

# KIC 007971645

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007971645-01	OBS	No	370.534209	231.073029	1297.6	15.014	8.4	8.5	0.83	5233	4.96	0.52

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007971645-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE--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.

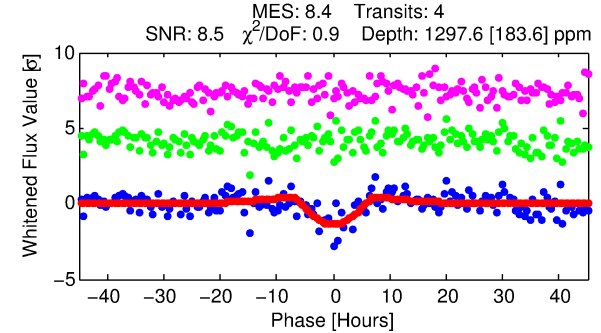
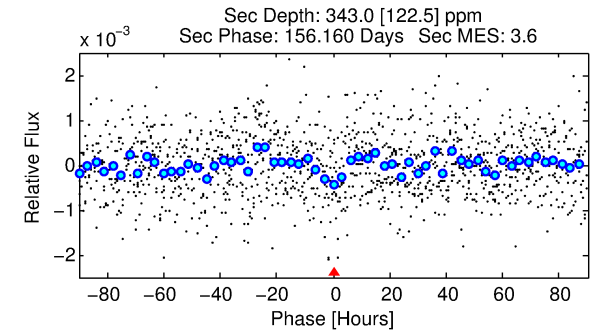
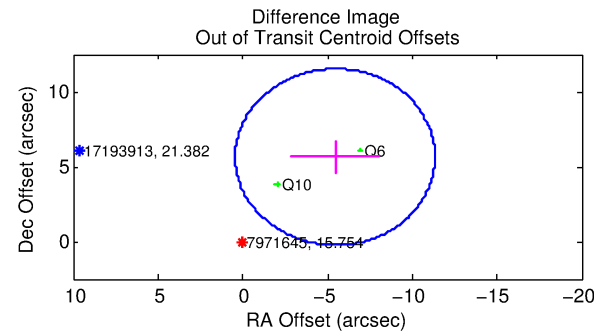
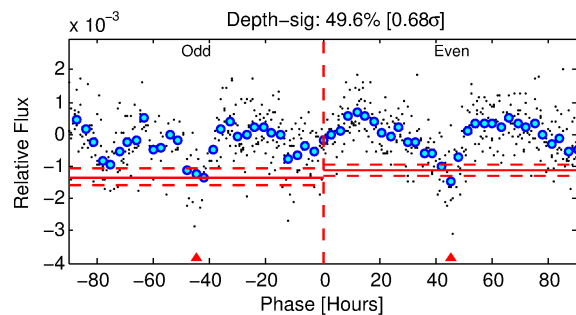
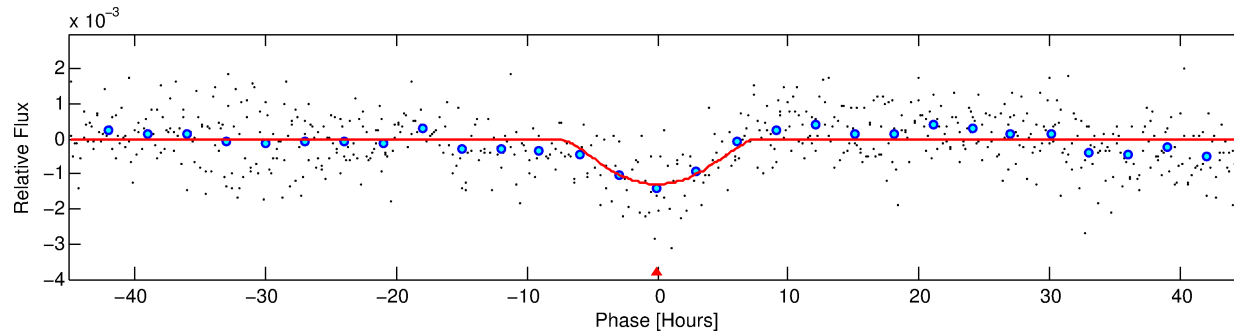
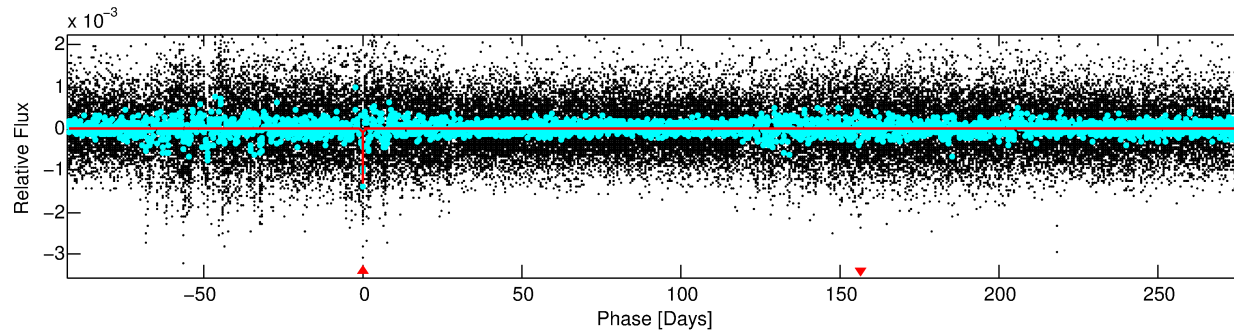
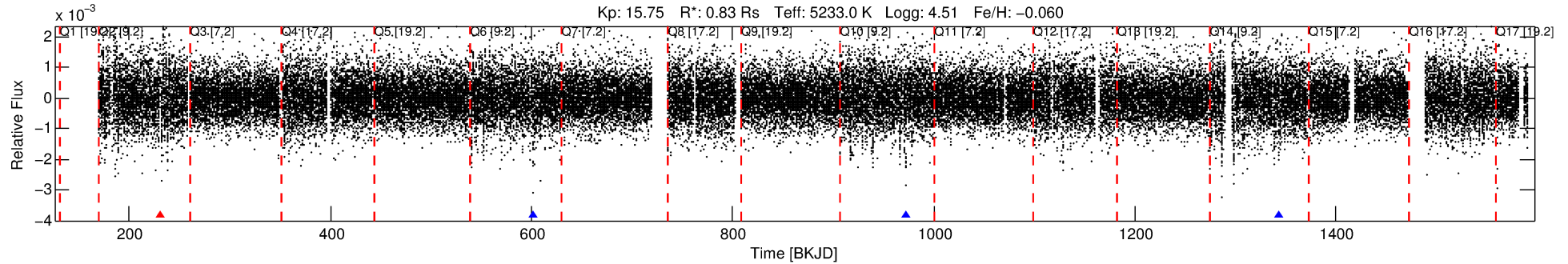
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007971645-01

No Significant Match Found

# DV One-Page Summary

KIC: 7971645 Candidate: 1 of 1 Period: 370.534 d



## DV Fit Results:

Period = 370.53421 [0.02095] d  
Epoch = 231.0730 [0.0454] BKJD  
Rp/R\* = 0.0550 [0.0958]  
a/R\* = 72.11 [38.98]  
b = 0.98 [0.16]  
Seff = 0.52 [0.11]  
Teq = 217 [12] K  
Rp = 4.96 [8.66] Re  
a = 0.9388 [0.1081] AU  
Ag = 6771.93 [23760.13] [0.28 $\sigma$ ]  
Teffp = 3037 [2663] K [1.06 $\sigma$ ]

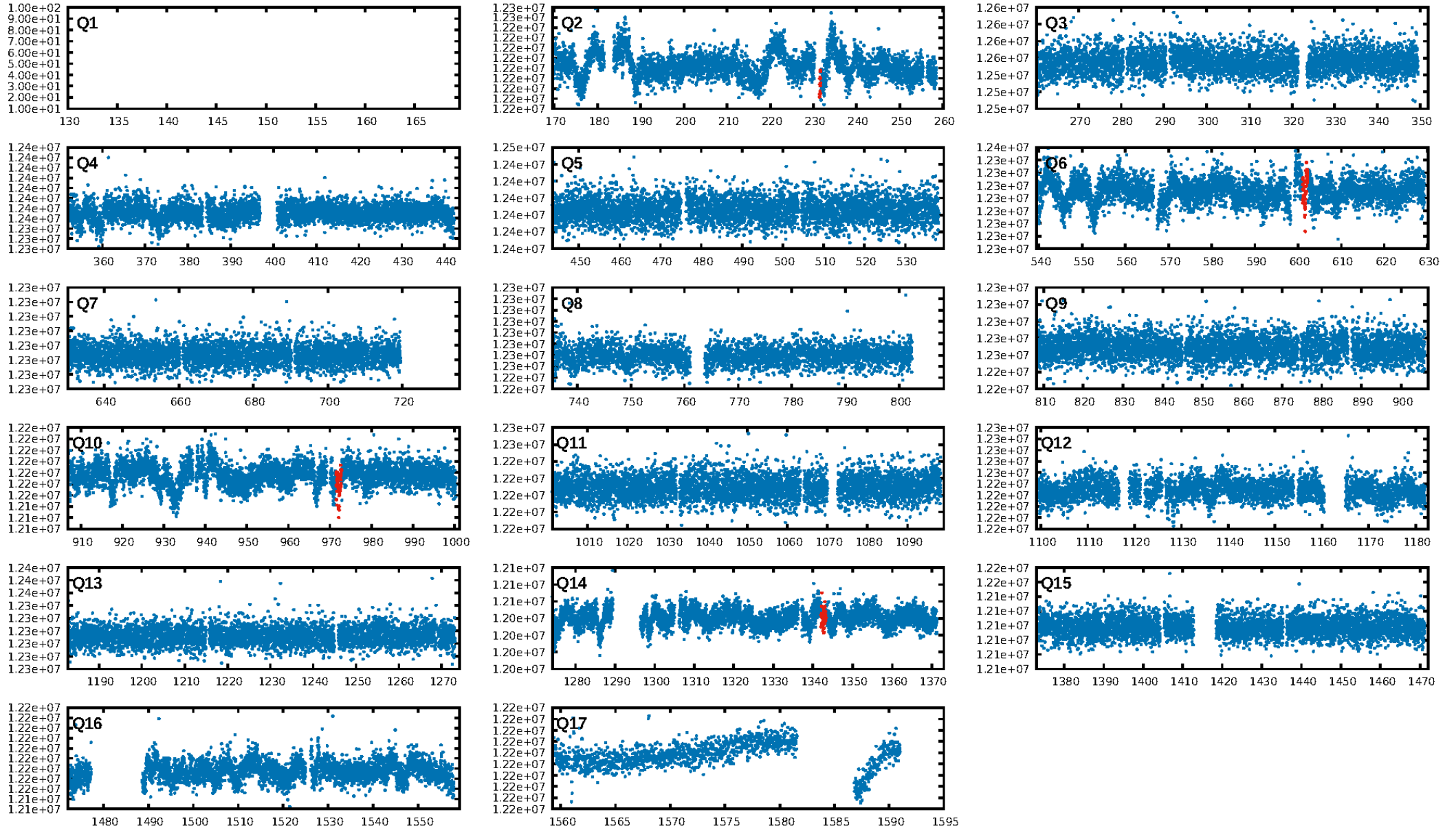
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 67.7%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 5.01e-10  
RollingBand-fgt: 0.75 [3/4]  
GhostDiagnostic-chr: 1.126  
Centroid-sig: 66.5%  
Centroid-so: 1.516 arcsec [0.63 $\sigma$ ]  
OotOffset-rm: 7.844 arcsec [4.00 $\sigma$ ]  
KicOffset-rm: 7.849 arcsec [4.02 $\sigma$ ]  
OotOffset-st: 2/0/0/0 [2]  
KicOffset-st: 2/0/0/0 [2]  
DiffImageQuality-fgm: 0.00 [0/2]  
DiffImageOverlap-fno: 1.00 [3/3]

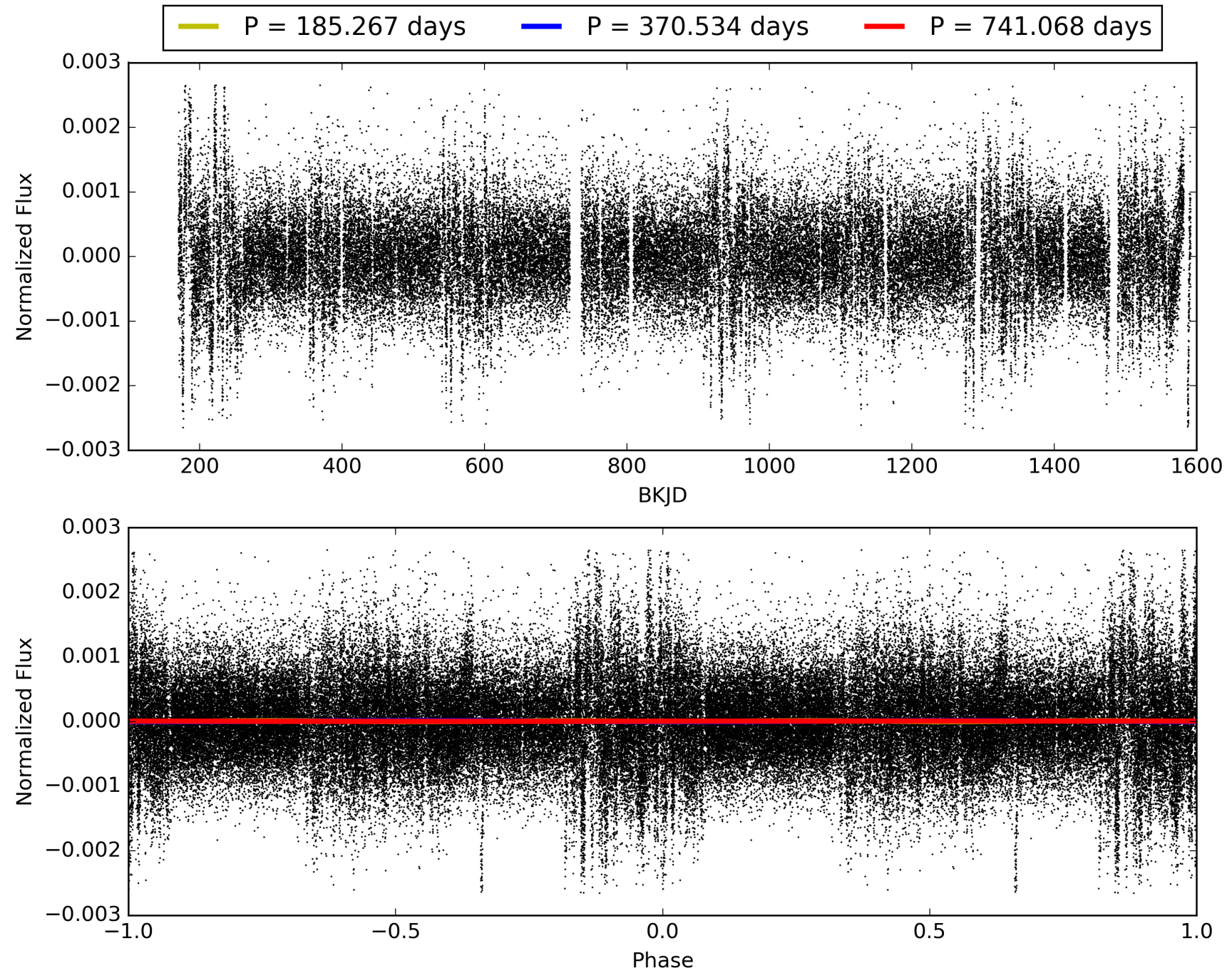
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 01:02:39 Z

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

# TCE 007971645-01, PDC Light Curves

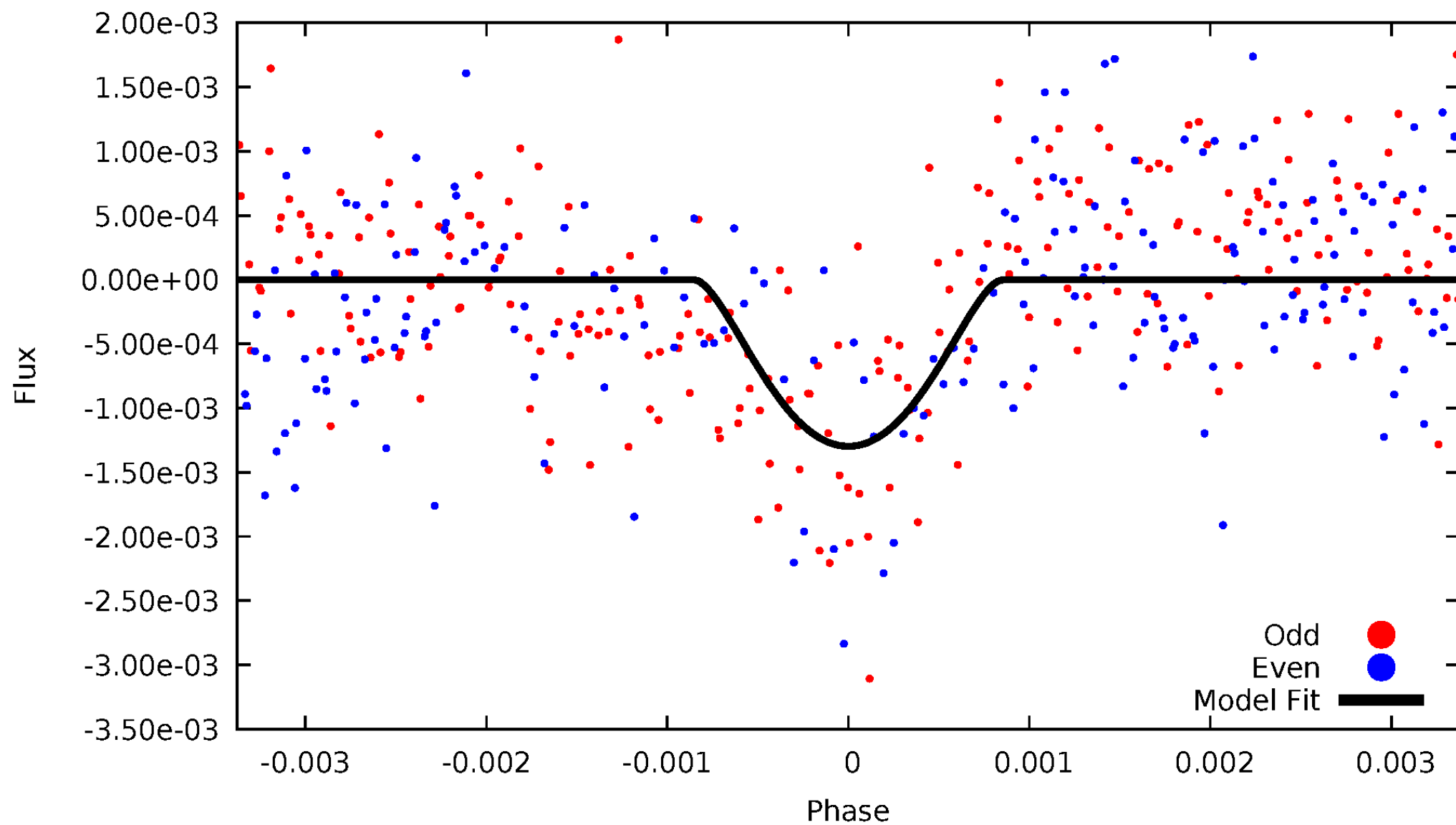


TCE 007971645-01



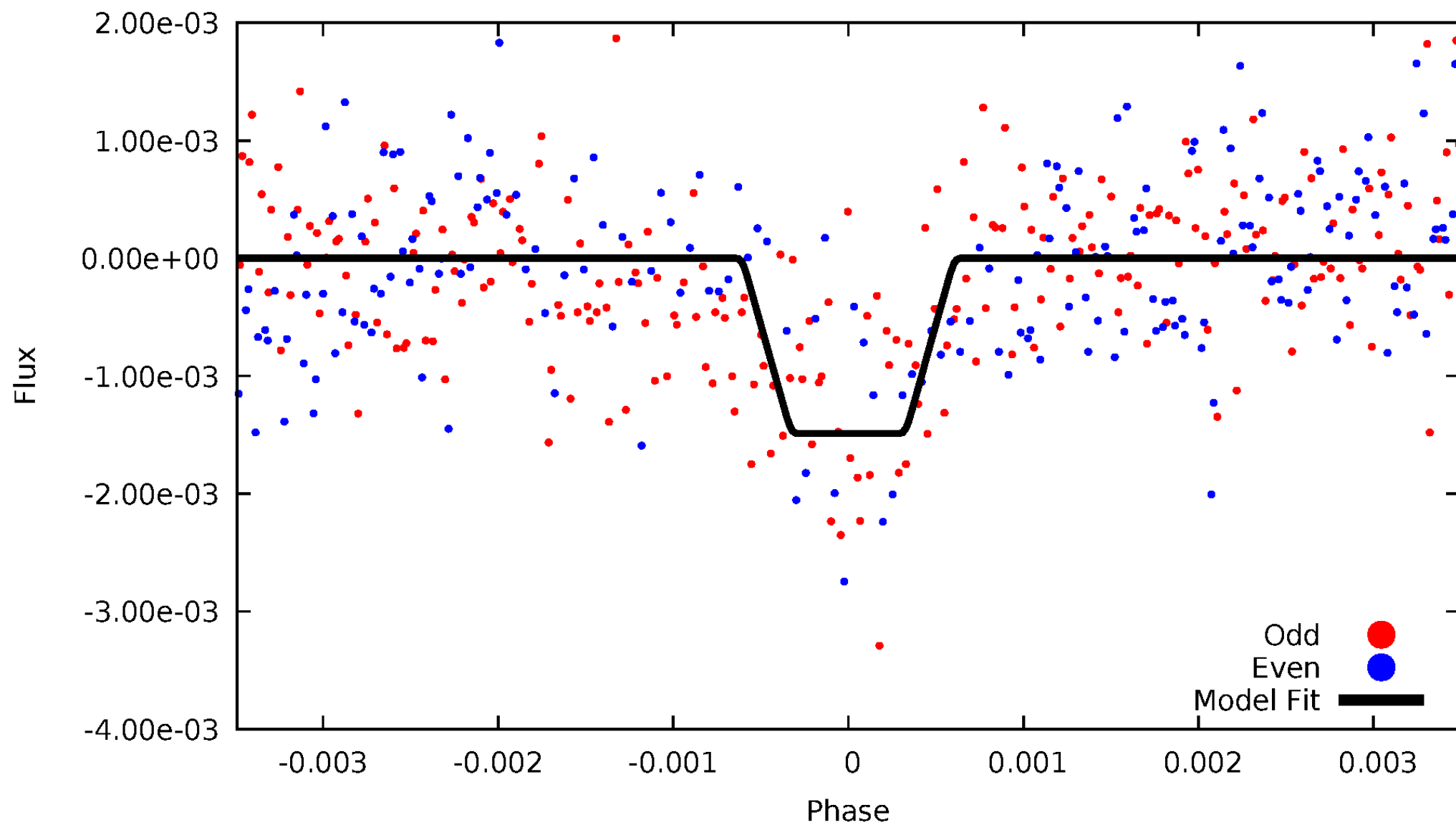
# DV Odd/Even

TCE 007971645-01



# ALT Odd/Even

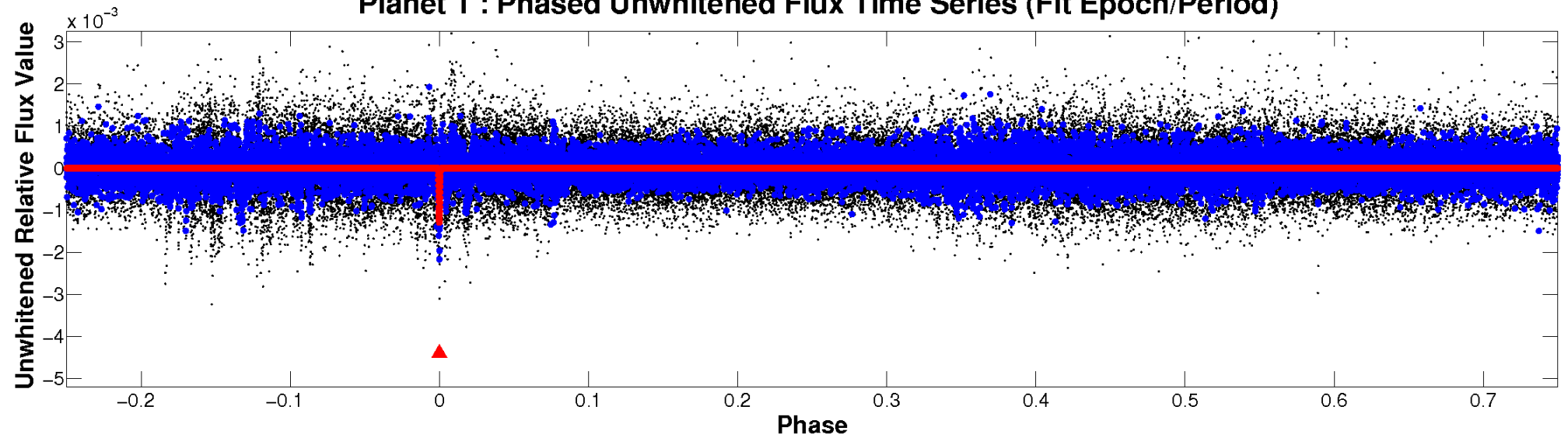
TCE 007971645-01



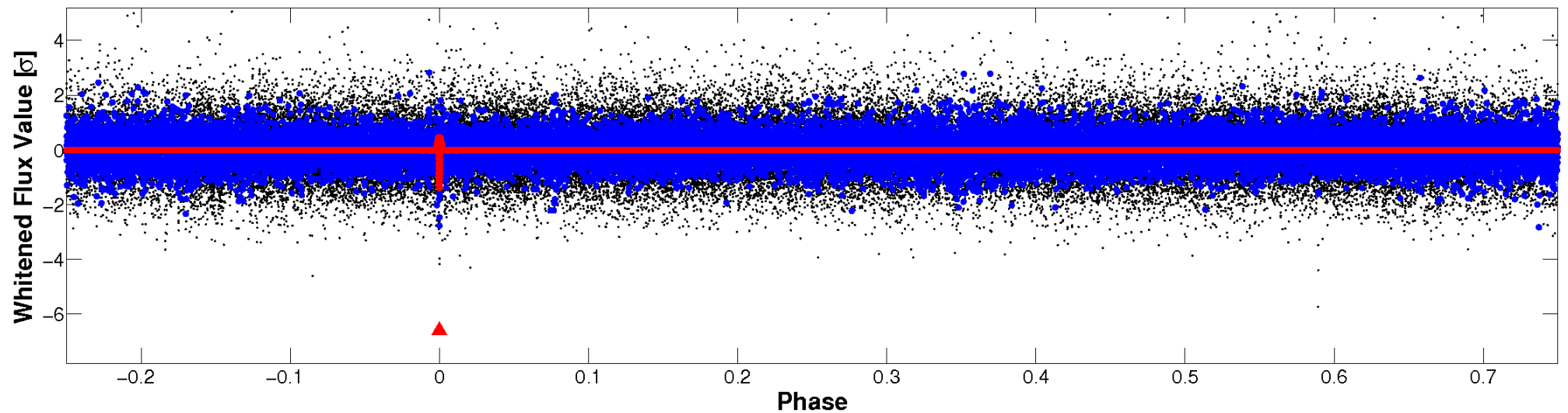


# Non-Whitened Vs. Whitened Light Curve

**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

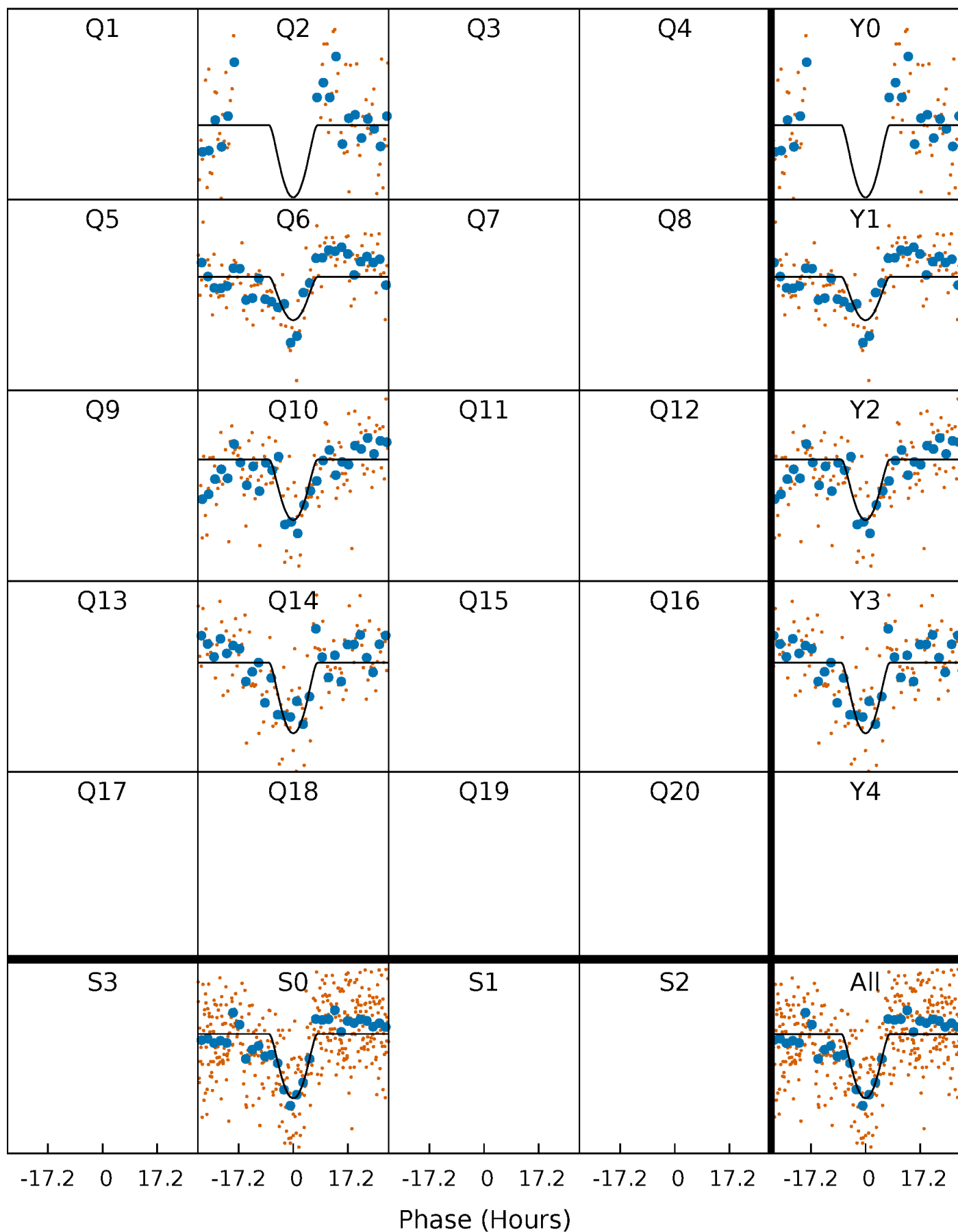
TCE 007971645-01 P=370.534209 Days  $T_0=231.073029$  (BKJD)





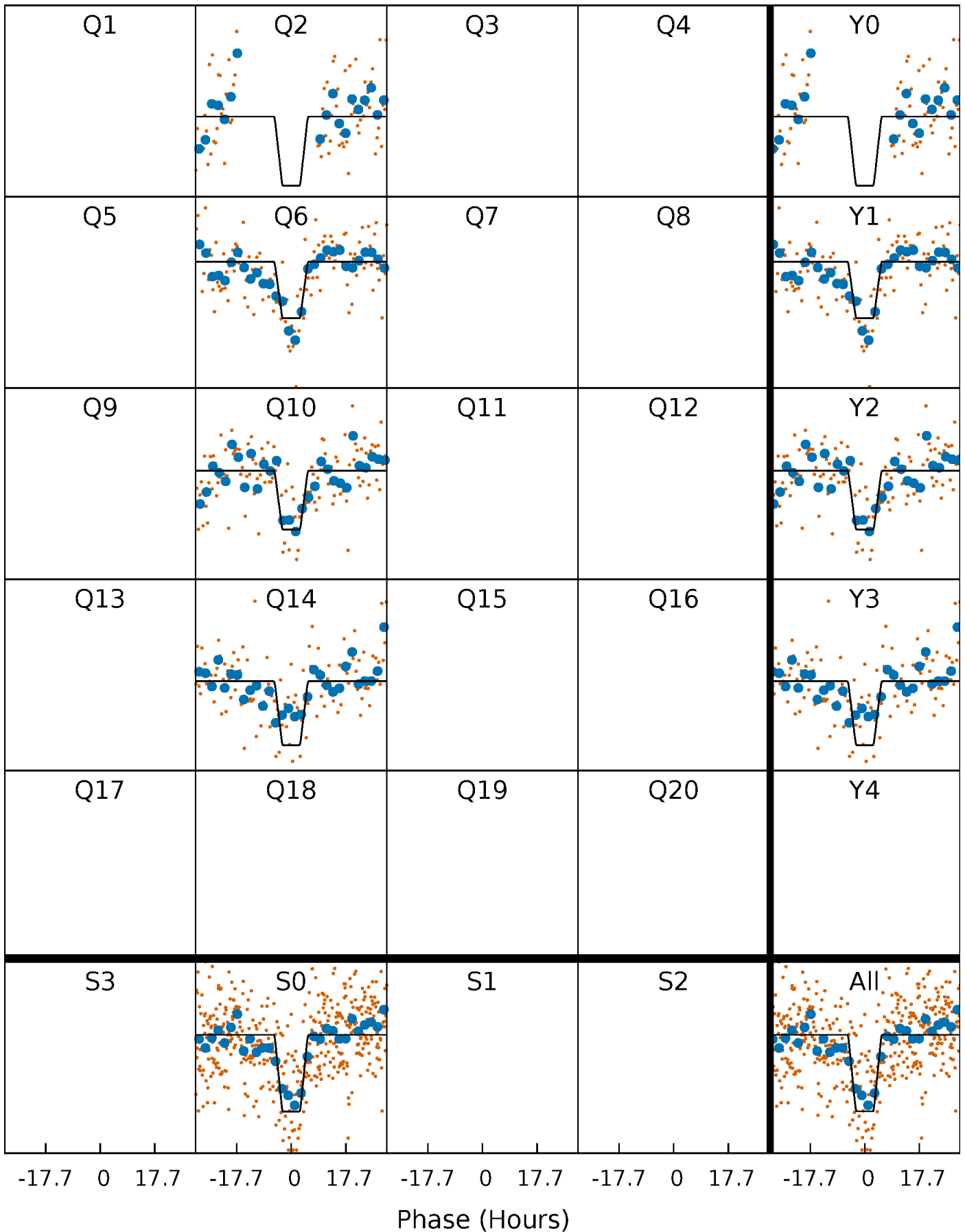
# DV Quarter-Phased Transit Curves

TCE 007971645-01 P=370.534209 Days  $T_0=231.073029$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

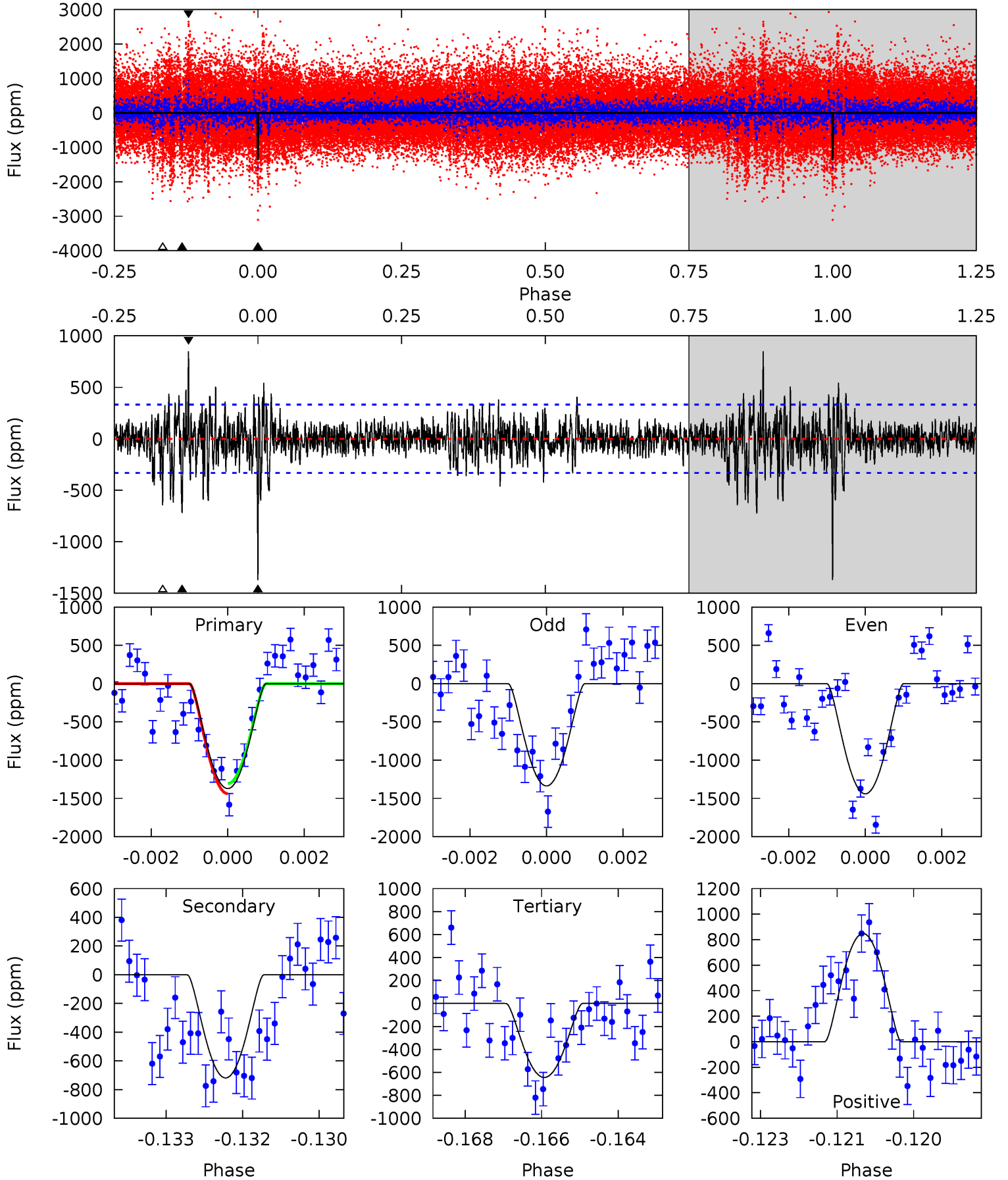
TCE 007971645-01 P=370.555799 Days  $T_0=231.028974$  (BKJD)



# DV Model-Shift Uniqueness Test

007971645-01, P = 370.534209 Days, E = 231.073029 Days

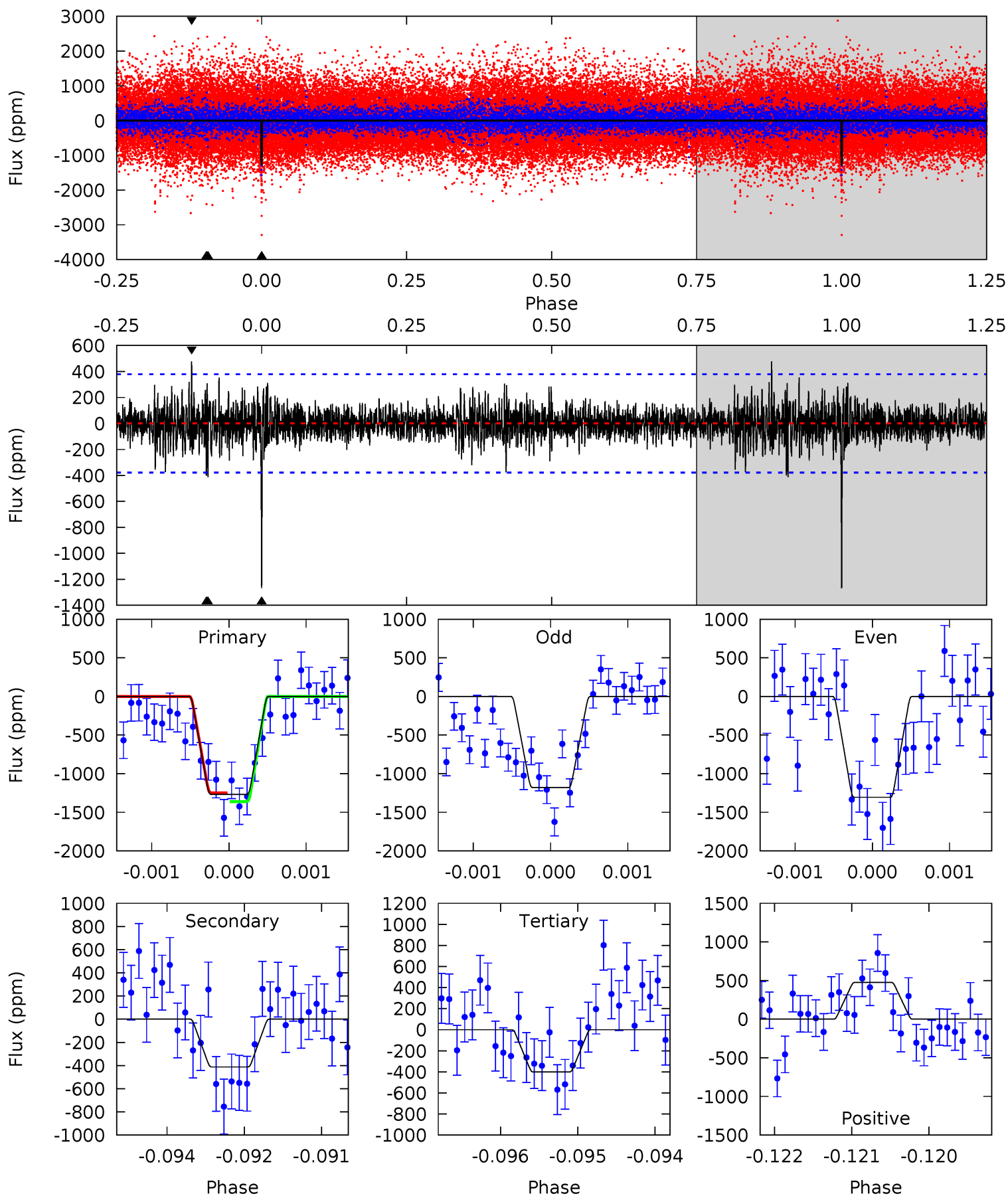
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.1	11.6	10.4	13.7	5.36	3.14	2.22	11.7	8.44	1.20	-2.09	0.79	0.95	0.38	1.07



# Alt Model-Shift Uniqueness Test

007971645-01, P = 370.555799 Days, E = 231.028974 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
18.1	5.90	5.74	6.81	5.41	3.23	1.26	12.4	11.3	0.16	-0.91	0.83	0.97	0.27	0



### Stellar Parameters For KIC 007971645

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5233^{+174}_{-158}$	$4.509^{+0.076}_{-0.093}$	$-0.060^{+0.300}_{-0.300}$	$0.826^{+0.112}_{-0.084}$	$0.802^{+0.093}_{-0.070}$	$2.007^{+0.623}_{-0.566}$
	+3%/-3%	+2%/-2%	+500%/-500%	+14%/-10%	+12%/-9%	+31%/-28%
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 007971645-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-719 \pm 62$	$7.94^{+6.83}_{-5.09}$	$304^{+15}_{-14}$	$3380^{+1424}_{-568}$	$5647^{+37290}_{-4050}$
Alt.	$-412 \pm 70$	$7.32^{+6.64}_{-5.01}$	$303^{+14}_{-12}$	$3170^{+1525}_{-496}$	$3539^{+32901}_{-2512}$

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

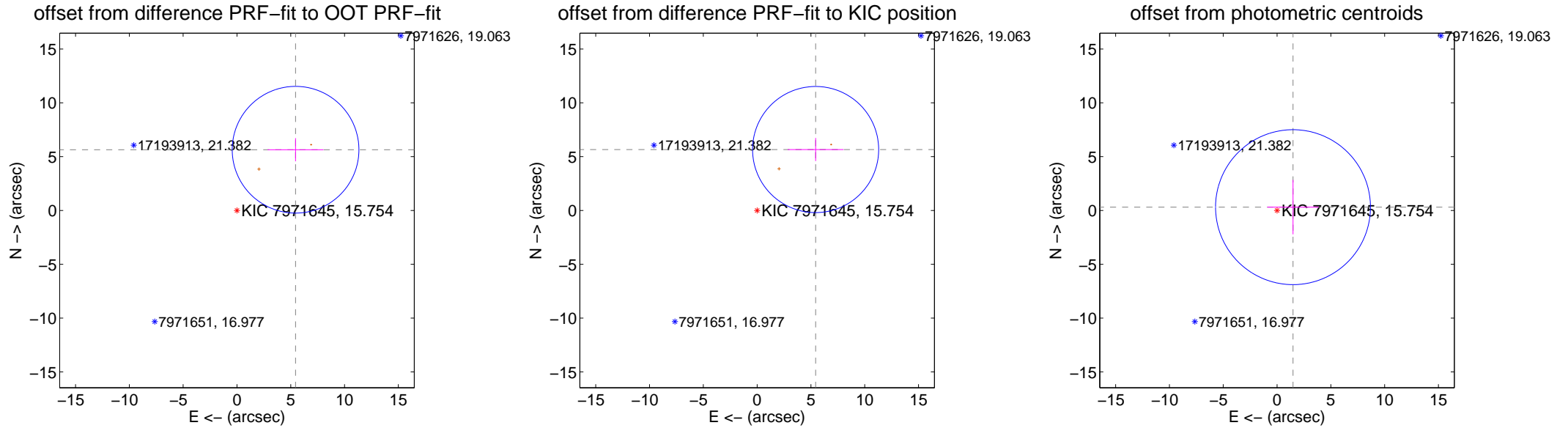
## DV Centroid Data

Supplemental centroid analysis for 007971645-01. Kepler magnitude: 15.75. Transit SNR 8.49

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$7.844 \pm 1.963$	4.00	$-5.448 \pm 2.596$	$5.643 \pm 1.078$
PRF-fit source offset from KIC position	$7.849 \pm 1.953$	4.02	$-5.436 \pm 2.591$	$5.662 \pm 1.071$
photometric centroid source offset	$1.52 \pm 2.40$	0.63	$-1.48 \pm 2.39$	$0.31 \pm 2.53$



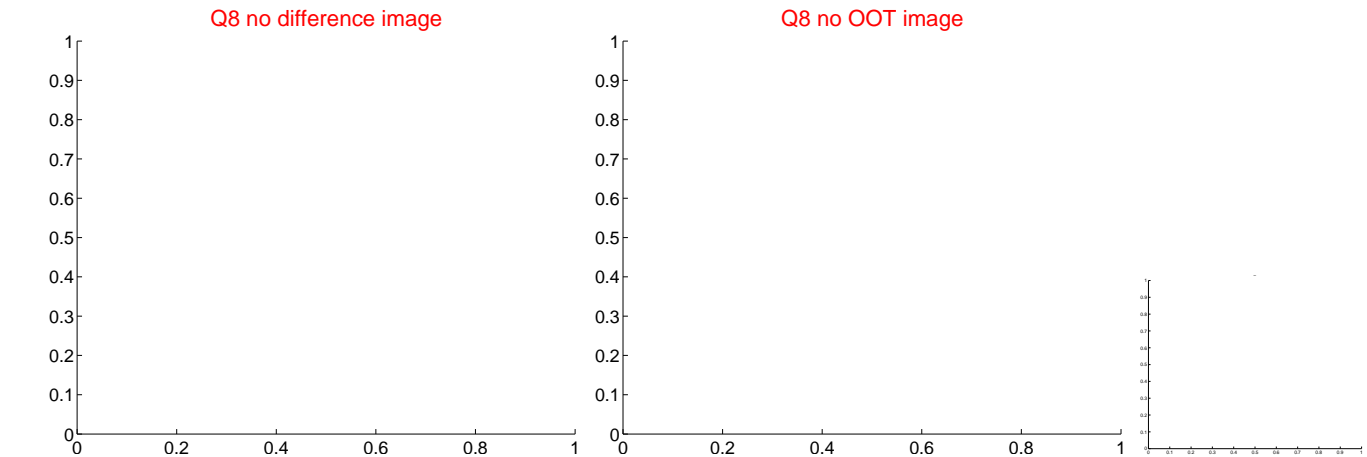
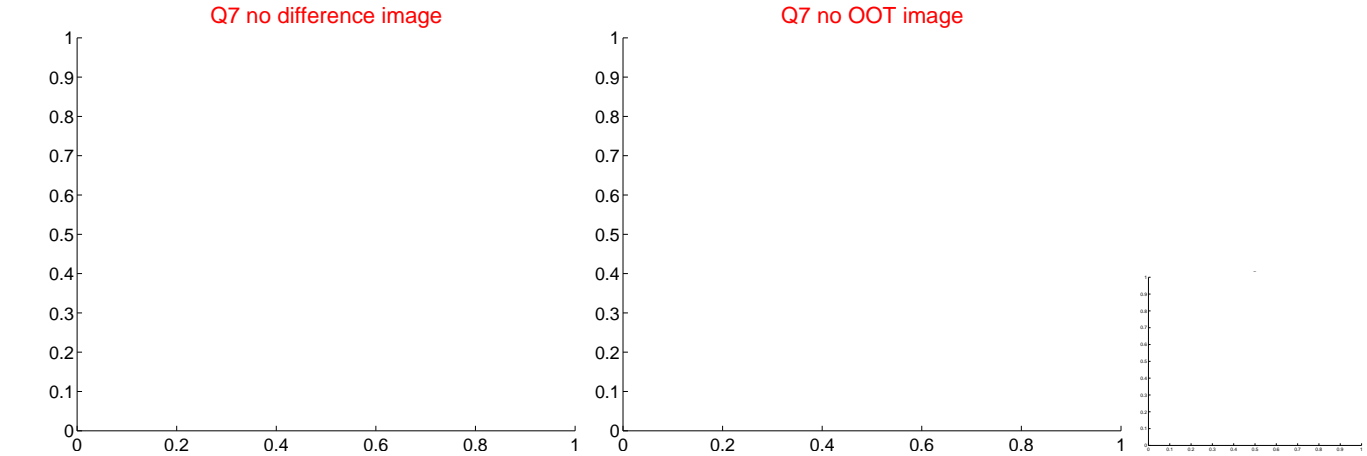
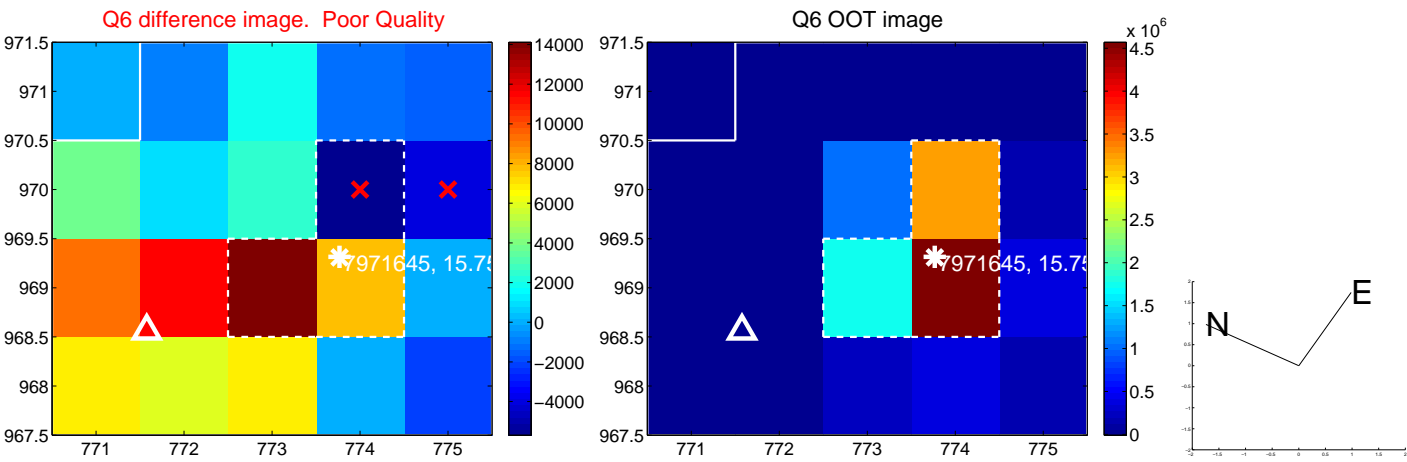
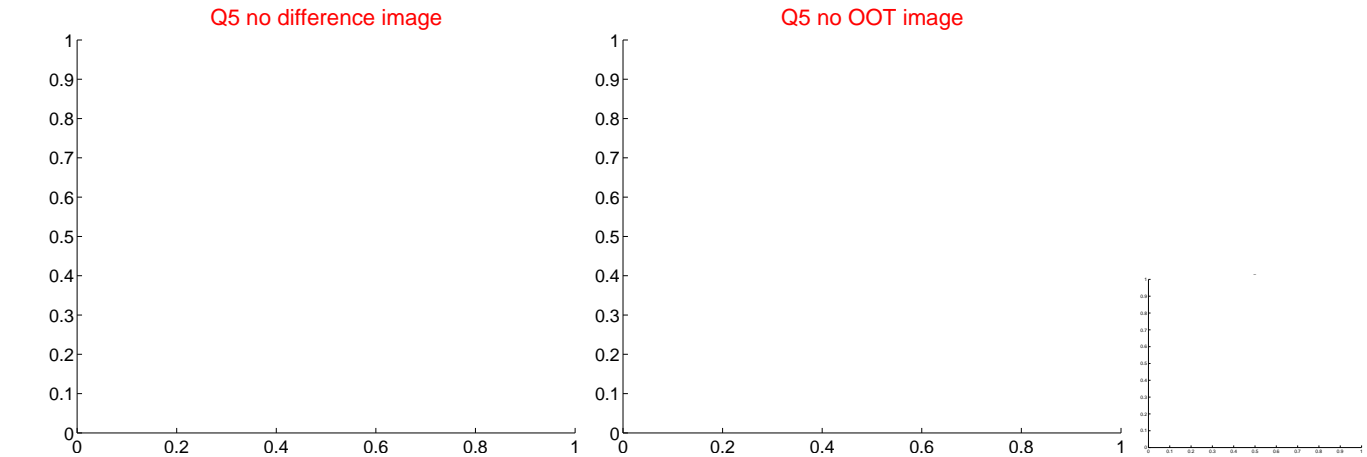
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



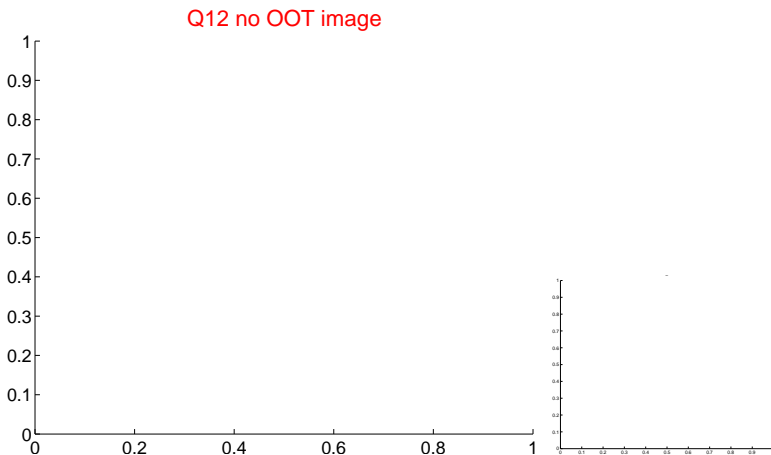
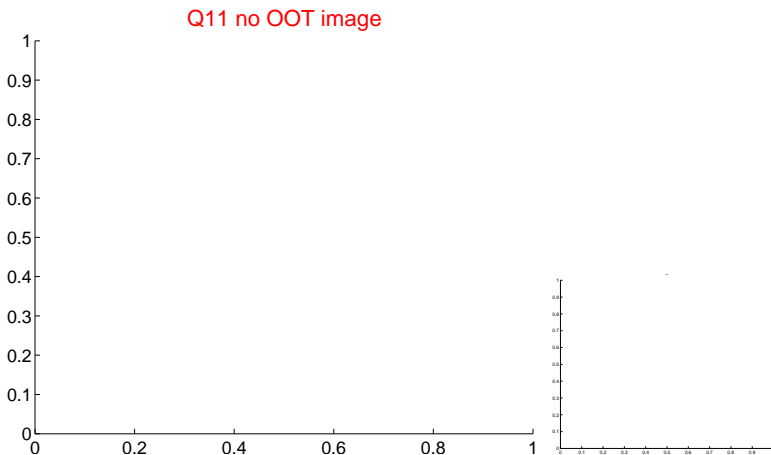
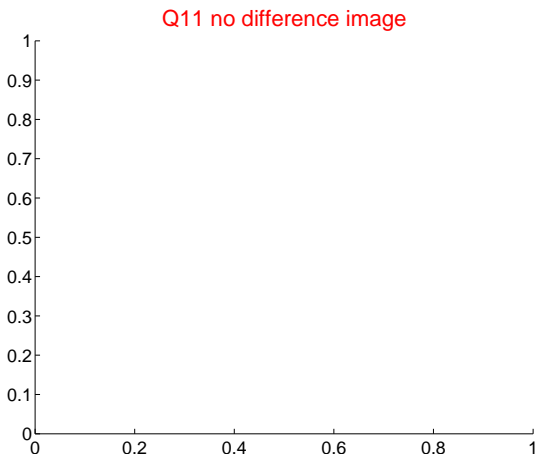
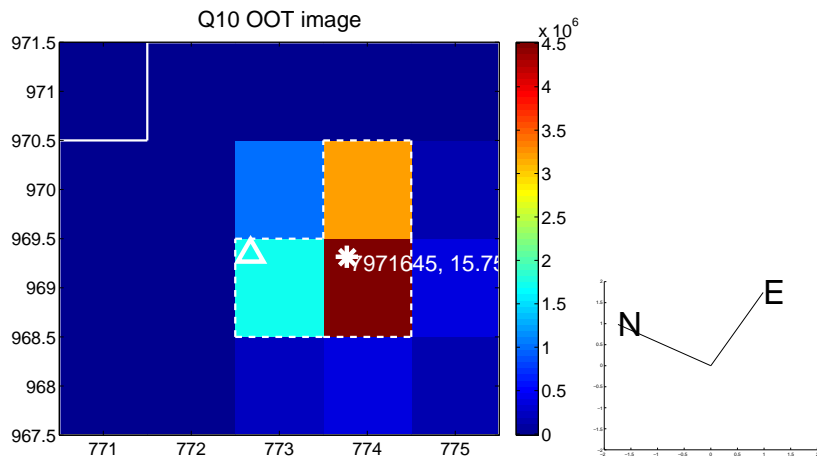
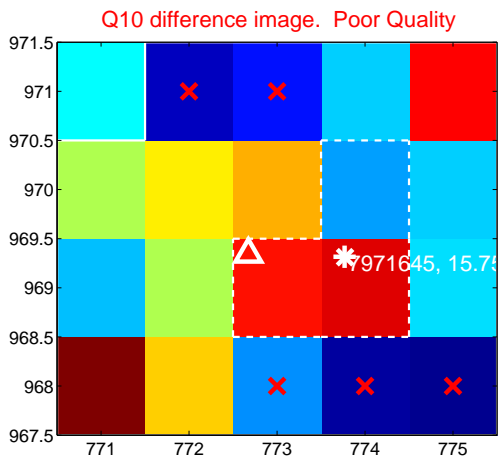
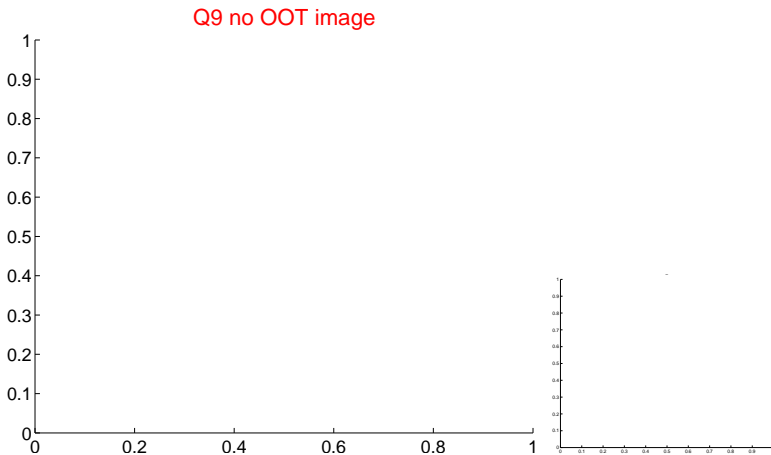
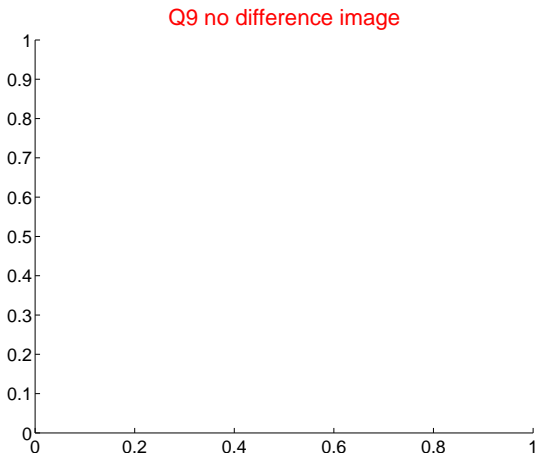
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



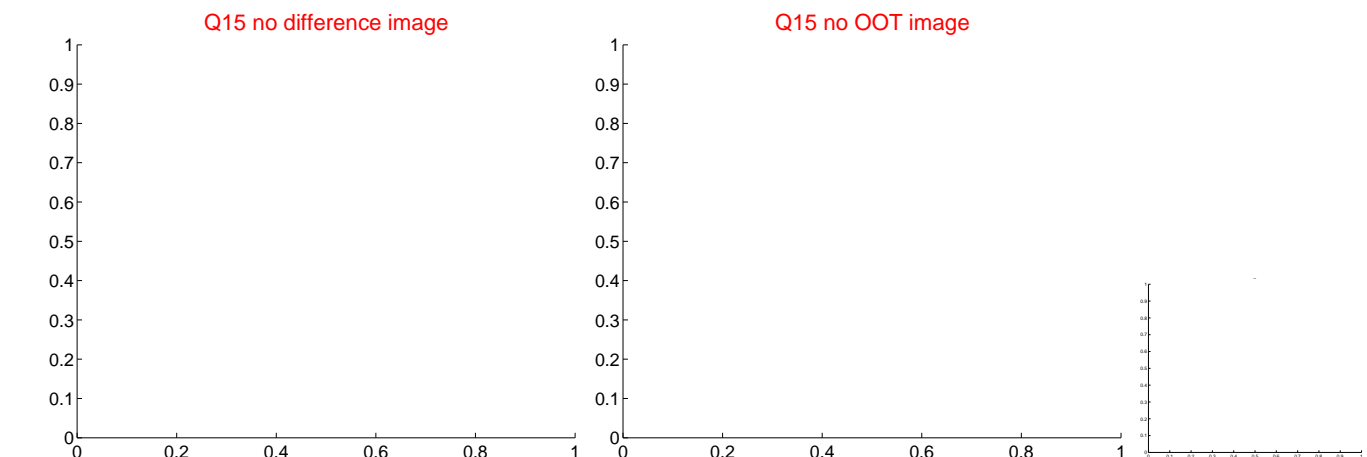
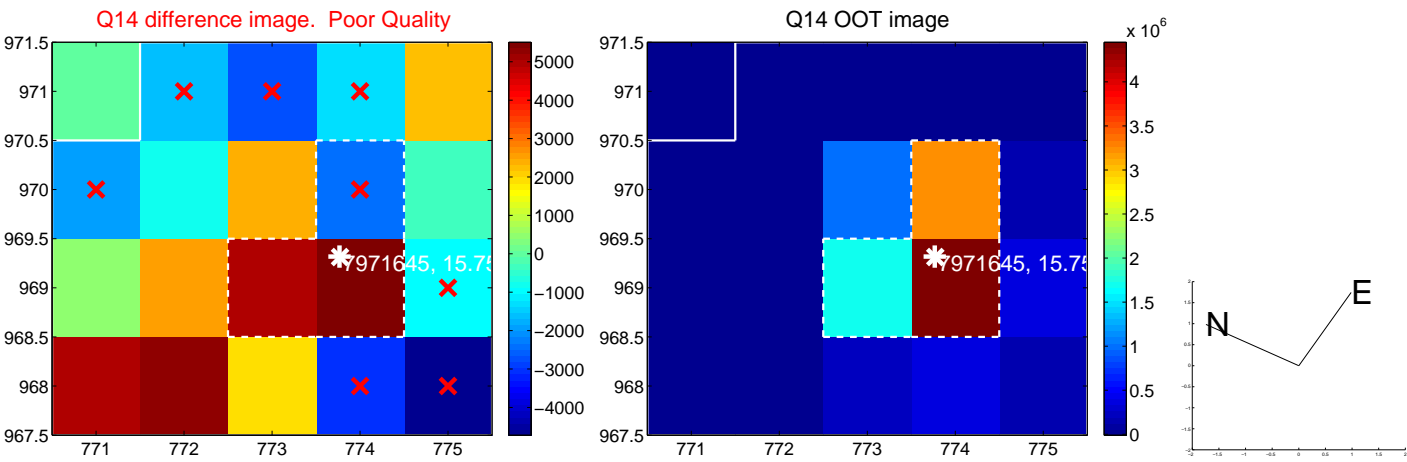
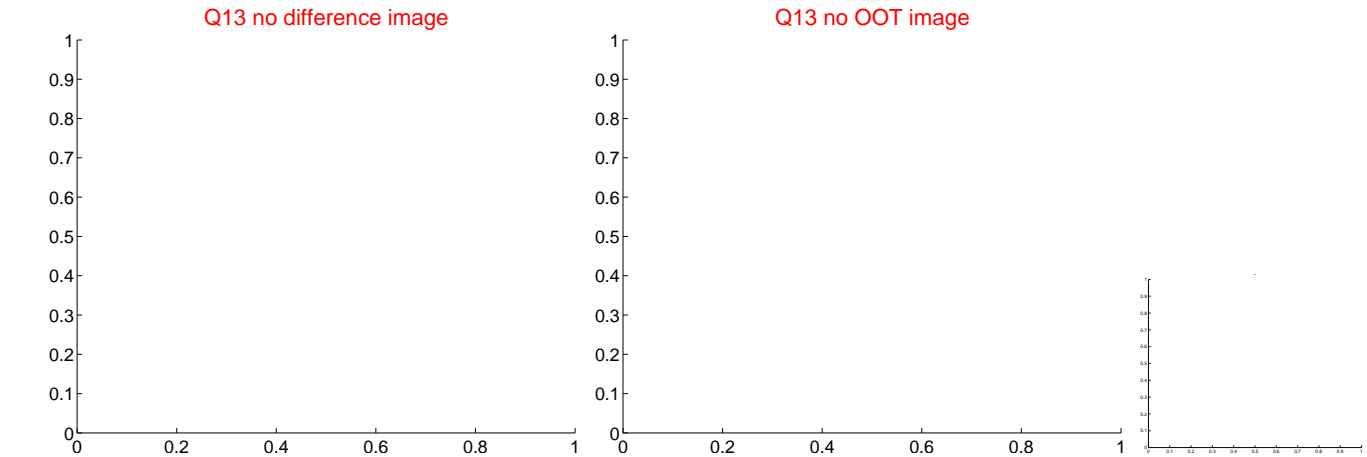
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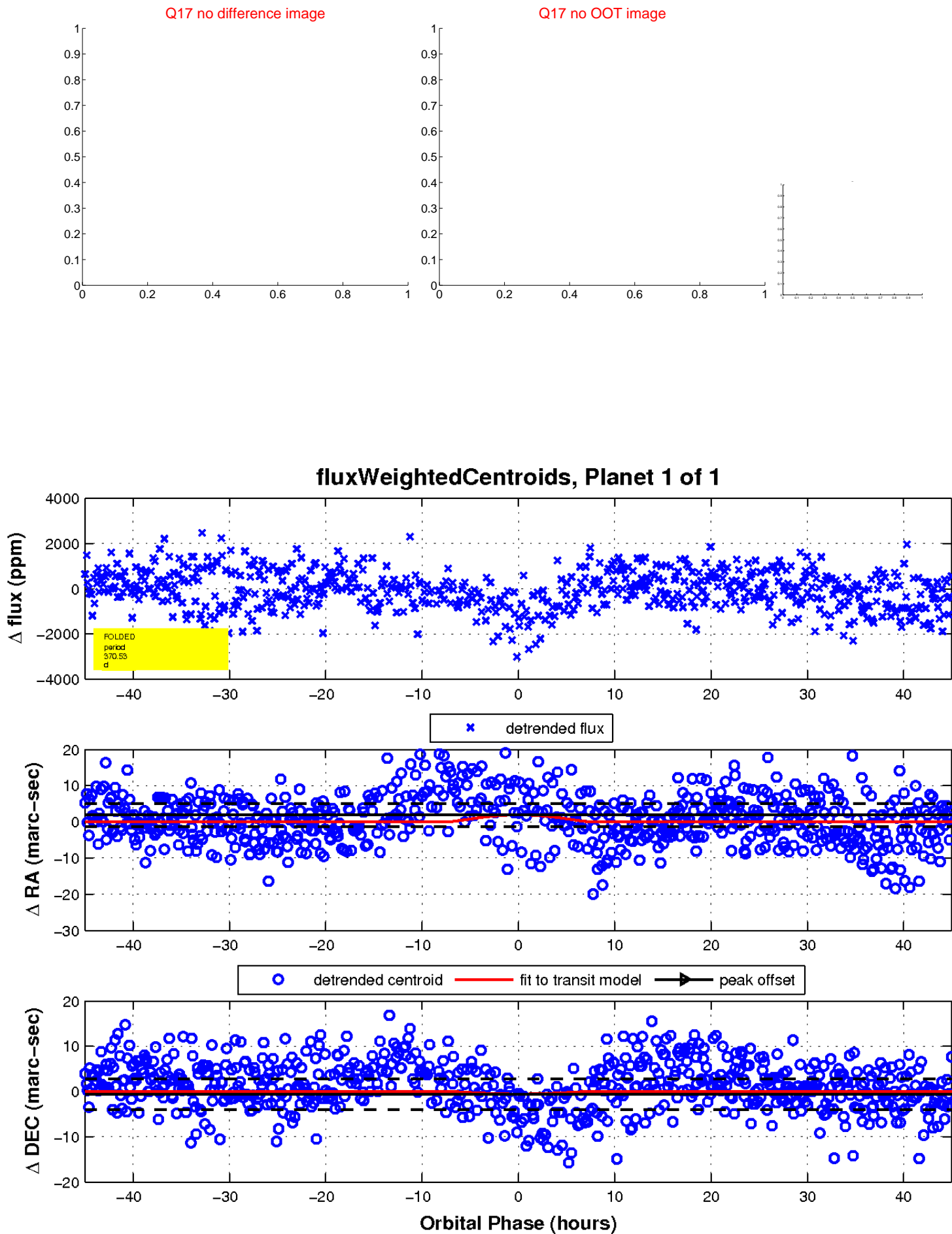
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UKIRT Image

Declination

