

# KIC 006685533

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006685533-01	OBS	No	273.154536	398.505046	436.0	19.895	9.1	6.5	0.68	5130	1.44	0.53
006685533-02	OBS	No	367.758471	301.326785	1539.0	26.869	9.1	8.9	0.68	5130	4.36	0.35
006685533-03	OBS	No	375.584755	295.082400	1315.7	10.655	8.1	8.0	0.68	5130	2.46	0.34

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006685533-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—CENT_FEW_DIFFS
006685533-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—CENT_FEW_DIFFS
006685533-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—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.

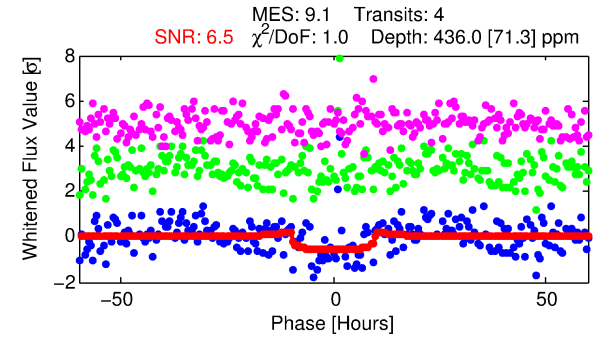
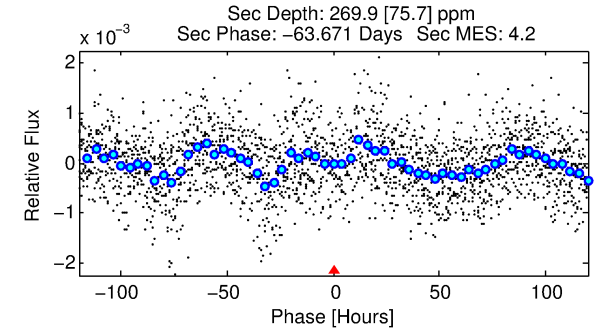
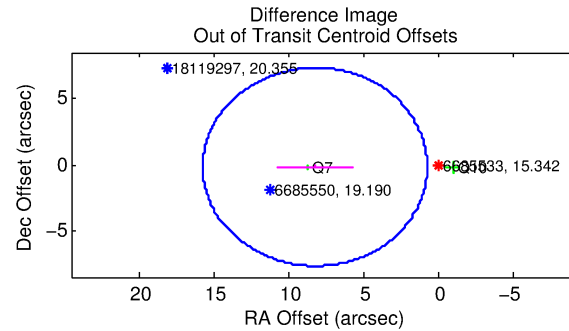
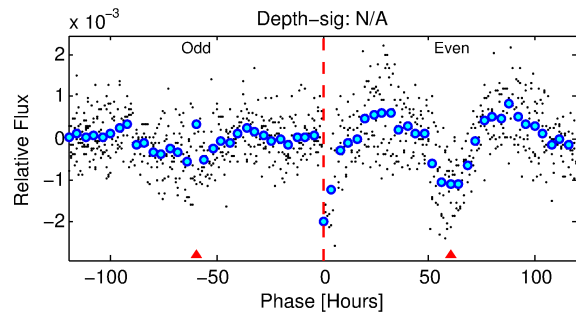
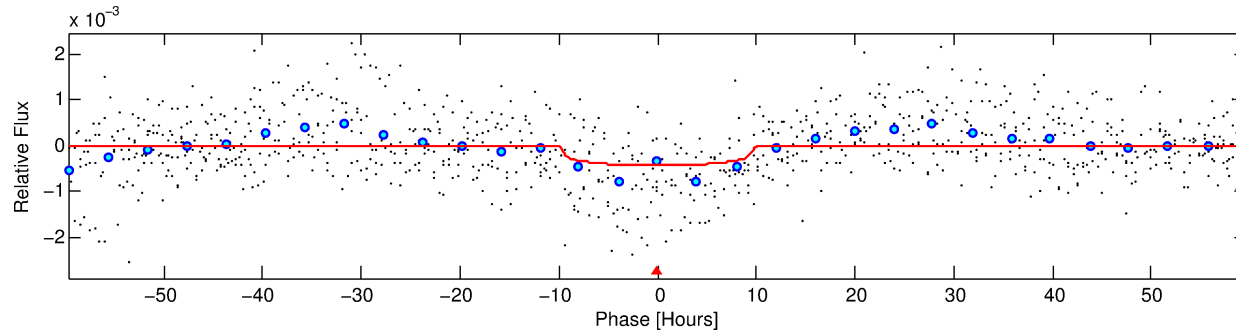
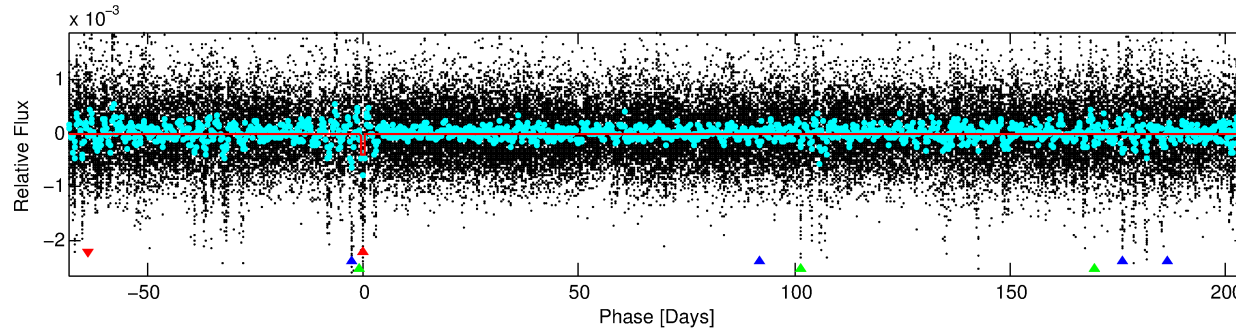
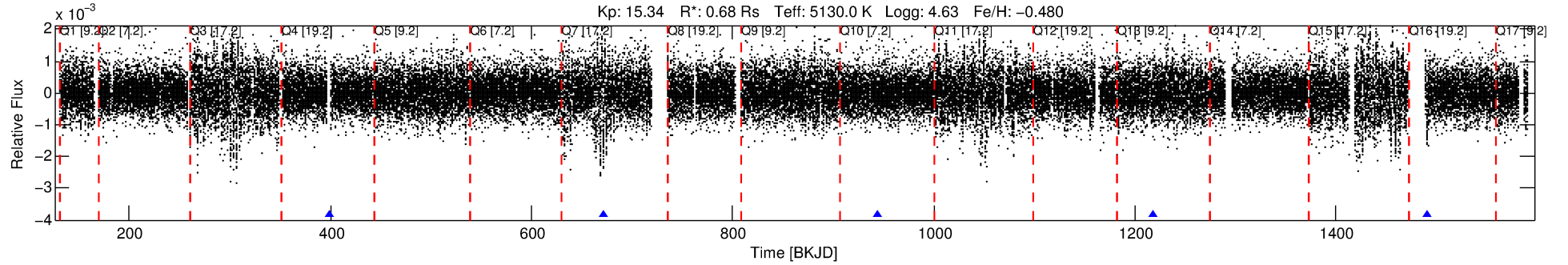
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006685533-01

No Significant Match Found

# DV One-Page Summary

KIC: 6685533 Candidate: 1 of 3 Period: 273.155 d



## DV Fit Results:

Period = 273.15454 [0.01761] d  
Epoch = 398.5050 [0.0486] BKJD  
Rp/R\* = 0.0196 [0.0168]  
a/R\* = 90.35 [294.12]  
b = 0.55 [4.24]  
Seff = 0.53 [0.09]  
Teq = 217 [9] K  
Rp = 1.44 [1.25] Re  
a = 0.7344 [0.0671] AU  
Ag = 38448.69 [66921.18] [0.57σ]  
Teffp = 4701 [2045] K [2.19σ]

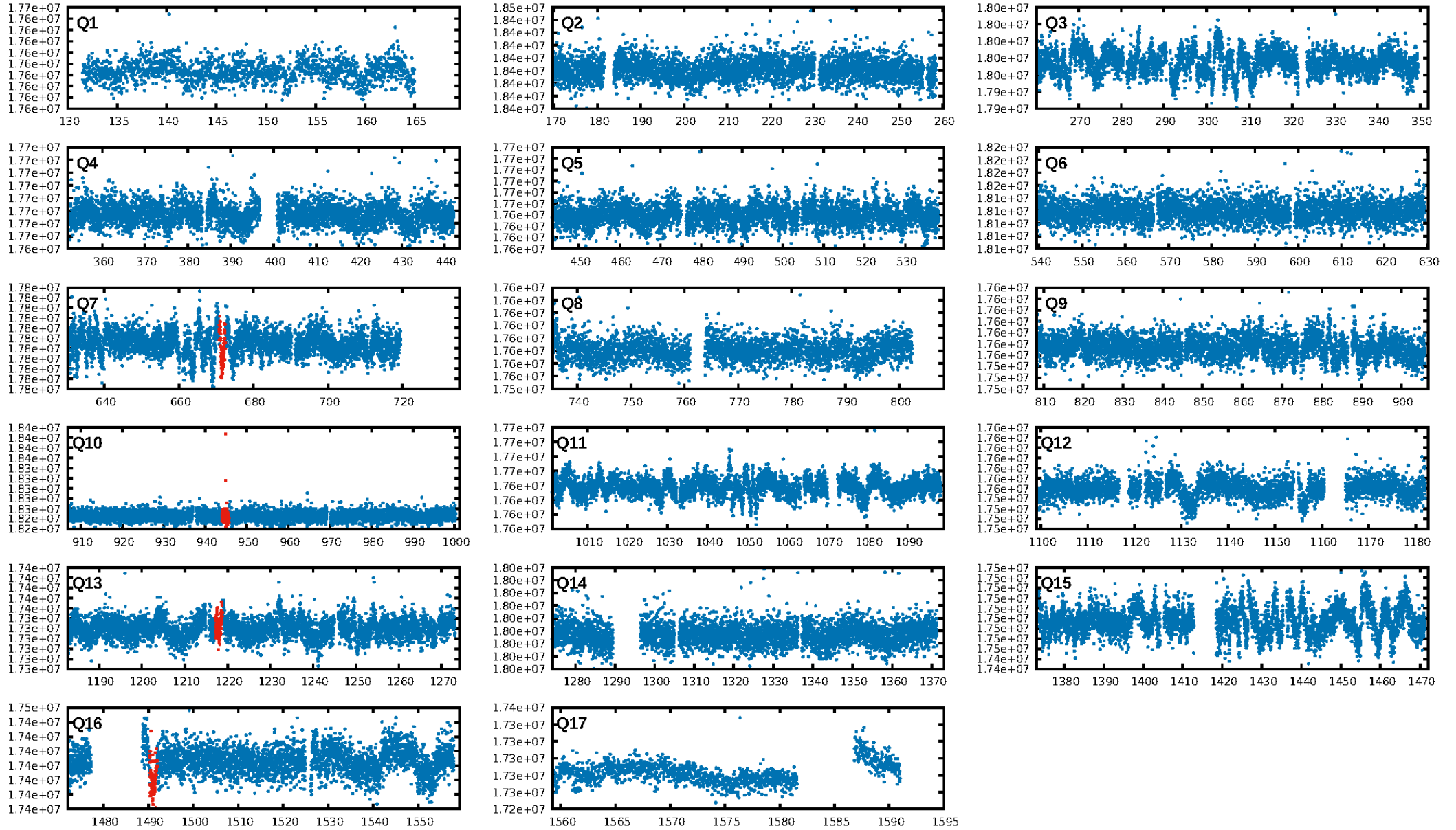
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [67.91σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 99.4%  
Bootstrap-pfa: 1.97e-11  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -2.374  
Centroid-sig: 95.8%  
Centroid-so: 0.381 arcsec [0.17σ]  
OotOffset-rm: 8.196 arcsec [3.28σ]  
KicOffset-rm: 8.069 arcsec [3.24σ]  
OotOffset-st: 1/1/0/0 [2]  
KicOffset-st: 1/1/0/0 [2]  
DiffImageQuality-fgm: 0.00 [0/2]  
DiffImageOverlap-fno: 0.67 [2/3]

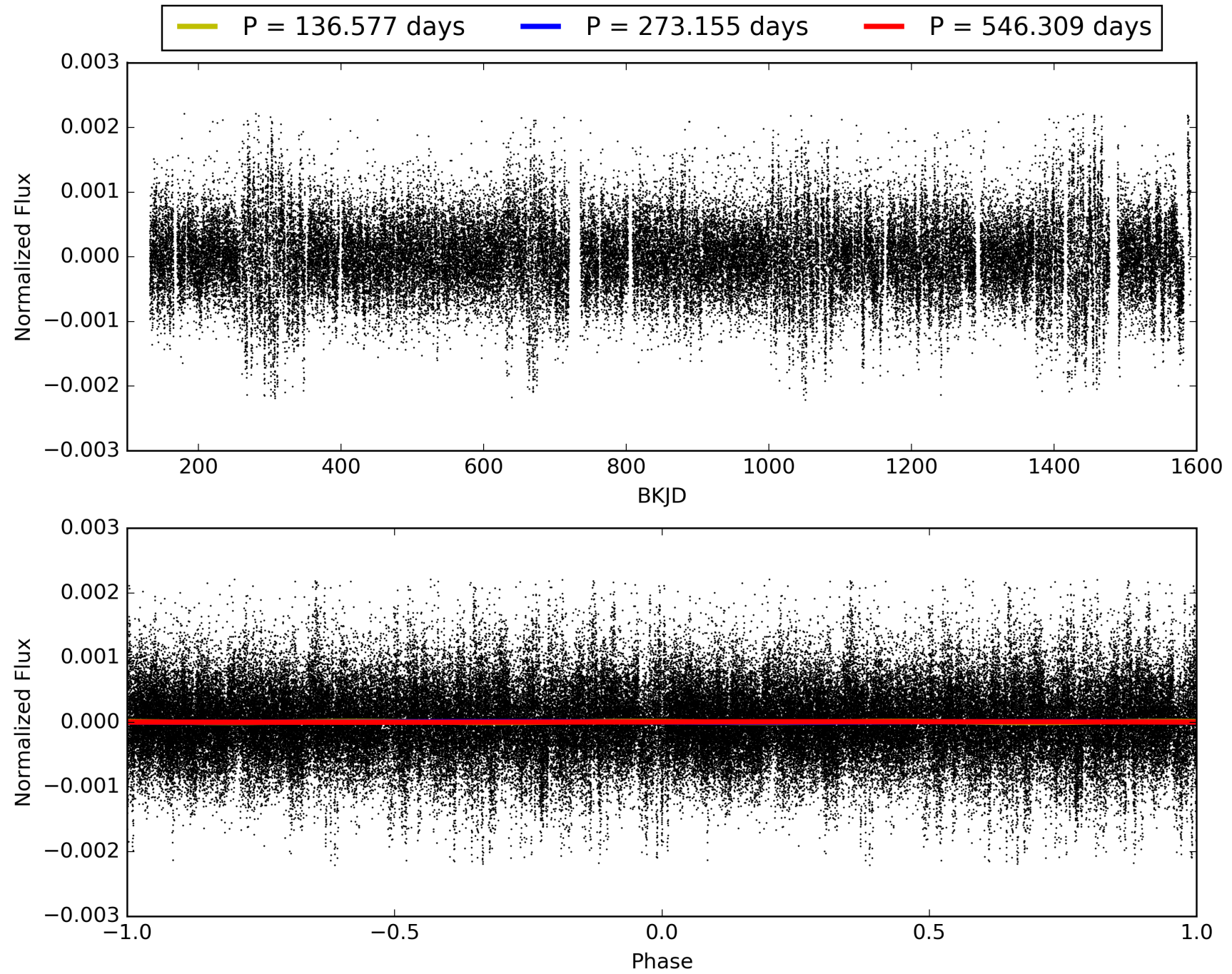
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:29:07 Z

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

# TCE 006685533-01, PDC Light Curves

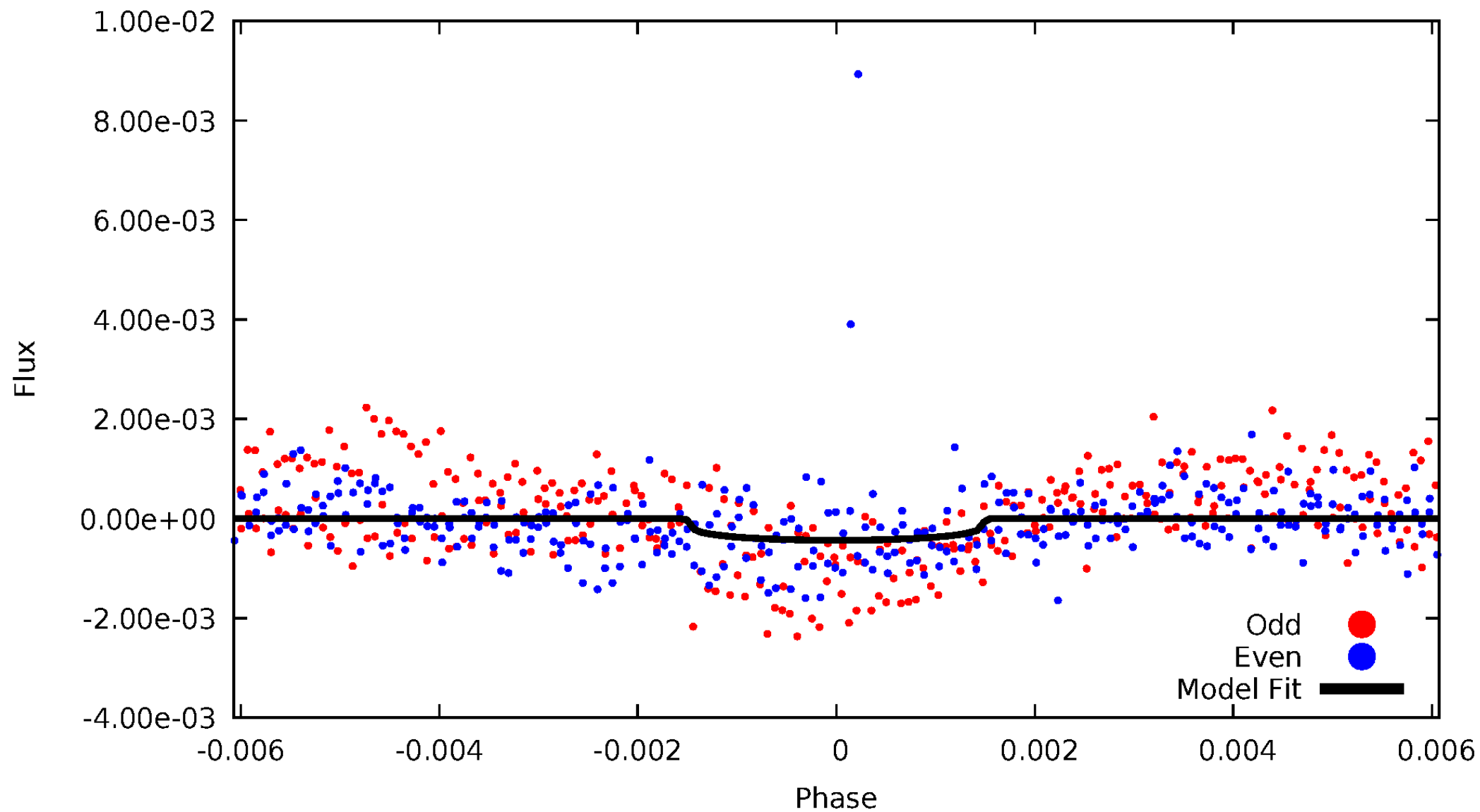


TCE 006685533-01



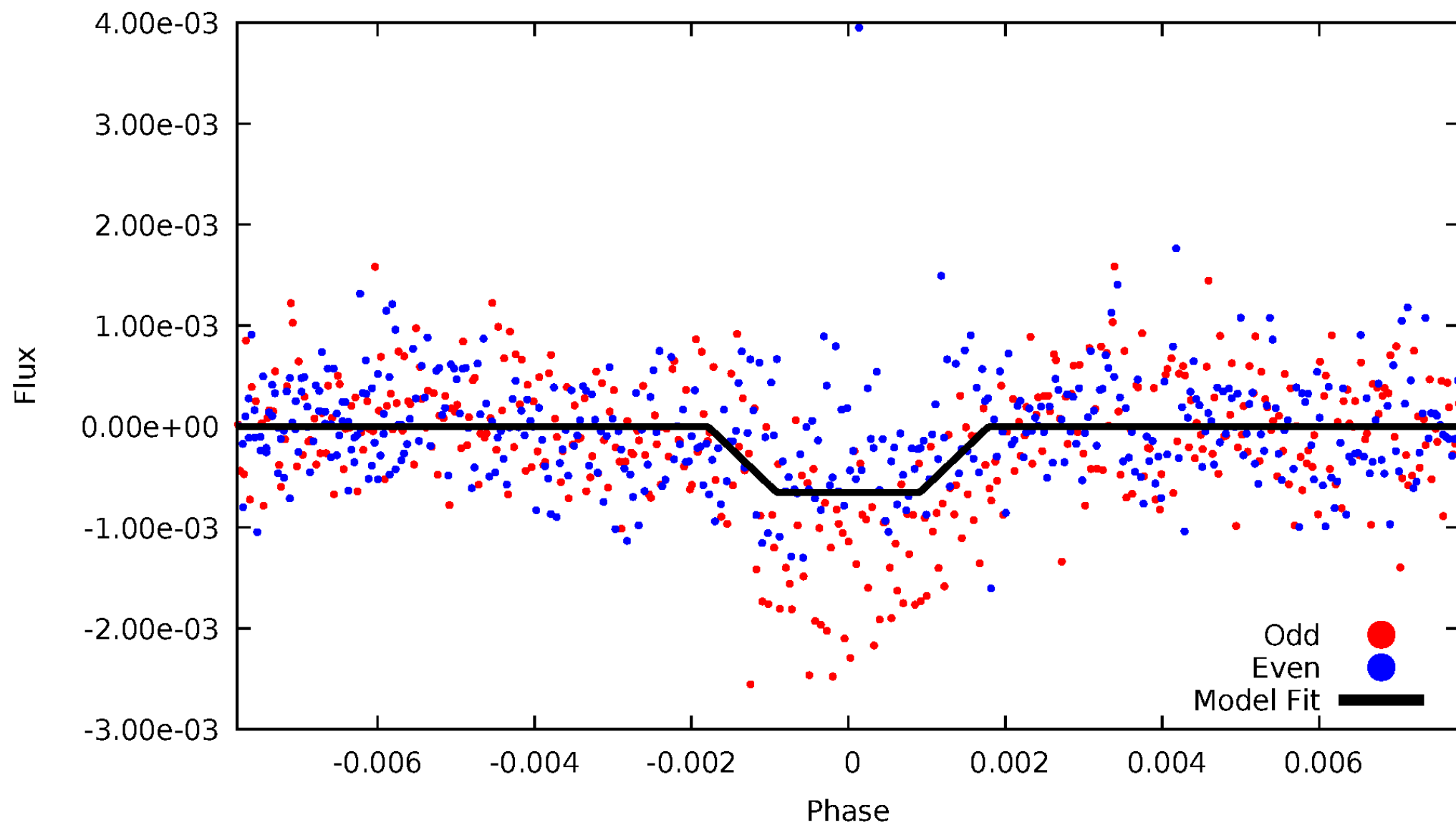
# DV Odd/Even

TCE 006685533-01



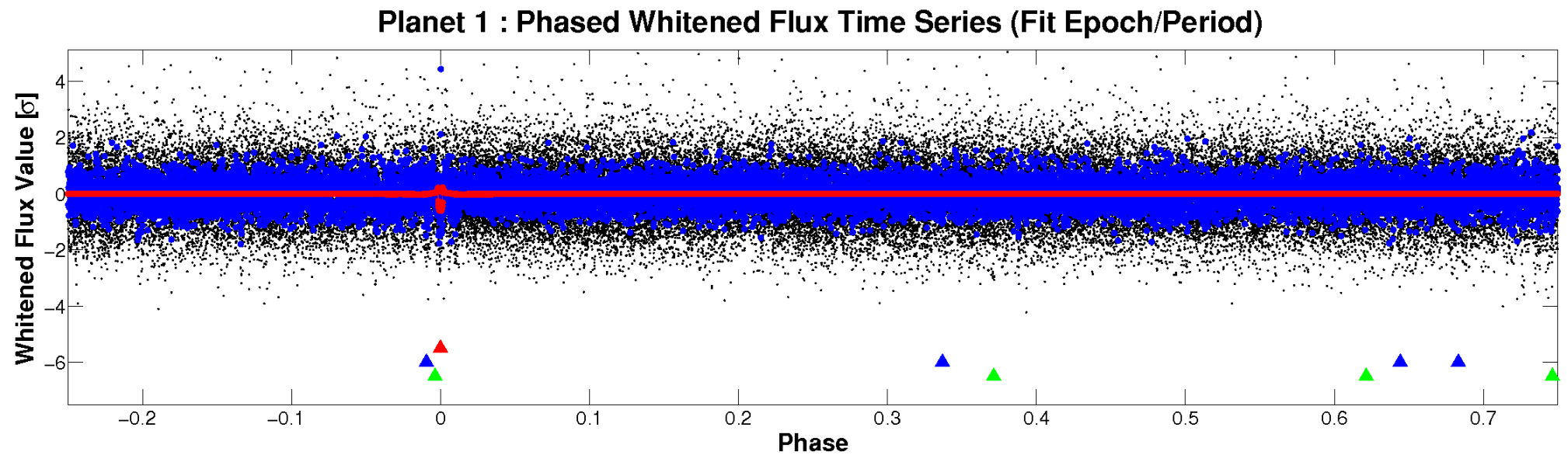
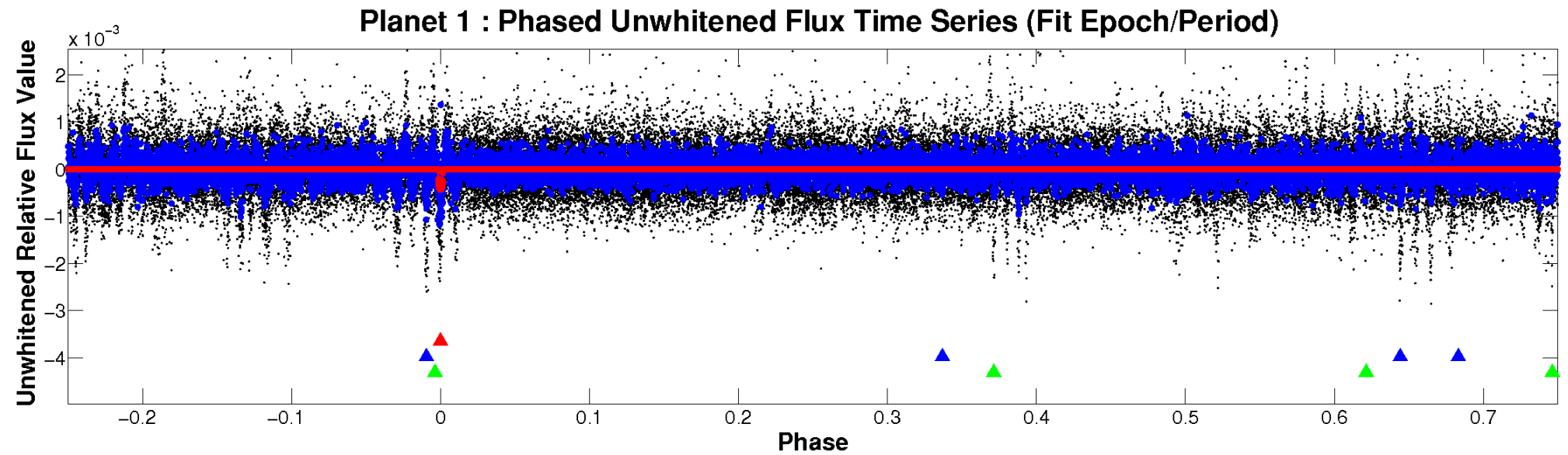
# ALT Odd/Even

TCE 006685533-01



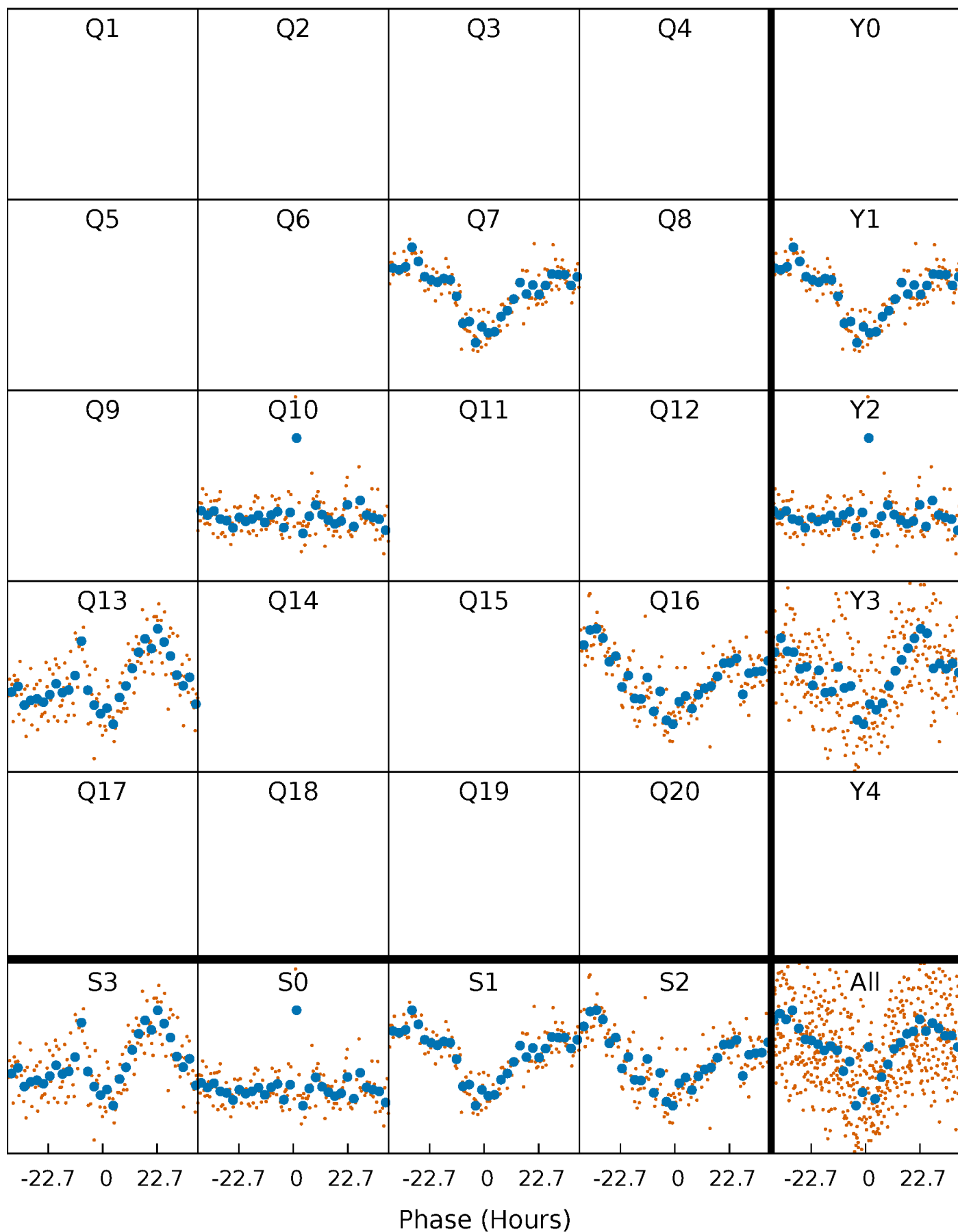


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

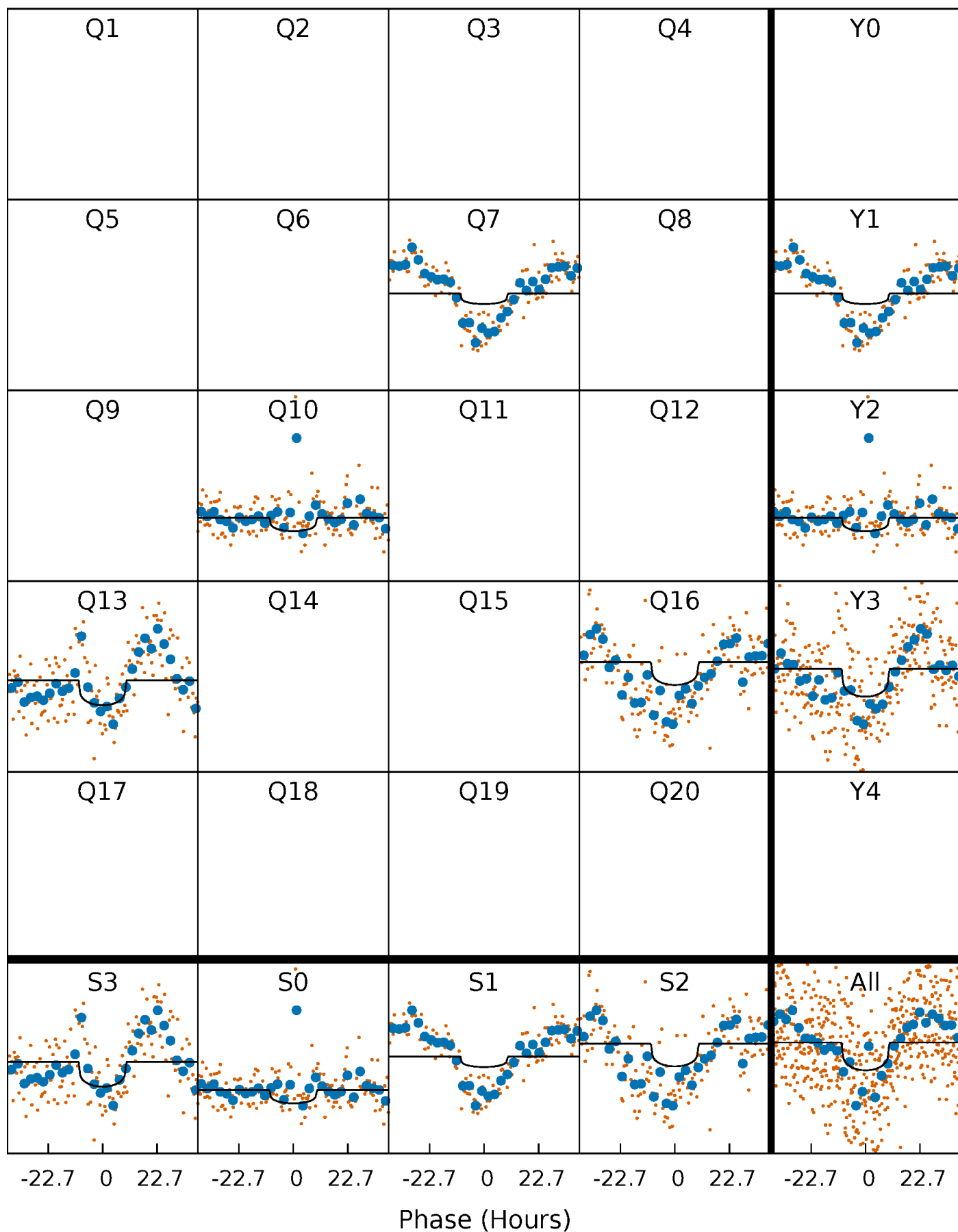
TCE 006685533-01 P=273.154536 Days  $T_0=398.505046$  (BKJD)





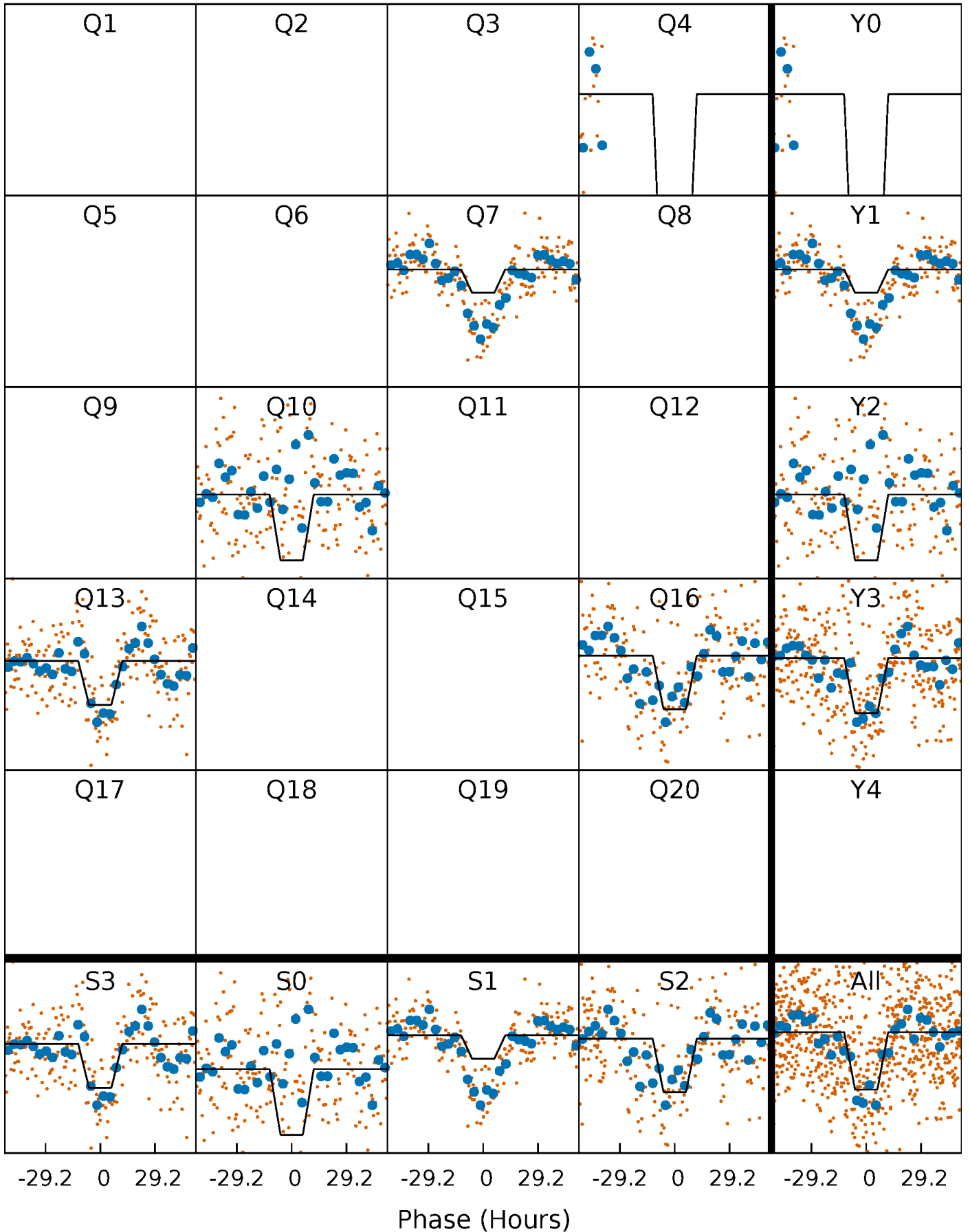
# DV Quarter-Phased Transit Curves

TCE 006685533-01 P=273.154536 Days  $T_0=398.505046$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

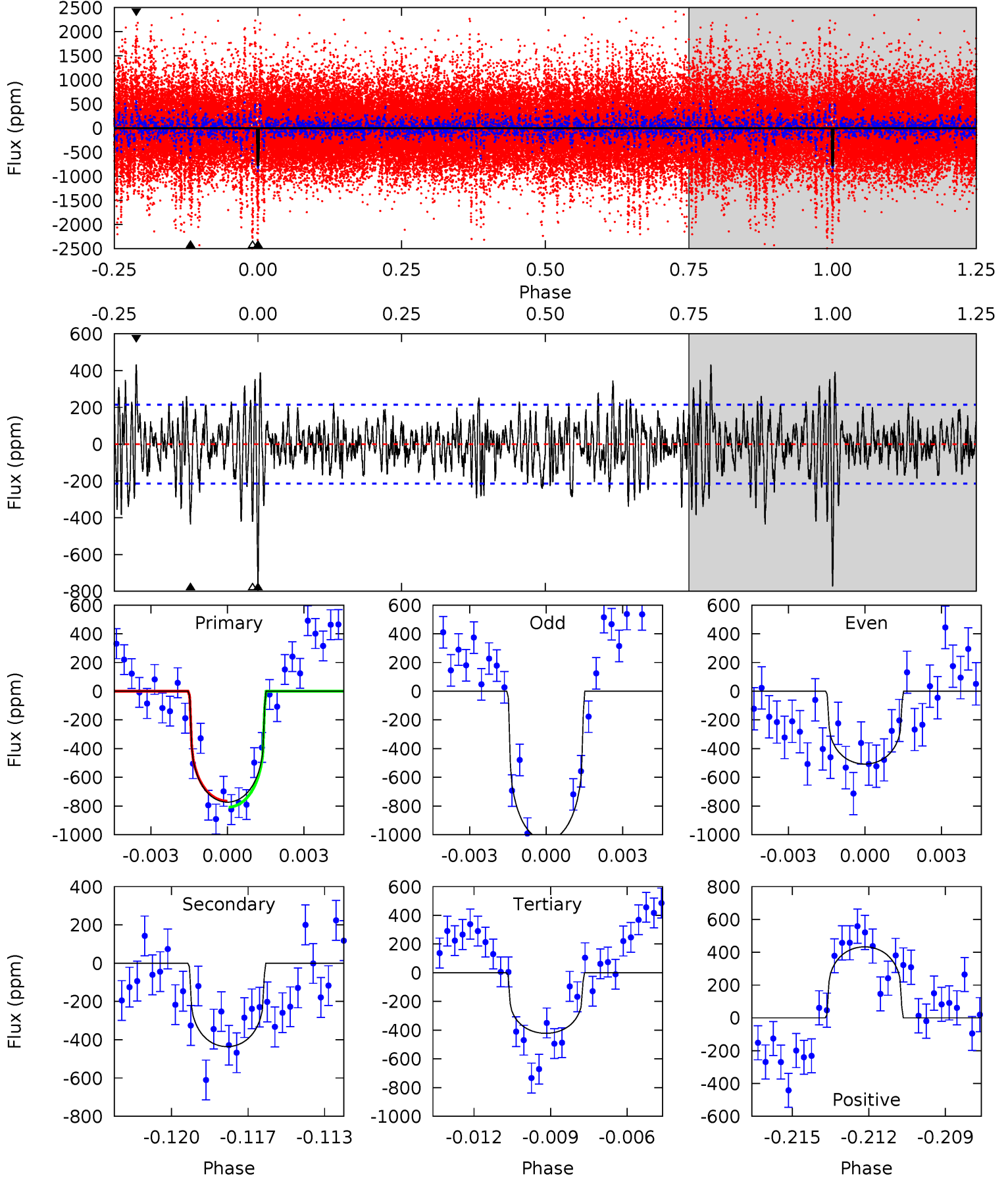
TCE 006685533-01 P=273.210320 Days  $T_0=398.395245$  (BKJD)



# DV Model-Shift Uniqueness Test

006685533-01,  $P = 273.154536$  Days,  $E = 125.350510$  Days

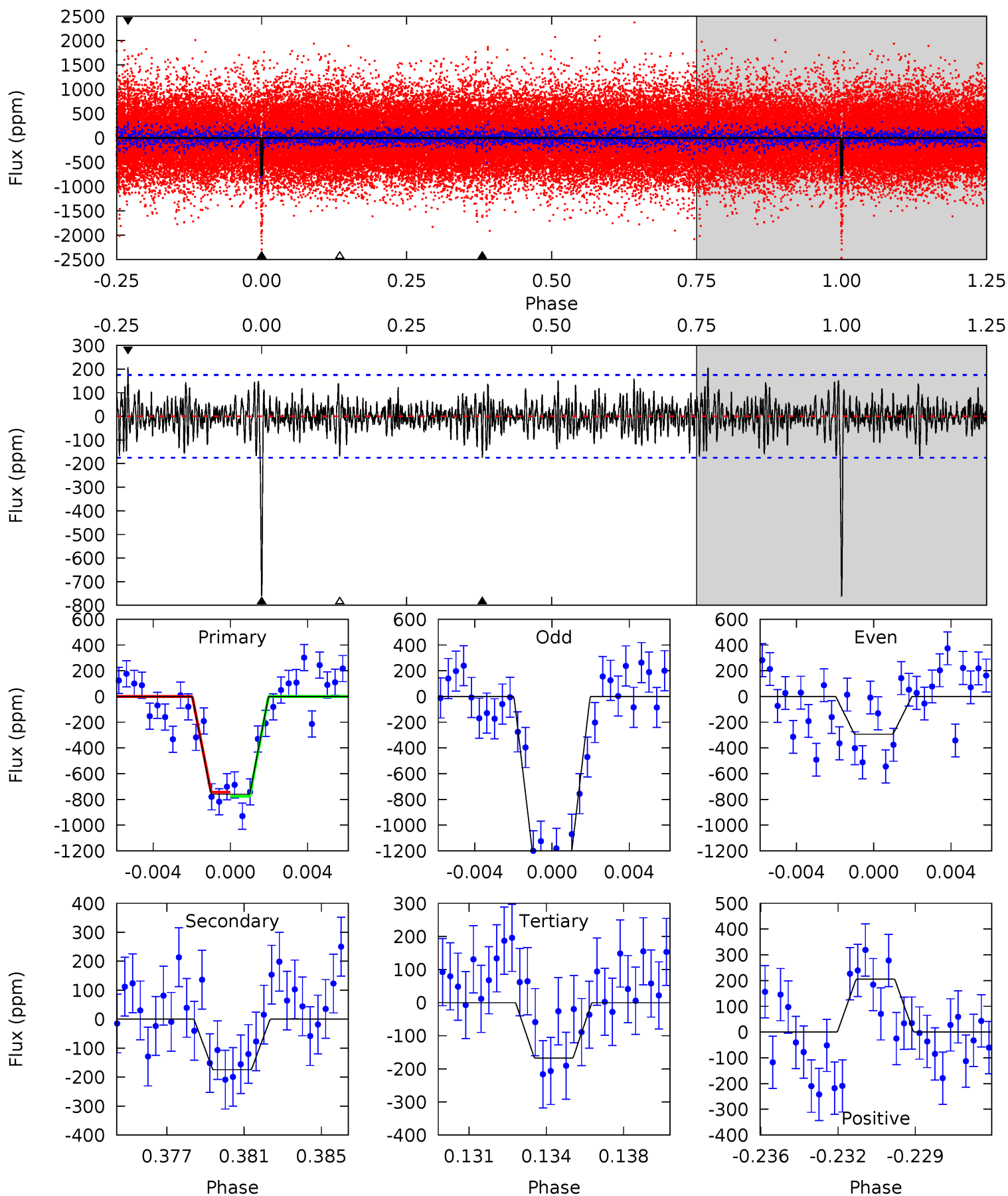
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.9	10.7	10.3	10.6	5.25	2.96	2.74	8.59	8.32	0.35	0.08	6.53	0.97	0.36	0.52



# Alt Model-Shift Uniqueness Test

006685533-01, P = 273.210320 Days, E = 125.184925 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
22.7	5.20	4.99	6.12	5.22	2.91	1.44	17.7	16.5	0.21	-0.92	14.0	1.13	0.21	0.49



### Stellar Parameters For KIC 006685533

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5130^{+154}_{-138}$	$4.628^{+0.040}_{-0.060}$	$-0.480^{+0.300}_{-0.300}$	$0.676^{+0.080}_{-0.053}$	$0.709^{+0.083}_{-0.055}$	$3.228^{+0.613}_{-0.740}$
	+3%/-3%	+1%/-1%	+62%/-62%	+12%/-8%	+12%/-8%	+19%/-23%
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 006685533-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-436 \pm 41$	$1.63^{+1.04}_{-0.98}$	$305^{+11}_{-10}$	$5061^{+3129}_{-924}$	$50172^{+259841}_{-32177}$
Alt.	$-174 \pm 34$	$1.96^{+1.32}_{-0.97}$	$305^{+13}_{-10}$	$3919^{+1263}_{-618}$	$12832^{+40166}_{-8119}$

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

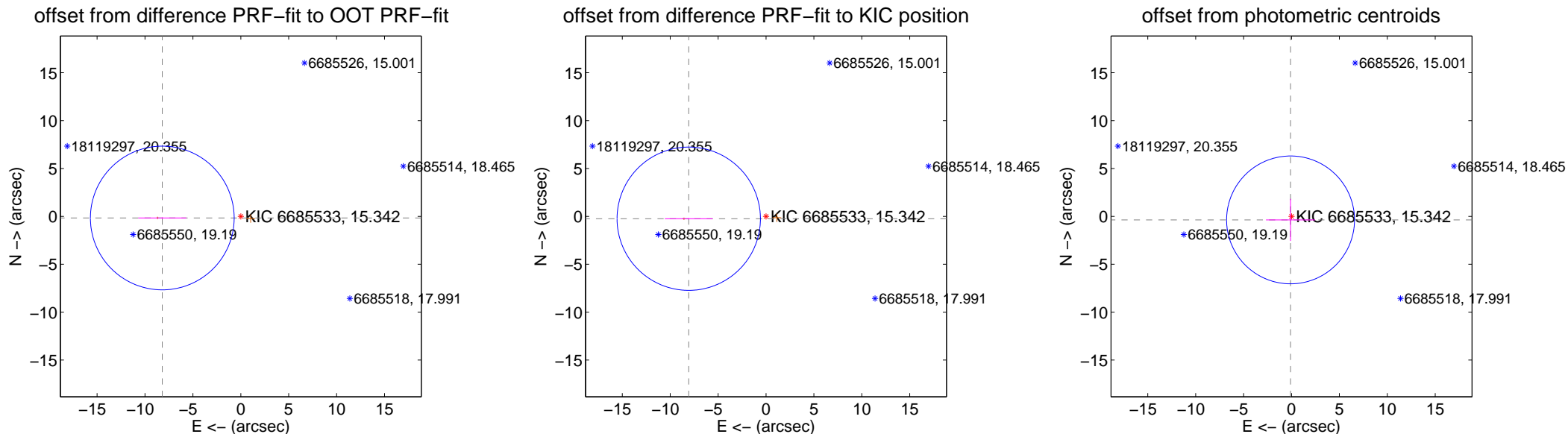
## DV Centroid Data

Supplemental centroid analysis for 006685533-01. Kepler magnitude: 15.34. Transit SNR 6.48

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$8.196 \pm 2.501$	3.28	$8.195 \pm 2.501$	$-0.169 \pm 0.070$
PRF-fit source offset from KIC position	$8.069 \pm 2.493$	3.24	$8.065 \pm 2.495$	$-0.245 \pm 0.075$
photometric centroid source offset	$0.38 \pm 2.22$	0.17	$0.10 \pm 2.56$	$-0.37 \pm 2.20$



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.

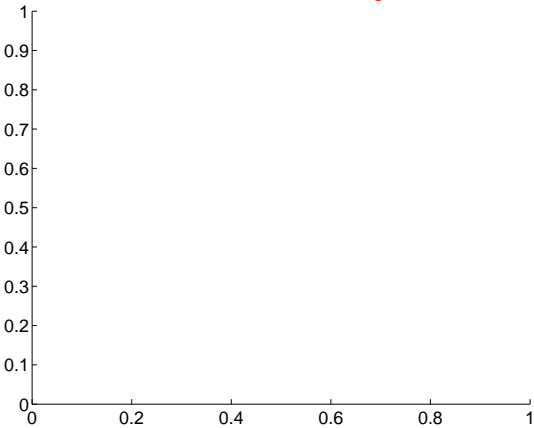
Q5 no difference image



Q5 no OOT image



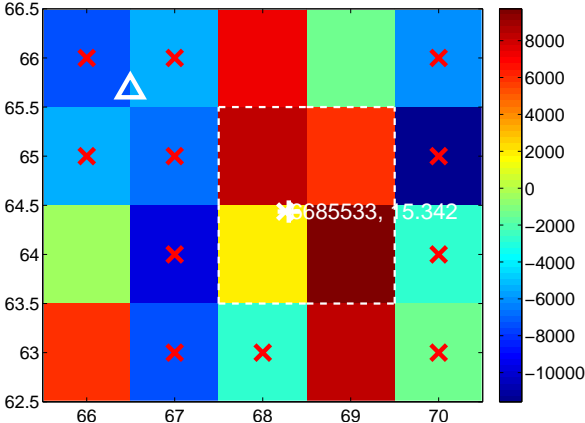
Q6 no difference image



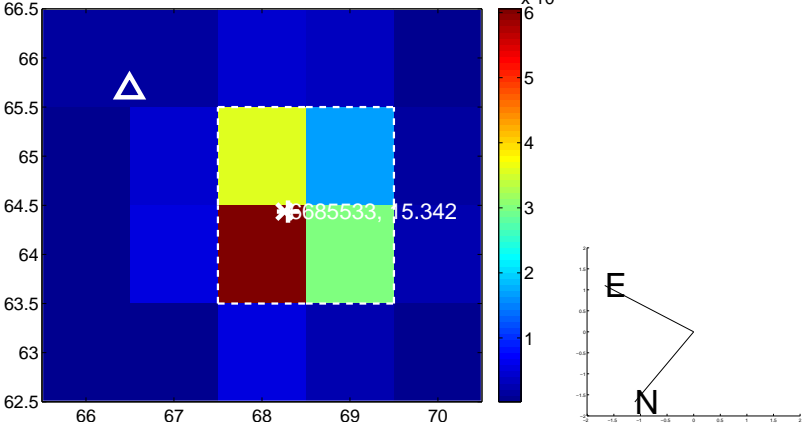
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



Q8 no difference image



Q8 no OOT image



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

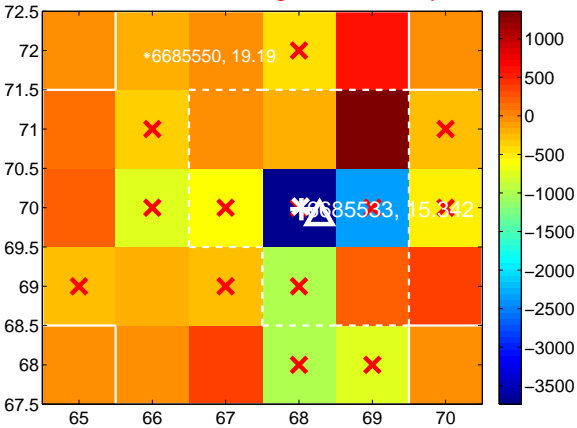
Q9 no difference image



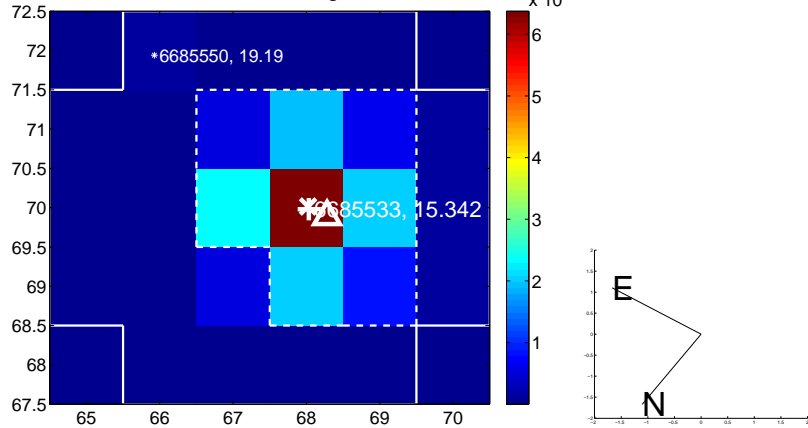
Q9 no OOT image



Q10 difference image. Poor Quality



Q10 OOT image



Q11 no difference image



Q11 no OOT image



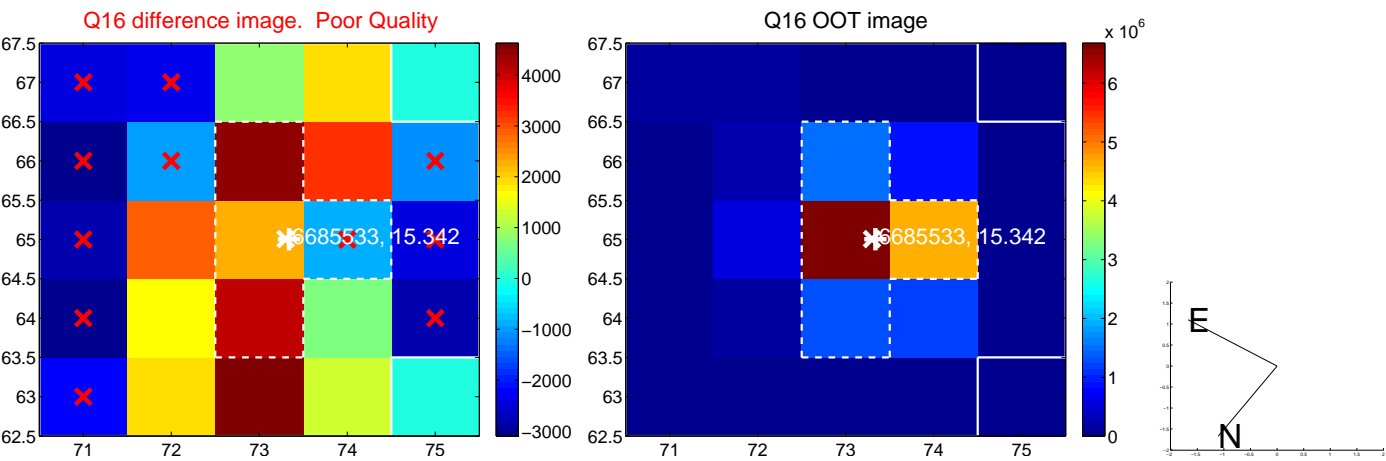
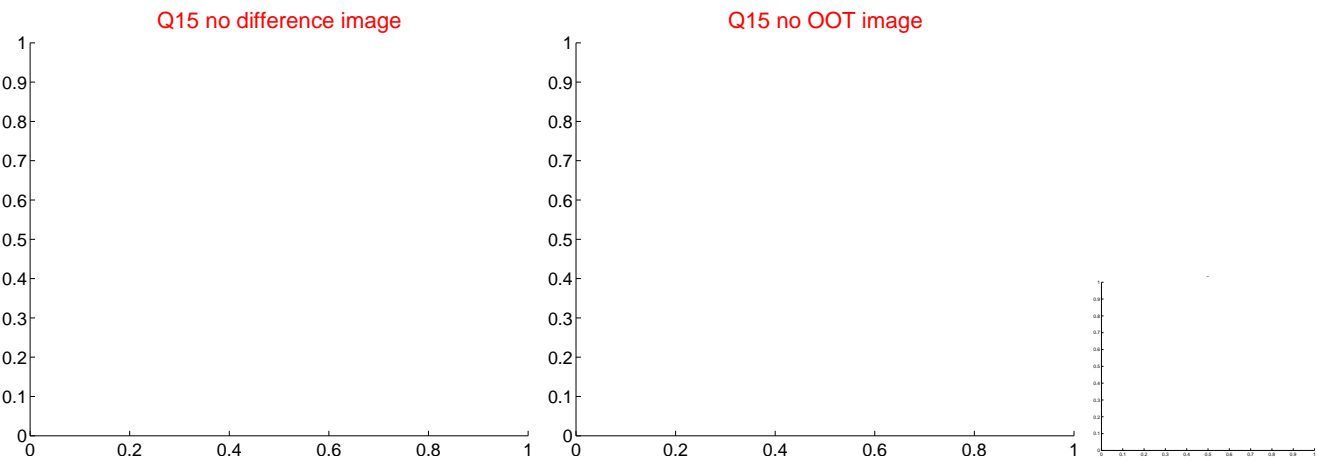
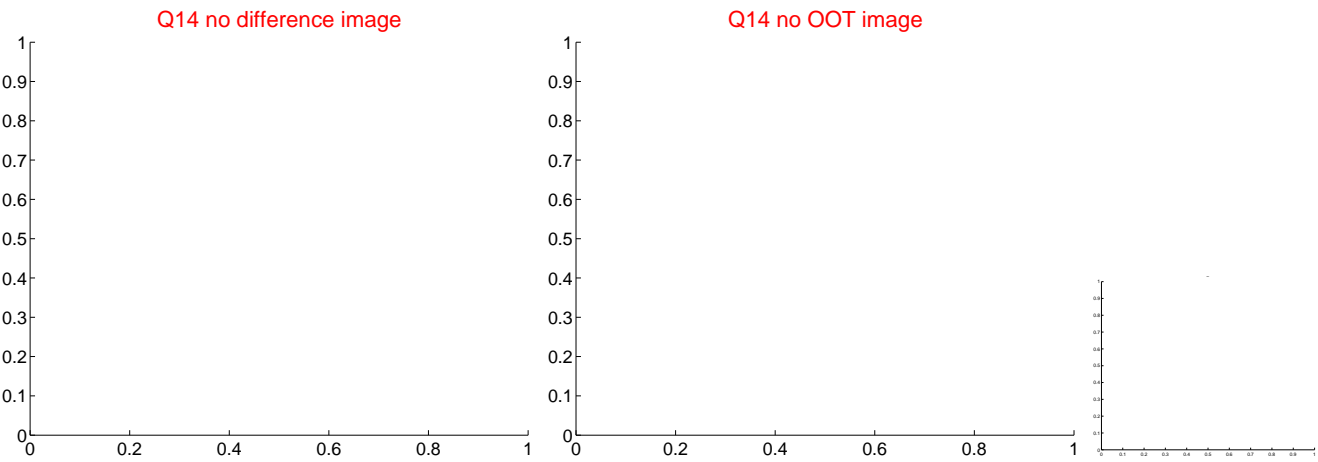
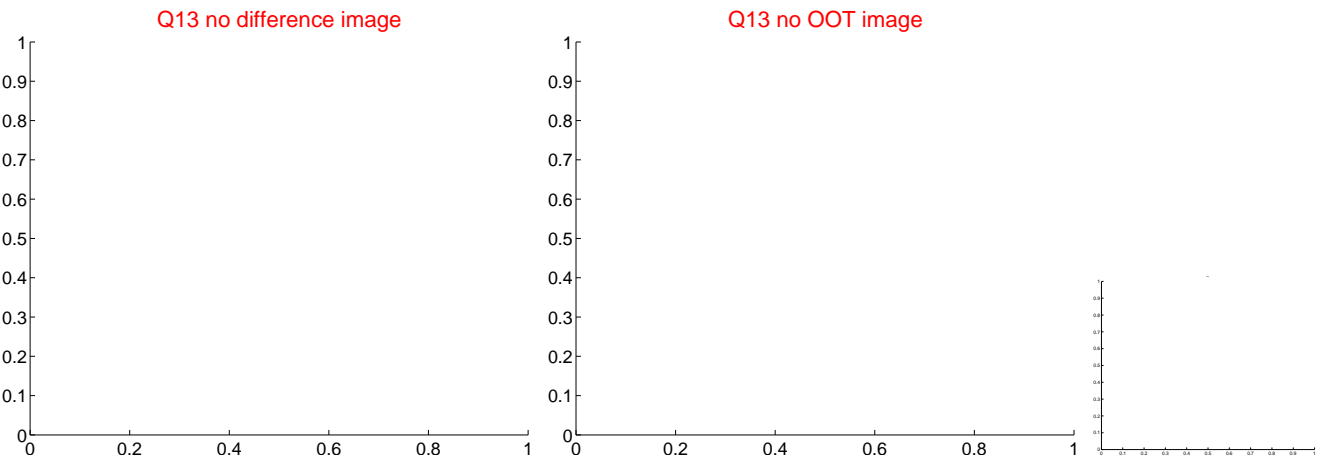
Q12 no difference image



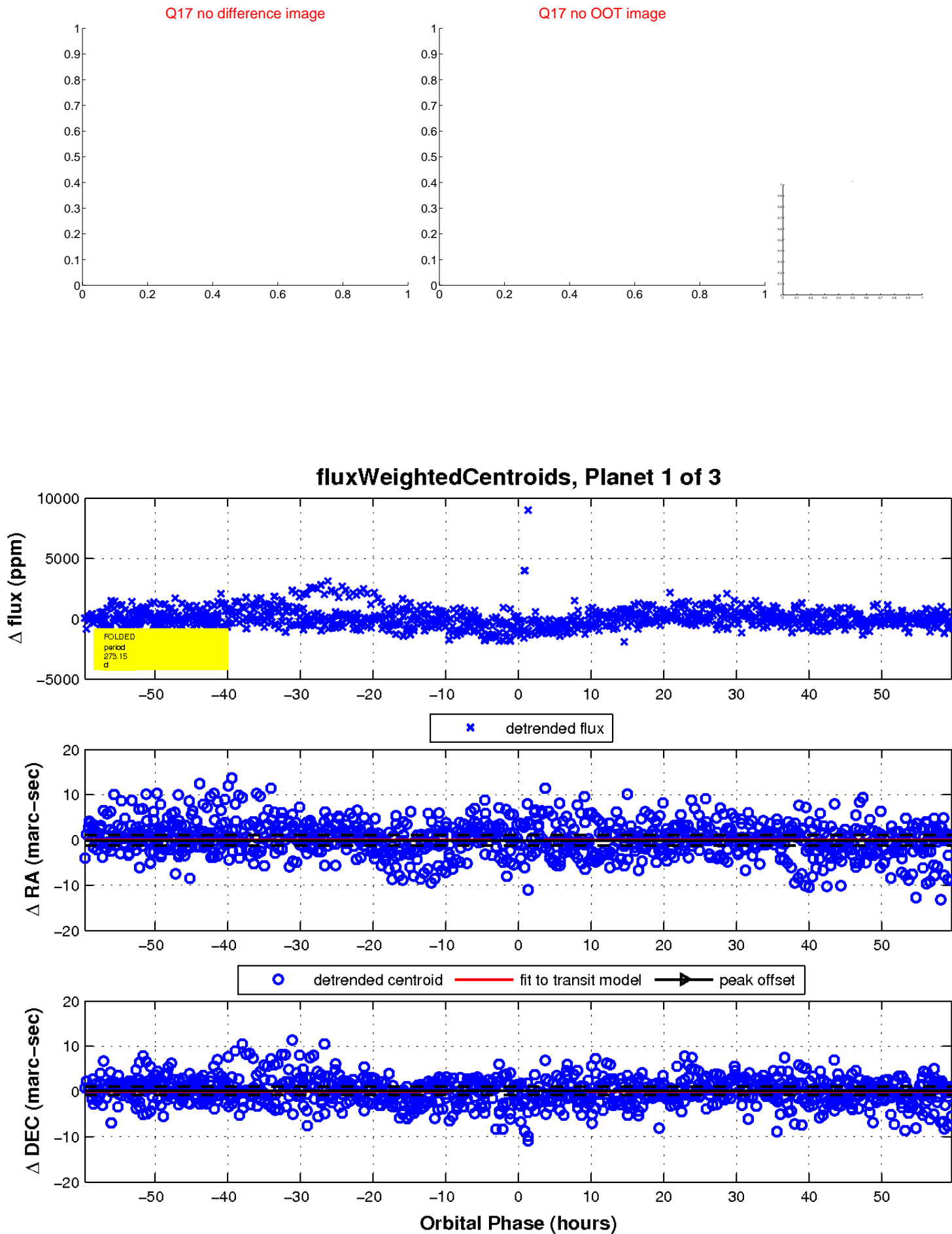
Q12 no OOT image



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

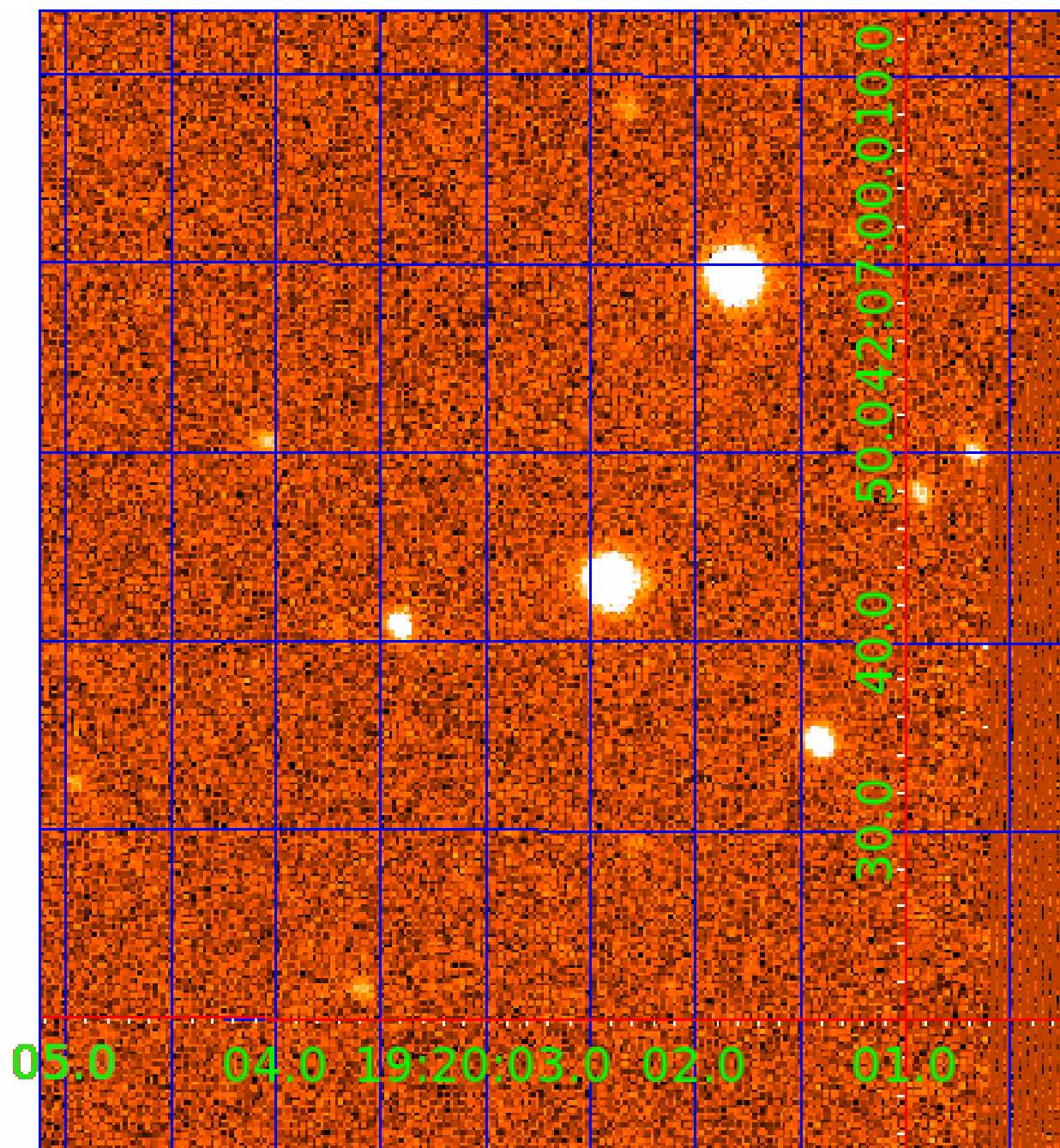


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination





# KIC 006685533

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006685533-01	OBS	No	273.154536	398.505046	436.0	19.895	9.1	6.5	0.68	5130	1.44	0.53
006685533-02	OBS	No	367.758471	301.326785	1539.0	26.869	9.1	8.9	0.68	5130	4.36	0.35
006685533-03	OBS	No	375.584755	295.082400	1315.7	10.655	8.1	8.0	0.68	5130	2.46	0.34

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006685533-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—CENT_FEW_DIFFS
006685533-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—CENT_FEW_DIFFS
006685533-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—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.

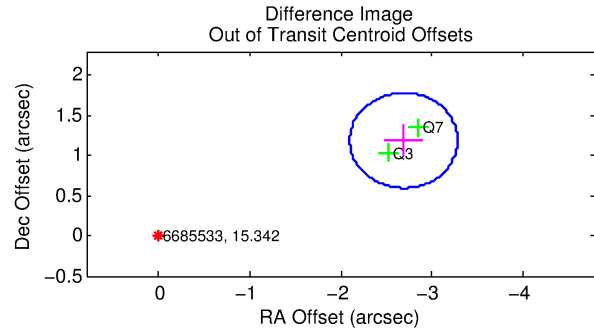
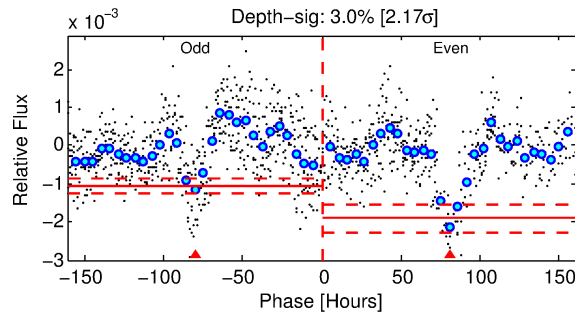
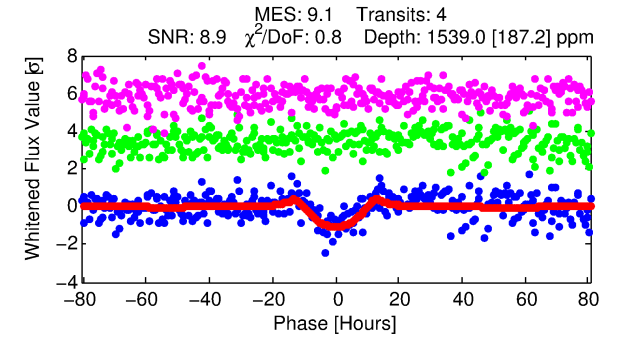
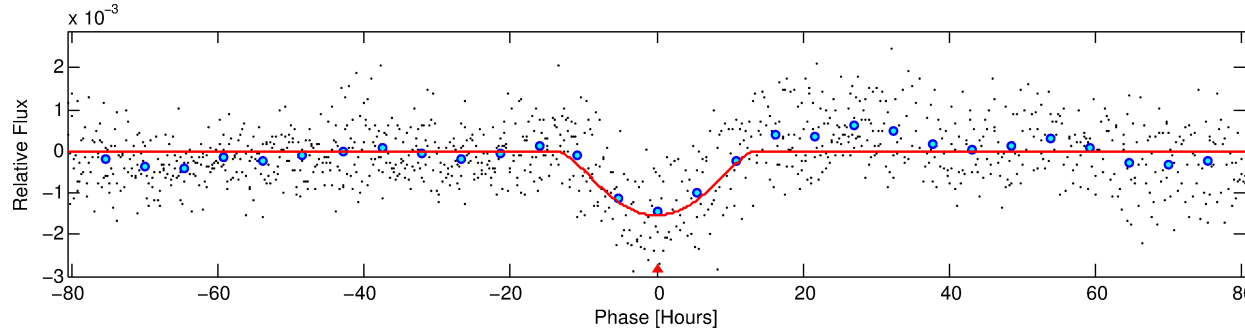
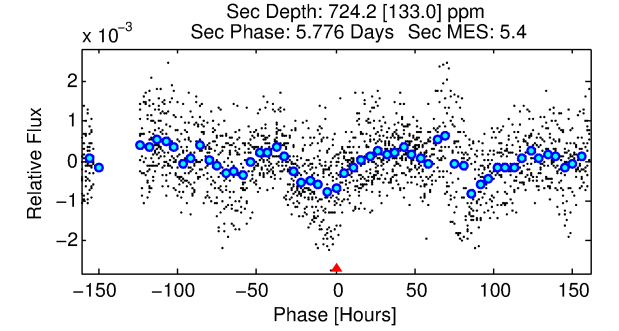
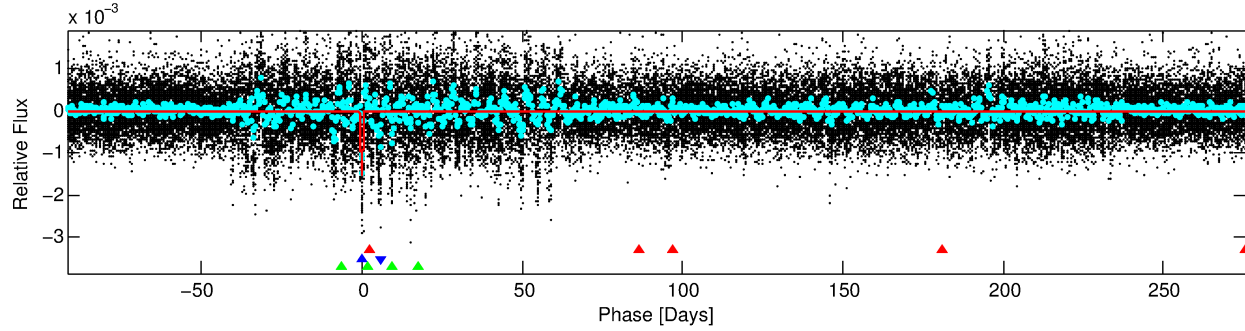
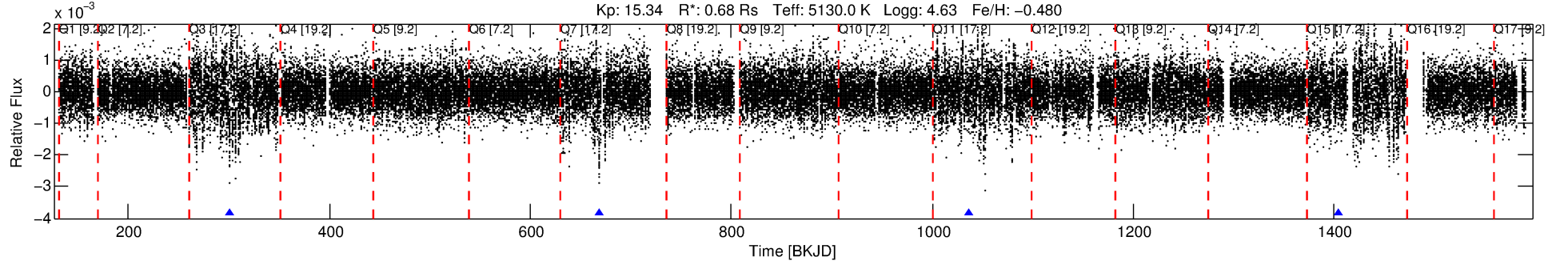
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006685533-02

No Significant Match Found

# DV One-Page Summary

KIC: 6685533 Candidate: 2 of 3 Period: 367.758 d



## DV Fit Results:

Period = 367.75847 [0.02773] d  
Epoch = 301.3268 [0.0413] BKJD  
Rp/R\* = 0.0591 [0.0559]  
a/R\* = 41.61 [11.88]  
b = 0.98 [0.10]  
Seff = 0.35 [0.06]  
Teq = 197 [8] K  
Rp = 4.36 [4.16] Re  
a = 0.8954 [0.0818] AU  
Ag = 16832.09 [32083.10] [0.52σ]  
Teff = 3463 [1650] K [1.98σ]

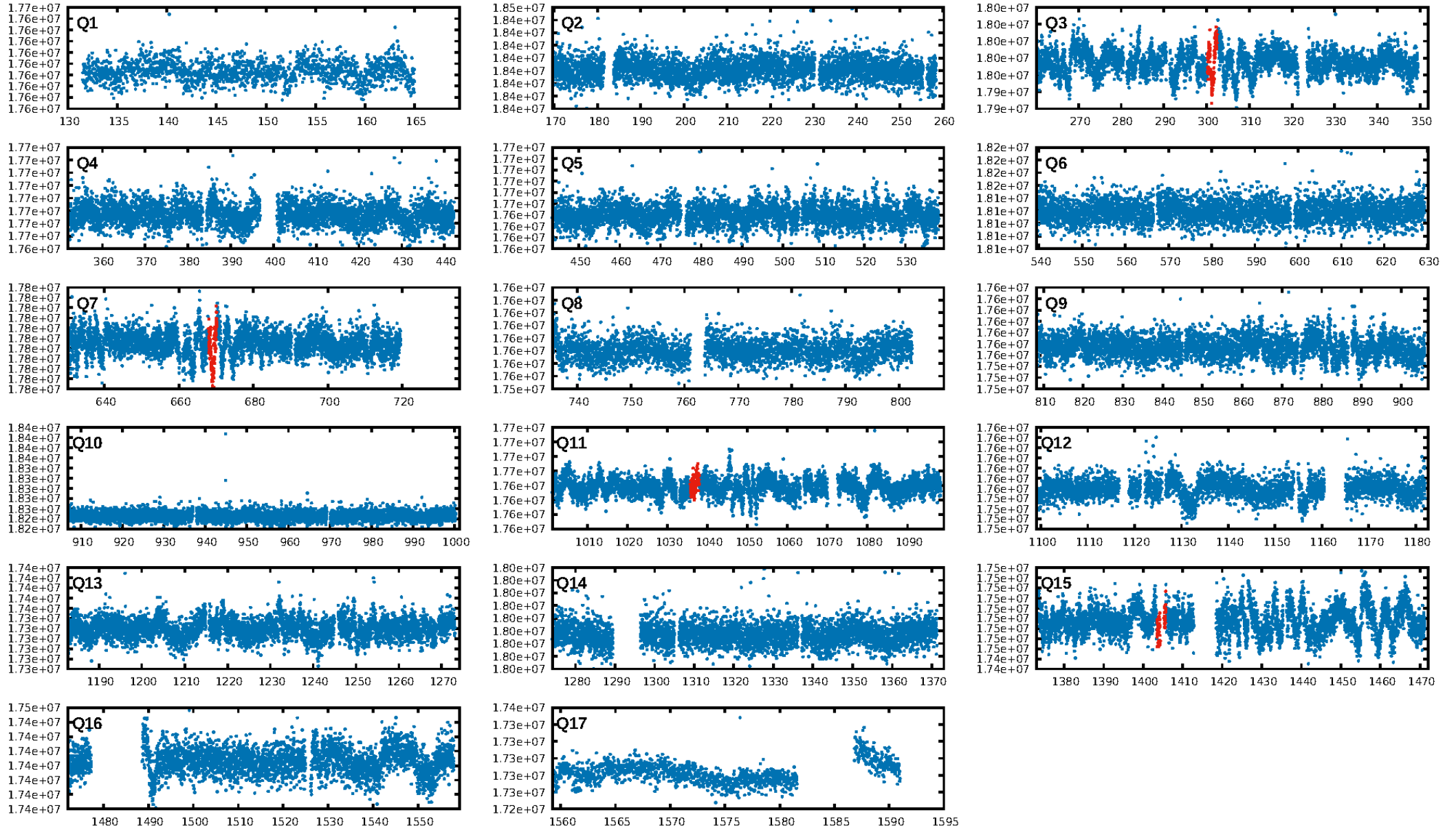
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [67.91σ]  
LongPeriod-sig: 100.0% [6.50σ]  
ModelChiSquare2-sig: 3.4%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 1.05e-10**  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -5.168  
Centroid-sig: 6.0%  
Centroid-so: 4.217 arcsec [2.05σ]  
**OotOffset-rm: 2.943 arcsec [14.87σ]**  
**KicOffset-rm: 3.043 arcsec [15.99σ]**  
OotOffset-st: 0/2/0/0 [2]  
KicOffset-st: 0/2/0/0 [2]  
DiffImageQuality-fgm: 0.00 [0/2]  
DiffImageOverlap-fno: 0.50 [1/2]

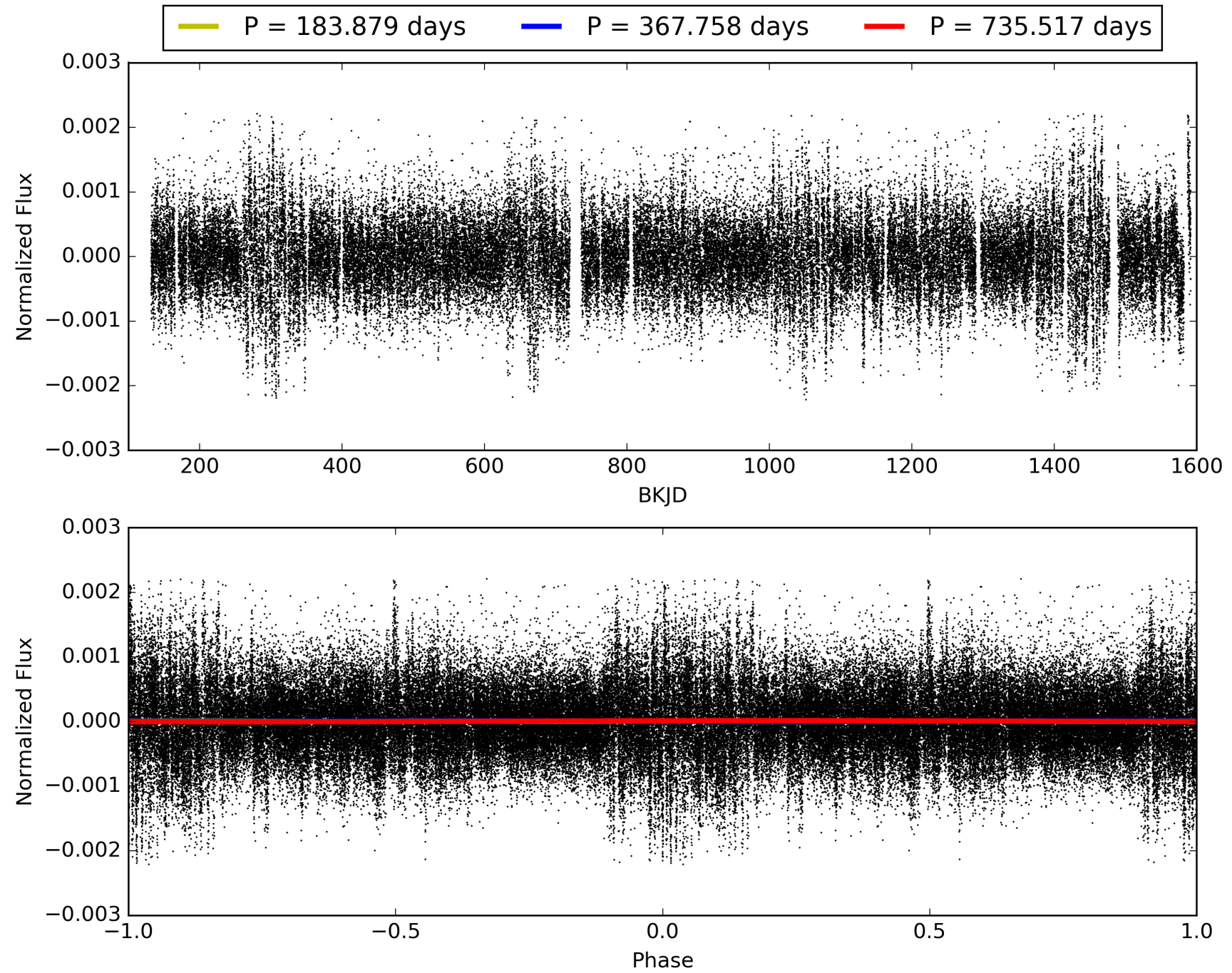
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:29:15 Z

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

# TCE 006685533-02, PDC Light Curves

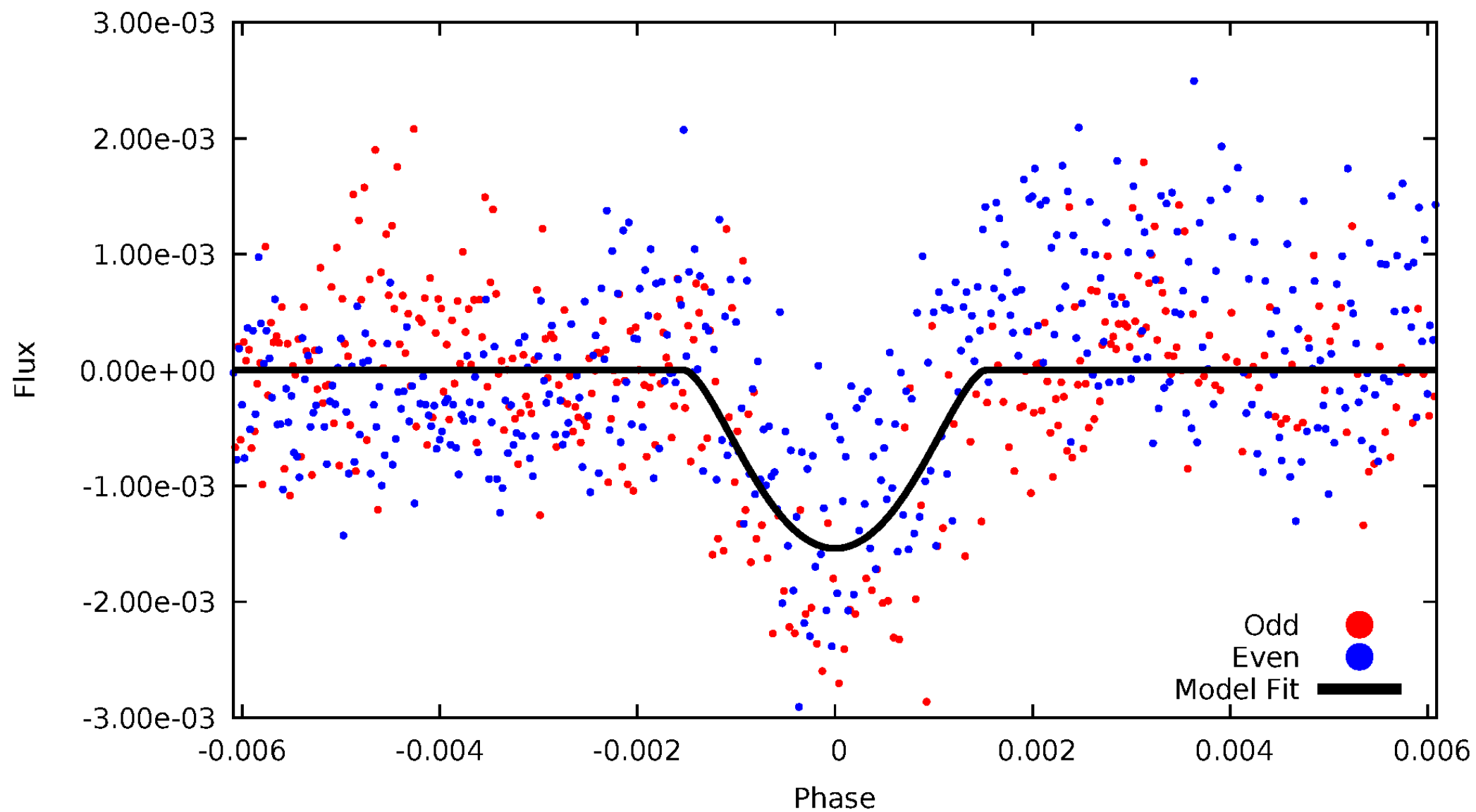


TCE 006685533-02



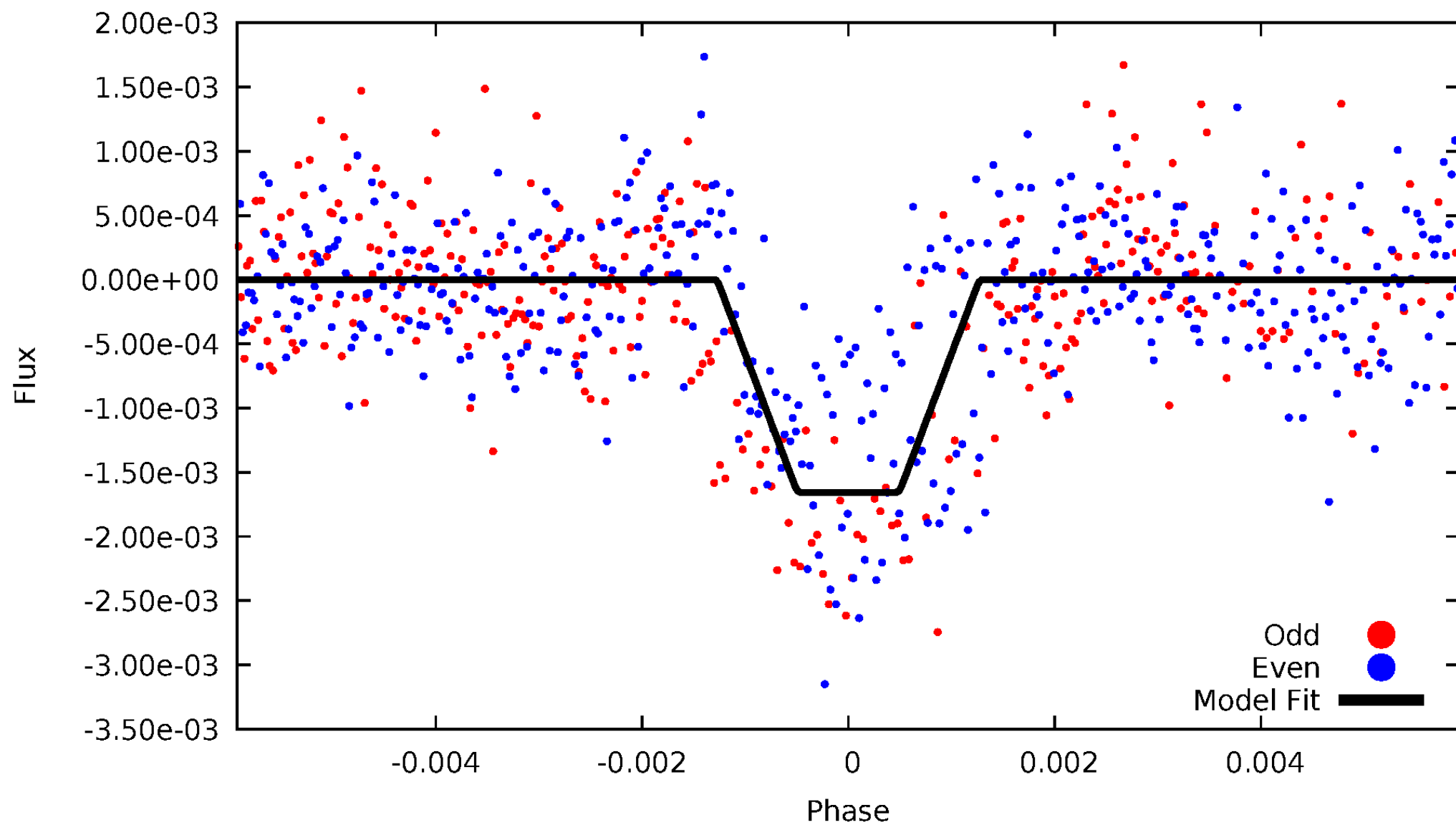
# DV Odd/Even

TCE 006685533-02



# ALT Odd/Even

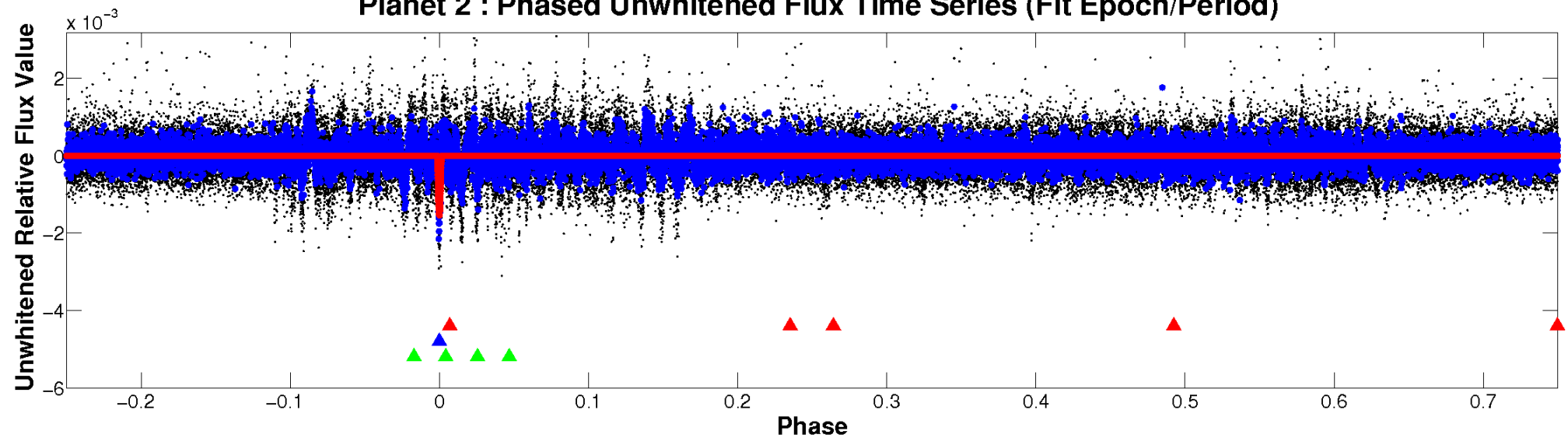
TCE 006685533-02



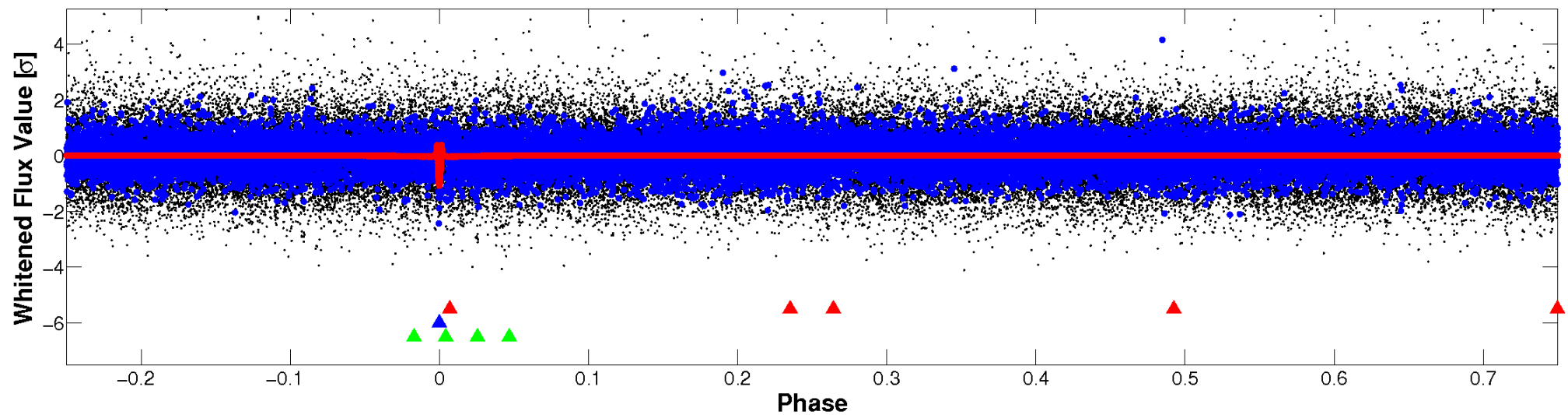


# Non-Whitened Vs. Whitened Light Curve

## Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

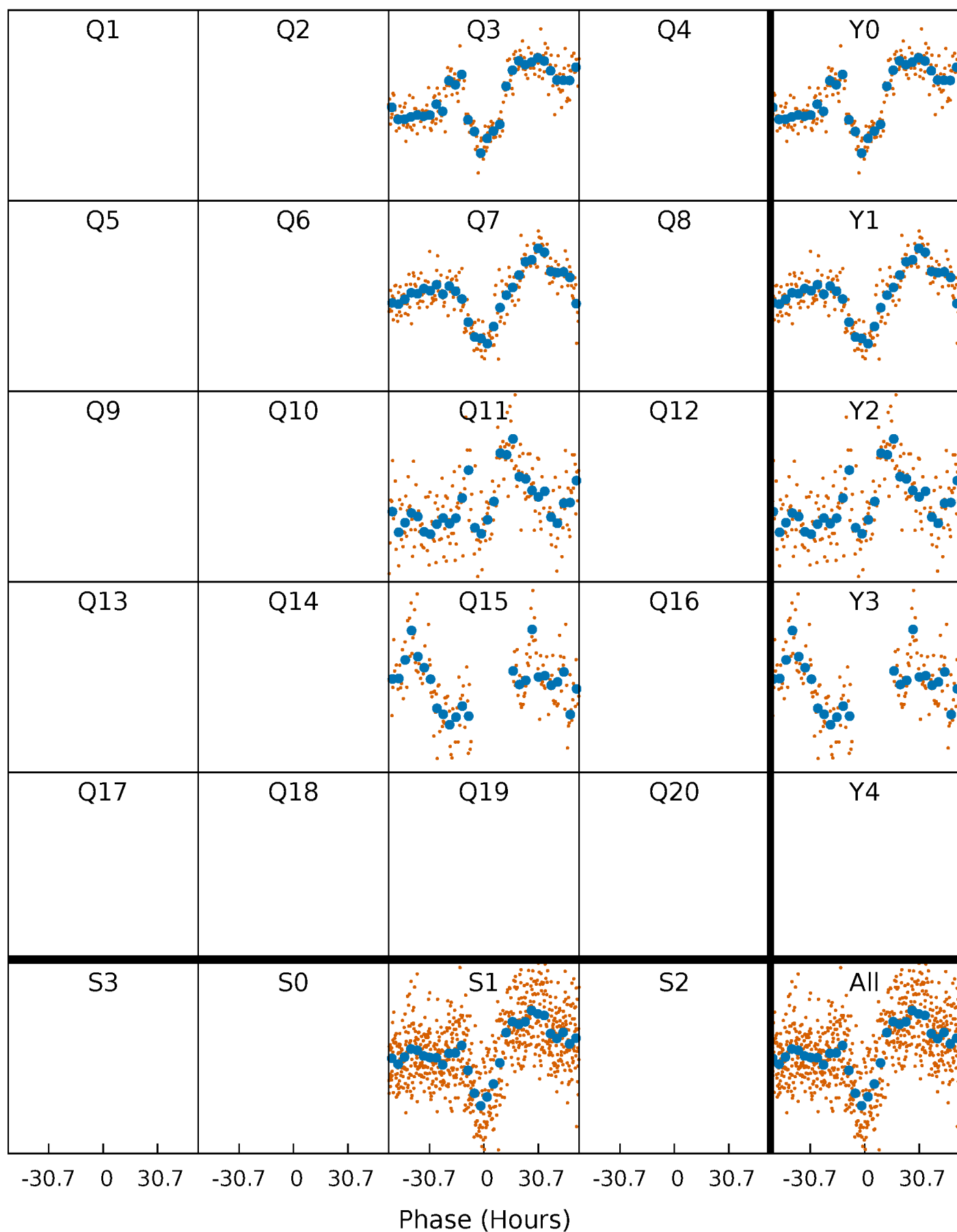


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



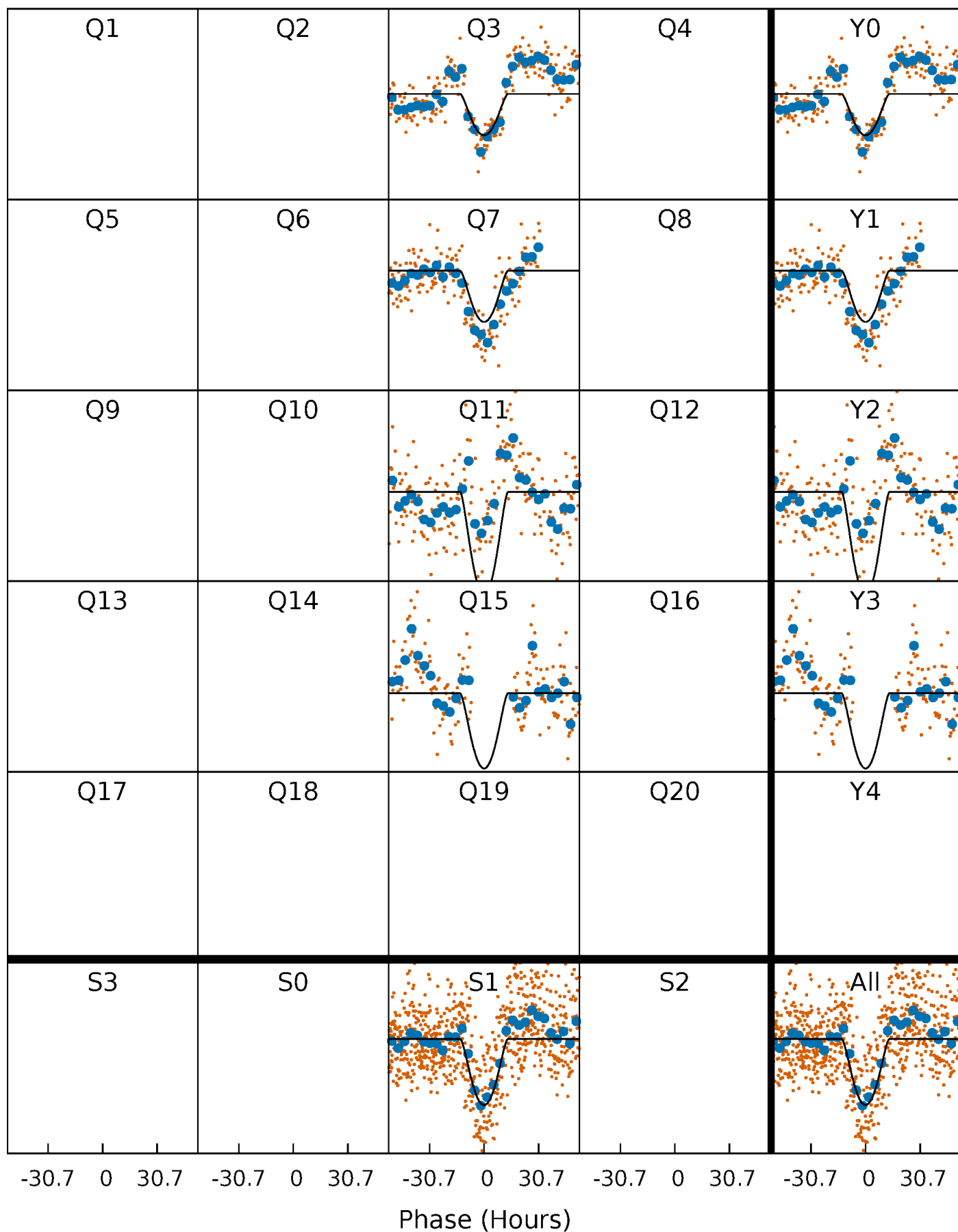
# PDC Quarter-Phased Transit Curves

TCE 006685533-02     $P=367.758471$  Days     $T_0=301.326785$  (BKJD)



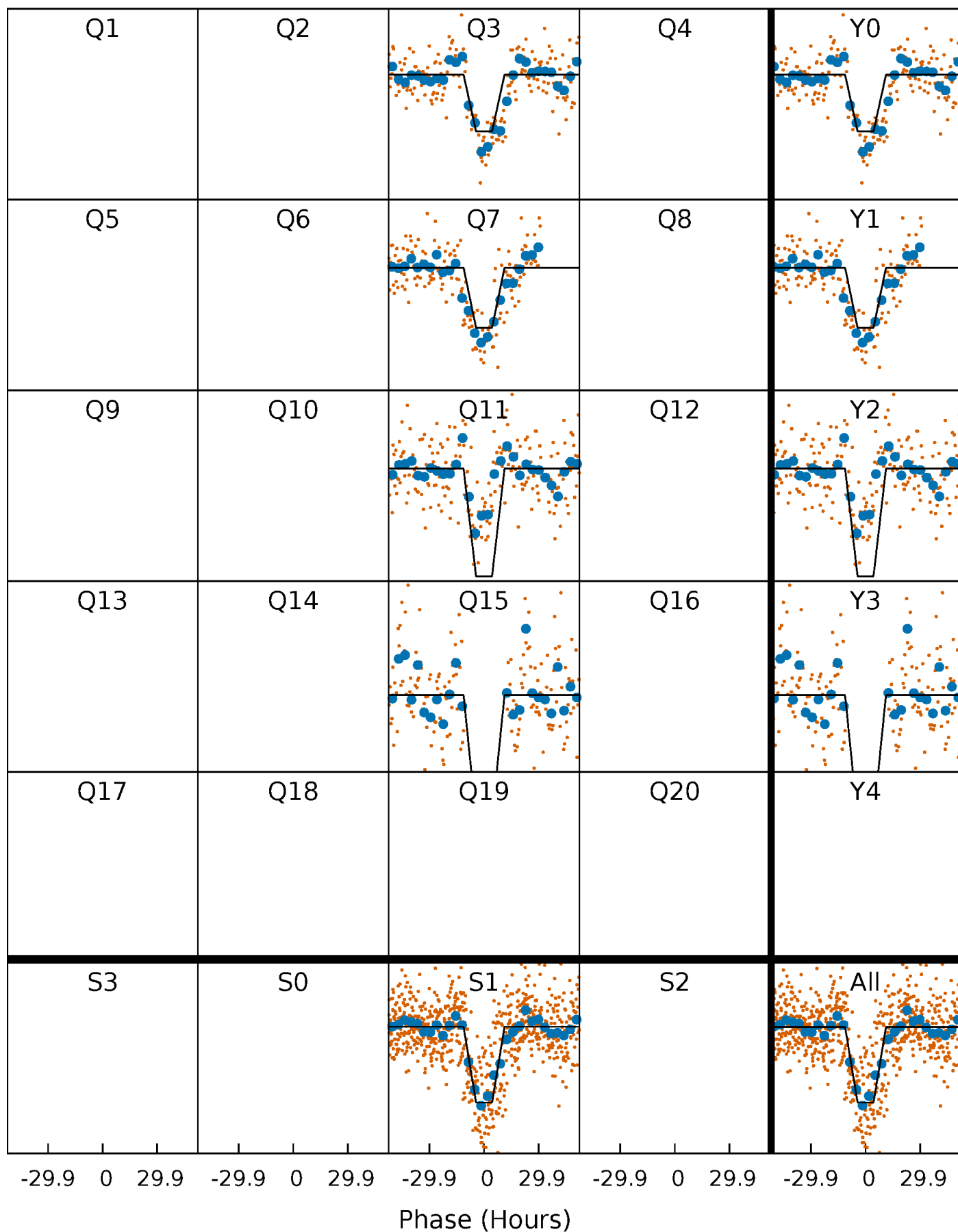
# DV Quarter-Phased Transit Curves

TCE 006685533-02     $P=367.758471$  Days     $T_0=301.326785$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

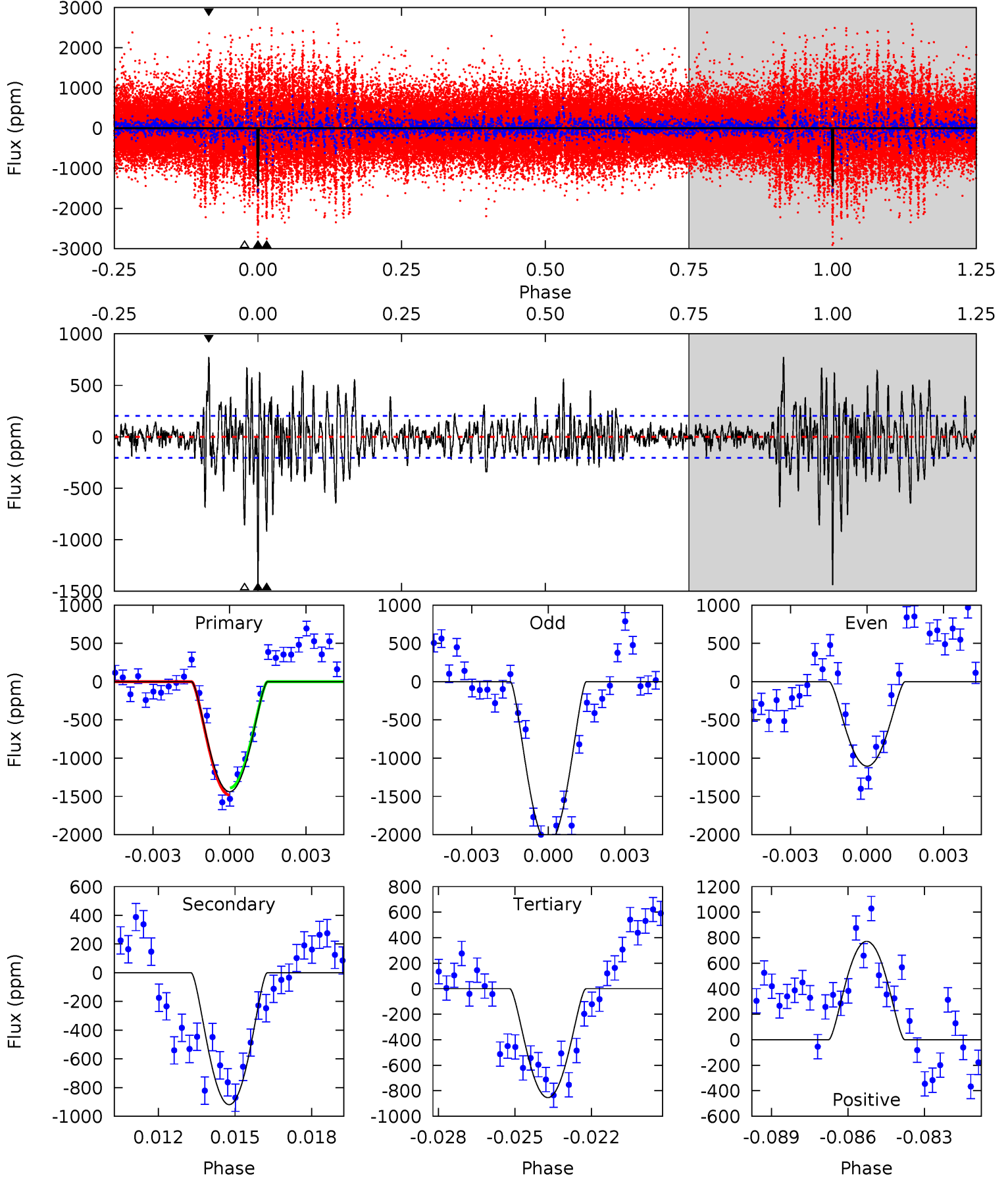
TCE 006685533-02 P=367.831325 Days  $T_0=301.276733$  (BKJD)



# DV Model-Shift Uniqueness Test

006685533-02, P = 367.758471 Days, E = 301.326785 Days

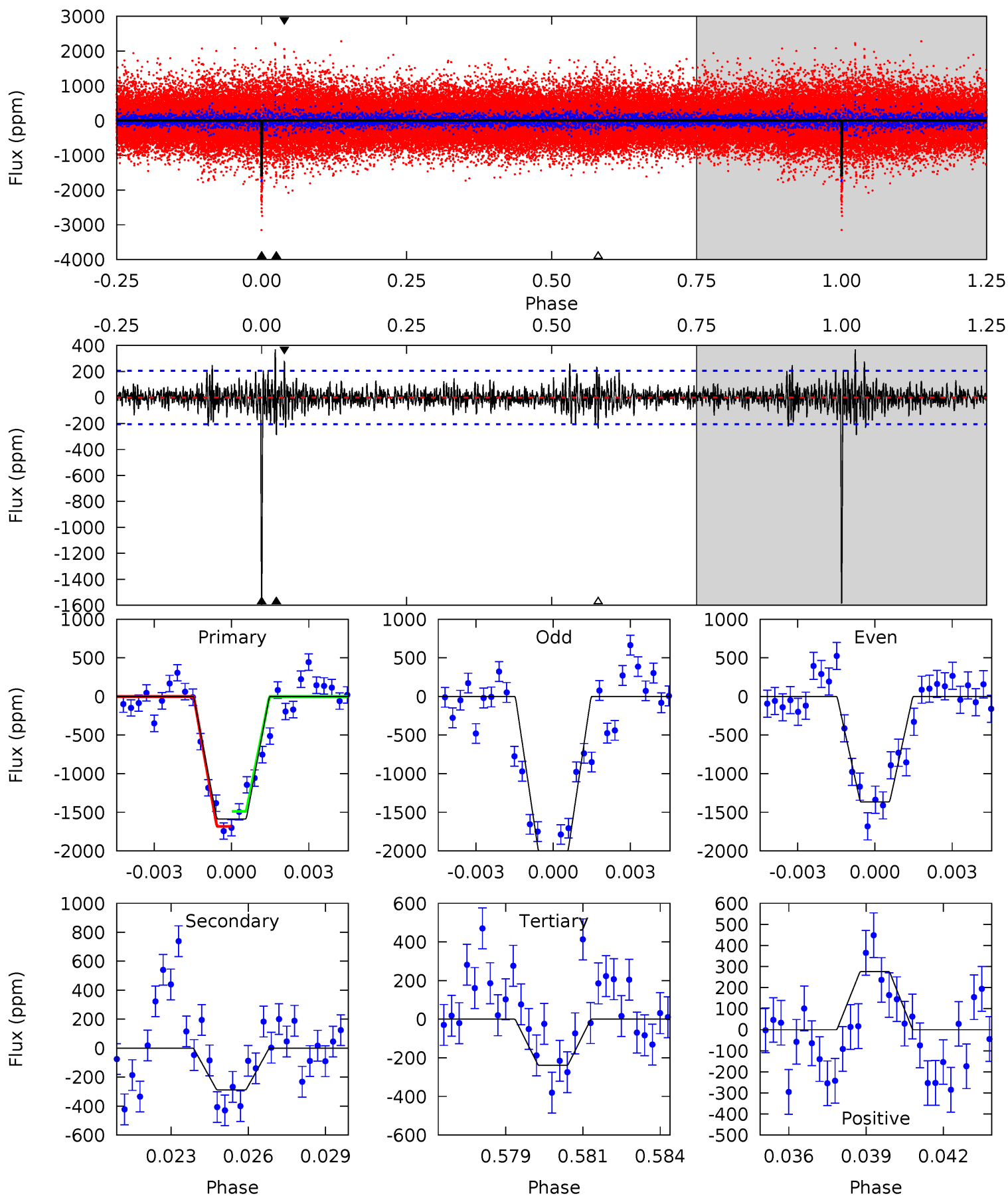
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.0	23.7	22.0	19.9	5.25	2.96	4.35	15.0	17.2	1.68	3.80	12.5	0.90	0.35	1.16



# Alt Model-Shift Uniqueness Test

006685533-02, P = 367.831325 Days, E = 301.276733 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
40.8	7.40	6.15	7.09	5.28	3.01	1.50	34.6	33.7	1.24	0.31	7.75	0.78	0.19	2.50





### Stellar Parameters For KIC 006685533

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5130^{+154}_{-138}$	$4.628^{+0.040}_{-0.060}$	$-0.480^{+0.300}_{-0.300}$	$0.676^{+0.080}_{-0.053}$	$0.709^{+0.083}_{-0.055}$	$3.228^{+0.613}_{-0.740}$
	+3%/-3%	+1%/-1%	+62%/-62%	+12%/-8%	+12%/-8%	+19%/-23%
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 006685533-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-919 \pm 39$	$5.09^{+3.90}_{-3.06}$	$275^{+10}_{-9}$	$3754^{+1633}_{-599}$	$15444^{+85760}_{-10530}$
Alt.	$-288 \pm 39$	$4.30^{+3.44}_{-2.69}$	$276^{+11}_{-9}$	$3289^{+1357}_{-508}$	$6801^{+43110}_{-4754}$

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

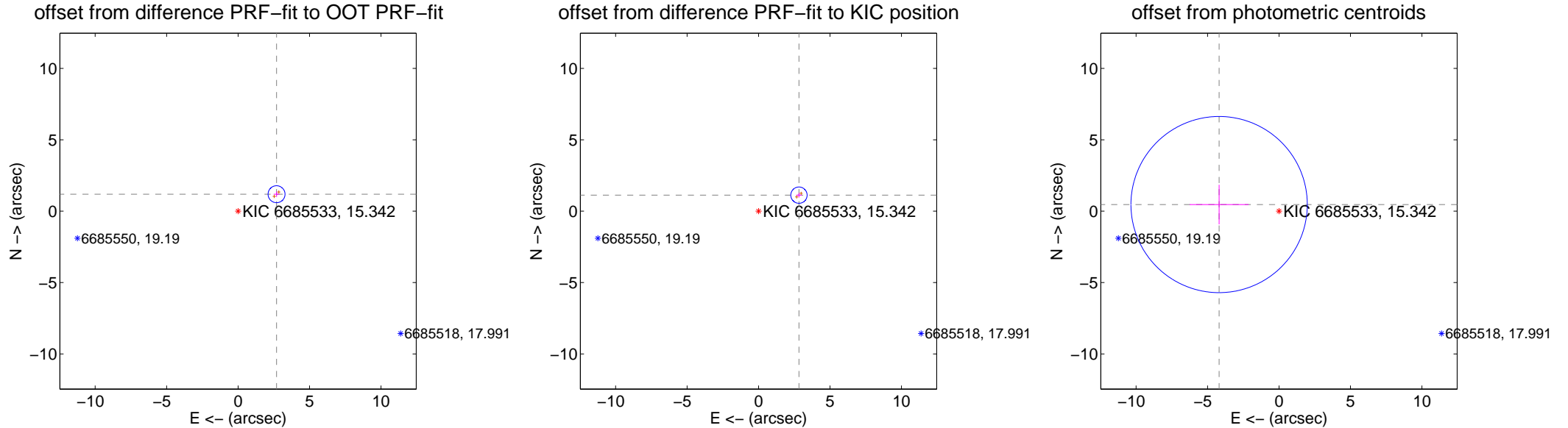
## DV Centroid Data

Supplemental centroid analysis for 006685533-02. Kepler magnitude: 15.34. Transit SNR 8.89

There are 0 quarters with good PRF difference image offsets

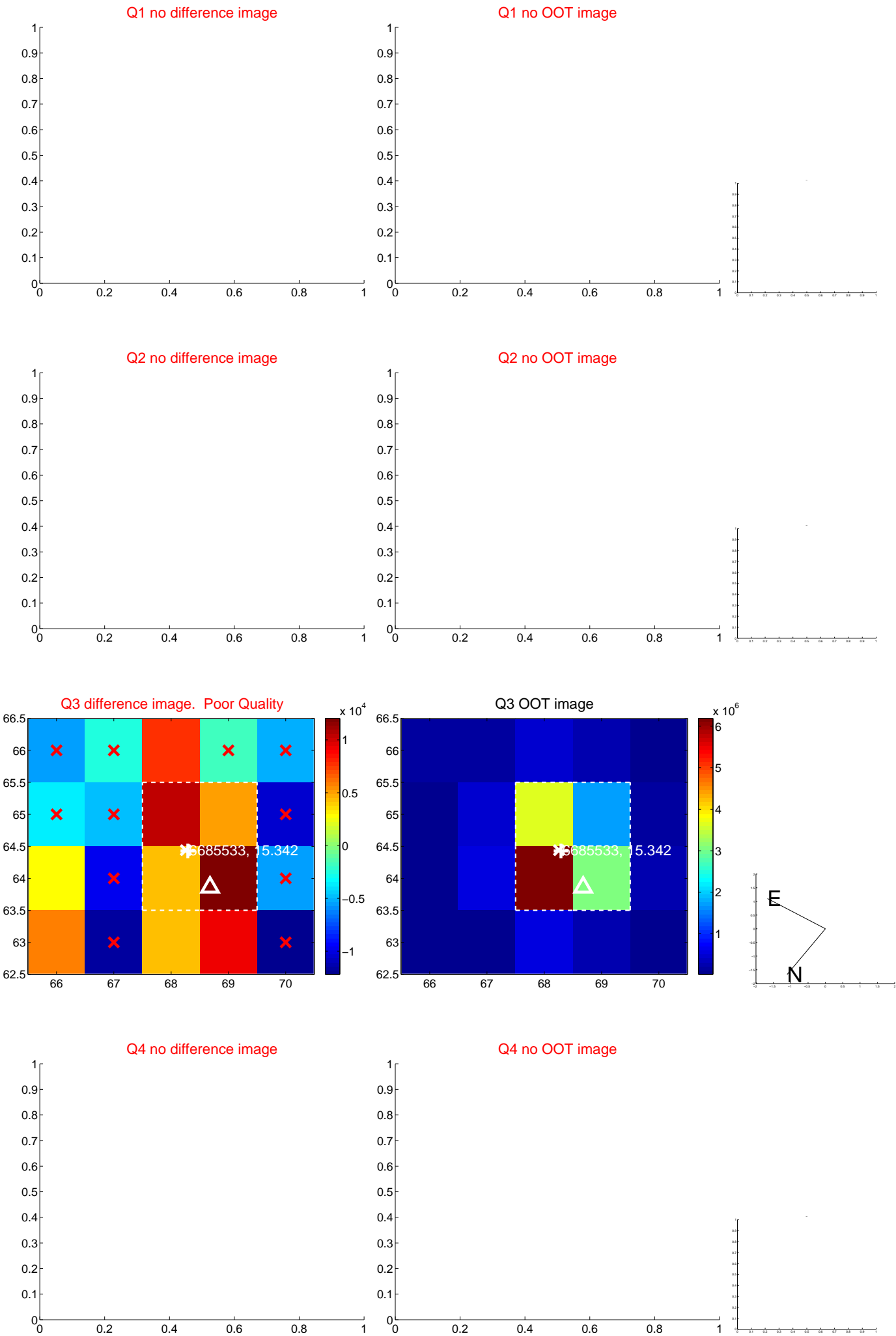
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.943 \pm 0.198$	14.87	$-2.692 \pm 0.199$	$1.189 \pm 0.192$
PRF-fit source offset from KIC position	$3.043 \pm 0.190$	15.99	$-2.828 \pm 0.194$	$1.123 \pm 0.162$
photometric centroid source offset	$4.22 \pm 2.06$	2.05	$4.19 \pm 2.06$	$0.46 \pm 1.39$

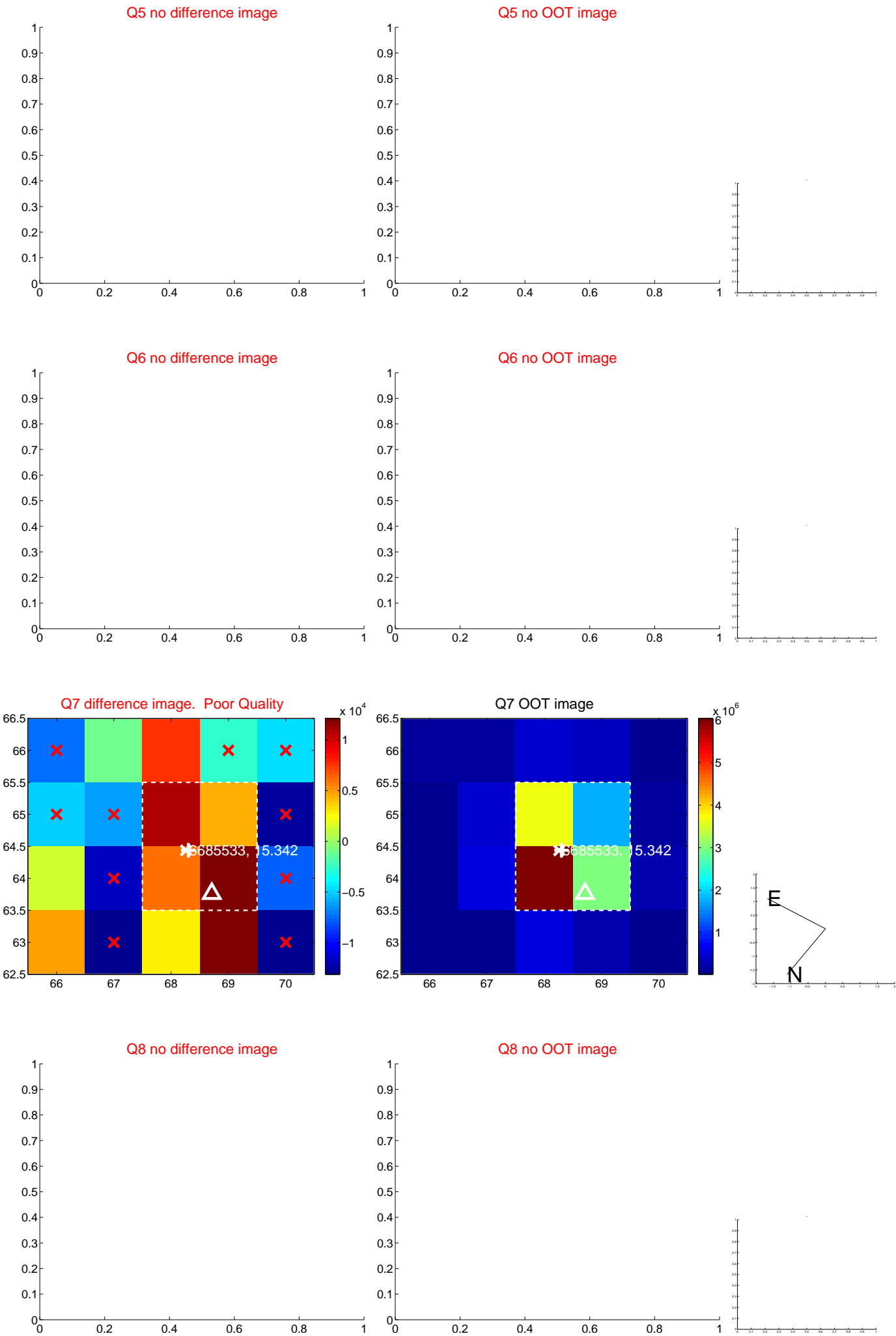


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



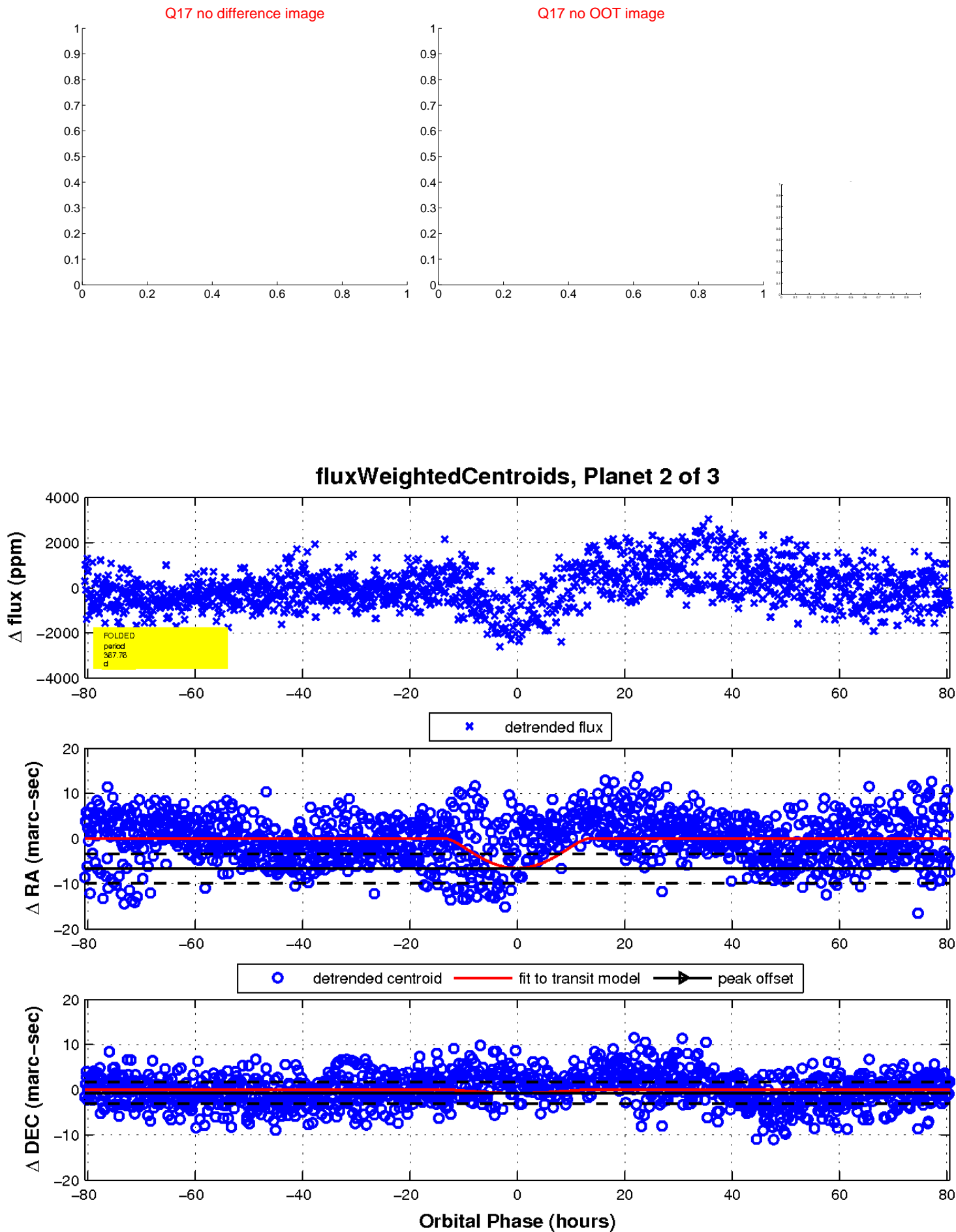
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

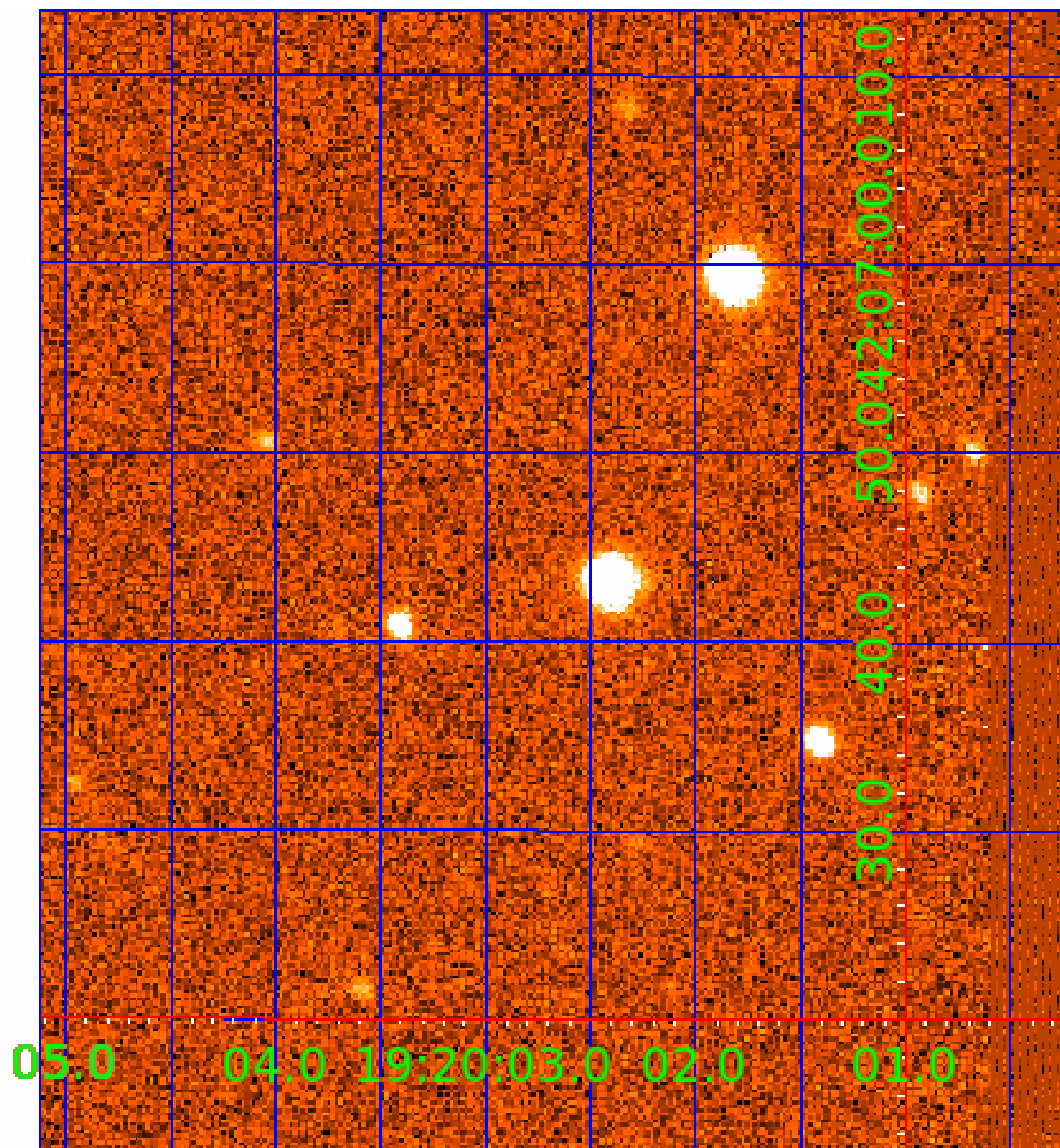


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination





# KIC 006685533

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006685533-01	OBS	No	273.154536	398.505046	436.0	19.895	9.1	6.5	0.68	5130	1.44	0.53
006685533-02	OBS	No	367.758471	301.326785	1539.0	26.869	9.1	8.9	0.68	5130	4.36	0.35
006685533-03	OBS	No	375.584755	295.082400	1315.7	10.655	8.1	8.0	0.68	5130	2.46	0.34

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006685533-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—CENT_FEW_DIFFS
006685533-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—CENT_FEW_DIFFS
006685533-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—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.

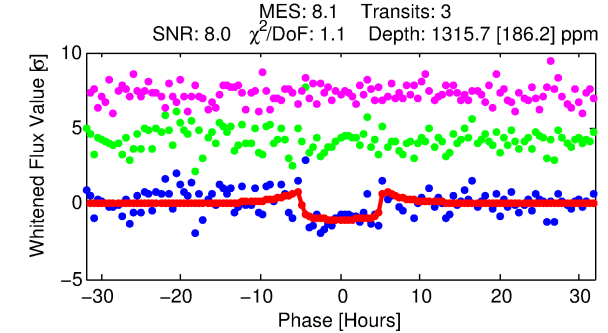
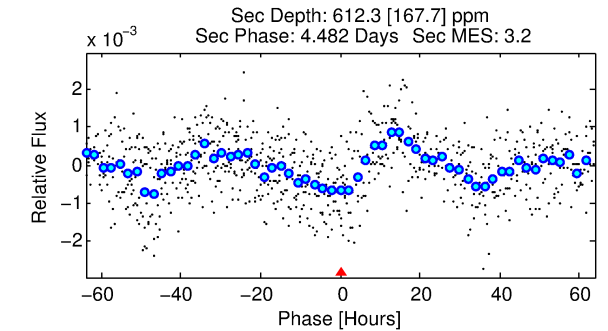
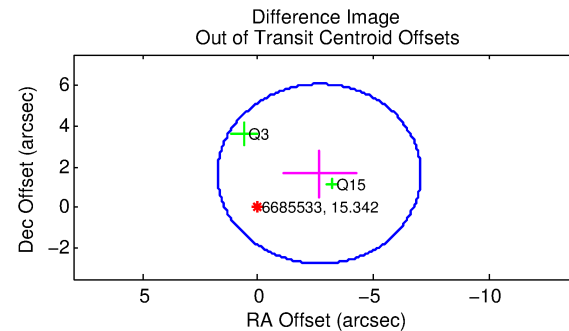
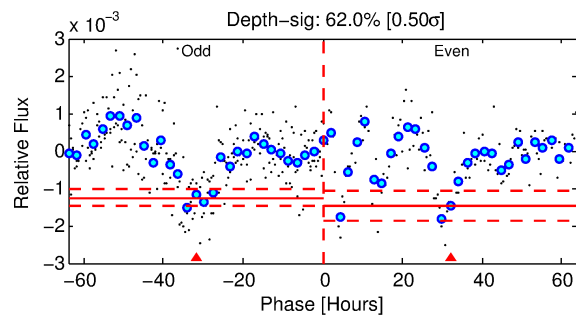
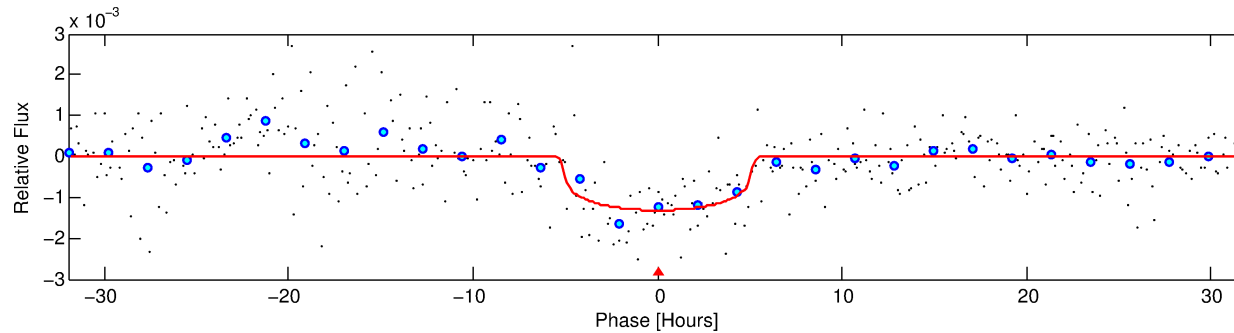
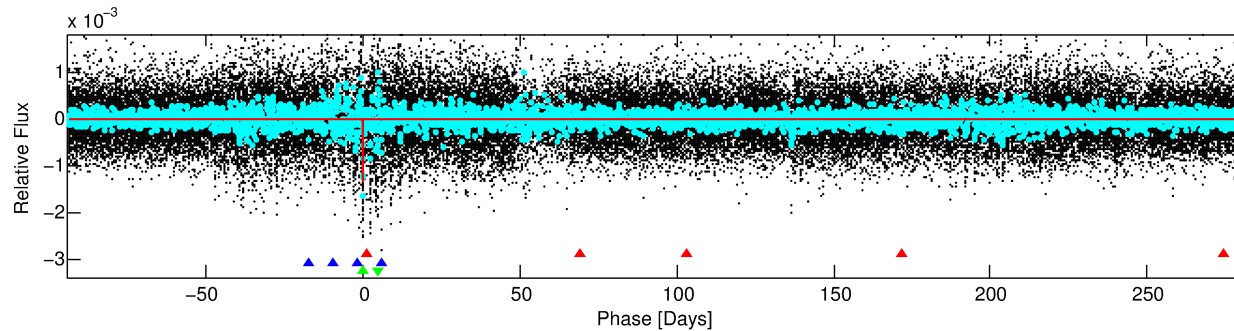
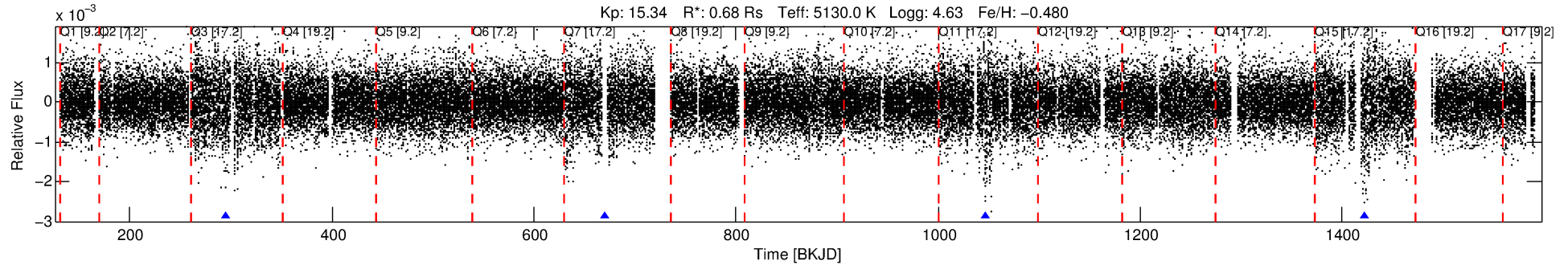
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006685533-03

No Significant Match Found

# DV One-Page Summary

KIC: 6685533 Candidate: 3 of 3 Period: 375.585 d



## DV Fit Results:

Period = 375.58476 [0.00633] d  
Epoch = 295.0824 [0.0130] BKJD  
Rp/R\* = 0.0334 [0.0179]  
a/R\* = 252.12 [504.55]  
b = 0.44 [3.73]  
Seff = 0.34 [0.06]  
Teq = 195 [8] K  
Rp = 2.46 [1.35] Re  
a = 0.9081 [0.0830] AU  
Ag = 45821.35 [51007.60] [0.90 $\sigma$ ]  
Teffp = 4417 [1229] K [3.43 $\sigma$ ]

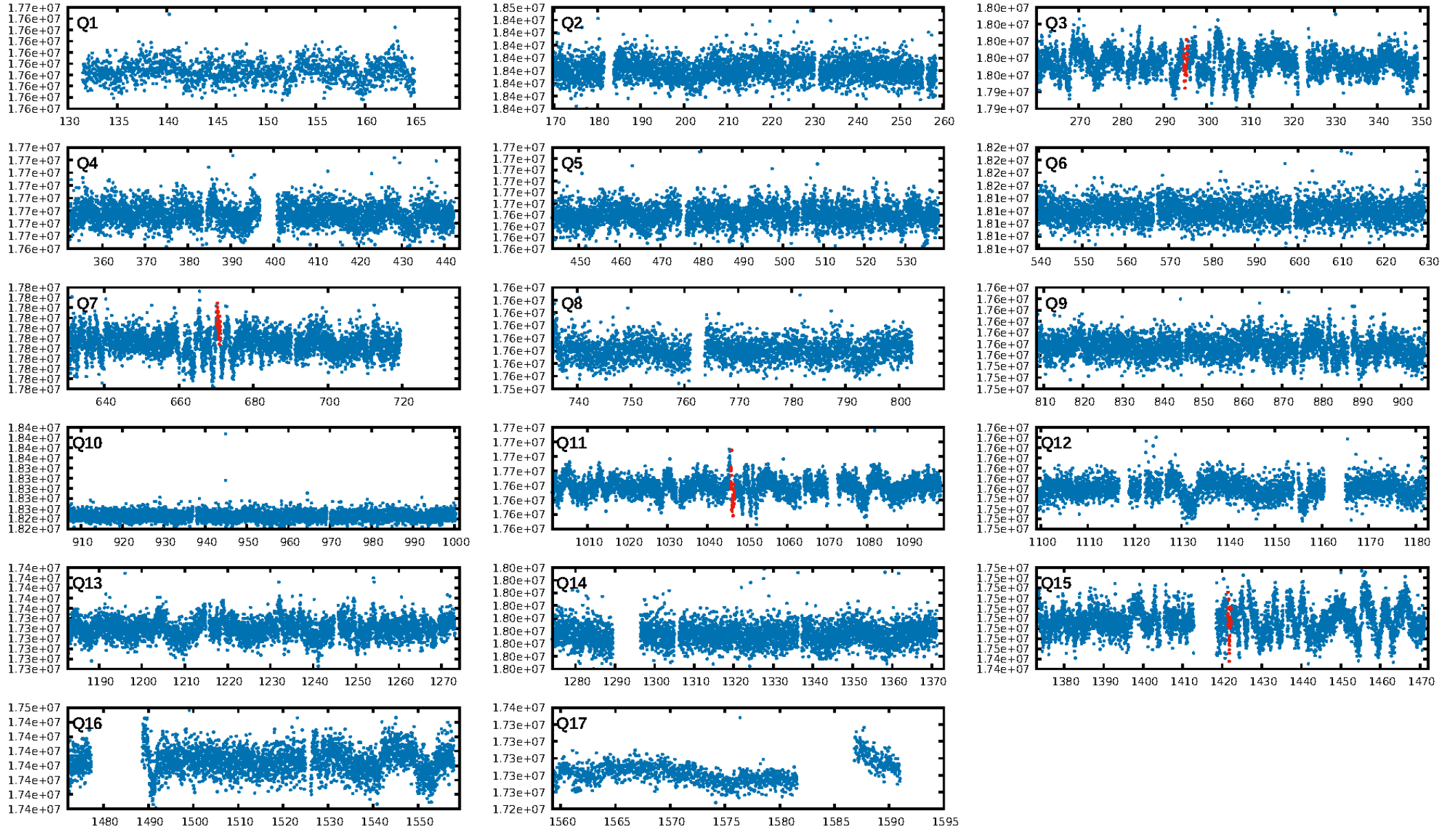
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [6.50 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 4.0%  
ModelChiSquareGof-sig: 99.2%  
**Bootstrap-pfa: 4.64e-11**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -0.9744  
Centroid-sig: 8.9%  
Centroid-so: 1.880 arcsec [1.25 $\sigma$ ]  
OotOffset-rm: 3.112 arcsec [2.12 $\sigma$ ]  
OotOffset-st: 0/2/0/0 [2]  
KicOffset-rm: 3.179 arcsec [2.16 $\sigma$ ]  
KicOffset-st: 0/2/0/0 [2]  
DiffImageQuality-fgm: 0.00 [0/2]  
DiffImageOverlap-fno: 0.75 [3/4]

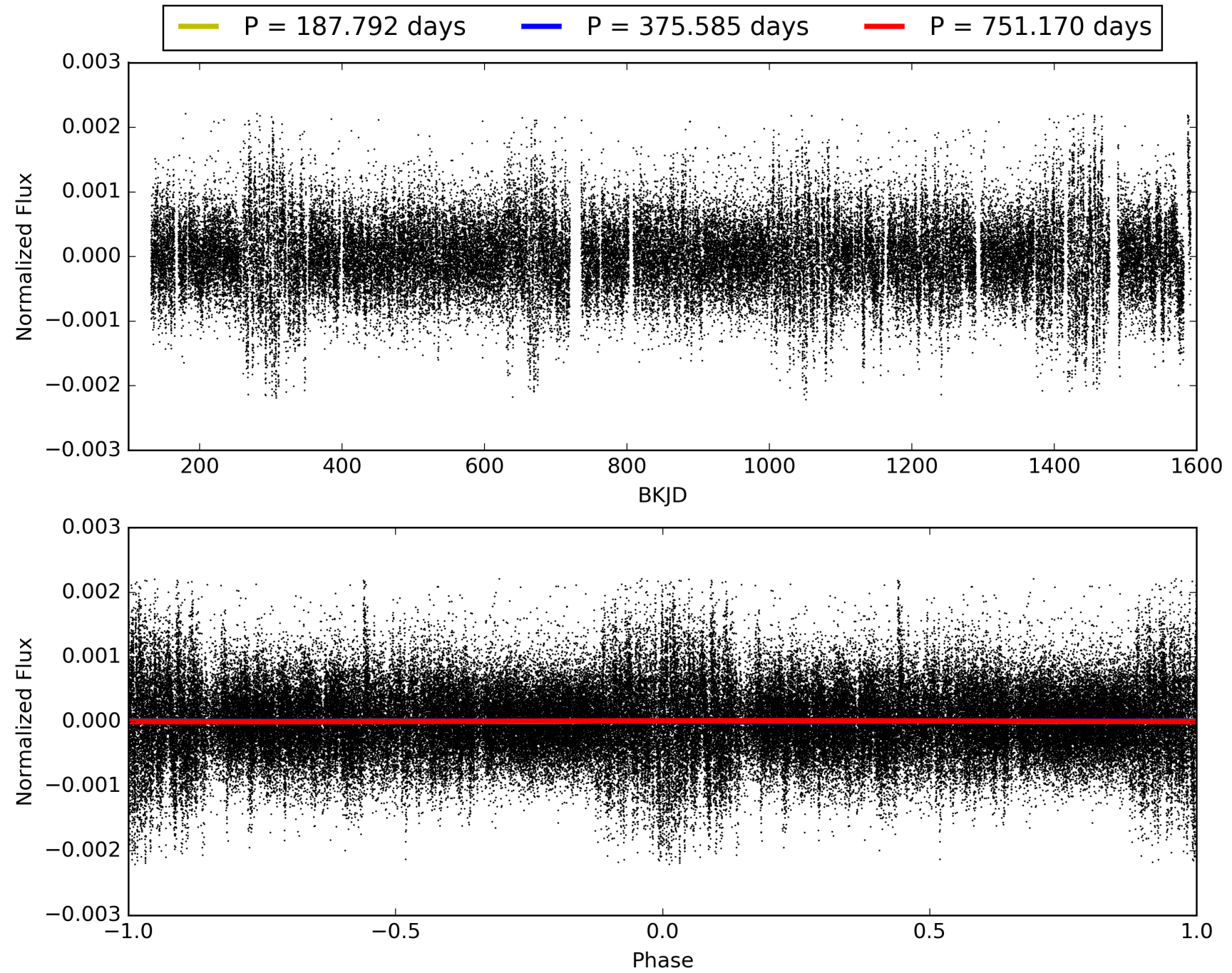
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:29:24 Z

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

# TCE 006685533-03, PDC Light Curves

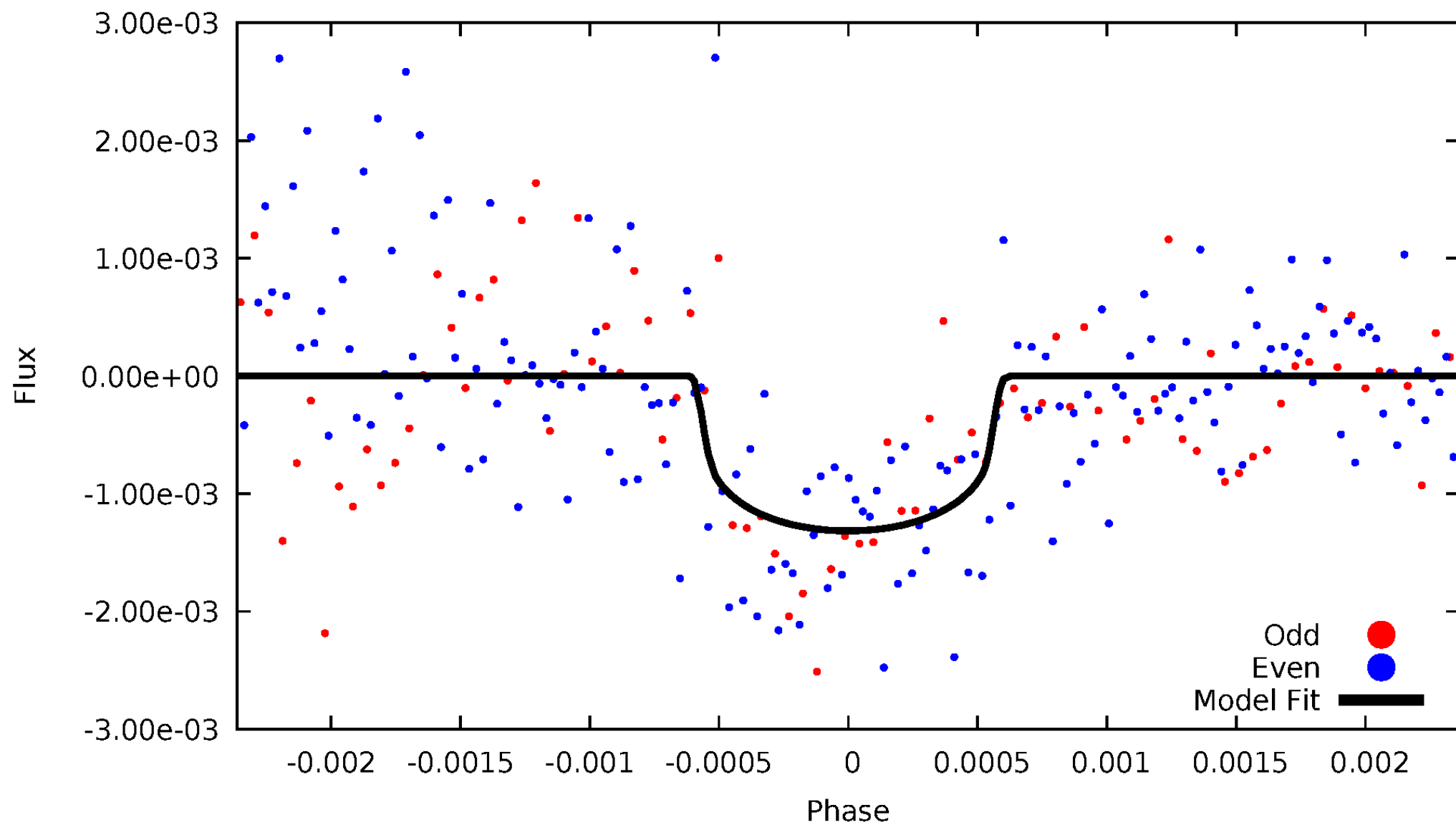


TCE 006685533-03



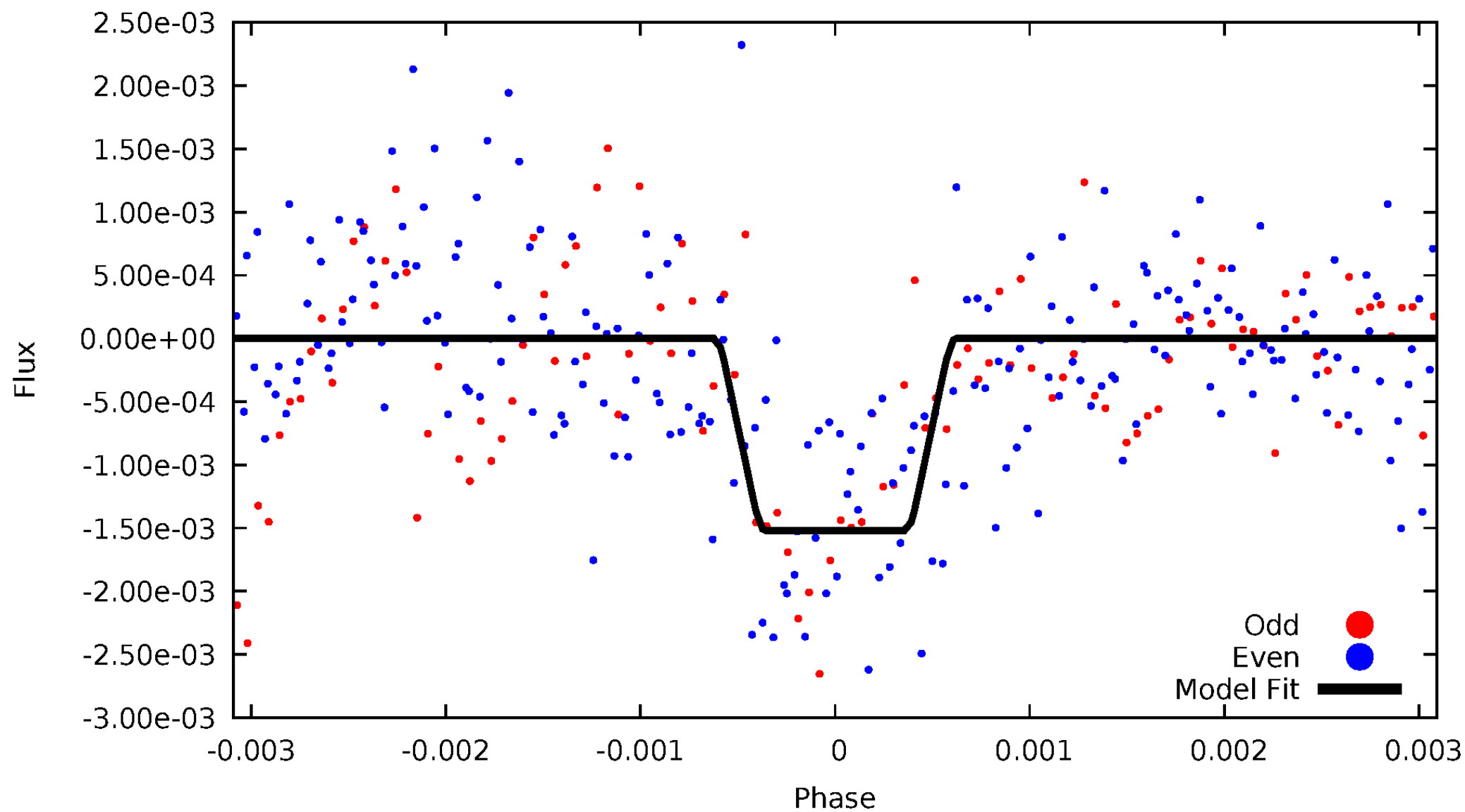
# DV Odd/Even

TCE 006685533-03



# ALT Odd/Even

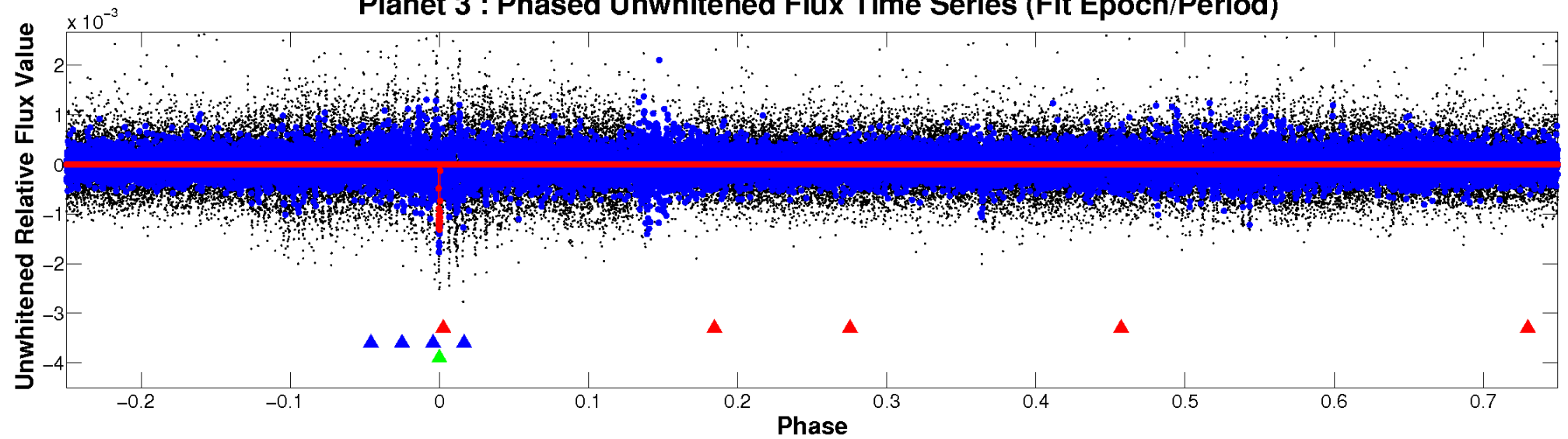
TCE 006685533-03



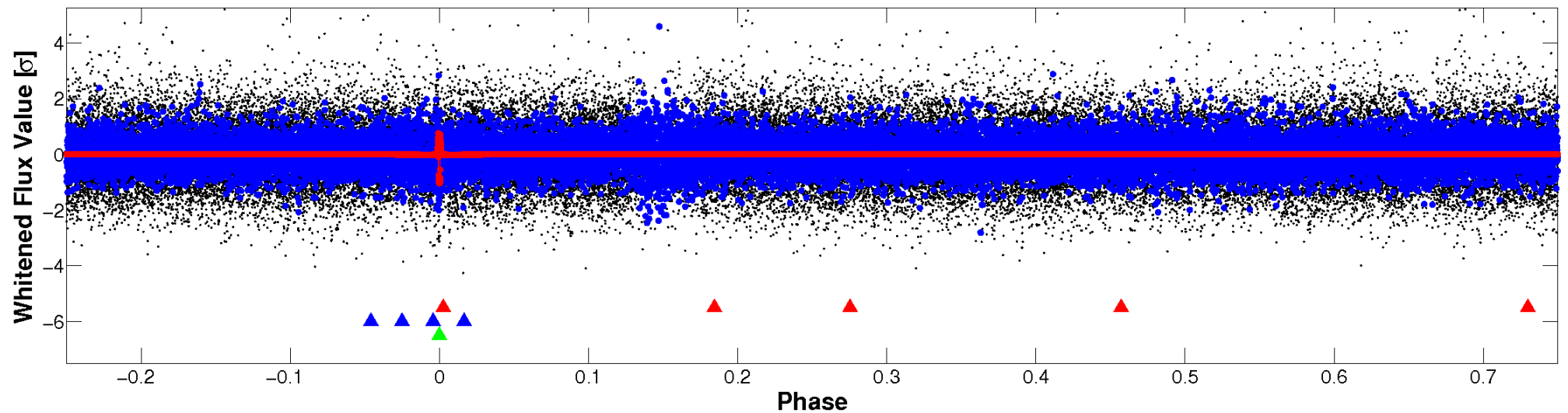


# Non-Whitened Vs. Whitened Light Curve

**Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)**

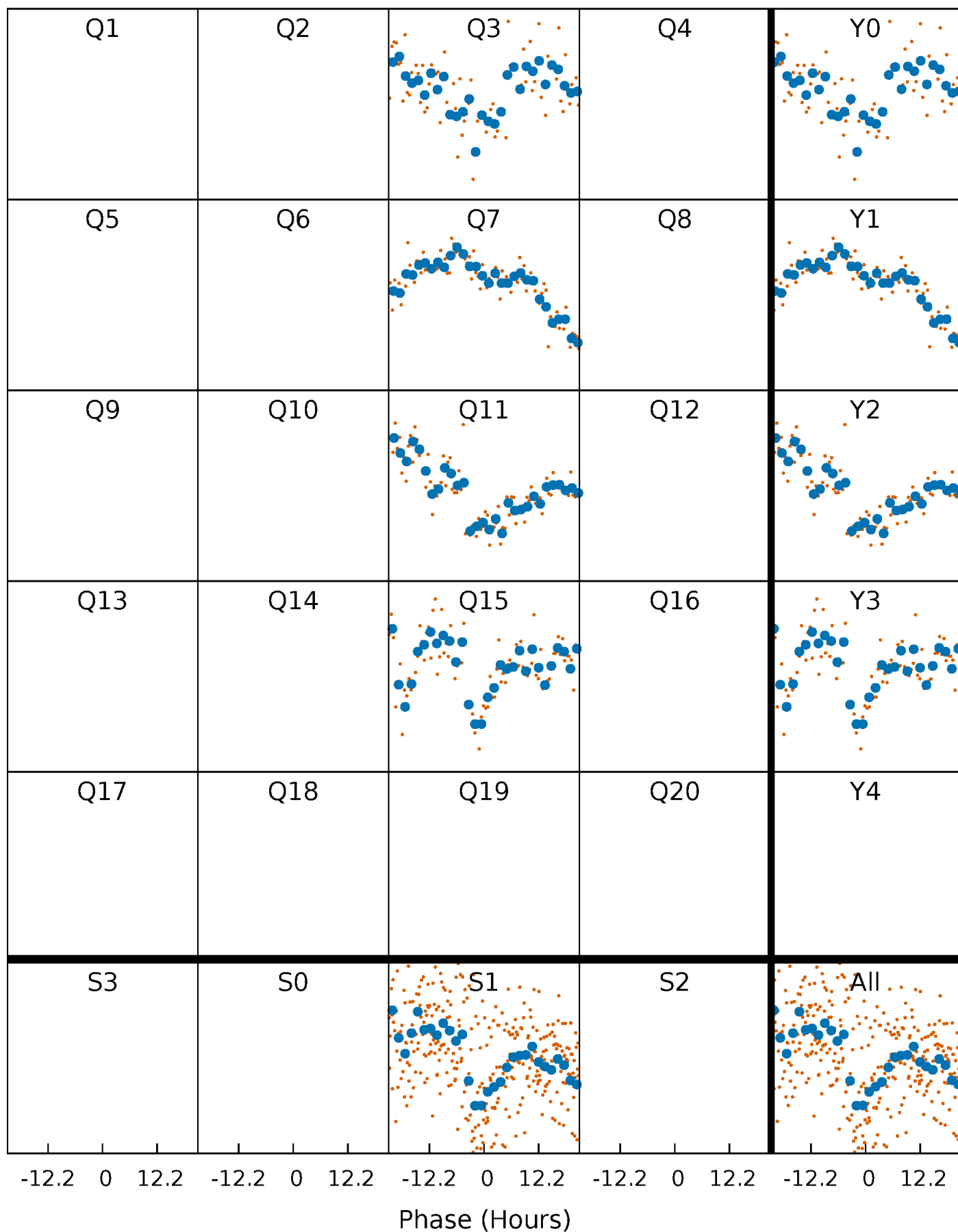


**Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

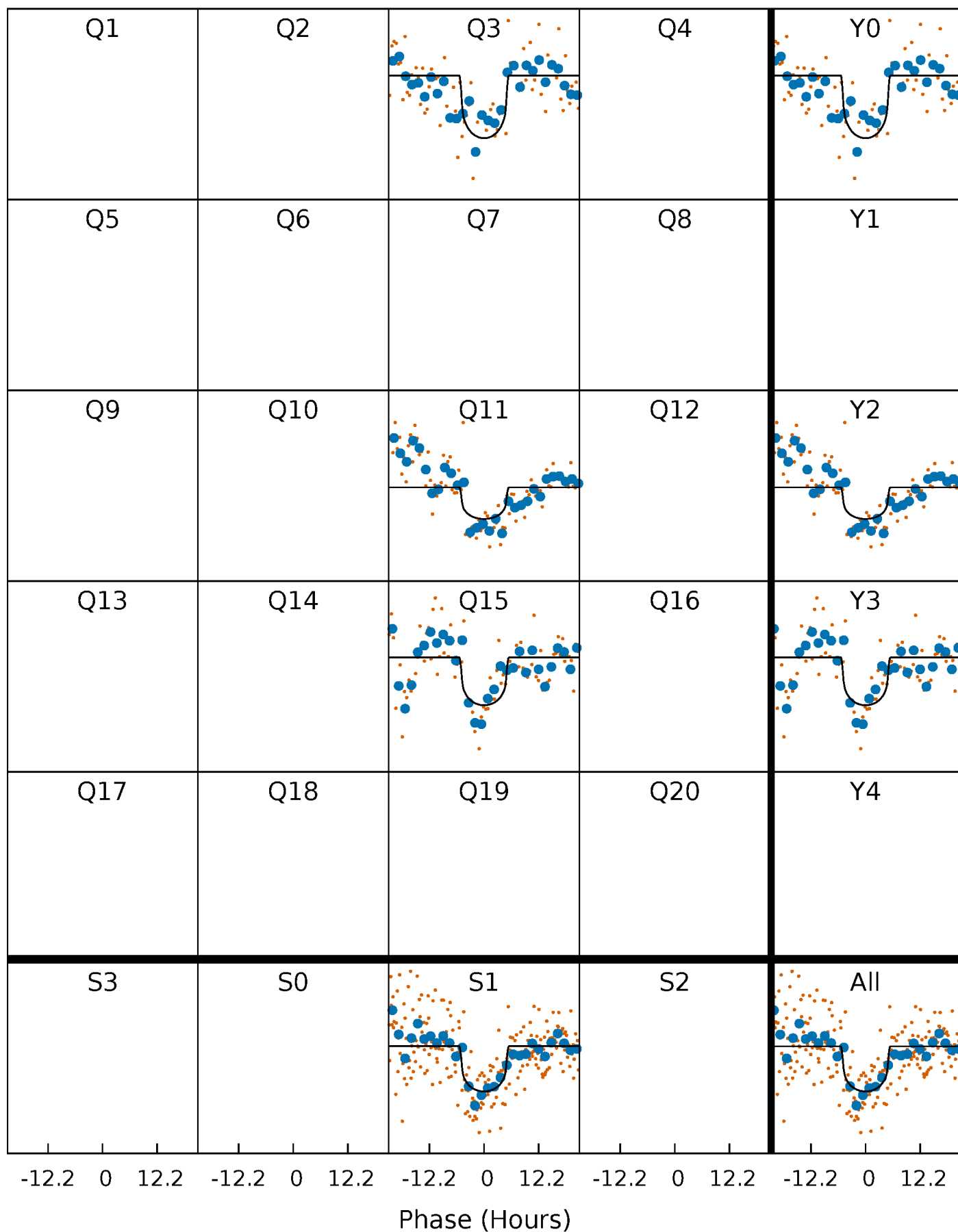
TCE 006685533-03     $P=375.584755$  Days     $T_0=295.082400$  (BKJD)





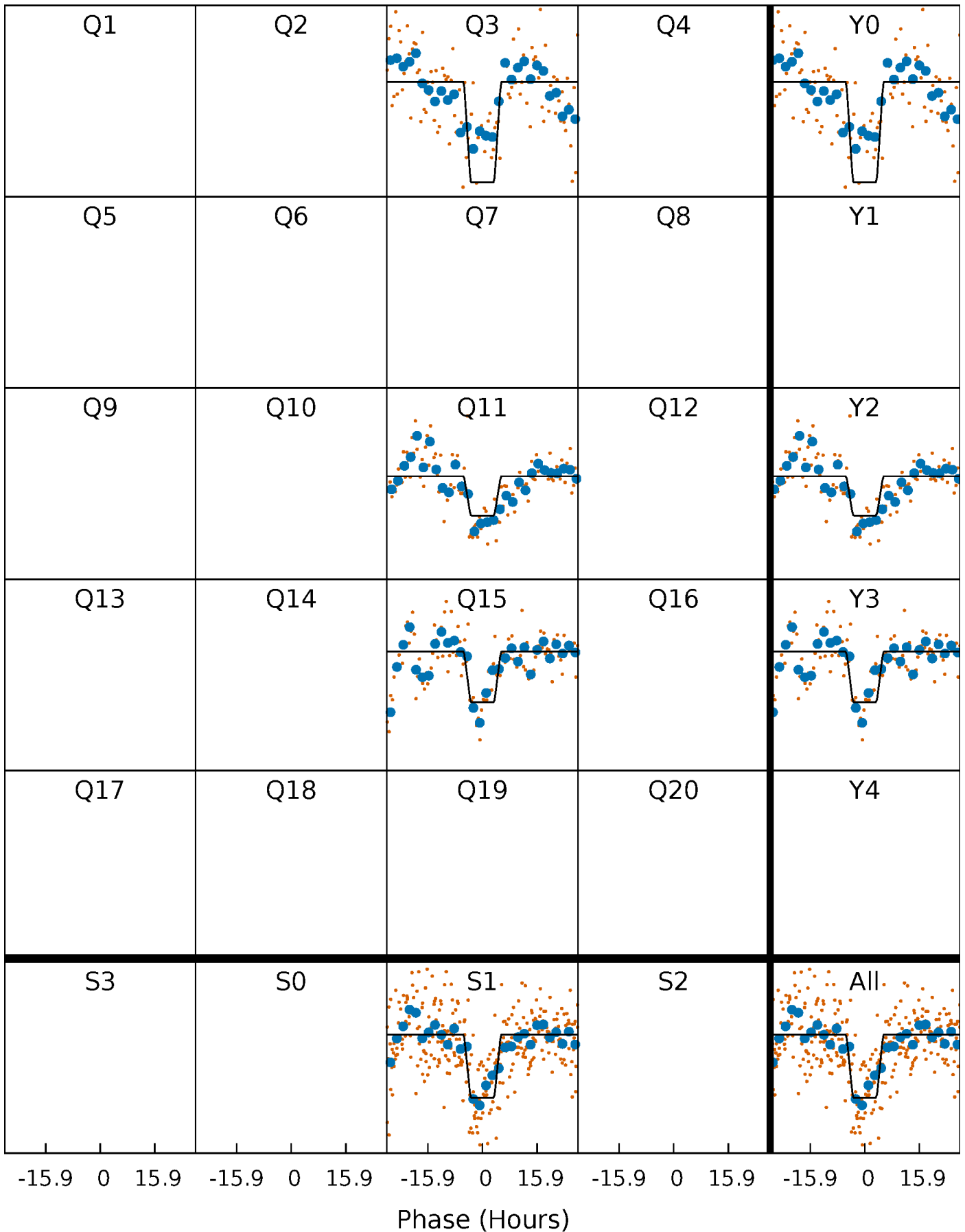
# DV Quarter-Phased Transit Curves

TCE 006685533-03     $P=375.584755$  Days     $T_0=295.082400$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

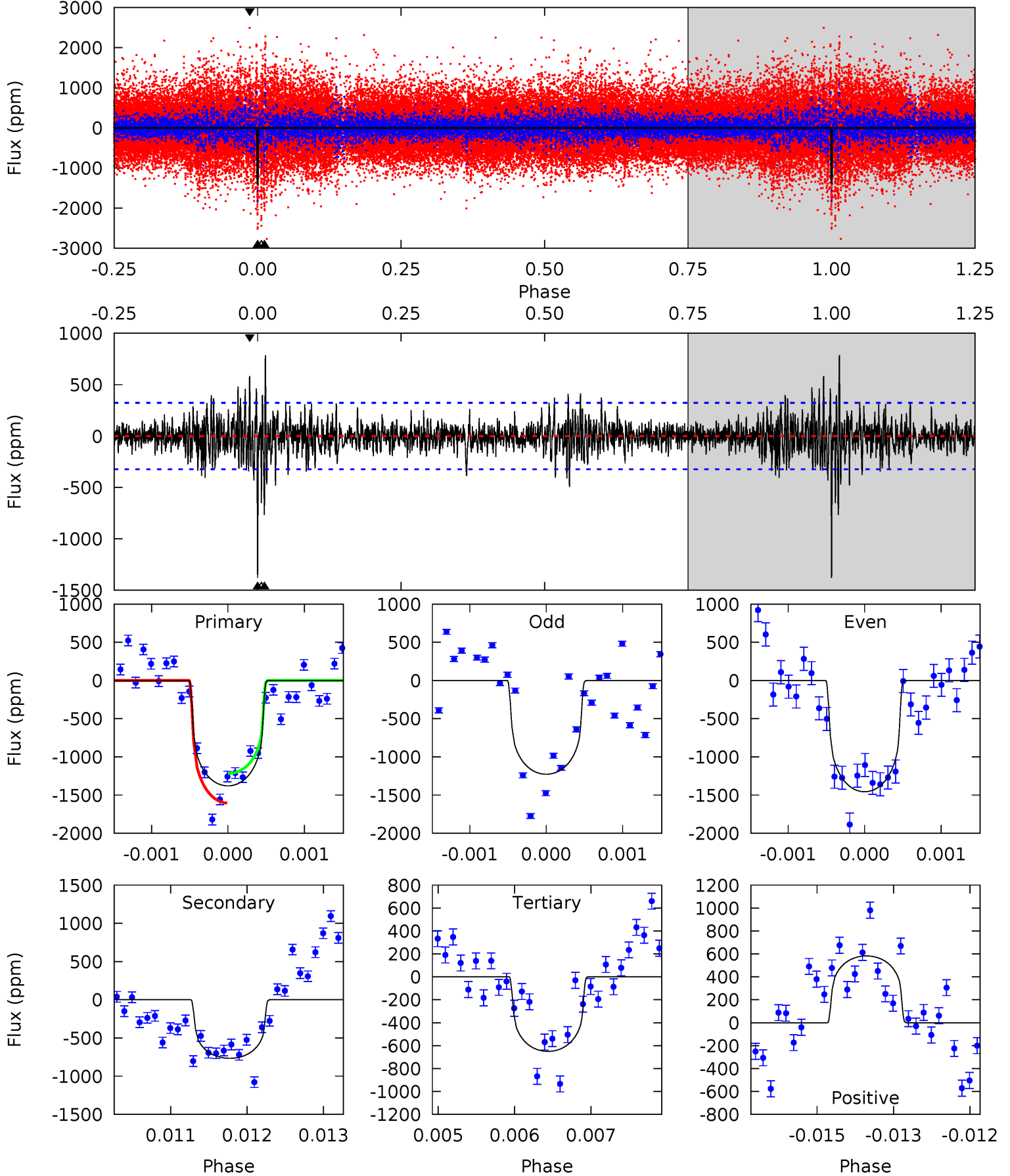
TCE 006685533-03 P=375.582455 Days  $T_0=295.073947$  (BKJD)



# DV Model-Shift Uniqueness Test

006685533-03, P = 375.584755 Days, E = 295.082400 Days

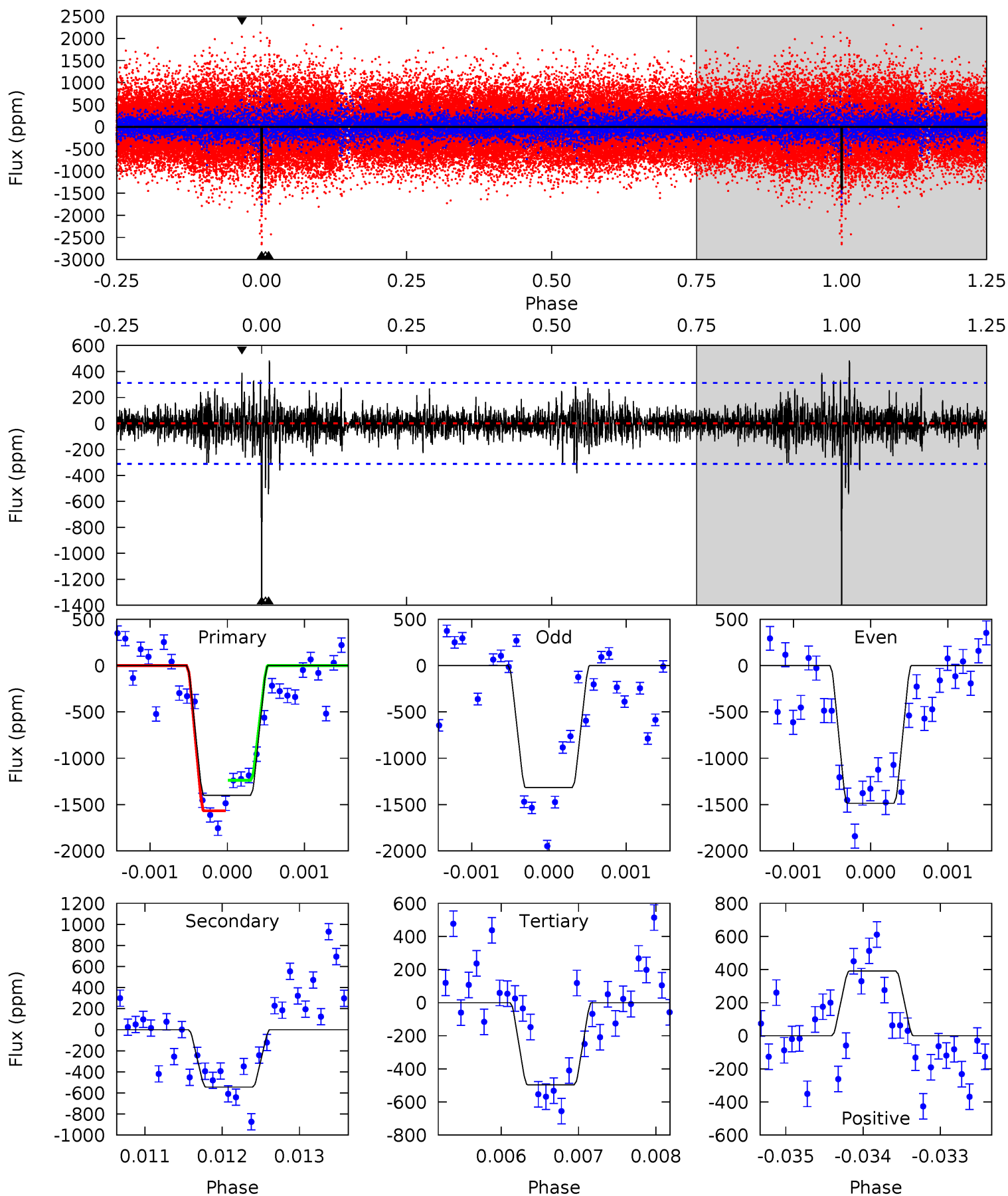
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.1	12.8	10.9	9.76	5.42	3.24	1.89	12.2	13.4	1.95	3.08	1.82	1.09	0.36	3.20



# Alt Model-Shift Uniqueness Test

006685533-03, P = 375.582455 Days, E = 295.073947 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
24.4	9.48	8.63	6.79	5.42	3.24	1.35	15.7	17.6	0.85	2.69	1.41	1.04	0.26	2.87



### Stellar Parameters For KIC 006685533

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5130^{+154}_{-138}$	$4.628^{+0.040}_{-0.060}$	$-0.480^{+0.300}_{-0.300}$	$0.676^{+0.080}_{-0.053}$	$0.709^{+0.083}_{-0.055}$	$3.228^{+0.613}_{-0.740}$
	+3%/-3%	+1%/-1%	+62%/-62%	+12%/-8%	+12%/-8%	+19%/-23%
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 006685533-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-767 \pm 60$	$2.61^{+1.30}_{-1.31}$	$274^{+10}_{-10}$	$4661^{+1734}_{-651}$	$50959^{+163474}_{-28056}$
Alt.	$-545 \pm 57$	$2.88^{+1.45}_{-1.32}$	$274^{+9}_{-9}$	$4206^{+1175}_{-556}$	$30406^{+68374}_{-16843}$

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

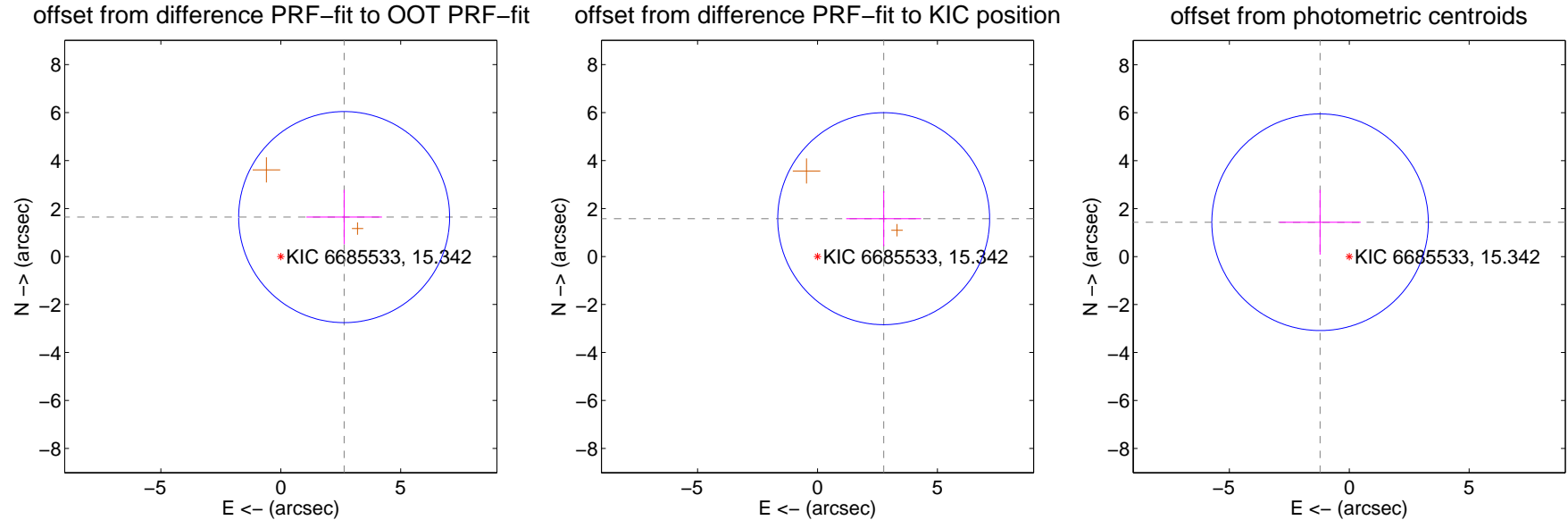
## DV Centroid Data

Supplemental centroid analysis for 006685533-03. Kepler magnitude: 15.34. Transit SNR 7.95

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.112 \pm 1.466$	2.12	$-2.643 \pm 1.576$	$1.643 \pm 1.134$
PRF-fit source offset from KIC position	$3.179 \pm 1.473$	2.16	$-2.760 \pm 1.565$	$1.577 \pm 1.146$
photometric centroid source offset	$1.88 \pm 1.51$	1.25	$1.22 \pm 1.70$	$1.43 \pm 1.35$



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.

Q1 no difference image



Q1 no OOT image



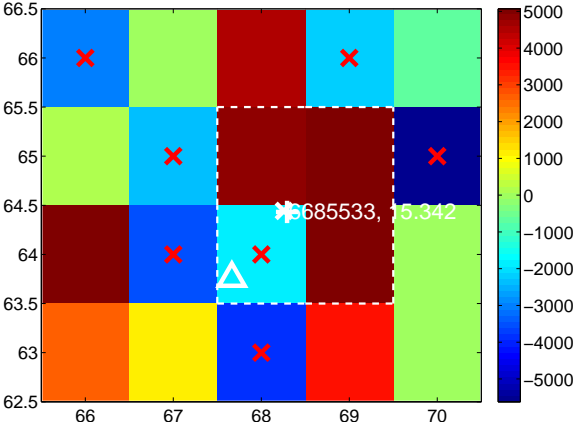
Q2 no difference image



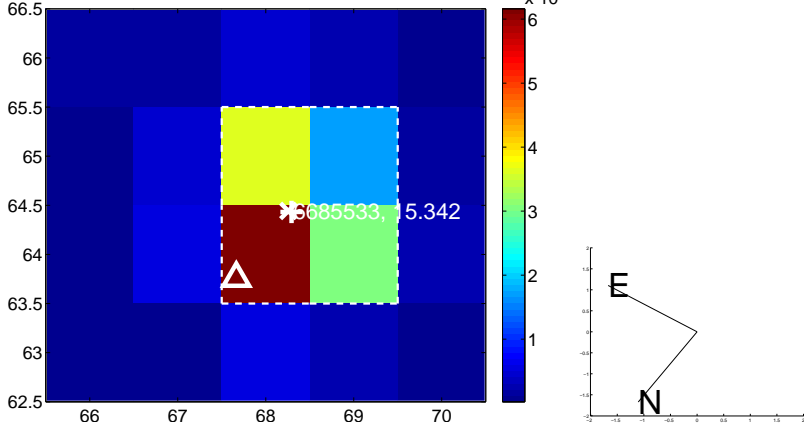
Q2 no OOT image



Q3 difference image. Poor Quality



Q3 OOT image



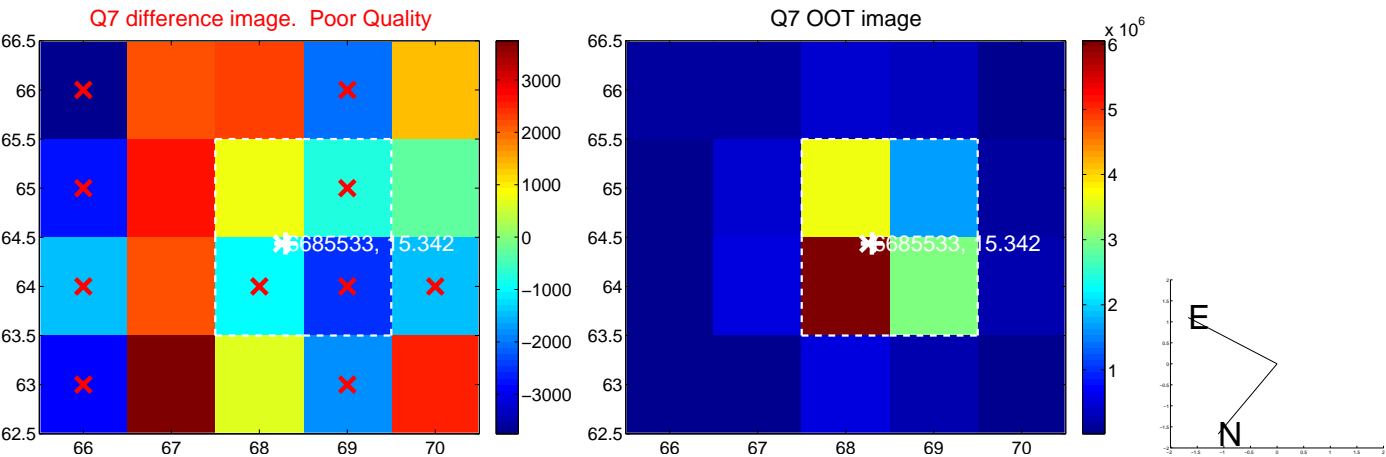
Q4 no difference image



Q4 no OOT image

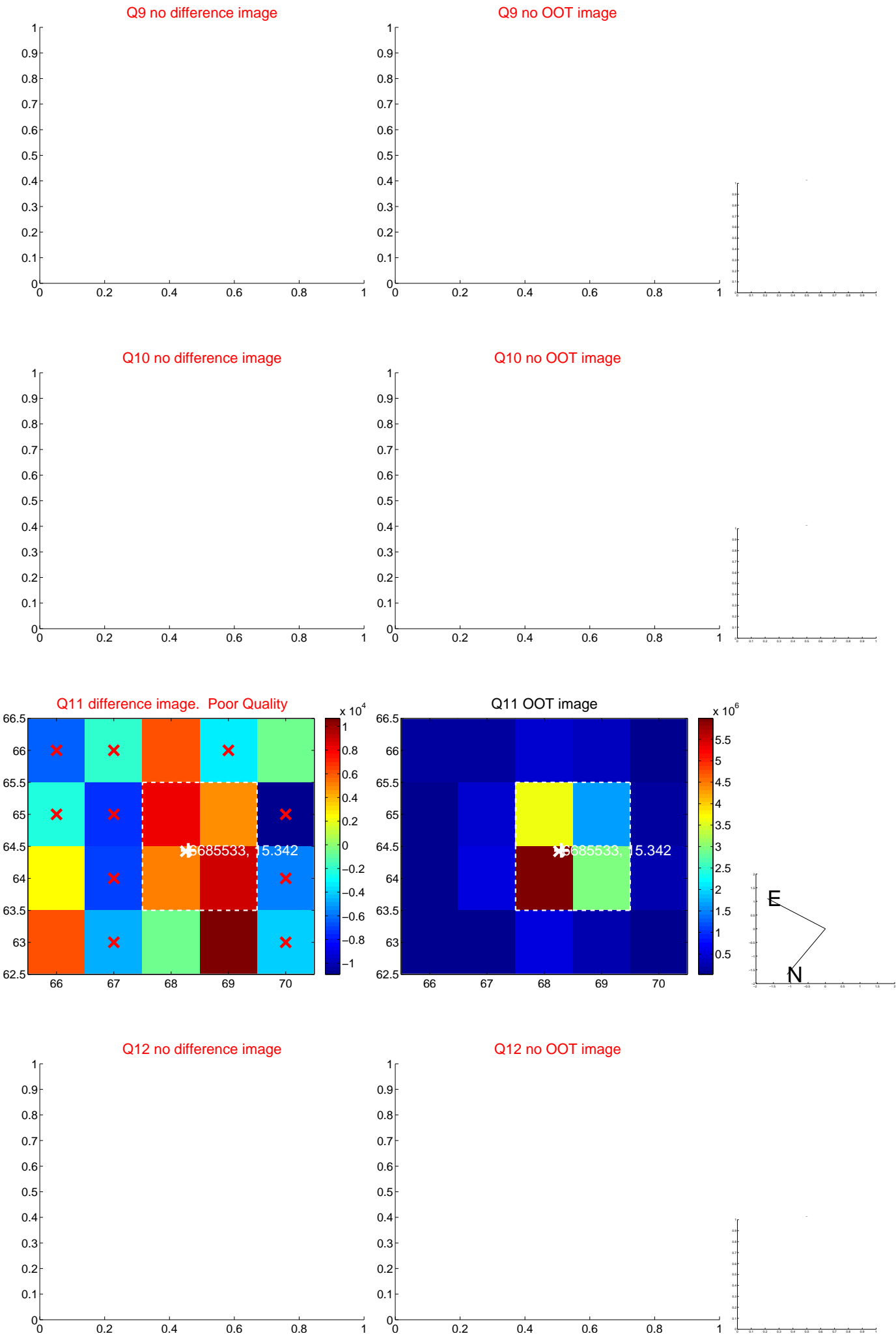


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

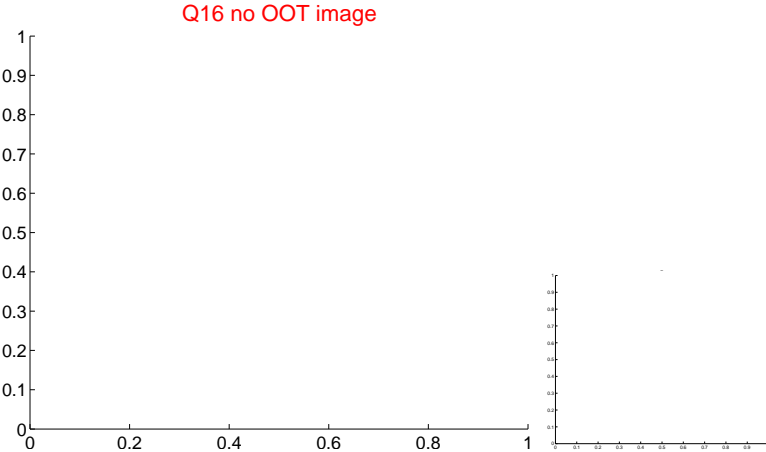
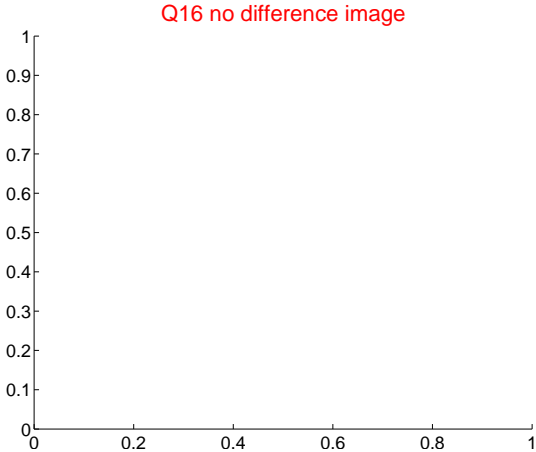
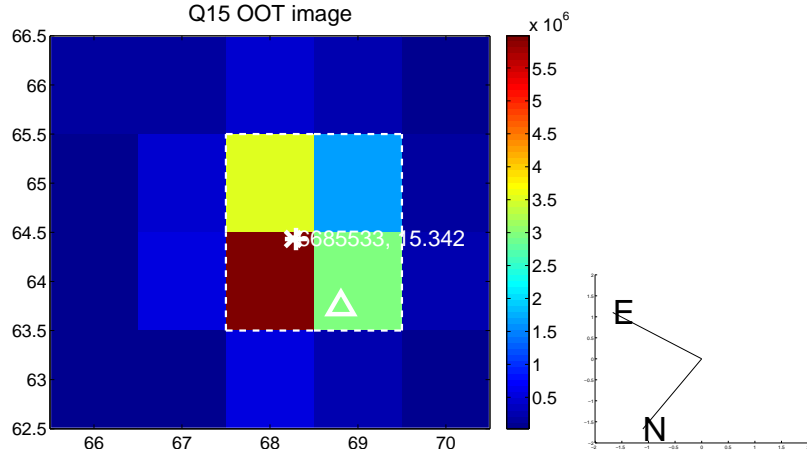
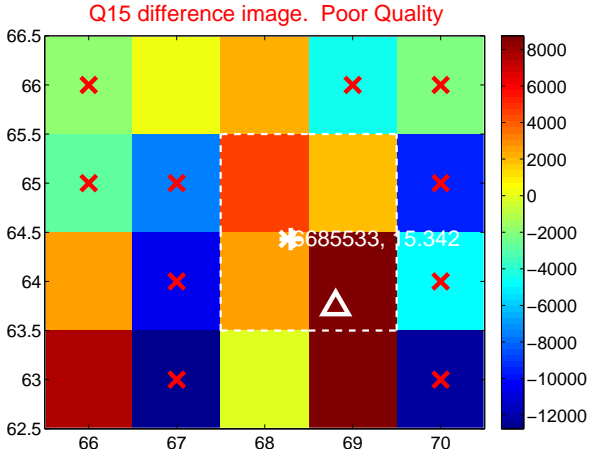
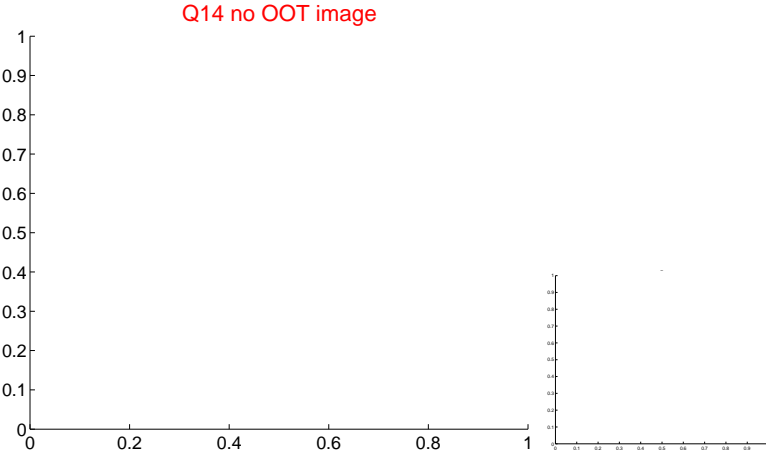
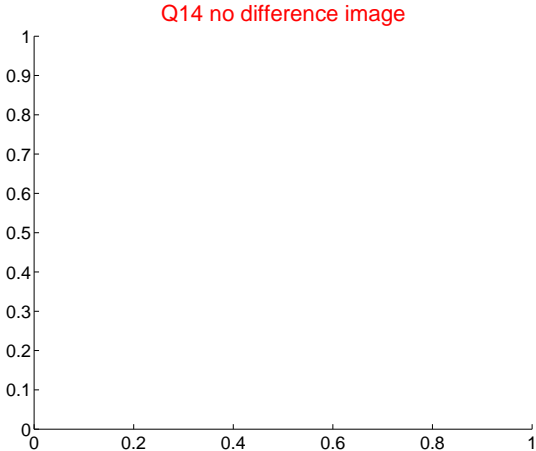
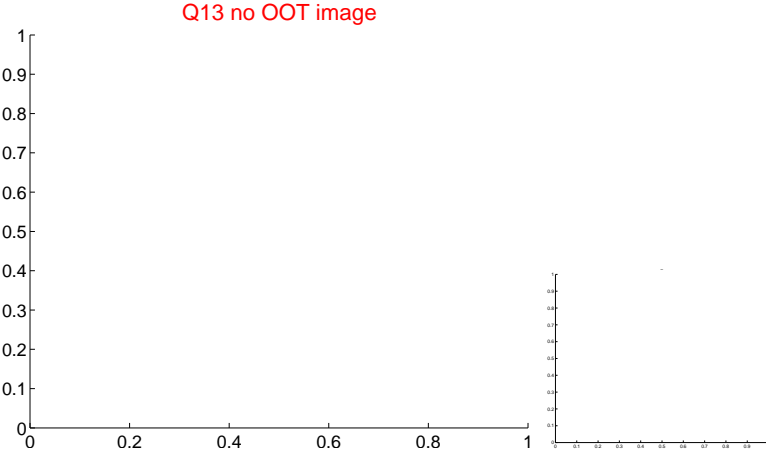
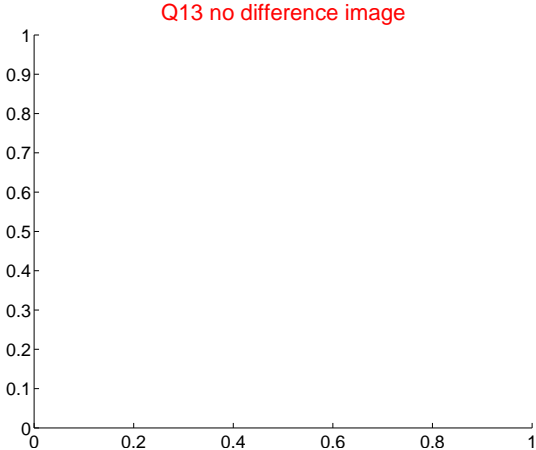




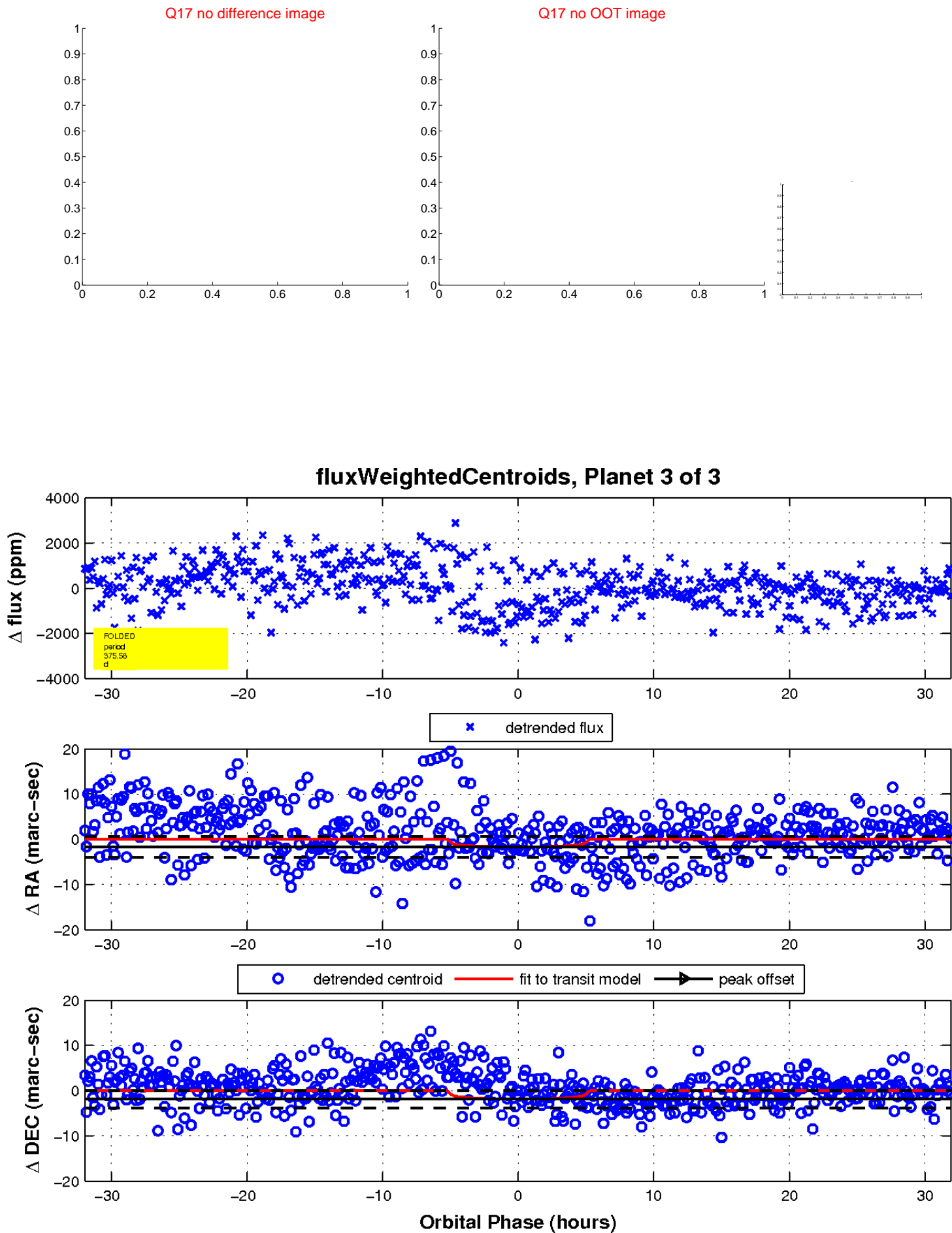
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



# UKIRT Image

Declination

