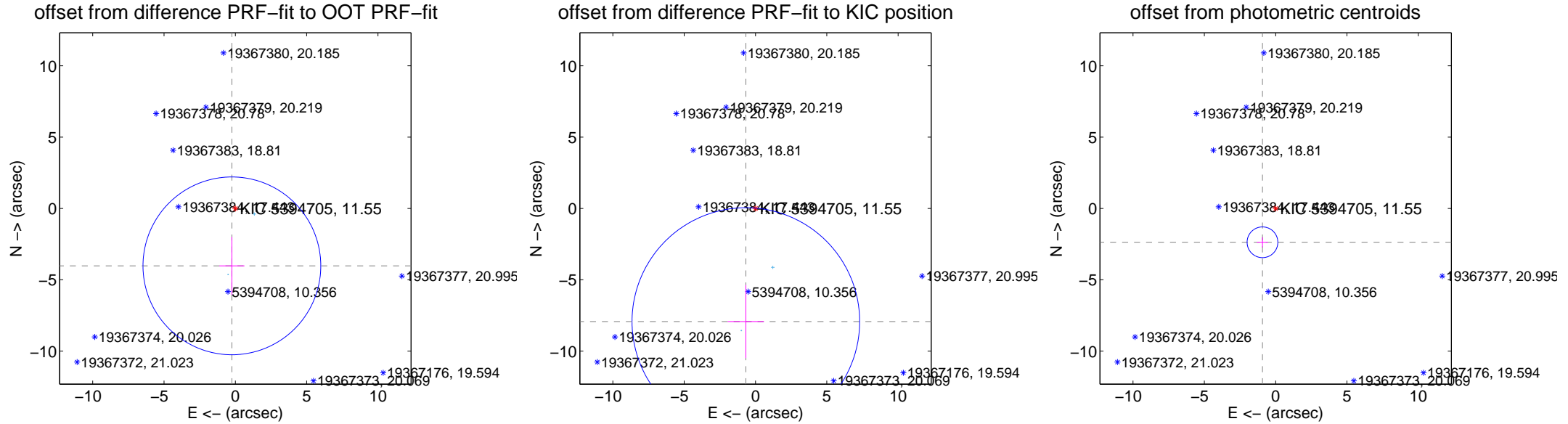
## DV Centroid Data

Supplemental centroid analysis for 005394705-01. **Kepler magnitude: 11.55.** Transit SNR 6.81

There are 2 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 3.96 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.032 \pm 2.077$	1.94	$0.242 \pm 0.882$	$-4.024 \pm 2.028$
PRF-fit source offset from KIC position	$7.957 \pm 2.659$	2.99	$0.676 \pm 1.276$	$-7.928 \pm 2.561$
photometric centroid source offset	$2.55 \pm 0.36$	7.09	$0.92 \pm 0.39$	$-2.37 \pm 0.35$

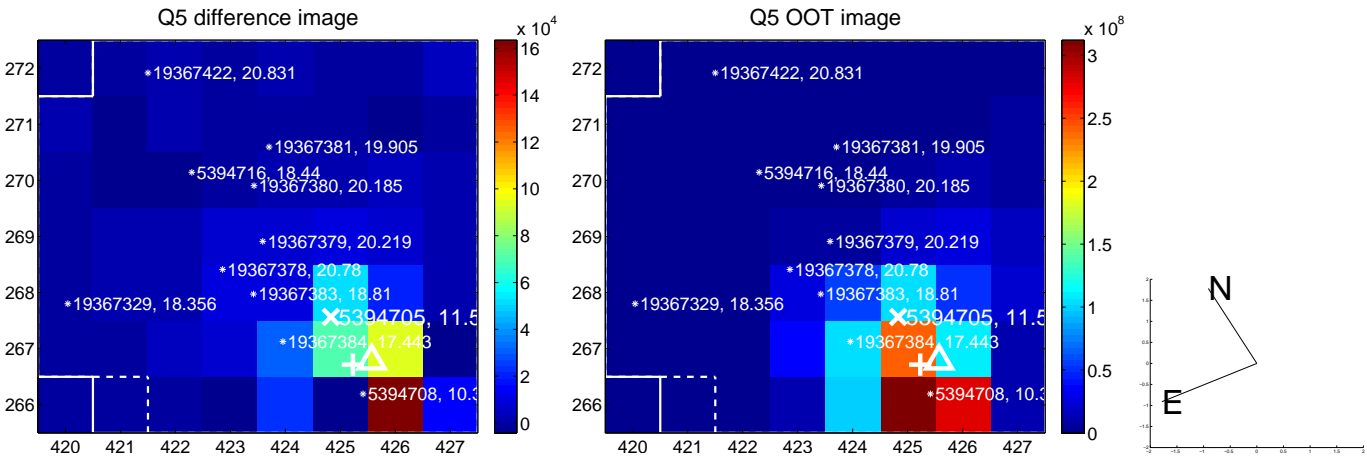


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



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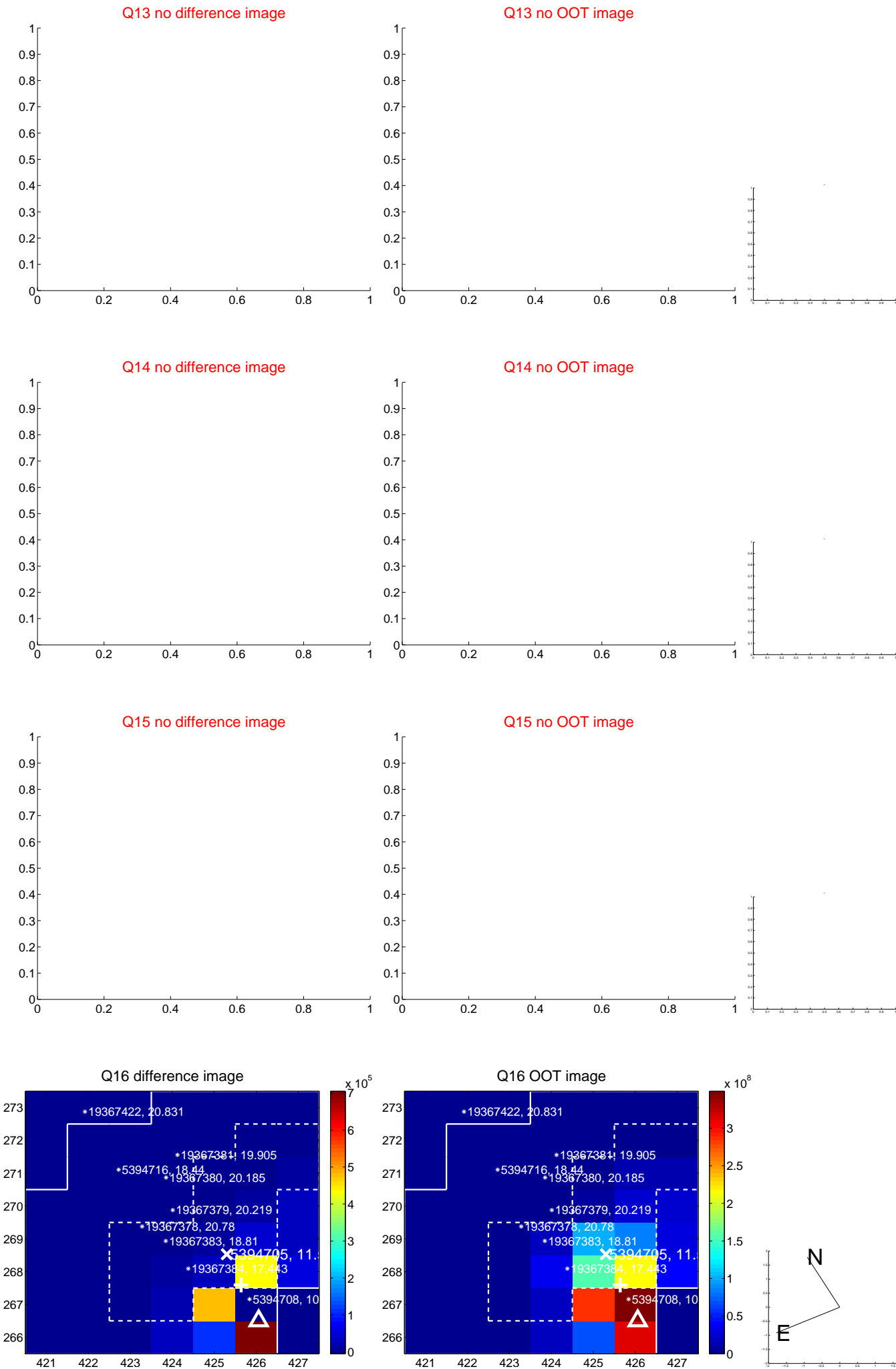




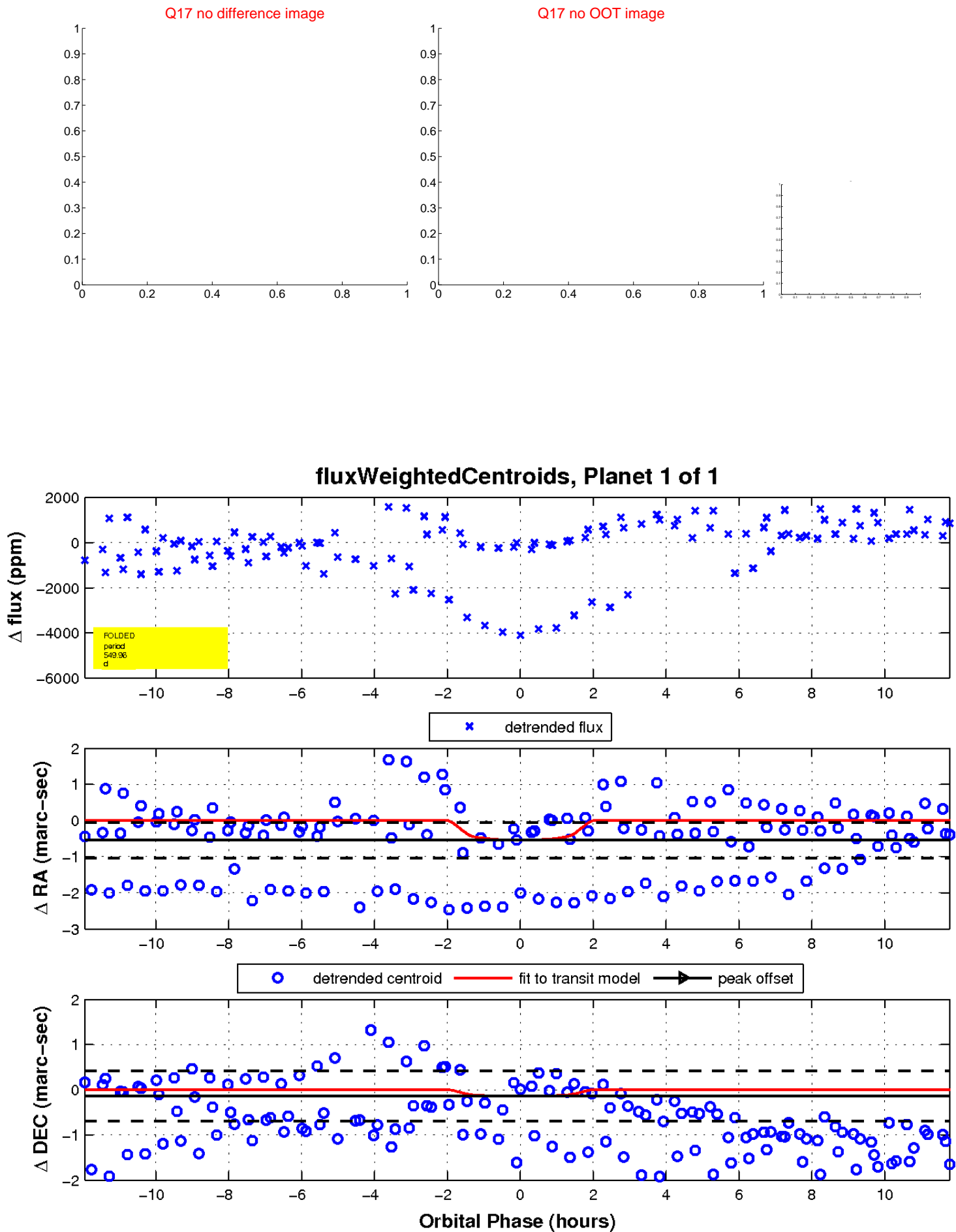
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

