

# KIC 007602453

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007602453-01	OBS	No	447.167214	535.961424	8235.1	14.222	27.6	5.3	1.68	7249	26.81	4.33
007602453-02	OBS	No	329.405664	426.352045	8464.3	8.380	20.9	14.2	1.68	7249	19.75	6.51
007602453-03	OBS	No	186.122717	189.109966	640.2	2.500	17.3	-1.0	1.68	7249	4.32	13.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007602453-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007602453-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—CENT_FEW_DIFFS
007602453-03	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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

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

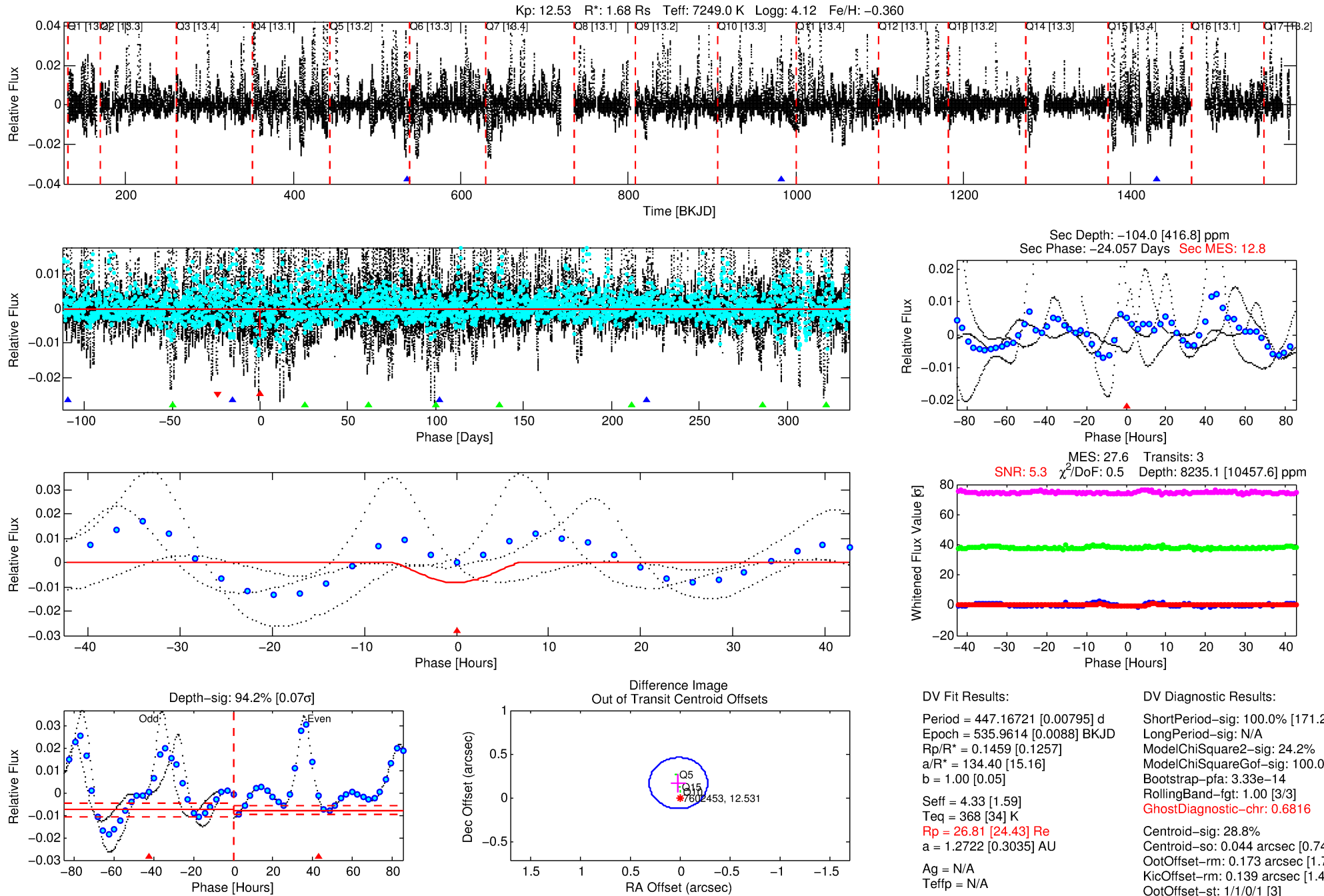
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007602453-01

No Significant Match Found

# DV One-Page Summary

KIC: 7602453 Candidate: 1 of 3 Period: 447.167 d



## DV Fit Results:

Period = 447.16721 [0.00795] d  
Epoch = 535.9614 [0.0088] BKJD  
Rp/R\* = 0.1459 [0.1257]  
a/R\* = 134.40 [15.16]  
b = 1.00 [0.05]  
Seff = 4.33 [1.59]  
Teq = 368 [34] K  
Rp = 26.81 [24.43] Re  
a = 1.2722 [0.3035] AU  
Ag = N/A  
Teffp = N/A

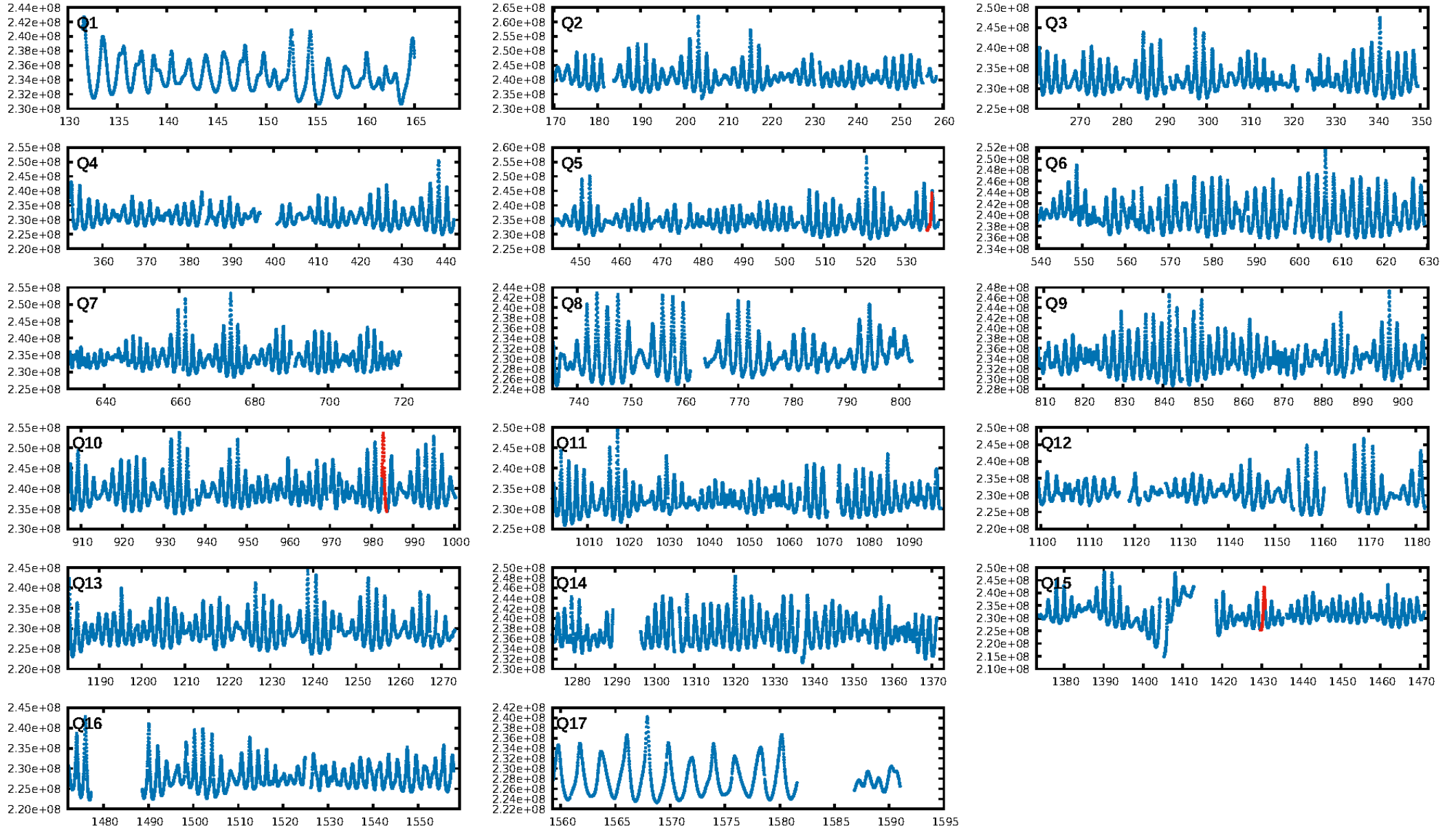
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [171.22σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 24.2%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.33e-14  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 0.6816  
Centroid-sig: 28.8%  
Centroid-so: 0.044 arcsec [0.74σ]  
OotOffset-rm: 0.173 arcsec [1.78σ]  
KicOffset-rm: 0.139 arcsec [1.48σ]  
OotOffset-st: 1/1/0/1 [3]  
KicOffset-st: 1/1/0/1 [3]  
DiffImageQuality-fgm: 0.33 [1/3]  
DiffImageOverlap-fno: 1.00 [3/3]

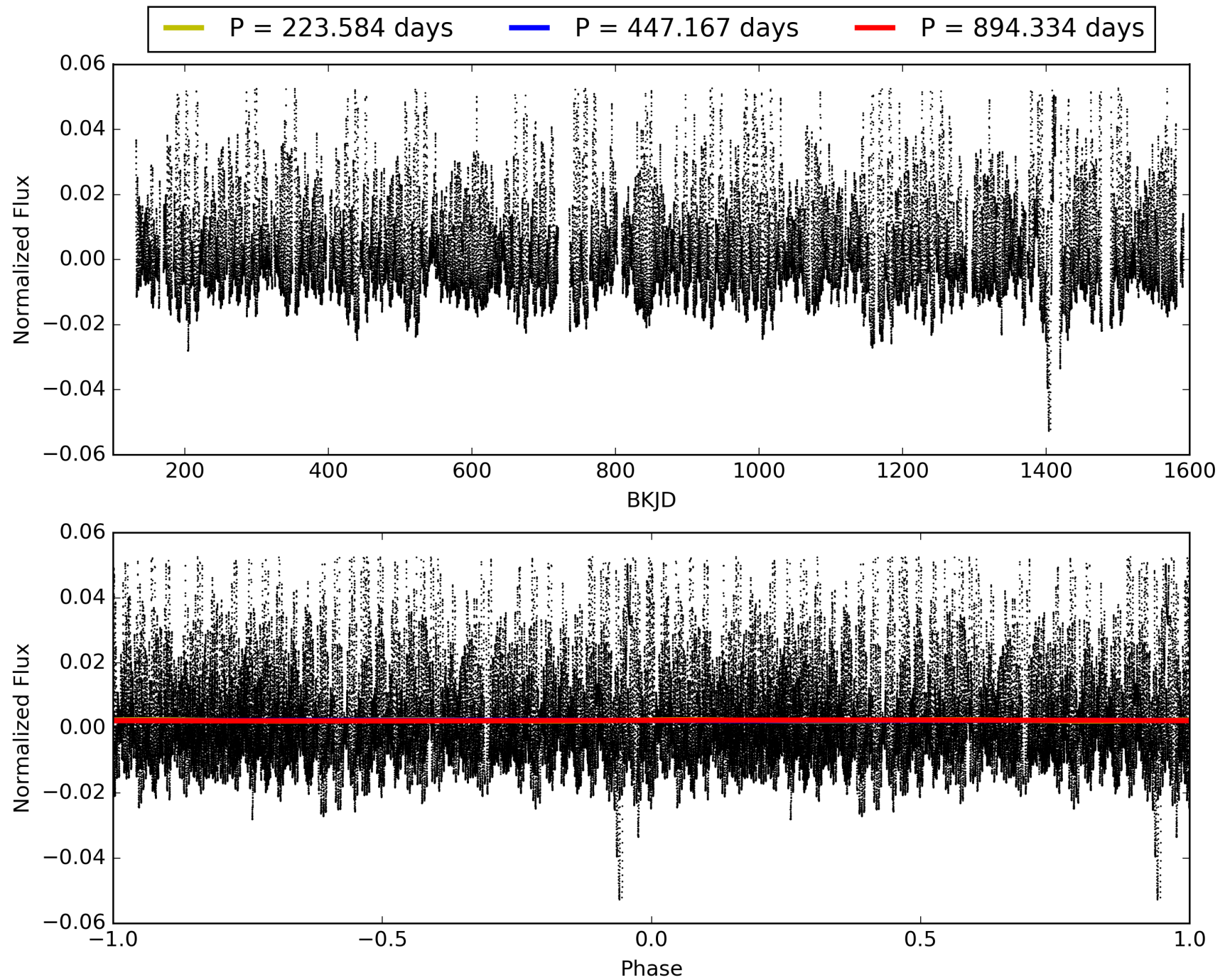
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:09:12 Z

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

# TCE 007602453-01, PDC Light Curves

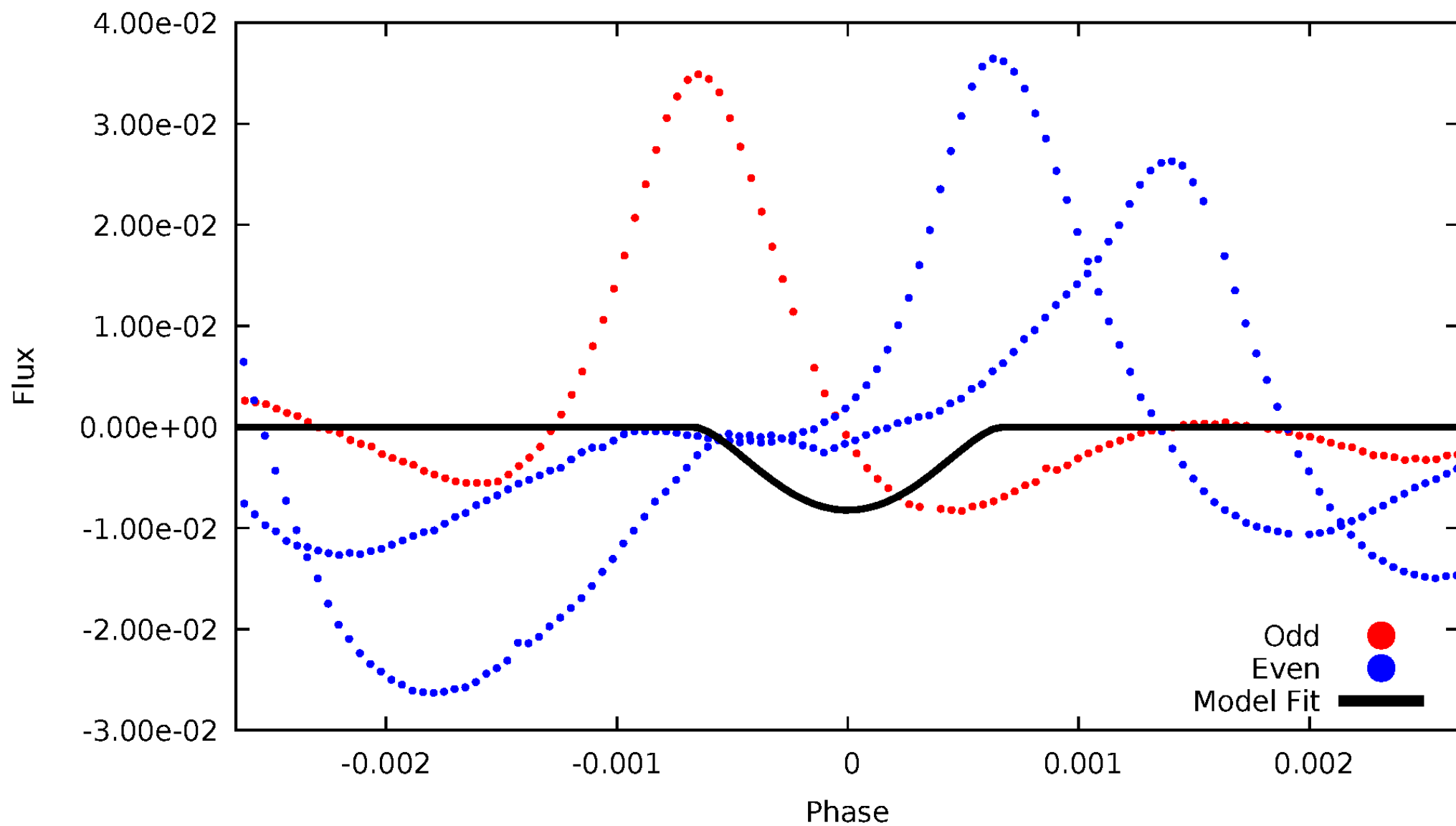


TCE 007602453-01



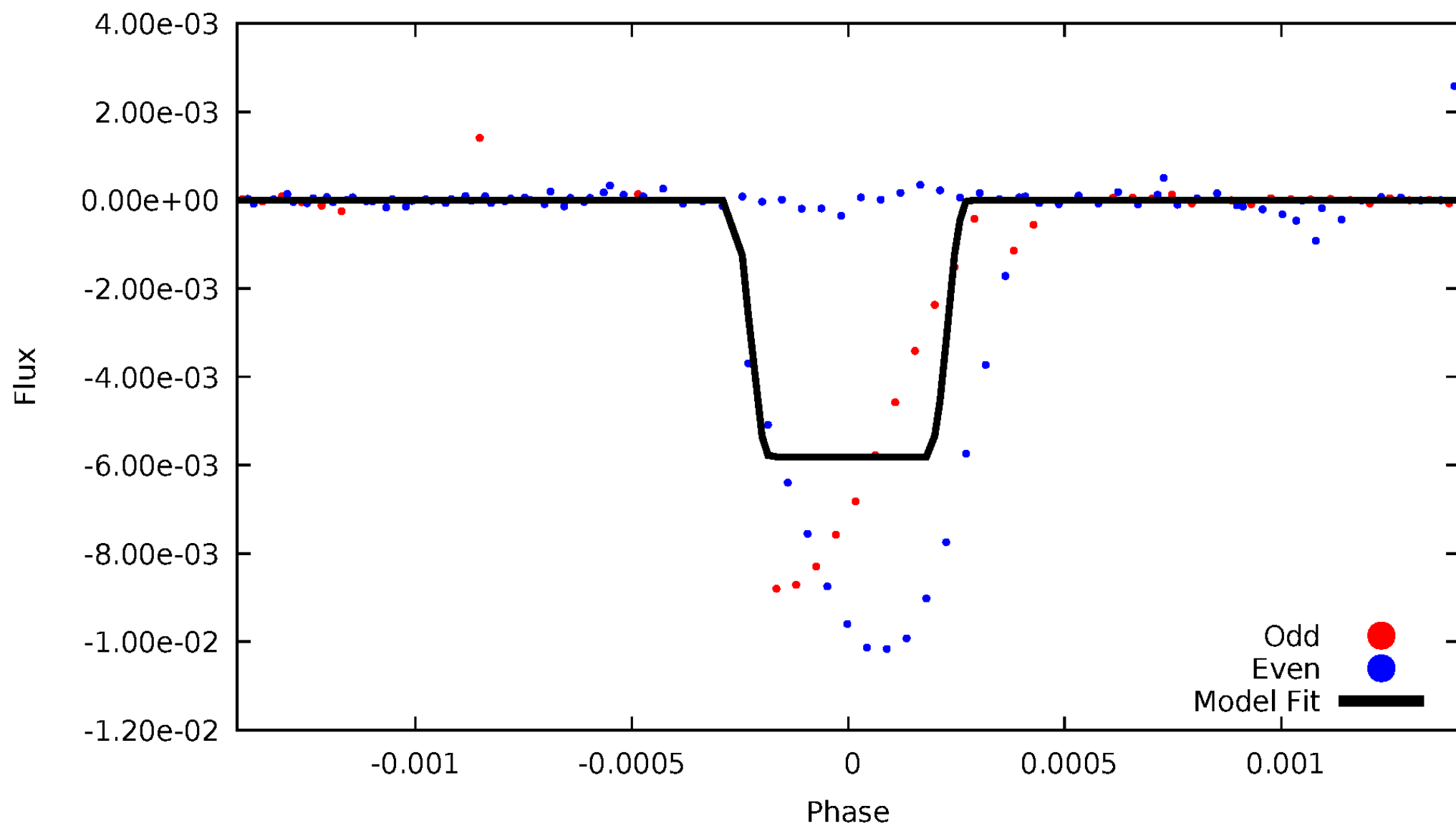
# DV Odd/Even

TCE 007602453-01



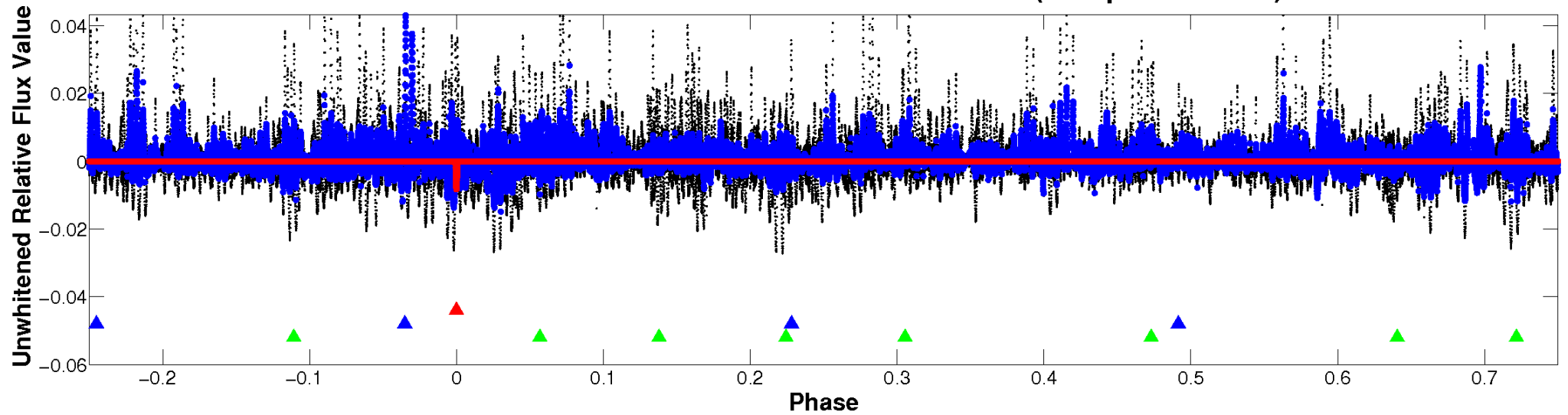
# ALT Odd/Even

TCE 007602453-01

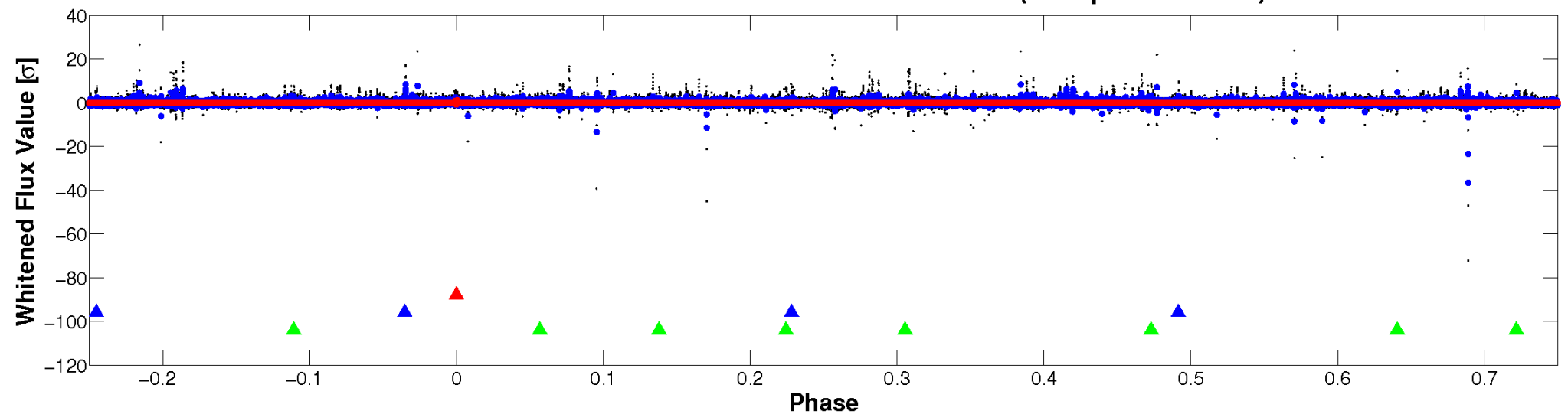


# Non-Whitened Vs. Whitened Light Curve

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

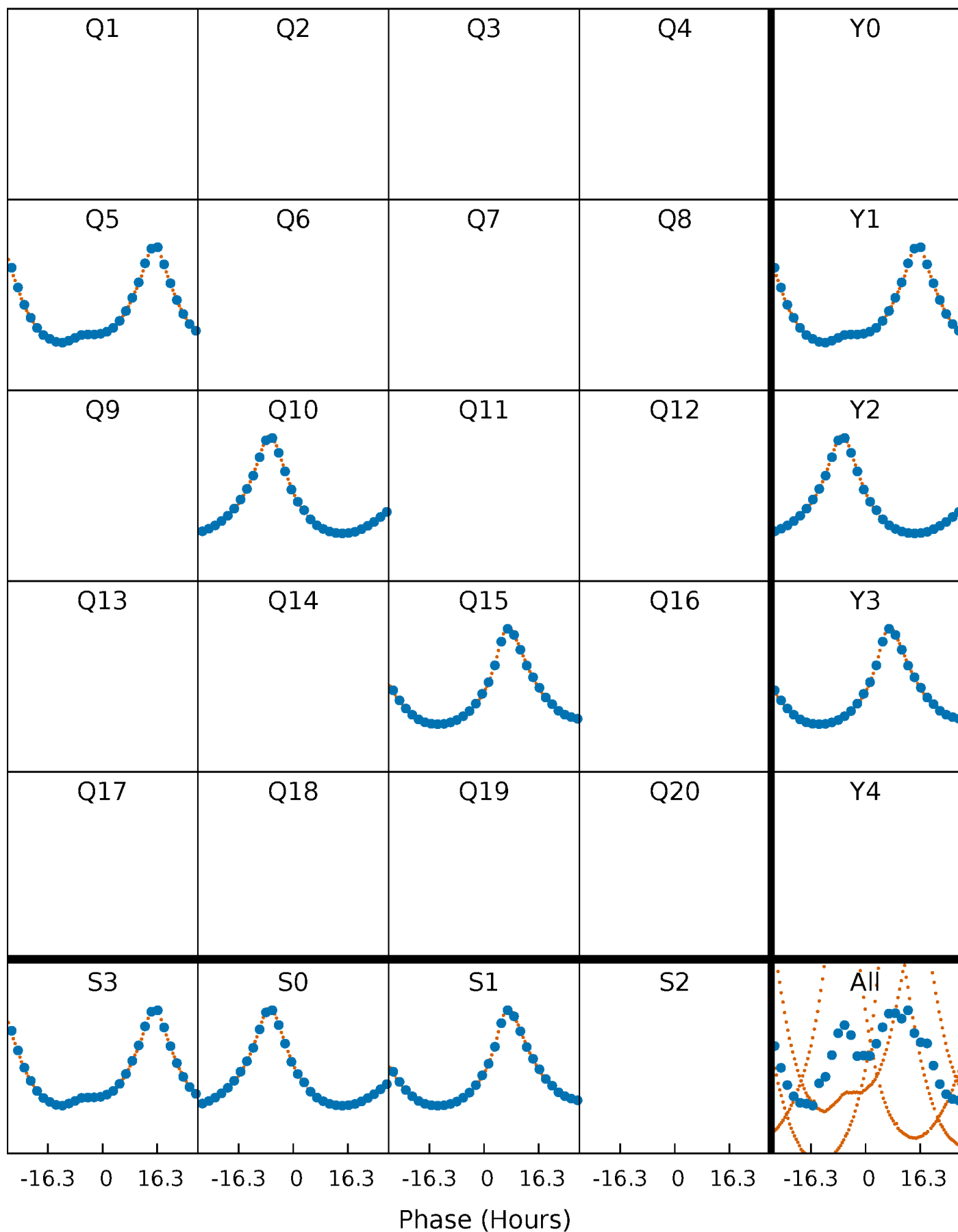


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

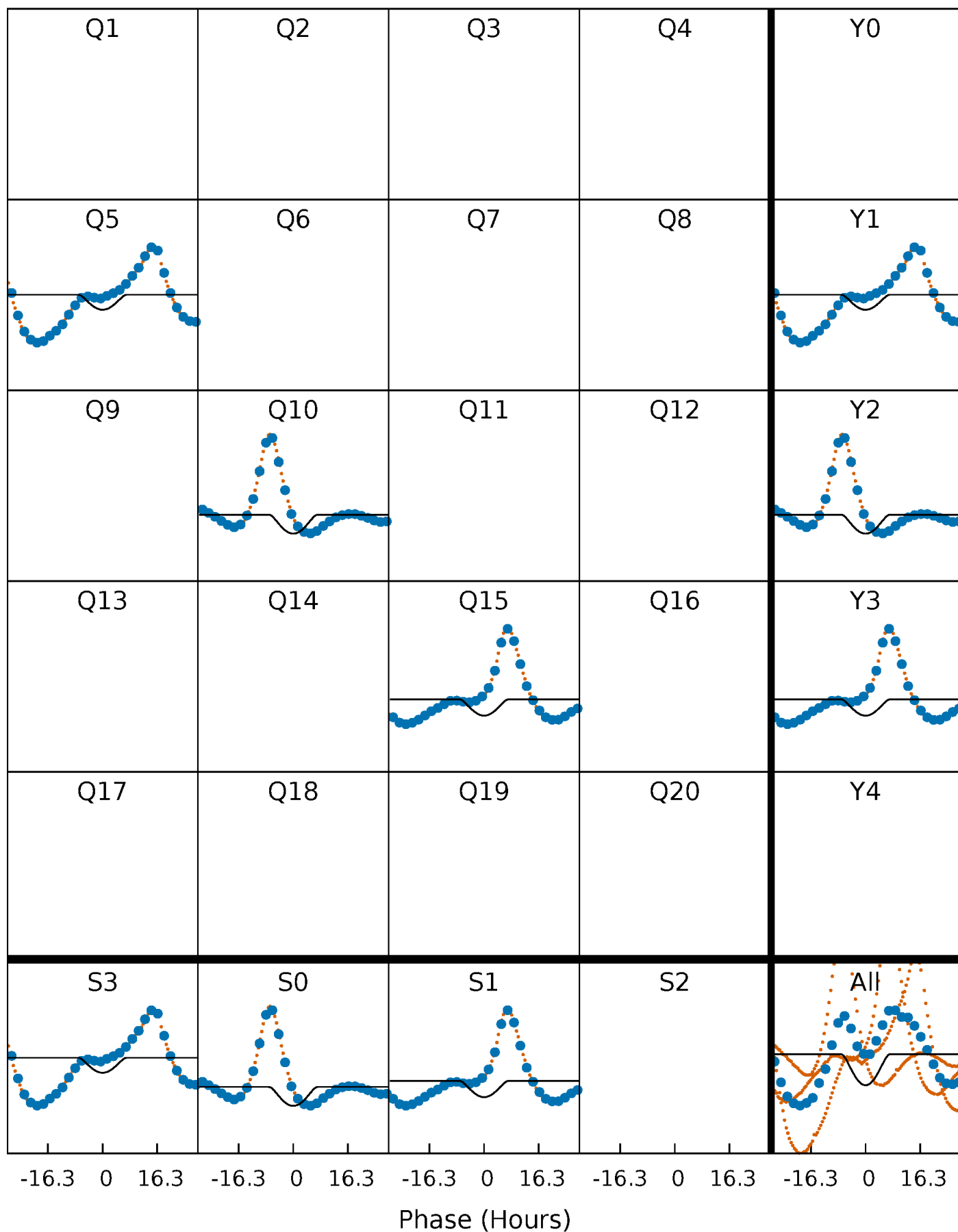
TCE 007602453-01 P=447.167214 Days  $T_0=535.961424$  (BKJD)





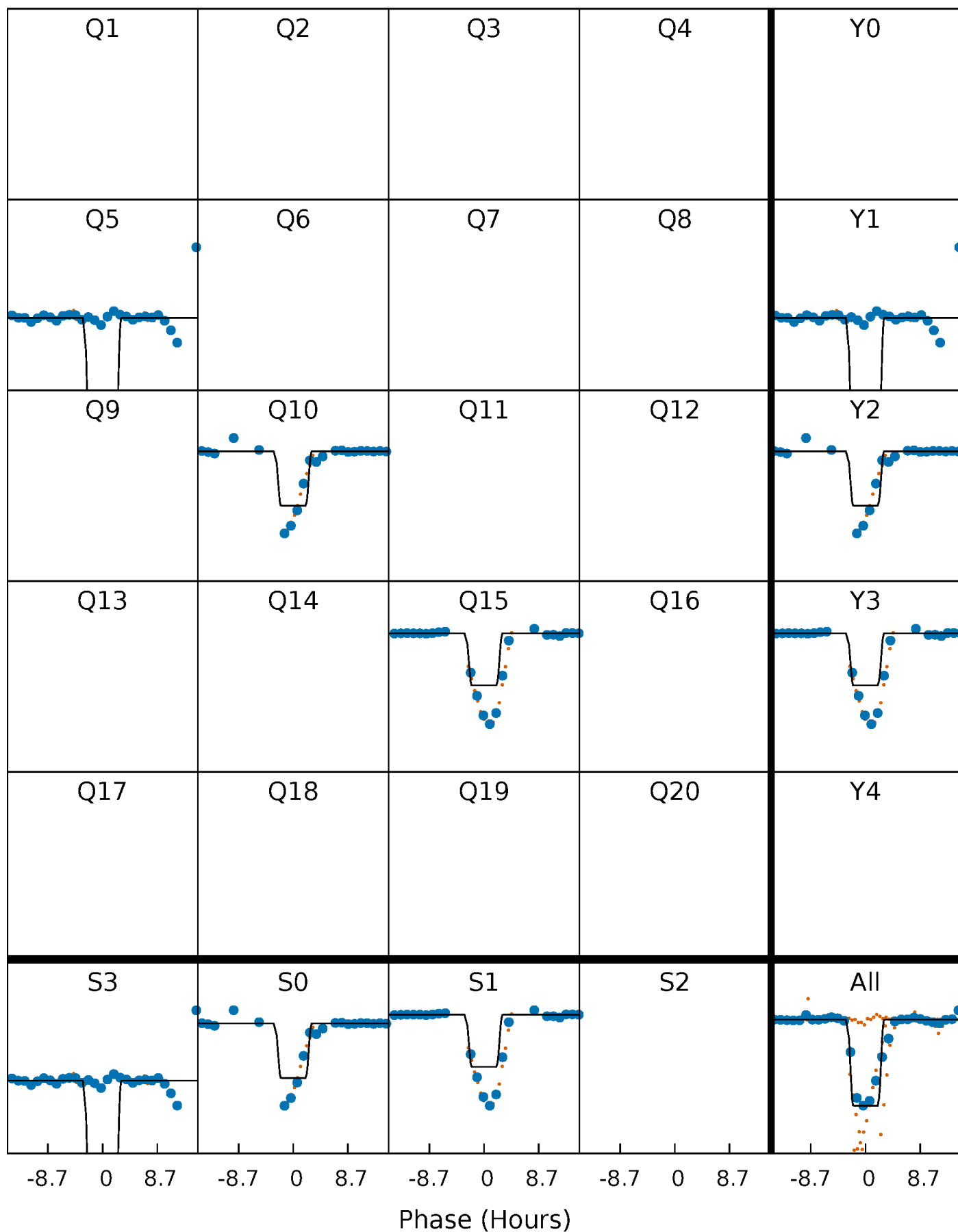
# DV Quarter-Phased Transit Curves

TCE 007602453-01 P=447.167214 Days  $T_0=535.961424$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

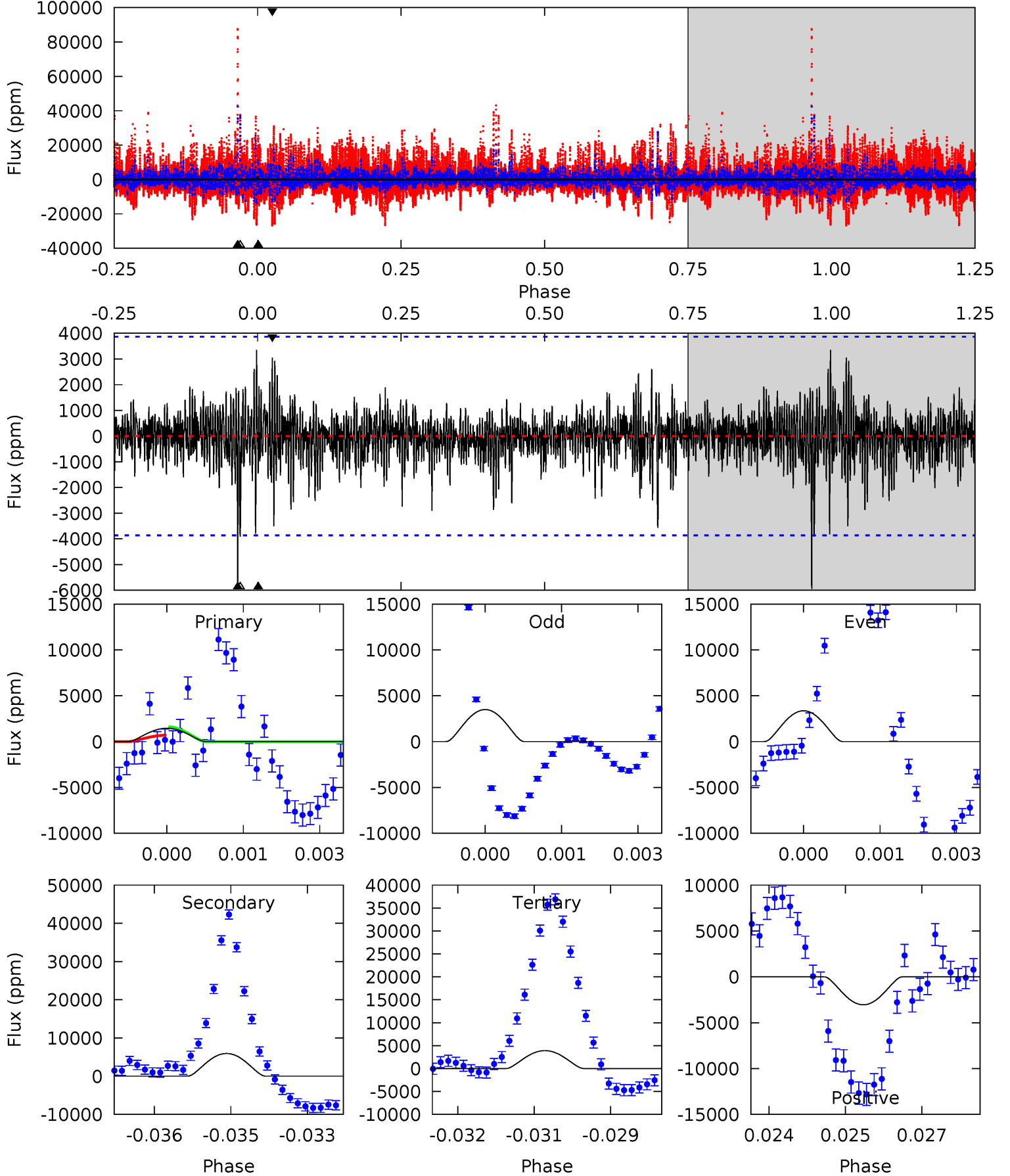
TCE 007602453-01 P=447.215705 Days  $T_0=535.922372$  (BKJD)



# DV Model-Shift Uniqueness Test

007602453-01,  $P = 447.167214$  Days,  $E = 88.794210$  Days

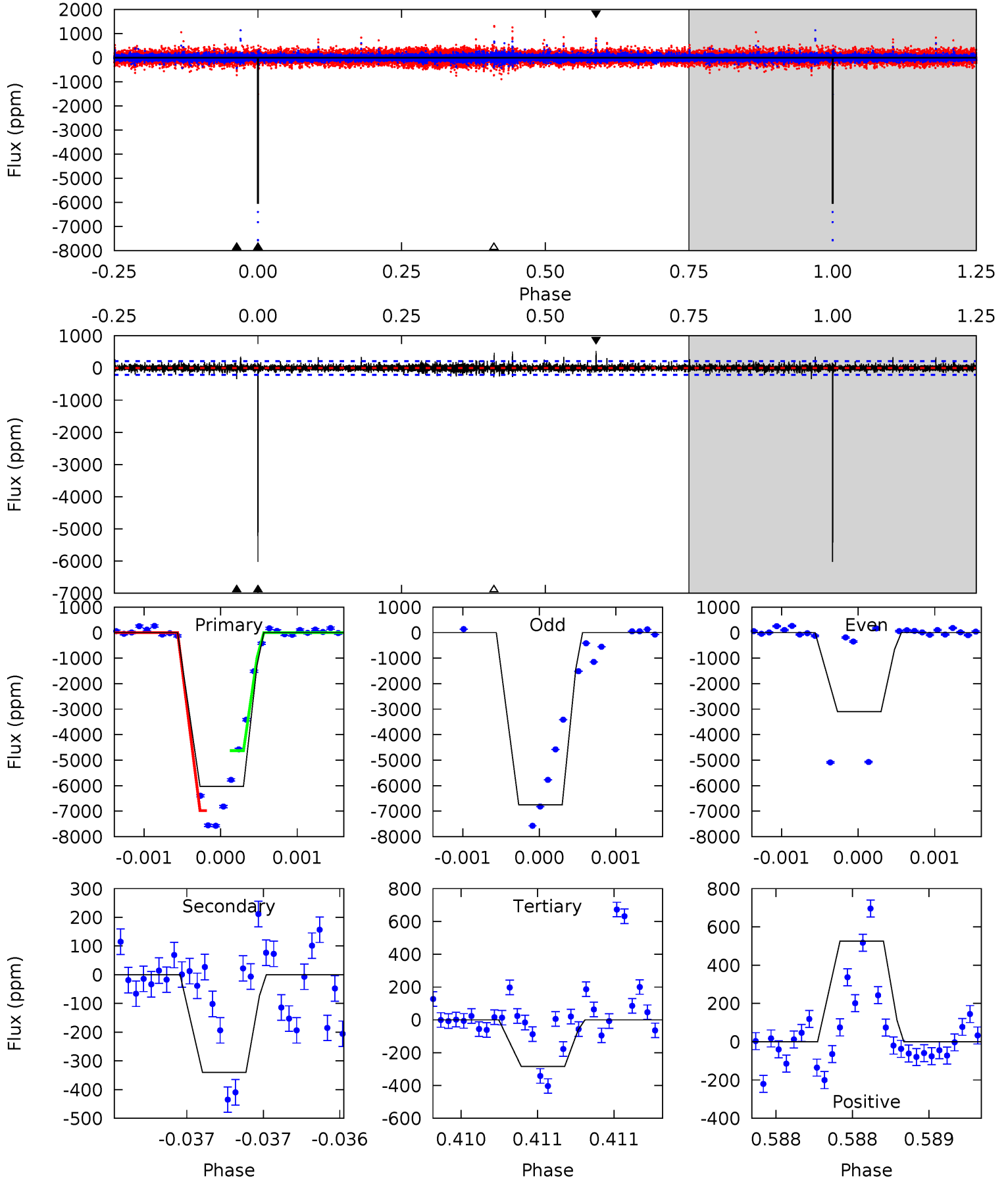
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.03	8.31	5.46	4.26	5.40	3.21	1.07	-3.43	-2.23	2.84	4.04	0.08	0.97	0.36	0.66



# Alt Model-Shift Uniqueness Test

007602453-01, P = 447.215705 Days, E = 88.706667 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
156.9	8.85	7.39	13.7	5.57	3.47	1.25	149.5	143.2	1.46	-4.84	48.9	0.79	0.08	0



### Stellar Parameters For KIC 007602453

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7249^{+203}_{-279}$	$4.123^{+0.175}_{-0.175}$	$-0.360^{+0.250}_{-0.350}$	$1.684^{+0.498}_{-0.407}$	$1.374^{+0.212}_{-0.212}$	$0.405^{+0.436}_{-0.196}$
	+3%/-4%	+4%/-4%	+69%/-97%	+30%/-24%	+15%/-15%	+108%/-48%
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 007602453-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-5944 \pm 716$	$30.40^{+23.47}_{-18.12}$	$515^{+38}_{-40}$	$4951^{+2974}_{-927}$	$5651^{+30694}_{-3880}$
Alt.	$-340 \pm 38$	$21.89^{+20.44}_{-14.31}$	$512^{+40}_{-35}$	$3360^{+1601}_{-573}$	$628^{+4381}_{-464}$

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

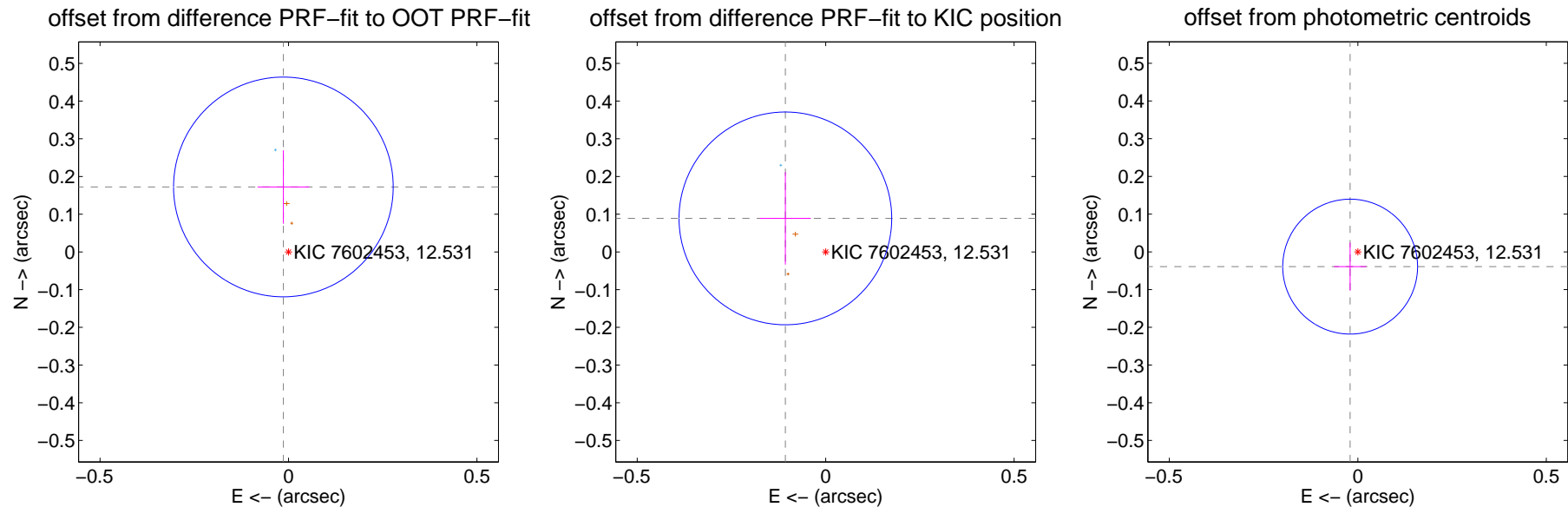
## DV Centroid Data

Supplemental centroid analysis for 007602453-01. Kepler magnitude: 12.53. Transit SNR 5.30

There are 1 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.173 \pm 0.097$	1.78	$0.014 \pm 0.069$	$0.172 \pm 0.097$
PRF-fit source offset from KIC position	$0.139 \pm 0.094$	1.48	$0.107 \pm 0.067$	$0.089 \pm 0.123$
photometric centroid source offset	$0.04 \pm 0.06$	0.74	$0.02 \pm 0.04$	$-0.04 \pm 0.06$

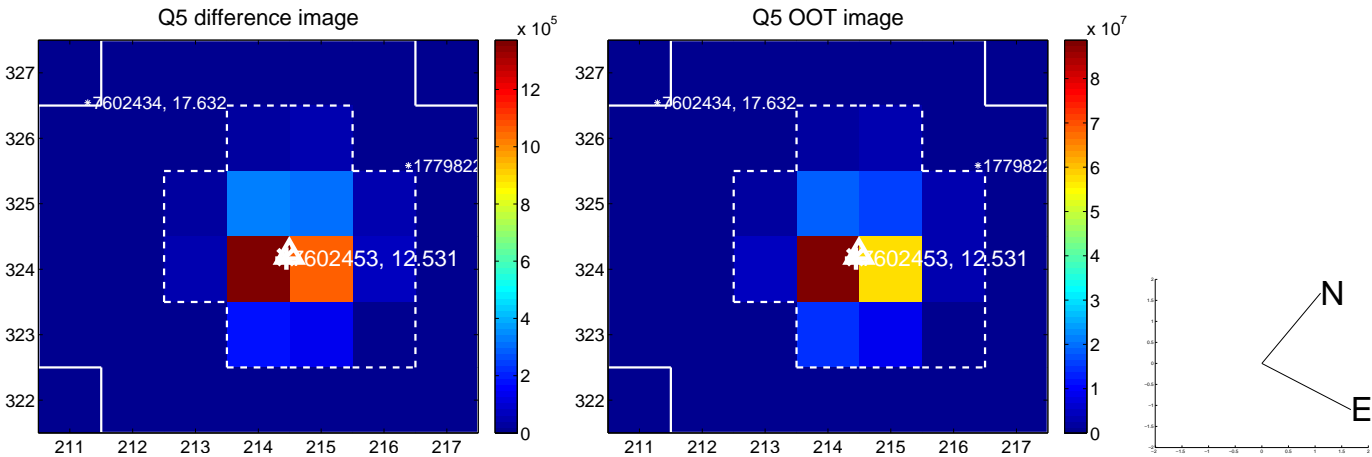


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

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

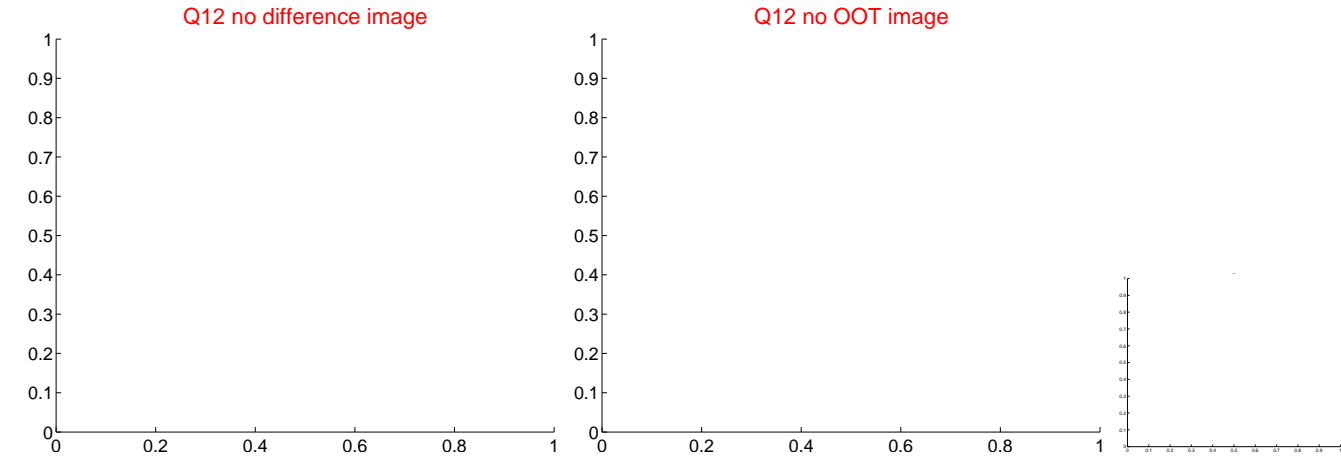
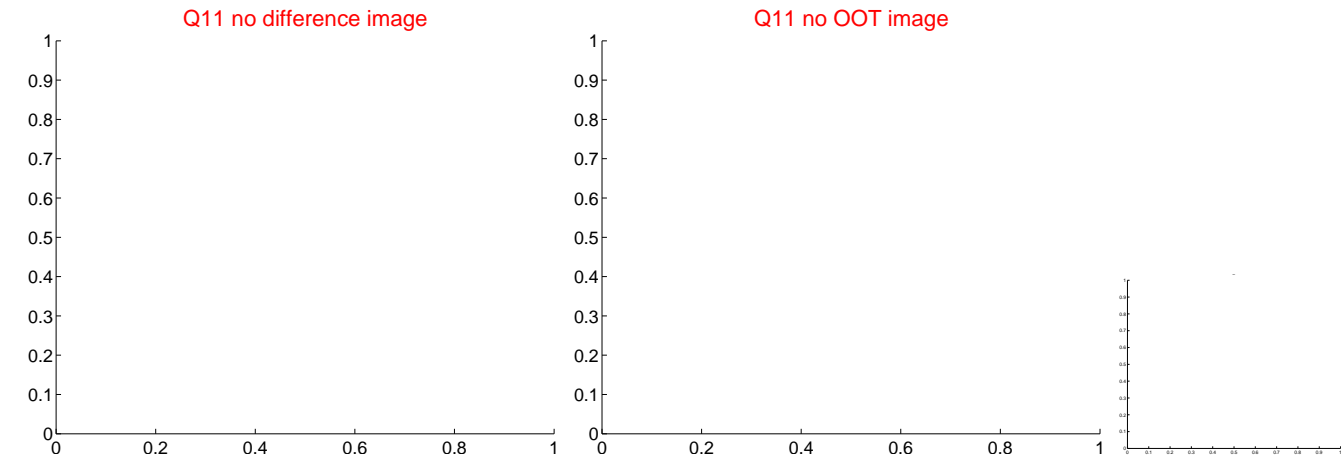
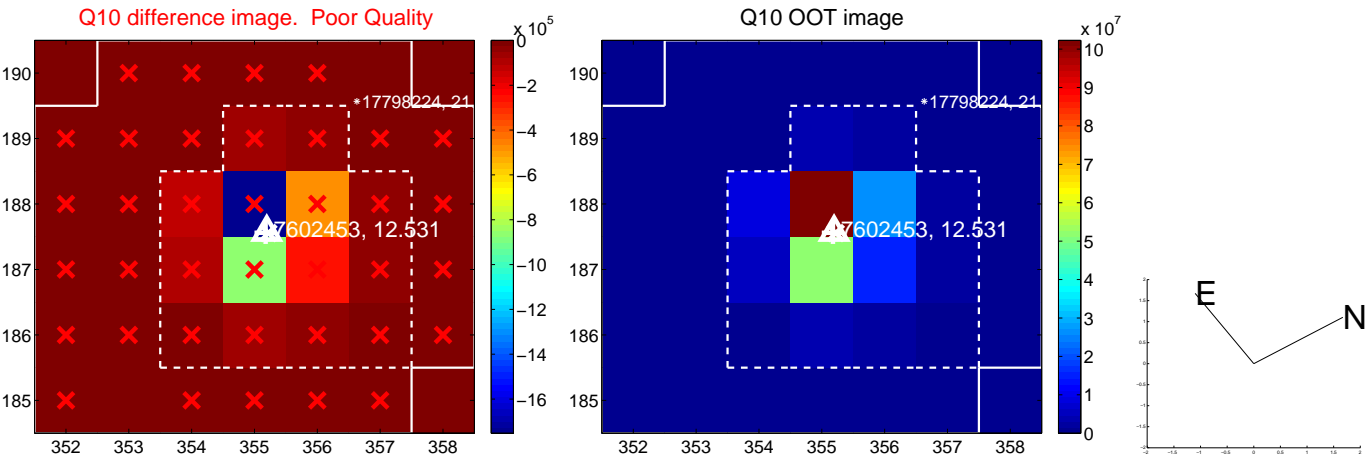


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

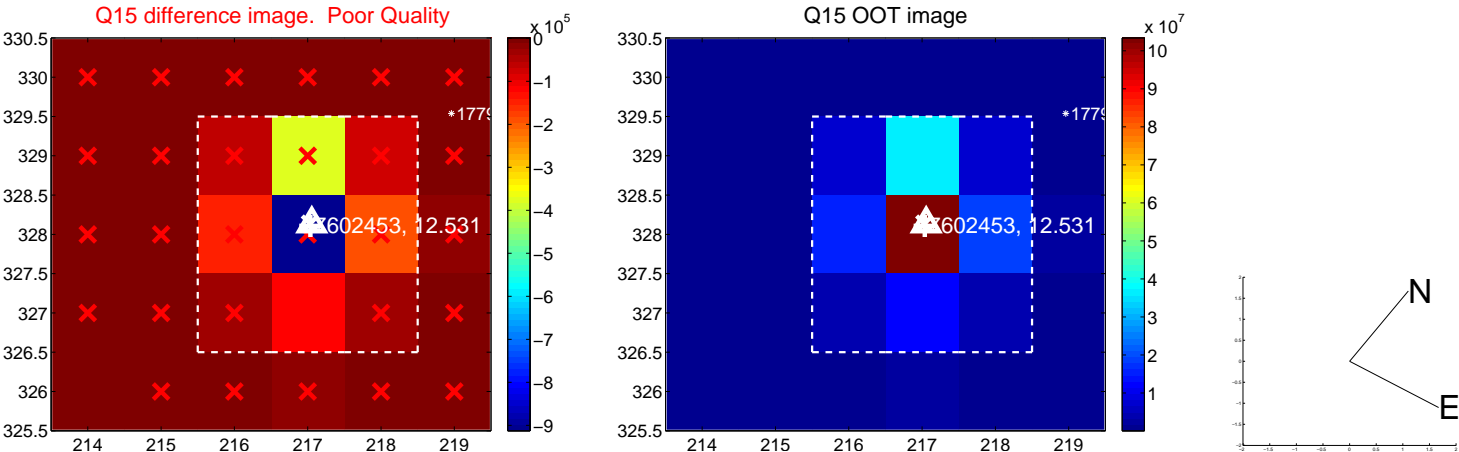




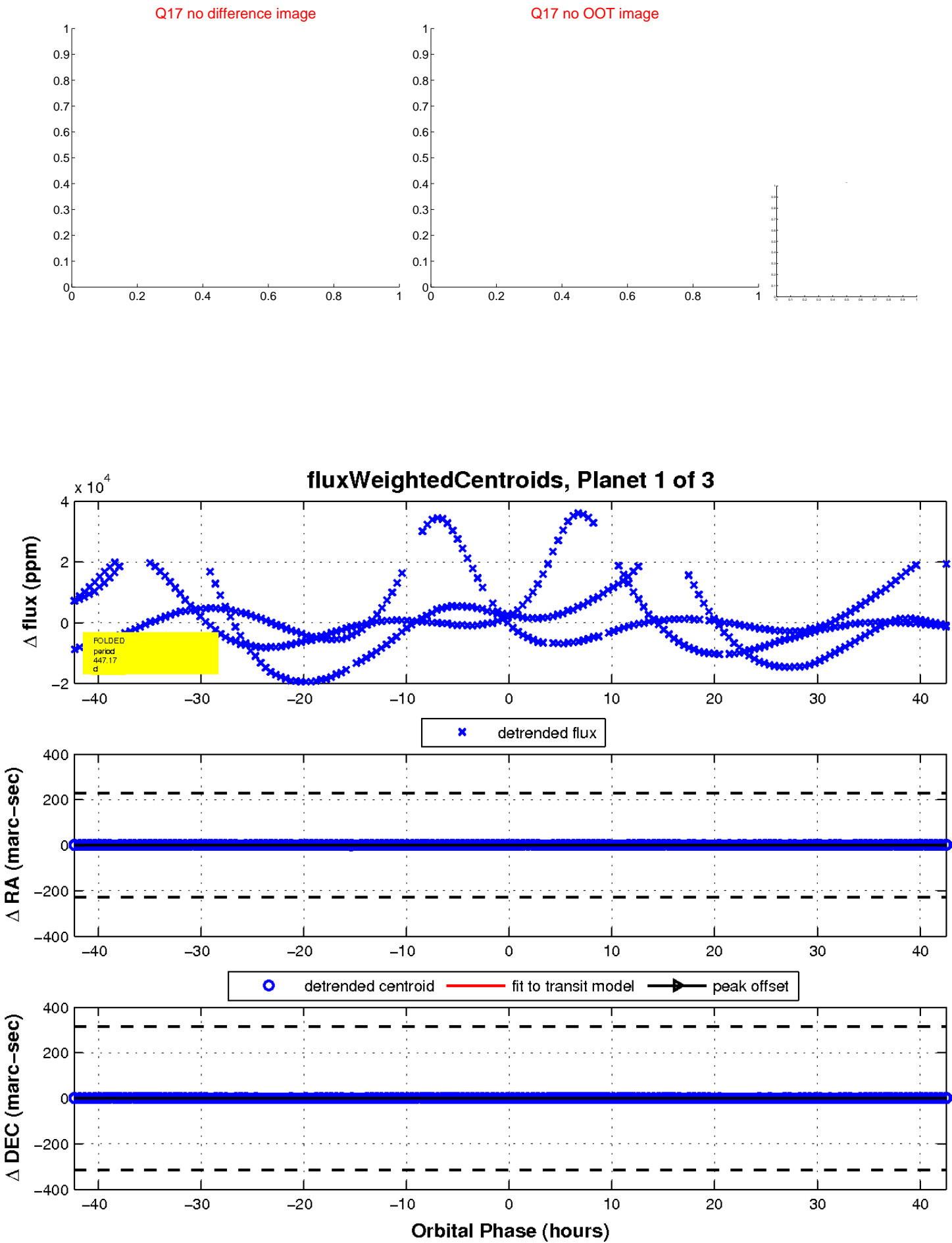
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

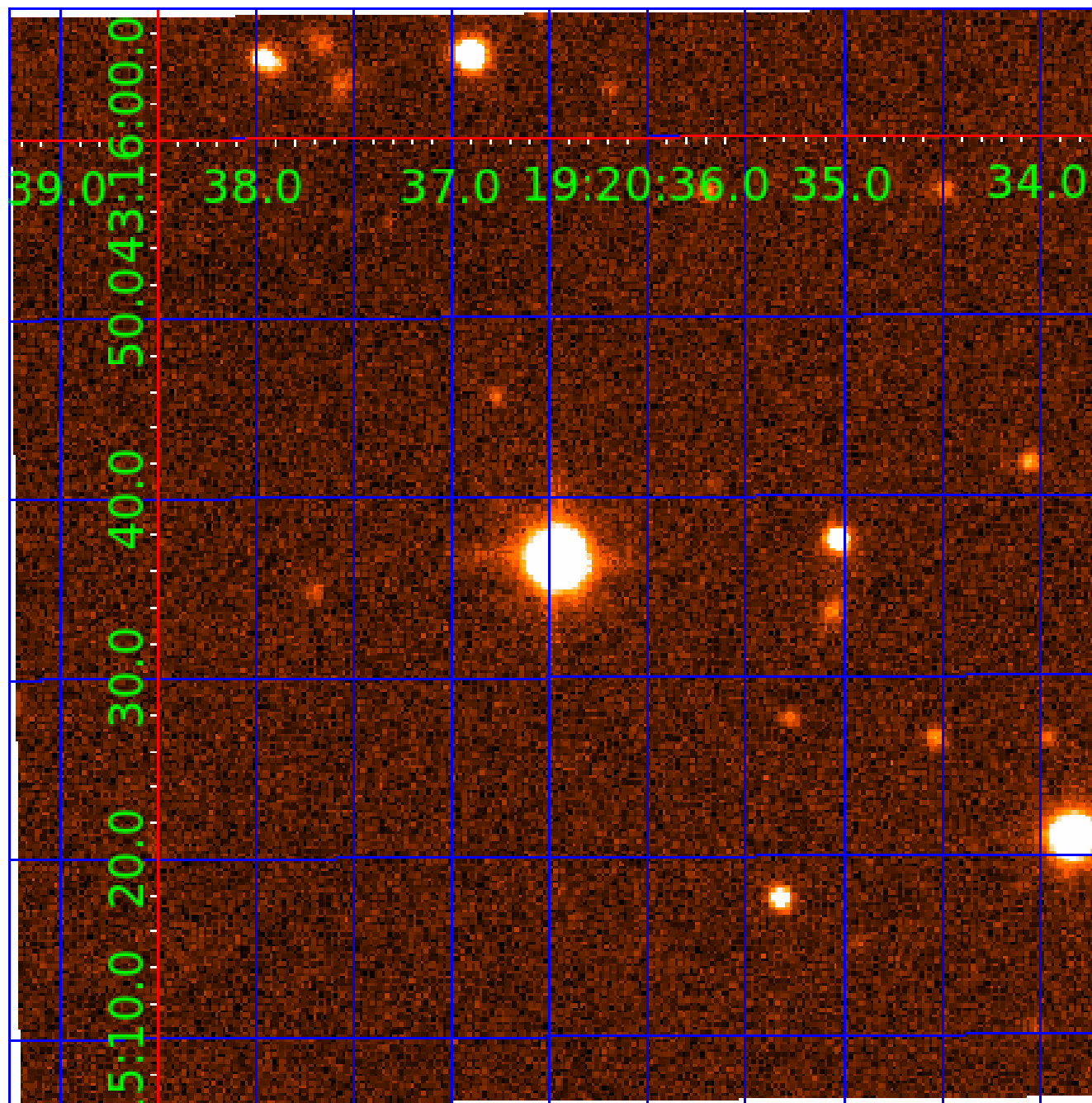


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 007602453

## 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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## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007602453-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007602453-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—CENT_FEW_DIFFS
007602453-03	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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

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

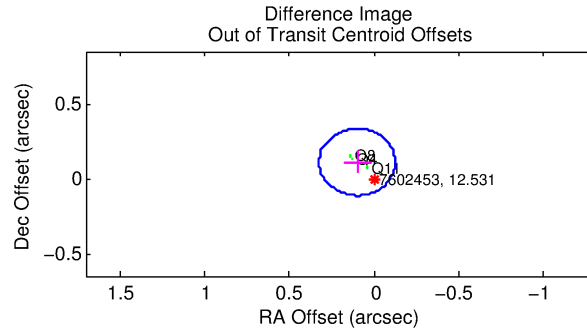
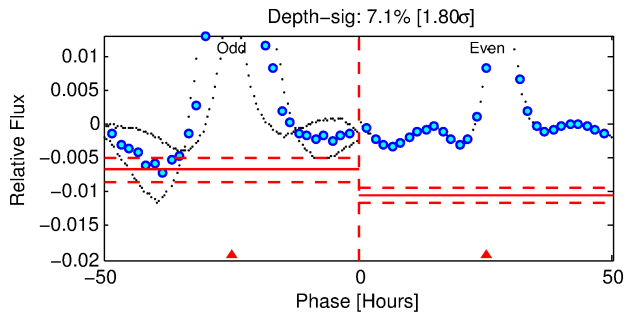
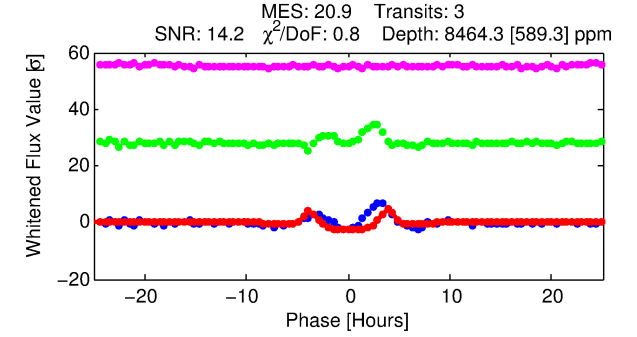
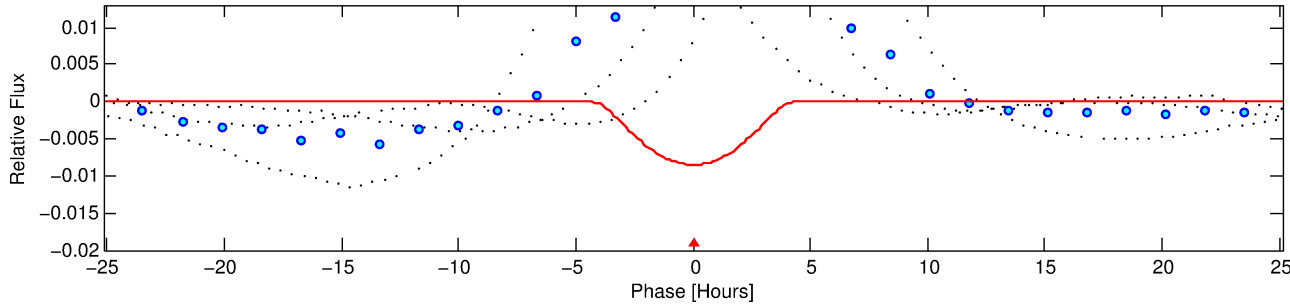
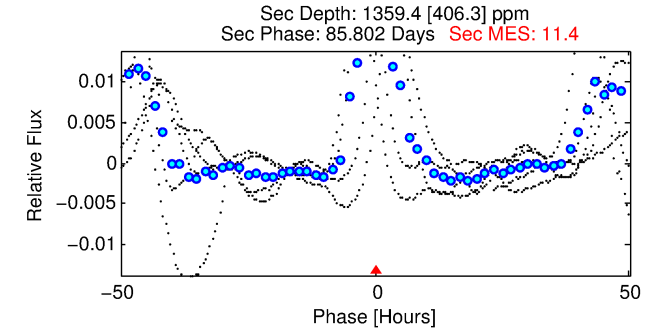
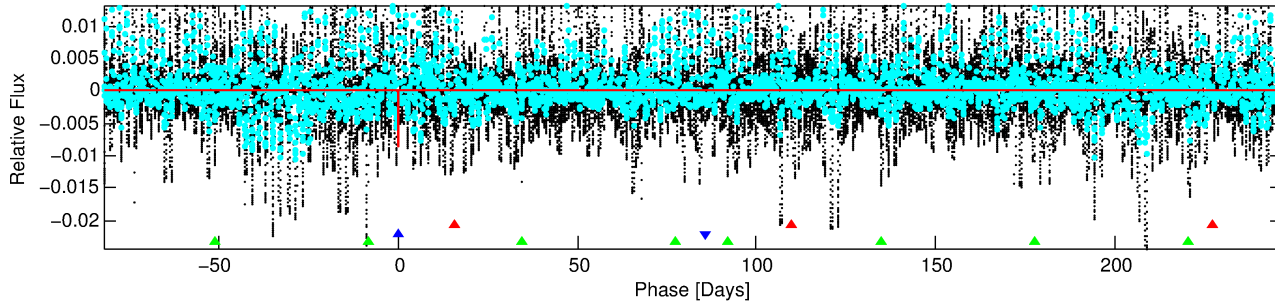
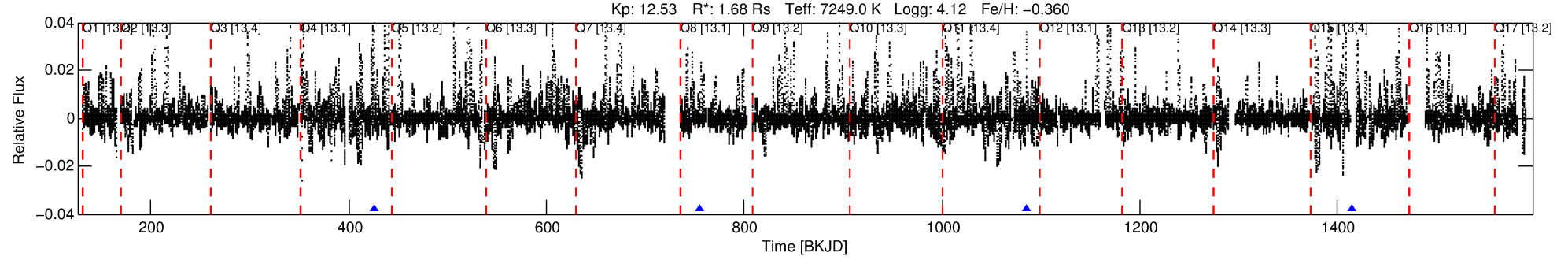
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007602453-02

No Significant Match Found

# DV One-Page Summary

KIC: 7602453 Candidate: 2 of 3 Period: 329.406 d



## DV Fit Results:

Period = 329.40566 [0.00298] d  
Epoch = 426.3520 [0.0032] BKJD  
Rp/R\* = 0.1075 [0.0089]  
a/R\* = 180.73 [5.16]  
b = 0.93 [0.02]  
Seff = 6.52 [2.39]  
Teq = 407 [37] K  
Rp = 19.76 [6.07] Re  
a = 1.0377 [0.2476] AU  
Ag = 2063.57 [985.08] [2.09σ]  
Teffp = 4245 [398] K [9.60σ]

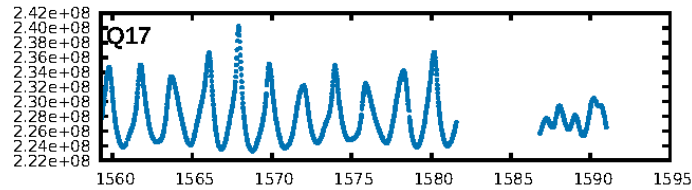
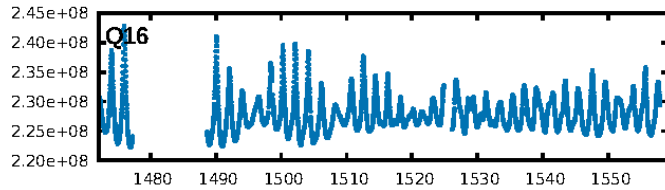
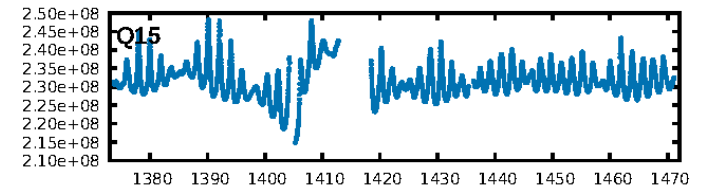
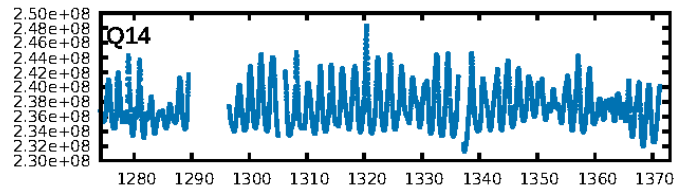
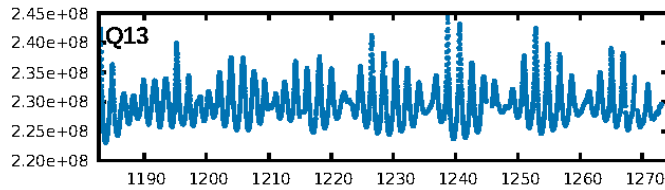
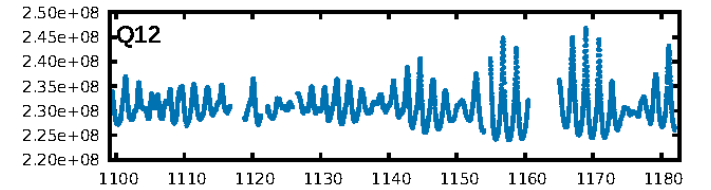
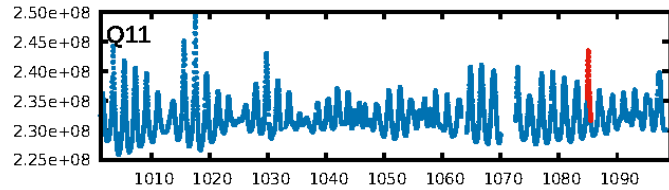
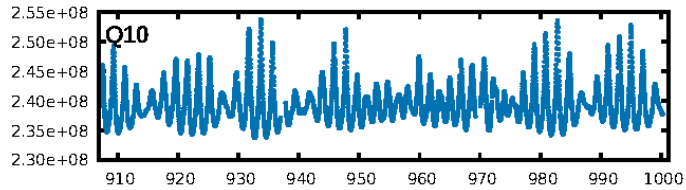
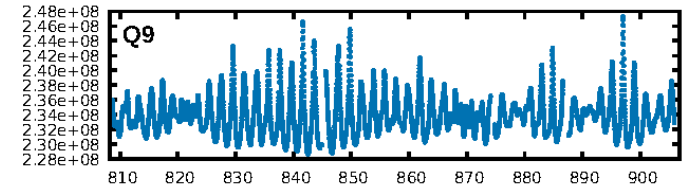
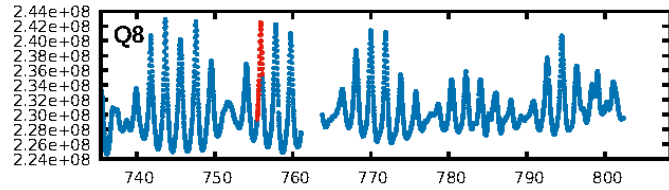
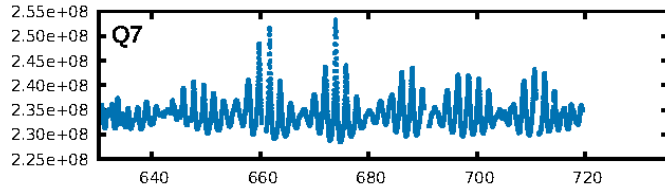
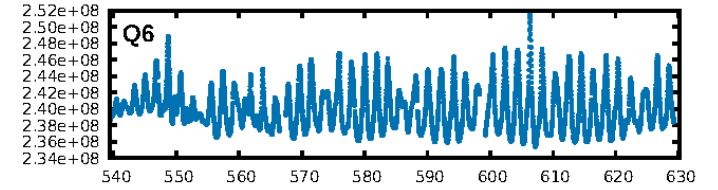
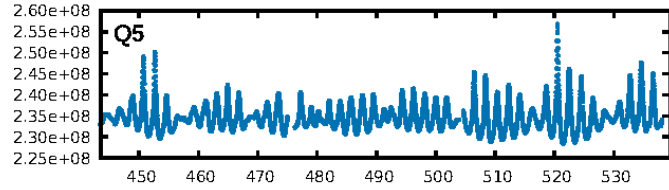
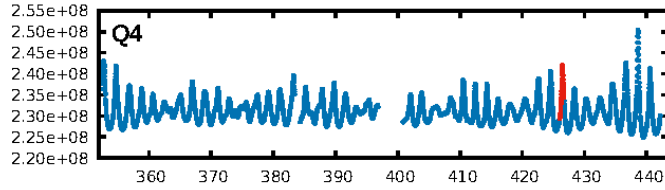
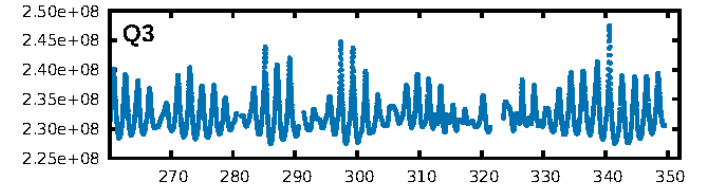
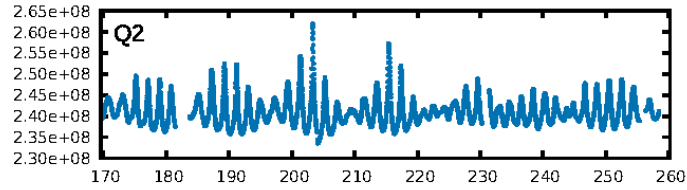
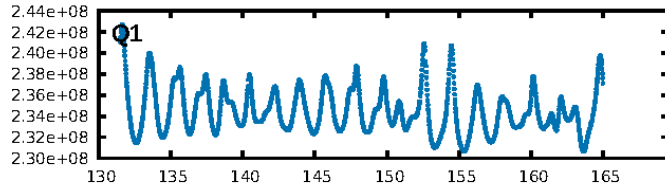
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [393.23σ]  
LongPeriod-sig: 100.0% [171.22σ]  
ModelChiSquare2-sig: 18.1%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.15e-11  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -1.917  
Centroid-sig: 14.9%  
Centroid-so: 0.142 arcsec [2.61σ]  
OotOffset-rm: 0.149 arcsec [2.01σ]  
KicOffset-rm: 0.241 arcsec [2.53σ]  
OotOffset-st: 0.1/2/0 [3]  
KicOffset-st: 0.1/2/0 [3]  
DiffImageQuality-fgm: 0.00 [0/3]  
DiffImageOverlap-fno: 1.00 [3/3]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:09:21 Z

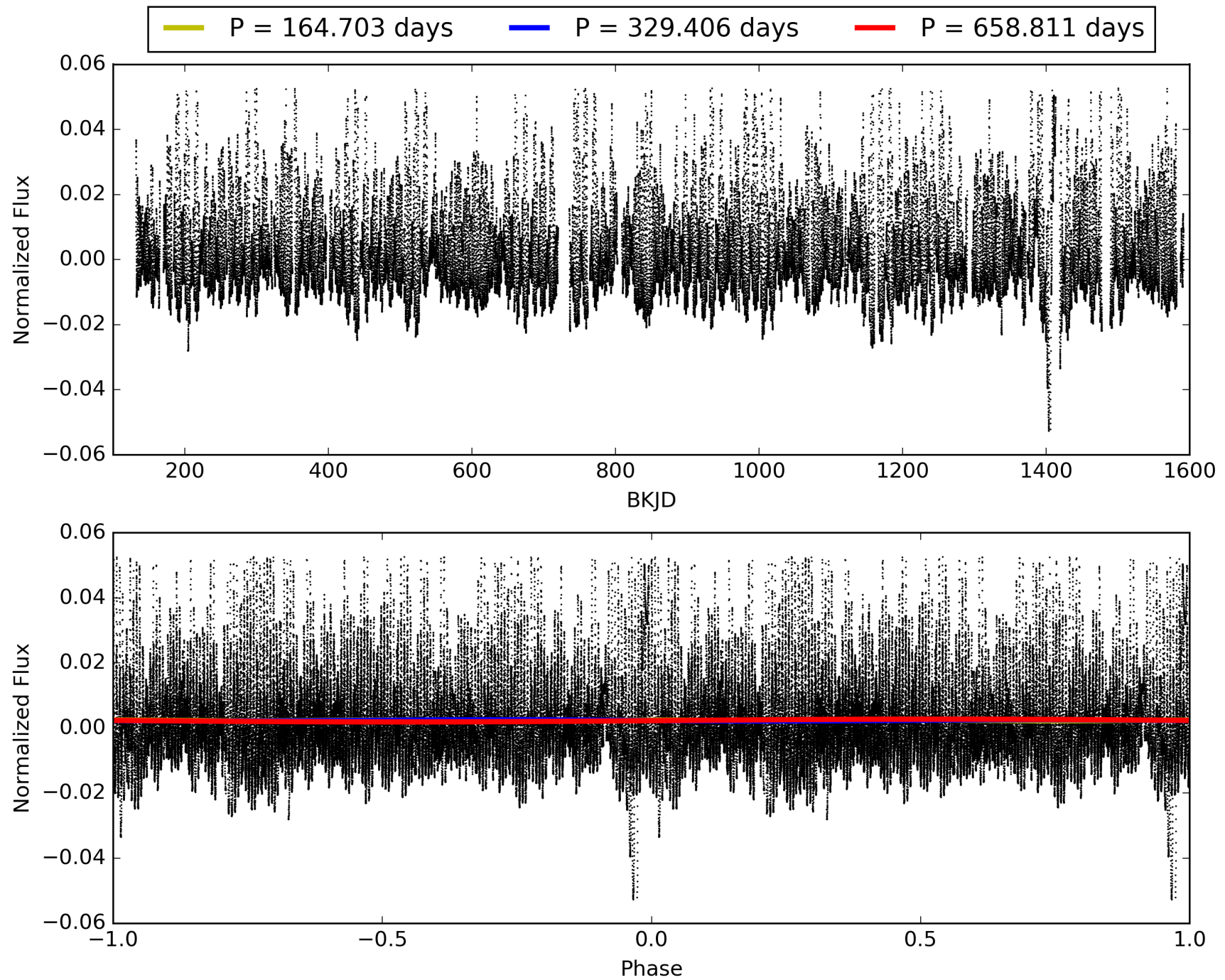
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007602453-02, PDC Light Curves





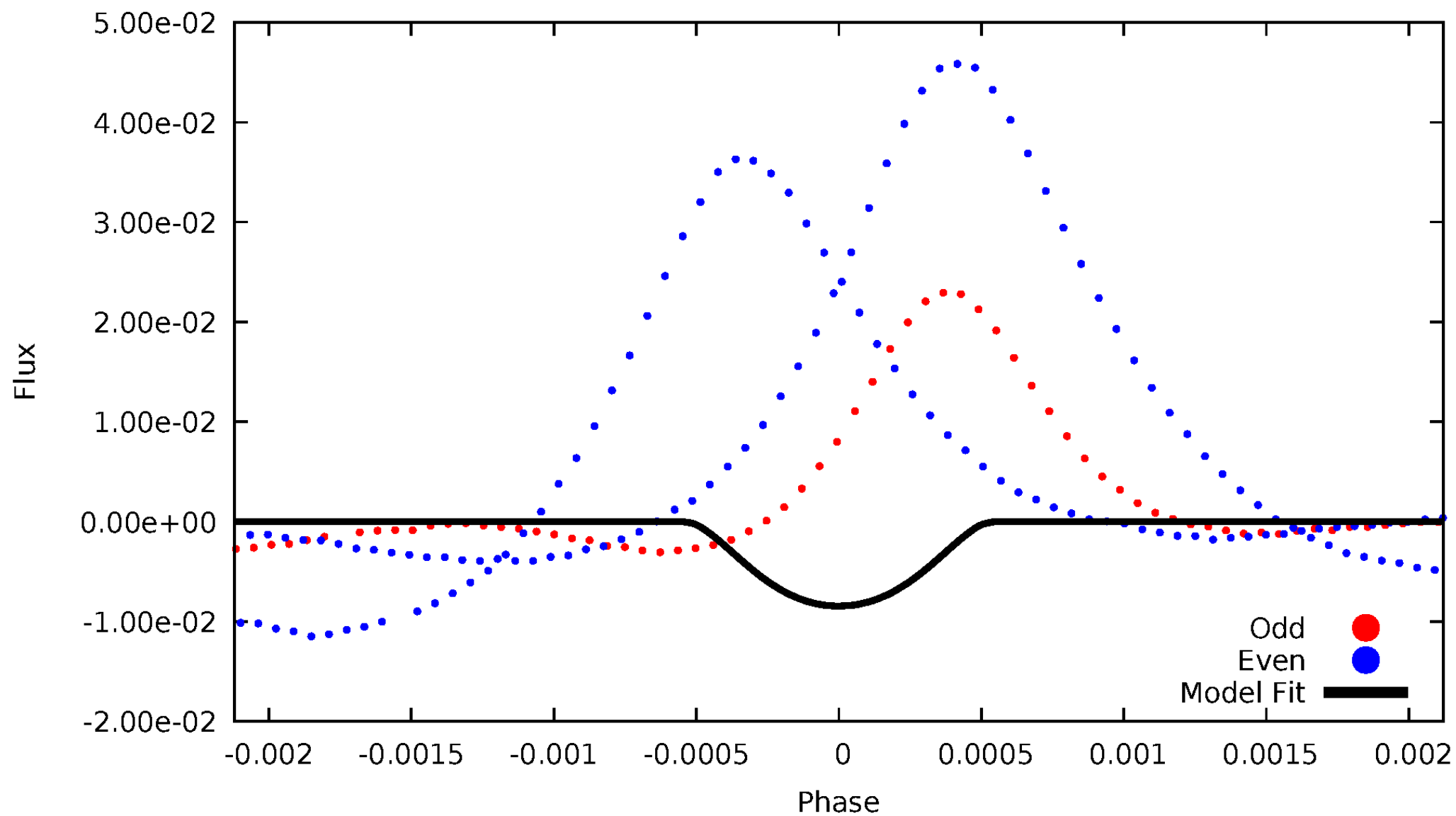
TCE 007602453-02





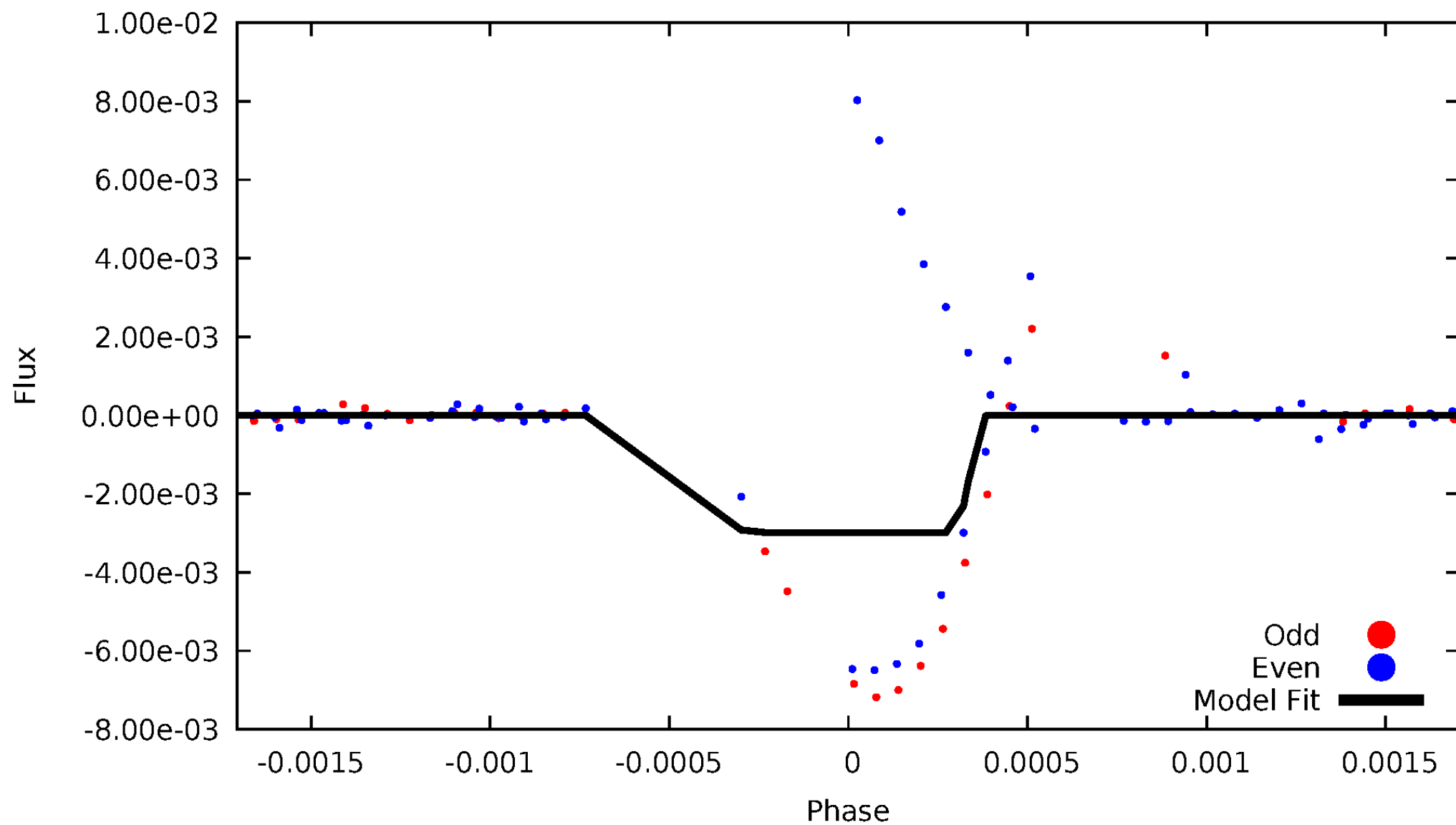
# DV Odd/Even

TCE 007602453-02



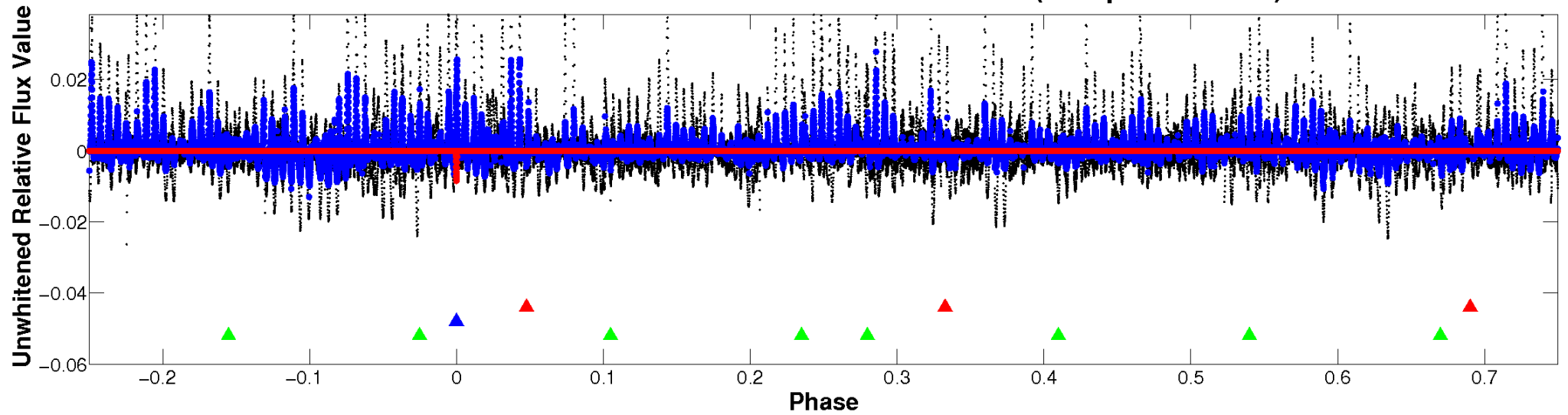
# ALT Odd/Even

TCE 007602453-02

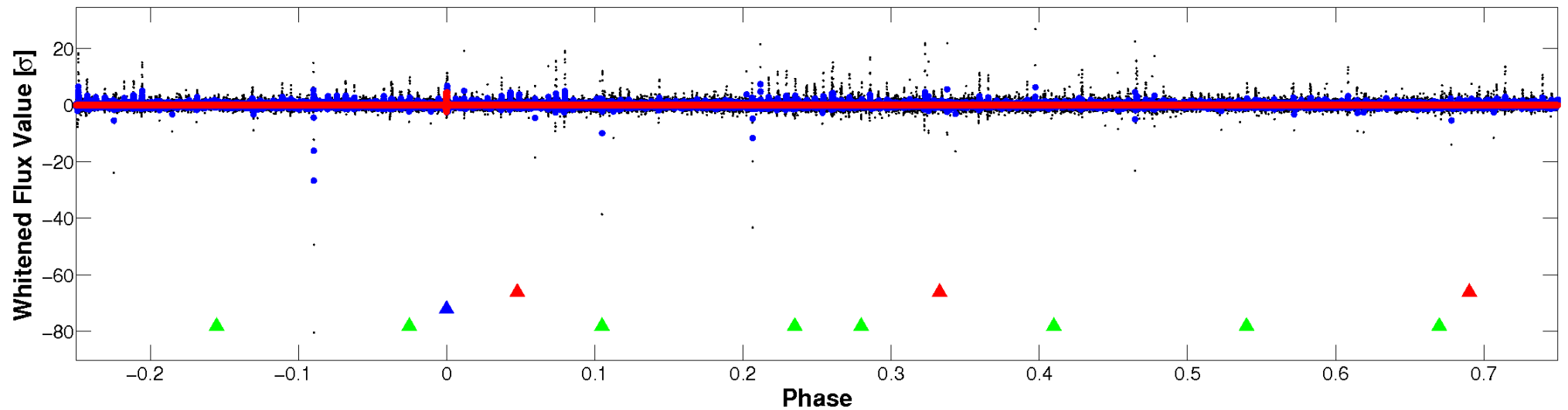


# Non-Whitened Vs. Whitened Light Curve

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

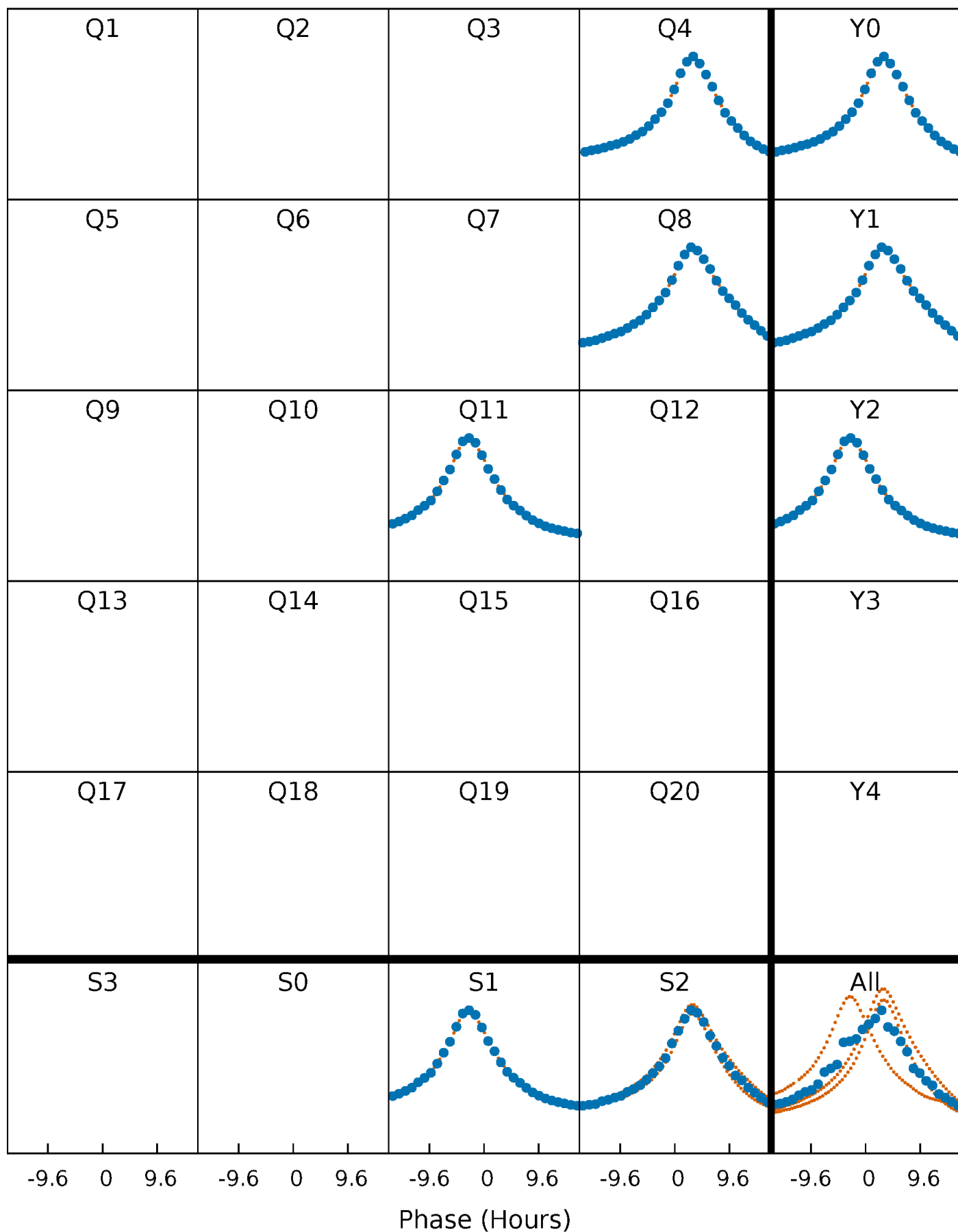


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



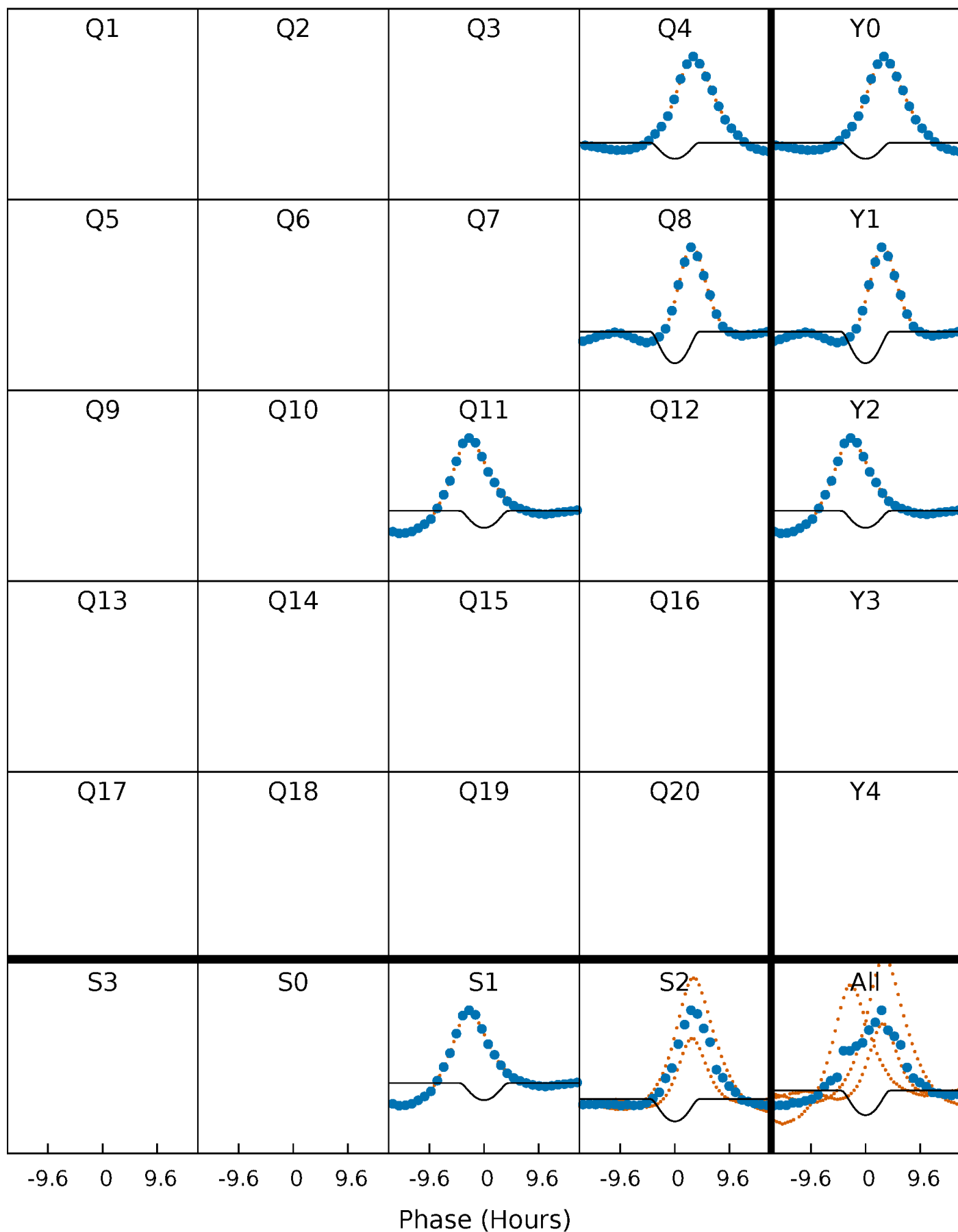
# PDC Quarter-Phased Transit Curves

TCE 007602453-02 P=329.405664 Days  $T_0=426.352045$  (BKJD)



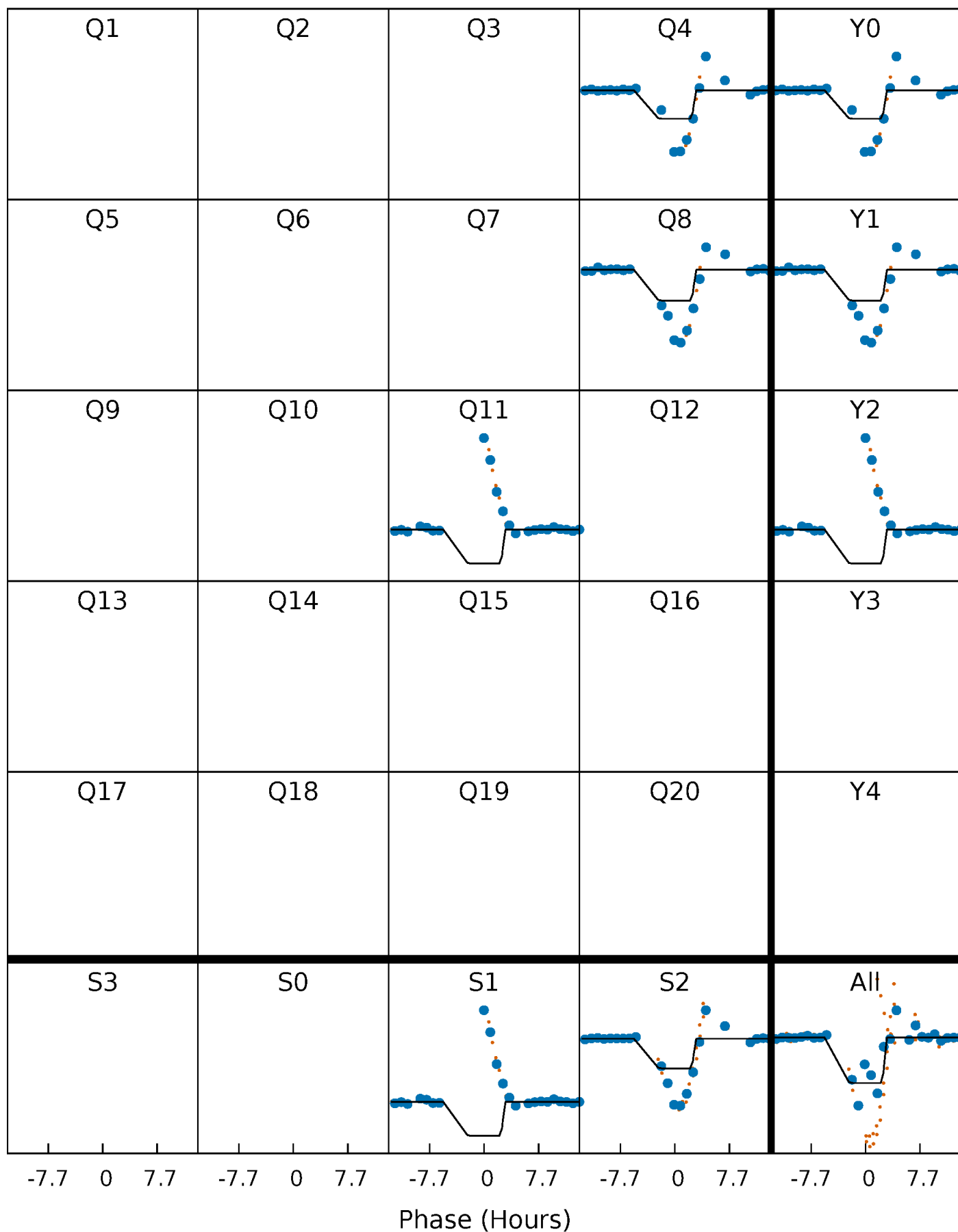
# DV Quarter-Phased Transit Curves

TCE 007602453-02     $P=329.405664$  Days     $T_0=426.352045$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

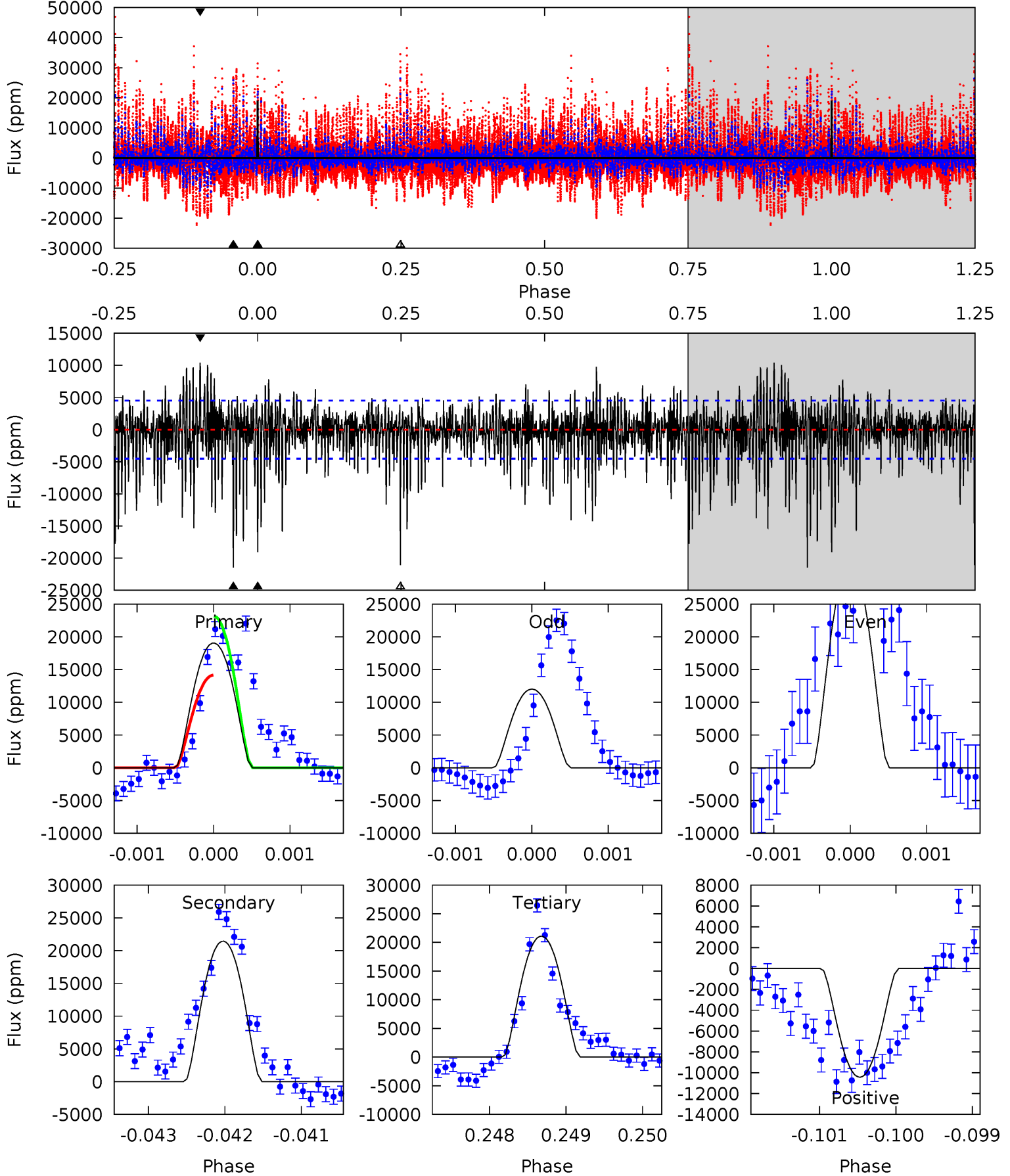
TCE 007602453-02 P=329.408178 Days  $T_0=426.260563$  (BKJD)



# DV Model-Shift Uniqueness Test

007602453-02, P = 329.405664 Days, E = 96.946381 Days

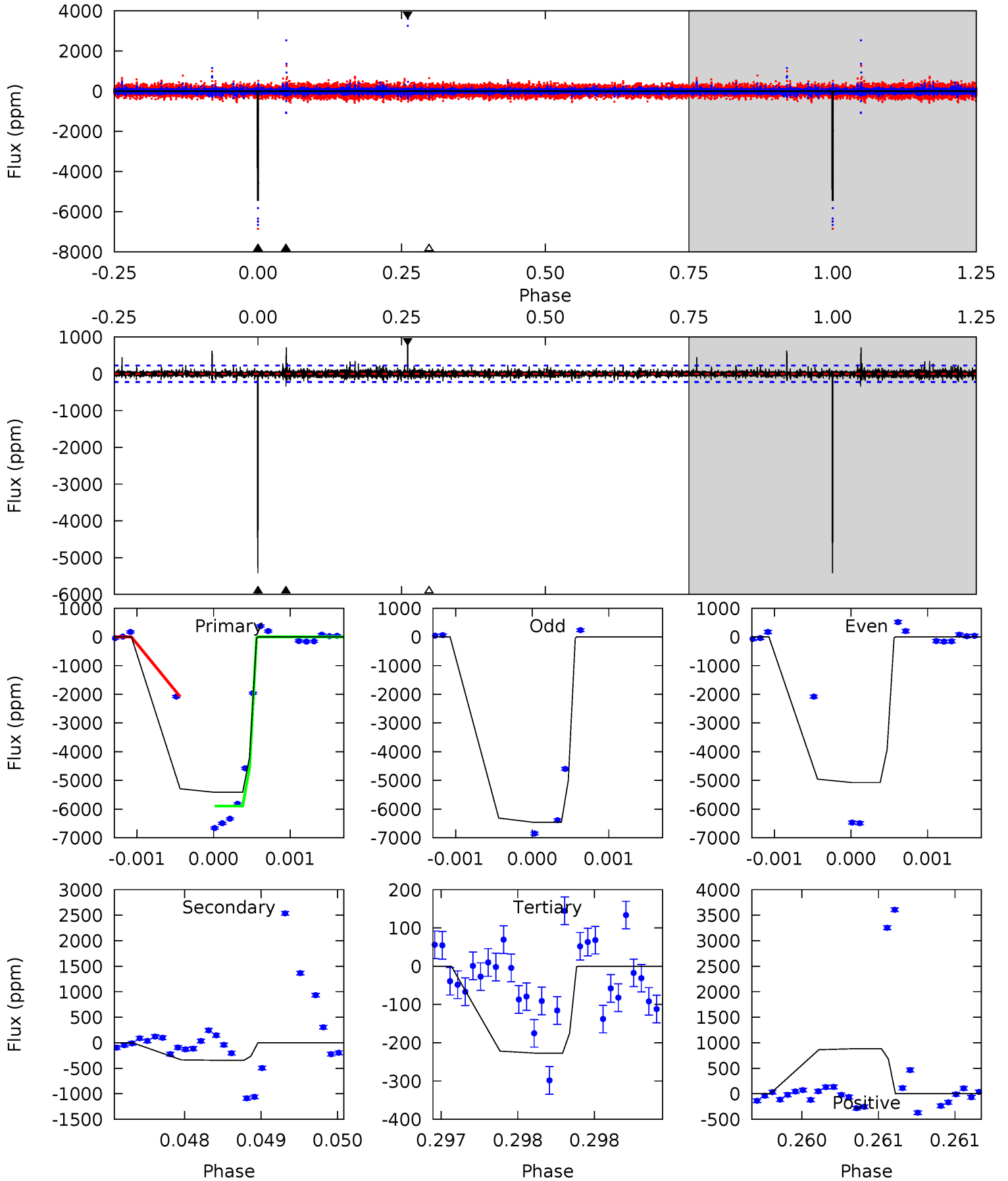
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.9	25.8	25.4	12.5	5.44	3.27	3.83	-2.46	10.4	0.43	13.3	11.0	0.81	0.33	5.53



# Alt Model-Shift Uniqueness Test

007602453-02, P = 329.408178 Days, E = 96.852385 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
133.3	8.44	5.59	21.8	5.52	3.40	1.29	127.8	111.6	2.85	-13.3	12.3	0.37	0.14	0





### Stellar Parameters For KIC 007602453

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7249^{+203}_{-279}$	$4.123^{+0.175}_{-0.175}$	$-0.360^{+0.250}_{-0.350}$	$1.684^{+0.498}_{-0.407}$	$1.374^{+0.212}_{-0.212}$	$0.405^{+0.436}_{-0.196}$
	+3%/-4%	+4%/-4%	+69%/-97%	+30%/-24%	+15%/-15%	+108%/-48%
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 007602453-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-21444 \pm 831$	$19.88^{+3.42}_{-3.11}$	$568^{+43}_{-40}$	$8760^{+650}_{-564}$	$32508^{+12806}_{-8490}$
Alt.	$-343 \pm 41$	$10.09^{+2.33}_{-2.11}$	$566^{+43}_{-37}$	$4374^{+373}_{-283}$	$1986^{+1182}_{-665}$

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

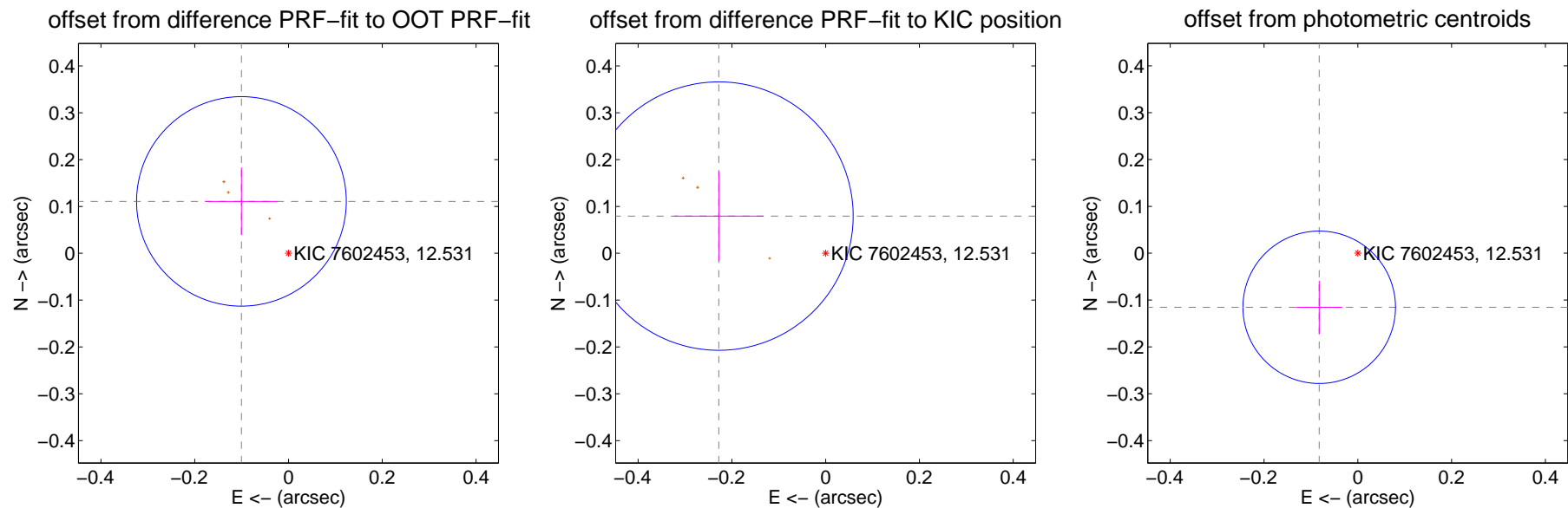
## DV Centroid Data

Supplemental centroid analysis for 007602453-02. Kepler magnitude: 12.53. Transit SNR 14.16

There are 0 quarters with good PRF difference image offsets

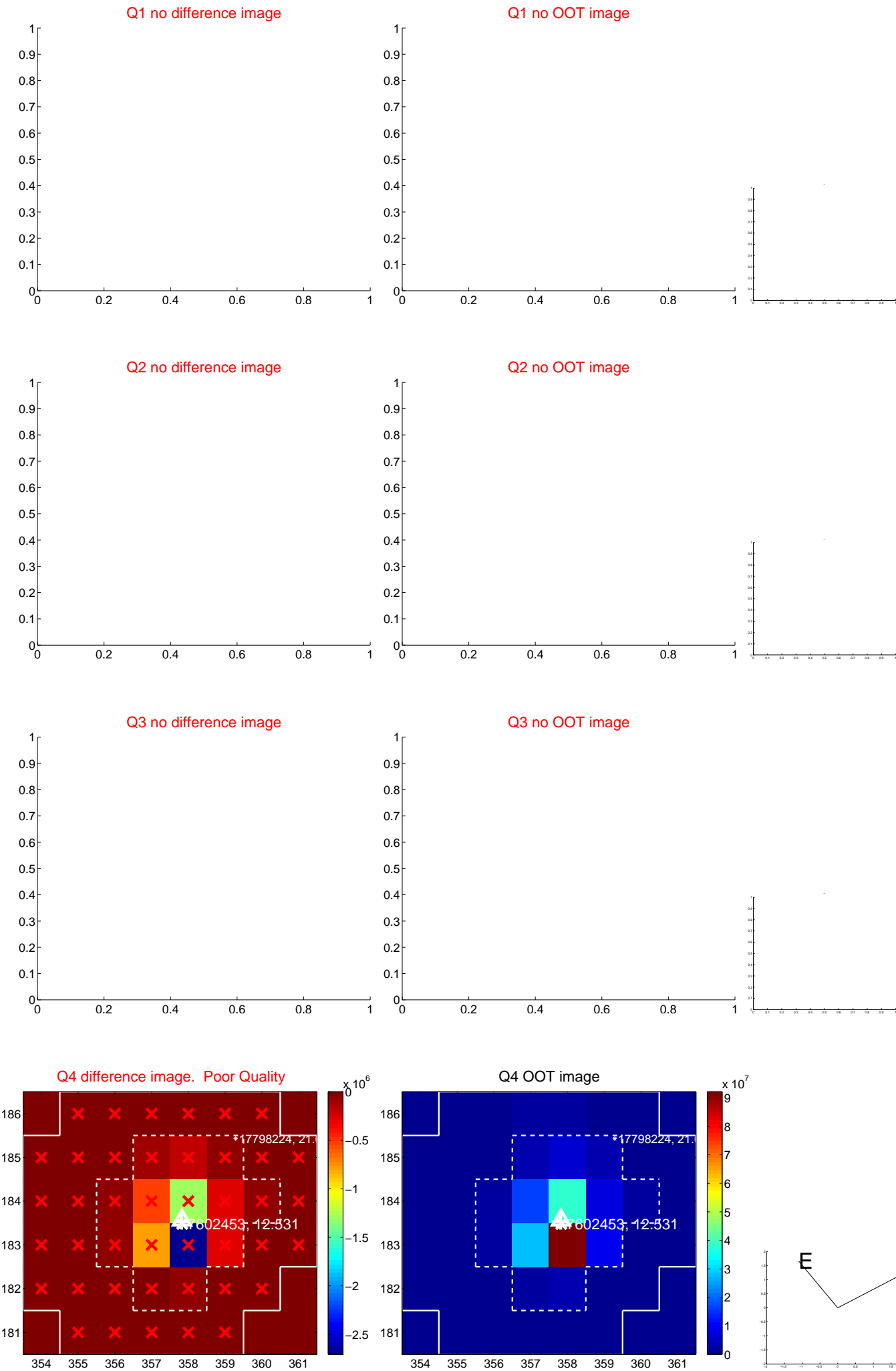
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.149 \pm 0.075$	2.01	$0.100 \pm 0.077$	$0.111 \pm 0.072$
PRF-fit source offset from KIC position	$0.241 \pm 0.095$	2.53	$0.228 \pm 0.095$	$0.079 \pm 0.095$
photometric centroid source offset	$0.14 \pm 0.05$	2.61	$0.08 \pm 0.05$	$-0.12 \pm 0.06$

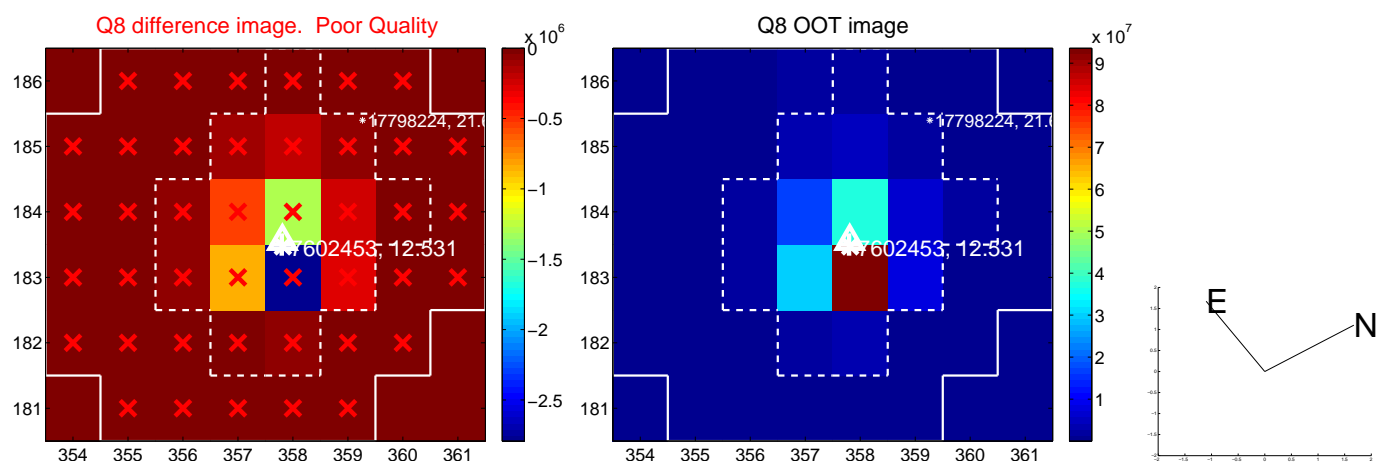
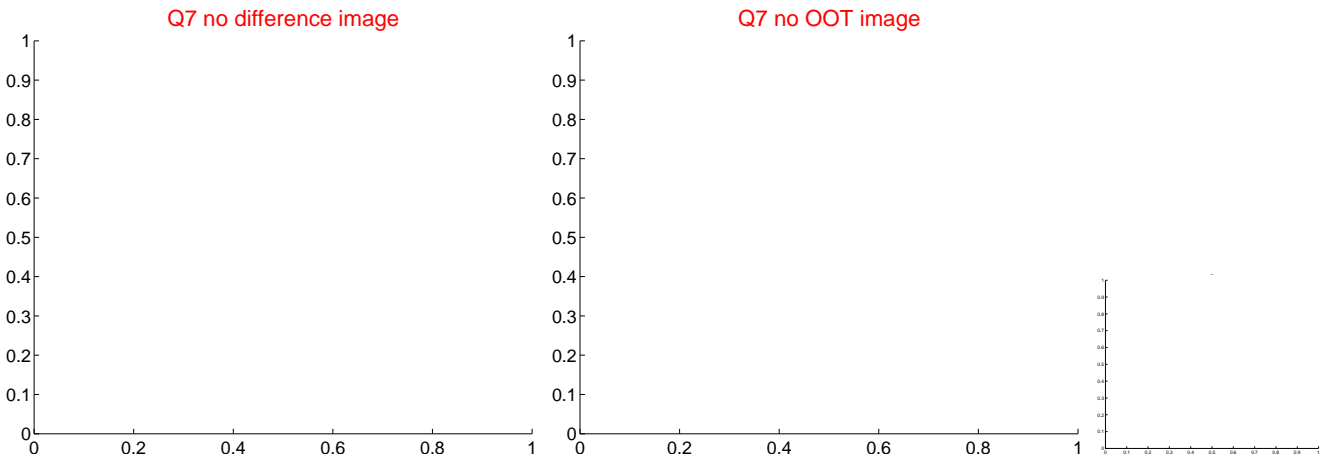
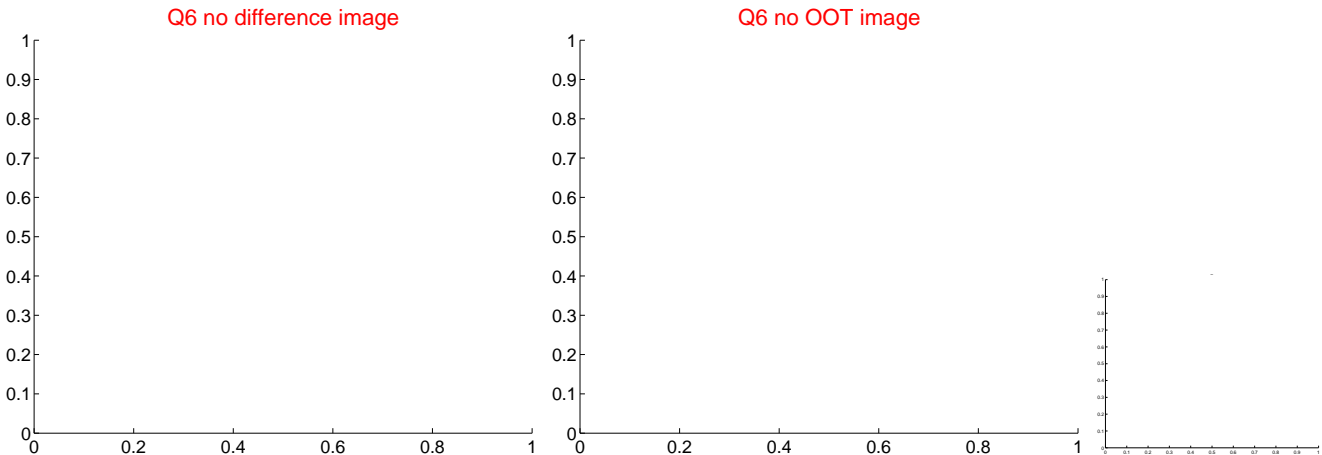
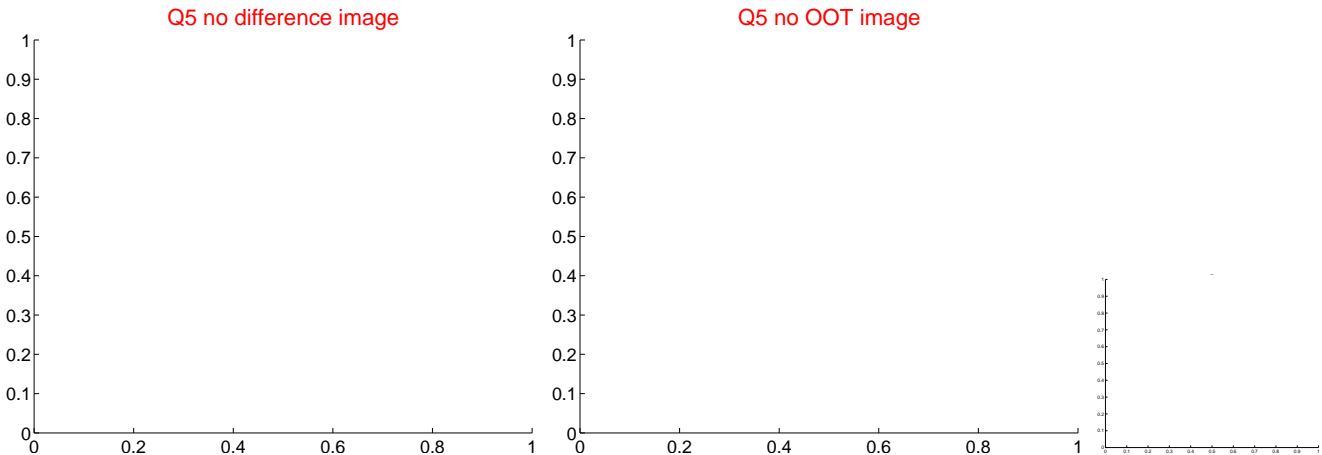


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

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

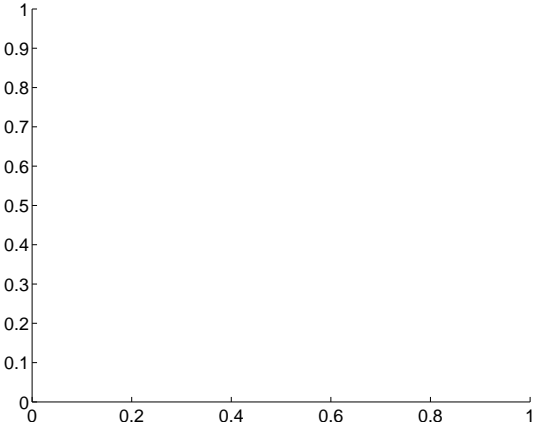


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value

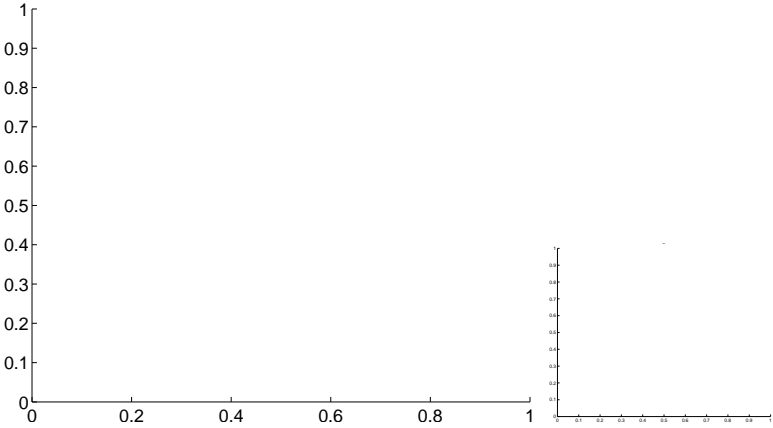


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

Q9 no difference image



Q9 no OOT image



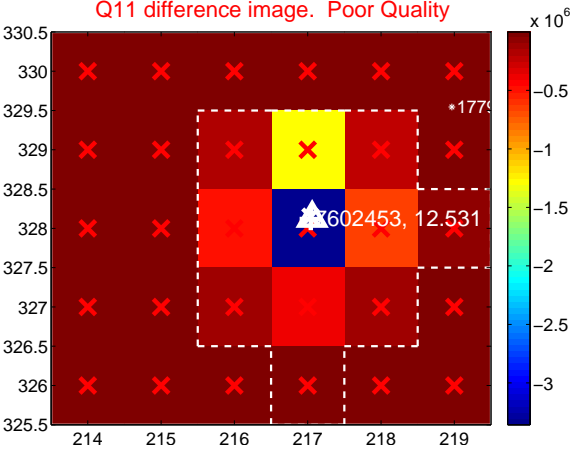
Q10 no difference image



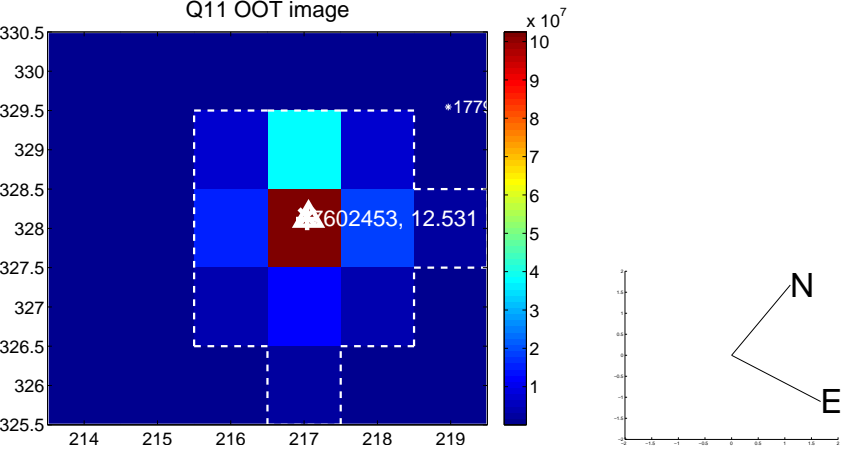
Q10 no OOT image



Q11 difference image. Poor Quality



Q11 OOT image



Q12 no difference image



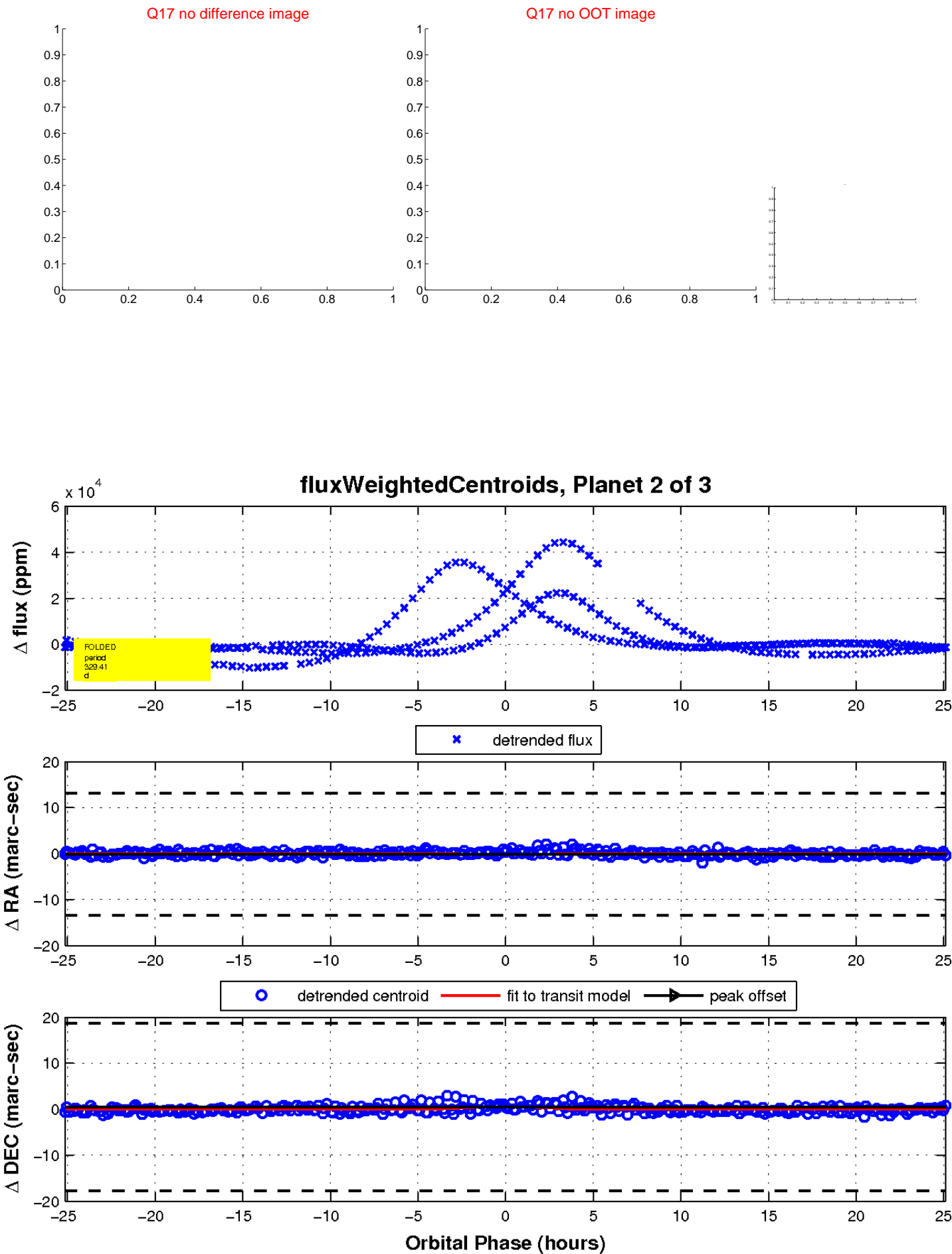
Q12 no OOT image



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

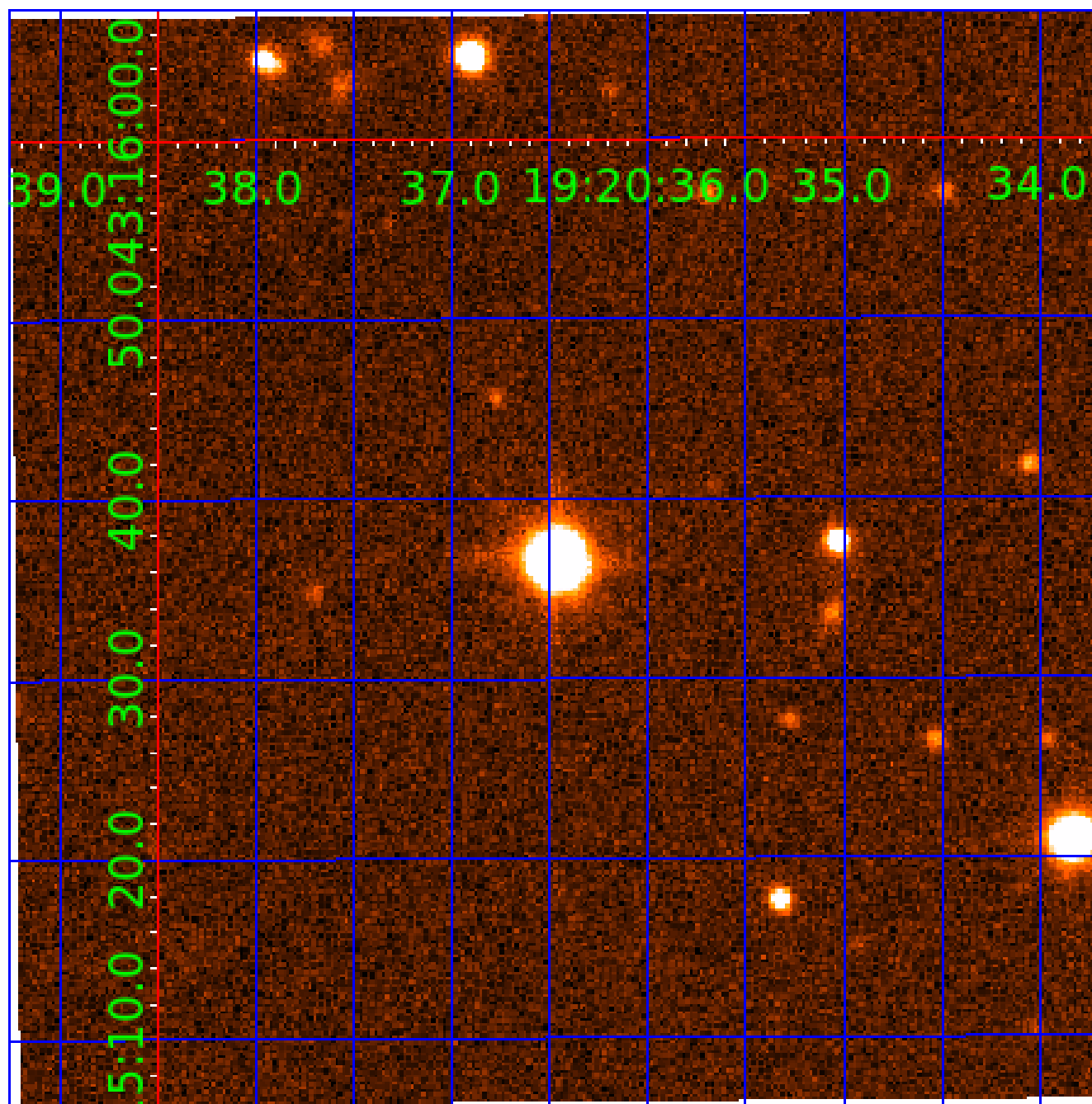


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 007602453

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007602453-01	OBS	No	447.167214	535.961424	8235.1	14.222	27.6	5.3	1.68	7249	26.81	4.33
007602453-02	OBS	No	329.405664	426.352045	8464.3	8.380	20.9	14.2	1.68	7249	19.75	6.51
007602453-03	OBS	No	186.122717	189.109966	640.2	2.500	17.3	-1.0	1.68	7249	4.32	13.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007602453-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007602453-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—CENT_FEW_DIFFS
007602453-03	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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

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

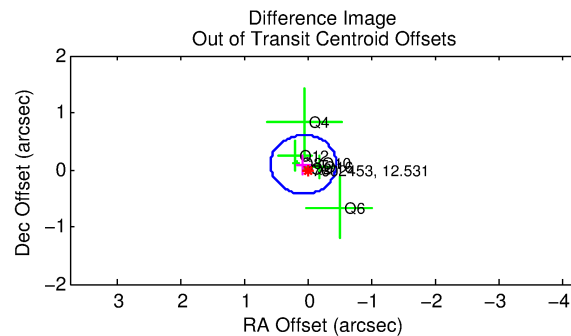
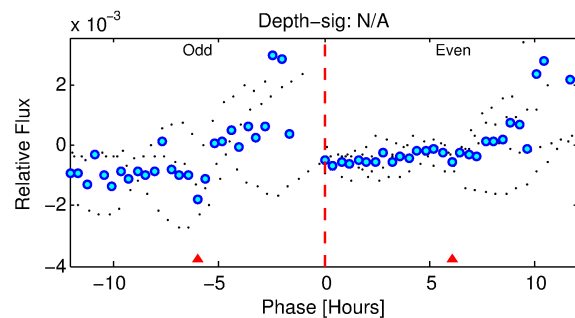
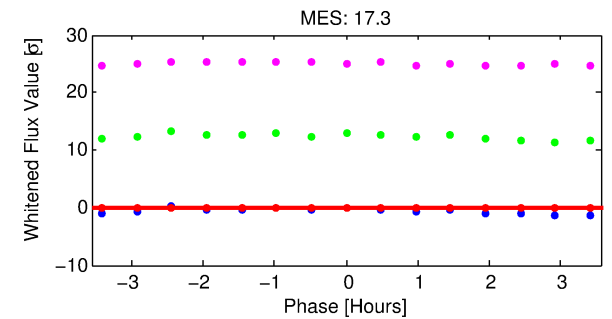
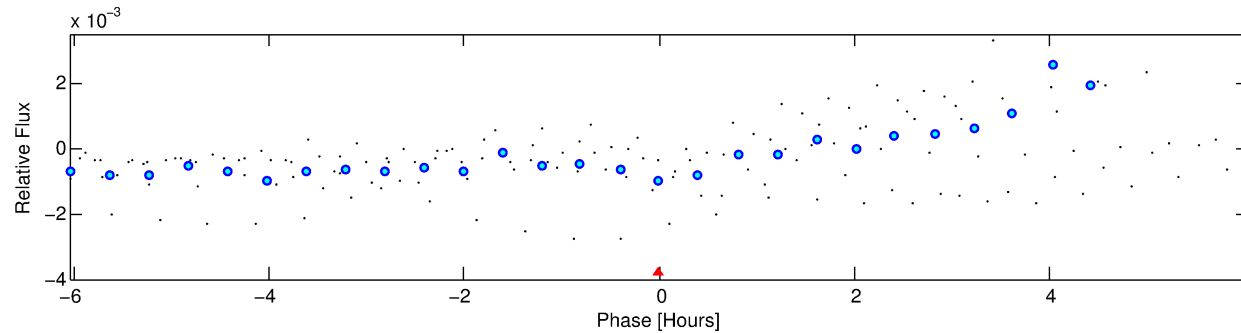
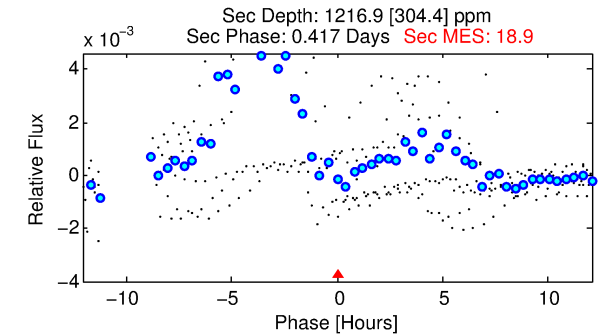
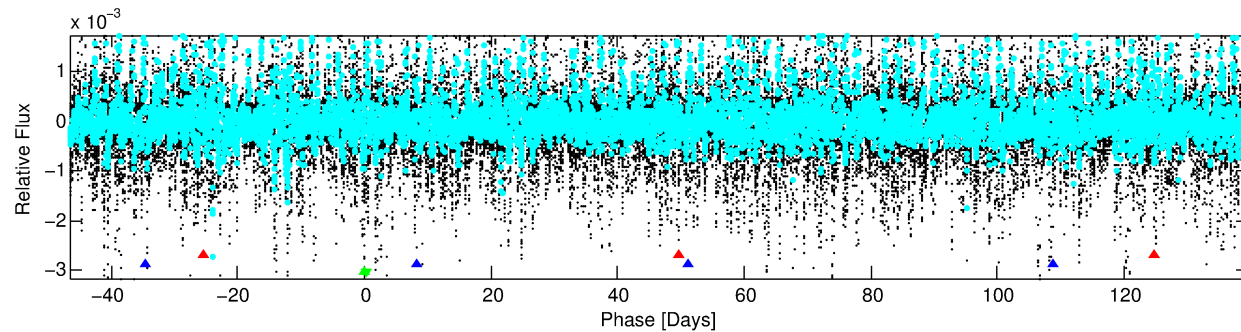
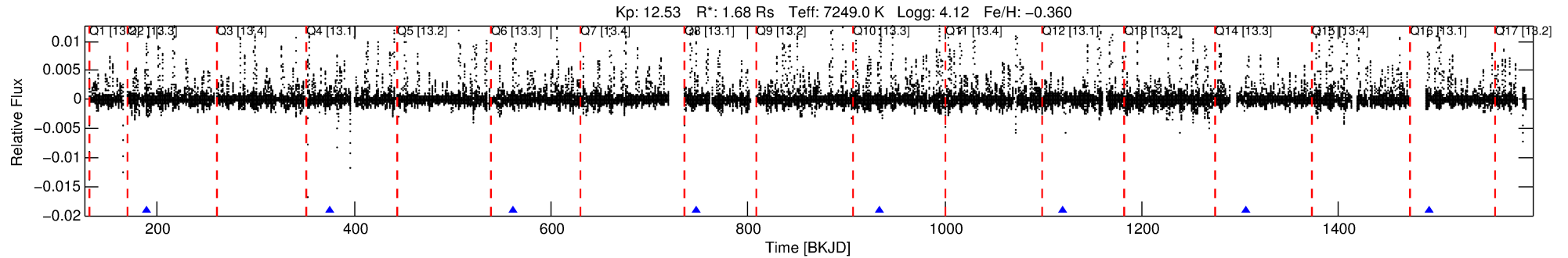
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007602453-03

No Significant Match Found

# DV One-Page Summary

KIC: 7602453 Candidate: 3 of 3 Period: 186.123 d



## TPS TCE Results:

Period = 186.12272 d  
Epoch = 189.1100 BKJD

**DV fit results are unavailable**

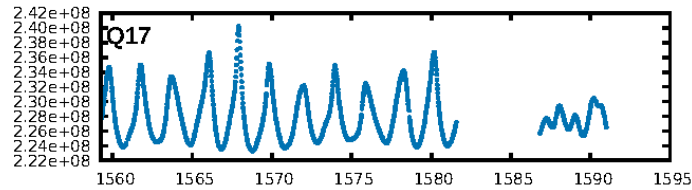
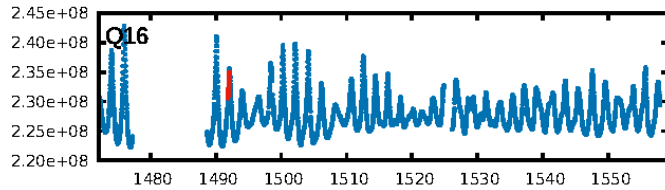
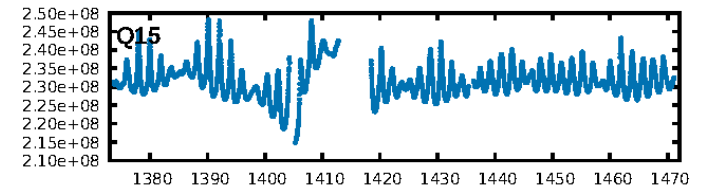
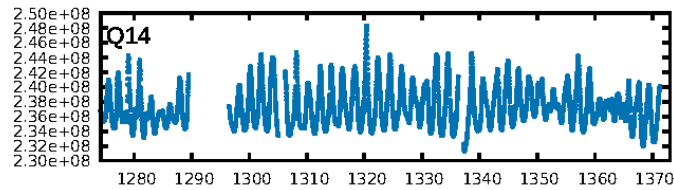
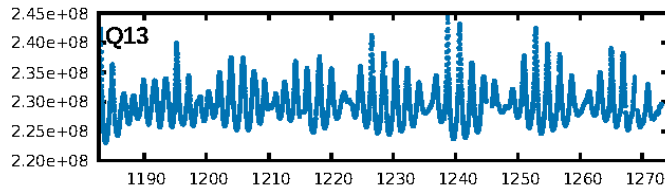
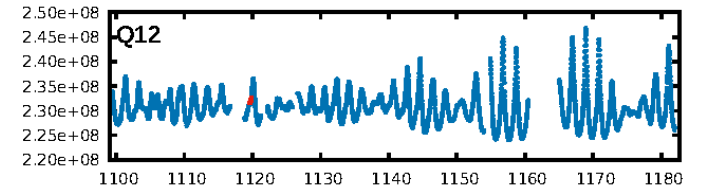
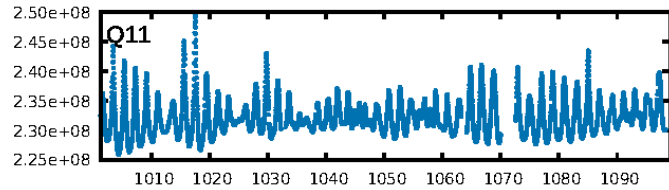
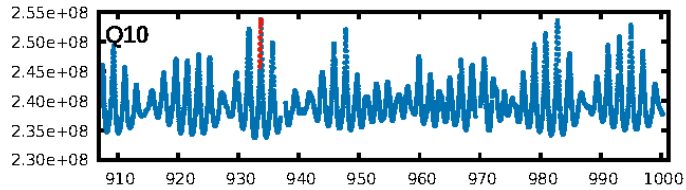
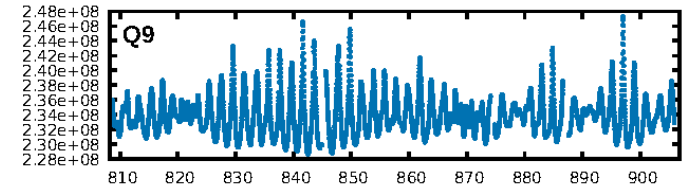
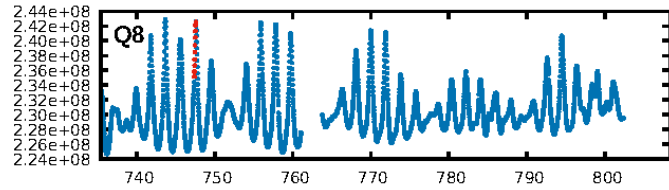
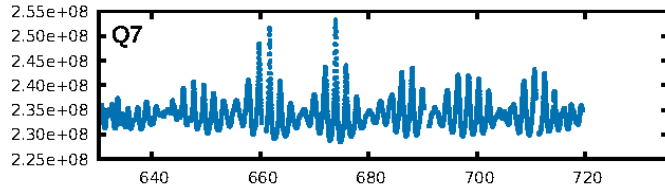
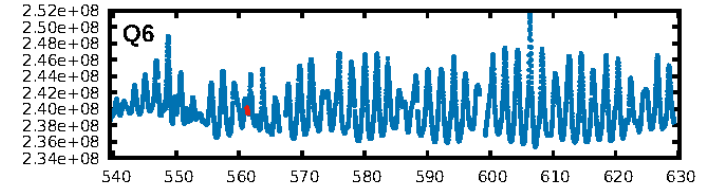
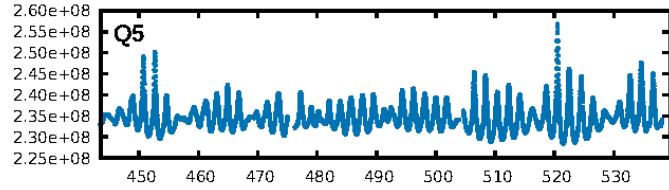
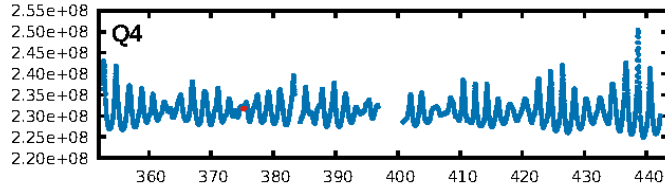
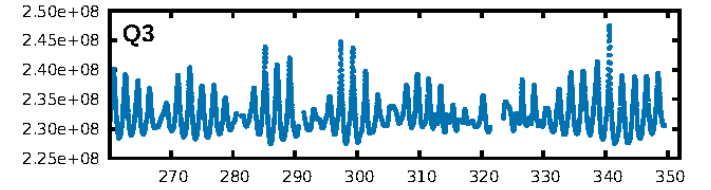
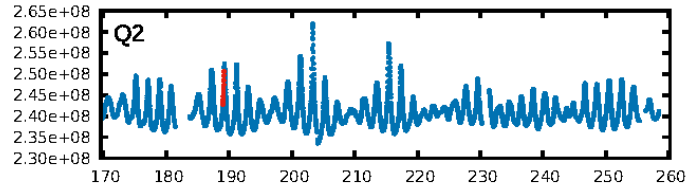
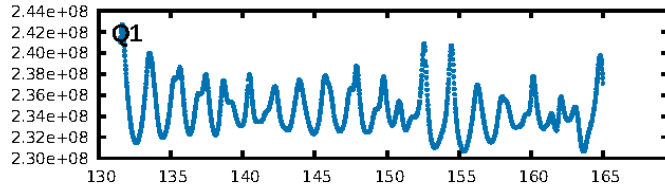
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [393.23σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 5.19e-14  
RollingBand-fgt: 1.00 [7/7]  
**GhostDiagnostic-chr: 0.1472**  
Centroid-sig: 20.9%  
Centroid-so: 0.267 arcsec [0.73σ]  
OotOffset-rm: 0.119 arcsec [0.69σ]  
KicOffset-rm: 0.226 arcsec [1.64σ]  
OotOffset-st: 3/0/4/0 [7]  
KicOffset-st: 3/0/4/0 [7]  
DiffImageQuality-fgm: 1.00 [7/7]  
DiffImageOverlap-fno: 1.00 [7/7]

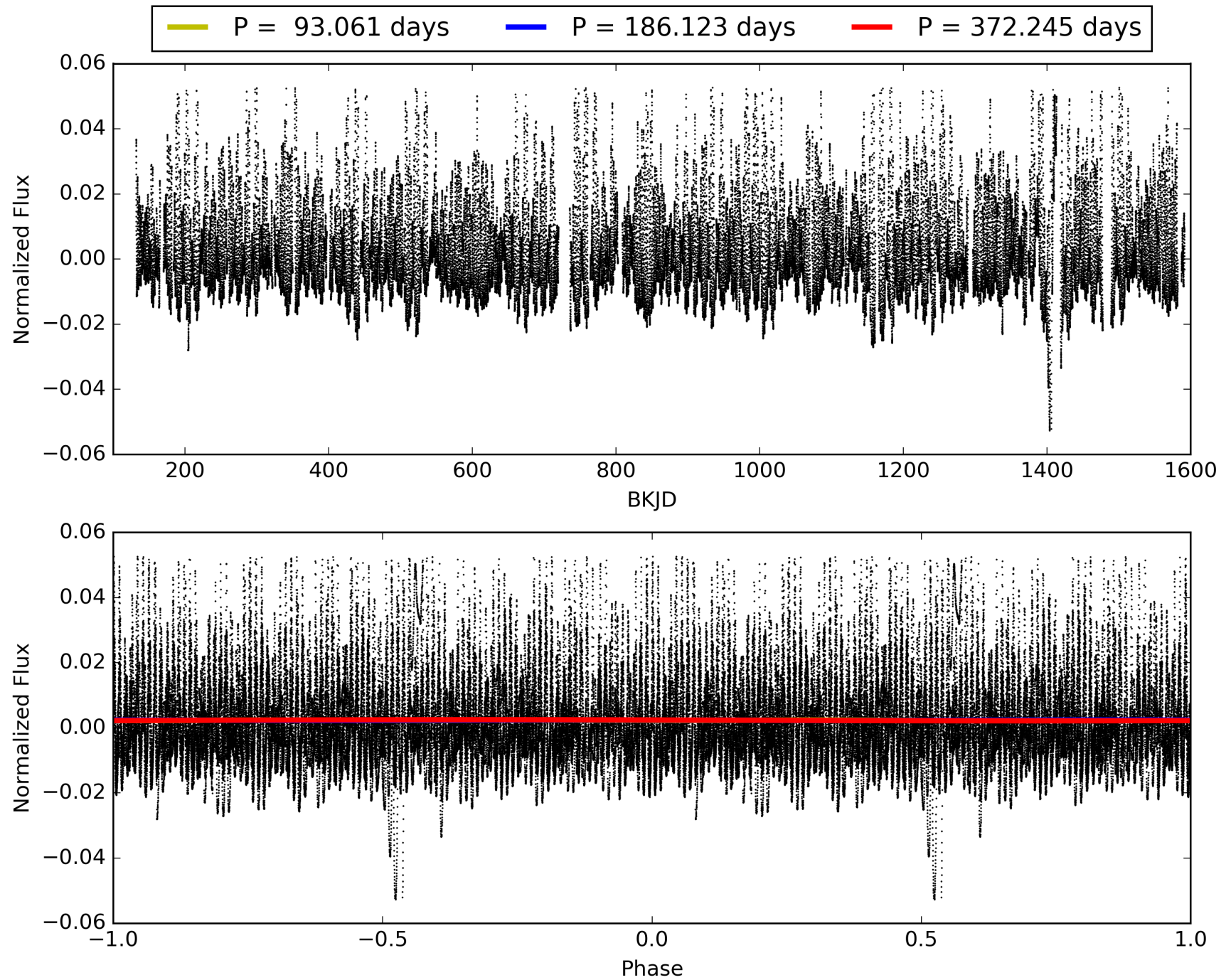
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:09:35 Z

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

# TCE 007602453-03, PDC Light Curves

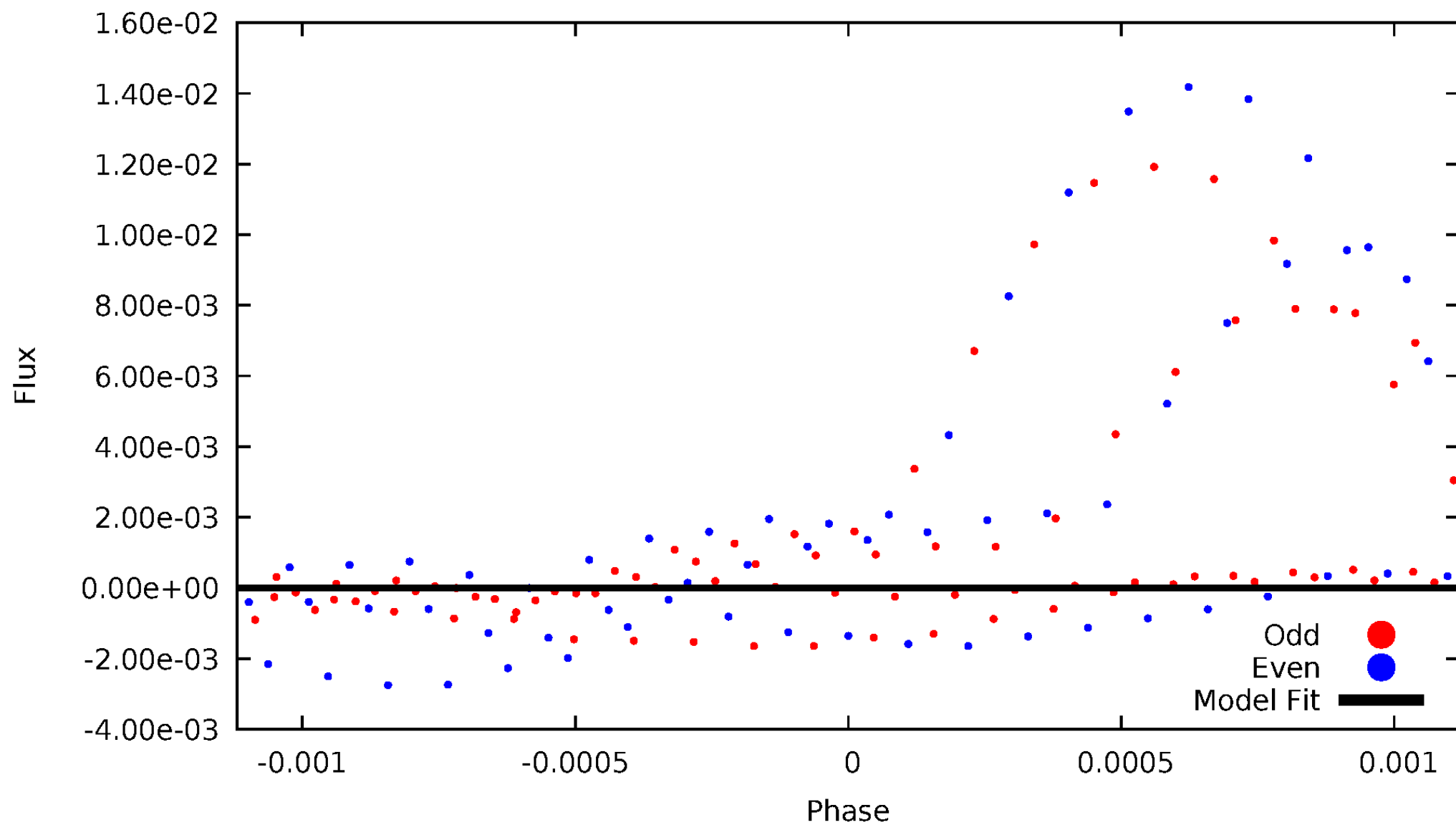


TCE 007602453-03



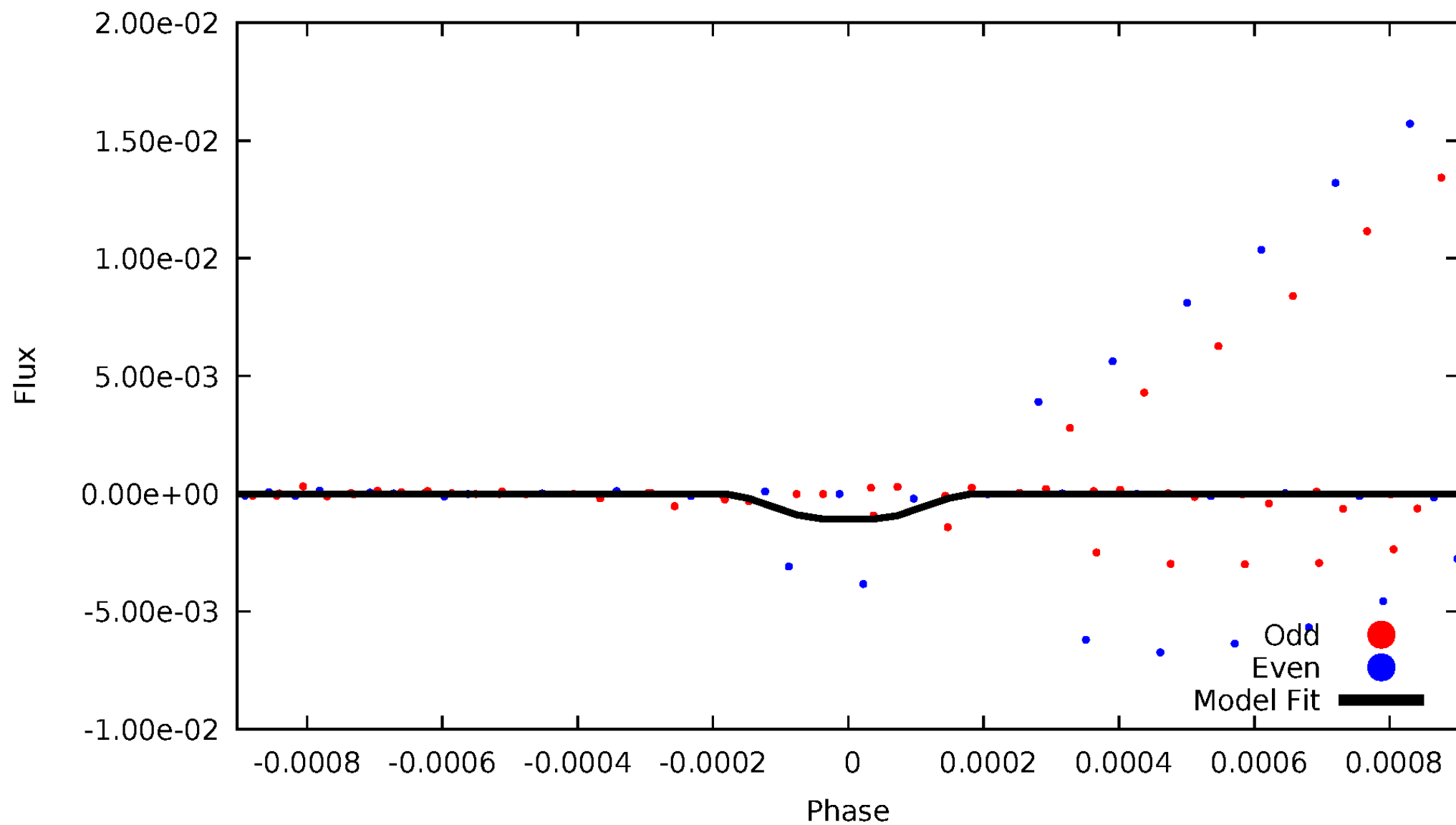
# DV Odd/Even

TCE 007602453-03

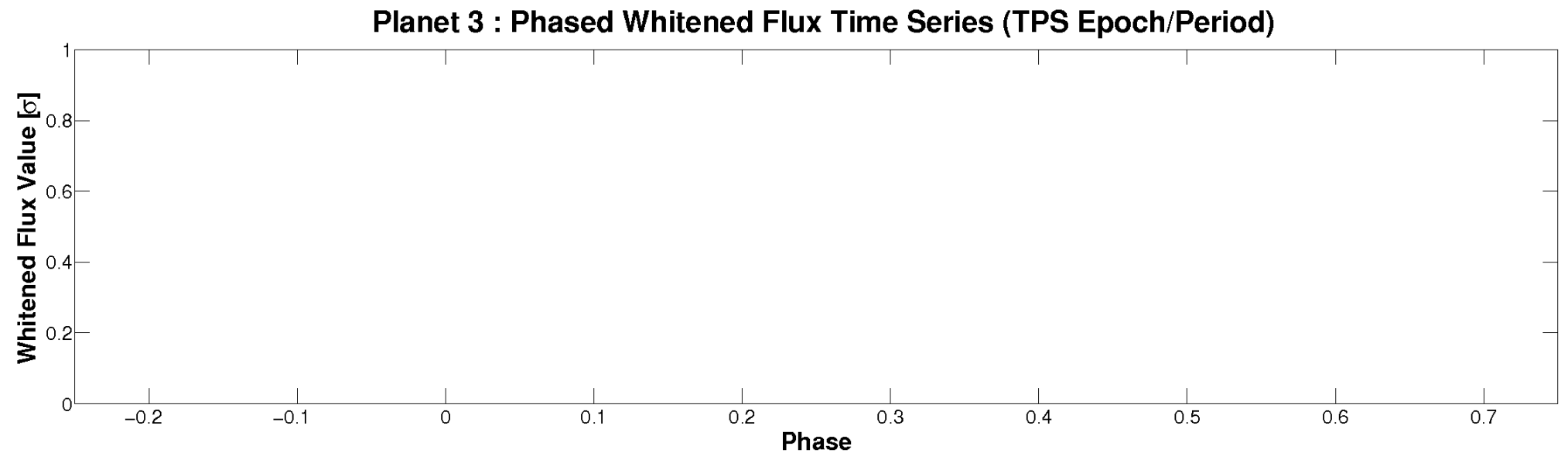
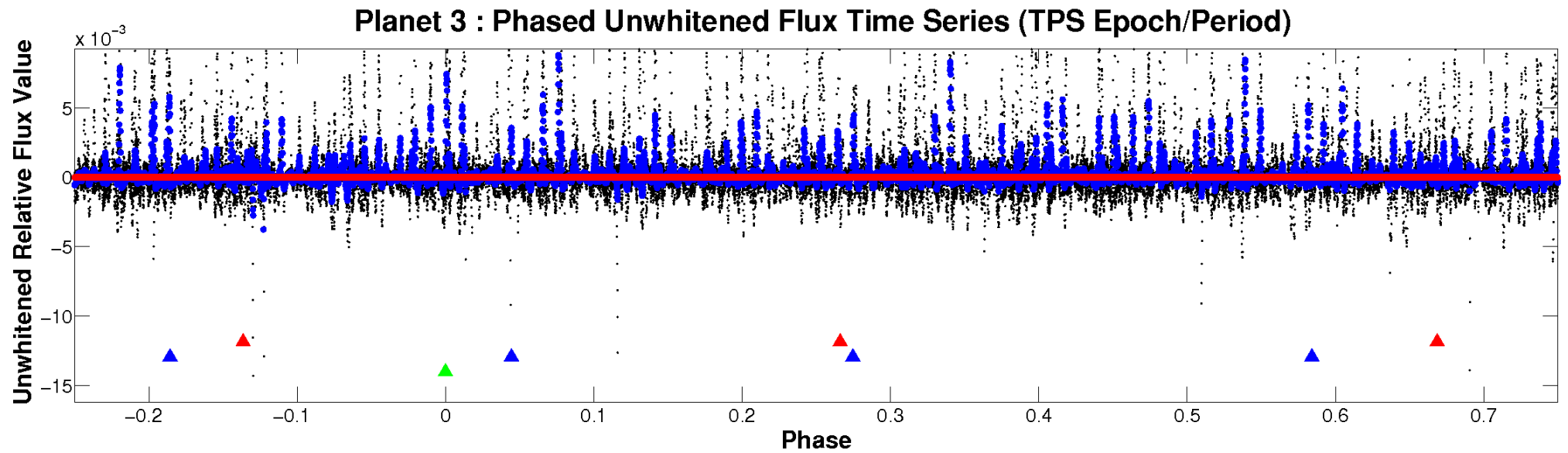


# ALT Odd/Even

TCE 007602453-03

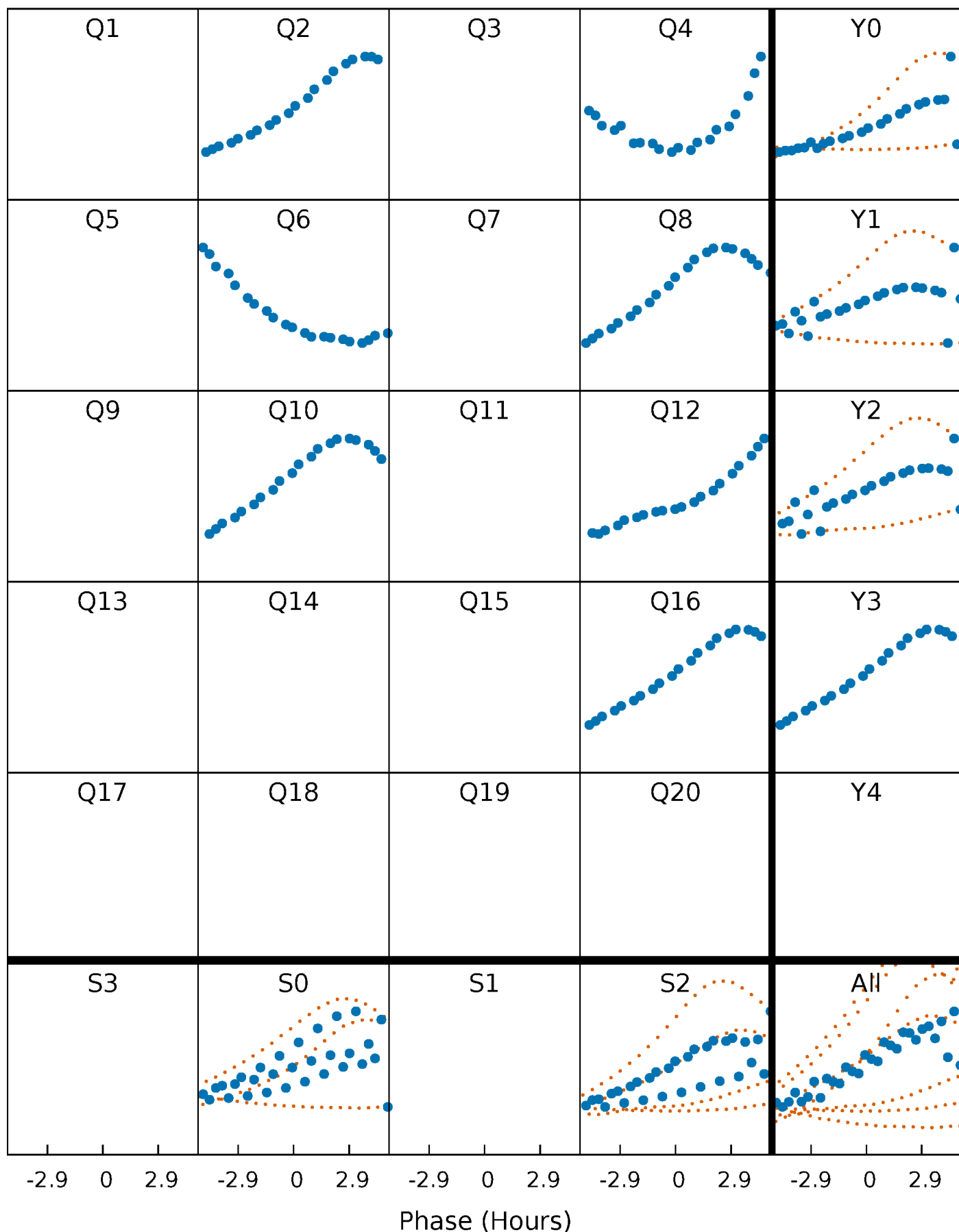


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

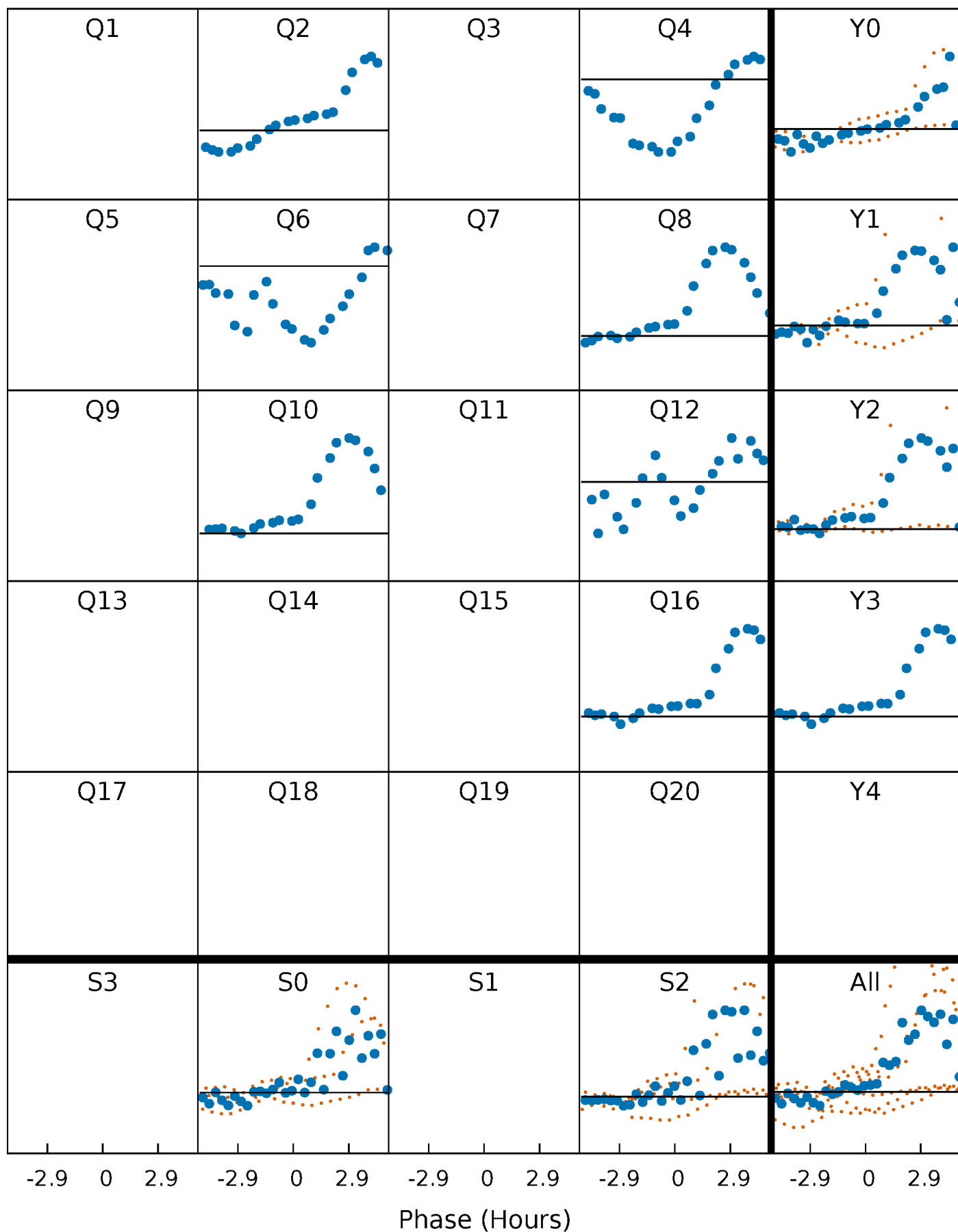
TCE 007602453-03 P=186.122717 Days  $T_0=189.109966$  (BKJD)





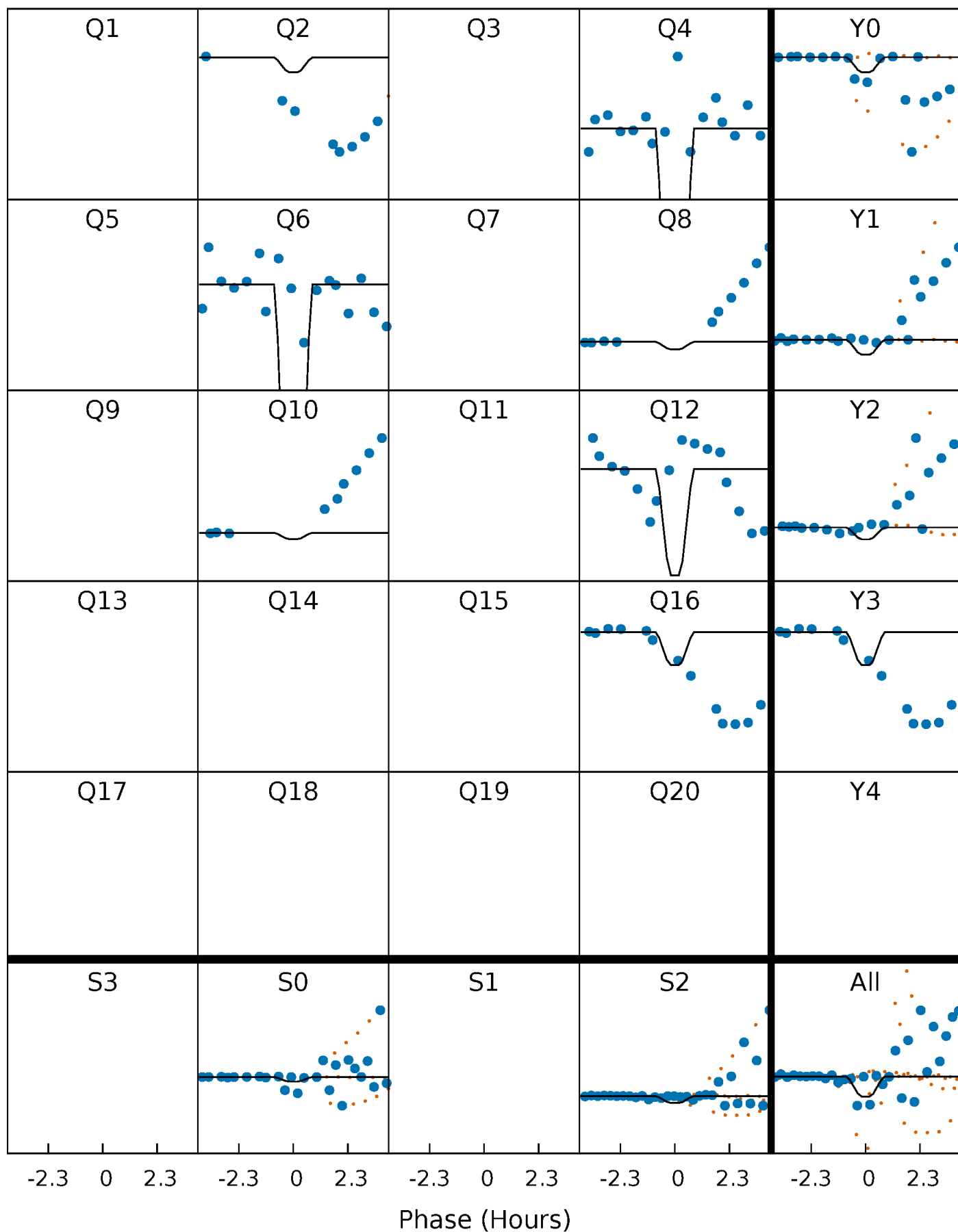
# DV Quarter-Phased Transit Curves

TCE 007602453-03 P=186.122717 Days  $T_0=189.109966$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

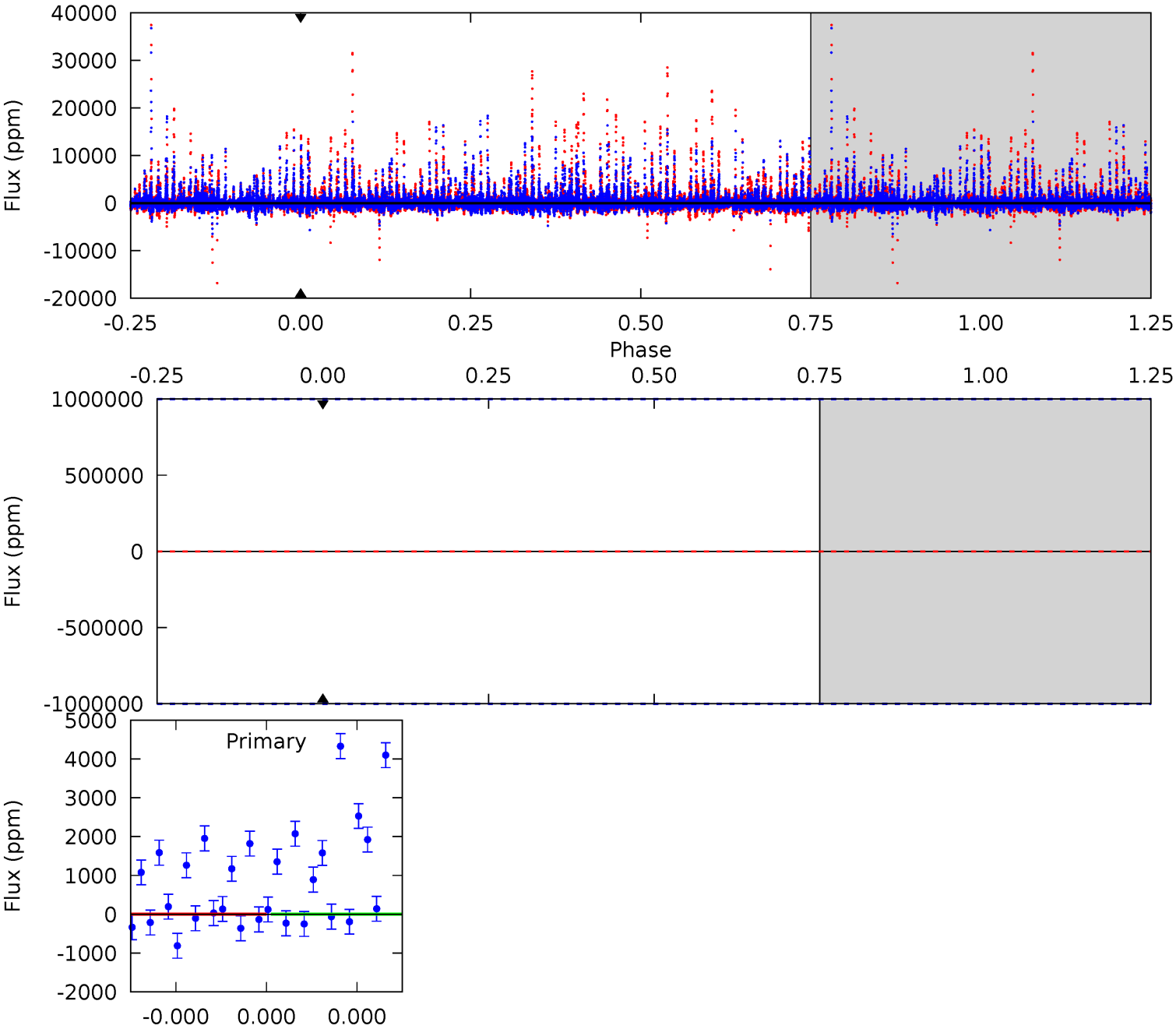
TCE 007602453-03 P=186.122717 Days  $T_0=188.989790$  (BKJD)



# DV Model-Shift Uniqueness Test

007602453-03, P = 186.122717 Days, E = 2.987249 Days

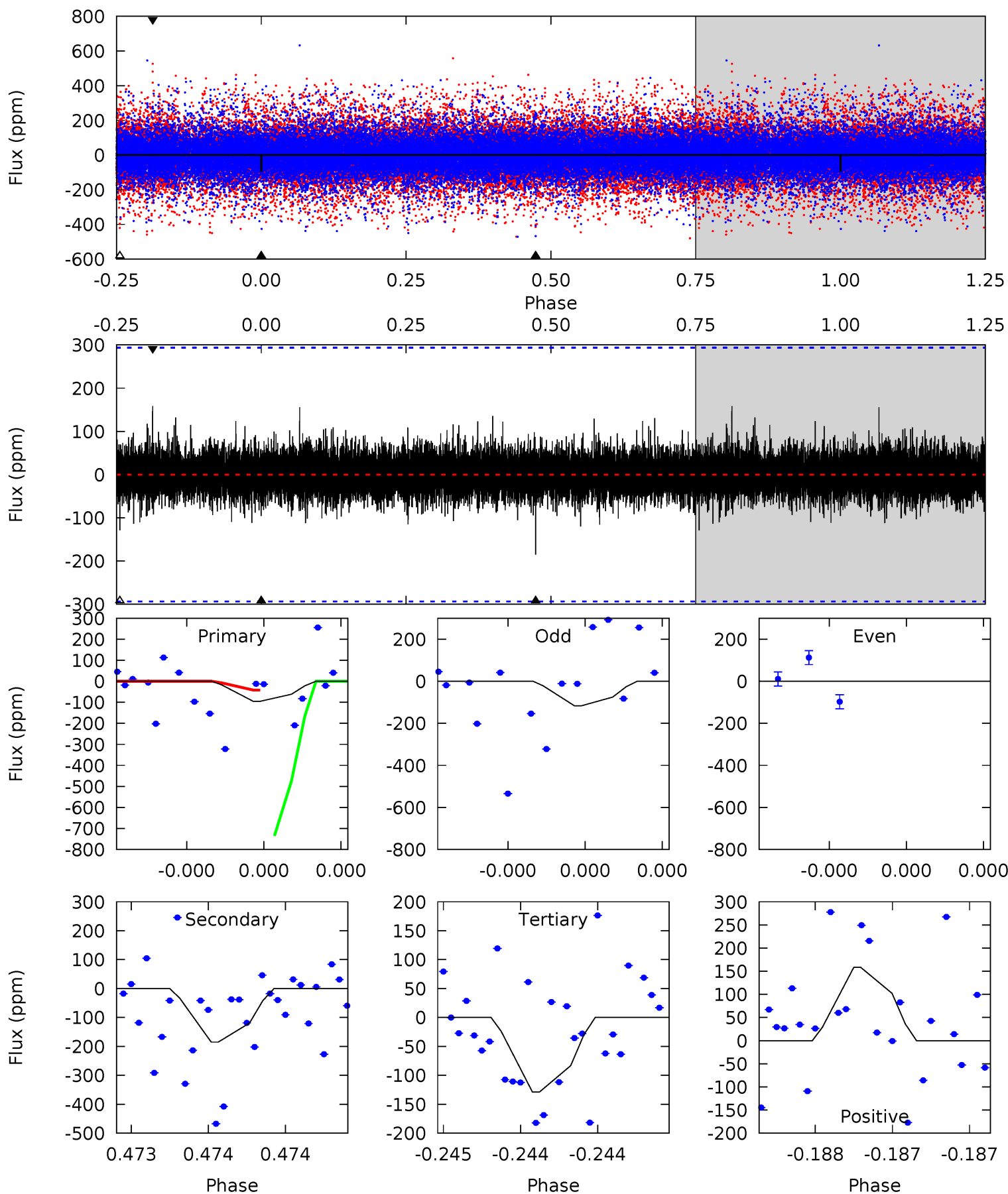
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

007602453-03, P = 186.122717 Days, E = 2.867073 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
1.85	3.58	2.49	3.06	5.68	3.64	0.51	-0.65	-1.22	1.09	0.52	0	14.3	0.46	7.40



### Stellar Parameters For KIC 007602453

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7249^{+203}_{-279}$	$4.123^{+0.175}_{-0.175}$	$-0.360^{+0.250}_{-0.350}$	$1.684^{+0.498}_{-0.407}$	$1.374^{+0.212}_{-0.212}$	$0.405^{+0.436}_{-0.196}$
	+3%/-4%	+4%/-4%	+69%/-97%	+30%/-24%	+15%/-15%	+108%/-48%
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 007602453-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$14.37^{+13.92}_{-10.21}$	$685^{+53}_{-47}$	$3318^{+34994}_{-34331}$	$115^{+286374}_{-202576}$
Alt.	$-185 \pm 52$	$14.24^{+15.81}_{-9.49}$	$689^{+50}_{-48}$	$3432^{+1759}_{-654}$	$238^{+1860}_{-188}$

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

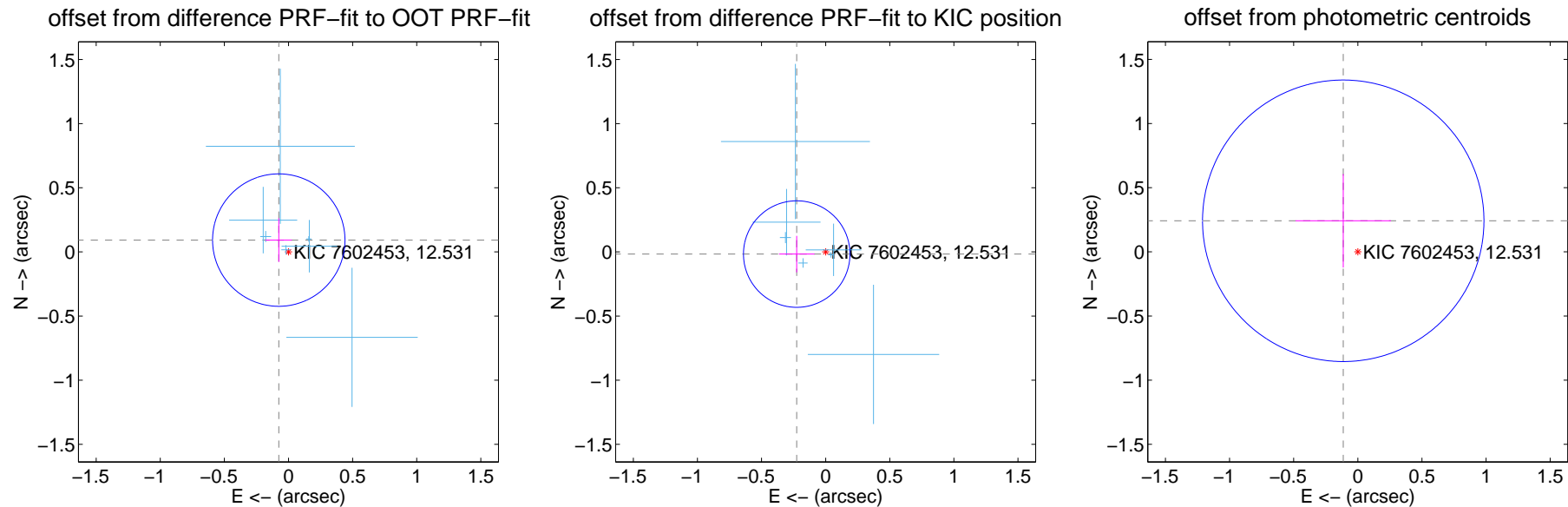
## DV Centroid Data

Supplemental centroid analysis for 007602453-03. Kepler magnitude: 12.53. Transit SNR -1.00

There are 7 quarters with good PRF difference image offsets

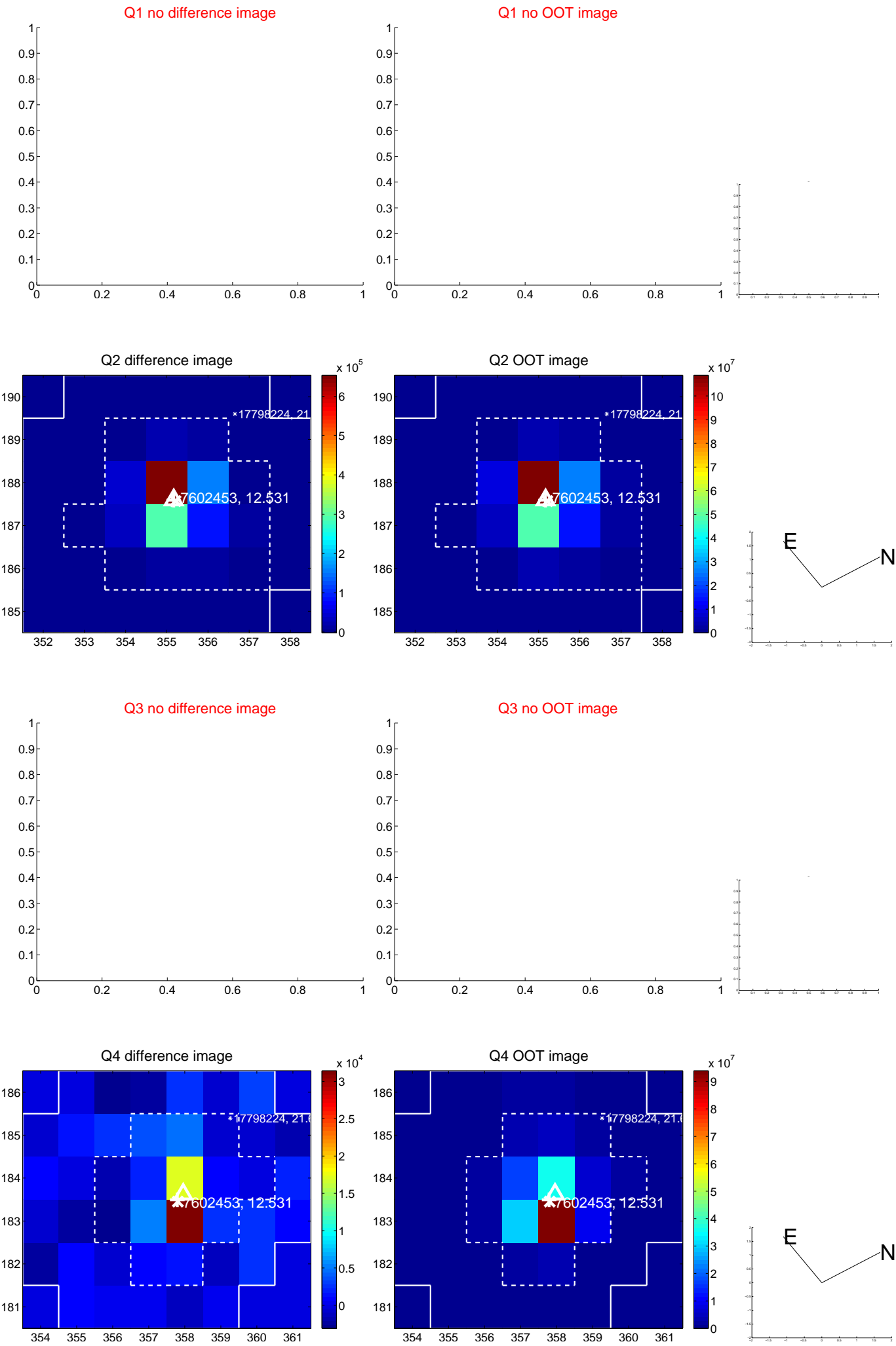
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.119 \pm 0.172$	0.69	$0.076 \pm 0.102$	$0.092 \pm 0.170$
PRF-fit source offset from KIC position	$0.226 \pm 0.138$	1.64	$0.226 \pm 0.138$	$-0.017 \pm 0.142$
photometric centroid source offset	$0.27 \pm 0.37$	0.73	$0.11 \pm 0.37$	$0.24 \pm 0.36$

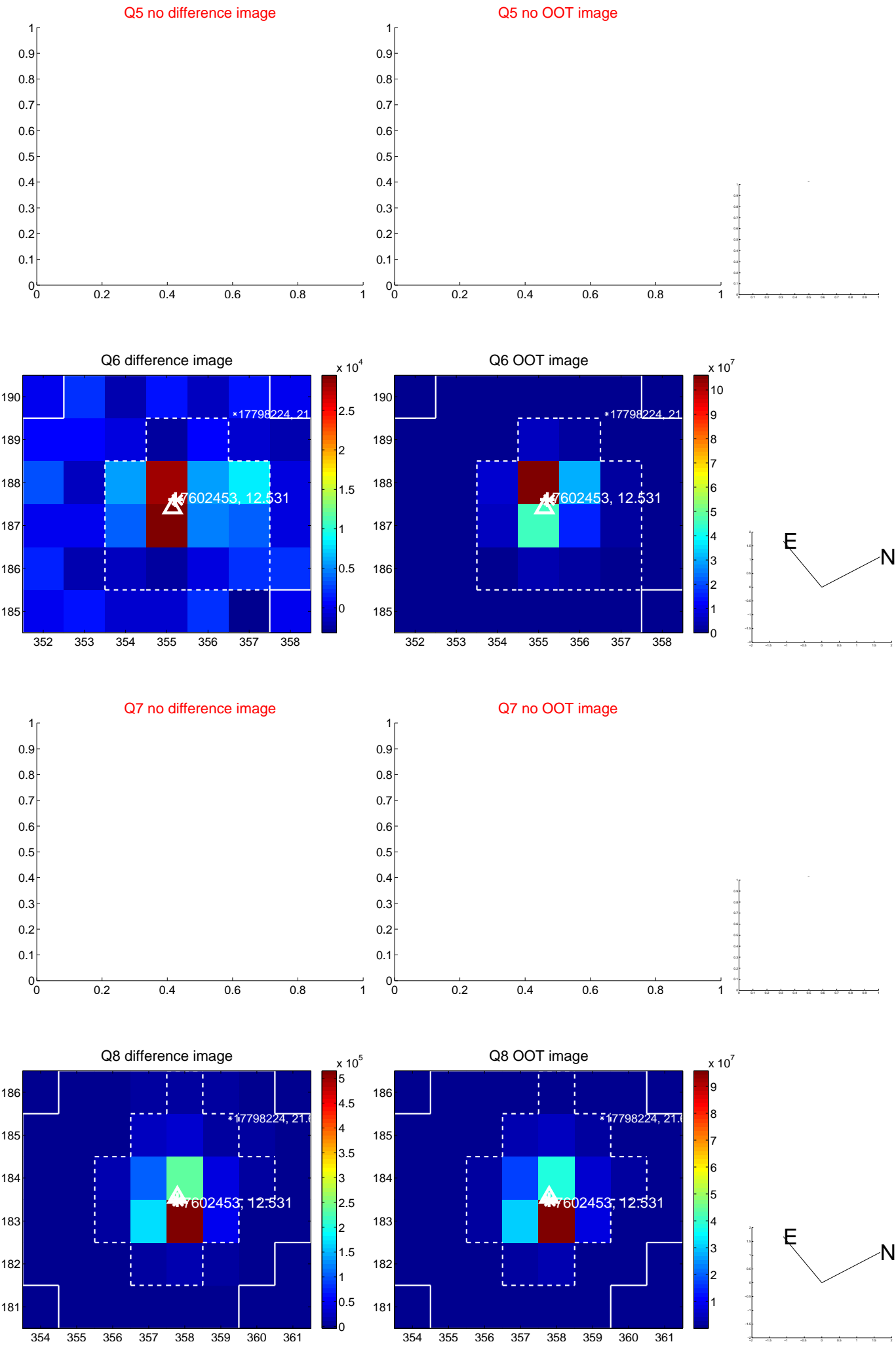


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

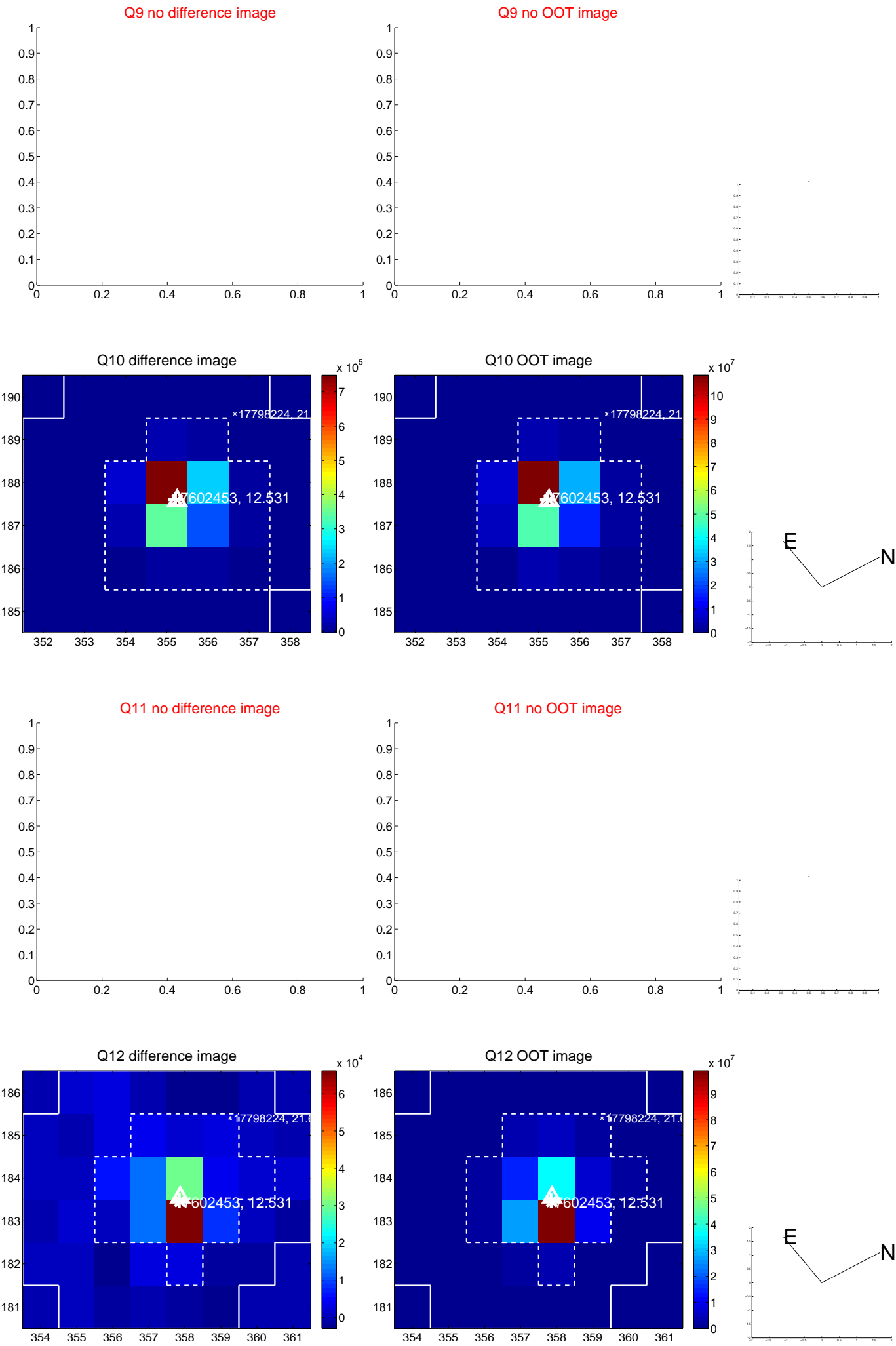


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

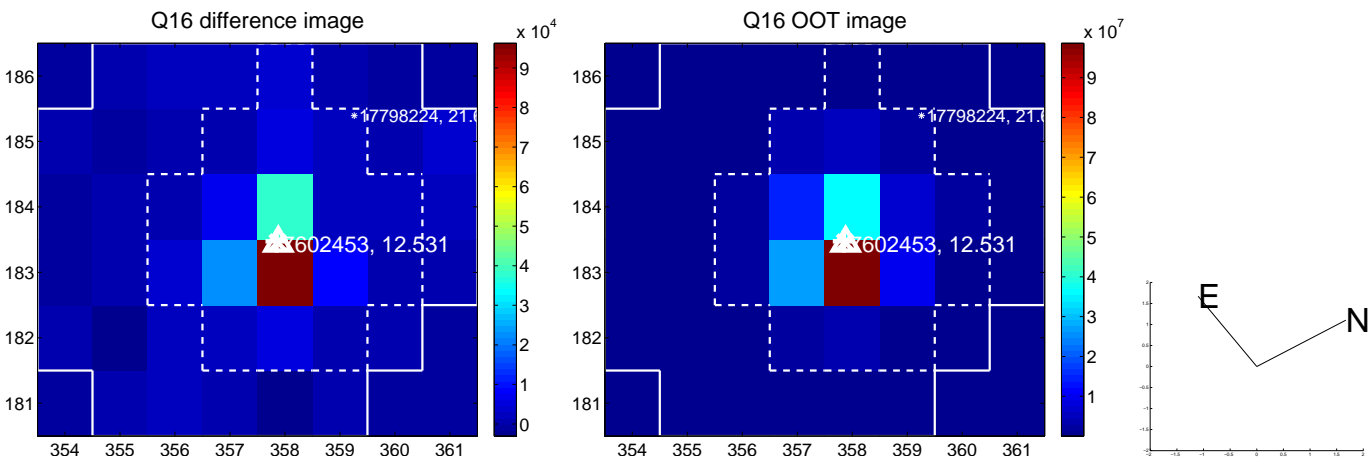
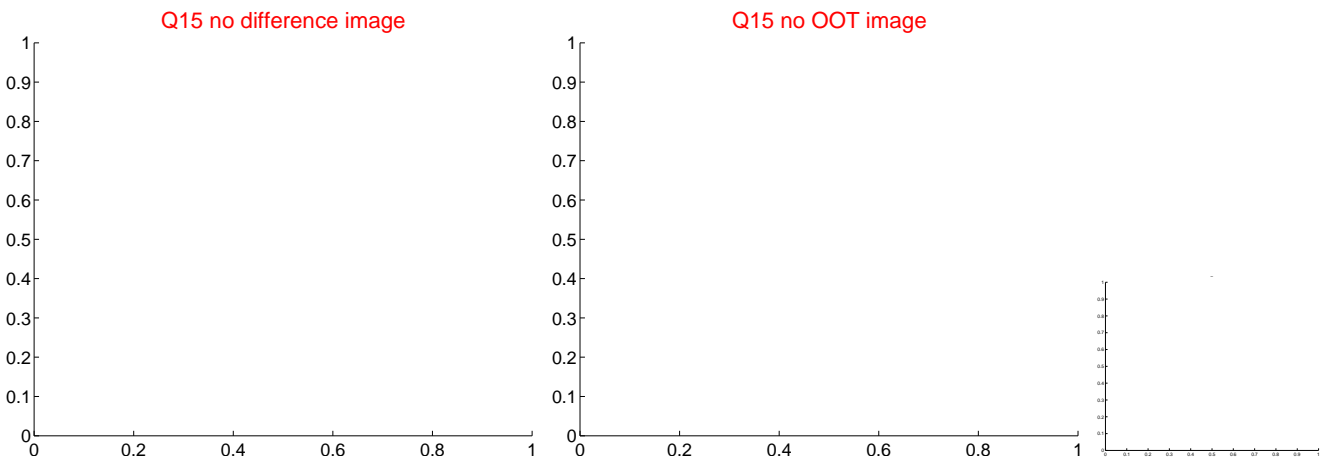
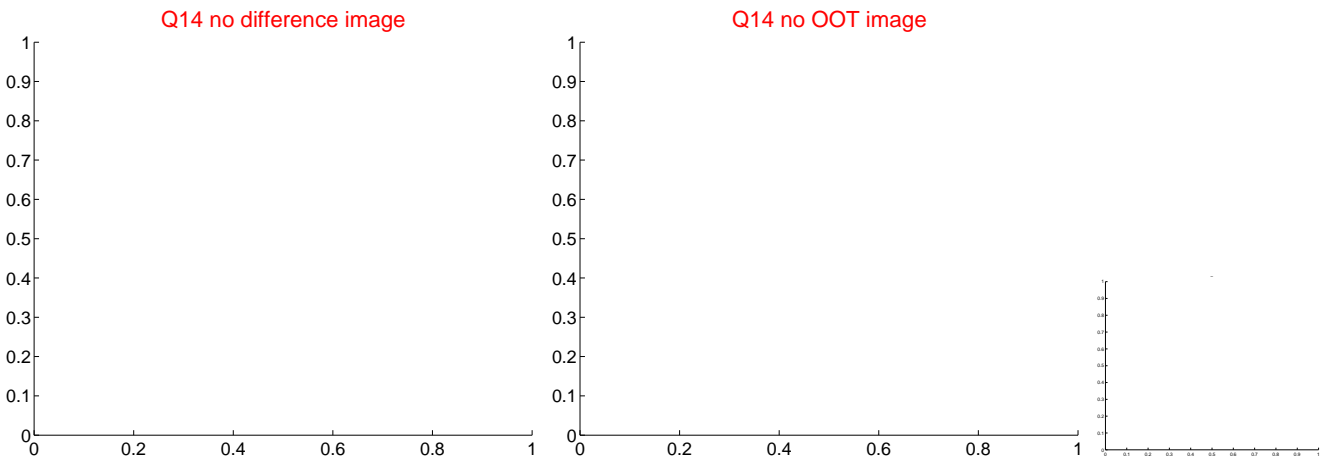
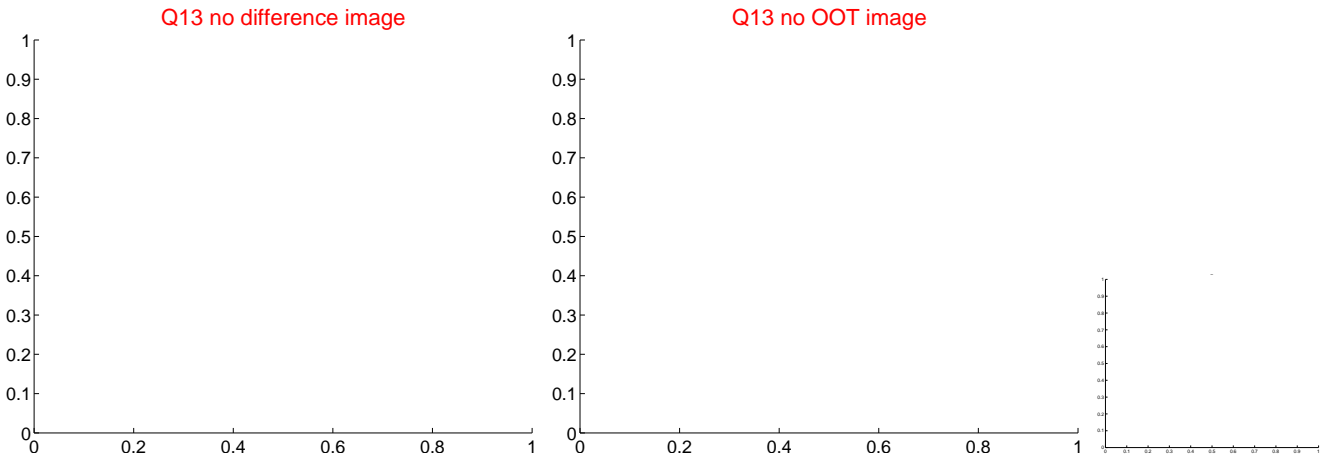




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



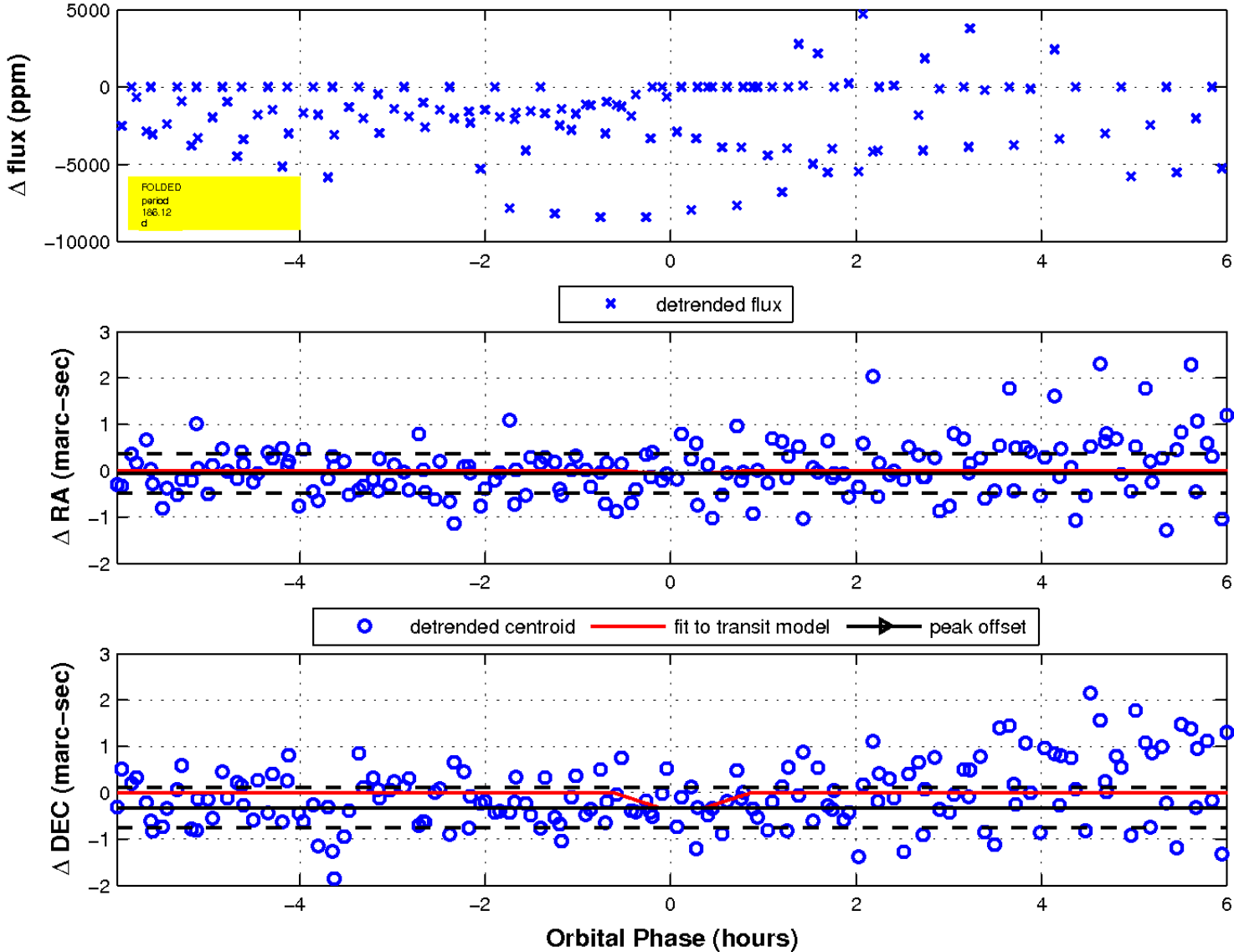
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

Q17 no difference image

Q17 no OOT image



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

