

# KIC 006697041

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006697041-01	OBS	No	560.179429	236.001075	777.9	5.987	14.9	7.5	0.66	5372	1.87	0.24
006697041-02	OBS	No	560.251987	433.550244	1144.0	6.975	21.7	9.6	0.66	5372	2.32	0.24
006697041-03	OBS	No	422.914325	520.970076	764.6	8.345	14.5	6.3	0.66	5372	1.92	0.35
006697041-04	OBS	No	382.523591	370.727132	576.7	6.888	11.7	5.8	0.66	5372	1.64	0.41
006697041-05	OBS	No	468.477500	317.928384	1242.6	14.468	11.7	9.6	0.66	5372	2.46	0.31
006697041-06	OBS	No	581.615296	233.381085	832.2	15.368	13.3	7.0	0.66	5372	1.93	0.23
006697041-07	OBS	No	316.778435	188.503522	678.1	10.697	11.2	8.1	0.66	5372	1.76	0.52
006697041-08	OBS	No	565.021990	414.543045	592.8	10.500	11.1	-1.0	0.66	5372	1.59	0.24

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006697041-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006697041-02	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—SAME_NTL_PERIOD—CENT_FEW_DIFFS
006697041-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_DIFFS
006697041-04	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
006697041-05	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
006697041-06	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006697041-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006697041-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

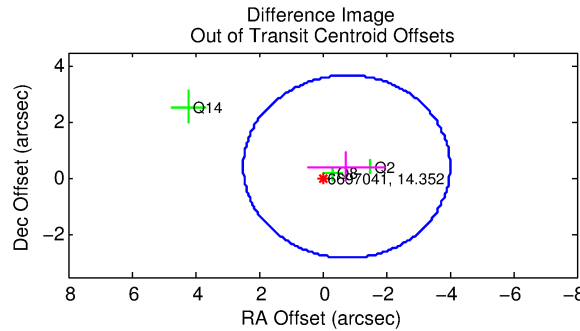
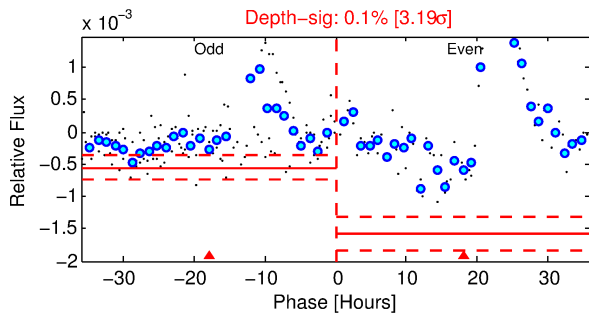
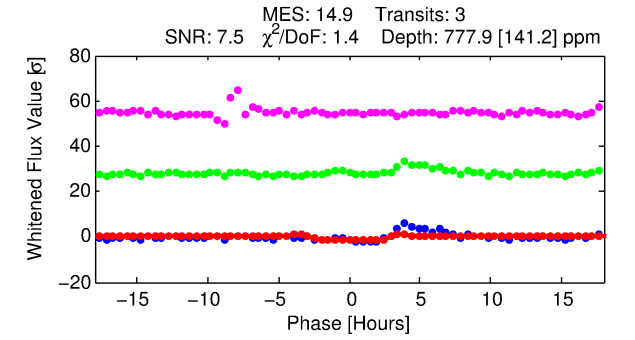
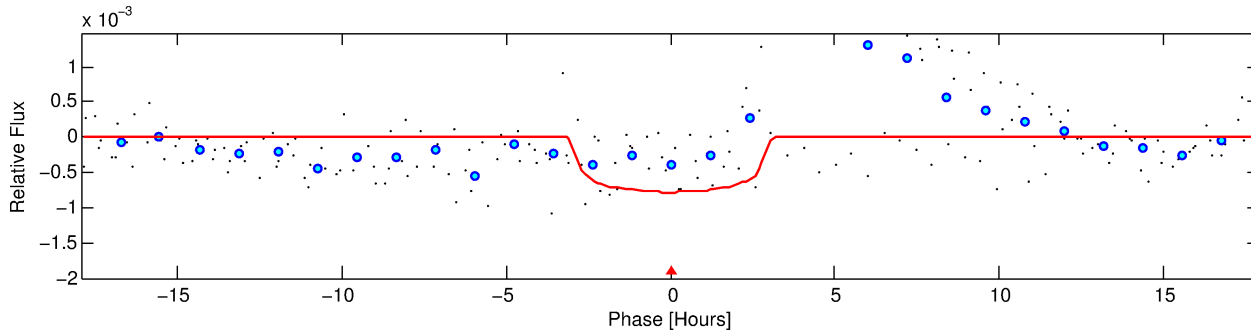
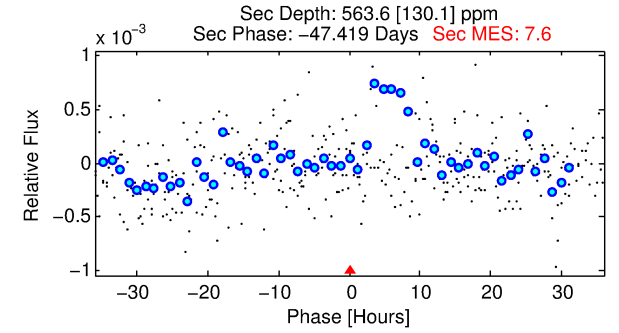
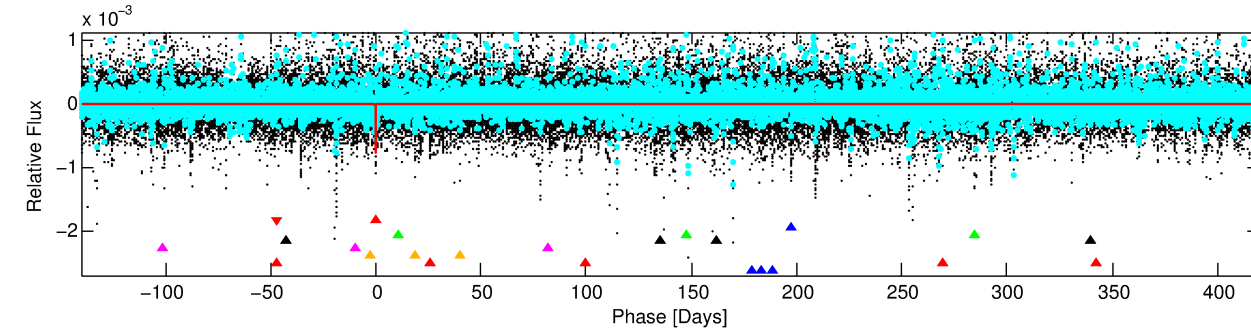
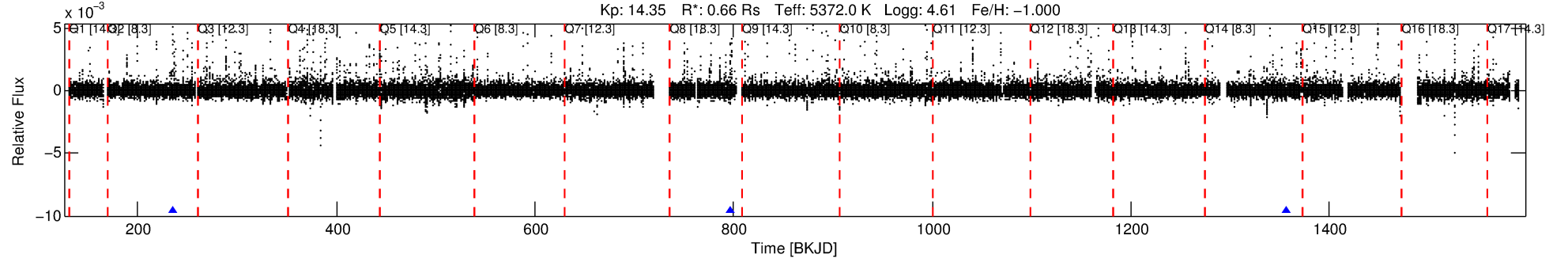
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006697041-01

No Significant Match Found

# DV One-Page Summary

KIC: 6697041 Candidate: 1 of 8 Period: 560.179 d



## DV Fit Results:

Period = 560.17943 [0.00793] d  
Epoch = 236.0011 [0.0102] BKJD  
Rp/R\* = 0.0261 [0.0336]  
a/R\* = 653.94 [3843.22]  
b = 0.46 [9.97]  
Seff = 0.24 [0.04]  
Teq = 179 [8] K  
Rp = 1.87 [2.41] Re  
a = 1.1478 [0.0971] AU  
Ag = 117315.11 [303750.11] [0.39σ]  
Teffp = 5127 [3319] K [1.49σ]

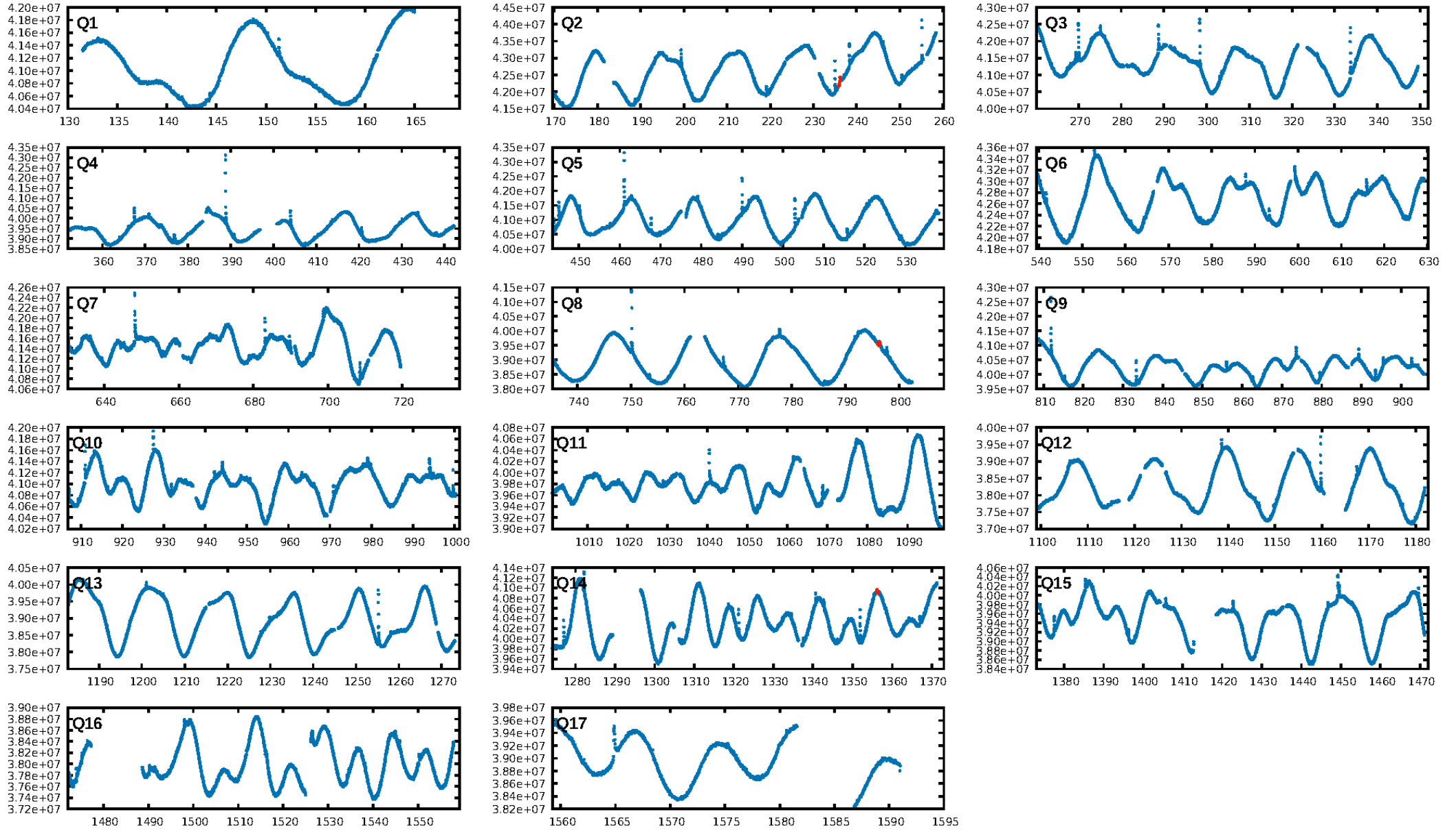
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [140.56σ]  
LongPeriod-sig: 15.0% [0.19σ]  
ModelChiSquare2-sig: 2.3%  
ModelChiSquareGof-sig: 22.3%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -8.381  
Centroid-sig: 0.5%  
Centroid-so: 2.043 arcsec [2.34σ]  
OotOffset-rm: 0.876 arcsec [0.81σ]  
OotOffset-st: 2/0/1/0 [3]  
KicOffset-rm: 0.780 arcsec [0.66σ]  
KicOffset-st: 2/0/1/0 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

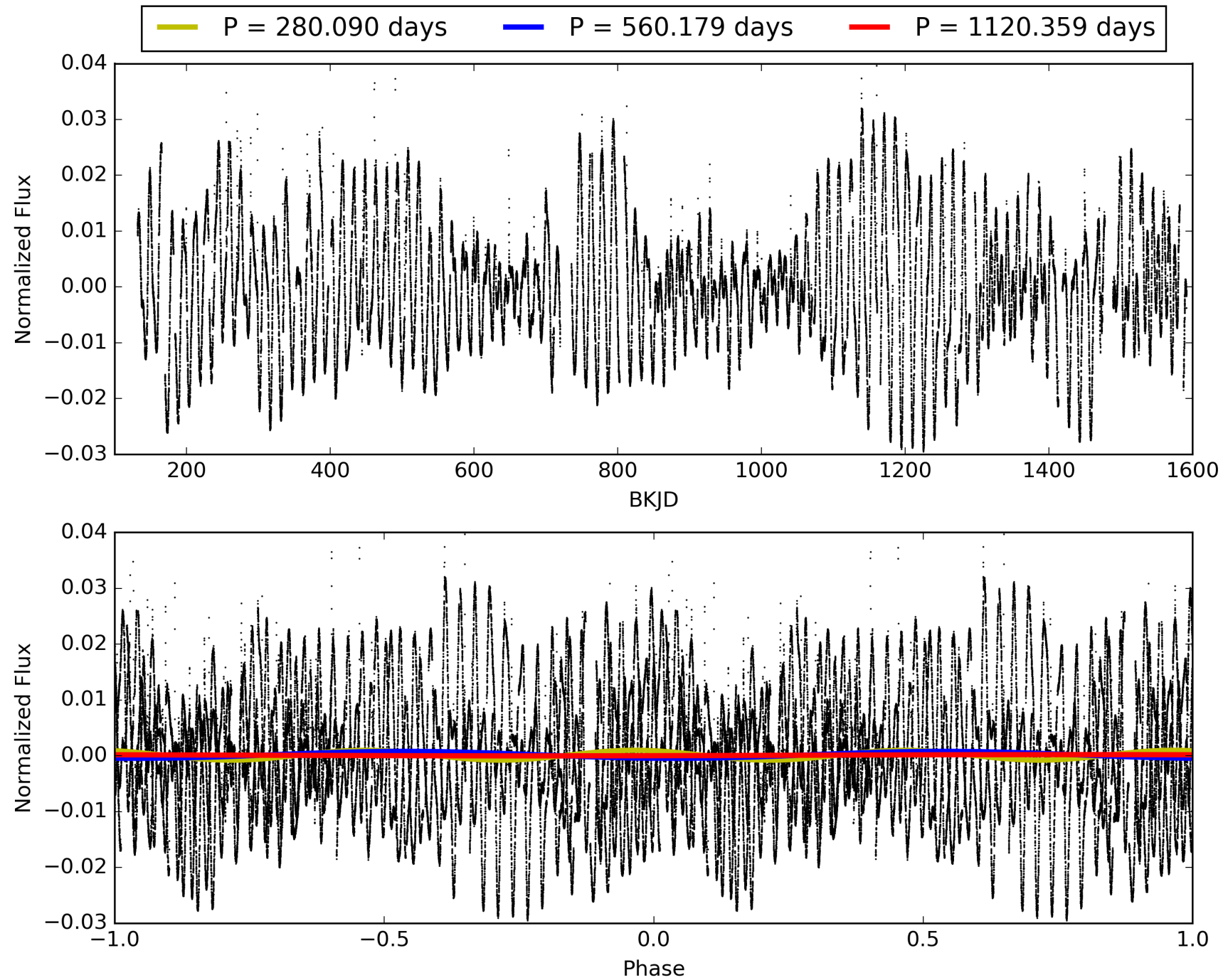
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:09:19 Z

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

# TCE 006697041-01, PDC Light Curves



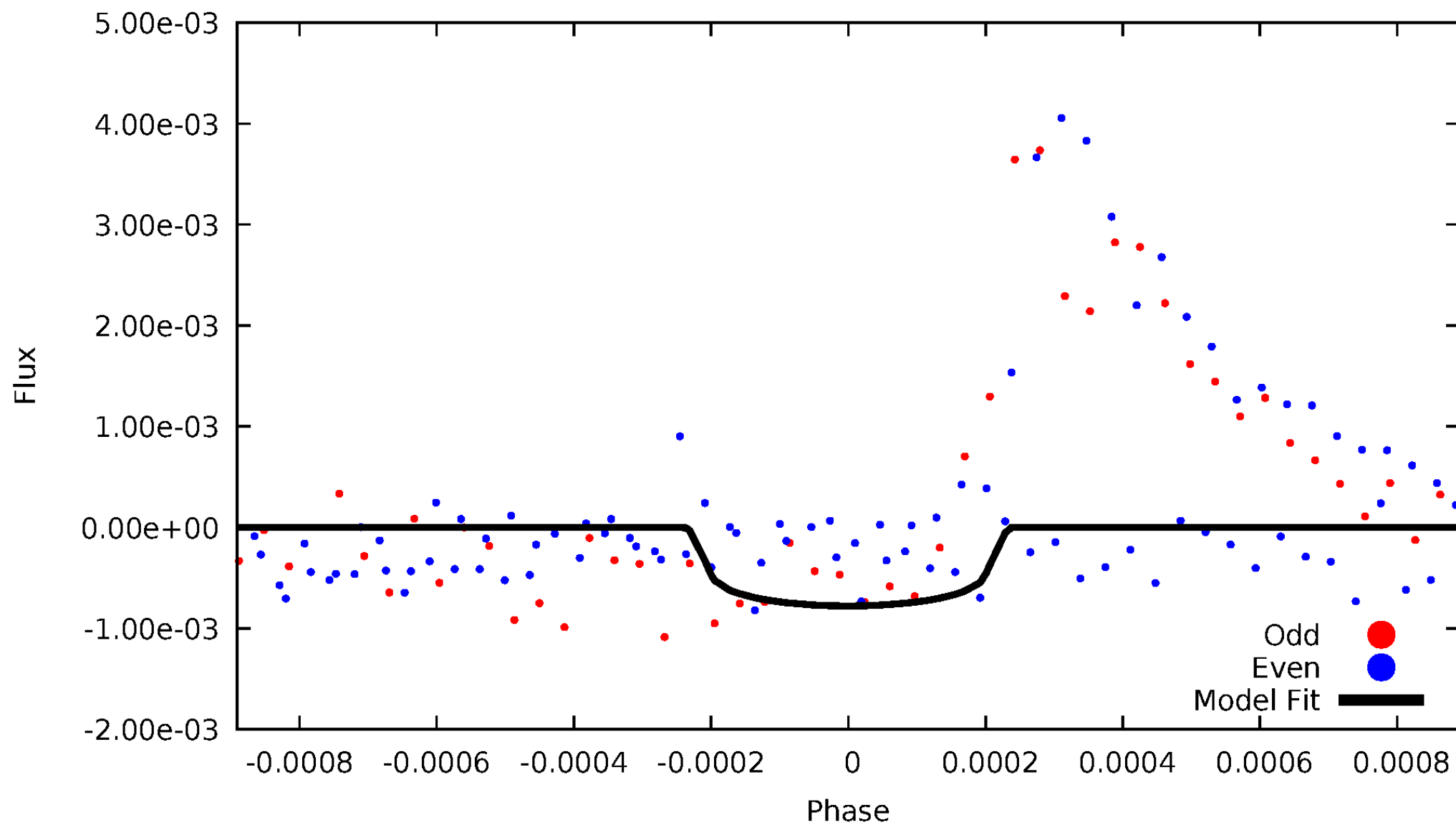
# TCE 006697041-01





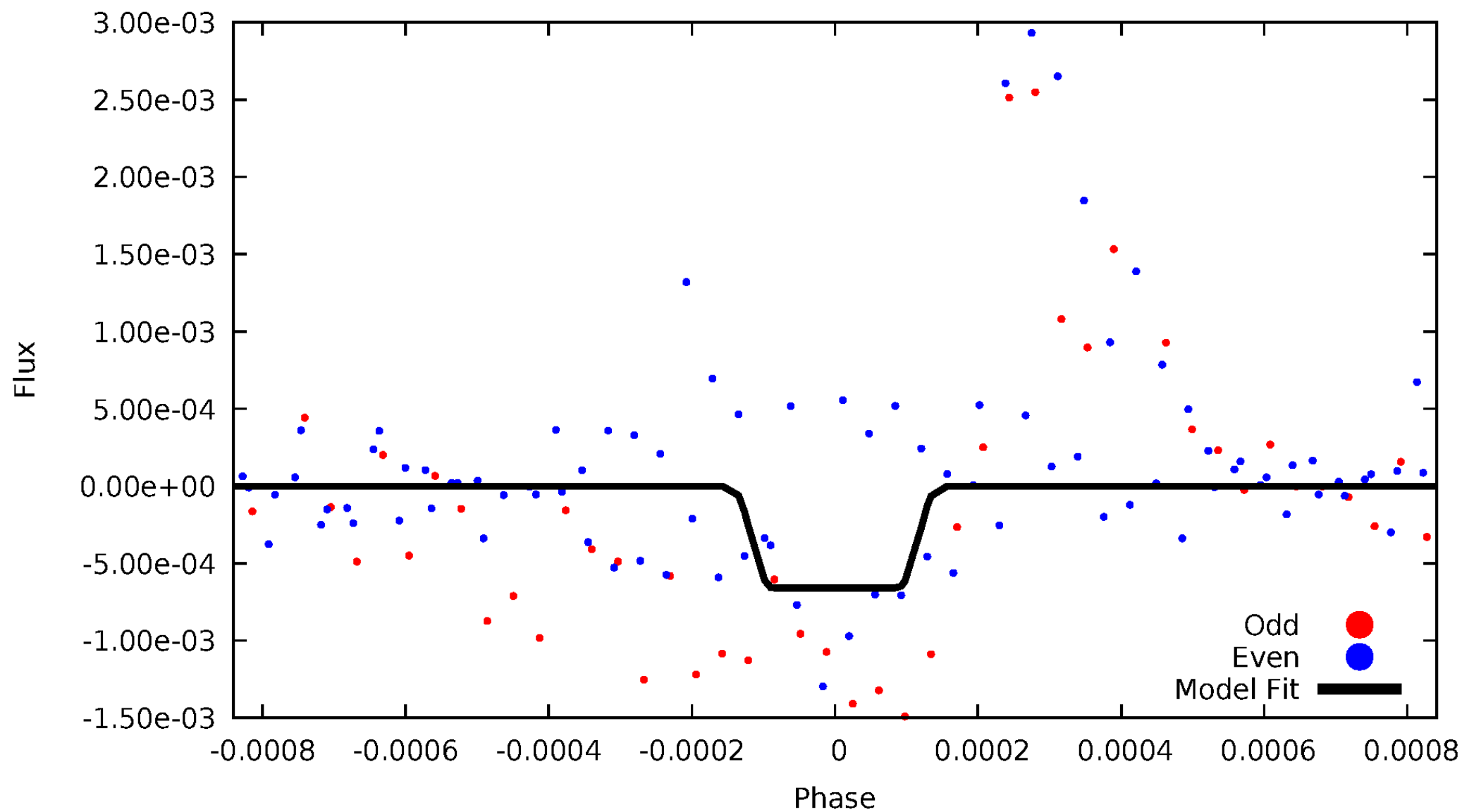
# DV Odd/Even

TCE 006697041-01



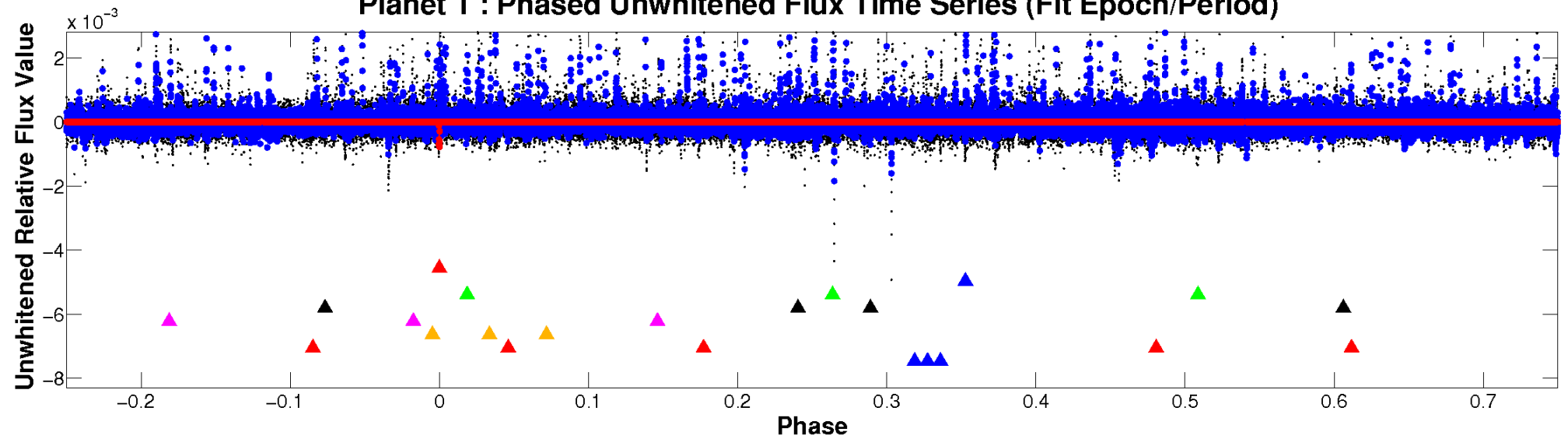
# ALT Odd/Even

TCE 006697041-01

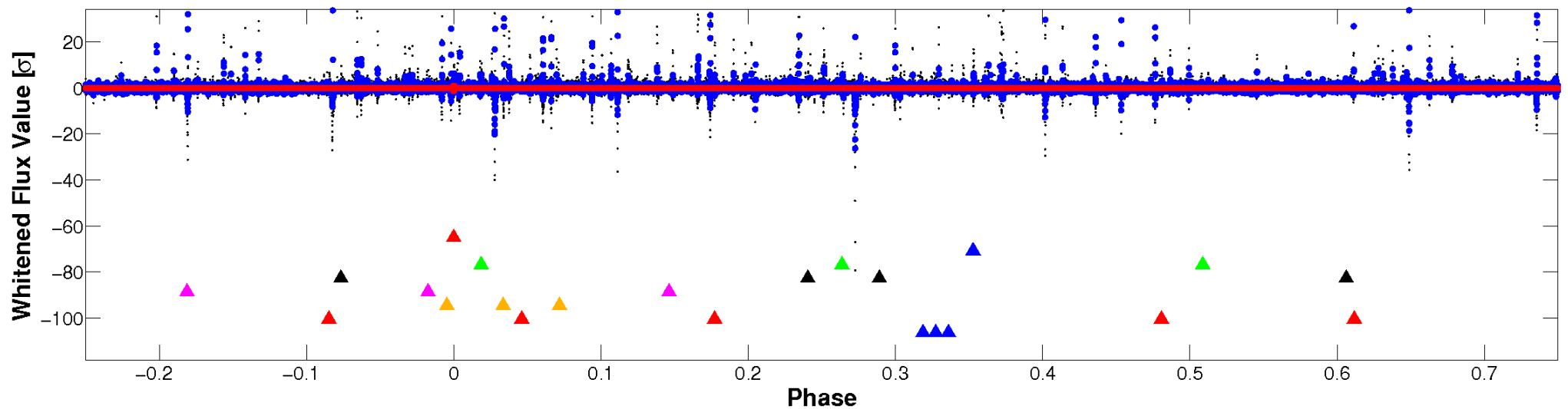


# Non-Whitened Vs. Whitened Light Curve

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

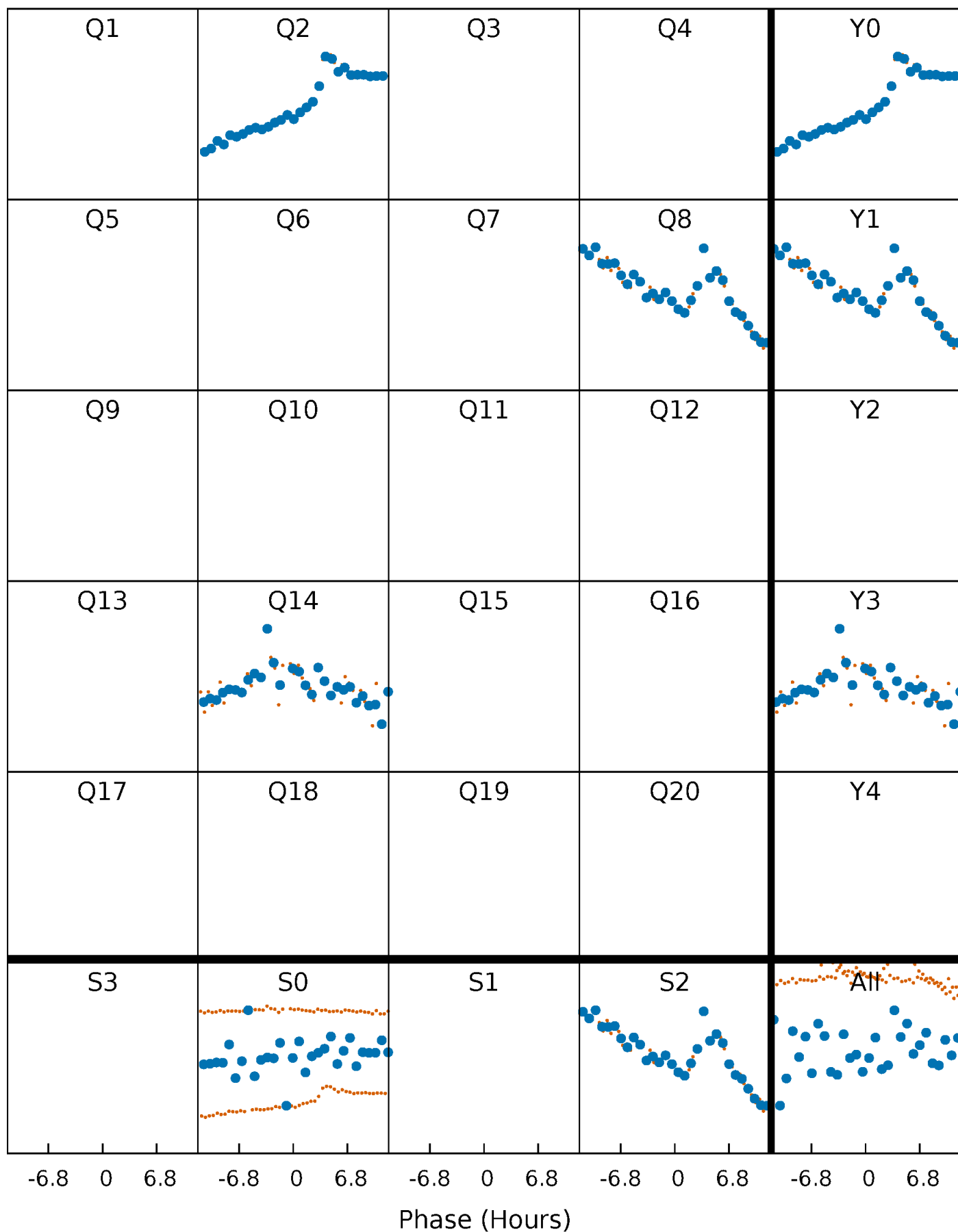


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



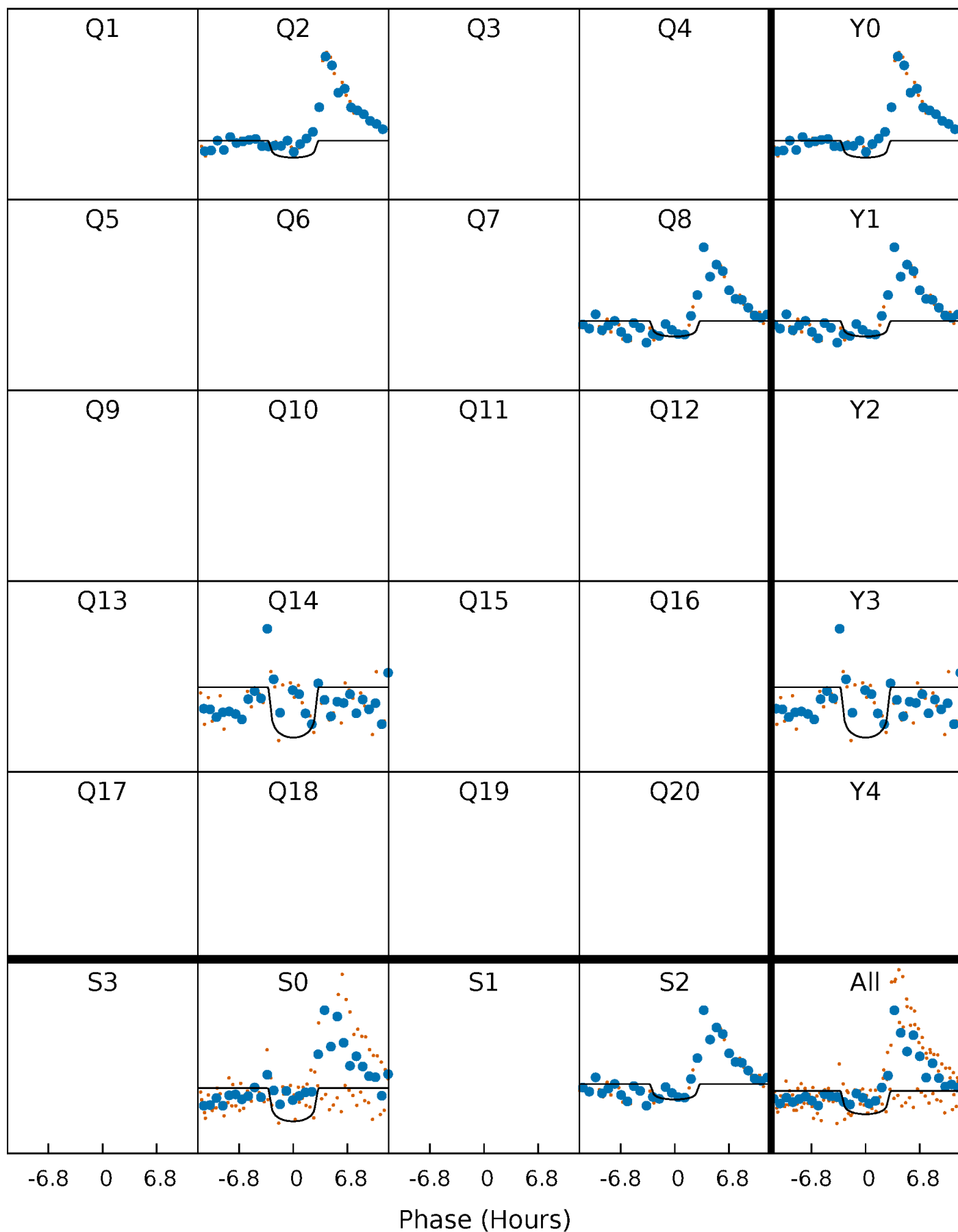
# PDC Quarter-Phased Transit Curves

TCE 006697041-01 P=560.179429 Days  $T_0=236.001075$  (BKJD)



# DV Quarter-Phased Transit Curves

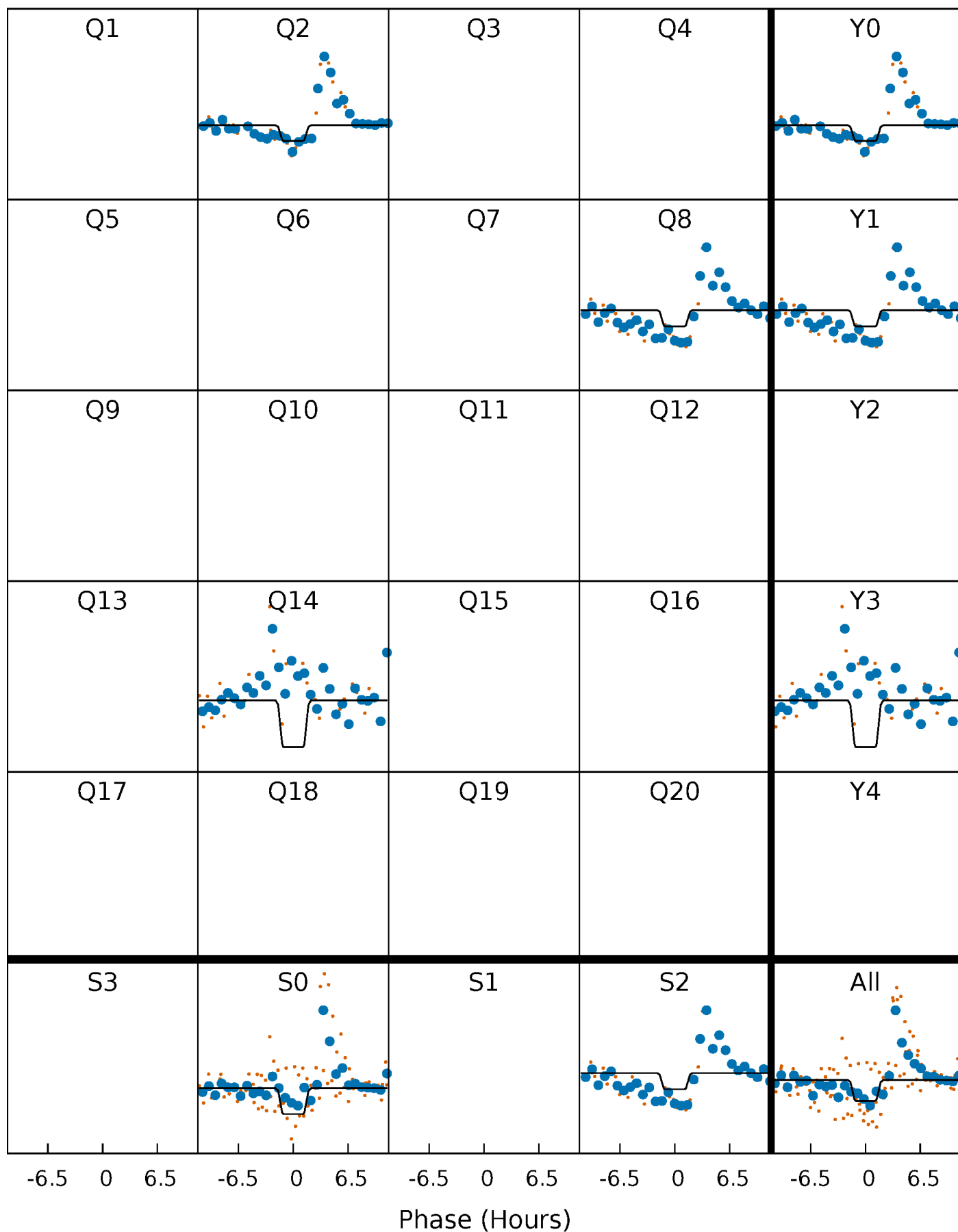
TCE 006697041-01 P=560.179429 Days  $T_0=236.001075$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

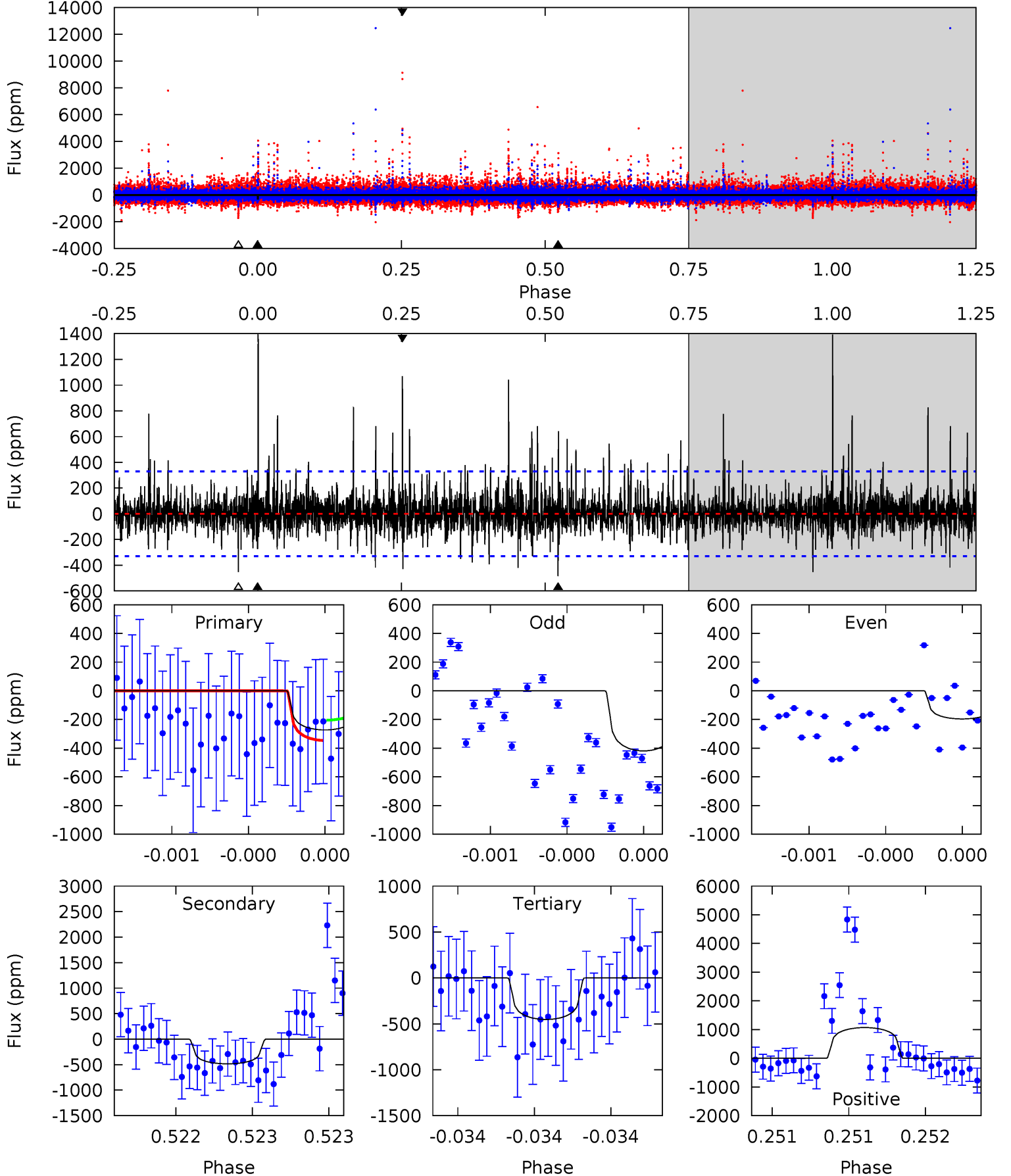
TCE 006697041-01 P=560.158803 Days  $T_0=236.021218$  (BKJD)



# DV Model-Shift Uniqueness Test

006697041-01, P = 560.179429 Days, E = 236.001075 Days

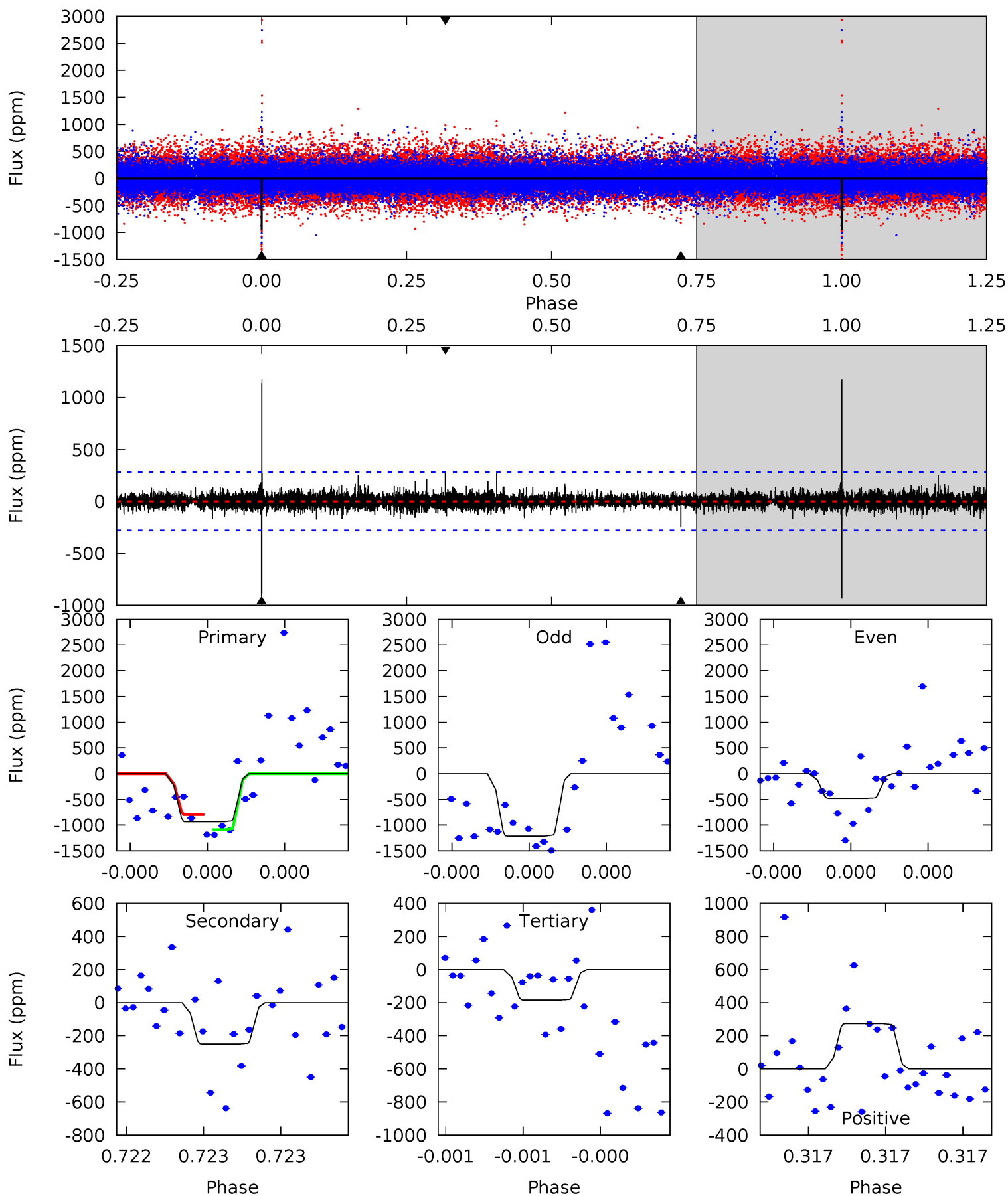
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.62	8.19	7.66	18.1	5.58	3.49	1.92	-3.03	-13.5	0.53	-9.90	0.89	1.09	0.74	1.23



# Alt Model-Shift Uniqueness Test

006697041-01, P = 560.158803 Days, E = 236.021218 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.9	5.05	3.73	5.52	5.67	3.62	0.76	15.2	13.4	1.32	-0.47	6.97	0.68	0.56	2.97



### Stellar Parameters For KIC 006697041

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$5372^{+177}_{-145}$	$4.612^{+0.072}_{-0.054}$	$-1.000^{+0.300}_{-0.300}$	$0.656^{+0.063}_{-0.051}$	$0.642^{+0.061}_{-0.024}$	$3.210^{+0.917}_{-0.596}$
	+3%/-3%	+2%/-1%	+30%/-30%	+10%/-8%	+10%/-4%	+29%/-19%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 006697041-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-484 \pm 59$	$2.59^{+2.05}_{-1.64}$	$250^{+10}_{-9}$	$4375^{+2574}_{-806}$	$53271^{+327569}_{-36782}$
Alt.	$-250 \pm 49$	$2.50^{+2.10}_{-1.57}$	$249^{+10}_{-9}$	$3929^{+1938}_{-714}$	$29094^{+179110}_{-20763}$

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

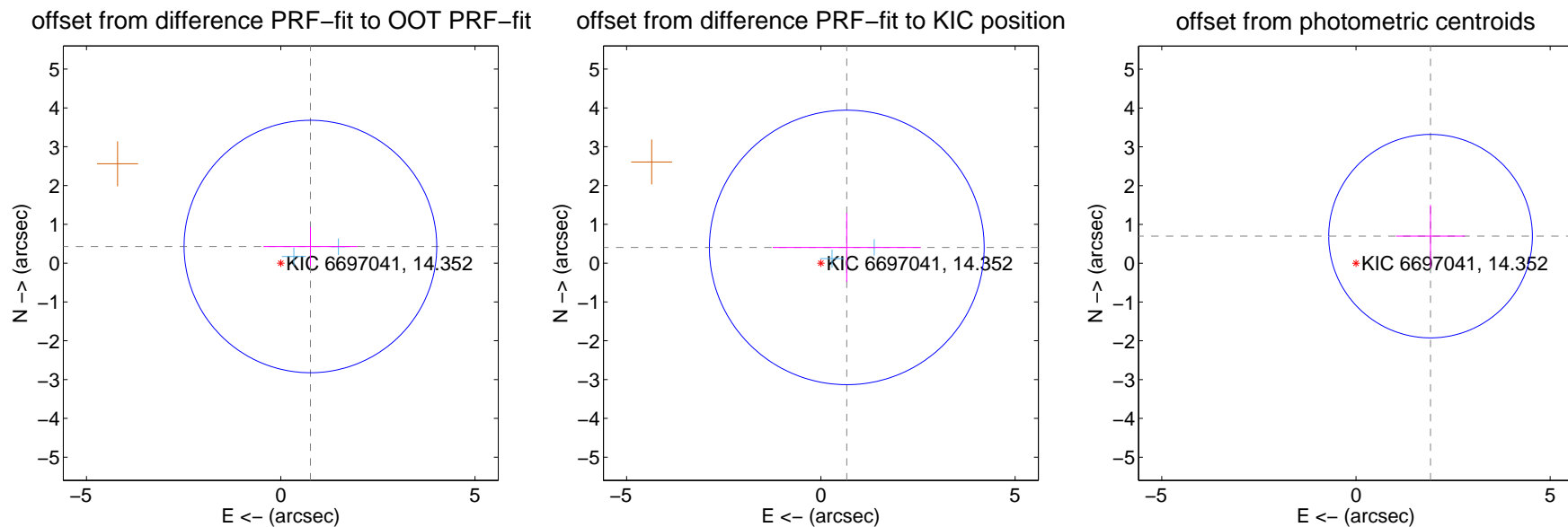
## DV Centroid Data

Supplemental centroid analysis for 006697041-01. Kepler magnitude: 14.35. Transit SNR 7.52

There are 2 quarters with good PRF difference image offsets

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

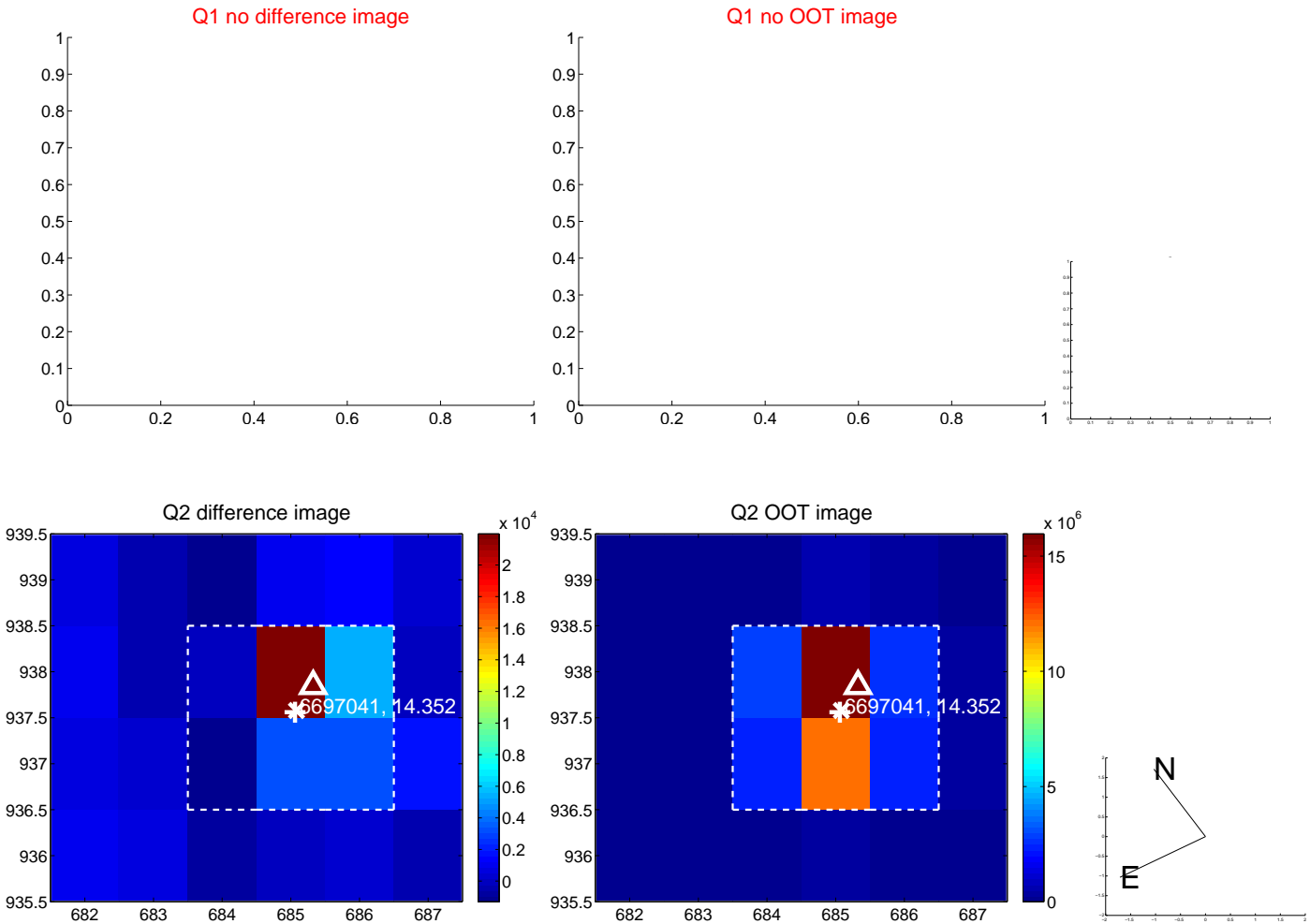
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.876 \pm 1.084$	0.81	$-0.764 \pm 1.210$	$0.428 \pm 0.503$
PRF-fit source offset from KIC position	$0.780 \pm 1.179$	0.66	$-0.667 \pm 1.905$	$0.405 \pm 0.889$
photometric centroid source offset	$2.04 \pm 0.87$	2.34	$-1.92 \pm 0.88$	$0.70 \pm 0.80$



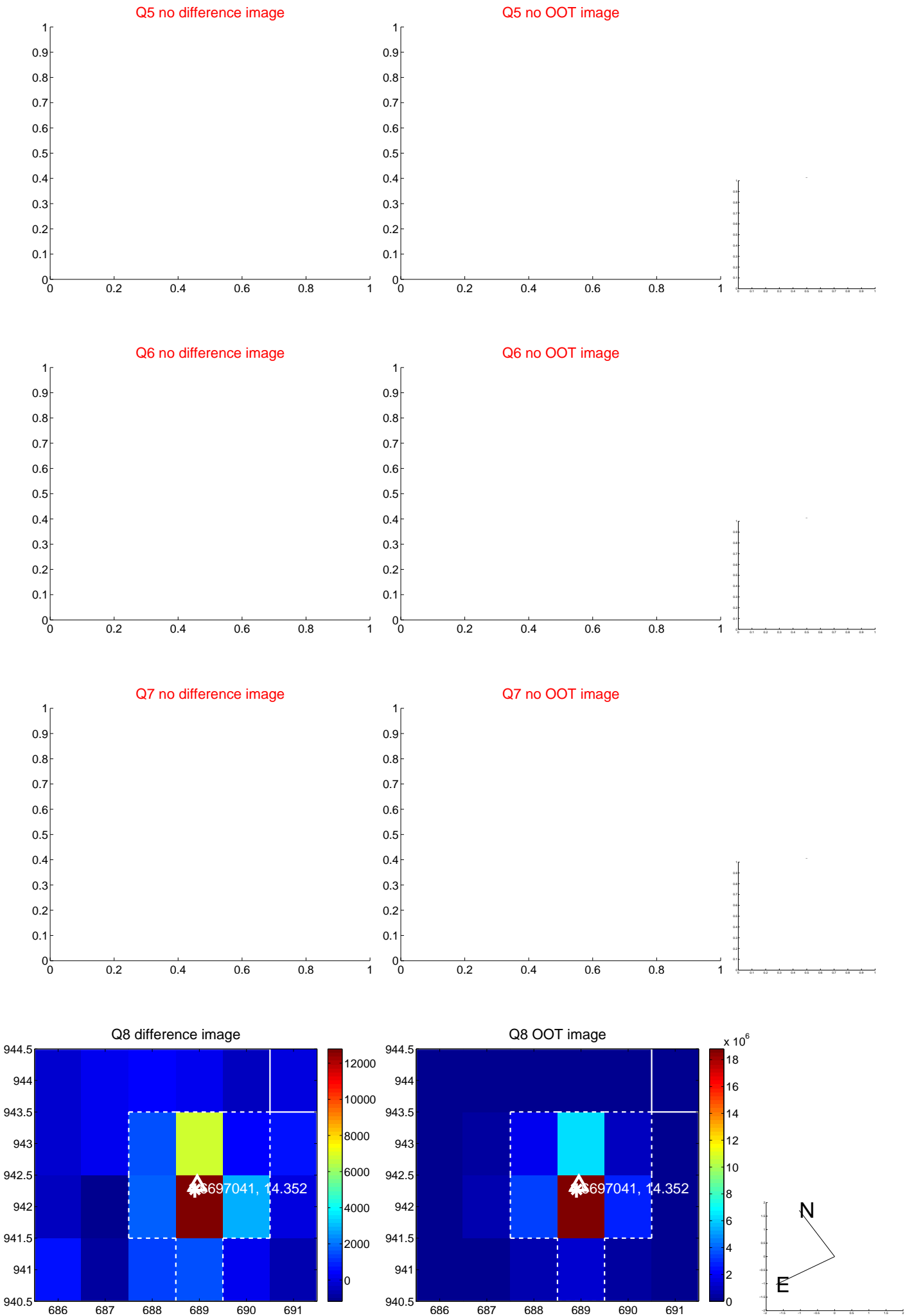
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



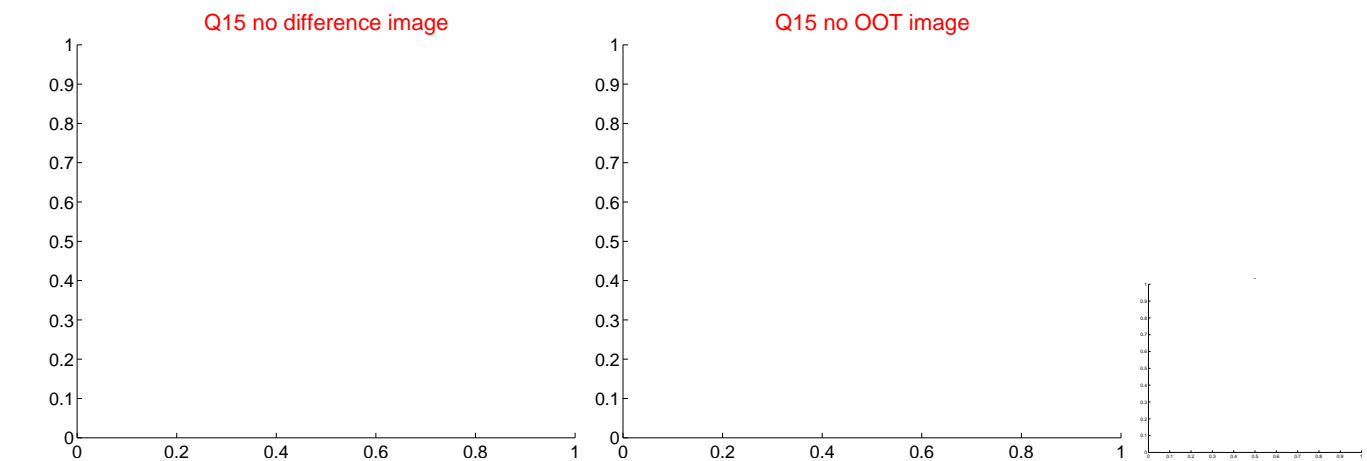
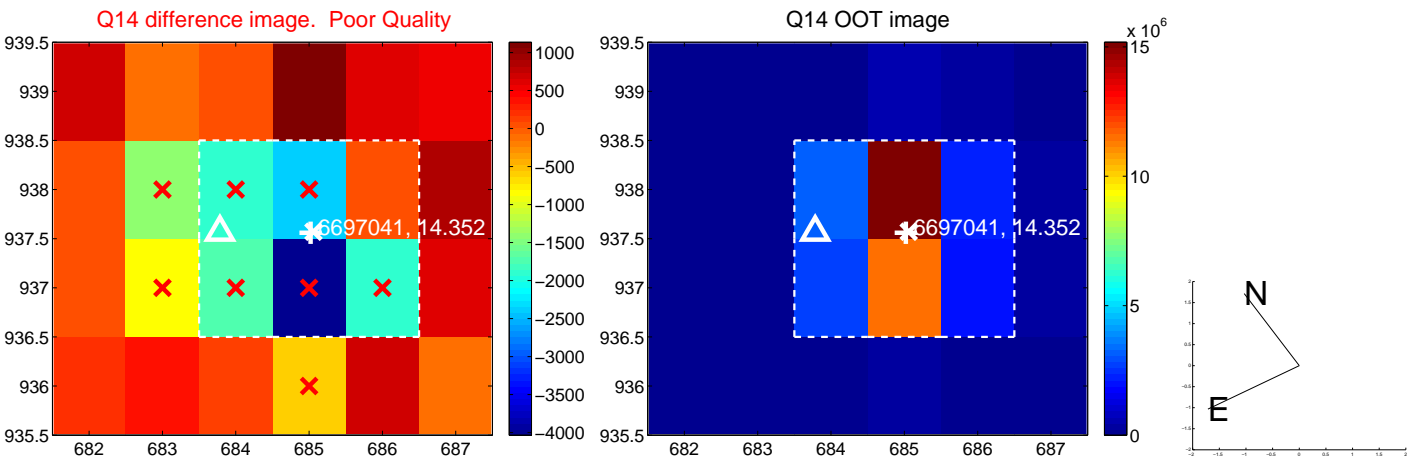
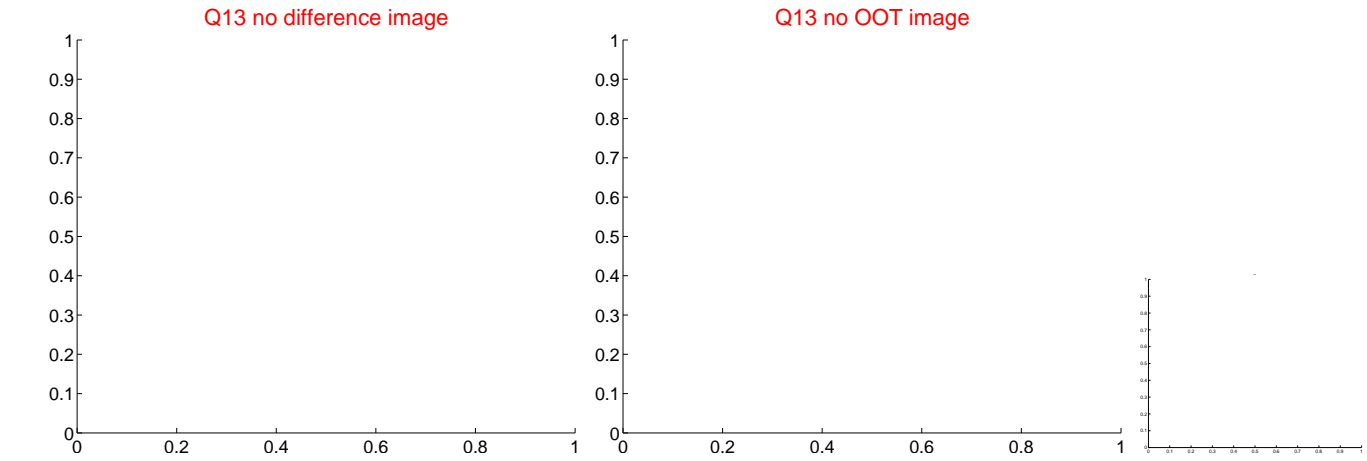
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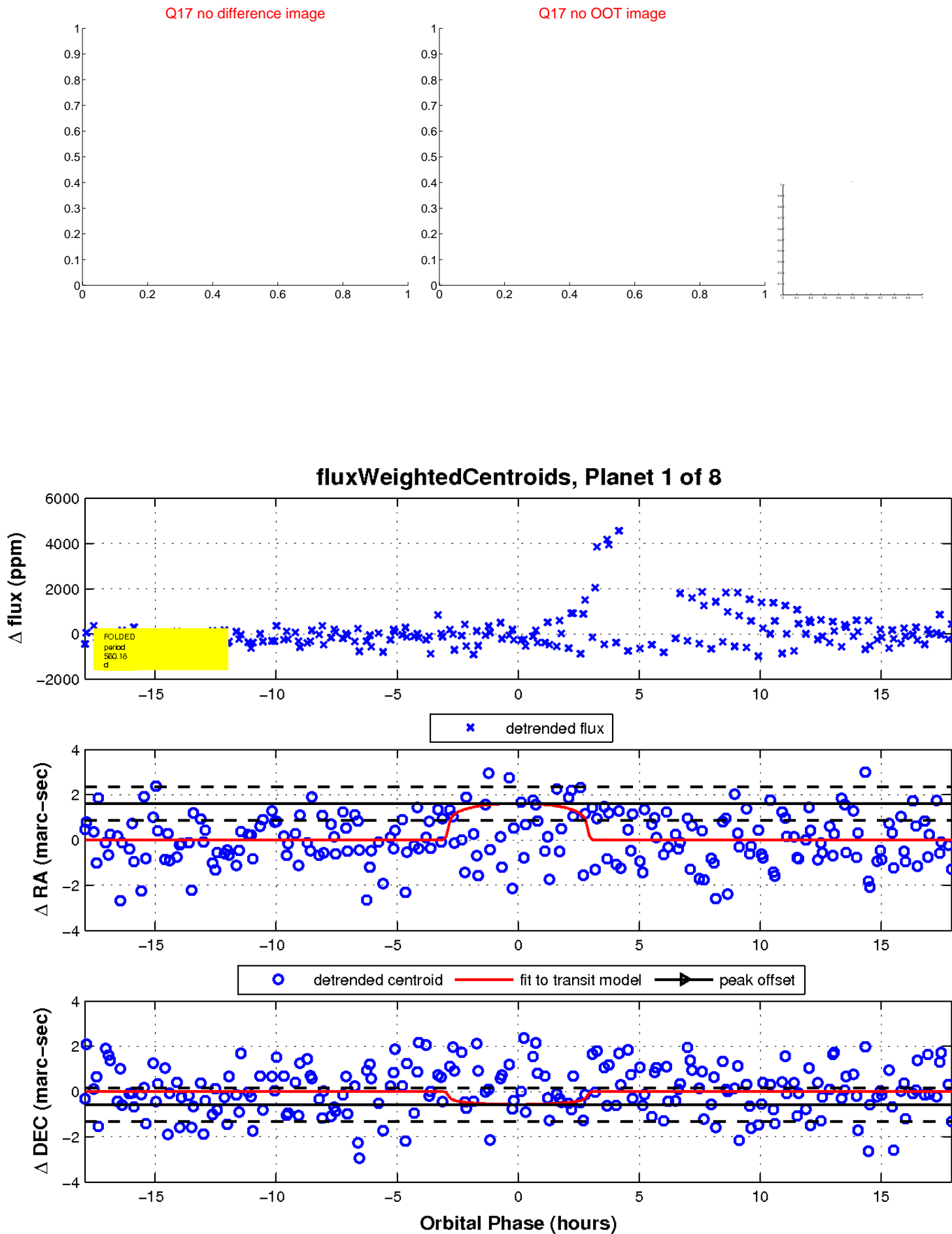
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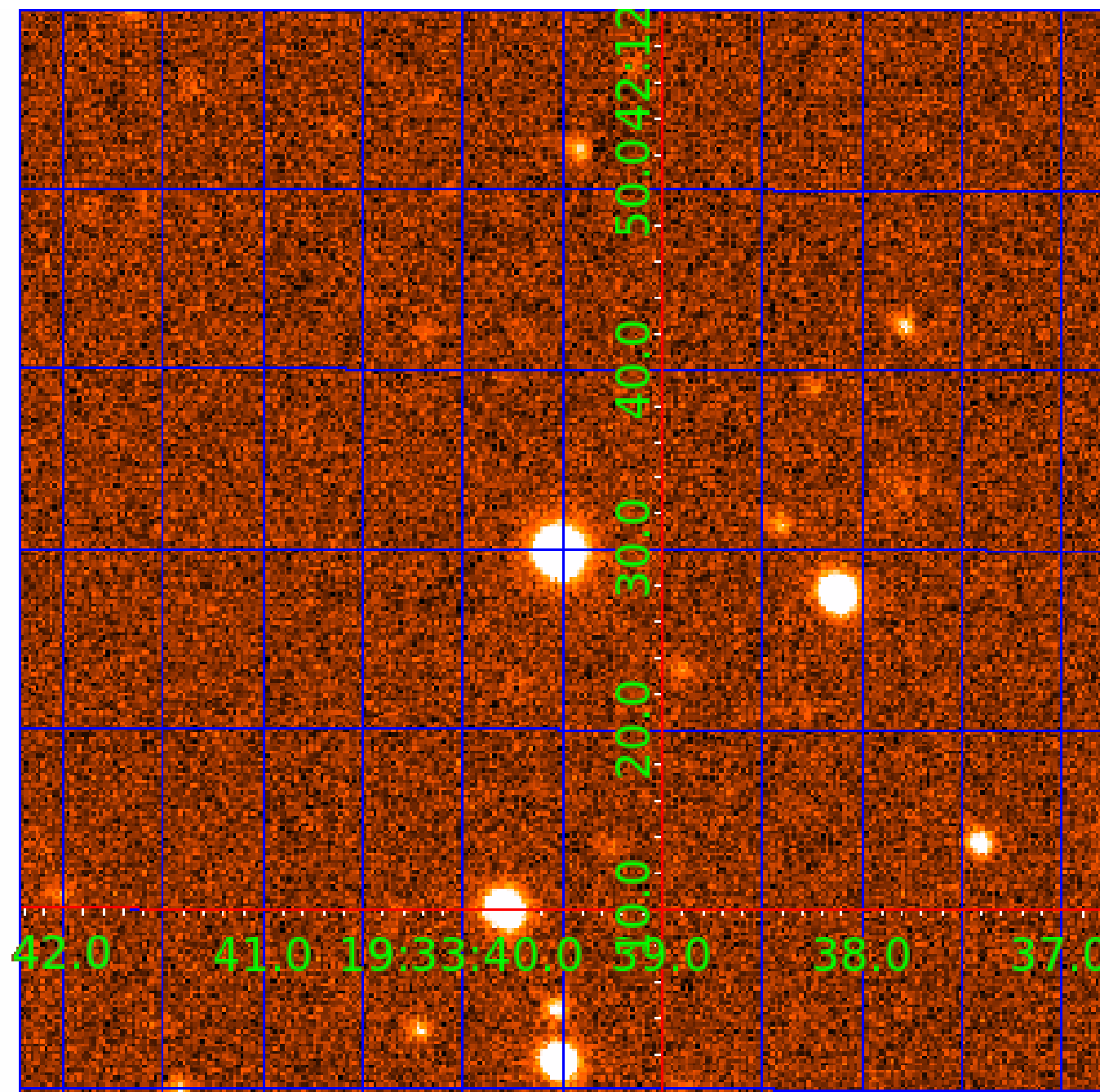
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# UKIRT Image

Declination



# KIC 006697041

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
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006697041-06	OBS	No	581.615296	233.381085	832.2	15.368	13.3	7.0	0.66	5372	1.93	0.23
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## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006697041-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006697041-02	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—SAME_NTL_PERIOD—CENT_FEW_DIFFS
006697041-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_DIFFS
006697041-04	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
006697041-05	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
006697041-06	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006697041-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006697041-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

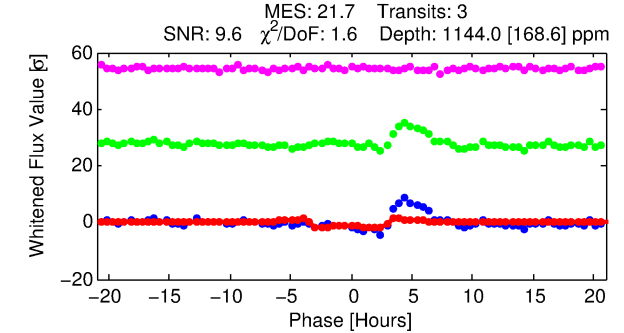
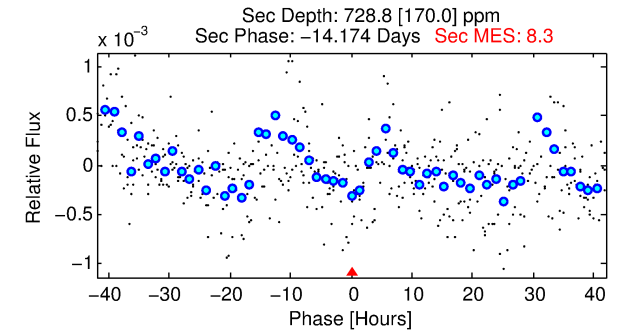
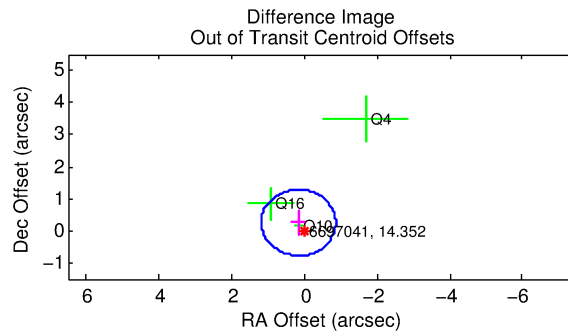
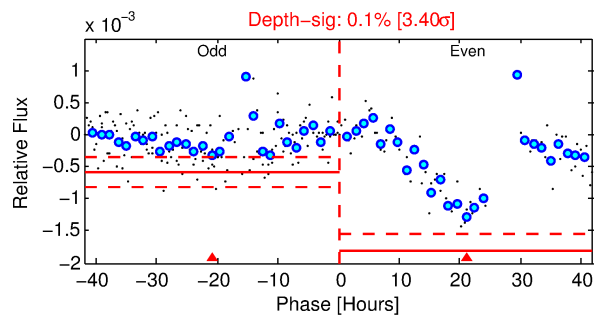
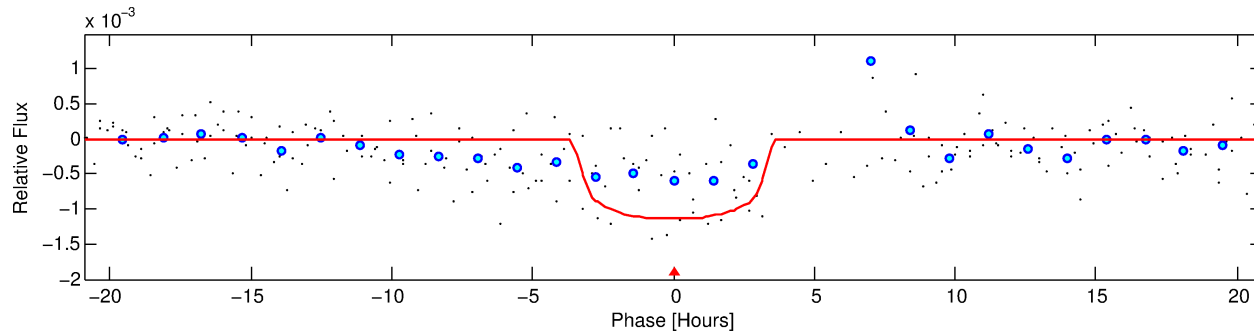
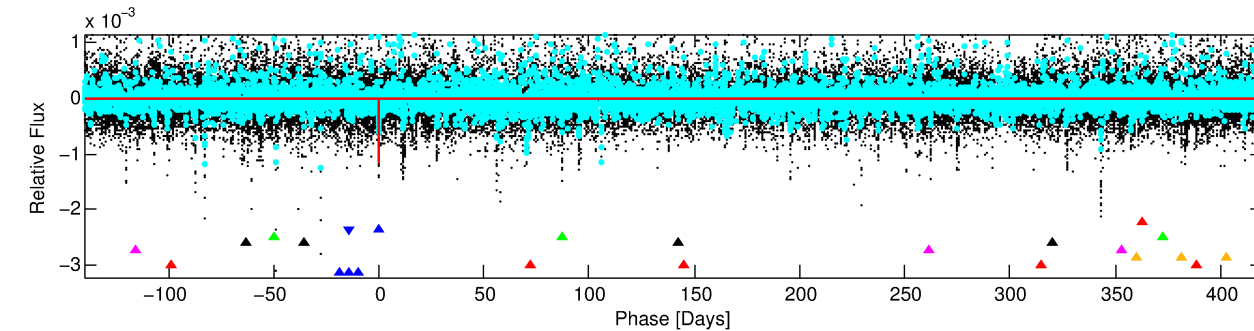
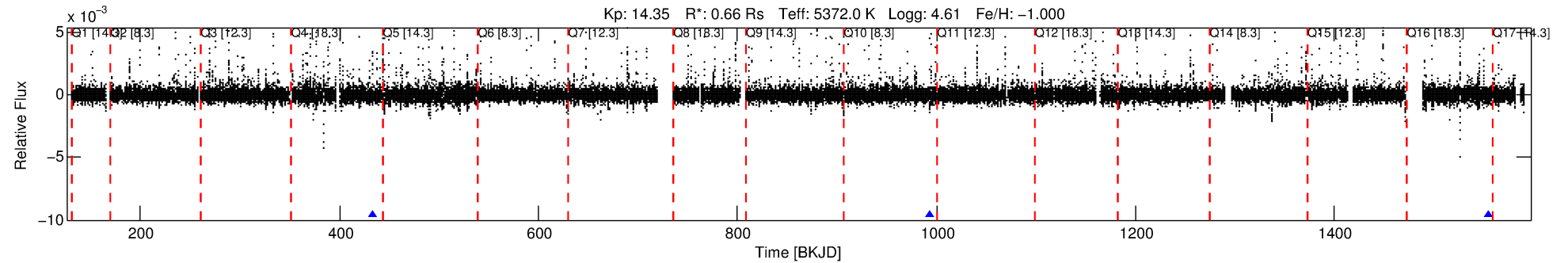
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006697041-02

No Significant Match Found

# DV One-Page Summary

KIC: 6697041 Candidate: 2 of 8 Period: 560.252 d



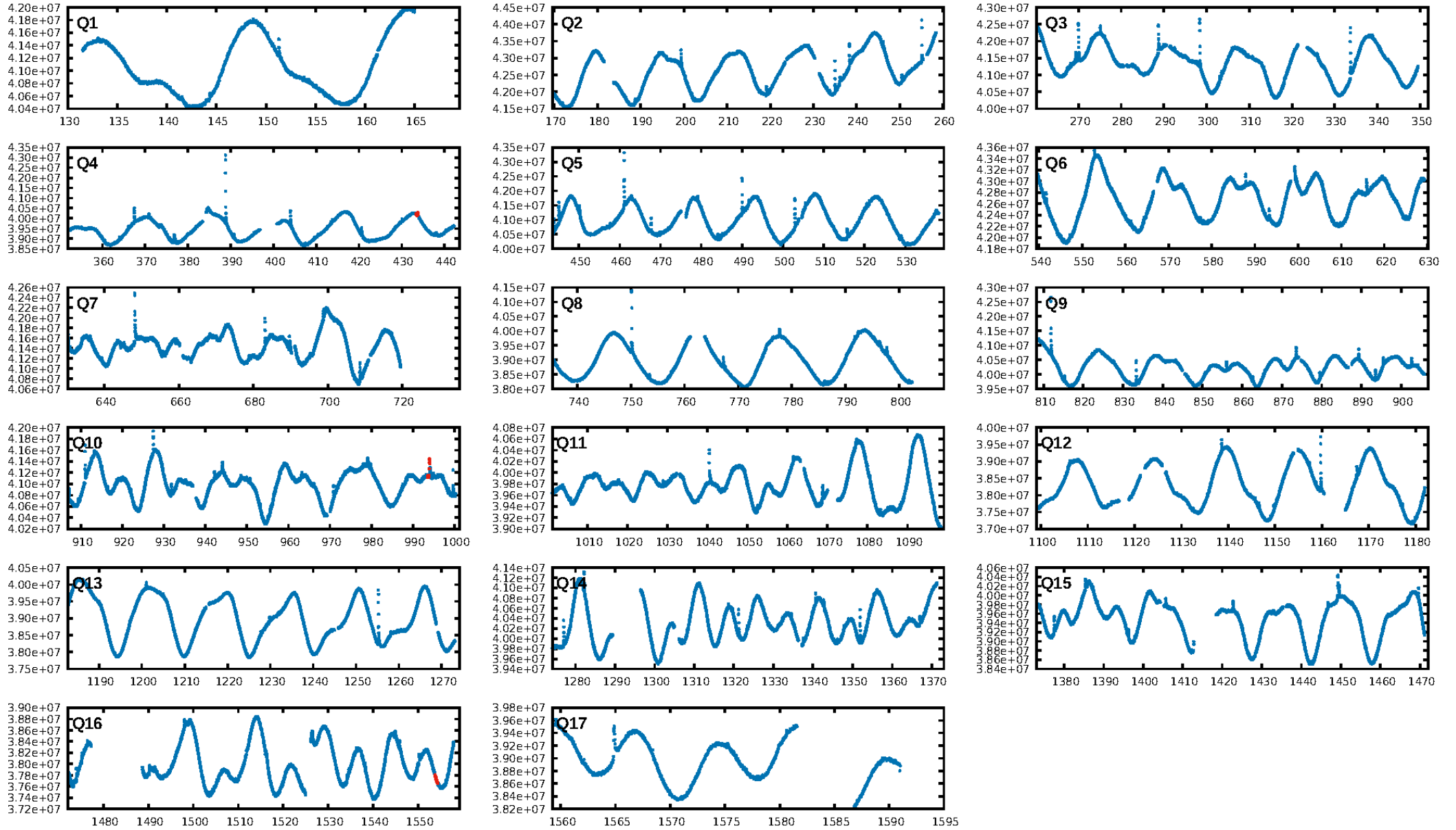
## DV Fit Results:

Period = 560.25199 [0.00586] d  
Epoch = 433.5502 [0.0074] BKJD  
Rp/R\* = 0.0324 [0.0163]  
a/R\* = 511.10 [1150.36]  
b = 0.61 [2.33]  
Seff = 0.24 [0.04]  
Teq = 179 [8] K  
Rp = 2.32 [1.19] Re  
a = 1.1479 [0.0971] AU  
Ag = 98419.07 [102721.84] [0.96 $\sigma$ ]  
Teffp = 4906 [1281] K [3.69 $\sigma$ ]

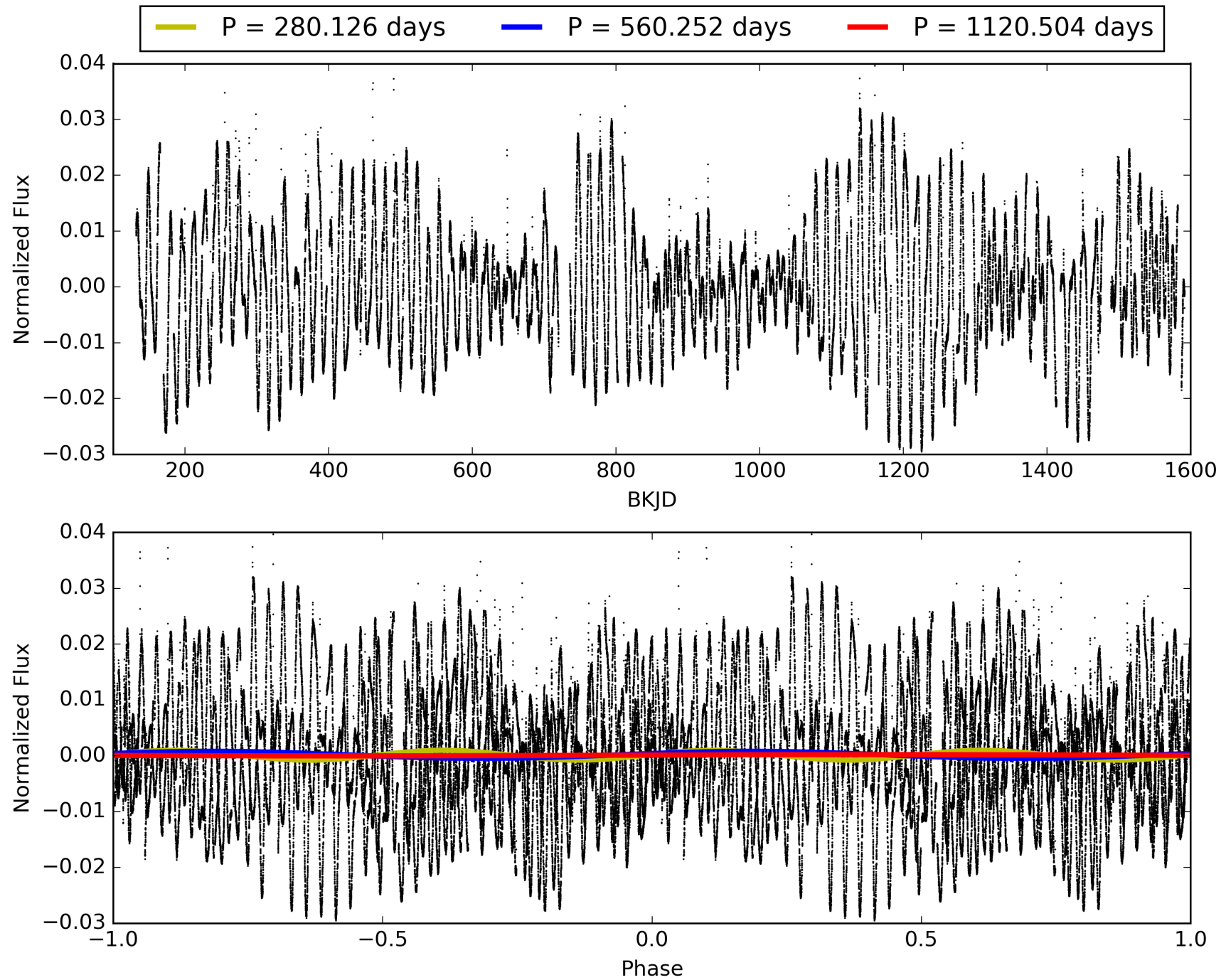
## DV Diagnostic Results:

ShortPeriod-sig: 15.0% [0.19 $\sigma$ ]  
LongPeriod-sig: 100.0% [9.08 $\sigma$ ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 11.4%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -0.3404  
Centroid-sig: 43.7%  
Centroid-so: 0.285 arcsec [0.57 $\sigma$ ]  
OotOffset-rm: 0.300 arcsec [0.88 $\sigma$ ]  
OotOffset-st: 1/0/2/0 [3]  
KicOffset-rm: 0.412 arcsec [1.08 $\sigma$ ]  
KicOffset-st: 1/0/2/0 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

# TCE 006697041-02, PDC Light Curves



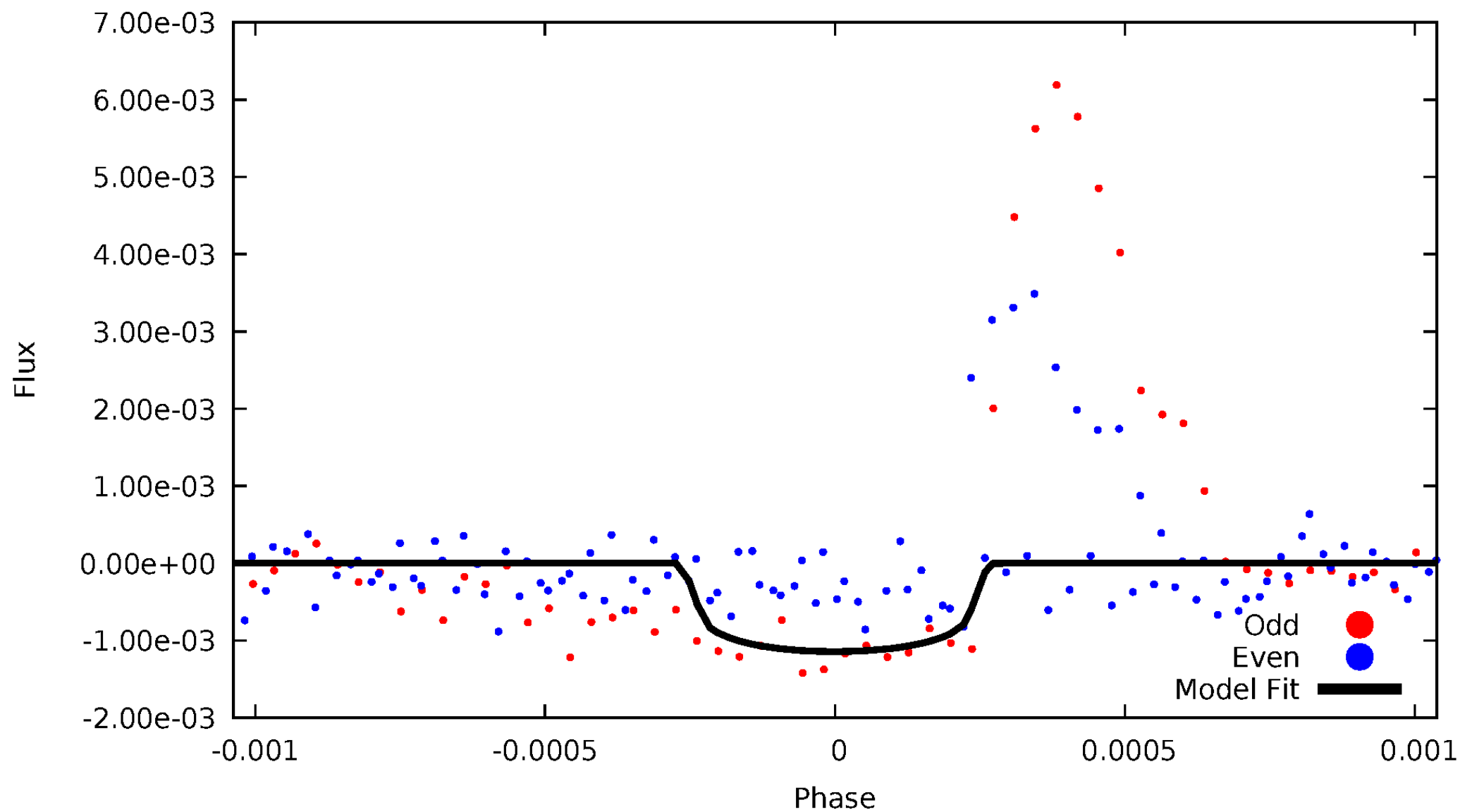
TCE 006697041-02





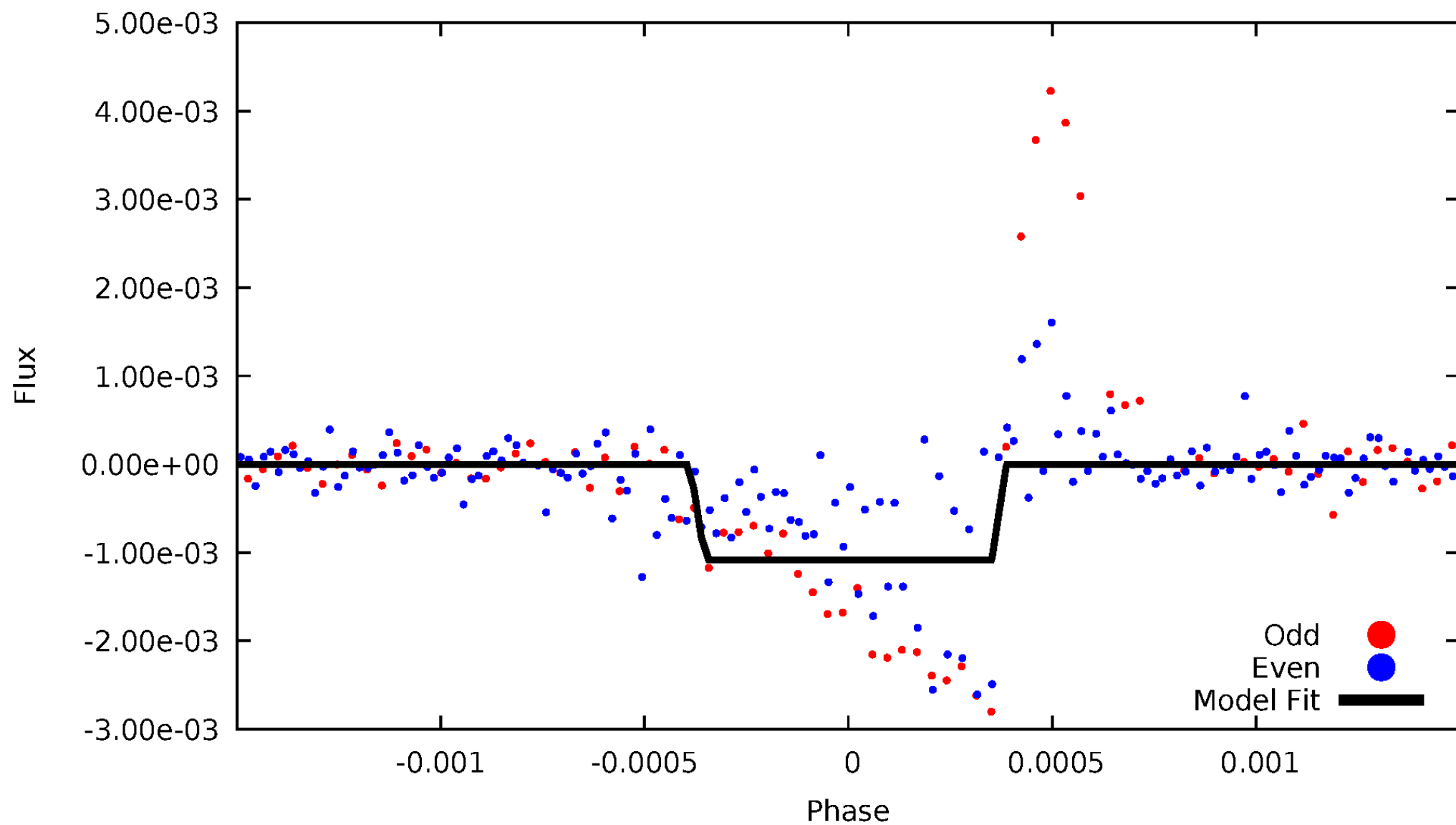
# DV Odd/Even

TCE 006697041-02



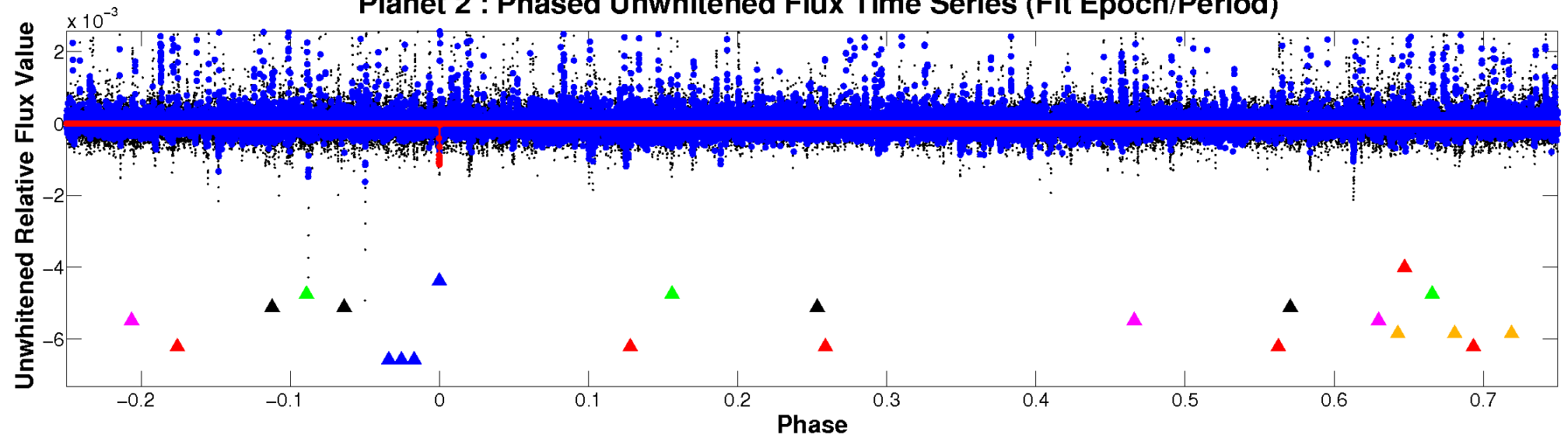
# ALT Odd/Even

TCE 006697041-02

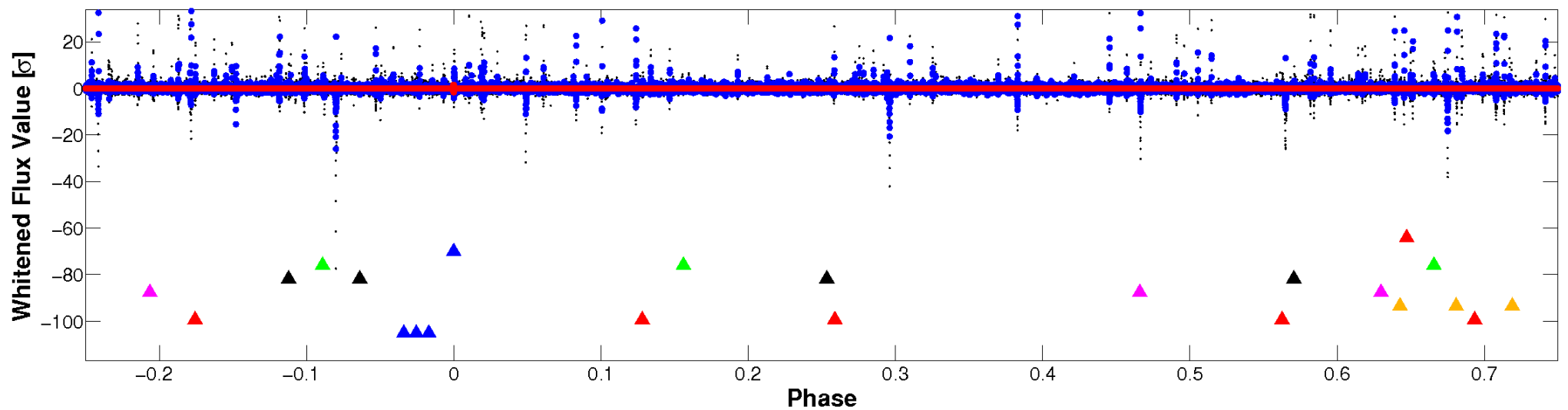


# Non-Whitened Vs. Whitened Light Curve

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

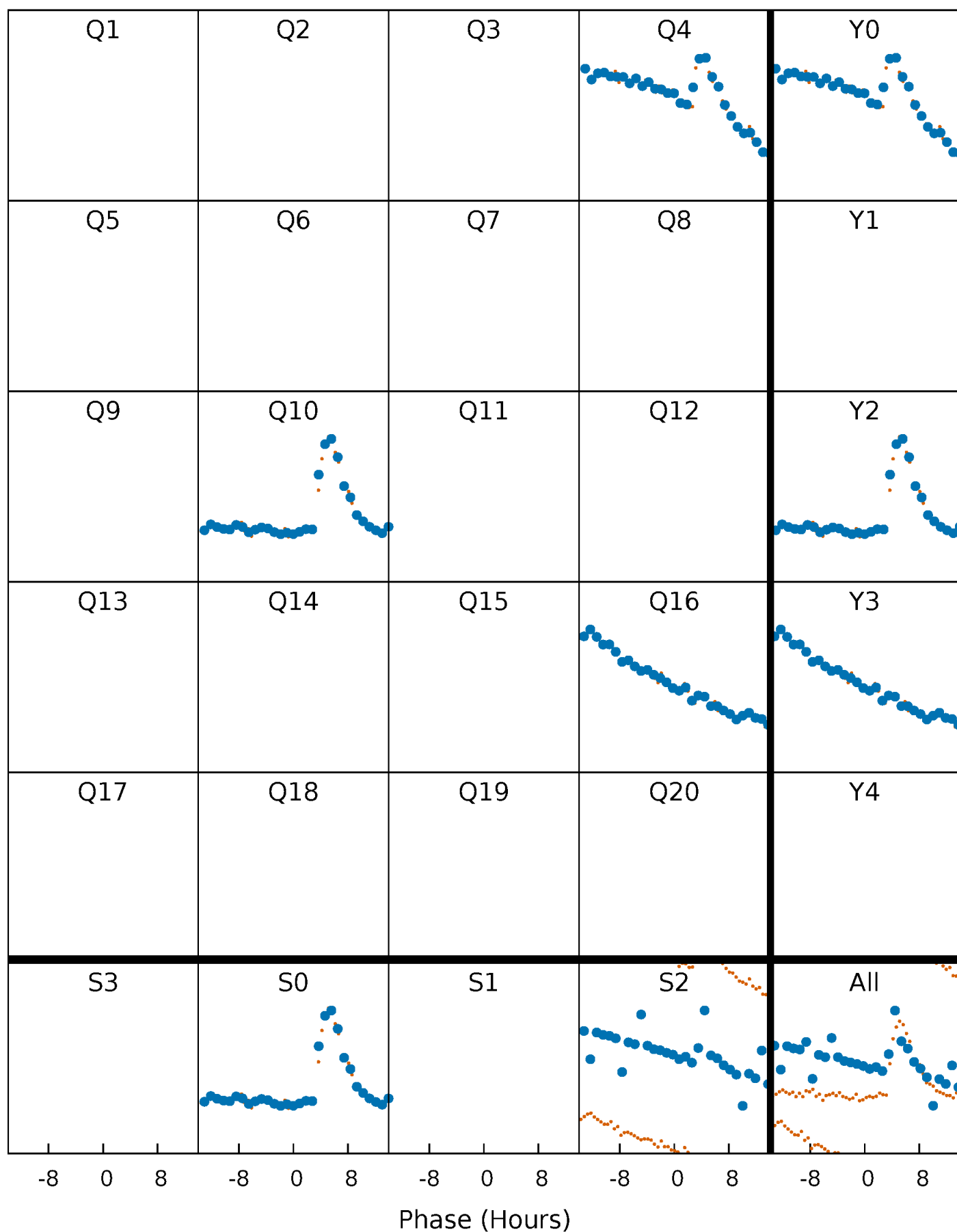


**Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



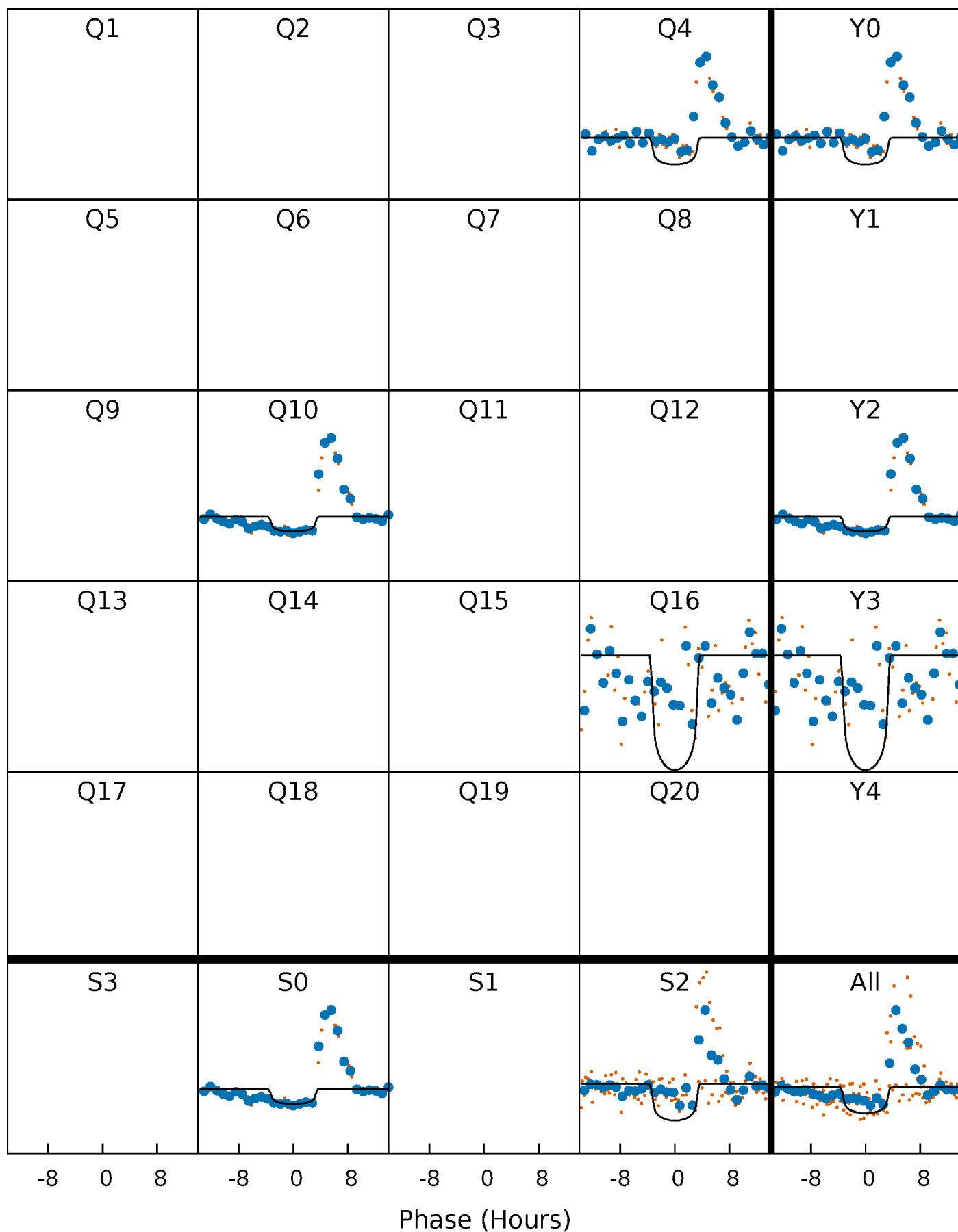
# PDC Quarter-Phased Transit Curves

TCE 006697041-02 P=560.251987 Days  $T_0=433.550244$  (BKJD)



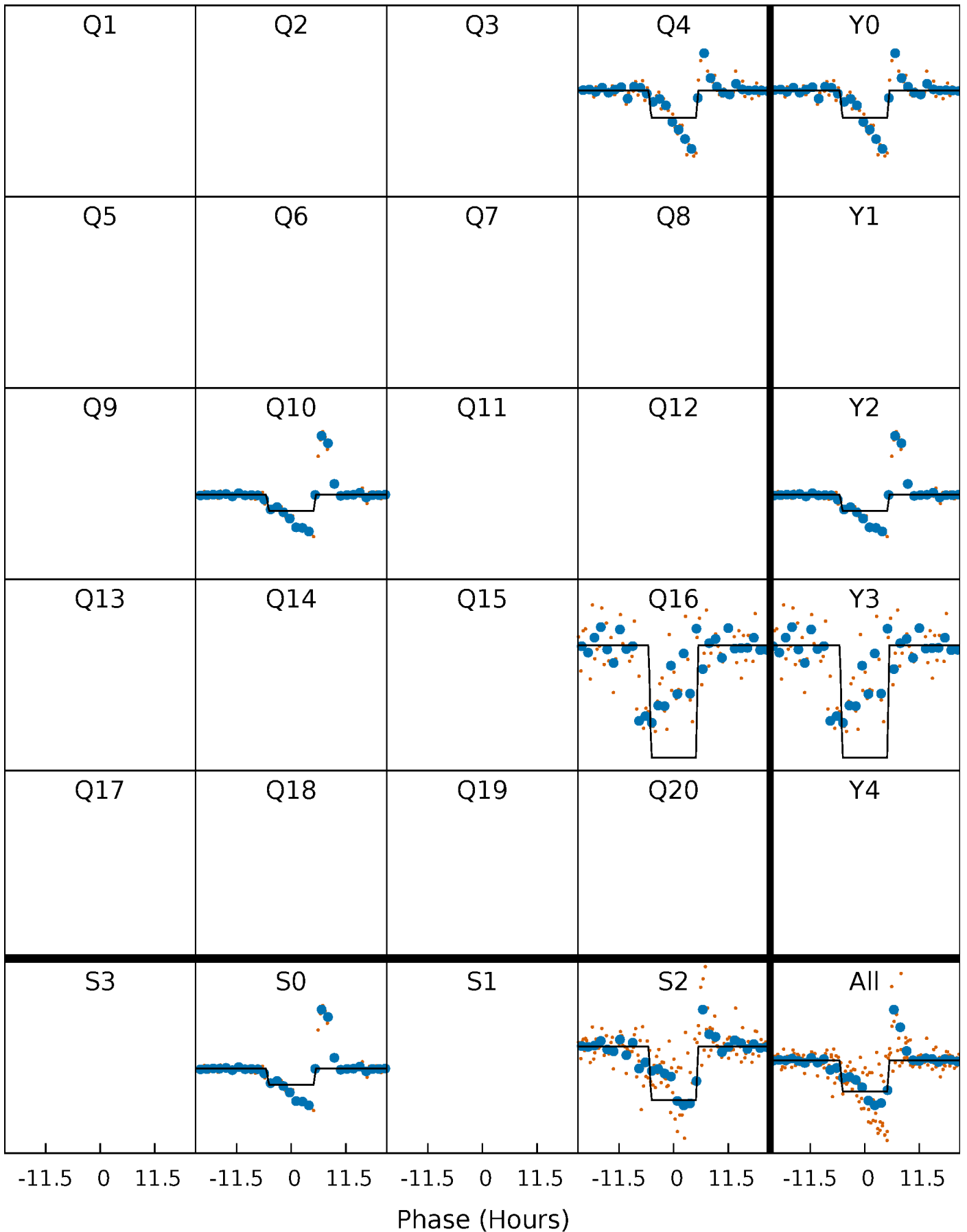
# DV Quarter-Phased Transit Curves

TCE 006697041-02 P=560.251987 Days  $T_0=433.550244$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

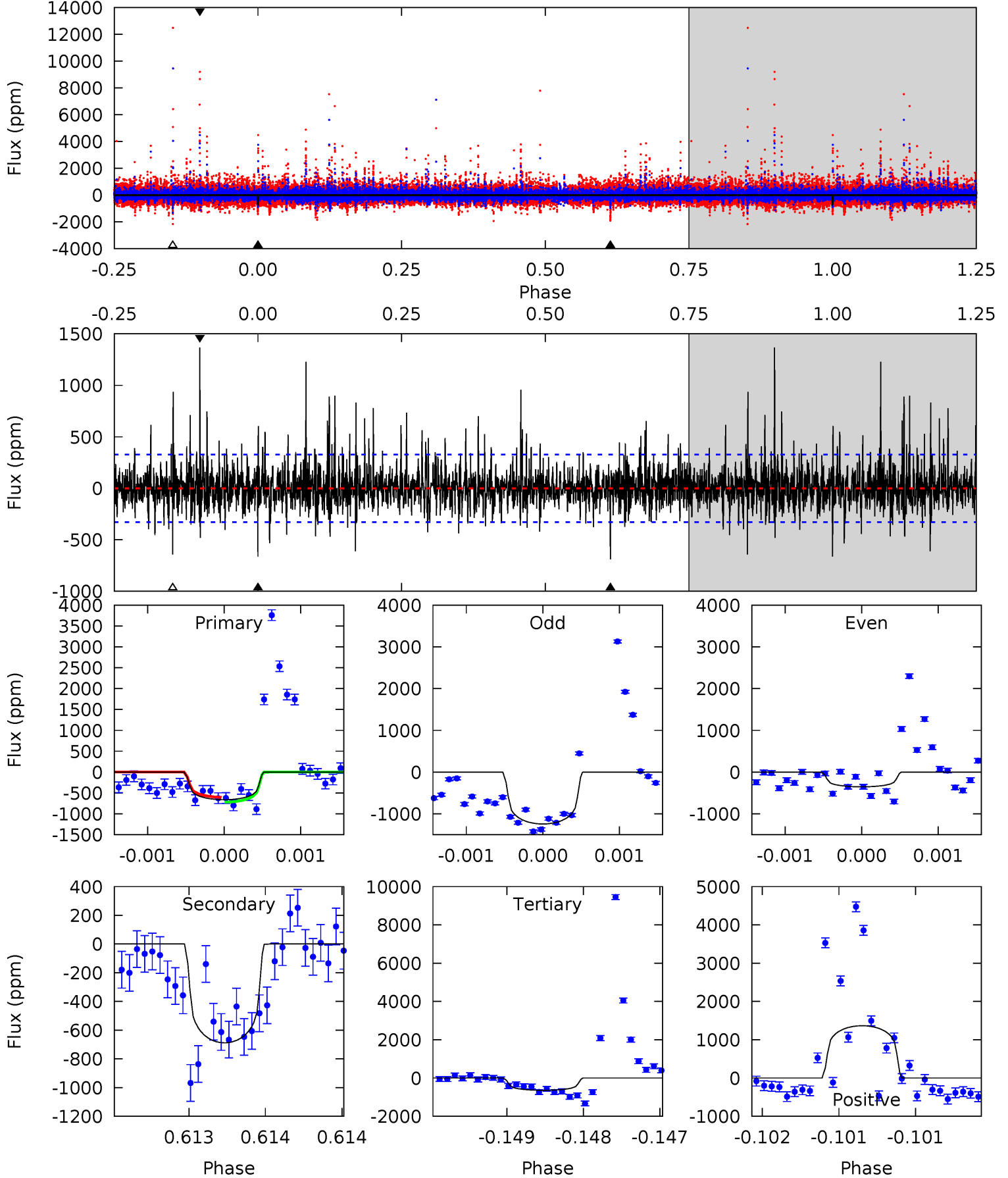
TCE 006697041-02 P=560.274593 Days  $T_0=433.463489$  (BKJD)



# DV Model-Shift Uniqueness Test

006697041-02, P = 560.251987 Days, E = 433.550244 Days

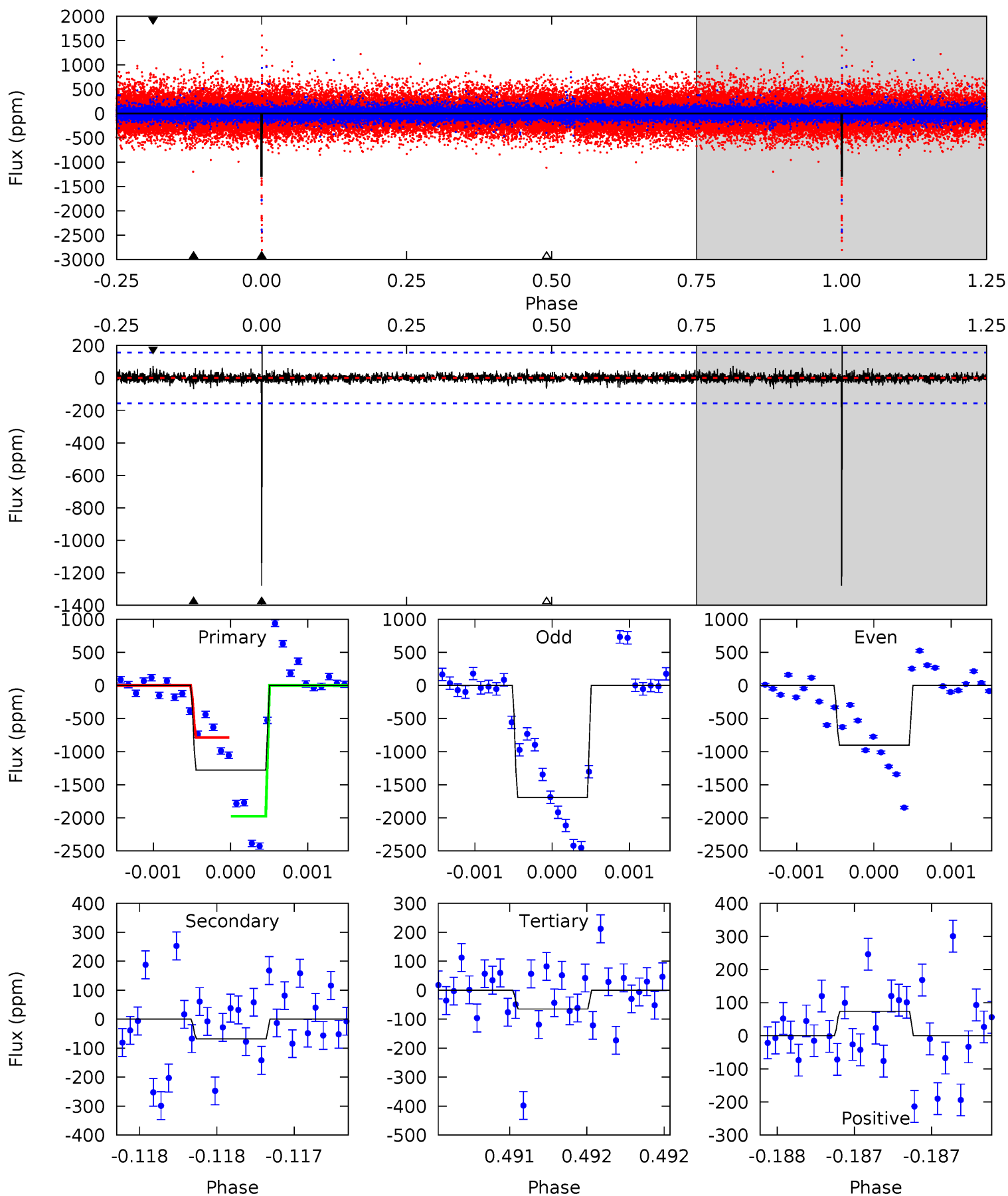
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	11.7	10.9	23.2	5.56	3.47	2.54	0.33	-11.9	0.77	-11.5	3.56	1.60	0.66	1.00



# Alt Model-Shift Uniqueness Test

006697041-02, P = 560.274593 Days, E = 433.463489 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
45.1	2.38	2.29	2.59	5.50	3.36	0.47	42.8	42.5	0.10	-0.21	12.2	0.88	0.13	21.0





### Stellar Parameters For KIC 006697041

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5372^{+177}_{-145}$	$4.612^{+0.072}_{-0.054}$	$-1.000^{+0.300}_{-0.300}$	$0.656^{+0.063}_{-0.051}$	$0.642^{+0.061}_{-0.024}$	$3.210^{+0.917}_{-0.596}$
	+3%/-3%	+2%/-1%	+30%/-30%	+10%/-8%	+10%/-4%	+29%/-19%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 006697041-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-688 \pm 59$	$2.39^{+0.99}_{-1.10}$	$249^{+9}_{-9}$	$4859^{+1638}_{-657}$	$89088^{+210348}_{-44466}$
Alt.	$-68 \pm 28$	$2.32^{+1.12}_{-1.03}$	$250^{+9}_{-9}$	$3244^{+669}_{-417}$	$8879^{+20531}_{-5595}$

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

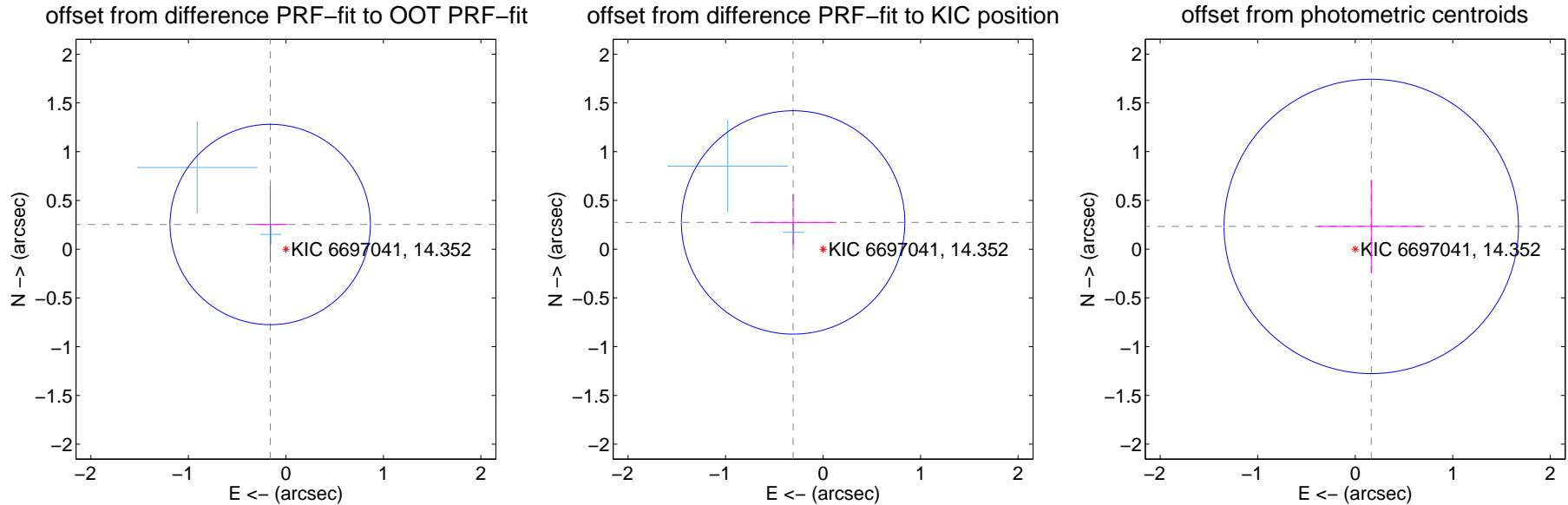
## DV Centroid Data

Supplemental centroid analysis for 006697041-02. Kepler magnitude: 14.35. Transit SNR 9.62

There are 2 quarters with good PRF difference image offsets

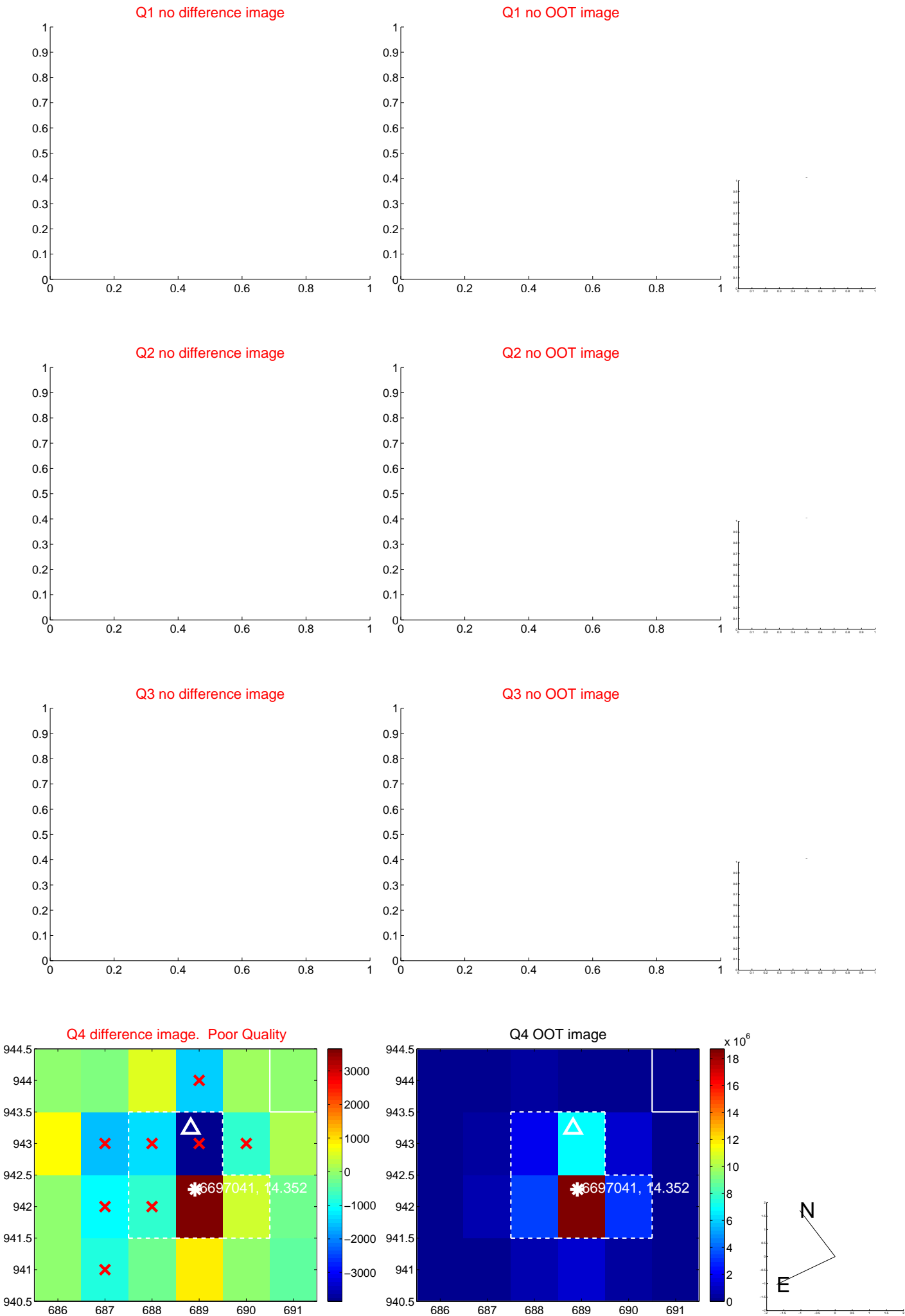
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.300 \pm 0.342$	0.88	$0.161 \pm 0.181$	$0.253 \pm 0.389$
PRF-fit source offset from KIC position	$0.412 \pm 0.382$	1.08	$0.307 \pm 0.440$	$0.274 \pm 0.294$
photometric centroid source offset	$0.29 \pm 0.50$	0.57	$-0.16 \pm 0.55$	$0.23 \pm 0.48$



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.

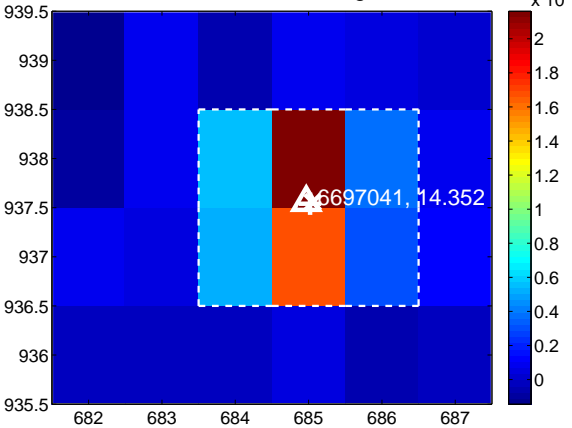
Q9 no difference image



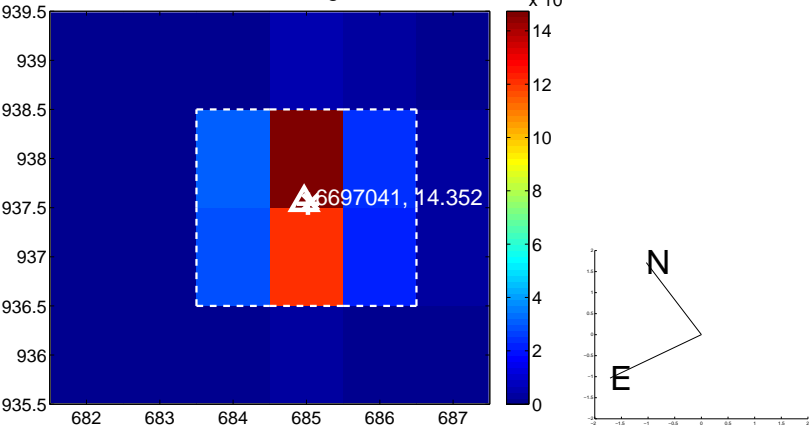
Q9 no OOT image



Q10 difference image



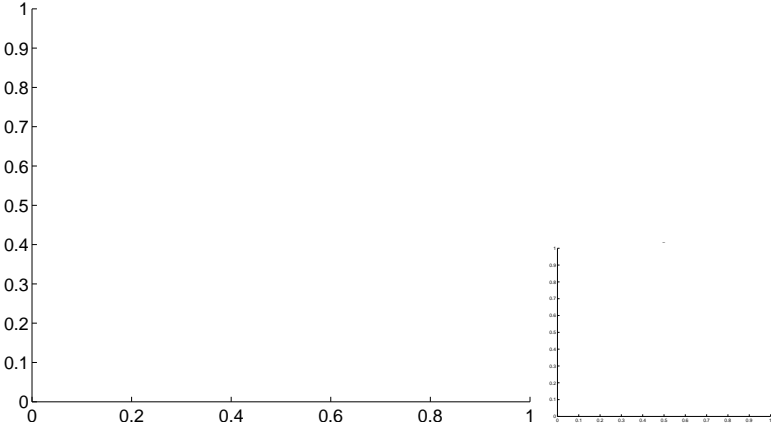
Q10 OOT image



Q11 no difference image



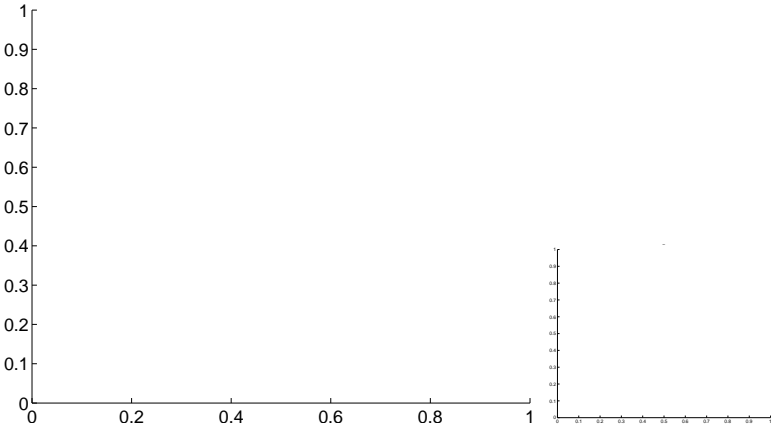
Q11 no OOT image



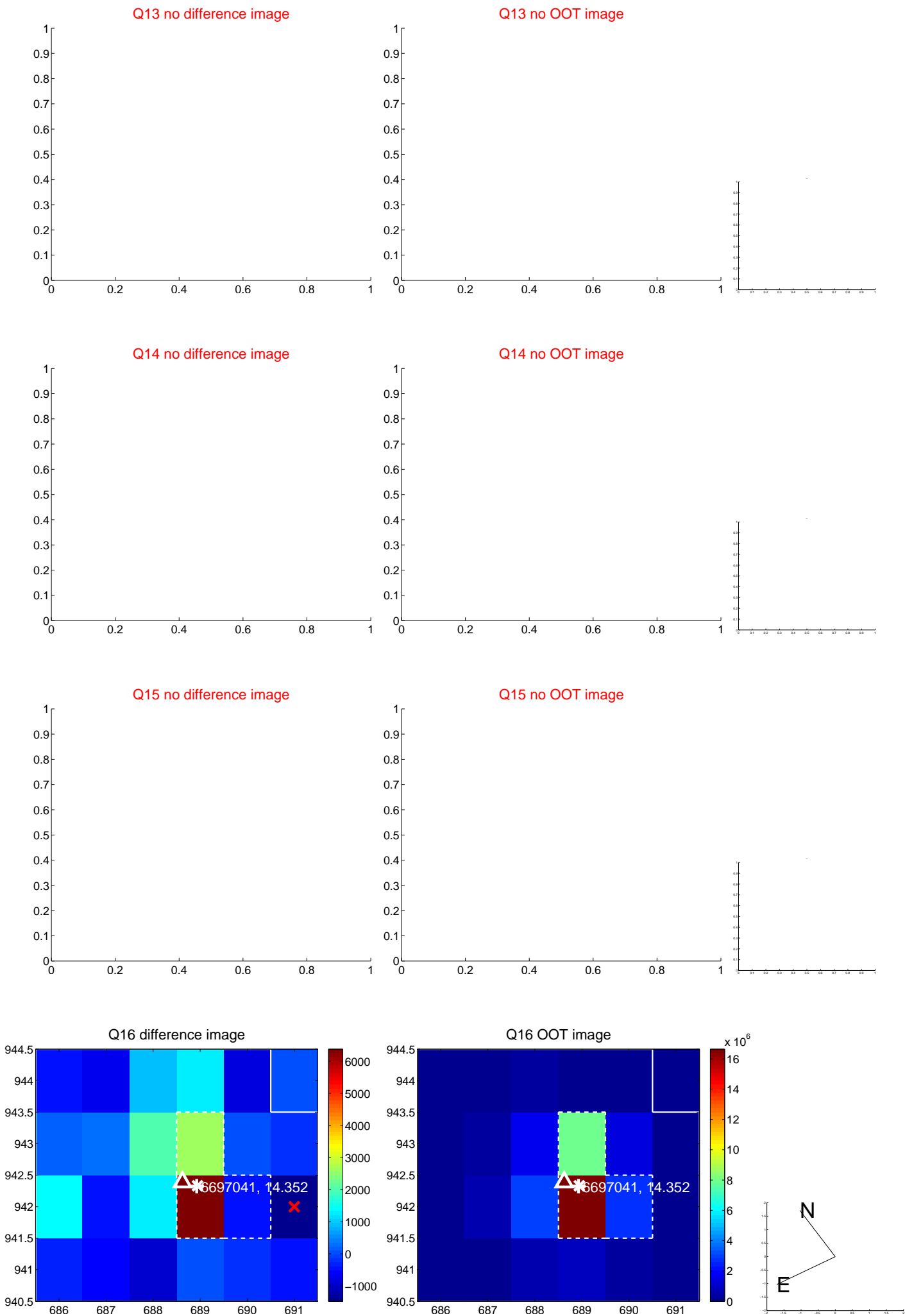
Q12 no difference image



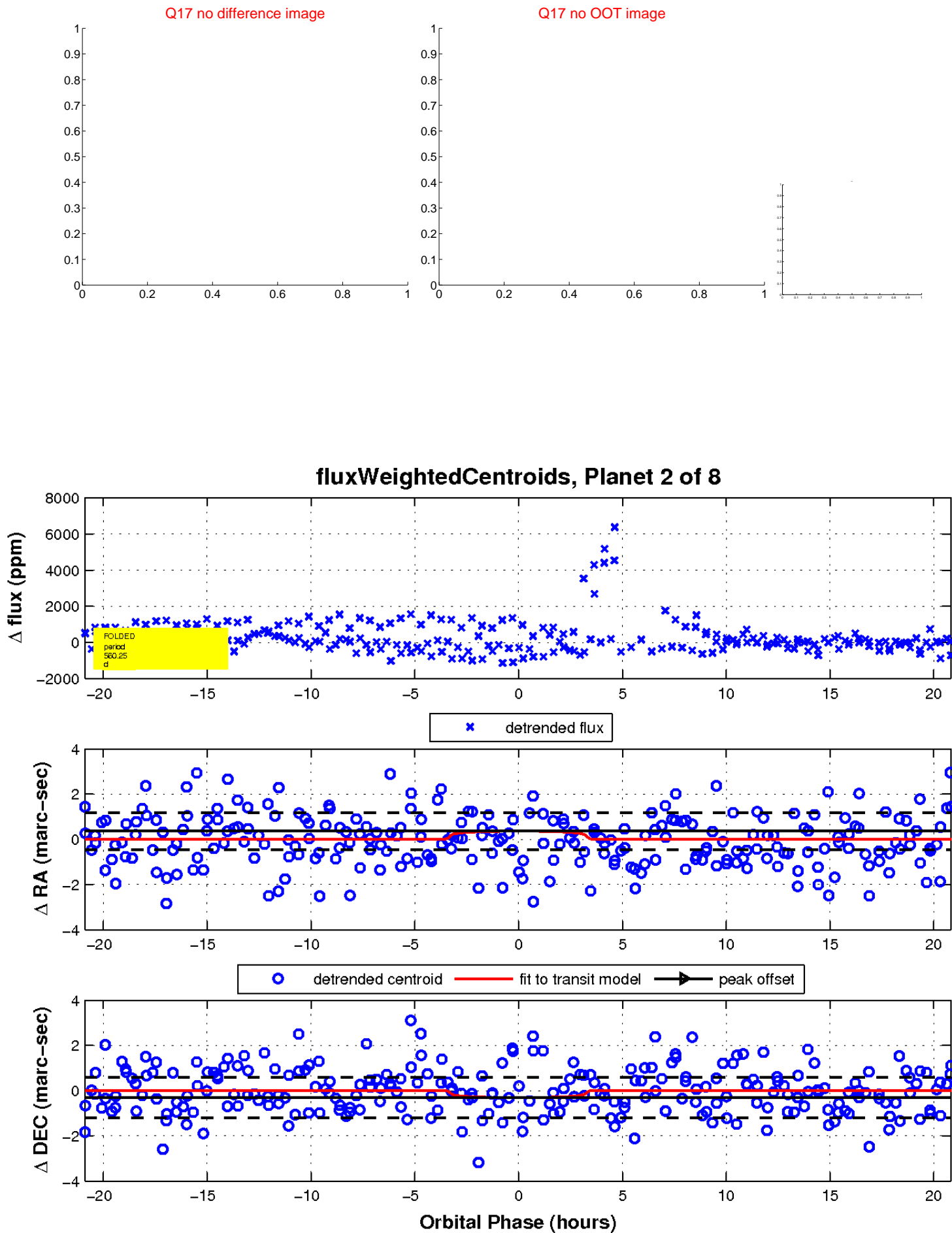
Q12 no OOT image



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

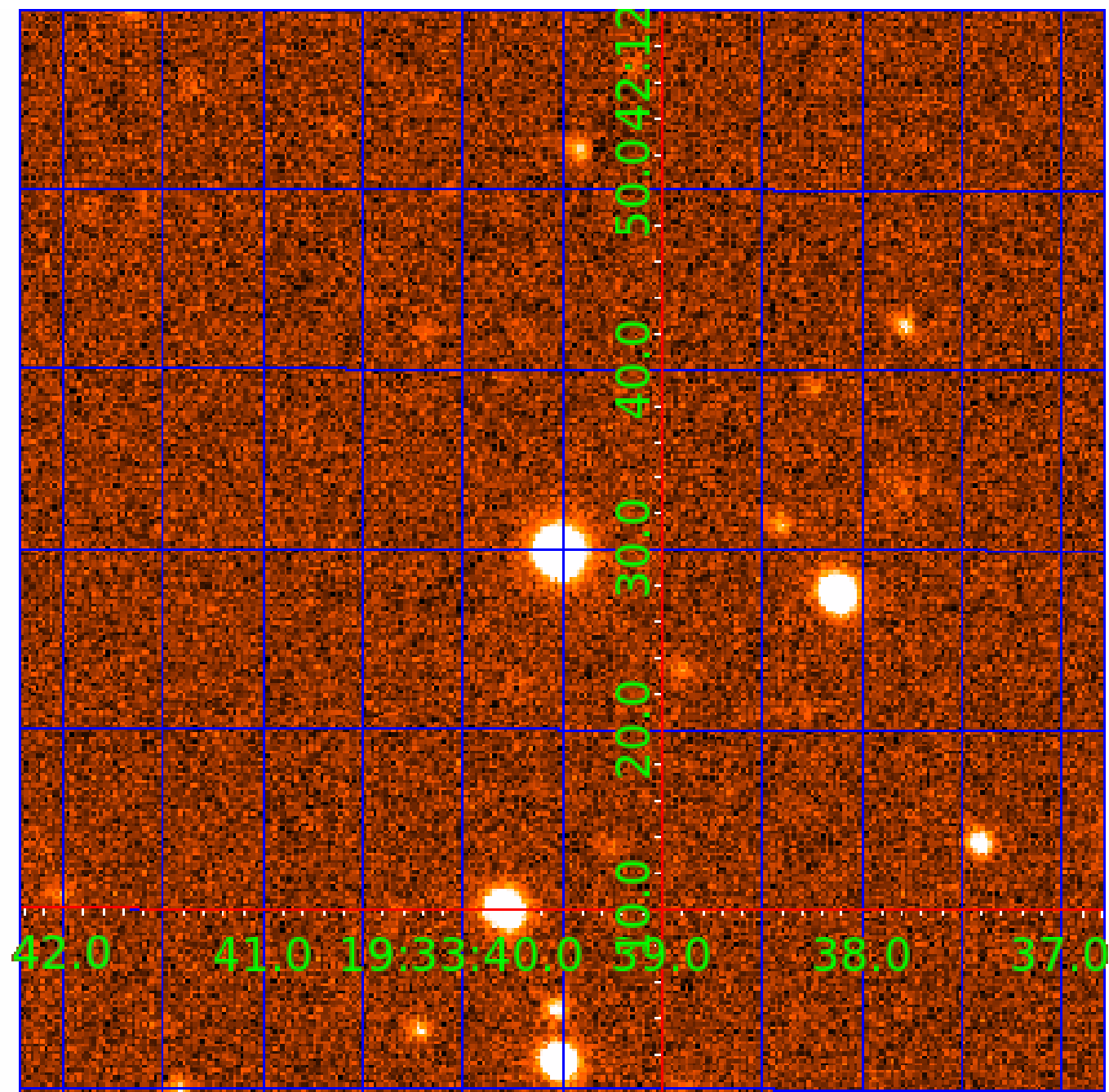


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination





# KIC 006697041

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006697041-01	OBS	No	560.179429	236.001075	777.9	5.987	14.9	7.5	0.66	5372	1.87	0.24
006697041-02	OBS	No	560.251987	433.550244	1144.0	6.975	21.7	9.6	0.66	5372	2.32	0.24
006697041-03	OBS	No	422.914325	520.970076	764.6	8.345	14.5	6.3	0.66	5372	1.92	0.35
006697041-04	OBS	No	382.523591	370.727132	576.7	6.888	11.7	5.8	0.66	5372	1.64	0.41
006697041-05	OBS	No	468.477500	317.928384	1242.6	14.468	11.7	9.6	0.66	5372	2.46	0.31
006697041-06	OBS	No	581.615296	233.381085	832.2	15.368	13.3	7.0	0.66	5372	1.93	0.23
006697041-07	OBS	No	316.778435	188.503522	678.1	10.697	11.2	8.1	0.66	5372	1.76	0.52
006697041-08	OBS	No	565.021990	414.543045	592.8	10.500	11.1	-1.0	0.66	5372	1.59	0.24

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006697041-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006697041-02	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—SAME_NTL_PERIOD—CENT_FEW_DIFFS
006697041-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_DIFFS
006697041-04	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
006697041-05	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
006697041-06	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006697041-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006697041-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

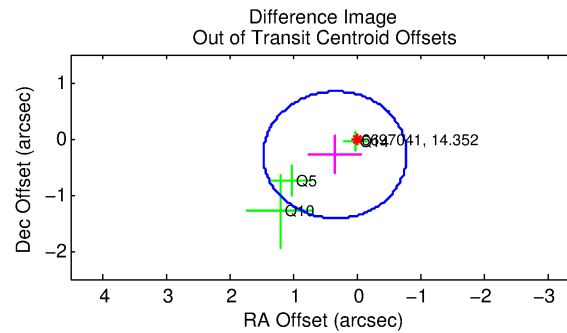
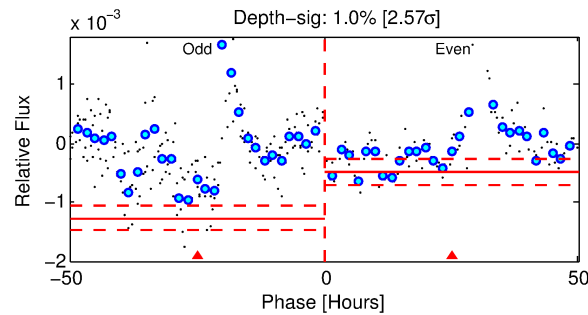
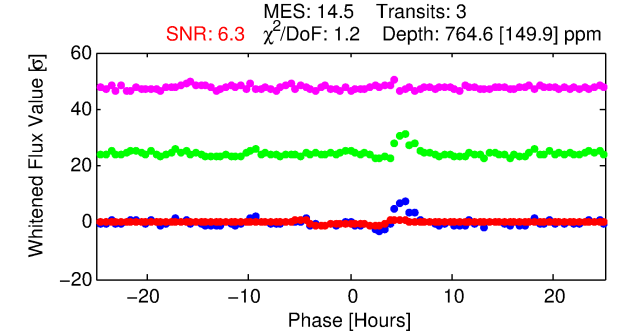
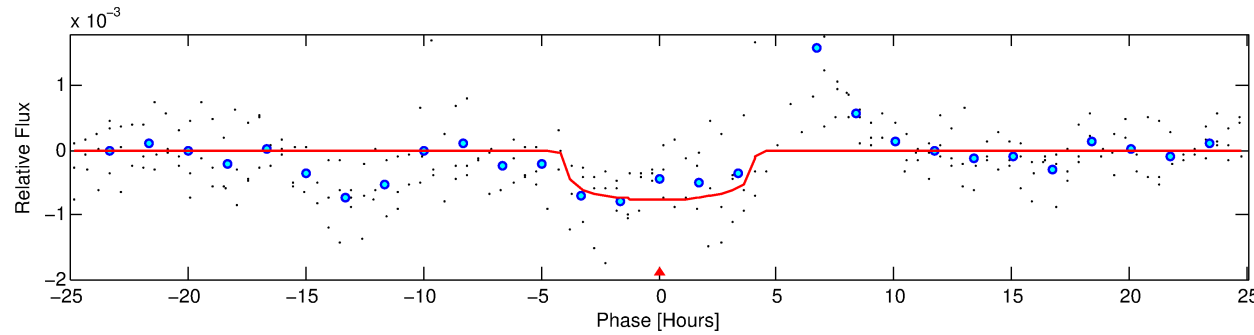
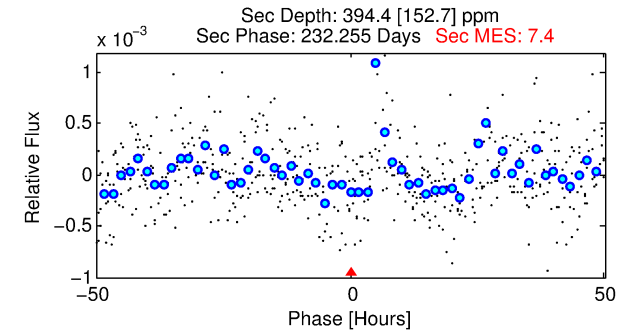
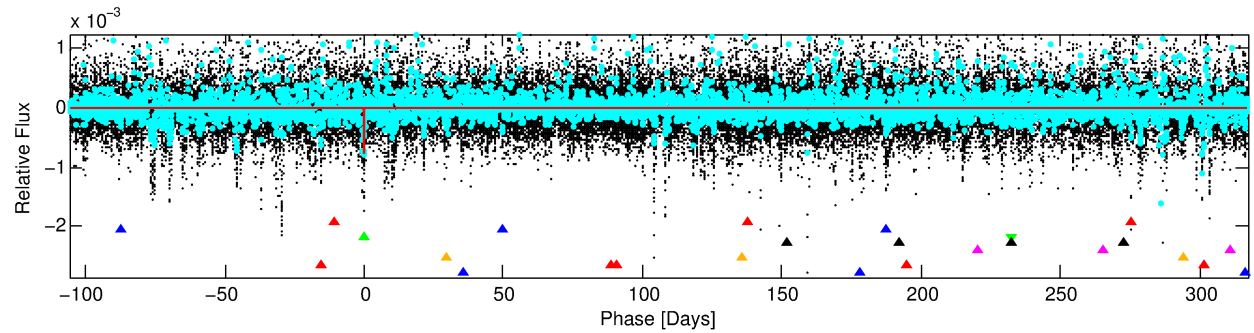
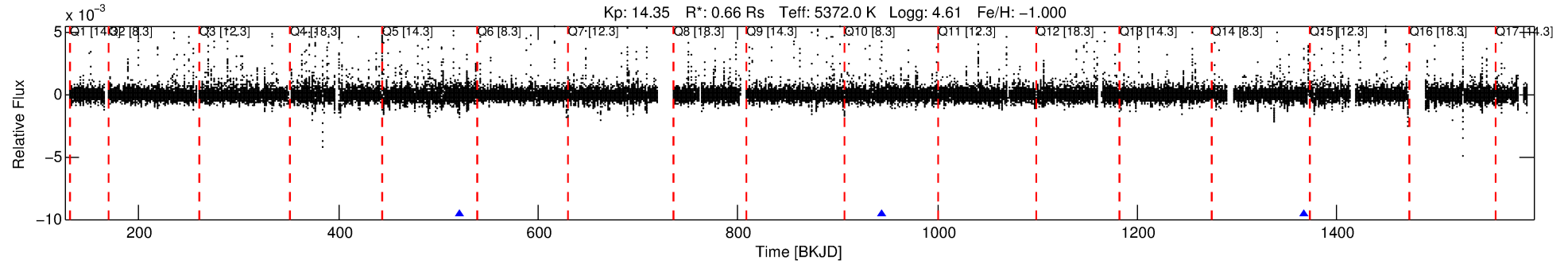
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006697041-03

No Significant Match Found

# DV One-Page Summary

KIC: 6697041 Candidate: 3 of 8 Period: 422.914 d



## DV Fit Results:

Period = 422.91433 [0.00951] d  
Epoch = 520.9701 [0.0129] BKJD  
Rp/R\* = 0.0268 [0.0102]  
a/R\* = 304.77 [492.41]  
b = 0.66 [1.40]  
Seff = 0.35 [0.07]  
Teq = 197 [9] K  
Rp = 1.92 [0.76] Re  
a = 0.9516 [0.0805] AU  
Ag = 53553.97 [46407.71] [1.15 $\sigma$ ]  
Teffp = 4628 [1003] K [4.42 $\sigma$ ]

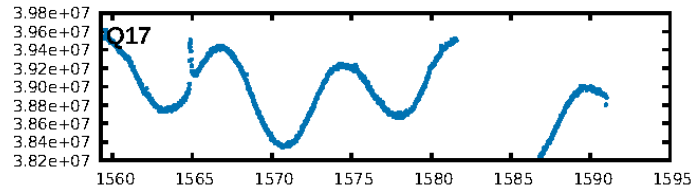
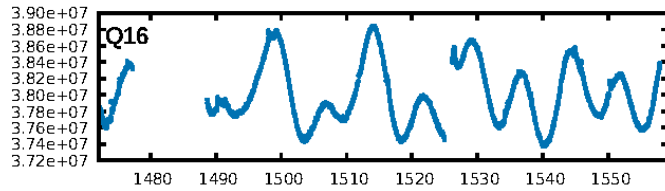
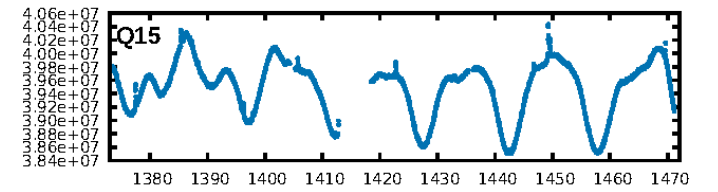
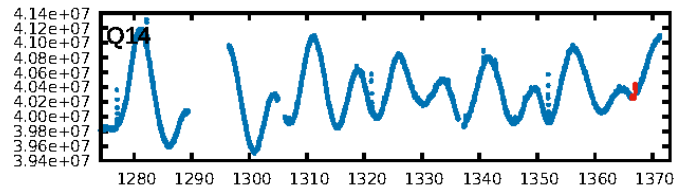
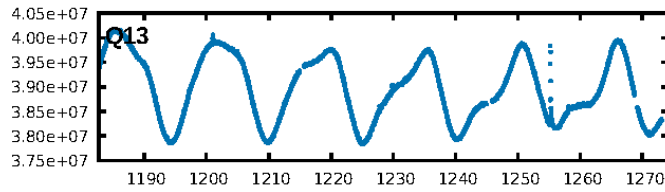
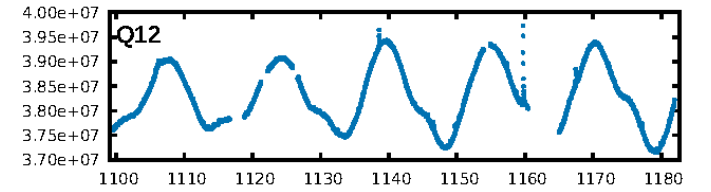
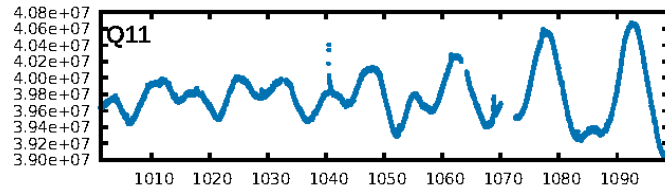
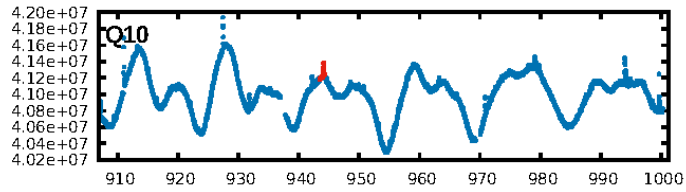
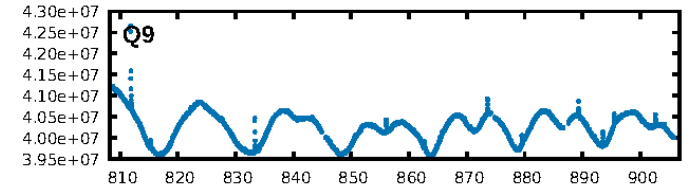
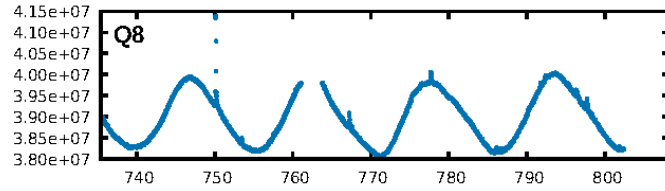
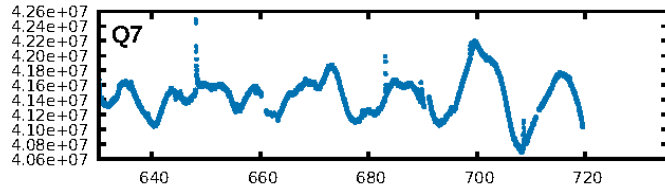
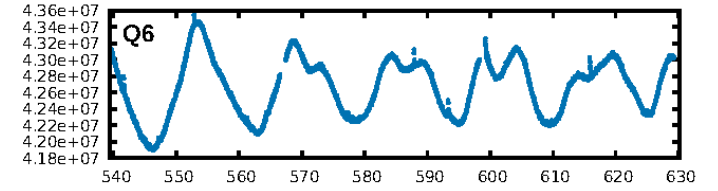
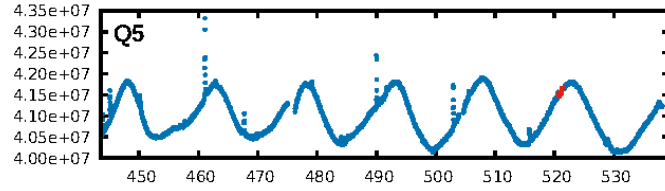
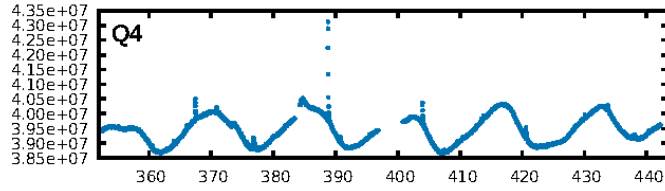
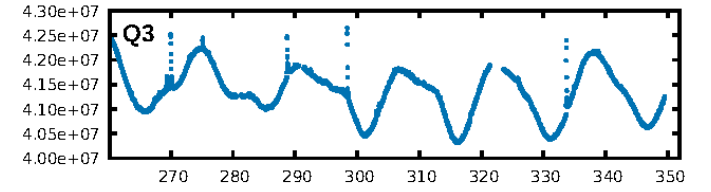
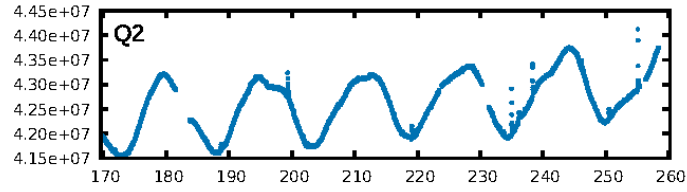
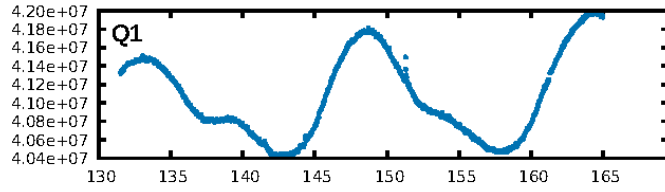
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [89.59 $\sigma$ ]  
LongPeriod-sig: 100.0% [65.47 $\sigma$ ]  
ModelChiSquare2-sig: 53.8%  
ModelChiSquareGof-sig: 88.8%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 0.287  
Centroid-sig: 96.5%  
Centroid-so: 0.077 arcsec [0.11 $\sigma$ ]  
OotOffset-rm: 0.444 arcsec [1.18 $\sigma$ ]  
OotOffset-st: 2/0/0/1 [3]  
KicOffset-rm: 0.553 arcsec [1.44 $\sigma$ ]  
KicOffset-st: 2/0/0/1 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

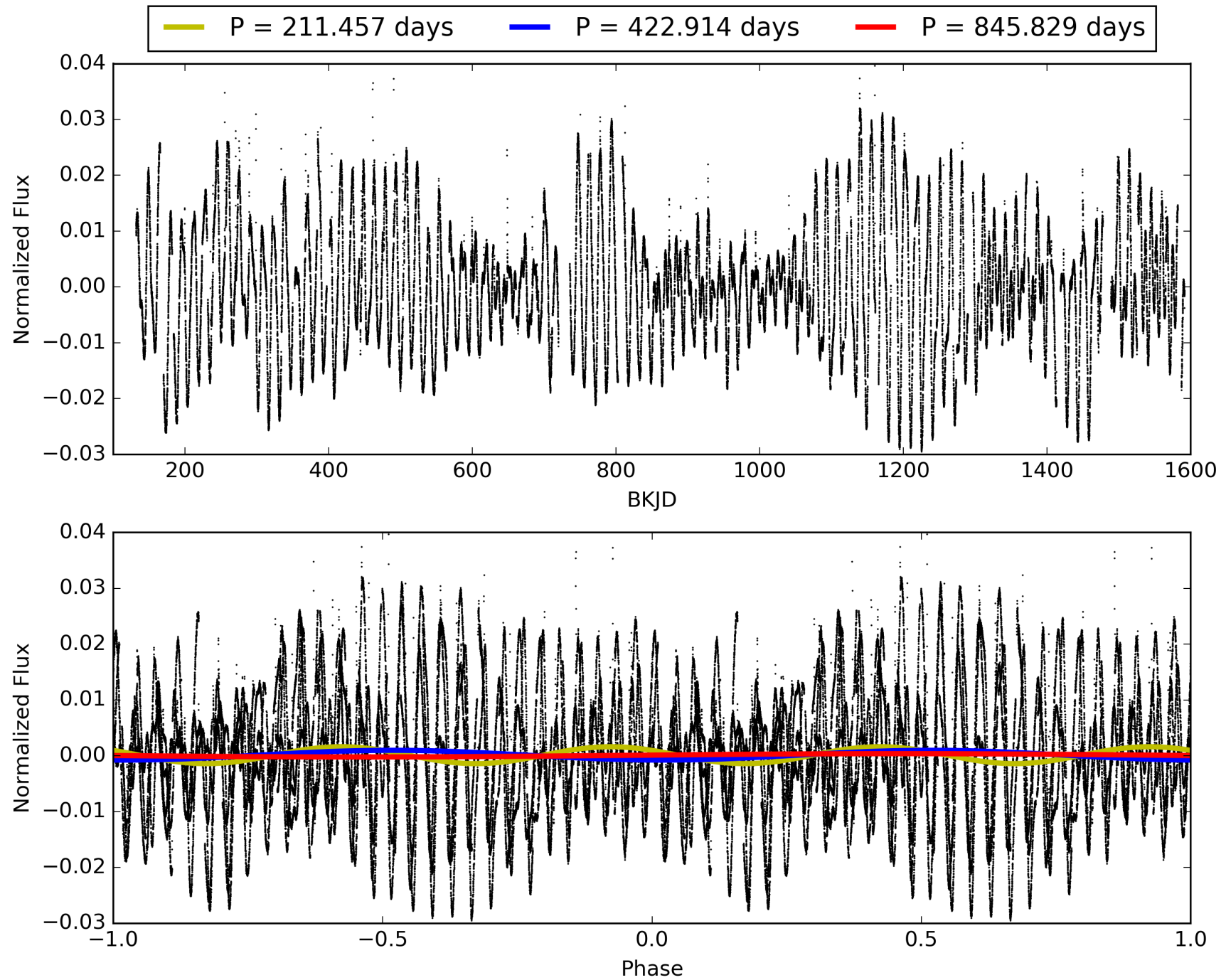
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:09:44 Z

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

# TCE 006697041-03, PDC Light Curves

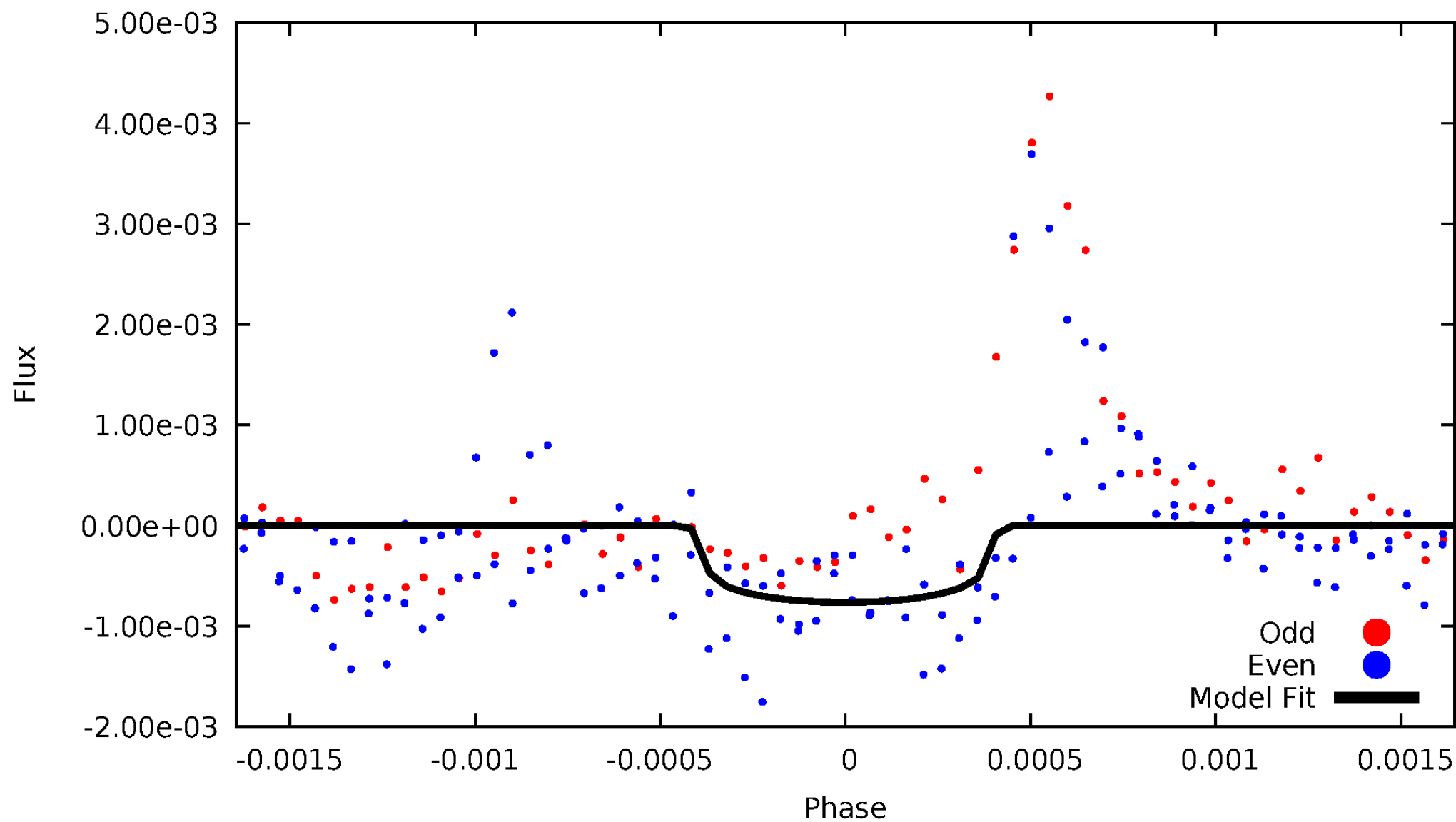


# TCE 006697041-03



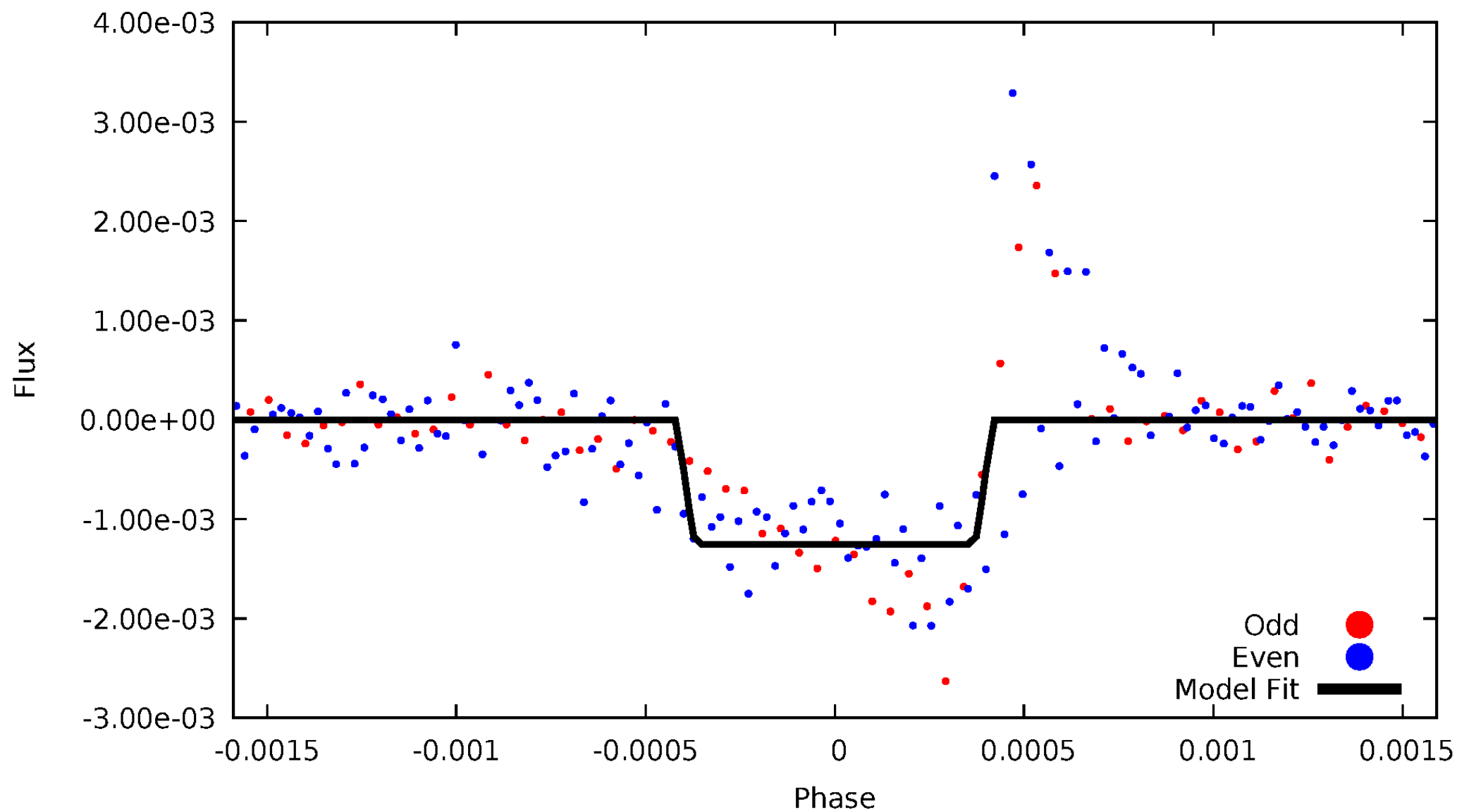
# DV Odd/Even

TCE 006697041-03



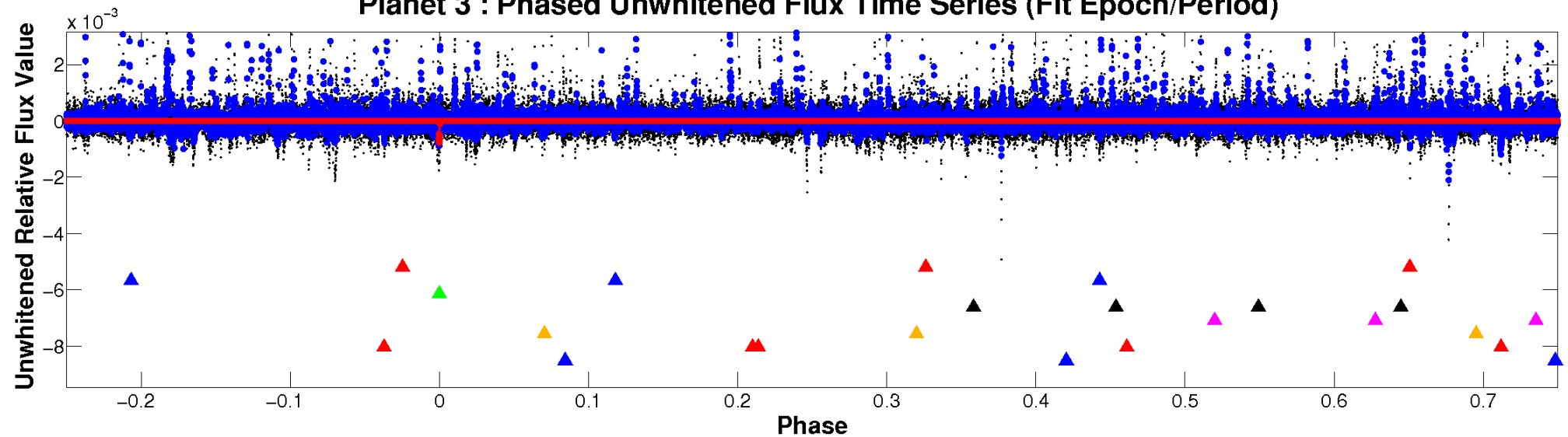
# ALT Odd/Even

TCE 006697041-03

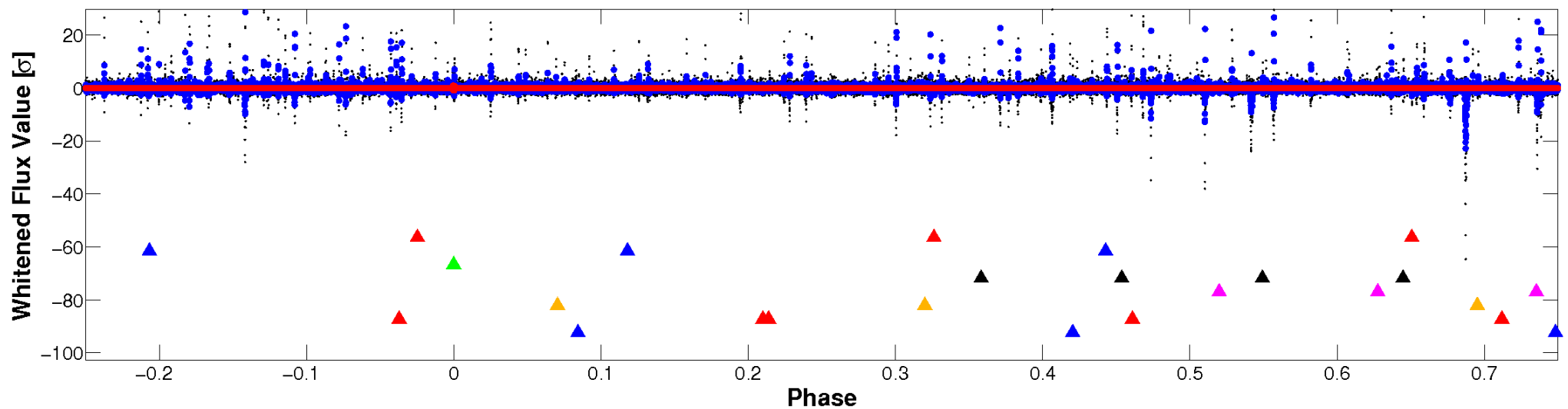


# Non-Whitened Vs. Whitened Light Curve

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

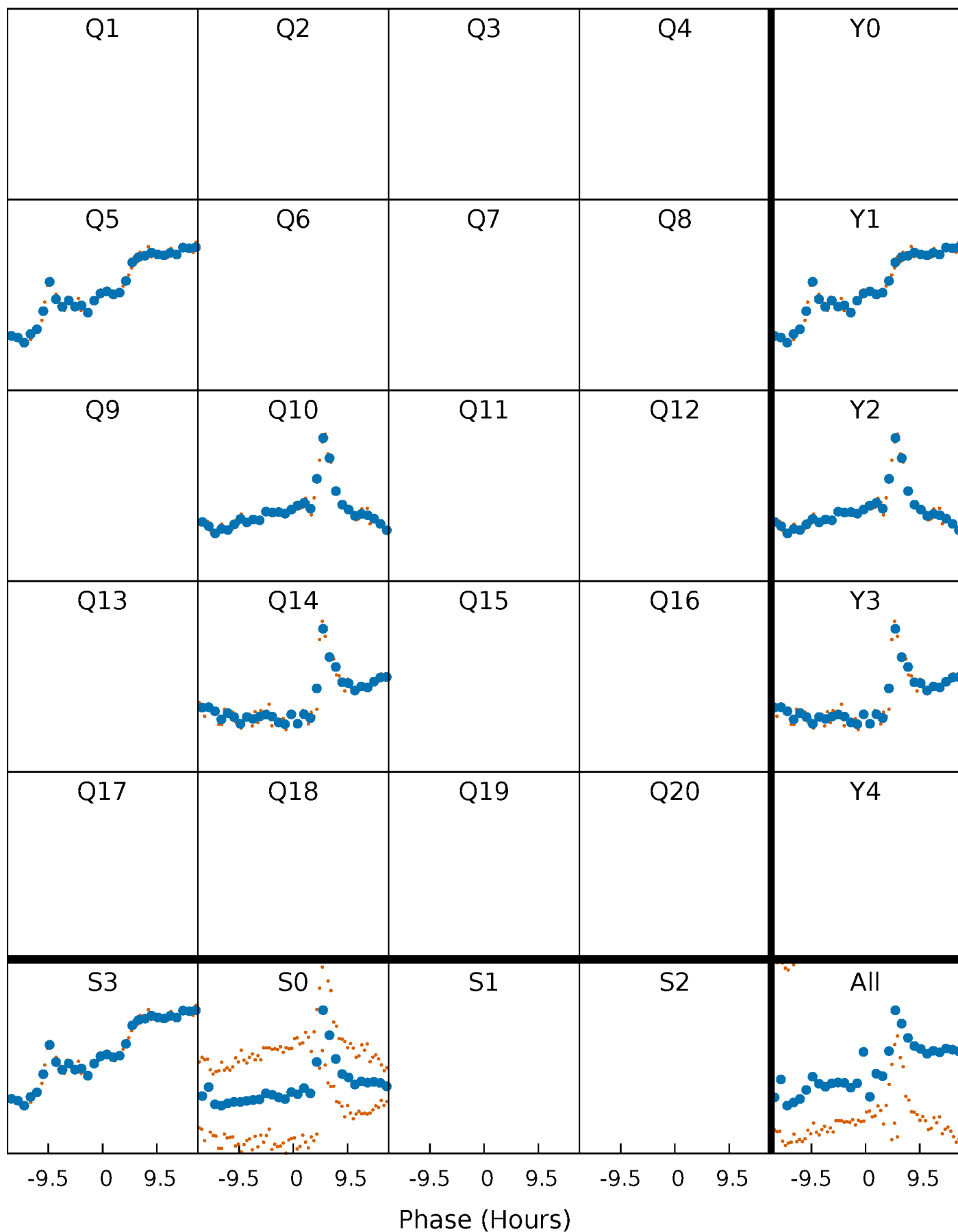


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

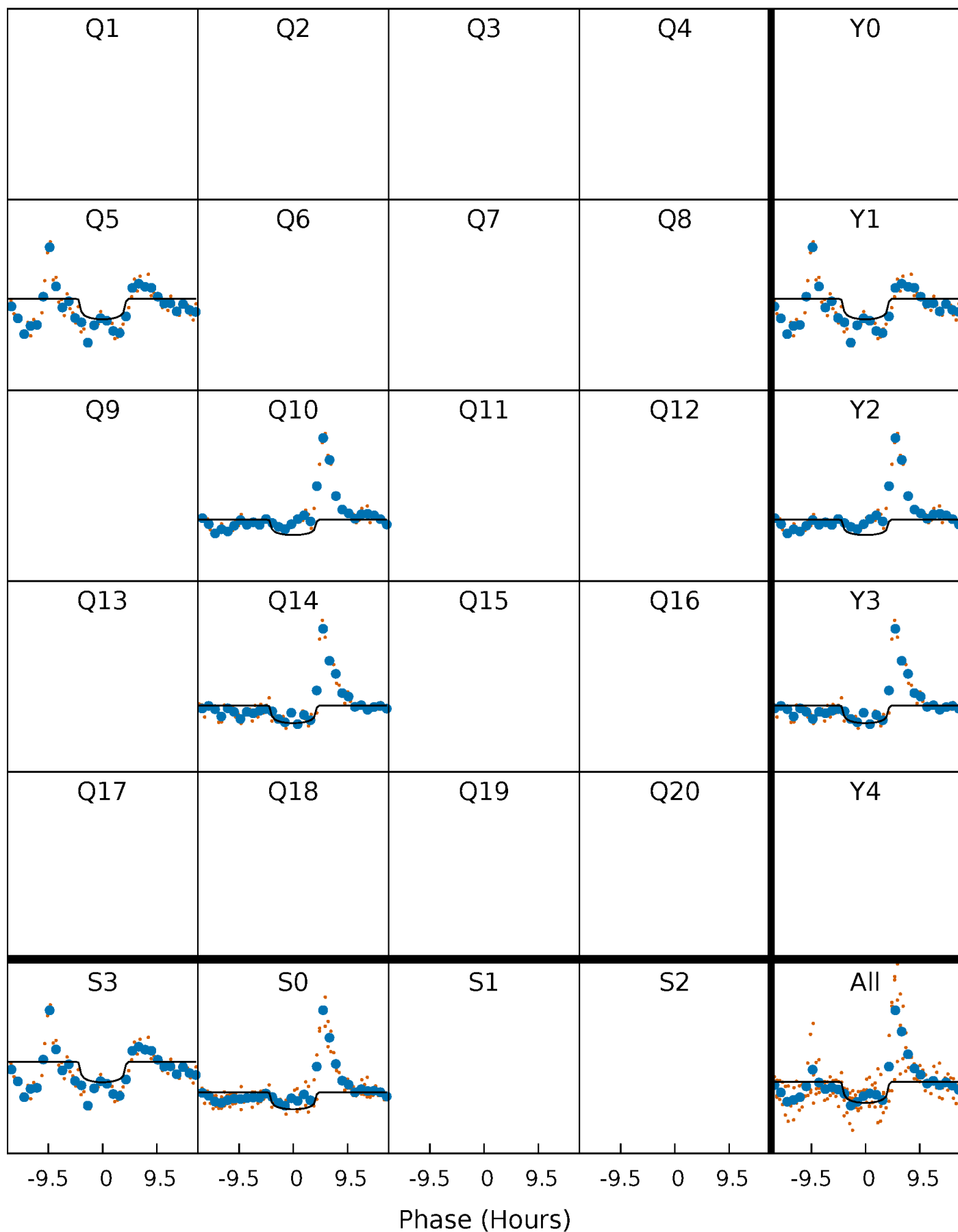
TCE 006697041-03     $P=422.914325$  Days     $T_0=520.970076$  (BKJD)





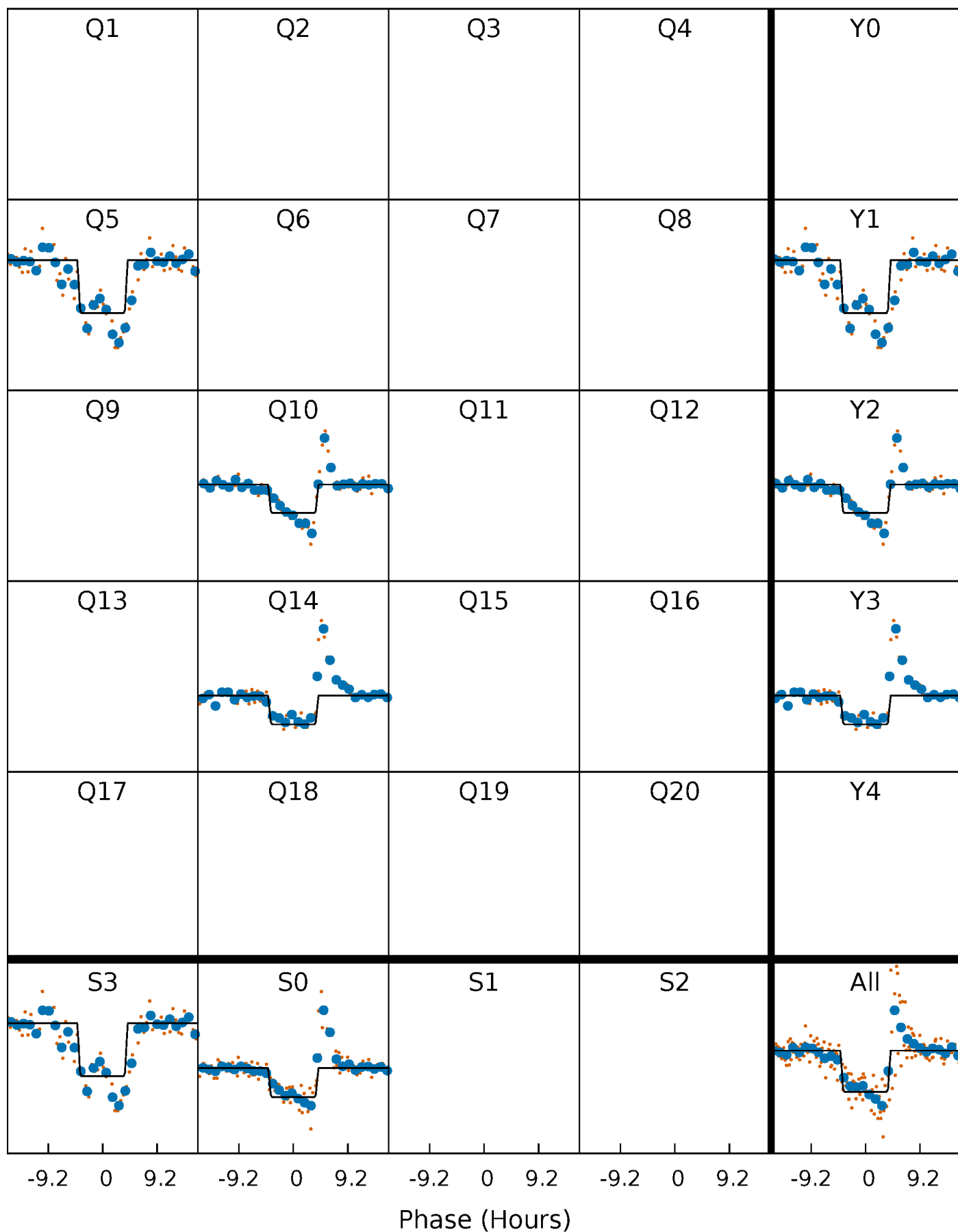
# DV Quarter-Phased Transit Curves

TCE 006697041-03     $P=422.914325$  Days     $T_0=520.970076$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

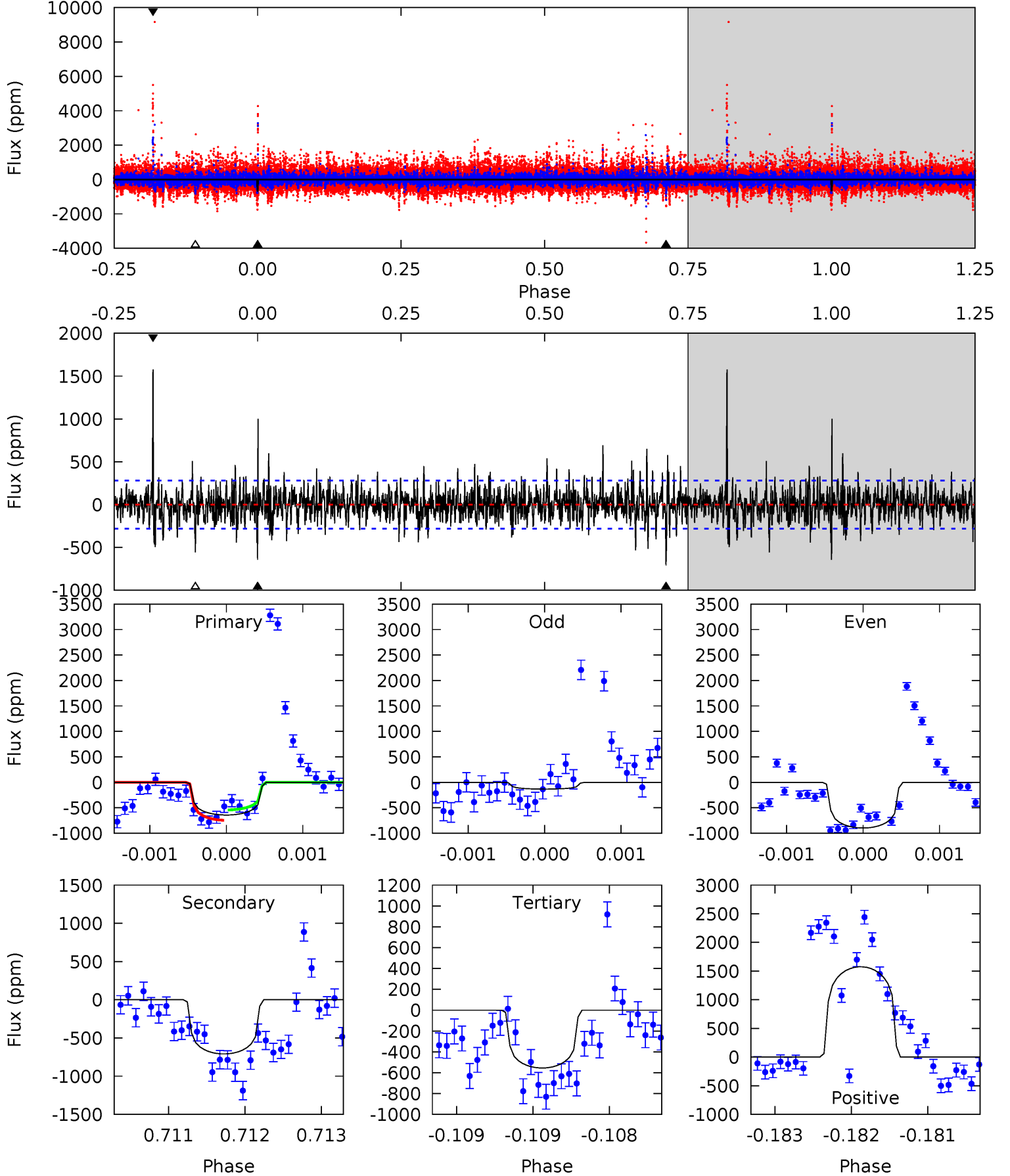
TCE 006697041-03     $P=422.920203$  Days     $T_0=520.972024$  (BKJD)



# DV Model-Shift Uniqueness Test

006697041-03, P = 422.914325 Days, E = 98.055751 Days

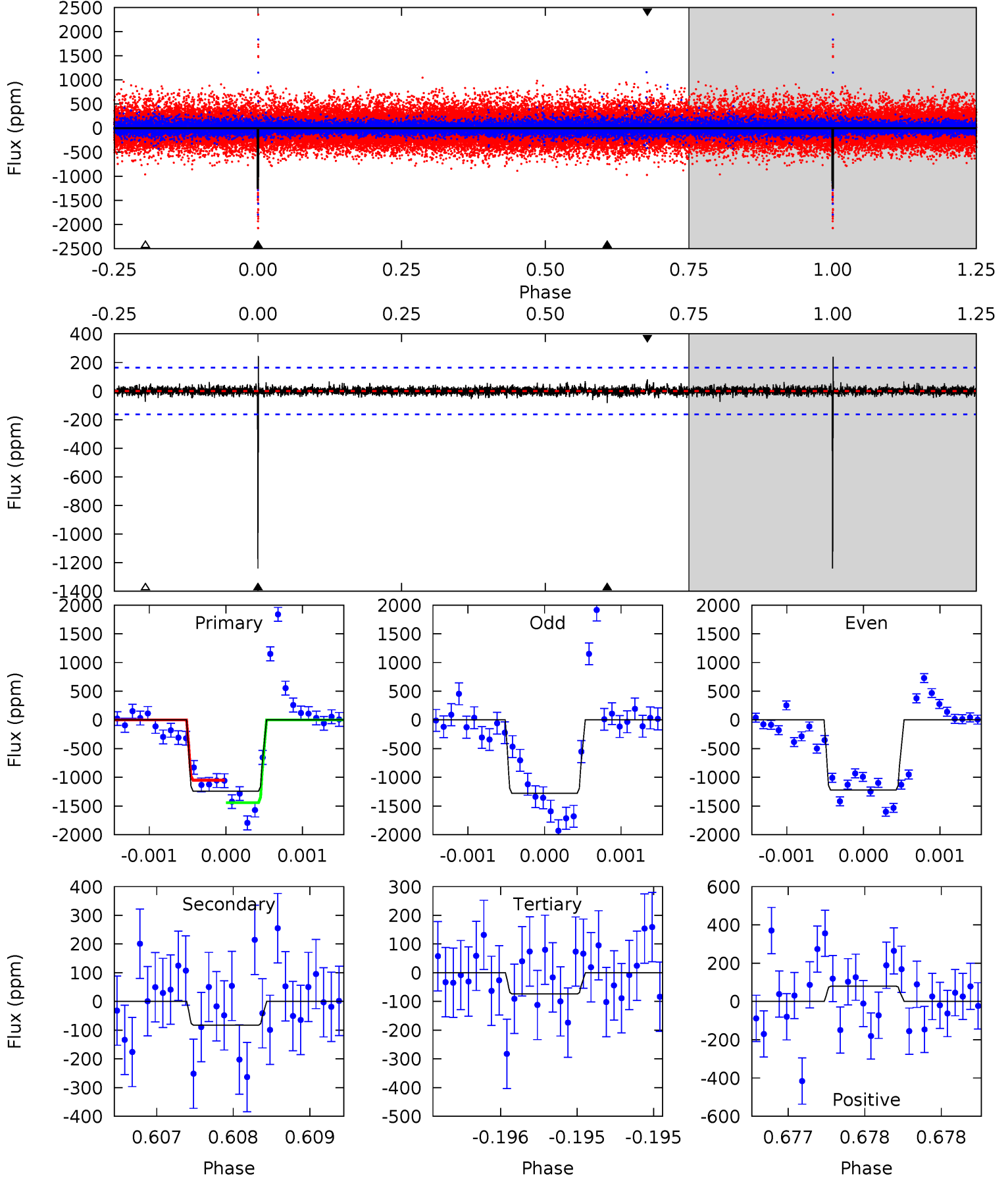
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	13.8	10.8	30.7	5.48	3.33	2.75	1.69	-18.2	3.00	-16.9	3.66	1.04	0.69	1.98



# Alt Model-Shift Uniqueness Test

006697041-03, P = 422.920203 Days, E = 98.051821 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
41.6	2.76	2.48	2.69	5.49	3.35	0.50	39.1	38.9	0.28	0.08	0.83	0.93	0.16	6.55



### Stellar Parameters For KIC 006697041

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5372^{+177}_{-145}$	$4.612^{+0.072}_{-0.054}$	$-1.000^{+0.300}_{-0.300}$	$0.656^{+0.063}_{-0.051}$	$0.642^{+0.061}_{-0.024}$	$3.210^{+0.917}_{-0.596}$
	+3%/-3%	+2%/-1%	+30%/-30%	+10%/-8%	+10%/-4%	+29%/-19%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 006697041-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-709 \pm 51$	$1.92^{+0.78}_{-0.72}$	$275^{+11}_{-10}$	$5392^{+1331}_{-766}$	$95994^{+146725}_{-47095}$
Alt.	$-82 \pm 30$	$2.56^{+0.71}_{-0.82}$	$274^{+12}_{-10}$	$3270^{+451}_{-316}$	$6145^{+8152}_{-2927}$

$T_{max}$  = 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

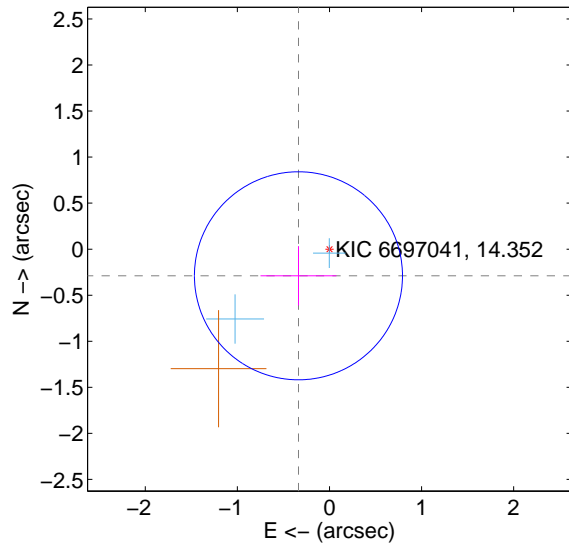
Supplemental centroid analysis for 006697041-03. Kepler magnitude: 14.35. Transit SNR 6.31

There are 2 quarters with good PRF difference image offsets

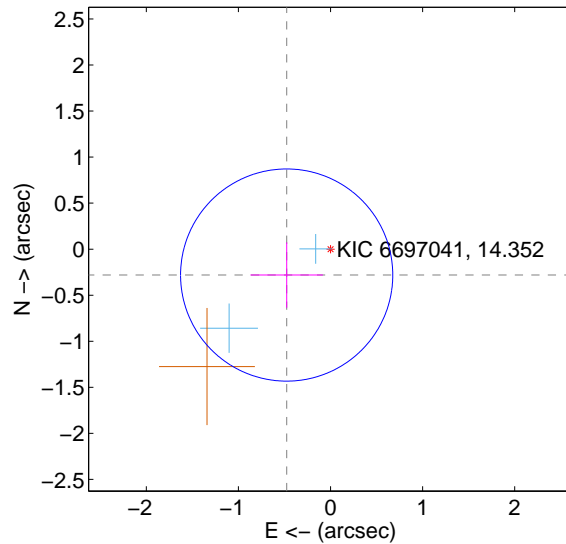
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.444 \pm 0.377$	1.18	$0.337 \pm 0.412$	$-0.289 \pm 0.322$
PRF-fit source offset from KIC position	$0.553 \pm 0.384$	1.44	$0.476 \pm 0.394$	$-0.281 \pm 0.355$
photometric centroid source offset	$0.08 \pm 0.70$	0.11	$0.02 \pm 0.77$	$-0.07 \pm 0.70$

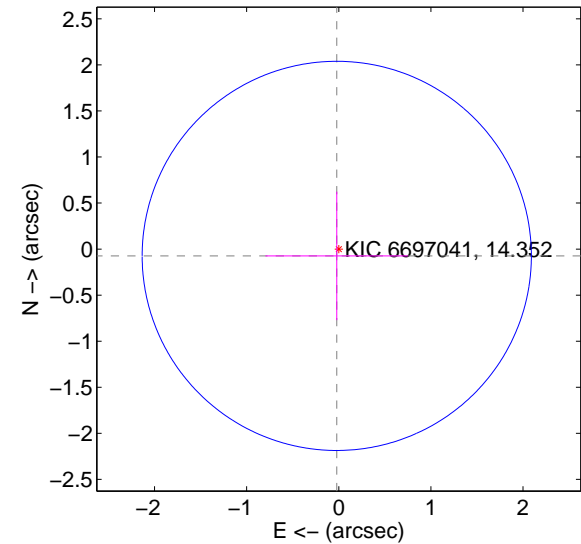
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

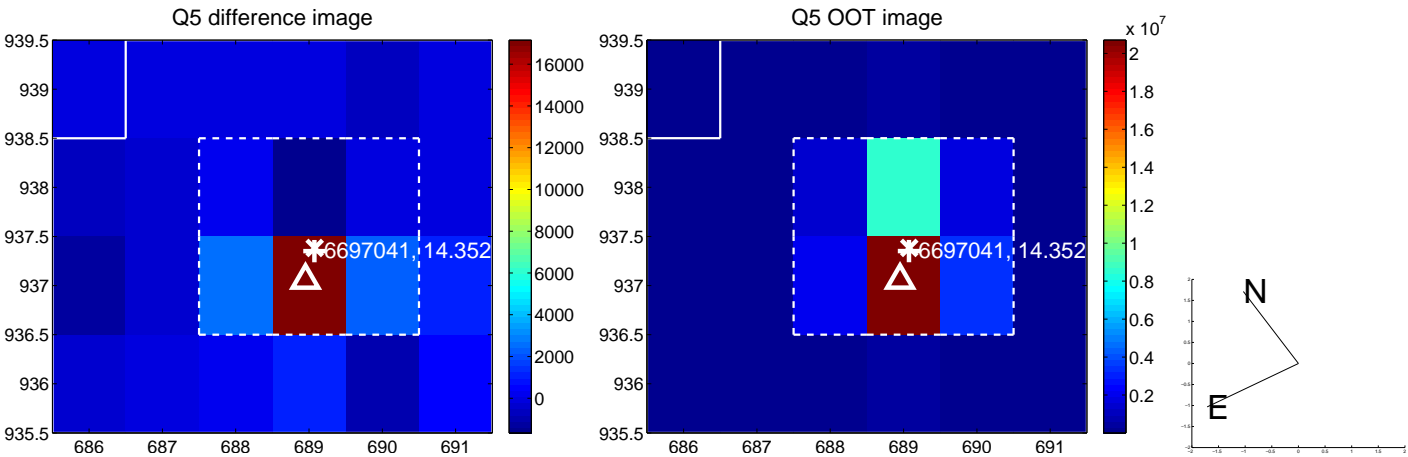


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

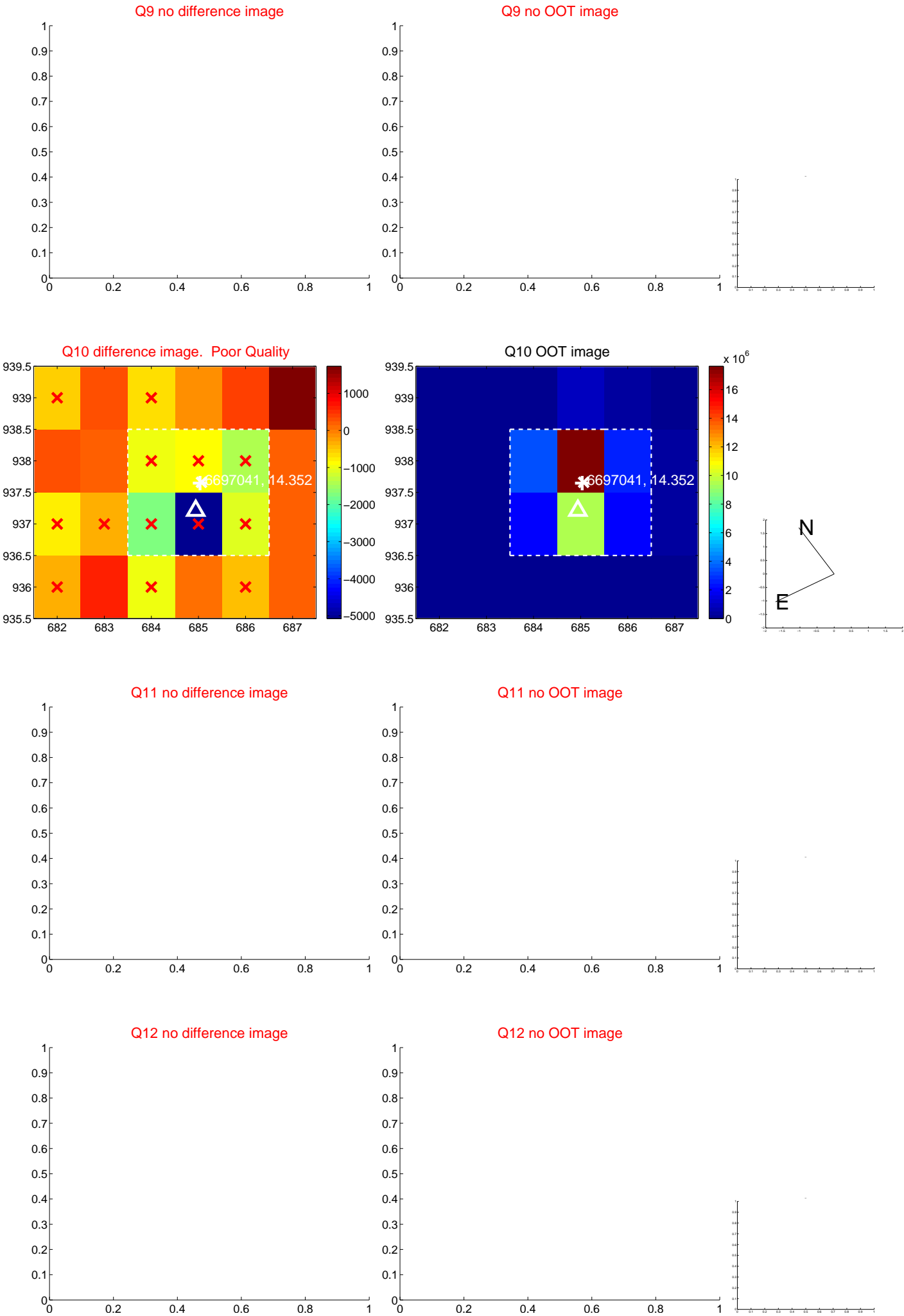


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

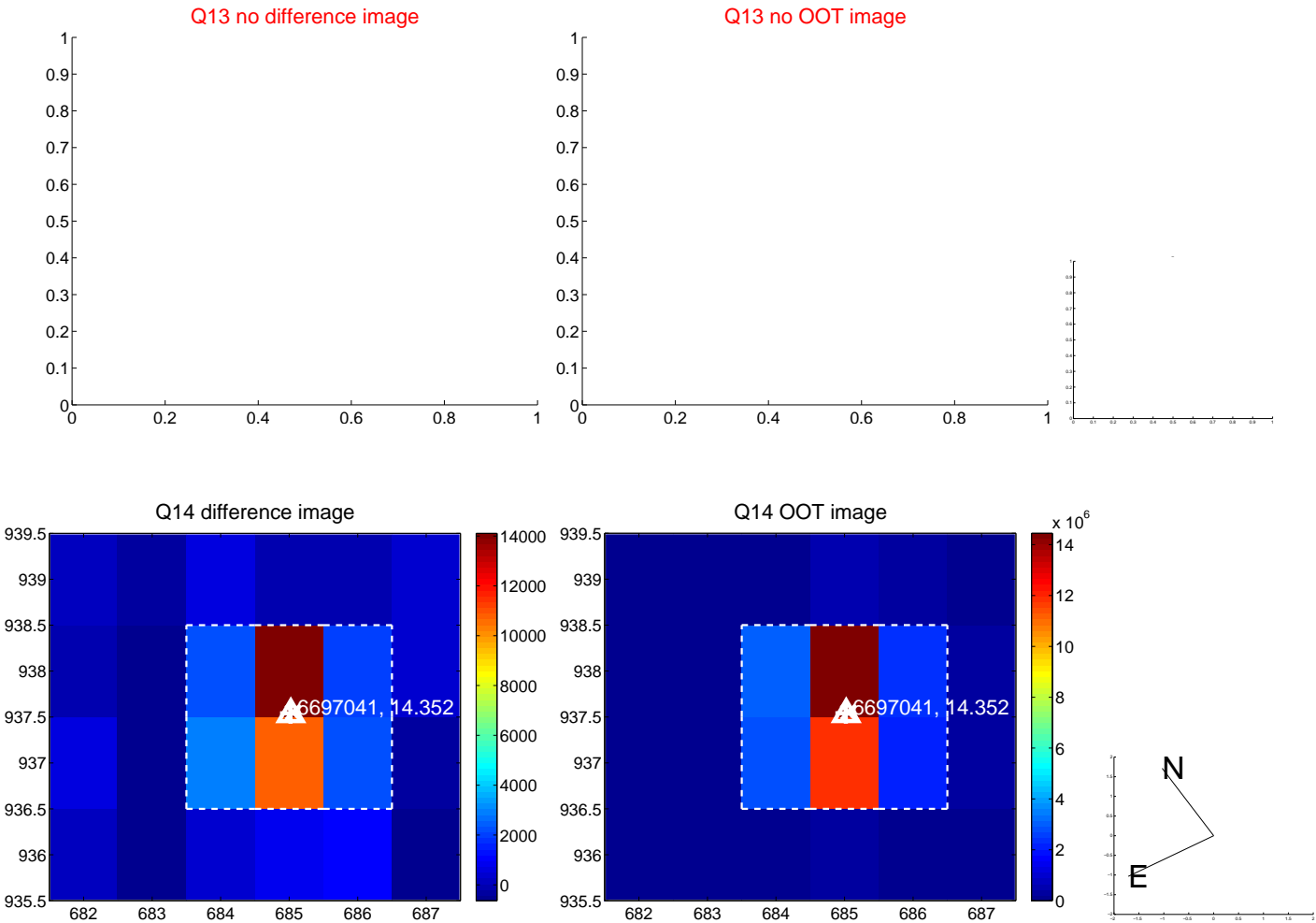




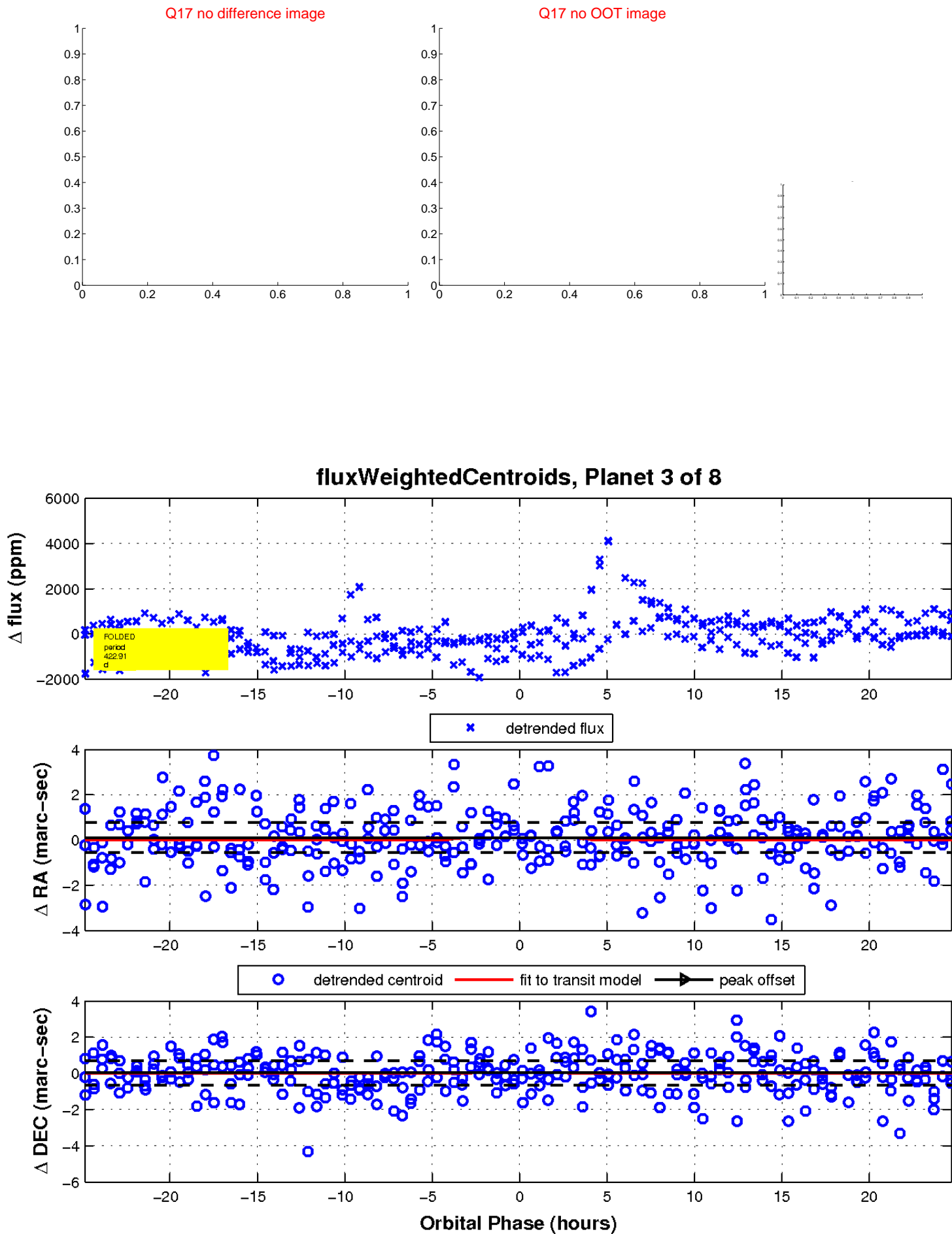
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

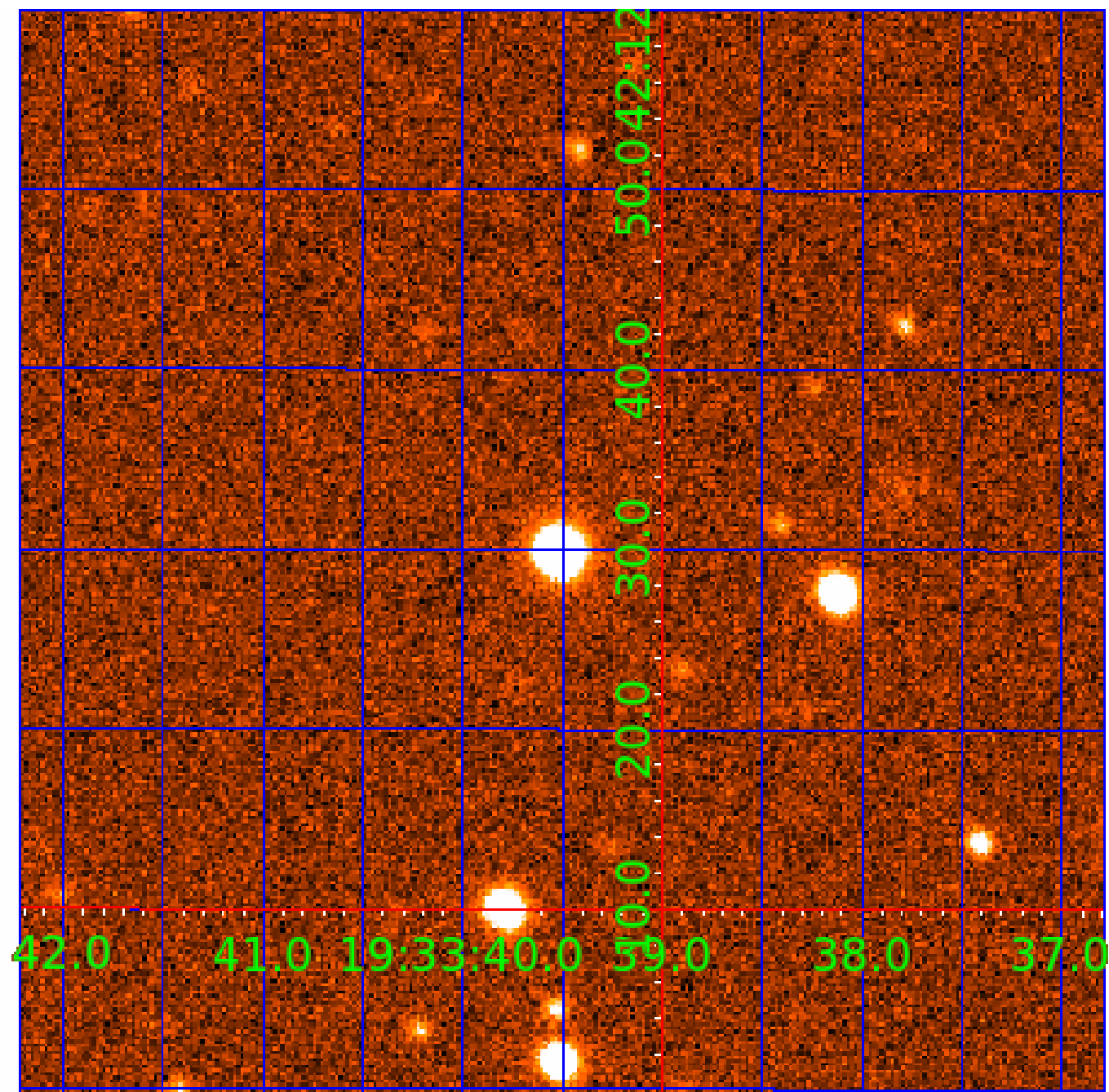


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination



# KIC 006697041

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006697041-01	OBS	No	560.179429	236.001075	777.9	5.987	14.9	7.5	0.66	5372	1.87	0.24
006697041-02	OBS	No	560.251987	433.550244	1144.0	6.975	21.7	9.6	0.66	5372	2.32	0.24
006697041-03	OBS	No	422.914325	520.970076	764.6	8.345	14.5	6.3	0.66	5372	1.92	0.35
006697041-04	OBS	No	382.523591	370.727132	576.7	6.888	11.7	5.8	0.66	5372	1.64	0.41
006697041-05	OBS	No	468.477500	317.928384	1242.6	14.468	11.7	9.6	0.66	5372	2.46	0.31
006697041-06	OBS	No	581.615296	233.381085	832.2	15.368	13.3	7.0	0.66	5372	1.93	0.23
006697041-07	OBS	No	316.778435	188.503522	678.1	10.697	11.2	8.1	0.66	5372	1.76	0.52
006697041-08	OBS	No	565.021990	414.543045	592.8	10.500	11.1	-1.0	0.66	5372	1.59	0.24

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006697041-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006697041-02	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—SAME_NTL_PERIOD—CENT_FEW_DIFFS
006697041-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_DIFFS
006697041-04	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
006697041-05	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
006697041-06	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006697041-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006697041-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

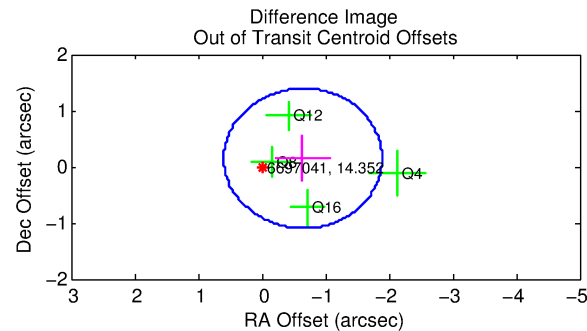
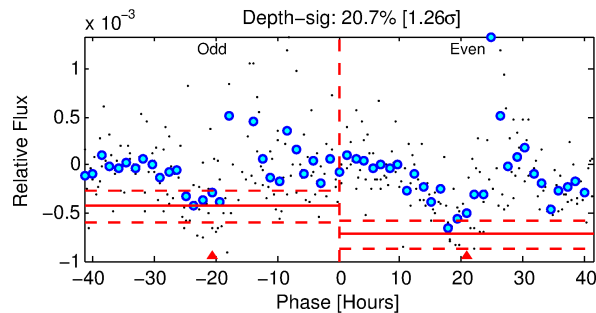
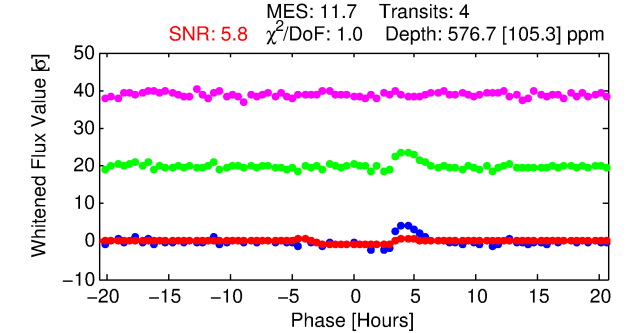
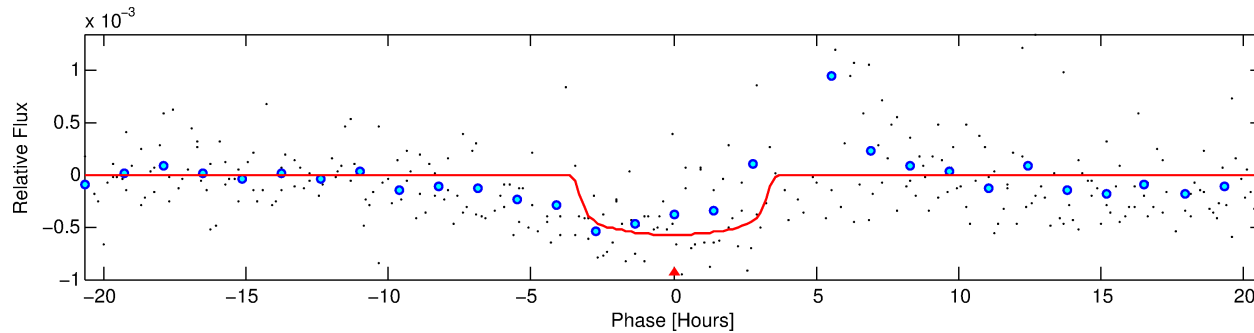
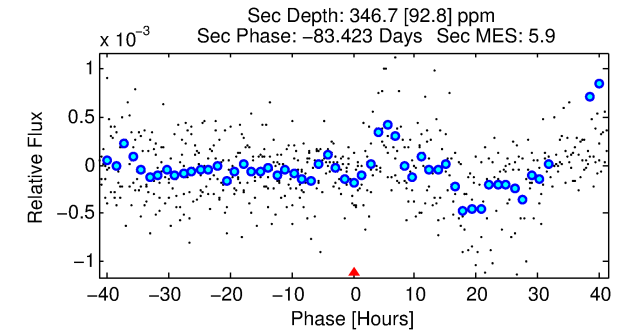
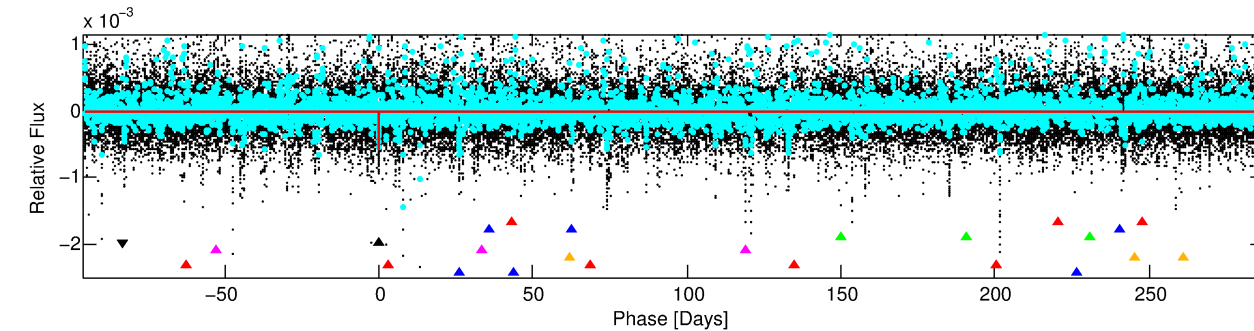
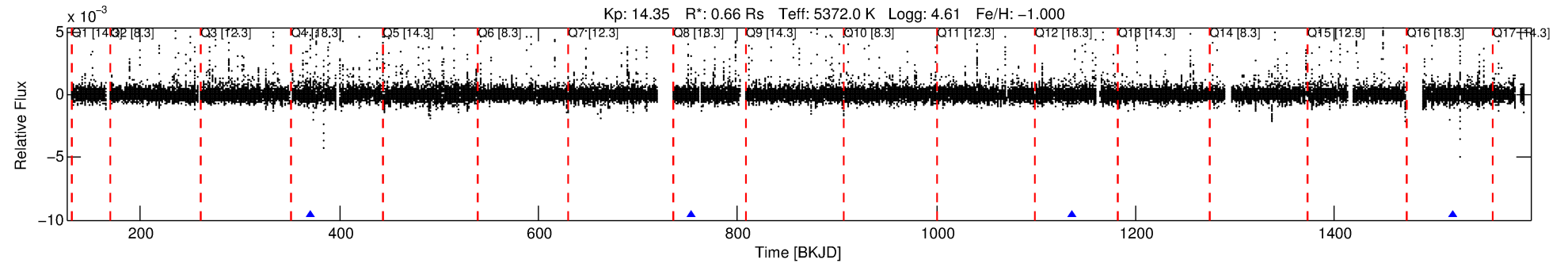
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006697041-04

No Significant Match Found

# DV One-Page Summary

KIC: 6697041 Candidate: 4 of 8 Period: 382.524 d



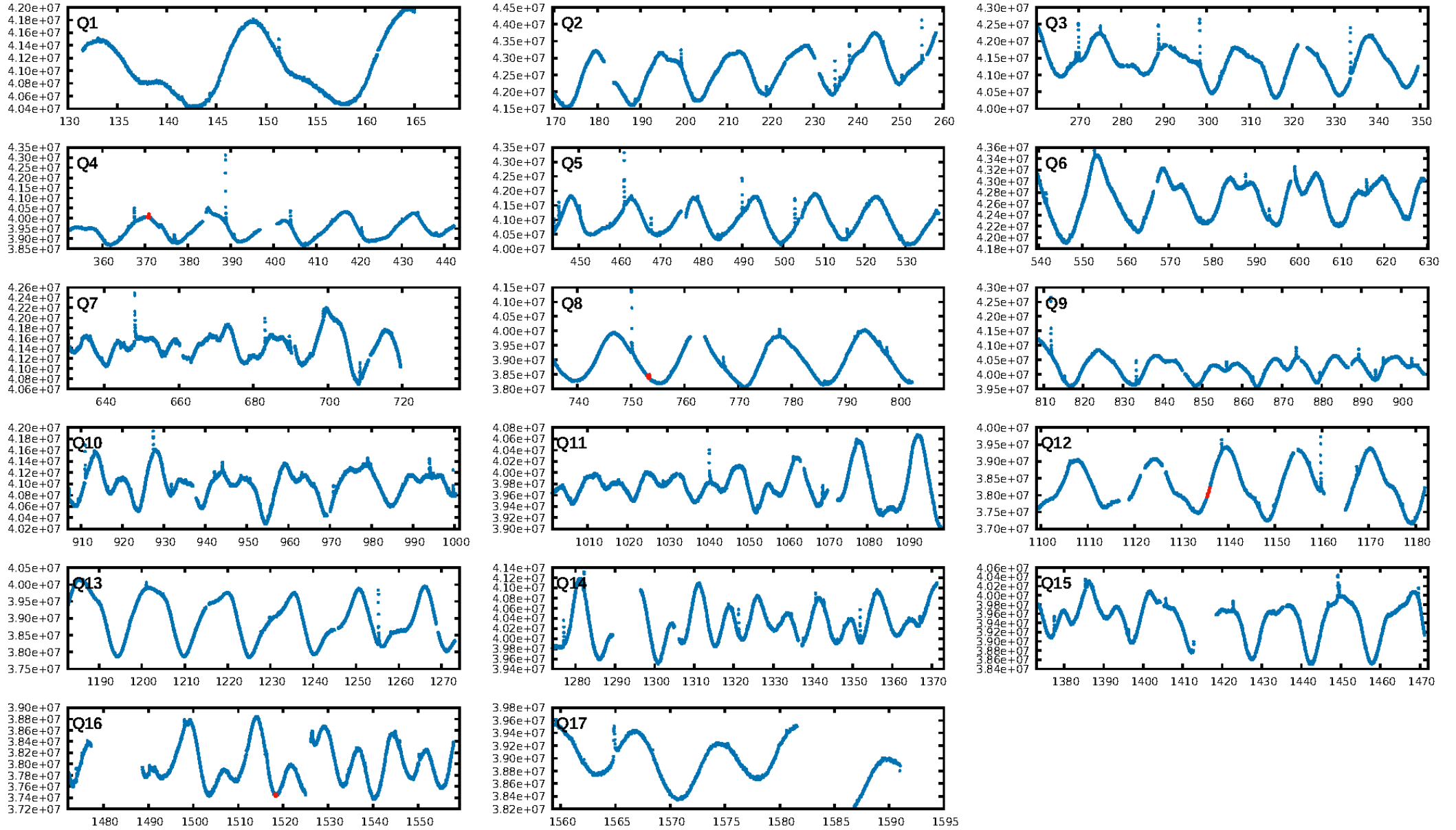
## DV Fit Results:

Period = 382.52359 [0.00660] d  
Epoch = 370.7271 [0.0121] BKJD  
Rp/R\* = 0.0229 [0.0219]  
a/R\* = 350.64 [1537.92]  
b = 0.60 [4.66]  
Seff = 0.41 [0.07]  
Teff = 203 [9] K  
Rp = 1.64 [1.58] Re  
a = 0.8900 [0.0753] AU  
Ag = 56023.97 [108301.12] [0.52σ]  
Teffp = 4840 [2339] K [1.98σ]

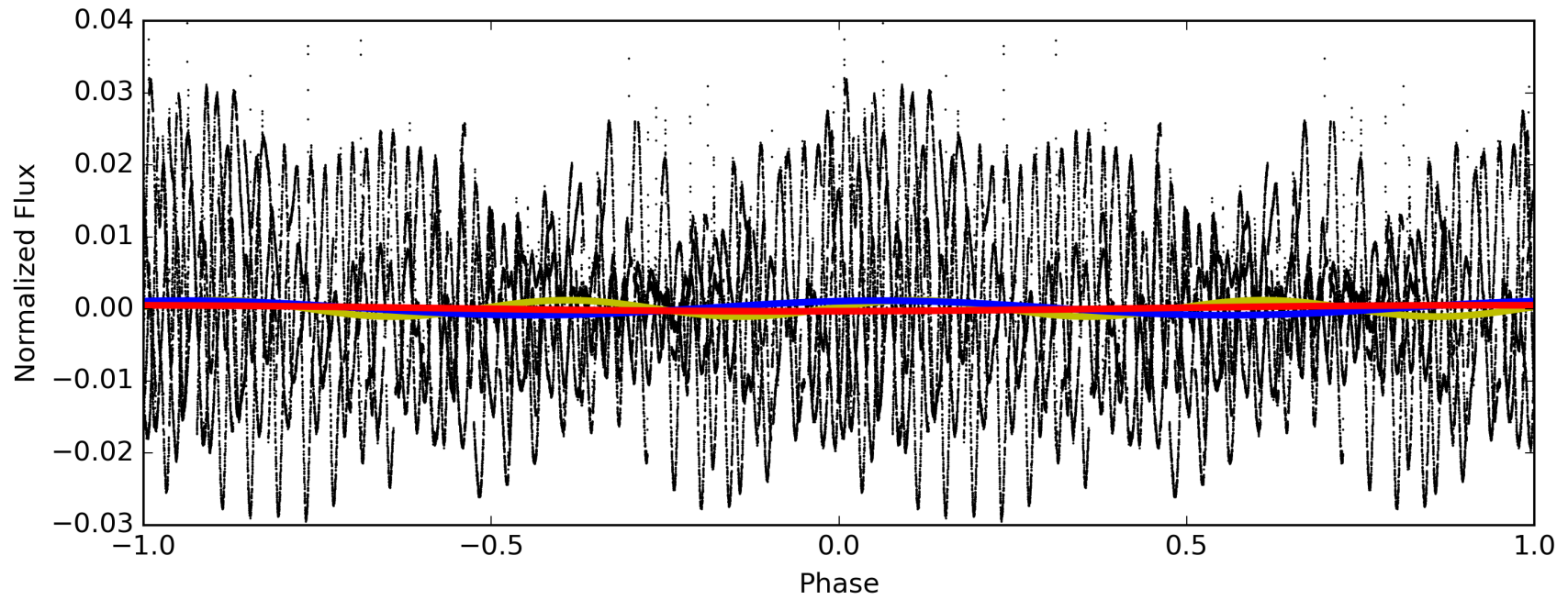
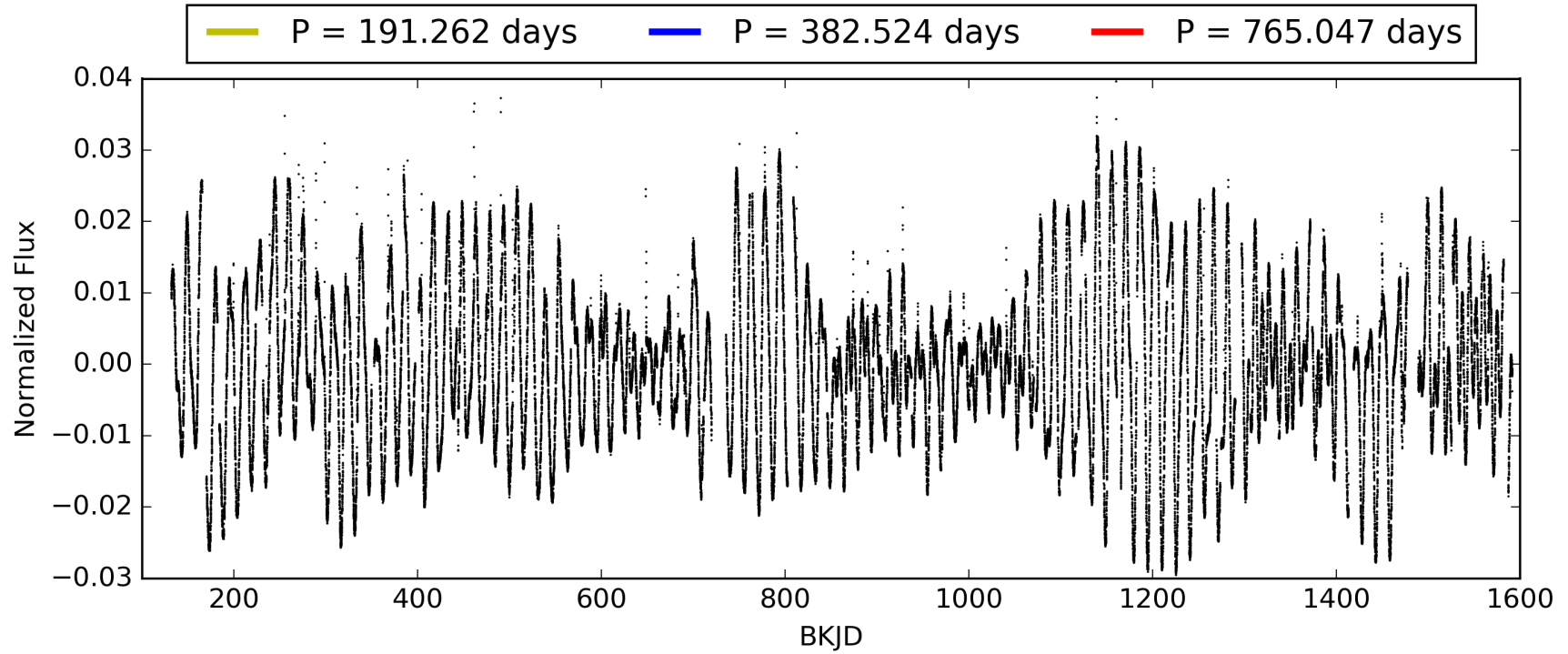
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [124.03σ]  
LongPeriod-sig: 100.0% [89.59σ]  
ModelChiSquare2-sig: 36.7%  
ModelChiSquareGof-sig: 96.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -1.484  
Centroid-sig: 6.3%  
Centroid-so: 1.275 arcsec [1.53σ]  
OotOffset-rm: 0.663 arcsec [1.60σ]  
KicOffset-rm: 0.570 arcsec [1.38σ]  
OotOffset-st: 0/0/4/0 [4]  
KicOffset-st: 0/0/4/0 [4]  
DiffImageQuality-fgm: 0.75 [3/4]  
DiffImageOverlap-fno: 1.00 [4/4]

# TCE 006697041-04, PDC Light Curves



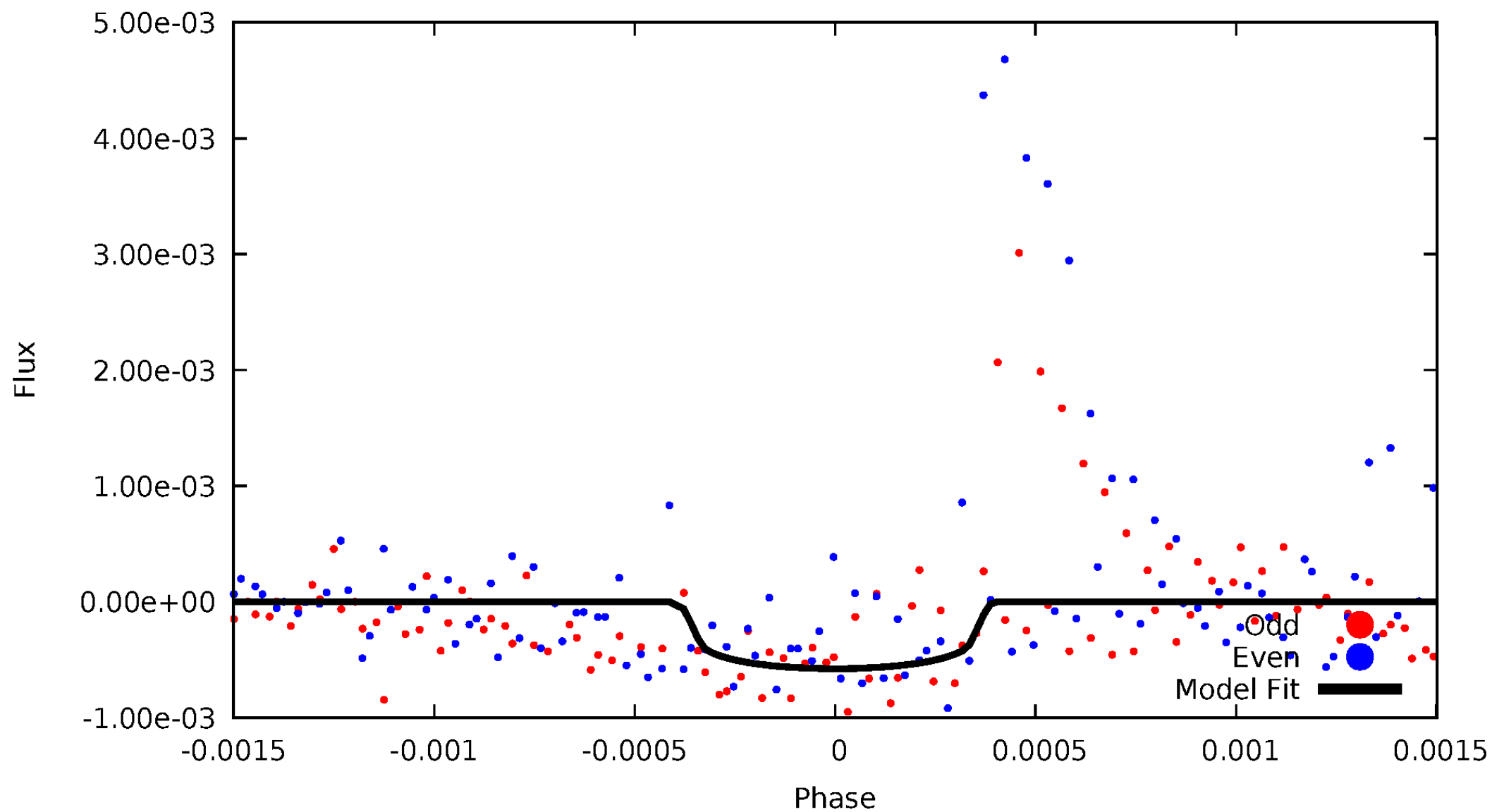
TCE 006697041-04





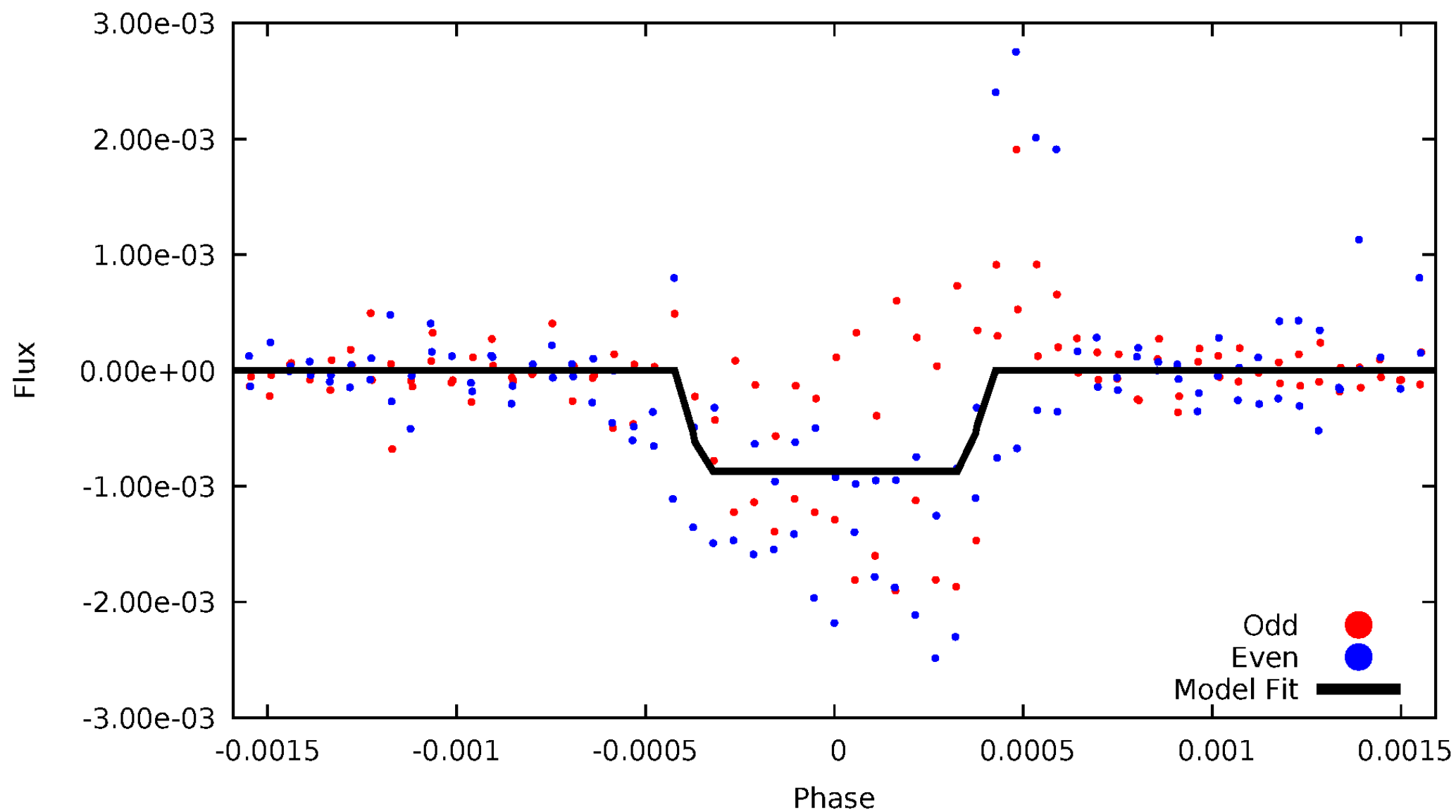
# DV Odd/Even

TCE 006697041-04



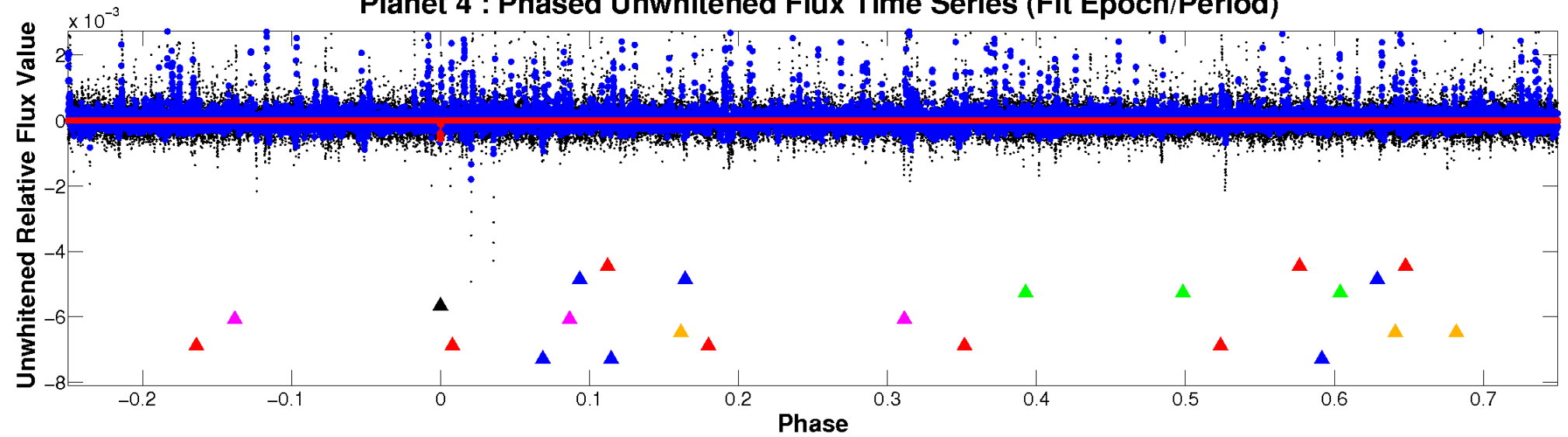
# ALT Odd/Even

TCE 006697041-04

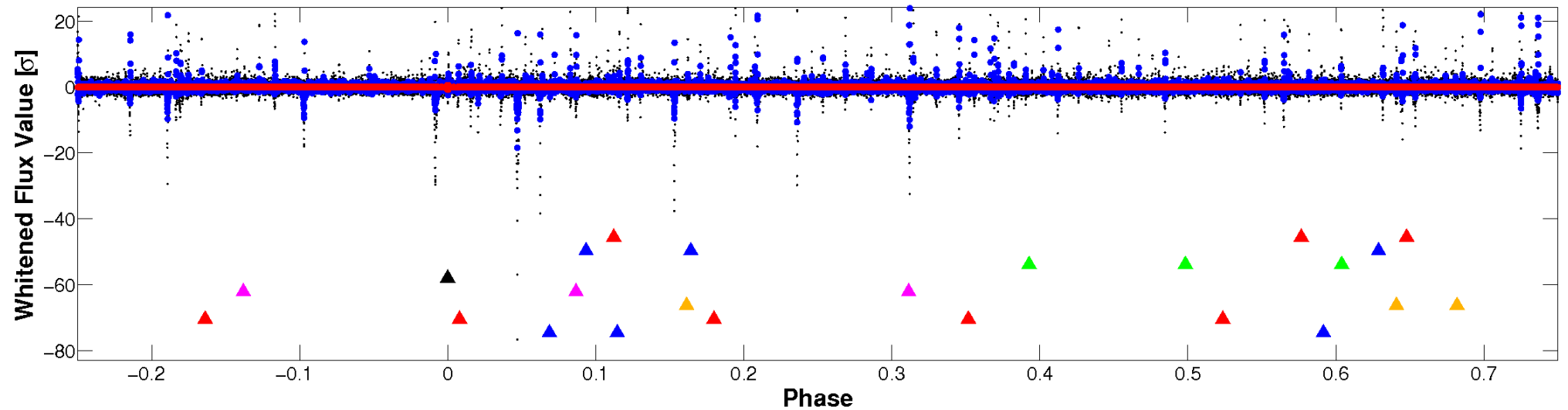


# Non-Whitened Vs. Whitened Light Curve

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

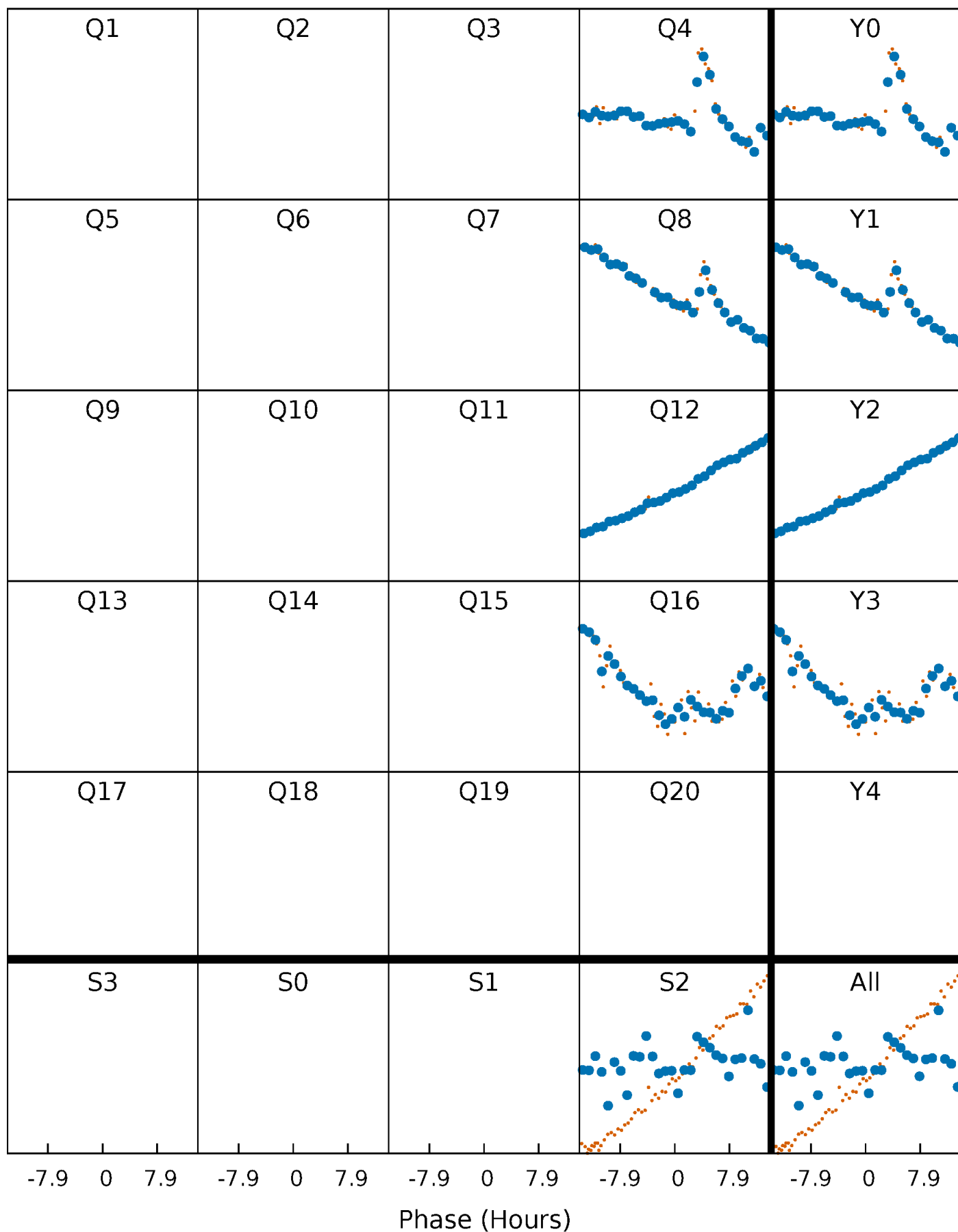


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



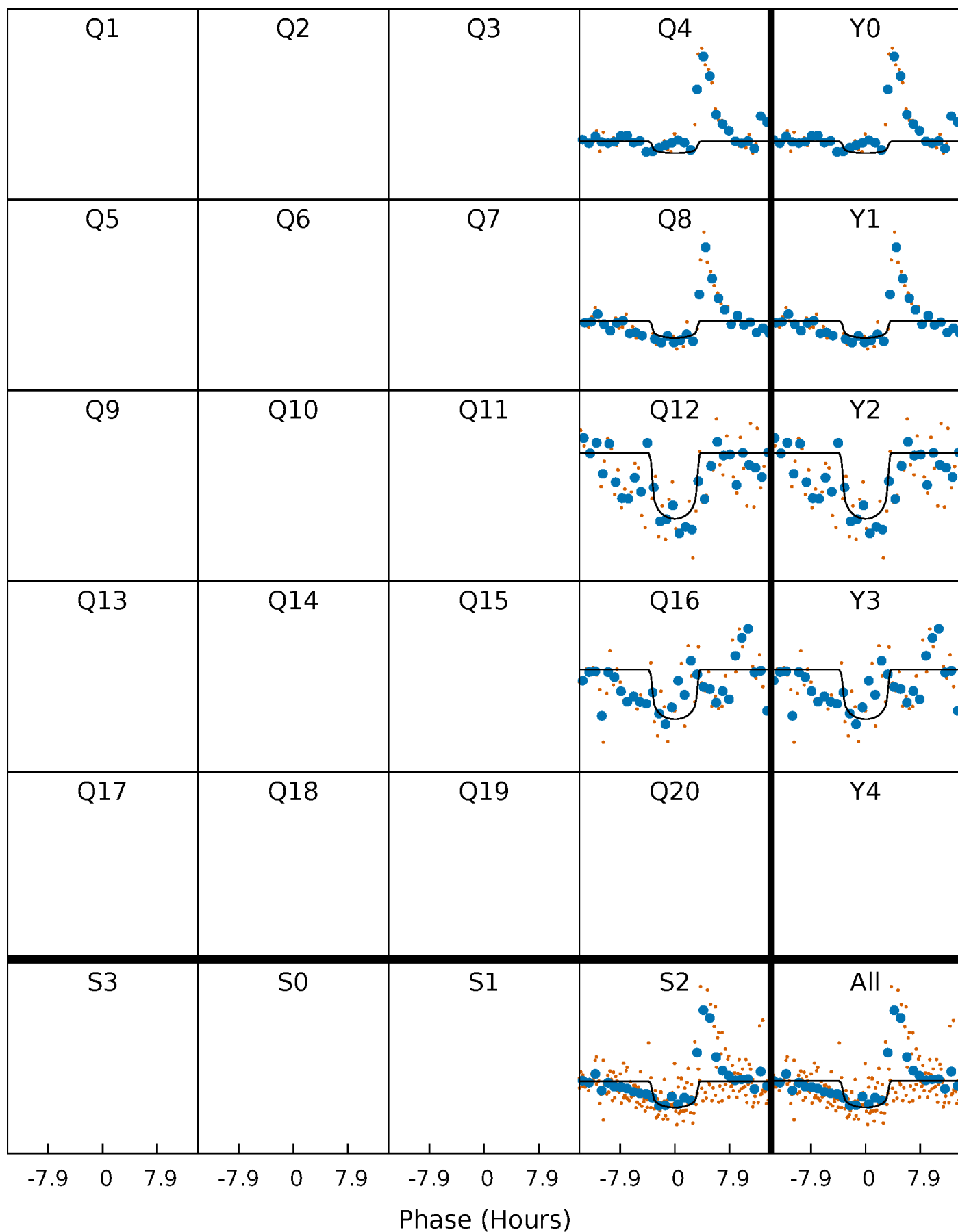
# PDC Quarter-Phased Transit Curves

TCE 006697041-04     $P=382.523591$  Days     $T_0=370.727132$  (BKJD)



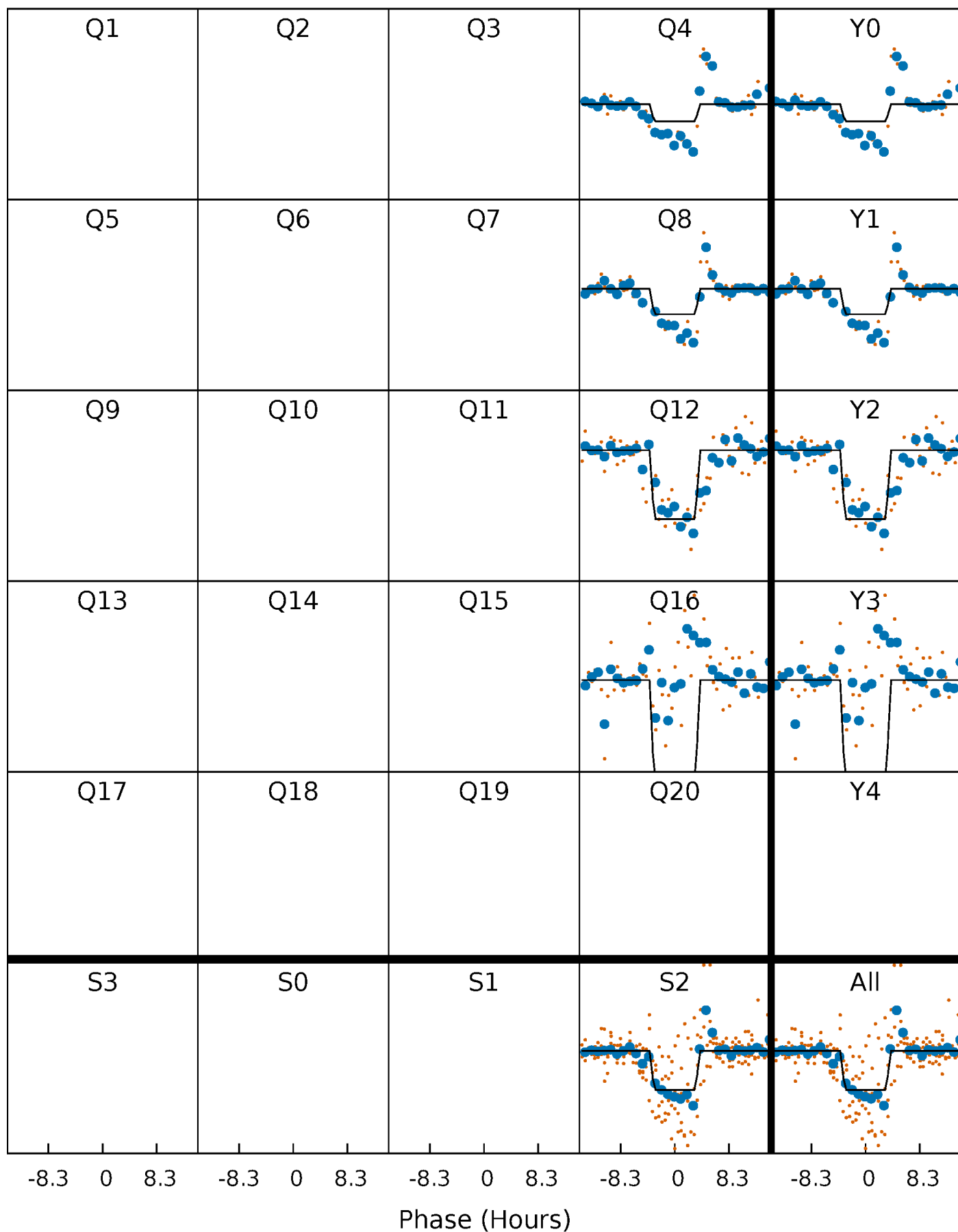
# DV Quarter-Phased Transit Curves

TCE 006697041-04     $P=382.523591$  Days     $T_0=370.727132$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

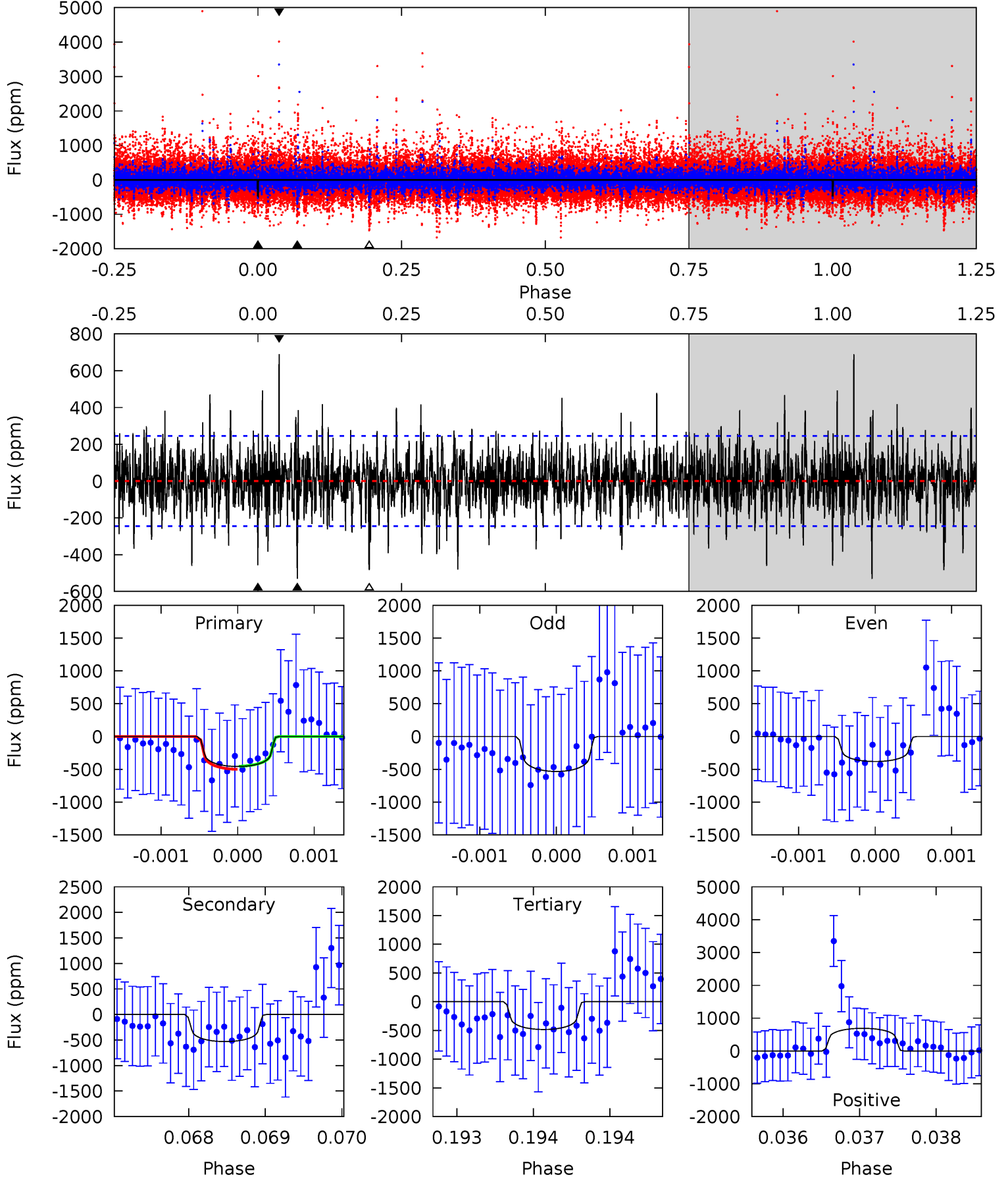
TCE 006697041-04     $P=382.536677$  Days     $T_0=370.705147$  (BKJD)



# DV Model-Shift Uniqueness Test

006697041-04, P = 382.523591 Days, E = 370.727132 Days

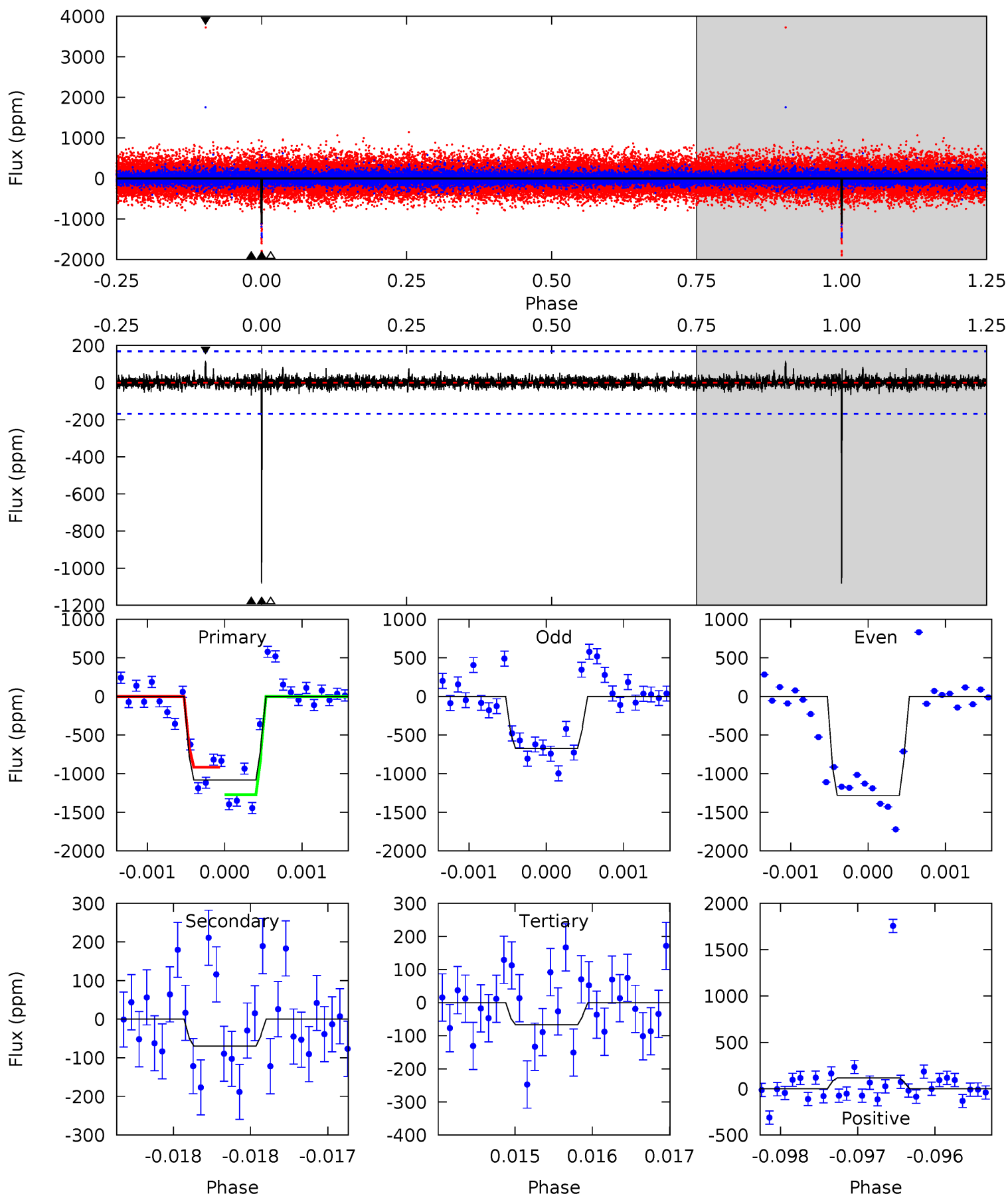
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	11.9	10.8	15.4	5.49	3.36	2.52	-0.59	-5.21	1.06	-3.56	1.07	0.87	0.57	0.51



# Alt Model-Shift Uniqueness Test

006697041-04, P = 382.536677 Days, E = 370.705147 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
35.2	2.27	2.19	3.82	5.49	3.35	0.50	33.1	31.4	0.08	-1.54	10.9	0.90	0.10	0





### Stellar Parameters For KIC 006697041

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5372^{+177}_{-145}$	$4.612^{+0.072}_{-0.054}$	$-1.000^{+0.300}_{-0.300}$	$0.656^{+0.063}_{-0.051}$	$0.642^{+0.061}_{-0.024}$	$3.210^{+0.917}_{-0.596}$
	+3%/-3%	+2%/-1%	+30%/-30%	+10%/-8%	+10%/-4%	+29%/-19%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 006697041-04 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-531 \pm 45$	$1.95^{+1.48}_{-1.18}$	$285^{+11}_{-11}$	$5059^{+3124}_{-1066}$	$61890^{+327938}_{-41719}$
Alt.	$-70 \pm 31$	$2.24^{+1.53}_{-1.28}$	$284^{+11}_{-10}$	$3256^{+1201}_{-469}$	$5585^{+30319}_{-3752}$

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

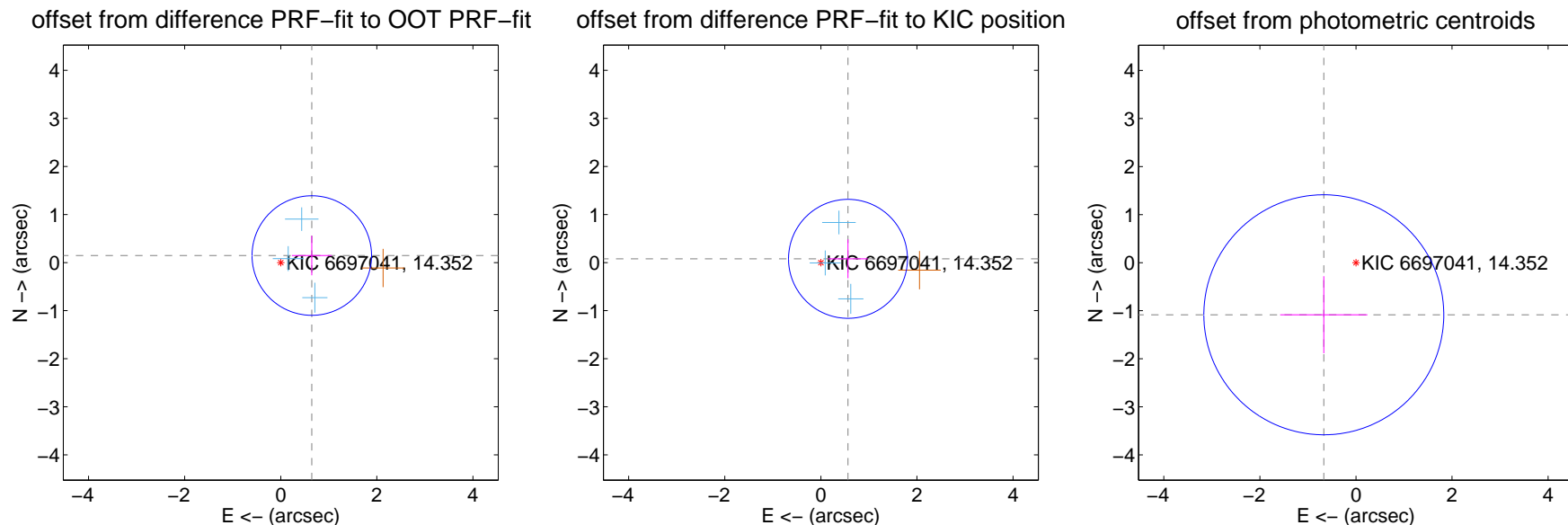
## DV Centroid Data

Supplemental centroid analysis for 006697041-04. Kepler magnitude: 14.35. Transit SNR 5.85

There are 3 quarters with good PRF difference image offsets

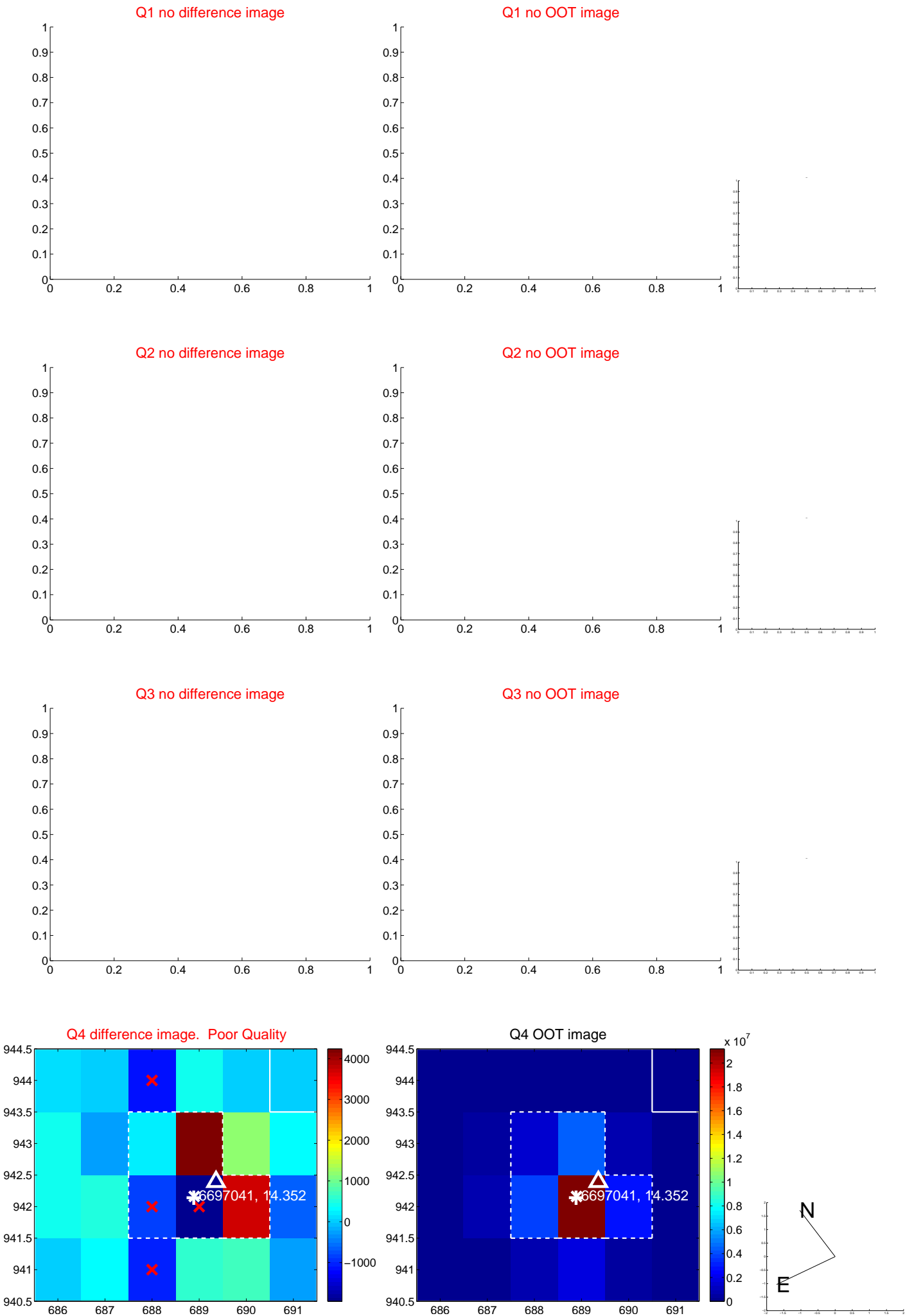
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.663 \pm 0.415$	1.60	$-0.646 \pm 0.415$	$0.147 \pm 0.411$
PRF-fit source offset from KIC position	$0.570 \pm 0.413$	1.38	$-0.565 \pm 0.413$	$0.078 \pm 0.405$
photometric centroid source offset	$1.27 \pm 0.83$	1.53	$0.67 \pm 0.91$	$-1.08 \pm 0.80$

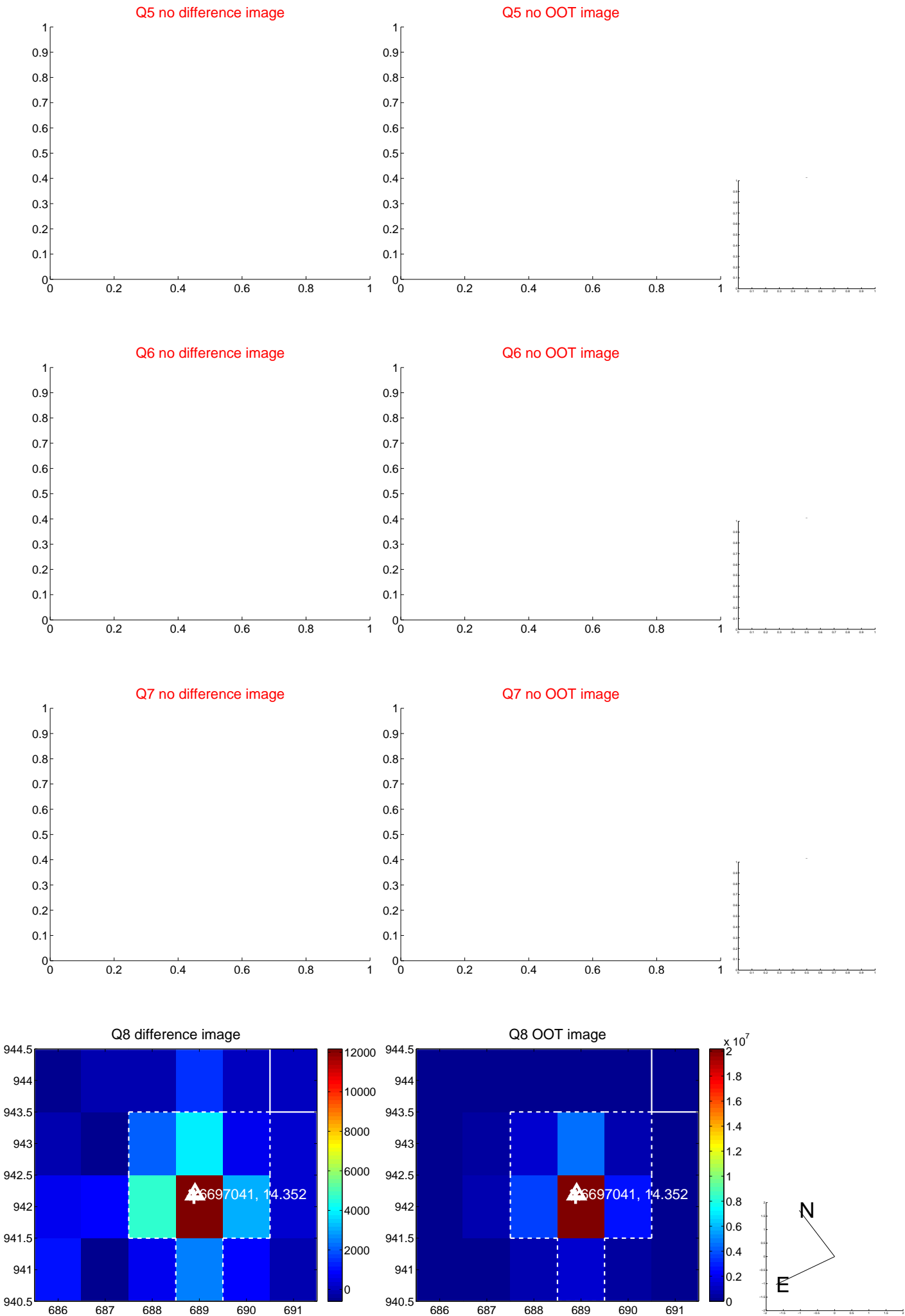


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

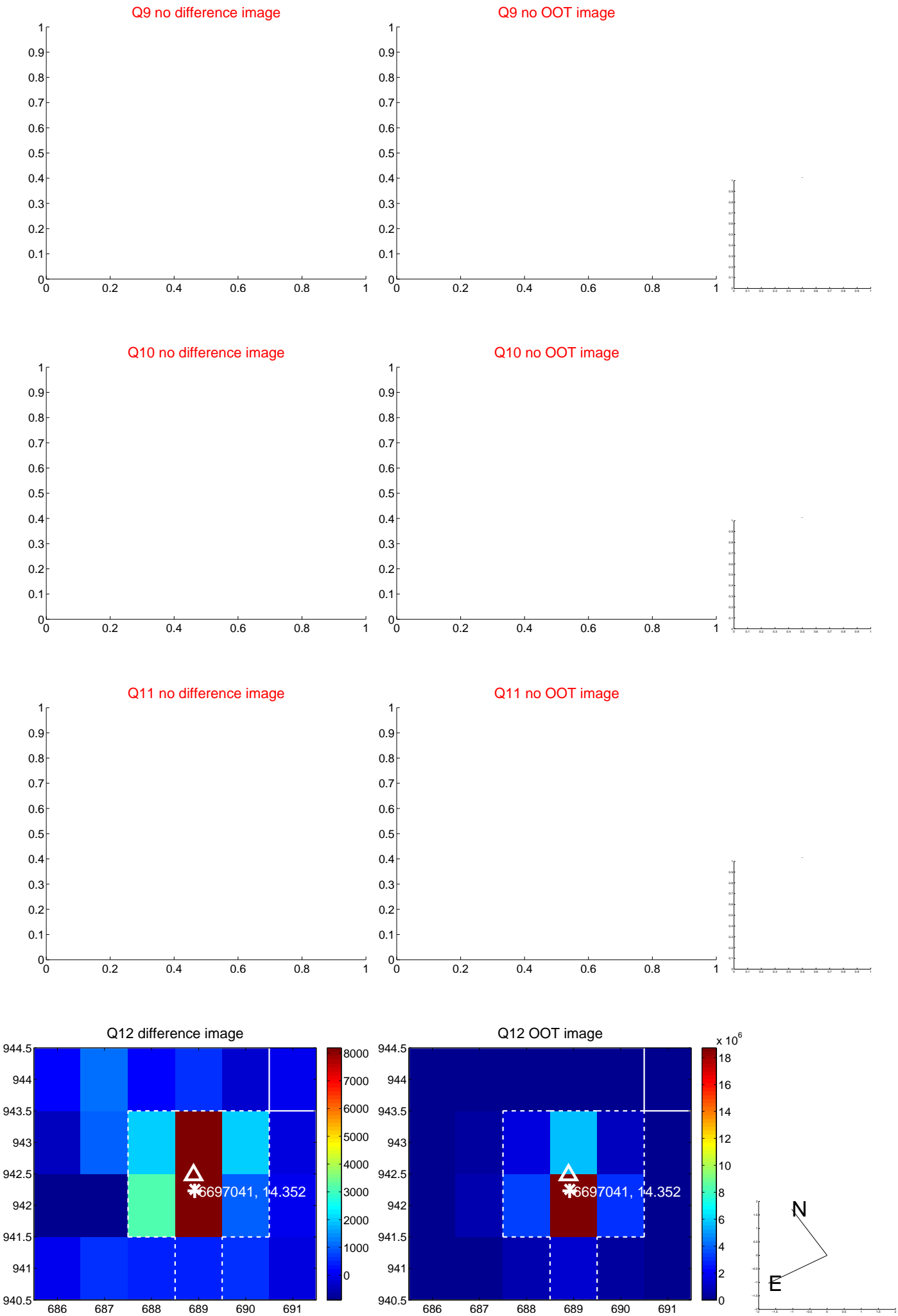
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



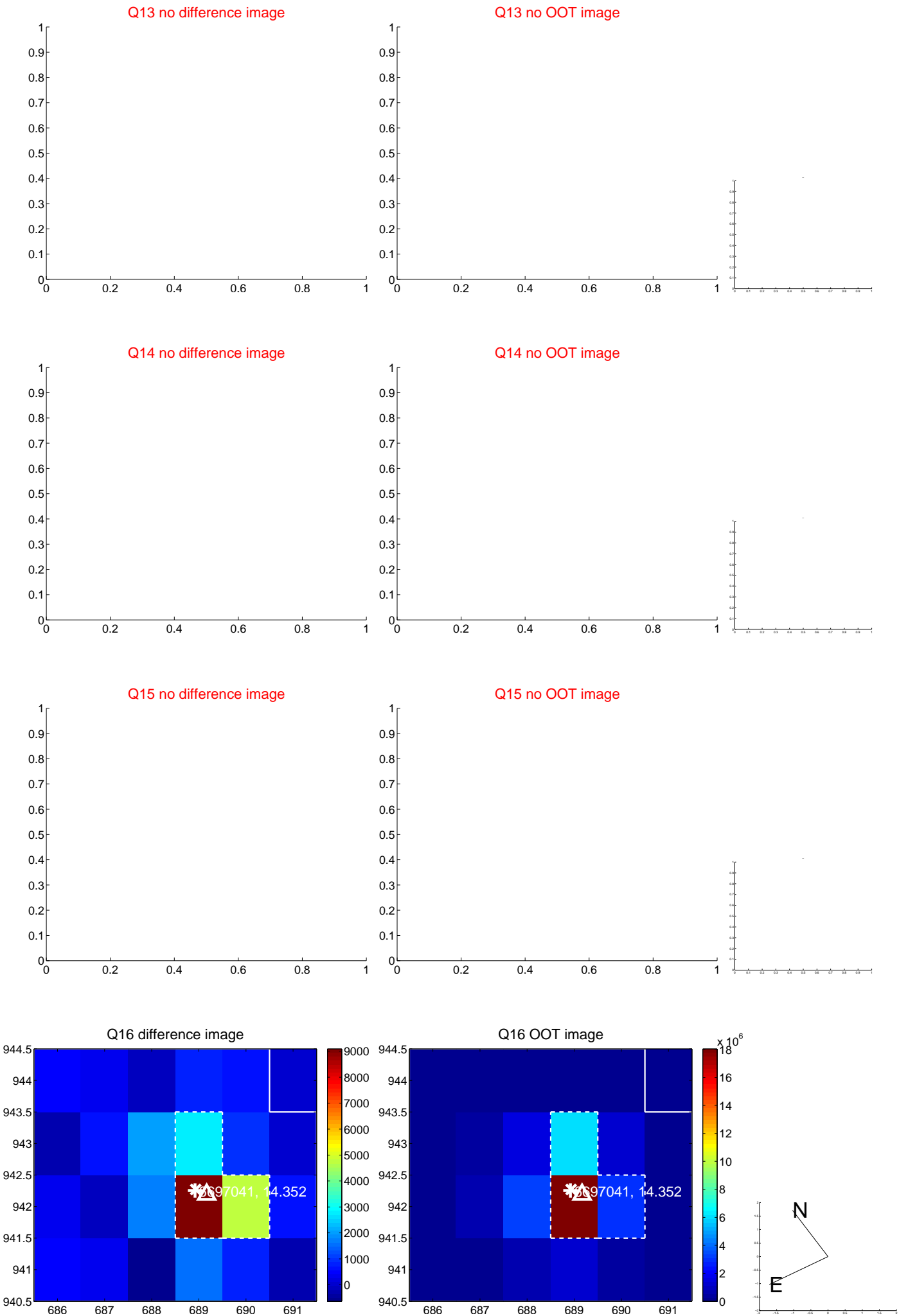
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



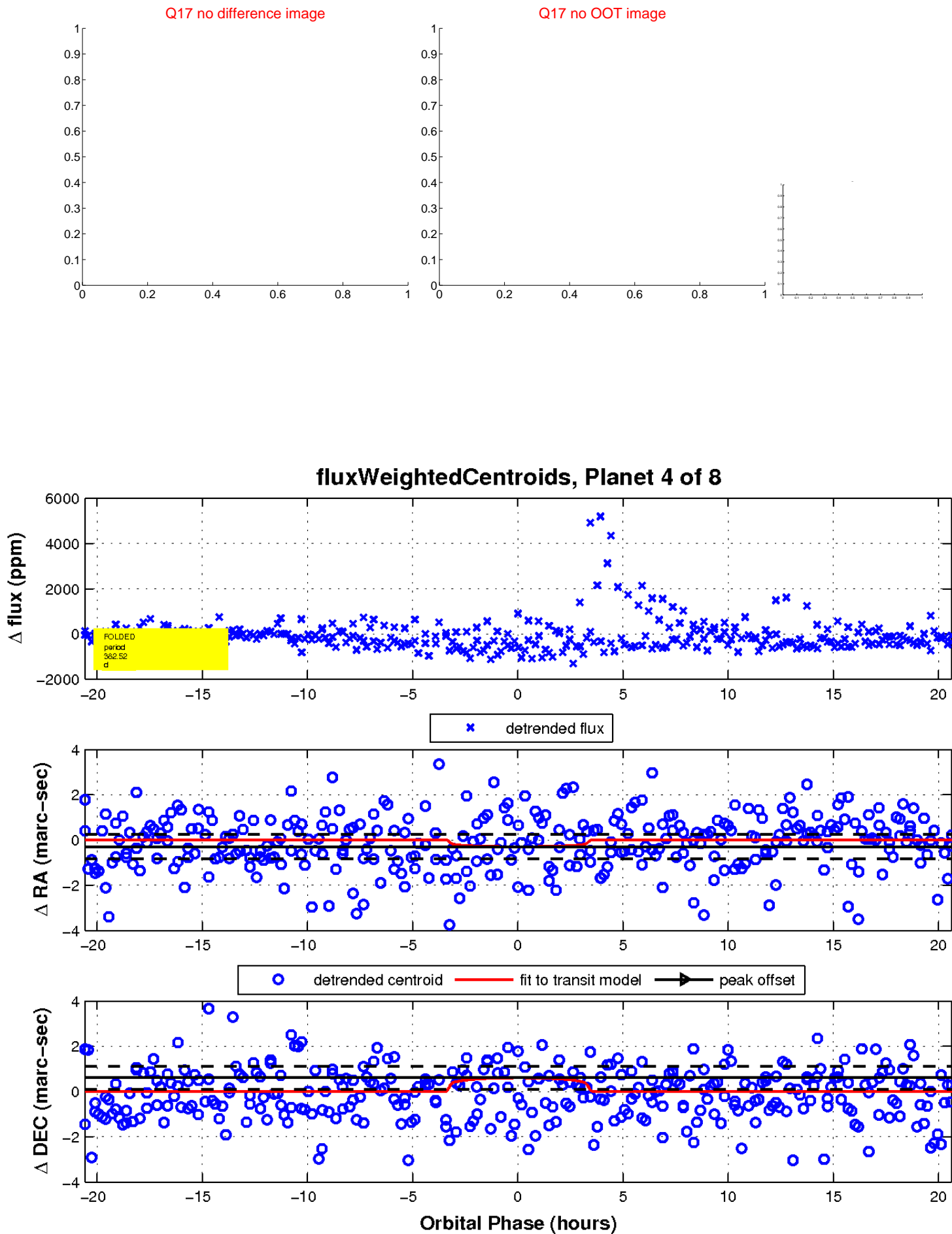
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

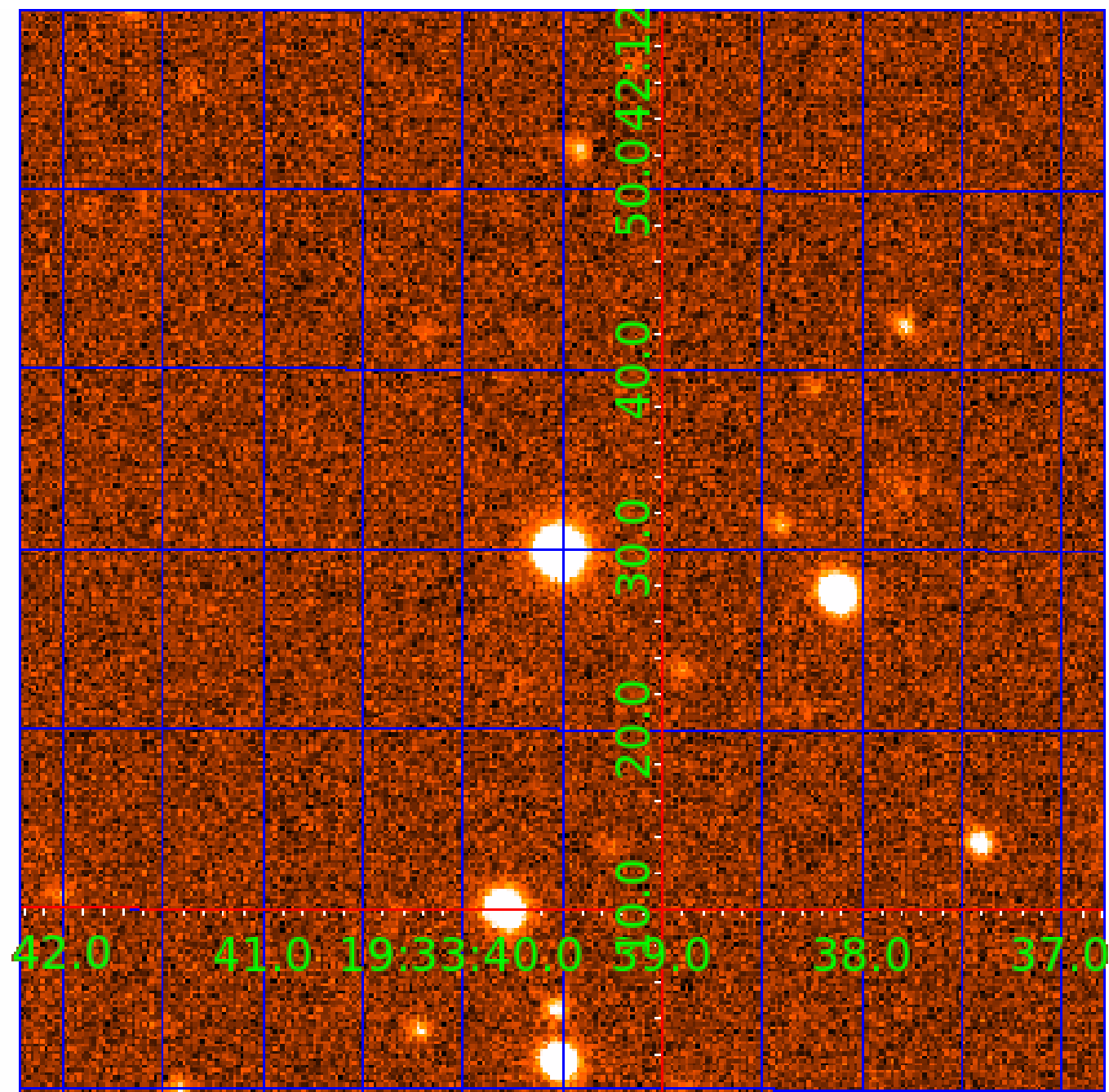


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination





# KIC 006697041

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006697041-01	OBS	No	560.179429	236.001075	777.9	5.987	14.9	7.5	0.66	5372	1.87	0.24
006697041-02	OBS	No	560.251987	433.550244	1144.0	6.975	21.7	9.6	0.66	5372	2.32	0.24
006697041-03	OBS	No	422.914325	520.970076	764.6	8.345	14.5	6.3	0.66	5372	1.92	0.35
006697041-04	OBS	No	382.523591	370.727132	576.7	6.888	11.7	5.8	0.66	5372	1.64	0.41
006697041-05	OBS	No	468.477500	317.928384	1242.6	14.468	11.7	9.6	0.66	5372	2.46	0.31
006697041-06	OBS	No	581.615296	233.381085	832.2	15.368	13.3	7.0	0.66	5372	1.93	0.23
006697041-07	OBS	No	316.778435	188.503522	678.1	10.697	11.2	8.1	0.66	5372	1.76	0.52
006697041-08	OBS	No	565.021990	414.543045	592.8	10.500	11.1	-1.0	0.66	5372	1.59	0.24

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006697041-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006697041-02	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—SAME_NTL_PERIOD—CENT_FEW_DIFFS
006697041-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_DIFFS
006697041-04	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
006697041-05	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
006697041-06	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006697041-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006697041-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

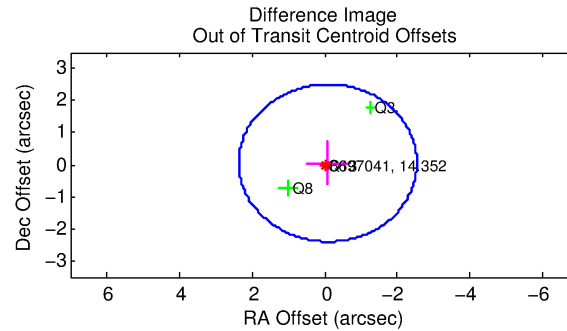
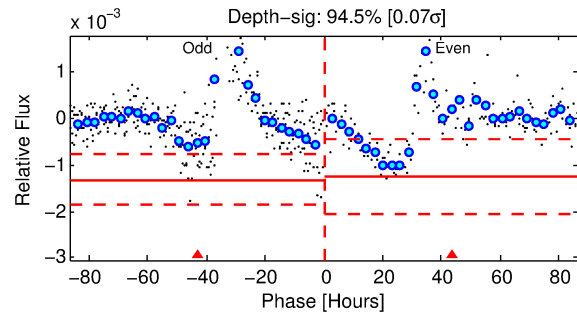
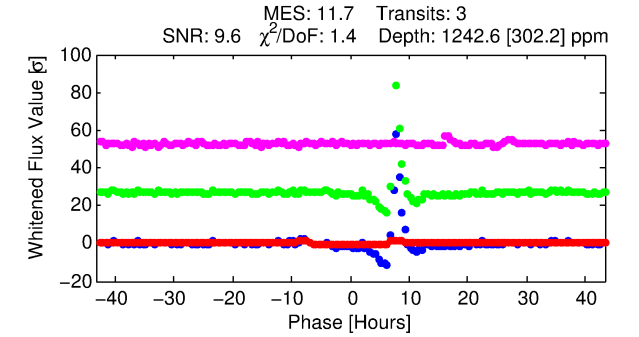
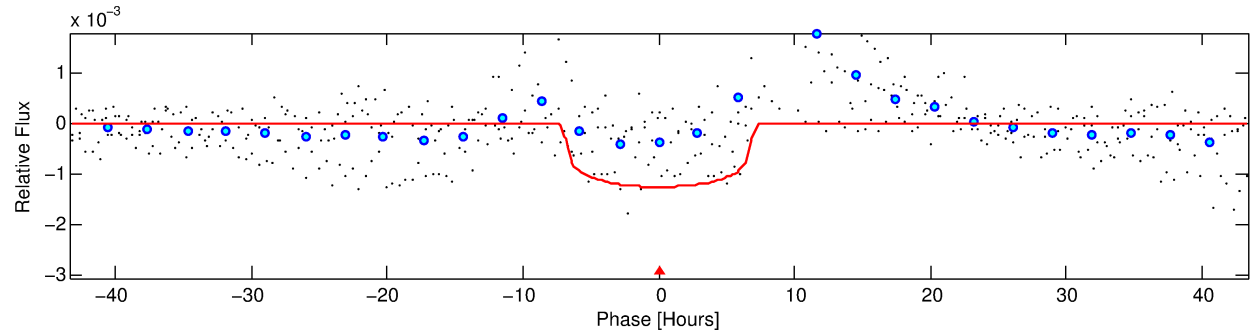
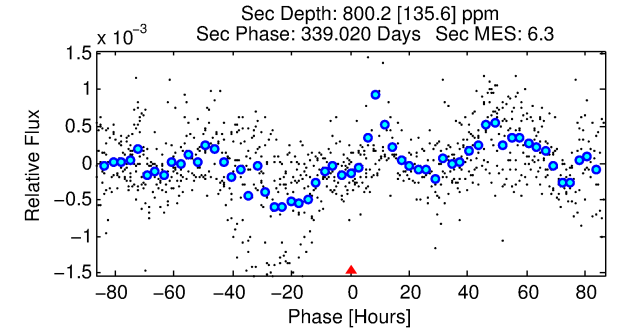
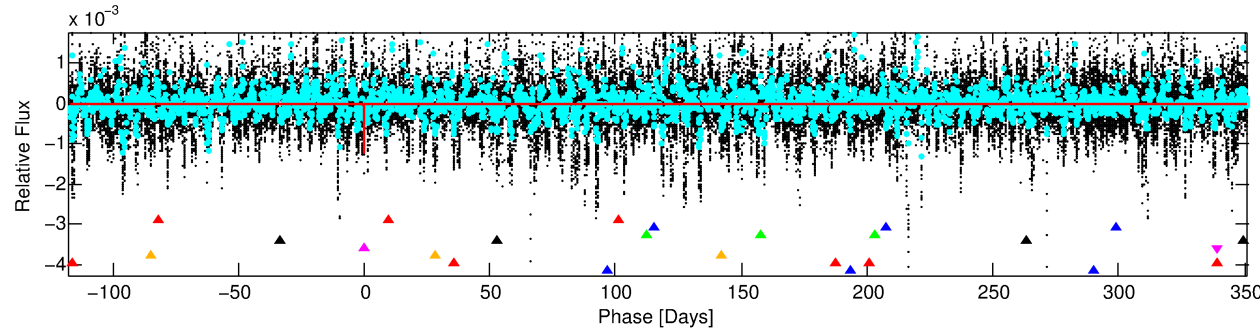
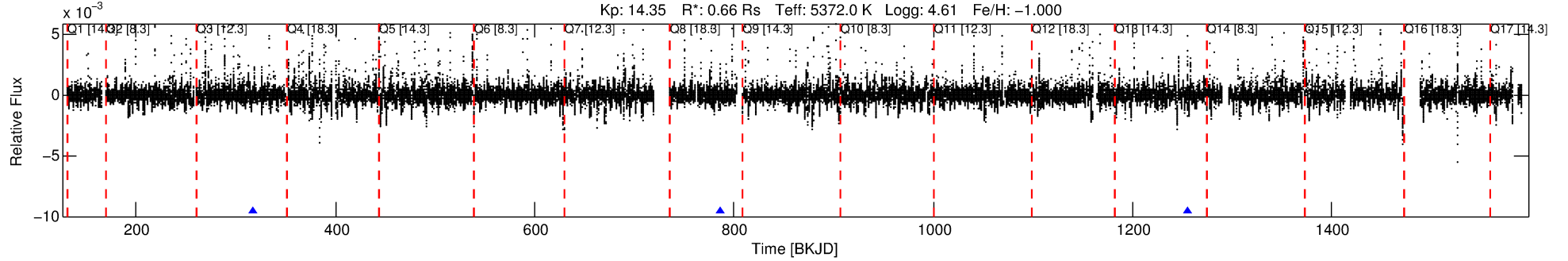
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006697041-05

No Significant Match Found

# DV One-Page Summary

KIC: 6697041 Candidate: 5 of 8 Period: 468.477 d



## DV Fit Results:

Period = 468.47750 [0.01309] d  
Epoch = 317.9284 [0.0170] BKJD  
Rp/R\* = 0.0343 [0.0077]  
a/R\* = 191.92 [147.16]  
b = 0.68 [0.60]  
Seff = 0.31 [0.06]  
Teq = 190 [9] K  
Rp = 2.46 [0.60] Re  
a = 1.0188 [0.0862] AU  
Ag = 75672.59 [37573.24] [2.01 $\sigma$ ]  
Teffp = 4877 [607] K [7.72 $\sigma$ ]

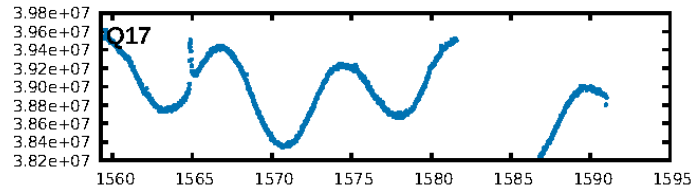
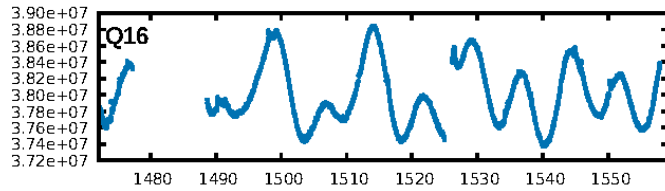
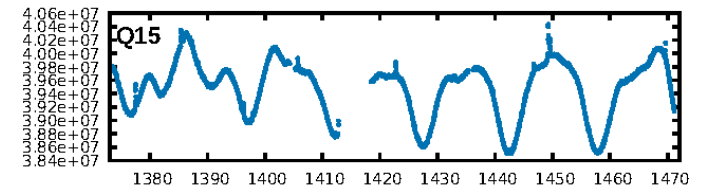
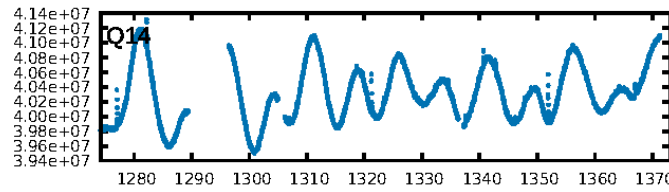
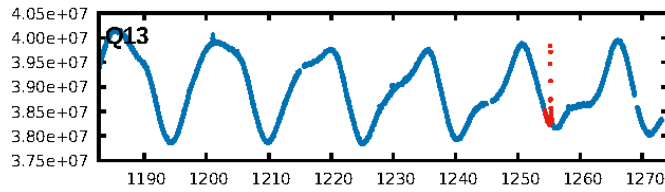
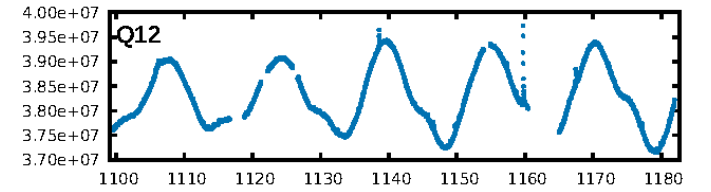
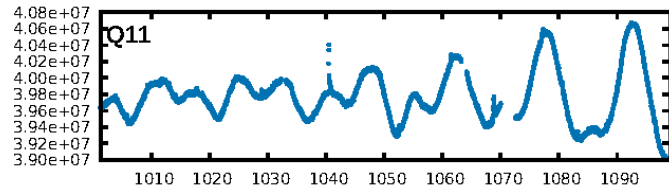
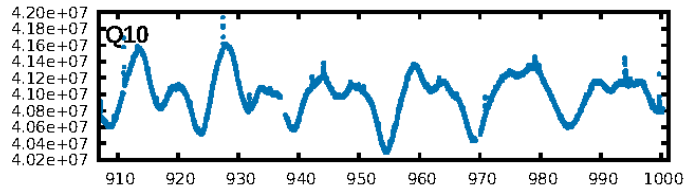
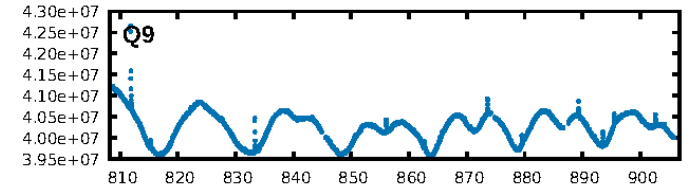
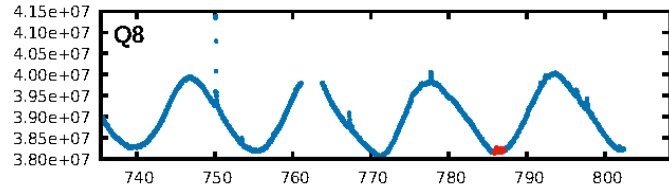
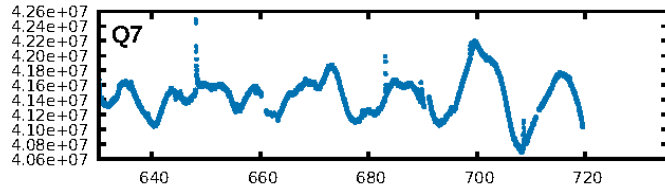
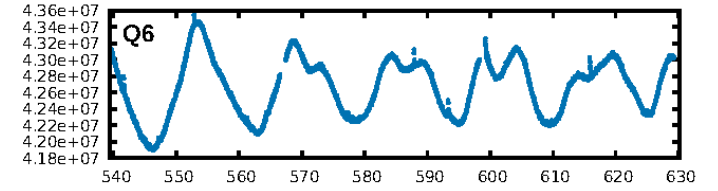
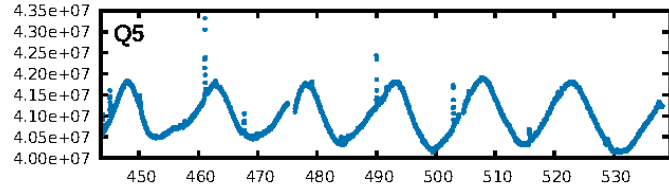
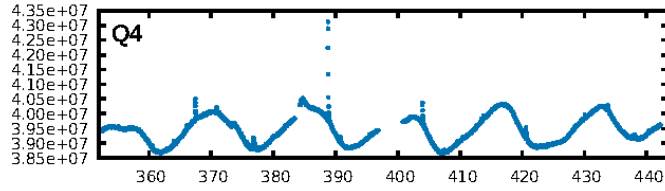
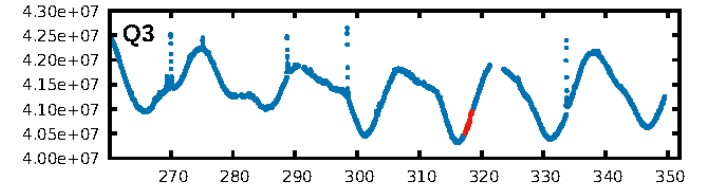
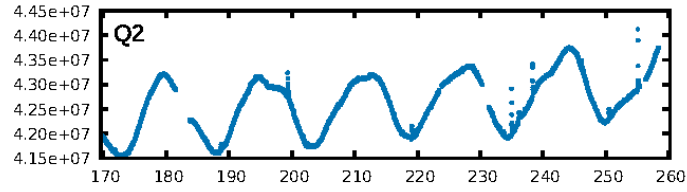
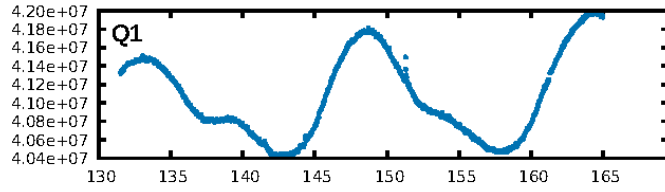
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [65.47 $\sigma$ ]  
LongPeriod-sig: 100.0% [140.56 $\sigma$ ]  
ModelChiSquare2-sig: 6.4%  
ModelChiSquareGof-sig: 96.7%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.516  
Centroid-sig: 0.4%  
Centroid-so: 1.276 arcsec [3.01 $\sigma$ ]  
OotOffset-rm: 0.100 arcsec [0.12 $\sigma$ ]  
KicOffset-rm: 0.025 arcsec [0.03 $\sigma$ ]  
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]

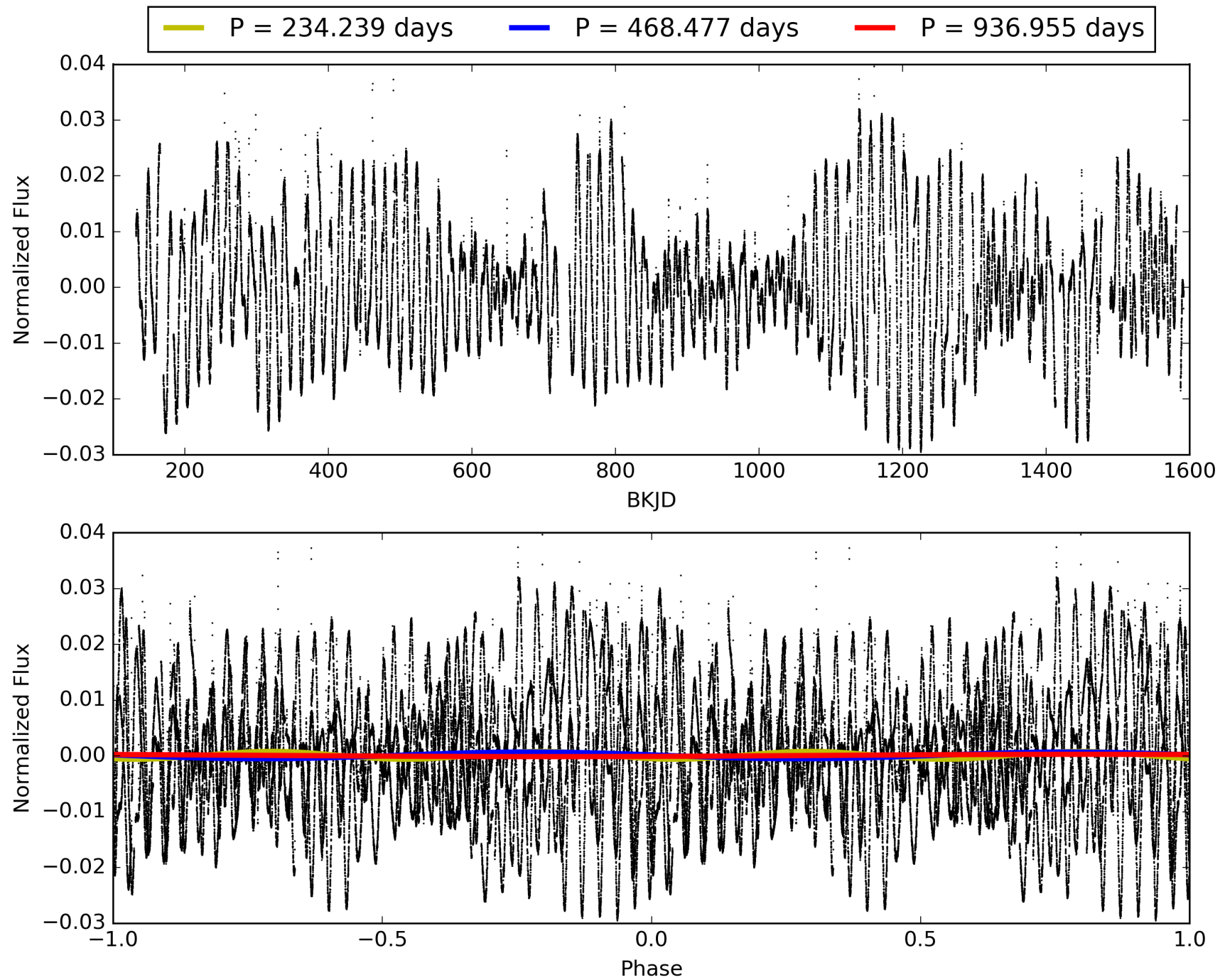
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:10:04 Z

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

# TCE 006697041-05, PDC Light Curves

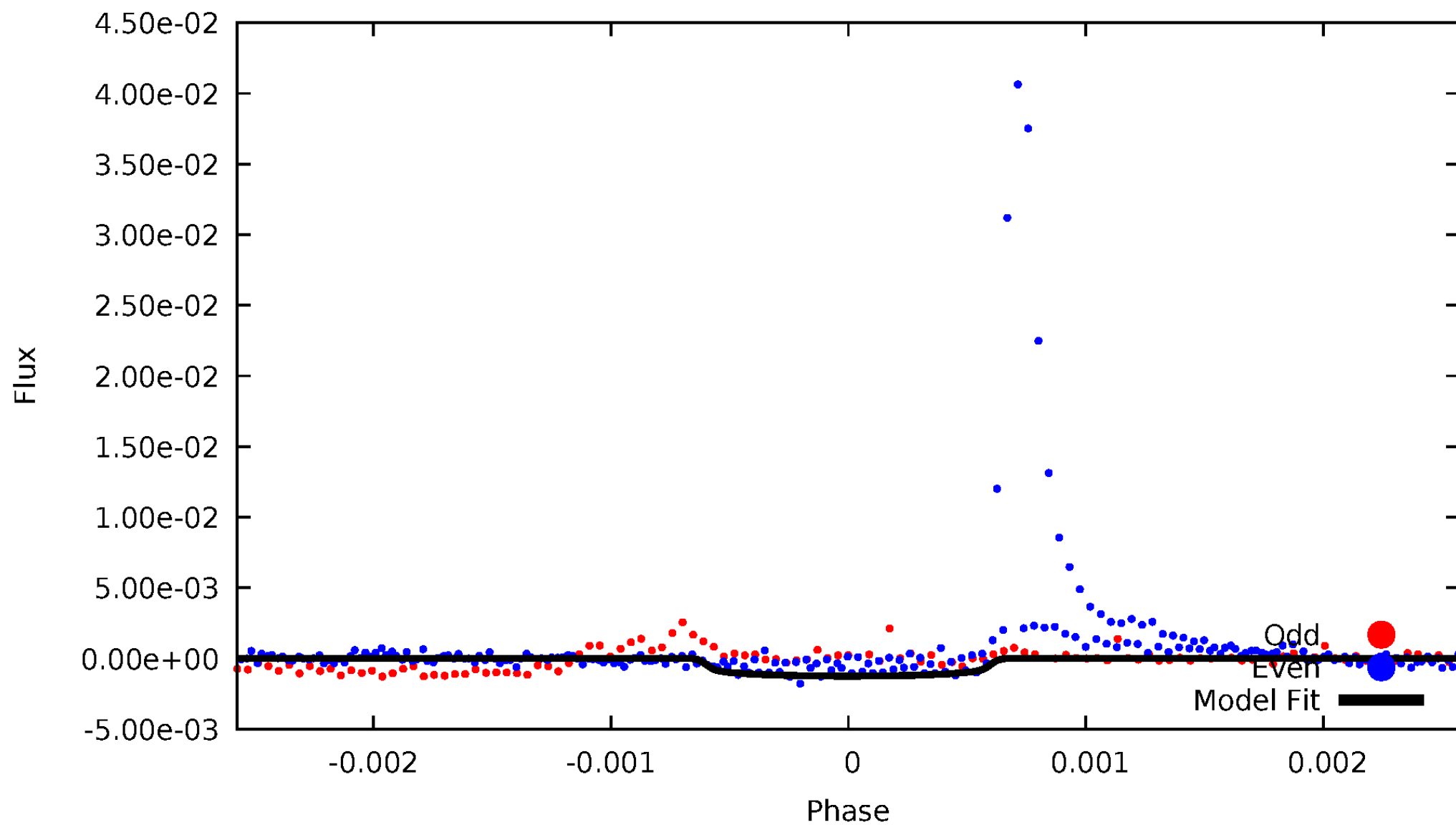


TCE 006697041-05



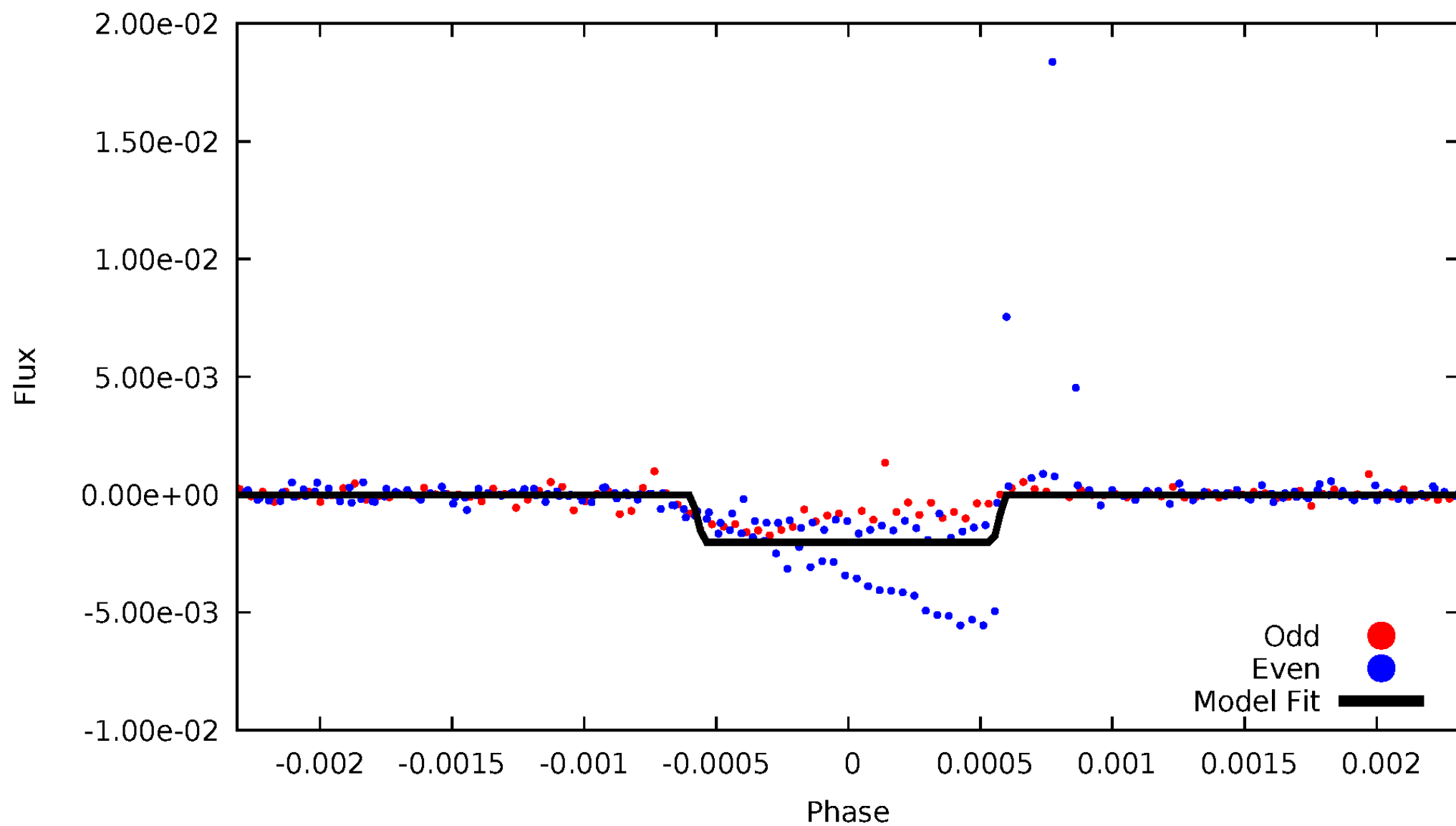
# DV Odd/Even

TCE 006697041-05



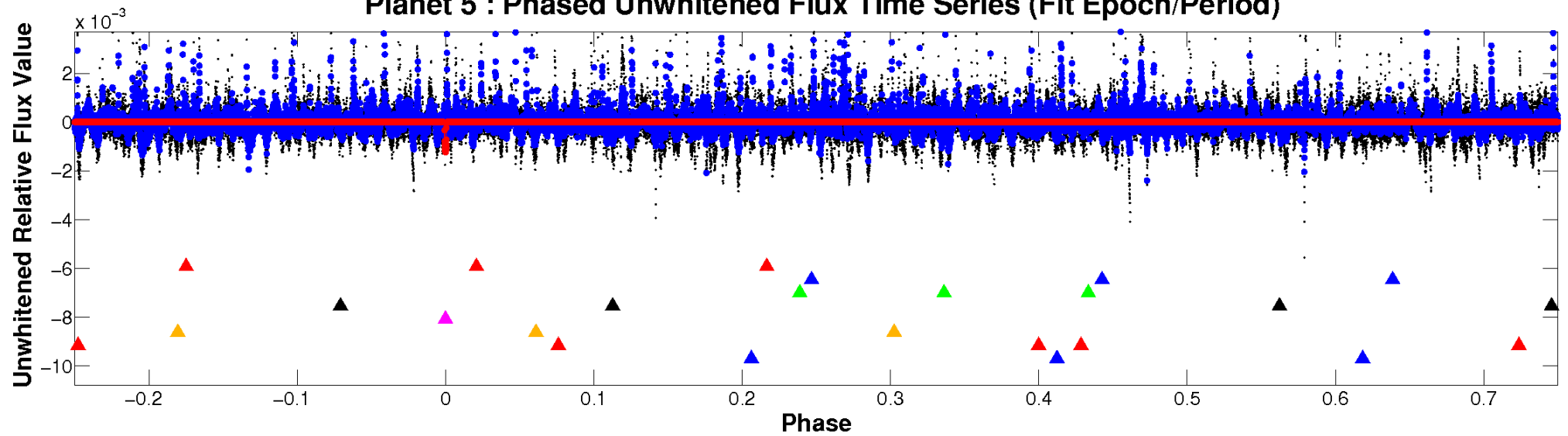
# ALT Odd/Even

TCE 006697041-05

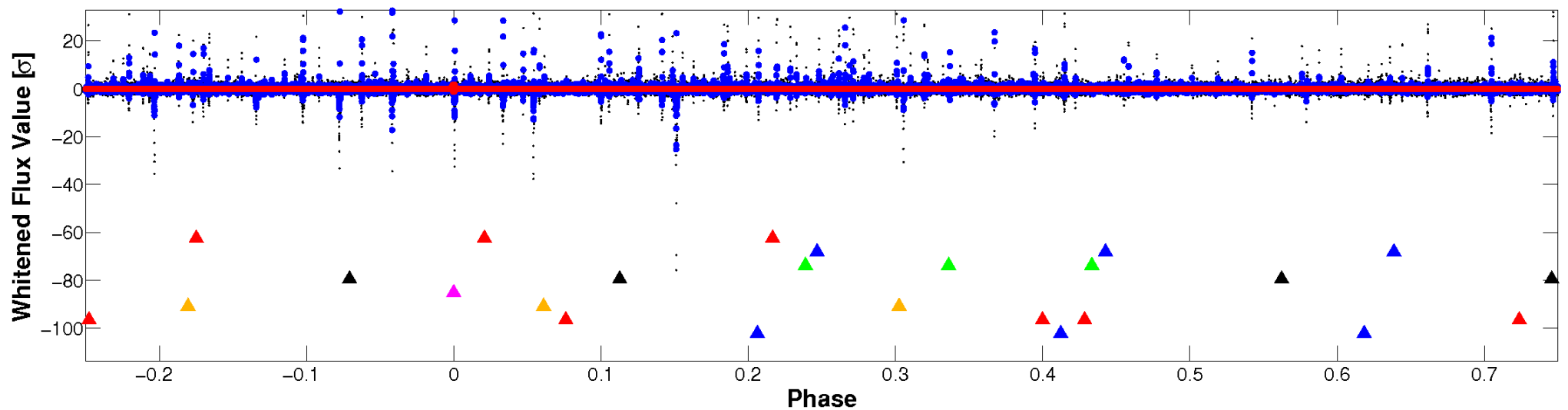


# Non-Whitened Vs. Whitened Light Curve

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

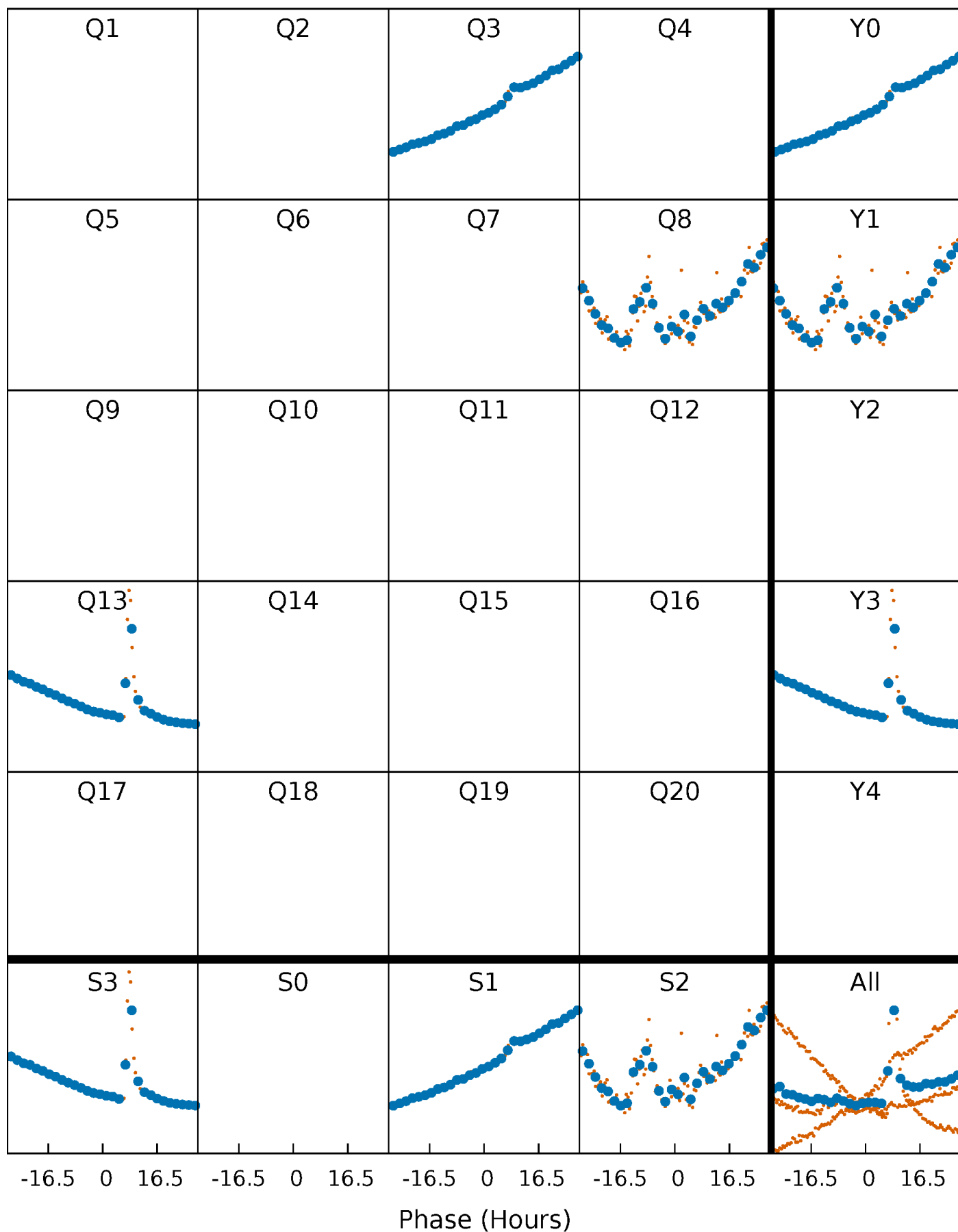


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

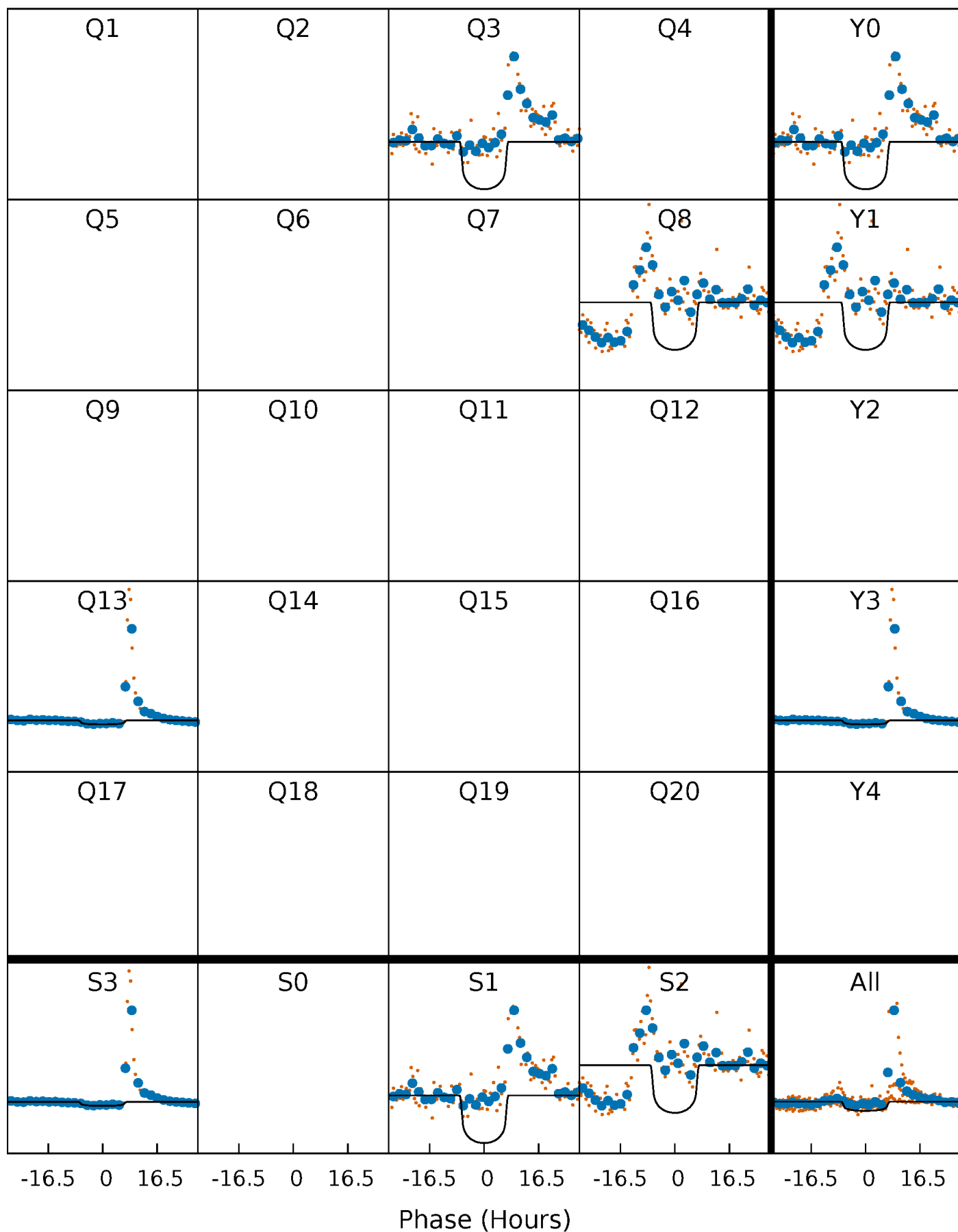
TCE 006697041-05     $P=468.477500$  Days     $T_0=317.928384$  (BKJD)





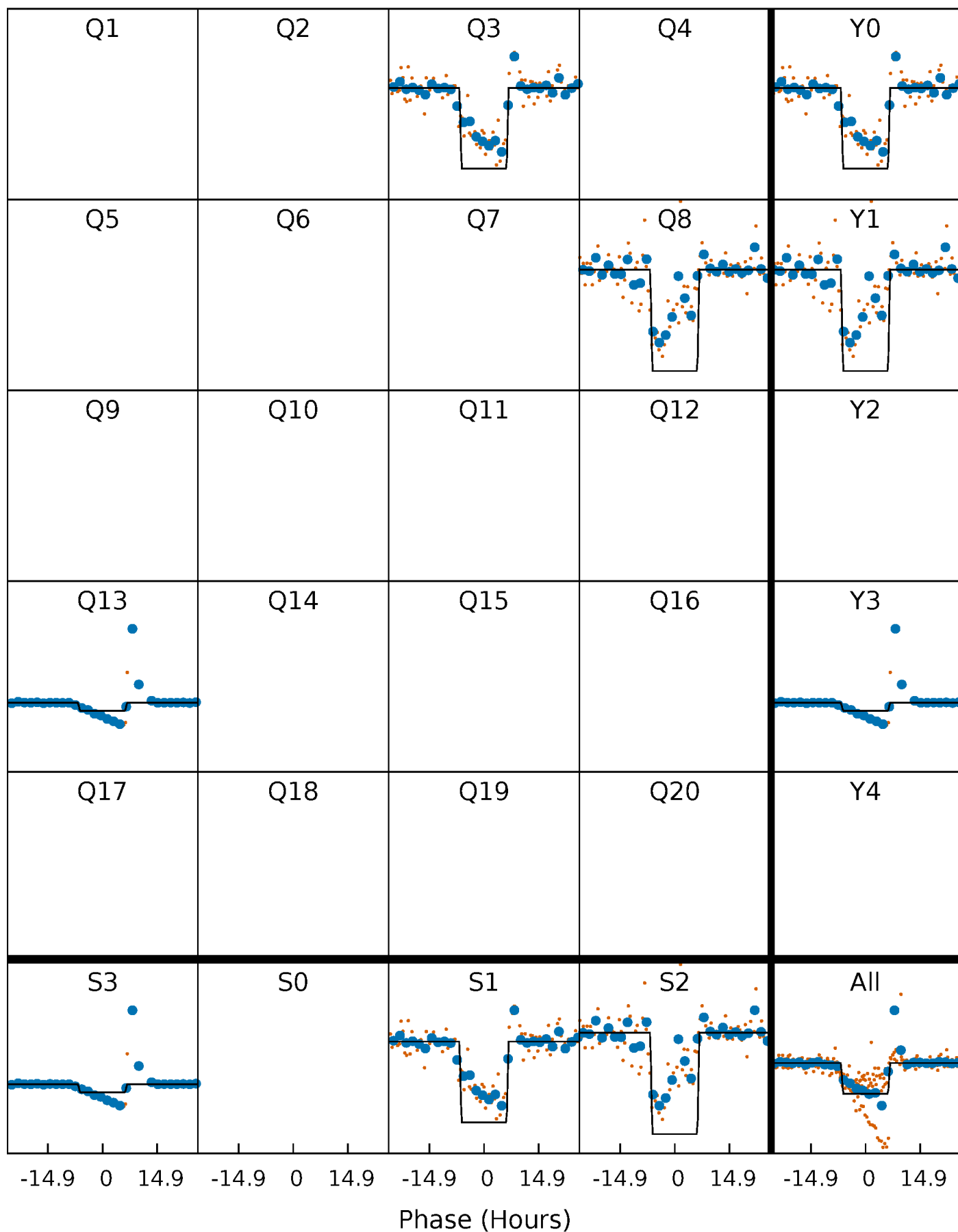
# DV Quarter-Phased Transit Curves

TCE 006697041-05     $P=468.477500$  Days     $T_0=317.928384$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

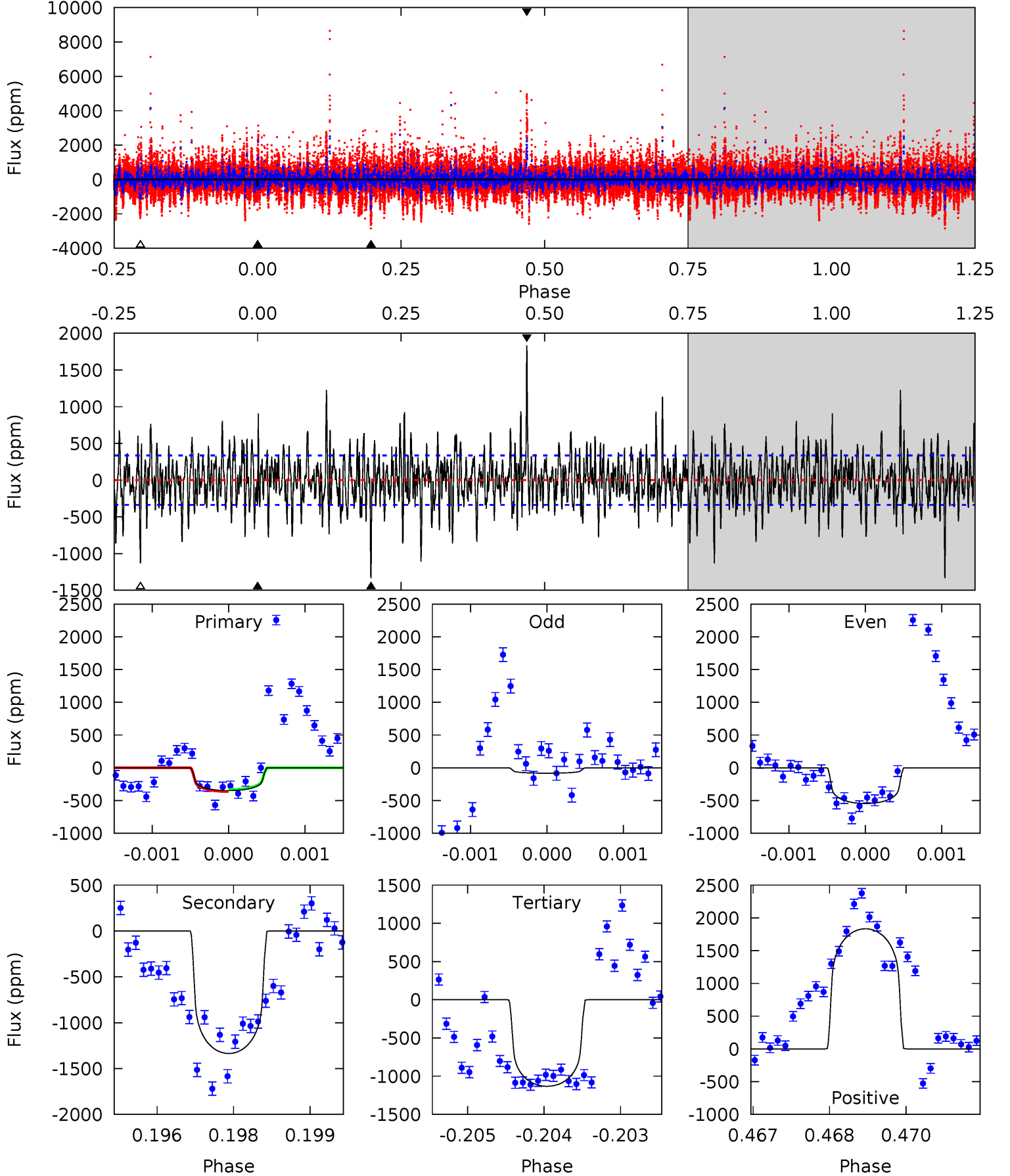
TCE 006697041-05     $P=468.473419$  Days     $T_0=317.949482$  (BKJD)



# DV Model-Shift Uniqueness Test

006697041-05, P = 468.477500 Days, E = 317.928384 Days

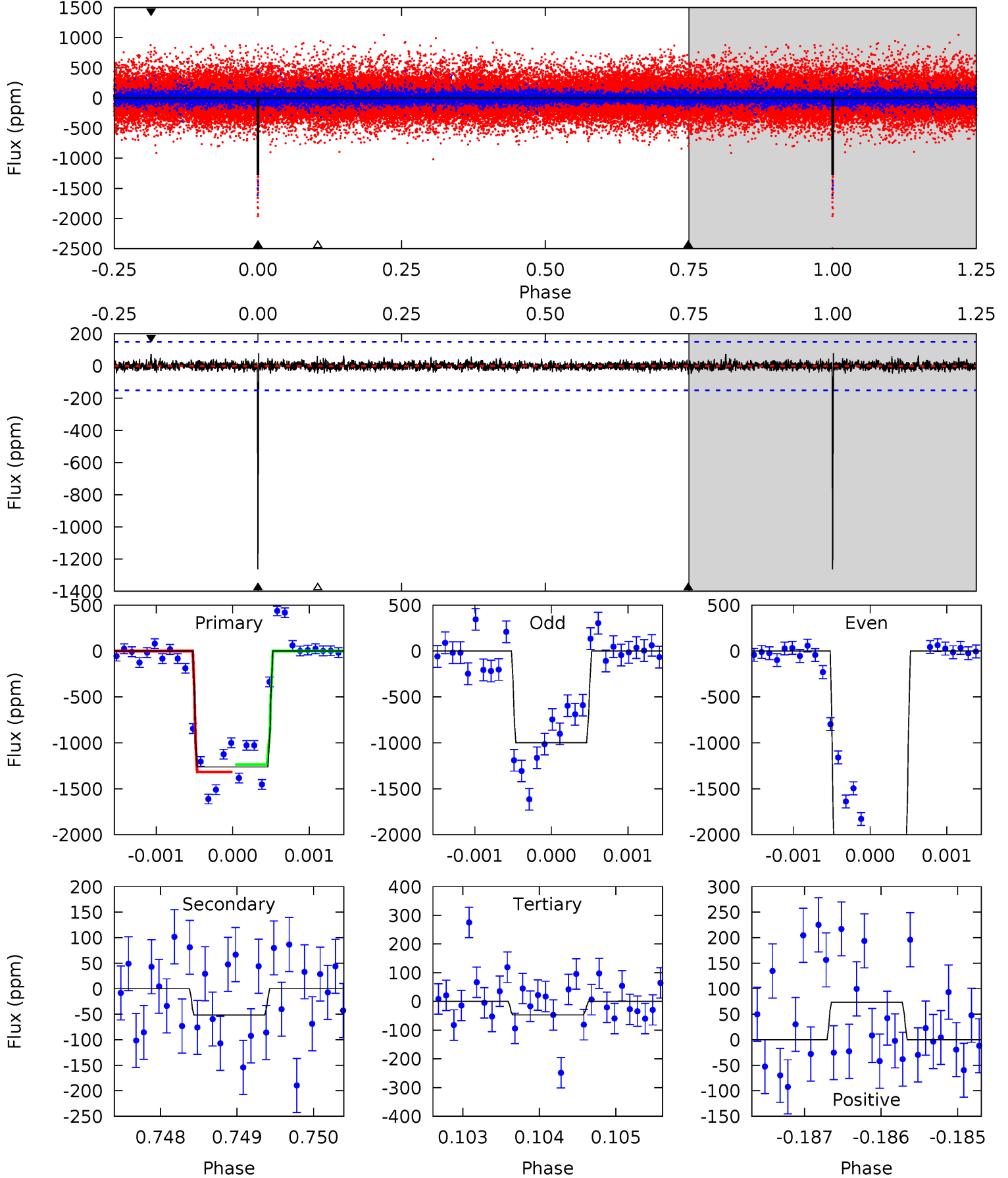
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.60	21.5	18.2	29.4	5.40	3.21	4.64	-12.6	-23.8	3.27	-8.00	2.51	4.76	0.58	0.23



# Alt Model-Shift Uniqueness Test

006697041-05, P = 468.473419 Days, E = 317.949482 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
45.4	1.85	1.68	2.65	5.43	3.25	0.46	43.7	42.8	0.16	-0.80	26.1	1.51	0.06	1.39



### Stellar Parameters For KIC 006697041

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5372^{+177}_{-145}$	$4.612^{+0.072}_{-0.054}$	$-1.000^{+0.300}_{-0.300}$	$0.656^{+0.063}_{-0.051}$	$0.642^{+0.061}_{-0.024}$	$3.210^{+0.917}_{-0.596}$
	+3%/-3%	+2%/-1%	+30%/-30%	+10%/-8%	+10%/-4%	+29%/-19%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 006697041-05 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-1336 \pm 62$	$2.48^{+0.60}_{-0.58}$	$264^{+11}_{-9}$	$5533^{+723}_{-543}$	$126536^{+88146}_{-44621}$
Alt.	$-51 \pm 28$	$3.21^{+0.58}_{-0.54}$	$264^{+11}_{-10}$	$2848^{+263}_{-304}$	$2878^{+2249}_{-1699}$

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

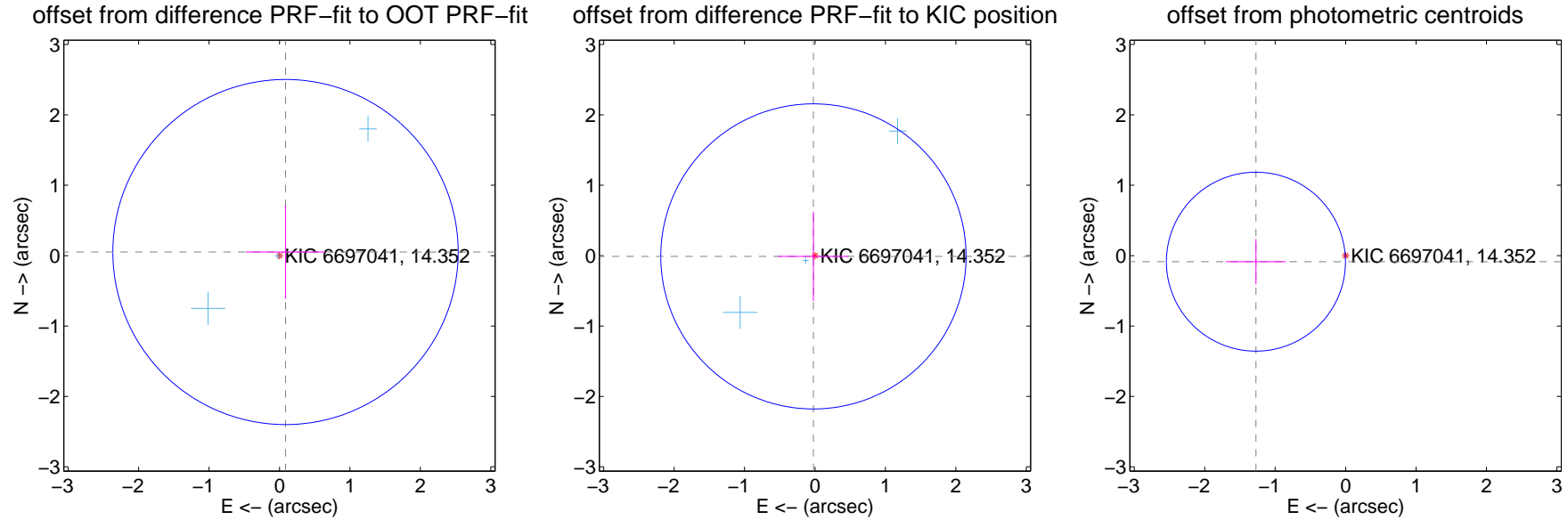
## DV Centroid Data

Supplemental centroid analysis for 006697041-05. Kepler magnitude: 14.35. Transit SNR 9.59

There are 3 quarters with good PRF difference image offsets

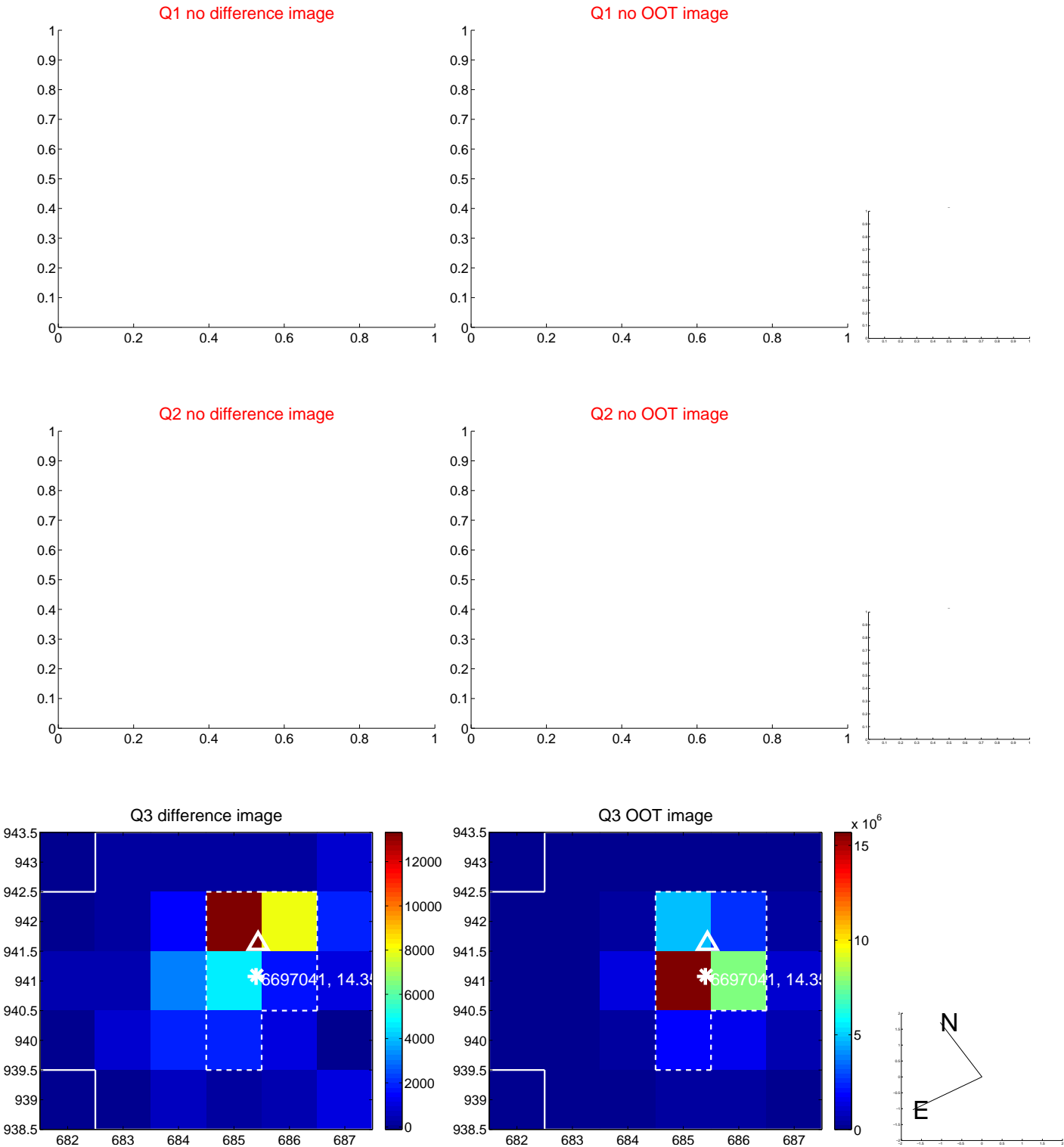
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.100 \pm 0.817$	0.12	$-0.086 \pm 0.561$	$0.051 \pm 0.665$
PRF-fit source offset from KIC position	$0.025 \pm 0.723$	0.03	$0.022 \pm 0.497$	$-0.011 \pm 0.635$
photometric centroid source offset	$1.28 \pm 0.42$	3.01	$1.27 \pm 0.42$	$-0.09 \pm 0.32$

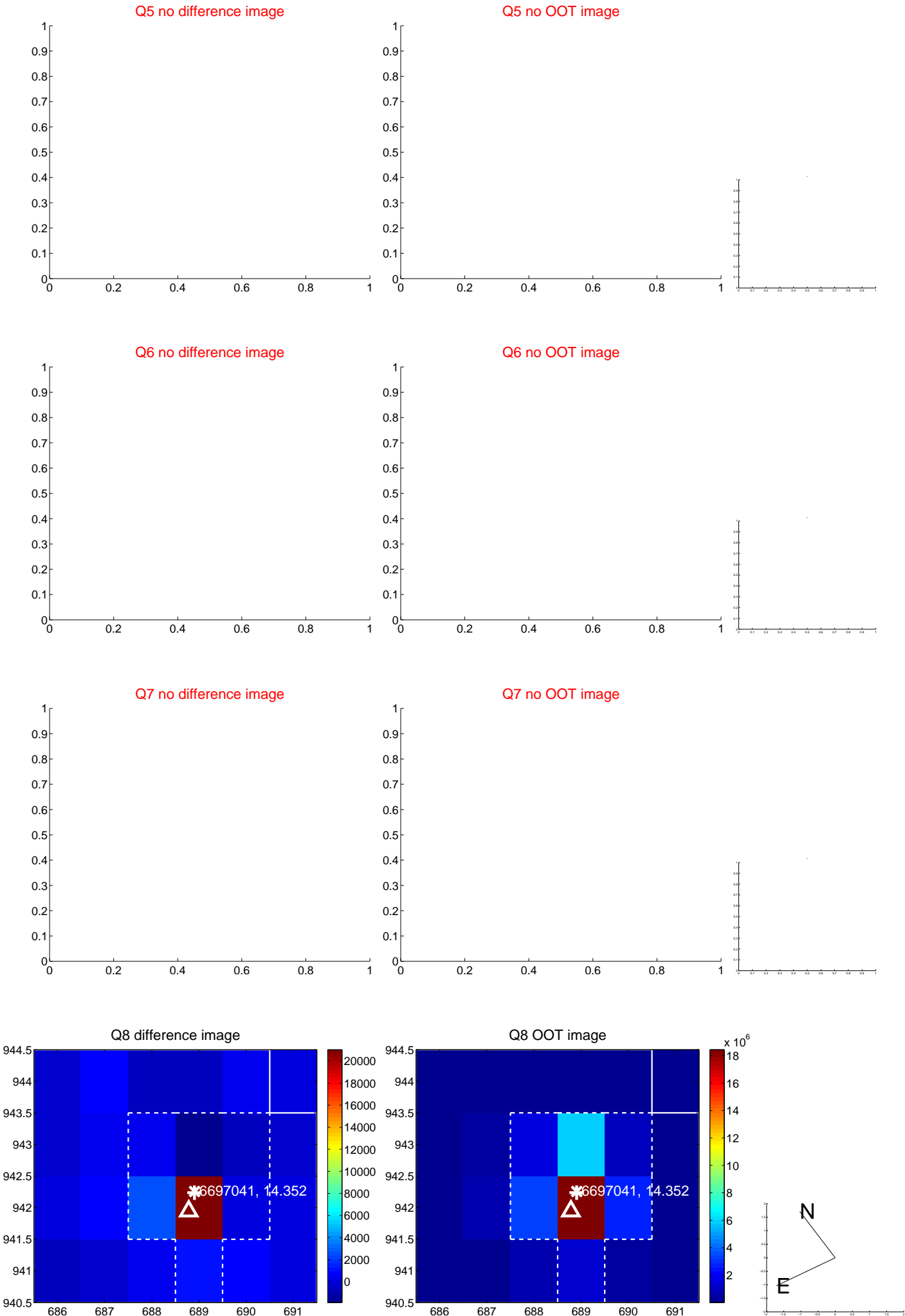


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

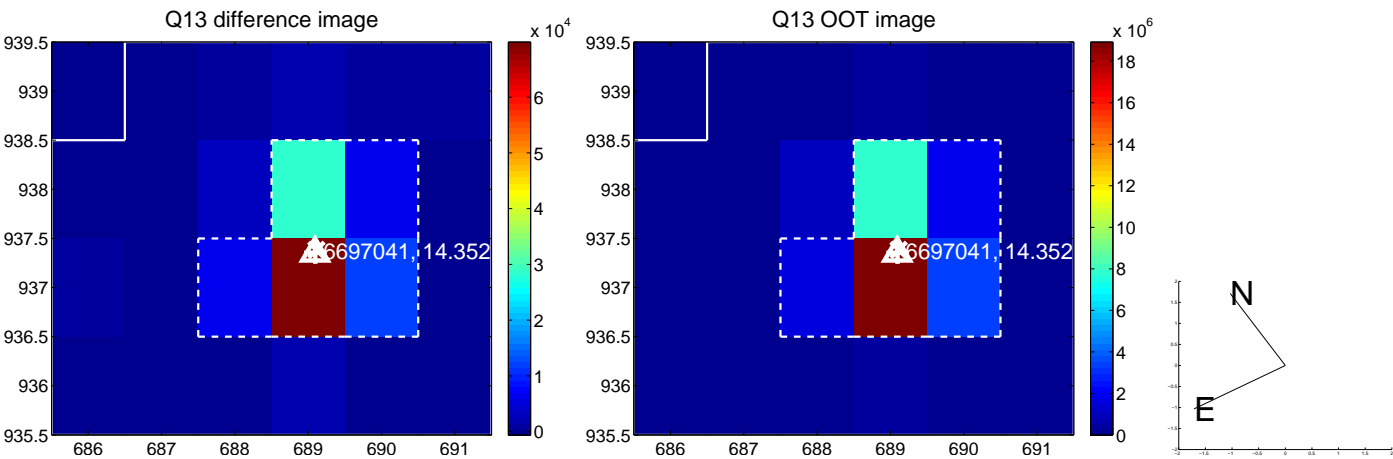




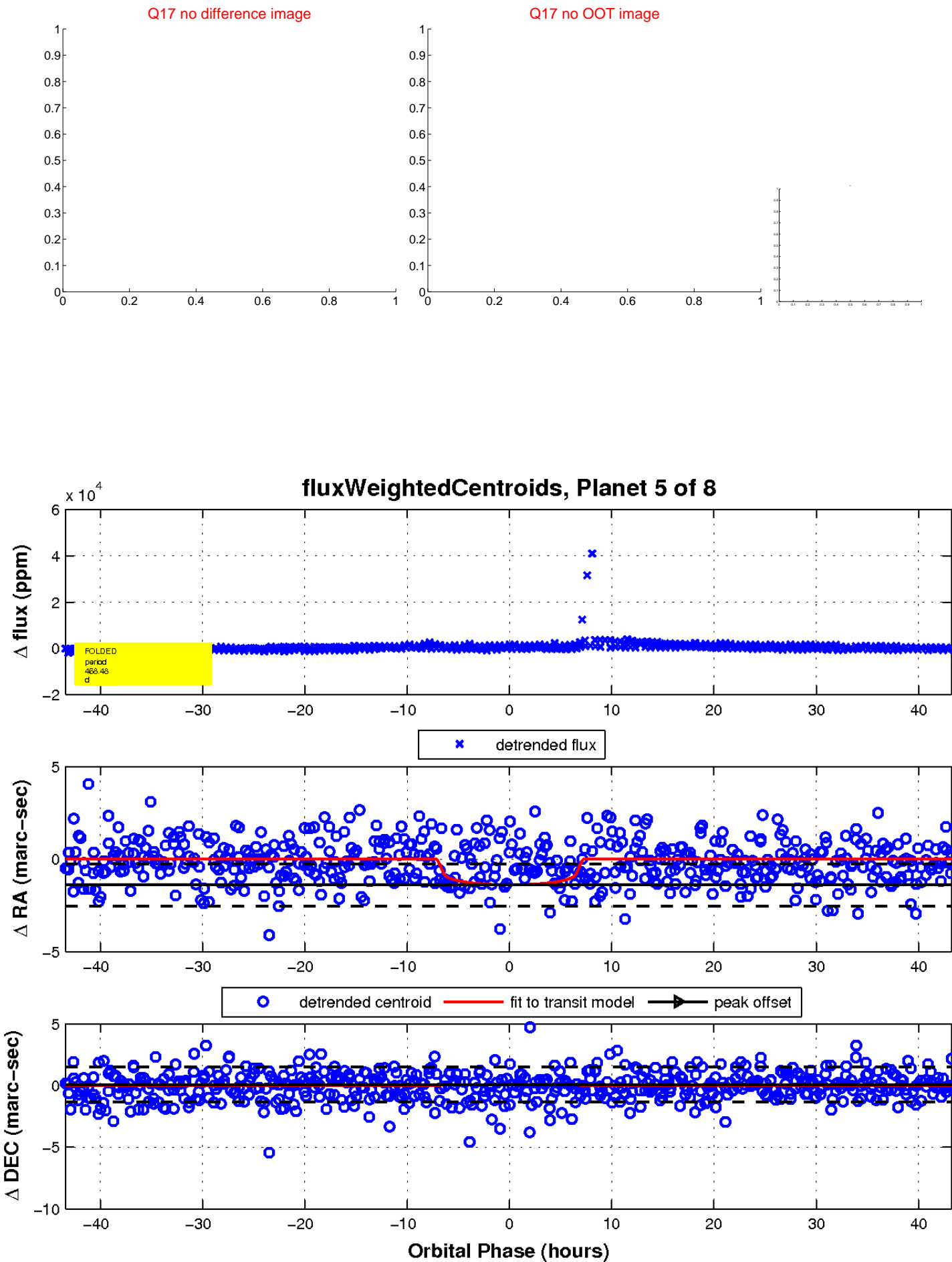
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

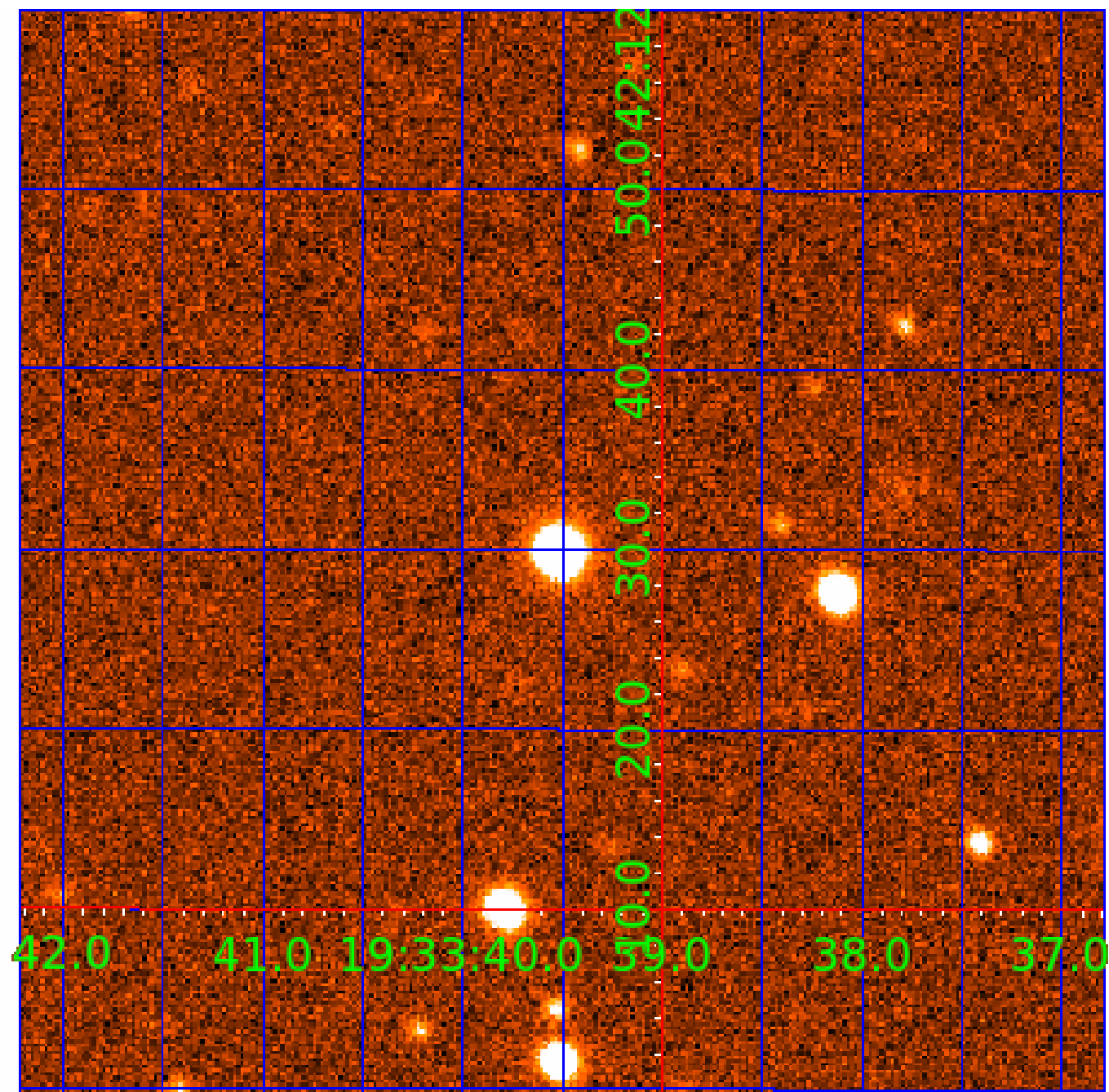


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination



# KIC 006697041

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006697041-01	OBS	No	560.179429	236.001075	777.9	5.987	14.9	7.5	0.66	5372	1.87	0.24
006697041-02	OBS	No	560.251987	433.550244	1144.0	6.975	21.7	9.6	0.66	5372	2.32	0.24
006697041-03	OBS	No	422.914325	520.970076	764.6	8.345	14.5	6.3	0.66	5372	1.92	0.35
006697041-04	OBS	No	382.523591	370.727132	576.7	6.888	11.7	5.8	0.66	5372	1.64	0.41
006697041-05	OBS	No	468.477500	317.928384	1242.6	14.468	11.7	9.6	0.66	5372	2.46	0.31
006697041-06	OBS	No	581.615296	233.381085	832.2	15.368	13.3	7.0	0.66	5372	1.93	0.23
006697041-07	OBS	No	316.778435	188.503522	678.1	10.697	11.2	8.1	0.66	5372	1.76	0.52
006697041-08	OBS	No	565.021990	414.543045	592.8	10.500	11.1	-1.0	0.66	5372	1.59	0.24

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006697041-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006697041-02	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—SAME_NTL_PERIOD—CENT_FEW_DIFFS
006697041-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_DIFFS
006697041-04	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
006697041-05	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
006697041-06	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006697041-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006697041-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

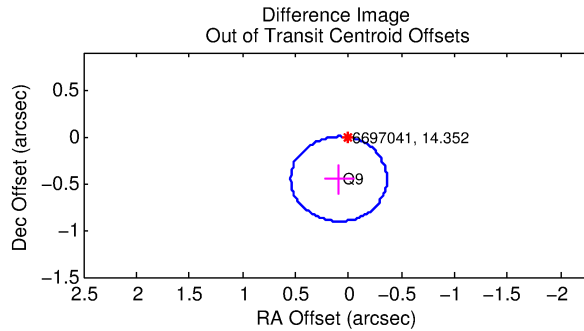
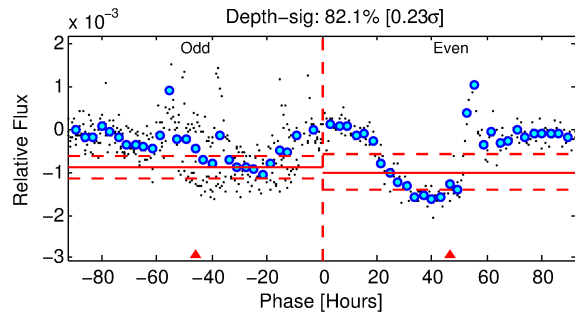
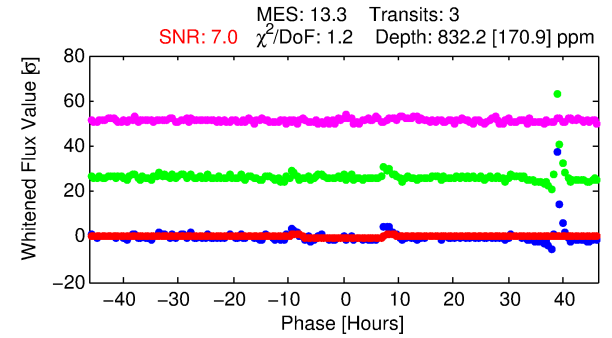
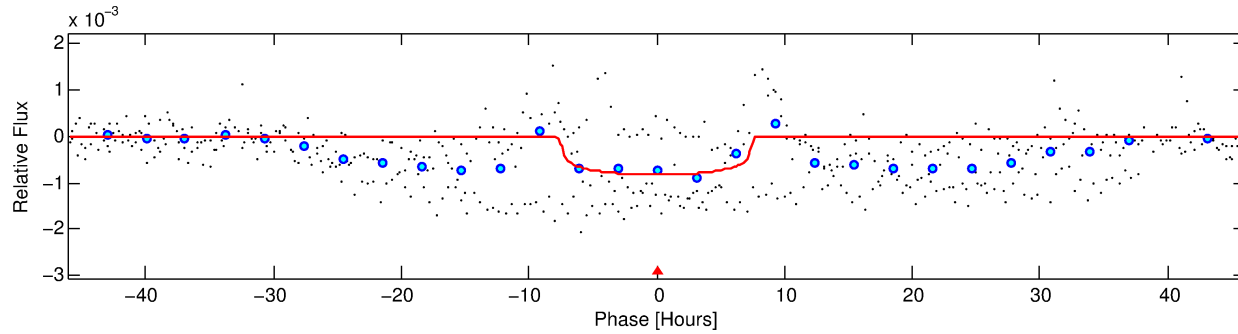
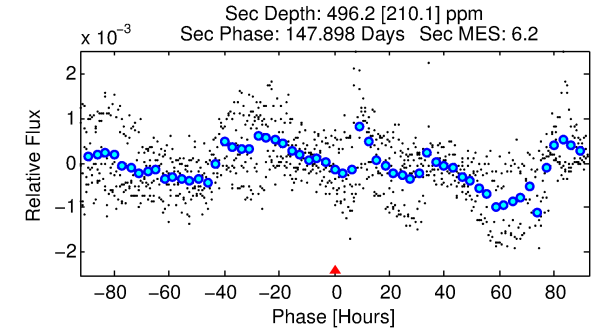
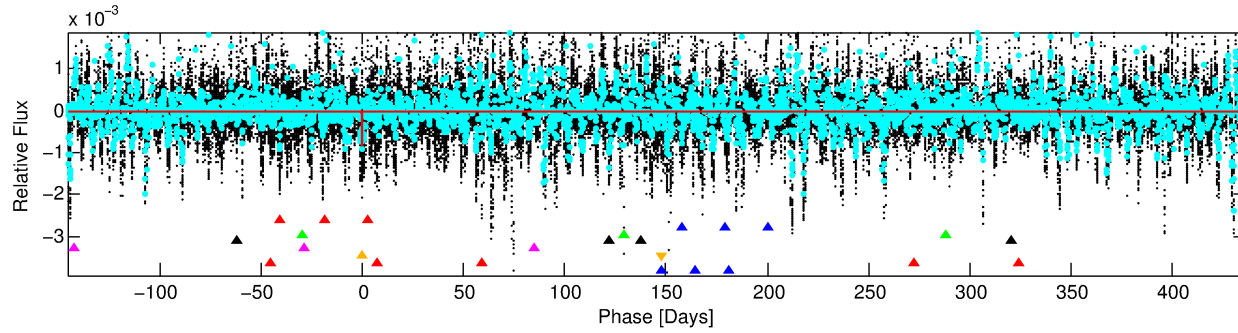
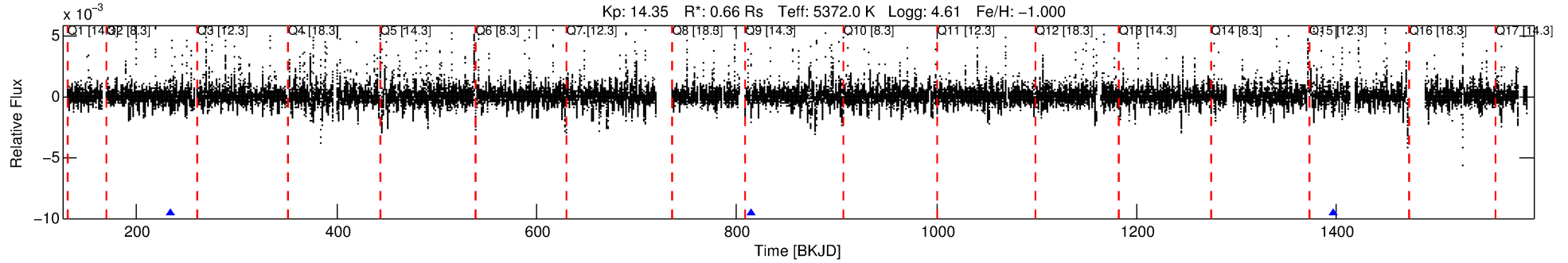
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006697041-06

No Significant Match Found

# DV One-Page Summary

KIC: 6697041 Candidate: 6 of 8 Period: 581.615 d



## DV Fit Results:

Period = 581.61530 [0.01114] d  
Epoch = 233.3811 [0.0144] BKJD  
Rp/R\* = 0.0270 [0.0088]  
a/R\* = 263.34 [351.64]  
b = 0.47 [2.19]  
Seff = 0.23 [0.04]  
Teq = 177 [8] K  
Rp = 1.93 [0.65] Re  
a = 1.1769 [0.0995] AU  
Ag = 101341.24 [79579.48] [1.27 $\sigma$ ]  
Teffp = 4881 [959] K [4.90 $\sigma$ ]

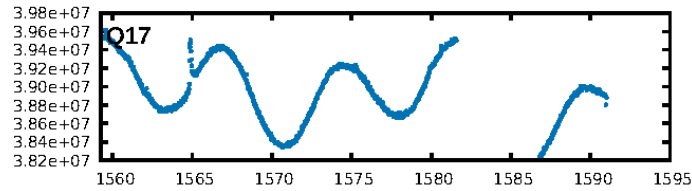
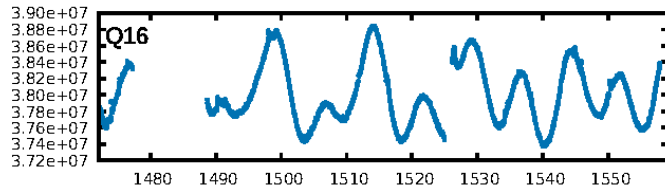
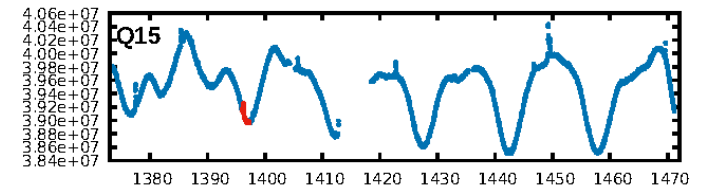
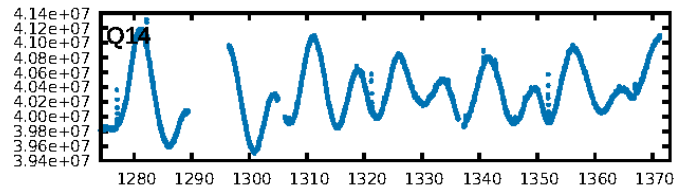
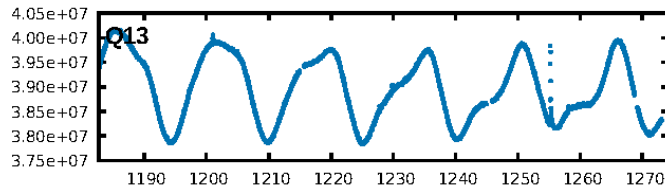
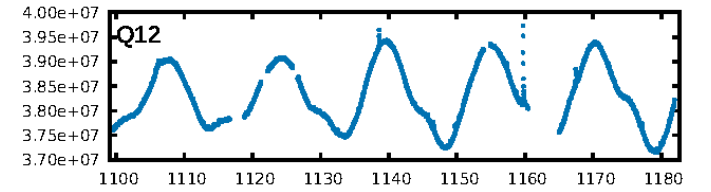
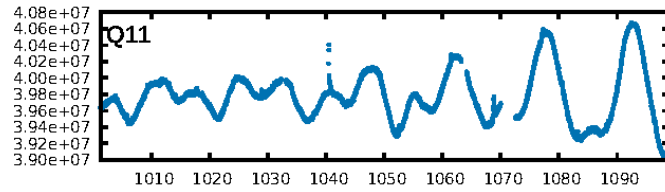
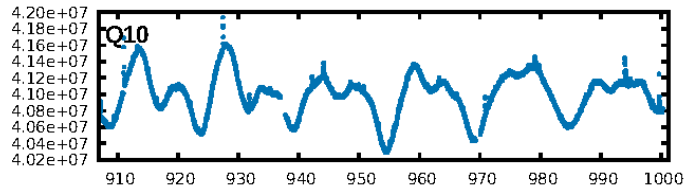
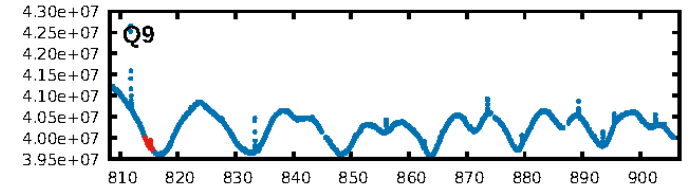
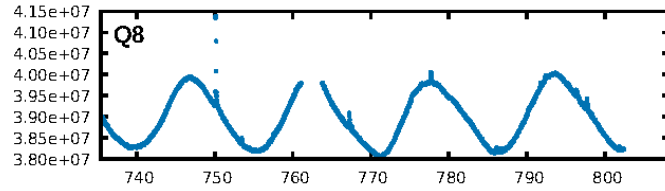
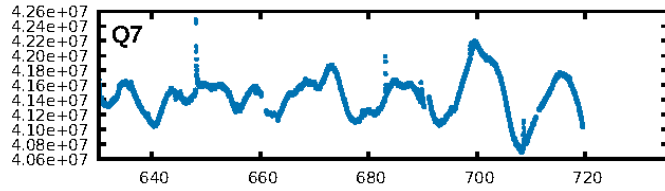
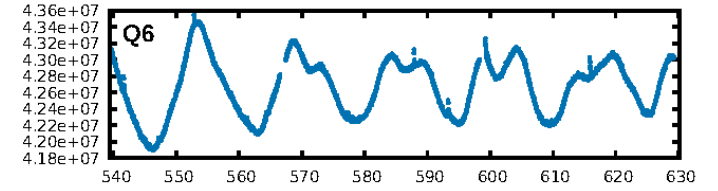
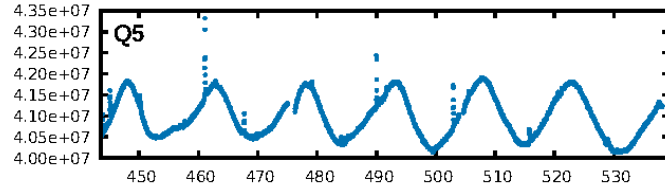
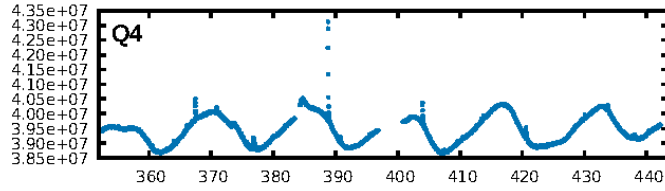
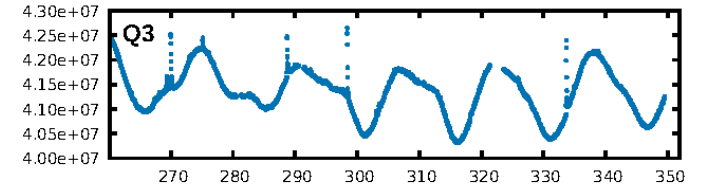
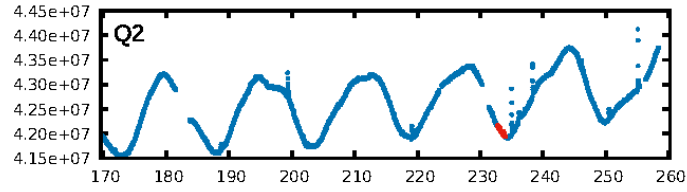
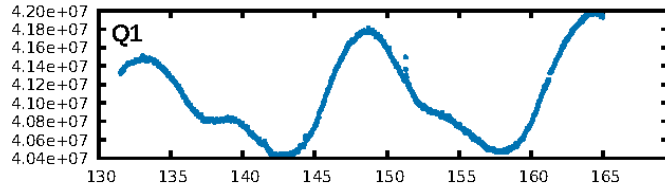
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [21.40 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 40.0%  
ModelChiSquareGof-sig: 99.7%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -2.176  
Centroid-sig: 92.4%  
Centroid-so: 0.253 arcsec [0.56 $\sigma$ ]  
OotOffset-rm: 0.461 arcsec [3.06 $\sigma$ ]  
KicOffset-rm: 0.536 arcsec [3.60 $\sigma$ ]  
OotOffset-st: 0/0/0/1 [1]  
KicOffset-st: 0/0/0/1 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [2/2]

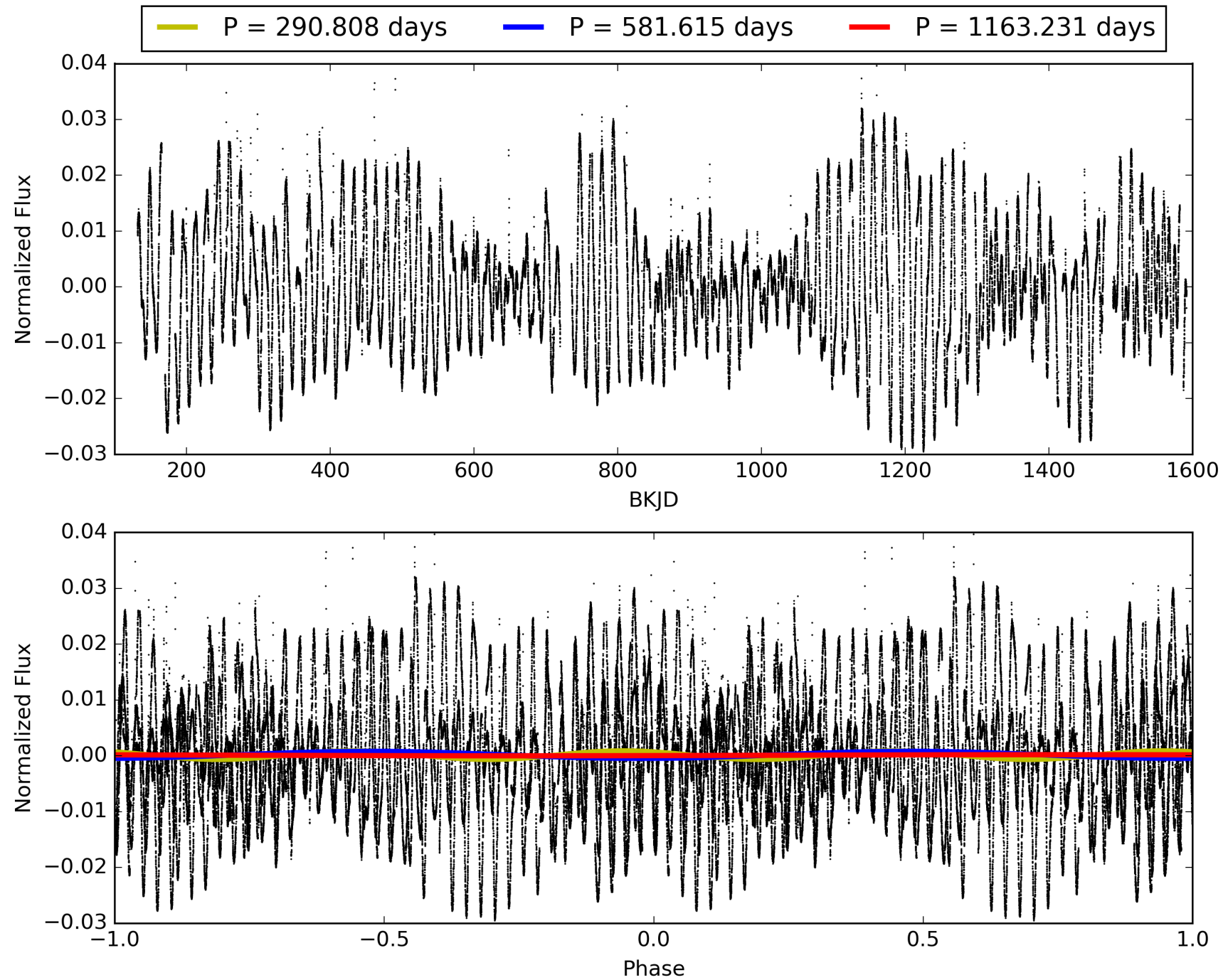
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 006697041-06, PDC Light Curves



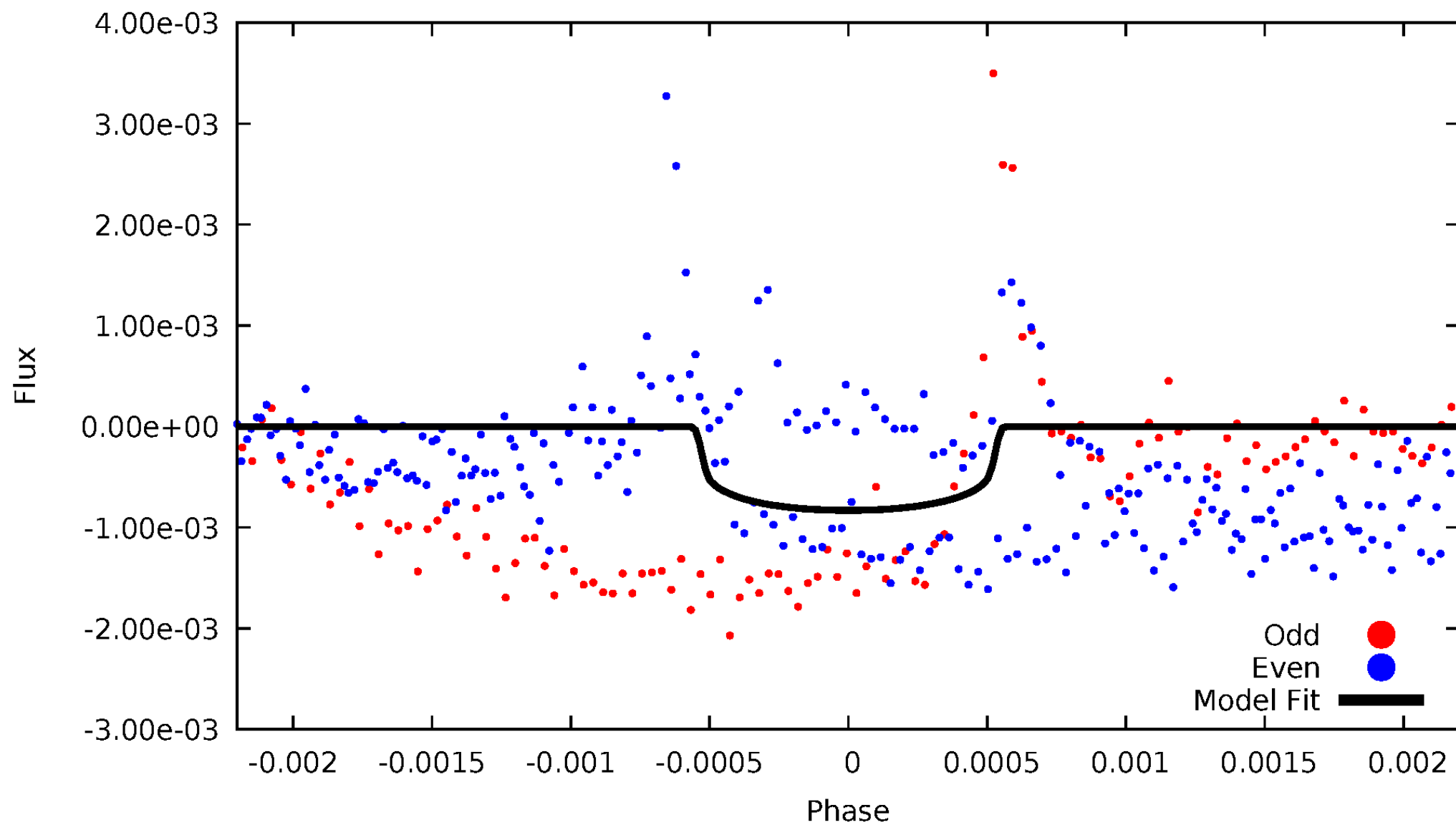
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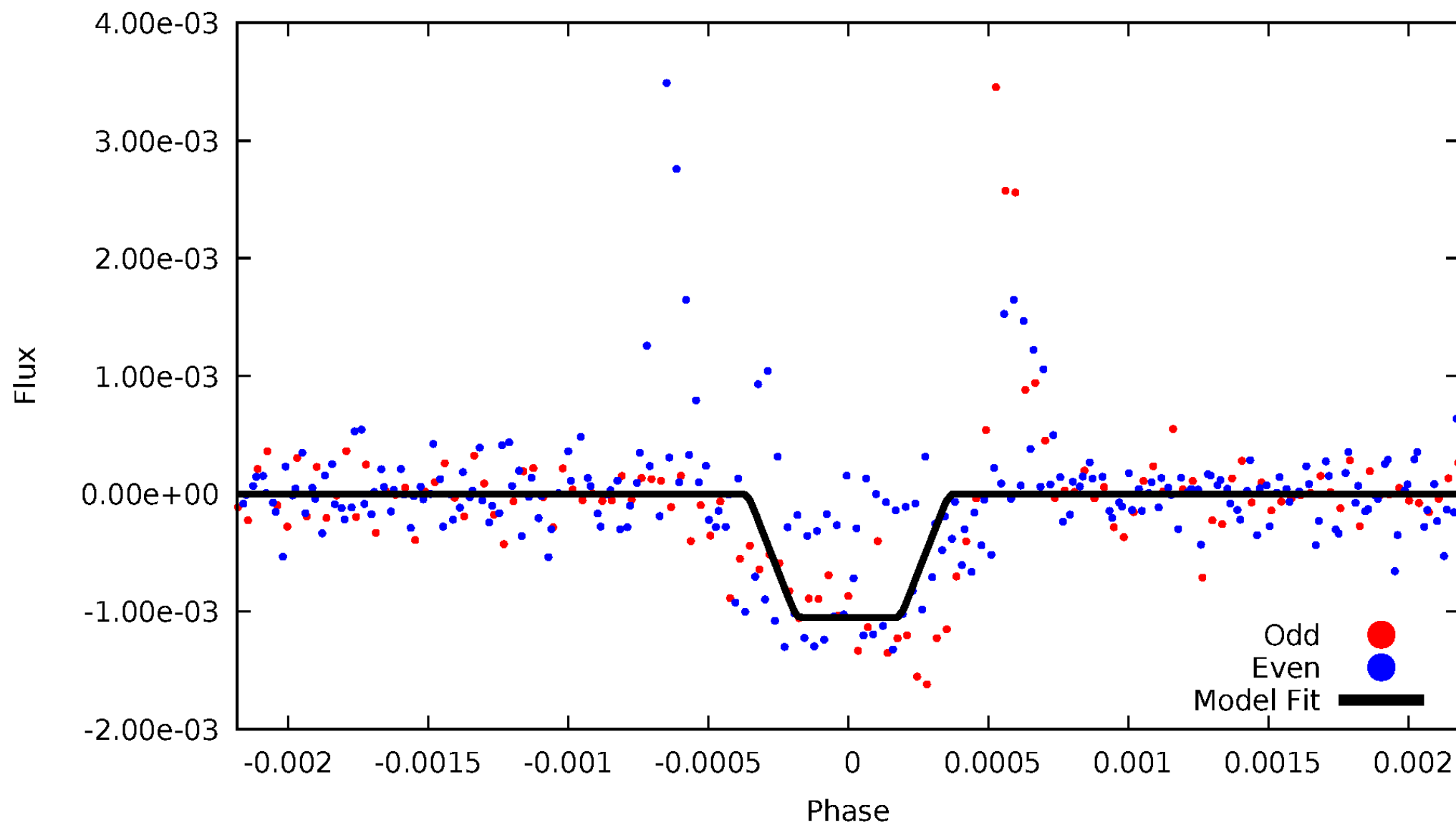
# DV Odd/Even

TCE 006697041-06



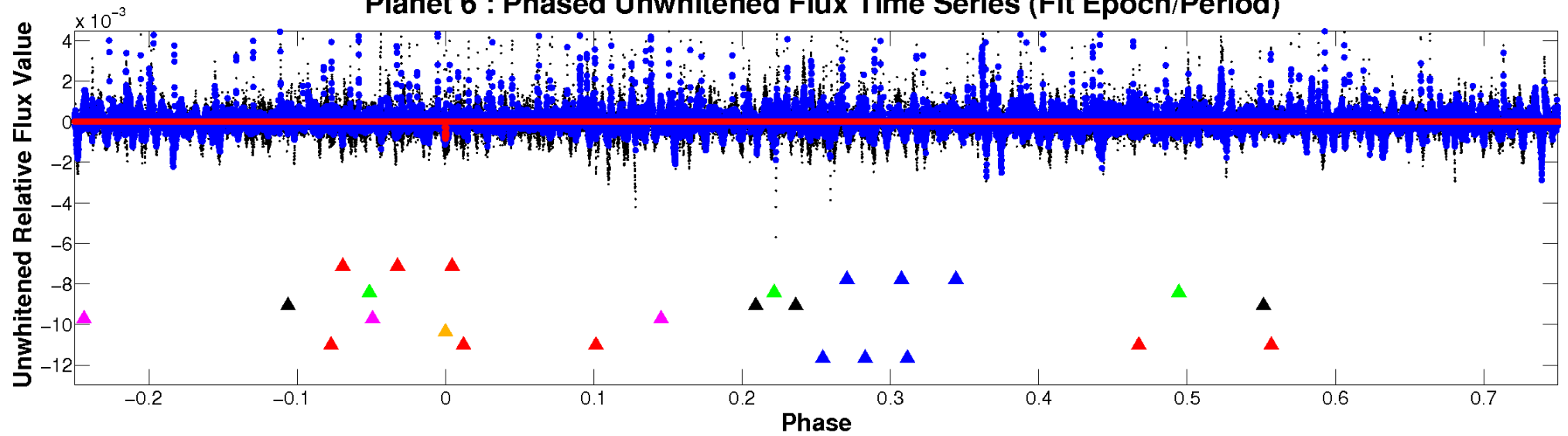
# ALT Odd/Even

TCE 006697041-06

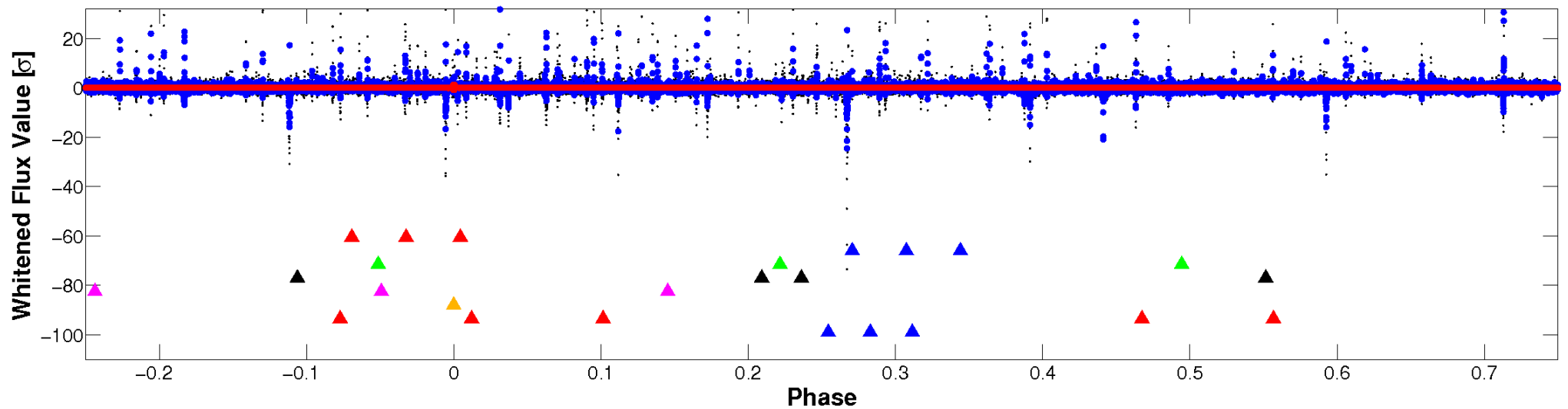


# Non-Whitened Vs. Whitened Light Curve

## Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

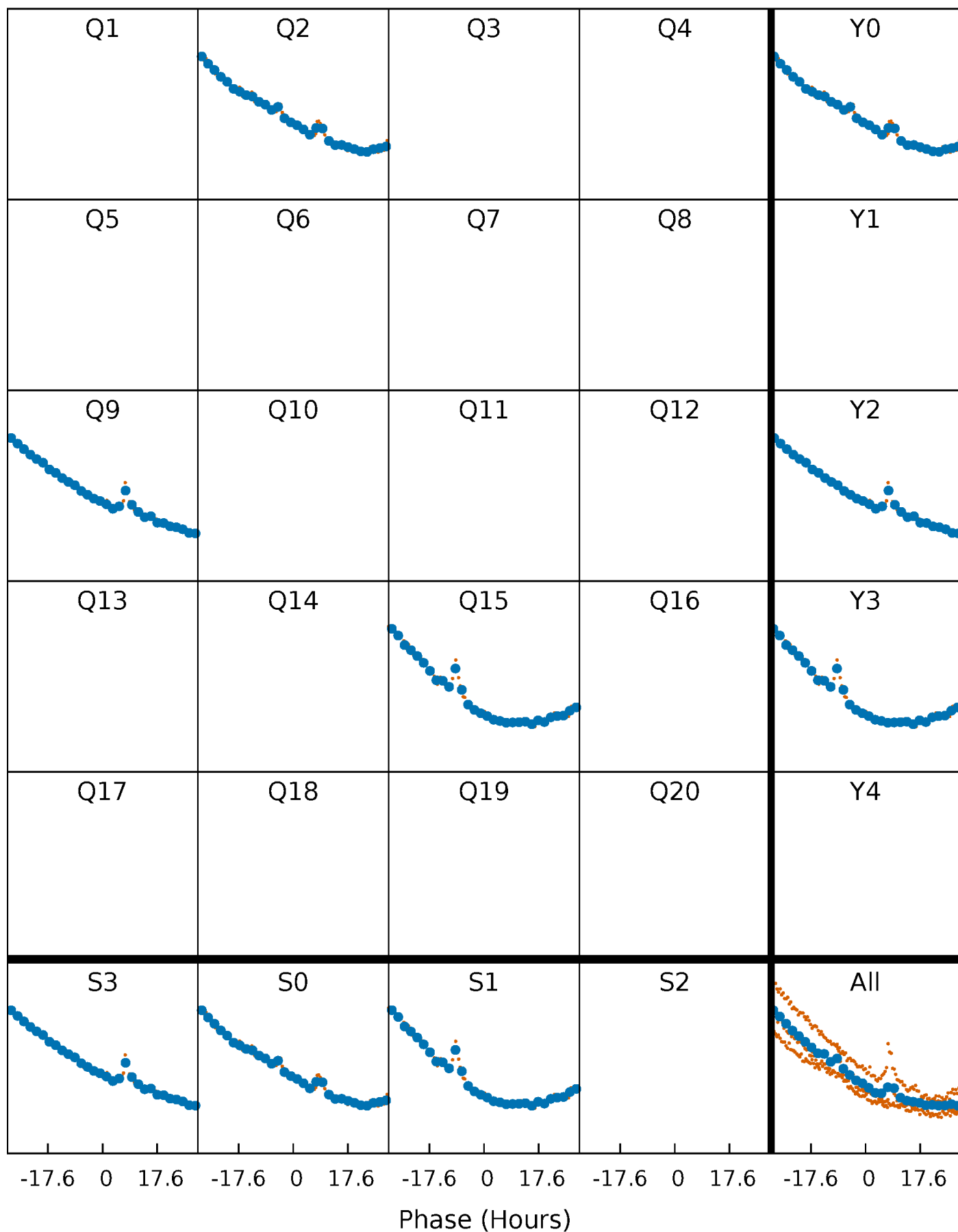


## Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



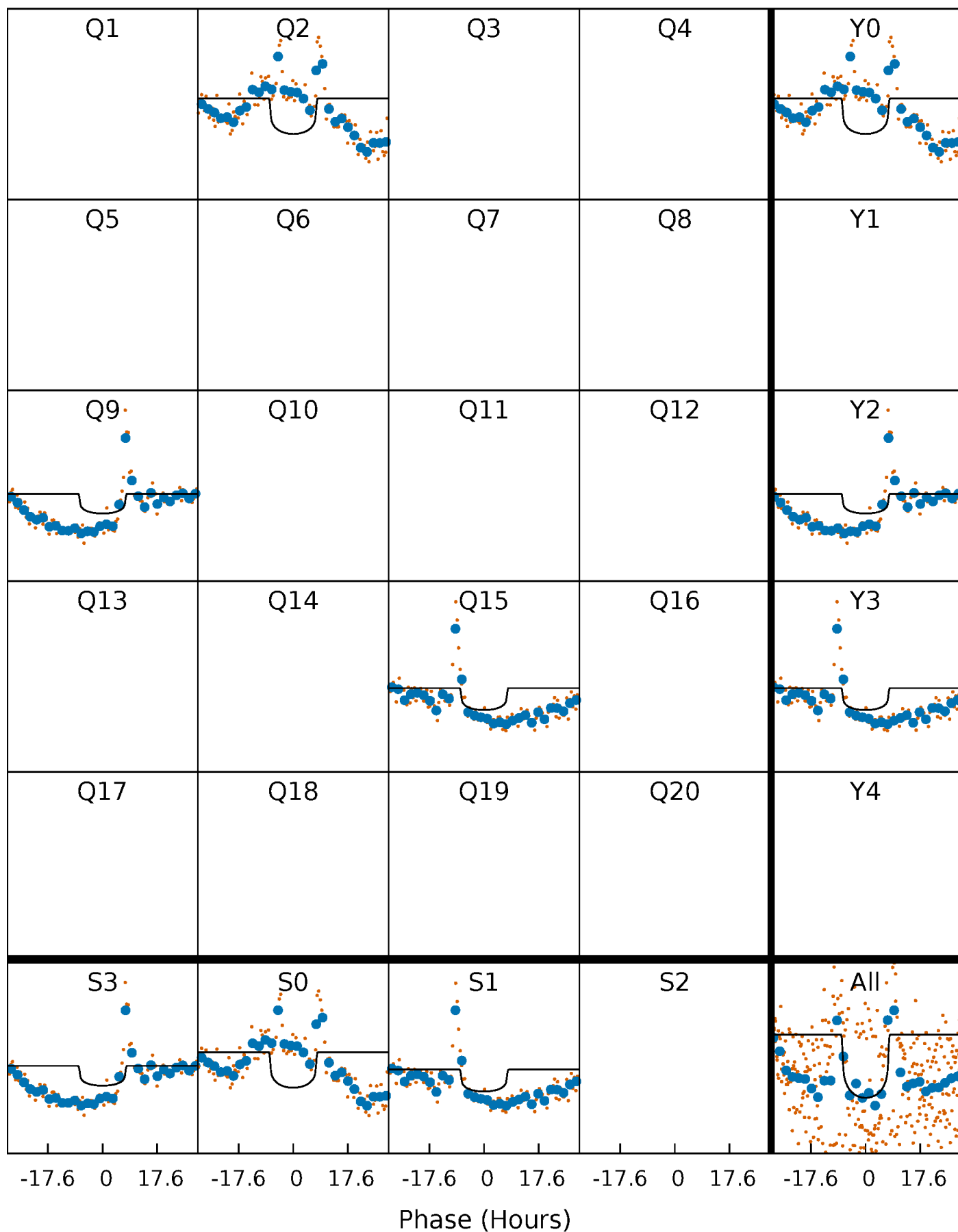
# PDC Quarter-Phased Transit Curves

TCE 006697041-06 P=581.615296 Days  $T_0=233.381085$  (BKJD)



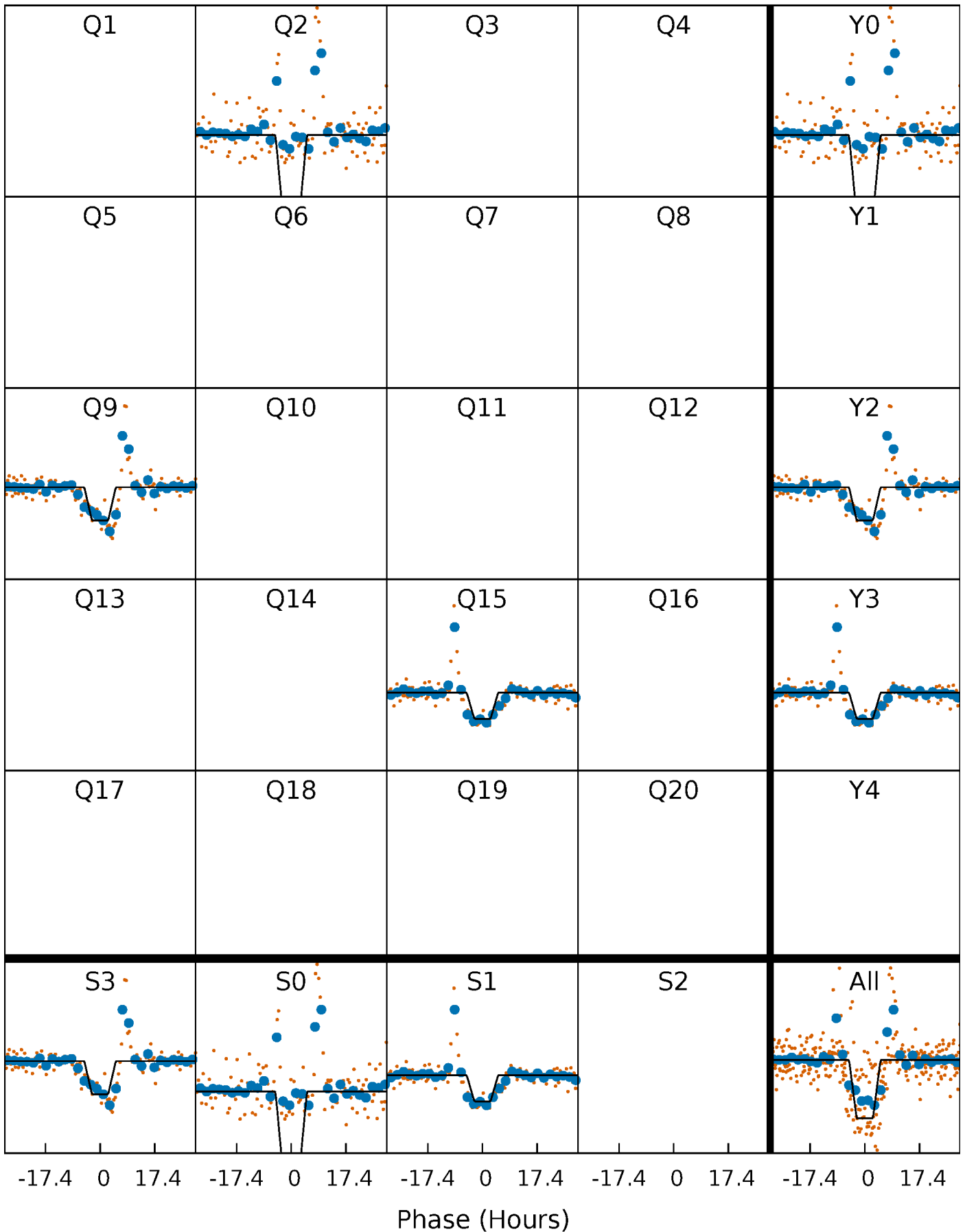
# DV Quarter-Phased Transit Curves

TCE 006697041-06 P=581.615296 Days  $T_0=233.381085$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

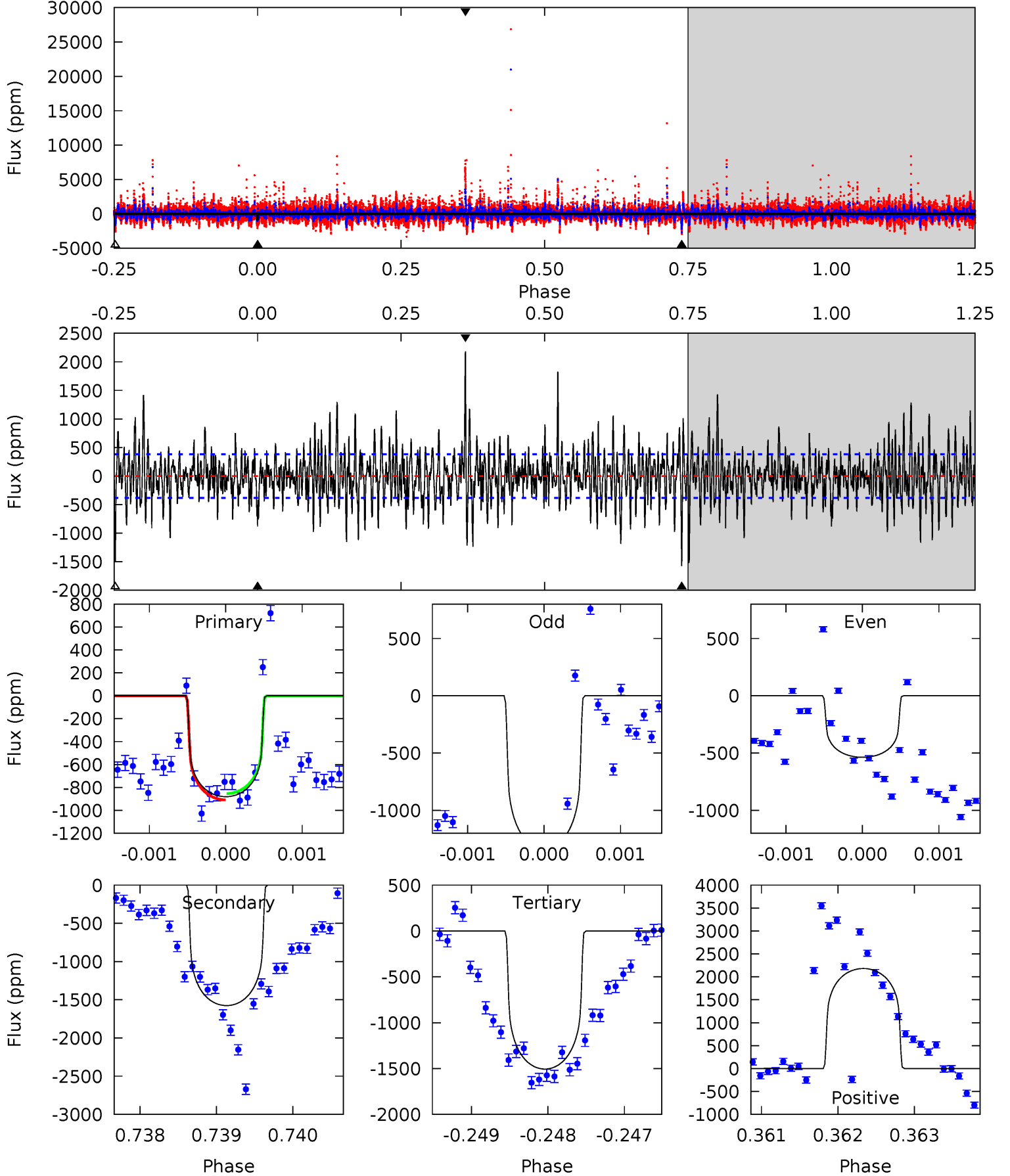
TCE 006697041-06 P=581.614041 Days  $T_0=233.379458$  (BKJD)



# DV Model-Shift Uniqueness Test

006697041-06, P = 581.615296 Days, E = 233.381085 Days

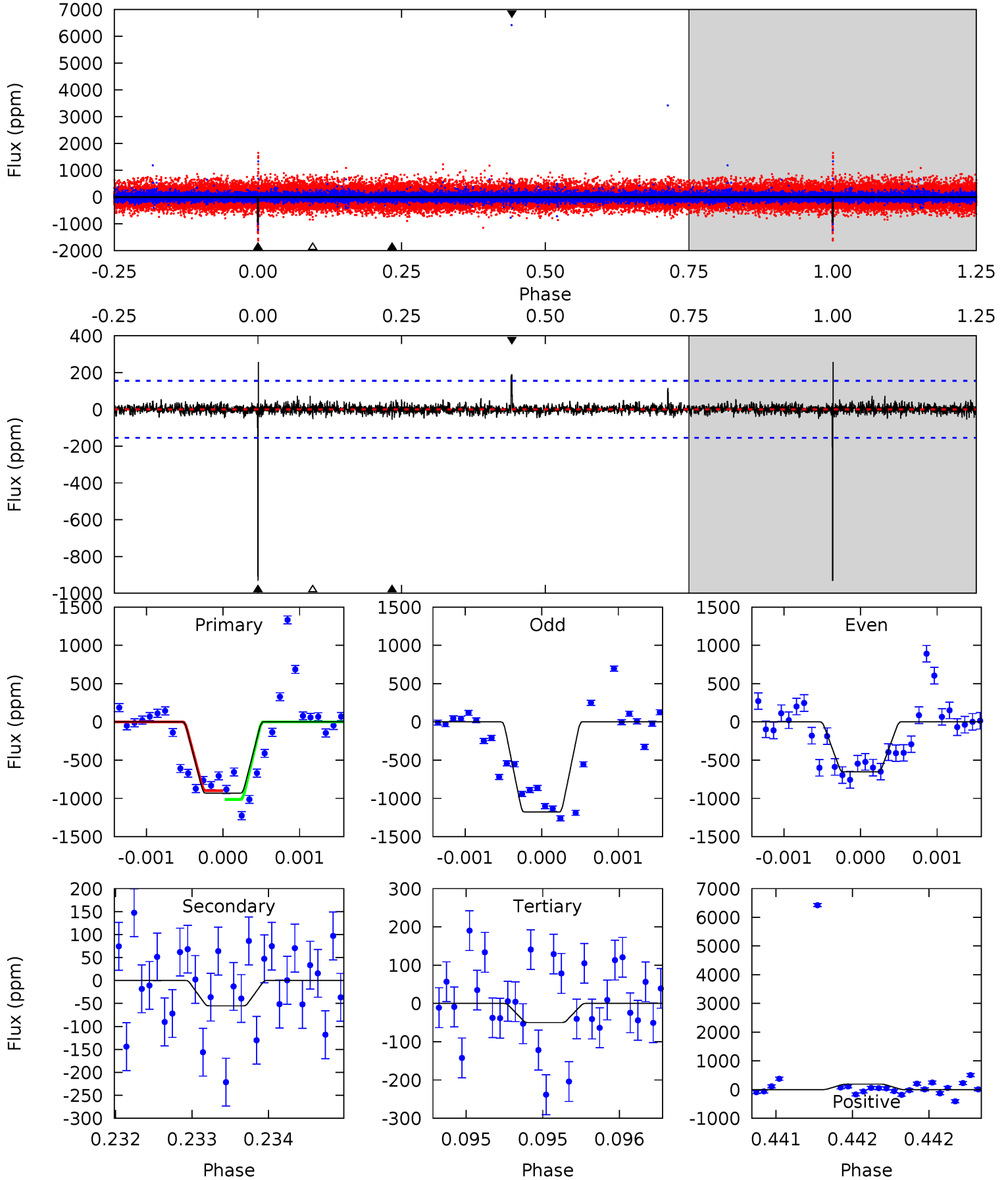
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	22.3	21.3	30.9	5.44	3.27	5.24	-8.86	-18.4	1.00	-8.58	3.67	0.66	0.58	0.39



# Alt Model-Shift Uniqueness Test

006697041-06, P = 581.614041 Days, E = 233.379458 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
33.2	1.97	1.78	6.79	5.51	3.38	0.54	31.4	26.4	0.19	-4.82	9.09	0.72	0.22	2.04





### Stellar Parameters For KIC 006697041

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5372^{+177}_{-145}$	$4.612^{+0.072}_{-0.054}$	$-1.000^{+0.300}_{-0.300}$	$0.656^{+0.063}_{-0.051}$	$0.642^{+0.061}_{-0.024}$	$3.210^{+0.917}_{-0.596}$
	+3%/-3%	+2%/-1%	+30%/-30%	+10%/-8%	+10%/-4%	+29%/-19%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 006697041-06 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-1576 \pm 71$	$1.93^{+0.62}_{-0.58}$	$247^{+10}_{-9}$	$6487^{+1469}_{-815}$	$323978^{+343549}_{-137195}$
Alt.	$-55 \pm 28$	$2.32^{+0.62}_{-0.61}$	$247^{+10}_{-8}$	$3139^{+430}_{-373}$	$7466^{+9459}_{-4392}$

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

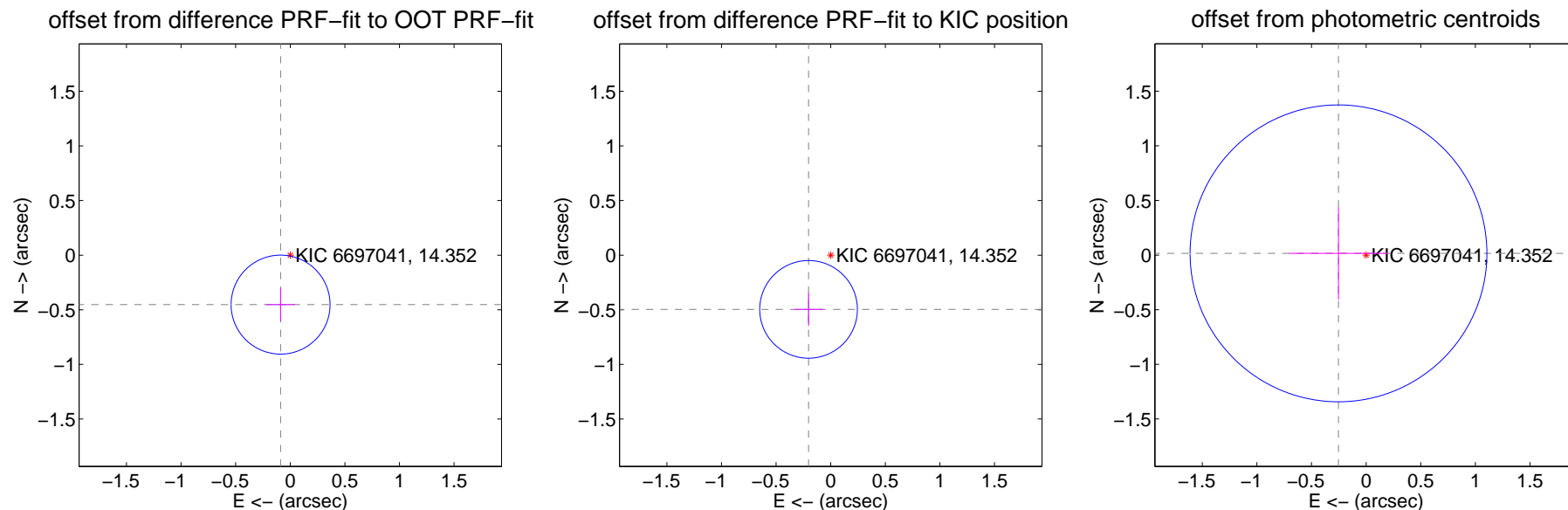
## DV Centroid Data

Supplemental centroid analysis for 006697041-06. Kepler magnitude: 14.35. Transit SNR 7.03

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	$0.461 \pm 0.151$	3.06	$0.089 \pm 0.132$	$-0.453 \pm 0.152$
PRF-fit source offset from KIC position	$0.536 \pm 0.149$	3.60	$0.203 \pm 0.132$	$-0.496 \pm 0.152$
photometric centroid source offset	$0.25 \pm 0.45$	0.56	$0.25 \pm 0.45$	$0.02 \pm 0.42$



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.

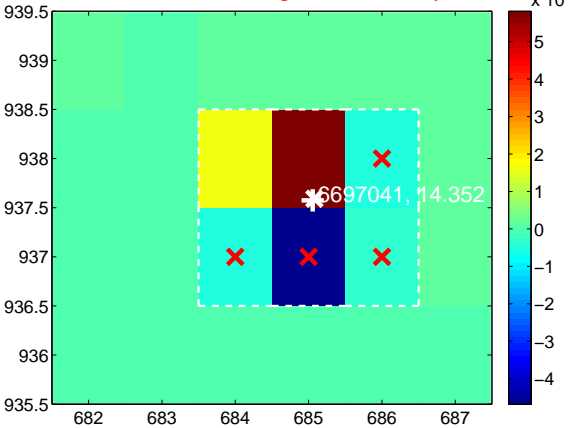
Q1 no difference image



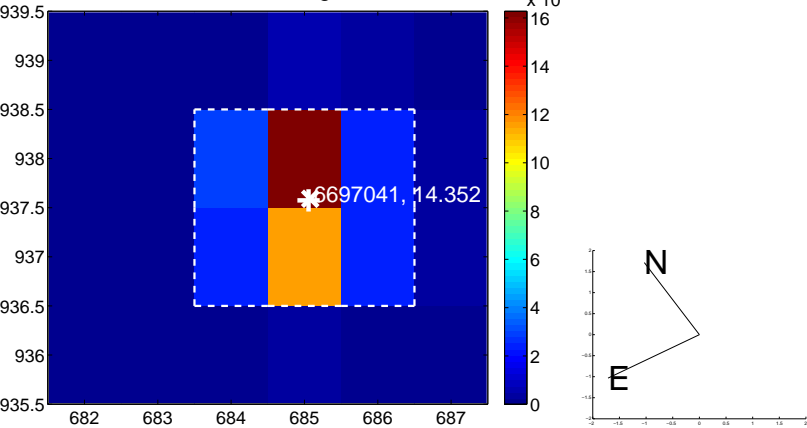
Q1 no OOT image



Q2 difference image. Poor Quality



Q2 OOT image



Q3 no difference image



Q3 no OOT image



Q4 no difference image



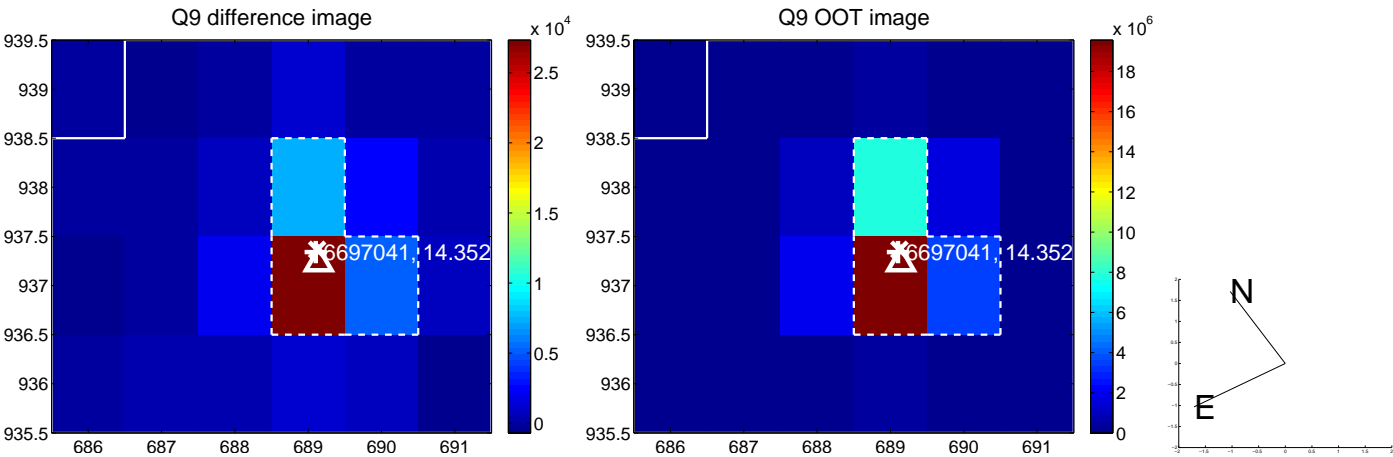
Q4 no OOT image



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



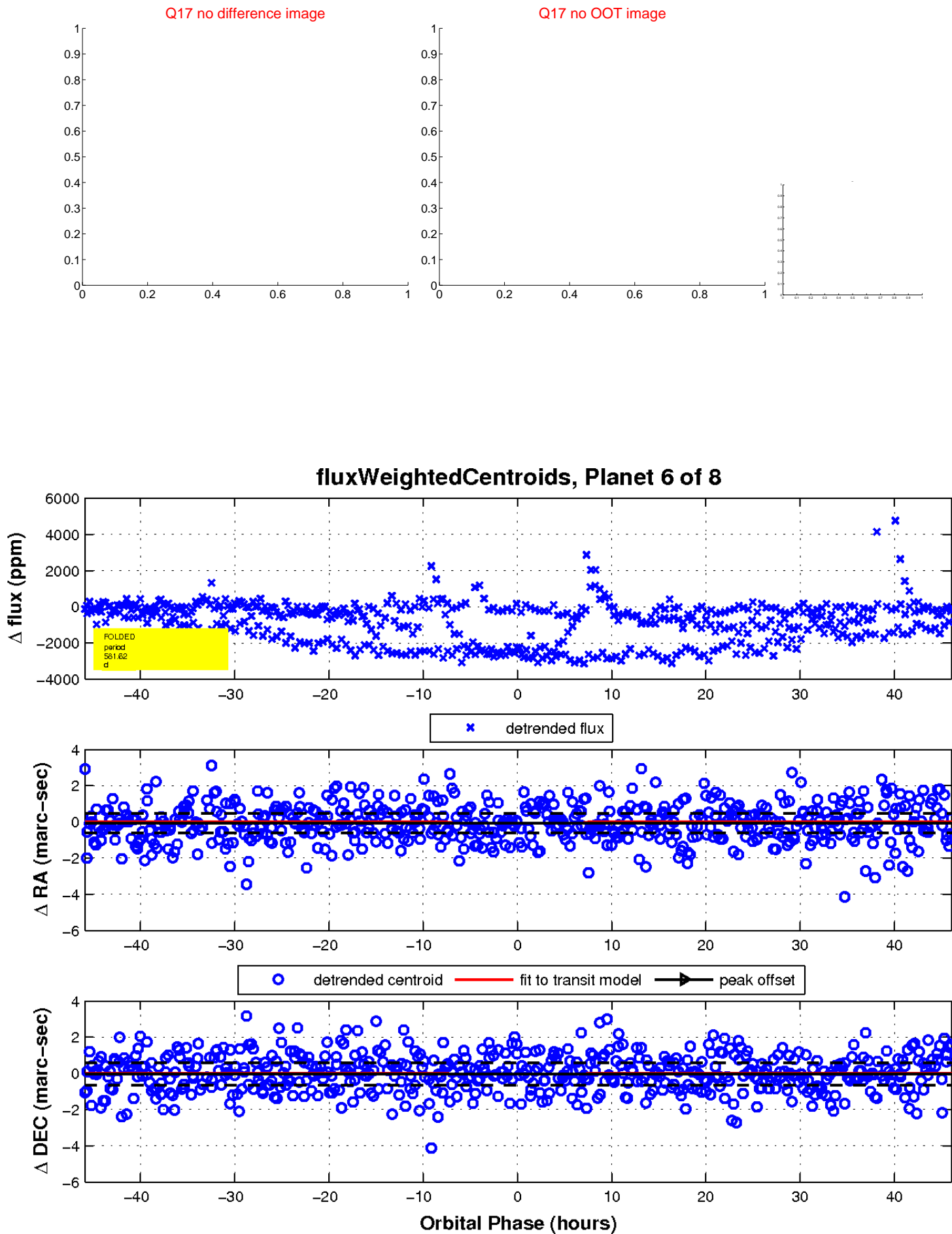
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

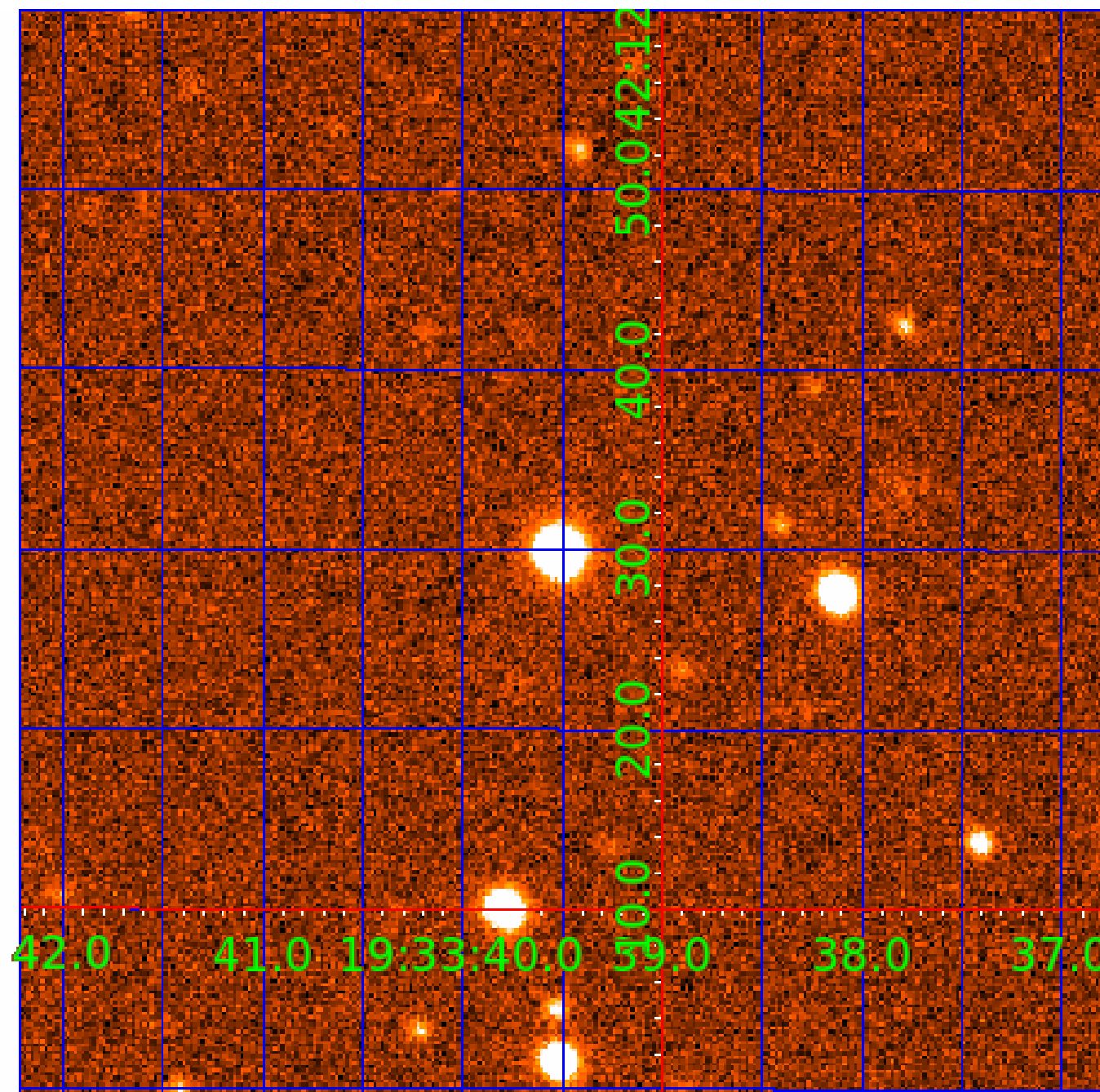


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination





# KIC 006697041

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006697041-01	OBS	No	560.179429	236.001075	777.9	5.987	14.9	7.5	0.66	5372	1.87	0.24
006697041-02	OBS	No	560.251987	433.550244	1144.0	6.975	21.7	9.6	0.66	5372	2.32	0.24
006697041-03	OBS	No	422.914325	520.970076	764.6	8.345	14.5	6.3	0.66	5372	1.92	0.35
006697041-04	OBS	No	382.523591	370.727132	576.7	6.888	11.7	5.8	0.66	5372	1.64	0.41
006697041-05	OBS	No	468.477500	317.928384	1242.6	14.468	11.7	9.6	0.66	5372	2.46	0.31
006697041-06	OBS	No	581.615296	233.381085	832.2	15.368	13.3	7.0	0.66	5372	1.93	0.23
006697041-07	OBS	No	316.778435	188.503522	678.1	10.697	11.2	8.1	0.66	5372	1.76	0.52
006697041-08	OBS	No	565.021990	414.543045	592.8	10.500	11.1	-1.0	0.66	5372	1.59	0.24

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006697041-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006697041-02	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—SAME_NTL_PERIOD—CENT_FEW_DIFFS
006697041-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_DIFFS
006697041-04	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
006697041-05	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
006697041-06	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006697041-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006697041-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

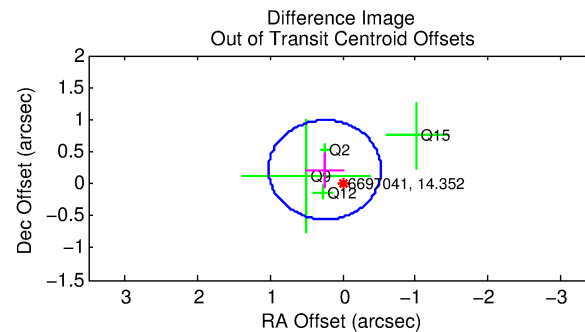
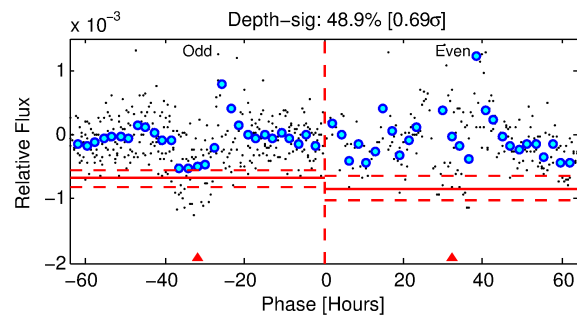
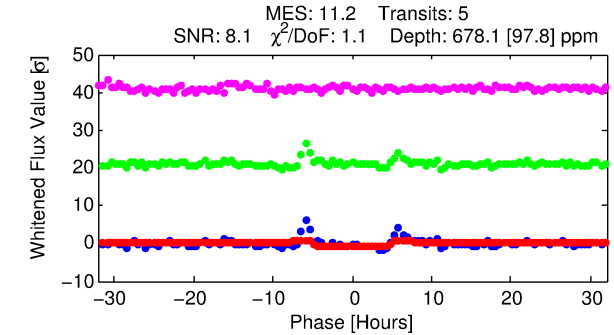
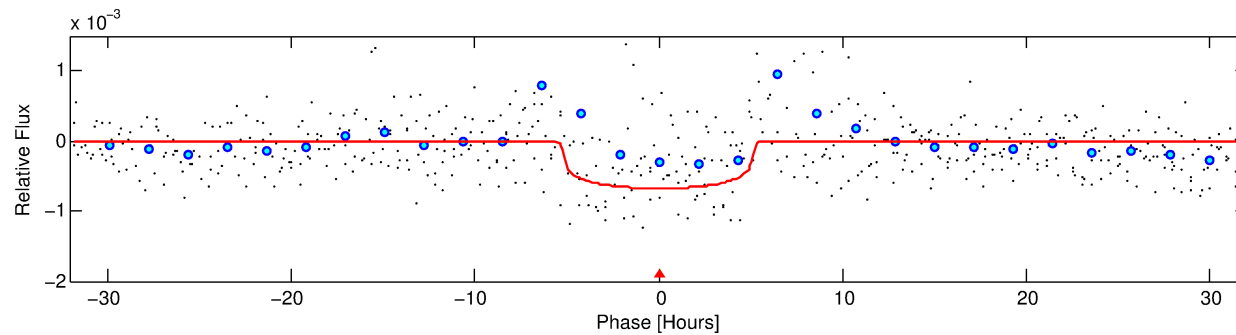
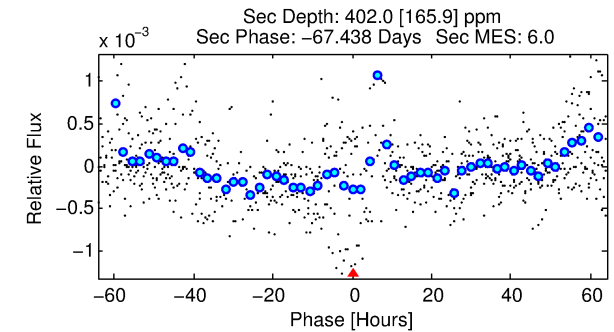
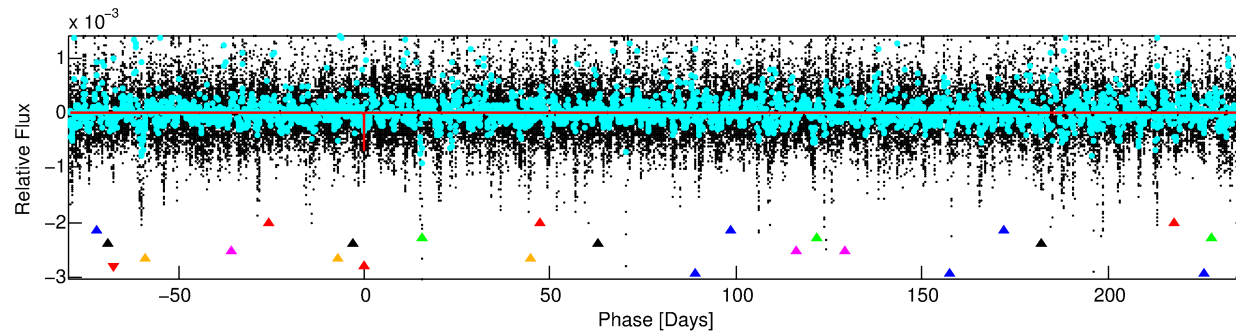
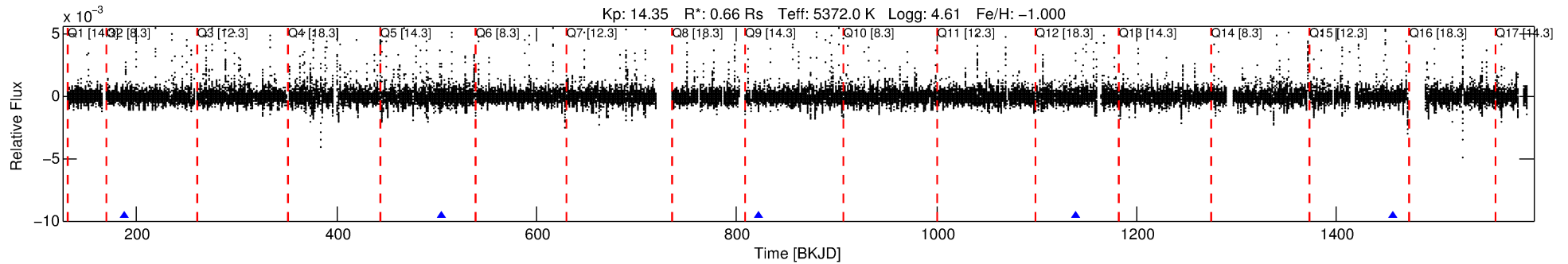
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006697041-07

No Significant Match Found

# DV One-Page Summary

KIC: 6697041 Candidate: 7 of 8 Period: 316.778 d



## DV Fit Results:

Period = 316.77843 [0.00399] d  
Epoch = 188.5035 [0.0112] BKJD  
Rp/R\* = 0.0246 [0.0083]  
a/R\* = 196.79 [288.67]  
b = 0.54 [1.92]  
Seff = 0.52 [0.10]  
Teq = 217 [10] K  
Rp = 1.76 [0.62] Re  
a = 0.7849 [0.0664] AU  
Ag = 43936.85 [35124.43] [1.25 $\sigma$ ]  
Teffp = 4850 [970] K [4.78 $\sigma$ ]

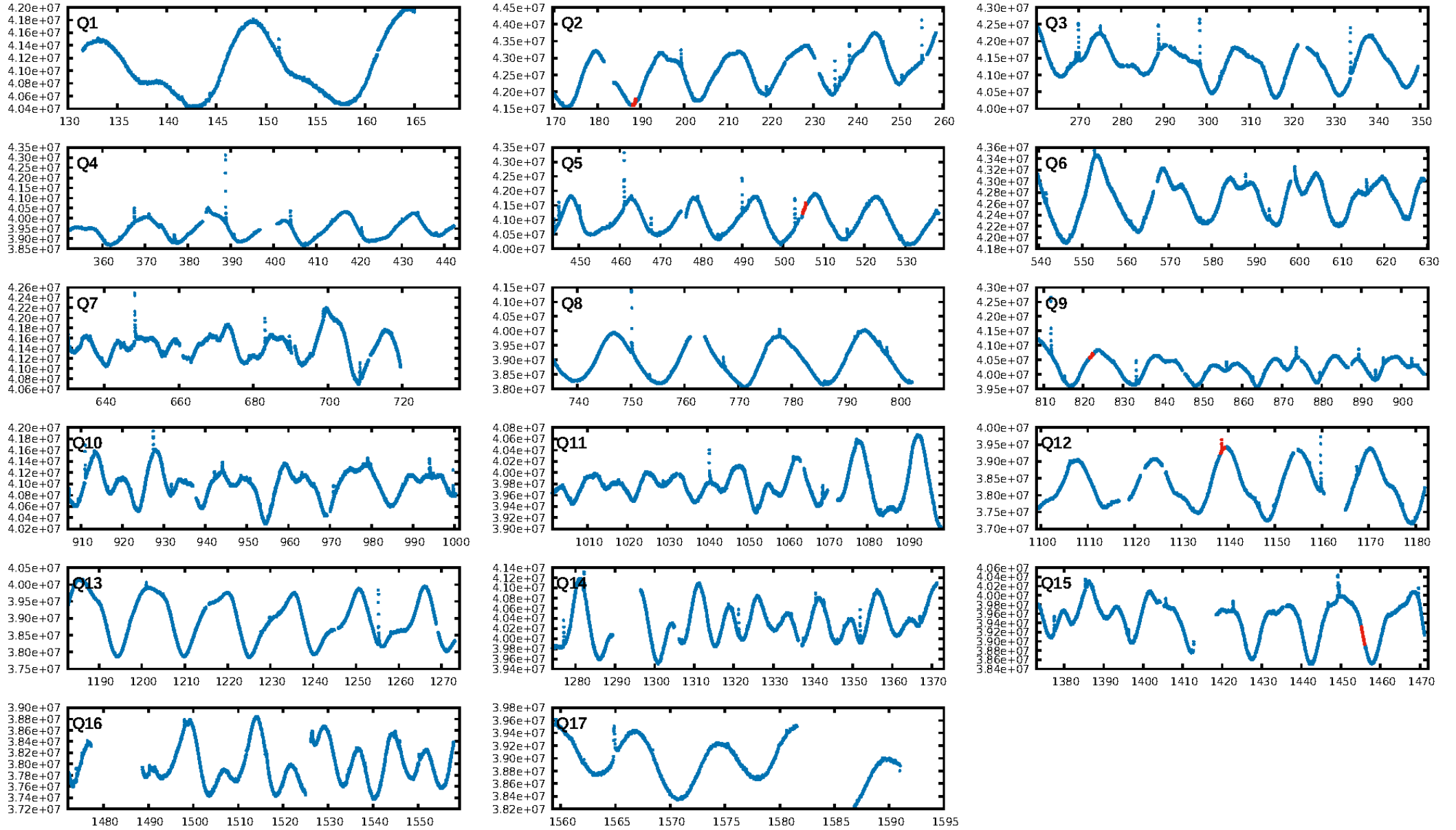
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [124.03 $\sigma$ ]  
ModelChiSquare2-sig: 0.7%  
ModelChiSquareGof-sig: 99.6%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: 1.902  
Centroid-sig: 0.0%  
Centroid-so: 1.255 arcsec [2.42 $\sigma$ ]  
OotOffset-rm: 0.327 arcsec [1.27 $\sigma$ ]  
KicOffset-rm: 0.377 arcsec [1.47 $\sigma$ ]  
OotOffset-st: 1/1/1/1 [4]  
KicOffset-st: 1/1/1/1 [4]  
DiffImageQuality-fgm: 0.75 [3/4]  
DiffImageOverlap-fno: 1.00 [4/4]

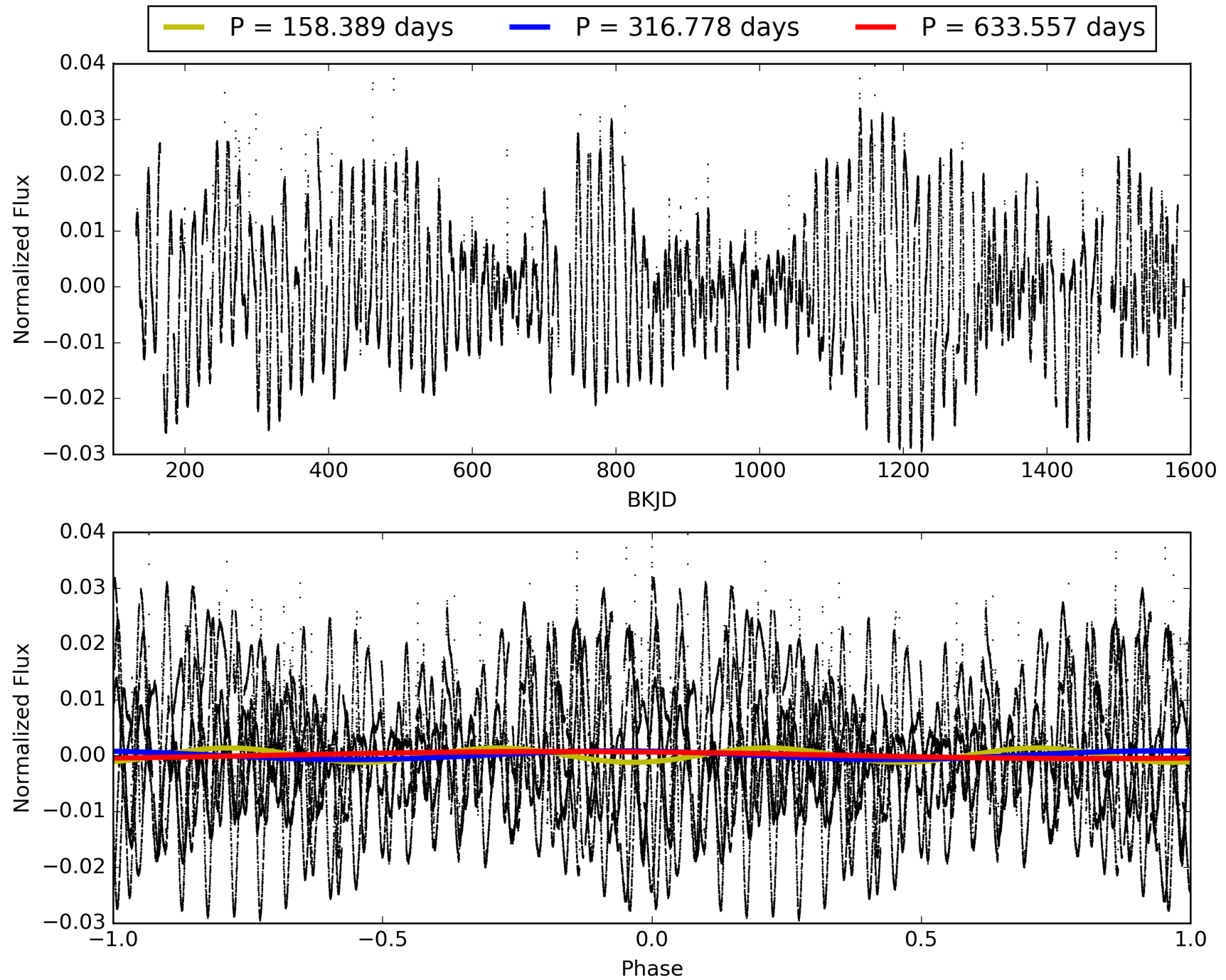
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:10:22 Z

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

# TCE 006697041-07, PDC Light Curves

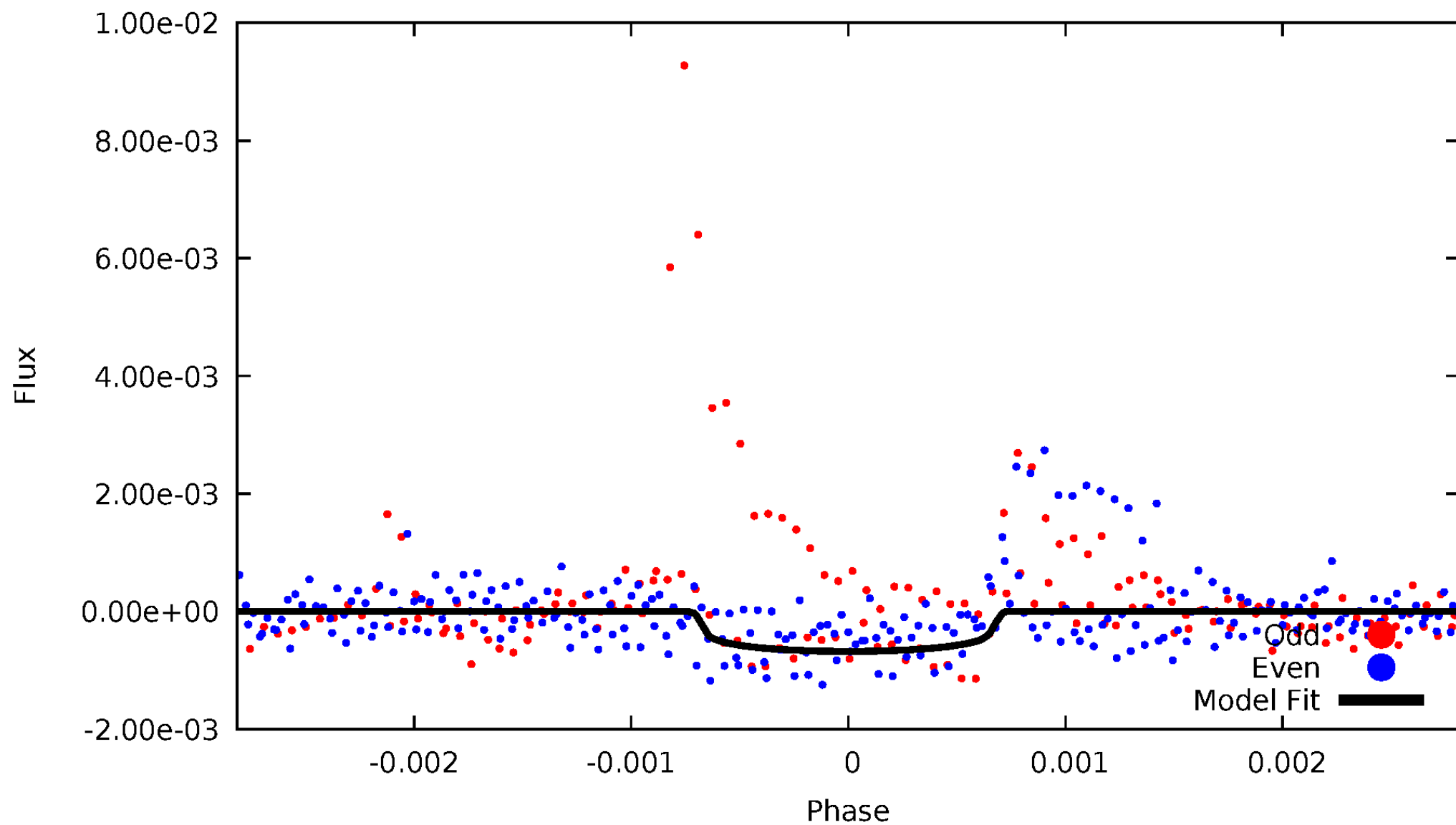


TCE 006697041-07



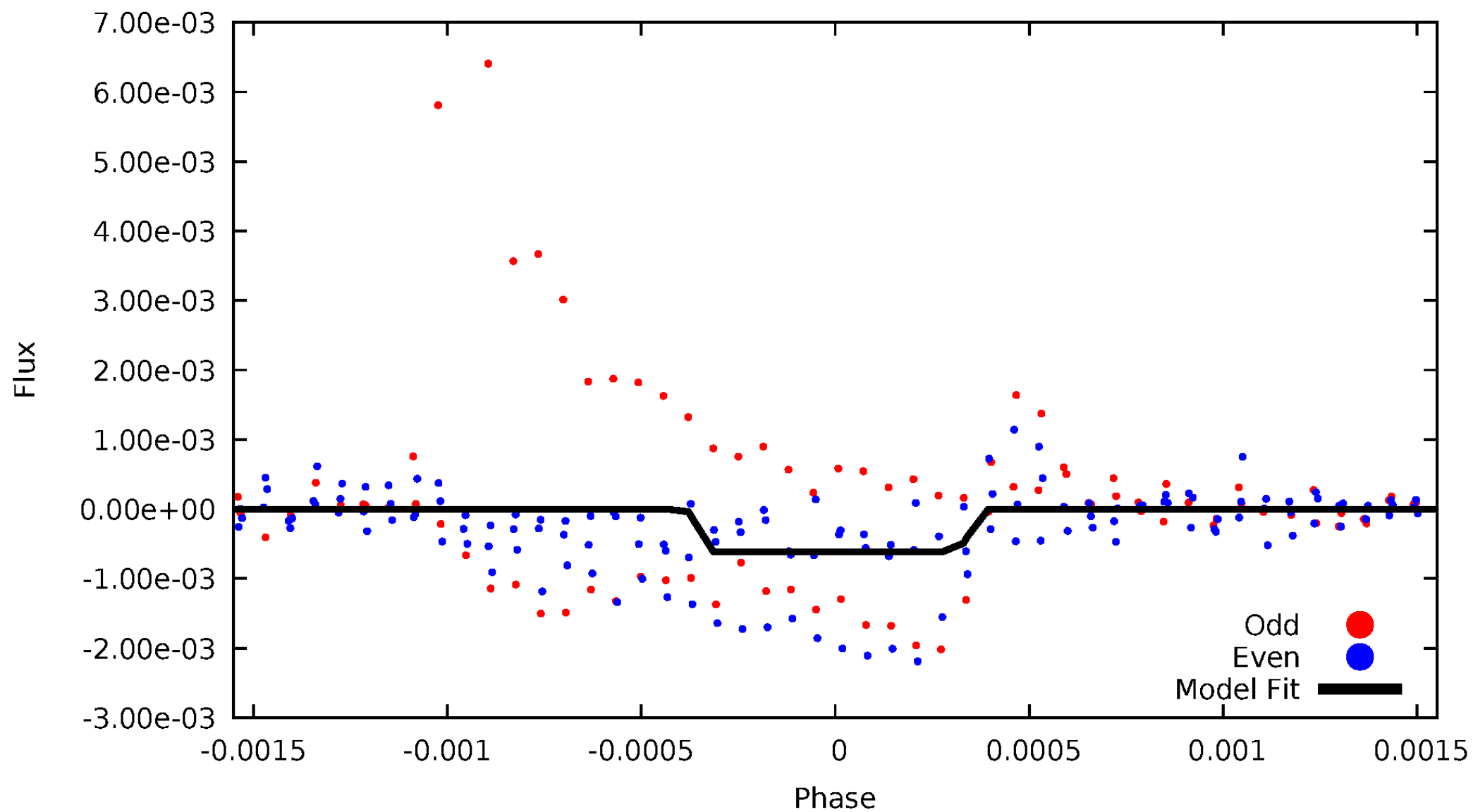
# DV Odd/Even

TCE 006697041-07



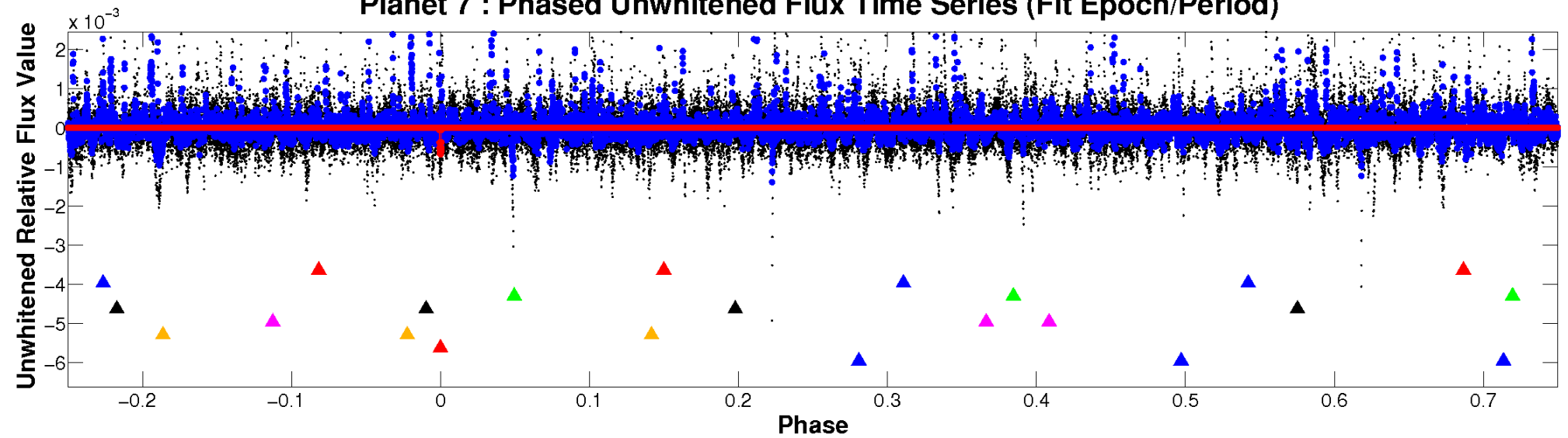
# ALT Odd/Even

TCE 006697041-07

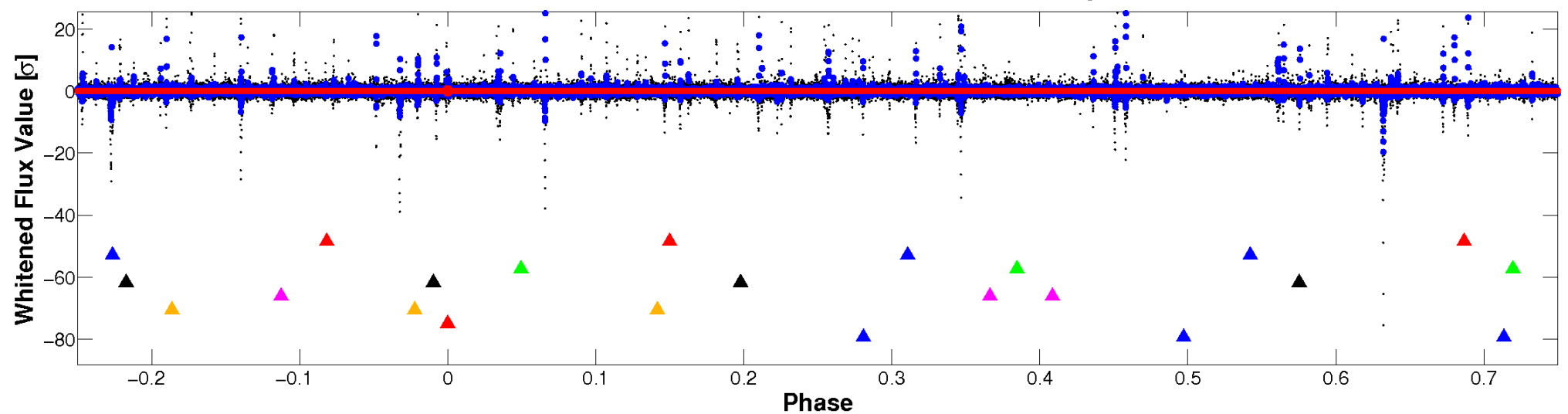


# Non-Whitened Vs. Whitened Light Curve

## Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

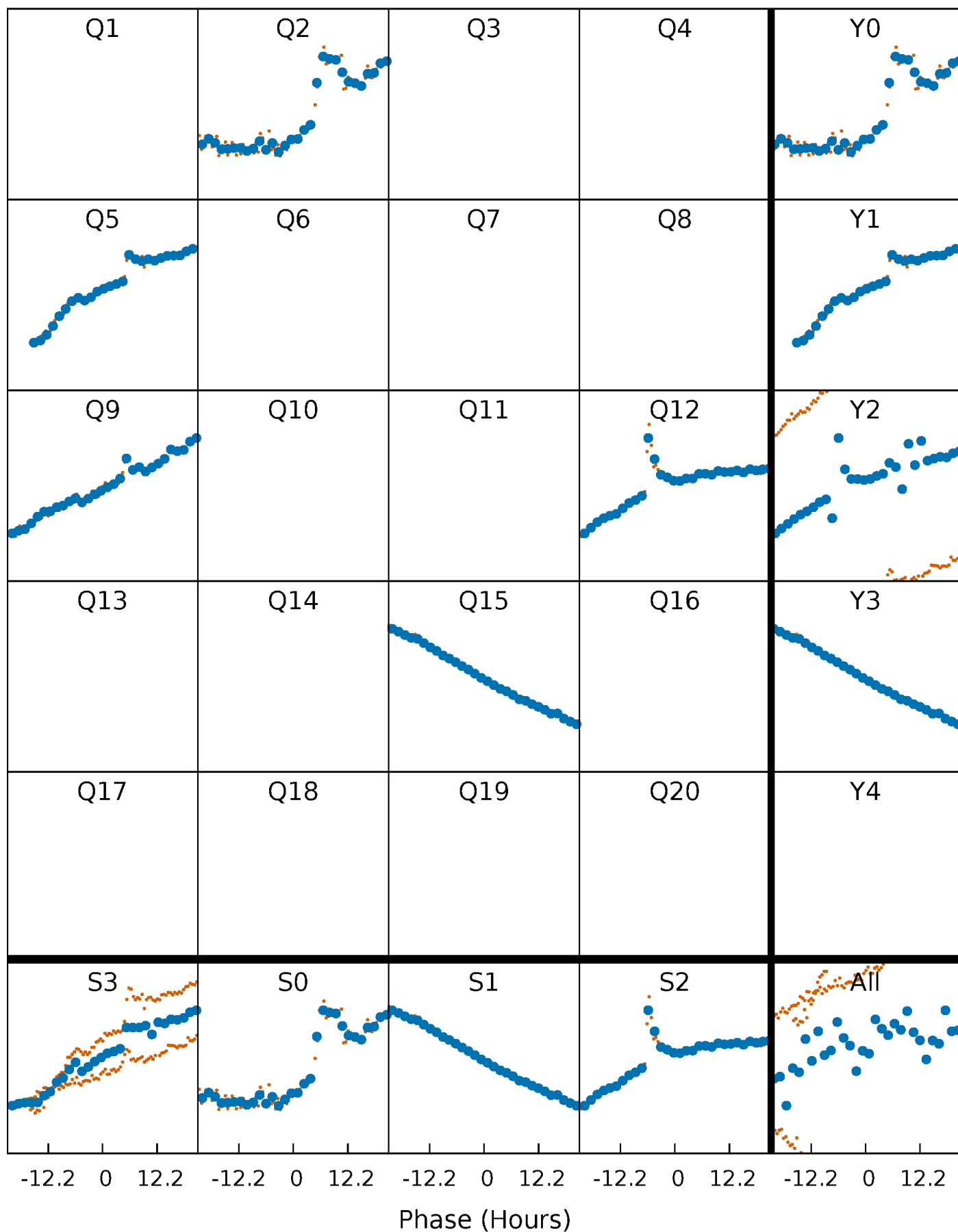


## Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

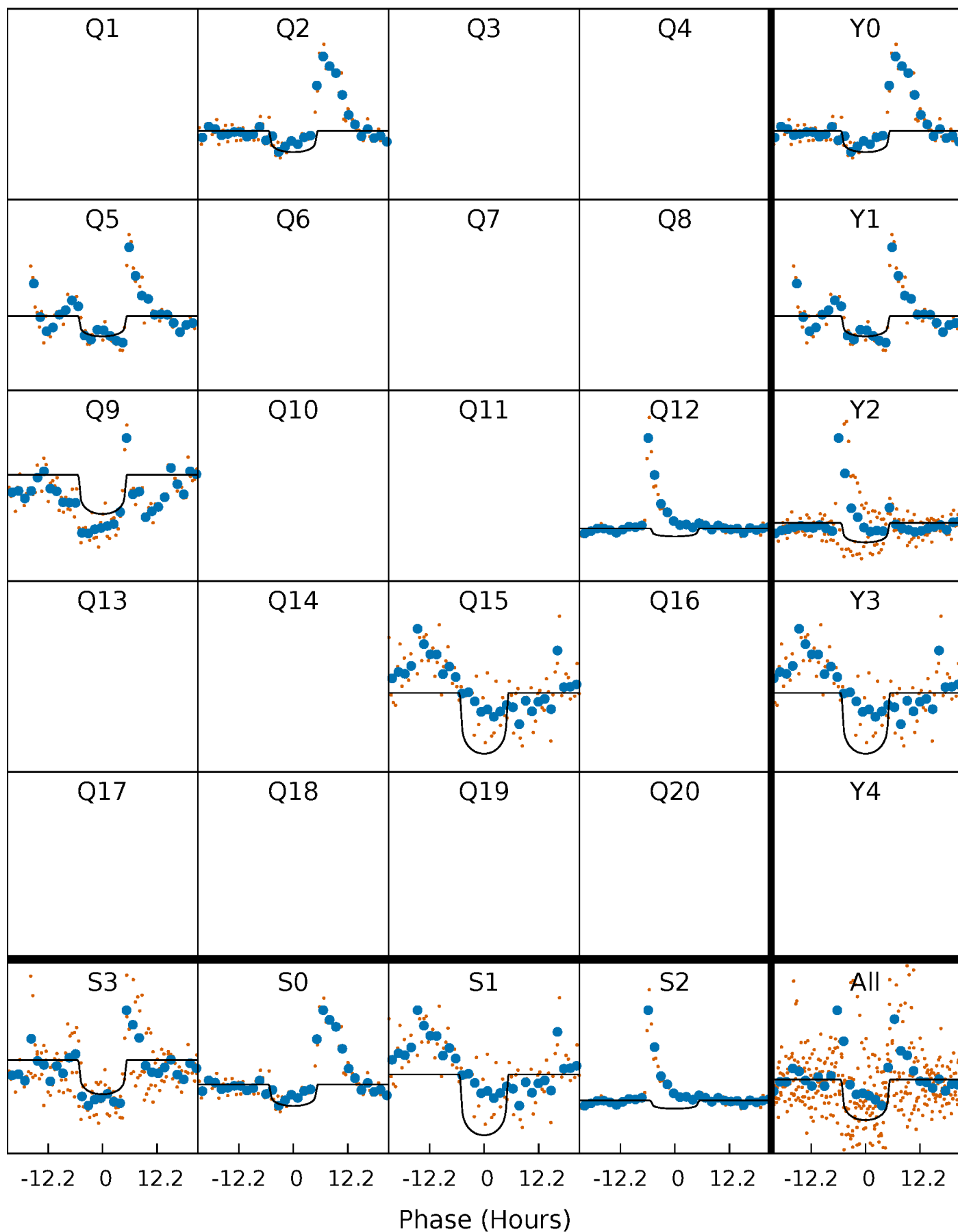
TCE 006697041-07     $P=316.778435$  Days     $T_0=188.503523$  (BKJD)





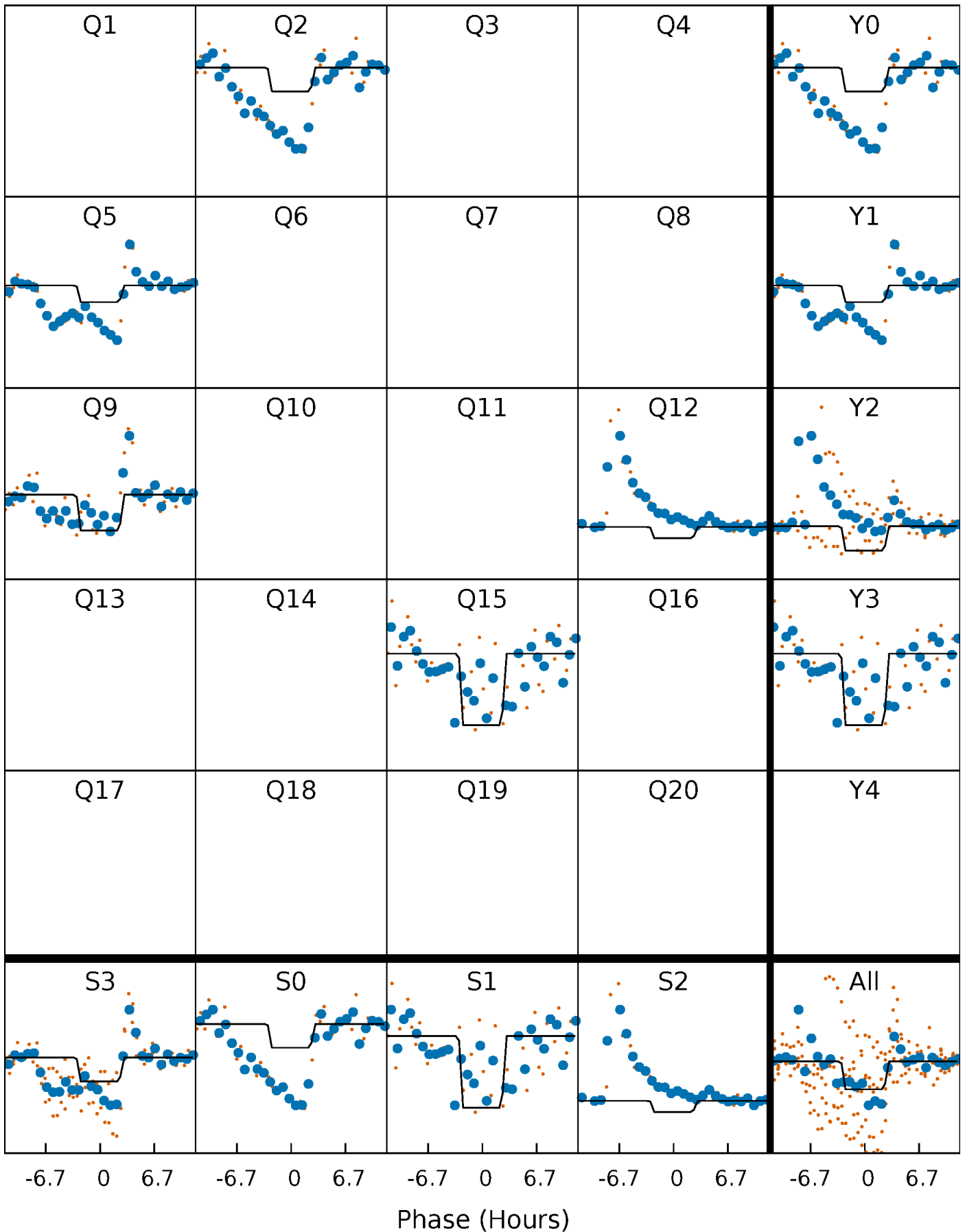
# DV Quarter-Phased Transit Curves

TCE 006697041-07     $P=316.778435$  Days     $T_0=188.503523$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

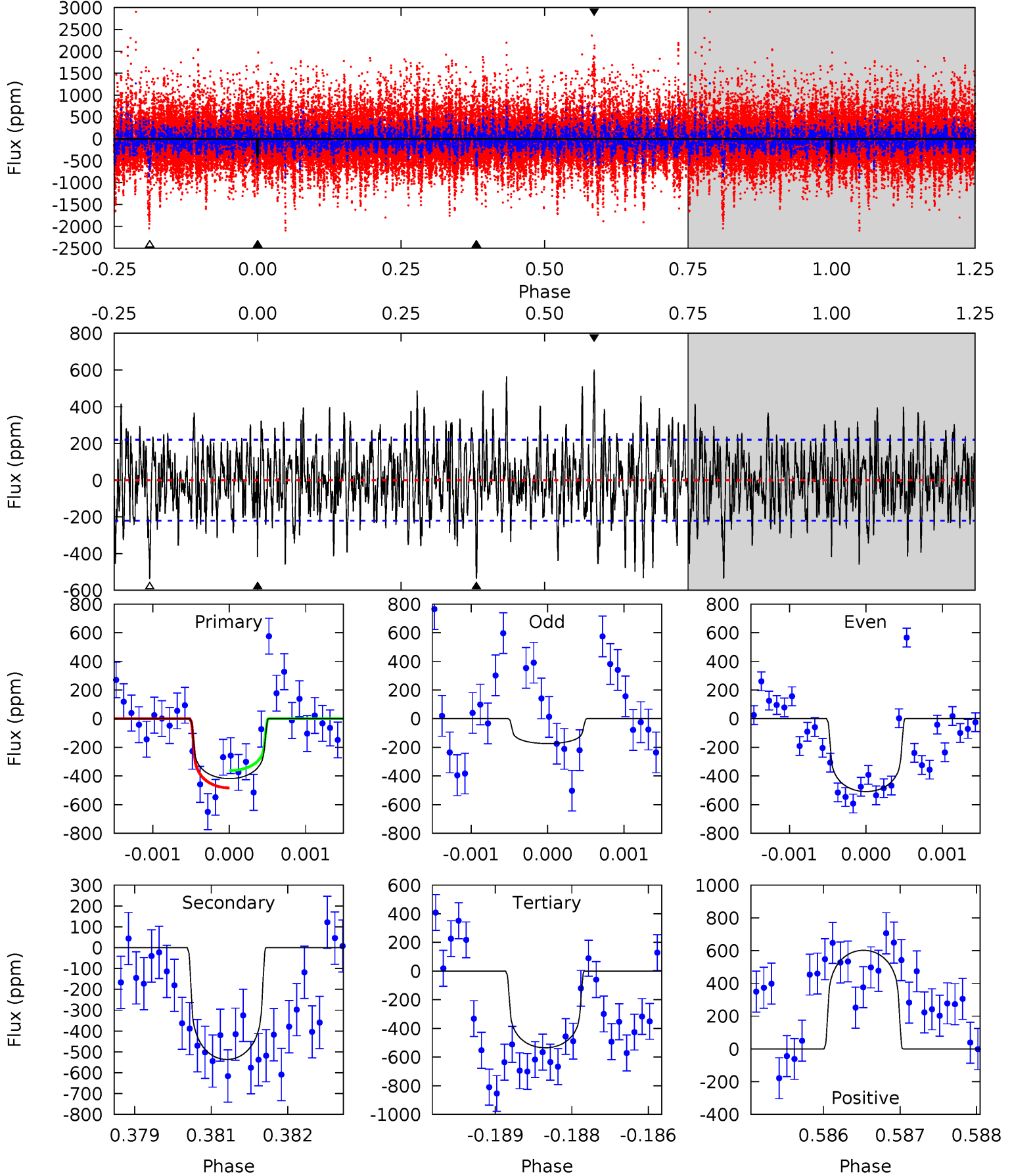
TCE 006697041-07     $P=316.761047$  Days     $T_0=188.620190$  (BKJD)



# DV Model-Shift Uniqueness Test

006697041-07, P = 316.778435 Days, E = 188.503523 Days

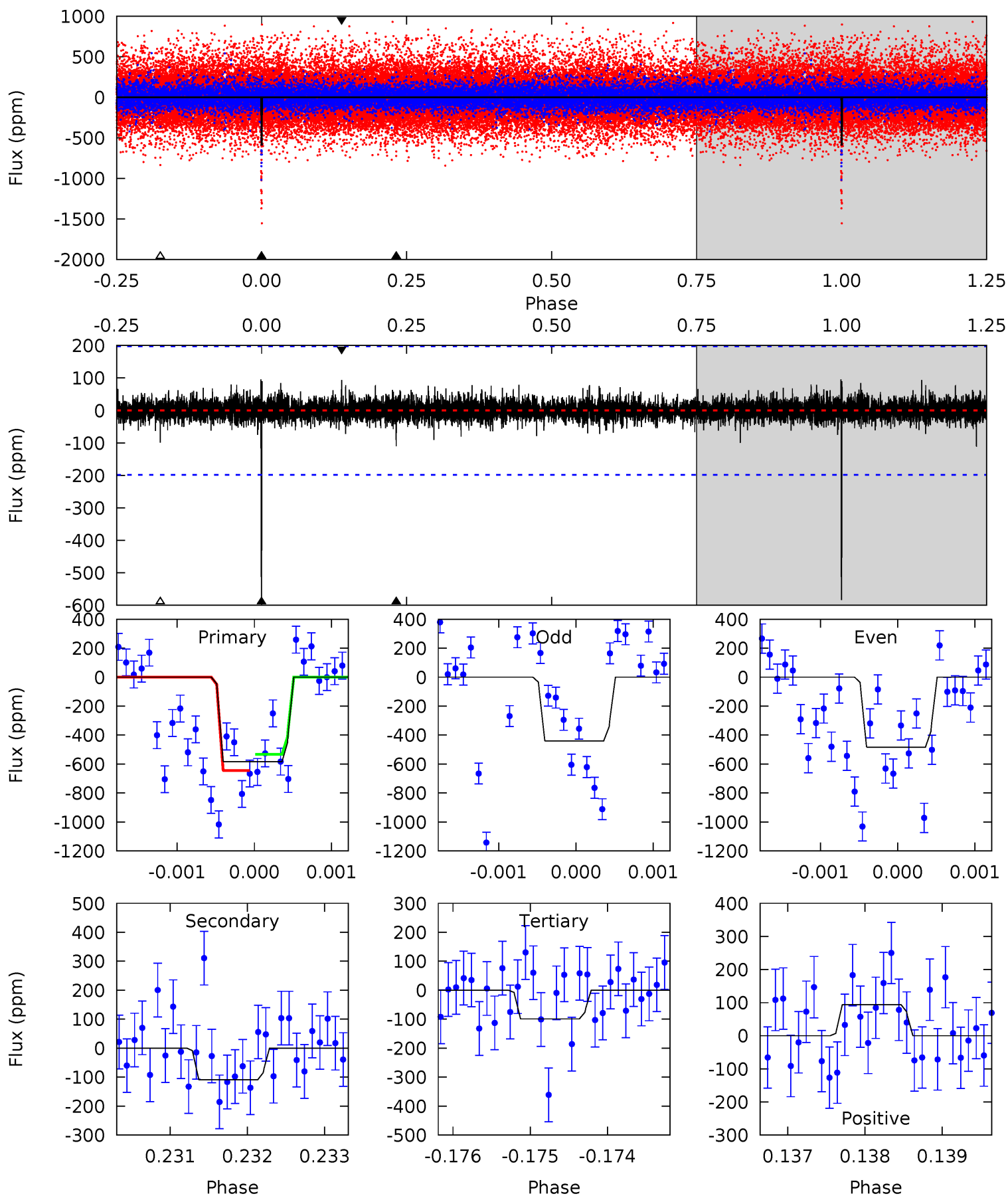
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	13.1	13.1	14.7	5.39	3.19	3.91	-2.85	-4.48	0.03	-1.59	3.44	0.57	0.53	1.48



# Alt Model-Shift Uniqueness Test

006697041-07, P = 316.761047 Days, E = 188.620190 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
16.2	3.04	2.75	2.60	5.50	3.36	0.51	13.4	13.6	0.29	0.44	0.71	1.79	0.14	0



### Stellar Parameters For KIC 006697041

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5372^{+177}_{-145}$	$4.612^{+0.072}_{-0.054}$	$-1.000^{+0.300}_{-0.300}$	$0.656^{+0.063}_{-0.051}$	$0.642^{+0.061}_{-0.024}$	$3.210^{+0.917}_{-0.596}$
	+3%/-3%	+2%/-1%	+30%/-30%	+10%/-8%	+10%/-4%	+29%/-19%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 006697041-07 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-537 \pm 41$	$1.81^{+0.57}_{-0.61}$	$302^{+12}_{-11}$	$5201^{+1104}_{-595}$	$56892^{+74107}_{-23921}$
Alt.	$-109 \pm 36$	$1.81^{+0.55}_{-0.64}$	$302^{+12}_{-11}$	$3818^{+652}_{-398}$	$11672^{+15136}_{-6010}$

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

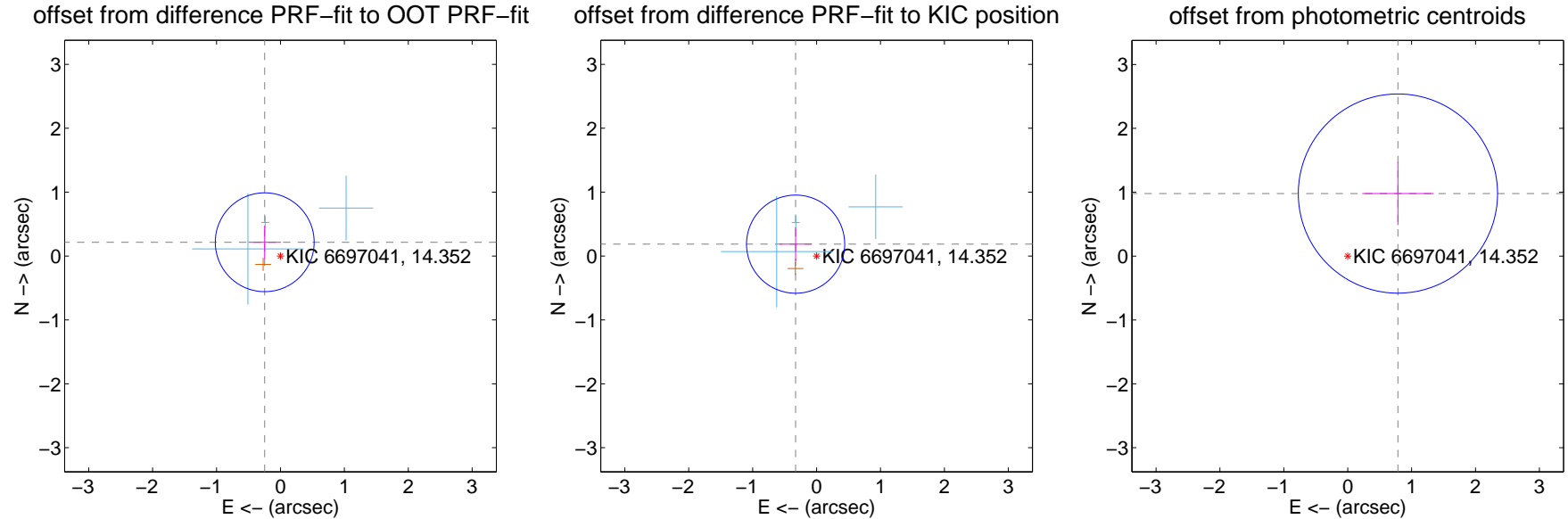
## DV Centroid Data

Supplemental centroid analysis for 006697041-07. Kepler magnitude: 14.35. Transit SNR 8.10

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.327 \pm 0.258$	1.27	$0.246 \pm 0.254$	$0.216 \pm 0.263$
PRF-fit source offset from KIC position	$0.377 \pm 0.256$	1.47	$0.328 \pm 0.254$	$0.186 \pm 0.263$
photometric centroid source offset	$1.26 \pm 0.52$	2.42	$-0.79 \pm 0.56$	$0.98 \pm 0.49$



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.

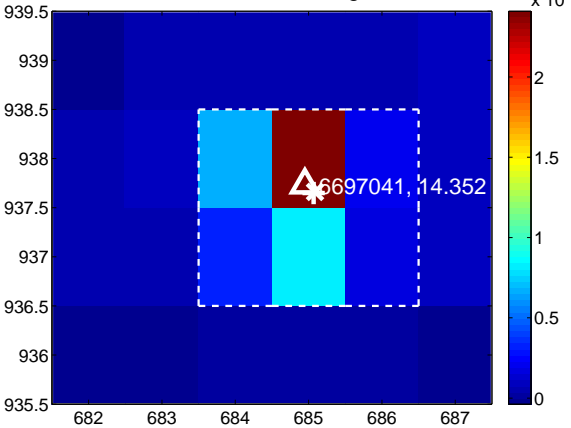
Q1 no difference image



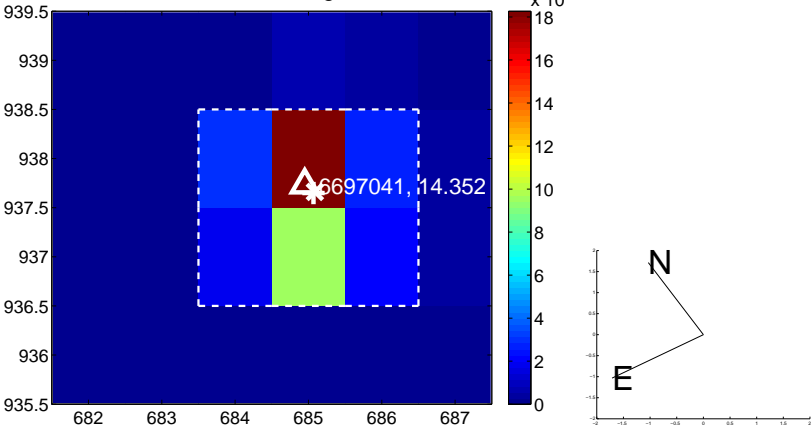
Q1 no OOT image



Q2 difference image



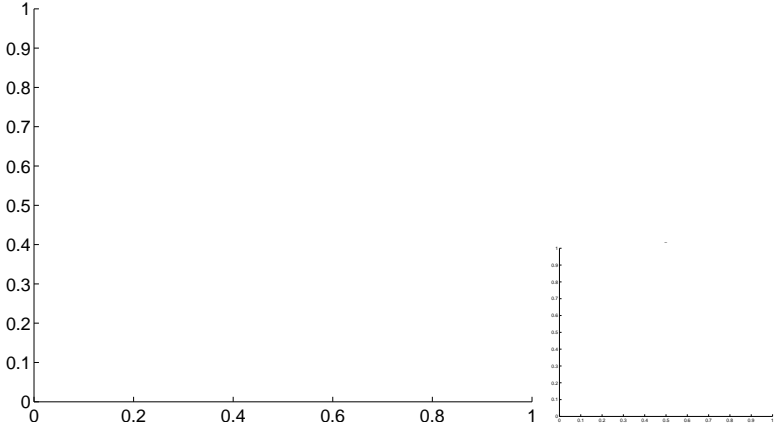
Q2 OOT image



Q3 no difference image



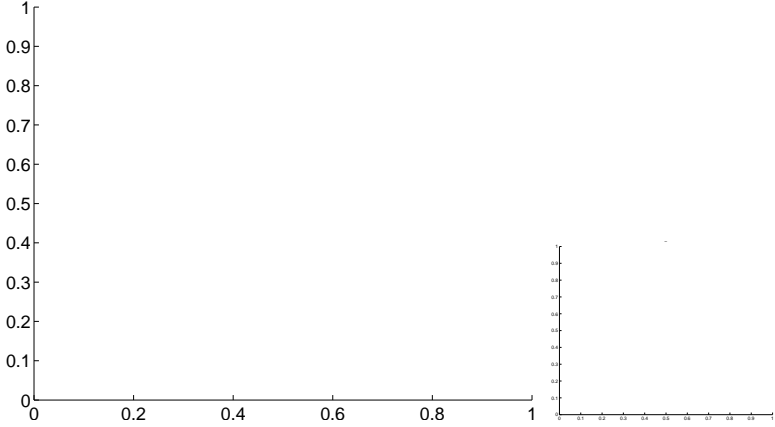
Q3 no OOT image



Q4 no difference image



Q4 no OOT image

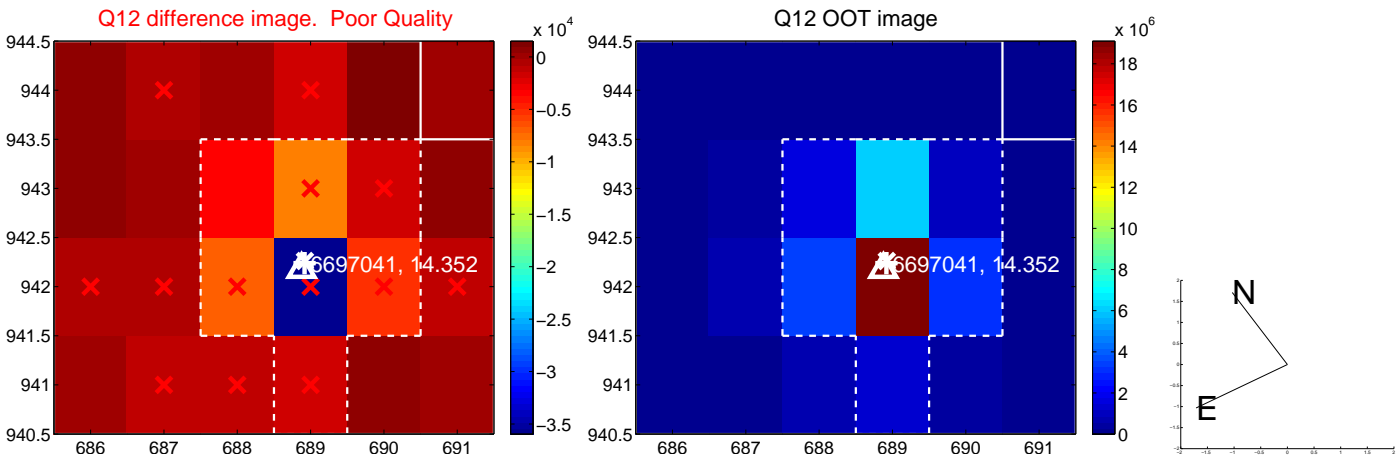
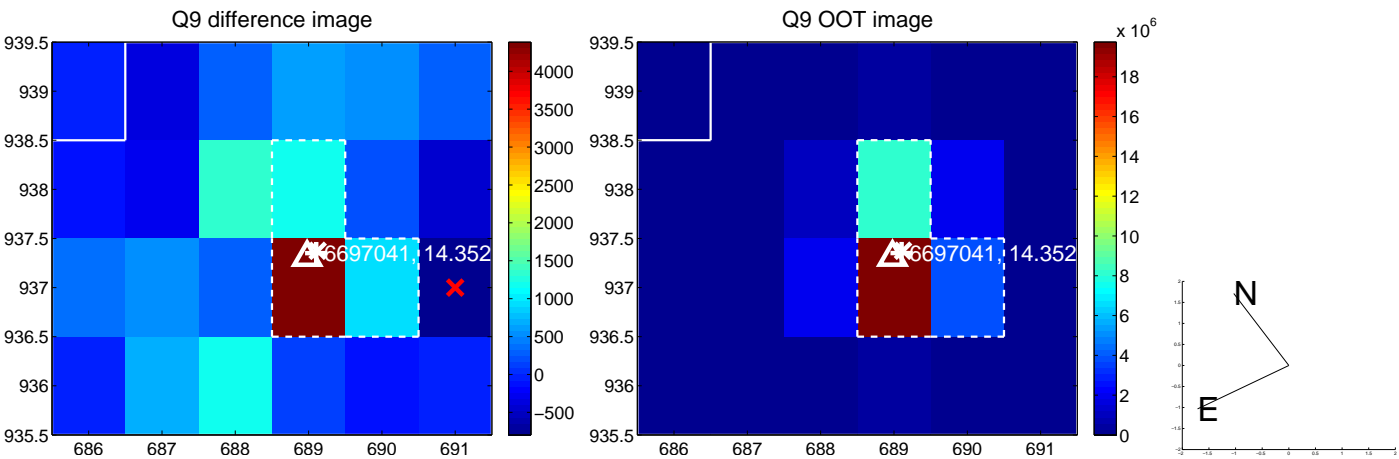


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

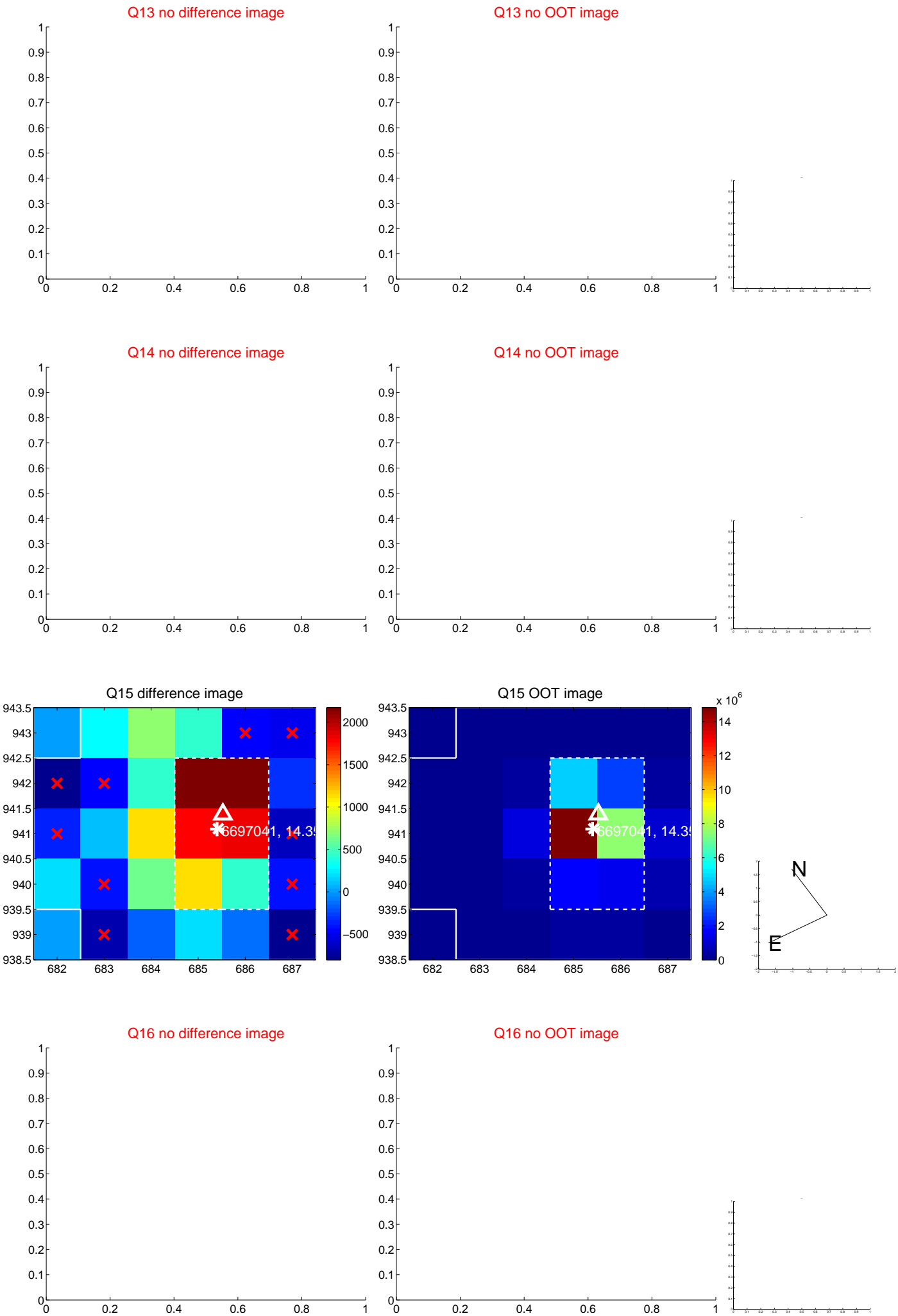




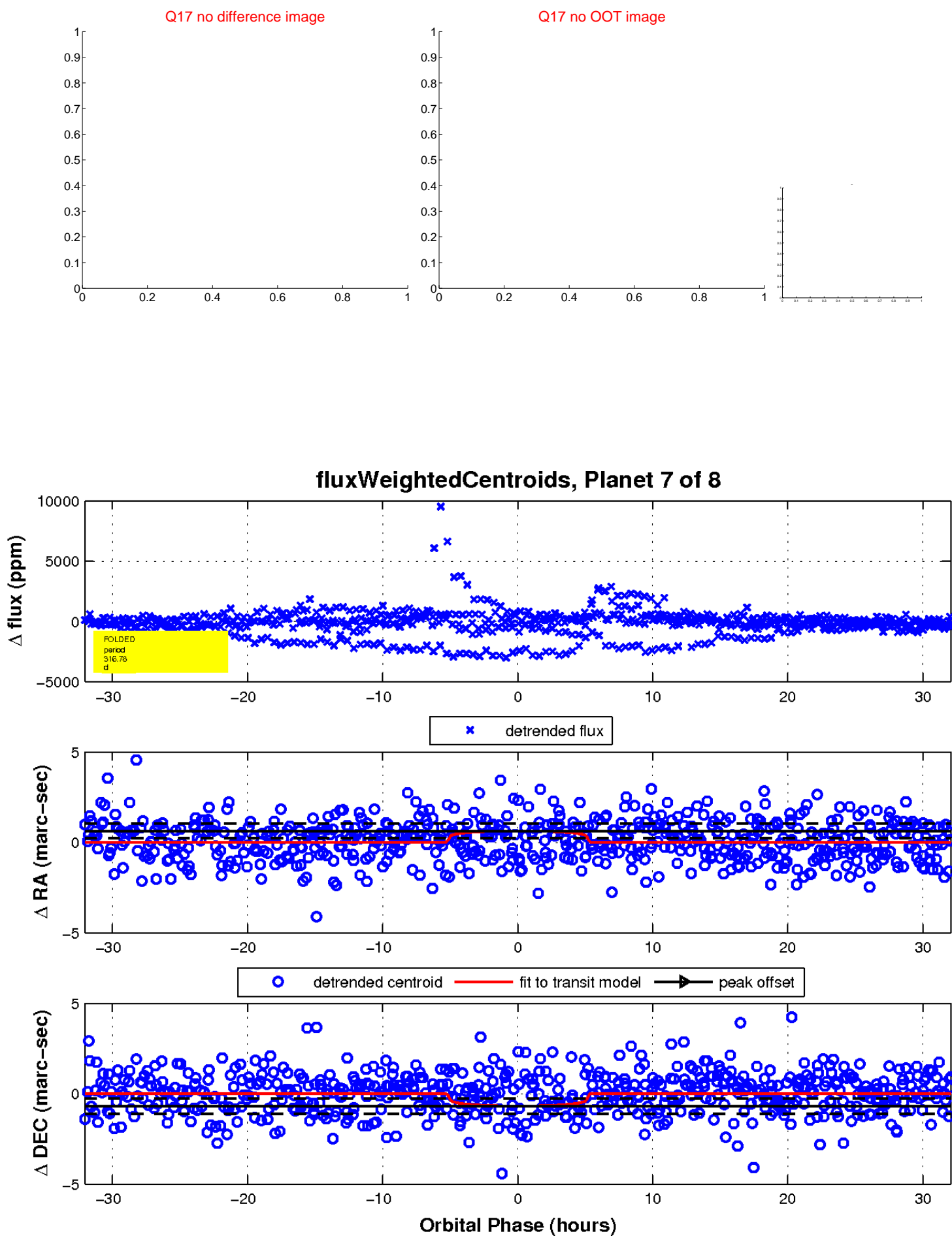
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

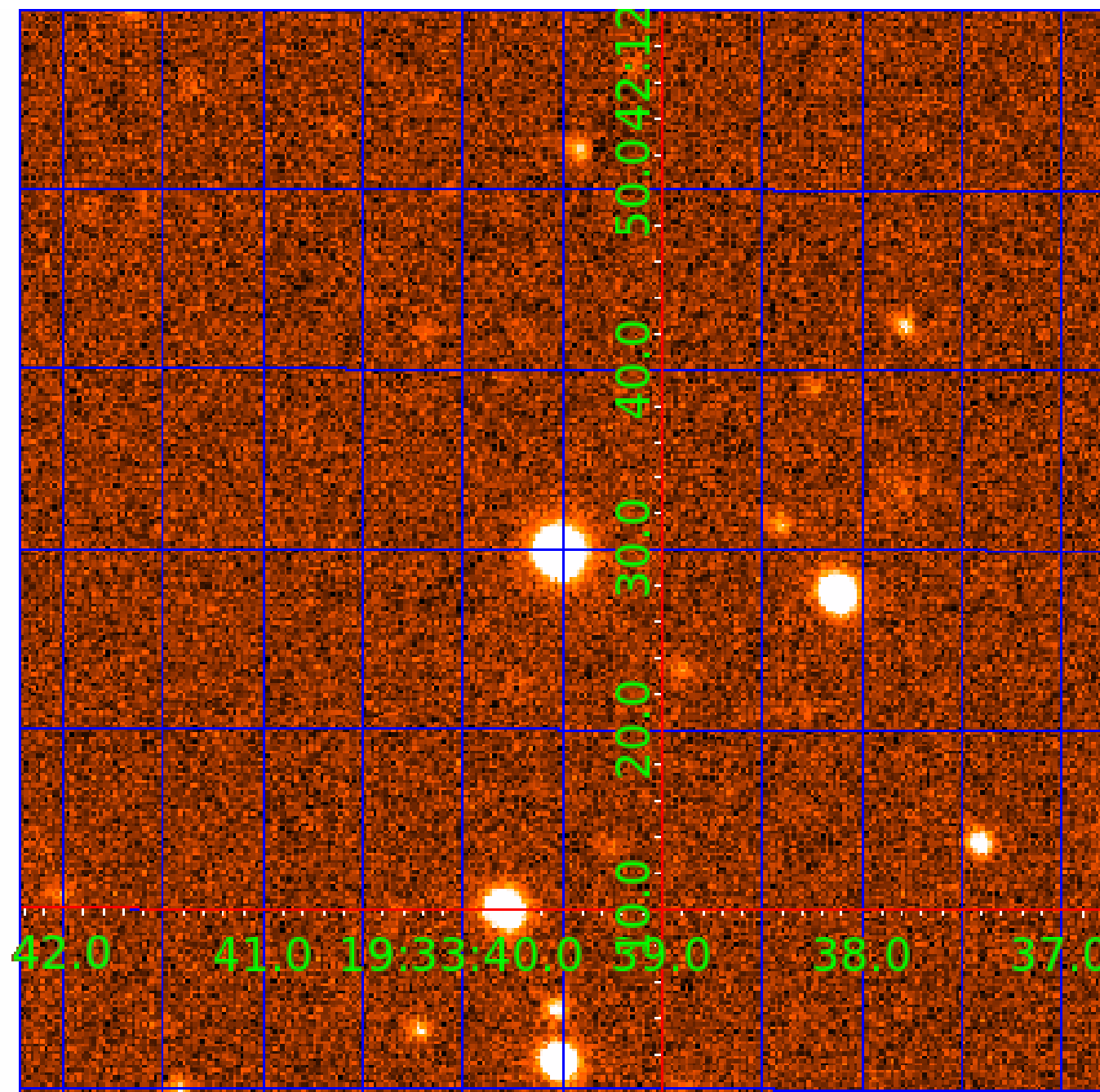


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination



# KIC 006697041

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006697041-01	OBS	No	560.179429	236.001075	777.9	5.987	14.9	7.5	0.66	5372	1.87	0.24
006697041-02	OBS	No	560.251987	433.550244	1144.0	6.975	21.7	9.6	0.66	5372	2.32	0.24
006697041-03	OBS	No	422.914325	520.970076	764.6	8.345	14.5	6.3	0.66	5372	1.92	0.35
006697041-04	OBS	No	382.523591	370.727132	576.7	6.888	11.7	5.8	0.66	5372	1.64	0.41
006697041-05	OBS	No	468.477500	317.928384	1242.6	14.468	11.7	9.6	0.66	5372	2.46	0.31
006697041-06	OBS	No	581.615296	233.381085	832.2	15.368	13.3	7.0	0.66	5372	1.93	0.23
006697041-07	OBS	No	316.778435	188.503522	678.1	10.697	11.2	8.1	0.66	5372	1.76	0.52
006697041-08	OBS	No	565.021990	414.543045	592.8	10.500	11.1	-1.0	0.66	5372	1.59	0.24

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006697041-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006697041-02	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—SAME_NTL_PERIOD—CENT_FEW_DIFFS
006697041-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_DIFFS
006697041-04	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
006697041-05	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
006697041-06	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006697041-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006697041-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

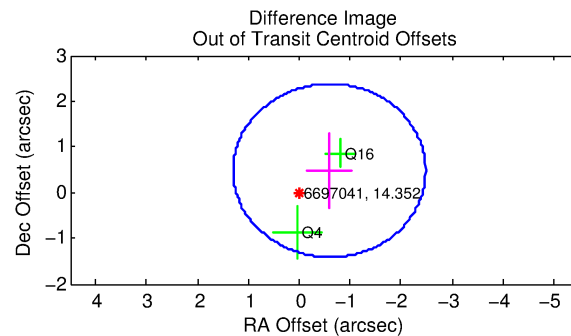
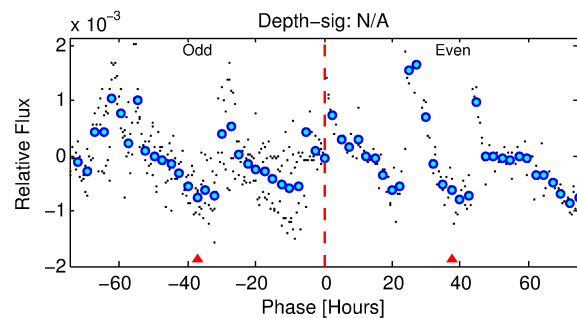
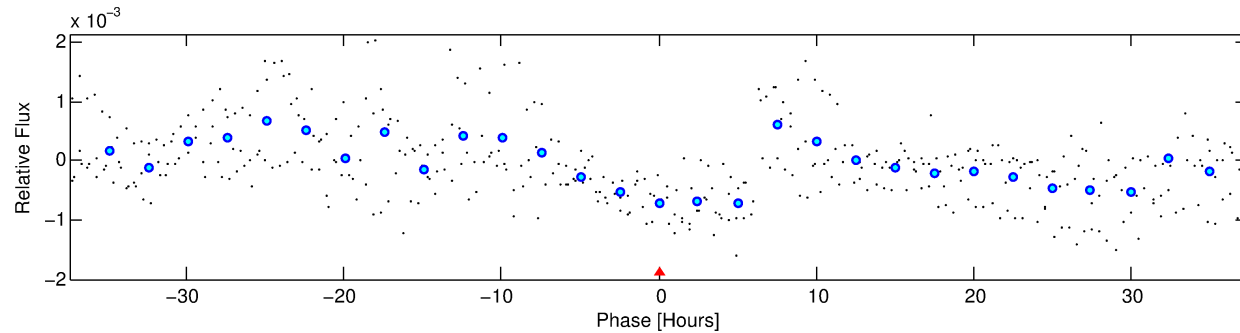
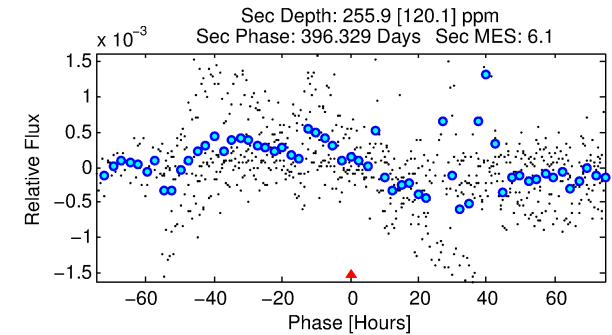
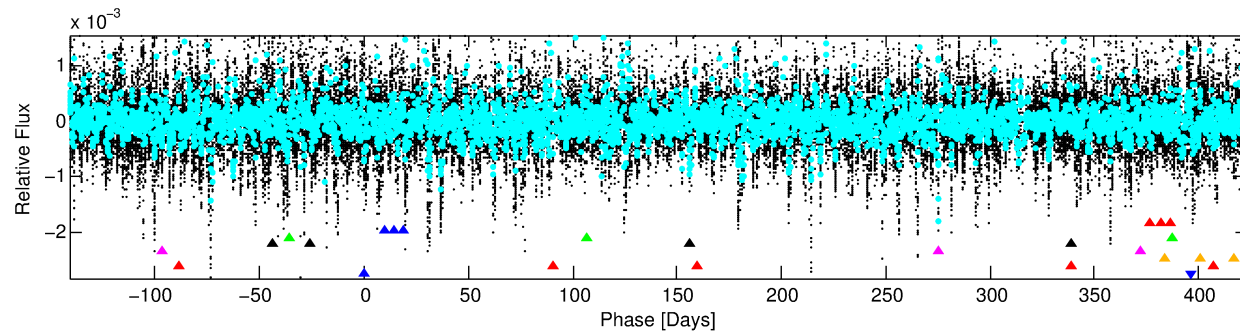
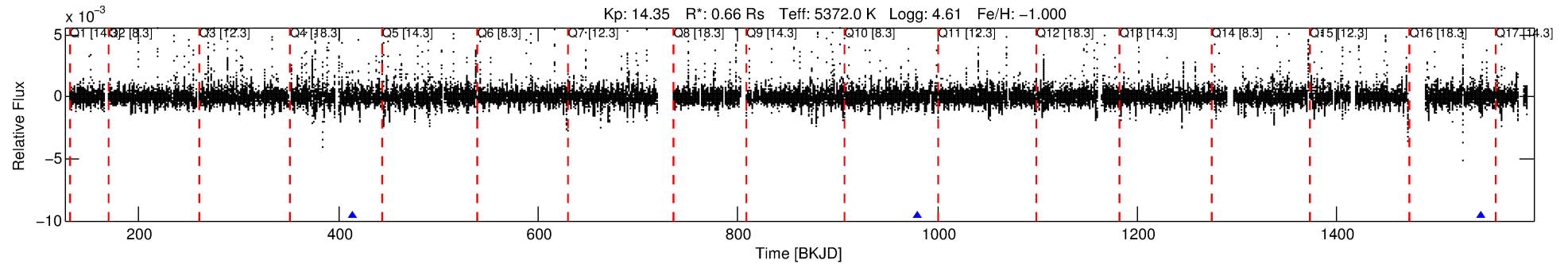
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006697041-08

No Significant Match Found

# DV One-Page Summary

KIC: 6697041 Candidate: 8 of 8 Period: 565.022 d



## TPS TCE Results:

Period = 565.02199 d  
Epoch = 414.5430 BKJD

DV fit results are unavailable

## DV Diagnostic Results:

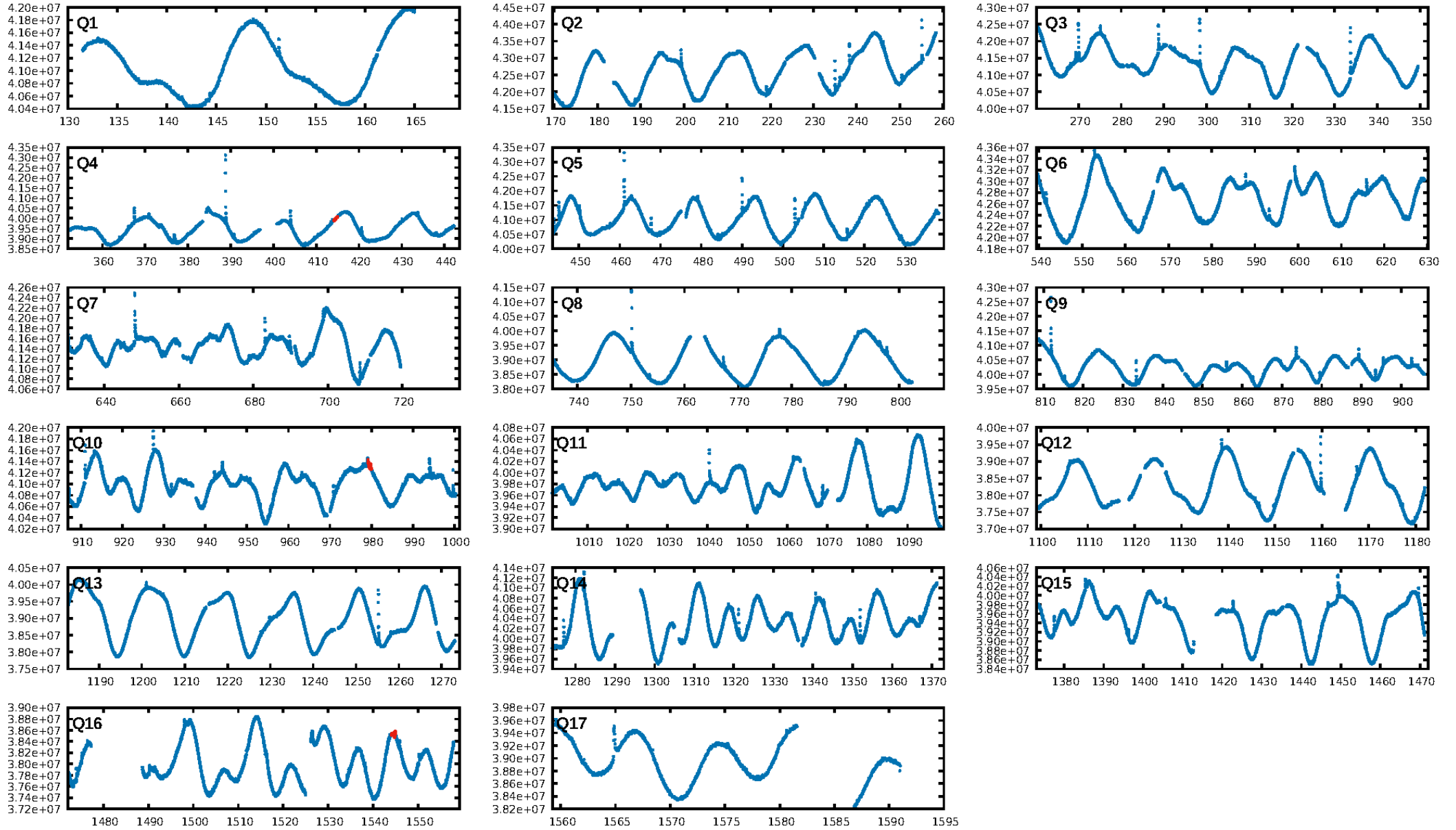
ShortPeriod-sig: 100.0% [9.08 $\sigma$ ]  
LongPeriod-sig: 100.0% [21.40 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -1.801

Centroid-sig: 44.6%  
Centroid-so: 1.239 arcsec [1.06 $\sigma$ ]  
OotOffset-rm: 0.765 arcsec [1.21 $\sigma$ ]  
KicOffset-rm: 0.722 arcsec [1.11 $\sigma$ ]  
OotOffset-st: 0/0/2/0 [2]  
KicOffset-st: 0/0/2/0 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [3/3]

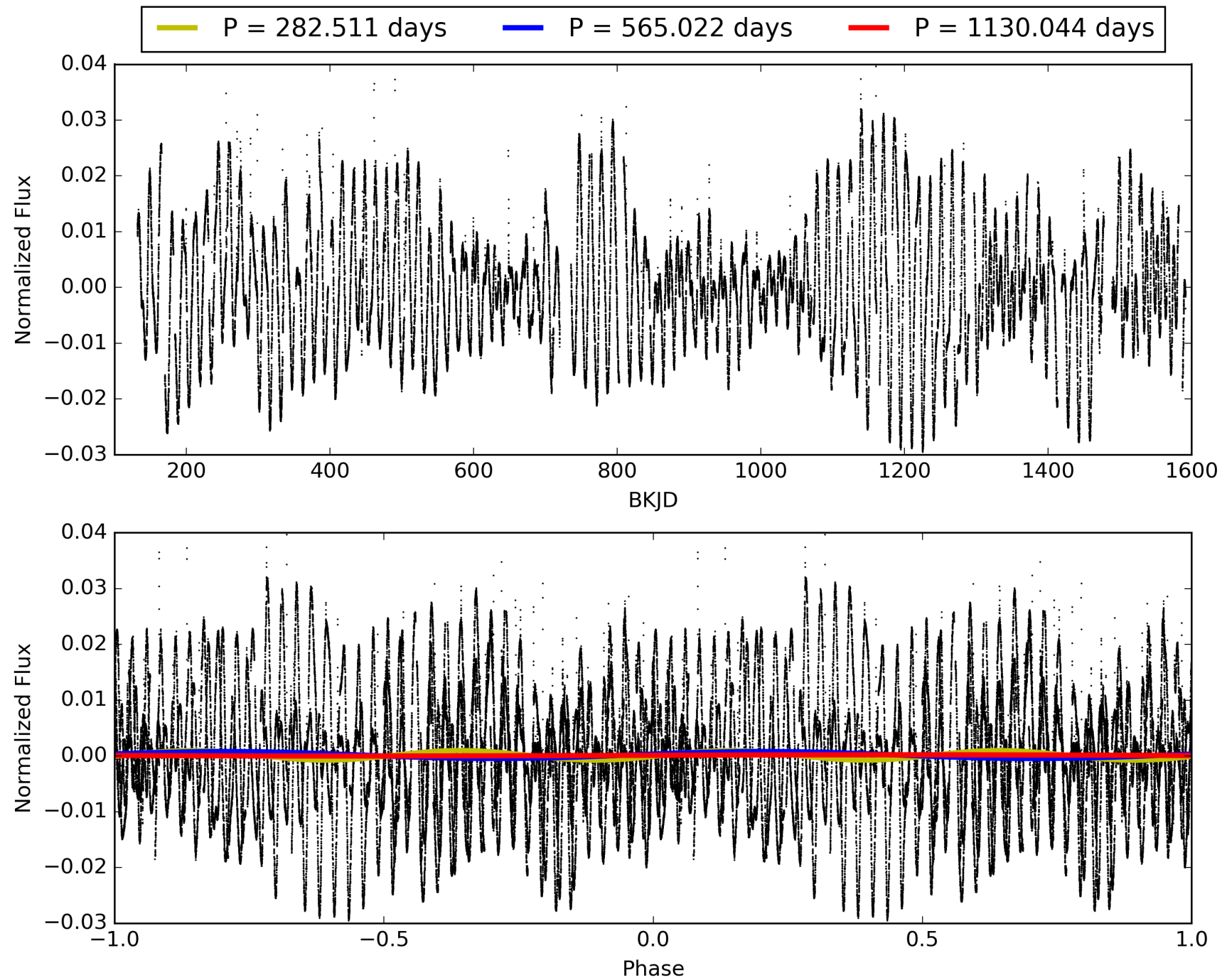
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:10:32 Z

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

# TCE 006697041-08, PDC Light Curves



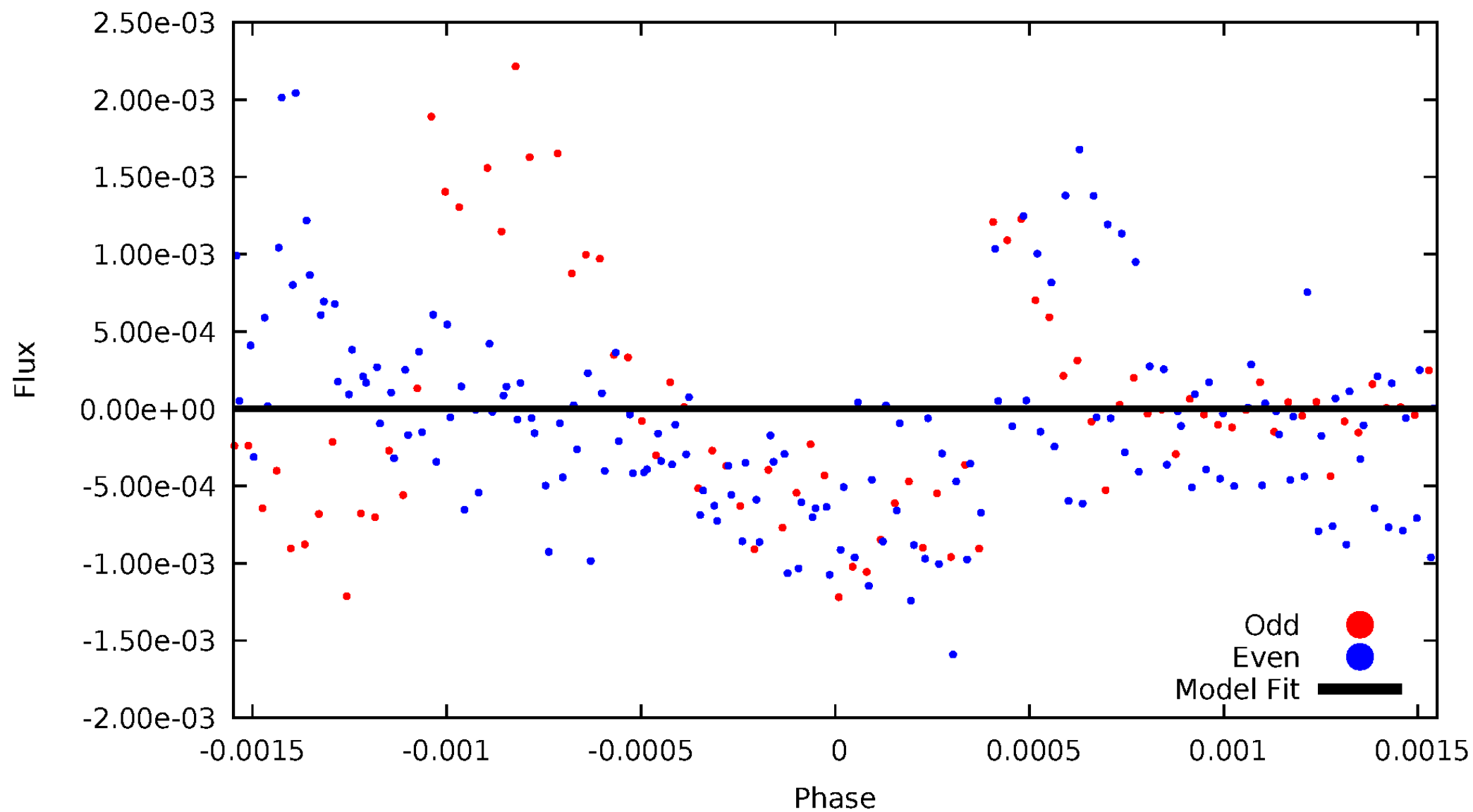
TCE 006697041-08





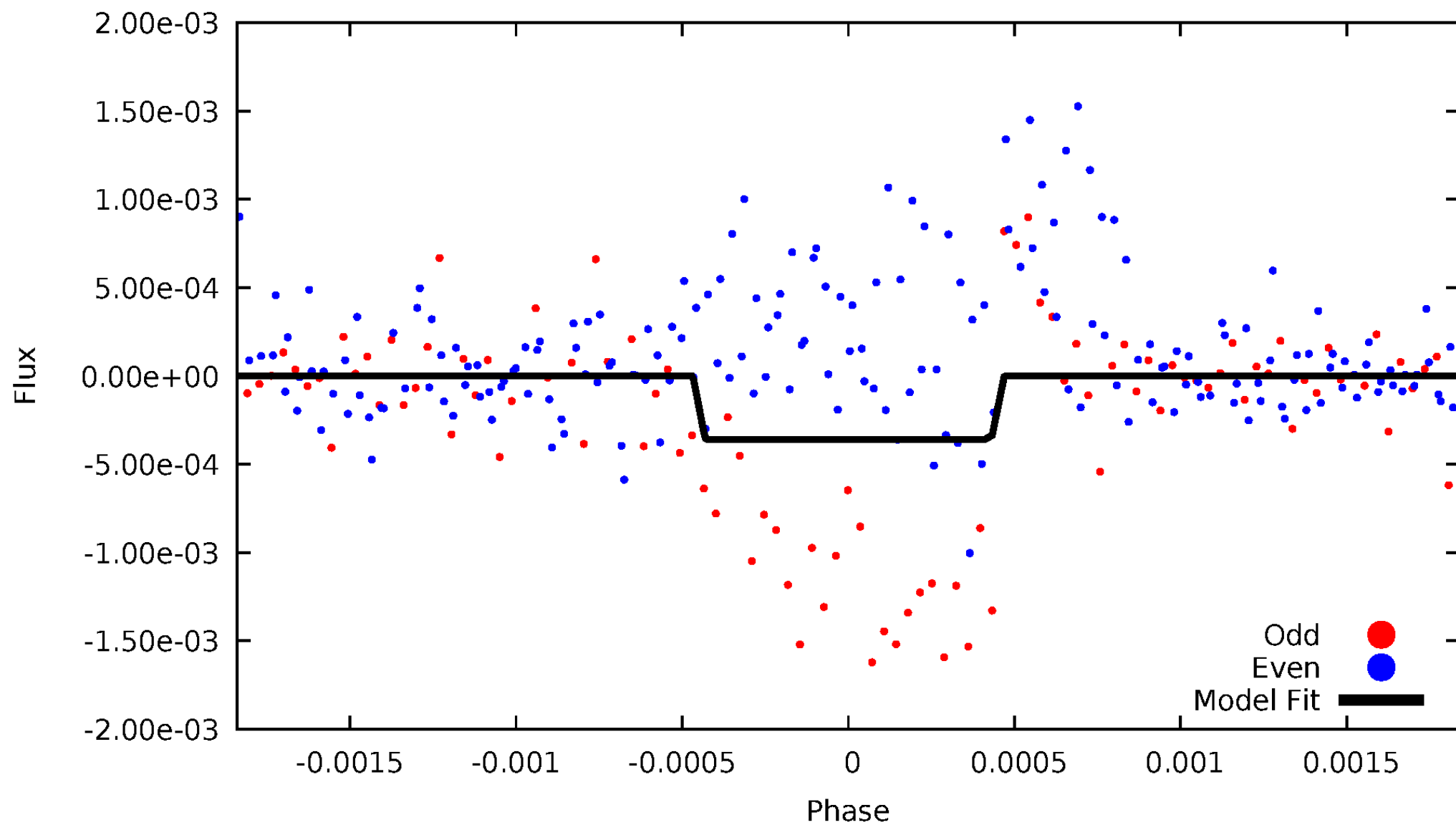
# DV Odd/Even

TCE 006697041-08



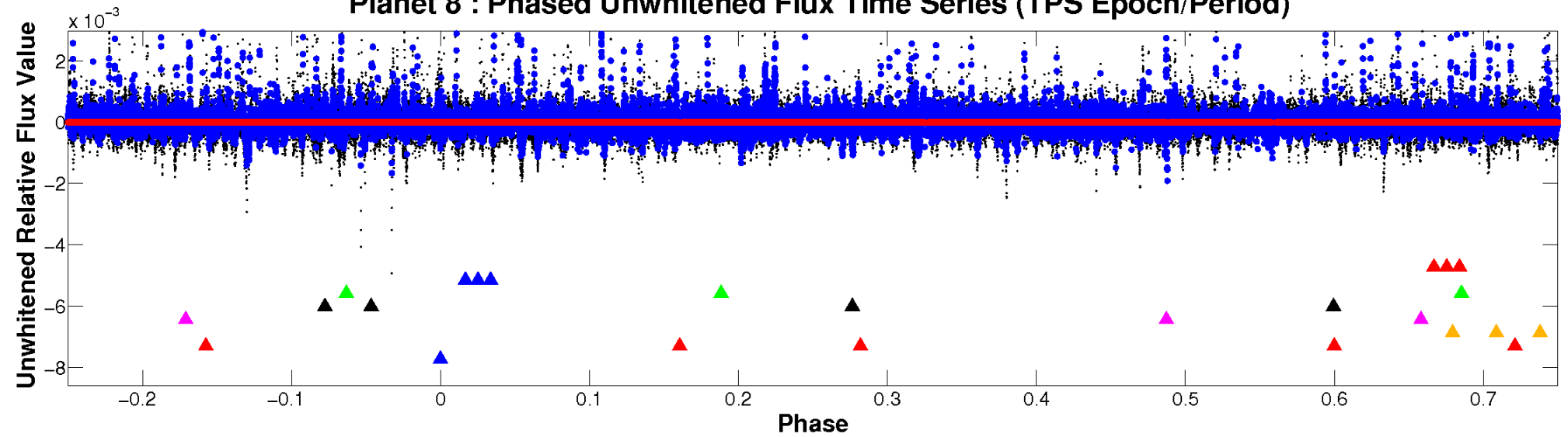
# ALT Odd/Even

TCE 006697041-08



# Non-Whitened Vs. Whitened Light Curve

**Planet 8 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**

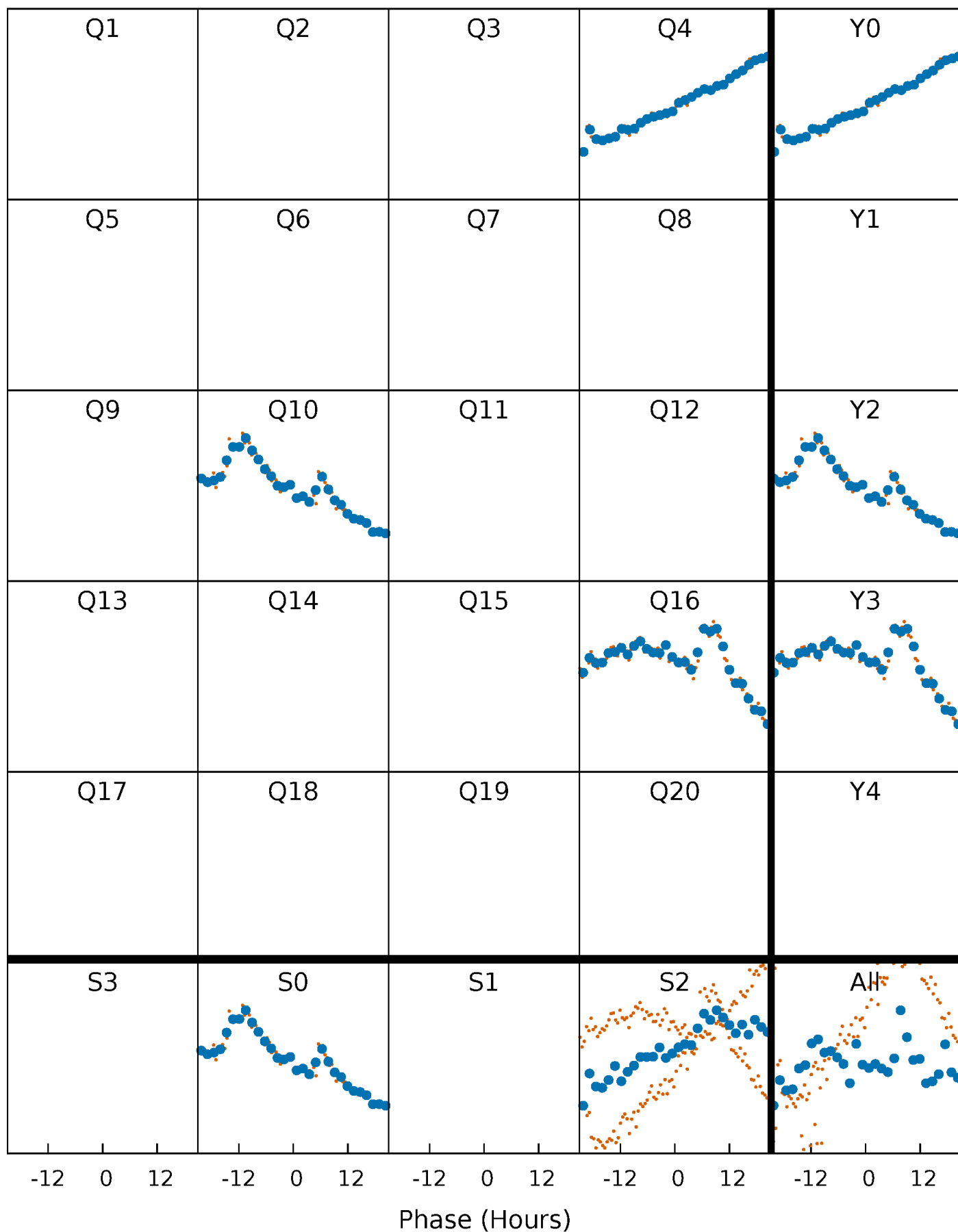


**Planet 8 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



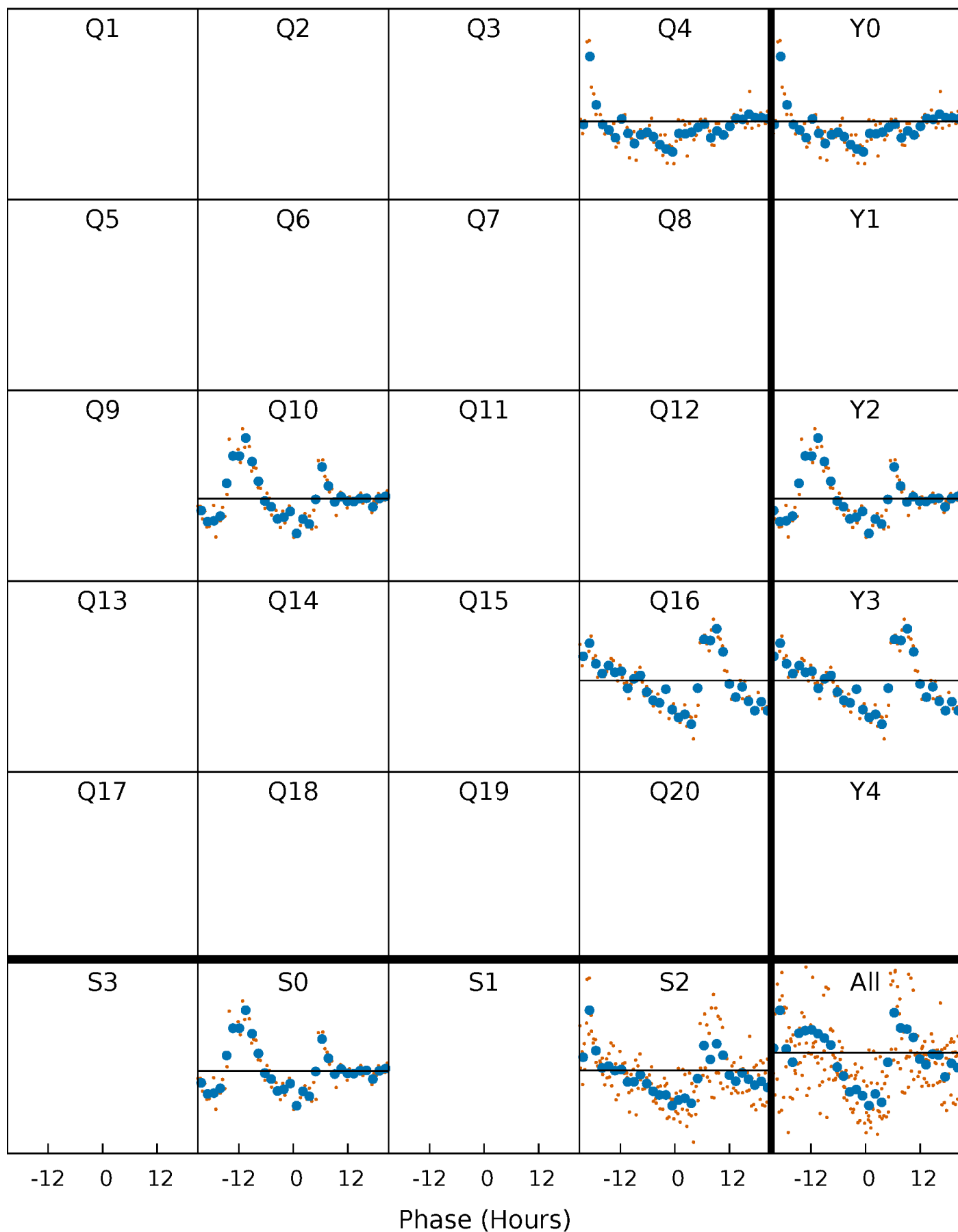
# PDC Quarter-Phased Transit Curves

TCE 006697041-08     $P=565.021990$  Days     $T_0=414.543045$  (BKJD)



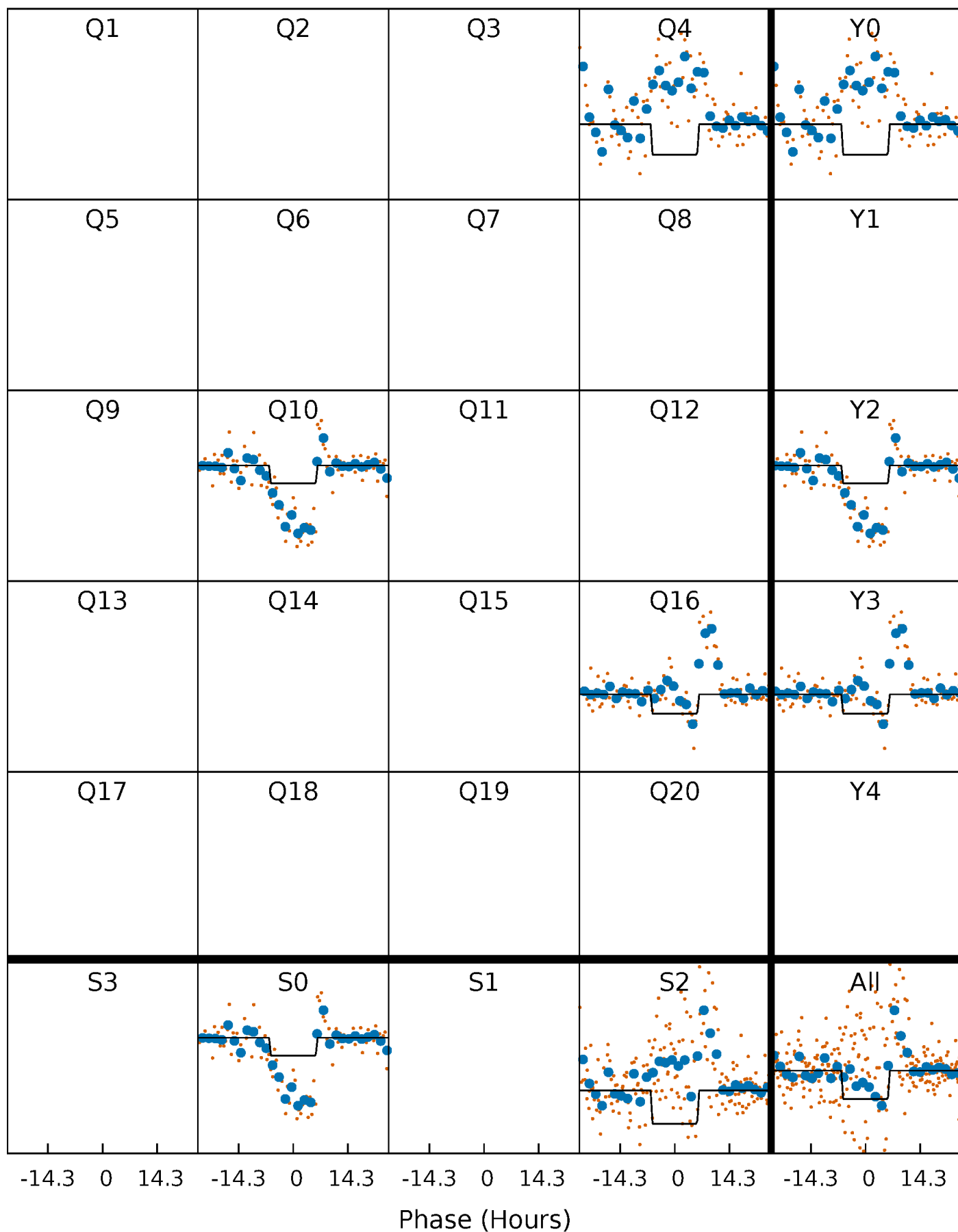
# DV Quarter-Phased Transit Curves

TCE 006697041-08     $P=565.021990$  Days     $T_0=414.543045$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

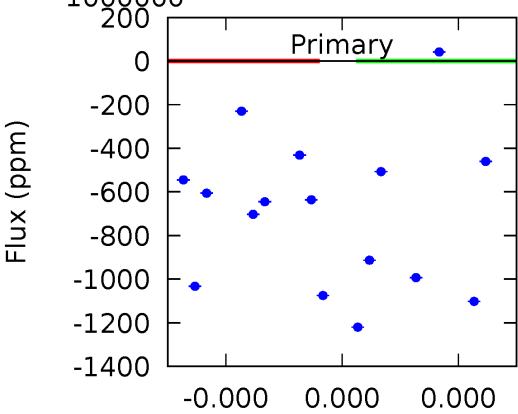
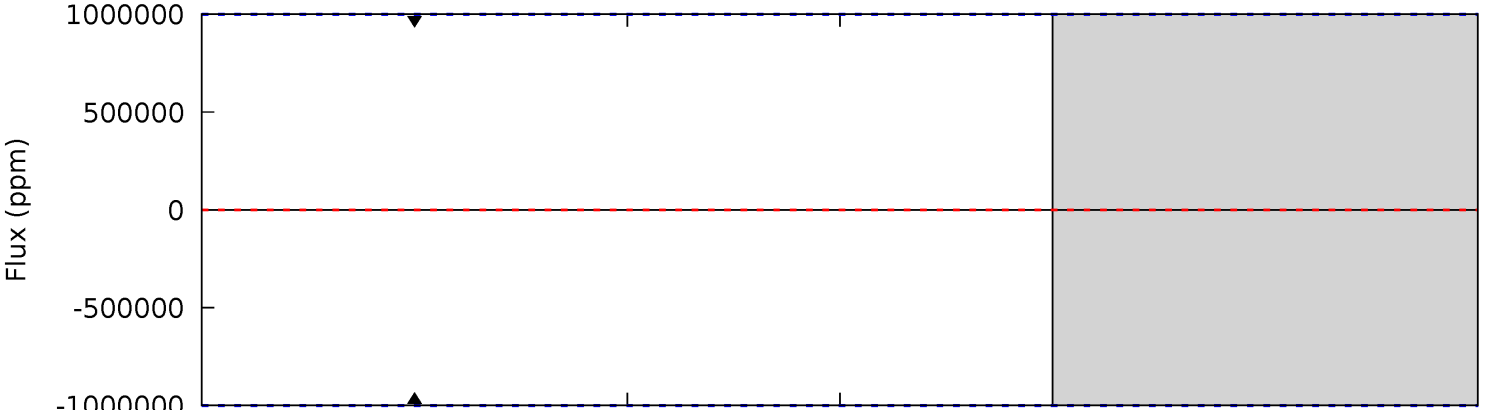
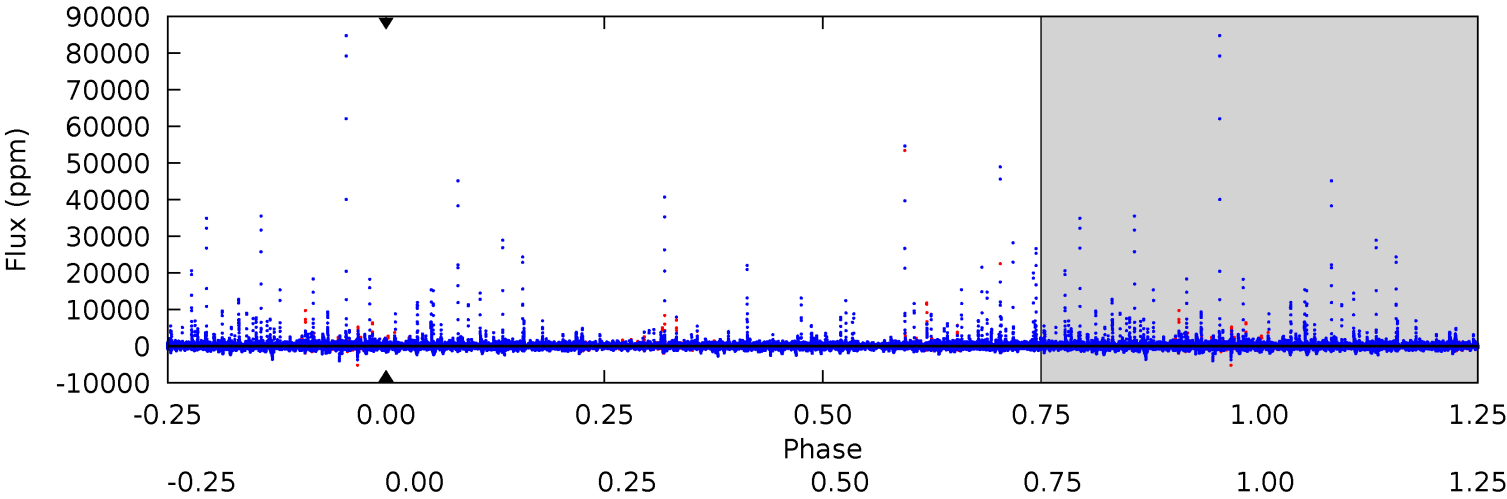
TCE 006697041-08 P=565.021990 Days  $T_0=414.507710$  (BKJD)



# DV Model-Shift Uniqueness Test

006697041-08, P = 565.021990 Days, E = 414.543045 Days

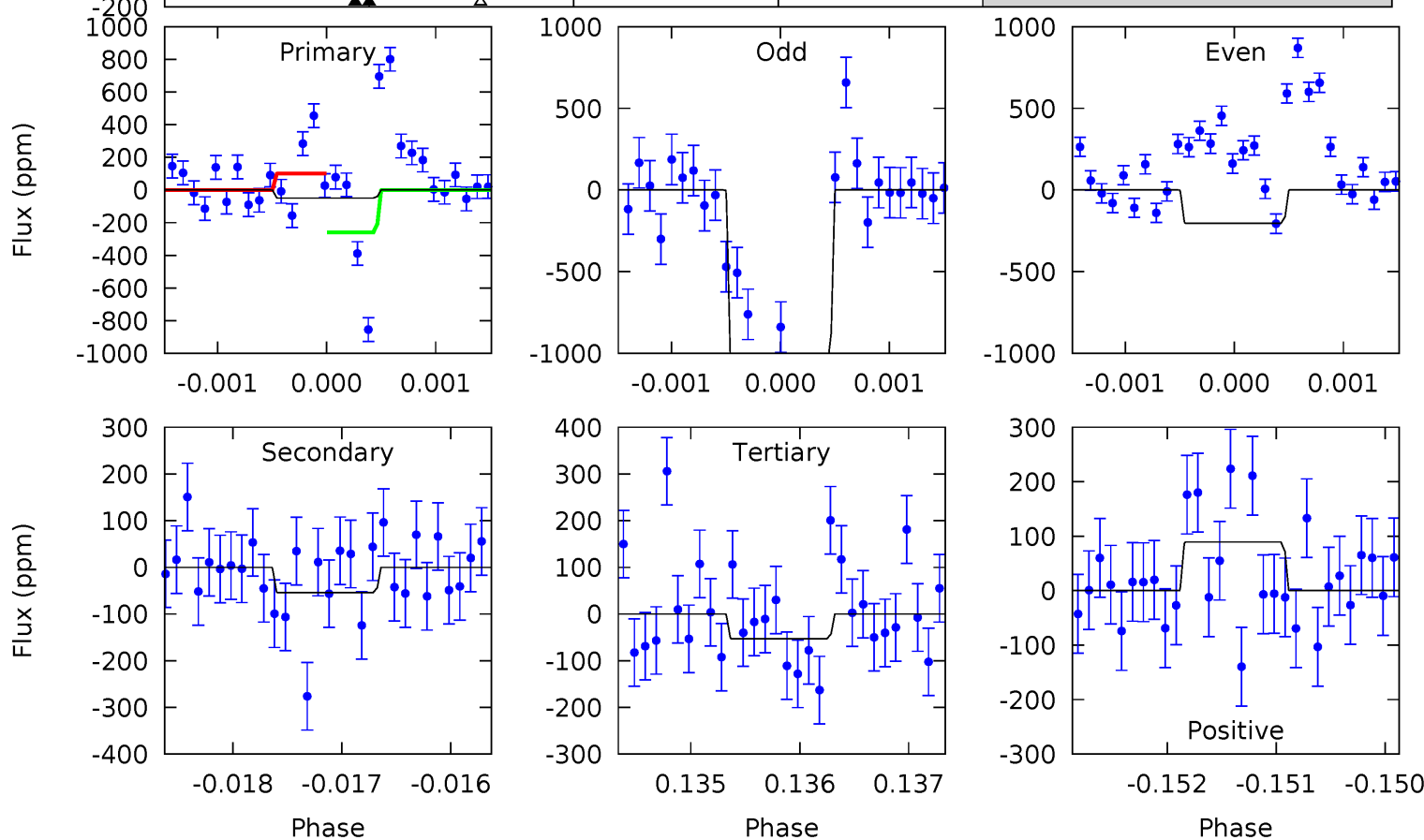
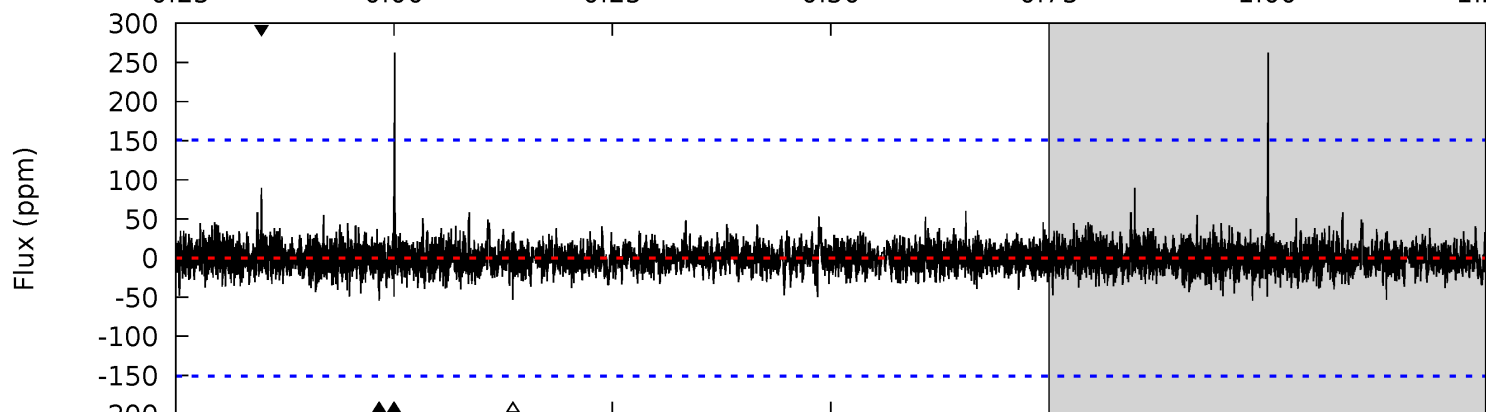
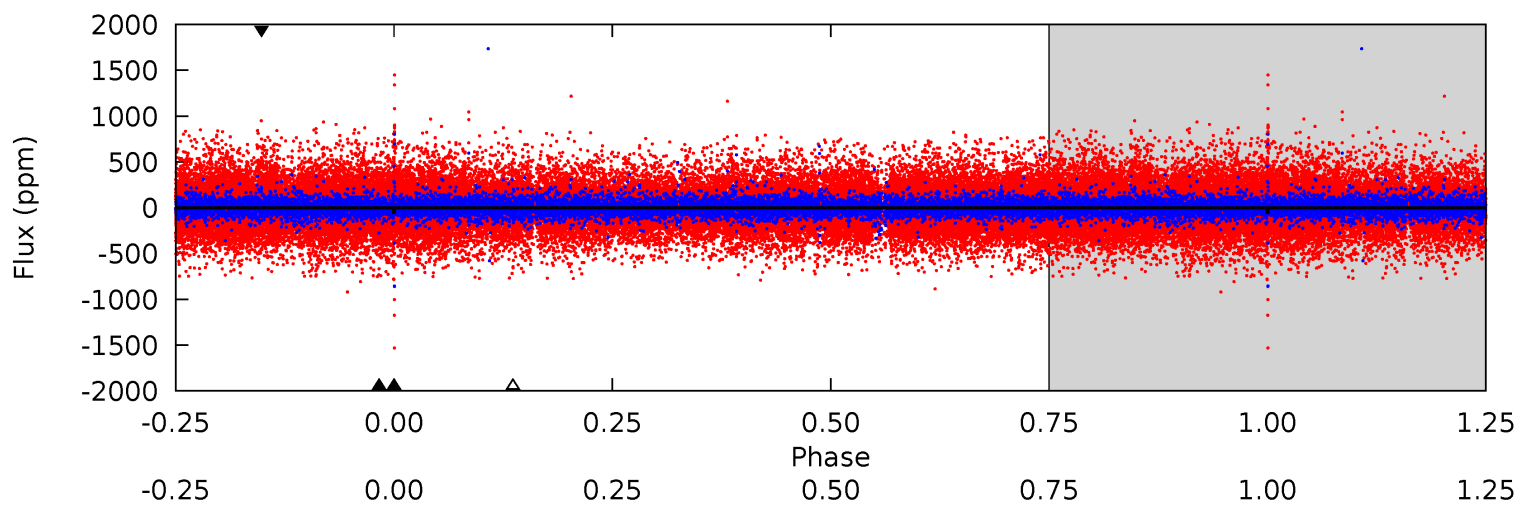
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

006697041-08, P = 565.021990 Days, E = 414.507710 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
1.78	1.96	1.92	3.24	5.46	3.31	0.45	-0.14	-1.46	0.04	-1.28	18.6	2.59	0.83	2.86





### Stellar Parameters For KIC 006697041

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5372^{+177}_{-145}$	$4.612^{+0.072}_{-0.054}$	$-1.000^{+0.300}_{-0.300}$	$0.656^{+0.063}_{-0.051}$	$0.642^{+0.061}_{-0.024}$	$3.210^{+0.917}_{-0.596}$
	+3%/-3%	+2%/-1%	+30%/-30%	+10%/-8%	+10%/-4%	+29%/-19%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 006697041-08 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$0 \pm 1000000$	$5.32^{+6.35}_{-3.67}$	$249^{+11}_{-9}$	$2624^{+15259}_{-19896}$	$2257^{+5035028}_{-4483541}$
Alt.	$-54 \pm 28$	$5.27^{+5.35}_{-3.47}$	$249^{+10}_{-9}$	$2506^{+887}_{-434}$	$1338^{+11411}_{-1073}$

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

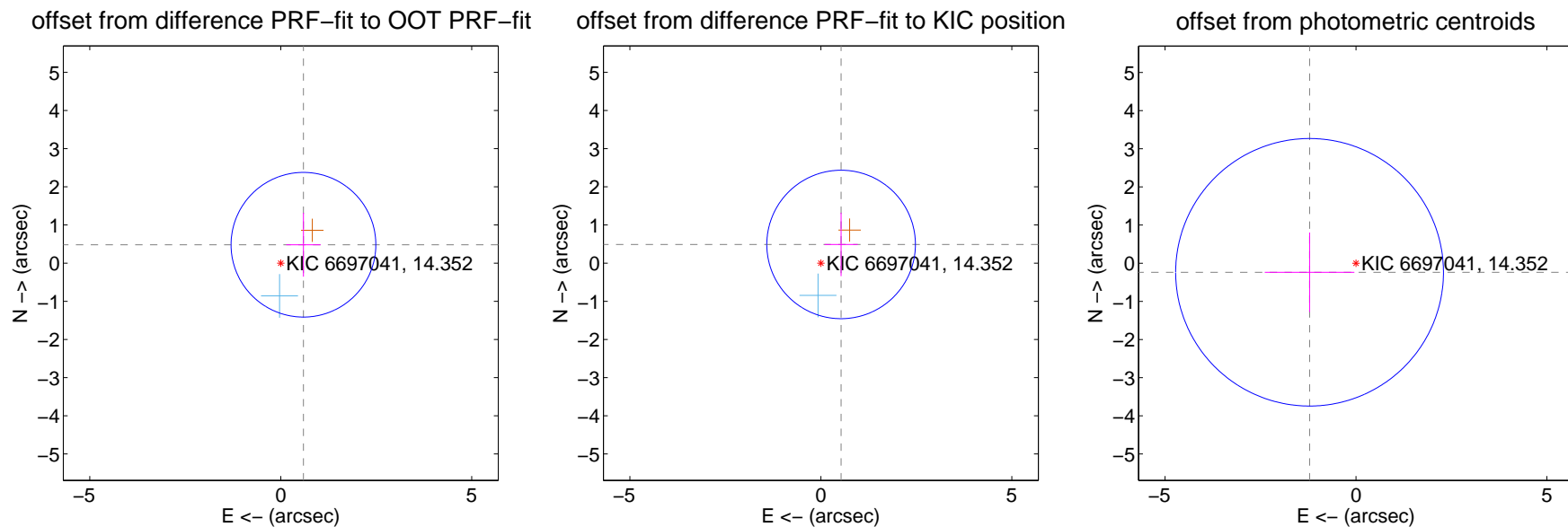
## DV Centroid Data

Supplemental centroid analysis for 006697041-08. Kepler magnitude: 14.35. Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

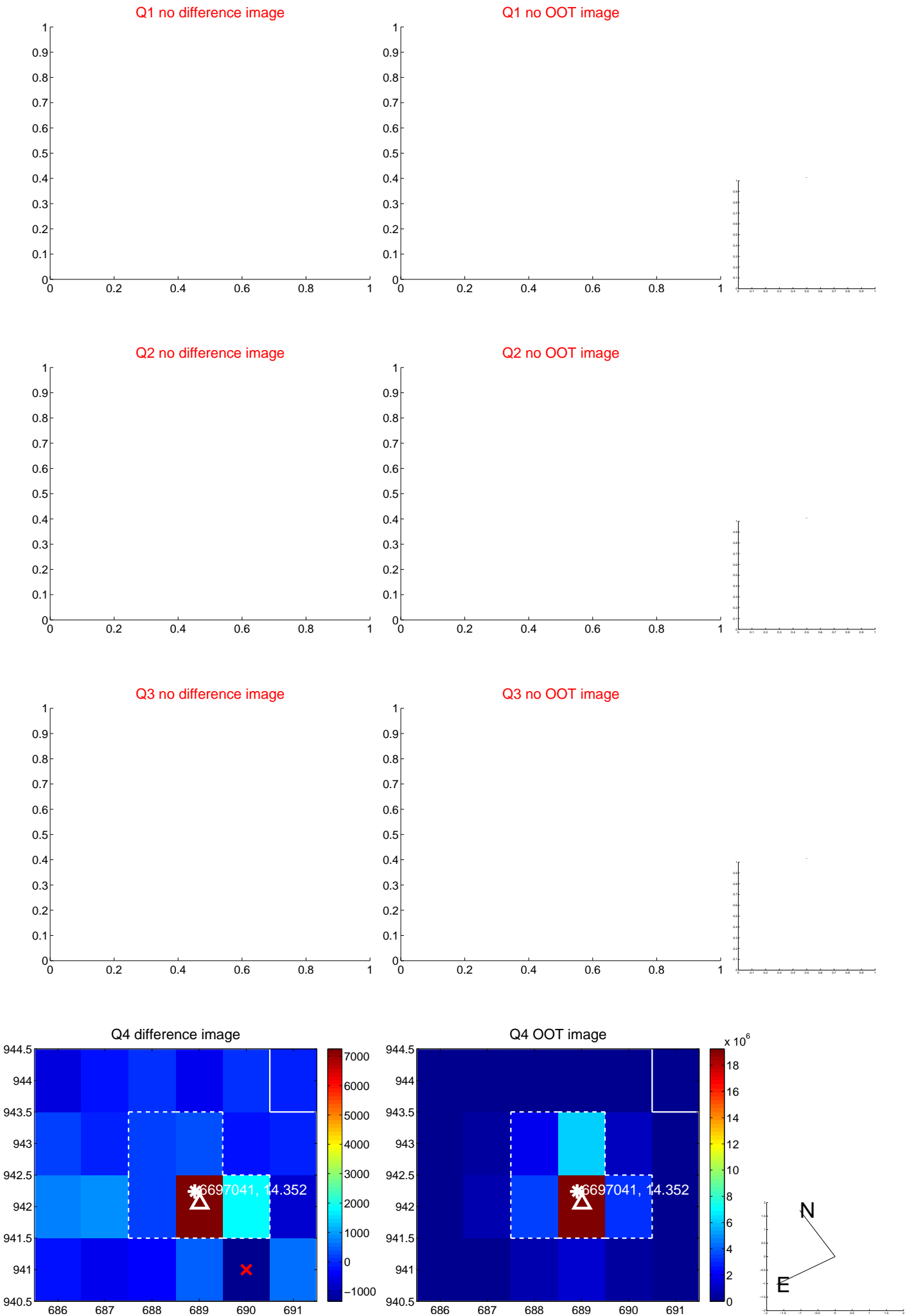
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.765 \pm 0.632$	1.21	$-0.594 \pm 0.450$	$0.482 \pm 0.836$
PRF-fit source offset from KIC position	$0.722 \pm 0.649$	1.11	$-0.530 \pm 0.435$	$0.490 \pm 0.832$
photometric centroid source offset	$1.24 \pm 1.17$	1.06	$1.22 \pm 1.17$	$-0.24 \pm 1.04$



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

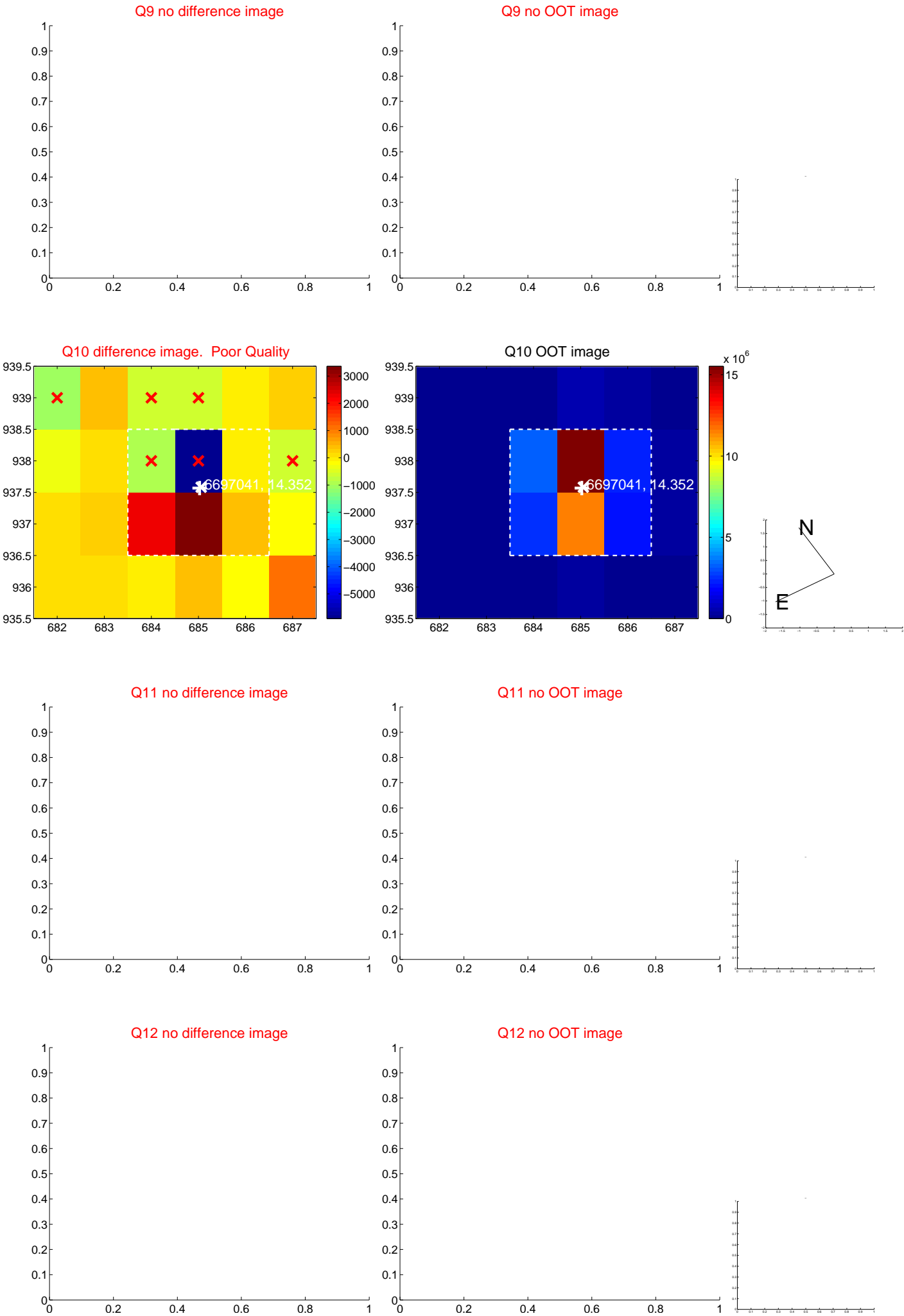
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



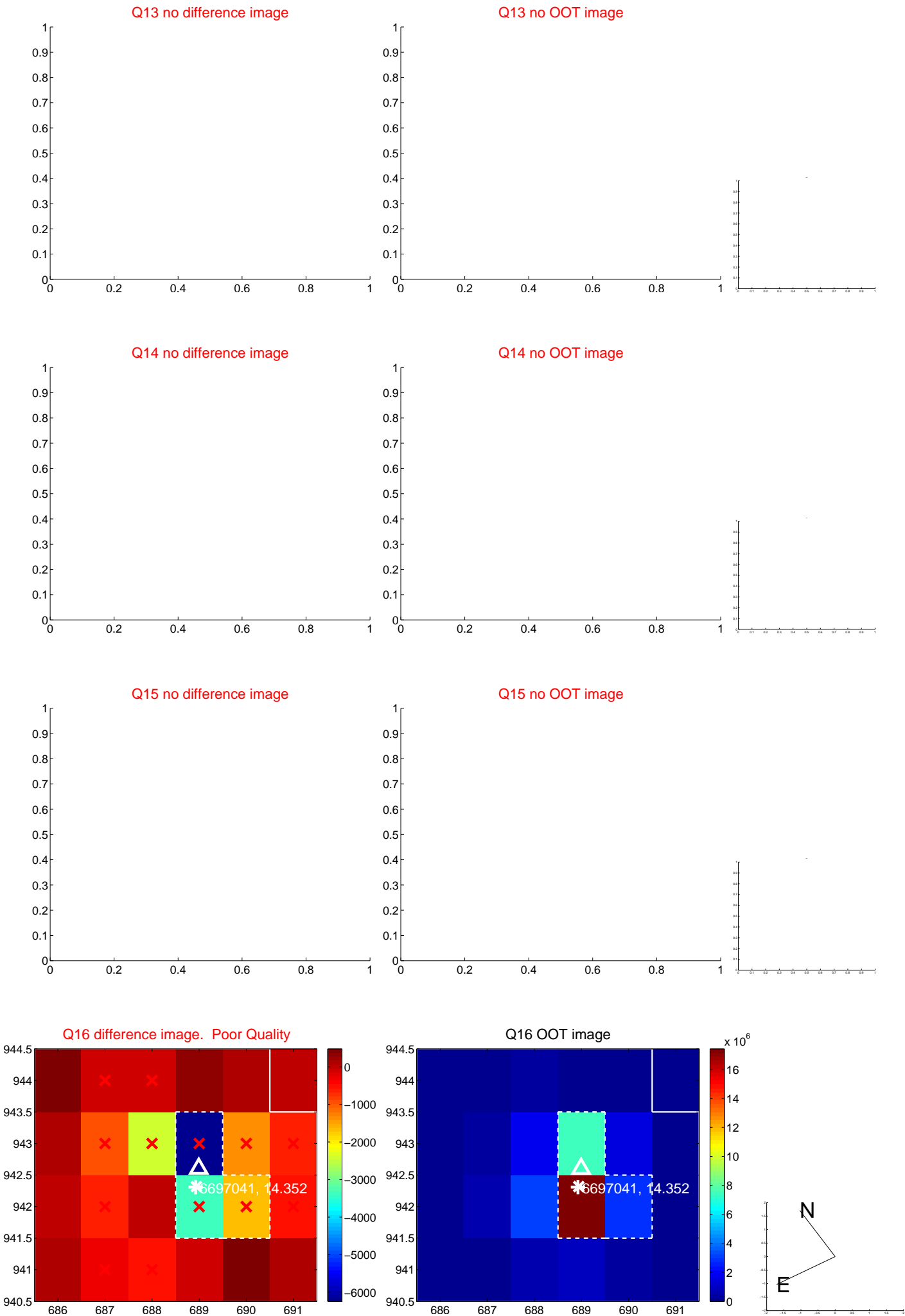
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



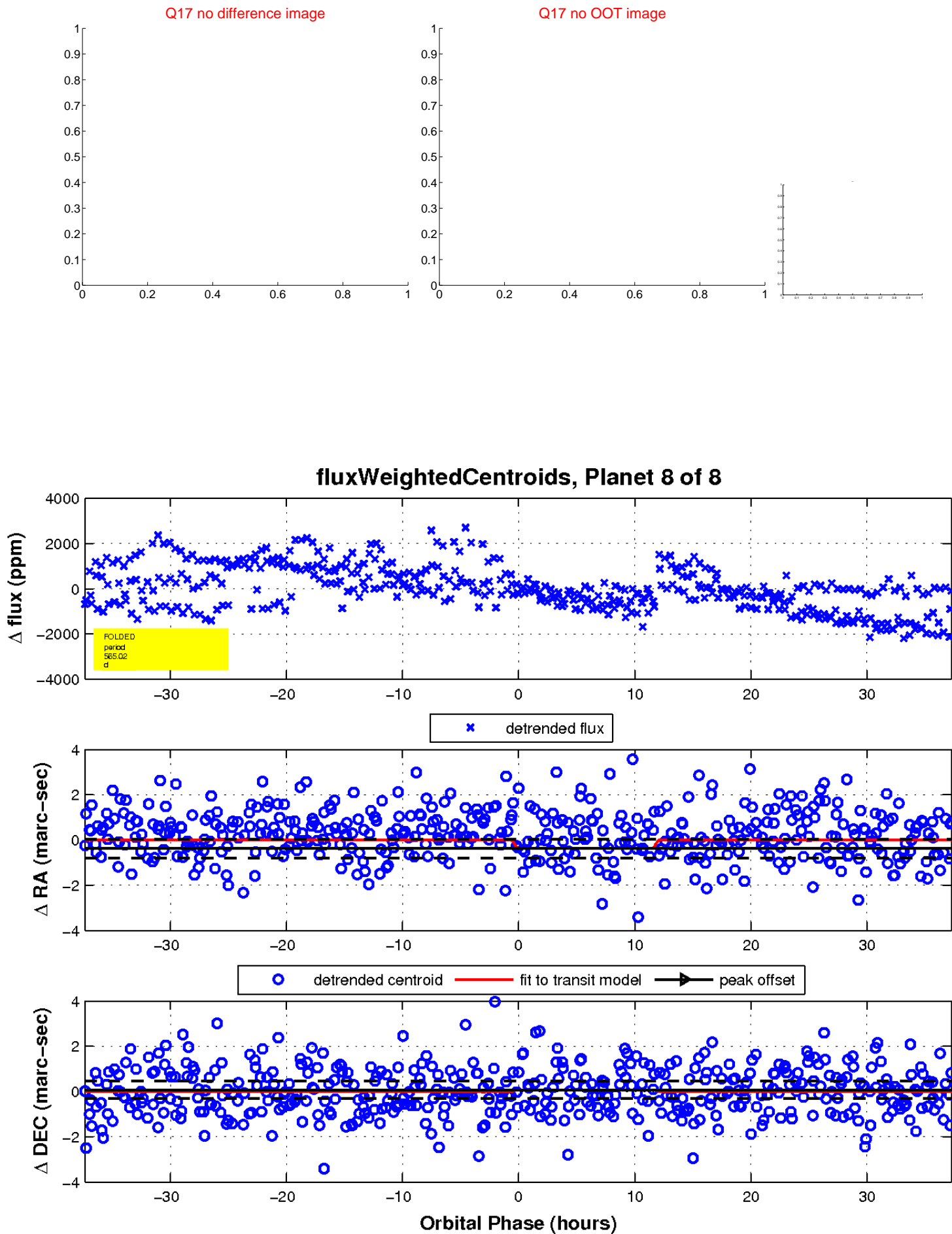
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



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



# UKIRT Image

Declination

