

# KIC 002583153

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
002583153-01	OBS	No	1.362873	132.052529	95.8	4.973	7.9	6.9	1.98	7071	2.26	11206.42
002583153-02	OBS	No	0.636861	131.856861	186.5	1.797	9.8	9.7	1.98	7071	3.15	30903.96
002583153-03	OBS	No	0.636877	131.529944	151.1	2.000	10.1	-1.0	1.98	7071	2.47	30902.98

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002583153-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
002583153-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
002583153-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—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.

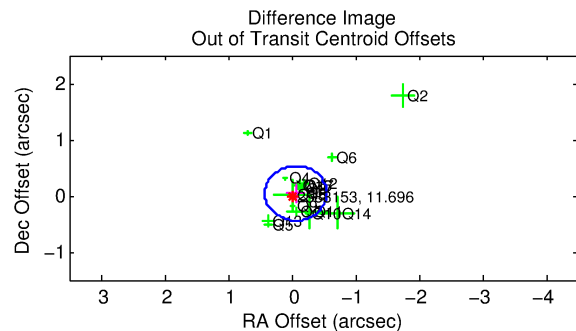
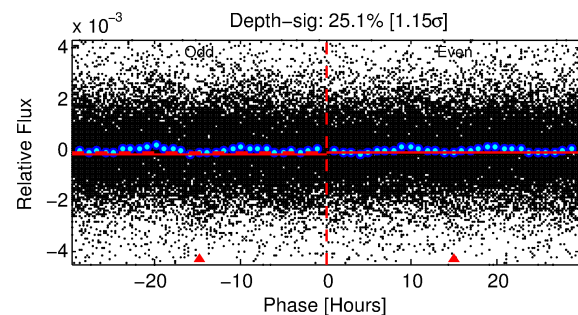
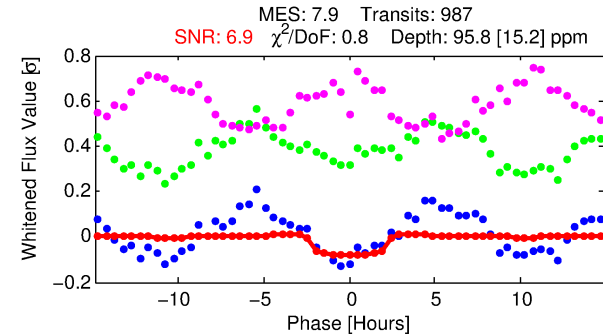
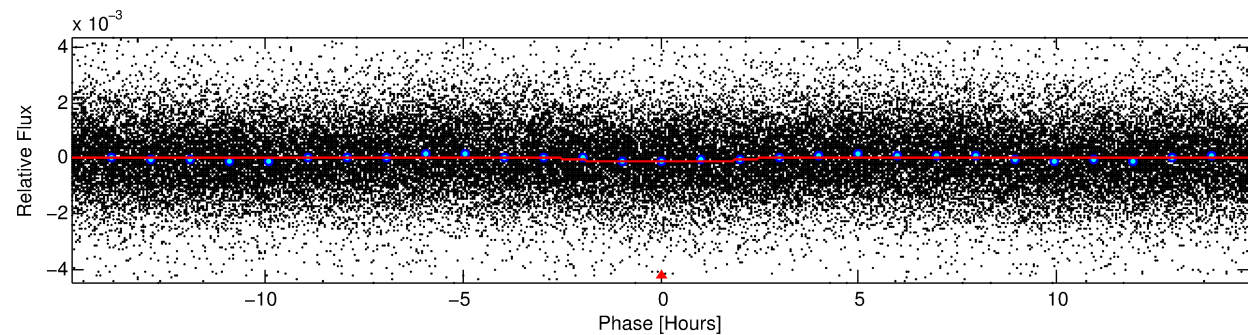
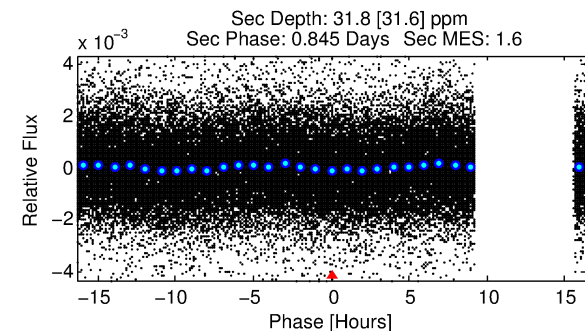
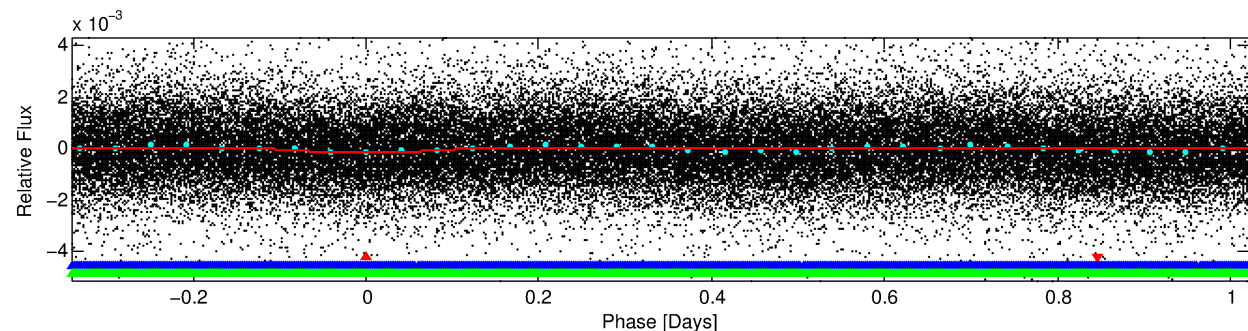
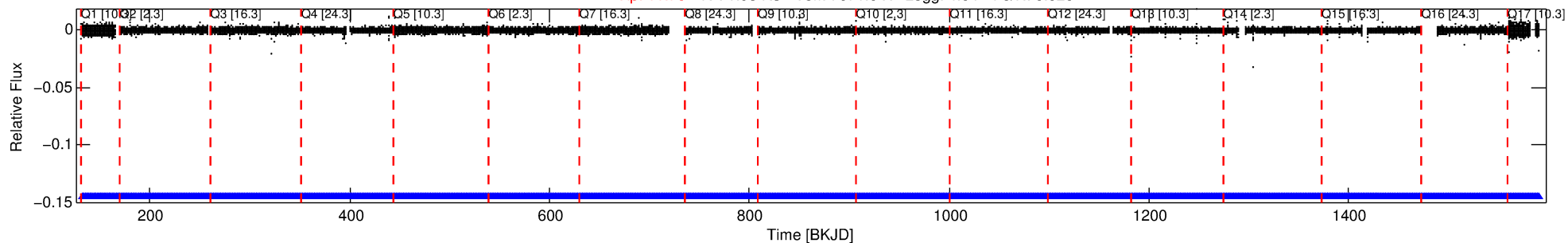
Ephemeris Match Information For 002583153-01

No Significant Match Found

# DV One-Page Summary

KIC: 2583153 Candidate: 1 of 3 Period: 1.363 d

Kp: 11.70 R\*: 1.98 Rs Teff: 7071.0 K Logg: 4.04 Fe/H: 0.020



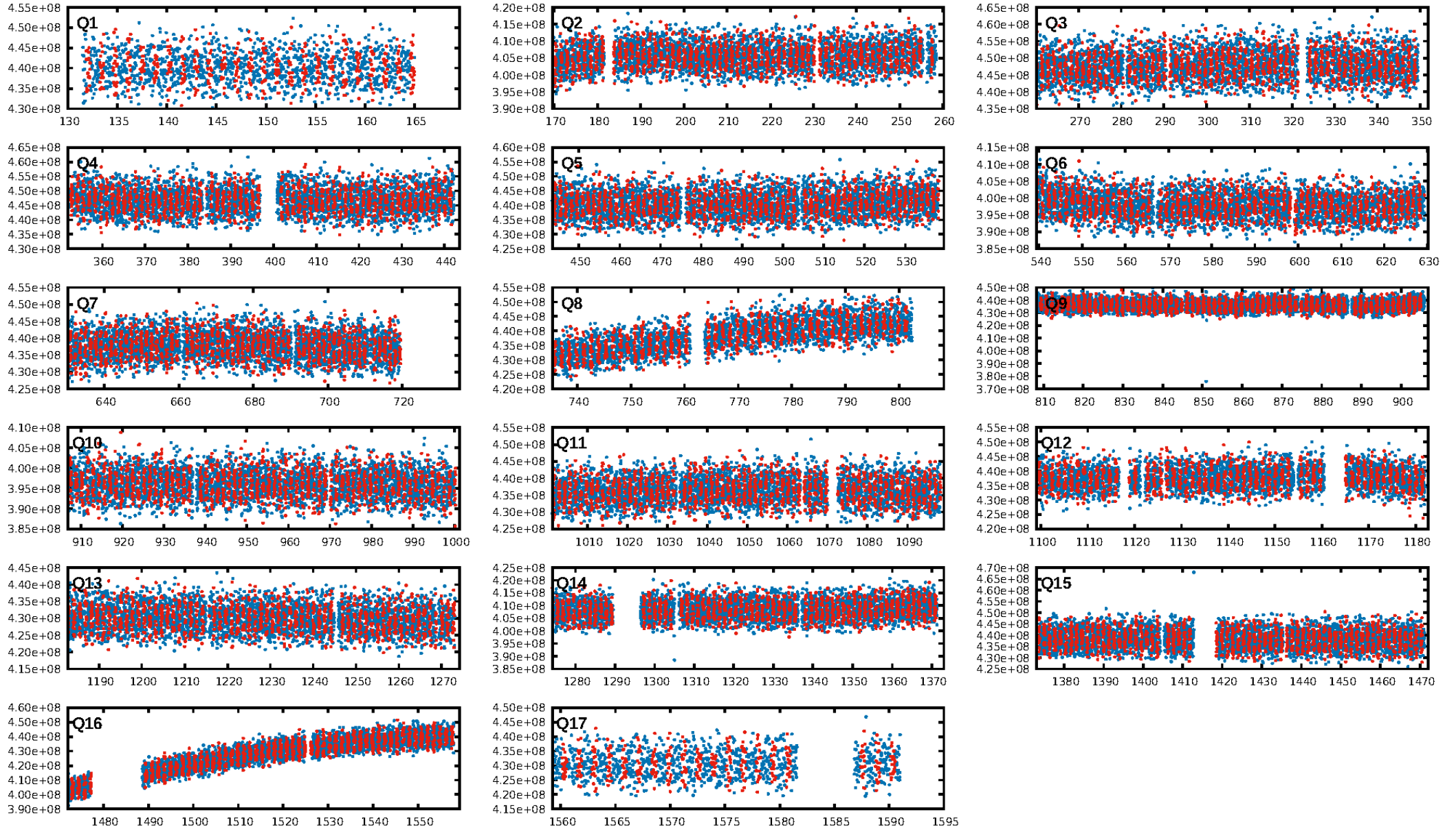
## DV Fit Results:

Period = 1.36287 [0.00002] d  
Epoch = 132.0525 [0.0075] BKJD  
Rp/R\* = 0.0104 [0.0044]  
a/R\* = 1.33 [1.50]  
b = 0.90 [0.52]  
Seff = 11206.42 [4379.35]  
Teq = 2624 [256] K  
Rp = 2.26 [1.17] Re  
a = 0.0280 [0.0069] AU  
Ag = 2.69 [3.62] [0.47σ]  
Teffp = 5196 [1703] K [1.49σ]

## DV Diagnostic Results:

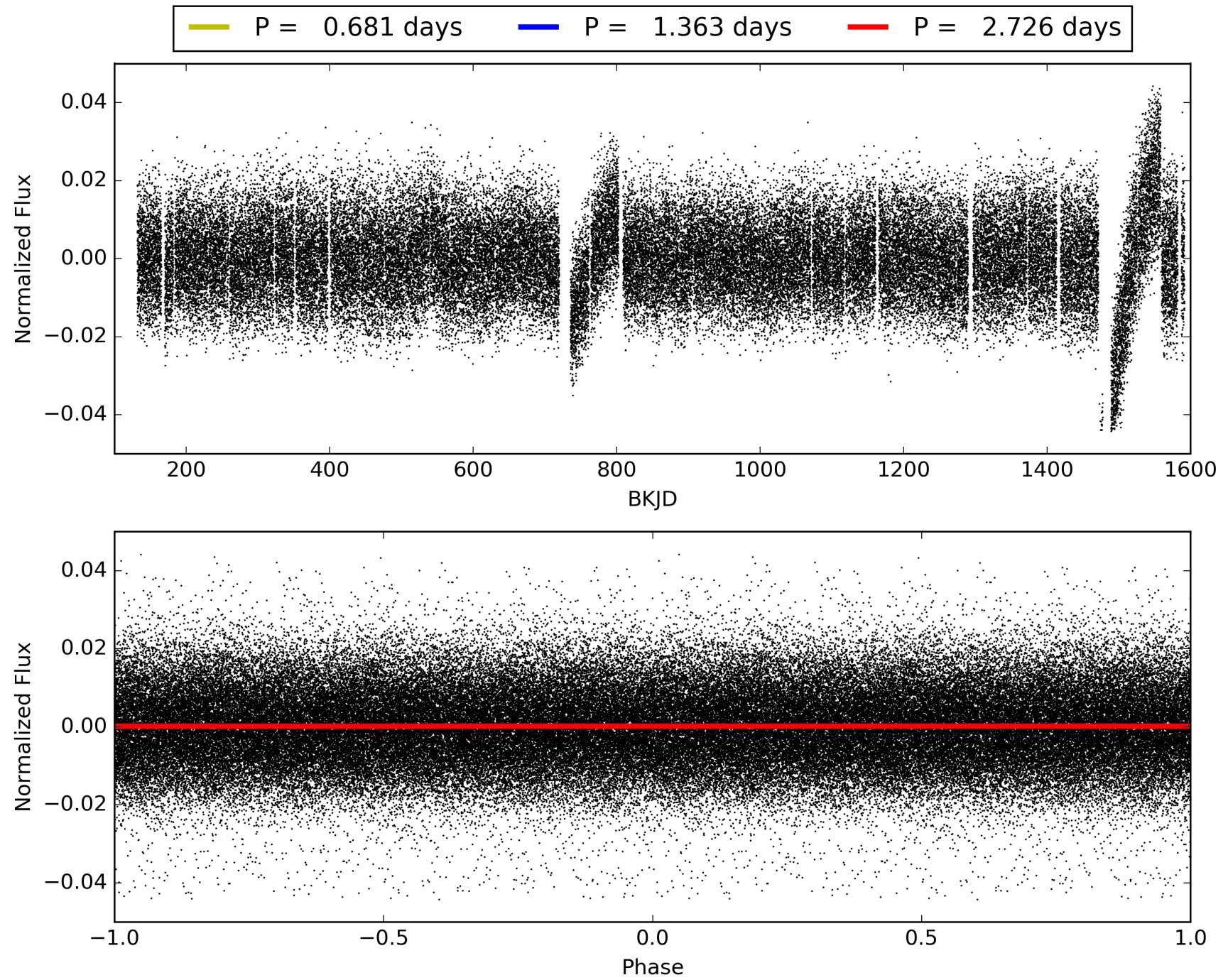
ShortPeriod-sig: 99.9% [3.25σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [943/943]  
GhostDiagnostic-chr: 1.187  
Centroid-sig: 35.2%  
Centroid-so: 0.103 arcsec [0.68σ]  
OotOffset-rm: 0.075 arcsec [0.46σ]  
KicOffset-rm: 0.102 arcsec [0.59σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.82 [14/17]  
DiffImageOverlap-fno: 0.00 [0/17]

# TCE 002583153-01, PDC Light Curves





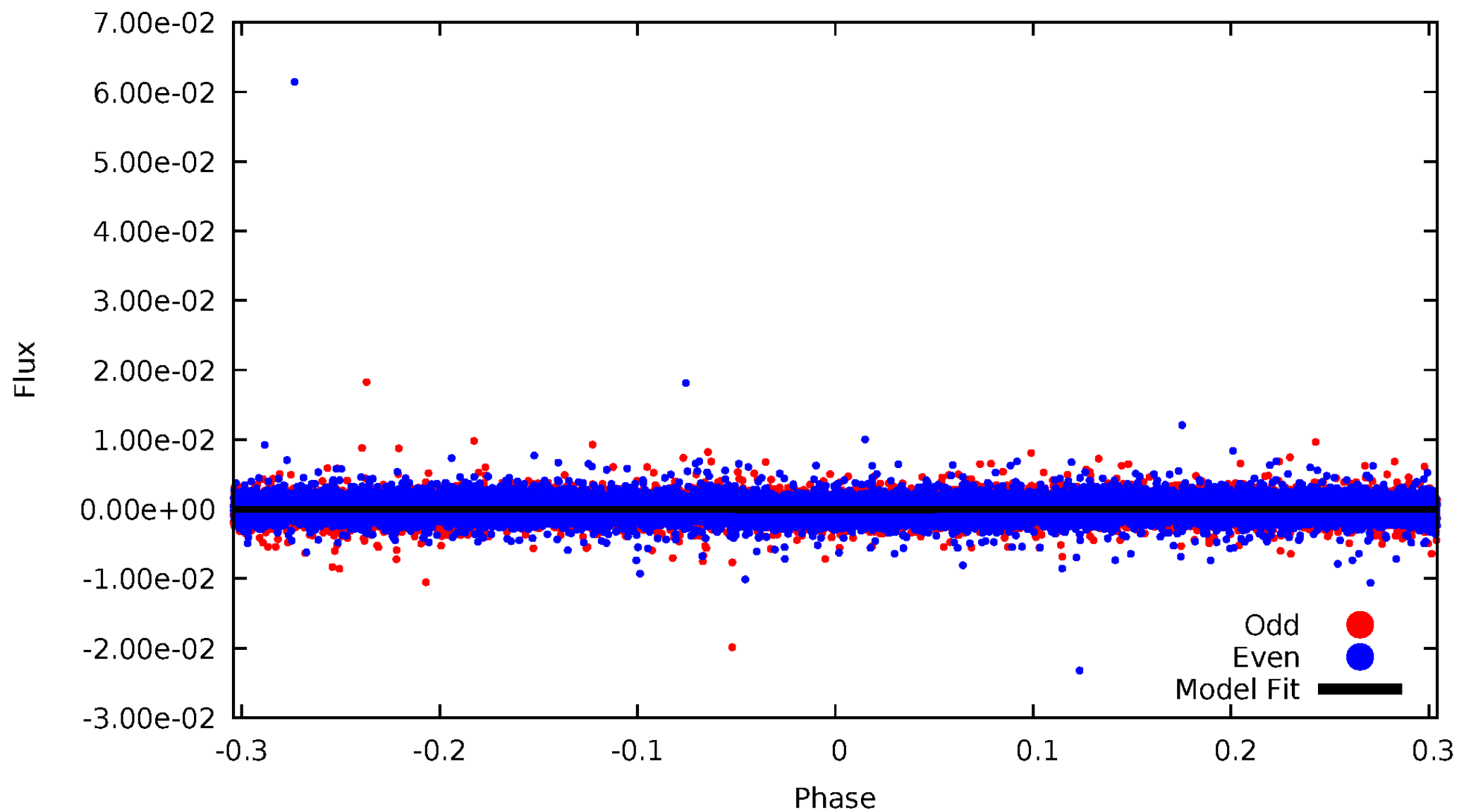
TCE 002583153-01





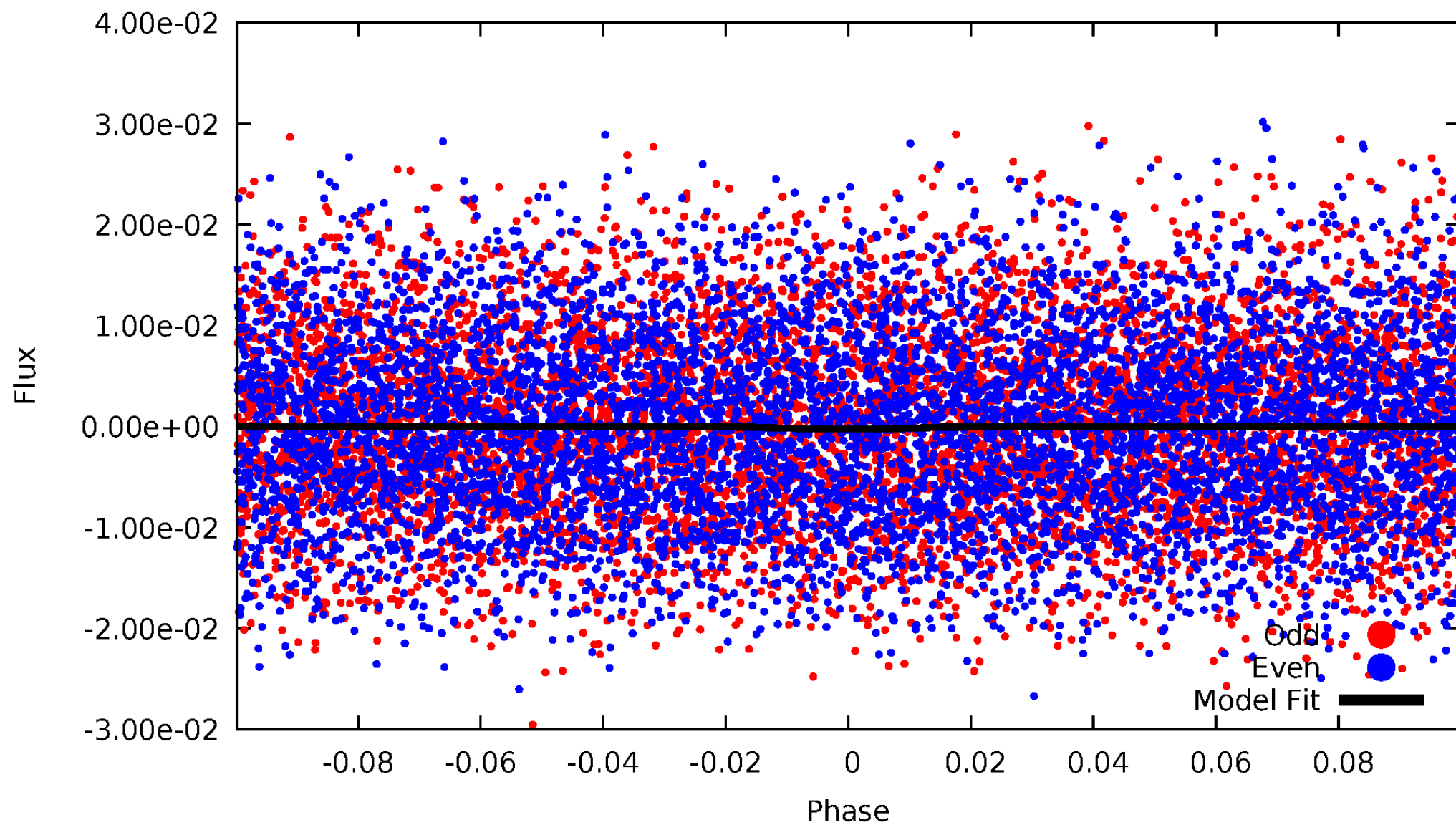
# DV Odd/Even

TCE 002583153-01

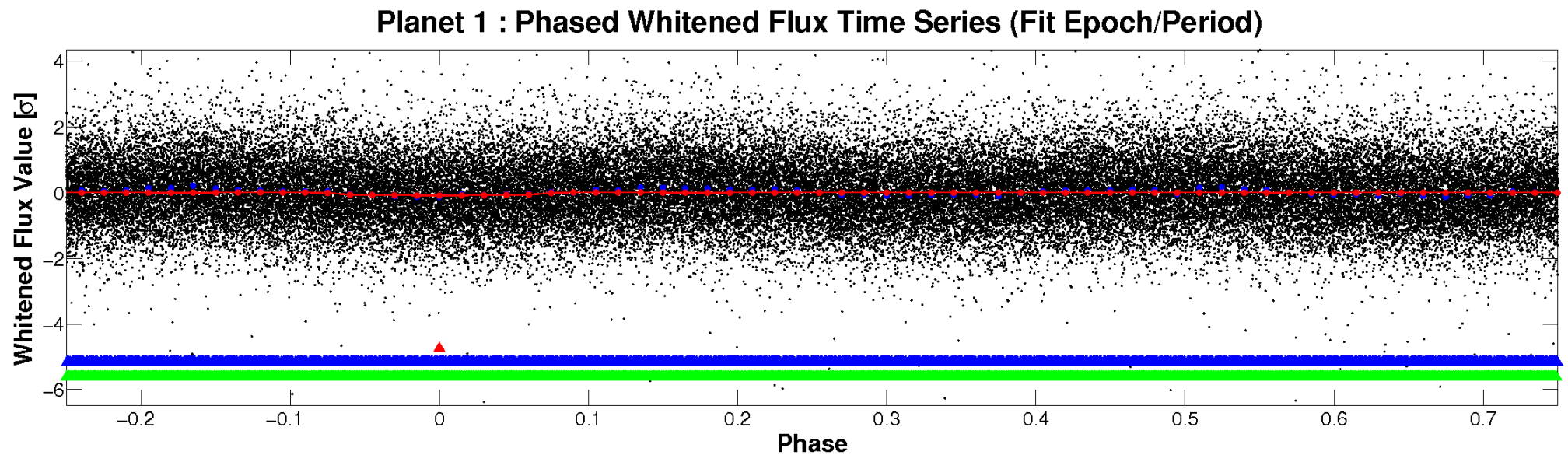
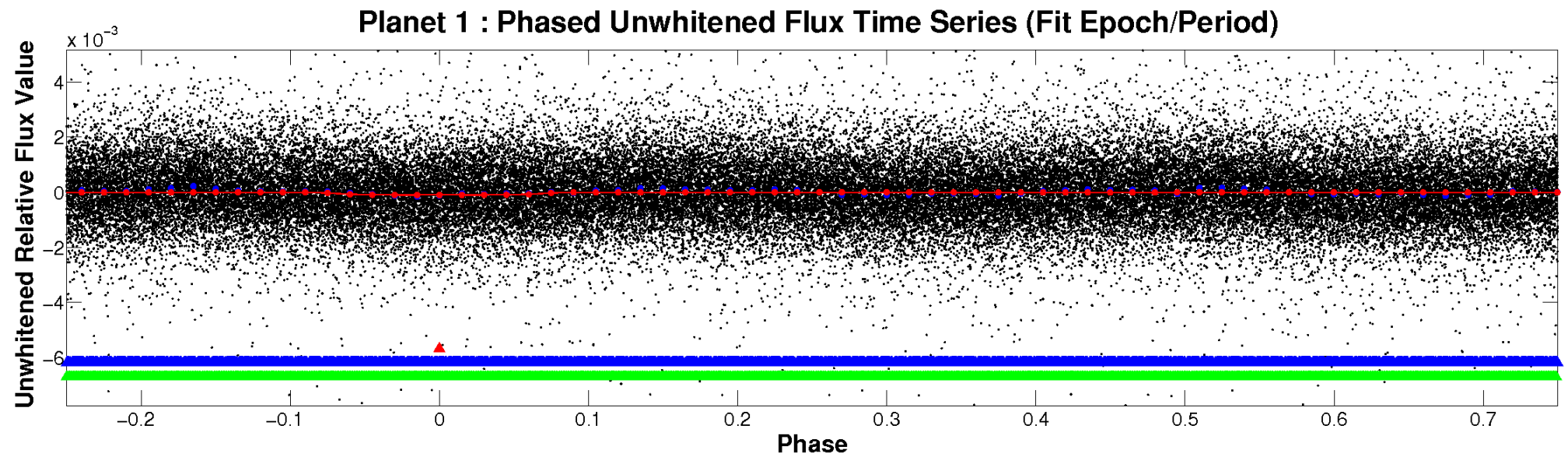


# ALT Odd/Even

TCE 002583153-01



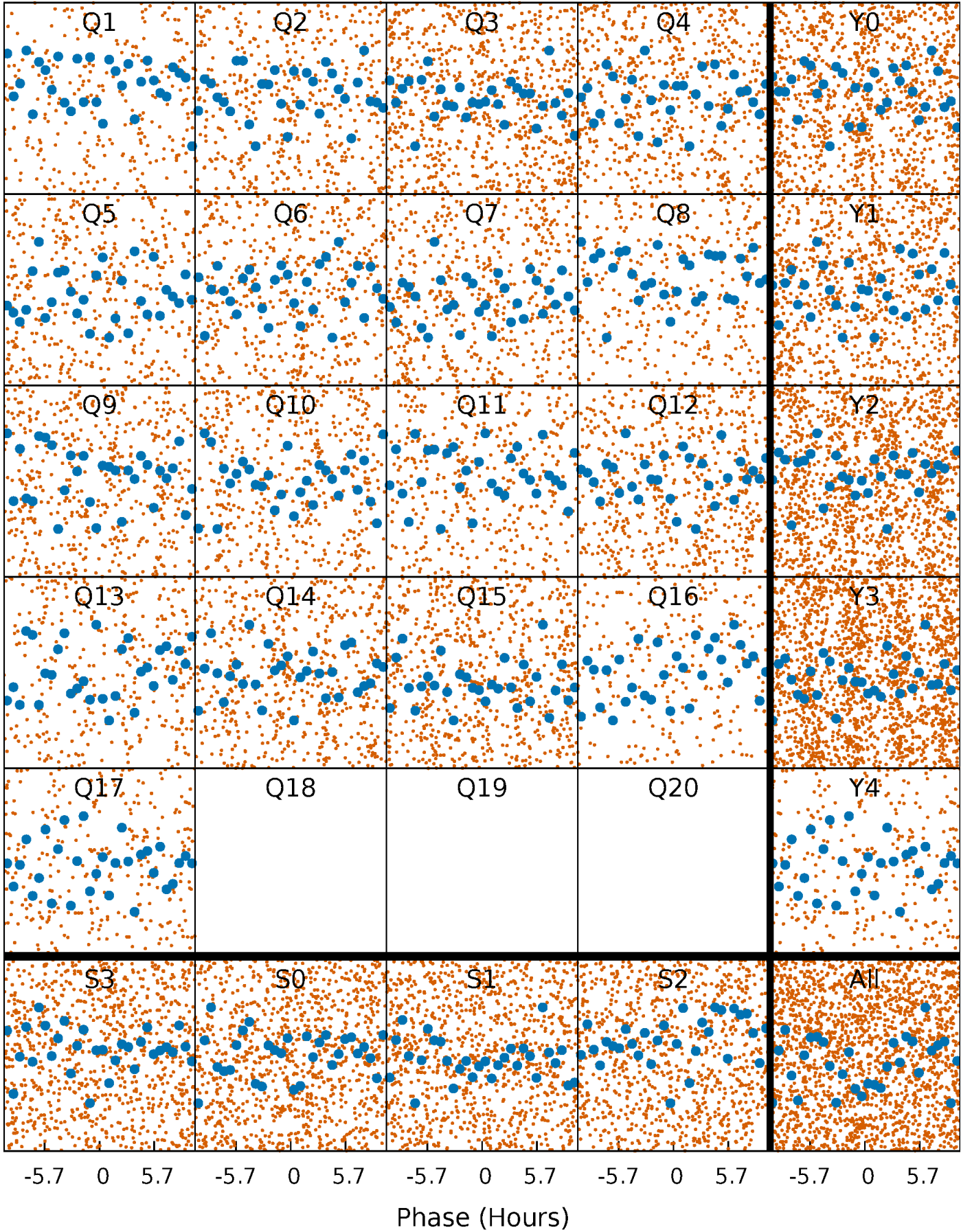
# Non-Whitened Vs. Whitened Light Curve





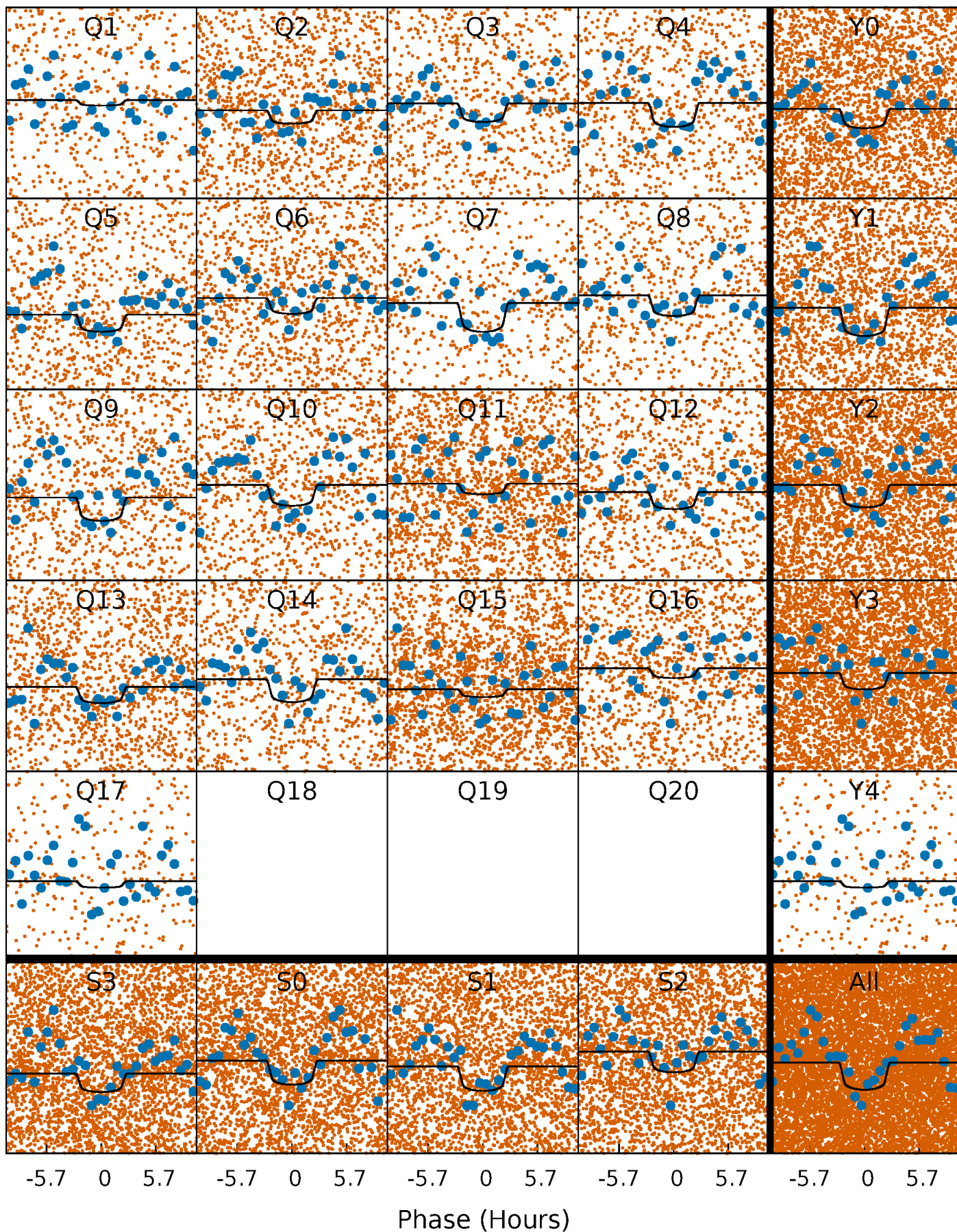
# PDC Quarter-Phased Transit Curves

TCE 002583153-01   P= 1.362873 Days    $T_0=132.052529$  (BKJD)



# DV Quarter-Phased Transit Curves

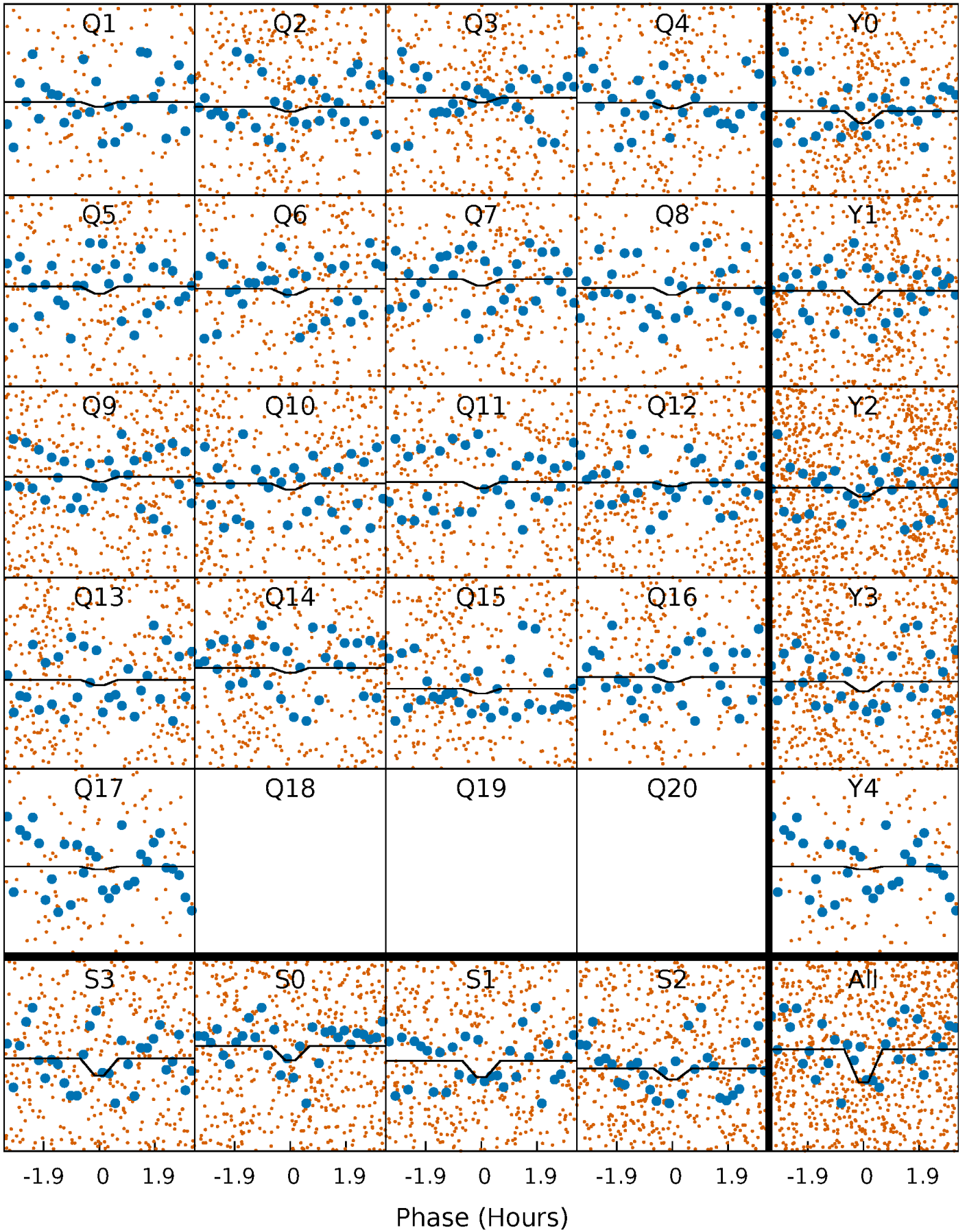
TCE 002583153-01 P= 1.362873 Days  $T_0=132.052529$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 002583153-01 P= 1.362909 Days  $T_0=132.042267$  (BKJD)

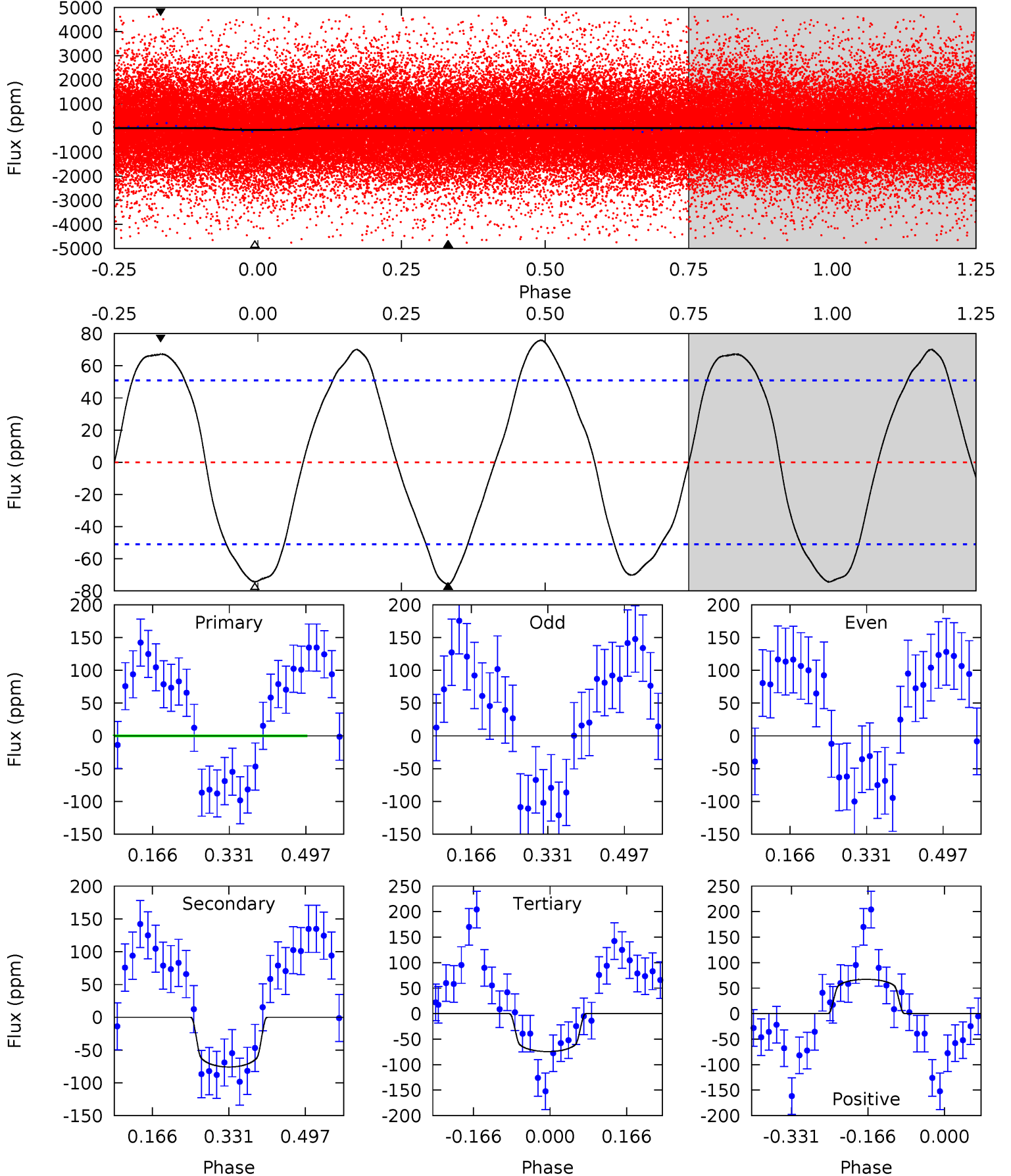




# DV Model-Shift Uniqueness Test

002583153-01, P = 1.362873 Days, E = 130.689656 Days

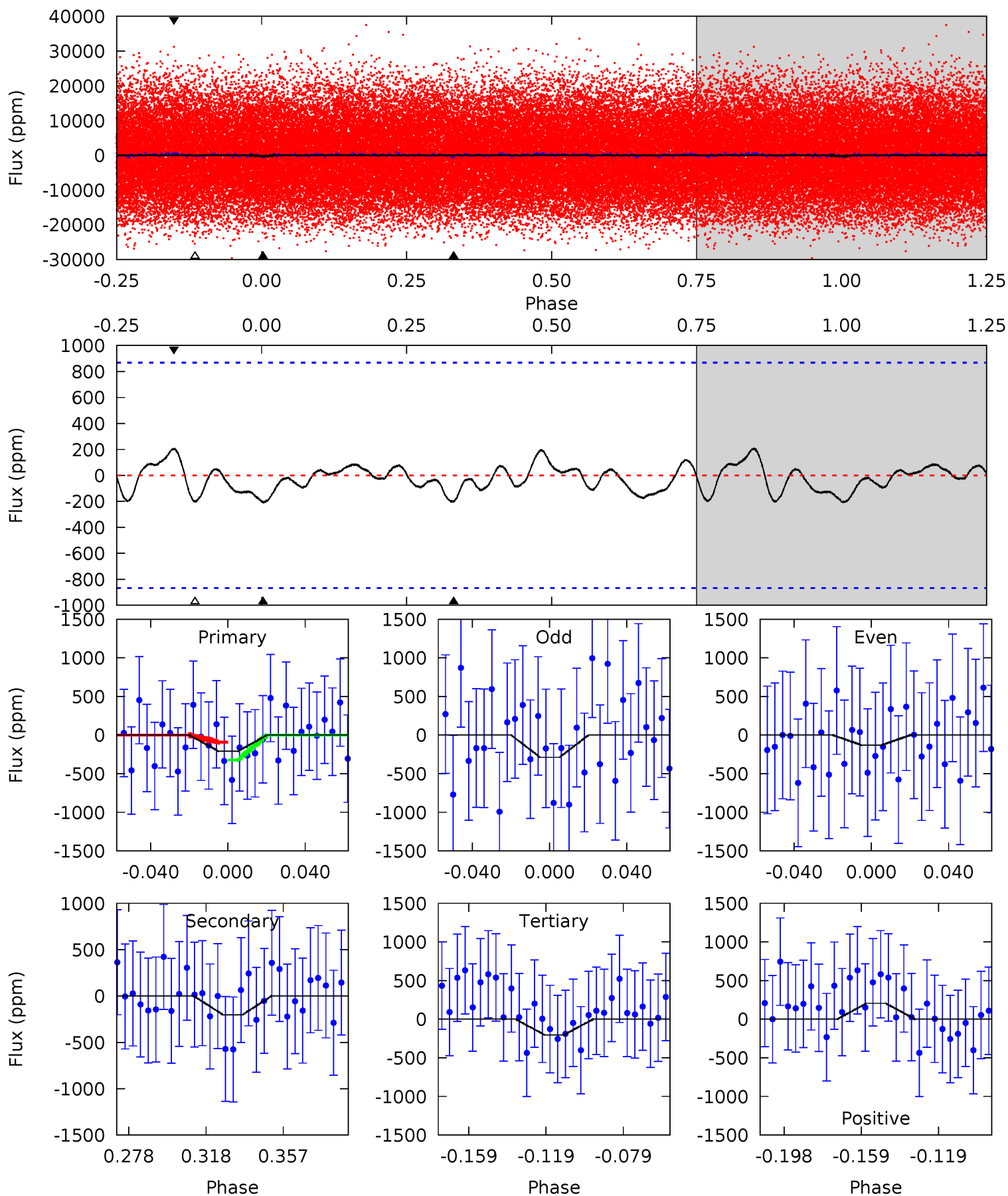
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.64	6.63	6.50	5.88	4.46	1.39	4.48	0.13	0.76	0.13	0.76	1.90	1.05	0.50	1.54



# Alt Model-Shift Uniqueness Test

002583153-01, P = 1.362909 Days, E = 130.679358 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
1.15	1.11	1.11	1.13	4.75	2.06	0.49	0.04	0.02	0.00	-0.01	0.43	0.45	0.50	0.63



### Stellar Parameters For KIC 002583153

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7071^{+225}_{-310}$	$4.042^{+0.185}_{-0.167}$	$0.020^{+0.200}_{-0.300}$	$1.981^{+0.604}_{-0.494}$	$1.578^{+0.220}_{-0.244}$	$0.286^{+0.283}_{-0.142}$
	+3%/-4%	+5%/-4%	+1000%/-1500%	+30%/-25%	+14%/-15%	+99%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 002583153-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-76 \pm 11$	$2.19^{+1.03}_{-0.93}$	$3646^{+273}_{-246}$	$6397^{+2468}_{-1134}$	$6.843^{+13.905}_{-3.743}$
Alt.	$-203 \pm 182$	$3.42^{+1.10}_{-1.02}$	$3620^{+312}_{-246}$	$6421^{+2011}_{-3000}$	$6.829^{+11.834}_{-6.235}$

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



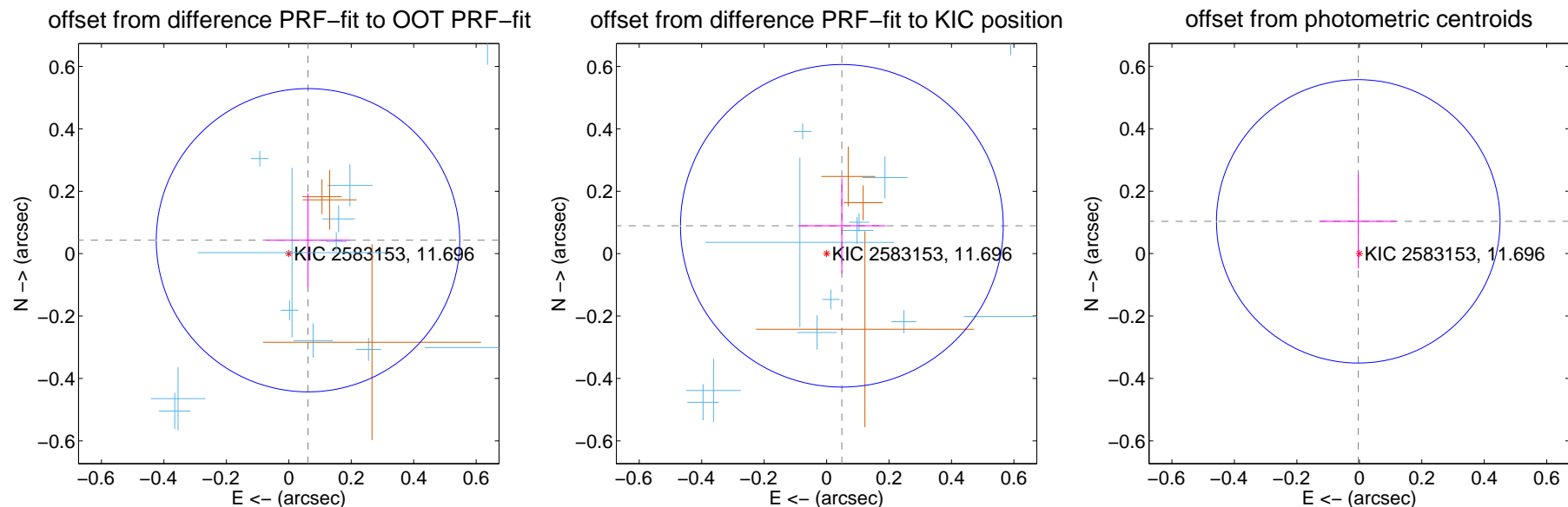
## DV Centroid Data

Supplemental centroid analysis for 002583153-01. **Kepler magnitude: 11.70.** Transit SNR 6.90

There are 14 quarters with good PRF difference image offsets

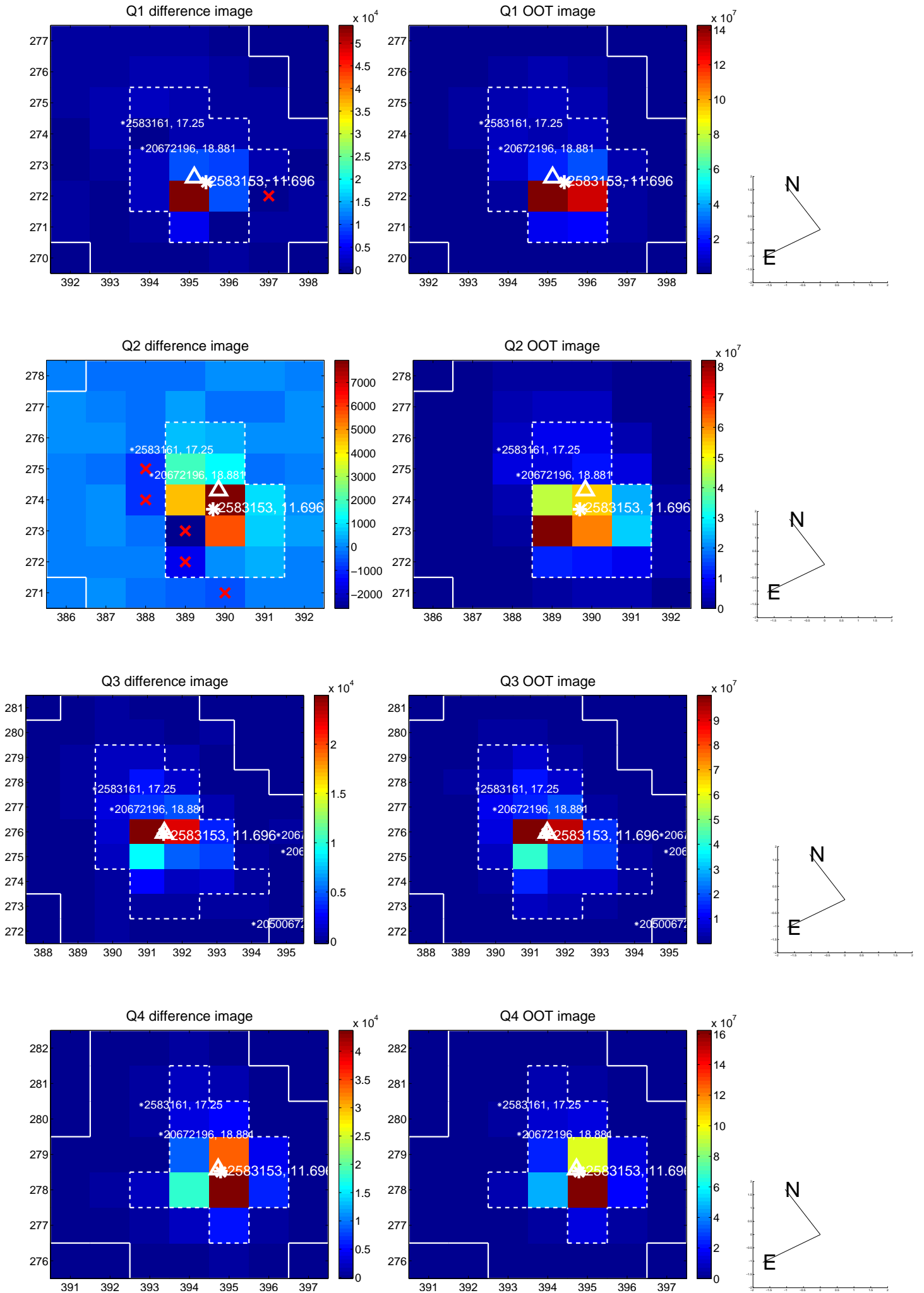
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.075 \pm 0.162$	0.46	$-0.061 \pm 0.133$	$0.043 \pm 0.150$
PRF-fit source offset from KIC position	$0.102 \pm 0.172$	0.59	$-0.049 \pm 0.140$	$0.089 \pm 0.152$
photometric centroid source offset	$0.10 \pm 0.15$	0.68	$0.00 \pm 0.12$	$0.10 \pm 0.15$

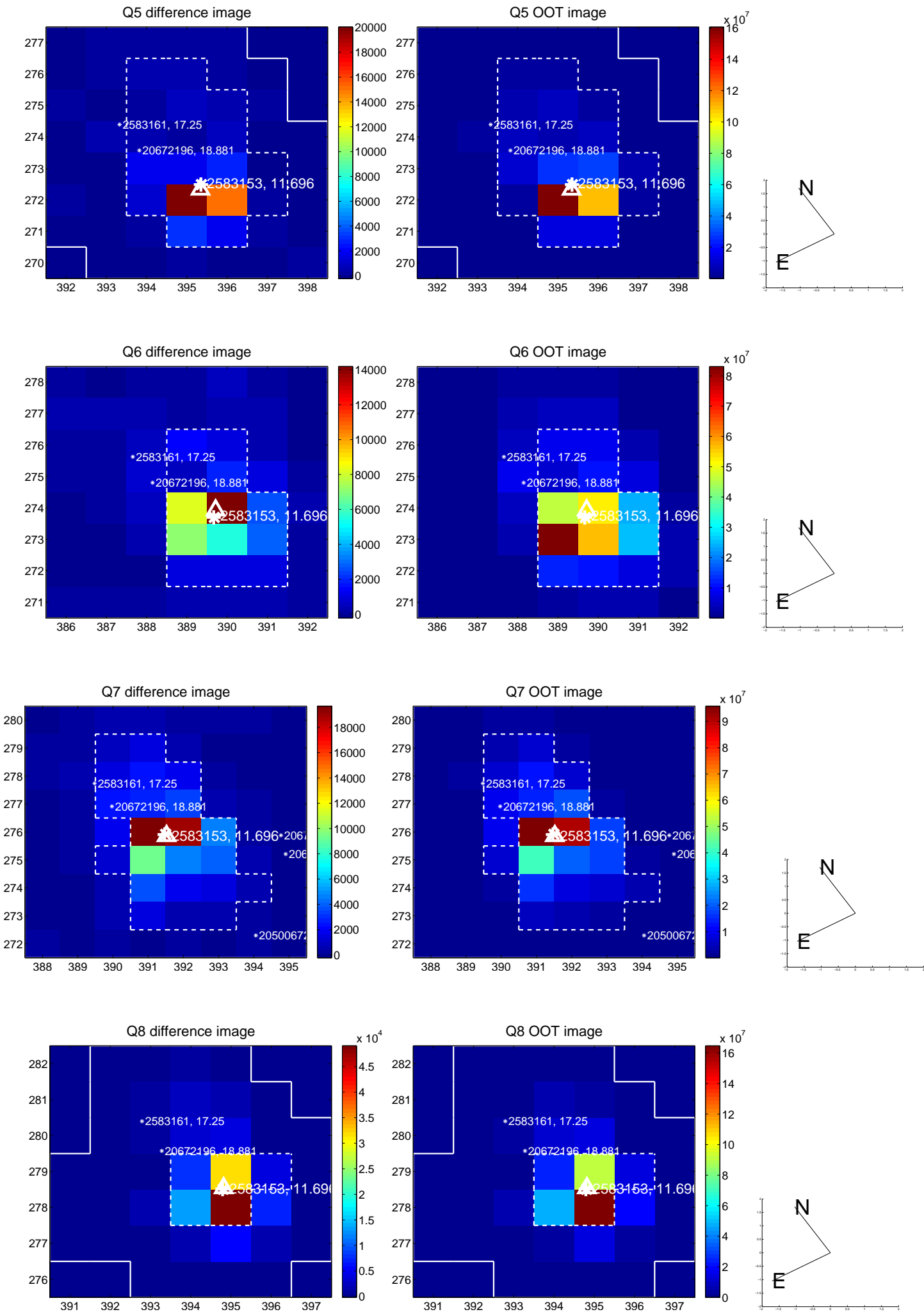


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

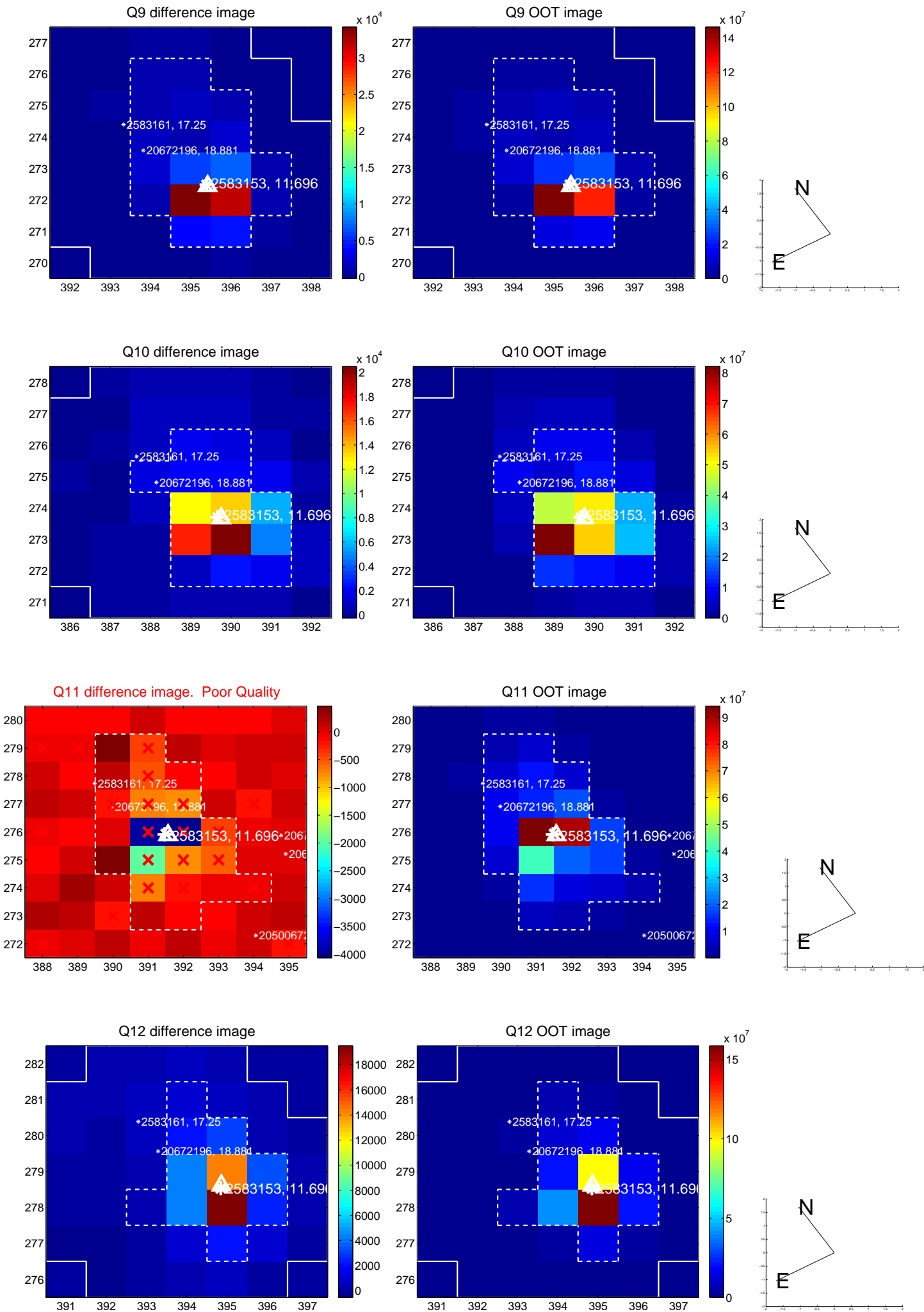
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

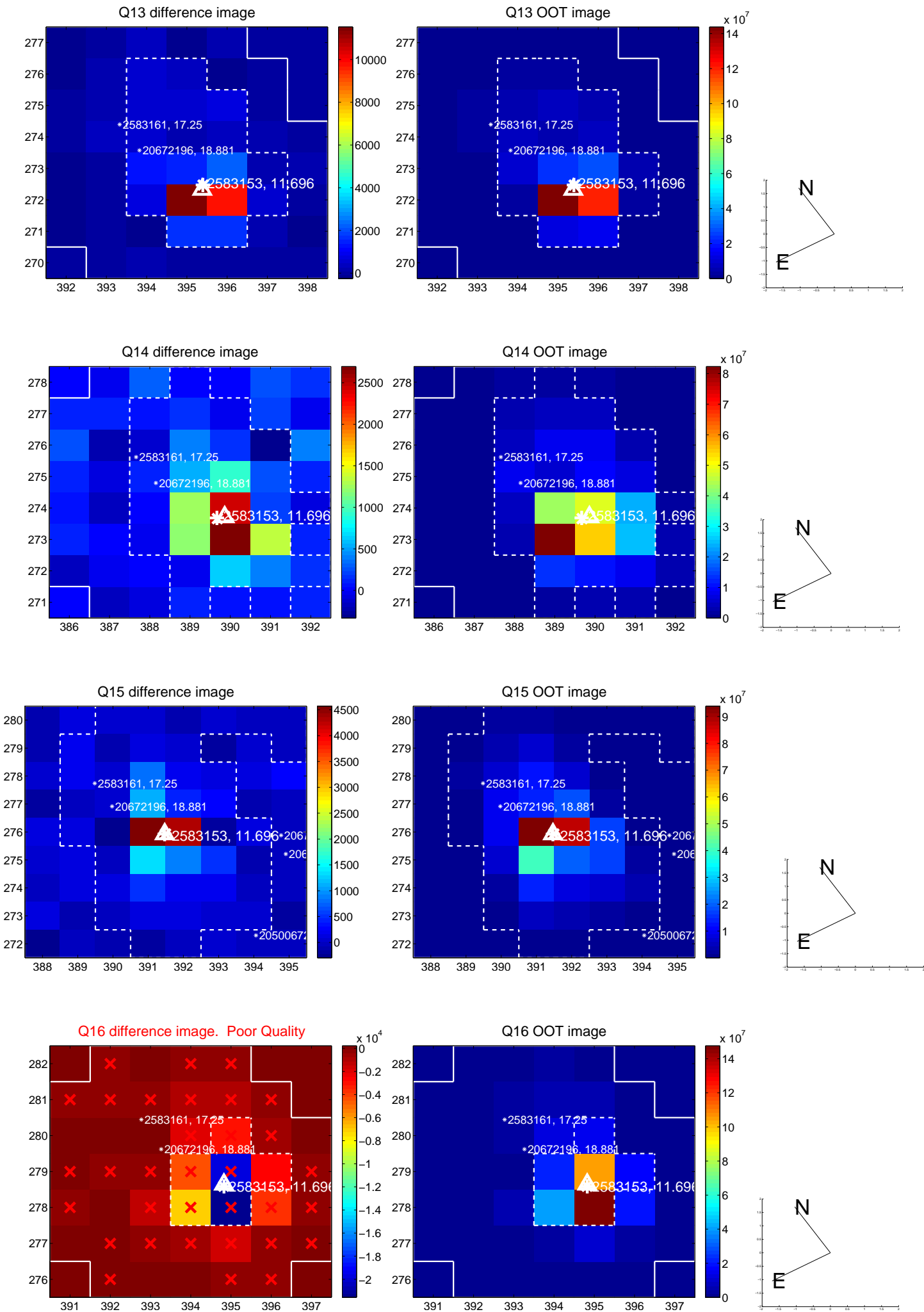


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

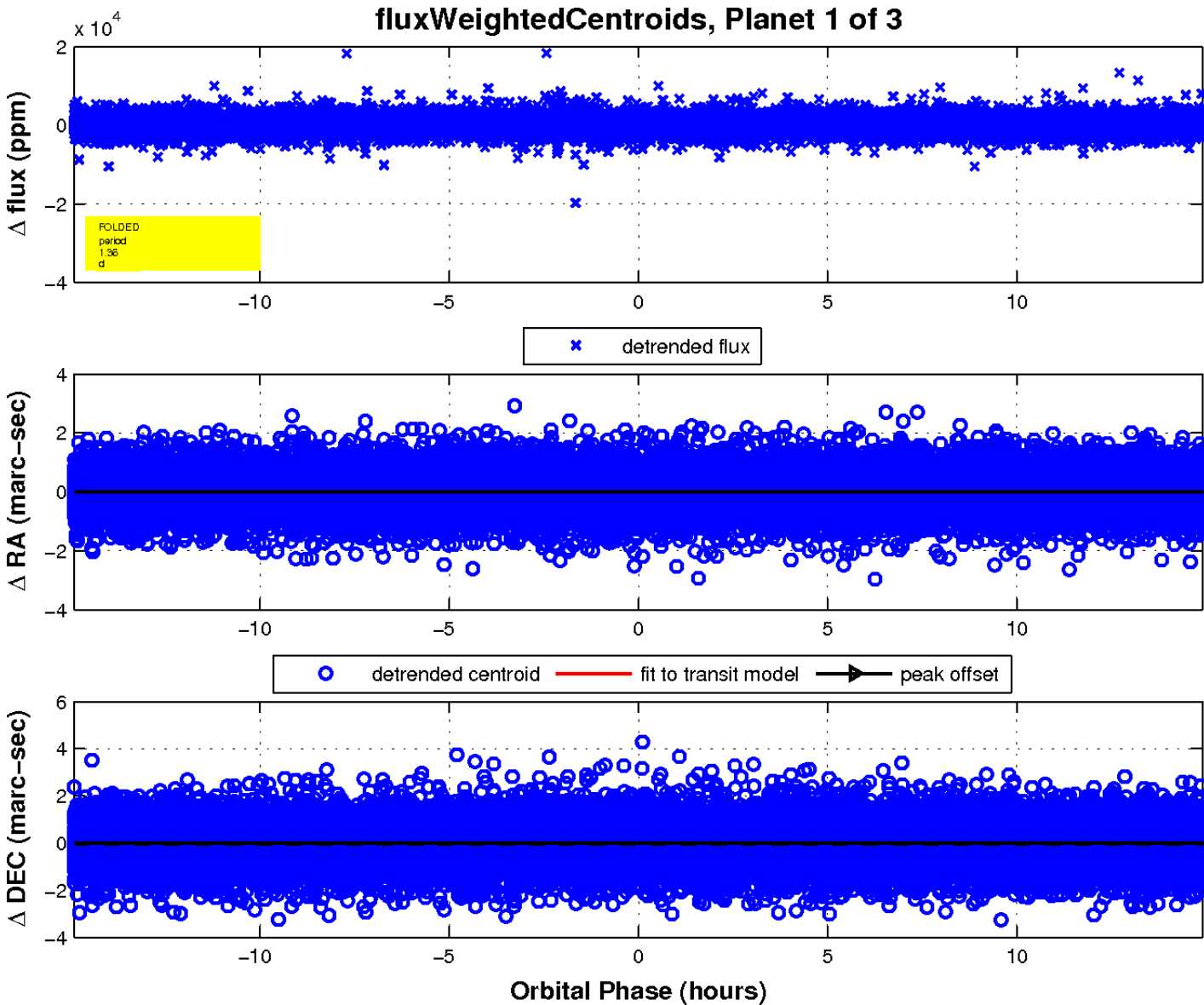
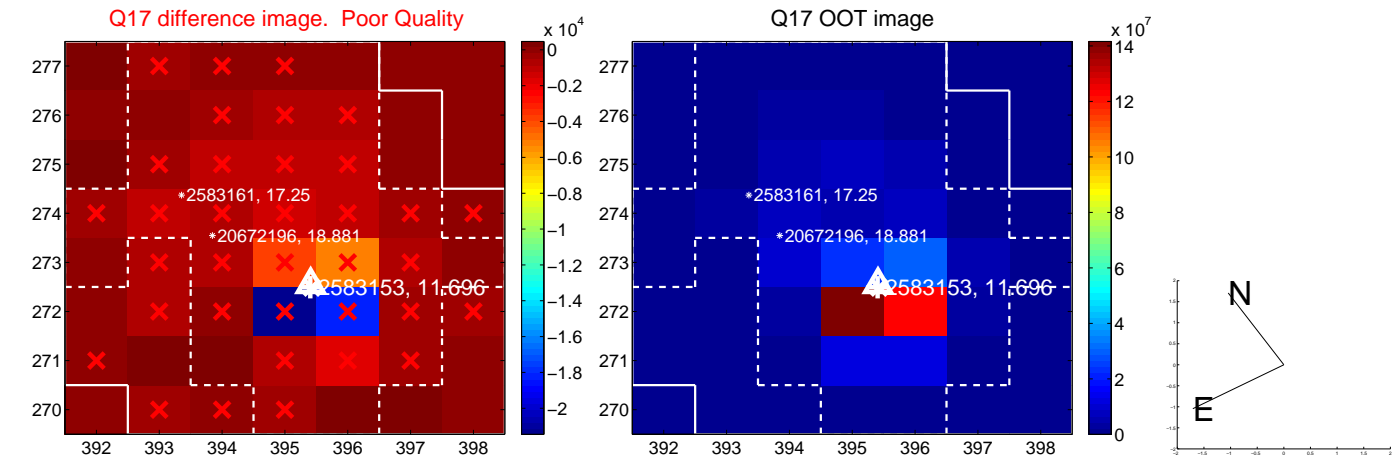




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

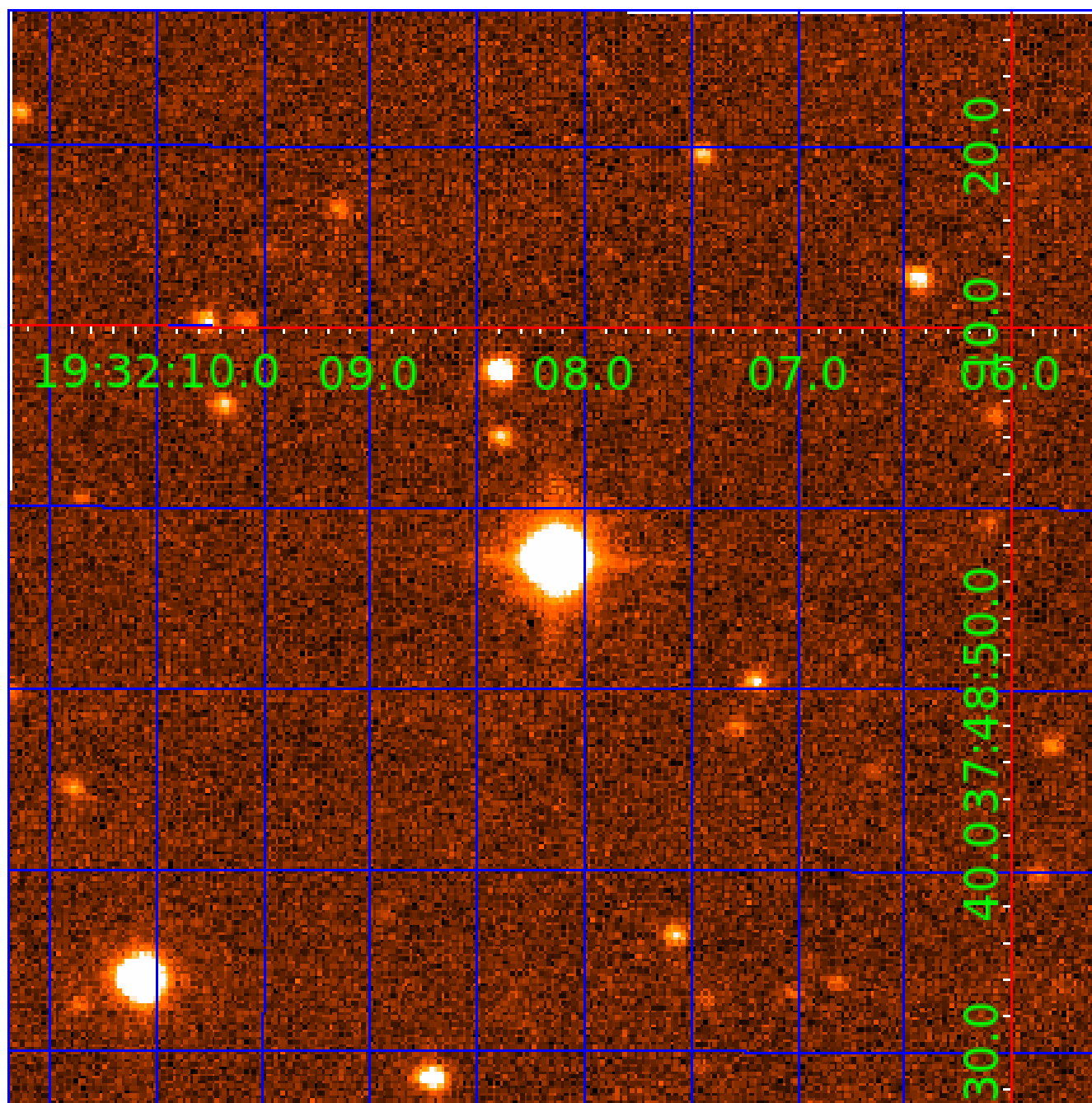


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 002583153

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
002583153-01	OBS	No	1.362873	132.052529	95.8	4.973	7.9	6.9	1.98	7071	2.26	11206.42
002583153-02	OBS	No	0.636861	131.856861	186.5	1.797	9.8	9.7	1.98	7071	3.15	30903.96
002583153-03	OBS	No	0.636877	131.529944	151.1	2.000	10.1	-1.0	1.98	7071	2.47	30902.98

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002583153-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
002583153-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
002583153-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—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 002583153-02

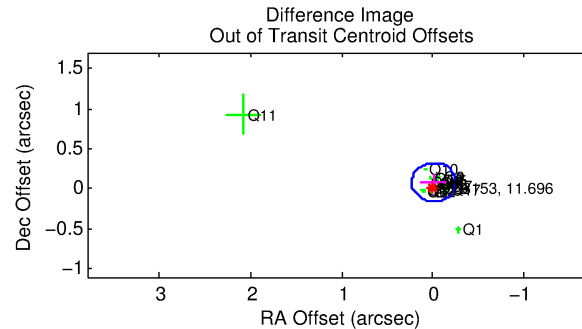
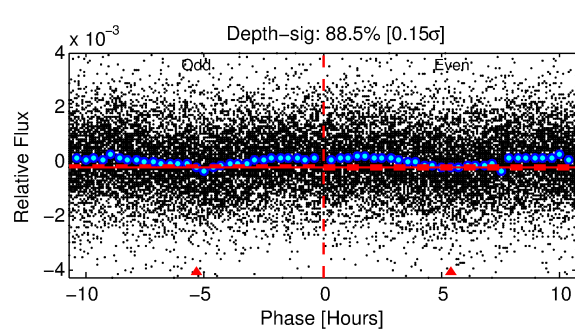
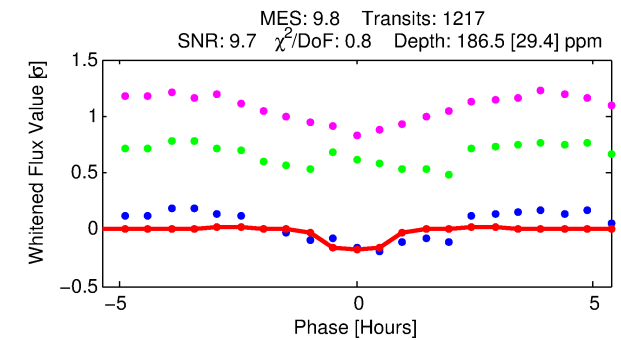
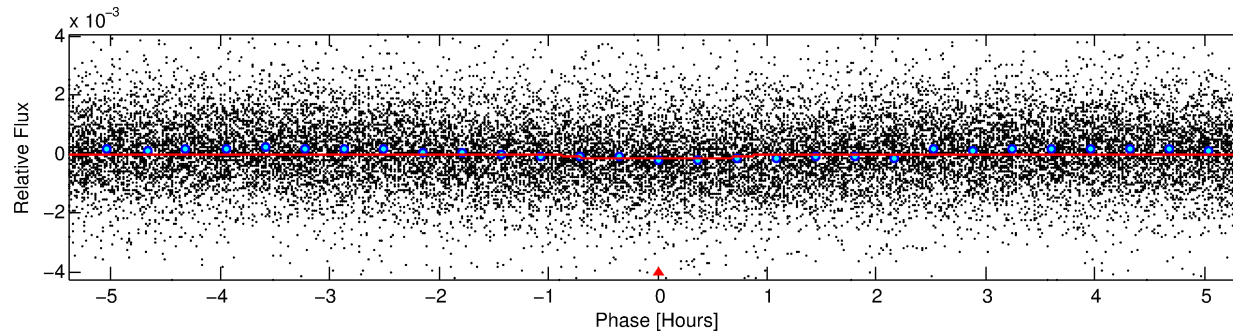
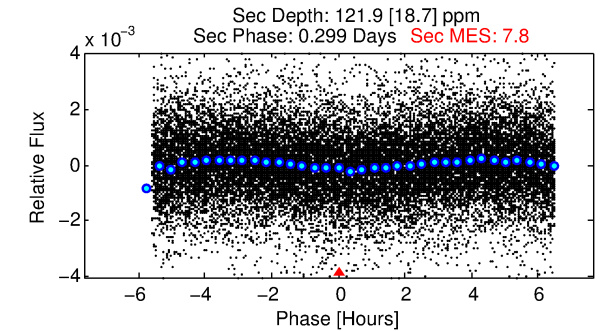
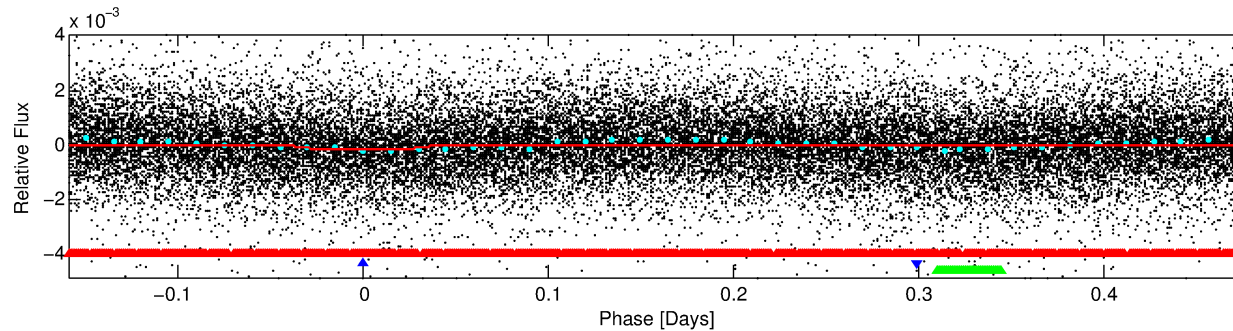
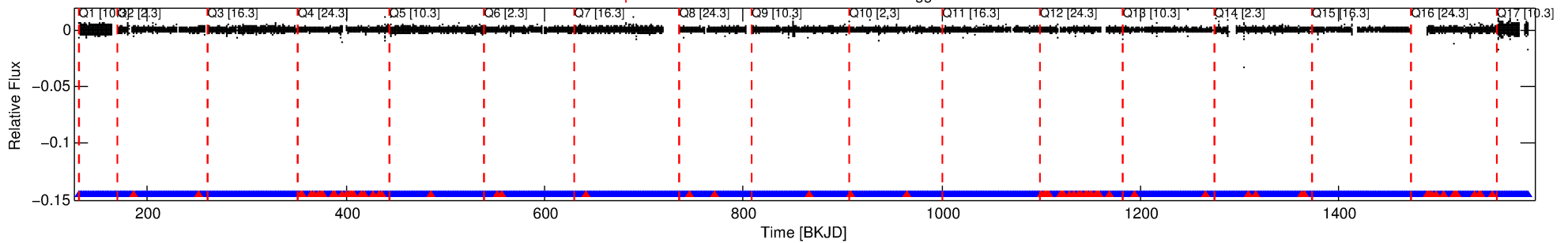
No Significant Match Found



# DV One-Page Summary

KIC: 2583153 Candidate: 2 of 3 Period: 0.637 d

Kp: 11.70 R\*: 1.98 Rs Teff: 7071.0 K Logg: 4.04 Fe/H: 0.020



## DV Fit Results:

Period = 0.63686 [0.00001] d  
Epoch = 131.8569 [0.0027] BKJD  
Rp/R\* = 0.0146 [0.0080]  
a/R\* = 1.58 [3.19]  
b = 0.90 [0.72]  
Seff = 30903.95 [12076.95]  
Teff = 3381 [330] K  
Rp = 3.15 [1.98] Re  
a = 0.0169 [0.0042] AU  
Ag = 1.93 [2.24] [0.41σ]  
Teffp = 6157 [1732] K [1.57σ]

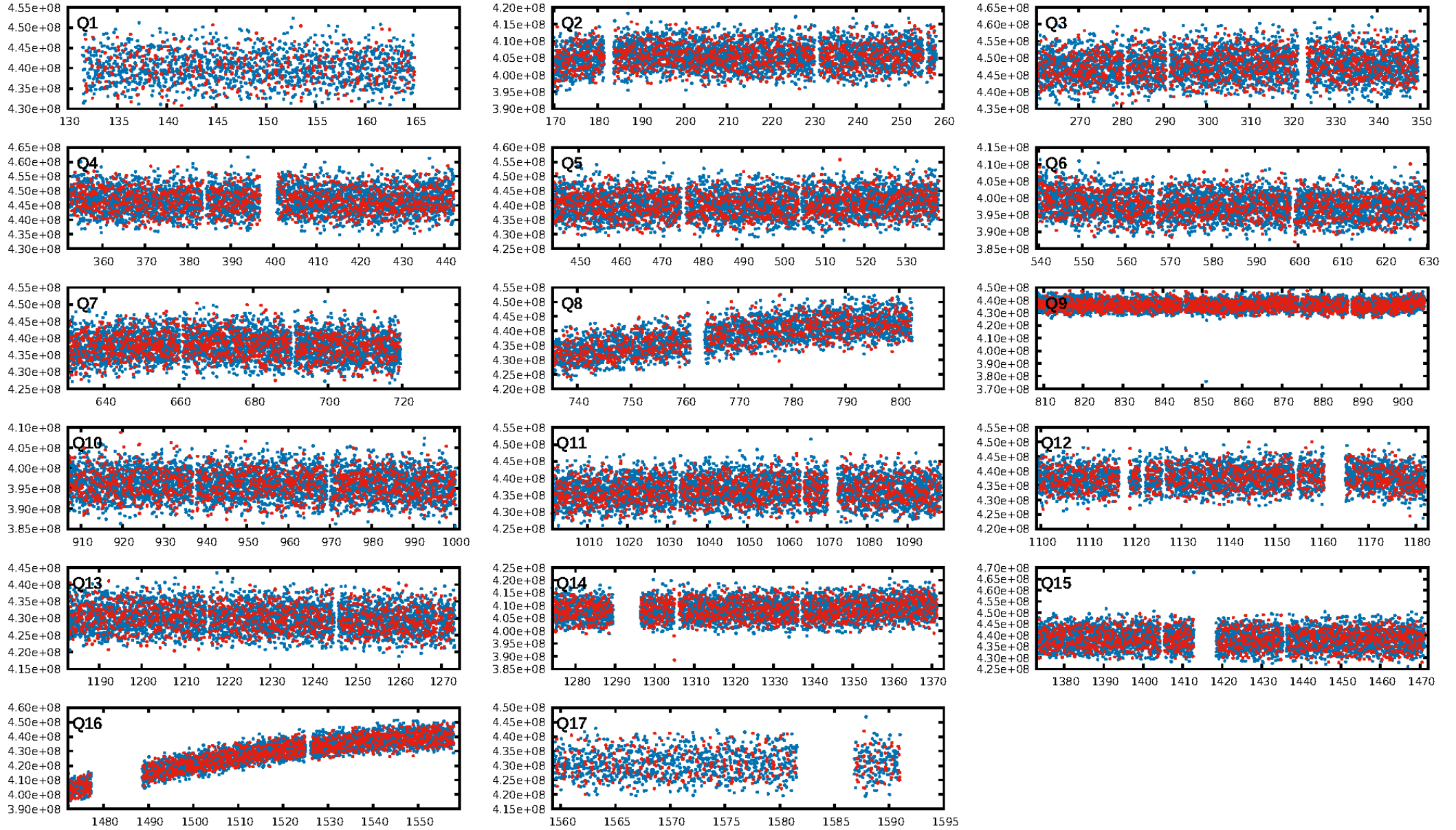
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.94 [1094/1164]  
GhostDiagnostic-chr: 1.324  
Centroid-sig: 0.2%  
Centroid-so: 0.142 arcsec [1.94σ]  
OotOffset-rm: 0.082 arcsec [1.01σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-rm: 0.124 arcsec [1.47σ]  
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DiffImageOverlap-fno: 1.00 [17/17]

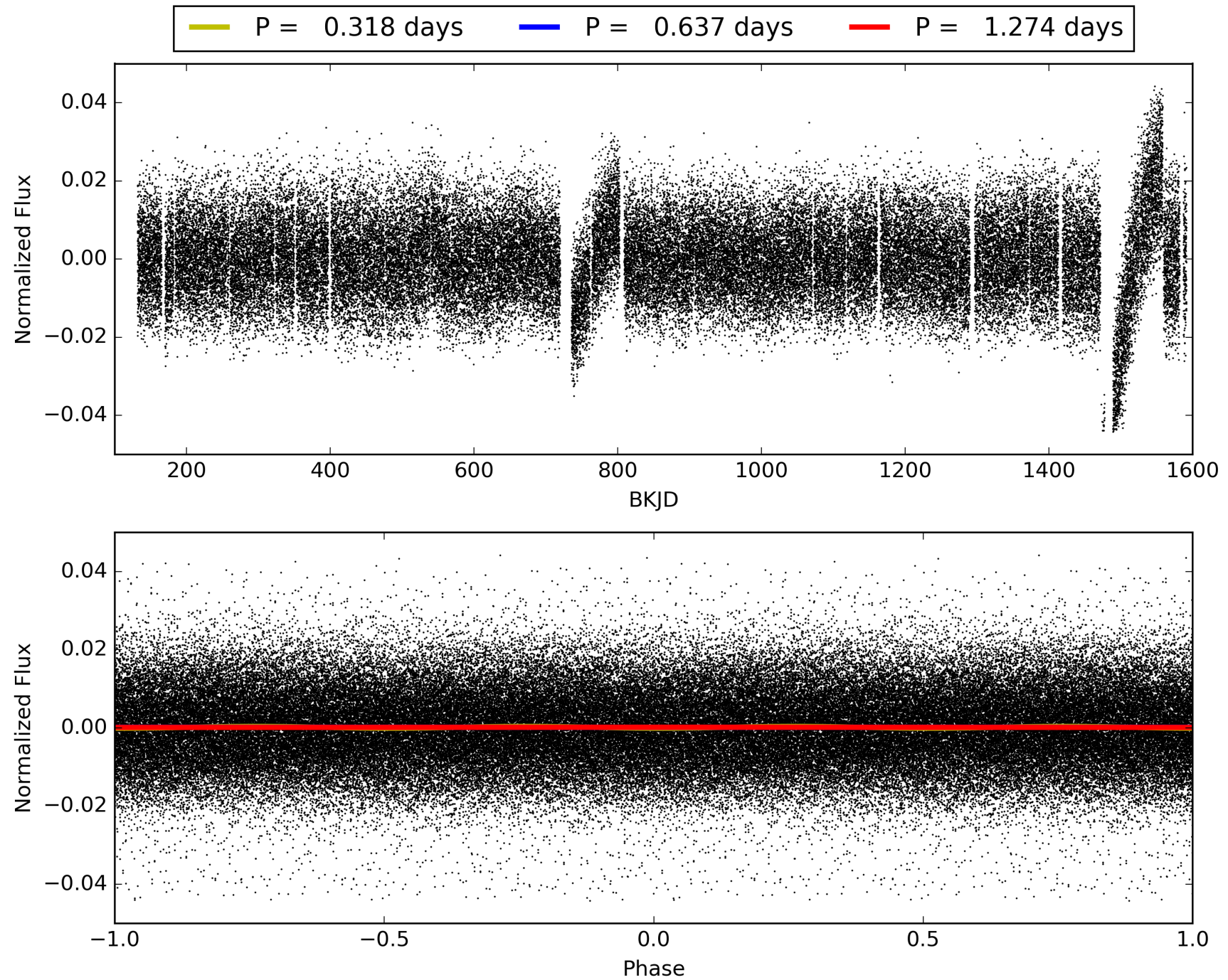
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:13:52 Z

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

# TCE 002583153-02, PDC Light Curves

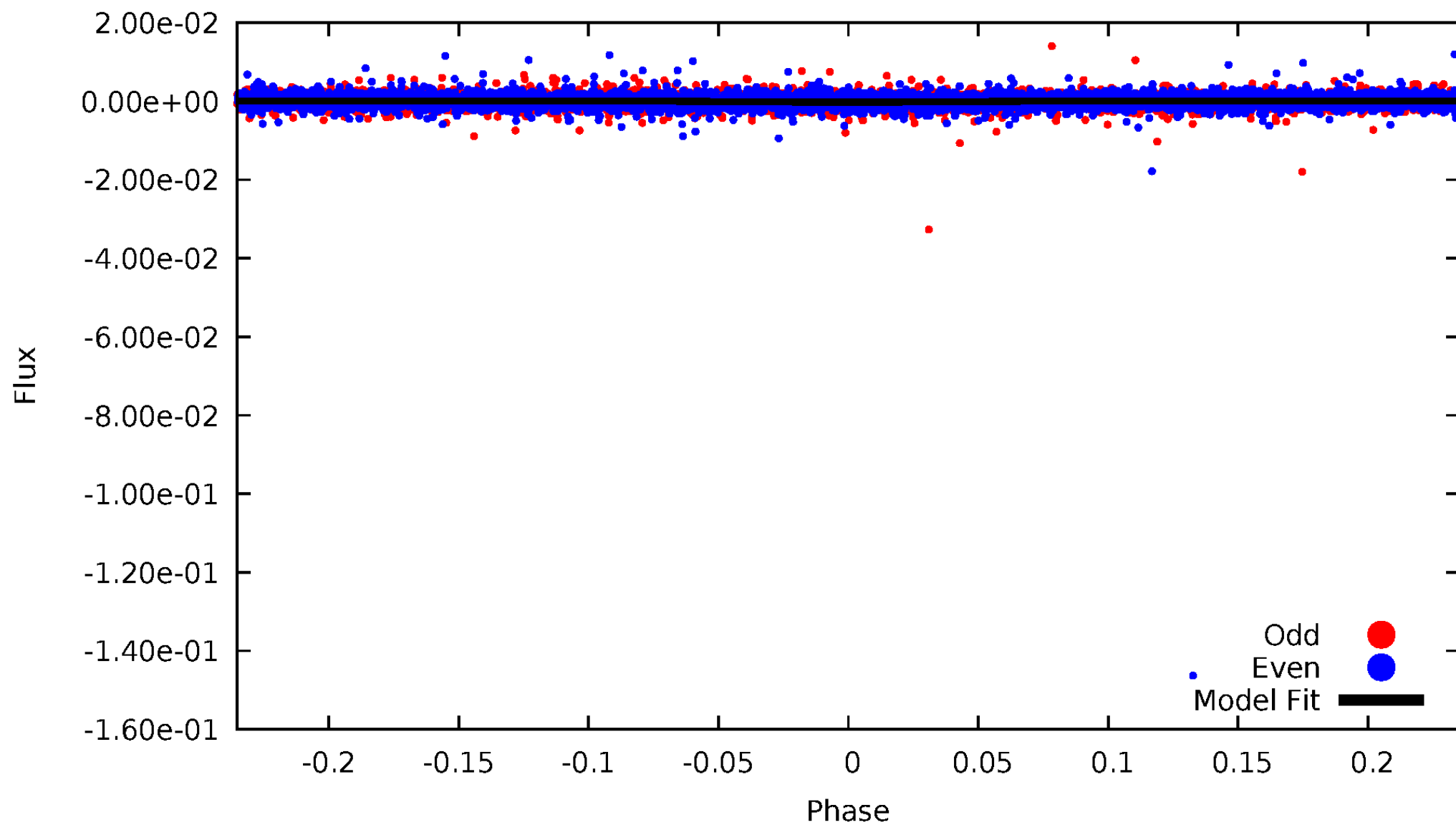


TCE 002583153-02



# DV Odd/Even

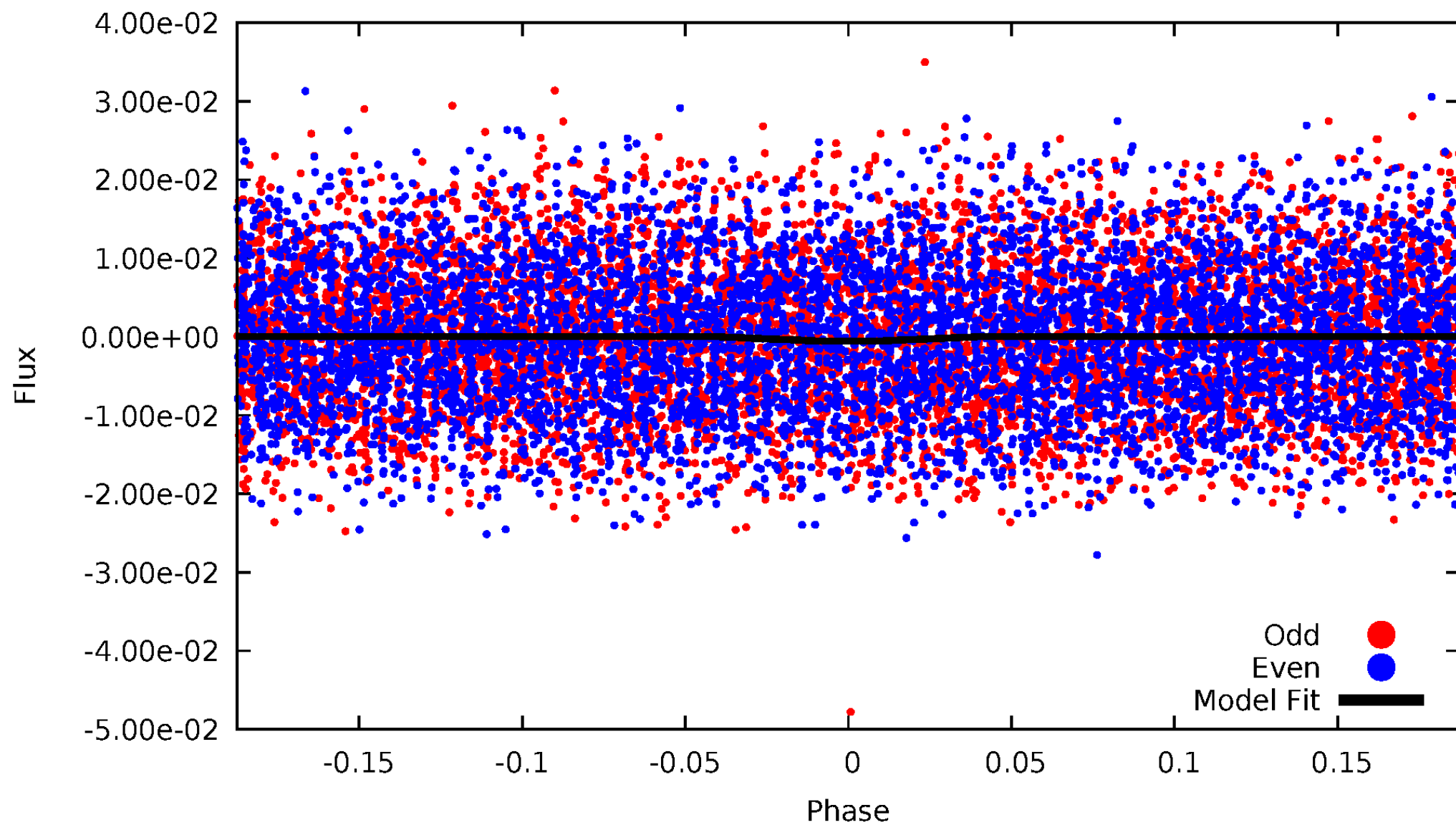
TCE 002583153-02





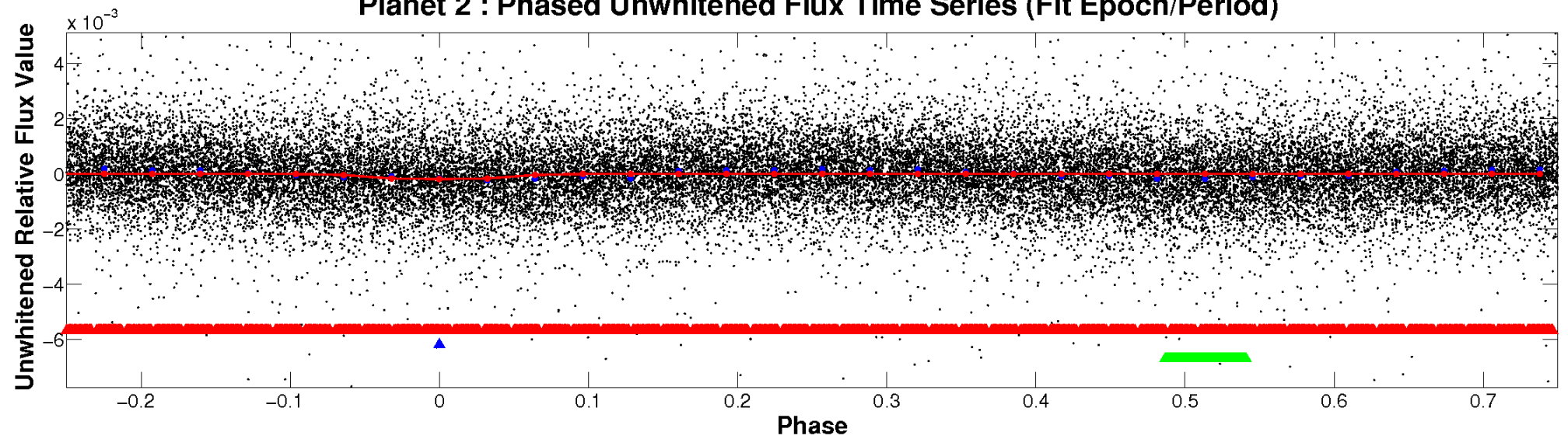
ALT Odd/Even

TCE 002583153-02

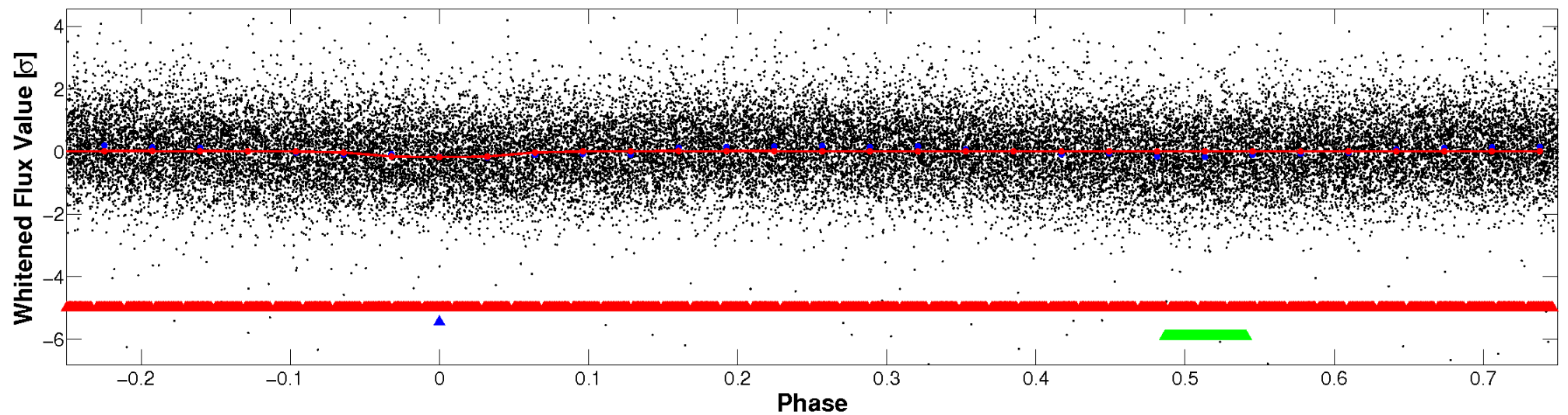


# Non-Whitened Vs. Whitened Light Curve

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

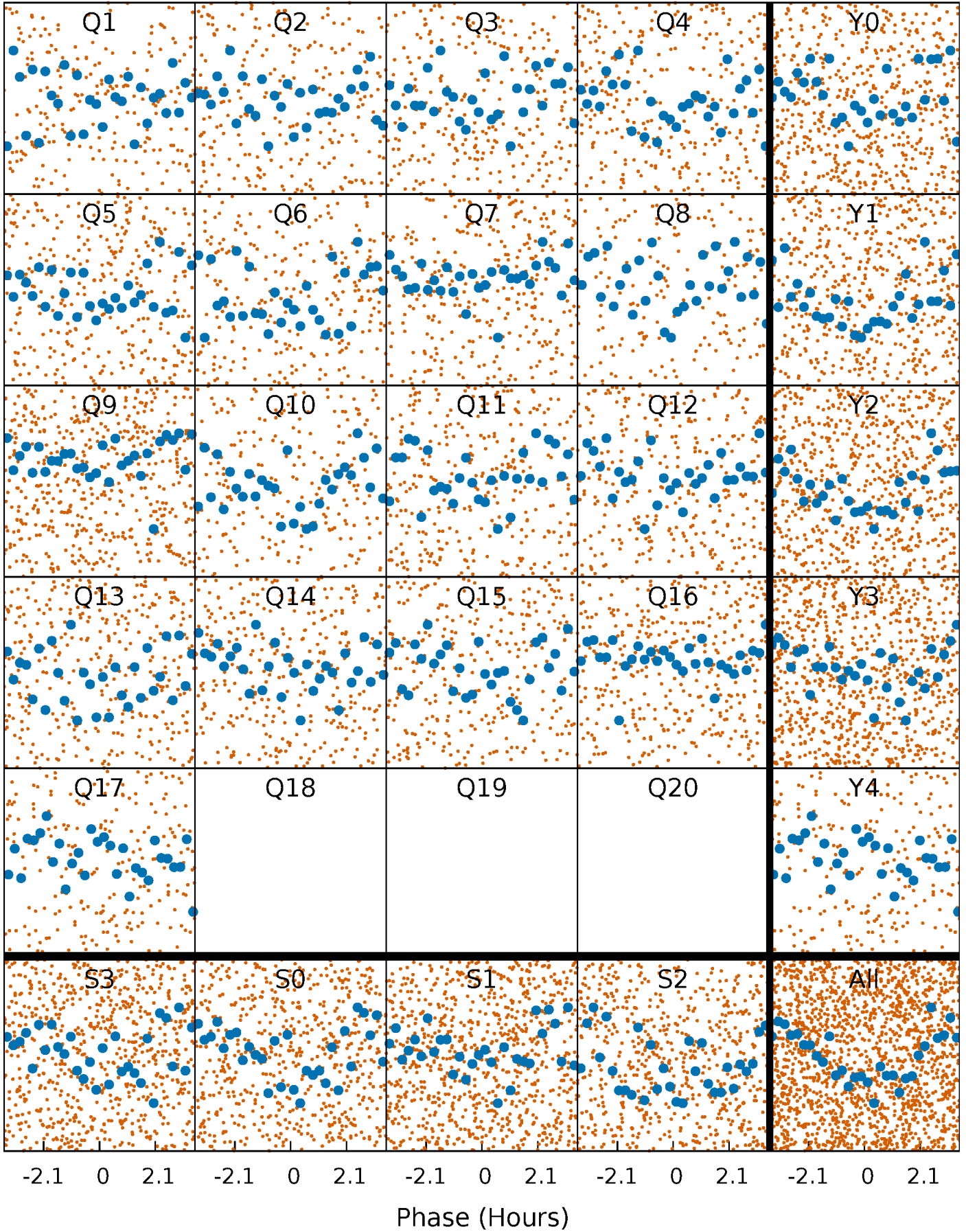


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

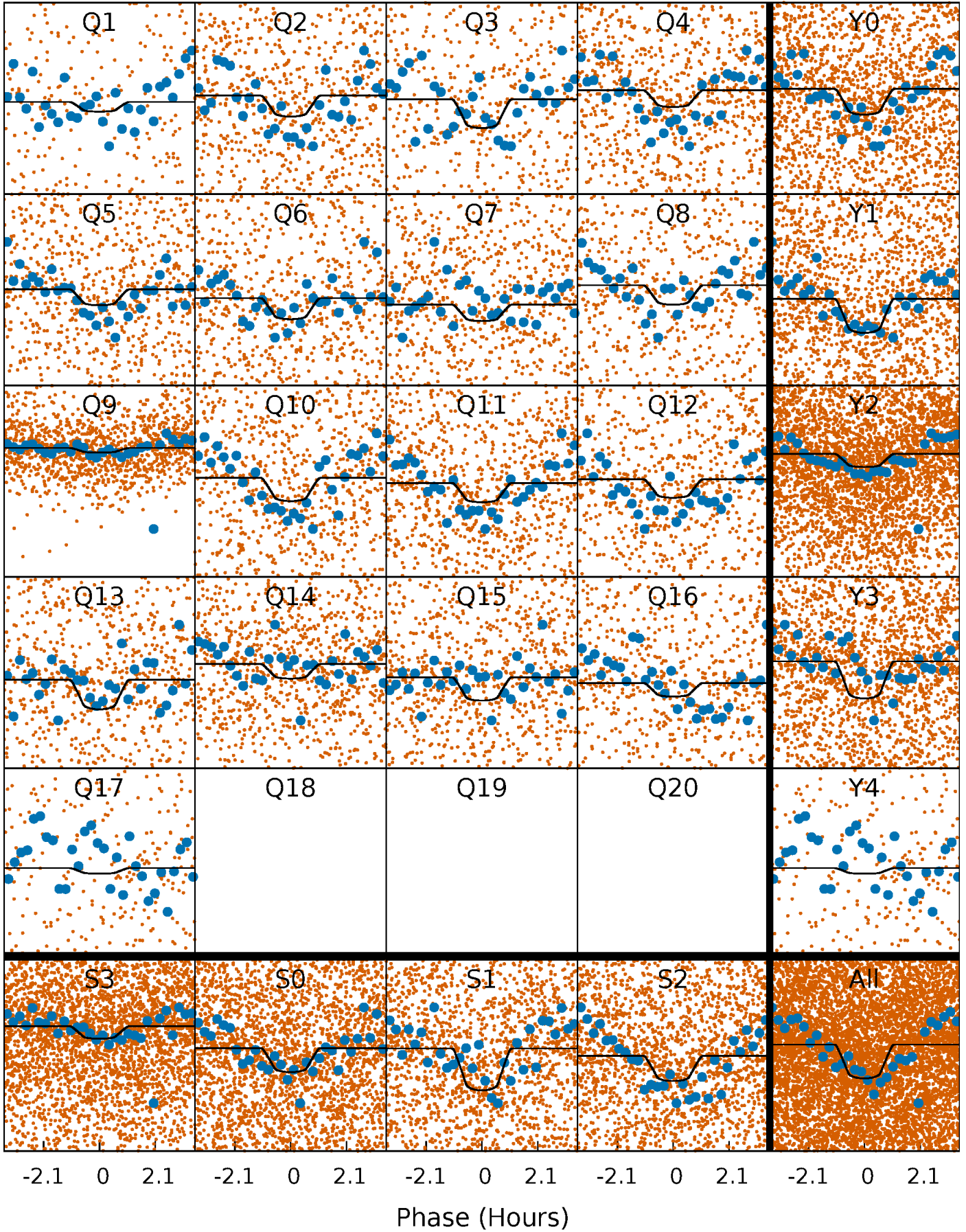
TCE 002583153-02 P= 0.636861 Days  $T_0=131.856861$  (BKJD)





# DV Quarter-Phased Transit Curves

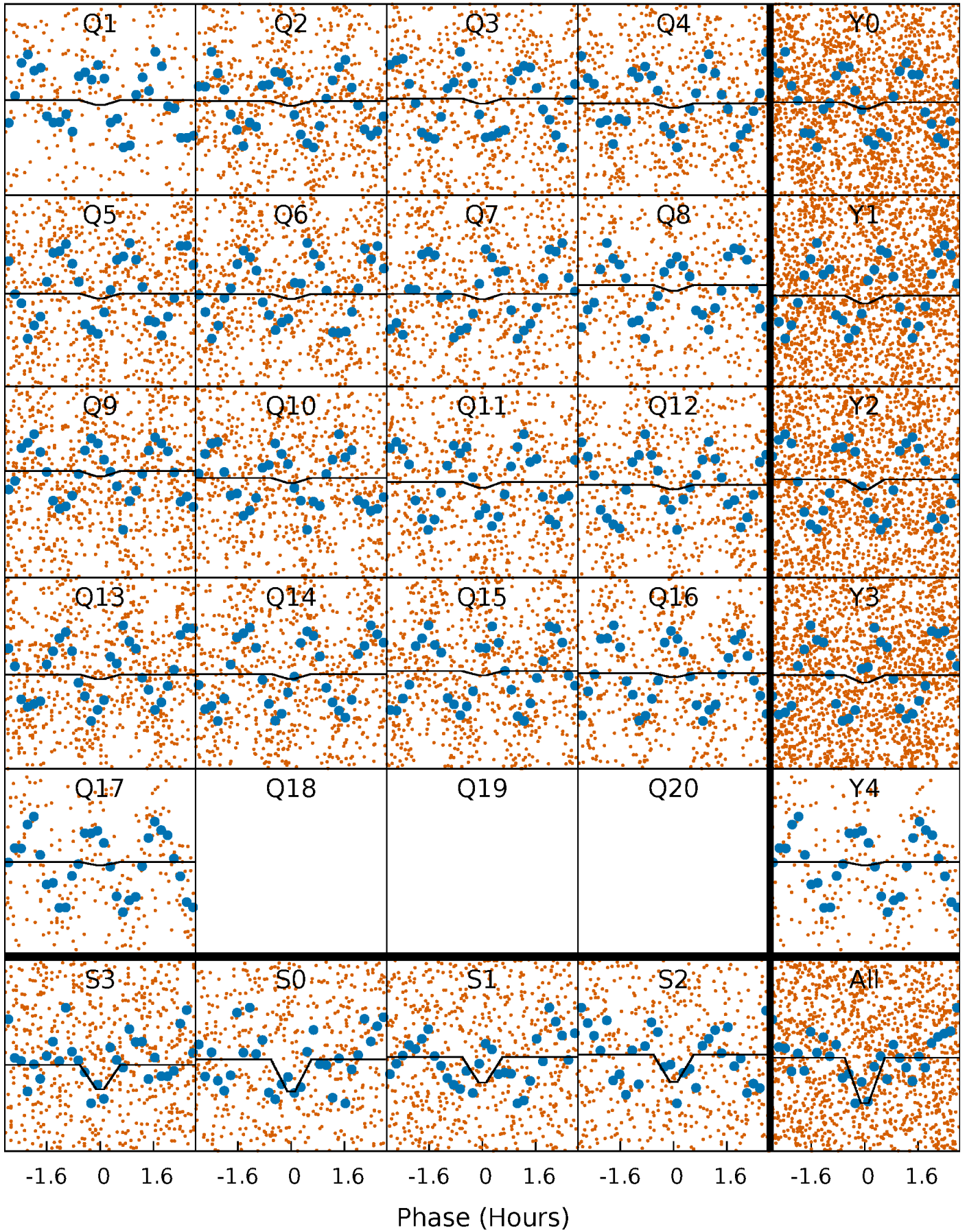
TCE 002583153-02 P= 0.636861 Days  $T_0=131.856861$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

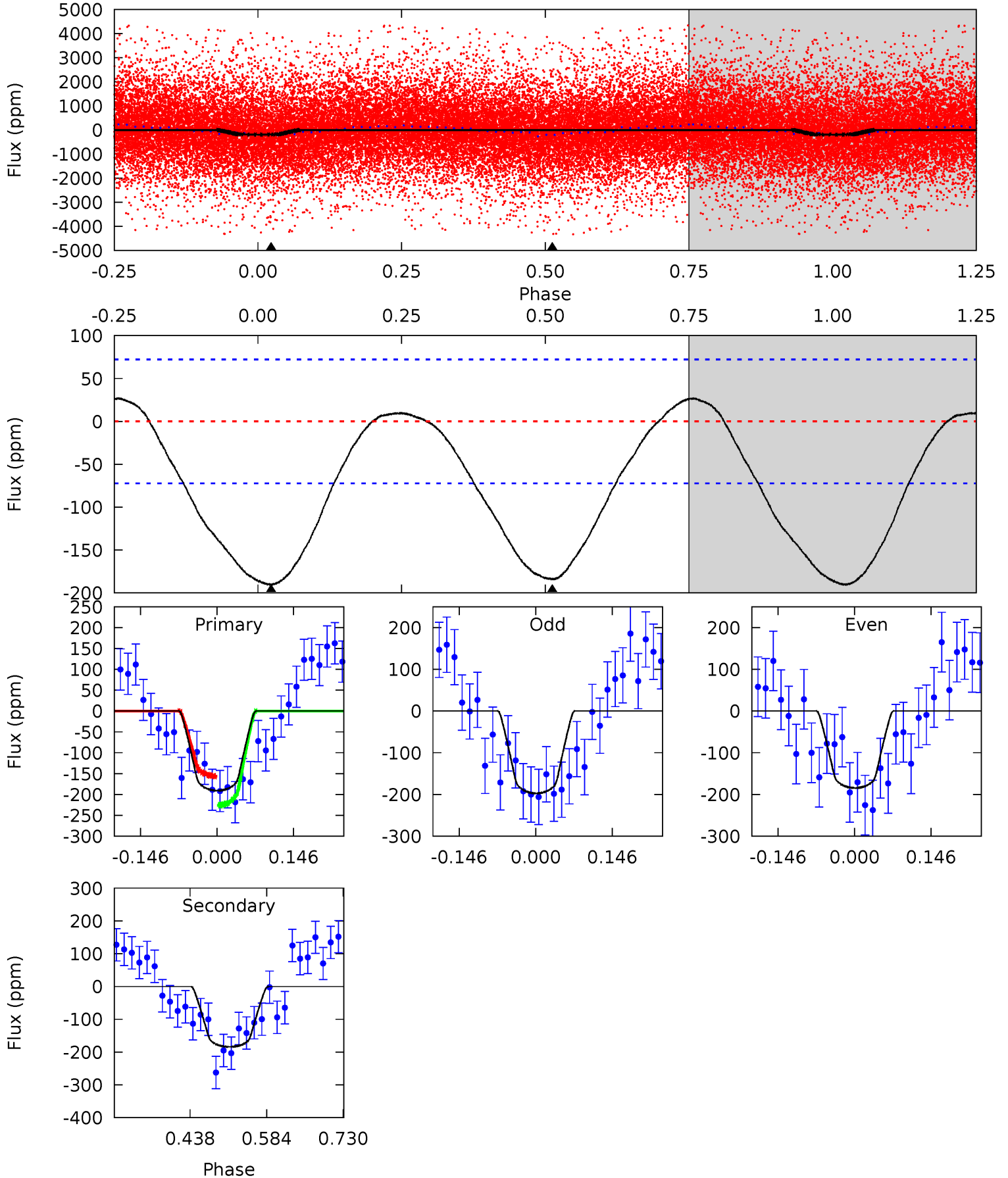
TCE 002583153-02   P= 0.636877 Days    $T_0=131.848342$  (BKJD)



# DV Model-Shift Uniqueness Test

002583153-02, P = 0.636861 Days, E = 131.220000 Days

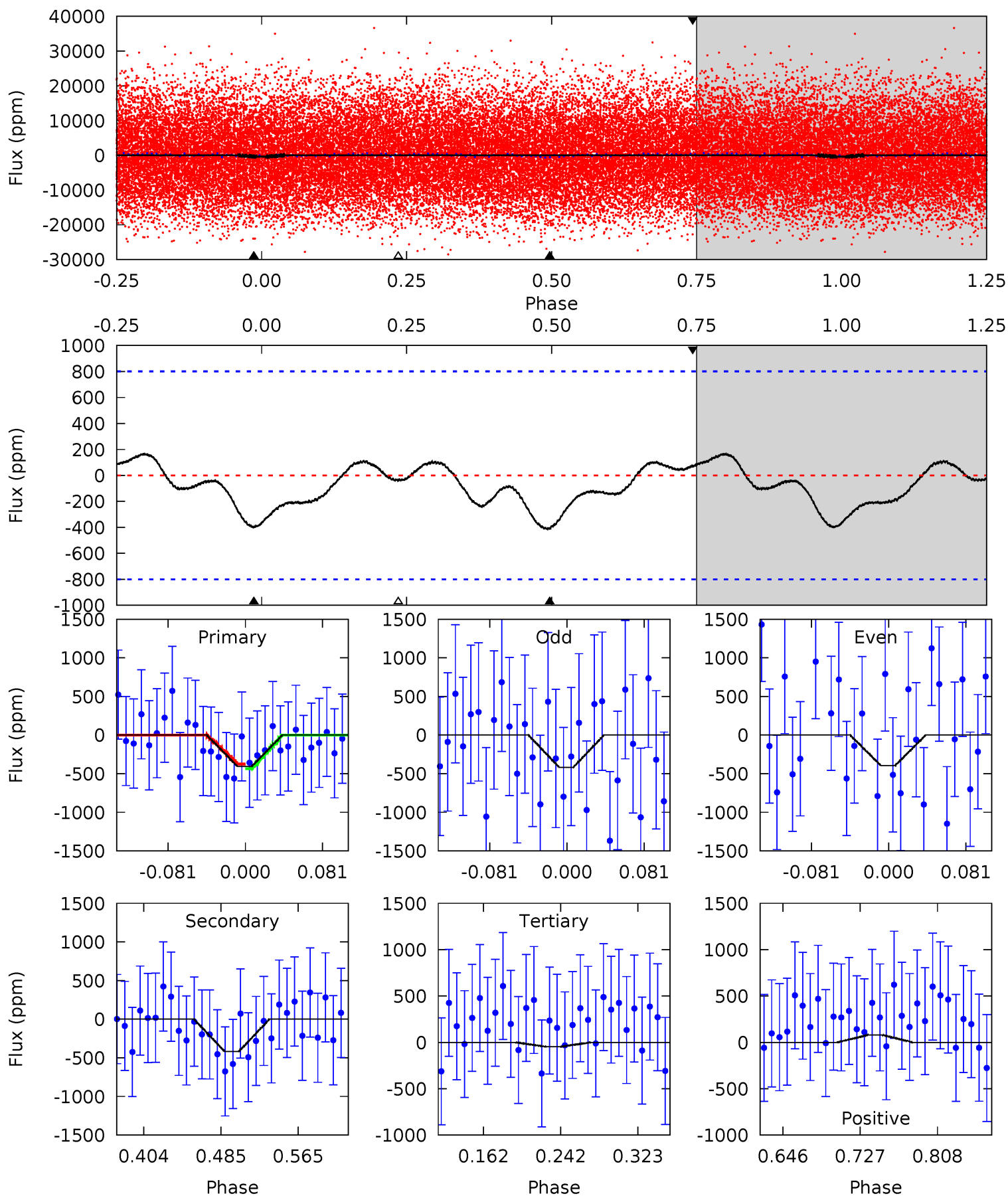
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	11.4	0	0	4.48	1.45	1.55	11.8	11.8	11.4	11.4	0.40	0.91	0.12	2.17



# Alt Model-Shift Uniqueness Test

002583153-02, P = 0.636877 Days, E = 131.211465 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
2.34	2.41	0.27	0.46	4.61	1.75	0.63	2.07	1.88	2.14	1.95	0.06	0.89	0.29	0.18



### Stellar Parameters For KIC 002583153

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7071^{+225}_{-310}$	$4.042^{+0.185}_{-0.167}$	$0.020^{+0.200}_{-0.300}$	$1.981^{+0.604}_{-0.494}$	$1.578^{+0.220}_{-0.244}$	$0.286^{+0.283}_{-0.142}$
	+3%/-4%	+5%/-4%	+1000%/-1500%	+30%/-25%	+14%/-15%	+99%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 002583153-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-184 \pm 16$	$3.26^{+1.73}_{-1.63}$	$4688^{+417}_{-340}$	$6380^{+3517}_{-1300}$	$2.729^{+8.081}_{-1.578}$
Alt.	$-418 \pm 174$	$5.13^{+1.85}_{-1.85}$	$4717^{+359}_{-337}$	$6128^{+2020}_{-1263}$	$2.303^{+3.484}_{-1.309}$

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

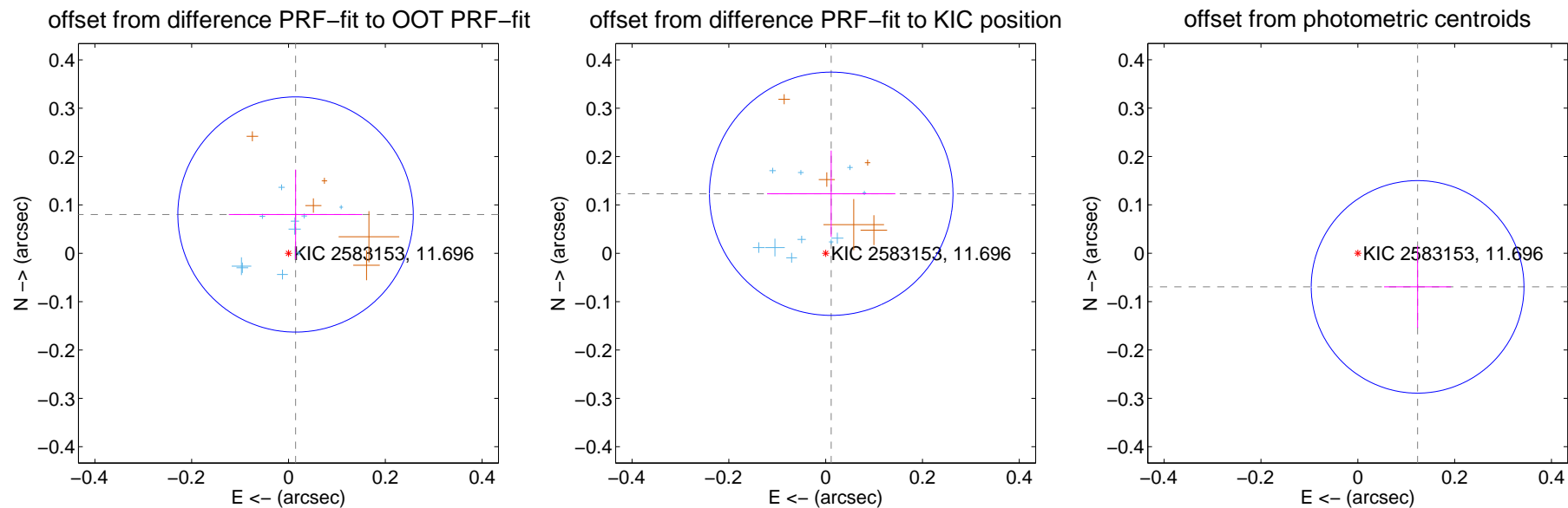
## DV Centroid Data

Supplemental centroid analysis for 002583153-02. **Kepler magnitude: 11.70.** Transit SNR 9.71

There are 11 quarters with good PRF difference image offsets

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

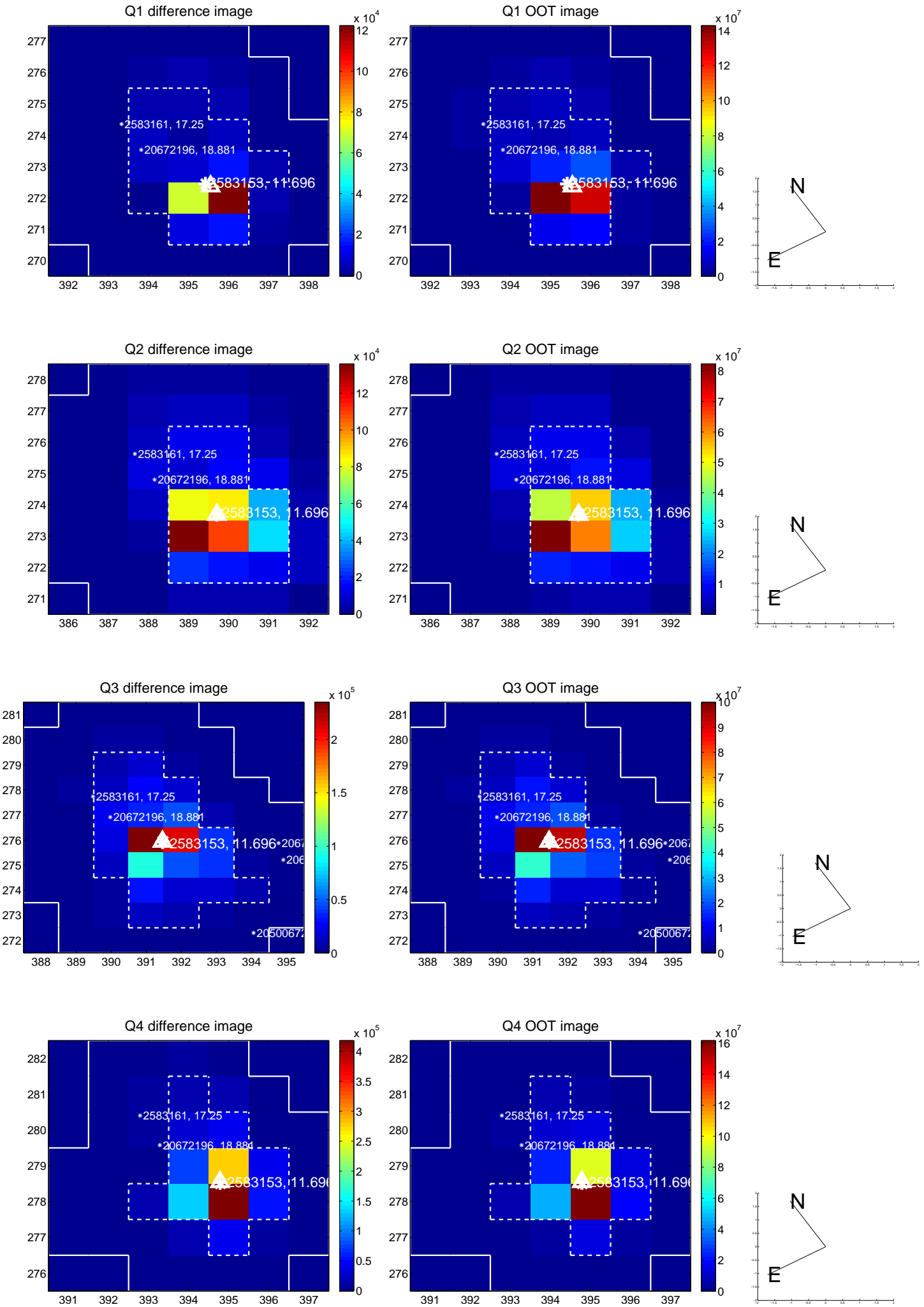
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.082 \pm 0.081$	1.01	$-0.015 \pm 0.138$	$0.080 \pm 0.093$
PRF-fit source offset from KIC position	$0.124 \pm 0.084$	1.47	$-0.011 \pm 0.133$	$0.123 \pm 0.089$
photometric centroid source offset	$0.14 \pm 0.07$	1.94	$-0.12 \pm 0.07$	$-0.07 \pm 0.08$



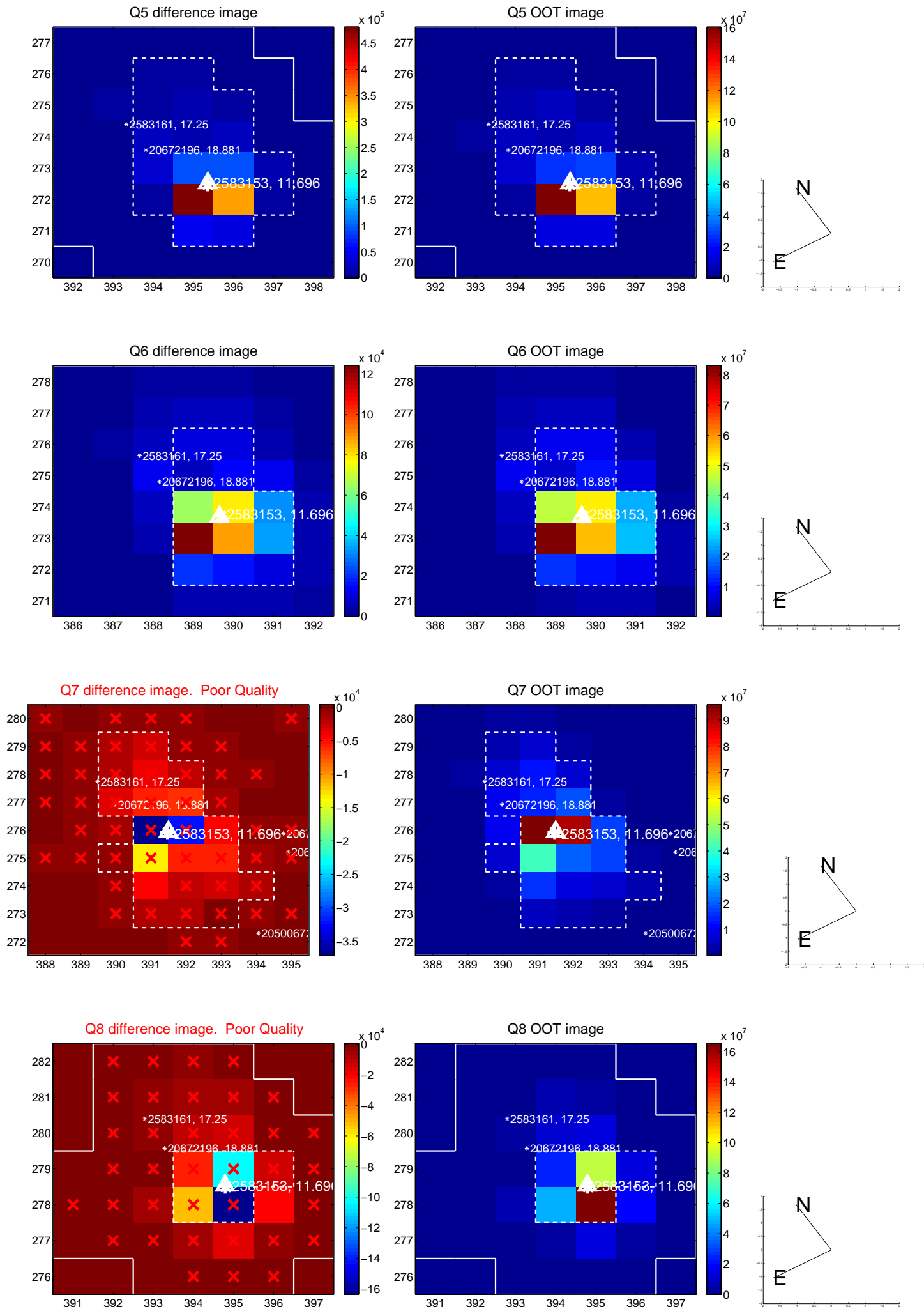
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



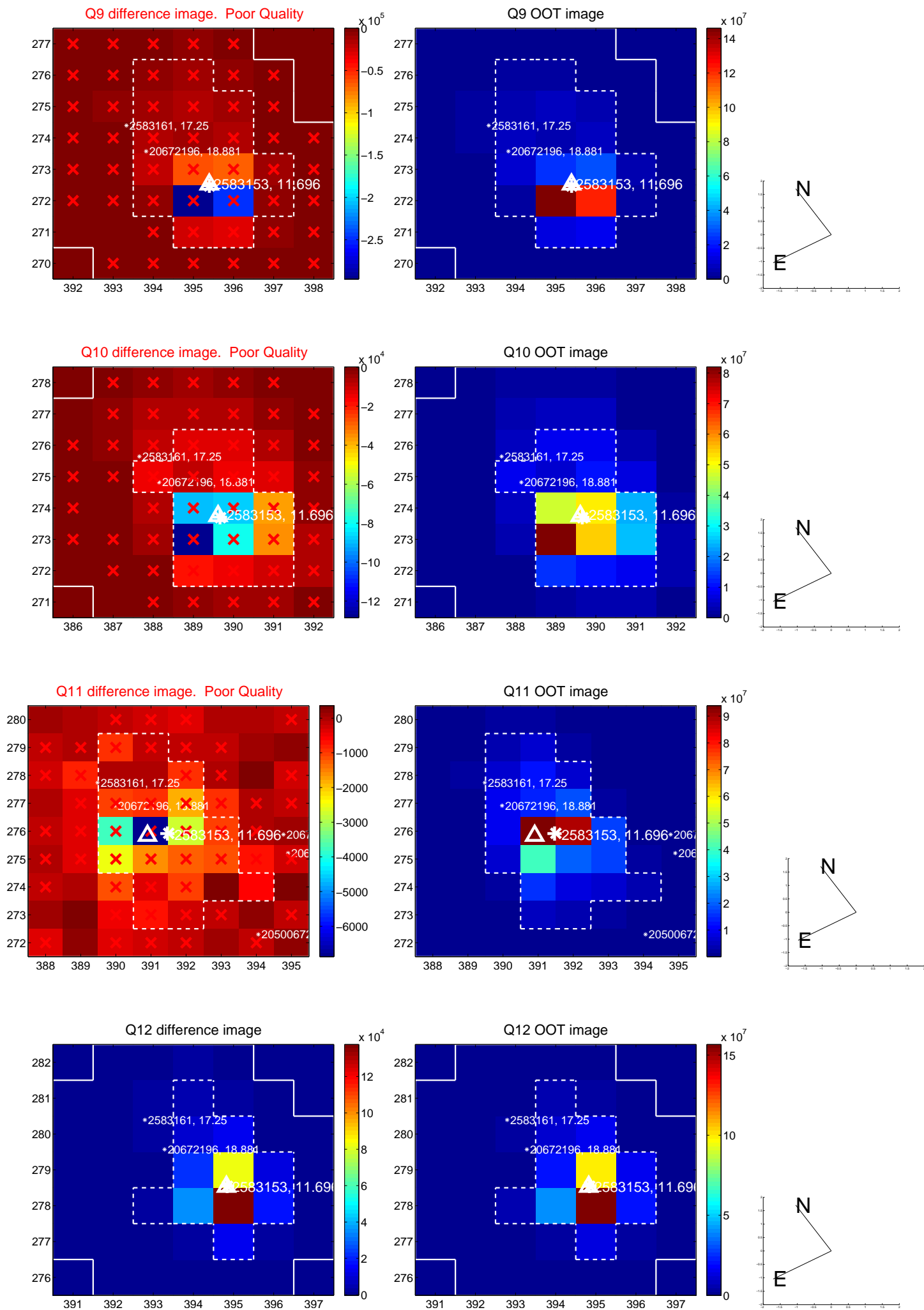
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



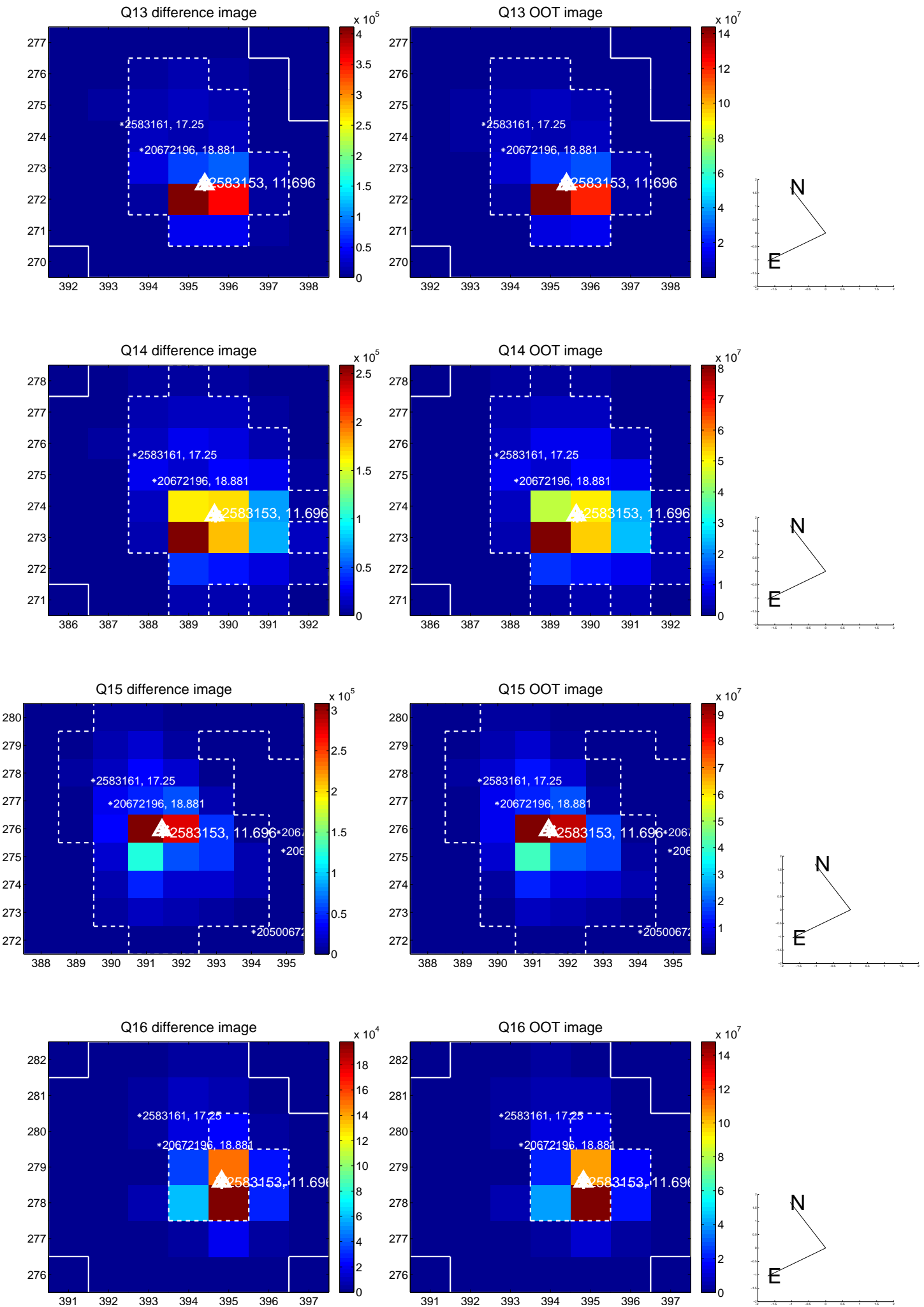
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



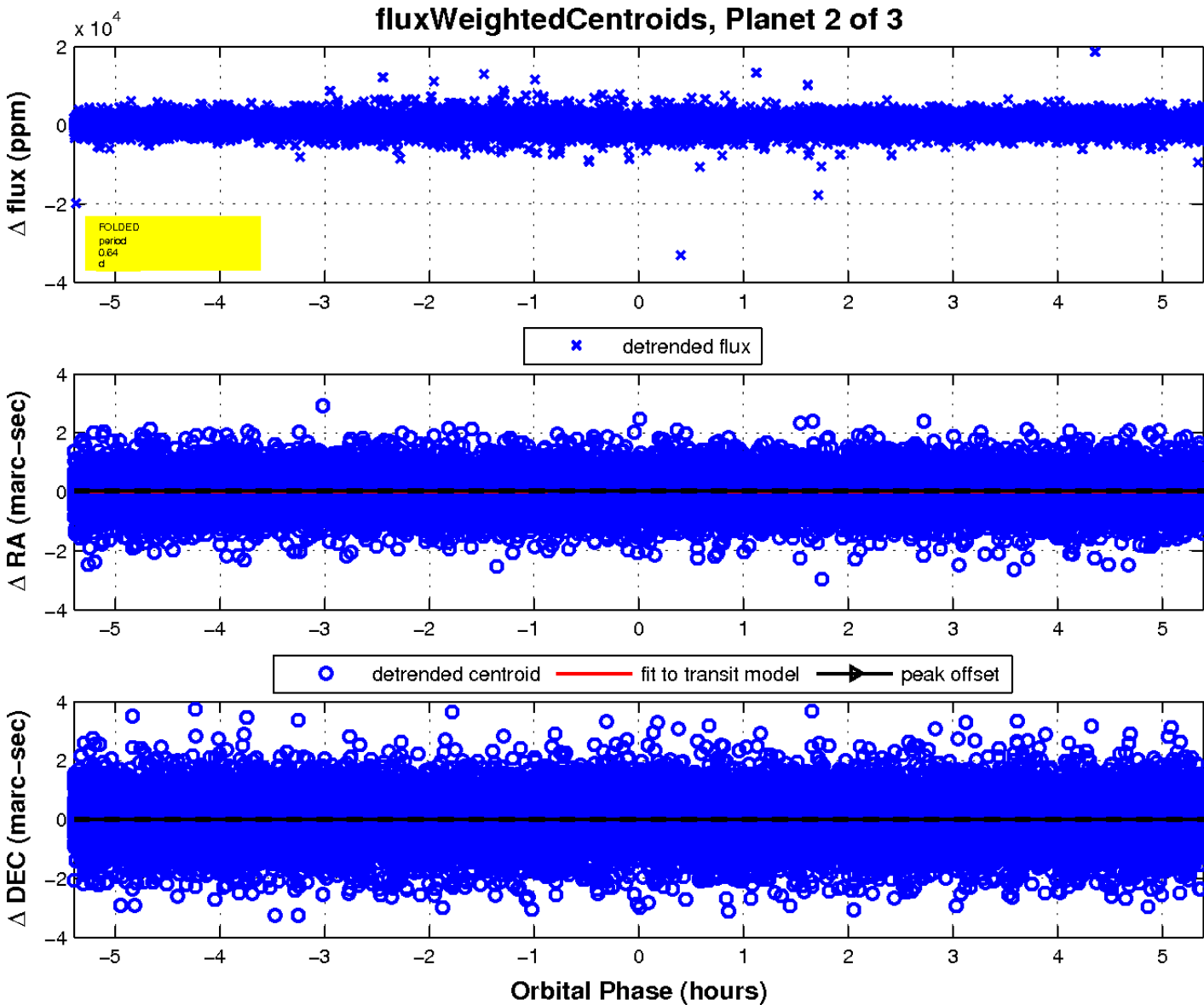
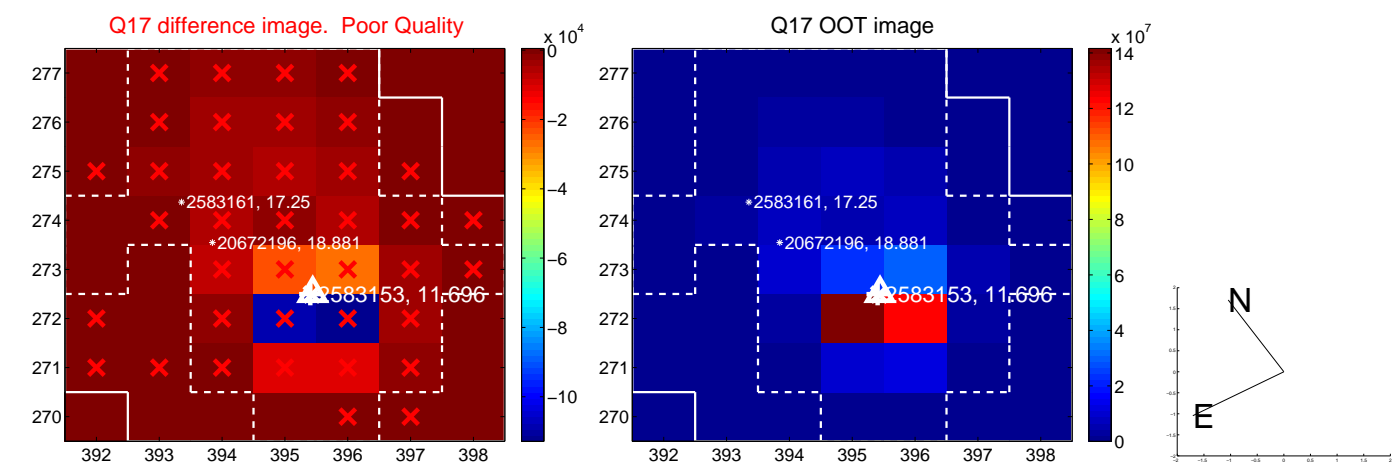
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



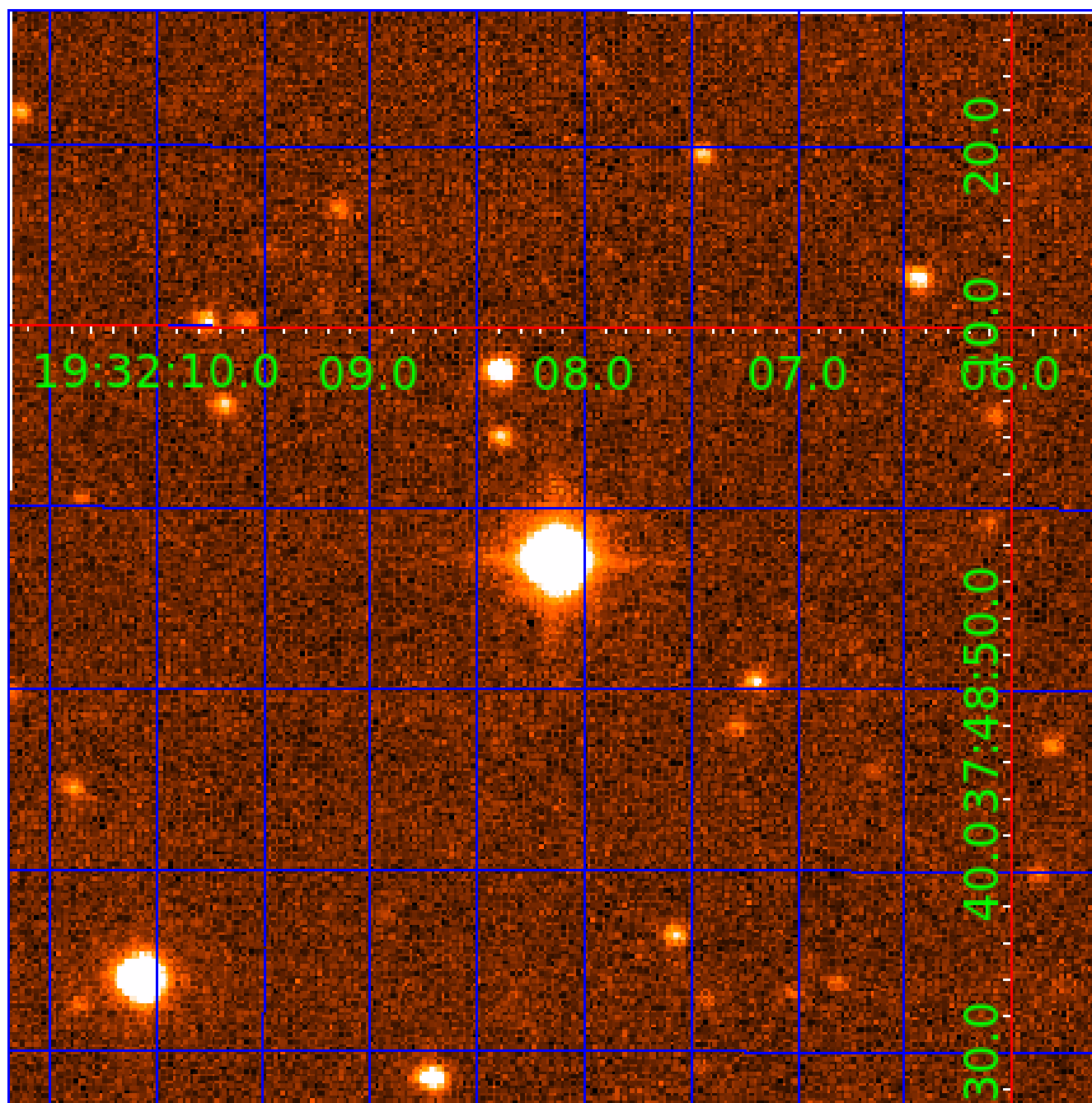
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





UKIRT Image

Declination



# KIC 002583153

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
002583153-01	OBS	No	1.362873	132.052529	95.8	4.973	7.9	6.9	1.98	7071	2.26	11206.42
002583153-02	OBS	No	0.636861	131.856861	186.5	1.797	9.8	9.7	1.98	7071	3.15	30903.96
002583153-03	OBS	No	0.636877	131.529944	151.1	2.000	10.1	-1.0	1.98	7071	2.47	30902.98

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002583153-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
002583153-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
002583153-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

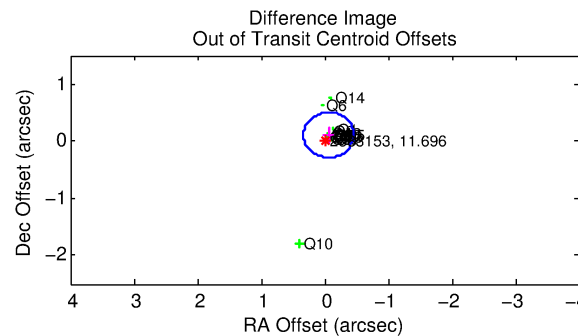
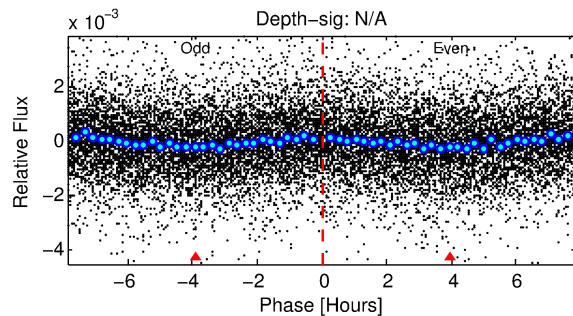
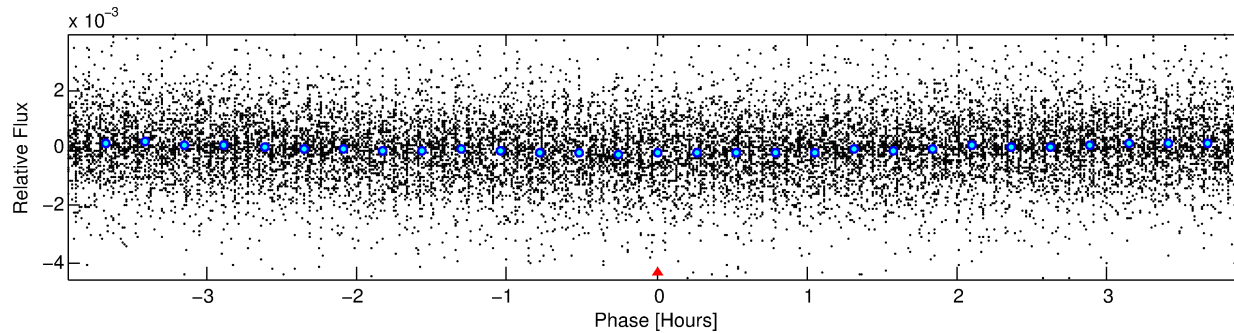
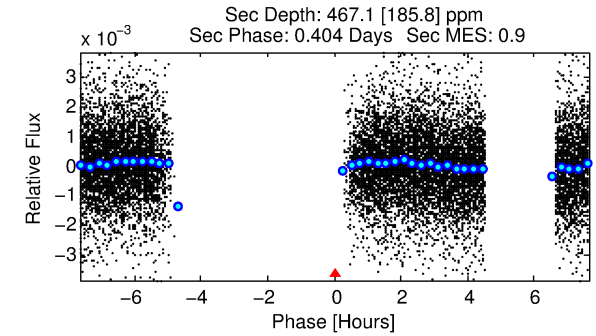
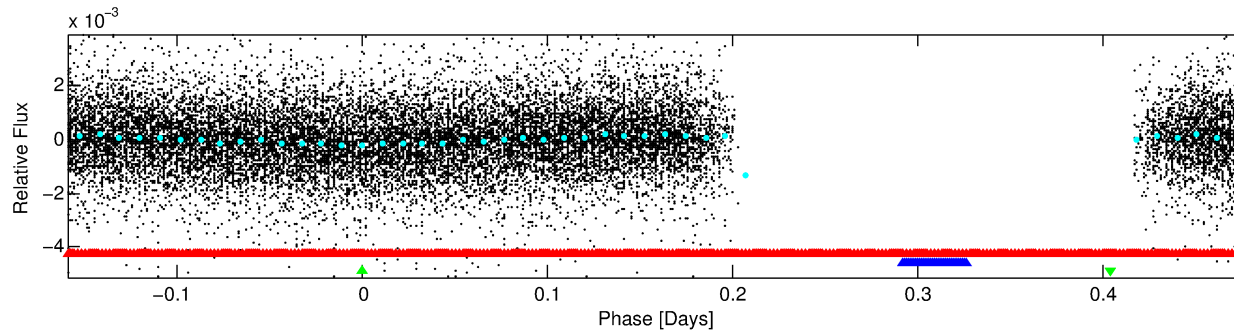
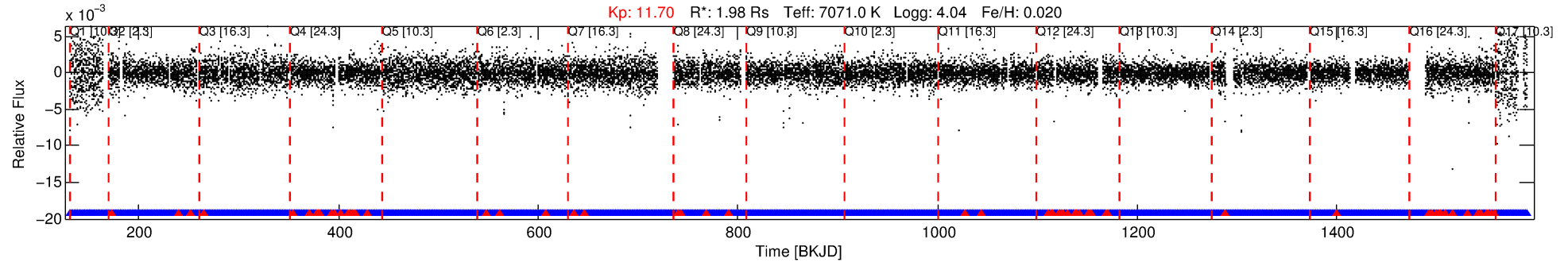
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 002583153-03

No Significant Match Found

# DV One-Page Summary

KIC: 2583153 Candidate: 3 of 3 Period: 0.637 d



## TPS TCE Results:

Period = 0.63688 d  
Epoch = 131.5299 BKJD

DV fit results are unavailable

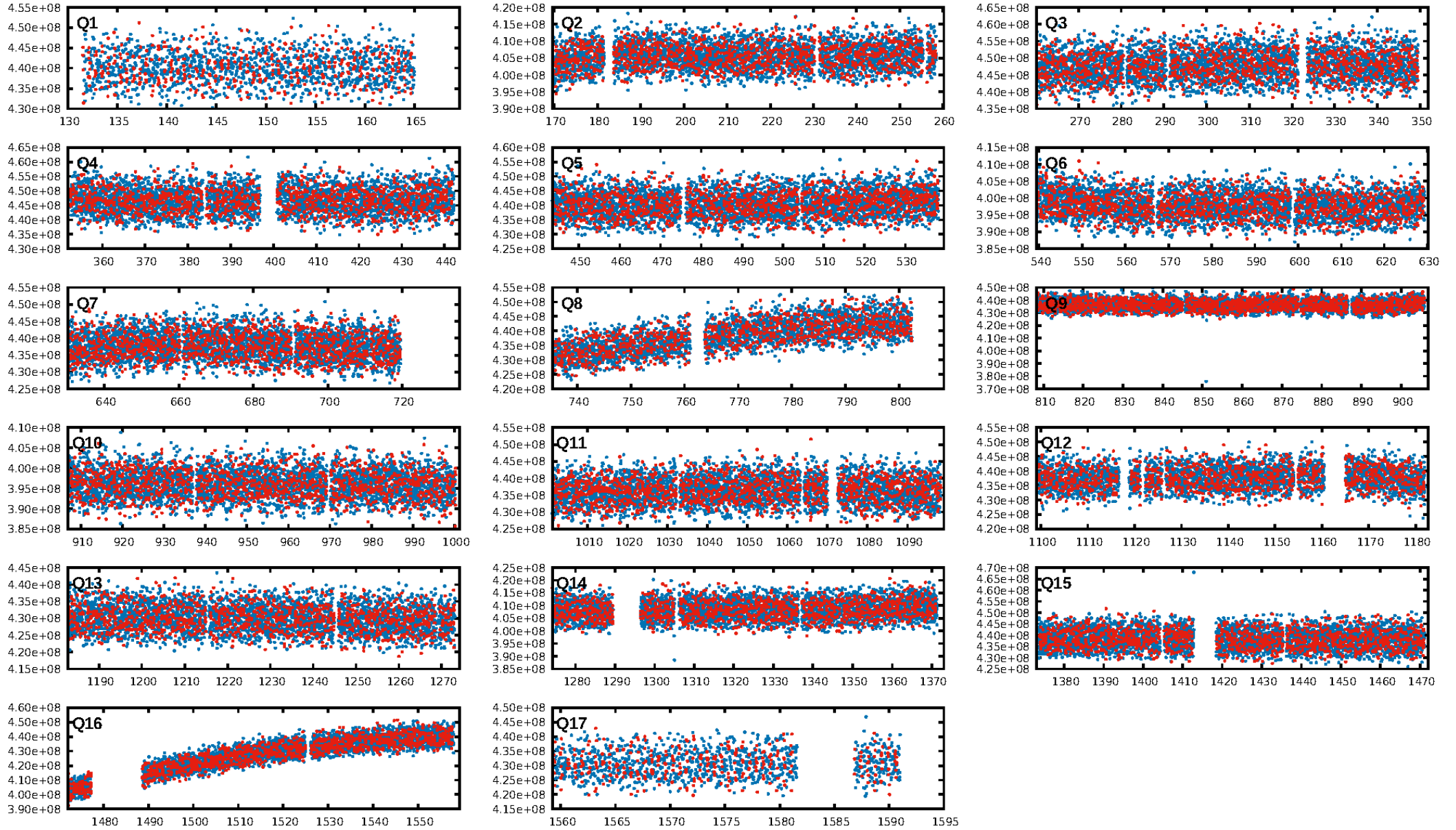
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 $\sigma$ ]  
LongPeriod-sig: 99.9% [3.25 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.95 [1090/1151]  
GhostDiagnostic-chr: 0.5866  
Centroid-sig: 5.8%  
Centroid-so: 0.050 arcsec [1.24 $\sigma$ ]  
OotOffset-rm: 0.125 arcsec [0.95 $\sigma$ ]  
KicOffset-rm: 0.142 arcsec [1.05 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.53 [9/17]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:13:59 Z

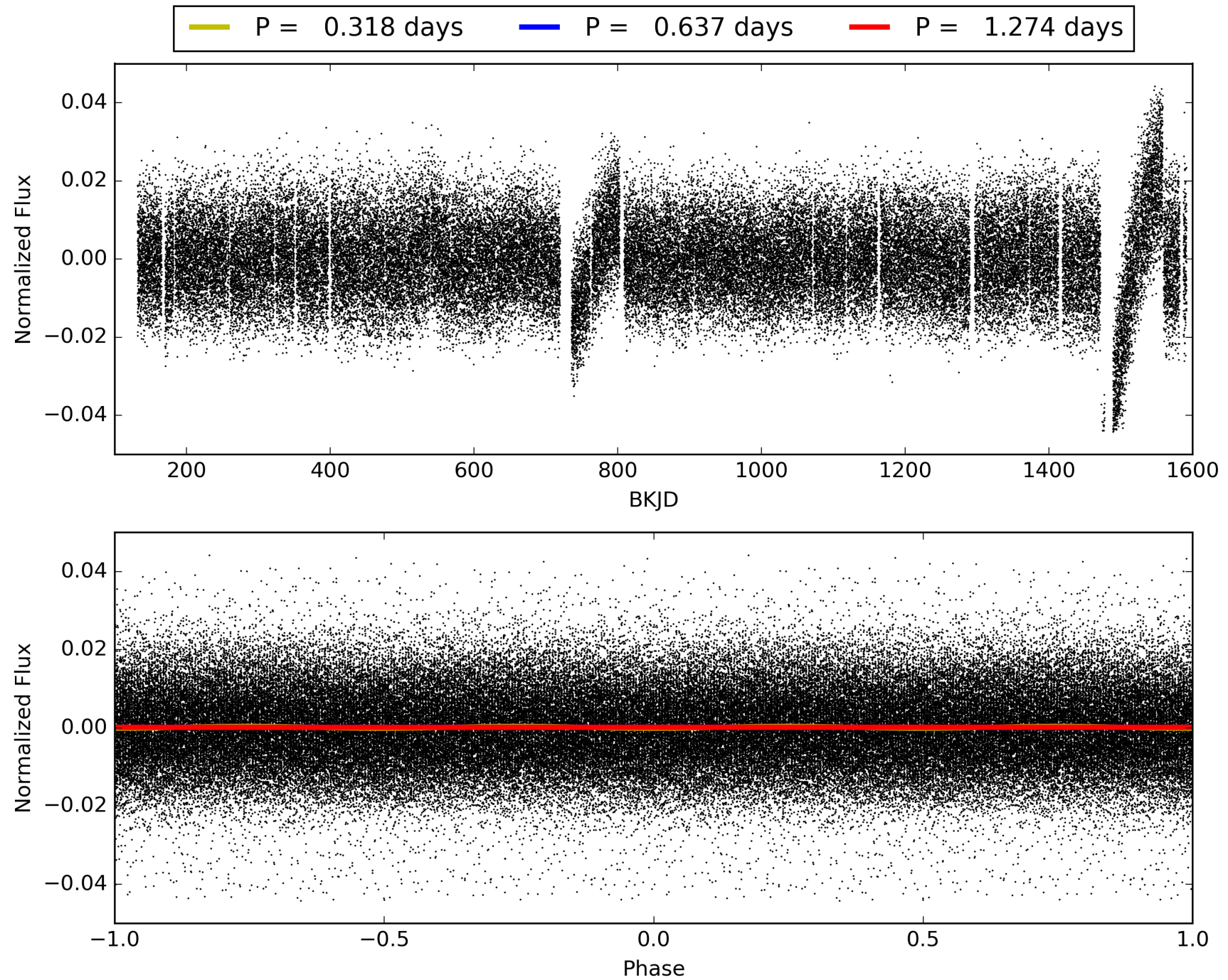
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 002583153-03, PDC Light Curves





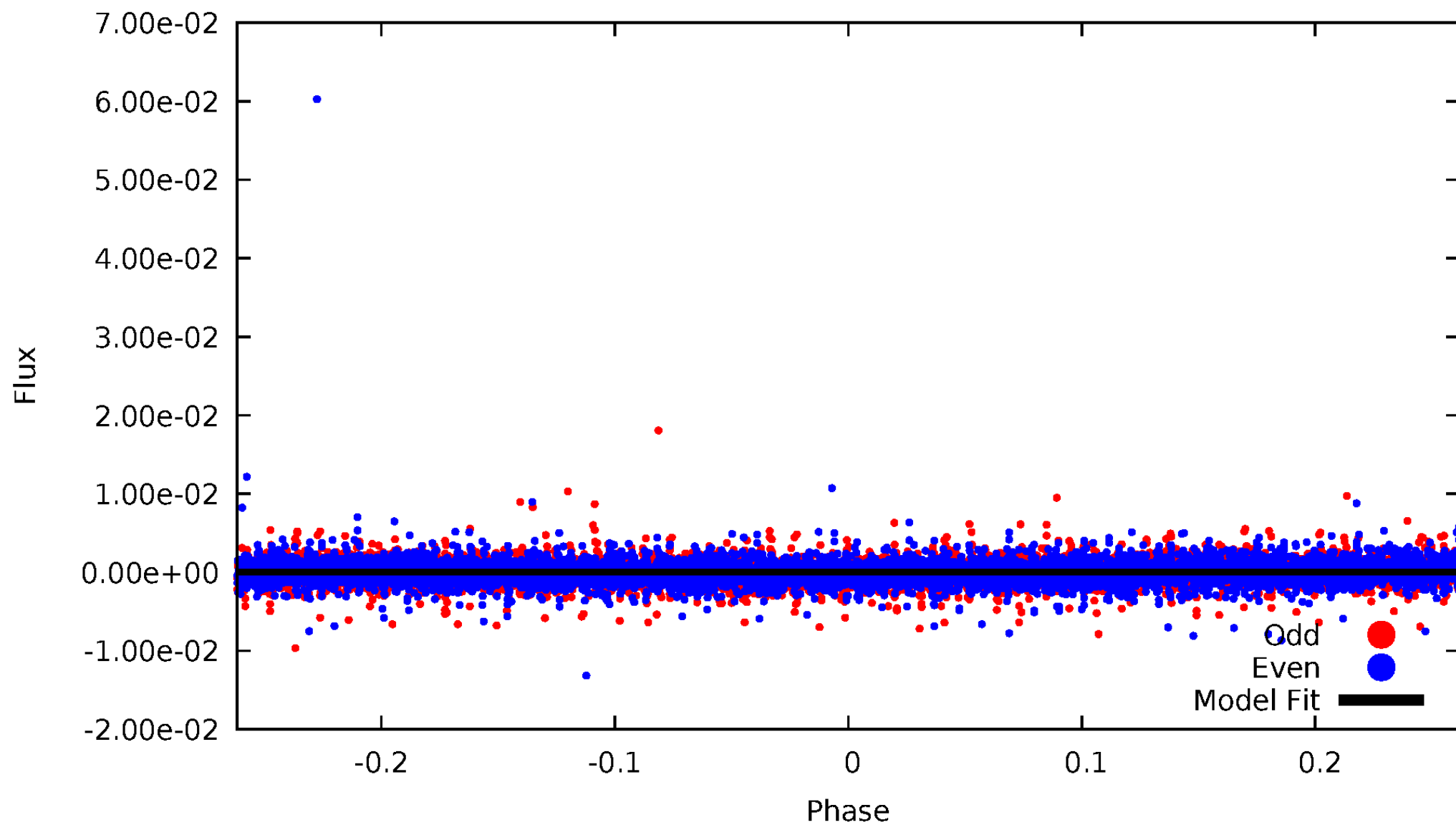
TCE 002583153-03





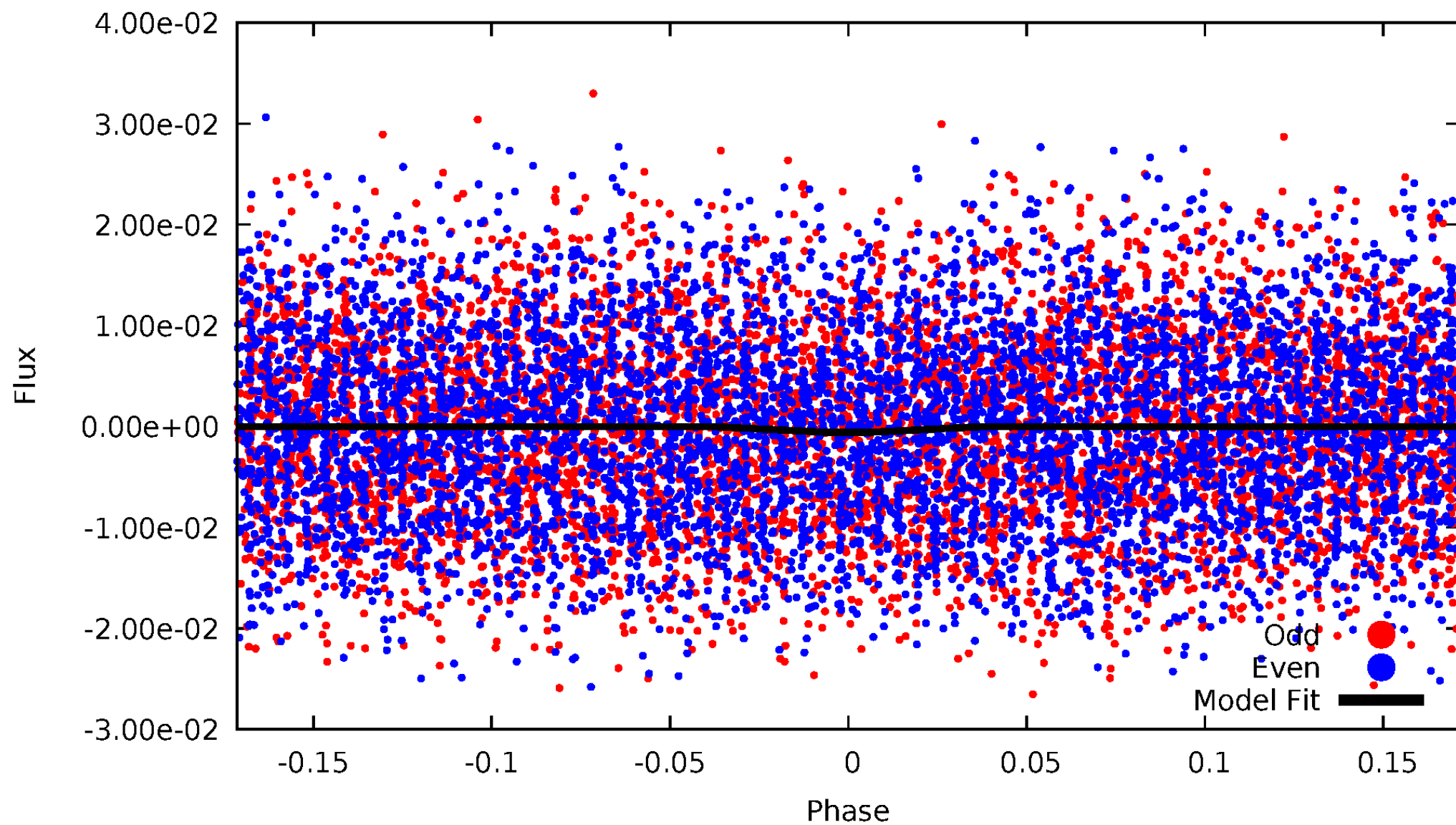
# DV Odd/Even

TCE 002583153-03



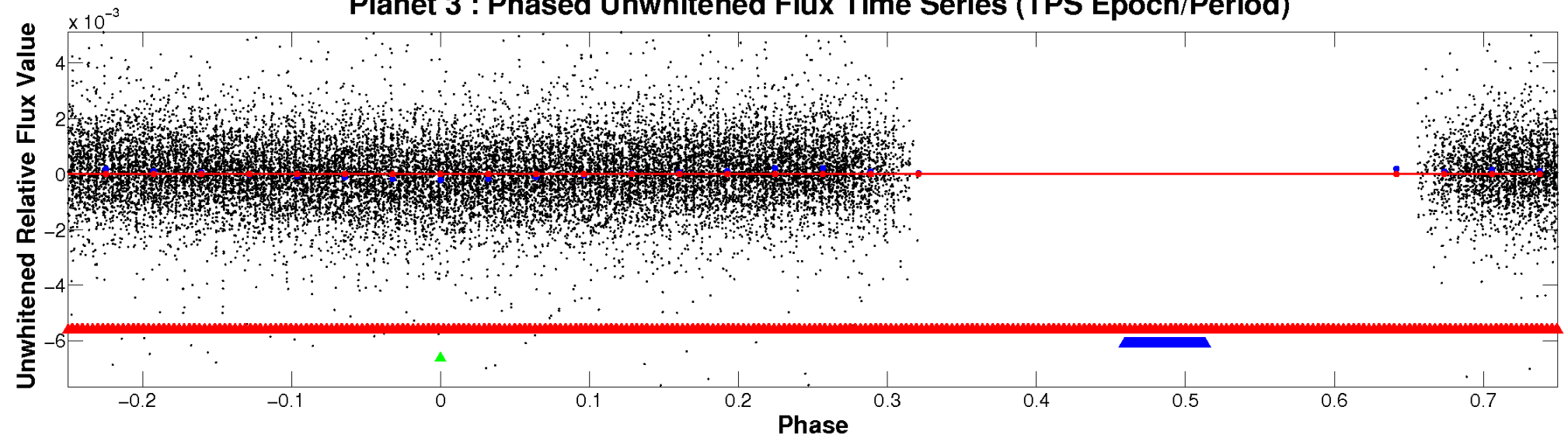
ALT Odd/Even

TCE 002583153-03



# Non-Whitened Vs. Whitened Light Curve

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

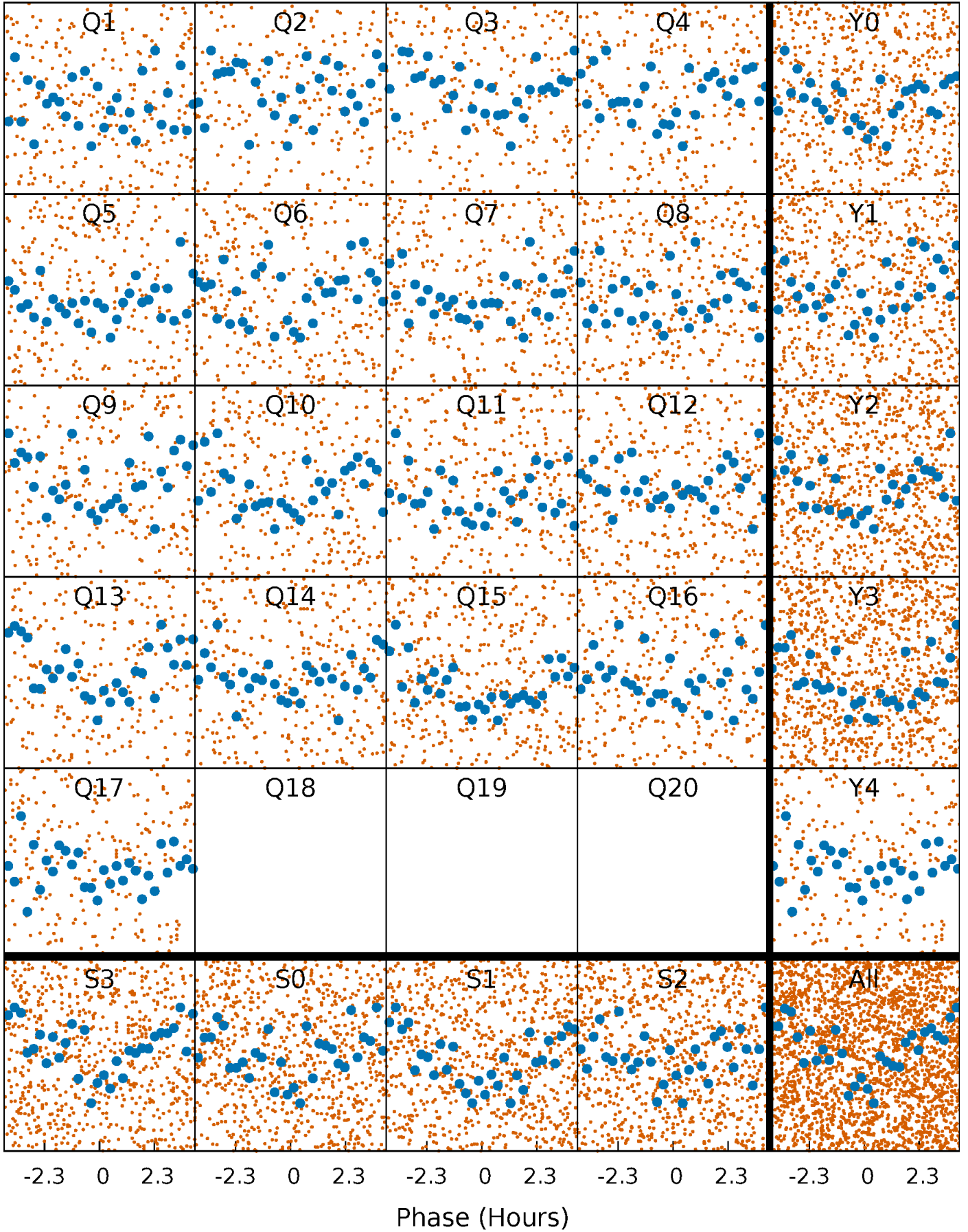


**Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



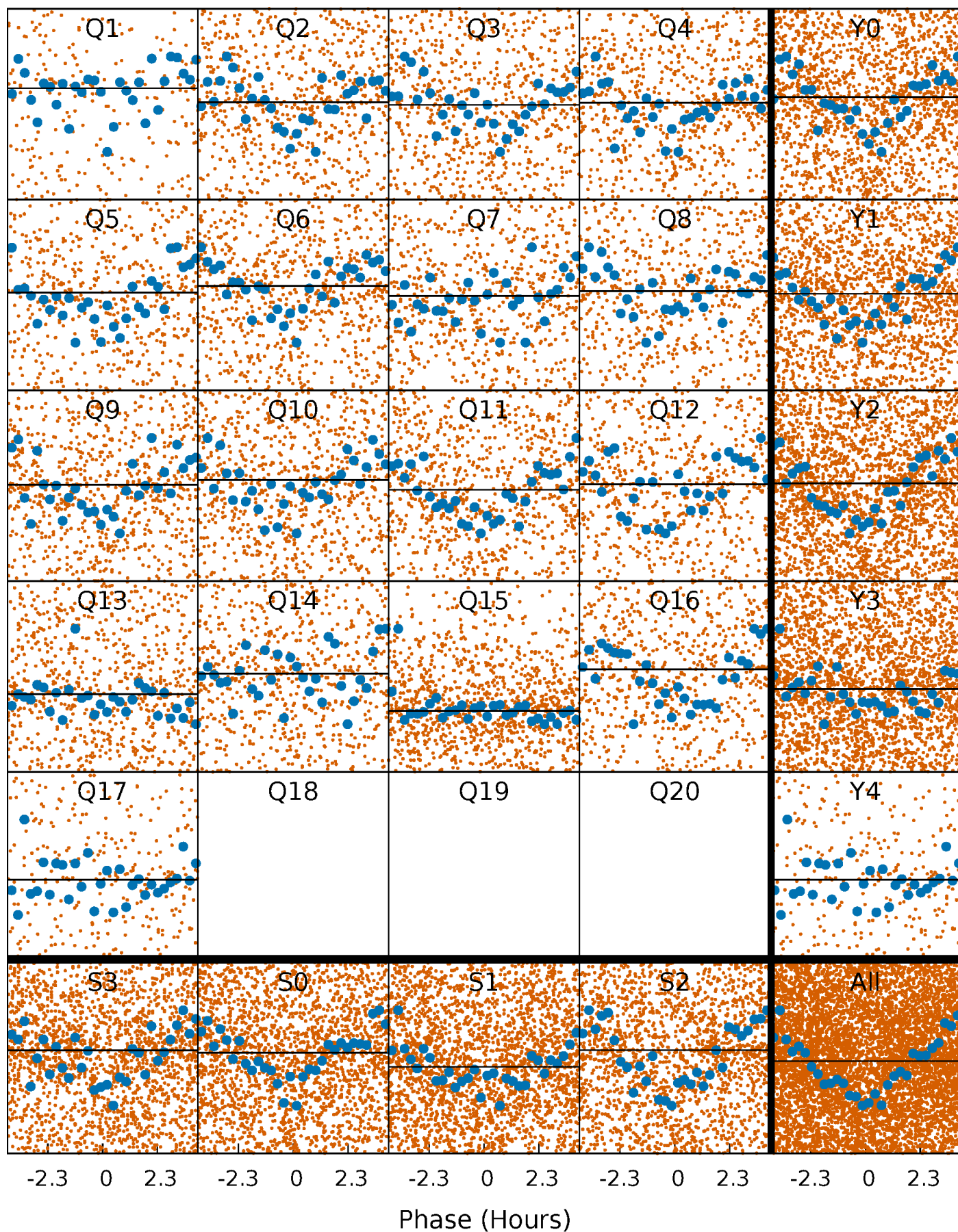
# PDC Quarter-Phased Transit Curves

TCE 002583153-03 P= 0.636877 Days  $T_0=131.529944$  (BKJD)



# DV Quarter-Phased Transit Curves

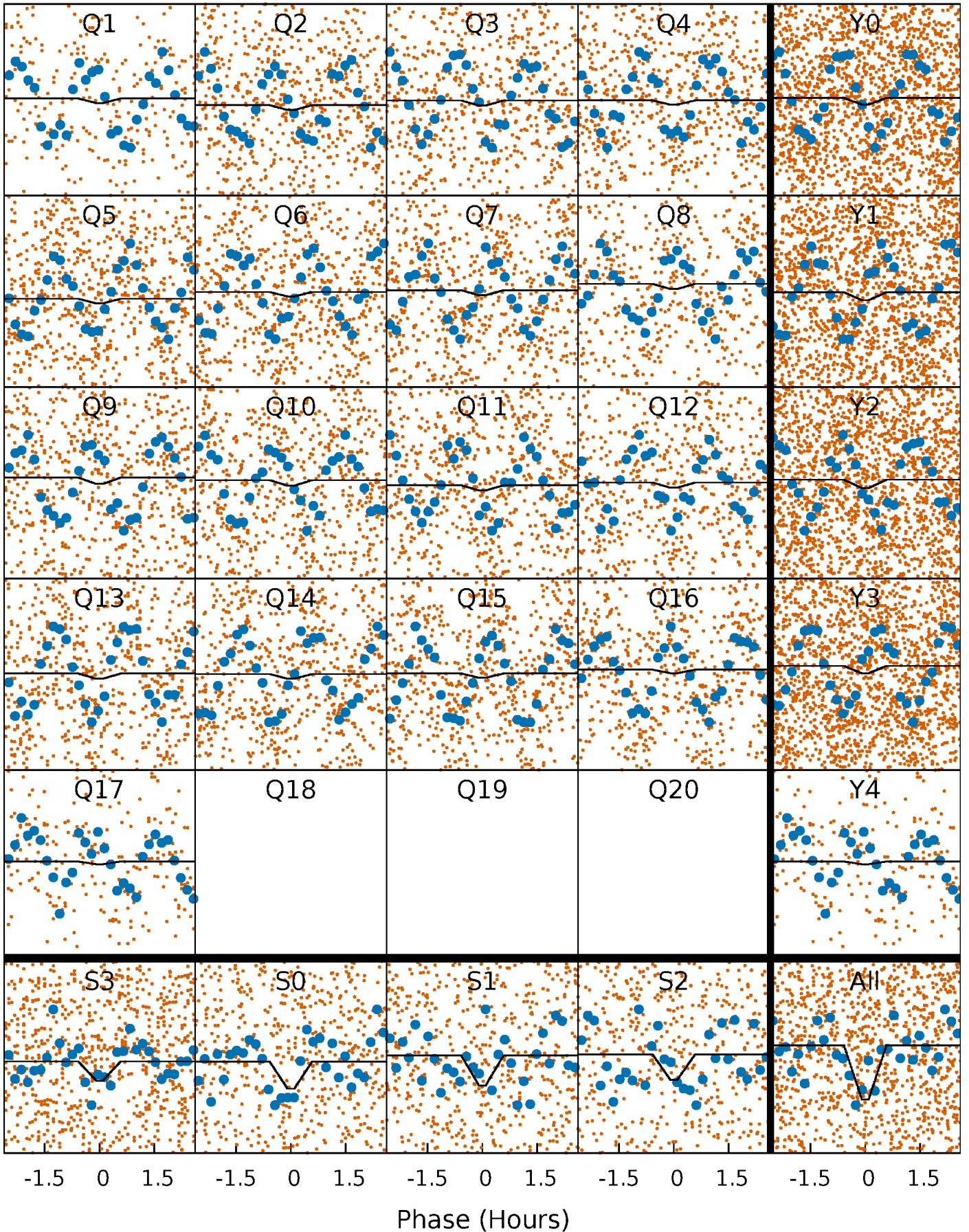
TCE 002583153-03     $P = 0.636877$  Days     $T_0 = 131.529944$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

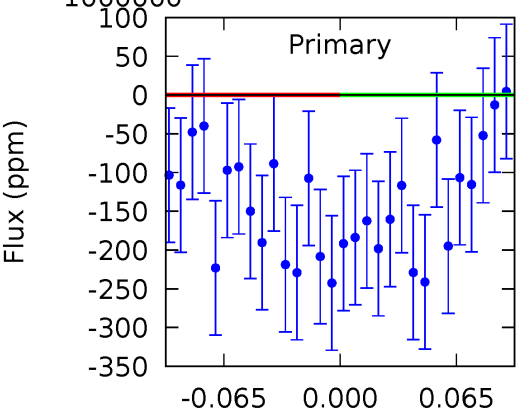
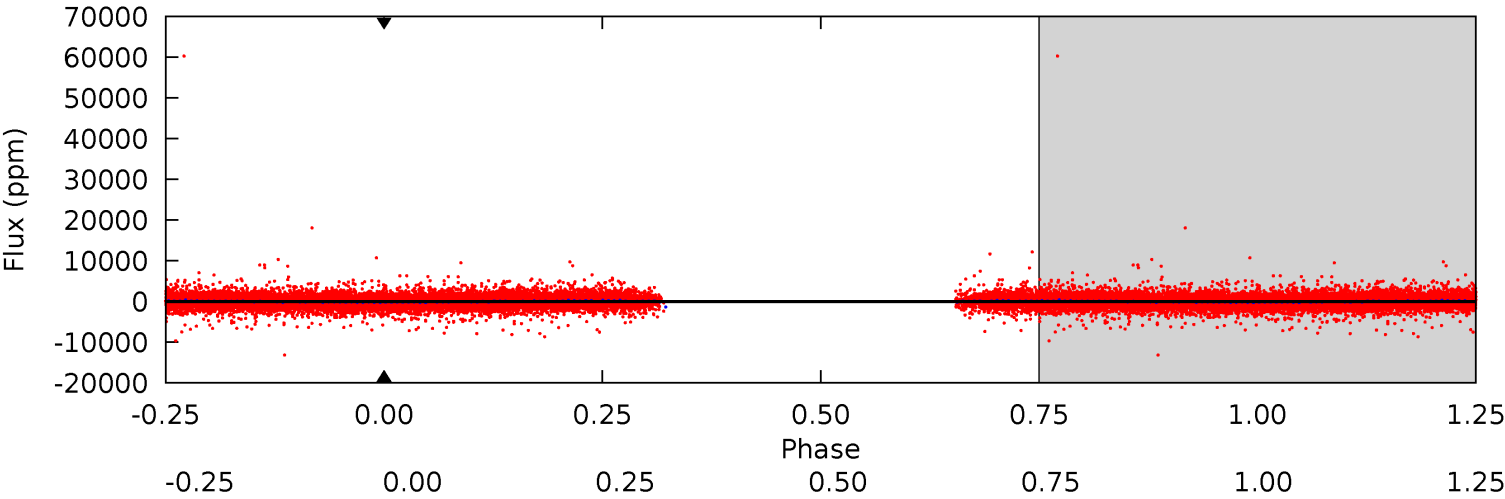
TCE 002583153-03   P= 0.636877 Days    $T_0=131.530593$  (BKJD)



# DV Model-Shift Uniqueness Test

002583153-03, P = 0.636877 Days, E = 130.893067 Days

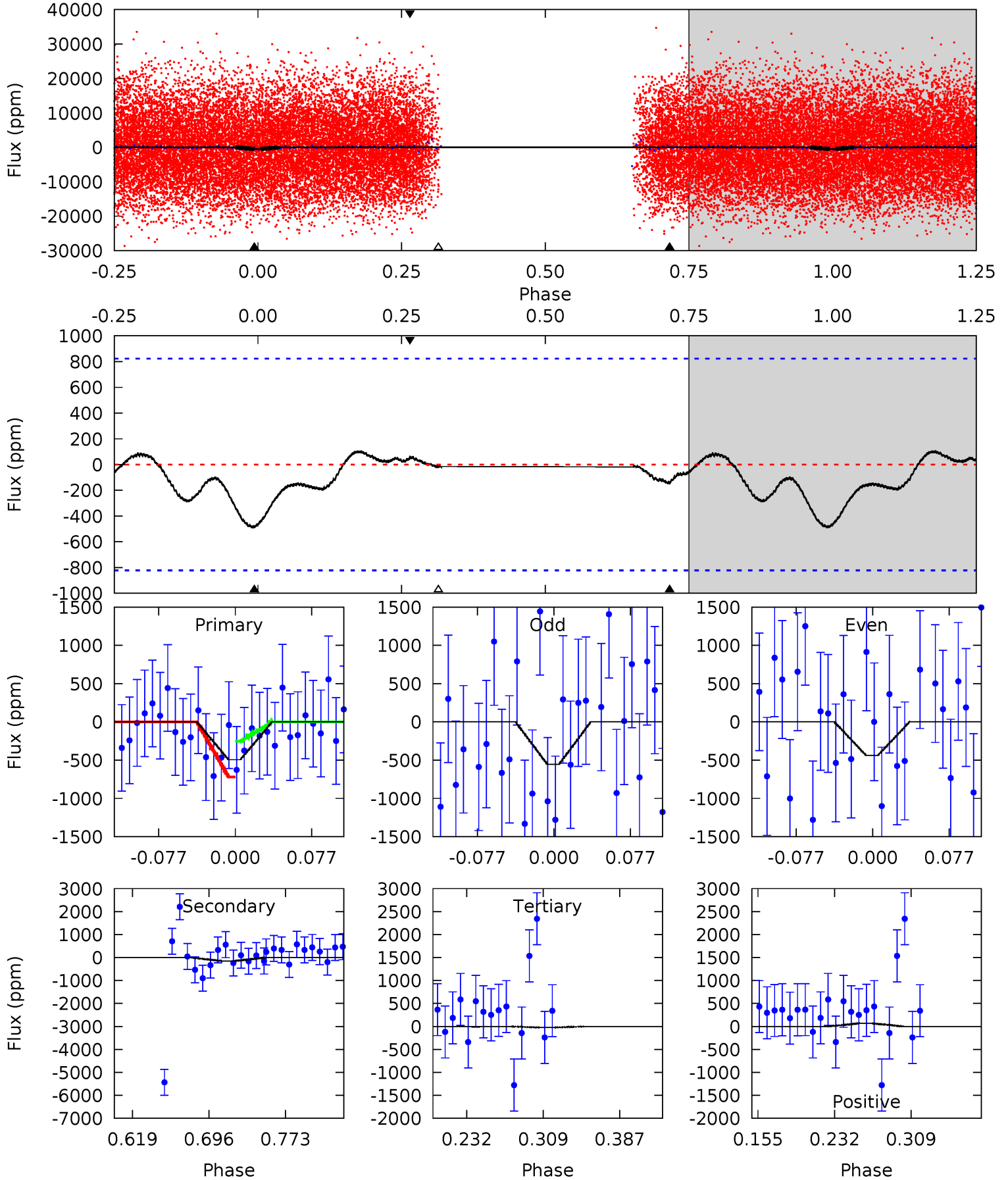
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

002583153-03, P = 0.636877 Days, E = 130.893716 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
2.78	0.87	0.14	0.38	4.62	1.77	0.67	2.64	2.39	0.73	0.48	0.33	1.36	0.18	1.30



### Stellar Parameters For KIC 002583153

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7071^{+225}_{-310}$	$4.042^{+0.185}_{-0.167}$	$0.020^{+0.200}_{-0.300}$	$1.981^{+0.604}_{-0.494}$	$1.578^{+0.220}_{-0.244}$	$0.286^{+0.283}_{-0.142}$
	+3%/-4%	+5%/-4%	+1000%/-1500%	+30%/-25%	+14%/-15%	+99%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 002583153-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$15.82^{+16.09}_{-11.06}$	$4706^{+379}_{-372}$	$-2899^{+33739}_{-33338}$	$0.271^{+101.093}_{-112.543}$
Alt.	$-155 \pm 178$	$16.68^{+18.09}_{-10.78}$	$4707^{+343}_{-363}$	$-3904^{+8079}_{-397}$	$0.049^{+0.577}_{-0.059}$

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

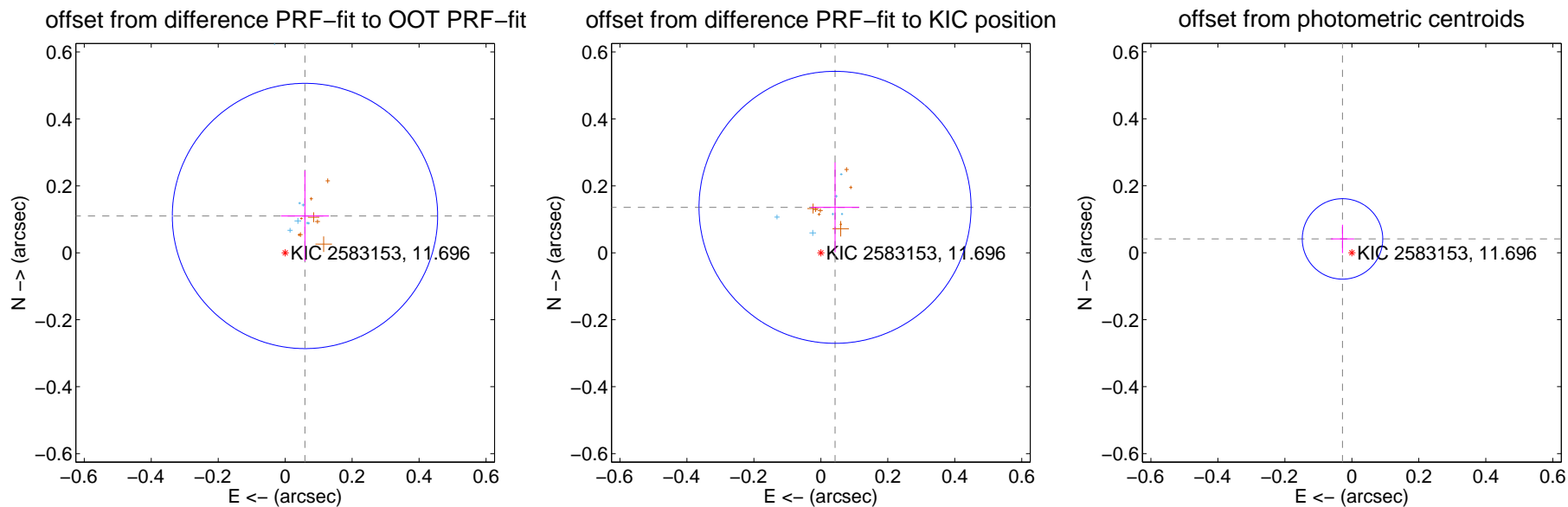
## DV Centroid Data

Supplemental centroid analysis for 002583153-03. **Kepler magnitude: 11.70.** Transit SNR -1.00

There are 9 quarters with good PRF difference image offsets

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

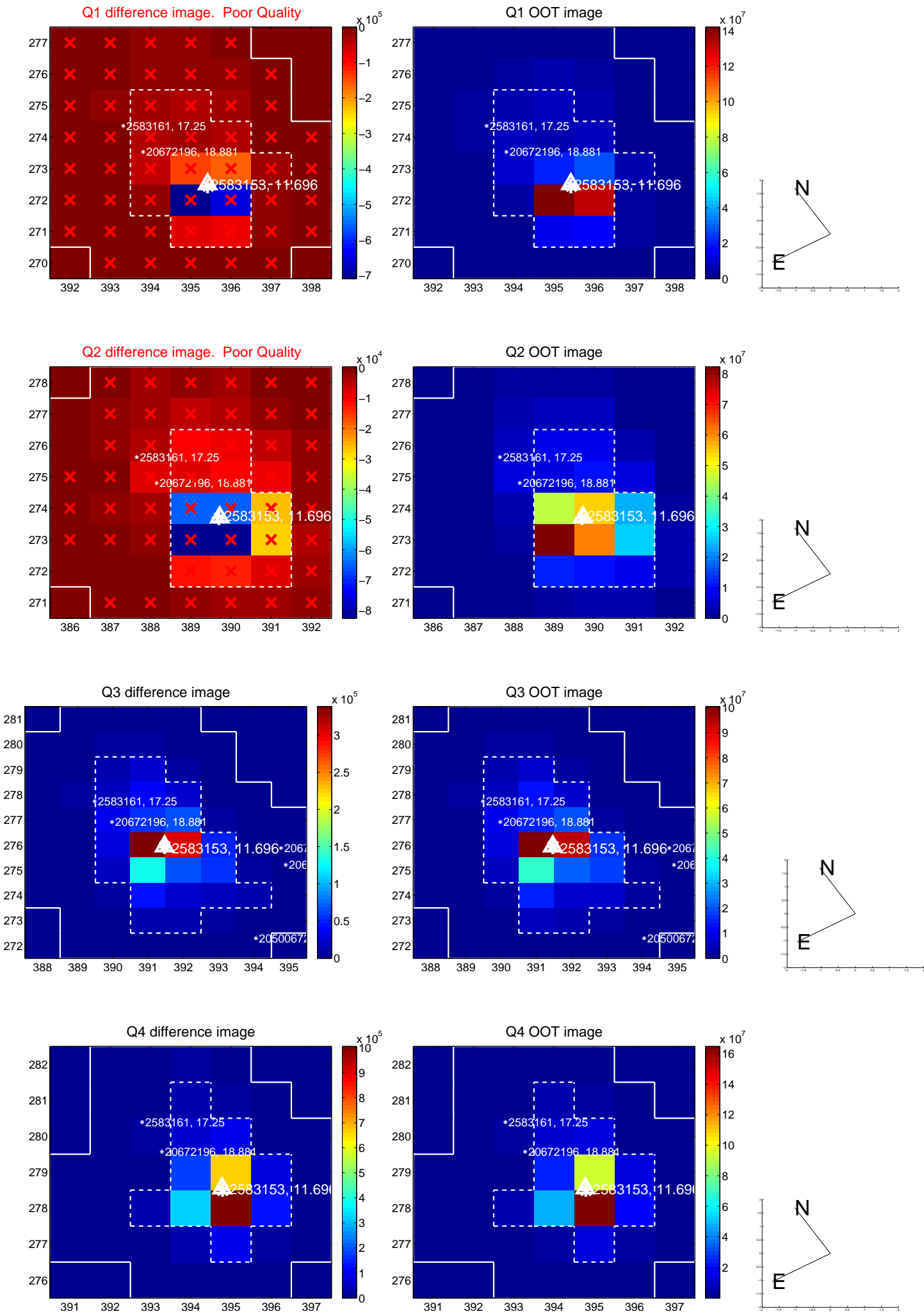
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.125 \pm 0.132$	0.95	$-0.059 \pm 0.072$	$0.110 \pm 0.135$
PRF-fit source offset from KIC position	$0.142 \pm 0.135$	1.05	$-0.042 \pm 0.072$	$0.136 \pm 0.134$
photometric centroid source offset	$0.05 \pm 0.04$	1.24	$0.03 \pm 0.03$	$0.04 \pm 0.04$



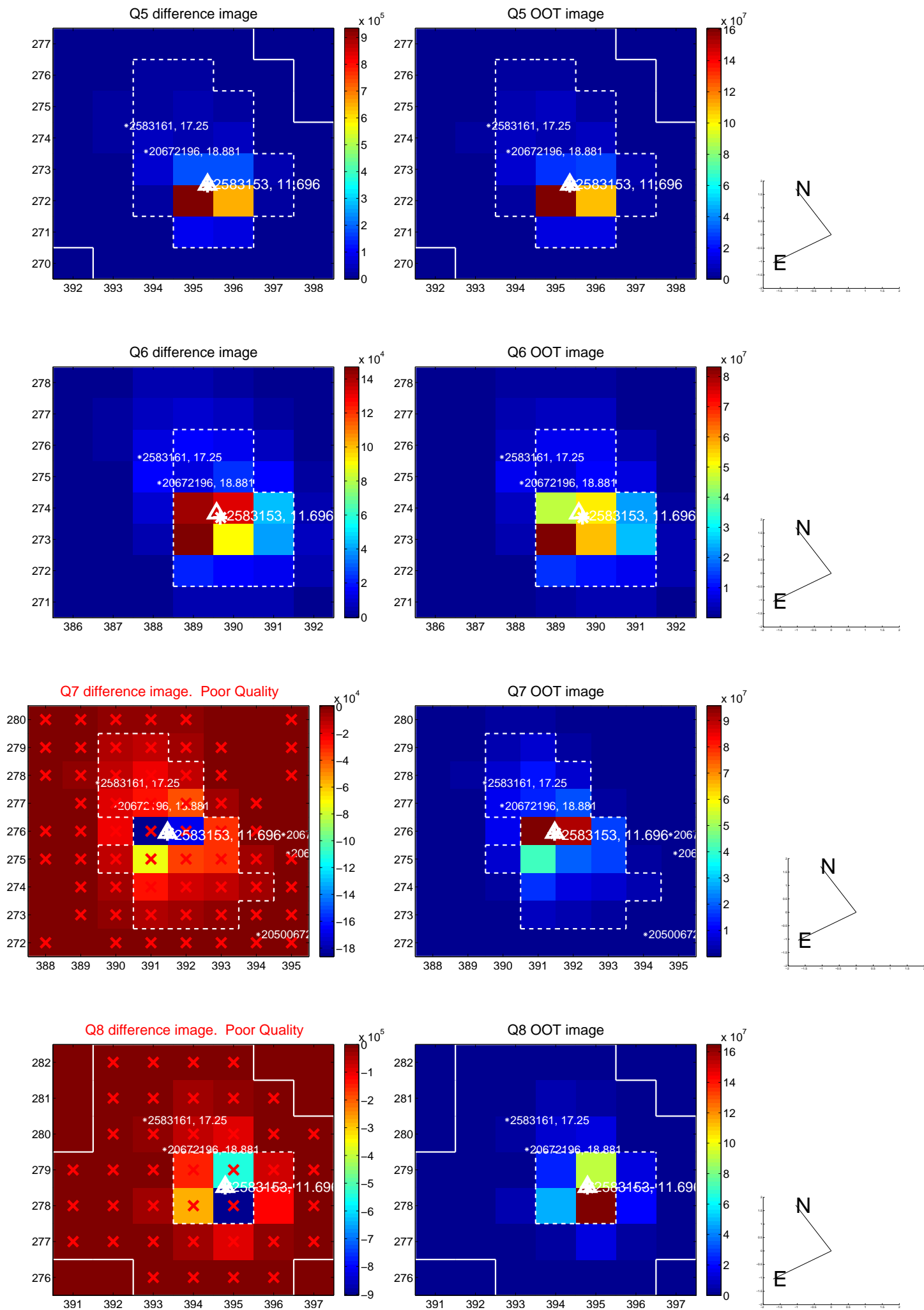
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



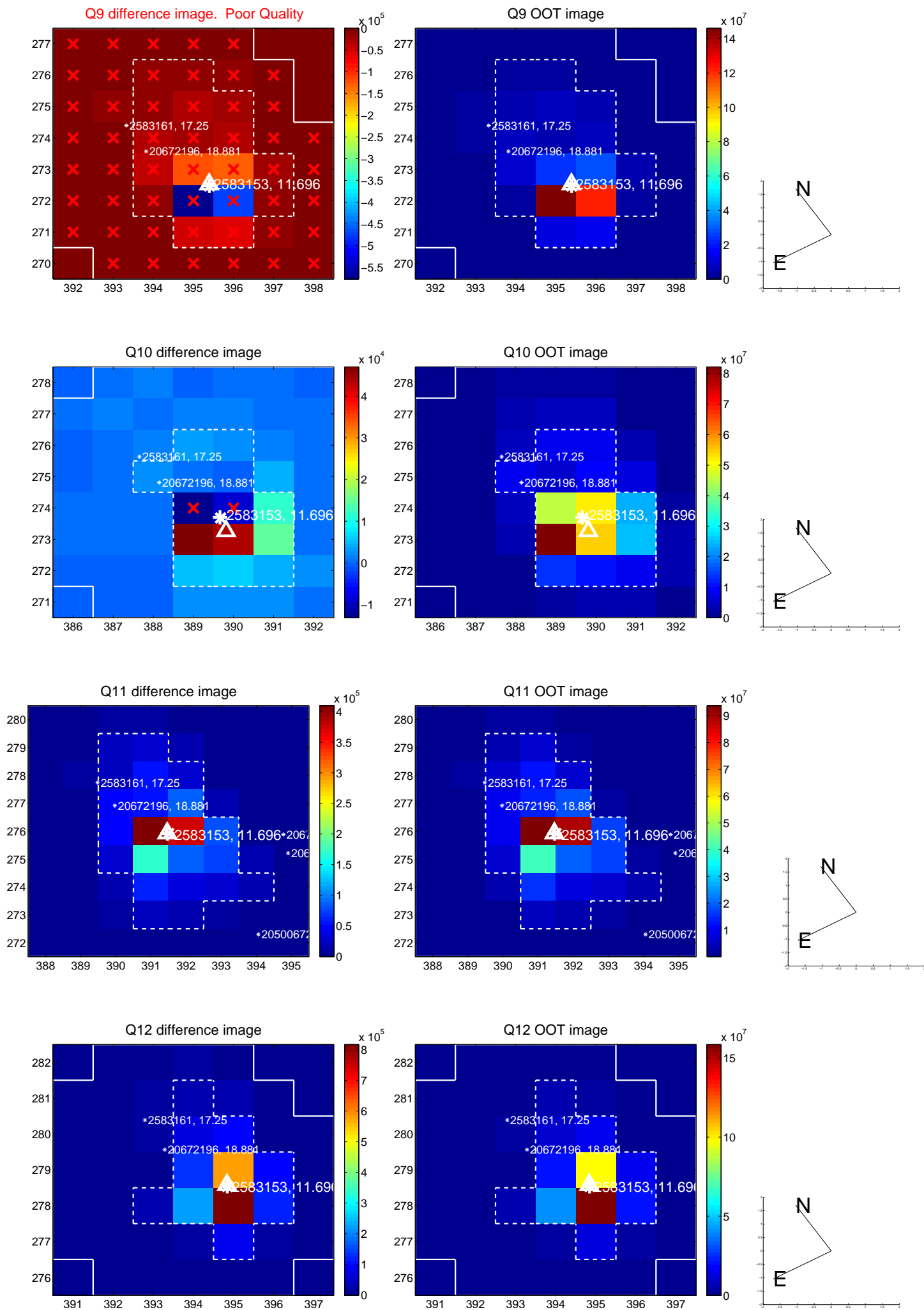
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



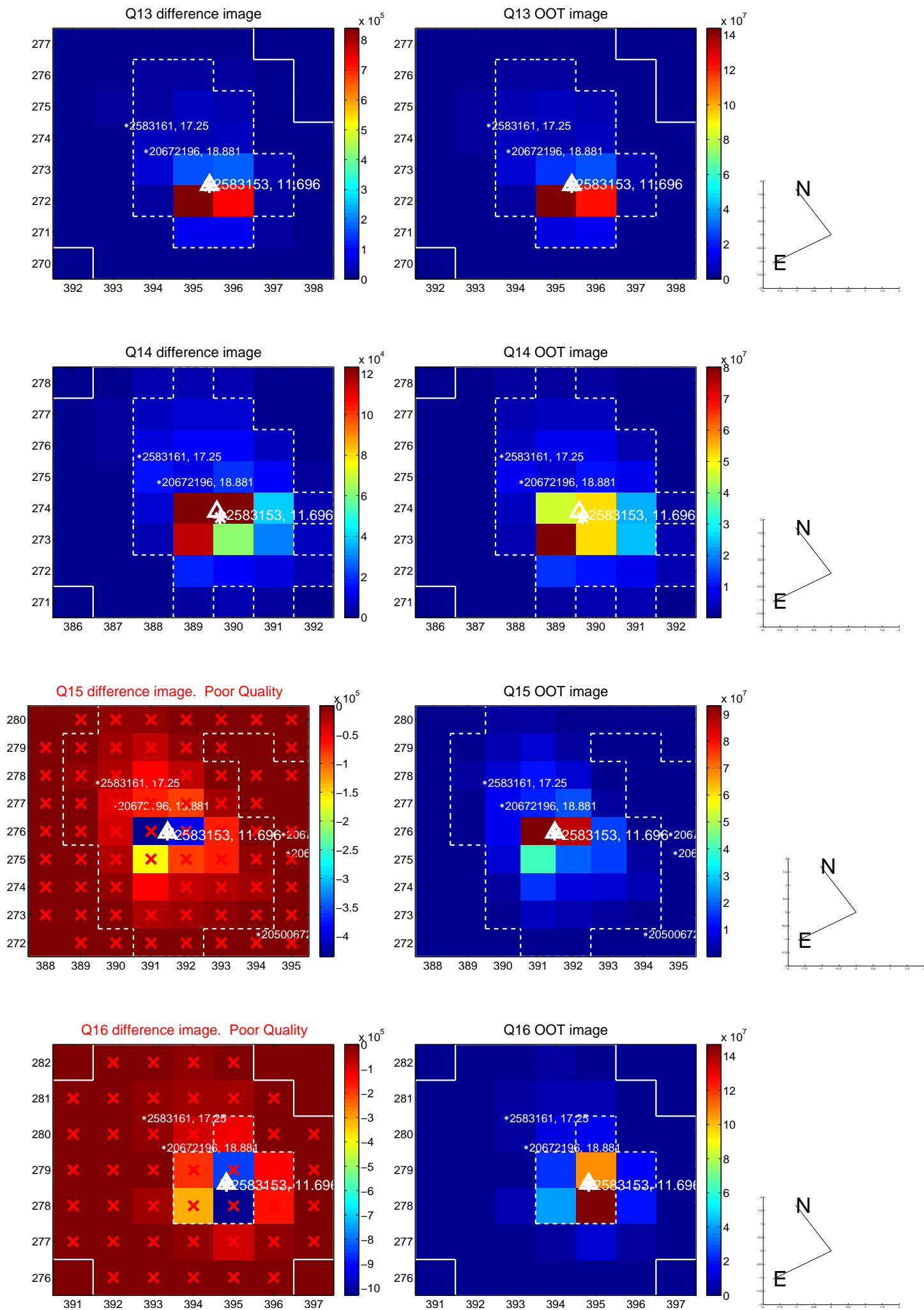
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



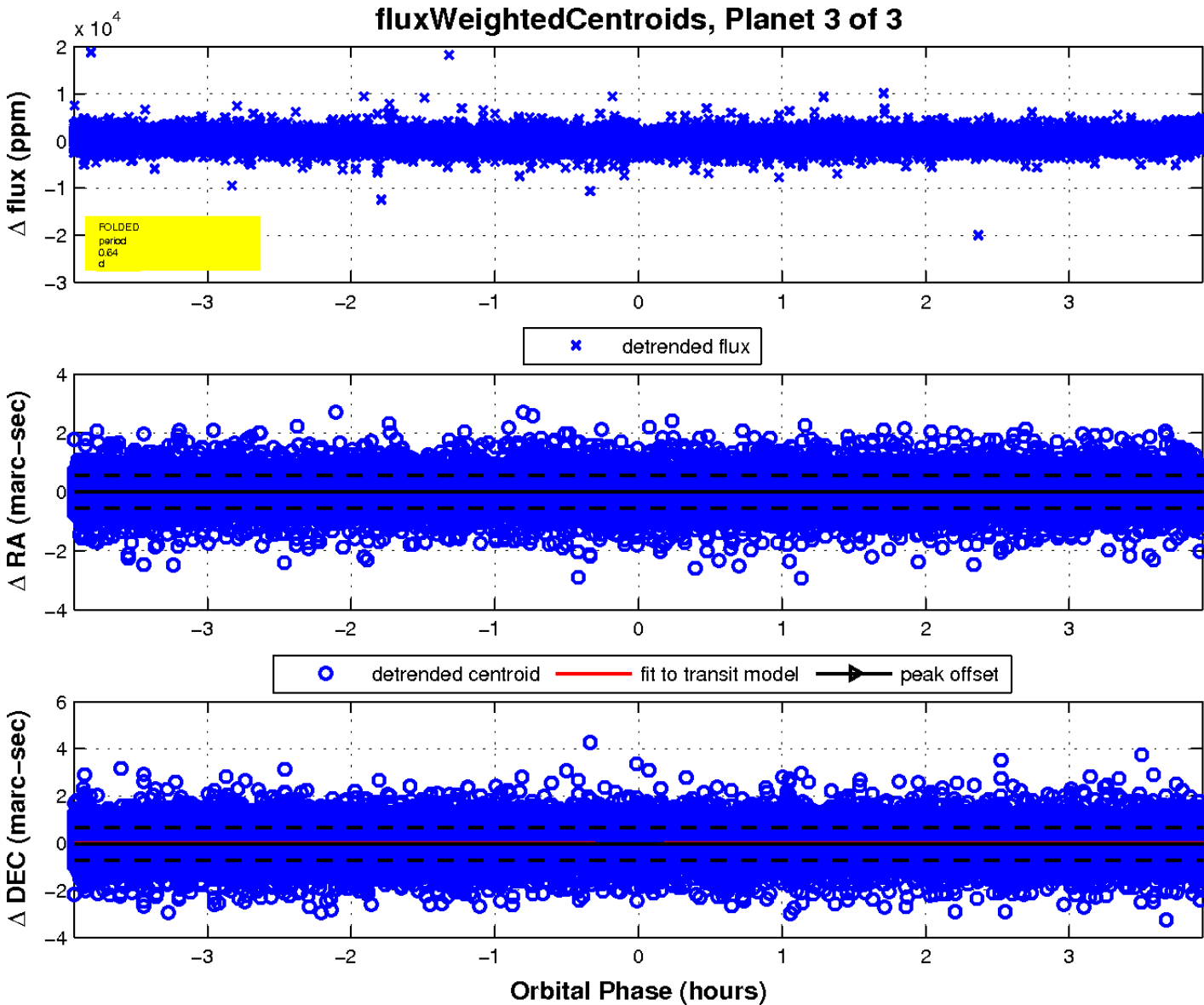
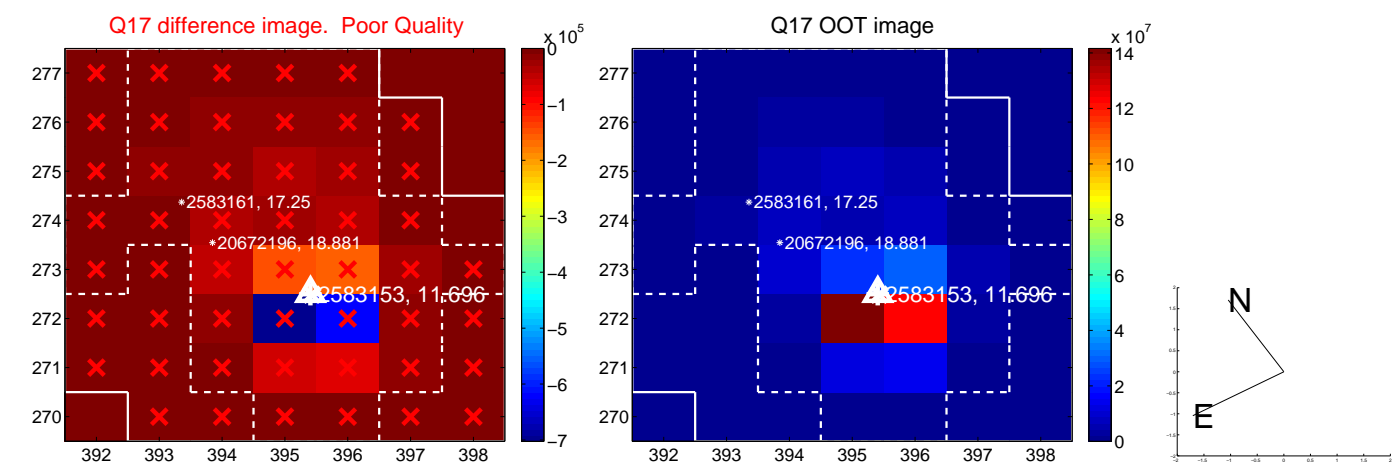
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

