

# KIC 008982583

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008982583-01	OBS	No	3.301619	131.973031	10.3	15.955	9.8	8.5	1.79	6561	0.61	2291.88
008982583-02	OBS	No	215.292244	344.031019	128.0	24.465	22.5	8.3	1.79	6561	2.33	8.73
008982583-04	OBS	No	266.436701	279.424625	73.3	8.759	10.2	5.7	1.79	6561	1.79	6.57
008982583-05	OBS	No	205.731738	336.040663	89.3	2.651	8.7	6.9	1.79	6561	1.85	9.28

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008982583-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_SATURATED
008982583-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
008982583-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_SATURATED
008982583-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_SATURATED

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

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

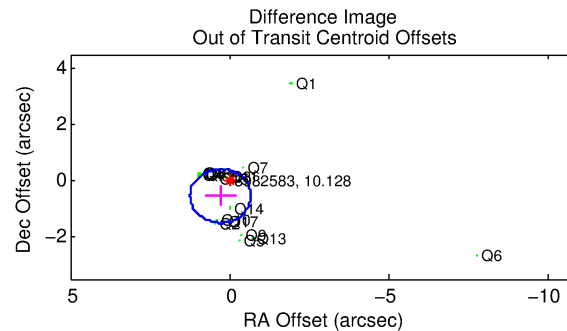
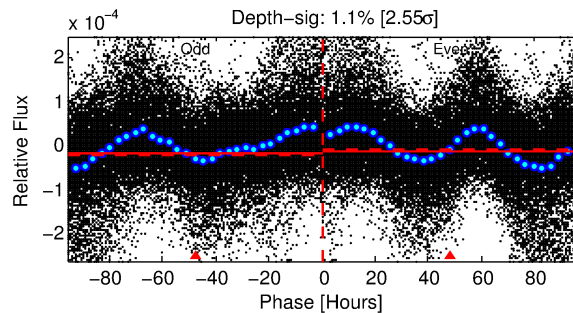
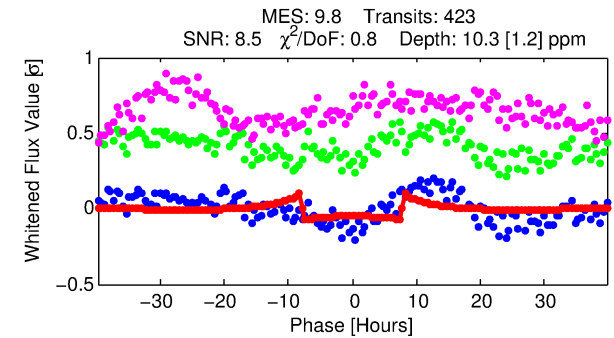
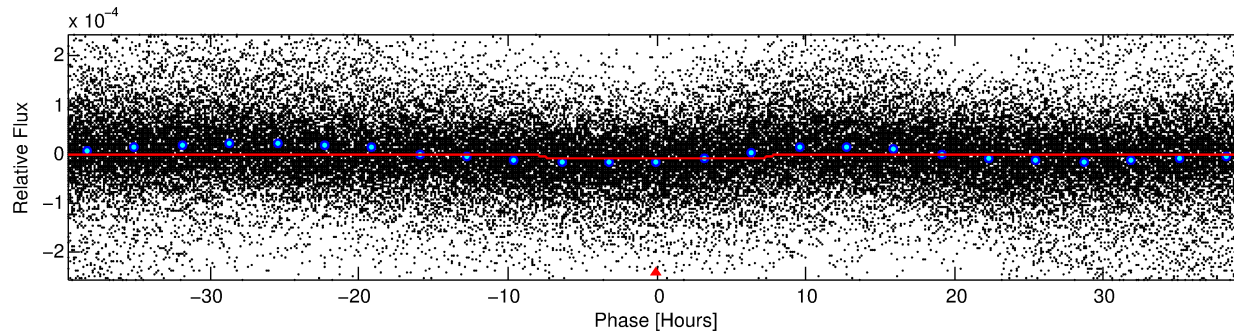
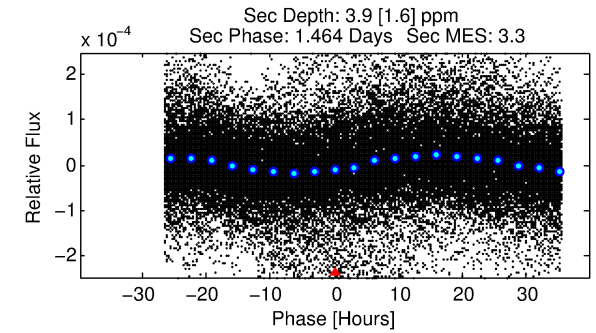
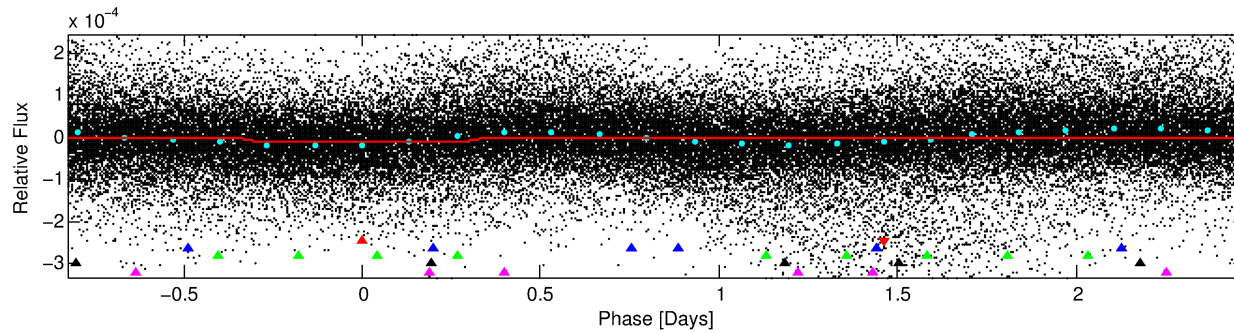
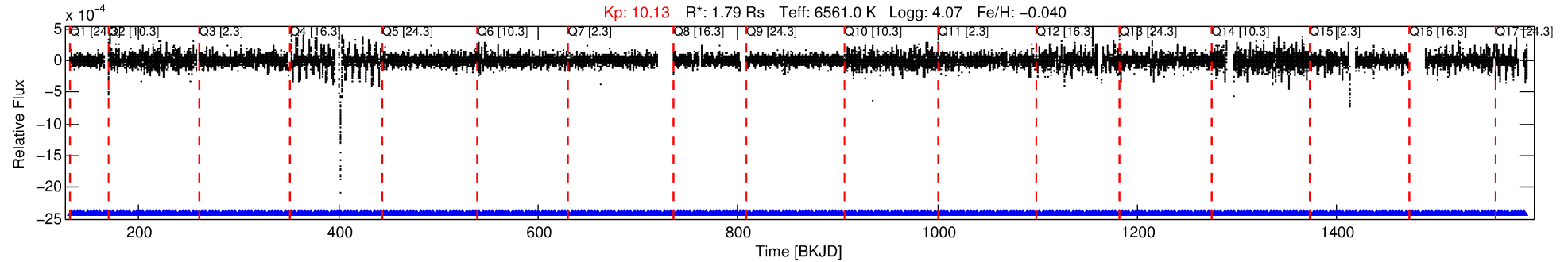
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008982583-01

No Significant Match Found

# DV One-Page Summary

KIC: 8982583 Candidate: 1 of 5 Period: 3.302 d



## DV Fit Results:

Period = 3.30162 [0.00003] d  
Epoch = 131.9730 [0.0053] BKJD  
Rp/R\* = 0.0031 [0.0005]  
a/R\* = 1.44 [0.55]  
b = 0.66 [0.63]  
Seff = 2291.88 [1074.65]  
Teq = 1764 [207] K  
Rp = 0.61 [0.22] Re  
a = 0.0483 [0.0140] AU  
Ag = 13.40 [9.08] [1.37σ]  
Teffp = 5219 [697] K [4.75σ]

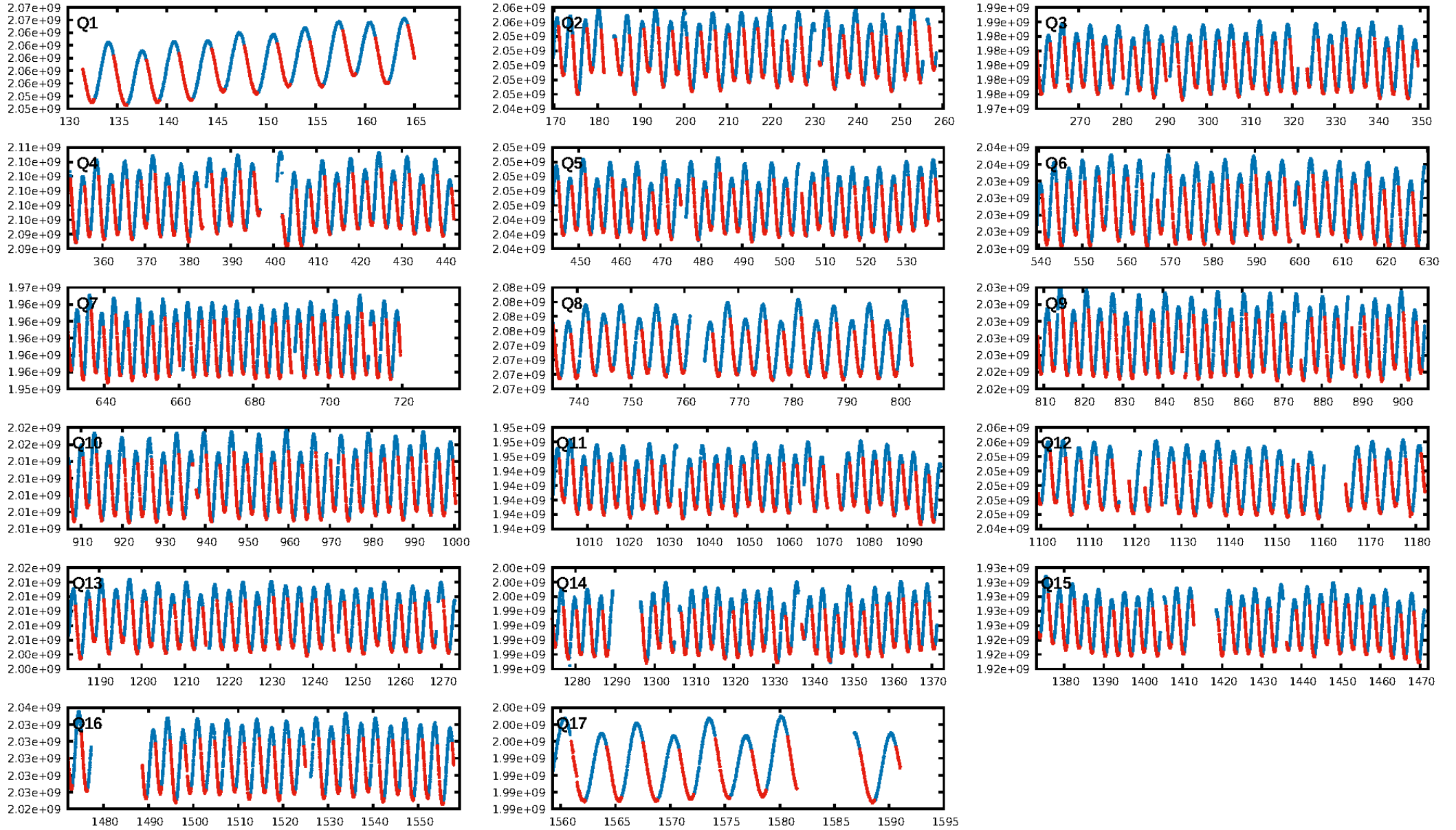
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [140.30σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGoF-sig: N/A  
Bootstrap-pfa: 1.97e-14  
RollingBand-fgt: 1.00 [403/403]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 0.0%  
Centroid-so: 4.394 arcsec [2.03σ]  
OotOffset-rm: 0.618 arcsec [1.94σ]  
KicOffset-rm: 0.950 arcsec [2.32σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.12 [2/17]  
DiffImageOverlap-fno: 1.00 [17/17]

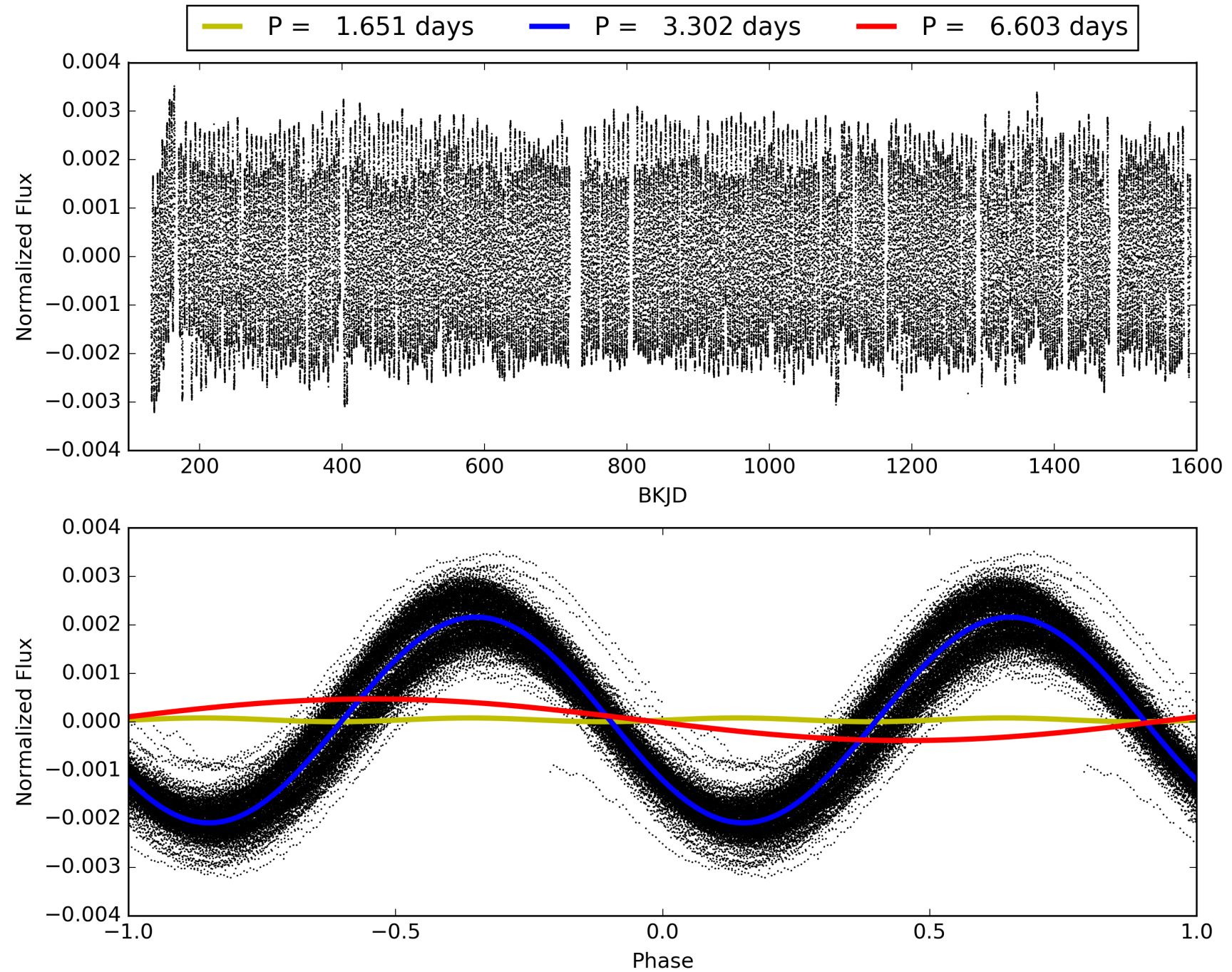
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:06:18 Z

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

# TCE 008982583-01, PDC Light Curves



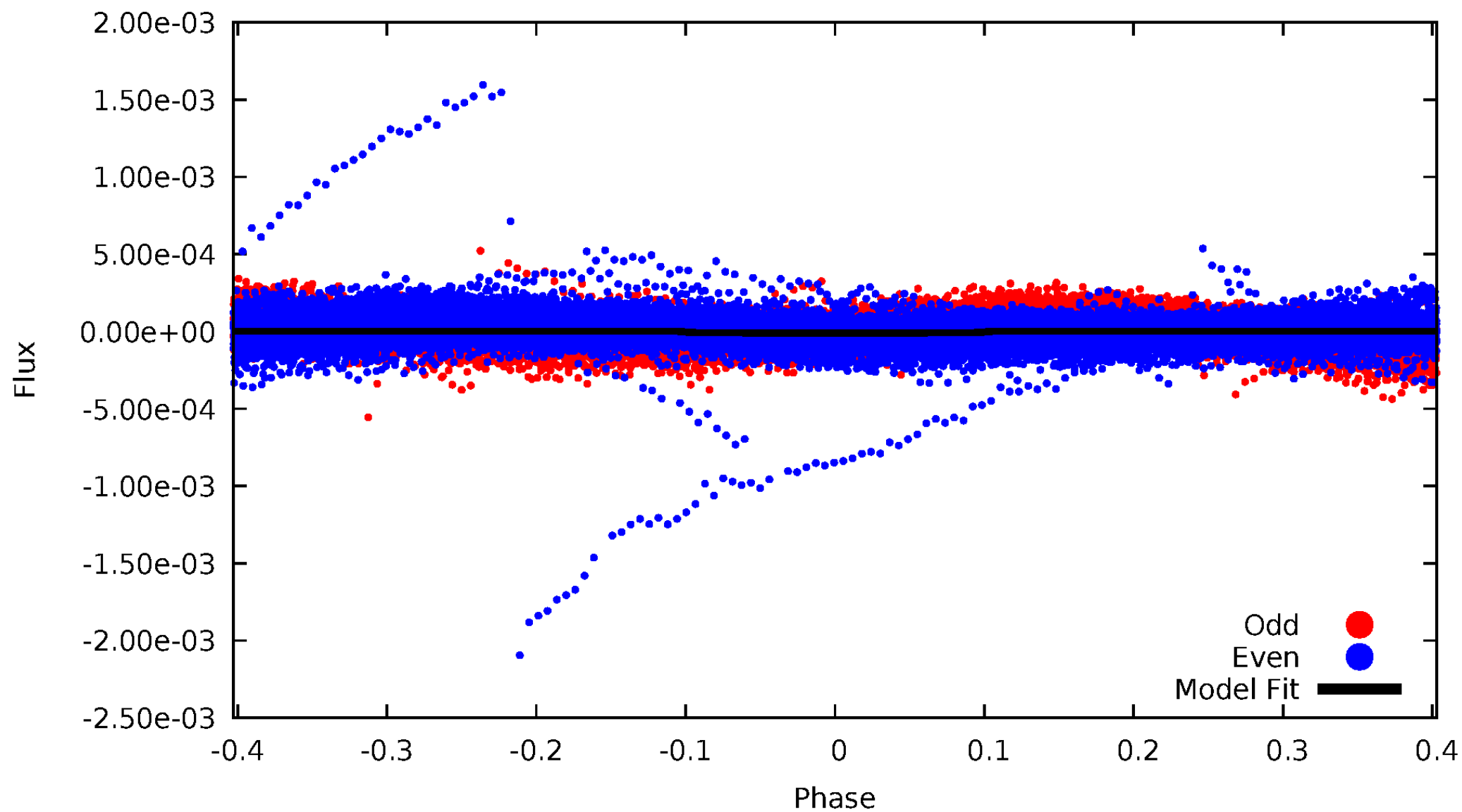
TCE 008982583-01





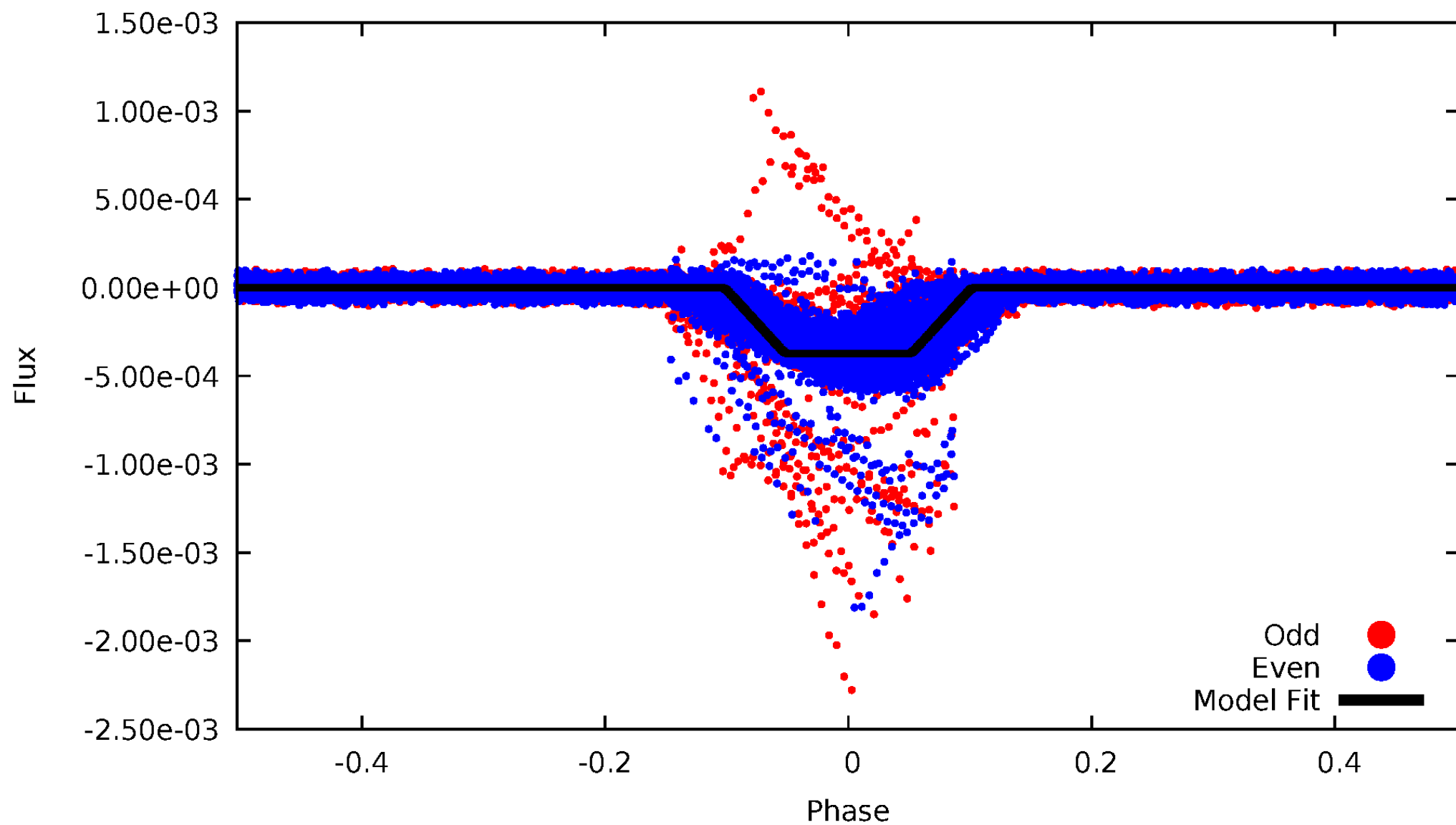
# DV Odd/Even

TCE 008982583-01

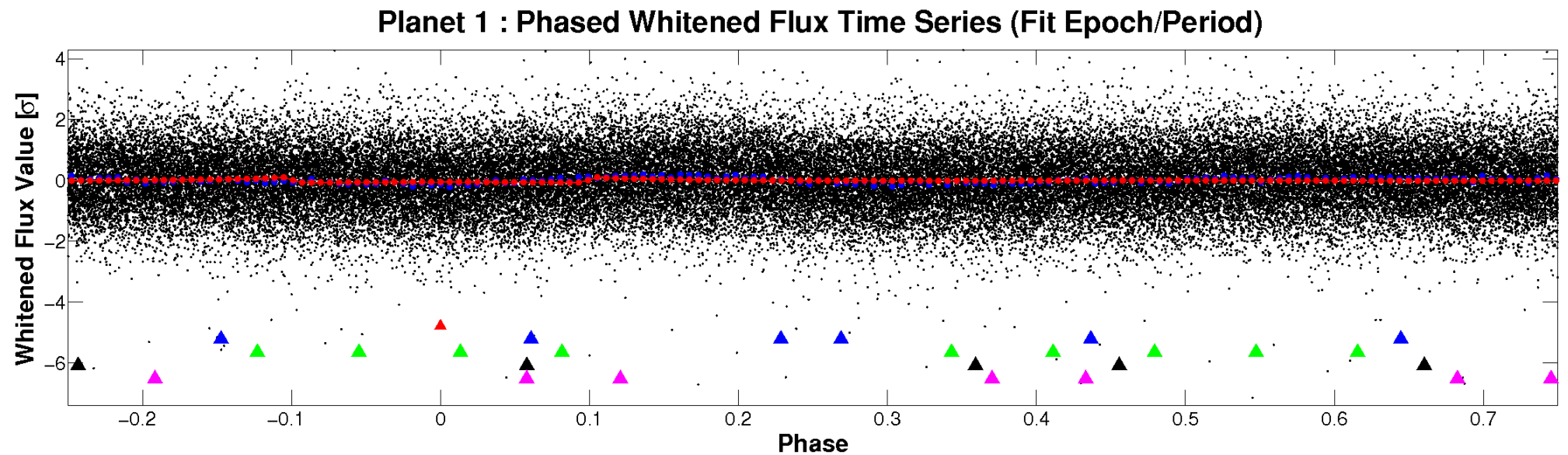
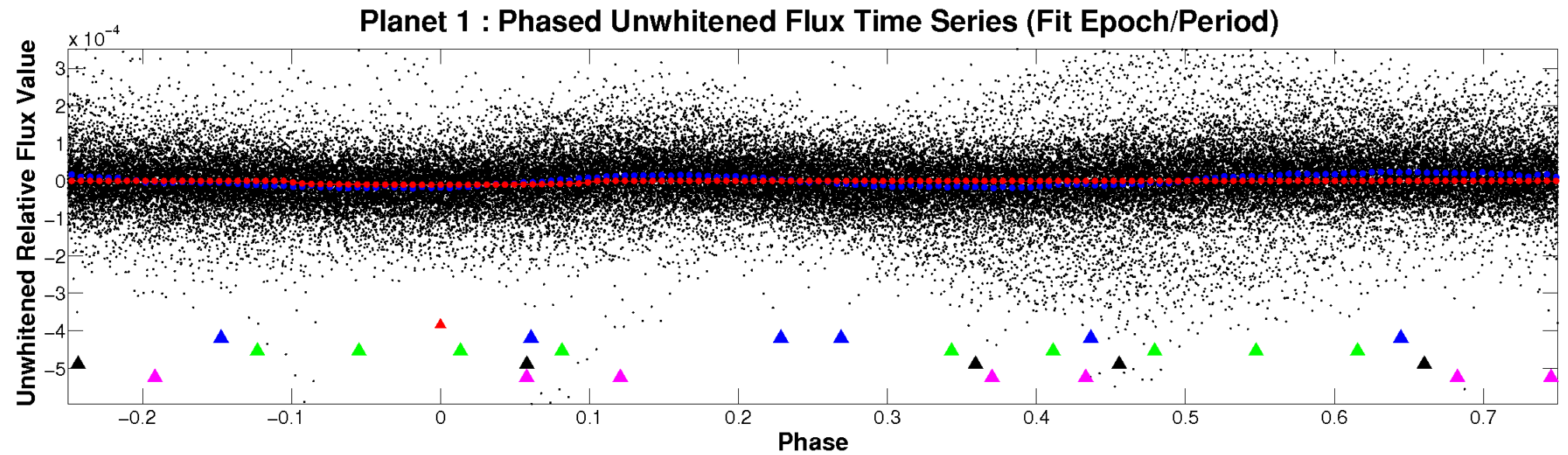


# ALT Odd/Even

TCE 008982583-01

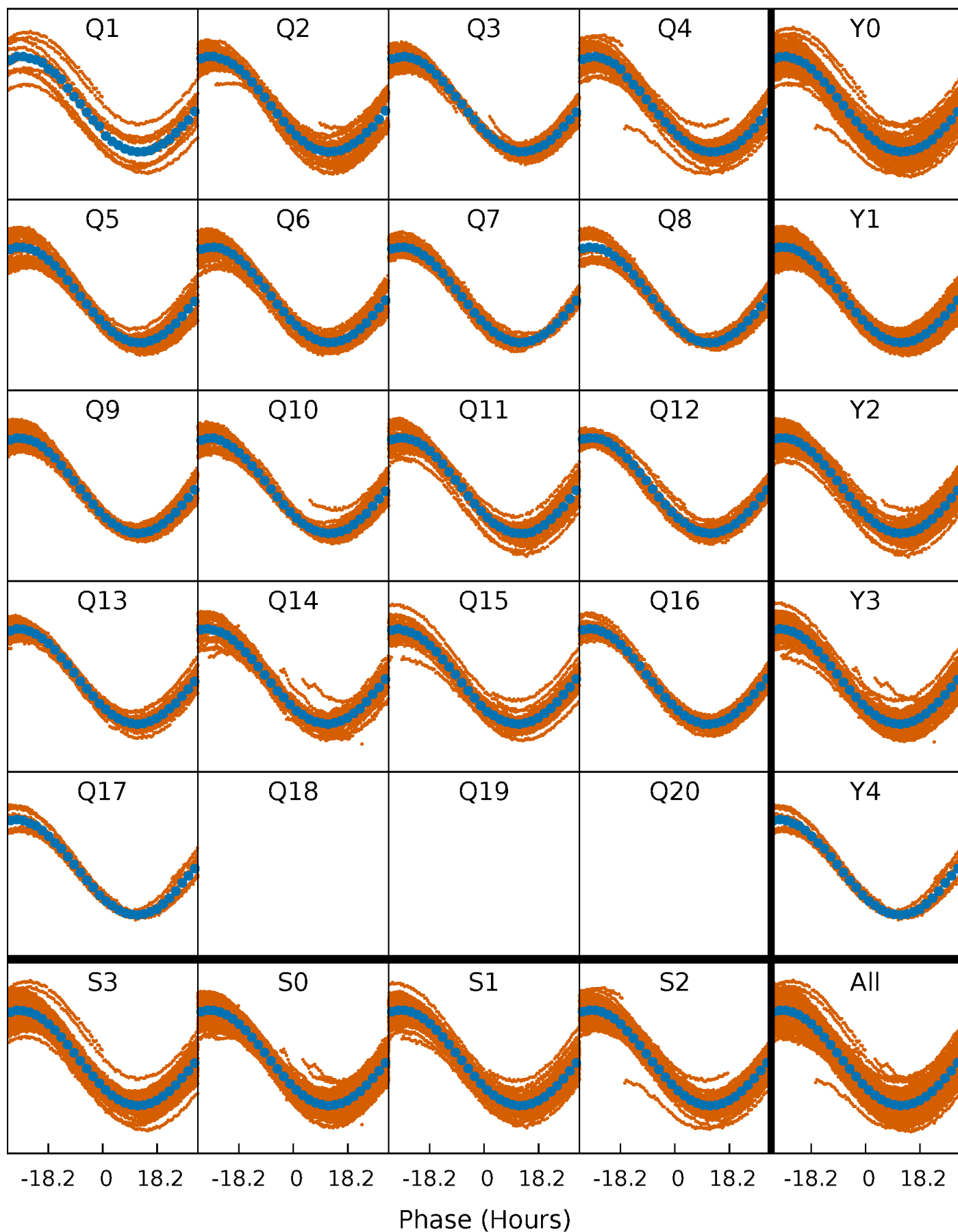


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

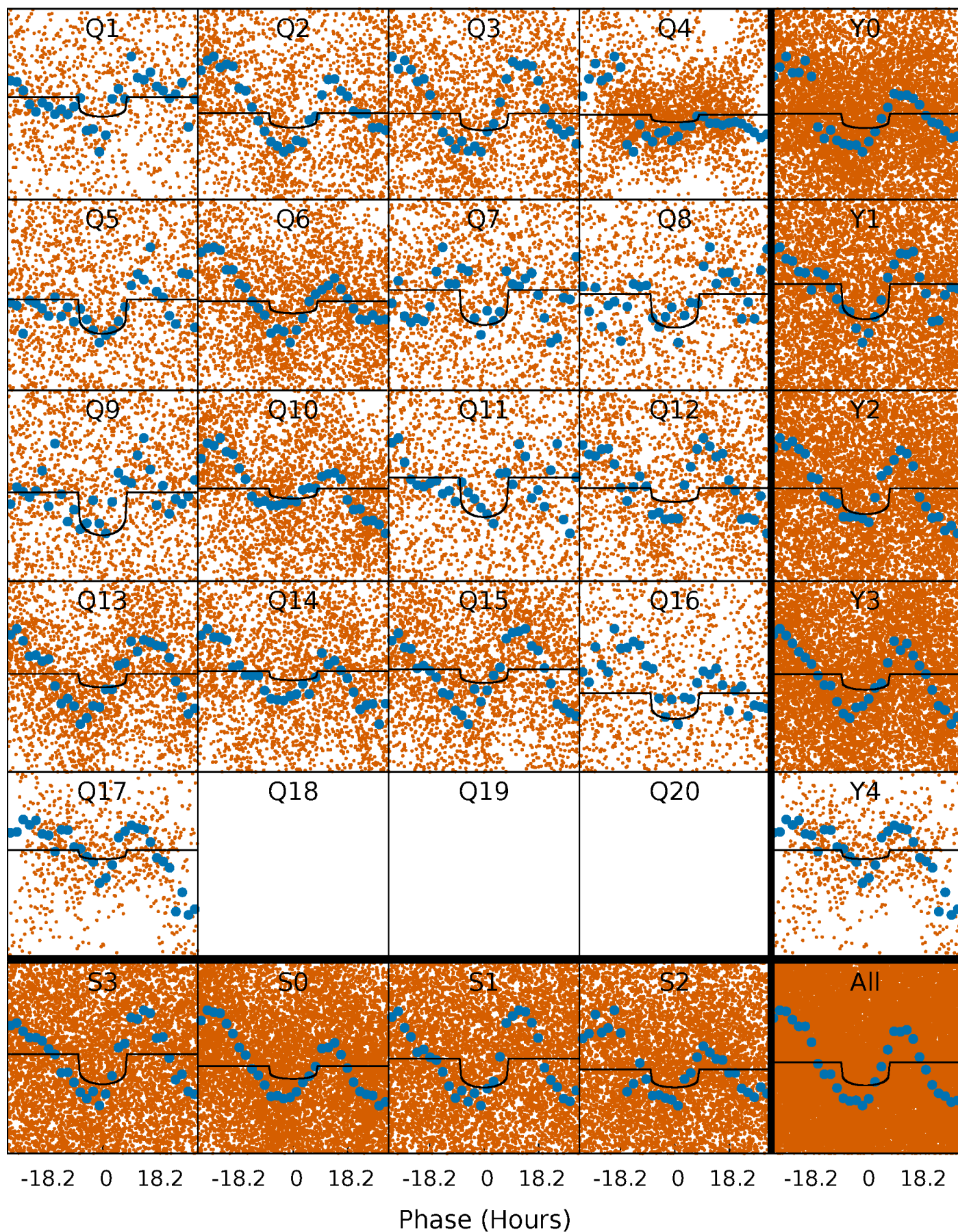
TCE 008982583-01   P= 3.301619 Days    $T_0=131.973031$  (BKJD)





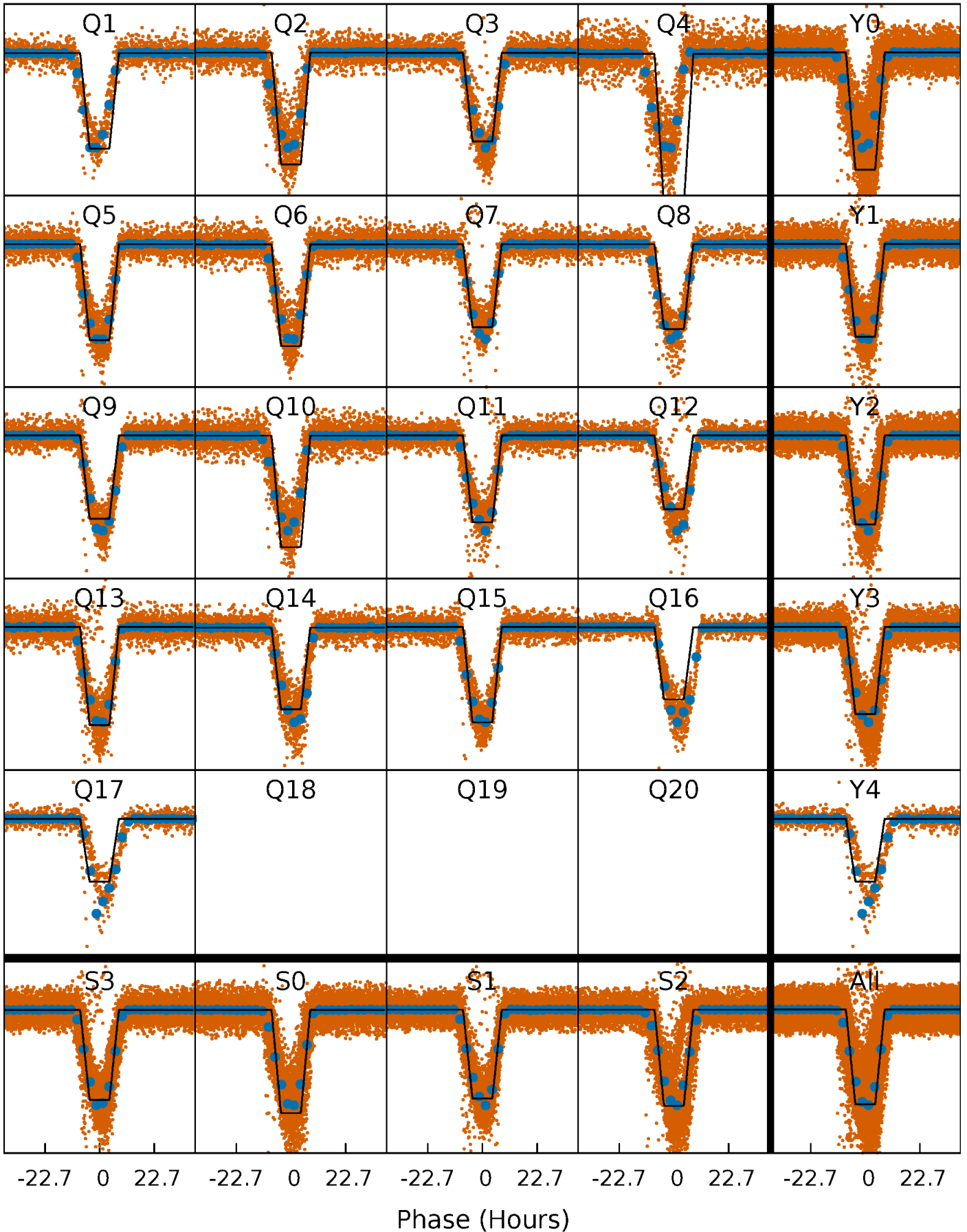
# DV Quarter-Phased Transit Curves

TCE 008982583-01   P= 3.301619 Days    $T_0=131.973031$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

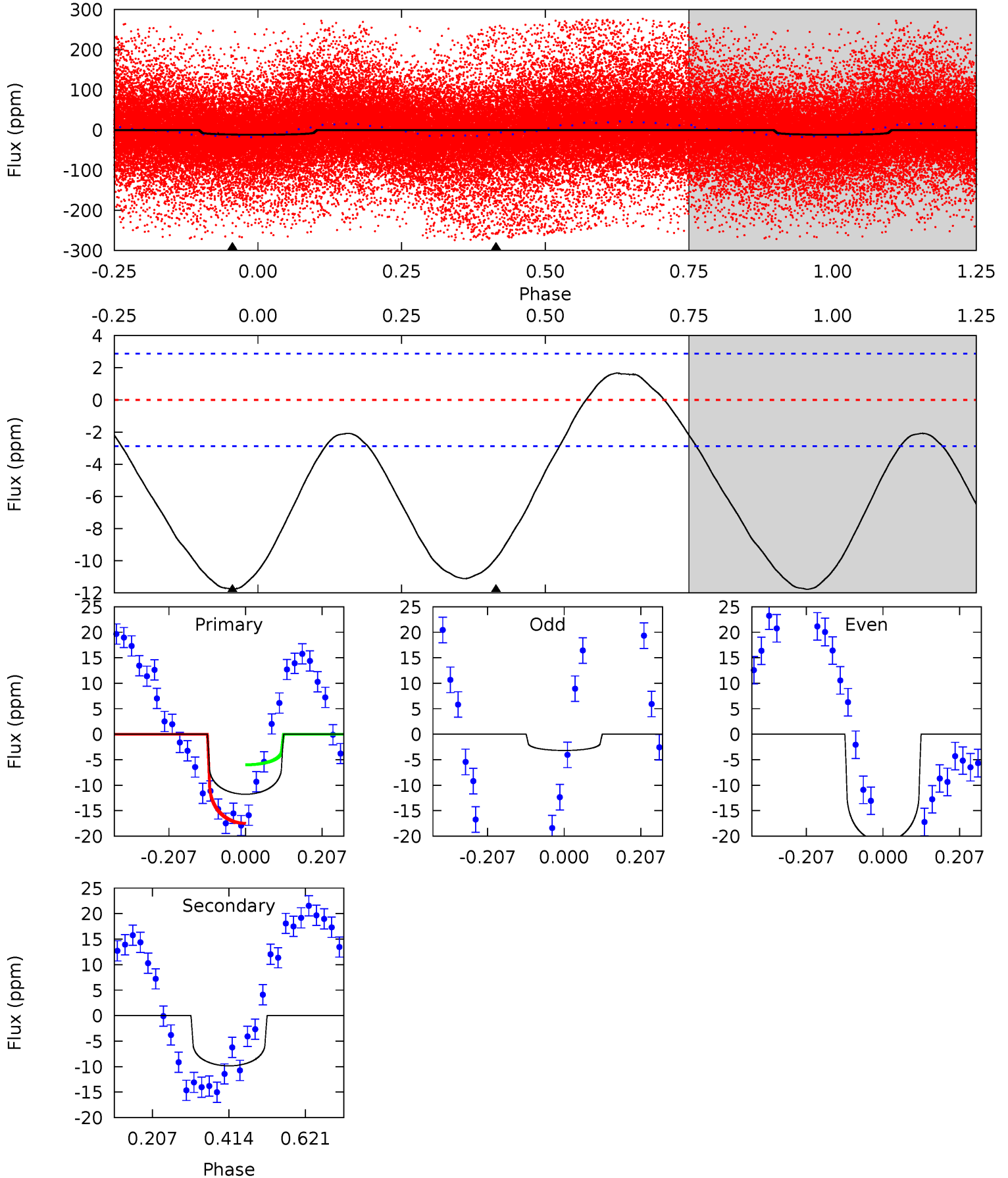
TCE 008982583-01 P= 3.301480 Days  $T_0=132.037783$  (BKJD)



# DV Model-Shift Uniqueness Test

008982583-01, P = 3.301619 Days, E = 128.671412 Days

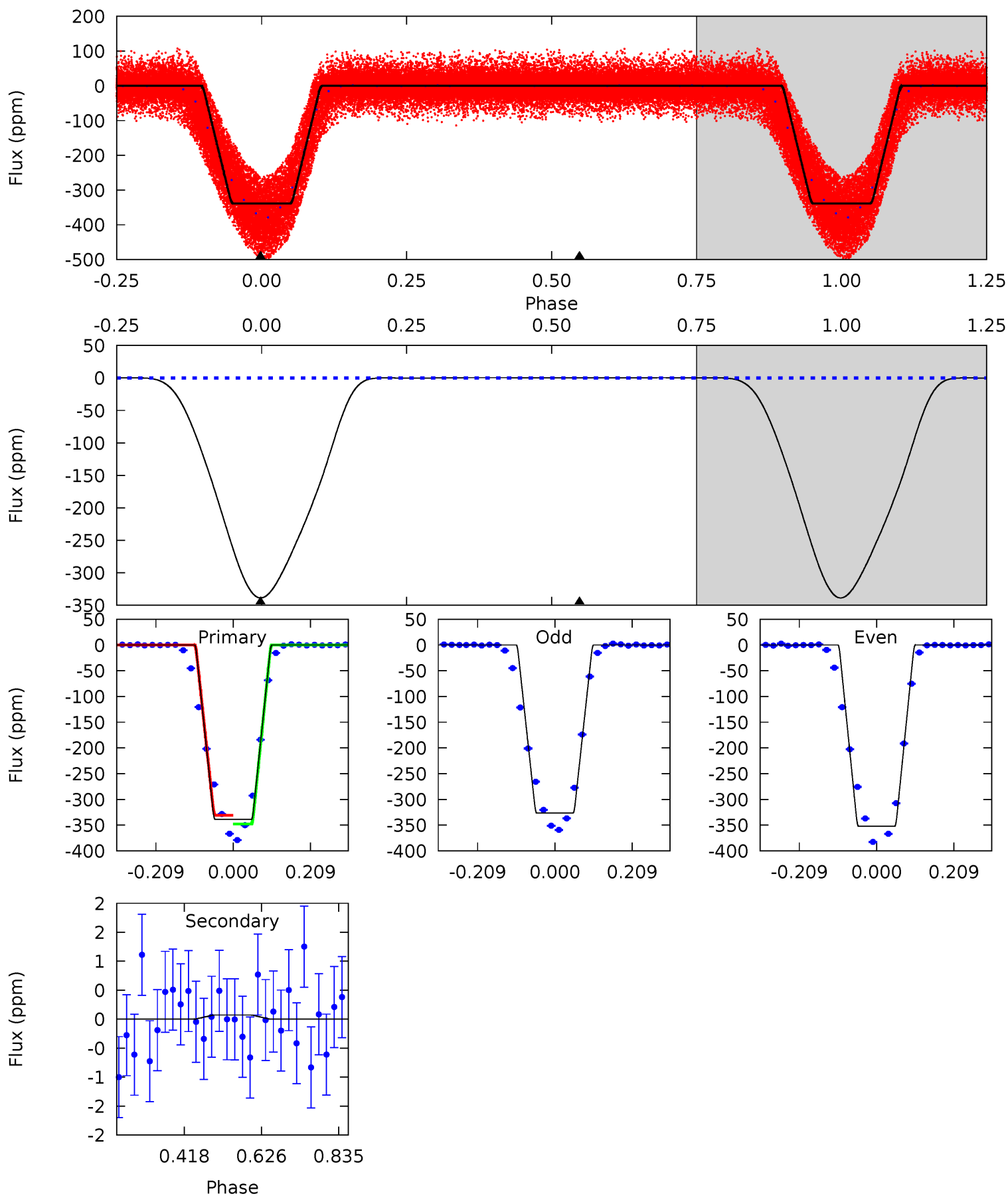
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.1	15.1	0	0	4.41	1.26	2.66	18.1	18.1	15.1	15.1	14.8	1.50	0.12	9.23



# Alt Model-Shift Uniqueness Test

008982583-01, P = 3.301480 Days, E = 128.736303 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
1369	-0.29	0	0	4.41	1.26	0.46	1369	1369	-0.29	-0.29	50.8	1.14	0.00	33.8





### Stellar Parameters For KIC 008982583

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6561^{+181}_{-250}$	$4.069^{+0.252}_{-0.168}$	$-0.040^{+0.250}_{-0.300}$	$1.793^{+0.530}_{-0.583}$	$1.377^{+0.182}_{-0.273}$	$0.336^{+0.543}_{-0.160}$
	+3%/-4%	+6%/-4%	+625%/-750%	+30%/-33%	+13%/-20%	+161%/-48%
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 008982583-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-10 \pm 1$	$0.60^{+0.15}_{-0.13}$	$2443^{+194}_{-212}$	$6552^{+609}_{-513}$	$35^{+20}_{-12}$
Alt.	$0 \pm 0$	$3.67^{+0.61}_{-0.61}$	$2427^{+203}_{-212}$	$-2761^{+133}_{-114}$	$-0.005^{+0.022}_{-0.026}$

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

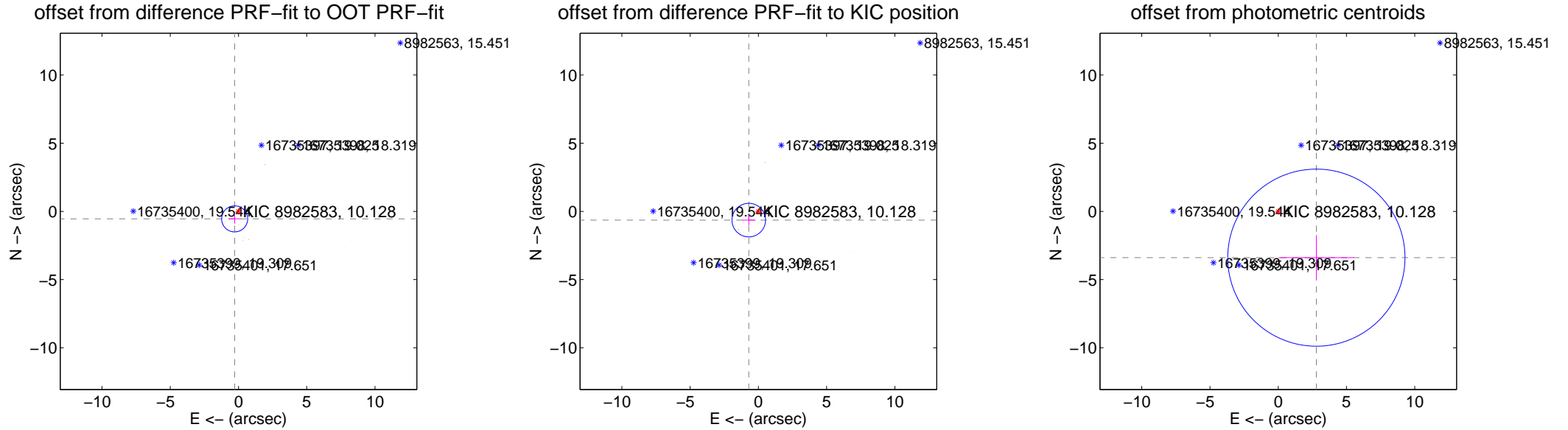
## DV Centroid Data

Supplemental centroid analysis for 008982583-01. **Kepler magnitude: 10.13.** Transit SNR 8.54

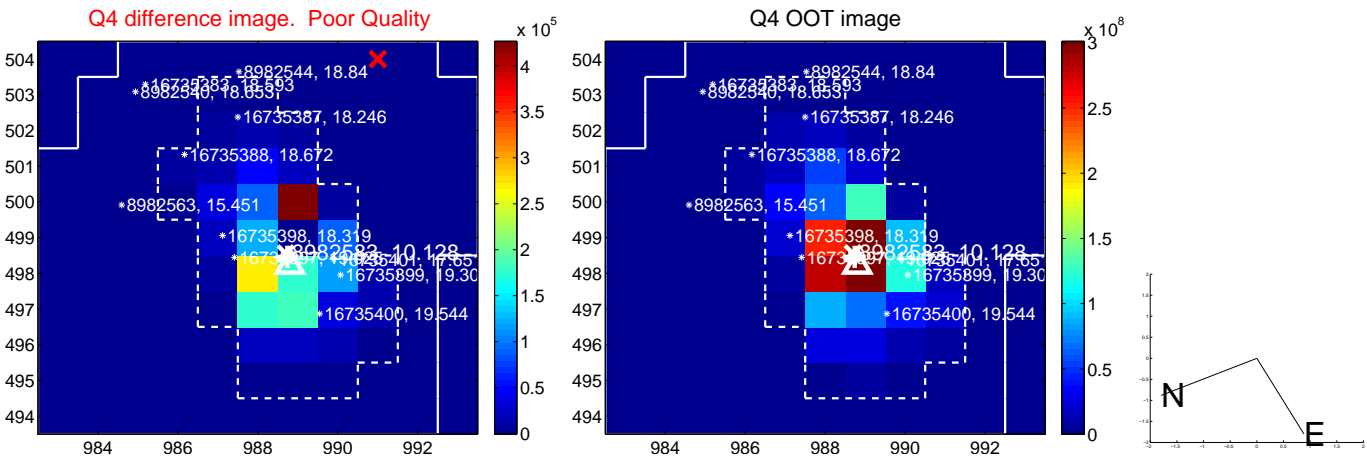
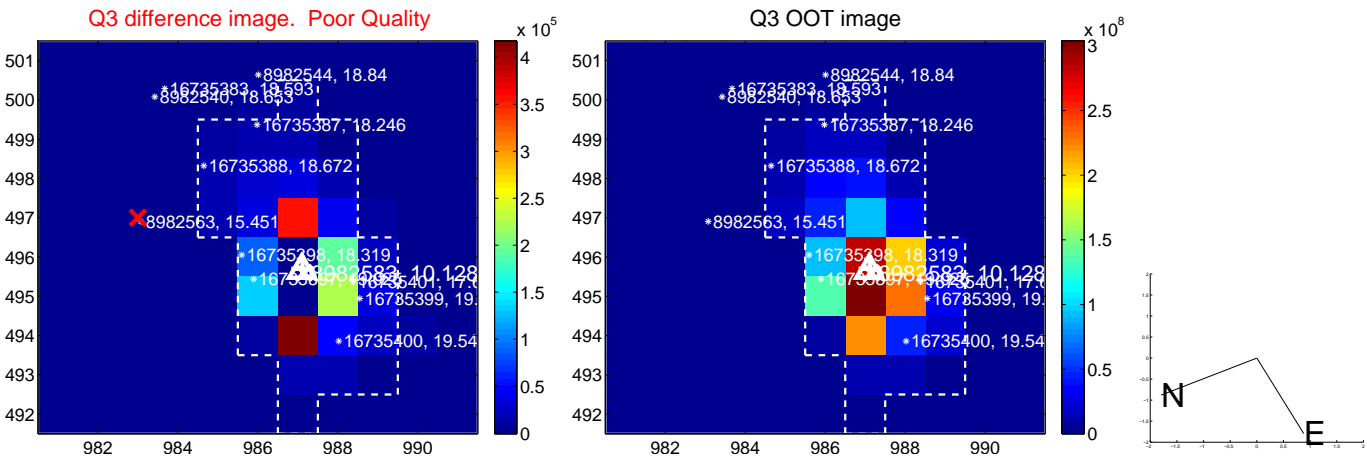
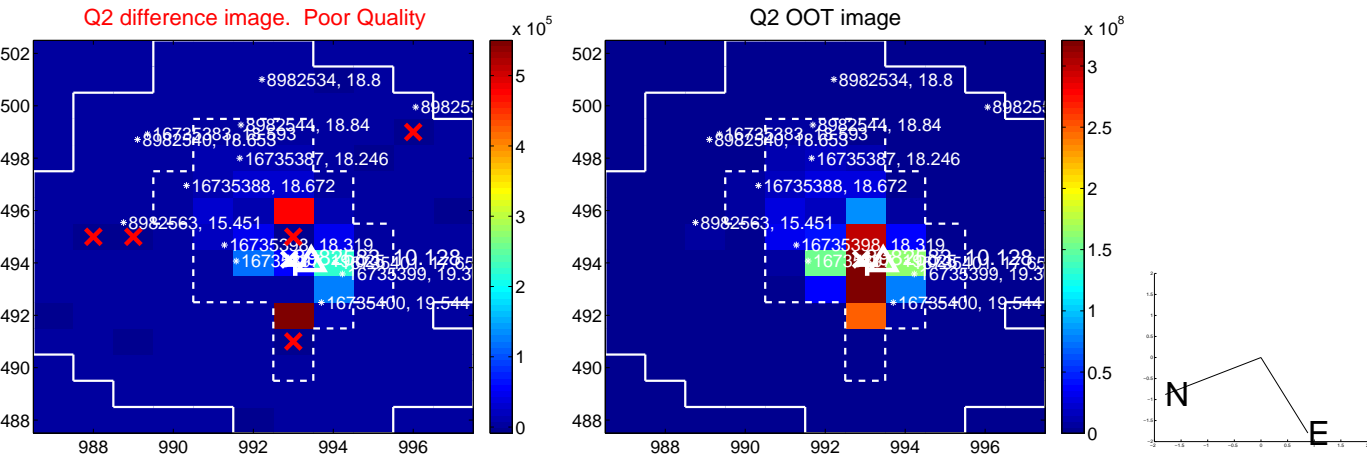
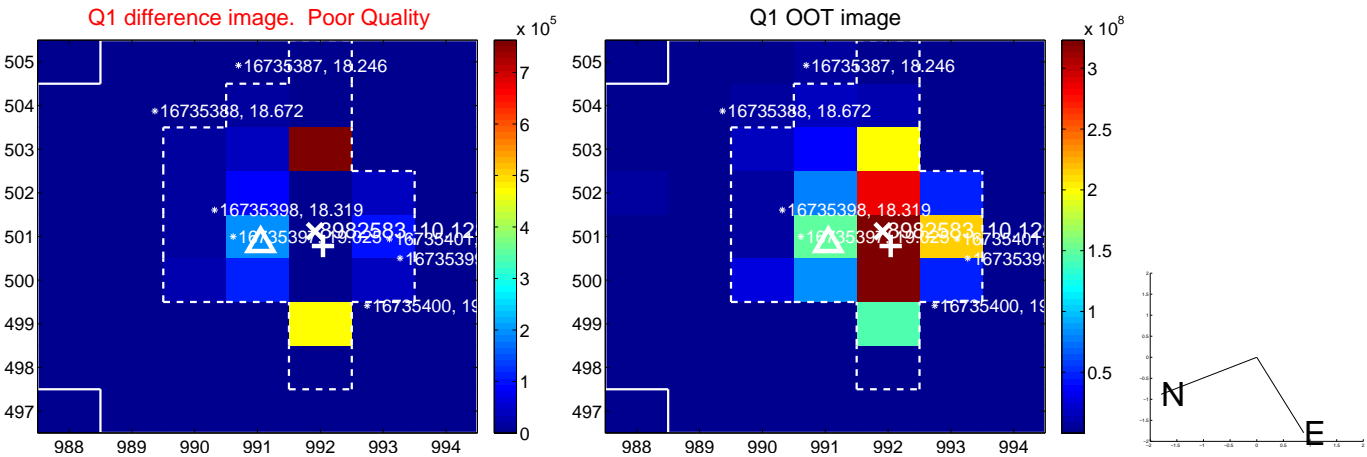
**There are 2 quarters with good PRF difference image offsets**

The direct PRF centroid is offset from the target star catalog position by about 1.31 arcsec

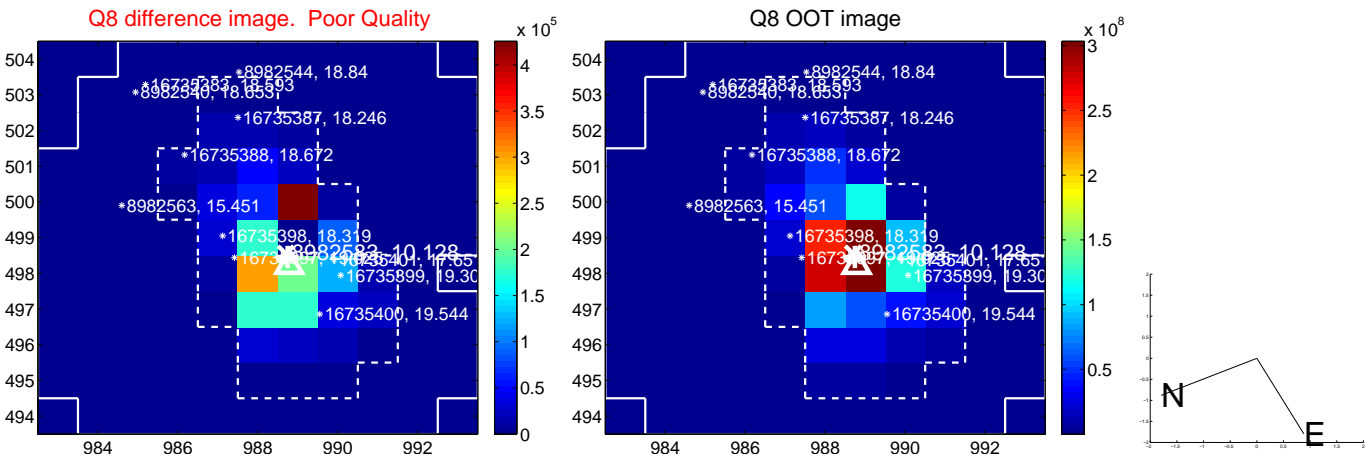
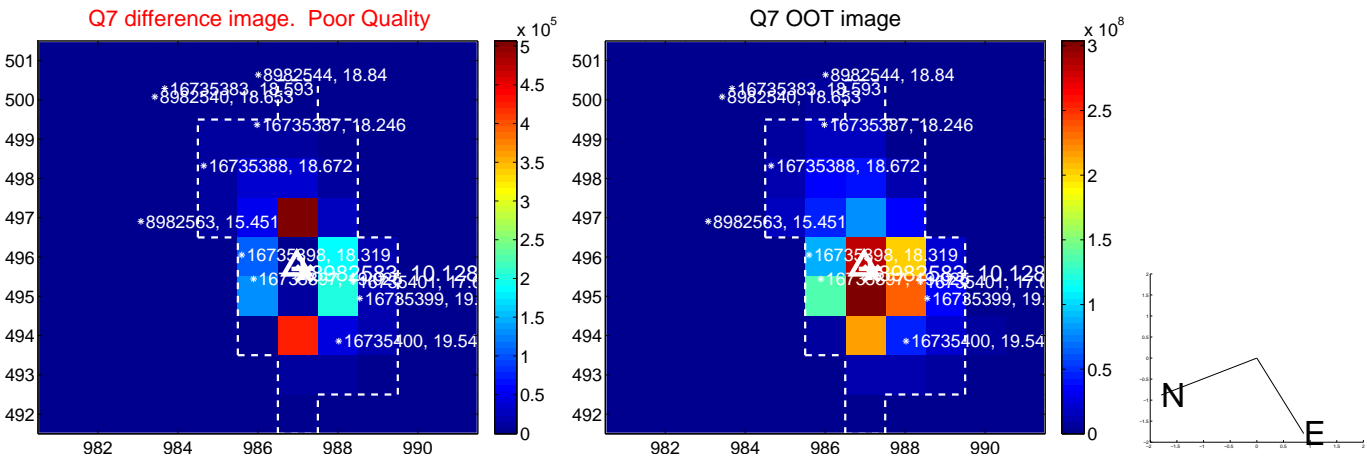
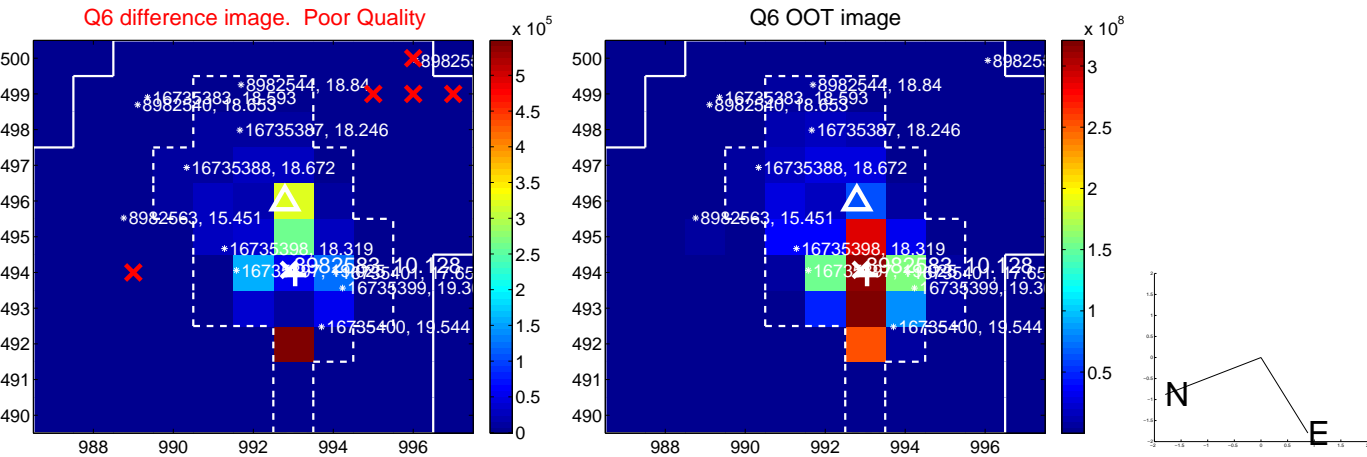
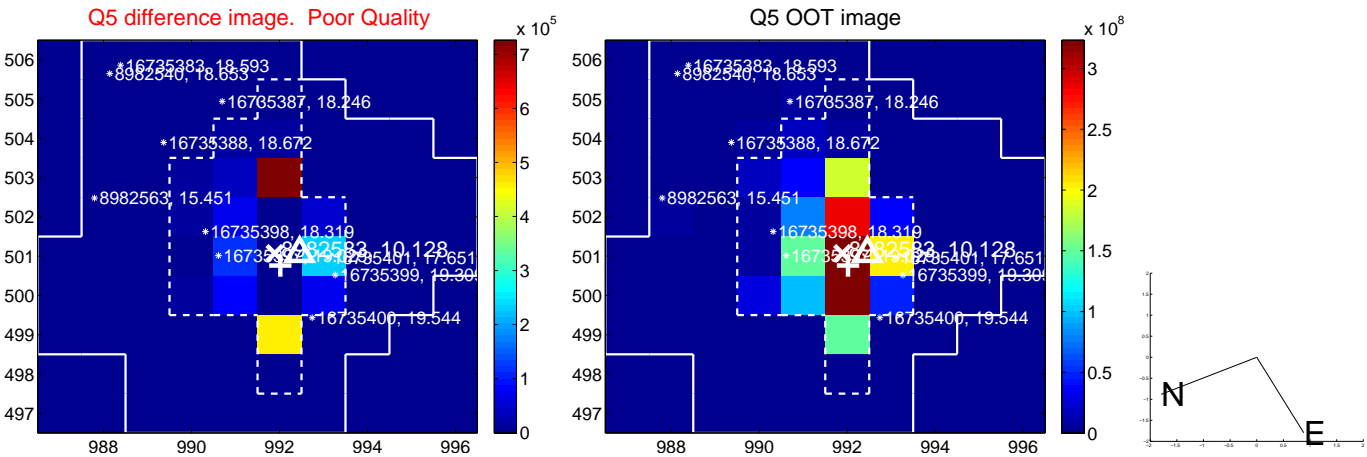
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.618 \pm 0.318$	1.94	$0.282 \pm 0.464$	$-0.550 \pm 0.350$
PRF-fit source offset from KIC position	$0.950 \pm 0.410$	2.32	$0.705 \pm 0.499$	$-0.638 \pm 0.375$
photometric centroid source offset	$4.39 \pm 2.16$	2.03	$-2.79 \pm 2.76$	$-3.39 \pm 1.64$



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

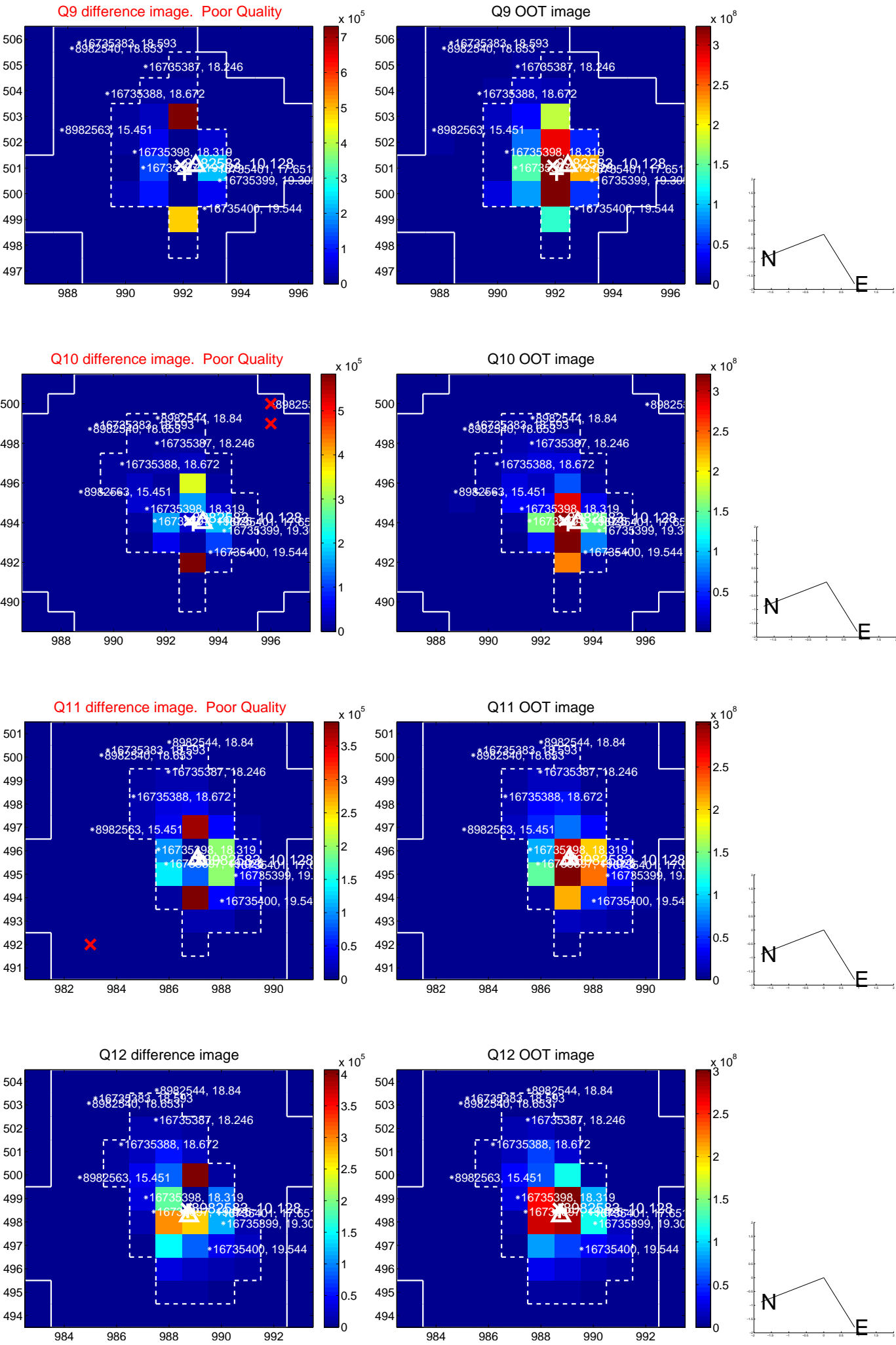


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

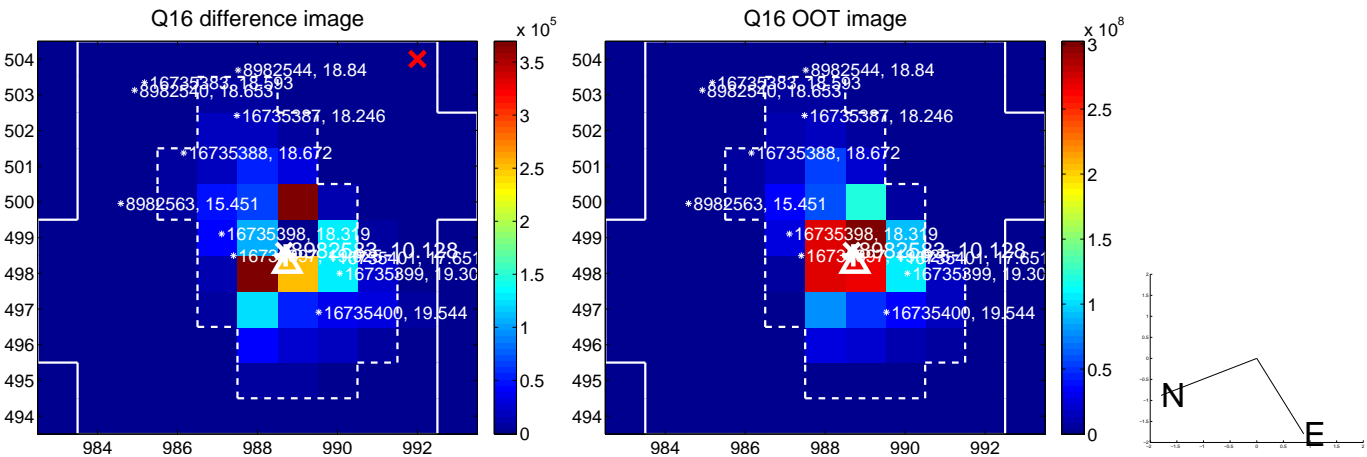
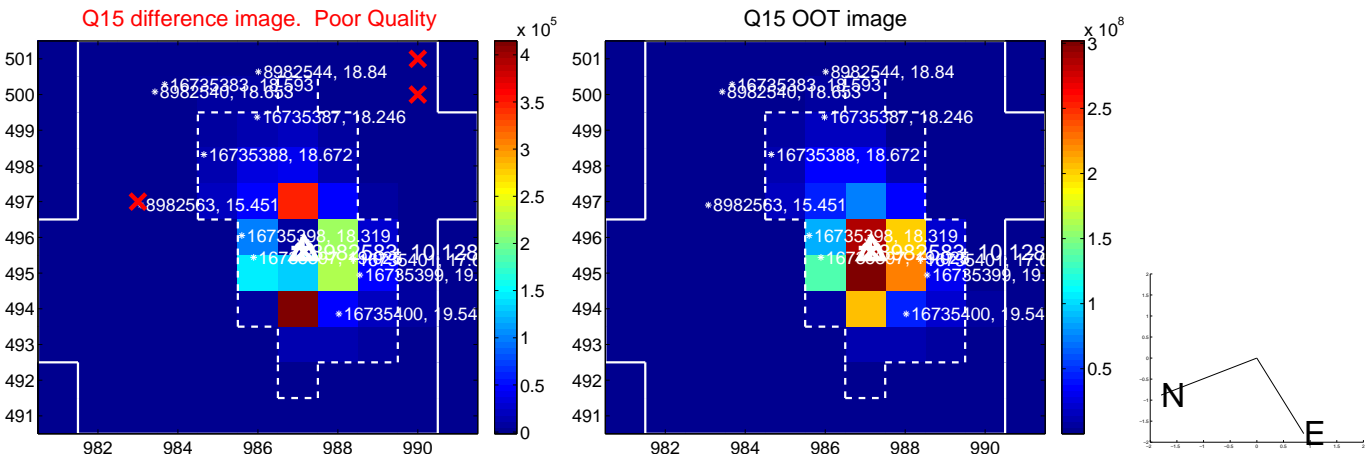
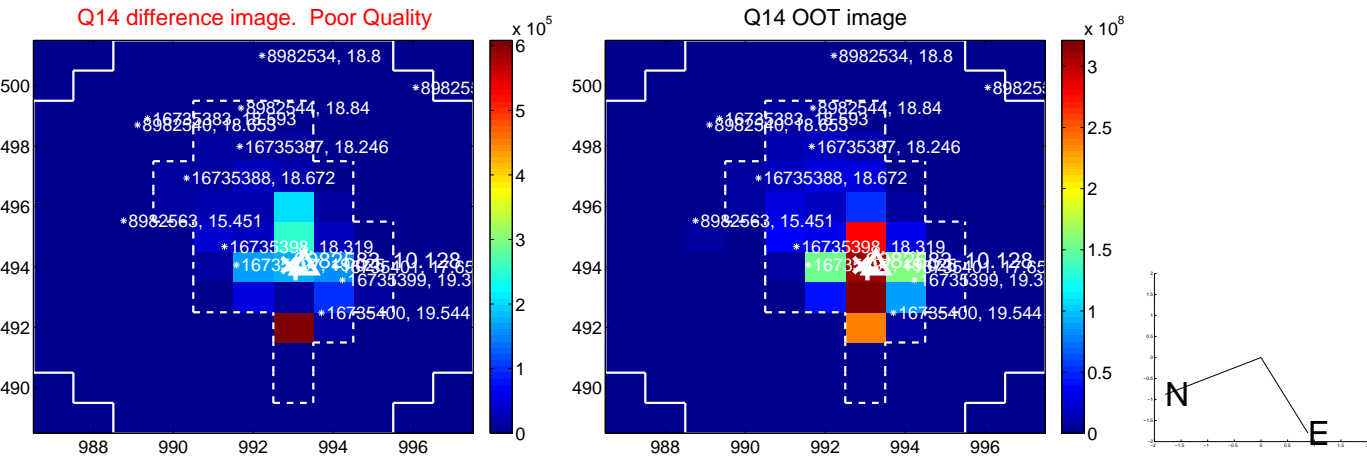
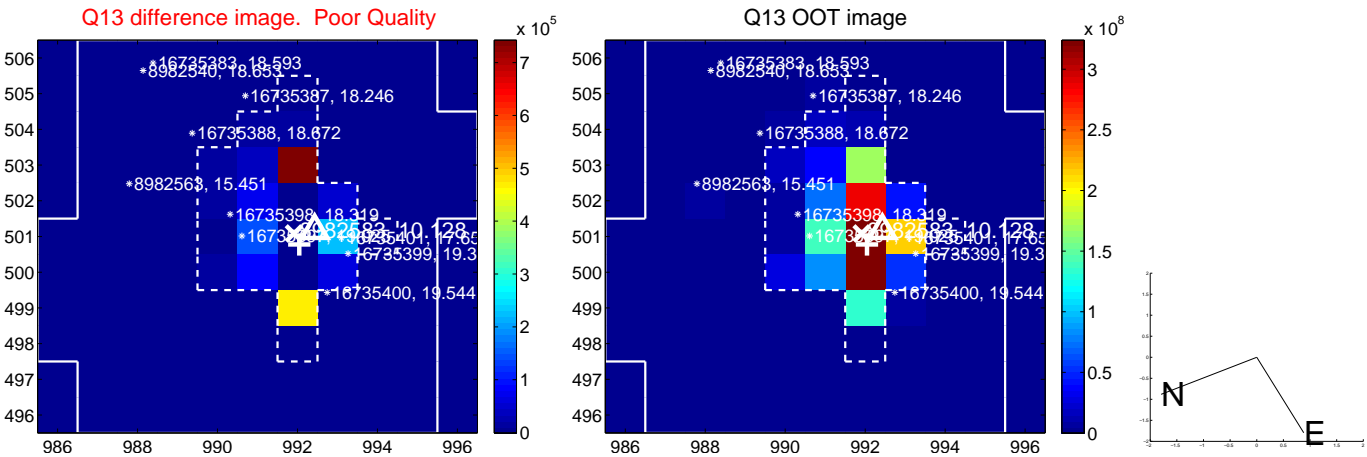




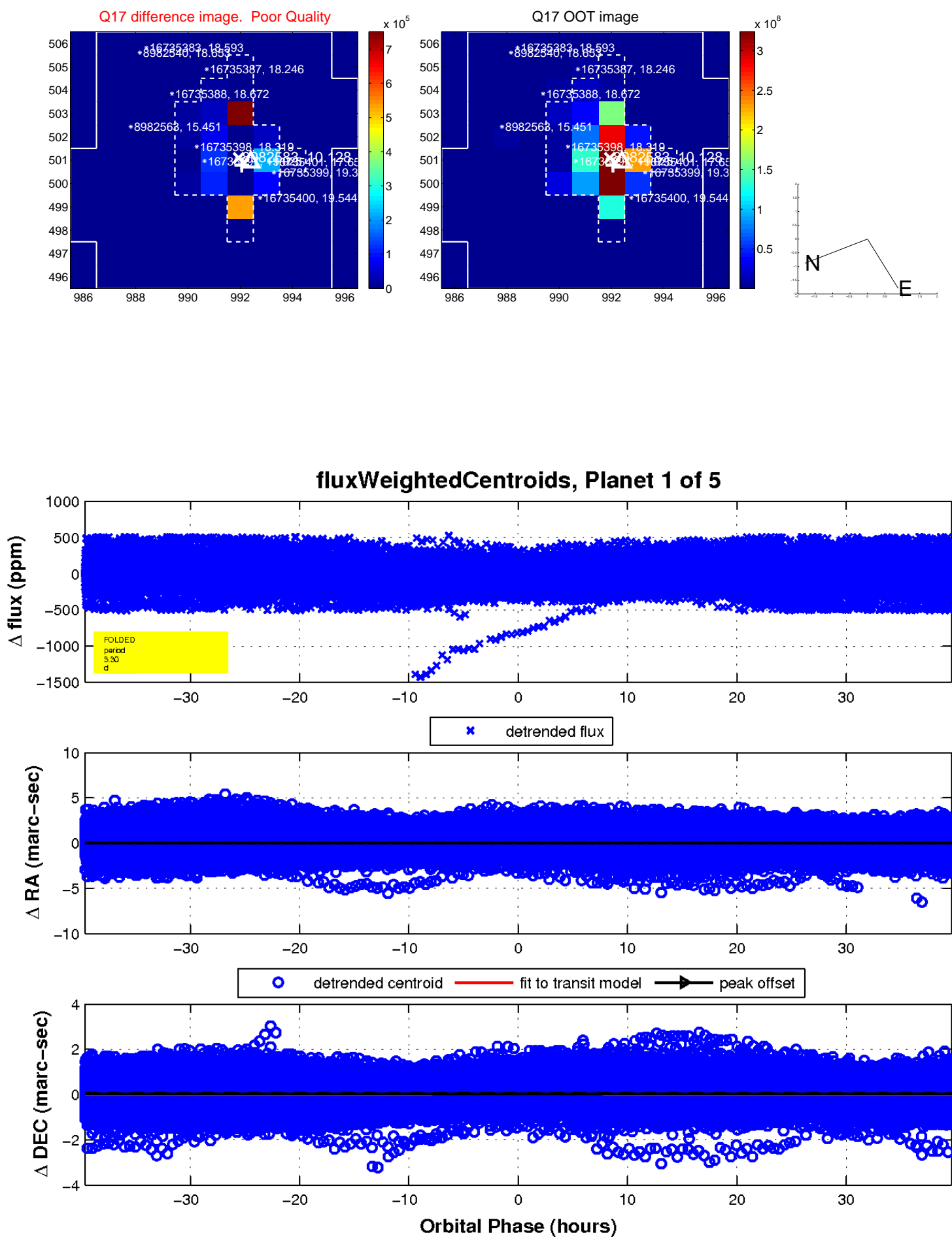
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

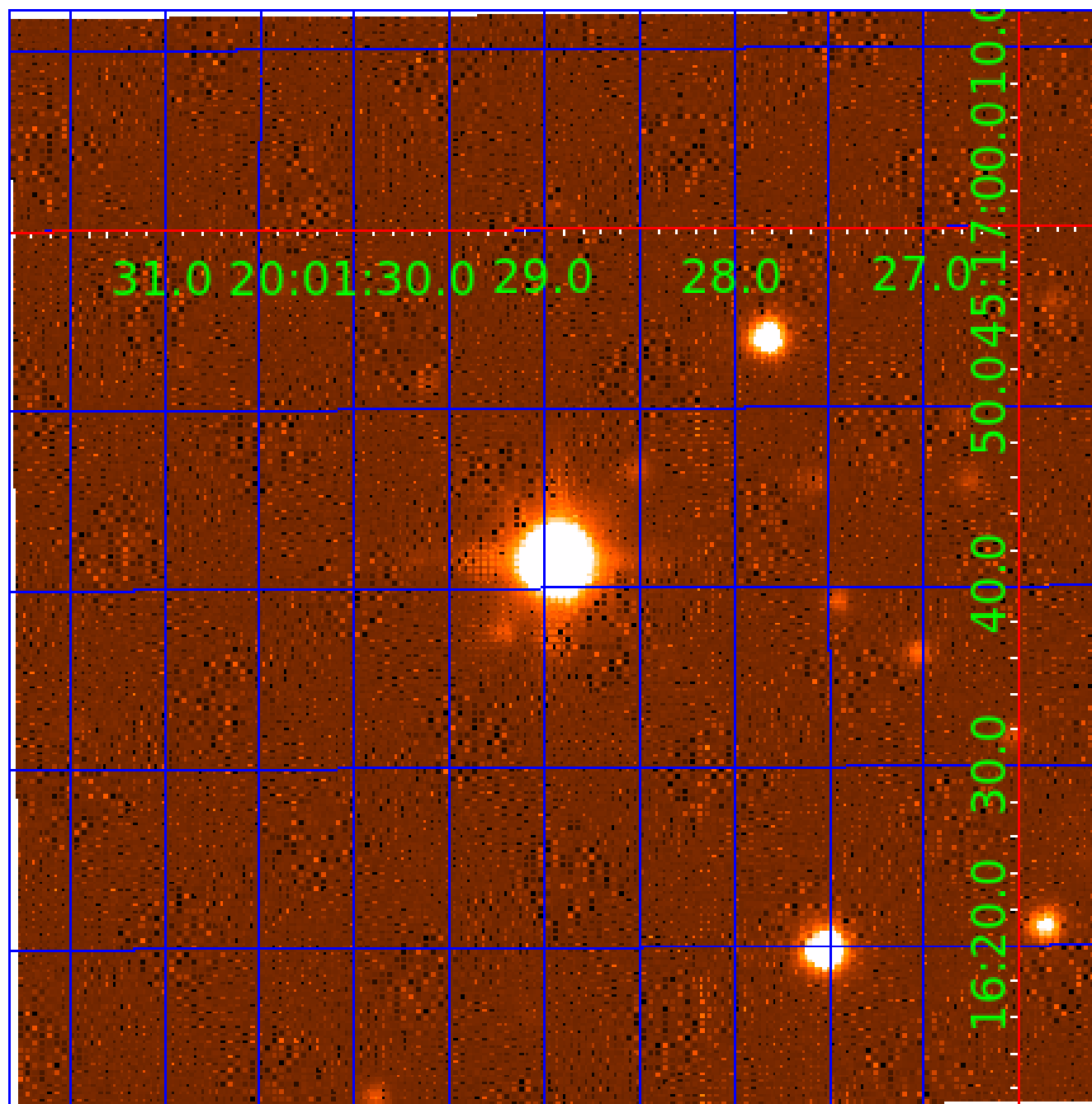


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 008982583

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008982583-01	OBS	No	3.301619	131.973031	10.3	15.955	9.8	8.5	1.79	6561	0.61	2291.88
008982583-02	OBS	No	215.292244	344.031019	128.0	24.465	22.5	8.3	1.79	6561	2.33	8.73
008982583-04	OBS	No	266.436701	279.424625	73.3	8.759	10.2	5.7	1.79	6561	1.79	6.57
008982583-05	OBS	No	205.731738	336.040663	89.3	2.651	8.7	6.9	1.79	6561	1.85	9.28

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008982583-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_SATURATED
008982583-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
008982583-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_SATURATED
008982583-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_SATURATED

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

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

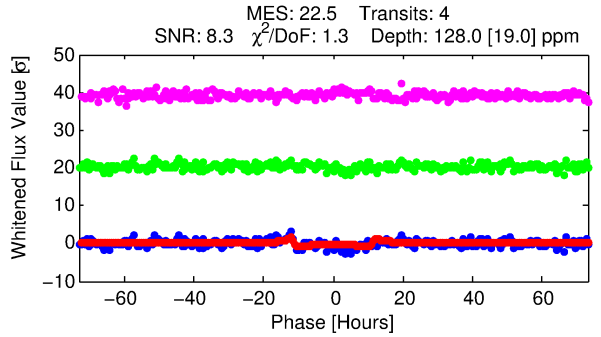
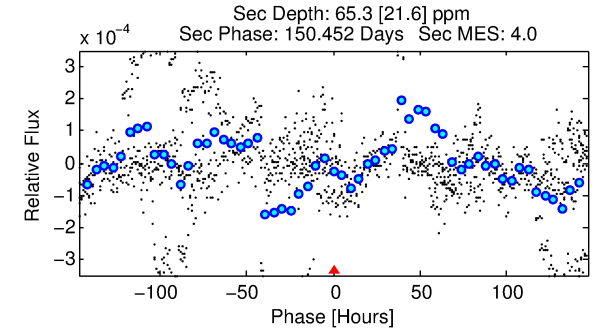
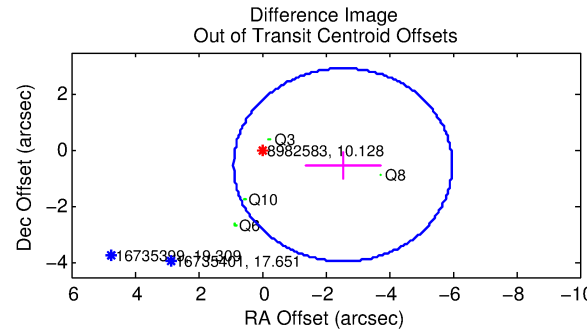
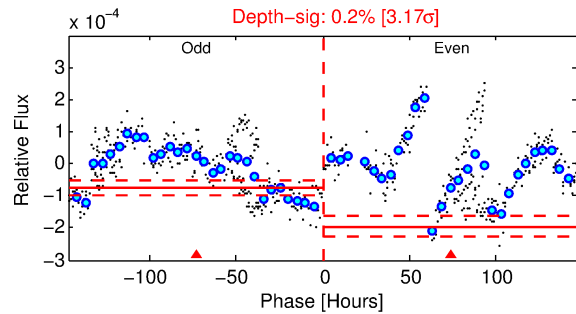
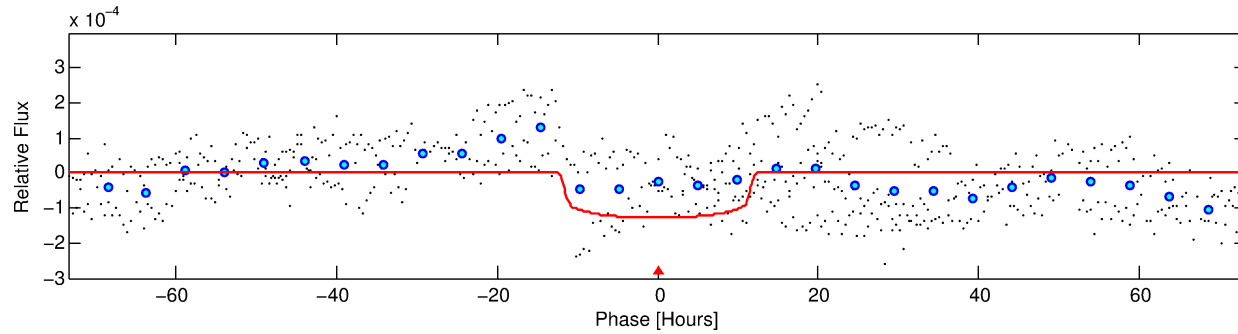
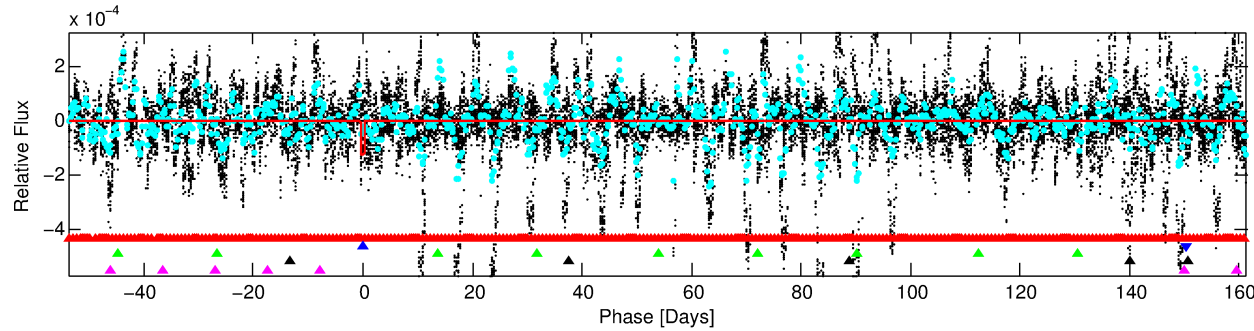
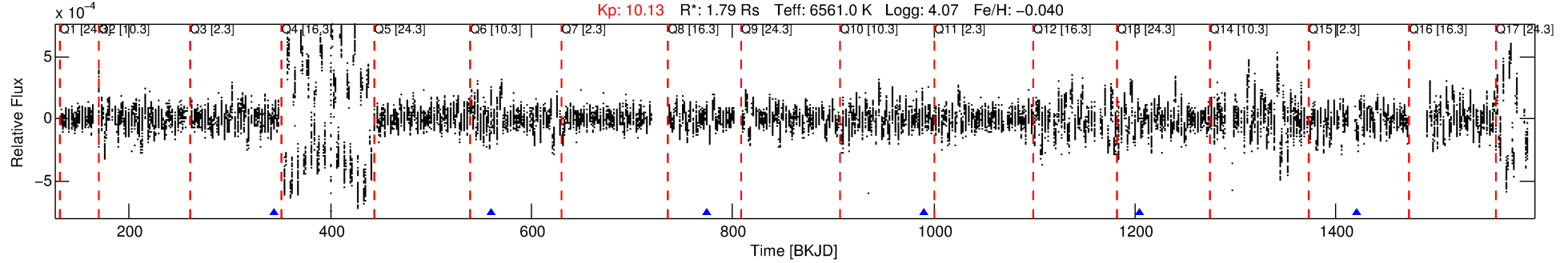
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008982583-02

No Significant Match Found

# DV One-Page Summary

KIC: 8982583 Candidate: 2 of 5 Period: 215.292 d



## DV Fit Results:

Period = 215.29224 [0.00469] d  
Epoch = 344.0310 [0.0136] BKJD  
Rp/R\* = 0.0119 [0.0011]  
a/R\* = 33.60 [8.98]  
b = 0.88 [0.07]  
Seff = 8.73 [4.09]  
Teq = 438 [51] K  
Rp = 2.33 [0.79] Re  
a = 0.7818 [0.2271] AU  
Ag = 4034.56 [2357.12] [1.71 $\sigma$ ]  
Teffp = 5401 [553] K [8.93 $\sigma$ ]

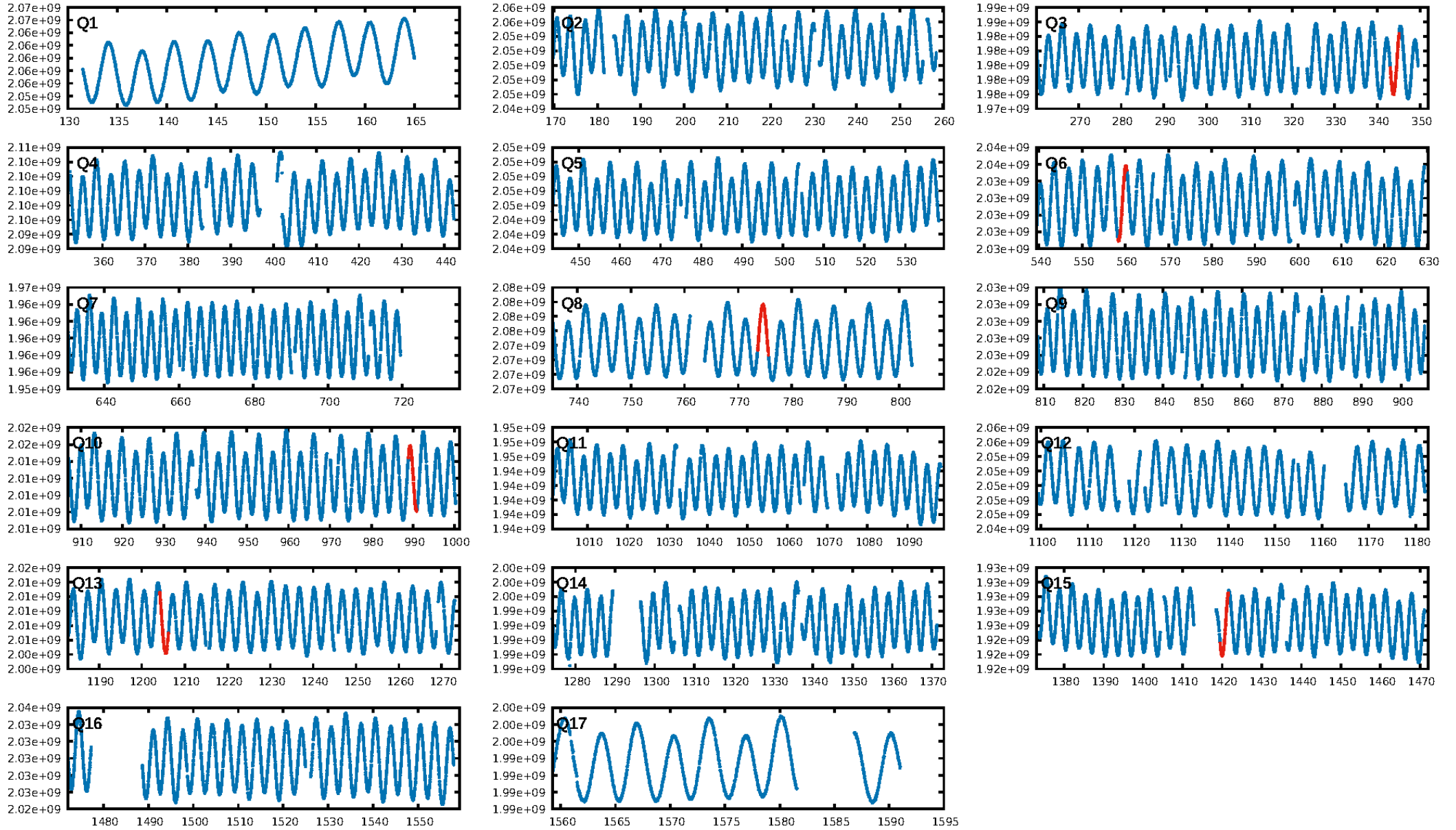
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [9.32 $\sigma$ ]  
LongPeriod-sig: 100.0% [47.24 $\sigma$ ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 4.29e-39  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 7.5%  
Centroid-so: 1.516 arcsec [1.17 $\sigma$ ]  
OotOffset-rm: 2.598 arcsec [2.27 $\sigma$ ]  
KicOffset-rm: 2.344 arcsec [2.33 $\sigma$ ]  
OotOffset-st: 2/1/1/0 [4]  
KicOffset-st: 2/1/1/0 [4]  
DiffImageQuality-fgm: 0.00 [0/4]  
DiffImageOverlap-fno: 0.00 [0/4]

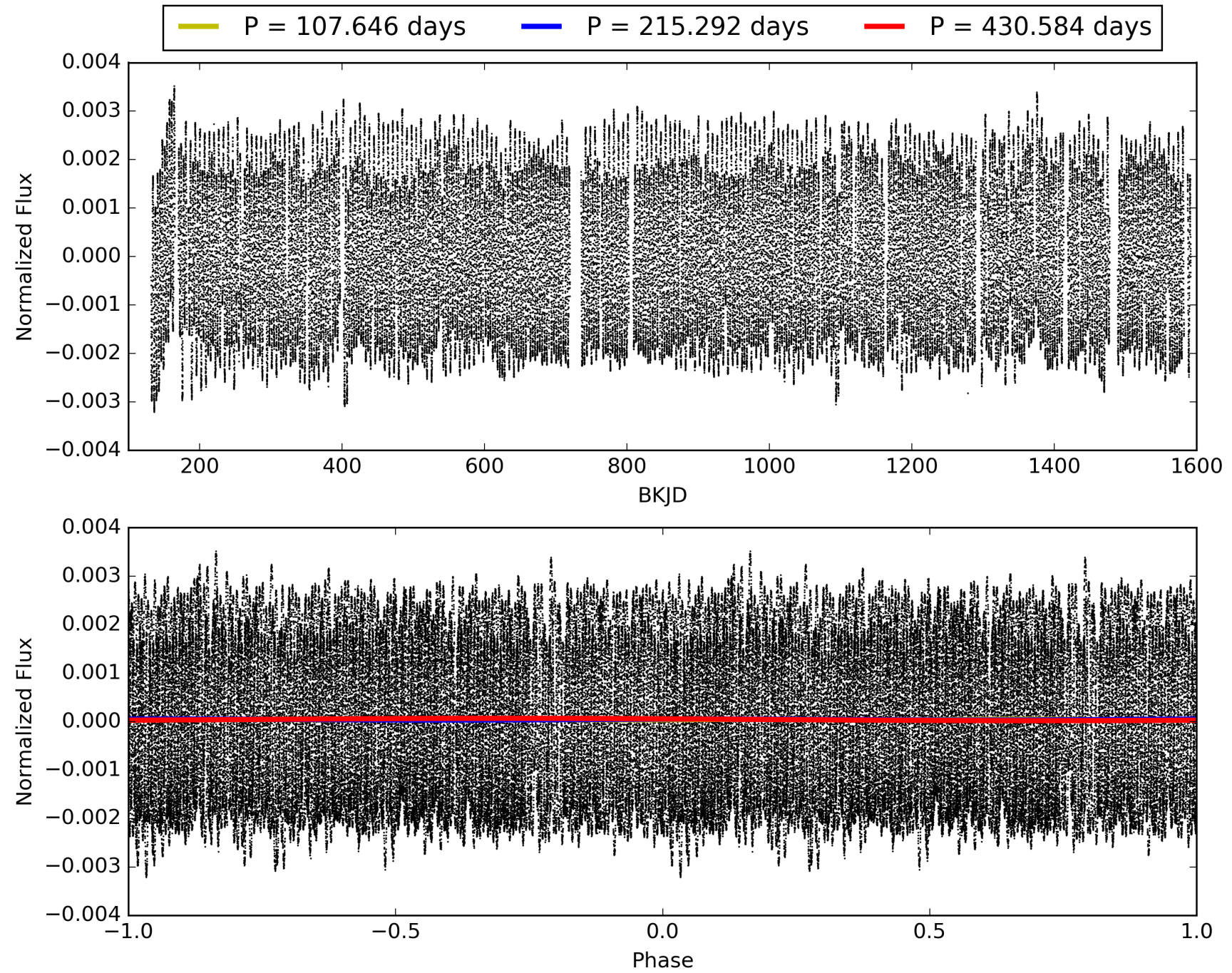
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:06:33 Z

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

# TCE 008982583-02, PDC Light Curves



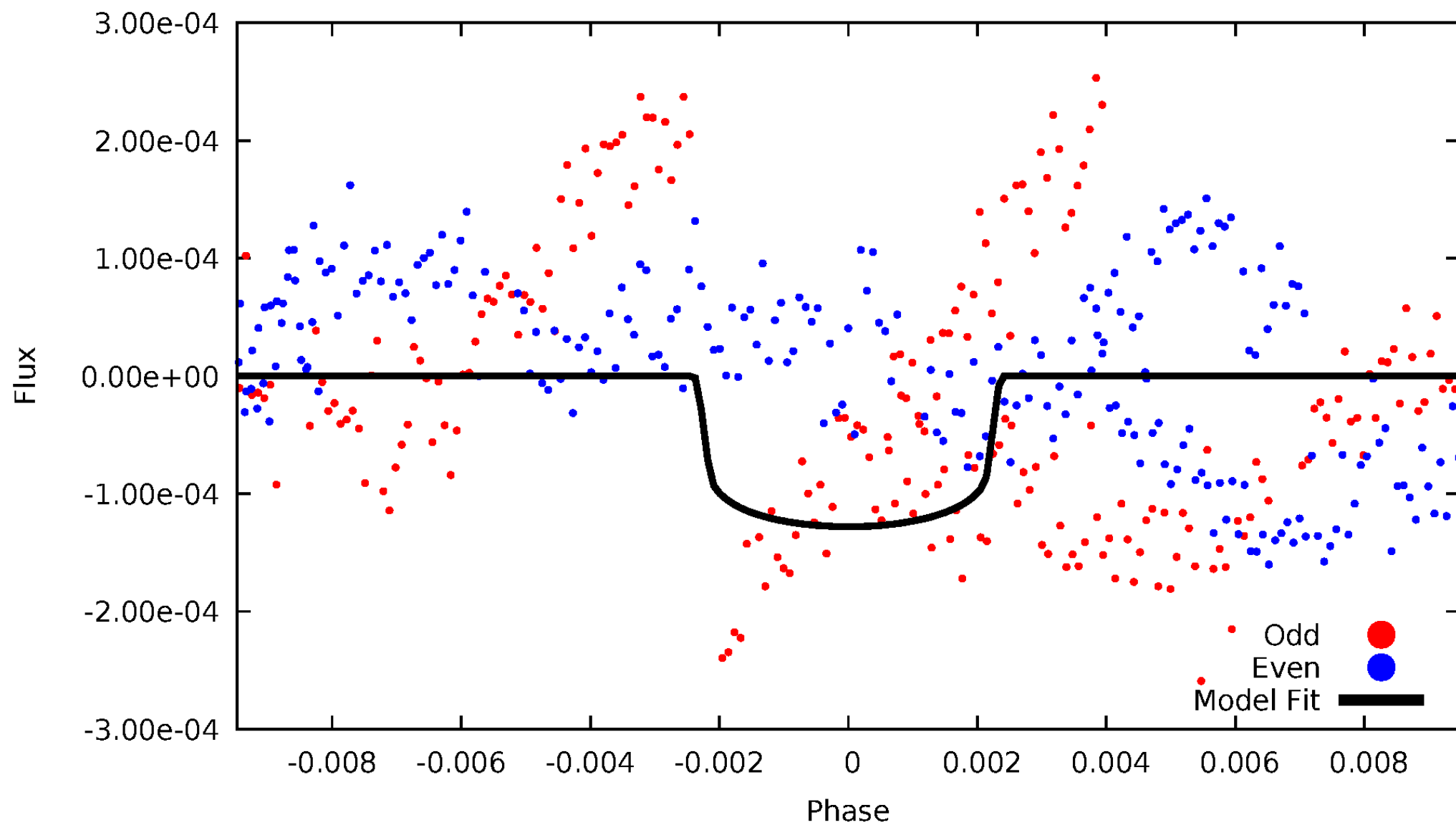
# TCE 008982583-02





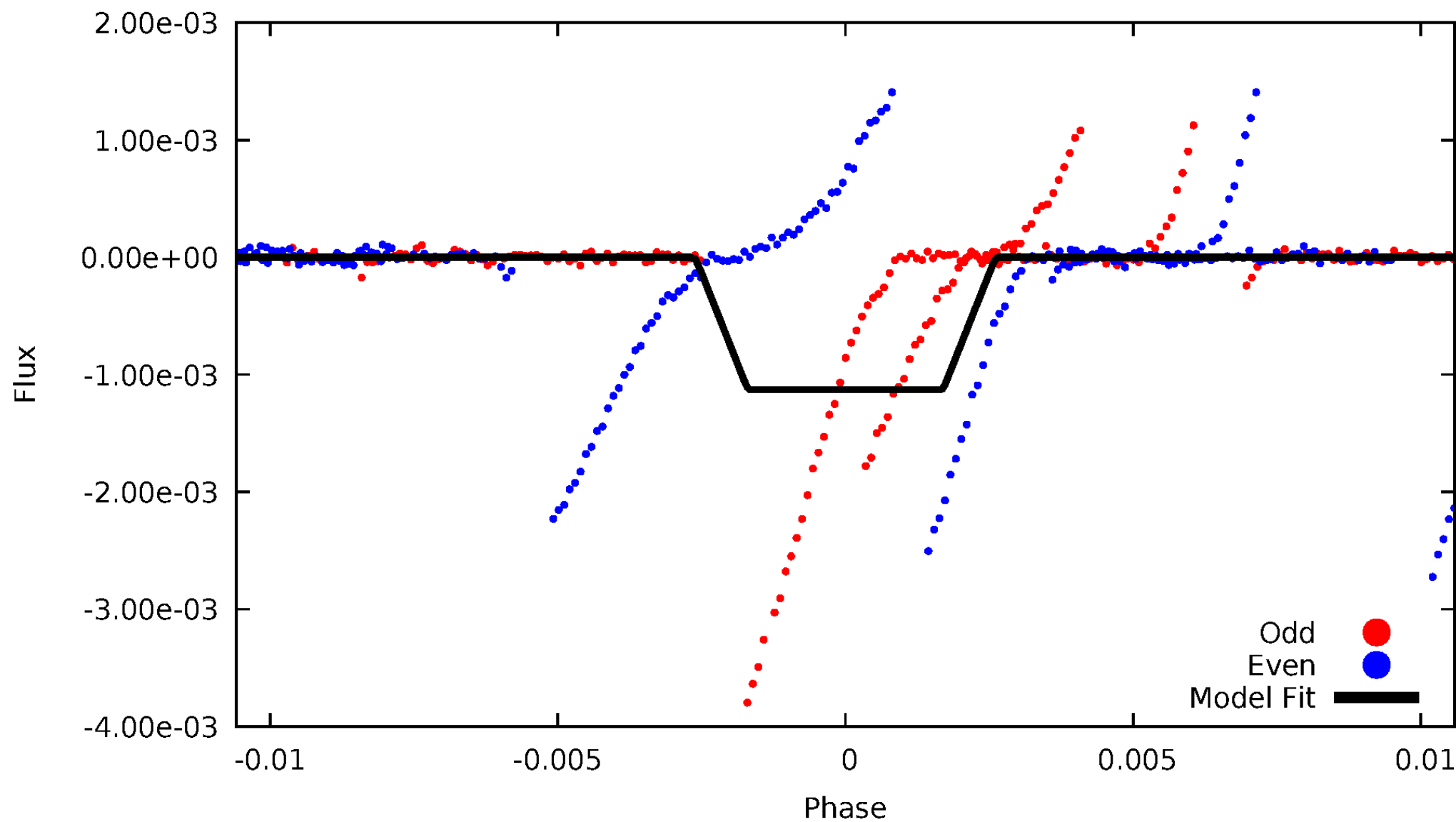
# DV Odd/Even

TCE 008982583-02



# ALT Odd/Even

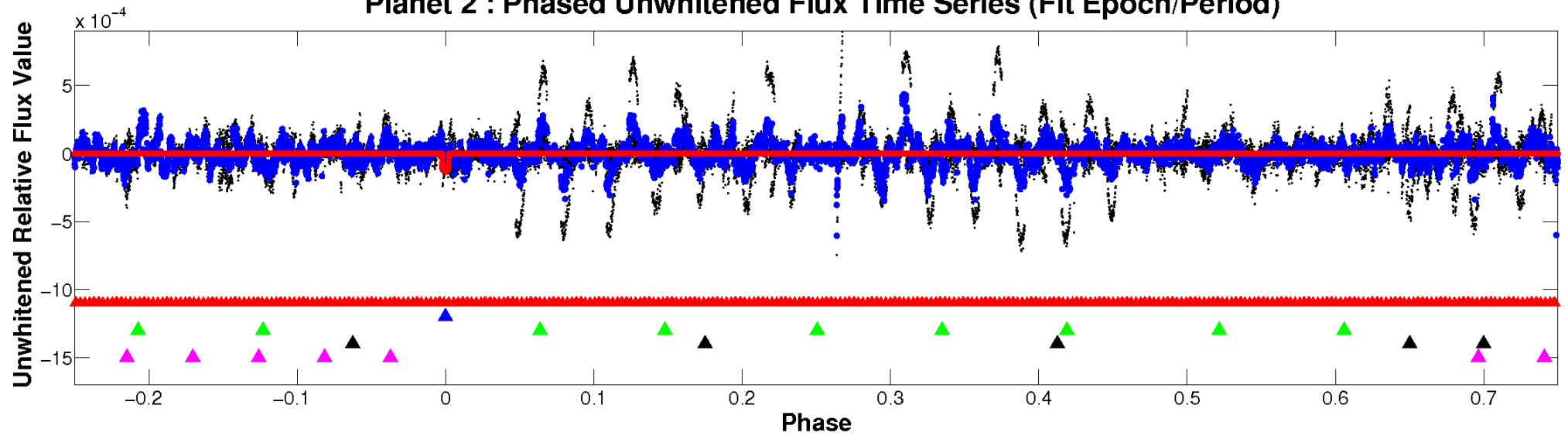
TCE 008982583-02



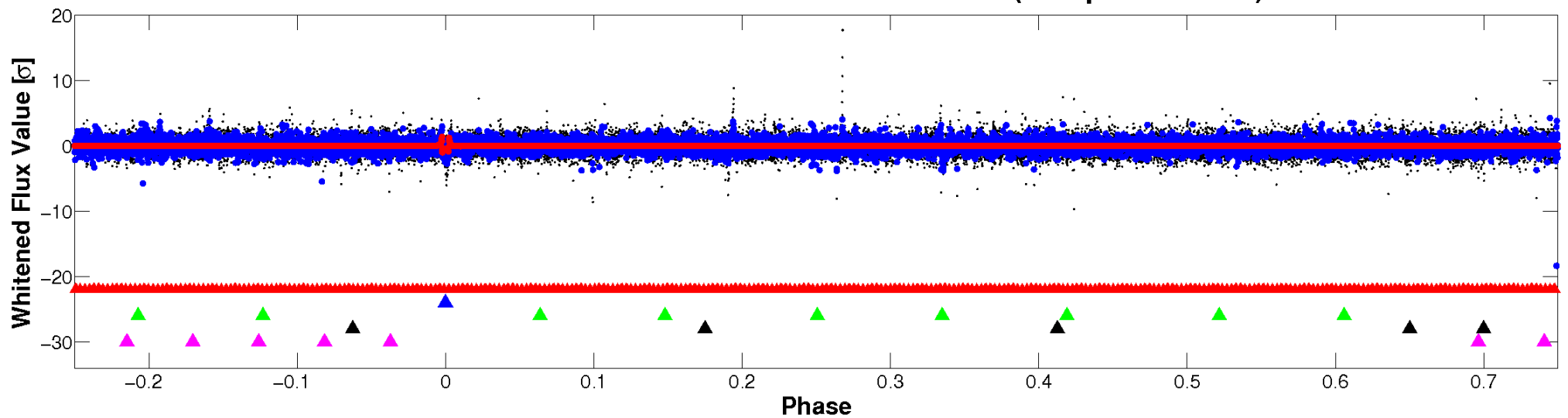


# Non-Whitened Vs. Whitened Light Curve

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

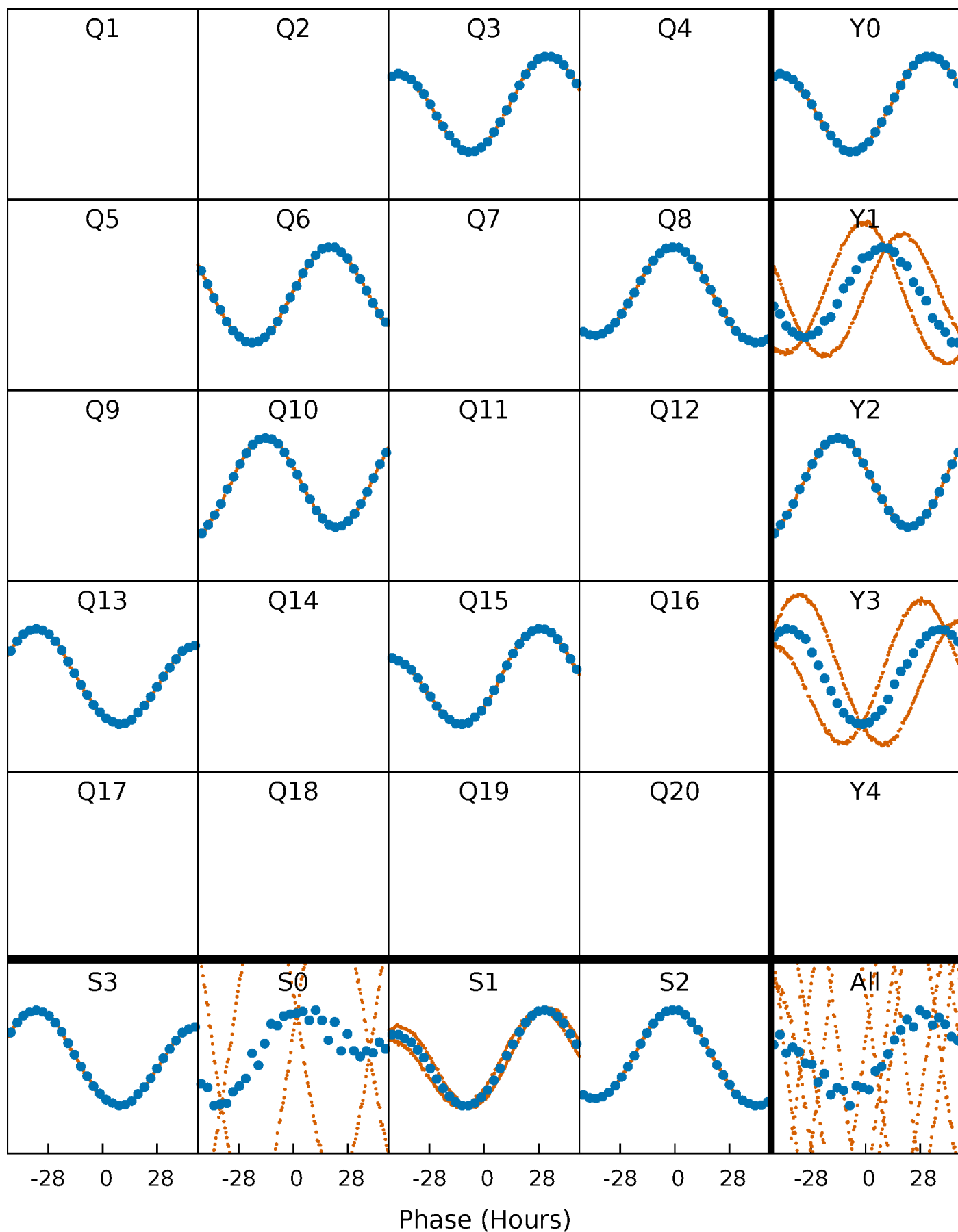


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



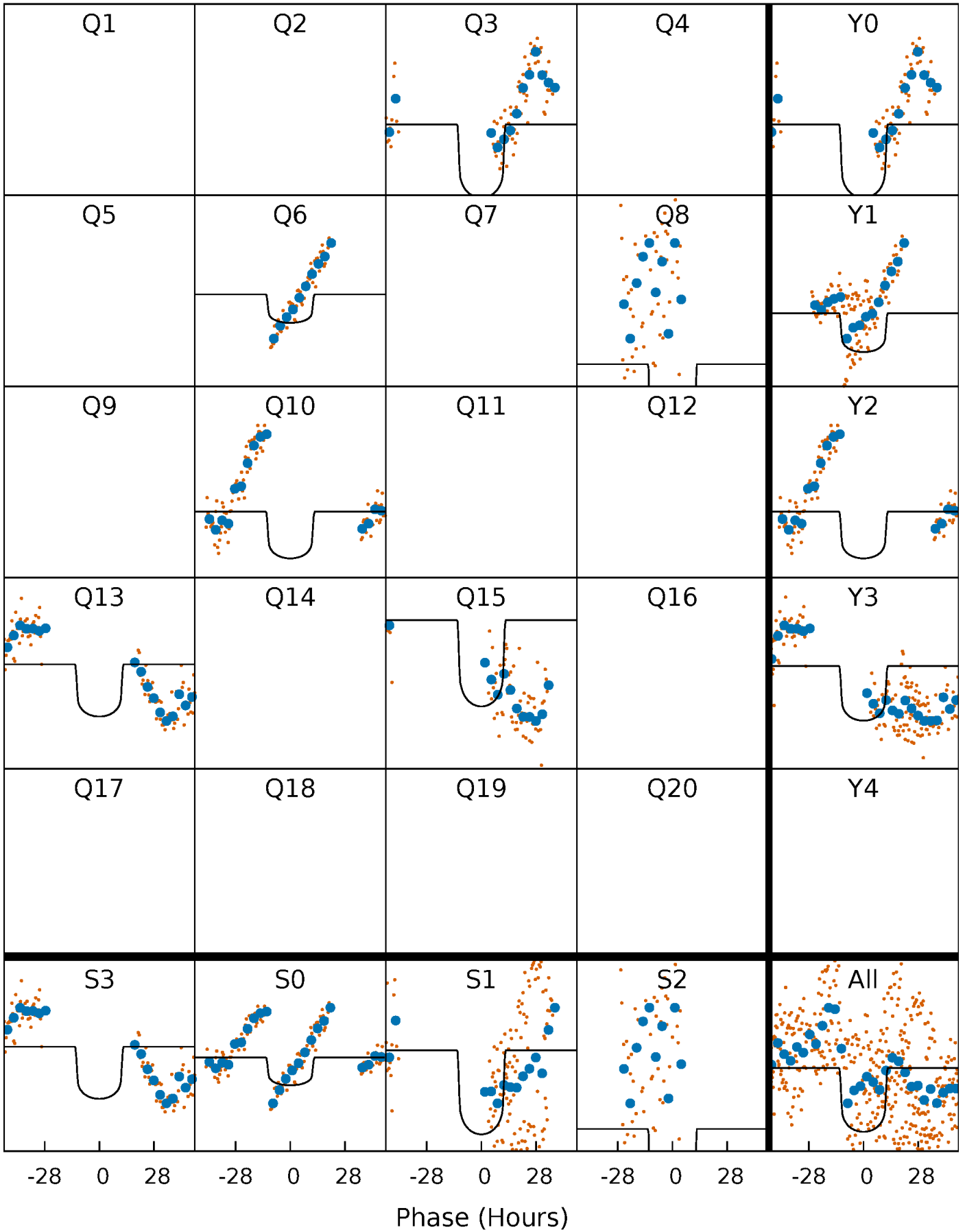
# PDC Quarter-Phased Transit Curves

TCE 008982583-02     $P=215.292244$  Days     $T_0=344.031019$  (BKJD)



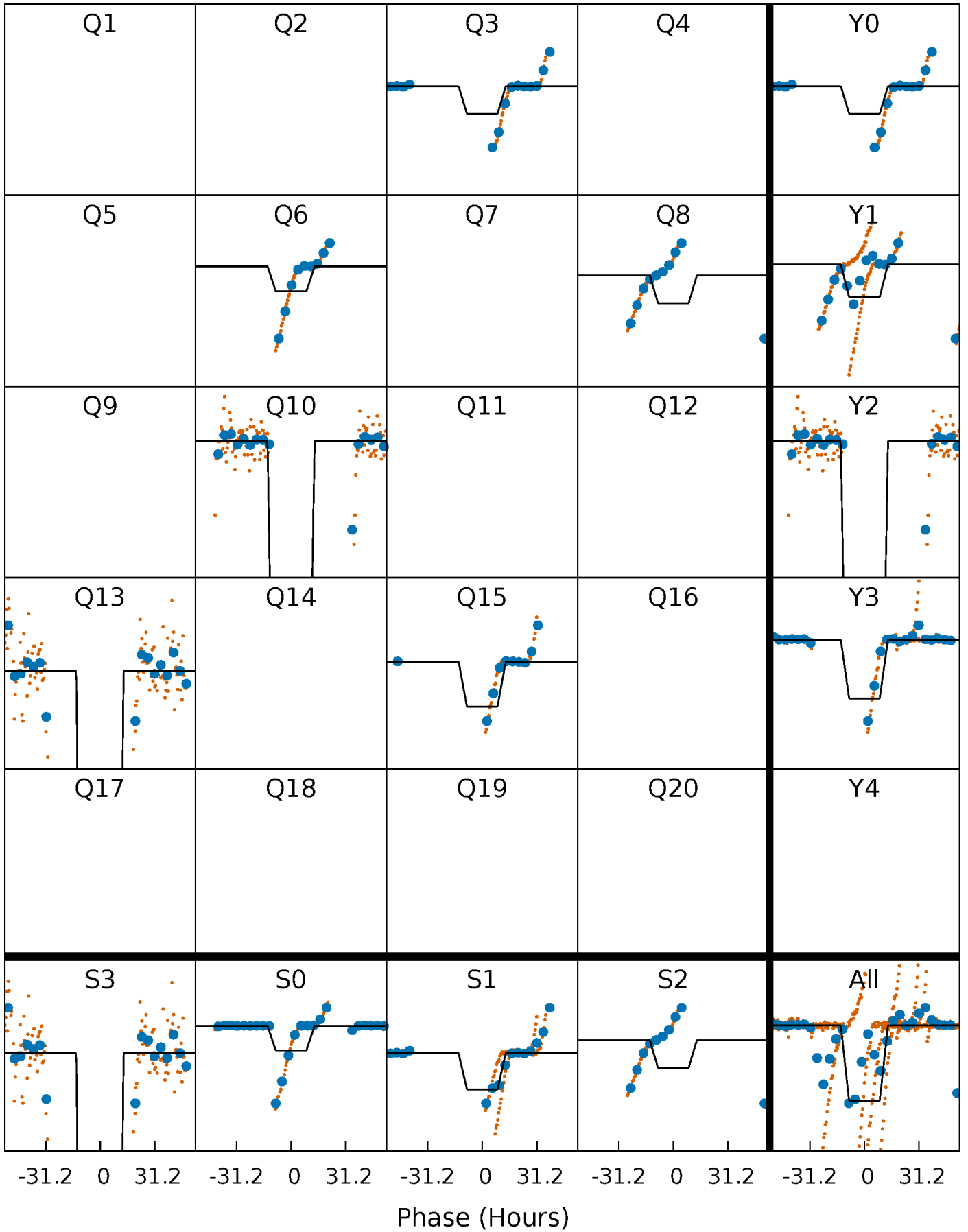
# DV Quarter-Phased Transit Curves

TCE 008982583-02     $P=215.292244$  Days     $T_0=344.031019$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

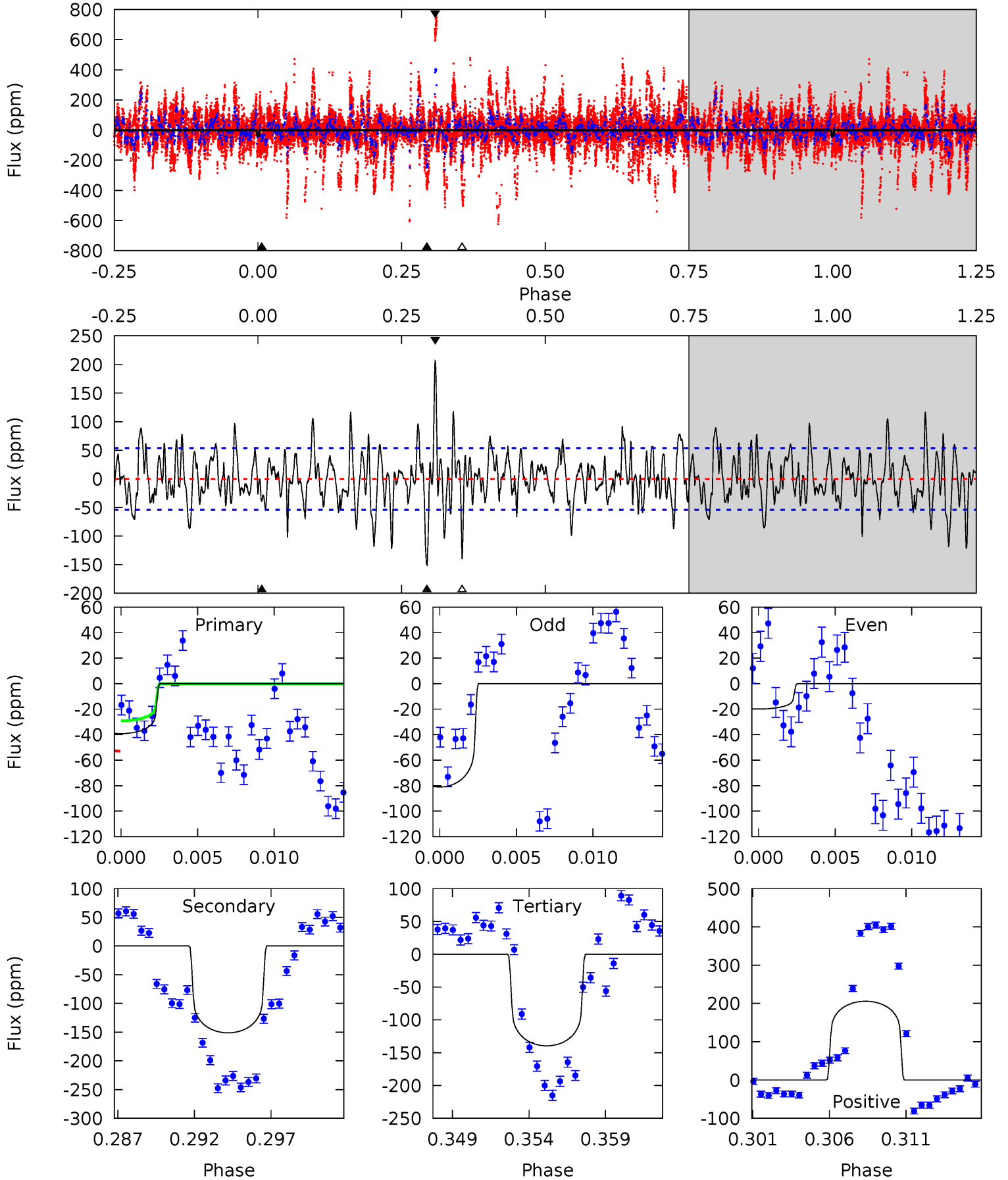
TCE 008982583-02 P=215.315233 Days  $T_0=343.974950$  (BKJD)



# DV Model-Shift Uniqueness Test

008982583-02, P = 215.292244 Days, E = 128.738775 Days

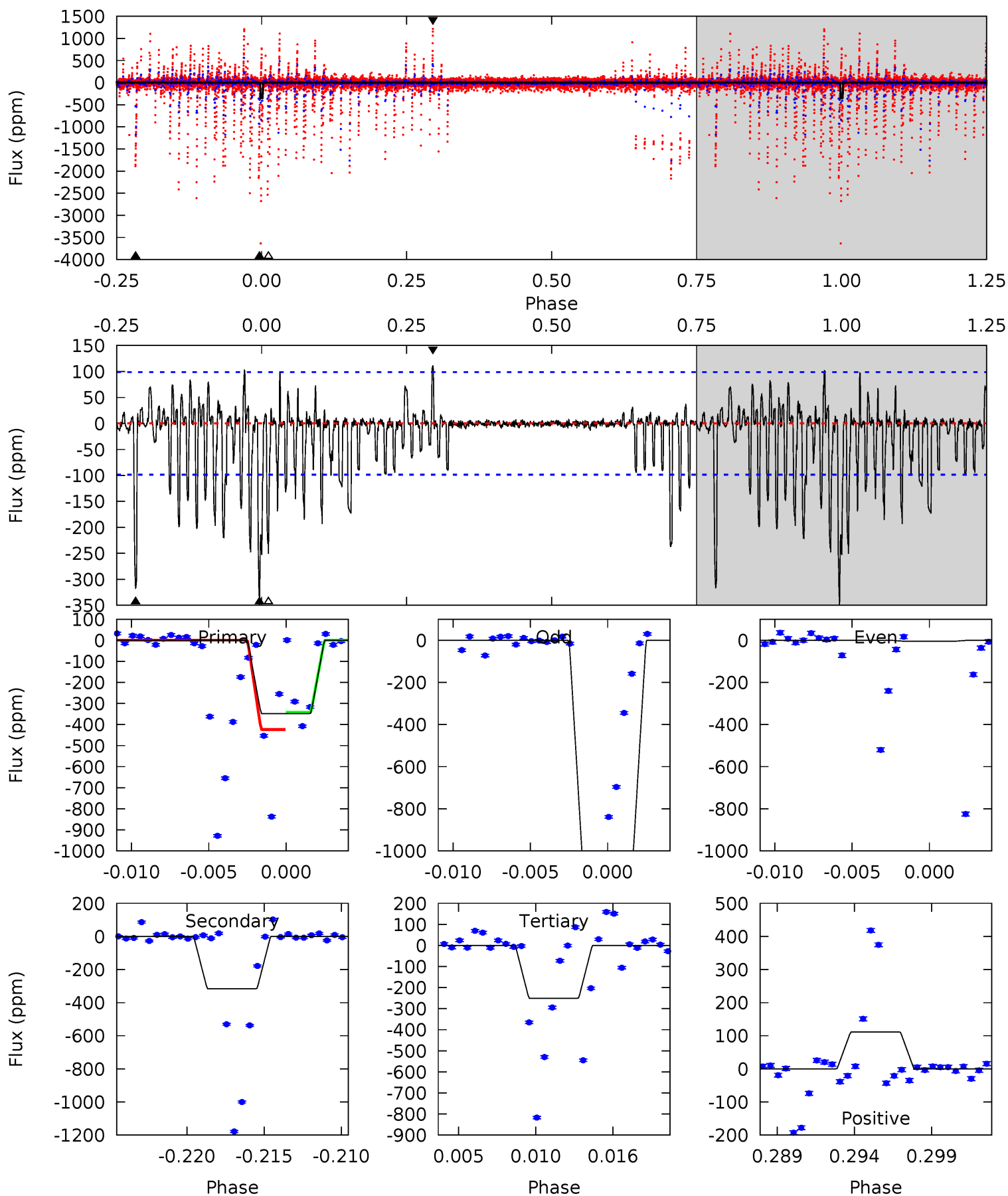
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.75	14.5	13.4	19.7	5.17	2.82	3.83	-9.61	-16.0	1.11	-5.23	2.07	0.84	0.58	1.15



# Alt Model-Shift Uniqueness Test

008982583-02, P = 215.315233 Days, E = 128.659717 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.2	16.5	13.1	5.82	5.15	2.79	2.24	5.09	12.4	3.45	10.7	20.0	0.95	0.24	2.20



### Stellar Parameters For KIC 008982583

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6561^{+181}_{-250}$	$4.069^{+0.252}_{-0.168}$	$-0.040^{+0.250}_{-0.300}$	$1.793^{+0.530}_{-0.583}$	$1.377^{+0.182}_{-0.273}$	$0.336^{+0.543}_{-0.160}$
	+3%/-4%	+6%/-4%	+625%/-750%	+30%/-33%	+13%/-20%	+161%/-48%
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 008982583-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-151 \pm 10$	$2.29^{+0.44}_{-0.44}$	$605^{+49}_{-53}$	$6637^{+453}_{-403}$	$9594^{+4923}_{-2765}$
Alt.	$-317 \pm 19$	$6.48^{+1.13}_{-1.13}$	$605^{+49}_{-54}$	$4867^{+148}_{-172}$	$2501^{+1095}_{-624}$

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



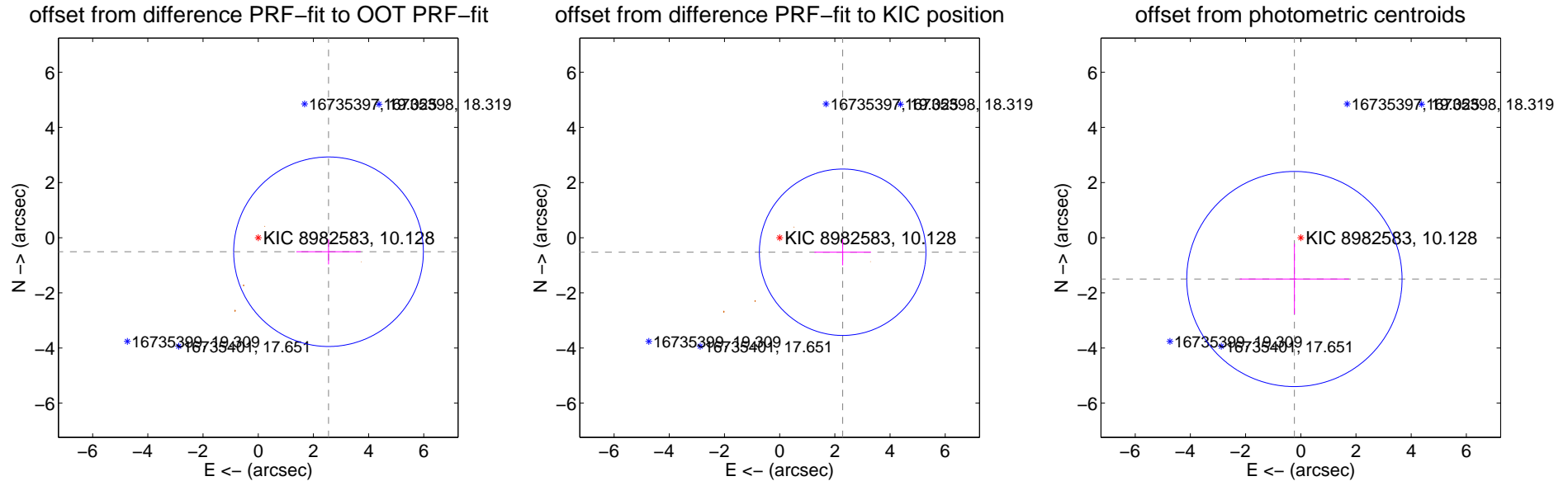
## DV Centroid Data

Supplemental centroid analysis for 008982583-02. **Kepler magnitude: 10.13.** Transit SNR 8.26

**There are 0 quarters with good PRF difference image offsets**

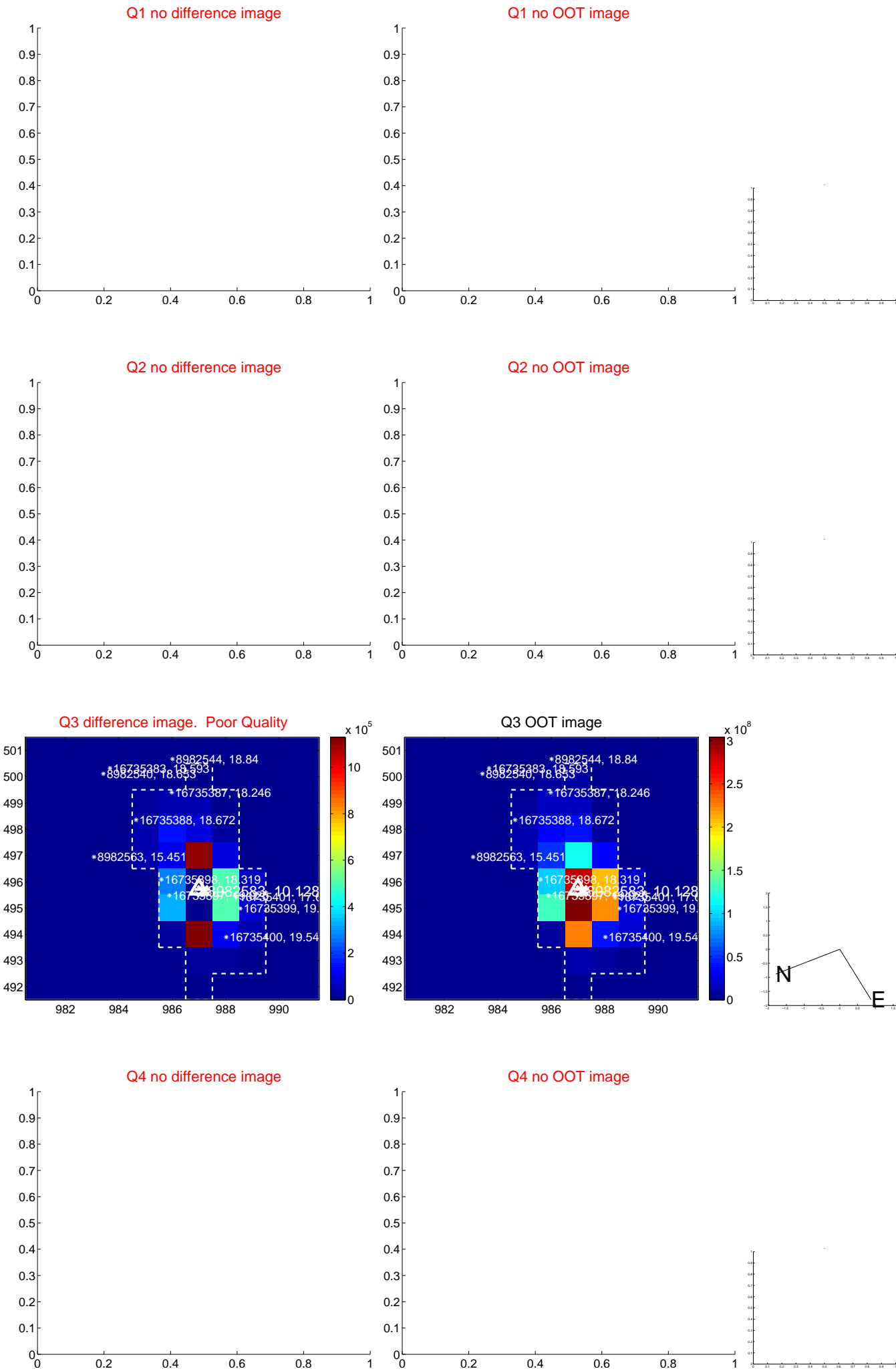
The direct PRF centroid is offset from the target star catalog position by about 0.67 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.598 \pm 1.146$	2.27	$-2.548 \pm 1.165$	$-0.509 \pm 0.457$
PRF-fit source offset from KIC position	$2.344 \pm 1.006$	2.33	$-2.283 \pm 1.027$	$-0.528 \pm 0.474$
photometric centroid source offset	$1.52 \pm 1.30$	1.17	$0.23 \pm 1.98$	$-1.50 \pm 1.28$

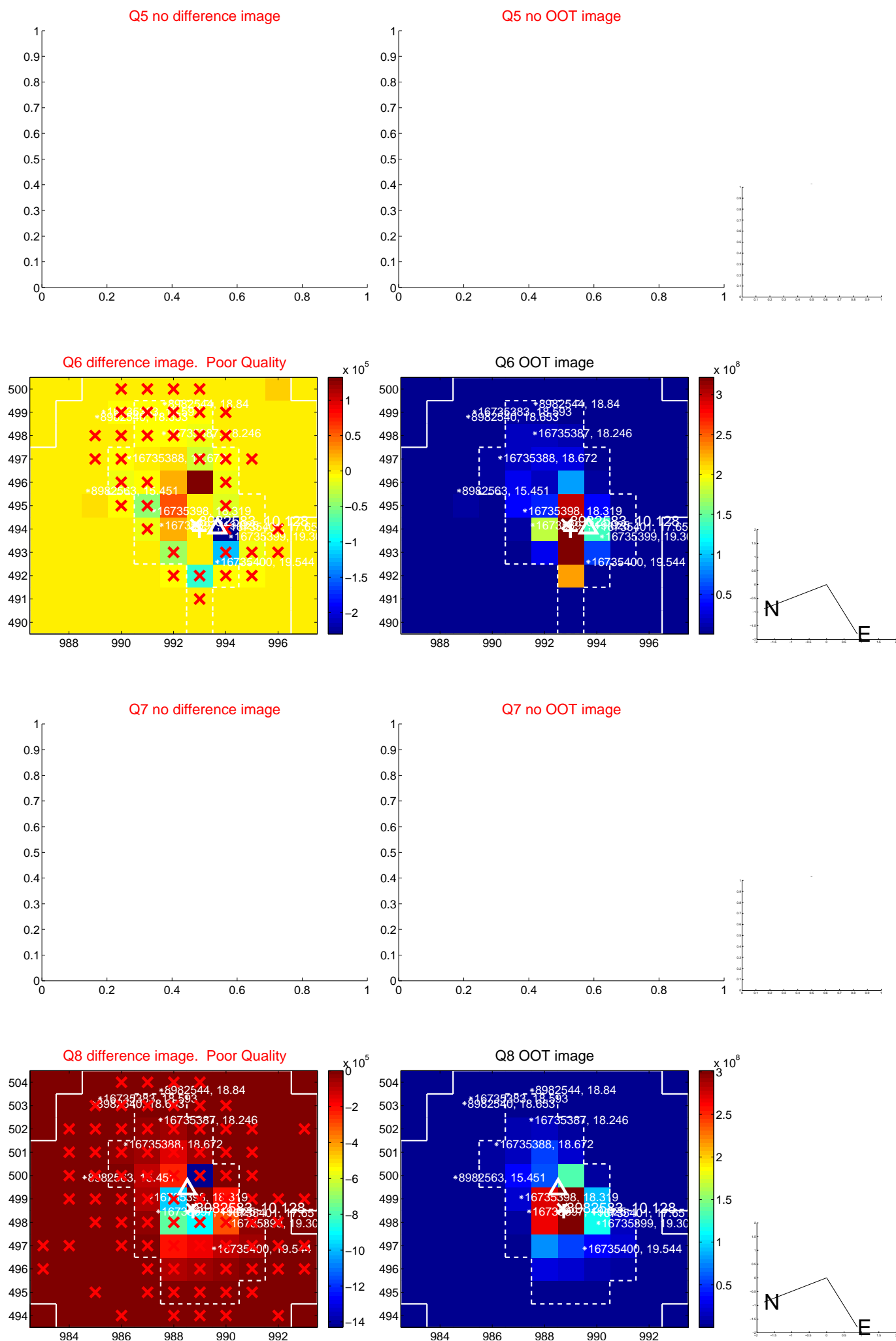


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

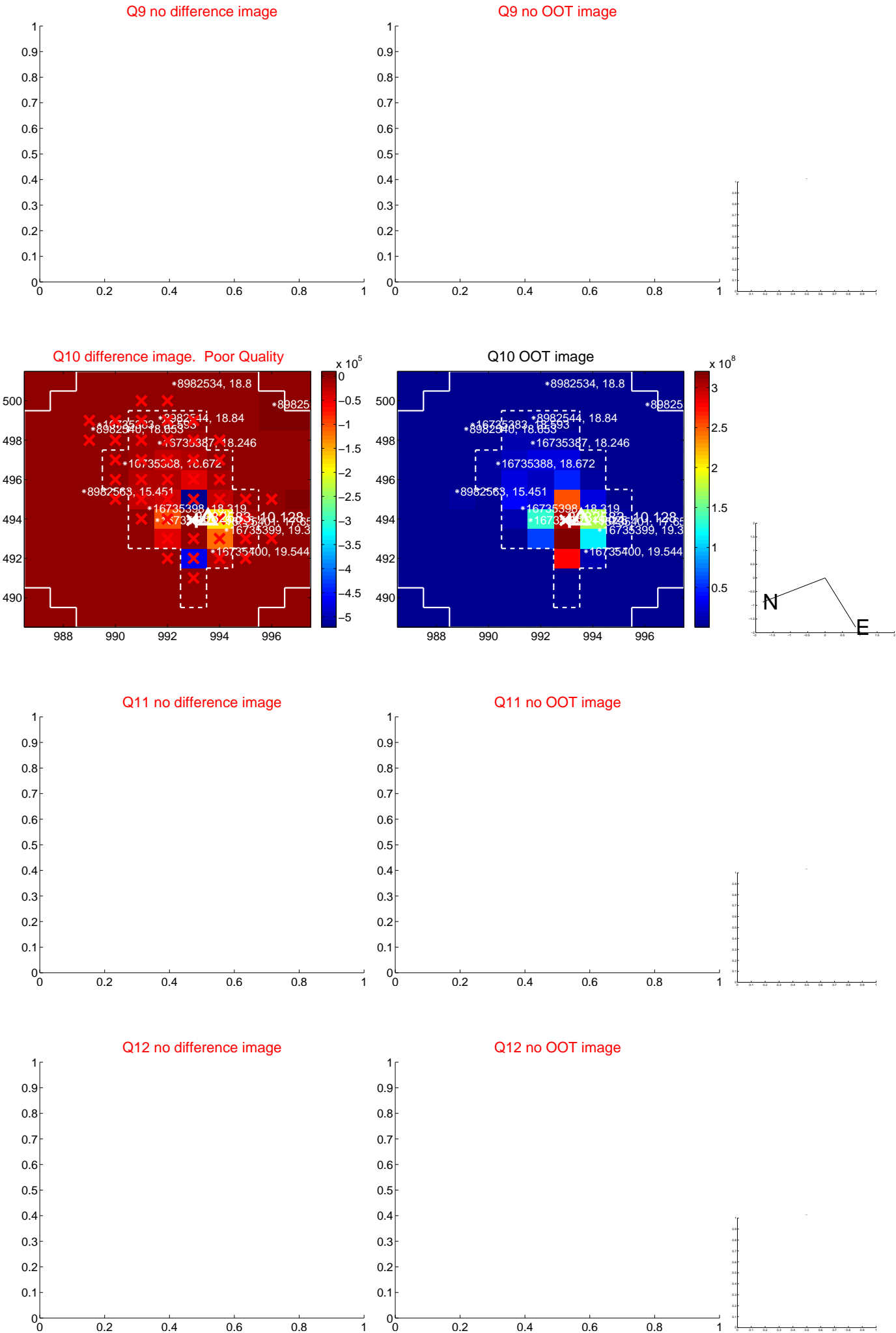
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



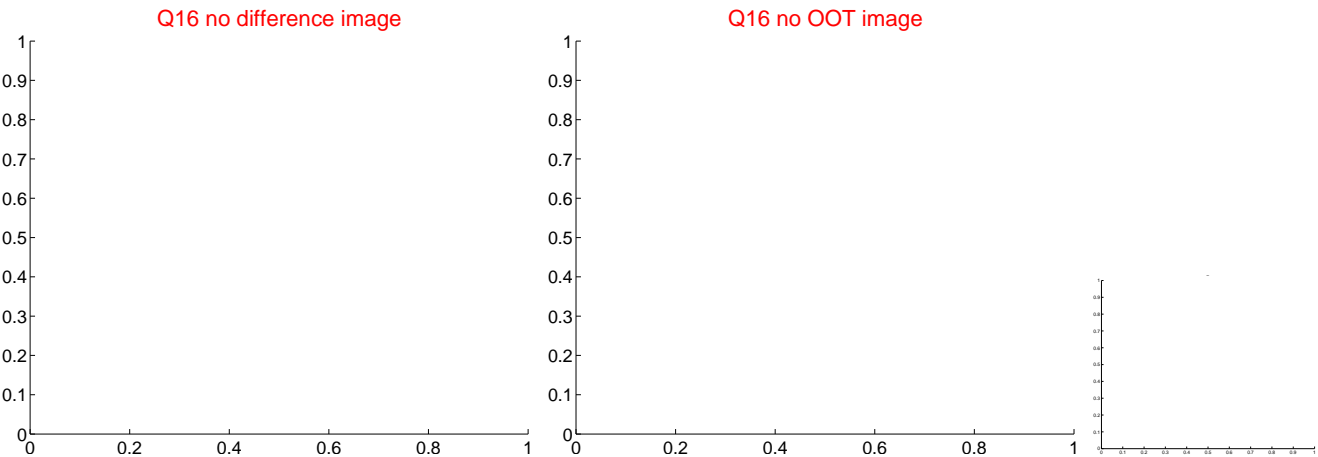
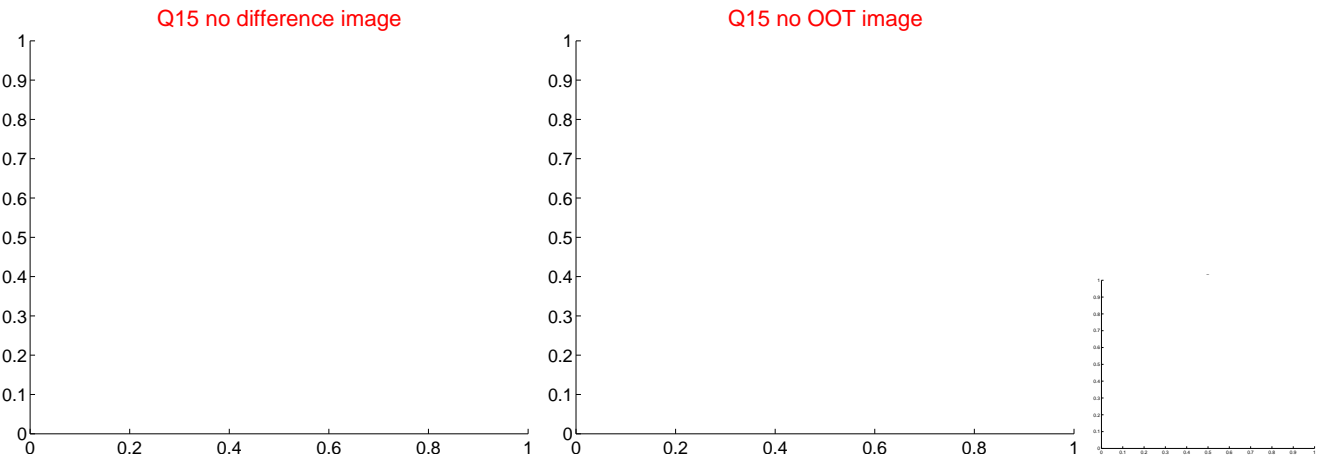
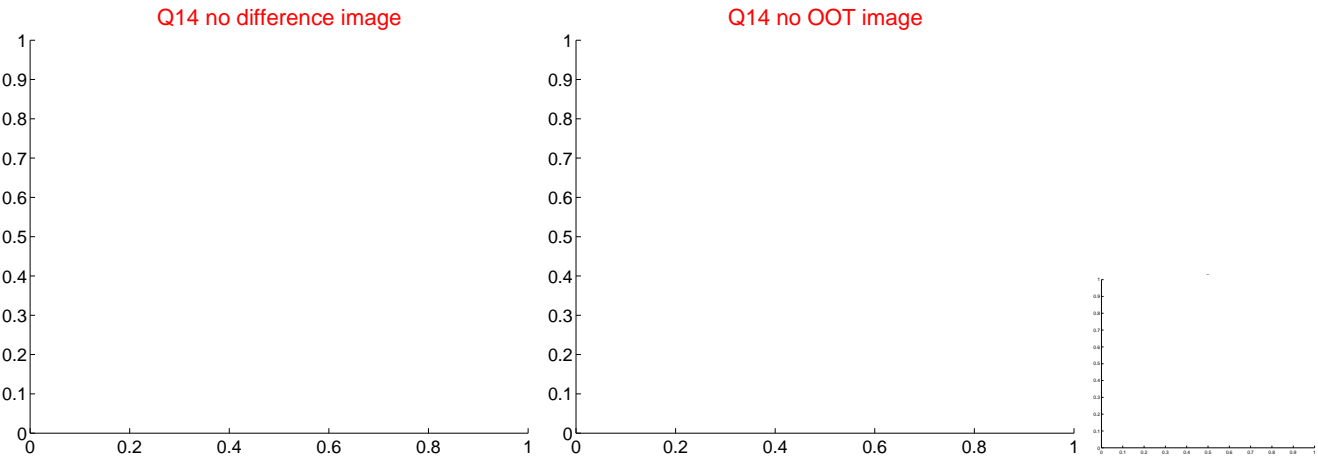
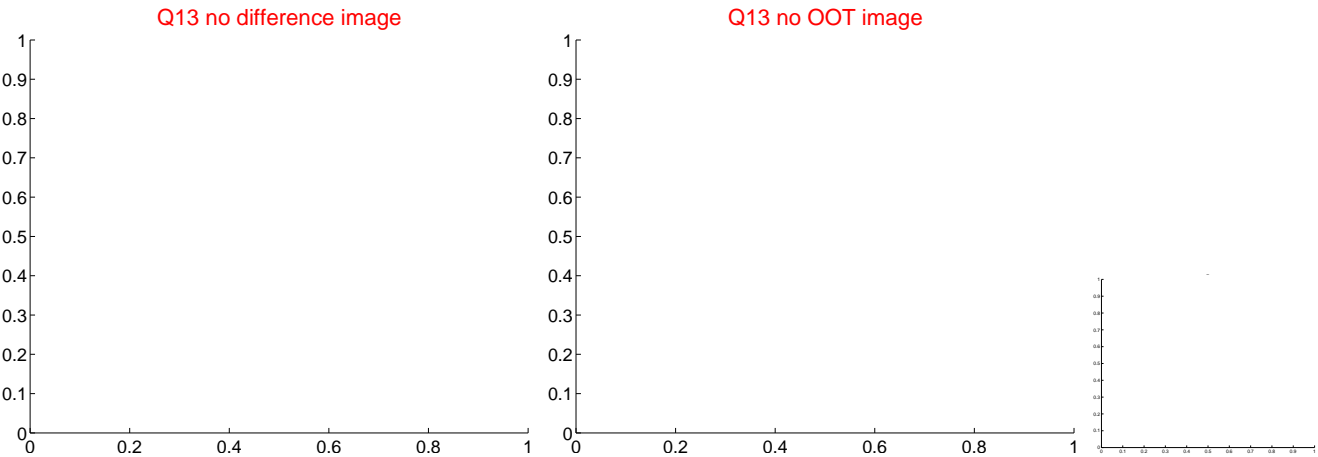
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



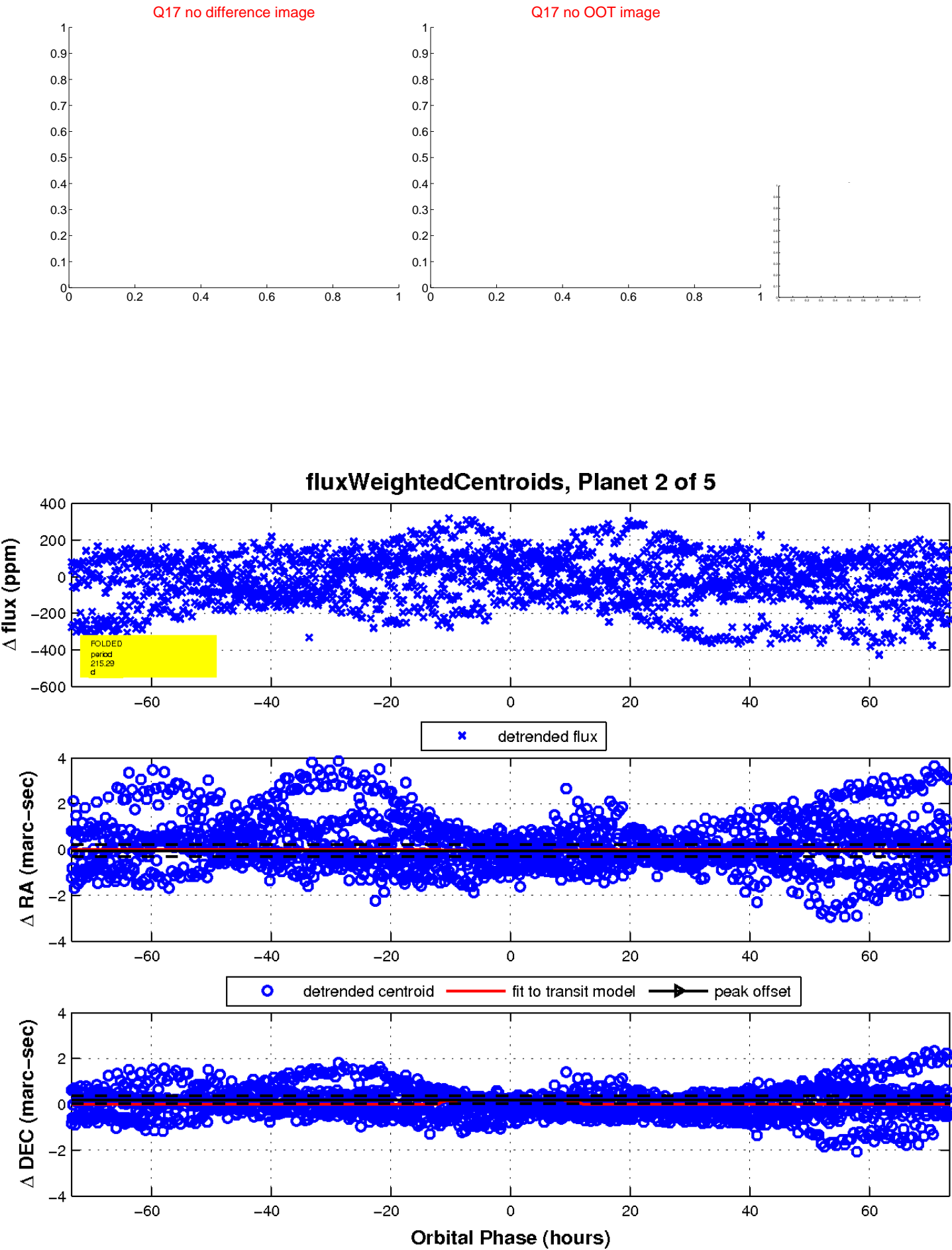
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

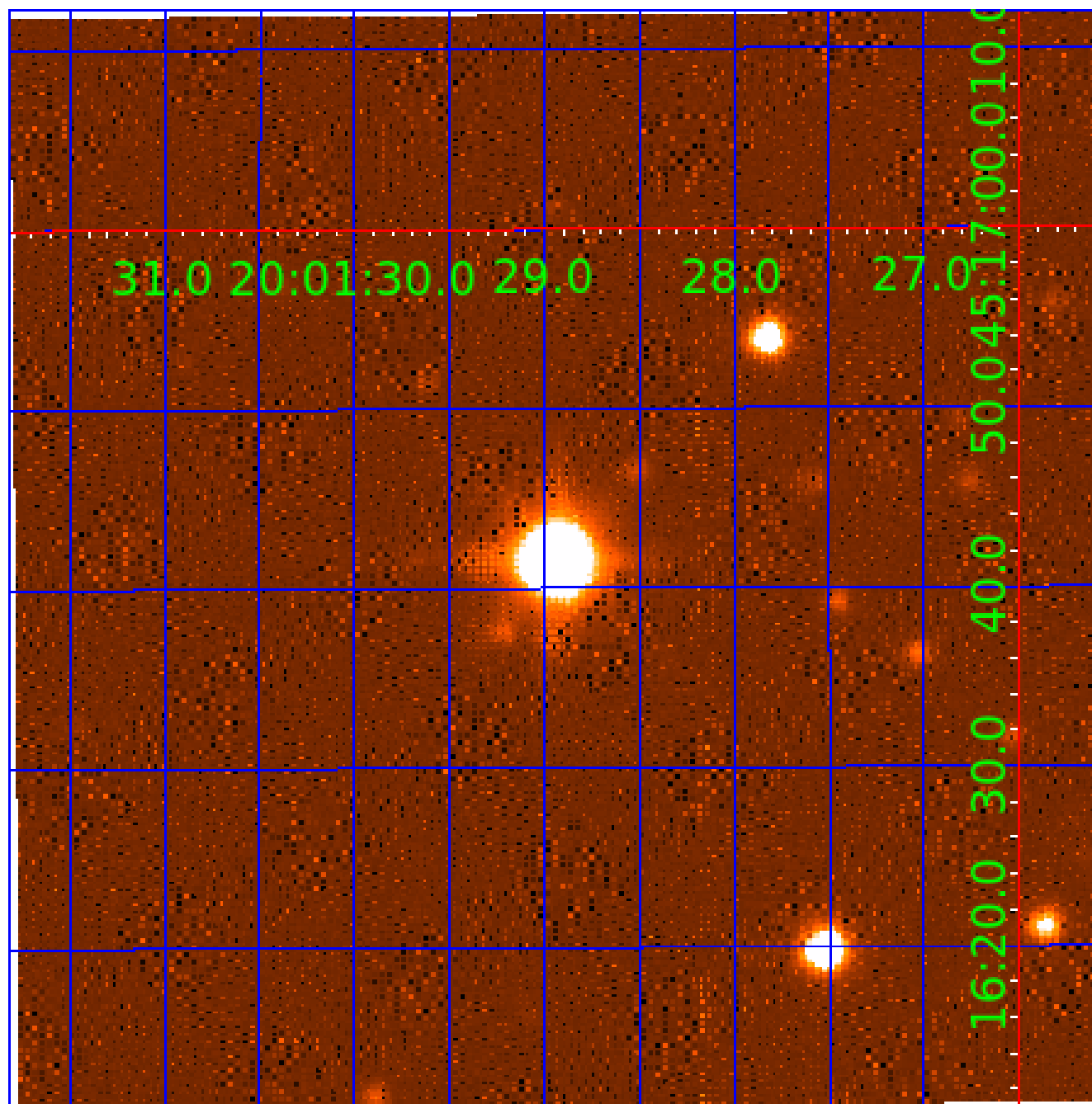


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 008982583

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008982583-01	OBS	No	3.301619	131.973031	10.3	15.955	9.8	8.5	1.79	6561	0.61	2291.88
008982583-02	OBS	No	215.292244	344.031019	128.0	24.465	22.5	8.3	1.79	6561	2.33	8.73
008982583-04	OBS	No	266.436701	279.424625	73.3	8.759	10.2	5.7	1.79	6561	1.79	6.57
008982583-05	OBS	No	205.731738	336.040663	89.3	2.651	8.7	6.9	1.79	6561	1.85	9.28

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008982583-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_SATURATED
008982583-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
008982583-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_SATURATED
008982583-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_SATURATED

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

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

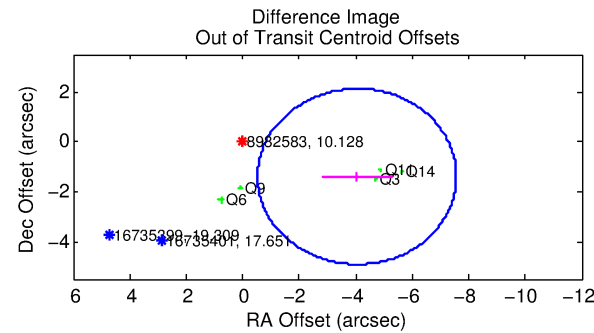
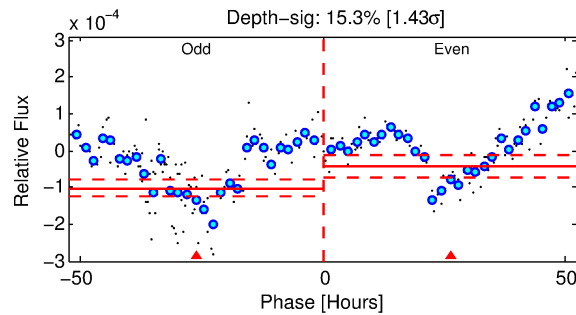
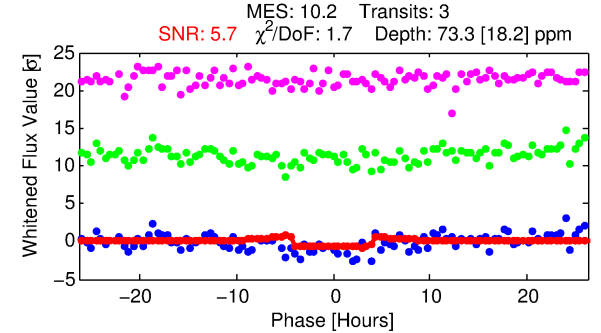
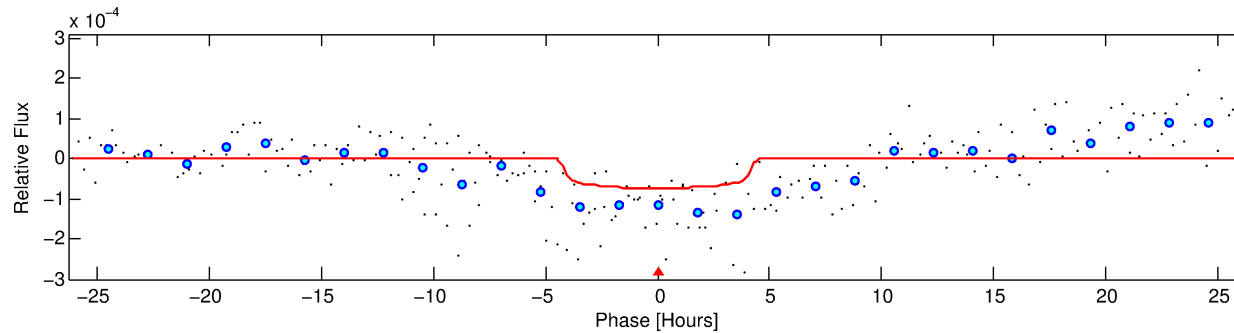
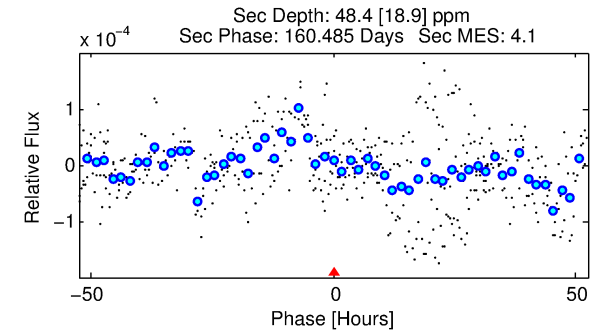
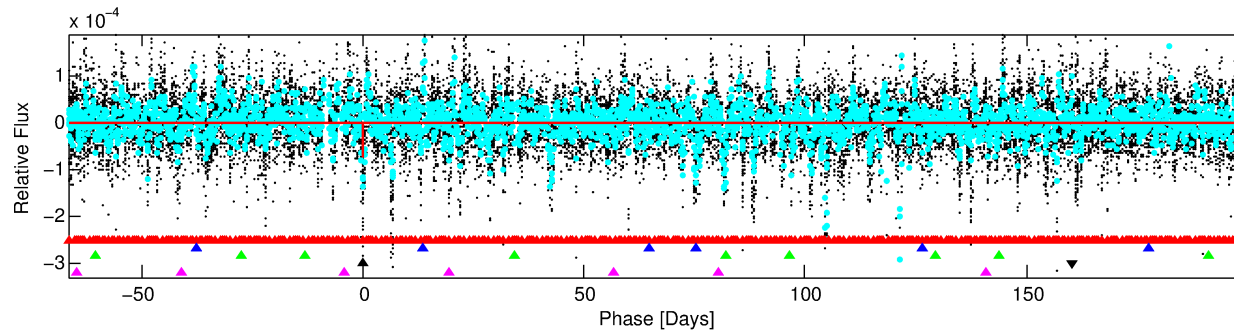
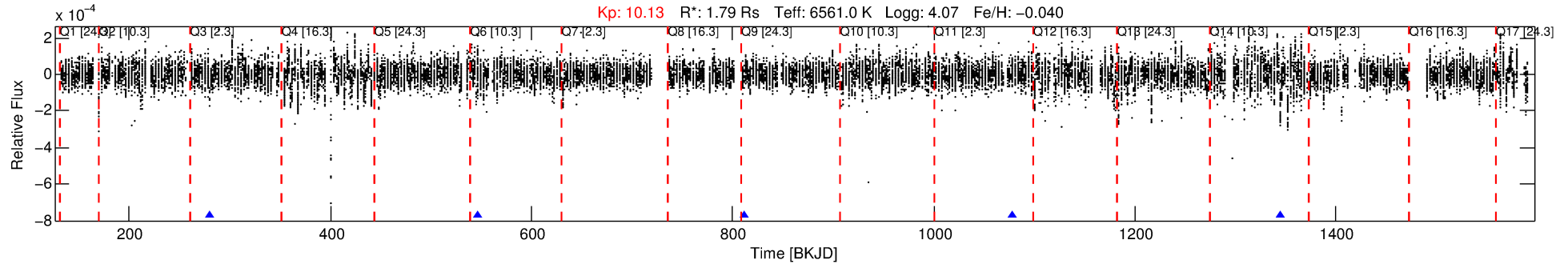
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008982583-04

No Significant Match Found

# DV One-Page Summary

KIC: 8982583 Candidate: 4 of 5 Period: 266.437 d



## DV Fit Results:

Period = 266.43670 [0.00771] d  
Epoch = 279.4246 [0.0174] BKJD  
Rp/R\* = 0.0092 [0.0032]  
a/R\* = 106.09 [193.88]  
b = 0.90 [0.39]  
Seff = 6.57 [3.08]  
Teq = 408 [48] K  
Rp = 1.79 [0.86] Re  
a = 0.9012 [0.2618] AU  
Ag = 6725.73 [6208.36] [1.08σ]  
Teffp = 5716 [1177] K [4.51σ]

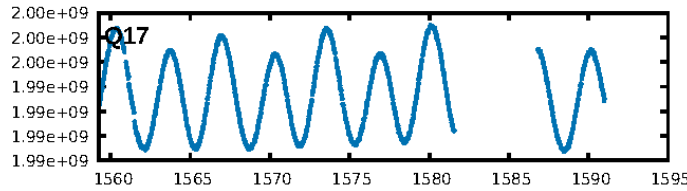
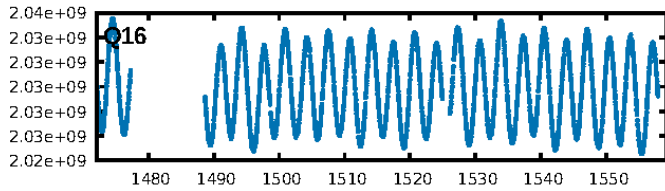
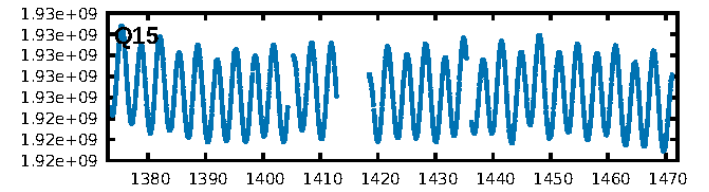
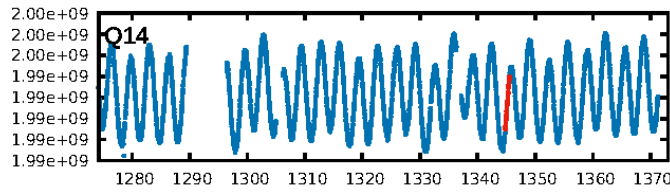
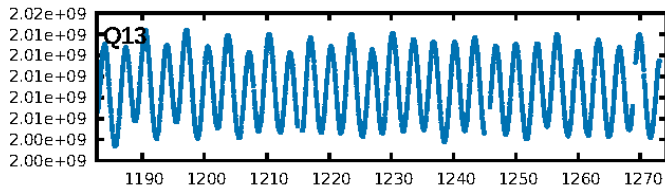
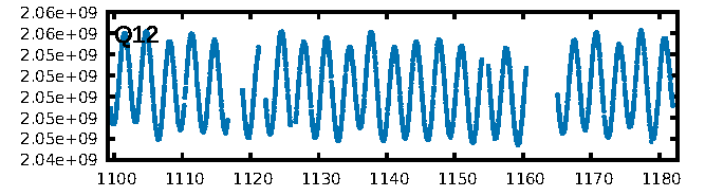
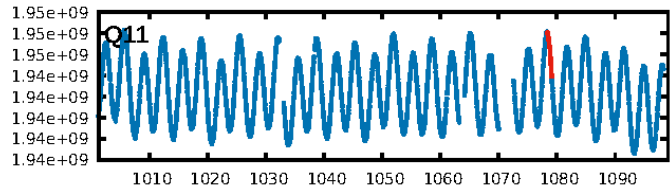
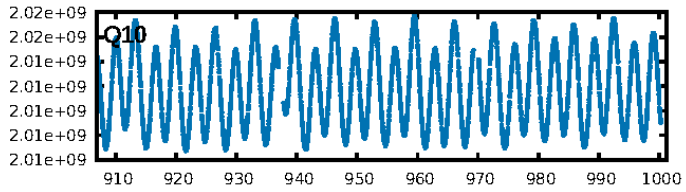
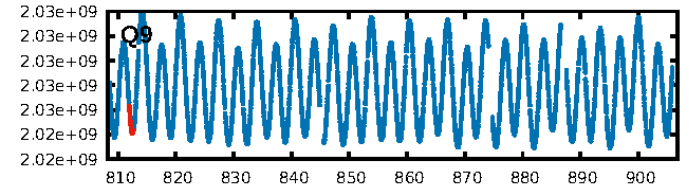
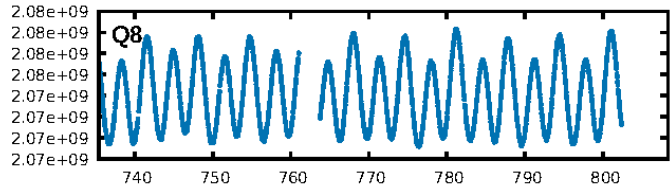
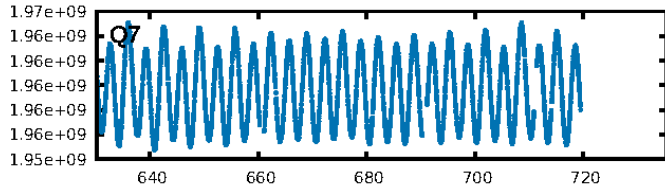
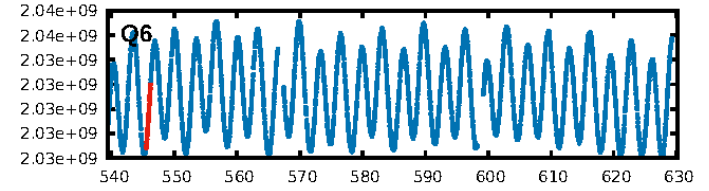
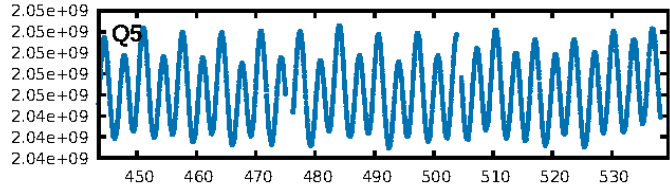
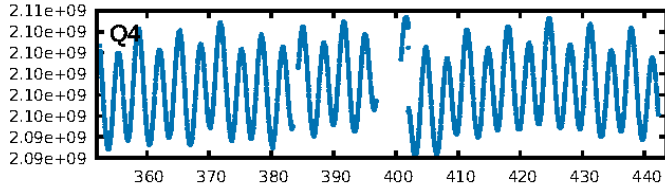
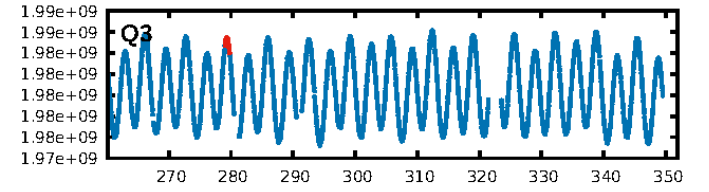
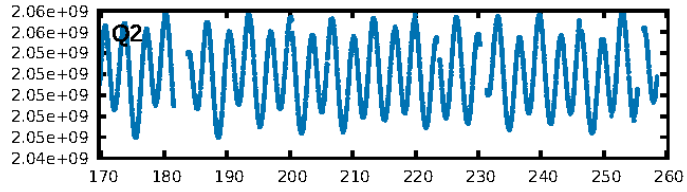
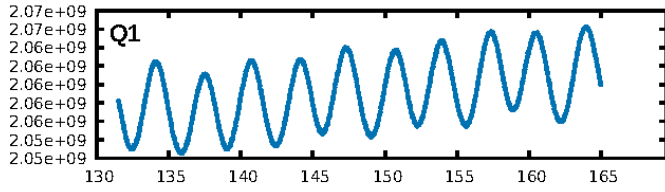
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [47.24σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 24.1%  
ModelChiSquareGof-sig: 48.0%  
Bootstrap-pfa: 1.14e-10  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 97.2%  
Centroid-so: 0.612 arcsec [0.22σ]  
OotOffset-rm: 4.277 arcsec [3.65σ]  
KicOffset-rm: 4.293 arcsec [2.93σ]  
OotOffset-st: 2/2/0/1 [5]  
KicOffset-st: 2/2/0/1 [5]  
DiffImageQuality-fgm: 0.00 [0/5]  
DiffImageOverlap-fno: 0.60 [3/5]

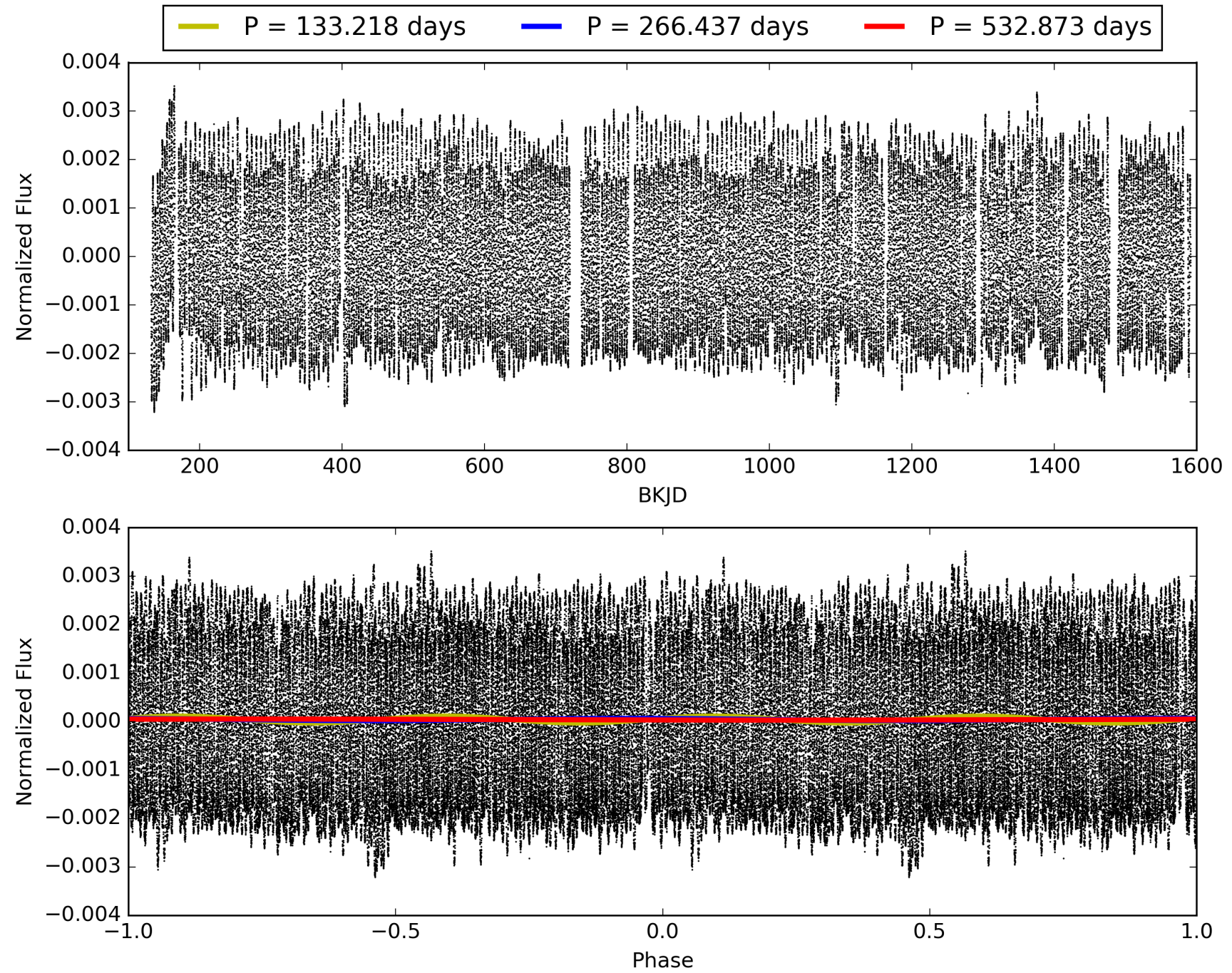
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:06:42 Z

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

## TCE 008982583-04, PDC Light Curves



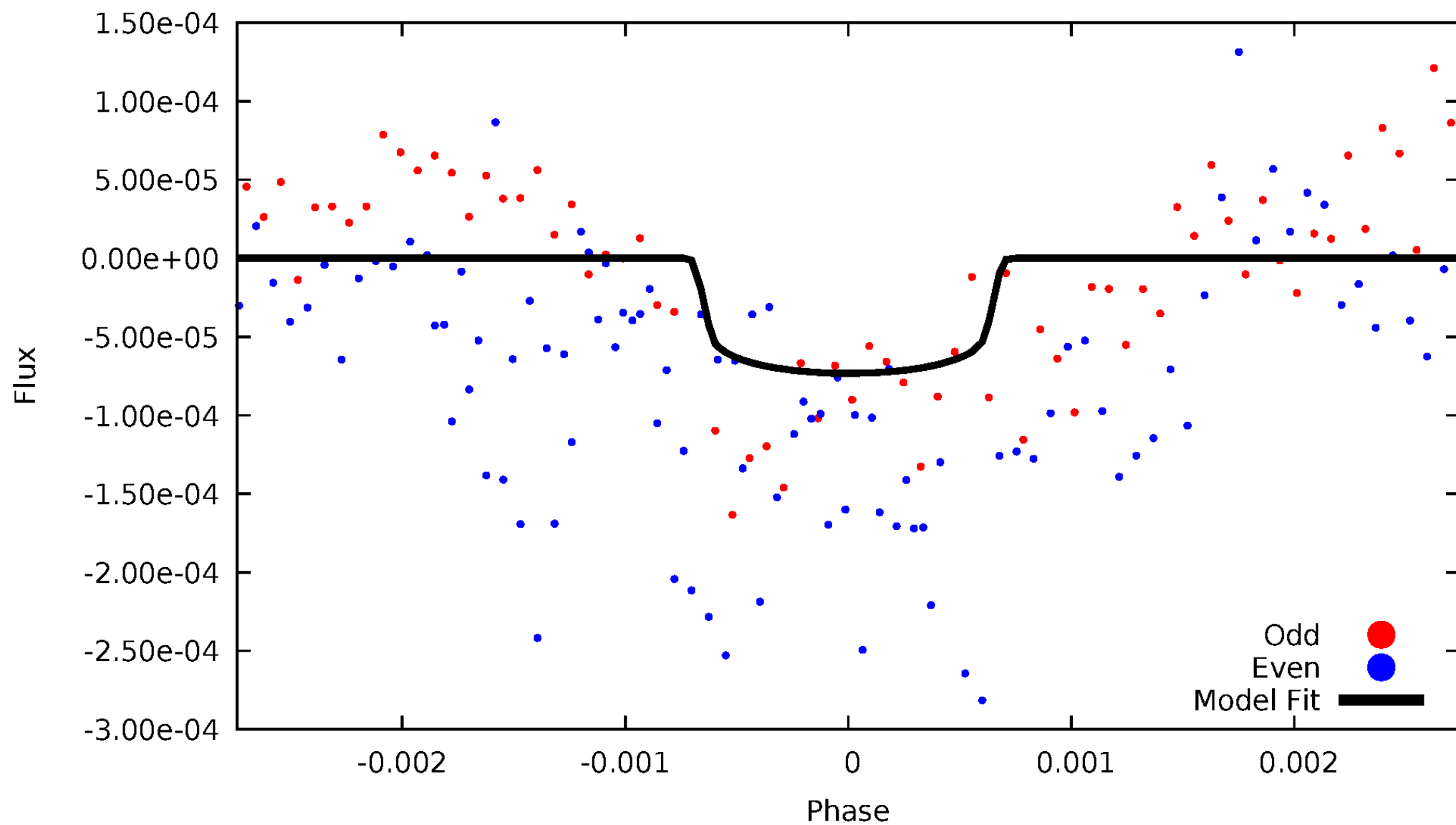
# TCE 008982583-04





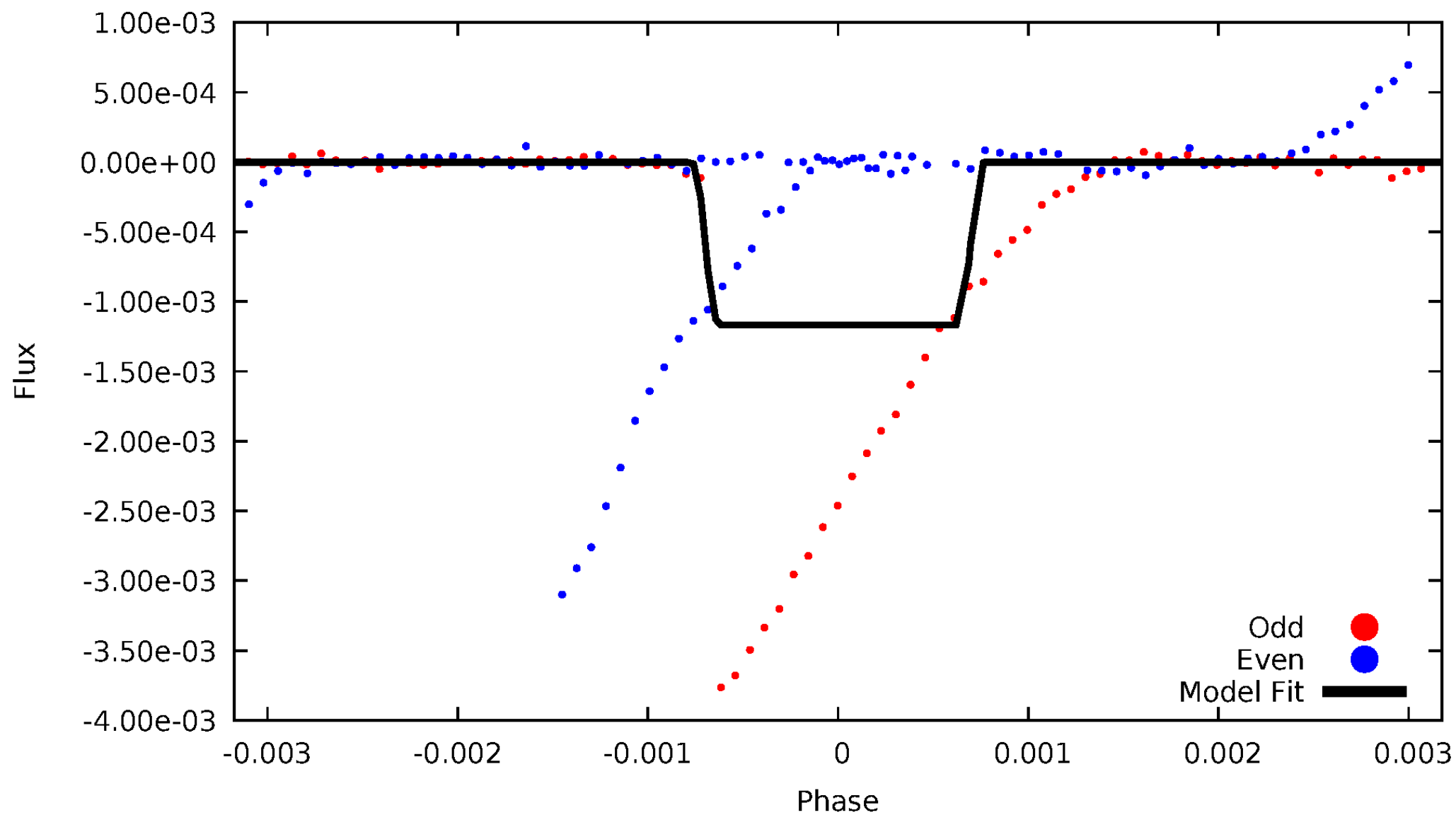
# DV Odd/Even

TCE 008982583-04



# ALT Odd/Even

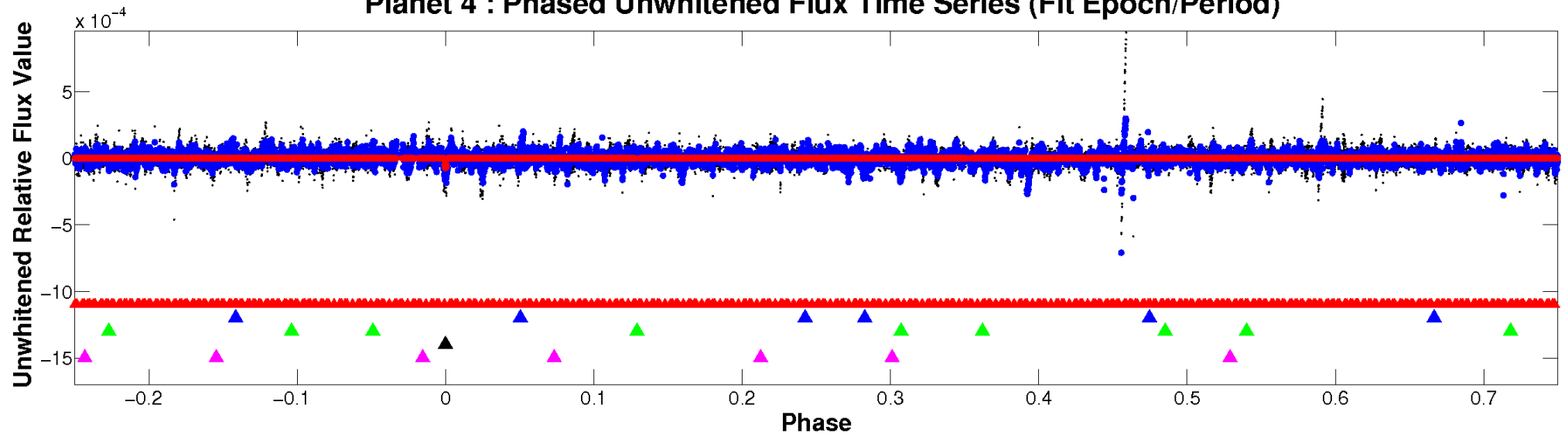
TCE 008982583-04



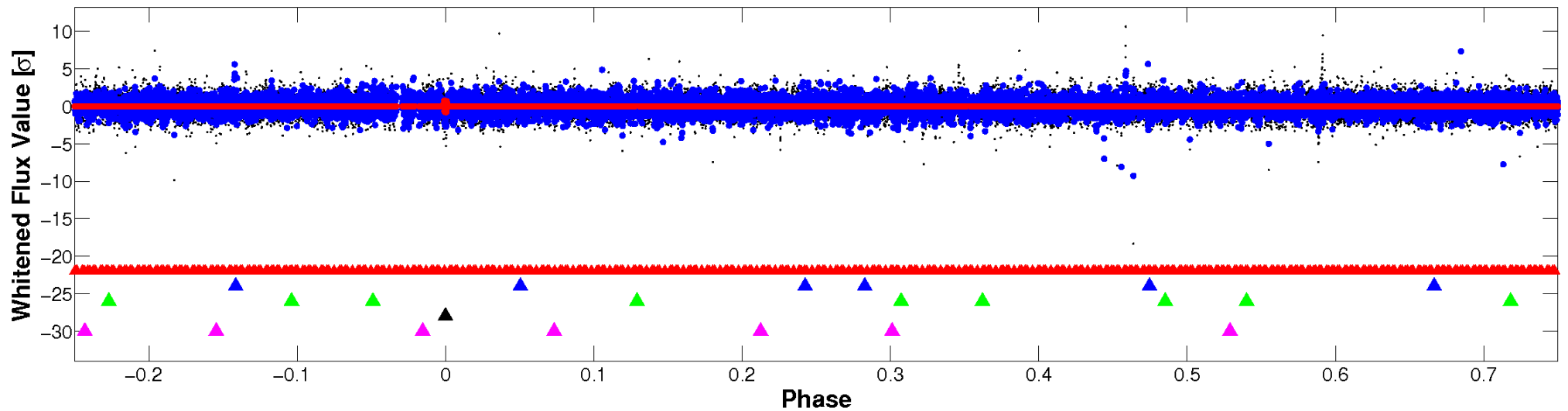


### Non-Whitened Vs. Whitened Light Curve

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

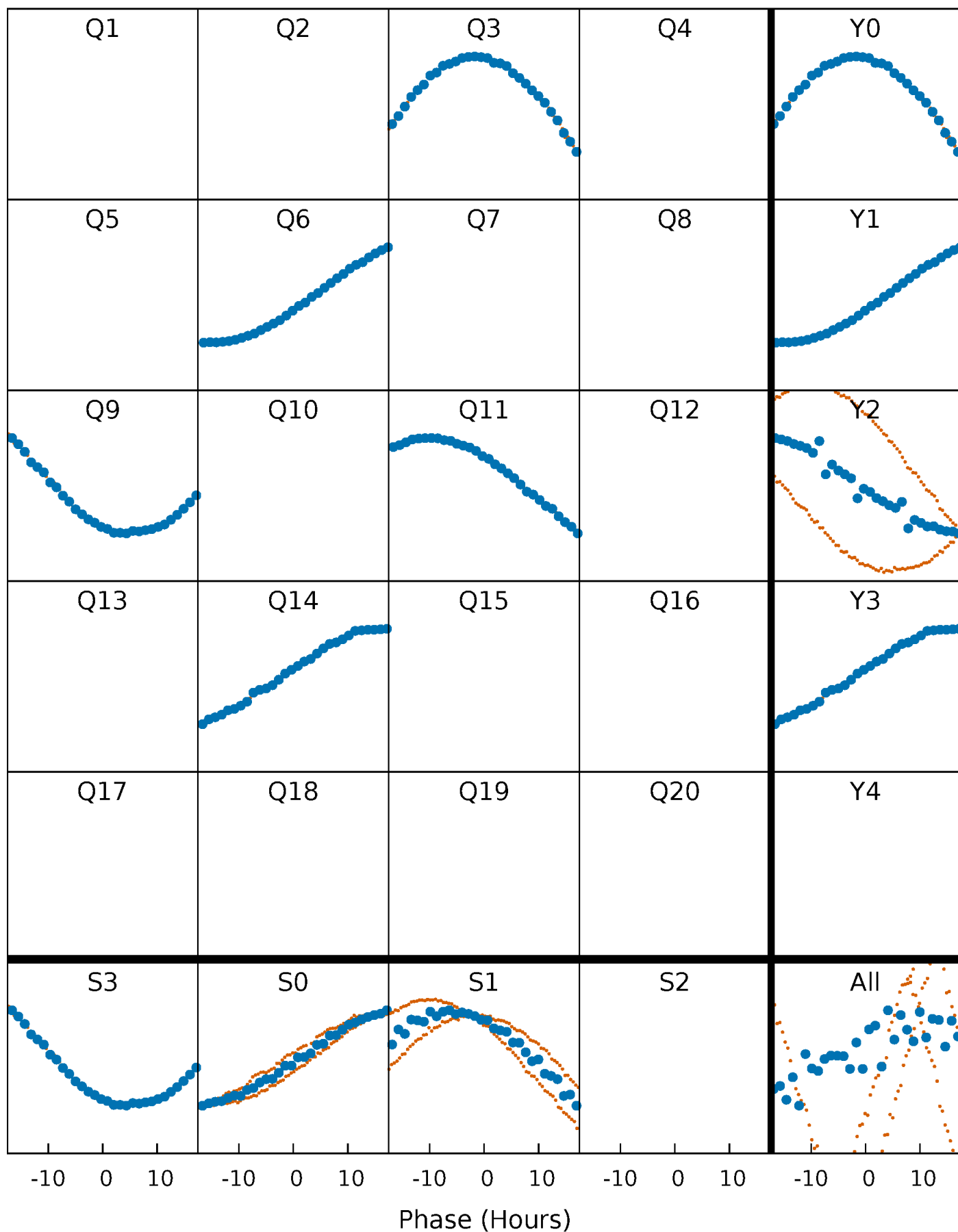


### Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



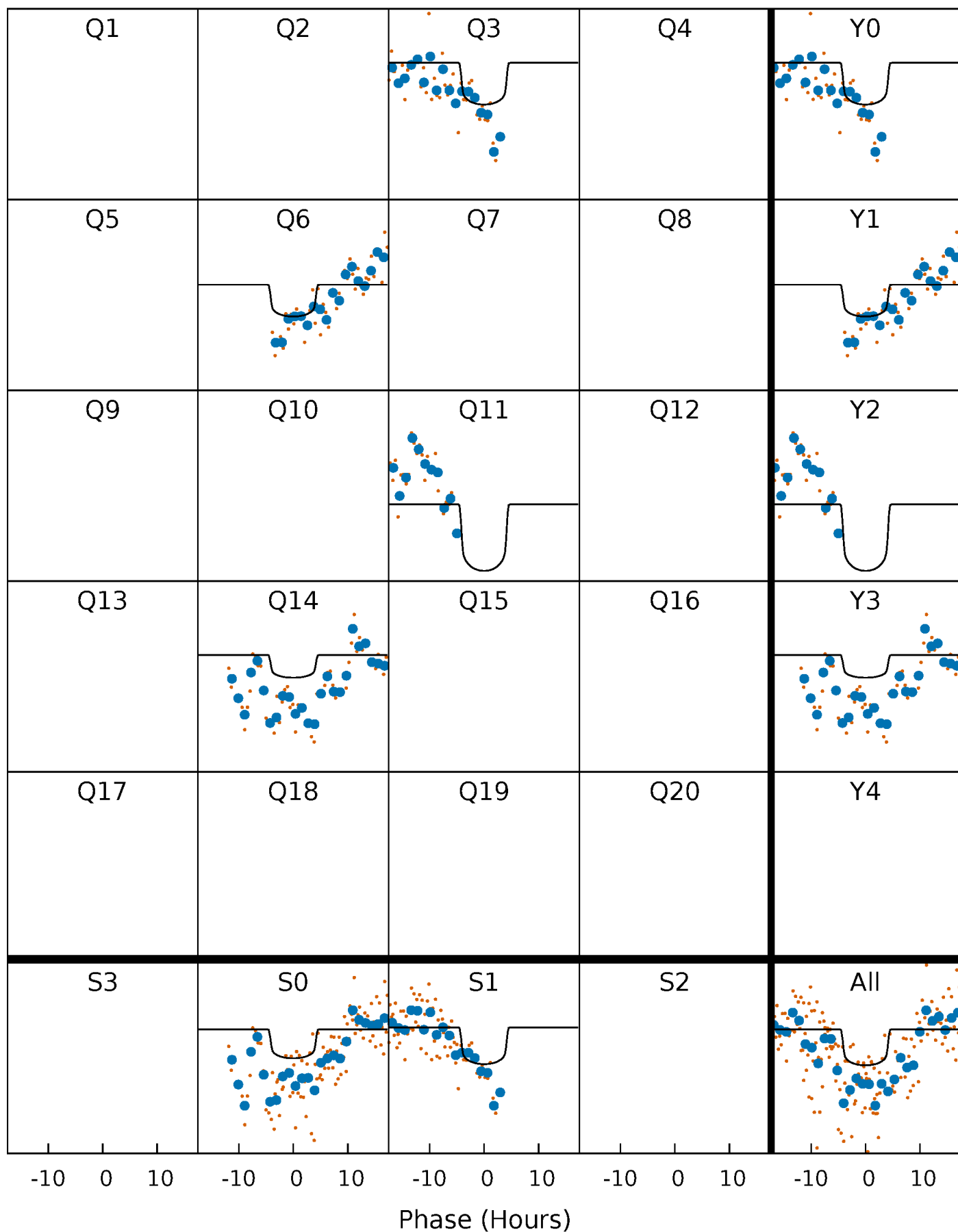
# PDC Quarter-Phased Transit Curves

TCE 008982583-04 P=266.436701 Days  $T_0=279.424625$  (BKJD)



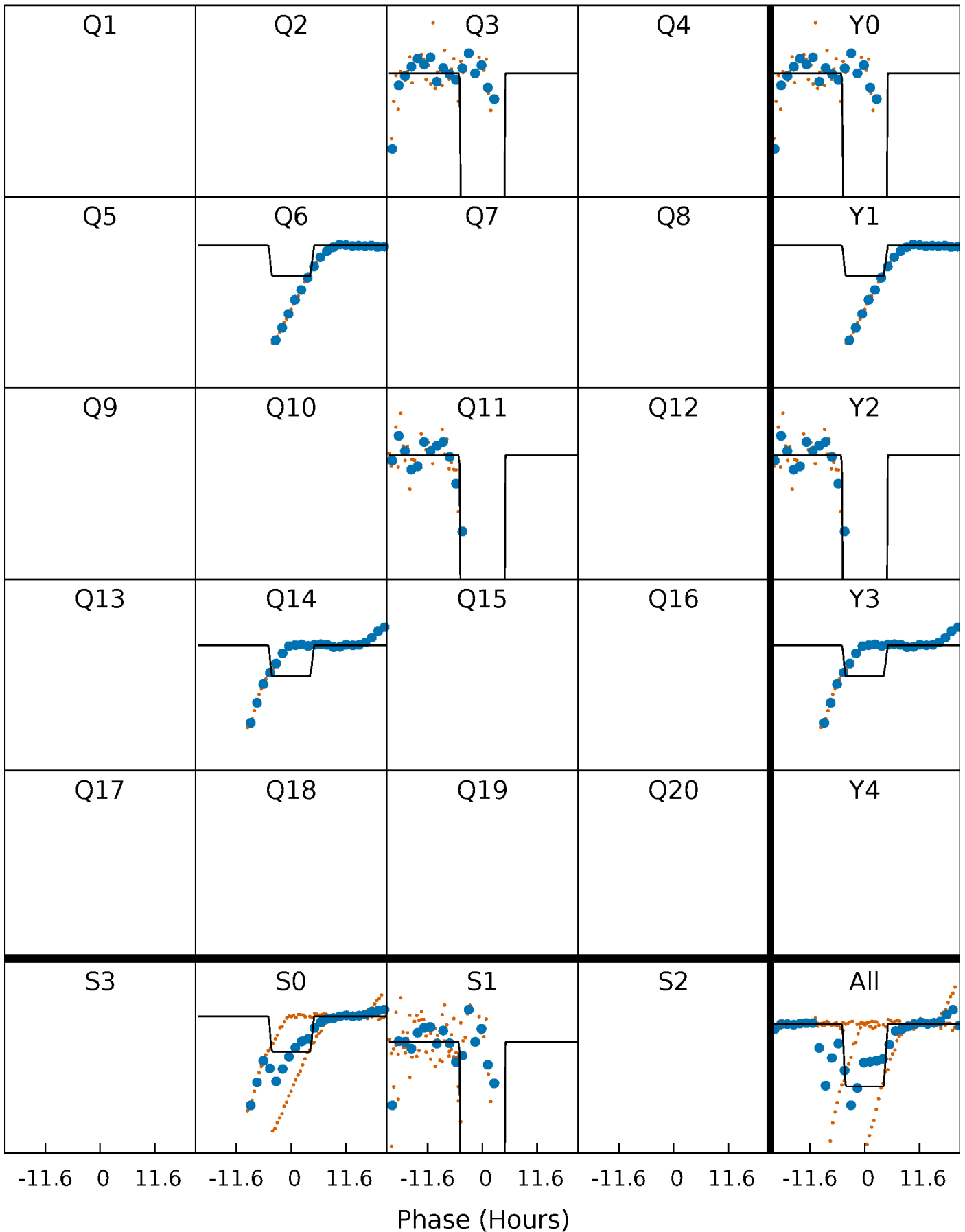
# DV Quarter-Phased Transit Curves

TCE 008982583-04     $P=266.436701$  Days     $T_0=279.424625$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

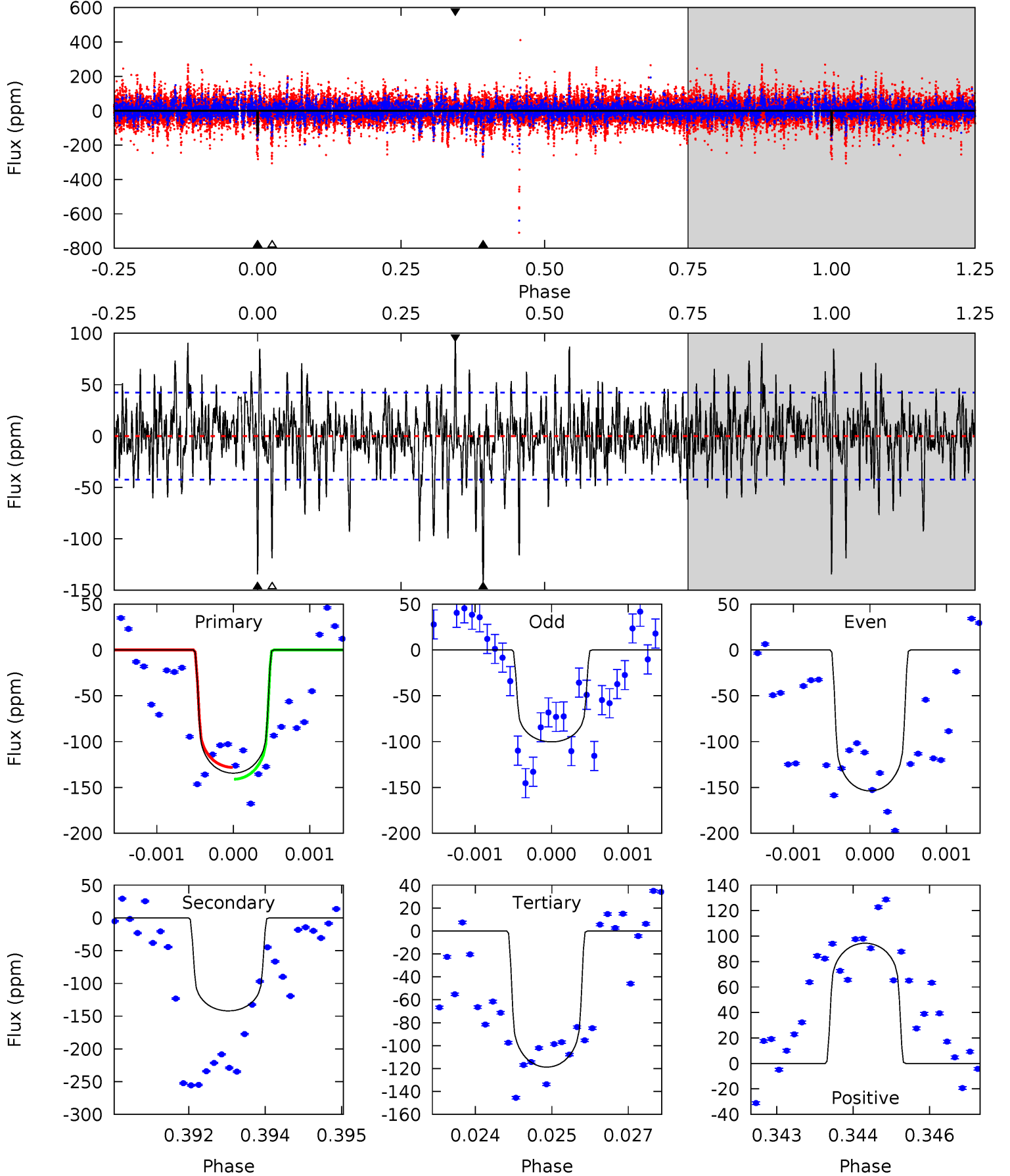
TCE 008982583-04     $P=266.426378$  Days     $T_0=279.440243$  (BKJD)



# DV Model-Shift Uniqueness Test

008982583-04,  $P = 266.436701$  Days,  $E = 12.987924$  Days

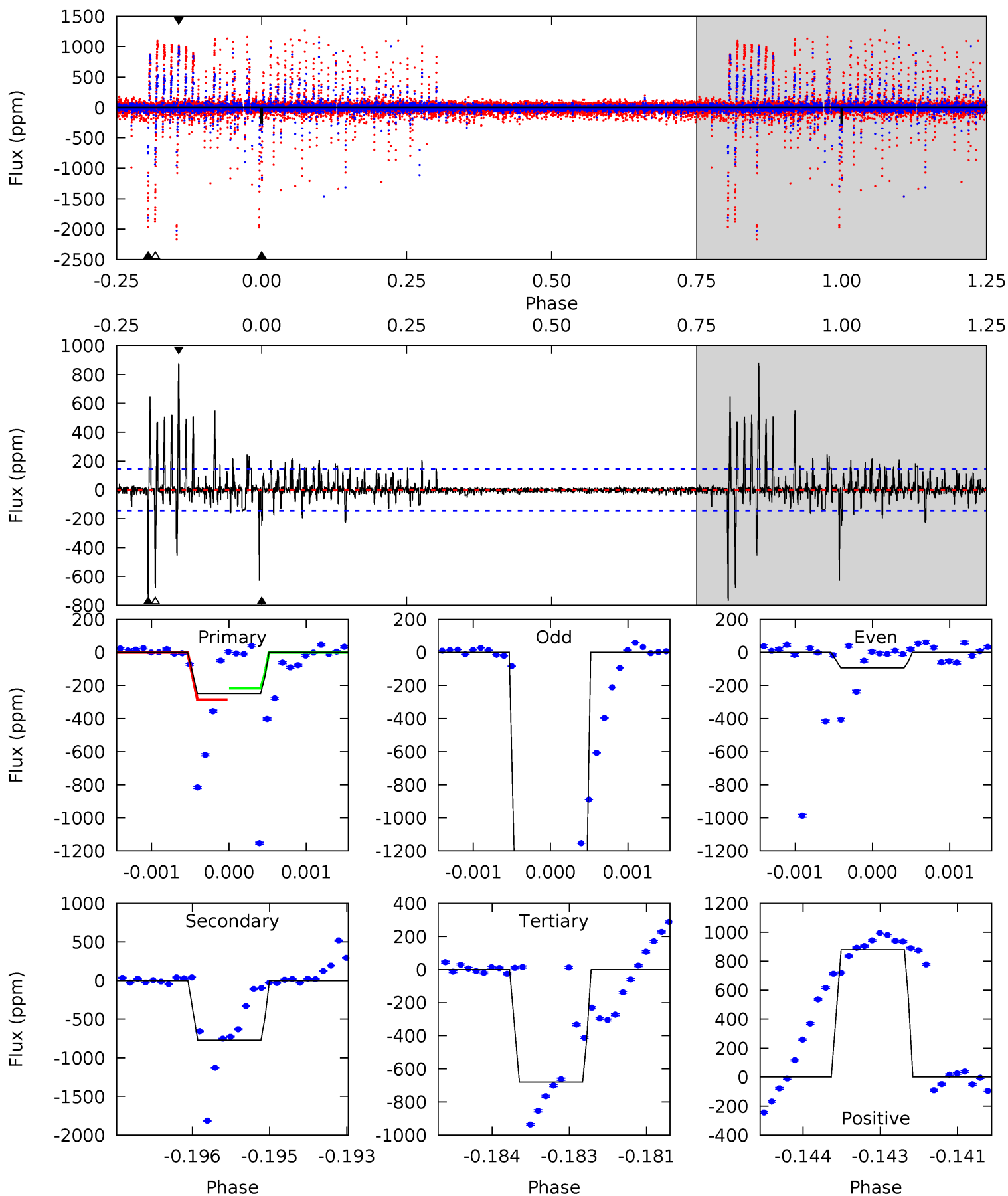
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.1	18.1	15.1	12.0	5.39	3.19	3.27	1.99	5.10	2.95	6.06	3.16	1.33	0.40	0.82



# Alt Model-Shift Uniqueness Test

008982583-04, P = 266.426378 Days, E = 13.013865 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.15	28.4	25.1	32.5	5.38	3.18	2.73	-15.9	-23.3	3.32	-4.07	38.1	3.83	0.53	0



### Stellar Parameters For KIC 008982583

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6561^{+181}_{-250}$	$4.069^{+0.252}_{-0.168}$	$-0.040^{+0.250}_{-0.300}$	$1.793^{+0.530}_{-0.583}$	$1.377^{+0.182}_{-0.273}$	$0.336^{+0.543}_{-0.160}$
	+3%/-4%	+6%/-4%	+625%/-750%	+30%/-33%	+13%/-20%	+161%/-48%
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 008982583-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-142 \pm 8$	$1.66^{+0.74}_{-0.60}$	$564^{+44}_{-44}$	$7748^{+2438}_{-1252}$	$22418^{+32145}_{-11193}$
Alt.	$-770 \pm 27$	$6.54^{+1.22}_{-1.30}$	$567^{+43}_{-51}$	$5910^{+310}_{-329}$	$7893^{+3912}_{-2147}$

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



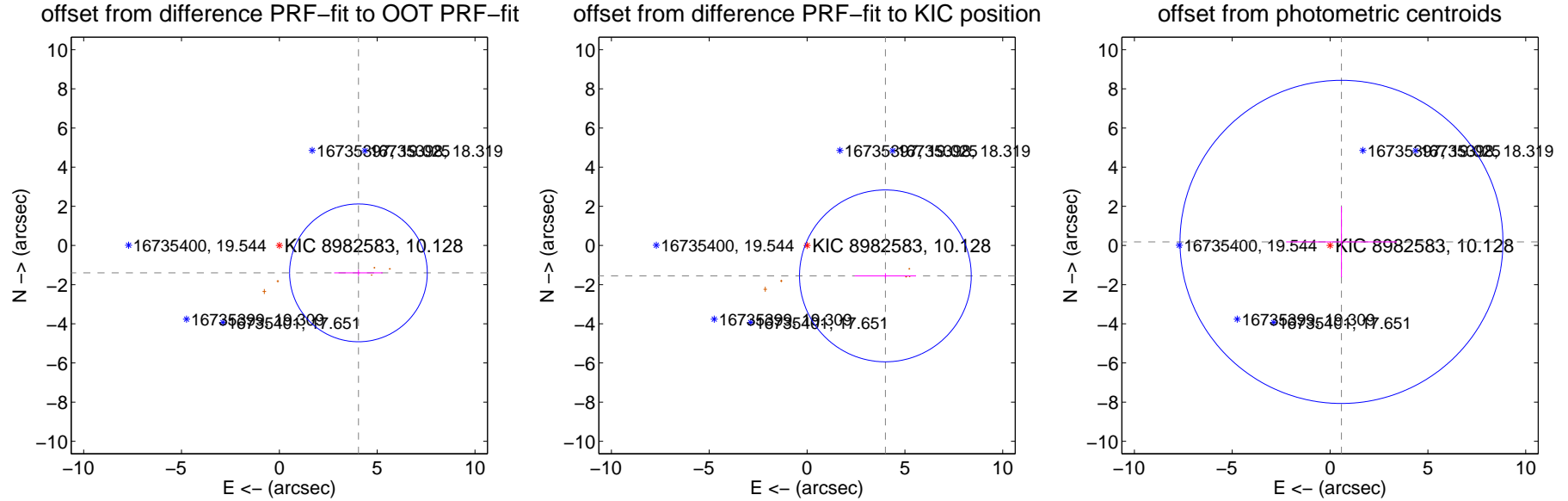
## DV Centroid Data

Supplemental centroid analysis for 008982583-04. **Kepler magnitude: 10.13.** Transit SNR 5.68

**There are 0 quarters with good PRF difference image offsets**

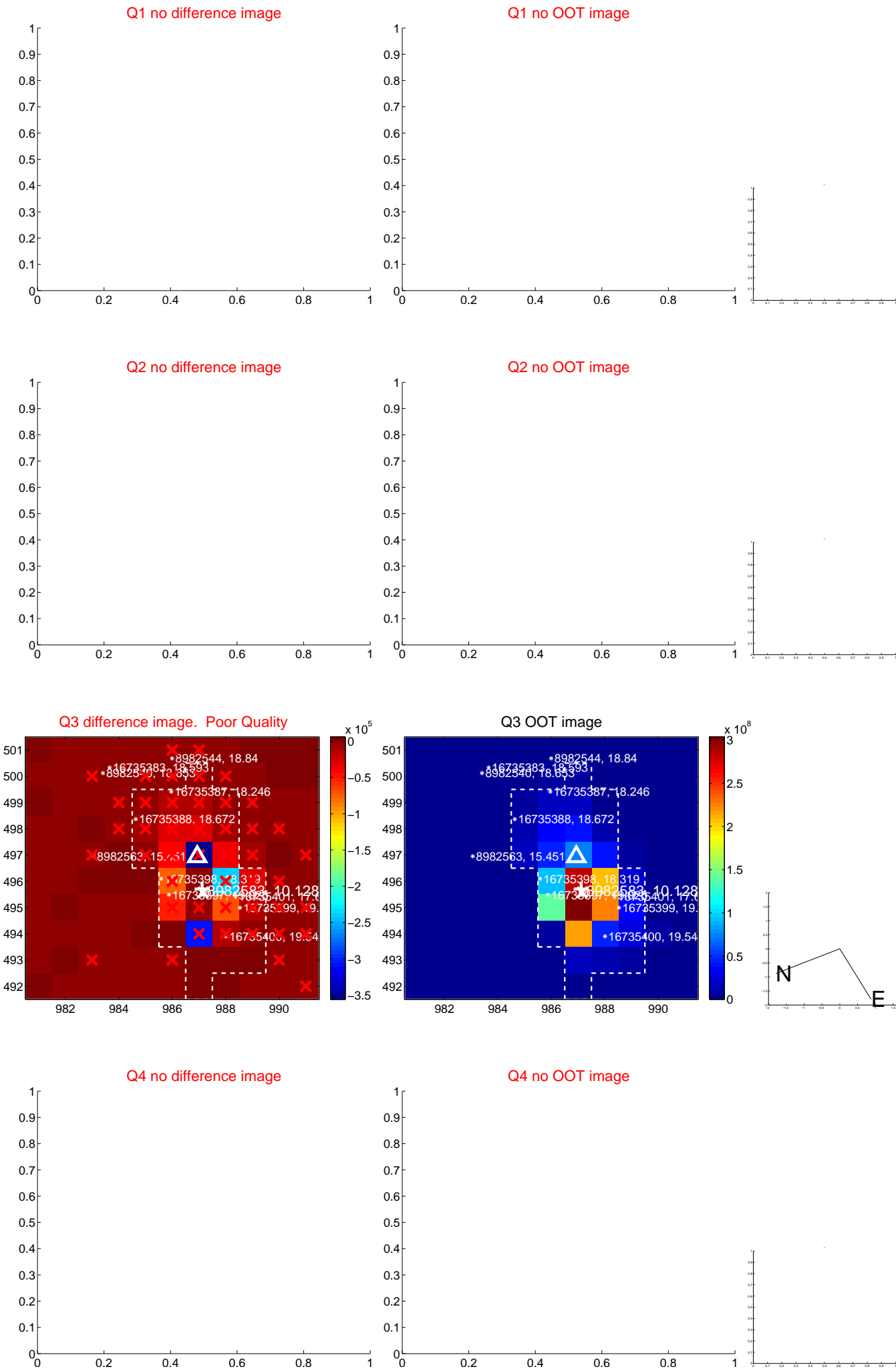
The direct PRF centroid is offset from the target star catalog position by about 0.71 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>4.277 <math>\pm</math> 1.173</b>	<b>3.65</b>	-4.042 $\pm$ 1.240	-1.398 $\pm$ 0.156
PRF-fit source offset from KIC position	4.293 $\pm$ 1.463	2.93	-4.003 $\pm$ 1.568	-1.552 $\pm$ 0.134
photometric centroid source offset	0.61 $\pm$ 2.75	0.22	-0.58 $\pm$ 2.83	0.18 $\pm$ 1.80

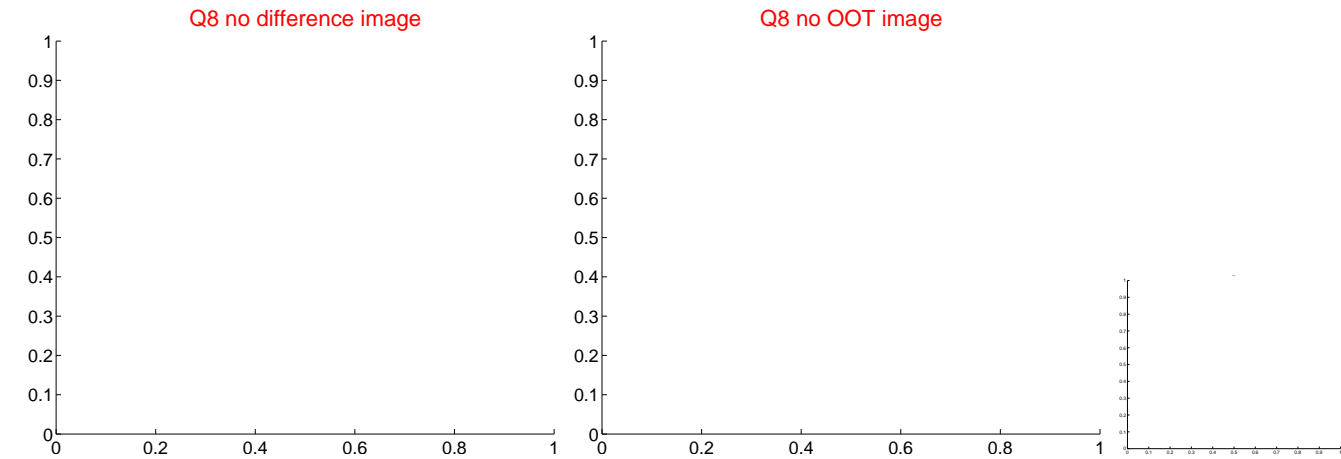
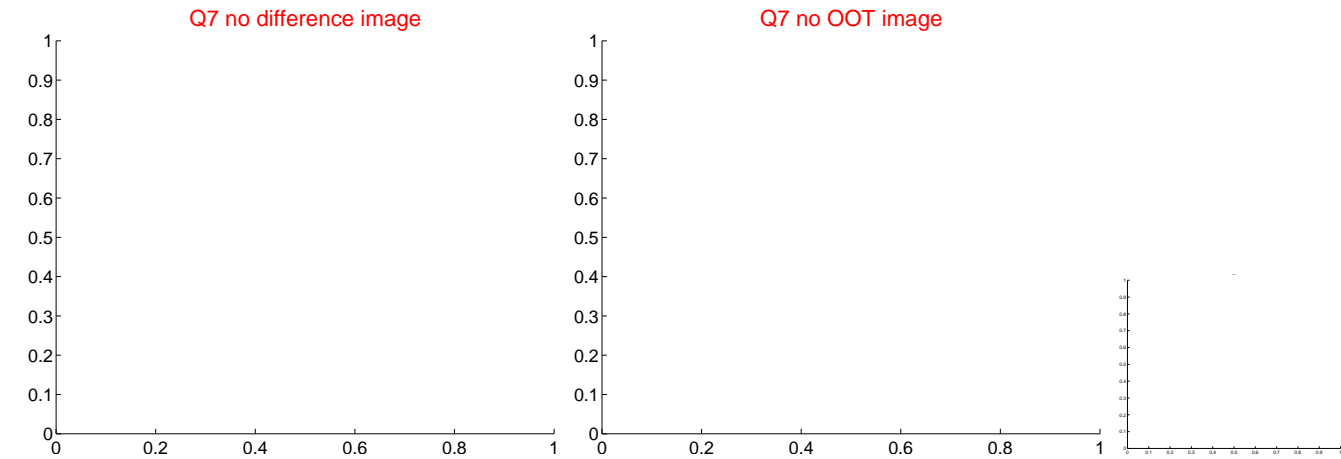
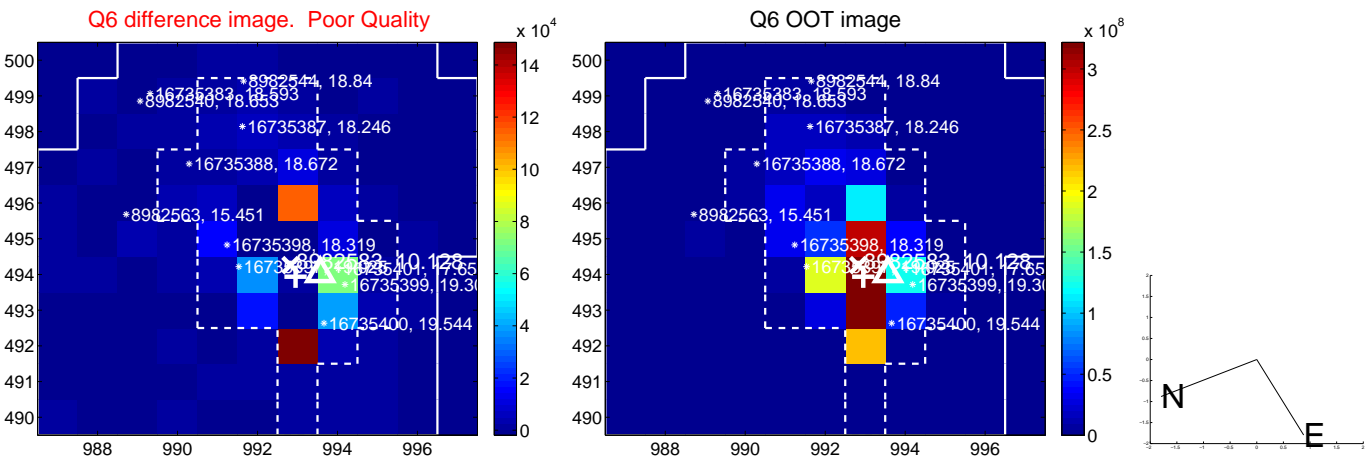
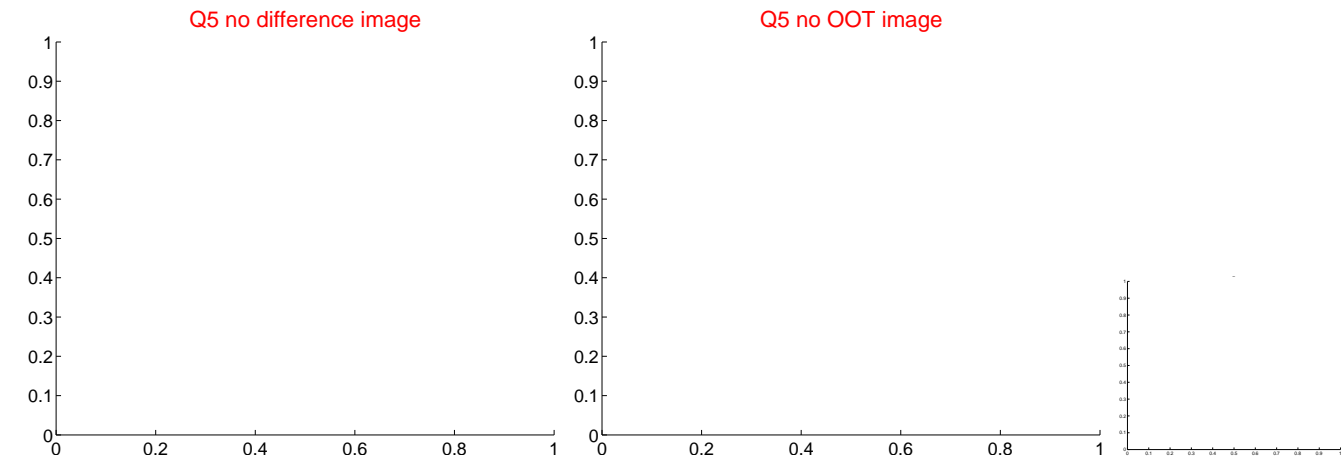


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

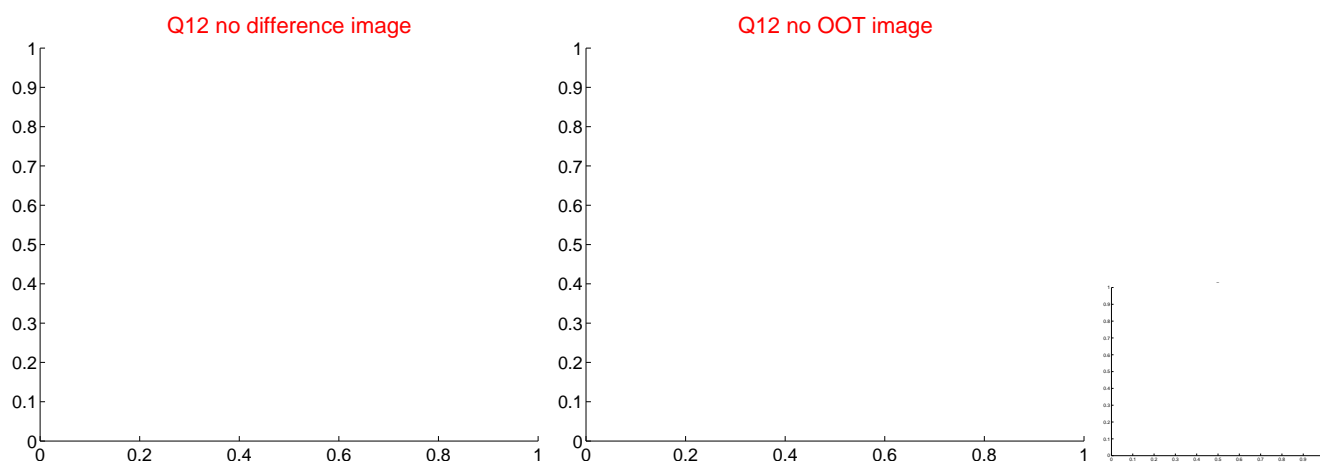
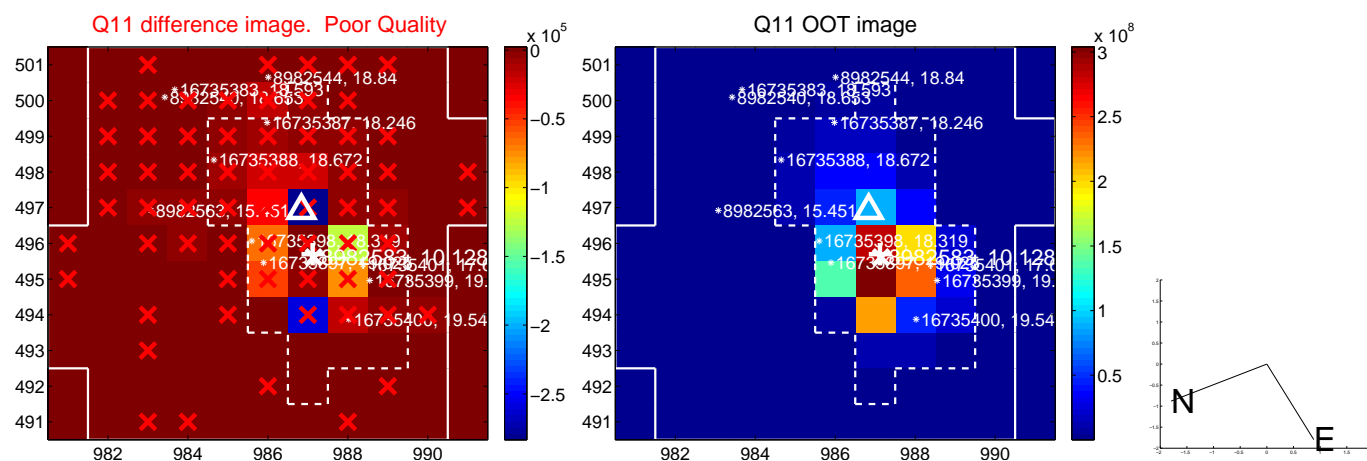
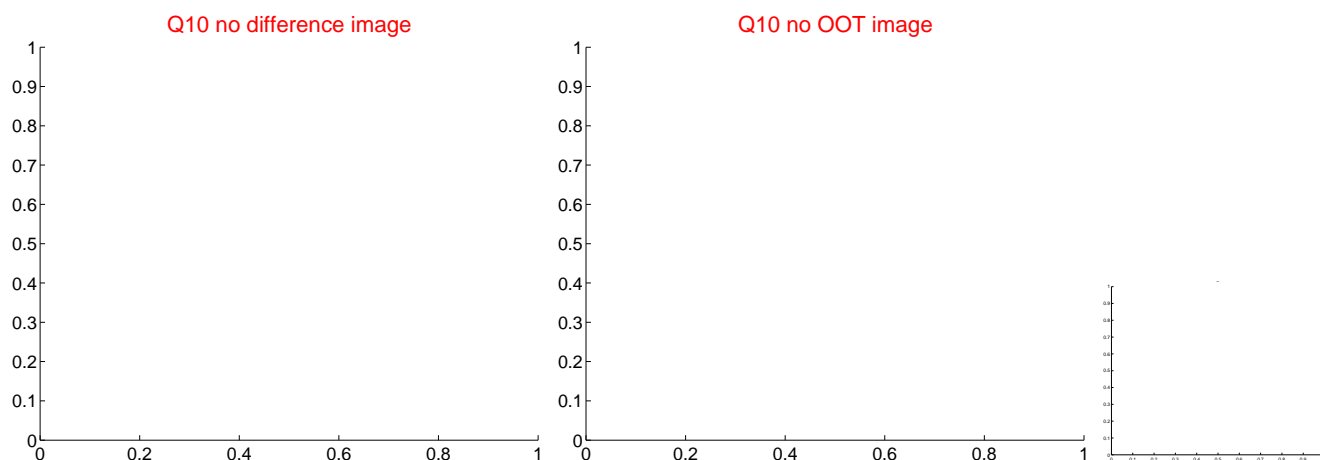
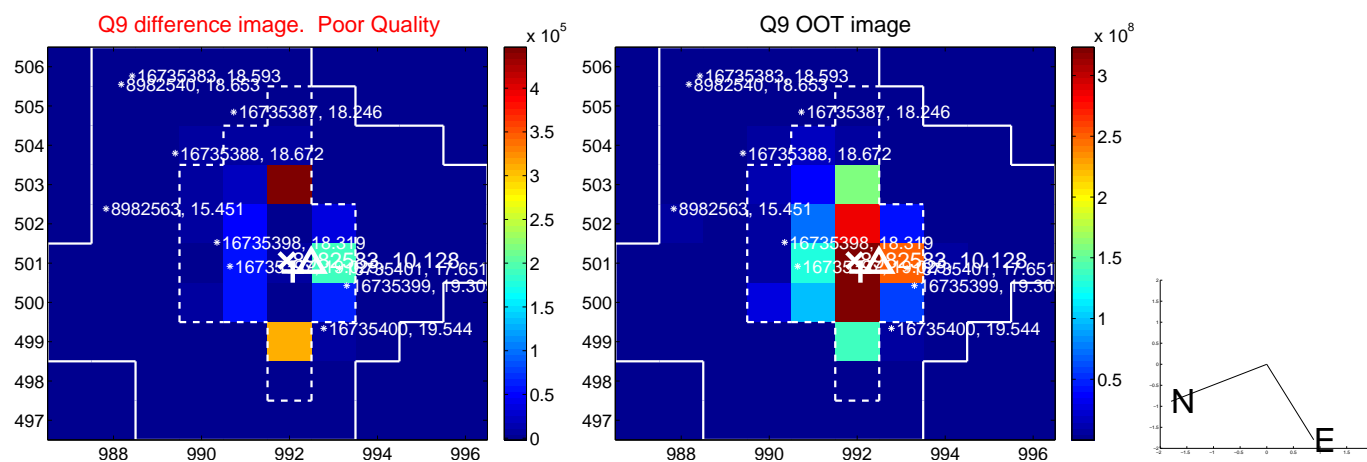
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



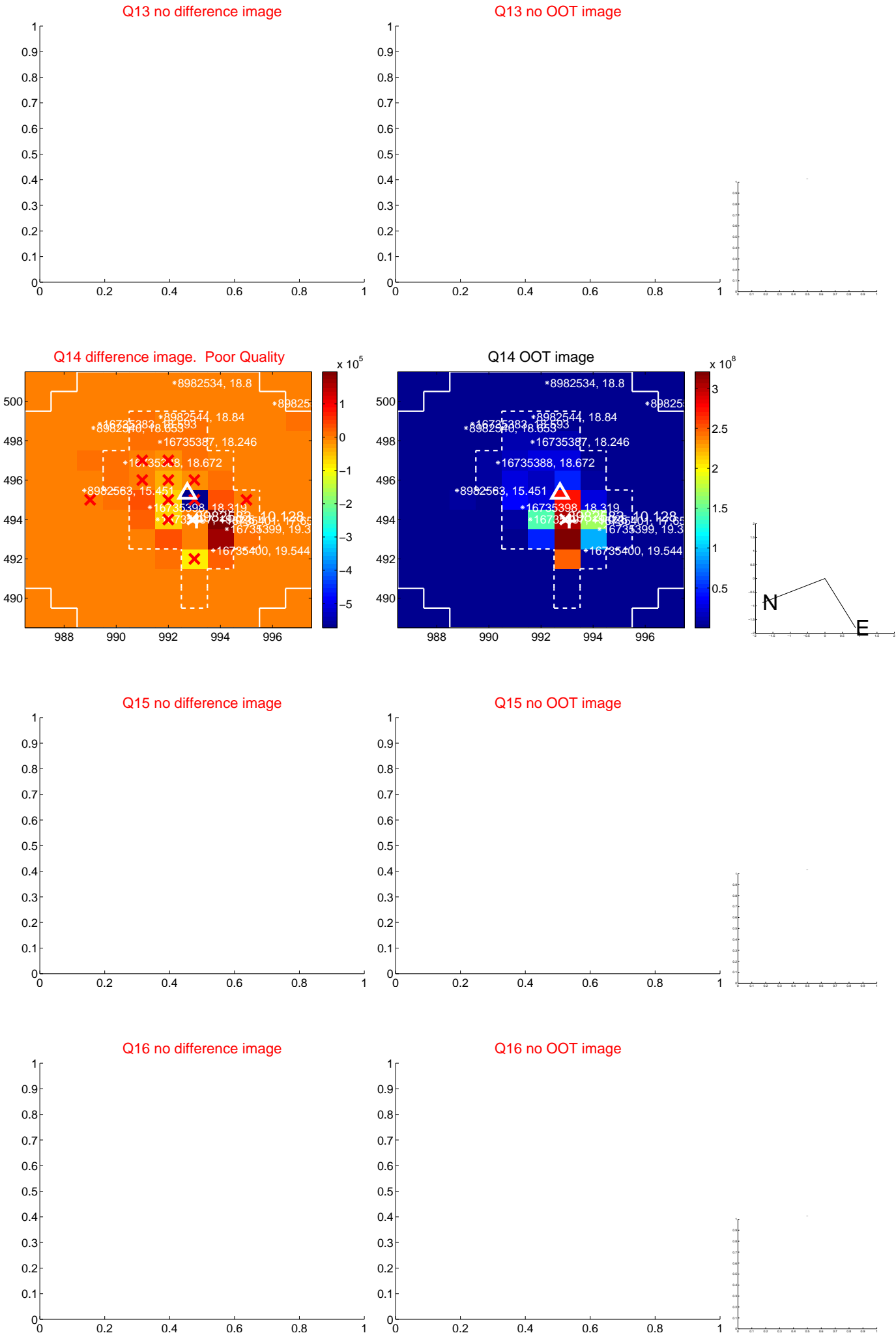
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



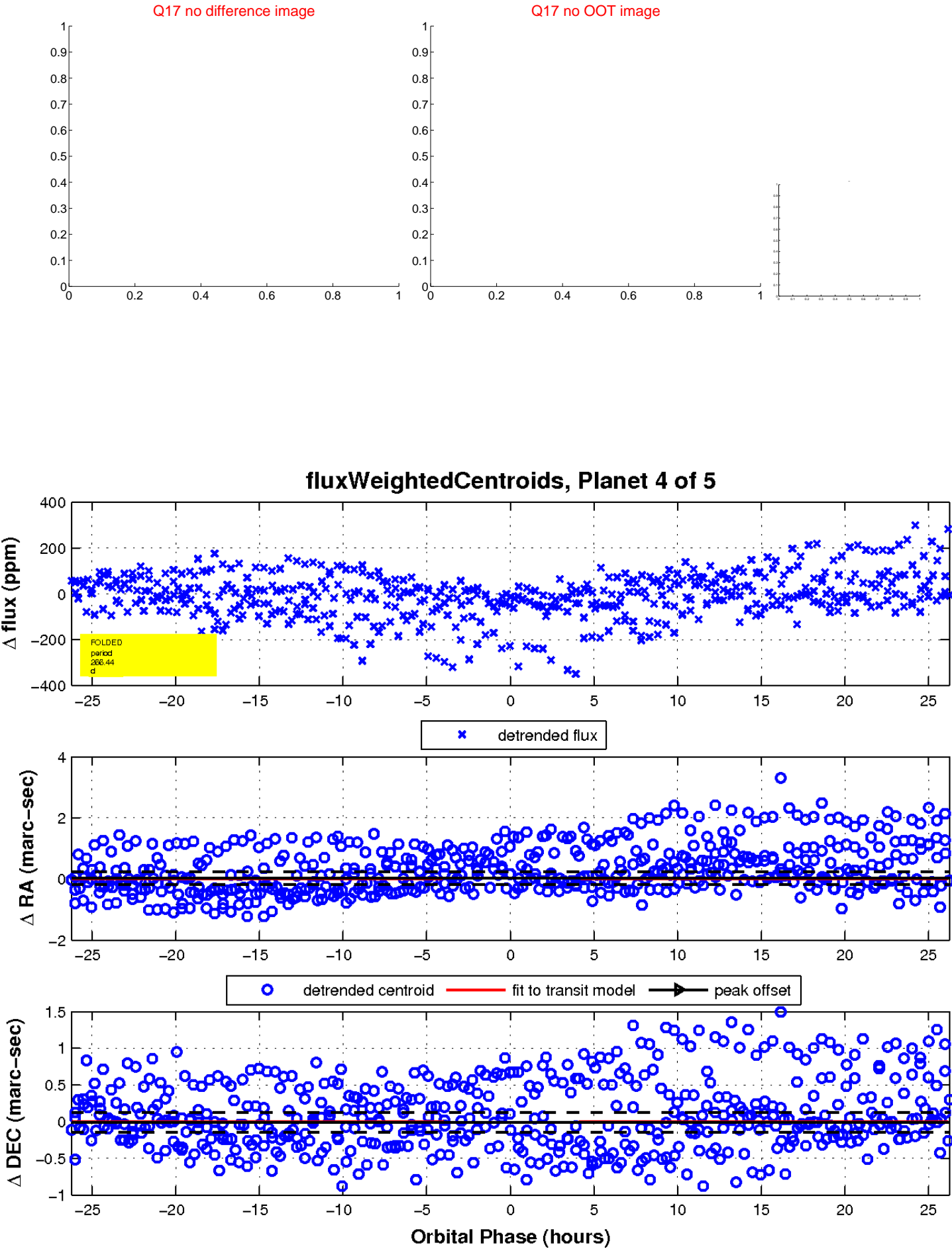
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

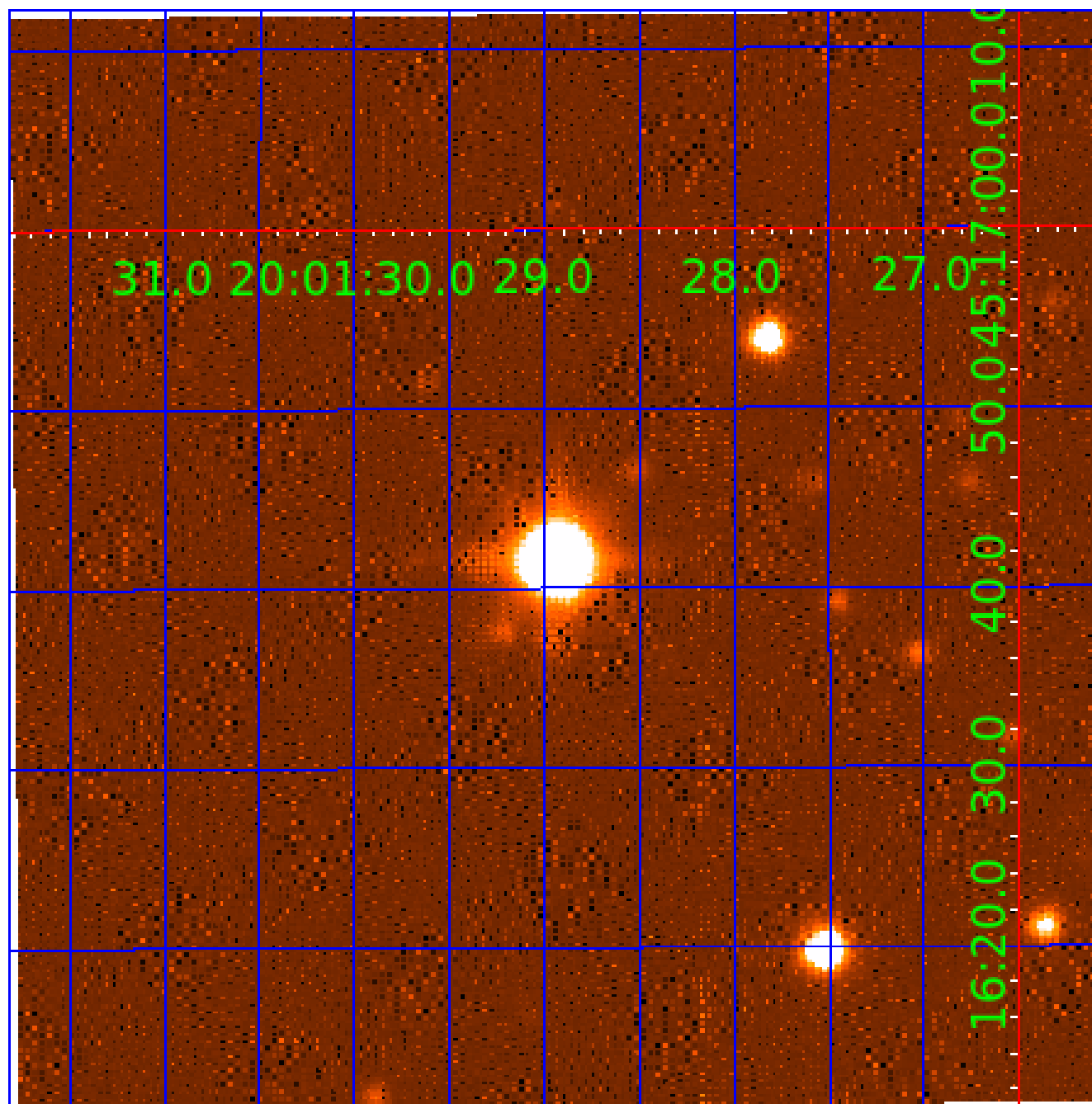


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 008982583

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008982583-01	OBS	No	3.301619	131.973031	10.3	15.955	9.8	8.5	1.79	6561	0.61	2291.88
008982583-02	OBS	No	215.292244	344.031019	128.0	24.465	22.5	8.3	1.79	6561	2.33	8.73
008982583-04	OBS	No	266.436701	279.424625	73.3	8.759	10.2	5.7	1.79	6561	1.79	6.57
008982583-05	OBS	No	205.731738	336.040663	89.3	2.651	8.7	6.9	1.79	6561	1.85	9.28

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008982583-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_SATURATED
008982583-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED
008982583-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_SATURATED
008982583-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_SATURATED

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

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

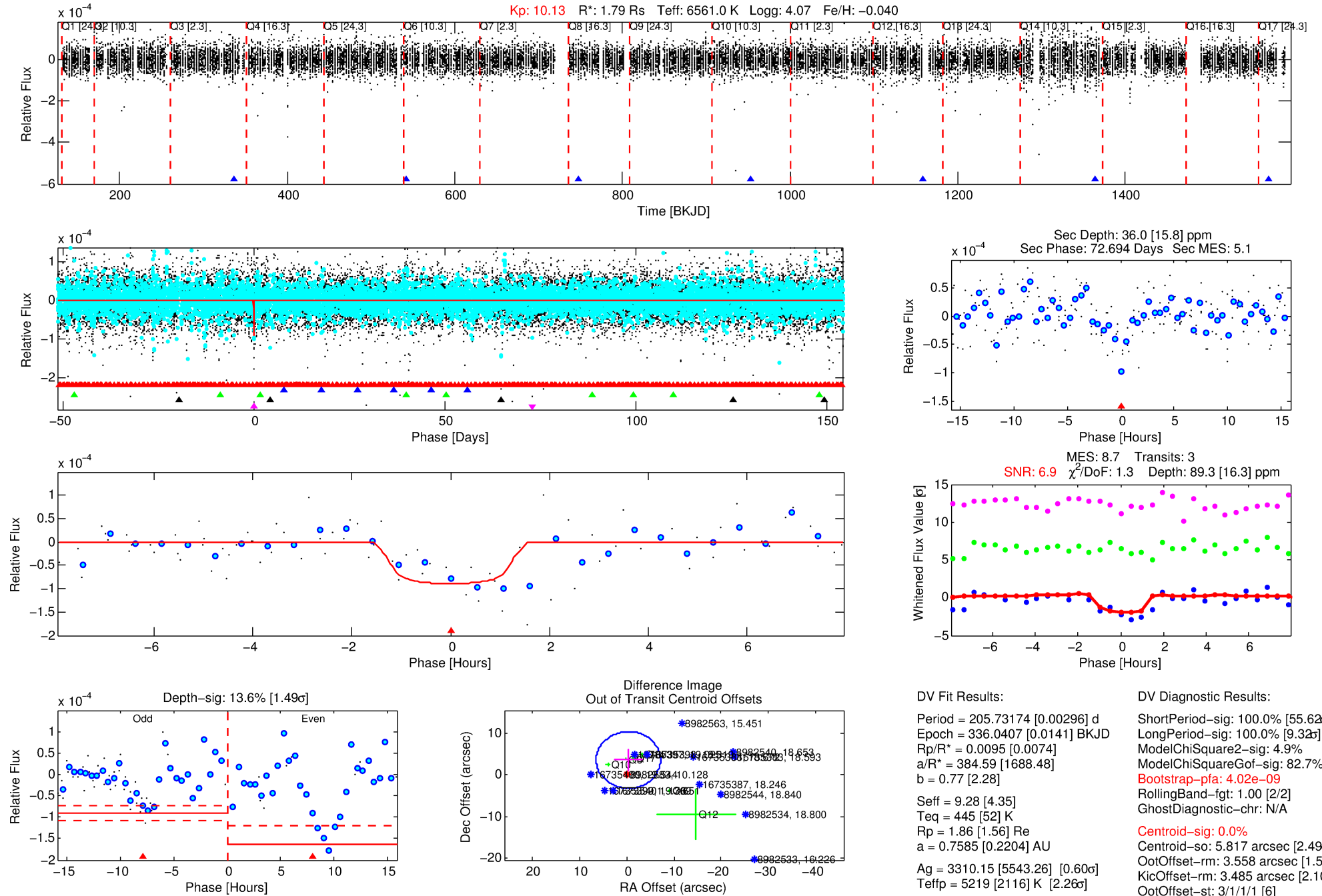
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008982583-05

No Significant Match Found

# DV One-Page Summary

KIC: 8982583 Candidate: 5 of 5 Period: 205.732 d



## DV Fit Results:

Period = 205.73174 [0.00296] d  
Epoch = 336.0407 [0.0141] BKJD  
Rp/R\* = 0.0095 [0.0074]  
a/R\* = 384.59 [1688.48]  
b = 0.77 [2.28]  
Seff = 9.28 [4.35]  
Teff = 445 [52] K  
Rp = 1.86 [1.56] Re  
a = 0.7585 [0.2204] AU  
Ag = 3310.15 [5543.26] [0.60 $\sigma$ ]  
Teffp = 5219 [2116] K [2.26 $\sigma$ ]

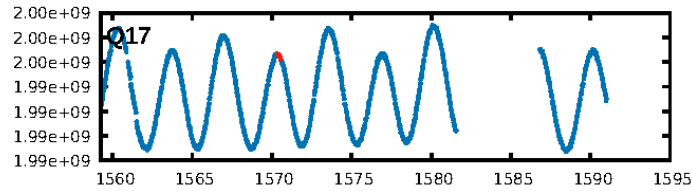
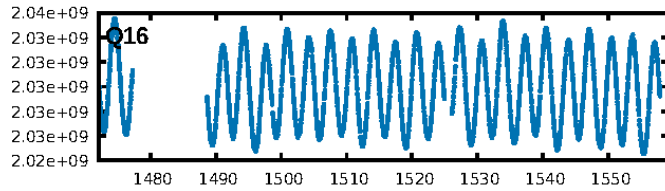
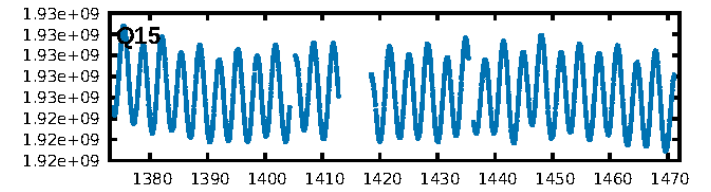
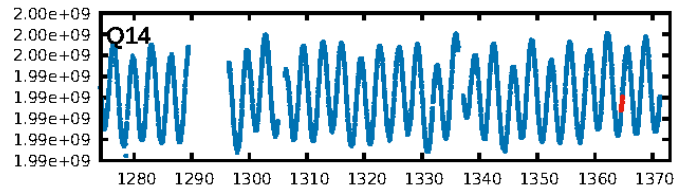
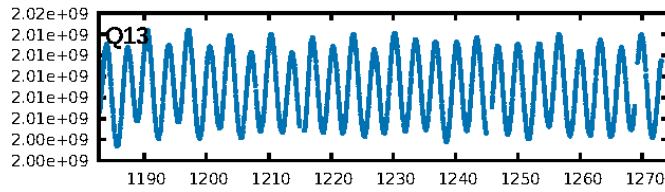
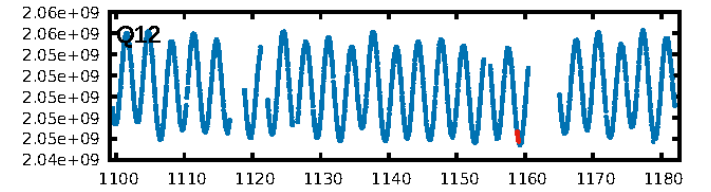
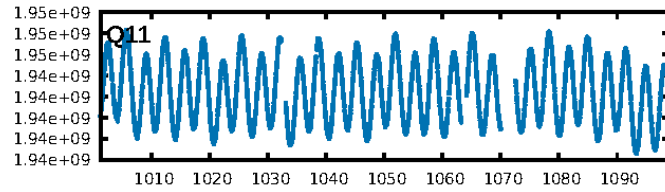
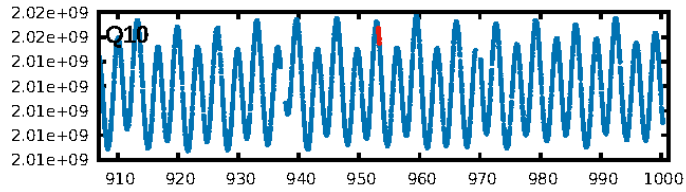
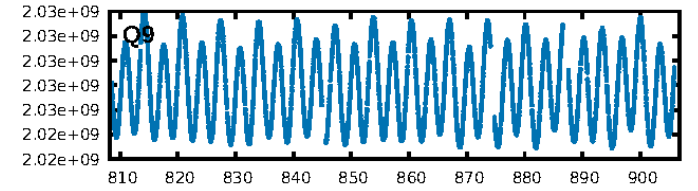
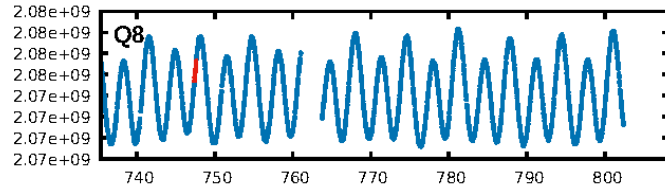
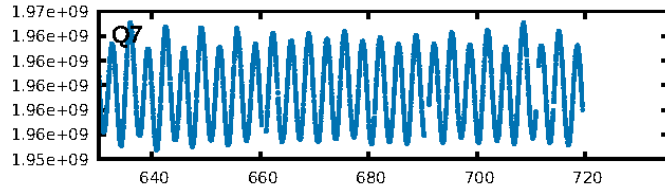
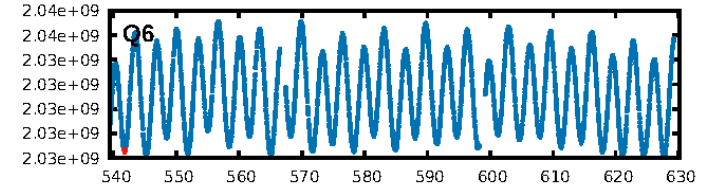
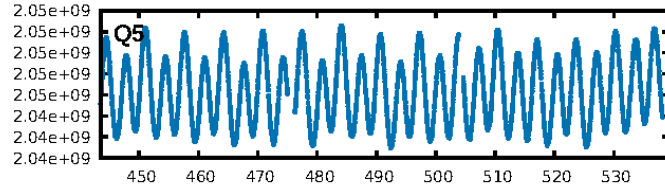
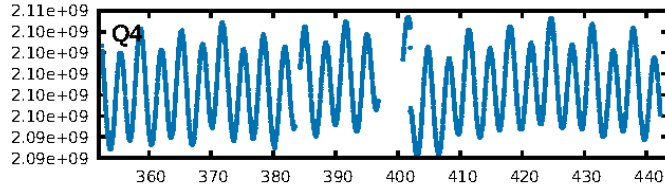
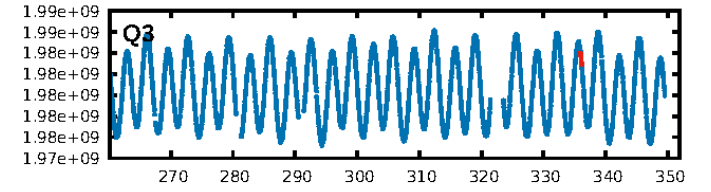
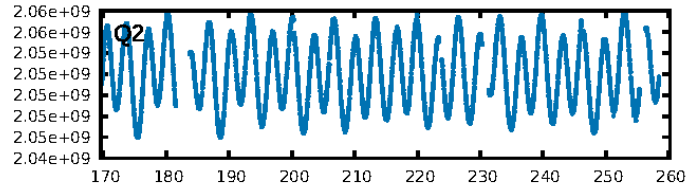
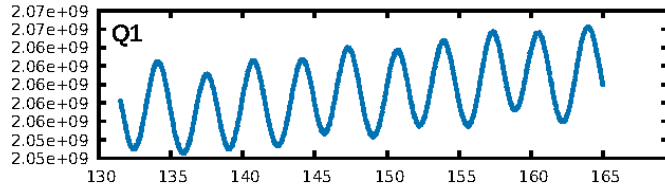
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [55.62 $\sigma$ ]  
LongPeriod-sig: 100.0% [9.32 $\sigma$ ]  
ModelChiSquare2-sig: 4.9%  
ModelChiSquareGof-sig: 82.7%  
**Bootstrap-pfa: 4.02e-09**  
RollingBand-fgt: 1.00 [2/2]  
GhostDiagnostic-chr: N/A  
**Centroid-sig: 0.0%**  
Centroid-so: 5.817 arcsec [2.49 $\sigma$ ]  
OotOffset-rm: 3.558 arcsec [1.56 $\sigma$ ]  
KicOffset-rm: 3.485 arcsec [2.10 $\sigma$ ]  
OotOffset-st: 3/1/1/1 [6]  
KicOffset-st: 3/1/1/1 [6]  
DiffImageQuality-fgm: 0.17 [1/6]  
DiffImageOverlap-fno: 0.57 [4/7]

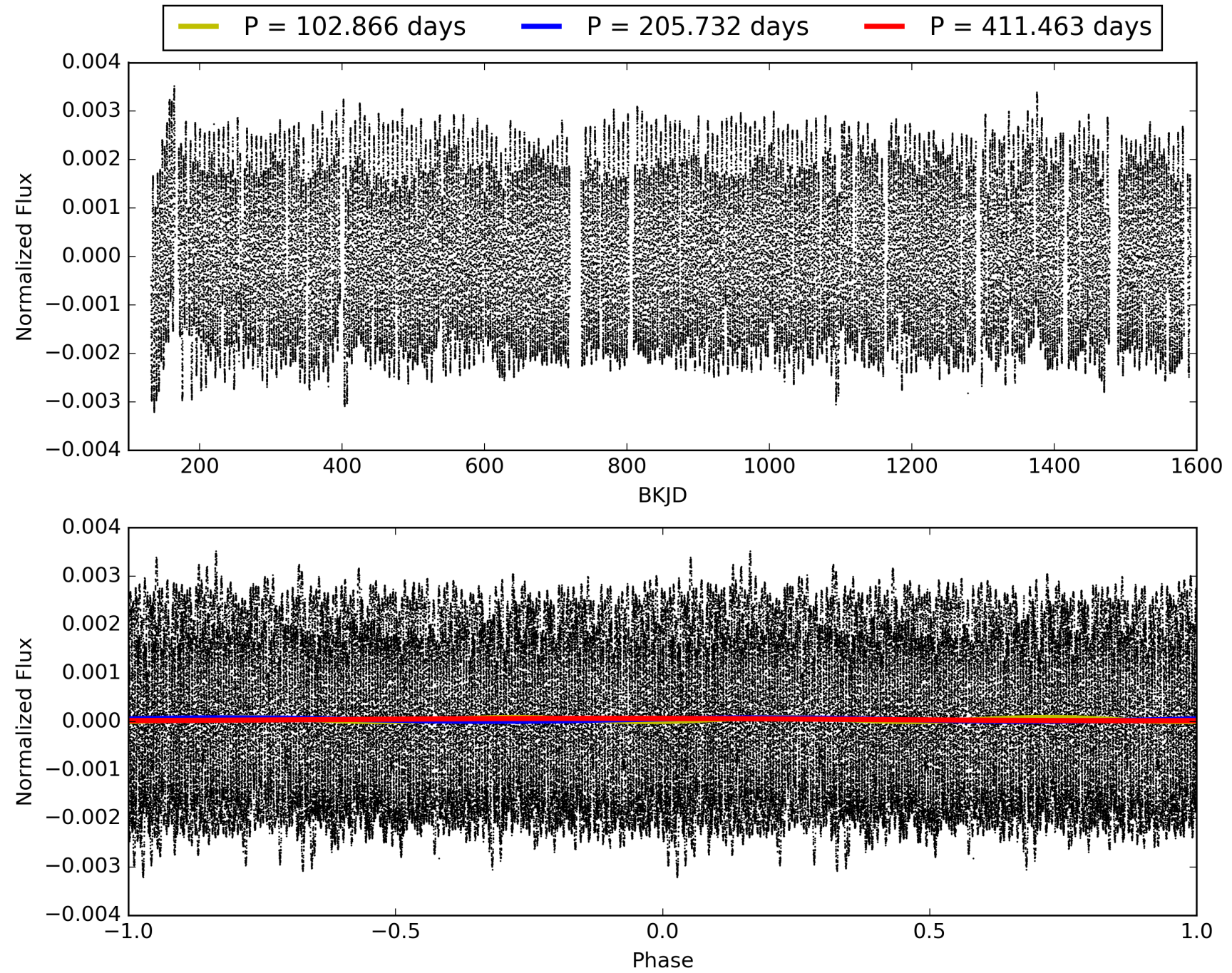
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:06:50 Z

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

# TCE 008982583-05, PDC Light Curves

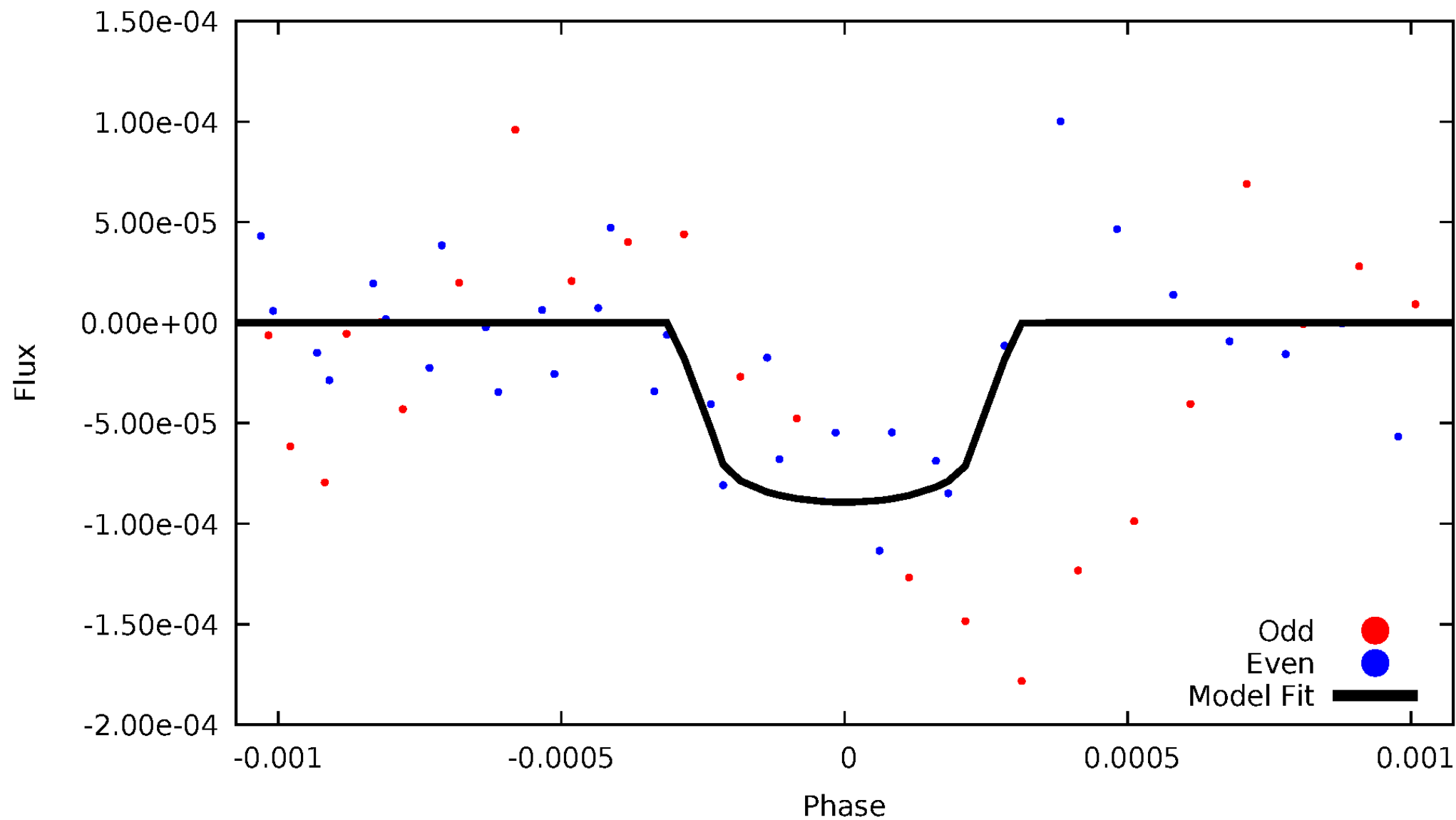


TCE 008982583-05



# DV Odd/Even

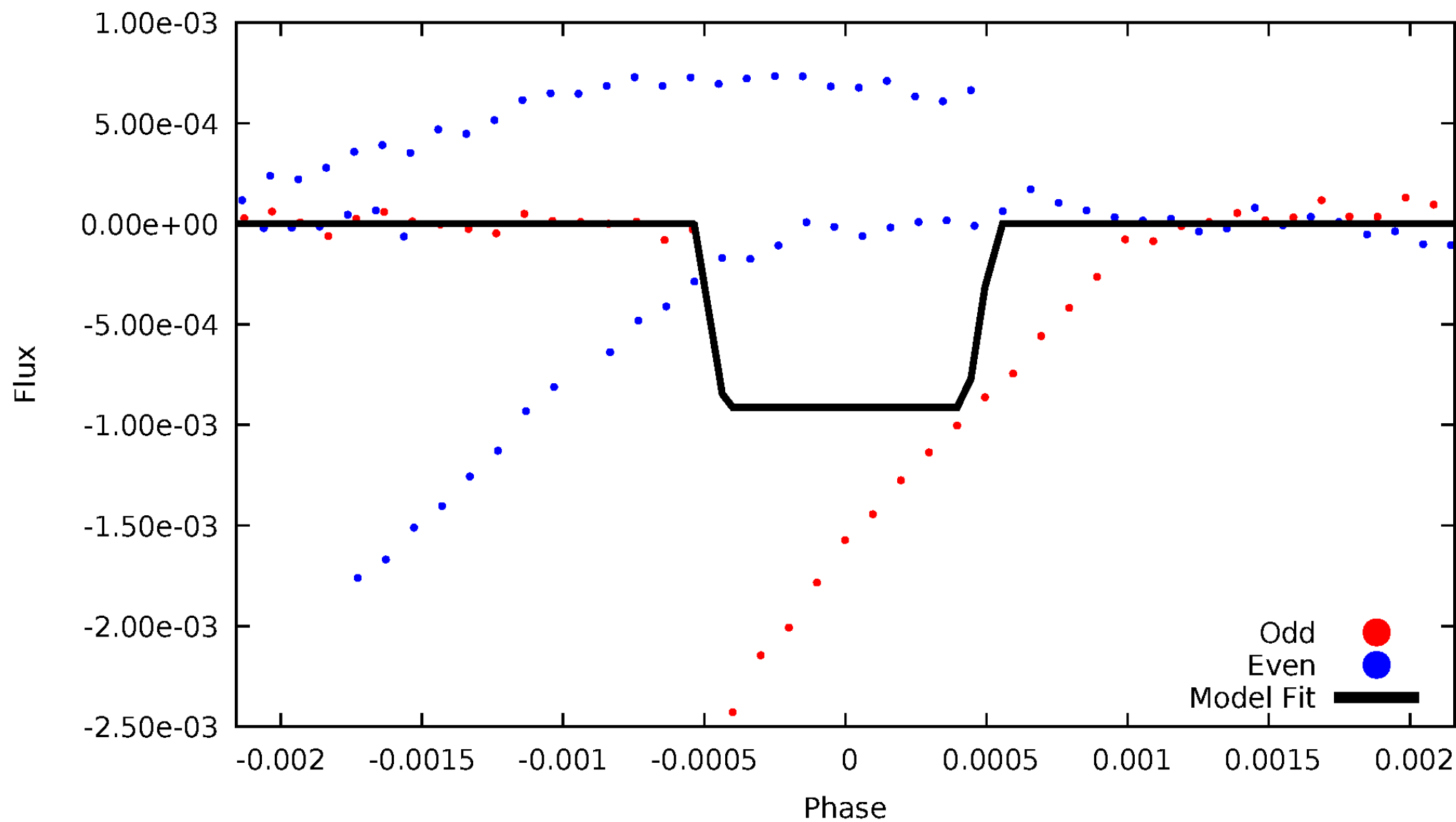
TCE 008982583-05





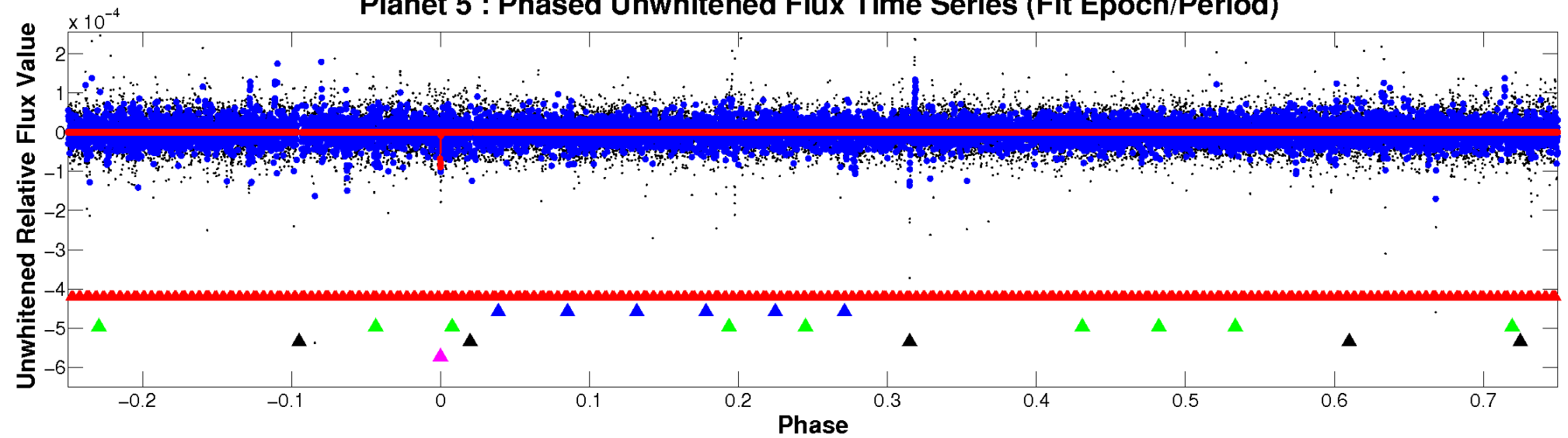
# ALT Odd/Even

TCE 008982583-05

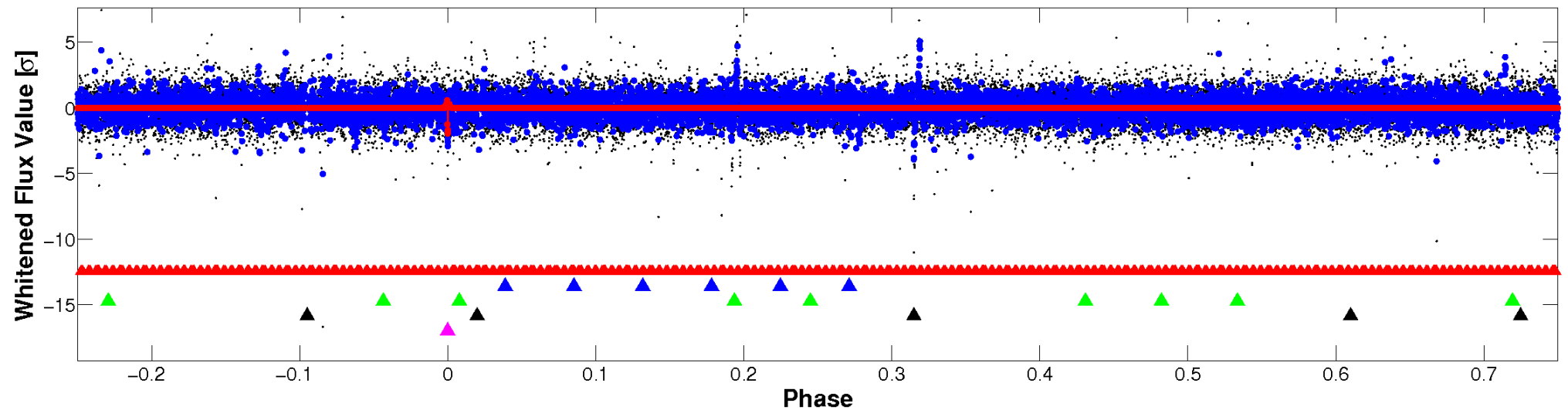


# Non-Whitened Vs. Whitened Light Curve

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



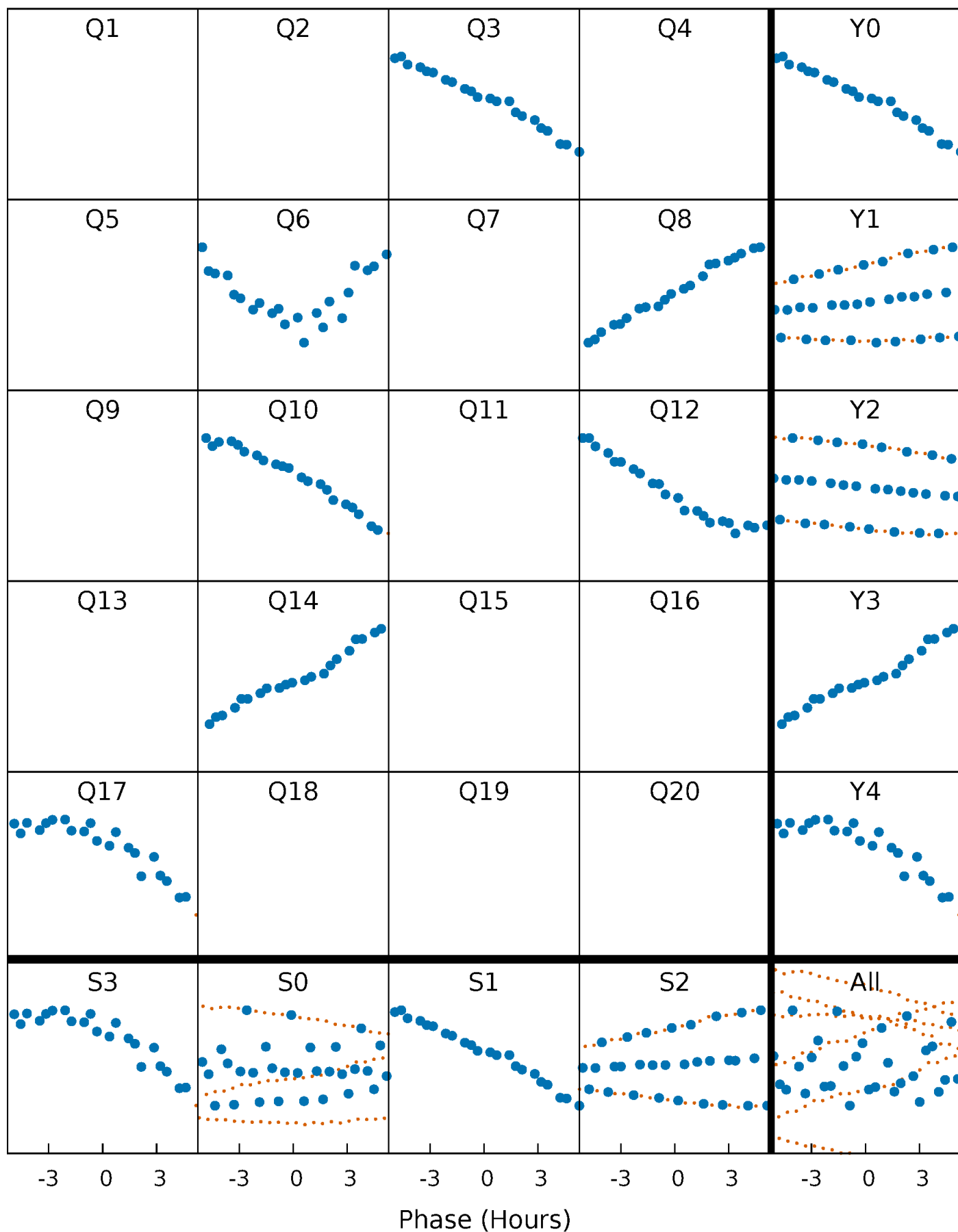
## Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)





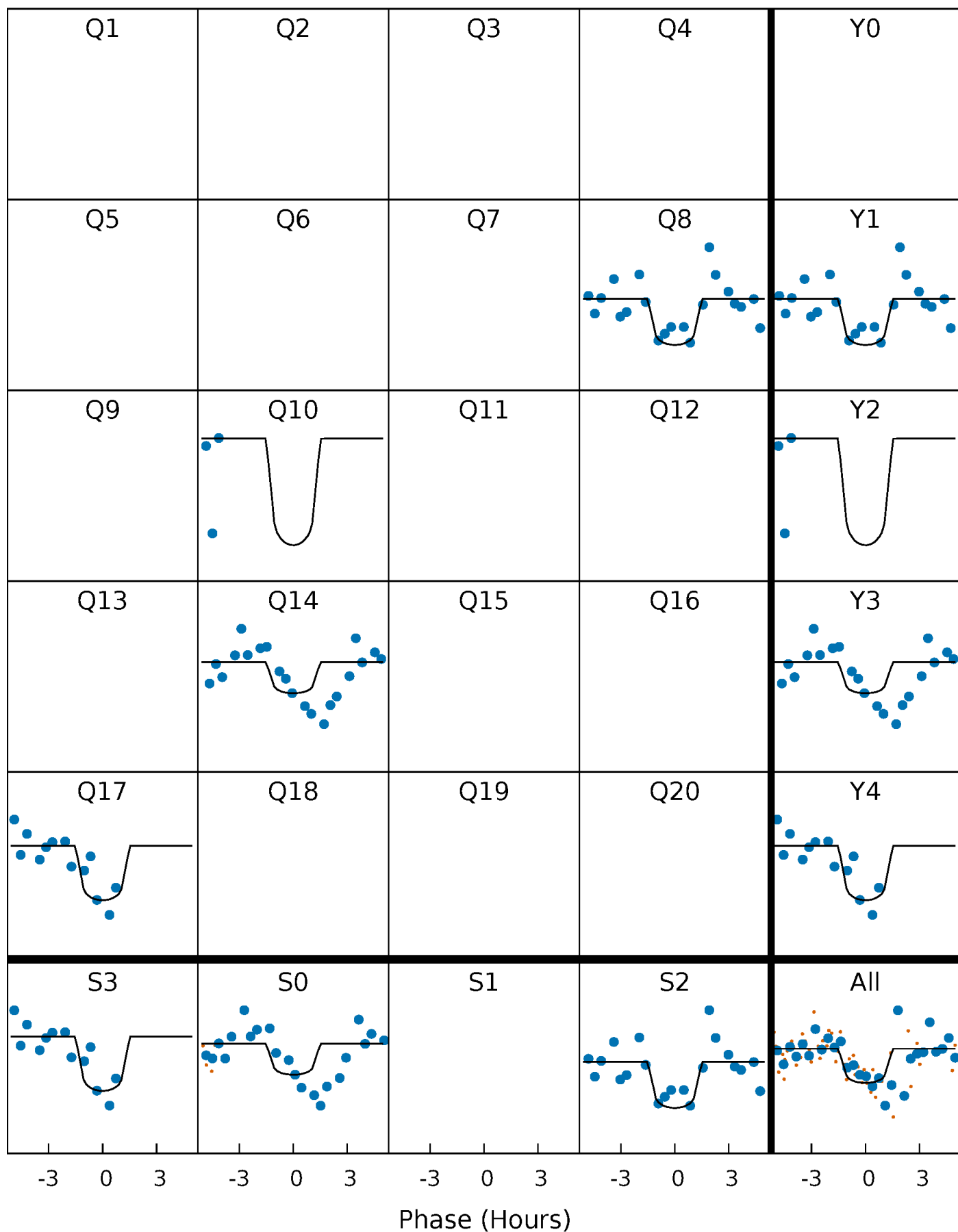
# PDC Quarter-Phased Transit Curves

TCE 008982583-05     $P=205.731738$  Days     $T_0=336.040663$  (BKJD)



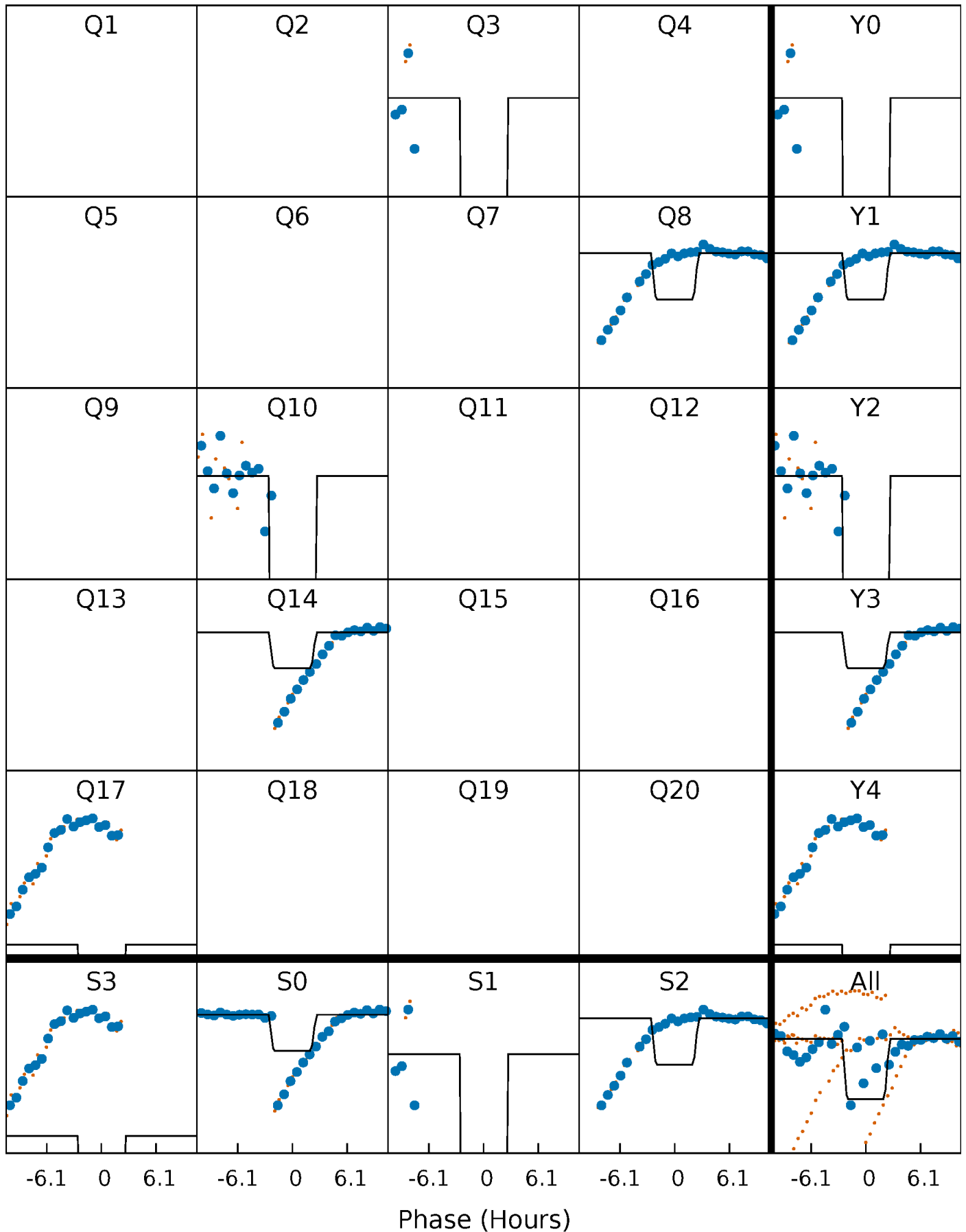
# DV Quarter-Phased Transit Curves

TCE 008982583-05     $P=205.731738$  Days     $T_0=336.040663$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

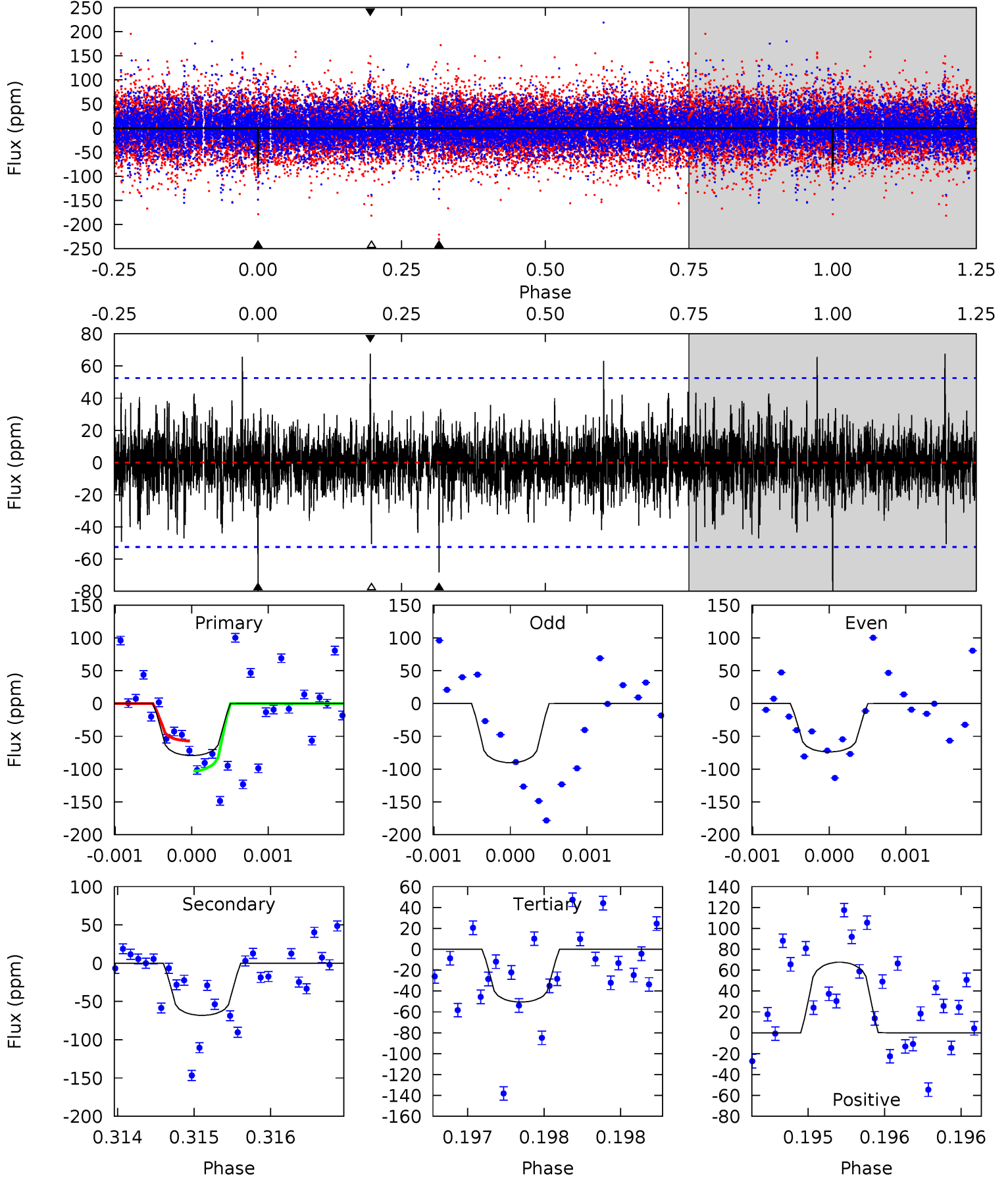
TCE 008982583-05 P=205.731274 Days  $T_0=335.985084$  (BKJD)



# DV Model-Shift Uniqueness Test

008982583-05, P = 205.731738 Days, E = 130.308925 Days

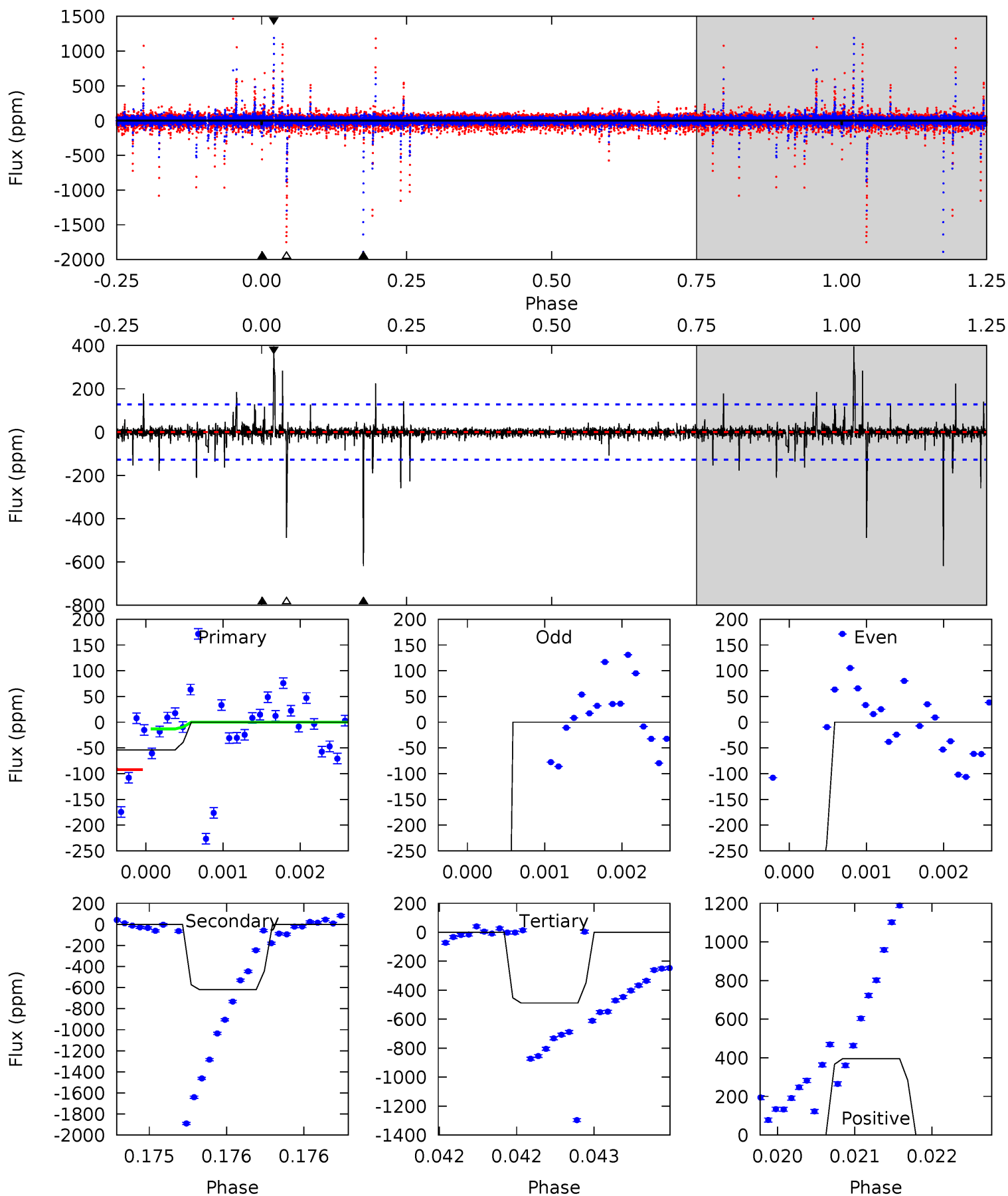
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.38	7.19	5.33	7.13	5.54	3.42	1.30	3.05	1.25	1.86	0.06	0.82	1.06	0.46	2.41



# Alt Model-Shift Uniqueness Test

008982583-05, P = 205.731274 Days, E = 130.253810 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
2.32	26.5	20.9	17.0	5.46	3.31	1.04	-18.6	-14.6	5.59	9.56	18.9	6.16	0.39	0



### Stellar Parameters For KIC 008982583

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6561^{+181}_{-250}$	$4.069^{+0.252}_{-0.168}$	$-0.040^{+0.250}_{-0.300}$	$1.793^{+0.530}_{-0.583}$	$1.377^{+0.182}_{-0.273}$	$0.336^{+0.543}_{-0.160}$
	+3%/-4%	+6%/-4%	+625%/-750%	+30%/-33%	+13%/-20%	+161%/-48%
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 008982583-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-68 \pm 9$	$1.94^{+1.53}_{-1.17}$	$618^{+49}_{-52}$	$5885^{+4103}_{-1296}$	$5633^{+29598}_{-3865}$
Alt.	$-619 \pm 23$	$5.75^{+1.81}_{-1.61}$	$619^{+49}_{-57}$	$5904^{+991}_{-569}$	$5794^{+5187}_{-2395}$

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

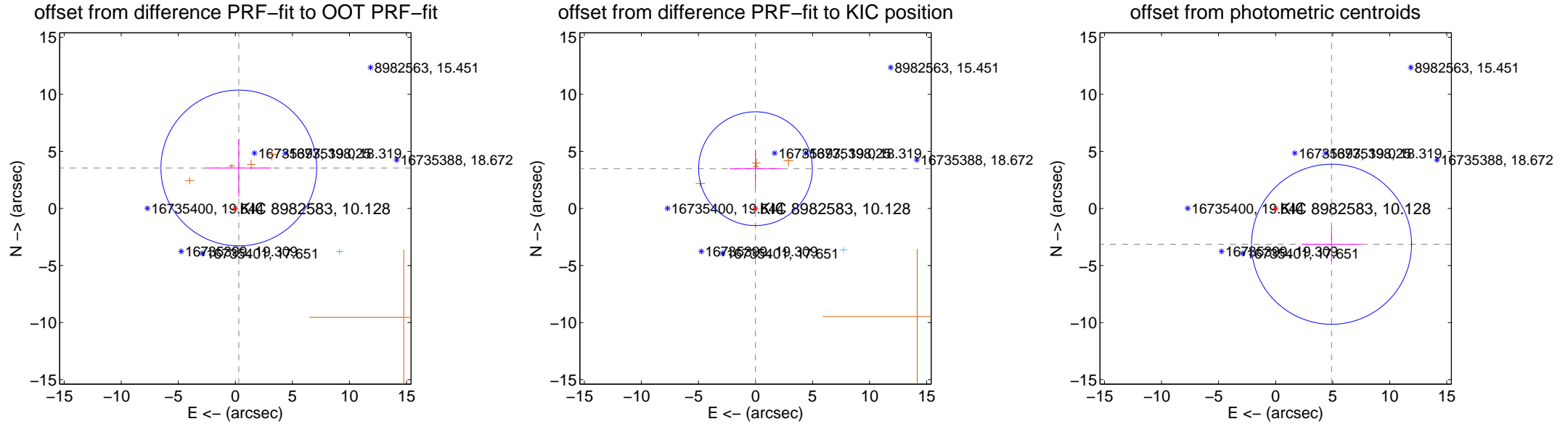
## DV Centroid Data

Supplemental centroid analysis for 008982583-05. **Kepler magnitude: 10.13.** Transit SNR 6.87

**There are 1 quarters with good PRF difference image offsets**

The direct PRF centroid is offset from the target star catalog position by about 1.31 arcsec

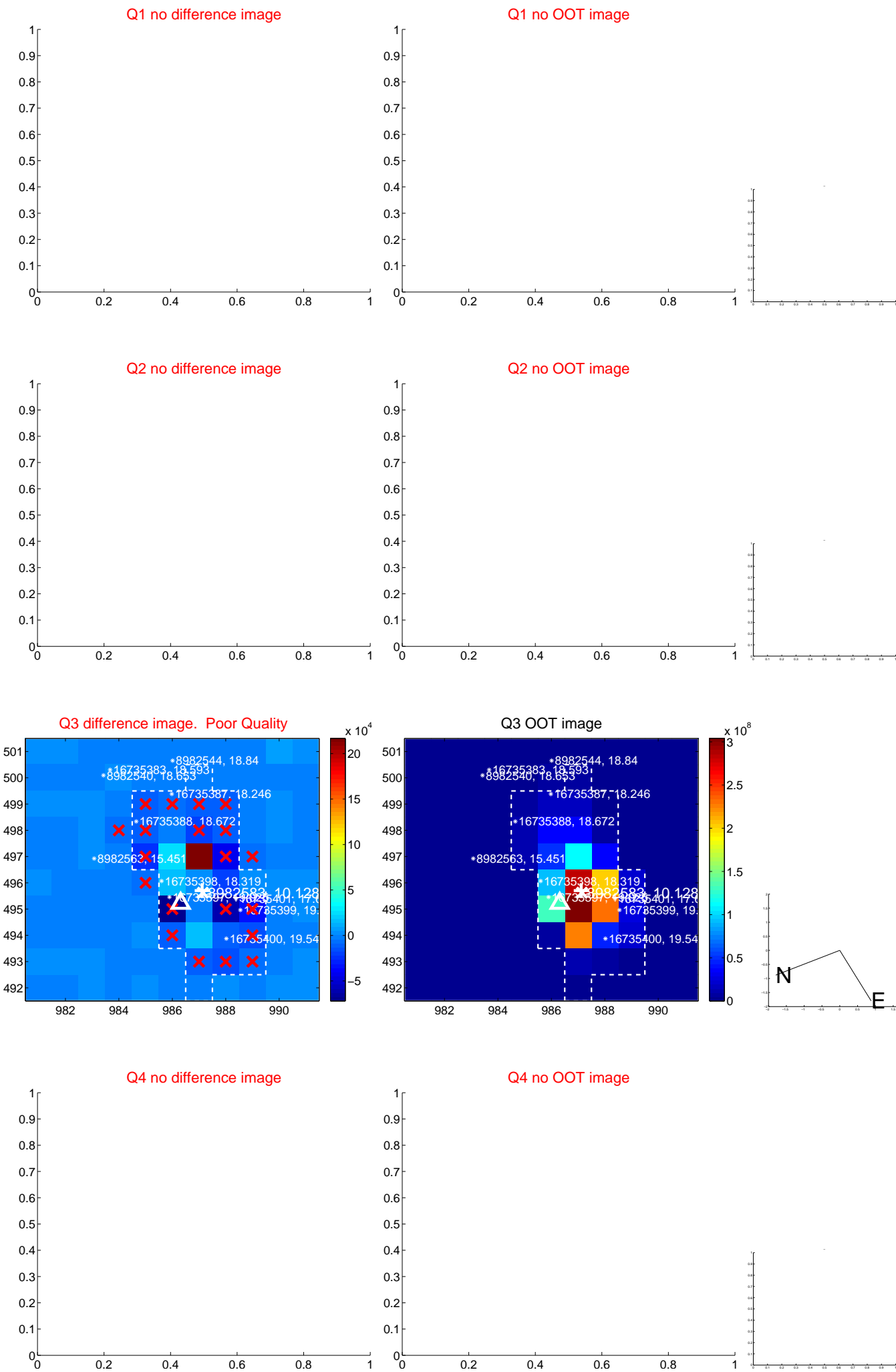
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.558 \pm 2.275$	1.56	$-0.302 \pm 2.831$	$3.545 \pm 2.501$
PRF-fit source offset from KIC position	$3.485 \pm 1.661$	2.10	$0.001 \pm 2.277$	$3.485 \pm 1.661$
photometric centroid source offset	$5.82 \pm 2.34$	2.49	$-4.90 \pm 2.61$	$-3.14 \pm 1.48$



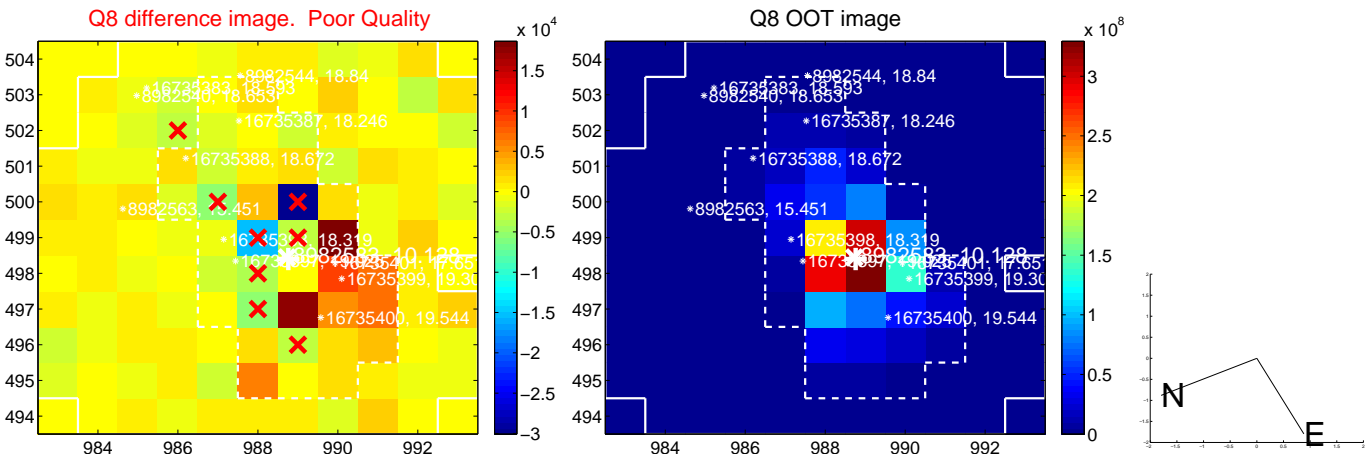
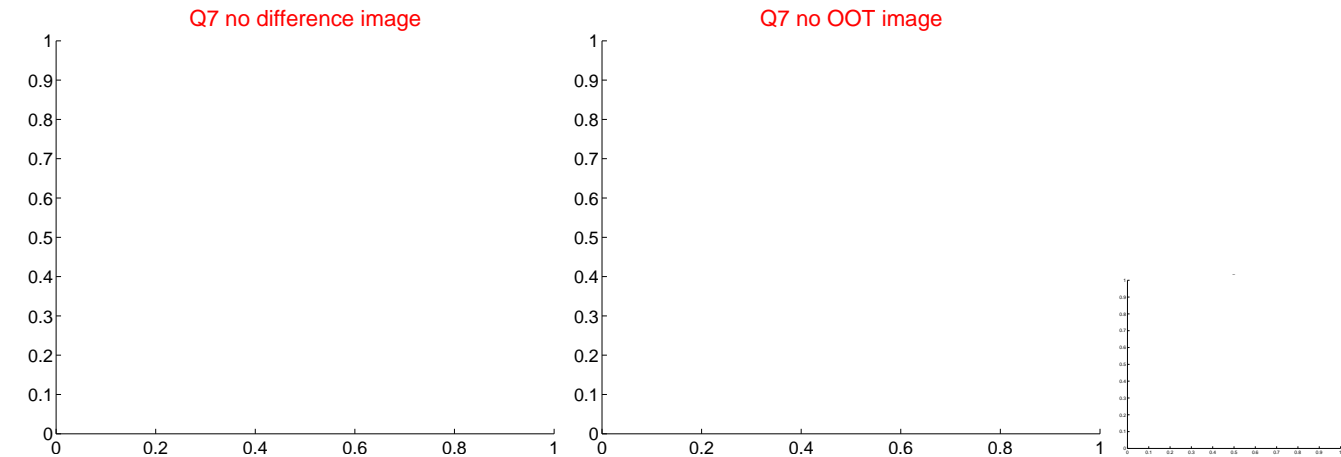
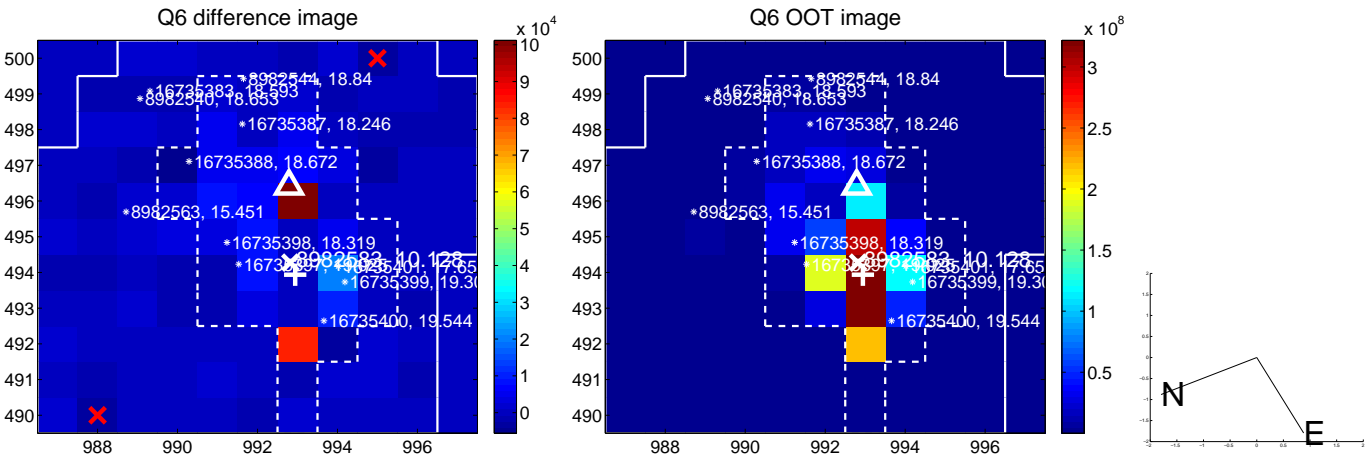
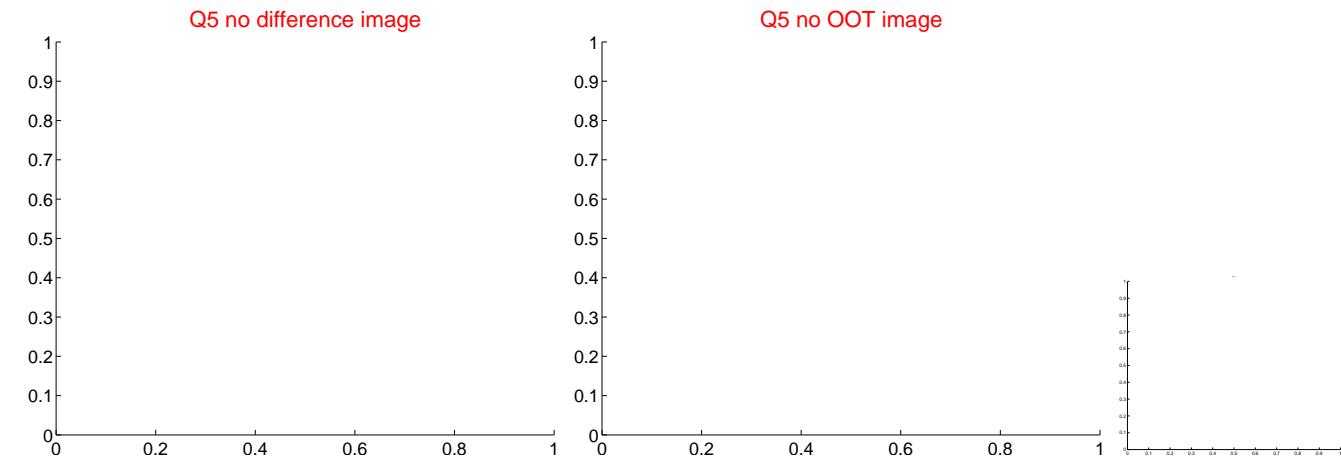
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



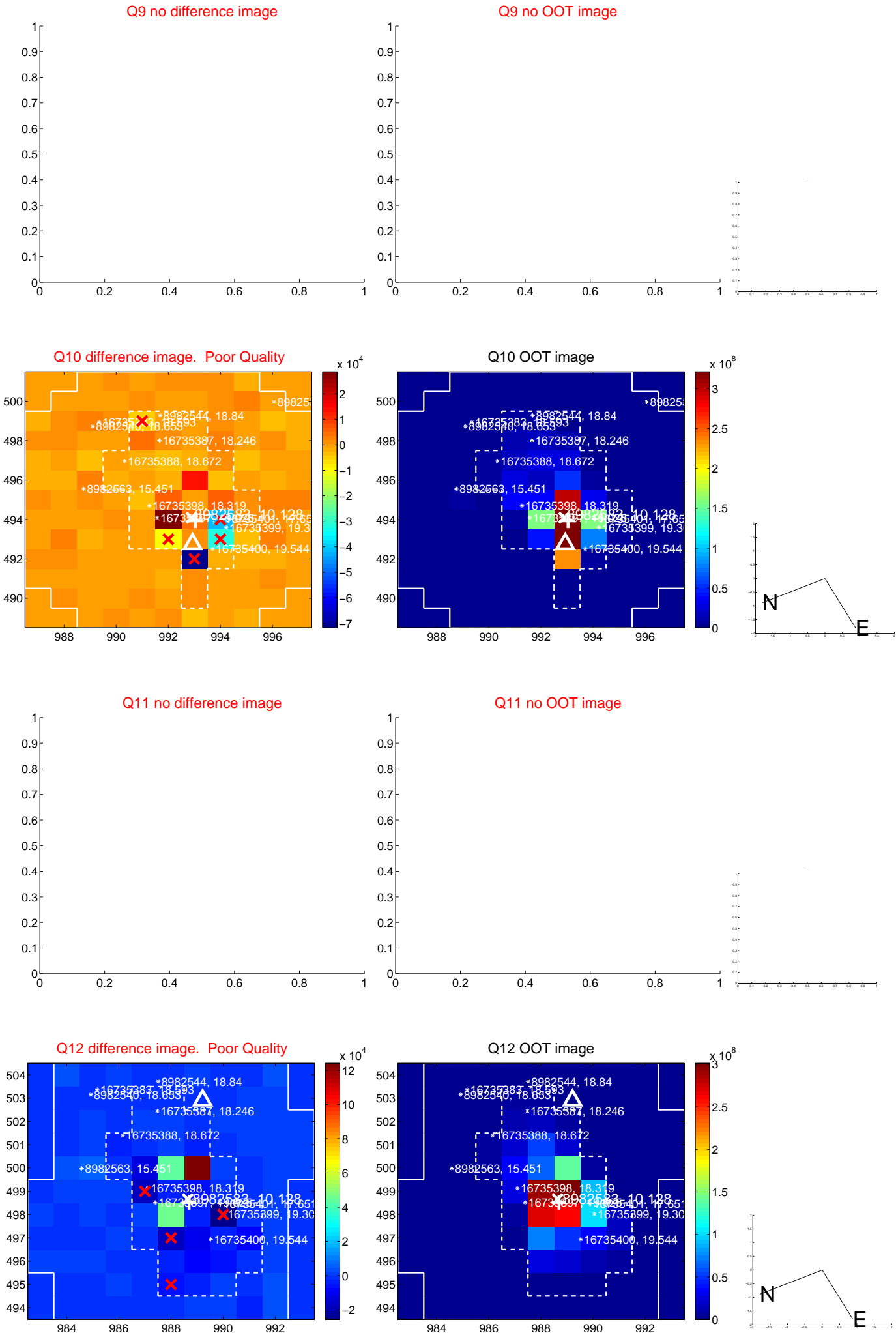
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



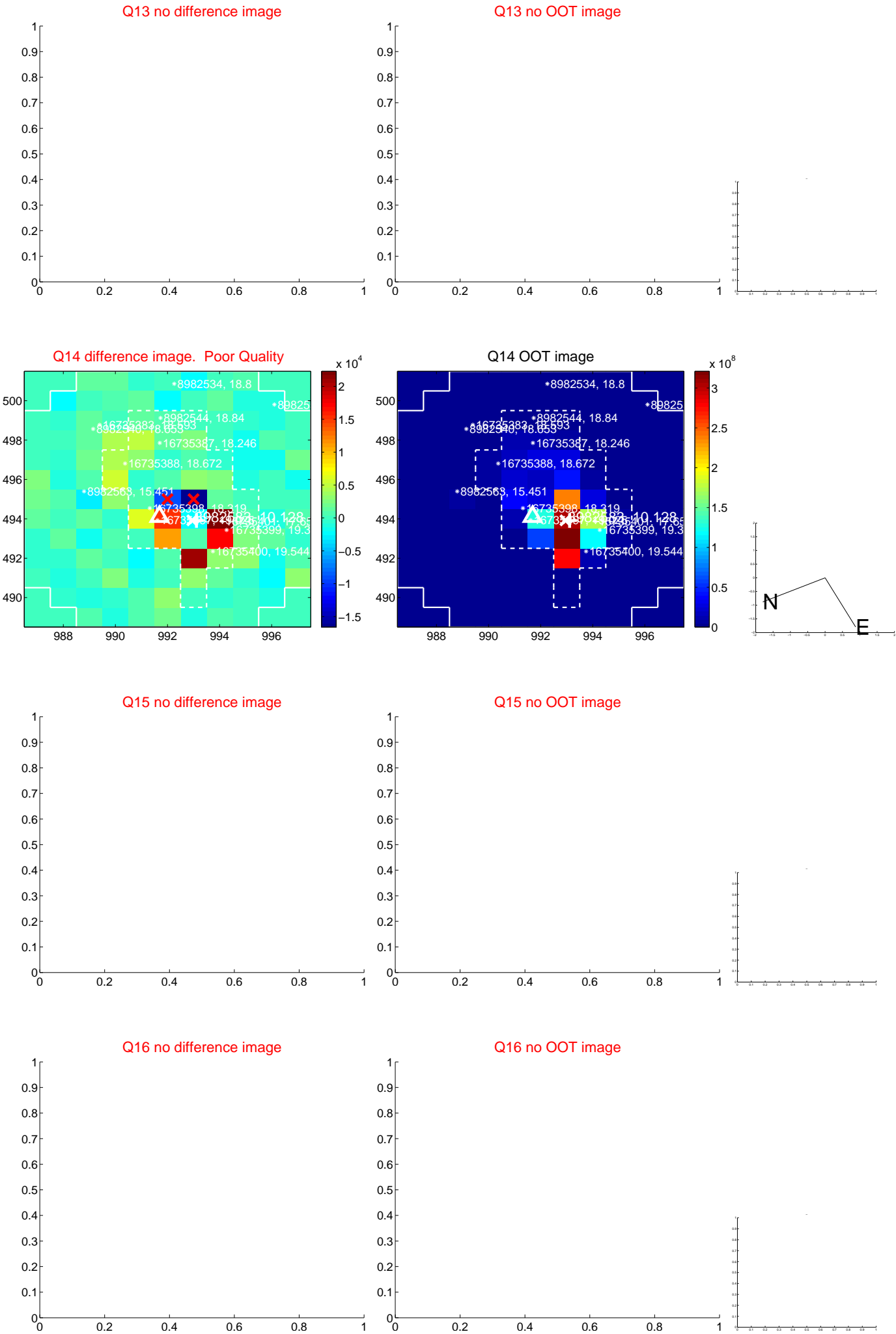
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



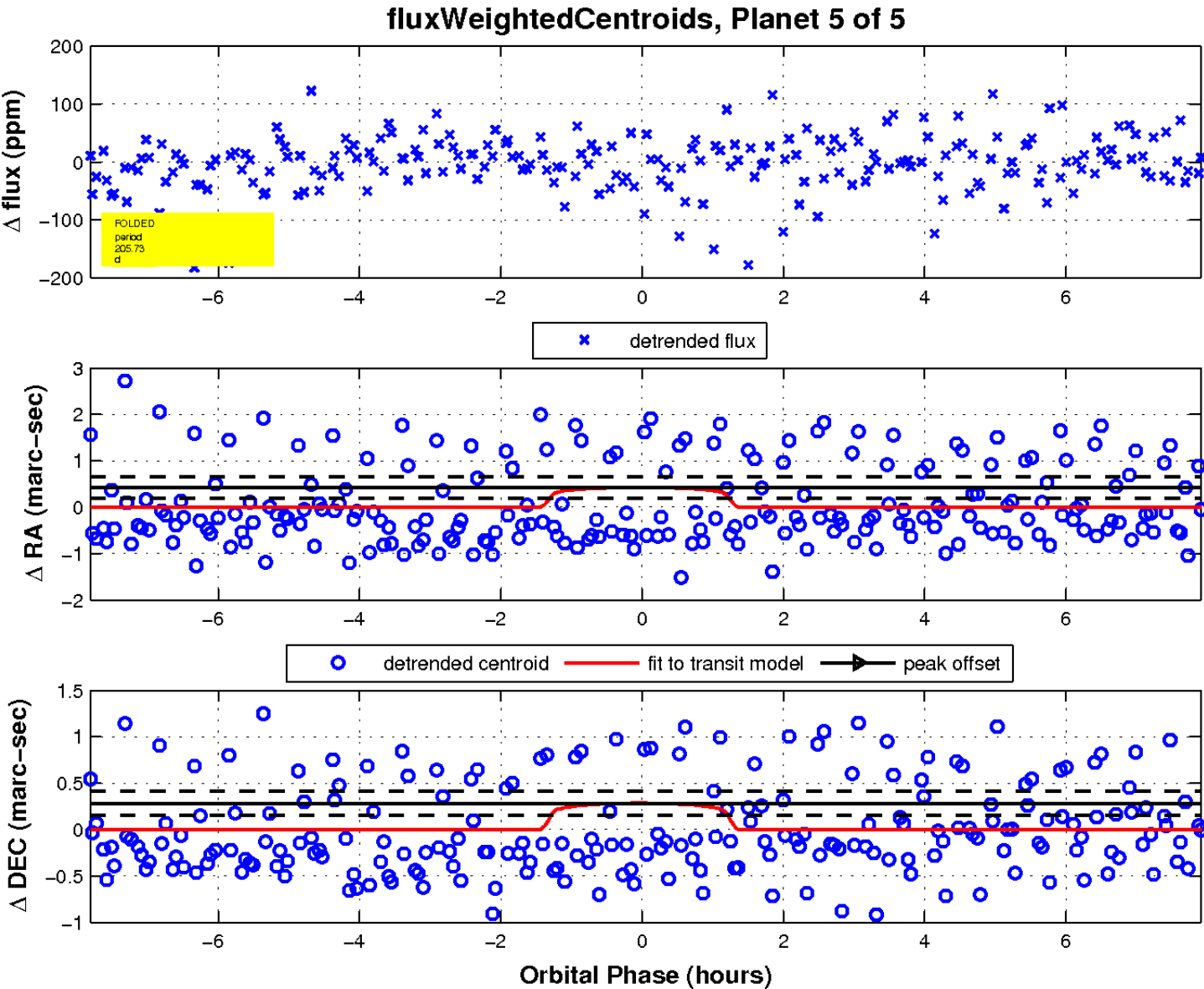
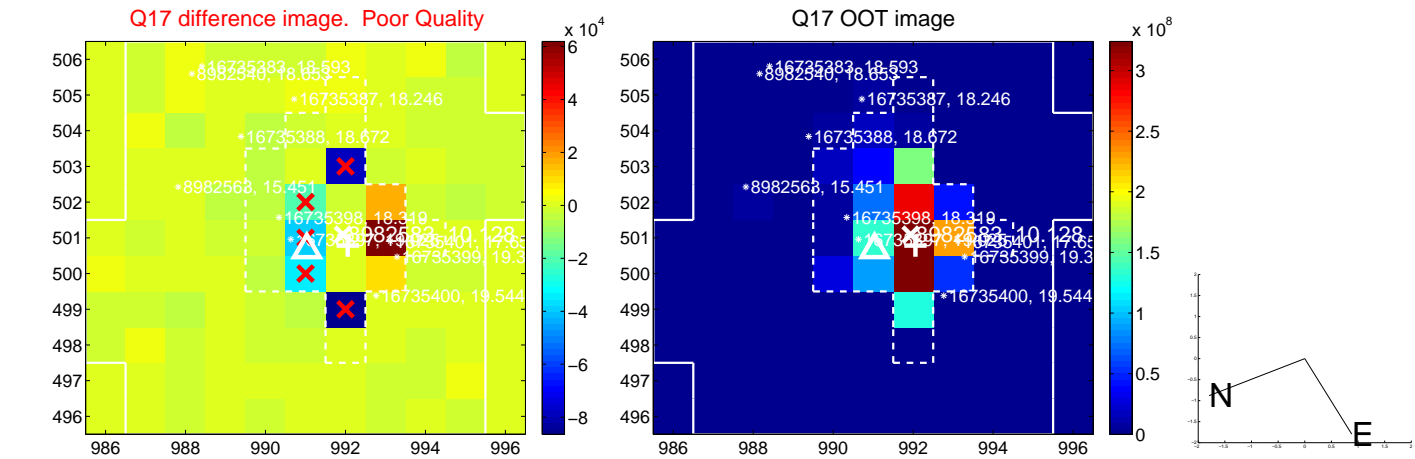
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

