

# KIC 006704889

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006704889-01	OBS	No	625.110519	300.307634	1900.9	3.108	14.7	5.9	0.86	5799	3.72	0.38
006704889-02	OBS	No	300.591512	284.337566	2066.6	3.687	14.1	7.7	0.86	5799	3.90	1.00
006704889-03	OBS	No	385.546949	450.682384	2174.7	3.303	14.8	7.6	0.86	5799	4.21	0.72
006704889-04	OBS	No	507.074116	248.366025	1734.9	3.030	11.9	6.4	0.86	5799	3.57	0.50
006704889-05	OBS	No	581.552740	338.247537	1494.7	5.000	10.2	-1.0	0.86	5799	3.30	0.42

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006704889-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006704889-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006704889-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
006704889-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006704889-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

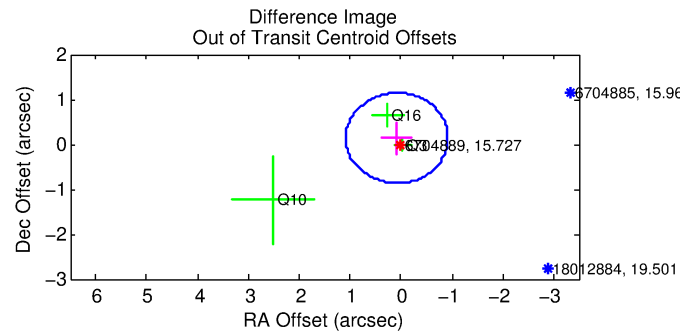
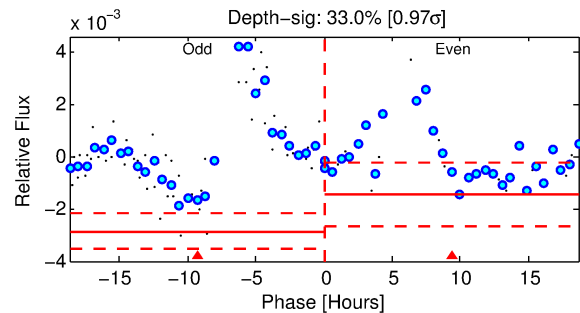
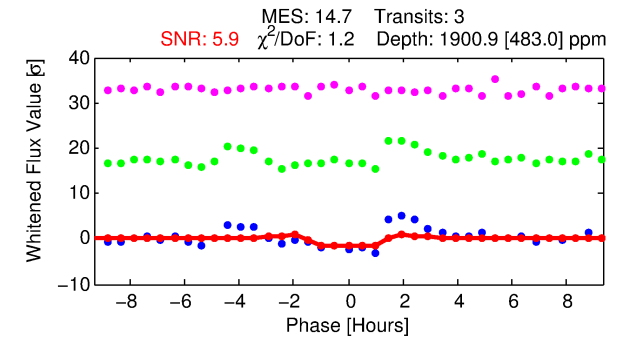
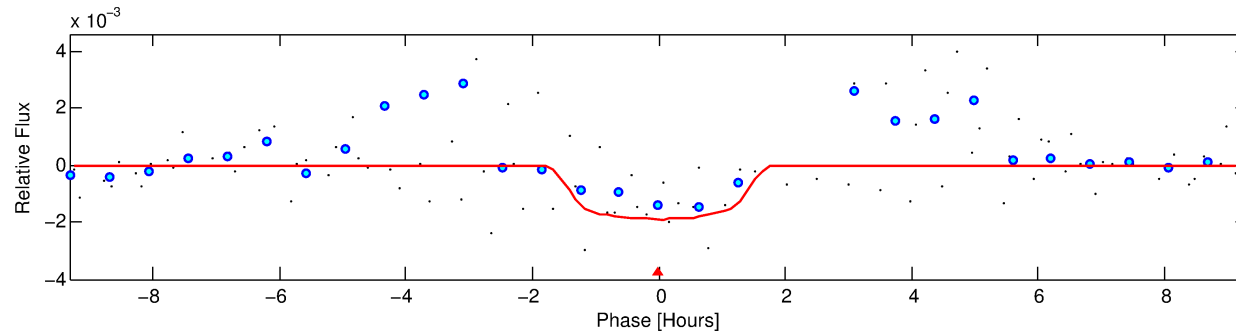
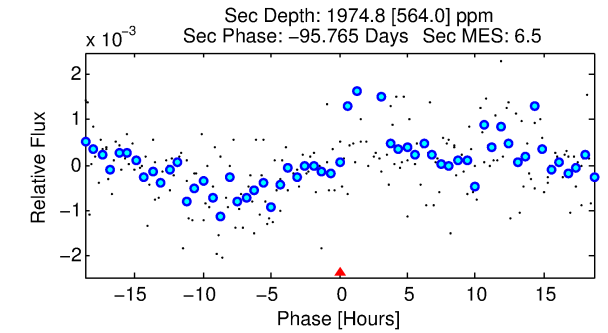
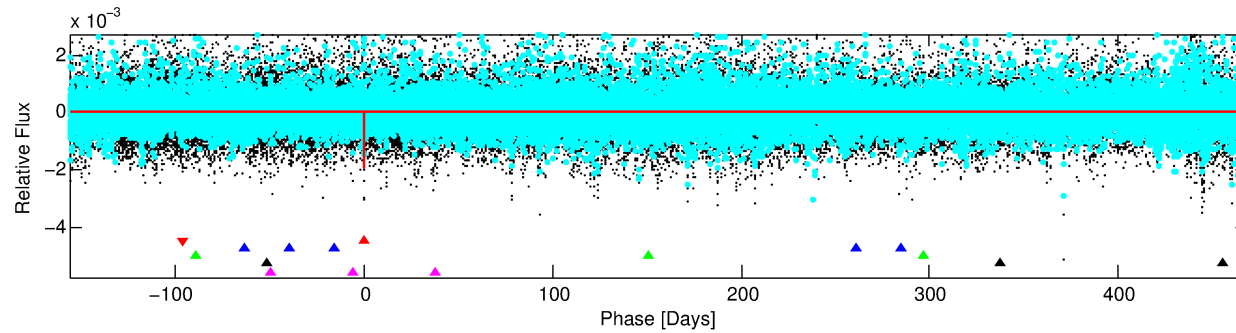
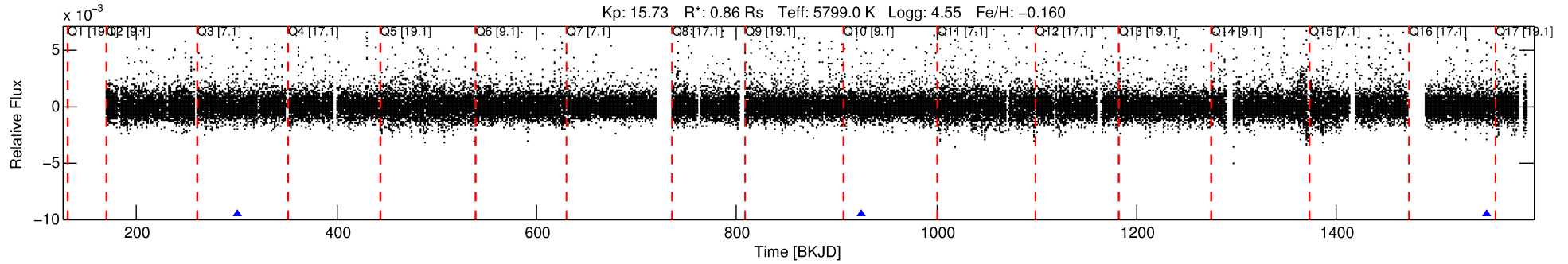
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Ephemeris Match Information For 006704889-01

No Significant Match Found

# DV One-Page Summary

KIC: 6704889 Candidate: 1 of 5 Period: 625.111 d



## DV Fit Results:

Period = 625.11052 [0.00628] d  
Epoch = 300.3076 [0.0073] BKJD  
Rp/R\* = 0.0397 [0.1745]  
a/R\* = 1596.66 [31594.01]  
b = 0.03 [705.95]  
Seff = 0.38 [0.14]  
Teq = 200 [19] K  
Rp = 3.72 [16.41] Re  
a = 1.4082 [0.3386] AU  
Ag = 155531.39 [1370389.94] [0.11 $\sigma$ ]  
Teffp = 6138 [13512] K [0.44 $\sigma$ ]

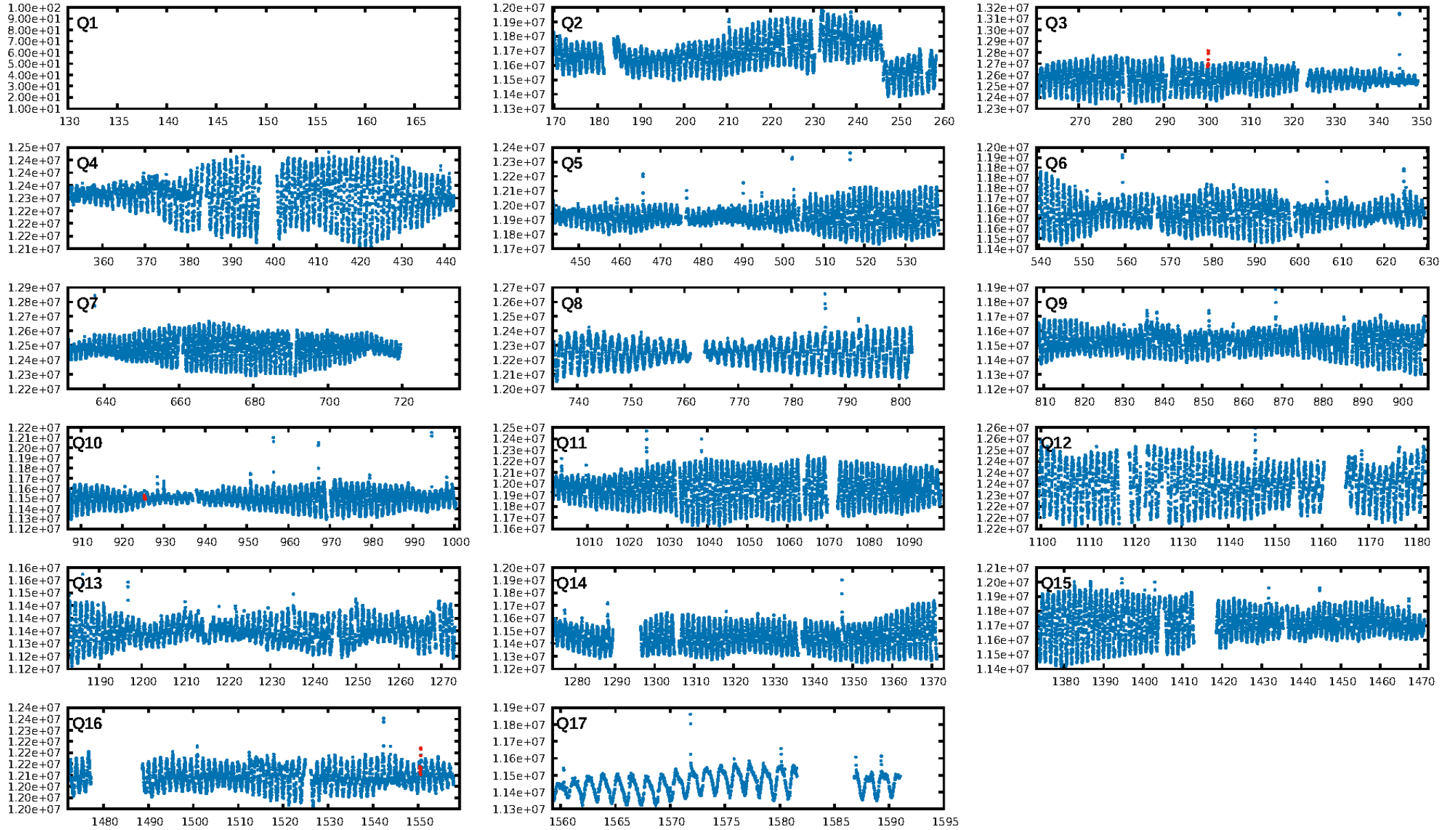
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [177.56 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 1.3%  
ModelChiSquareGof-sig: 82.9%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 13.95  
Centroid-sig: 95.3%  
Centroid-so: 0.954 arcsec [0.73 $\sigma$ ]  
OotOffset-rm: 0.159 arcsec [0.47 $\sigma$ ]  
OotOffset-st: 1/1/1/0 [3]  
KicOffset-rm: 0.205 arcsec [0.61 $\sigma$ ]  
KicOffset-st: 1/1/1/0 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

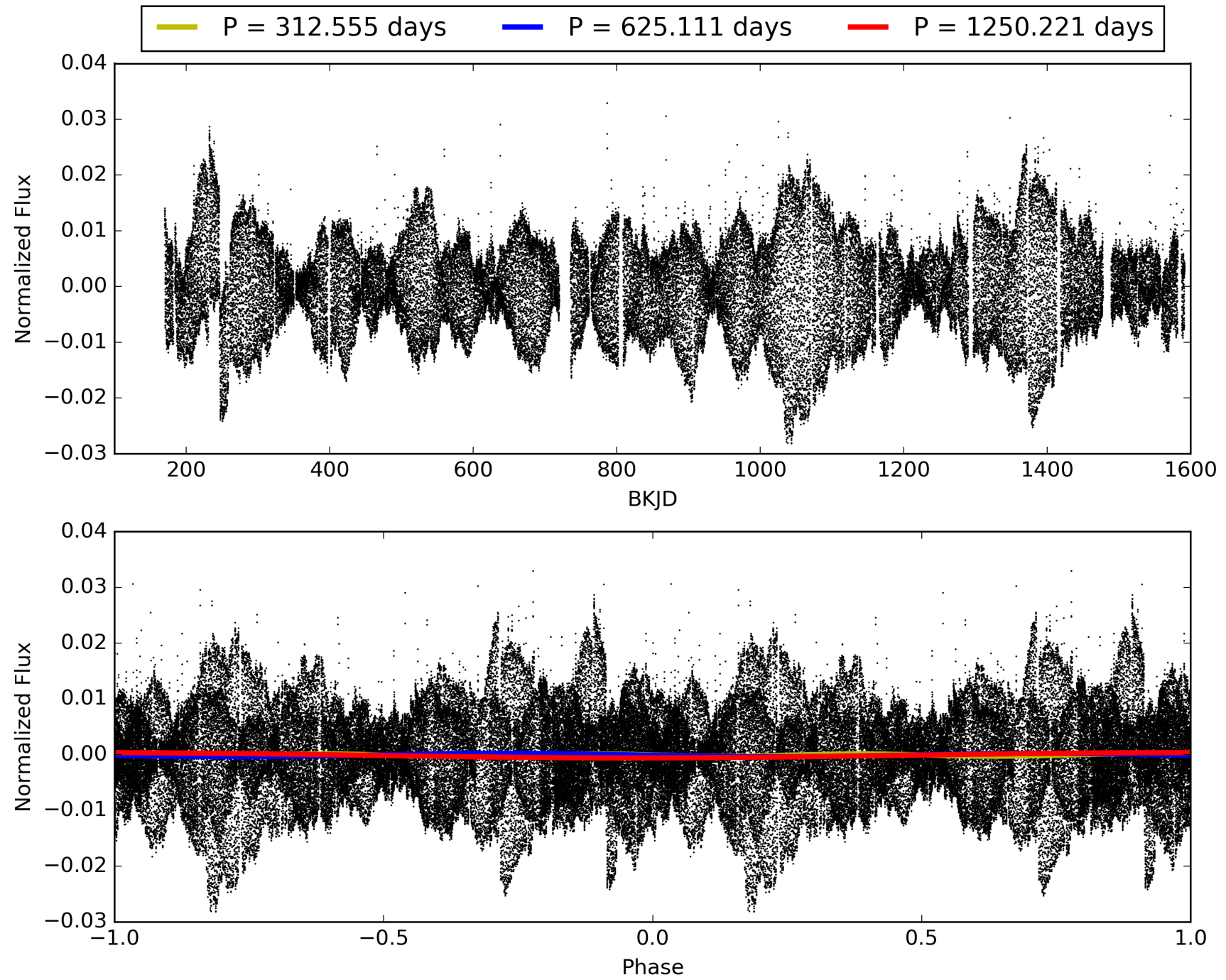
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:02:15 Z

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

# TCE 006704889-01, PDC Light Curves



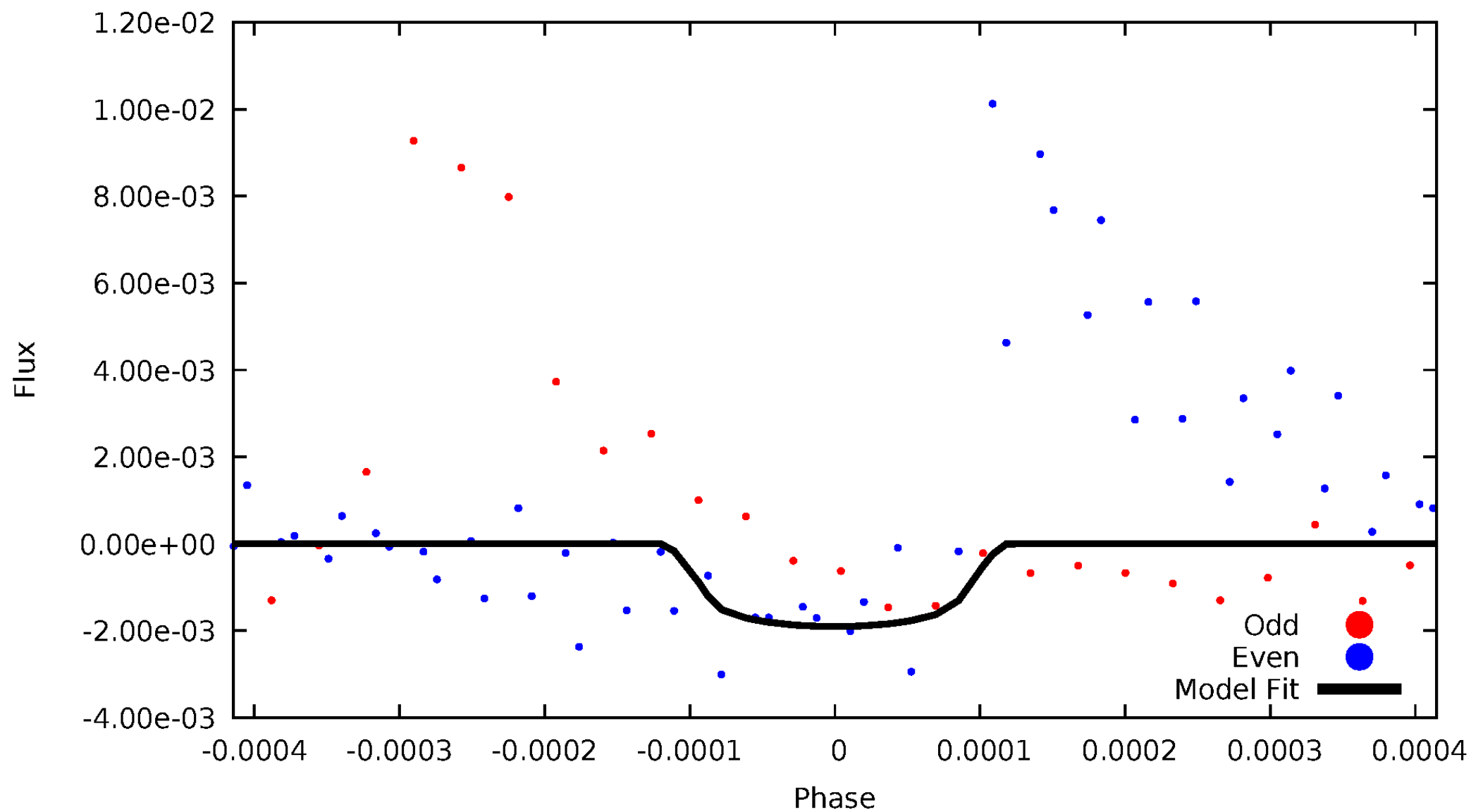
TCE 006704889-01





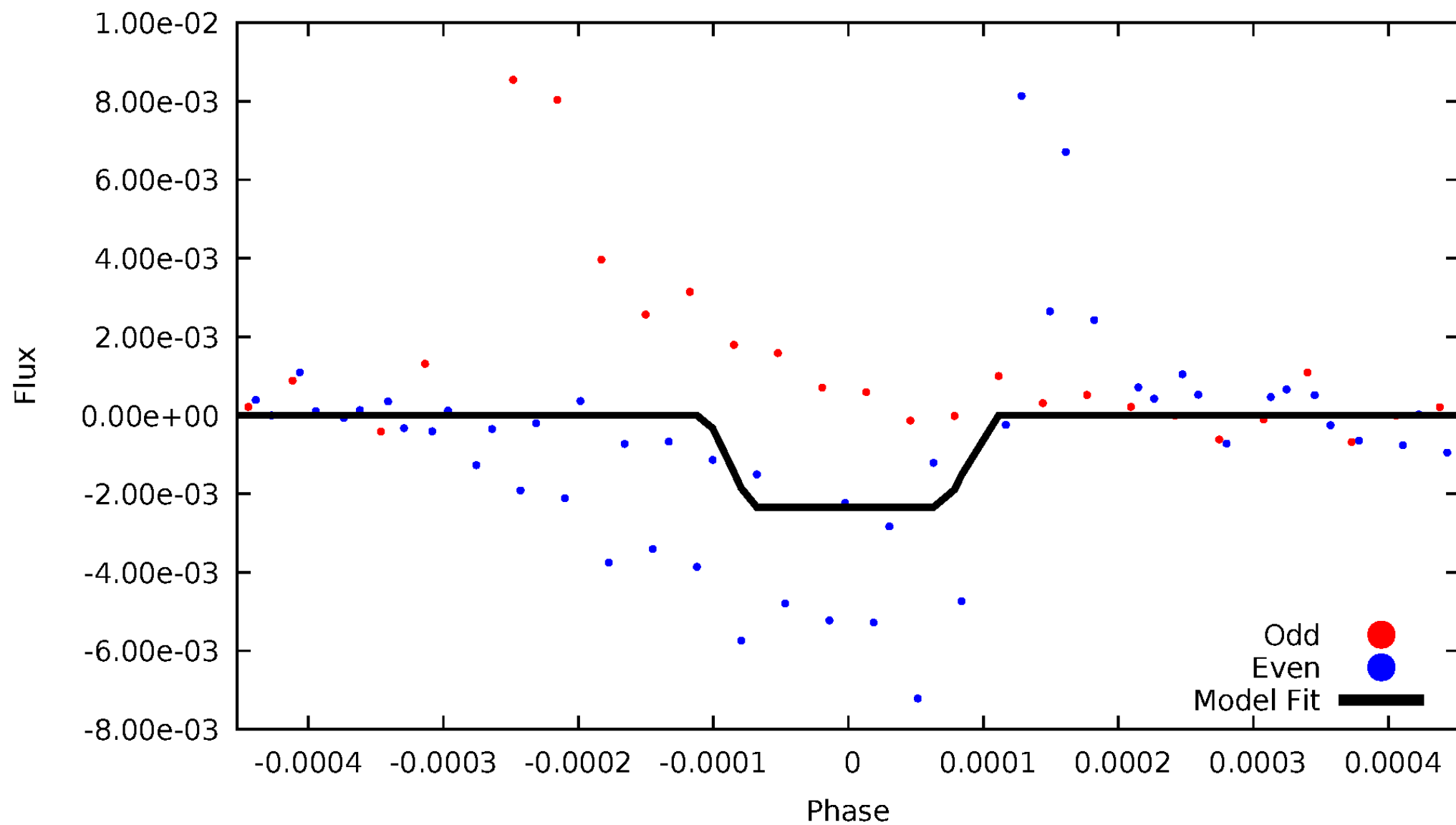
# DV Odd/Even

TCE 006704889-01

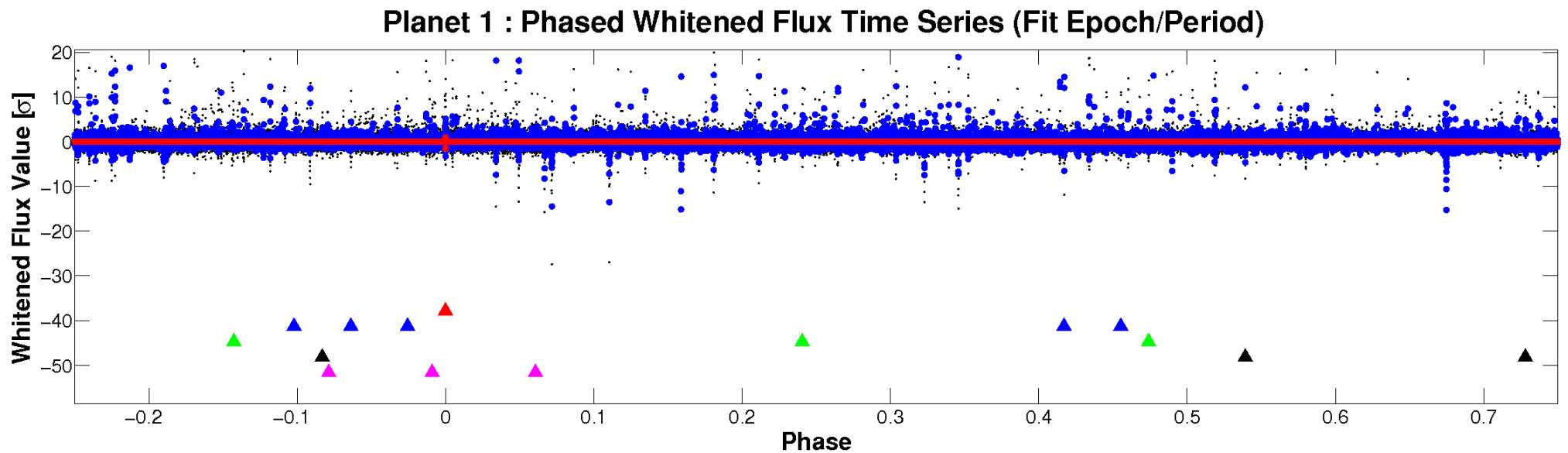
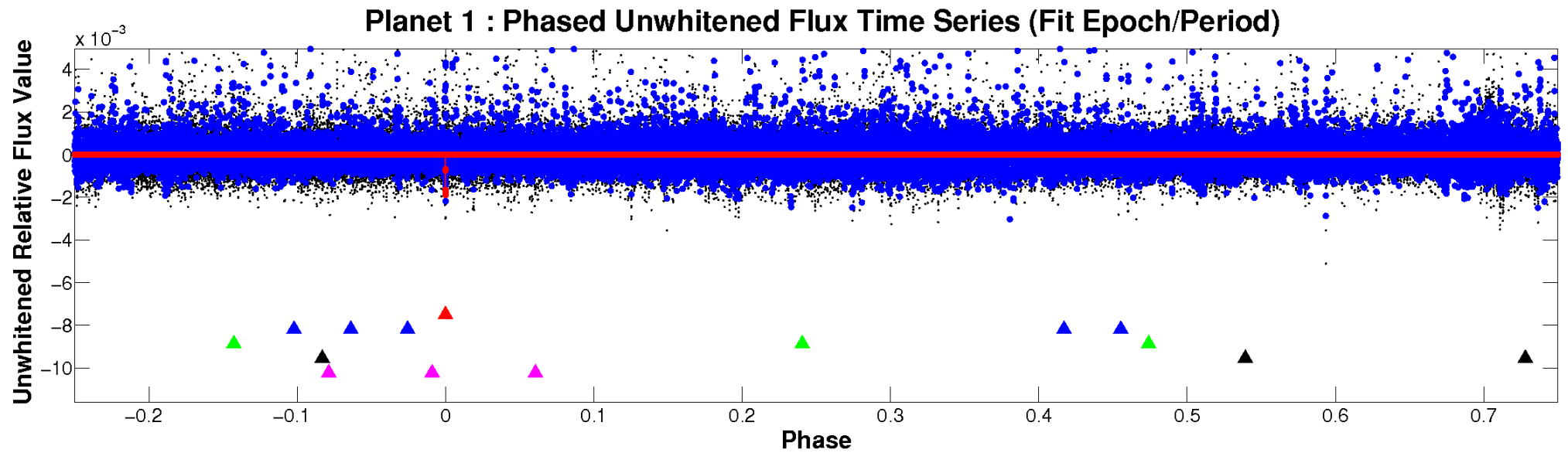


# ALT Odd/Even

TCE 006704889-01

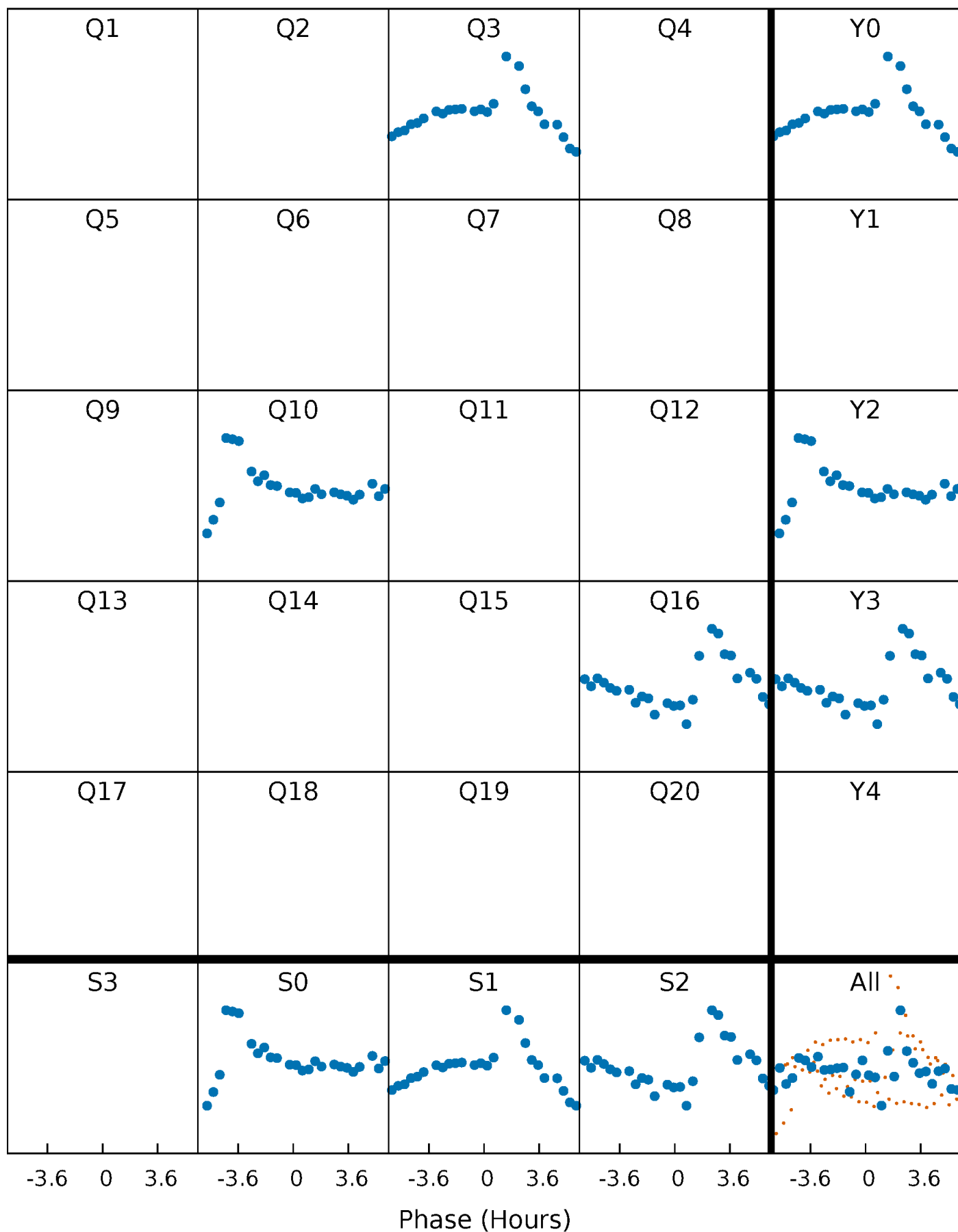


# Non-Whitened Vs. Whitened Light Curve



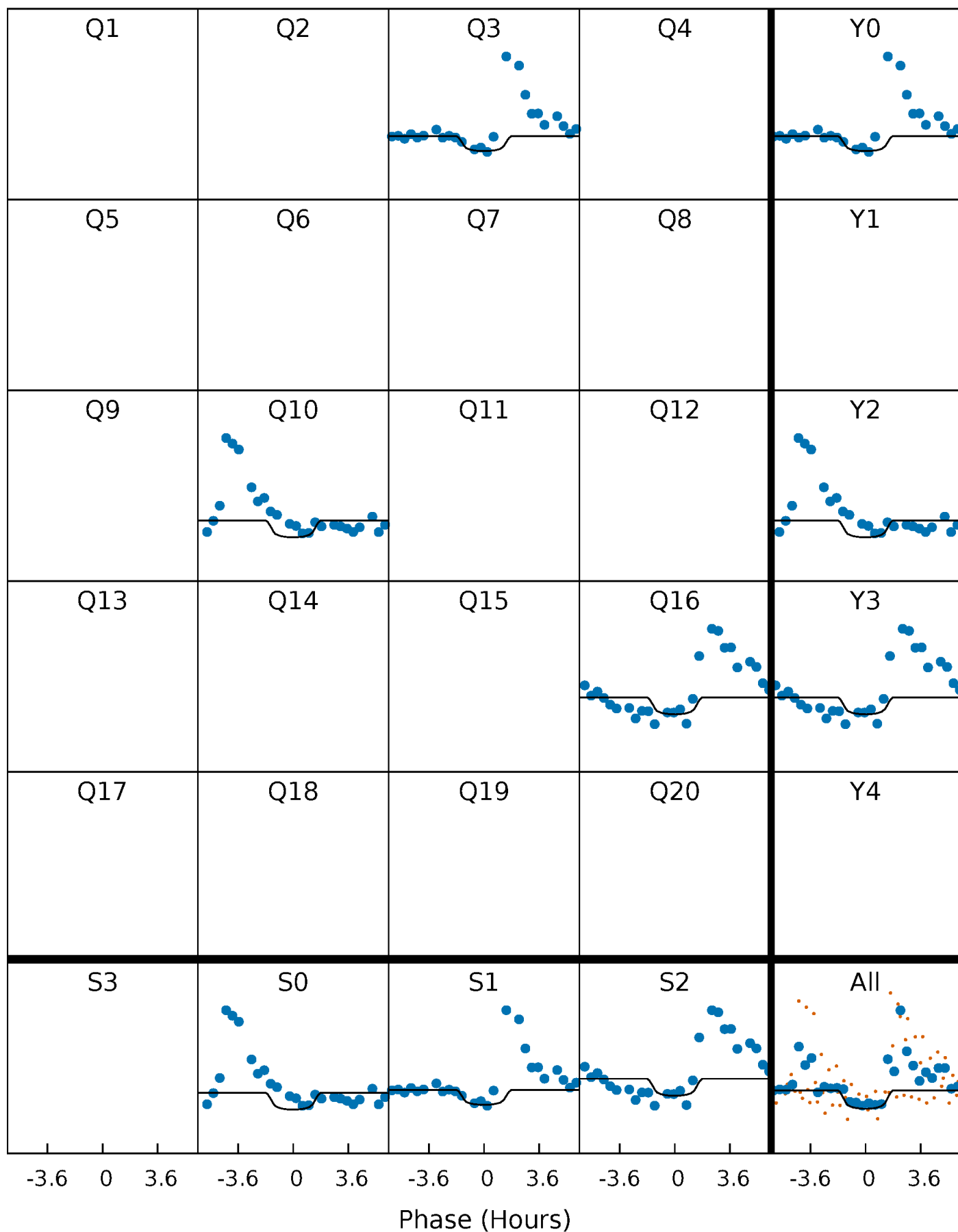
# PDC Quarter-Phased Transit Curves

TCE 006704889-01 P=625.110519 Days  $T_0=300.307634$  (BKJD)



# DV Quarter-Phased Transit Curves

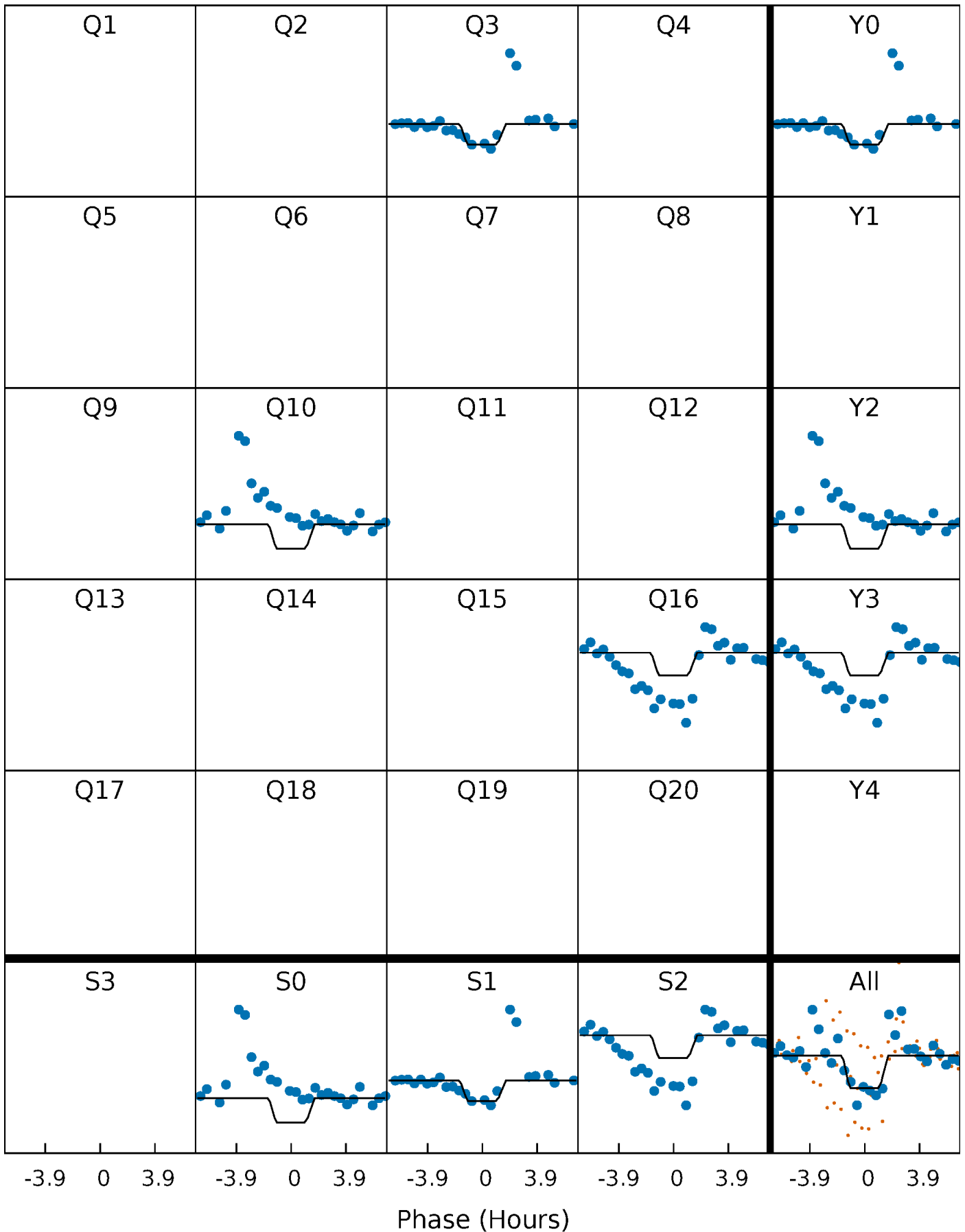
TCE 006704889-01 P=625.110519 Days  $T_0=300.307634$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

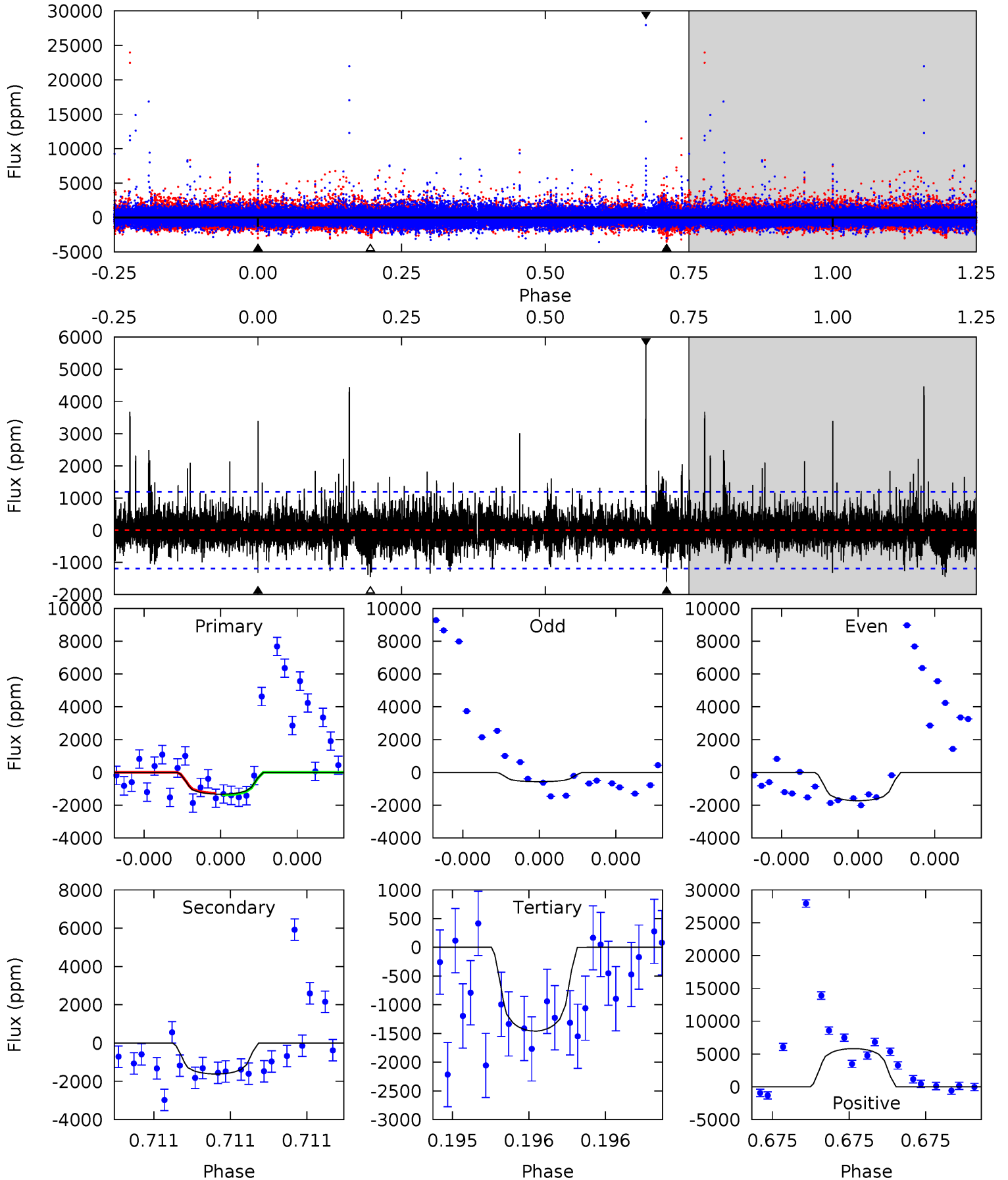
TCE 006704889-01 P=625.117090 Days  $T_0=300.295306$  (BKJD)



# DV Model-Shift Uniqueness Test

006704889-01, P = 625.110519 Days, E = 300.307634 Days

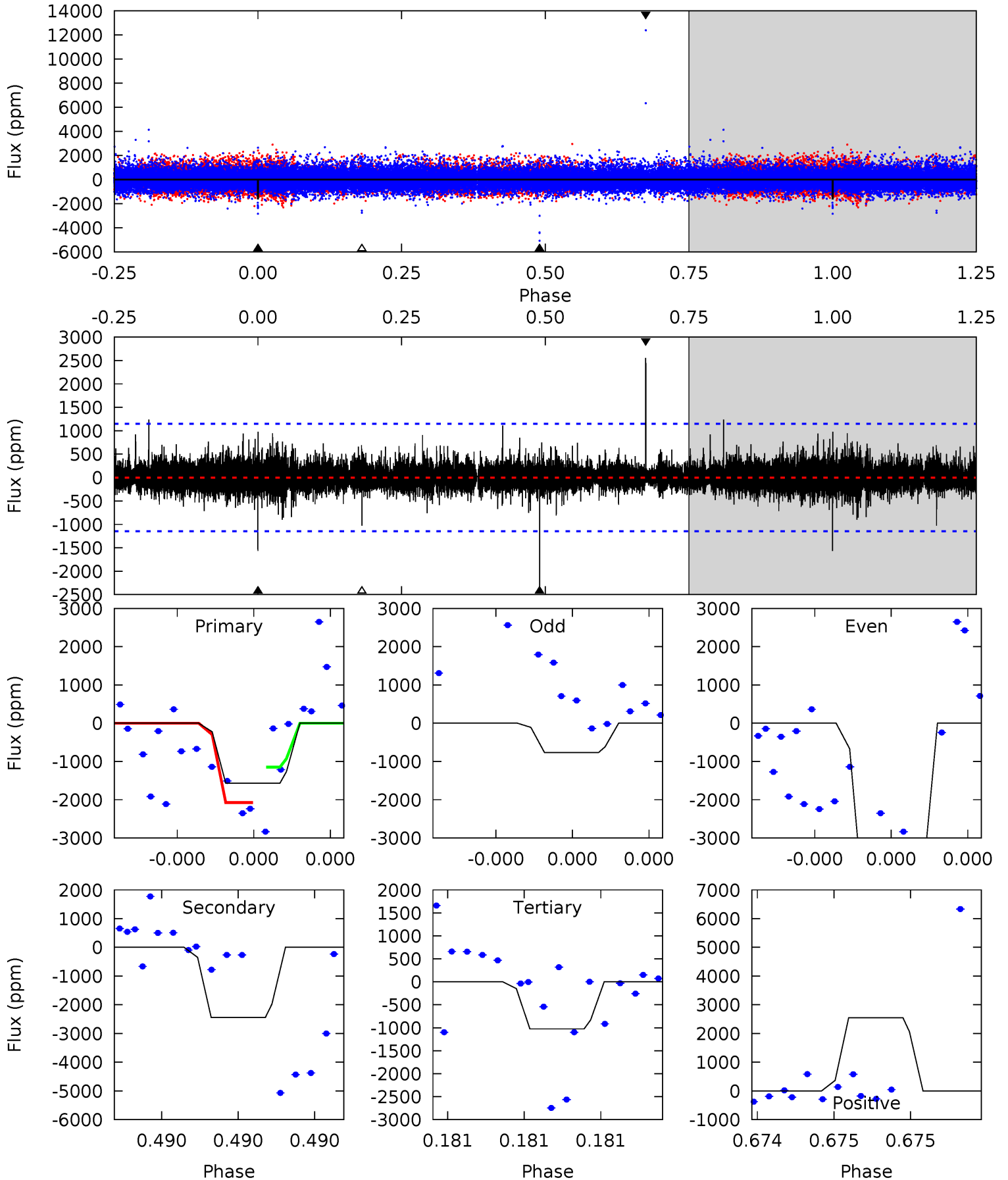
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.37	7.76	7.00	28.0	5.72	3.70	1.91	-0.63	-21.6	0.76	-20.2	1.91	1.19	0.78	0.24



# Alt Model-Shift Uniqueness Test

006704889-01, P = 625.117090 Days, E = 300.295306 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
7.85	12.2	5.14	12.8	5.74	3.74	0.84	2.71	-4.93	7.09	-0.55	13.4	1.18	0.51	2.30



### Stellar Parameters For KIC 006704889

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5799^{+155}_{-190}$	$4.548^{+0.035}_{-0.196}$	$-0.160^{+0.300}_{-0.300}$	$0.860^{+0.242}_{-0.081}$	$0.955^{+0.100}_{-0.123}$	$2.112^{+0.386}_{-1.028}$
	+3%/-3%	+1%/-4%	+188%/-188%	+28%/-9%	+10%/-13%	+18%/-49%
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 006704889-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-1616 \pm 208$	$13.77^{+13.78}_{-9.27}$	$287^{+19}_{-14}$	$3578^{+1876}_{-671}$	$8937^{+76487}_{-6711}$
Alt.	$-2441 \pm 200$	$13.40^{+13.42}_{-8.85}$	$286^{+22}_{-13}$	$3871^{+2079}_{-767}$	$14054^{+109312}_{-10455}$

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

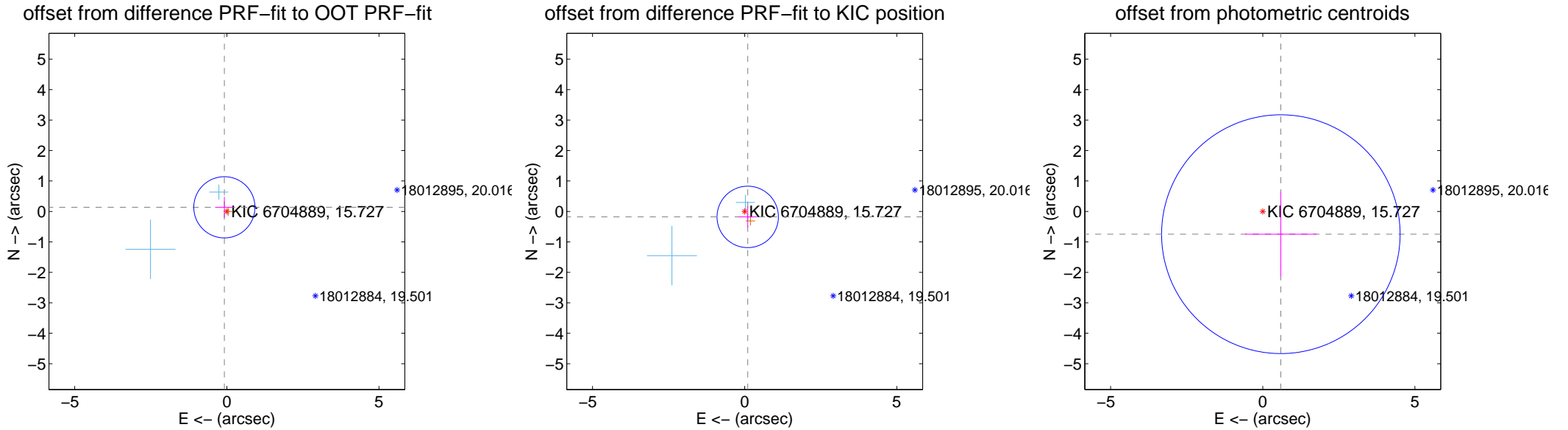
## DV Centroid Data

Supplemental centroid analysis for 006704889-01. Kepler magnitude: 15.73. Transit SNR 5.93

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.44 arcsec

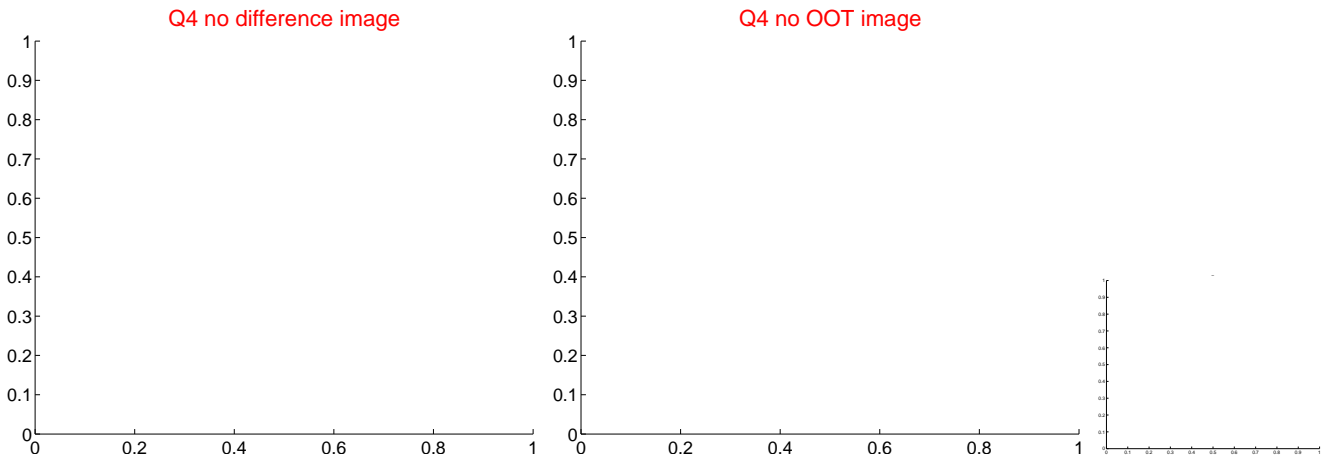
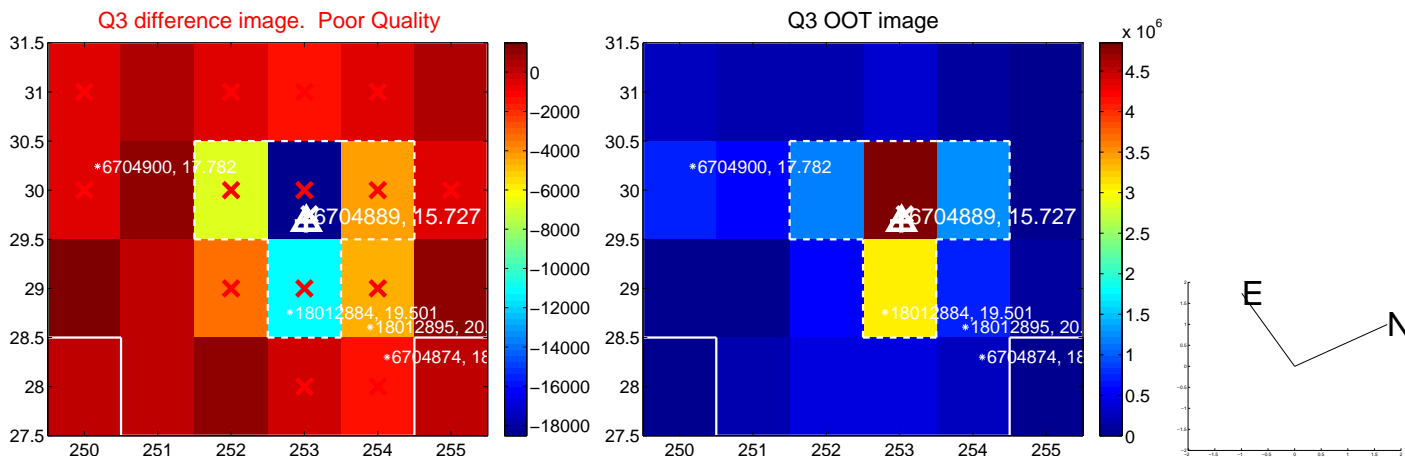
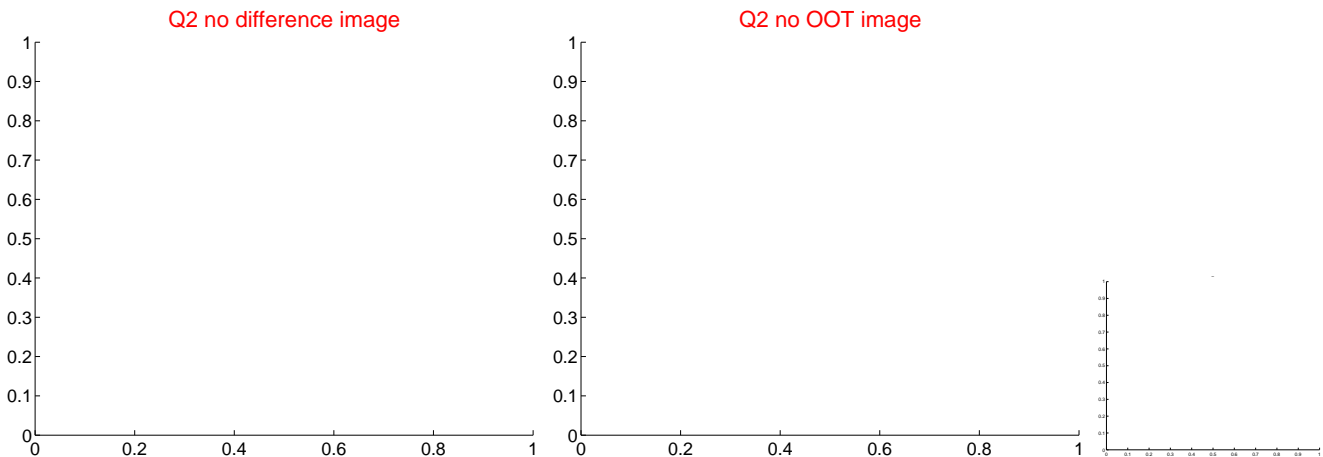
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.159 \pm 0.335$	0.47	$0.082 \pm 0.305$	$0.136 \pm 0.345$
PRF-fit source offset from KIC position	$0.205 \pm 0.336$	0.61	$-0.100 \pm 0.305$	$-0.179 \pm 0.345$
photometric centroid source offset	$0.95 \pm 1.31$	0.73	$-0.59 \pm 1.17$	$-0.75 \pm 1.38$



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.



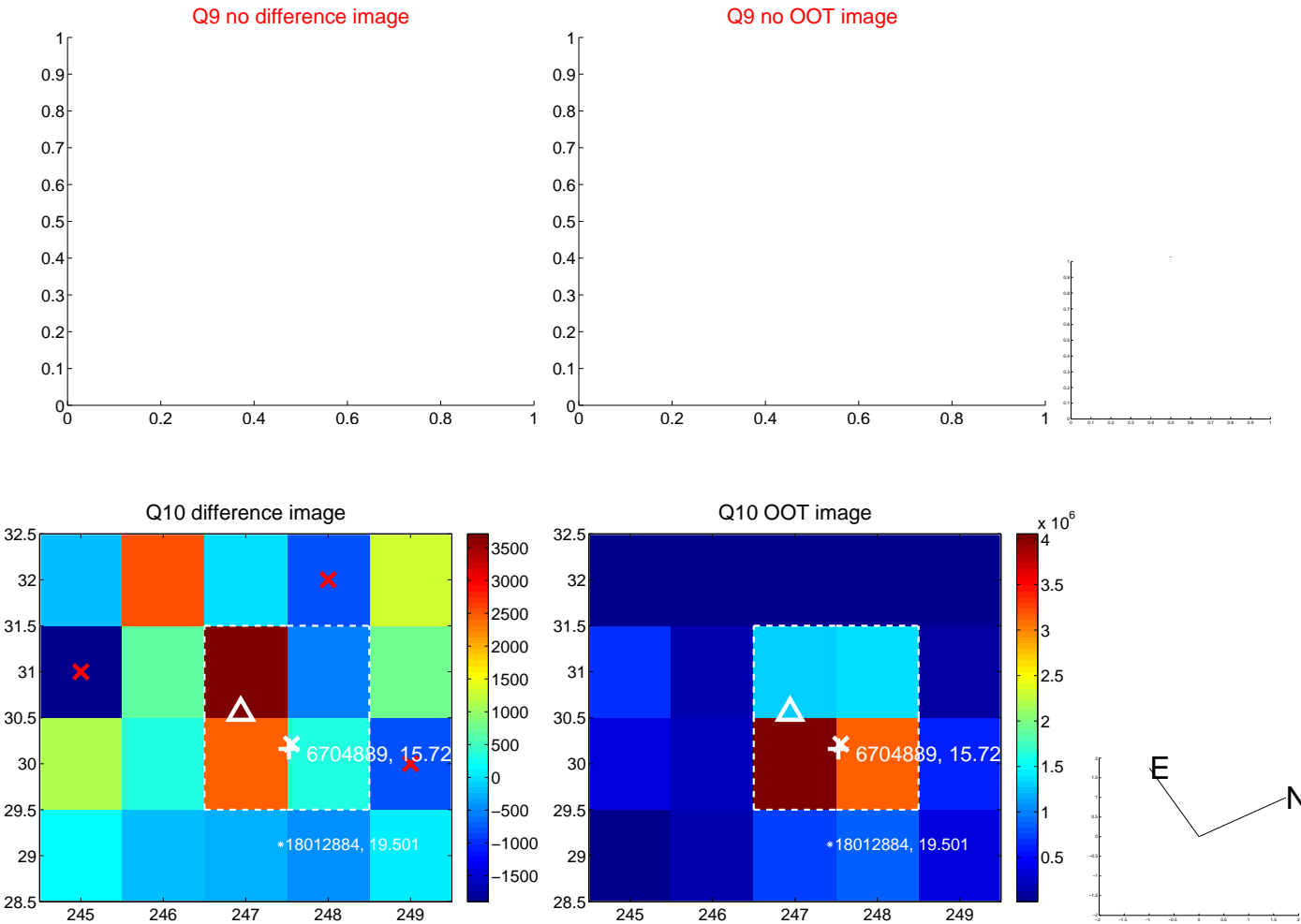
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



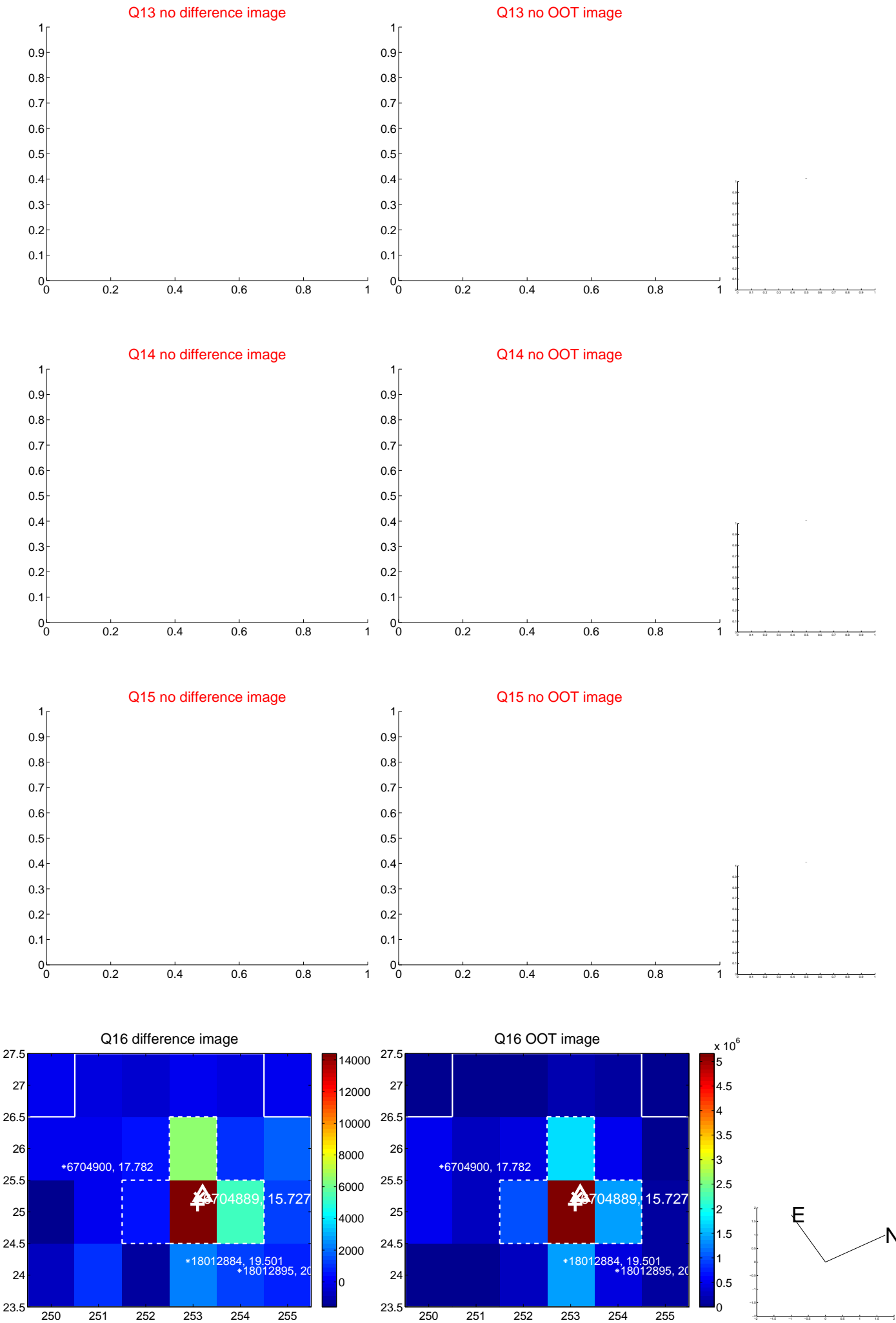
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



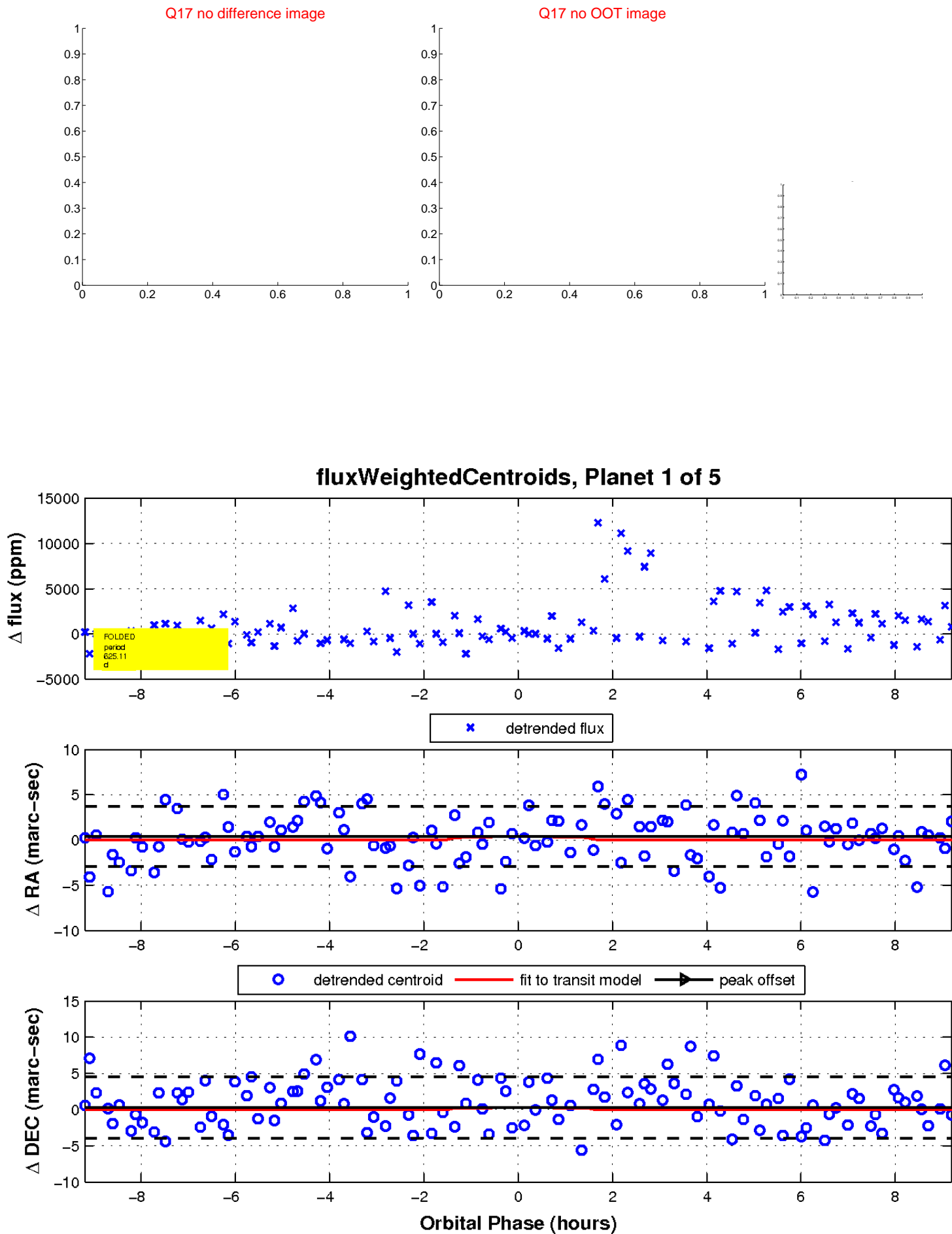
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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.





32.0 31.0 19:41:30.0 29.0 28.0

20.0 30.0 40.0 50.0 50:042:08:00.0

32.0 31.0 19:41:30.0 29.0 28.0

20.0 30.0 40.0 50.0

# KIC 006704889

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006704889-01	OBS	No	625.110519	300.307634	1900.9	3.108	14.7	5.9	0.86	5799	3.72	0.38
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006704889-05	OBS	No	581.552740	338.247537	1494.7	5.000	10.2	-1.0	0.86	5799	3.30	0.42

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006704889-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006704889-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006704889-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
006704889-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006704889-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

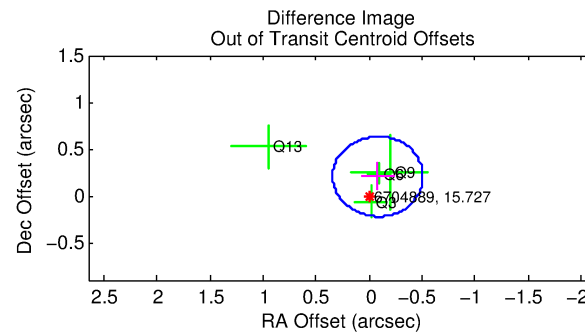
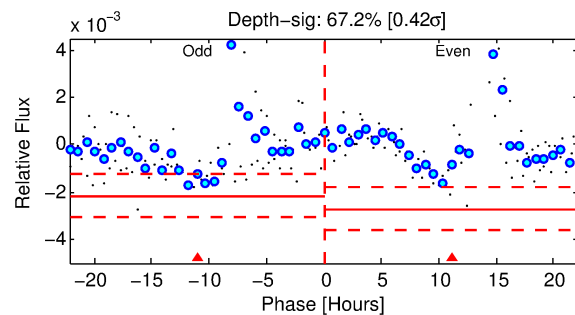
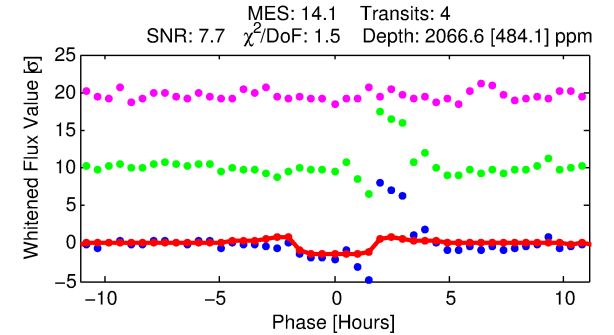
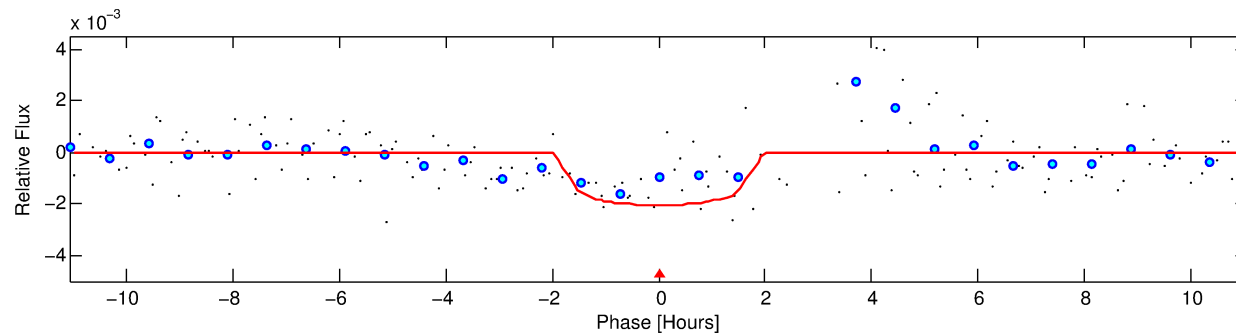
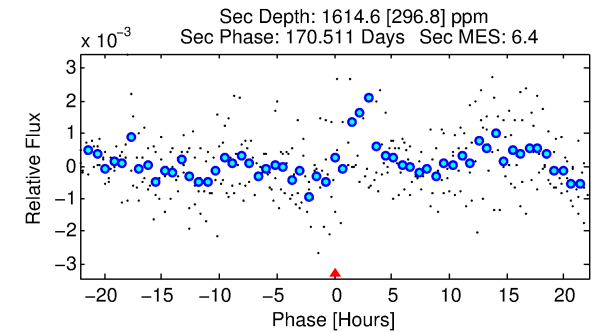
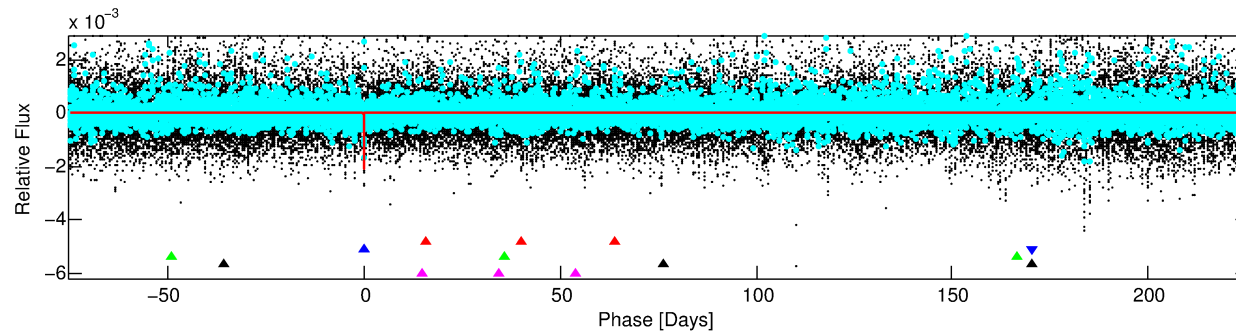
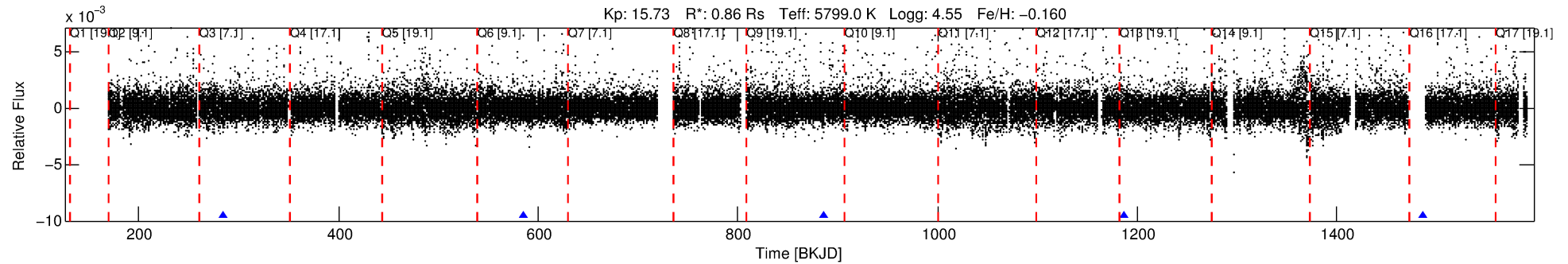
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006704889-02

No Significant Match Found

# DV One-Page Summary

KIC: 6704889 Candidate: 2 of 5 Period: 300.592 d



## DV Fit Results:

Period = 300.59151 [0.00547] d  
Epoch = 284.3376 [0.0106] BKJD  
Rp/R\* = 0.0416 [0.0909]  
a/R\* = 632.82 [6148.28]  
b = 0.23 [40.54]  
Seff = 1.00 [0.38]  
Teq = 255 [24] K  
Rp = 3.90 [8.60] Re  
a = 0.8643 [0.2078] AU  
Ag = 43589.81 [191320.62] [0.23σ]  
Teffp = 5701 [6238] K [0.87σ]

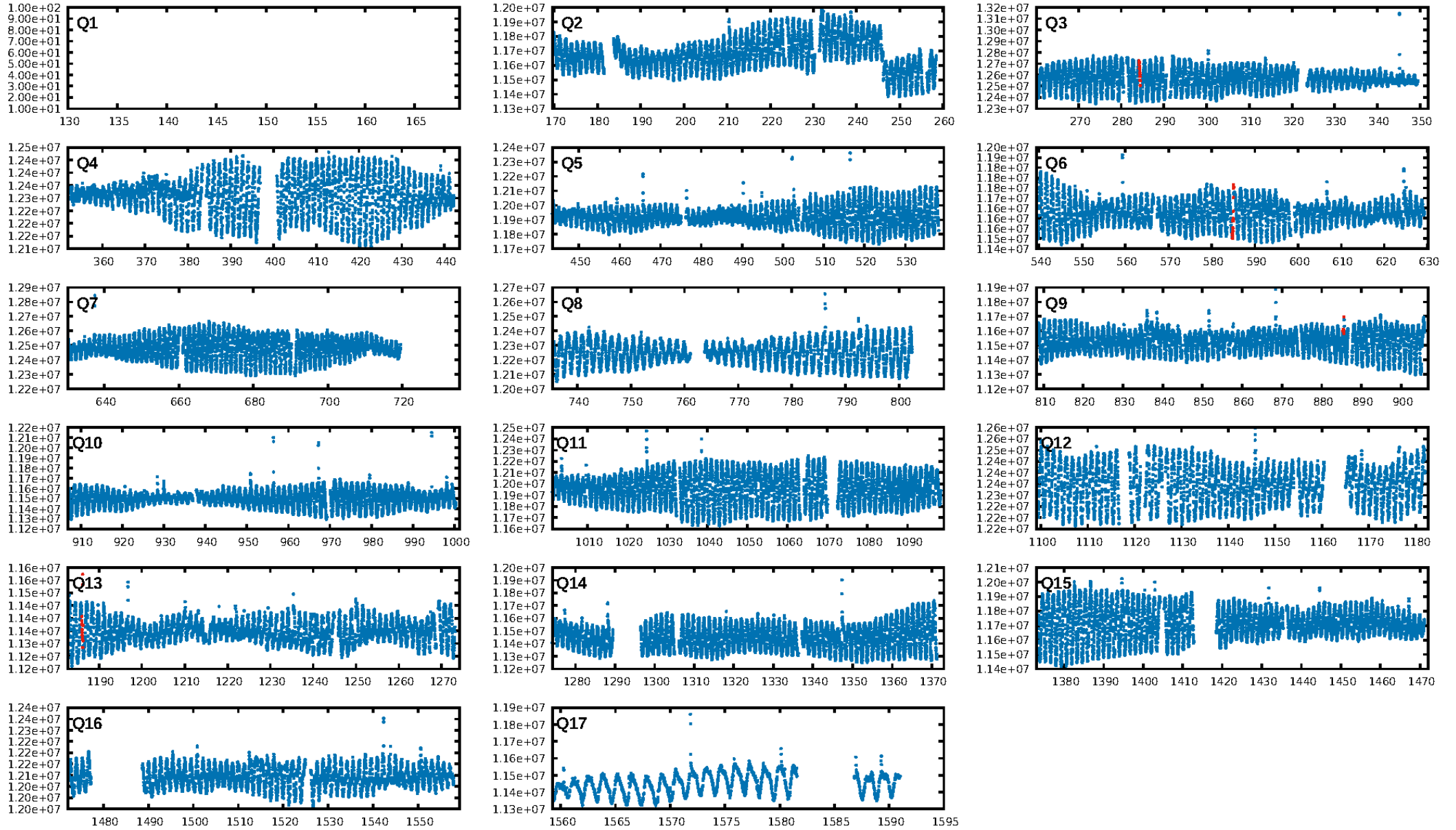
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [411.90σ]  
ModelChiSquare2-sig: 46.5%  
ModelChiSquareGof-sig: 85.6%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 1.676  
Centroid-sig: 30.1%  
Centroid-so: 1.482 arcsec [1.54σ]  
OotOffset-rm: 0.220 arcsec [1.55σ]  
OotOffset-st: 1/1/0/2 [4]  
KicOffset-rm: 0.235 arcsec [0.88σ]  
KicOffset-st: 1/1/0/2 [4]  
DiffImageQuality-fgm: 0.50 [2/4]  
DiffImageOverlap-fno: 1.00 [4/4]

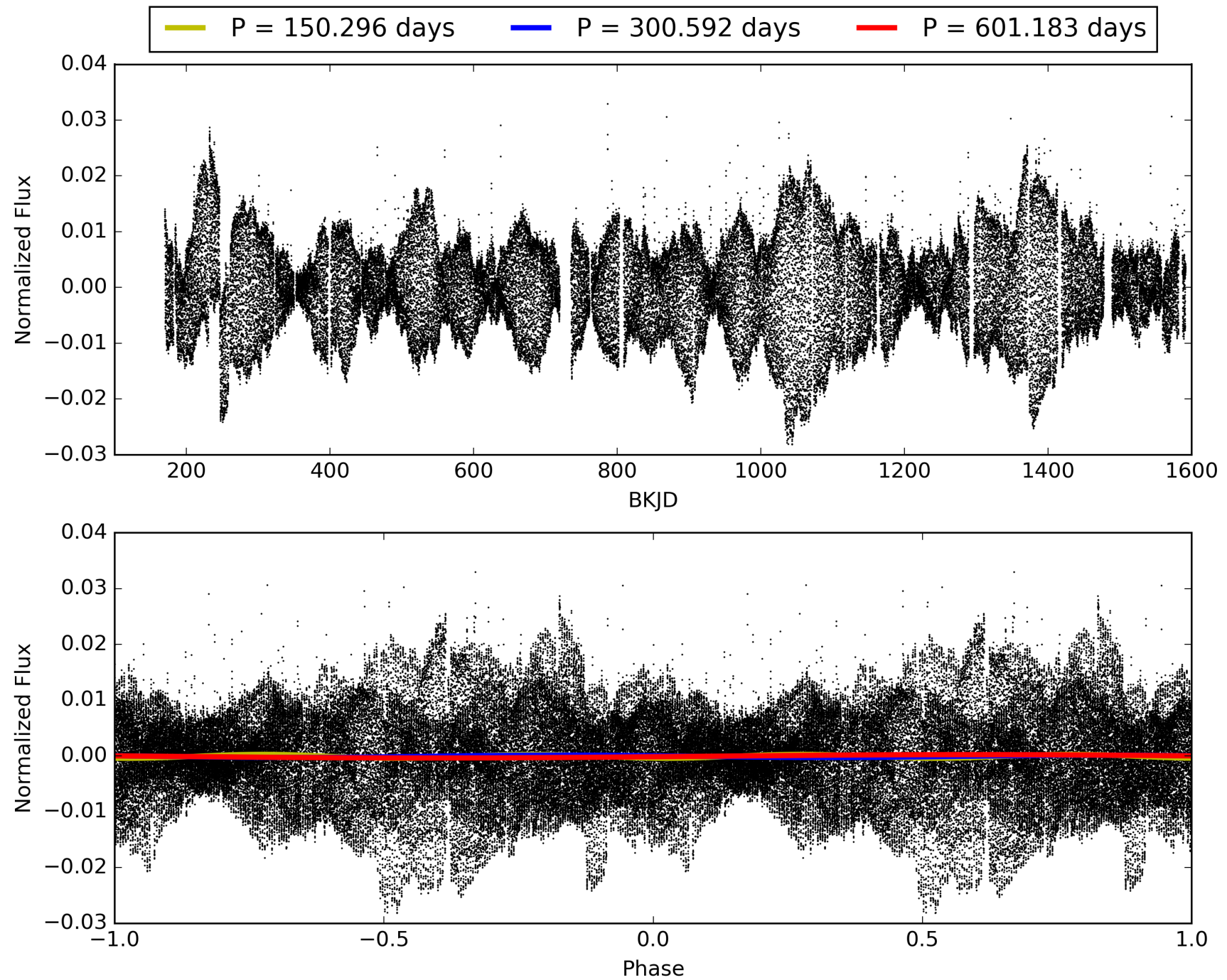
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:02:29 Z

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# TCE 006704889-02, PDC Light Curves



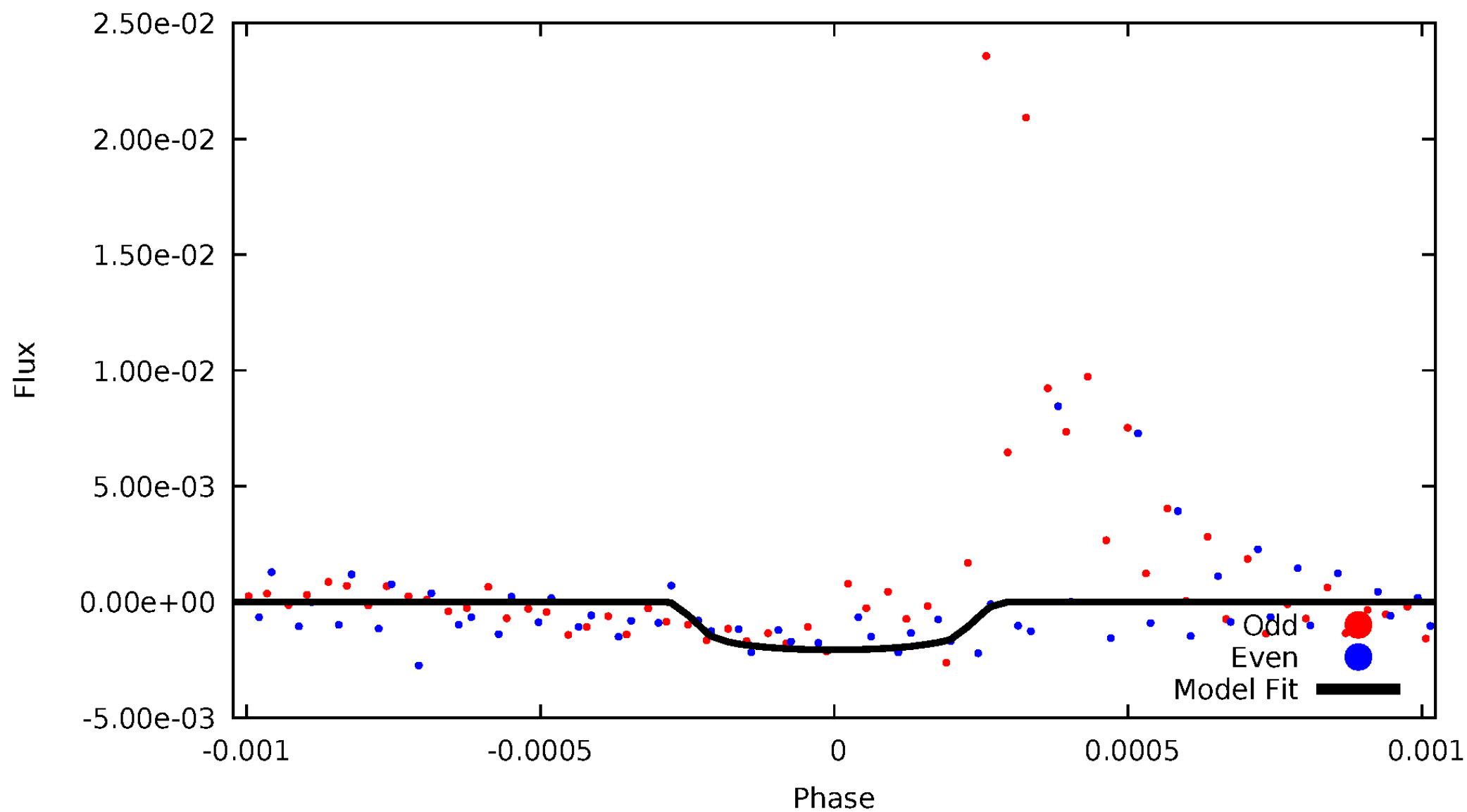
TCE 006704889-02





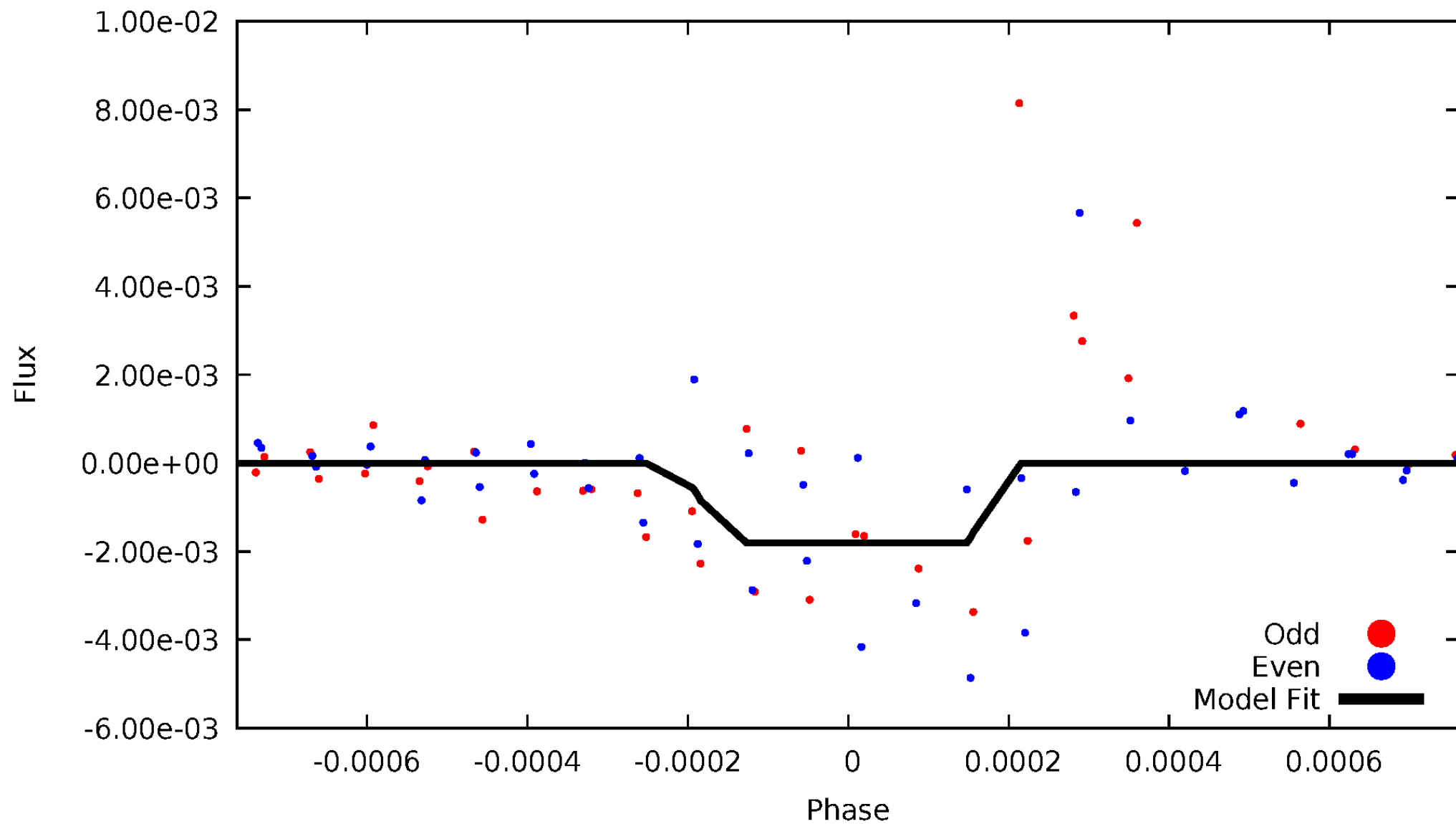
# DV Odd/Even

TCE 006704889-02



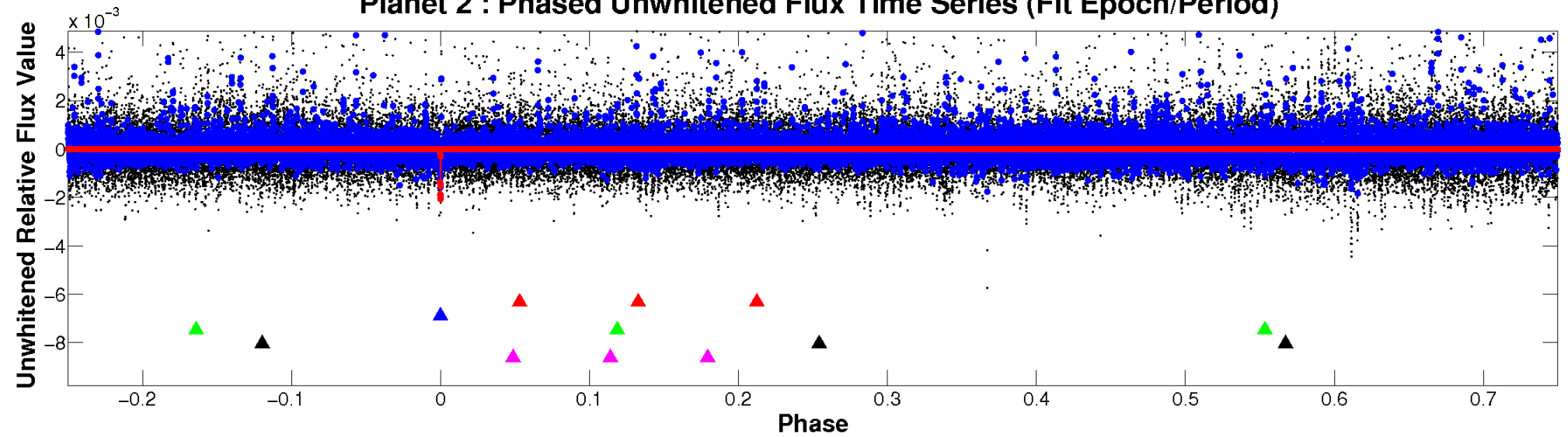
# ALT Odd/Even

TCE 006704889-02

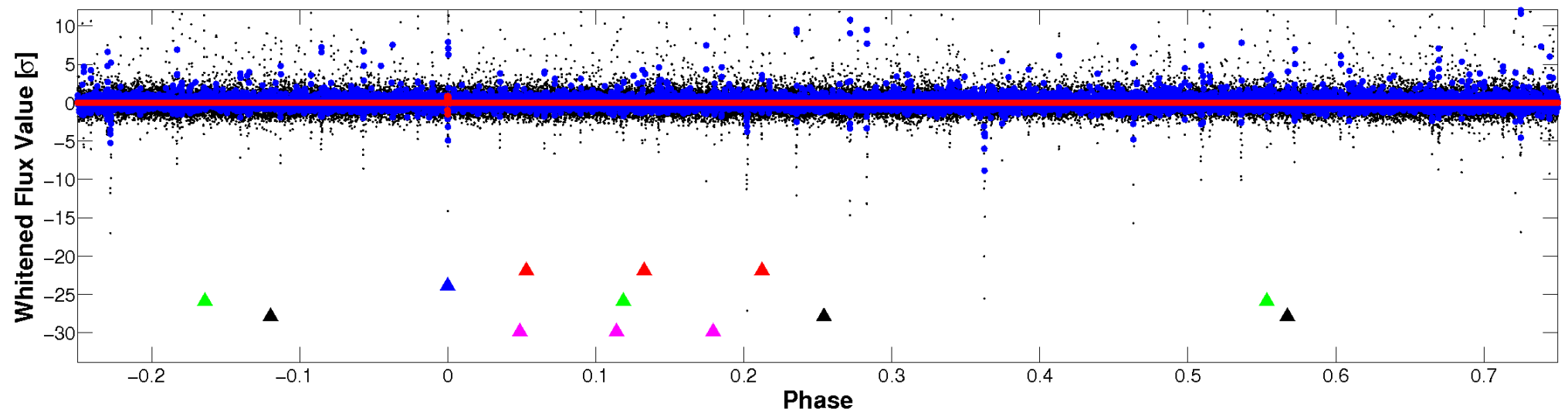


# Non-Whitened Vs. Whitened Light Curve

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

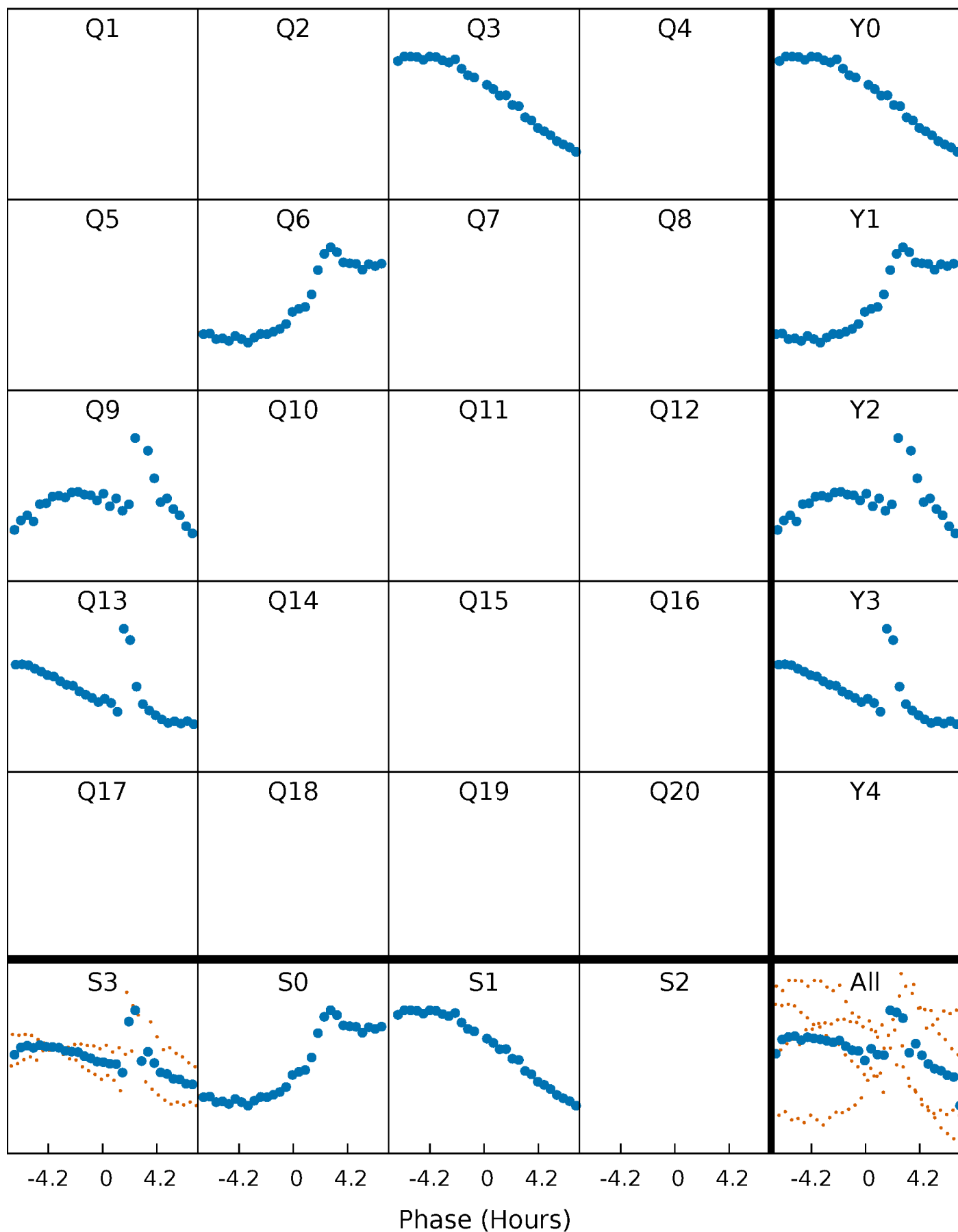


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



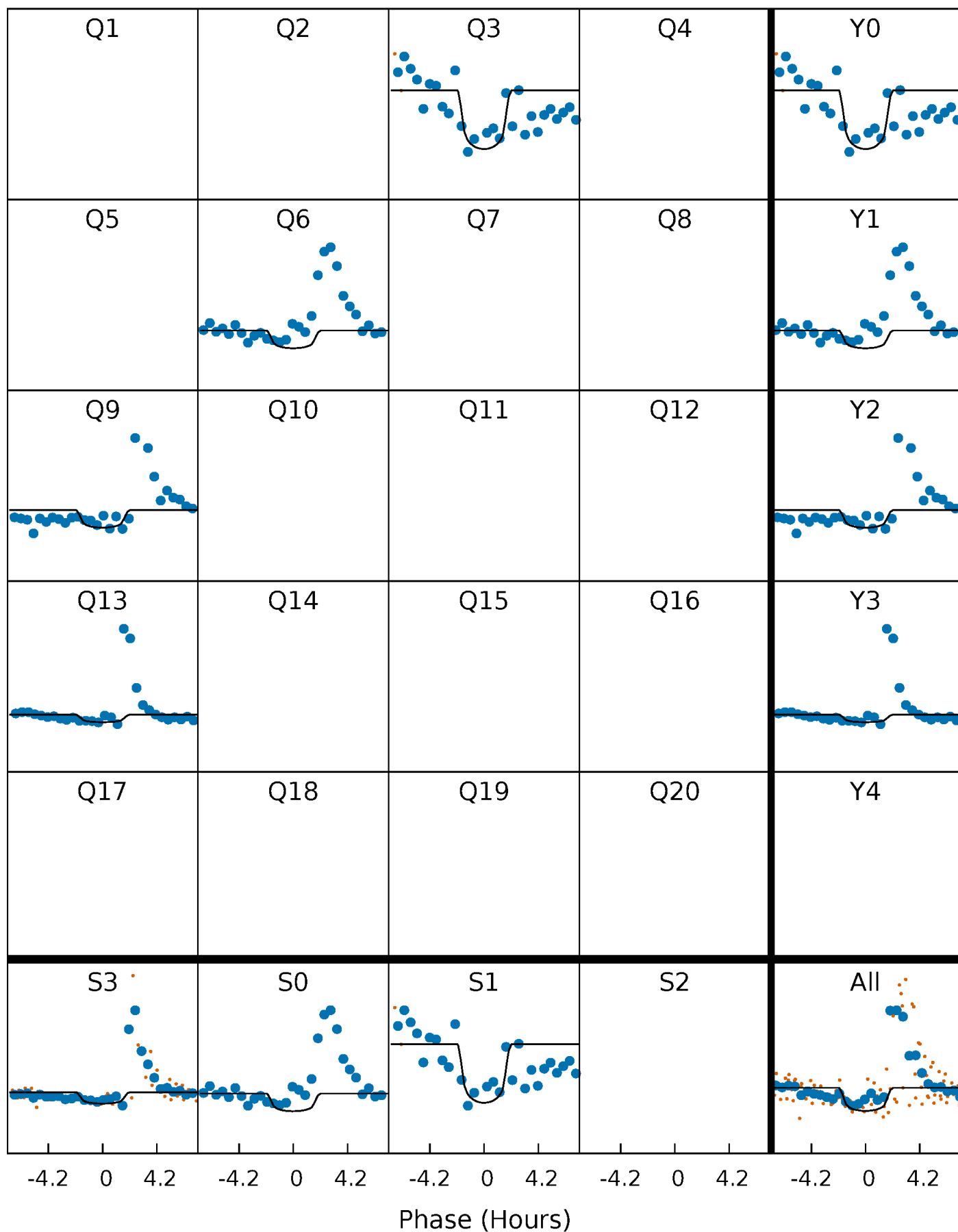
# PDC Quarter-Phased Transit Curves

TCE 006704889-02 P=300.591512 Days  $T_0=284.337566$  (BKJD)



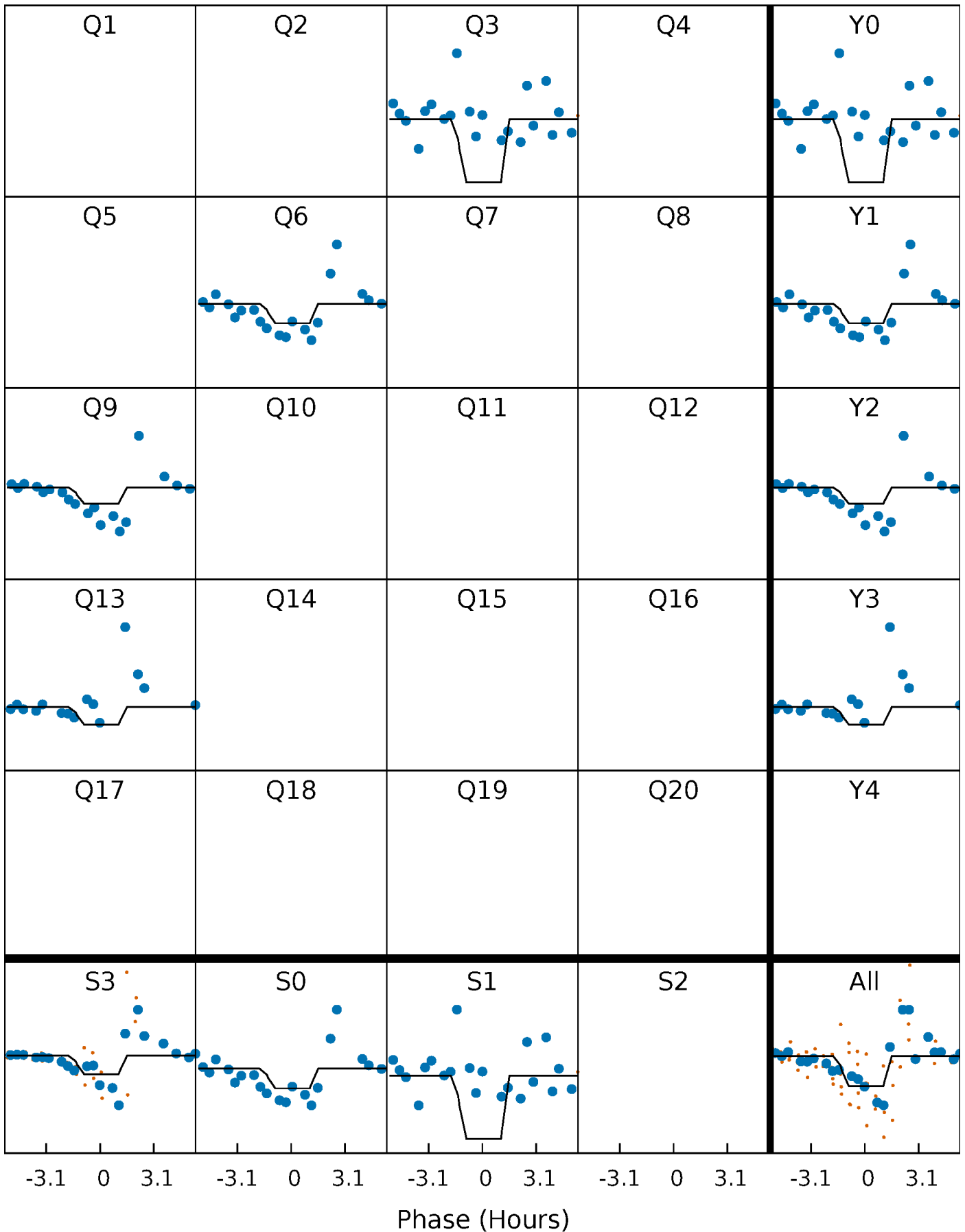
# DV Quarter-Phased Transit Curves

TCE 006704889-02 P=300.591512 Days  $T_0=284.337566$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

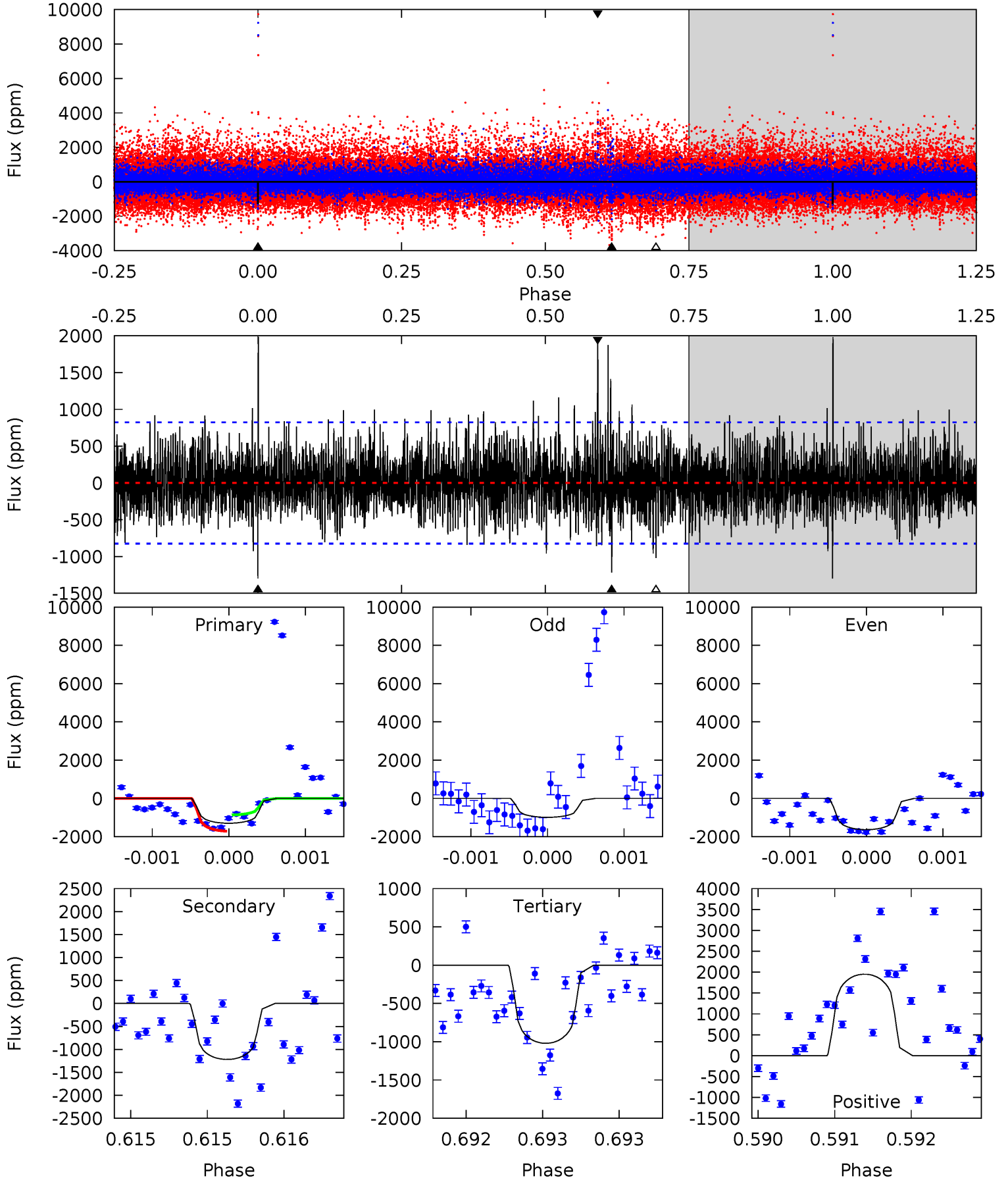
TCE 006704889-02 P=300.618231 Days  $T_0=284.311967$  (BKJD)



# DV Model-Shift Uniqueness Test

006704889-02, P = 300.591512 Days, E = 284.337566 Days

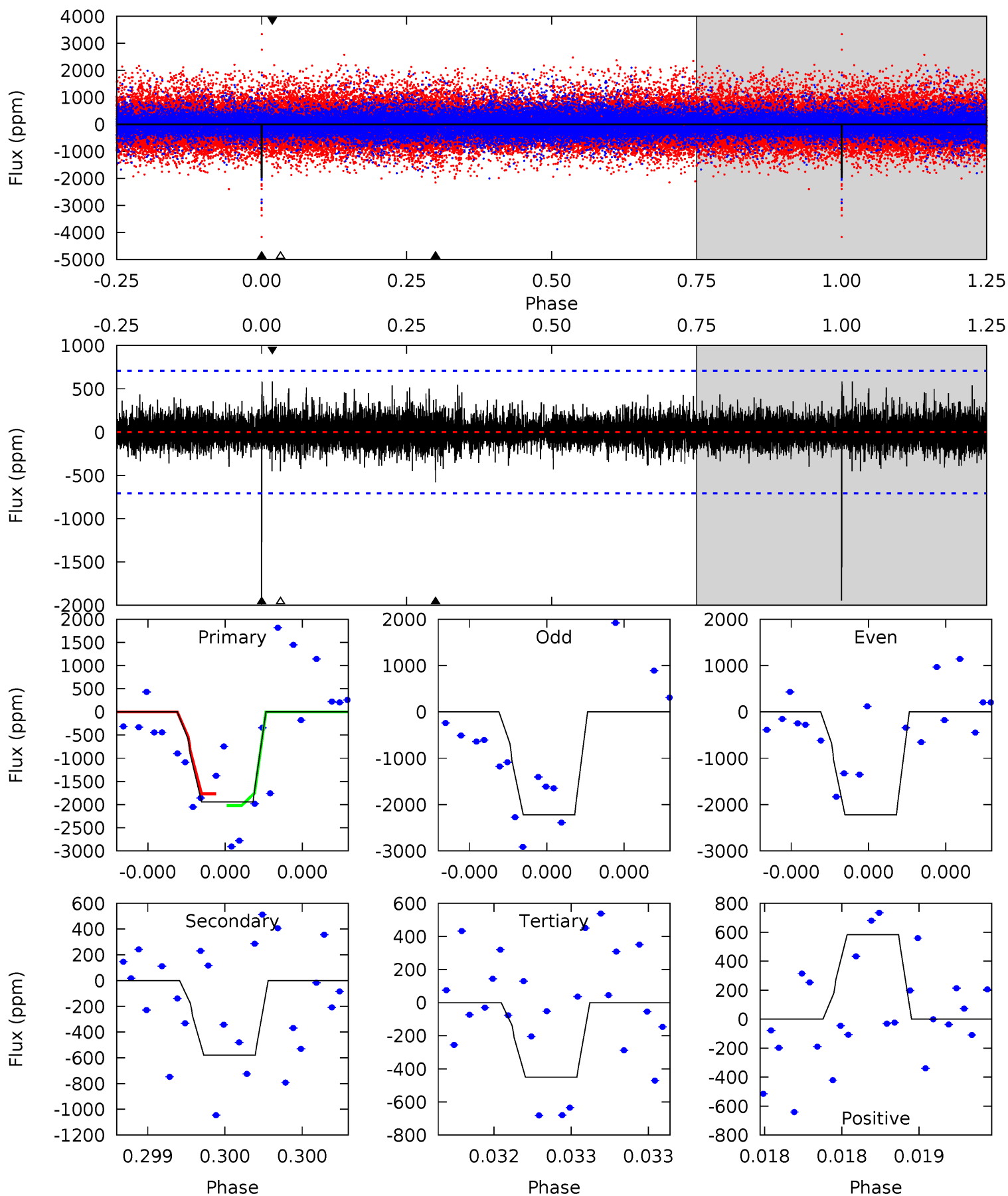
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.72	8.20	6.86	13.1	5.55	3.44	2.02	1.86	-4.40	1.33	-4.92	2.02	0.93	0.60	2.86



# Alt Model-Shift Uniqueness Test

006704889-02, P = 300.618231 Days, E = 284.311967 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
15.4	4.59	3.57	4.63	5.61	3.53	0.87	11.8	10.8	1.02	-0.04	0.00	1.09	0.23	0.92





### Stellar Parameters For KIC 006704889

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5799^{+155}_{-190}$	$4.548^{+0.035}_{-0.196}$	$-0.160^{+0.300}_{-0.300}$	$0.860^{+0.242}_{-0.081}$	$0.955^{+0.100}_{-0.123}$	$2.112^{+0.386}_{-1.028}$
	+3%/-3%	+1%/-4%	+188%/-188%	+28%/-9%	+10%/-13%	+18%/-49%
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 006704889-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-1218 \pm 149$	$7.97^{+7.21}_{-5.34}$	$366^{+22}_{-17}$	$4102^{+2536}_{-803}$	$7729^{+67497}_{-5632}$
Alt.	$-578 \pm 126$	$7.77^{+6.71}_{-5.28}$	$366^{+24}_{-17}$	$3655^{+2000}_{-681}$	$3817^{+33643}_{-2800}$

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

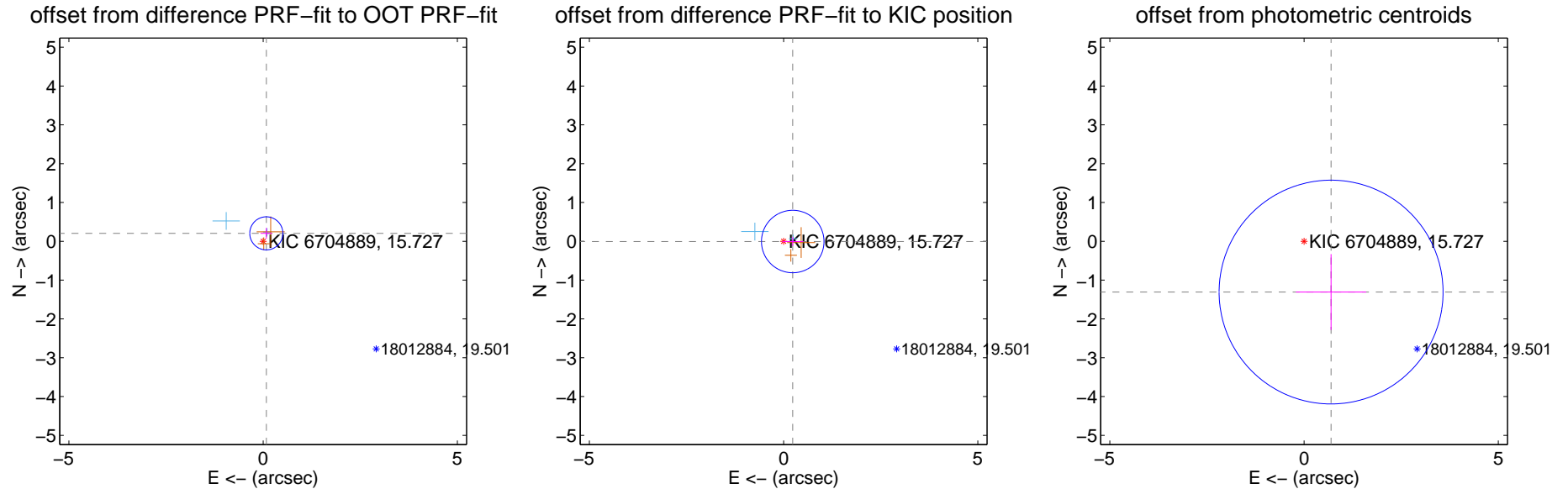
## DV Centroid Data

Supplemental centroid analysis for 006704889-02. Kepler magnitude: 15.73. Transit SNR 7.70

There are 2 quarters with good PRF difference image offsets

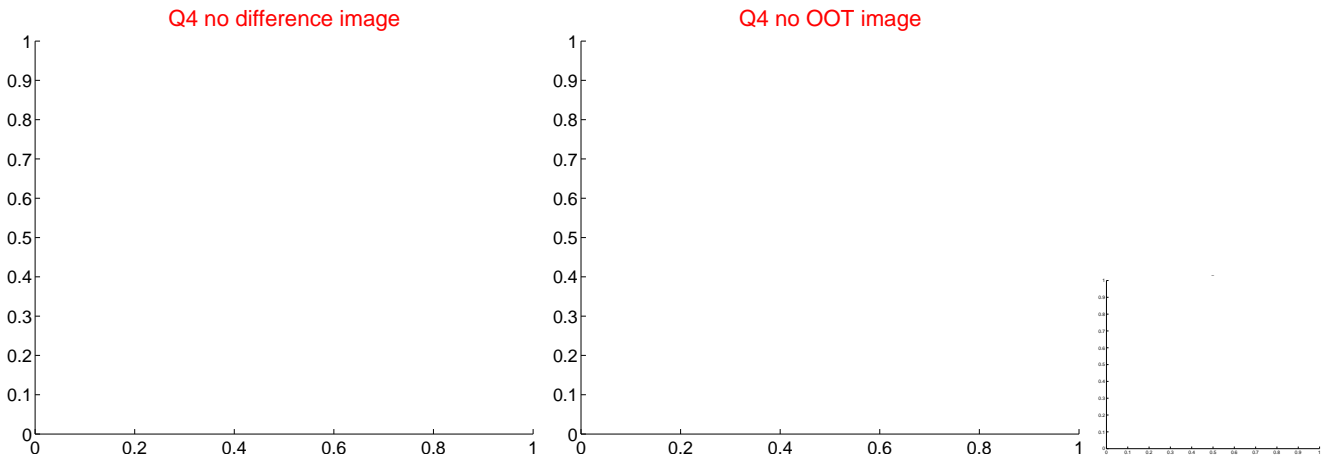
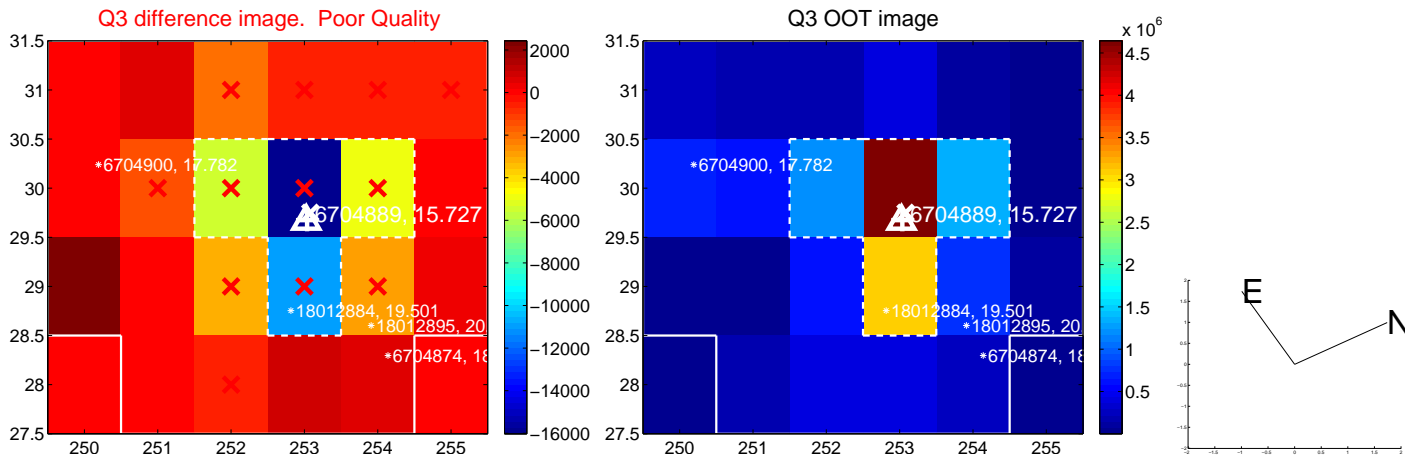
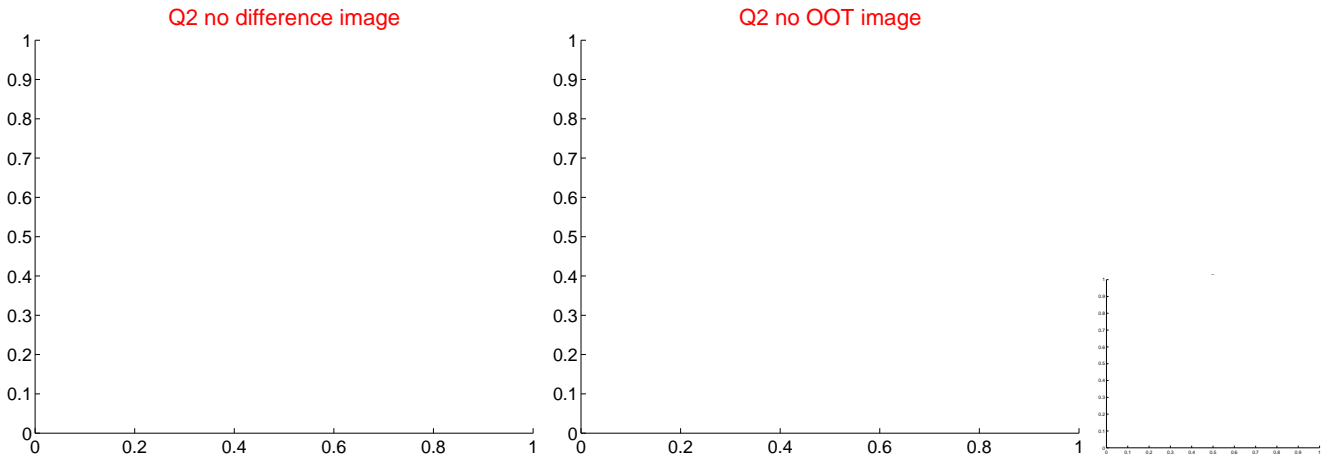
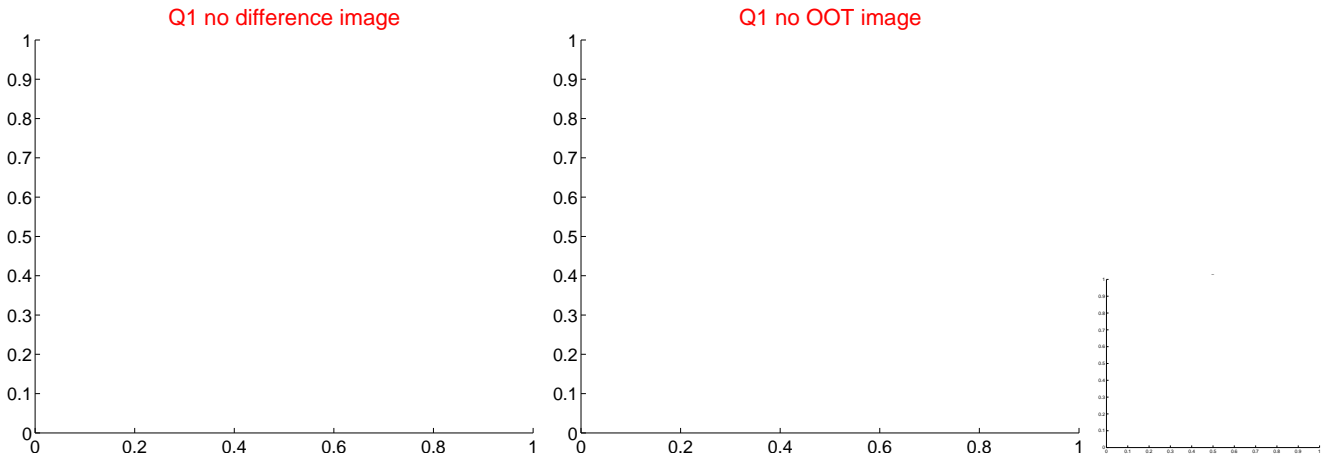
The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.220 \pm 0.142$	1.55	$-0.082 \pm 0.150$	$0.205 \pm 0.141$
PRF-fit source offset from KIC position	$0.235 \pm 0.268$	0.88	$-0.235 \pm 0.267$	$-0.006 \pm 0.115$
photometric centroid source offset	$1.48 \pm 0.96$	1.54	$-0.70 \pm 0.90$	$-1.31 \pm 0.98$



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.

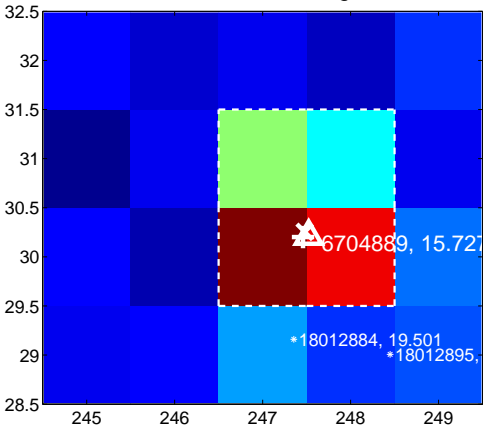
Q5 no difference image



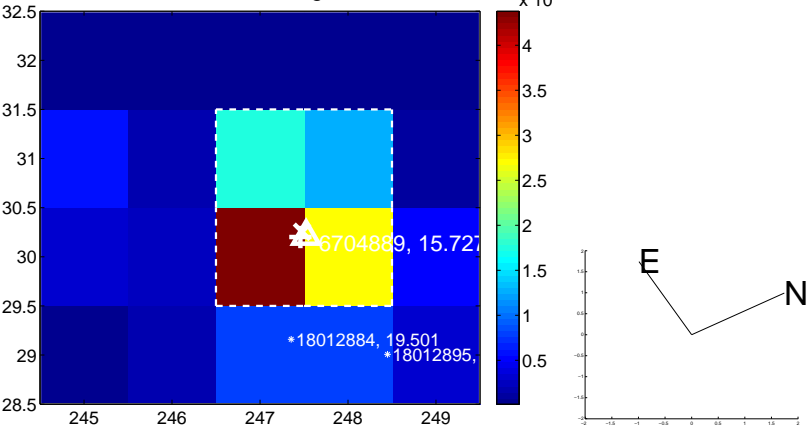
Q5 no OOT image



Q6 difference image



Q6 OOT image



Q7 no difference image



Q7 no OOT image



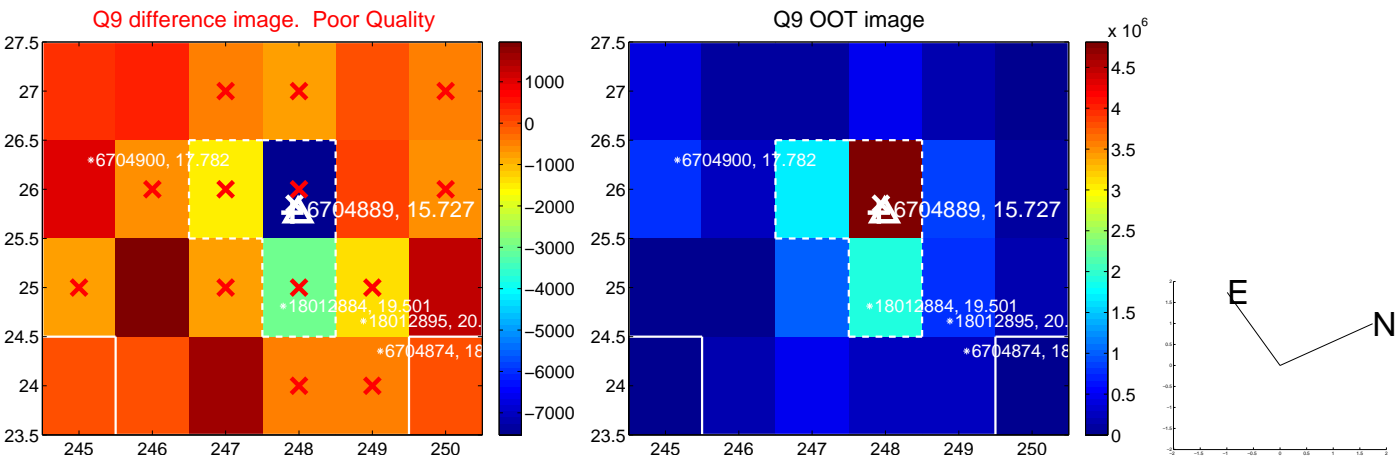
Q8 no difference image



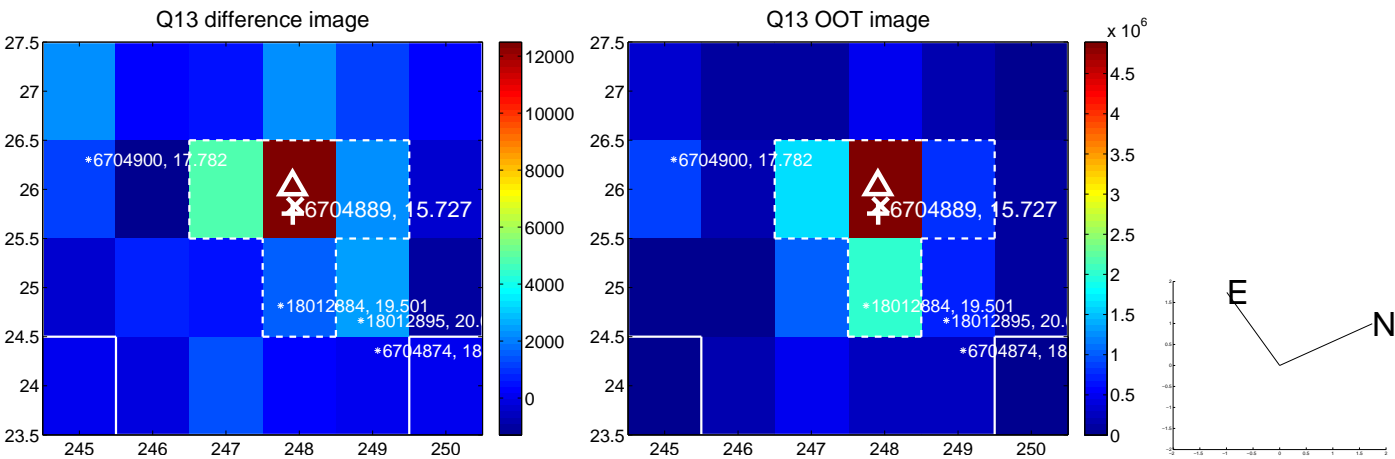
Q8 no OOT image



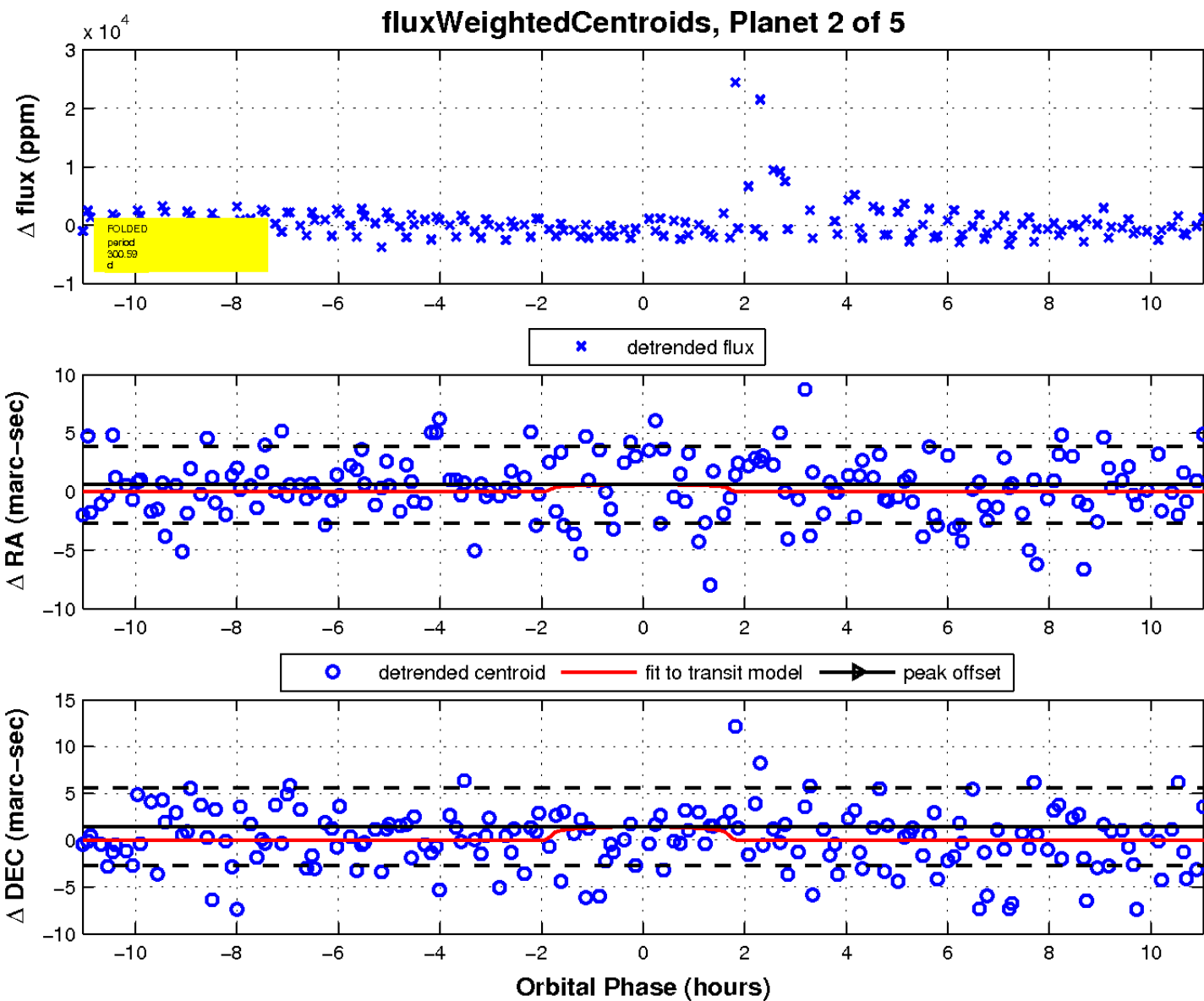
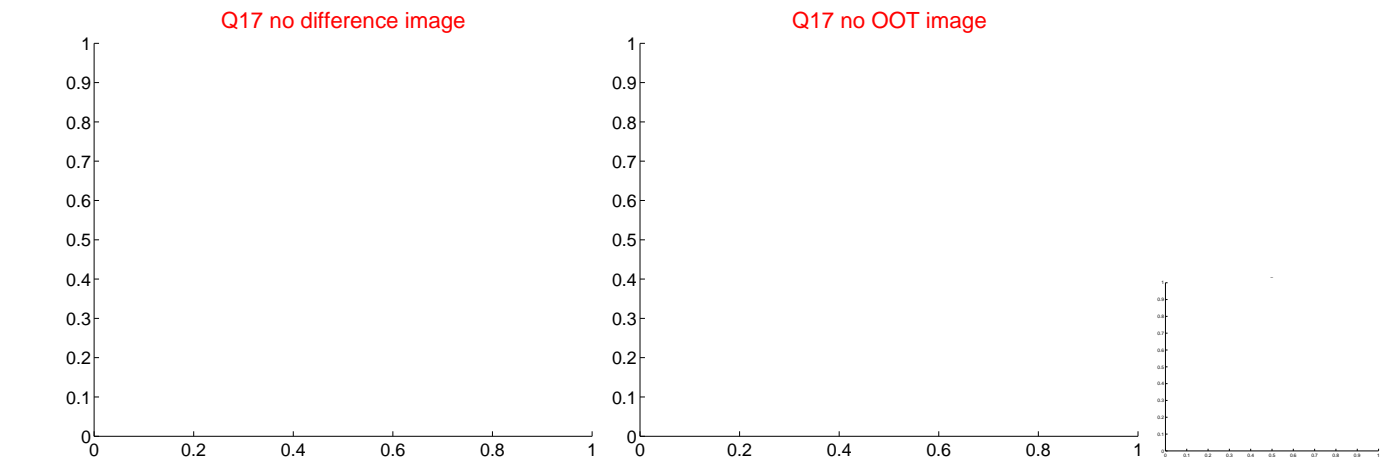
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



32.0 31.0 19:41:30.0 29.0 28.0

20.0 30.0 40.0 50.0

32.0 31.0 19:41:30.0 29.0 28.0

20.0 30.0 40.0 50.0



# KIC 006704889

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006704889-01	OBS	No	625.110519	300.307634	1900.9	3.108	14.7	5.9	0.86	5799	3.72	0.38
006704889-02	OBS	No	300.591512	284.337566	2066.6	3.687	14.1	7.7	0.86	5799	3.90	1.00
006704889-03	OBS	No	385.546949	450.682384	2174.7	3.303	14.8	7.6	0.86	5799	4.21	0.72
006704889-04	OBS	No	507.074116	248.366025	1734.9	3.030	11.9	6.4	0.86	5799	3.57	0.50
006704889-05	OBS	No	581.552740	338.247537	1494.7	5.000	10.2	-1.0	0.86	5799	3.30	0.42

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006704889-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006704889-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006704889-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
006704889-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006704889-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

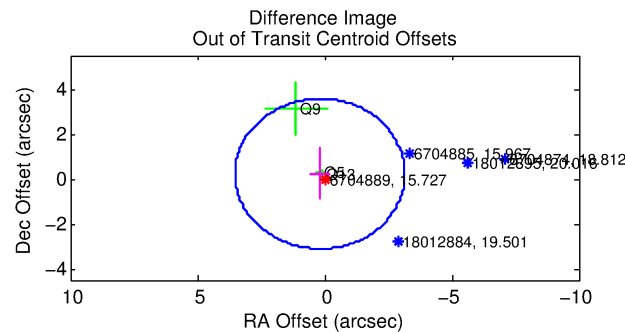
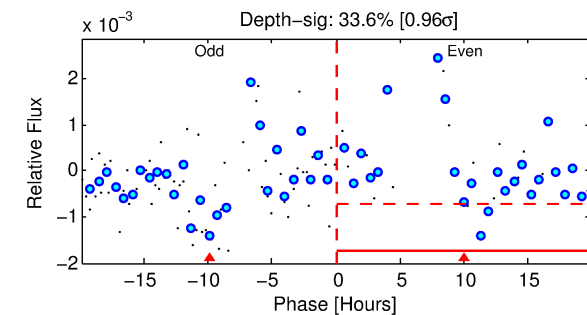
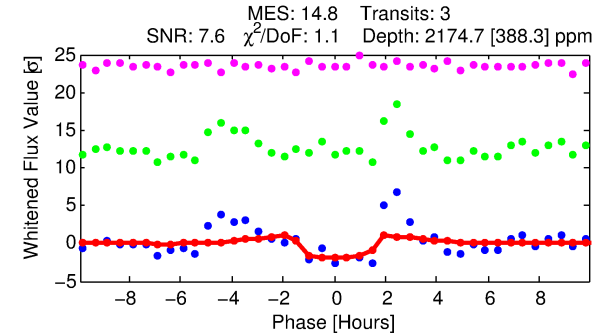
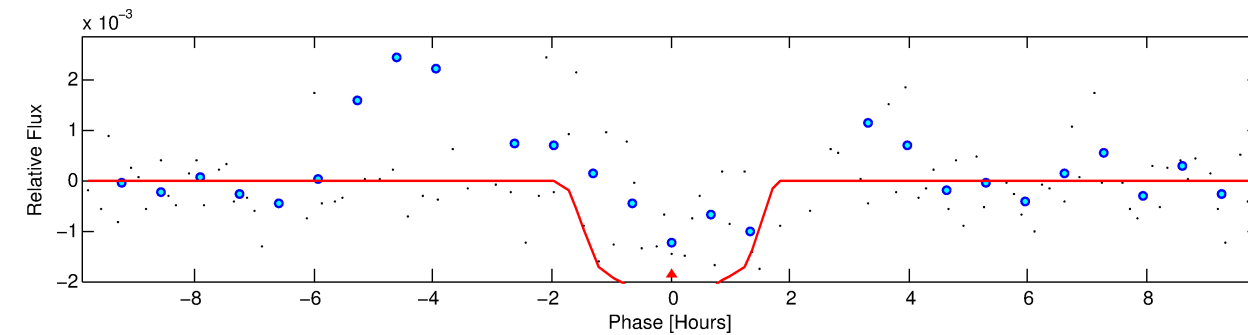
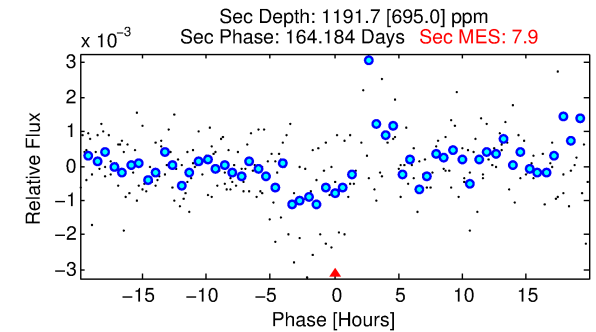
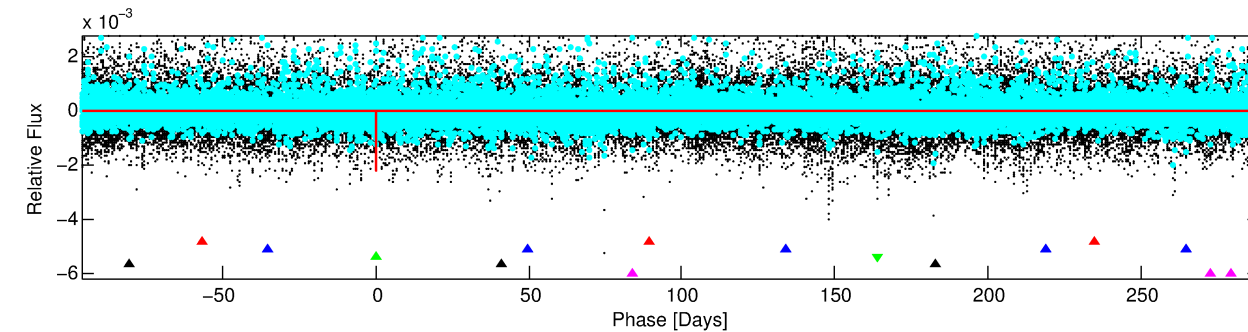
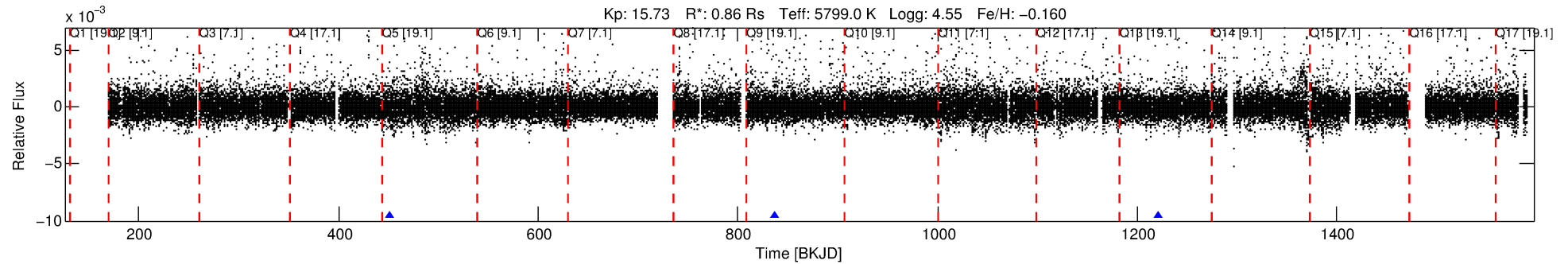
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006704889-03

No Significant Match Found

# DV One-Page Summary

KIC: 6704889 Candidate: 3 of 5 Period: 385.547 d



## DV Fit Results:

Period = 385.54695 [0.00541] d  
Epoch = 450.6824 [0.0067] BKJD  
Rp/R\* = 0.0448 [0.0381]  
a/R\* = 743.00 [2710.96]  
b = 0.63 [3.54]  
Seff = 0.72 [0.27]  
Teq = 235 [22] K  
Rp = 4.21 [3.77] Re  
a = 1.0203 [0.2454] AU  
Ag = 38532.97 [70541.26] [0.55σ]  
Teffp = 5088 [2290] K [2.12σ]

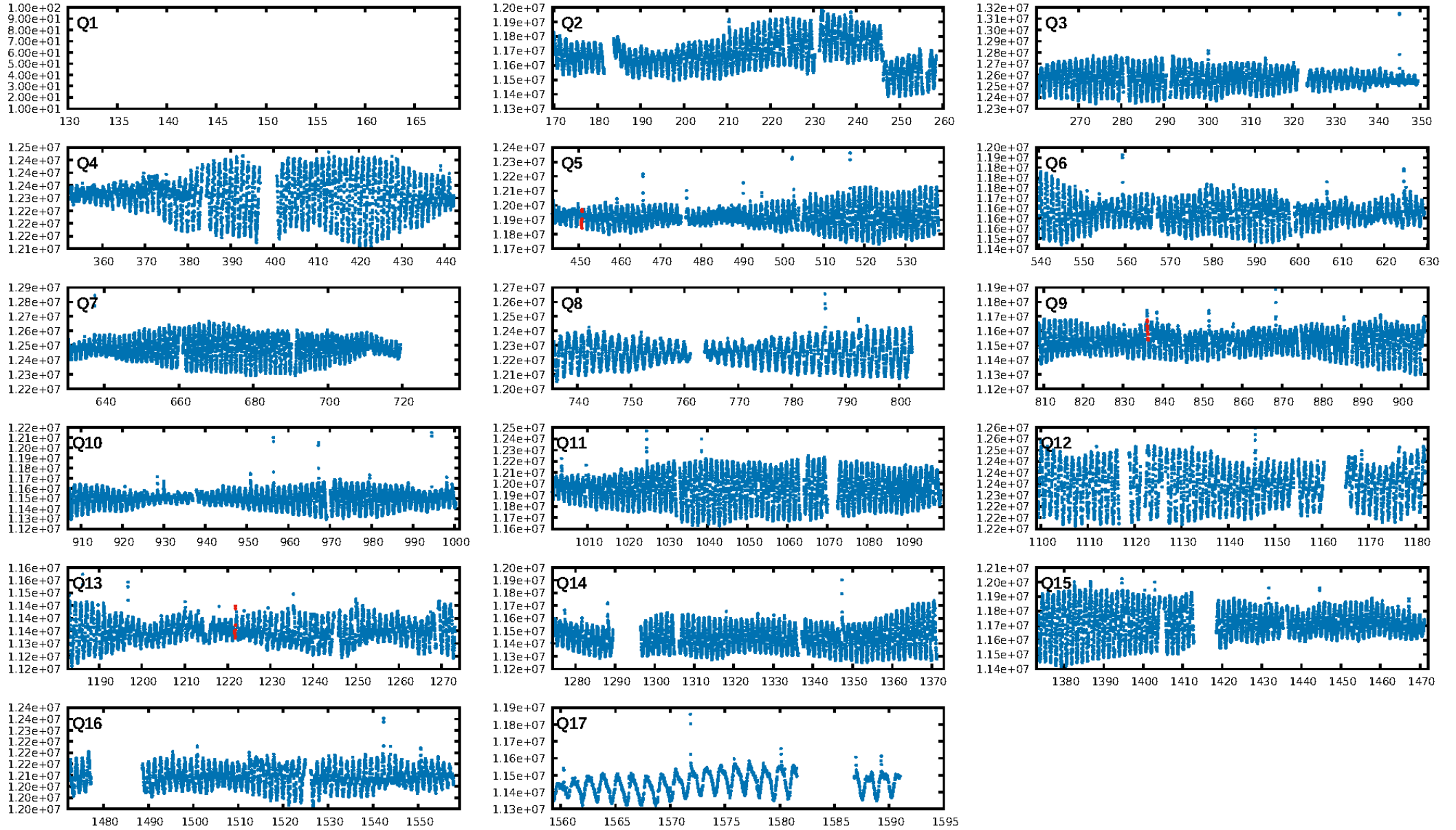
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [411.90σ]  
LongPeriod-sig: 100.0% [650.80σ]  
ModelChiSquare2-sig: 2.5%  
ModelChiSquareGof-sig: 80.2%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.195  
Centroid-sig: 15.2%  
Centroid-so: 1.270 arcsec [1.25σ]  
OotOffset-rm: 0.293 arcsec [0.26σ]  
OotOffset-st: 0/0/0/3 [3]  
KicOffset-rm: 0.041 arcsec [0.05σ]  
KicOffset-st: 0/0/0/3 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

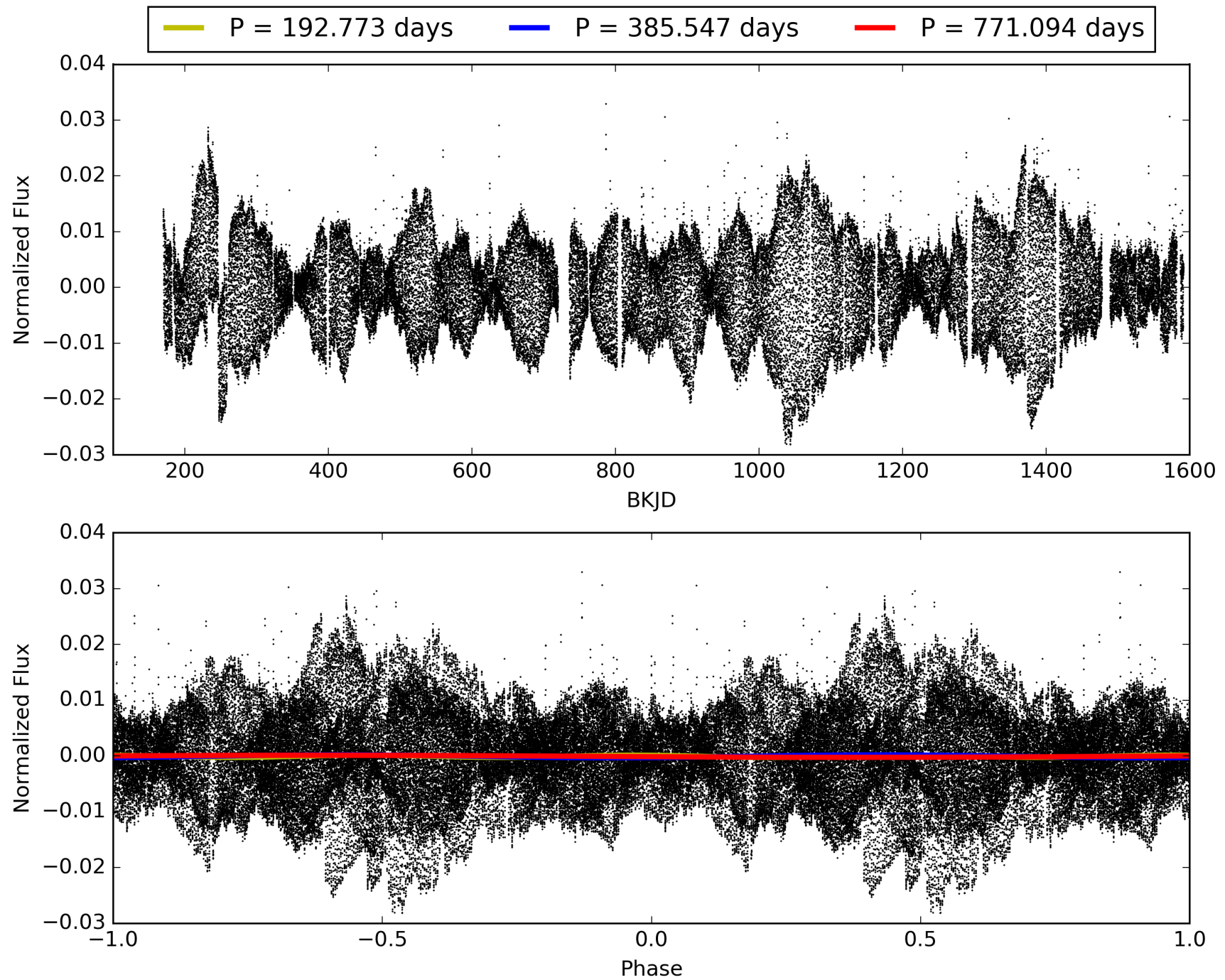
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:02:47 Z

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

# TCE 006704889-03, PDC Light Curves

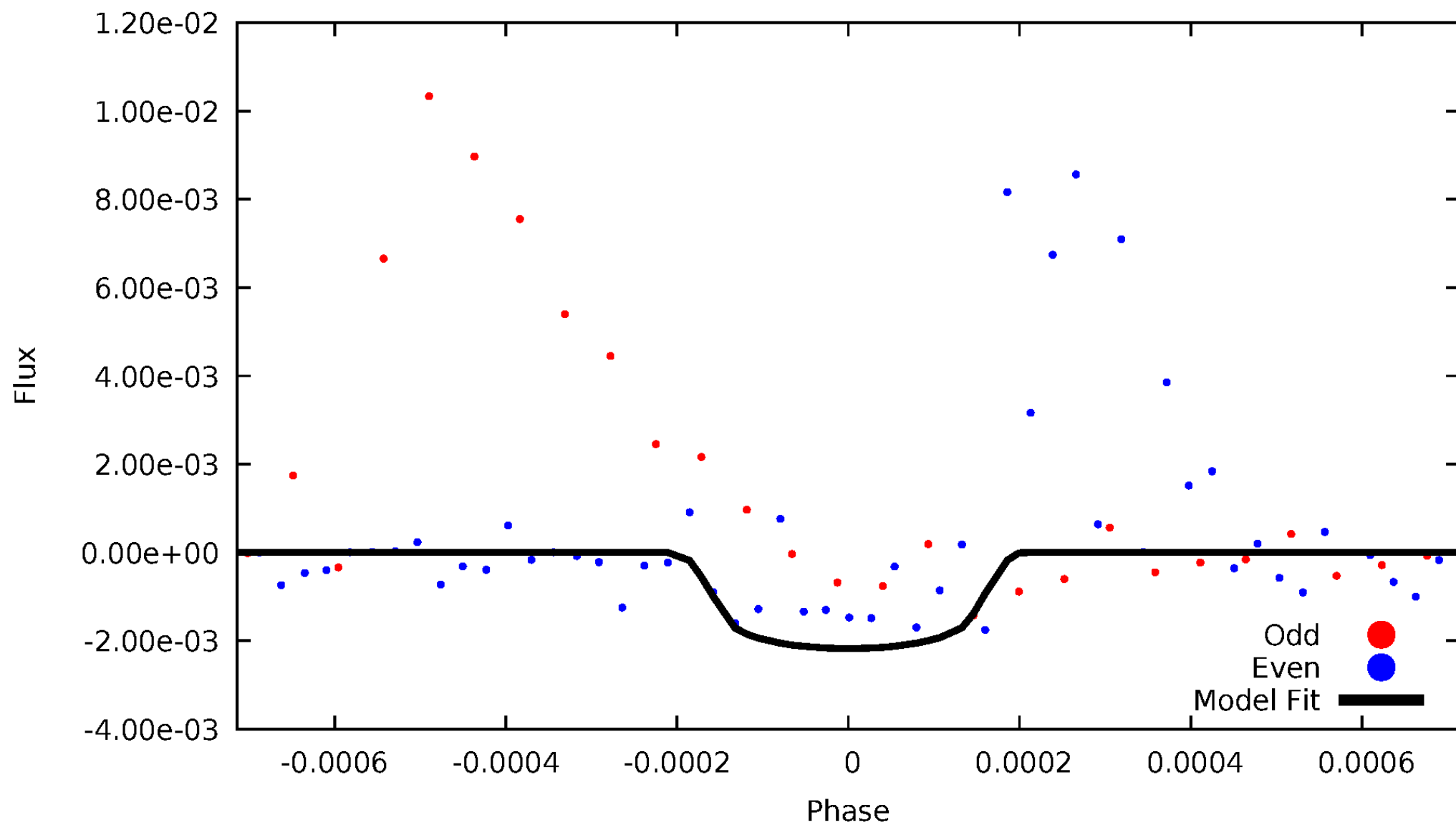


TCE 006704889-03



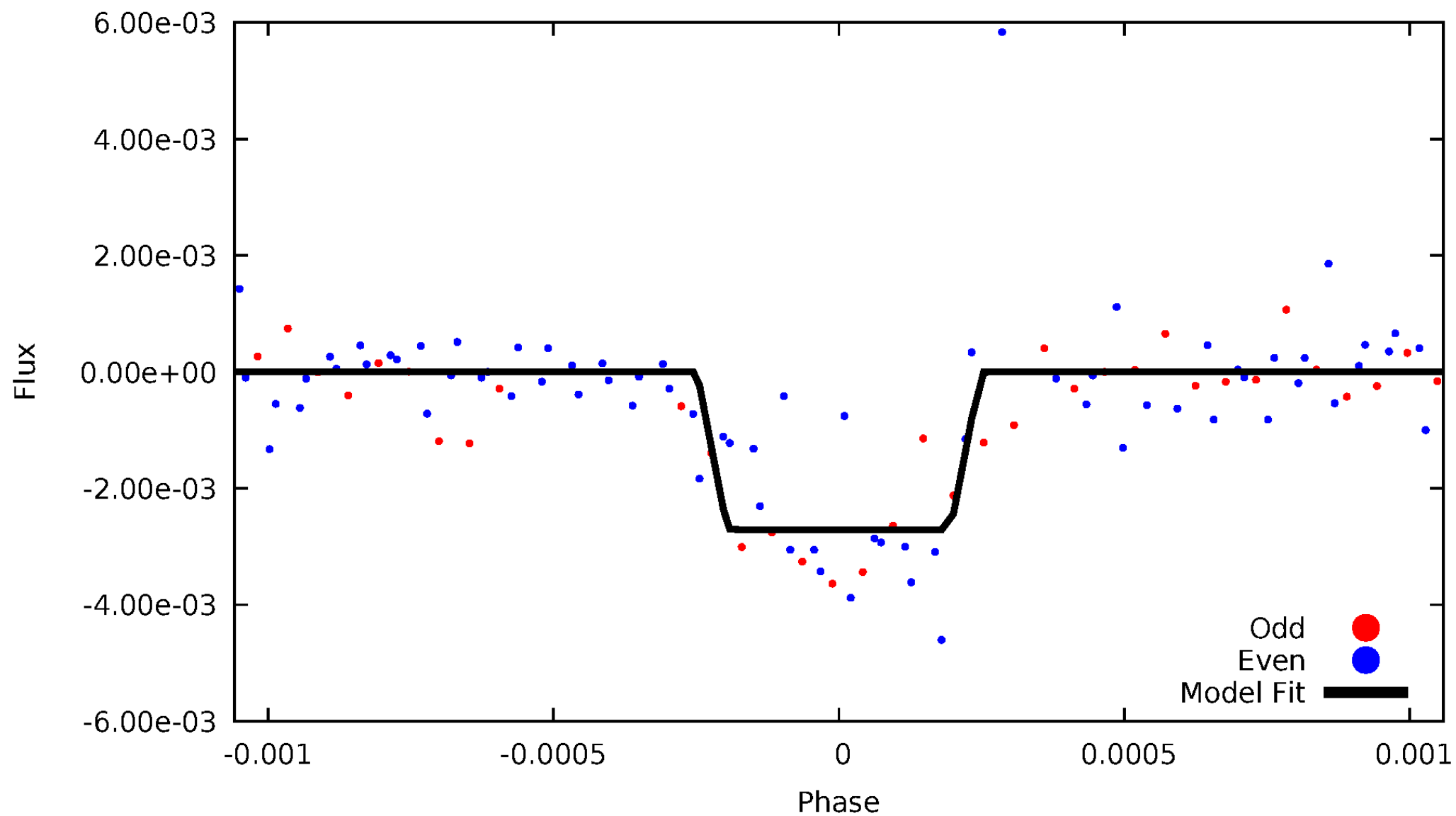
# DV Odd/Even

TCE 006704889-03



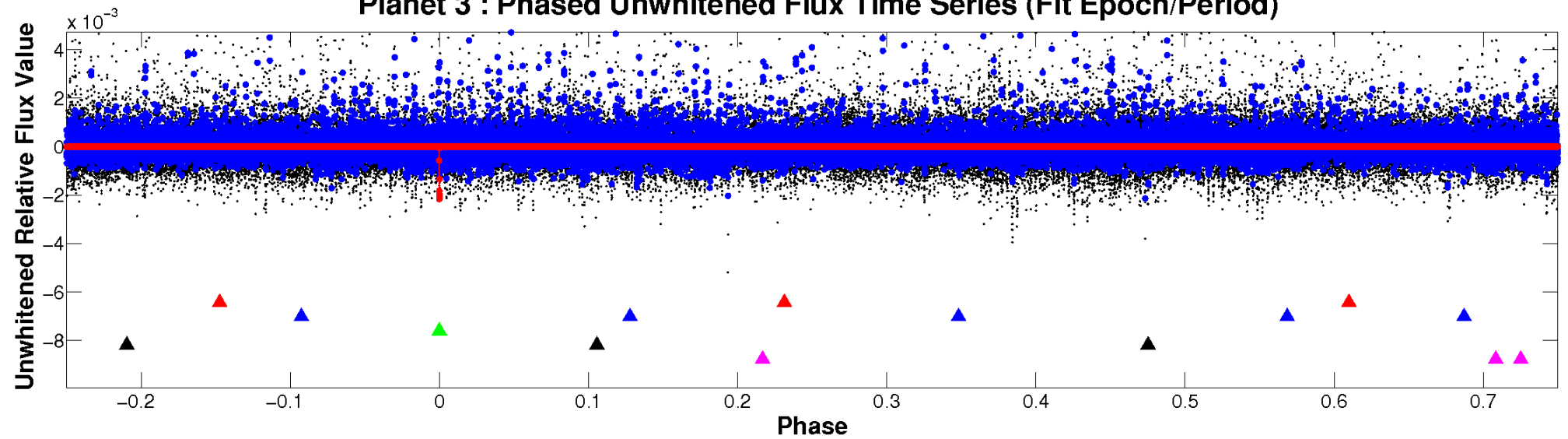
# ALT Odd/Even

TCE 006704889-03

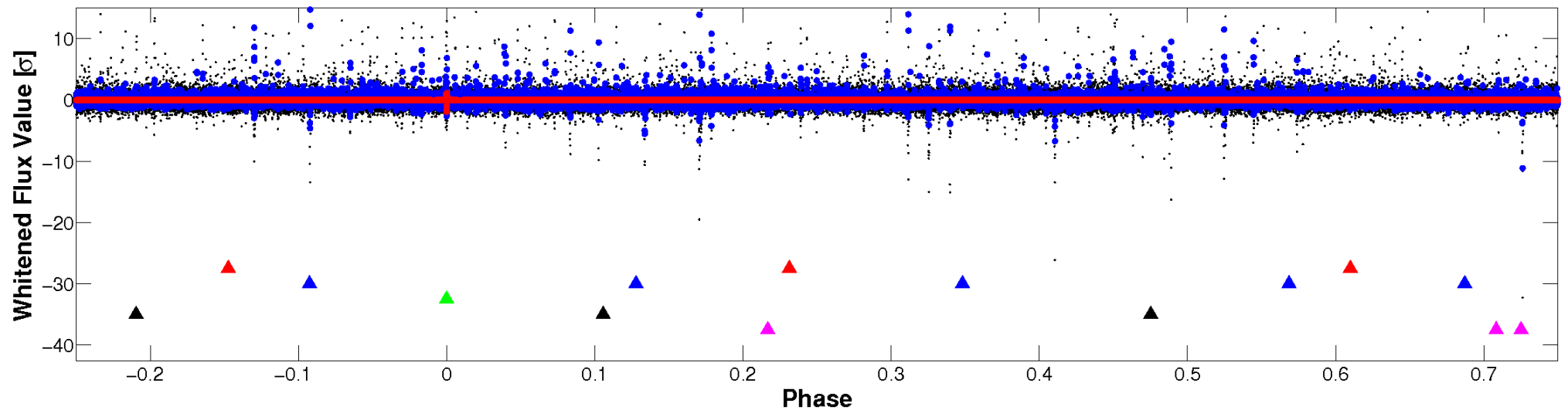


# Non-Whitened Vs. Whitened Light Curve

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

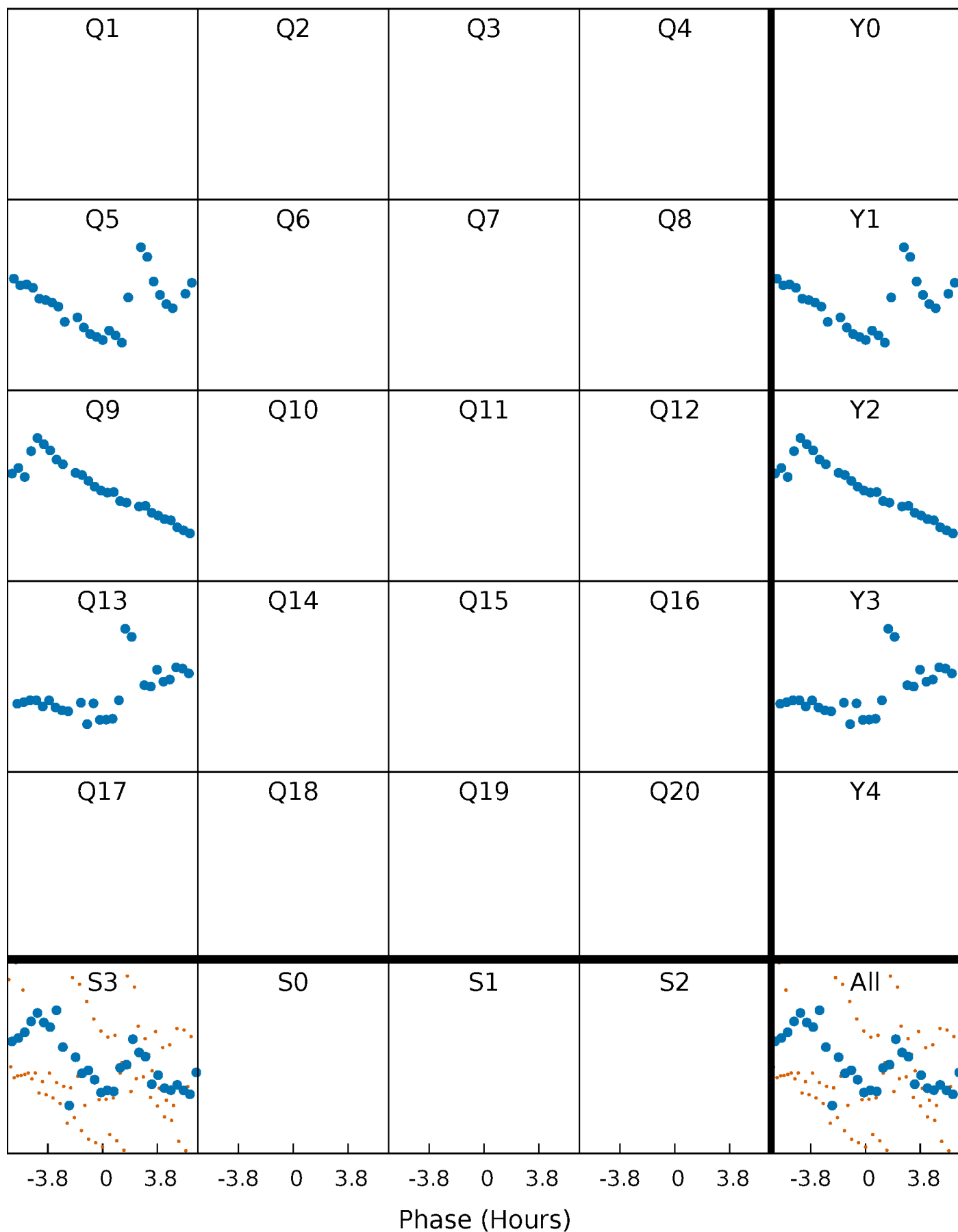


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

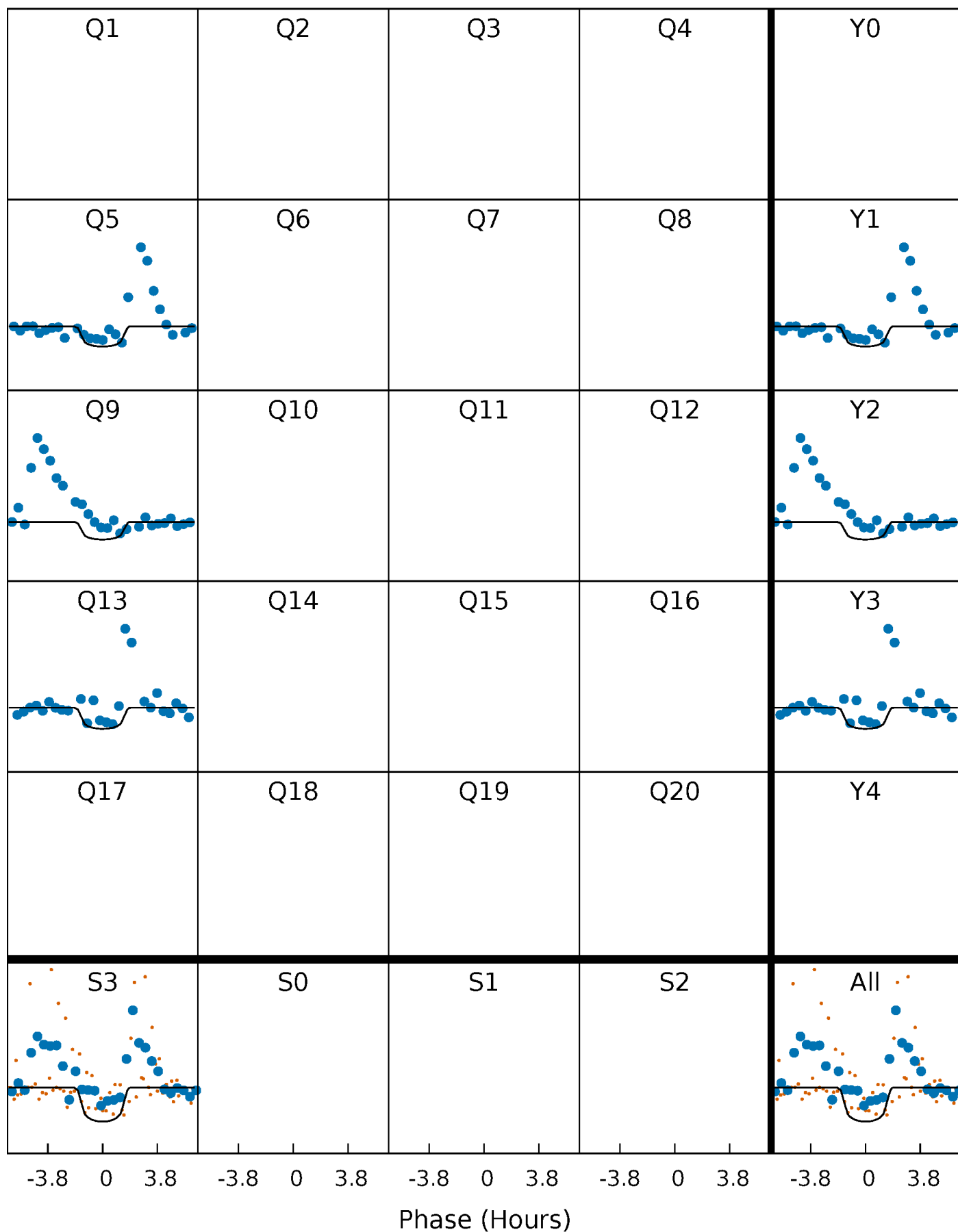
TCE 006704889-03     $P=385.546949$  Days     $T_0=450.682385$  (BKJD)





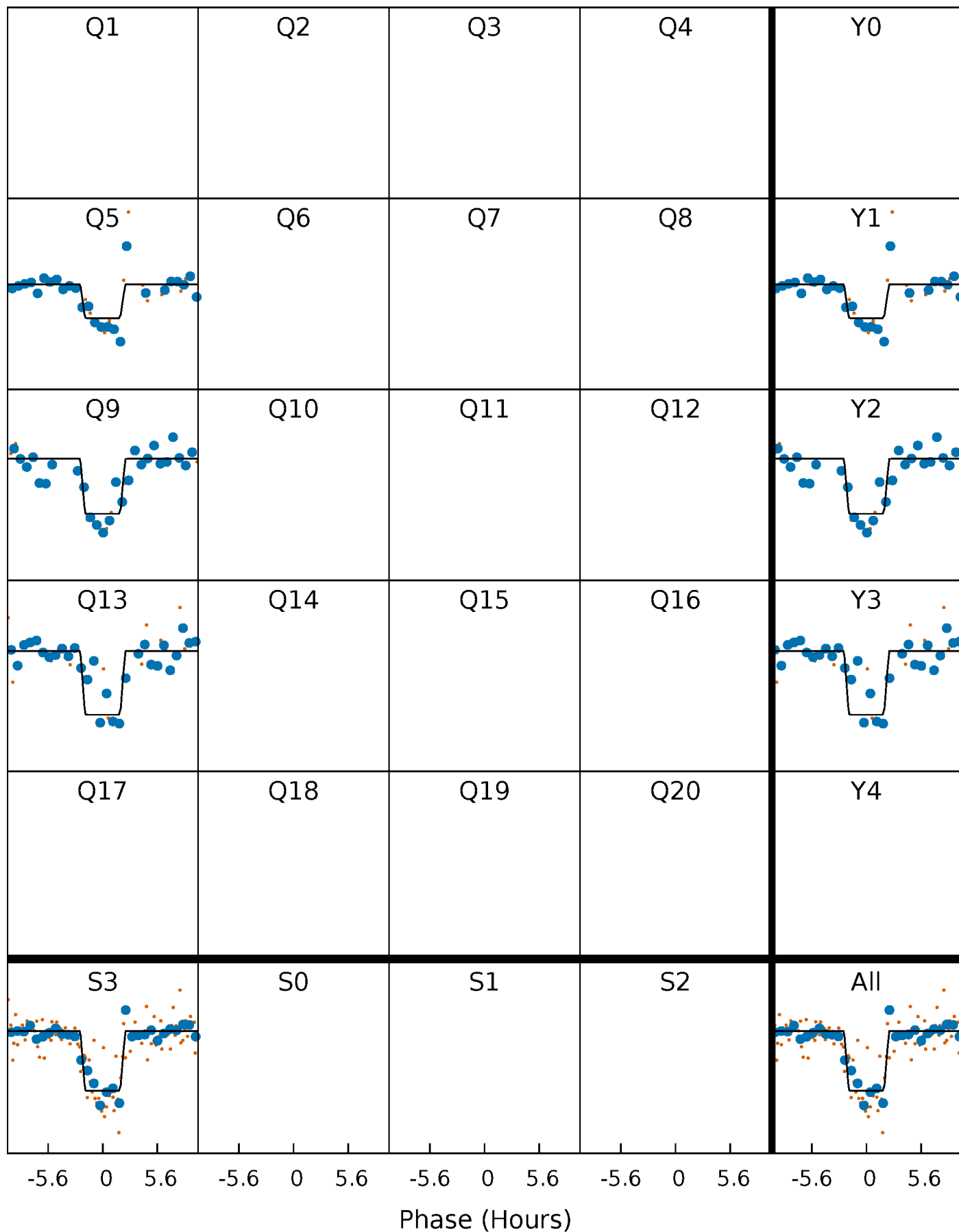
# DV Quarter-Phased Transit Curves

TCE 006704889-03     $P=385.546949$  Days     $T_0=450.682385$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

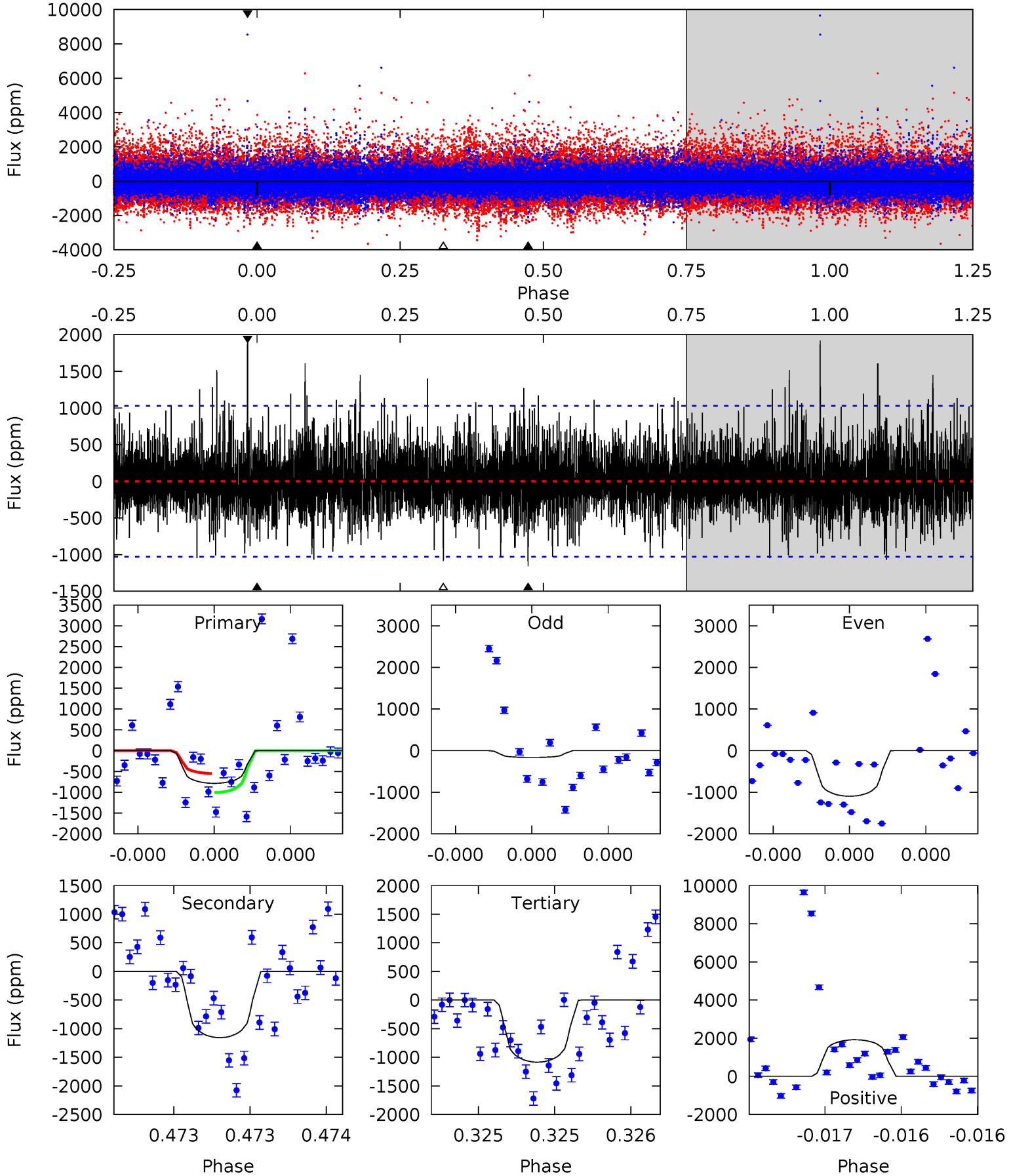
TCE 006704889-03     $P=385.533599$  Days     $T_0=450.674723$  (BKJD)



# DV Model-Shift Uniqueness Test

006704889-03, P = 385.546949 Days, E = 65.135436 Days

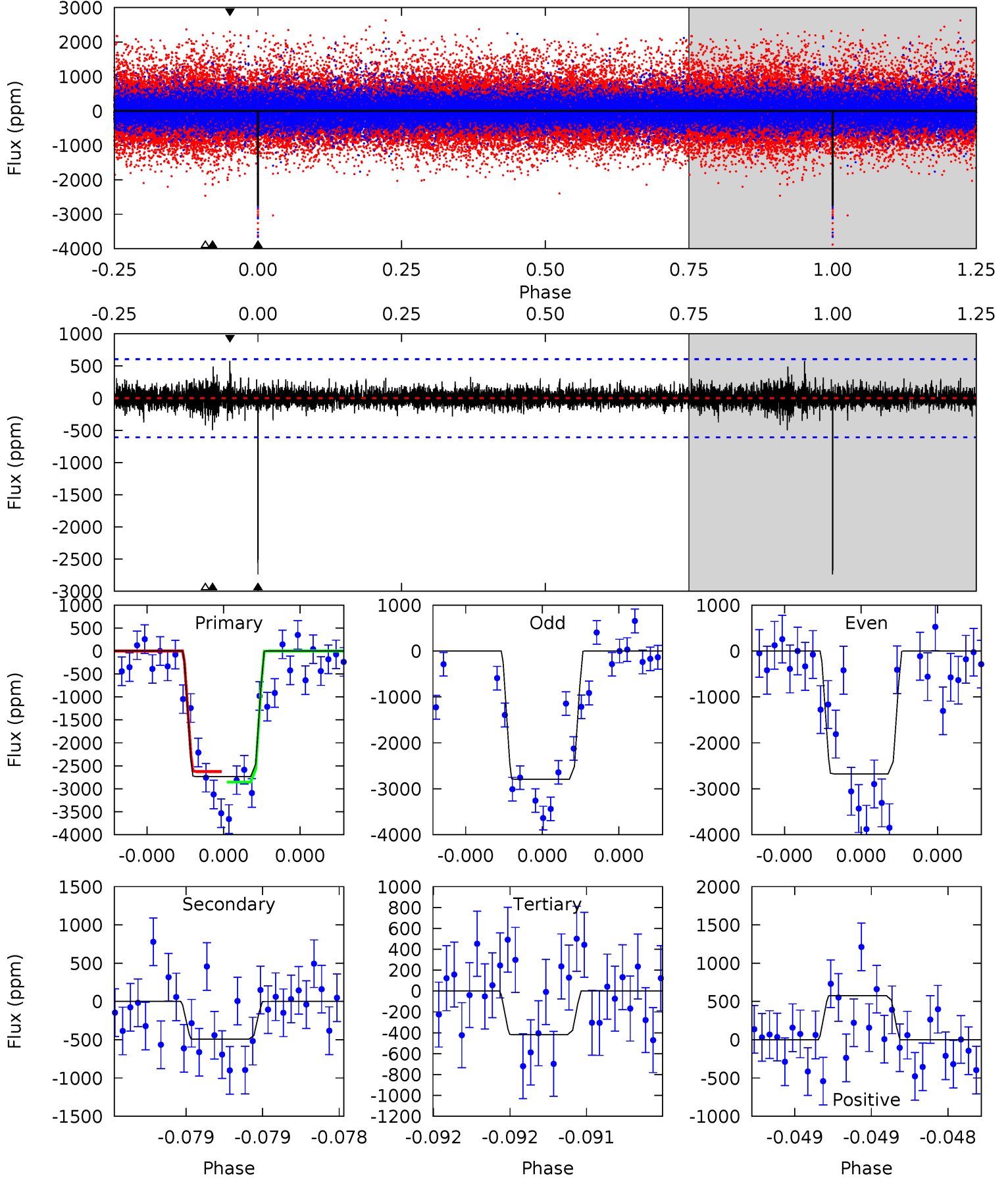
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.29	6.32	5.93	10.5	5.63	3.56	1.72	-1.64	-6.19	0.39	-4.16	2.01	0.92	0.62	1.26



# Alt Model-Shift Uniqueness Test

006704889-03, P = 385.533599 Days, E = 65.141124 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
25.2	4.53	3.85	5.30	5.58	3.49	0.74	21.3	19.9	0.69	-0.76	0.53	0.94	0.17	1.07



### Stellar Parameters For KIC 006704889

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5799^{+155}_{-190}$	$4.548^{+0.035}_{-0.196}$	$-0.160^{+0.300}_{-0.300}$	$0.860^{+0.242}_{-0.081}$	$0.955^{+0.100}_{-0.123}$	$2.112^{+0.386}_{-1.028}$
	+3%/-3%	+1%/-4%	+188%/-188%	+28%/-9%	+10%/-13%	+18%/-49%
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 006704889-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-1158 \pm 183$	$4.80^{+3.58}_{-2.91}$	$337^{+21}_{-16}$	$4933^{+2872}_{-947}$	$28611^{+151298}_{-19588}$
Alt.	$-493 \pm 109$	$5.53^{+3.72}_{-3.30}$	$336^{+26}_{-15}$	$3963^{+1663}_{-631}$	$8678^{+44882}_{-5654}$

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

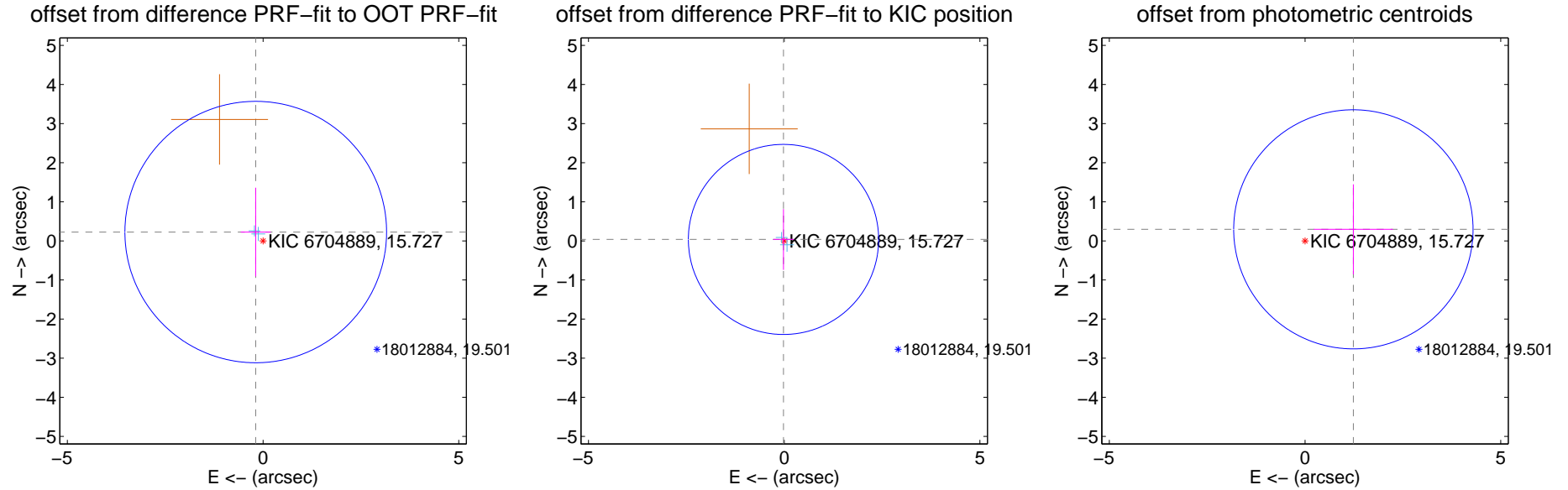
## DV Centroid Data

Supplemental centroid analysis for 006704889-03. Kepler magnitude: 15.73. Transit SNR 7.56

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.293 \pm 1.114$	0.26	$0.187 \pm 0.382$	$0.226 \pm 1.134$
PRF-fit source offset from KIC position	$0.041 \pm 0.810$	0.05	$0.018 \pm 0.262$	$0.037 \pm 0.777$
photometric centroid source offset	$1.27 \pm 1.02$	1.25	$-1.23 \pm 1.01$	$0.30 \pm 1.15$

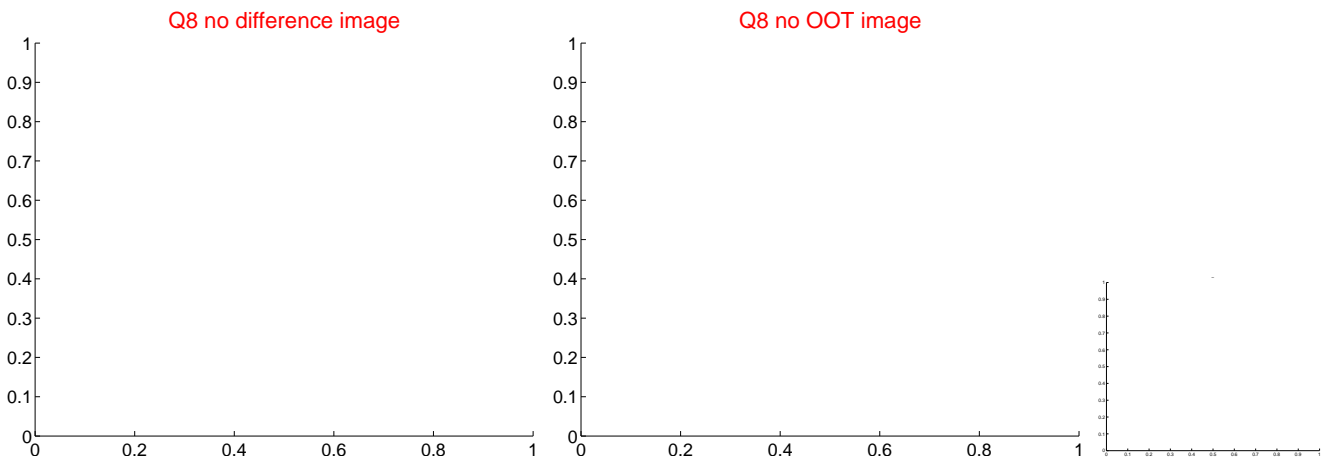
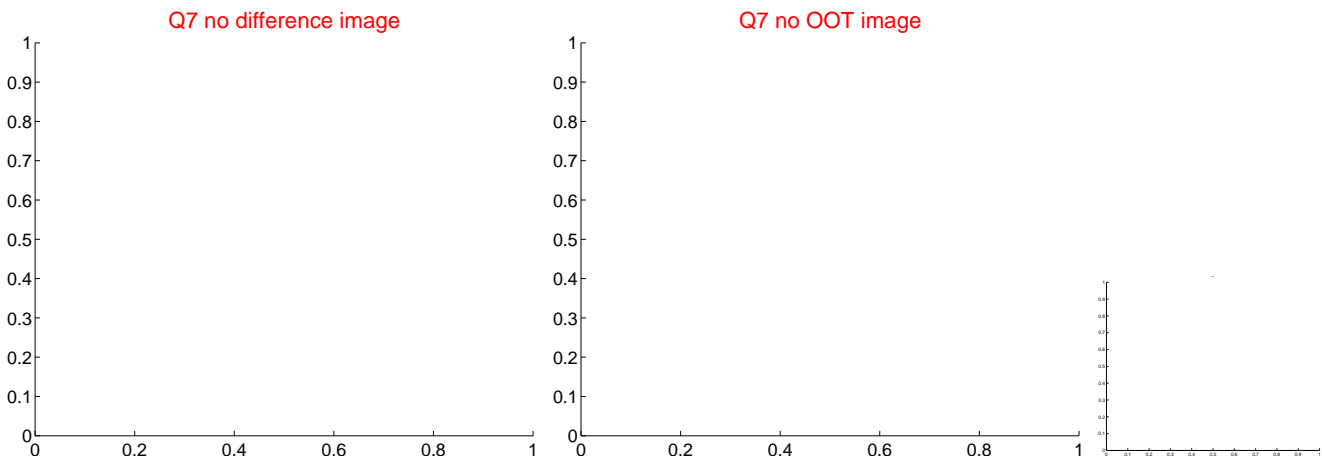
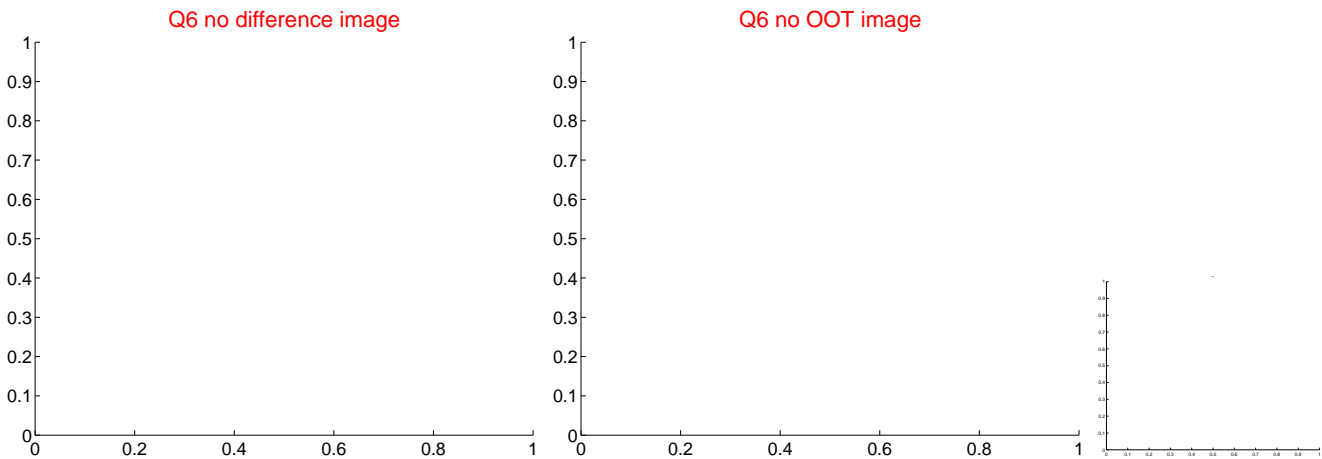
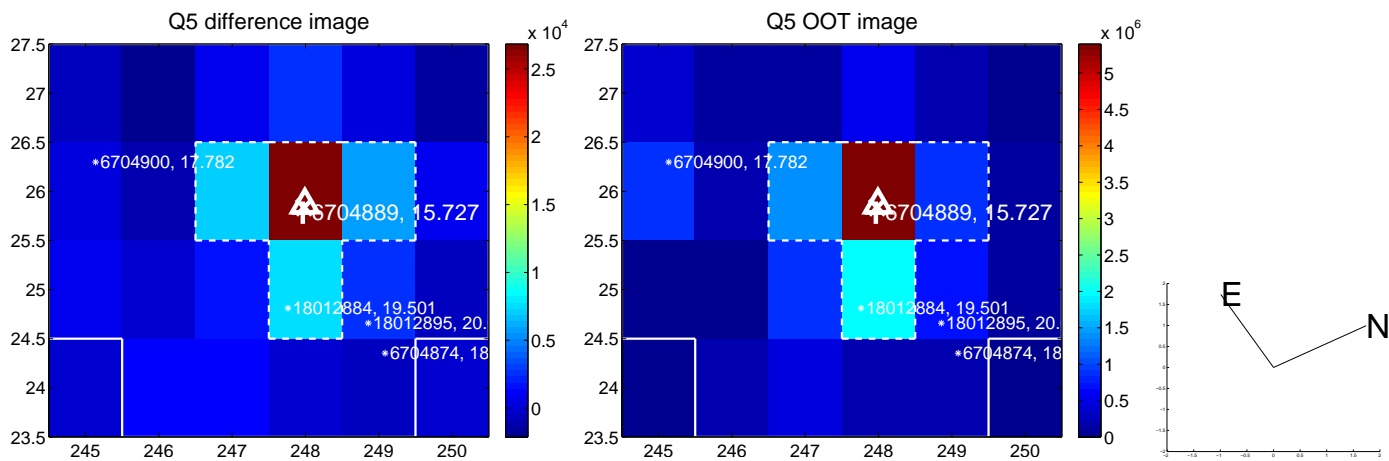


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000 are from the UKIRT catalog.

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

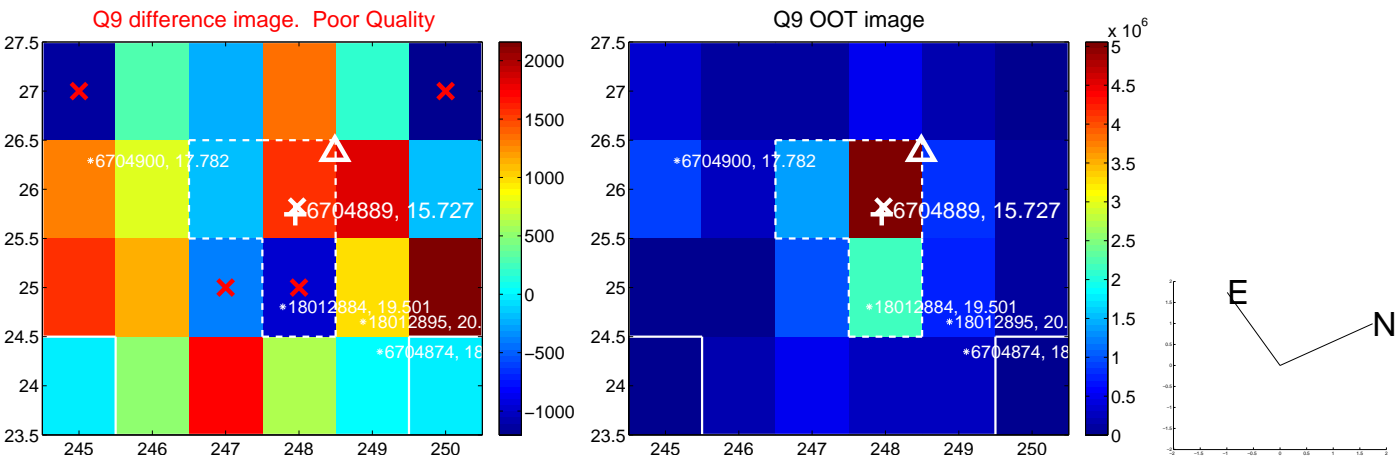


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

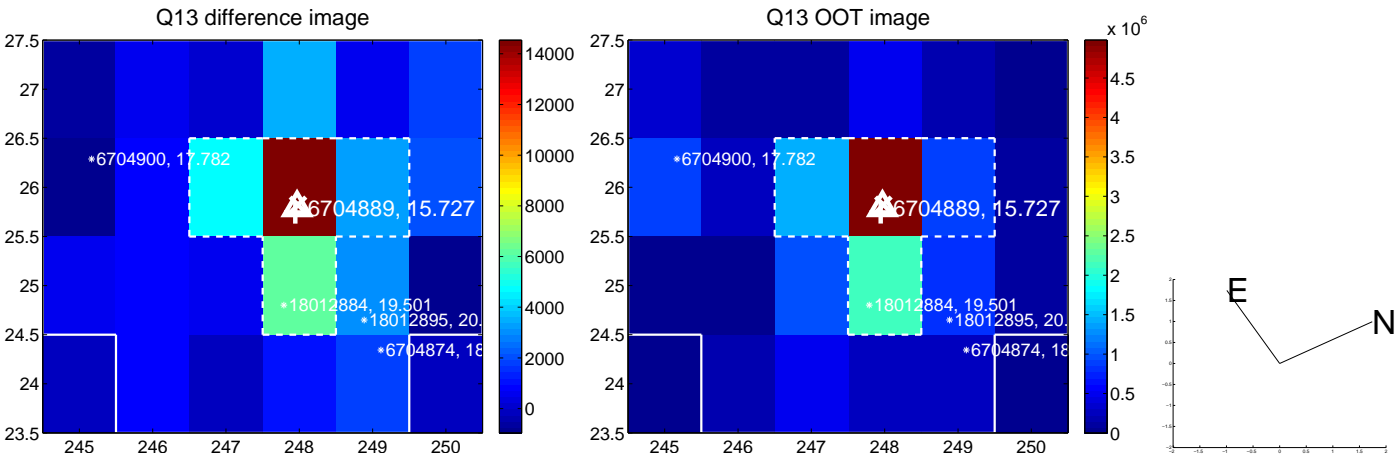




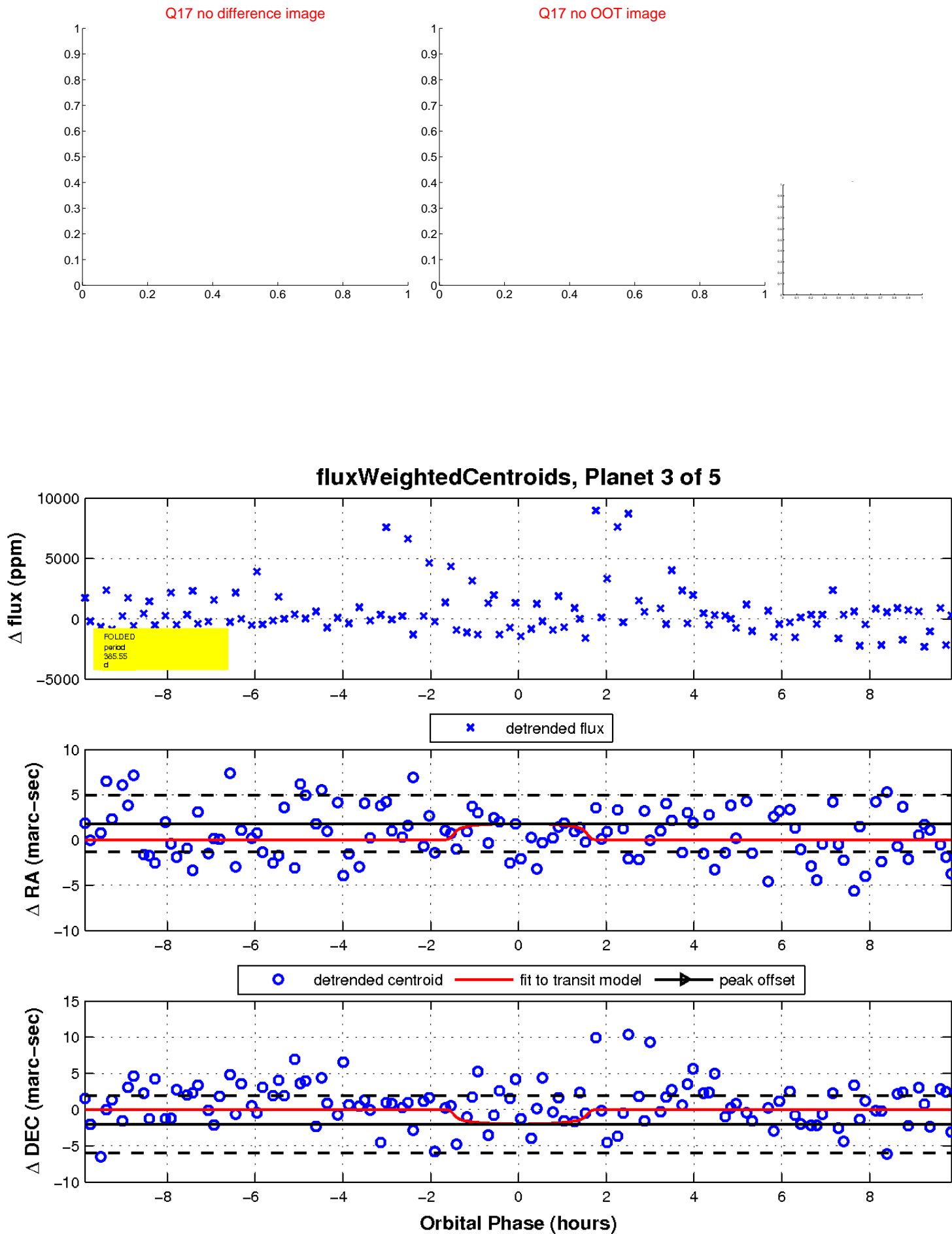
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: 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.



32.0 31.0 19:41:30.0 29.0 28.0

20.0 30.0 40.0 50.0

# KIC 006704889

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006704889-01	OBS	No	625.110519	300.307634	1900.9	3.108	14.7	5.9	0.86	5799	3.72	0.38
006704889-02	OBS	No	300.591512	284.337566	2066.6	3.687	14.1	7.7	0.86	5799	3.90	1.00
006704889-03	OBS	No	385.546949	450.682384	2174.7	3.303	14.8	7.6	0.86	5799	4.21	0.72
006704889-04	OBS	No	507.074116	248.366025	1734.9	3.030	11.9	6.4	0.86	5799	3.57	0.50
006704889-05	OBS	No	581.552740	338.247537	1494.7	5.000	10.2	-1.0	0.86	5799	3.30	0.42

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006704889-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006704889-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006704889-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
006704889-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006704889-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

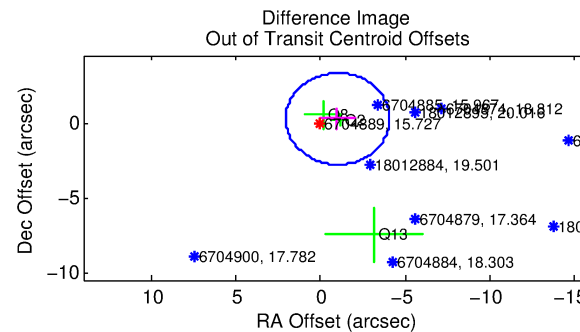
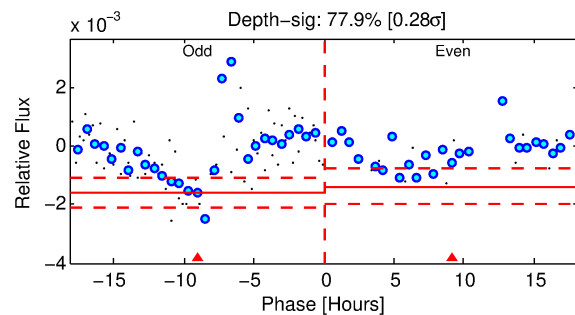
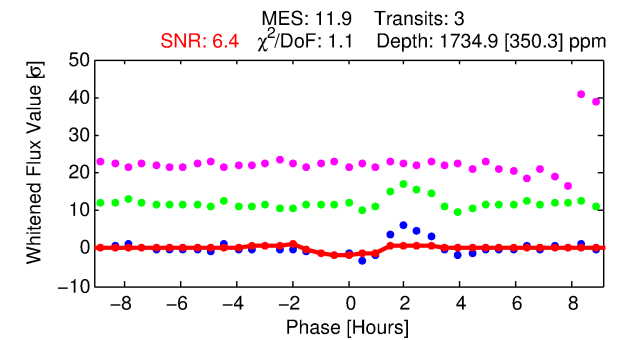
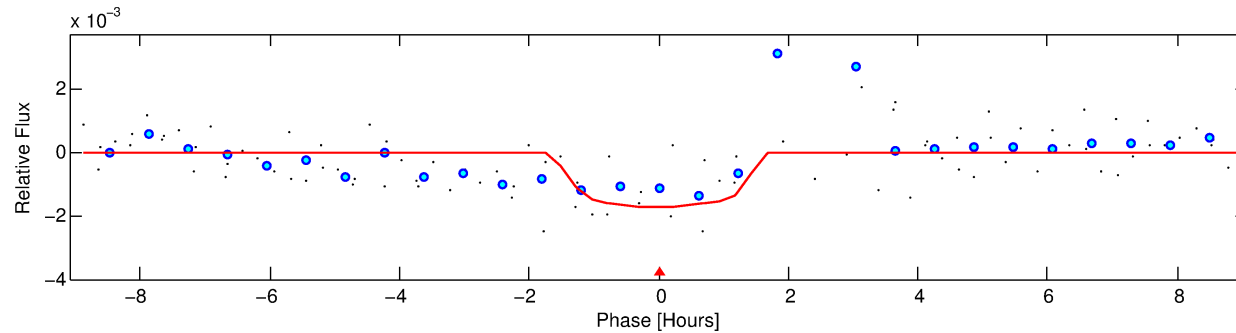
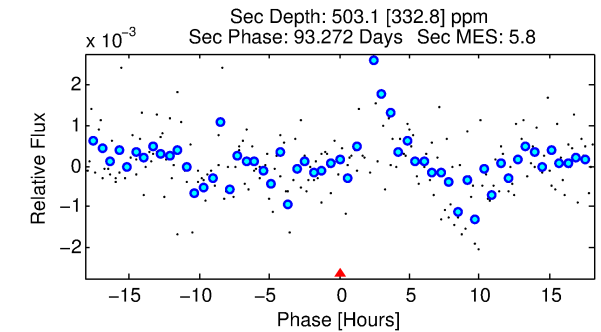
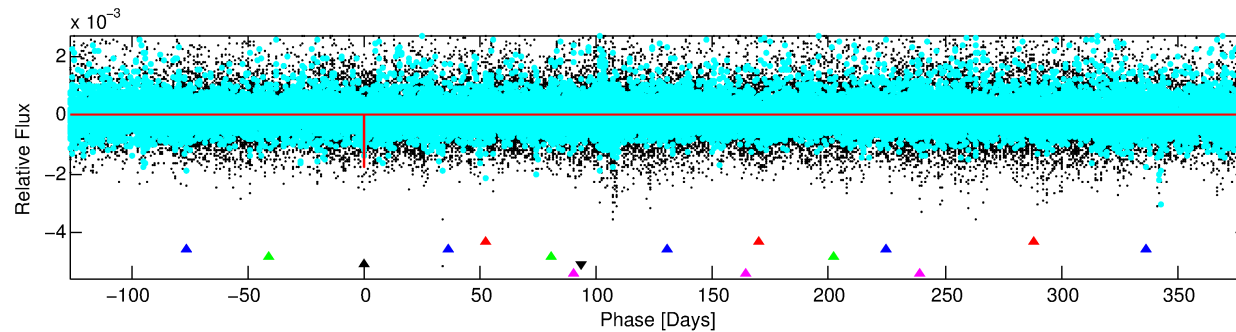
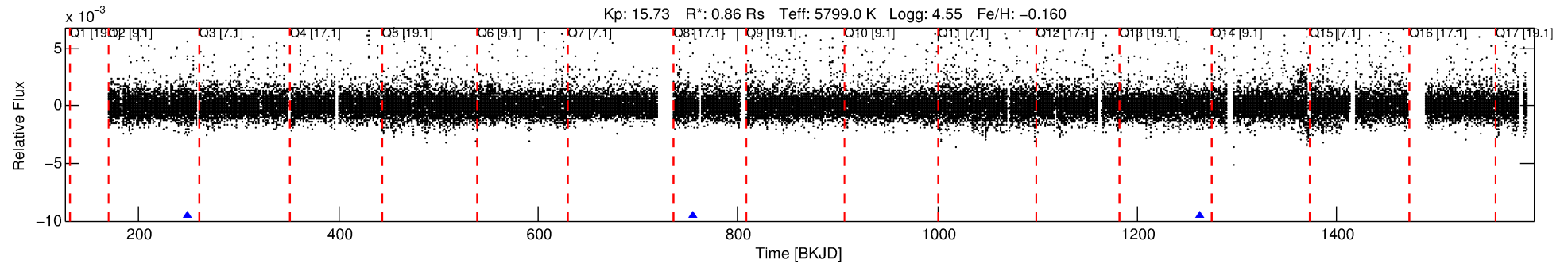
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006704889-04

No Significant Match Found

# DV One-Page Summary

KIC: 6704889 Candidate: 4 of 5 Period: 507.074 d



## DV Fit Results:

Period = 507.07412 [0.00662] d  
Epoch = 248.3660 [0.0086] BKJD  
Rp/R\* = 0.0381 [0.0769]  
a/R\* = 1302.45 [11704.60]  
b = 0.20 [43.55]  
Seff = 0.50 [0.19]  
Teq = 214 [20] K  
Rp = 3.57 [7.29] Re  
a = 1.2248 [0.2945] AU  
Ag = 32560.80 [133885.10] [0.24 $\sigma$ ]  
Teffp = 4452 [4562] K [0.93 $\sigma$ ]

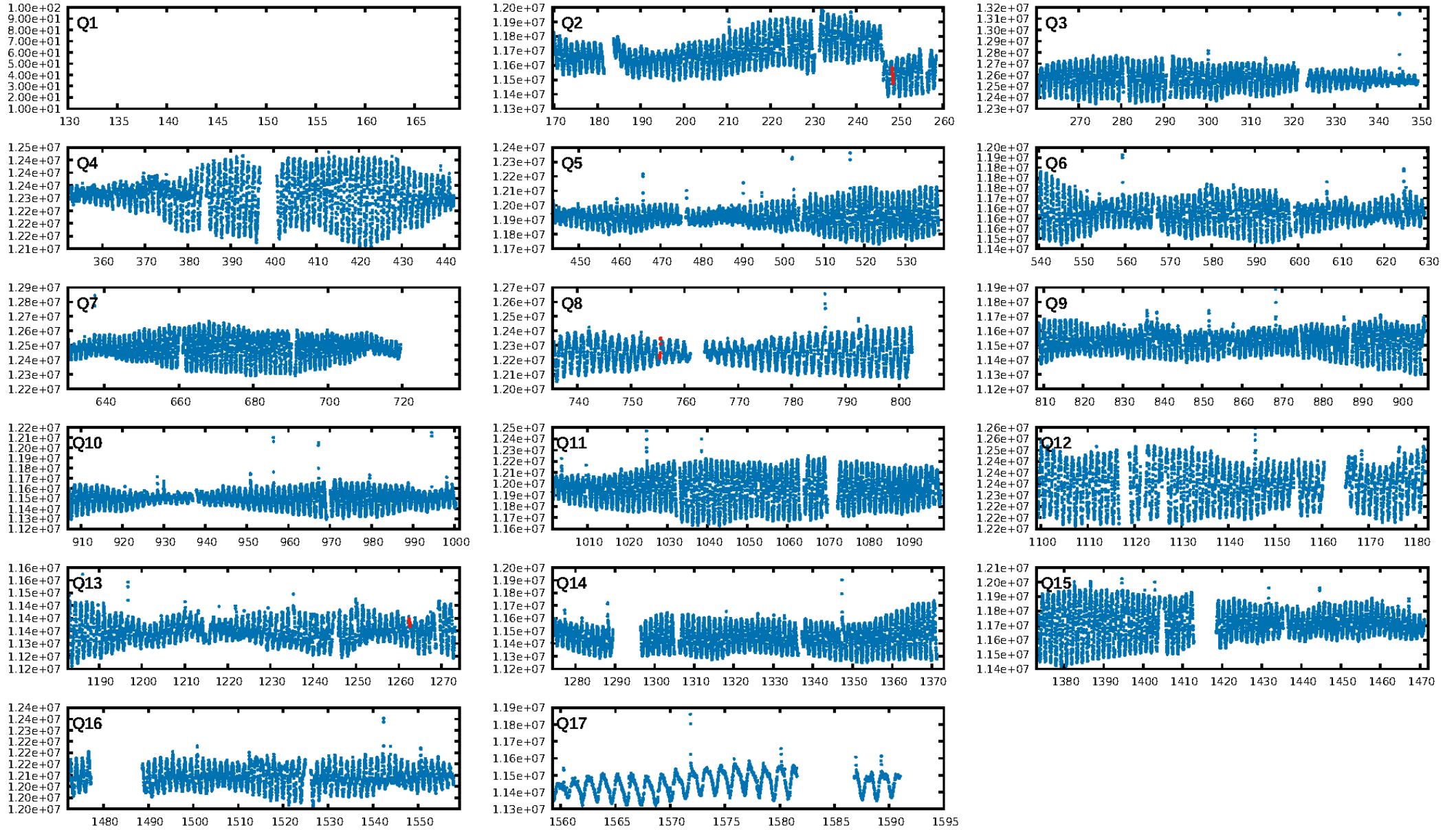
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [650.80 $\sigma$ ]  
LongPeriod-sig: 100.0% [305.75 $\sigma$ ]  
ModelChiSquare2-sig: 5.6%  
ModelChiSquareGof-sig: 64.5%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 53.6  
Centroid-sig: 37.1%  
Centroid-so: 0.746 arcsec [0.53 $\sigma$ ]  
OotOffset-rm: 1.023 arcsec [1.00 $\sigma$ ]  
OotOffset-st: 1/0/1/1 [3]  
KicOffset-rm: 1.162 arcsec [1.12 $\sigma$ ]  
KicOffset-st: 1/0/1/1 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:03:09 Z

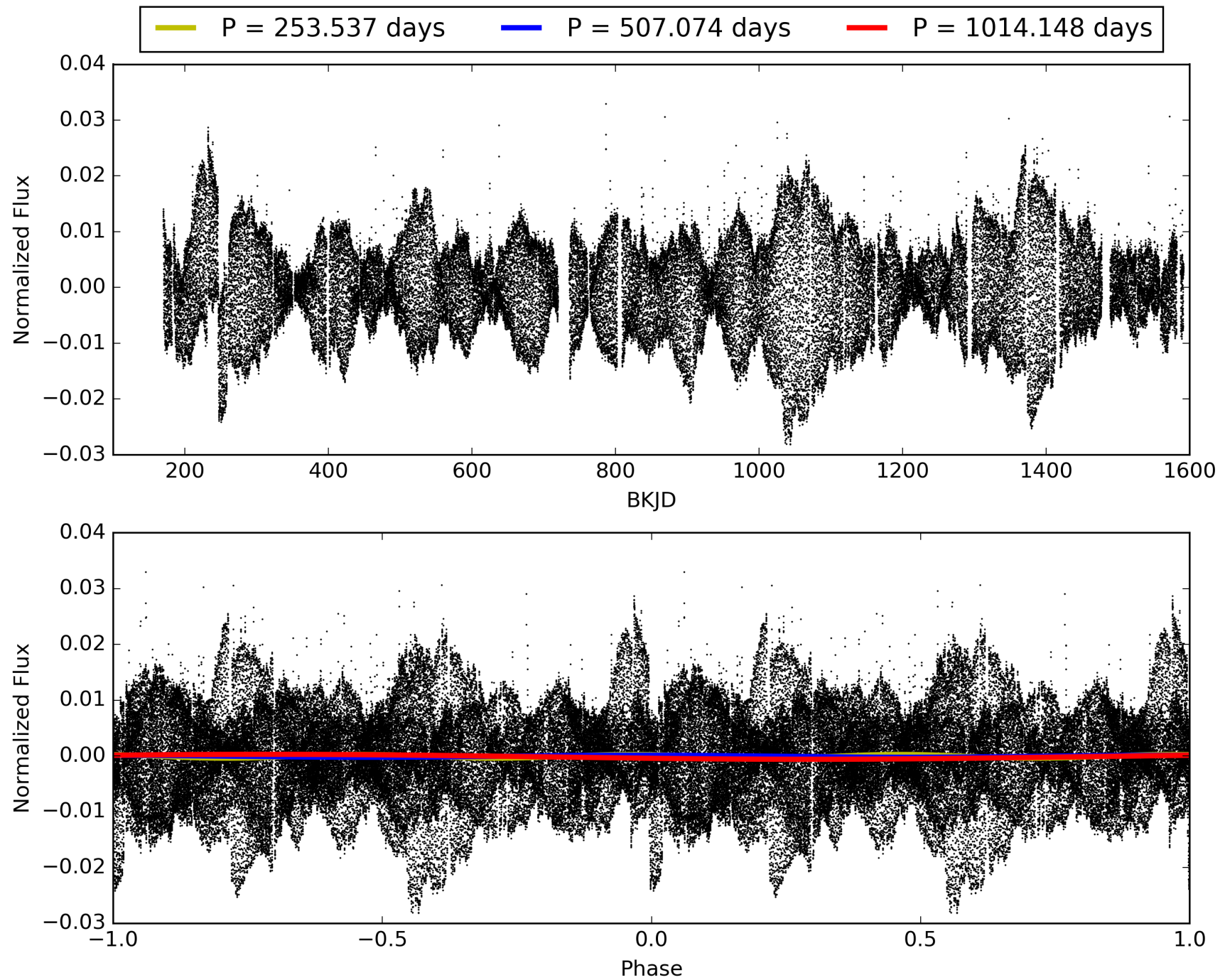
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 006704889-04, PDC Light Curves





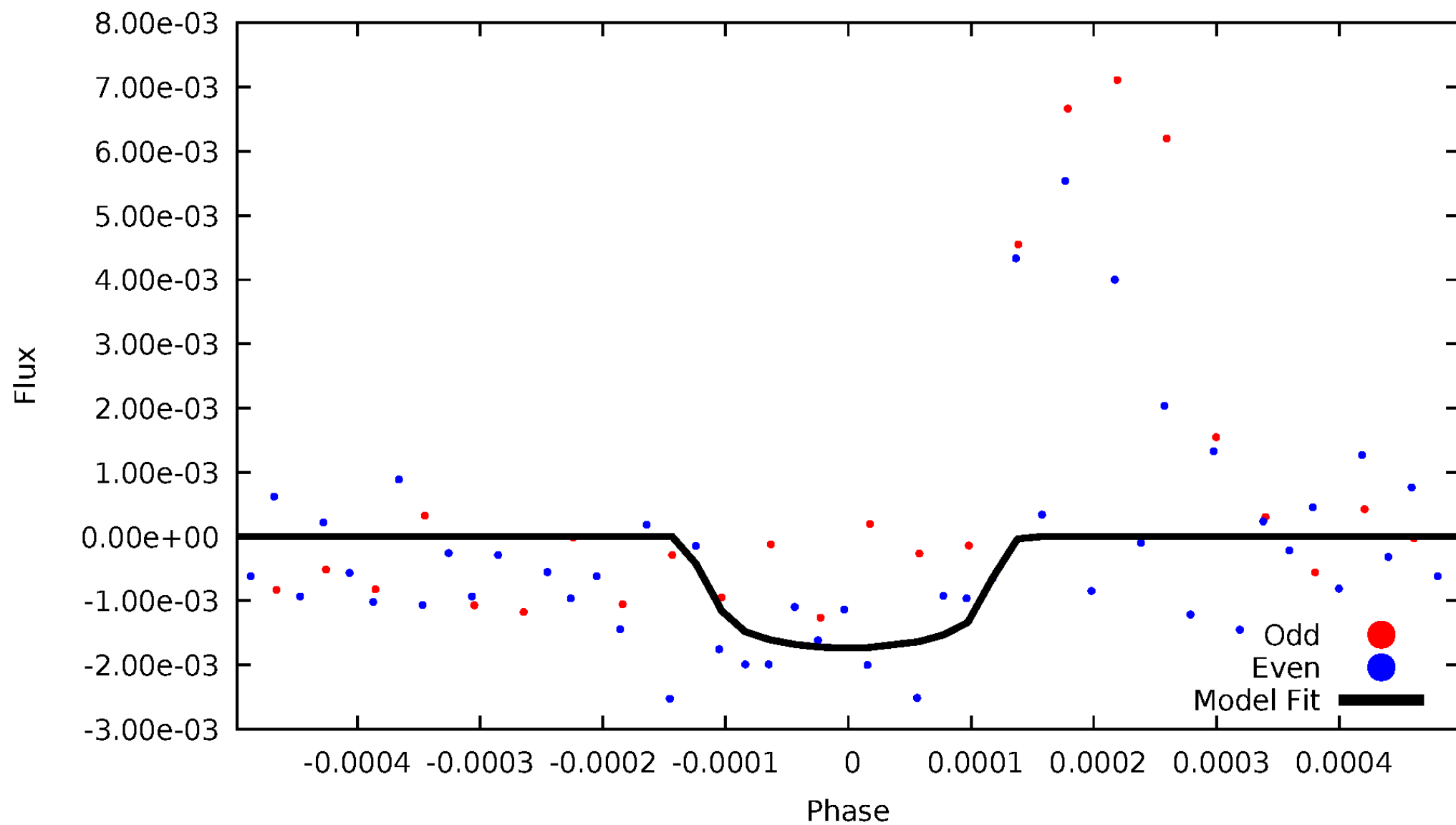
TCE 006704889-04





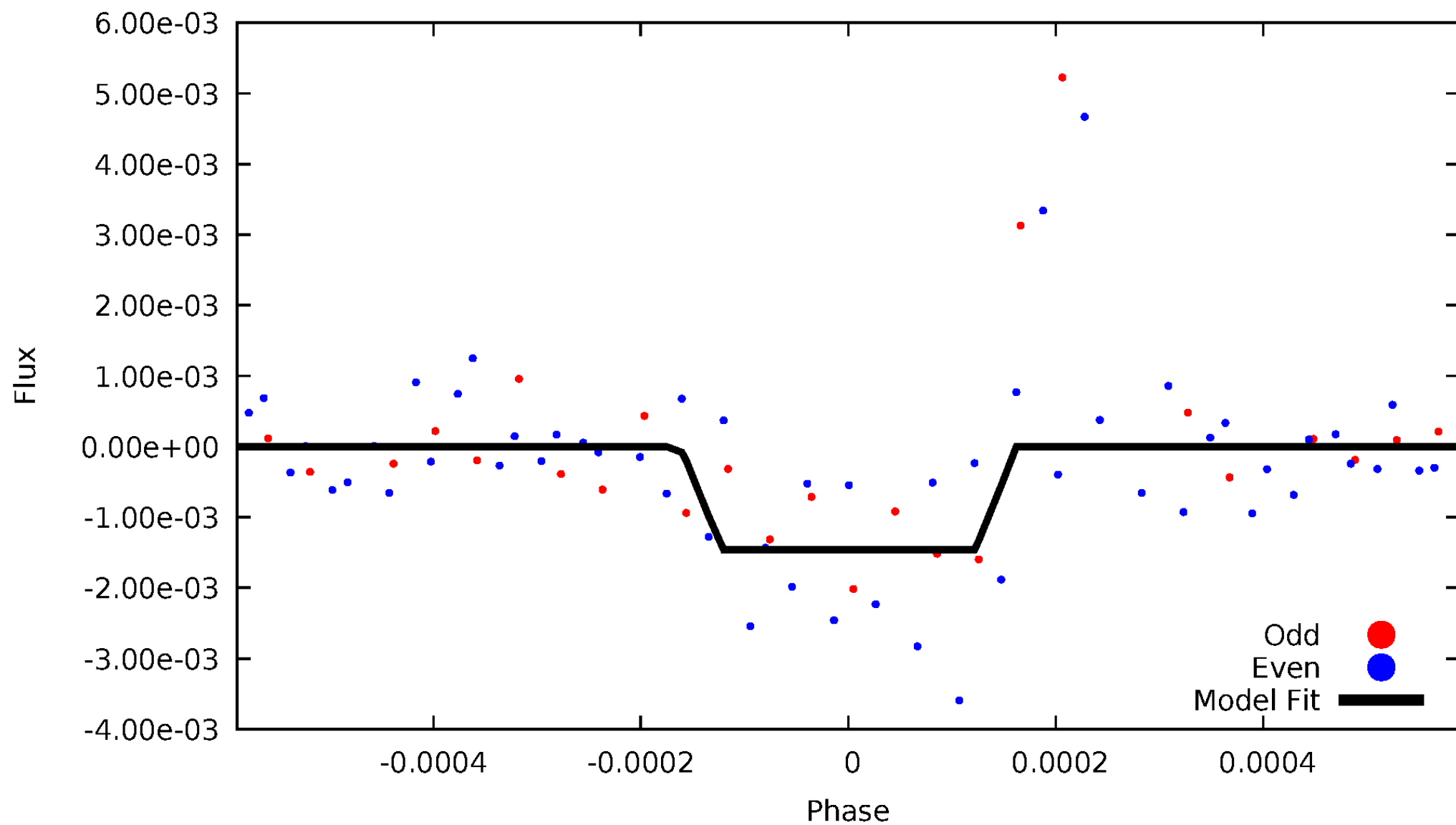
# DV Odd/Even

TCE 006704889-04



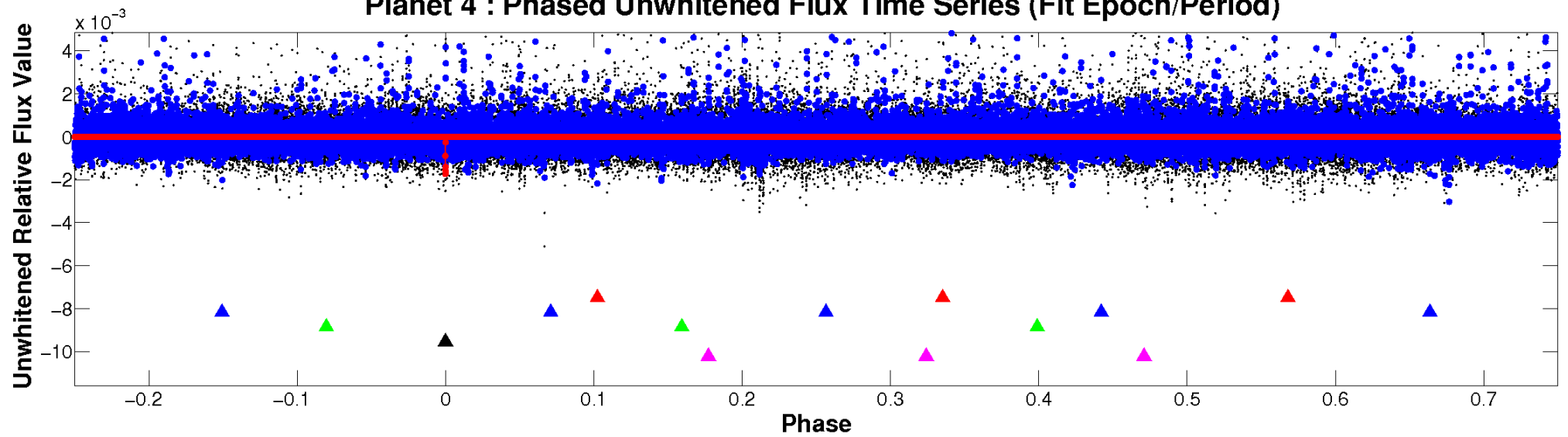
# ALT Odd/Even

TCE 006704889-04

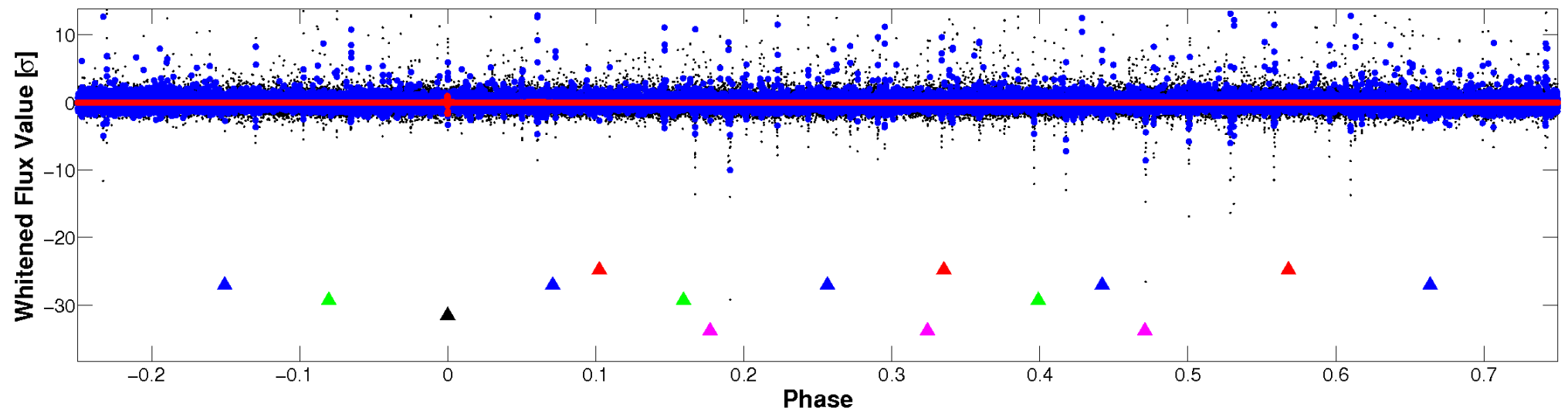


# Non-Whitened Vs. Whitened Light Curve

## Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

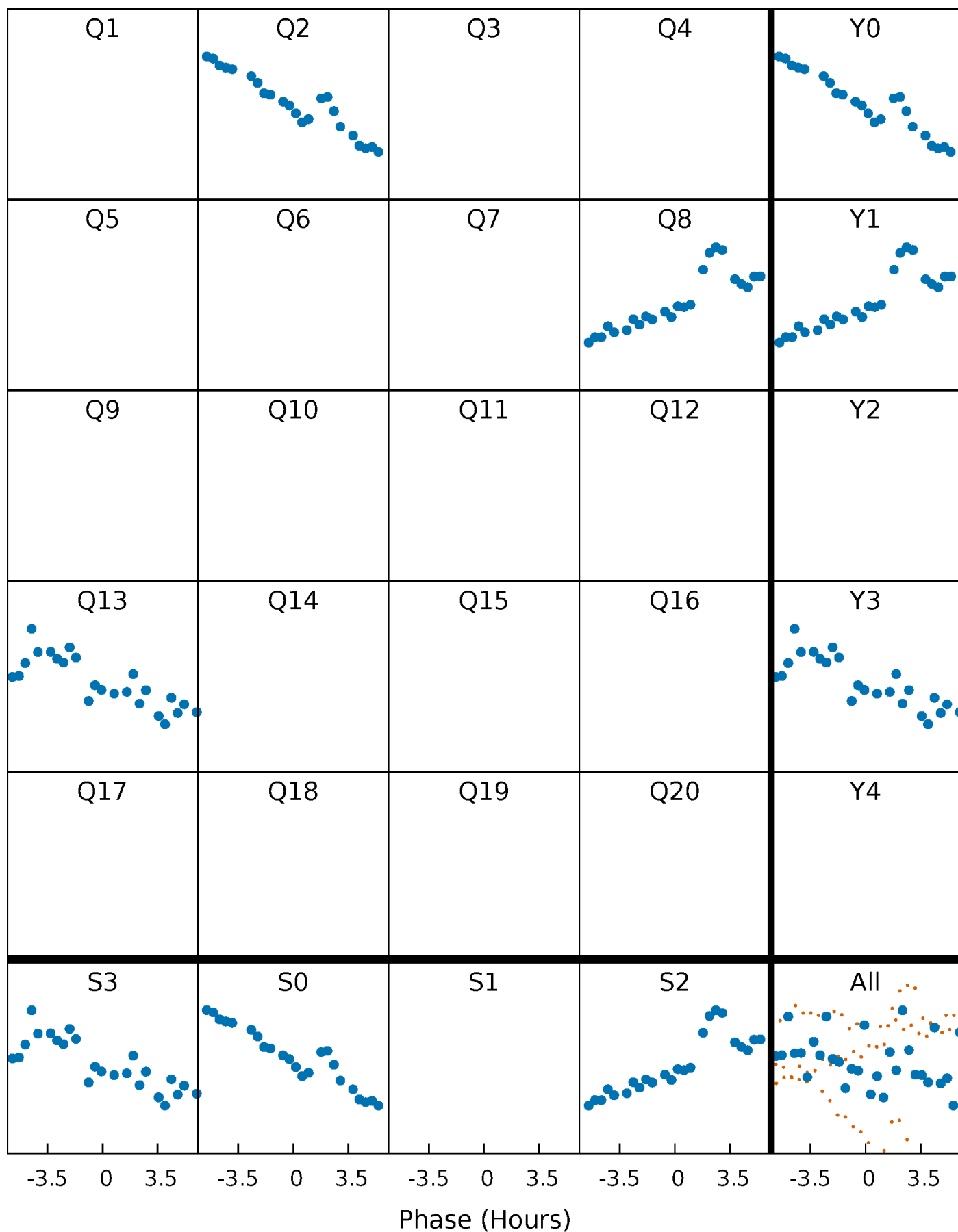


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



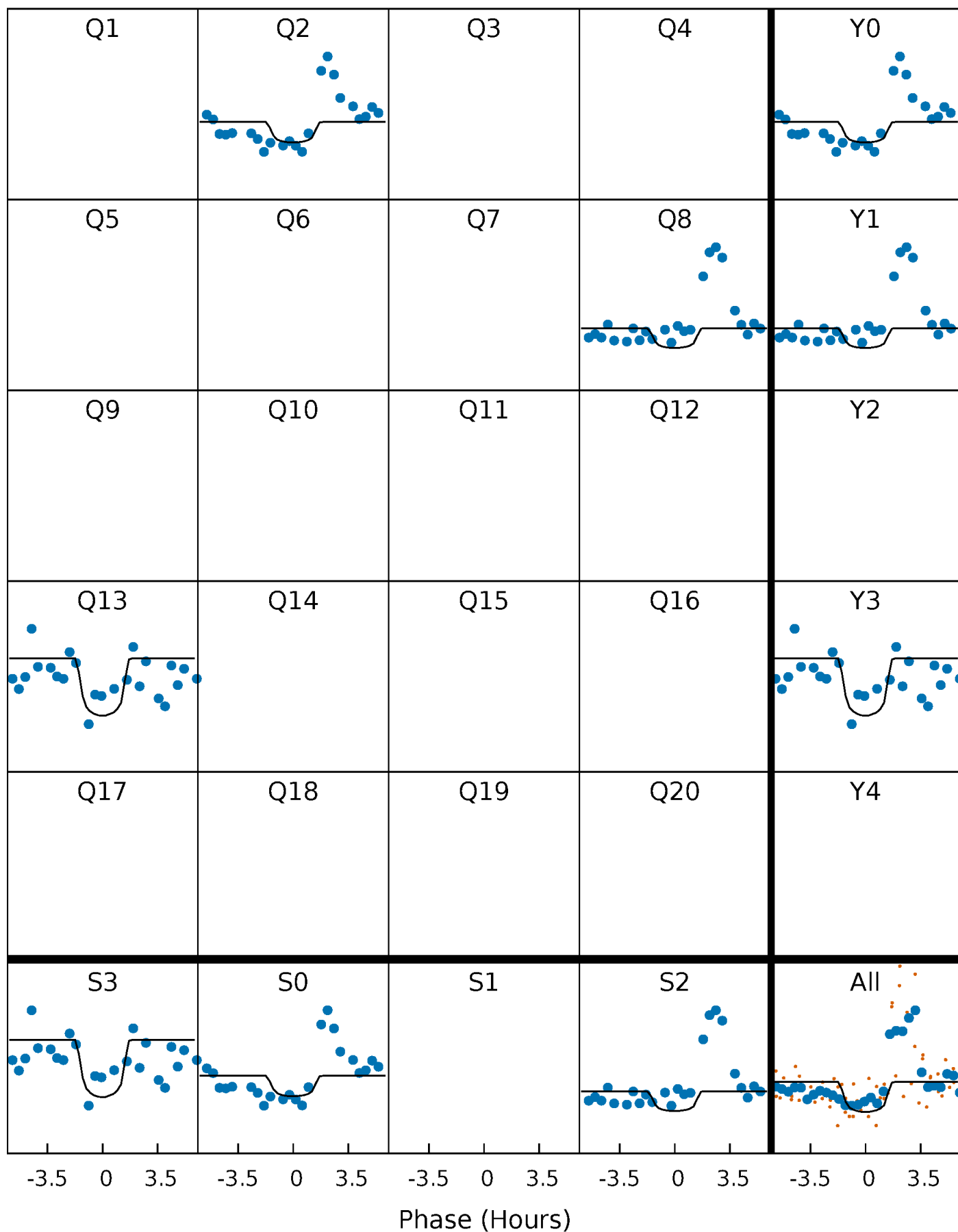
# PDC Quarter-Phased Transit Curves

TCE 006704889-04     $P=507.074116$  Days     $T_0=248.366025$  (BKJD)



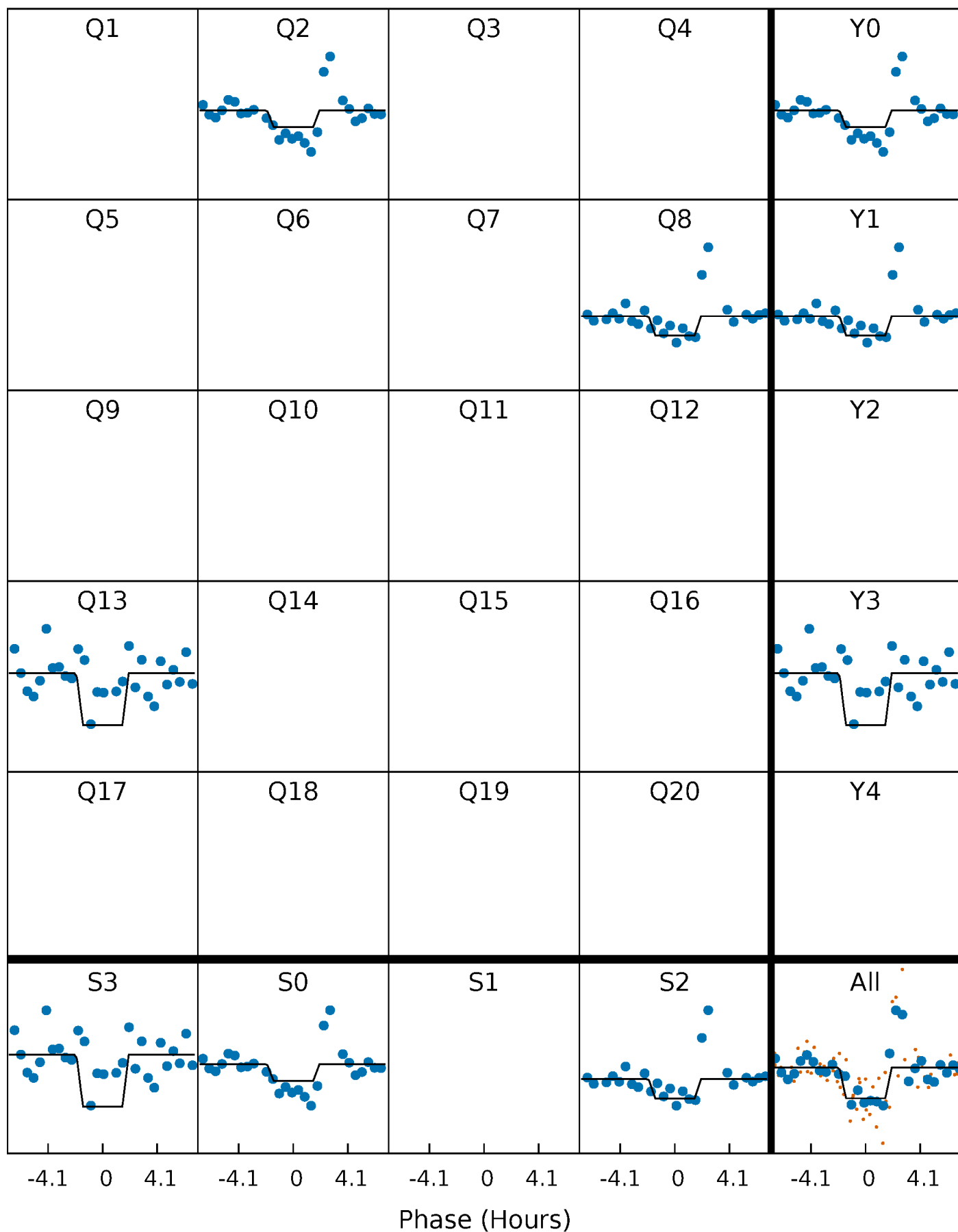
# DV Quarter-Phased Transit Curves

TCE 006704889-04 P=507.074116 Days  $T_0=248.366025$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

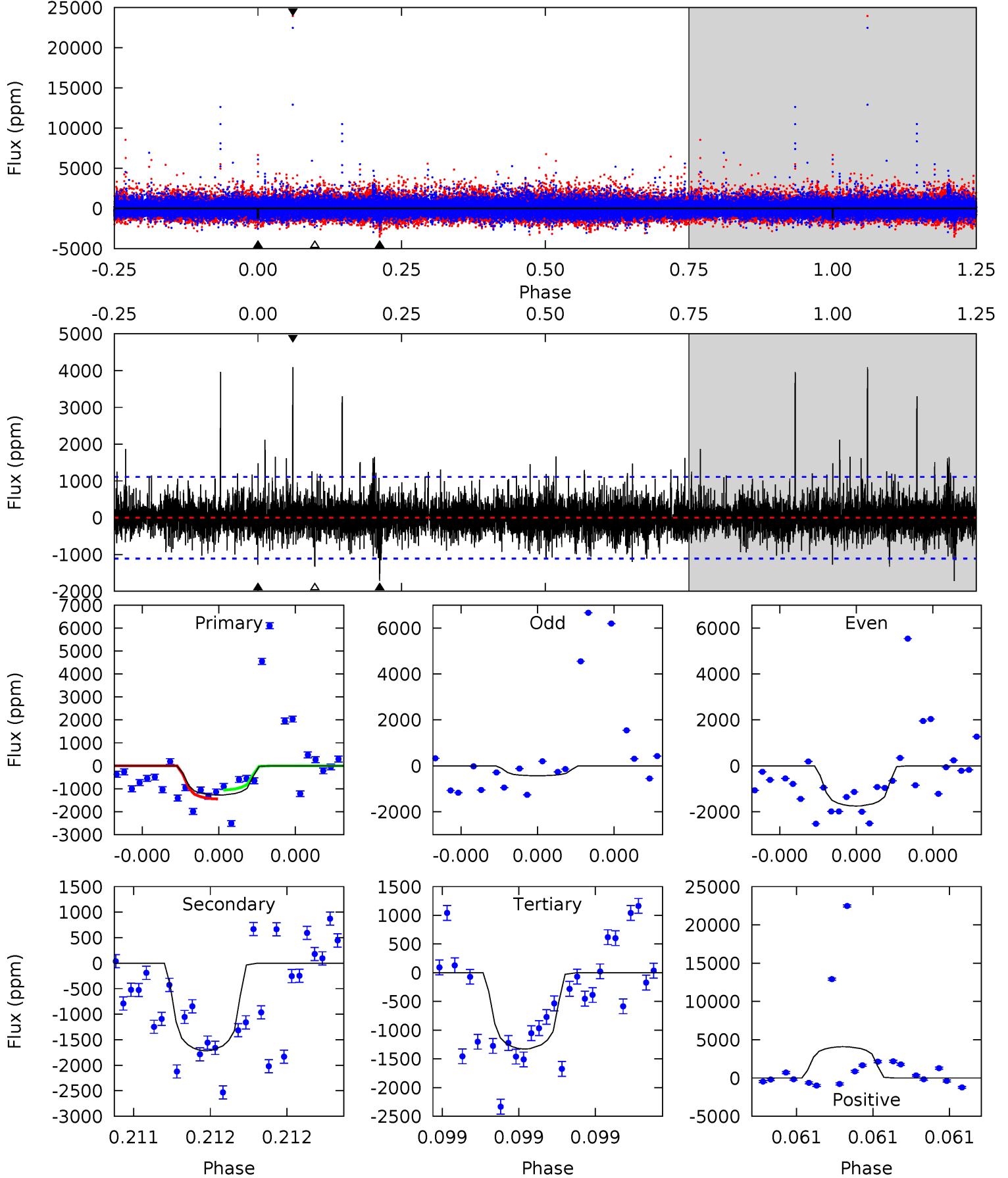
TCE 006704889-04 P=507.086036 Days  $T_0=248.340132$  (BKJD)



# DV Model-Shift Uniqueness Test

006704889-04, P = 507.074116 Days, E = 248.366025 Days

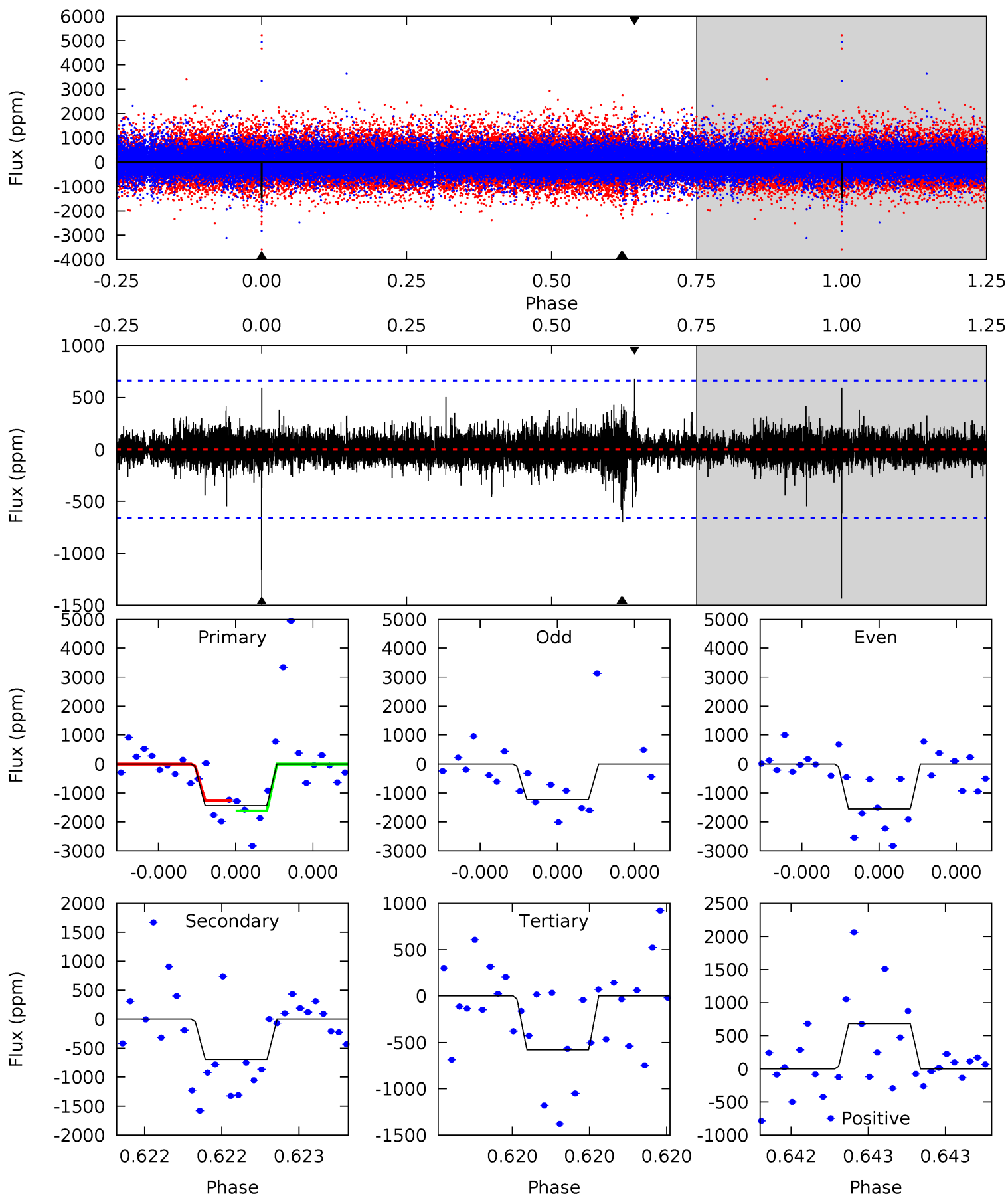
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.53	8.79	6.80	20.9	5.68	3.65	1.75	-0.27	-14.4	1.99	-12.1	2.52	0.93	0.70	0.99



# Alt Model-Shift Uniqueness Test

006704889-04, P = 507.086036 Days, E = 248.340132 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
12.3	5.94	4.96	5.82	5.66	3.61	0.76	7.30	6.44	0.98	0.12	1.32	1.17	0.32	1.54





### Stellar Parameters For KIC 006704889

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5799^{+155}_{-190}$	$4.548^{+0.035}_{-0.196}$	$-0.160^{+0.300}_{-0.300}$	$0.860^{+0.242}_{-0.081}$	$0.955^{+0.100}_{-0.123}$	$2.112^{+0.386}_{-1.028}$
	+3%/-3%	+1%/-4%	+188%/-188%	+28%/-9%	+10%/-13%	+18%/-49%
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 006704889-04 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-1718 \pm 195$	$6.72^{+6.55}_{-4.77}$	$306^{+21}_{-14}$	$4655^{+3860}_{-996}$	$30787^{+334037}_{-22980}$
Alt.	$-695 \pm 117$	$6.95^{+6.05}_{-4.69}$	$307^{+21}_{-15}$	$3926^{+2232}_{-733}$	$11654^{+100469}_{-8335}$

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

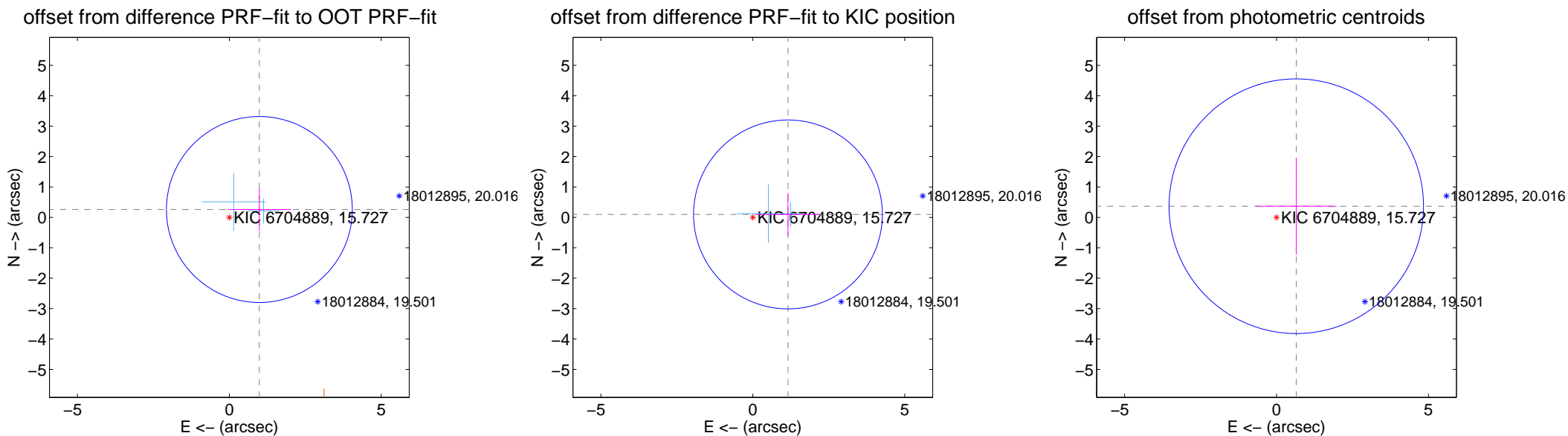
## DV Centroid Data

Supplemental centroid analysis for 006704889-04. Kepler magnitude: 15.73. Transit SNR 6.41

There are 2 quarters with good PRF difference image offsets

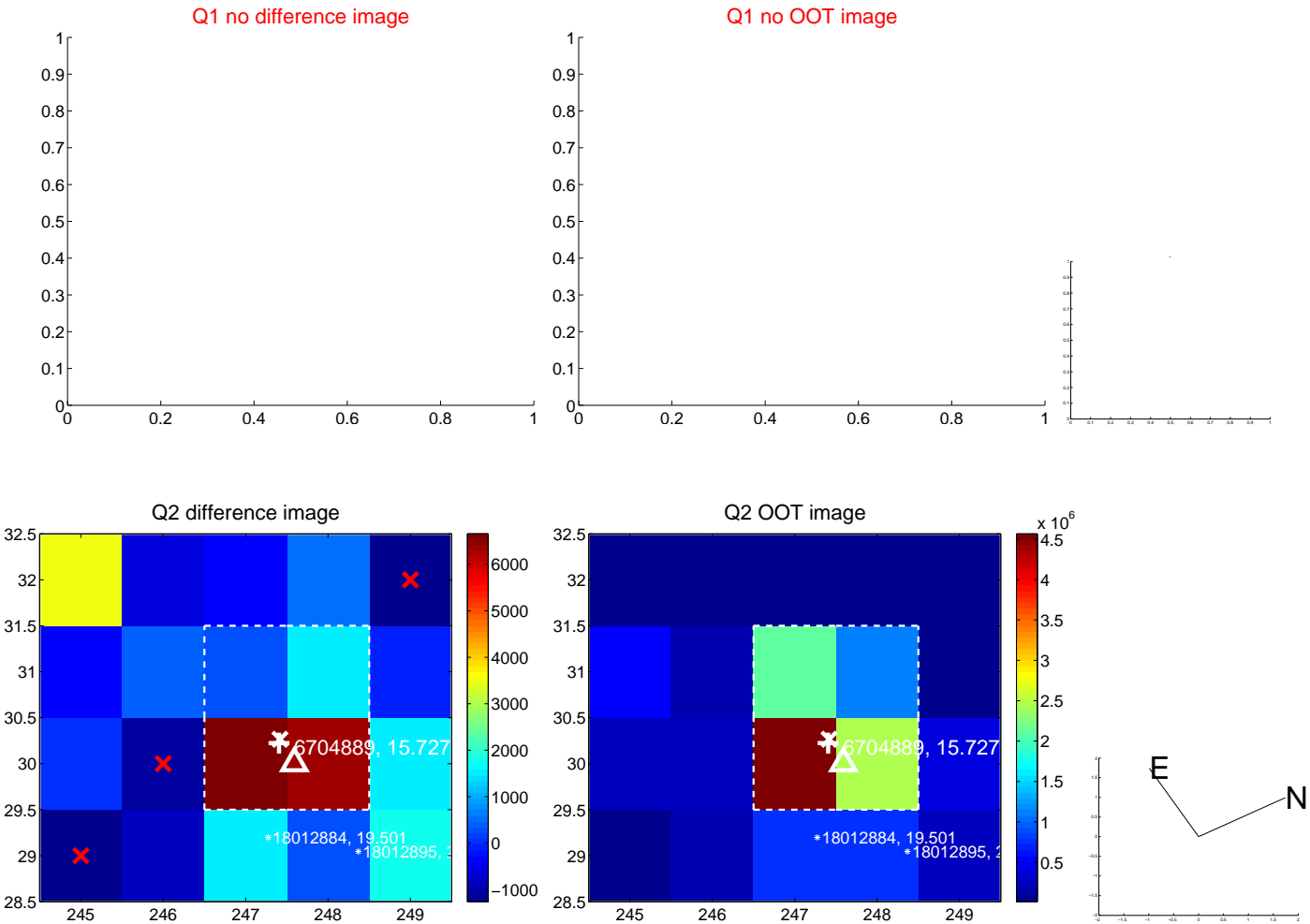
The direct PRF centroid is offset from the target star catalog position by about 0.39 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.023 \pm 1.020$	1.00	$-0.989 \pm 1.038$	$0.259 \pm 0.708$
PRF-fit source offset from KIC position	$1.162 \pm 1.036$	1.12	$-1.158 \pm 1.038$	$0.098 \pm 0.708$
photometric centroid source offset	$0.75 \pm 1.40$	0.53	$-0.65 \pm 1.33$	$0.37 \pm 1.59$

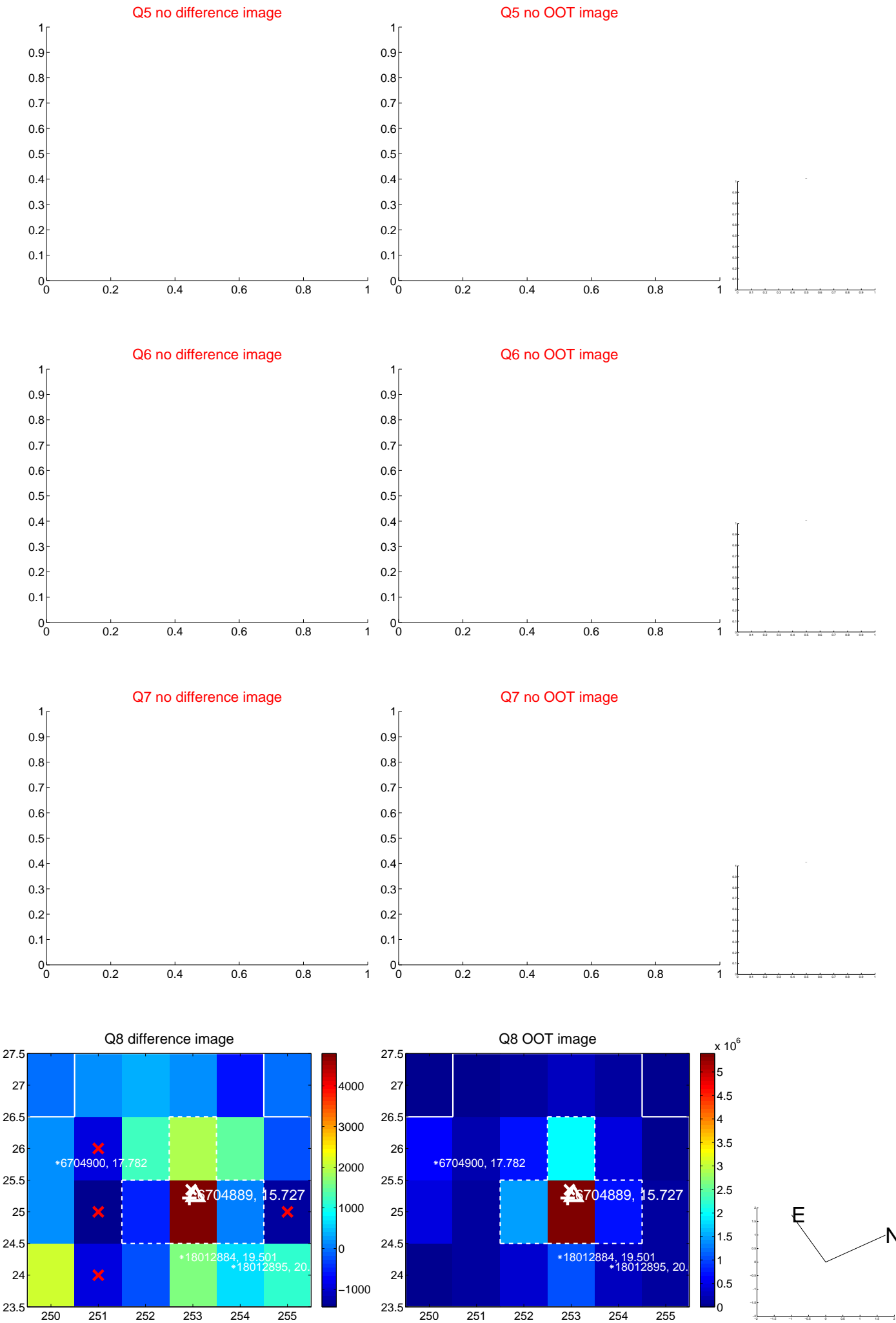


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



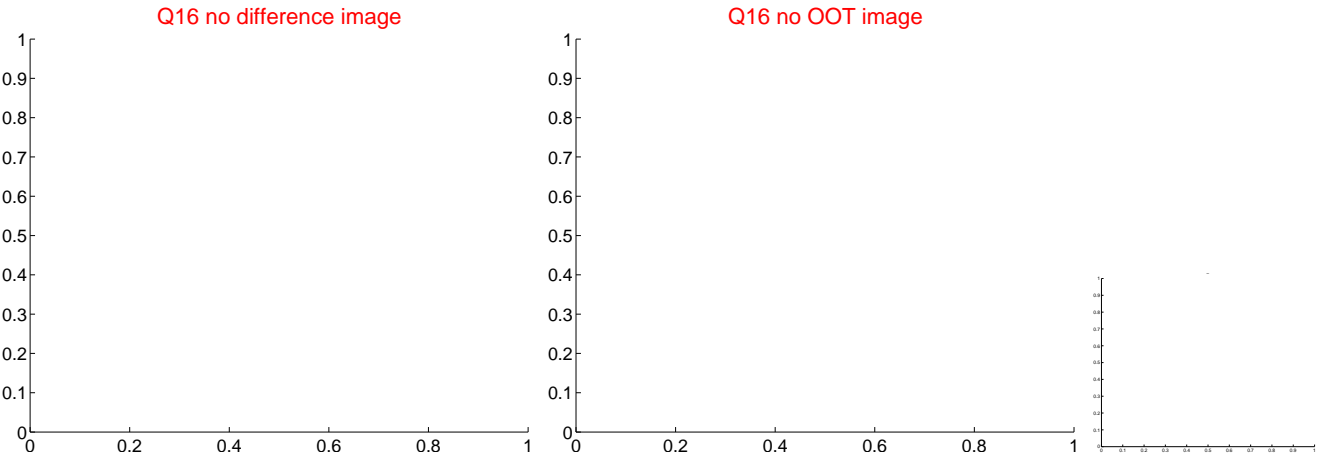
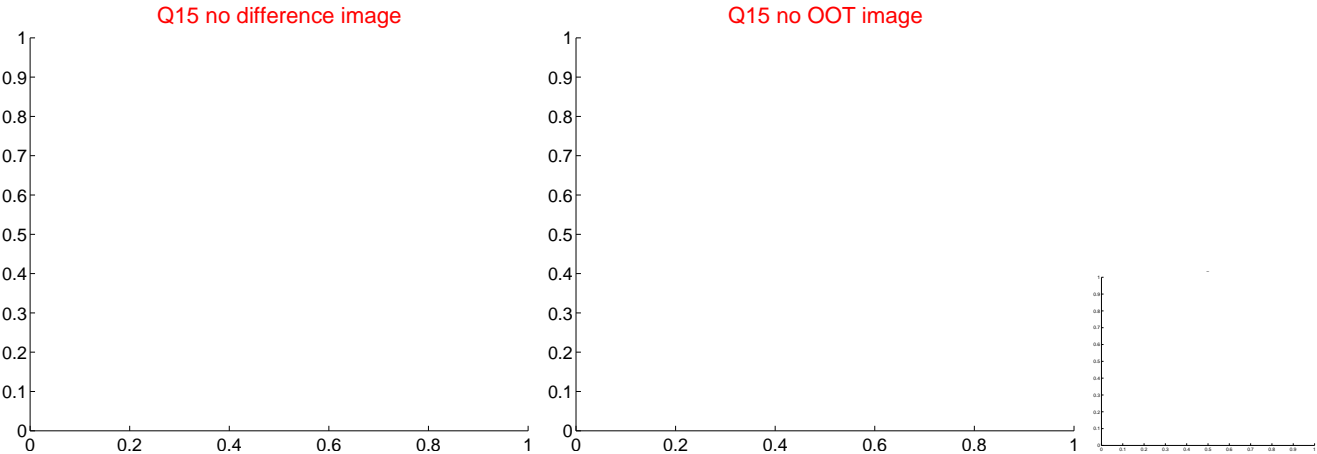
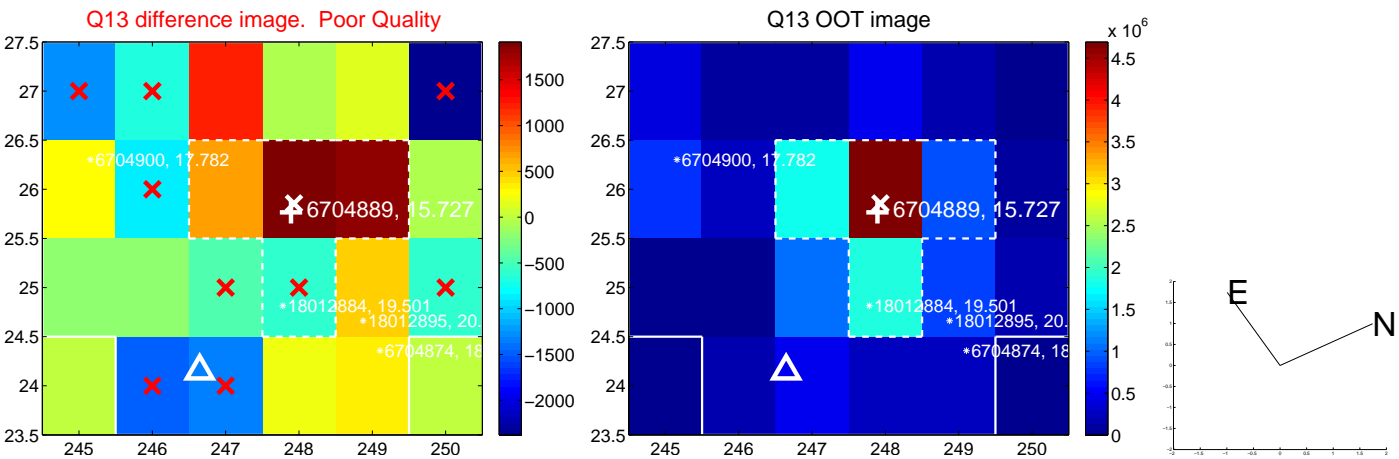
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



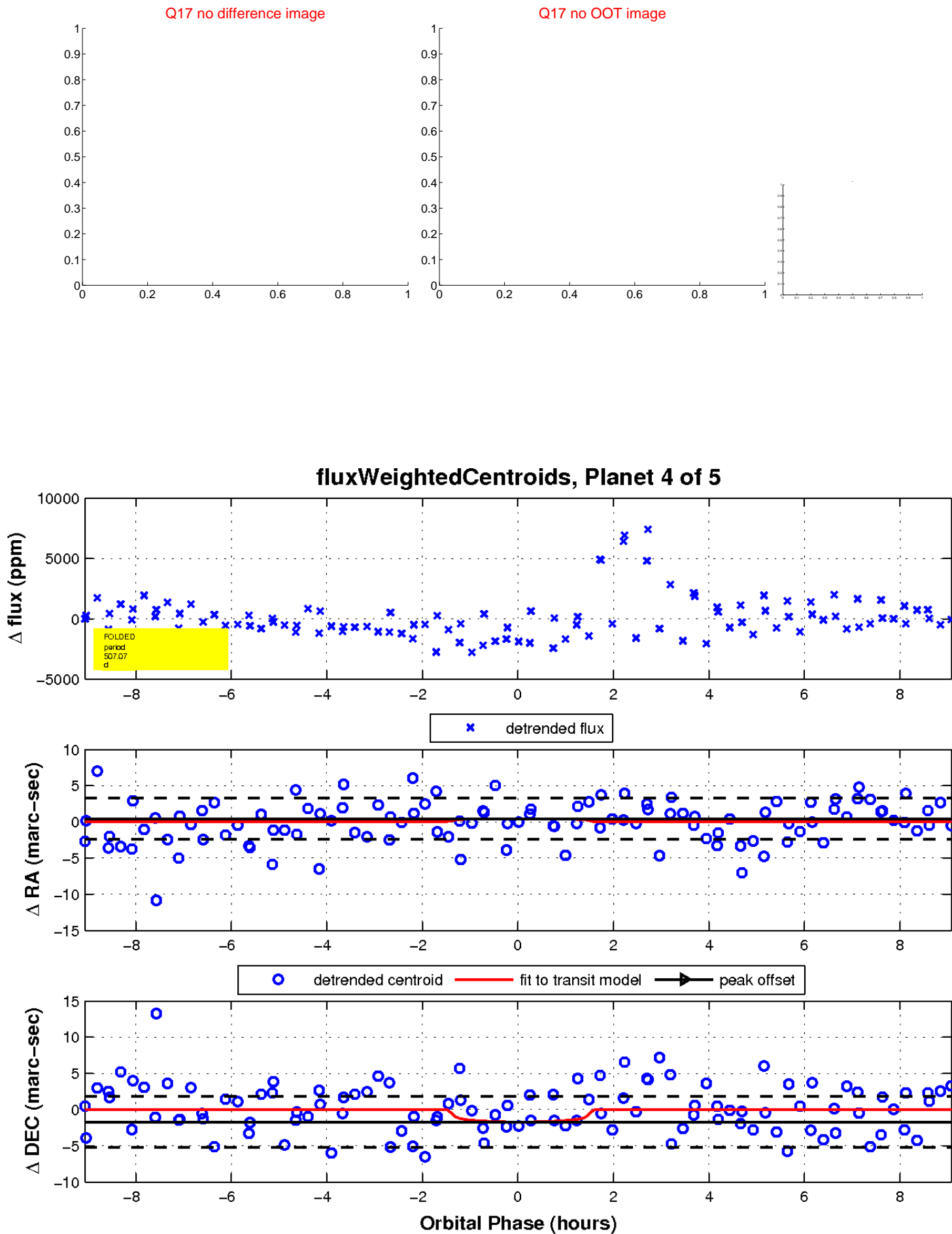
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



32.0 31.0 19:41:30.0 29.0 28.0

20.0 30.0 40.0 50.0

32.0 31.0 19:41:30.0 29.0 28.0

20.0 30.0 40.0 50.0



# KIC 006704889

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006704889-01	OBS	No	625.110519	300.307634	1900.9	3.108	14.7	5.9	0.86	5799	3.72	0.38
006704889-02	OBS	No	300.591512	284.337566	2066.6	3.687	14.1	7.7	0.86	5799	3.90	1.00
006704889-03	OBS	No	385.546949	450.682384	2174.7	3.303	14.8	7.6	0.86	5799	4.21	0.72
006704889-04	OBS	No	507.074116	248.366025	1734.9	3.030	11.9	6.4	0.86	5799	3.57	0.50
006704889-05	OBS	No	581.552740	338.247537	1494.7	5.000	10.2	-1.0	0.86	5799	3.30	0.42

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006704889-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006704889-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006704889-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
006704889-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006704889-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

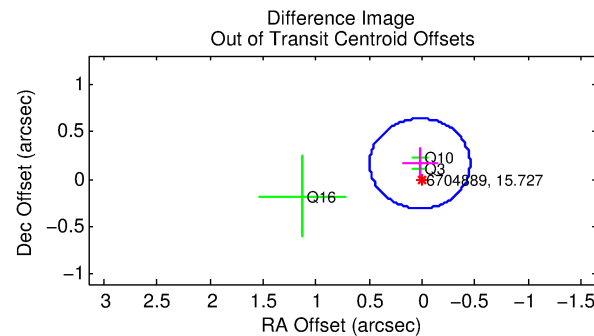
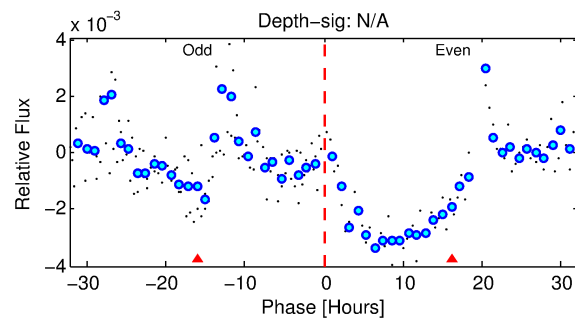
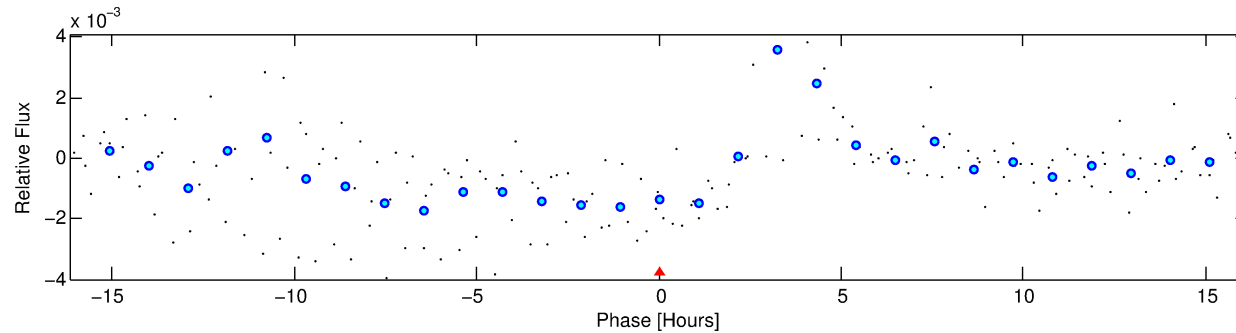
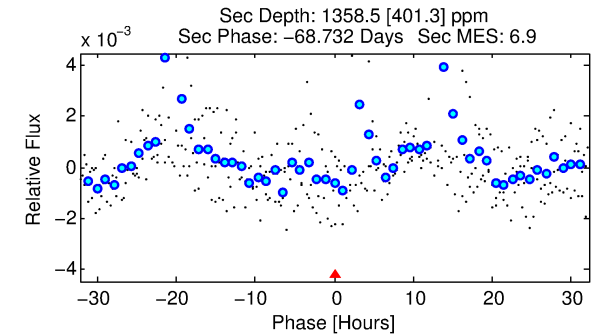
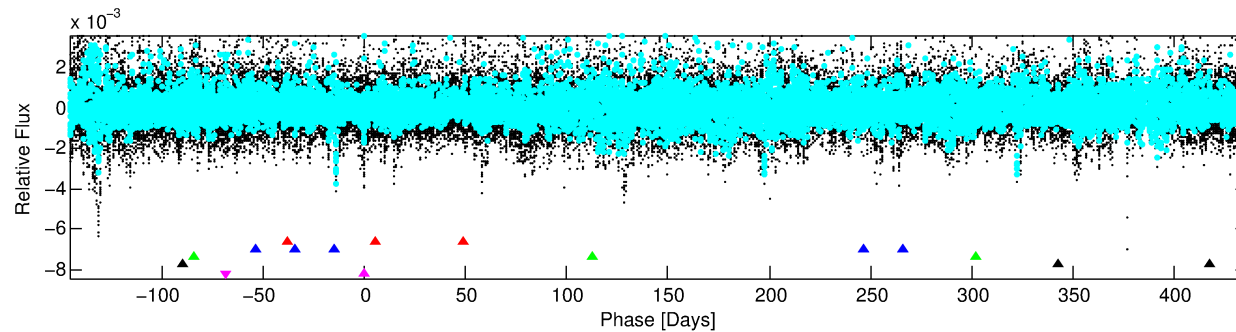
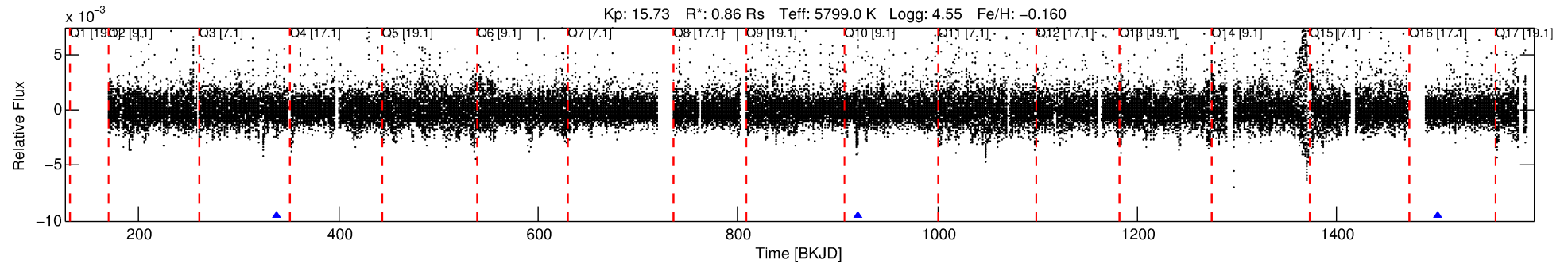
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006704889-05

No Significant Match Found

# DV One-Page Summary

KIC: 6704889 Candidate: 5 of 5 Period: 581.553 d



## TPS TCE Results:

Period = 581.55274 d  
Epoch = 338.2475 BKJD

DV fit results are unavailable

## DV Diagnostic Results:

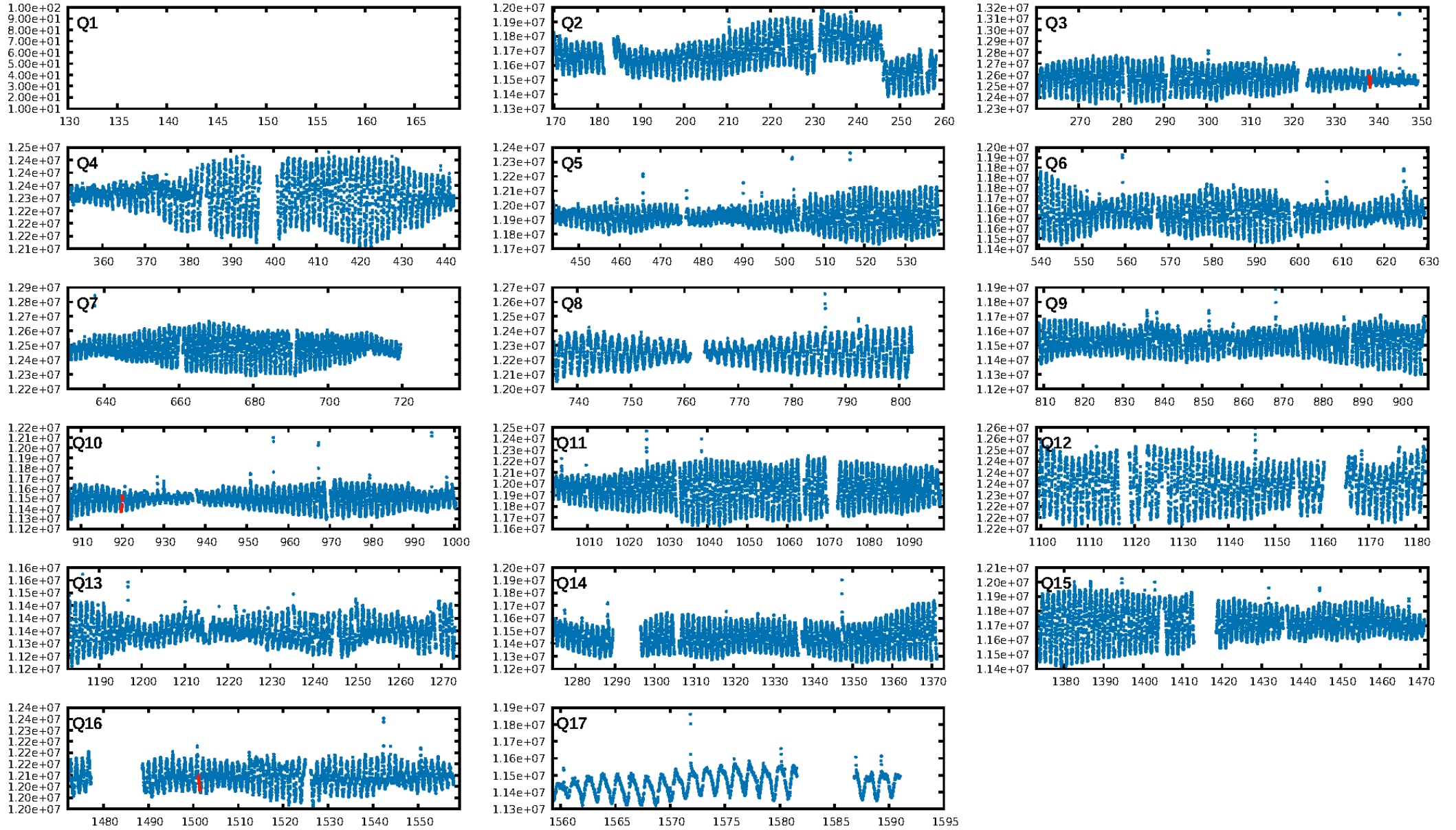
ShortPeriod-sig: 100.0% [305.75σ]  
LongPeriod-sig: 100.0% [177.56σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.848

Centroid-sig: 49.5%  
Centroid-so: 1.093 arcsec [1.96σ]  
OotOffset-rm: 0.166 arcsec [1.05σ]  
KicOffset-rm: 0.143 arcsec [0.92σ]  
OotOffset-st: 1/1/1/0 [3]  
KicOffset-st: 1/1/1/0 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [3/3]

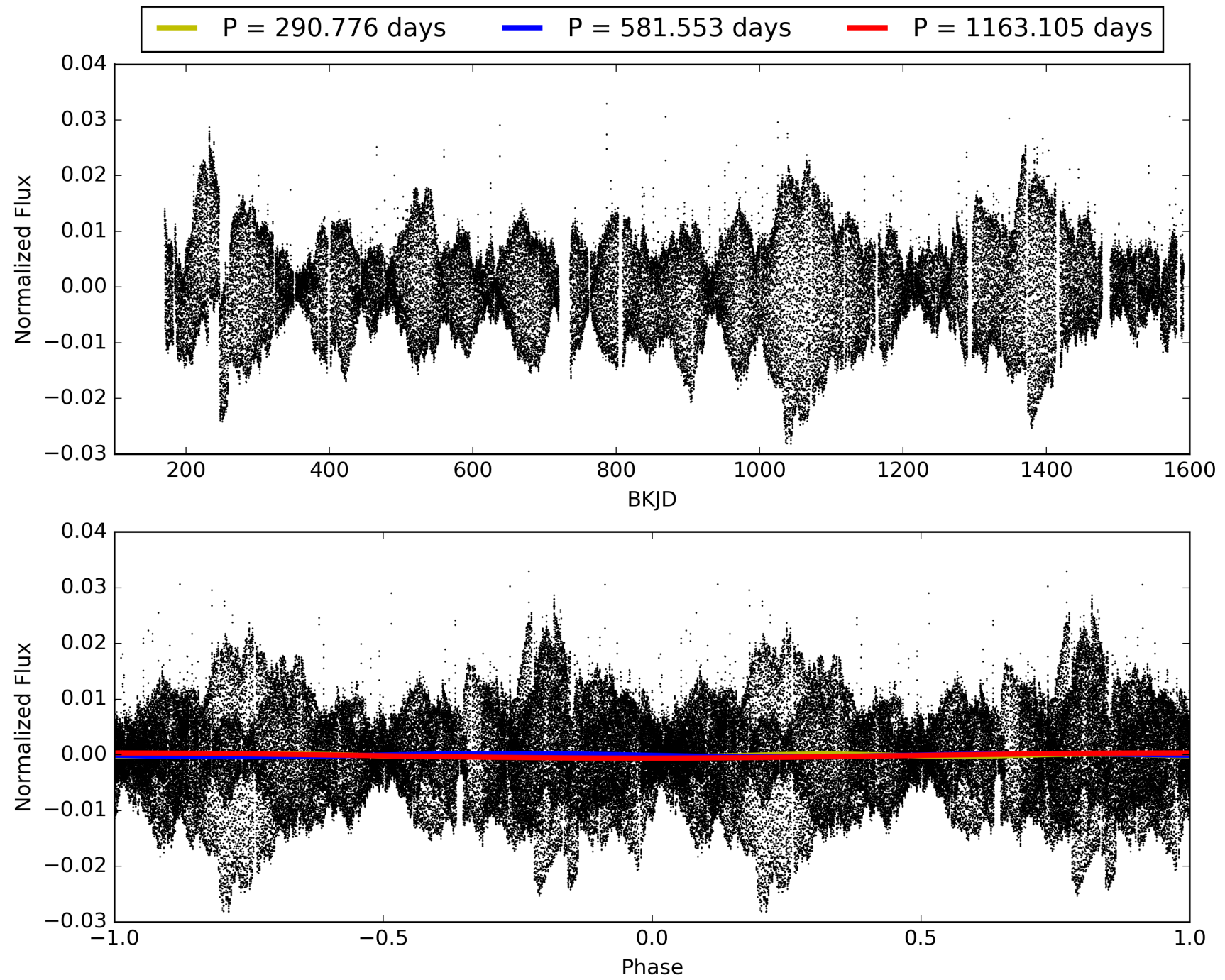
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:03:27 Z

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

# TCE 006704889-05, PDC Light Curves

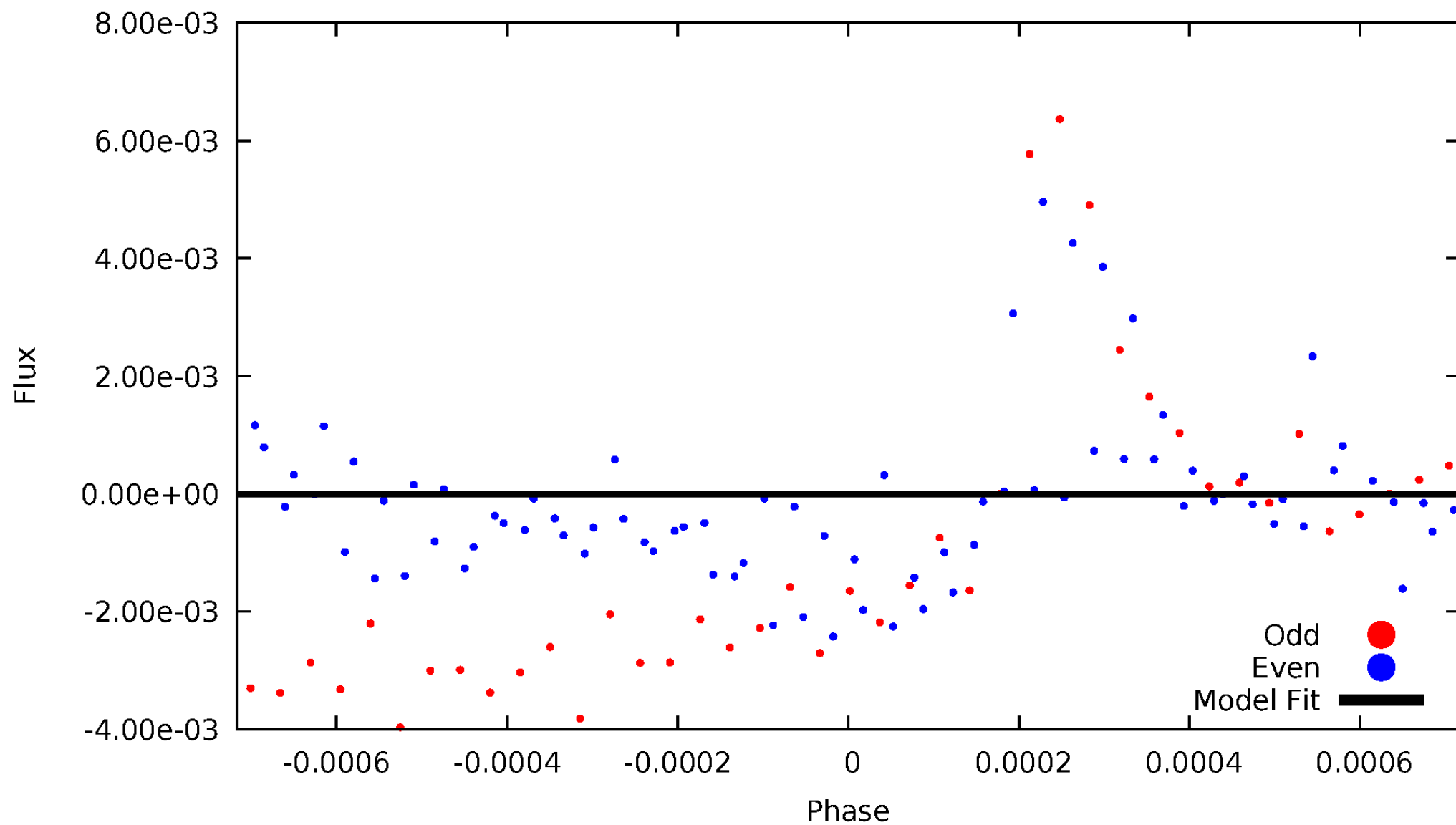


TCE 006704889-05



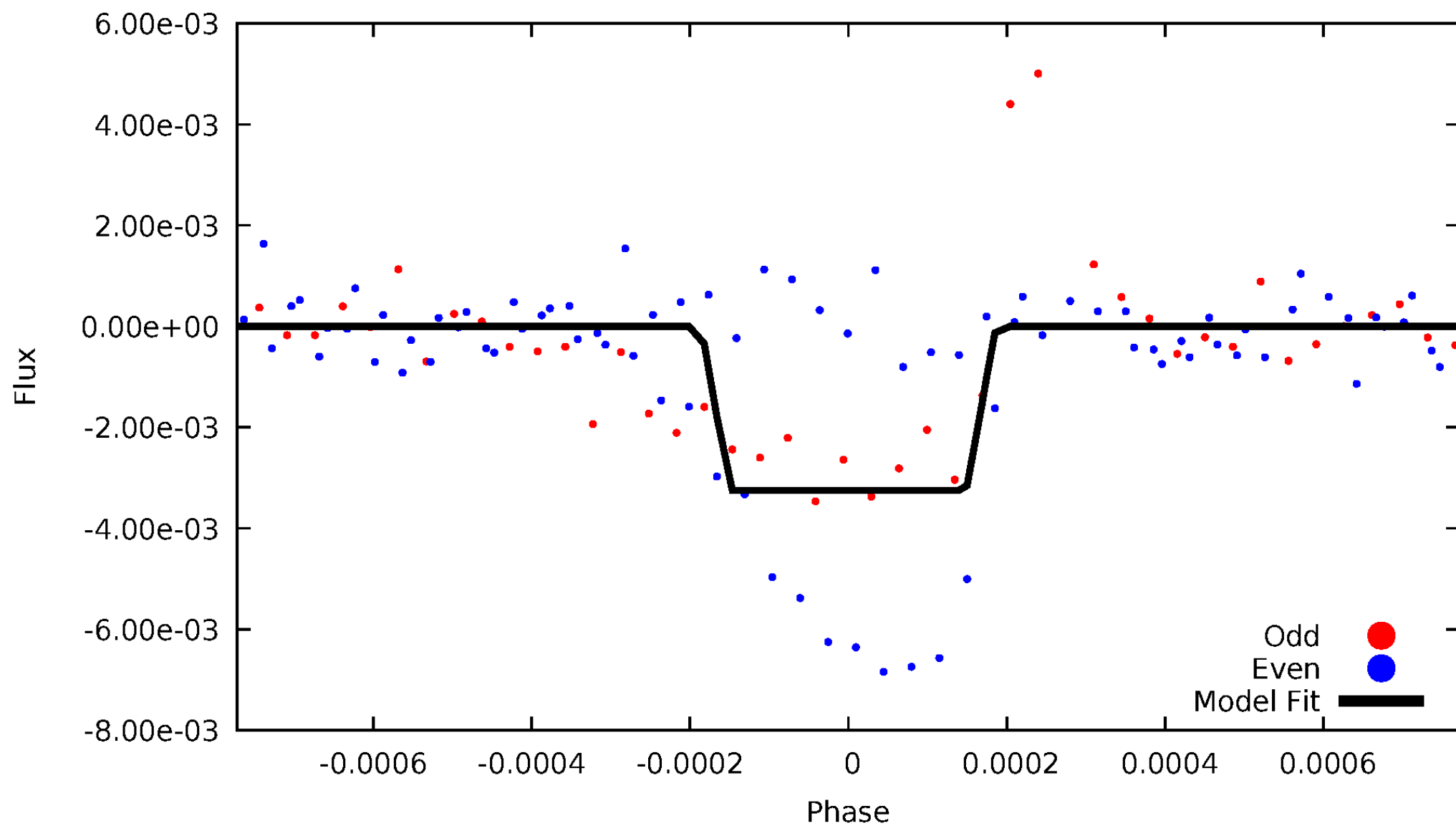
# DV Odd/Even

TCE 006704889-05

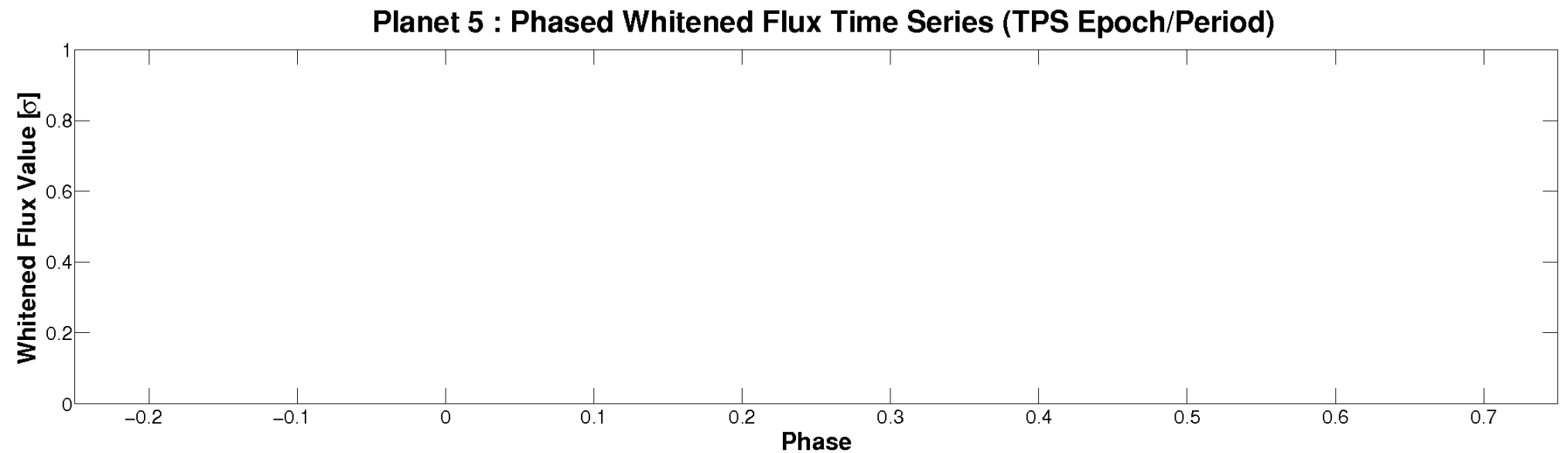
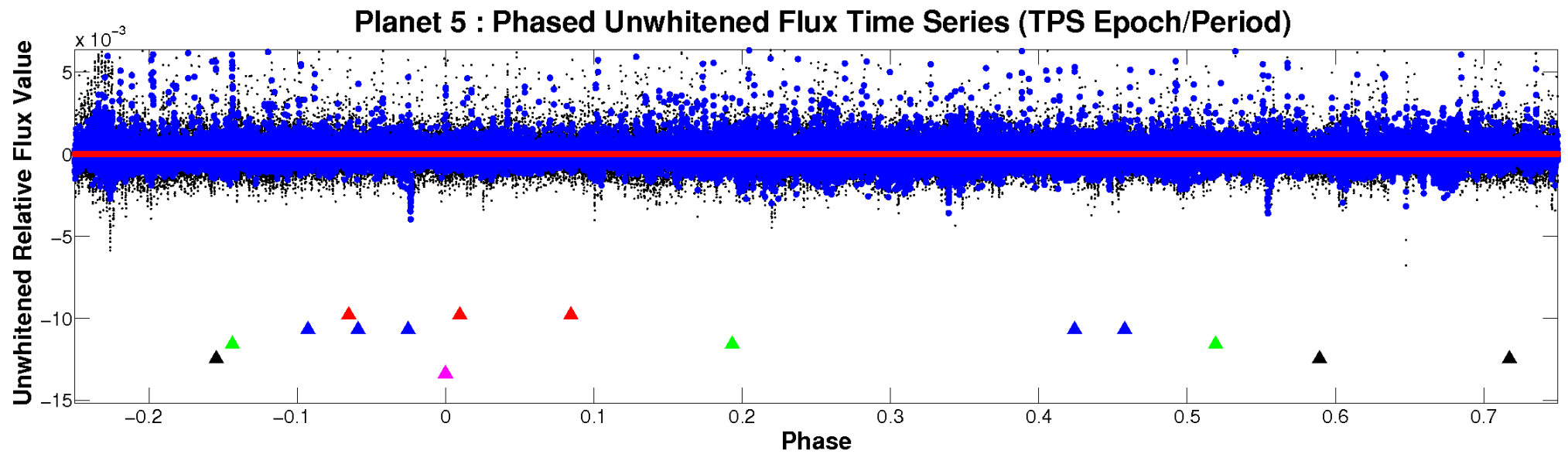


# ALT Odd/Even

TCE 006704889-05

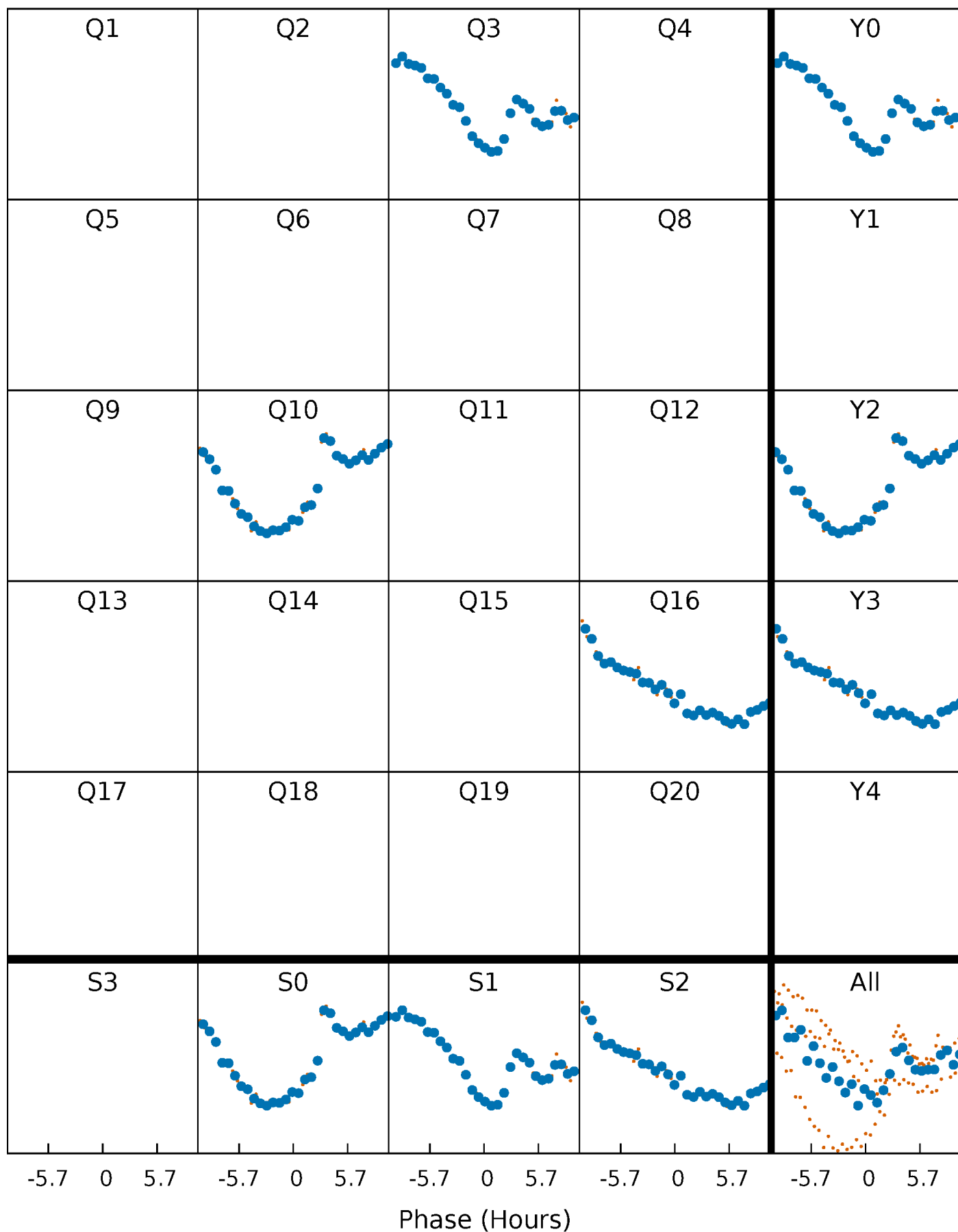


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

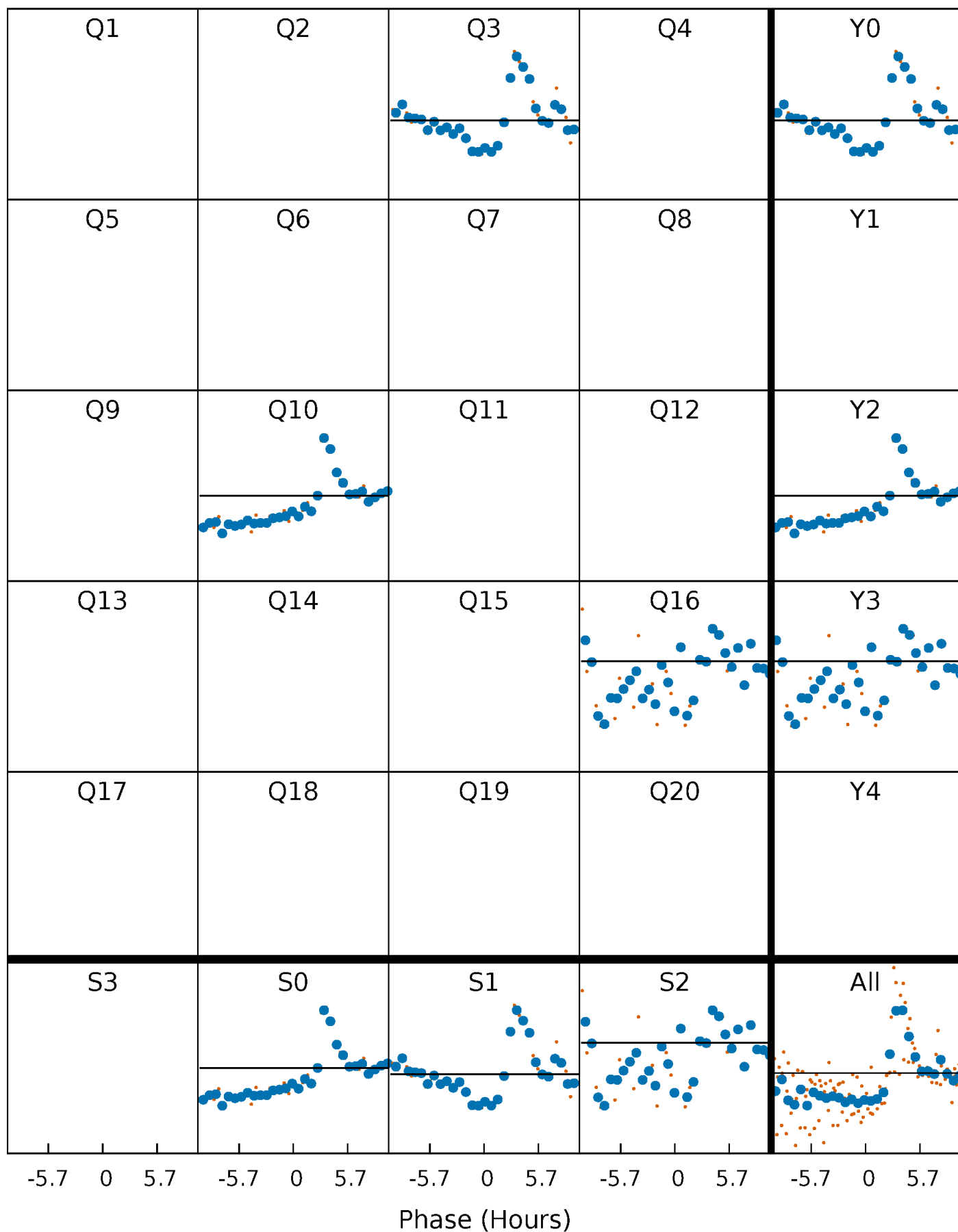
TCE 006704889-05     $P=581.552740$  Days     $T_0=338.247537$  (BKJD)





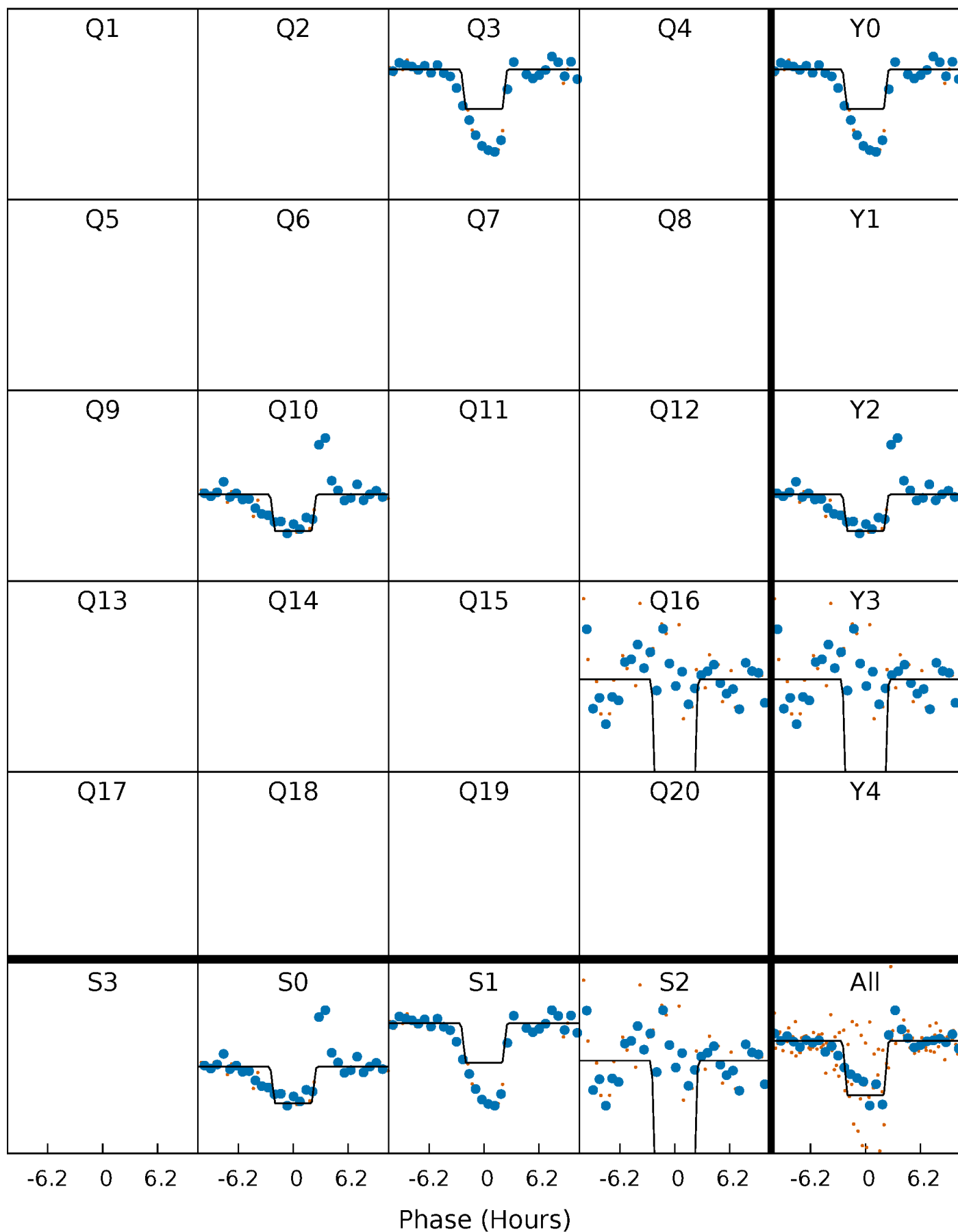
# DV Quarter-Phased Transit Curves

TCE 006704889-05     $P=581.552740$  Days     $T_0=338.247537$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

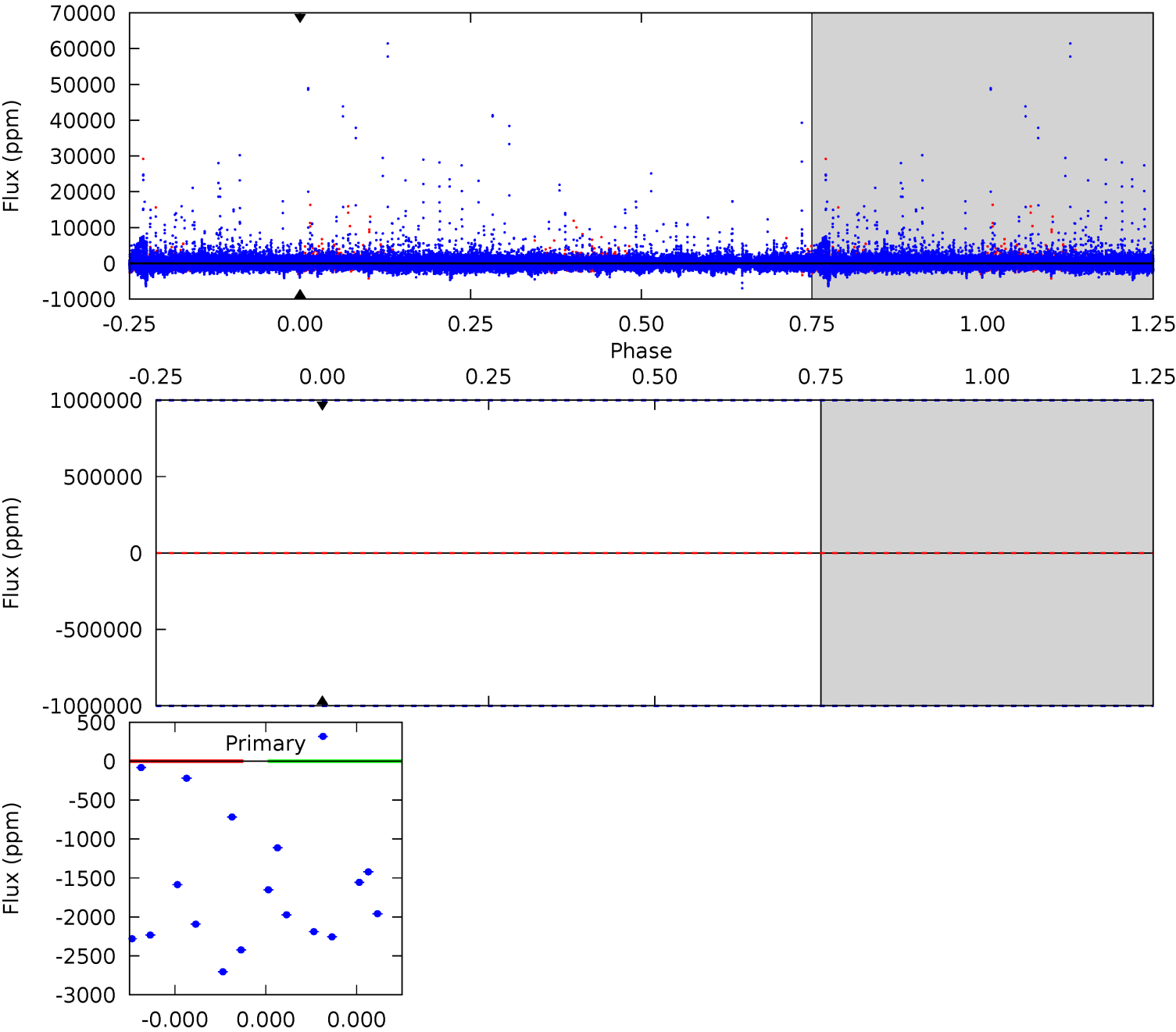
TCE 006704889-05     $P=581.552740$  Days     $T_0=338.252156$  (BKJD)



DV Model-Shift Uniqueness Test

006704889-05, P = 581.552740 Days, E = 338.247537 Days

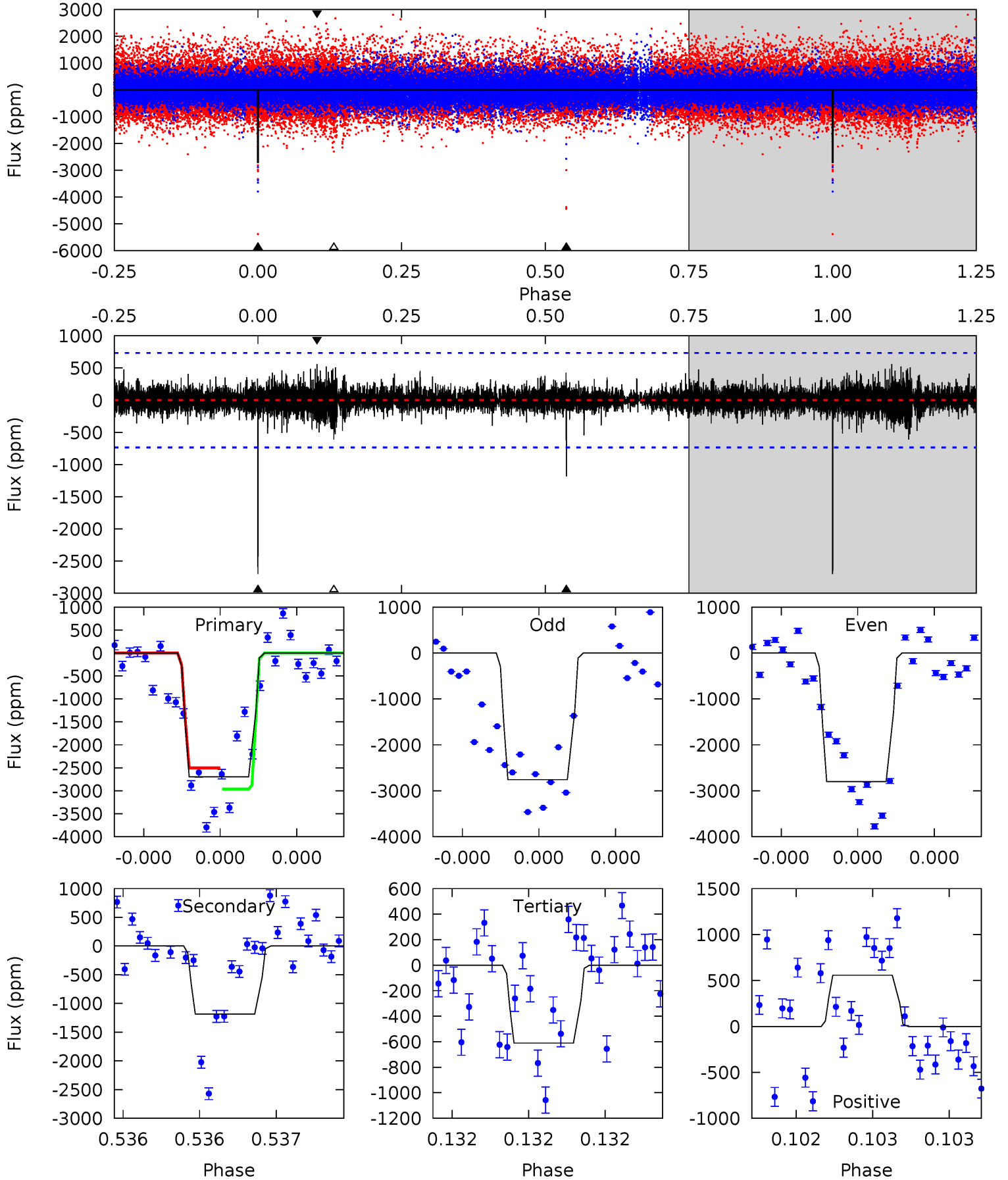
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

006704889-05, P = 581.552740 Days, E = 338.252156 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
20.7	9.08	4.68	4.28	5.63	3.57	0.78	16.0	16.4	4.40	4.80	0.22	1.01	0.17	1.87



### Stellar Parameters For KIC 006704889

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5799^{+155}_{-190}$	$4.548^{+0.035}_{-0.196}$	$-0.160^{+0.300}_{-0.300}$	$0.860^{+0.242}_{-0.081}$	$0.955^{+0.100}_{-0.123}$	$2.112^{+0.386}_{-1.028}$
	+3%/-3%	+1%/-4%	+188%/-188%	+28%/-9%	+10%/-13%	+18%/-49%
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 006704889-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$8.06^{+8.50}_{-5.41}$	$292^{+20}_{-13}$	$-4050^{+23951}_{-12890}$	$-14301.961^{+2616517.322}_{-2176337.217}$
Alt.	$-1184 \pm 130$	$8.95^{+8.92}_{-5.74}$	$293^{+21}_{-13}$	$3902^{+2178}_{-756}$	$14363^{+97269}_{-10745}$

$T_{max}$  = 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

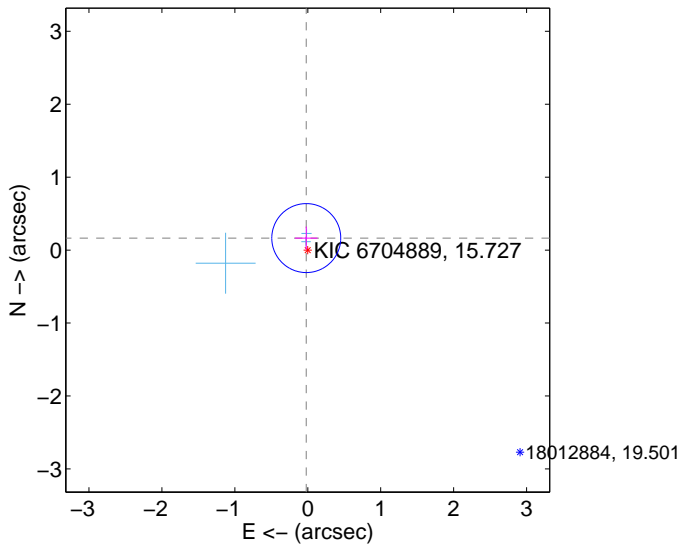
Supplemental centroid analysis for 006704889-05. Kepler magnitude: 15.73. Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

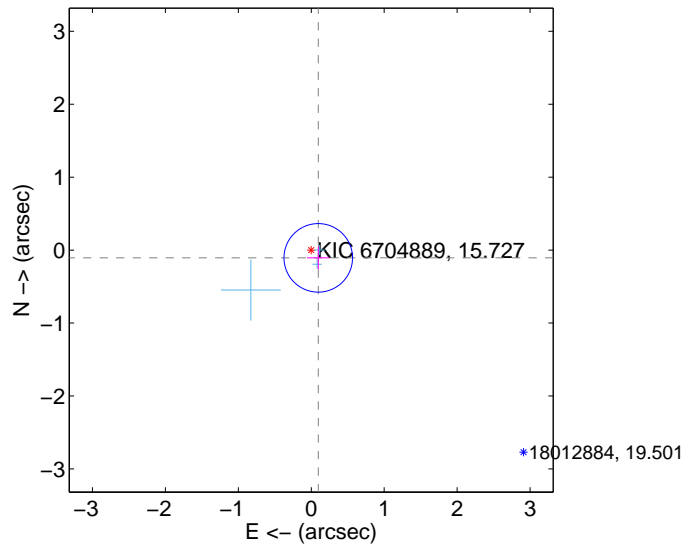
The direct PRF centroid is offset from the target star catalog position by about 0.47 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.166 \pm 0.158$	1.05	$0.021 \pm 0.155$	$0.165 \pm 0.158$
PRF-fit source offset from KIC position	$0.143 \pm 0.157$	0.92	$-0.096 \pm 0.155$	$-0.107 \pm 0.158$
photometric centroid source offset	$1.09 \pm 0.56$	1.96	$-0.85 \pm 0.52$	$-0.69 \pm 0.61$

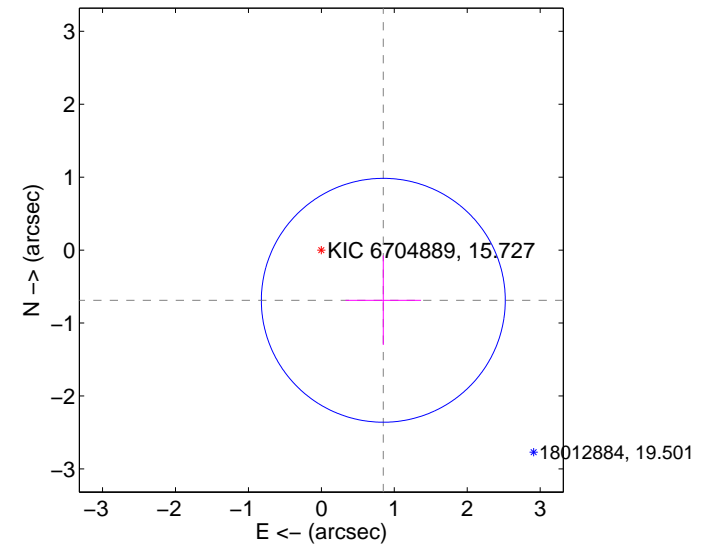
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



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

Q1 no difference image



Q1 no OOT image



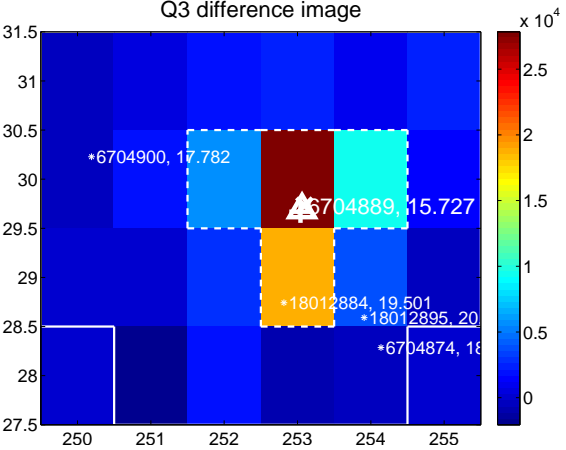
Q2 no difference image



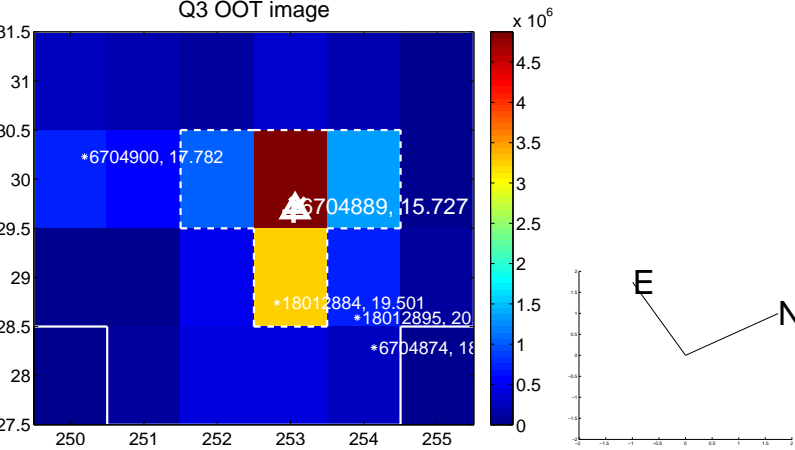
Q2 no OOT image



Q3 difference image



Q3 OOT image



Q4 no difference image



Q4 no OOT image



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.

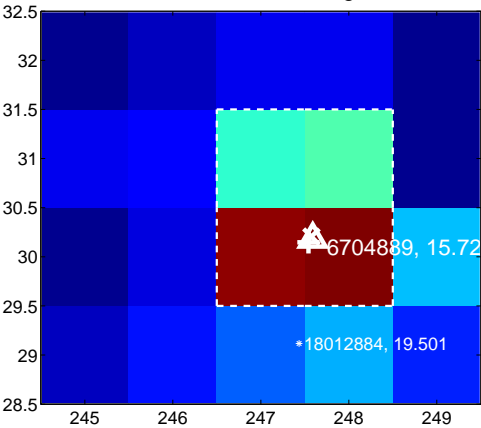
Q9 no difference image



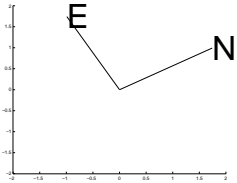
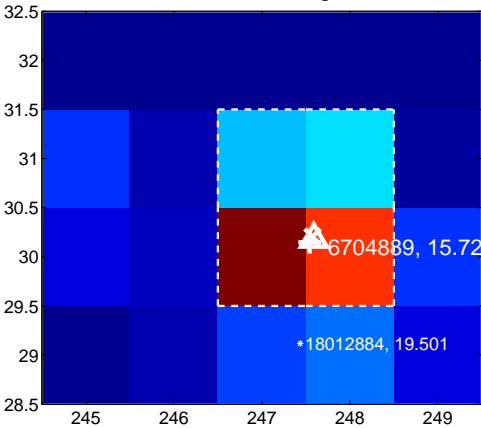
Q9 no OOT image



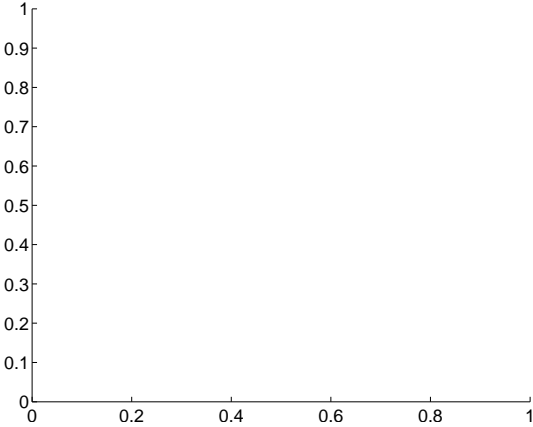
Q10 difference image



Q10 OOT image



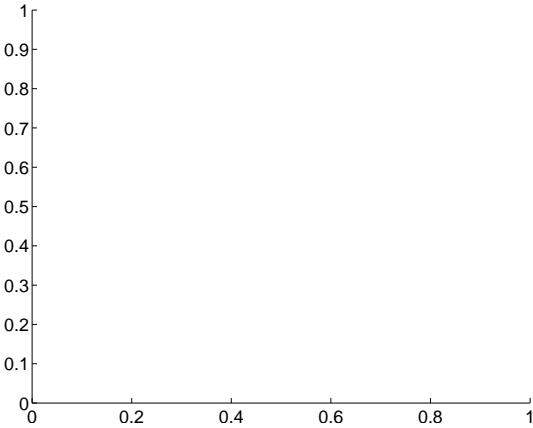
Q11 no difference image



Q11 no OOT image



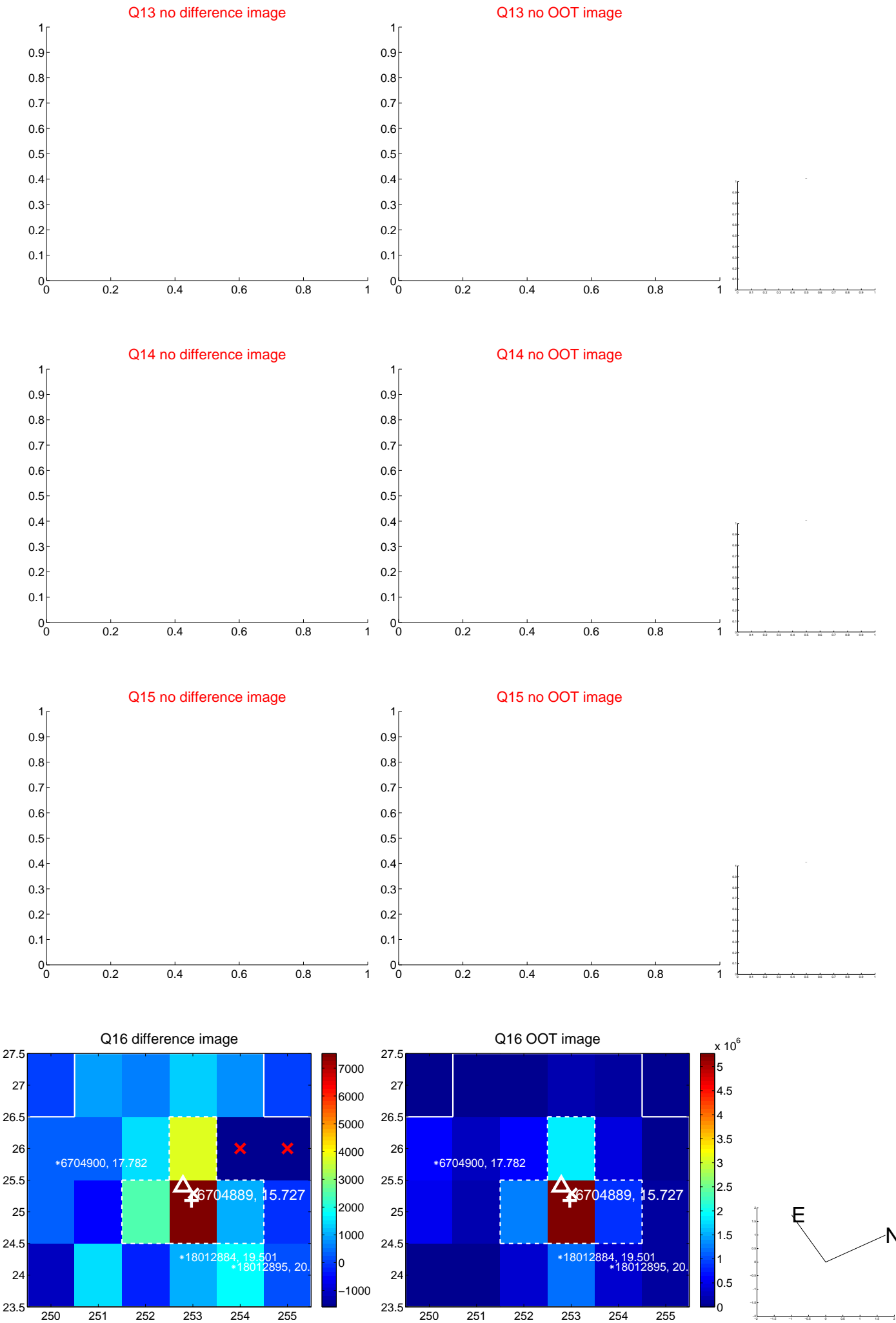
Q12 no difference image



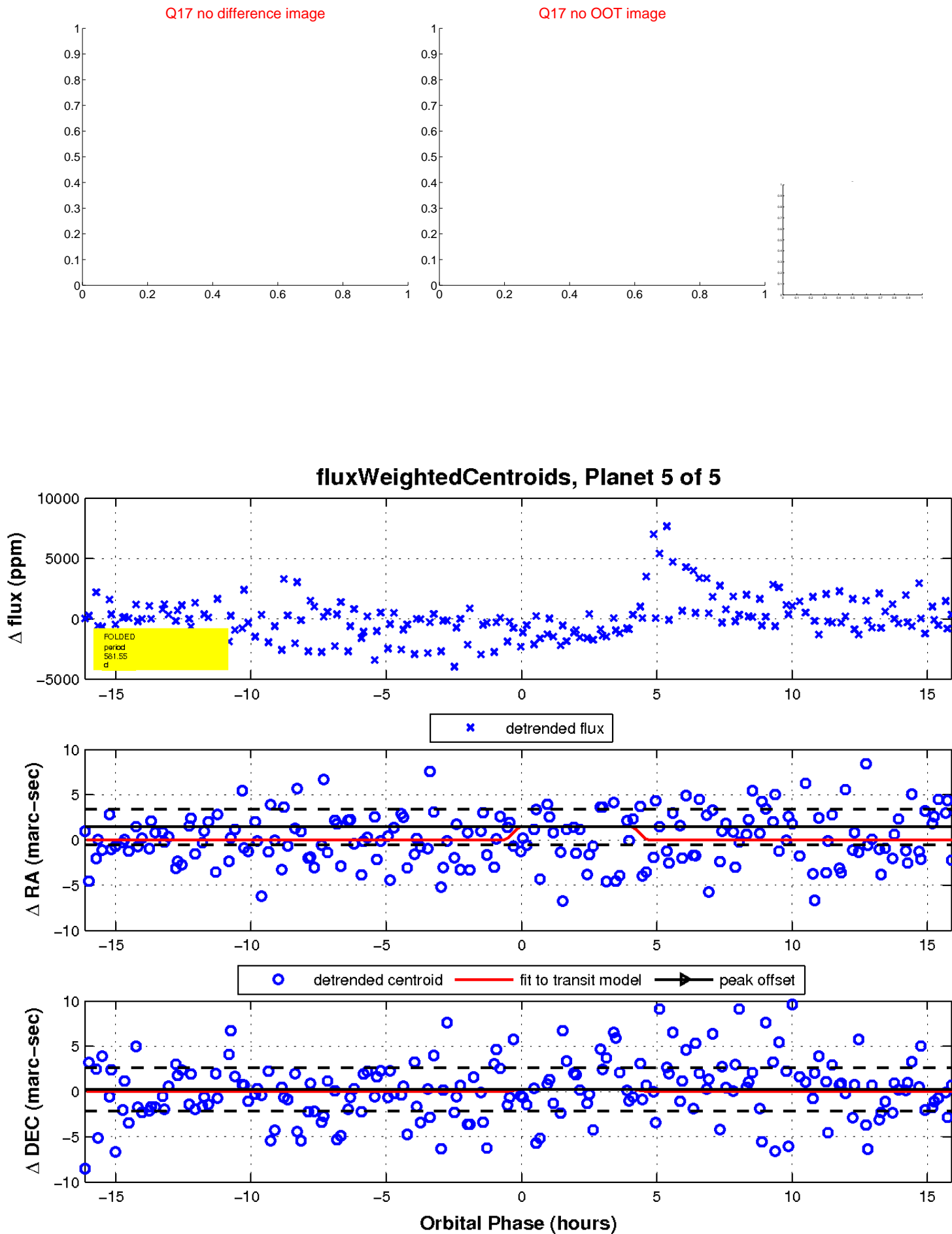
Q12 no OOT image



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.



32.0 31.0 19:41:30.0 29.0 28.0

20.0 30.0 40.0 50.0

32.0 31.0 19:41:30.0 29.0 28.0

20.0 30.0 40.0 50.0