

# KIC 007604425

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007604425-01	OBS	No	386.272776	468.740296	564.7	3.638	11.5	5.1	1.00	5780	2.58	0.93
007604425-02	OBS	No	490.763101	209.983720	766.0	4.240	11.0	6.9	1.00	5780	2.85	0.67
007604425-03	OBS	No	490.345840	255.161247	574.1	3.949	11.3	5.0	1.00	5780	2.47	0.68

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007604425-01	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—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007604425-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—CENT_FEW_DIFFS
007604425-03	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—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.

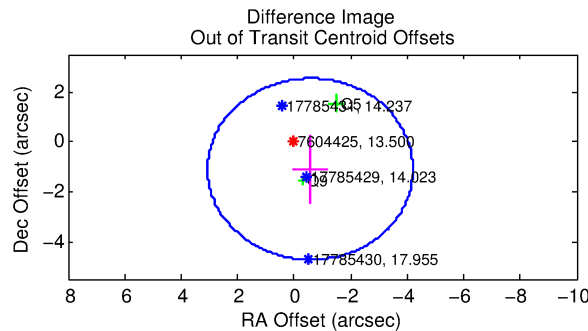
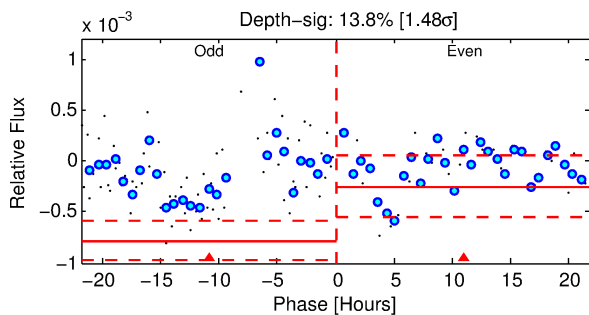
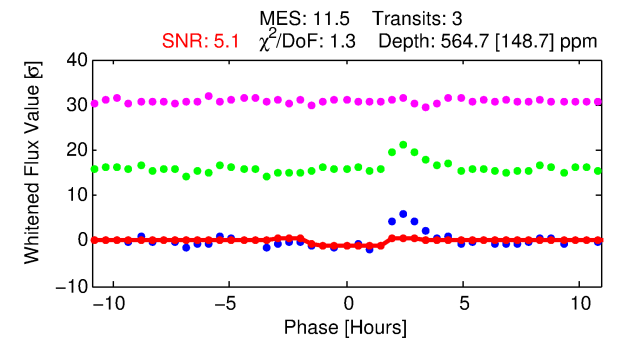
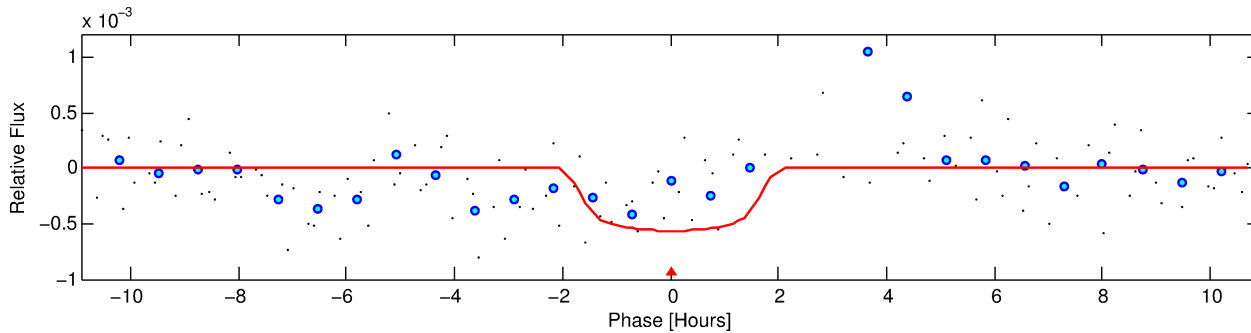
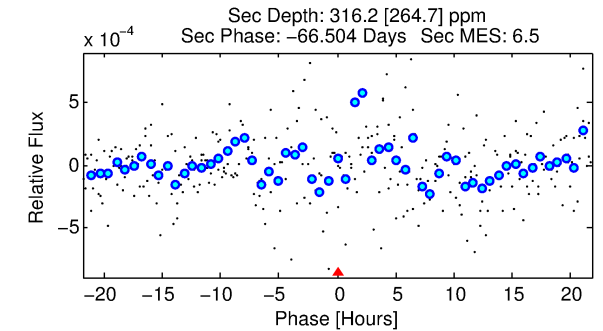
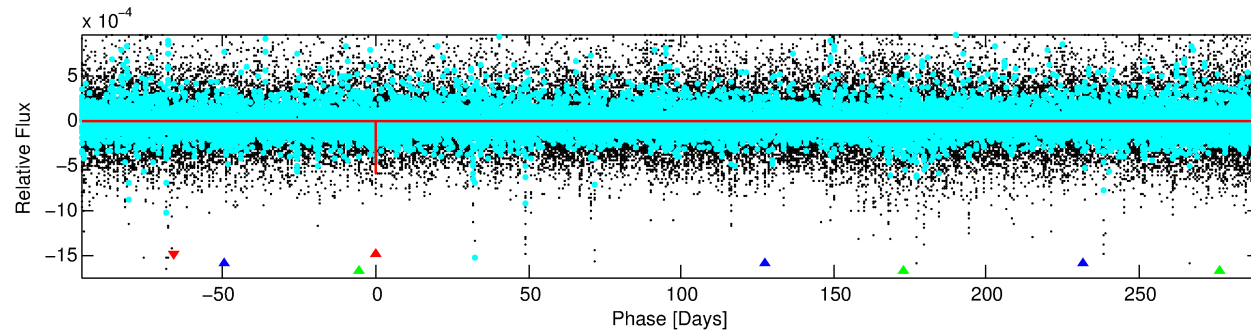
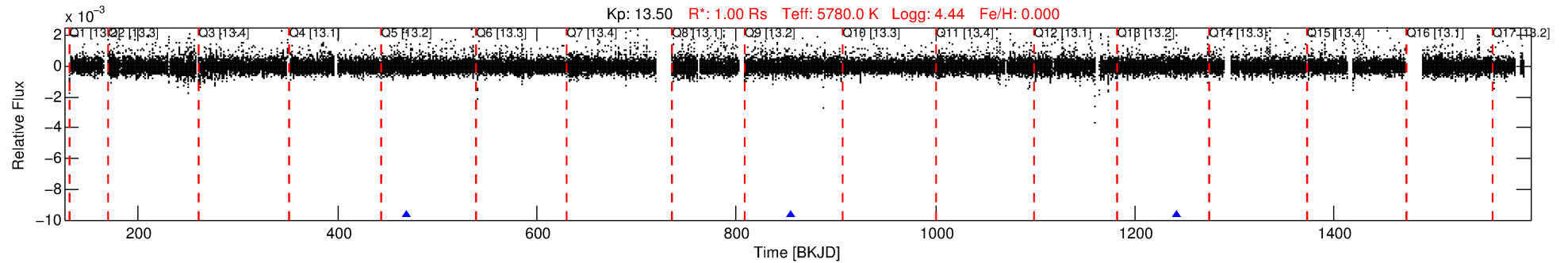
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007604425-01

No Significant Match Found

# DV One-Page Summary

KIC: 7604425 Candidate: 1 of 3 Period: 386.273 d



## DV Fit Results:

Period = 386.27278 [0.00971] d  
Epoch = 468.7403 [0.0146] BKJD  
Rp/R\* = 0.0236 [0.0641]  
a/R\* = 569.68 [6894.74]  
b = 0.74 [7.36]  
Seff = 0.93 [0.00]  
Teq = 250 [0] K  
Rp = 2.58 [7.00] Re  
a = 1.0382 [0.0000] AU  
Ag = 28211.29 [154999.63] [0.18σ]  
Teffp = 5014 [6888] K [0.69σ]

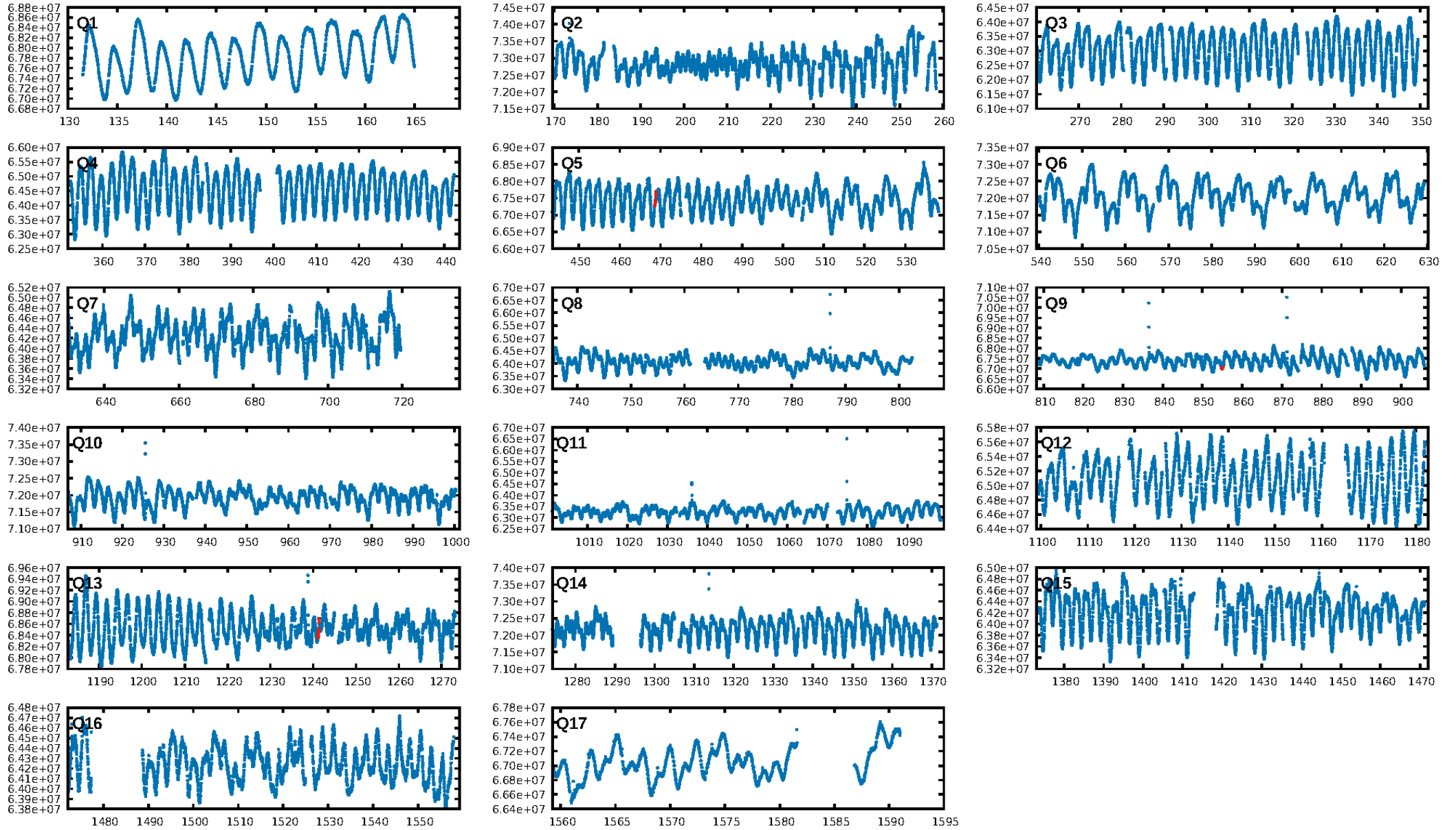
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [465.18σ]  
ModelChiSquare2-sig: 1.2%  
ModelChiSquareGof-sig: 82.4%  
**Bootstrap-pfa: 3.01e-09**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 31.8  
Centroid-sig: 3.2%  
Centroid-so: 3.077 arcsec [1.44σ]  
OotOffset-rm: 1.239 arcsec [1.02σ]  
OotOffset-st: 0/0/0/2 [2]  
KicOffset-rm: 1.265 arcsec [1.07σ]  
KicOffset-st: 0/0/0/2 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [2/2]

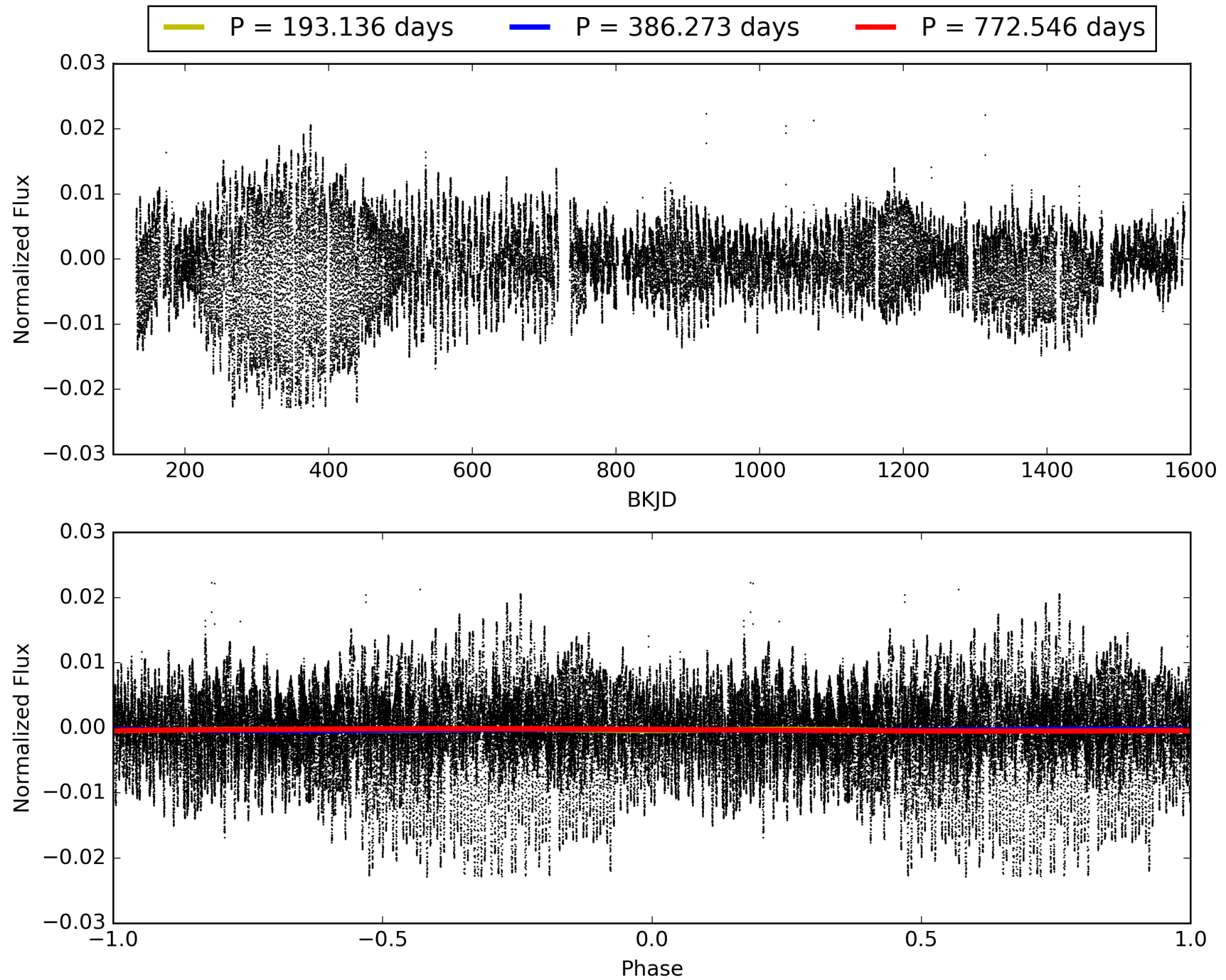
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:37:09 Z

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

# TCE 007604425-01, PDC Light Curves

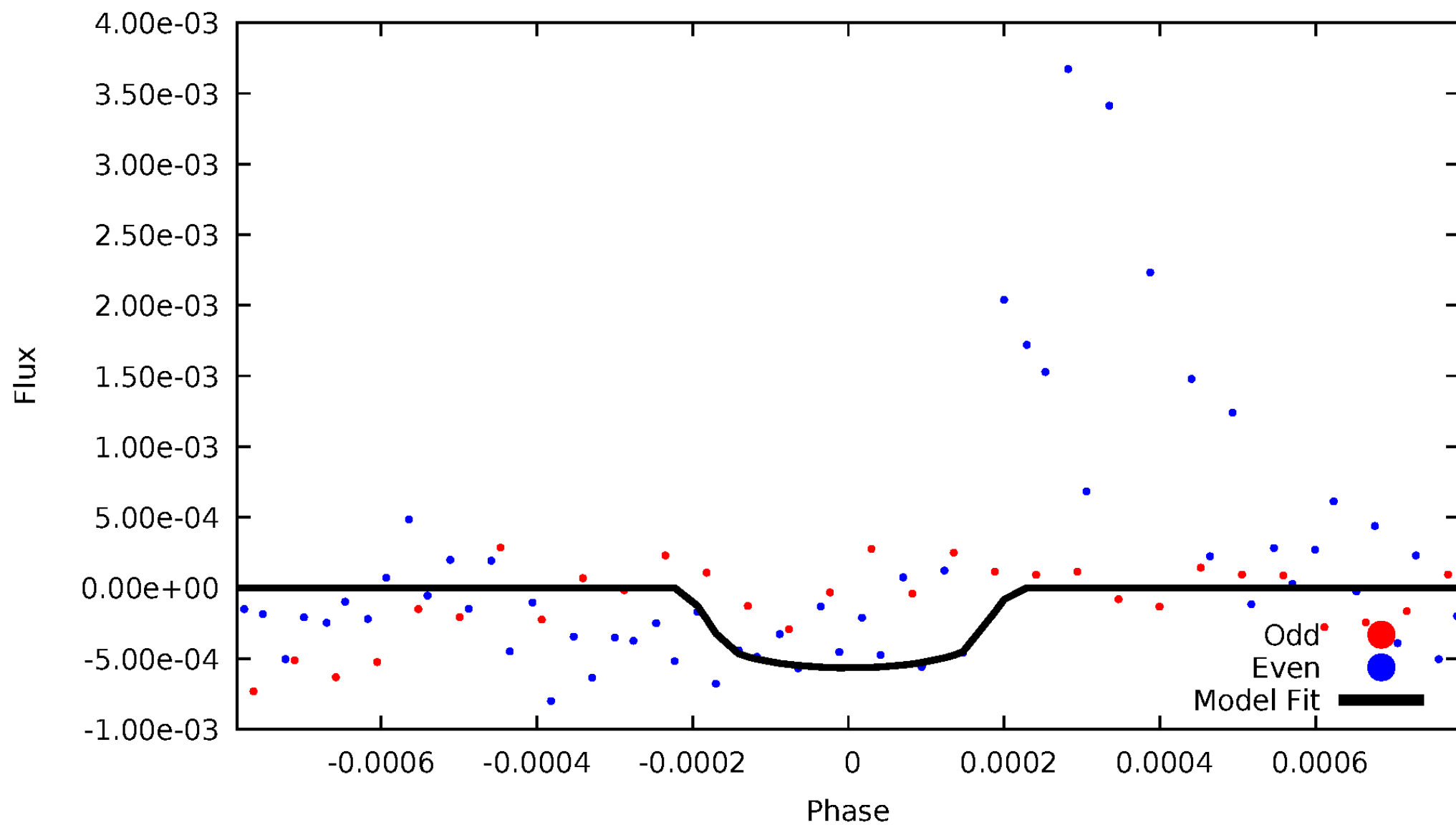


TCE 007604425-01



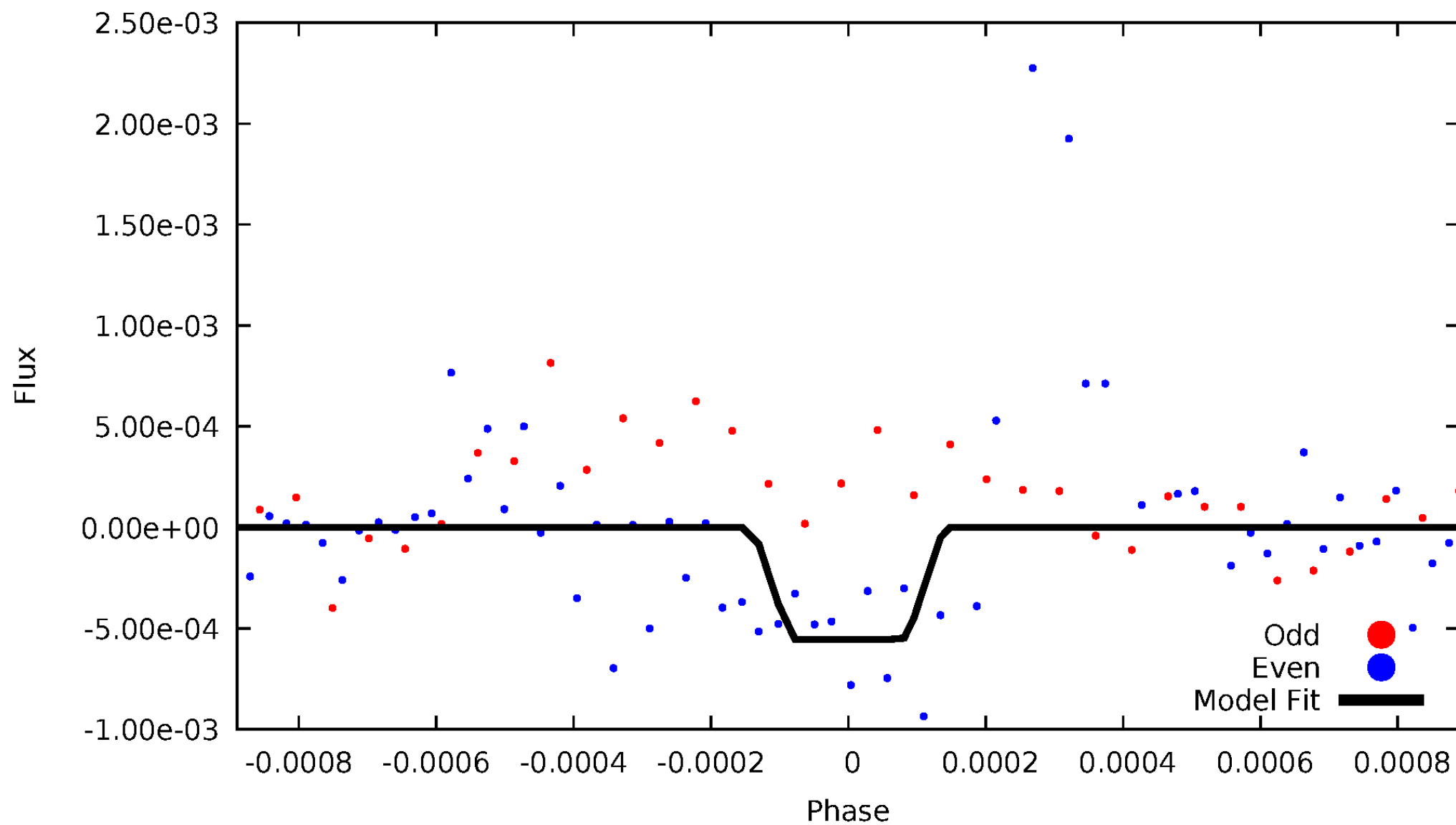
# DV Odd/Even

TCE 007604425-01



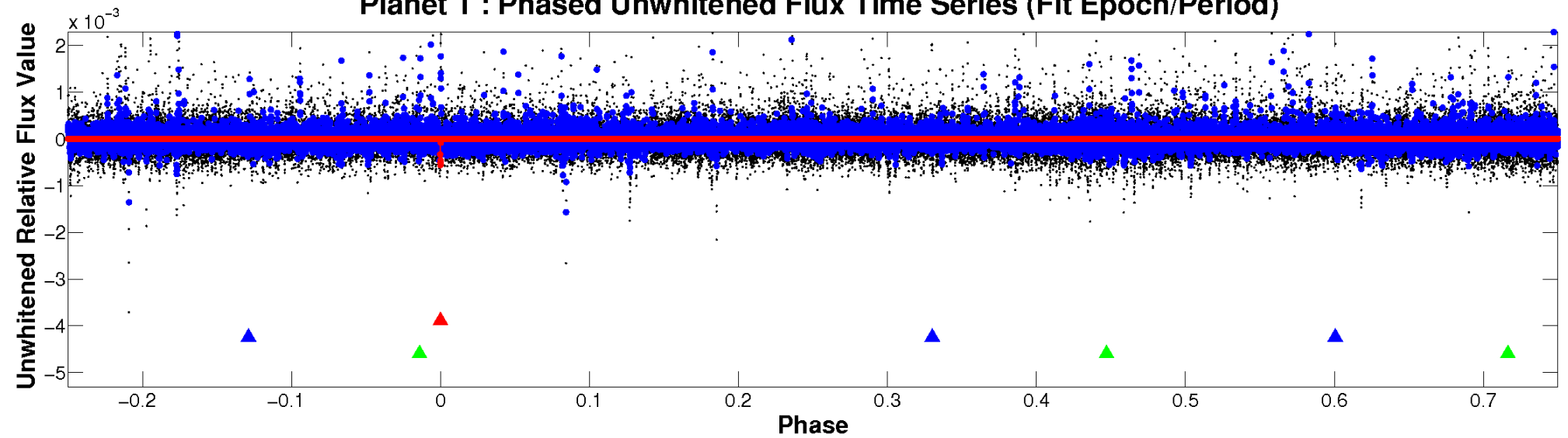
# ALT Odd/Even

TCE 007604425-01

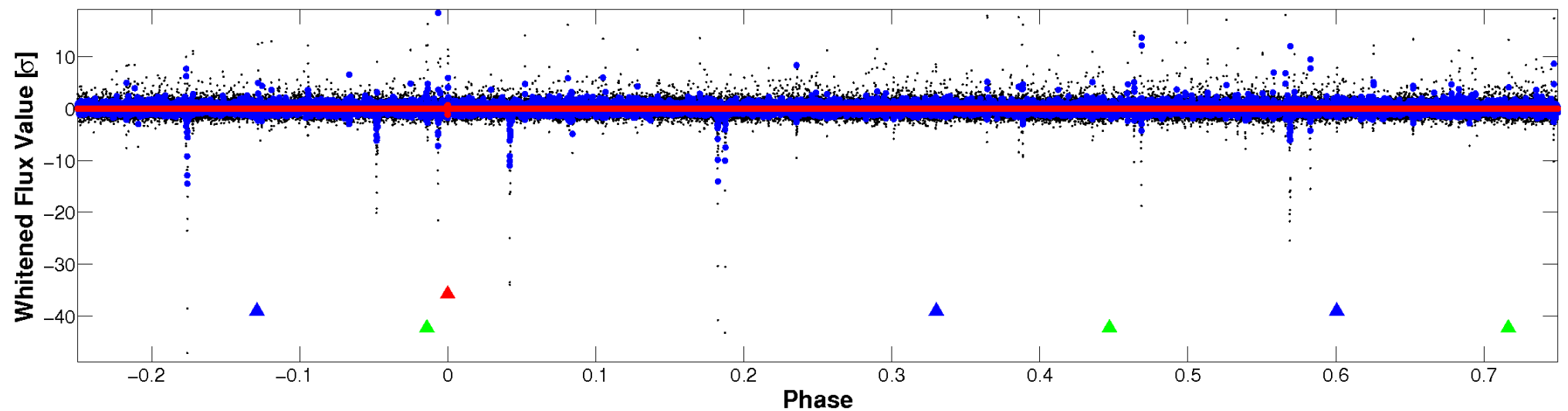


# Non-Whitened Vs. Whitened Light Curve

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

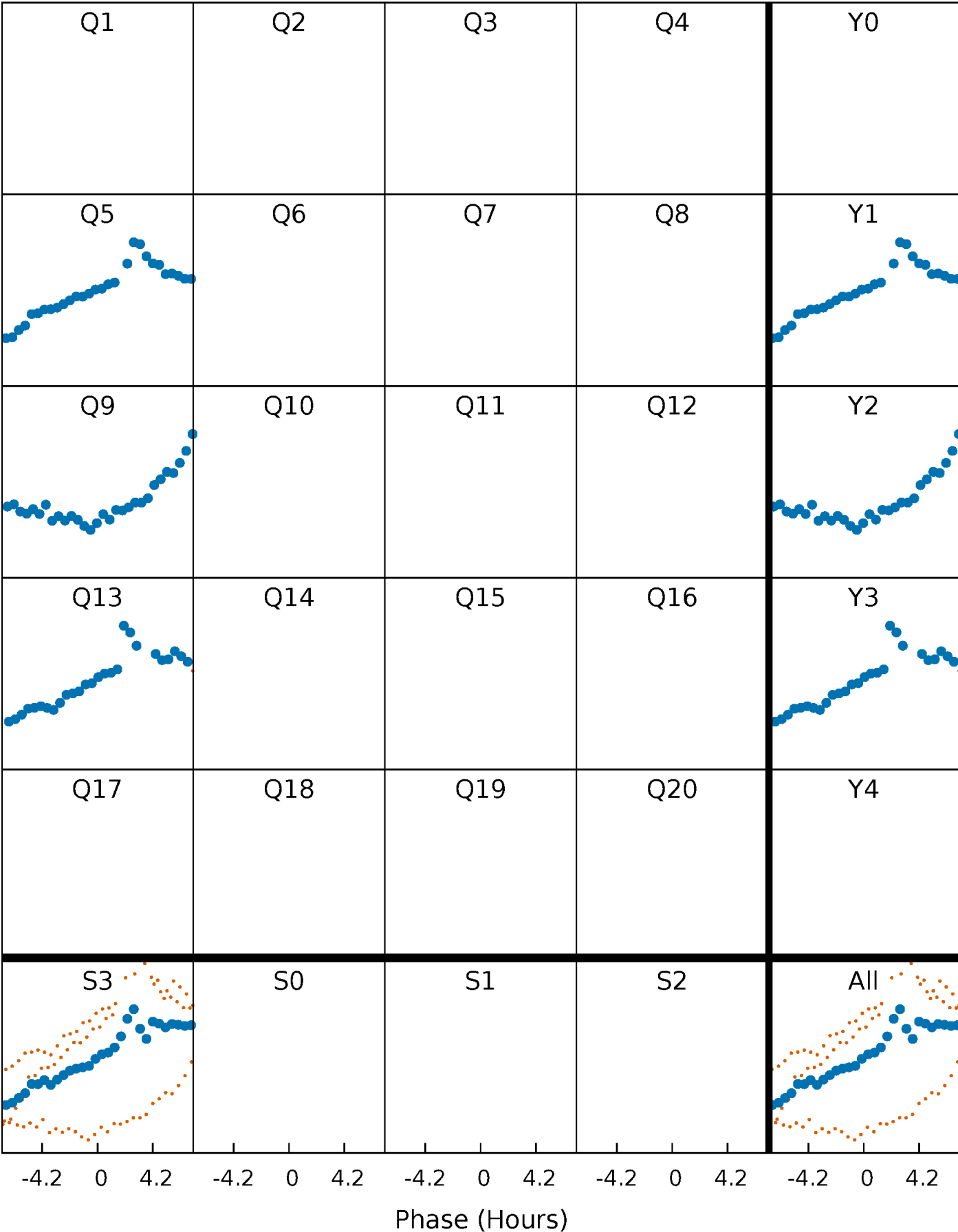


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

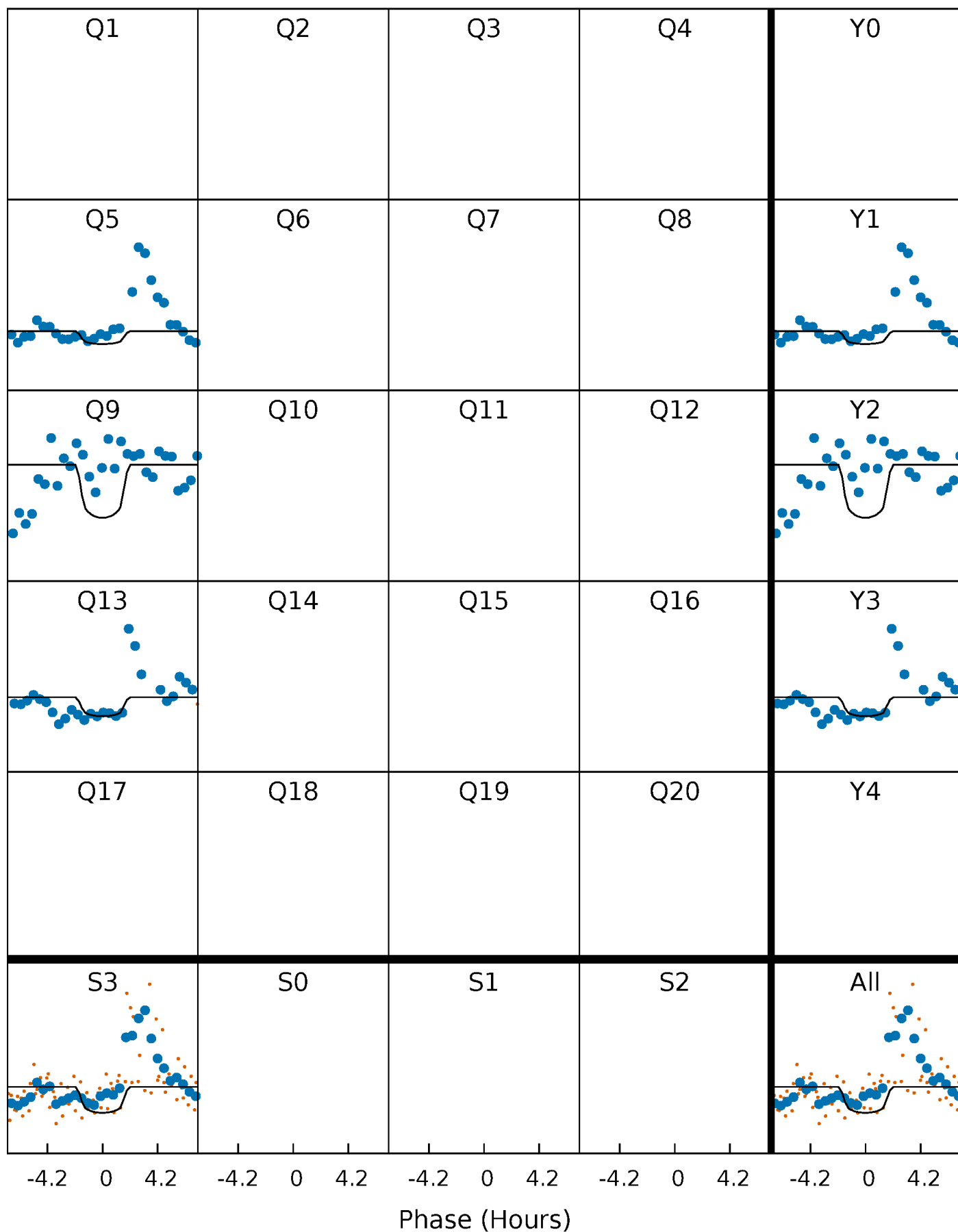
TCE 007604425-01    P=386.272776 Days    T<sub>0</sub>=468.740296 (BKJD)





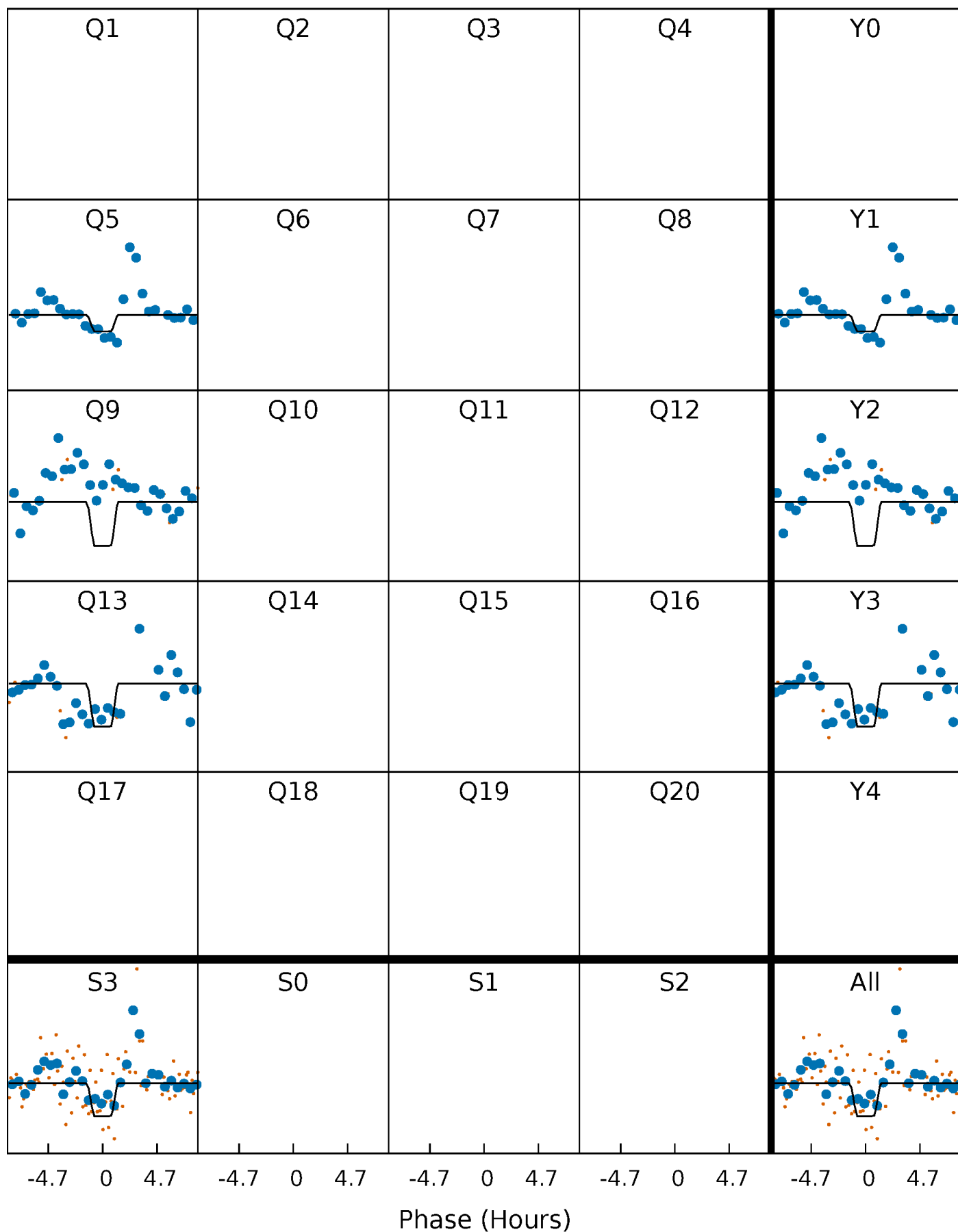
# DV Quarter-Phased Transit Curves

TCE 007604425-01     $P=386.272776$  Days     $T_0=468.740296$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

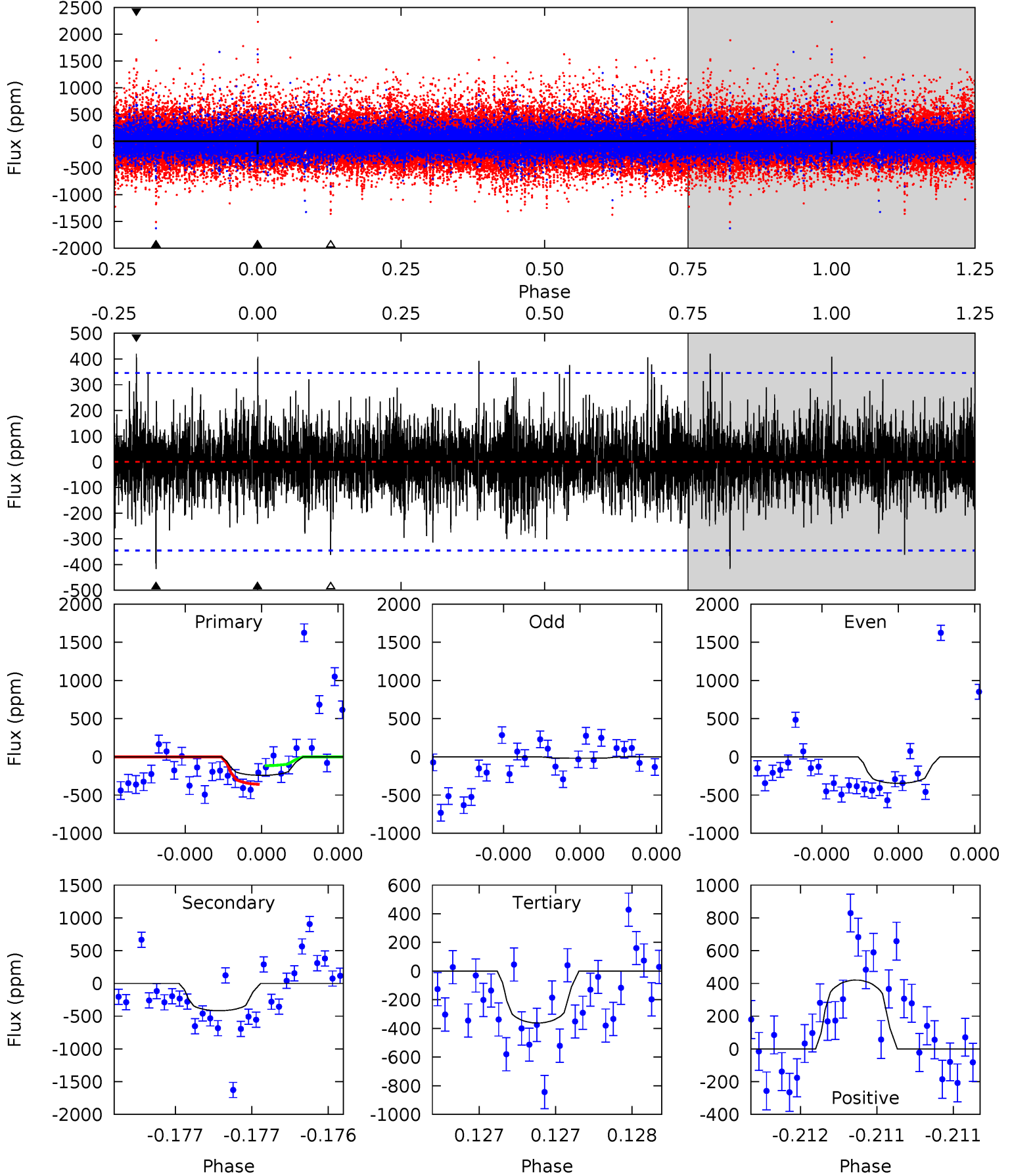
TCE 007604425-01     $P=386.262396$  Days     $T_0=468.745660$  (BKJD)



# DV Model-Shift Uniqueness Test

007604425-01,  $P = 386.272776$  Days,  $E = 82.467520$  Days

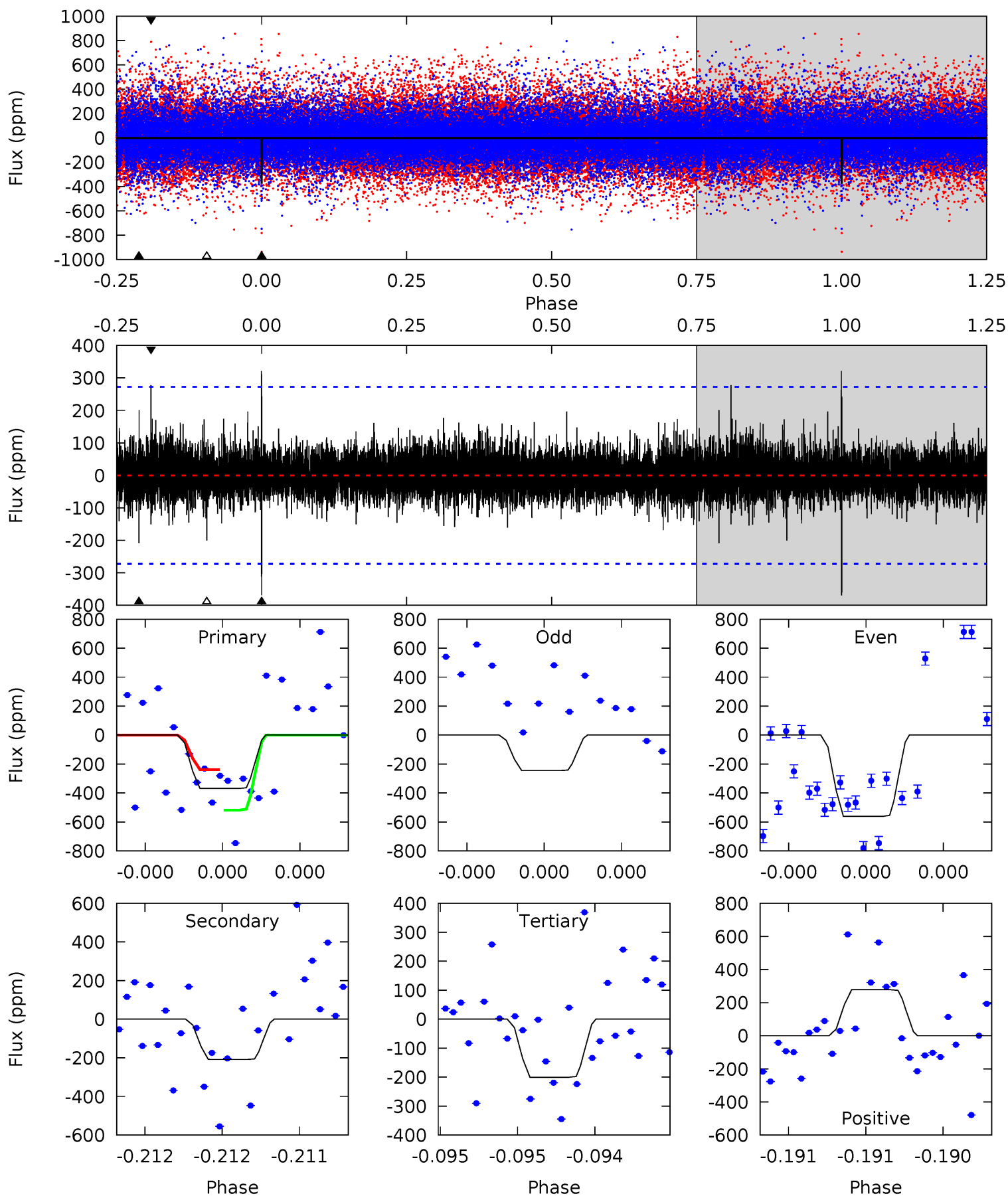
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.92	6.77	5.87	6.81	5.60	3.53	1.39	-1.95	-2.89	0.90	-0.04	2.33	1.35	0.50	1.99



# Alt Model-Shift Uniqueness Test

007604425-01, P = 386.262396 Days, E = 82.483264 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
7.70	4.35	4.18	5.80	5.68	3.65	0.88	3.52	1.90	0.17	-1.45	3.22	0.78	0.47	2.93



### Stellar Parameters For KIC 007604425

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5780^{+1}_{-1}$	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

### Secondary Eclipse Parameters for KIC 007604425-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-417 \pm 62$	$5.56^{+5.69}_{-3.73}$	$350^{+17}_{-17}$	$3944^{+2353}_{-785}$	$7586^{+63754}_{-5664}$
Alt.	$-208 \pm 48$	$5.91^{+5.61}_{-4.20}$	$349^{+16}_{-17}$	$3482^{+2105}_{-640}$	$3495^{+38259}_{-2580}$

$T_{max}$  = 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

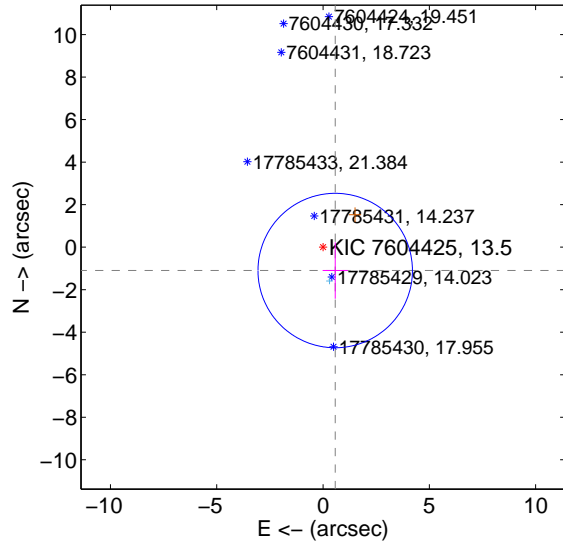
Supplemental centroid analysis for 007604425-01. Kepler magnitude: 13.50. Transit SNR 5.09

There are 1 quarters with good PRF difference image offsets

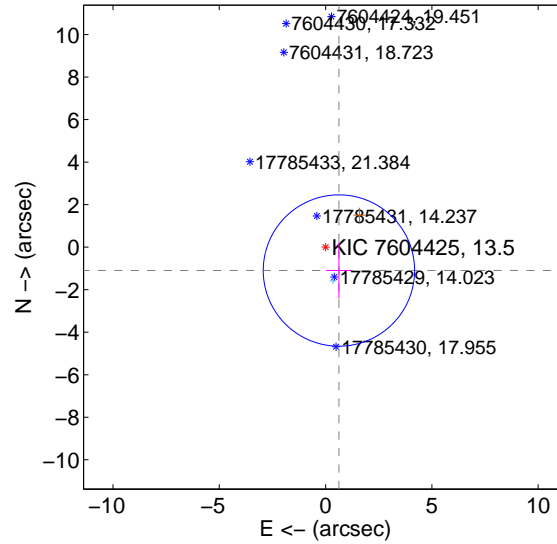
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.239 \pm 1.211$	1.02	$-0.573 \pm 0.591$	$-1.099 \pm 1.330$
PRF-fit source offset from KIC position	$1.265 \pm 1.186$	1.07	$-0.627 \pm 0.610$	$-1.098 \pm 1.321$
photometric centroid source offset	$3.08 \pm 2.14$	1.44	$1.19 \pm 1.77$	$-2.84 \pm 2.19$

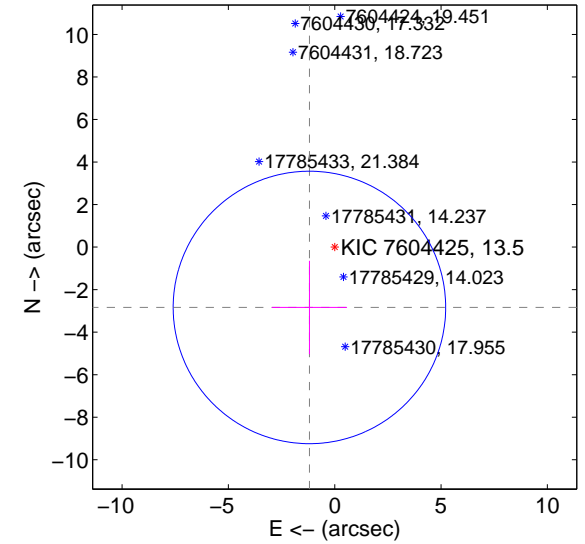
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

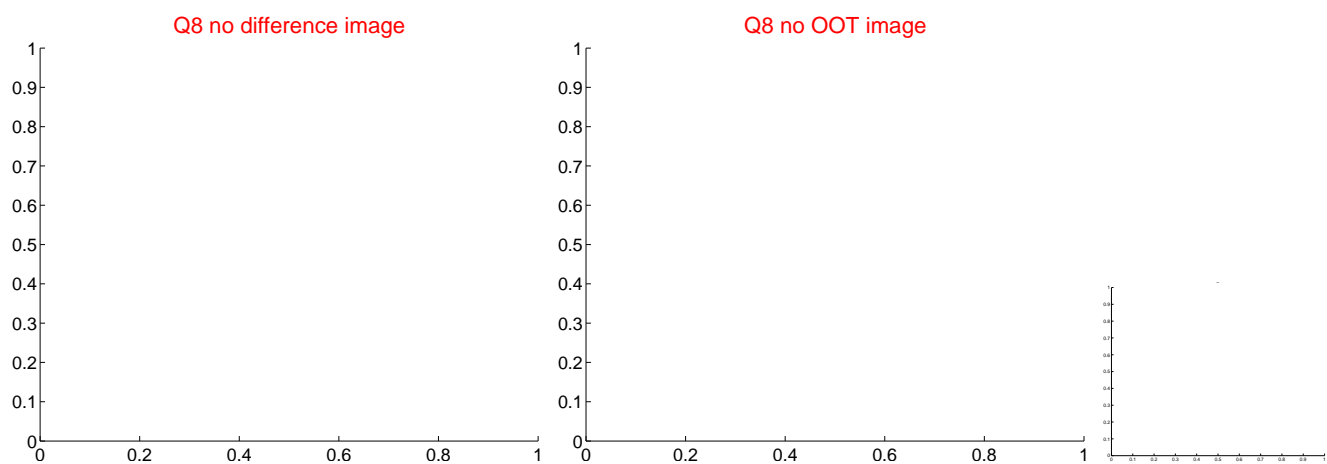
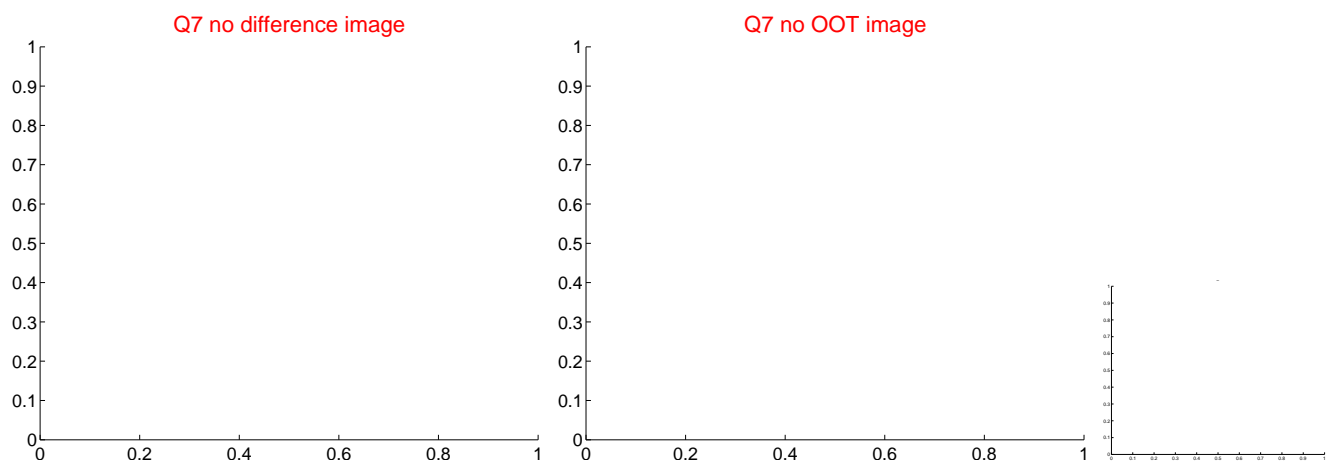
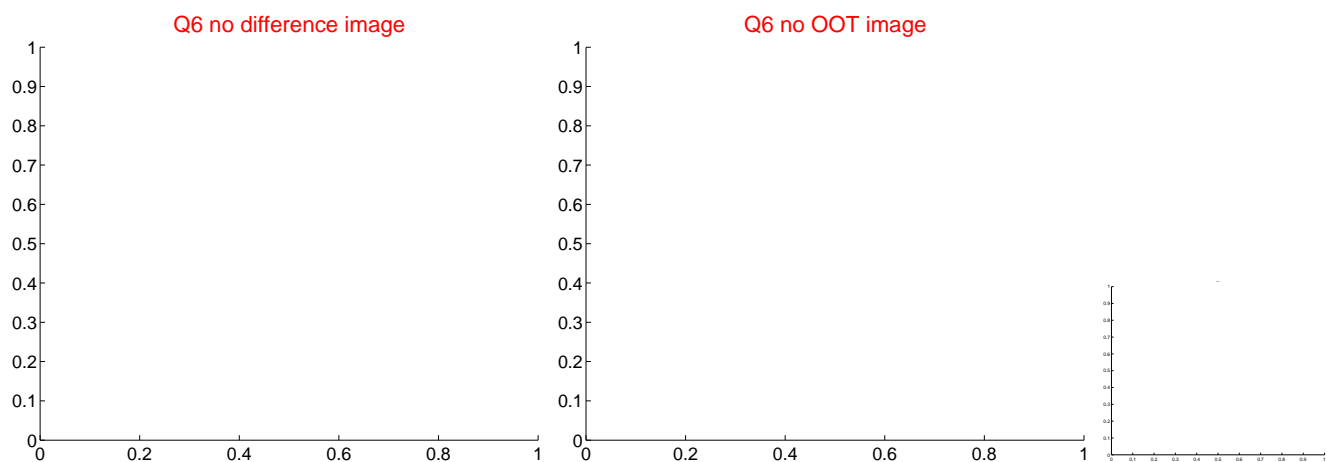
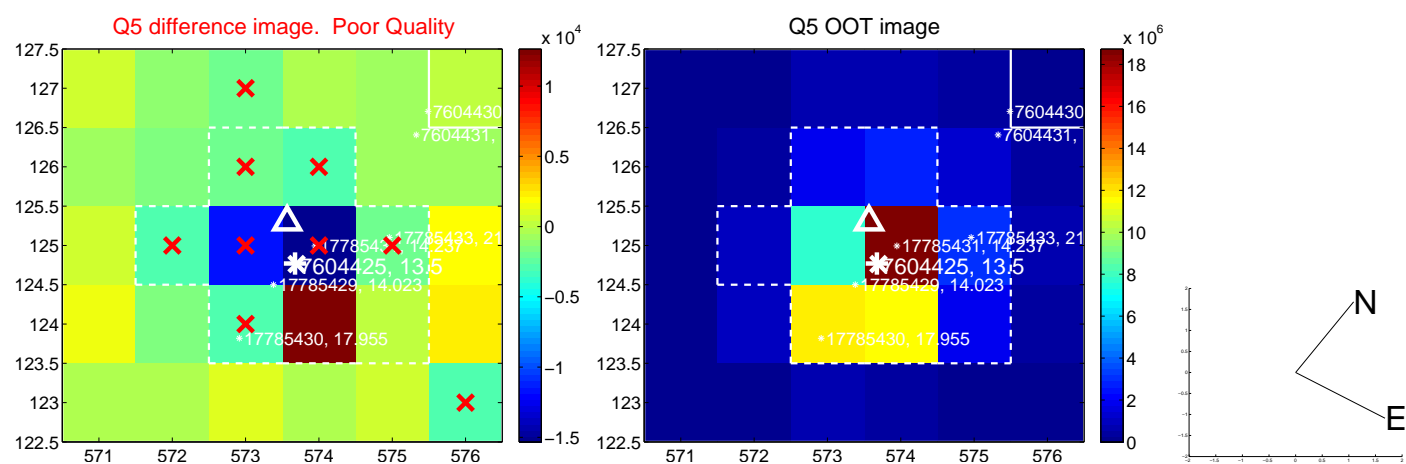


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

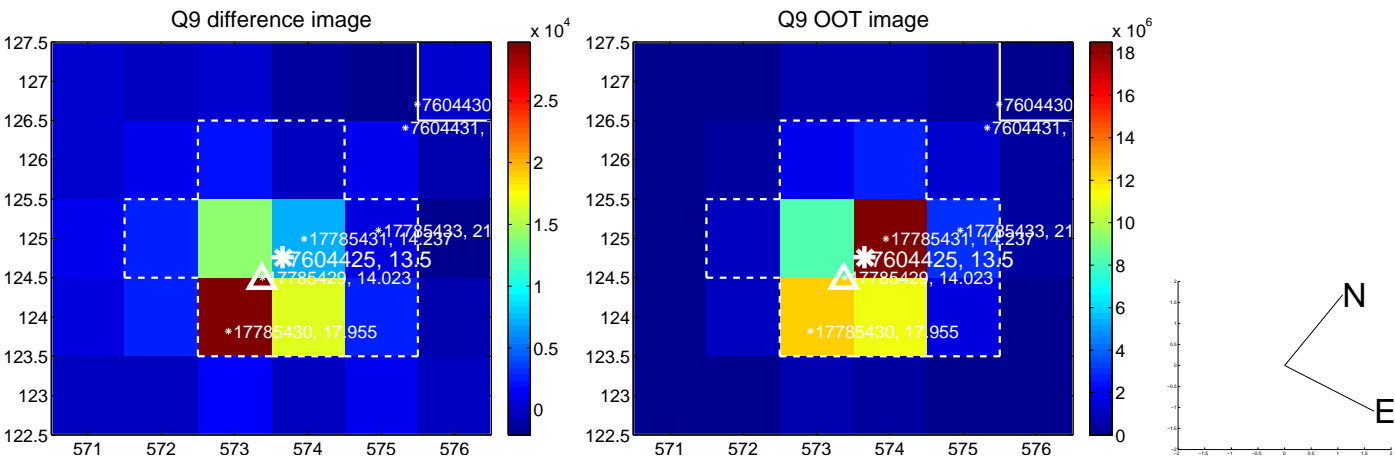


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





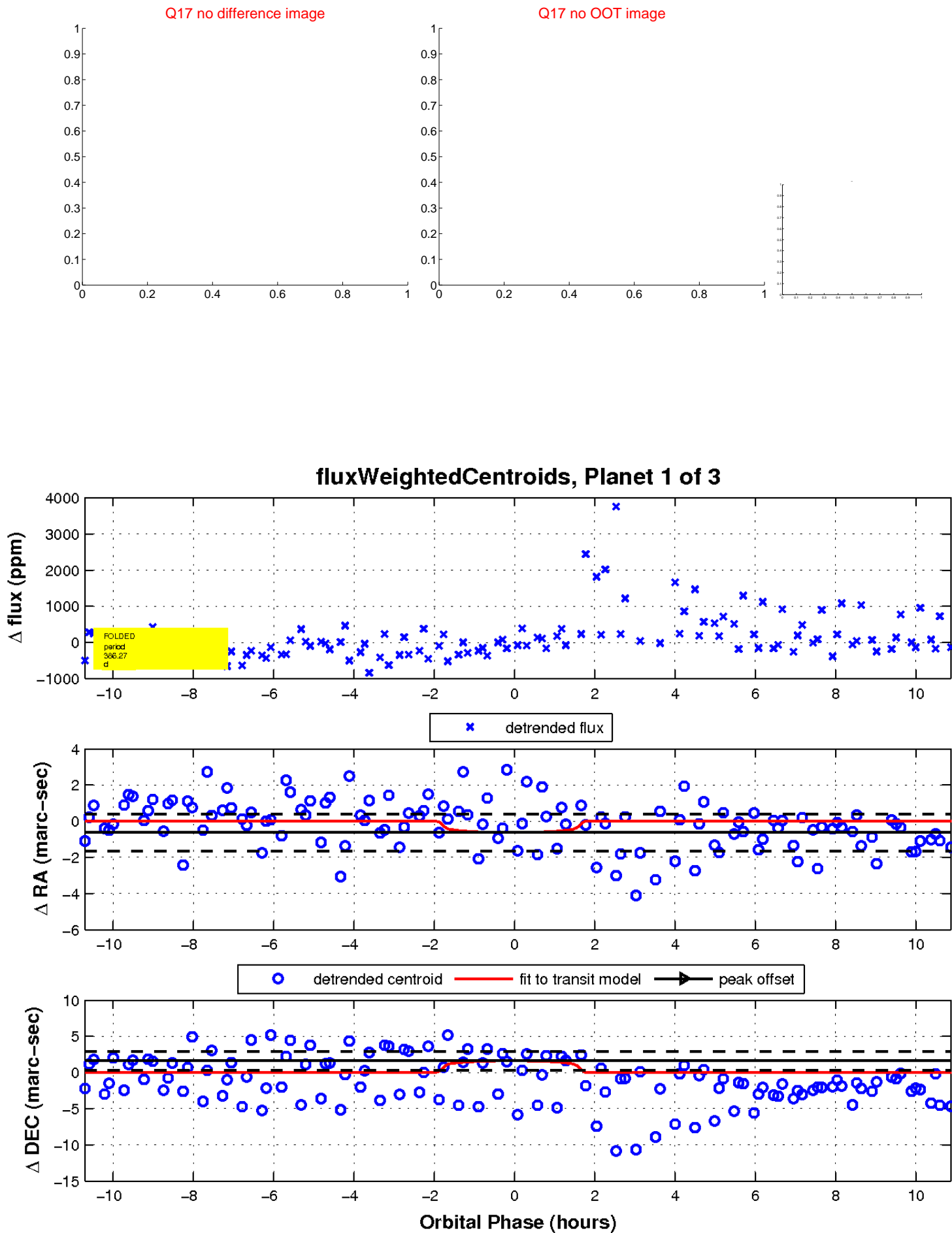
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

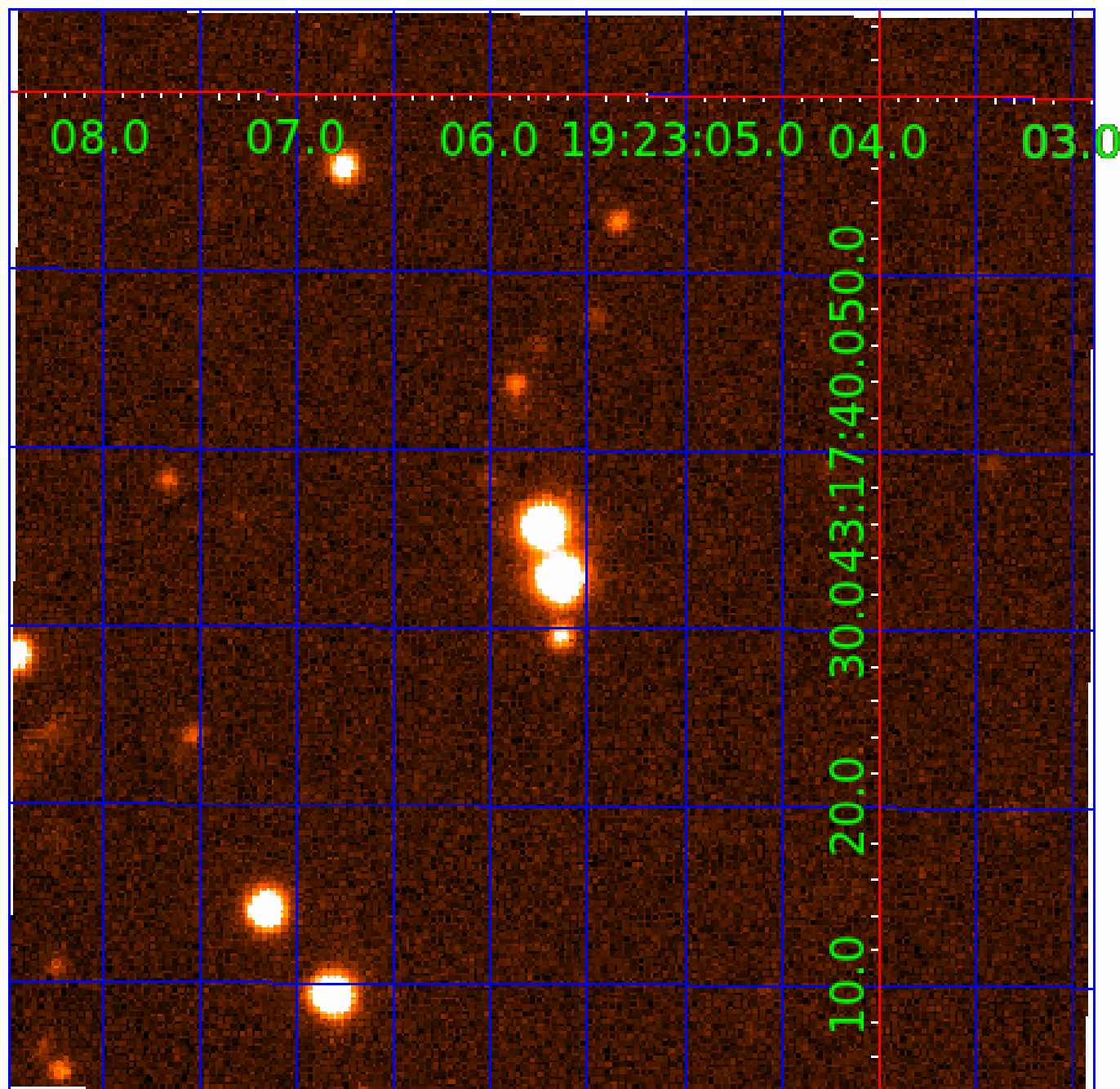


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UKIRT Image

Declination



# KIC 007604425

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007604425-01	OBS	No	386.272776	468.740296	564.7	3.638	11.5	5.1	1.00	5780	2.58	0.93
007604425-02	OBS	No	490.763101	209.983720	766.0	4.240	11.0	6.9	1.00	5780	2.85	0.67
007604425-03	OBS	No	490.345840	255.161247	574.1	3.949	11.3	5.0	1.00	5780	2.47	0.68

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007604425-01	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—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007604425-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—CENT_FEW_DIFFS
007604425-03	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—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.

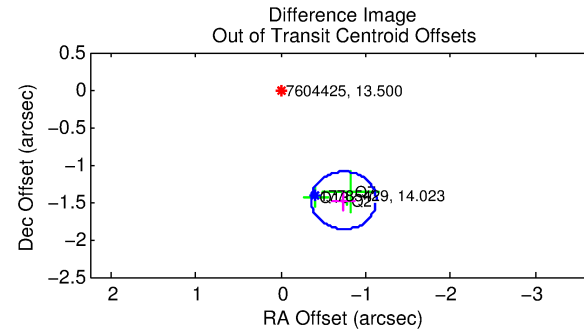
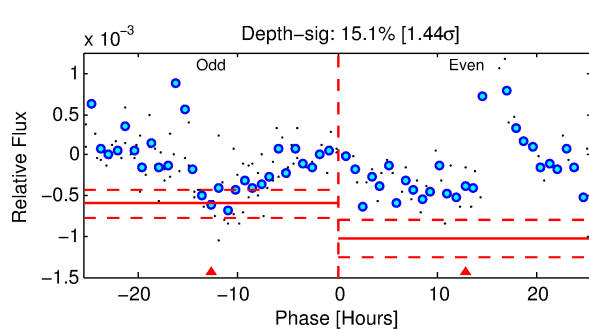
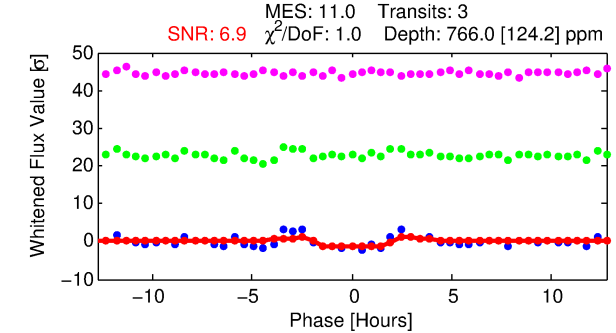
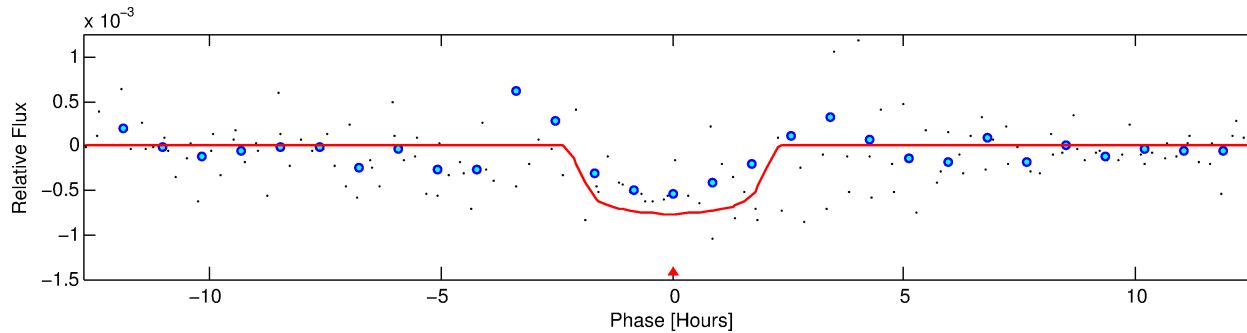
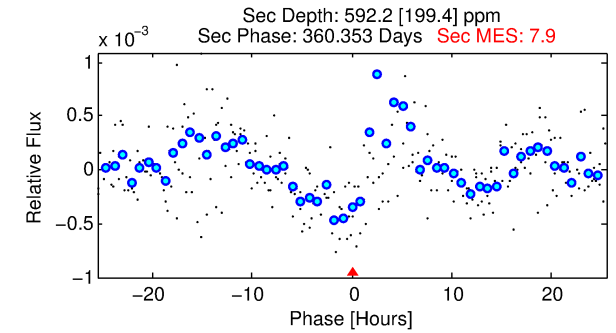
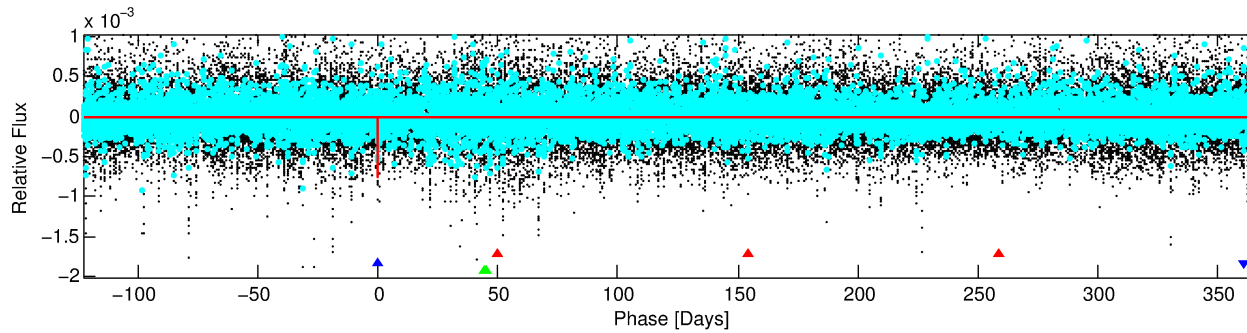
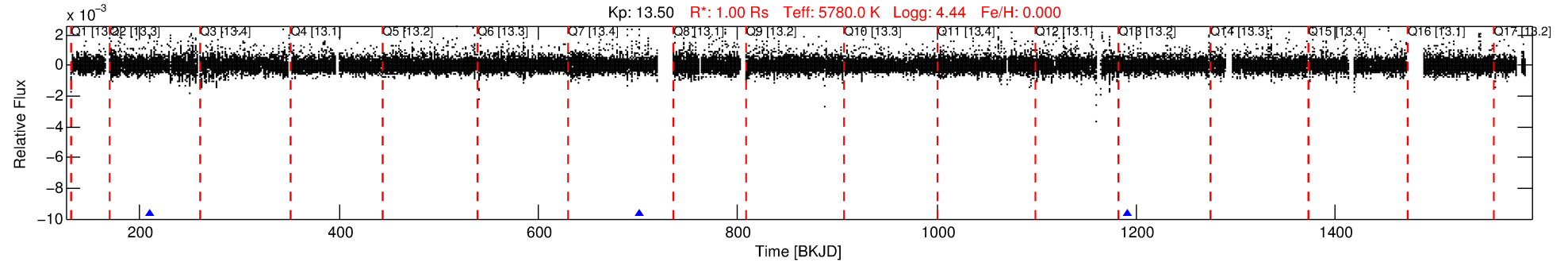
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007604425-02

No Significant Match Found

# DV One-Page Summary

KIC: 7604425 Candidate: 2 of 3 Period: 490.763 d



## DV Fit Results:

Period = 490.76310 [0.00560] d  
Epoch = 209.9837 [0.0061] BKJD  
Rp/R\* = 0.0261 [0.0345]  
a/R\* = 766.90 [4387.90]  
b = 0.55 [7.36]  
Seff = 0.67 [0.00]  
Teq = 231 [0] K  
Rp = 2.85 [3.76] Re  
a = 1.2179 [0.0000] AU  
Ag = 59414.05 [157910.58] [0.38sigma]  
Teffp = 5577 [3706] K [1.44sigma]

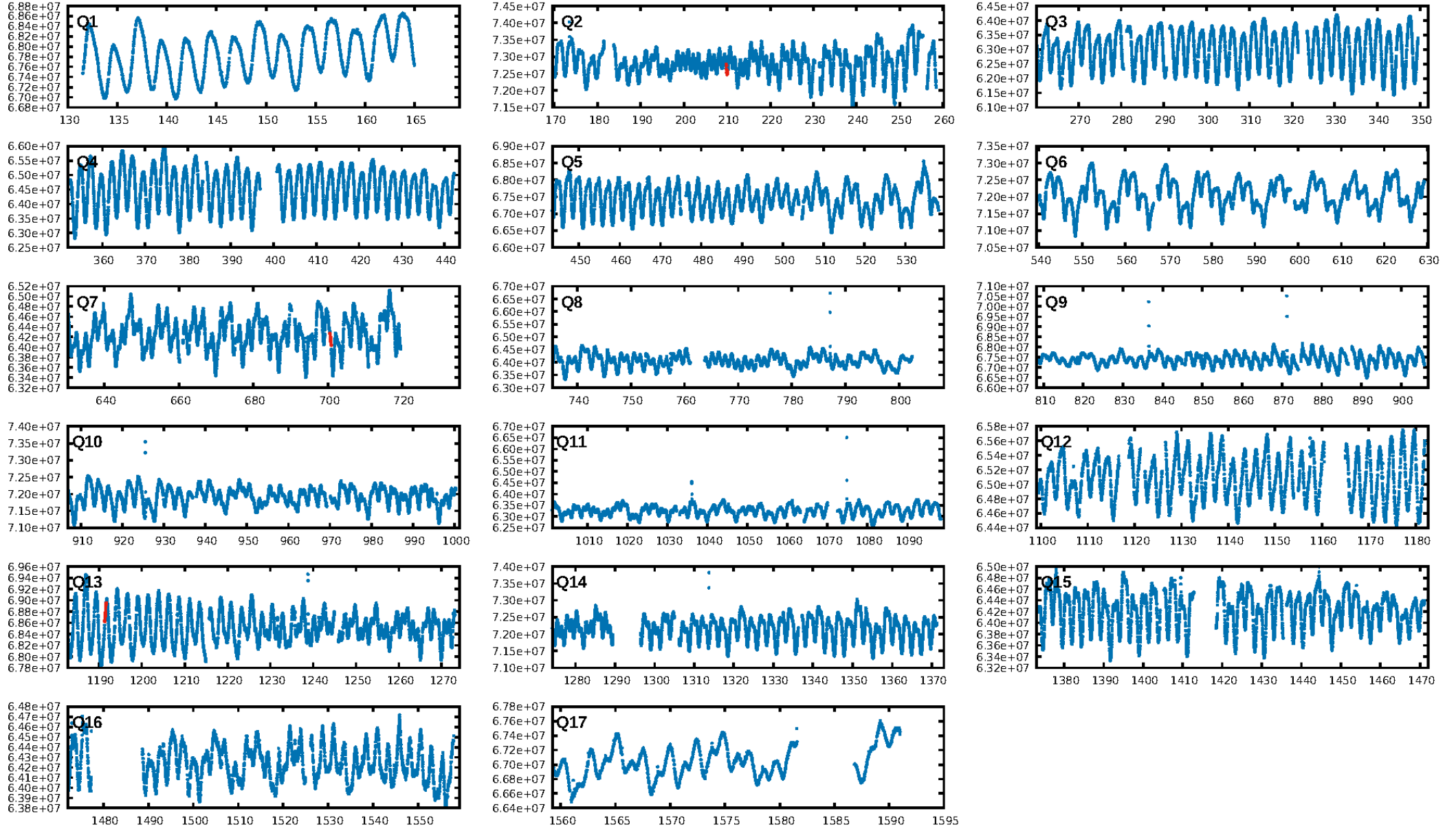
## DV Diagnostic Results:

ShortPeriod-sig: 91.6% [1.73sigma]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 52.0%  
ModelChiSquareGof-sig: 98.7%  
**Bootstrap-pfa: 3.59e-09**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 3.342  
Centroid-sig: 57.3%  
Centroid-so: 0.871 arcsec [0.81sigma]  
**OotOffset-rm: 1.653 arcsec [12.91sigma]**  
**KicOffset-rm: 1.570 arcsec [12.42sigma]**  
OotOffset-st: 1/1/0/1 [3]  
KicOffset-st: 1/1/0/1 [3]  
DiffImageQuality-fgm: 0.33 [1/3]  
DiffImageOverlap-fno: 1.00 [3/3]

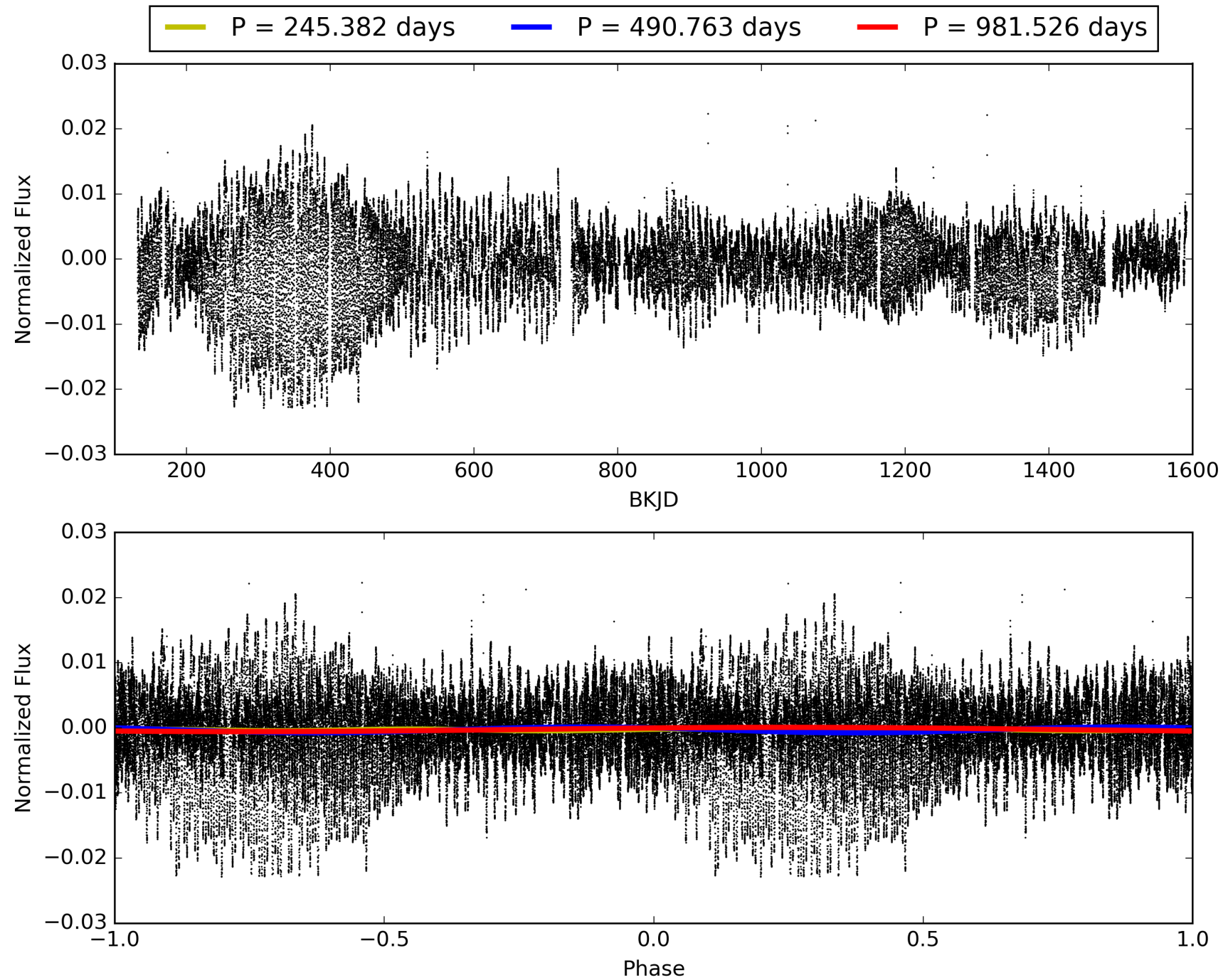
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:37:26 Z

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

# TCE 007604425-02, PDC Light Curves



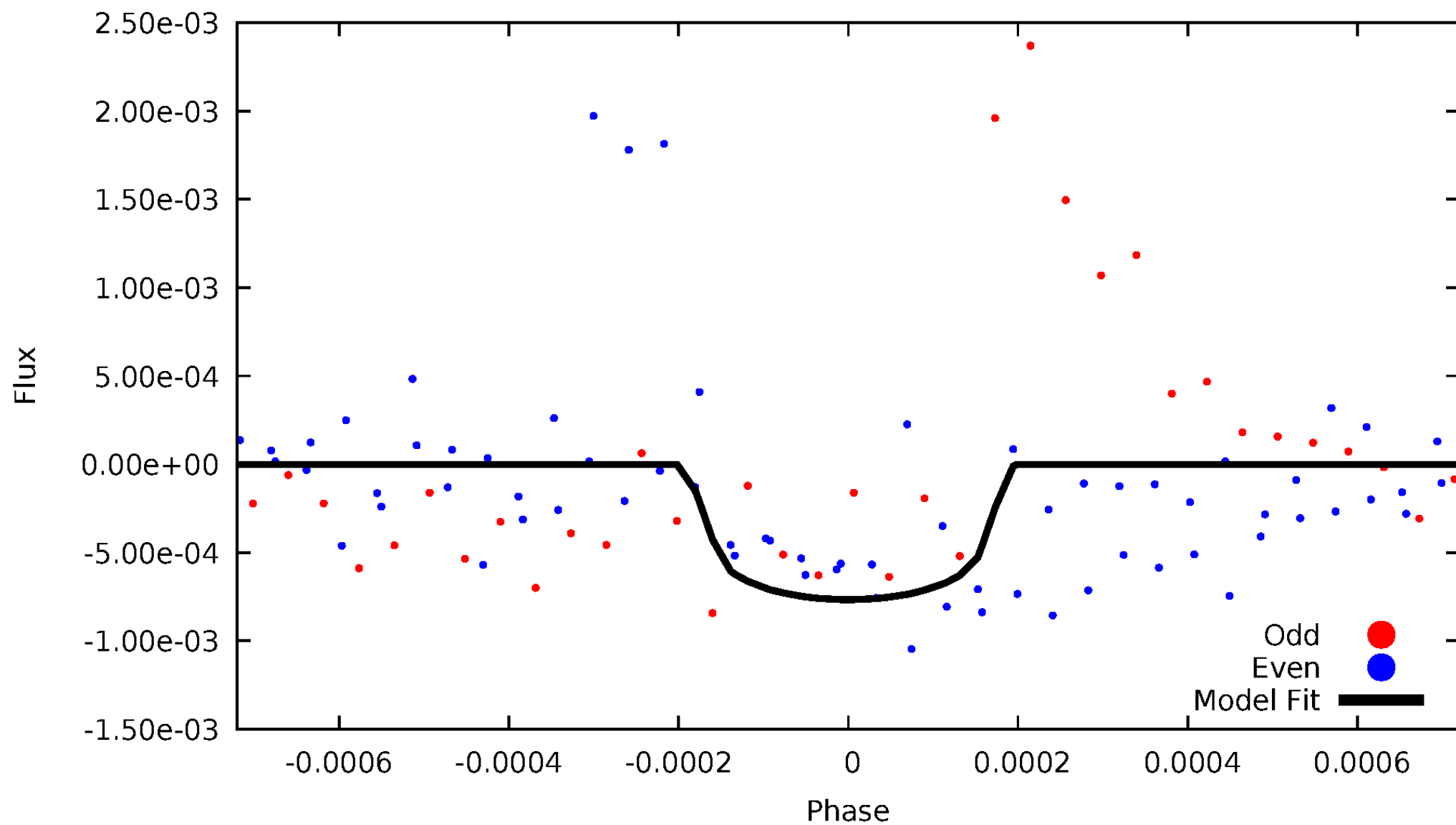
TCE 007604425-02





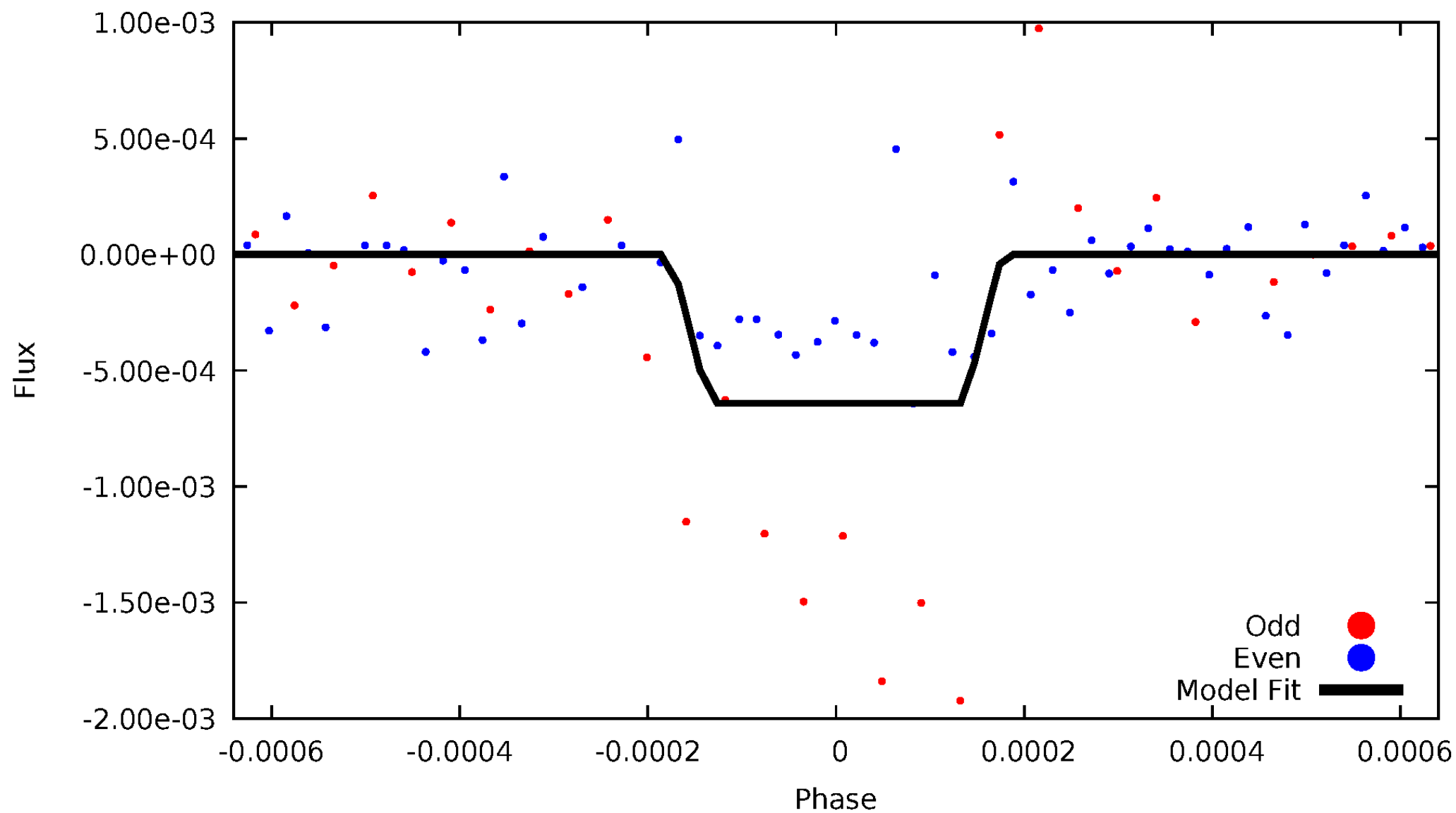
# DV Odd/Even

TCE 007604425-02



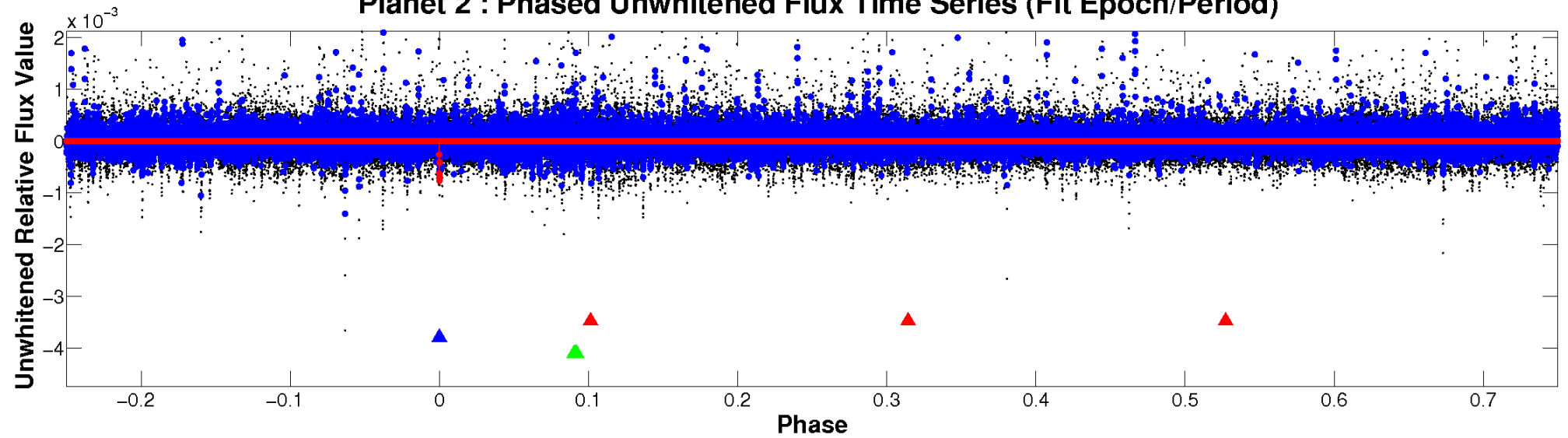
# ALT Odd/Even

TCE 007604425-02

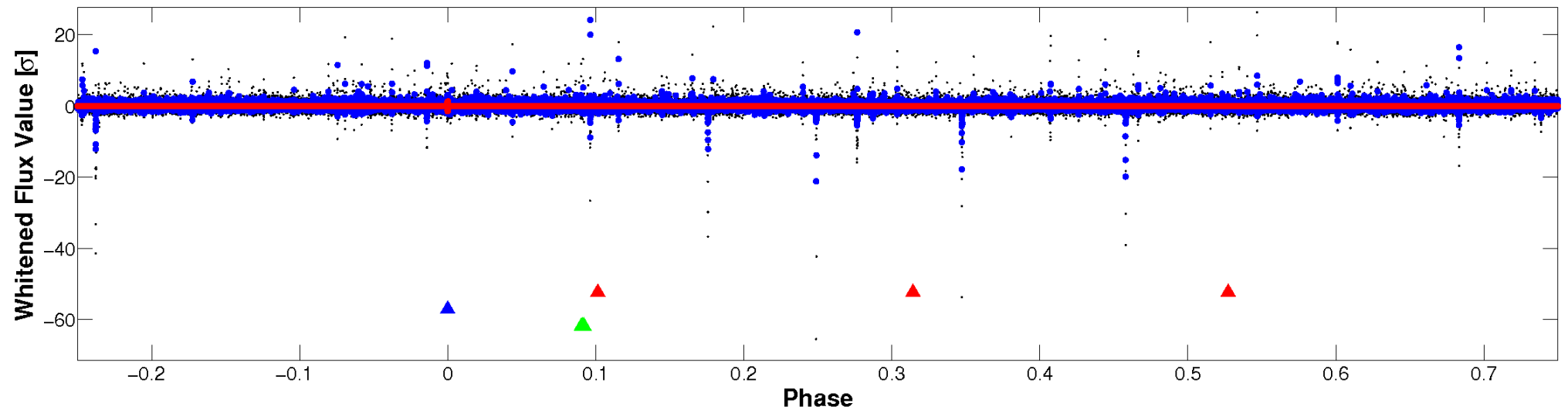


# Non-Whitened Vs. Whitened Light Curve

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

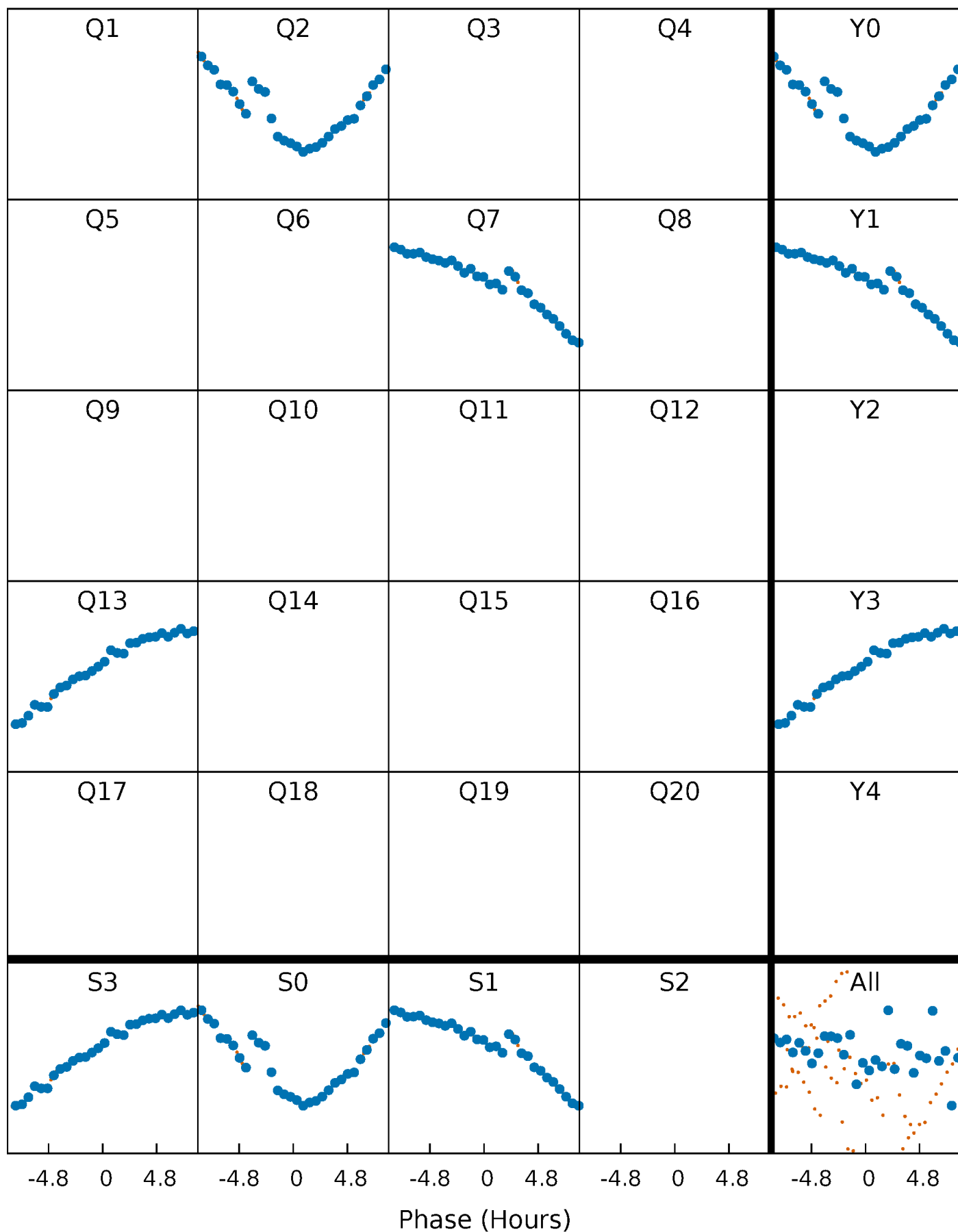


**Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



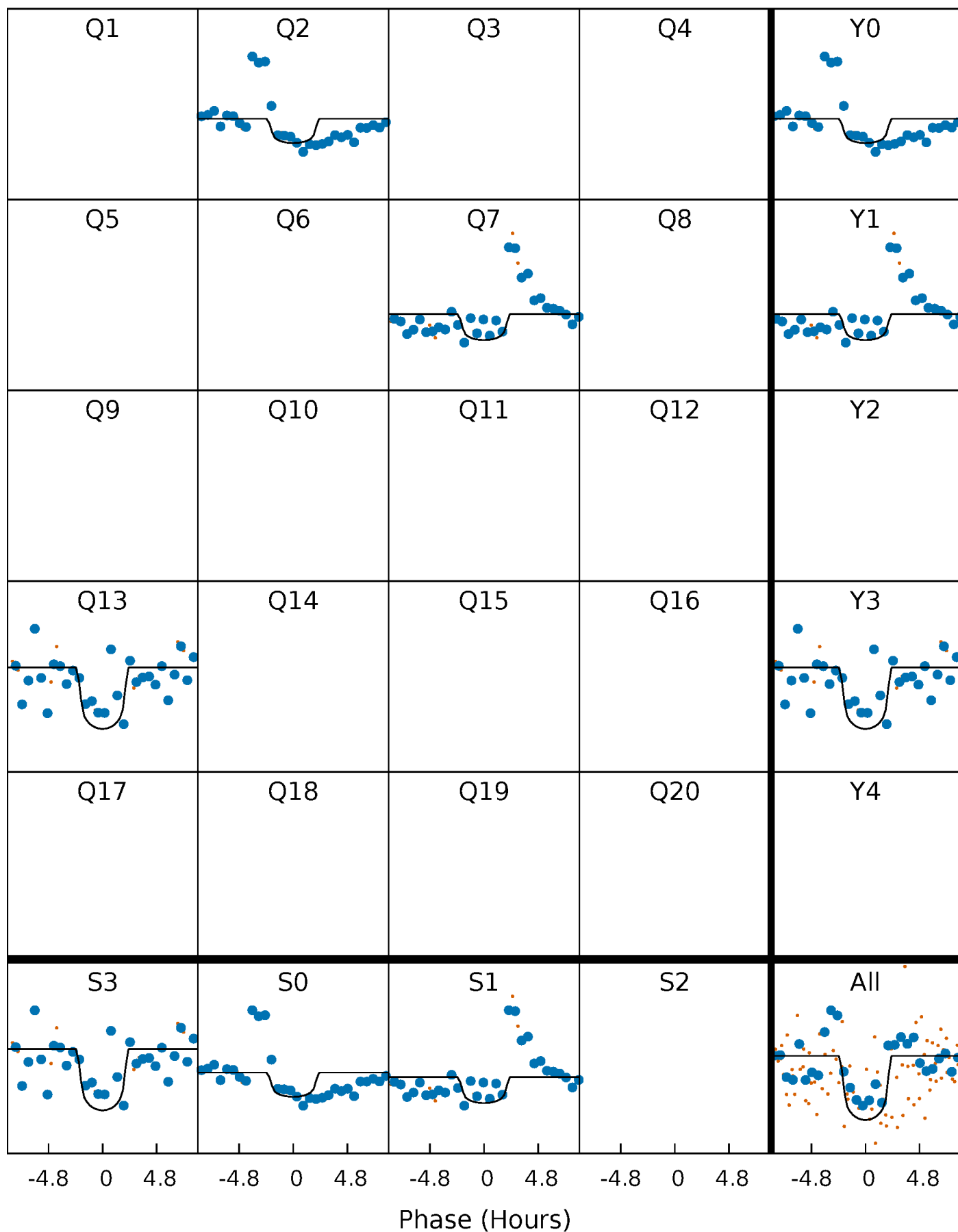
# PDC Quarter-Phased Transit Curves

TCE 007604425-02 P=490.763101 Days  $T_0=209.983720$  (BKJD)



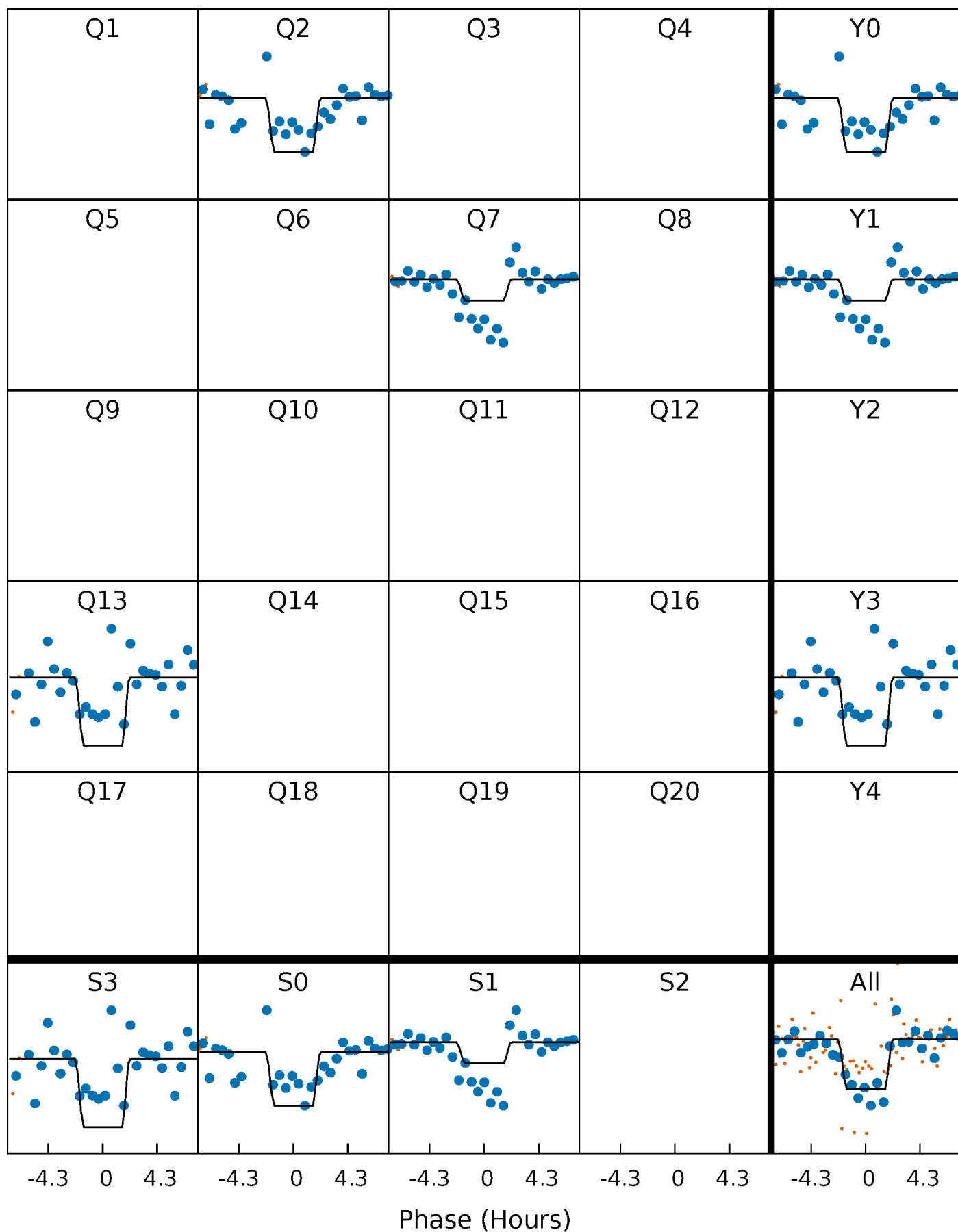
# DV Quarter-Phased Transit Curves

TCE 007604425-02 P=490.763101 Days  $T_0=209.983720$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

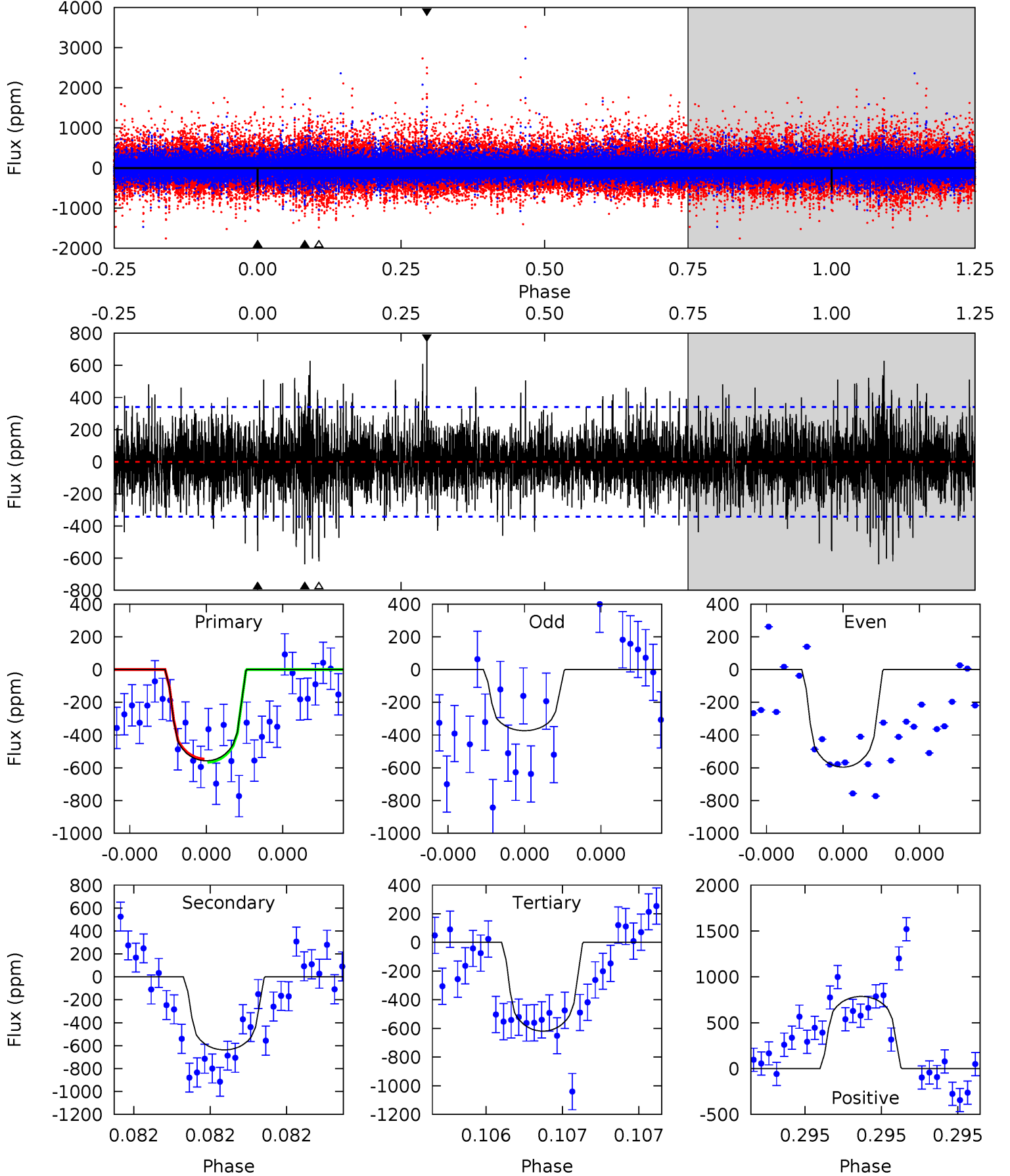
TCE 007604425-02 P=490.766433 Days  $T_0=209.979910$  (BKJD)



# DV Model-Shift Uniqueness Test

007604425-02, P = 490.763101 Days, E = 209.983720 Days

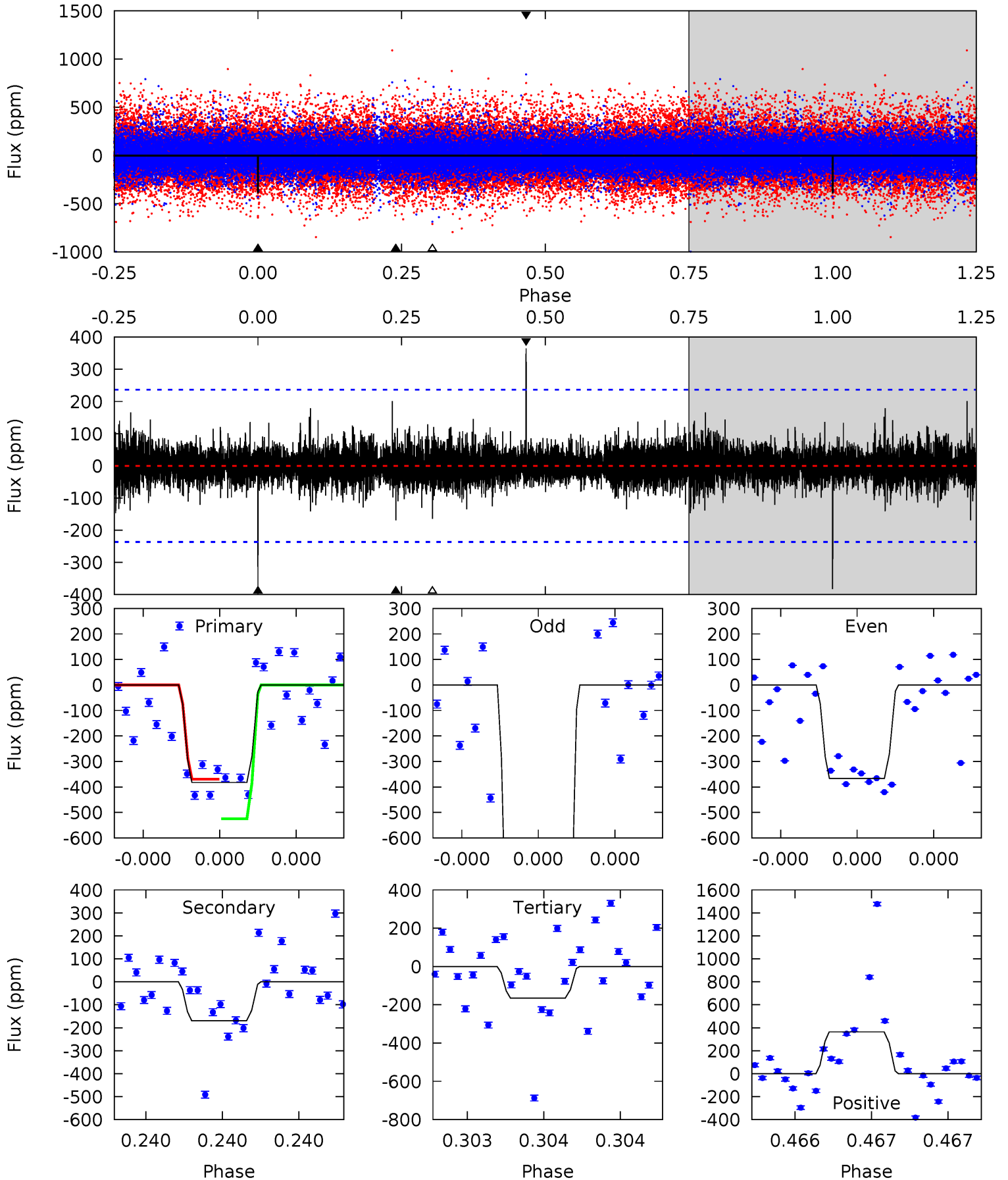
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.18	10.5	10.2	13.0	5.62	3.56	2.14	-1.02	-3.77	0.30	-2.45	1.19	1.14	0.55	0.16



# Alt Model-Shift Uniqueness Test

007604425-02, P = 490.766433 Days, E = 209.979910 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
9.10	4.03	3.92	8.67	5.64	3.58	0.78	5.18	0.43	0.10	-4.65	12.7	1.72	0.49	1.91





### Stellar Parameters For KIC 007604425

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5780^{+1}_{-1}$	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

### Secondary Eclipse Parameters for KIC 007604425-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-637 \pm 61$	$3.69^{+3.49}_{-2.51}$	$323^{+15}_{-15}$	$5045^{+4028}_{-1120}$	$38006^{+324986}_{-27880}$
Alt.	$-169 \pm 42$	$3.62^{+3.49}_{-2.28}$	$324^{+15}_{-16}$	$3954^{+2136}_{-803}$	$10247^{+69185}_{-7627}$

$T_{max}$  = 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

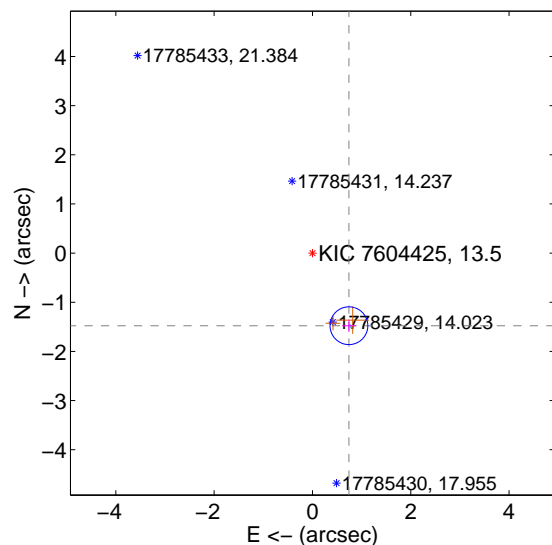
Supplemental centroid analysis for 007604425-02. Kepler magnitude: 13.50. Transit SNR 6.93

There are 1 quarters with good PRF difference image offsets

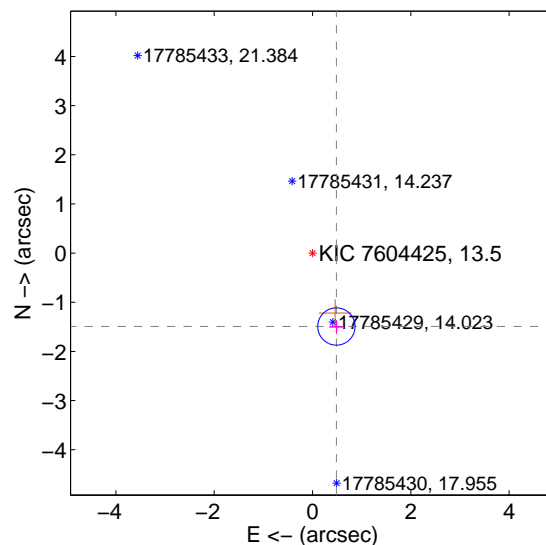
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.653 \pm 0.128$	12.91	$-0.742 \pm 0.140$	$-1.477 \pm 0.125$
PRF-fit source offset from KIC position	$1.570 \pm 0.126$	12.42	$-0.486 \pm 0.140$	$-1.493 \pm 0.125$
photometric centroid source offset	$0.87 \pm 1.08$	0.81	$0.85 \pm 1.05$	$-0.19 \pm 1.52$

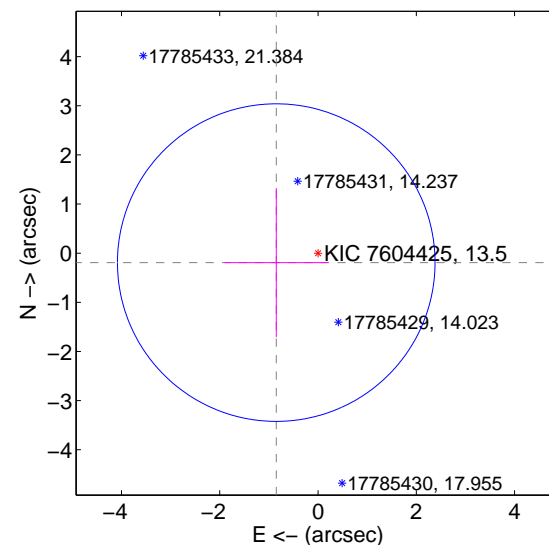
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



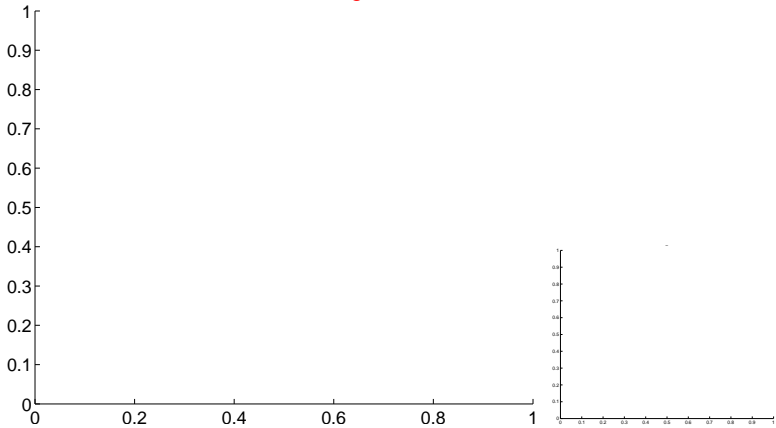
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

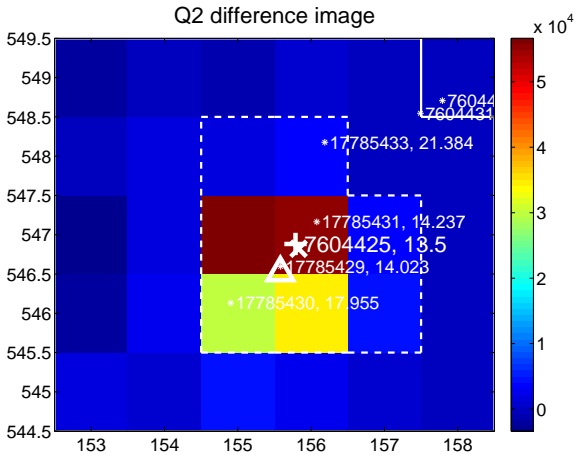
Q1 no difference image



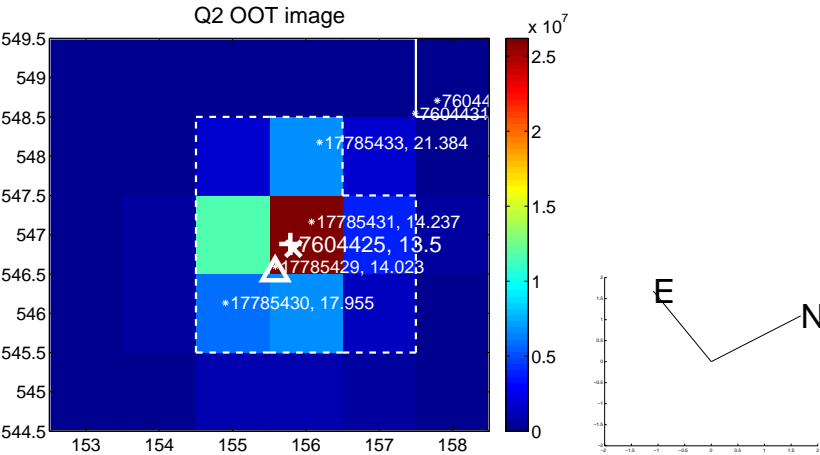
Q1 no OOT image



Q2 difference image



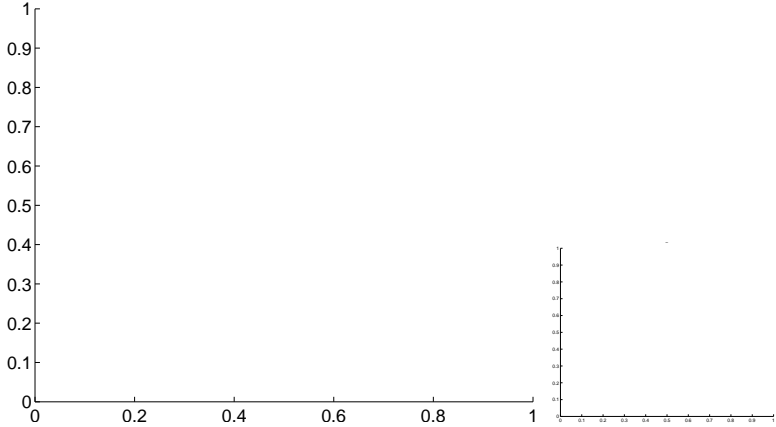
Q2 OOT image



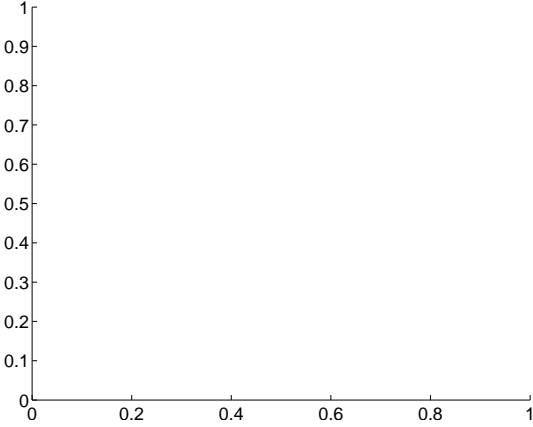
Q3 no difference image



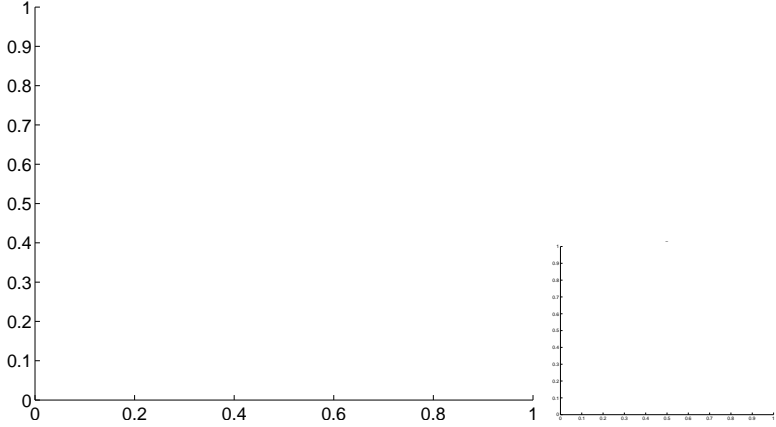
Q3 no OOT image



Q4 no difference image



Q4 no OOT image



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

Q5 no difference image



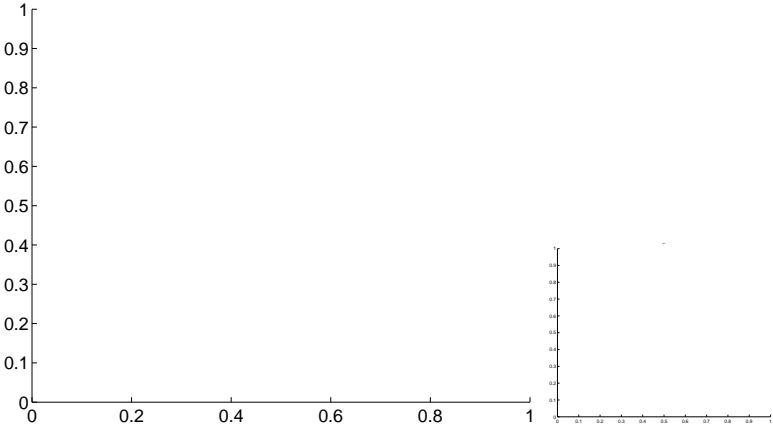
Q5 no OOT image



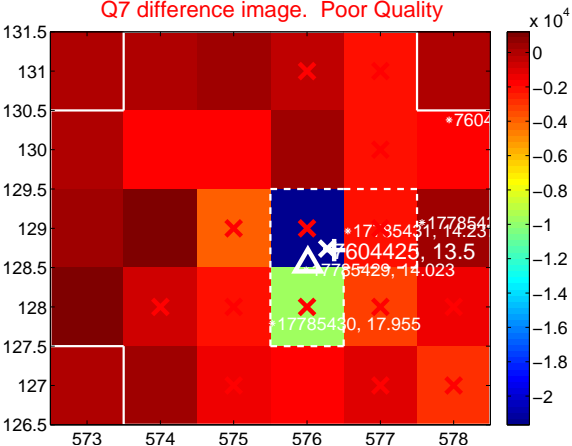
Q6 no difference image



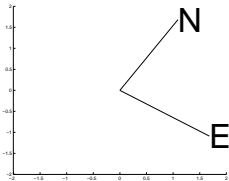
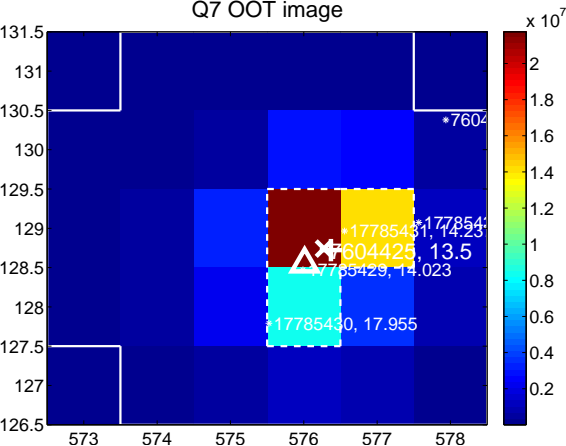
Q6 no OOT image



Q7 difference image. Poor Quality



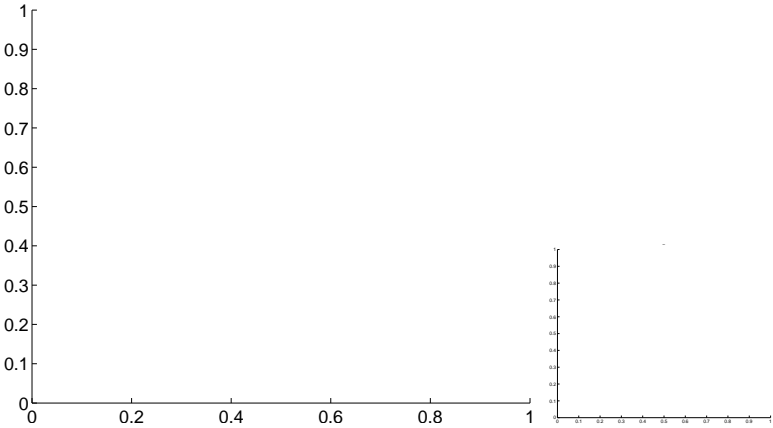
Q7 OOT image



Q8 no difference image



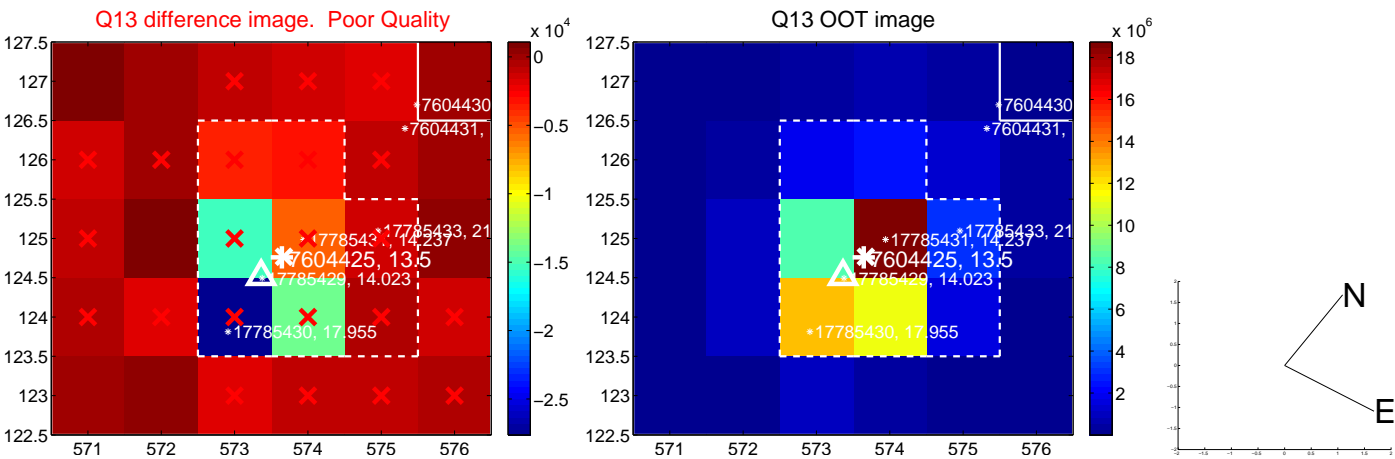
Q8 no OOT image



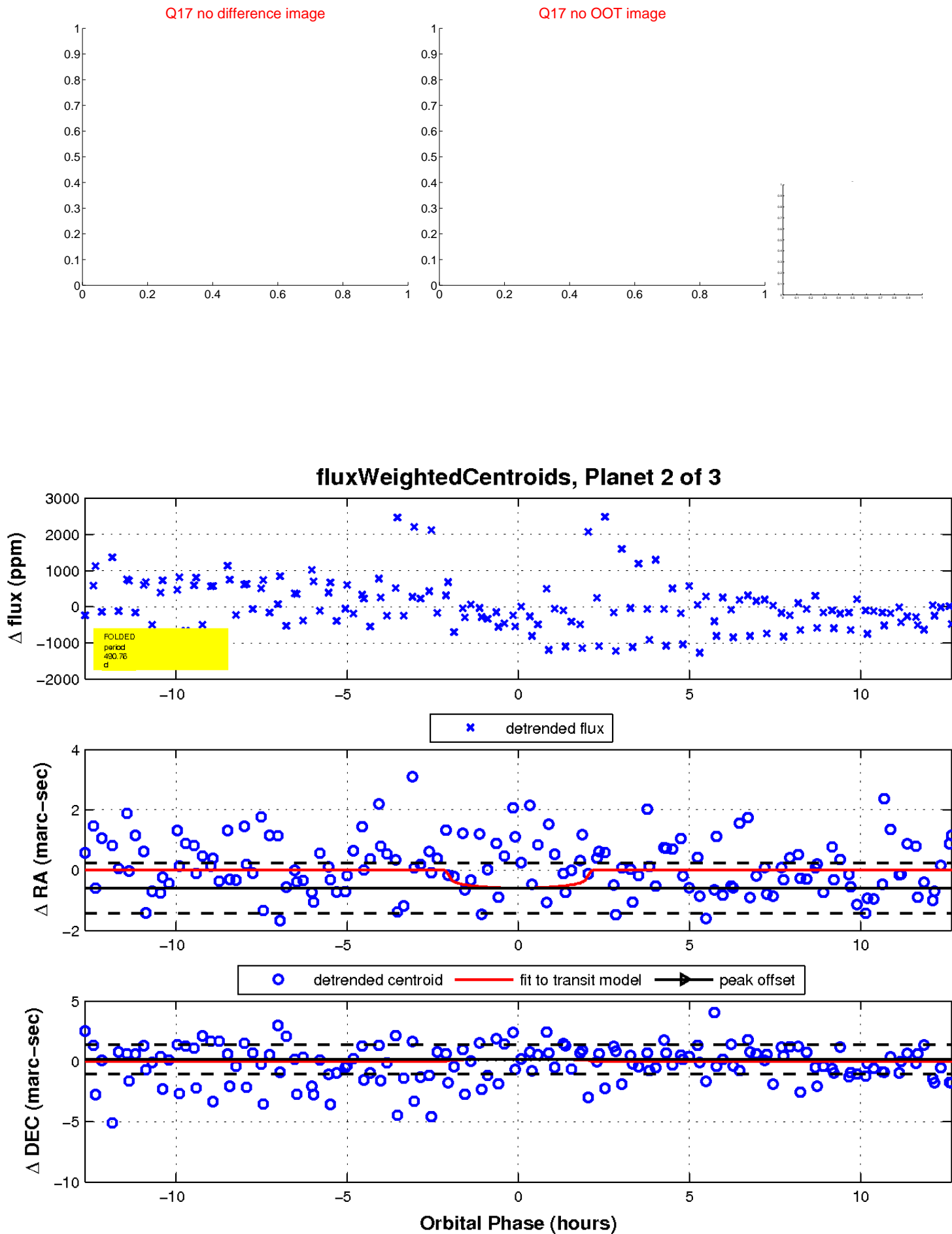
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

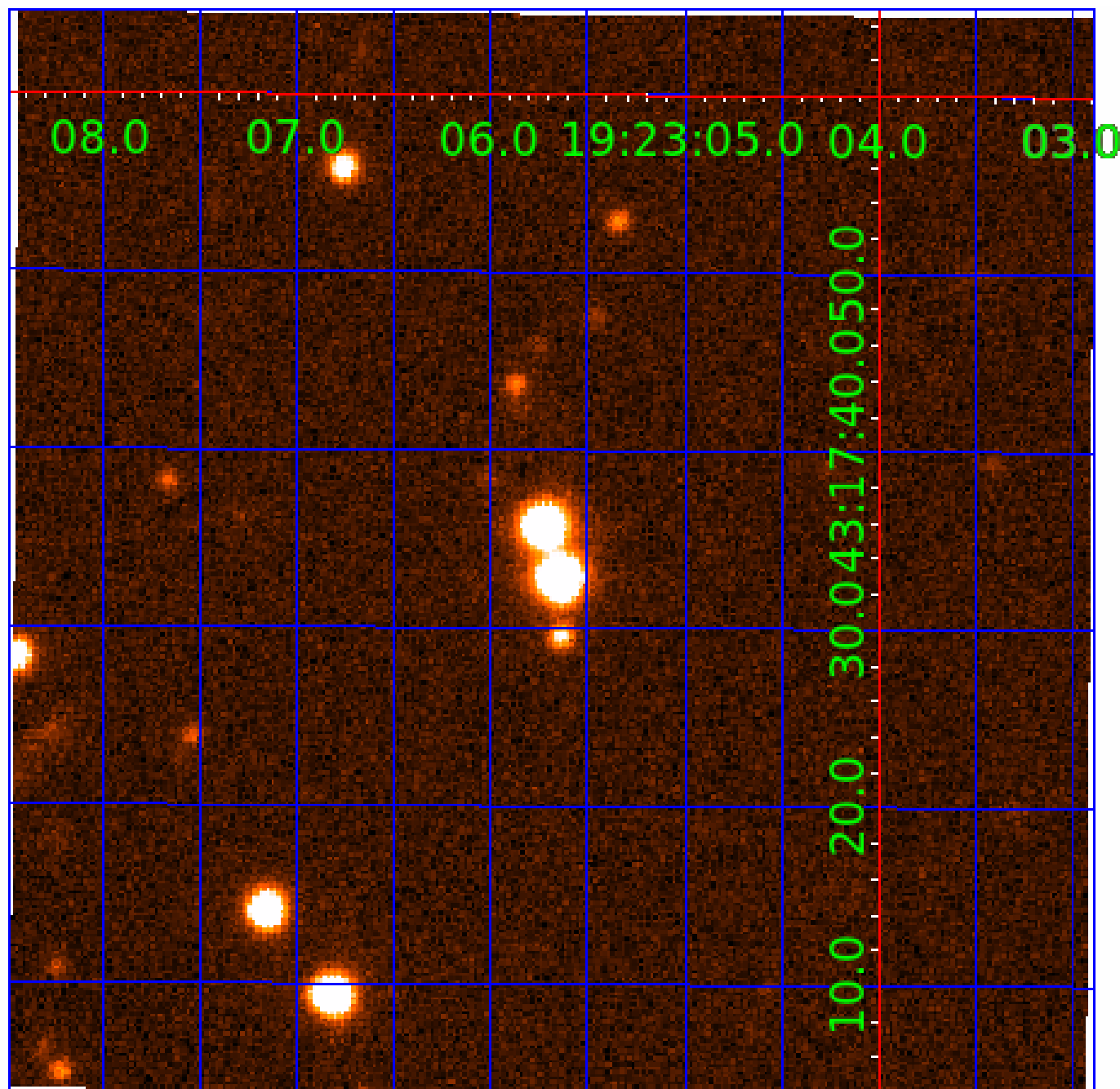


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 007604425

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007604425-01	OBS	No	386.272776	468.740296	564.7	3.638	11.5	5.1	1.00	5780	2.58	0.93
007604425-02	OBS	No	490.763101	209.983720	766.0	4.240	11.0	6.9	1.00	5780	2.85	0.67
007604425-03	OBS	No	490.345840	255.161247	574.1	3.949	11.3	5.0	1.00	5780	2.47	0.68

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007604425-01	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—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007604425-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—CENT_FEW_DIFFS
007604425-03	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—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.

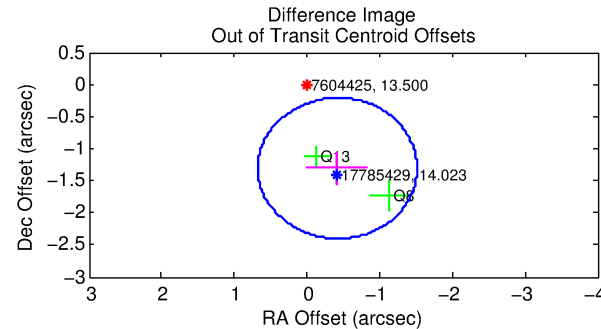
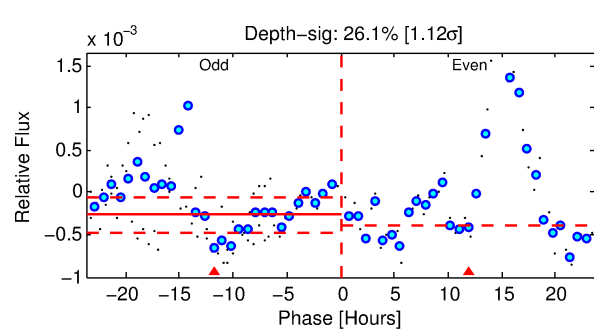
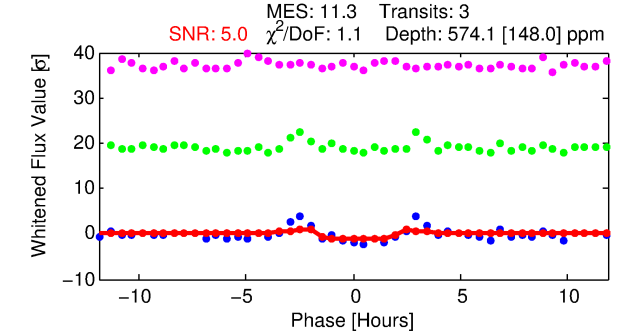
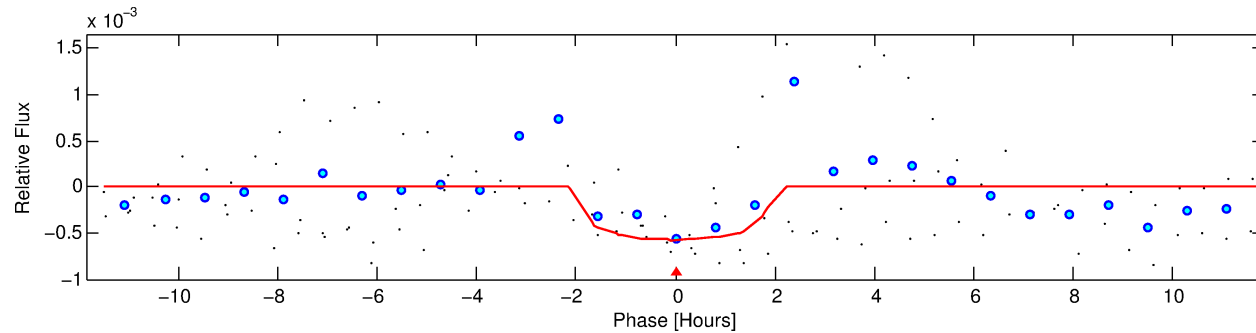
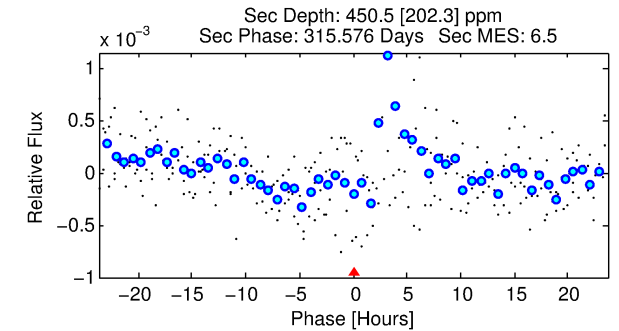
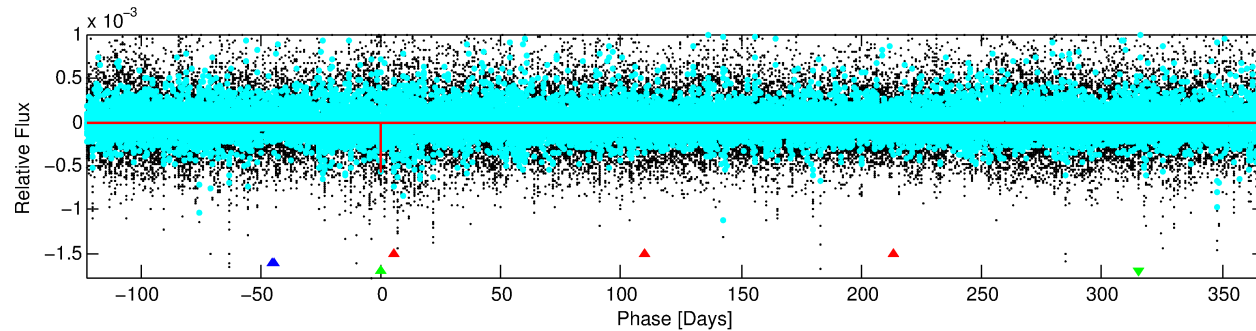
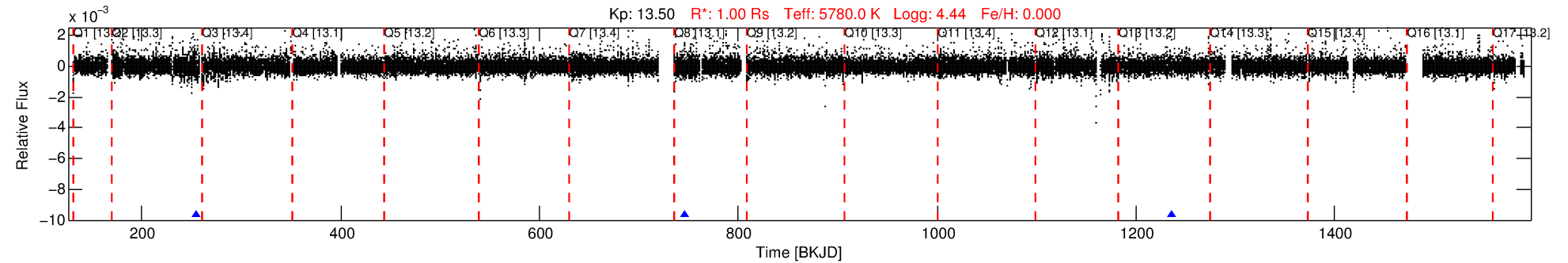
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007604425-03

No Significant Match Found

# DV One-Page Summary

KIC: 7604425 Candidate: 3 of 3 Period: 490.346 d



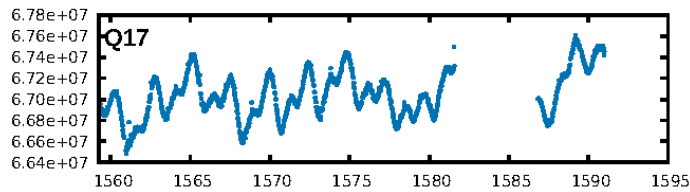
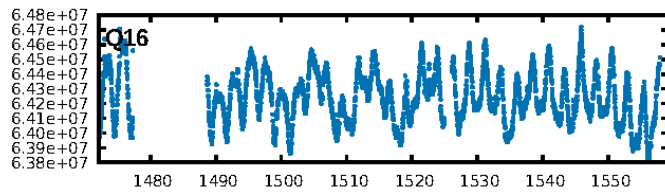
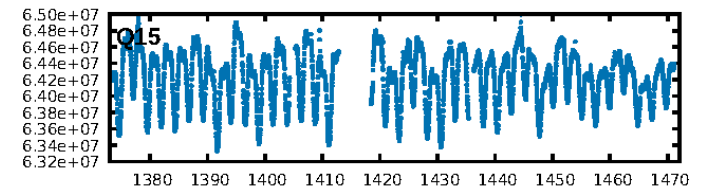
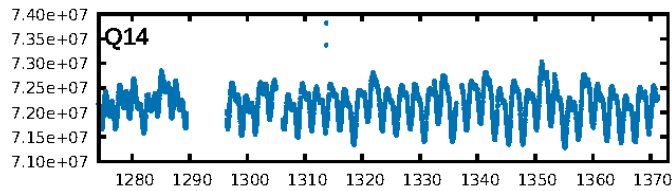
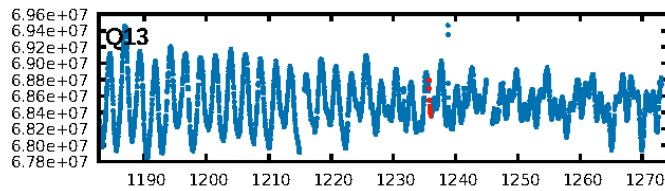
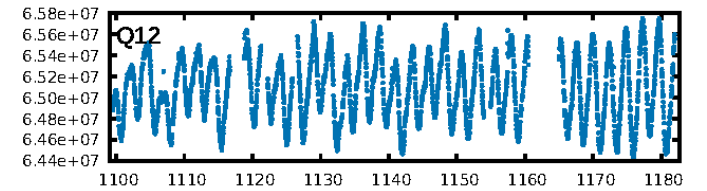
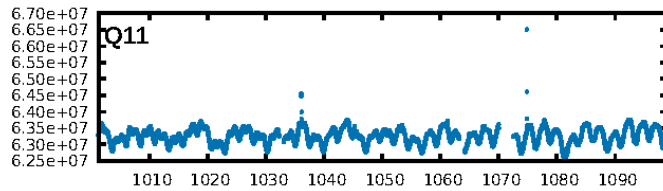
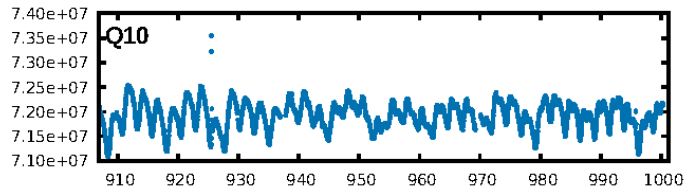
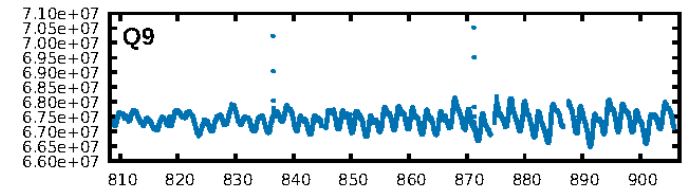
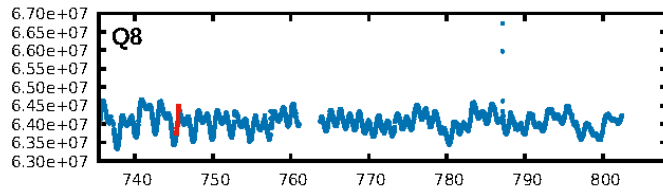
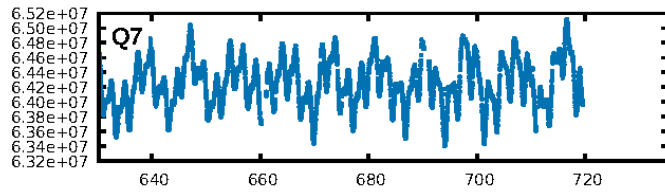
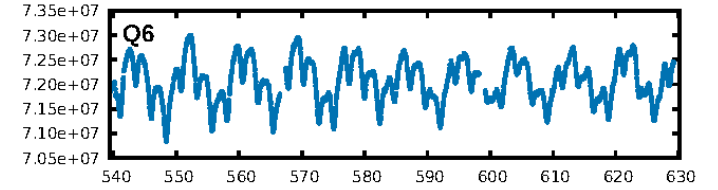
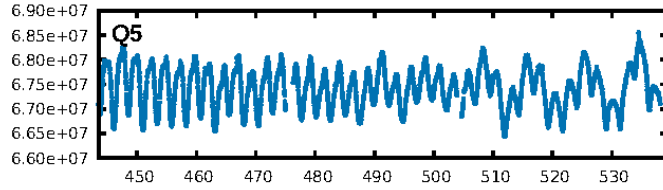
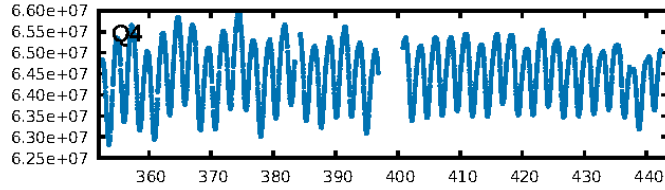
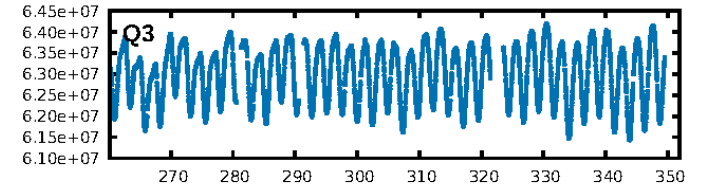
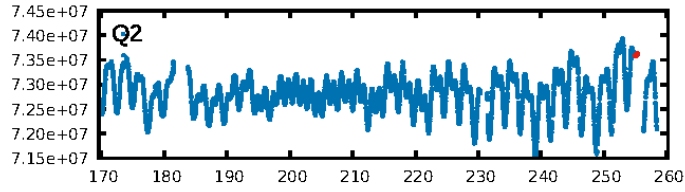
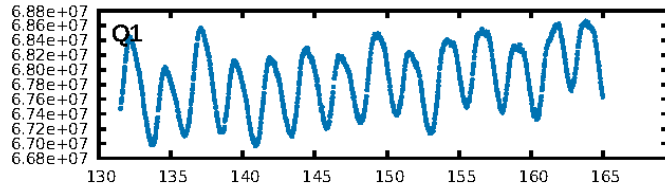
## DV Fit Results:

Period = 490.34584 [0.00724] d  
Epoch = 255.1612 [0.0099] BKJD  
Rp/R\* = 0.0227 [0.0506]  
a/R\* = 814.60 [7815.15]  
b = 0.56 [12.10]  
Seff = 0.67 [0.00]  
Teq = 231 [0] K  
Rp = 2.47 [5.52] Re  
a = 1.2172 [0.0000] AU  
Ag = 60067.54 [269589.91] [0.22σ]  
Teffp = 5594 [6277] K [0.85σ]

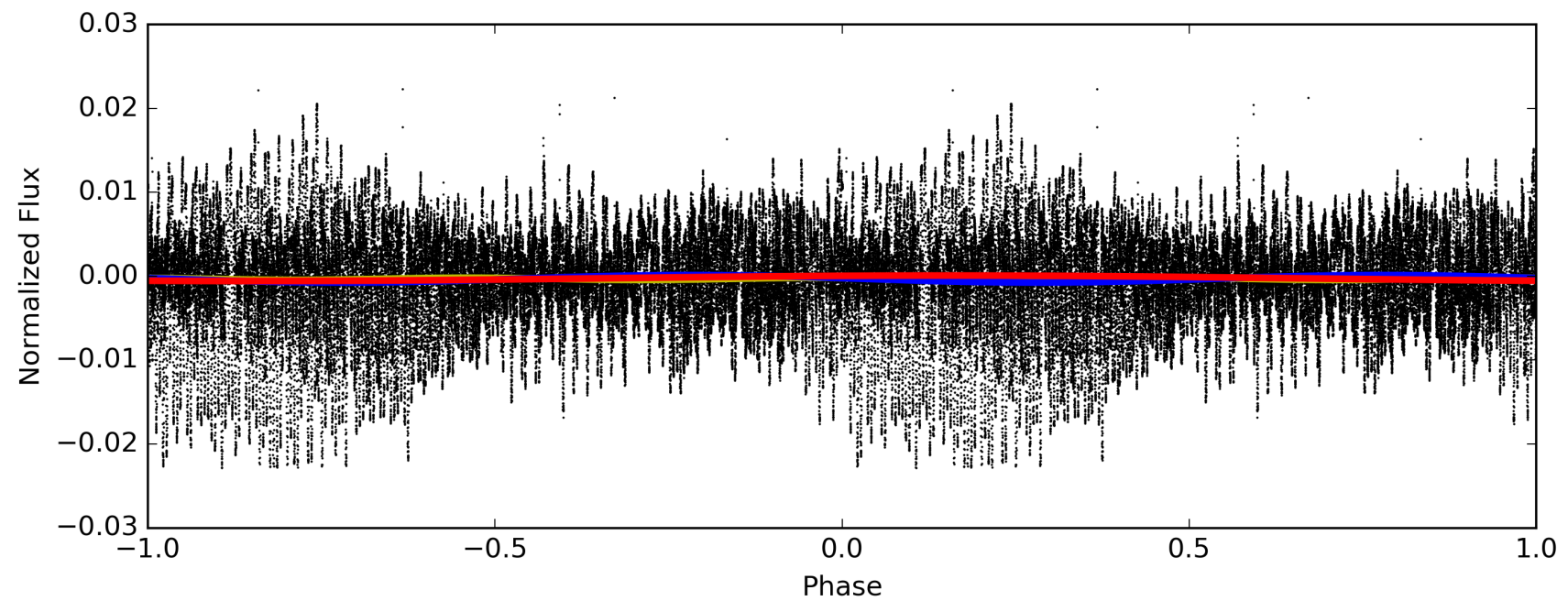
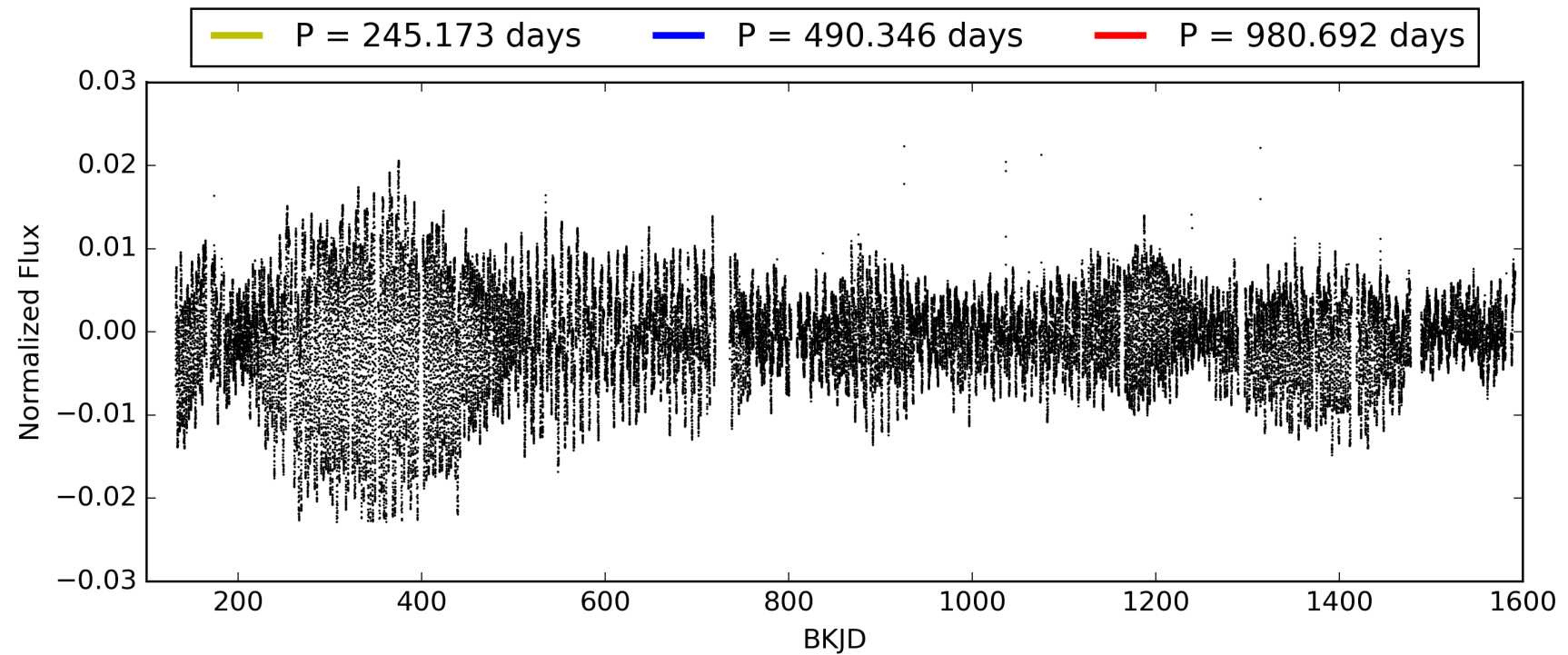
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [465.18σ]  
LongPeriod-sig: 91.6% [1.73σ]  
ModelChiSquare2-sig: 10.8%  
ModelChiSquareGof-sig: 88.6%  
Bootstrap-pfa: 2.06e-09  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 2.292  
Centroid-sig: 46.8%  
Centroid-so: 1.240 arcsec [0.64σ]  
OotOffset-rm: 1.371 arcsec [3.75σ]  
KicOffset-rm: 1.413 arcsec [5.58σ]  
OotOffset-st: 0/0/1/1 [2]  
KicOffset-st: 0/0/1/1 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [2/2]

# TCE 007604425-03, PDC Light Curves

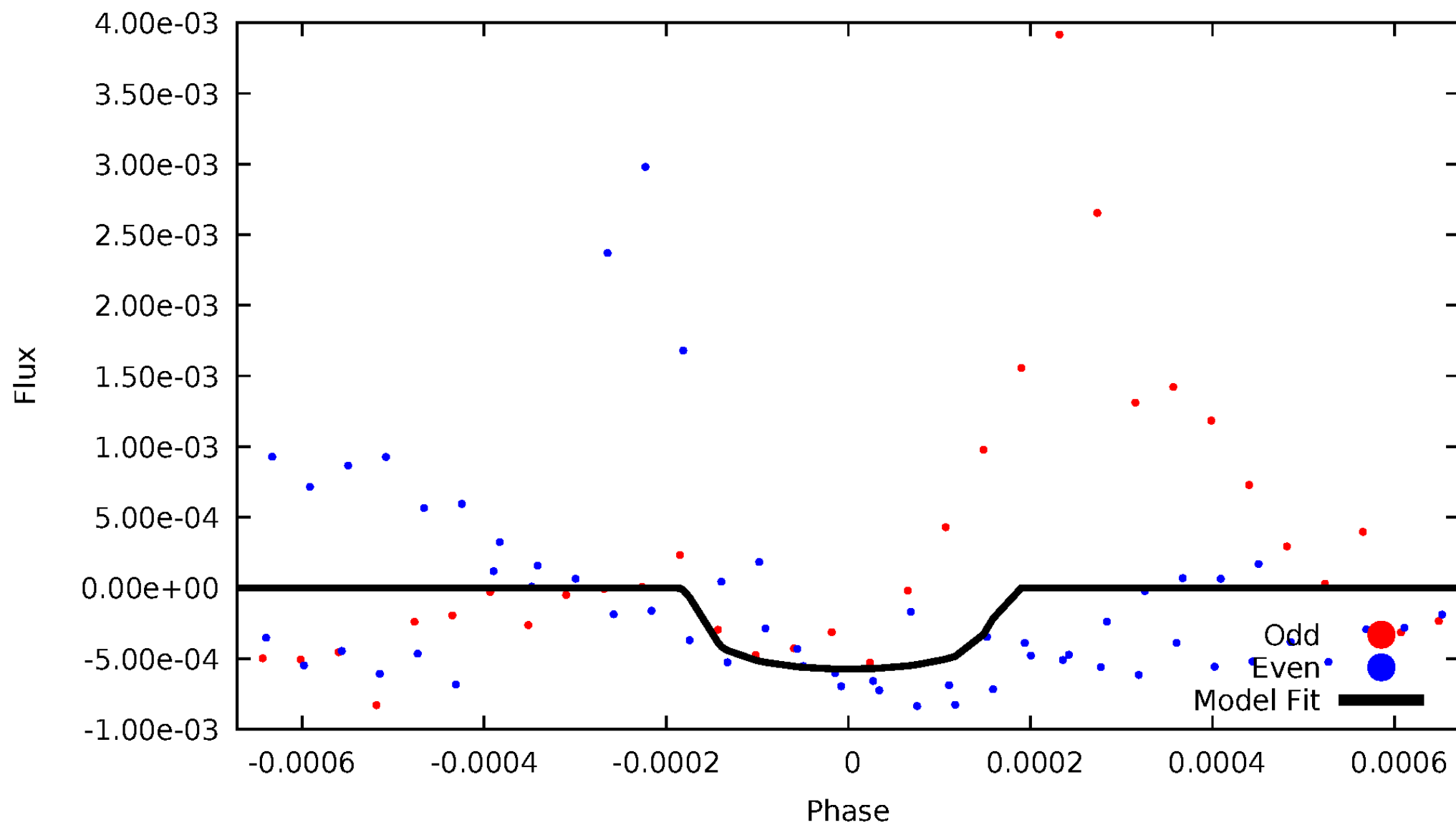


TCE 007604425-03



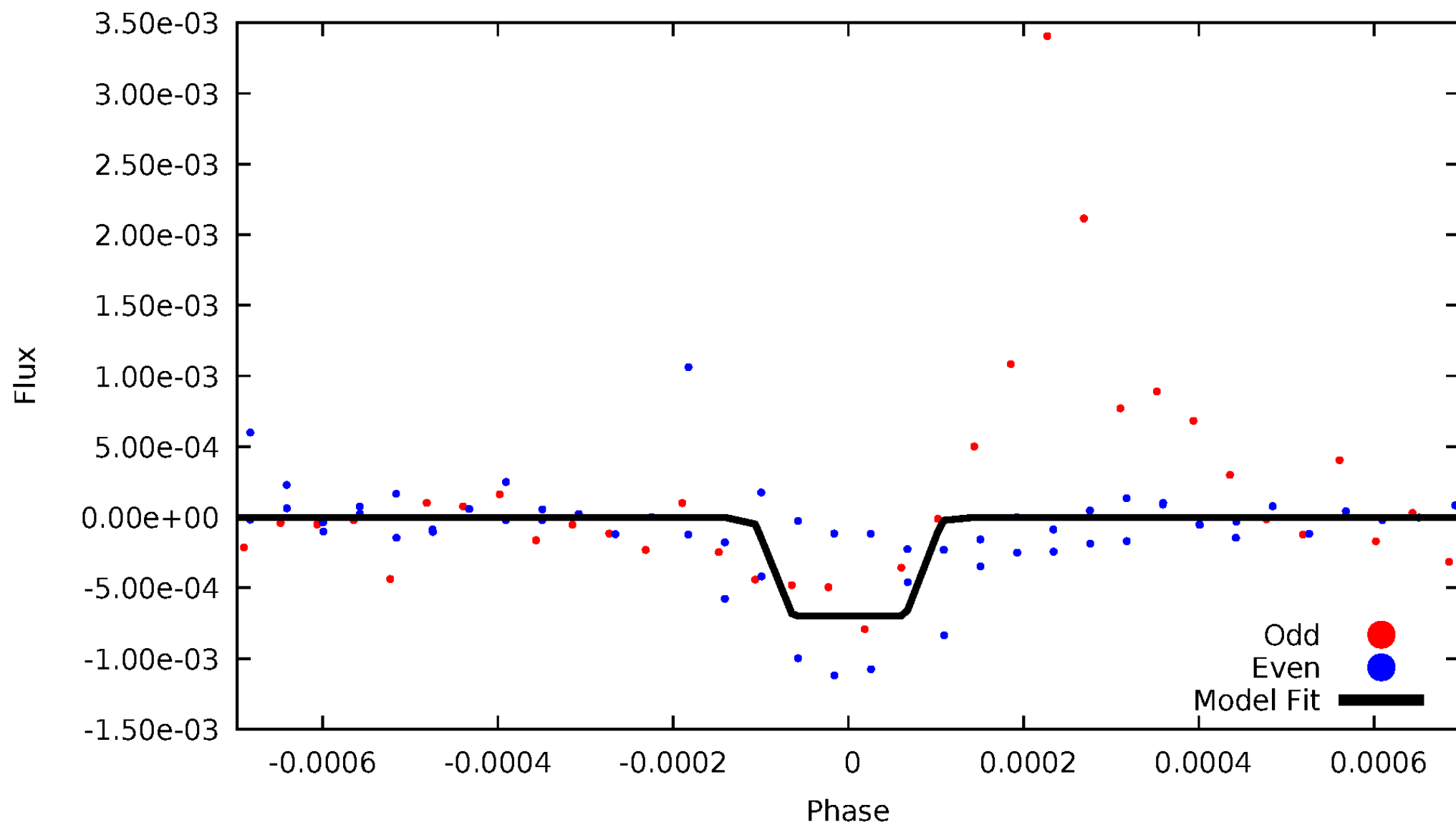
# DV Odd/Even

TCE 007604425-03



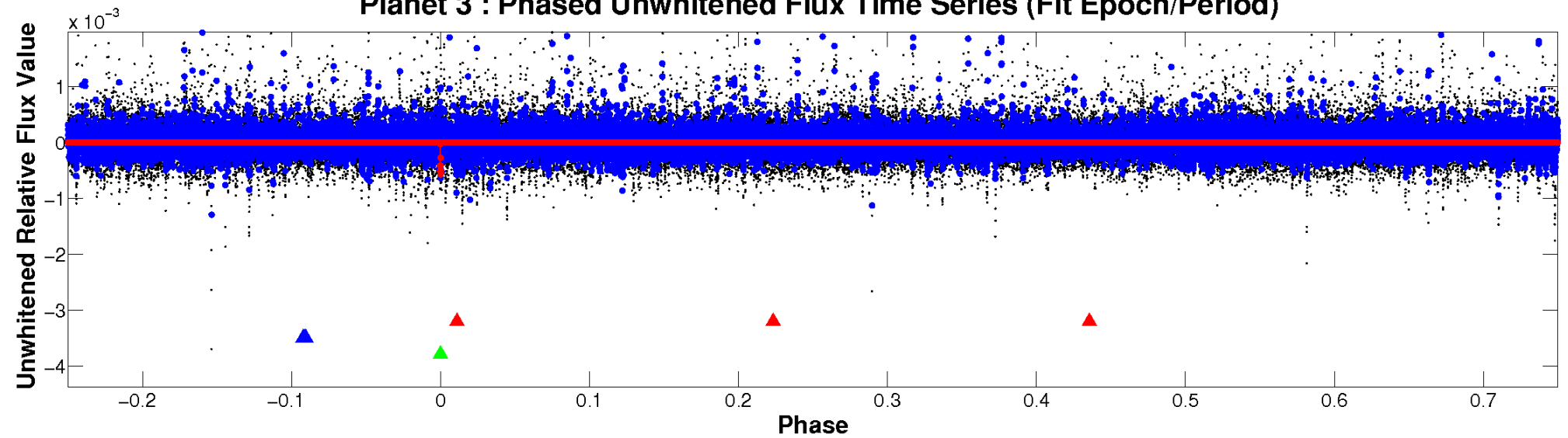
# ALT Odd/Even

TCE 007604425-03

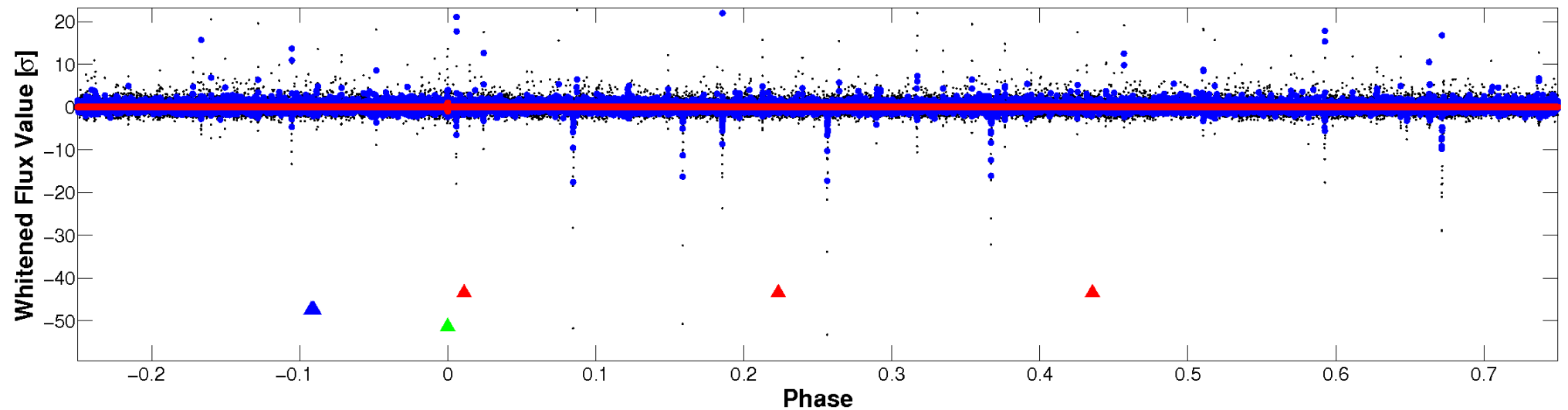


# Non-Whitened Vs. Whitened Light Curve

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

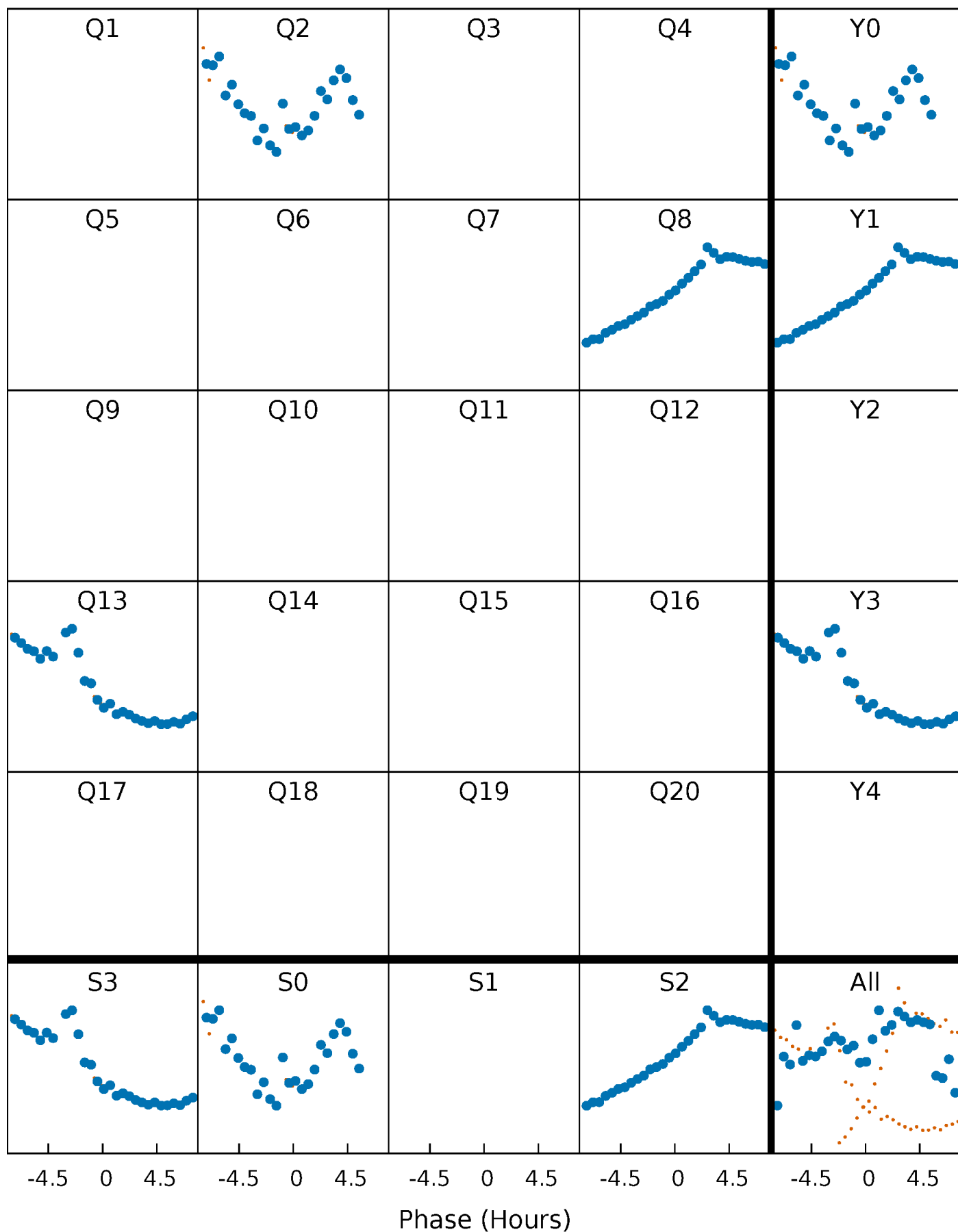


**Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

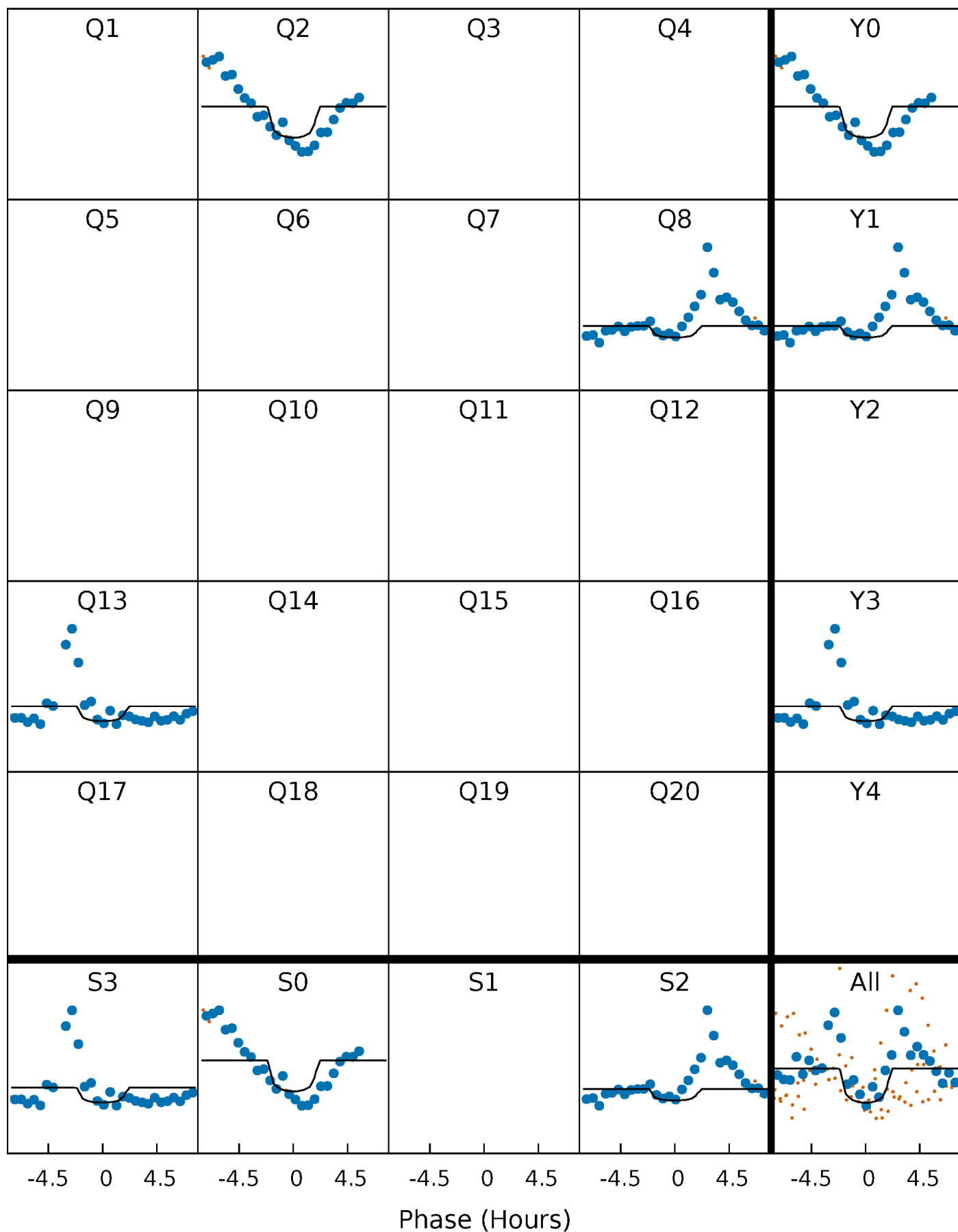
TCE 007604425-03 P=490.345840 Days  $T_0=255.161247$  (BKJD)





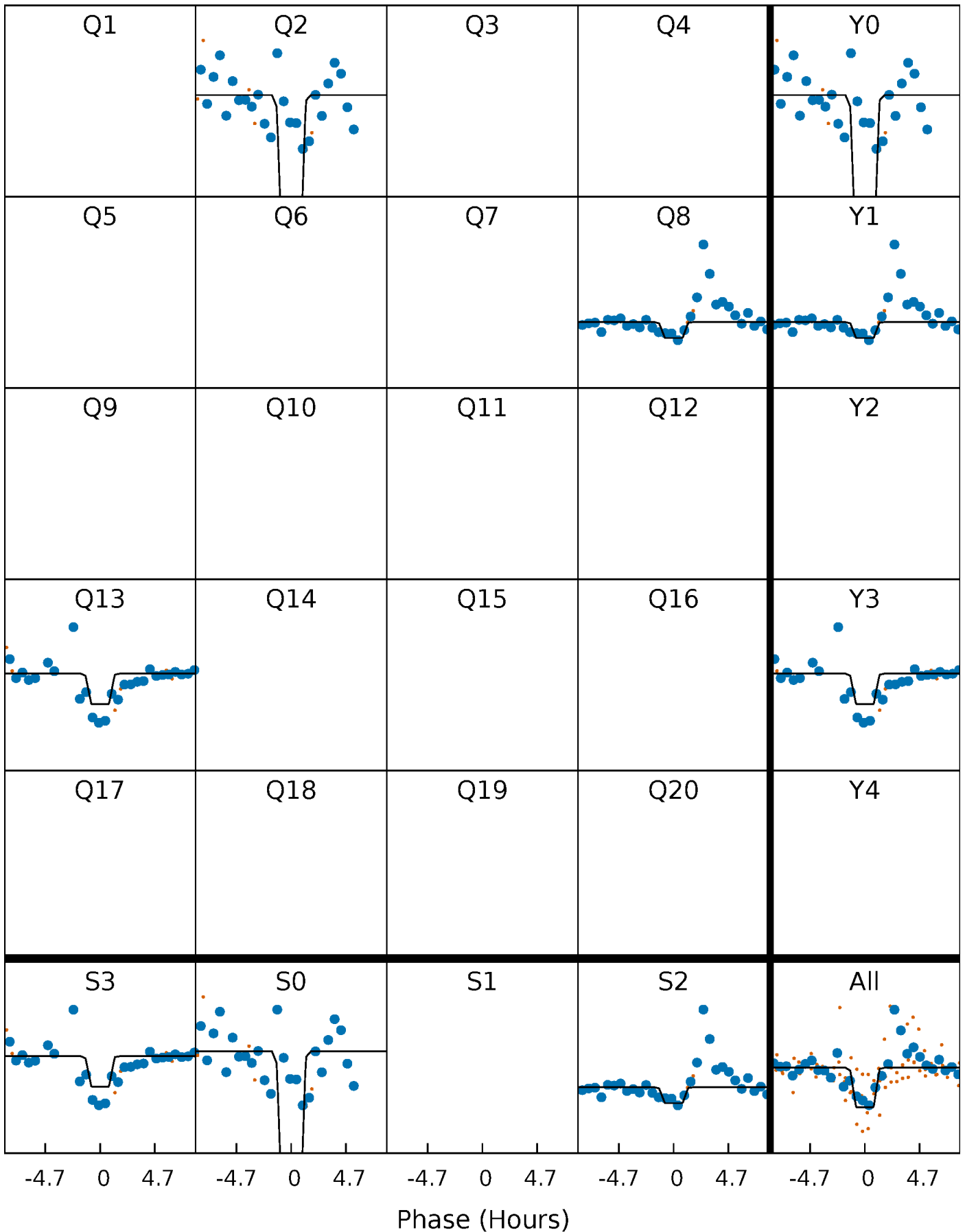
# DV Quarter-Phased Transit Curves

TCE 007604425-03 P=490.345840 Days  $T_0=255.161247$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

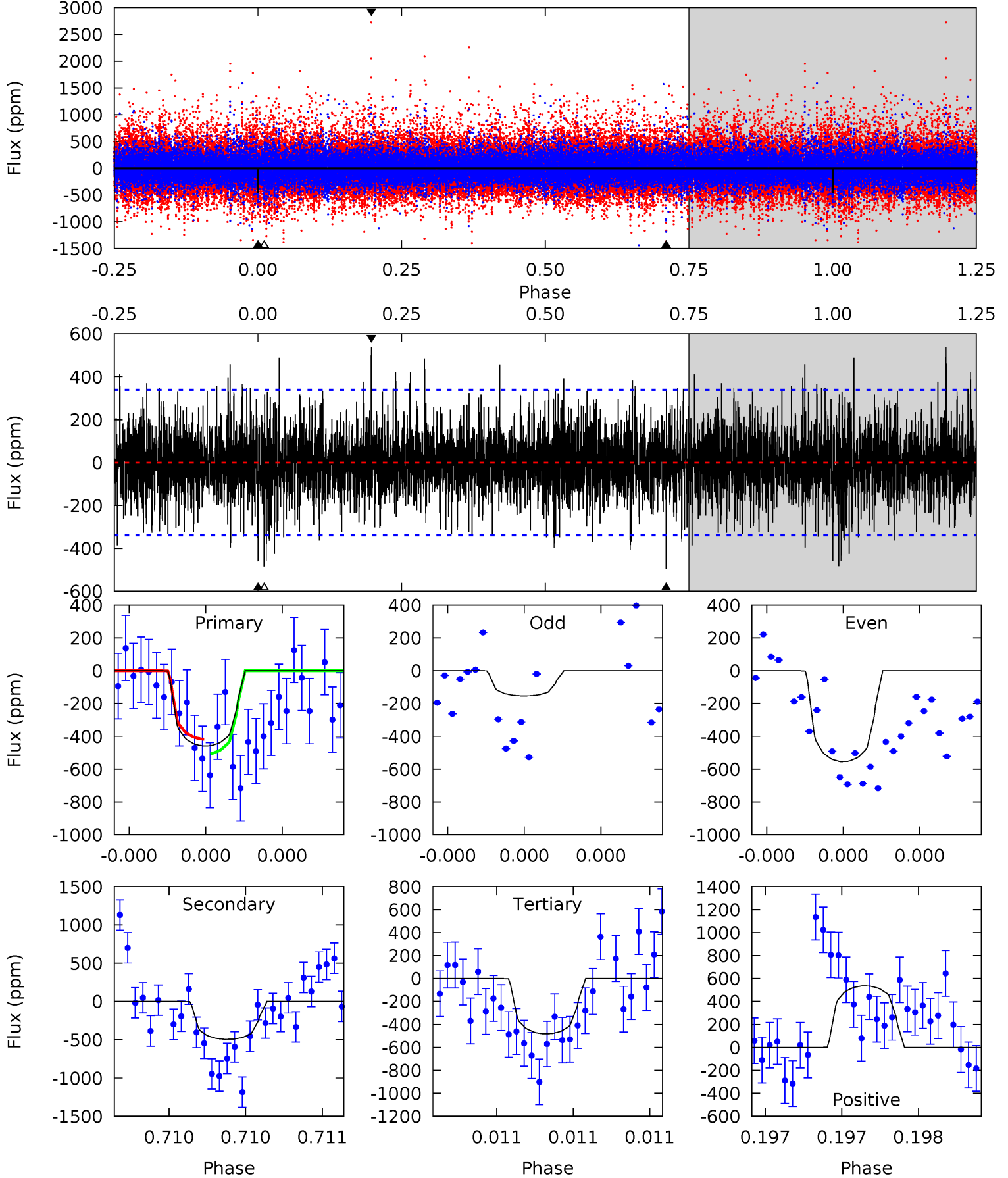
TCE 007604425-03 P=490.344139 Days  $T_0=255.165258$  (BKJD)



# DV Model-Shift Uniqueness Test

007604425-03, P = 490.345840 Days, E = 255.161247 Days

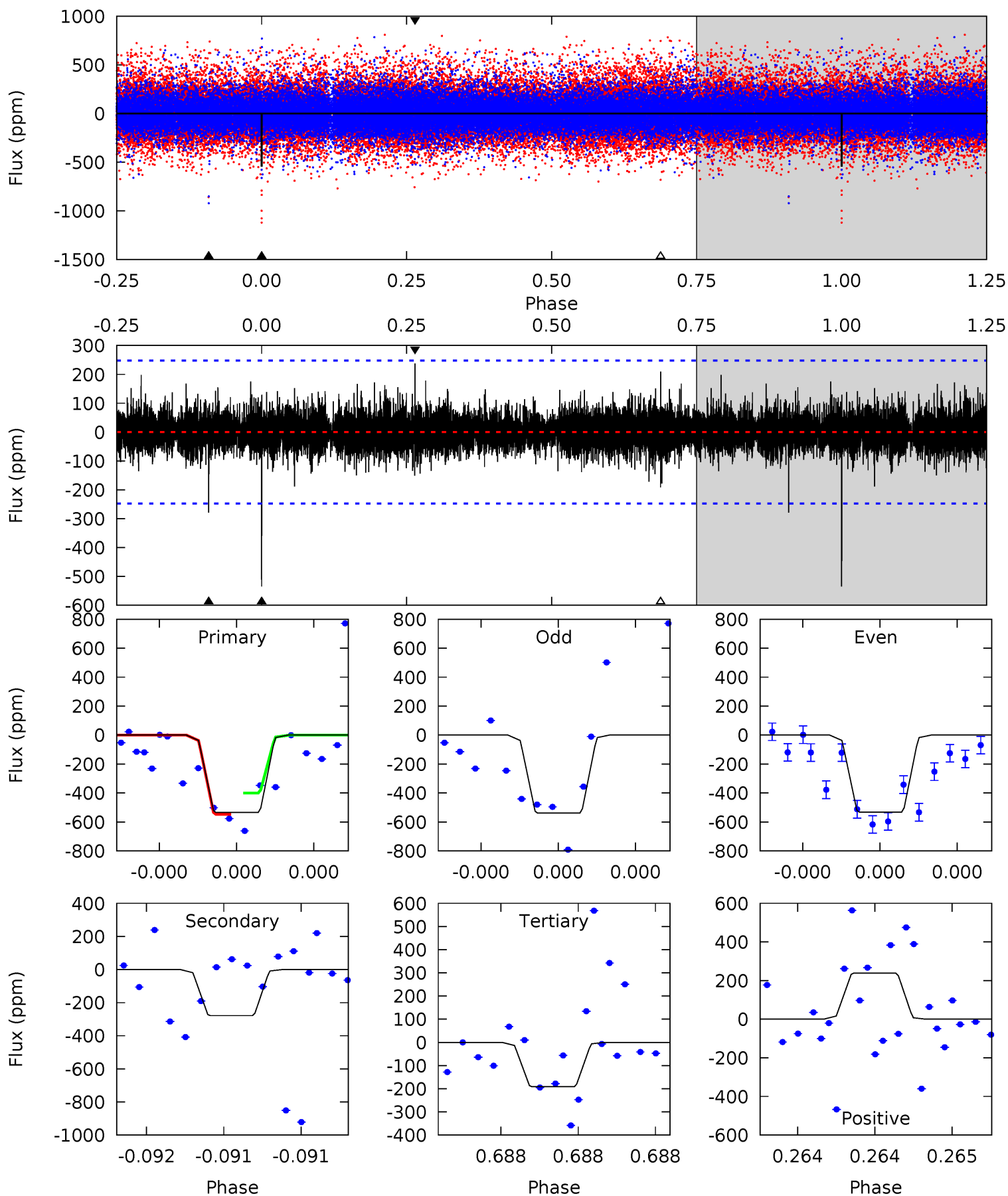
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.62	8.21	8.00	8.89	5.62	3.56	1.85	-0.38	-1.27	0.21	-0.68	2.04	1.10	0.52	0.74



# Alt Model-Shift Uniqueness Test

007604425-03, P = 490.344139 Days, E = 255.165258 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	6.43	4.41	5.49	5.72	3.70	0.88	7.92	6.84	2.02	0.94	0.07	0.99	0.31	1.65



### Stellar Parameters For KIC 007604425

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5780^{+1}_{-1}$	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

### Secondary Eclipse Parameters for KIC 007604425-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-495 \pm 60$	$4.79^{+4.73}_{-3.26}$	$323^{+16}_{-14}$	$4327^{+2969}_{-900}$	$17131^{+152048}_{-12725}$
Alt.	$-279 \pm 43$	$4.92^{+4.53}_{-3.30}$	$323^{+16}_{-15}$	$3906^{+2212}_{-771}$	$9715^{+75862}_{-7225}$

$T_{\text{max}}$  = 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

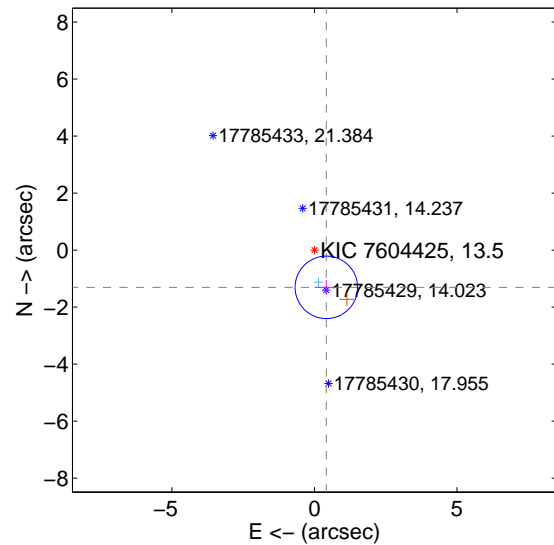
Supplemental centroid analysis for 007604425-03. Kepler magnitude: 13.50. Transit SNR 5.01

There are 1 quarters with good PRF difference image offsets

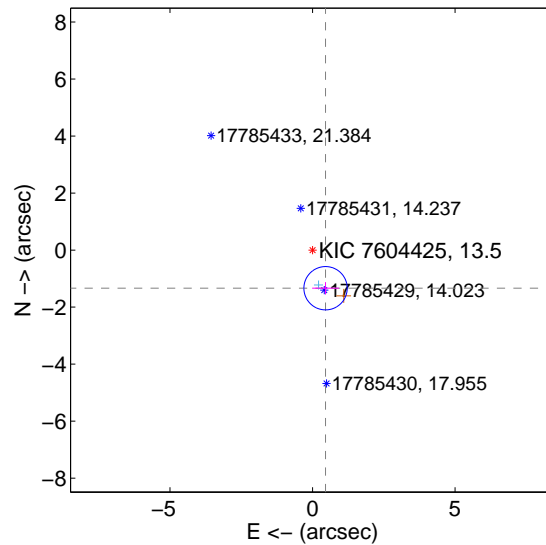
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.371 \pm 0.365$	3.75	$-0.418 \pm 0.414$	$-1.306 \pm 0.255$
PRF-fit source offset from KIC position	$1.413 \pm 0.253$	5.58	$-0.457 \pm 0.469$	$-1.338 \pm 0.214$
photometric centroid source offset	$1.24 \pm 1.94$	0.64	$0.10 \pm 1.44$	$-1.24 \pm 1.95$

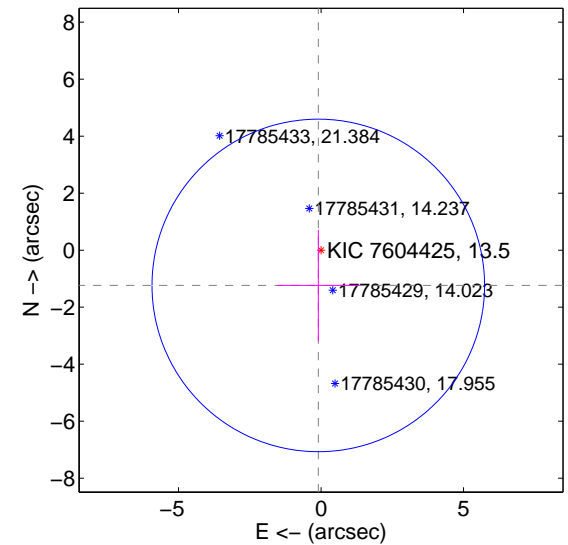
offset from difference PRF-fit to OOT PRF-fit



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  $\times$ : 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



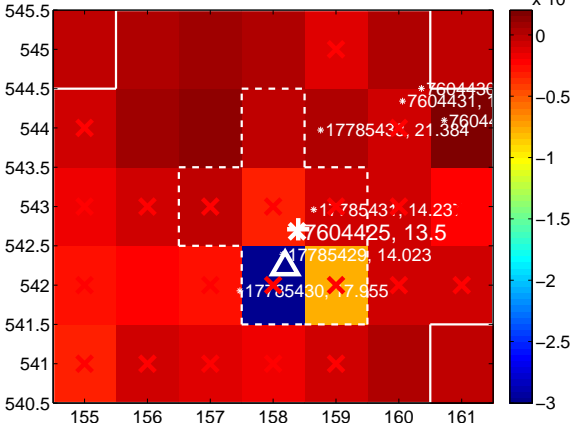
Q7 no difference image



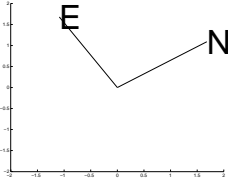
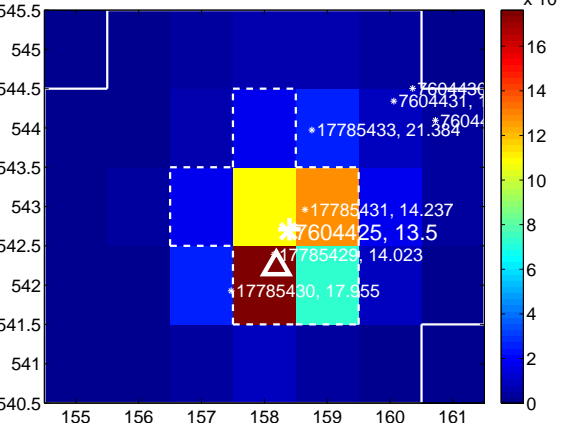
Q7 no OOT image



Q8 difference image. Poor Quality



Q8 OOT image

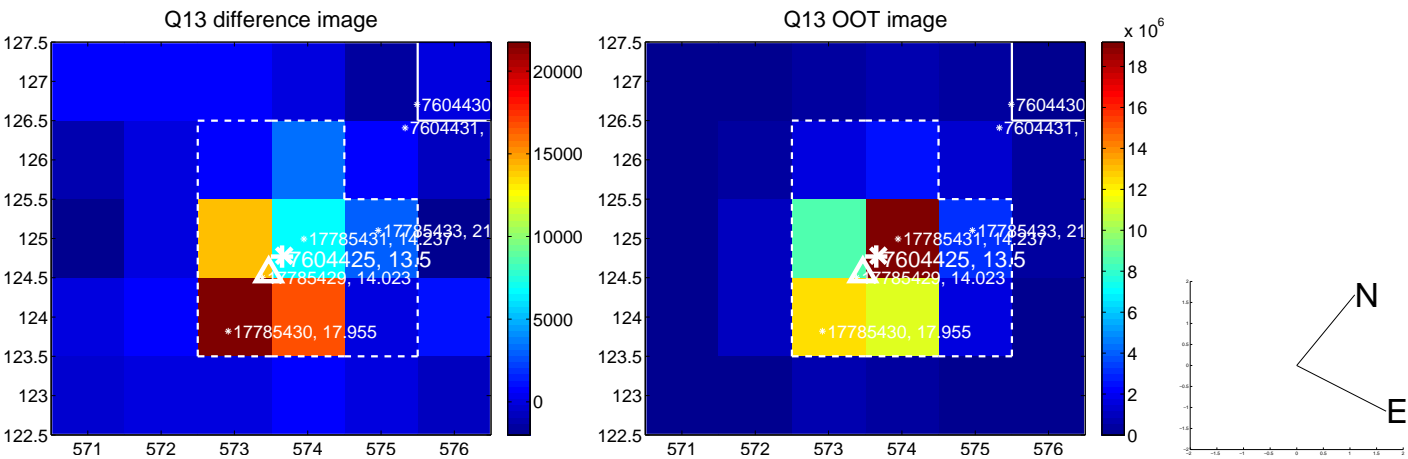




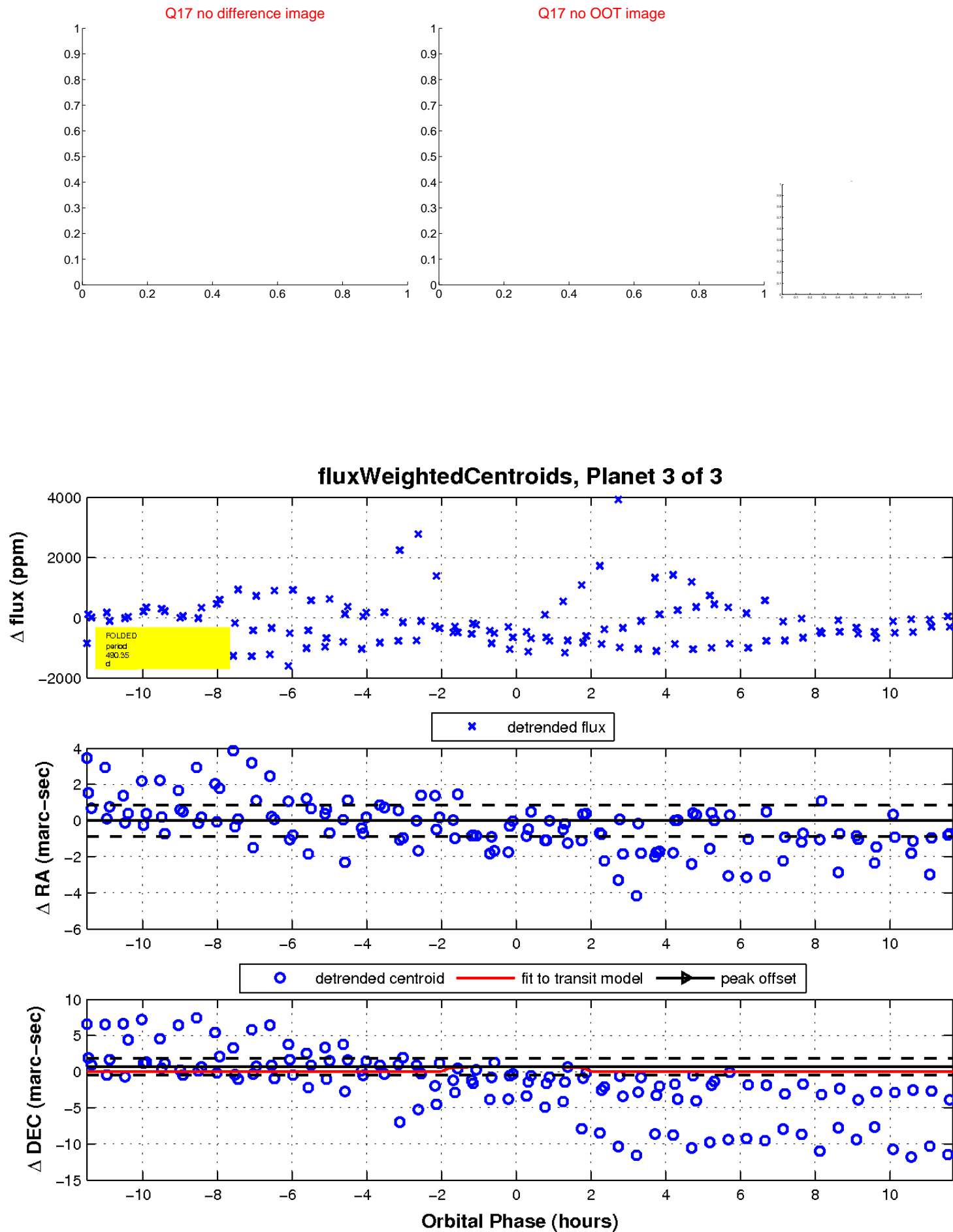
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

Declination

