

# KIC 003120796

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003120796-01	OBS	No	420.735810	508.880338	394.2	6.126	9.5	6.6	1.30	6310	2.79	1.80

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003120796-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_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.

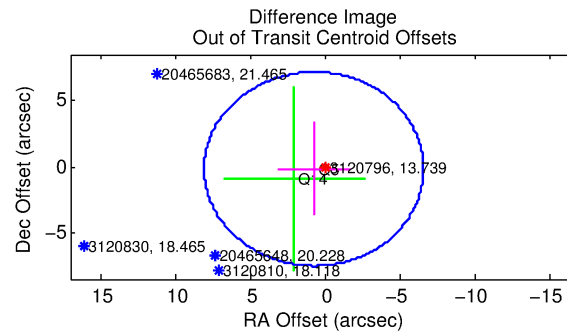
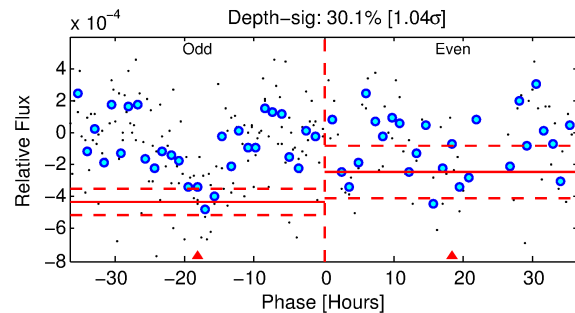
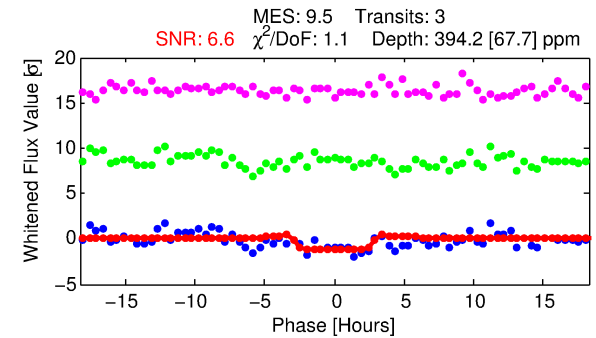
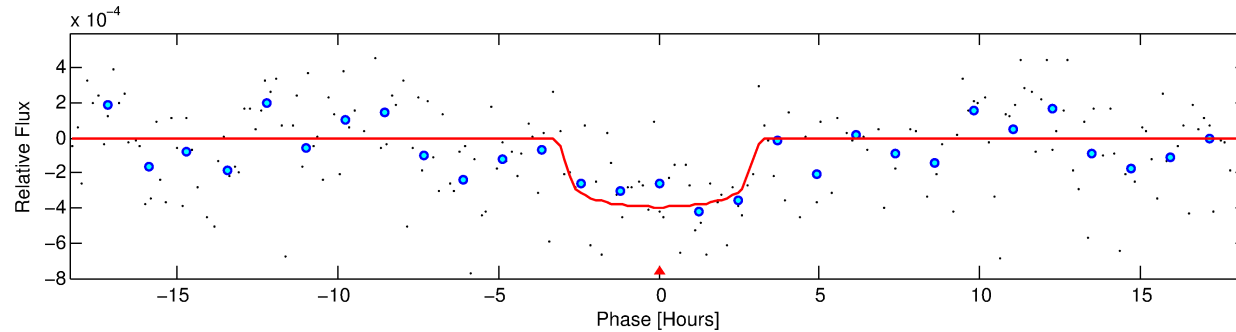
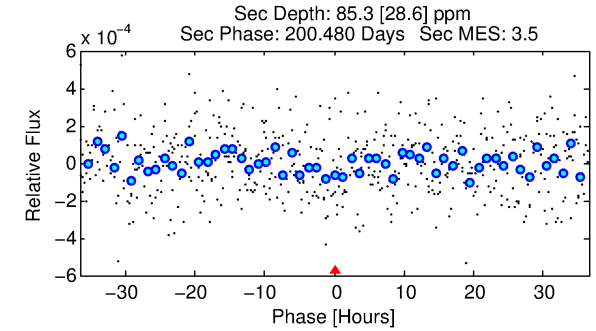
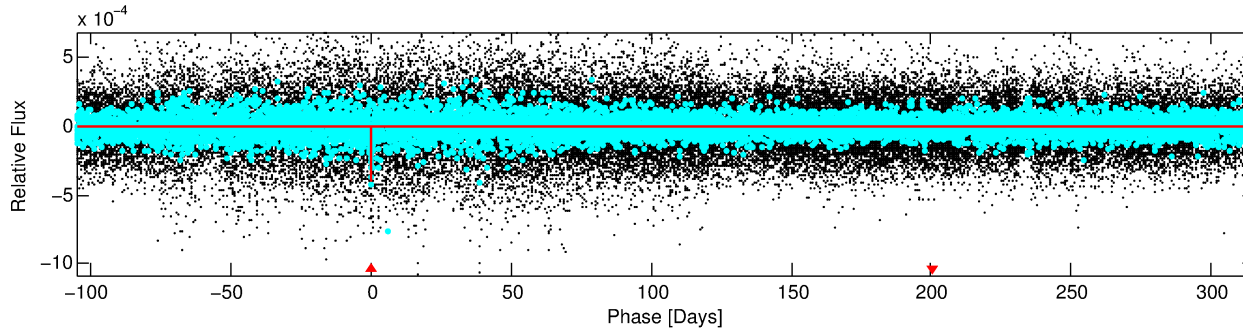
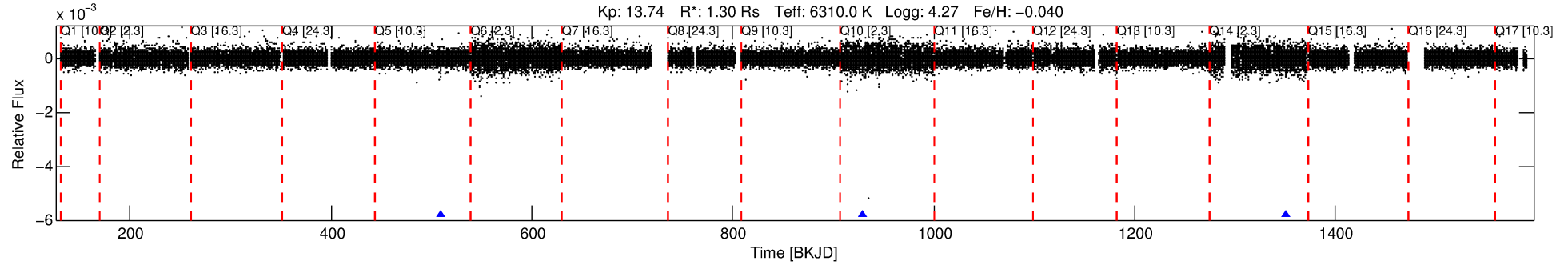
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003120796-01

No Significant Match Found

# DV One-Page Summary

KIC: 3120796 Candidate: 1 of 1 Period: 420.736 d



## DV Fit Results:

Period = 420.73581 [0.00934] d  
Epoch = 508.8803 [0.0095] BKJD  
Rp/R\* = 0.0197 [0.0273]  
a/R\* = 370.42 [2669.93]  
b = 0.74 [4.53]  
Seff = 1.80 [0.74]  
Teq = 295 [30] K  
Rp = 2.78 [3.97] Re  
a = 1.1532 [0.3093] AU  
Ag = 8050.15 [22695.74] [0.35σ]  
Teffp = 4325 [3025] K [1.33σ]

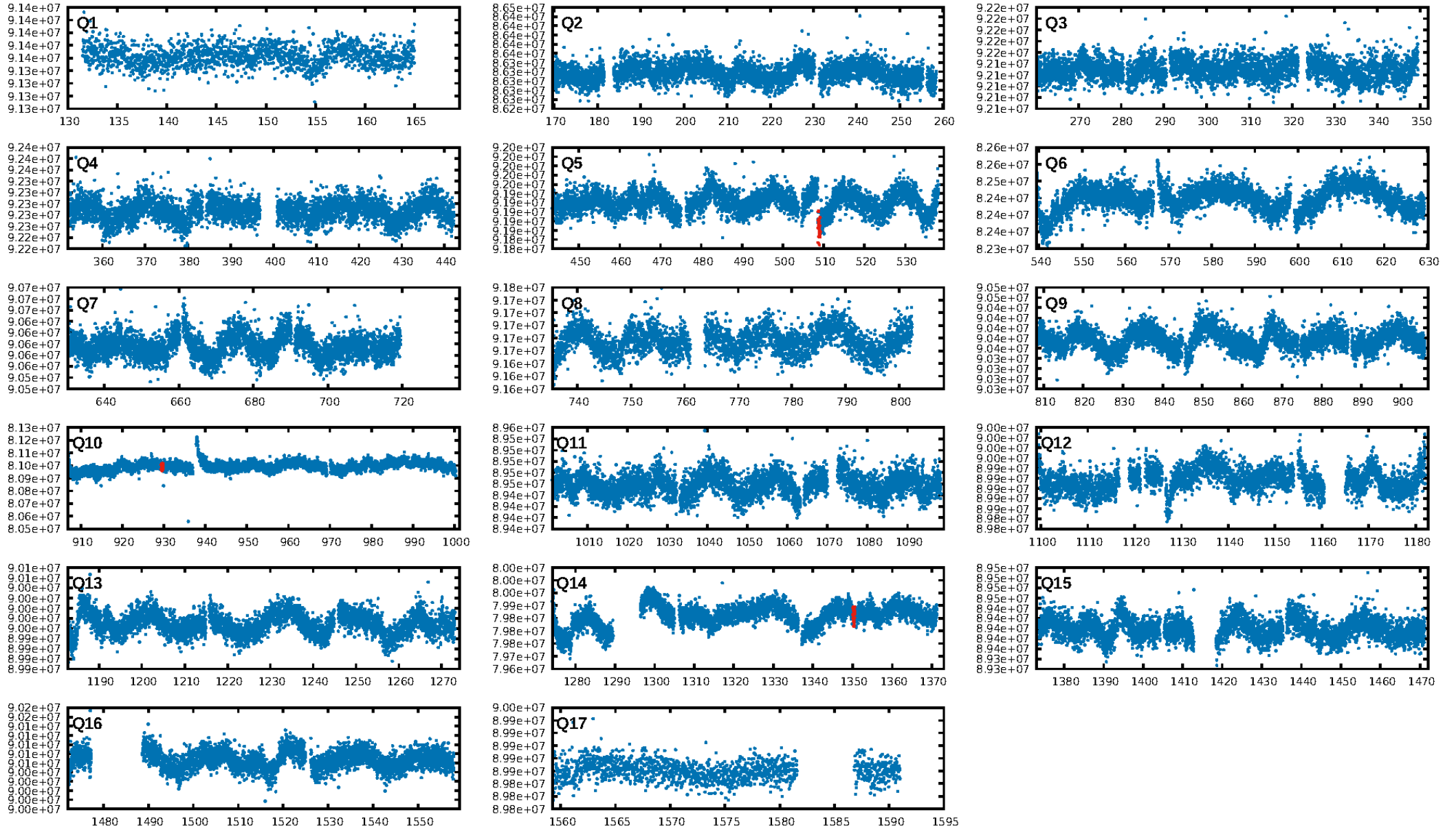
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 33.1%  
ModelChiSquareGof-sig: 99.0%  
Bootstrap-pfa: 1.21e-15  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -2.45  
Centroid-sig: 3.1%  
Centroid-so: 1.870 arcsec [1.68σ]  
OotOffset-rm: 0.738 arcsec [0.30σ]  
KicOffset-rm: 0.702 arcsec [0.29σ]  
OotOffset-st: 1/0/0/1 [2]  
KicOffset-st: 1/0/0/1 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [2/2]

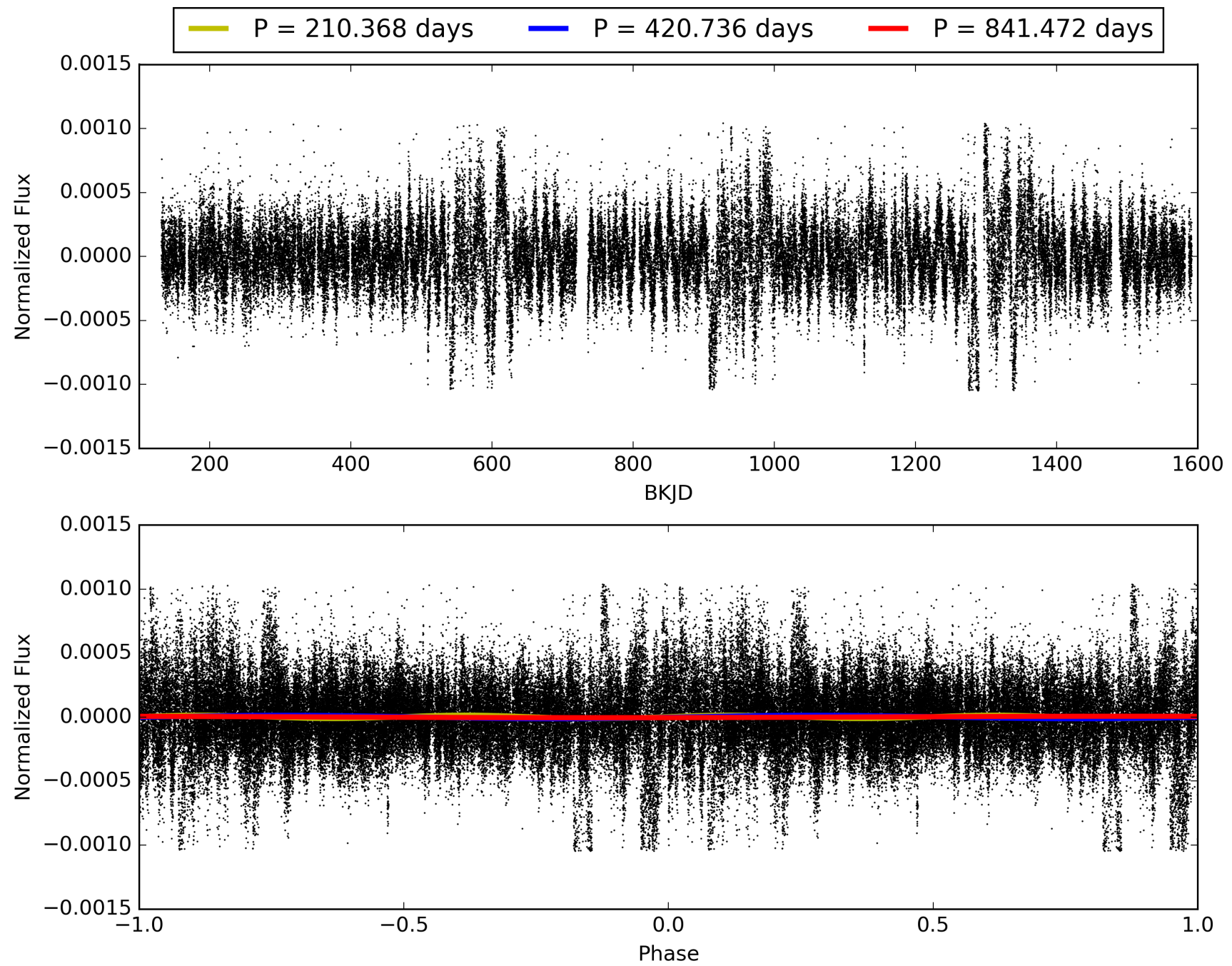
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:26:44 Z

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

# TCE 003120796-01, PDC Light Curves

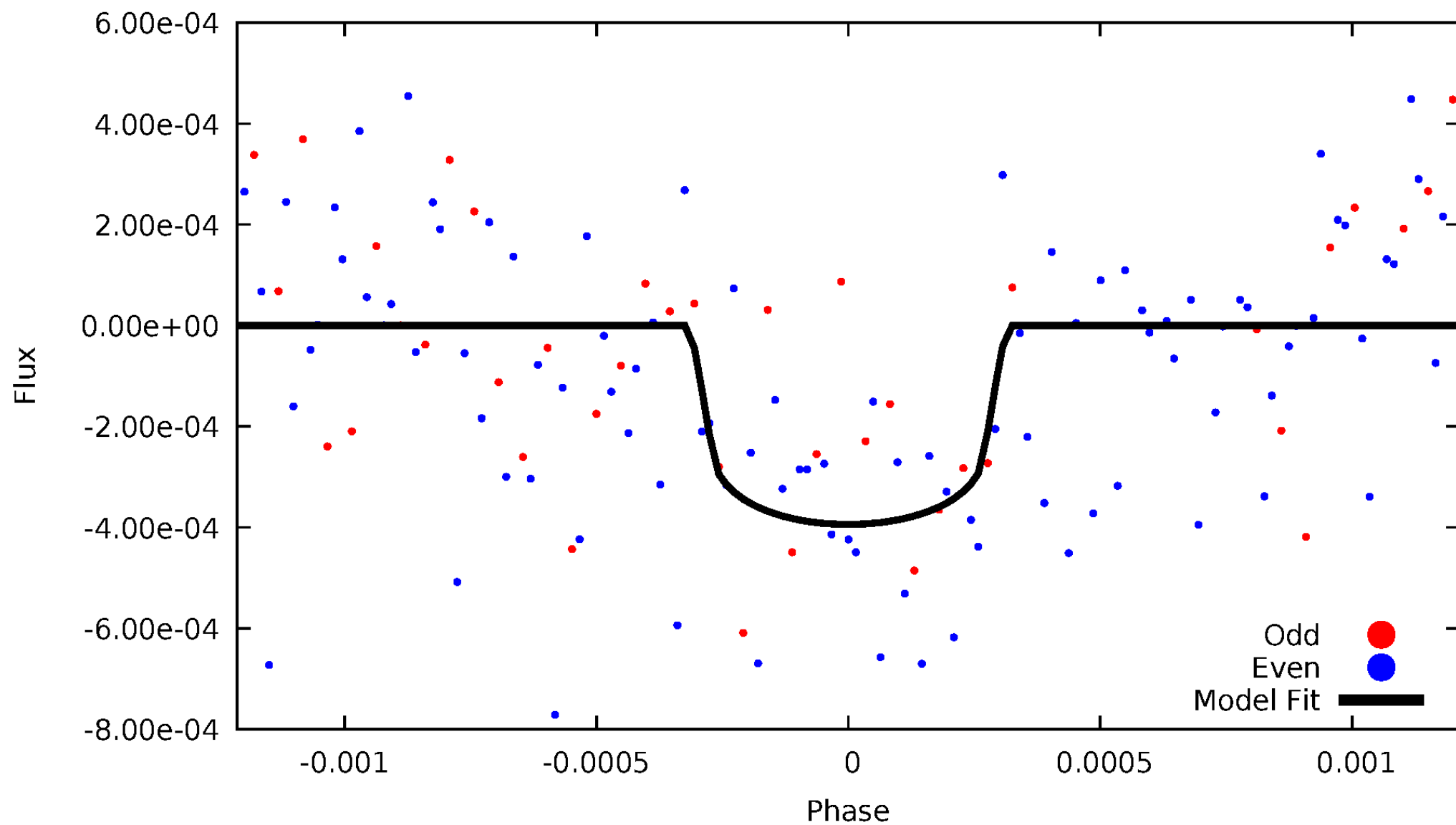


# TCE 003120796-01



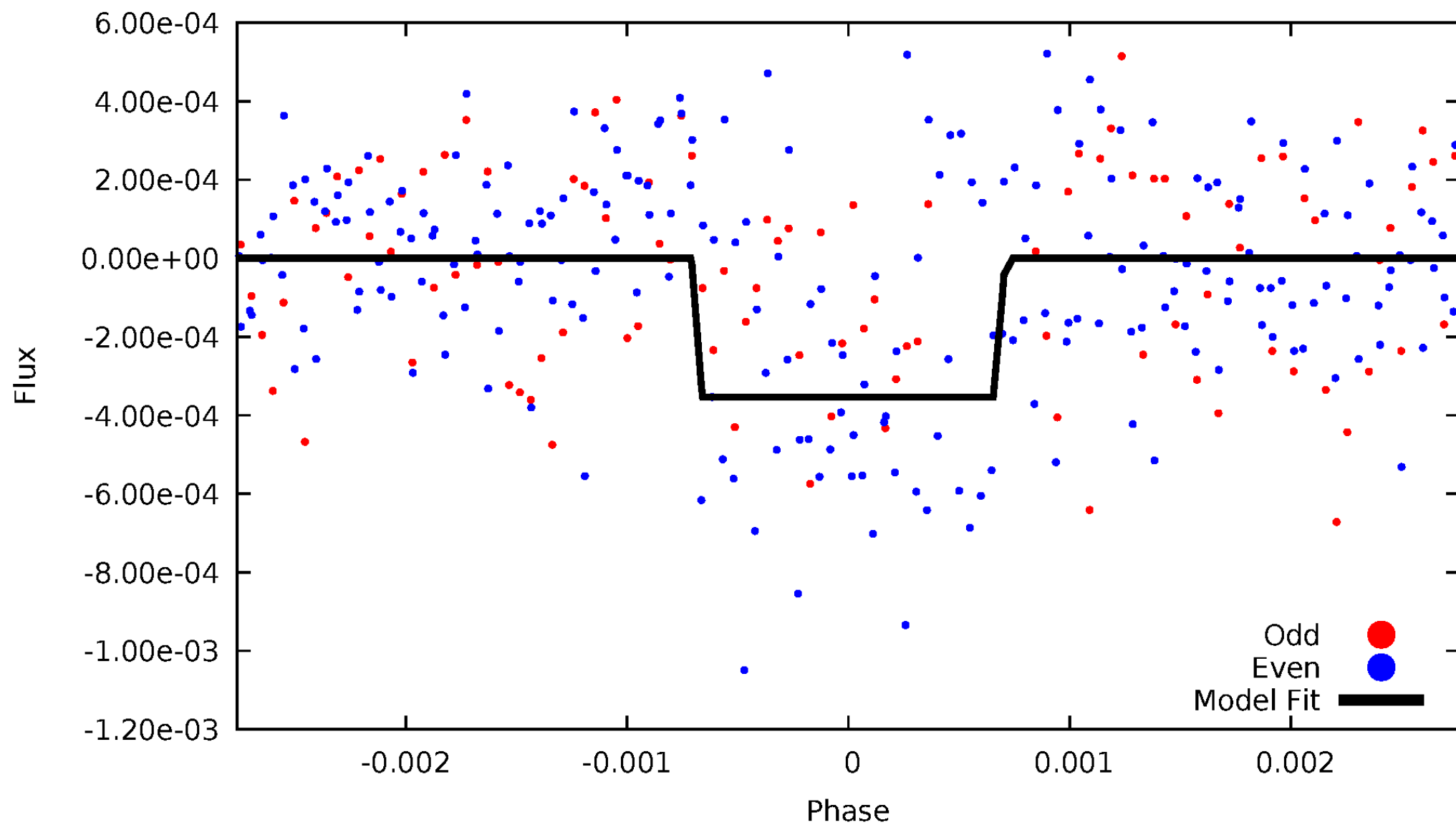
# DV Odd/Even

TCE 003120796-01



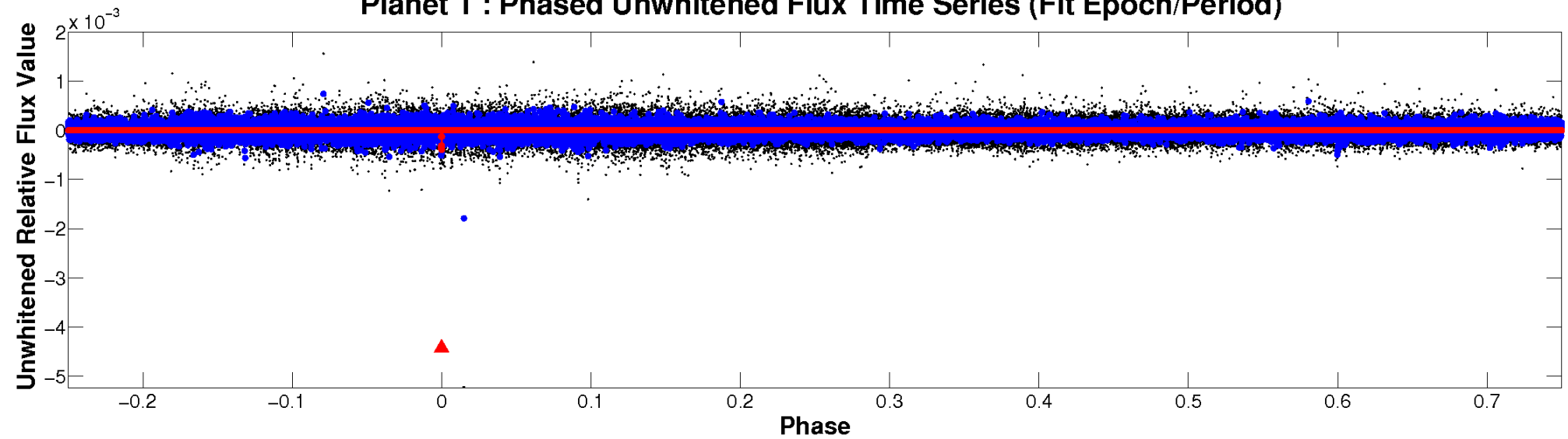
# ALT Odd/Even

TCE 003120796-01

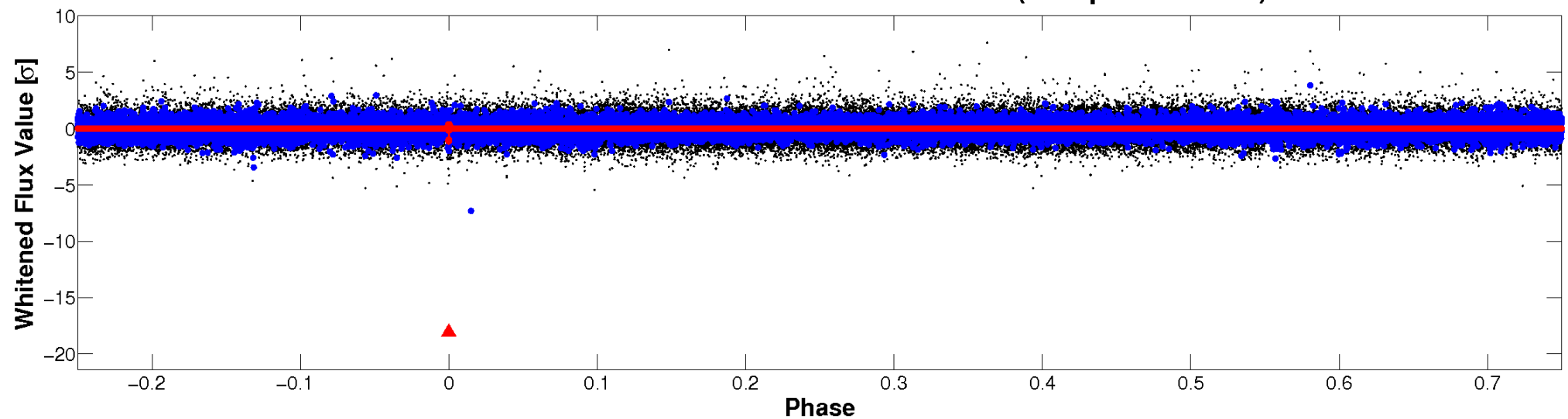


# Non-Whitened Vs. Whitened Light Curve

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

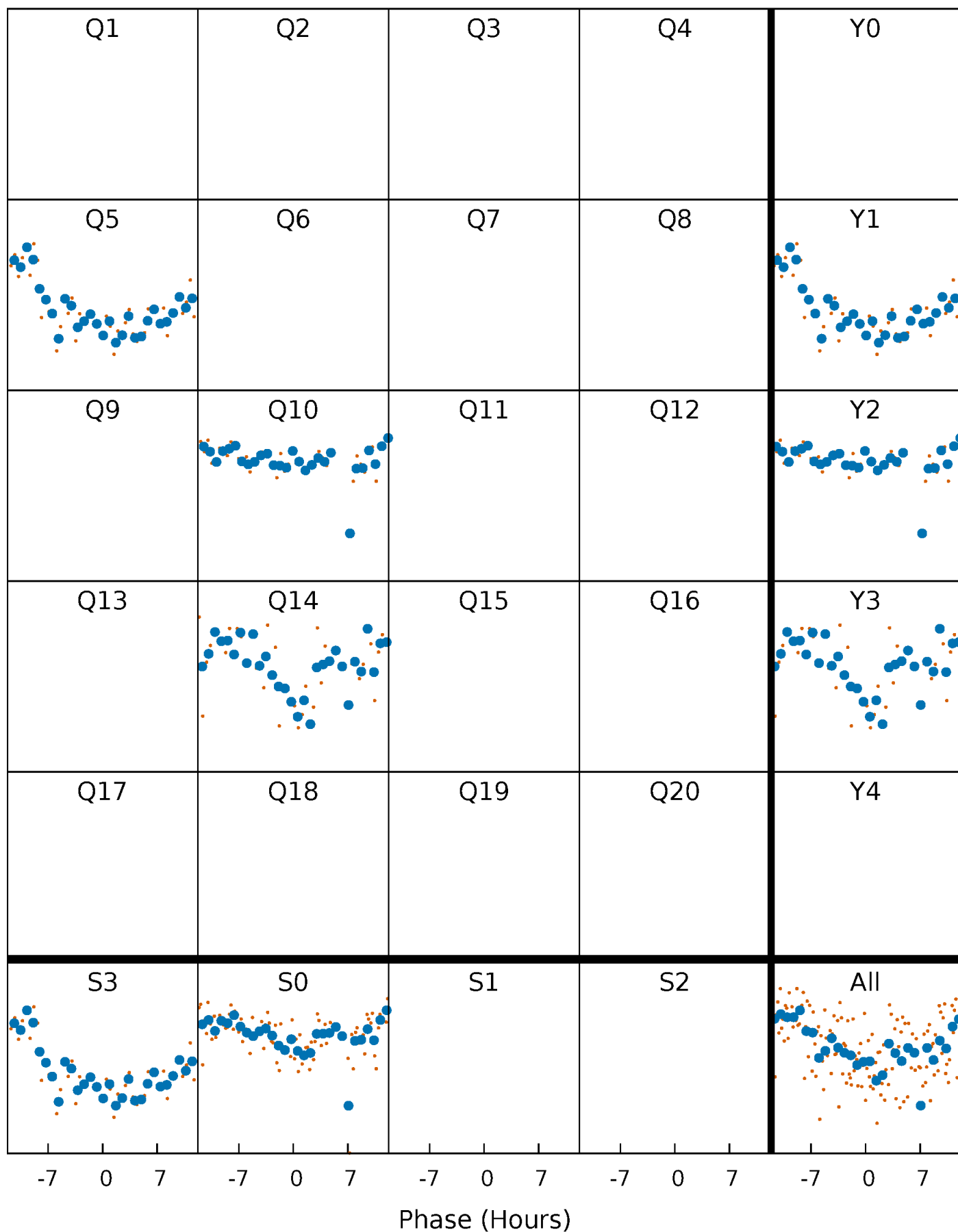


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

TCE 003120796-01 P=420.735810 Days  $T_0=508.880338$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 003120796-01 P=420.735810 Days  $T_0=508.880338$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

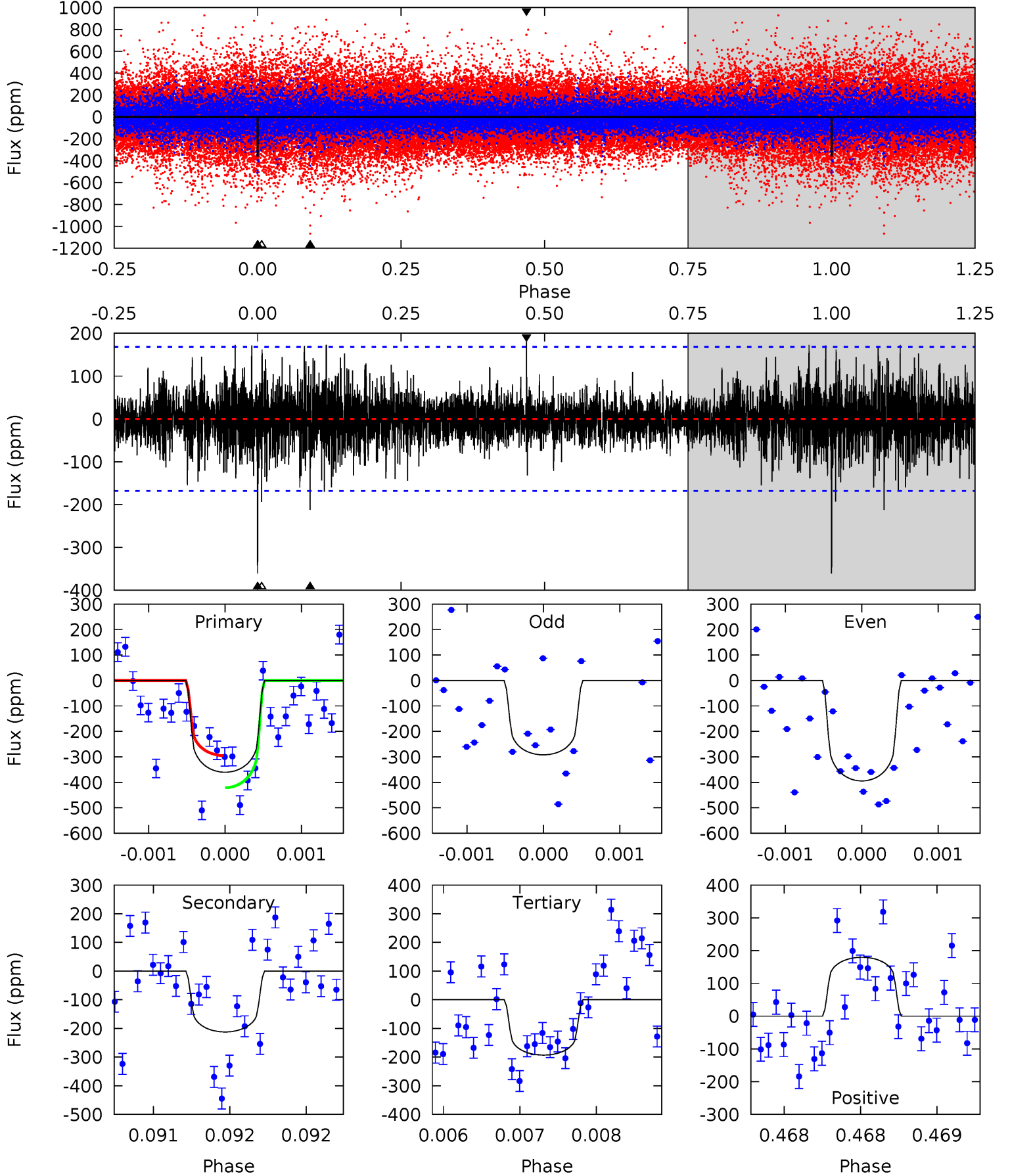
TCE 003120796-01 P=420.767868 Days  $T_0=508.833193$  (BKJD)



# DV Model-Shift Uniqueness Test

003120796-01,  $P = 420.735810$  Days,  $E = 88.144528$  Days

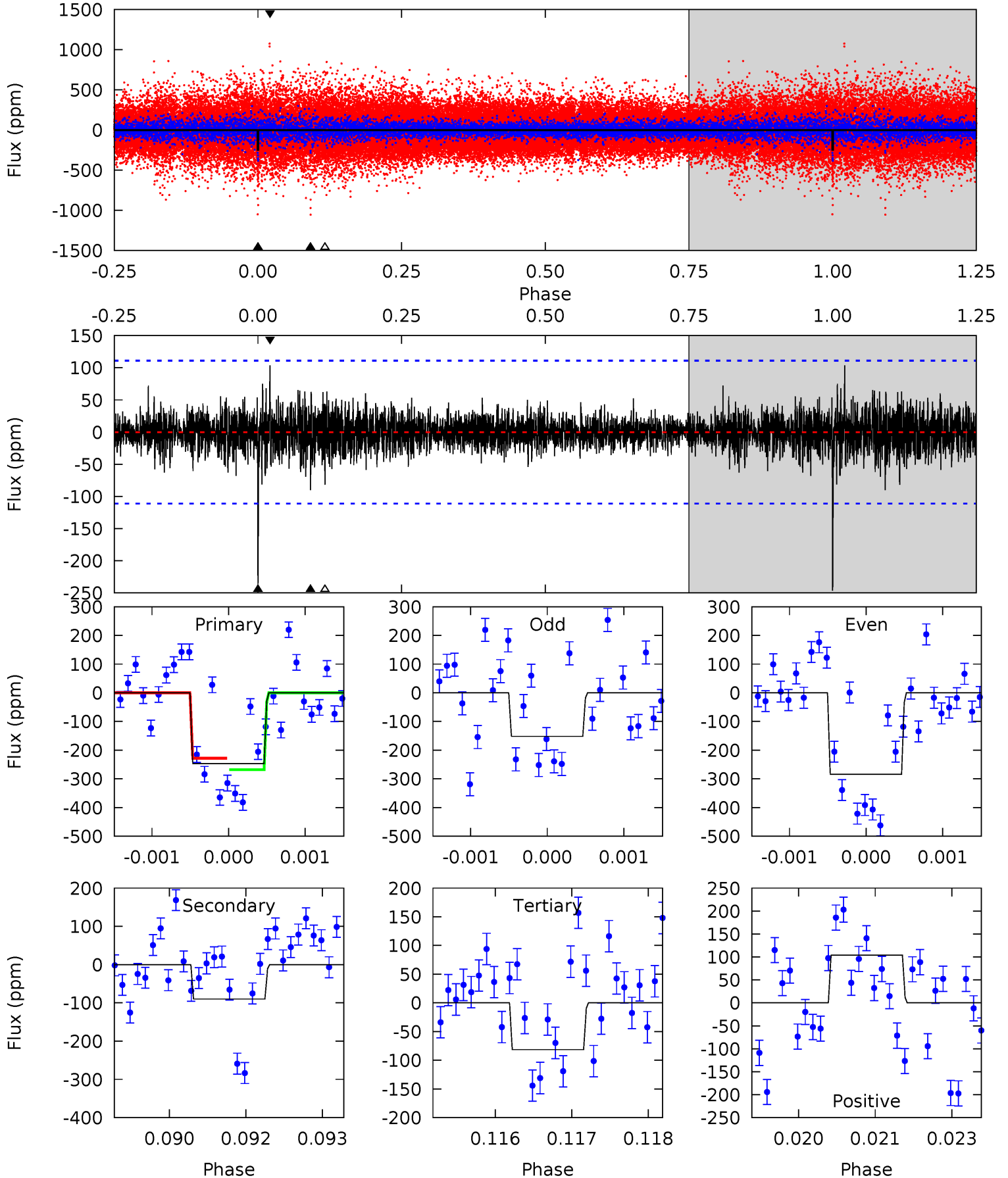
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	6.99	6.36	5.91	5.53	3.42	1.31	5.51	5.95	0.63	1.08	1.58	1.04	0.33	2.08



# Alt Model-Shift Uniqueness Test

003120796-01,  $P = 420.767868$  Days,  $E = 88.065325$  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
12.0	4.37	3.96	5.04	5.39	3.19	0.87	8.00	6.91	0.42	-0.67	2.86	1.52	0.30	0.98



### Stellar Parameters For KIC 003120796

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6310^{+177}_{-243}$	$4.274^{+0.136}_{-0.204}$	$-0.040^{+0.250}_{-0.300}$	$1.298^{+0.424}_{-0.261}$	$1.154^{+0.177}_{-0.159}$	$0.743^{+0.540}_{-0.379}$
	+3%/-4%	+3%/-5%	+625%/-750%	+33%/-20%	+15%/-14%	+73%/-51%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 003120796-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-212 \pm 30$	$3.95^{+3.31}_{-2.63}$	$414^{+33}_{-26}$	$4706^{+3408}_{-961}$	$9991^{+84447}_{-7189}$
Alt.	$-90 \pm 21$	$4.12^{+3.53}_{-2.67}$	$415^{+33}_{-28}$	$3963^{+2166}_{-722}$	$3841^{+28934}_{-2750}$

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

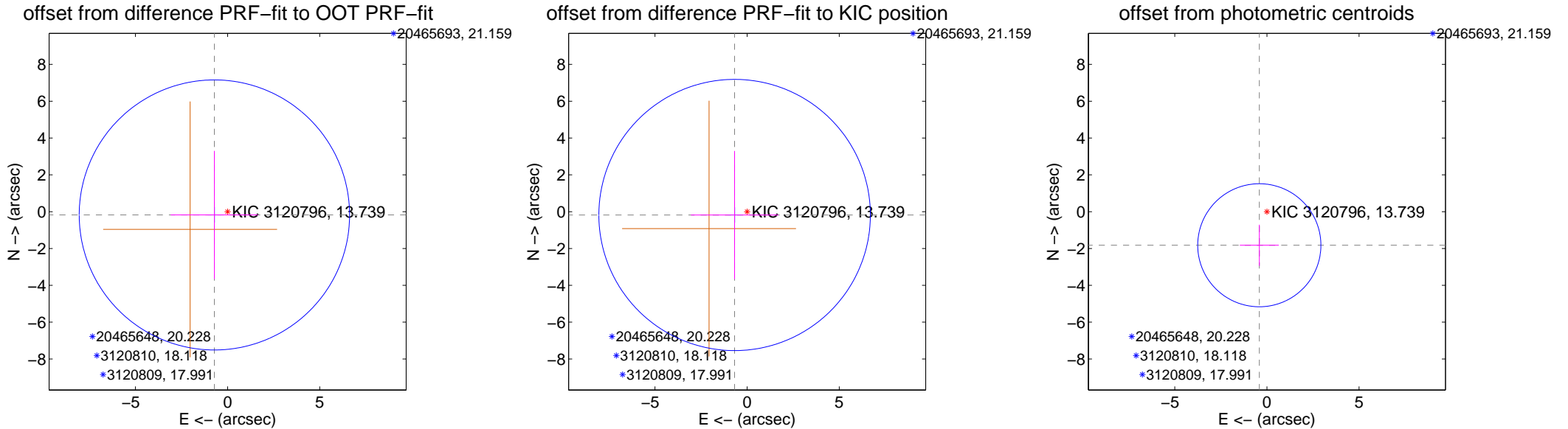
## DV Centroid Data

Supplemental centroid analysis for 003120796-01. Kepler magnitude: 13.74. Transit SNR 6.65

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.738 \pm 2.445$	0.30	$0.716 \pm 2.366$	$-0.178 \pm 3.479$
PRF-fit source offset from KIC position	$0.702 \pm 2.455$	0.29	$0.679 \pm 2.366$	$-0.180 \pm 3.479$
photometric centroid source offset	$1.87 \pm 1.11$	1.68	$0.41 \pm 1.06$	$-1.82 \pm 1.12$

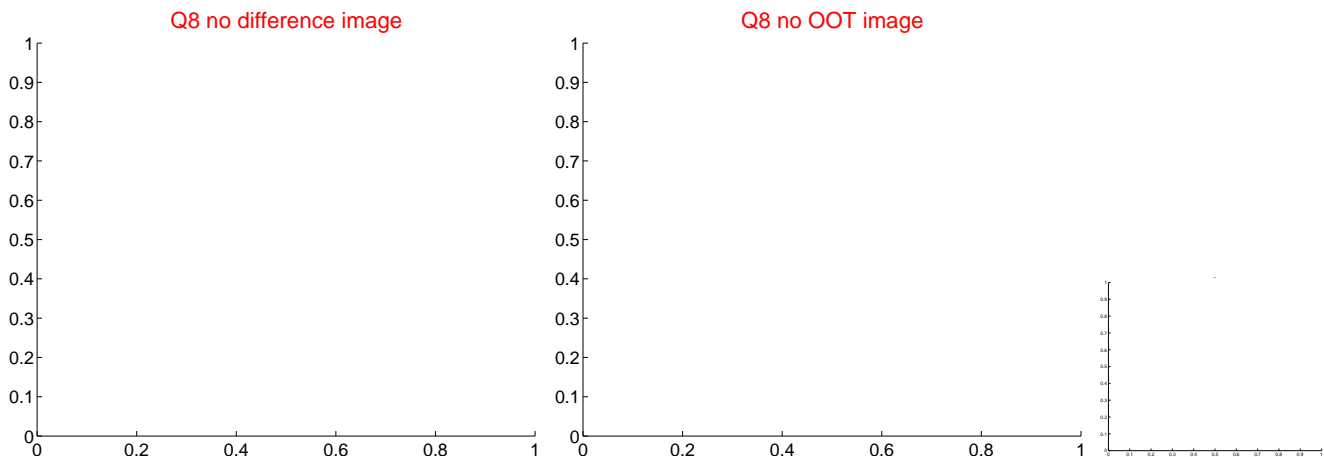
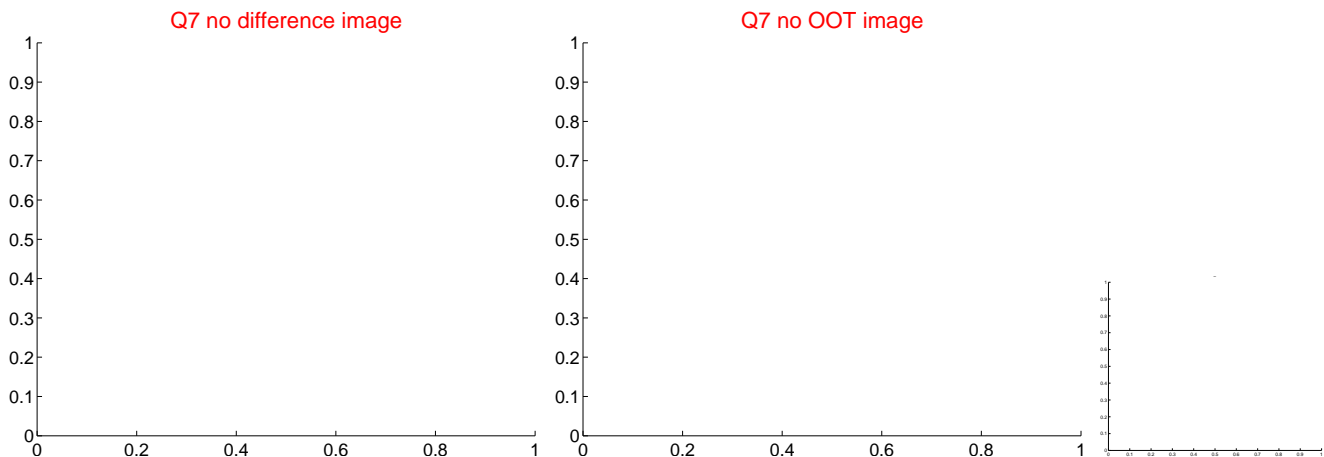
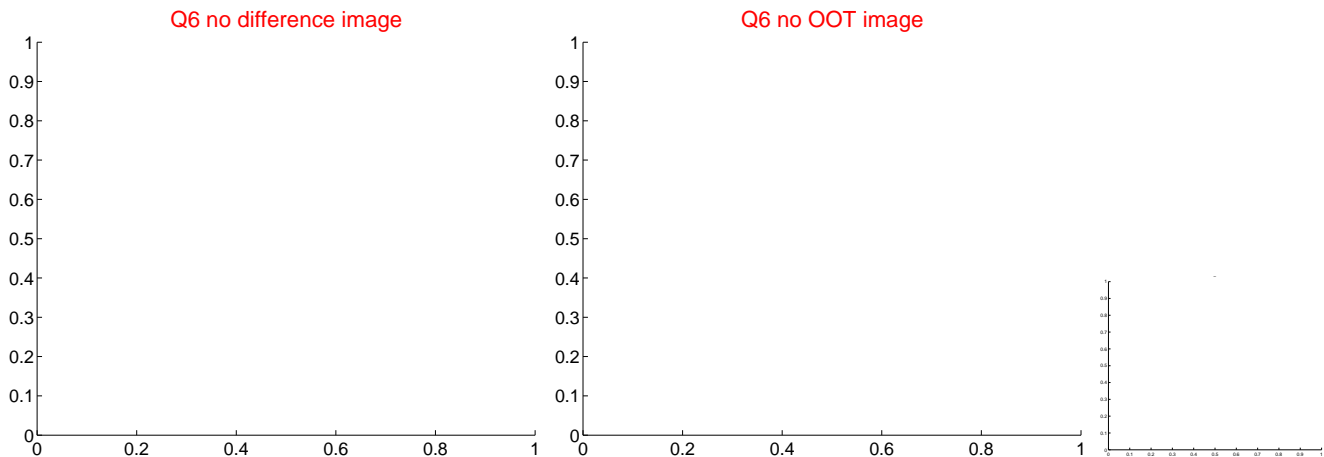
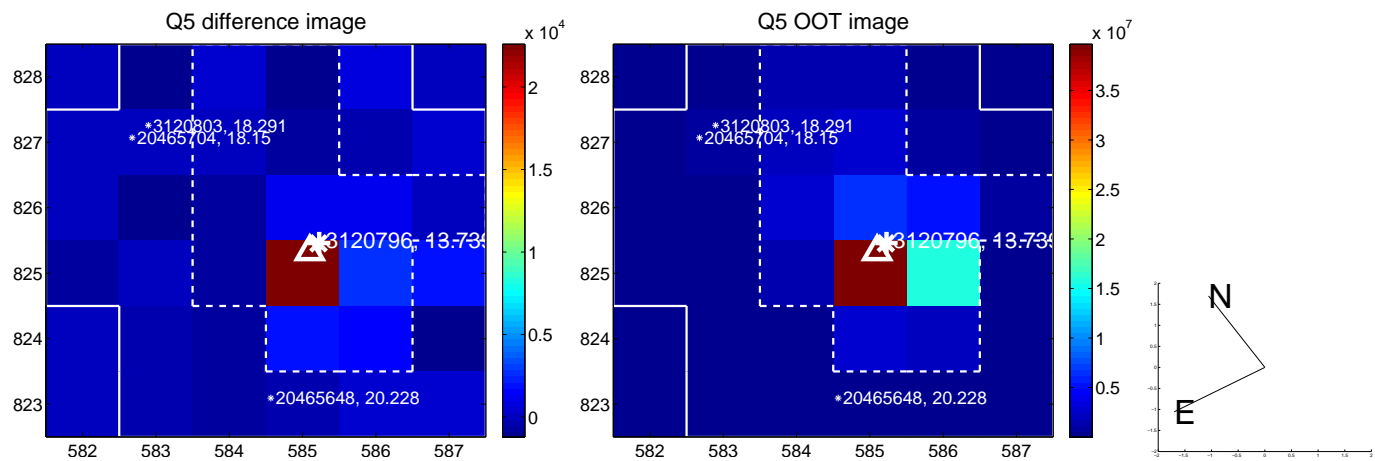


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



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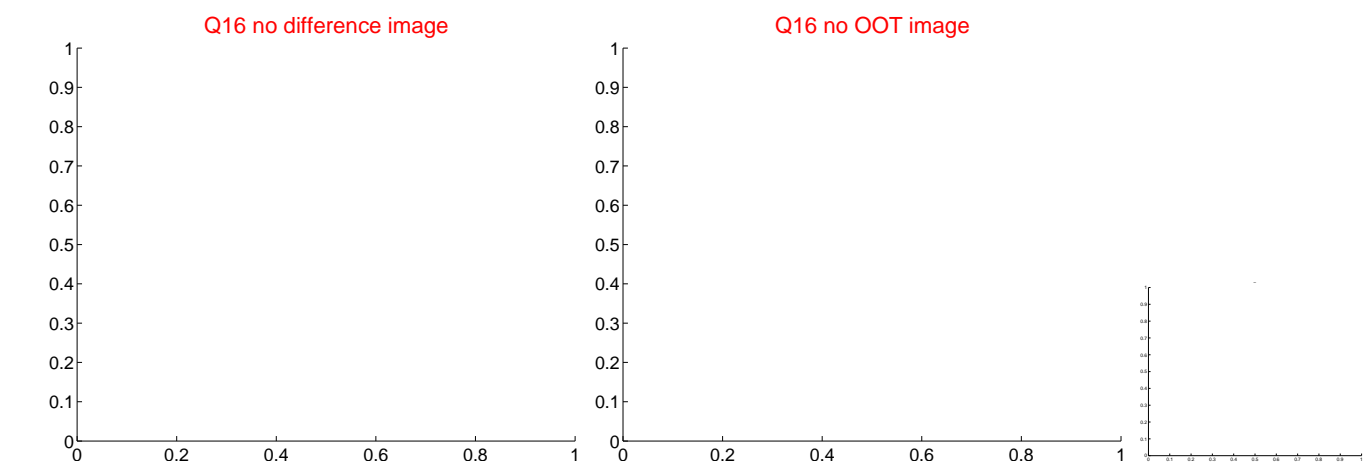
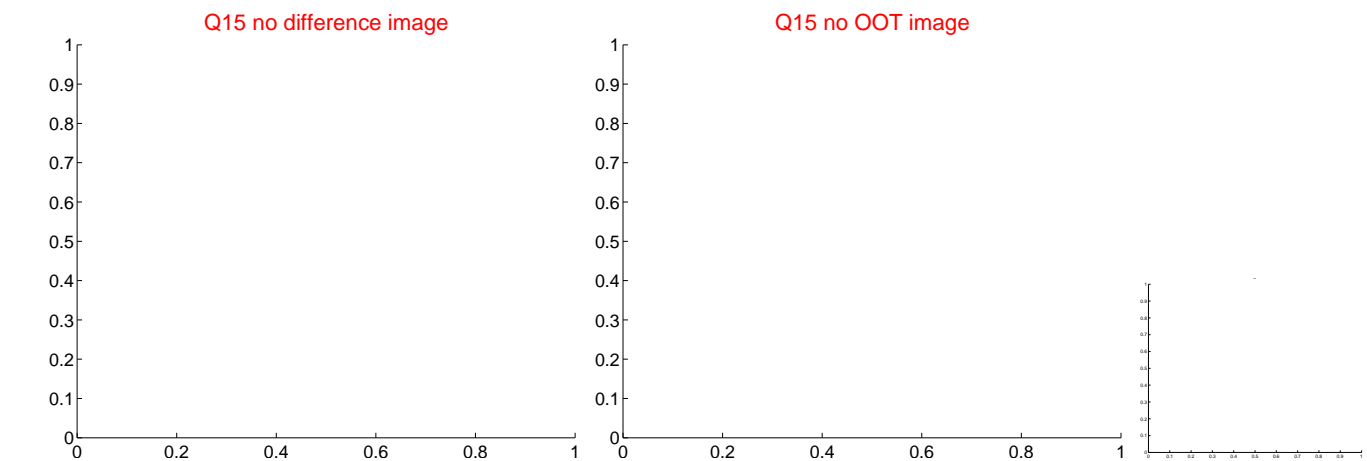
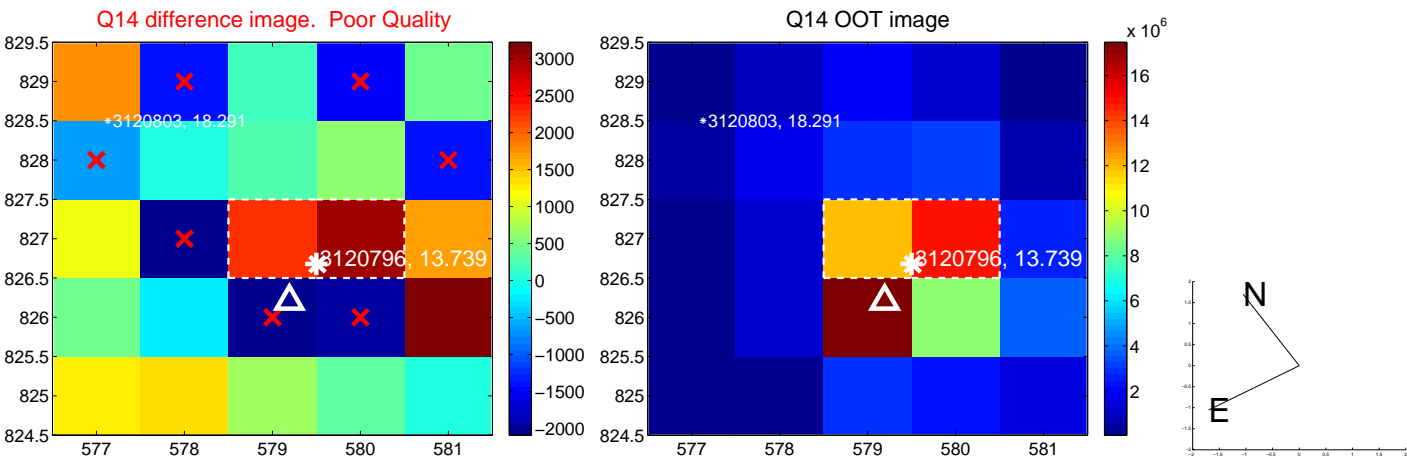
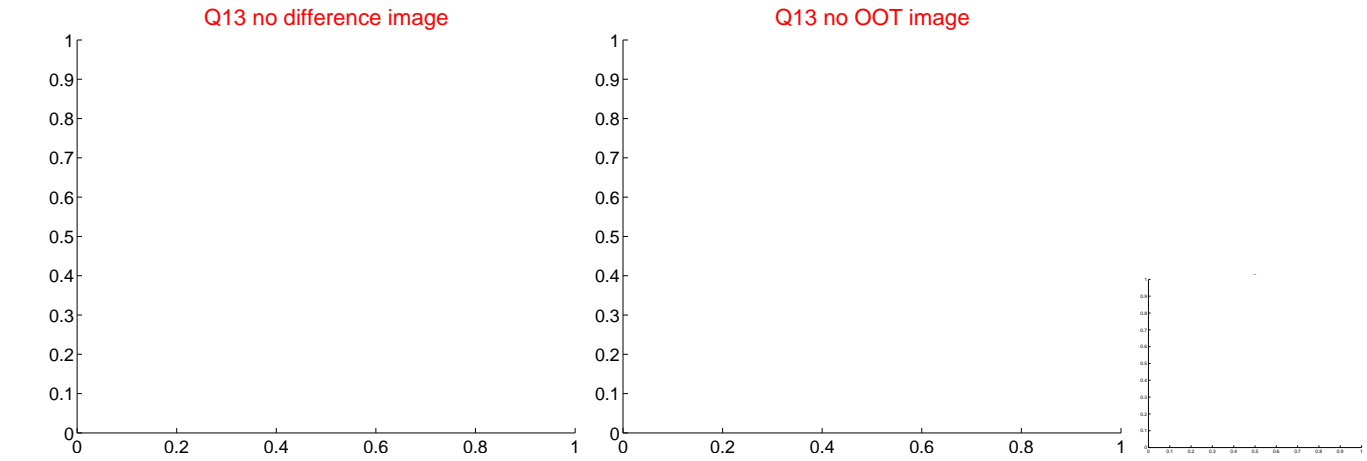




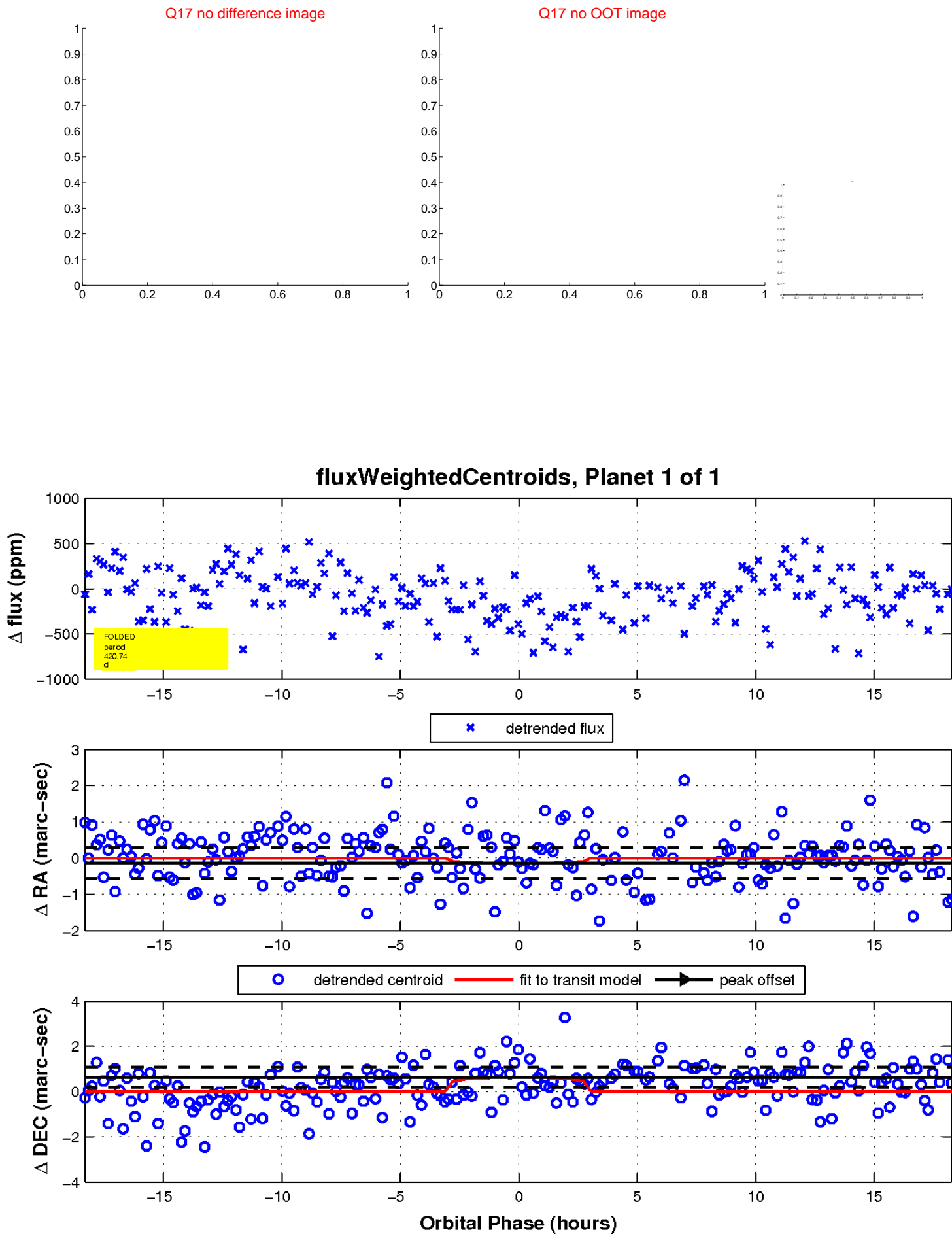
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UKIRT Image

Declination

