

# KIC 006127083

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006127083-01	OBS	No	185.641478	258.153093	213.1	8.803	15.0	7.7	86.15	3683	116.31	2564.32
006127083-02	OBS	No	347.827409	169.708129	1798.5	3.500	24.0	-1.0	86.15	3683	338.82	1110.16

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006127083-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006127083-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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

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

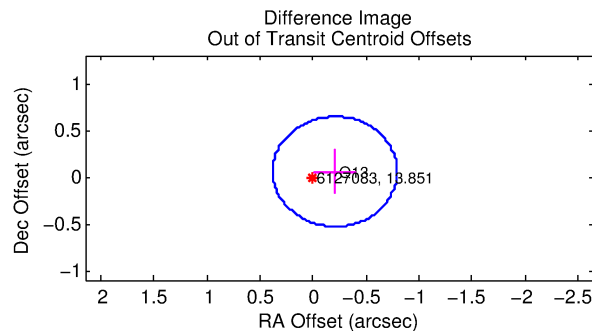
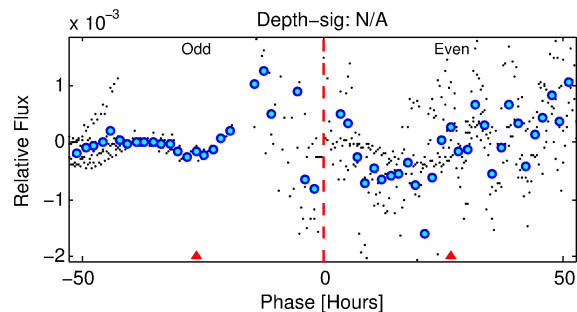
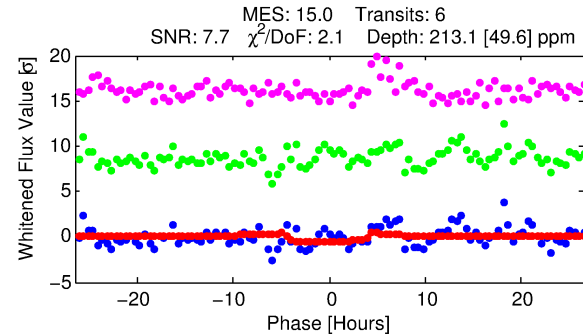
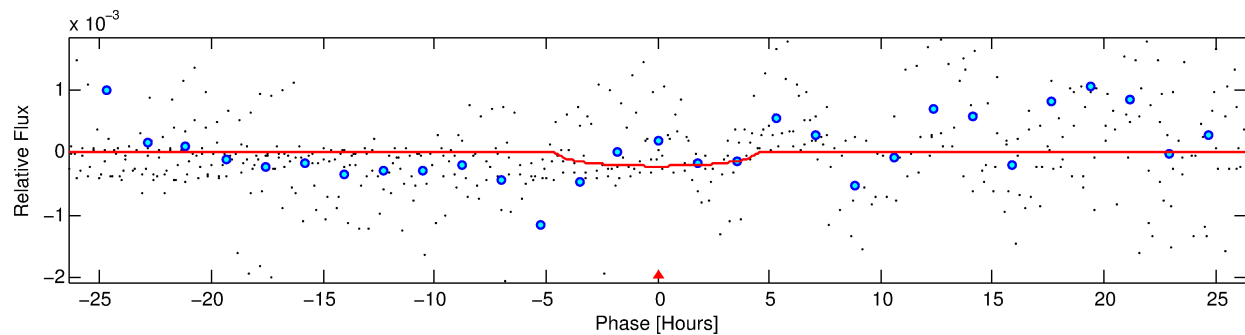
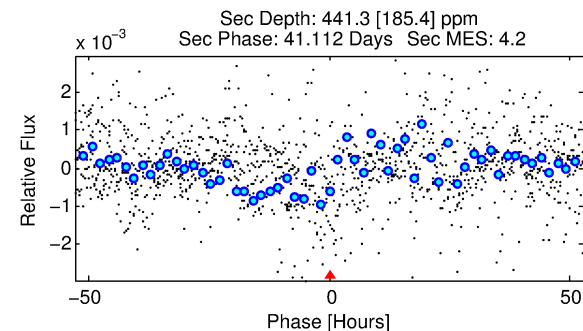
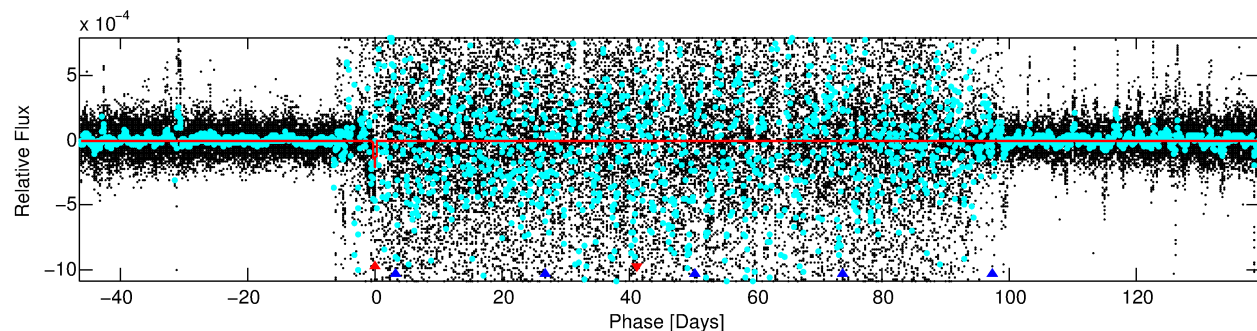
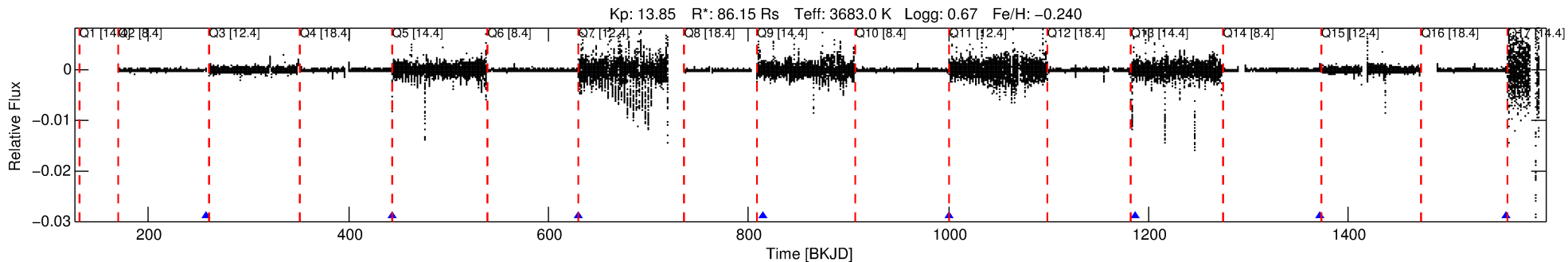
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006127083-01

No Significant Match Found

# DV One-Page Summary

KIC: 6127083 Candidate: 1 of 2 Period: 185.641 d



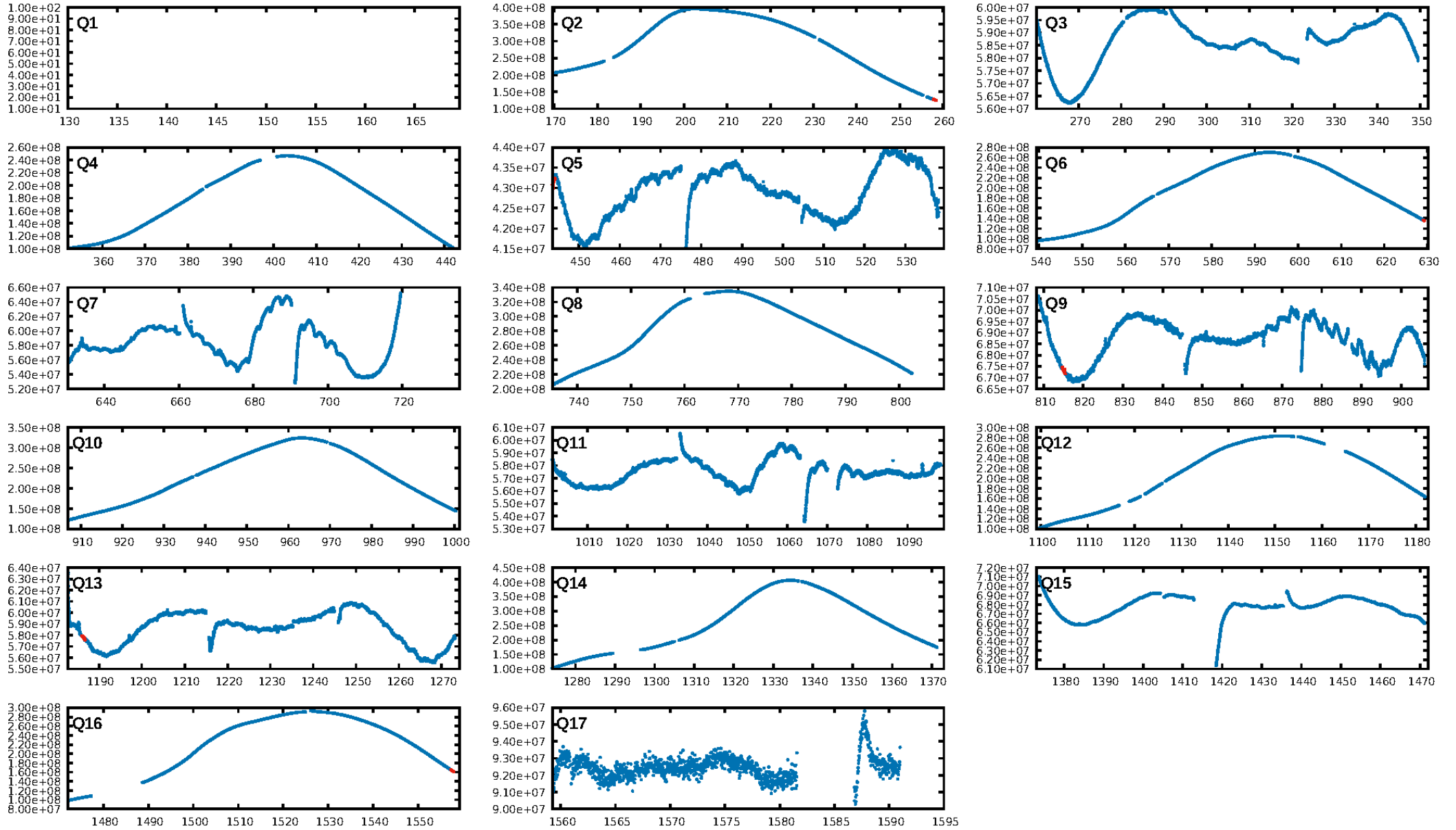
## DV Fit Results:

Period = 185.64148 [0.00287] d  
Epoch = 258.1531 [0.0155] BKJD  
Rp/R\* = 0.0124 [0.0125]  
a/R\* = 162.69 [360.28]  
b = 0.07 [32.14]  
Seff = 2564.32 [1307.47]  
Teq = 1815 [231] K  
**Rp = 116.31 [122.15] Re**  
a = 0.6907 [0.2075] AU  
Ag = 8.56 [18.10] [0.42σ]  
Teffp = 4799 [2473] K [1.20σ]

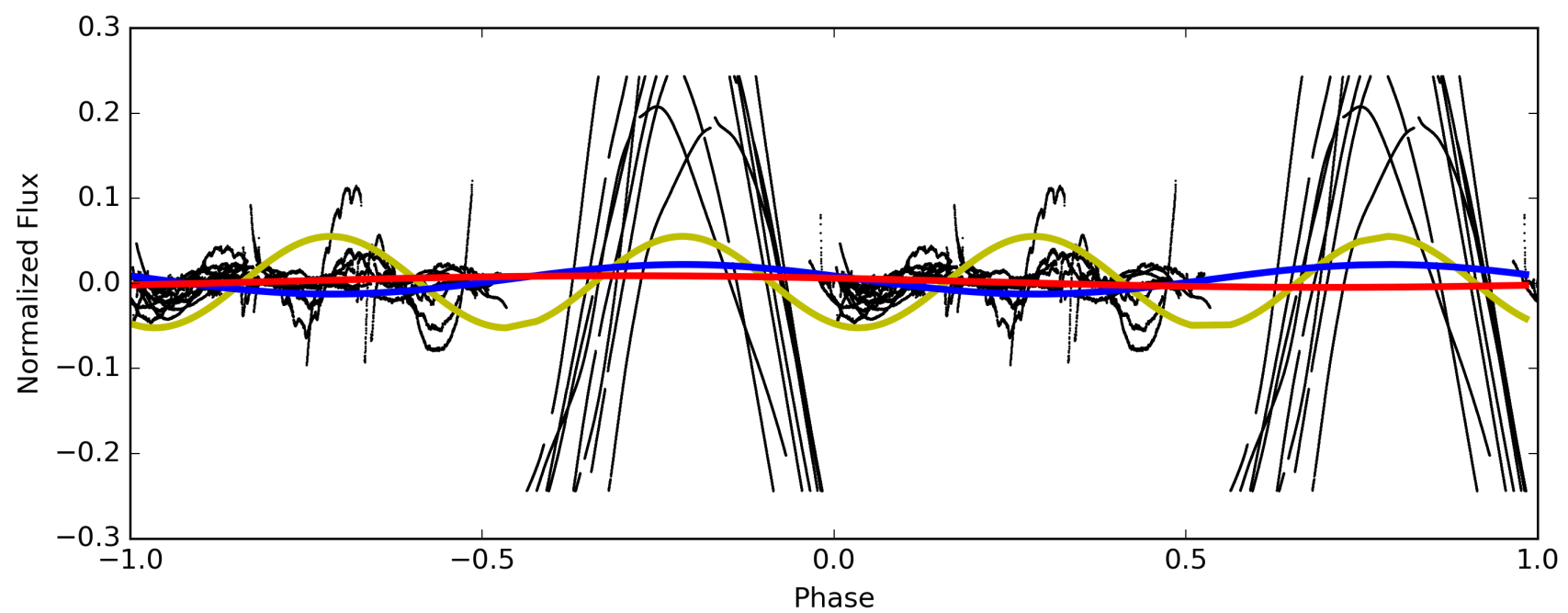
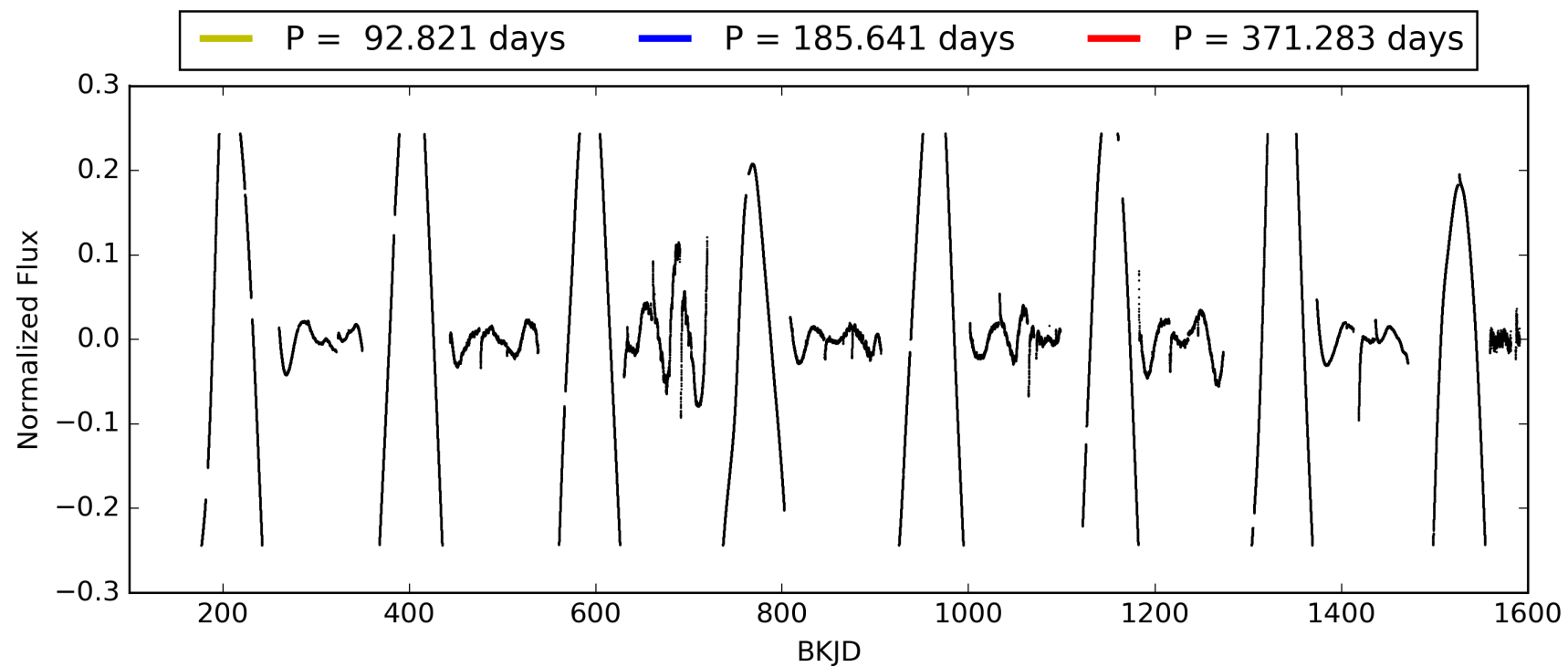
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [410.87σ]  
ModelChiSquare2-sig: 2.5%  
ModelChiSquareGof-sig: 1.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [6/6]  
**GhostDiagnostic-chr: 1.558**  
Centroid-sig: 70.4%  
Centroid-so: 0.643 arcsec [0.52σ]  
OotOffset-rm: 0.214 arcsec [1.09σ]  
KicOffset-rm: 0.393 arcsec [1.82σ]  
OotOffset-st: 0/0/0/1 [1]  
KicOffset-st: 0/0/0/1 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [2/2]

# TCE 006127083-01, PDC Light Curves

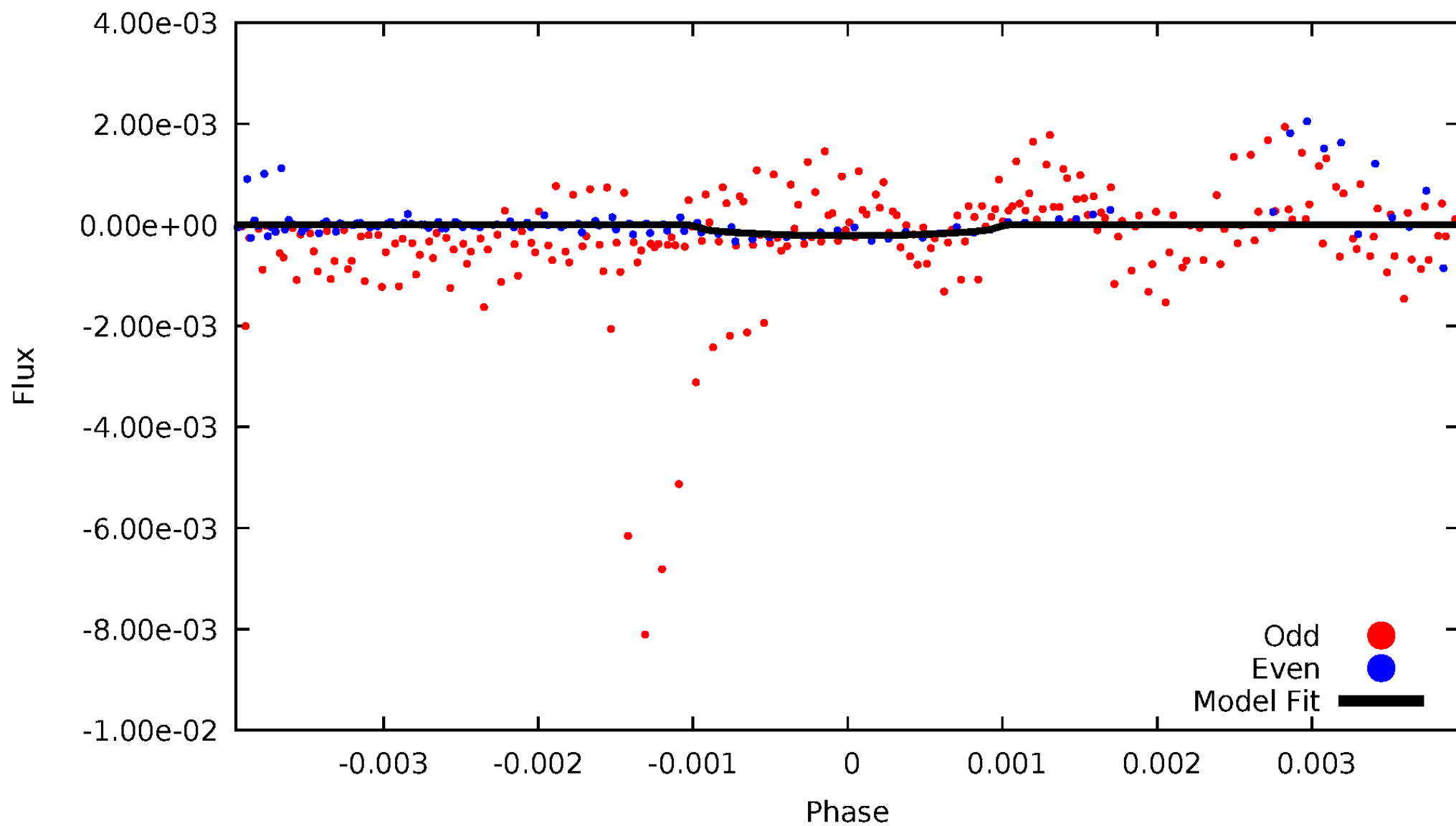


TCE 006127083-01



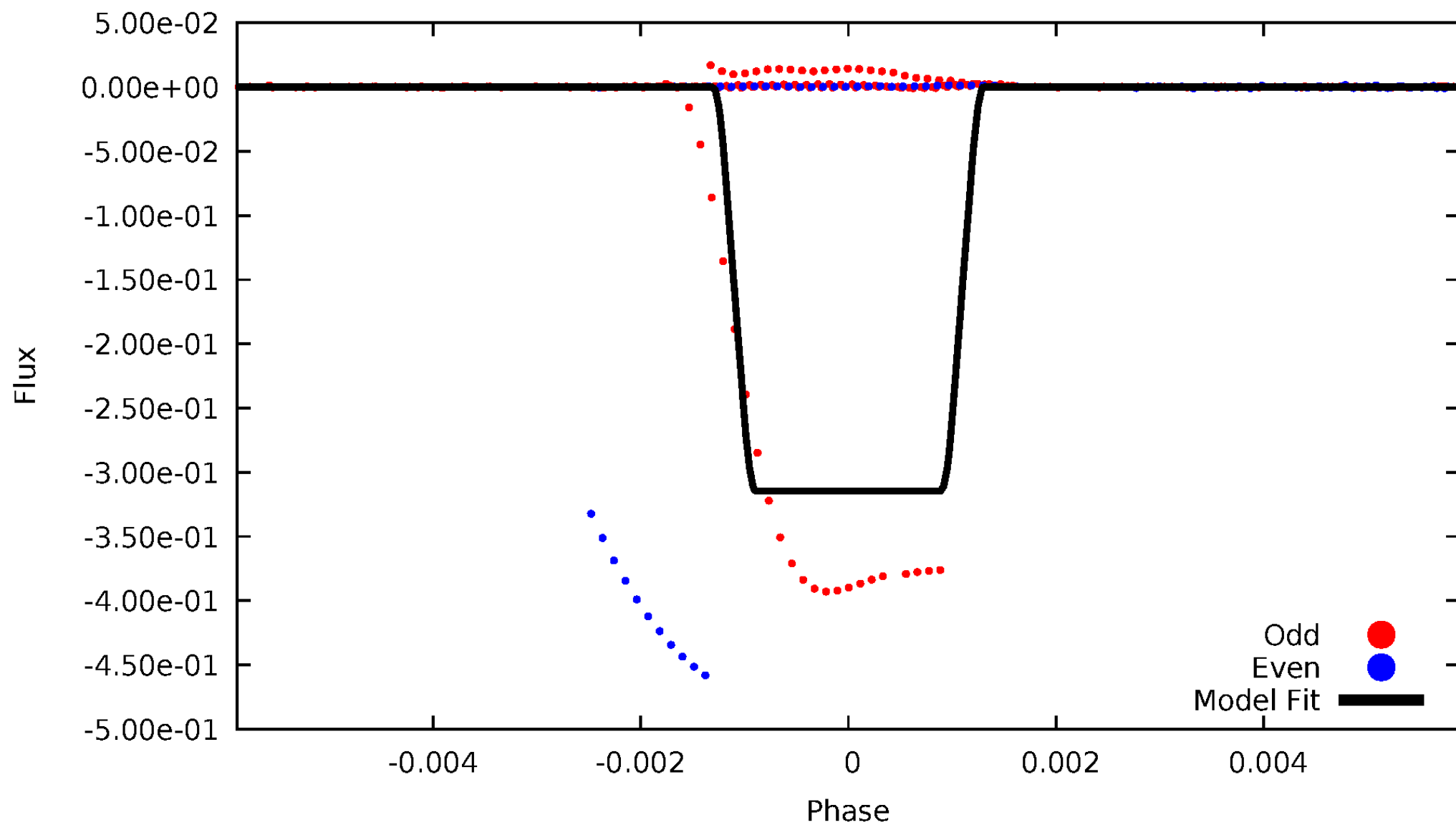
# DV Odd/Even

TCE 006127083-01



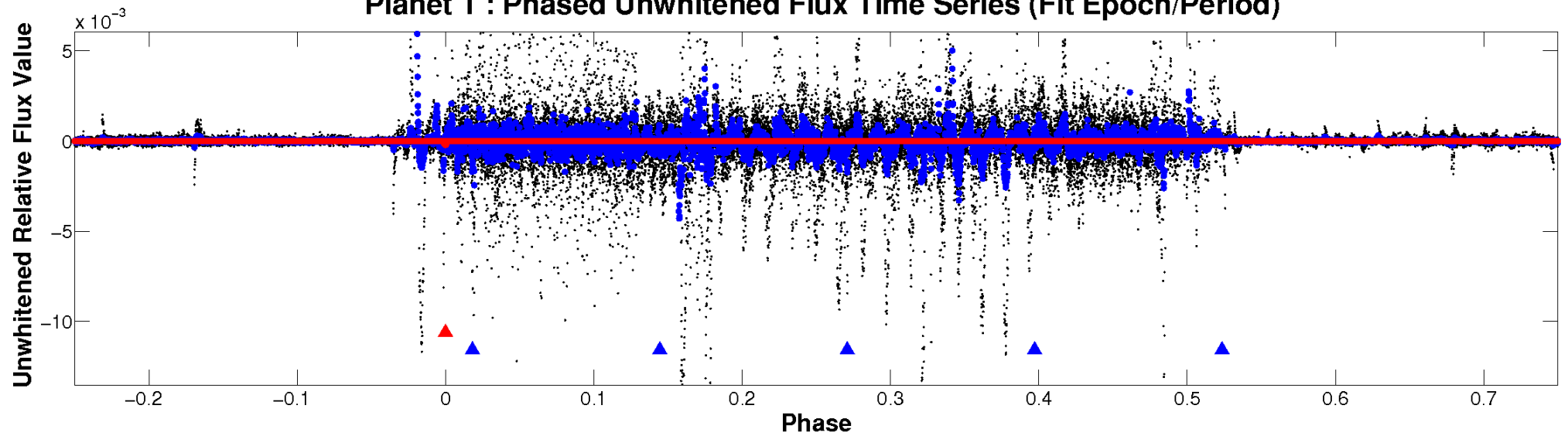
# ALT Odd/Even

TCE 006127083-01

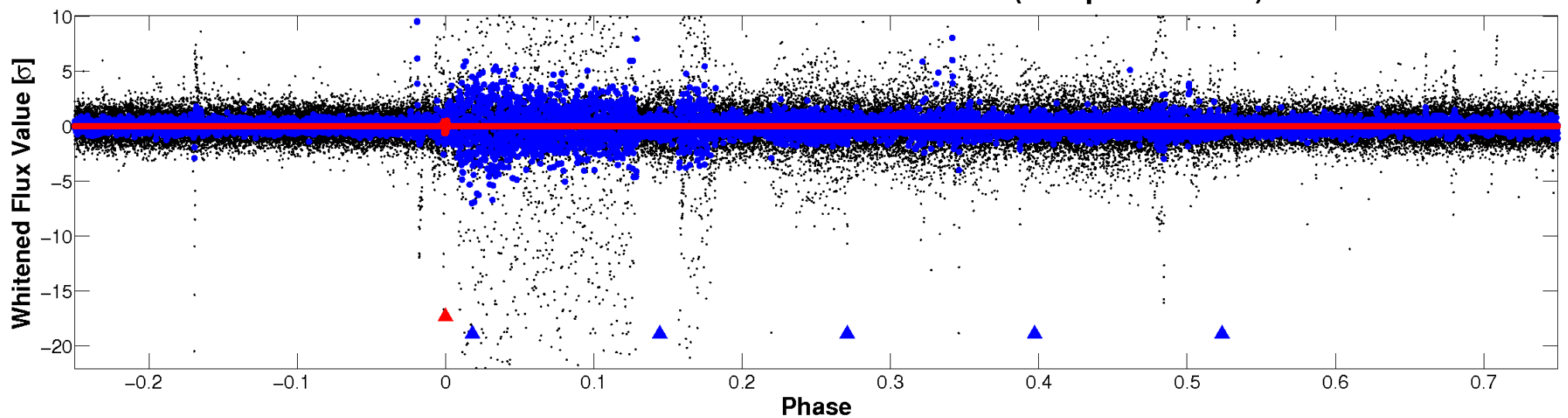


# Non-Whitened Vs. Whitened Light Curve

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

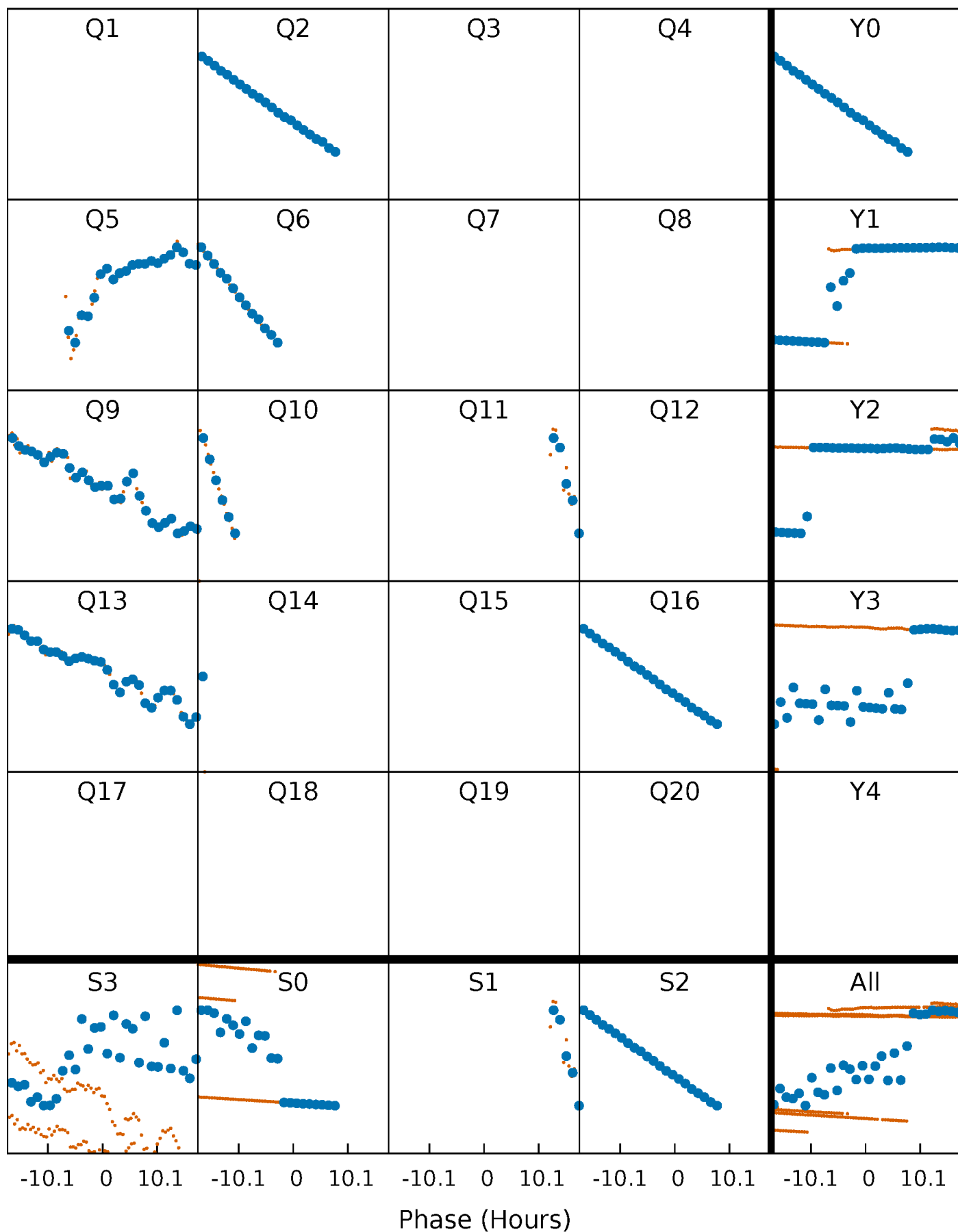


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

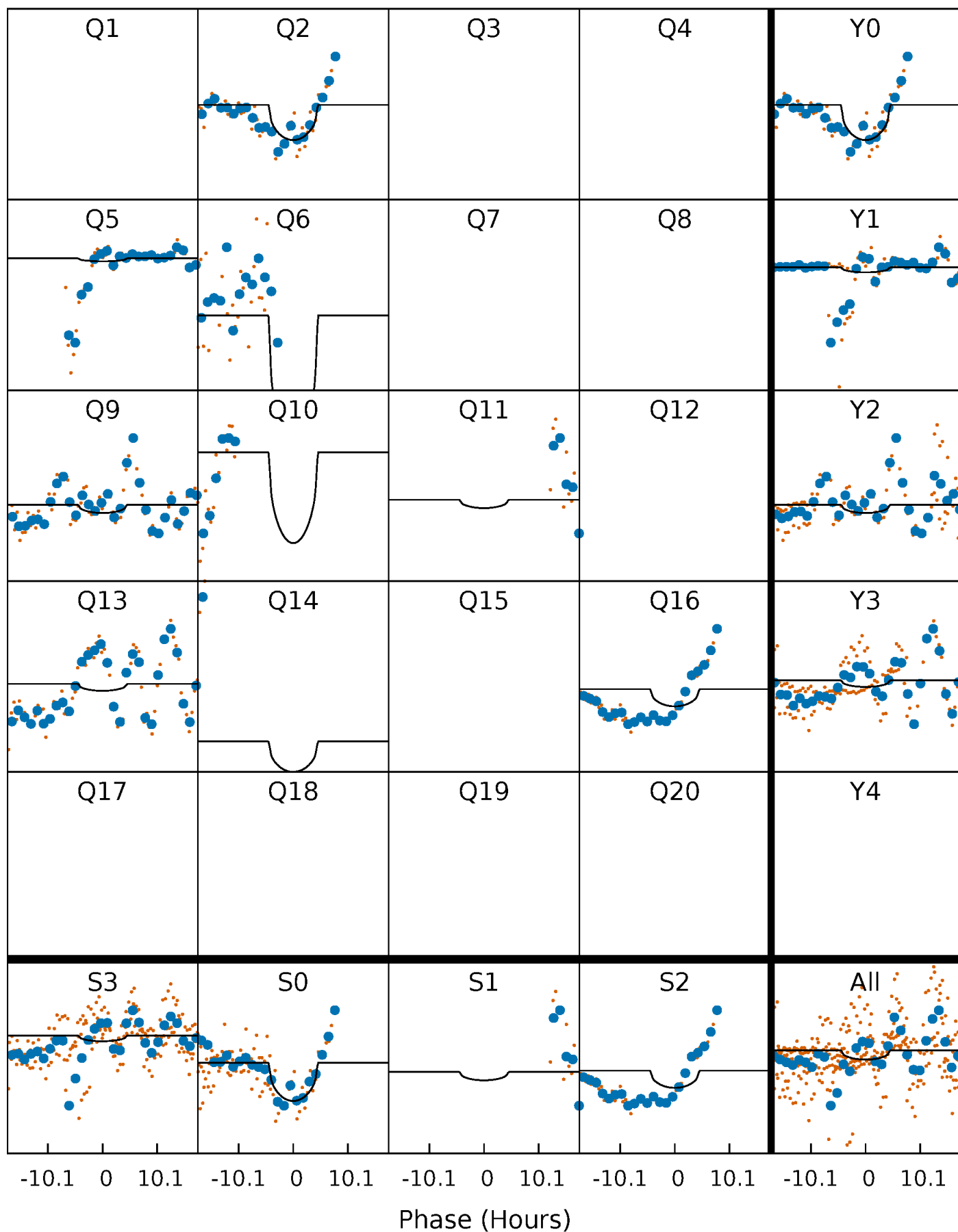
TCE 006127083-01 P=185.641478 Days  $T_0=258.153093$  (BKJD)





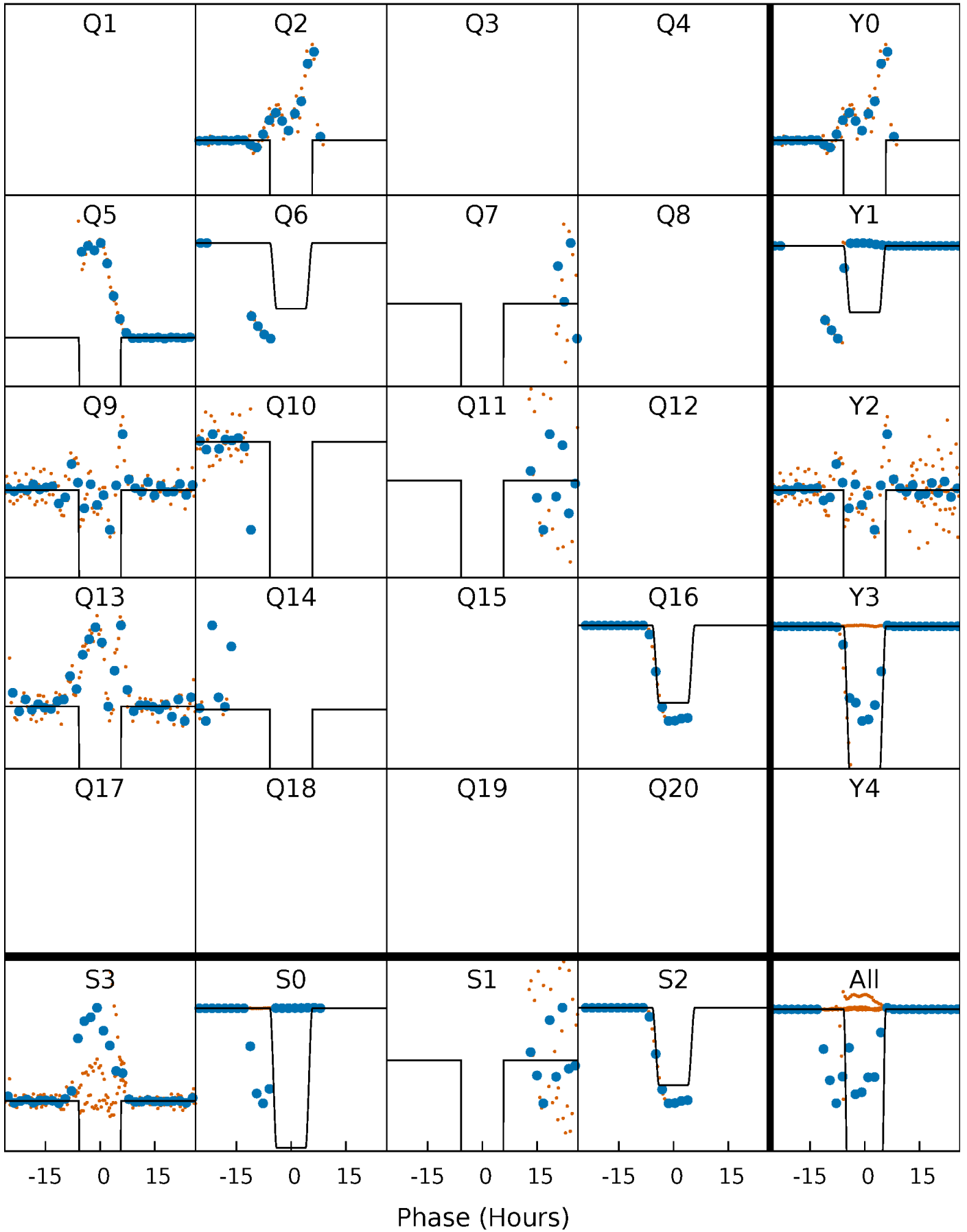
# DV Quarter-Phased Transit Curves

TCE 006127083-01 P=185.641478 Days  $T_0=258.153093$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

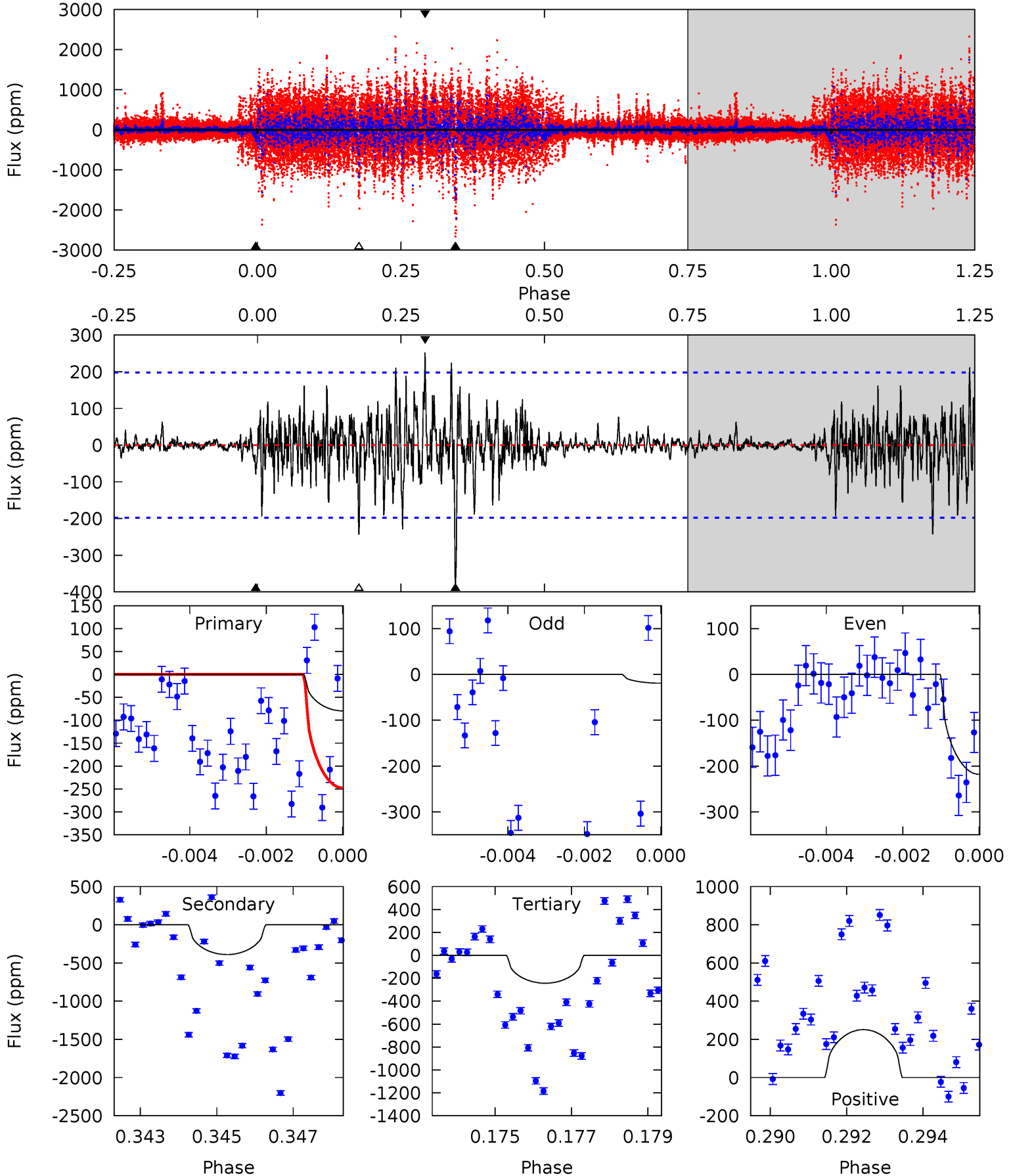
TCE 006127083-01 P=185.652515 Days  $T_0=258.104314$  (BKJD)



# DV Model-Shift Uniqueness Test

006127083-01,  $P = 185.641478$  Days,  $E = 72.511615$  Days

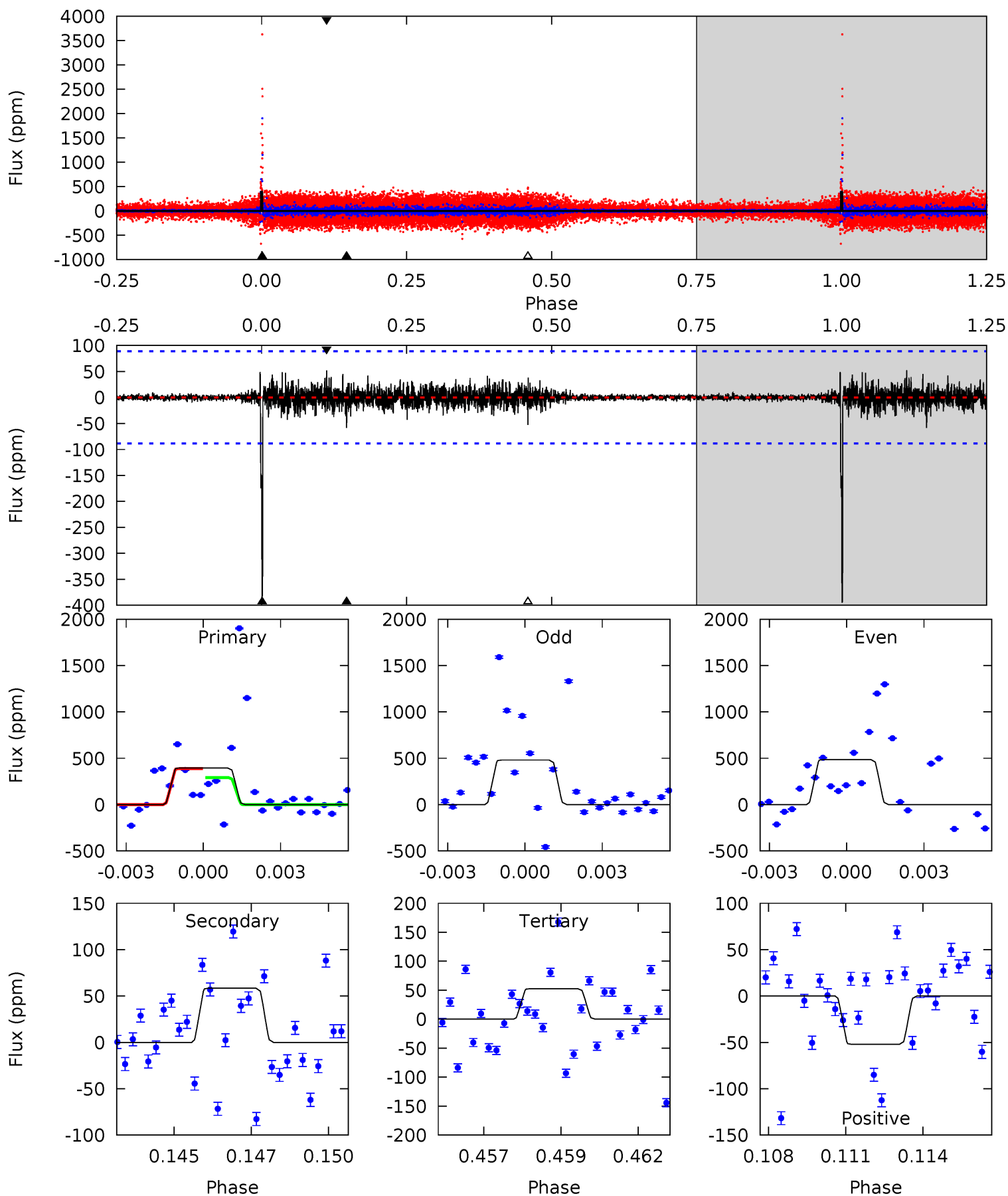
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.14	10.5	6.55	6.75	5.32	3.08	1.14	-4.41	-4.61	3.94	3.74	1.92	0.67	0.39	0.96



# Alt Model-Shift Uniqueness Test

006127083-01, P = 185.652515 Days, E = 72.451799 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
23.5	3.47	3.13	3.10	5.28	3.01	0.52	20.4	20.4	0.35	0.37	0.17	-146.0	0.12	0



### Stellar Parameters For KIC 006127083

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$3683^{+127}_{-114}$	$0.673^{+0.292}_{-0.239}$	$-0.240^{+0.300}_{-0.250}$	$86.150^{+25.854}_{-25.854}$	$1.274^{+0.270}_{-0.270}$	$0.000^{+0.000}_{-0.000}$
	+3%/-3%	+43%/-36%	+125%/-104%	+30%/-30%	+21%/-21%	+190%/-50%
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 006127083-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-390 \pm 37$	$139.11^{+114.82}_{-85.67}$	$2549^{+244}_{-251}$	$4036^{+2100}_{-815}$	$5.210^{+32.010}_{-3.646}$
Alt.	$-58 \pm 17$	$5321.66^{+1053.87}_{-971.54}$	$2554^{+241}_{-250}$	$-2654^{+144}_{-136}$	$0.001^{+0.000}_{-0.000}$

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

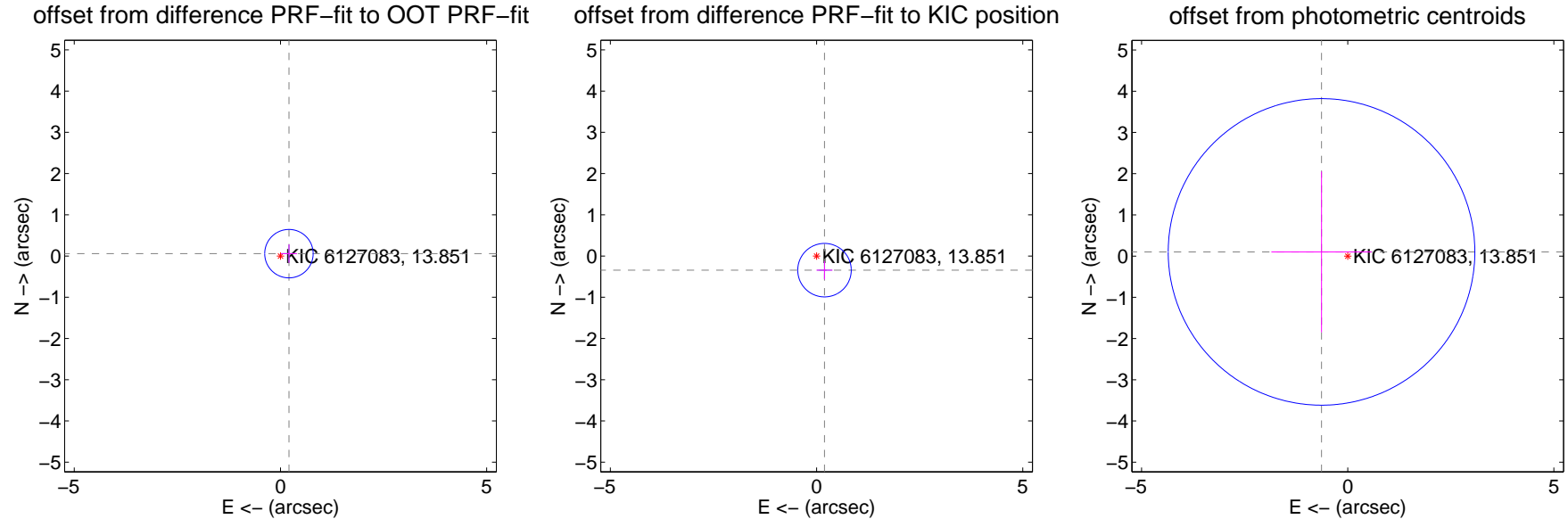
## DV Centroid Data

Supplemental centroid analysis for 006127083-01. Kepler magnitude: 13.85. Transit SNR 7.73

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.40 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.214 \pm 0.196$	1.09	$-0.206 \pm 0.193$	$0.057 \pm 0.223$
PRF-fit source offset from KIC position	$0.393 \pm 0.216$	1.82	$-0.192 \pm 0.193$	$-0.343 \pm 0.223$
photometric centroid source offset	$0.64 \pm 1.24$	0.52	$0.64 \pm 1.22$	$0.10 \pm 1.95$



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.

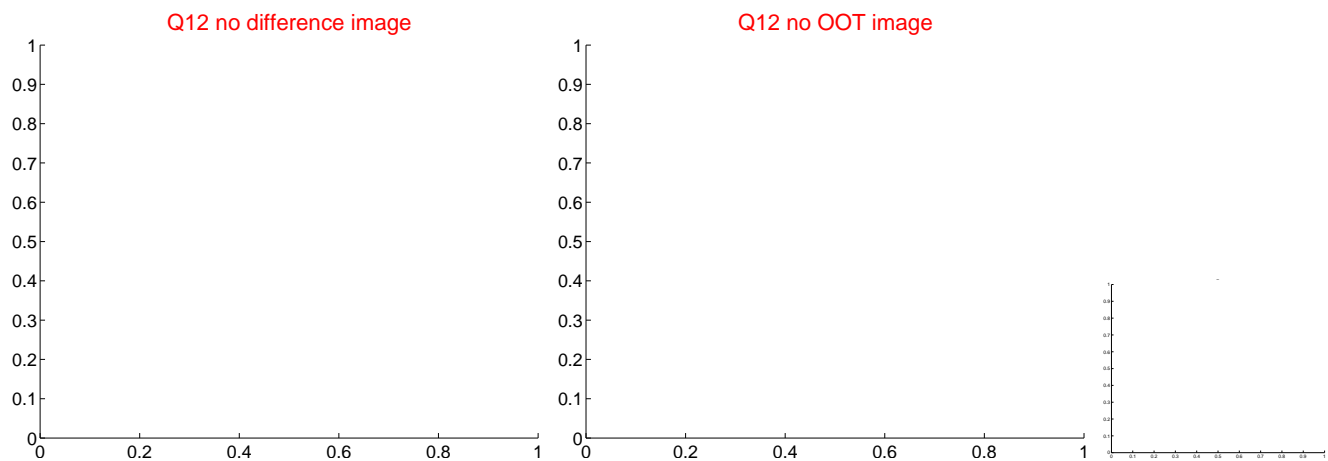
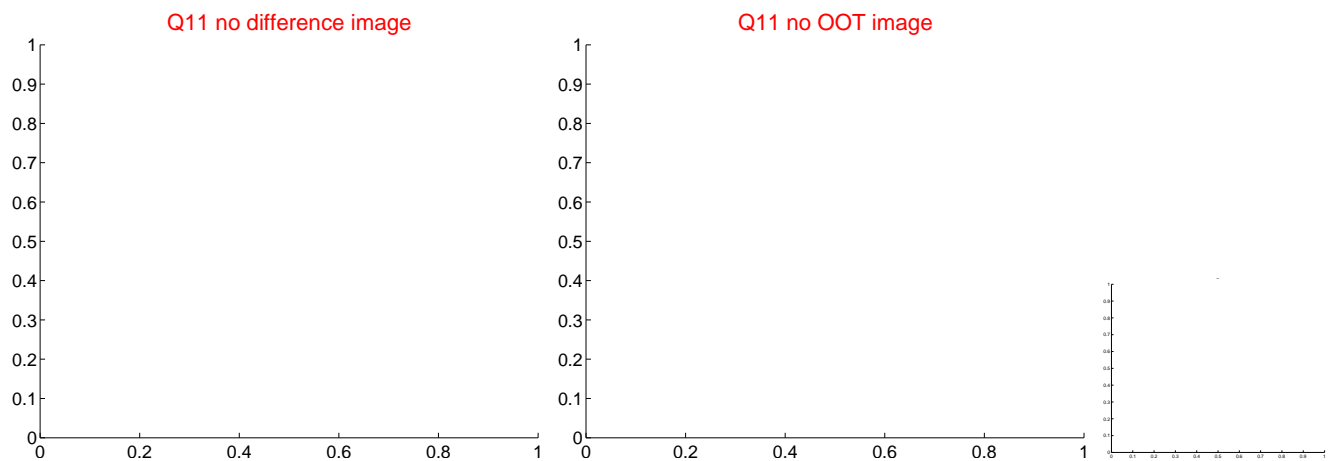
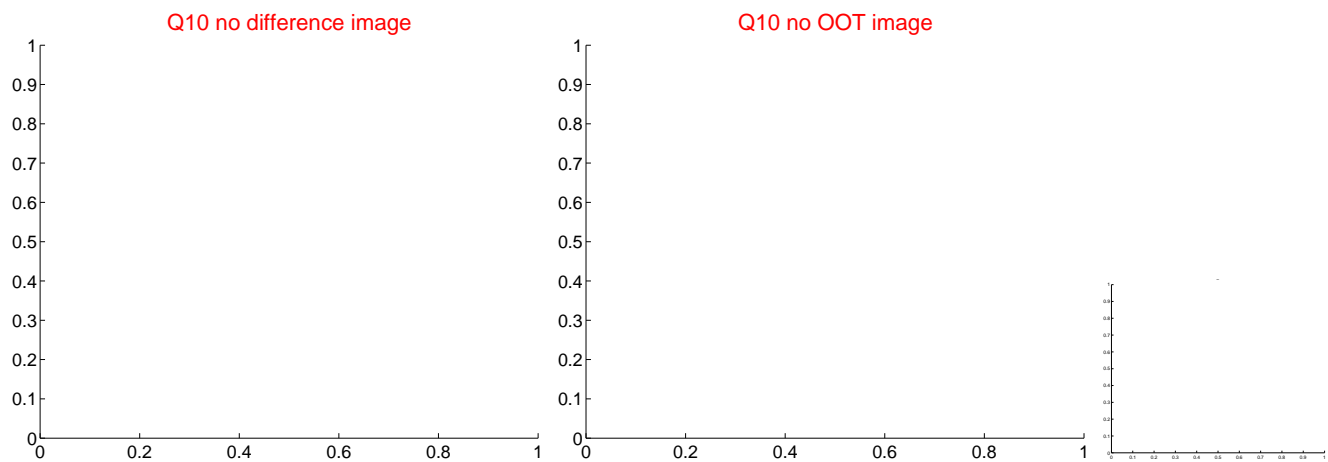
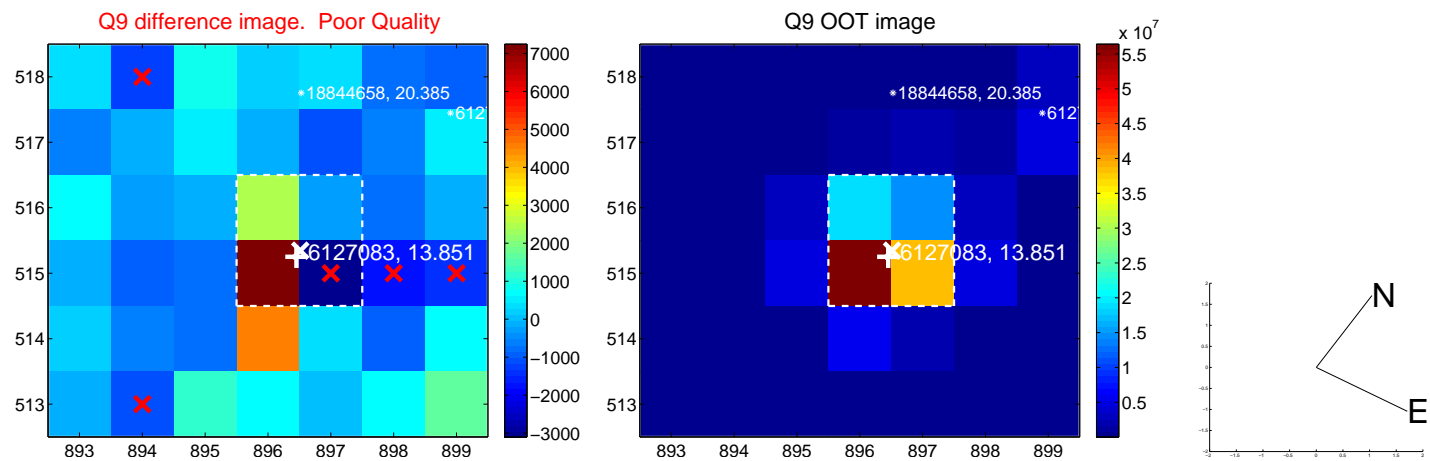


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

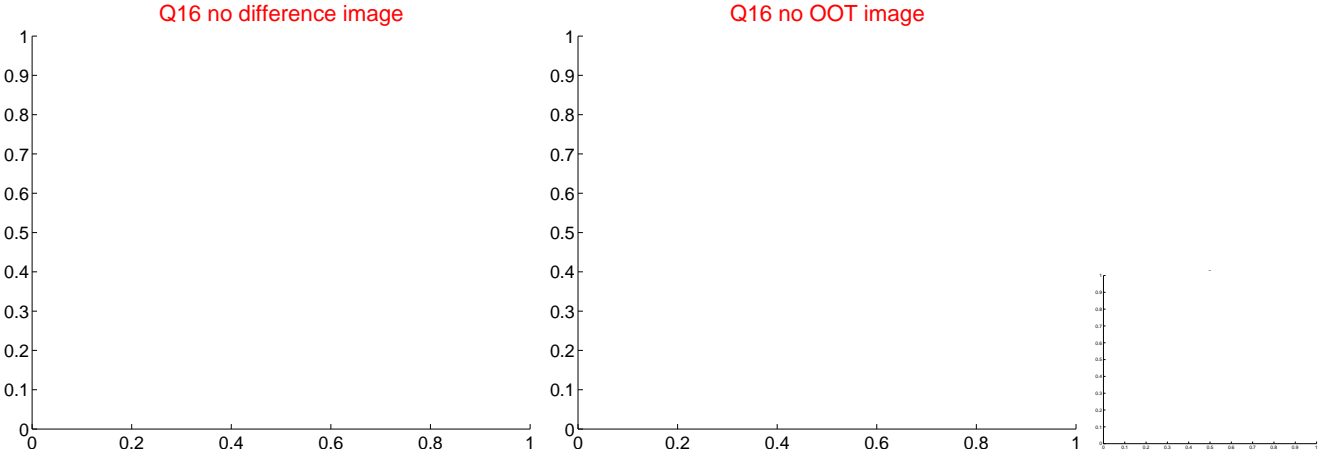
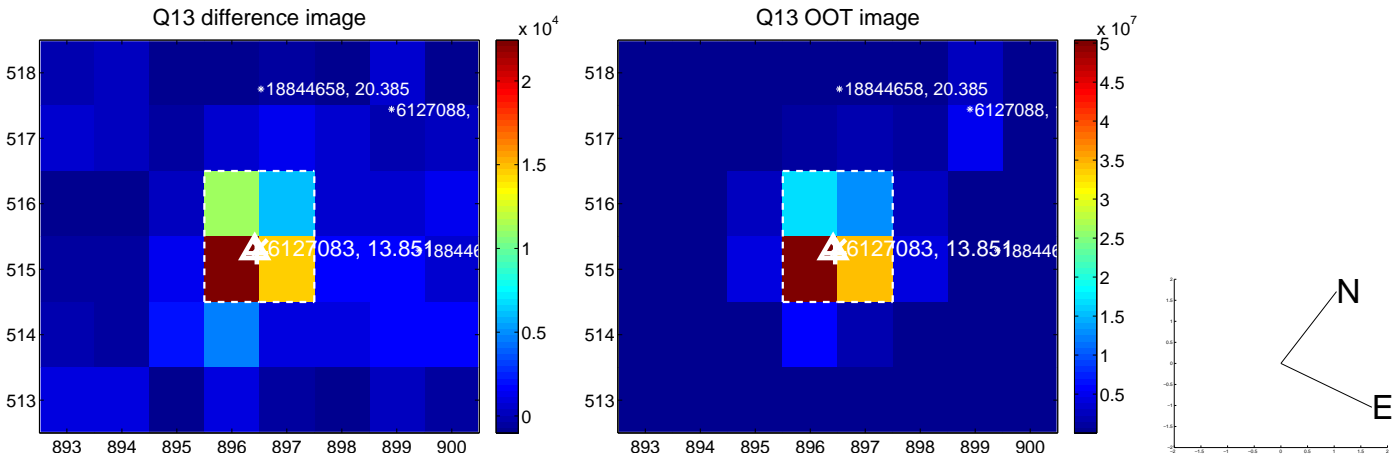




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



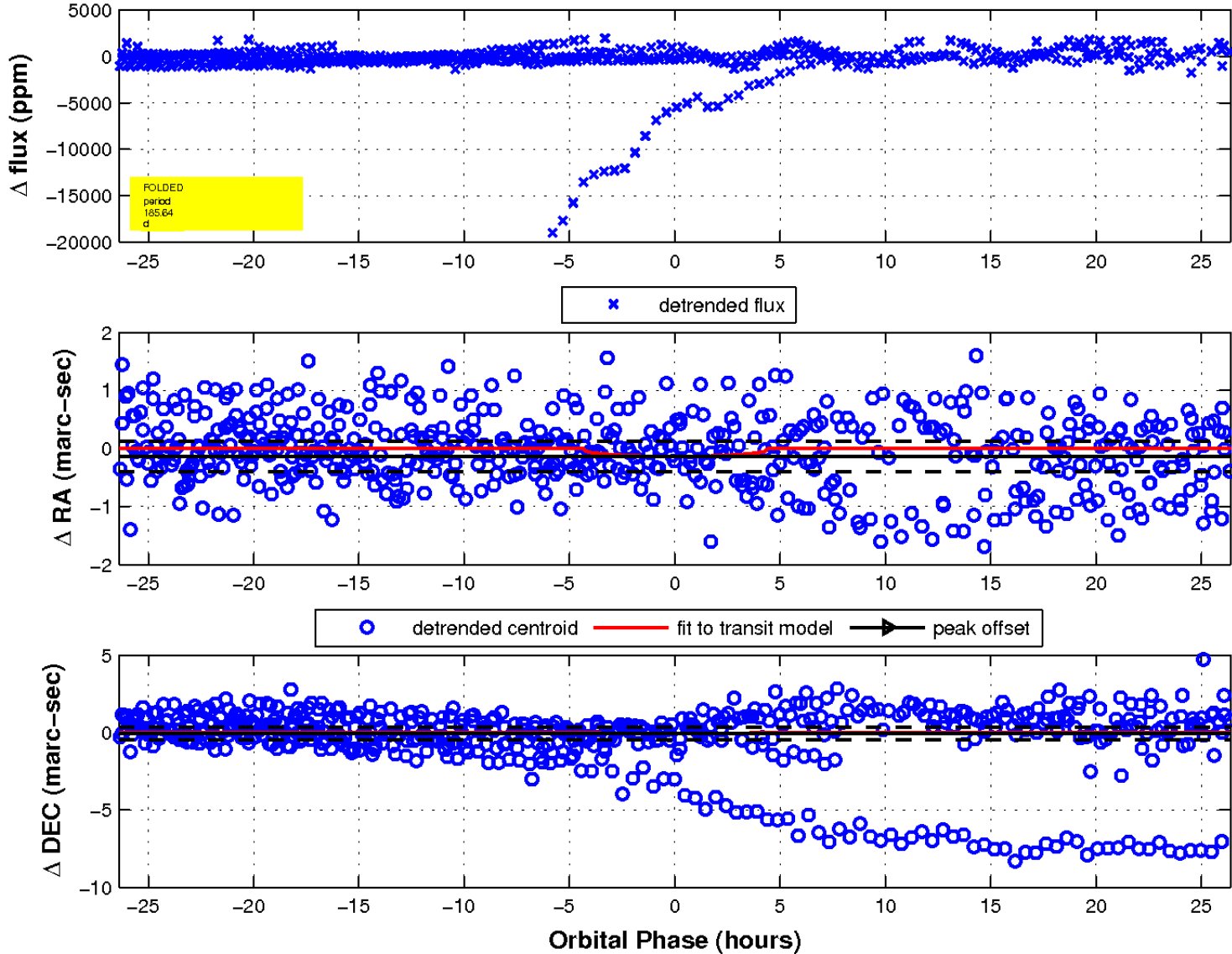
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

Q17 no difference image

Q17 no OOT image

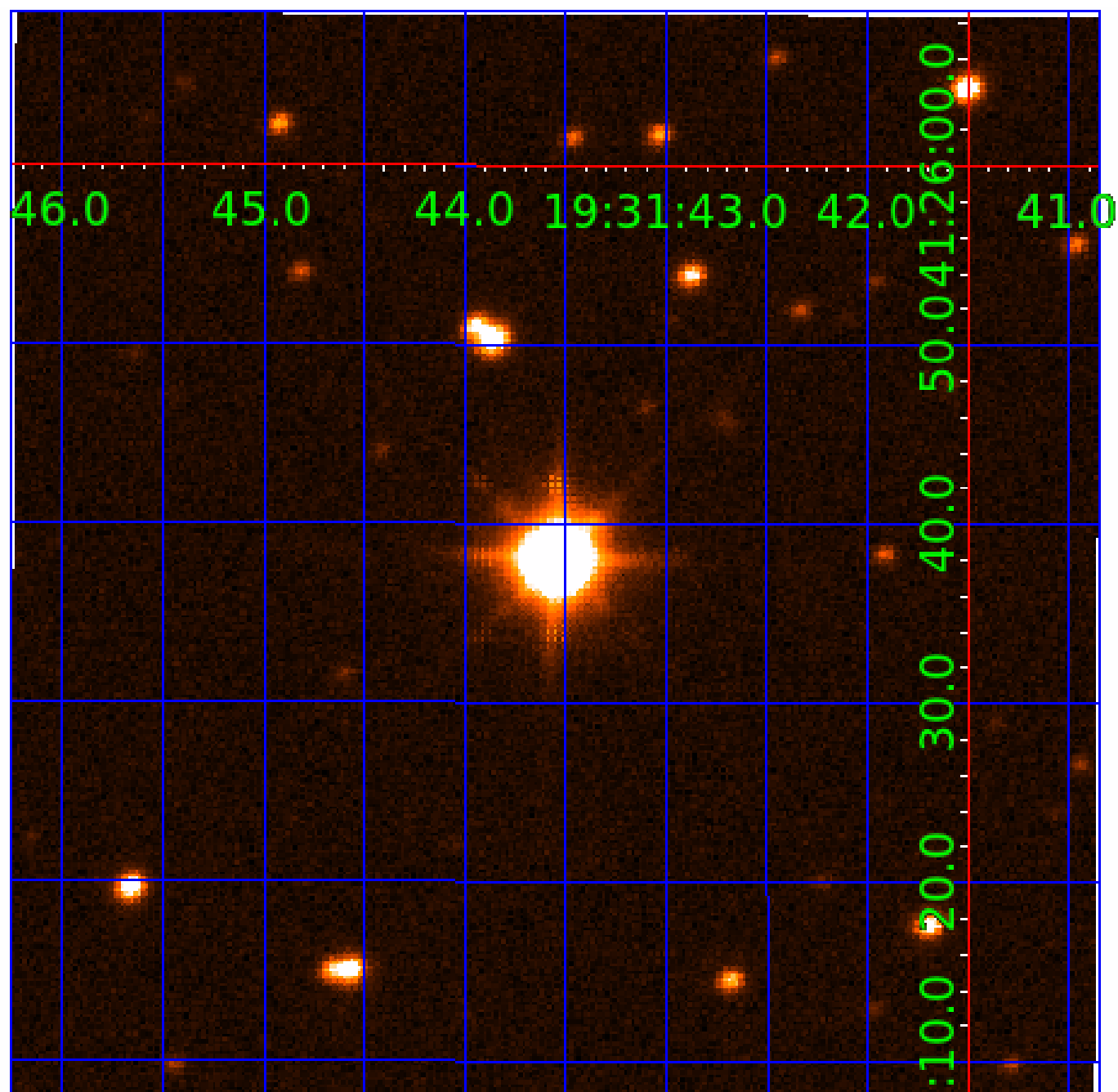


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



# KIC 006127083

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006127083-01	OBS	No	185.641478	258.153093	213.1	8.803	15.0	7.7	86.15	3683	116.31	2564.32
006127083-02	OBS	No	347.827409	169.708129	1798.5	3.500	24.0	-1.0	86.15	3683	338.82	1110.16

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006127083-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006127083-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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

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

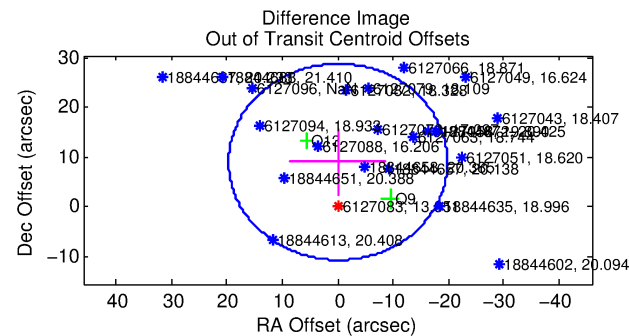
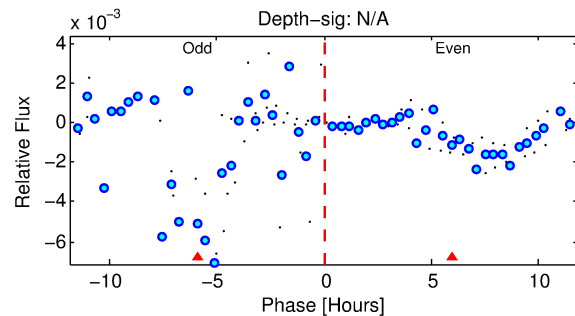
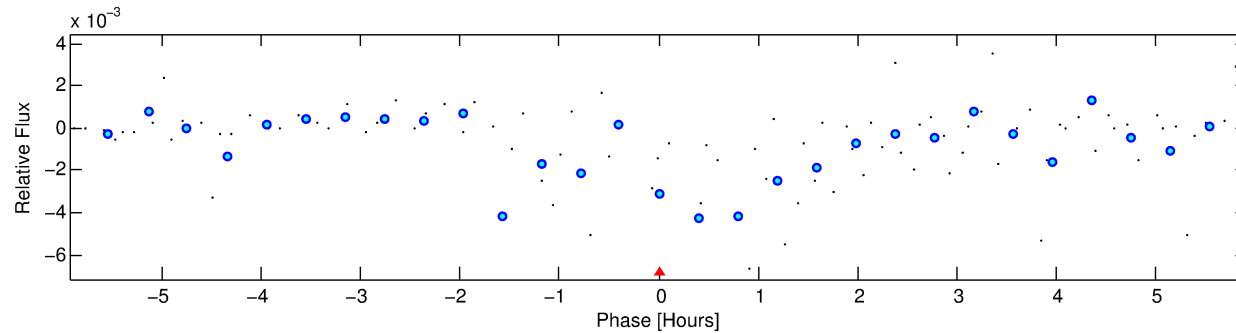
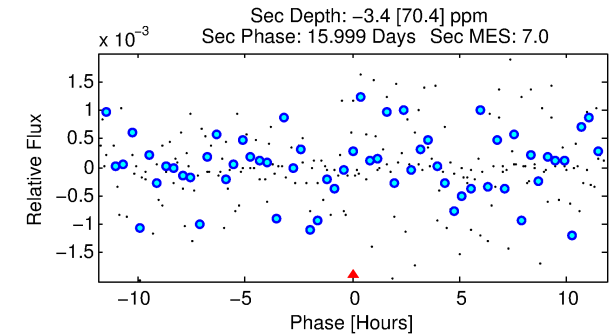
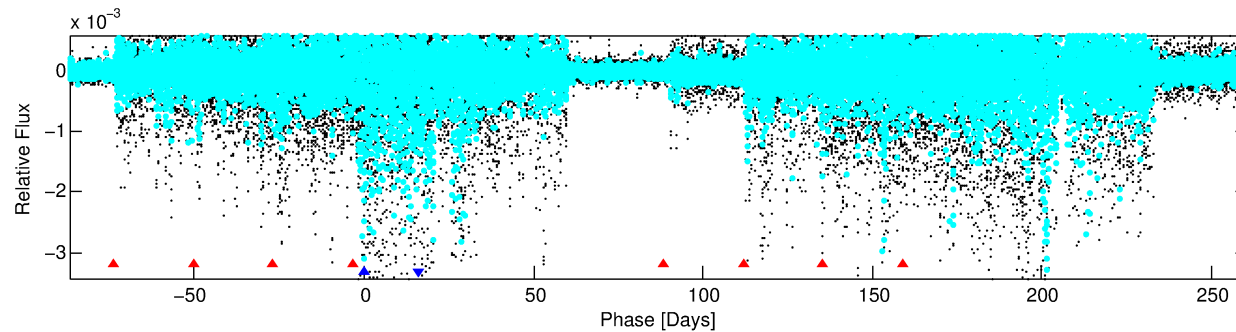
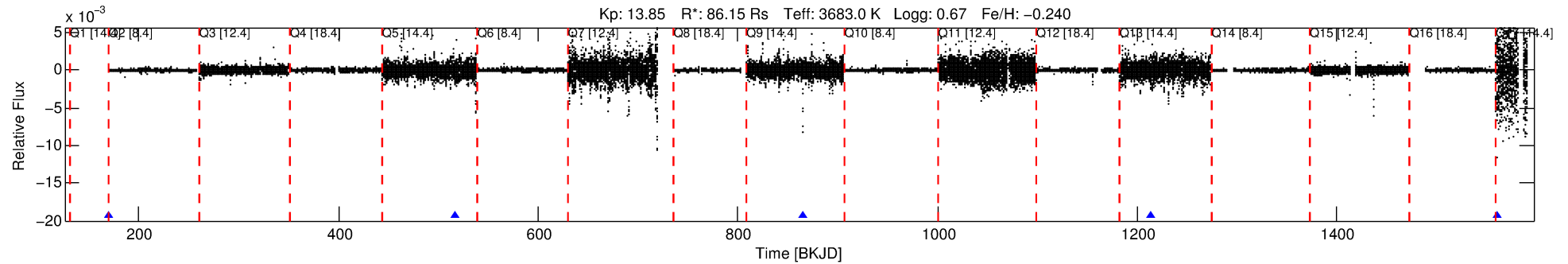
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006127083-02

No Significant Match Found

# DV One-Page Summary

KIC: 6127083 Candidate: 2 of 2 Period: 347.827 d



TPS TCE Results:

Period = 347.82741 d  
Epoch = 169.7081 BKJD

DV fit results are unavailable

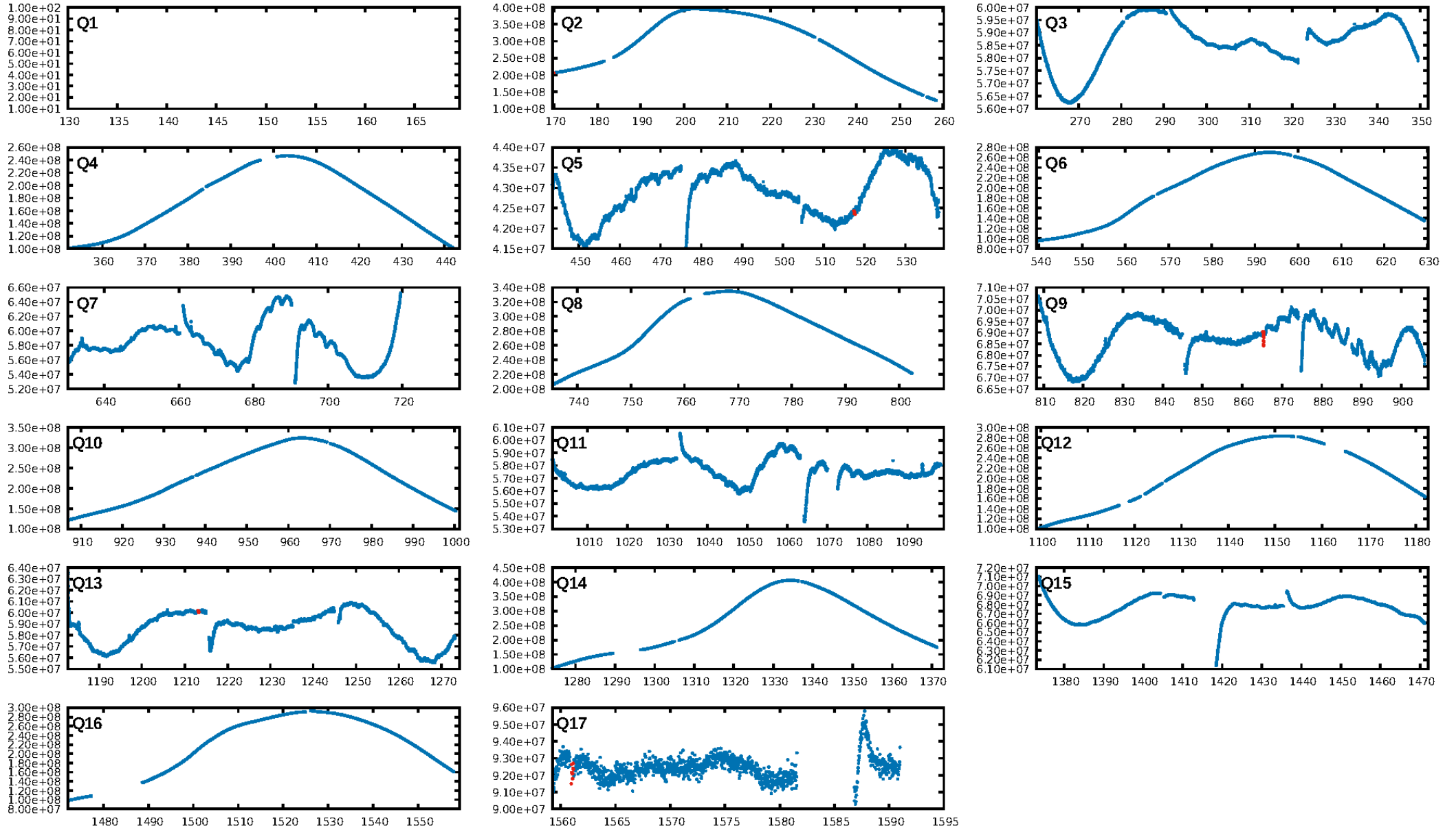
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [410.87σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -0.1617  
Centroid-sig: 0.0%  
Centroid-so: 0.740 arcsec [3.21σ]  
OotOffset-rm: 9.078 arcsec [1.38σ]  
KicOffset-rm: 8.682 arcsec [1.32σ]  
OotOffset-st: 0/0/0/2 [2]  
KicOffset-st: 0/0/0/2 [2]  
DiffImageQuality-fgm: 0.00 [0/2]  
DiffImageOverlap-fno: 1.00 [3/3]

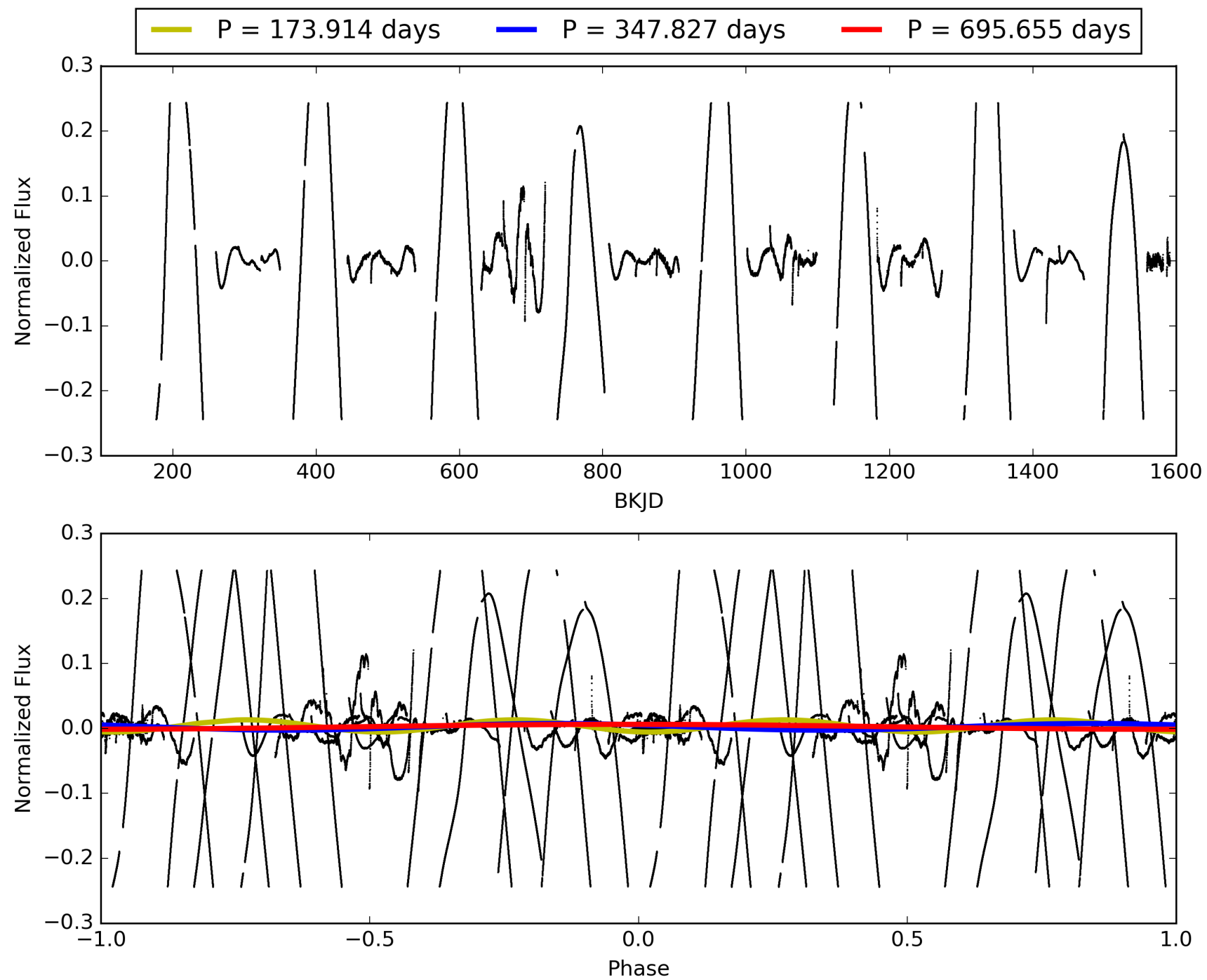
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:56:40 Z

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

# TCE 006127083-02, PDC Light Curves



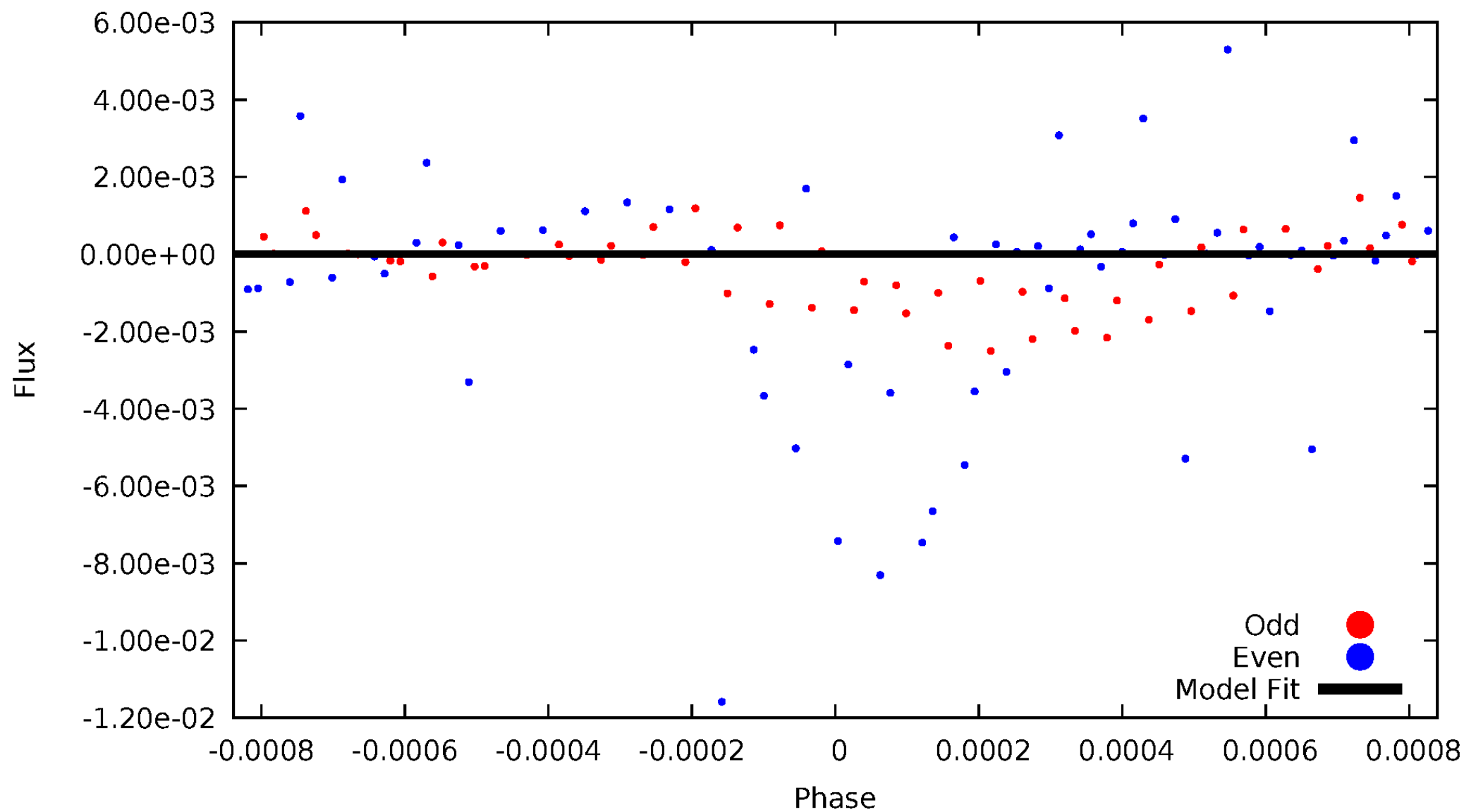
TCE 006127083-02





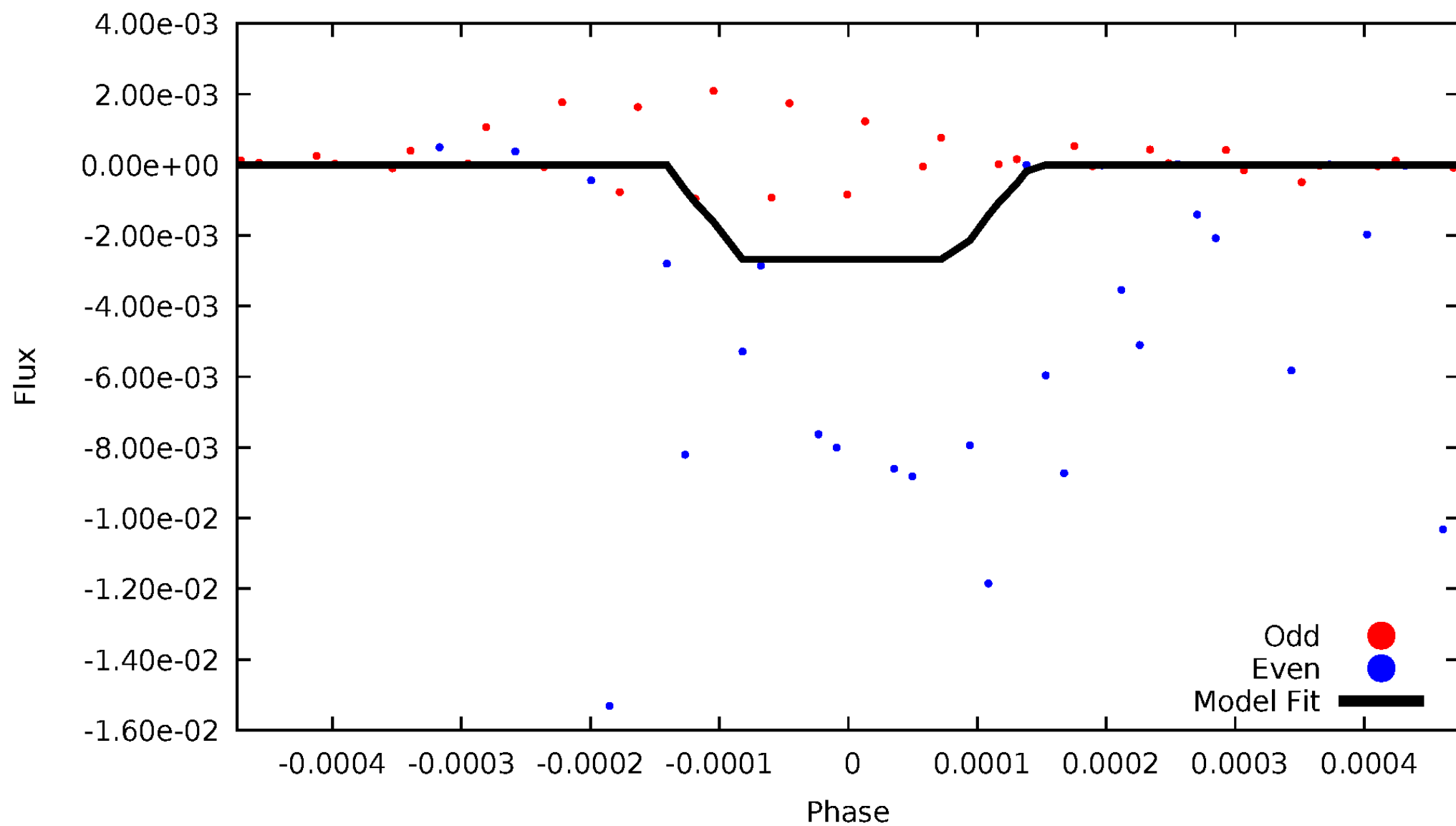
# DV Odd/Even

TCE 006127083-02

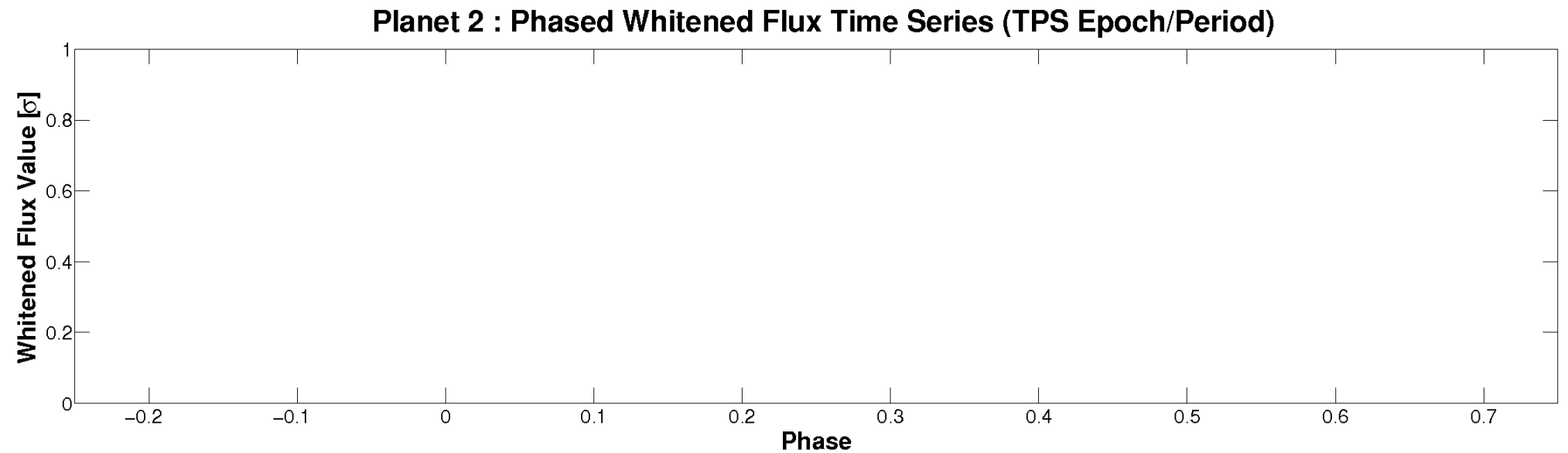
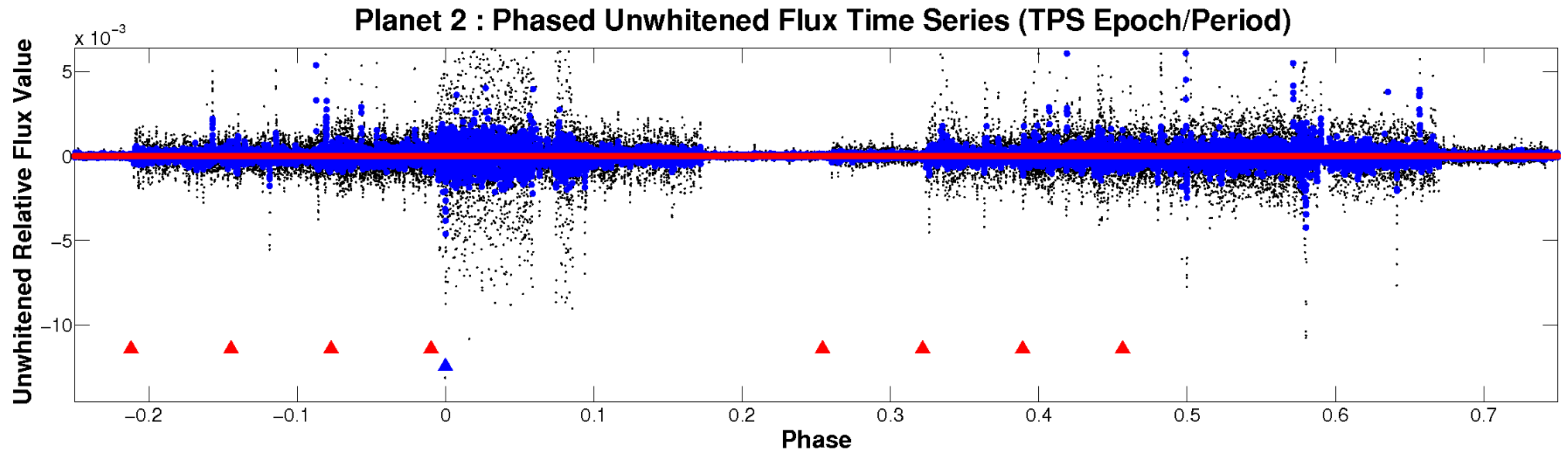


# ALT Odd/Even

TCE 006127083-02

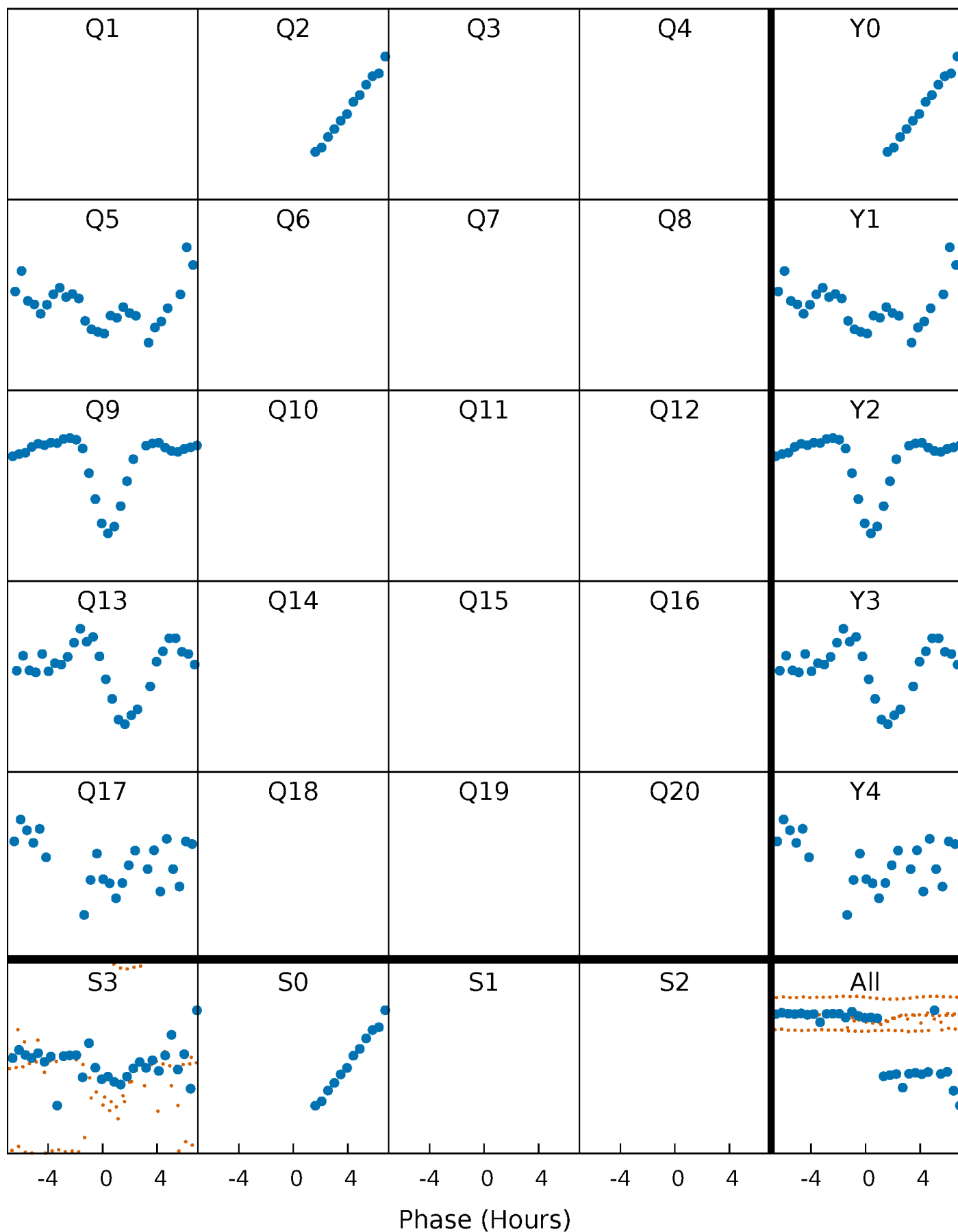


# Non-Whitened Vs. Whitened Light Curve



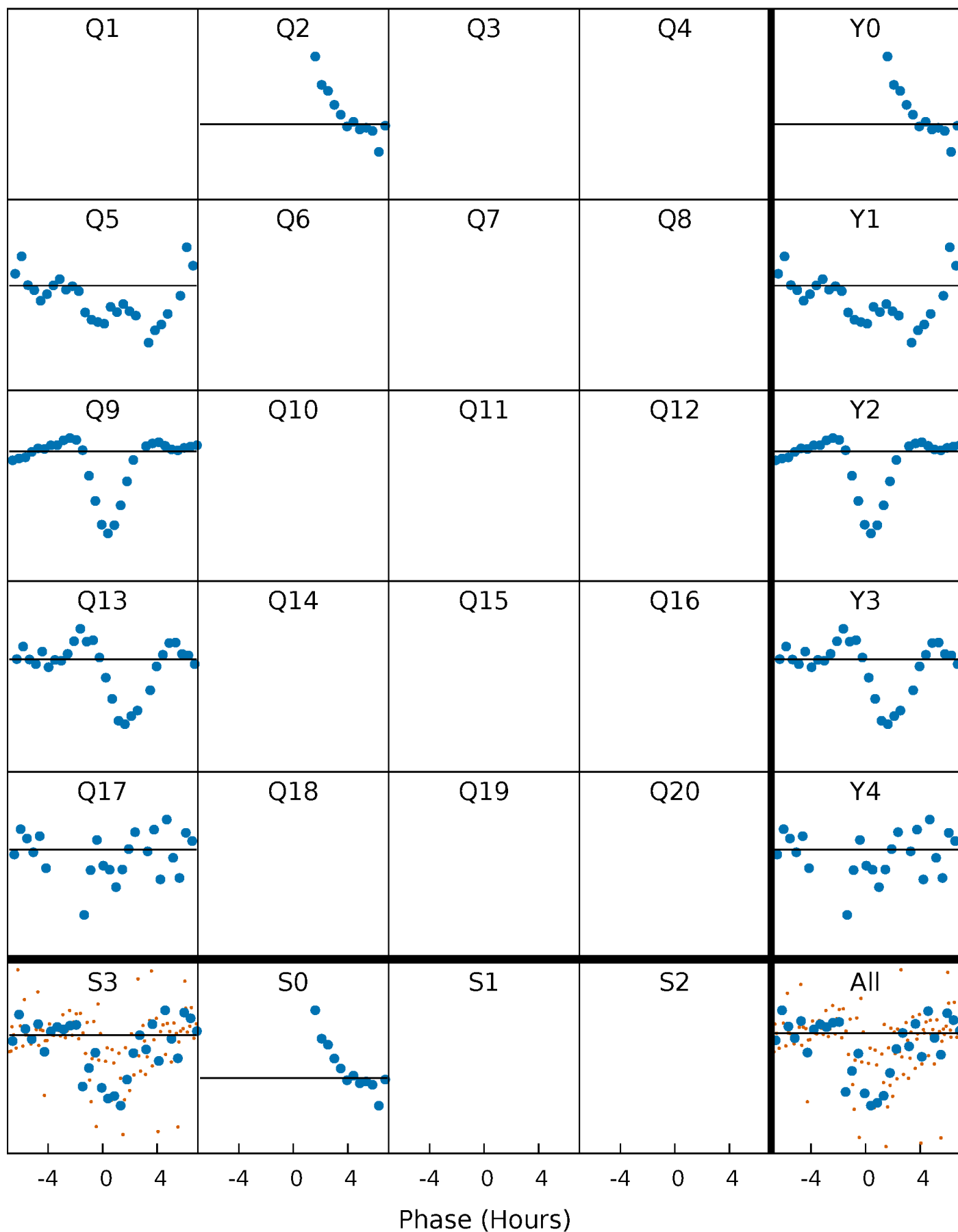
# PDC Quarter-Phased Transit Curves

TCE 006127083-02 P=347.827409 Days  $T_0=169.708129$  (BKJD)



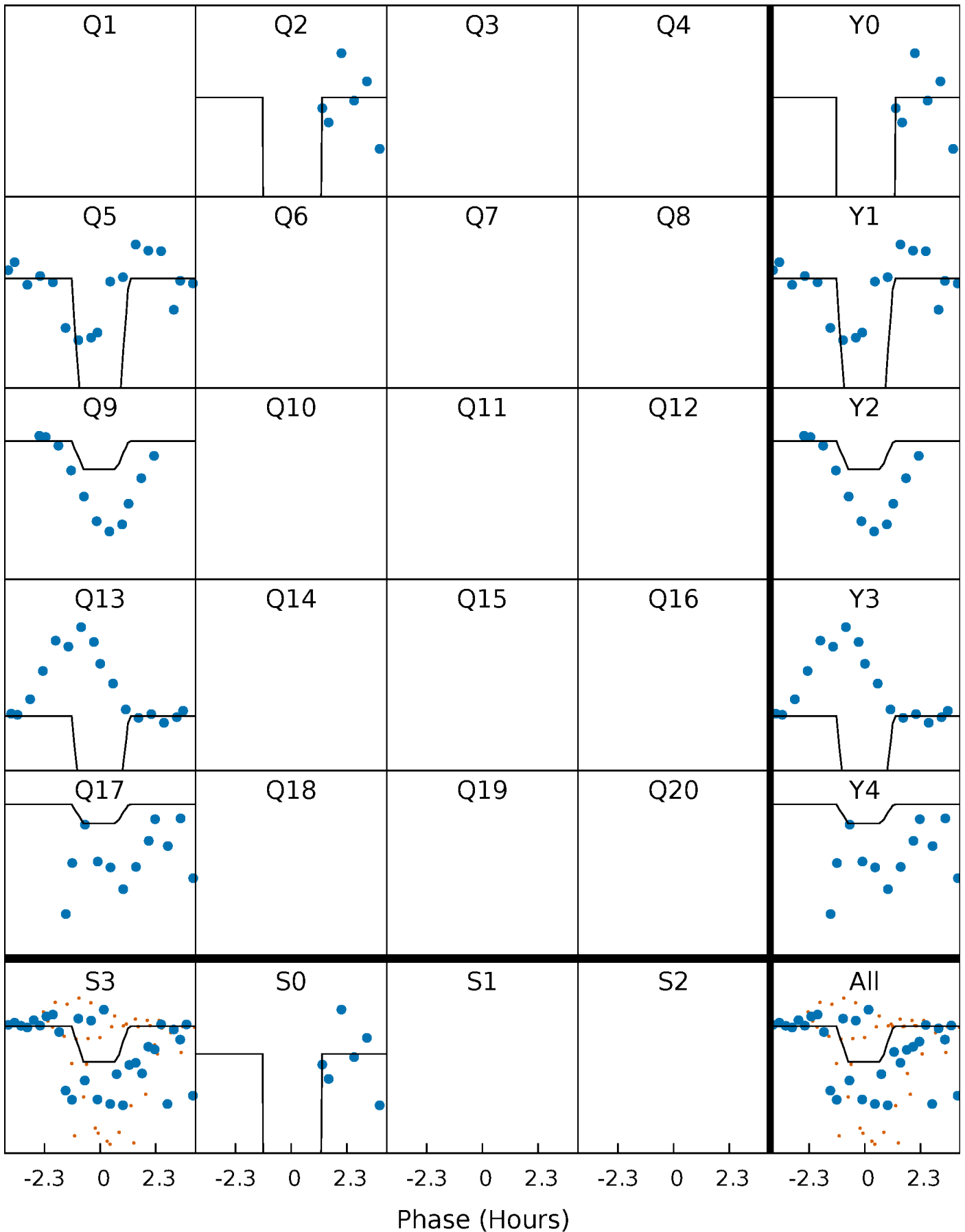
# DV Quarter-Phased Transit Curves

TCE 006127083-02     $P=347.827409$  Days     $T_0=169.708129$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

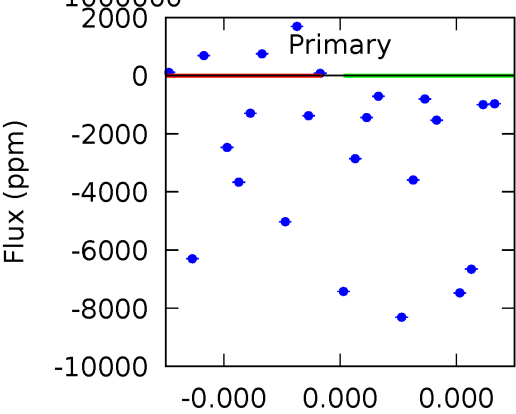
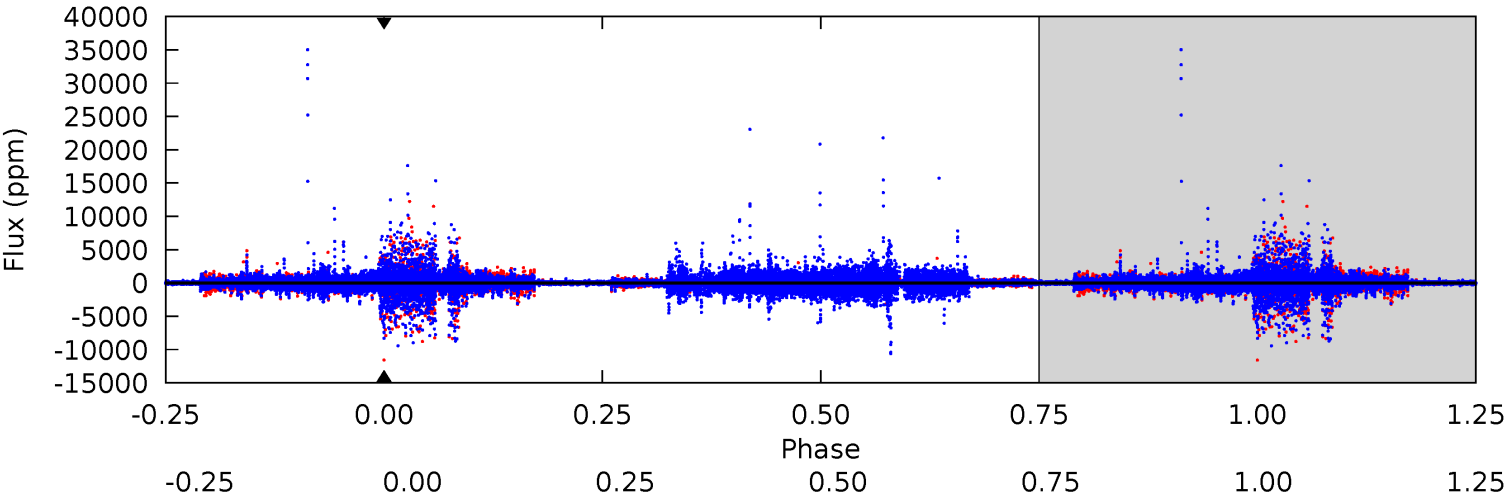
TCE 006127083-02 P=347.827409 Days  $T_0=169.717514$  (BKJD)



DV Model-Shift Uniqueness Test

006127083-02, P = 347.827409 Days, E = 169.708129 Days

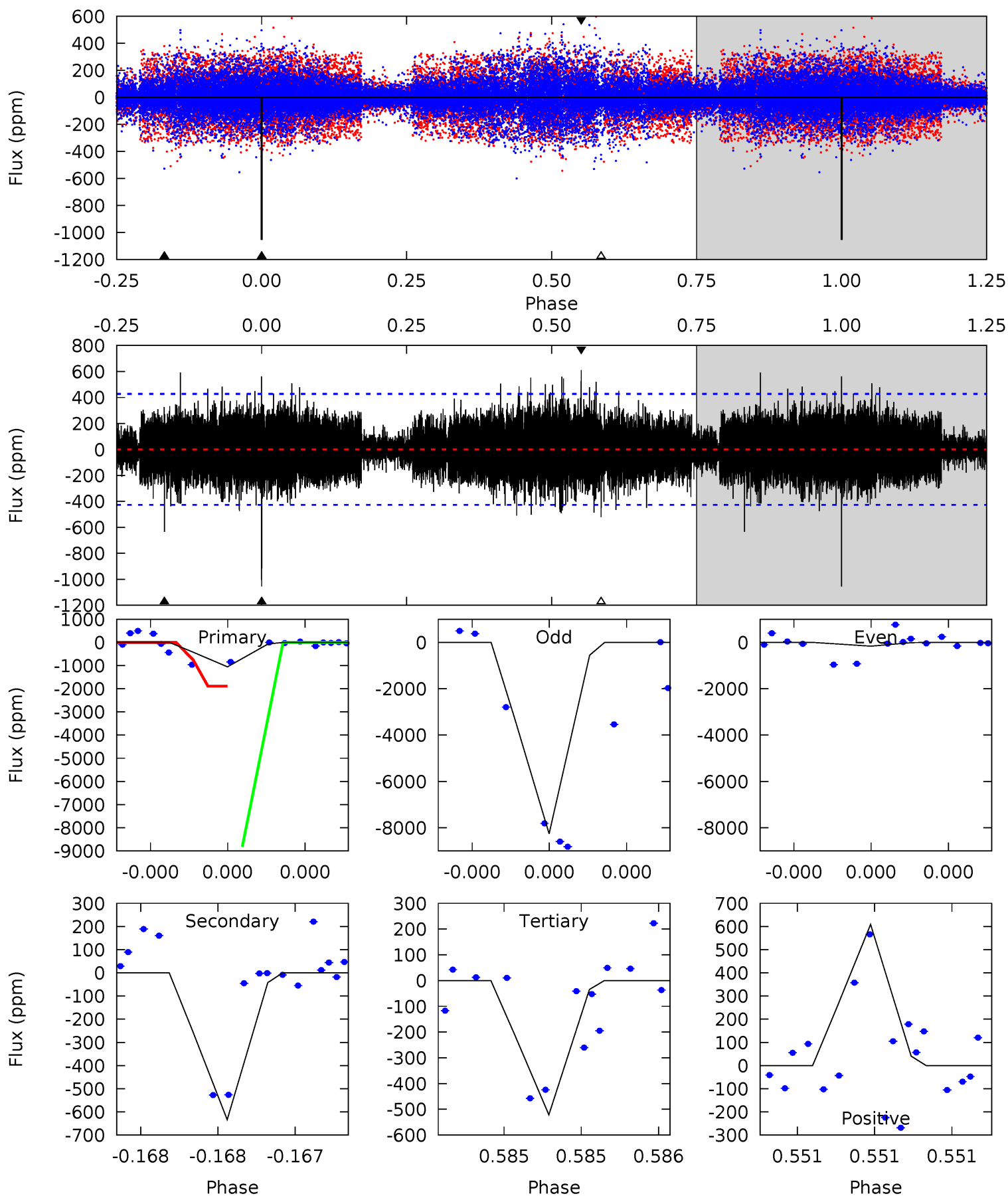
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

006127083-02, P = 347.827409 Days, E = 169.717514 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
14.1	8.44	6.94	8.11	5.68	3.65	1.33	7.11	5.94	1.50	0.33	104.9	0.92	0.37	61.9





### Stellar Parameters For KIC 006127083

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$3683^{+127}_{-114}$	$0.673^{+0.292}_{-0.239}$	$-0.240^{+0.300}_{-0.250}$	$86.150^{+25.854}_{-25.854}$	$1.274^{+0.270}_{-0.270}$	$0.000^{+0.000}_{-0.000}$
	+3%/-3%	+43%/-36%	+125%/-104%	+30%/-30%	+21%/-21%	+190%/-50%
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 006127083-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$0 \pm 1000000$	$785.19^{+857.00}_{-567.46}$	$2058^{+209}_{-196}$	$2963^{+5015}_{-9788}$	$1.802^{+234.942}_{-140.296}$
Alt.	$-634 \pm 75$	$829.30^{+785.26}_{-584.75}$	$2059^{+180}_{-189}$	$2306^{+1283}_{-4522}$	$0.563^{+5.573}_{-0.421}$

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

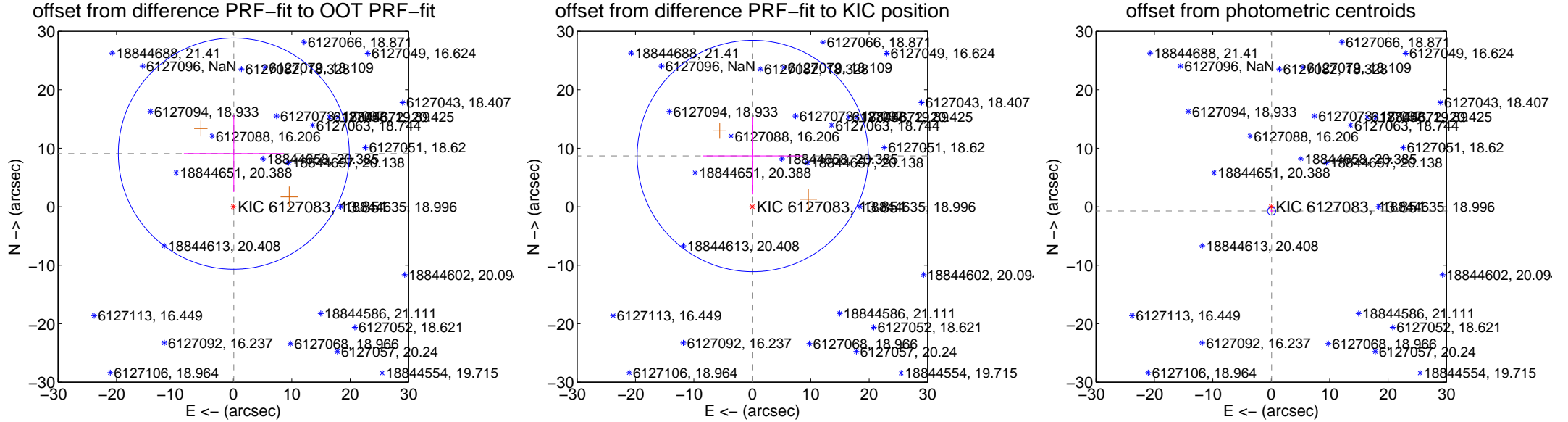
## DV Centroid Data

Supplemental centroid analysis for 006127083-02. Kepler magnitude: 13.85. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.39 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$9.078 \pm 6.588$	1.38	$-0.076 \pm 8.549$	$9.078 \pm 6.588$
PRF-fit source offset from KIC position	$8.682 \pm 6.594$	1.32	$-0.077 \pm 8.570$	$8.682 \pm 6.594$
photometric centroid source offset	$0.74 \pm 0.23$	3.21	$-0.06 \pm 0.22$	$-0.74 \pm 0.23$

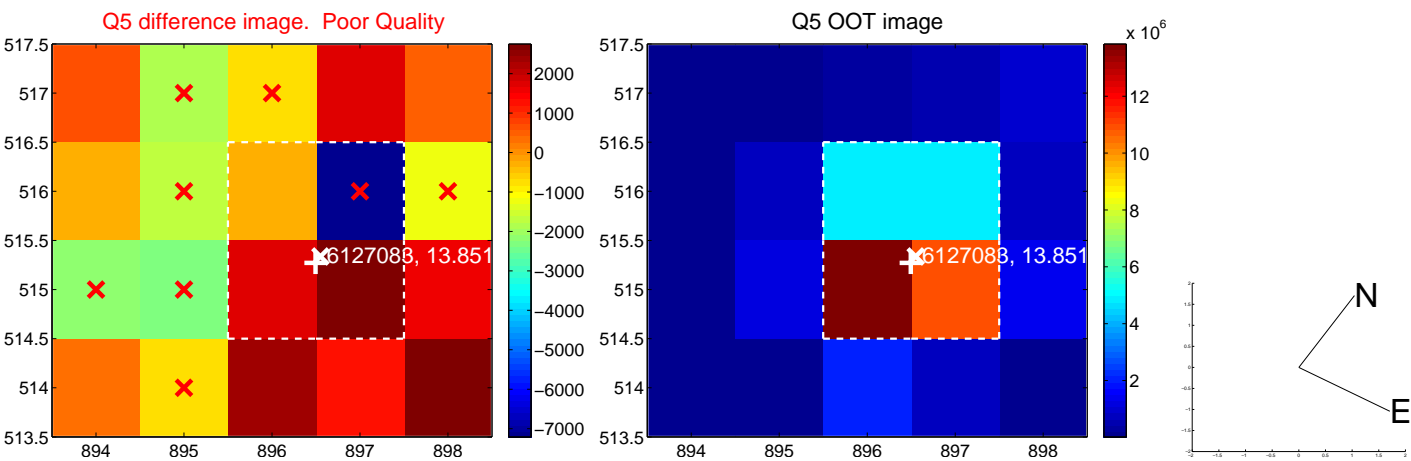


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

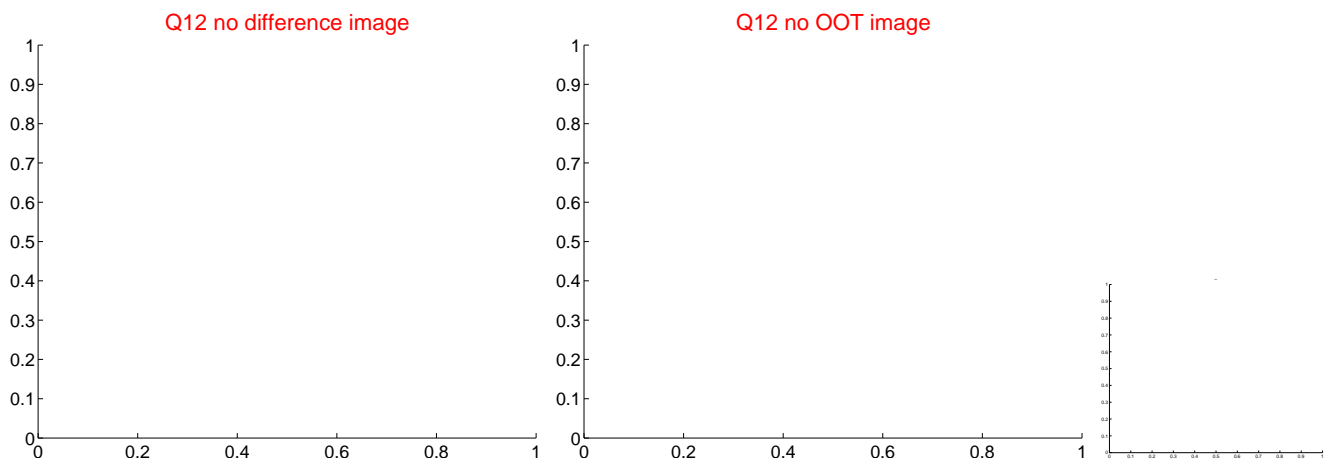
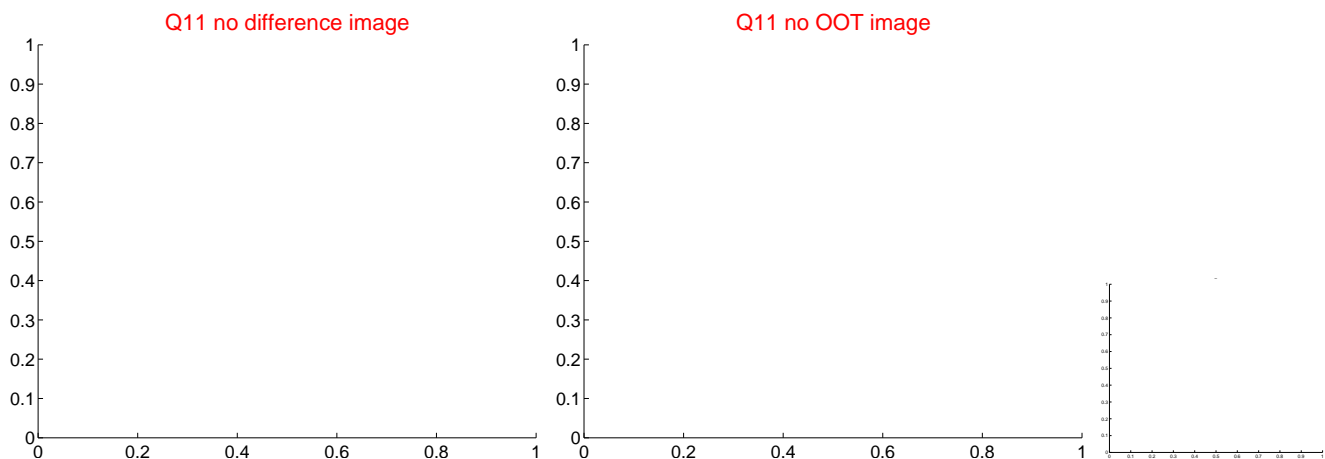
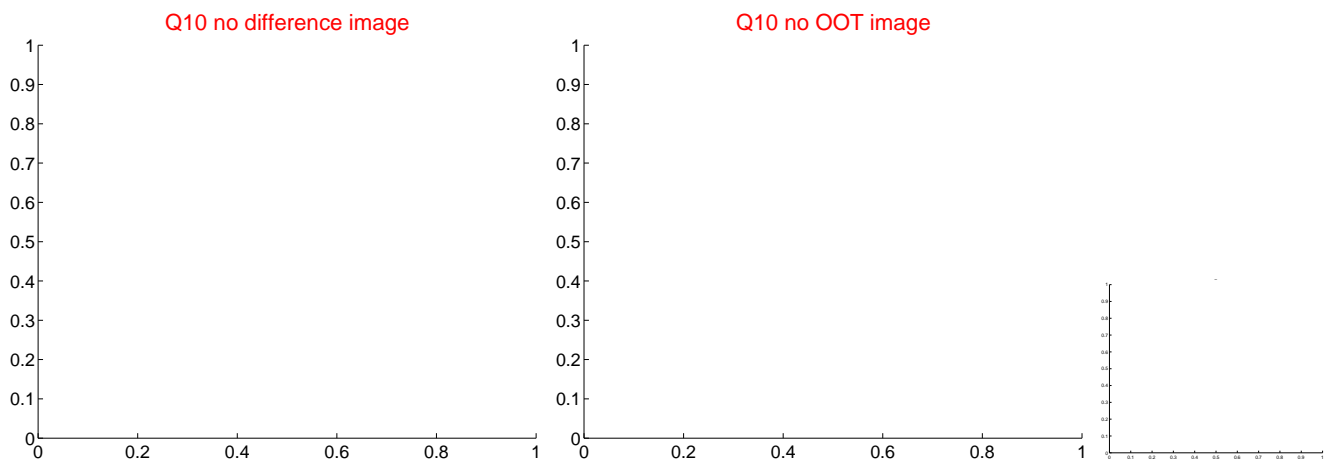
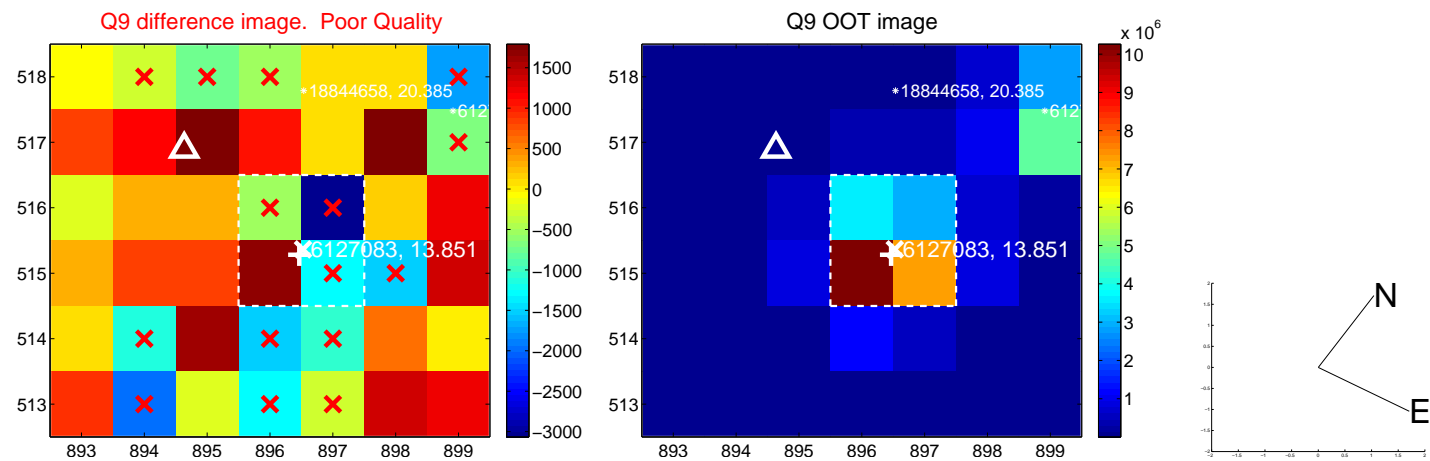
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



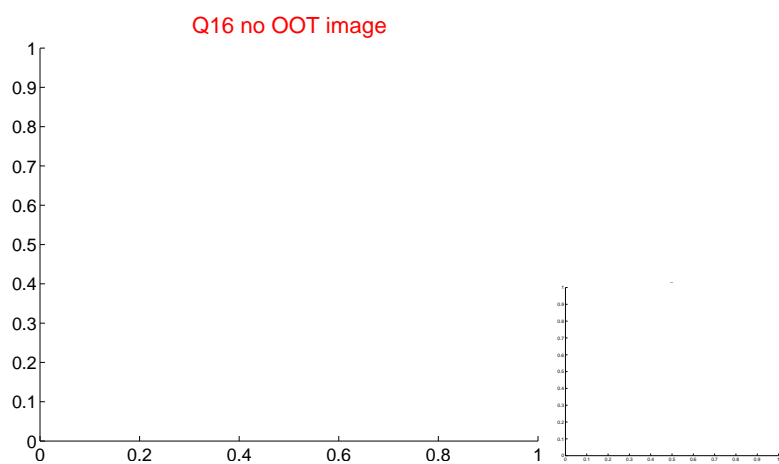
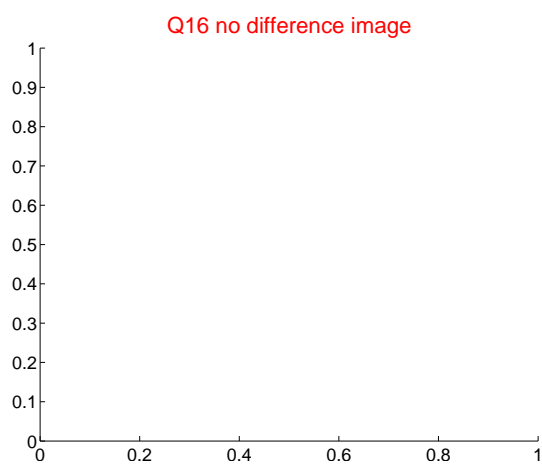
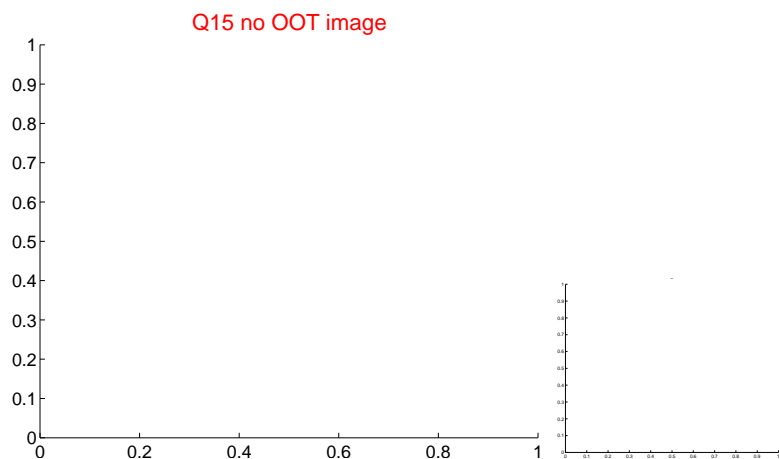
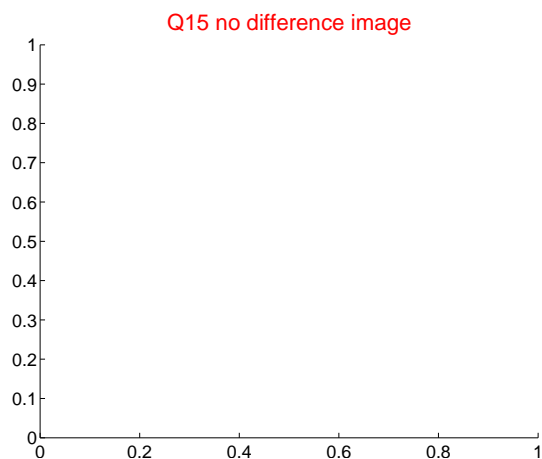
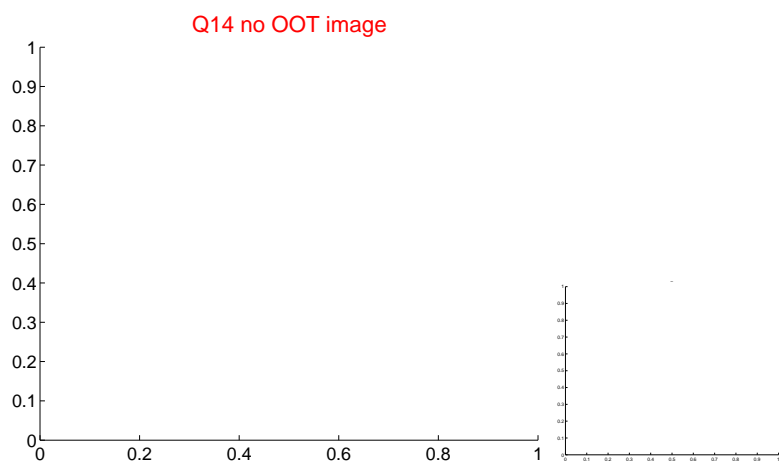
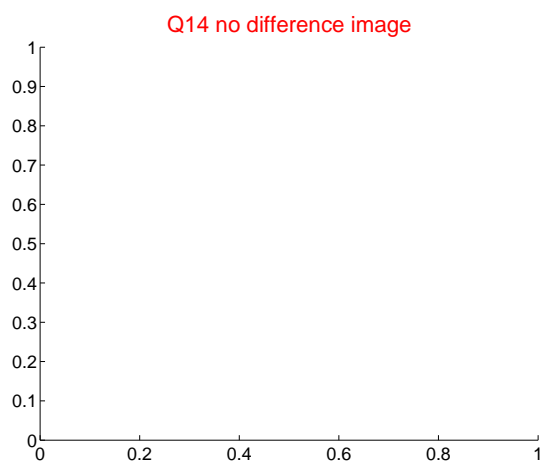
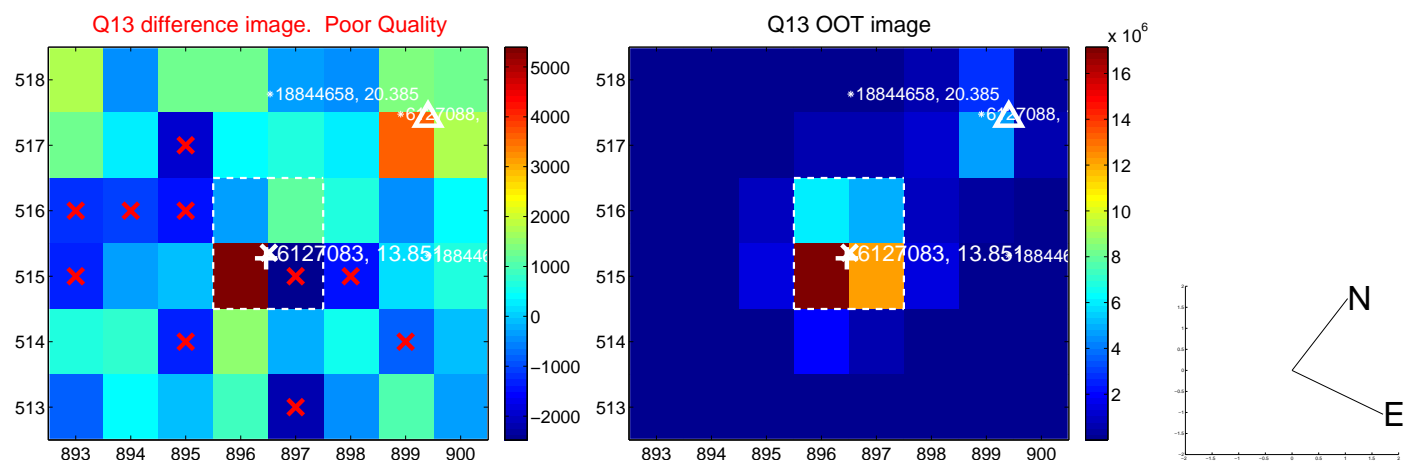
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



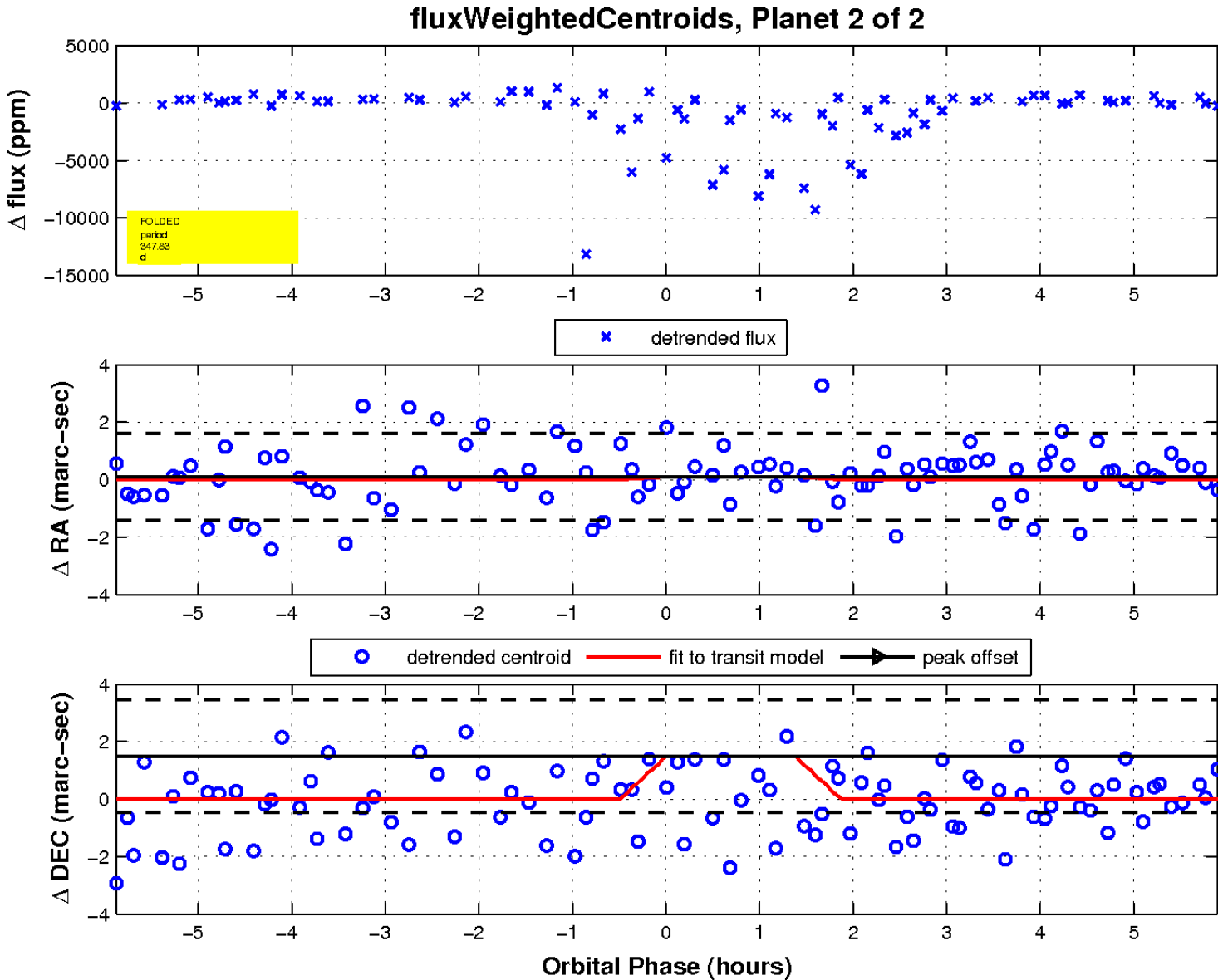
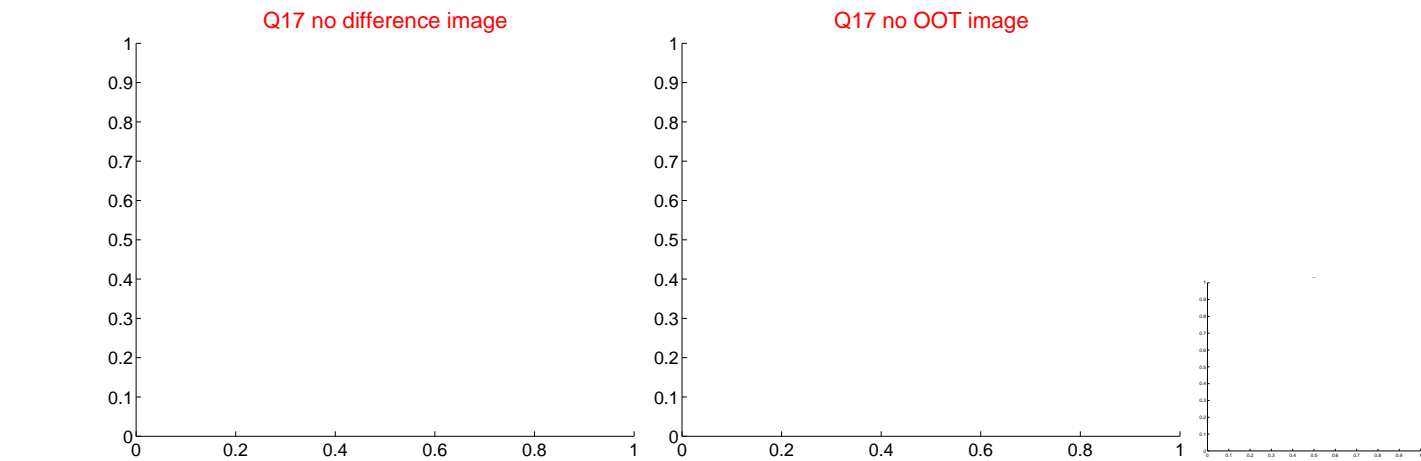
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

