

# KIC 003452996

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003452996-01	OBS	No	234.033860	218.308106	592.1	2.667	13.7	3.3	1.79	5031	4.23	3.51
003452996-02	OBS	No	149.492667	234.086469	657.8	2.088	17.8	4.3	1.79	5031	4.77	6.38
003452996-03	OBS	No	240.899586	347.488329	775.1	3.000	16.8	-1.0	1.79	5031	4.83	3.38

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003452996-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003452996-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003452996-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_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.

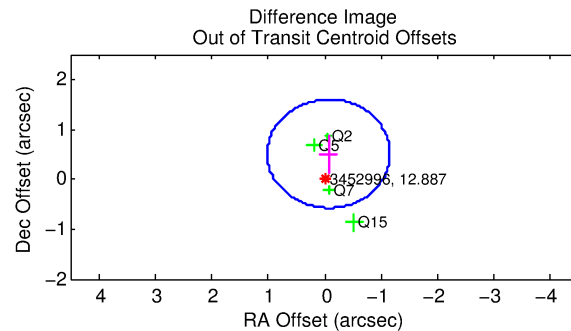
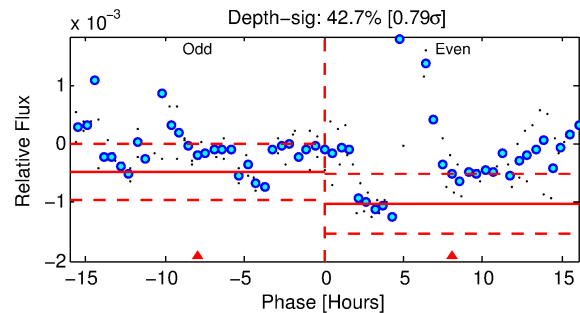
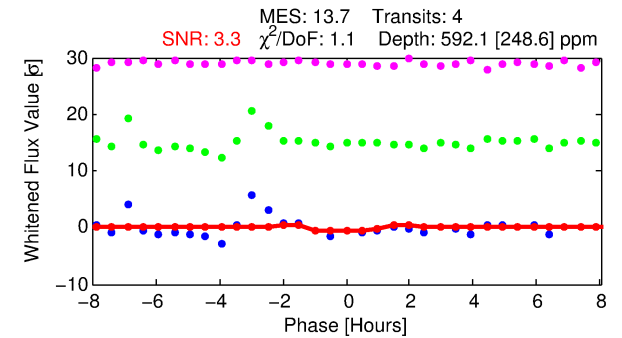
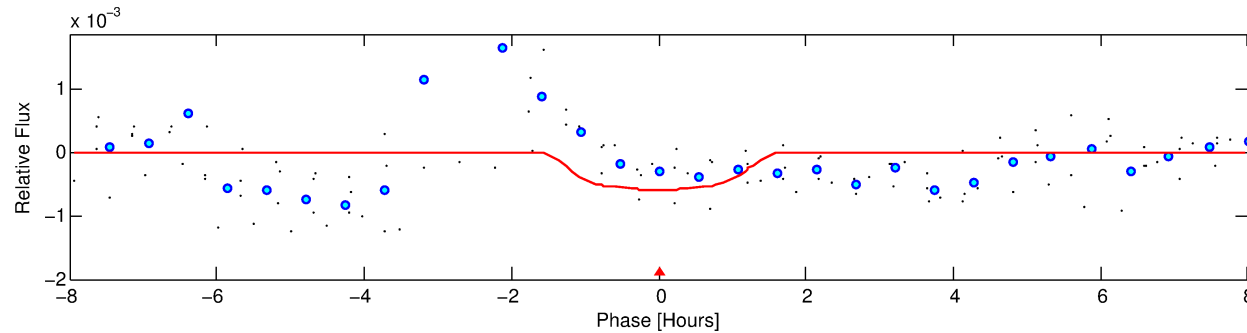
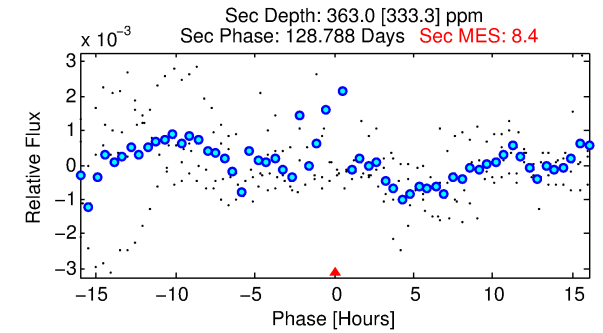
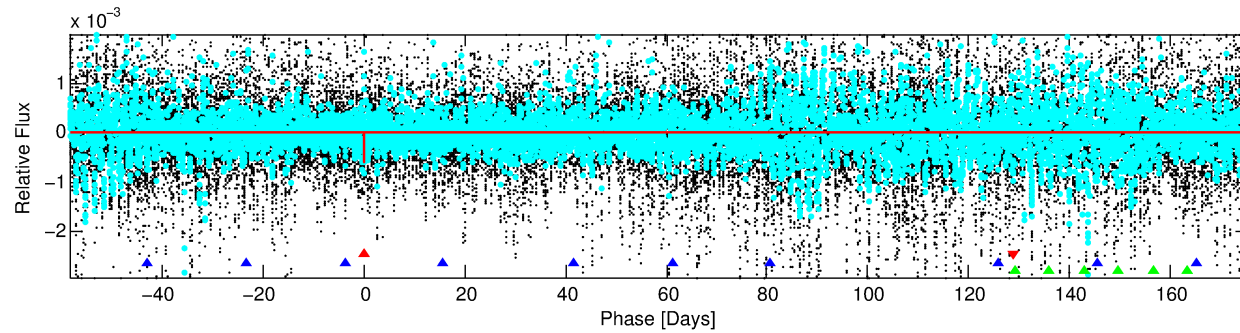
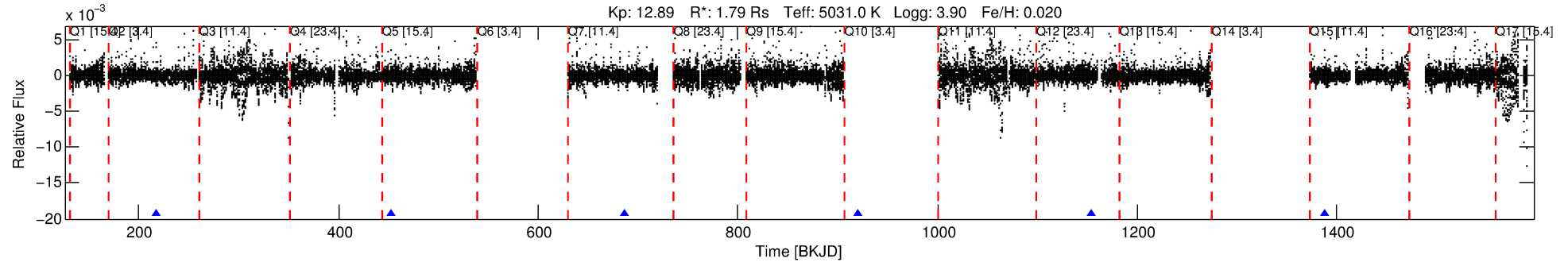
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003452996-01

No Significant Match Found

# DV One-Page Summary

KIC: 3452996 Candidate: 1 of 3 Period: 234.034 d



## DV Fit Results:

Period = 234.03386 [0.00354] d  
Epoch = 218.3081 [0.0093] BKJD  
Rp/R\* = 0.0217 [0.1503]  
a/R\* = 678.63 [16005.32]  
b = 0.14 [170.36]  
Seff = 3.51 [1.42]  
Teff = 349 [35] K  
Rp = 4.23 [29.38] Re  
a = 0.7224 [0.2611] AU  
Ag = 5832.74 [81060.79] [0.07 $\sigma$ ]  
Teffp = 4715 [16376] K [0.27 $\sigma$ ]

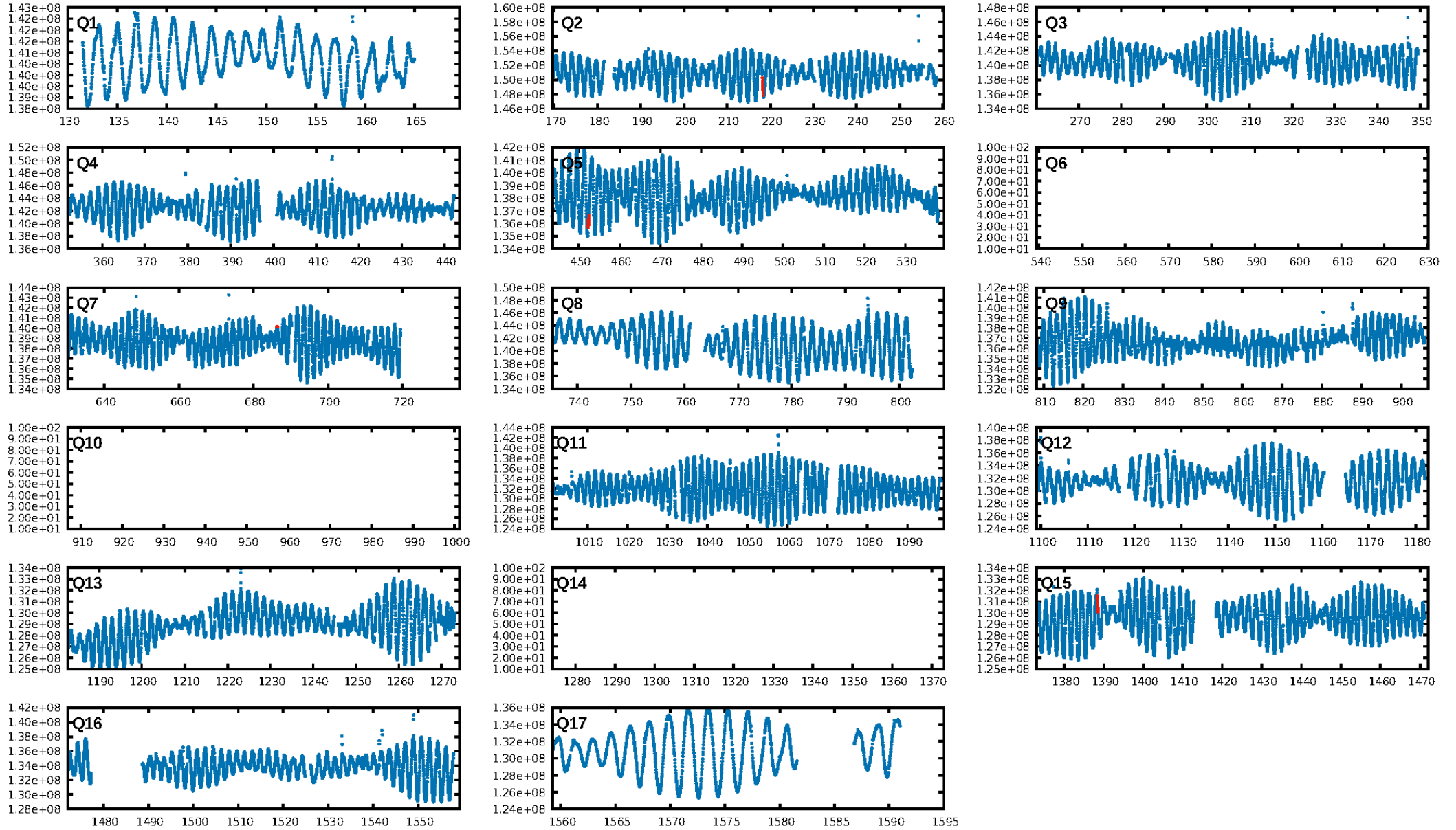
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [599.06 $\sigma$ ]  
LongPeriod-sig: 100.0% [41.05 $\sigma$ ]  
ModelChiSquare2-sig: 9.7%  
ModelChiSquareGof-sig: 95.6%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 2.235  
Centroid-sig: 28.6%  
Centroid-so: 0.851 arcsec [0.83 $\sigma$ ]  
OotOffset-rm: 0.514 arcsec [1.42 $\sigma$ ]  
KicOffset-rm: 0.468 arcsec [1.19 $\sigma$ ]  
OotOffset-st: 1/2/0/1 [4]  
KicOffset-st: 1/2/0/1 [4]  
DiffImageQuality-fgm: 0.50 [2/4]  
DiffImageOverlap-fno: 1.00 [4/4]

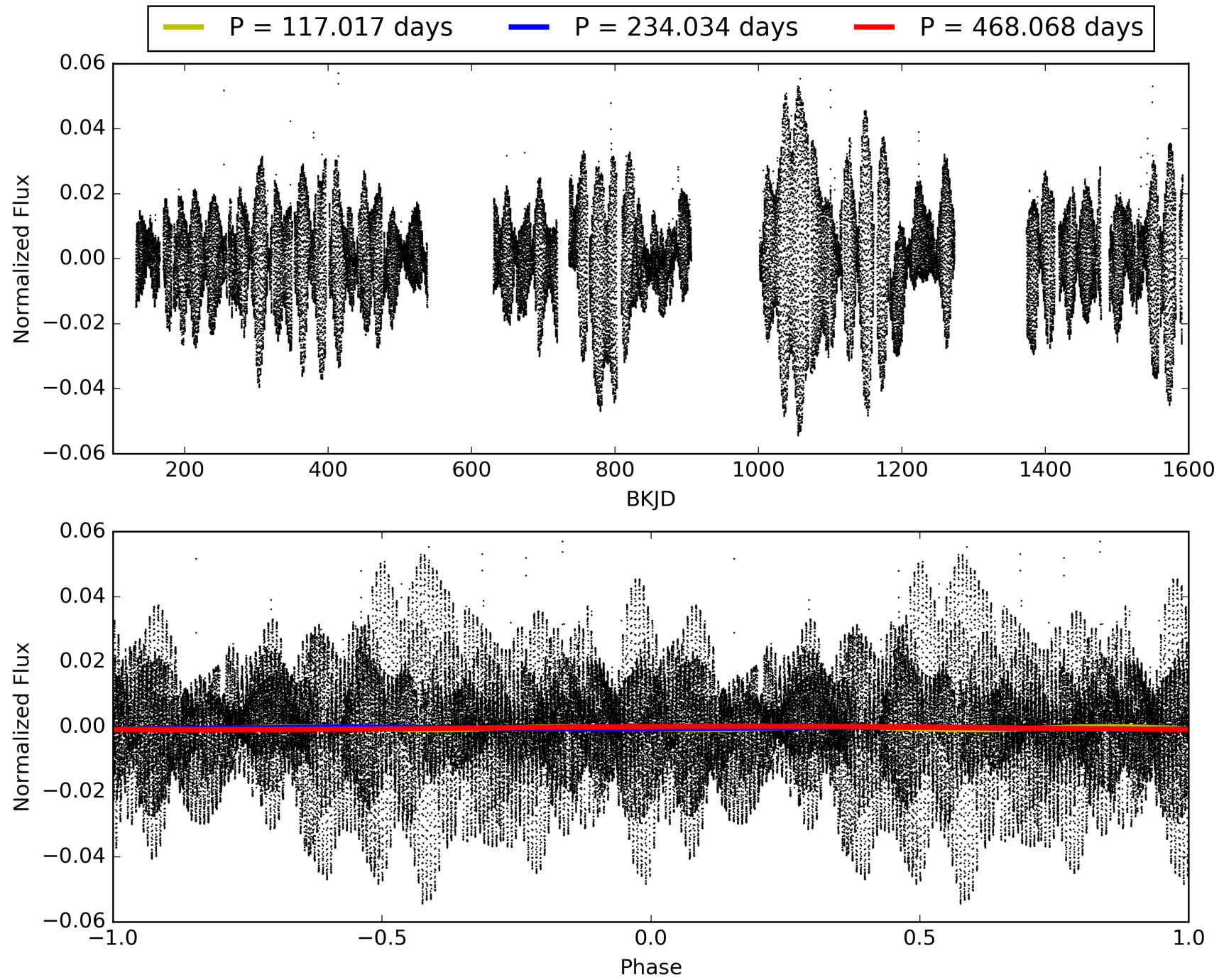
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:00:10 Z

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

# TCE 003452996-01, PDC Light Curves

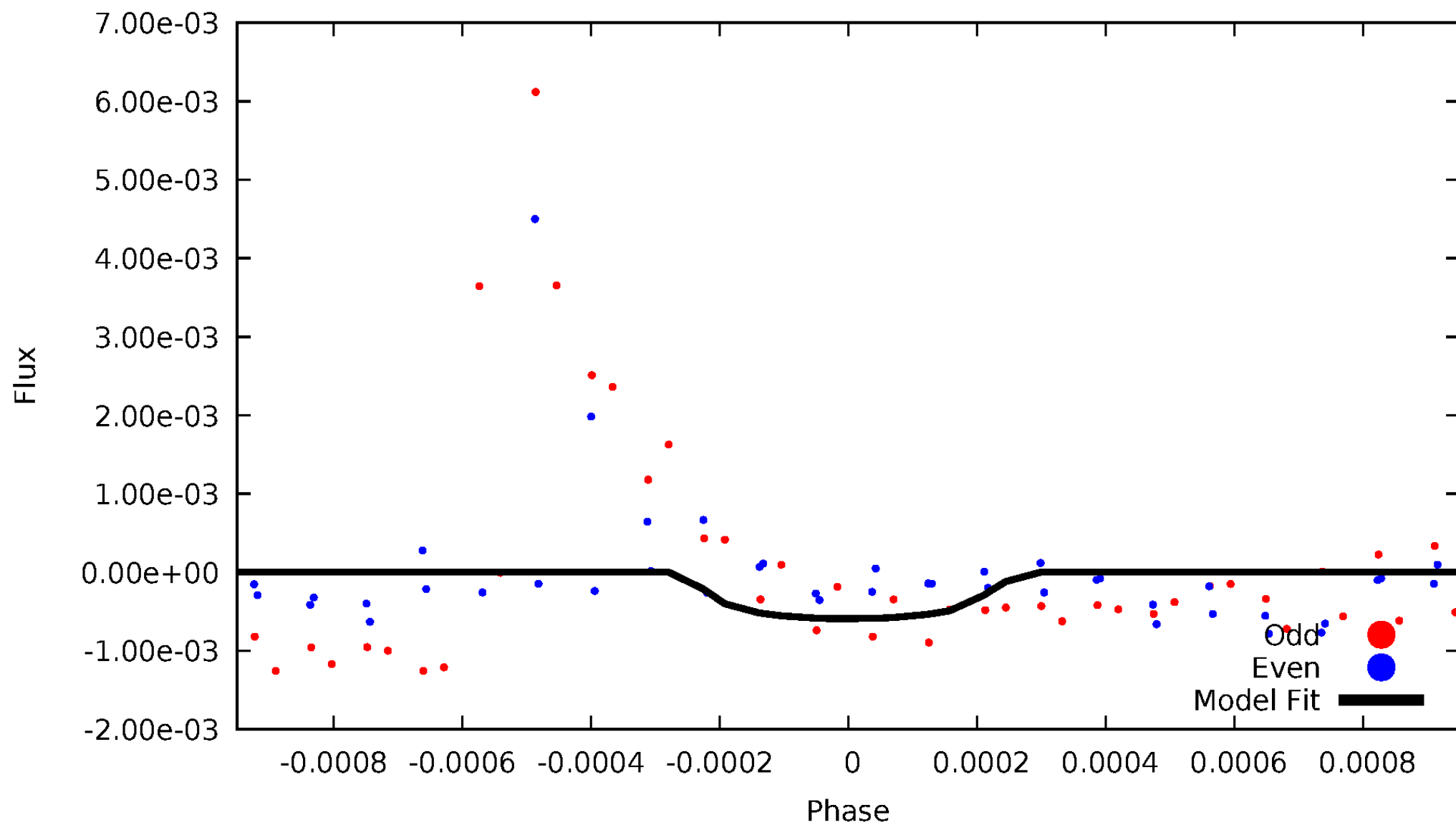


TCE 003452996-01



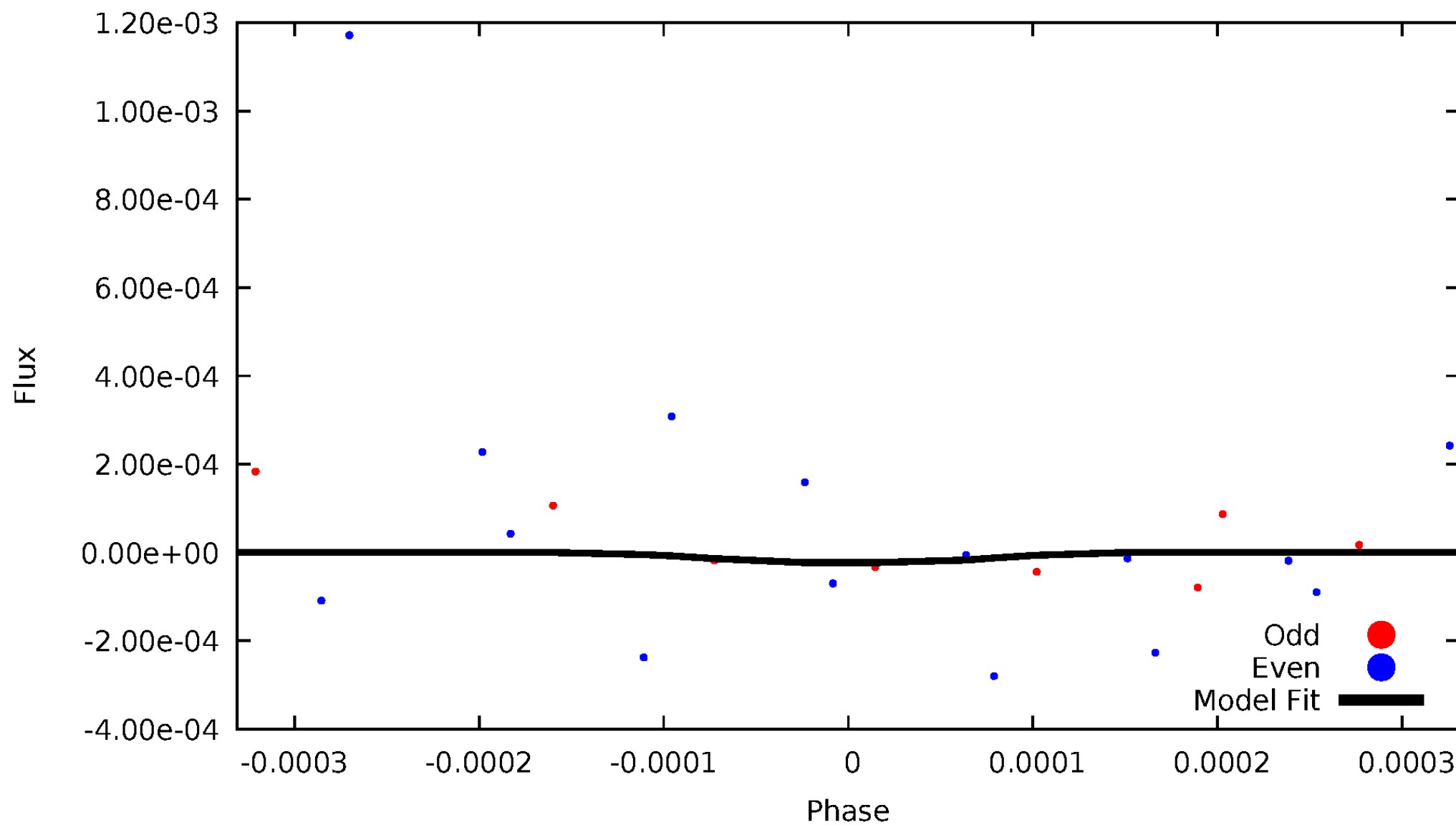
# DV Odd/Even

TCE 003452996-01



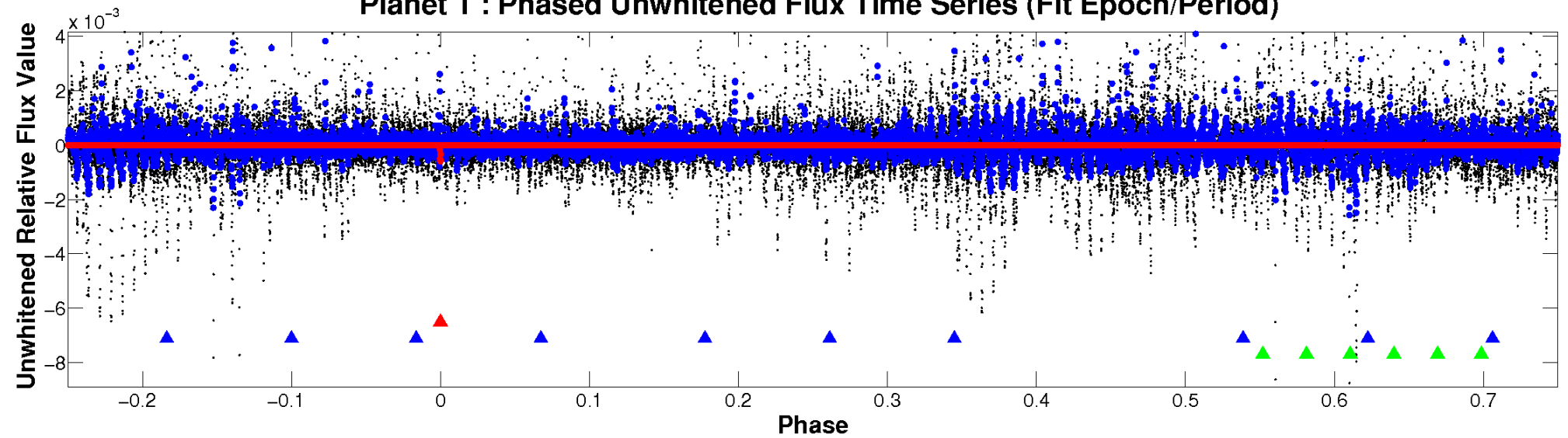
# ALT Odd/Even

TCE 003452996-01

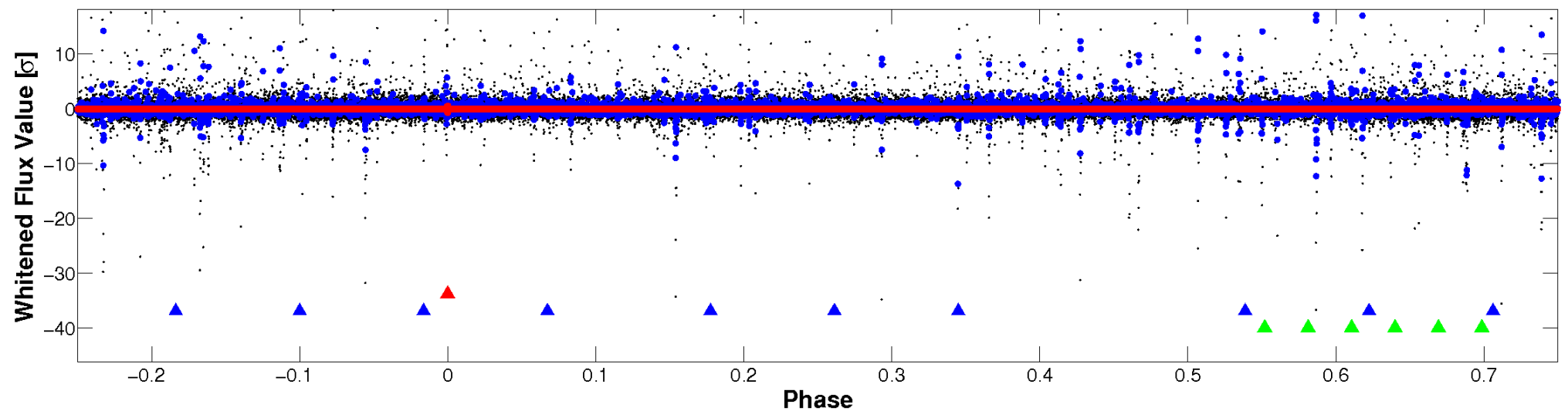


# Non-Whitened Vs. Whitened Light Curve

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

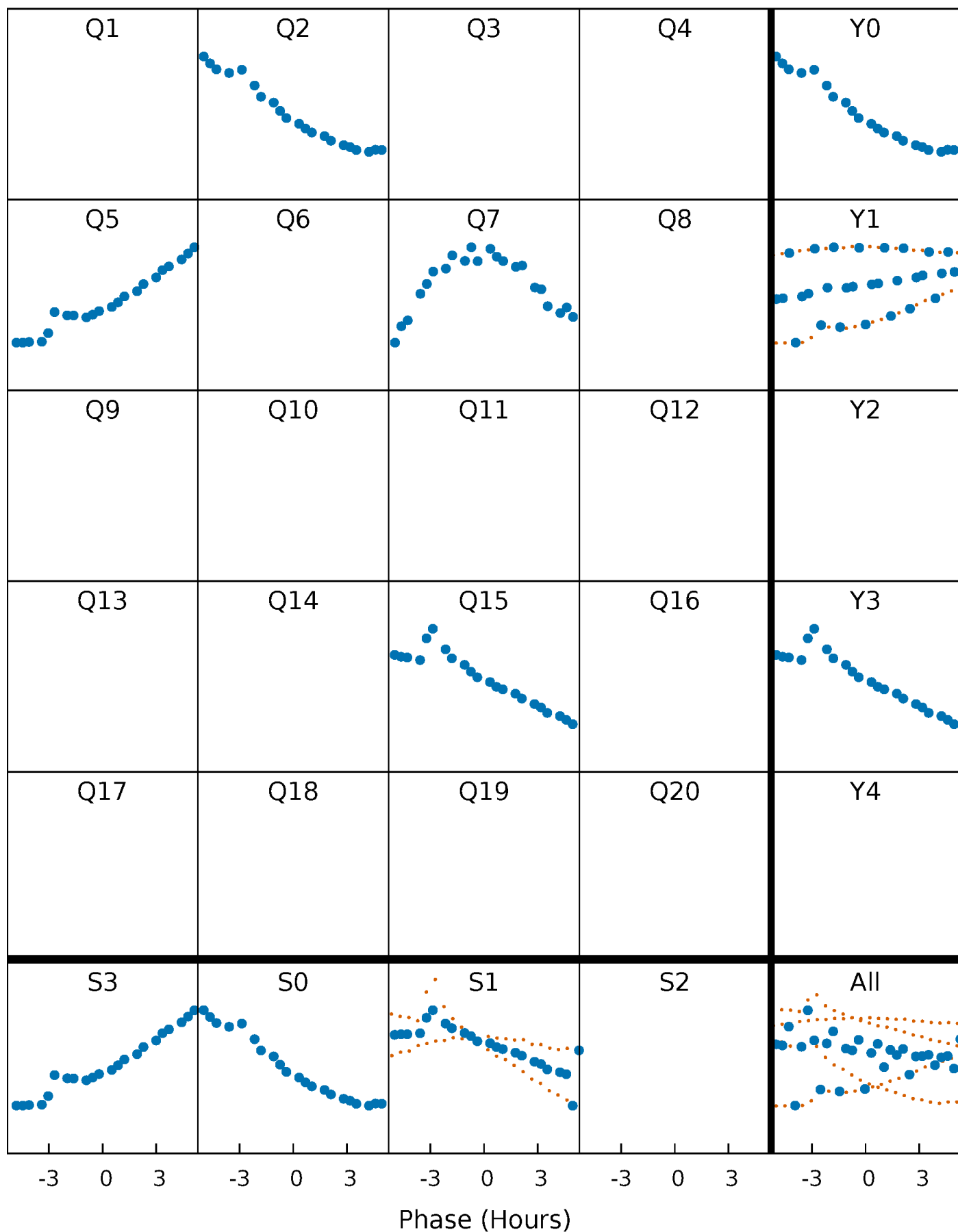


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

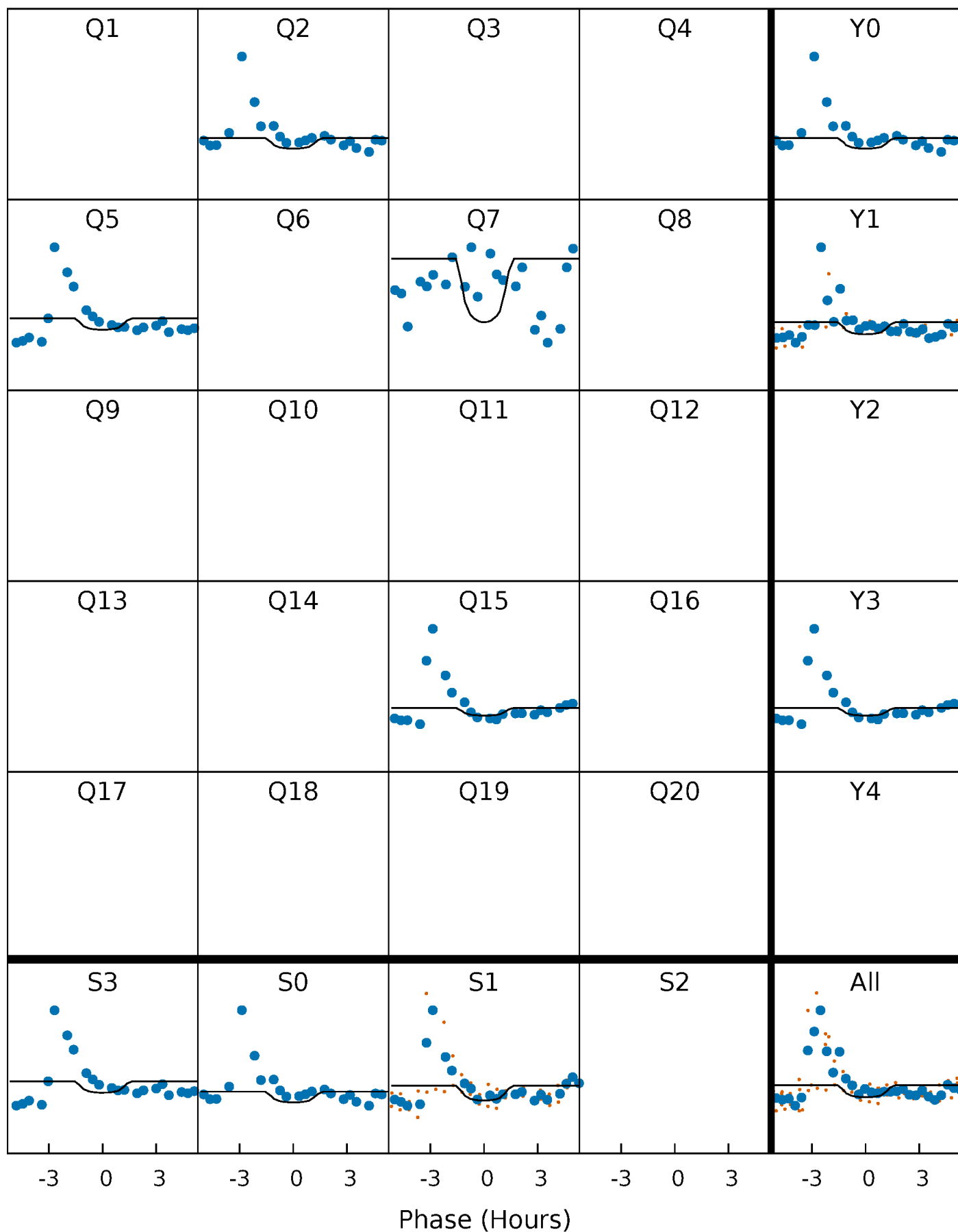
TCE 003452996-01 P=234.033860 Days  $T_0=218.308106$  (BKJD)





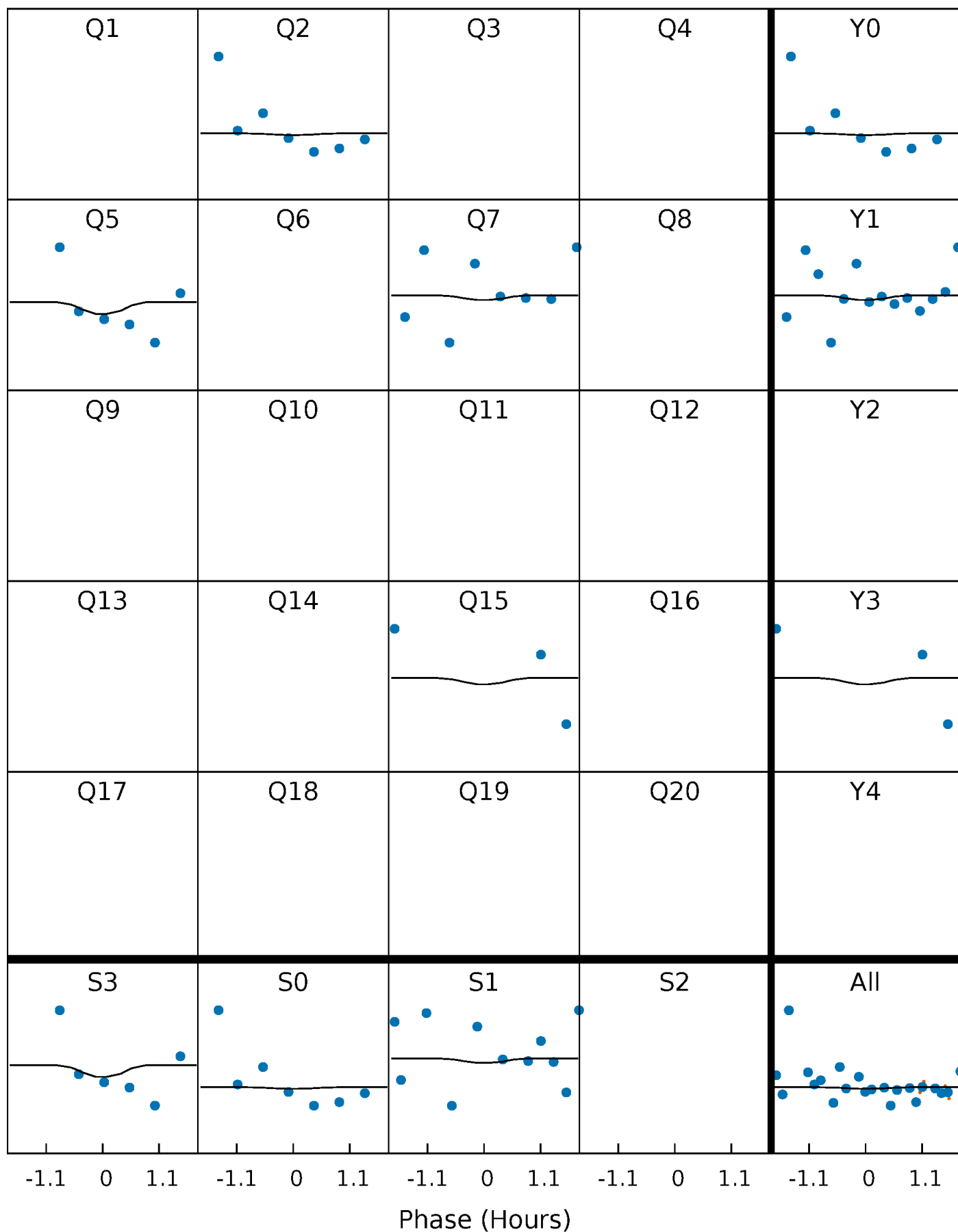
# DV Quarter-Phased Transit Curves

TCE 003452996-01 P=234.033860 Days  $T_0=218.308106$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

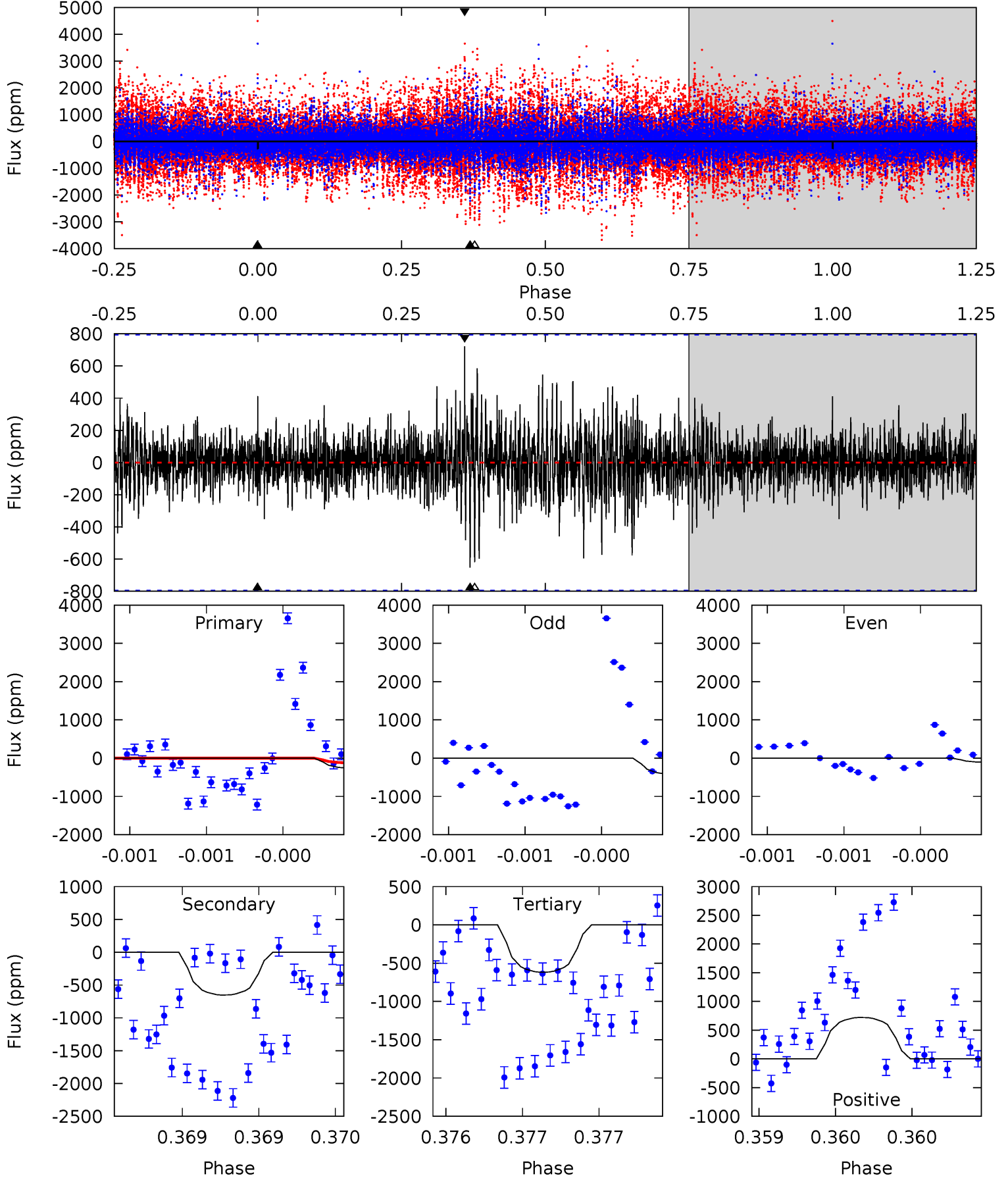
TCE 003452996-01 P=234.056727 Days  $T_0=218.277807$  (BKJD)



# DV Model-Shift Uniqueness Test

003452996-01, P = 234.033860 Days, E = 218.308106 Days

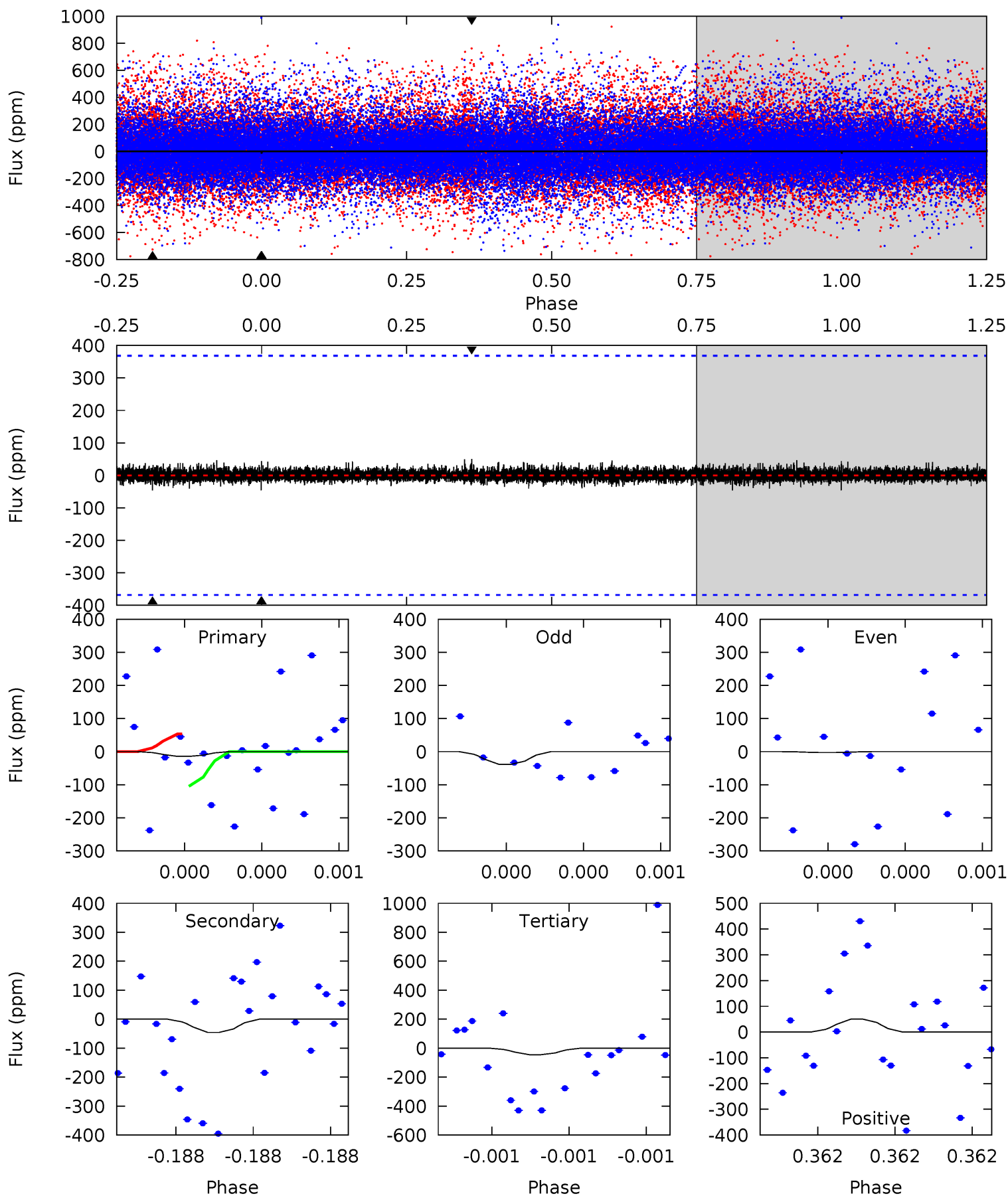
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.88	4.58	4.34	5.07	5.58	3.50	0.92	-2.46	-3.19	0.24	-0.48	0.95	1.82	0.53	1.03



# Alt Model-Shift Uniqueness Test

003452996-01, P = 234.056727 Days, E = 218.277807 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
0.22	0.71	0.70	0.78	5.68	3.65	0.16	-0.48	-0.56	0.00	-0.07	0.28	0.46	0.52	0.40



### Stellar Parameters For KIC 003452996

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5031^{+80}_{-70}$	$3.897^{+0.131}_{-0.131}$	$0.020^{+0.150}_{-0.150}$	$1.786^{+0.399}_{-0.930}$	$0.917^{+0.120}_{-0.108}$	$0.227^{+1.729}_{-0.092}$
	+2%/-1%	+3%/-3%	+750%/-750%	+22%/-52%	+13%/-12%	+763%/-40%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 003452996-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-653 \pm 142$	$22.82^{+23.09}_{-15.93}$	$496^{+24}_{-25}$	$3027^{+1419}_{-533}$	$367^{+3763}_{-284}$
Alt.	$-46 \pm 65$	$20.04^{+23.00}_{-14.35}$	$497^{+23}_{-26}$	$2108^{+798}_{-4060}$	$19^{+240}_{-28}$

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

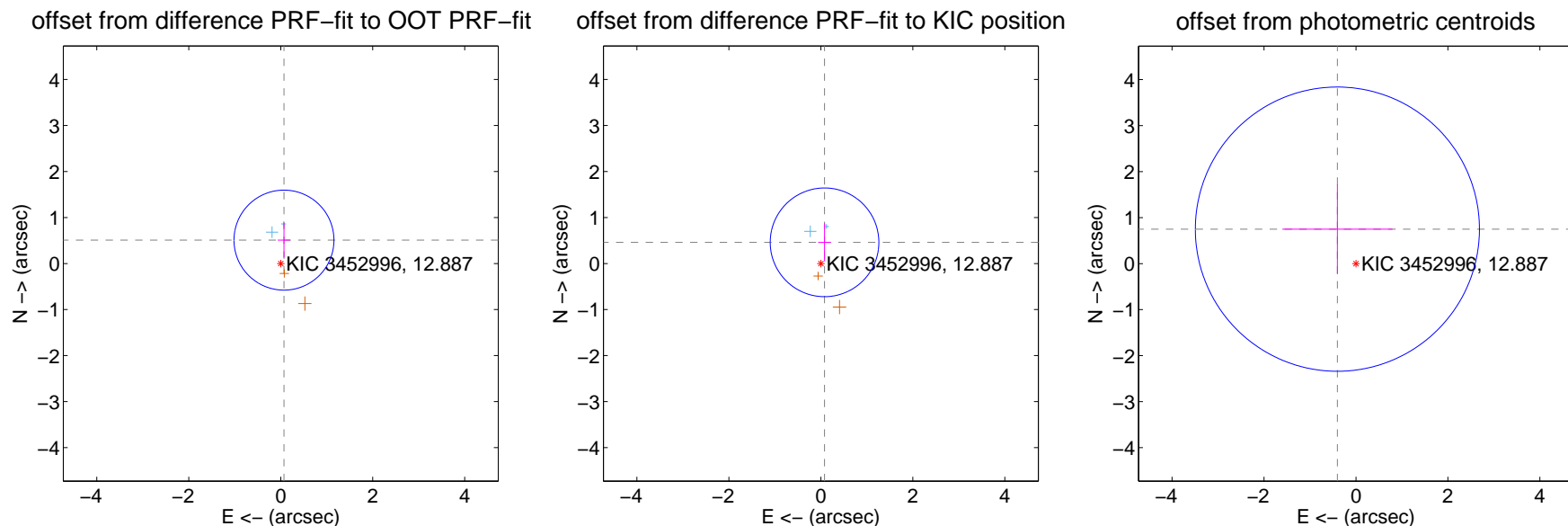
## DV Centroid Data

Supplemental centroid analysis for 003452996-01. Kepler magnitude: 12.89. Transit SNR 3.33

There are 2 quarters with good PRF difference image offsets

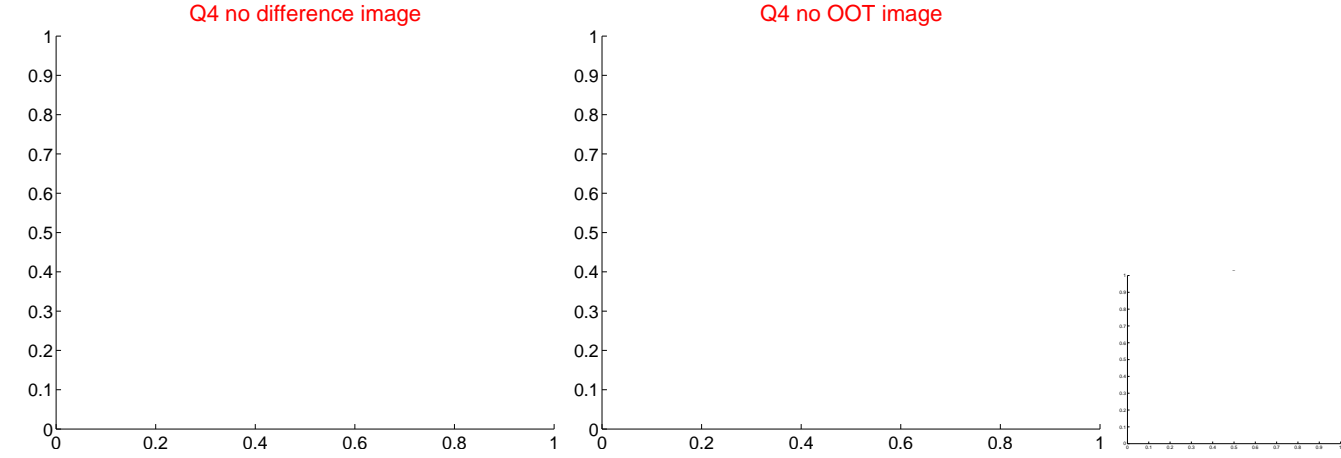
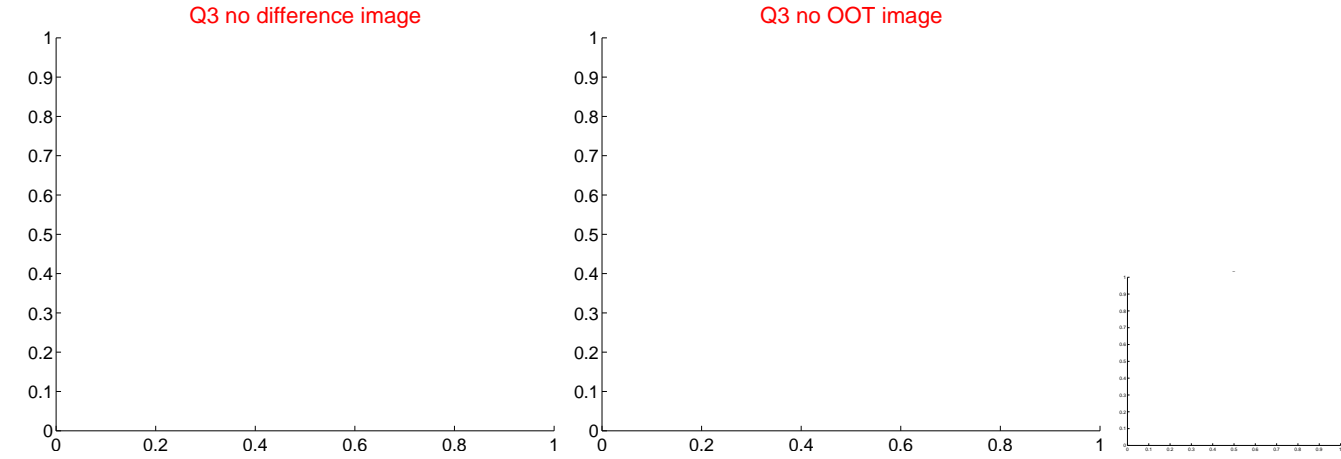
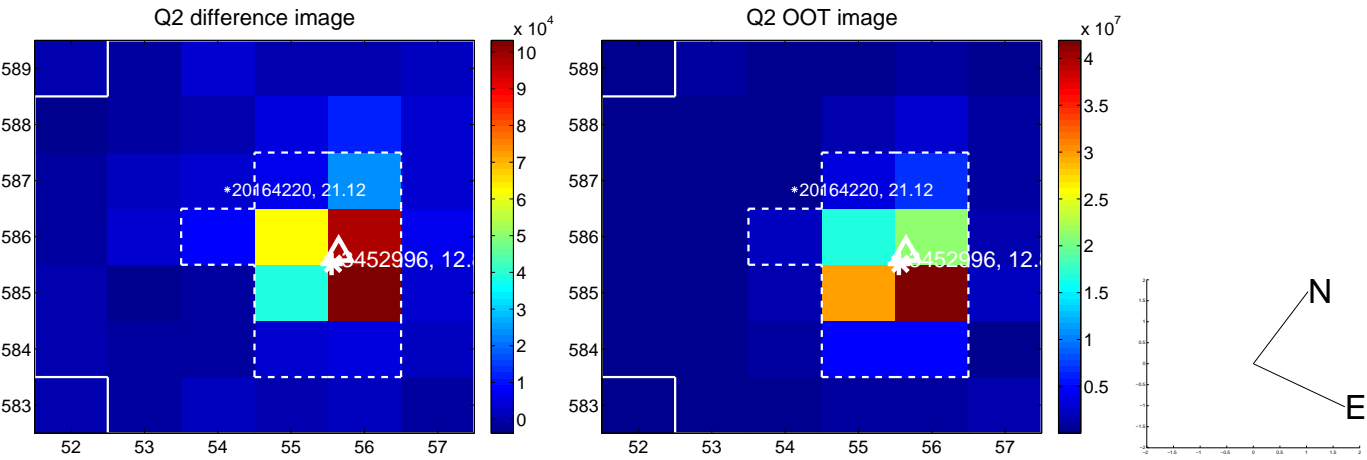
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.514 \pm 0.362$	1.42	$-0.070 \pm 0.137$	$0.509 \pm 0.377$
PRF-fit source offset from KIC position	$0.468 \pm 0.394$	1.19	$-0.080 \pm 0.139$	$0.461 \pm 0.413$
photometric centroid source offset	$0.85 \pm 1.03$	0.83	$0.40 \pm 1.20$	$0.75 \pm 0.98$

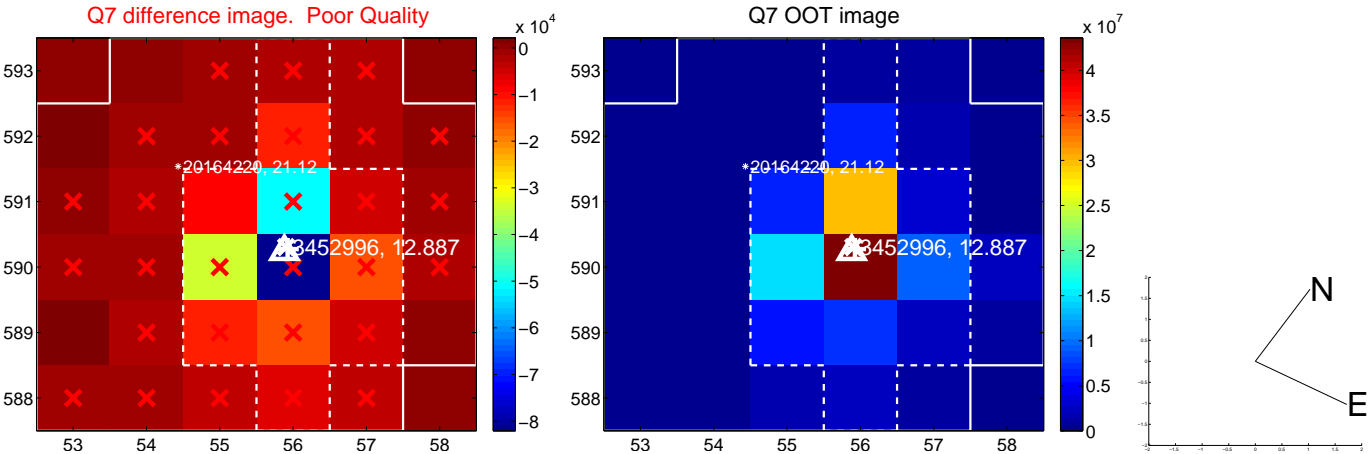
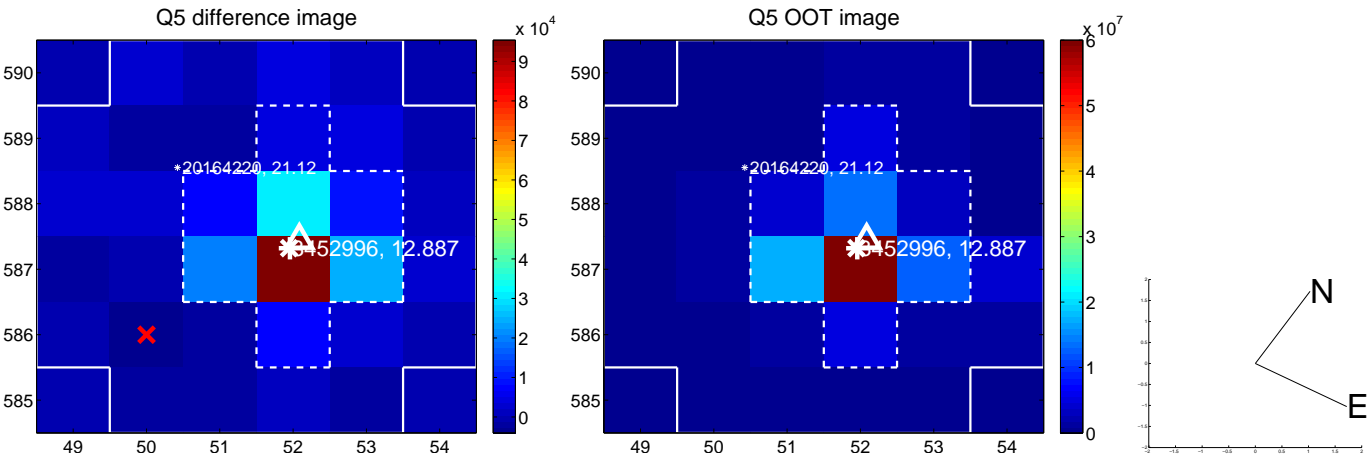


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

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



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

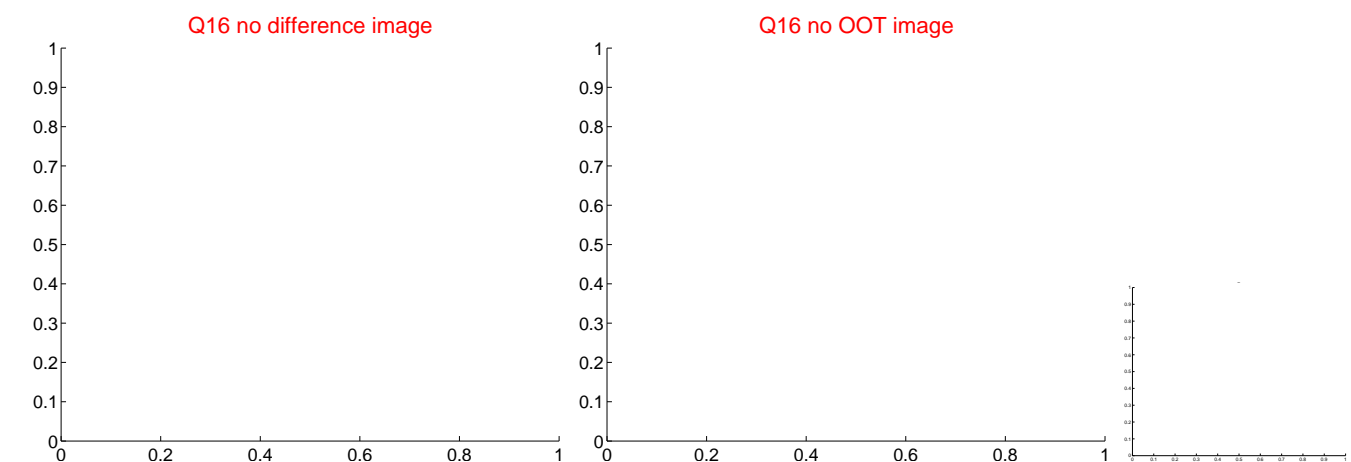
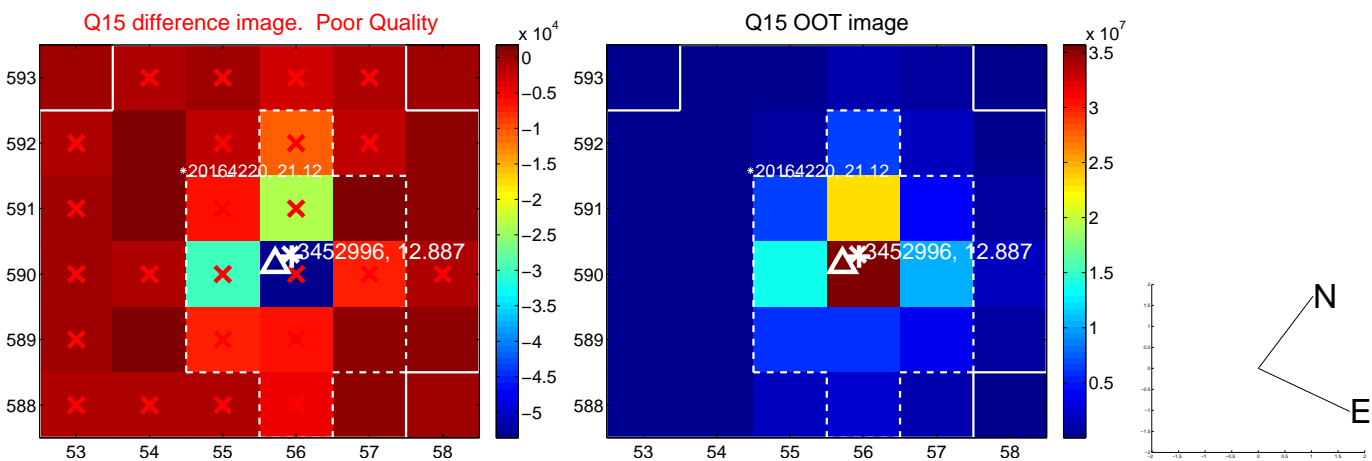
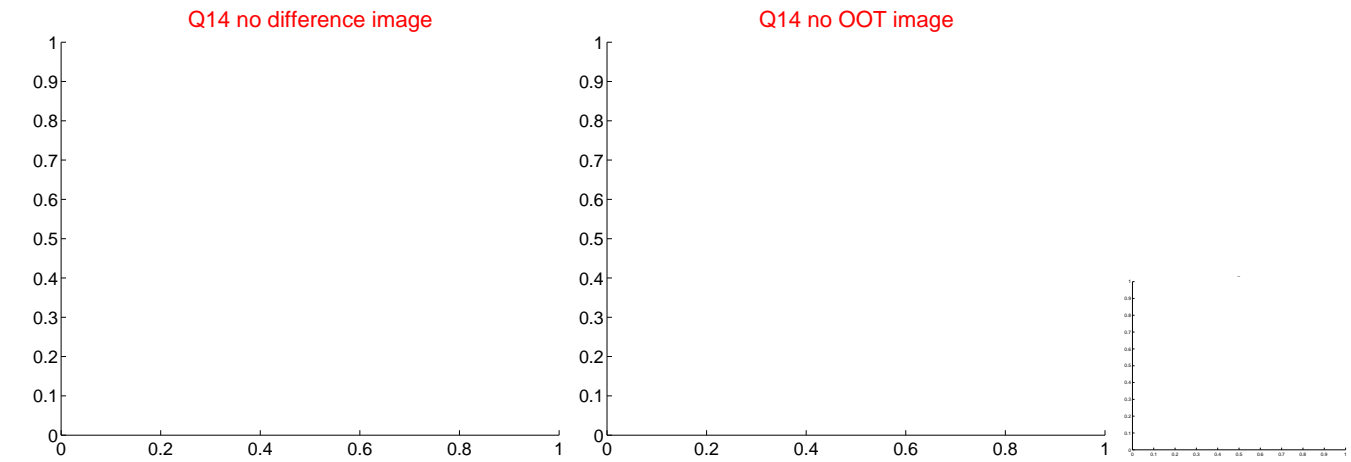
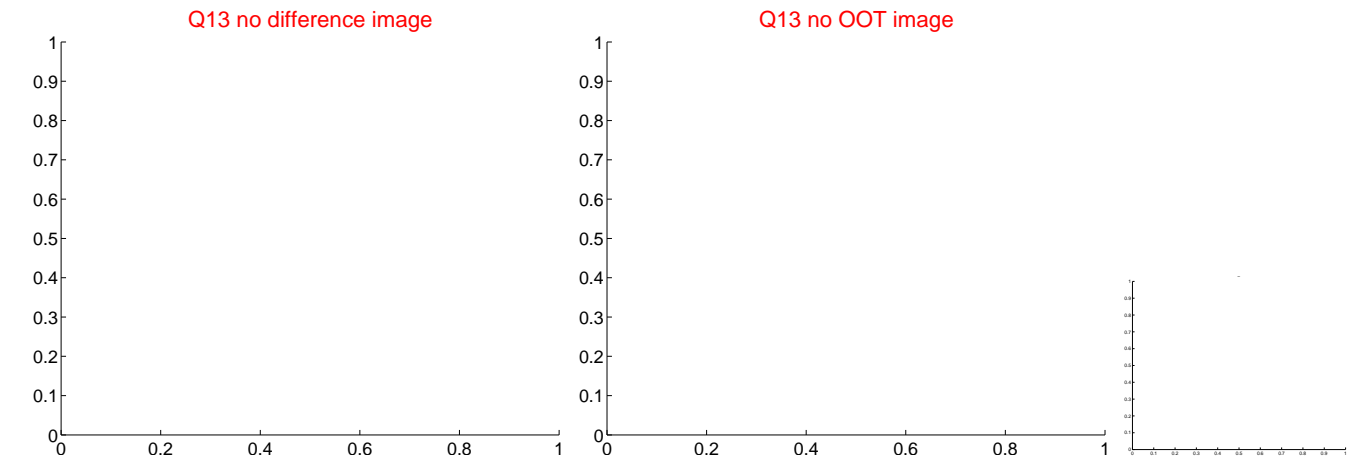




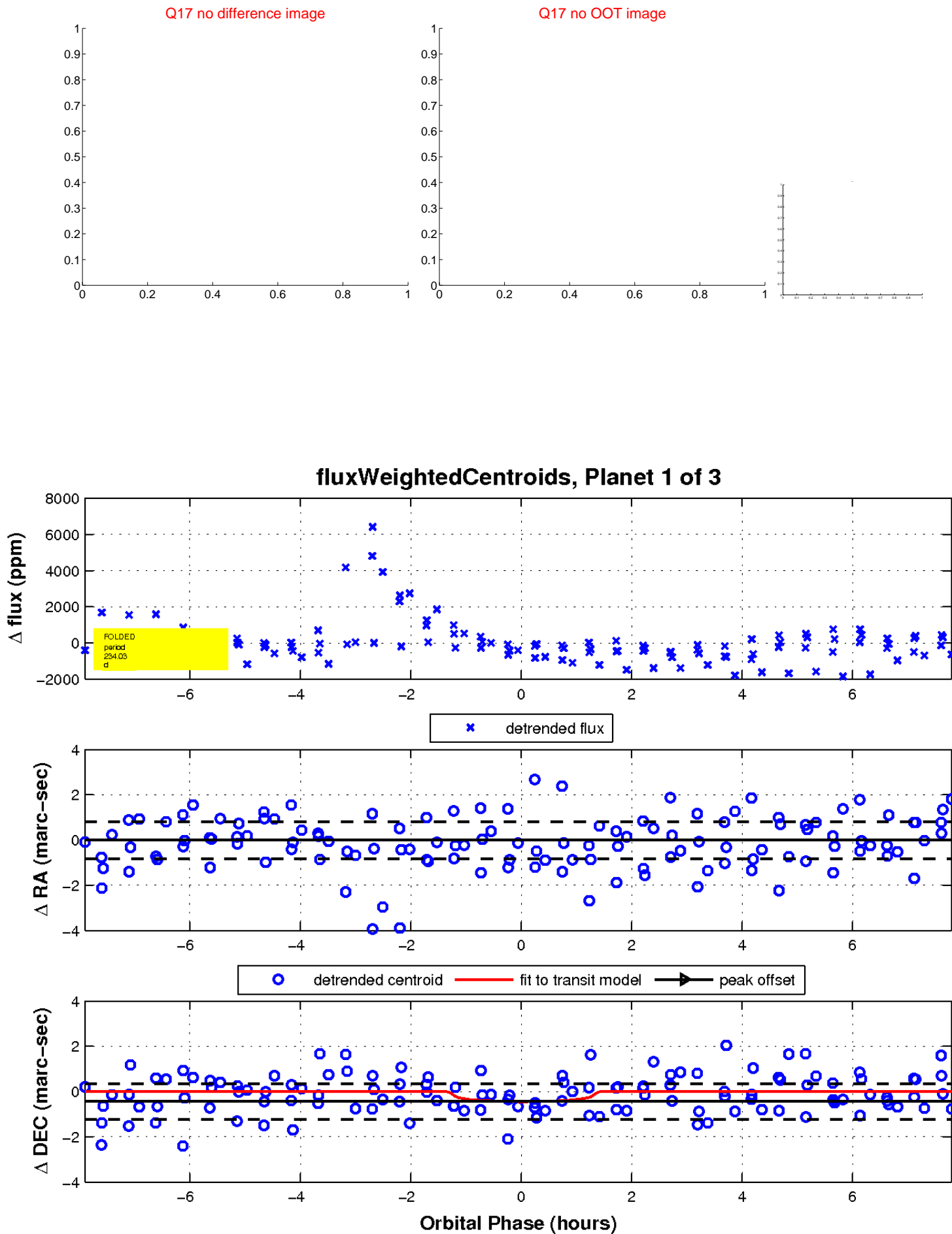
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



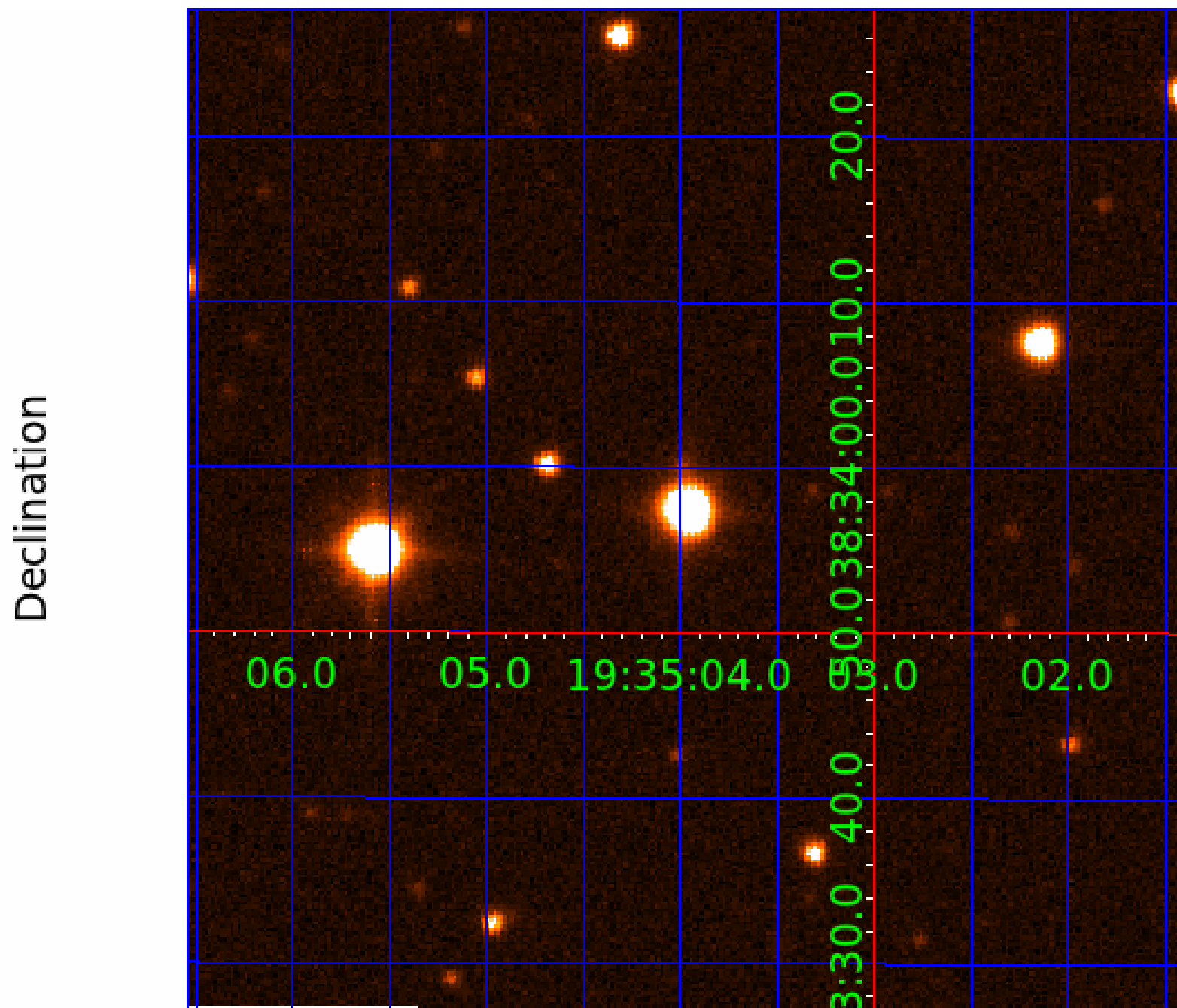
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image



# KIC 003452996

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003452996-01	OBS	No	234.033860	218.308106	592.1	2.667	13.7	3.3	1.79	5031	4.23	3.51
003452996-02	OBS	No	149.492667	234.086469	657.8	2.088	17.8	4.3	1.79	5031	4.77	6.38
003452996-03	OBS	No	240.899586	347.488329	775.1	3.000	16.8	-1.0	1.79	5031	4.83	3.38

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003452996-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003452996-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003452996-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_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.

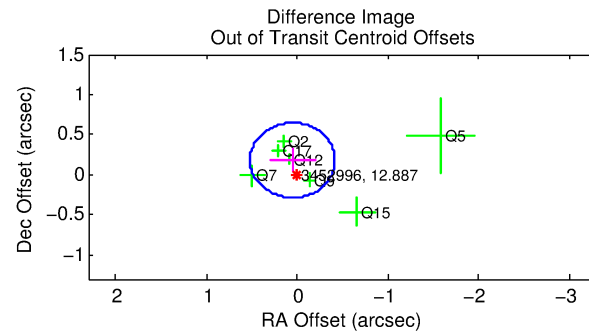
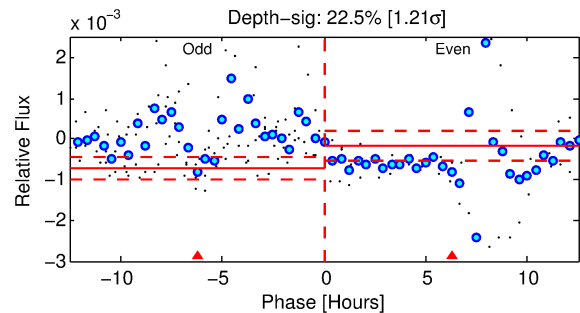
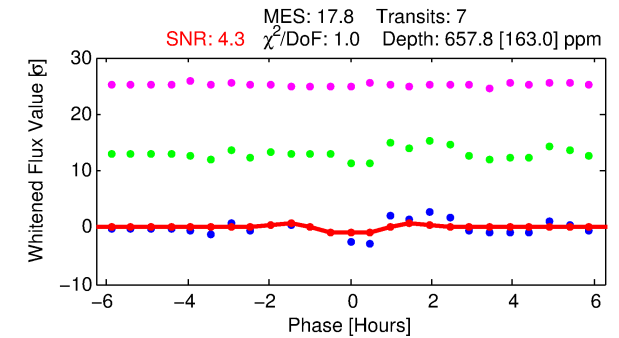
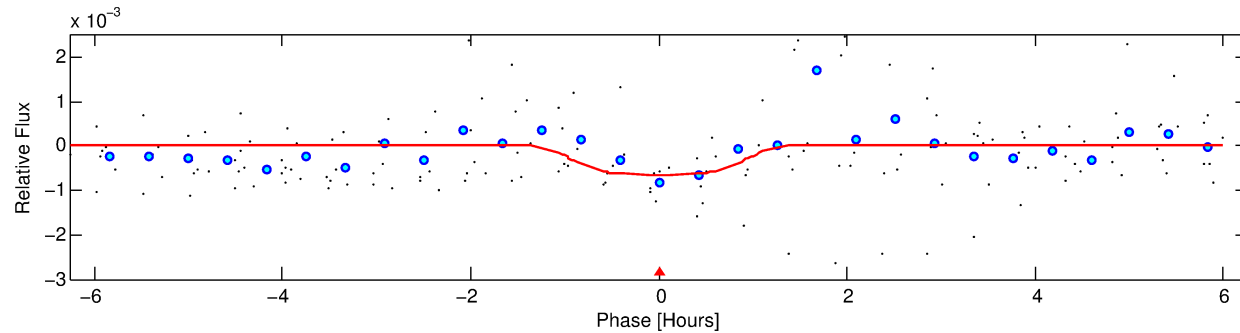
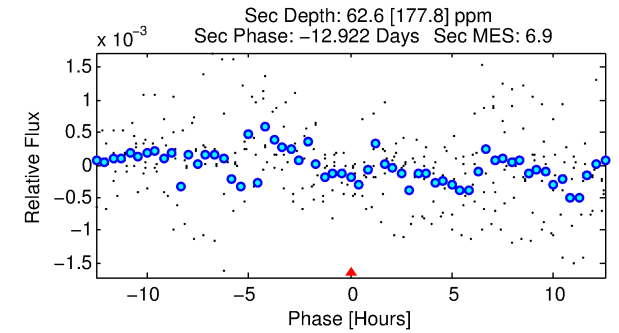
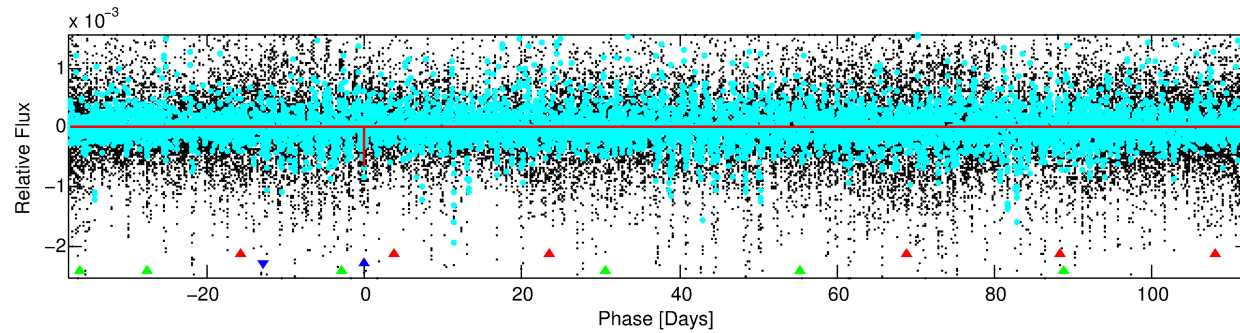
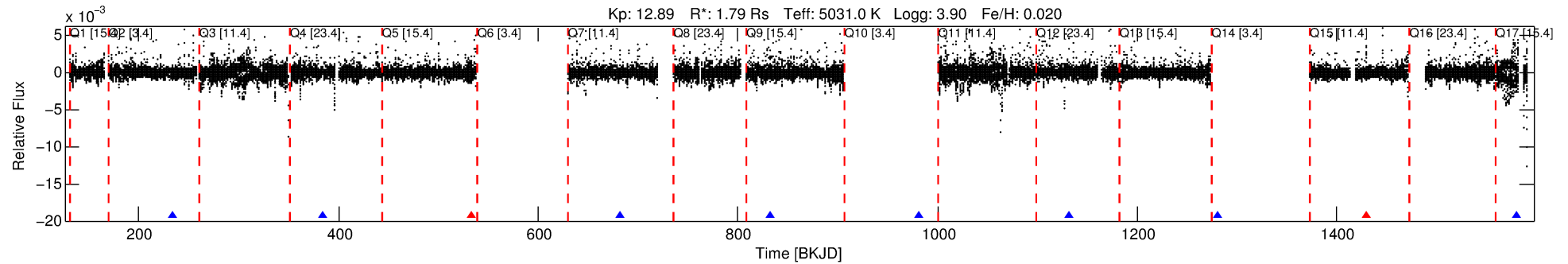
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003452996-02

No Significant Match Found

# DV One-Page Summary

KIC: 3452996 Candidate: 2 of 3 Period: 149.493 d



## DV Fit Results:

Period = 149.49267 [0.00153] d  
Epoch = 234.0865 [0.0066] BKJD  
Rp/R\* = 0.0245 [0.0599]  
a/R\* = 445.18 [3748.70]  
b = 0.62 [8.52]  
Seff = 6.38 [2.59]  
Teq = 405 [41] K  
Rp = 4.77 [11.94] Re  
a = 0.5358 [0.1937] AU  
Ag = 434.67 [2466.57] [0.18 $\sigma$ ]  
Teffp = 2861 [4048] K [0.61 $\sigma$ ]

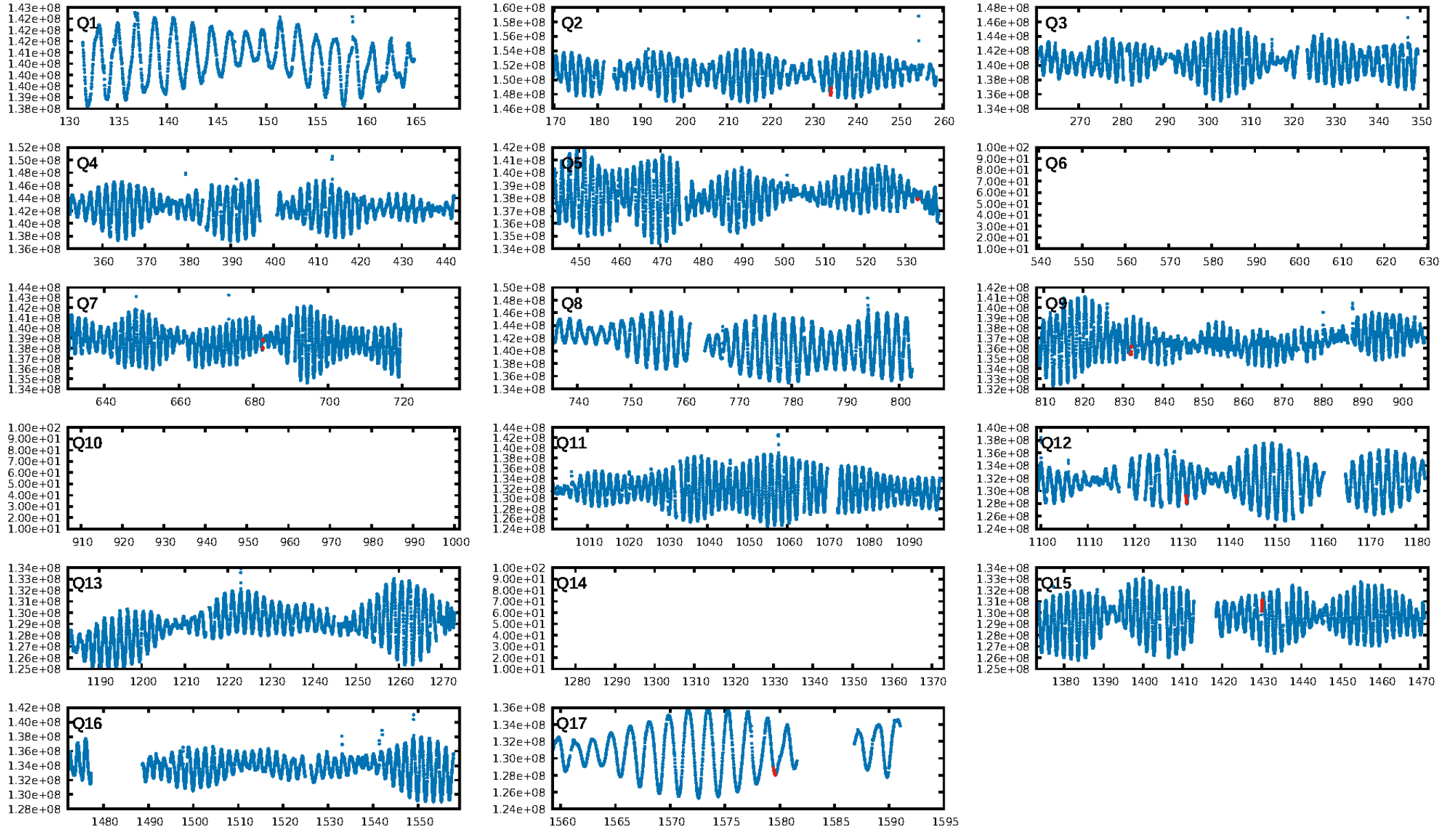
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [599.06 $\sigma$ ]  
ModelChiSquare2-sig: 10.6%  
ModelChiSquareGof-sig: 93.1%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.67 [4/6]  
GhostDiagnostic-chr: 2.506  
Centroid-sig: 39.7%  
Centroid-so: 0.522 arcsec [0.62 $\sigma$ ]  
OotOffset-rm: 0.188 arcsec [1.21 $\sigma$ ]  
OotOffset-st: 1/2/1/3 [7]  
KicOffset-rm: 0.204 arcsec [1.33 $\sigma$ ]  
KicOffset-st: 1/2/1/3 [7]  
DiffImageQuality-fgm: 0.86 [6/7]  
DiffImageOverlap-fno: 1.00 [7/7]

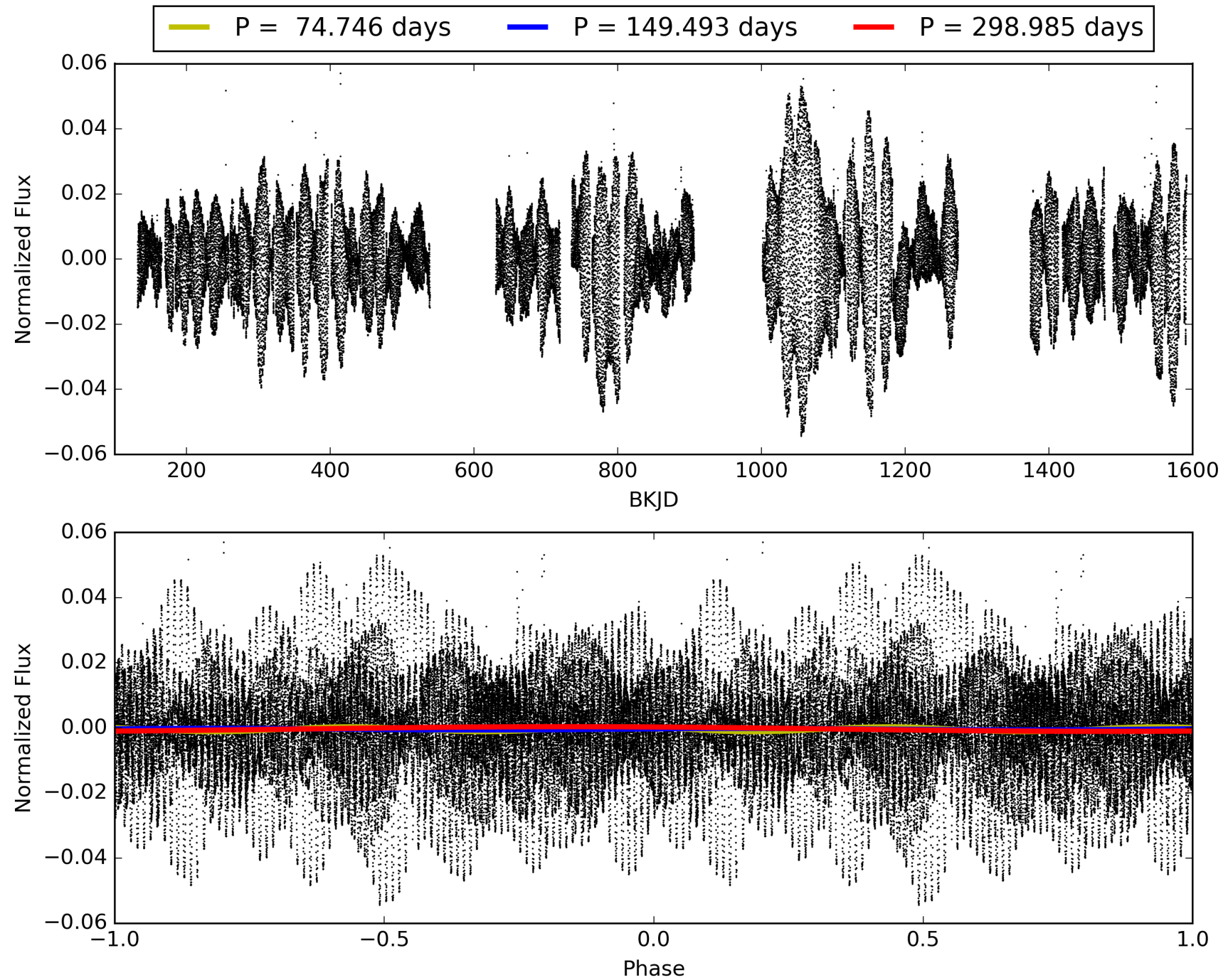
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:00:21 Z

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

# TCE 003452996-02, PDC Light Curves



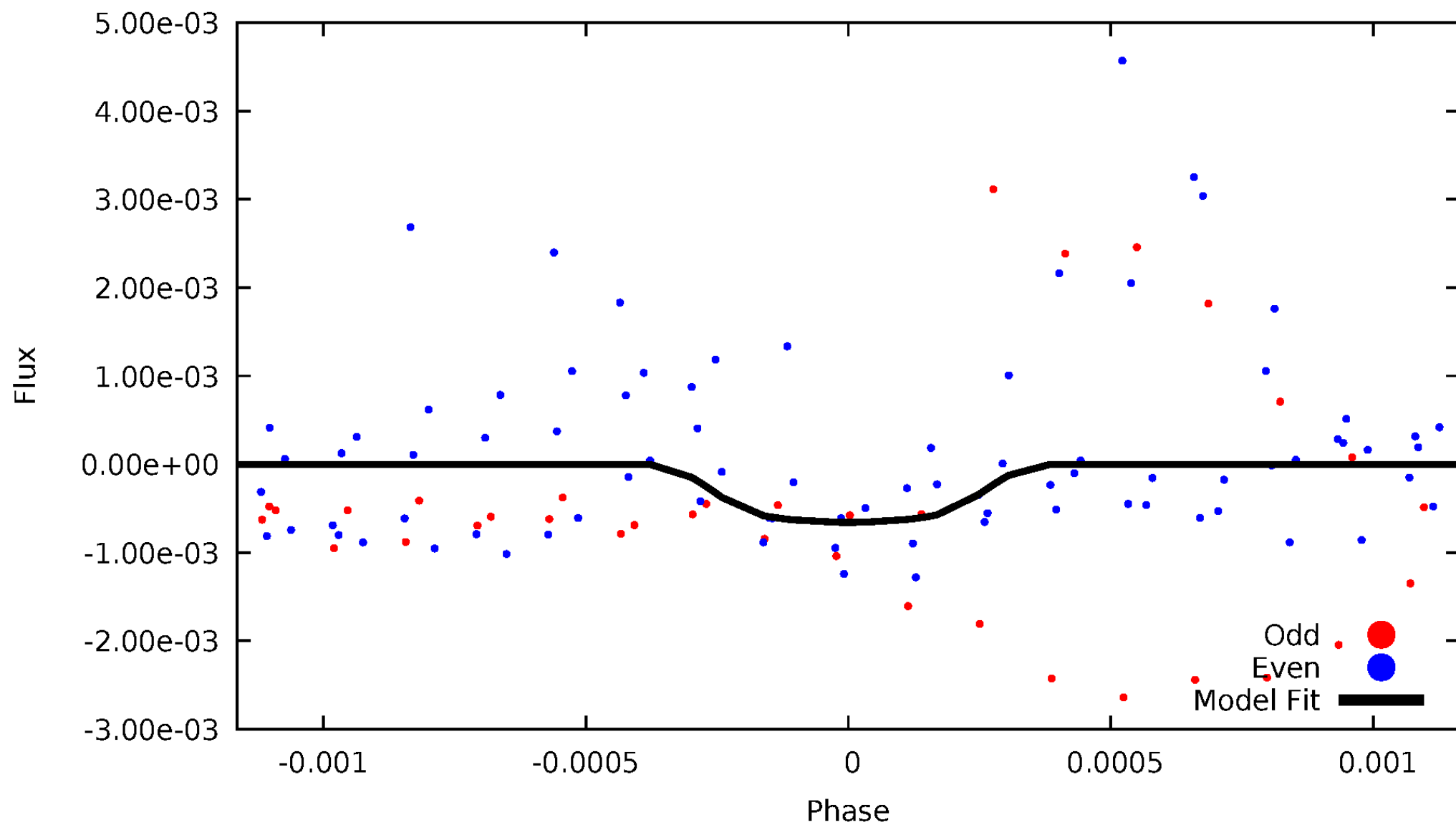
TCE 003452996-02





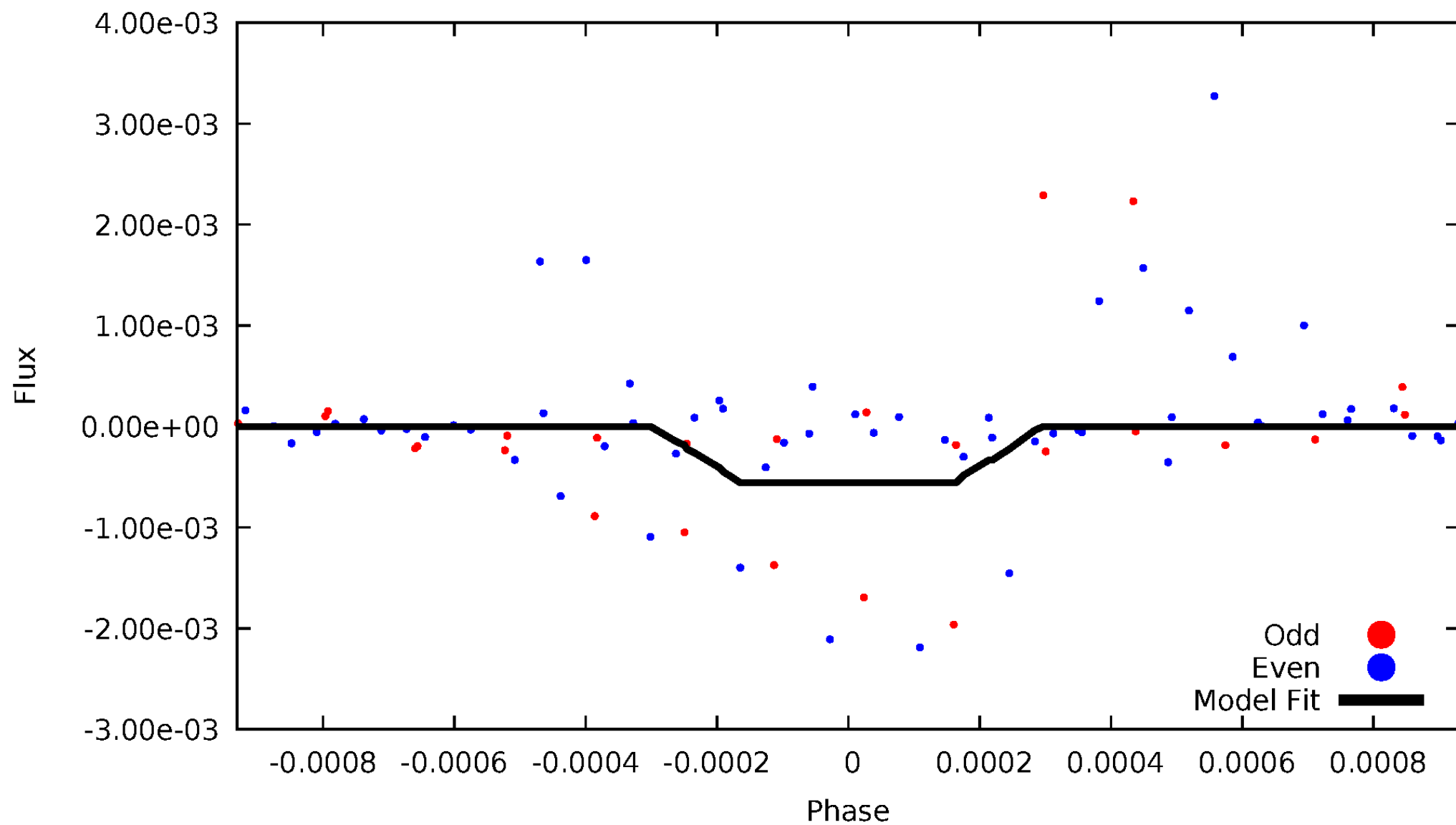
# DV Odd/Even

TCE 003452996-02



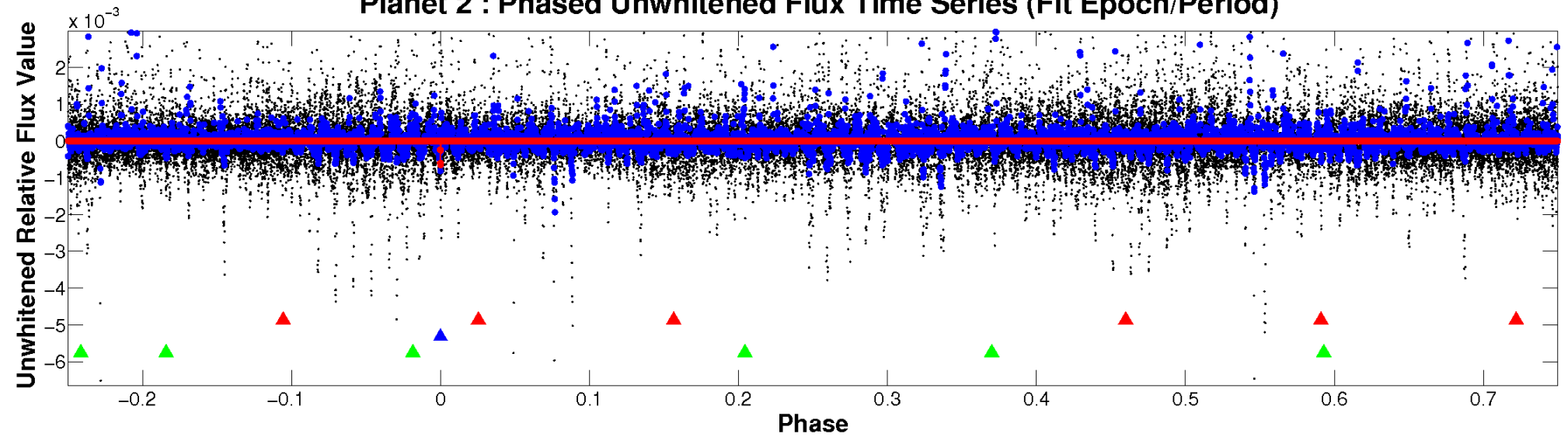
# ALT Odd/Even

TCE 003452996-02

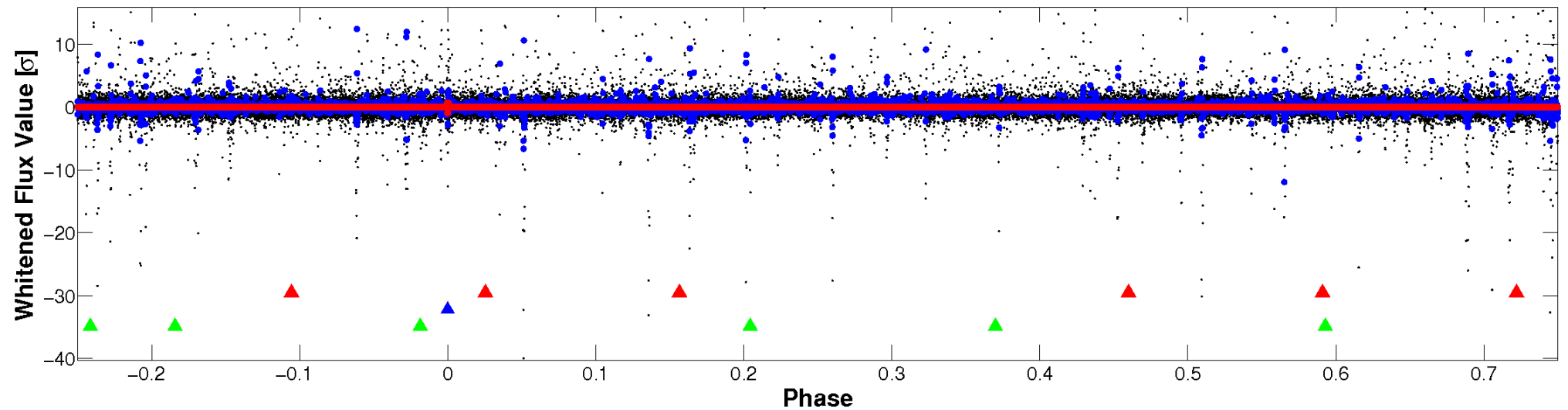


# Non-Whitened Vs. Whitened Light Curve

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

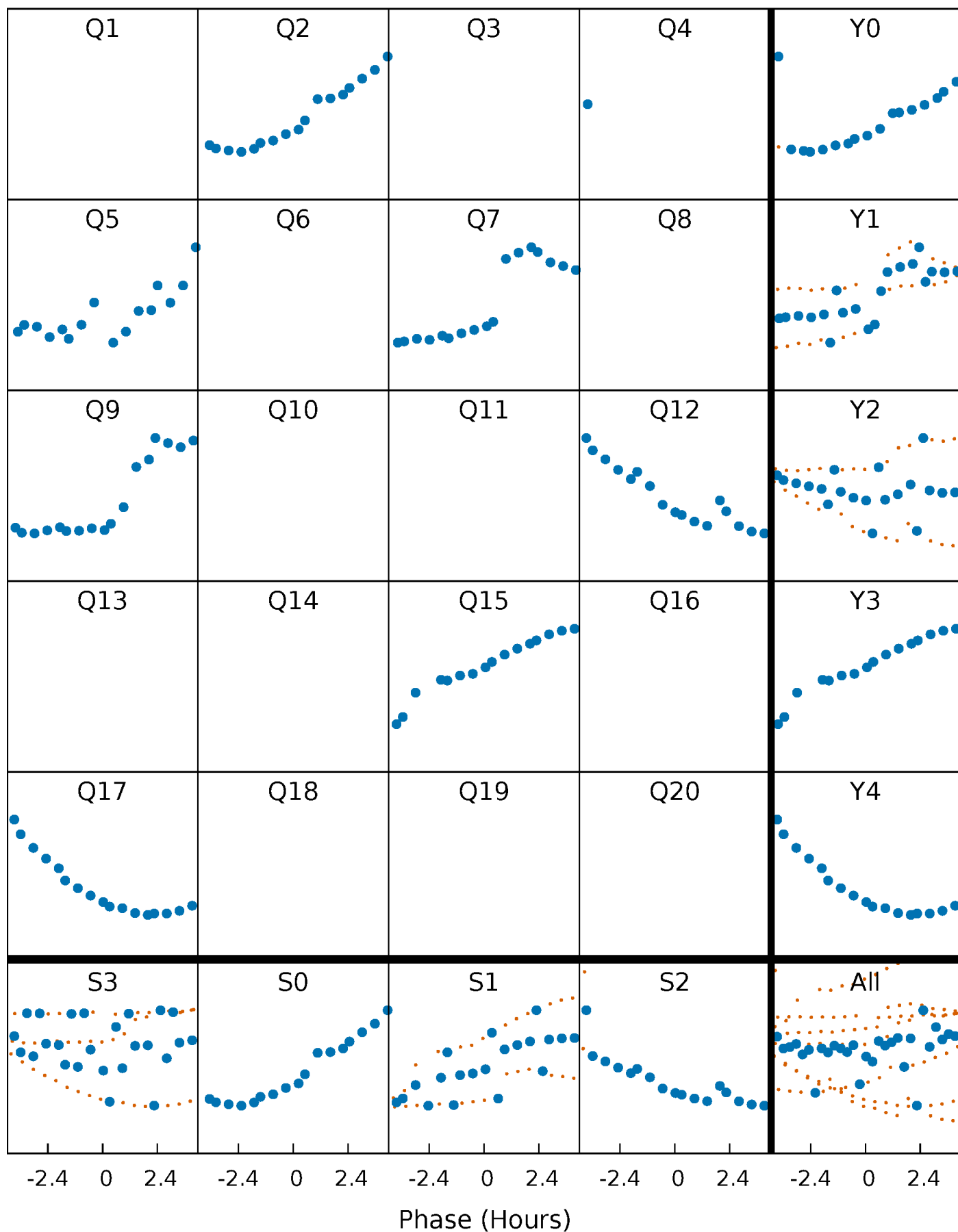


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



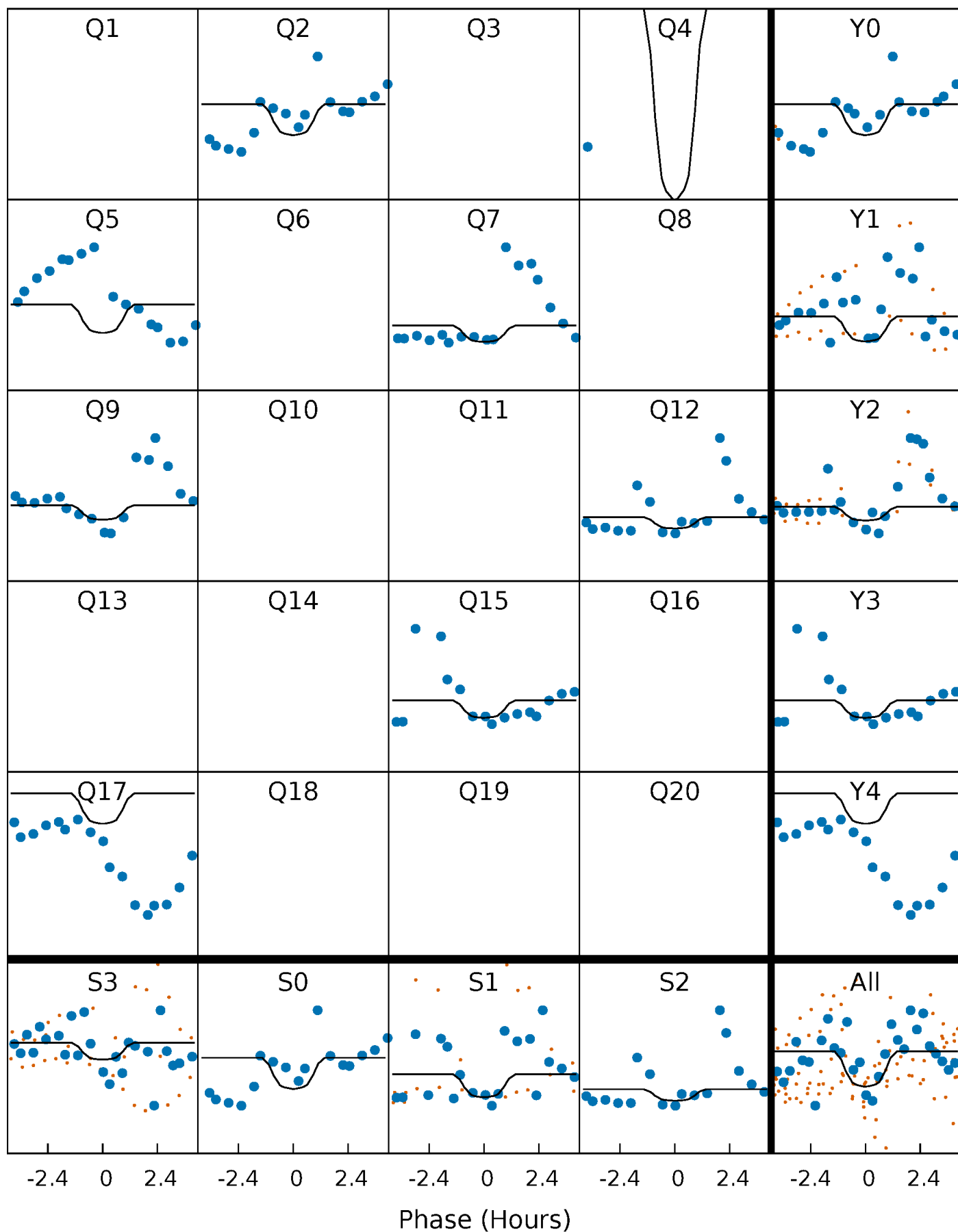
# PDC Quarter-Phased Transit Curves

TCE 003452996-02   P=149.492667 Days    $T_0=234.086469$  (BKJD)



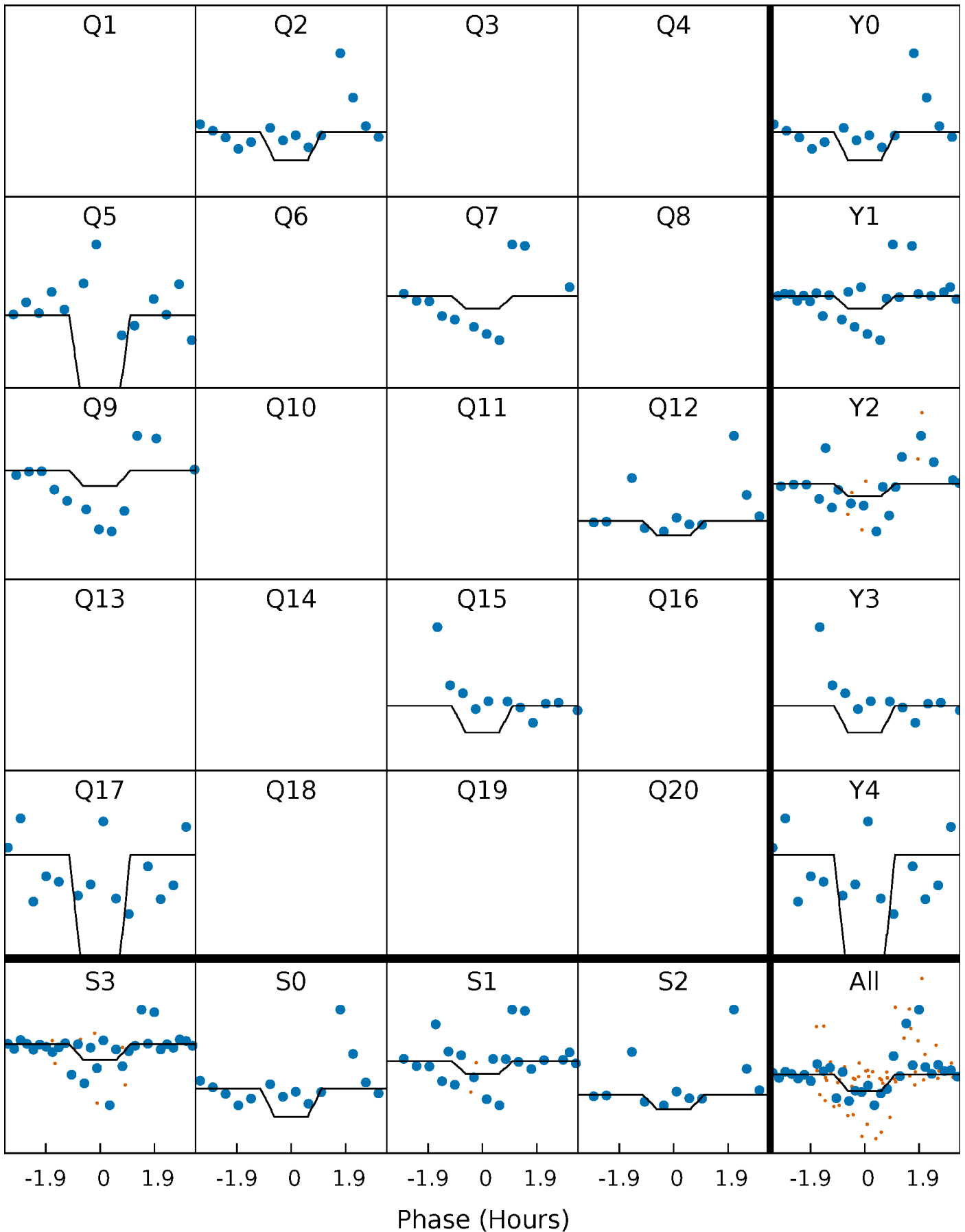
# DV Quarter-Phased Transit Curves

TCE 003452996-02     $P=149.492667$  Days     $T_0=234.086469$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

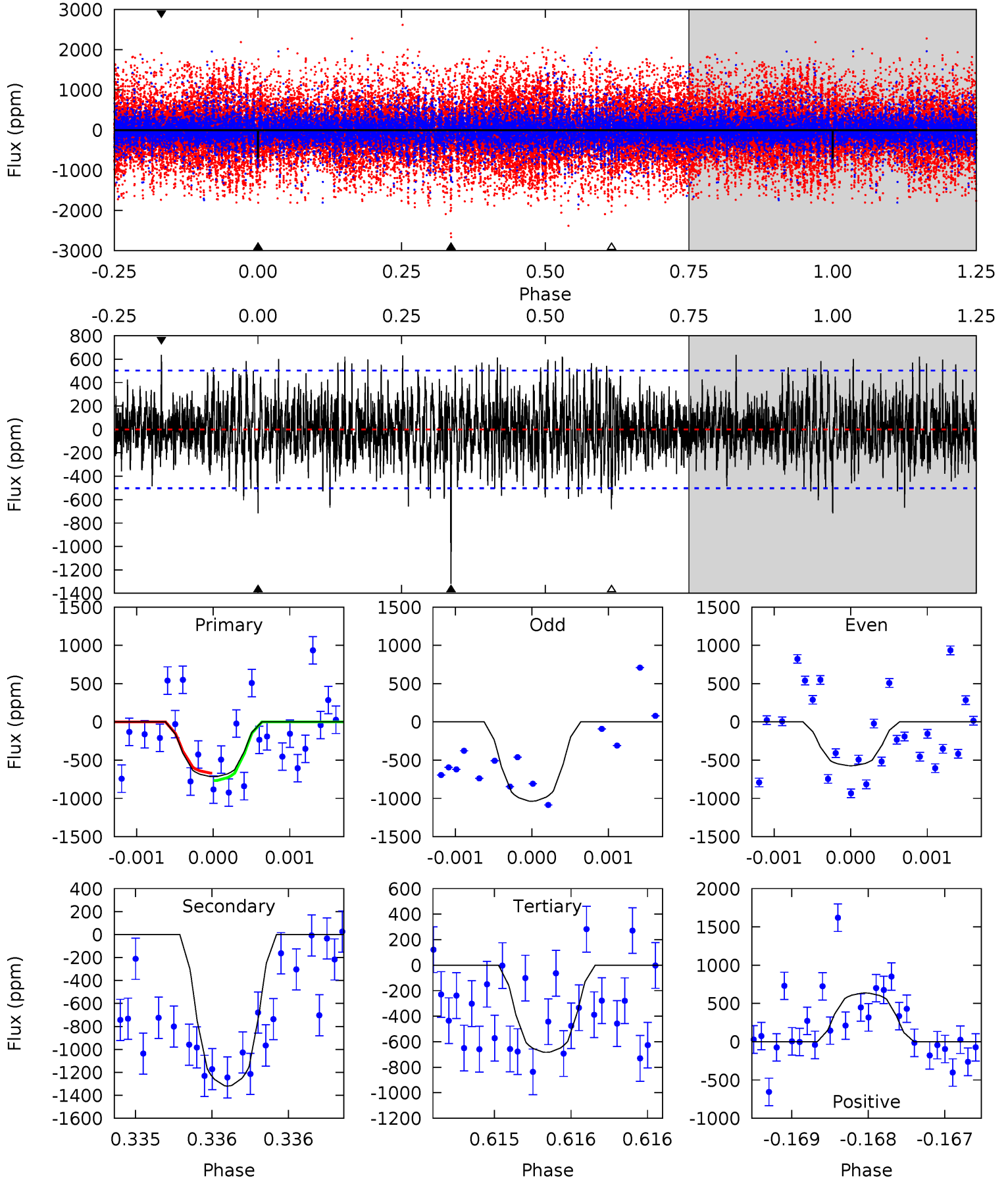
TCE 003452996-02     $P=149.498750$  Days     $T_0=234.065066$  (BKJD)



# DV Model-Shift Uniqueness Test

003452996-02,  $P = 149.492667$  Days,  $E = 84.593802$  Days

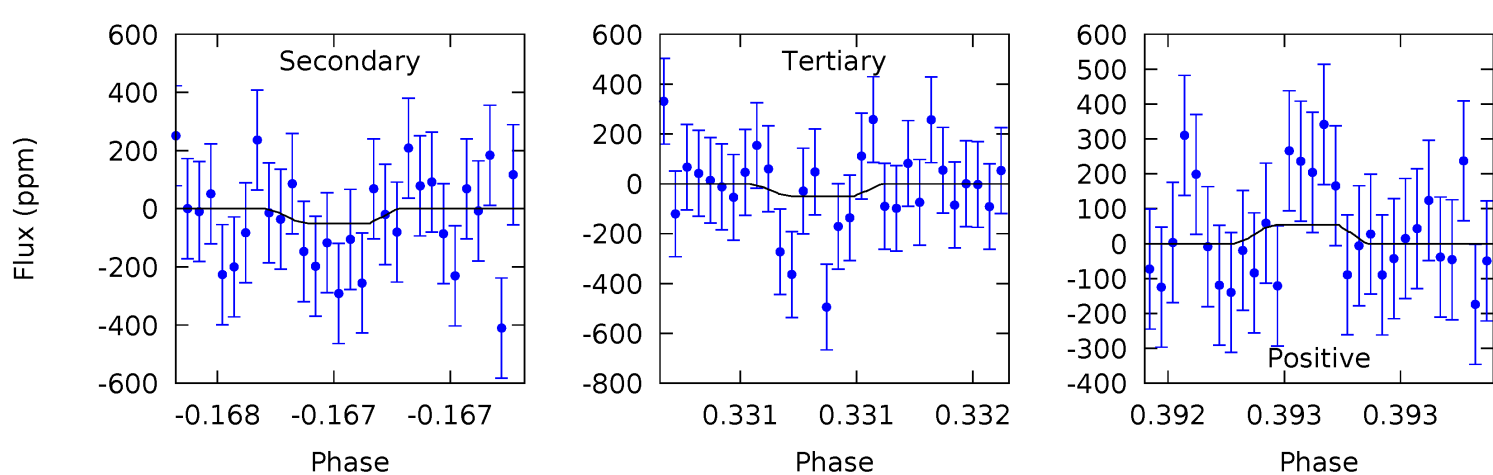
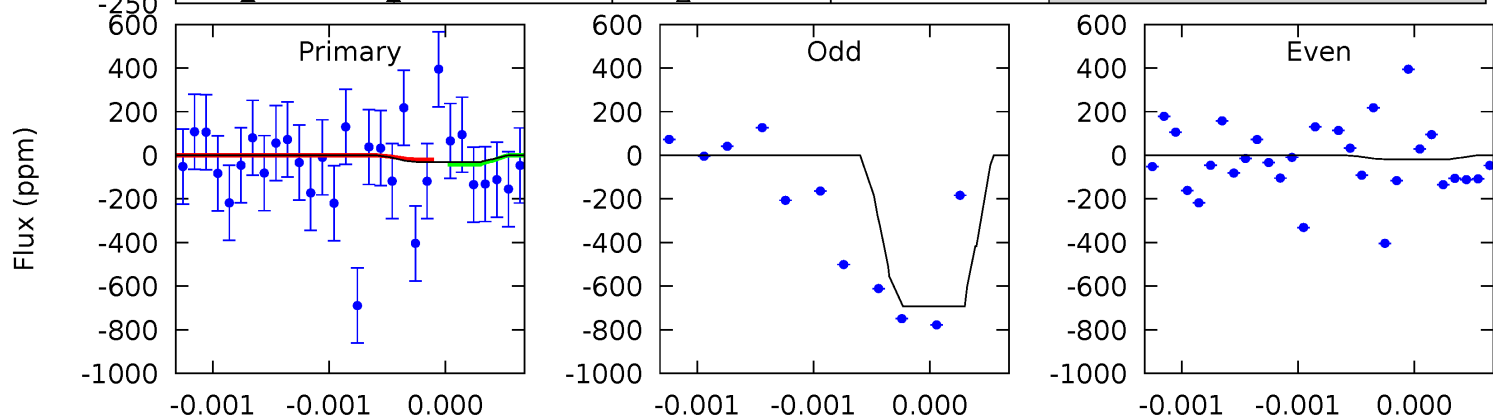
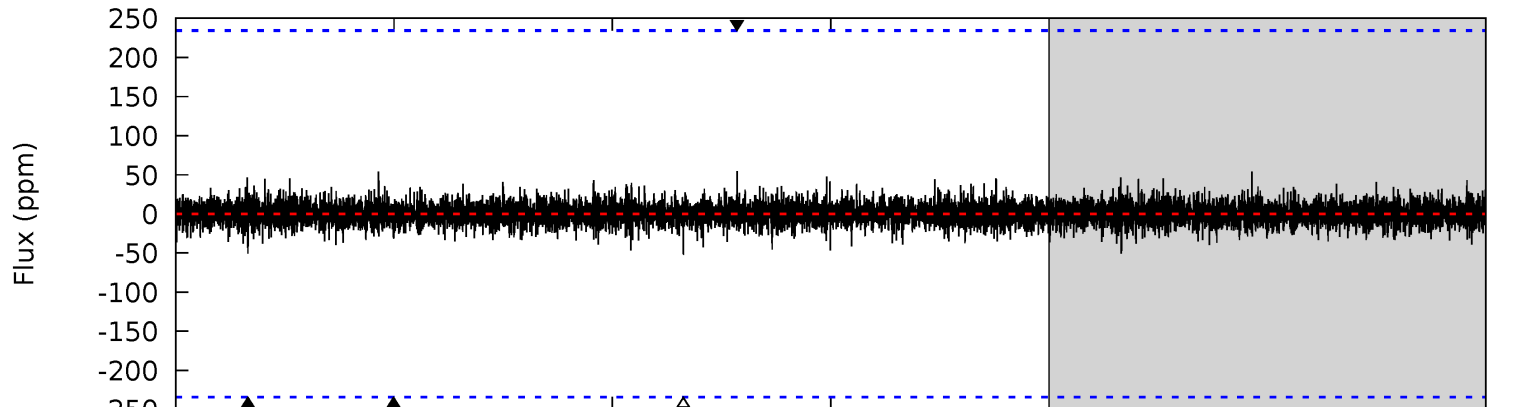
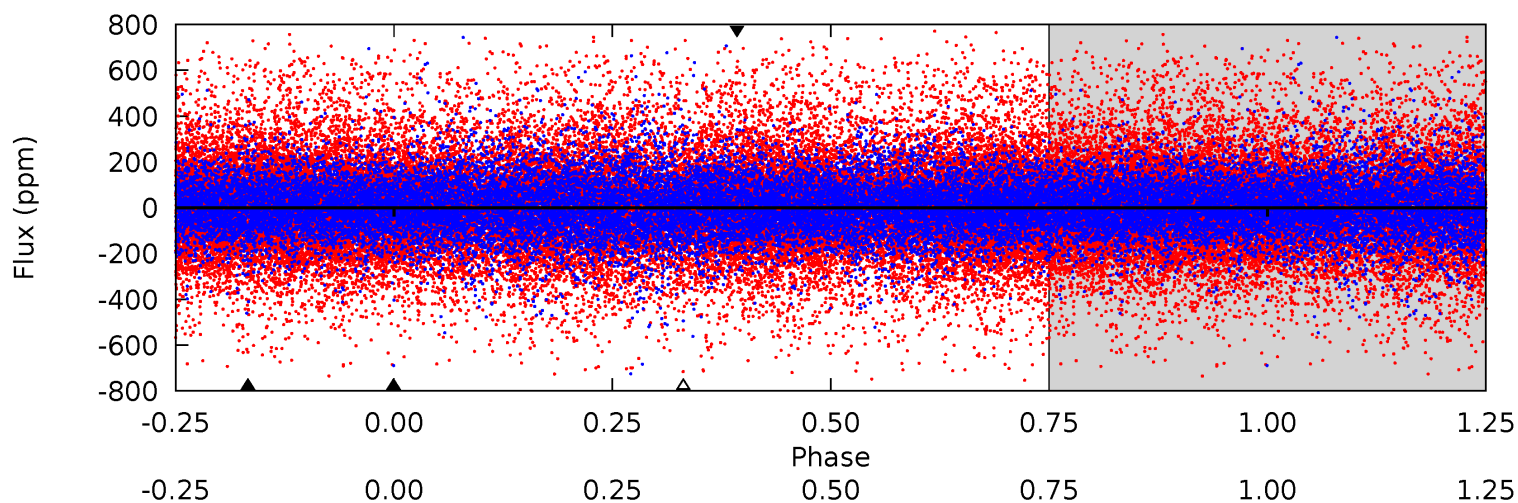
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.89	14.5	7.52	7.01	5.54	3.43	2.13	0.36	0.87	7.01	7.52	2.20	0.74	0.33	0.54



# Alt Model-Shift Uniqueness Test

003452996-02, P = 149.498750 Days, E = 84.566316 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
0.75	1.20	1.20	1.29	5.56	3.46	0.27	-0.45	-0.54	0.00	-0.09	7.49	3.61	0.52	0





### Stellar Parameters For KIC 003452996

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5031^{+80}_{-70}$	$3.897^{+0.131}_{-0.131}$	$0.020^{+0.150}_{-0.150}$	$1.786^{+0.399}_{-0.930}$	$0.917^{+0.120}_{-0.108}$	$0.227^{+1.729}_{-0.092}$
	+2%/-1%	+3%/-3%	+750%/-750%	+22%/-52%	+13%/-12%	+763%/-40%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 003452996-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	-1319±91	$10.26^{+10.33}_{-6.94}$	$576^{+30}_{-27}$	$4346^{+3500}_{-884}$	$1929^{+18001}_{-1418}$
Alt.	-51±42	$10.38^{+9.34}_{-6.94}$	$578^{+28}_{-31}$	$2526^{+924}_{-569}$	$51^{+451}_{-45}$

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

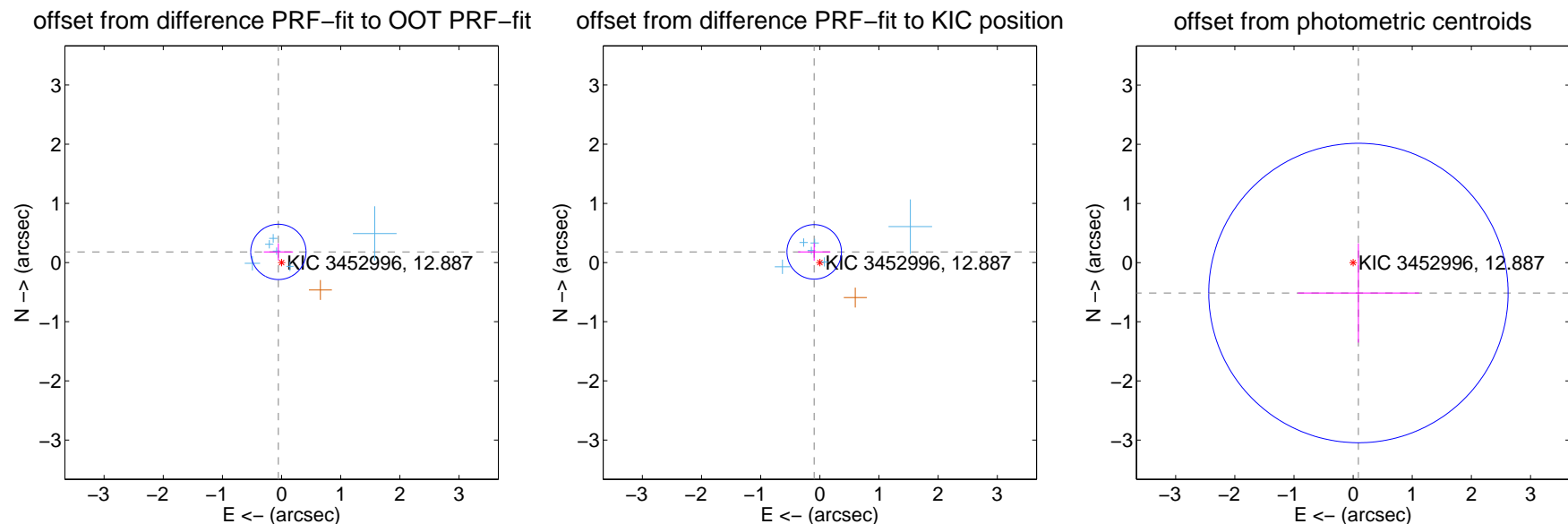
## DV Centroid Data

Supplemental centroid analysis for 003452996-02. Kepler magnitude: 12.89. Transit SNR 4.30

There are 6 quarters with good PRF difference image offsets

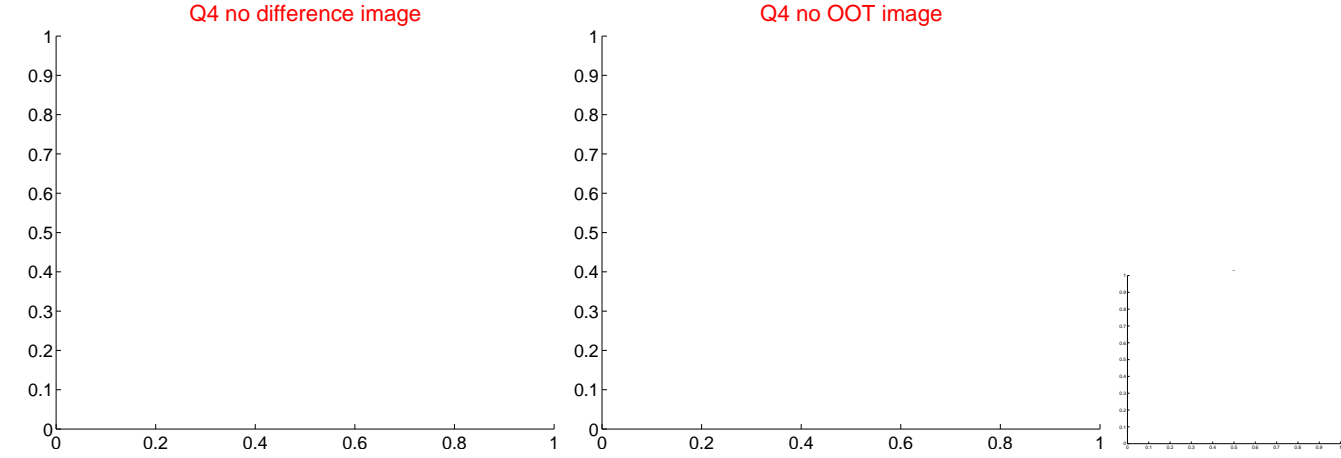
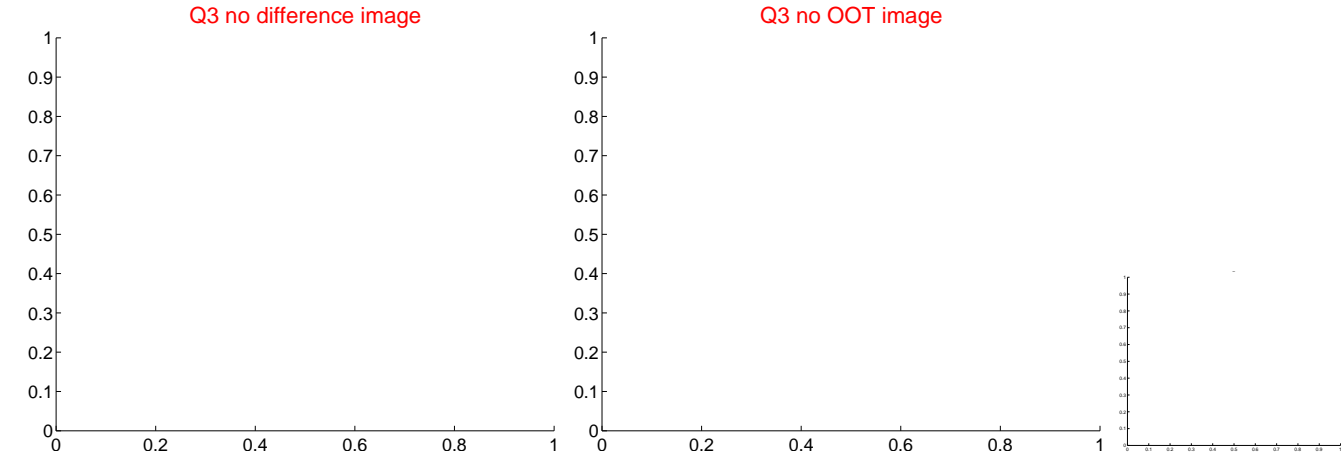
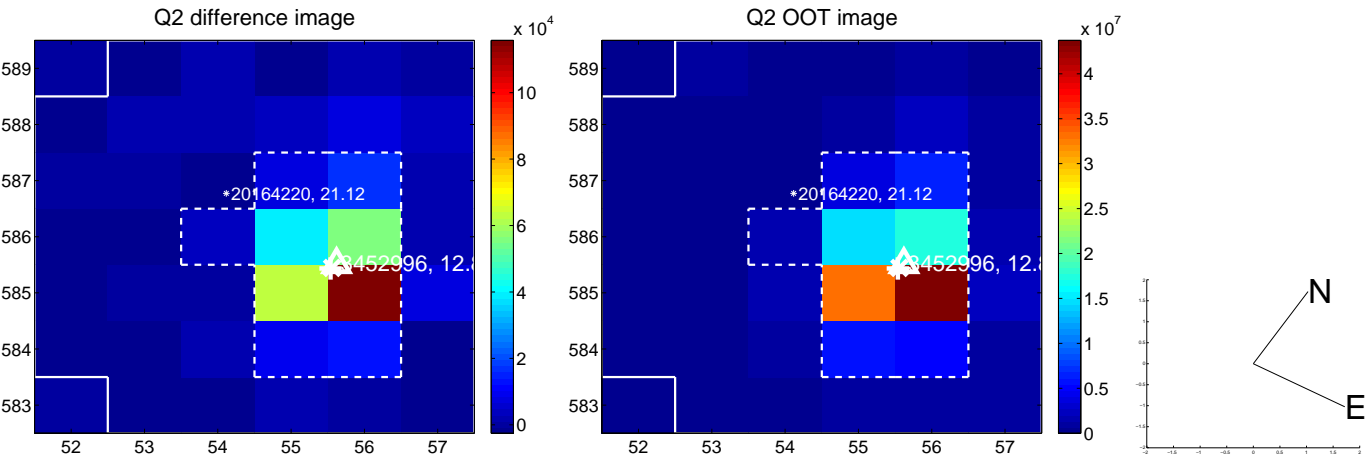
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.188 \pm 0.156$	1.21	$0.054 \pm 0.247$	$0.180 \pm 0.144$
PRF-fit source offset from KIC position	$0.204 \pm 0.153$	1.33	$0.095 \pm 0.272$	$0.180 \pm 0.149$
photometric centroid source offset	$0.52 \pm 0.84$	0.62	$-0.09 \pm 1.02$	$-0.51 \pm 0.84$

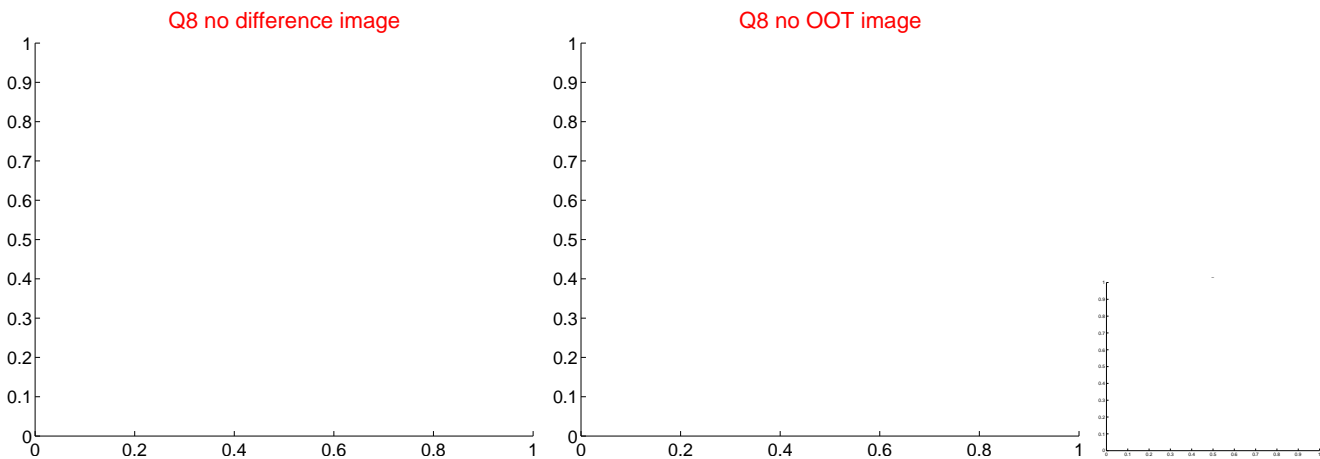
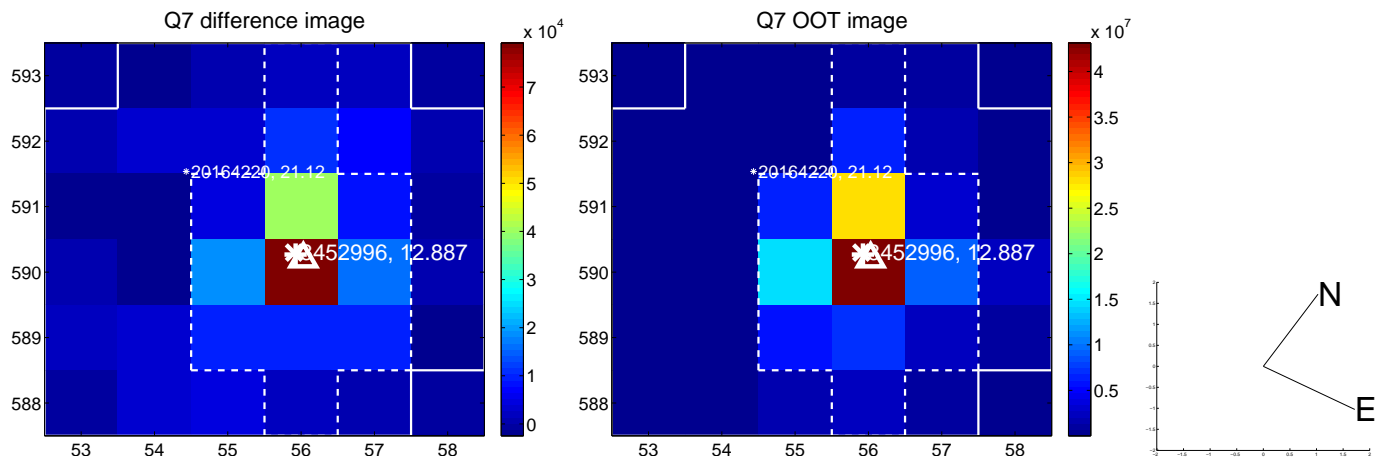
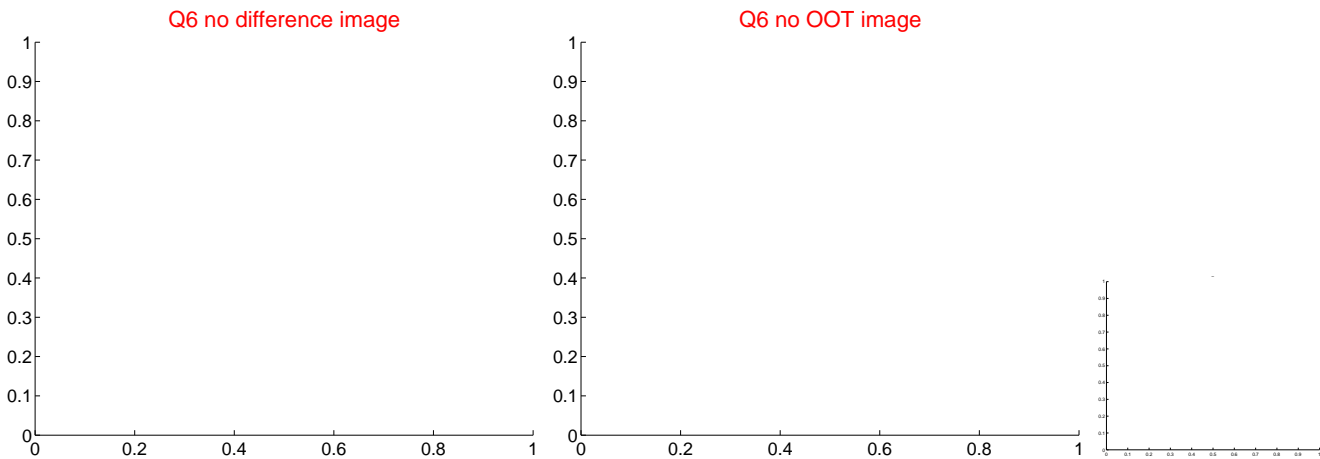
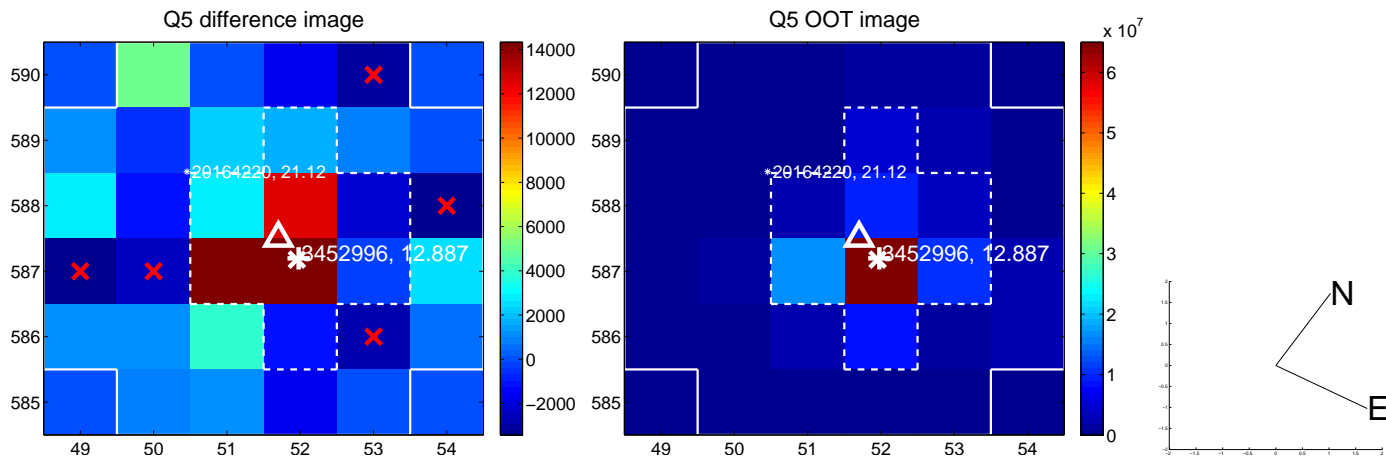


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

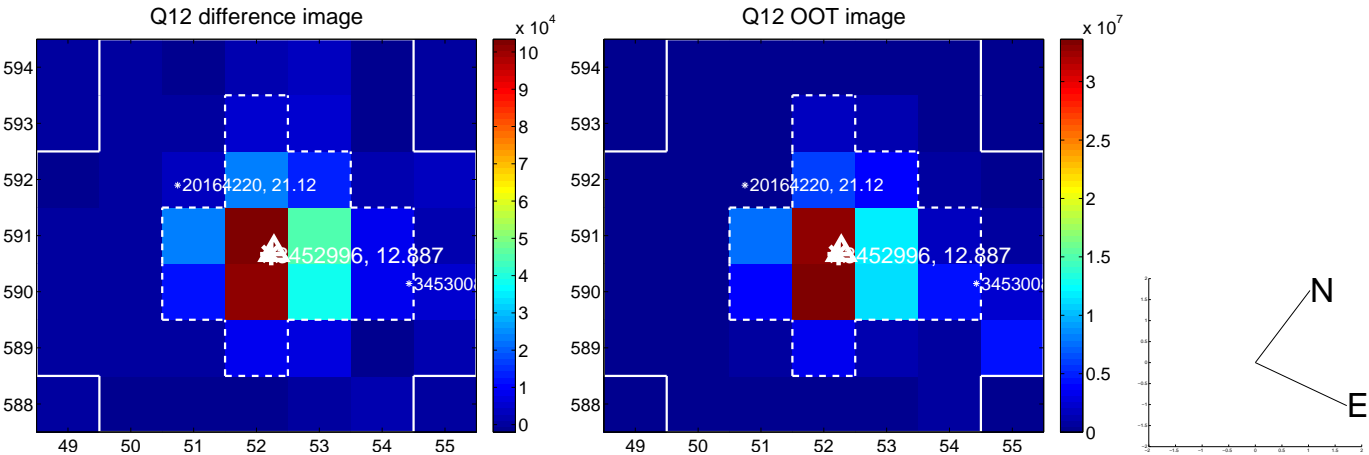
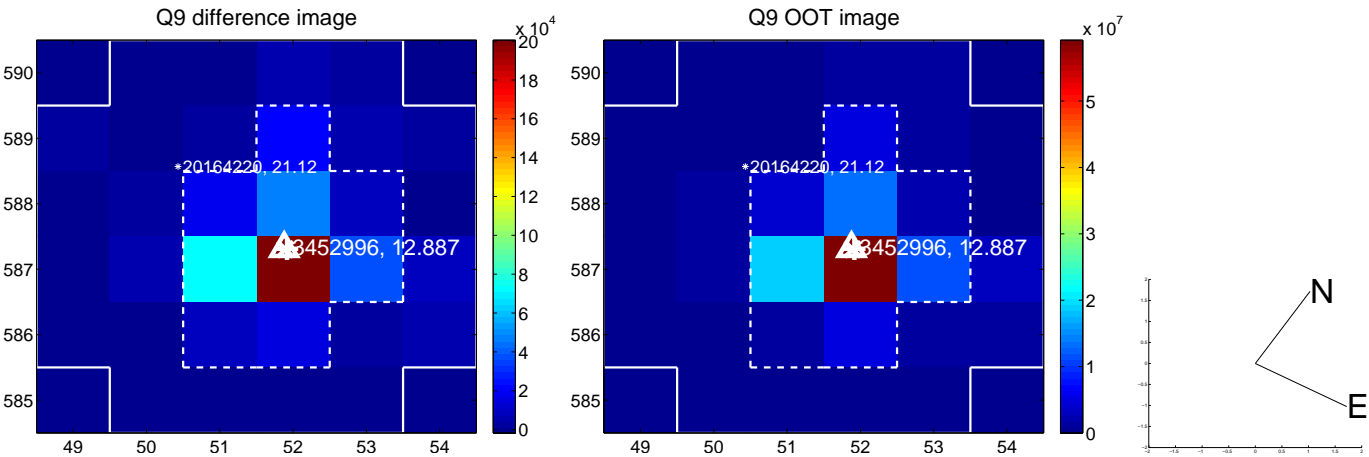
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



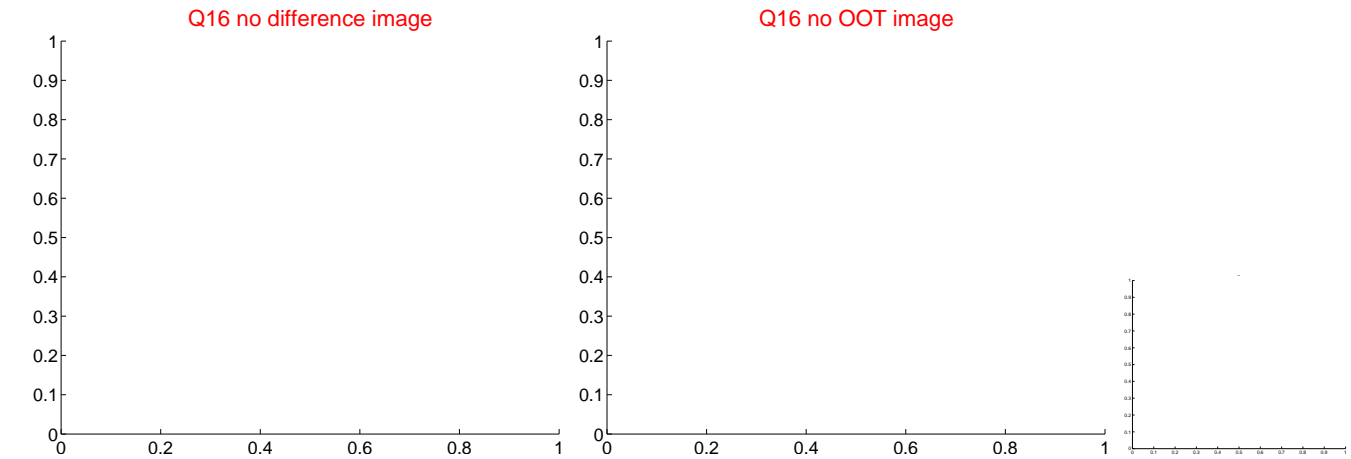
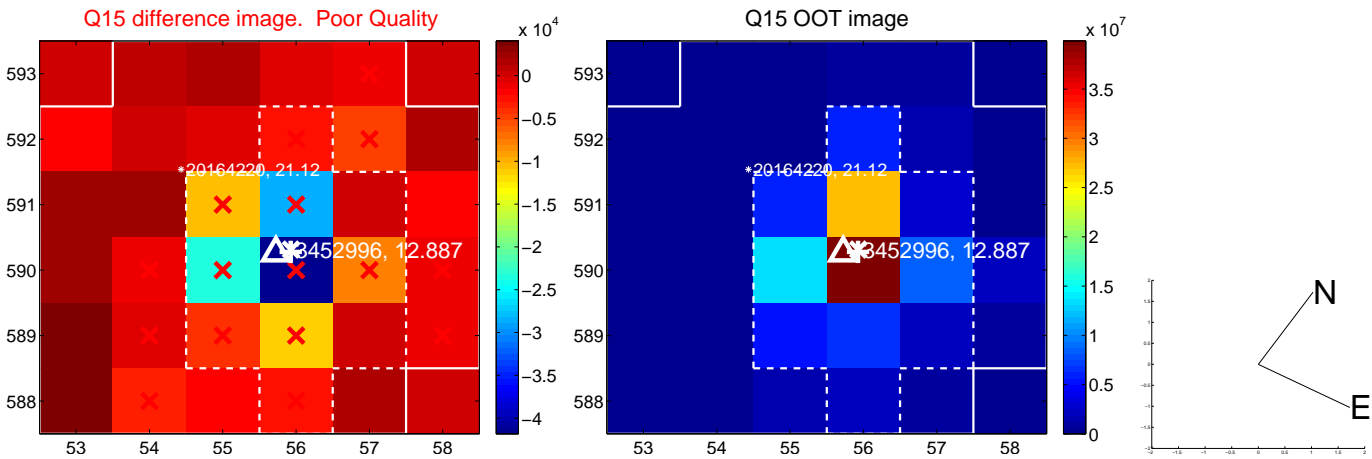
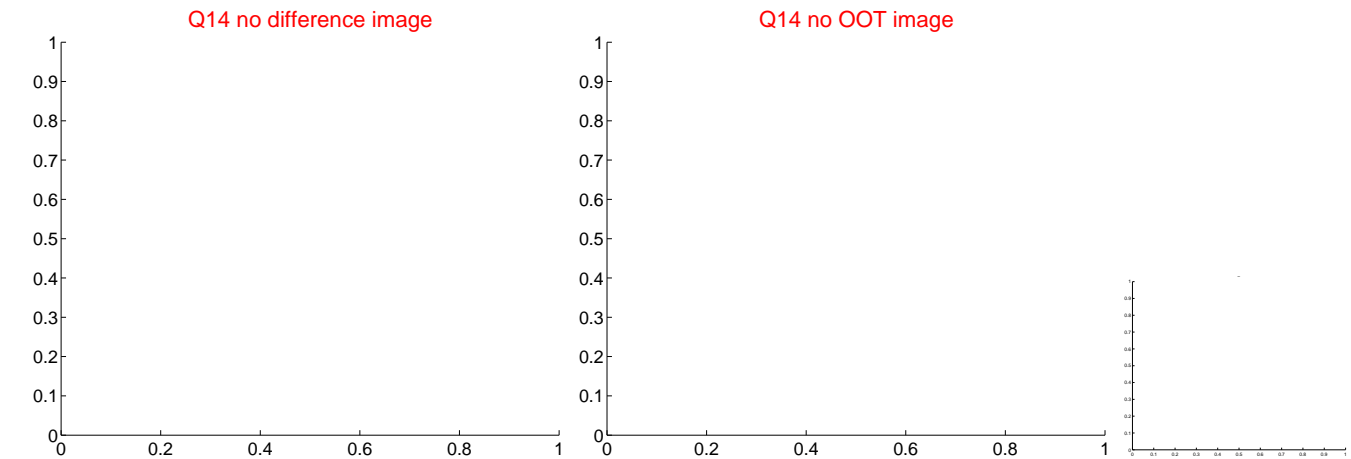
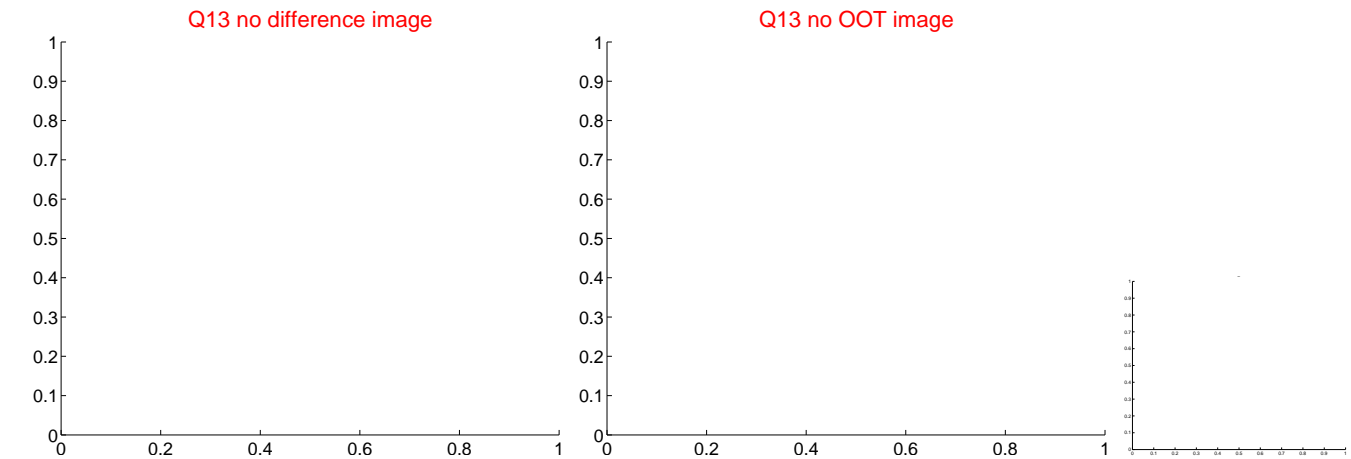
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



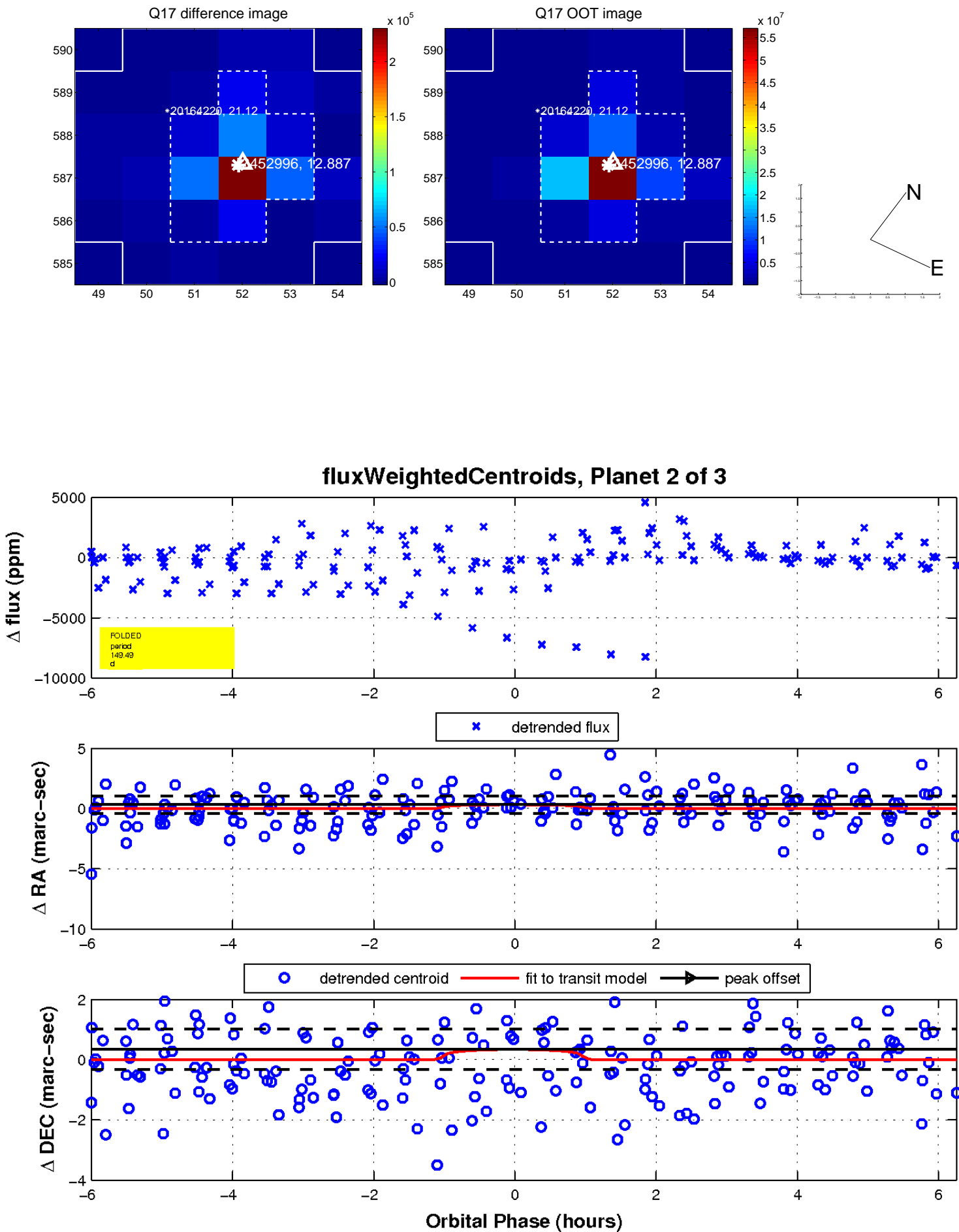
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



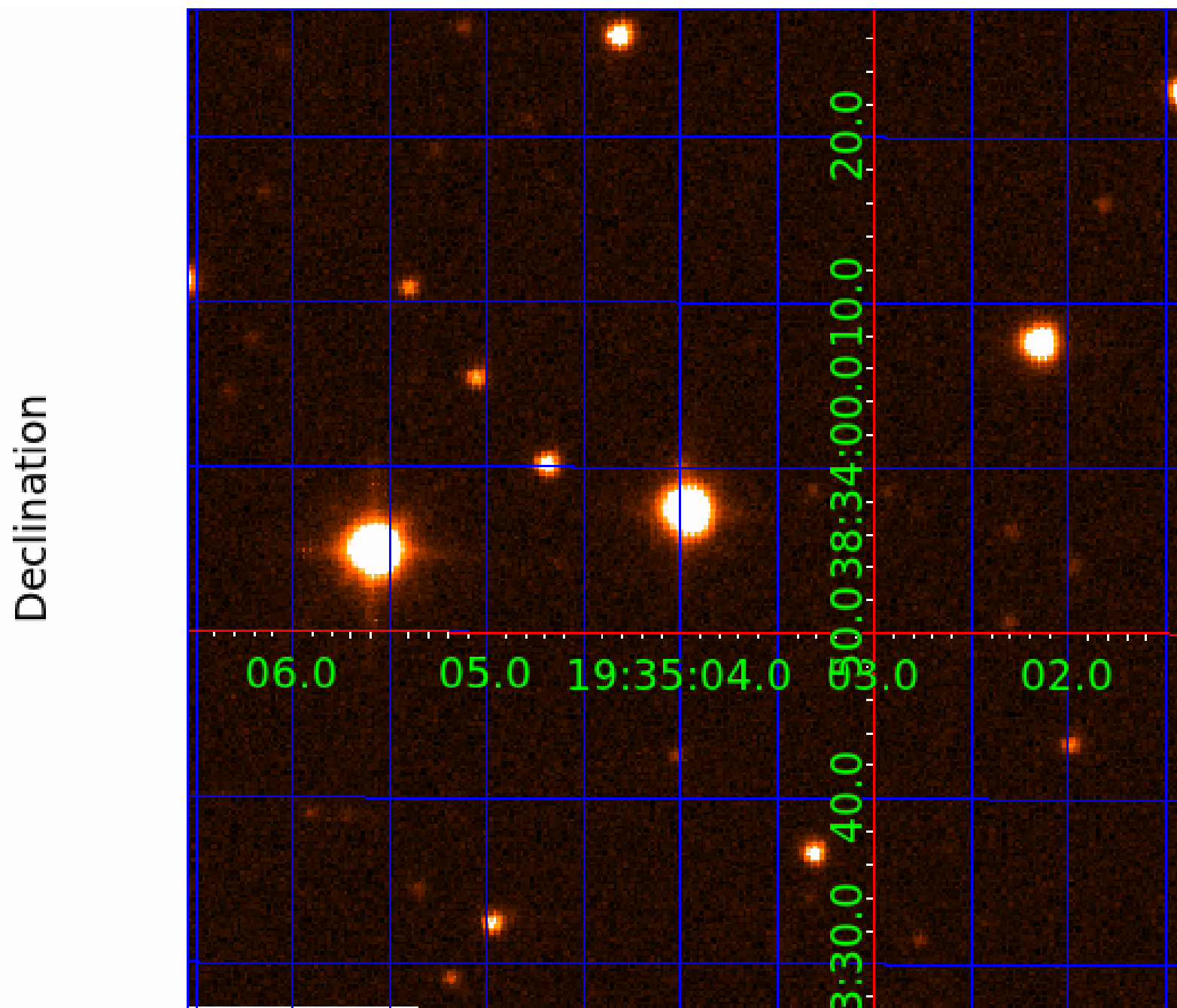
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image





# KIC 003452996

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003452996-01	OBS	No	234.033860	218.308106	592.1	2.667	13.7	3.3	1.79	5031	4.23	3.51
003452996-02	OBS	No	149.492667	234.086469	657.8	2.088	17.8	4.3	1.79	5031	4.77	6.38
003452996-03	OBS	No	240.899586	347.488329	775.1	3.000	16.8	-1.0	1.79	5031	4.83	3.38

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003452996-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003452996-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003452996-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_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.

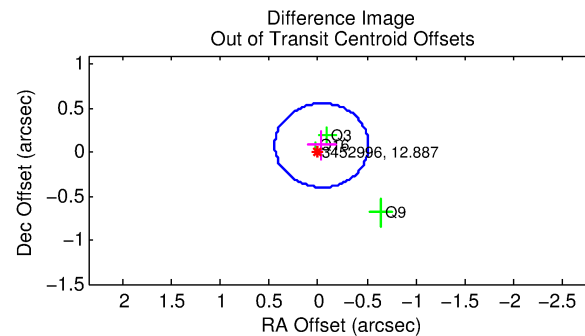
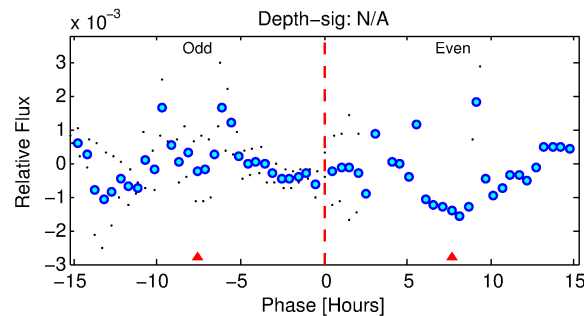
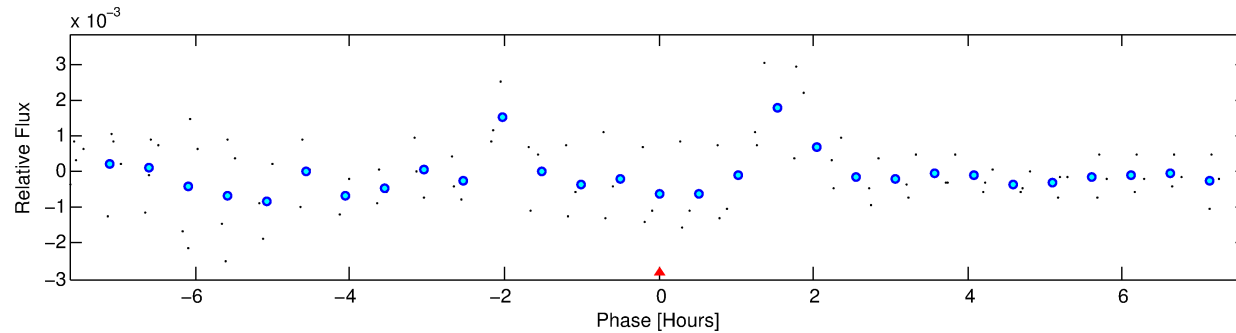
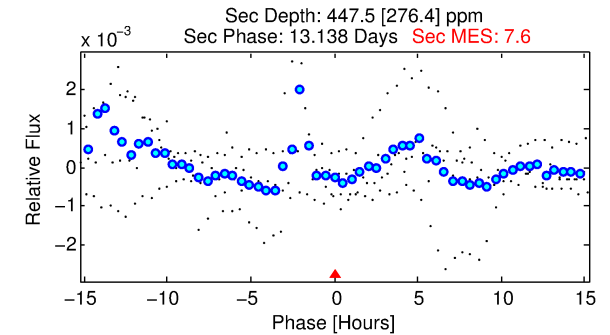
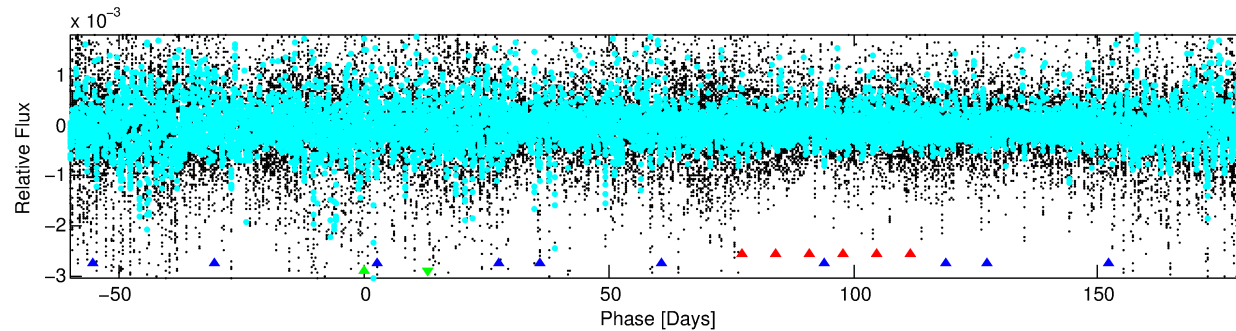
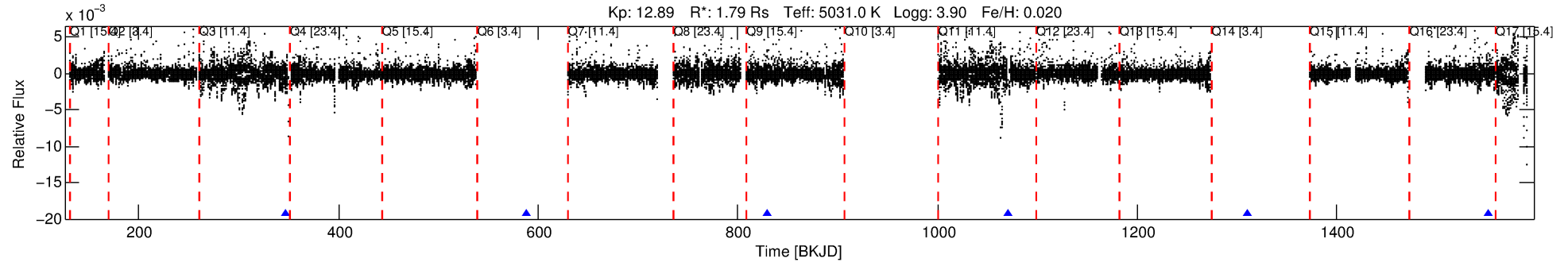
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003452996-03

No Significant Match Found

# DV One-Page Summary

KIC: 3452996 Candidate: 3 of 3 Period: 240.900 d



## TPS TCE Results:

Period = 240.89959 d  
Epoch = 347.4883 BKJD

**DV fit results are unavailable**

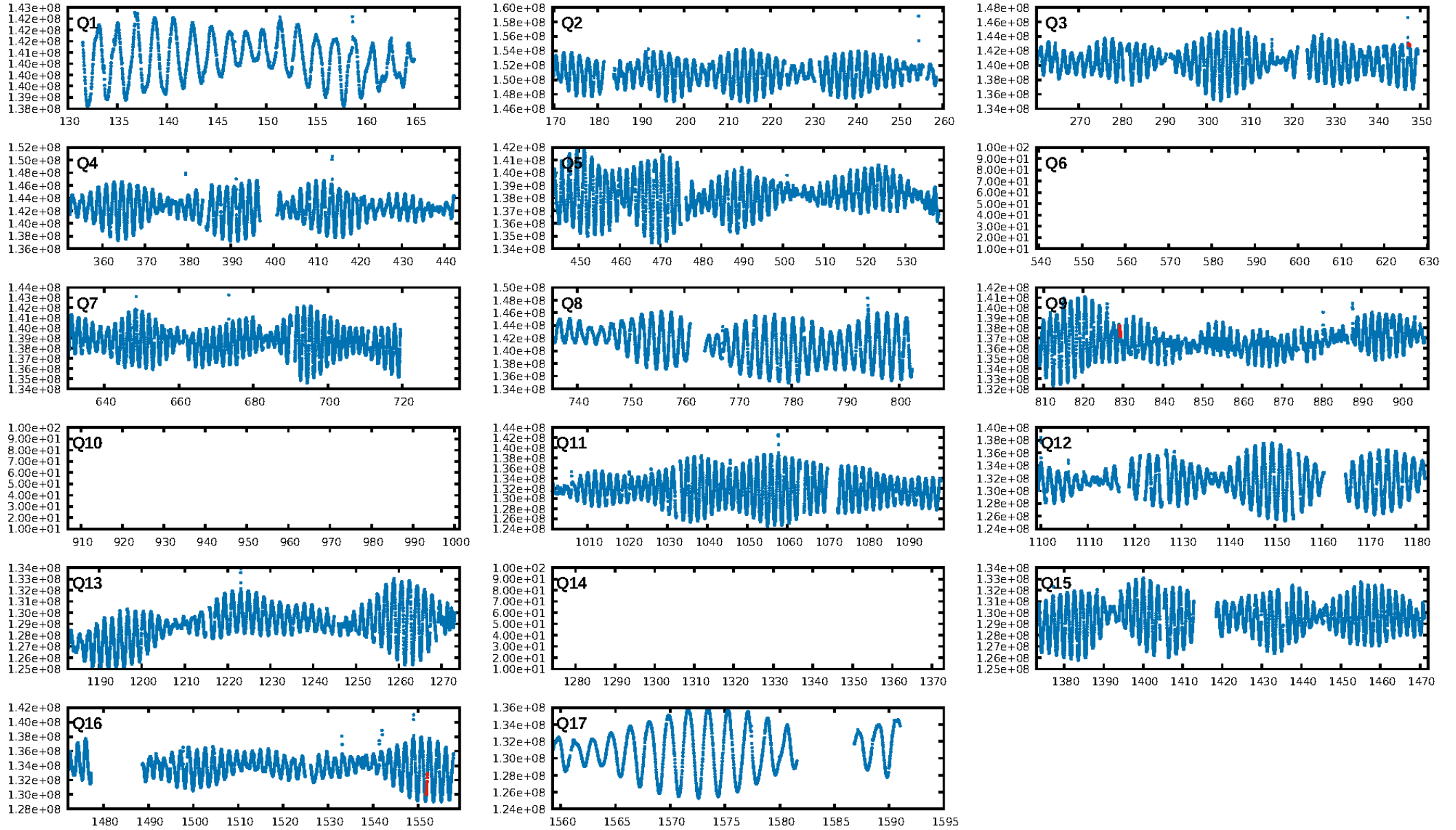
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [41.05σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -2.517  
Centroid-sig: 58.8%  
Centroid-so: 0.920 arcsec [0.91σ]  
OotOffset-rm: 0.086 arcsec [0.54σ]  
KicOffset-rm: 0.114 arcsec [0.76σ]  
OotOffset-st: 0/1/1/1 [3]  
KicOffset-st: 0/1/1/1 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

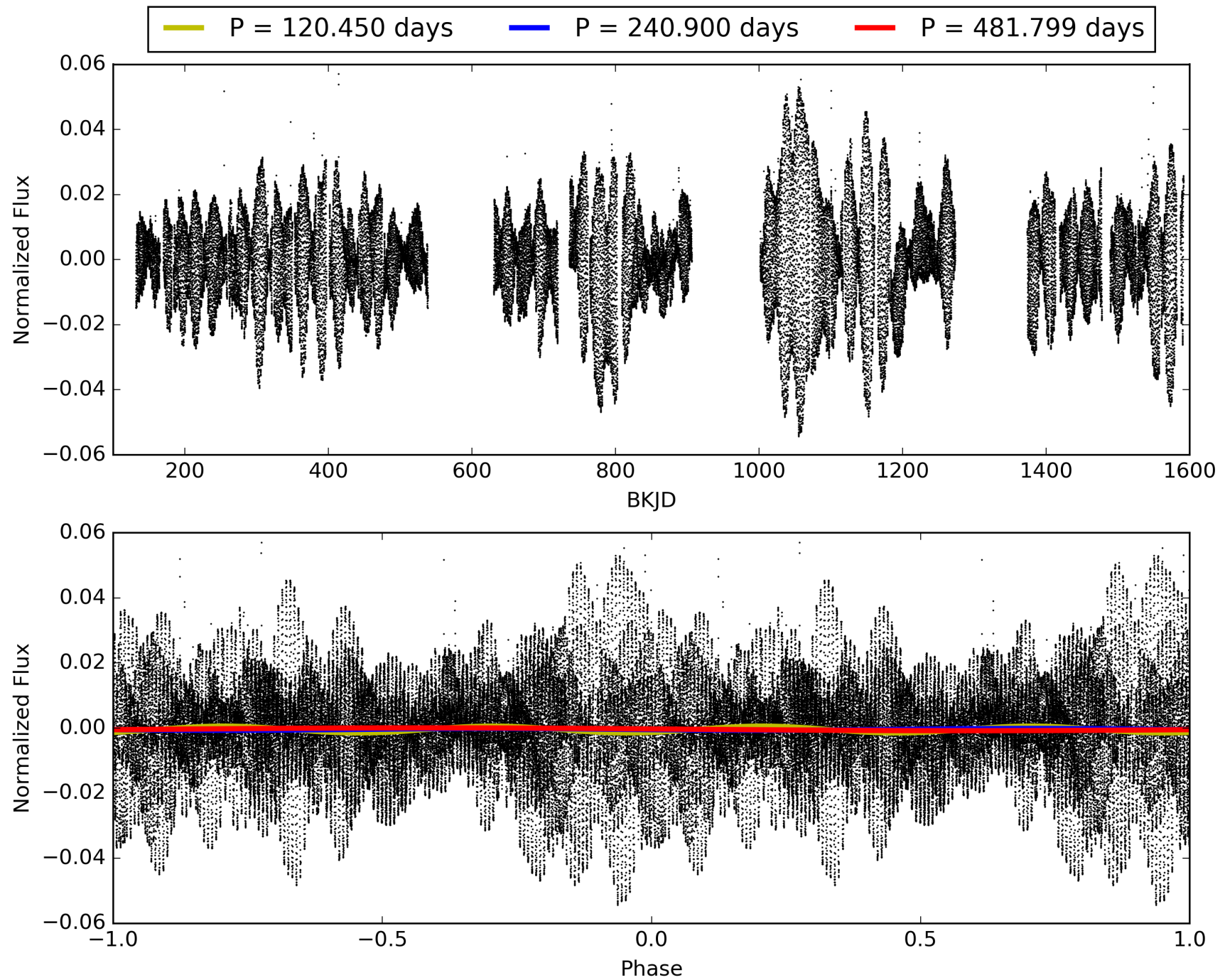
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:00:33 Z

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

# TCE 003452996-03, PDC Light Curves

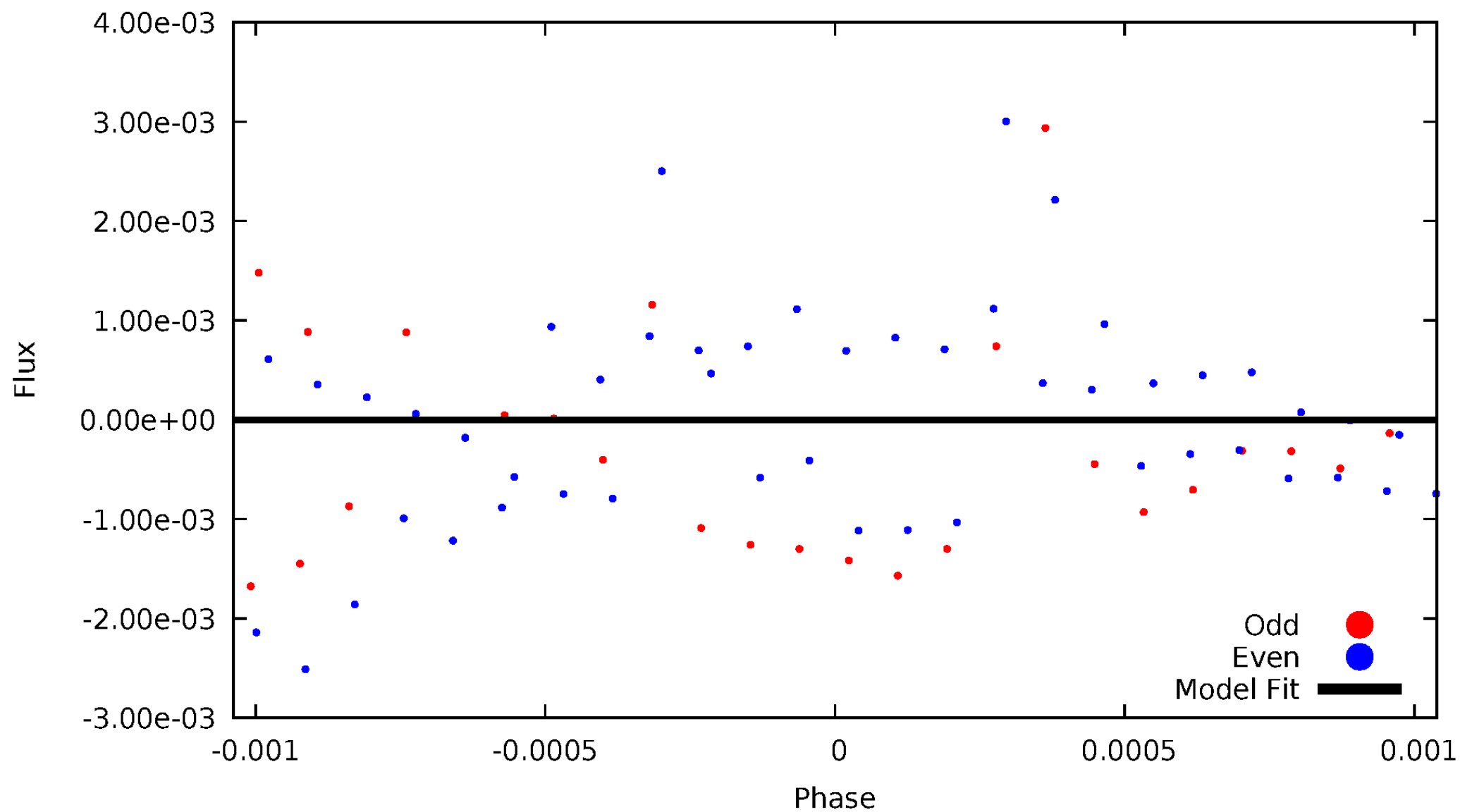


TCE 003452996-03



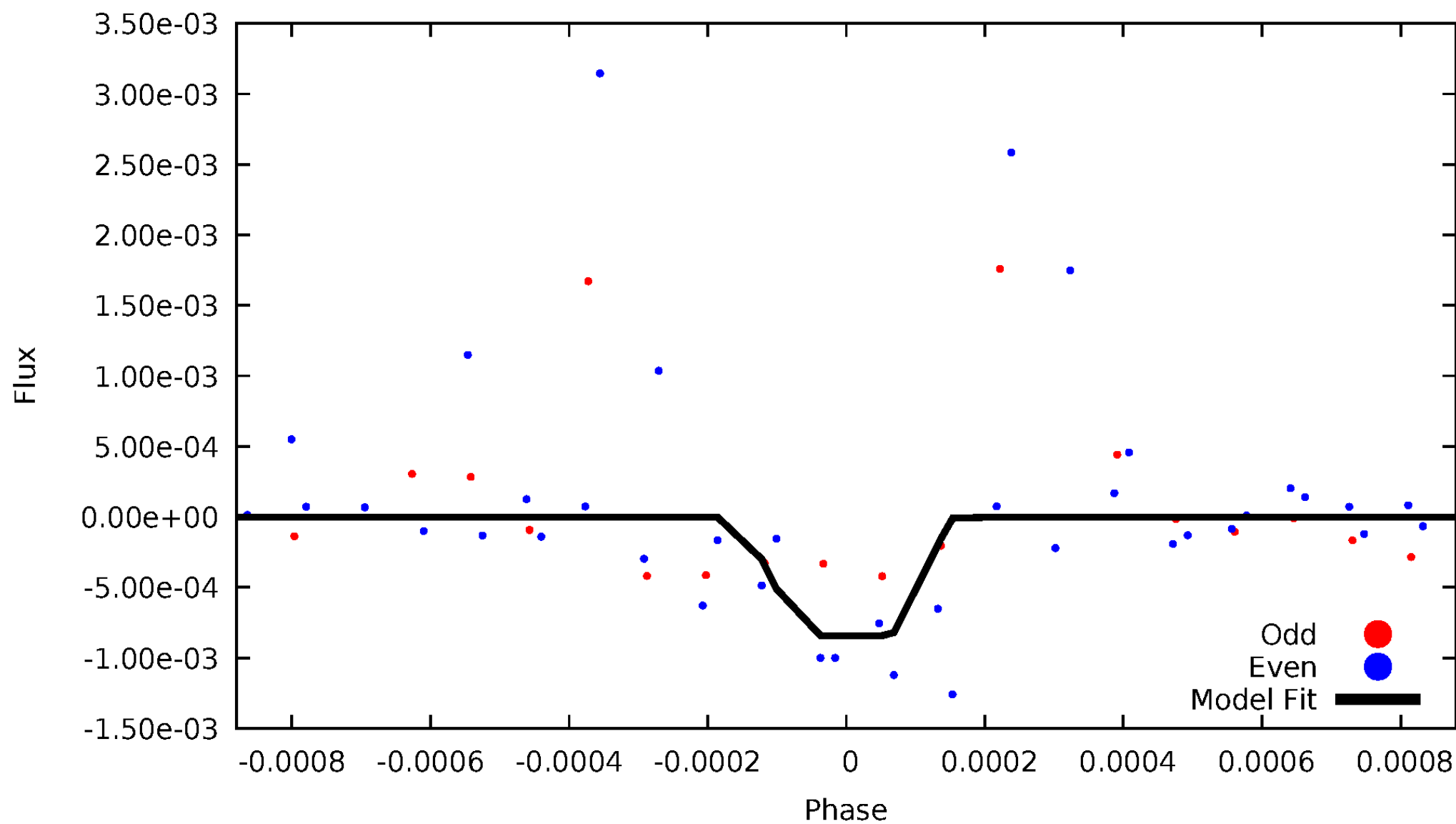
# DV Odd/Even

TCE 003452996-03

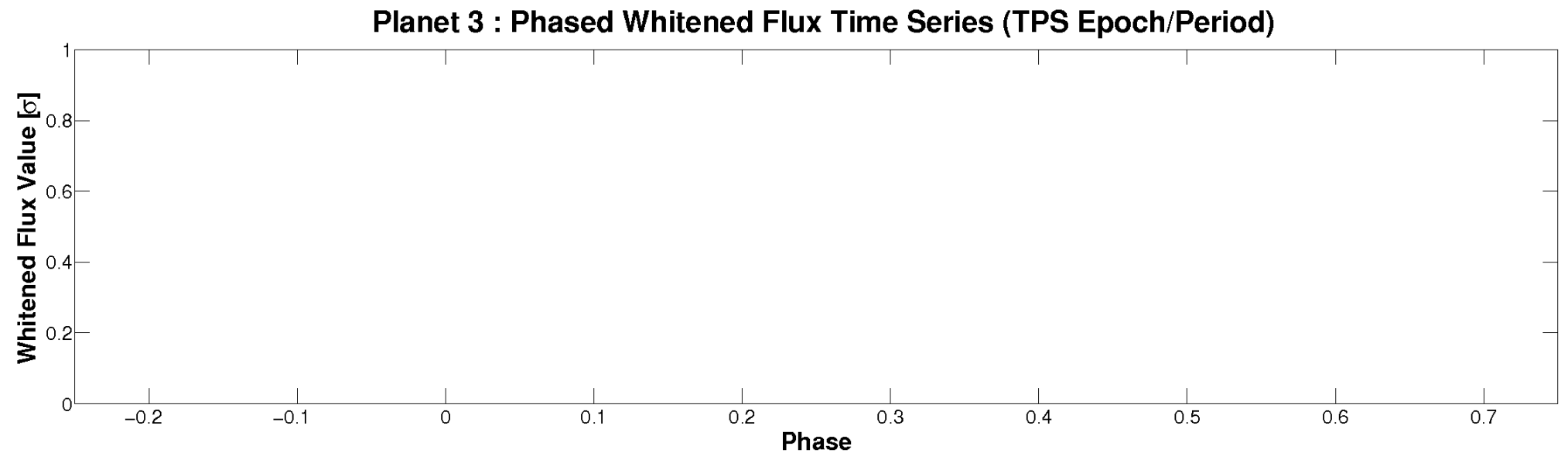
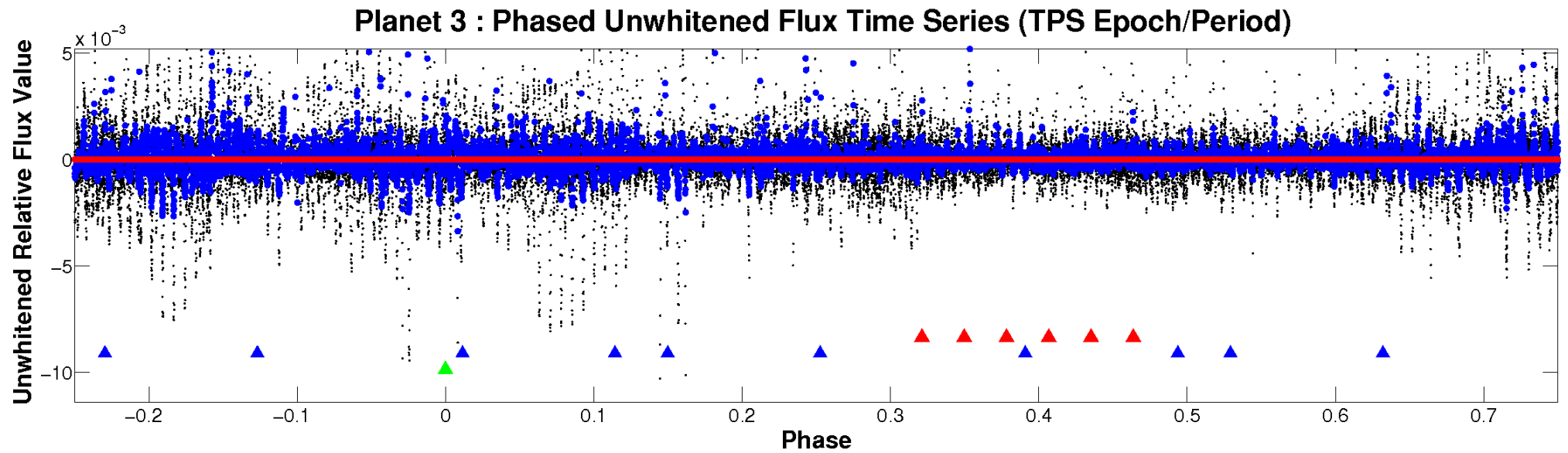


# ALT Odd/Even

TCE 003452996-03

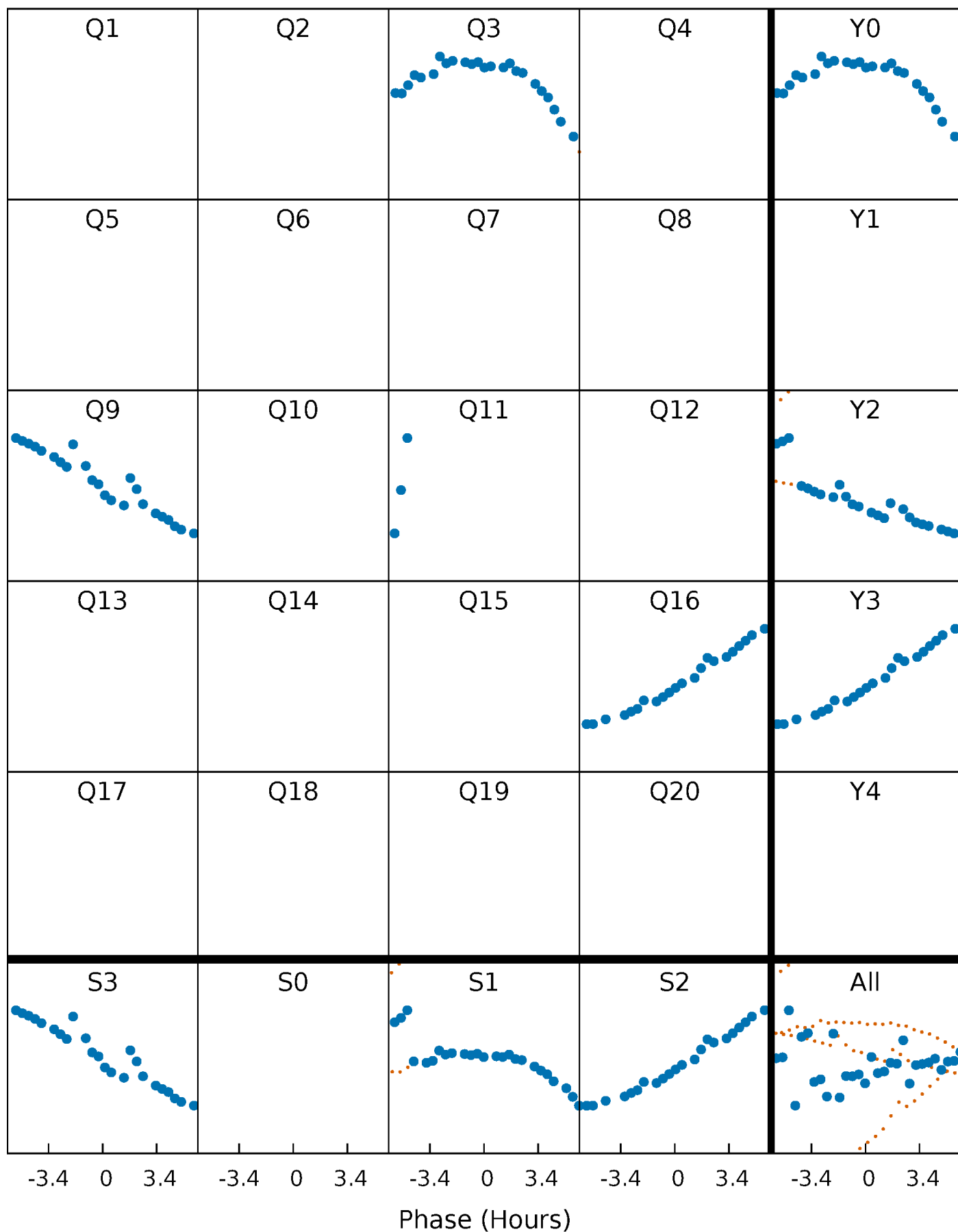


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

TCE 003452996-03     $P=240.899586$  Days     $T_0=347.488329$  (BKJD)





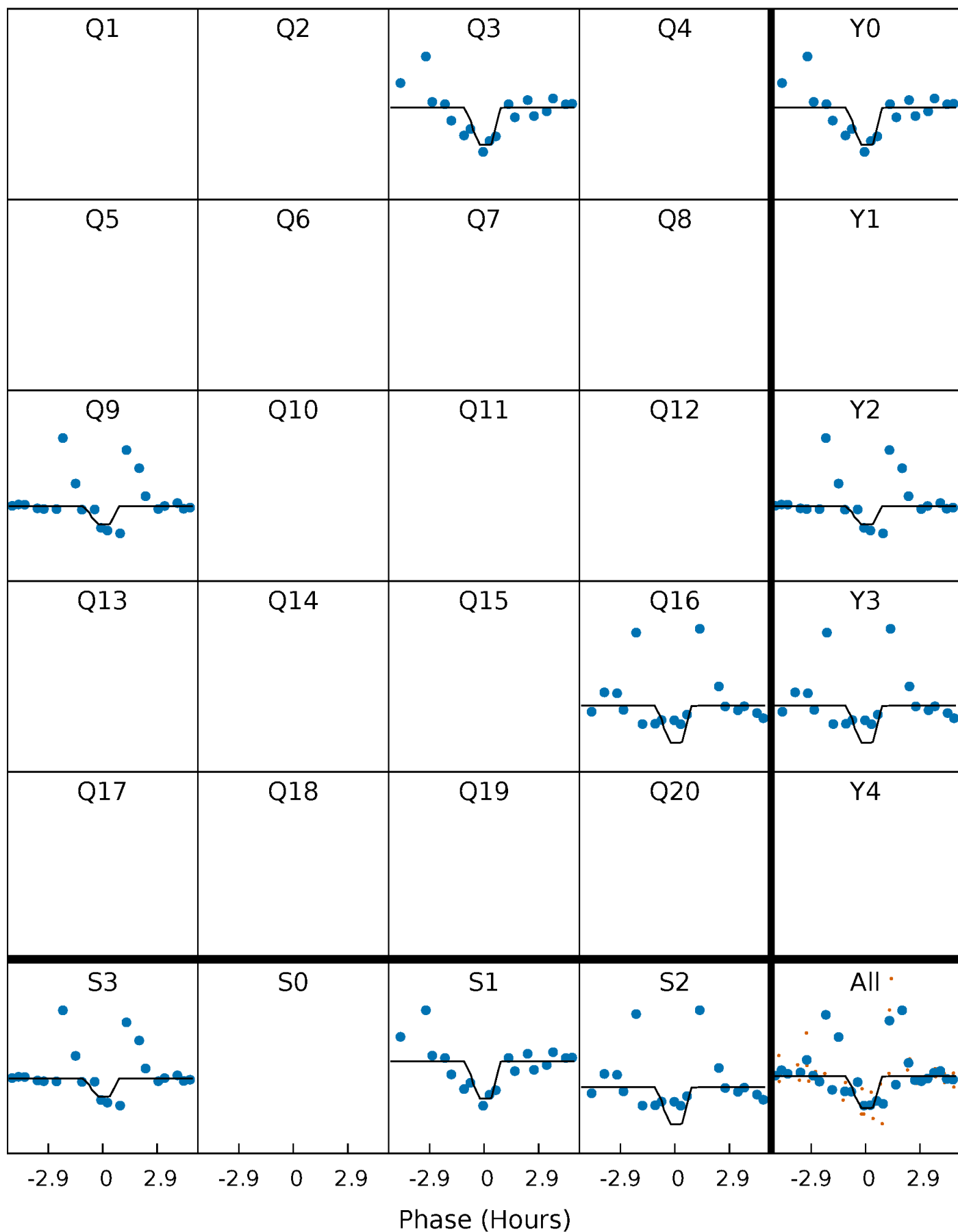
# DV Quarter-Phased Transit Curves

TCE 003452996-03     $P=240.899586$  Days     $T_0=347.488329$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

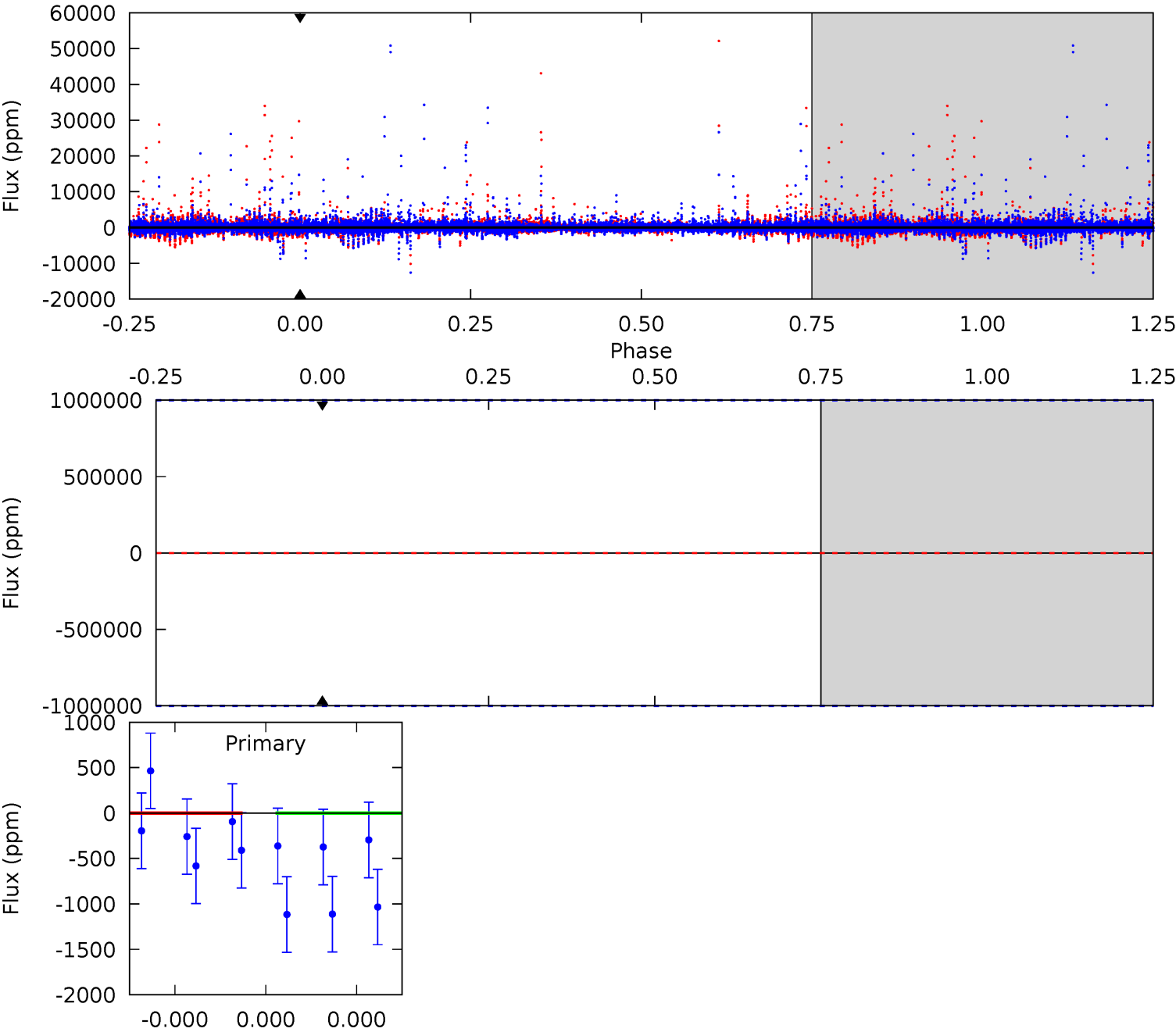
TCE 003452996-03     $P=240.899586$  Days     $T_0=347.501943$  (BKJD)



# DV Model-Shift Uniqueness Test

003452996-03, P = 240.899586 Days, E = 106.588743 Days

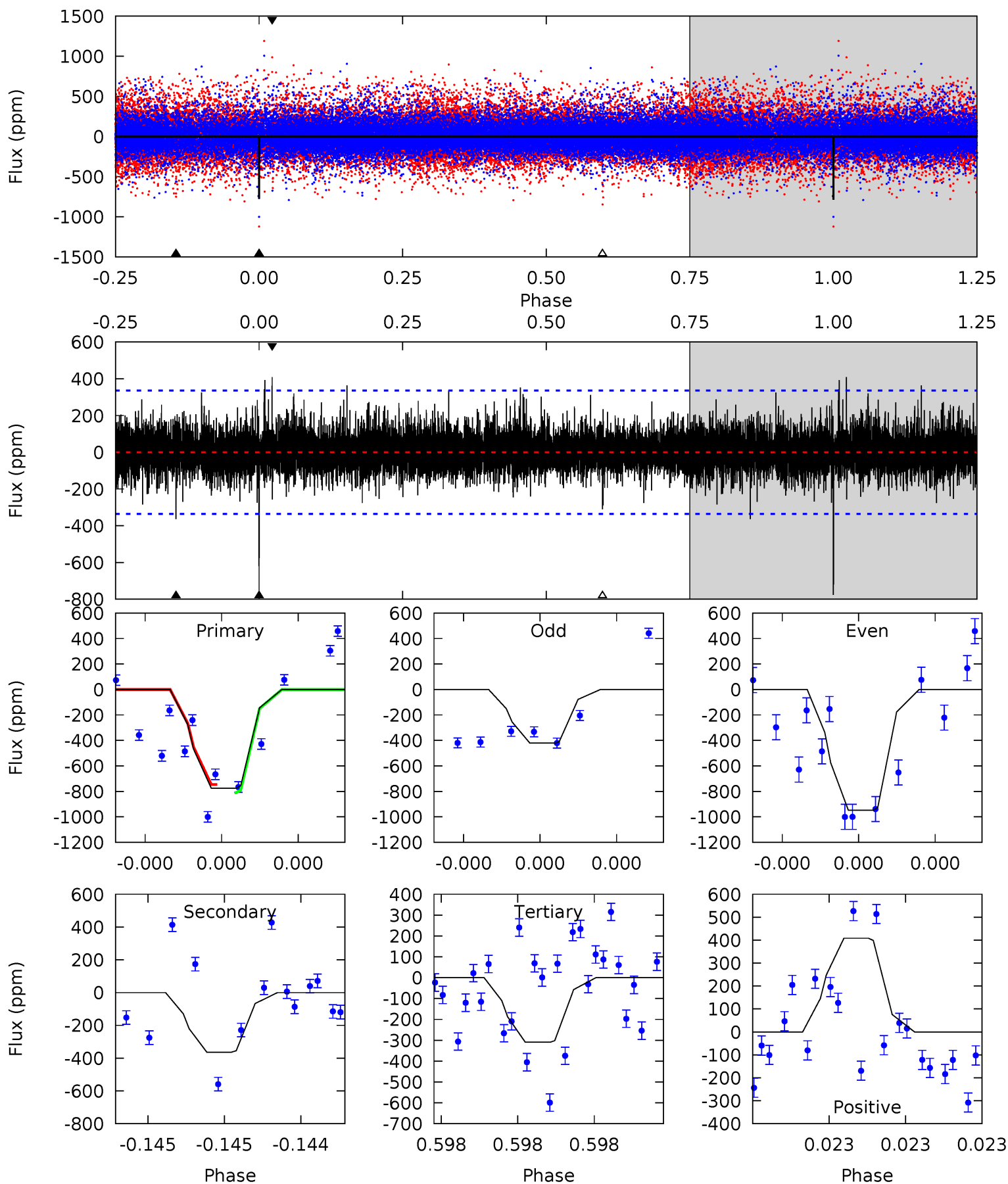
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

003452996-03, P = 240.899586 Days, E = 106.602357 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
13.1	6.14	5.22	6.89	5.68	3.64	1.23	7.86	6.20	0.91	-0.75	4.35	0.82	0.34	0.54



### Stellar Parameters For KIC 003452996

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5031^{+80}_{-70}$	$3.897^{+0.131}_{-0.131}$	$0.020^{+0.150}_{-0.150}$	$1.786^{+0.399}_{-0.930}$	$0.917^{+0.120}_{-0.108}$	$0.227^{+1.729}_{-0.092}$
	+2%/-1%	+3%/-3%	+750%/-750%	+22%/-52%	+13%/-12%	+763%/-40%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 003452996-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$15.74^{+15.92}_{-11.27}$	$492^{+25}_{-28}$	$3947^{+9851}_{-18817}$	$2115^{+197764}_{-233927}$
Alt.	$-364 \pm 59$	$16.26^{+15.71}_{-10.68}$	$490^{+24}_{-25}$	$3057^{+1249}_{-503}$	$407^{+3069}_{-302}$

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

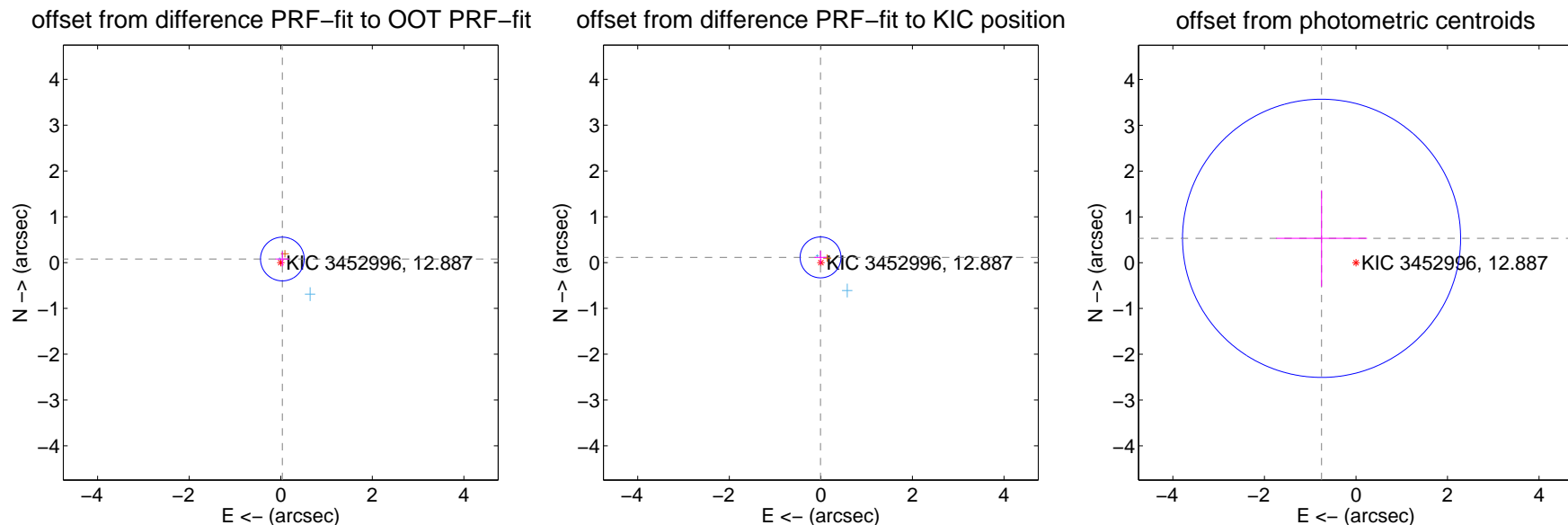
## DV Centroid Data

Supplemental centroid analysis for 003452996-03. Kepler magnitude: 12.89. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

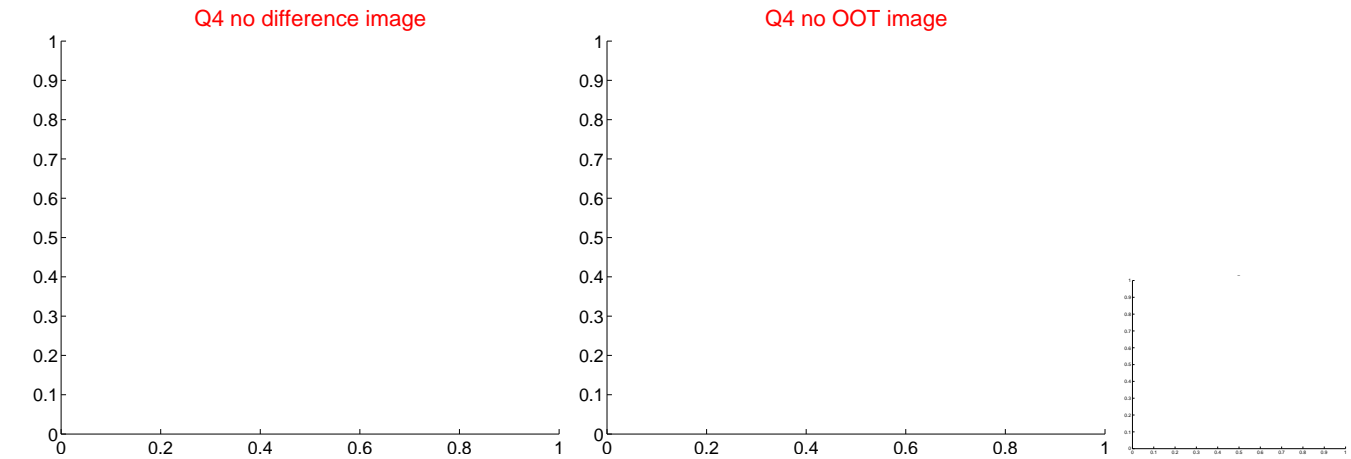
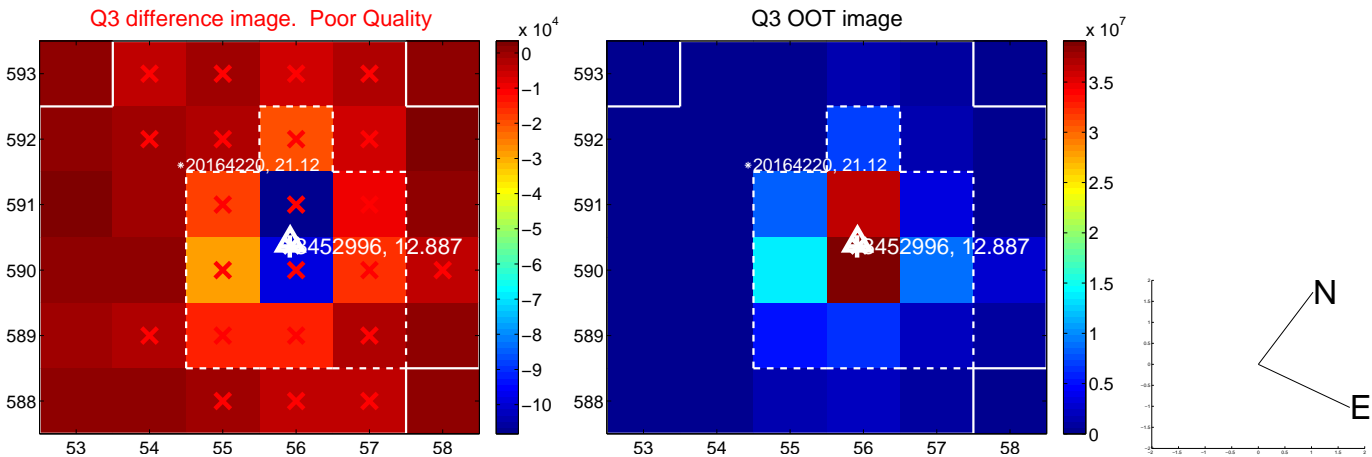
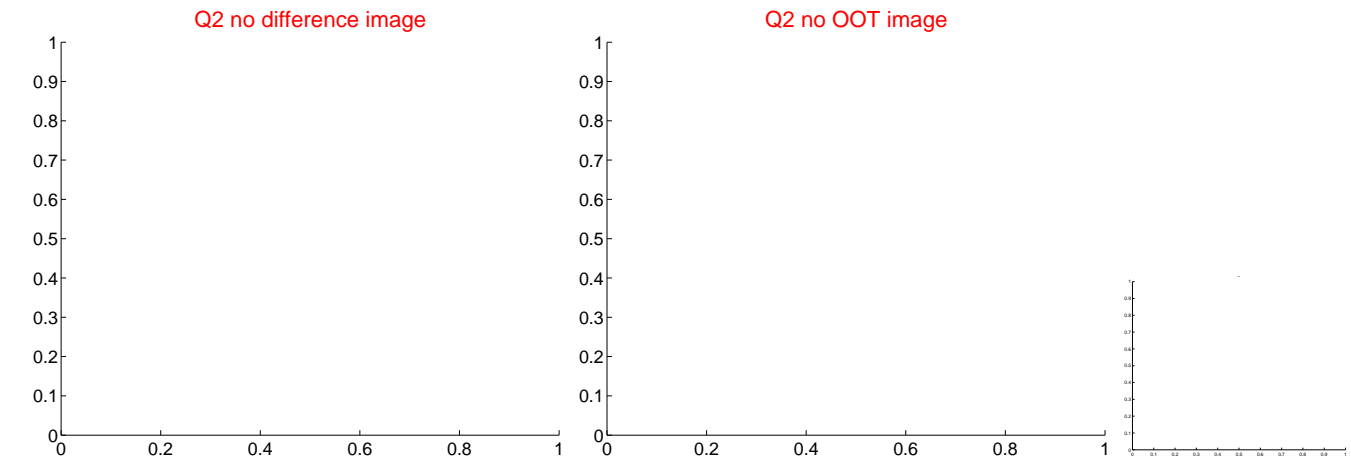
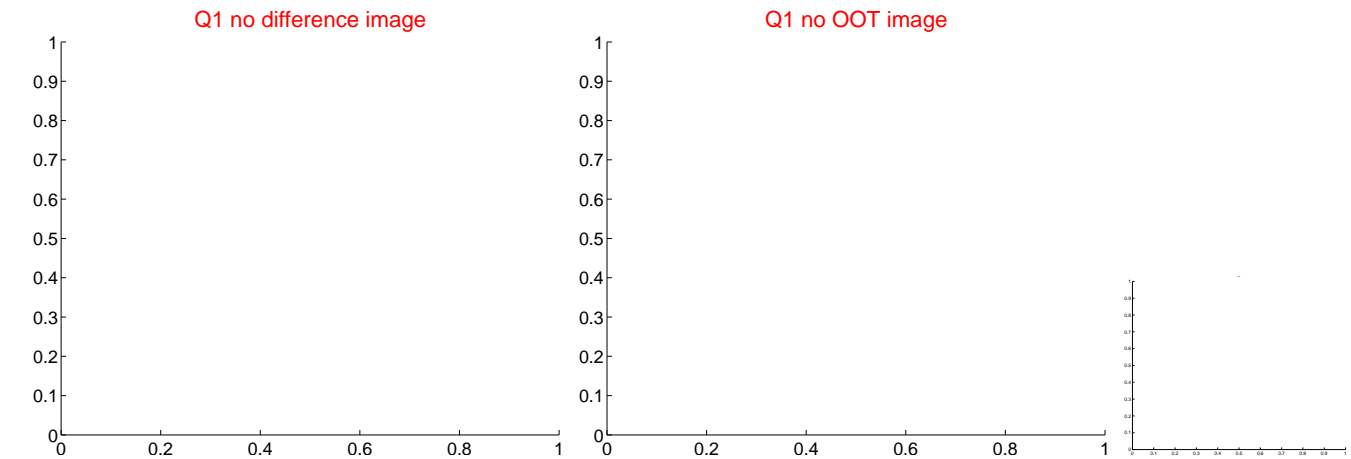
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.086 \pm 0.159$	0.54	$-0.035 \pm 0.147$	$0.078 \pm 0.161$
PRF-fit source offset from KIC position	$0.114 \pm 0.149$	0.76	$0.007 \pm 0.133$	$0.113 \pm 0.143$
photometric centroid source offset	$0.92 \pm 1.01$	0.91	$0.75 \pm 0.99$	$0.53 \pm 1.05$



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

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

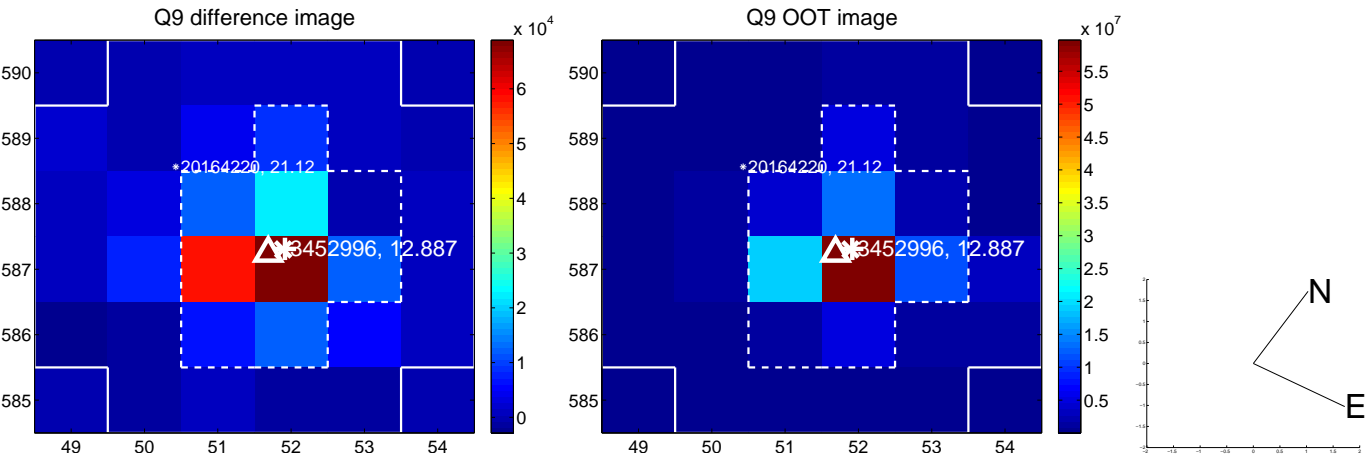


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

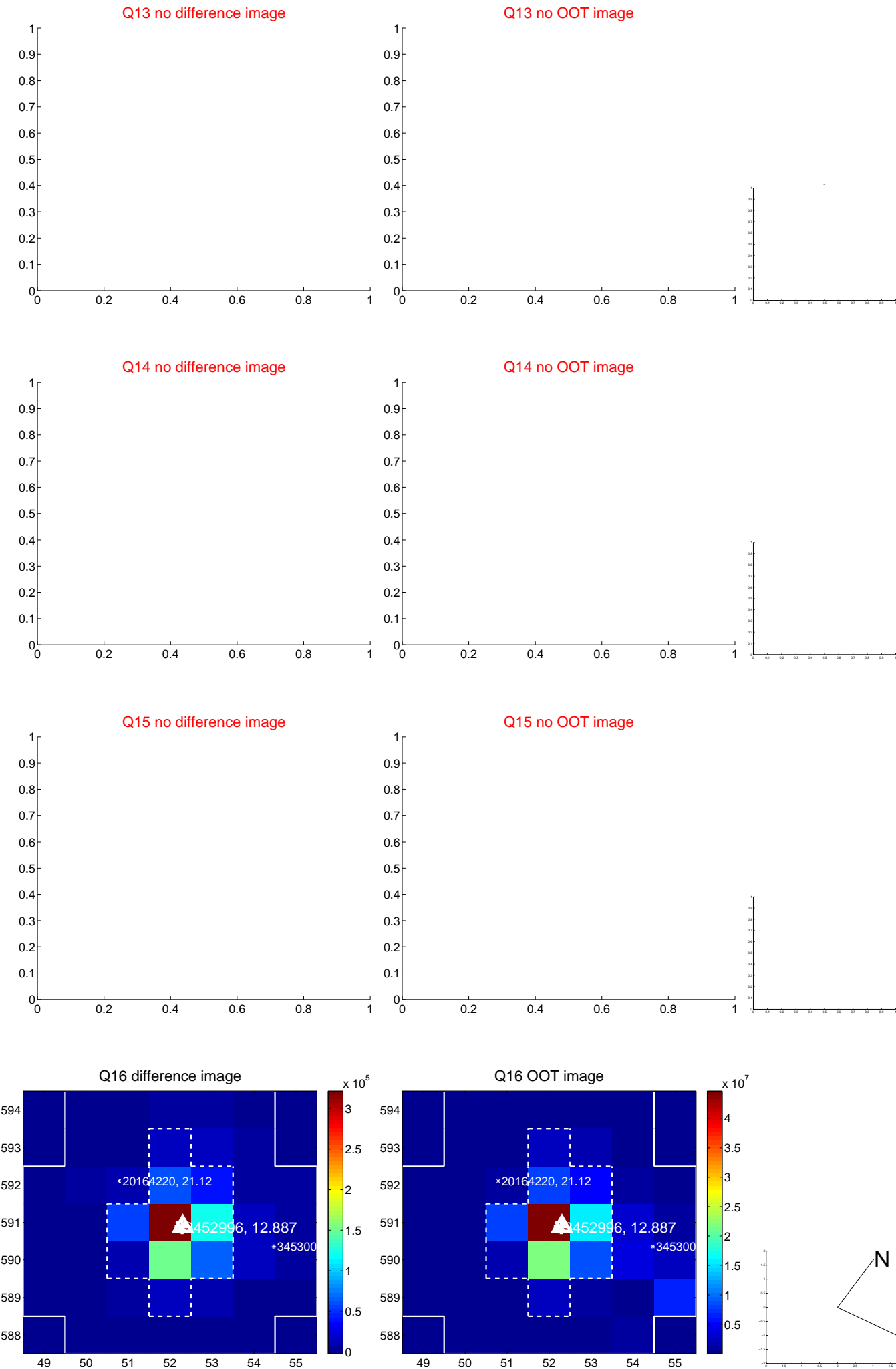




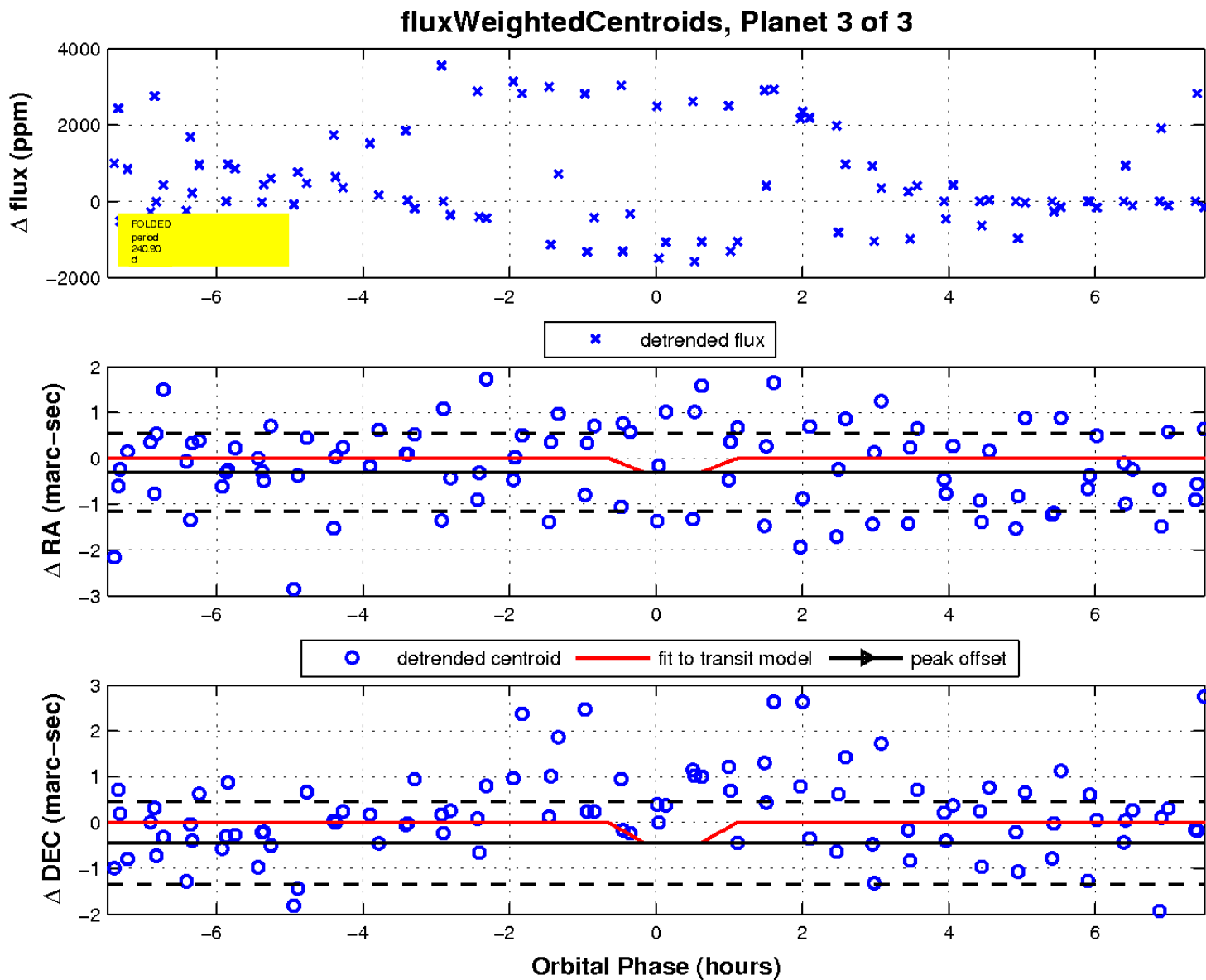
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

