

# KIC 006707805

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006707805-01	OBS	No	480.046522	175.694954	7260.0	7.499	18.9	31.2	5.15	5258	81.41	8.23
006707805-02	OBS	No	469.564870	360.520758	766.4	4.730	21.5	6.9	5.15	5258	13.97	8.48
006707805-03	OBS	No	464.397577	240.857893	853.0	13.866	17.5	6.5	5.15	5258	16.73	8.61
006707805-04	OBS	No	576.471098	216.083208	884.8	5.062	17.7	7.0	5.15	5258	15.40	6.45
006707805-05	OBS	No	489.204876	591.562173	454.9	12.456	18.1	4.3	5.15	5258	11.88	8.03
006707805-06	OBS	No	414.583310	318.338438	452.7	9.000	18.6	-1.0	5.15	5258	10.72	10.01

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006707805-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006707805-02	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
006707805-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006707805-04	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
006707805-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006707805-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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

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

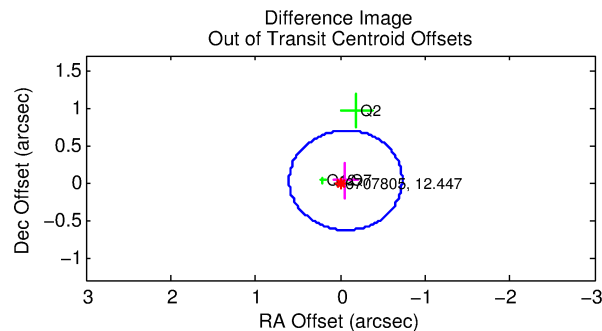
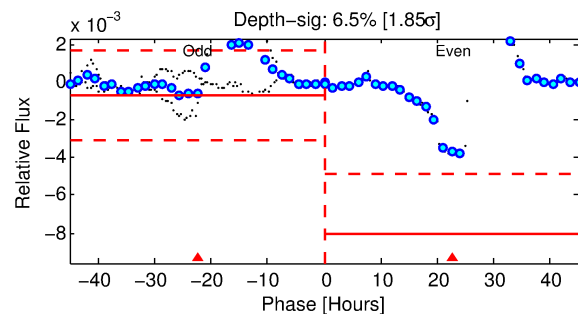
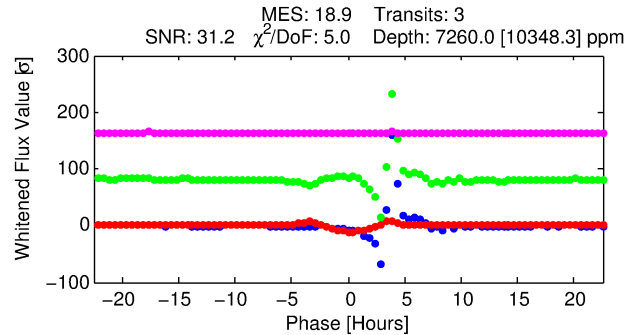
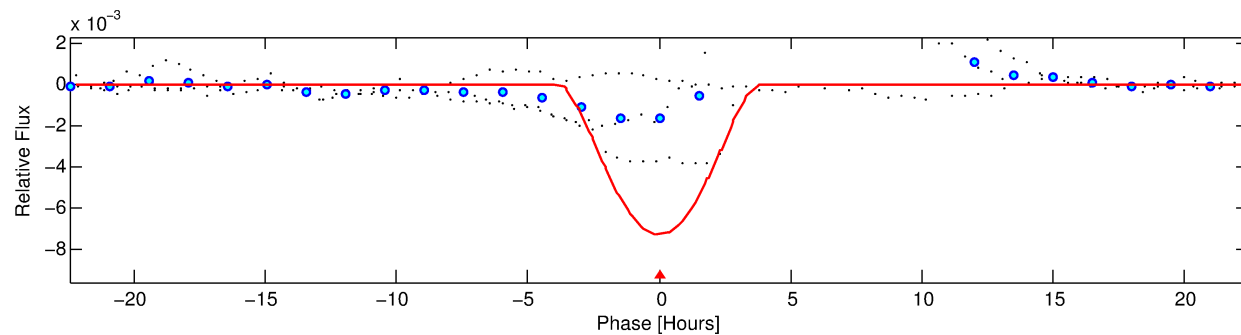
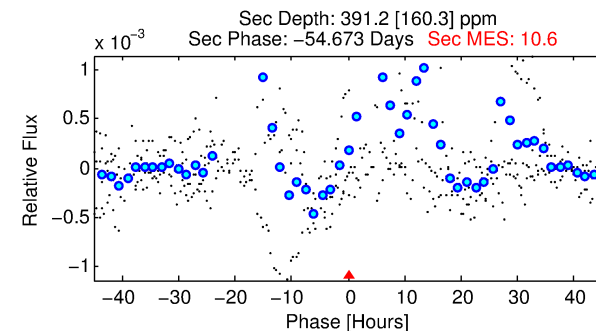
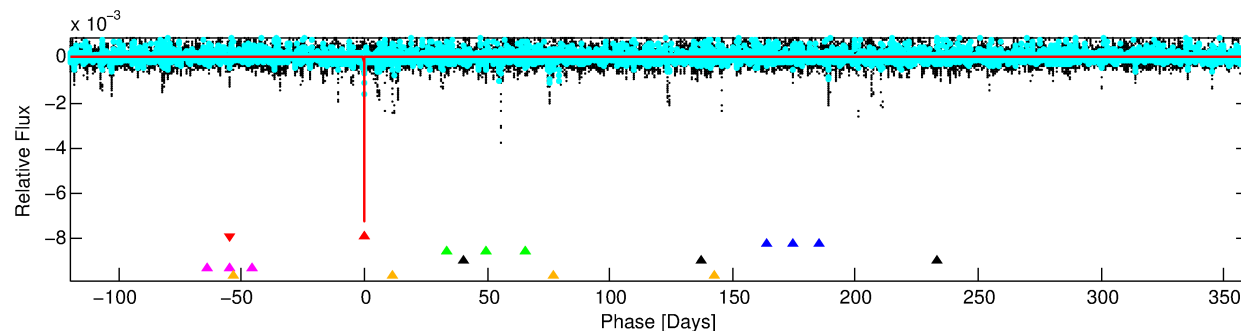
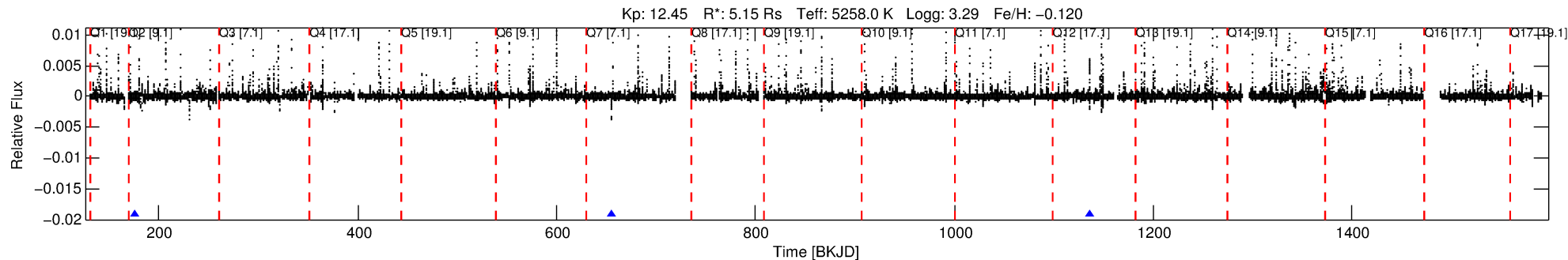
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006707805-01

No Significant Match Found

# DV One-Page Summary

KIC: 6707805 Candidate: 1 of 6 Period: 480.047 d



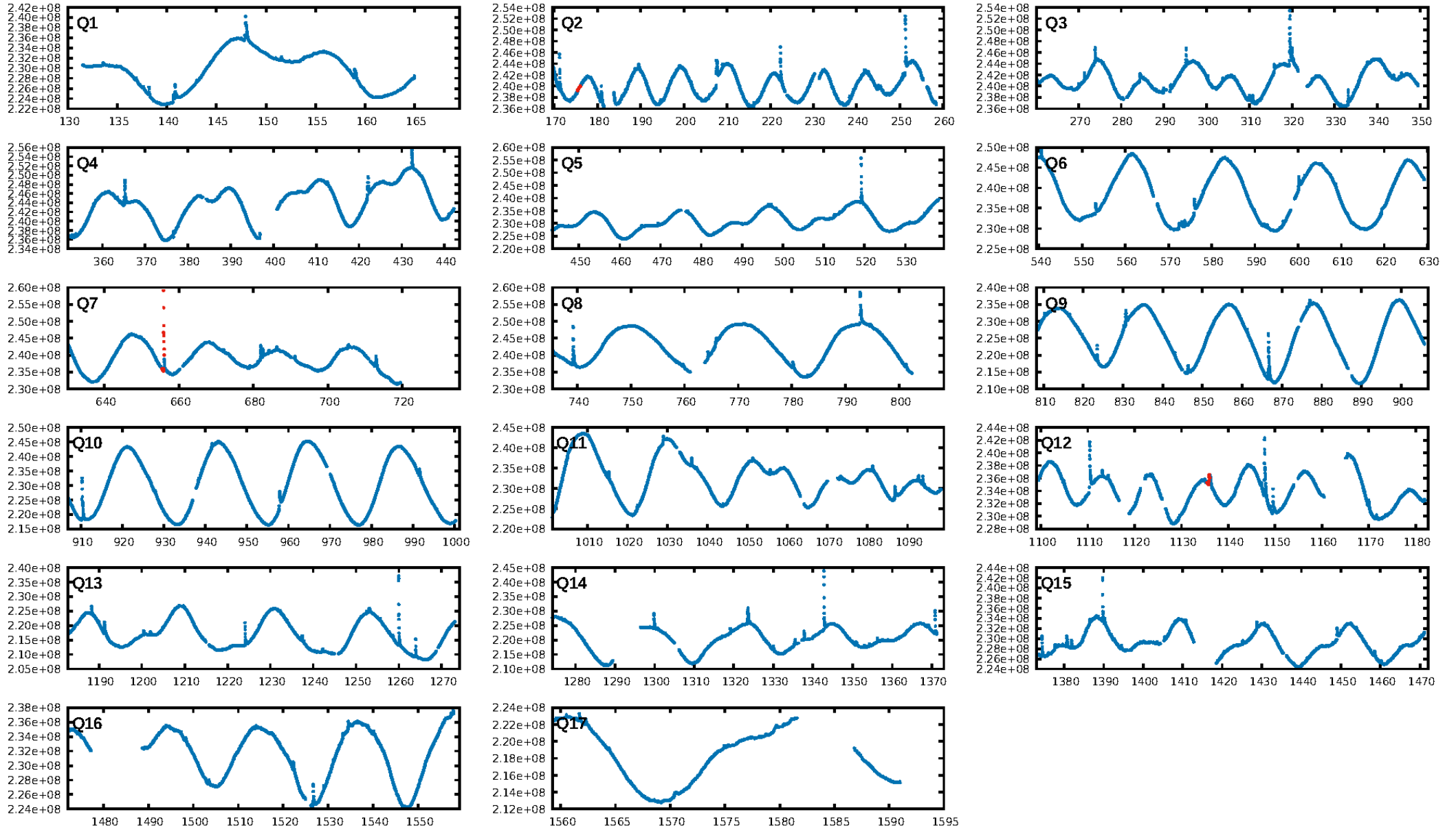
## DV Fit Results:

Period = 480.04652 [0.01369] d  
Epoch = 175.6950 [0.0196] BKJD  
Rp/R\* = 0.1449 [0.3987]  
a/R\* = 272.67 [113.15]  
b = 1.00 [0.42]  
Seff = 8.23 [4.05]  
Teq = 432 [53] K  
Rp = 81.41 [226.26] Re  
a = 1.4847 [0.4926] AU  
Ag = 71.59 [396.47] [0.18σ]  
Teff = 1943 [2680] K [0.56σ]

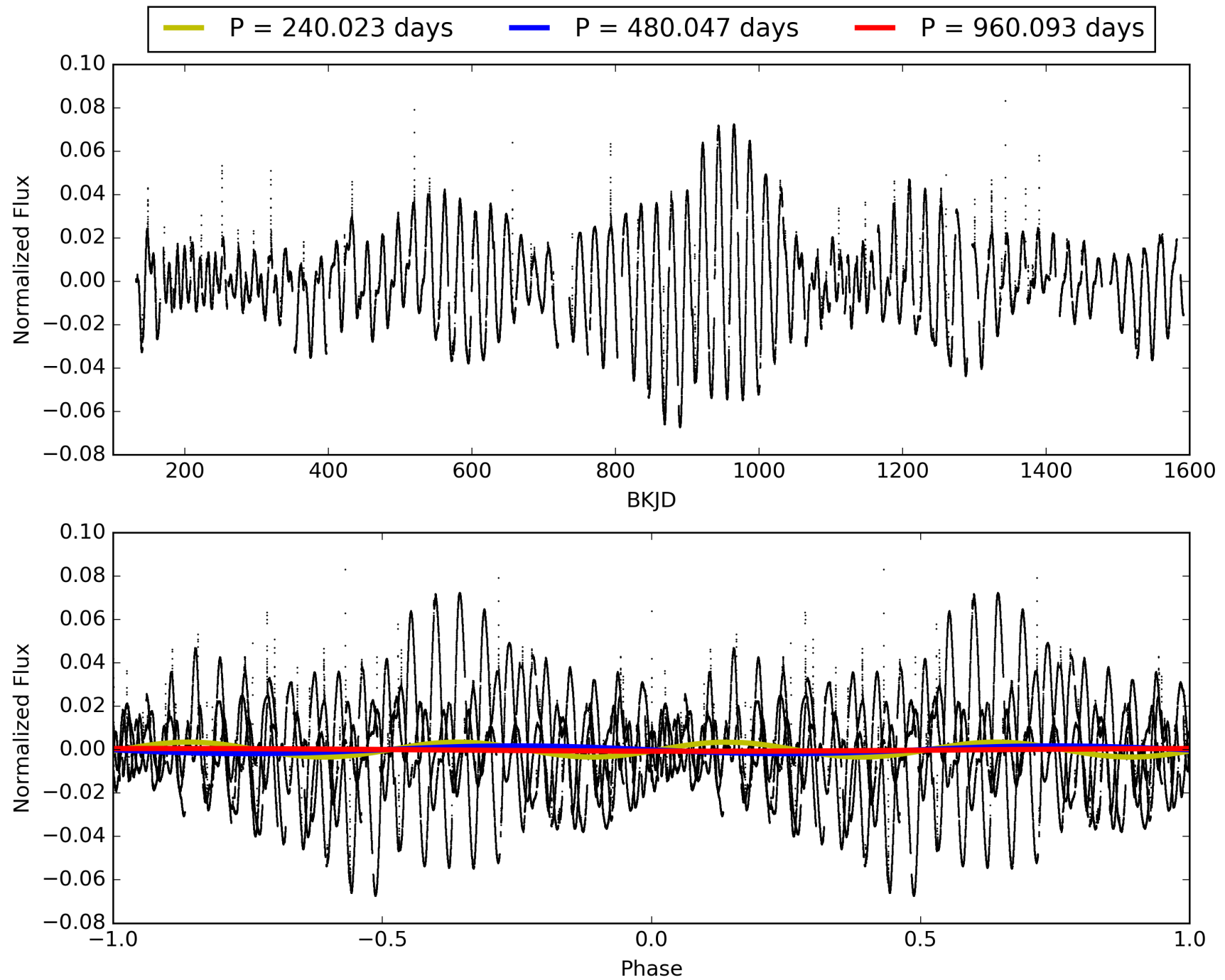
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [28.37σ]  
LongPeriod-sig: 100.0% [15.12σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.39  
Centroid-sig: 0.0%  
Centroid-so: 0.208 arcsec [4.60σ]  
OotOffset-rm: 0.073 arcsec [0.33σ]  
OotOffset-st: 1/1/1/0 [3]  
KicOffset-rm: 0.123 arcsec [0.32σ]  
KicOffset-st: 1/1/1/0 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

# TCE 006707805-01, PDC Light Curves



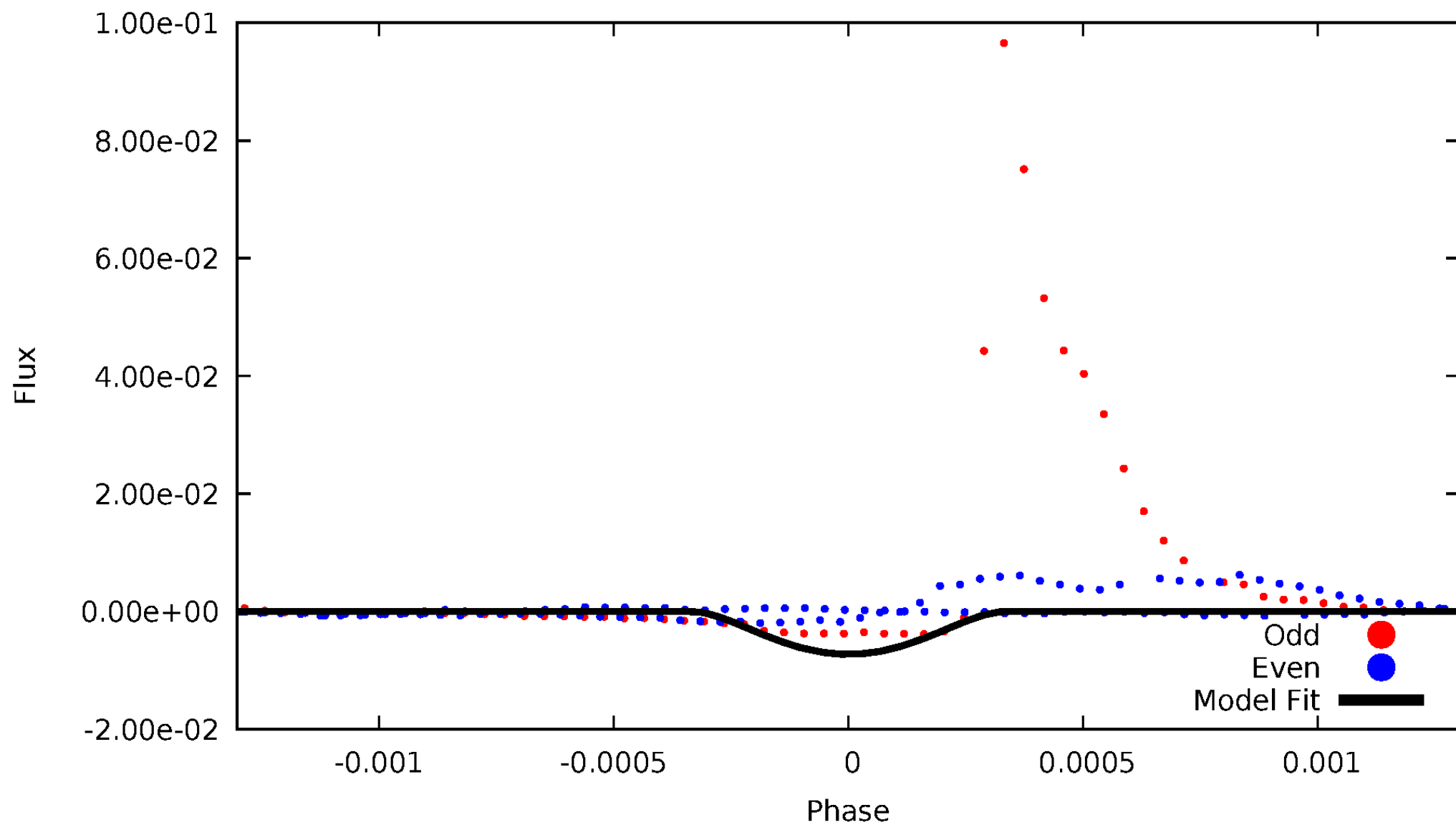
TCE 006707805-01





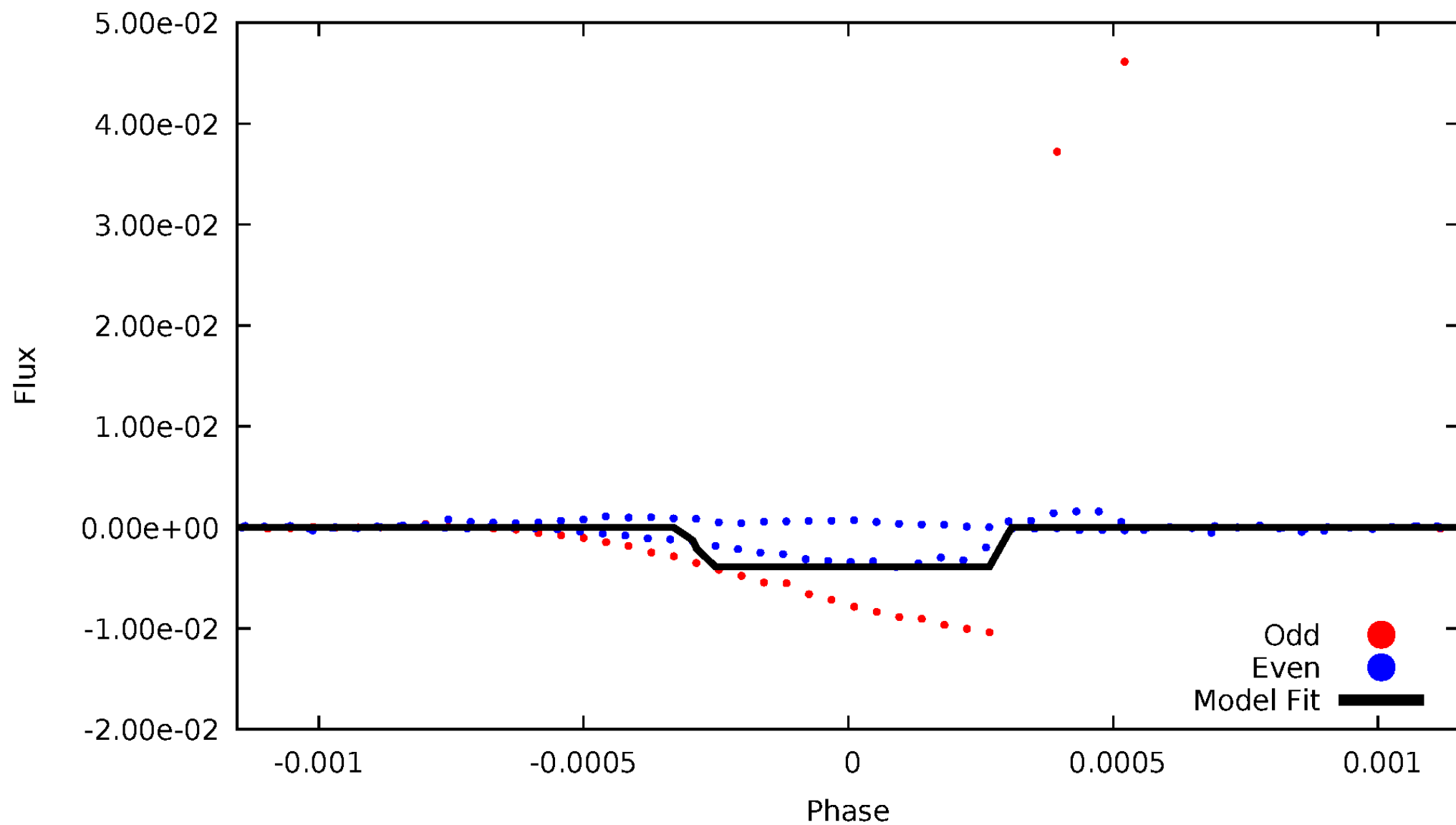
# DV Odd/Even

TCE 006707805-01



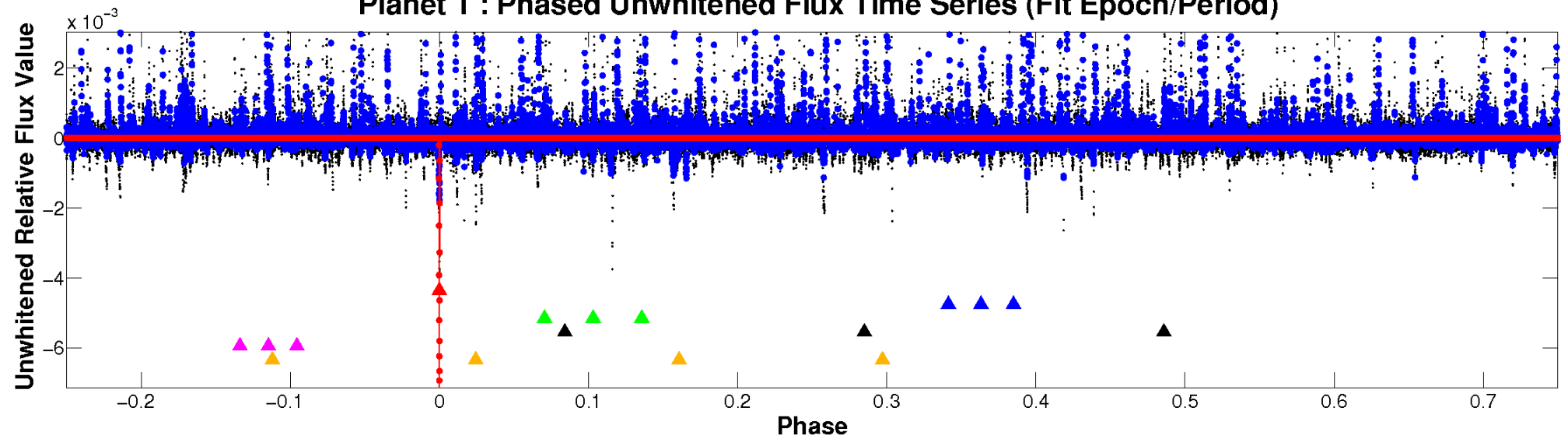
# ALT Odd/Even

TCE 006707805-01

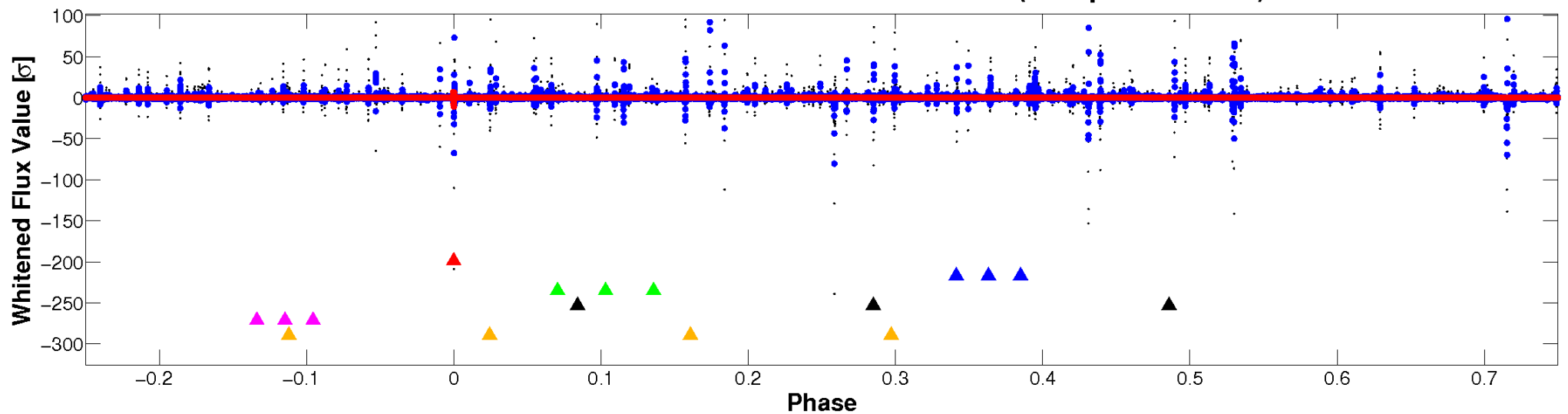


# Non-Whitened Vs. Whitened Light Curve

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

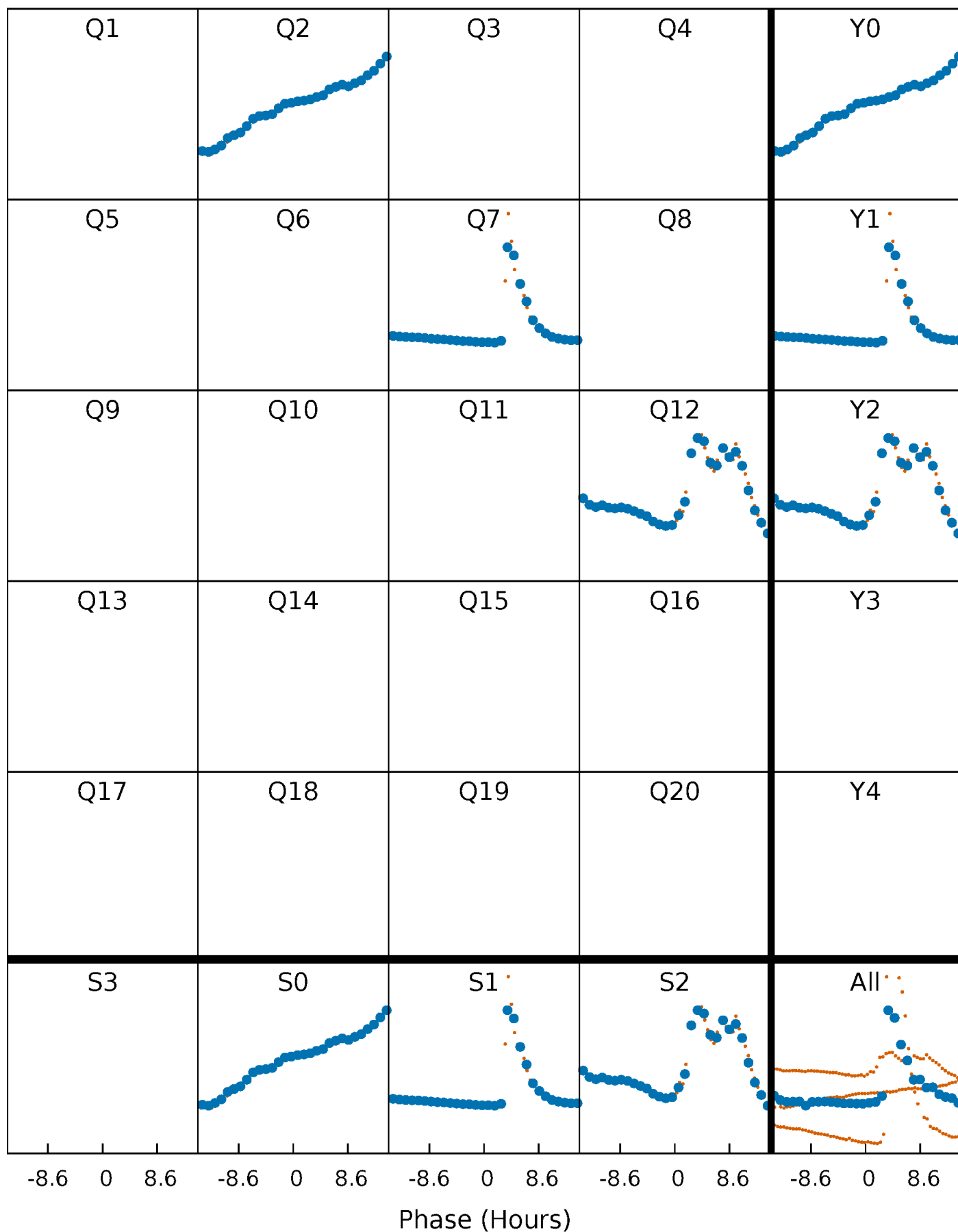


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



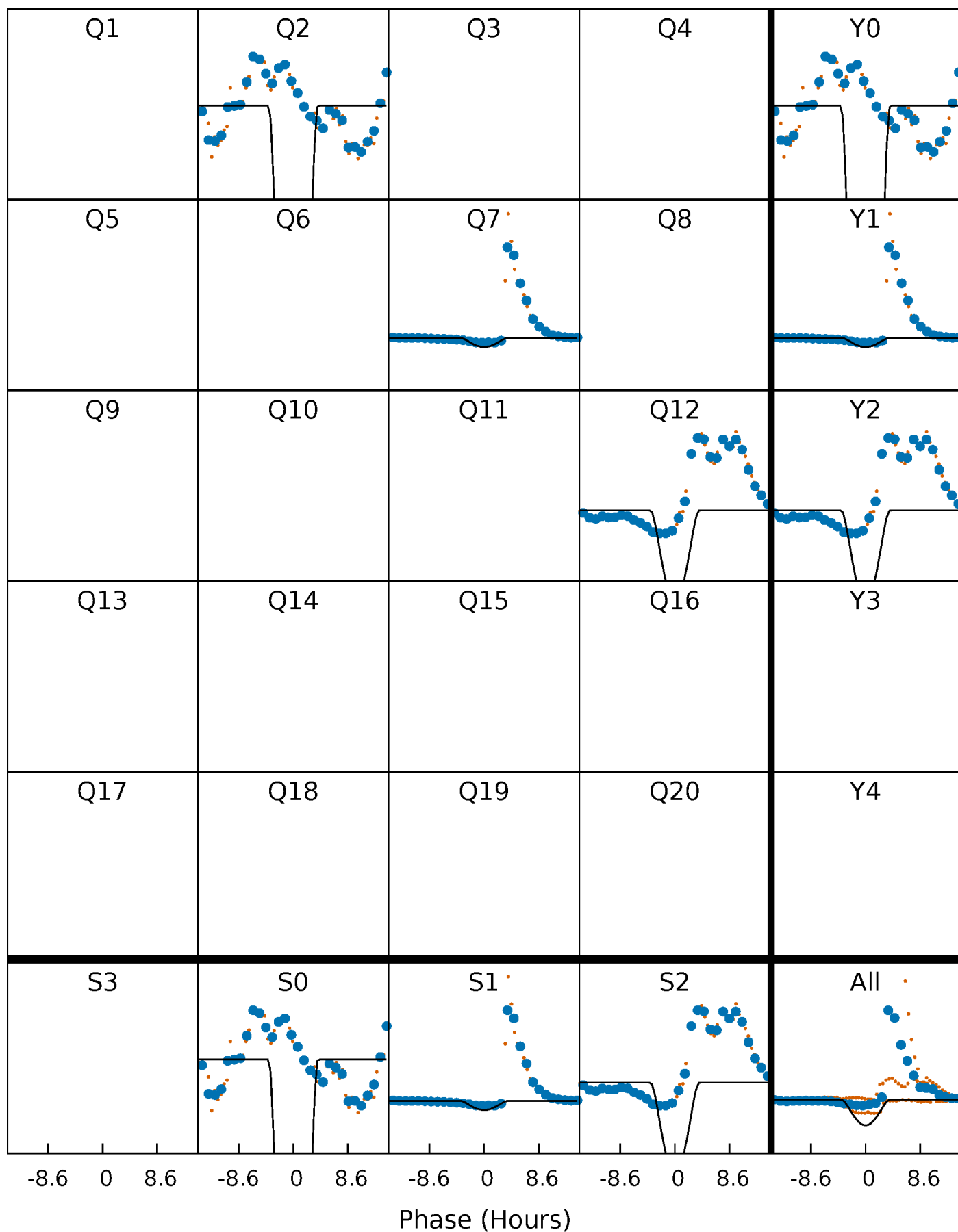
# PDC Quarter-Phased Transit Curves

TCE 006707805-01 P=480.046522 Days  $T_0=175.694954$  (BKJD)



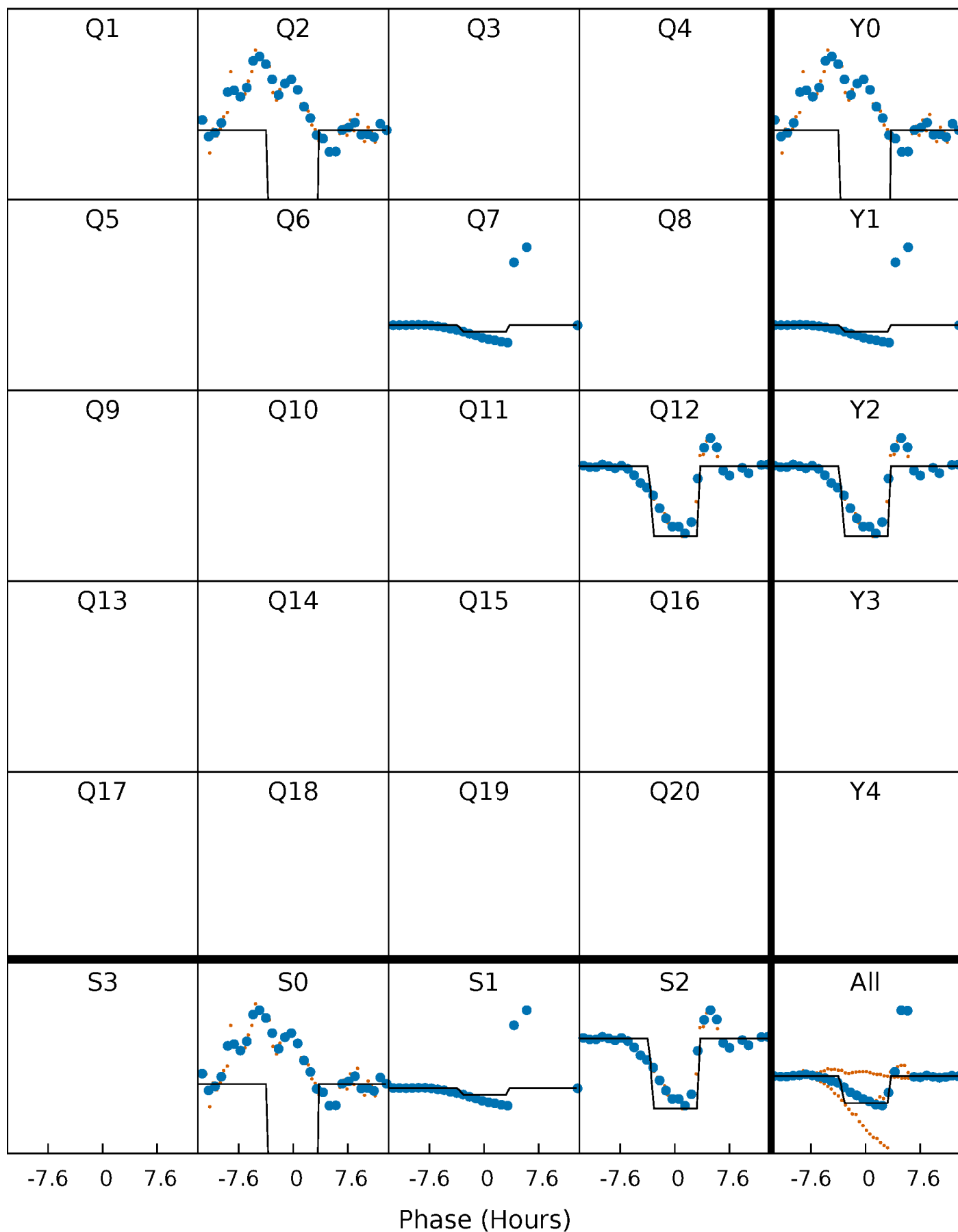
# DV Quarter-Phased Transit Curves

TCE 006707805-01 P=480.046522 Days  $T_0=175.694954$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

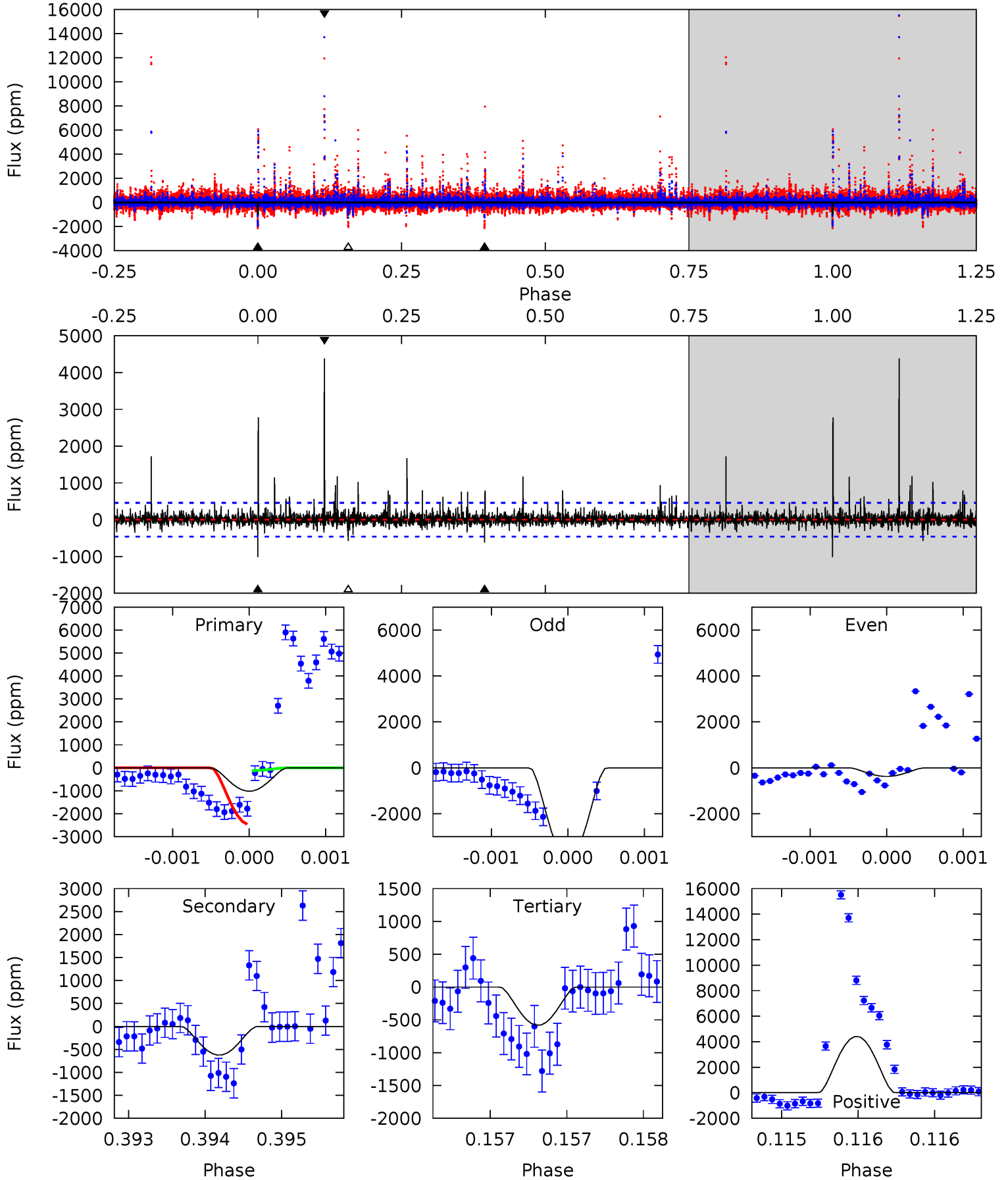
TCE 006707805-01 P=480.045625 Days  $T_0=175.645295$  (BKJD)



# DV Model-Shift Uniqueness Test

006707805-01, P = 480.046522 Days, E = 175.694954 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
12.2	7.48	6.98	52.9	5.52	3.40	1.57	5.23	-40.7	0.50	-45.4	9.26	2.32	0.81	0

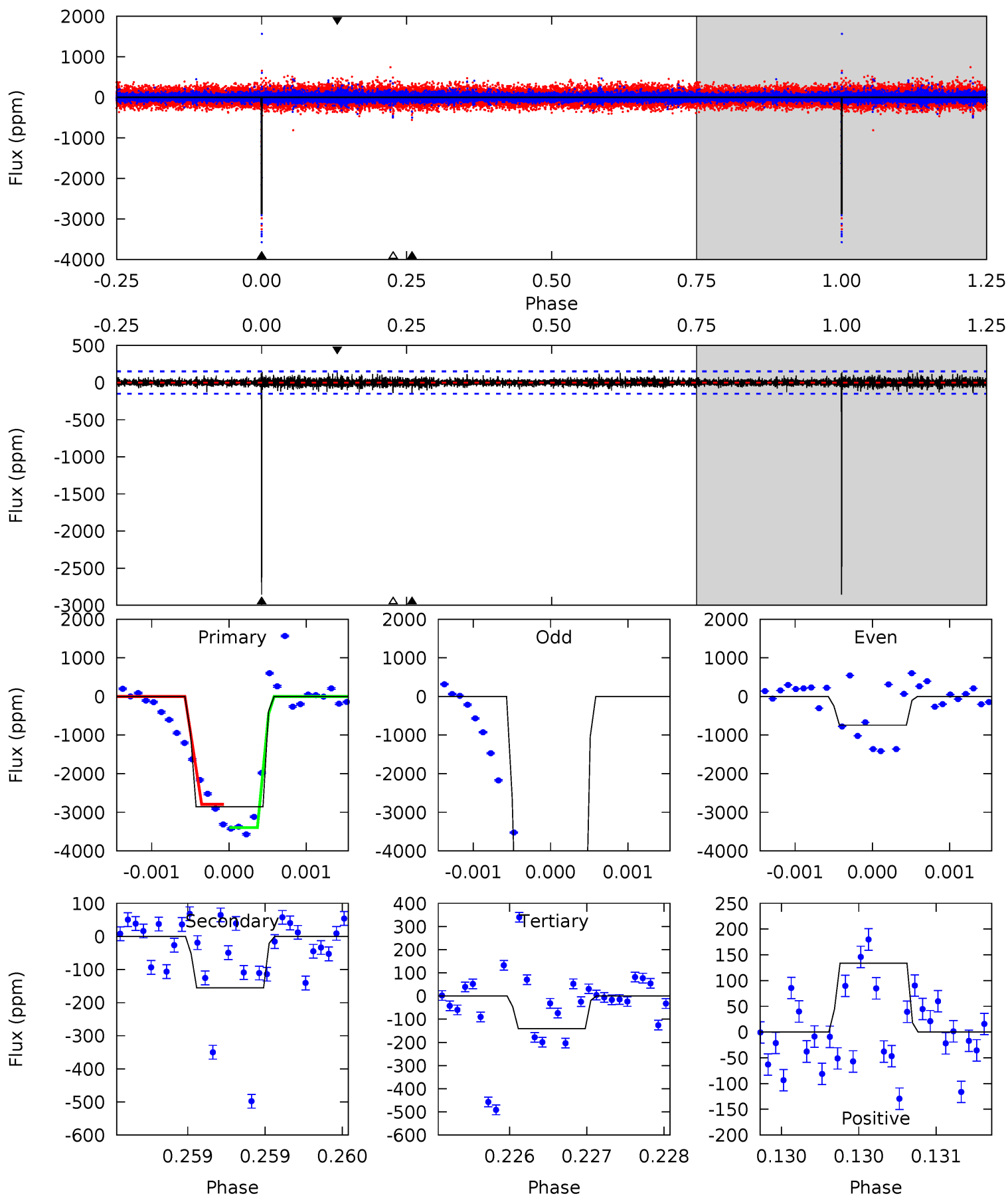




# Alt Model-Shift Uniqueness Test

006707805-01, P = 480.045625 Days, E = 175.645295 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
105.4	5.72	5.19	4.93	5.54	3.44	0.86	100.2	100.4	0.53	0.79	197.7	1.14	0.05	0



### Stellar Parameters For KIC 006707805

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5258^{+62}_{-125}$	$3.292^{+0.264}_{-0.066}$	$-0.120^{+0.150}_{-0.250}$	$5.148^{+0.507}_{-2.029}$	$1.894^{+0.115}_{-0.654}$	$0.020^{+0.038}_{-0.005}$
	+1%/-2%	+8%/-2%	+125%/-208%	+10%/-39%	+6%/-35%	+194%/-24%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 006707805-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	-619±83	$169.66^{+179.99}_{-114.51}$	$593^{+25}_{-51}$	$2331^{+783}_{-333}$	$25^{+217}_{-19}$
Alt.	-155±27	$151.96^{+158.30}_{-105.55}$	$590^{+28}_{-44}$	$2061^{+616}_{-309}$	$8.047^{+76.426}_{-6.224}$

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

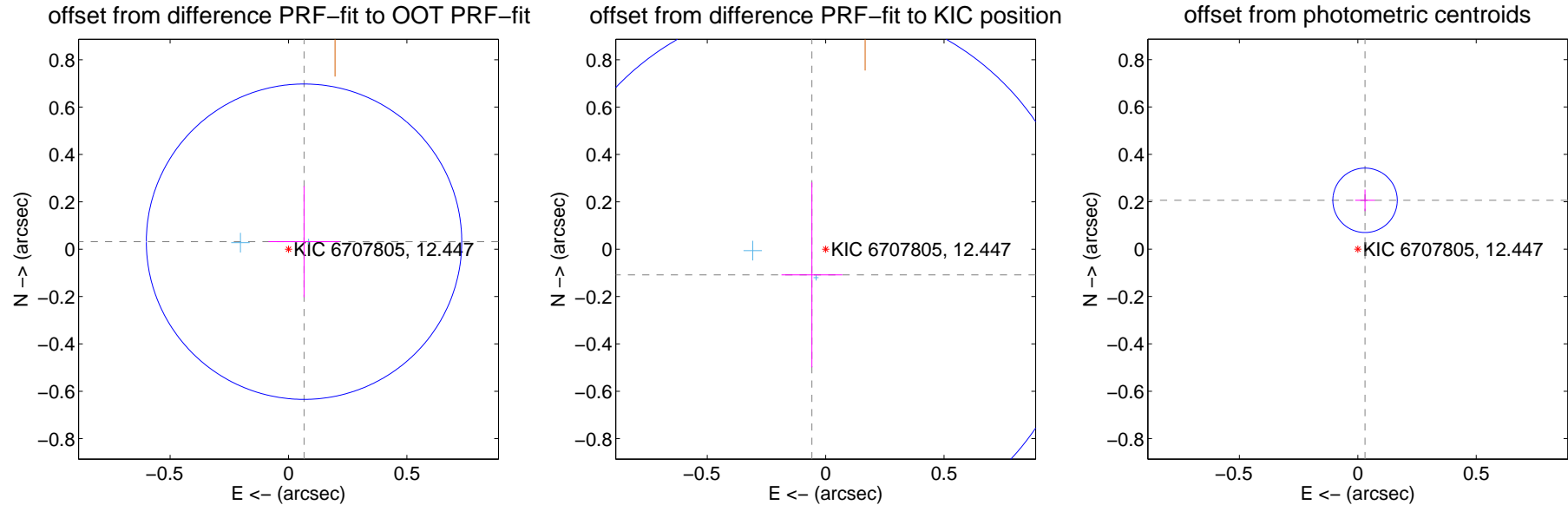
## DV Centroid Data

Supplemental centroid analysis for 006707805-01. Kepler magnitude: 12.45. Transit SNR 31.19

There are 2 quarters with good PRF difference image offsets

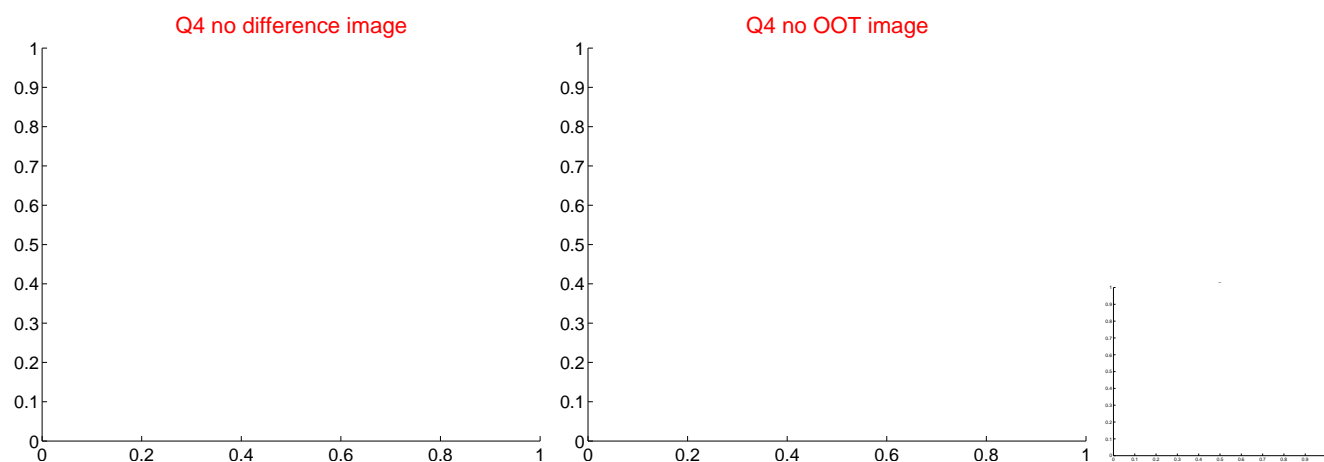
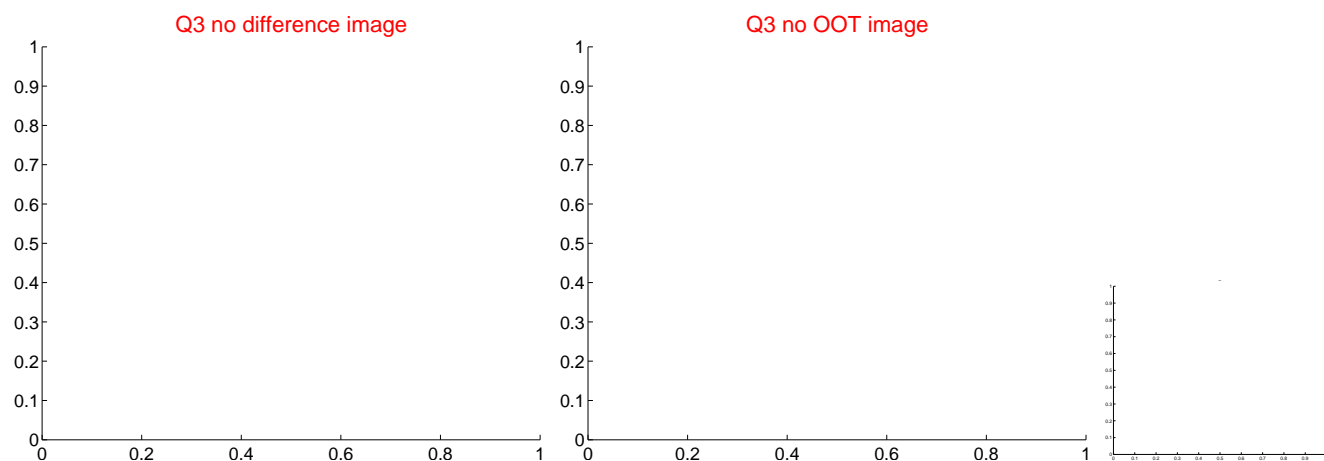
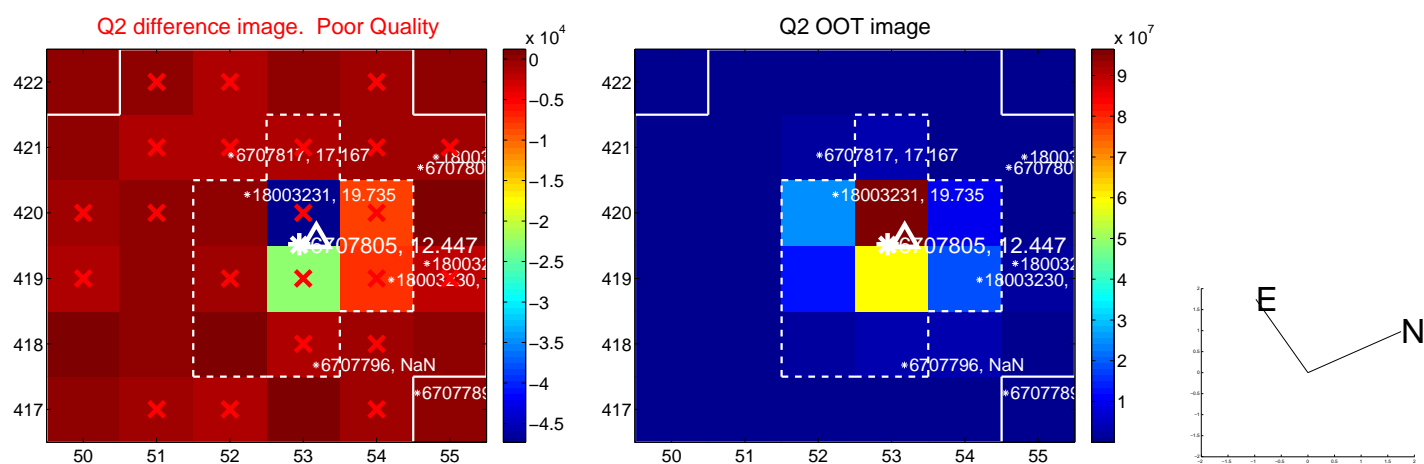
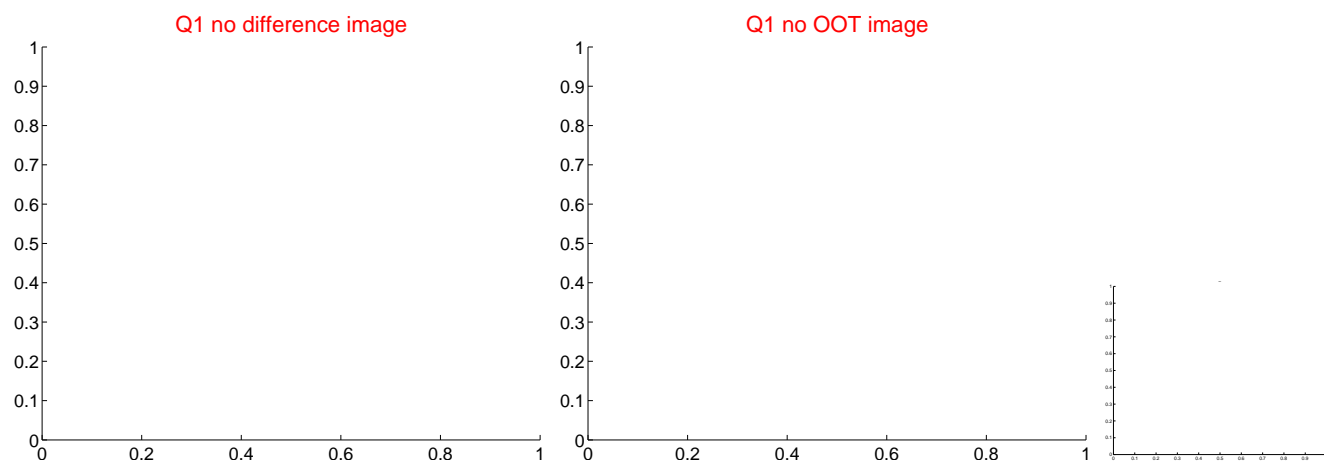
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.073 \pm 0.222$	0.33	$-0.066 \pm 0.150$	$0.032 \pm 0.234$
PRF-fit source offset from KIC position	$0.123 \pm 0.382$	0.32	$0.058 \pm 0.128$	$-0.108 \pm 0.390$
photometric centroid source offset	$0.21 \pm 0.05$	4.60	$-0.03 \pm 0.04$	$0.21 \pm 0.05$



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

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



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

Q5 no difference image



Q5 no OOT image



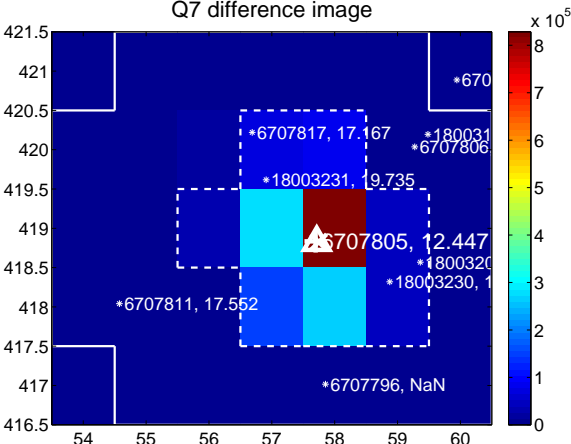
Q6 no difference image



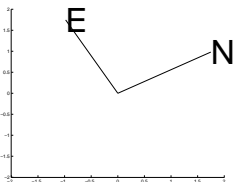
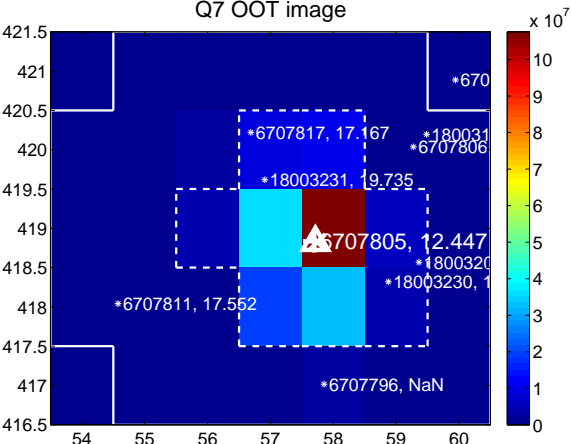
Q6 no OOT image



Q7 difference image



Q7 OOT image



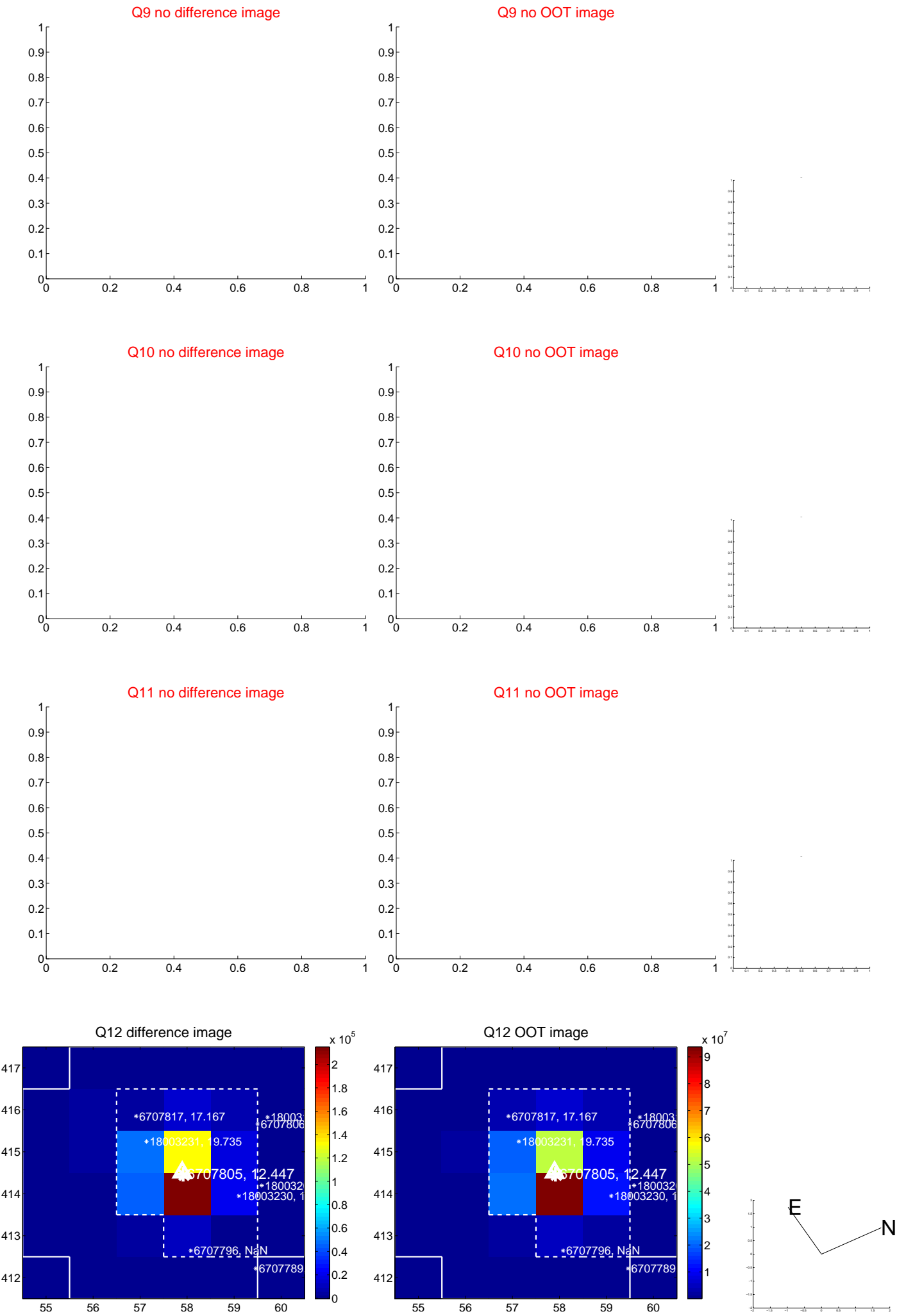
Q8 no difference image



Q8 no OOT image



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

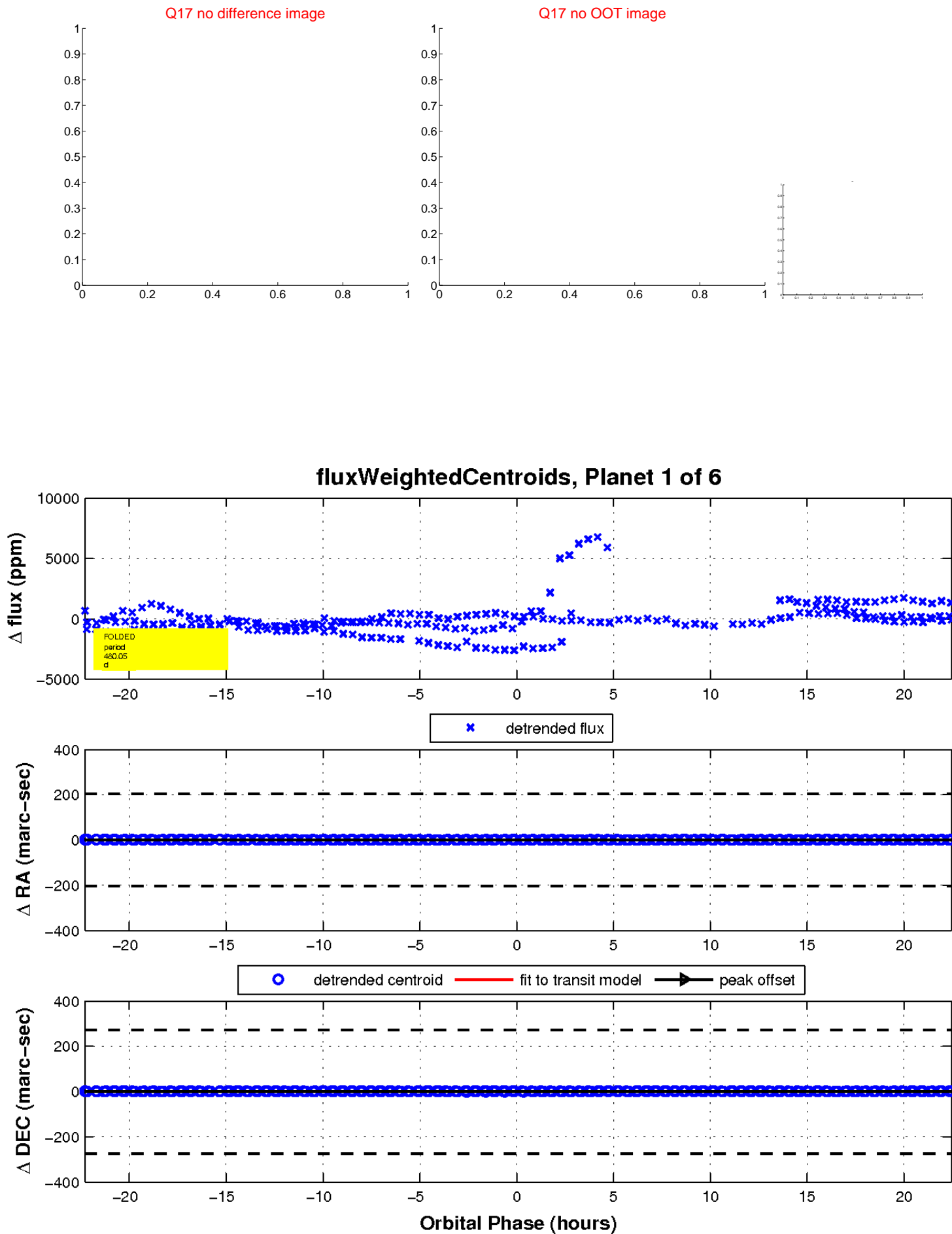


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



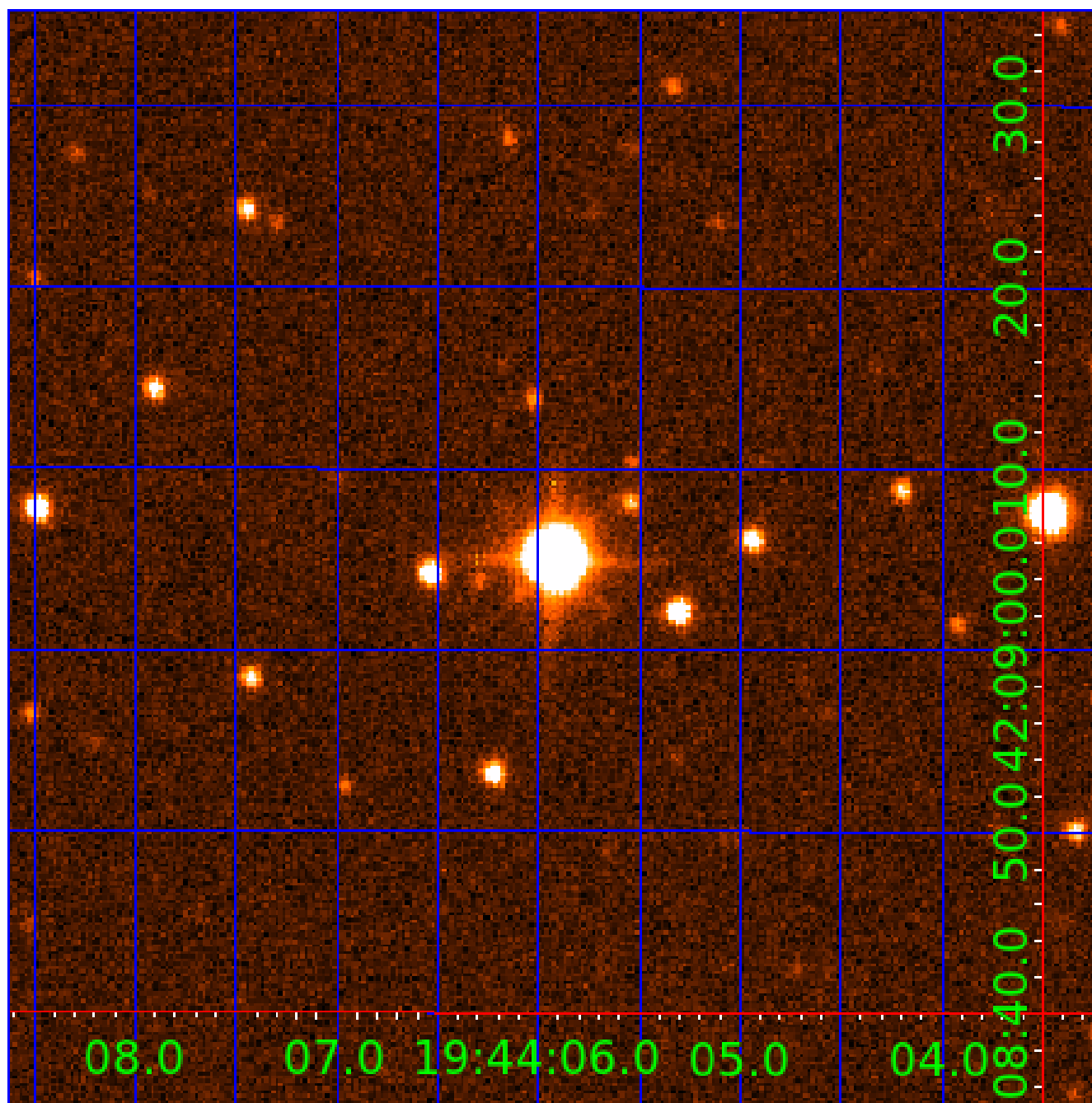


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 006707805

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006707805-01	OBS	No	480.046522	175.694954	7260.0	7.499	18.9	31.2	5.15	5258	81.41	8.23
006707805-02	OBS	No	469.564870	360.520758	766.4	4.730	21.5	6.9	5.15	5258	13.97	8.48
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006707805-06	OBS	No	414.583310	318.338438	452.7	9.000	18.6	-1.0	5.15	5258	10.72	10.01

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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006707805-02	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
006707805-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006707805-04	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
006707805-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006707805-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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

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

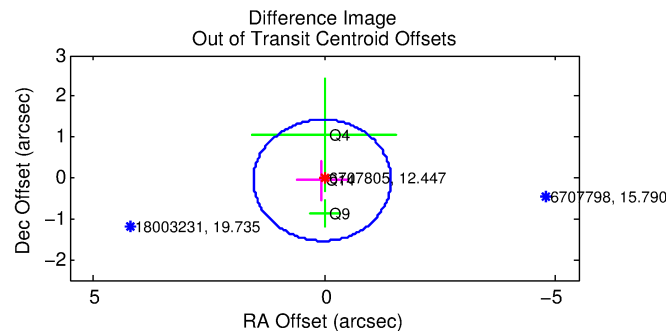
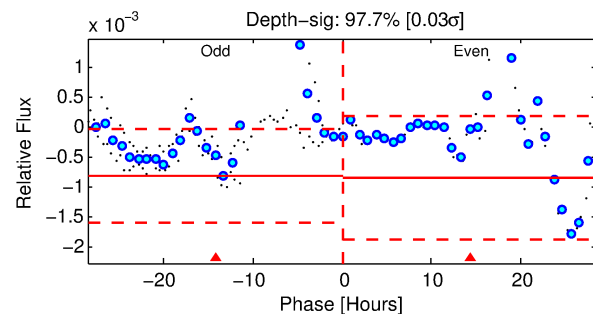
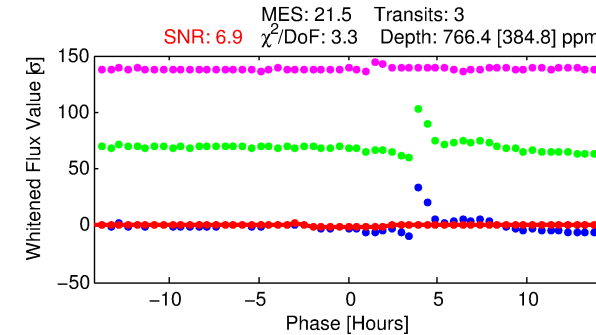
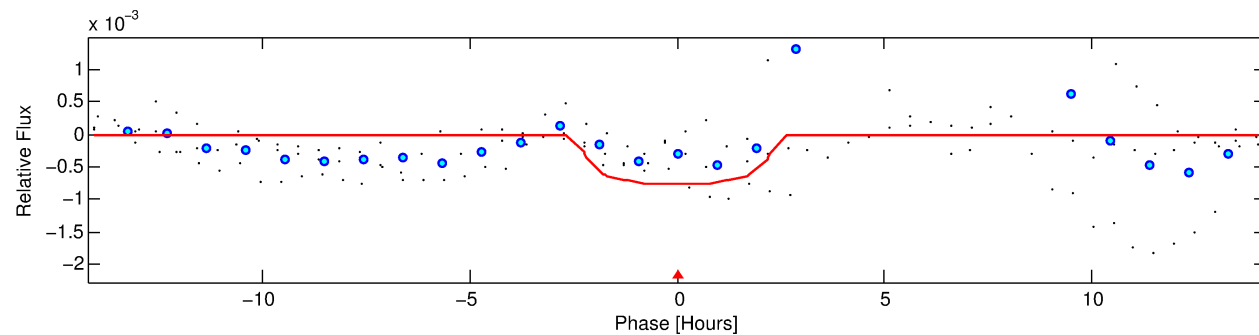
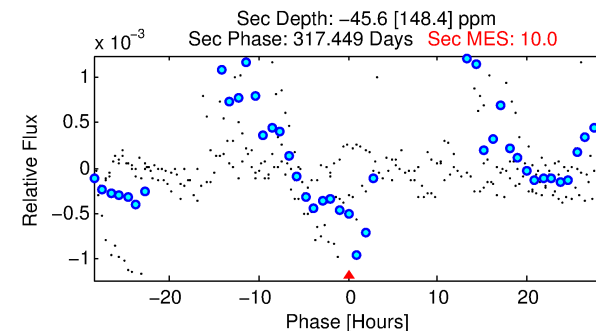
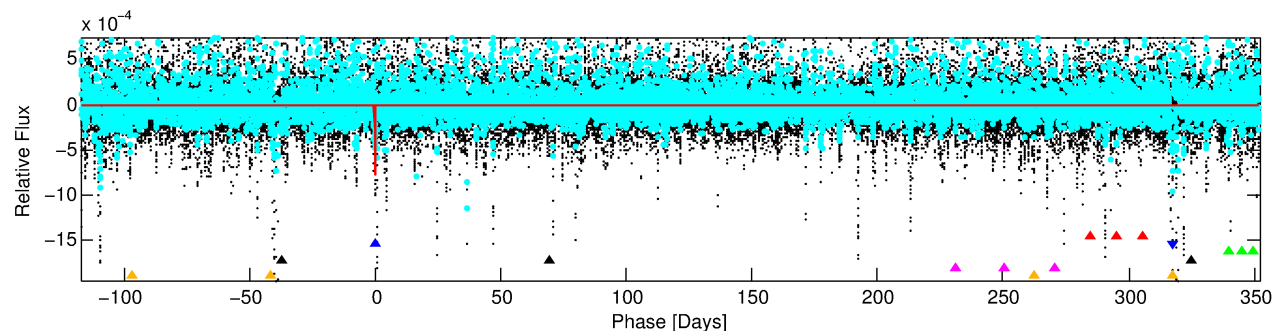
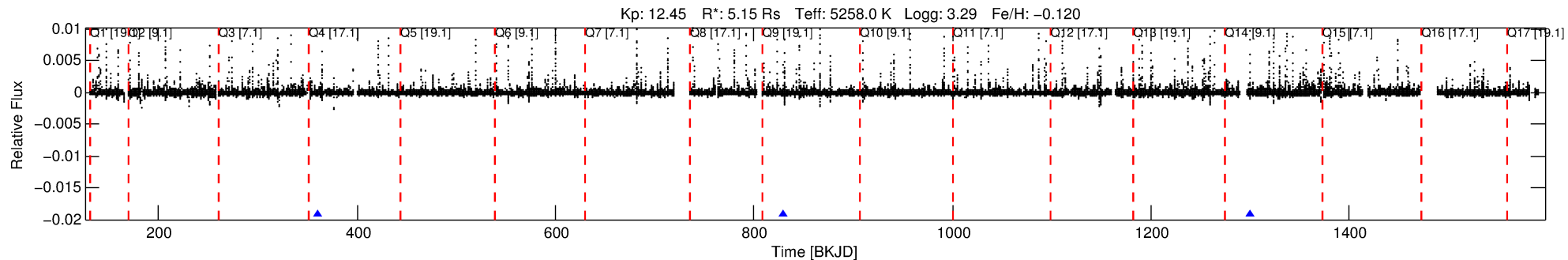
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006707805-02

No Significant Match Found

# DV One-Page Summary

KIC: 6707805 Candidate: 2 of 6 Period: 469.565 d



## DV Fit Results:

Period = 469.56487 [0.01174] d  
Epoch = 360.5208 [0.0139] BKJD  
Rp/R\* = 0.0249 [0.3348]  
a/R\* = 774.39 [39966.89]  
b = 0.09 [594.70]  
Seff = 8.48 [4.17]  
Teq = 435 [54] K  
Rp = 13.97 [188.17] Re  
a = 1.4630 [0.4854] AU  
Ag = N/A  
Teffp = N/A

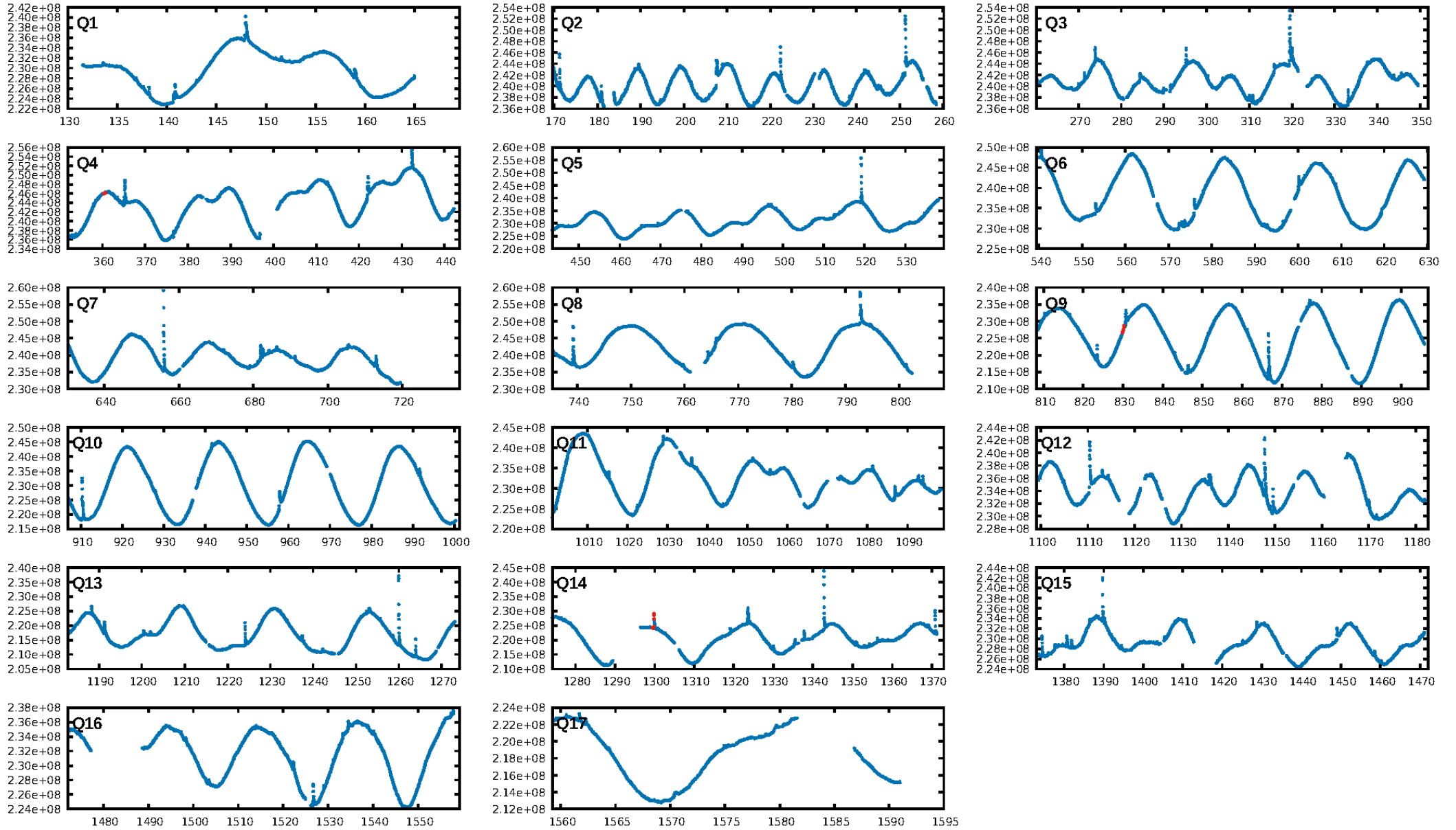
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [8.47σ]  
LongPeriod-sig: 100.0% [28.37σ]  
**ModelChiSquare2-sig: 0.0%**  
ModelChiSquareGof-sig: 1.4%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.44  
Centroid-sig: 25.4%  
Centroid-so: 0.313 arcsec [0.89σ]  
OotOffset-rm: 0.073 arcsec [0.15σ]  
KicOffset-rm: 0.140 arcsec [0.28σ]  
OotOffset-st: 1/0/1/1 [3]  
KicOffset-st: 1/0/1/1 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

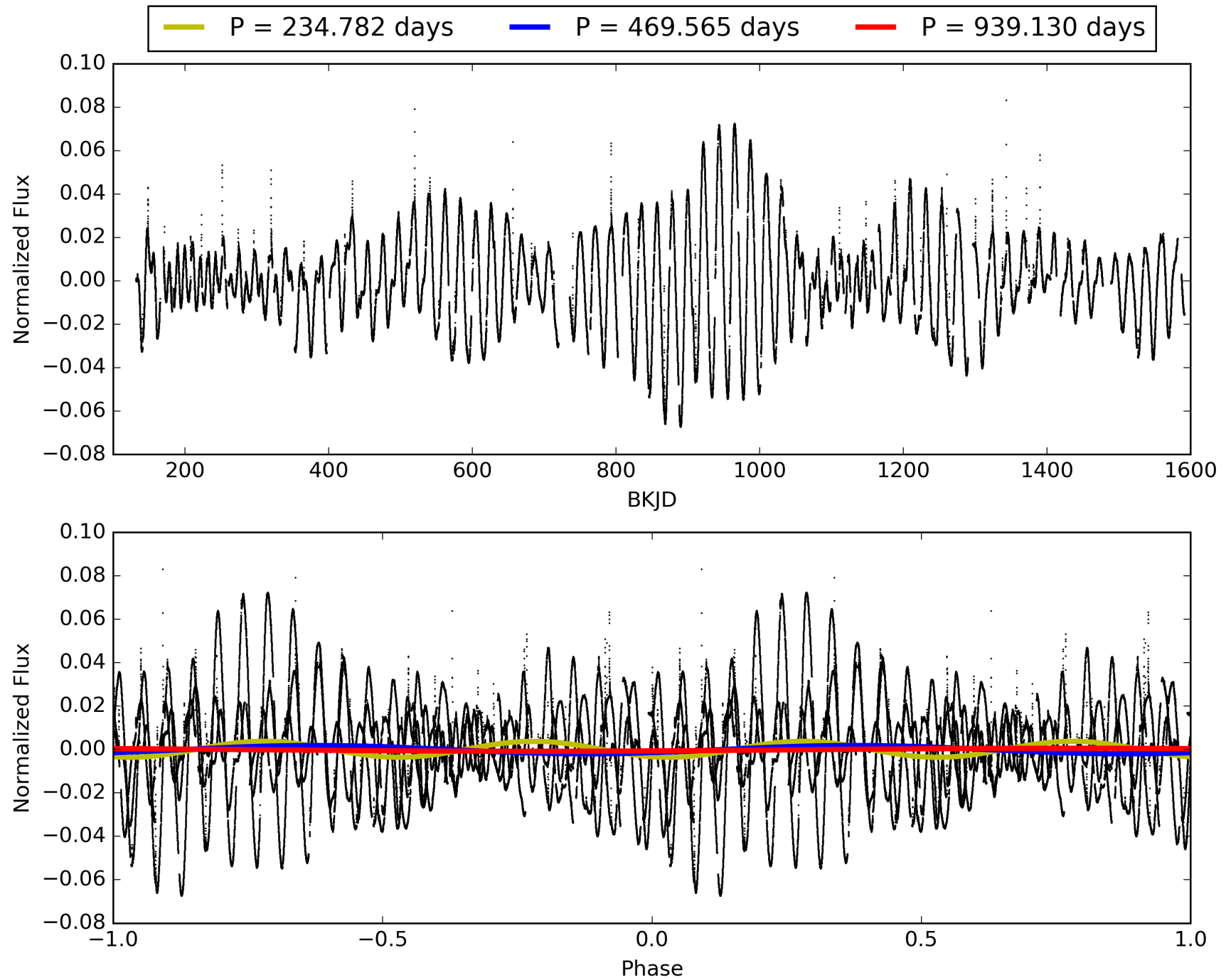
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 006707805-02, PDC Light Curves

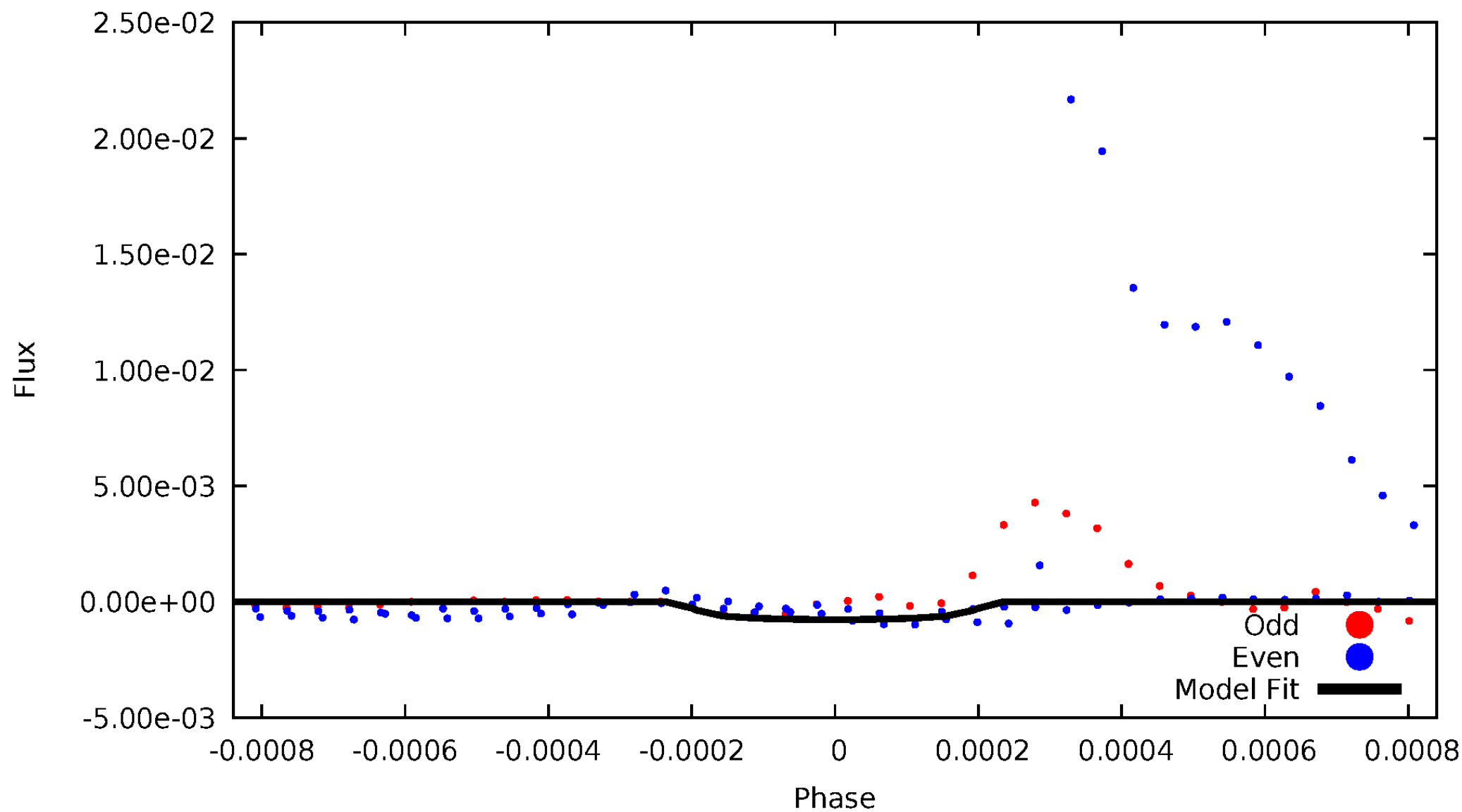


# TCE 006707805-02



# DV Odd/Even

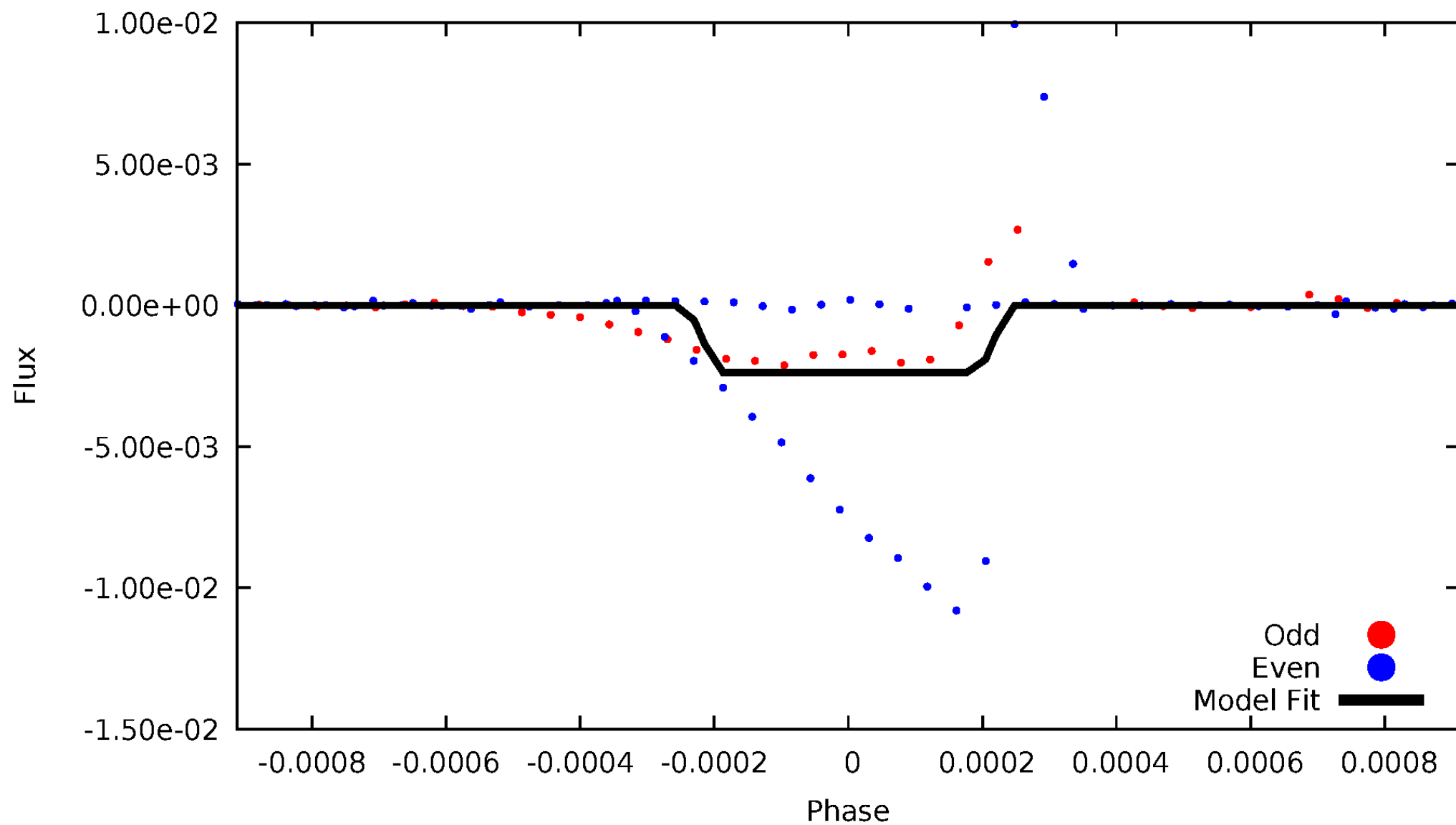
TCE 006707805-02





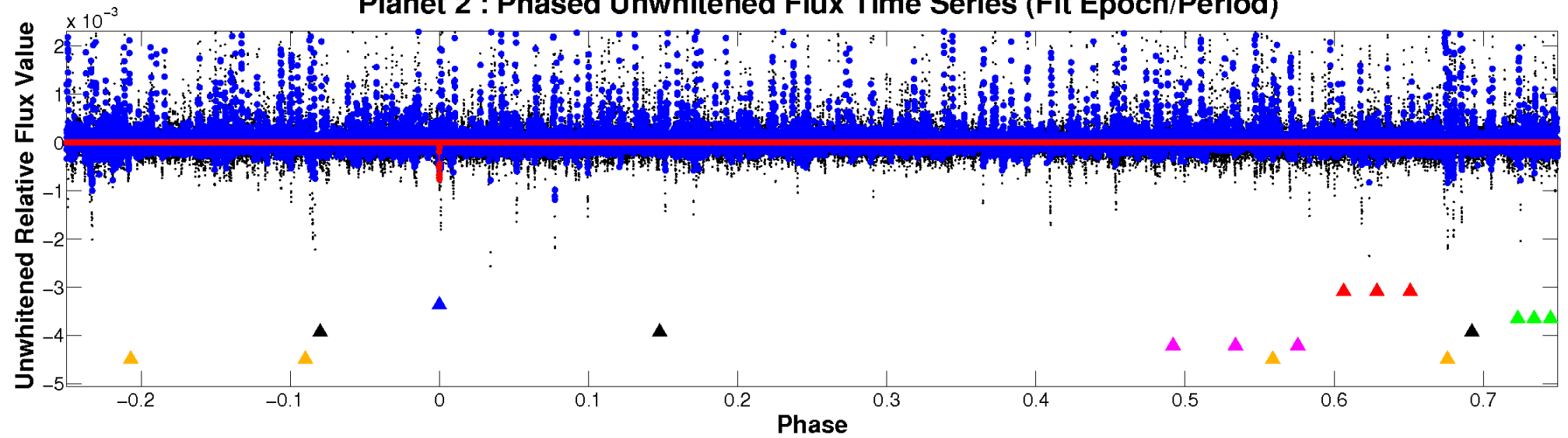
# ALT Odd/Even

TCE 006707805-02

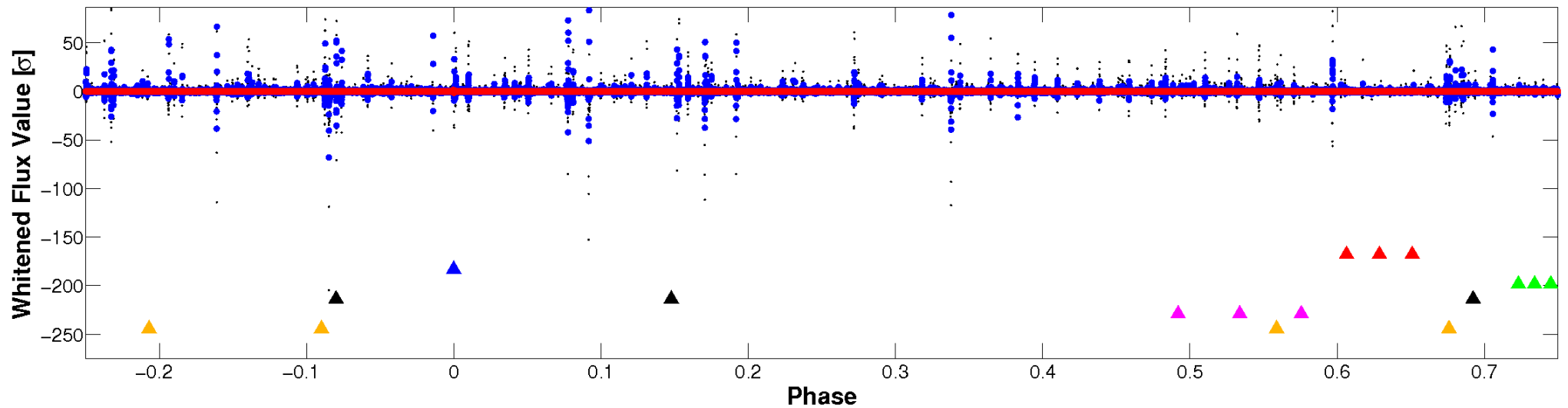


# Non-Whitened Vs. Whitened Light Curve

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

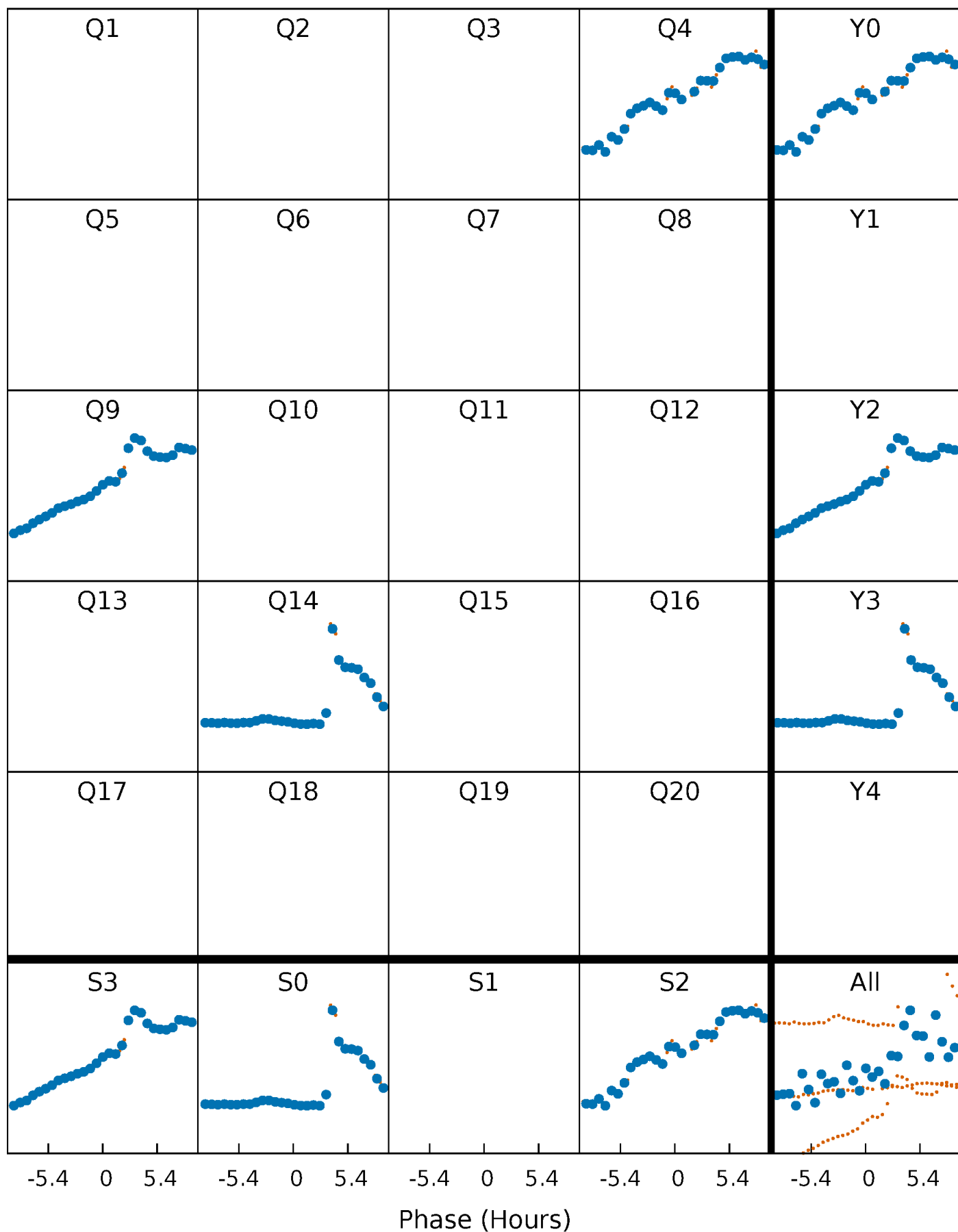


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



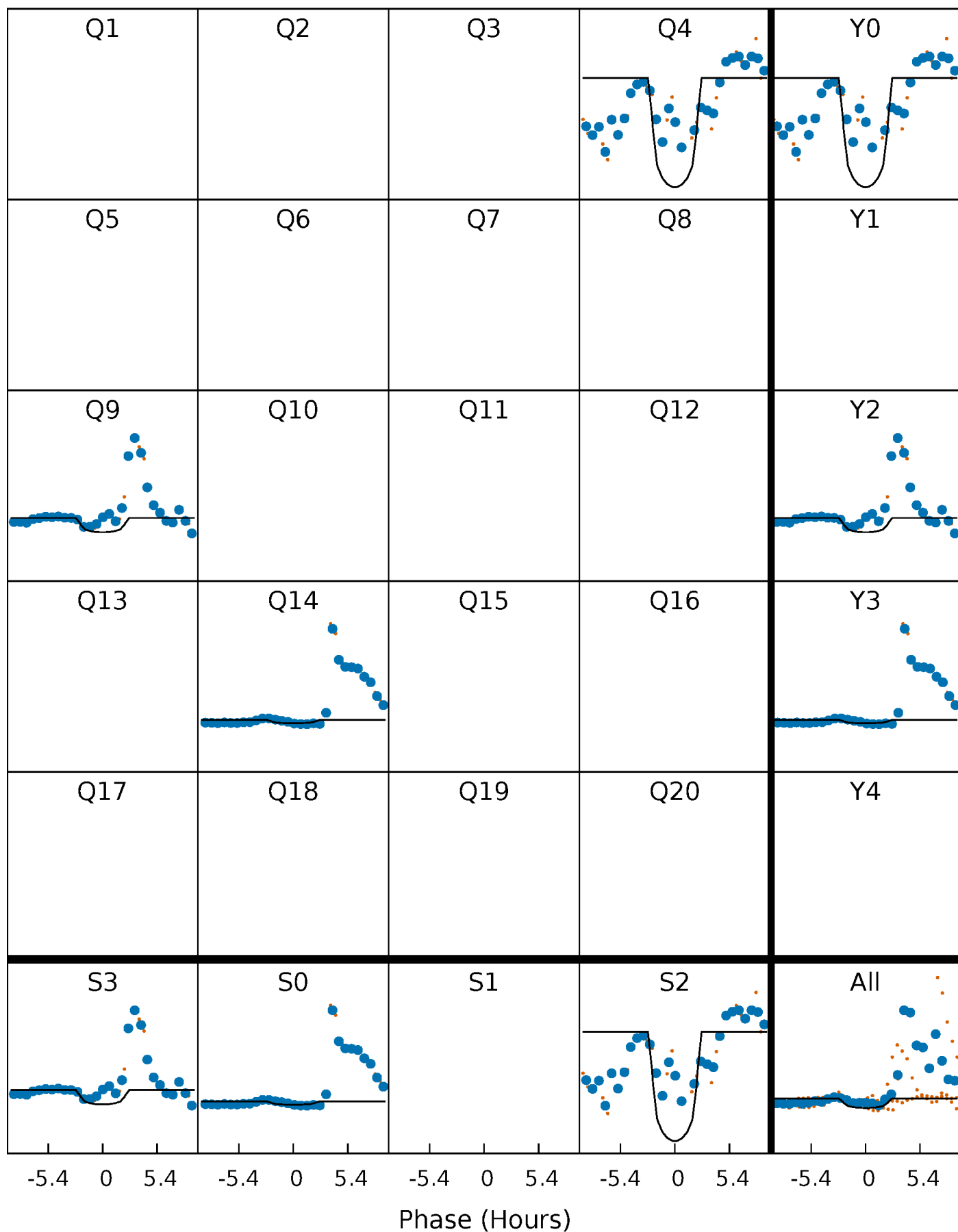
# PDC Quarter-Phased Transit Curves

TCE 006707805-02     $P=469.564870$  Days     $T_0=360.520758$  (BKJD)



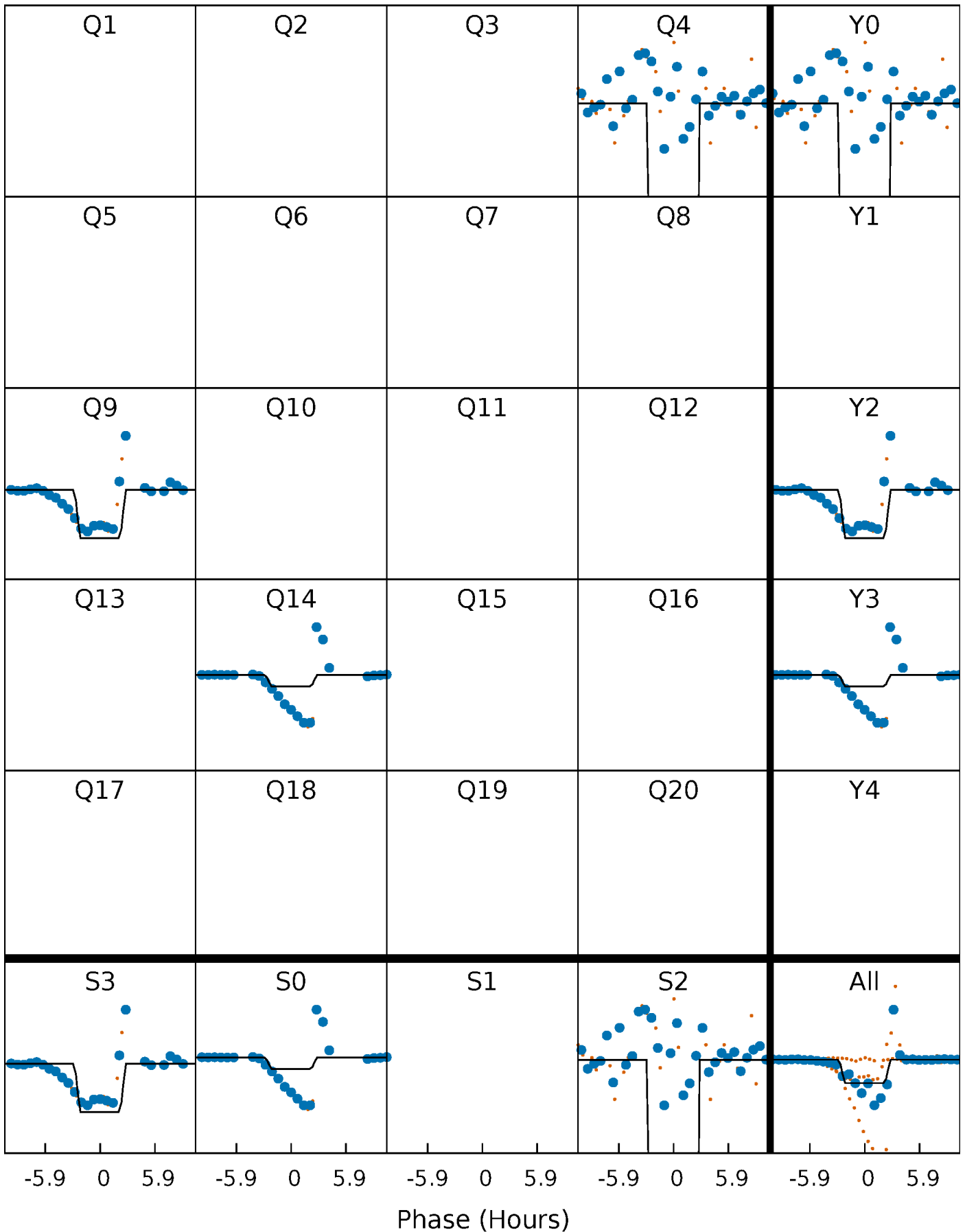
# DV Quarter-Phased Transit Curves

TCE 006707805-02     $P=469.564870$  Days     $T_0=360.520758$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

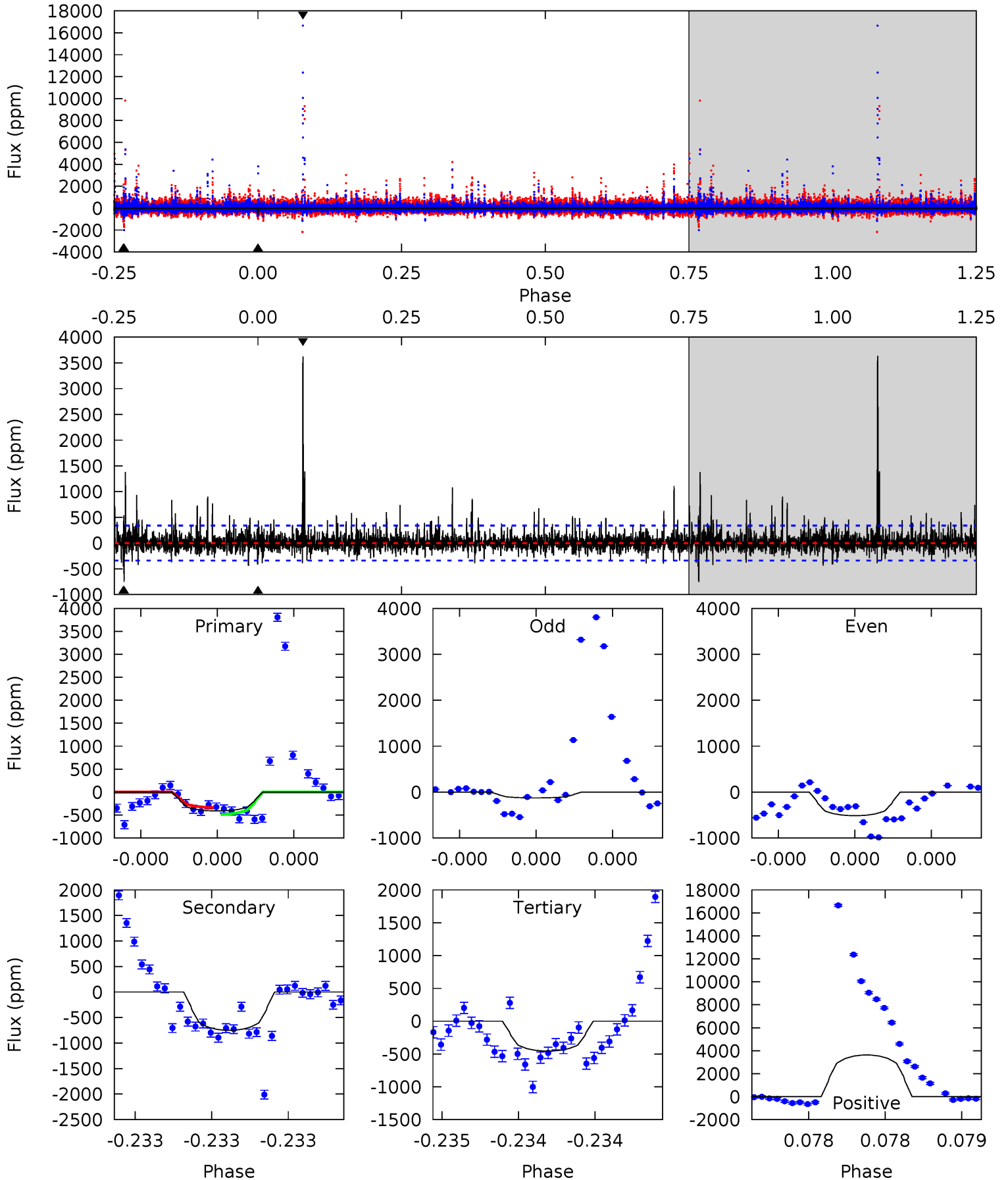
TCE 006707805-02     $P=469.590454$  Days     $T_0=360.507654$  (BKJD)



# DV Model-Shift Uniqueness Test

006707805-02, P = 469.564870 Days, E = 360.520758 Days

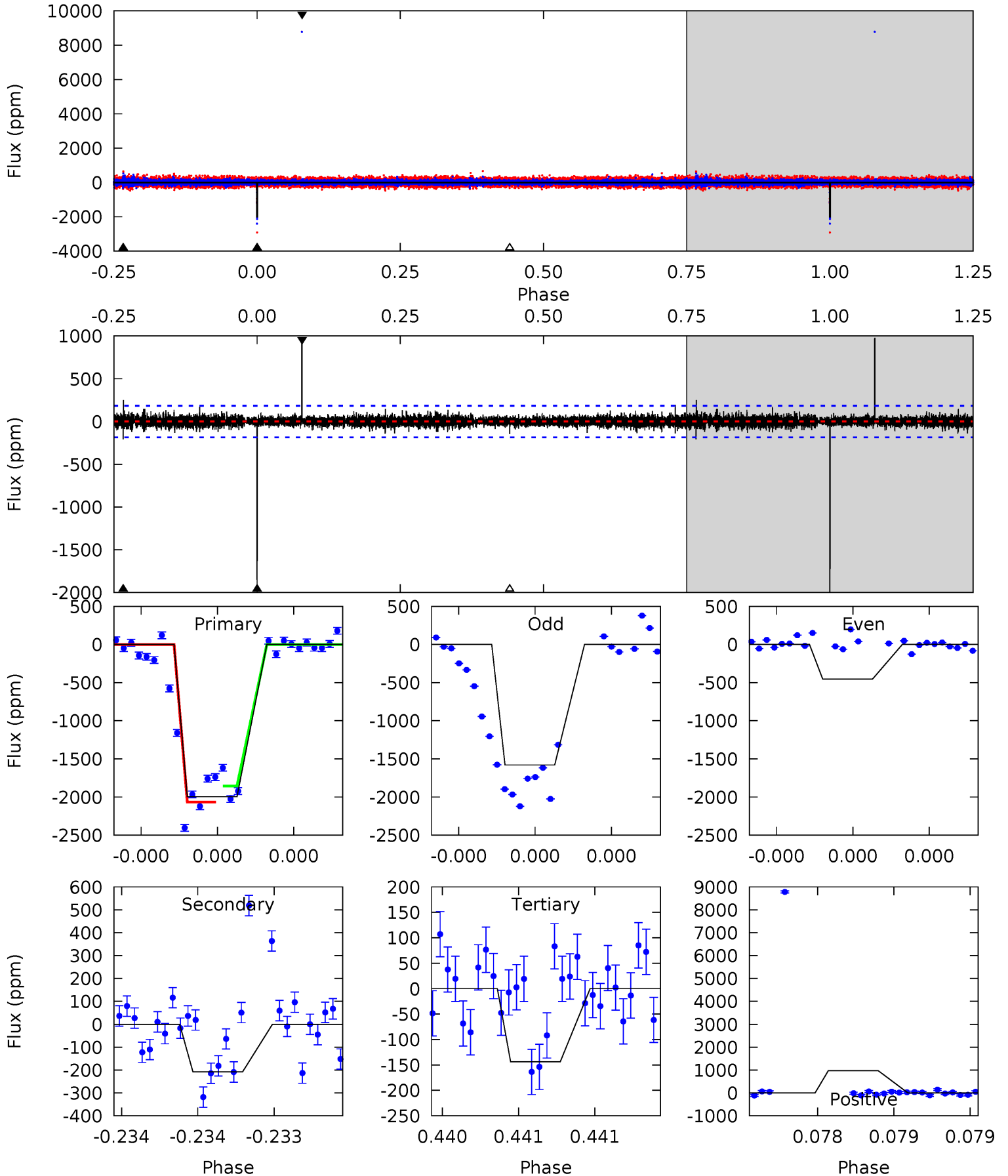
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.81	12.4	7.54	60.1	5.61	3.54	2.36	-0.73	-53.3	4.89	-47.6	0.81	1.02	0.83	1.25



# Alt Model-Shift Uniqueness Test

006707805-02, P = 469.590454 Days, E = 360.507654 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
60.2	6.26	4.33	29.5	5.58	3.49	0.95	55.8	30.7	1.93	-23.2	18.0	1.87	0.33	2.98





### Stellar Parameters For KIC 006707805

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5258^{+62}_{-125}$	$3.292^{+0.264}_{-0.066}$	$-0.120^{+0.150}_{-0.250}$	$5.148^{+0.507}_{-2.029}$	$1.894^{+0.115}_{-0.654}$	$0.020^{+0.038}_{-0.005}$
	+1%/-2%	+8%/-2%	+125%/-208%	+10%/-39%	+6%/-35%	+194%/-24%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 006707805-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-750 \pm 60$	$114.64^{+133.61}_{-80.15}$	$598^{+23}_{-54}$	$2619^{+1073}_{-423}$	$65^{+614}_{-51}$
Alt.	$-208 \pm 33$	$126.95^{+128.17}_{-87.97}$	$598^{+22}_{-51}$	$2205^{+744}_{-300}$	$15^{+135}_{-11}$

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

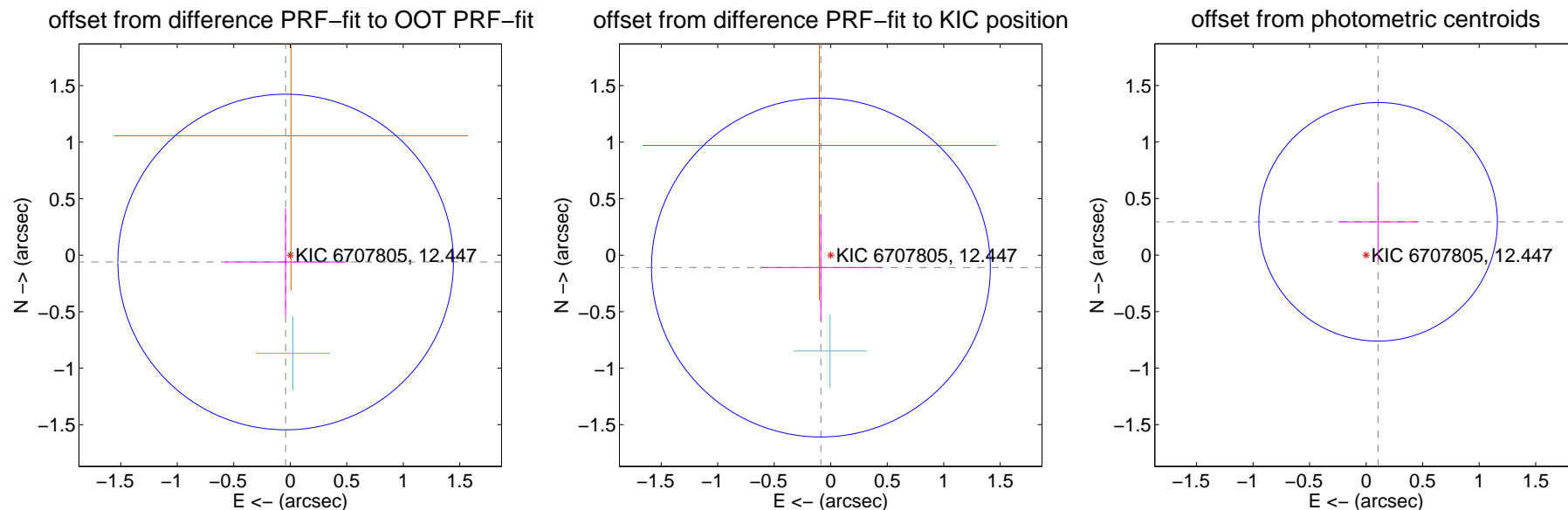
## DV Centroid Data

Supplemental centroid analysis for 006707805-02. Kepler magnitude: 12.45. Transit SNR 6.88

There are 2 quarters with good PRF difference image offsets

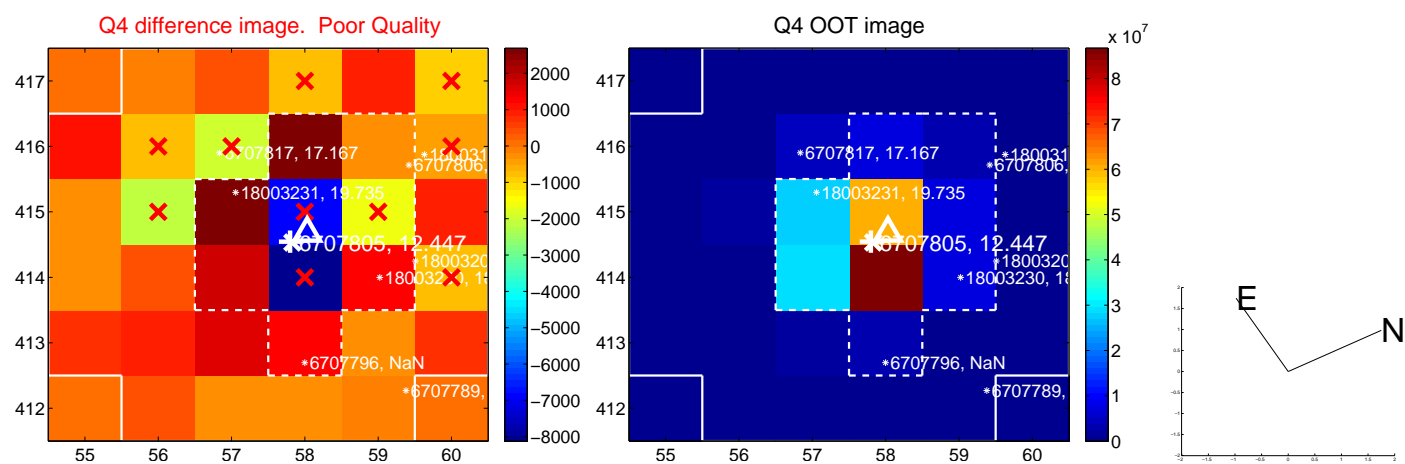
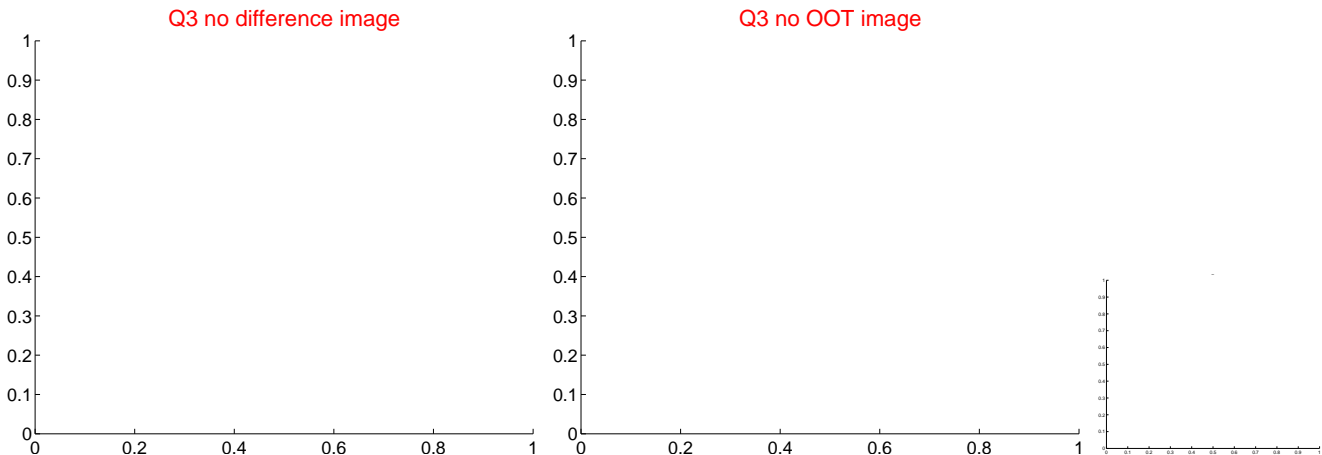
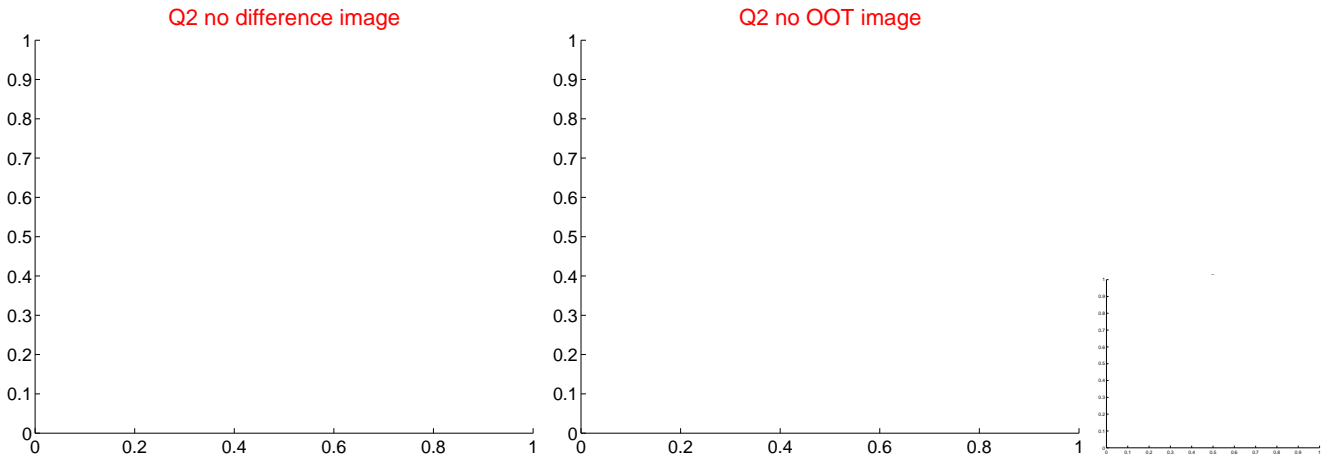
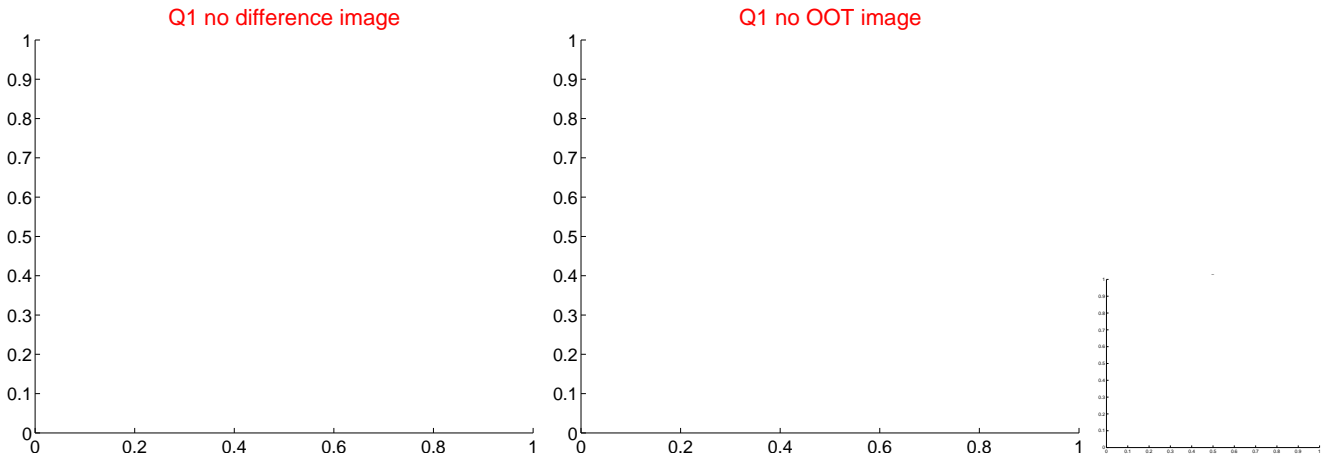
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.073 \pm 0.495$	0.15	$0.041 \pm 0.538$	$-0.061 \pm 0.474$
PRF-fit source offset from KIC position	$0.140 \pm 0.500$	0.28	$0.087 \pm 0.538$	$-0.109 \pm 0.474$
photometric centroid source offset	$0.31 \pm 0.35$	0.89	$-0.11 \pm 0.35$	$0.29 \pm 0.35$



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

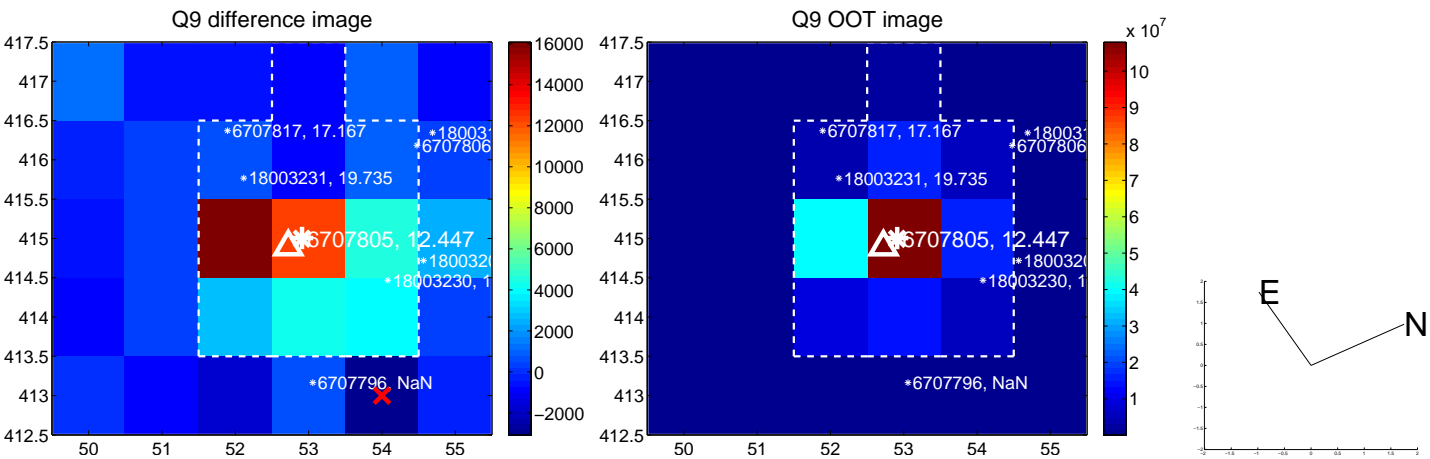
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



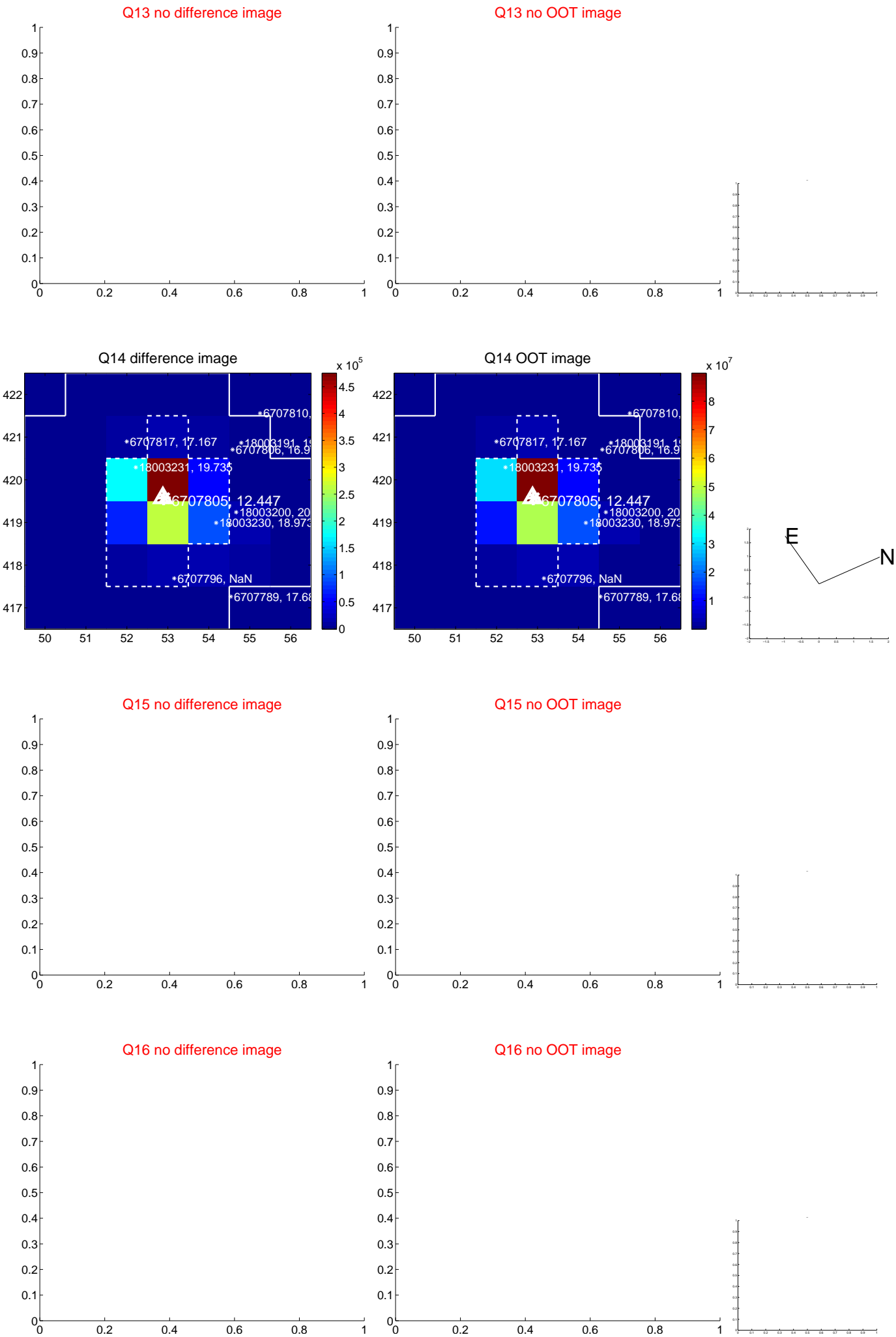
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



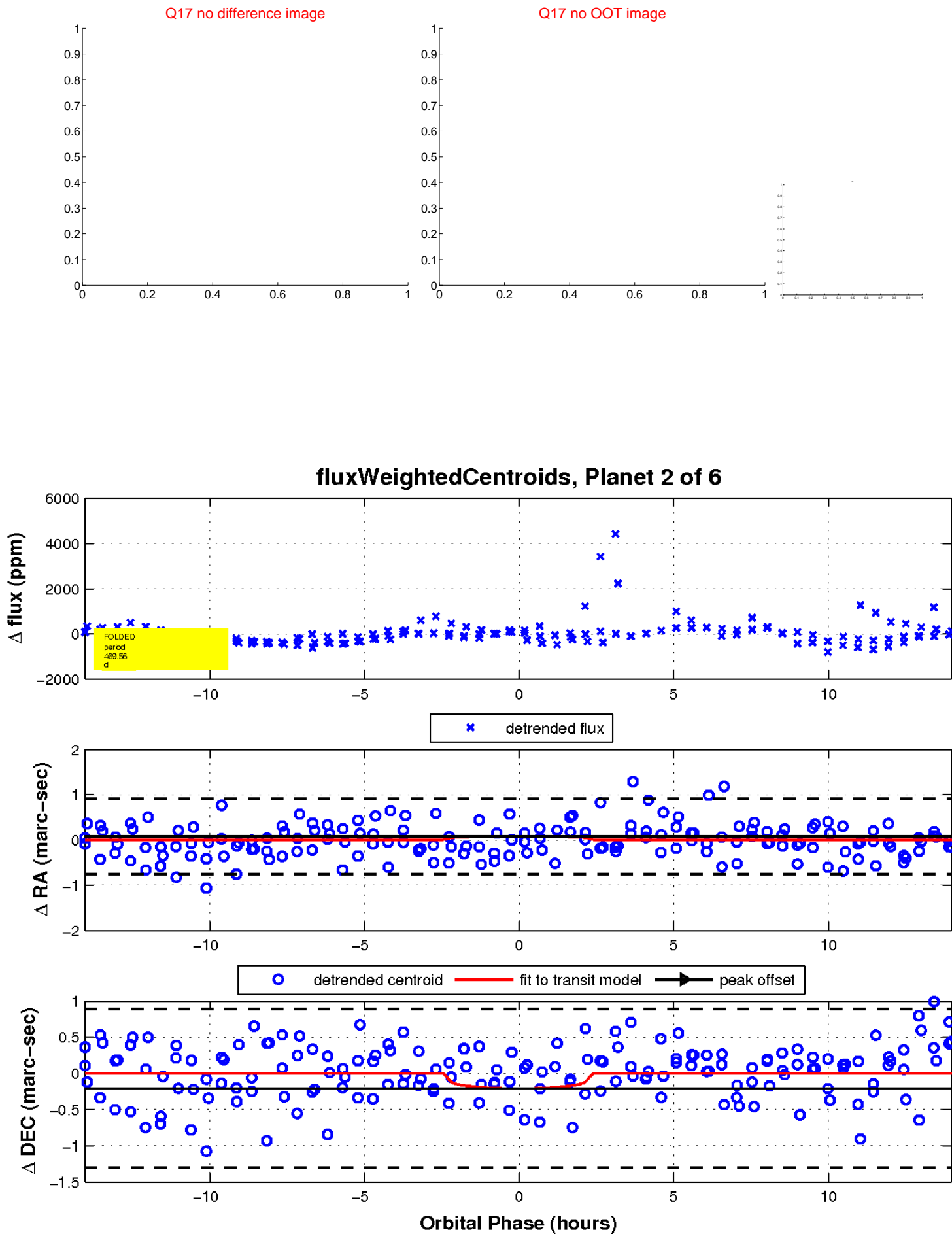
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

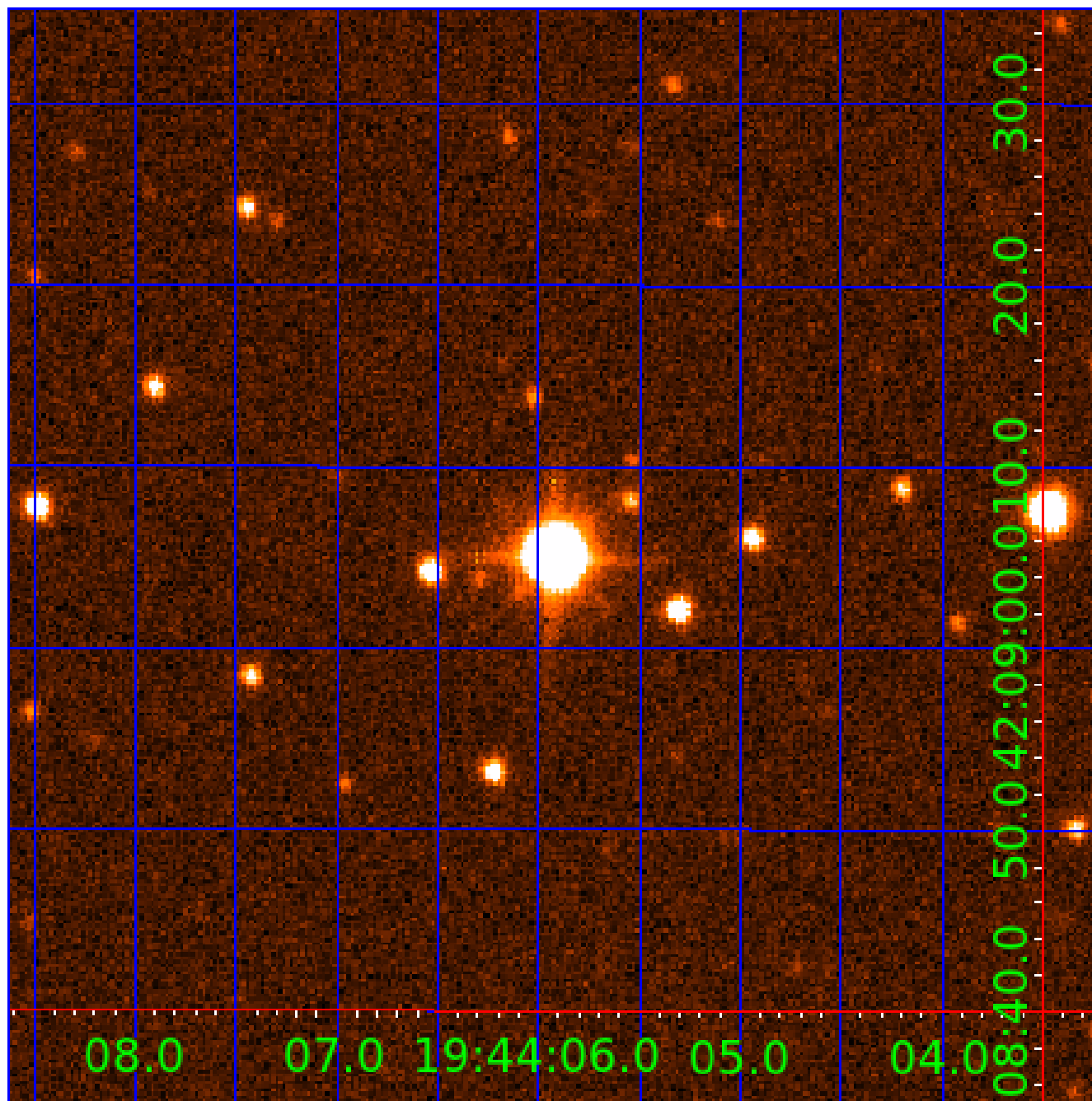


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 006707805

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006707805-01	OBS	No	480.046522	175.694954	7260.0	7.499	18.9	31.2	5.15	5258	81.41	8.23
006707805-02	OBS	No	469.564870	360.520758	766.4	4.730	21.5	6.9	5.15	5258	13.97	8.48
006707805-03	OBS	No	464.397577	240.857893	853.0	13.866	17.5	6.5	5.15	5258	16.73	8.61
006707805-04	OBS	No	576.471098	216.083208	884.8	5.062	17.7	7.0	5.15	5258	15.40	6.45
006707805-05	OBS	No	489.204876	591.562173	454.9	12.456	18.1	4.3	5.15	5258	11.88	8.03
006707805-06	OBS	No	414.583310	318.338438	452.7	9.000	18.6	-1.0	5.15	5258	10.72	10.01

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006707805-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006707805-02	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
006707805-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006707805-04	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
006707805-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006707805-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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

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

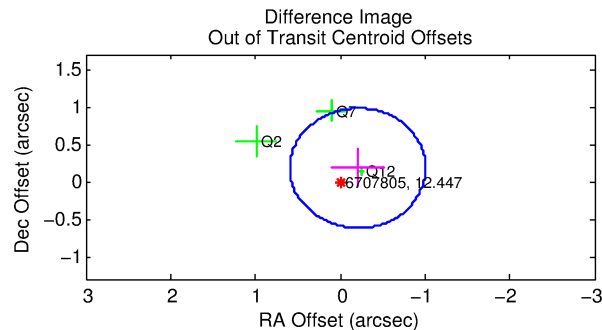
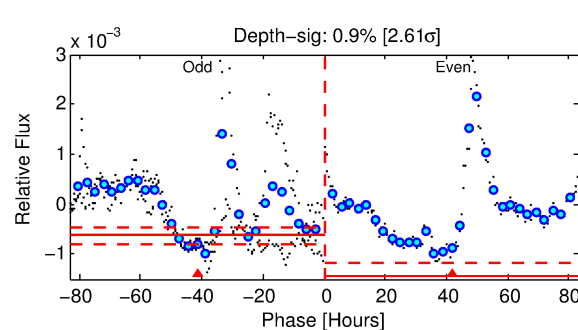
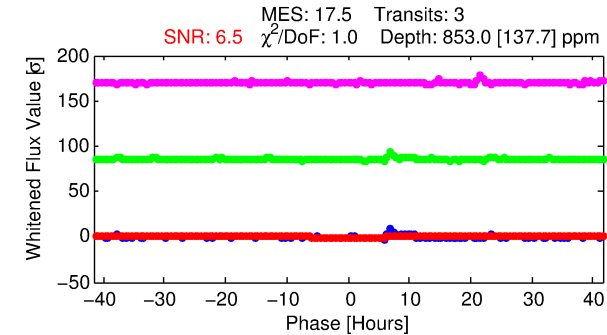
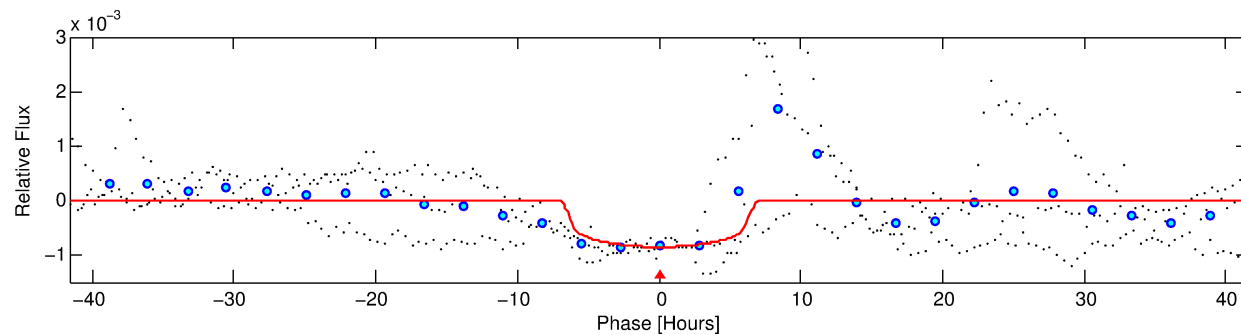
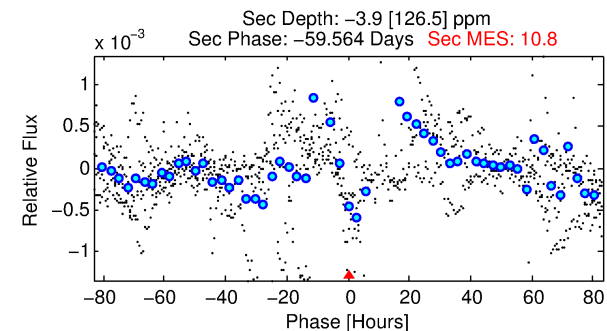
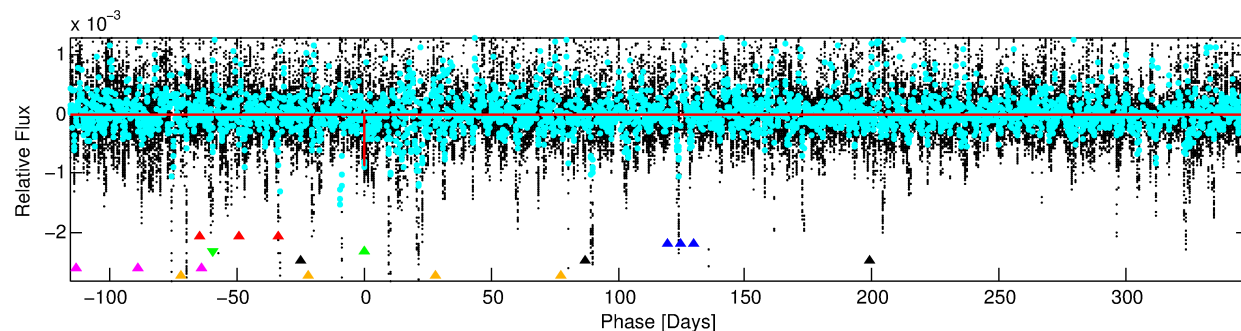
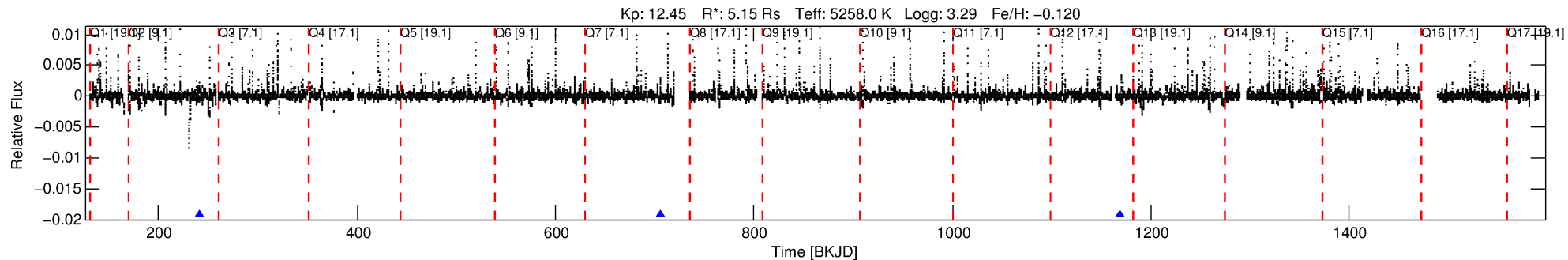
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006707805-03

No Significant Match Found

# DV One-Page Summary

KIC: 6707805 Candidate: 3 of 6 Period: 464.398 d



## DV Fit Results:

Period = 464.39758 [0.00633] d  
Epoch = 240.8579 [0.0086] BKJD  
Rp/R\* = 0.0298 [0.0029]  
a/R\* = 166.79 [29.24]  
b = 0.80 [0.08]  
Seff = 8.60 [4.24]  
Teq = 437 [54] K  
Rp = 16.73 [6.79] Re  
a = 1.4523 [0.4819] AU  
Ag = N/A  
Teffp = N/A

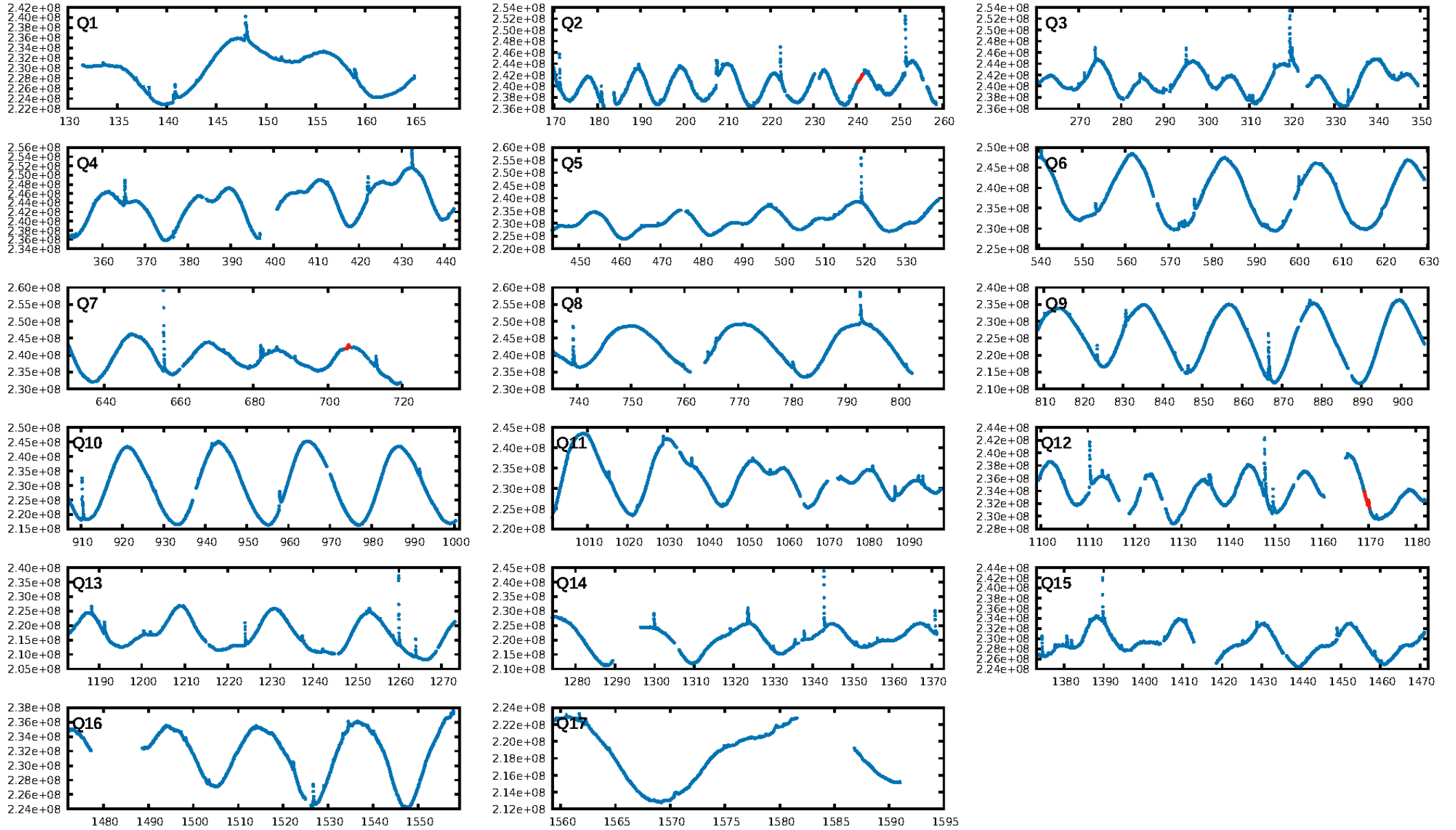
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [72.32σ]  
LongPeriod-sig: 100.0% [8.47σ]  
ModelChiSquare2-sig: 18.9%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -3.127  
Centroid-sig: 62.6%  
Centroid-so: 0.150 arcsec [0.53σ]  
OotOffset-rm: 0.274 arcsec [1.03σ]  
KicOffset-st: 1/1/1/0 [3]  
KicOffset-st: 1/1/1/0 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

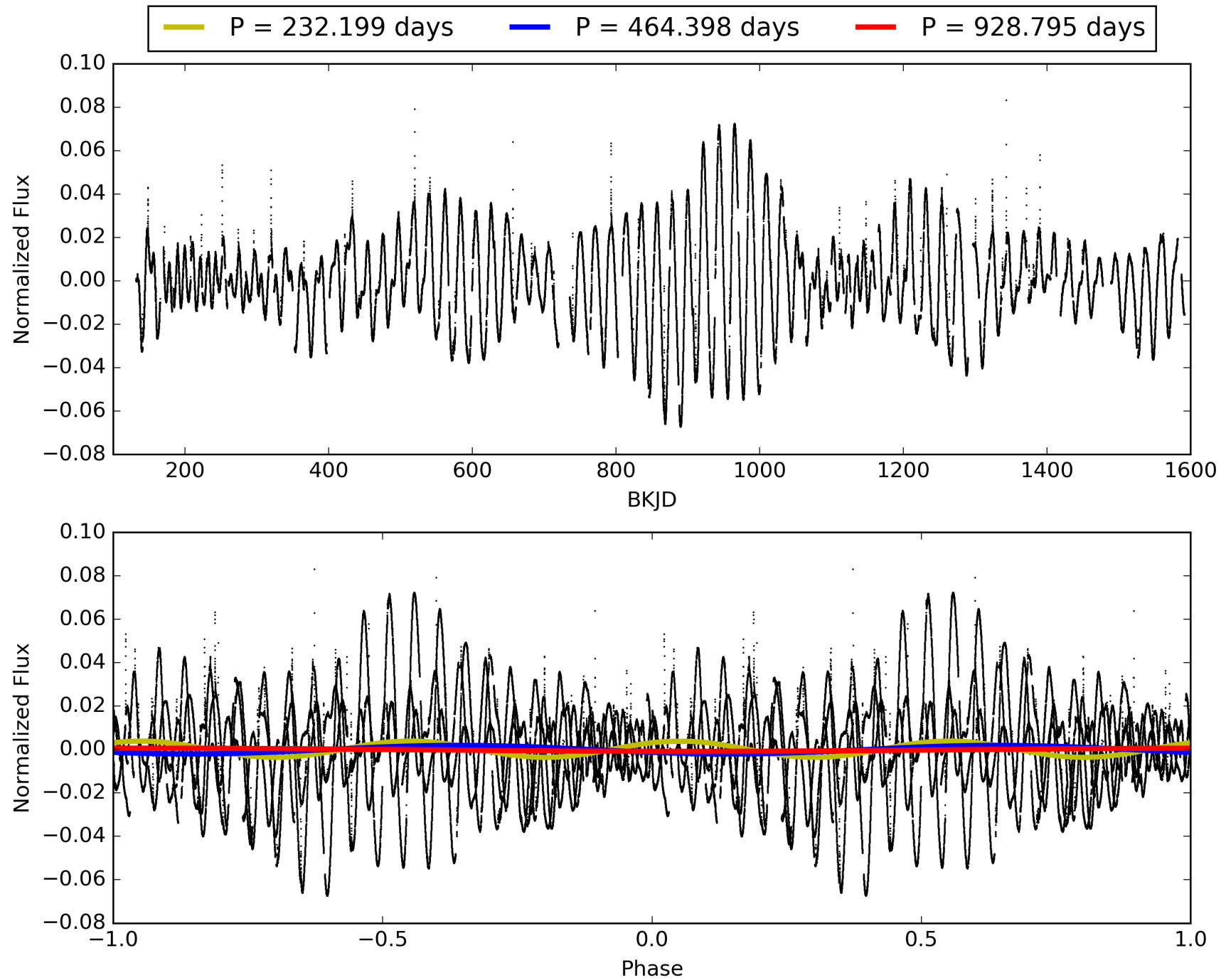
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:25:13 Z

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

# TCE 006707805-03, PDC Light Curves

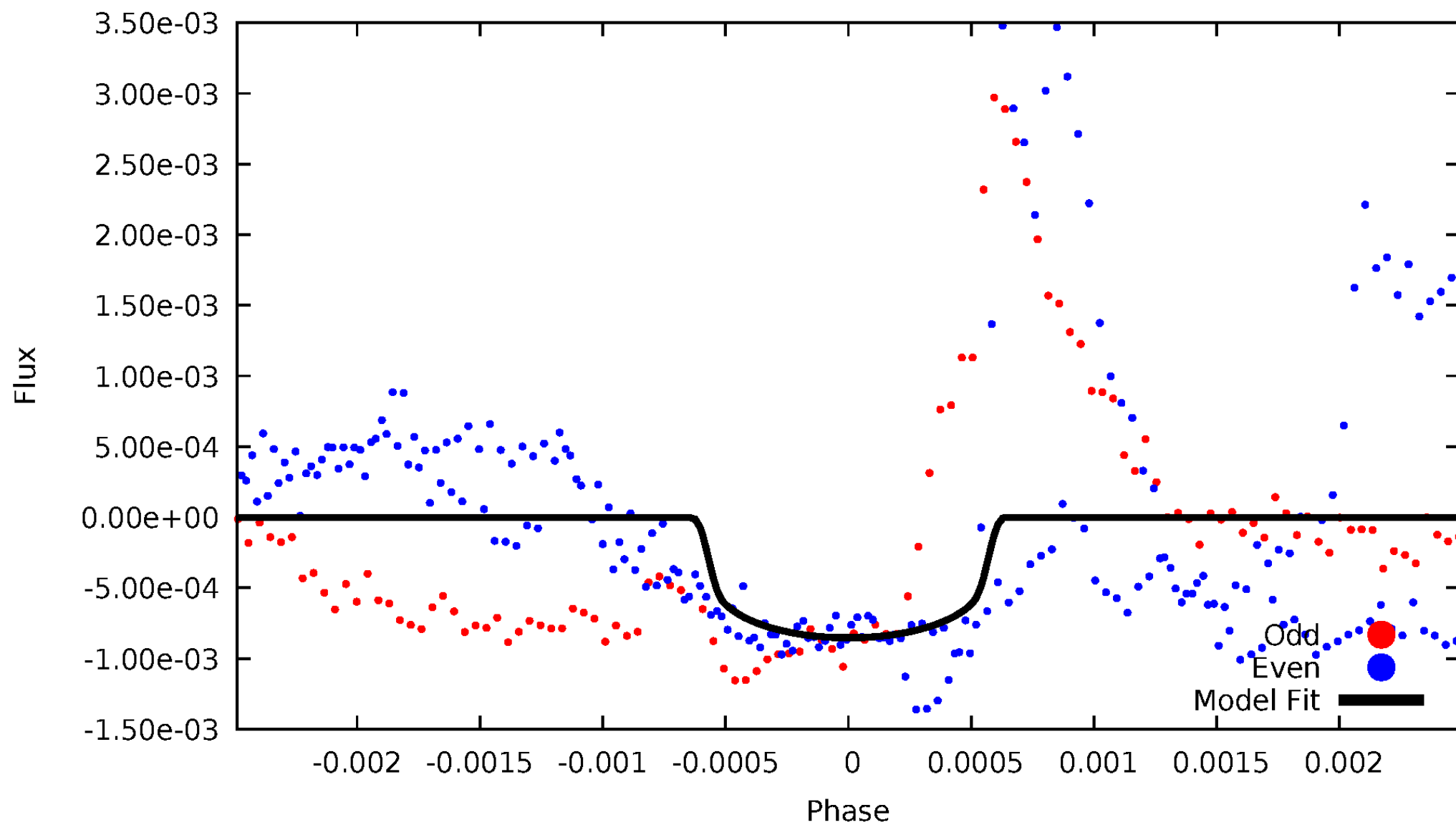


# TCE 006707805-03



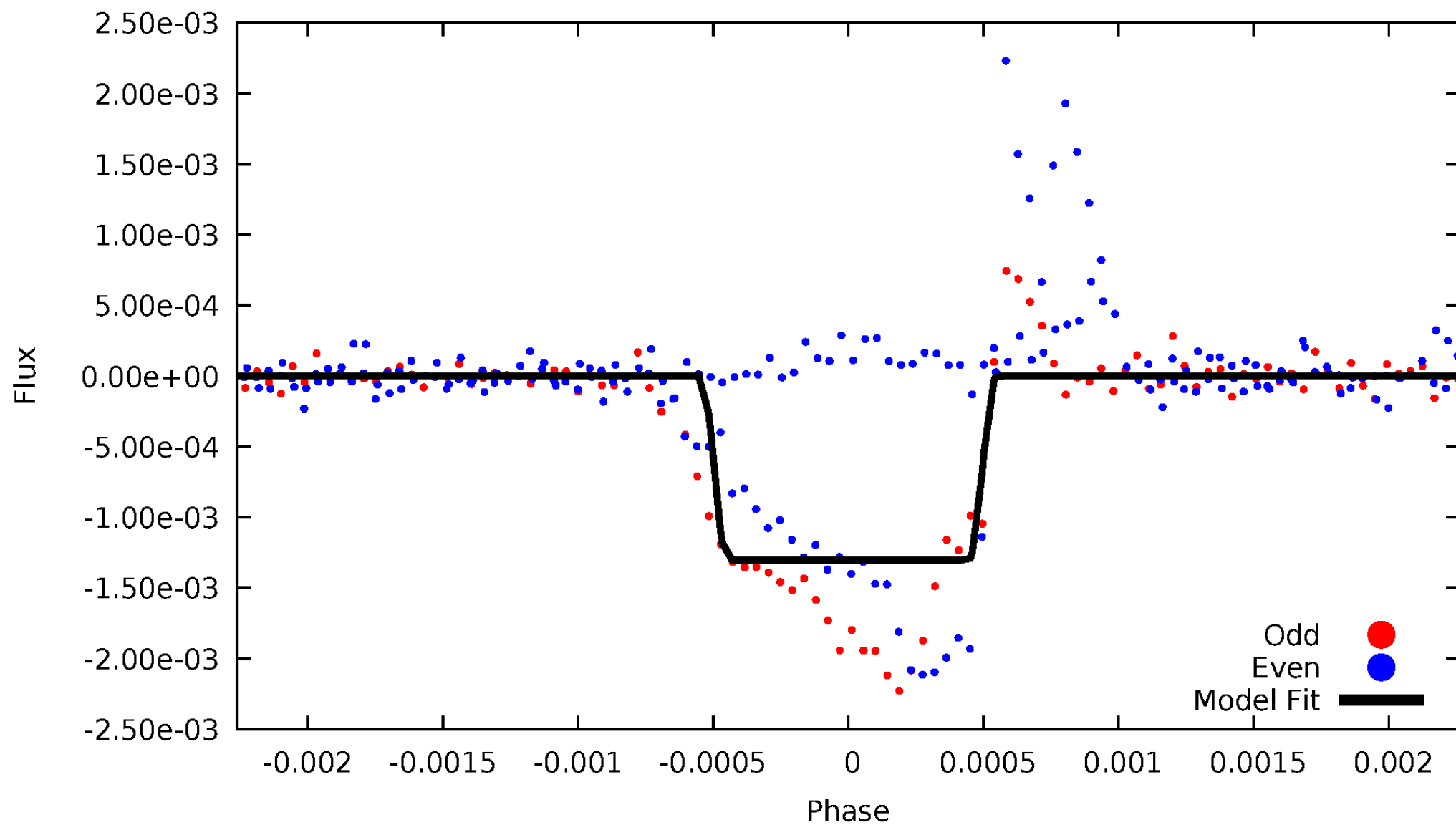
# DV Odd/Even

TCE 006707805-03



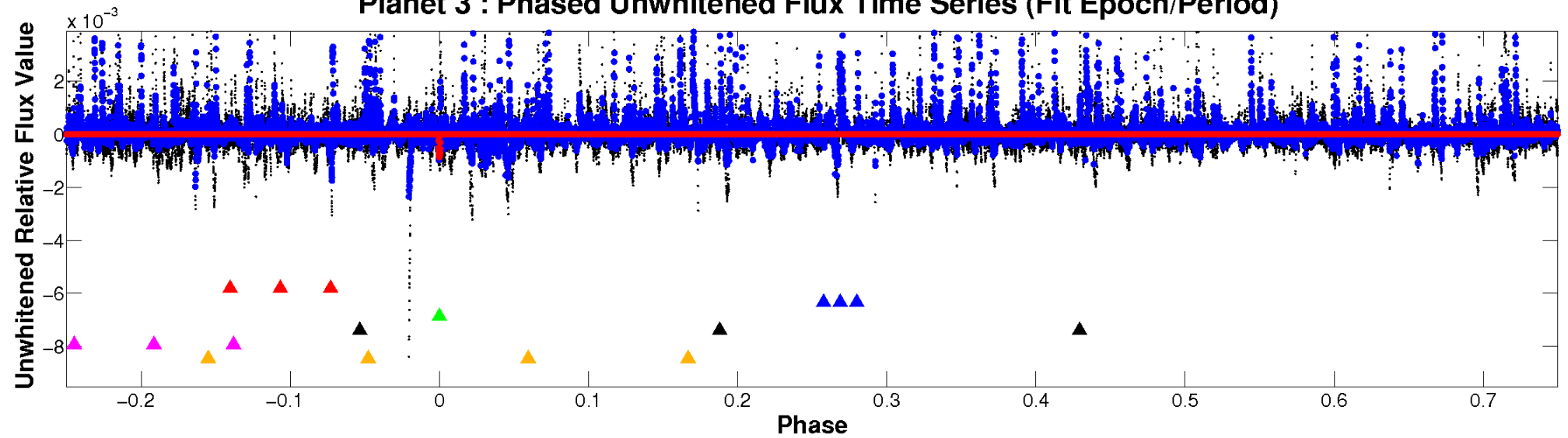
# ALT Odd/Even

TCE 006707805-03

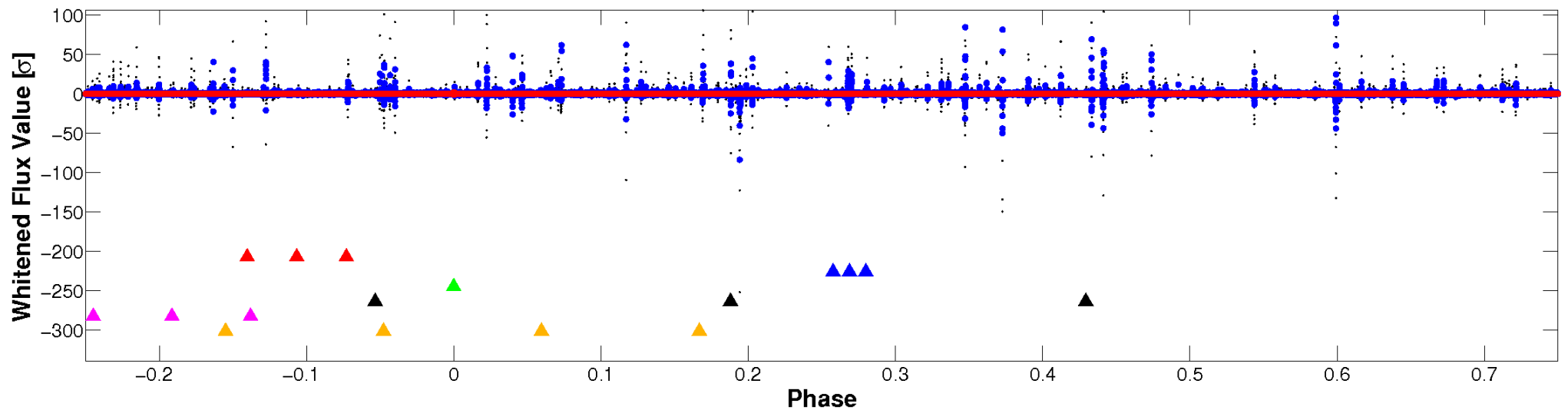


# Non-Whitened Vs. Whitened Light Curve

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

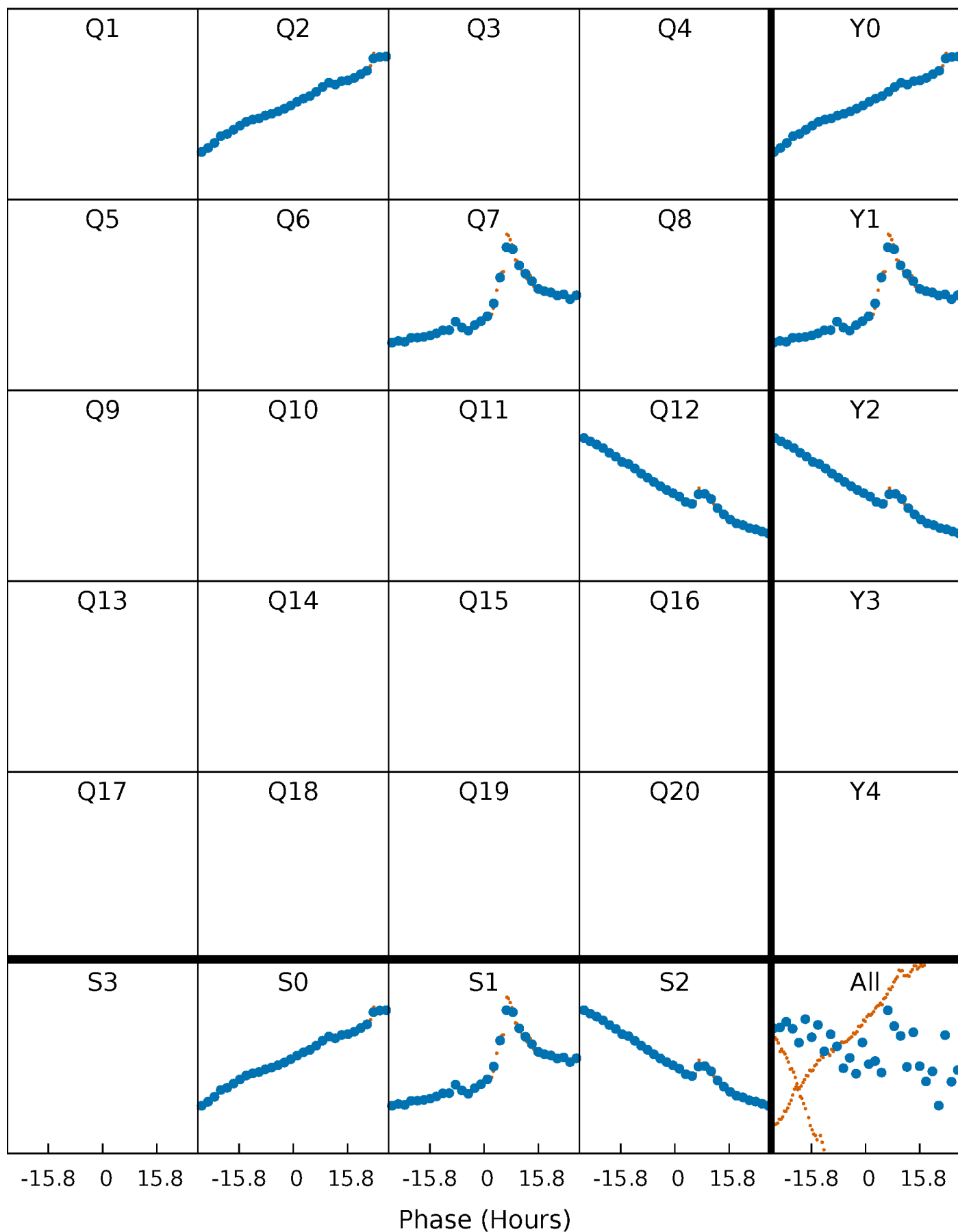


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

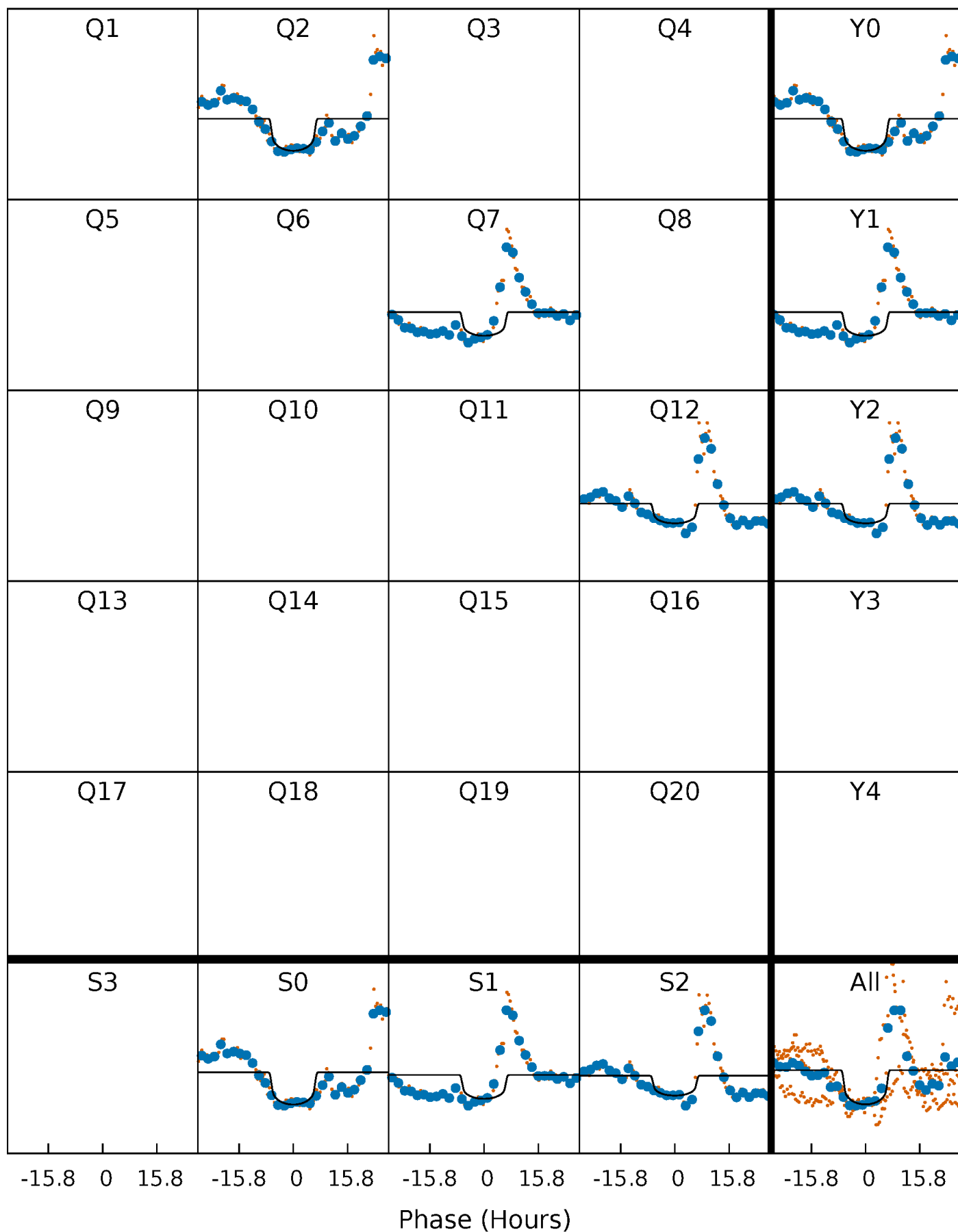
TCE 006707805-03     $P=464.397577$  Days     $T_0=240.857893$  (BKJD)





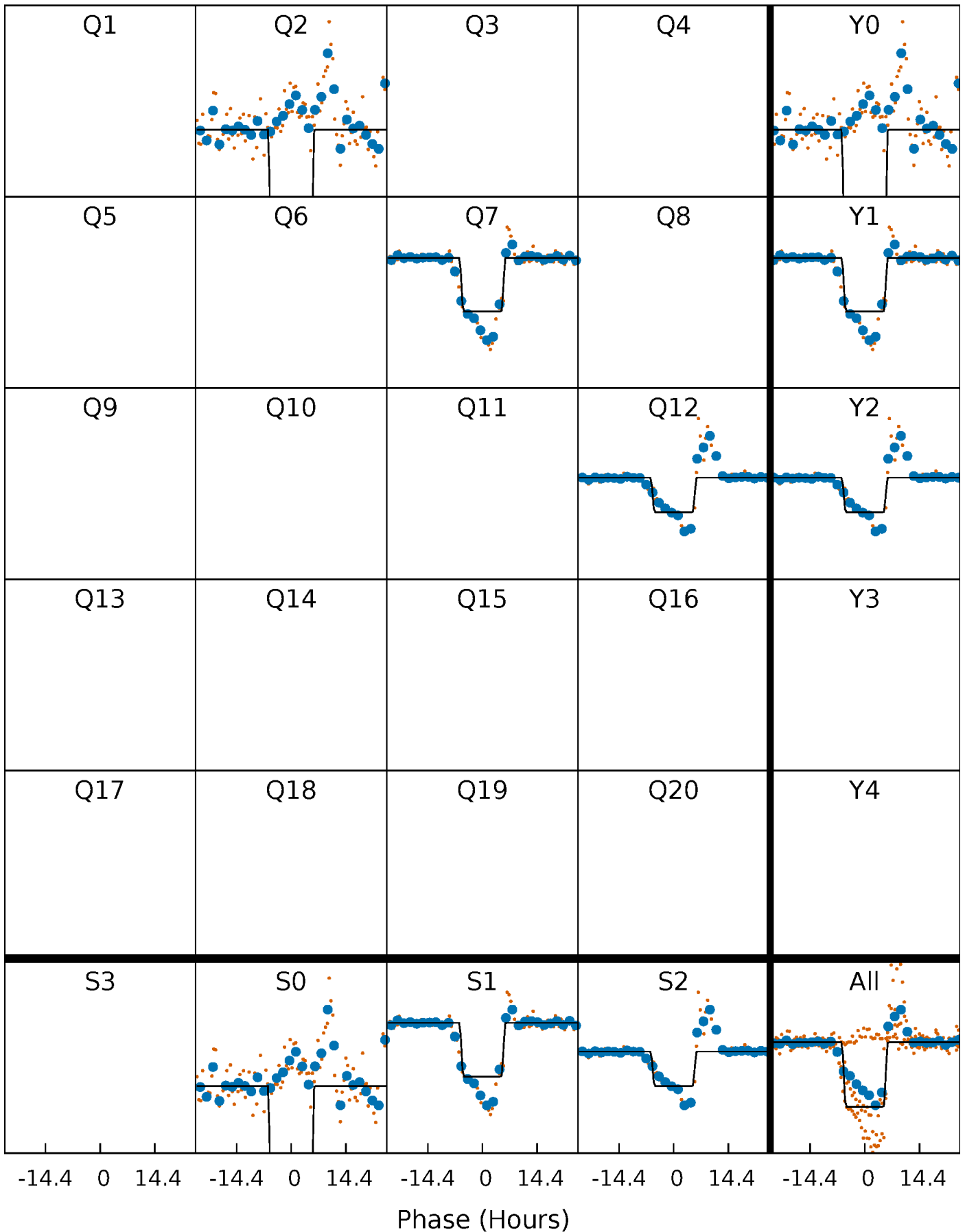
# DV Quarter-Phased Transit Curves

TCE 006707805-03     $P=464.397577$  Days     $T_0=240.857893$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

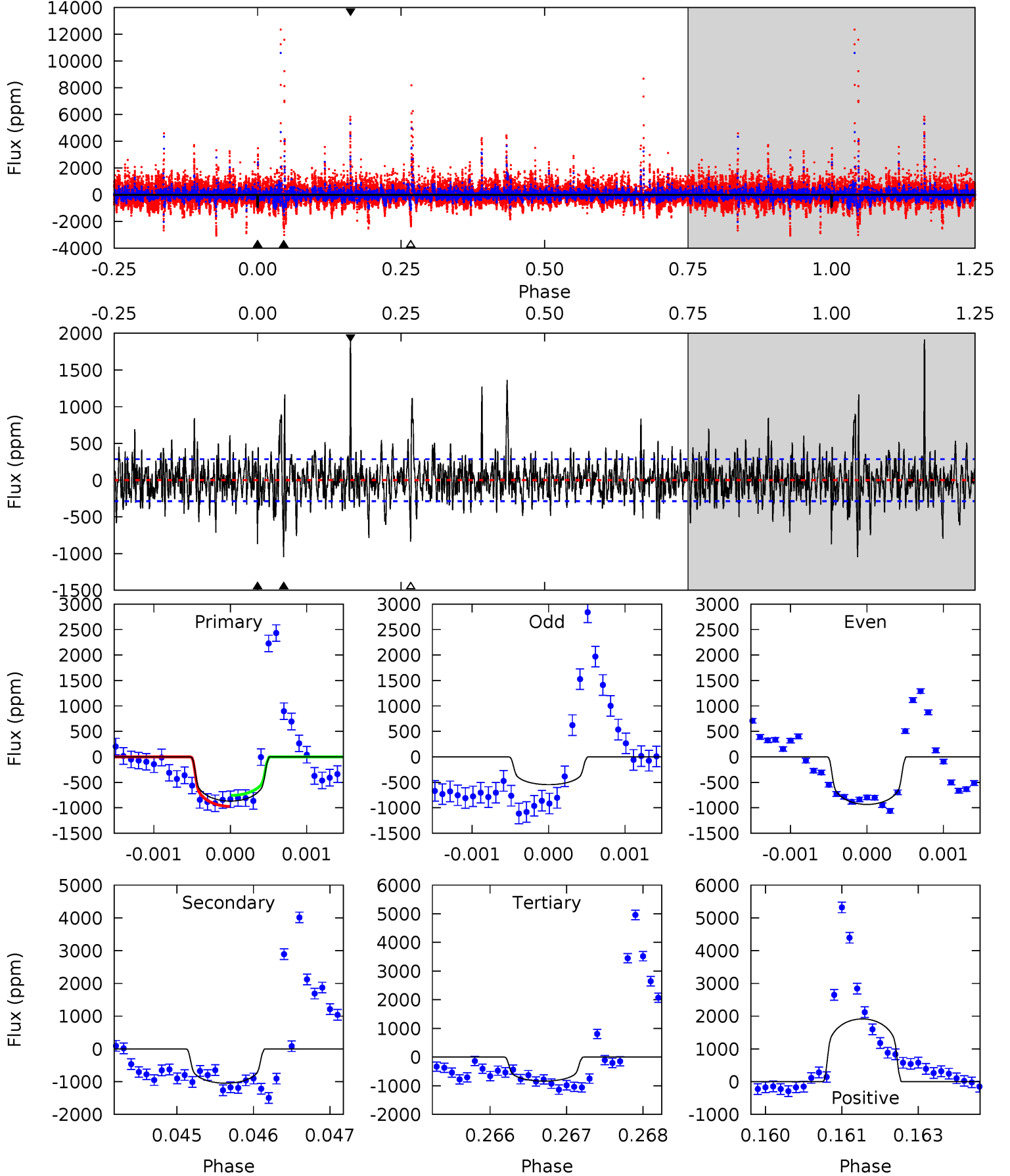
TCE 006707805-03     $P=464.413952$  Days     $T_0=240.846168$  (BKJD)



# DV Model-Shift Uniqueness Test

006707805-03, P = 464.397577 Days, E = 240.857893 Days

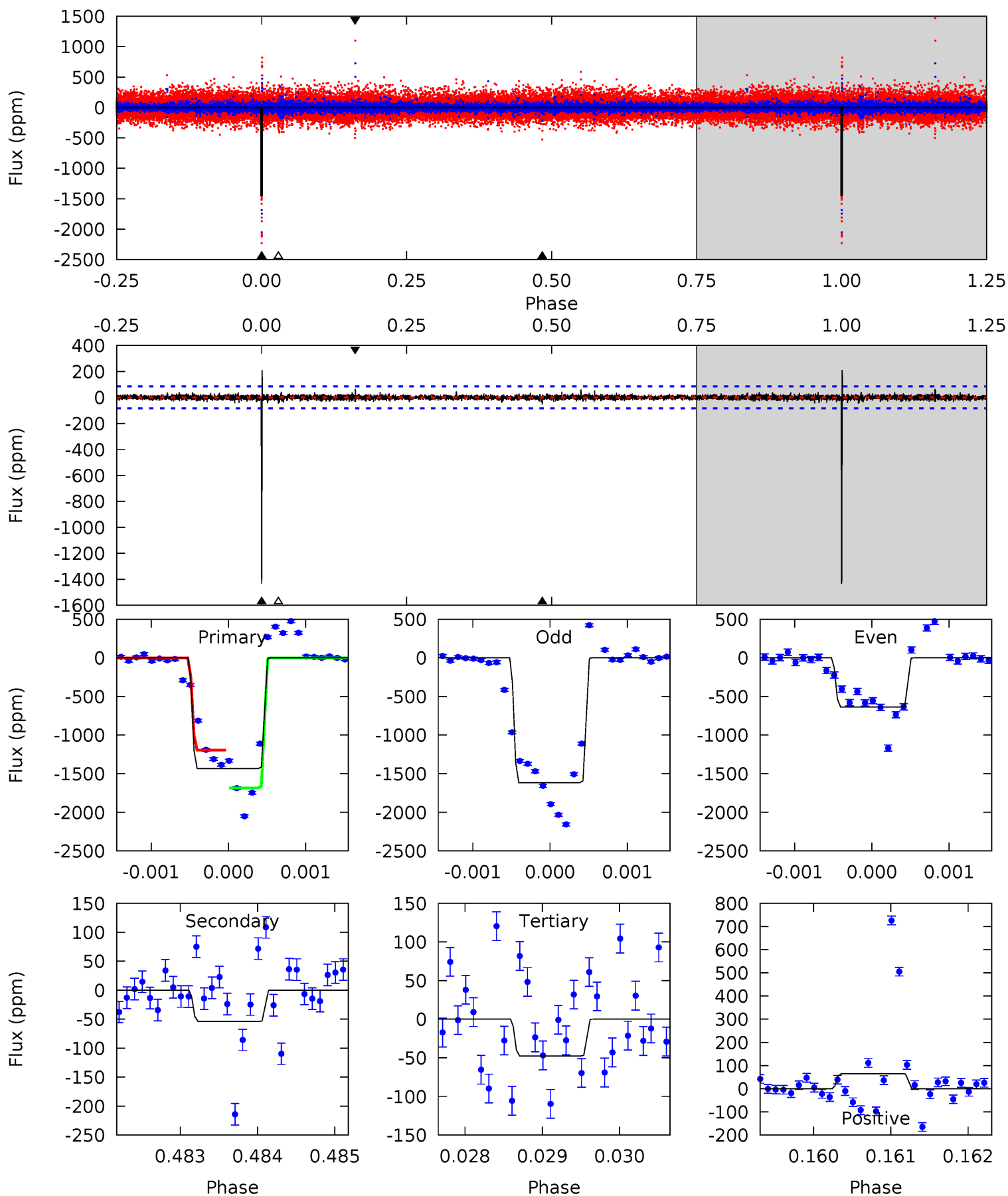
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.5	19.8	15.9	36.3	5.41	3.23	4.16	0.57	-19.8	3.94	-16.4	1.26	0.88	0.65	2.05



# Alt Model-Shift Uniqueness Test

006707805-03, P = 464.413952 Days, E = 240.846168 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
92.3	3.46	3.07	4.18	5.44	3.27	0.59	89.3	88.2	0.40	-0.71	29.6	0.69	0.13	0



### Stellar Parameters For KIC 006707805

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5258^{+62}_{-125}$	$3.292^{+0.264}_{-0.066}$	$-0.120^{+0.150}_{-0.250}$	$5.148^{+0.507}_{-2.029}$	$1.894^{+0.115}_{-0.654}$	$0.020^{+0.038}_{-0.005}$
	+1%/-2%	+8%/-2%	+125%/-208%	+10%/-39%	+6%/-35%	+194%/-24%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 006707805-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-1047 \pm 53$	$16.10^{+2.55}_{-3.21}$	$600^{+26}_{-47}$	$5416^{+282}_{-235}$	$4729^{+2012}_{-1188}$
Alt.	$-54 \pm 16$	$19.52^{+2.65}_{-3.79}$	$600^{+24}_{-48}$	$3005^{+138}_{-172}$	$164^{+85}_{-59}$

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

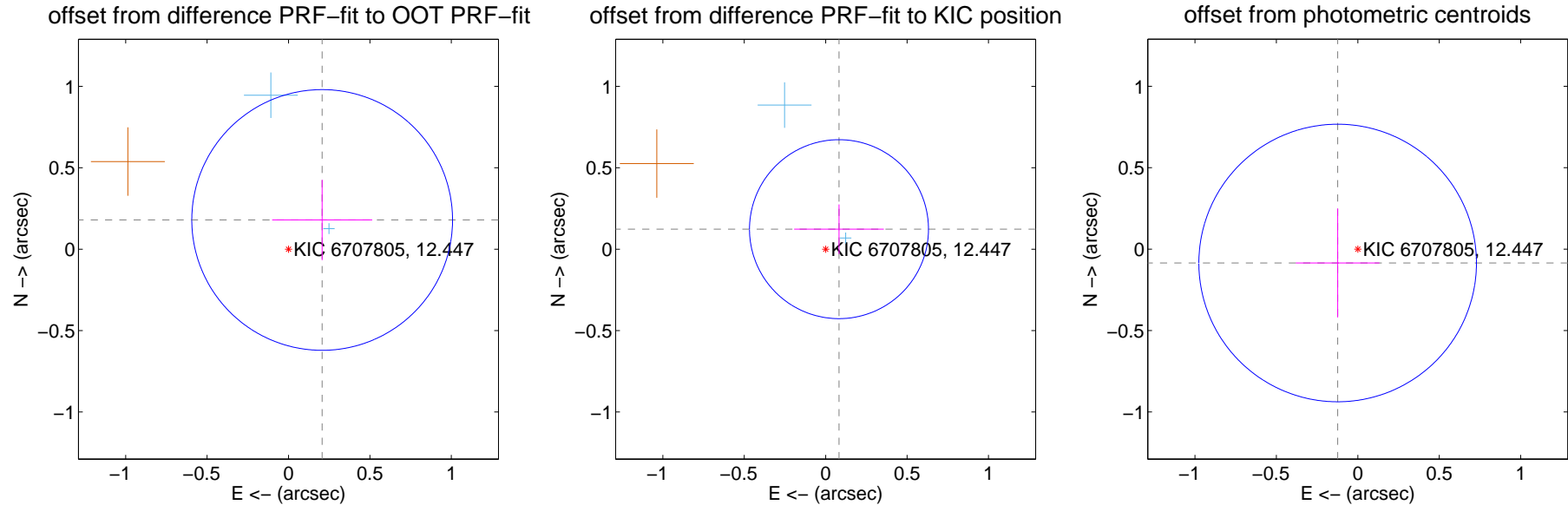
## DV Centroid Data

Supplemental centroid analysis for 006707805-03. Kepler magnitude: 12.45. Transit SNR 6.46

There are 2 quarters with good PRF difference image offsets

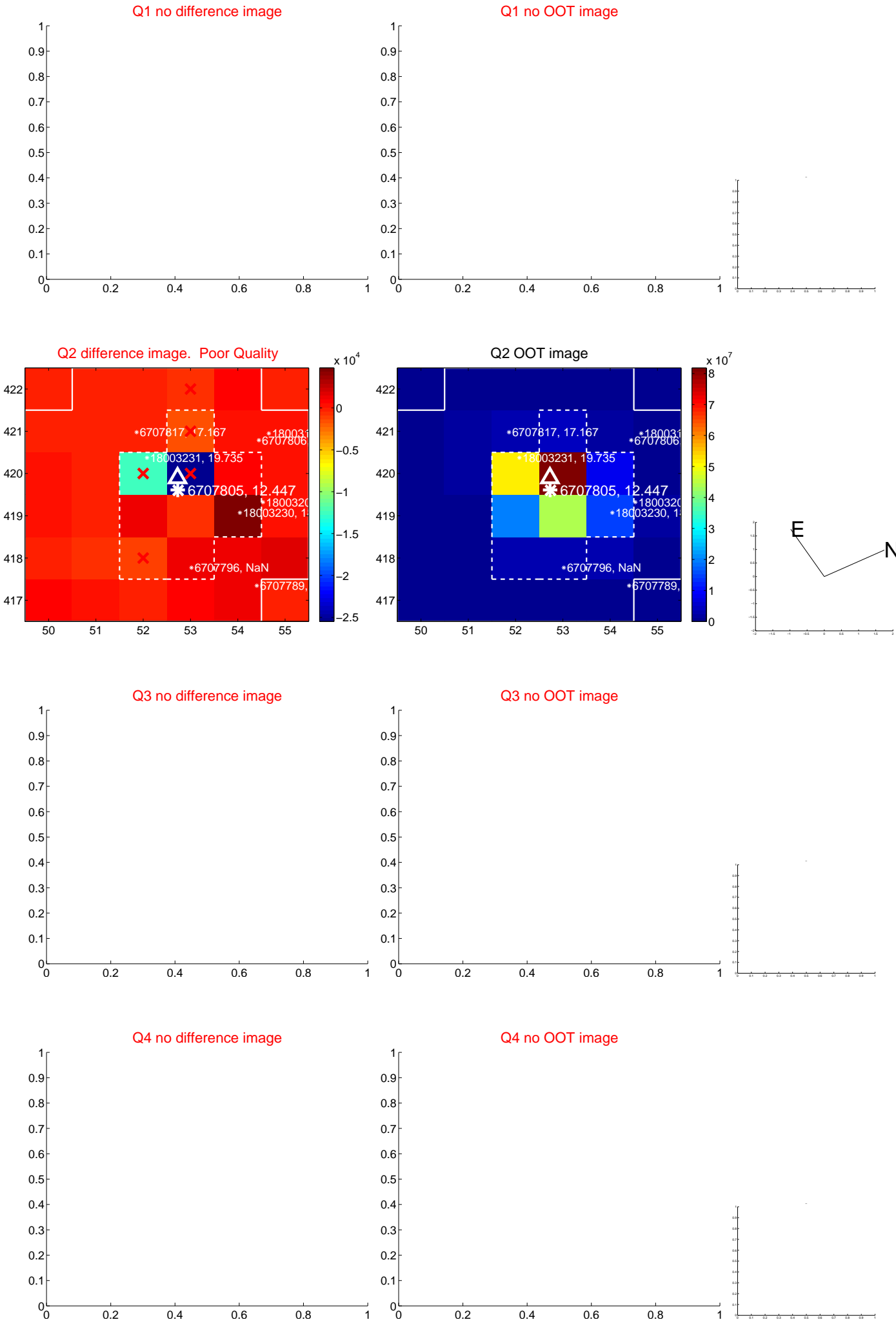
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.274 \pm 0.267$	1.03	$-0.207 \pm 0.307$	$0.179 \pm 0.247$
PRF-fit source offset from KIC position	$0.148 \pm 0.183$	0.81	$-0.082 \pm 0.275$	$0.123 \pm 0.152$
photometric centroid source offset	$0.15 \pm 0.28$	0.53	$0.12 \pm 0.26$	$-0.09 \pm 0.33$



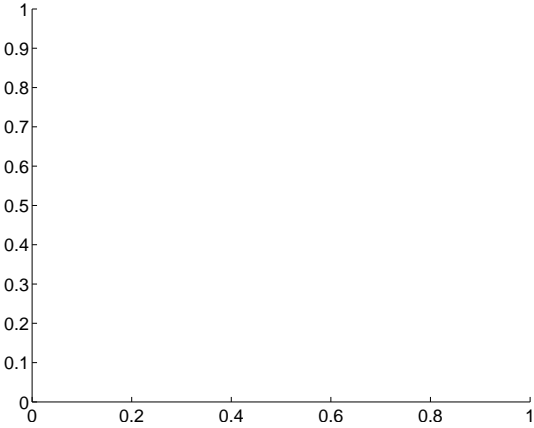
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

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

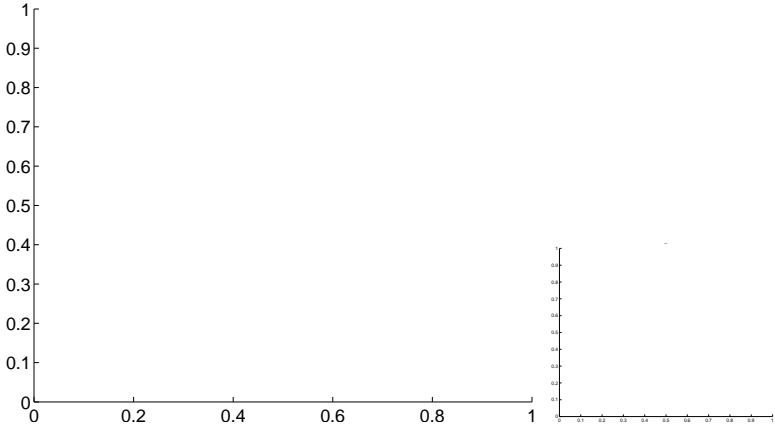


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

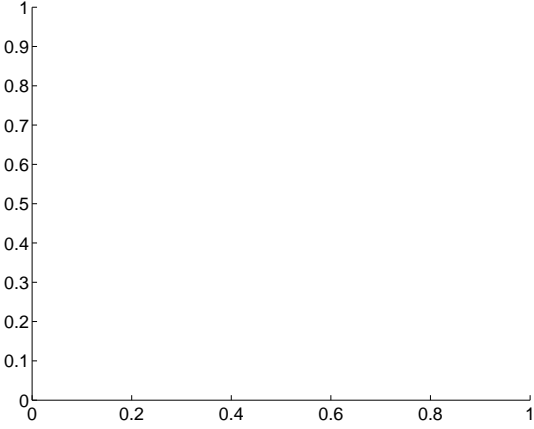
Q5 no difference image



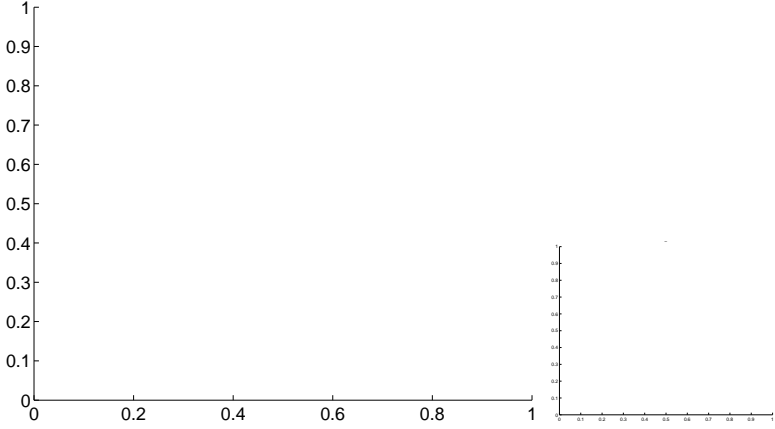
Q5 no OOT image



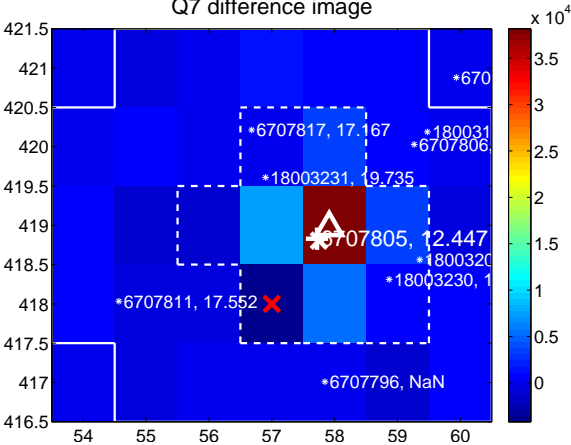
Q6 no difference image



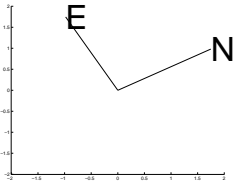
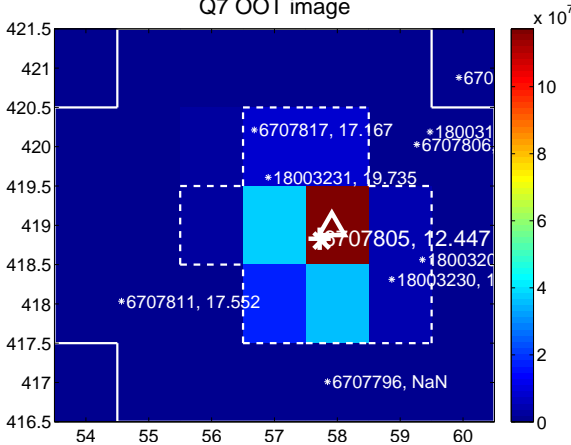
Q6 no OOT image



Q7 difference image



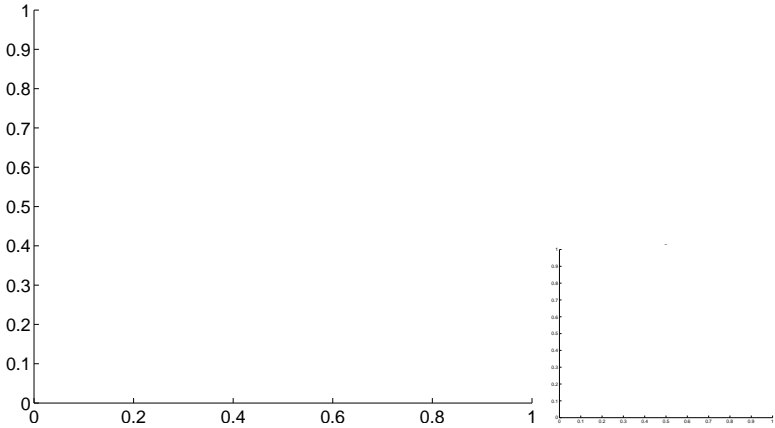
Q7 OOT image



Q8 no difference image

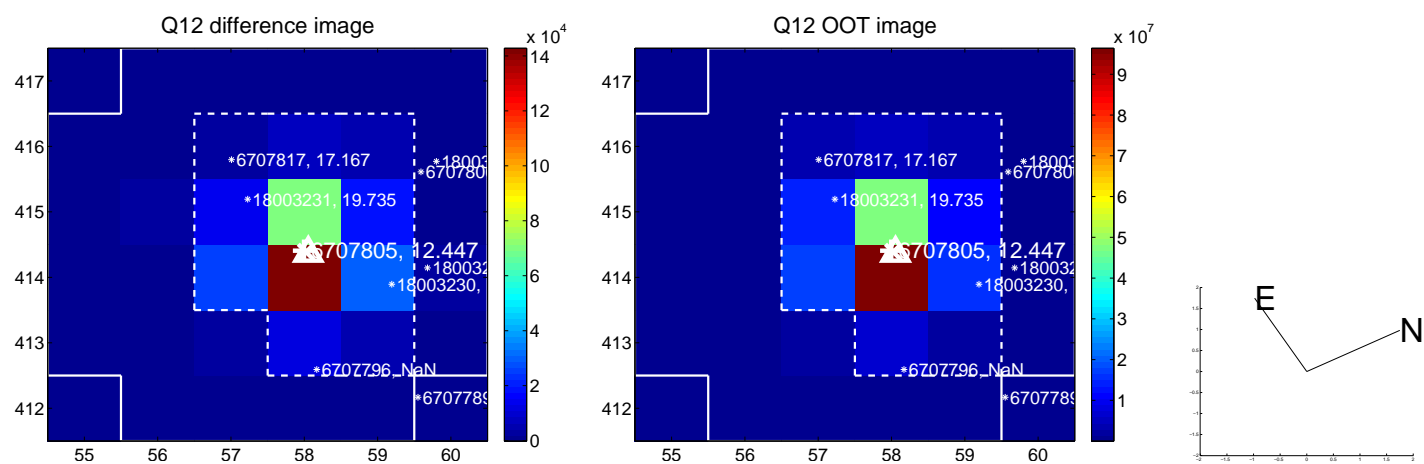


Q8 no OOT image





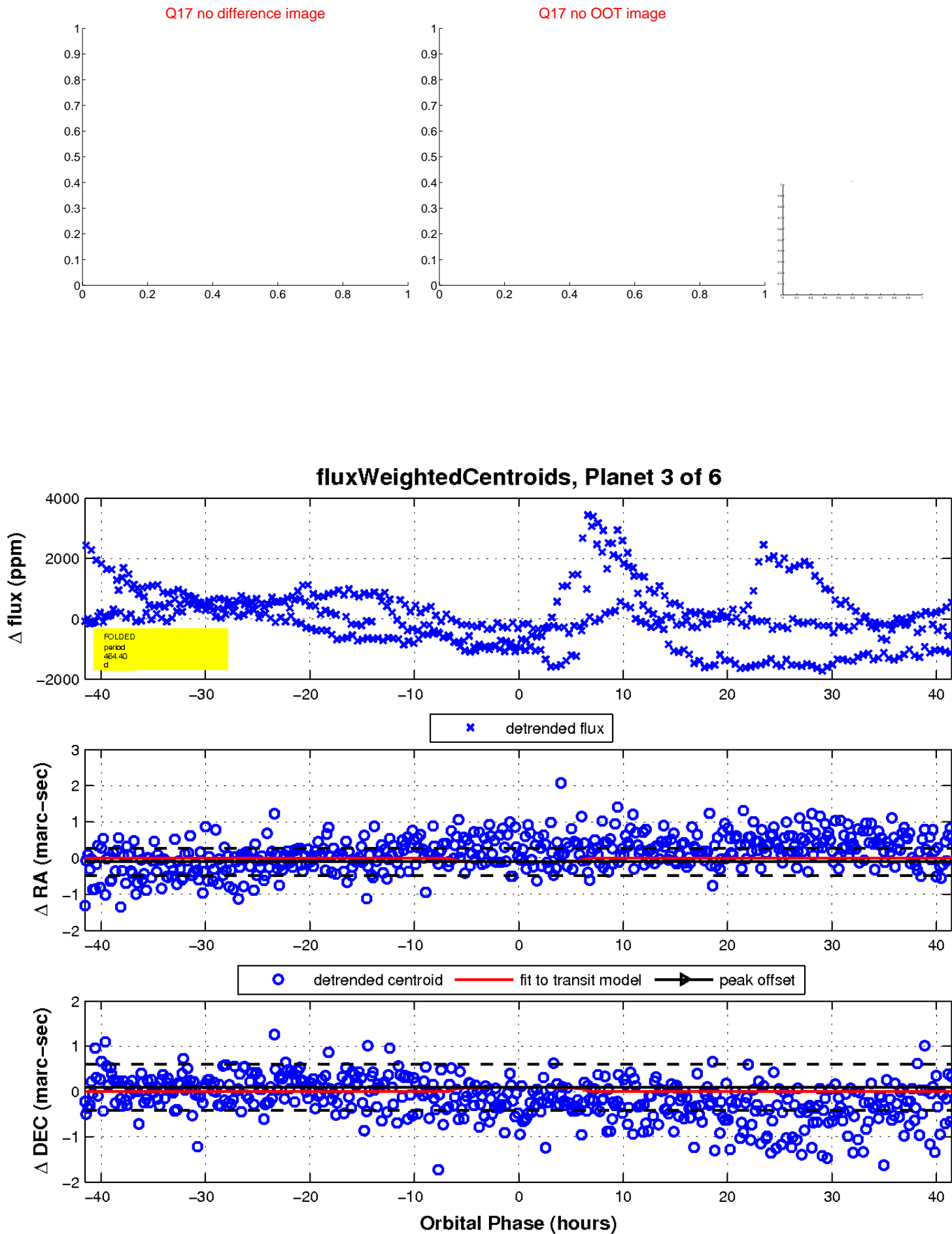
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



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

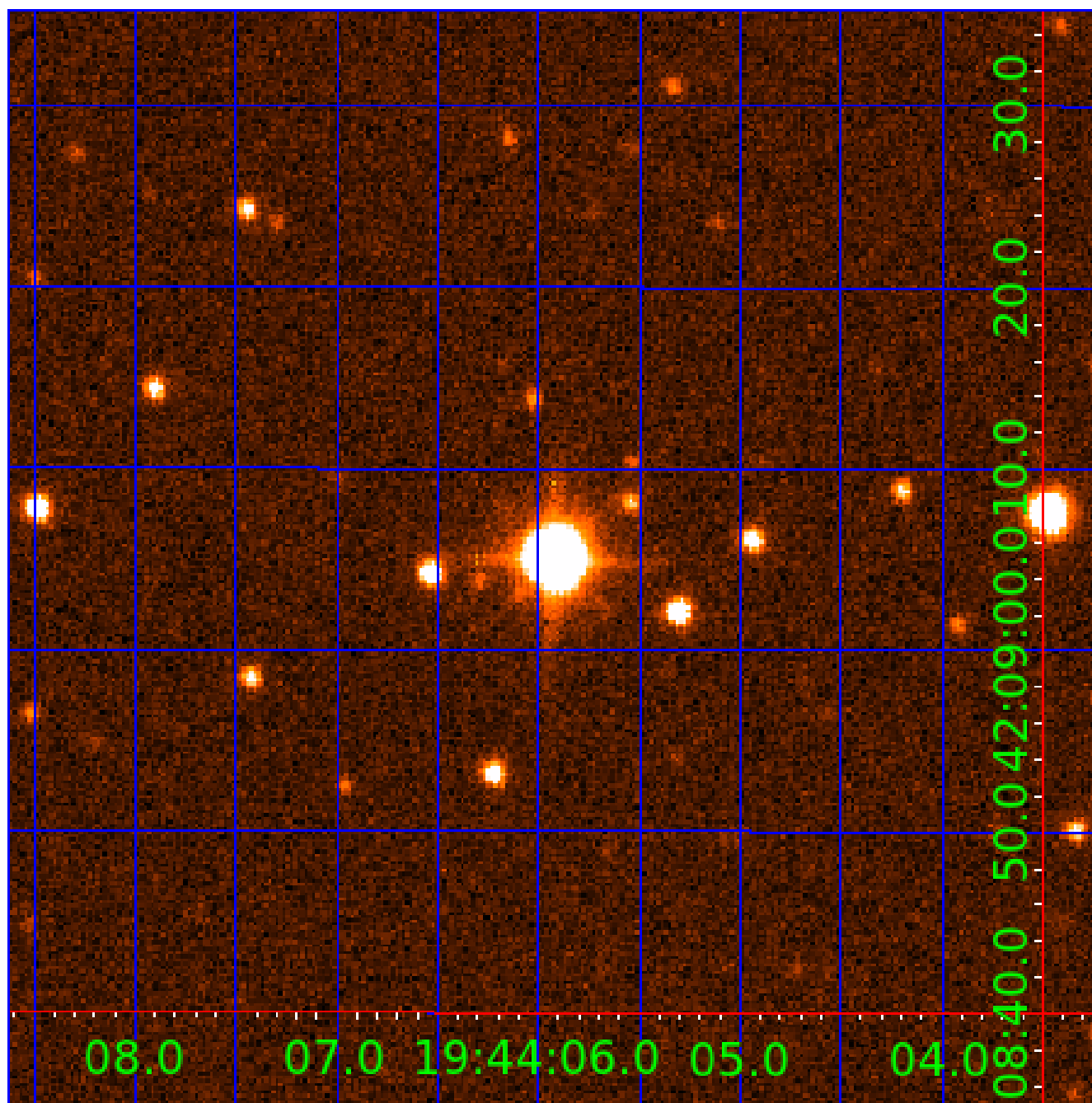


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 006707805

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006707805-01	OBS	No	480.046522	175.694954	7260.0	7.499	18.9	31.2	5.15	5258	81.41	8.23
006707805-02	OBS	No	469.564870	360.520758	766.4	4.730	21.5	6.9	5.15	5258	13.97	8.48
006707805-03	OBS	No	464.397577	240.857893	853.0	13.866	17.5	6.5	5.15	5258	16.73	8.61
006707805-04	OBS	No	576.471098	216.083208	884.8	5.062	17.7	7.0	5.15	5258	15.40	6.45
006707805-05	OBS	No	489.204876	591.562173	454.9	12.456	18.1	4.3	5.15	5258	11.88	8.03
006707805-06	OBS	No	414.583310	318.338438	452.7	9.000	18.6	-1.0	5.15	5258	10.72	10.01

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006707805-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006707805-02	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
006707805-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006707805-04	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
006707805-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006707805-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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

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

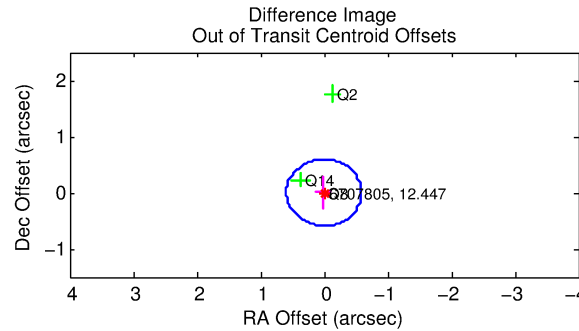
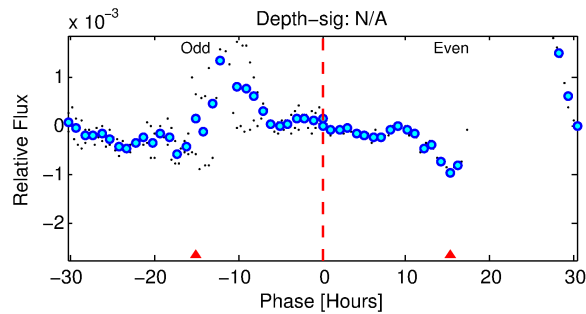
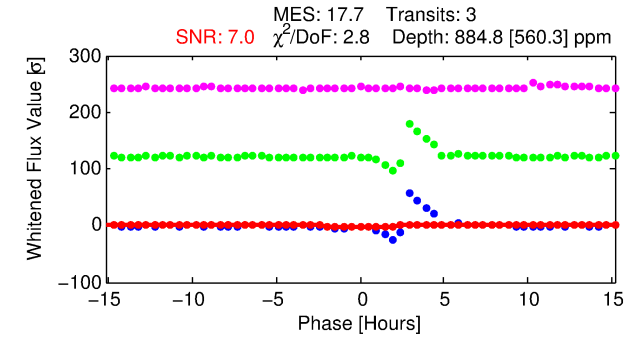
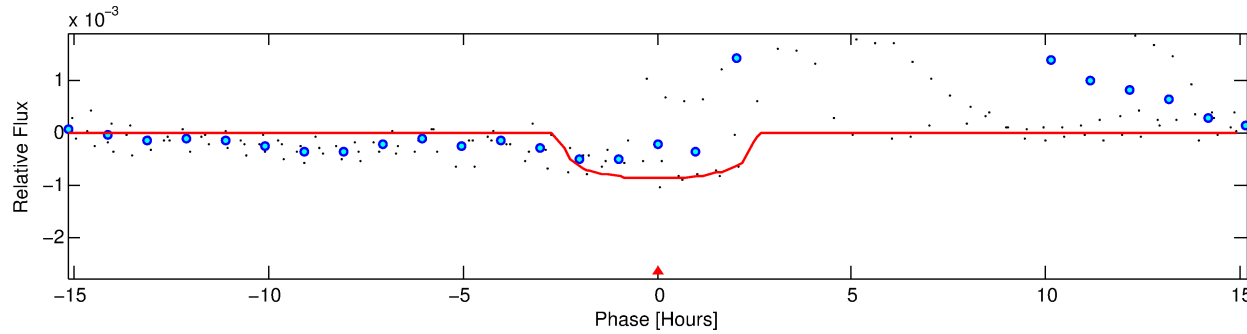
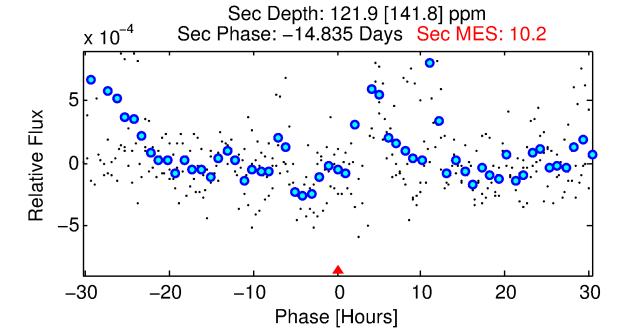
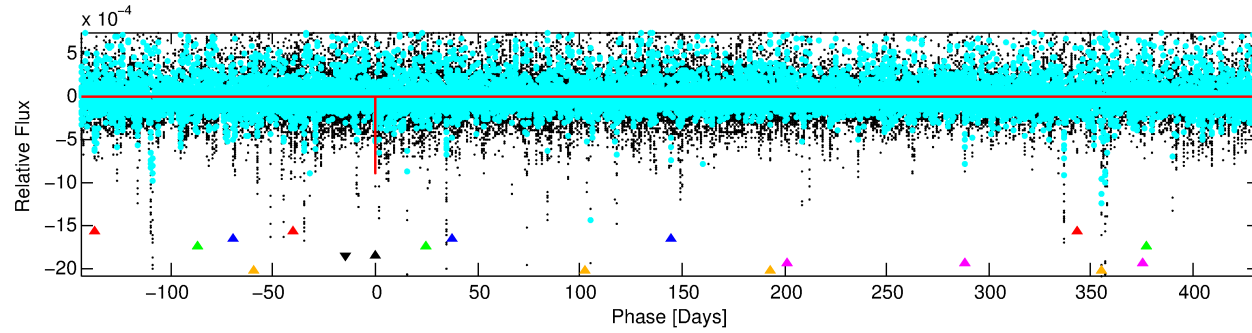
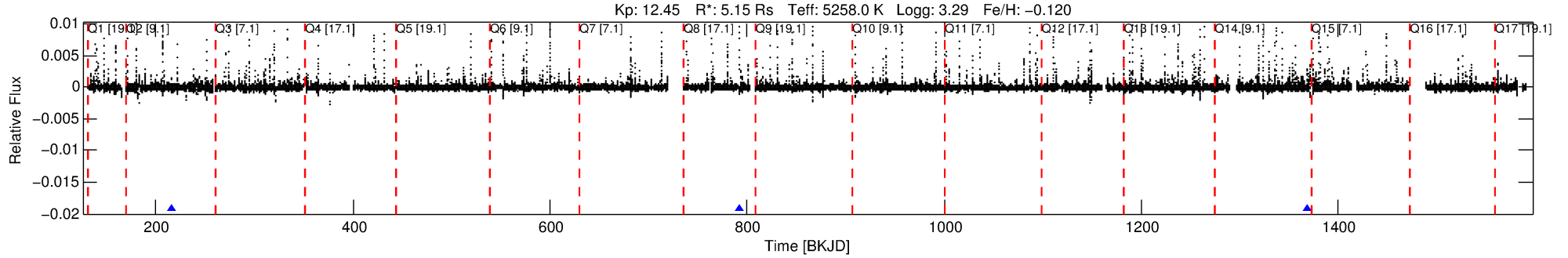
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006707805-04

No Significant Match Found

# DV One-Page Summary

KIC: 6707805 Candidate: 4 of 6 Period: 576.471 d



## DV Fit Results:

Period = 576.47110 [0.01806] d  
Epoch = 216.0832 [0.0216] BKJD  
Rp/R\* = 0.0274 [0.0977]  
a/R\* = 806.95 [10879.64]  
b = 0.44 [24.85]  
Seff = 6.45 [3.18]  
Teq = 406 [50] K  
Rp = 15.40 [55.23] Re  
a = 1.6774 [0.5566] AU  
Ag = 795.29 [5756.74] [0.14σ]  
Teff = 3336 [6025] K [0.49σ]

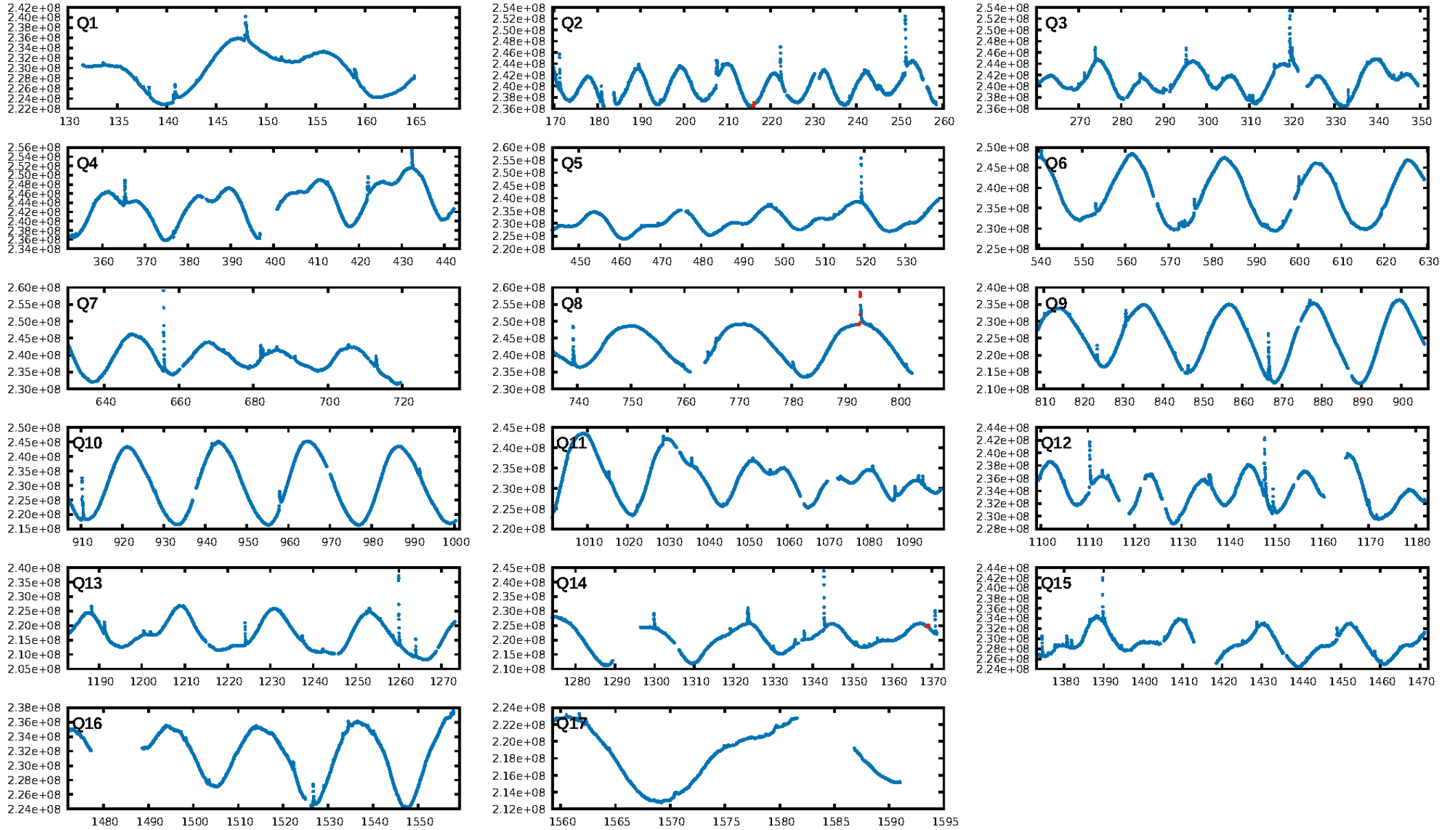
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [155.77σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 2.6%  
ModelChiSquareGof-sig: 62.2%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
**GhostDiagnostic-chr: 0.905**  
Centroid-sig: 13.3%  
Centroid-so: 0.388 arcsec [1.24σ]  
OotOffset-rm: 0.005 arcsec [0.02σ]  
OotOffset-st: 2/0/1/0 [3]  
KicOffset-rm: 0.139 arcsec [0.48σ]  
KicOffset-st: 2/0/1/0 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

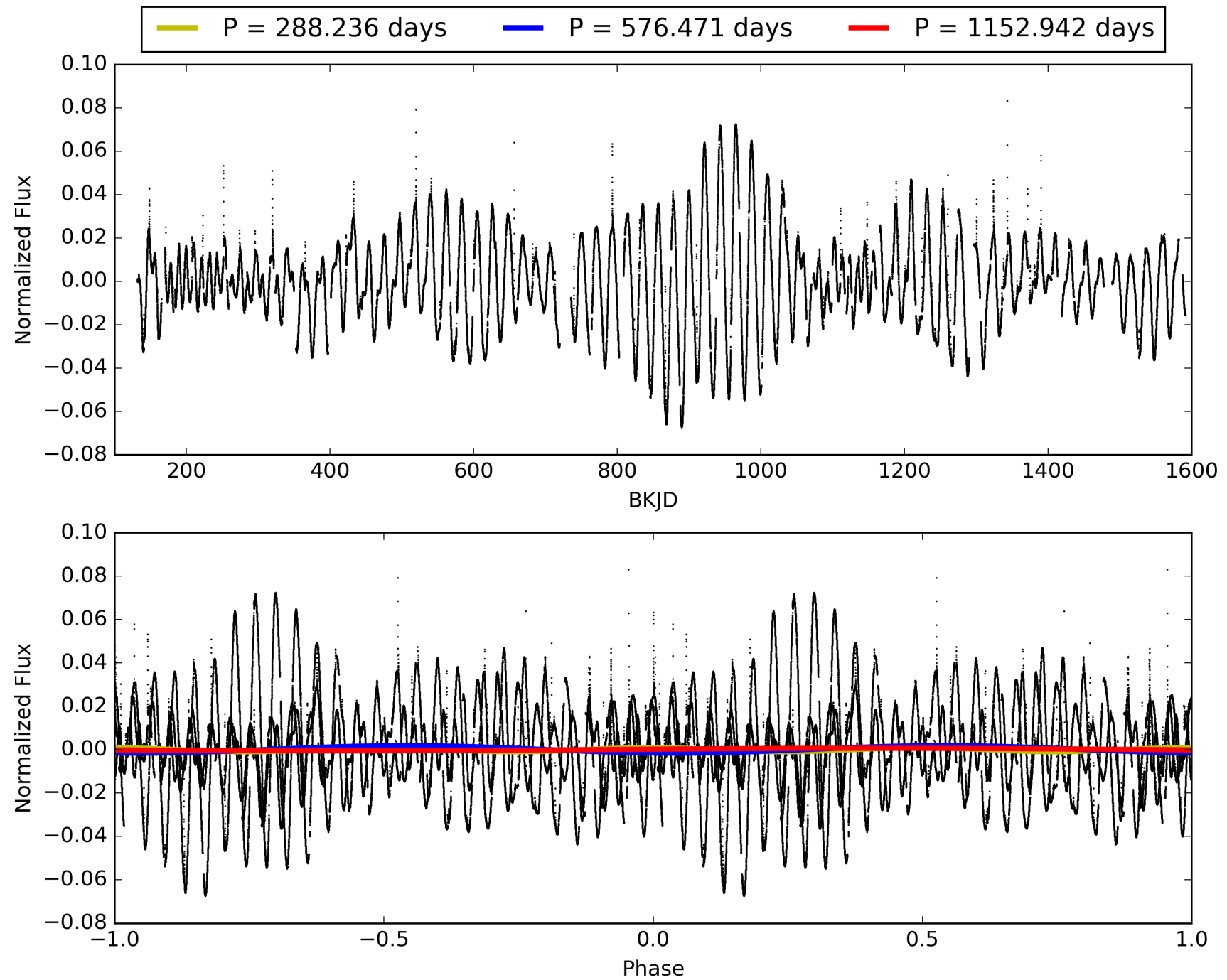
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:25:29 Z

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

# TCE 006707805-04, PDC Light Curves



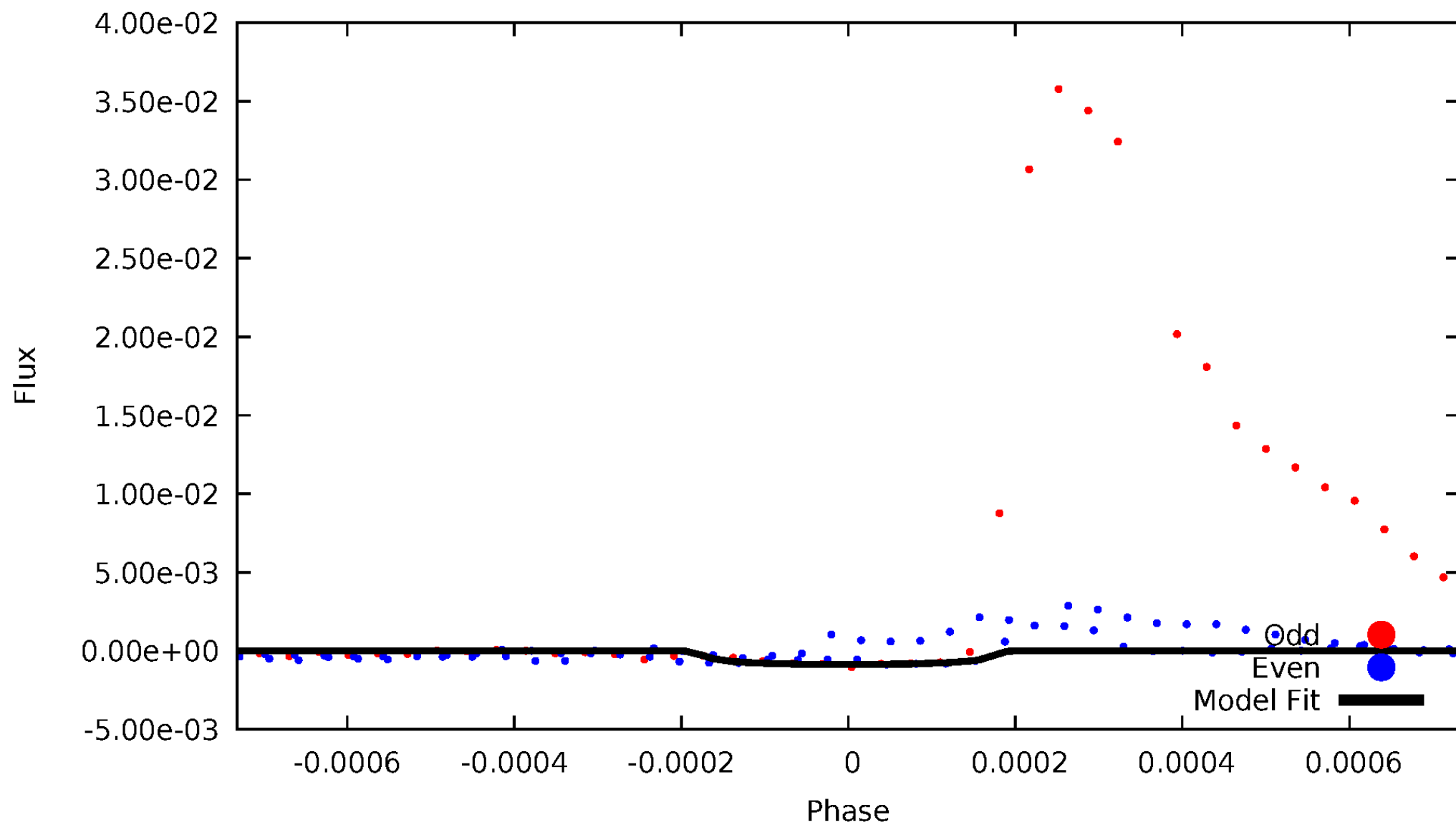
# TCE 006707805-04





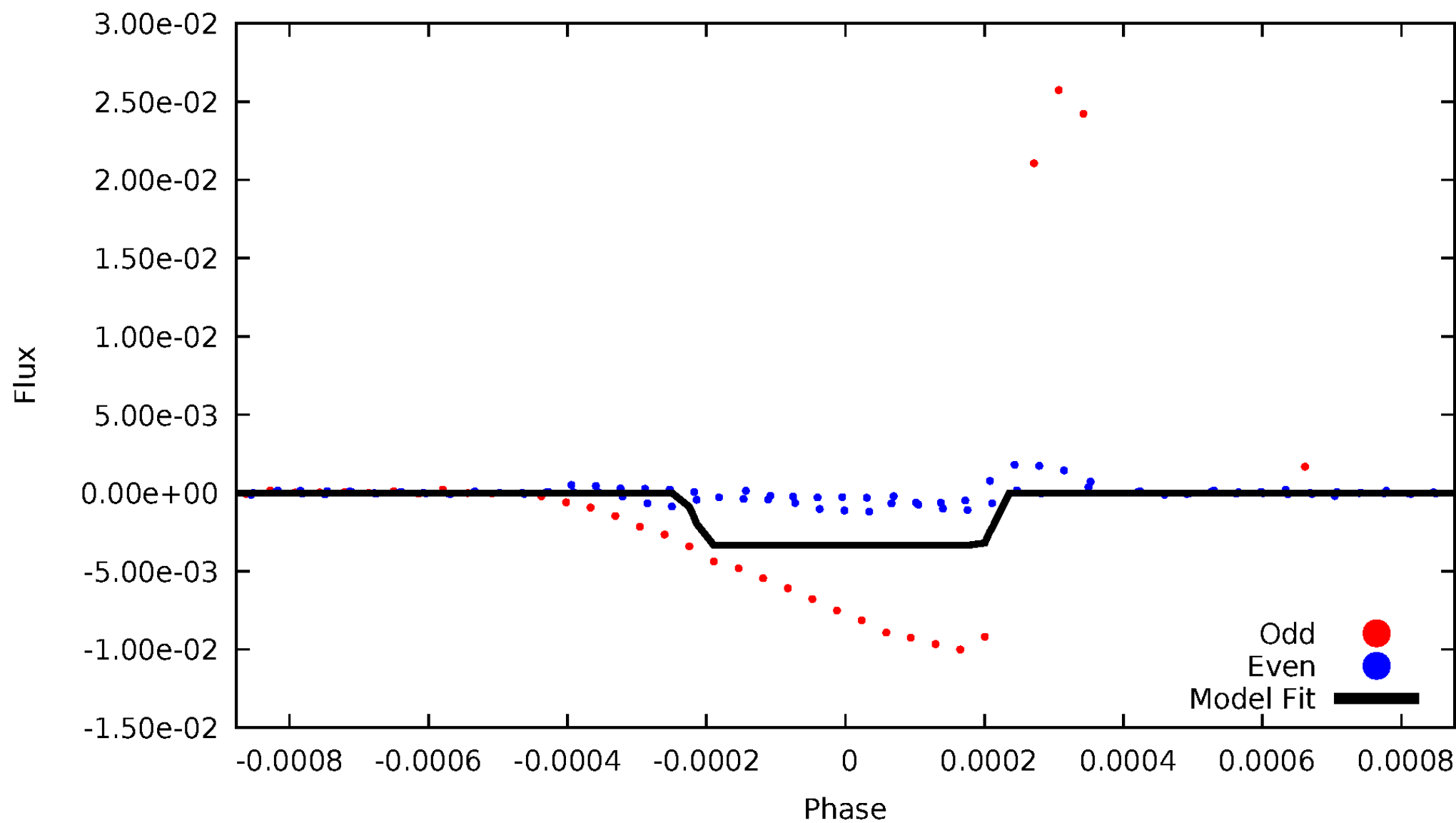
# DV Odd/Even

TCE 006707805-04



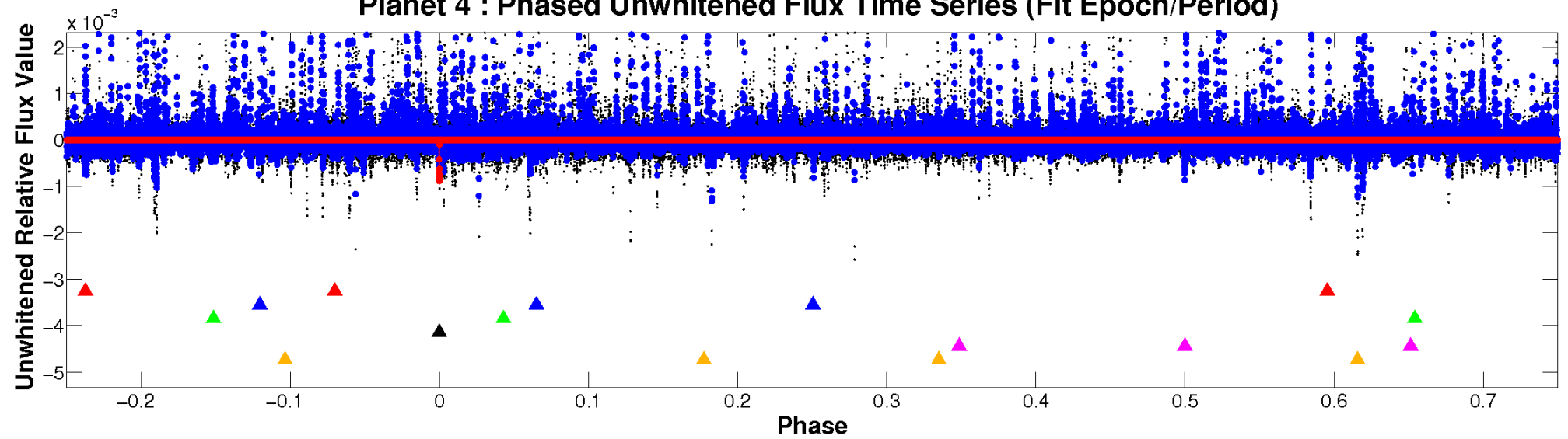
# ALT Odd/Even

TCE 006707805-04

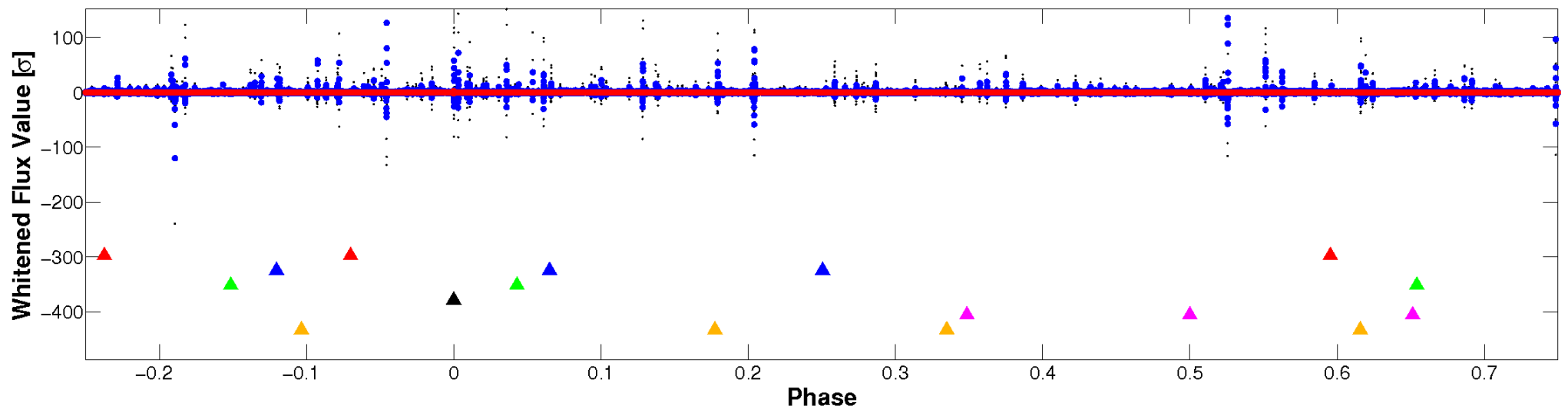


# Non-Whitened Vs. Whitened Light Curve

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

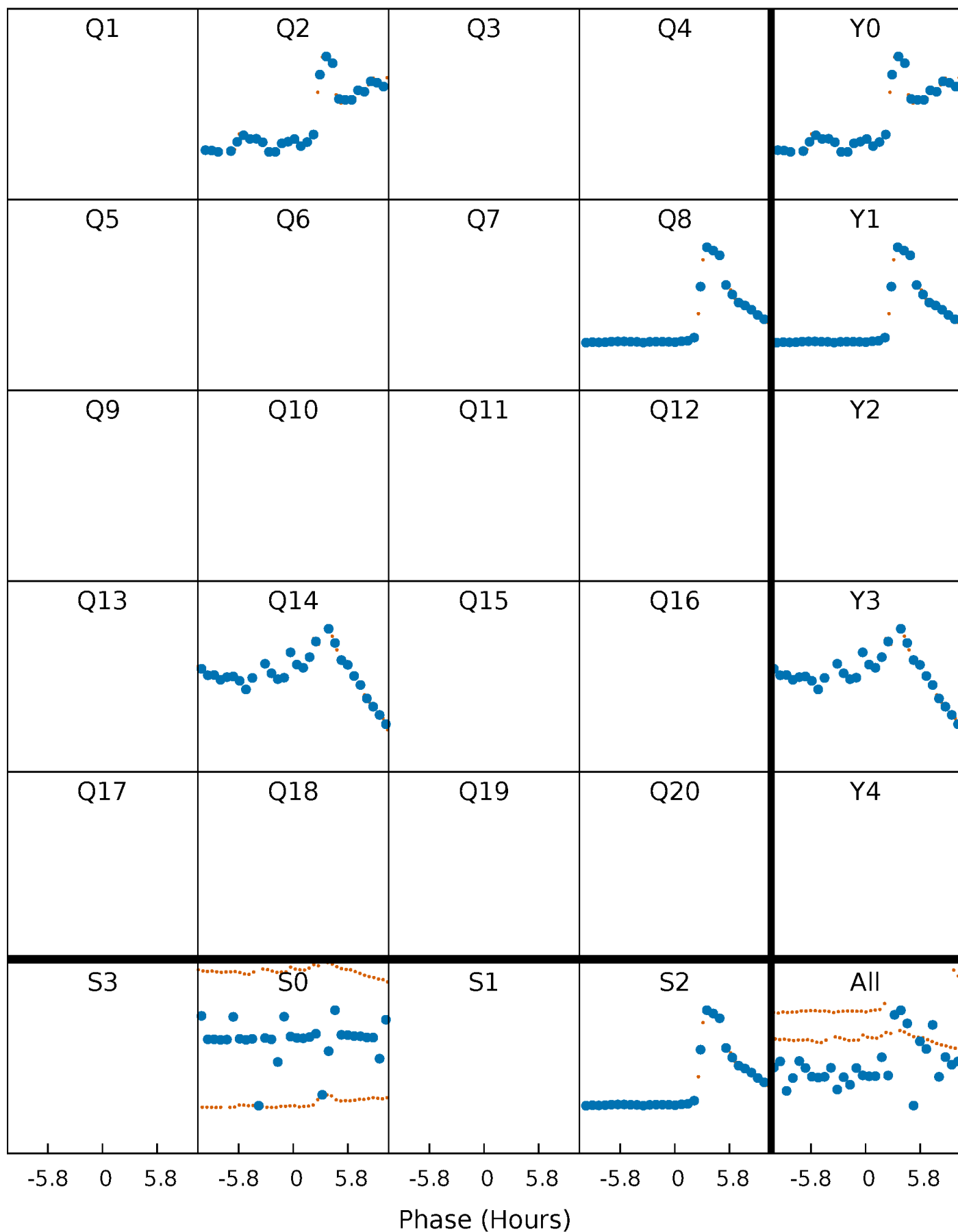


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



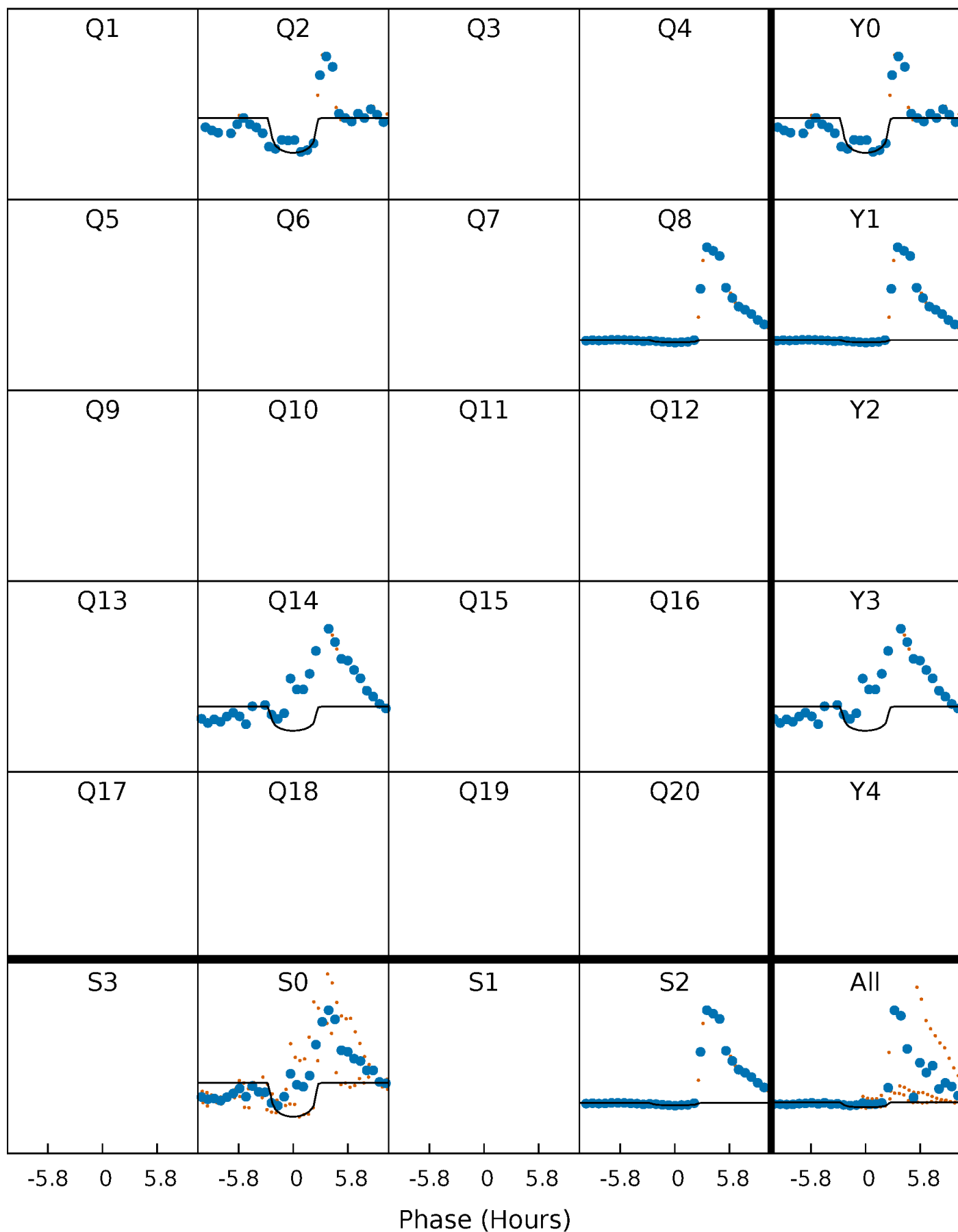
# PDC Quarter-Phased Transit Curves

TCE 006707805-04 P=576.471098 Days  $T_0=216.083208$  (BKJD)



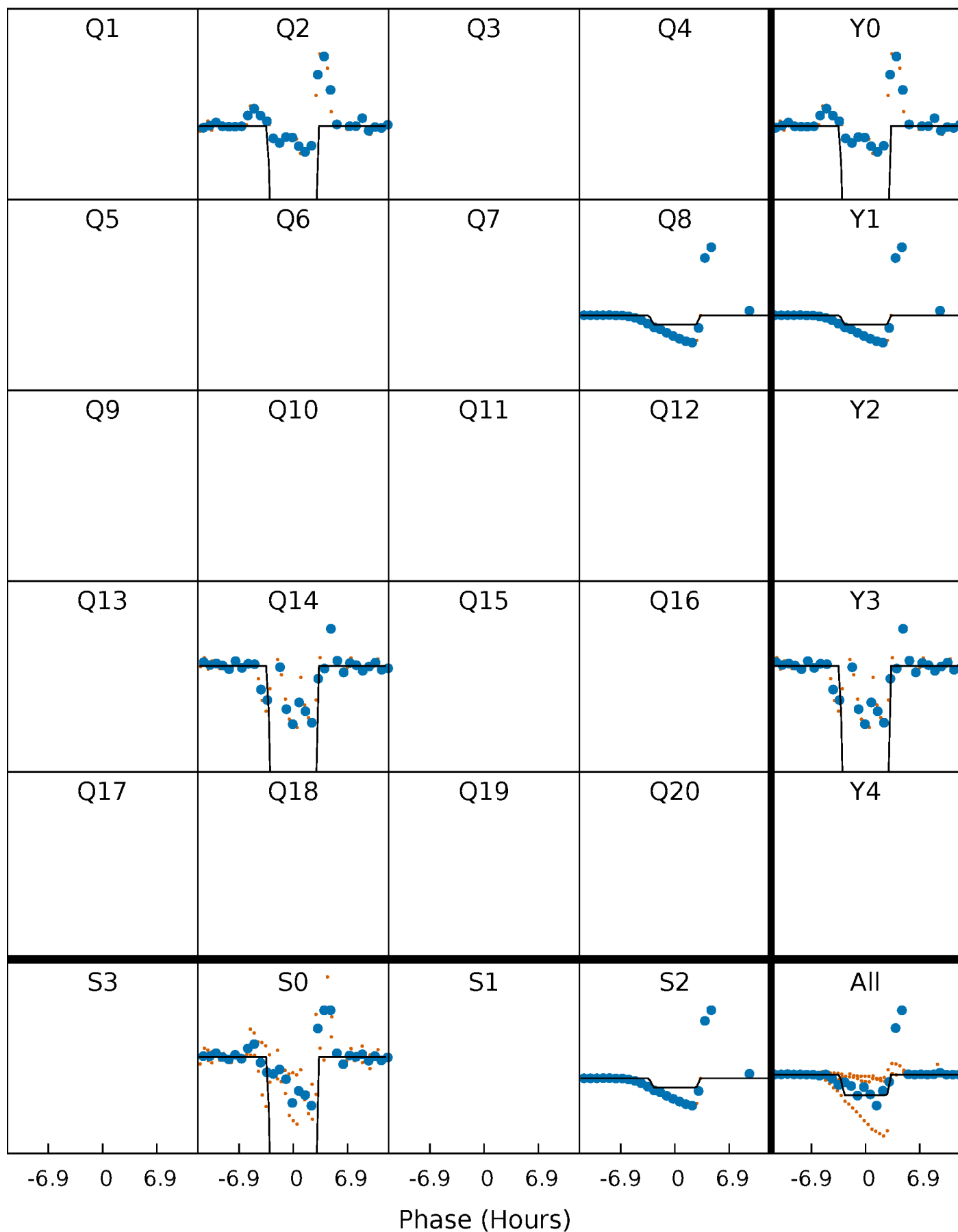
# DV Quarter-Phased Transit Curves

TCE 006707805-04 P=576.471098 Days  $T_0=216.083208$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

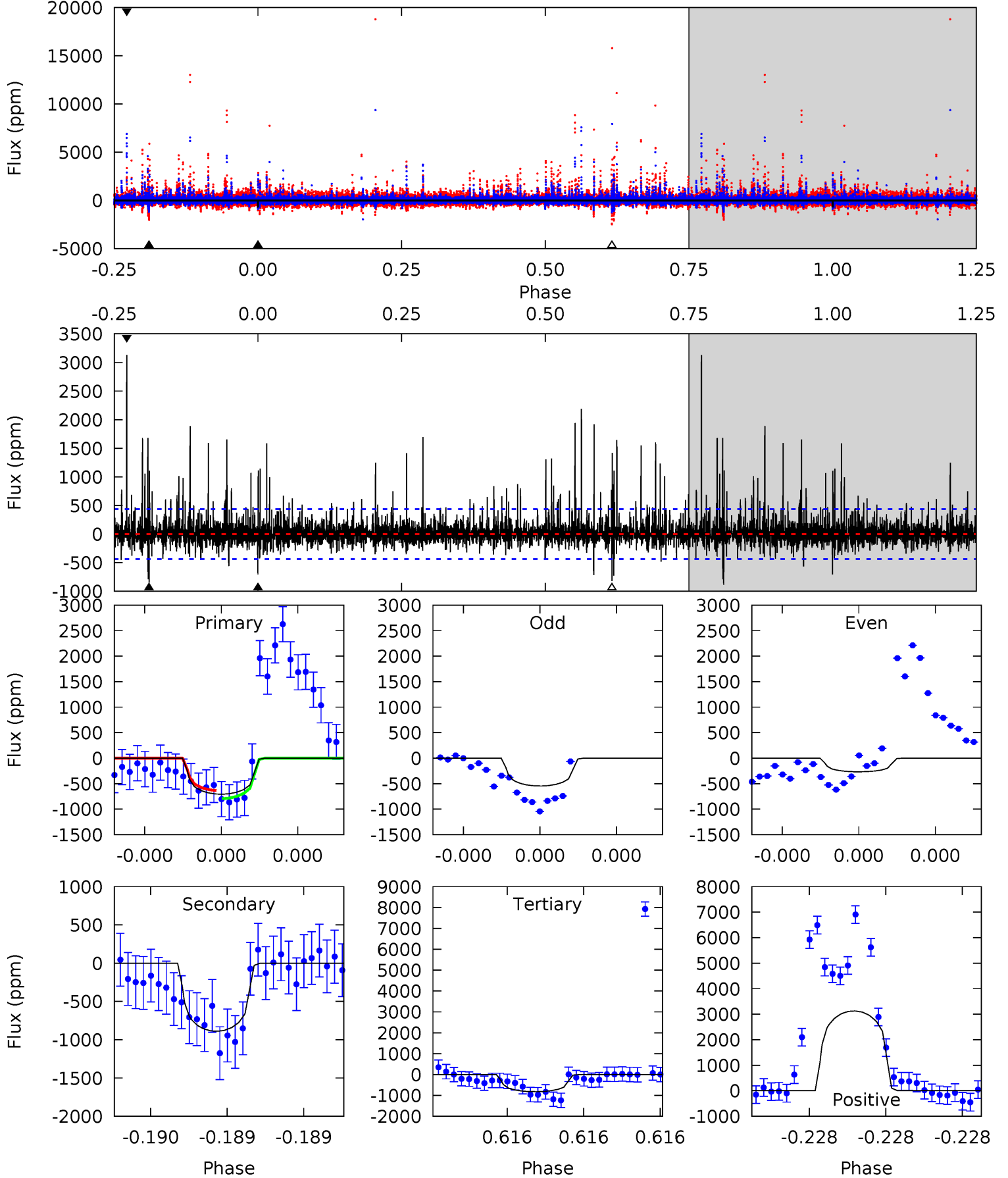
TCE 006707805-04 P=576.451161 Days  $T_0=216.071454$  (BKJD)



# DV Model-Shift Uniqueness Test

006707805-04, P = 576.471098 Days, E = 216.083208 Days

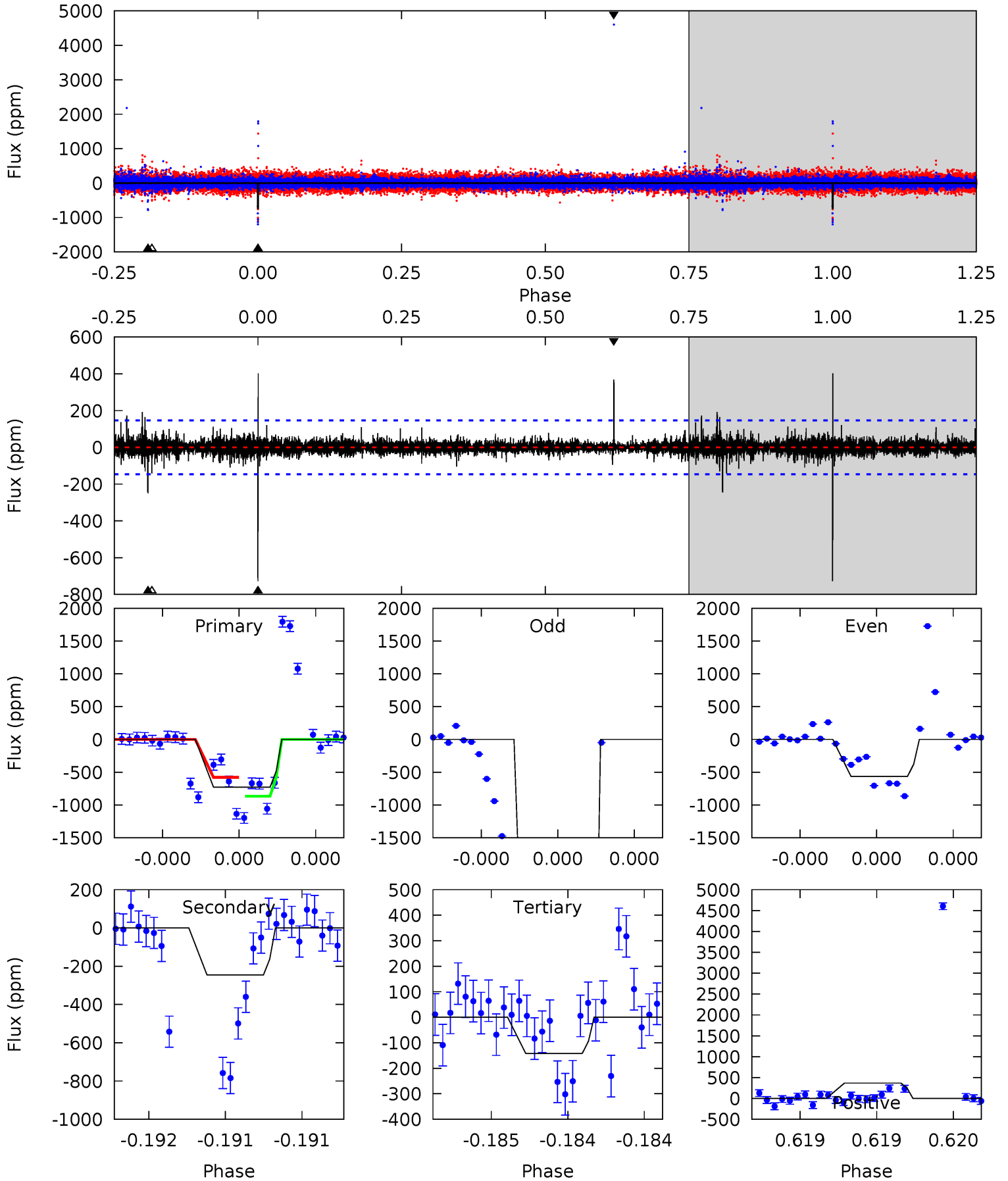
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.10	11.5	10.6	40.3	5.62	3.55	2.56	-1.49	-31.2	0.87	-28.8	0.53	0.46	0.78	0



# Alt Model-Shift Uniqueness Test

006707805-04, P = 576.451161 Days, E = 216.071454 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
27.7	9.35	5.41	14.0	5.60	3.52	0.80	22.3	13.7	3.93	-4.69	163.9	3.95	0.36	5.46





### Stellar Parameters For KIC 006707805

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5258^{+62}_{-125}$	$3.292^{+0.264}_{-0.066}$	$-0.120^{+0.150}_{-0.250}$	$5.148^{+0.507}_{-2.029}$	$1.894^{+0.115}_{-0.654}$	$0.020^{+0.038}_{-0.005}$
	+1%/-2%	+8%/-2%	+125%/-208%	+10%/-39%	+6%/-35%	+194%/-24%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 006707805-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-889 \pm 78$	$40.85^{+45.11}_{-28.55}$	$558^{+24}_{-46}$	$3617^{+2095}_{-706}$	$795^{+8052}_{-613}$
Alt.	$-245 \pm 26$	$47.90^{+46.20}_{-33.16}$	$558^{+22}_{-46}$	$2852^{+1251}_{-449}$	$162^{+1503}_{-121}$

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

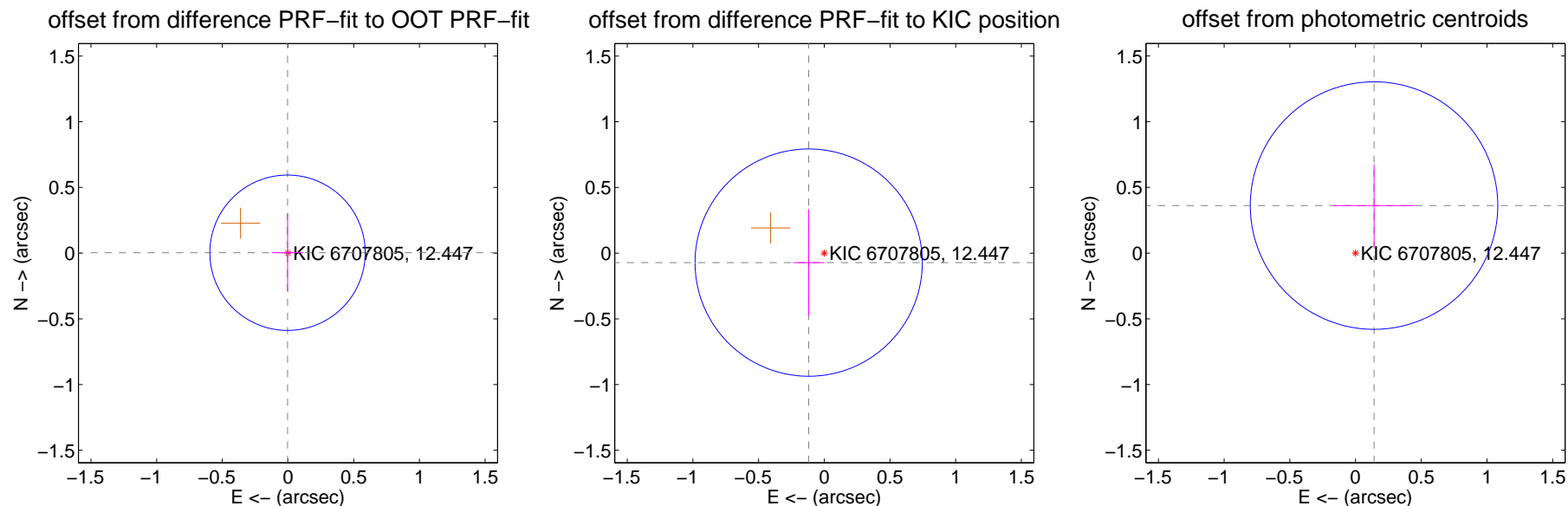
## DV Centroid Data

Supplemental centroid analysis for 006707805-04. Kepler magnitude: 12.45. Transit SNR 6.98

There are 2 quarters with good PRF difference image offsets

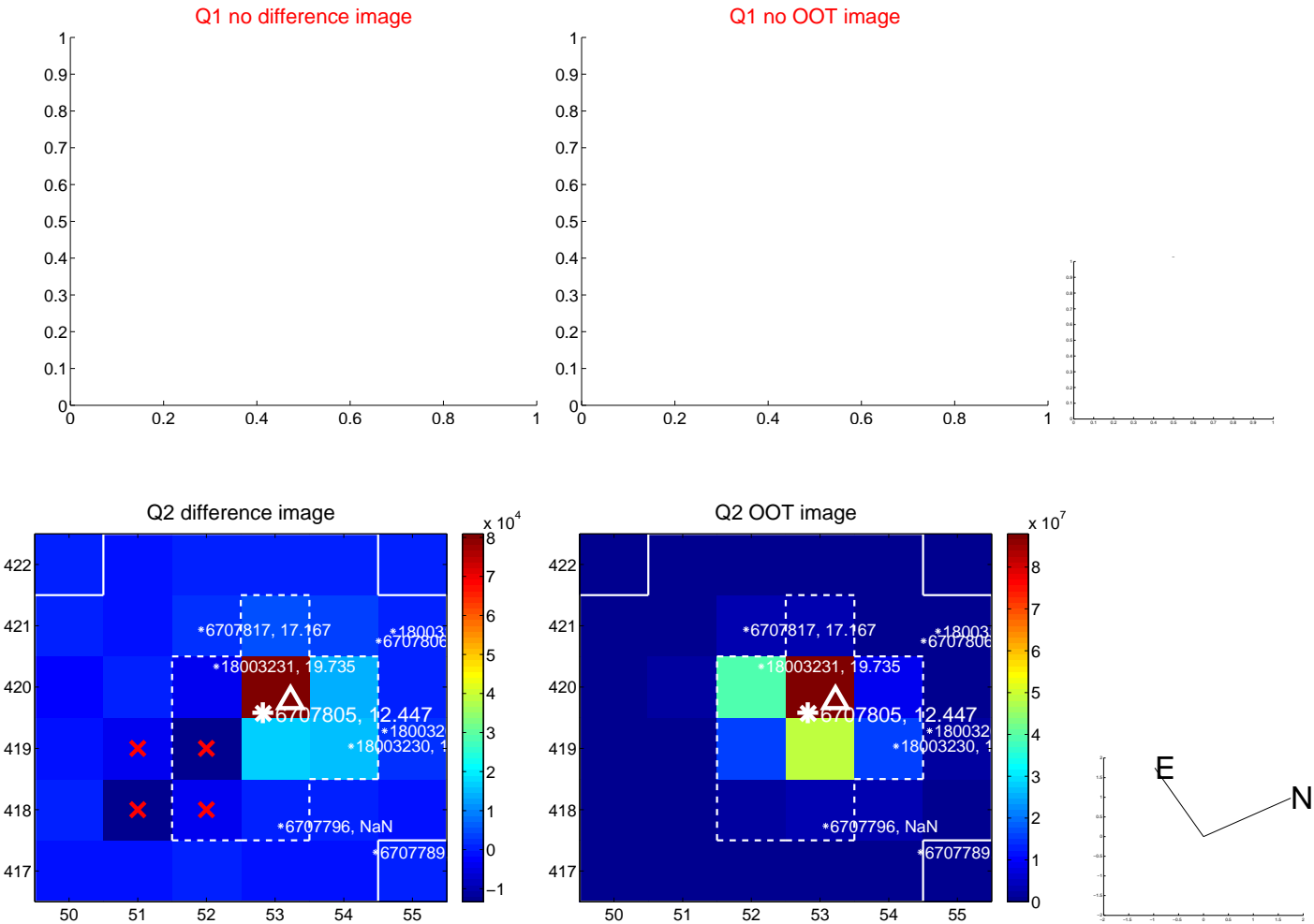
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.005 \pm 0.197$	0.02	$0.004 \pm 0.121$	$0.003 \pm 0.297$
PRF-fit source offset from KIC position	$0.139 \pm 0.288$	0.48	$0.119 \pm 0.120$	$-0.072 \pm 0.406$
photometric centroid source offset	$0.39 \pm 0.31$	1.24	$-0.14 \pm 0.31$	$0.36 \pm 0.31$

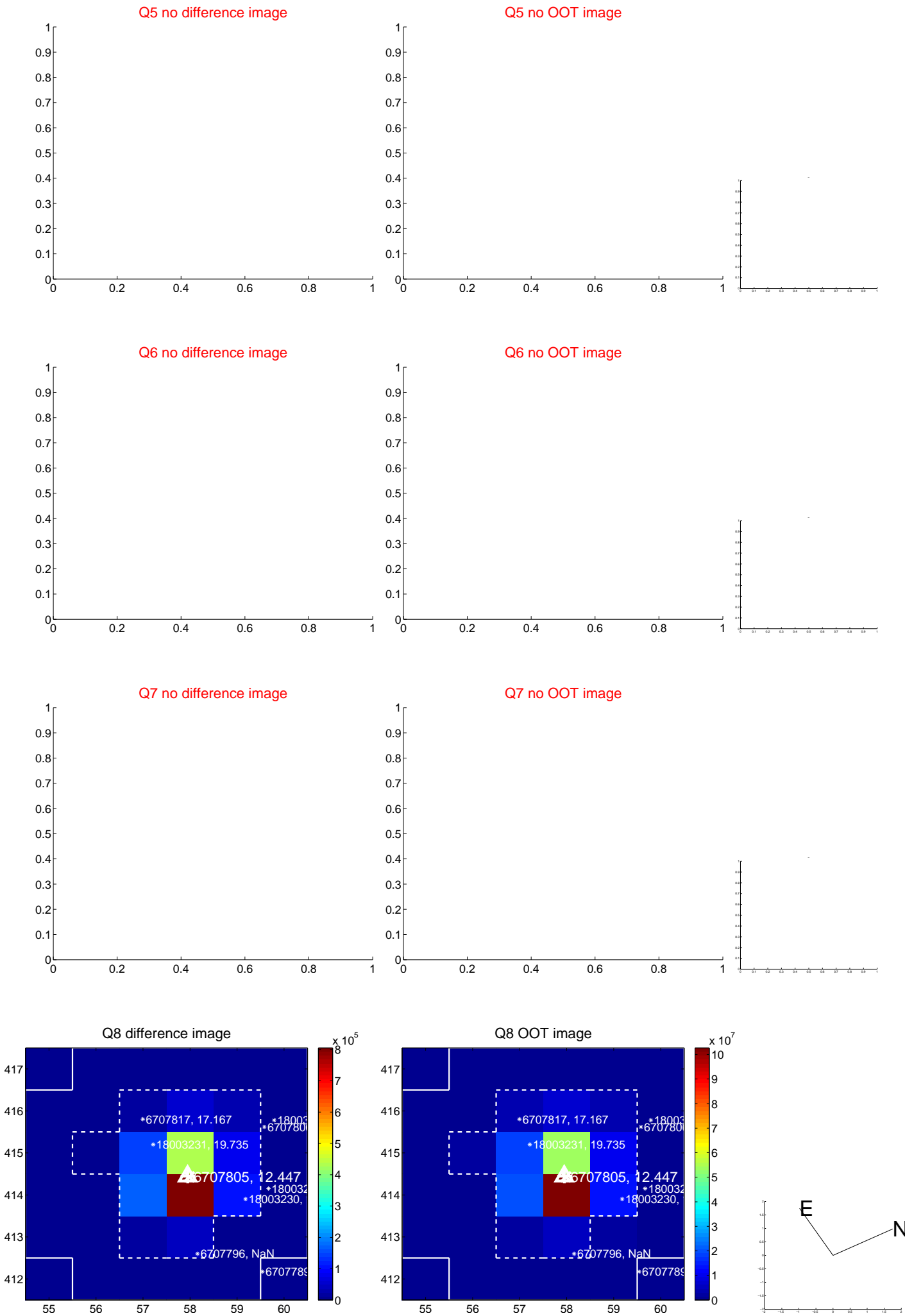


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

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



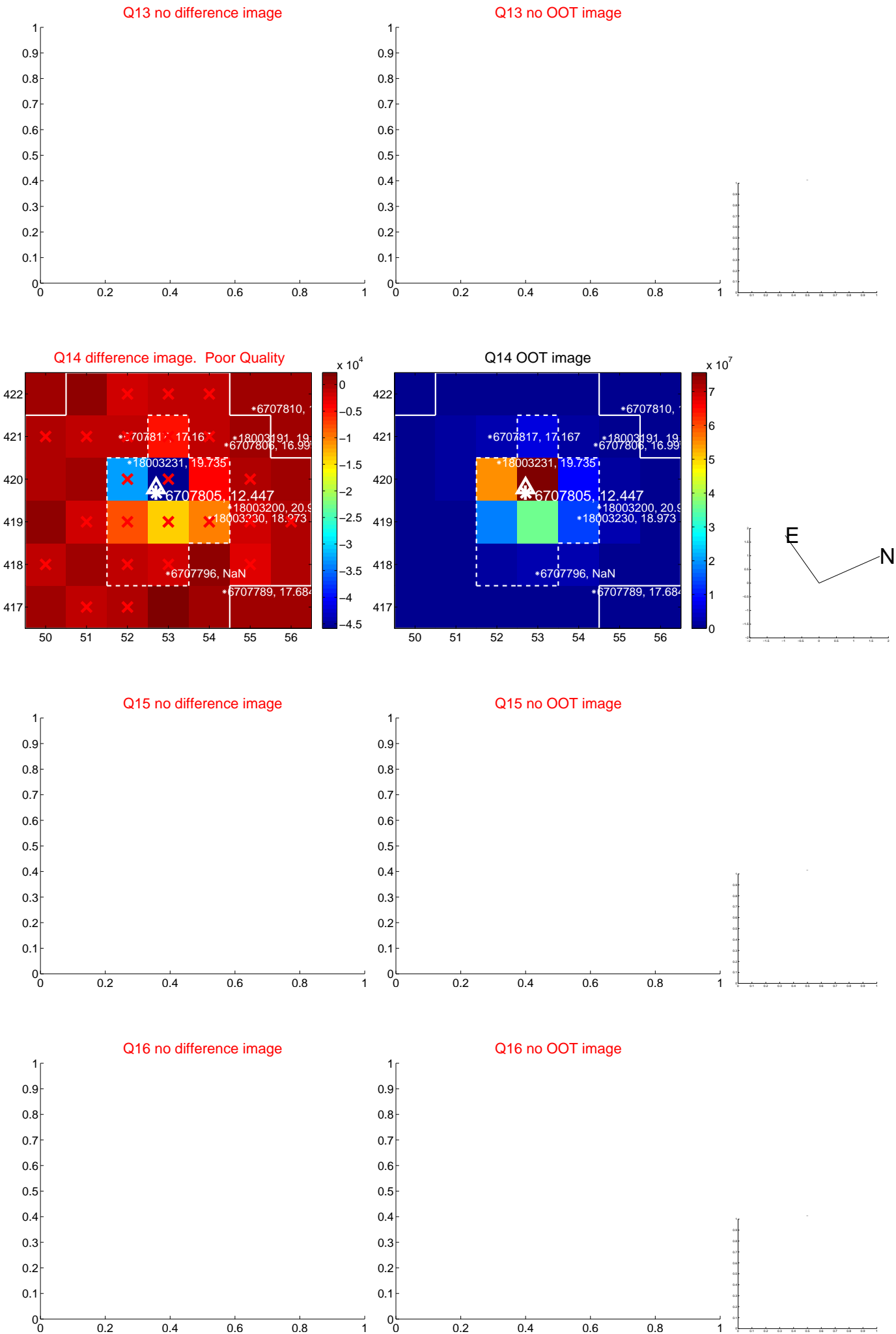
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



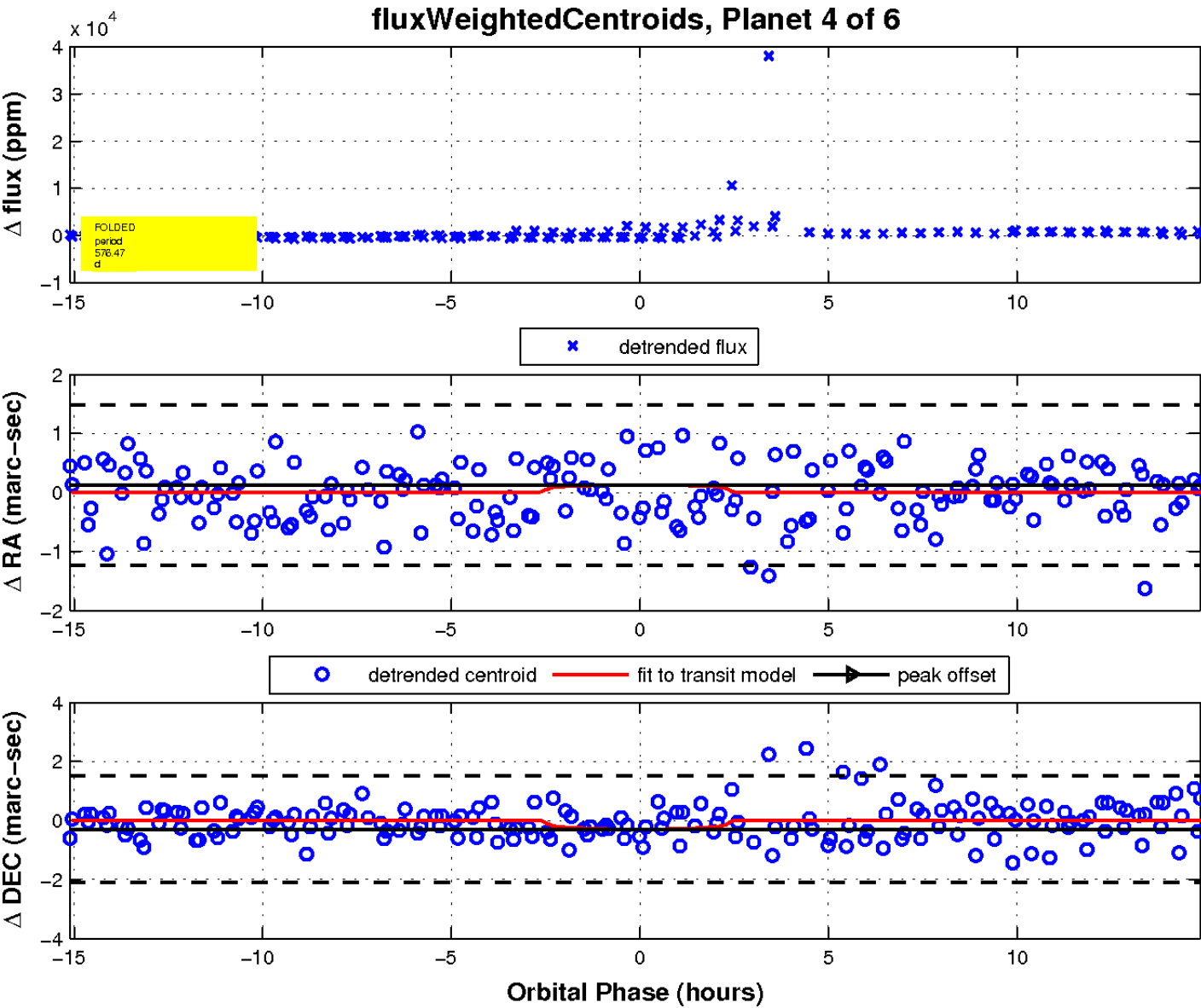
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

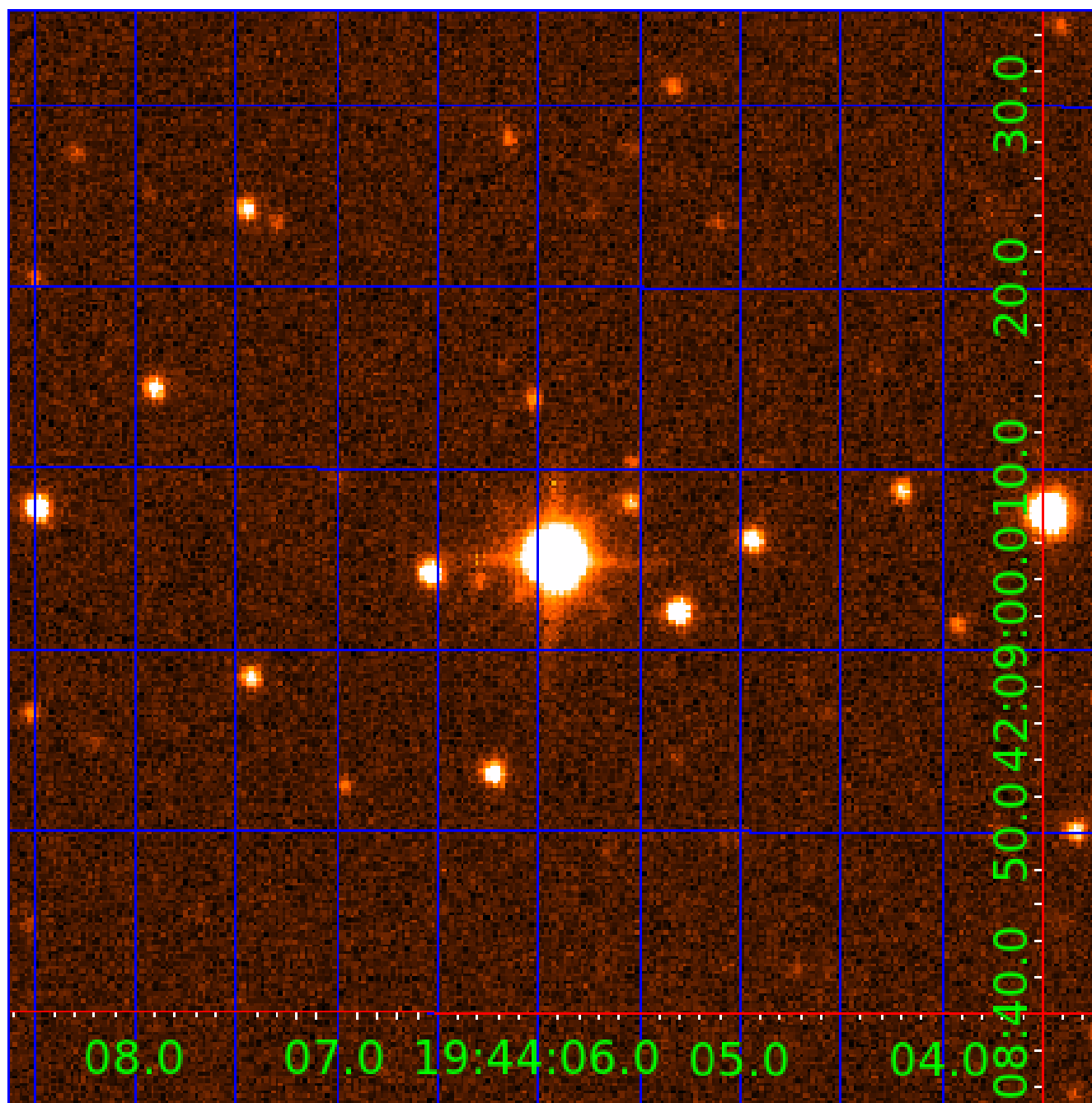


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 006707805

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006707805-01	OBS	No	480.046522	175.694954	7260.0	7.499	18.9	31.2	5.15	5258	81.41	8.23
006707805-02	OBS	No	469.564870	360.520758	766.4	4.730	21.5	6.9	5.15	5258	13.97	8.48
006707805-03	OBS	No	464.397577	240.857893	853.0	13.866	17.5	6.5	5.15	5258	16.73	8.61
006707805-04	OBS	No	576.471098	216.083208	884.8	5.062	17.7	7.0	5.15	5258	15.40	6.45
006707805-05	OBS	No	489.204876	591.562173	454.9	12.456	18.1	4.3	5.15	5258	11.88	8.03
006707805-06	OBS	No	414.583310	318.338438	452.7	9.000	18.6	-1.0	5.15	5258	10.72	10.01

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006707805-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006707805-02	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
006707805-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006707805-04	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
006707805-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006707805-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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

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

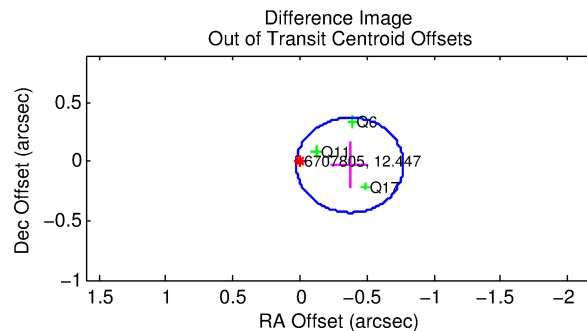
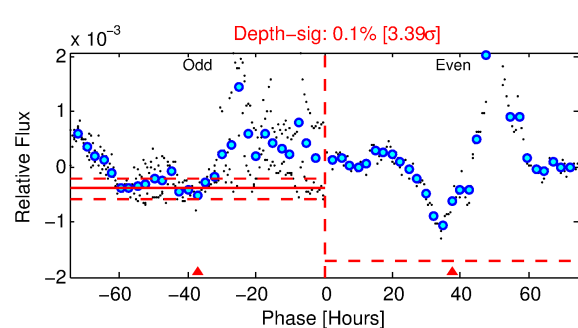
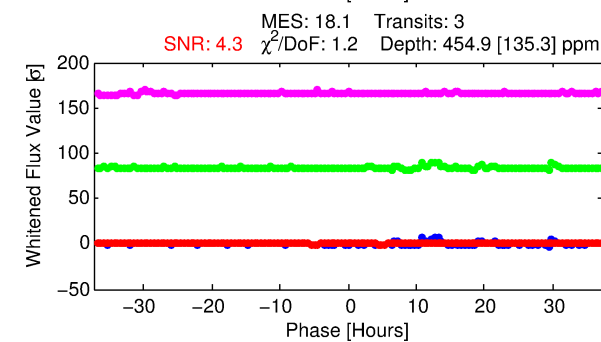
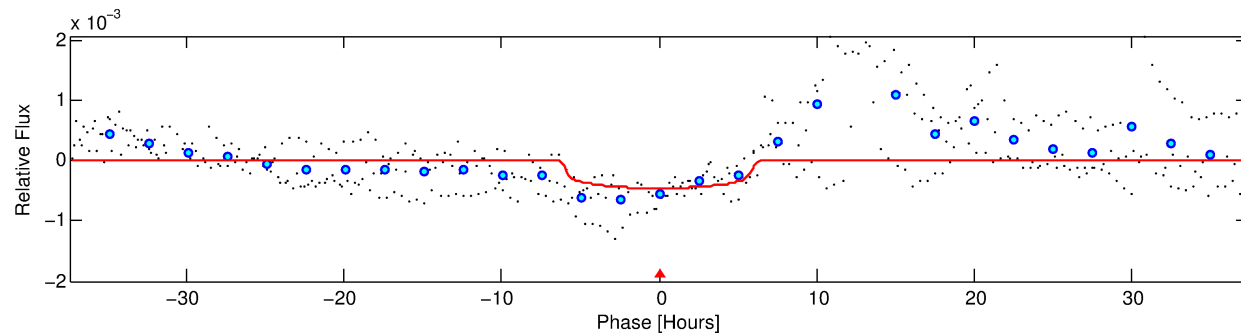
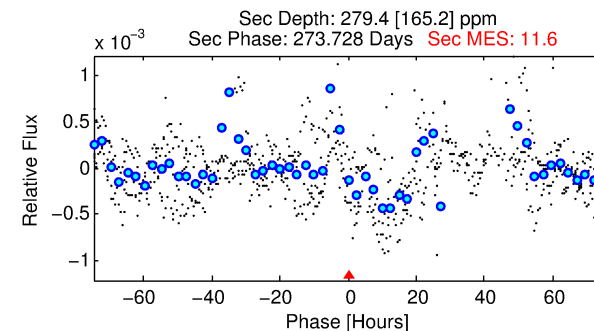
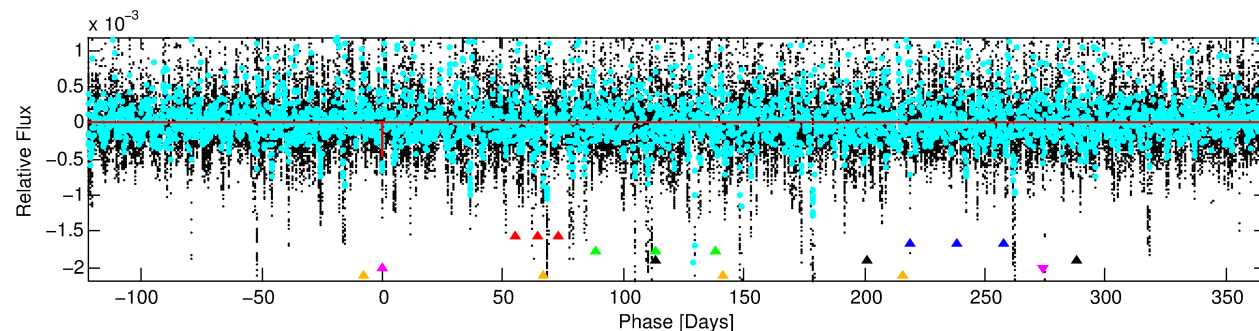
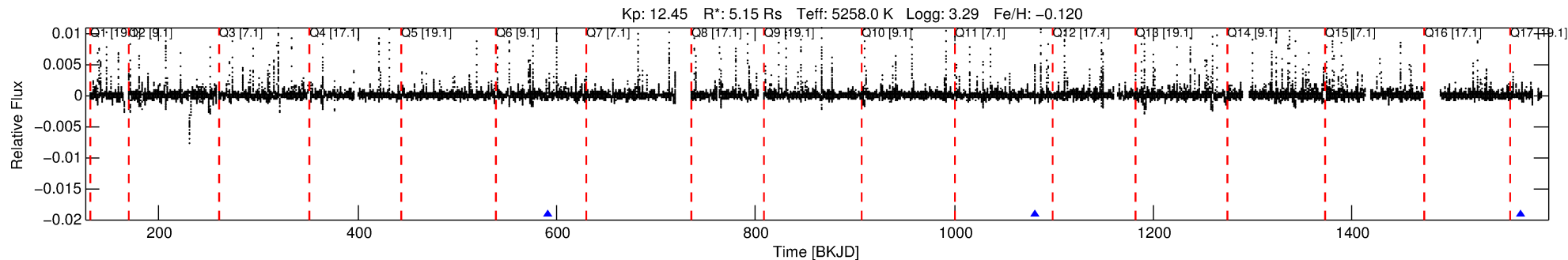
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006707805-05

No Significant Match Found

# DV One-Page Summary

KIC: 6707805 Candidate: 5 of 6 Period: 489.205 d



## DV Fit Results:

Period = 489.20488 [0.00834] d  
Epoch = 591.5622 [0.0110] BKJD  
Rp/R\* = 0.0211 [0.0057]  
a/R\* = 211.93 [162.78]  
b = 0.74 [0.48]  
Seff = 8.03 [3.95]  
Teq = 429 [53] K  
Rp = 11.88 [5.68] Re  
a = 1.5035 [0.4989] AU  
Ag = 2463.54 [2304.59] [1.07 $\sigma$ ]  
Teff = 4675 [943] K [4.50 $\sigma$ ]

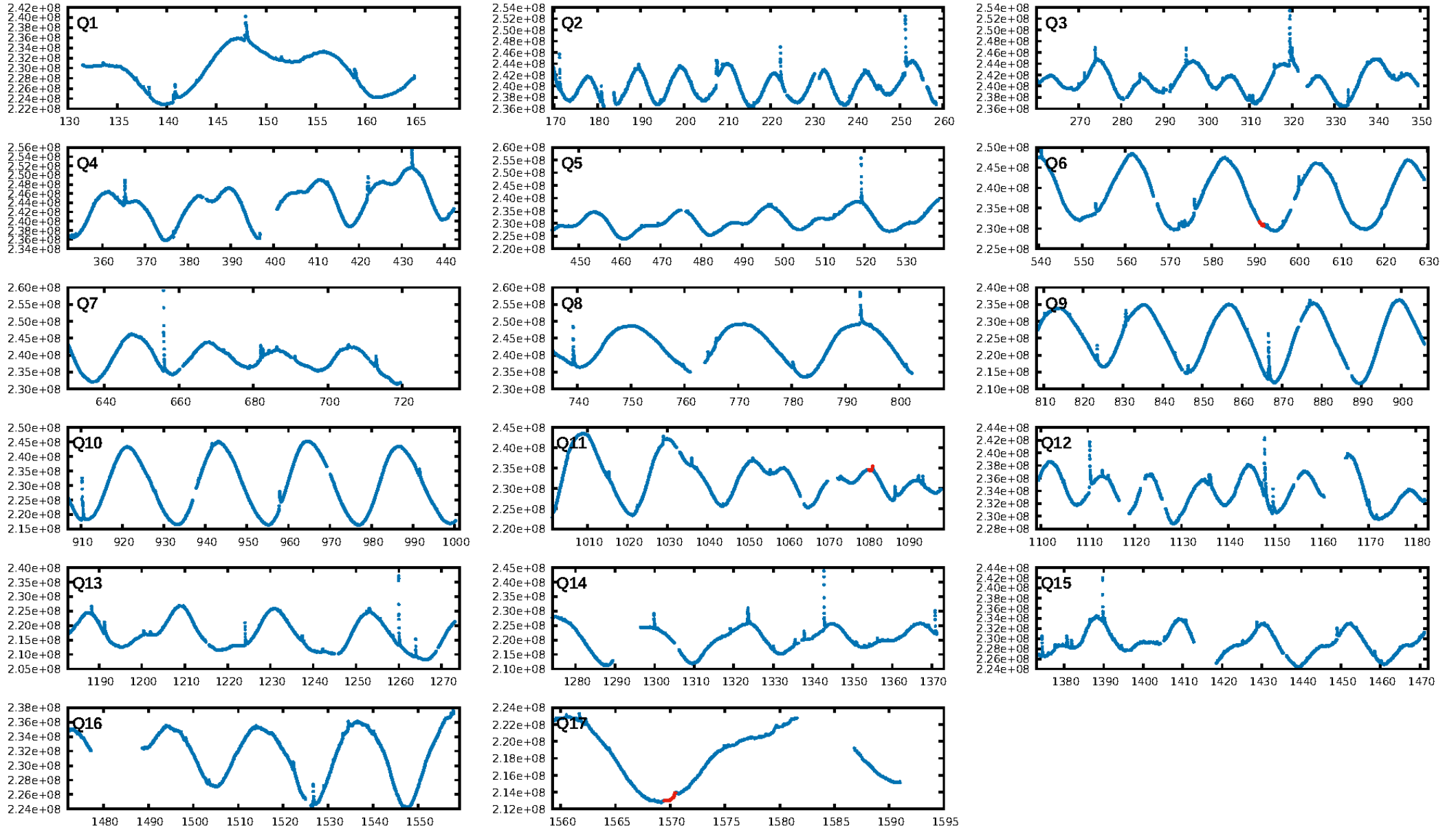
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [15.12 $\sigma$ ]  
LongPeriod-sig: 100.0% [155.77 $\sigma$ ]  
ModelChiSquare2-sig: 36.8%  
ModelChiSquareGof-sig: 98.4%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [2/2]  
GhostDiagnostic-chr: 12.49  
Centroid-sig: 20.6%  
Centroid-so: 0.357 arcsec [0.83 $\sigma$ ]  
OotOffset-rm: 0.373 arcsec [2.79 $\sigma$ ]  
KicOffset-st: 1/1/0/1 [3]  
KicOffset-st: 1/1/0/1 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [3/3]

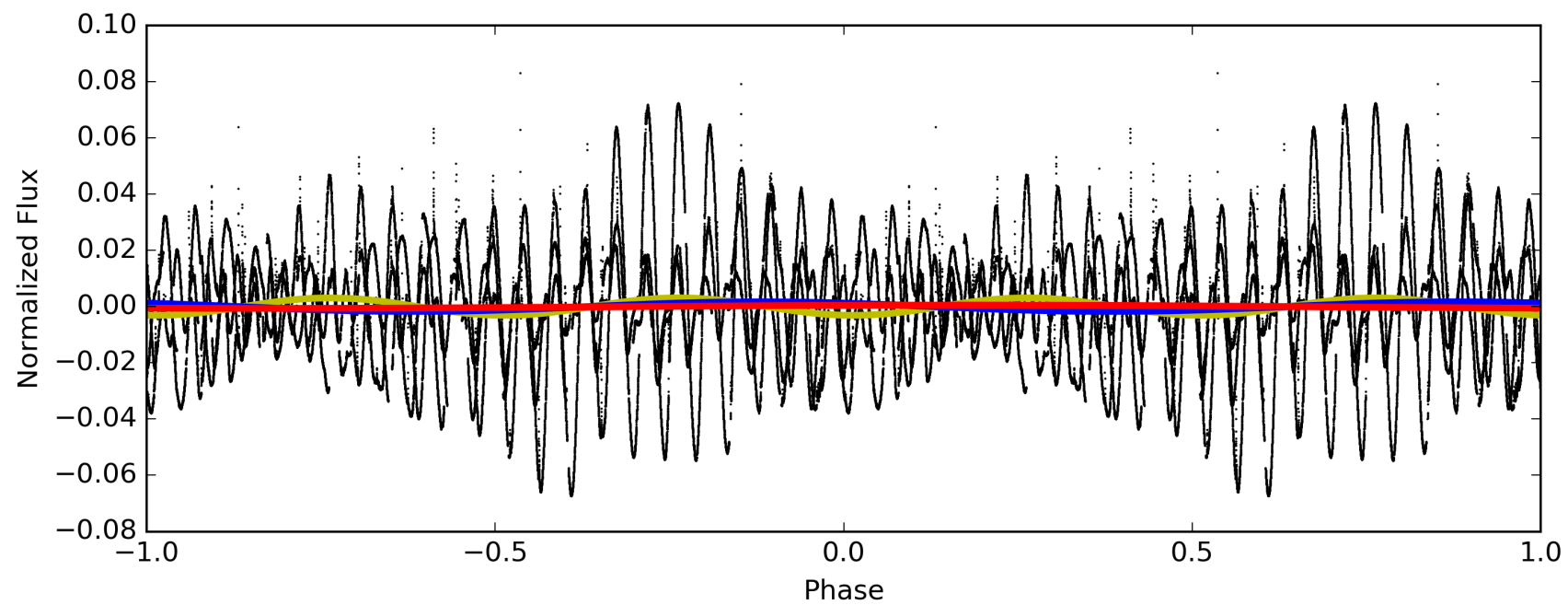
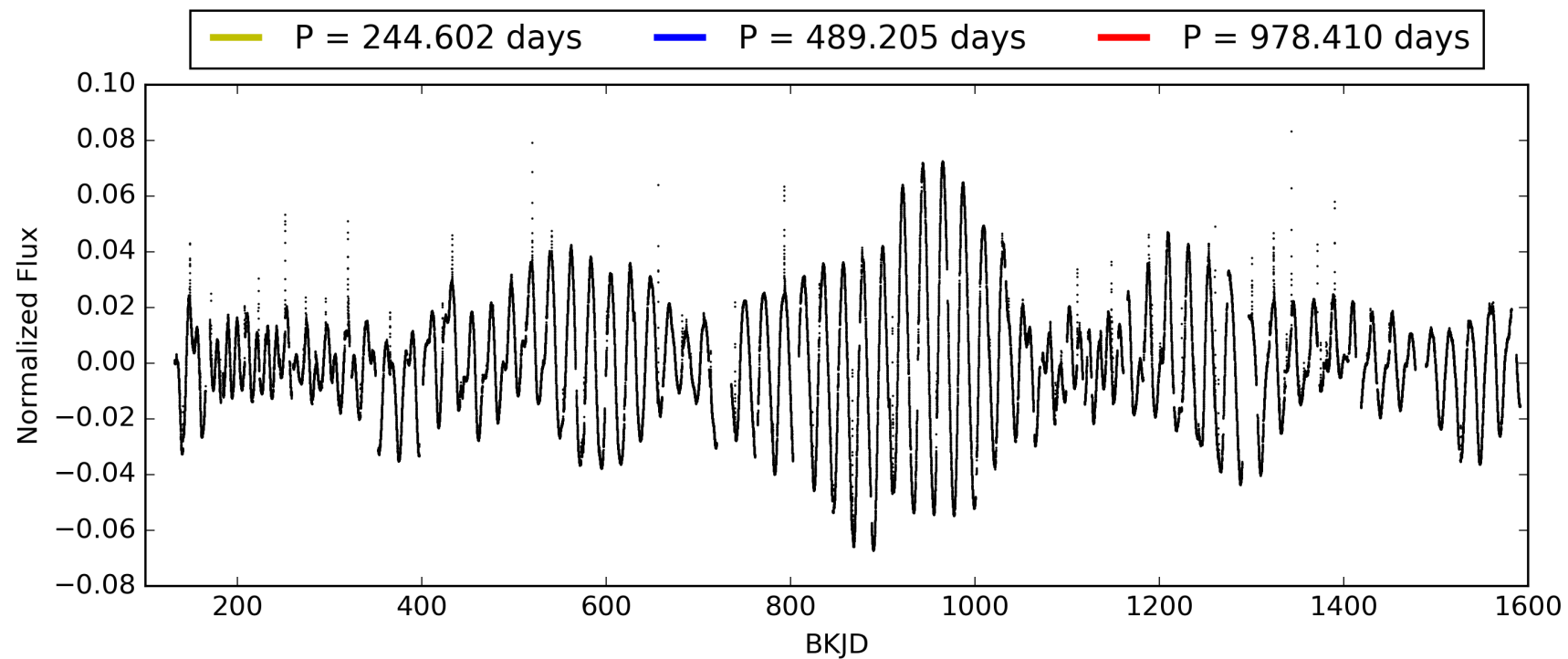
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:25:38 Z

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

# TCE 006707805-05, PDC Light Curves

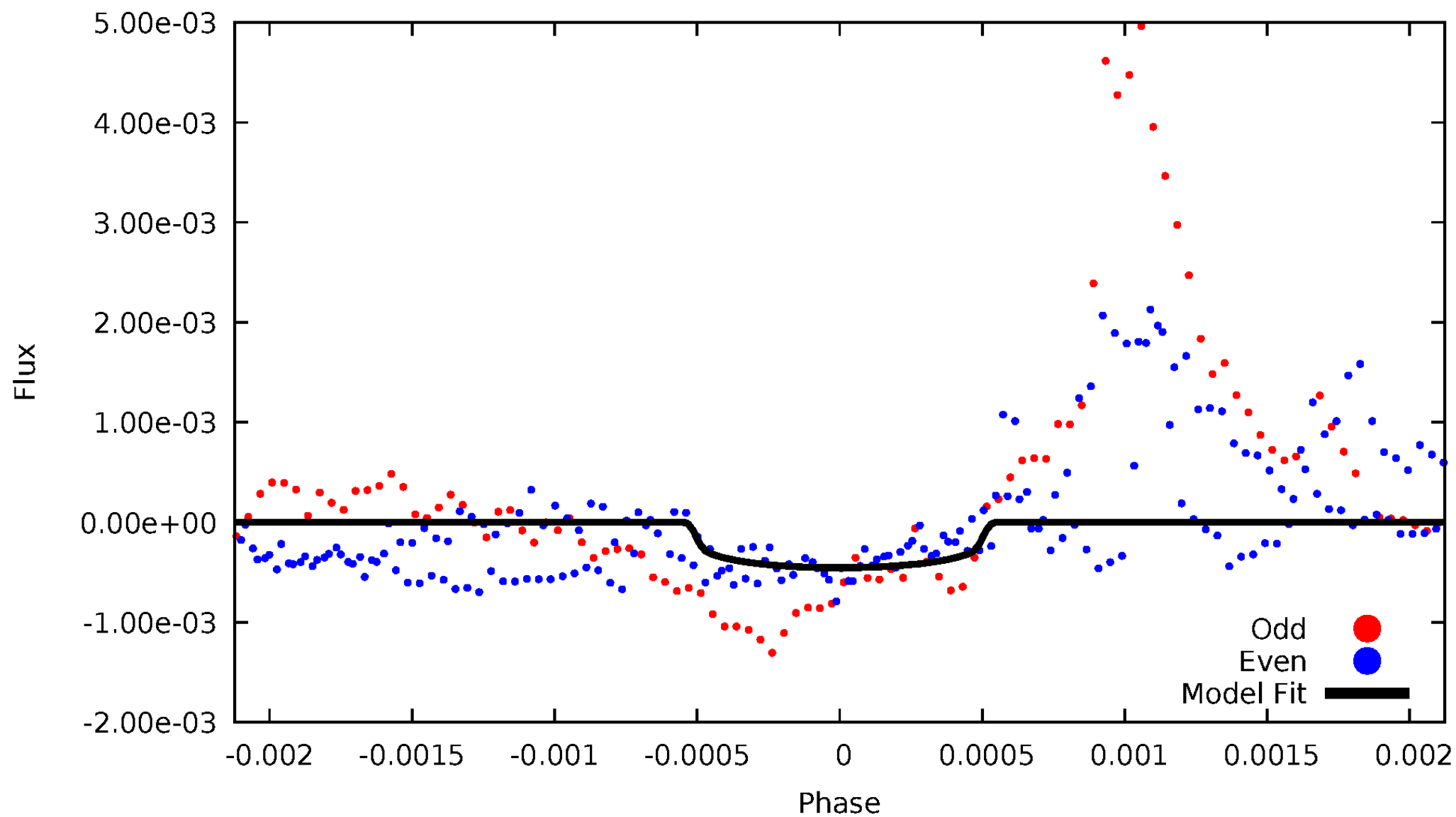


TCE 006707805-05



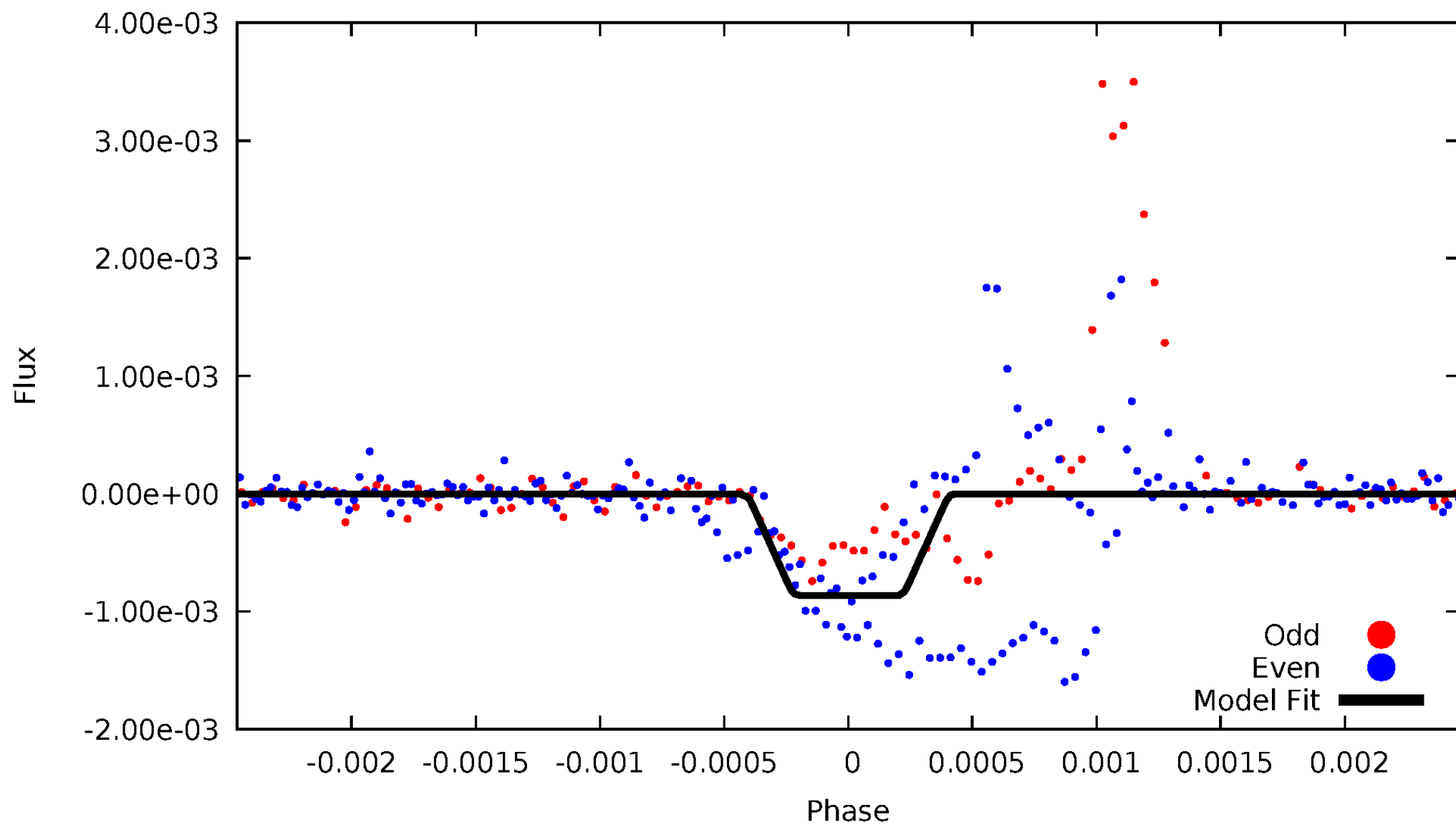
# DV Odd/Even

TCE 006707805-05



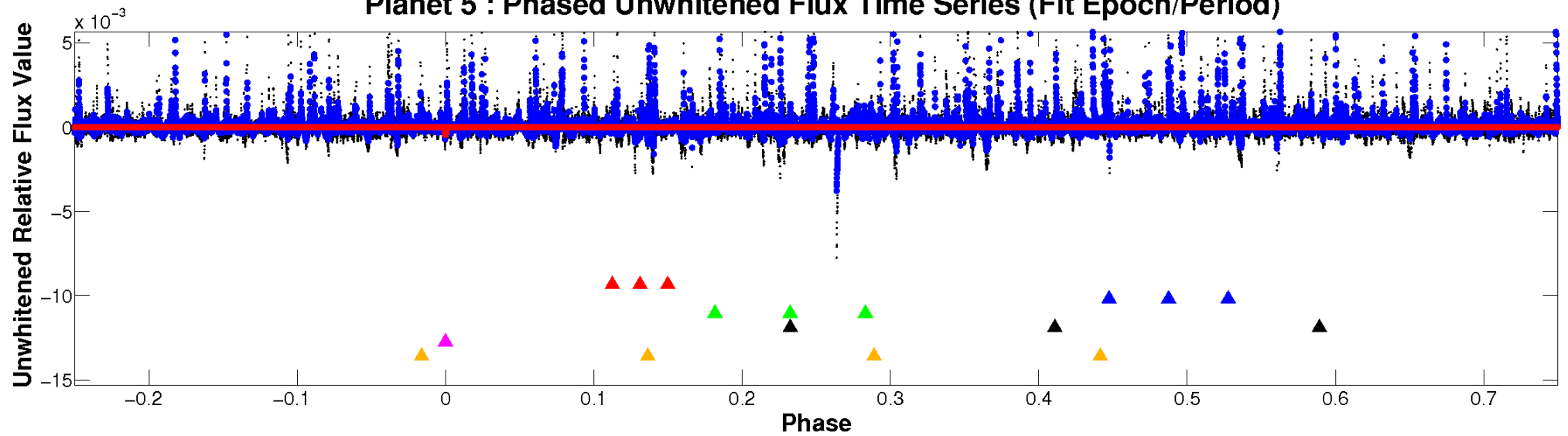
# ALT Odd/Even

TCE 006707805-05

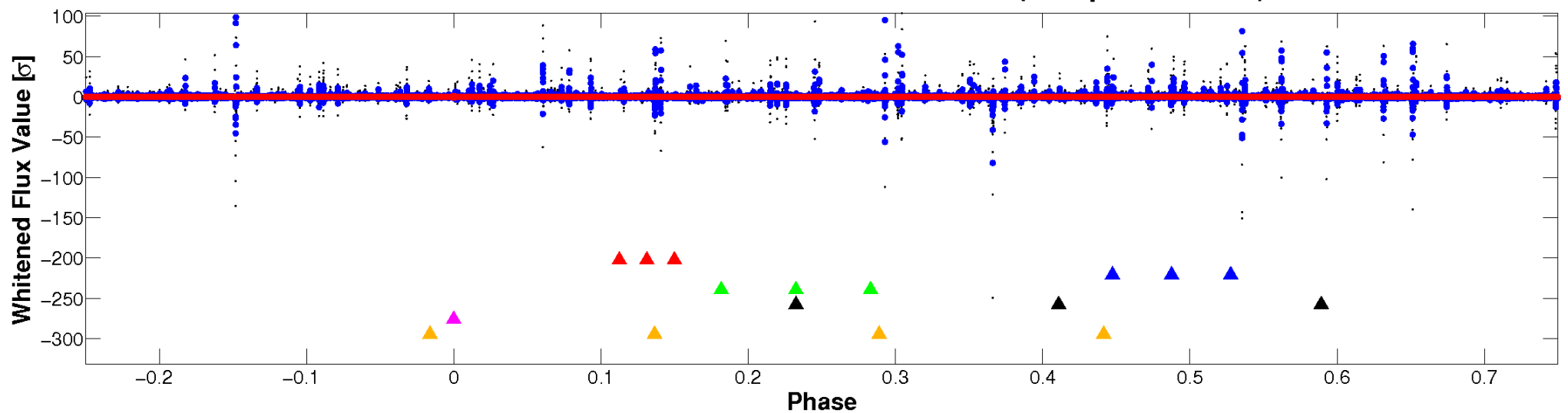


# Non-Whitened Vs. Whitened Light Curve

**Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)**

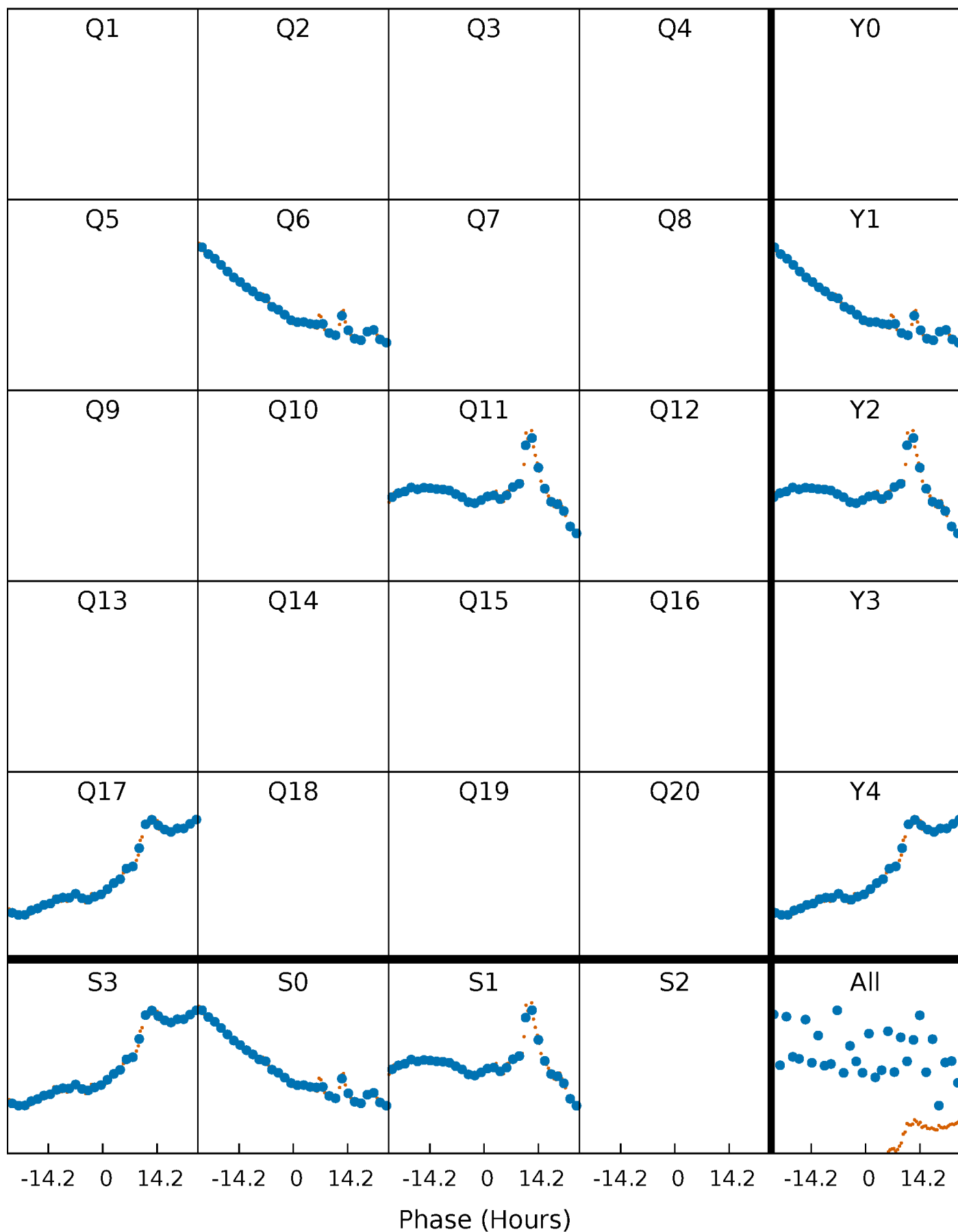


**Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

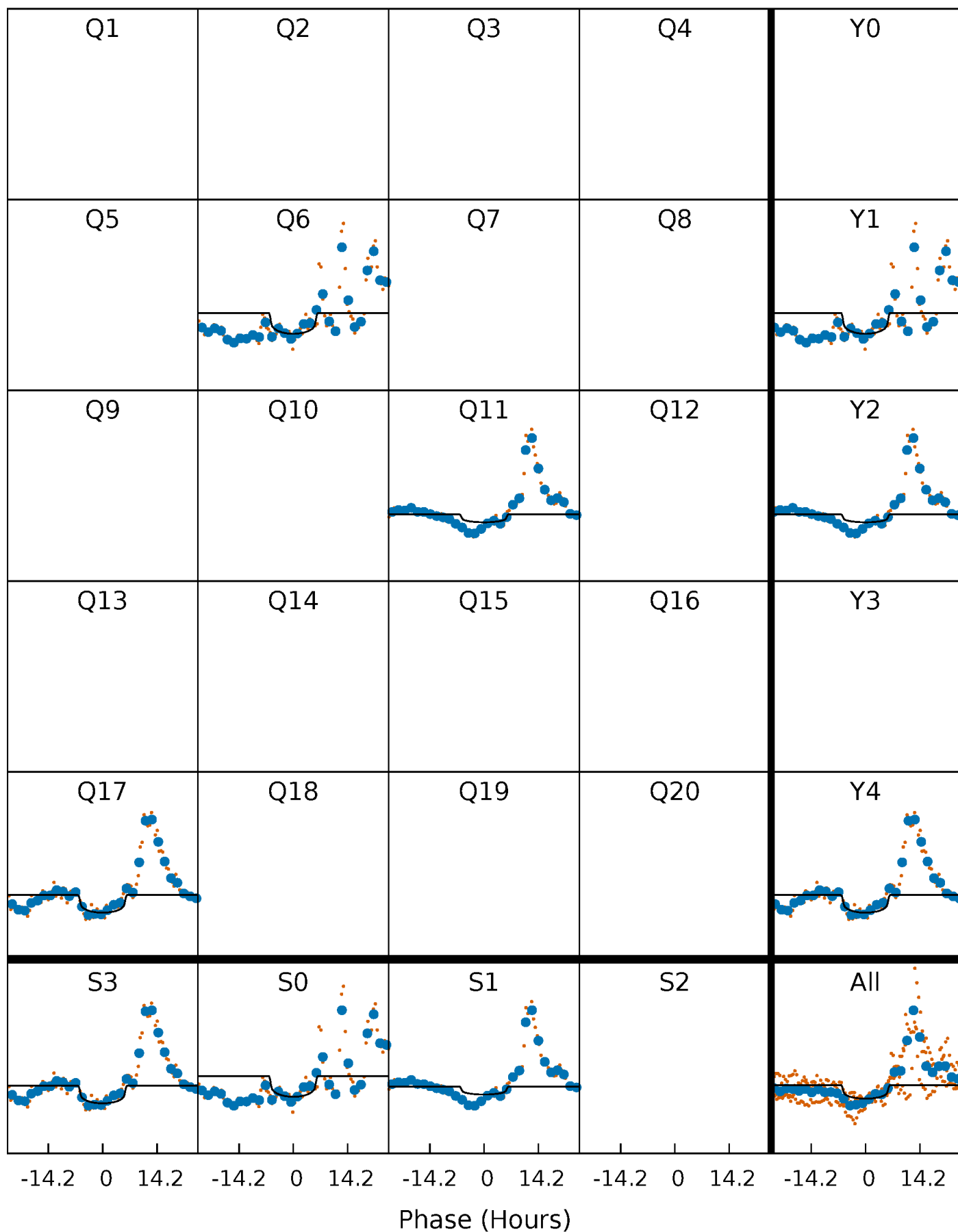
TCE 006707805-05     $P=489.204876$  Days     $T_0=591.562173$  (BKJD)





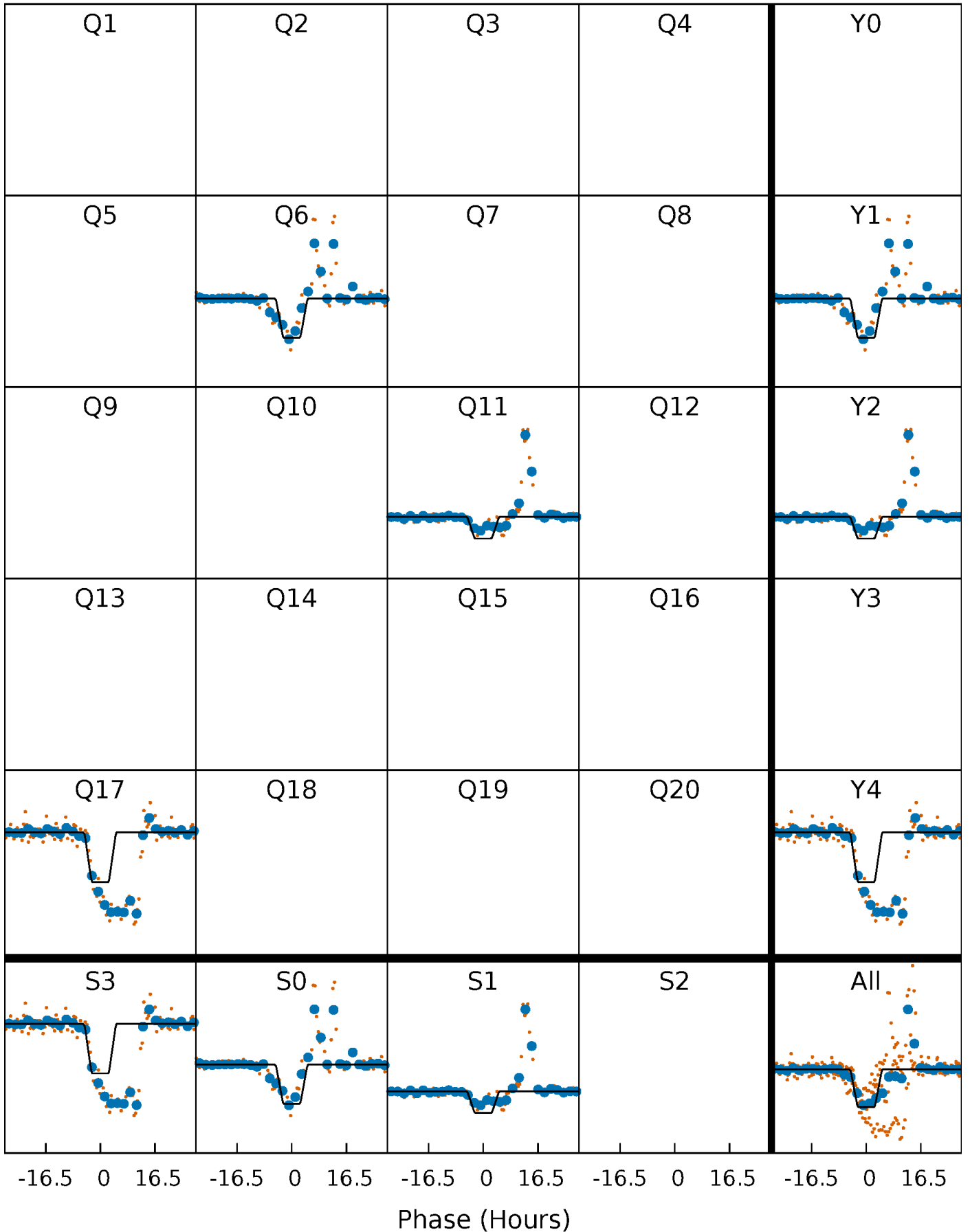
# DV Quarter-Phased Transit Curves

TCE 006707805-05     $P=489.204876$  Days     $T_0=591.562173$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

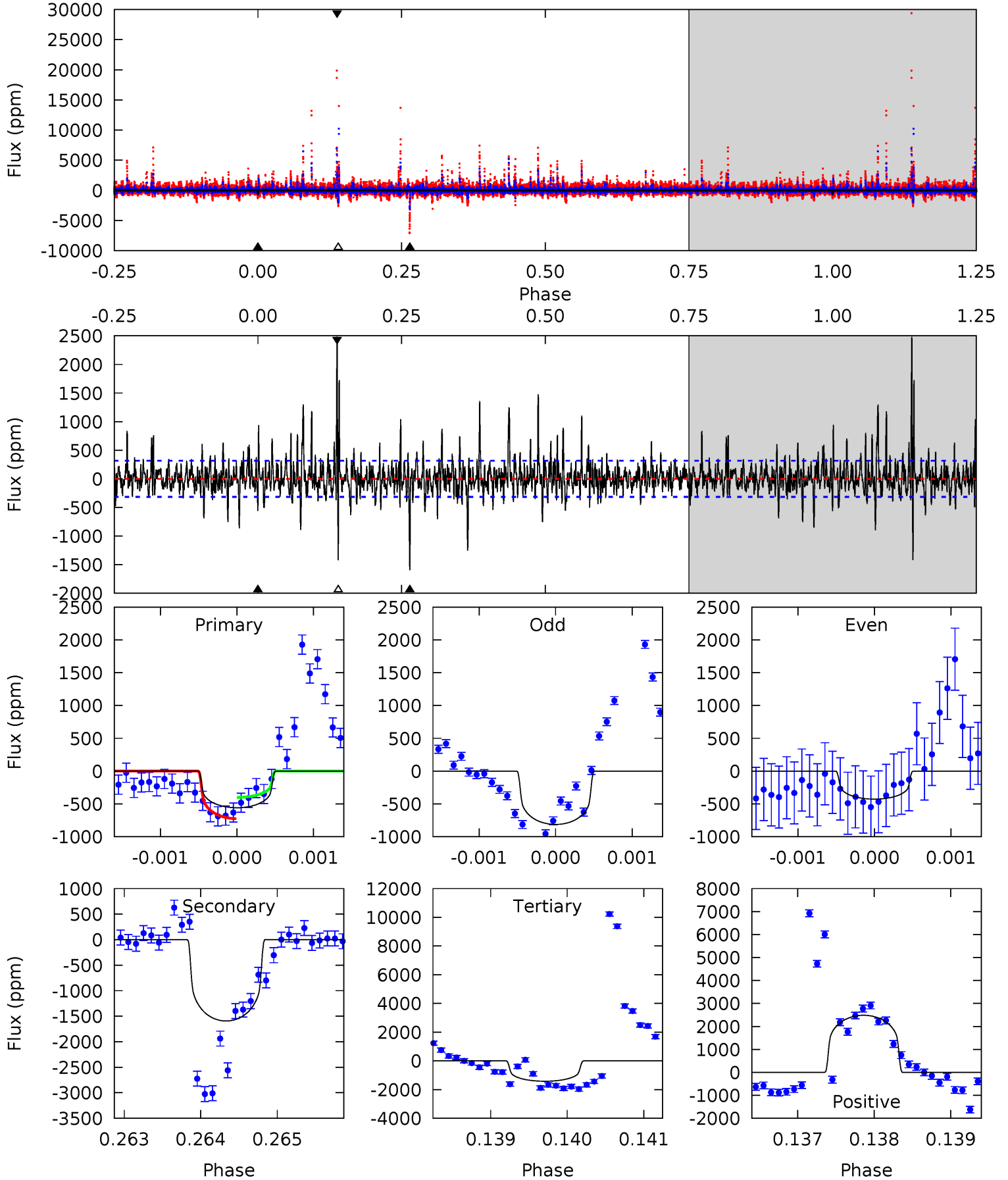
TCE 006707805-05     $P=489.152182$  Days     $T_0=591.570328$  (BKJD)



# DV Model-Shift Uniqueness Test

006707805-05, P = 489.204876 Days, E = 102.357297 Days

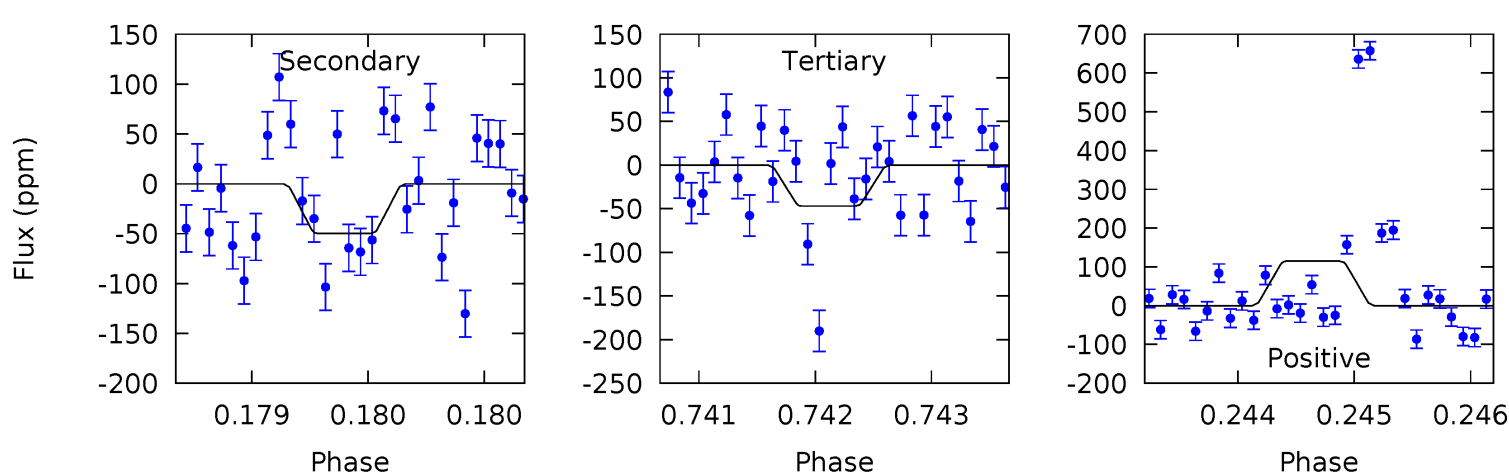
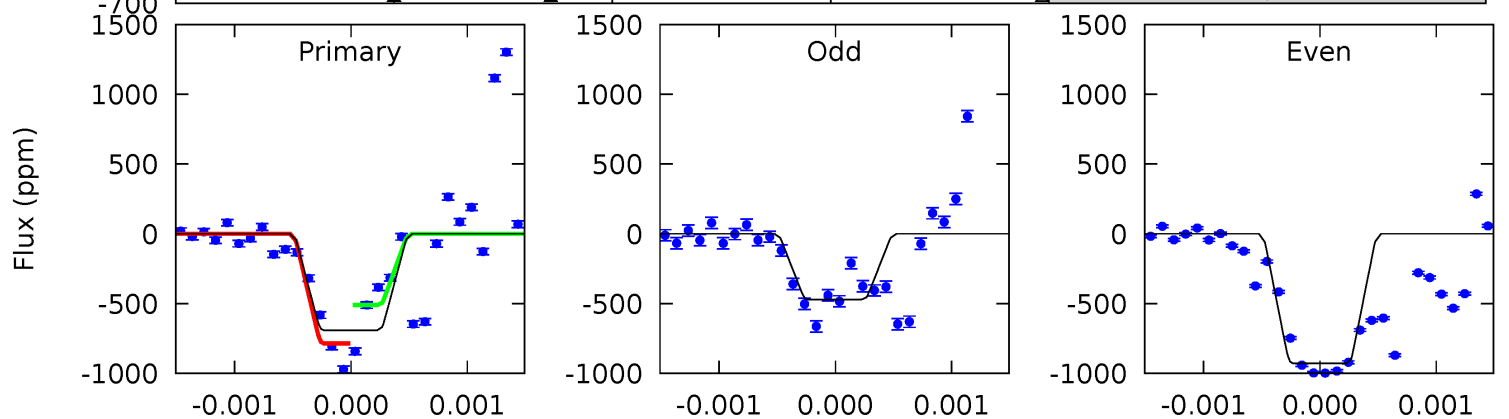
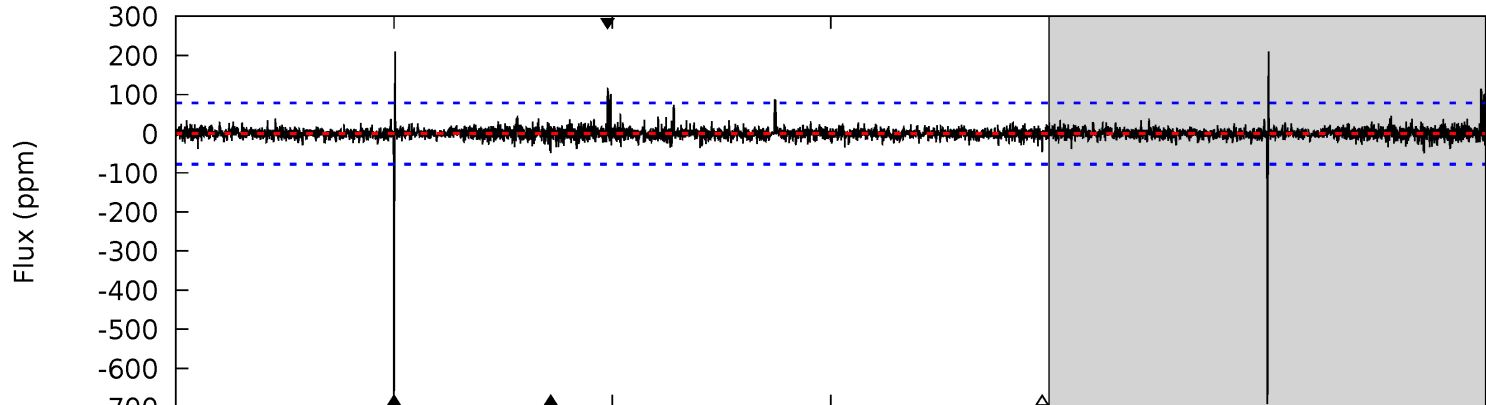
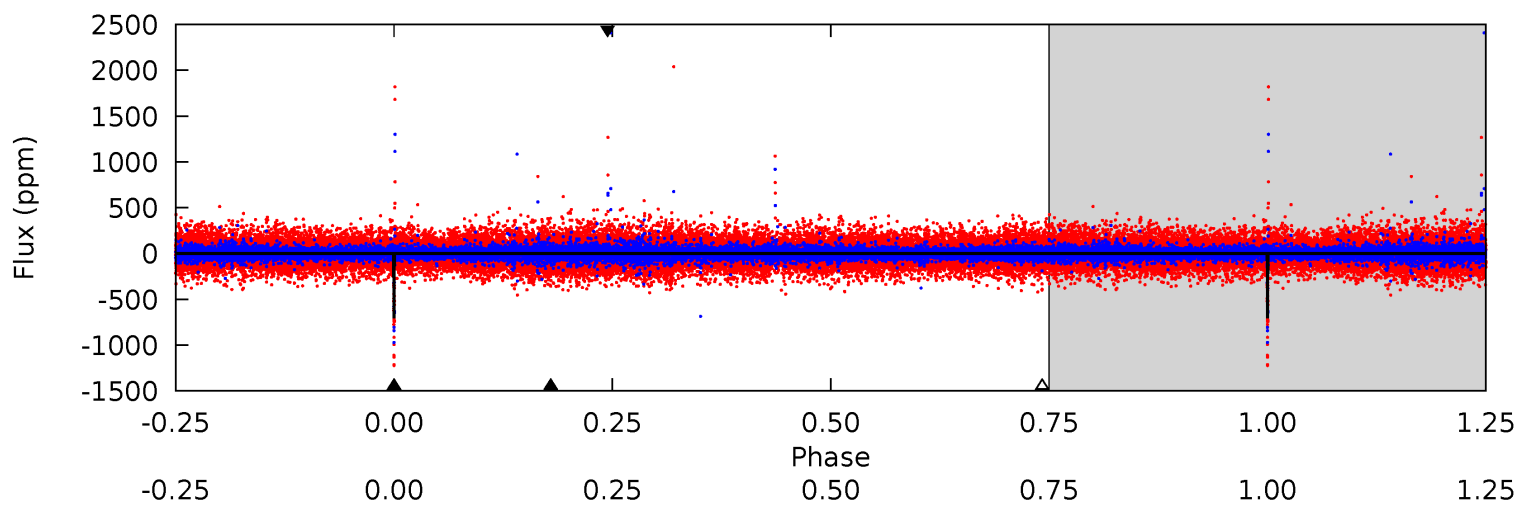
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.60	27.4	24.4	42.7	5.44	3.27	4.18	-14.8	-33.1	2.98	-15.3	1.25	1.27	0.61	2.81



# Alt Model-Shift Uniqueness Test

006707805-05, P = 489.152182 Days, E = 102.418146 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
48.4	3.48	3.29	8.04	5.48	3.34	0.72	45.1	40.4	0.19	-4.56	15.0	1.19	0.23	9.25



### Stellar Parameters For KIC 006707805

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5258^{+62}_{-125}$	$3.292^{+0.264}_{-0.066}$	$-0.120^{+0.150}_{-0.250}$	$5.148^{+0.507}_{-2.029}$	$1.894^{+0.115}_{-0.654}$	$0.020^{+0.038}_{-0.005}$
	+1%/-2%	+8%/-2%	+125%/-208%	+10%/-39%	+6%/-35%	+194%/-24%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 006707805-05 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-1593 \pm 58$	$10.87^{+3.66}_{-3.14}$	$590^{+24}_{-47}$	$7237^{+1671}_{-894}$	$16594^{+15736}_{-7012}$
Alt.	$-50 \pm 14$	$15.51^{+4.08}_{-3.82}$	$589^{+24}_{-49}$	$3142^{+244}_{-219}$	$248^{+185}_{-103}$

$T_{max}$  = 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

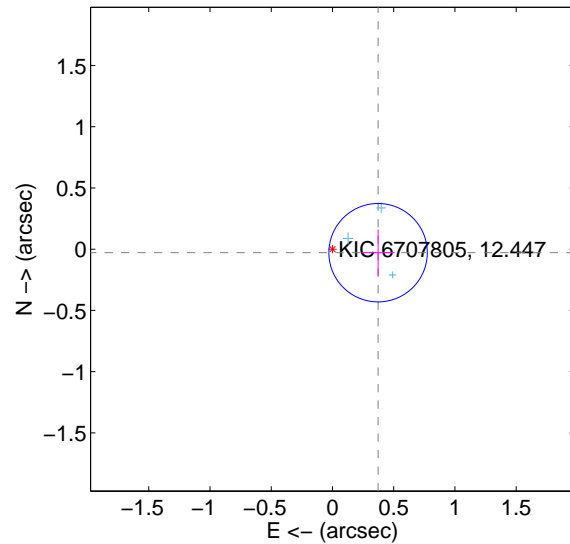
Supplemental centroid analysis for 006707805-05. Kepler magnitude: 12.45. Transit SNR 4.30

There are 3 quarters with good PRF difference image offsets

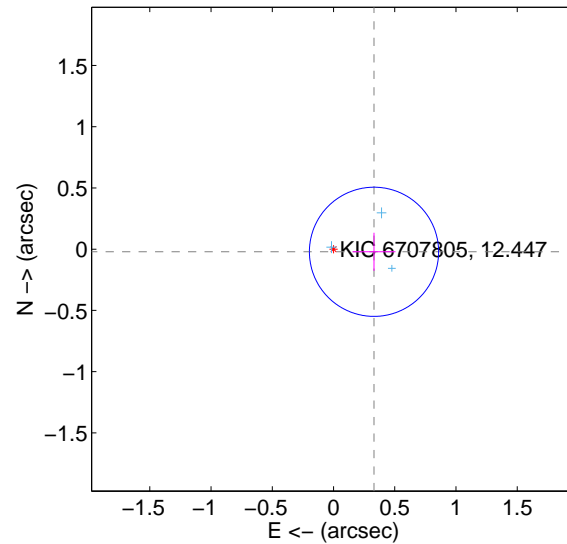
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.373 \pm 0.134$	2.79	$-0.372 \pm 0.133$	$-0.029 \pm 0.189$
PRF-fit source offset from KIC position	$0.331 \pm 0.176$	1.88	$-0.331 \pm 0.176$	$-0.021 \pm 0.156$
photometric centroid source offset	$0.36 \pm 0.43$	0.83	$0.23 \pm 0.52$	$-0.28 \pm 0.36$

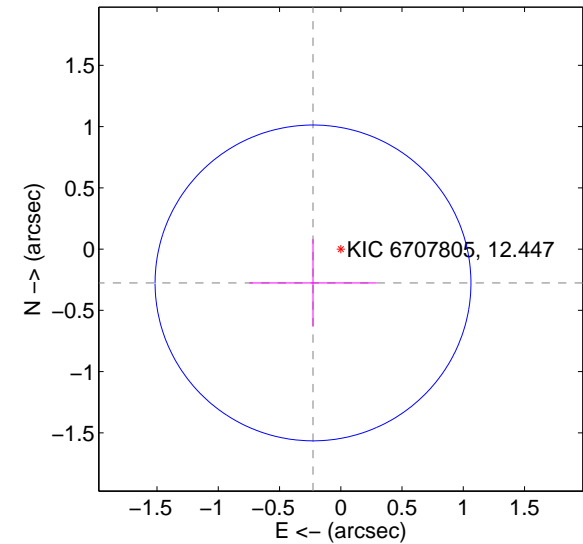
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

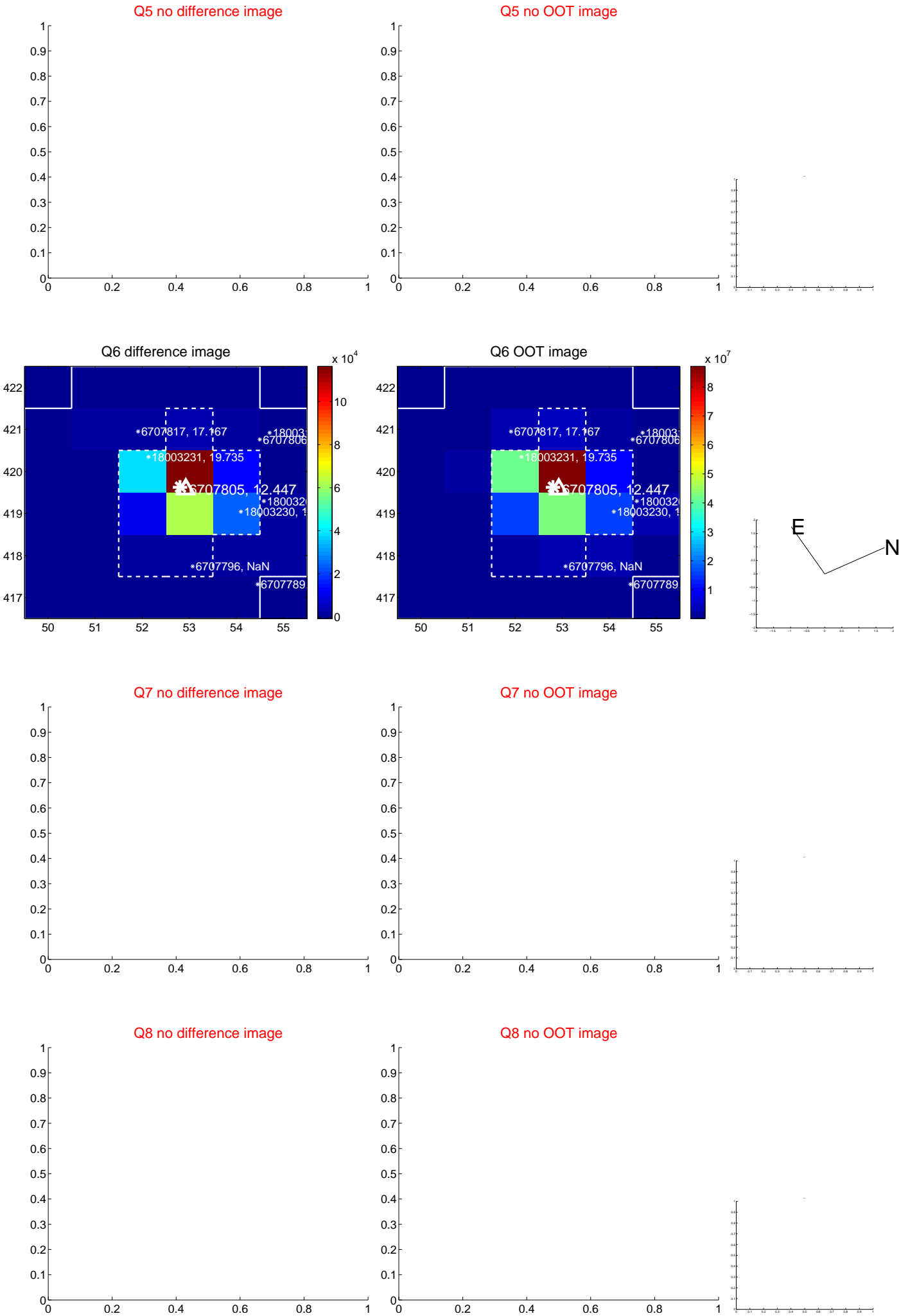


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

Q9 no difference image



Q9 no OOT image



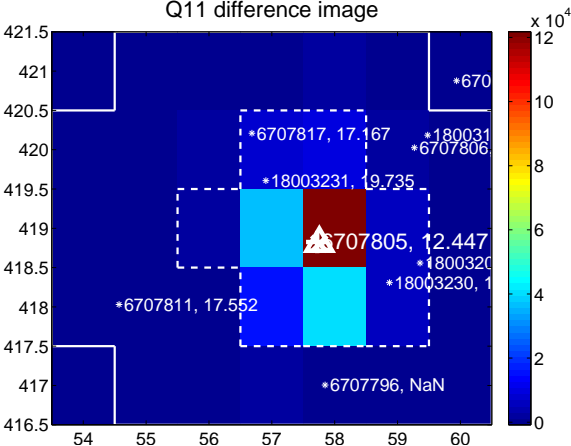
Q10 no difference image



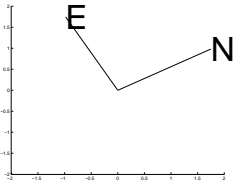
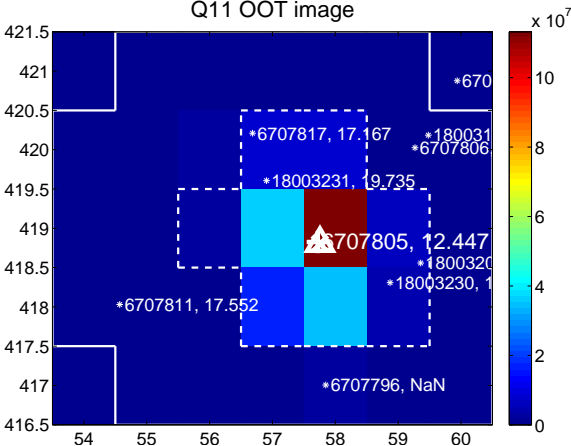
Q10 no OOT image



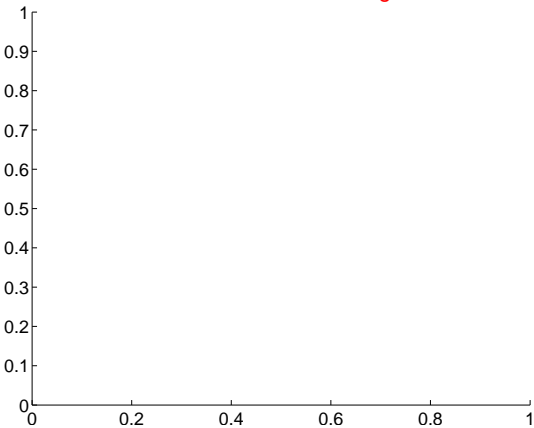
Q11 difference image



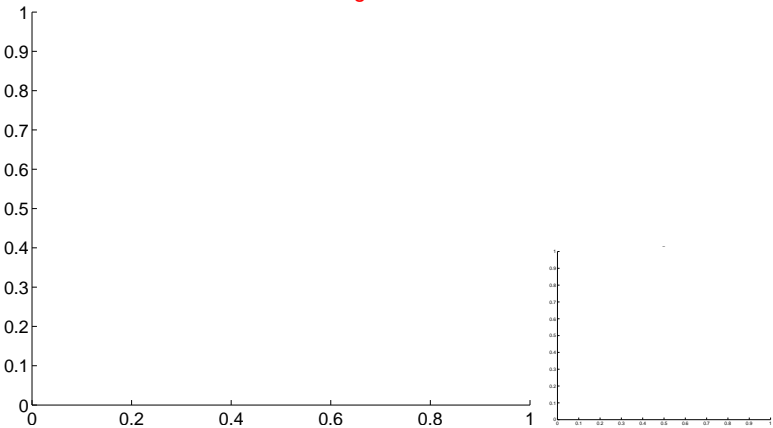
Q11 OOT image



Q12 no difference image



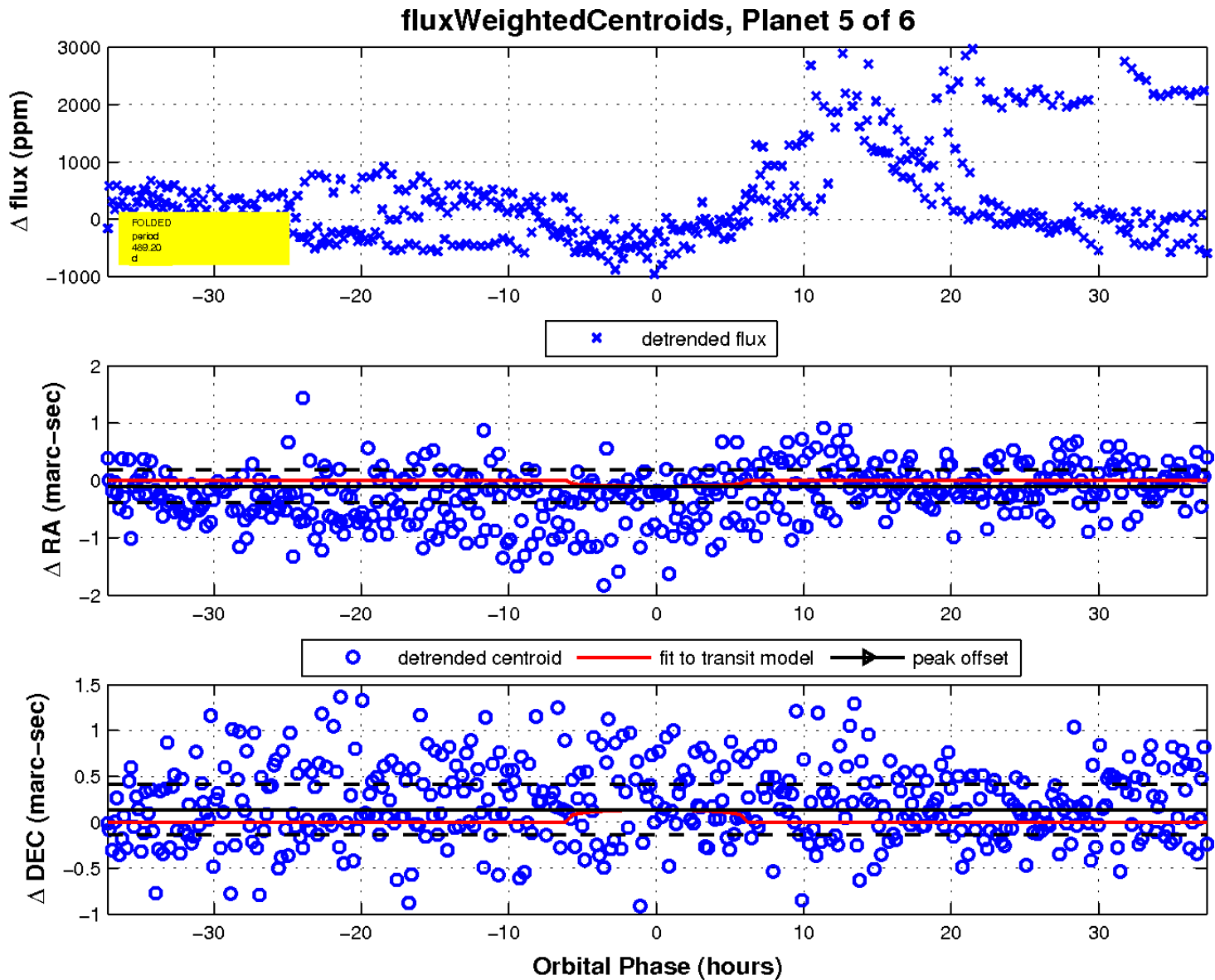
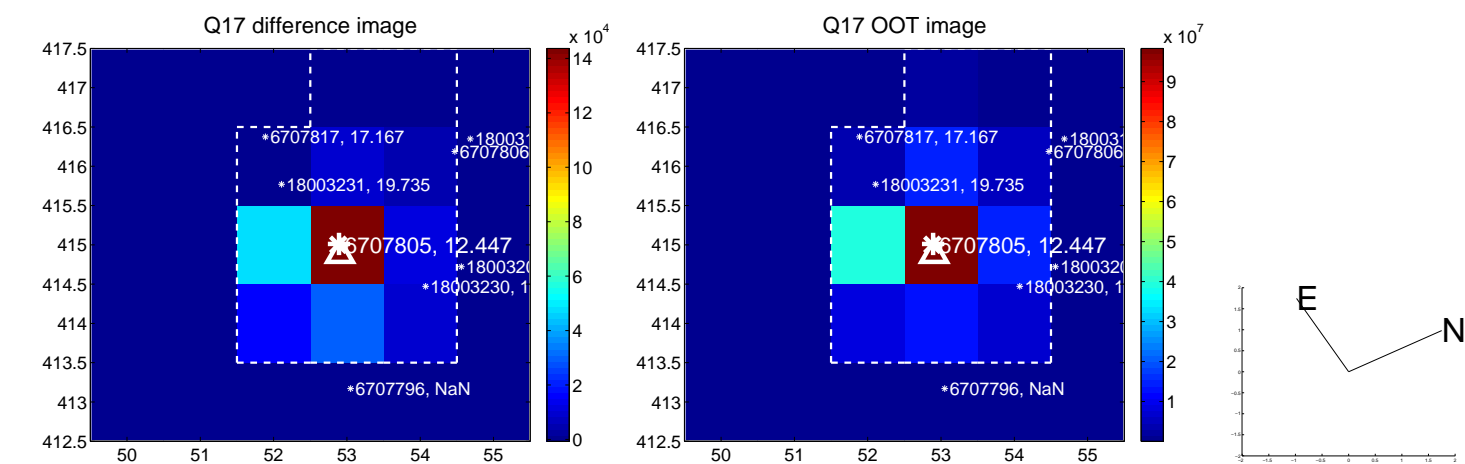
Q12 no OOT image



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

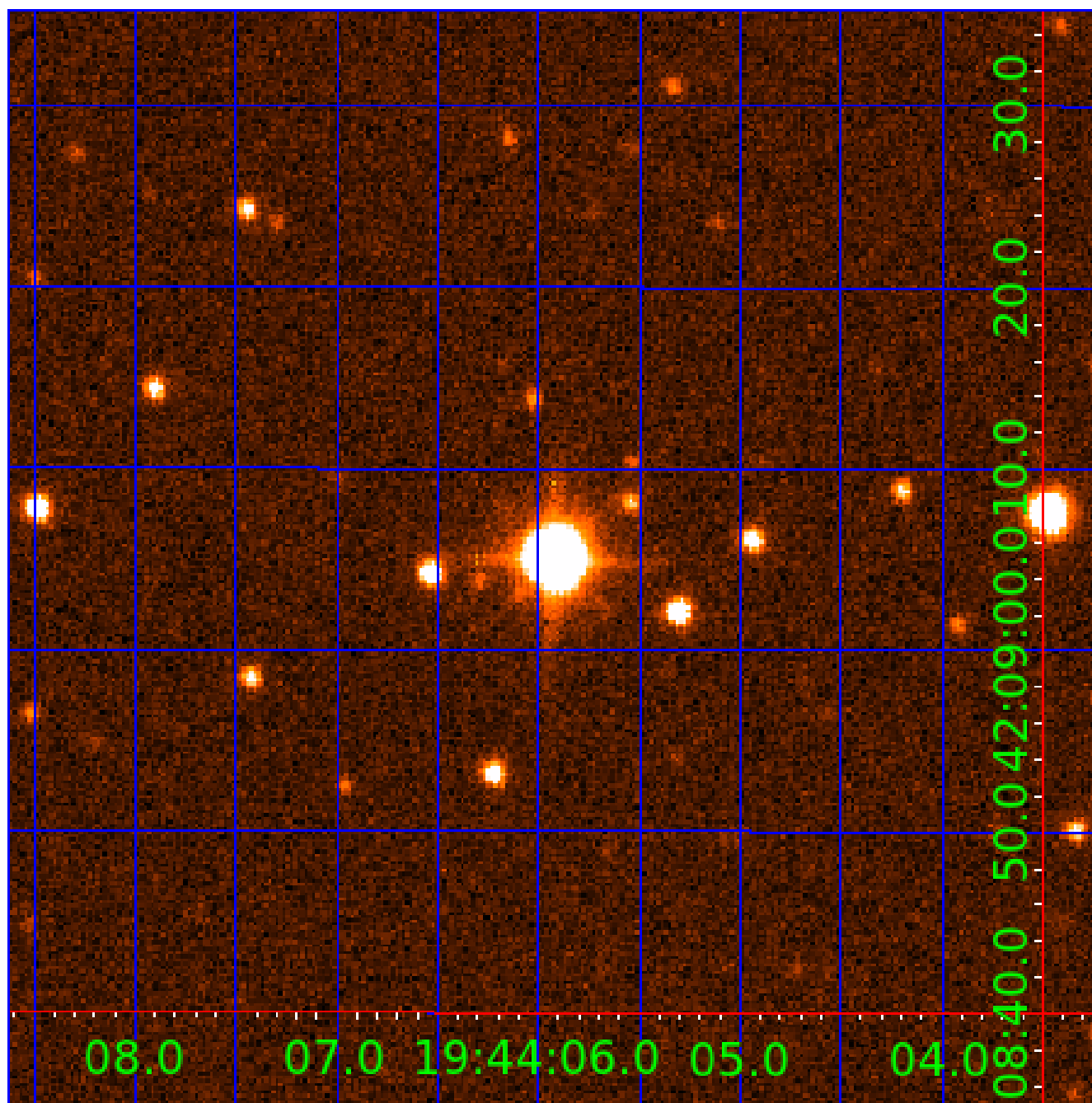


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 006707805

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006707805-01	OBS	No	480.046522	175.694954	7260.0	7.499	18.9	31.2	5.15	5258	81.41	8.23
006707805-02	OBS	No	469.564870	360.520758	766.4	4.730	21.5	6.9	5.15	5258	13.97	8.48
006707805-03	OBS	No	464.397577	240.857893	853.0	13.866	17.5	6.5	5.15	5258	16.73	8.61
006707805-04	OBS	No	576.471098	216.083208	884.8	5.062	17.7	7.0	5.15	5258	15.40	6.45
006707805-05	OBS	No	489.204876	591.562173	454.9	12.456	18.1	4.3	5.15	5258	11.88	8.03
006707805-06	OBS	No	414.583310	318.338438	452.7	9.000	18.6	-1.0	5.15	5258	10.72	10.01

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006707805-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006707805-02	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
006707805-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006707805-04	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
006707805-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006707805-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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

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

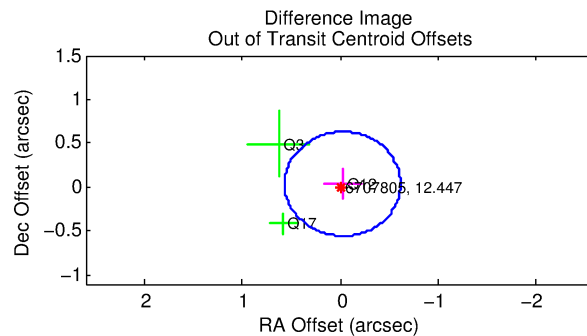
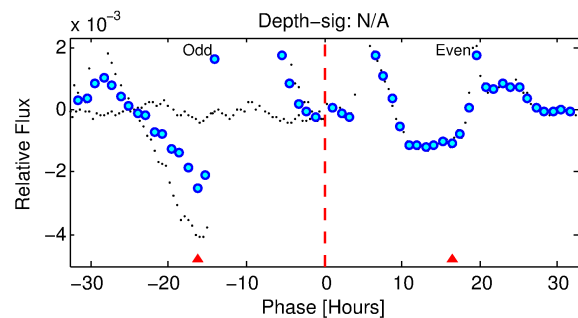
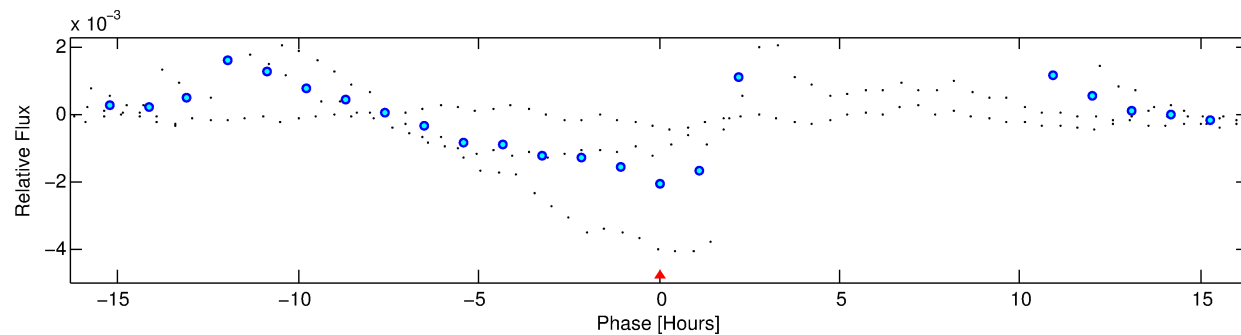
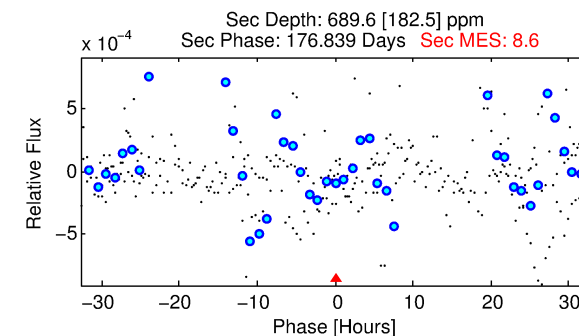
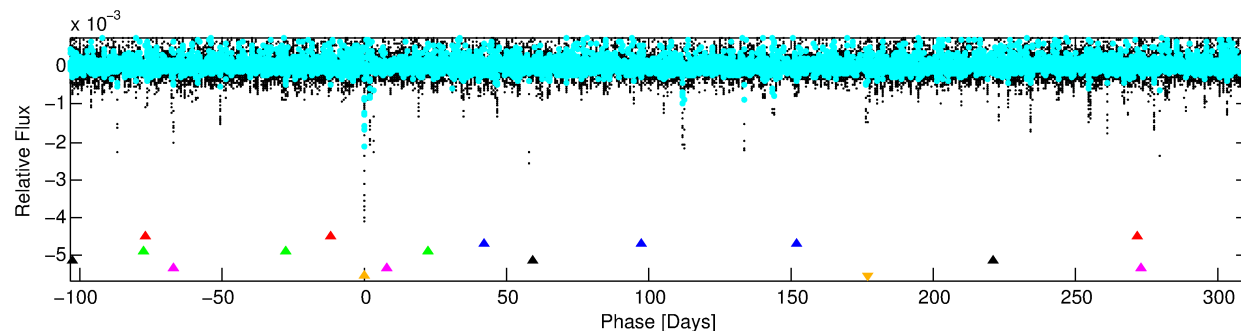
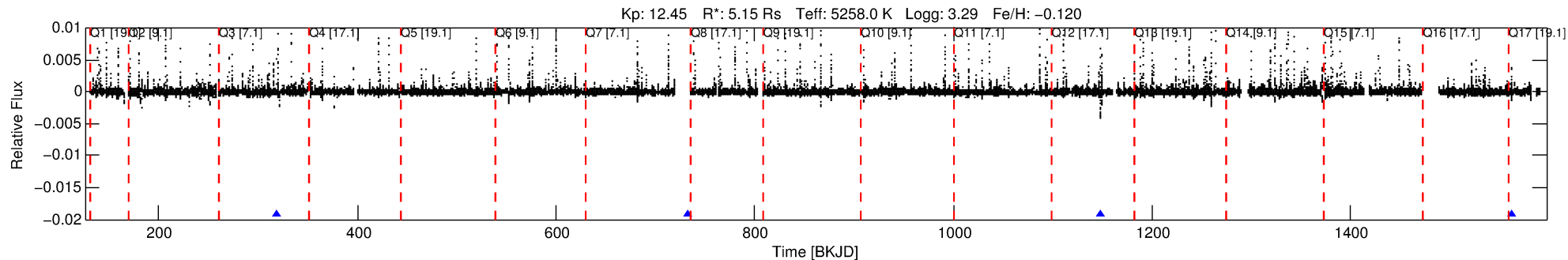
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006707805-06

No Significant Match Found

# DV One-Page Summary

KIC: 6707805 Candidate: 6 of 6 Period: 414.583 d



## TPS TCE Results:

Period = 414.58331 d  
Epoch = 318.3384 BKJD

**DV fit results are unavailable**

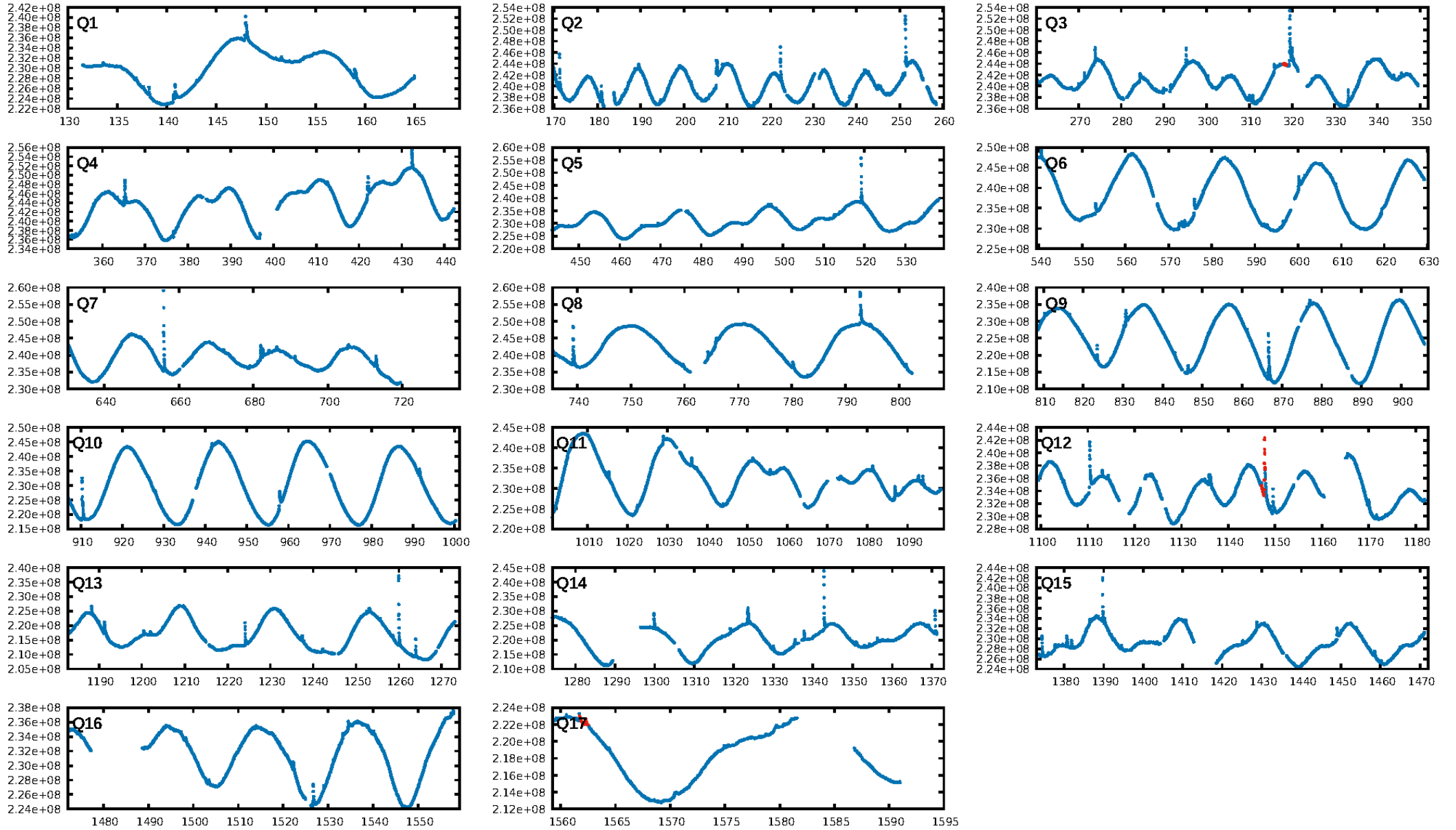
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [72.32 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [2/2]  
**GhostDiagnostic-chr: -0.2029**  
Centroid-sig: 19.7%  
Centroid-so: 0.077 arcsec [1.26 $\sigma$ ]  
OotOffset-rm: 0.045 arcsec [0.23 $\sigma$ ]  
KicOffset-rm: 0.080 arcsec [0.43 $\sigma$ ]  
OotOffset-st: 0/1/1/1 [3]  
KicOffset-st: 0/1/1/1 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [3/3]

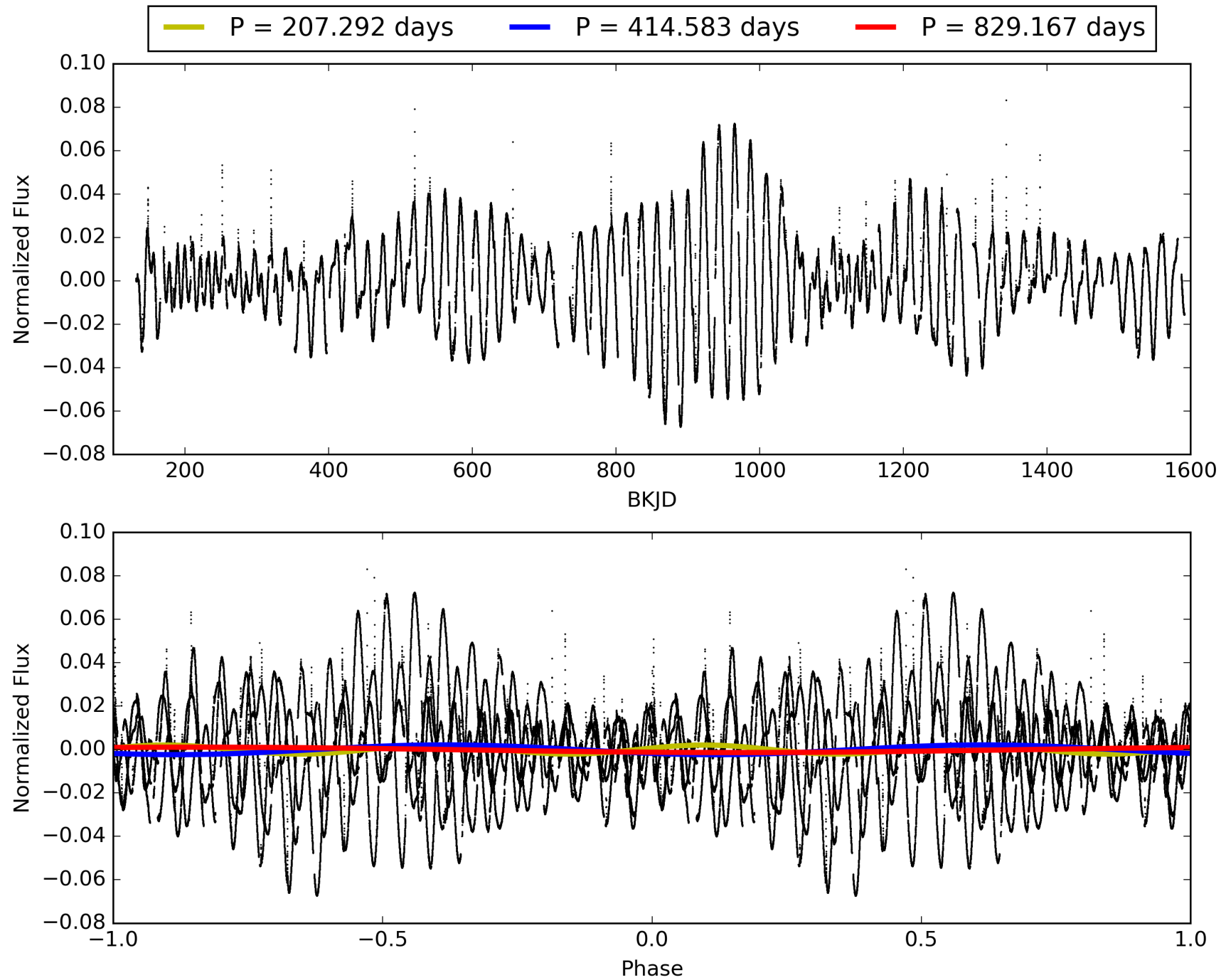
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:25:50 Z

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

# TCE 006707805-06, PDC Light Curves



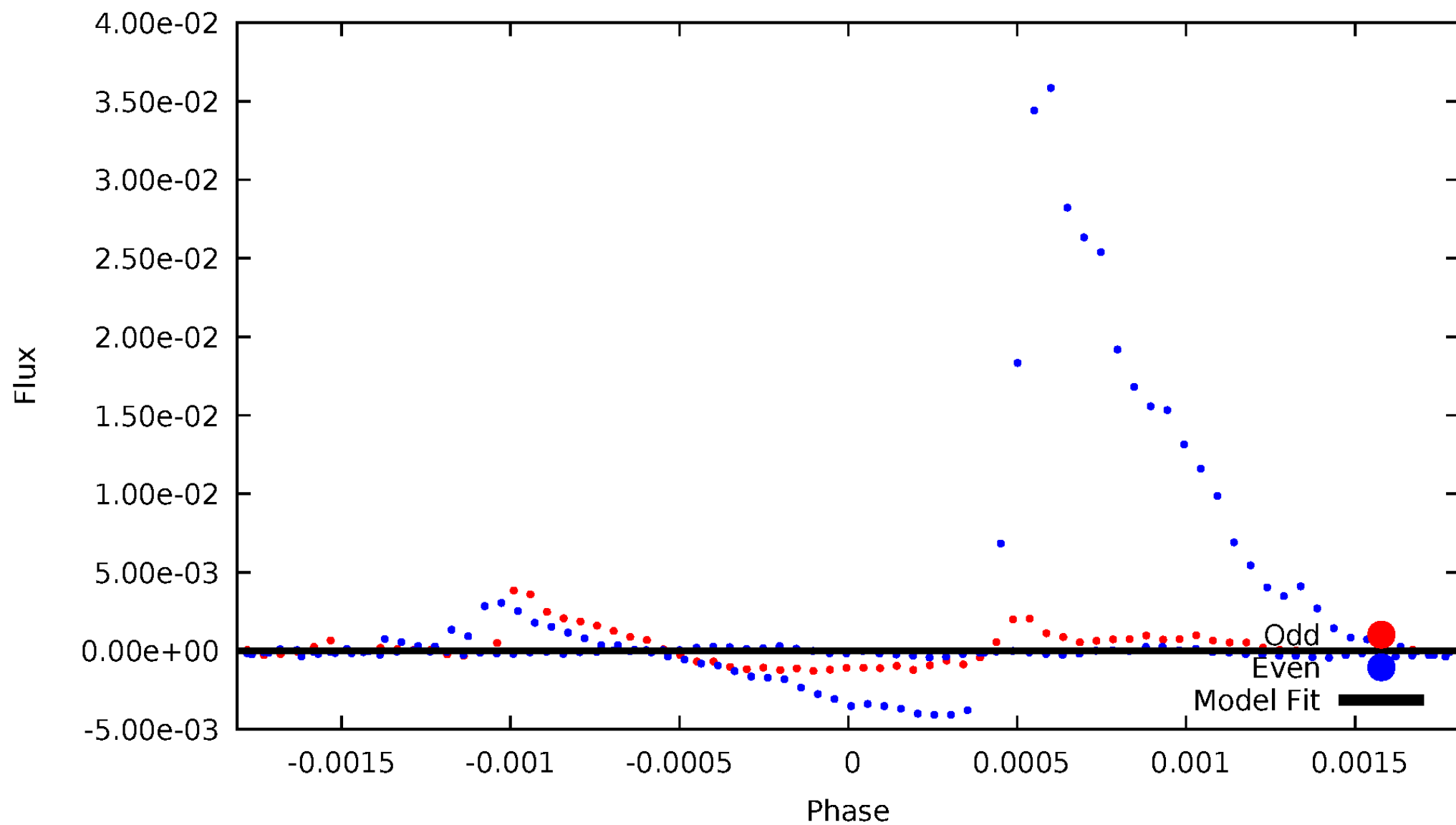
# TCE 006707805-06





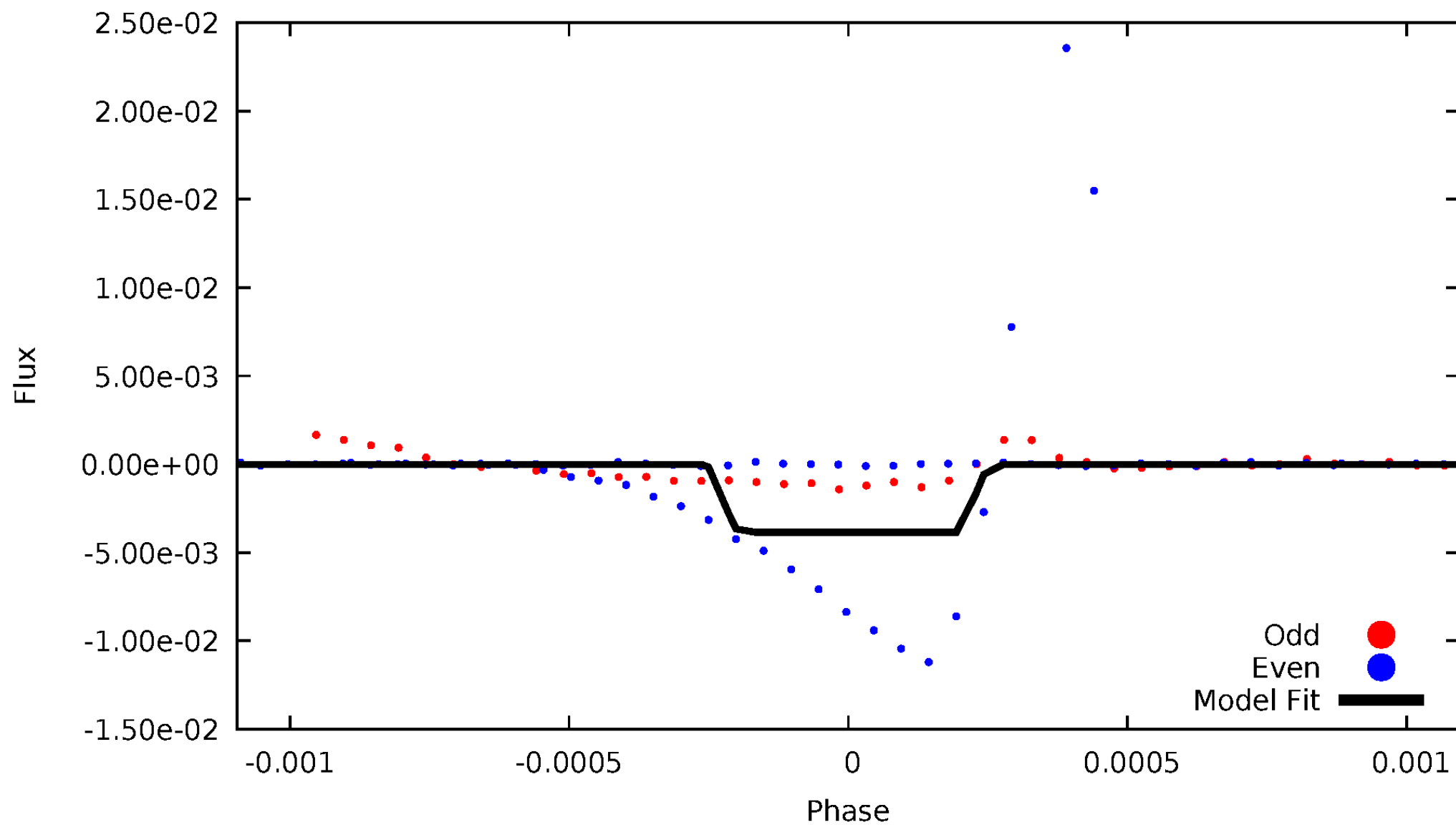
# DV Odd/Even

TCE 006707805-06



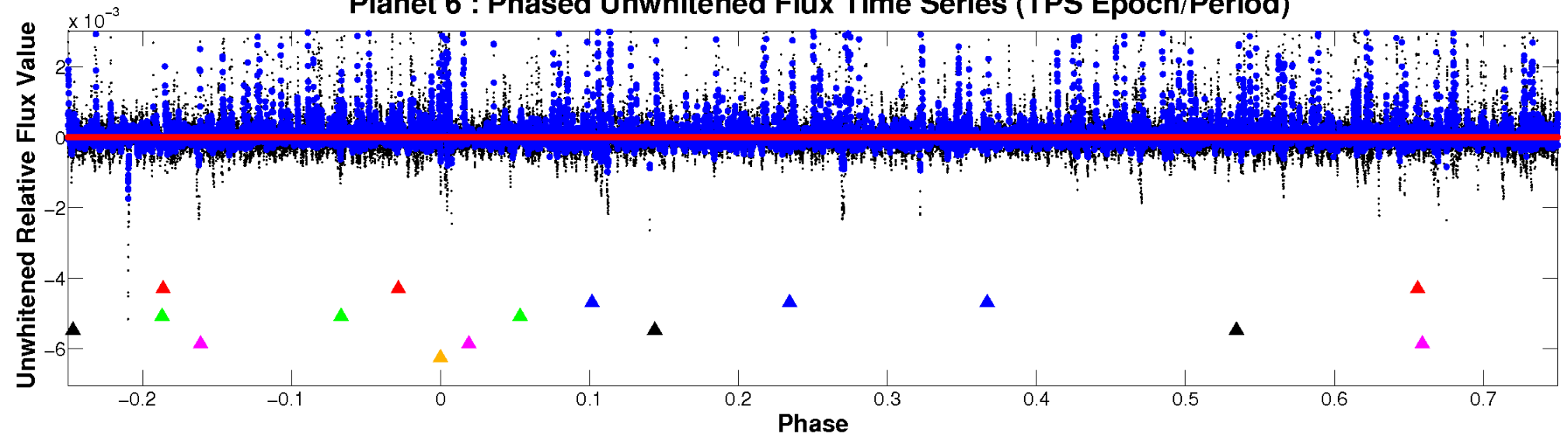
# ALT Odd/Even

TCE 006707805-06



# Non-Whitened Vs. Whitened Light Curve

**Planet 6 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**

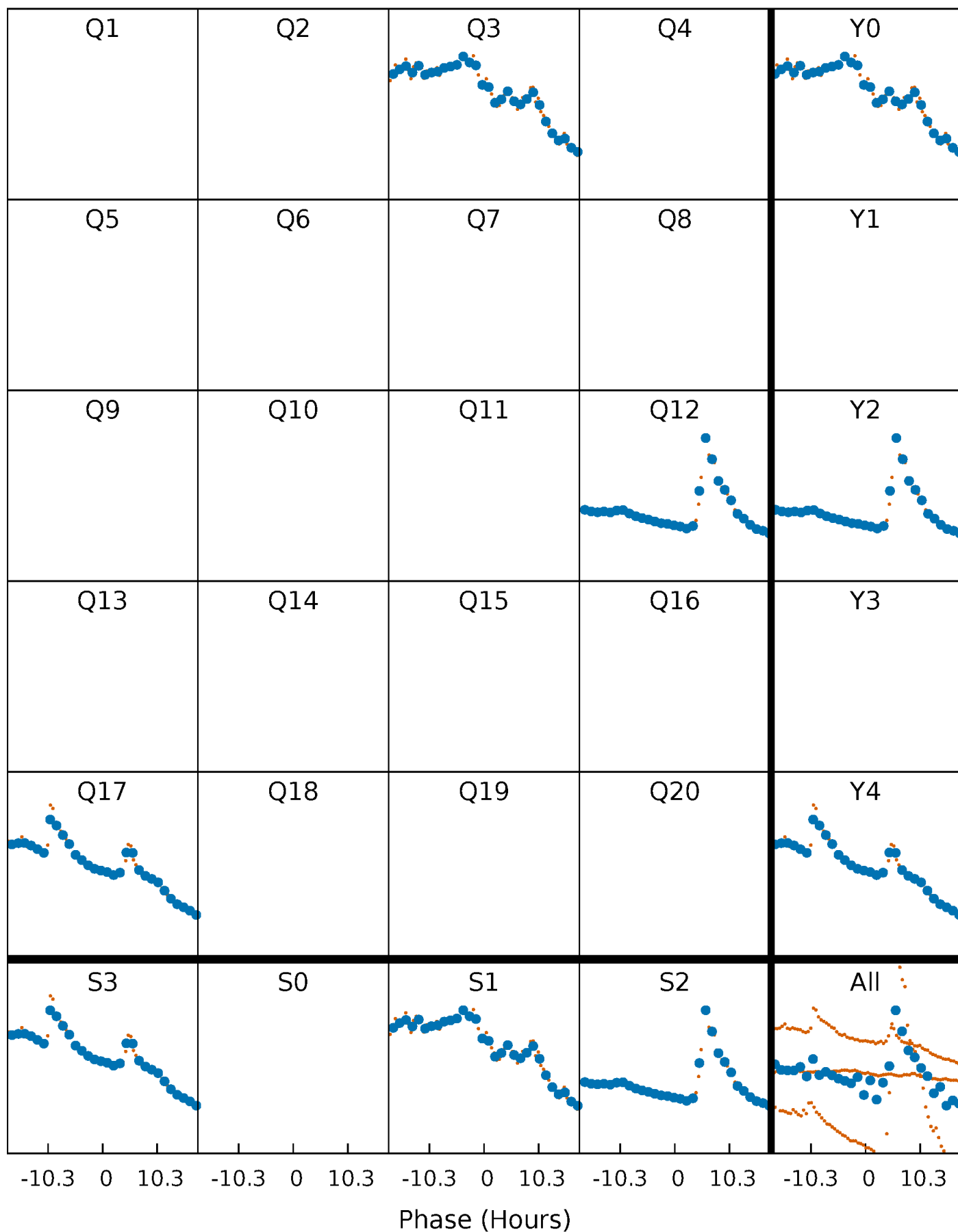


**Planet 6 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



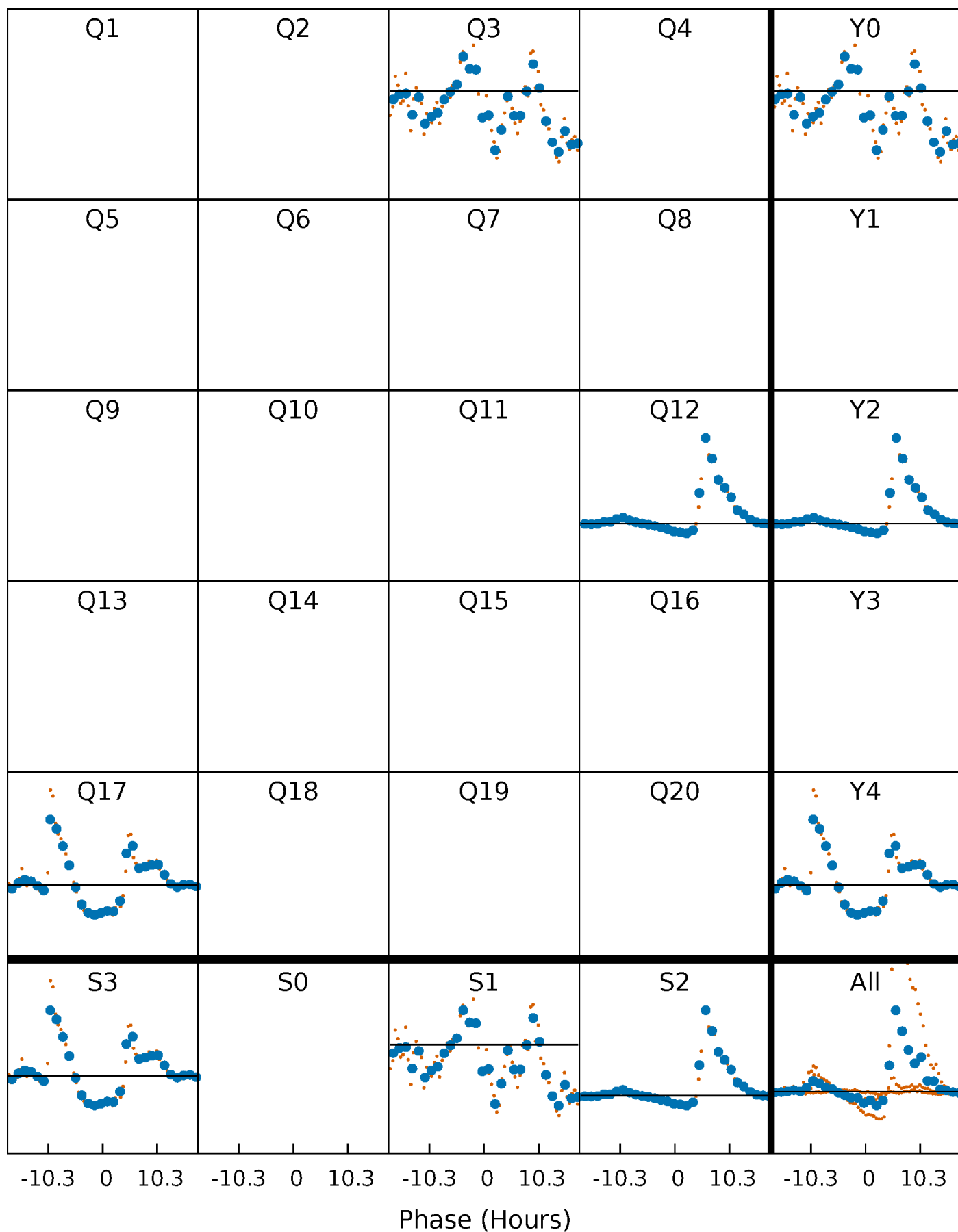
# PDC Quarter-Phased Transit Curves

TCE 006707805-06     $P=414.583310$  Days     $T_0=318.338438$  (BKJD)



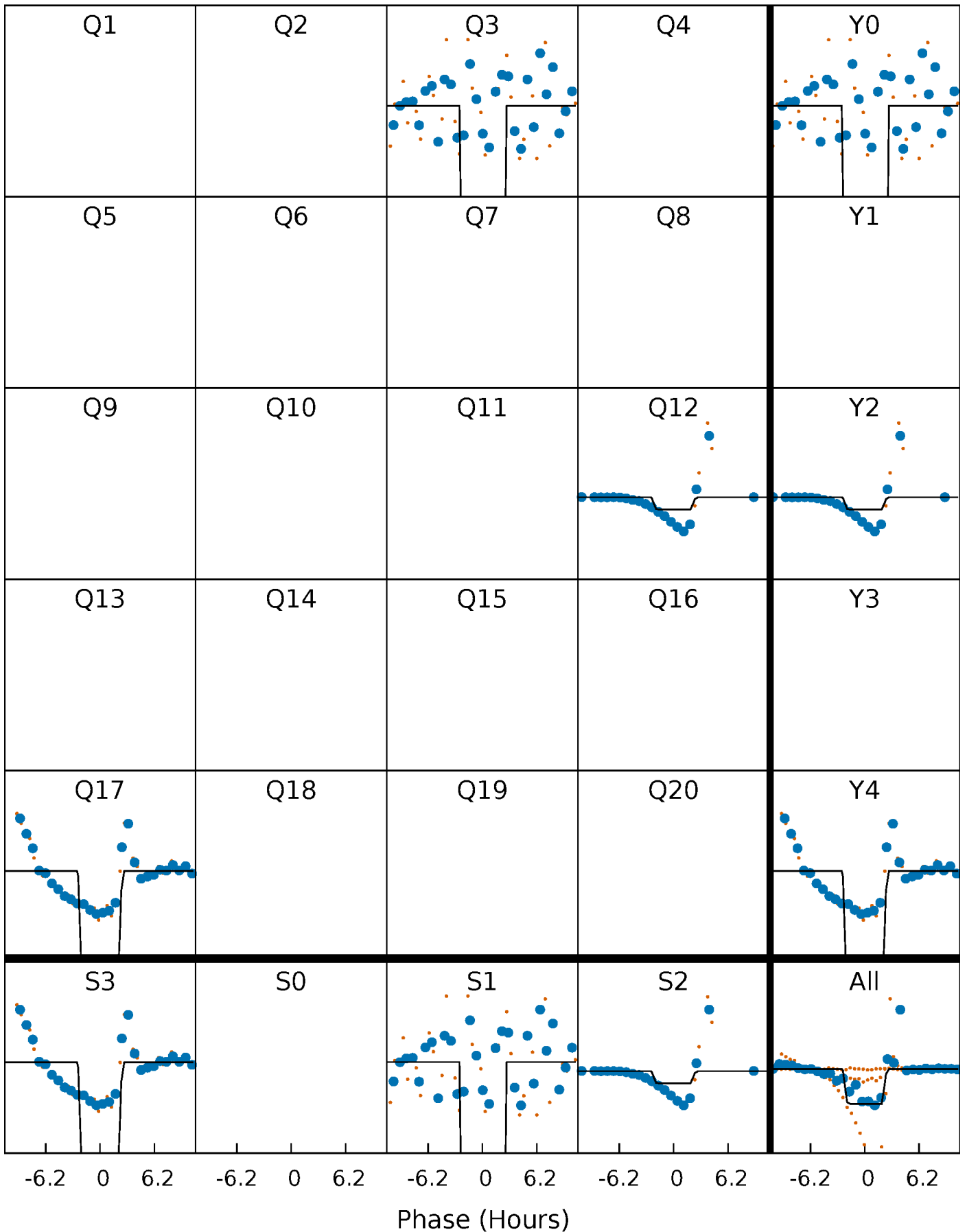
# DV Quarter-Phased Transit Curves

TCE 006707805-06     $P=414.583310$  Days     $T_0=318.338438$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

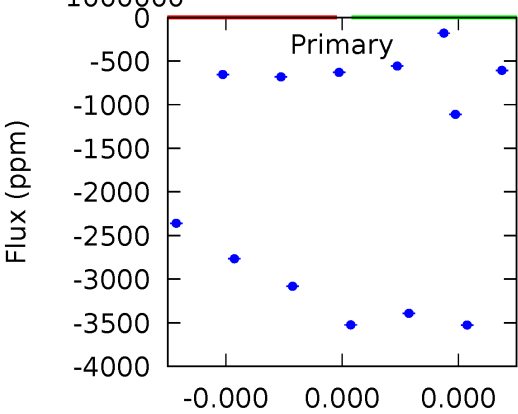
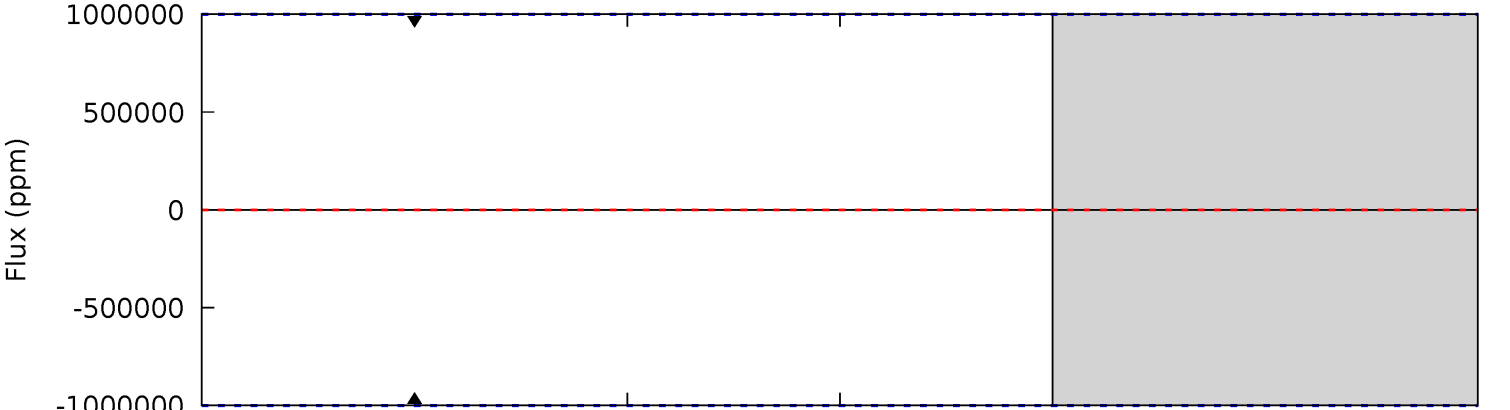
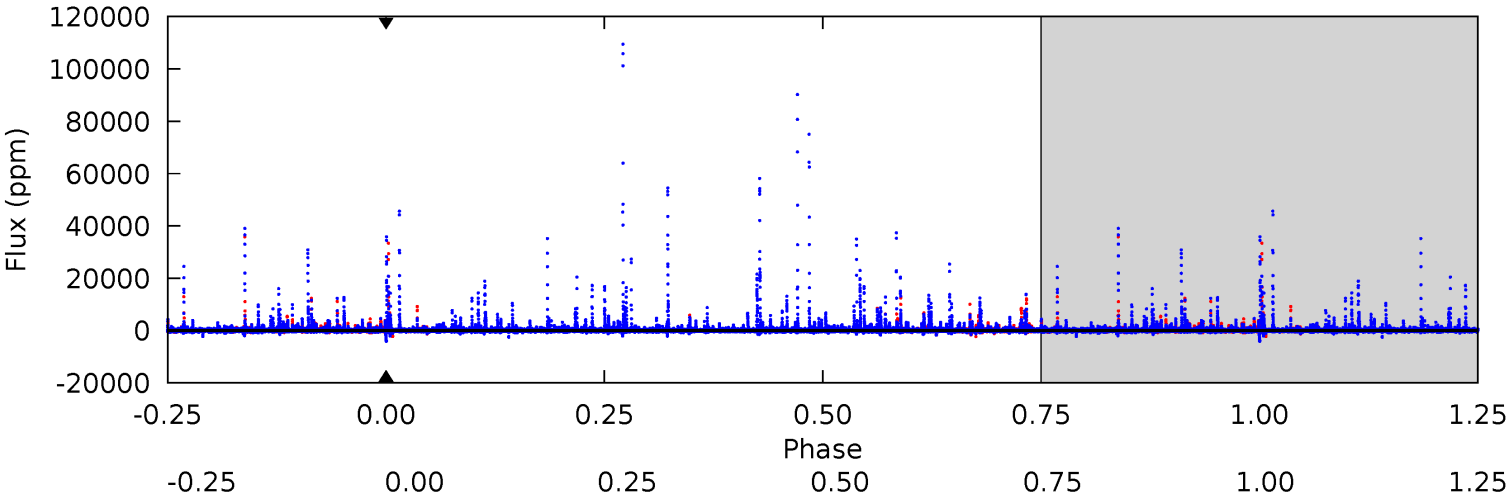
TCE 006707805-06     $P=414.583310$  Days     $T_0=318.425129$  (BKJD)



# DV Model-Shift Uniqueness Test

006707805-06, P = 414.583310 Days, E = 318.338438 Days

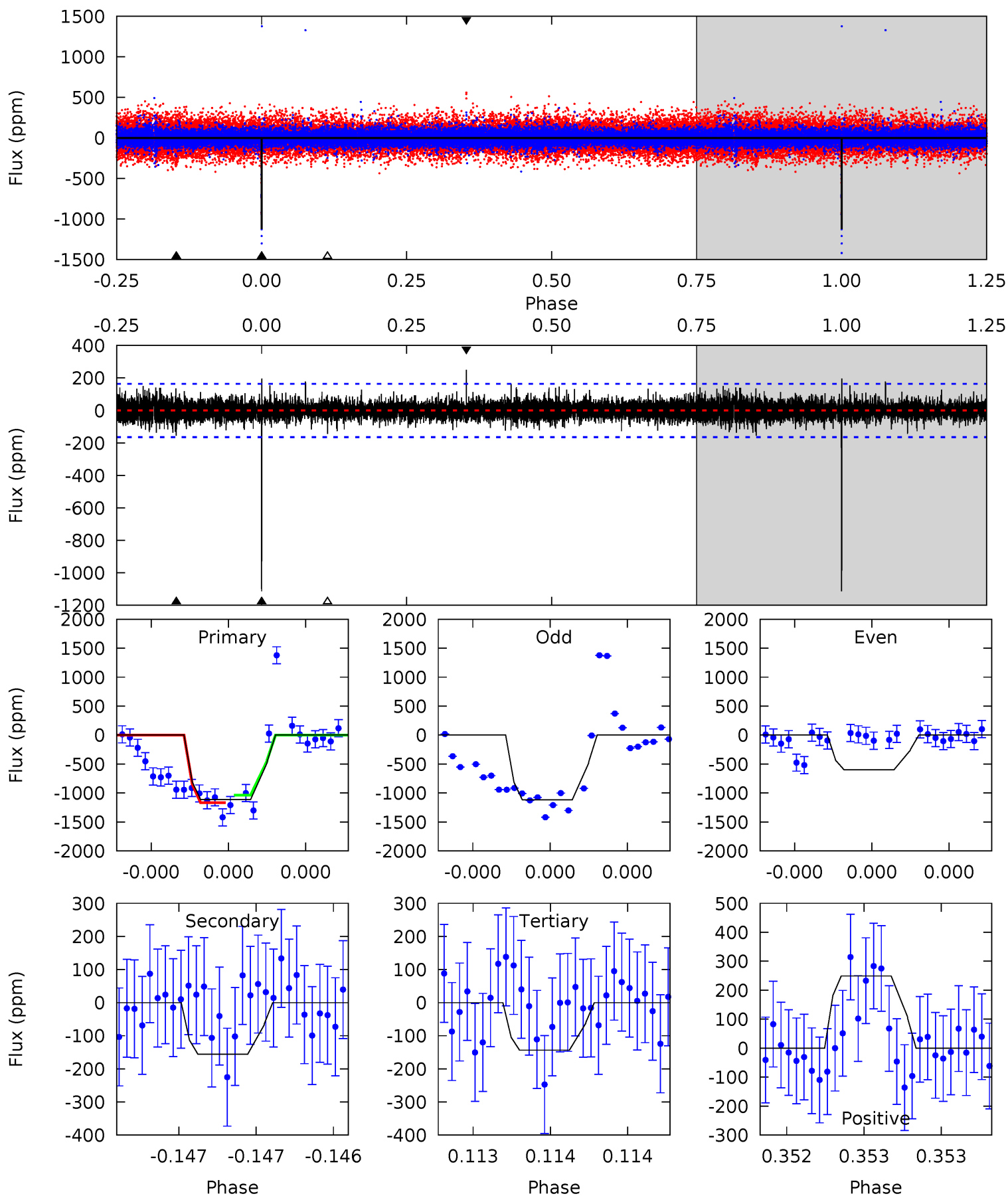
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

006707805-06, P = 414.583310 Days, E = 318.425129 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.9	5.30	4.89	8.49	5.59	3.50	1.09	33.1	29.5	0.42	-3.19	8.15	2.69	0.18	0





### Stellar Parameters For KIC 006707805

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5258^{+62}_{-125}$	$3.292^{+0.264}_{-0.066}$	$-0.120^{+0.150}_{-0.250}$	$5.148^{+0.507}_{-2.029}$	$1.894^{+0.115}_{-0.654}$	$0.020^{+0.038}_{-0.005}$
	+1%/-2%	+8%/-2%	+125%/-208%	+10%/-39%	+6%/-35%	+194%/-24%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 006707805-06 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$0 \pm 1000000$	$39.87^{+42.54}_{-27.47}$	$624^{+23}_{-51}$	$-4382^{+19471}_{-11093}$	$-1497.320^{+93261.226}_{-96267.929}$
Alt.	$-156 \pm 29$	$51.11^{+44.90}_{-32.79}$	$621^{+28}_{-54}$	$2644^{+870}_{-374}$	$55^{+398}_{-39}$

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

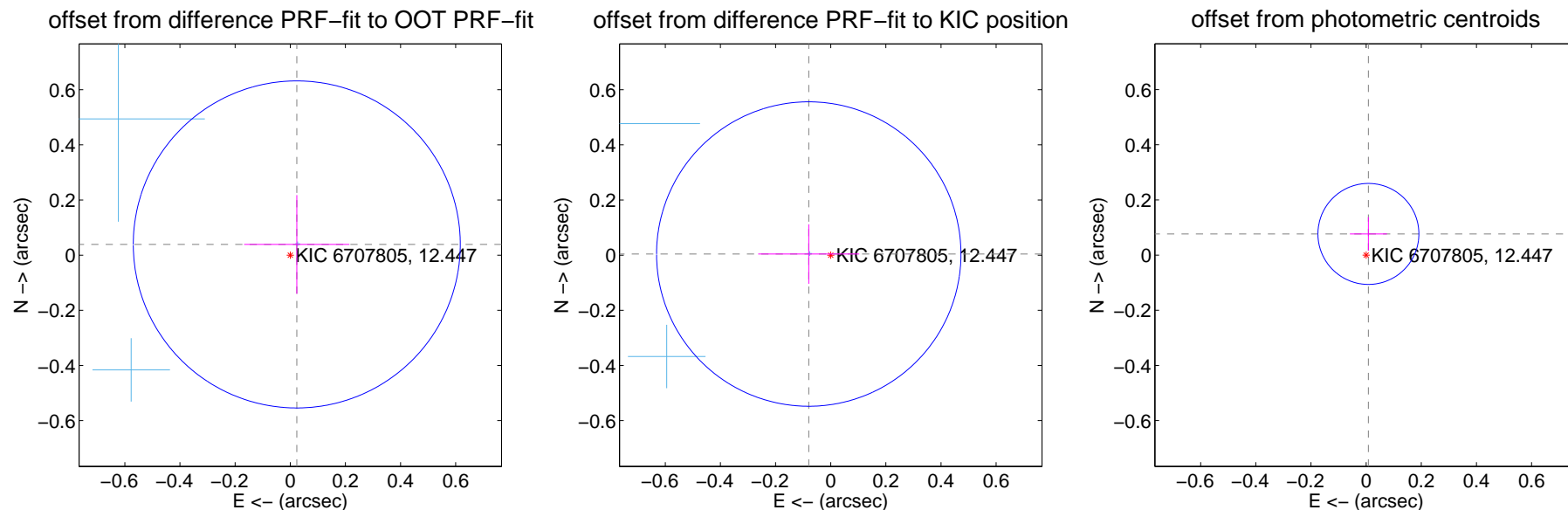
## DV Centroid Data

Supplemental centroid analysis for 006707805-06. Kepler magnitude: 12.45. 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 0.05 arcsec

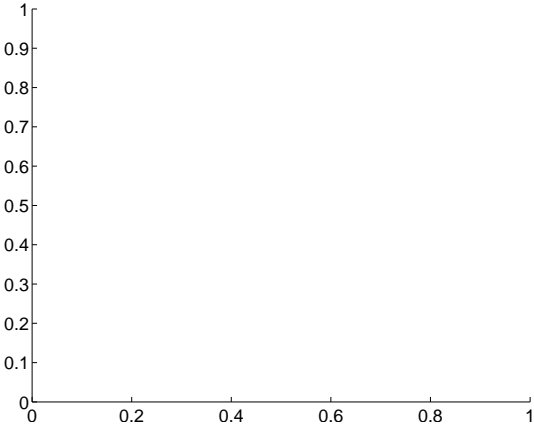
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.045 \pm 0.198$	0.23	$-0.024 \pm 0.191$	$0.039 \pm 0.179$
PRF-fit source offset from KIC position	$0.080 \pm 0.184$	0.43	$0.080 \pm 0.183$	$0.004 \pm 0.108$
photometric centroid source offset	$0.08 \pm 0.06$	1.26	$-0.01 \pm 0.07$	$0.08 \pm 0.06$



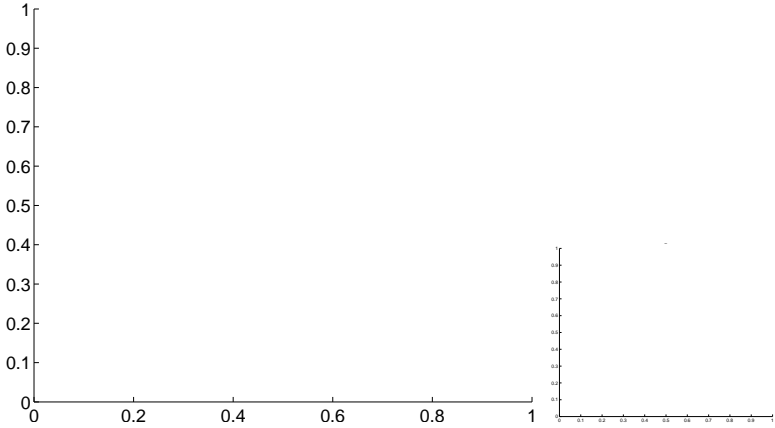
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

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

Q1 no difference image



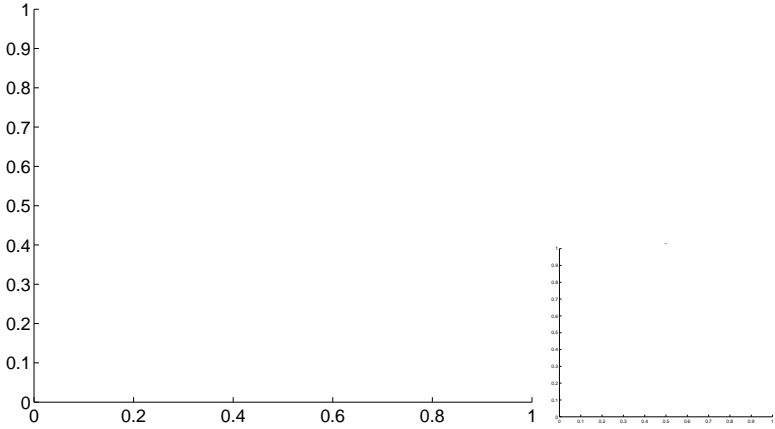
Q1 no OOT image



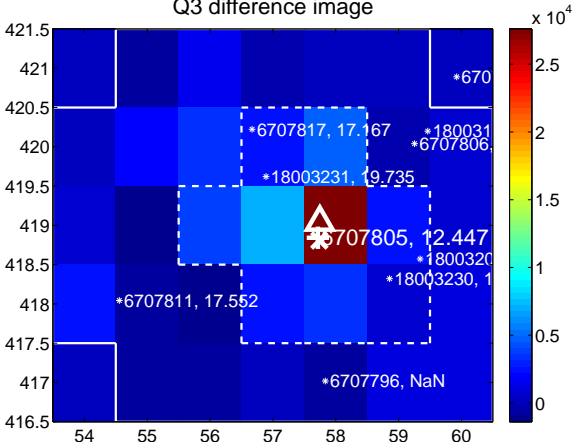
Q2 no difference image



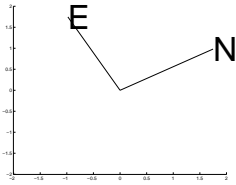
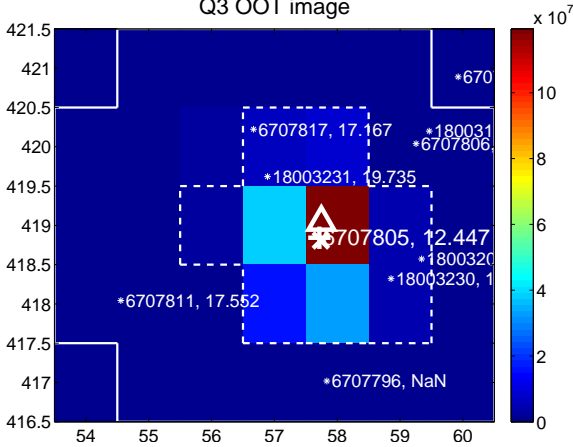
Q2 no OOT image



Q3 difference image



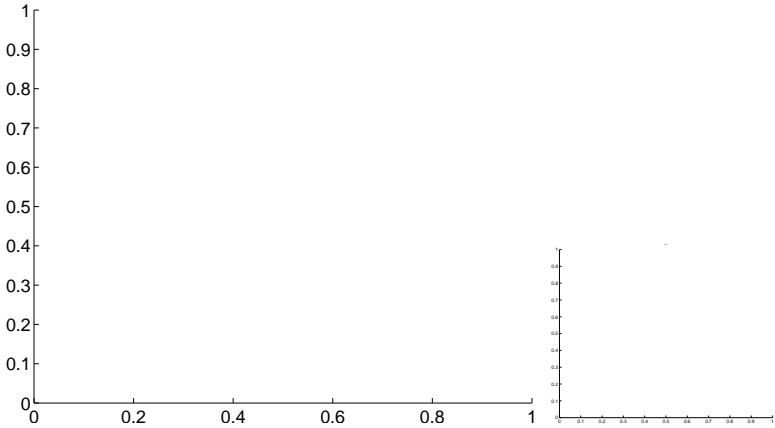
Q3 OOT image



Q4 no difference image



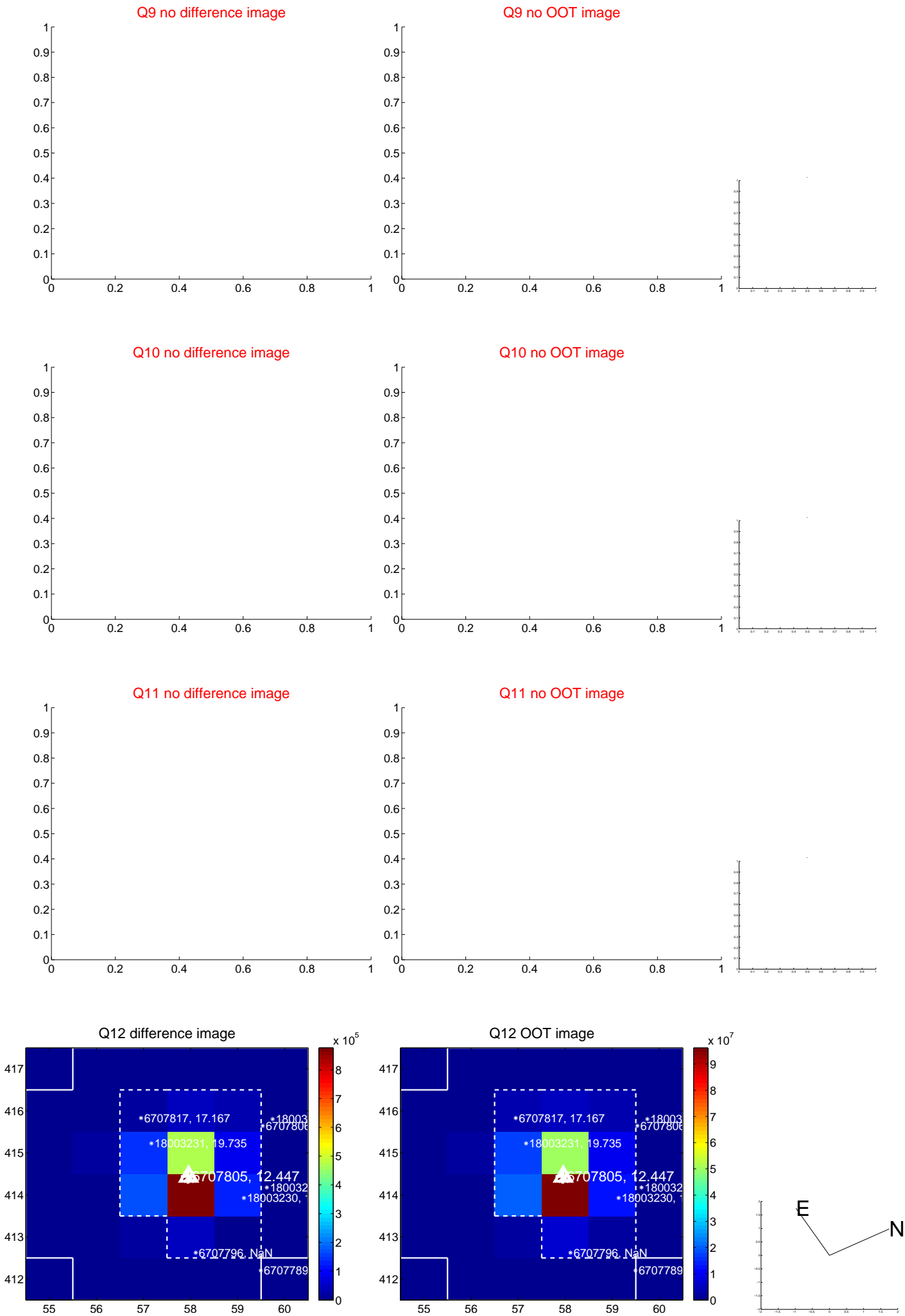
Q4 no OOT image



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



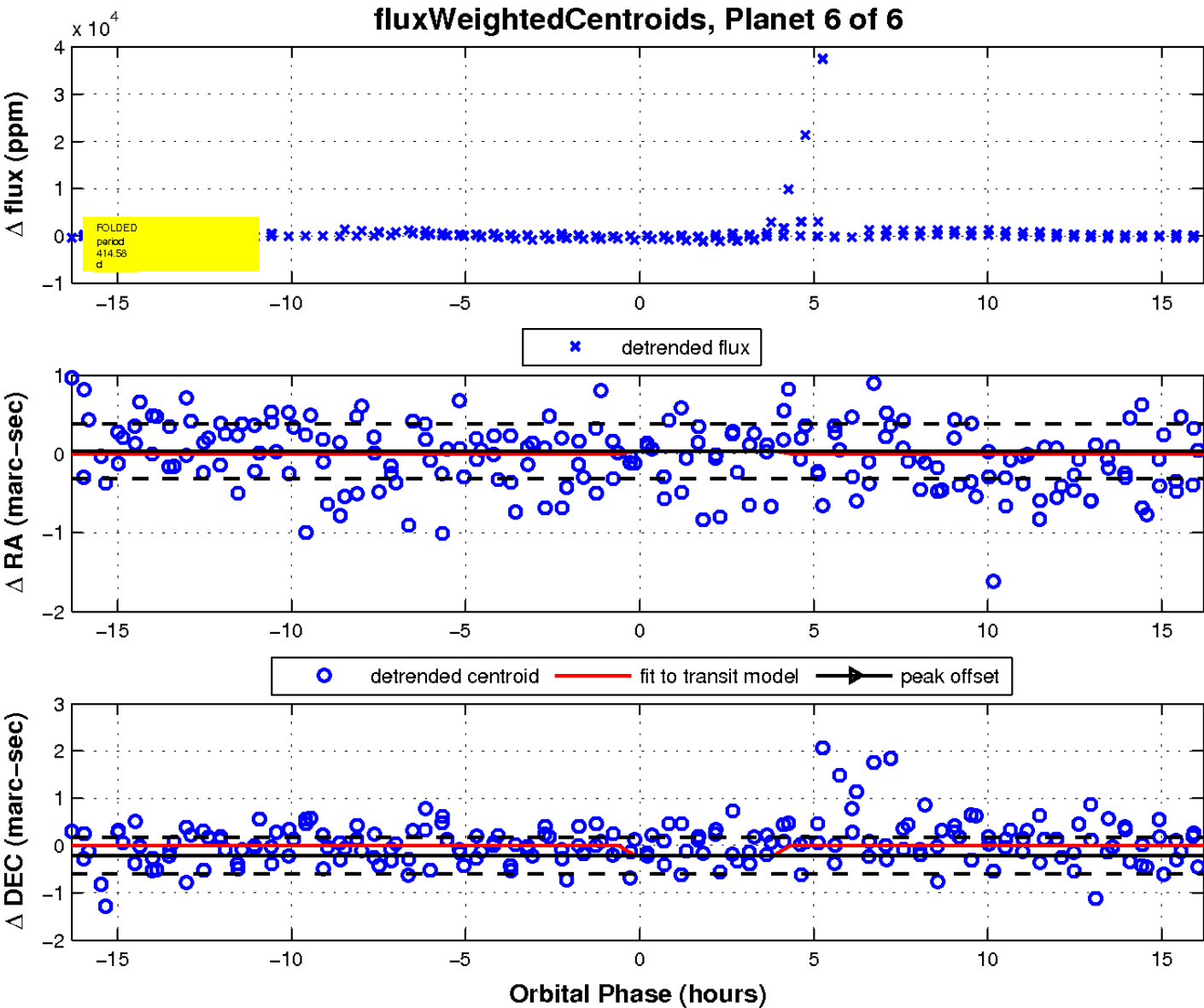
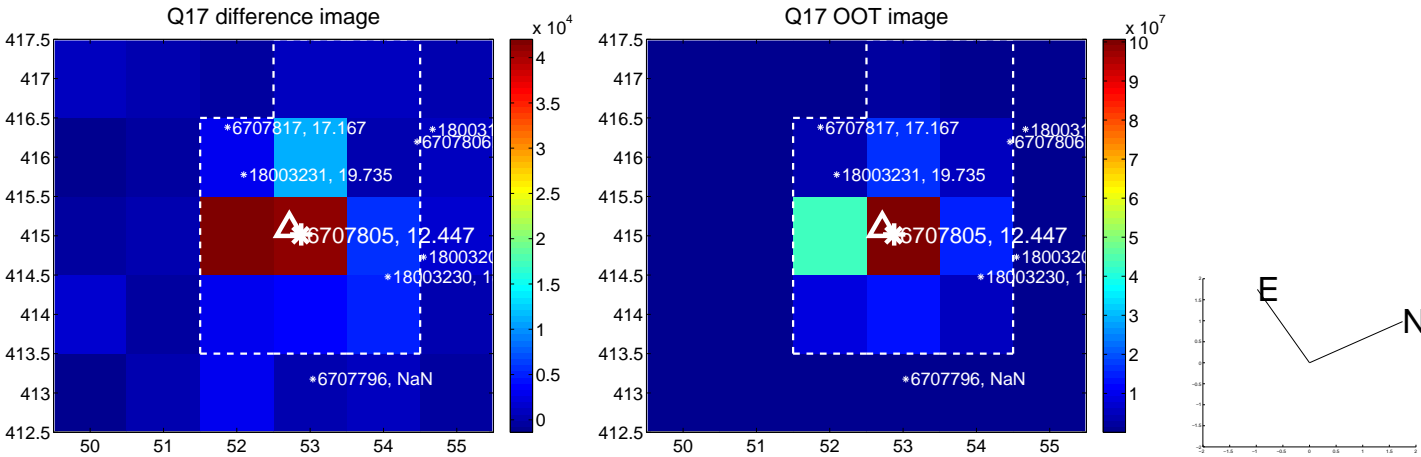
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

