

# KIC 008783270

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008783270-01	OBS	No	0.519352	131.609633	77.2	3.910	15.0	13.0	2.45	7094	2.22	60407.78
008783270-02	OBS	No	4.505537	133.517654	691.1	1.274	12.3	10.2	2.45	7094	6.57	3388.81
008783270-03	OBS	No	6.986826	132.625777	665.5	2.000	13.1	-1.0	2.45	7094	6.42	1888.00
008783270-04	OBS	No	8.258431	139.501621	930.3	1.500	14.2	-1.0	2.45	7094	7.60	1510.70
008783270-05	OBS	No	19.737546	144.223497	644.1	1.500	13.9	-1.0	2.45	7094	6.32	472.77
008783270-06	OBS	No	3.577228	133.596172	487.7	2.372	14.1	11.2	2.45	7094	5.54	4609.42
008783270-07	OBS	No	7.824958	139.131252	1052.0	2.203	11.4	18.5	2.45	7094	8.09	1623.30
008783270-08	OBS	No	6.005497	133.207915	1459.7	1.374	13.0	19.8	2.45	7094	9.53	2310.17
008783270-09	OBS	No	6.216187	132.163758	1887.3	0.529	12.1	18.0	2.45	7094	13.61	2206.36
008783270-10	OBS	No	8.919382	136.025778	332.3	3.000	7.9	-1.0	2.45	7094	4.53	1363.31

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008783270-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_MEAS
008783270-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
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**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

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

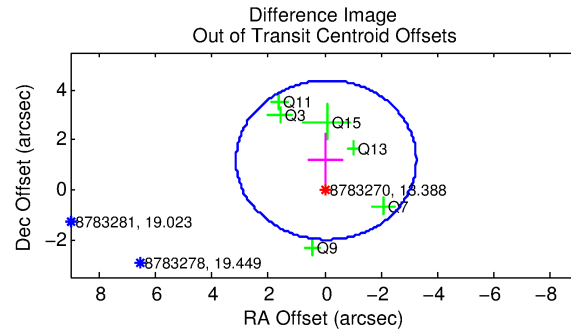
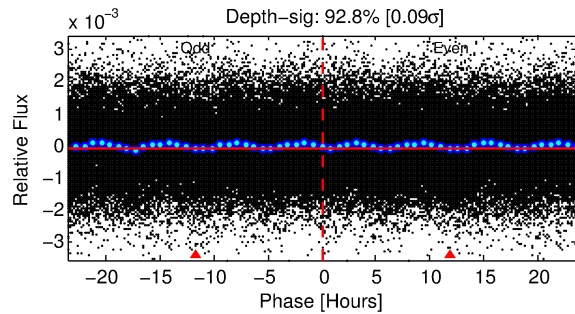
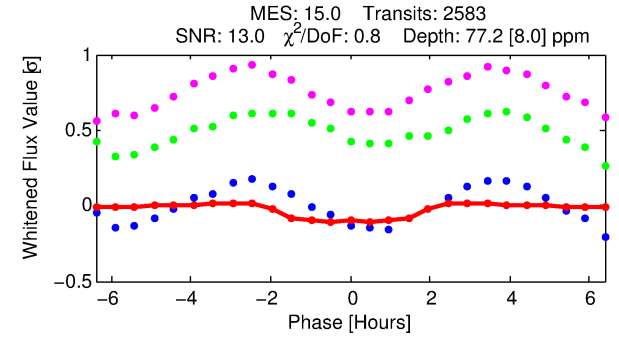
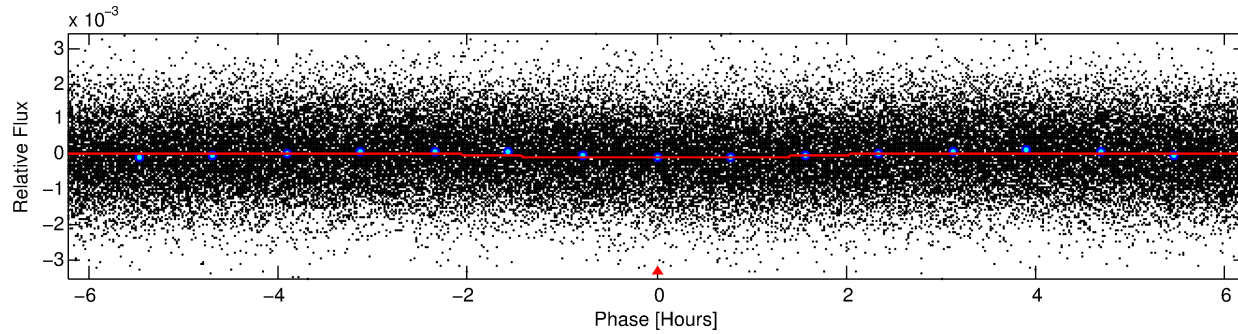
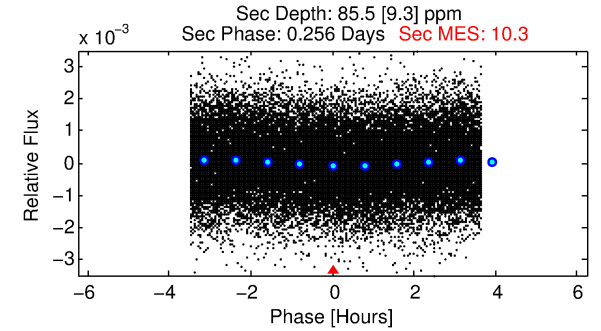
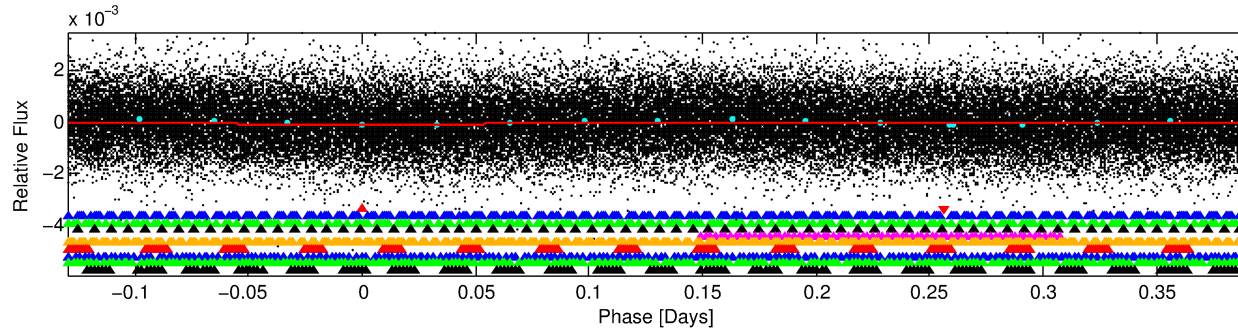
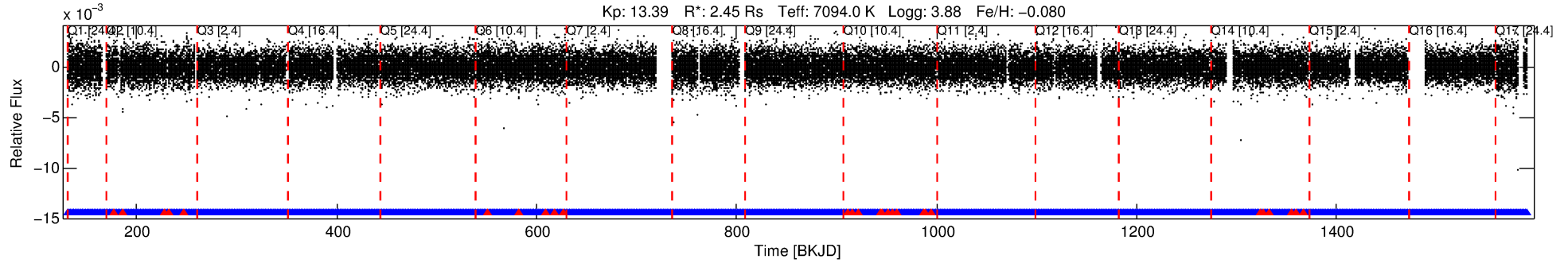
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008783270-01

No Significant Match Found

# DV One-Page Summary

KIC: 8783270 Candidate: 1 of 10 Period: 0.519 d



## DV Fit Results:

Period = 0.51935 [0.00001] d  
Epoch = 131.6096 [0.0033] BKJD  
Rp/R\* = 0.0083 [0.0079]  
a/R\* = 1.18 [1.78]  
b = 0.43 [10.54]  
Seff = 60407.78 [37760.53]  
Teq = 3998 [625] K  
Rp = 2.22 [2.30] Re  
a = 0.0150 [0.0057] AU  
Ag = 2.16 [4.31] [0.27σ]  
Teffp = 7490 [3587] K [0.96σ]

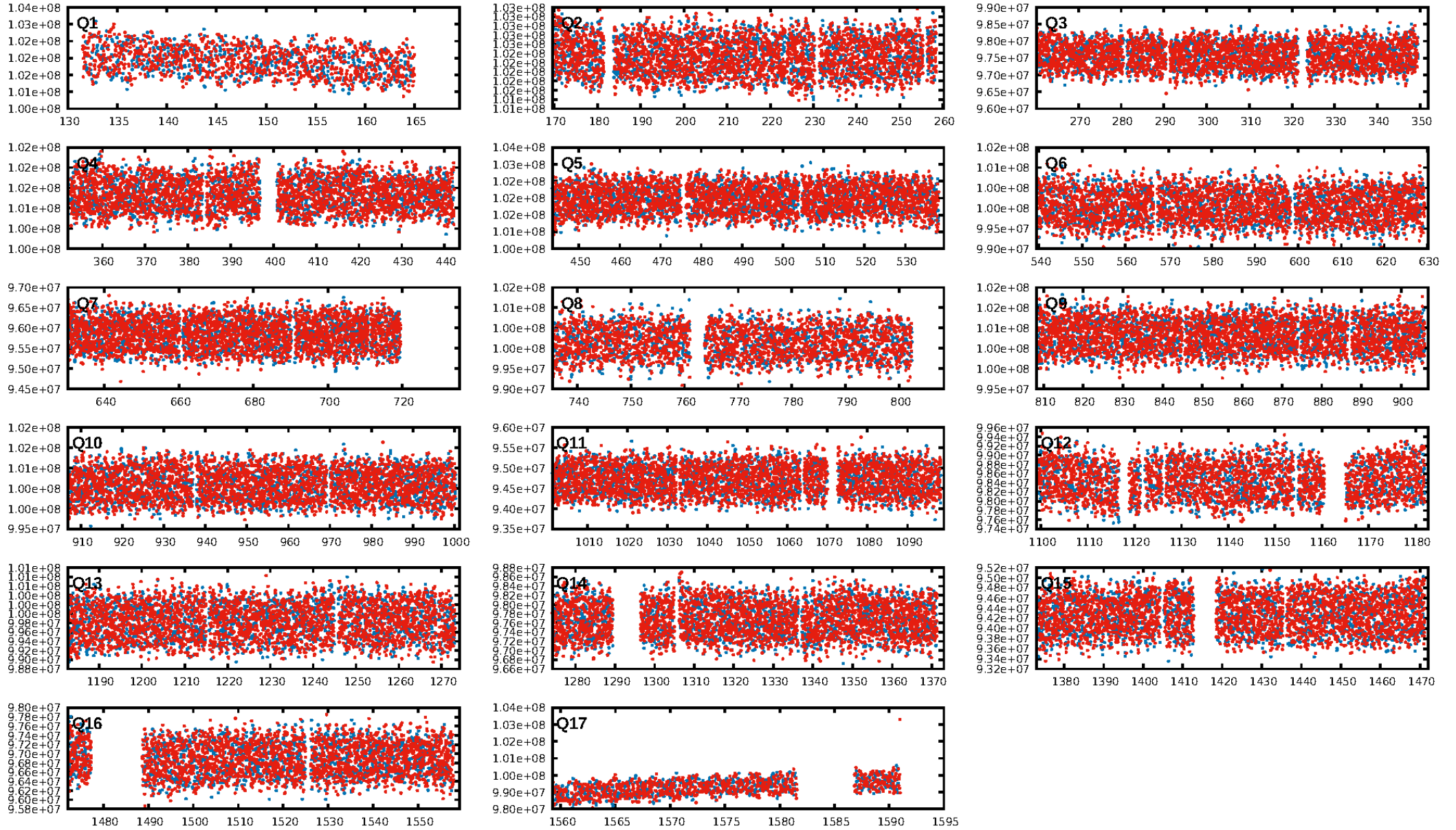
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [16.05σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.99 [2437/2465]  
**GhostDiagnostic-chr: 0.8637**  
Centroid-sig: 3.5%  
Centroid-so: 0.440 arcsec [1.36σ]  
OotOffset-rm: 1.184 arcsec [1.11σ]  
OotOffset-st: 0/4/0/2 [6]  
KicOffset-rm: 1.125 arcsec [1.07σ]  
KicOffset-st: 0/4/0/2 [6]  
DiffImageQuality-fgm: 0.00 [0/6]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:22:12 Z

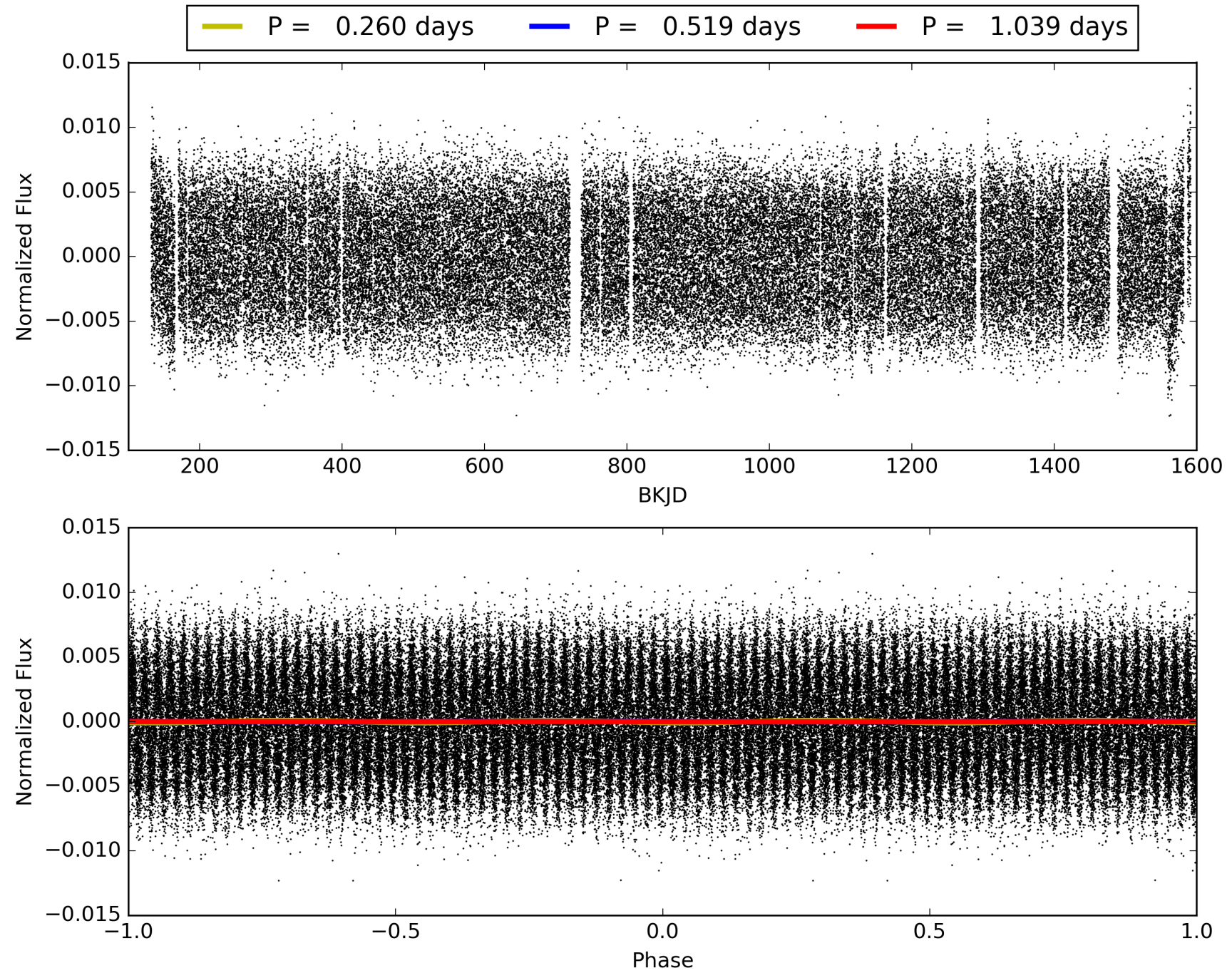
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008783270-01, PDC Light Curves





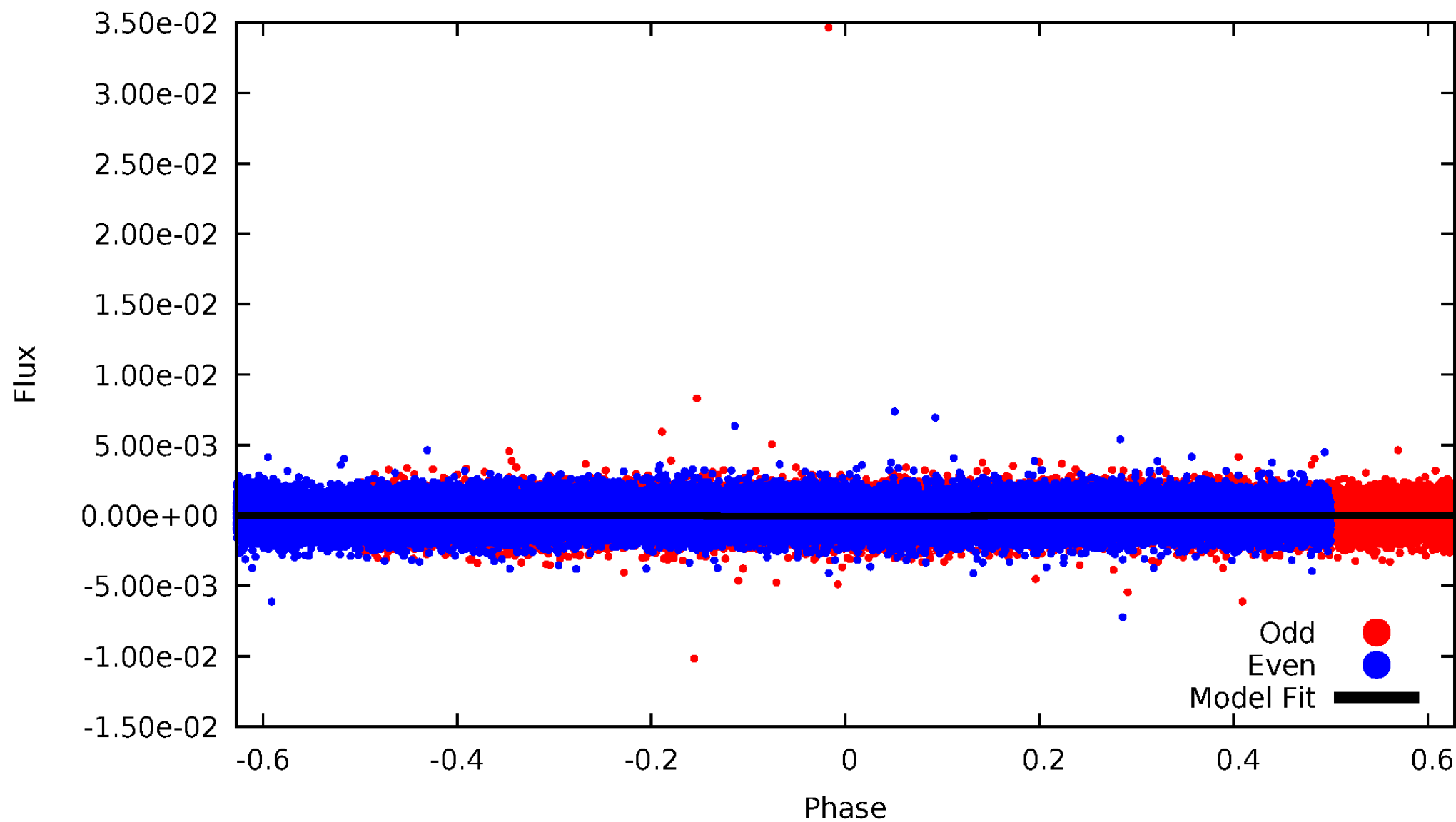
TCE 008783270-01





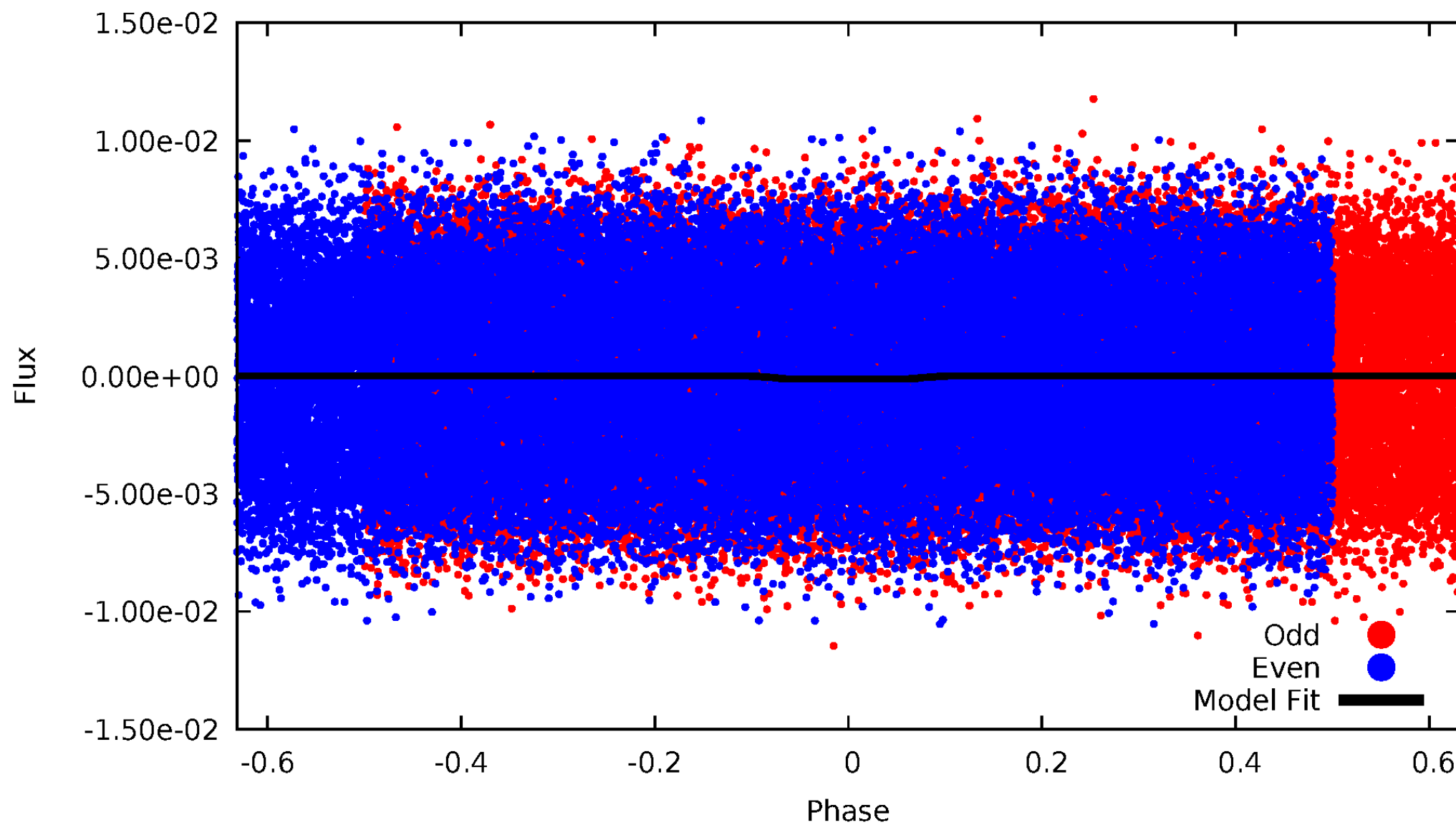
# DV Odd/Even

TCE 008783270-01

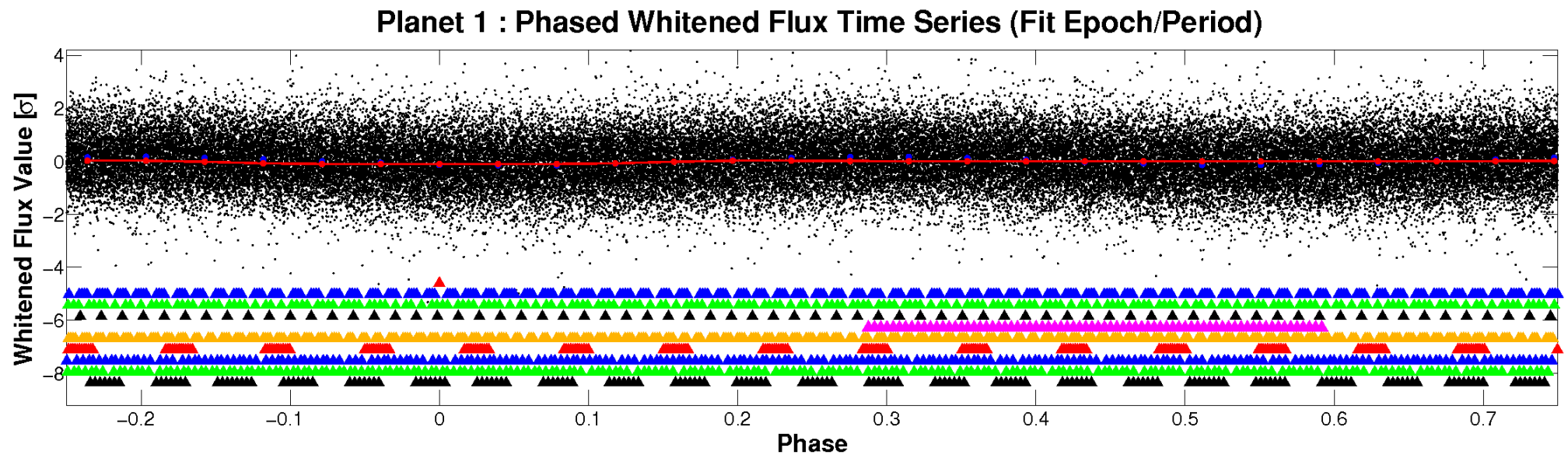
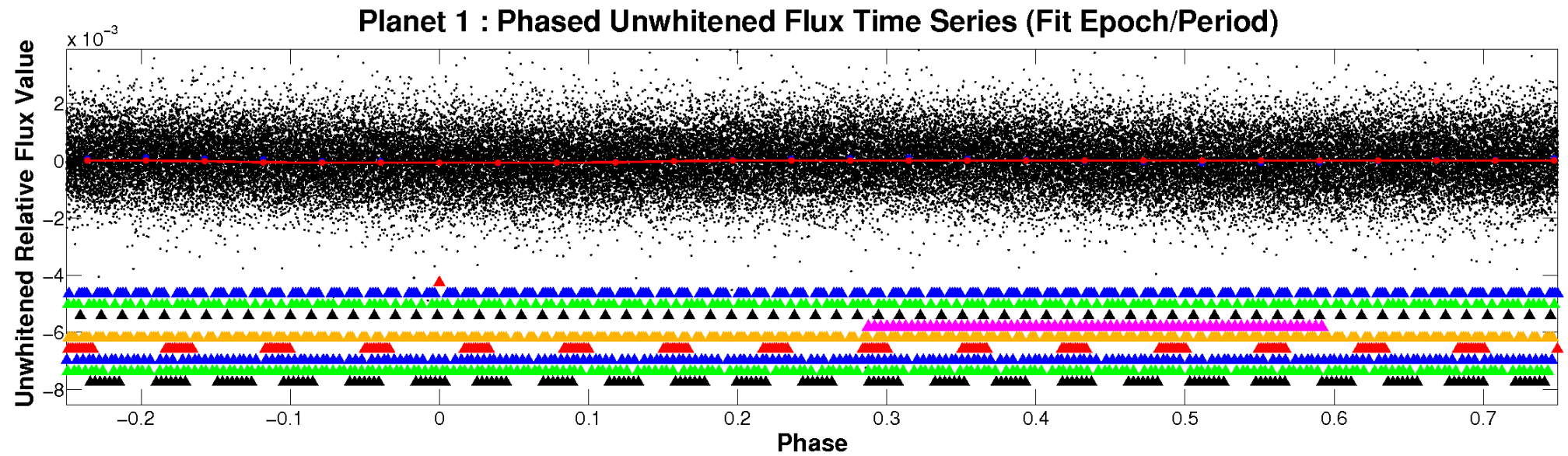


# ALT Odd/Even

TCE 008783270-01



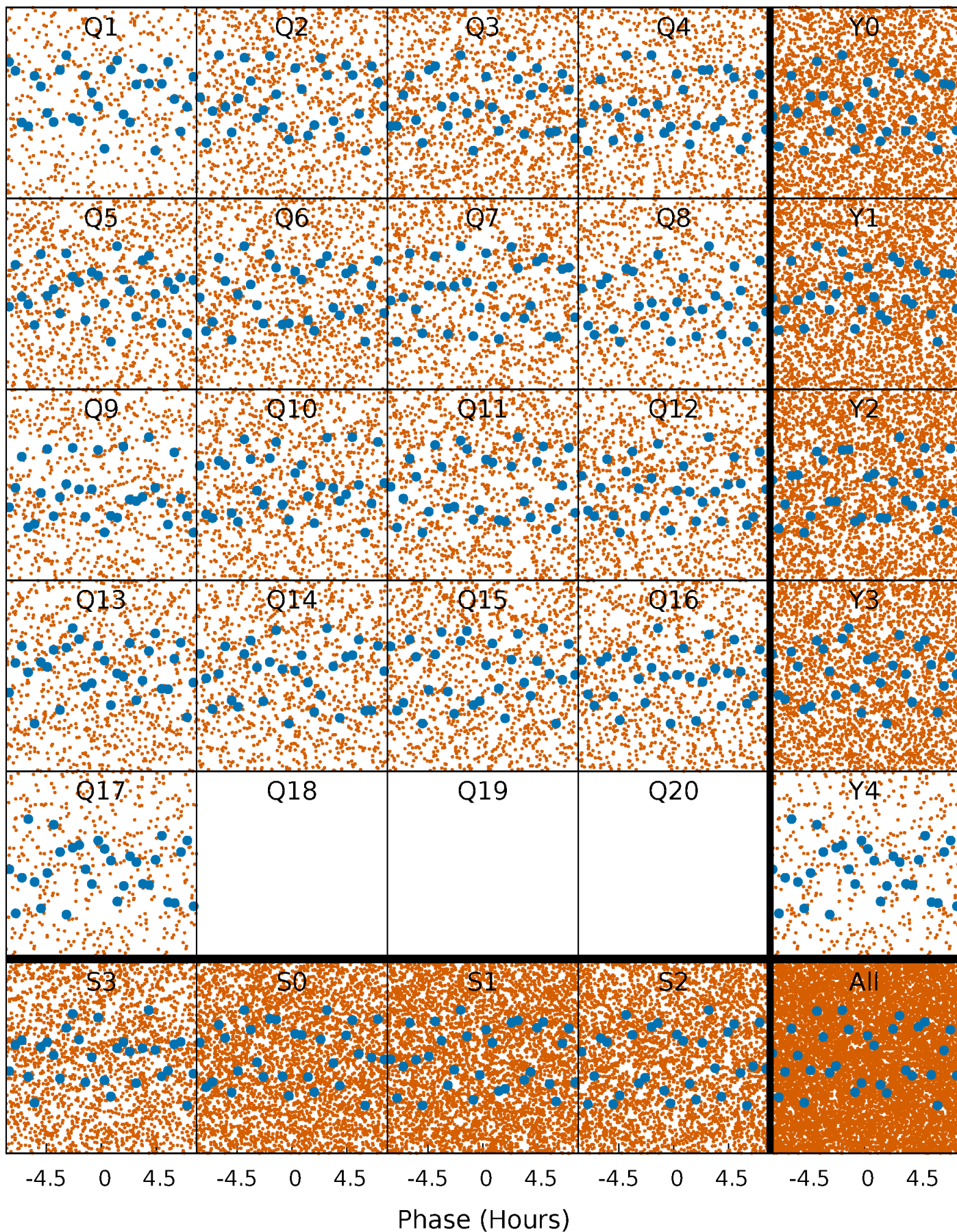
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

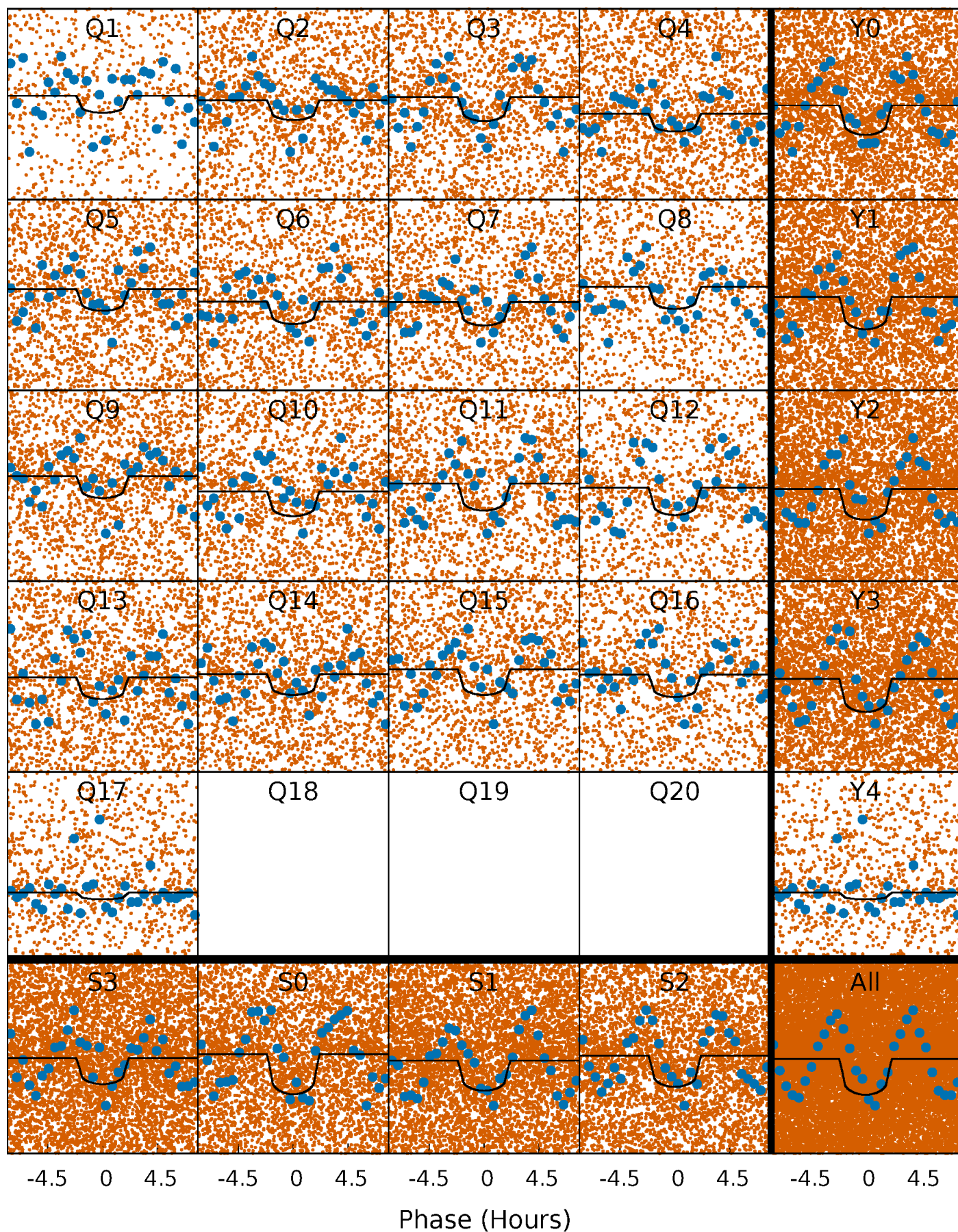
TCE 008783270-01 P= 0.519352 Days  $T_0=131.609633$  (BKJD)





# DV Quarter-Phased Transit Curves

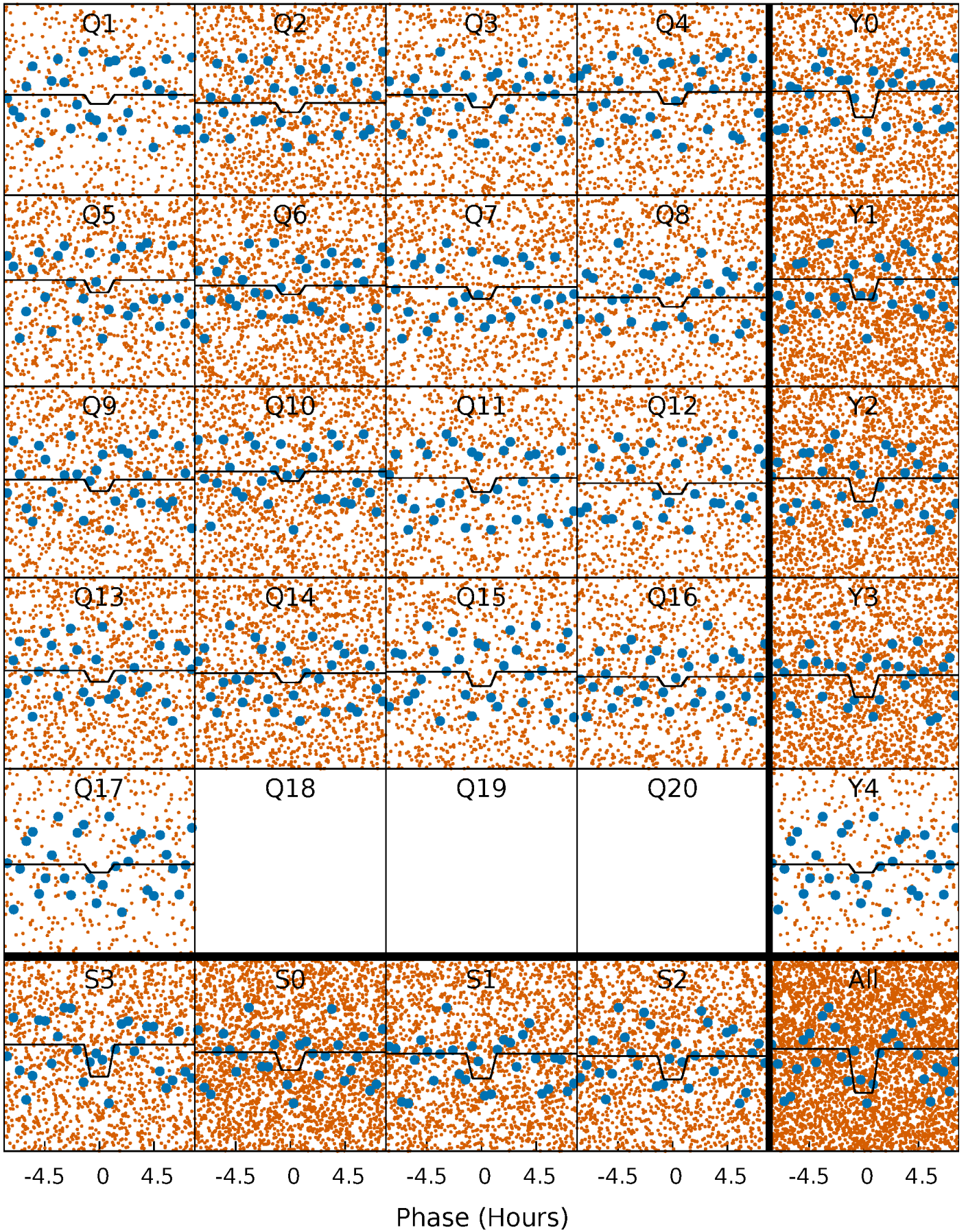
TCE 008783270-01 P= 0.519352 Days  $T_0=131.609633$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 008783270-01 P= 0.519371 Days  $T_0=131.607669$  (BKJD)

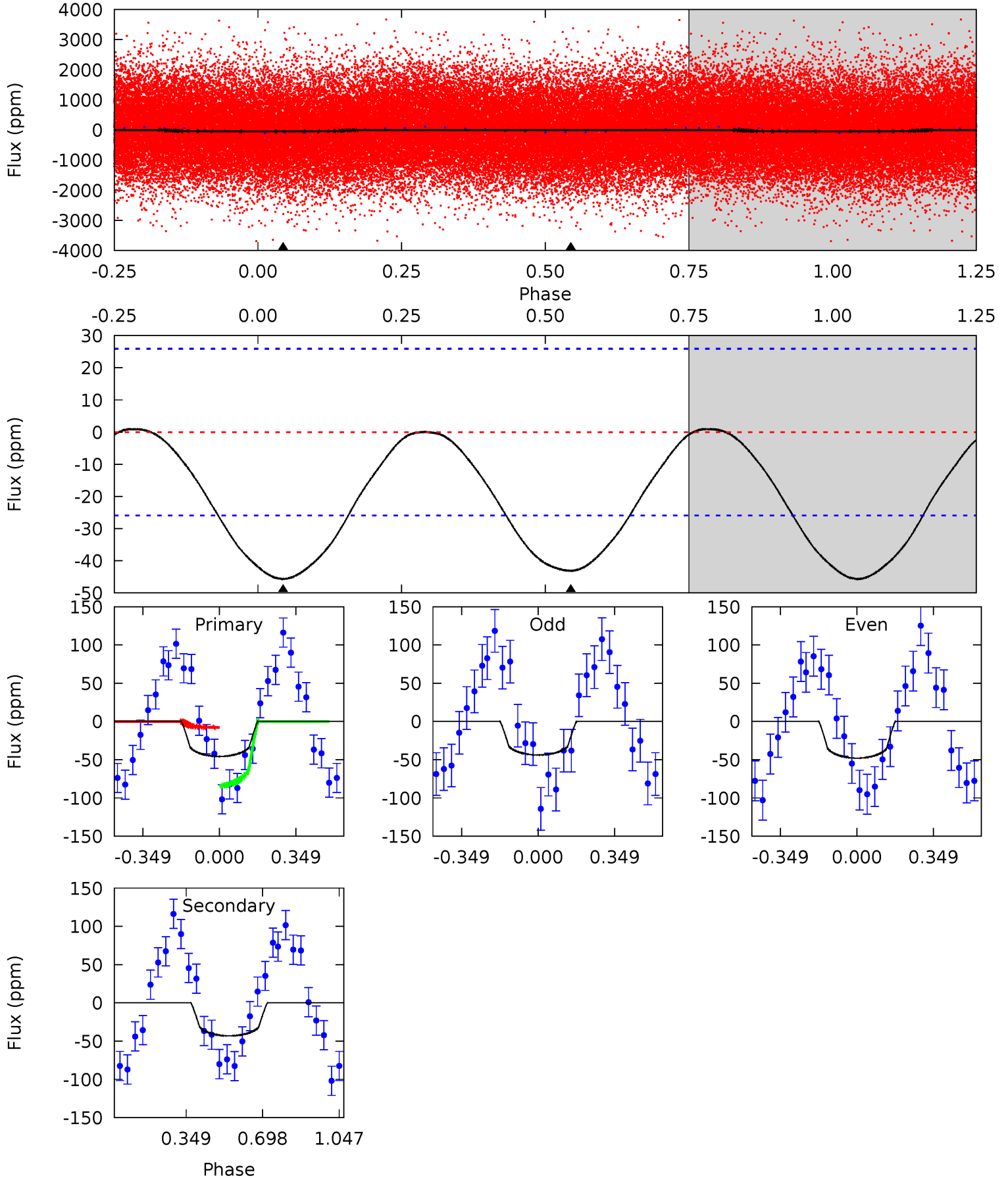




# DV Model-Shift Uniqueness Test

008783270-01, P = 0.519352 Days, E = 131.090281 Days

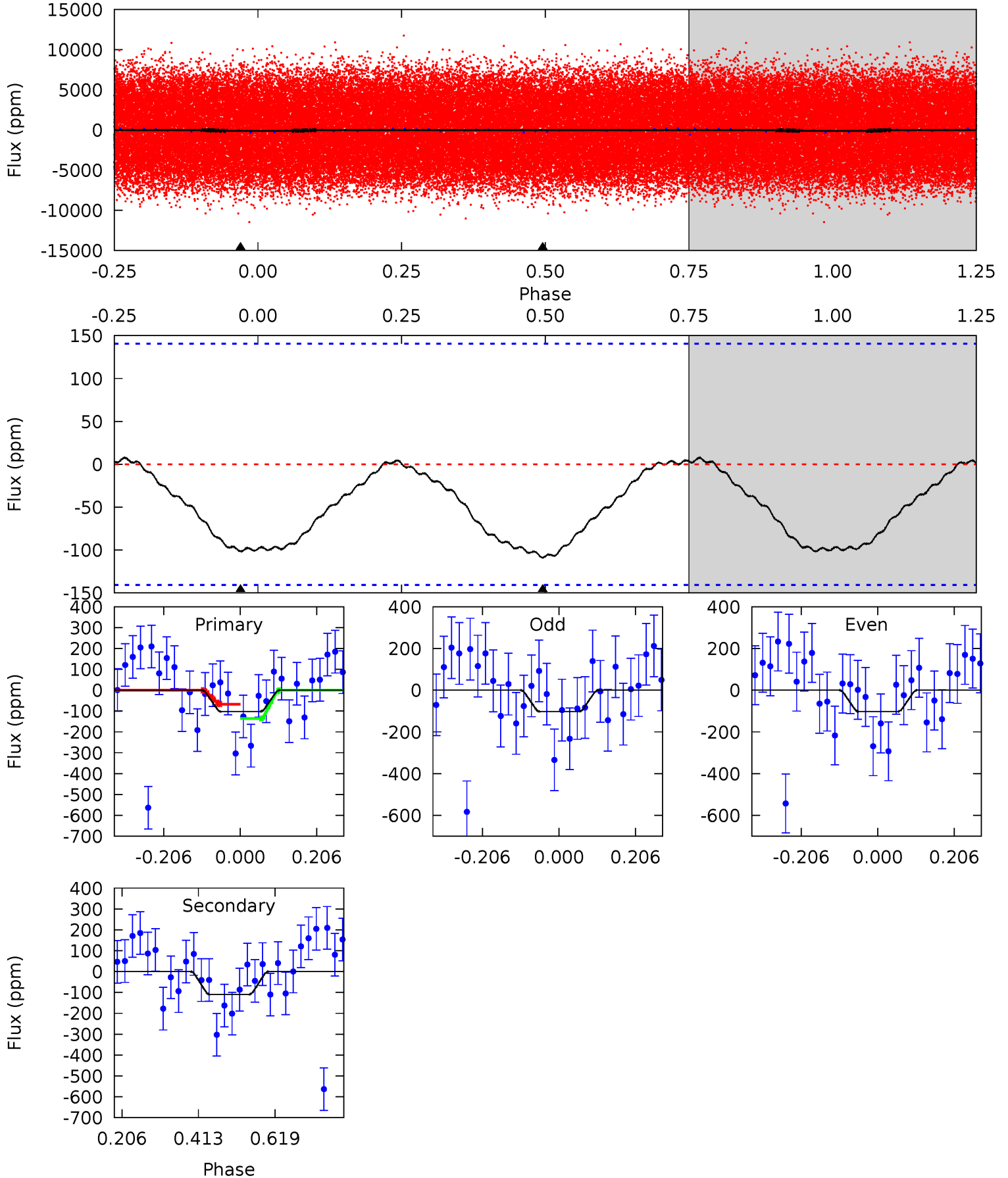
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.57	7.14	0	0	4.30	0.94	0.09	7.57	7.57	7.14	7.14	0.34	0.94	0.02	6.30



# Alt Model-Shift Uniqueness Test

008783270-01, P = 0.519371 Days, E = 131.088298 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
3.20	3.42	0	0	4.41	1.26	0.24	3.20	3.20	3.42	3.42	0.01	1.04	0.07	1.08



### Stellar Parameters For KIC 008783270

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7094^{+225}_{-338}$	$3.884^{+0.345}_{-0.138}$	$-0.080^{+0.250}_{-0.350}$	$2.454^{+0.539}_{-1.001}$	$1.682^{+0.165}_{-0.385}$	$0.160^{+0.427}_{-0.063}$
	+3%/-5%	+9%/-4%	+312%/-438%	+22%/-41%	+10%/-23%	+266%/-40%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 008783270-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-43 \pm 6$	$2.52^{+1.93}_{-1.61}$	$5463^{+442}_{-553}$	$5154^{+4667}_{-8438}$	$0.806^{+5.543}_{-0.545}$
Alt.	$-109 \pm 32$	$3.04^{+2.12}_{-1.70}$	$5472^{+455}_{-577}$	$5926^{+4392}_{-1794}$	$1.371^{+5.439}_{-0.897}$

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



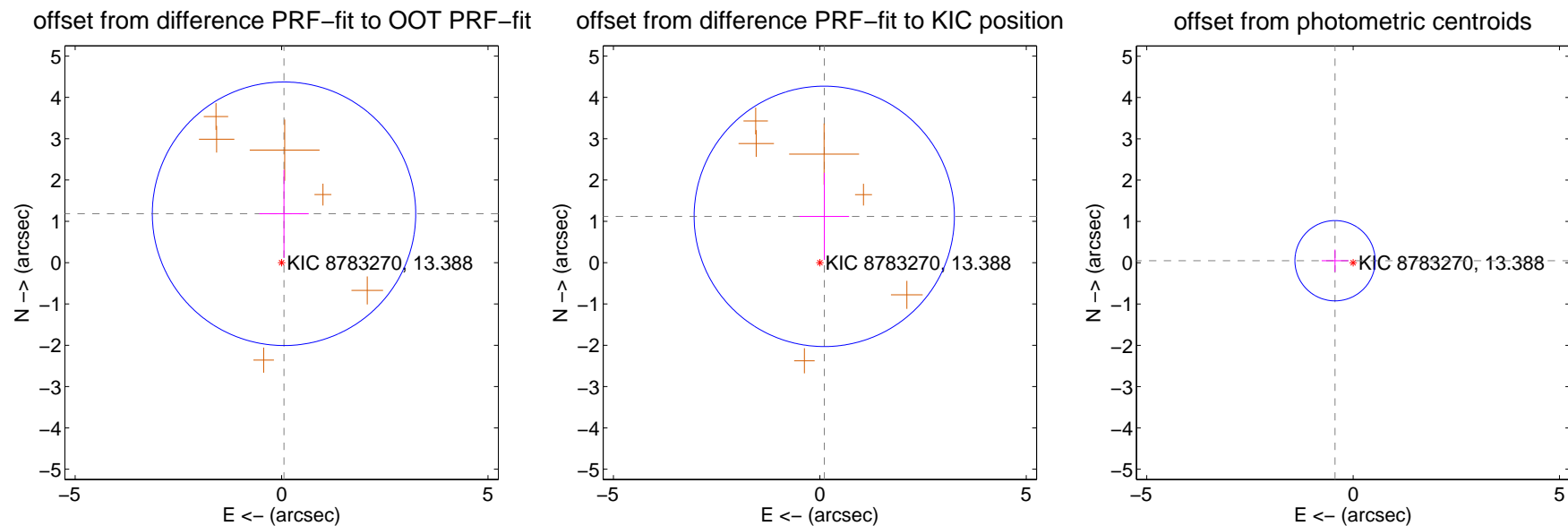
## DV Centroid Data

Supplemental centroid analysis for 008783270-01. Kepler magnitude: 13.39. Transit SNR 12.99

There are 0 quarters with good PRF difference image offsets

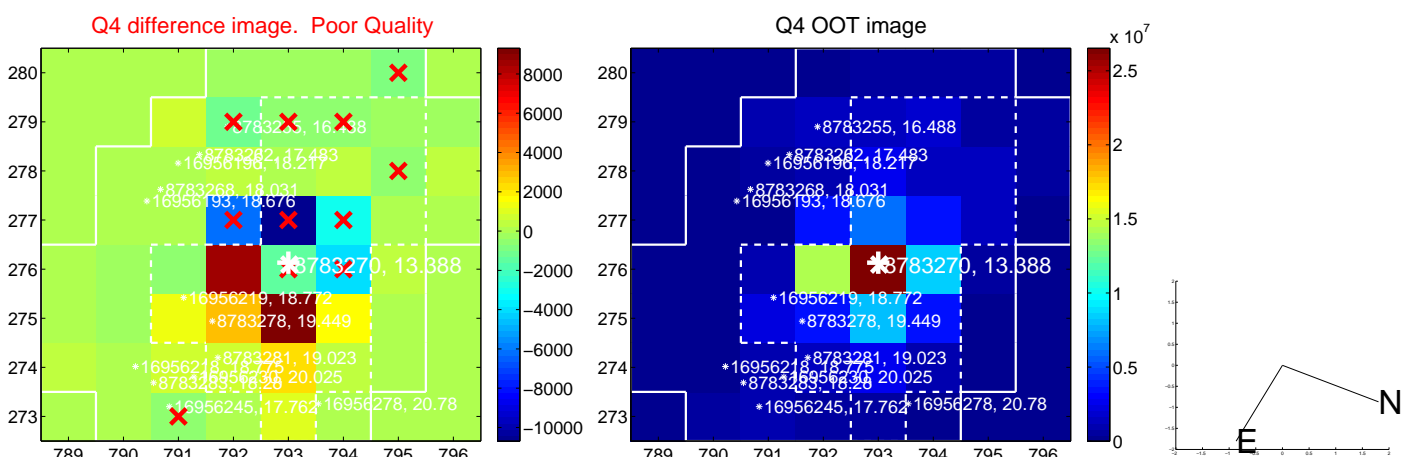
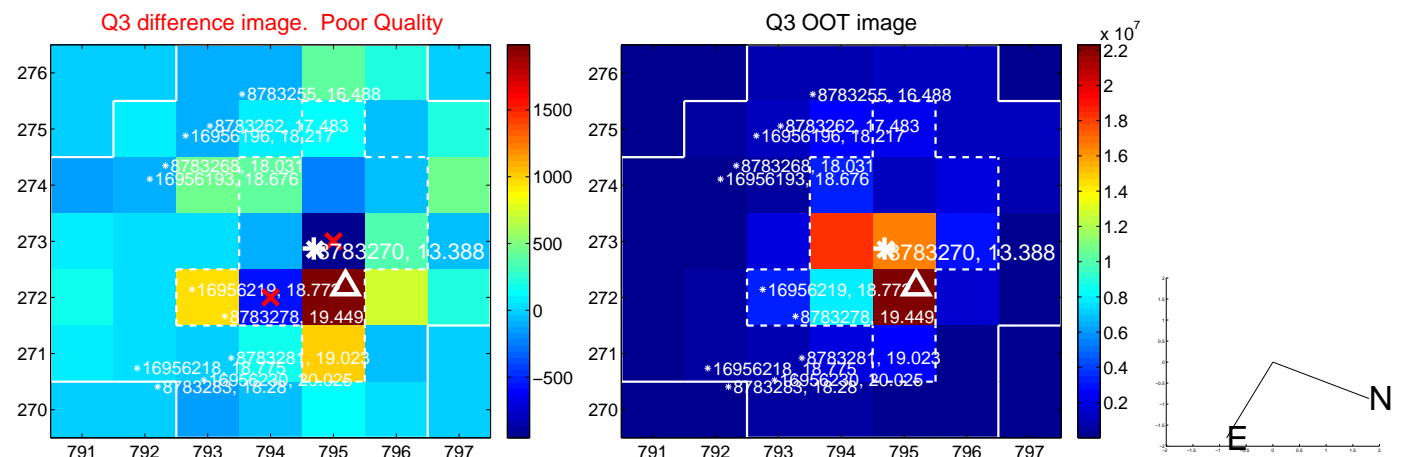
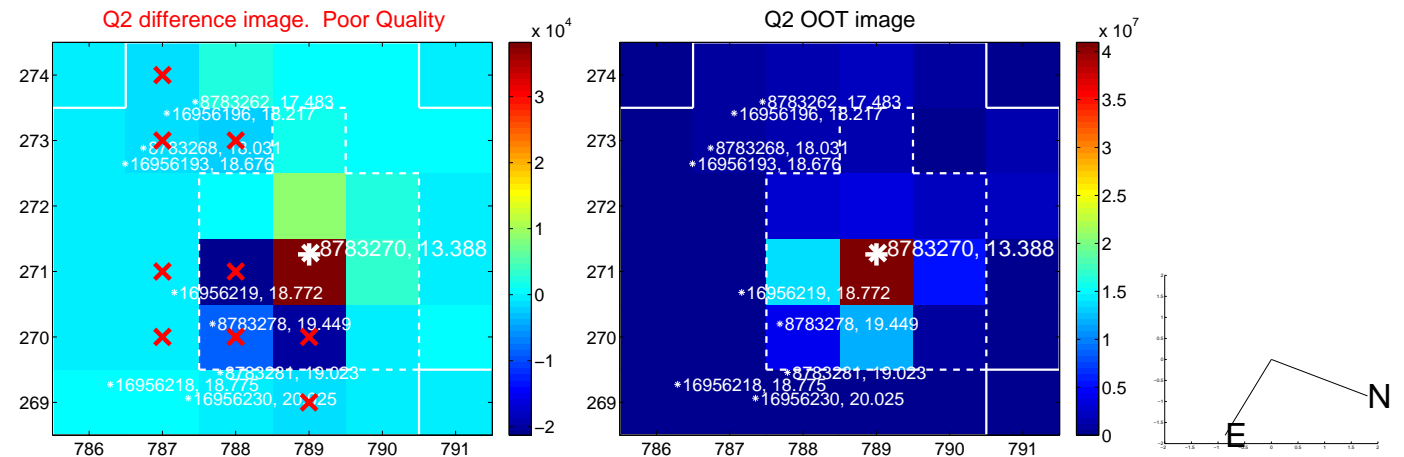
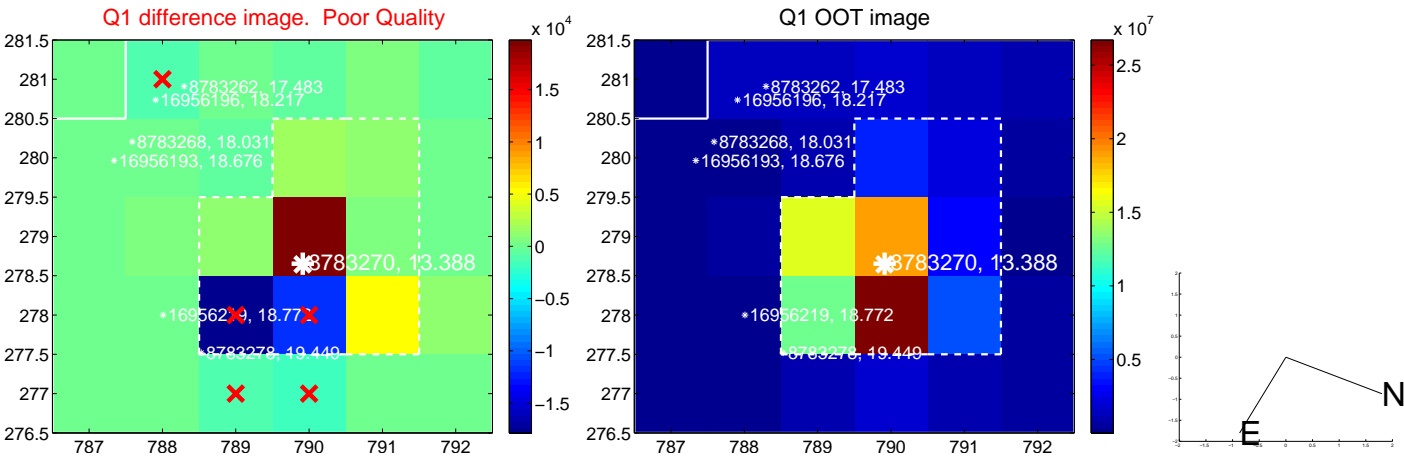
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.184 \pm 1.063$	1.11	$-0.059 \pm 0.599$	$1.183 \pm 1.064$
PRF-fit source offset from KIC position	$1.125 \pm 1.051$	1.07	$-0.107 \pm 0.601$	$1.120 \pm 1.054$
photometric centroid source offset	$0.44 \pm 0.32$	1.36	$0.44 \pm 0.32$	$0.05 \pm 0.27$

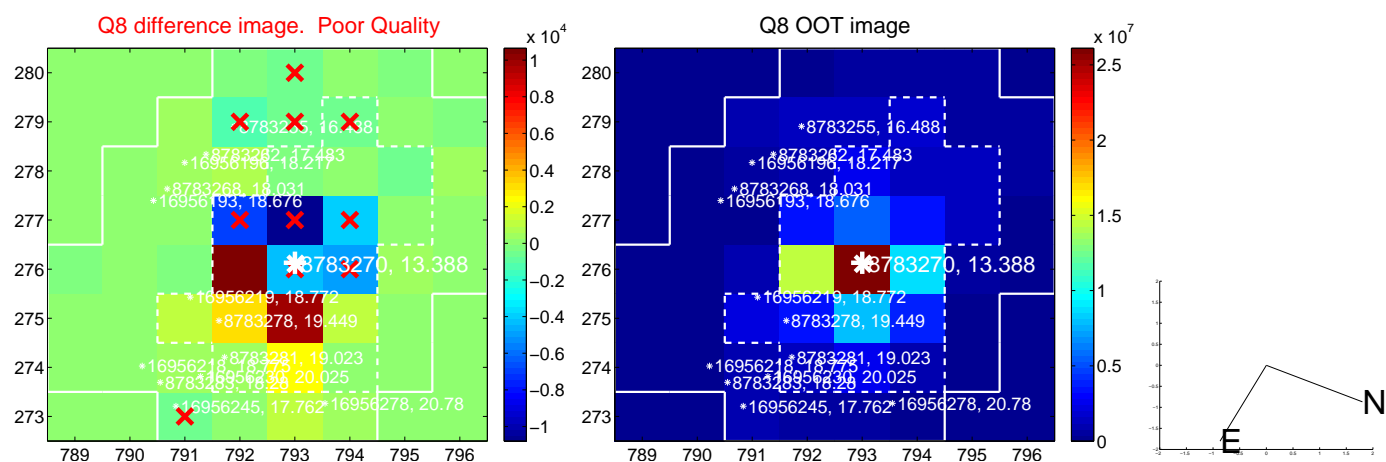
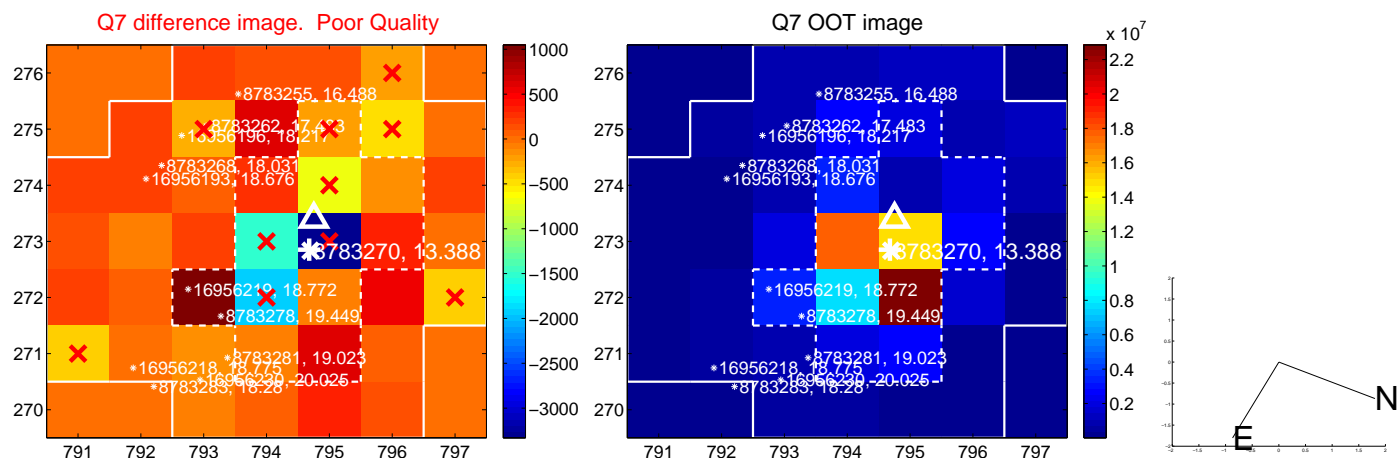
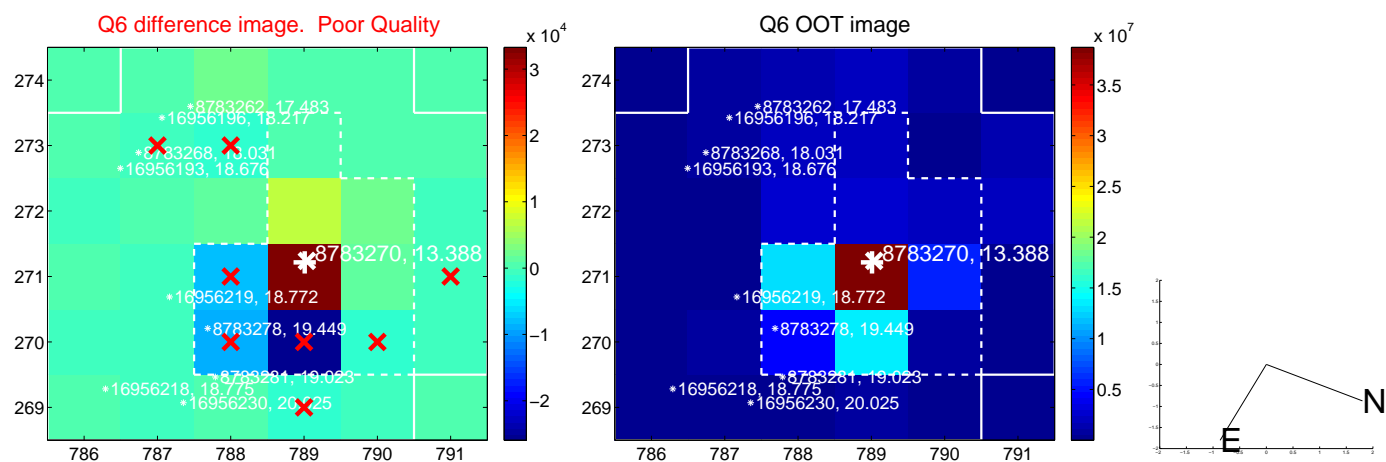
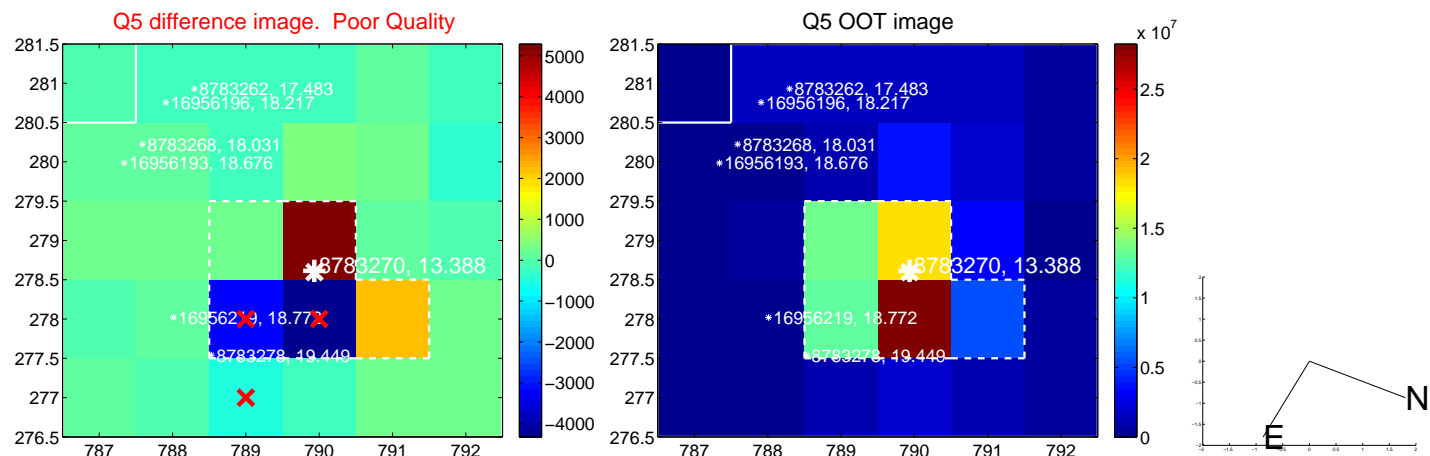


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

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

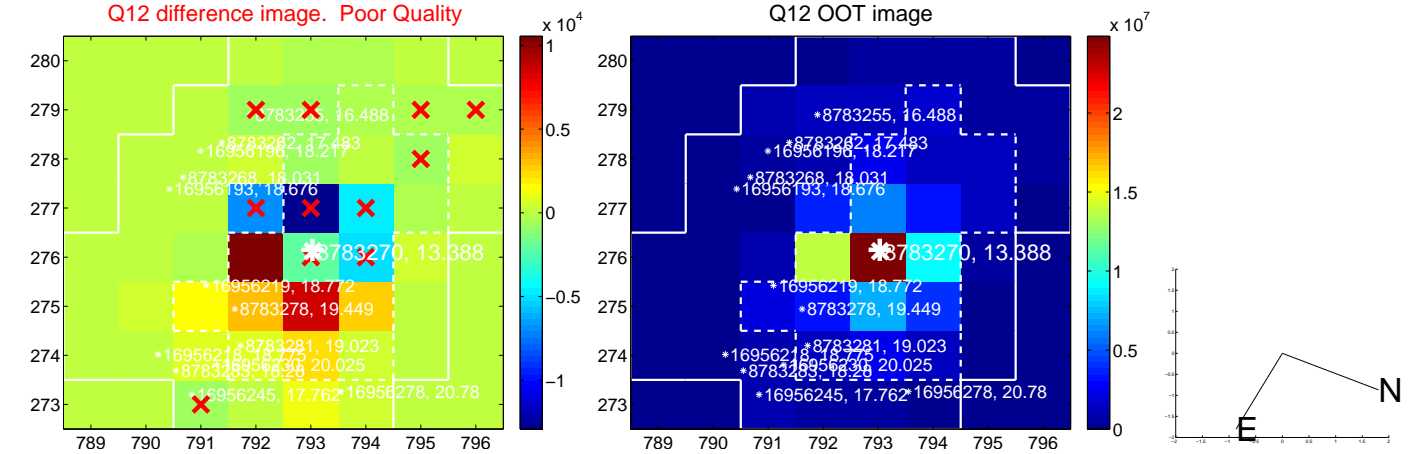
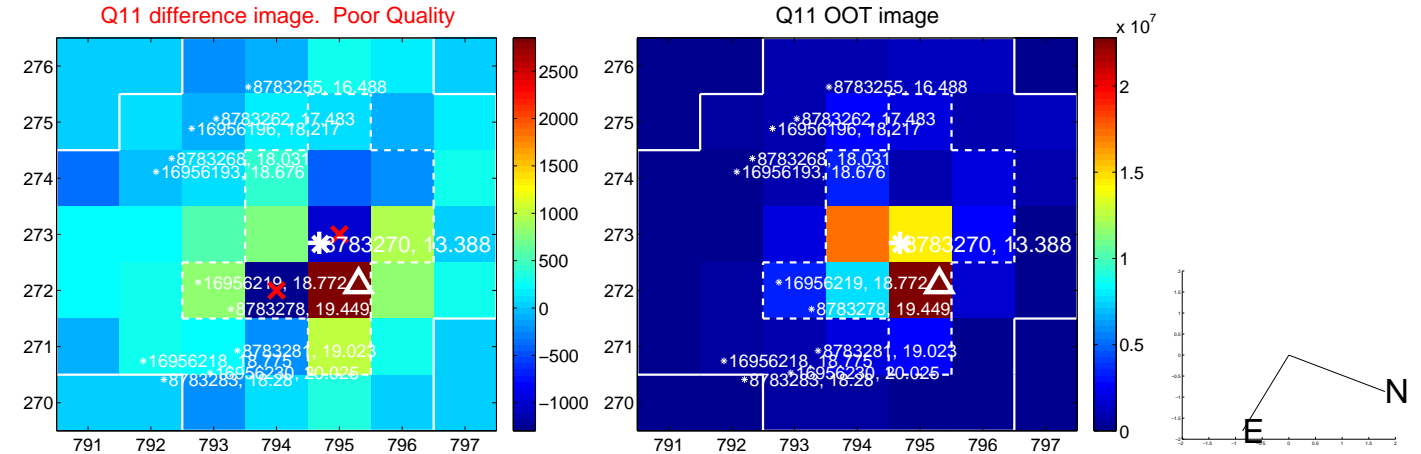
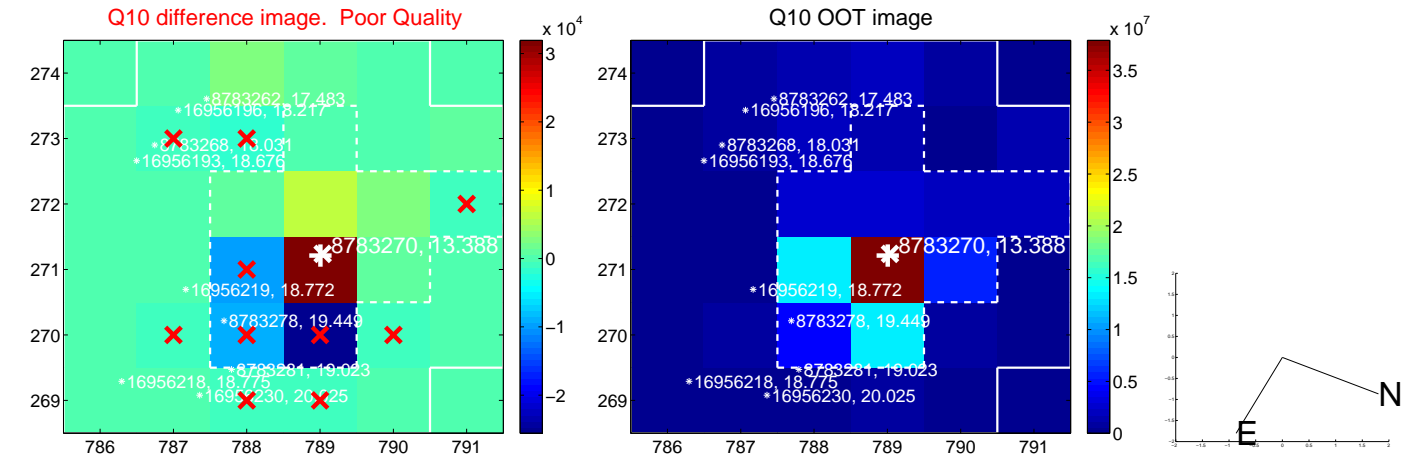
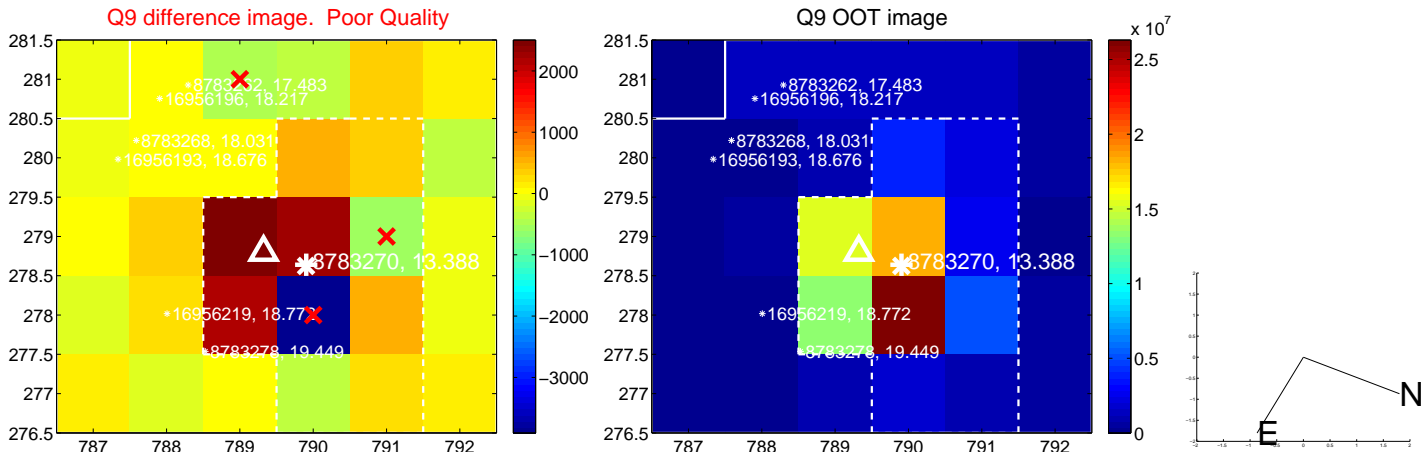


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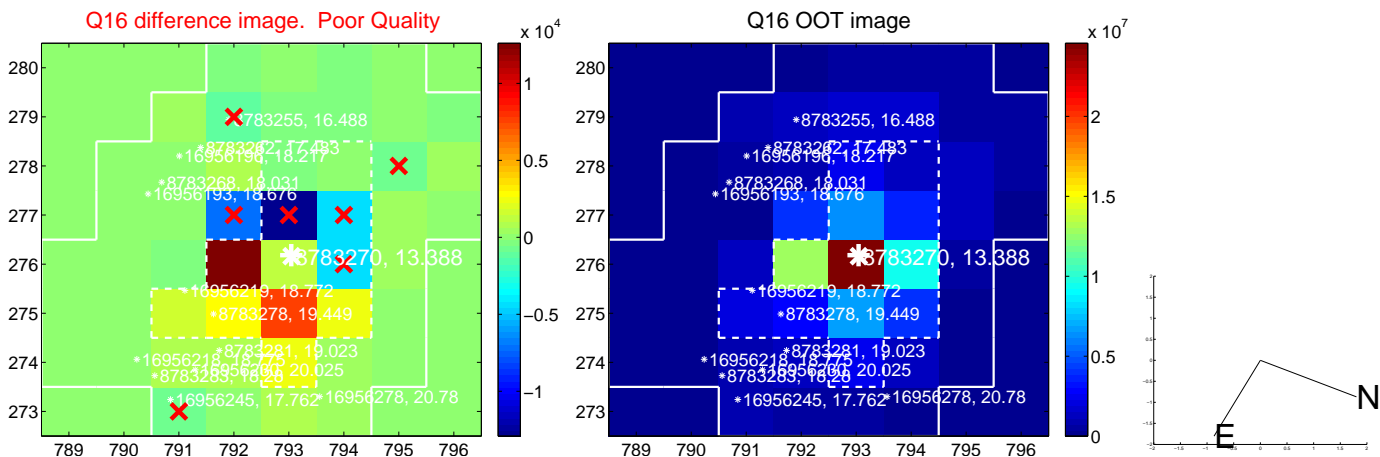
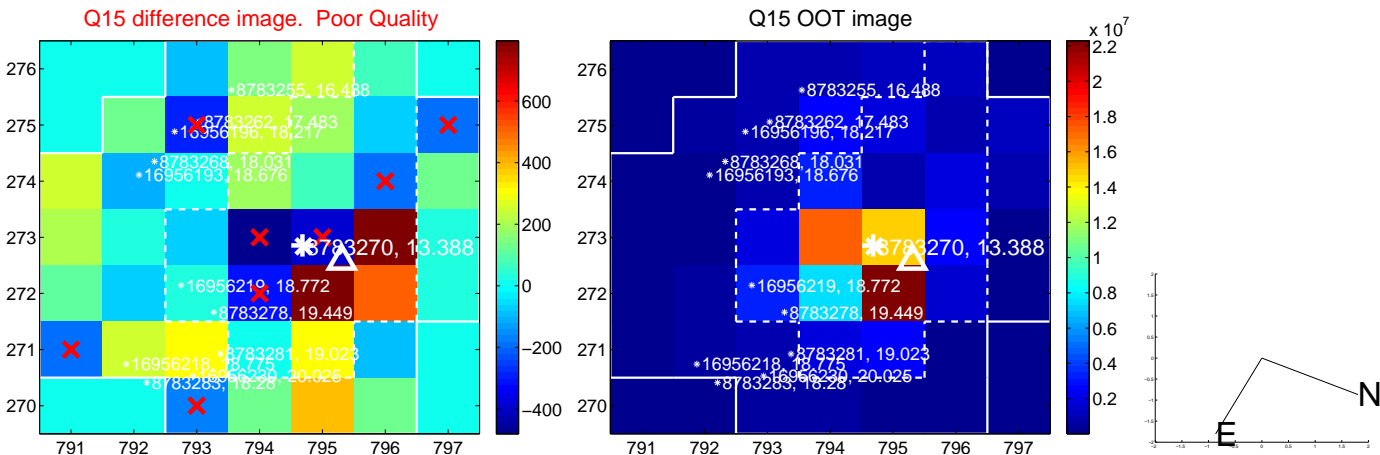
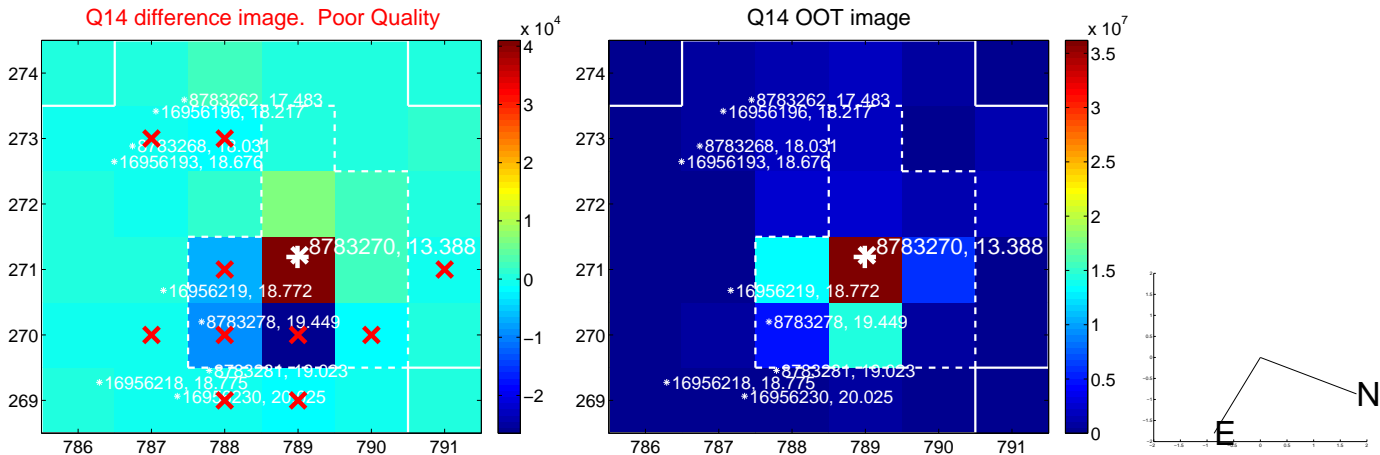
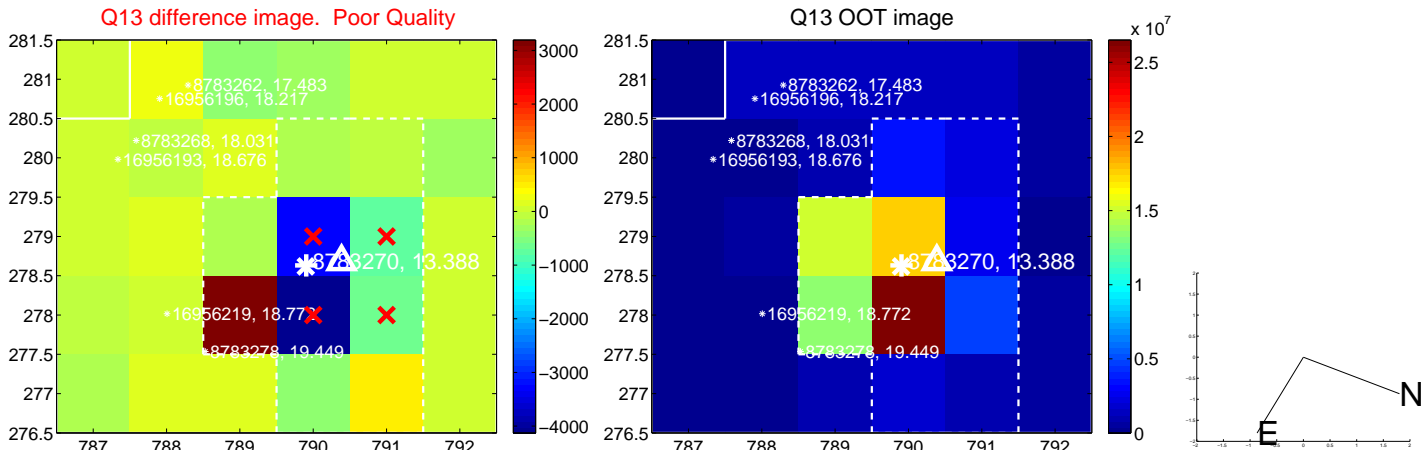




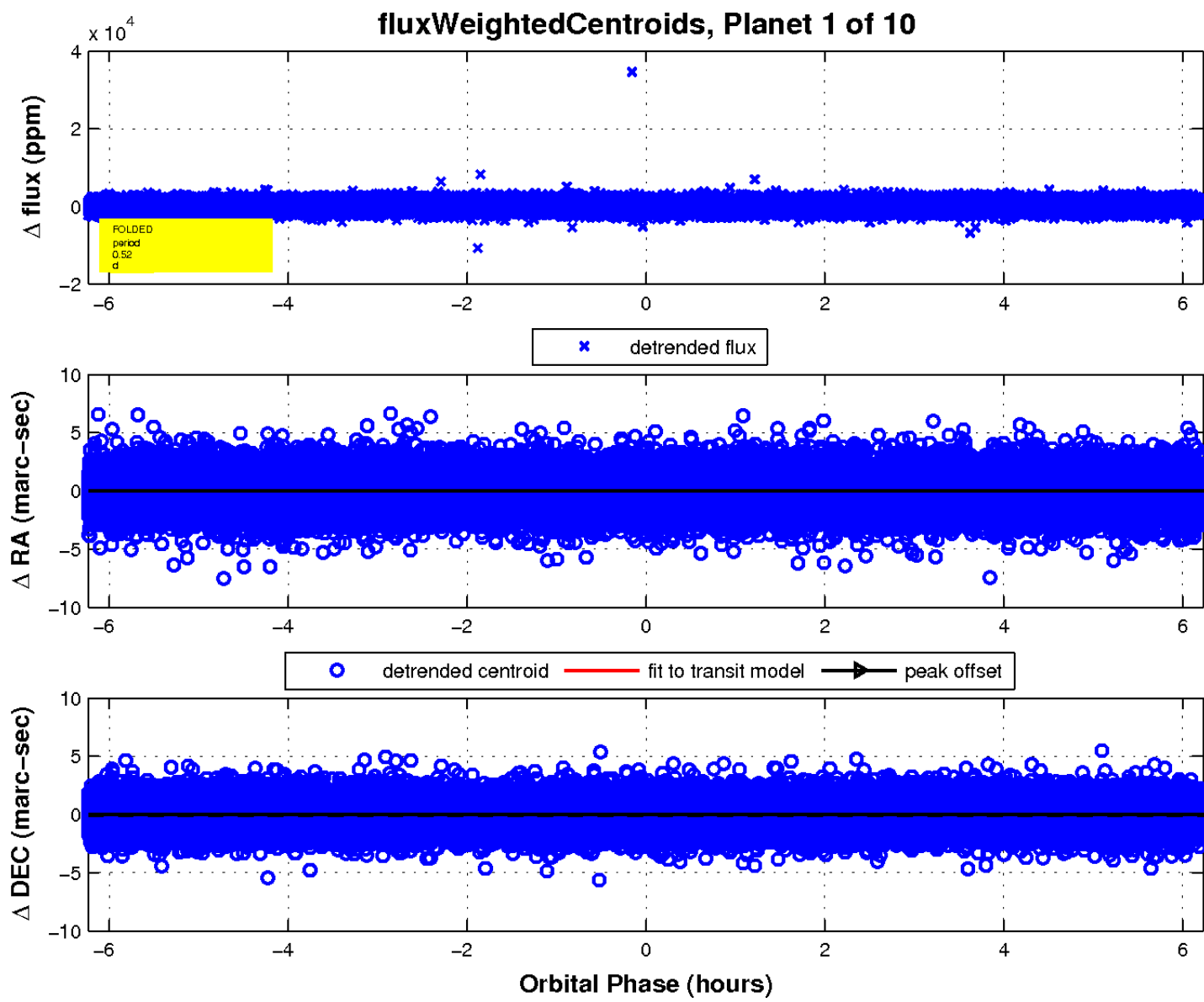
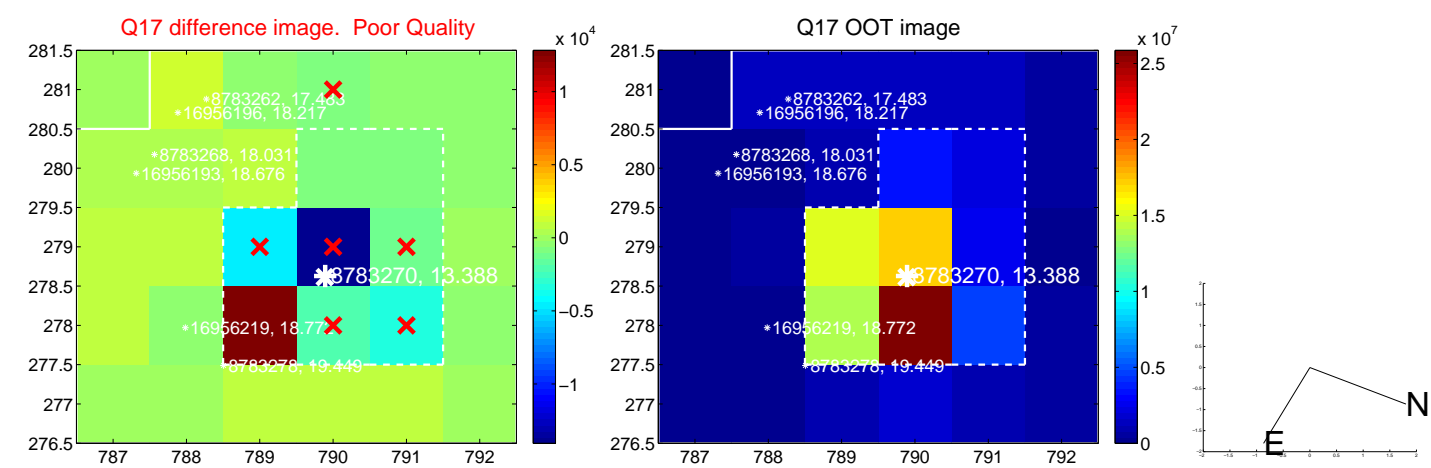
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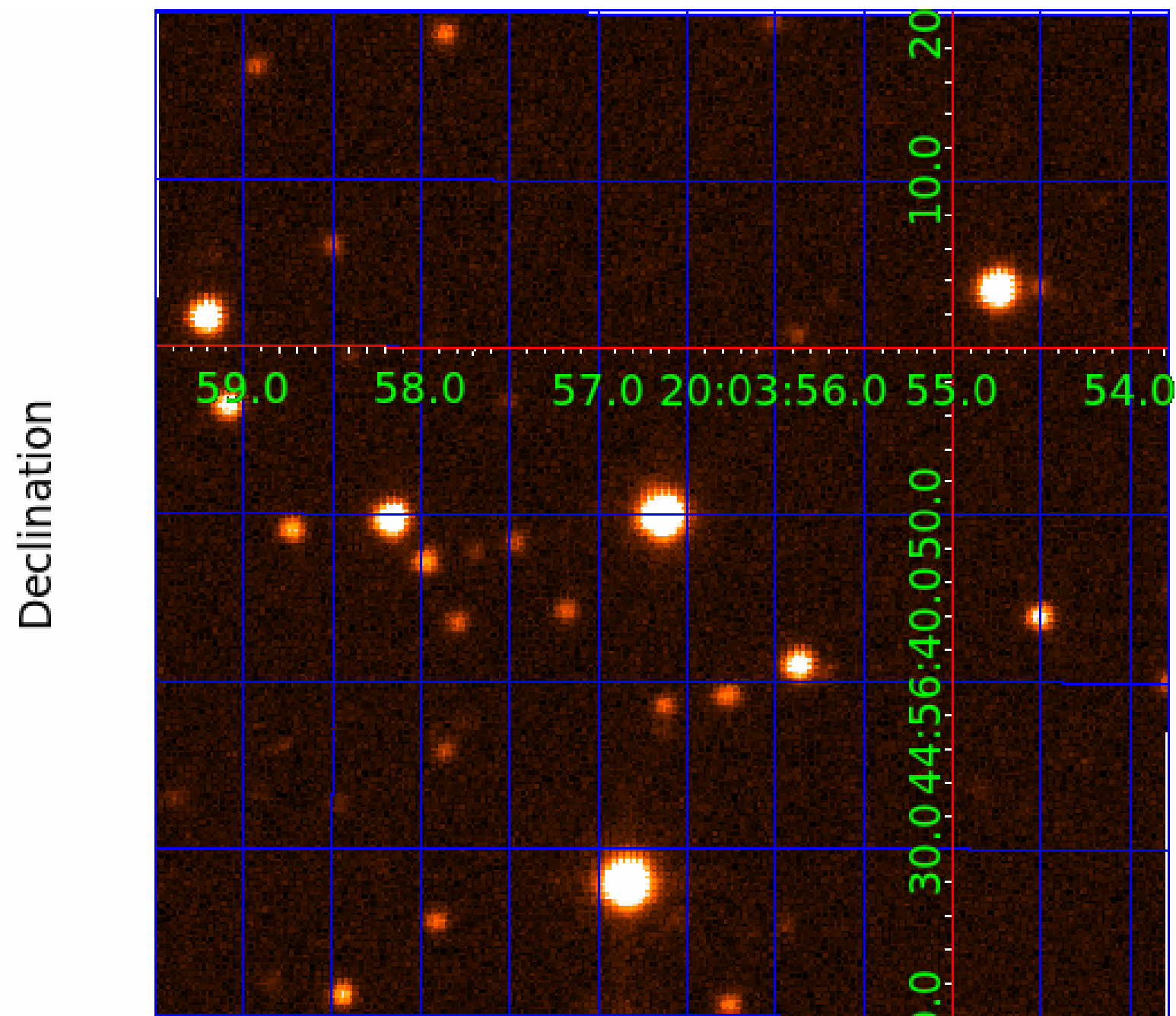
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UKIRT Image



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008783270-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
008783270-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
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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.

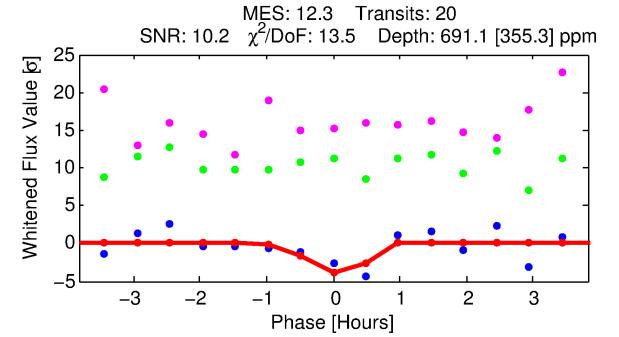
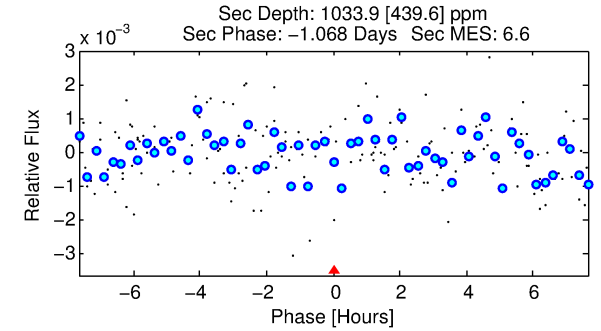
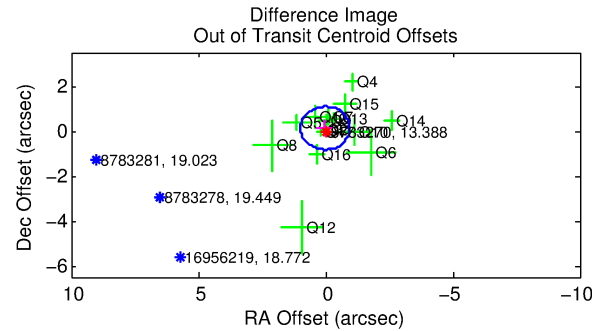
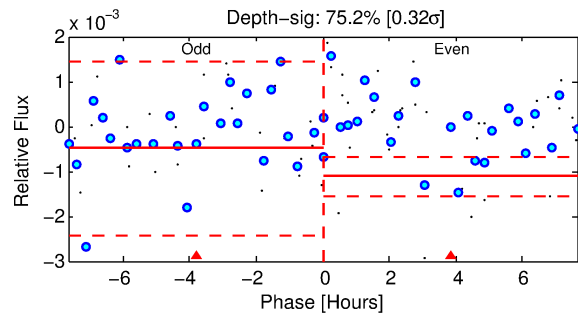
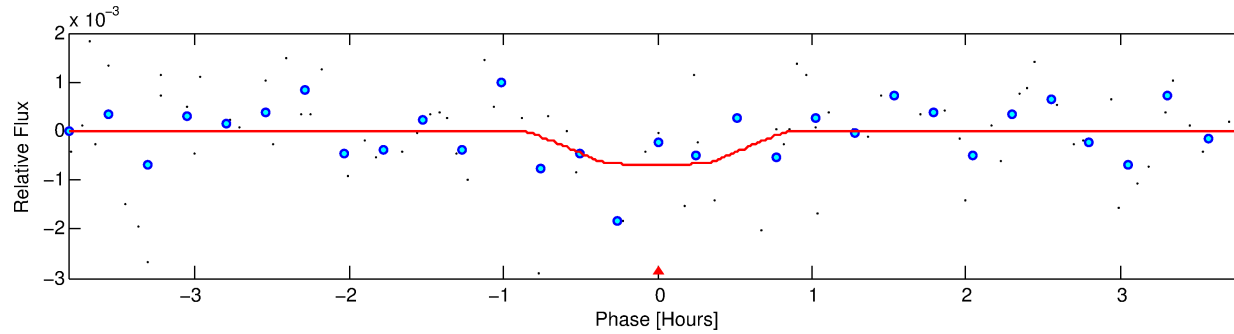
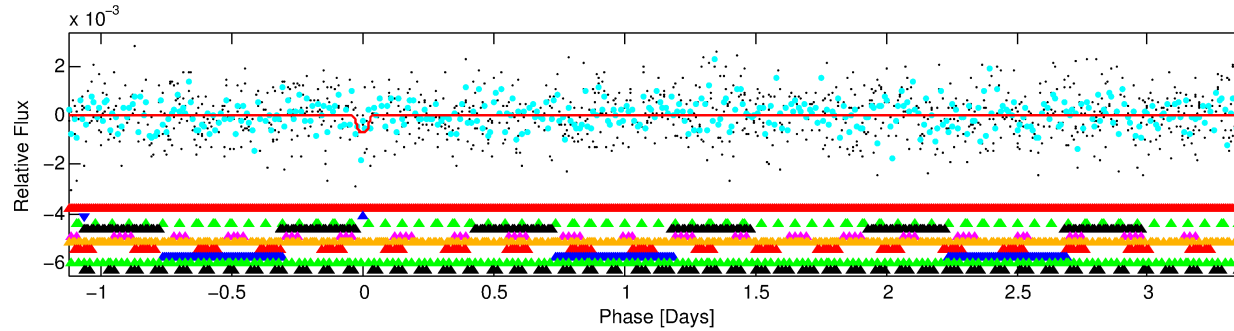
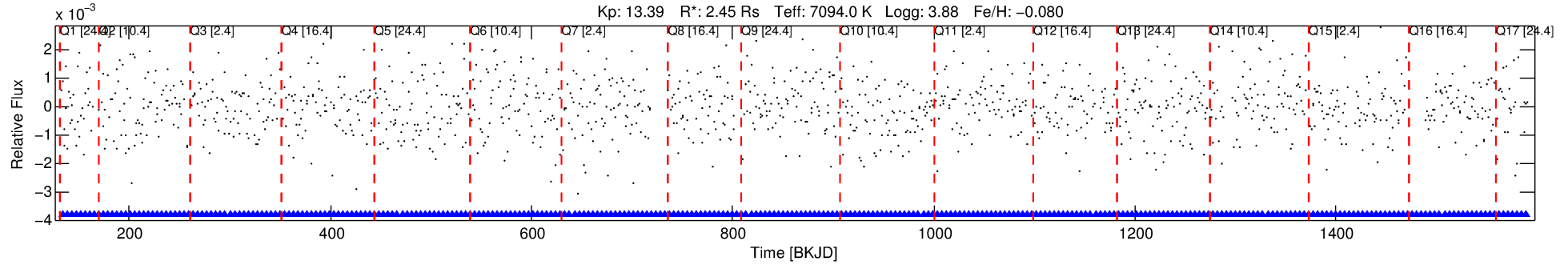
## Ephemeris Match Information For 008783270-02

No Significant Match Found



# DV One-Page Summary

KIC: 8783270 Candidate: 2 of 10 Period: 4.506 d



## DV Fit Results:

Period = 4.50554 [0.00007] d  
Epoch = 133.5177 [0.0121] BKJD  
Rp/R\* = 0.0245 [0.1045]  
a/R\* = 27.42 [652.05]  
b = 0.14 [163.64]  
Seff = 3388.81 [2118.32]  
Teq = 1946 [304] K  
Rp = 6.56 [28.10] Re  
a = 0.0635 [0.0241] AU  
Ag = 53.22 [455.34] [0.11 $\sigma$ ]  
Teffp = 8125 [17339] K [0.36 $\sigma$ ]

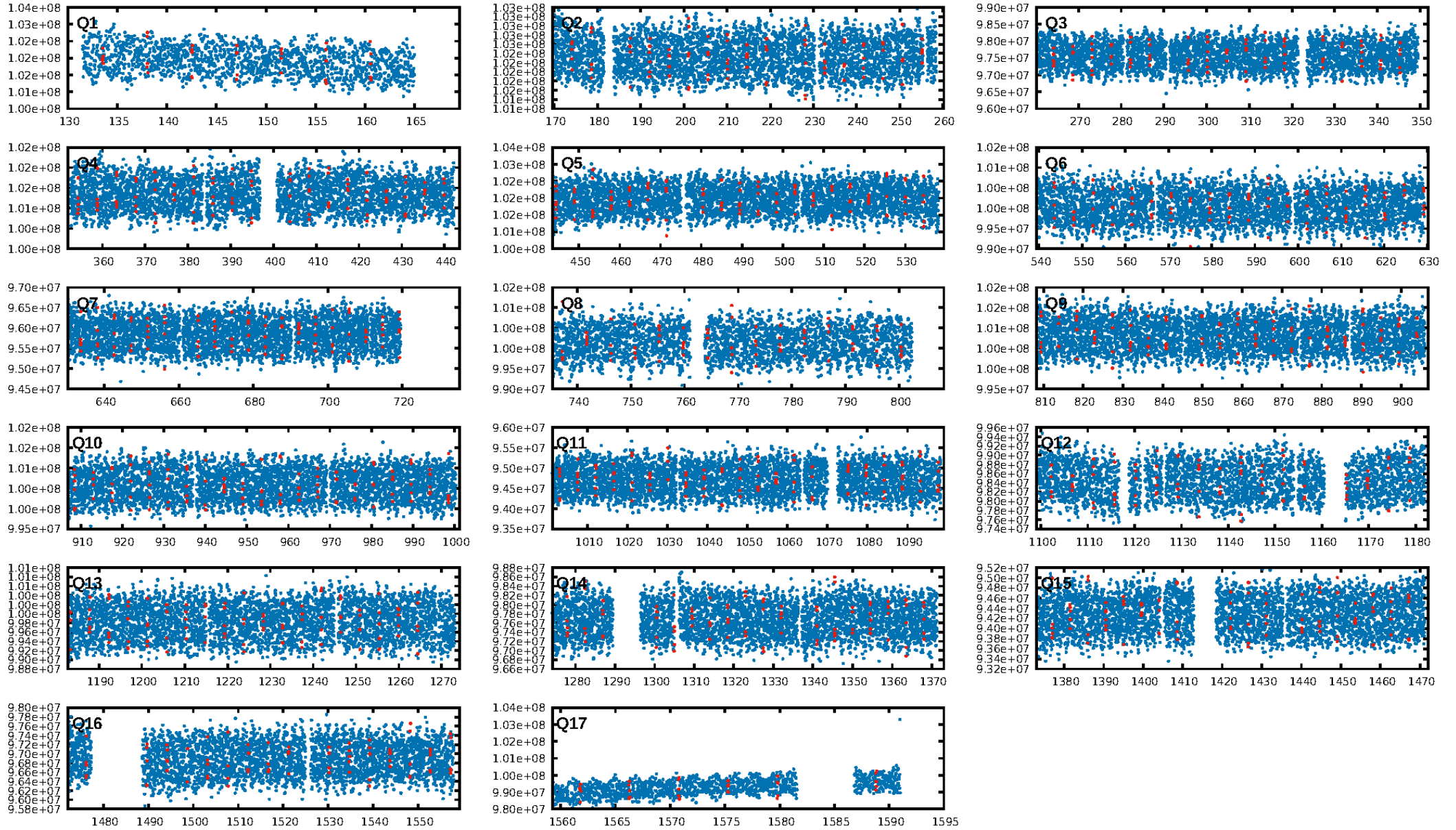
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [8.28 $\sigma$ ]  
LongPeriod-sig: 100.0% [19.23 $\sigma$ ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [18/18]  
GhostDiagnostic-chr: 5.133  
Centroid-sig: 0.1%  
Centroid-so: 0.612 arcsec [3.27 $\sigma$ ]  
OotOffset-rm: 0.126 arcsec [0.39 $\sigma$ ]  
KicOffset-rm: 0.095 arcsec [0.30 $\sigma$ ]  
OotOffset-st: 4/4/4/4 [16]  
KicOffset-st: 4/4/4/4 [16]  
DiffImageQuality-fgm: 0.25 [4/16]  
DiffImageOverlap-fno: 0.00 [0/17]

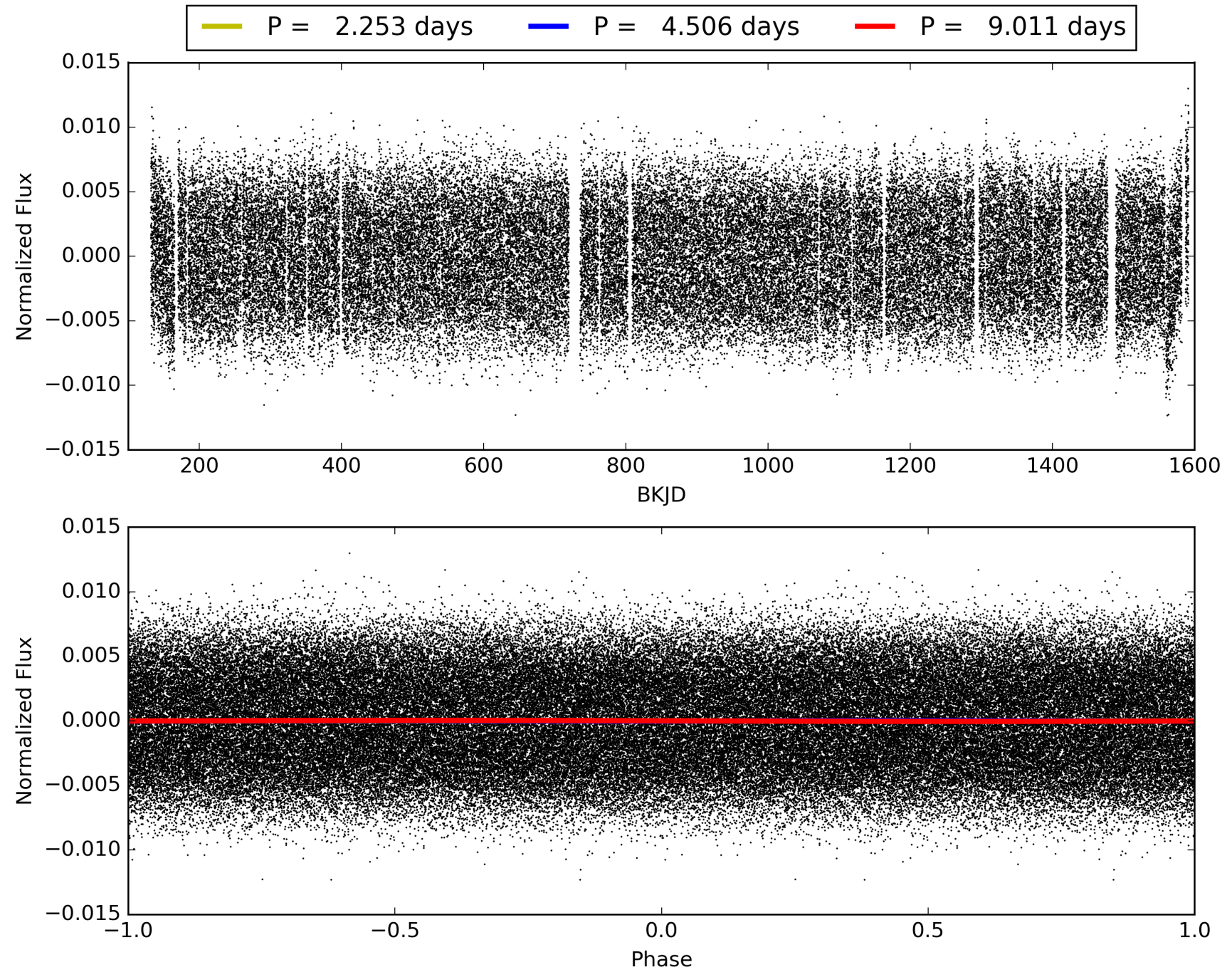
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:22:24 Z

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

# TCE 008783270-02, PDC Light Curves

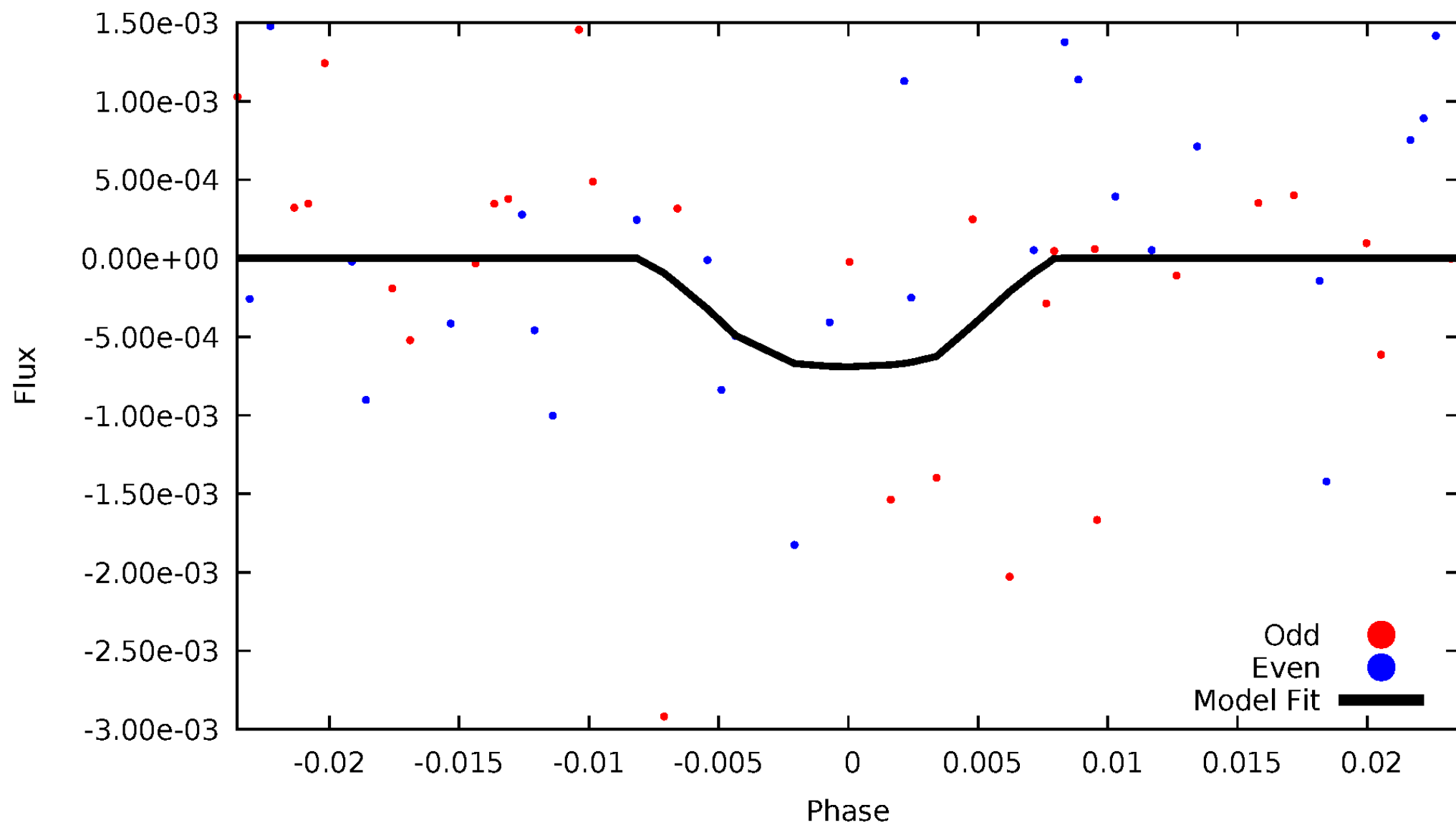


# TCE 008783270-02



# DV Odd/Even

TCE 008783270-02





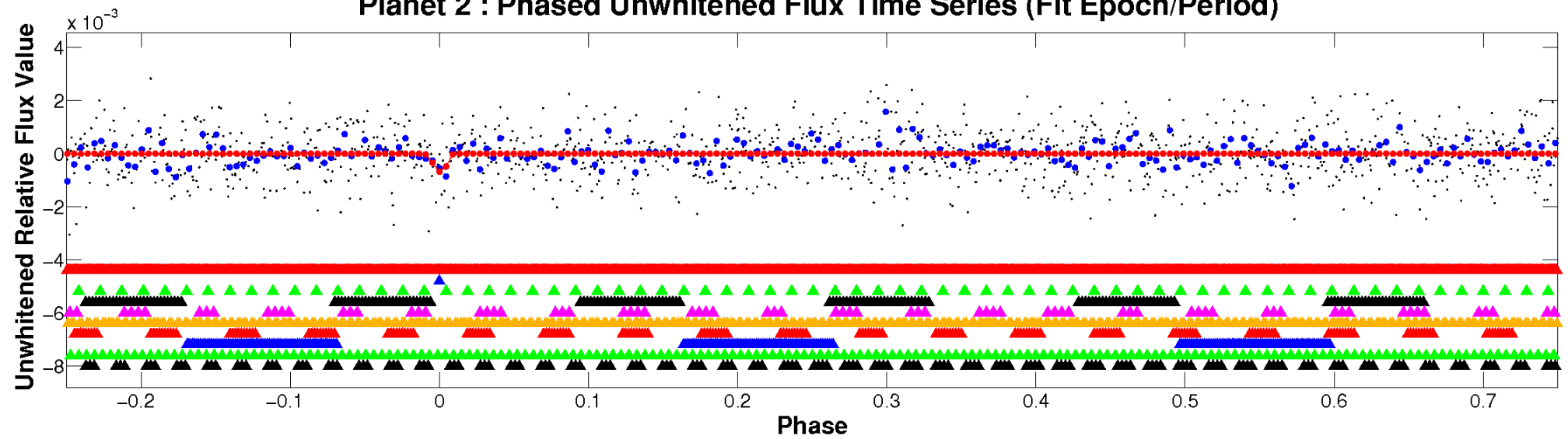


ALT Odd/Even

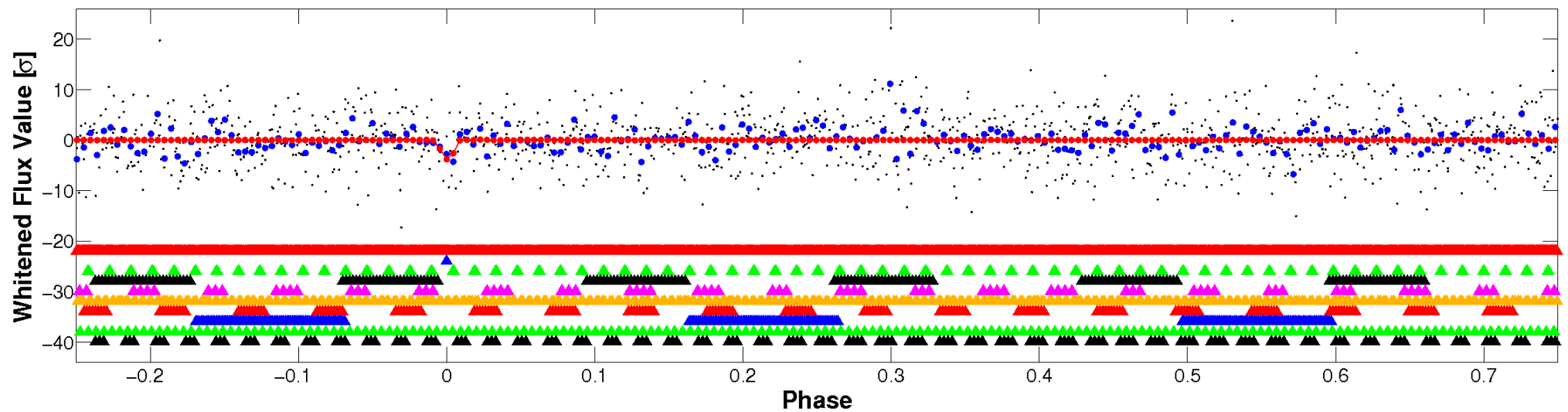
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

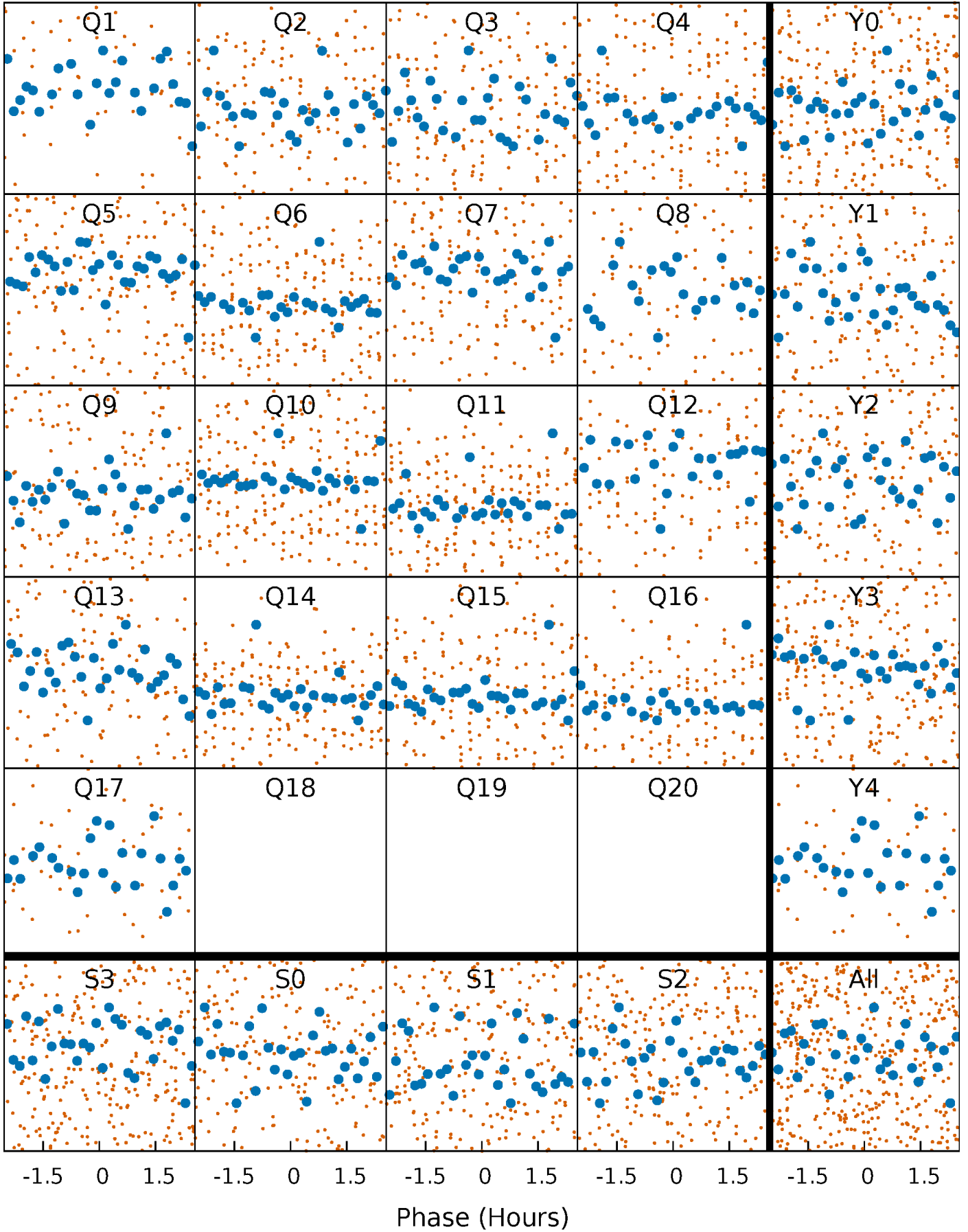


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



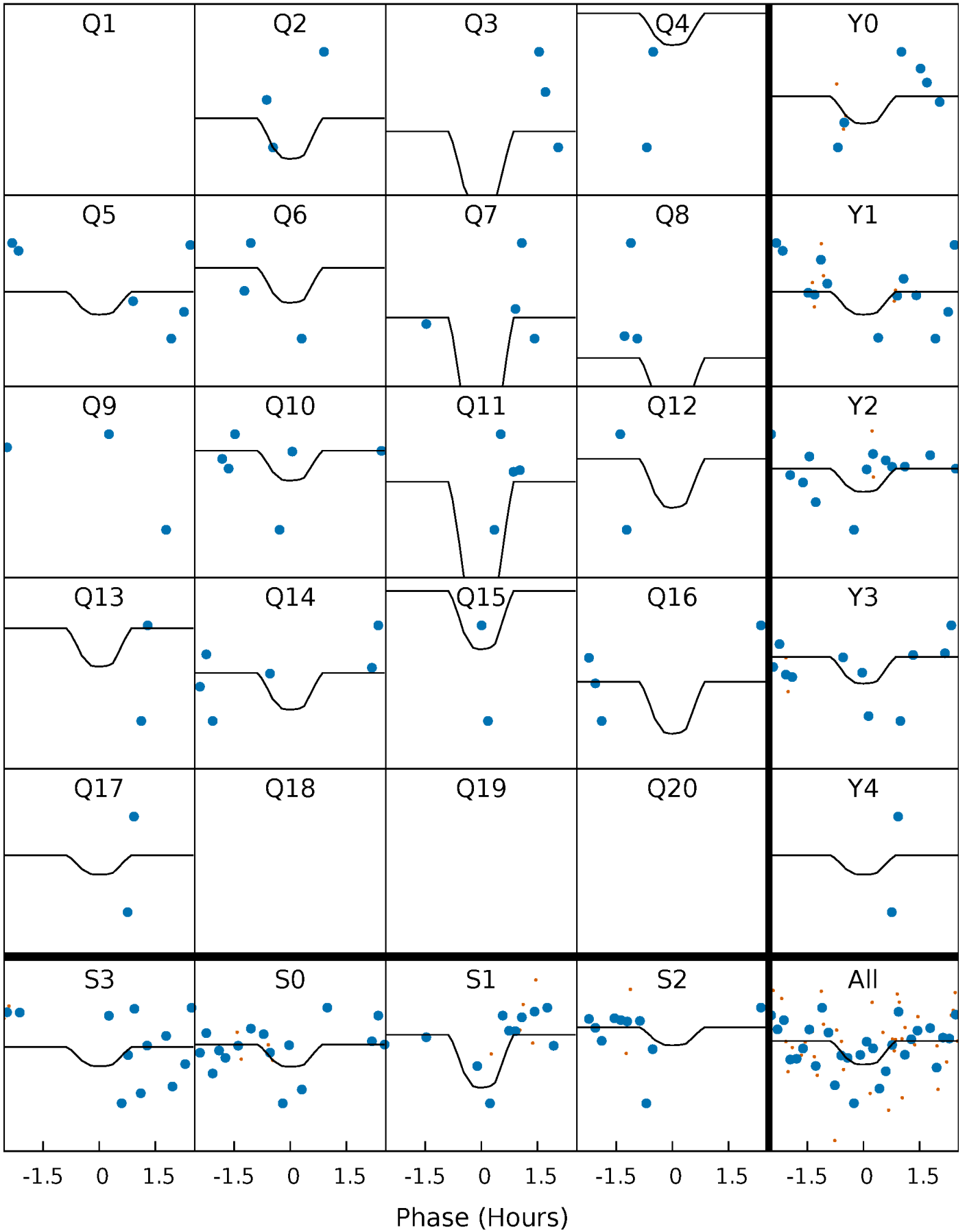
# PDC Quarter-Phased Transit Curves

TCE 008783270-02   P= 4.505537 Days    $T_0=133.517654$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 008783270-02   P= 4.505537 Days    $T_0=133.517654$  (BKJD)



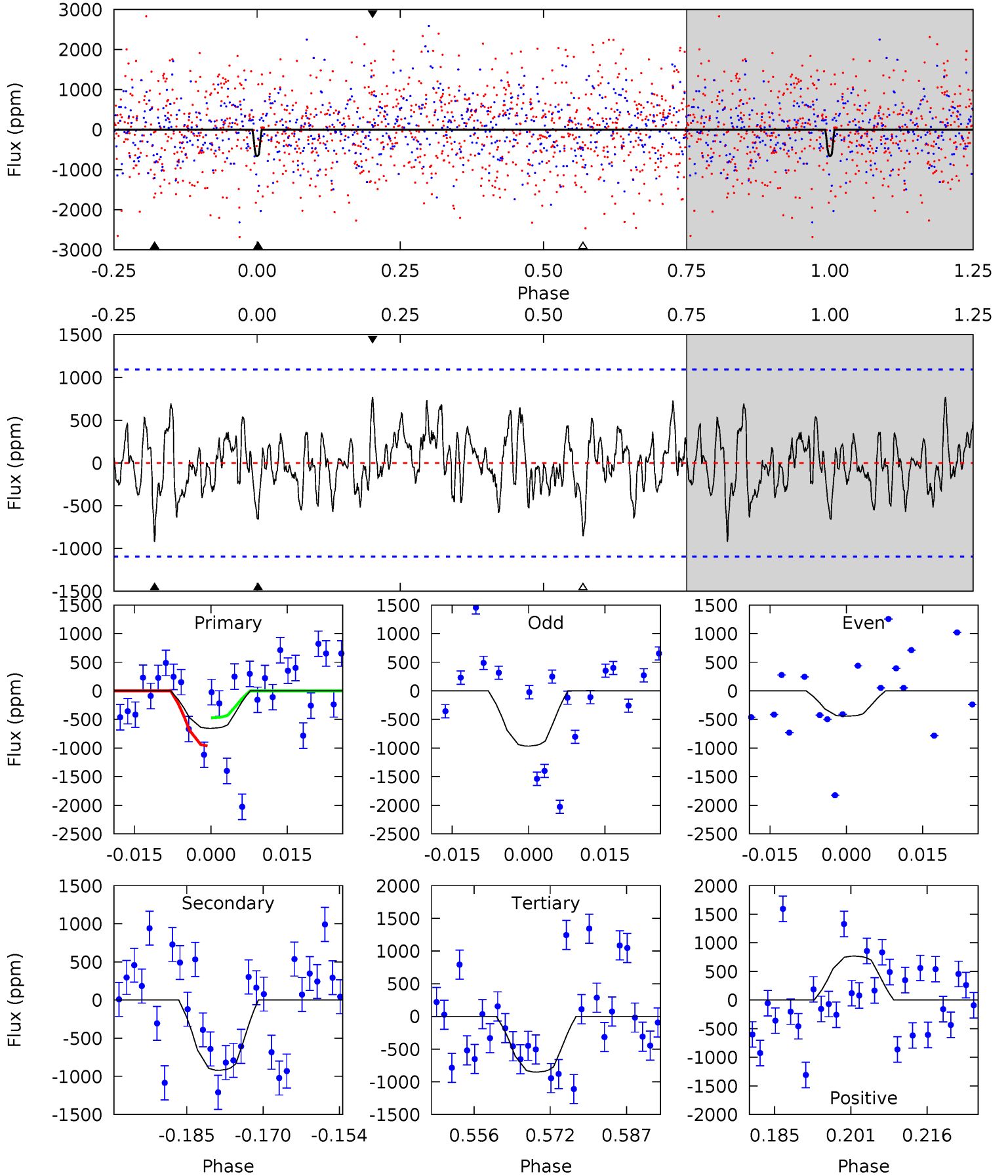
This plot does not exist for this TCE.



# DV Model-Shift Uniqueness Test

008783270-02, P = 4.505537 Days, E = 129.012117 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
2.97	4.17	3.85	3.47	4.94	2.42	1.27	-0.89	-0.51	0.32	0.70	1.20	0	0.45	1.09



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 008783270

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7094^{+225}_{-338}$	$3.884^{+0.345}_{-0.138}$	$-0.080^{+0.250}_{-0.350}$	$2.454^{+0.539}_{-1.001}$	$1.682^{+0.165}_{-0.385}$	$0.160^{+0.427}_{-0.063}$
	+3%/-5%	+9%/-4%	+312%/-438%	+22%/-41%	+10%/-23%	+266%/-40%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 008783270-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	-922±221	$20.30^{+20.75}_{-14.03}$	$2660^{+215}_{-262}$	$4419^{+3582}_{-1084}$	$4.787^{+46.436}_{-3.629}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

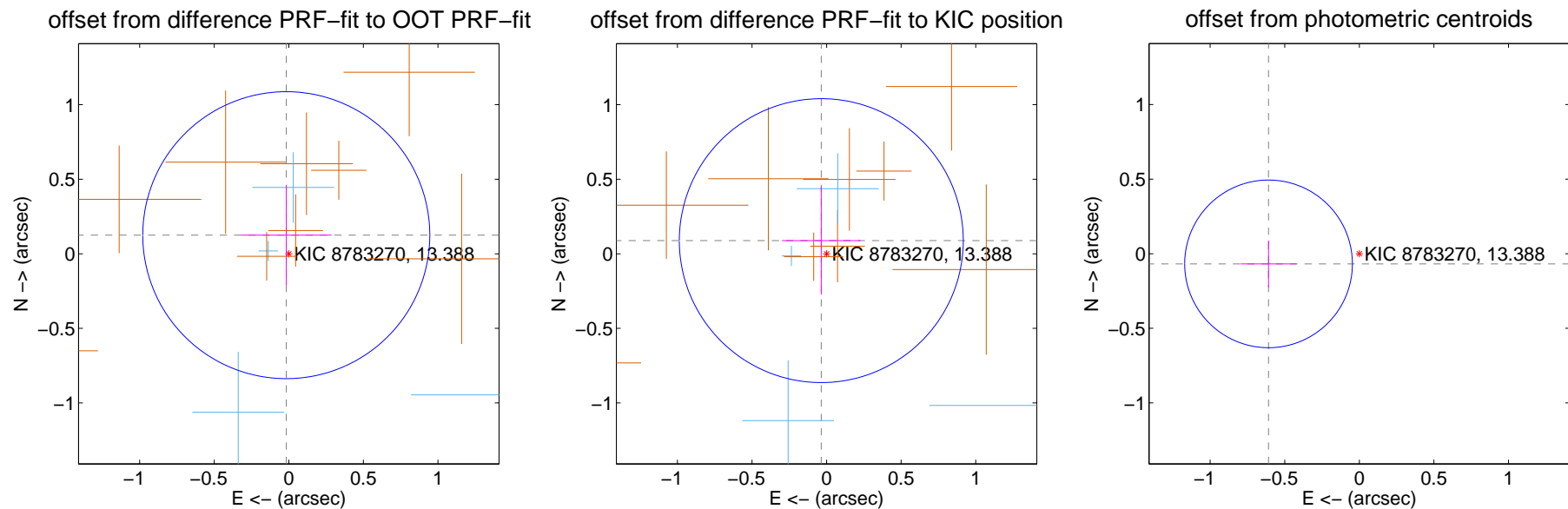
## DV Centroid Data

Supplemental centroid analysis for 008783270-02. Kepler magnitude: 13.39. Transit SNR 10.16

There are 4 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

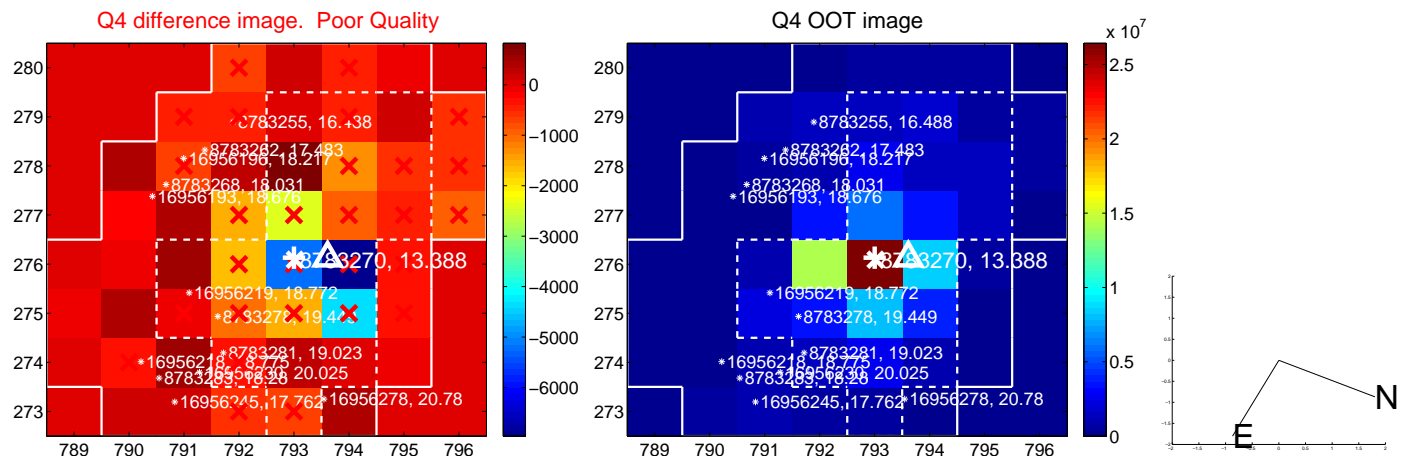
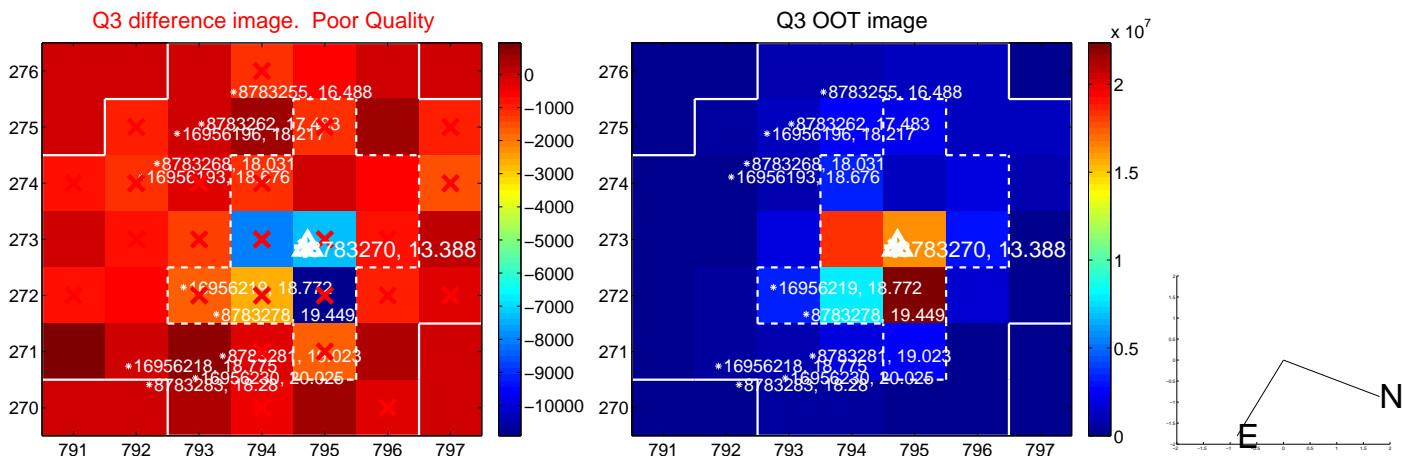
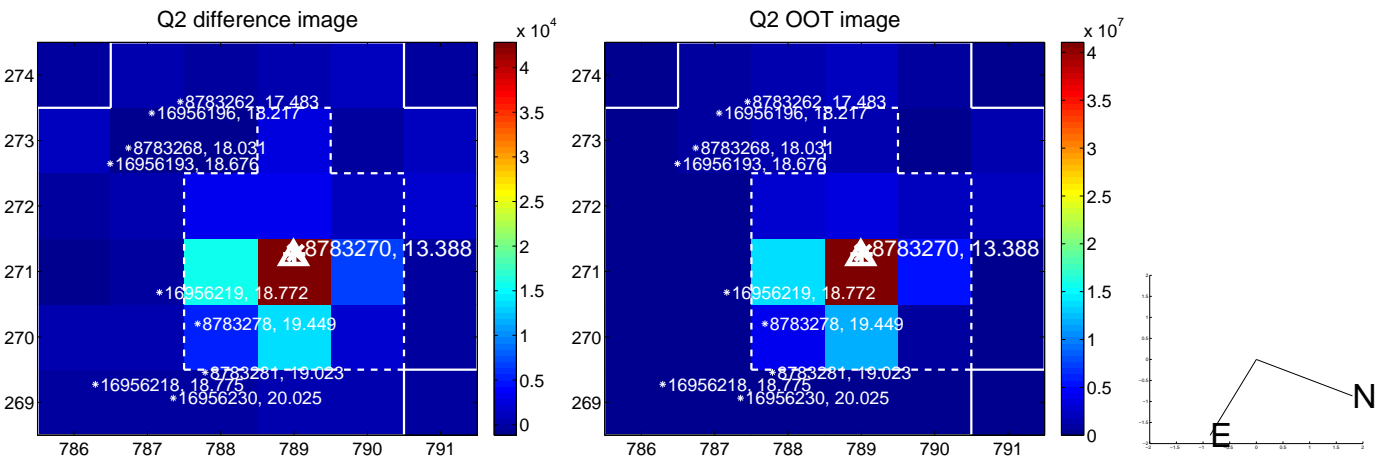
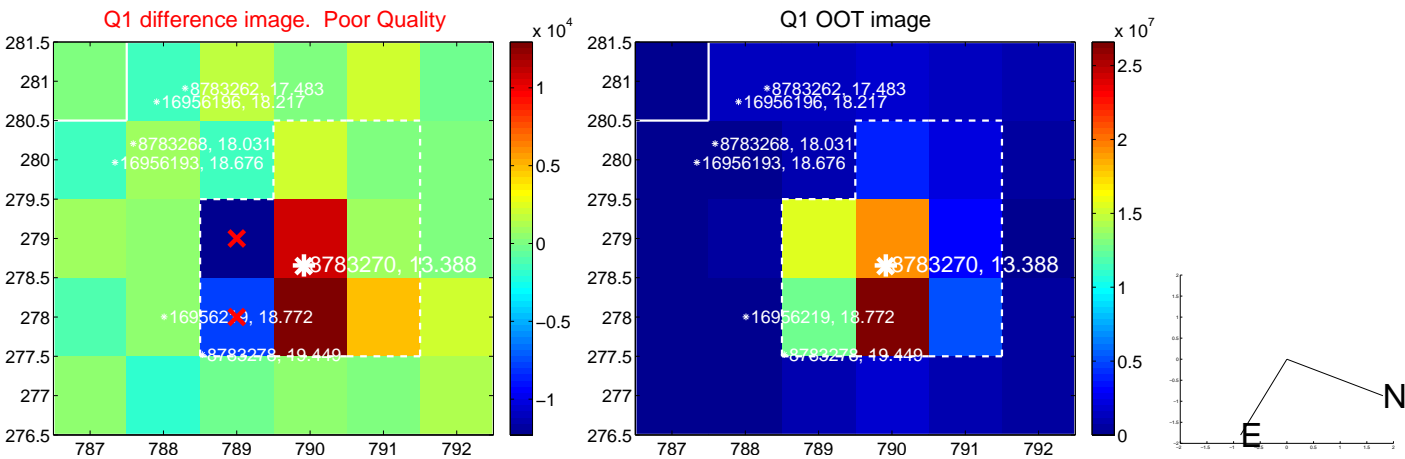
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.126 \pm 0.321$	0.39	$0.017 \pm 0.304$	$0.125 \pm 0.335$
PRF-fit source offset from KIC position	$0.095 \pm 0.317$	0.30	$0.035 \pm 0.263$	$0.088 \pm 0.362$
photometric centroid source offset	$0.61 \pm 0.19$	3.27	$0.61 \pm 0.19$	$-0.07 \pm 0.16$



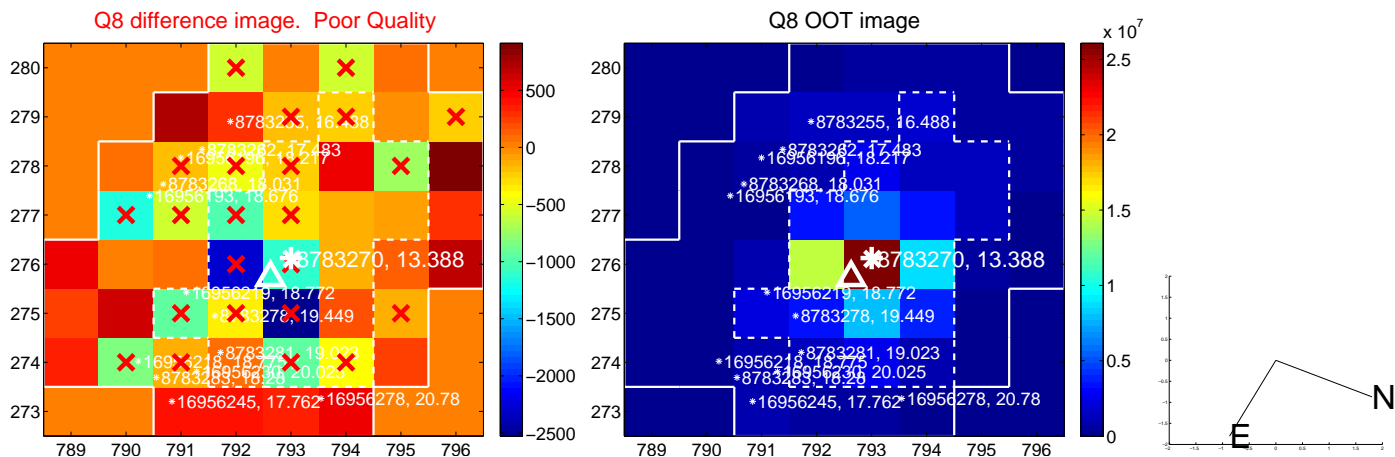
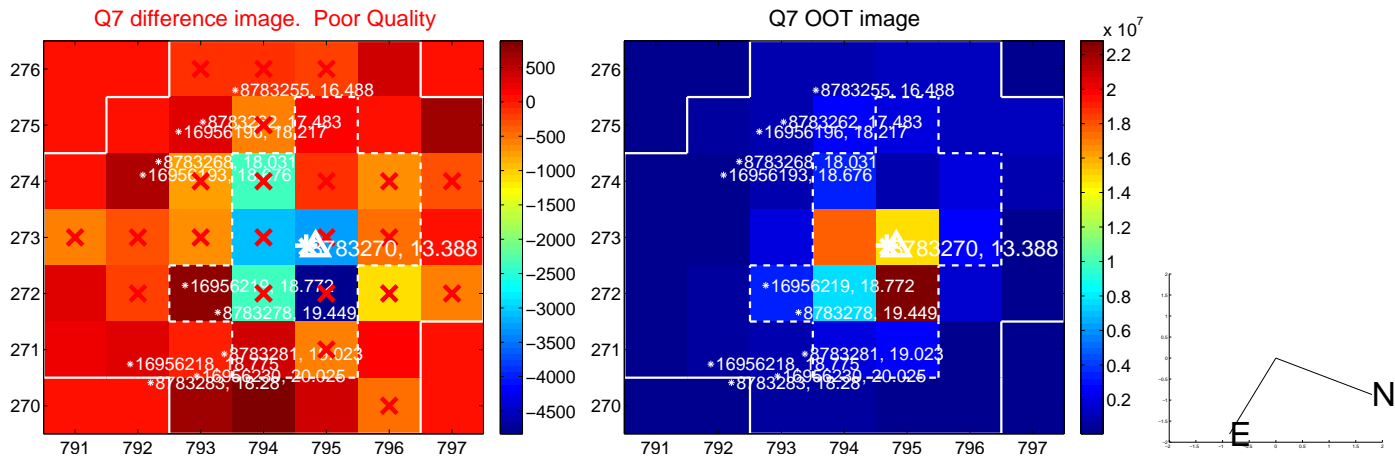
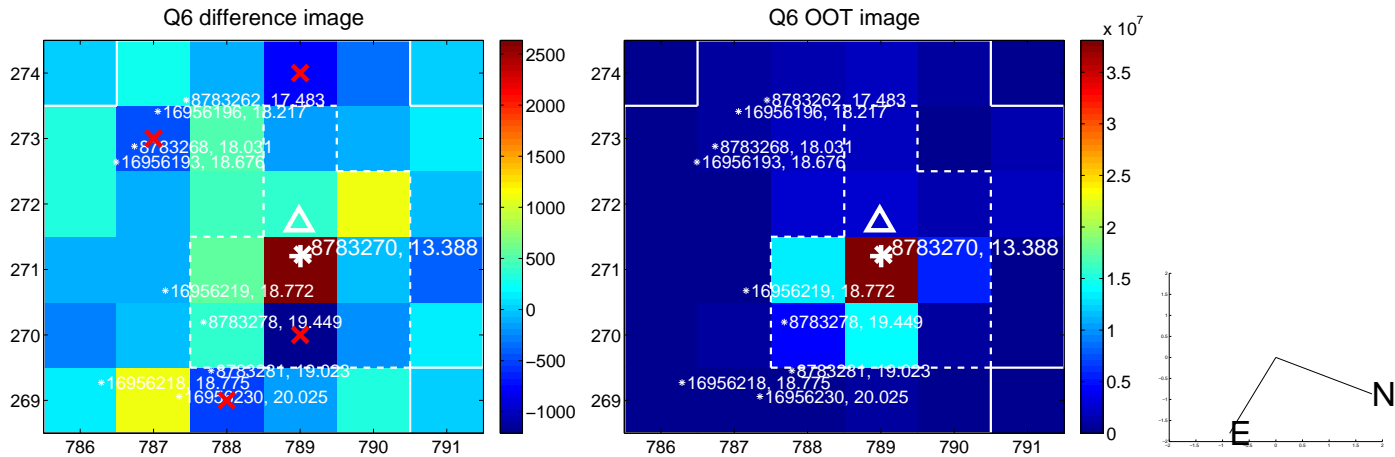
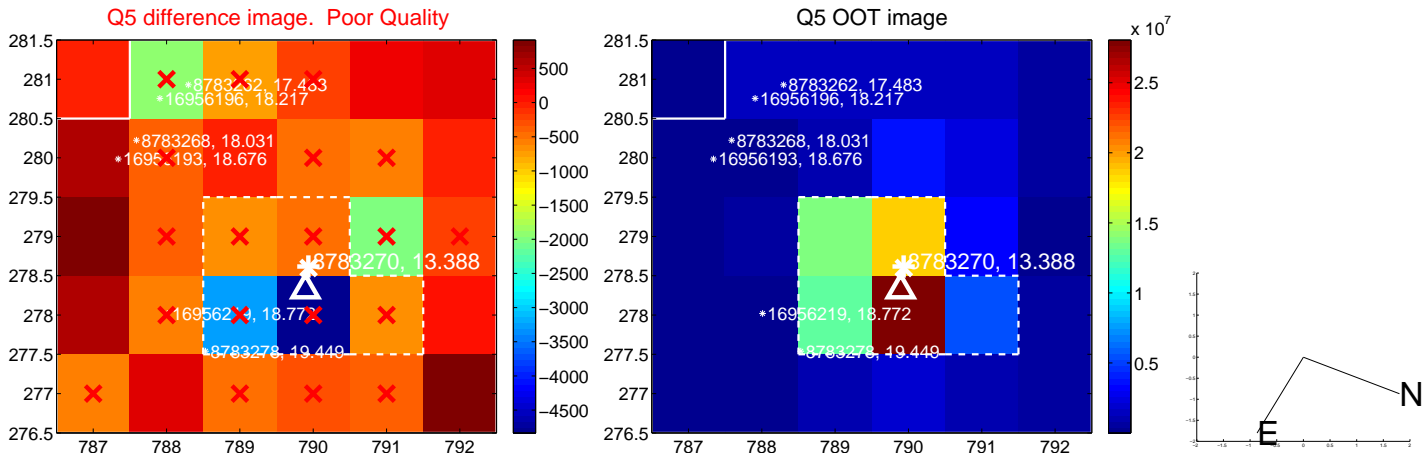
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



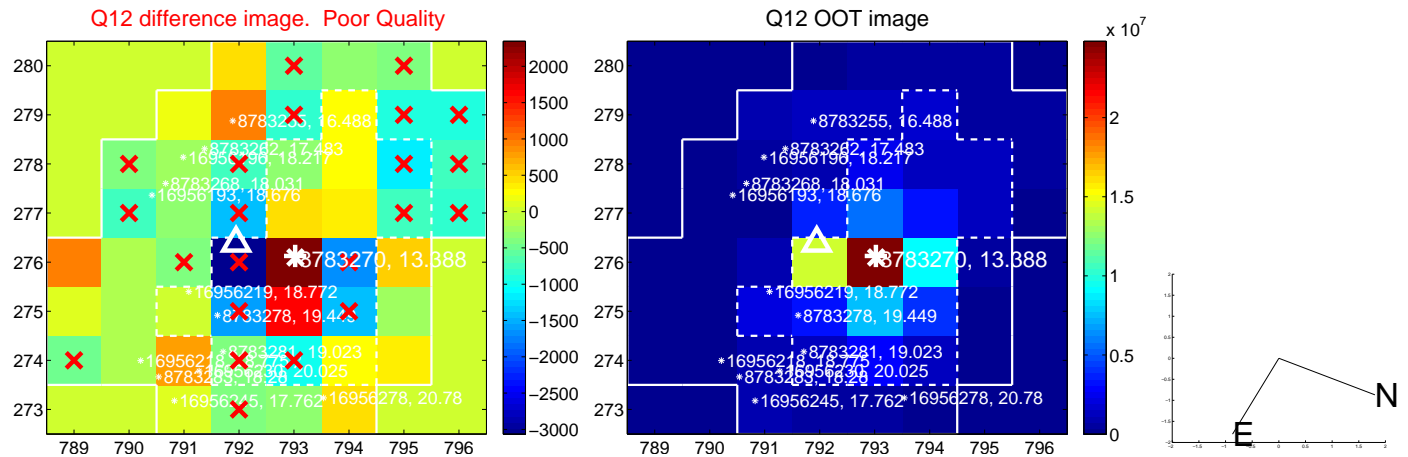
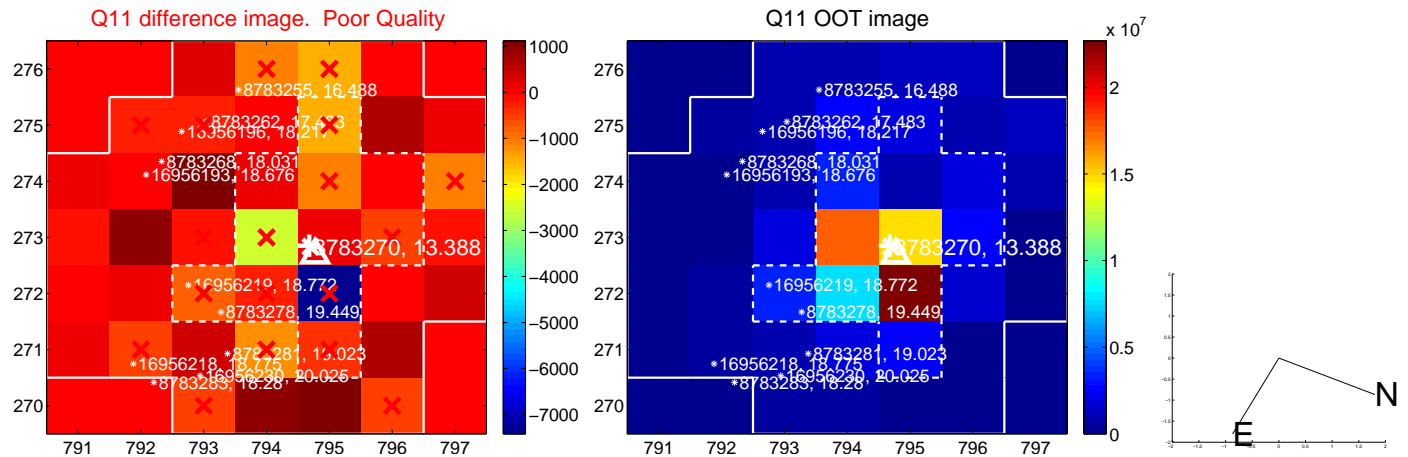
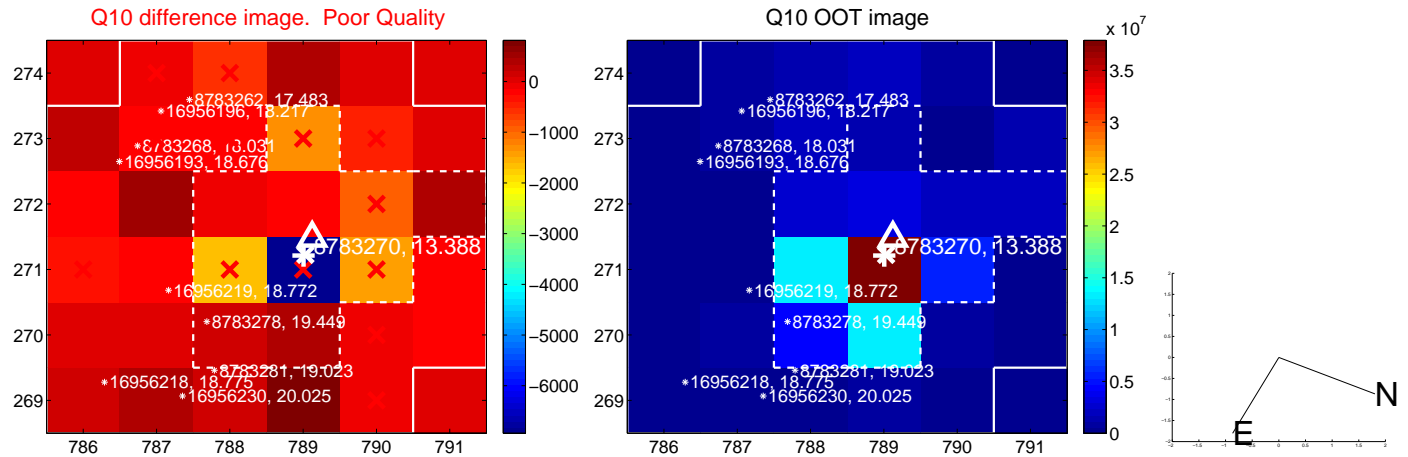
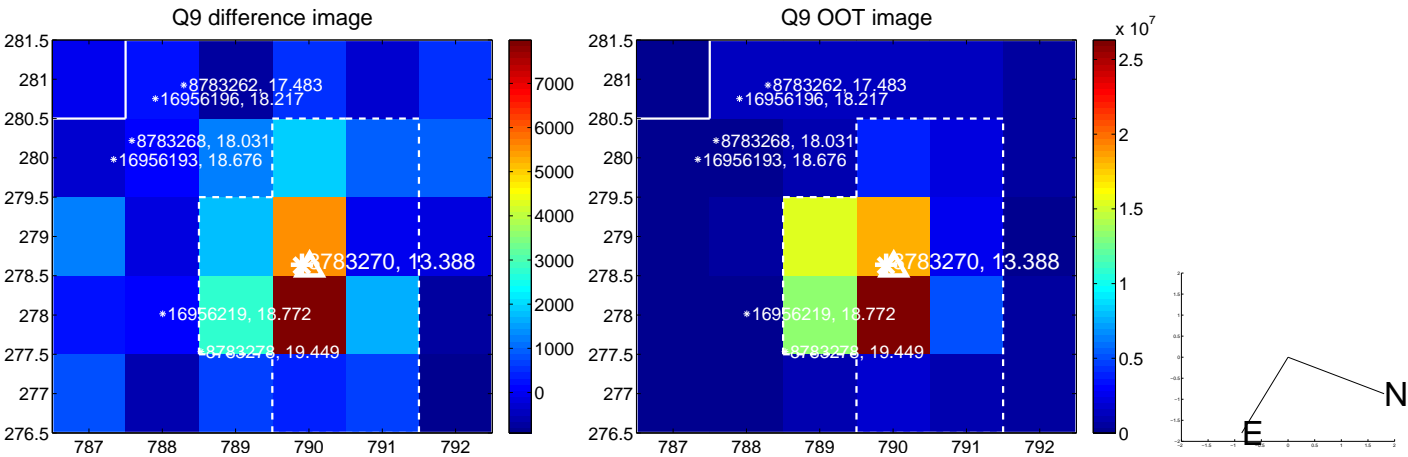
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



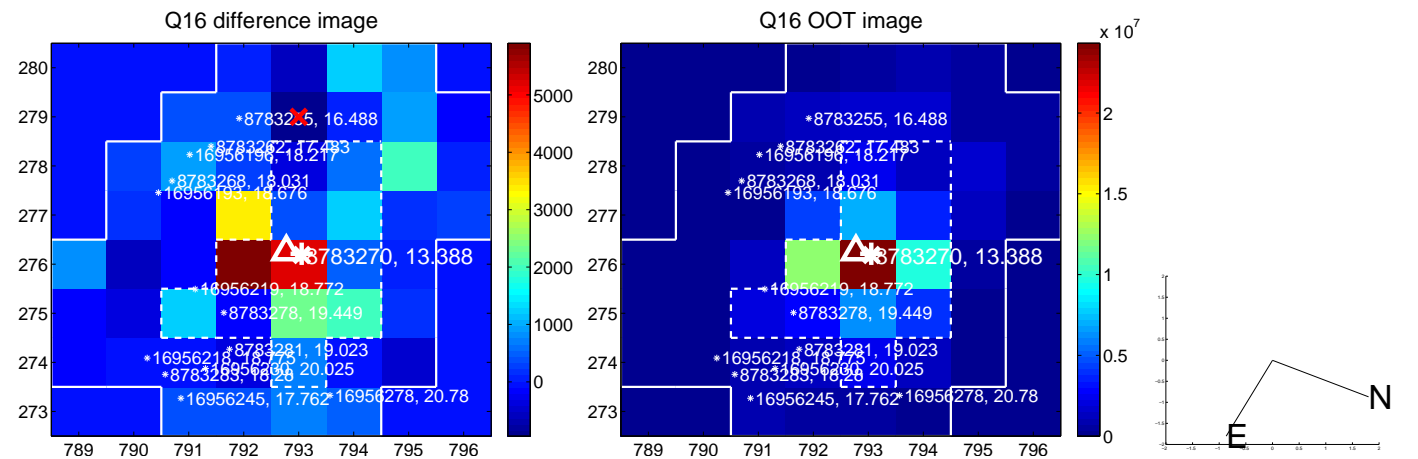
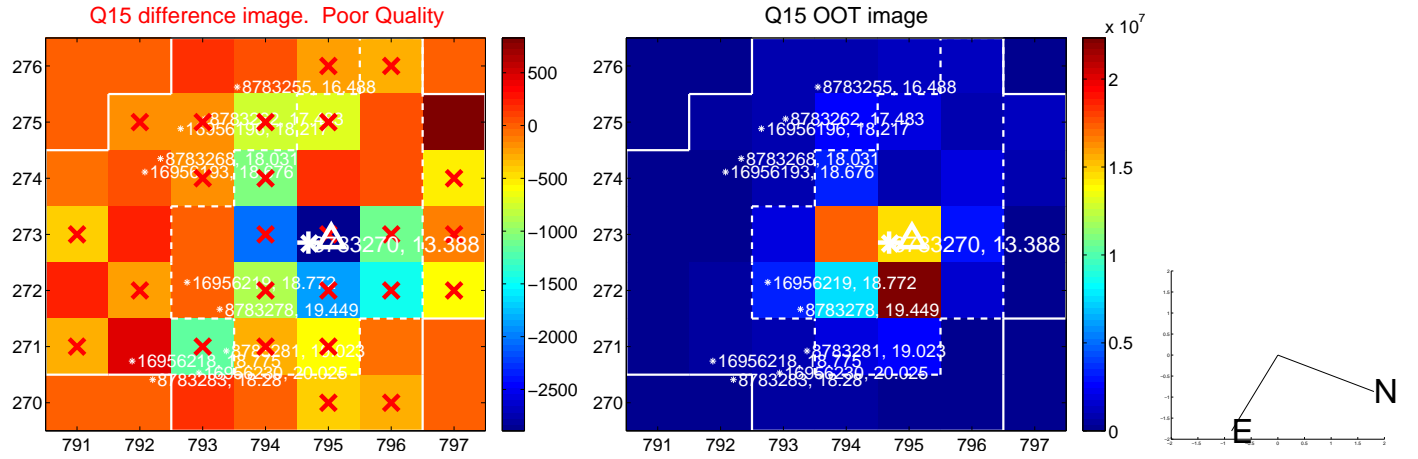
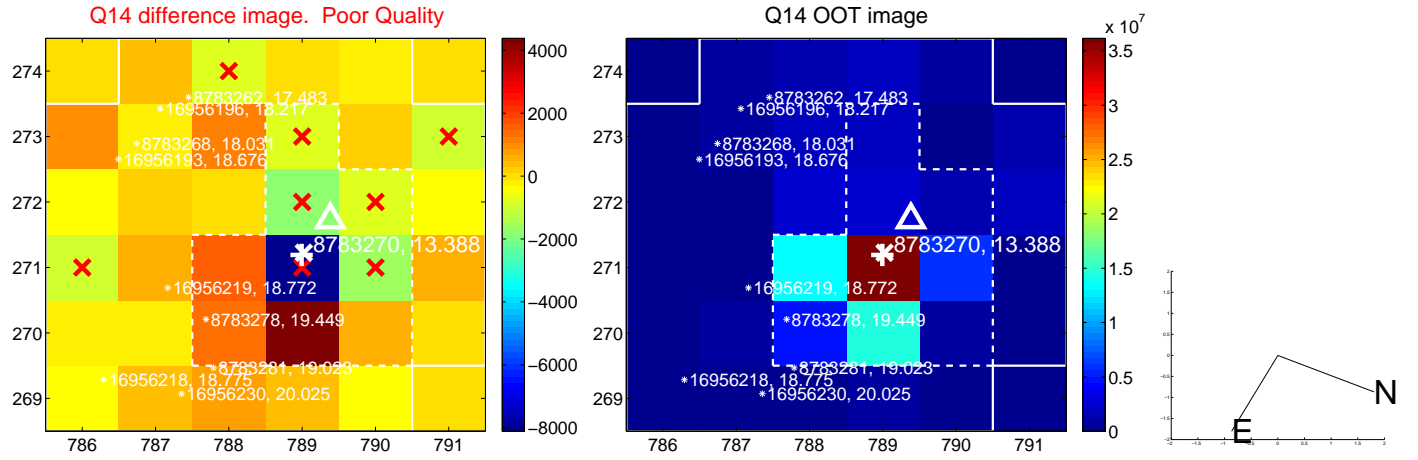
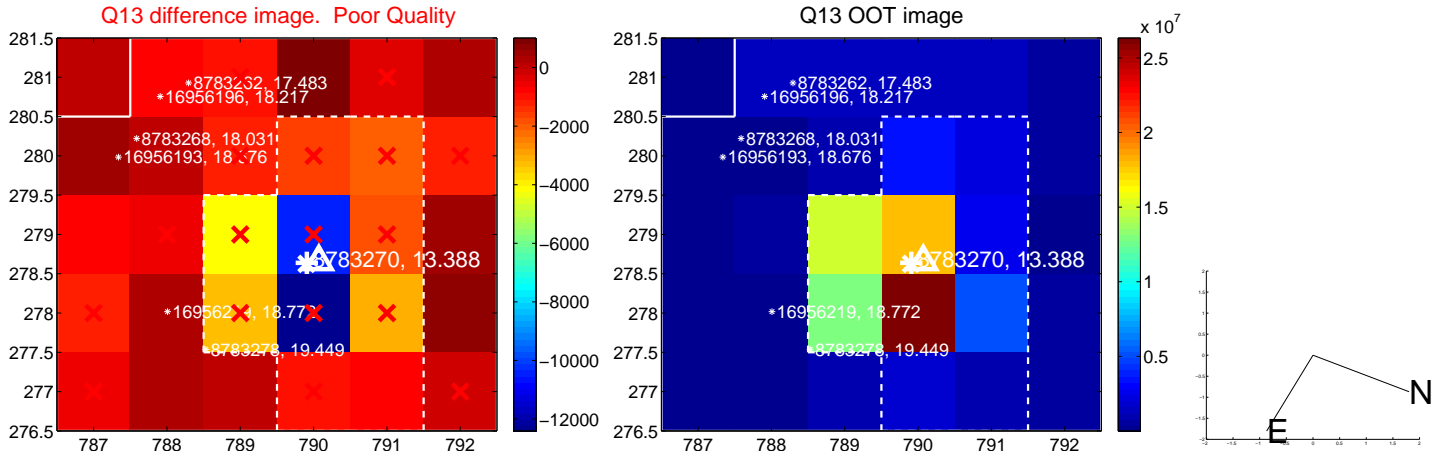
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



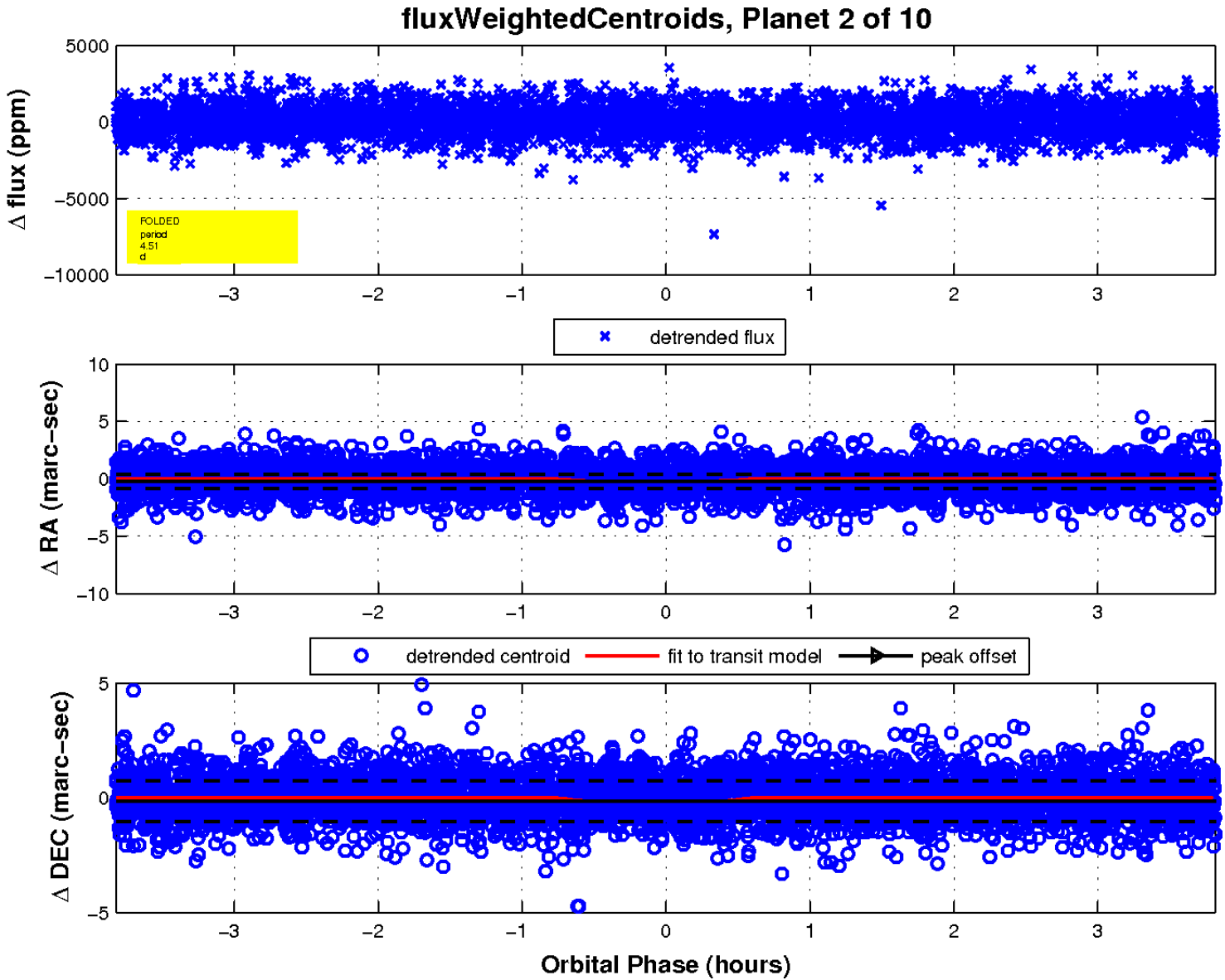
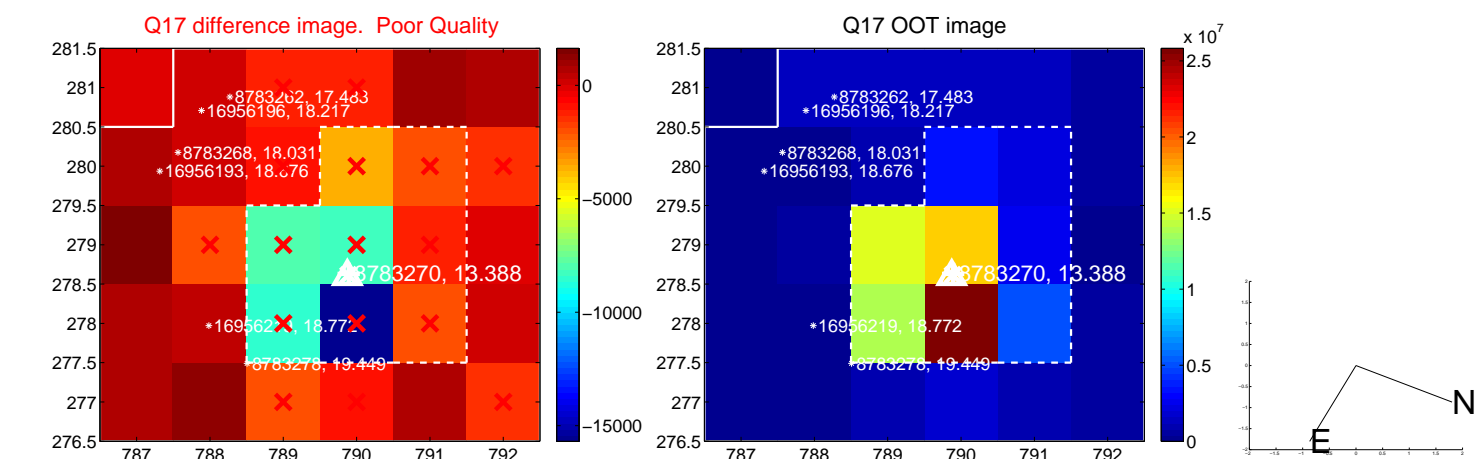
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



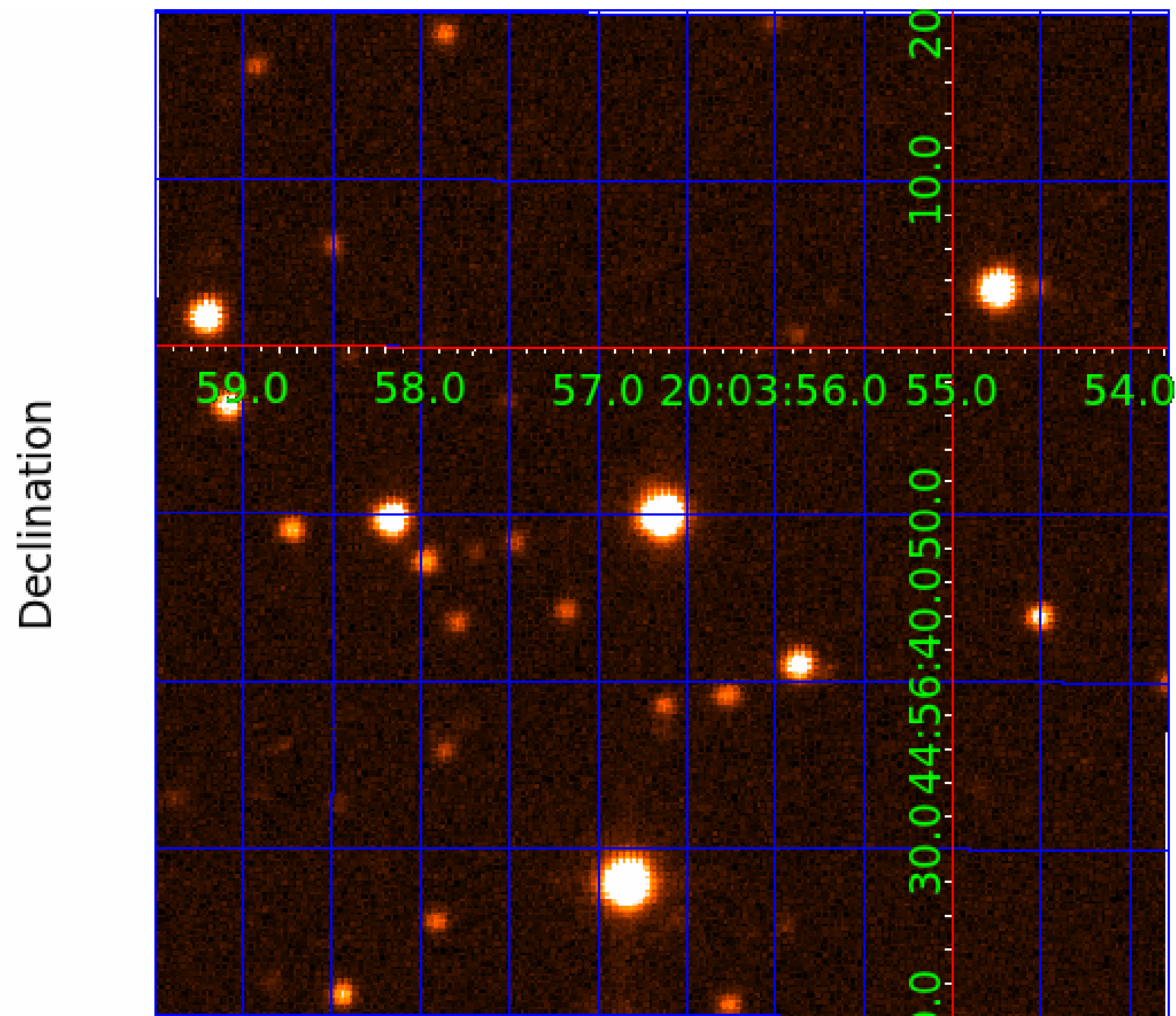
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image





# KIC 008783270

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008783270-01	OBS	No	0.519352	131.609633	77.2	3.910	15.0	13.0	2.45	7094	2.22	60407.78
008783270-02	OBS	No	4.505537	133.517654	691.1	1.274	12.3	10.2	2.45	7094	6.57	3388.81
008783270-03	OBS	No	6.986826	132.625777	665.5	2.000	13.1	-1.0	2.45	7094	6.42	1888.00
008783270-04	OBS	No	8.258431	139.501621	930.3	1.500	14.2	-1.0	2.45	7094	7.60	1510.70
008783270-05	OBS	No	19.737546	144.223497	644.1	1.500	13.9	-1.0	2.45	7094	6.32	472.77
008783270-06	OBS	No	3.577228	133.596172	487.7	2.372	14.1	11.2	2.45	7094	5.54	4609.42
008783270-07	OBS	No	7.824958	139.131252	1052.0	2.203	11.4	18.5	2.45	7094	8.09	1623.30
008783270-08	OBS	No	6.005497	133.207915	1459.7	1.374	13.0	19.8	2.45	7094	9.53	2310.17
008783270-09	OBS	No	6.216187	132.163758	1887.3	0.529	12.1	18.0	2.45	7094	13.61	2206.36
008783270-10	OBS	No	8.919382	136.025778	332.3	3.000	7.9	-1.0	2.45	7094	4.53	1363.31

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008783270-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_MEAS
008783270-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
008783270-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
008783270-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
008783270-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
008783270-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
008783270-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS

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

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

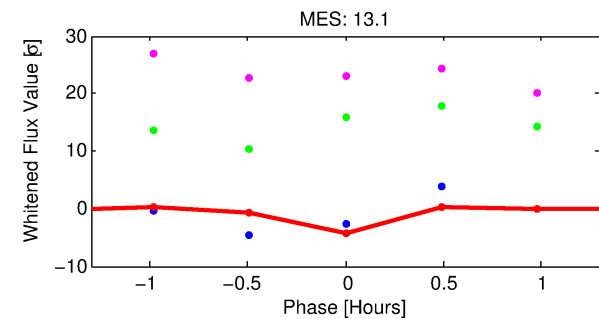
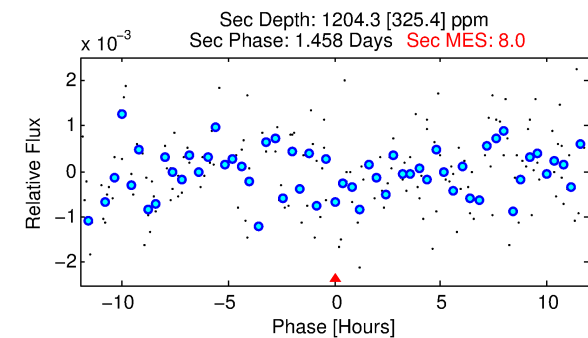
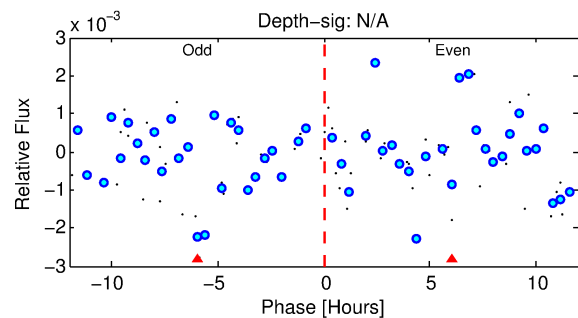
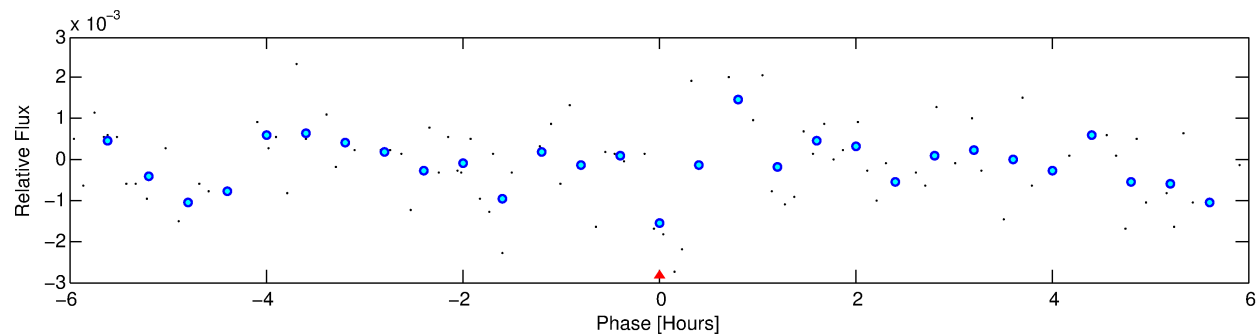
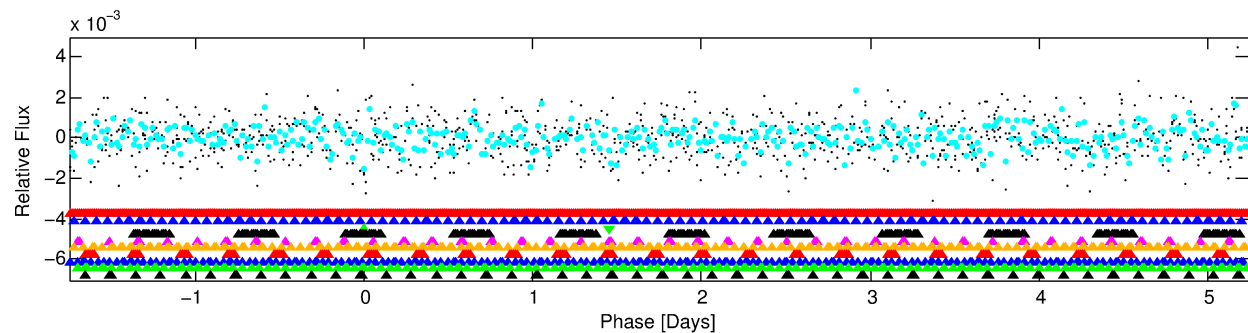
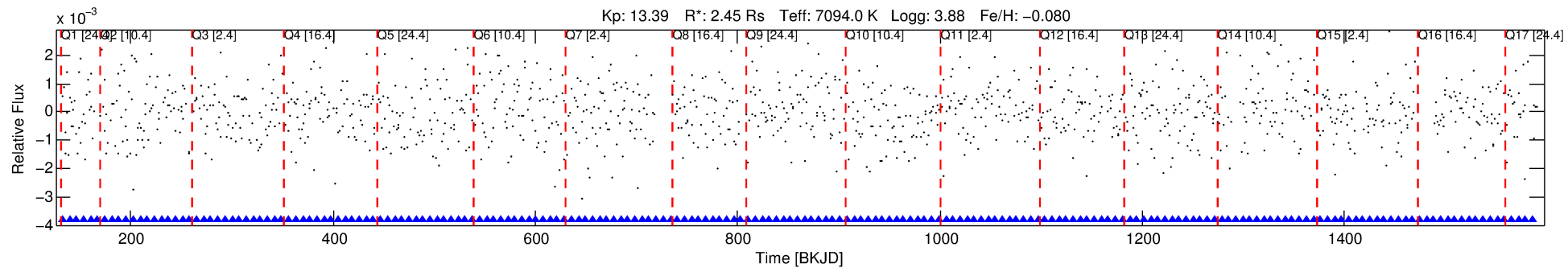
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008783270-03

No Significant Match Found

# DV One-Page Summary

KIC: 8783270 Candidate: 3 of 10 Period: 6.987 d



## TPS TCE Results:

Period = 6.98683 d  
Epoch = 132.6258 BKJD

DV fit results are unavailable

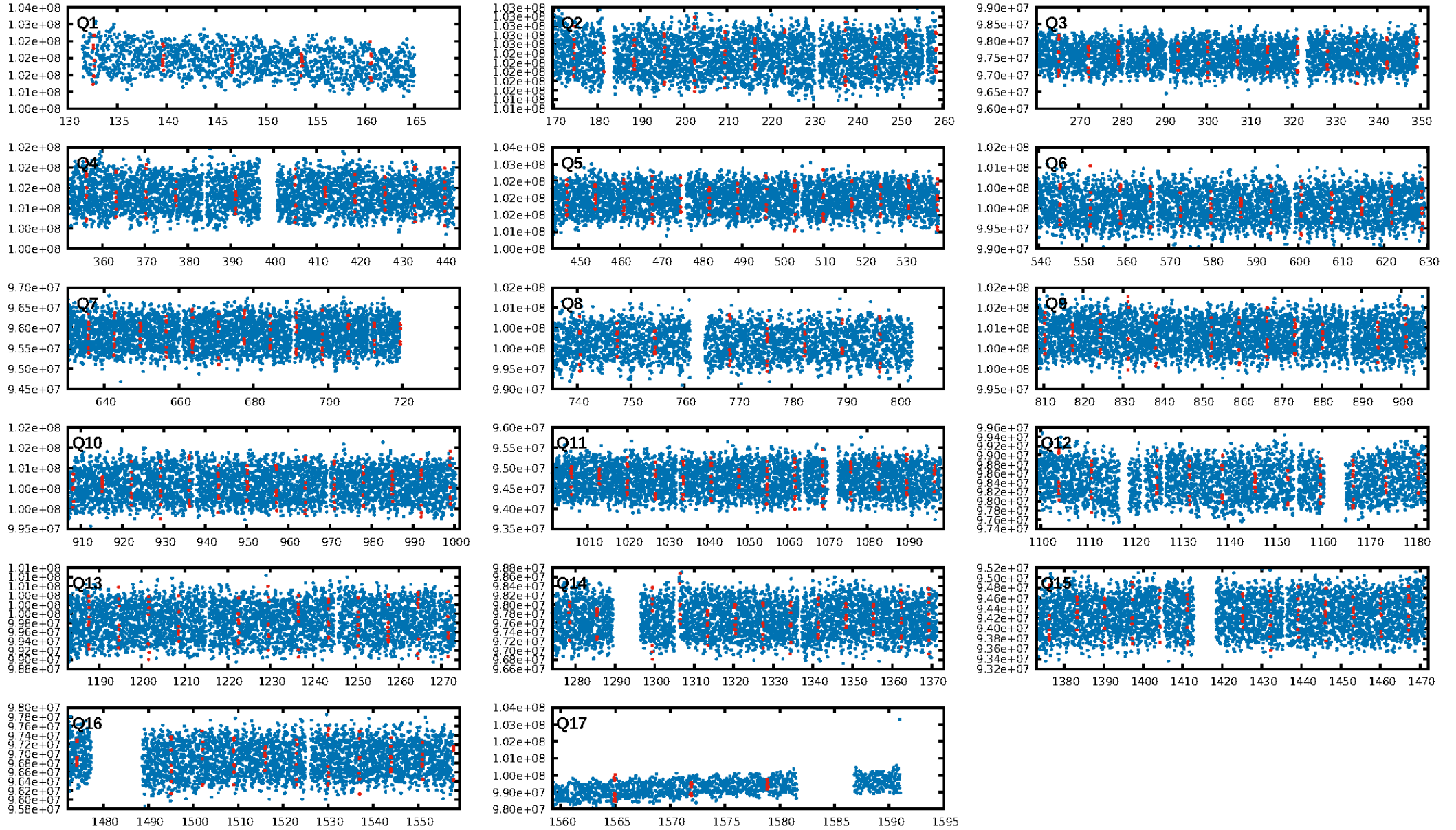
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [8.94σ]  
LongPeriod-sig: 100.0% [6.76σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGoF-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: N/A  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0 [0]  
KicOffset-st: 0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: N/A

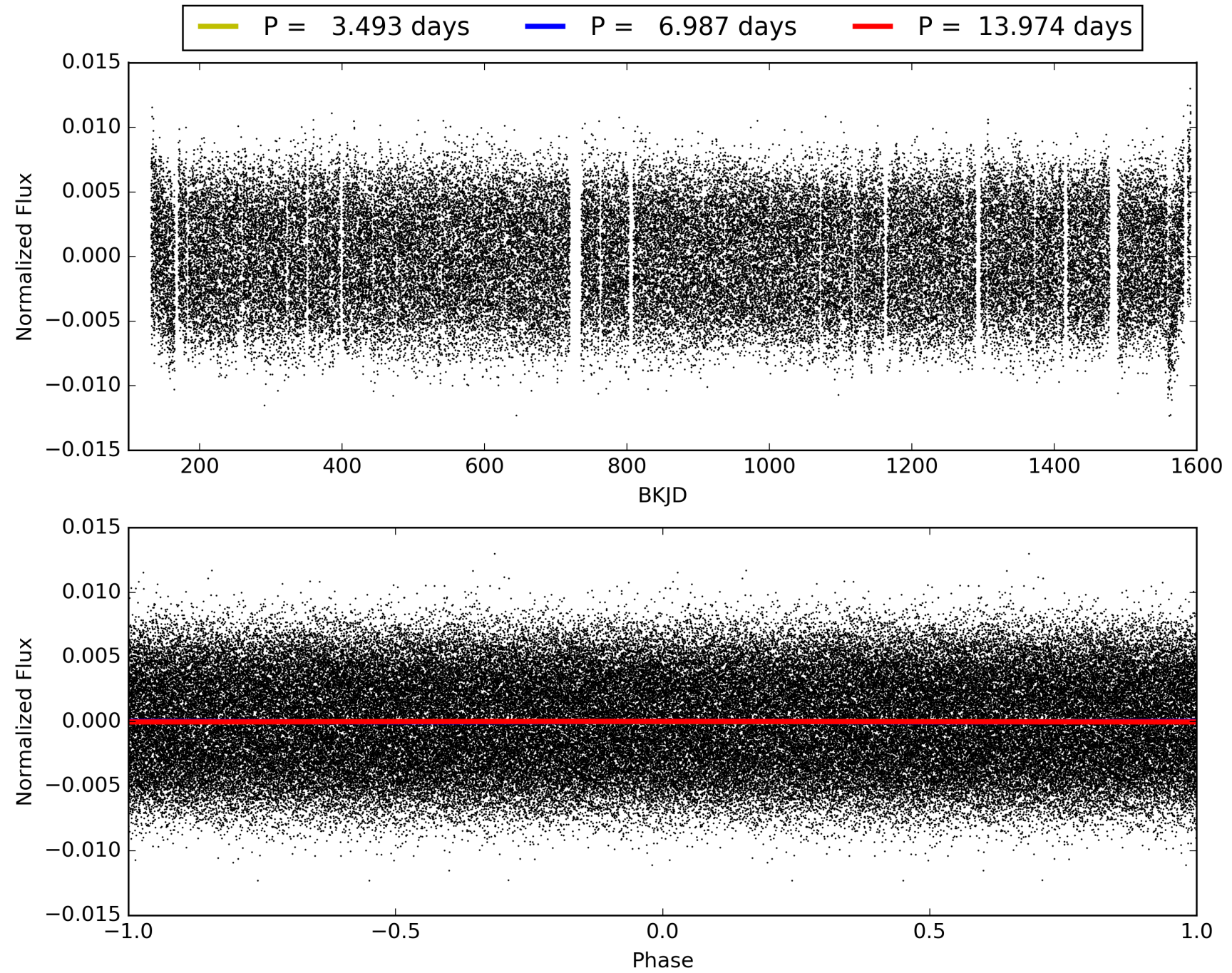
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:22:26 Z

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

# TCE 008783270-03, PDC Light Curves

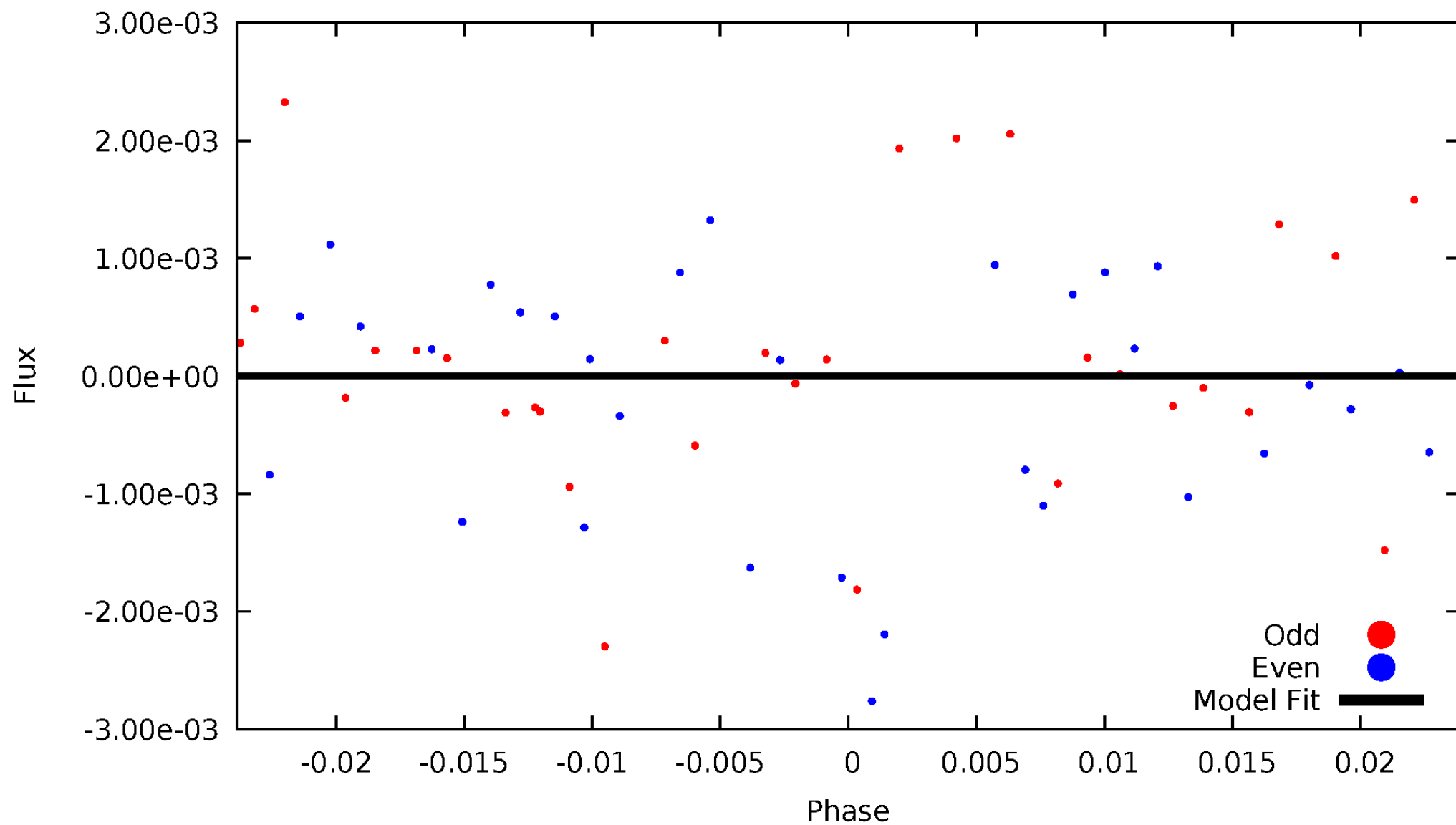


TCE 008783270-03



# DV Odd/Even

TCE 008783270-03





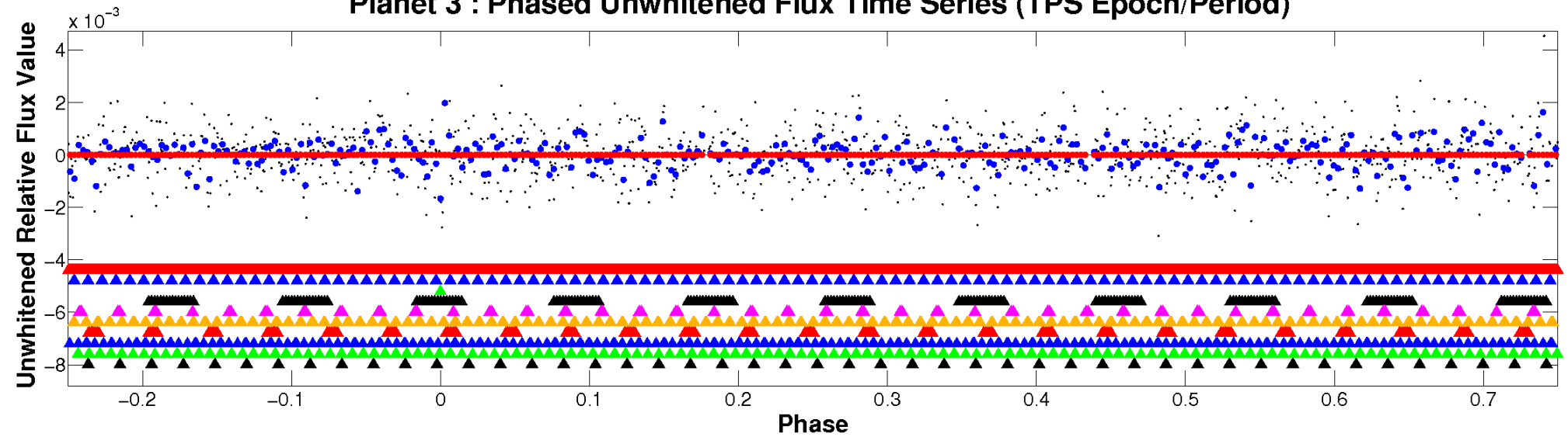


ALT Odd/Even

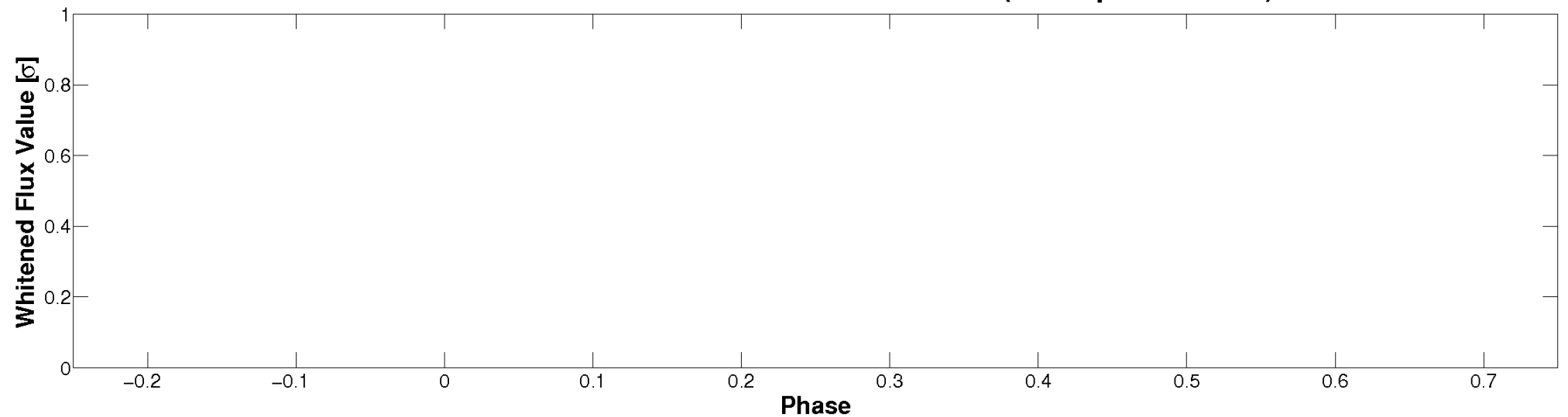
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

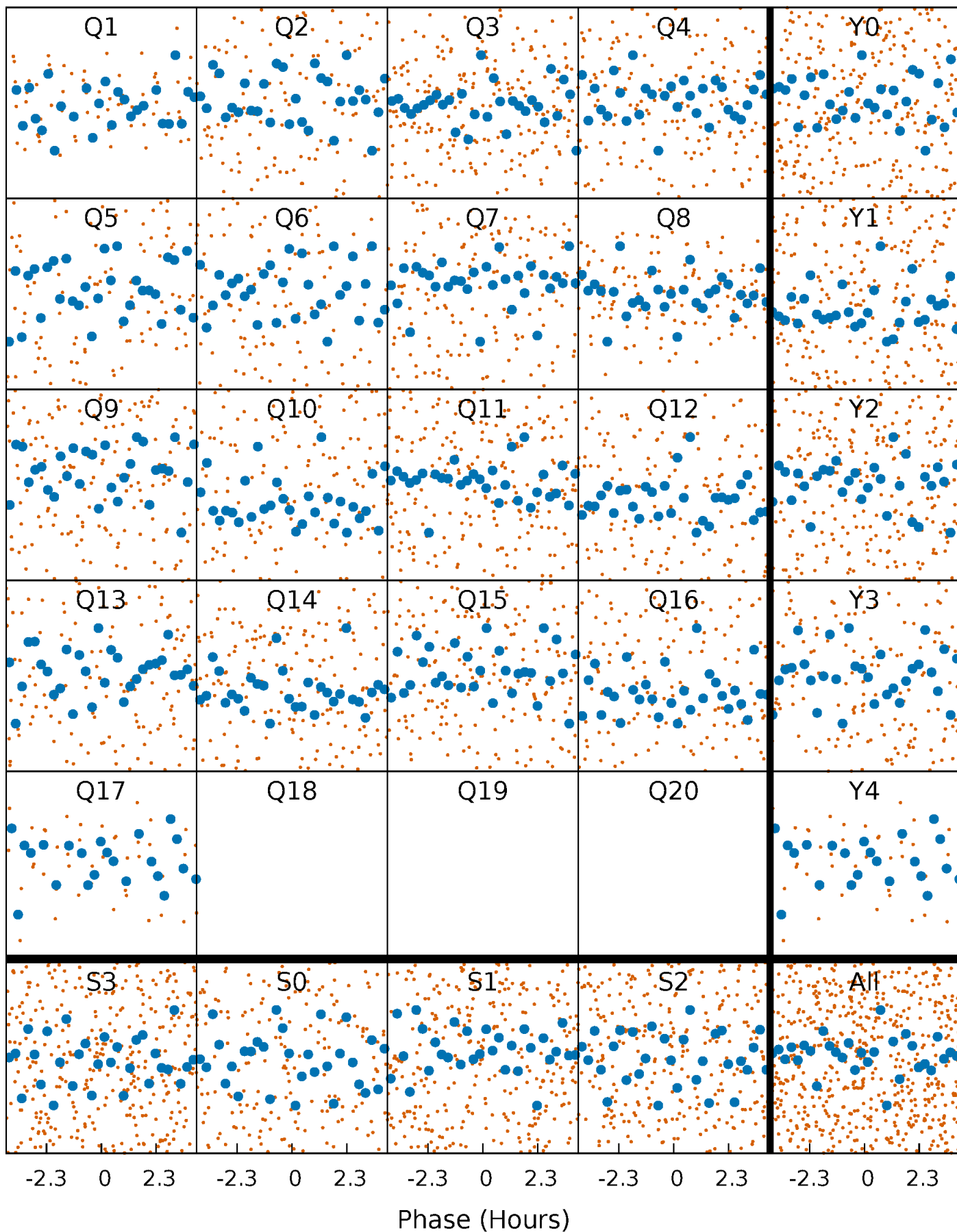


**Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



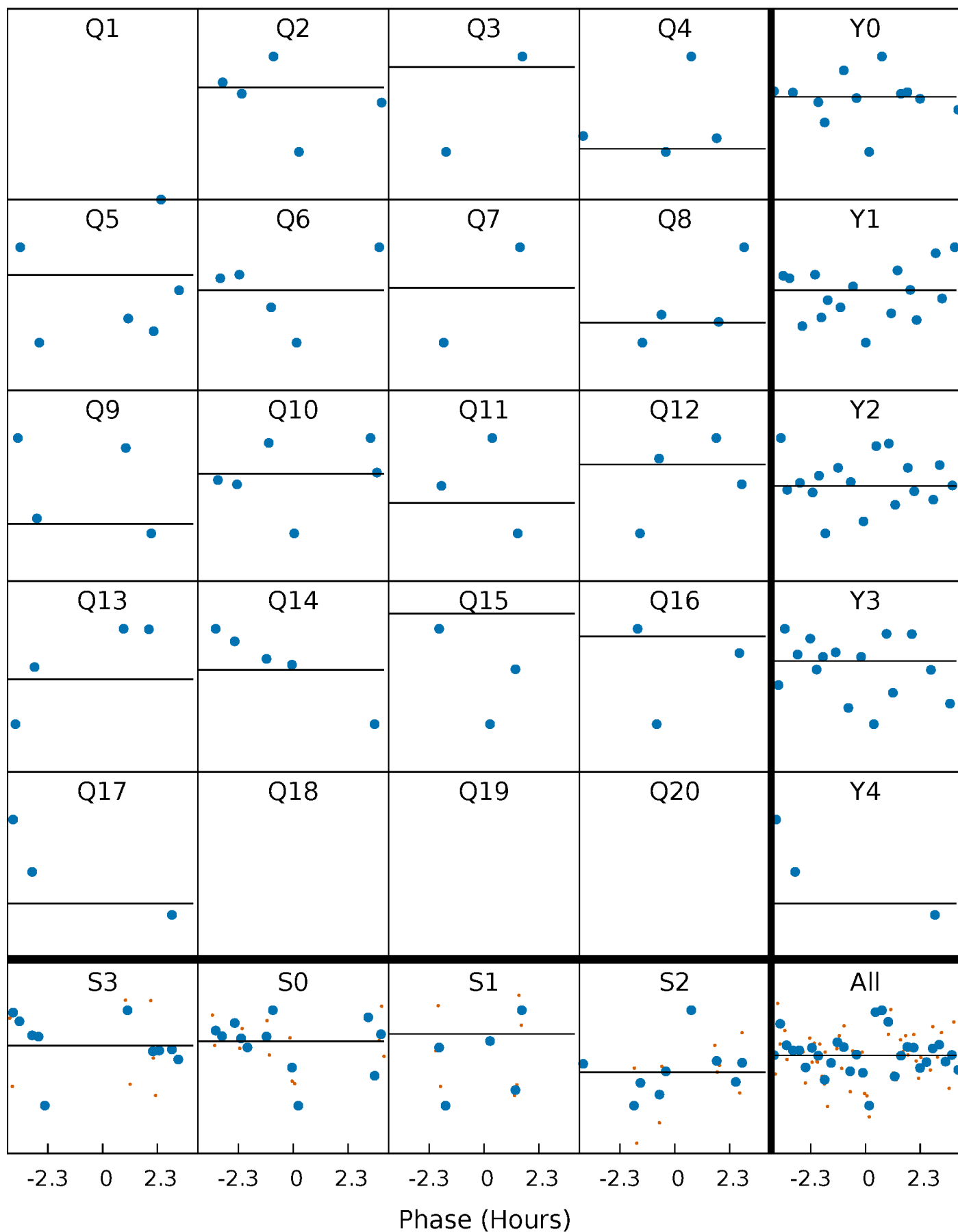
# PDC Quarter-Phased Transit Curves

TCE 008783270-03 P= 6.986826 Days  $T_0=132.625777$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 008783270-03     $P = 6.986826$  Days     $T_0 = 132.625777$  (BKJD)

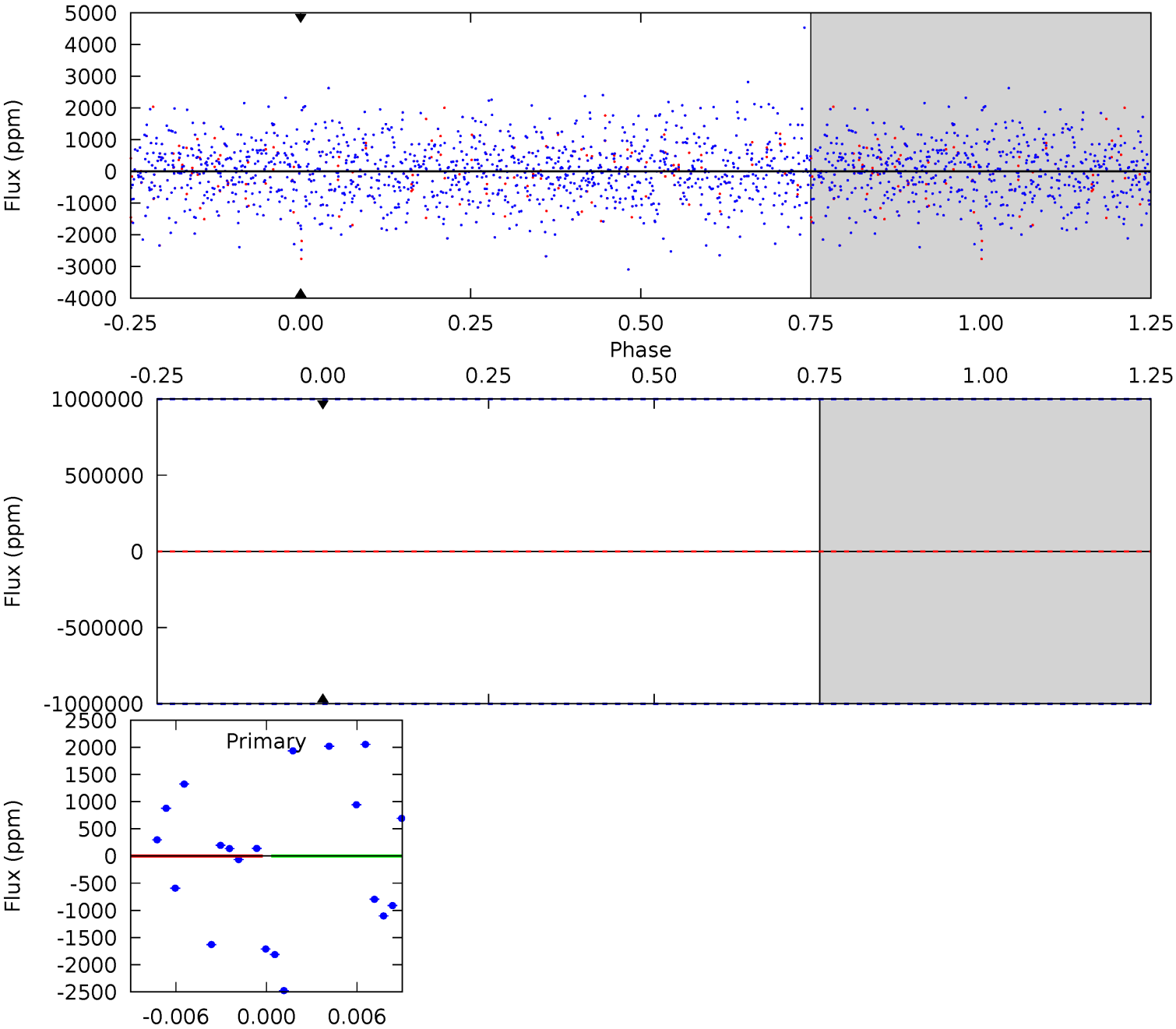


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

008783270-03, P = 6.986826 Days, E = 125.638951 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

This plot does not exist for this TCE.

### Stellar Parameters For KIC 008783270

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7094^{+225}_{-338}$	$3.884^{+0.345}_{-0.138}$	$-0.080^{+0.250}_{-0.350}$	$2.454^{+0.539}_{-1.001}$	$1.682^{+0.165}_{-0.385}$	$0.160^{+0.427}_{-0.063}$
	+3%/-5%	+9%/-4%	+312%/-438%	+22%/-41%	+10%/-23%	+266%/-40%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 008783270-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$19.32^{+19.92}_{-12.34}$	$2297^{+182}_{-230}$	$5057^{+26531}_{-31204}$	$11^{+2063}_{-1434}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

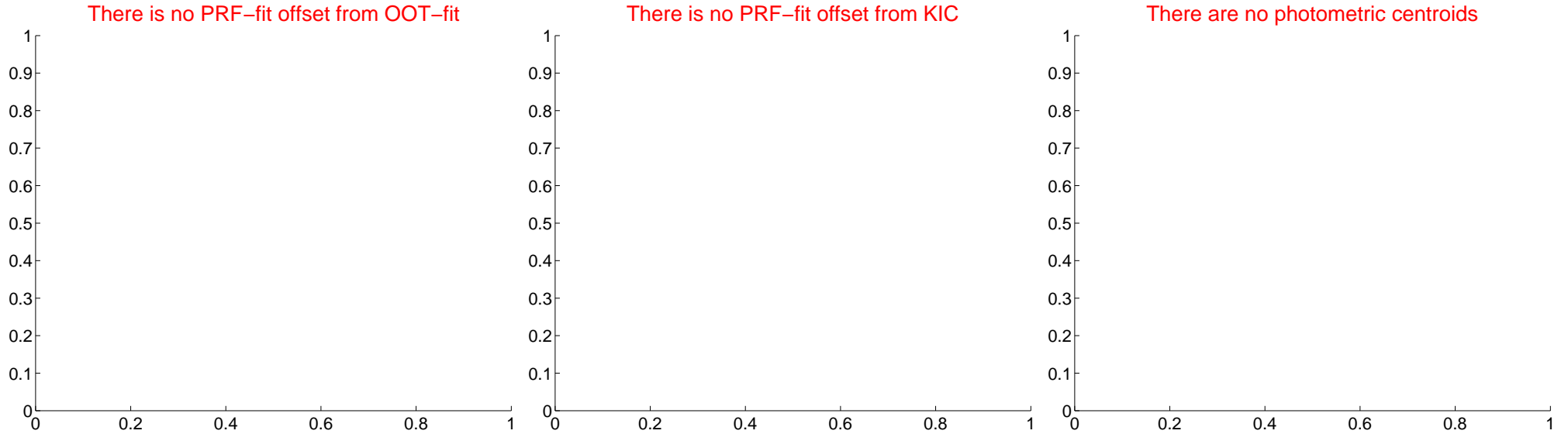
## DV Centroid Data

Supplemental centroid analysis for 008783270-03. Kepler magnitude: 13.39. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

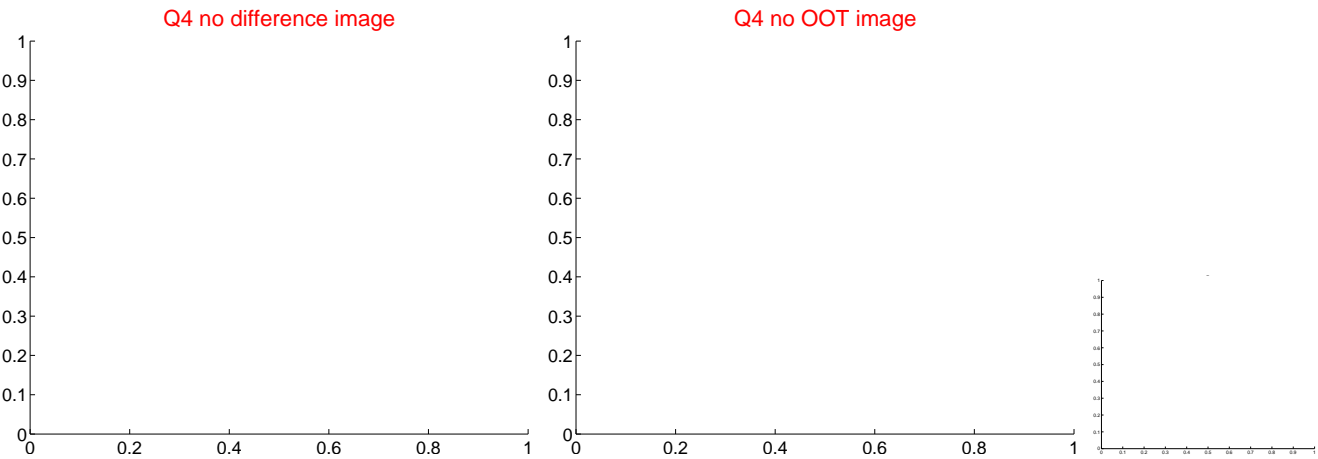
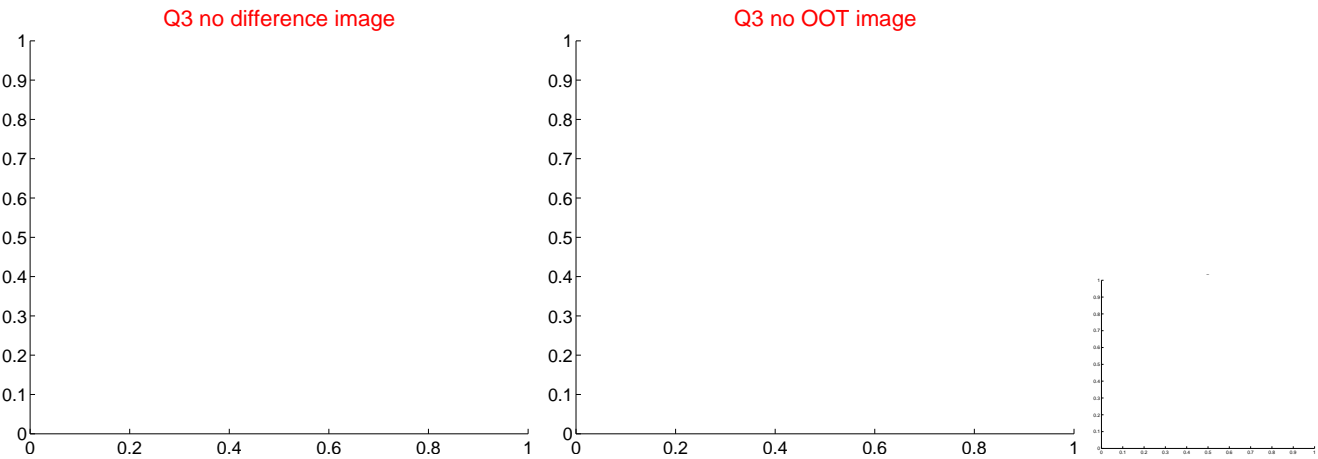
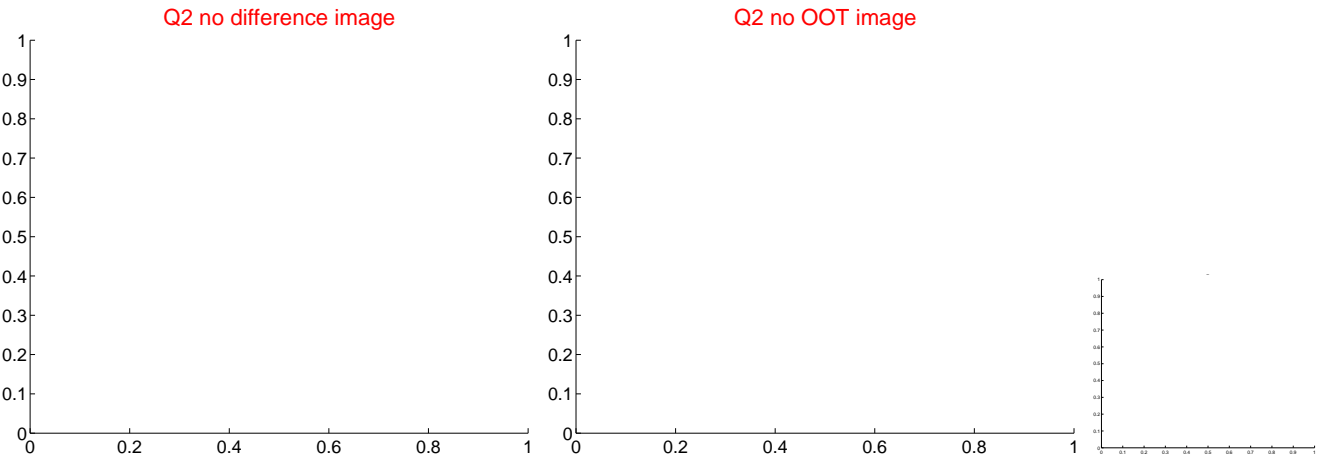
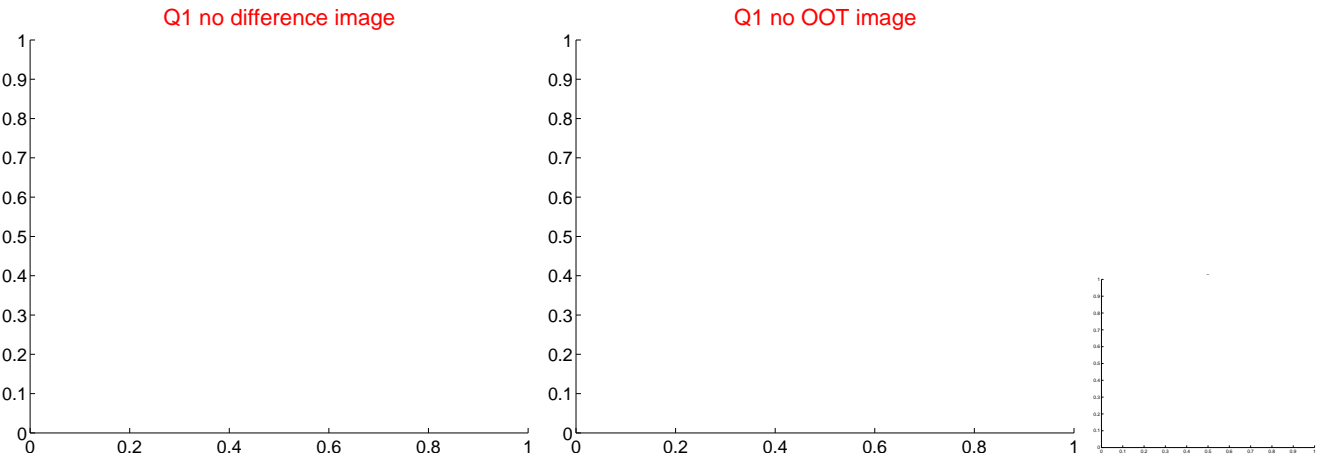
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	—	—	—	—



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.

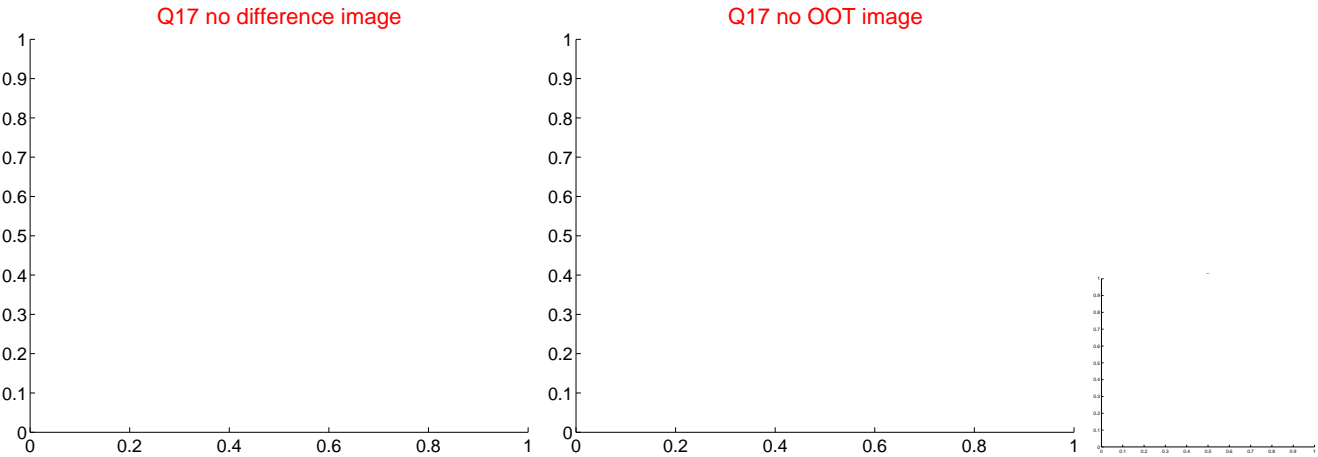




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

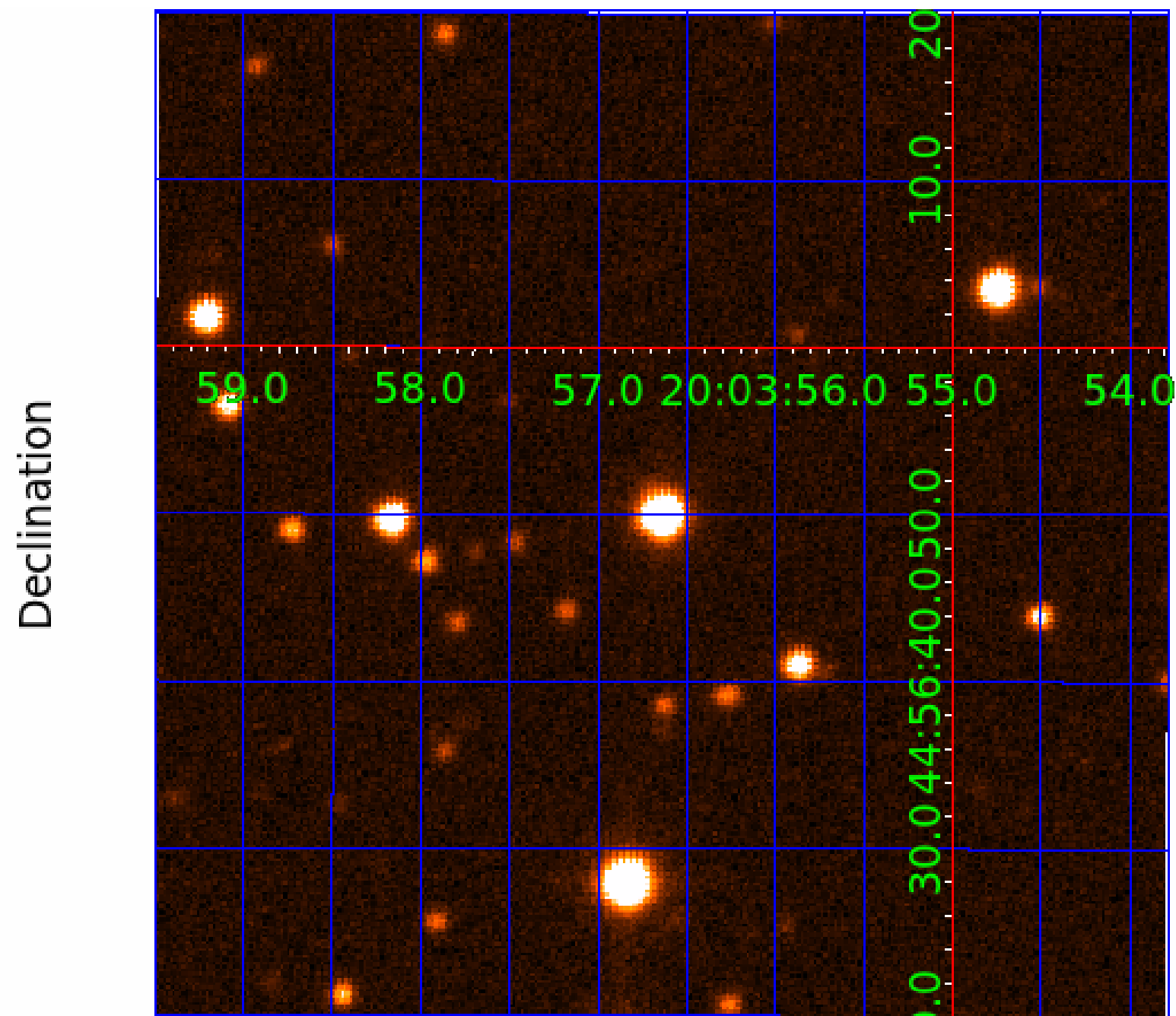


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image



# KIC 008783270

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008783270-01	OBS	No	0.519352	131.609633	77.2	3.910	15.0	13.0	2.45	7094	2.22	60407.78
008783270-02	OBS	No	4.505537	133.517654	691.1	1.274	12.3	10.2	2.45	7094	6.57	3388.81
008783270-03	OBS	No	6.986826	132.625777	665.5	2.000	13.1	-1.0	2.45	7094	6.42	1888.00
008783270-04	OBS	No	8.258431	139.501621	930.3	1.500	14.2	-1.0	2.45	7094	7.60	1510.70
008783270-05	OBS	No	19.737546	144.223497	644.1	1.500	13.9	-1.0	2.45	7094	6.32	472.77
008783270-06	OBS	No	3.577228	133.596172	487.7	2.372	14.1	11.2	2.45	7094	5.54	4609.42
008783270-07	OBS	No	7.824958	139.131252	1052.0	2.203	11.4	18.5	2.45	7094	8.09	1623.30
008783270-08	OBS	No	6.005497	133.207915	1459.7	1.374	13.0	19.8	2.45	7094	9.53	2310.17
008783270-09	OBS	No	6.216187	132.163758	1887.3	0.529	12.1	18.0	2.45	7094	13.61	2206.36
008783270-10	OBS	No	8.919382	136.025778	332.3	3.000	7.9	-1.0	2.45	7094	4.53	1363.31

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008783270-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_MEAS
008783270-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
008783270-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
008783270-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
008783270-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
008783270-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
008783270-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS

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

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

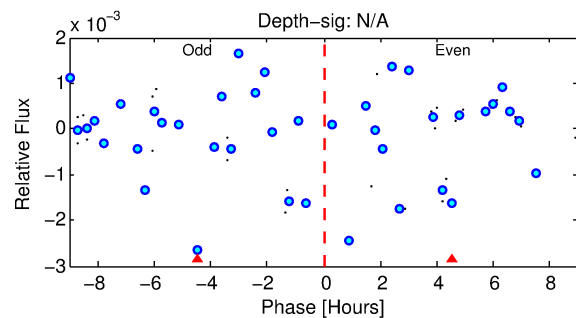
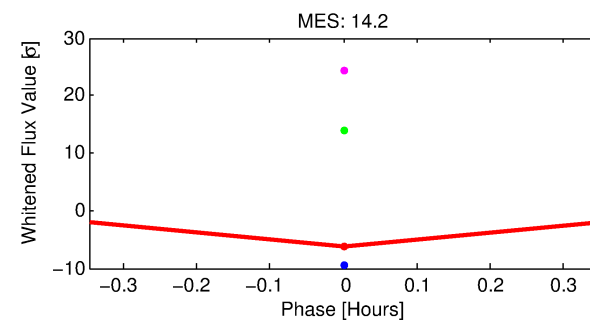
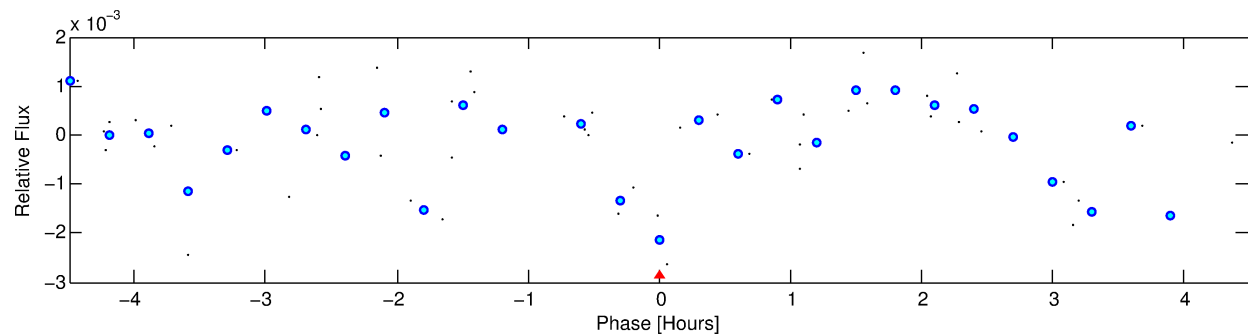
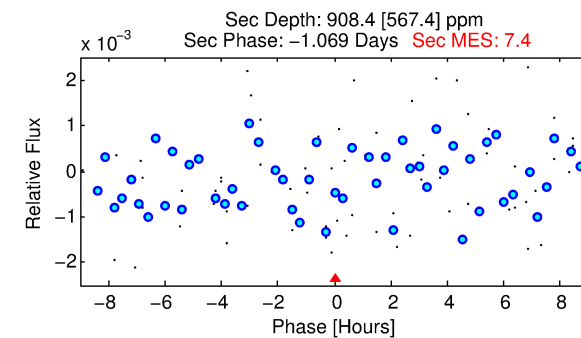
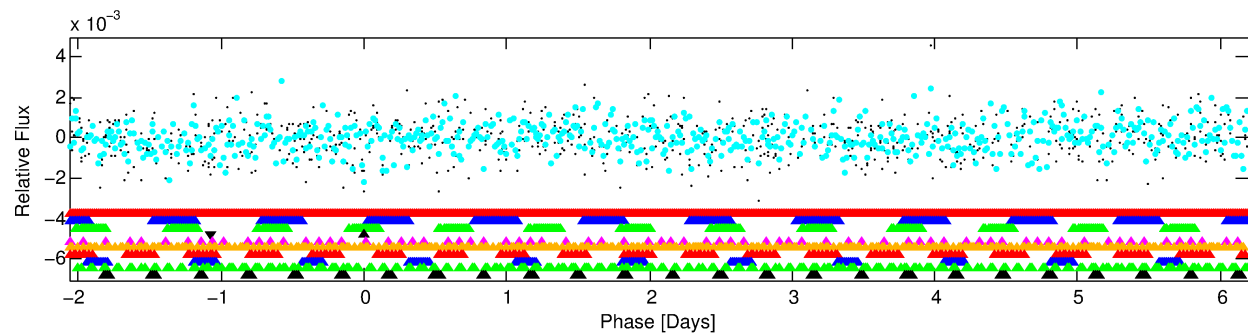
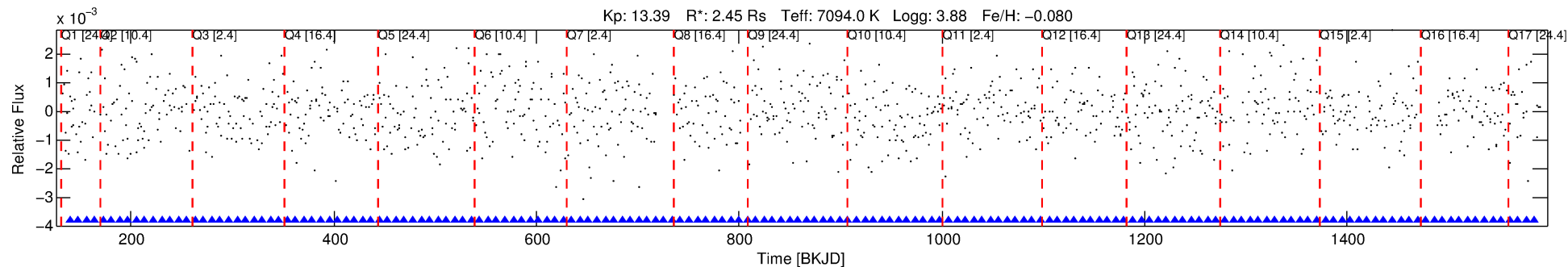
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008783270-04

No Significant Match Found

# DV One-Page Summary

KIC: 8783270 Candidate: 4 of 10 Period: 8.258 d



## TPS TCE Results:

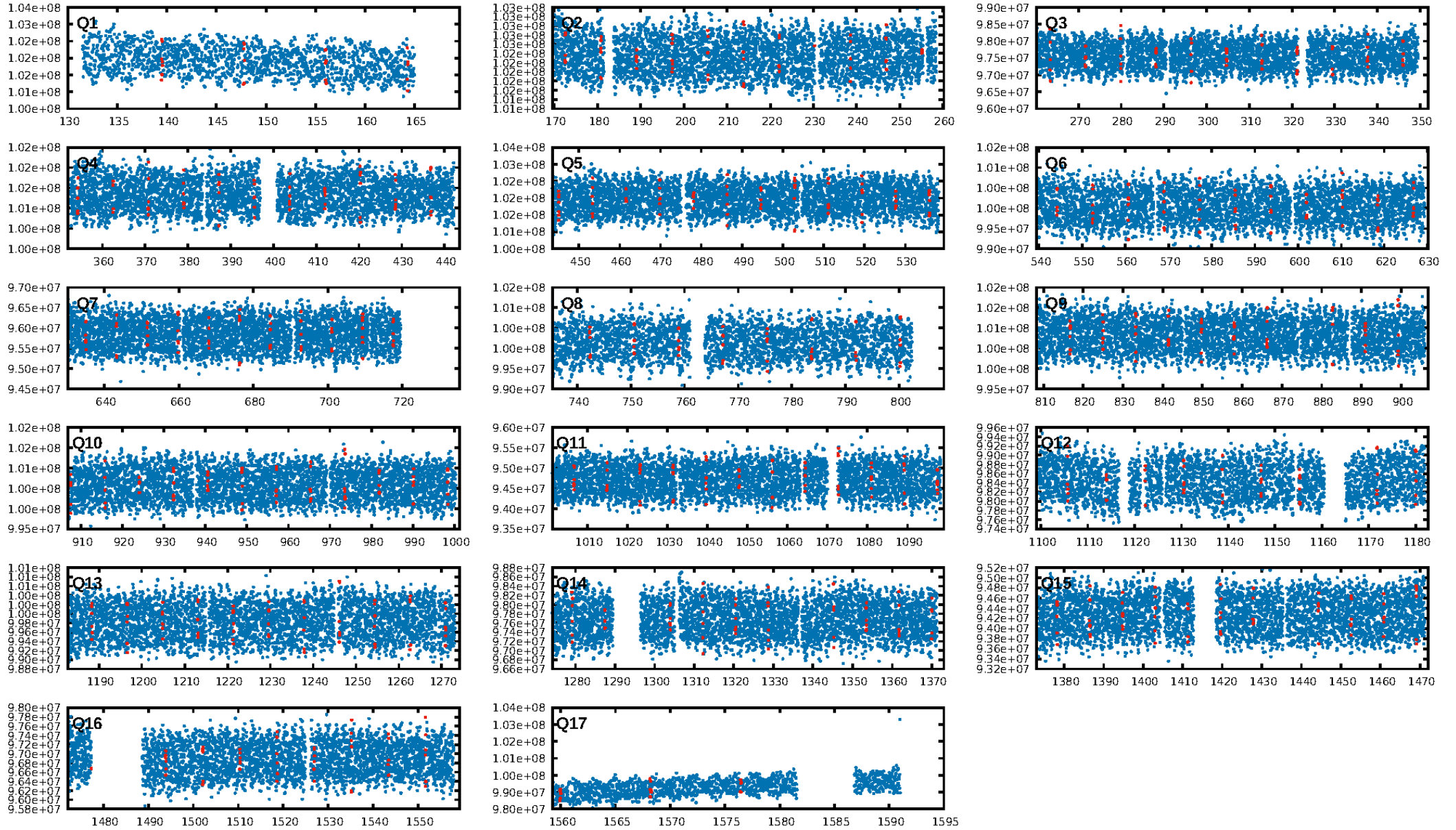
Period = 8.25843 d  
Epoch = 139.5016 BKJD

DV fit results are unavailable

## DV Diagnostic Results:

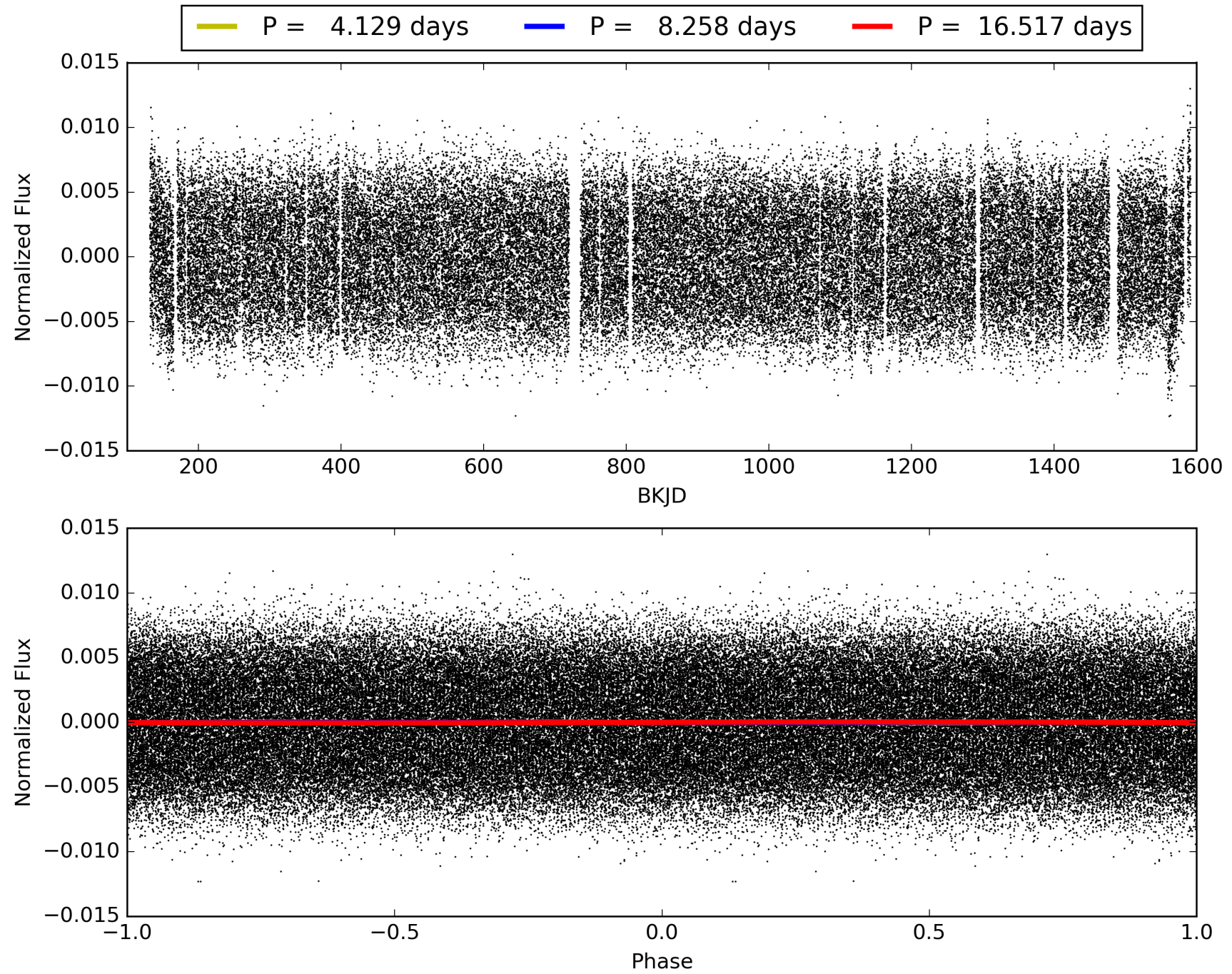
ShortPeriod-sig: 100.0% [3.90σ]  
LongPeriod-sig: 100.0% [4.73σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: N/A  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0/0 [0]  
KicOffset-st: 0/0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: N/A

# TCE 008783270-04, PDC Light Curves





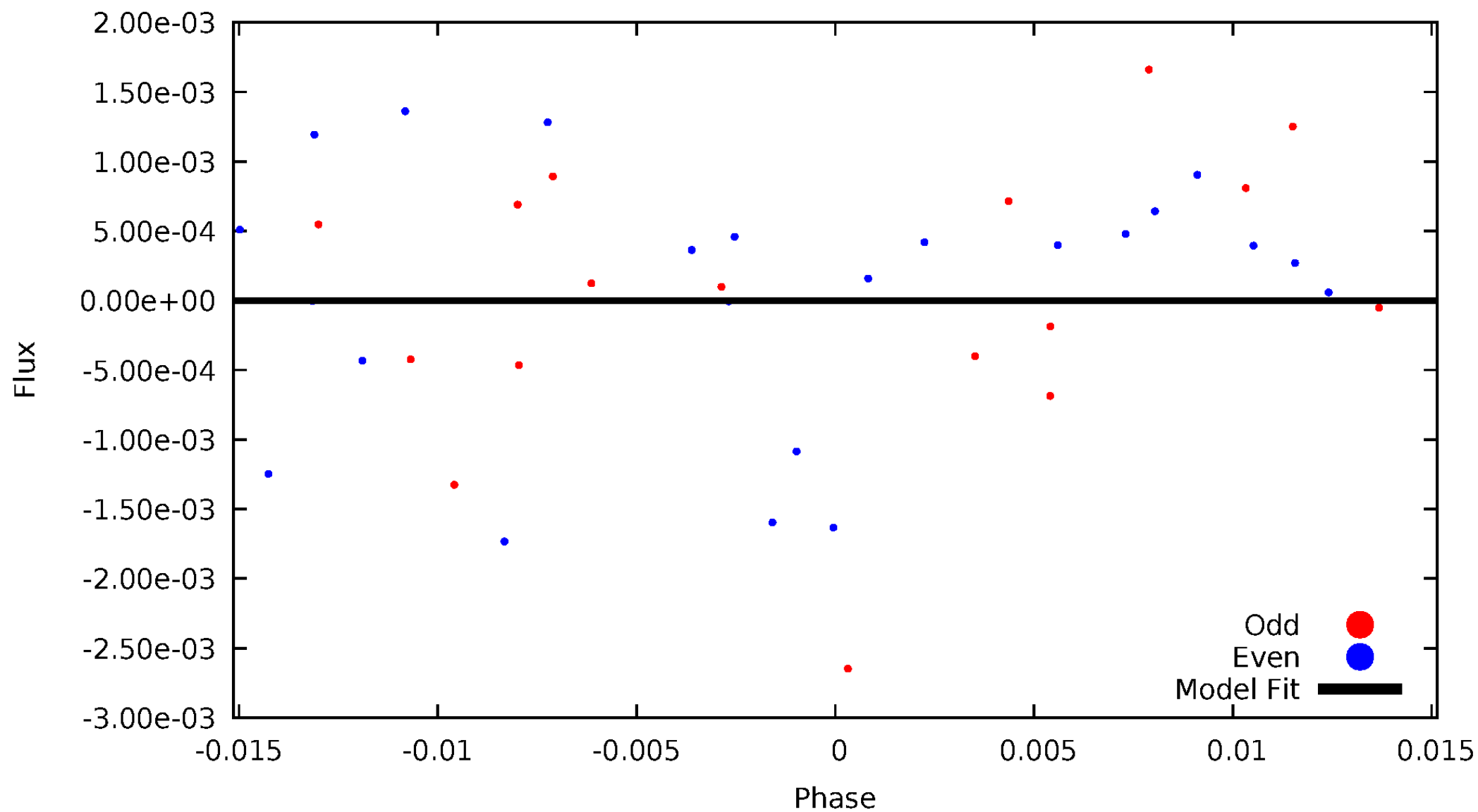
TCE 008783270-04





# DV Odd/Even

TCE 008783270-04



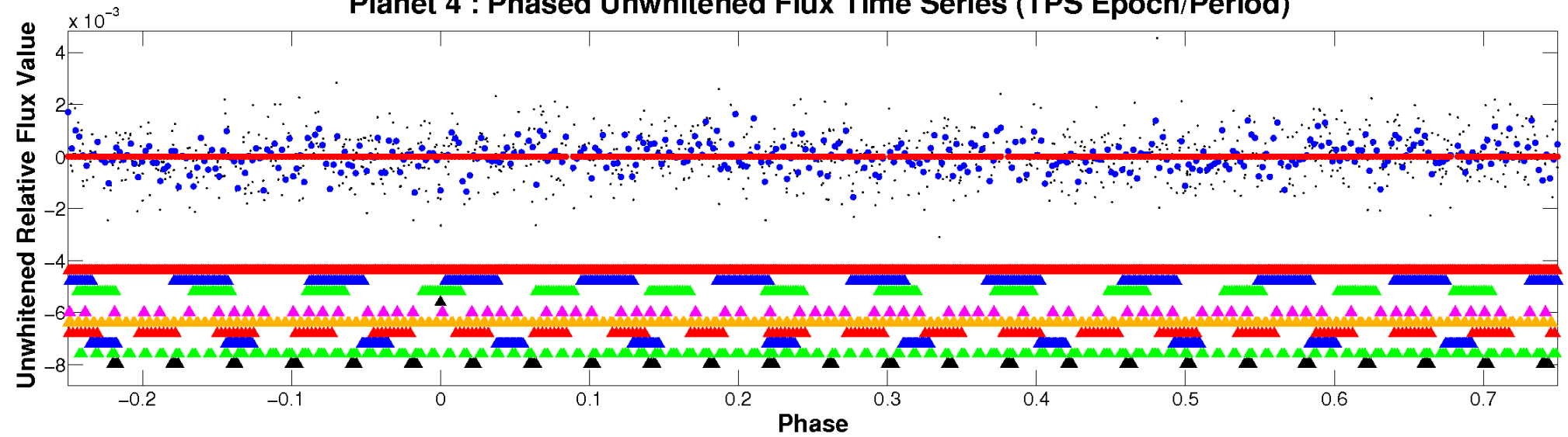


ALT Odd/Even

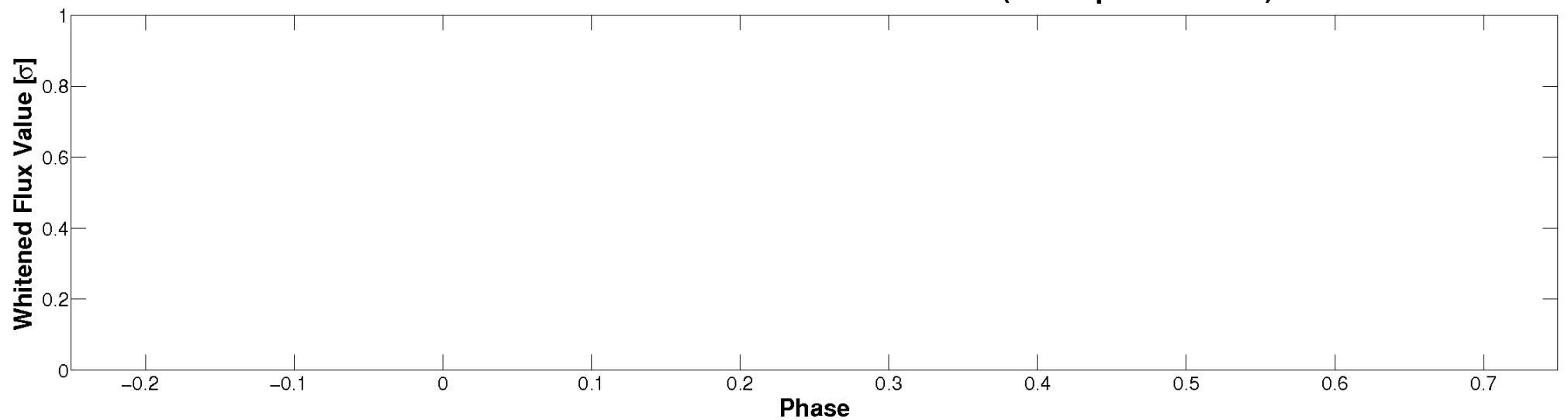
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

**Planet 4 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**

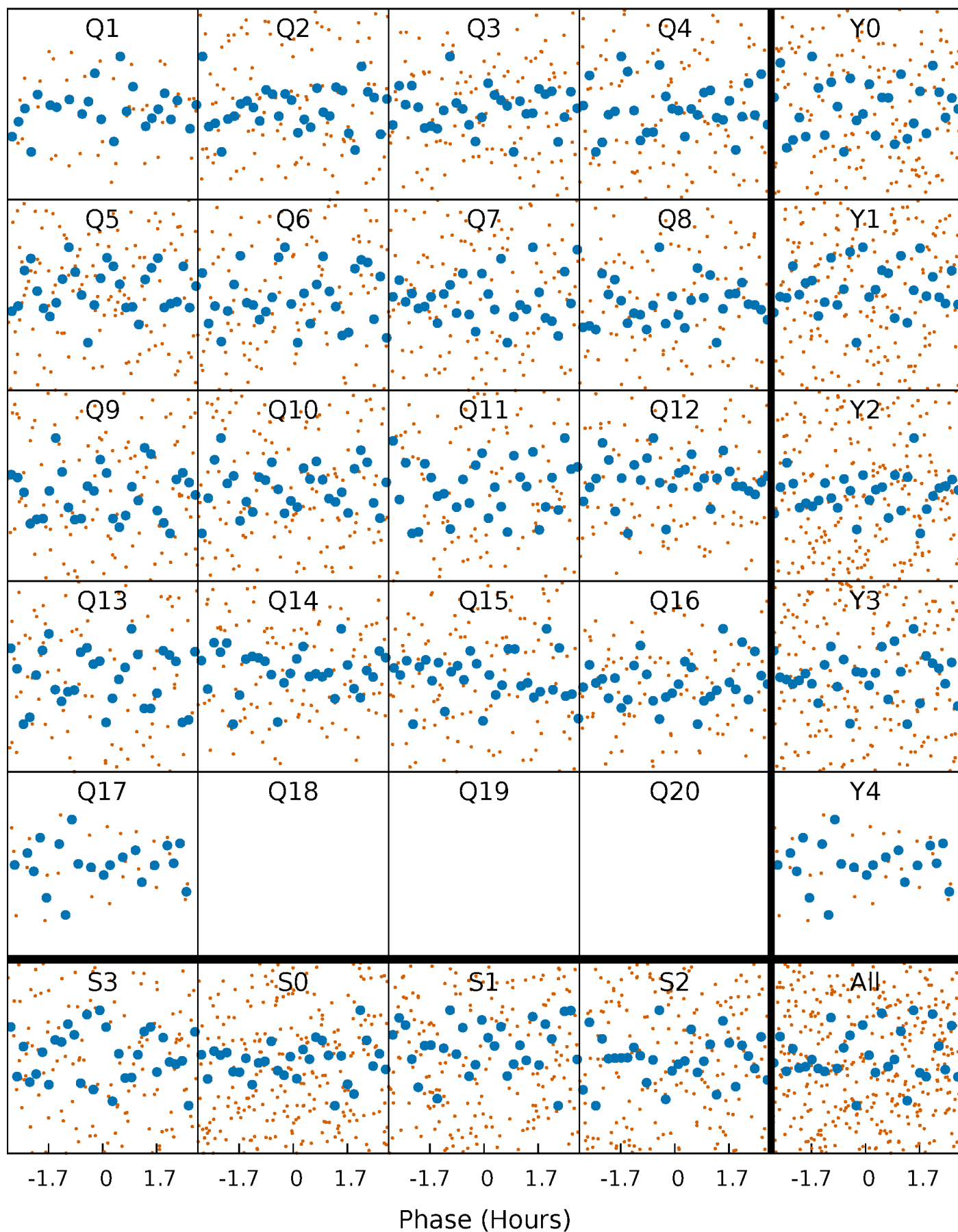


**Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



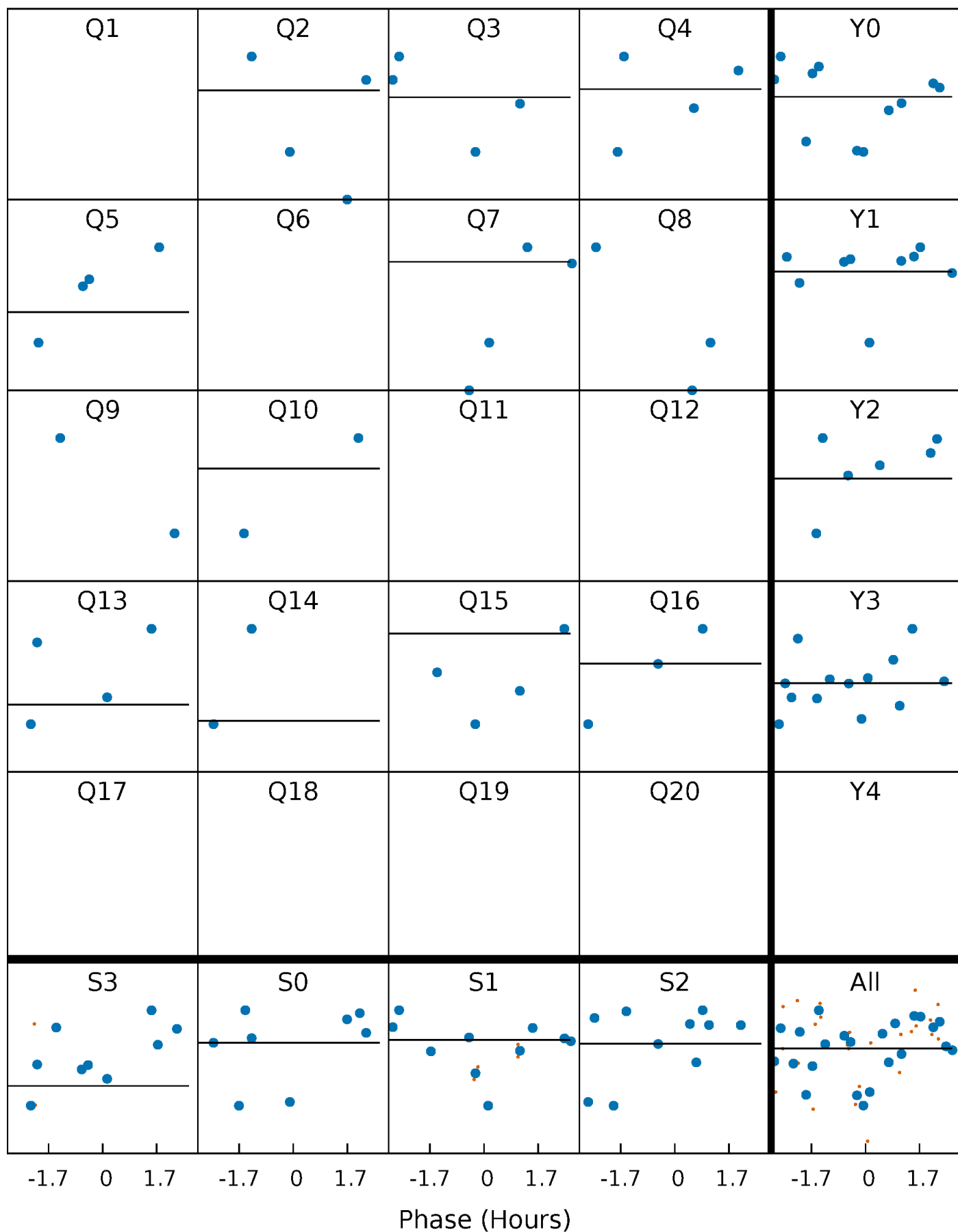
# PDC Quarter-Phased Transit Curves

TCE 008783270-04   P= 8.258431 Days    $T_0=139.501621$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 008783270-04   P= 8.258431 Days    $T_0=139.501621$  (BKJD)



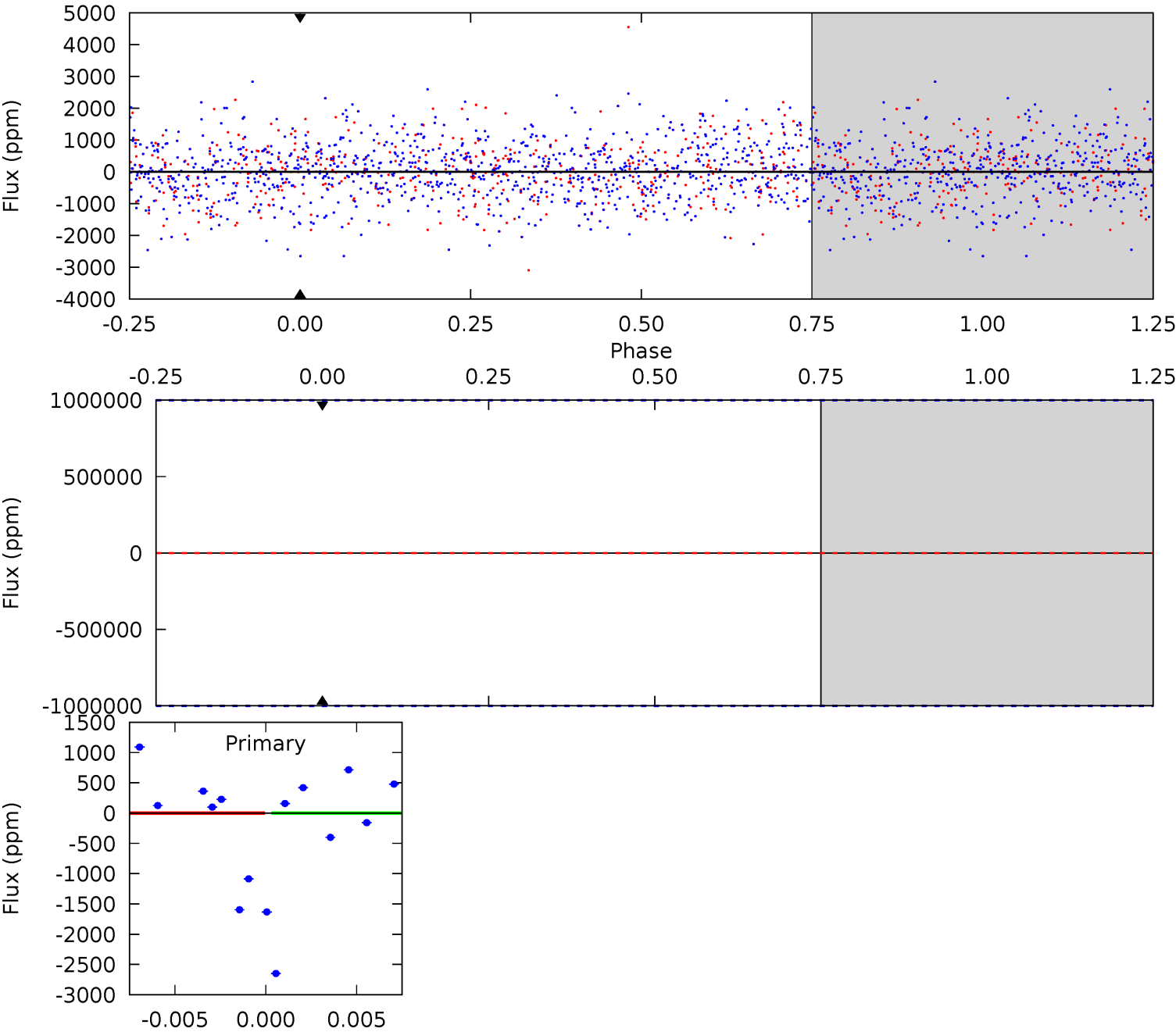
This plot does not exist for this TCE.



# DV Model-Shift Uniqueness Test

008783270-04, P = 8.258431 Days, E = 131.243190 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

This plot does not exist for this TCE.

### Stellar Parameters For KIC 008783270

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7094^{+225}_{-338}$	$3.884^{+0.345}_{-0.138}$	$-0.080^{+0.250}_{-0.350}$	$2.454^{+0.539}_{-1.001}$	$1.682^{+0.165}_{-0.385}$	$0.160^{+0.427}_{-0.063}$
	+3%/-5%	+9%/-4%	+312%/-438%	+22%/-41%	+10%/-23%	+266%/-40%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 008783270-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$18.14^{+20.98}_{-12.22}$	$2176^{+170}_{-237}$	$4385^{+31705}_{-32383}$	$17^{+3037}_{-2162}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

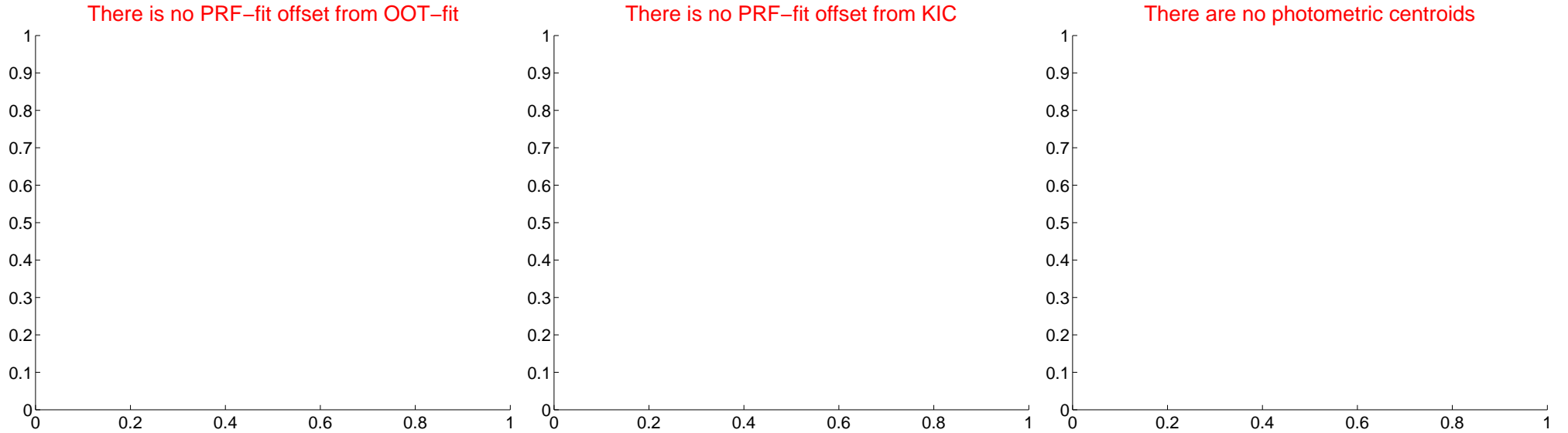
## DV Centroid Data

Supplemental centroid analysis for 008783270-04. Kepler magnitude: 13.39. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	—	—	—	—



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.

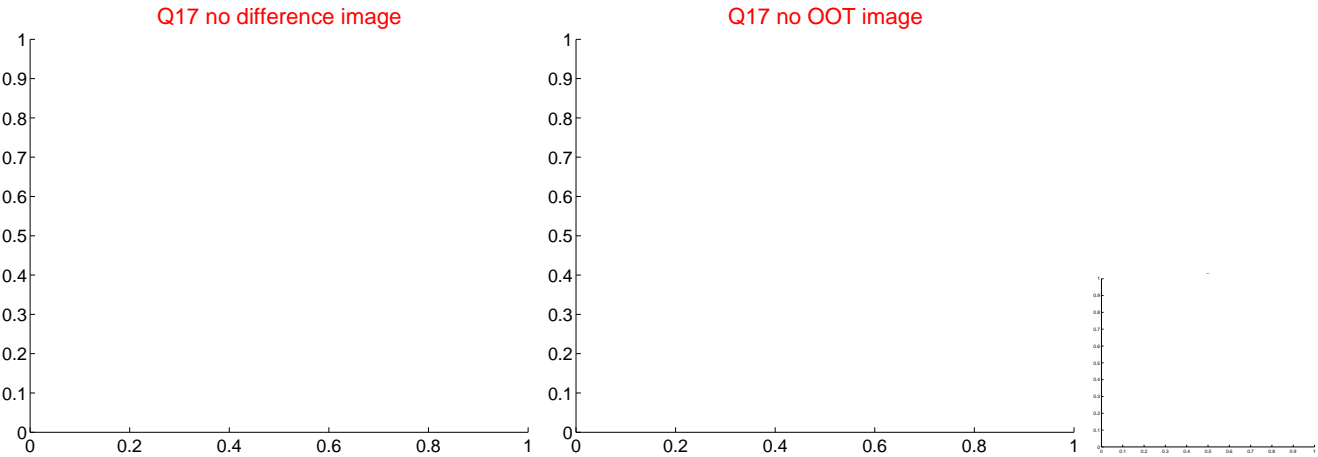




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

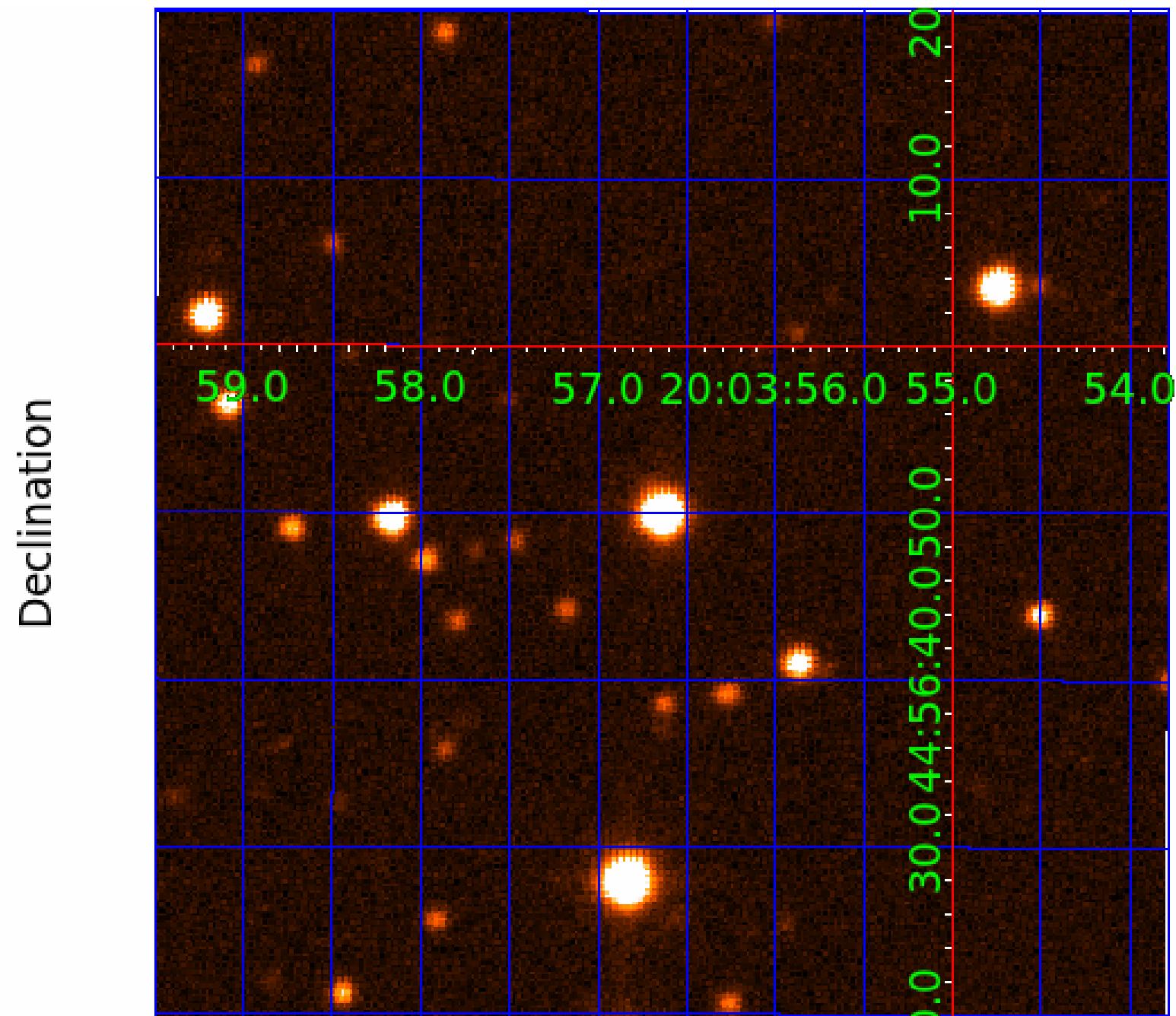


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image



# KIC 008783270

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008783270-01	OBS	No	0.519352	131.609633	77.2	3.910	15.0	13.0	2.45	7094	2.22	60407.78
008783270-02	OBS	No	4.505537	133.517654	691.1	1.274	12.3	10.2	2.45	7094	6.57	3388.81
008783270-03	OBS	No	6.986826	132.625777	665.5	2.000	13.1	-1.0	2.45	7094	6.42	1888.00
008783270-04	OBS	No	8.258431	139.501621	930.3	1.500	14.2	-1.0	2.45	7094	7.60	1510.70
008783270-05	OBS	No	19.737546	144.223497	644.1	1.500	13.9	-1.0	2.45	7094	6.32	472.77
008783270-06	OBS	No	3.577228	133.596172	487.7	2.372	14.1	11.2	2.45	7094	5.54	4609.42
008783270-07	OBS	No	7.824958	139.131252	1052.0	2.203	11.4	18.5	2.45	7094	8.09	1623.30
008783270-08	OBS	No	6.005497	133.207915	1459.7	1.374	13.0	19.8	2.45	7094	9.53	2310.17
008783270-09	OBS	No	6.216187	132.163758	1887.3	0.529	12.1	18.0	2.45	7094	13.61	2206.36
008783270-10	OBS	No	8.919382	136.025778	332.3	3.000	7.9	-1.0	2.45	7094	4.53	1363.31

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008783270-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_MEAS
008783270-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
008783270-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
008783270-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
008783270-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
008783270-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
008783270-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS

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

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

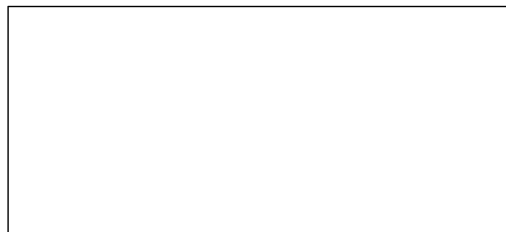
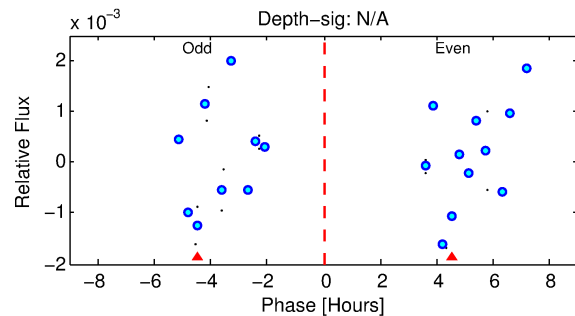
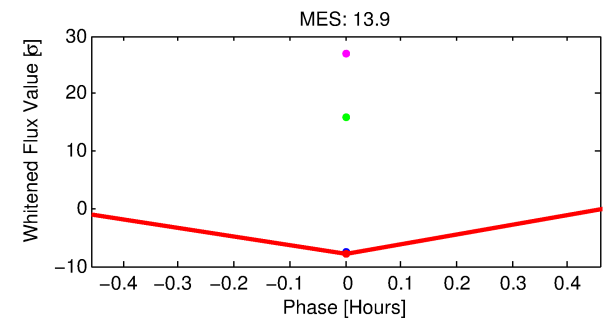
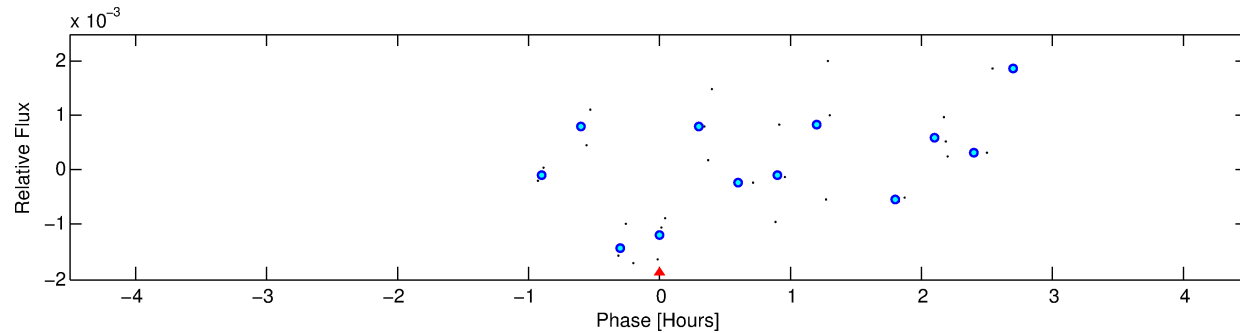
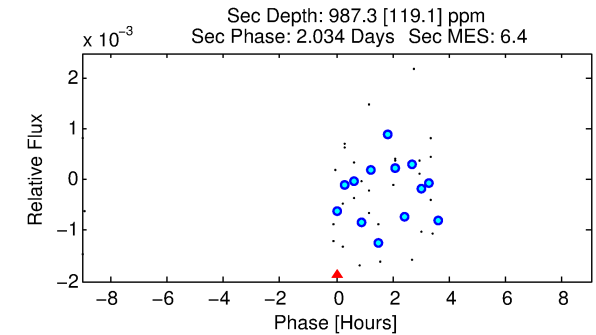
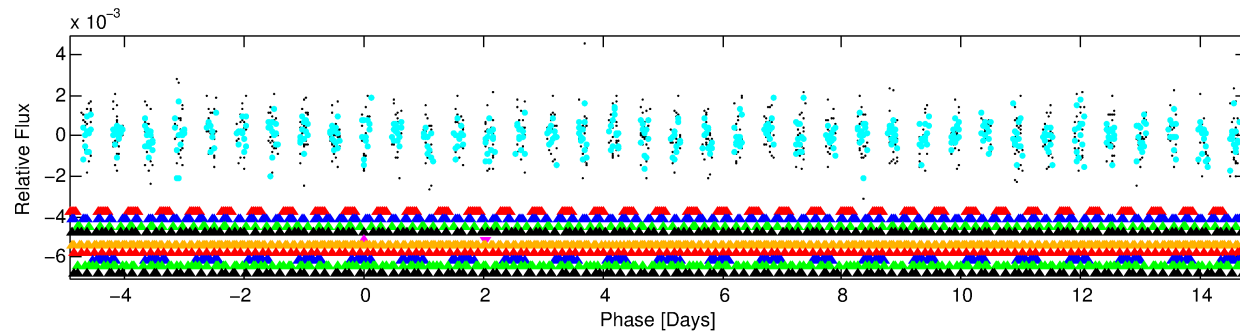
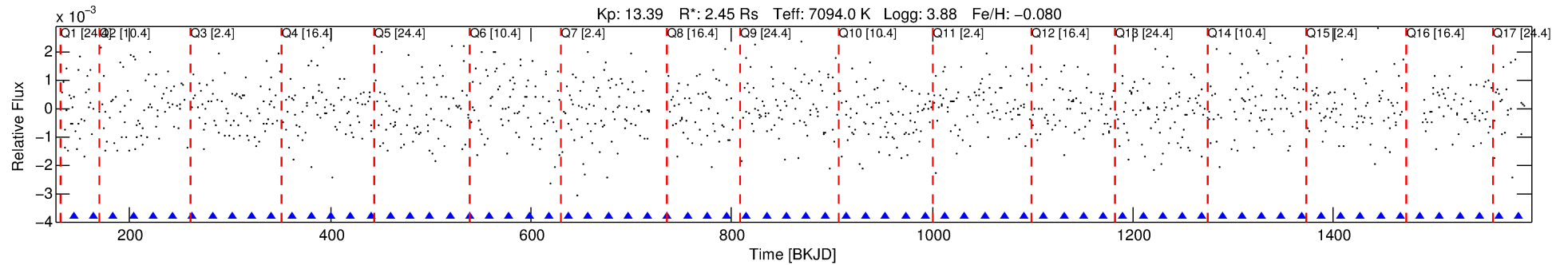
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008783270-05

No Significant Match Found

# DV One-Page Summary

KIC: 8783270 Candidate: 5 of 10 Period: 19.738 d



## TPS TCE Results:

Period = 19.73755 d  
Epoch = 144.2235 BKJD

DV fit results are unavailable

## DV Diagnostic Results:

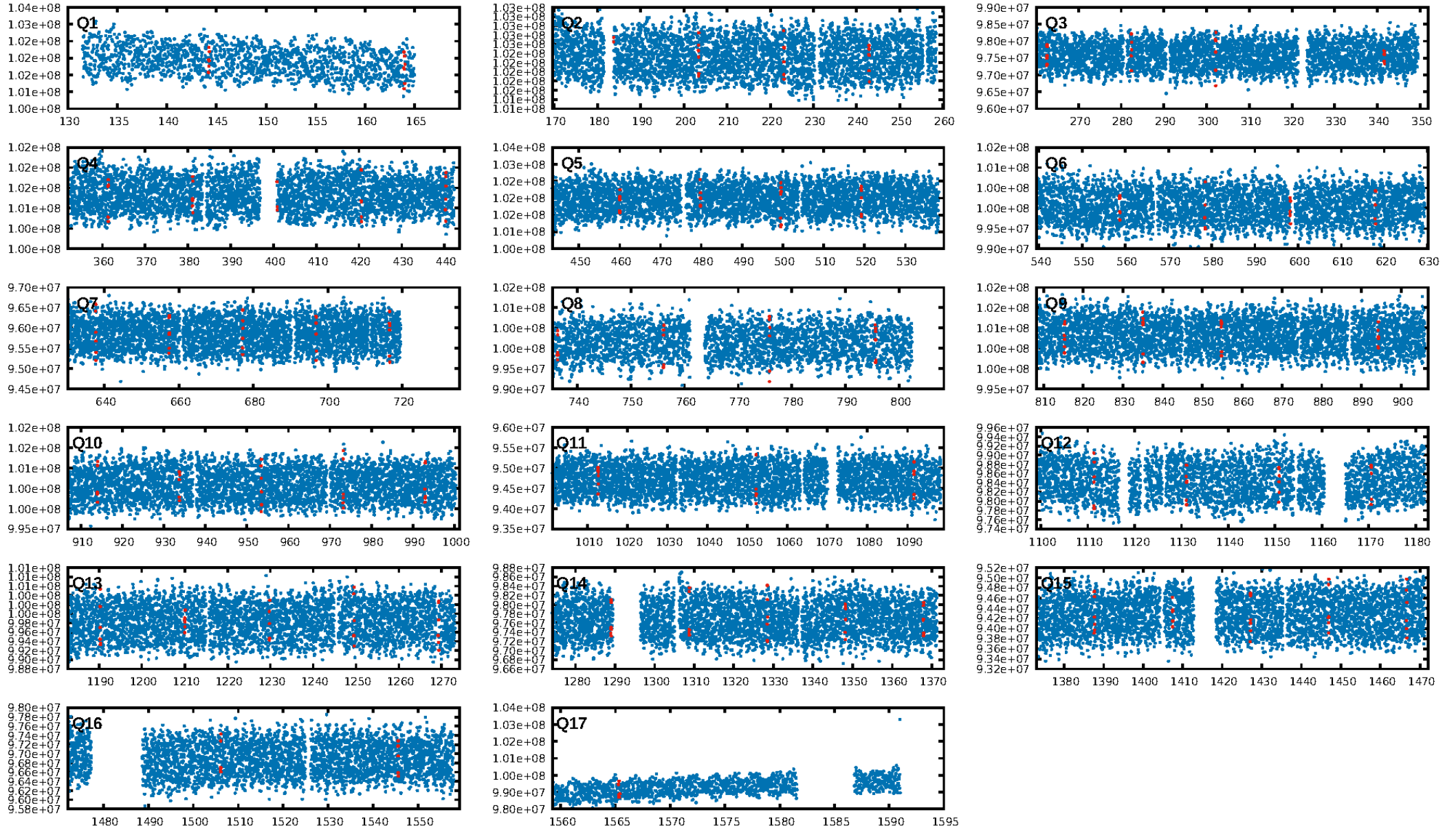
ShortPeriod-sig: 100.0% [77.41 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGoF-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: N/A  
GhostDiagnostic-chr: N/A

Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0/0 [0]  
KicOffset-st: 0/0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: N/A

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

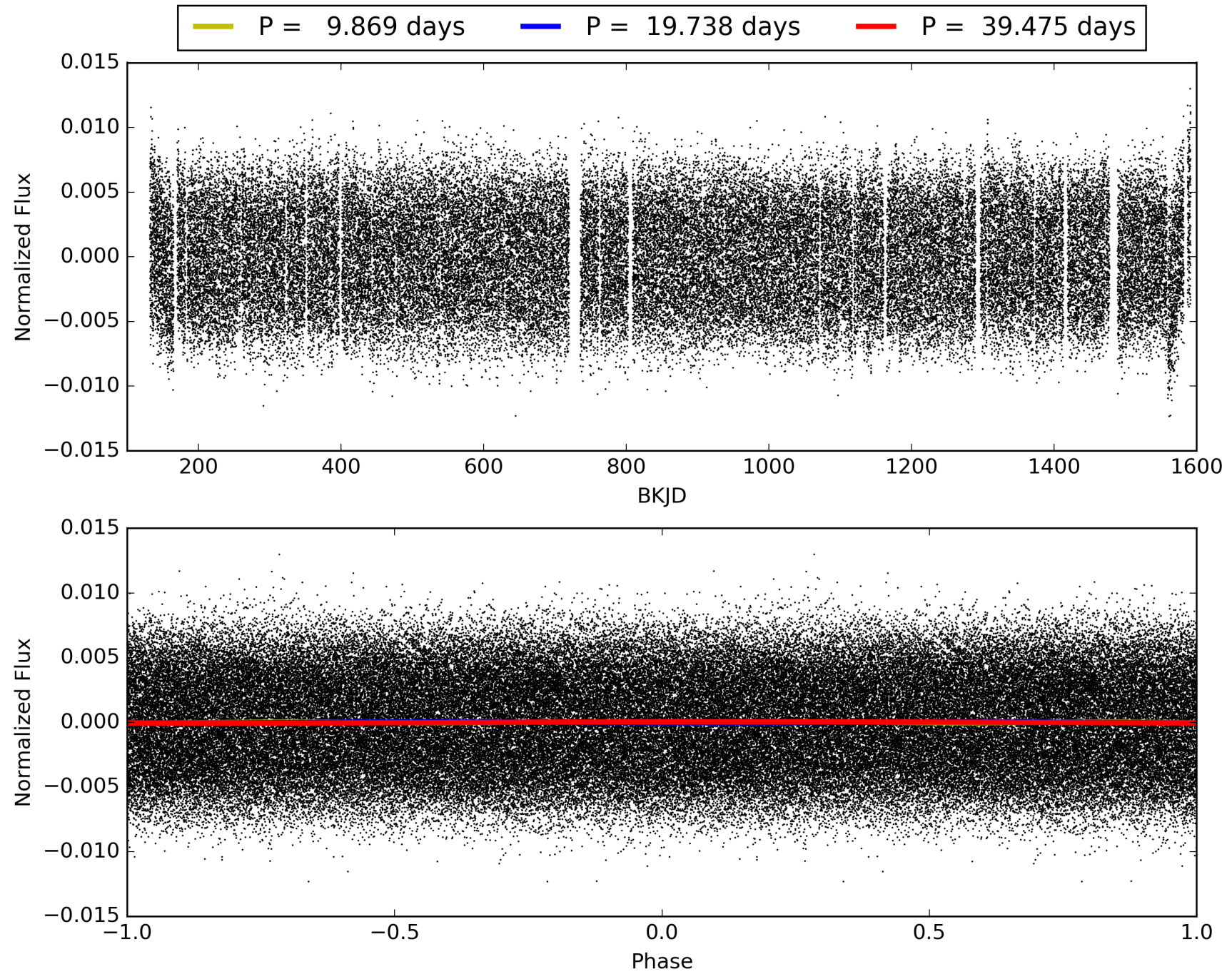
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008783270-05, PDC Light Curves





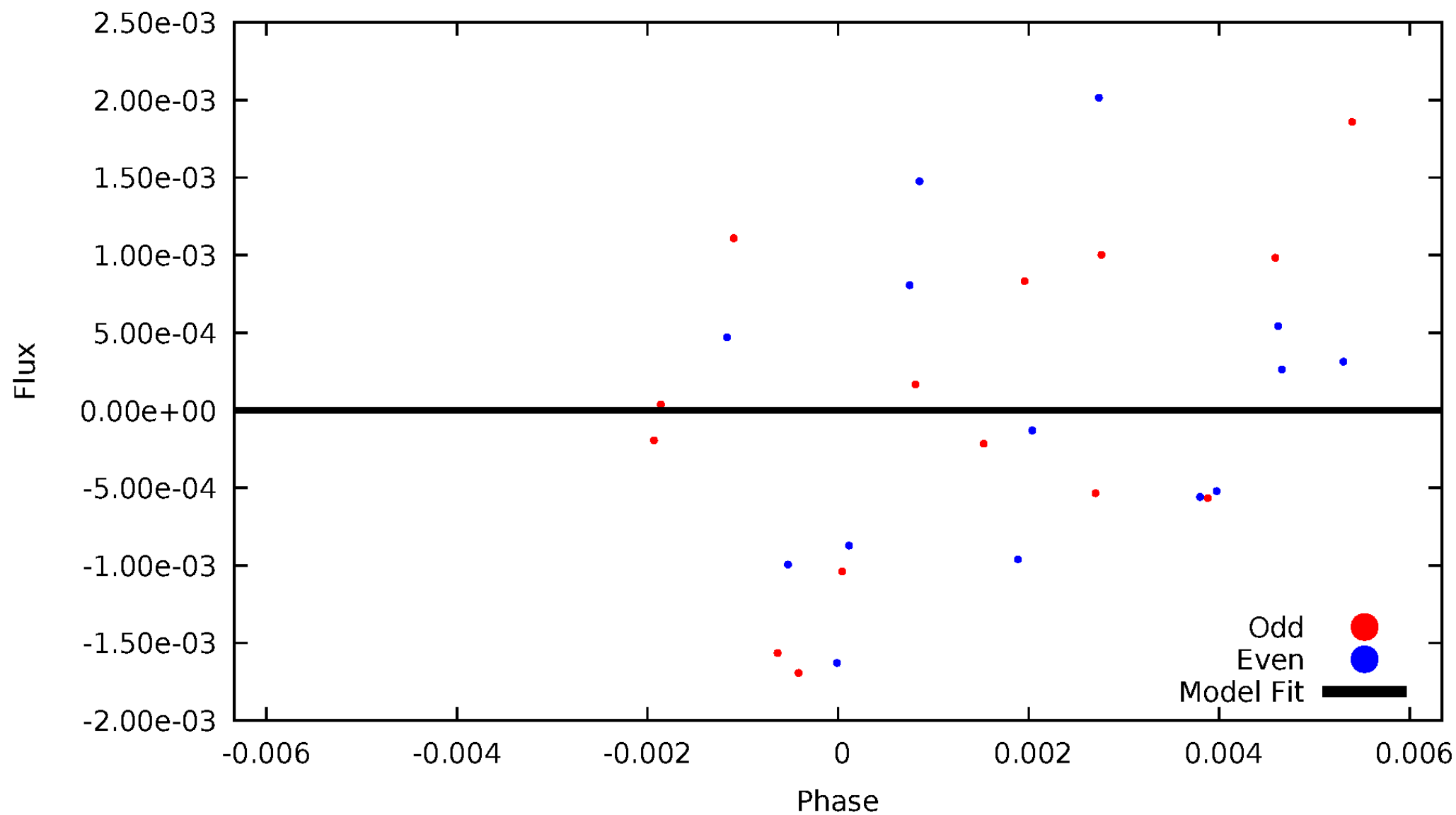
TCE 008783270-05





# DV Odd/Even

TCE 008783270-05



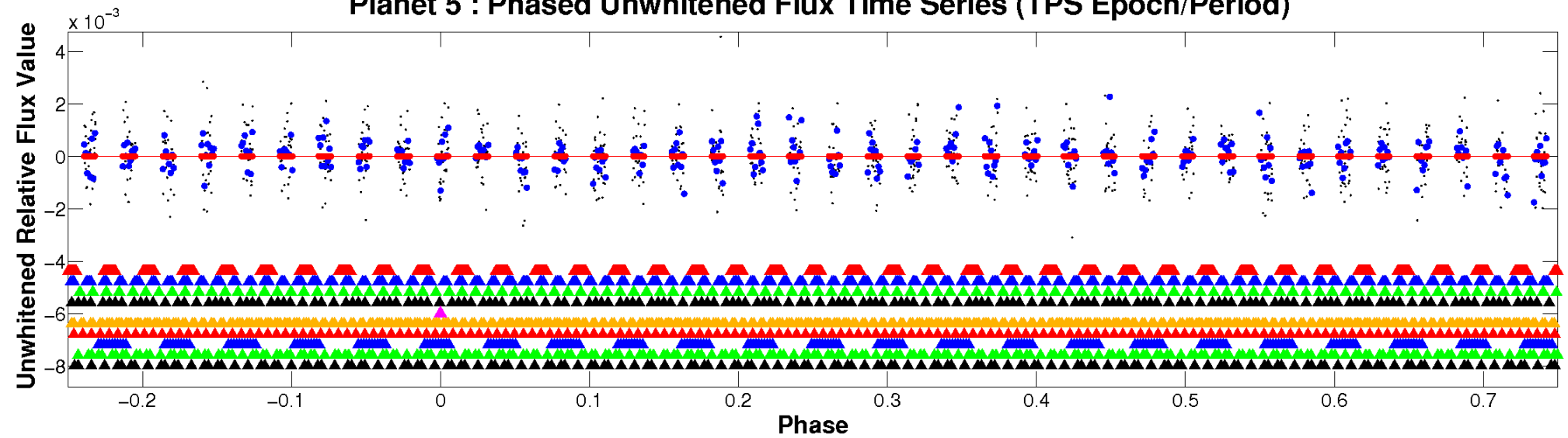


ALT Odd/Even

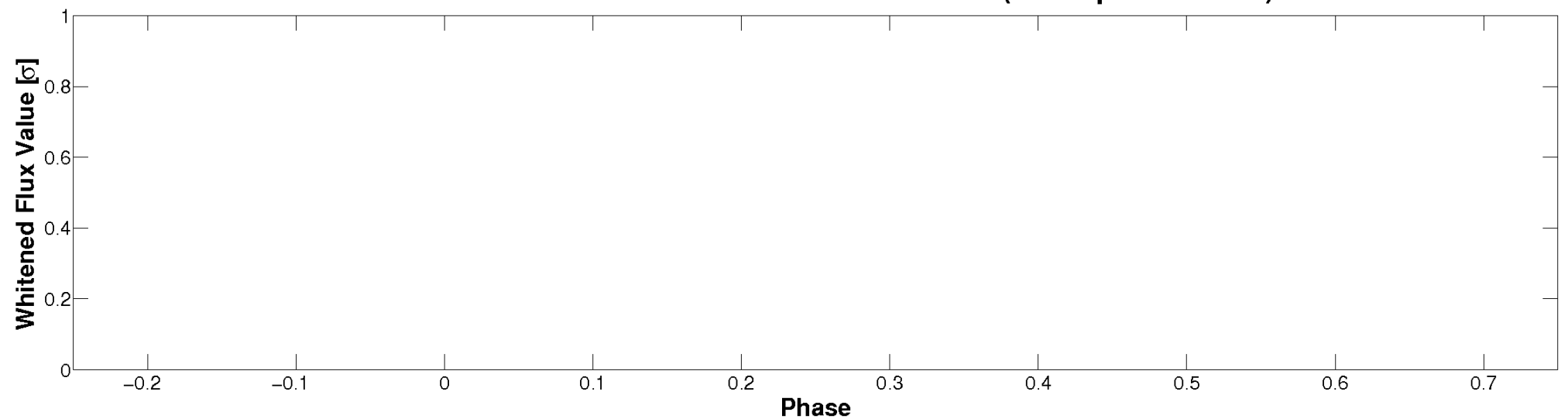
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

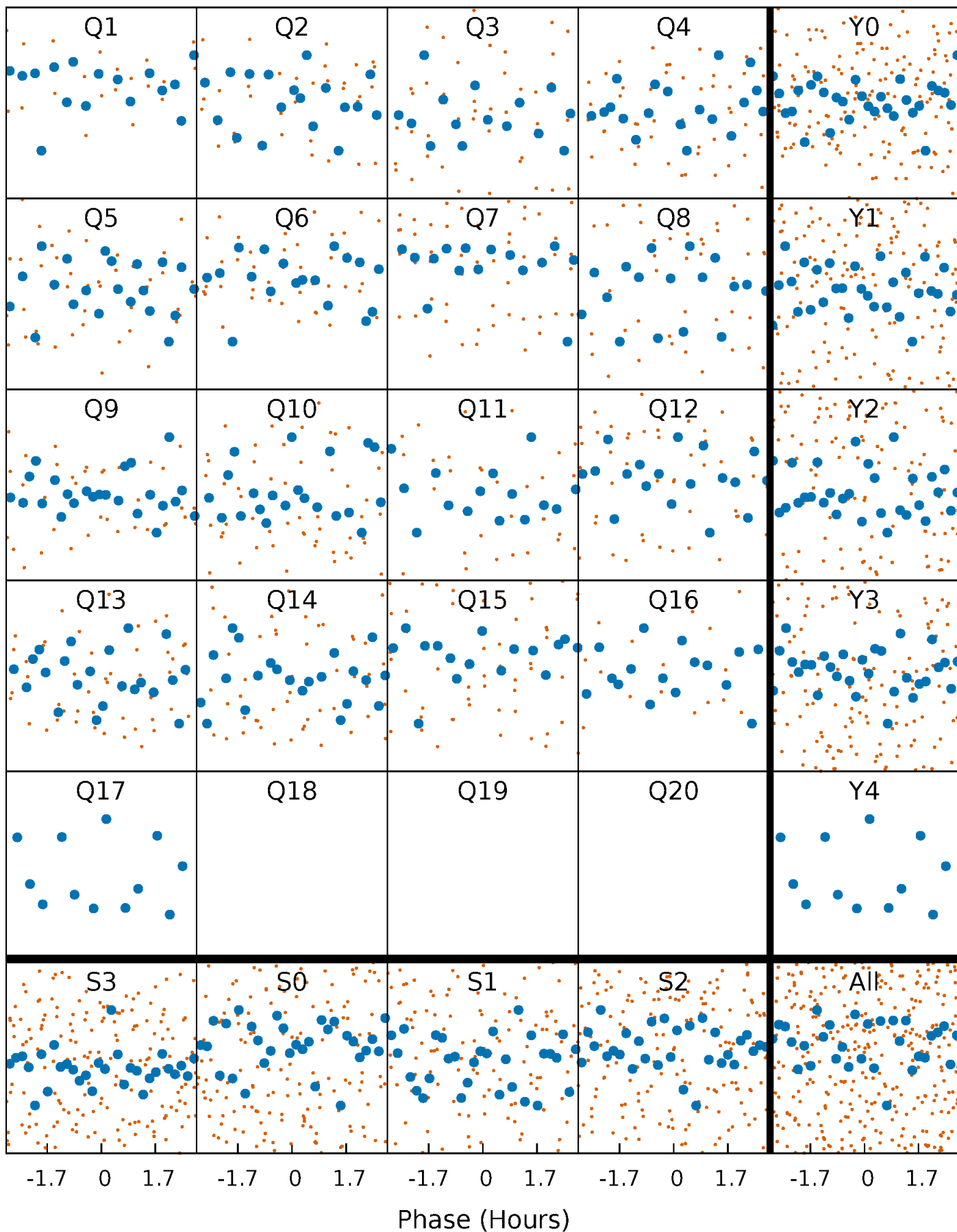


**Planet 5 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



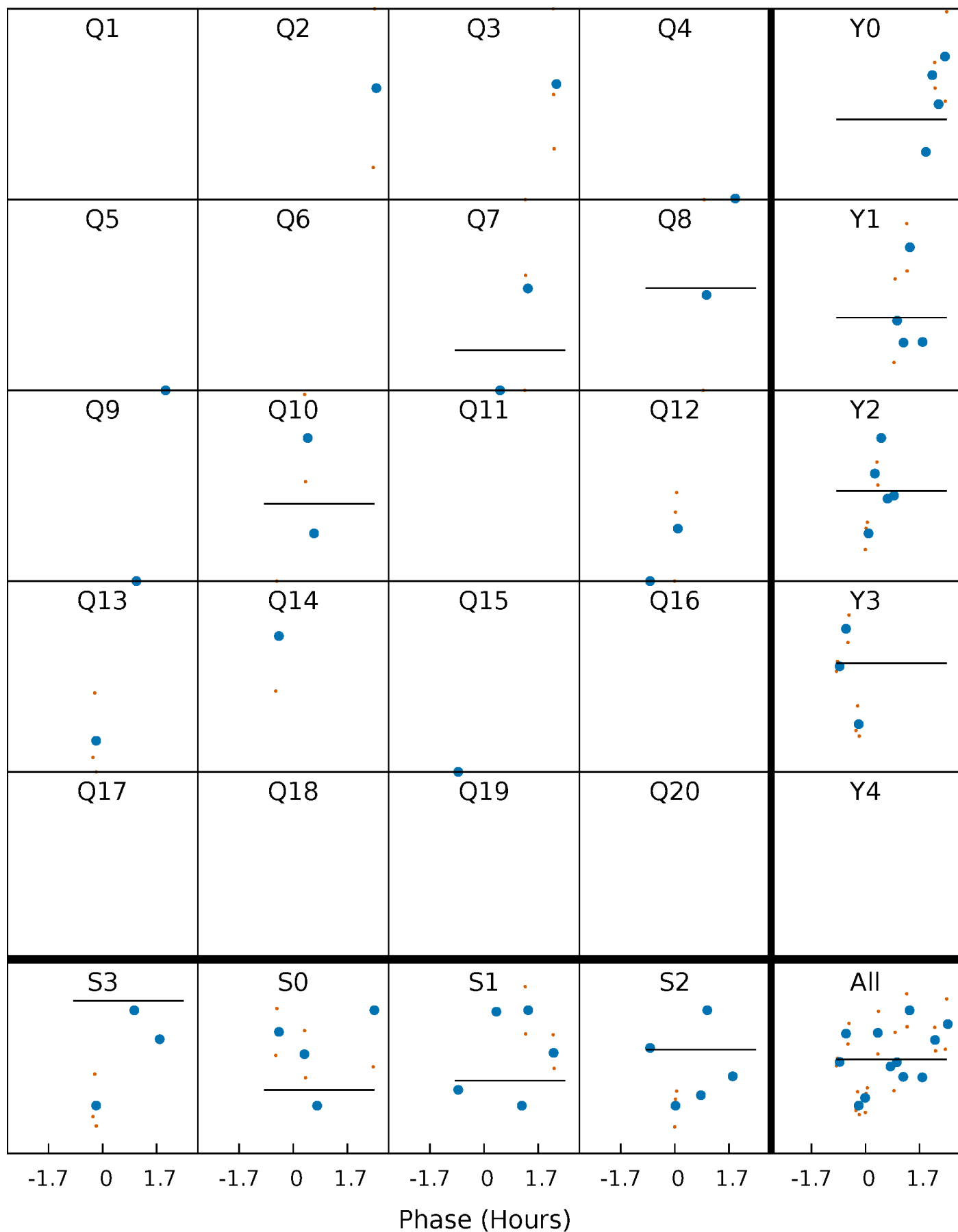
# PDC Quarter-Phased Transit Curves

TCE 008783270-05     $P = 19.737546$  Days     $T_0 = 144.223497$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 008783270-05     $P = 19.737546$  Days     $T_0 = 144.223497$  (BKJD)

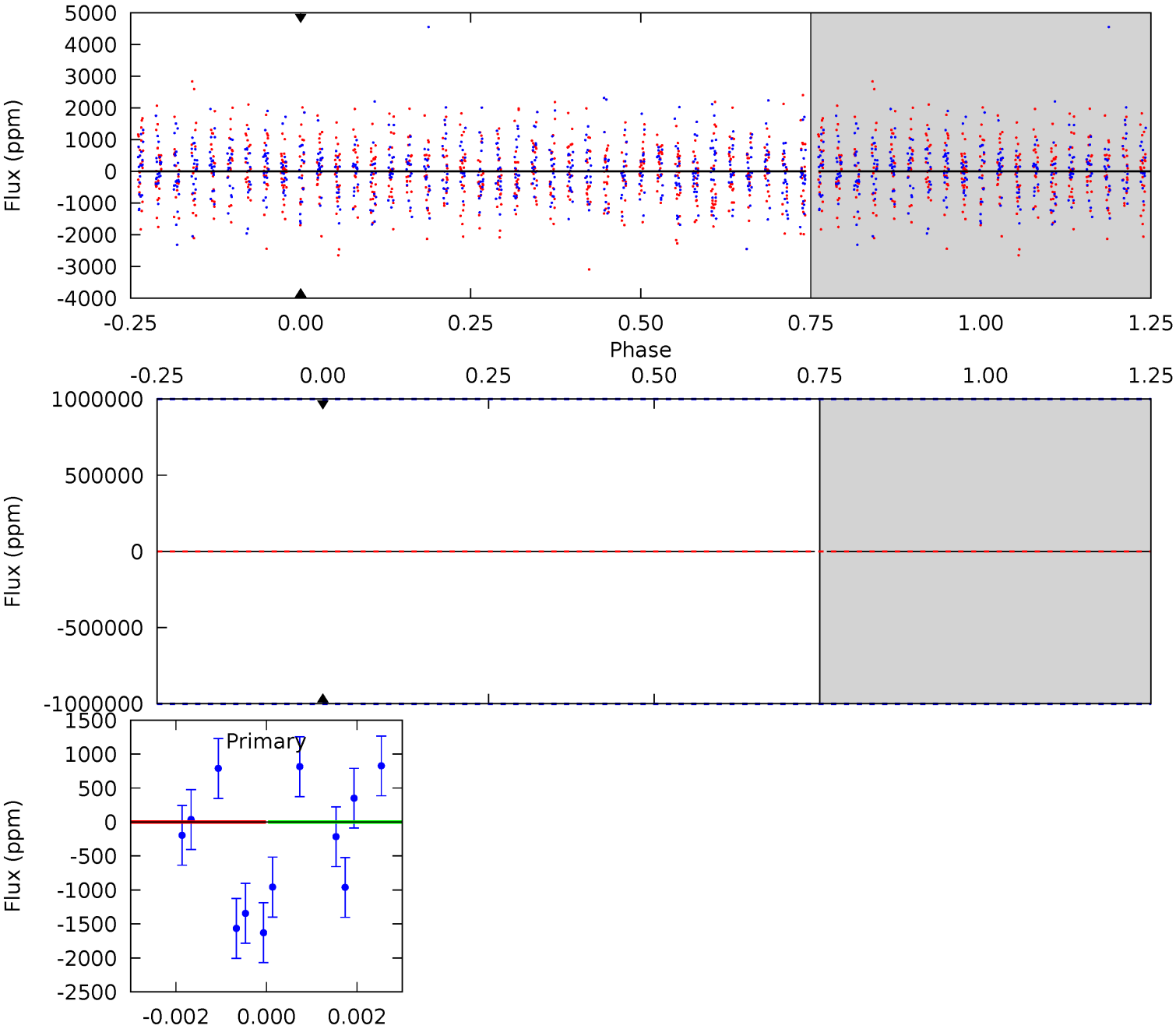


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

008783270-05, P = 19.737546 Days, E = 124.485951 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

This plot does not exist for this TCE.

### Stellar Parameters For KIC 008783270

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7094^{+225}_{-338}$	$3.884^{+0.345}_{-0.138}$	$-0.080^{+0.250}_{-0.350}$	$2.454^{+0.539}_{-1.001}$	$1.682^{+0.165}_{-0.385}$	$0.160^{+0.427}_{-0.063}$
	+3%/-5%	+9%/-4%	+312%/-438%	+22%/-41%	+10%/-23%	+266%/-40%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 008783270-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$19.33^{+20.25}_{-14.17}$	$1630^{+138}_{-173}$	$4062^{+30807}_{-38133}$	$17^{+8440}_{-8674}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

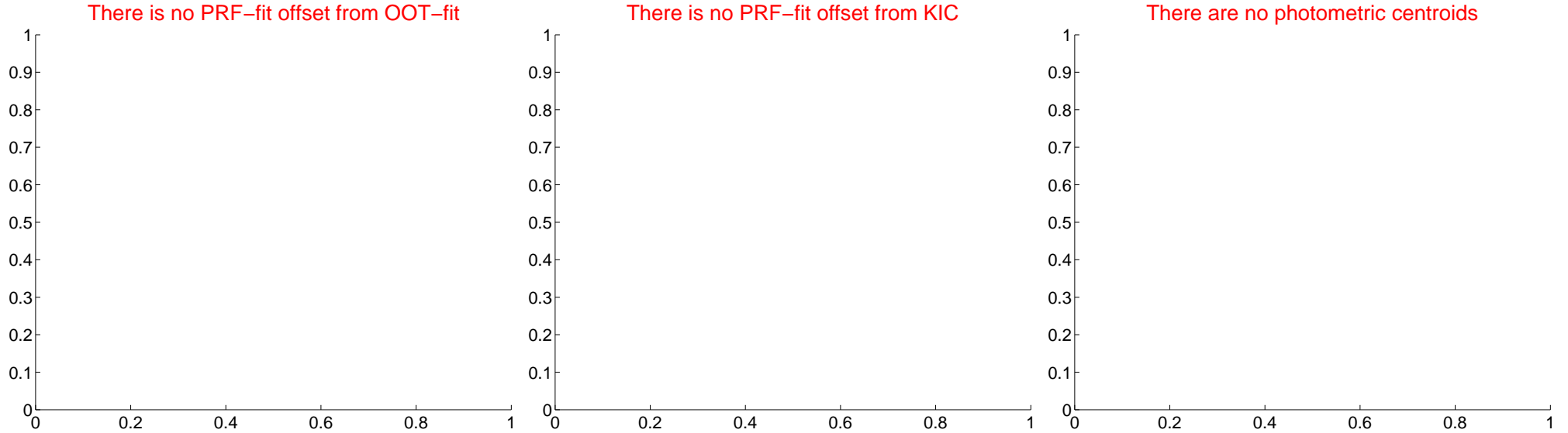
## DV Centroid Data

Supplemental centroid analysis for 008783270-05. Kepler magnitude: 13.39. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	—	—	—	—

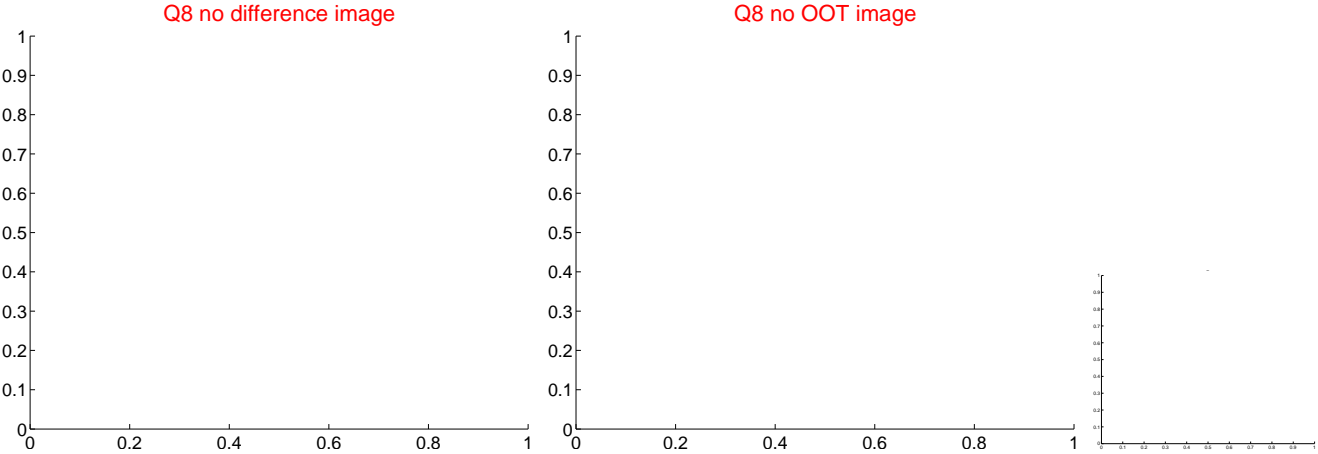
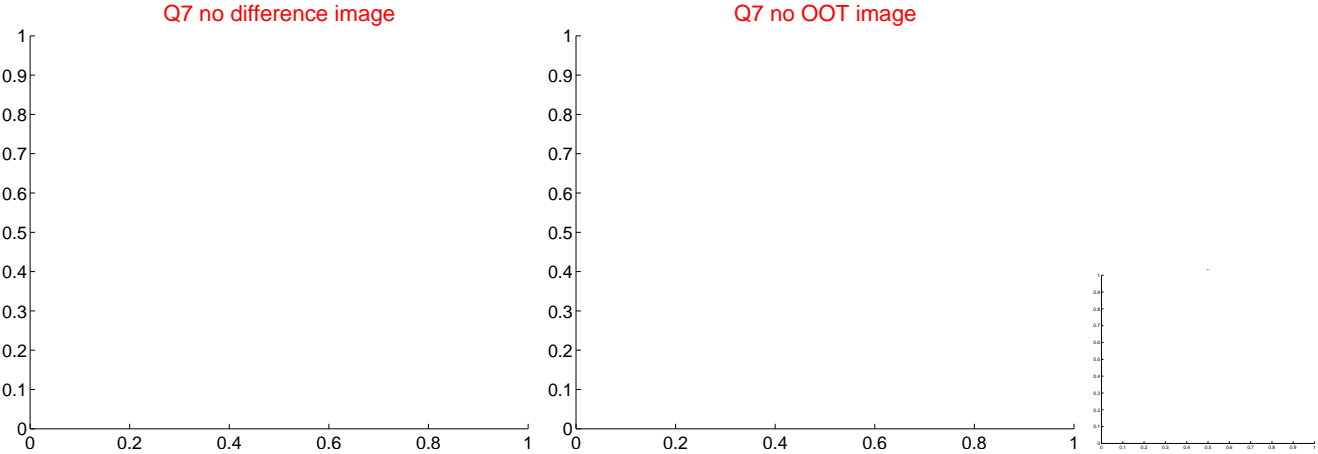
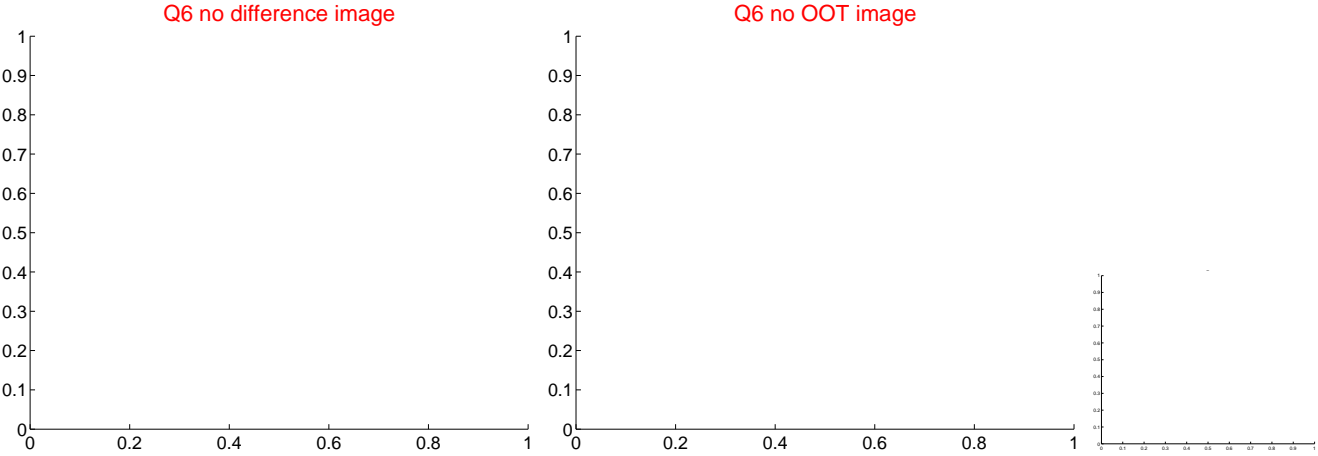
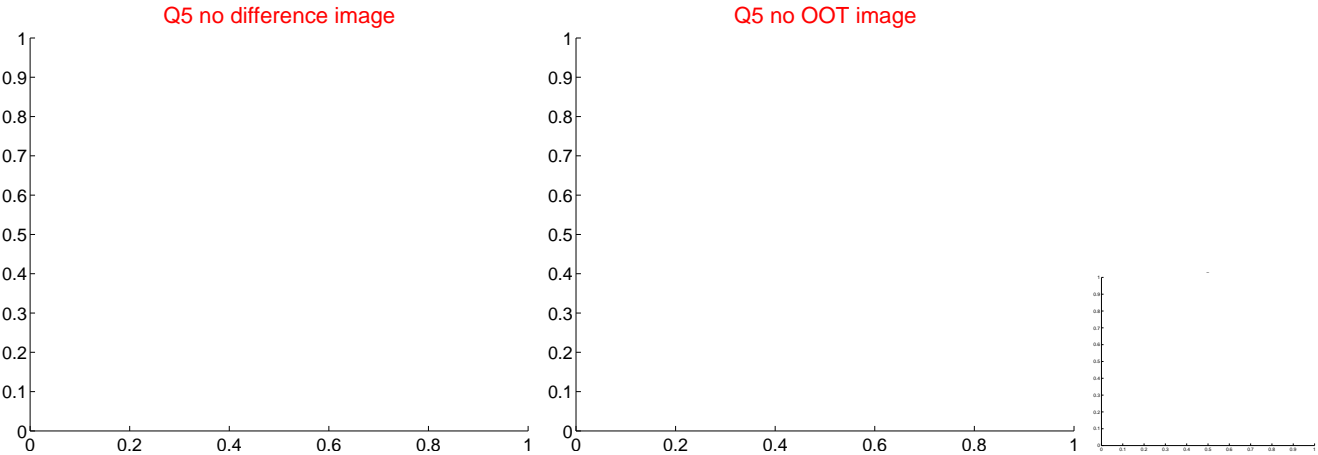


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



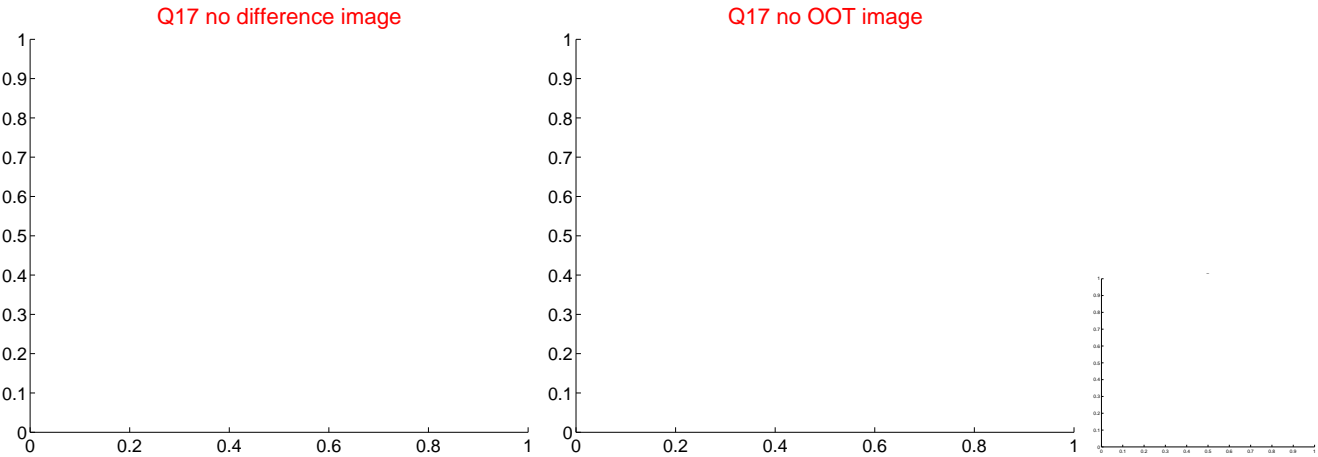
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



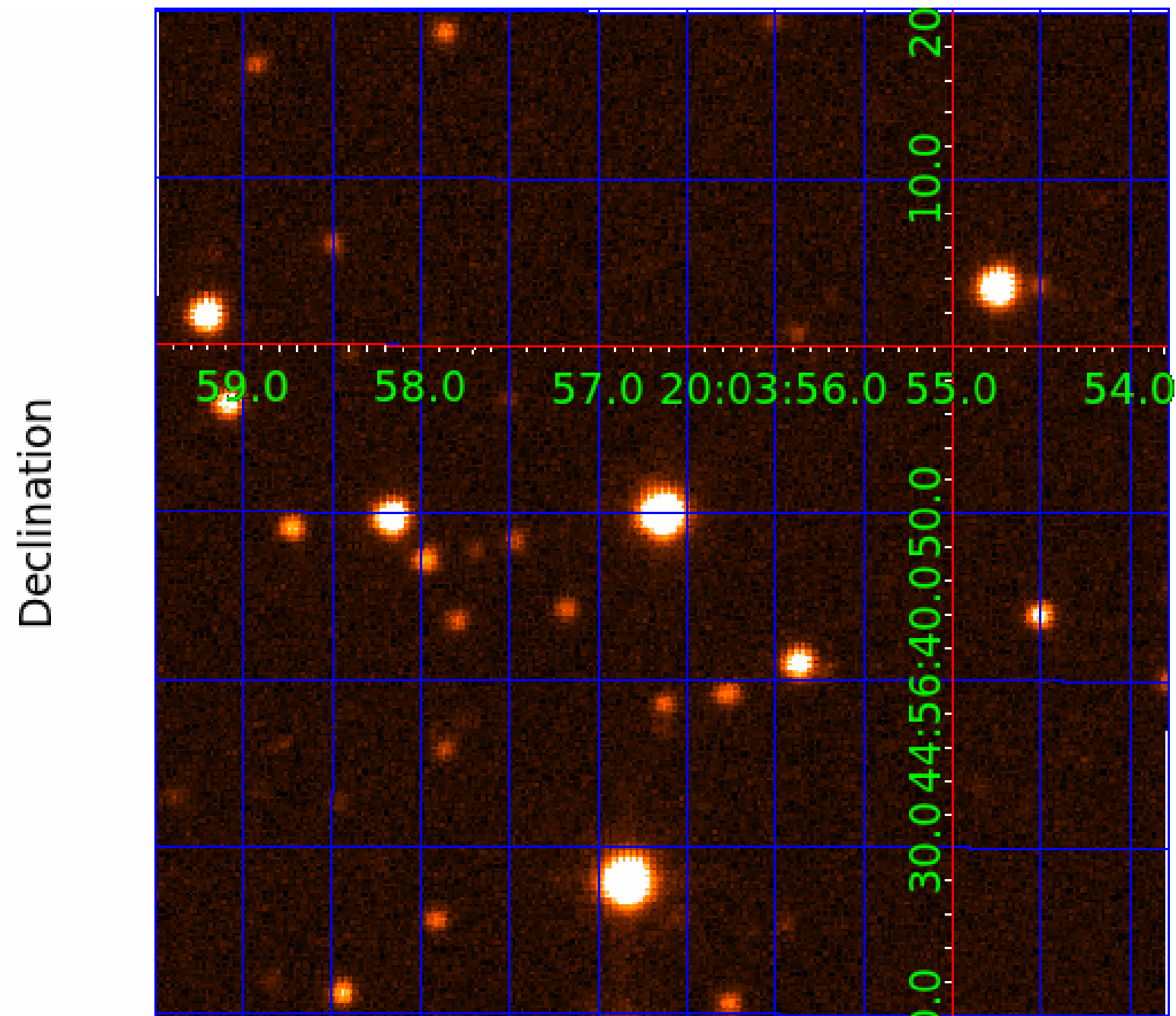
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.



UKIRT Image



# KIC 008783270

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008783270-01	OBS	No	0.519352	131.609633	77.2	3.910	15.0	13.0	2.45	7094	2.22	60407.78
008783270-02	OBS	No	4.505537	133.517654	691.1	1.274	12.3	10.2	2.45	7094	6.57	3388.81
008783270-03	OBS	No	6.986826	132.625777	665.5	2.000	13.1	-1.0	2.45	7094	6.42	1888.00
008783270-04	OBS	No	8.258431	139.501621	930.3	1.500	14.2	-1.0	2.45	7094	7.60	1510.70
008783270-05	OBS	No	19.737546	144.223497	644.1	1.500	13.9	-1.0	2.45	7094	6.32	472.77
008783270-06	OBS	No	3.577228	133.596172	487.7	2.372	14.1	11.2	2.45	7094	5.54	4609.42
008783270-07	OBS	No	7.824958	139.131252	1052.0	2.203	11.4	18.5	2.45	7094	8.09	1623.30
008783270-08	OBS	No	6.005497	133.207915	1459.7	1.374	13.0	19.8	2.45	7094	9.53	2310.17
008783270-09	OBS	No	6.216187	132.163758	1887.3	0.529	12.1	18.0	2.45	7094	13.61	2206.36
008783270-10	OBS	No	8.919382	136.025778	332.3	3.000	7.9	-1.0	2.45	7094	4.53	1363.31

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008783270-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_MEAS
008783270-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
008783270-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
008783270-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
008783270-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
008783270-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
008783270-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS

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

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

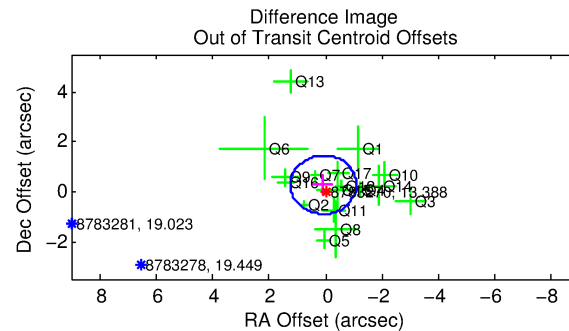
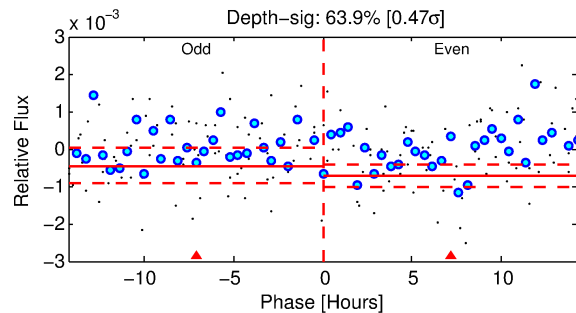
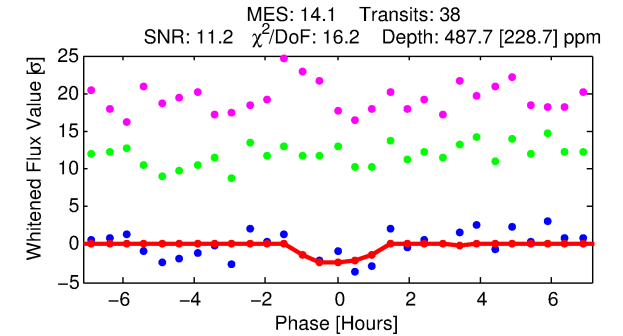
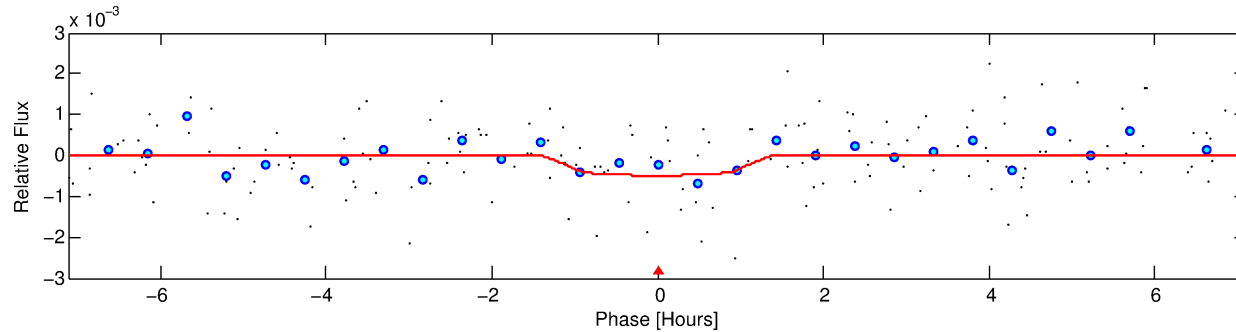
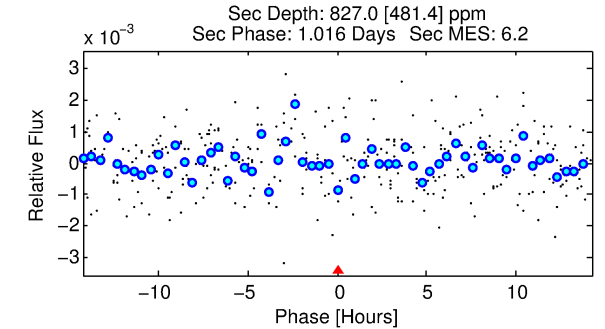
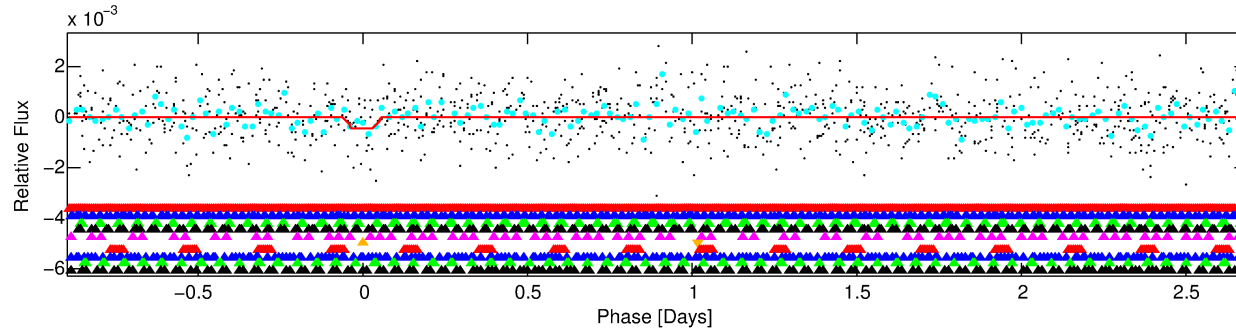
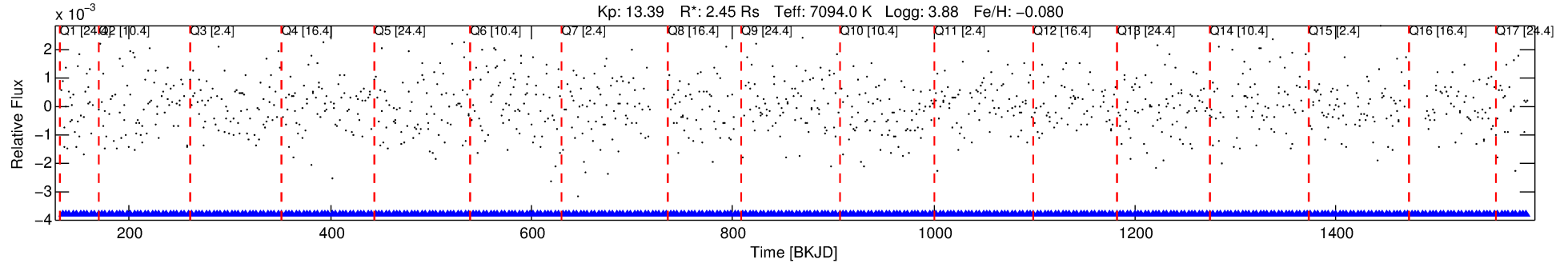
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008783270-06

No Significant Match Found

# DV One-Page Summary

KIC: 8783270 Candidate: 6 of 10 Period: 3.577 d



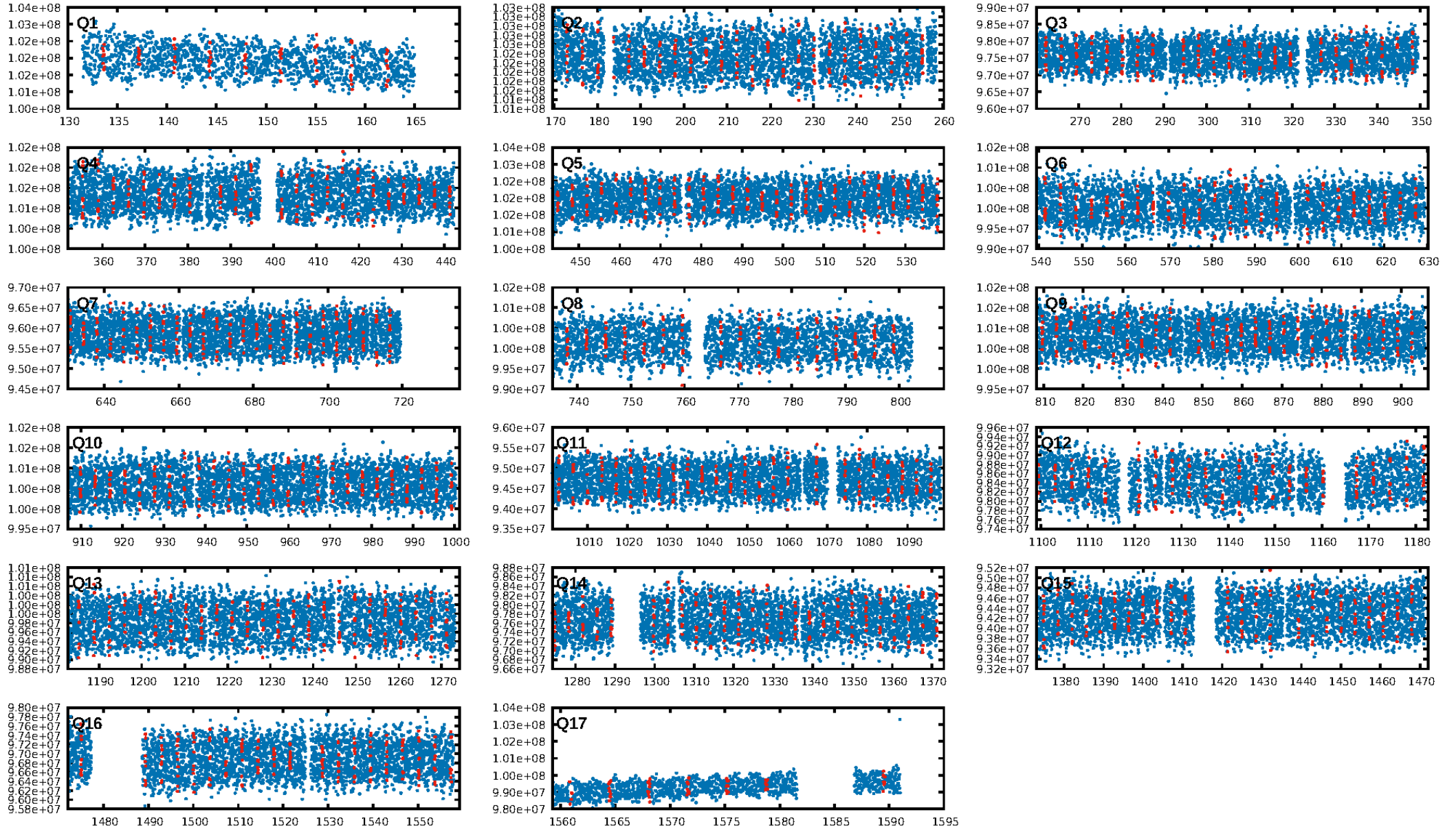
## DV Fit Results:

Period = 3.57723 [0.00009] d  
Epoch = 133.5962 [0.0167] BKJD  
Rp/R\* = 0.0207 [0.0789]  
a/R\* = 11.13 [242.61]  
b = 0.34 [58.49]  
Seff = 4609.42 [2881.32]  
Teq = 2101 [328] K  
Rp = 5.54 [21.24] Re  
a = 0.0544 [0.0207] AU  
Ag = 43.89 [336.44] [0.13σ]  
Teffp = 8361 [15980] K [0.39σ]

## DV Diagnostic Results:

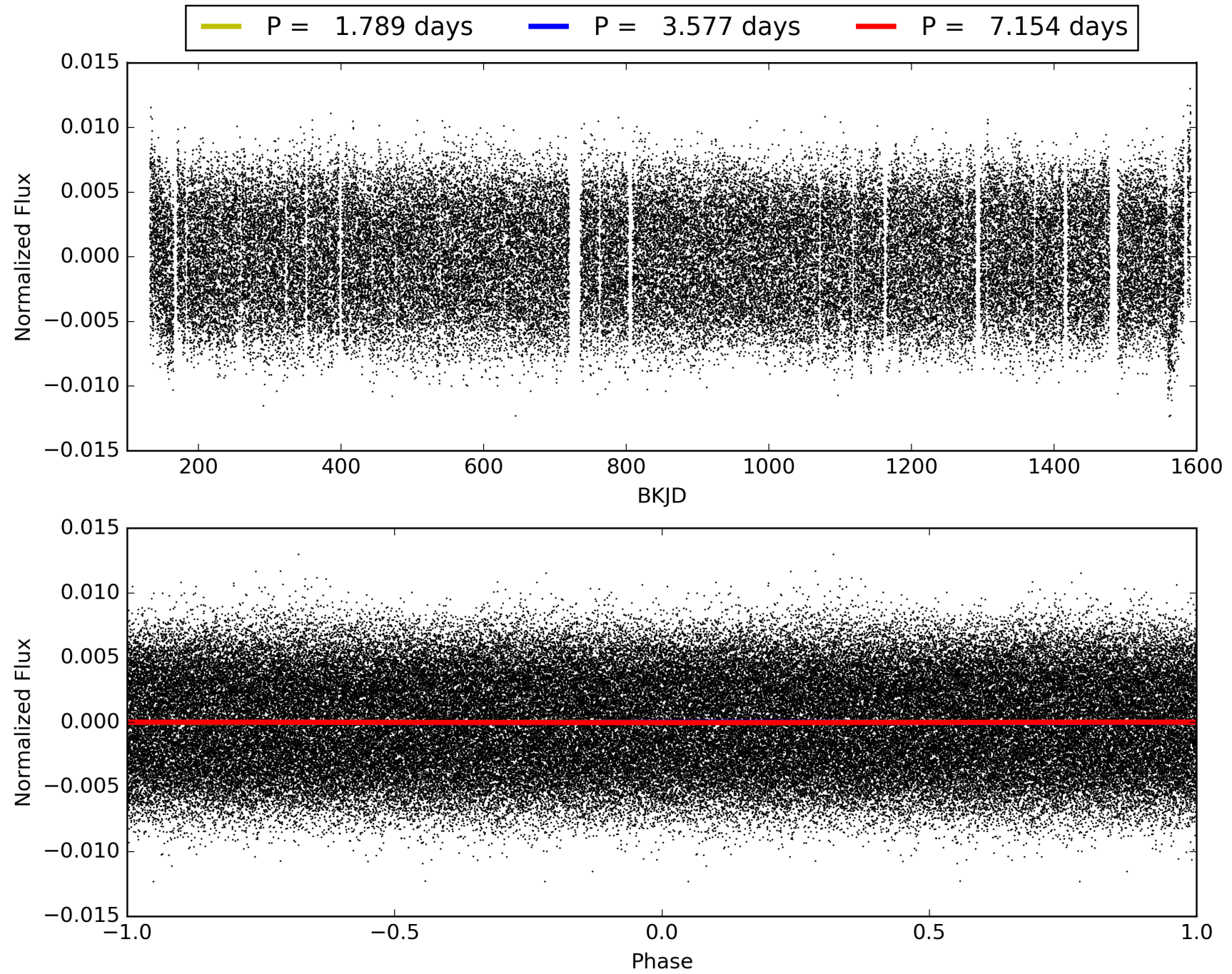
ShortPeriod-sig: 100.0% [16.05σ]  
LongPeriod-sig: 100.0% [8.28σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [38/38]  
GhostDiagnostic-chr: -0.9635  
Centroid-sig: 0.0%  
Centroid-so: 0.692 arcsec [4.62σ]  
OotOffset-rm: 0.285 arcsec [0.73σ]  
KicOffset-rm: 0.091 arcsec [0.26σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.41 [7/17]  
DiffImageOverlap-fno: 0.00 [0/17]

# TCE 008783270-06, PDC Light Curves



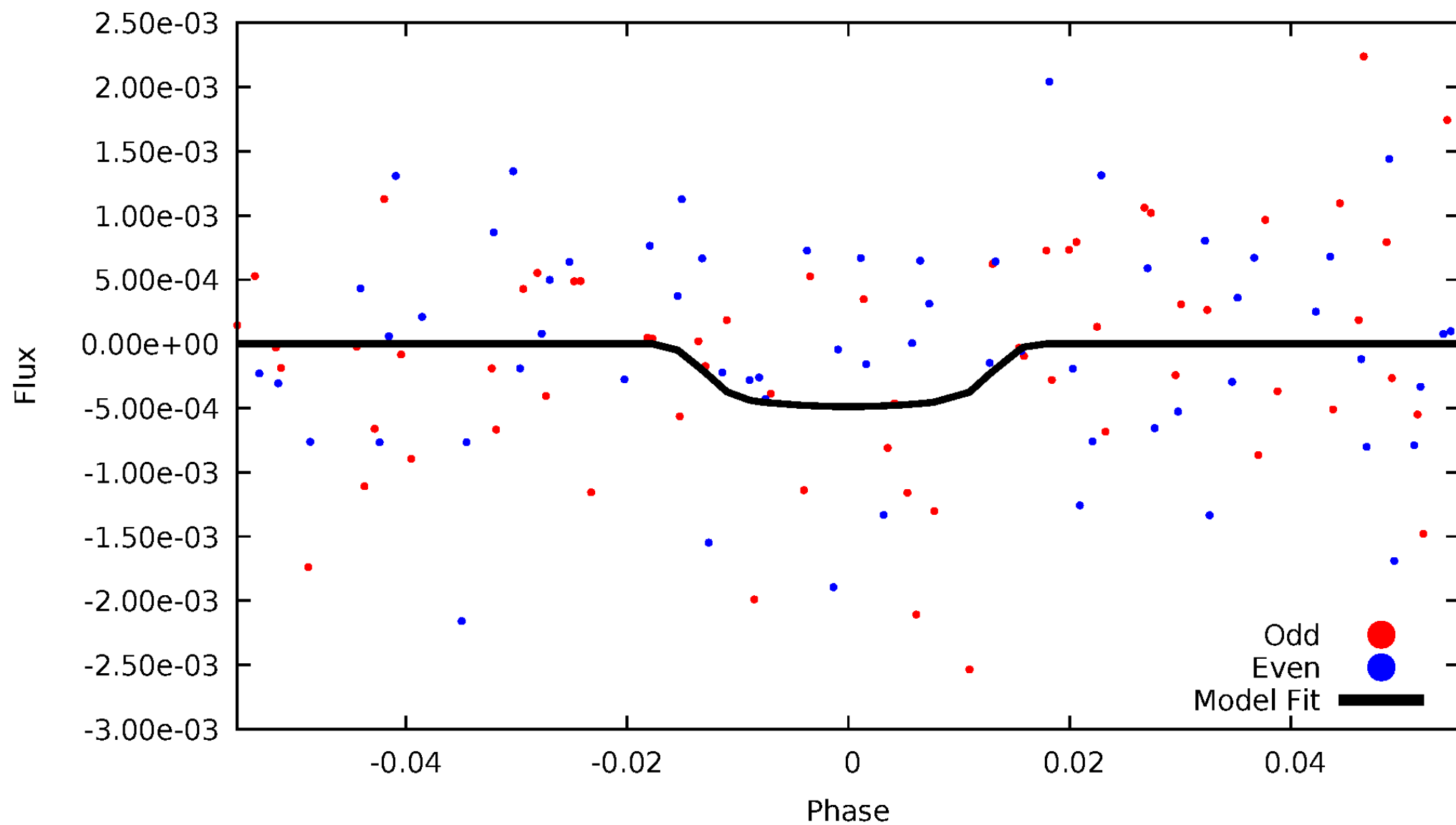


TCE 008783270-06



# DV Odd/Even

TCE 008783270-06





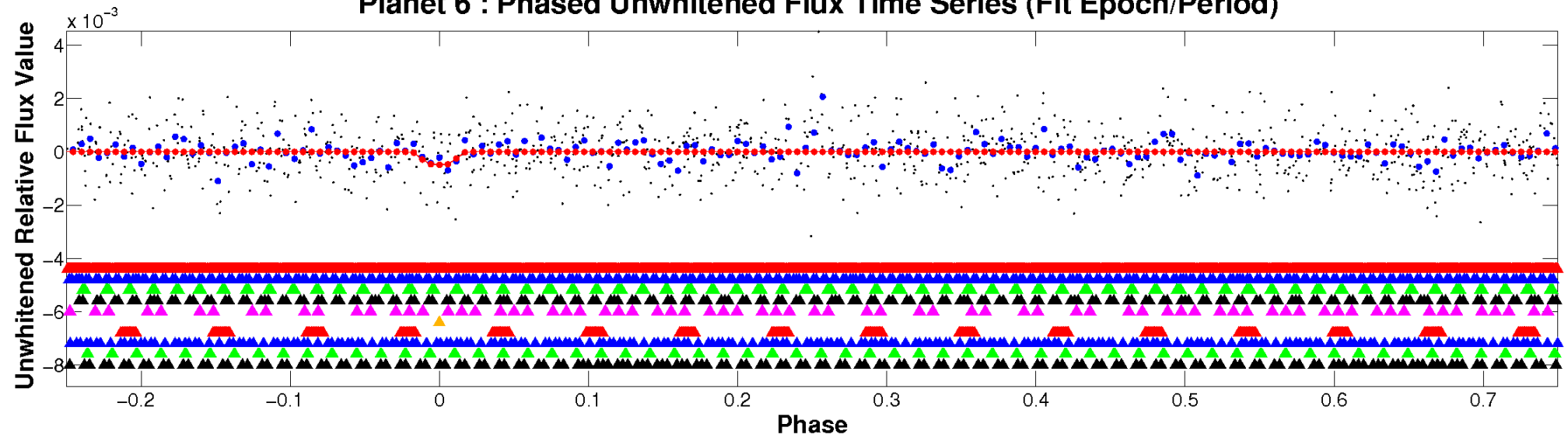
ALT Odd/Even

This plot does not exist for this TCE.

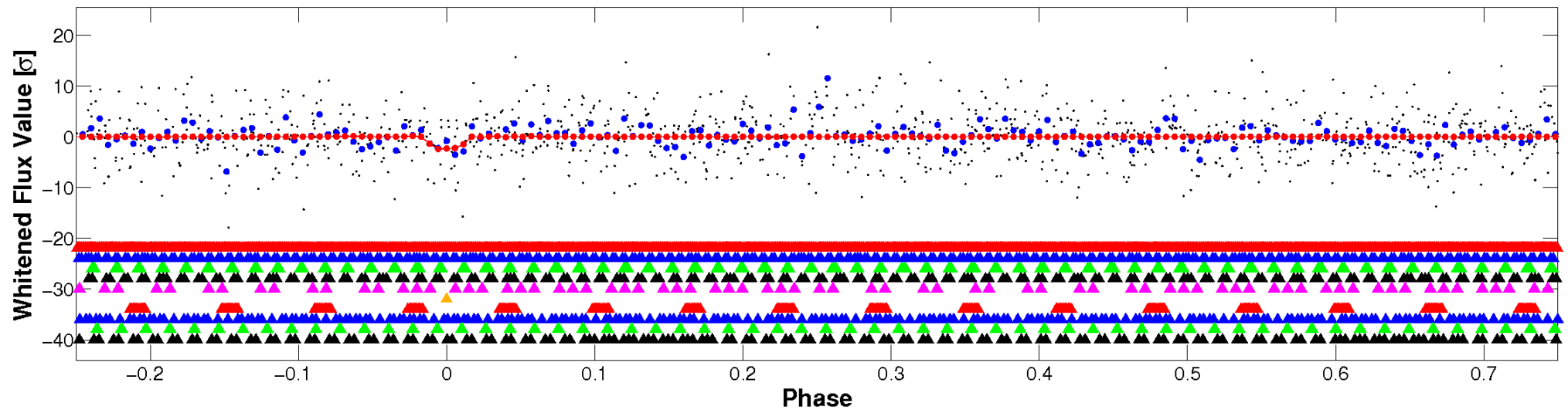


# Non-Whitened Vs. Whitened Light Curve

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

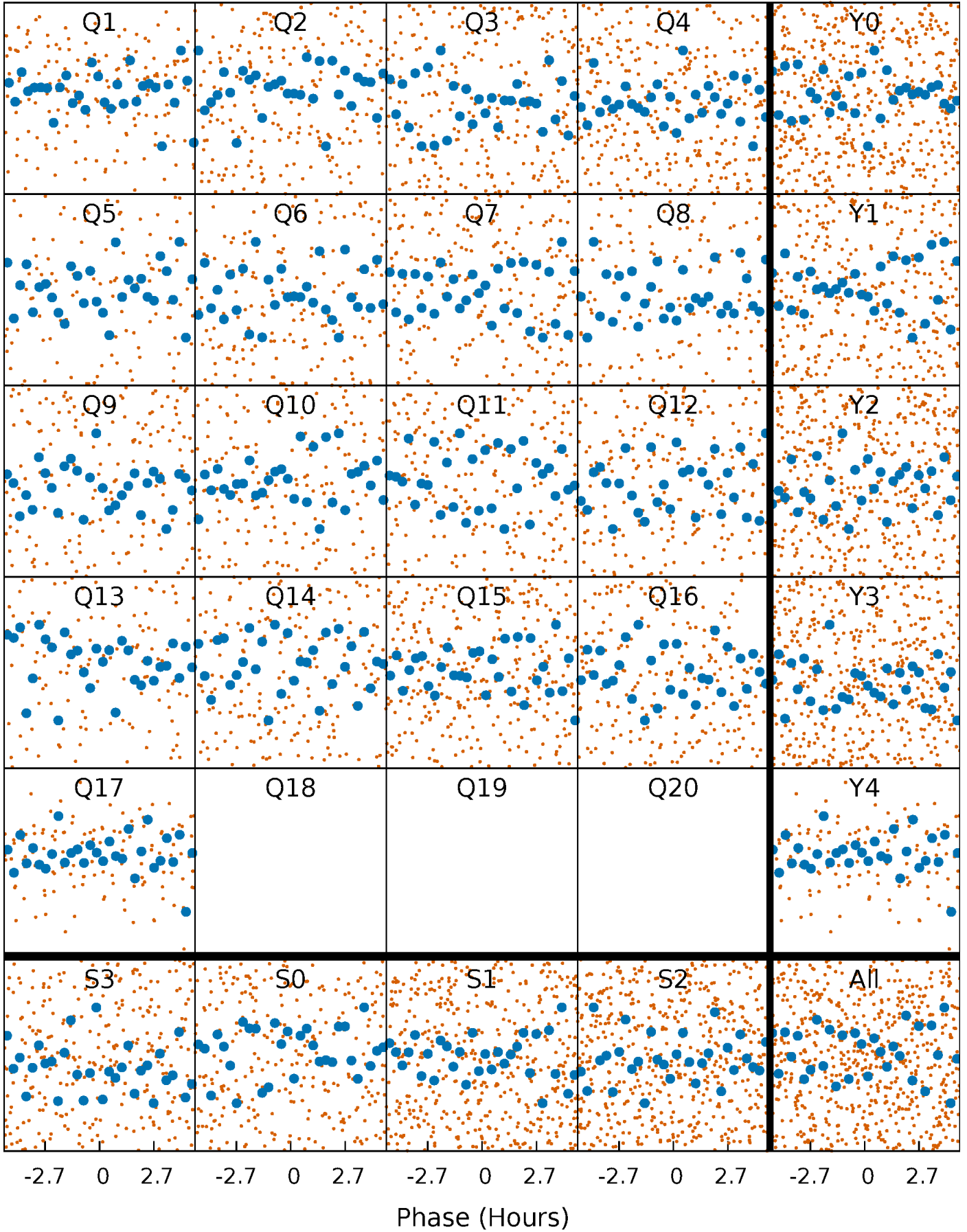


## Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



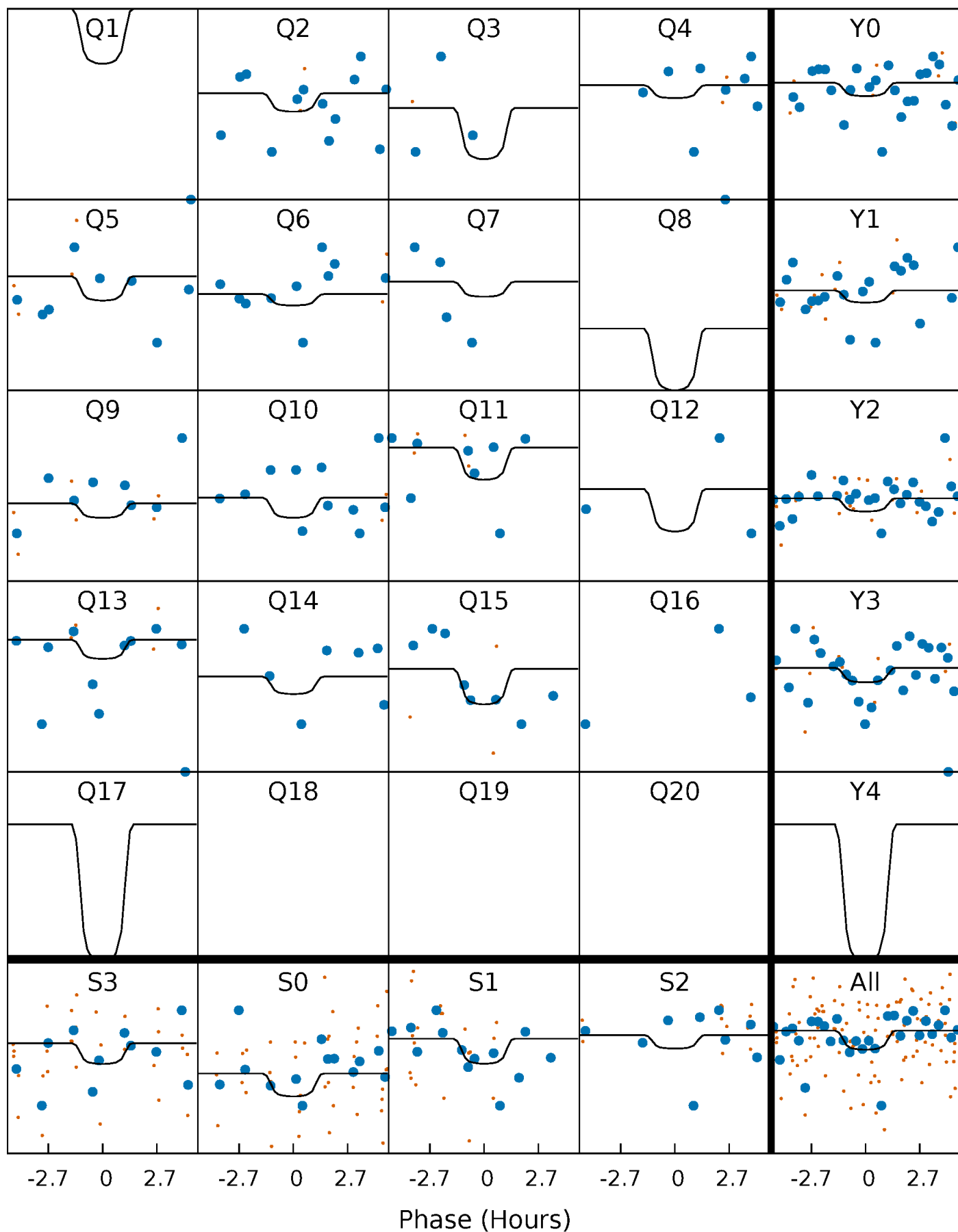
# PDC Quarter-Phased Transit Curves

TCE 008783270-06   P= 3.577228 Days    $T_0=133.596172$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 008783270-06 P= 3.577228 Days  $T_0=133.596172$  (BKJD)

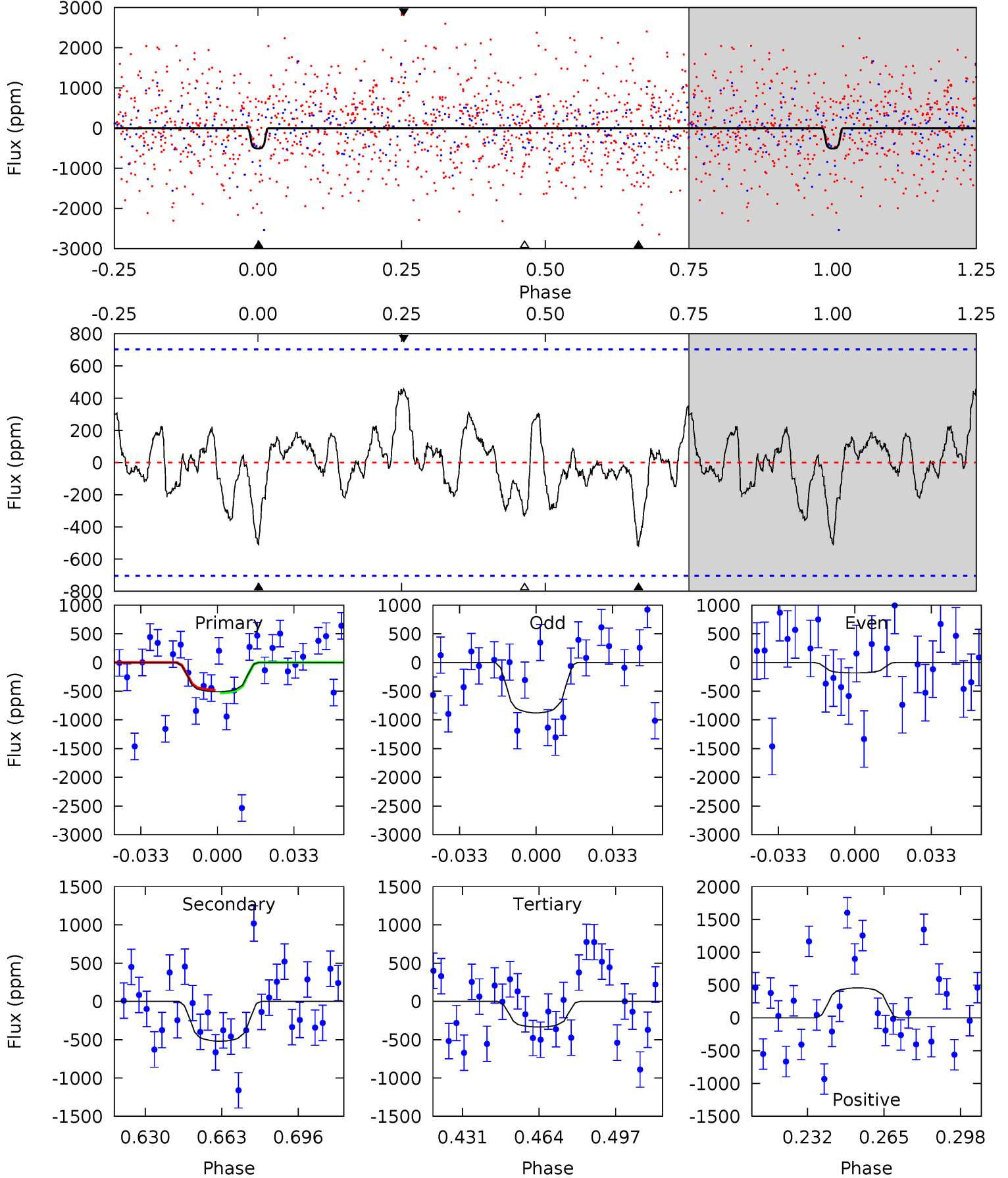


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

008783270-06, P = 3.577228 Days, E = 130.018944 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
3.46	3.53	2.27	3.11	4.79	2.13	1.06	1.19	0.35	1.26	0.42	2.40	0	0.47	0.16



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 008783270

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7094^{+225}_{-338}$	$3.884^{+0.345}_{-0.138}$	$-0.080^{+0.250}_{-0.350}$	$2.454^{+0.539}_{-1.001}$	$1.682^{+0.165}_{-0.385}$	$0.160^{+0.427}_{-0.063}$
	+3%/-5%	+9%/-4%	+312%/-438%	+22%/-41%	+10%/-23%	+266%/-40%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 008783270-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	-519±147	$14.57^{+16.78}_{-10.05}$	$2869^{+232}_{-292}$	$4388^{+3369}_{-1172}$	$3.534^{+37.126}_{-2.700}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

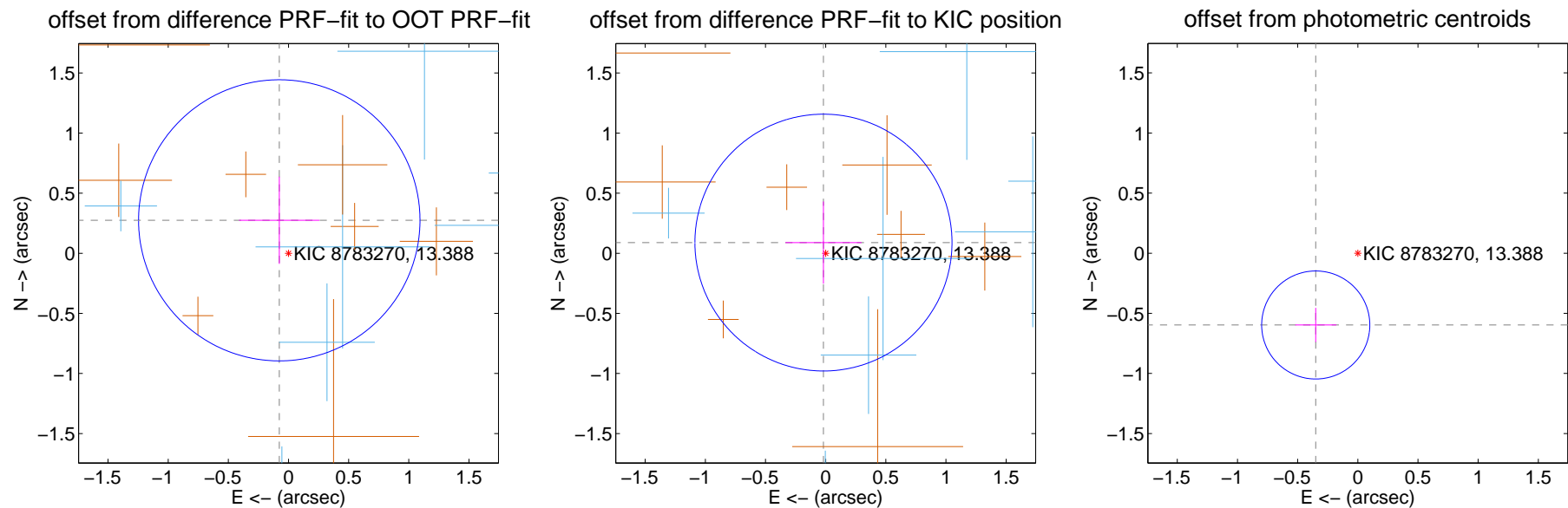
## DV Centroid Data

Supplemental centroid analysis for 008783270-06. Kepler magnitude: 13.39. Transit SNR 11.20

There are 7 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

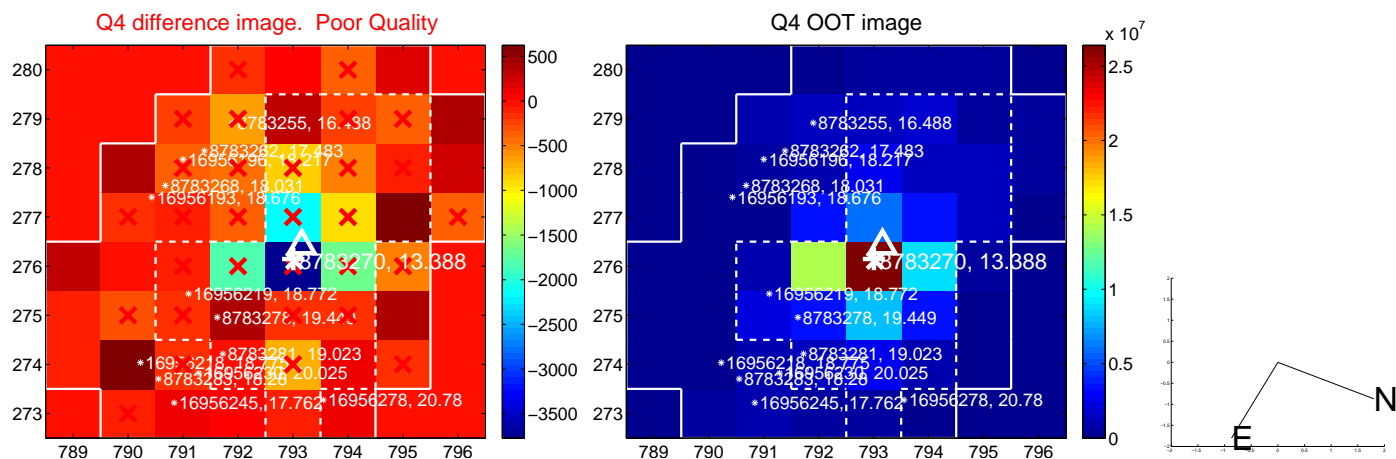
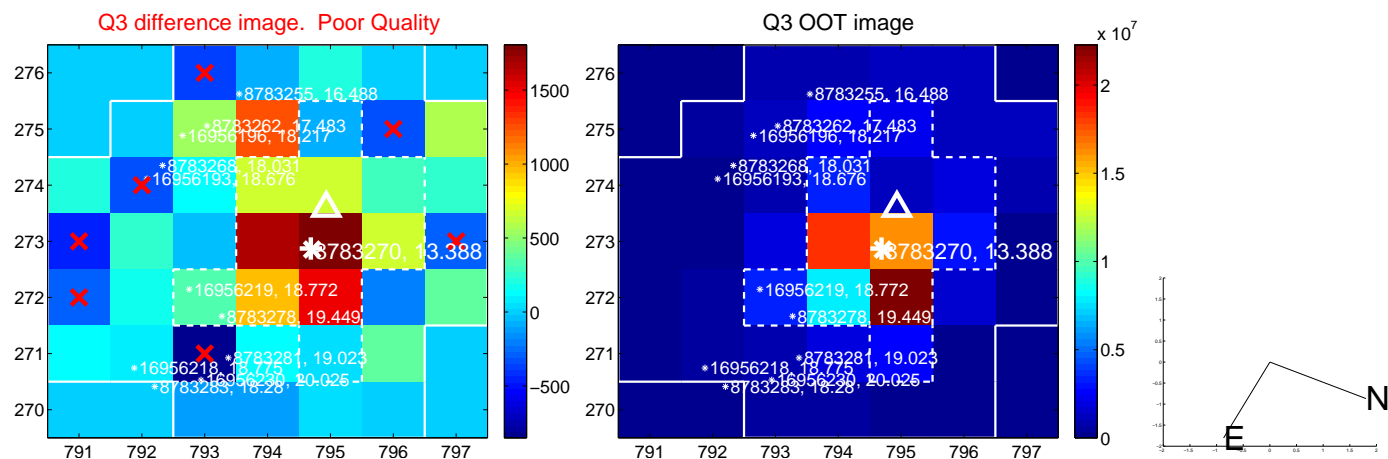
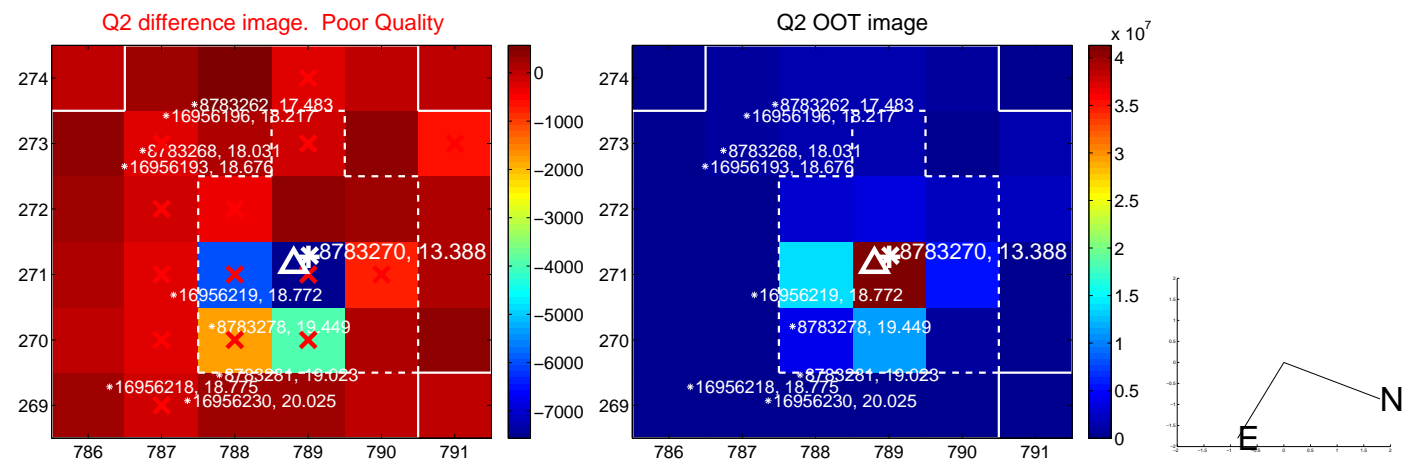
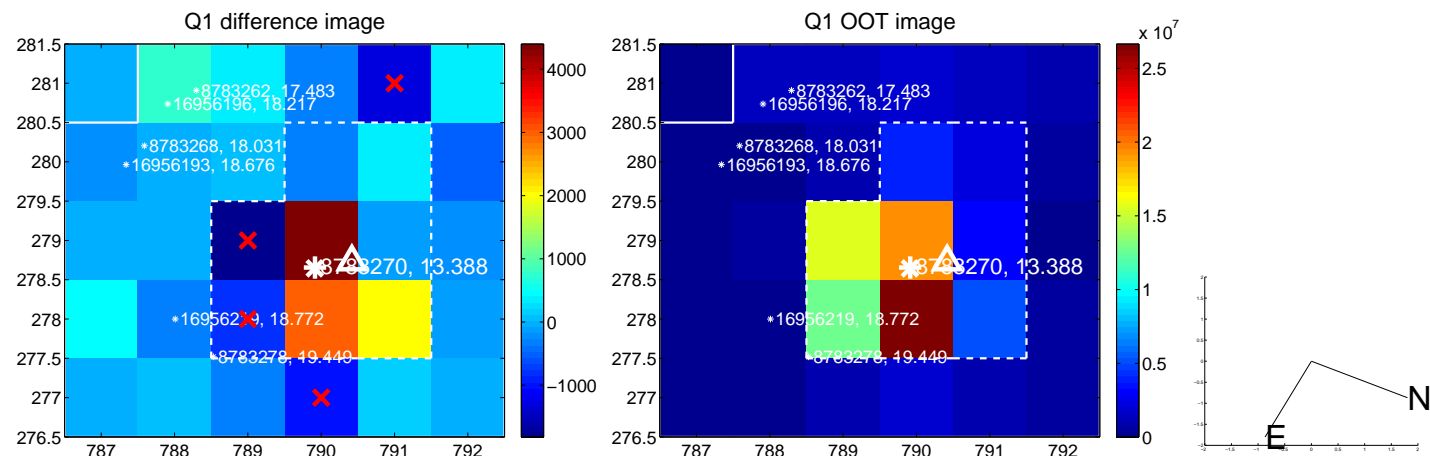
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.285 \pm 0.390$	0.73	$0.077 \pm 0.334$	$0.274 \pm 0.363$
PRF-fit source offset from KIC position	$0.091 \pm 0.356$	0.26	$0.018 \pm 0.316$	$0.089 \pm 0.342$
photometric centroid source offset	$0.69 \pm 0.15$	4.62	$0.35 \pm 0.17$	$-0.60 \pm 0.14$



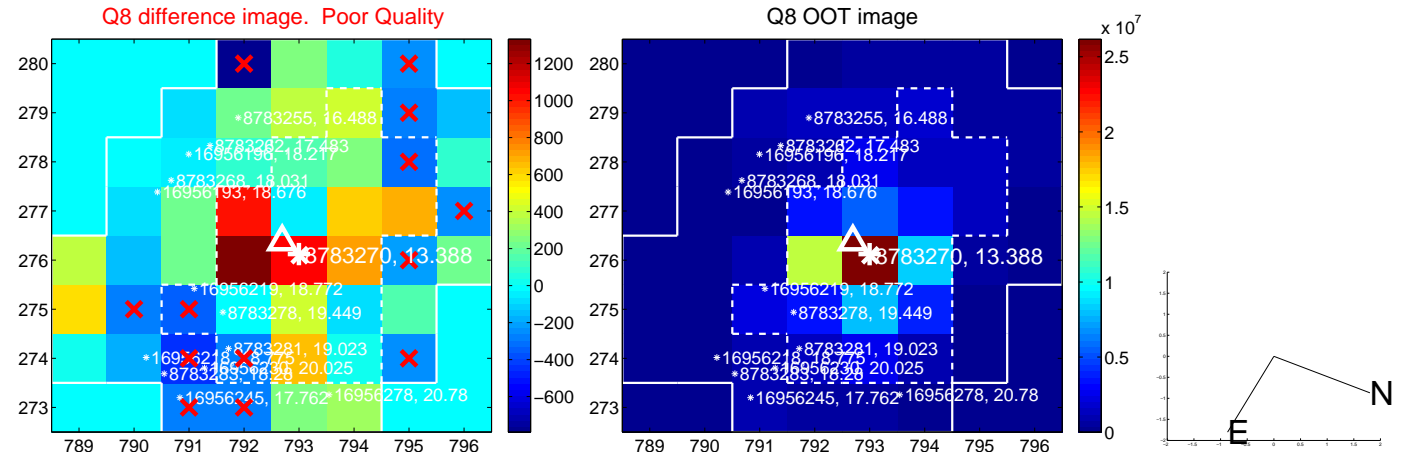
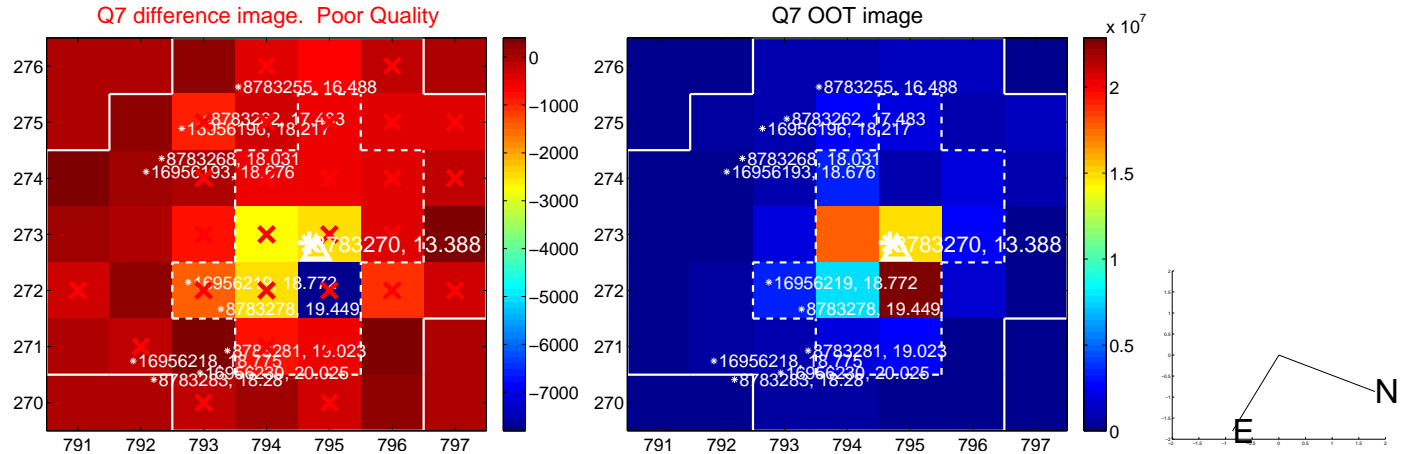
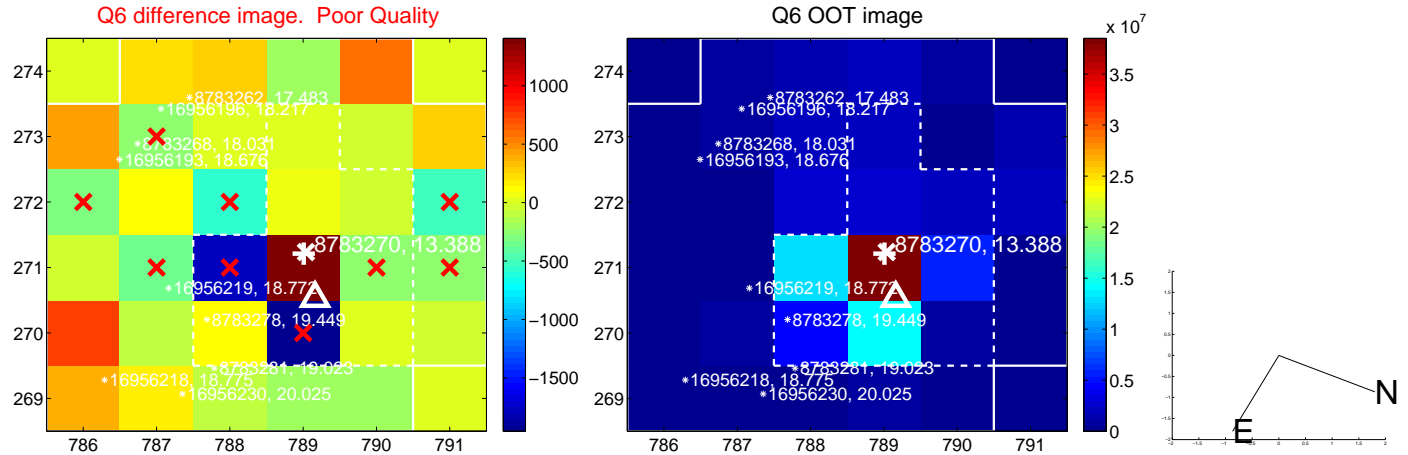
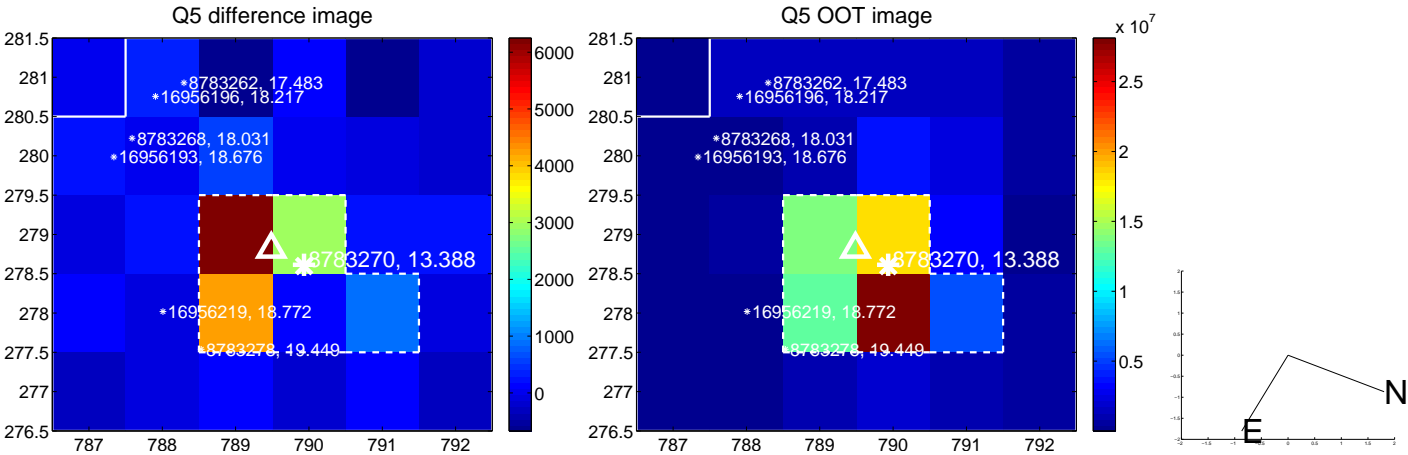
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

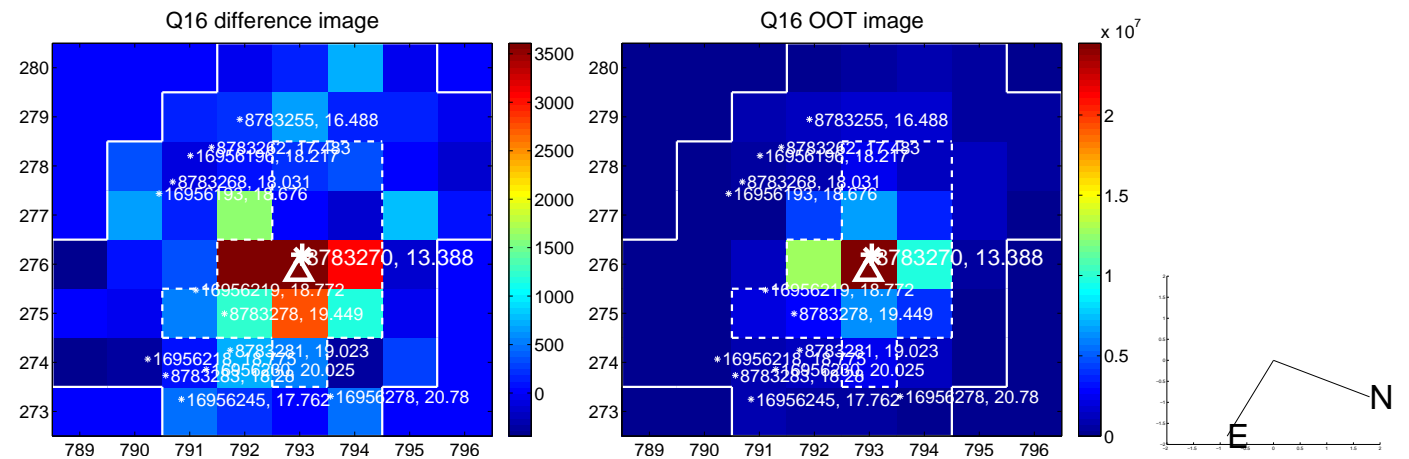
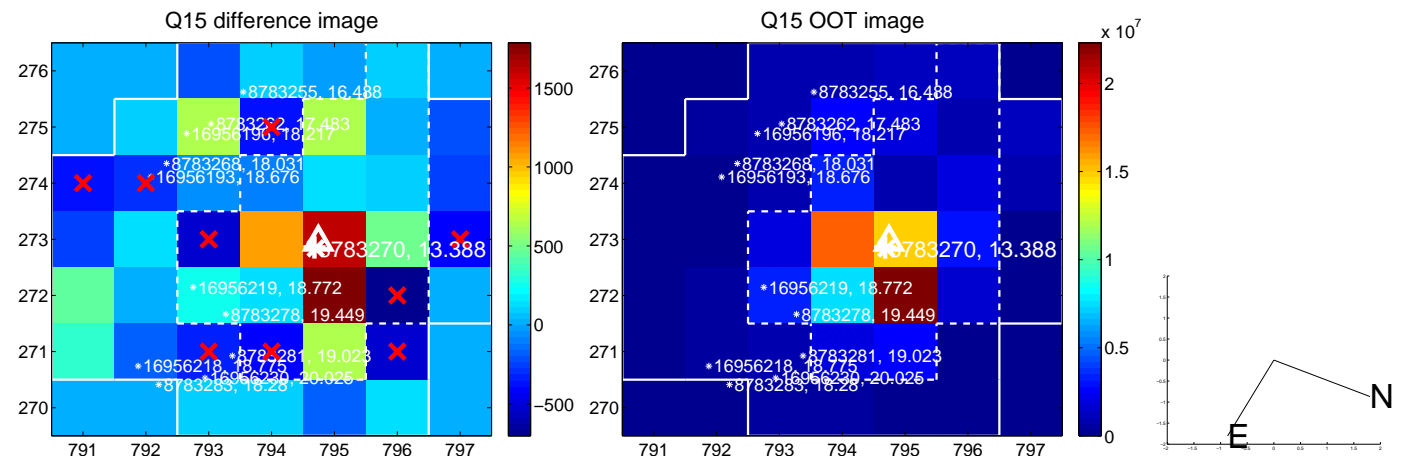
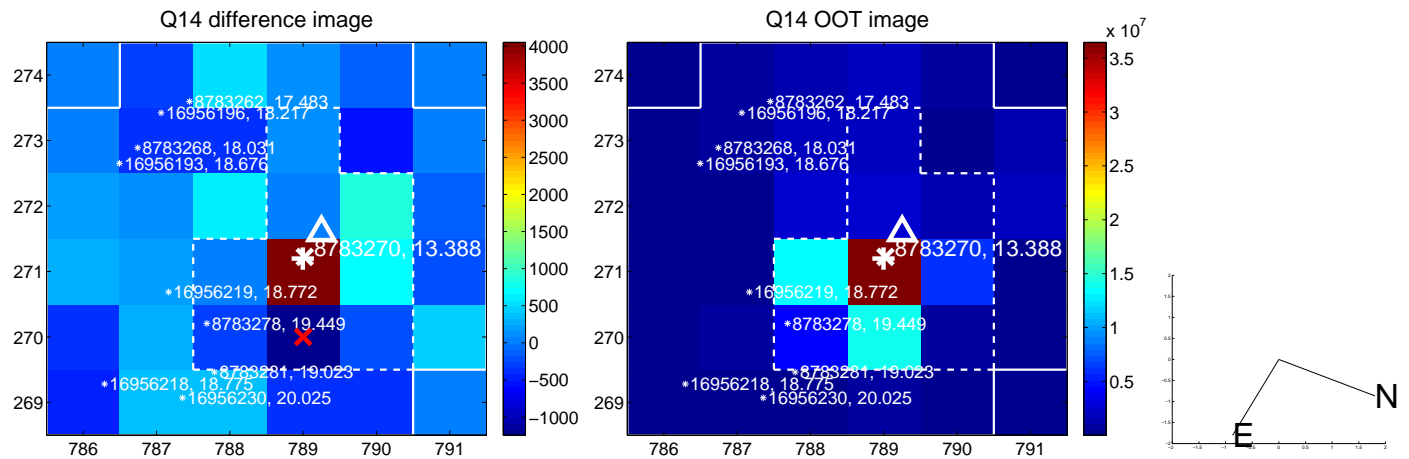
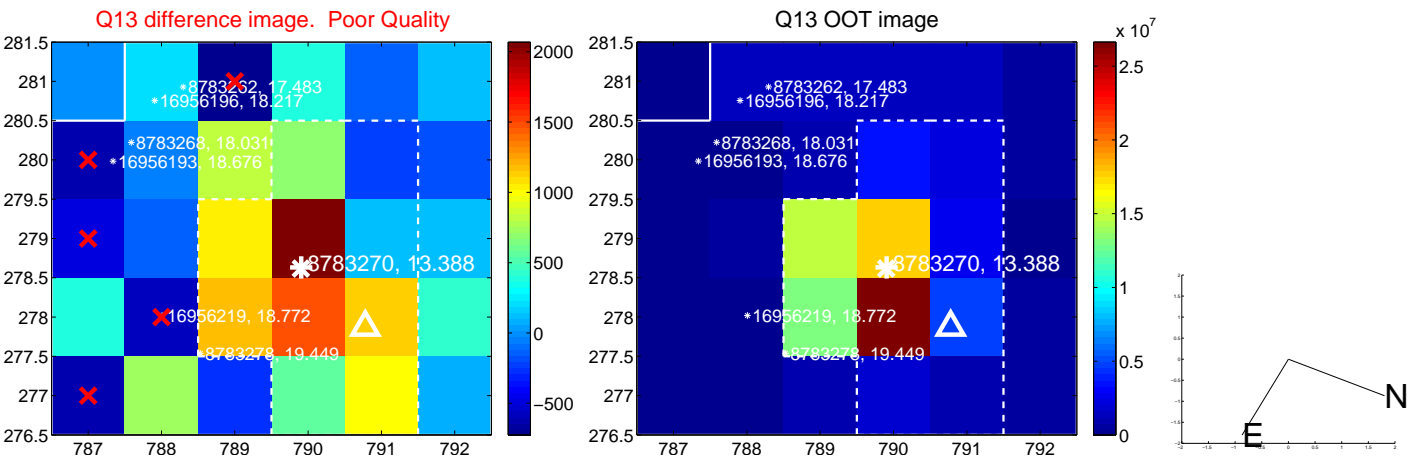


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

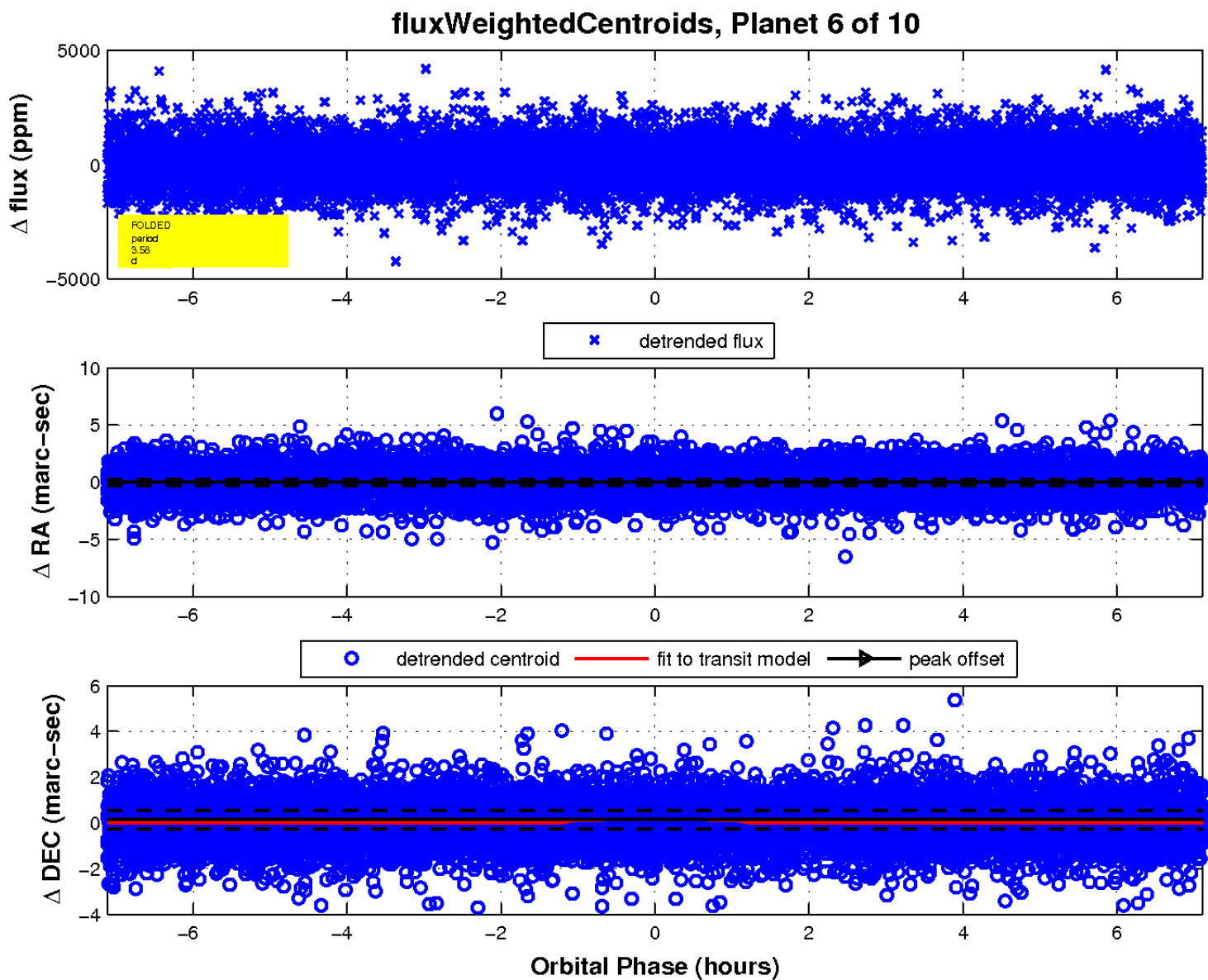
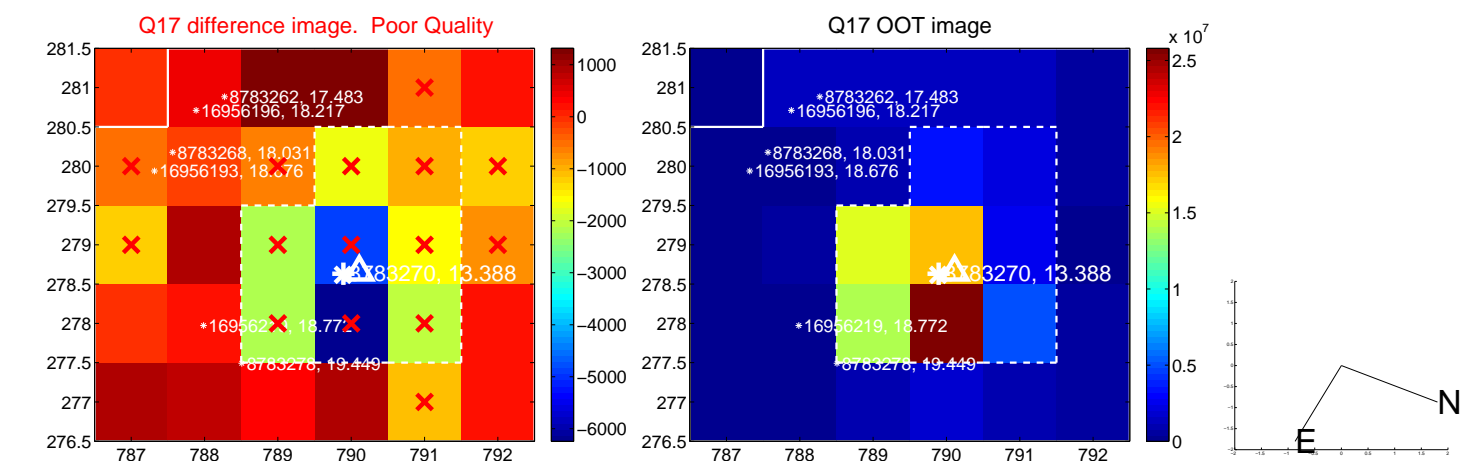




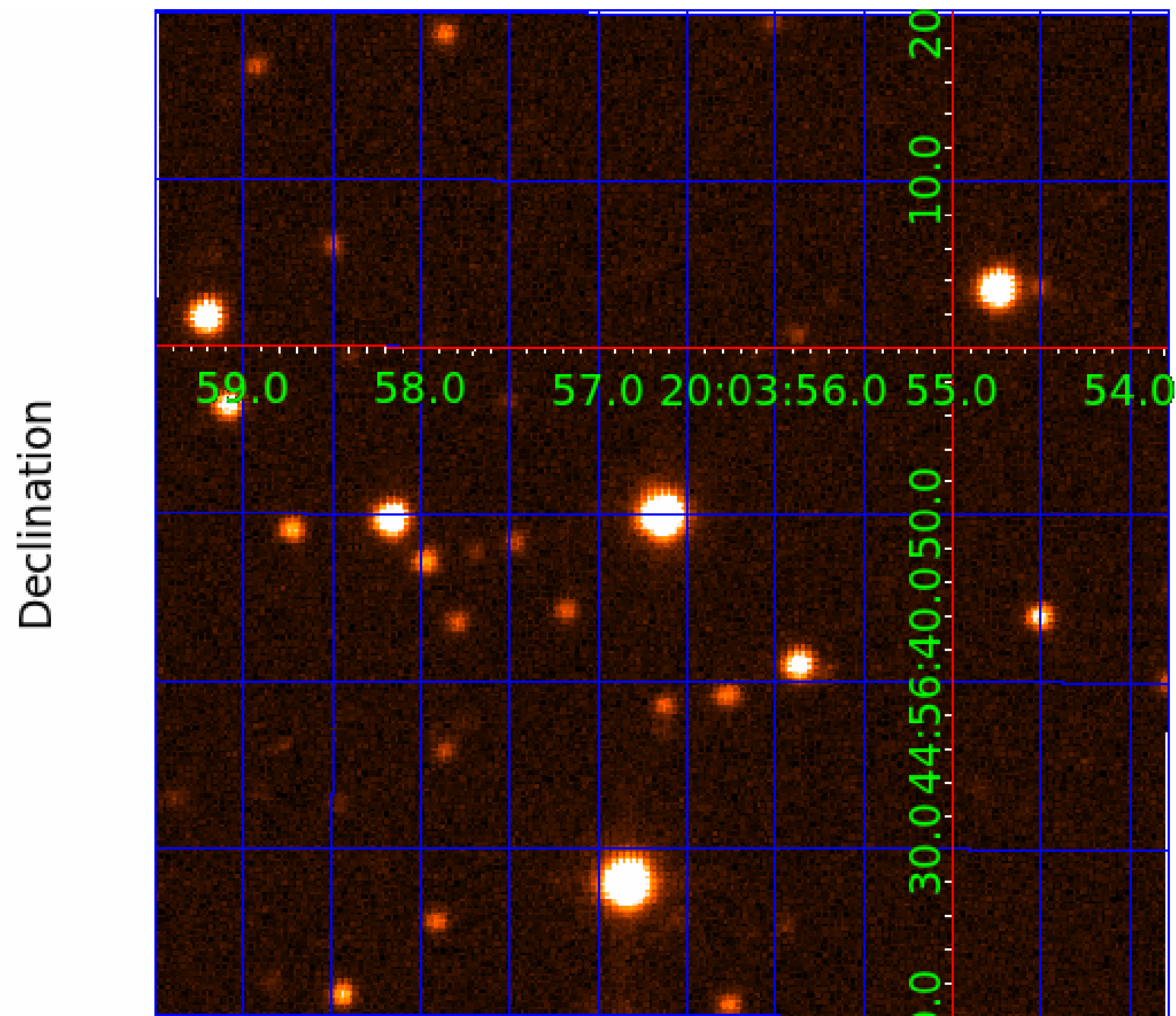
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image



# KIC 008783270

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008783270-01	OBS	No	0.519352	131.609633	77.2	3.910	15.0	13.0	2.45	7094	2.22	60407.78
008783270-02	OBS	No	4.505537	133.517654	691.1	1.274	12.3	10.2	2.45	7094	6.57	3388.81
008783270-03	OBS	No	6.986826	132.625777	665.5	2.000	13.1	-1.0	2.45	7094	6.42	1888.00
008783270-04	OBS	No	8.258431	139.501621	930.3	1.500	14.2	-1.0	2.45	7094	7.60	1510.70
008783270-05	OBS	No	19.737546	144.223497	644.1	1.500	13.9	-1.0	2.45	7094	6.32	472.77
008783270-06	OBS	No	3.577228	133.596172	487.7	2.372	14.1	11.2	2.45	7094	5.54	4609.42
008783270-07	OBS	No	7.824958	139.131252	1052.0	2.203	11.4	18.5	2.45	7094	8.09	1623.30
008783270-08	OBS	No	6.005497	133.207915	1459.7	1.374	13.0	19.8	2.45	7094	9.53	2310.17
008783270-09	OBS	No	6.216187	132.163758	1887.3	0.529	12.1	18.0	2.45	7094	13.61	2206.36
008783270-10	OBS	No	8.919382	136.025778	332.3	3.000	7.9	-1.0	2.45	7094	4.53	1363.31

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008783270-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_MEAS
008783270-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
008783270-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
008783270-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
008783270-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
008783270-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
008783270-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—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.

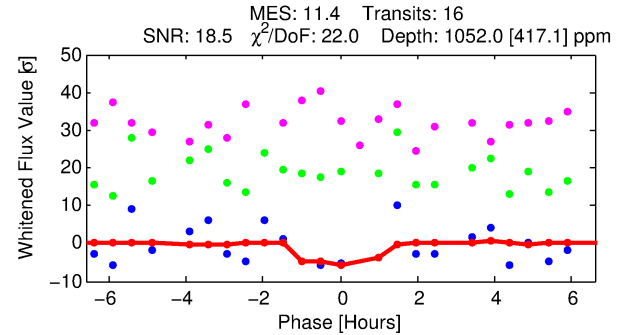
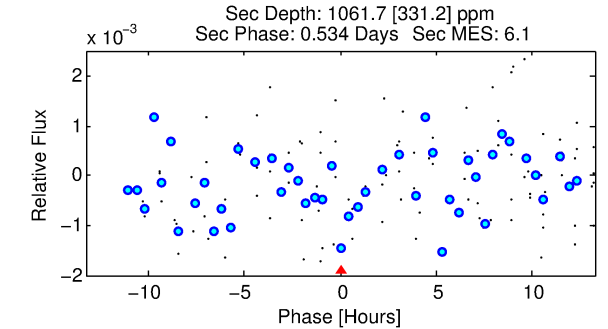
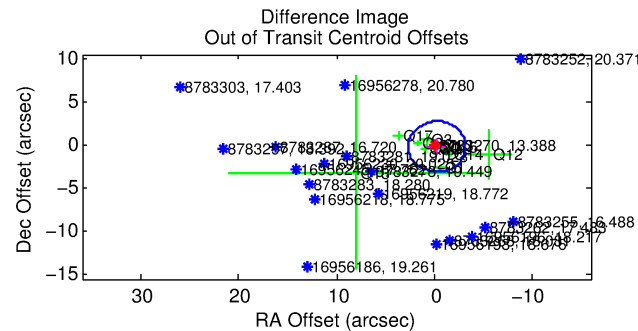
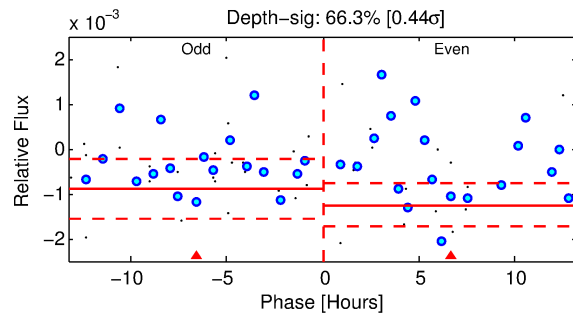
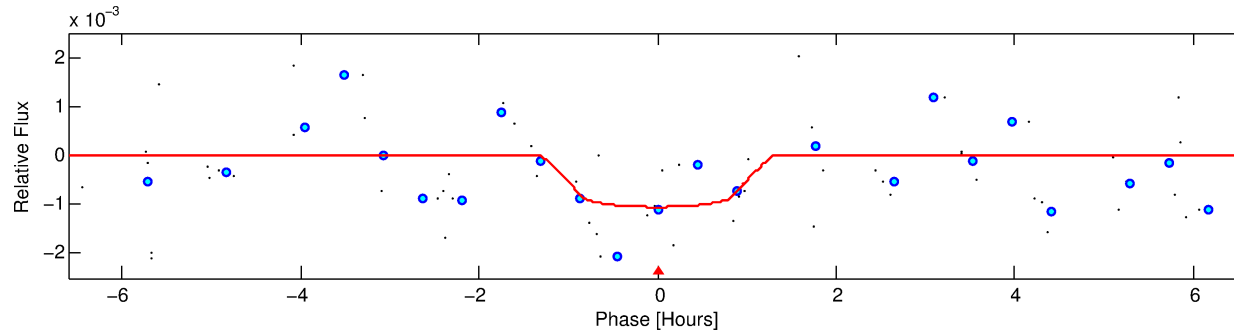
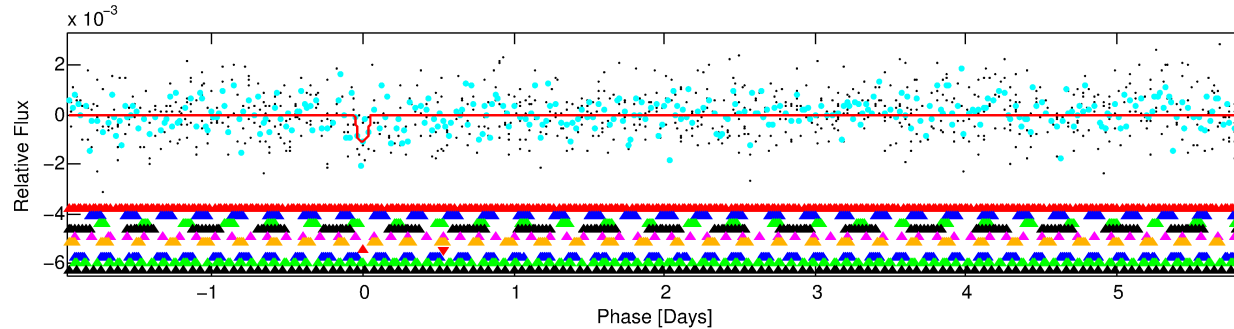
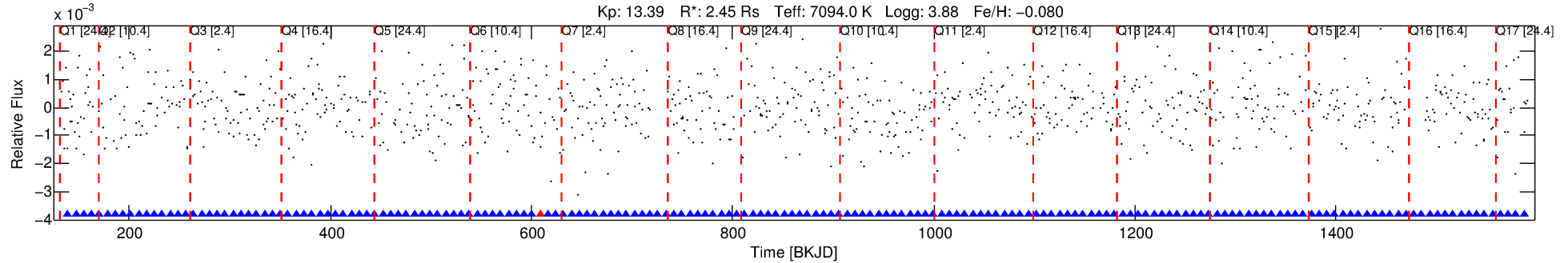
Ephemeris Match Information For 008783270-07

No Significant Match Found



# DV One-Page Summary

KIC: 8783270 Candidate: 7 of 10 Period: 7.825 d



## DV Fit Results:

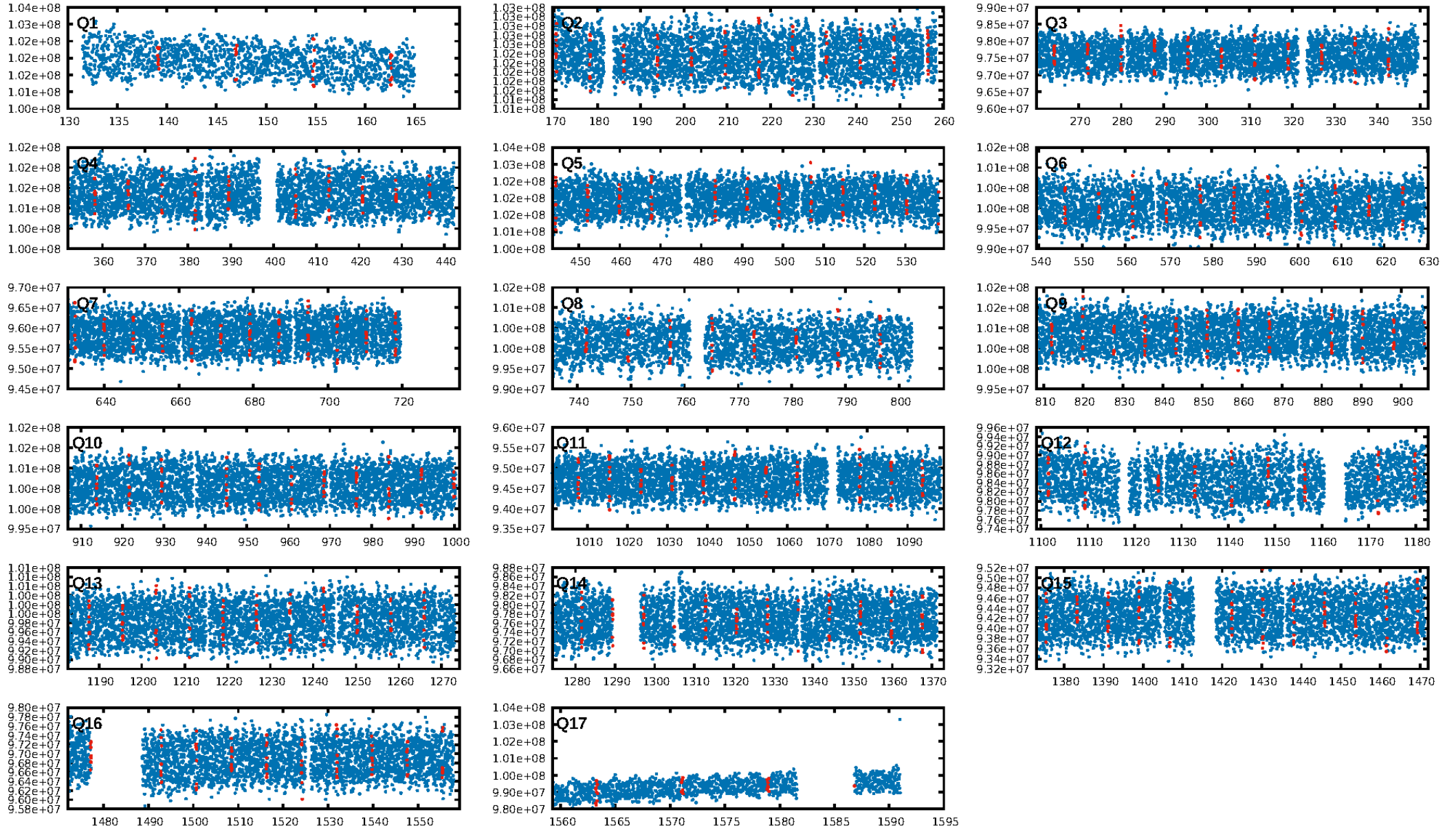
Period = 7.82496 [0.00020] d  
Epoch = 139.1313 [0.0211] BKJD  
Rp/R\* = 0.0302 [0.2591]  
a/R\* = 27.39 [1323.67]  
b = 0.21 [224.07]  
Seff = 1623.30 [1014.72]  
Teq = 1619 [253] K  
Rp = 8.09 [69.46] Re  
a = 0.0917 [0.0348] AU  
Ag = 75.12 [1289.58] [0.06 $\sigma$ ]  
Teffp = 7367 [31600] K [0.18 $\sigma$ ]

## DV Diagnostic Results:

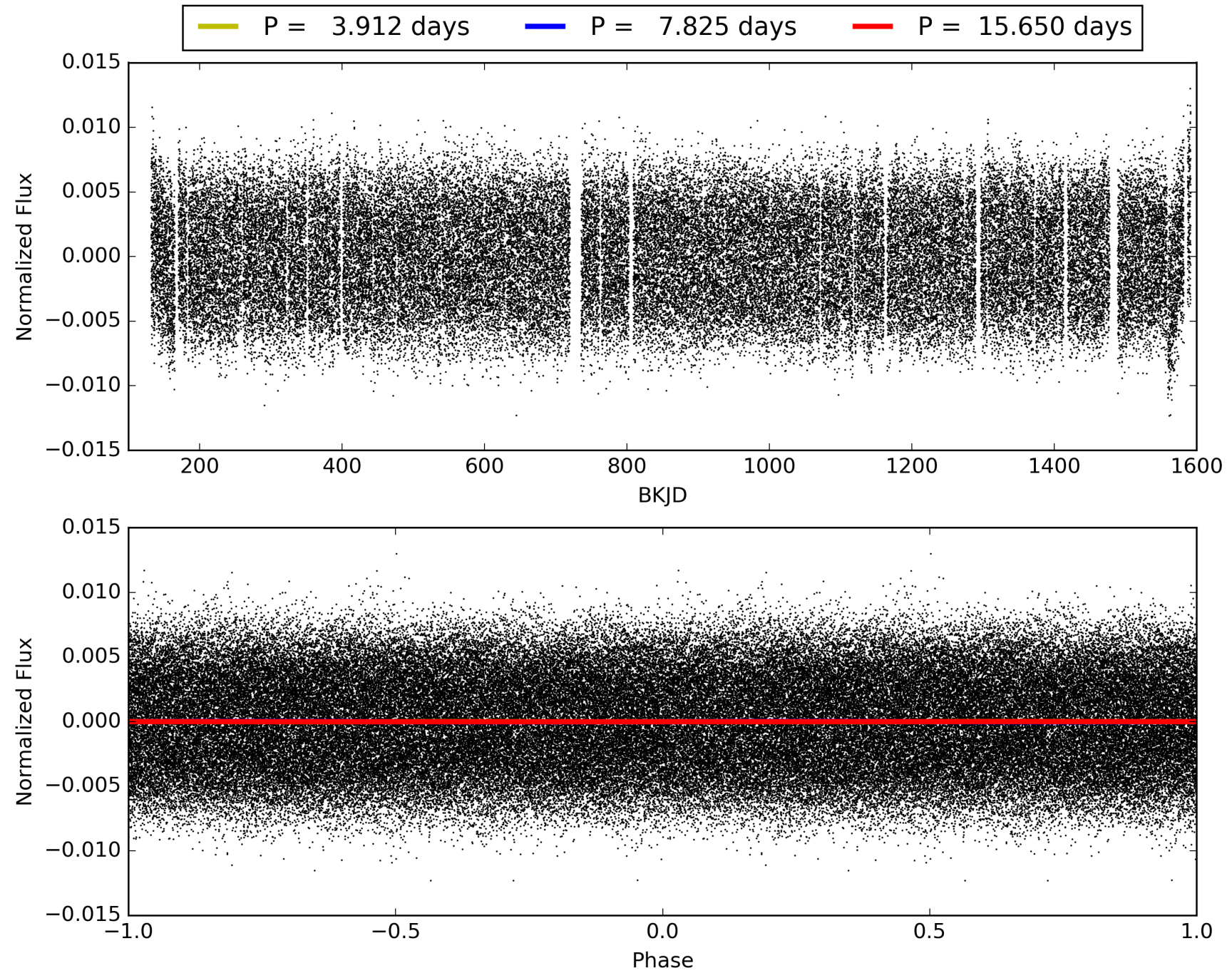
ShortPeriod-sig: 100.0% [6.76 $\sigma$ ]  
LongPeriod-sig: 100.0% [3.90 $\sigma$ ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 4.1%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.93 [14/15]  
GhostDiagnostic-chr: 0.2034  
Centroid-sig: 0.2%  
Centroid-so: 0.236 arcsec [1.98 $\sigma$ ]  
OotOffset-rm: 0.295 arcsec [0.30 $\sigma$ ]  
OotOffset-st: 4/3/2/4 [13]  
KicOffset-rm: 0.280 arcsec [0.30 $\sigma$ ]  
KicOffset-st: 4/3/2/4 [13]  
DiffImageQuality-fgm: 0.31 [4/13]  
DiffImageOverlap-fno: 0.00 [0/17]



# TCE 008783270-07, PDC Light Curves

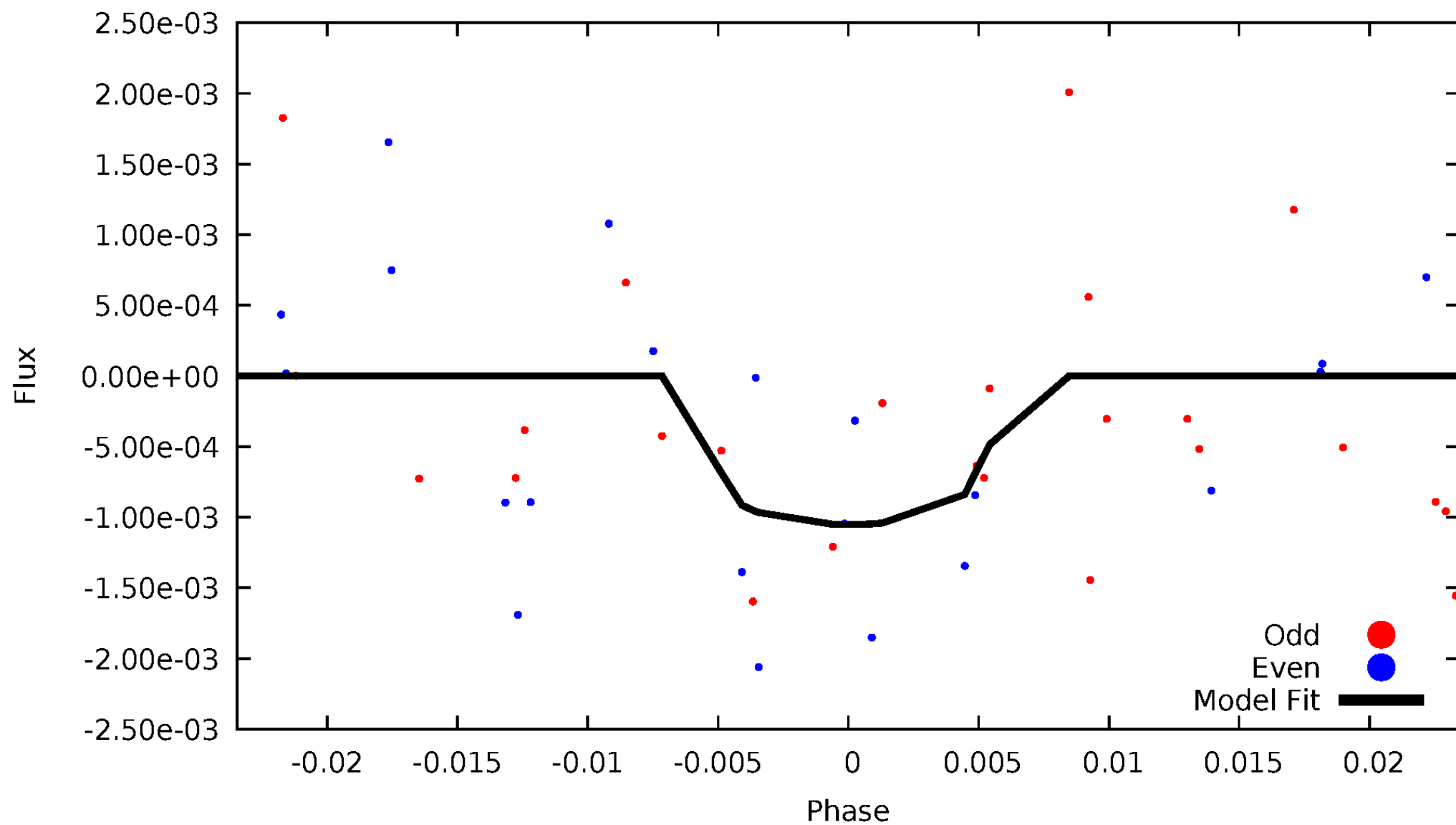


TCE 008783270-07



# DV Odd/Even

TCE 008783270-07



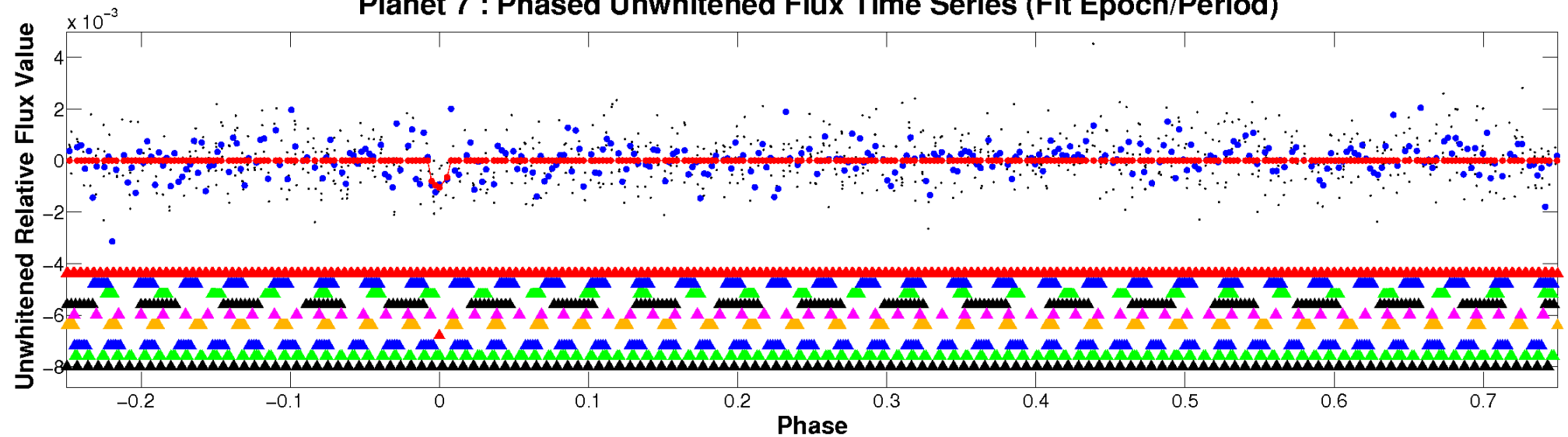


ALT Odd/Even

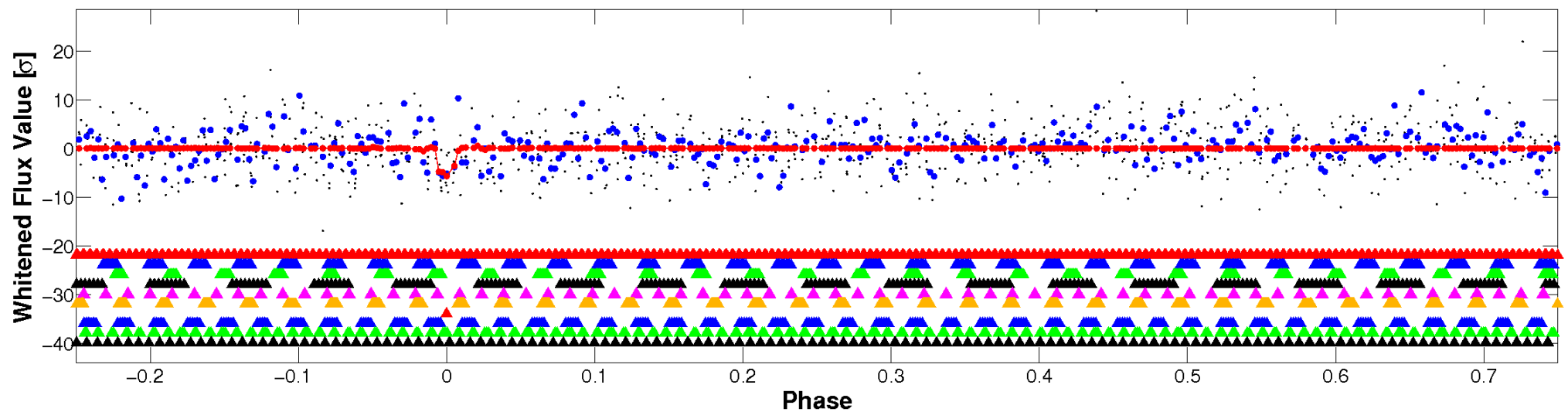
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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



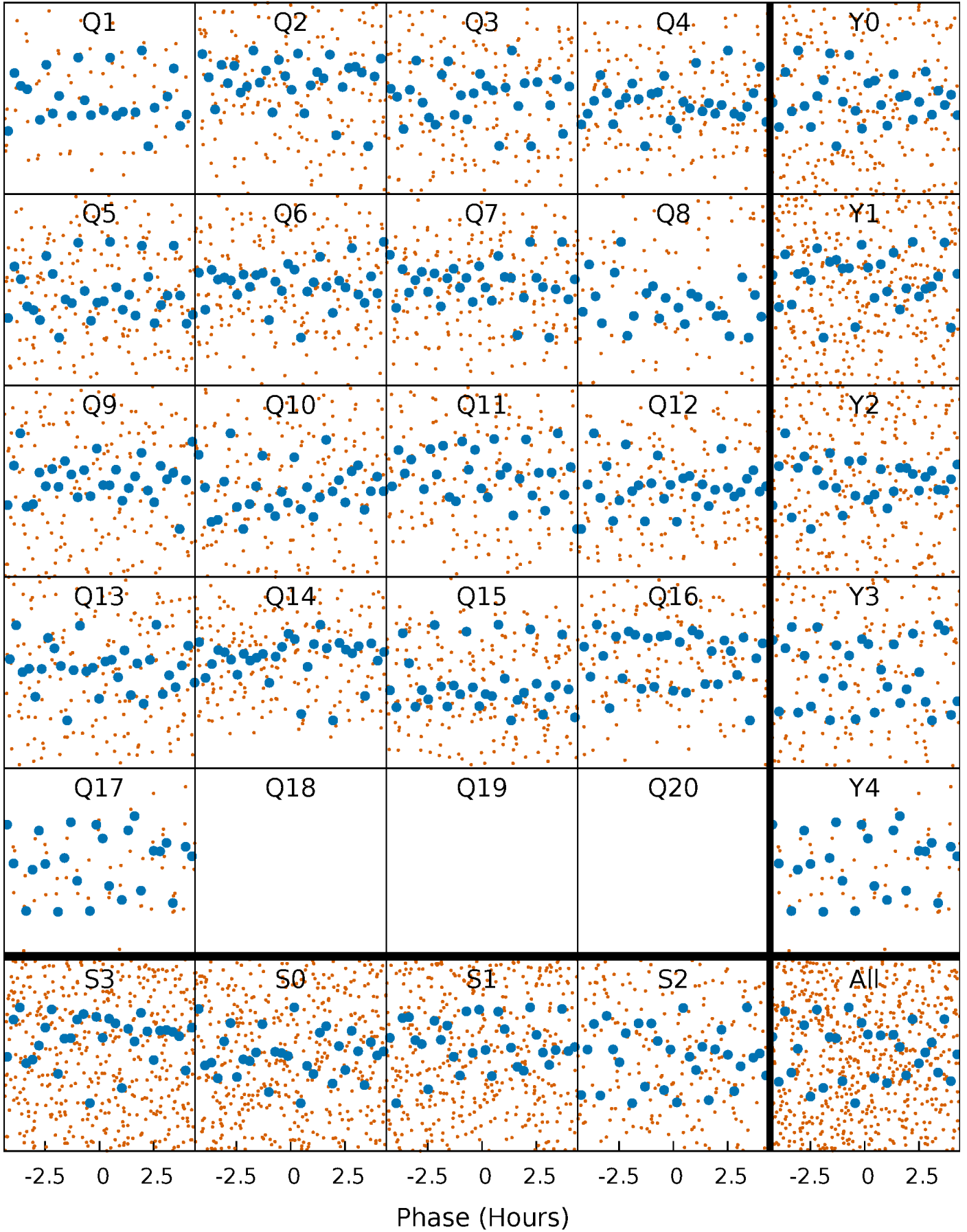
## Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)





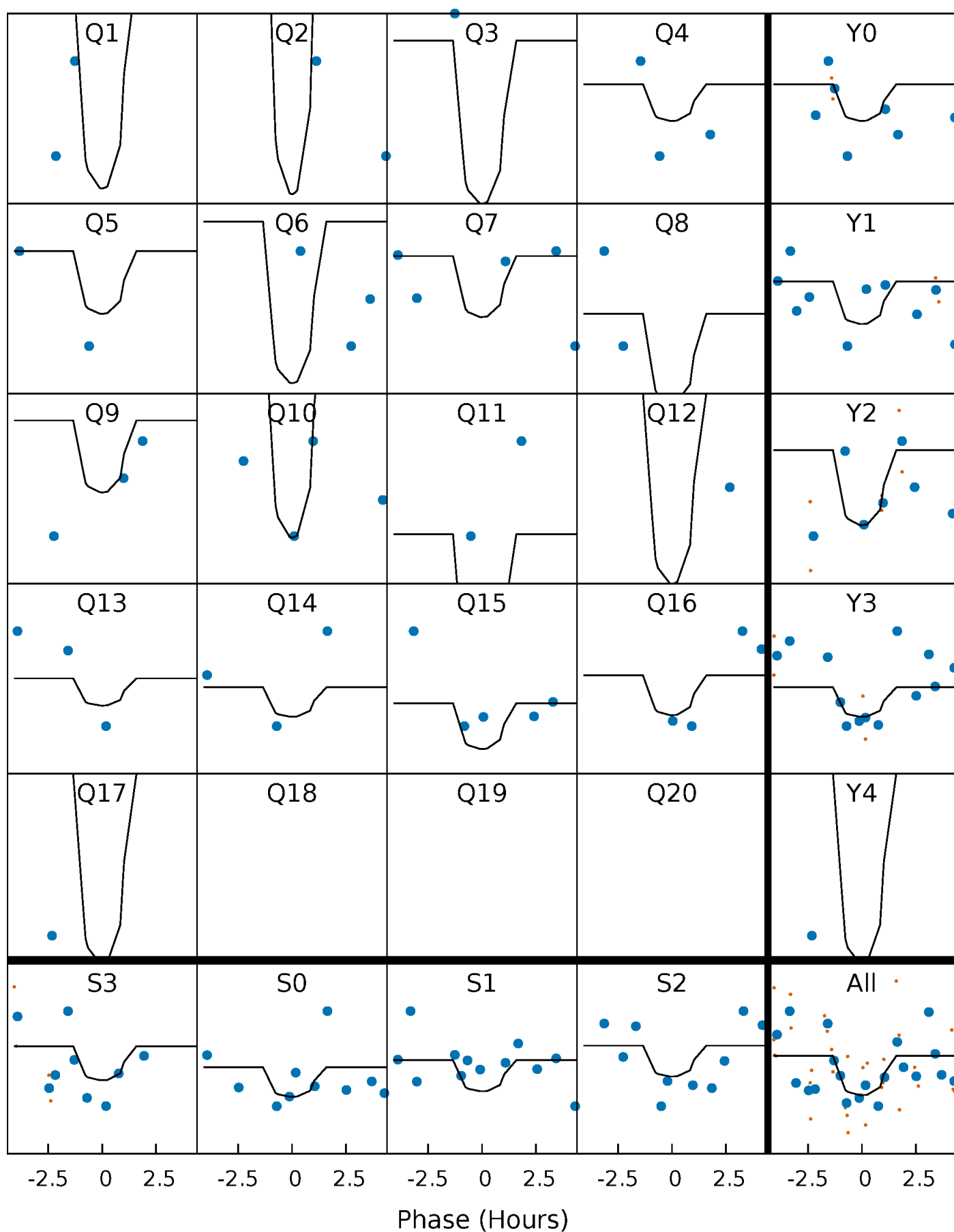
# PDC Quarter-Phased Transit Curves

TCE 008783270-07   P= 7.824958 Days    $T_0=139.131252$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 008783270-07     $P = 7.824958$  Days     $T_0 = 139.131252$  (BKJD)



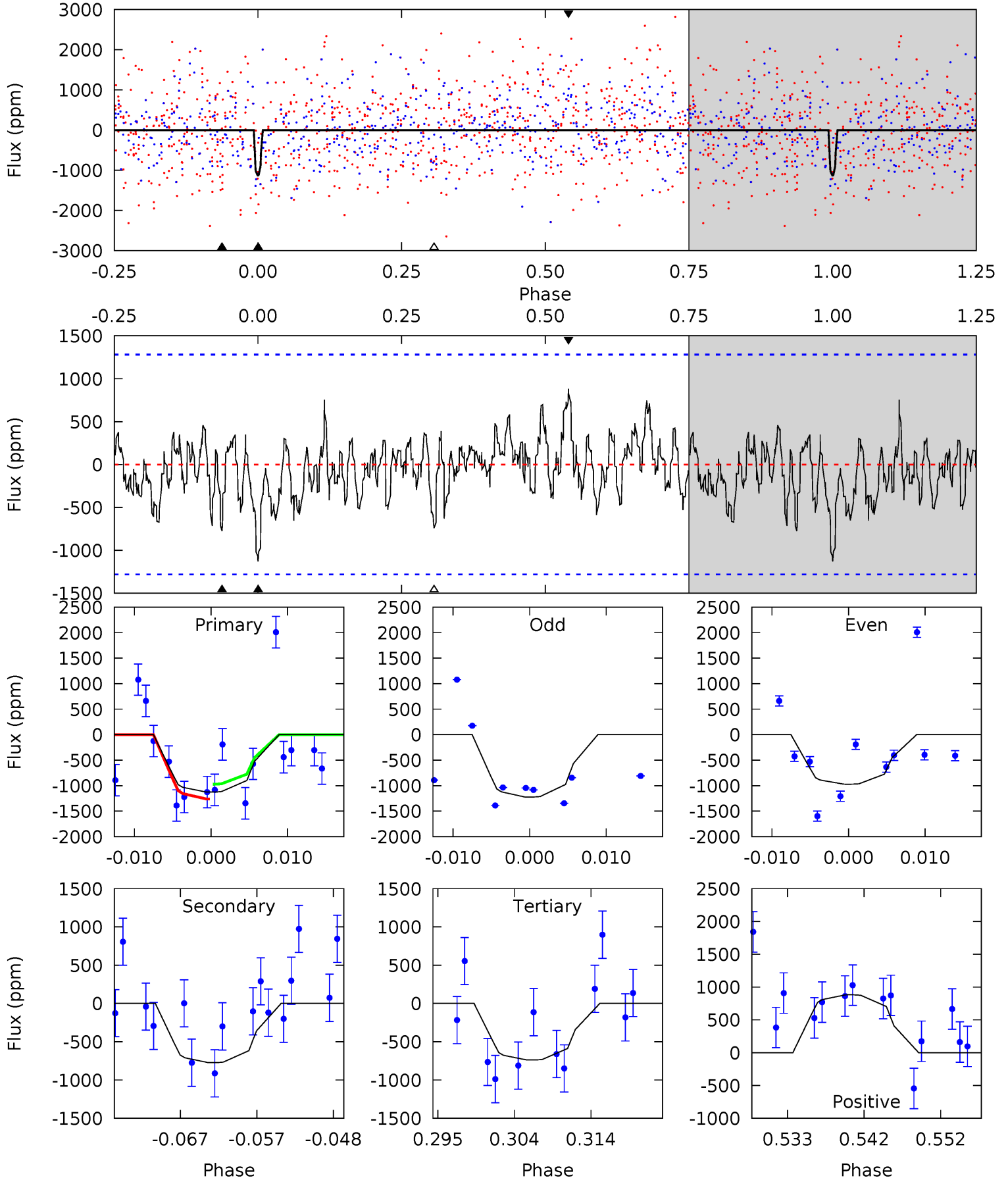


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

008783270-07, P = 7.824958 Days, E = 131.306294 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.43	3.04	2.91	3.47	5.04	2.59	1.12	1.53	0.96	0.14	-0.43	0.49	0	0.44	0.56



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 008783270

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7094^{+225}_{-338}$	$3.884^{+0.345}_{-0.138}$	$-0.080^{+0.250}_{-0.350}$	$2.454^{+0.539}_{-1.001}$	$1.682^{+0.165}_{-0.385}$	$0.160^{+0.427}_{-0.063}$
	+3%/-5%	+9%/-4%	+312%/-438%	+22%/-41%	+10%/-23%	+266%/-40%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 008783270-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-774 \pm 254$	$47.86^{+48.85}_{-33.44}$	$2224^{+173}_{-245}$	$3095^{+1777}_{-1005}$	$1.524^{+14.189}_{-1.178}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

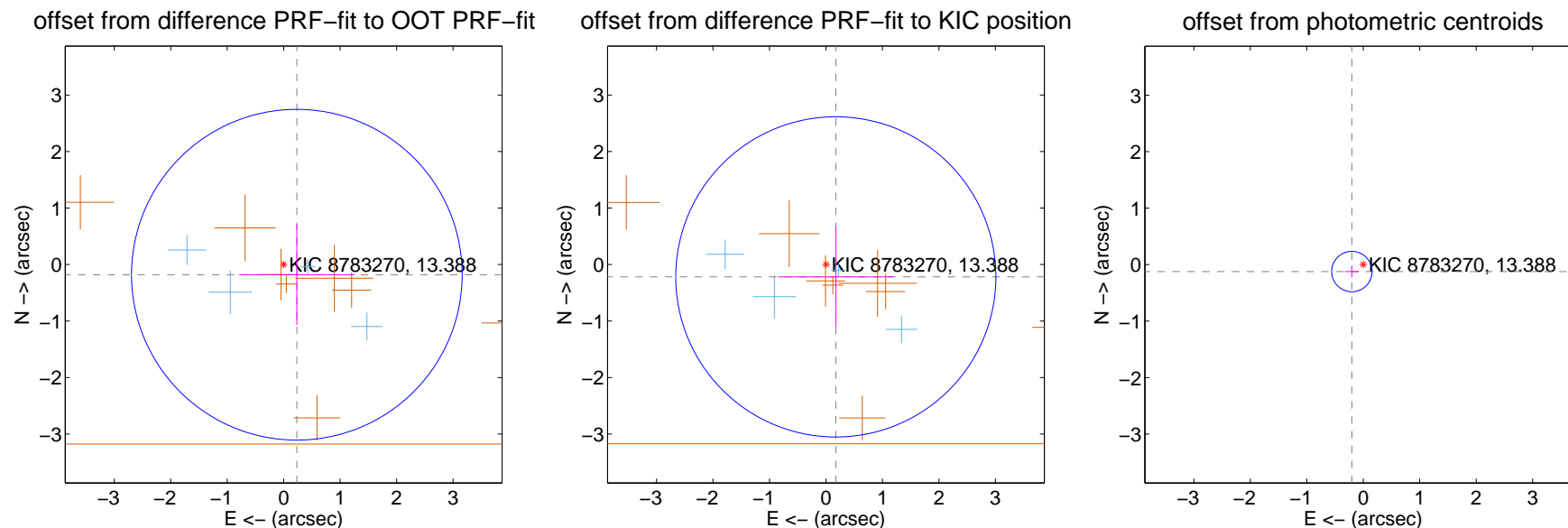
## DV Centroid Data

Supplemental centroid analysis for 008783270-07. Kepler magnitude: 13.39. Transit SNR 18.48

There are 4 quarters with good PRF difference image offsets

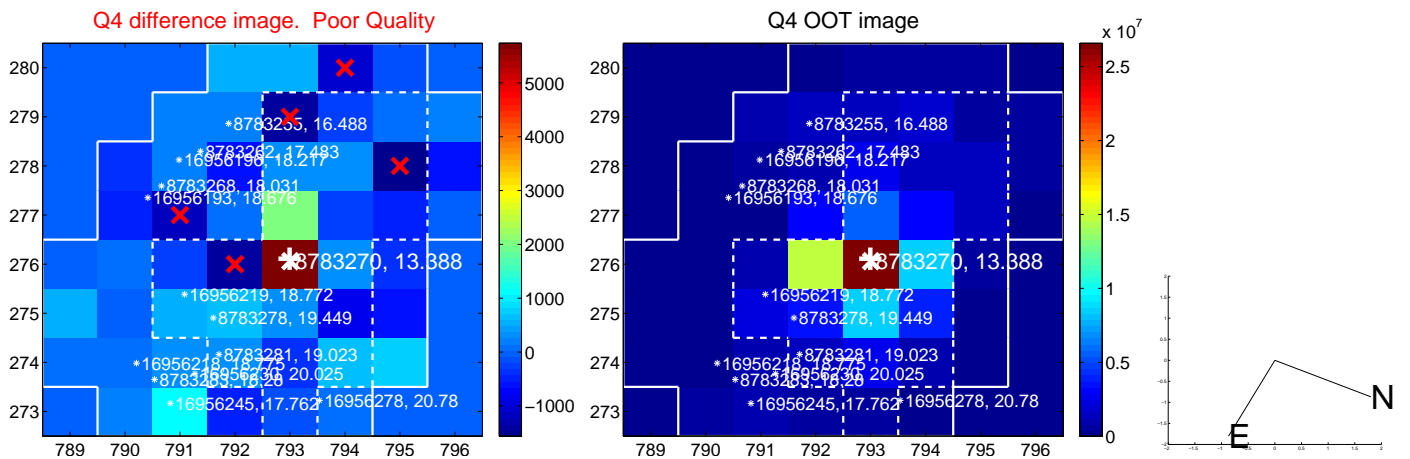
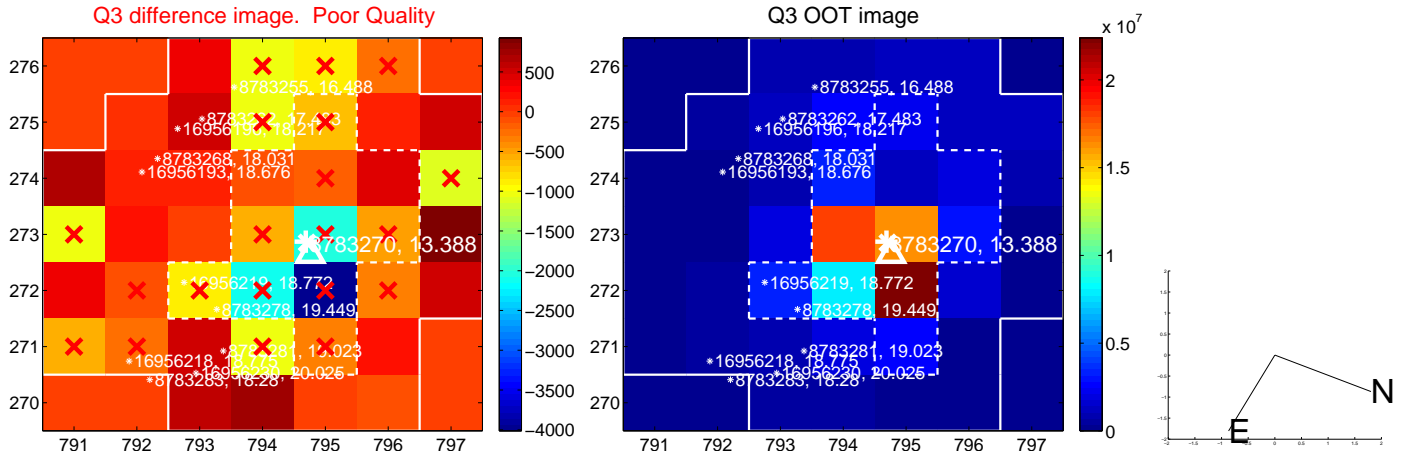
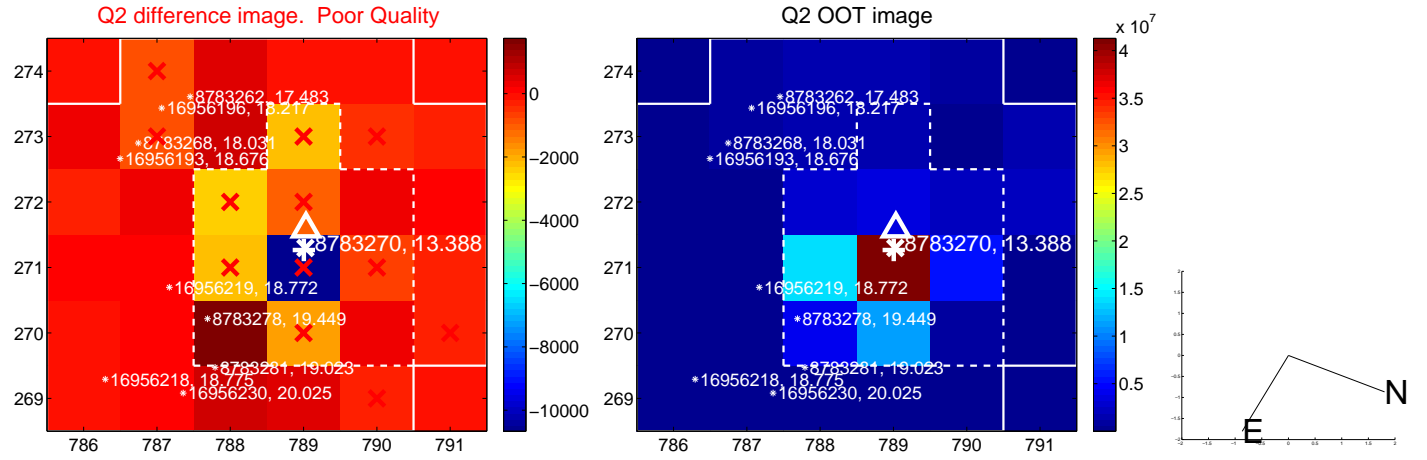
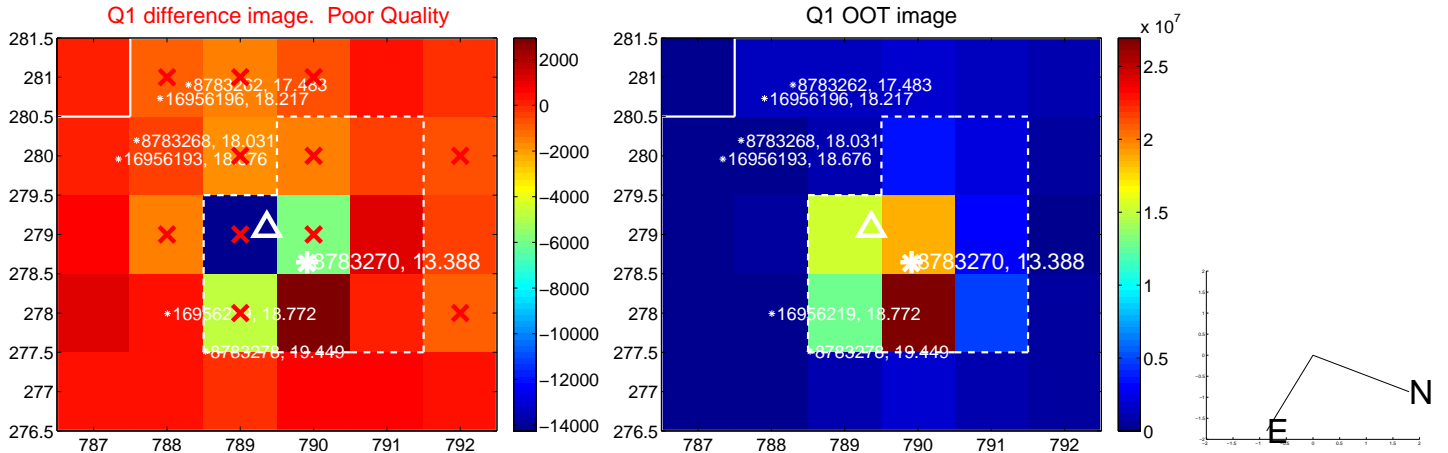
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.295 \pm 0.976$	0.30	$-0.233 \pm 1.023$	$-0.180 \pm 0.891$
PRF-fit source offset from KIC position	$0.280 \pm 0.945$	0.30	$-0.174 \pm 1.023$	$-0.219 \pm 0.891$
photometric centroid source offset	$0.24 \pm 0.12$	1.98	$0.20 \pm 0.12$	$-0.12 \pm 0.10$

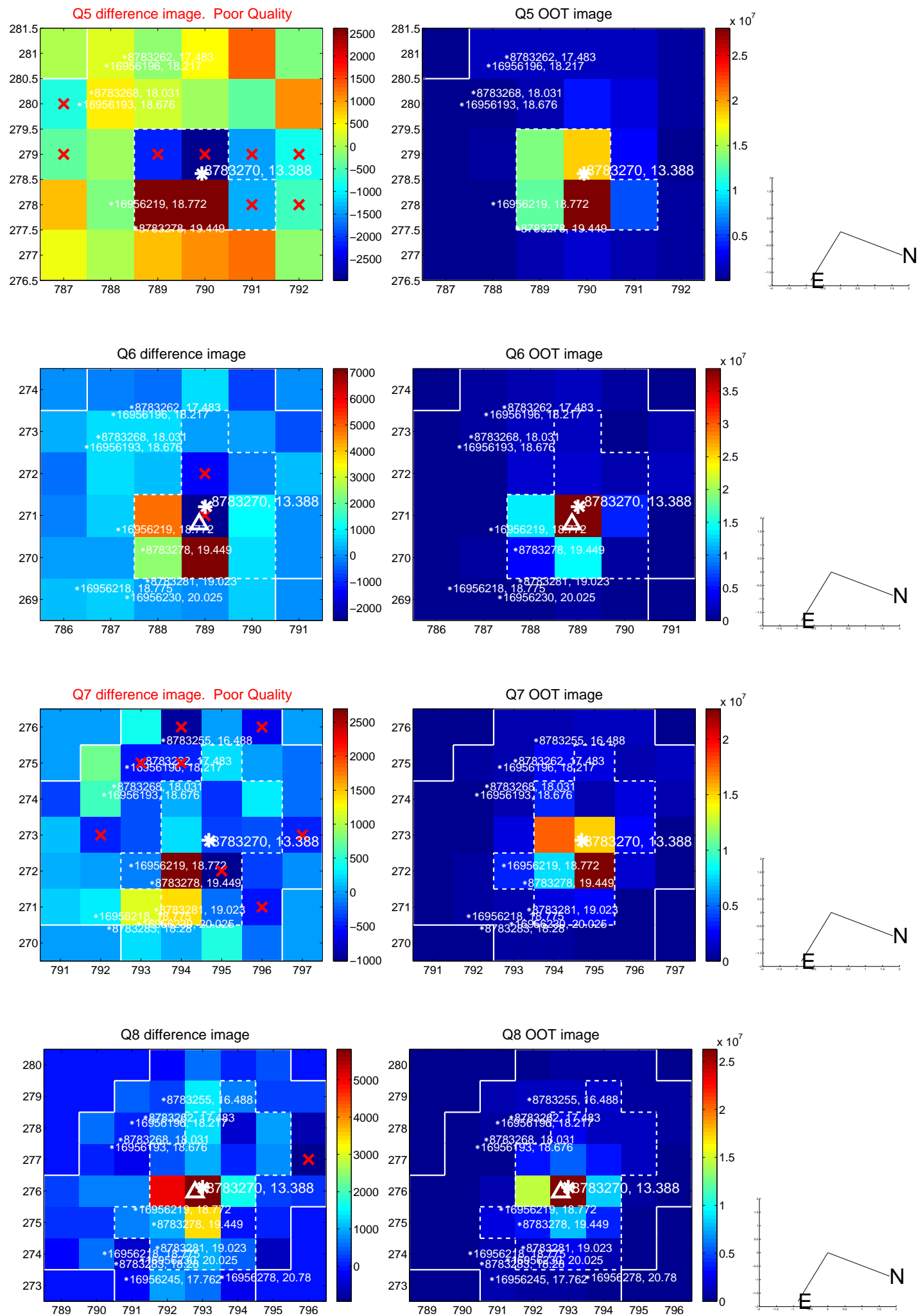


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

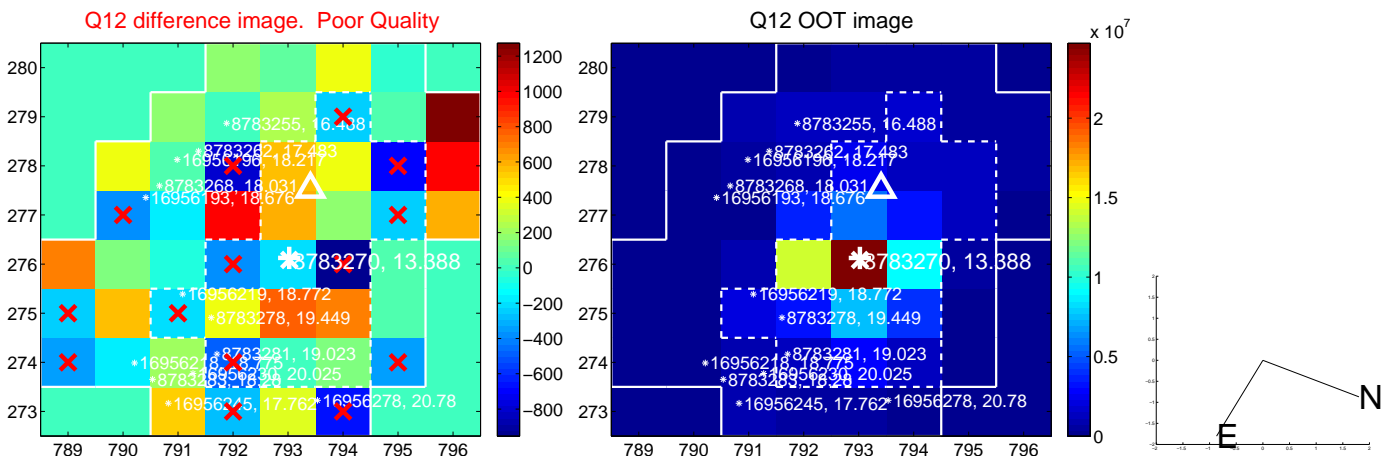
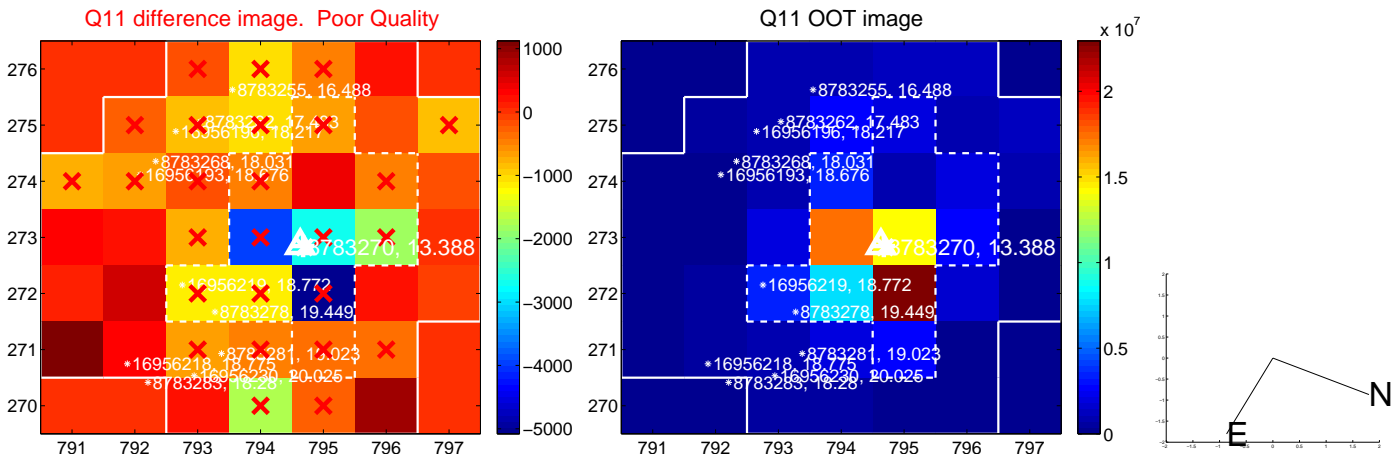
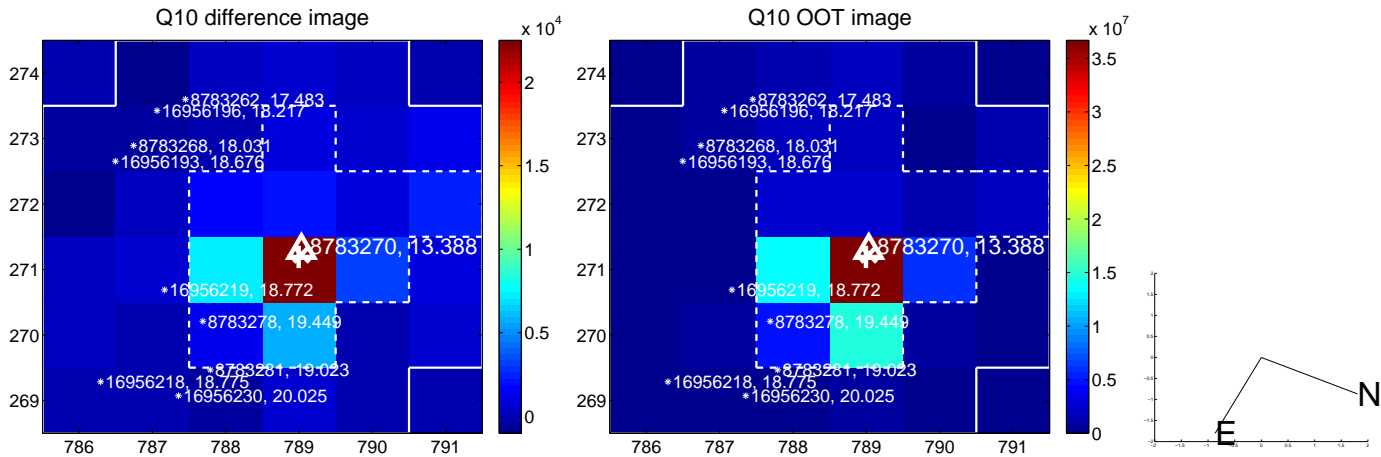
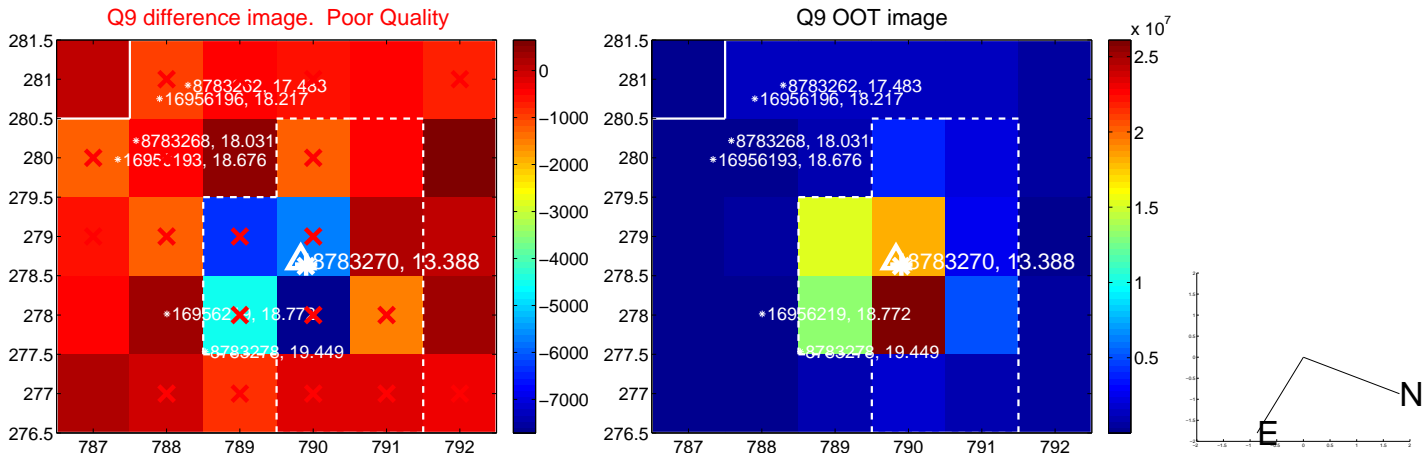
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

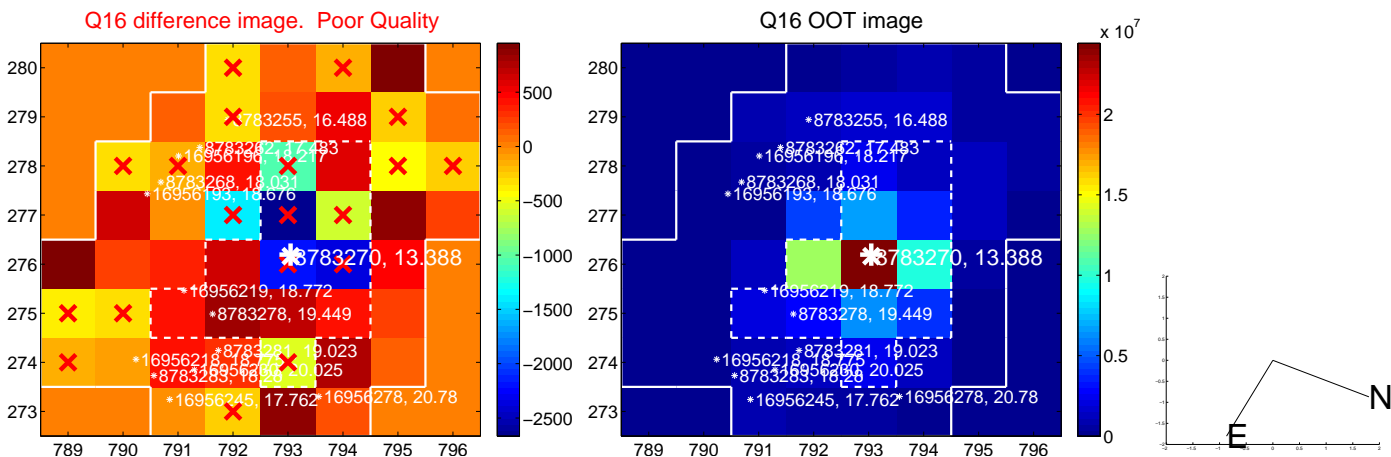
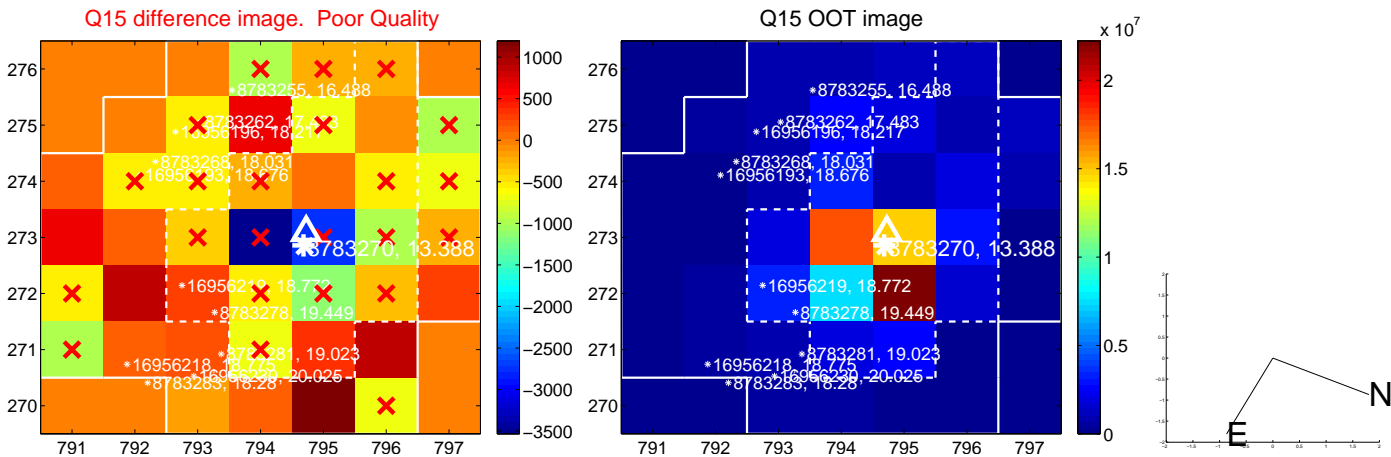
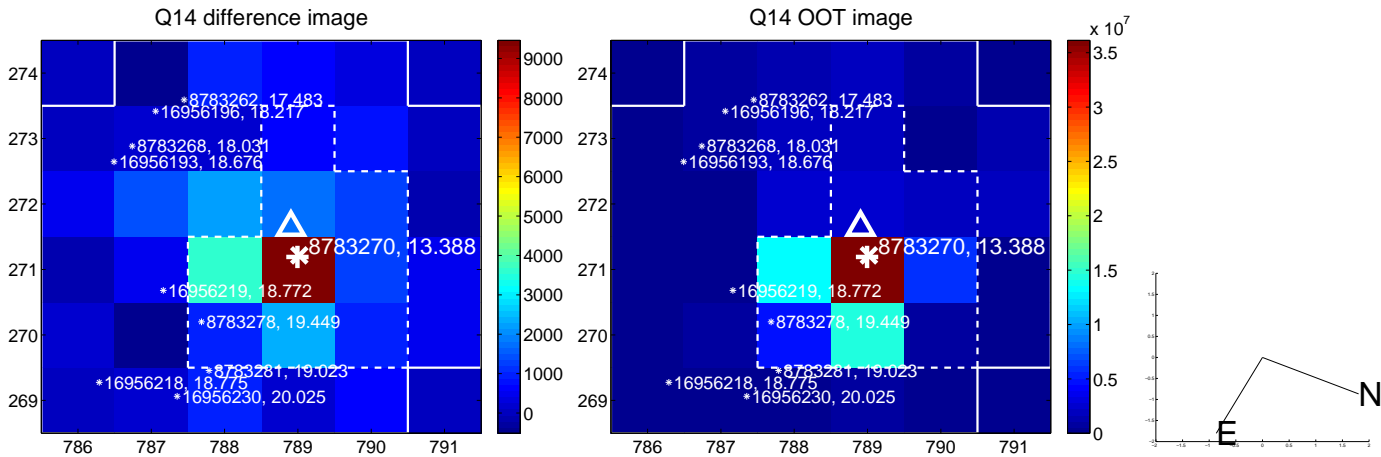
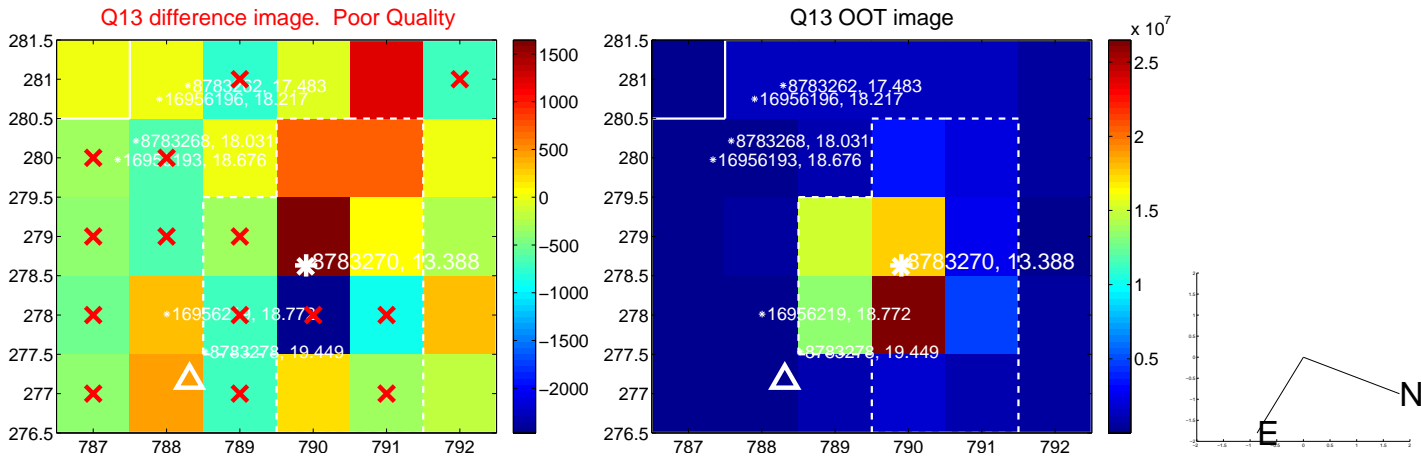


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

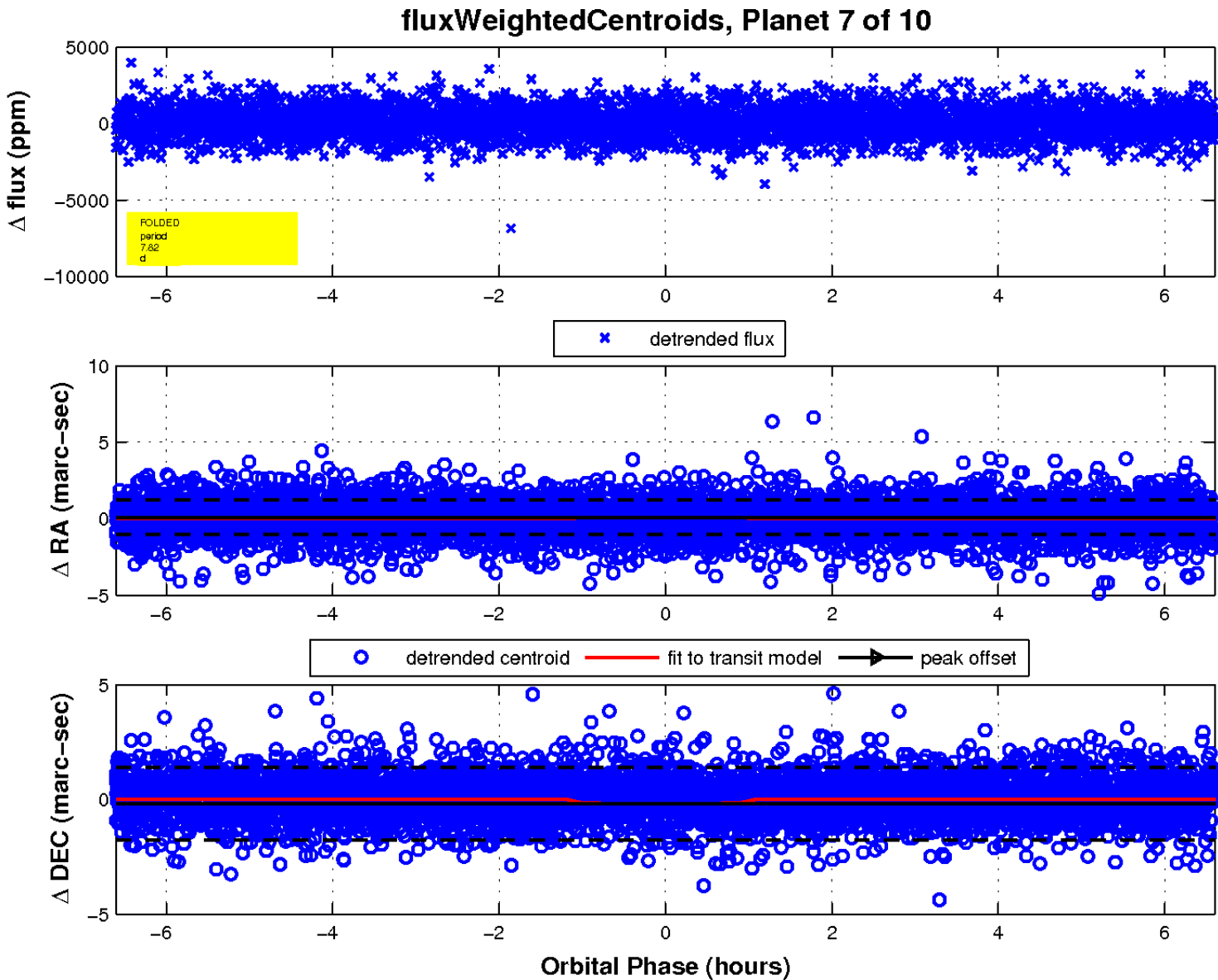
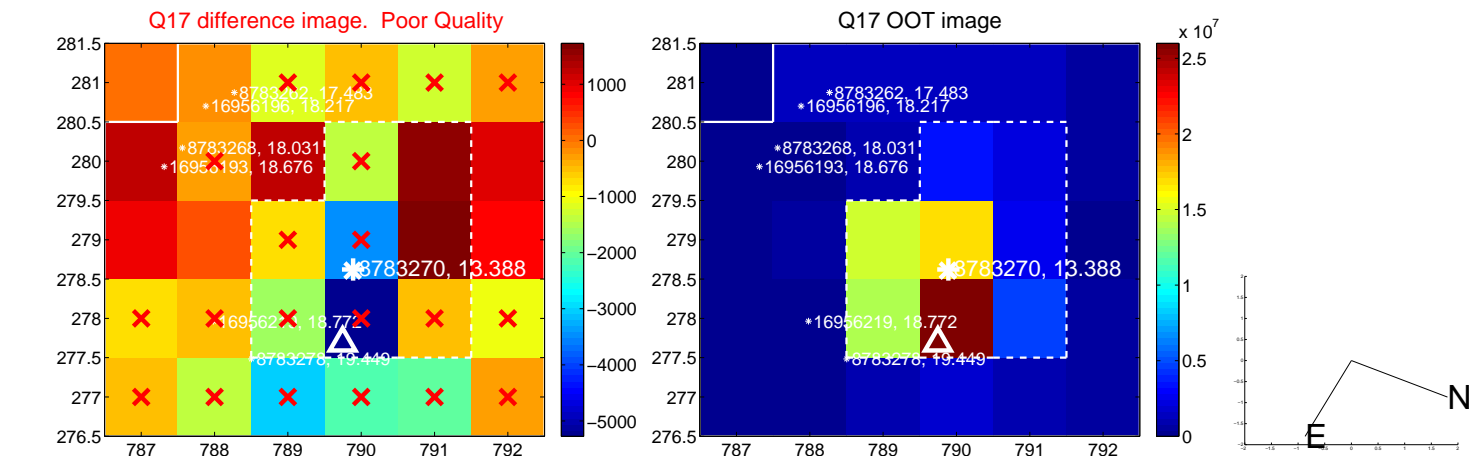




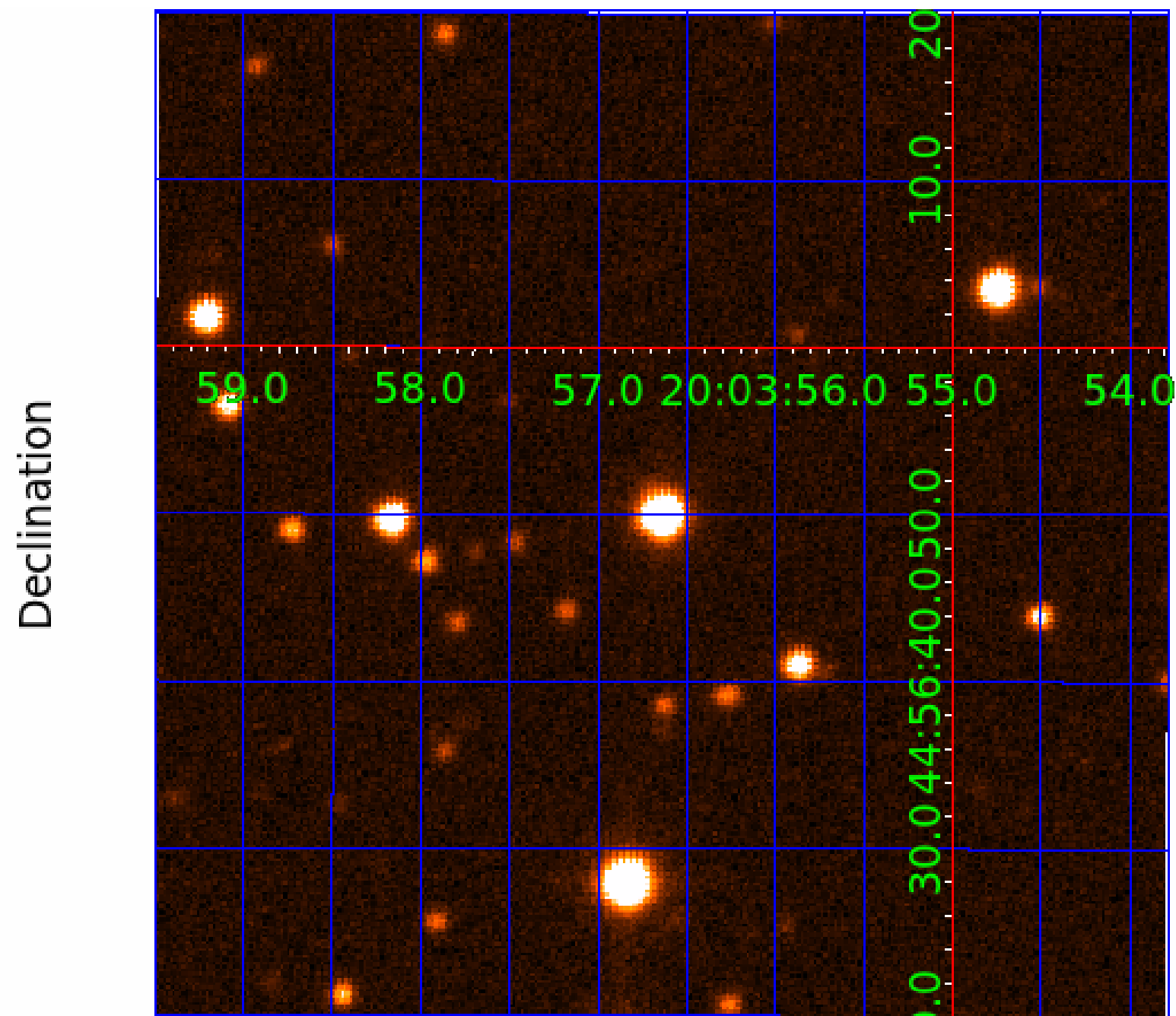
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image



# KIC 008783270

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008783270-01	OBS	No	0.519352	131.609633	77.2	3.910	15.0	13.0	2.45	7094	2.22	60407.78
008783270-02	OBS	No	4.505537	133.517654	691.1	1.274	12.3	10.2	2.45	7094	6.57	3388.81
008783270-03	OBS	No	6.986826	132.625777	665.5	2.000	13.1	-1.0	2.45	7094	6.42	1888.00
008783270-04	OBS	No	8.258431	139.501621	930.3	1.500	14.2	-1.0	2.45	7094	7.60	1510.70
008783270-05	OBS	No	19.737546	144.223497	644.1	1.500	13.9	-1.0	2.45	7094	6.32	472.77
008783270-06	OBS	No	3.577228	133.596172	487.7	2.372	14.1	11.2	2.45	7094	5.54	4609.42
008783270-07	OBS	No	7.824958	139.131252	1052.0	2.203	11.4	18.5	2.45	7094	8.09	1623.30
008783270-08	OBS	No	6.005497	133.207915	1459.7	1.374	13.0	19.8	2.45	7094	9.53	2310.17
008783270-09	OBS	No	6.216187	132.163758	1887.3	0.529	12.1	18.0	2.45	7094	13.61	2206.36
008783270-10	OBS	No	8.919382	136.025778	332.3	3.000	7.9	-1.0	2.45	7094	4.53	1363.31

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008783270-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_MEAS
008783270-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
008783270-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
008783270-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
008783270-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
008783270-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
008783270-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS

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

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

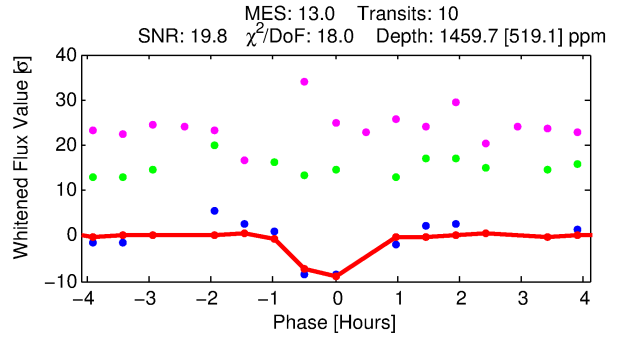
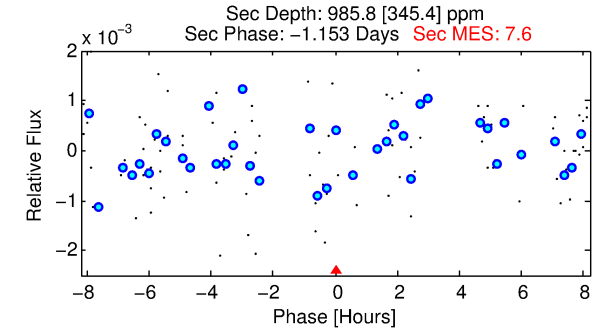
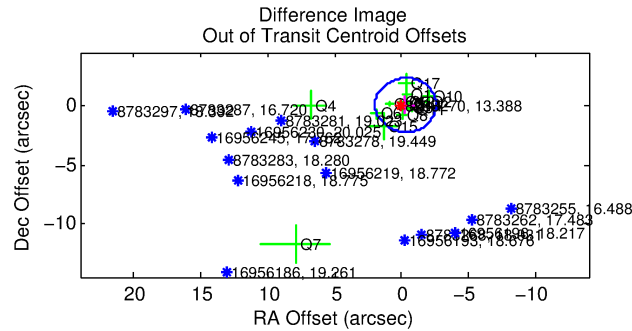
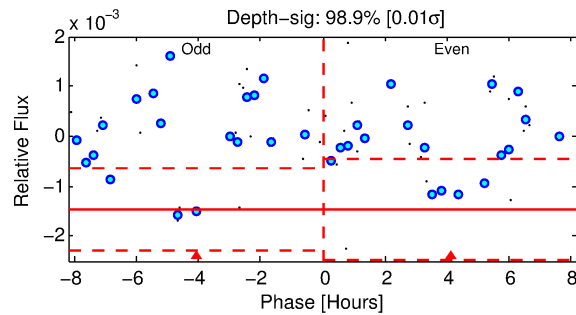
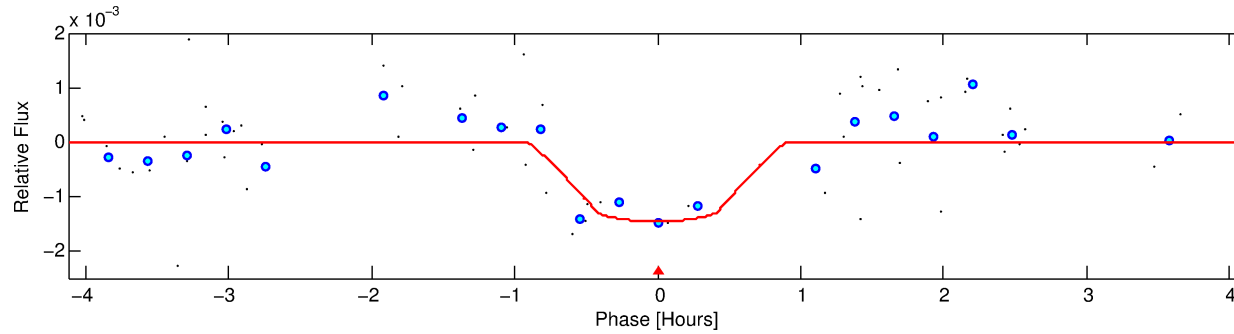
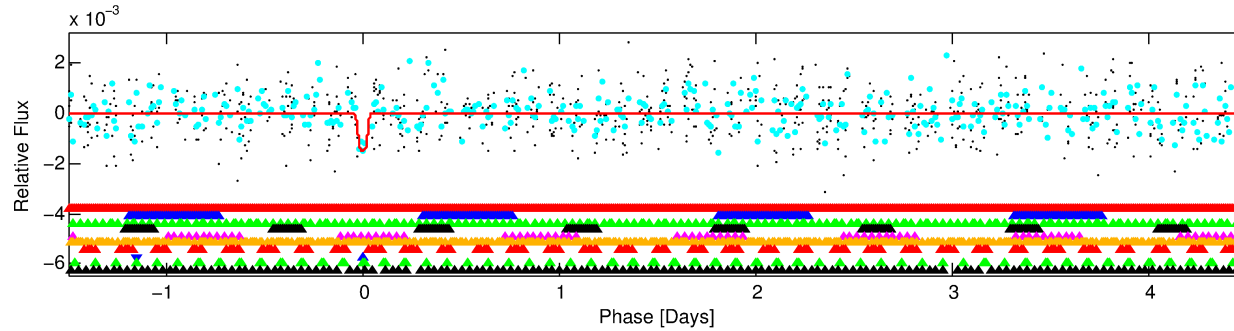
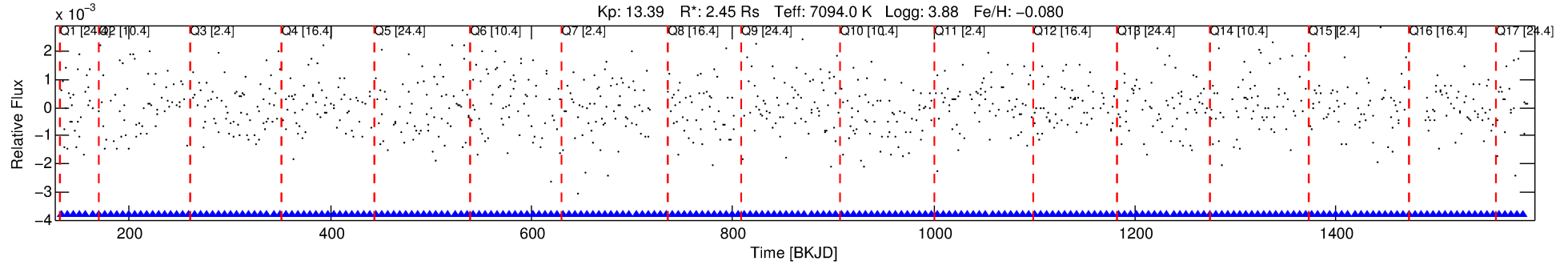
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008783270-08

No Significant Match Found

# DV One-Page Summary

KIC: 8783270 Candidate: 8 of 10 Period: 6.005 d



## DV Fit Results:

Period = 6.00550 [0.00009] d  
Epoch = 133.2079 [0.0168] BKJD  
Rp/R\* = 0.0356 [0.0662]  
a/R\* = 34.34 [355.98]  
b = 0.12 [83.21]  
Seff = 2310.17 [1444.07]  
Teq = 1768 [276] K  
Rp = 9.53 [18.14] Re  
a = 0.0769 [0.0292] AU  
Ag = 35.32 [133.60] [0.26σ]  
Teffp = 6663 [6231] K [0.78σ]

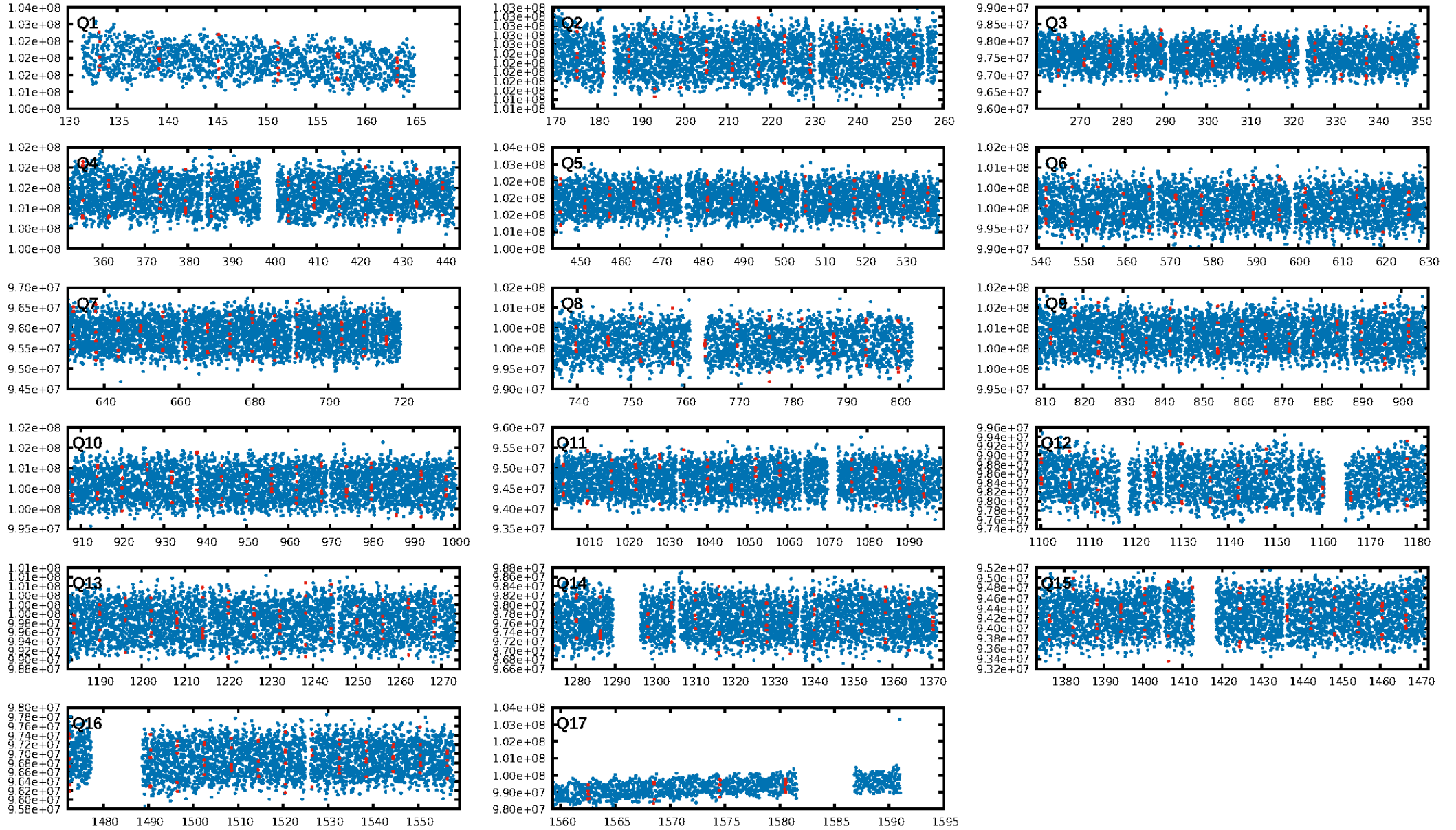
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [19.22σ]  
LongPeriod-sig: 99.9% [3.43σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 13.8%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [10/10]  
GhostDiagnostic-chr: 0.4377  
Centroid-sig: 0.0%  
Centroid-so: 0.512 arcsec [6.14σ]  
OotOffset-rm: 0.309 arcsec [0.41σ]  
KicOffset-rm: 0.358 arcsec [0.53σ]  
OotOffset-st: 4/3/4/5 [16]  
KicOffset-st: 4/3/4/5 [16]  
DiffImageQuality-fgm: 0.31 [5/16]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:22:40 Z

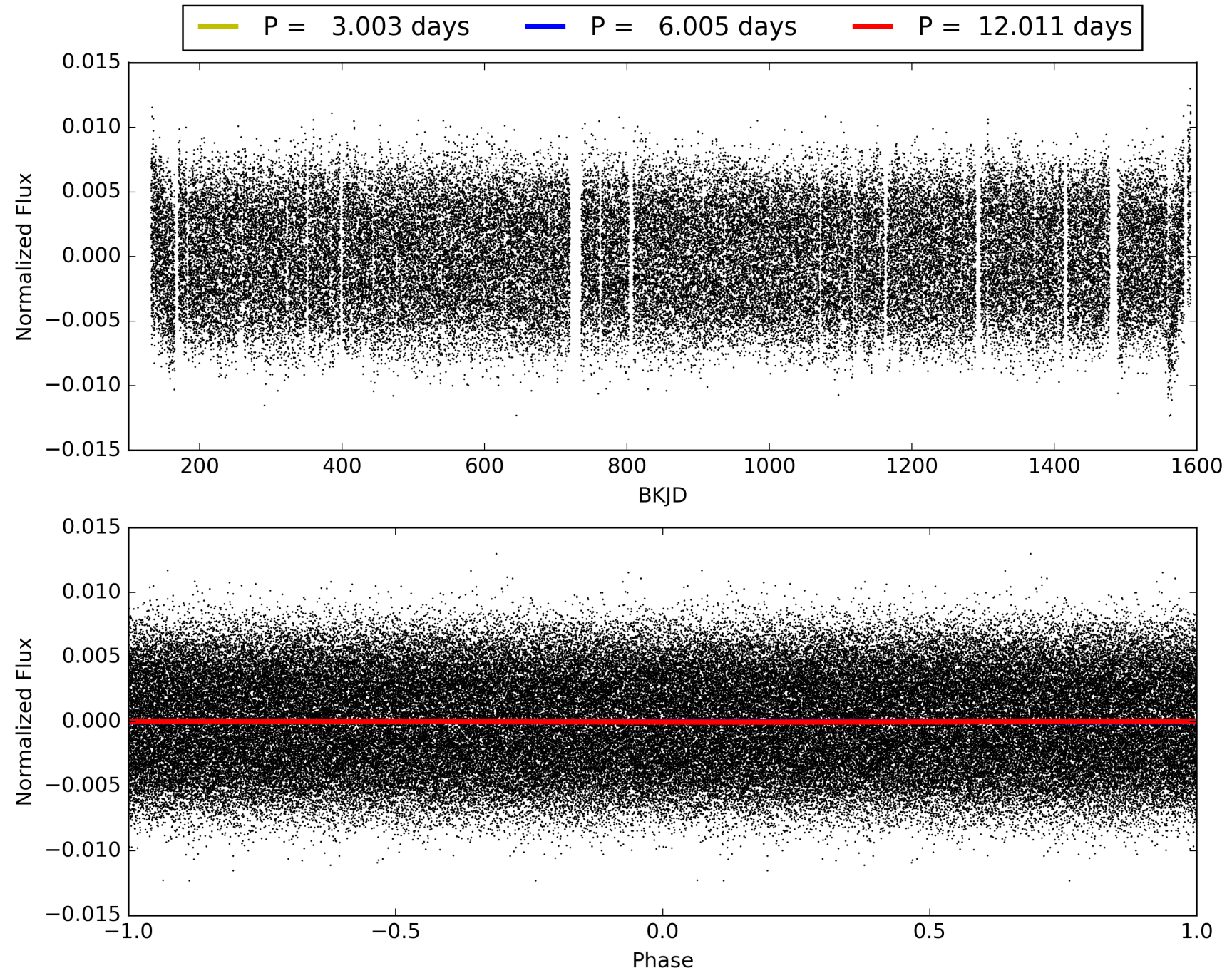
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008783270-08, PDC Light Curves



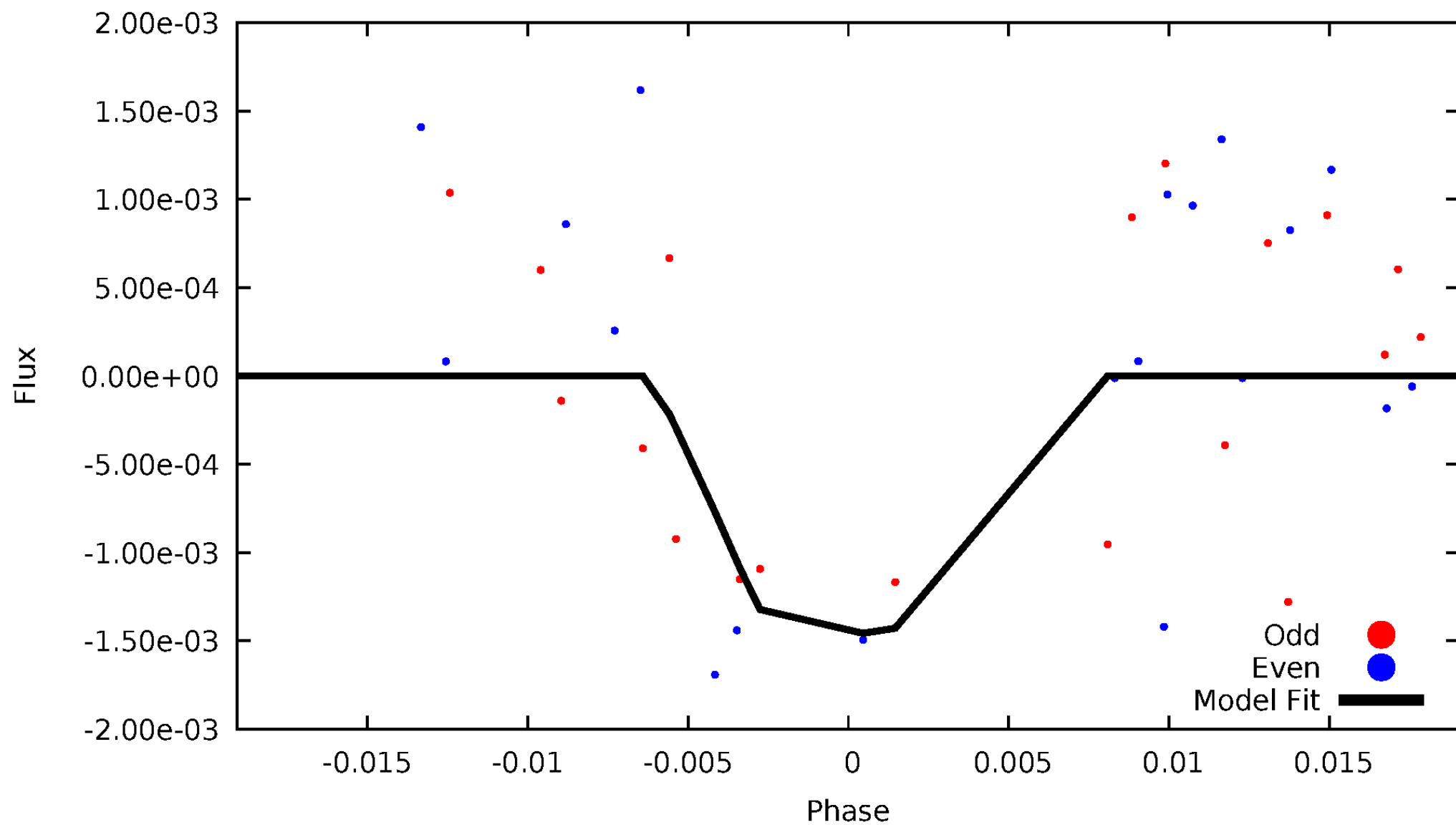


TCE 008783270-08



# DV Odd/Even

TCE 008783270-08





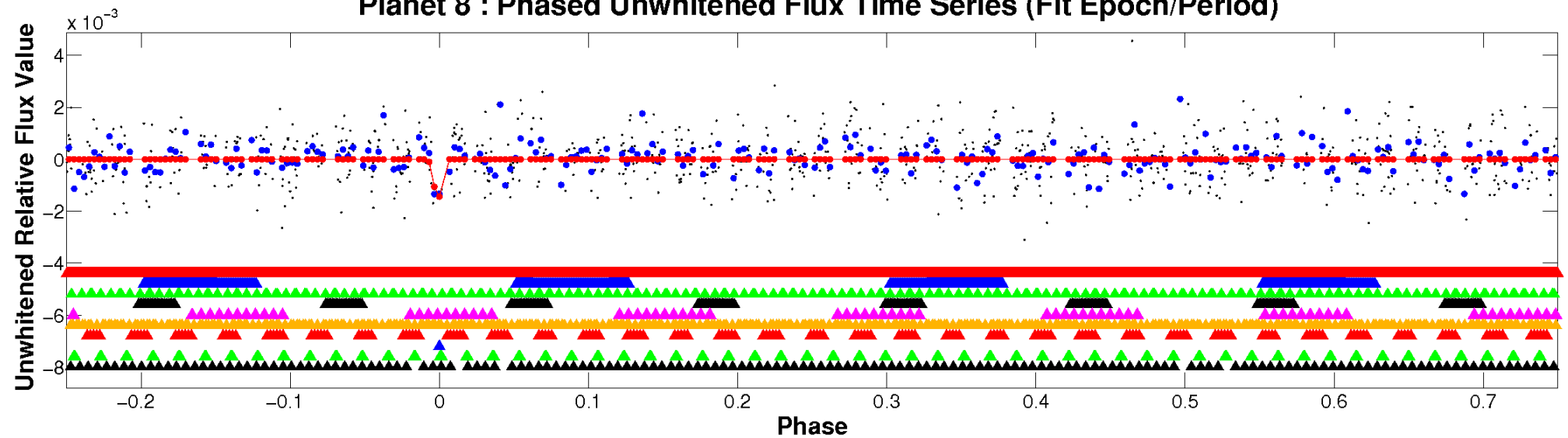


ALT Odd/Even

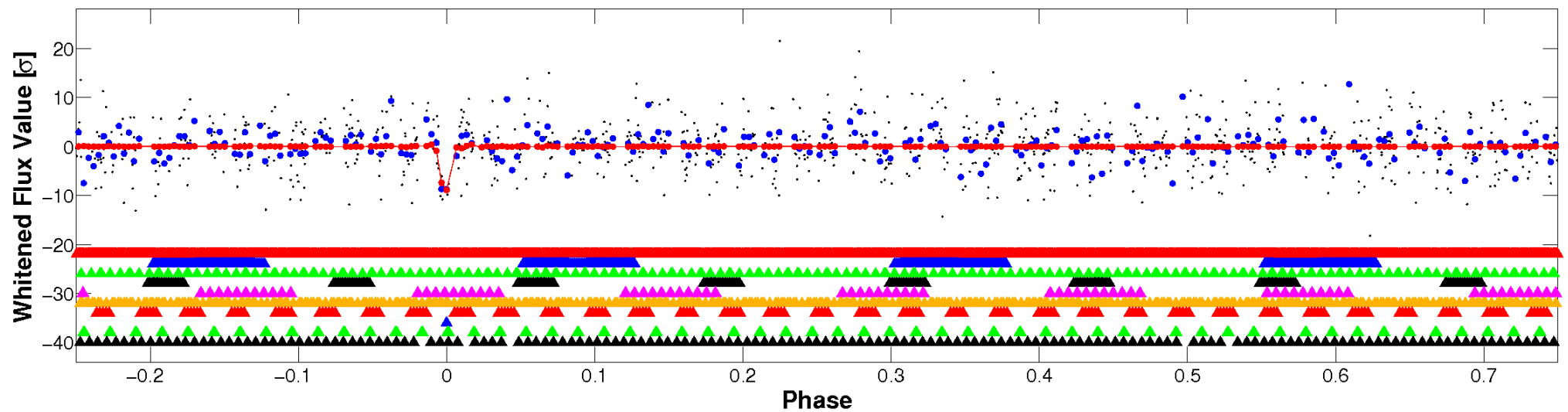
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

## Planet 8 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

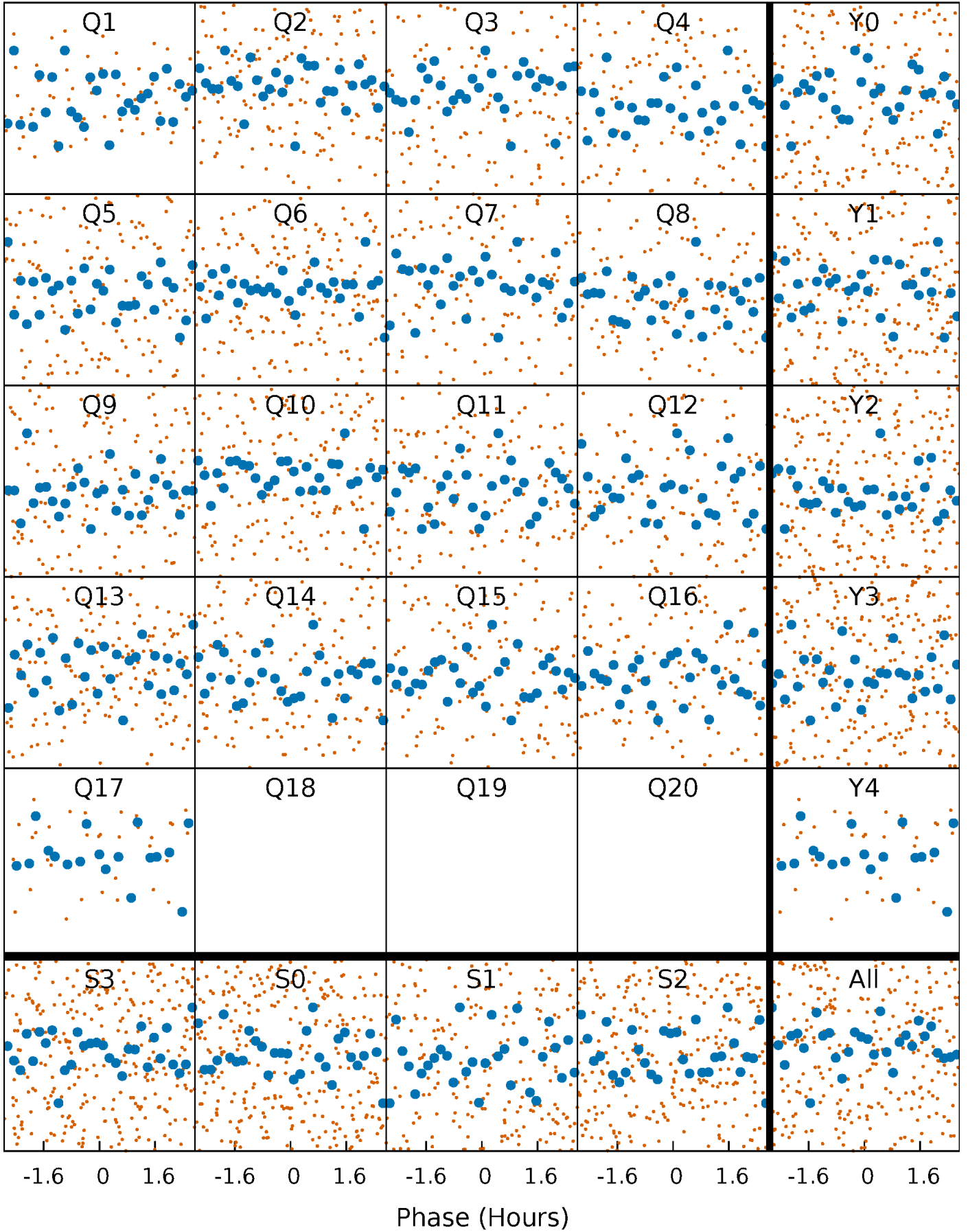


## Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



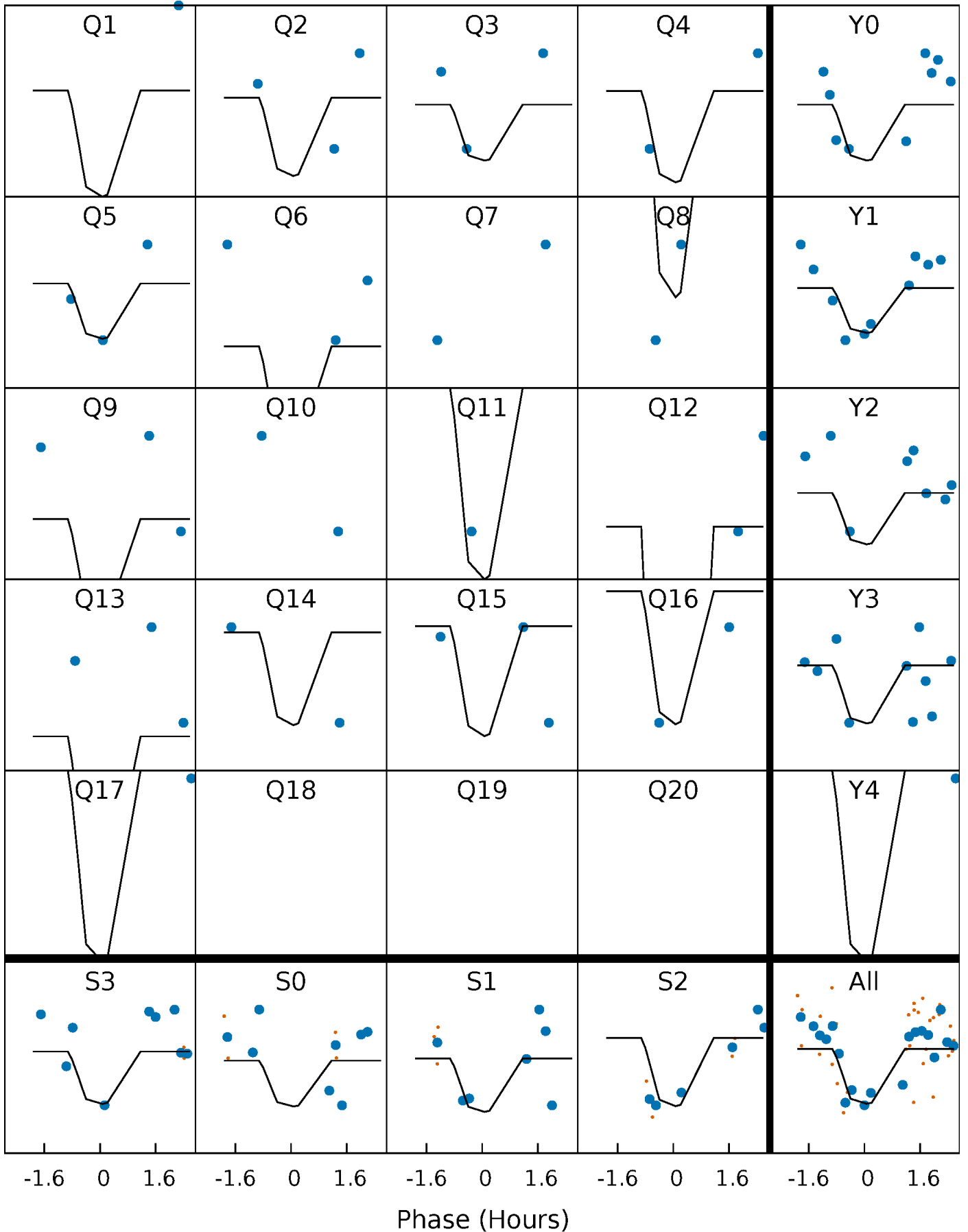
# PDC Quarter-Phased Transit Curves

TCE 008783270-08   P= 6.005497 Days    $T_0=133.207915$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 008783270-08 P= 6.005497 Days  $T_0=133.207915$  (BKJD)

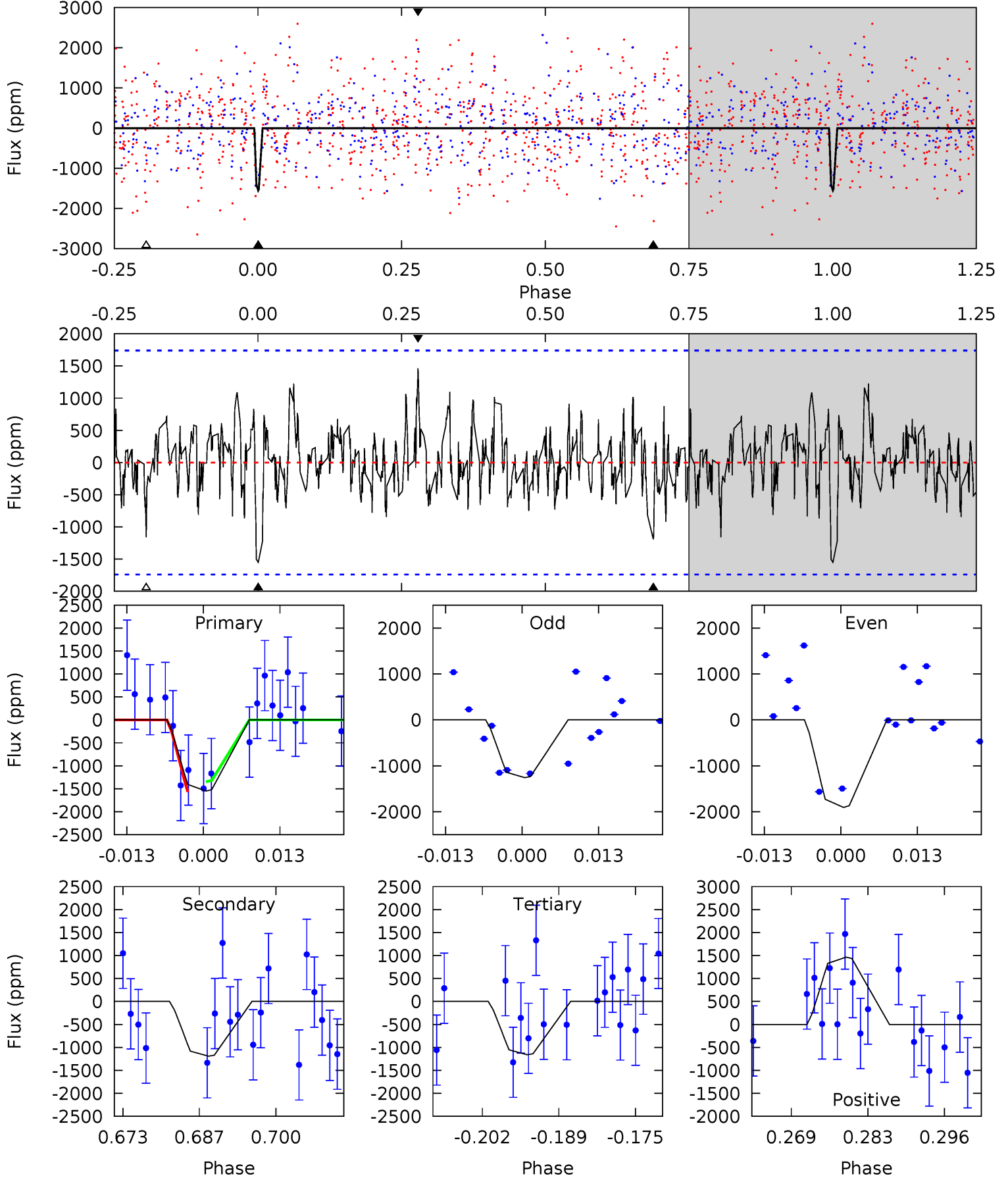


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

008783270-08, P = 6.005497 Days, E = 127.202418 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.43	3.41	3.31	4.18	4.97	2.47	1.14	1.11	0.24	0.09	-0.78	0.93	0	0.49	0.31



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.



### Stellar Parameters For KIC 008783270

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7094^{+225}_{-338}$	$3.884^{+0.345}_{-0.138}$	$-0.080^{+0.250}_{-0.350}$	$2.454^{+0.539}_{-1.001}$	$1.682^{+0.165}_{-0.385}$	$0.160^{+0.427}_{-0.063}$
	+3%/-5%	+9%/-4%	+312%/-438%	+22%/-41%	+10%/-23%	+266%/-40%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 008783270-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-1192 \pm 350$	$14.64^{+14.52}_{-10.23}$	$2419^{+193}_{-260}$	$5311^{+5365}_{-1279}$	$18^{+167}_{-14}$
Alt.	N/A	N/A	N/A	N/A	N/A

$T_{\text{max}}$  = 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

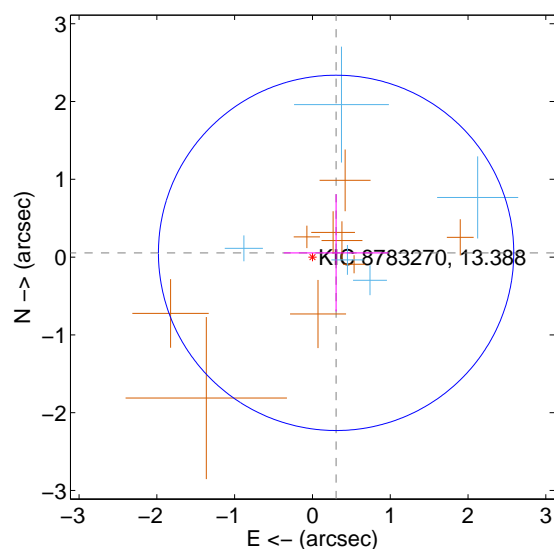
Supplemental centroid analysis for 008783270-08. Kepler magnitude: 13.39. Transit SNR 19.79

There are 5 quarters with good PRF difference image offsets

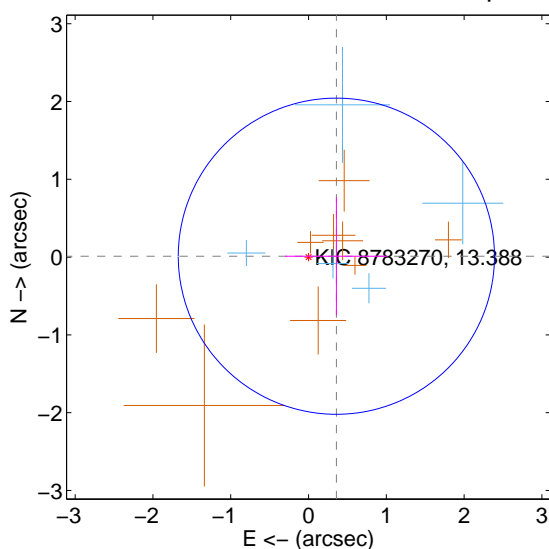
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.309 \pm 0.761$	0.41	$-0.304 \pm 0.673$	$0.054 \pm 0.753$
PRF-fit source offset from KIC position	$0.358 \pm 0.677$	0.53	$-0.358 \pm 0.661$	$0.011 \pm 0.757$
photometric centroid source offset	$0.51 \pm 0.08$	6.14	$0.17 \pm 0.10$	$-0.48 \pm 0.08$

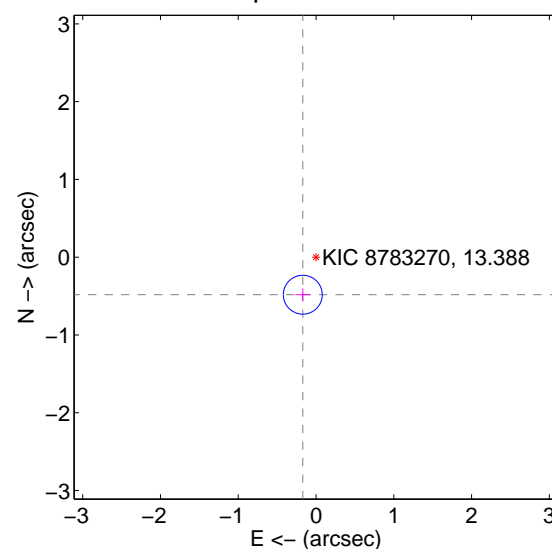
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

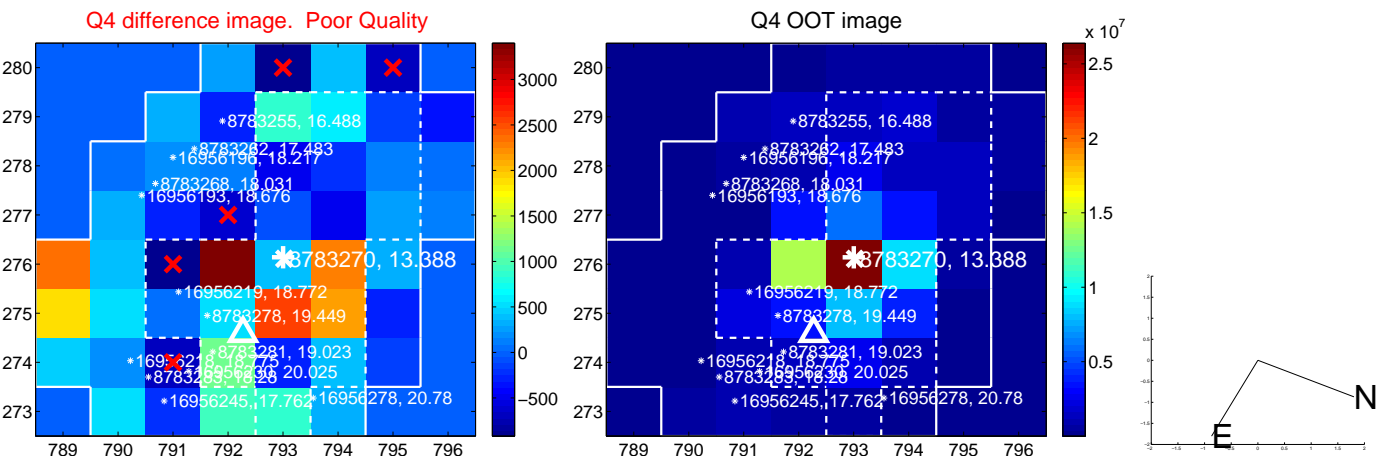
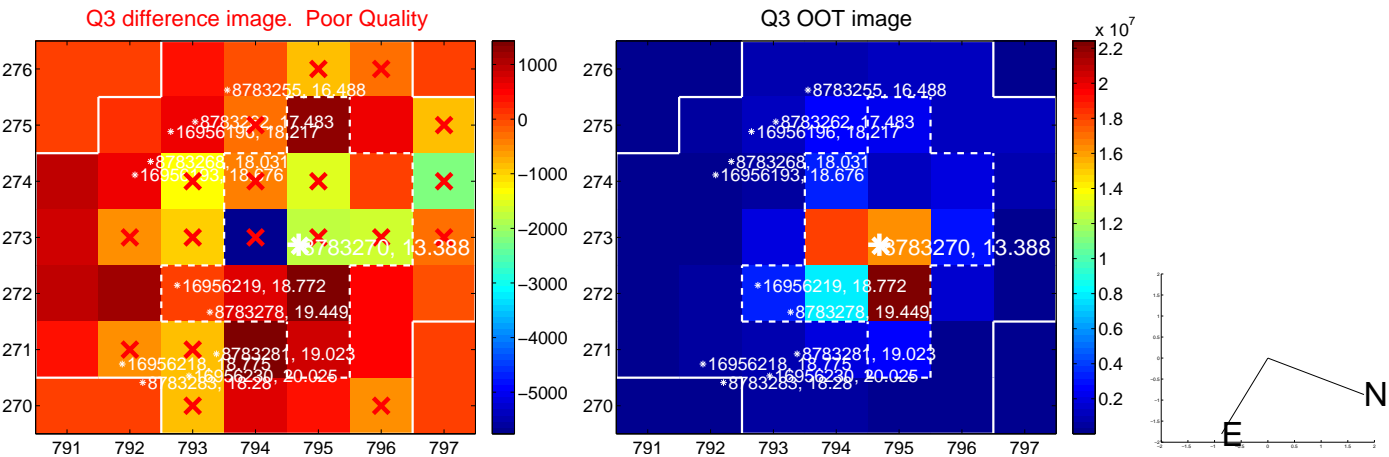
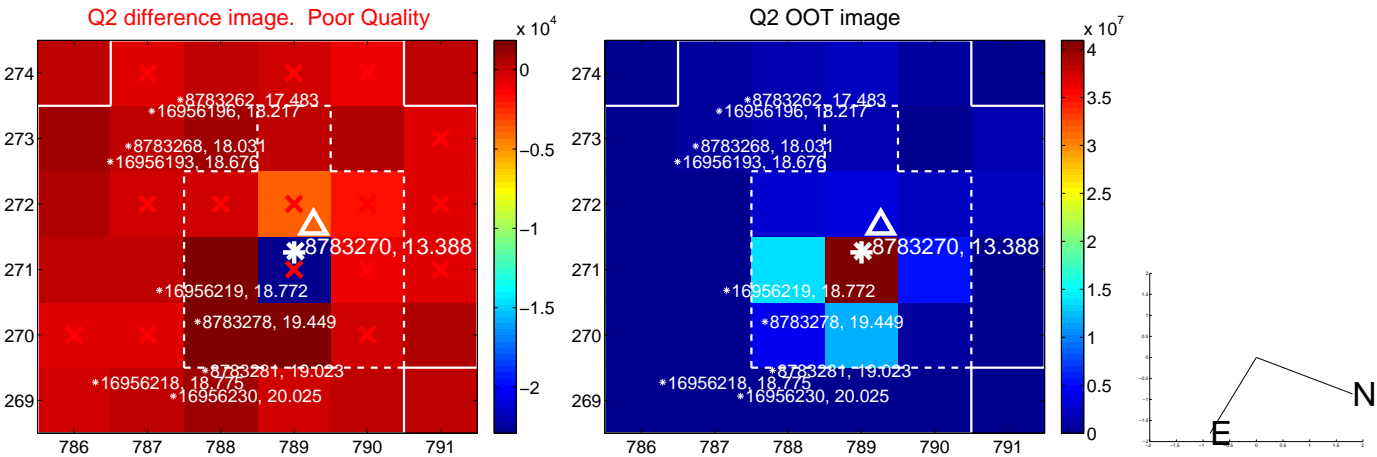
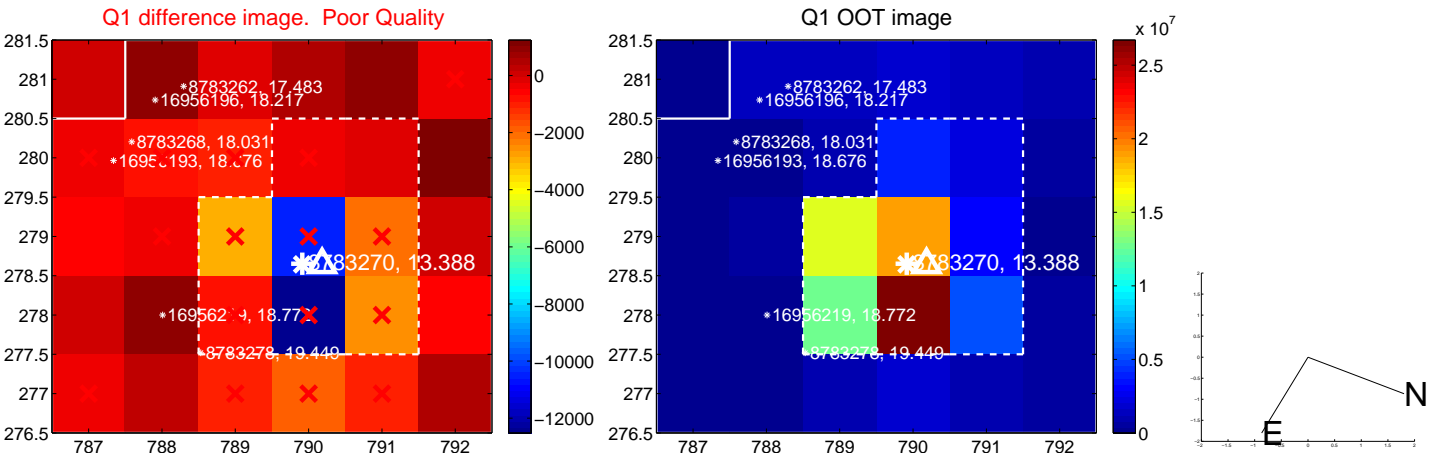


offset from photometric centroids

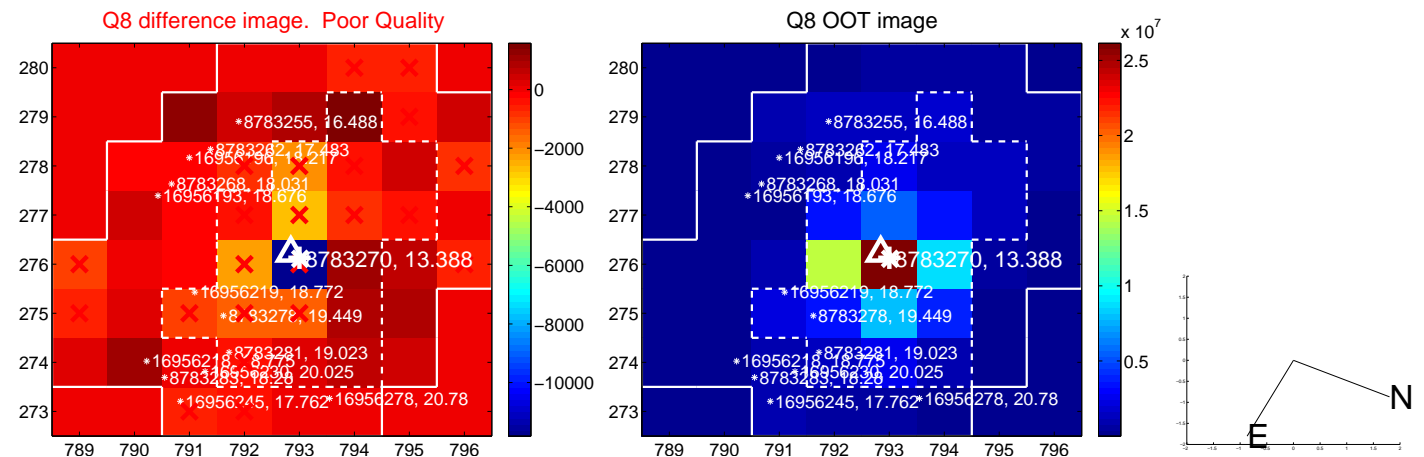
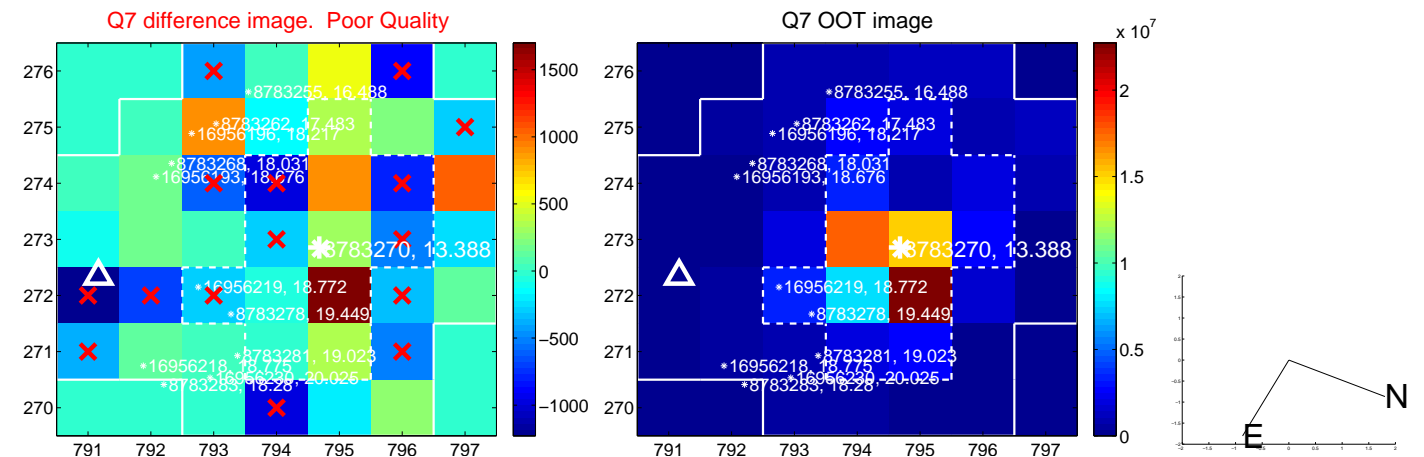
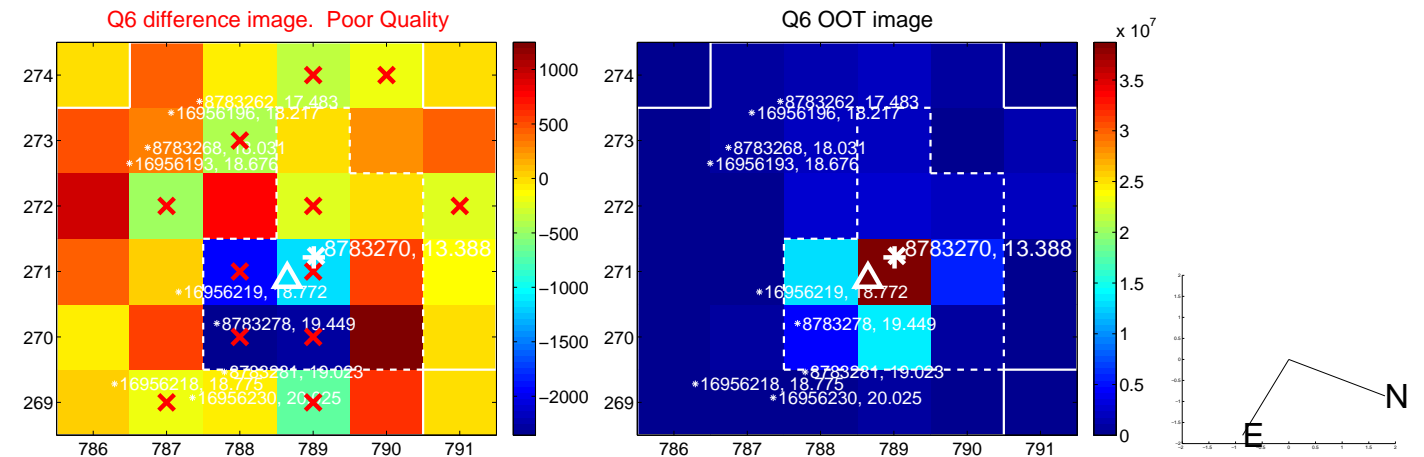
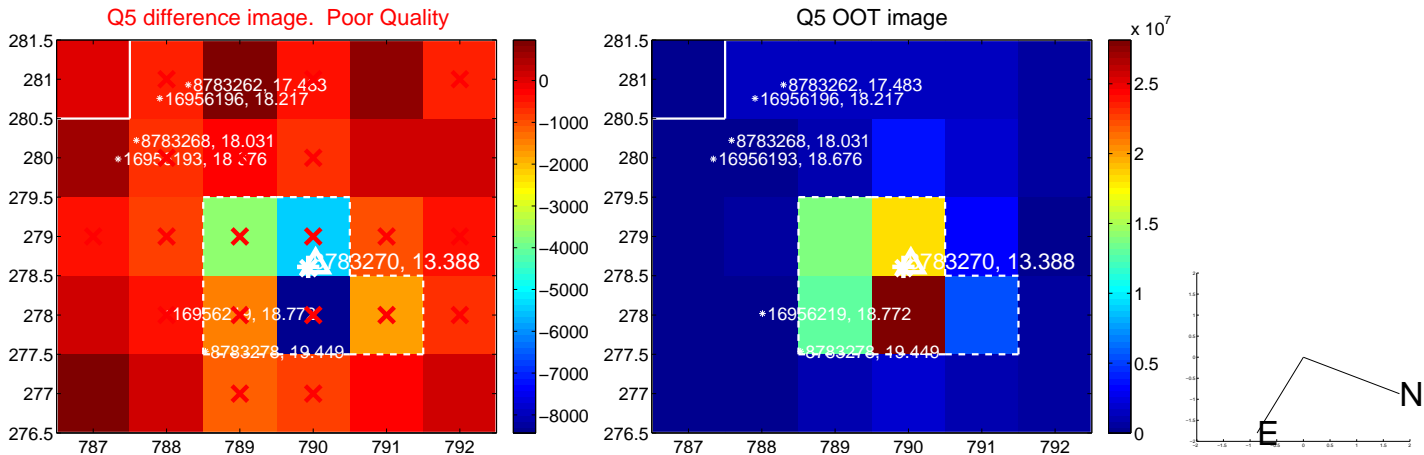


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

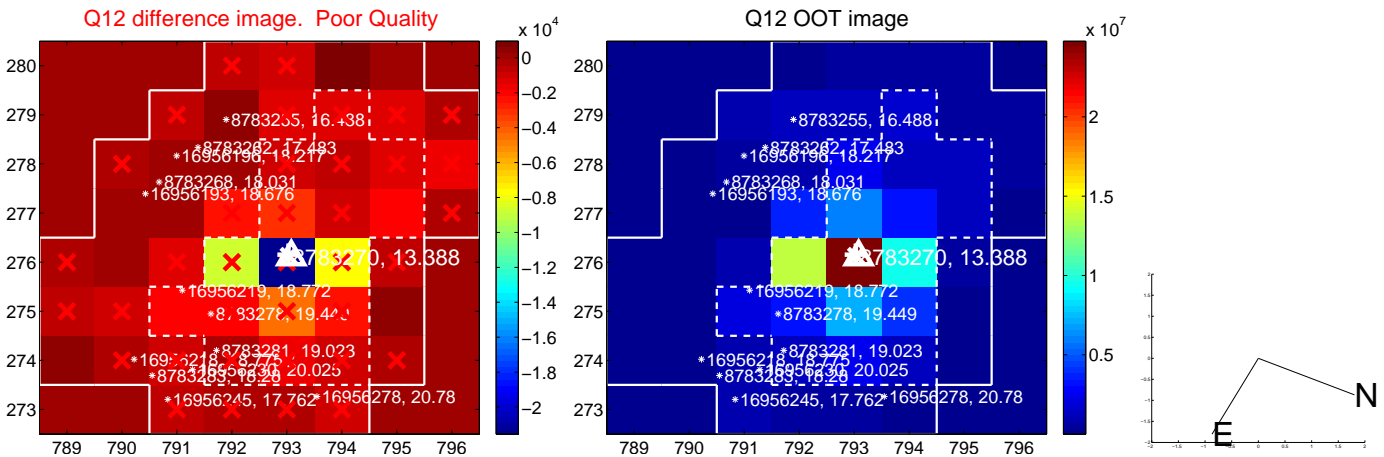
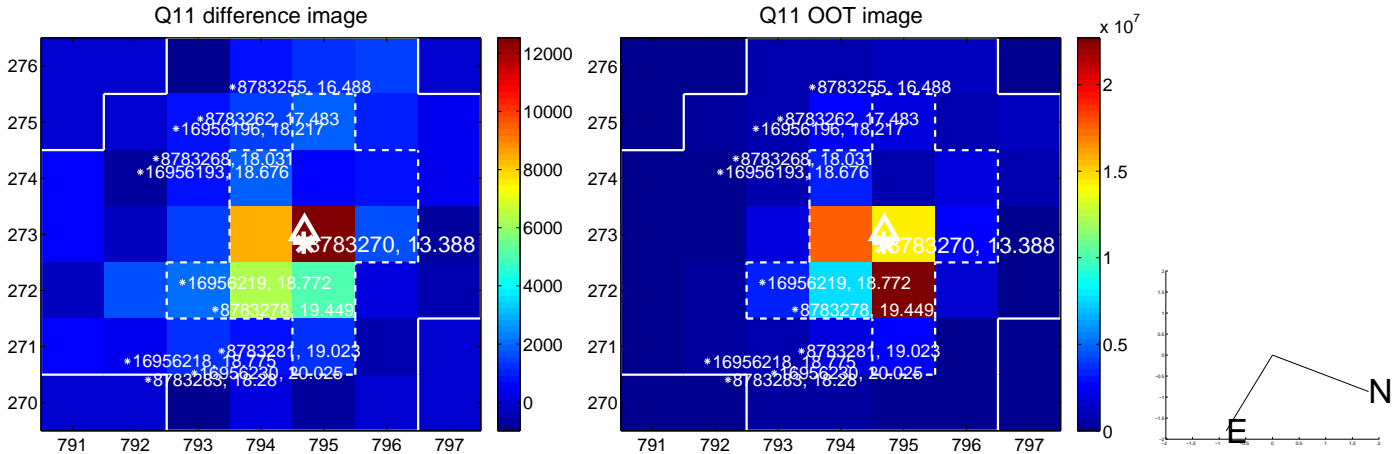
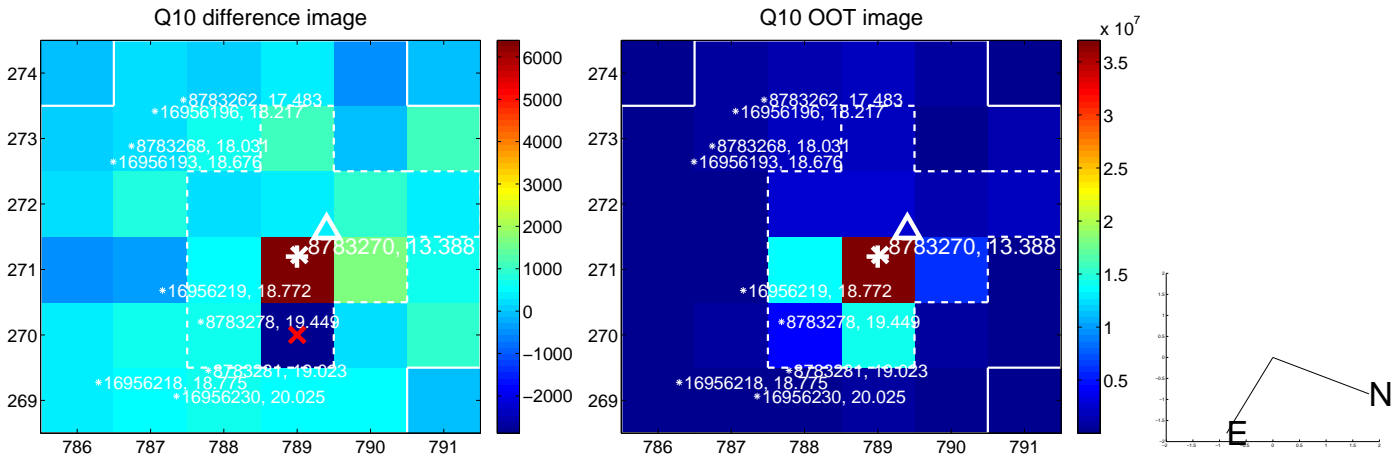
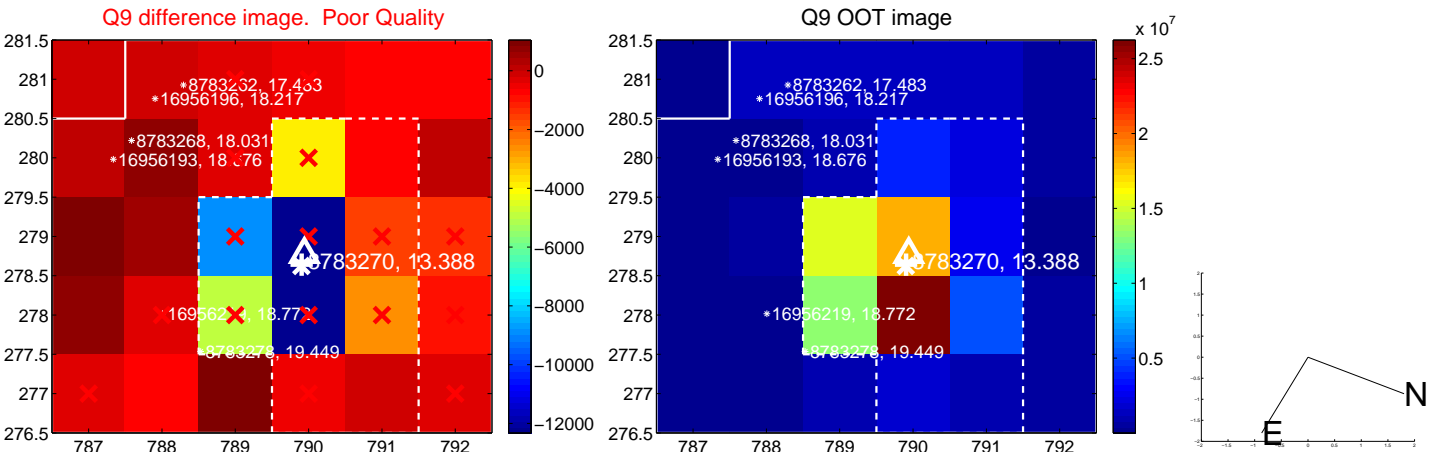
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



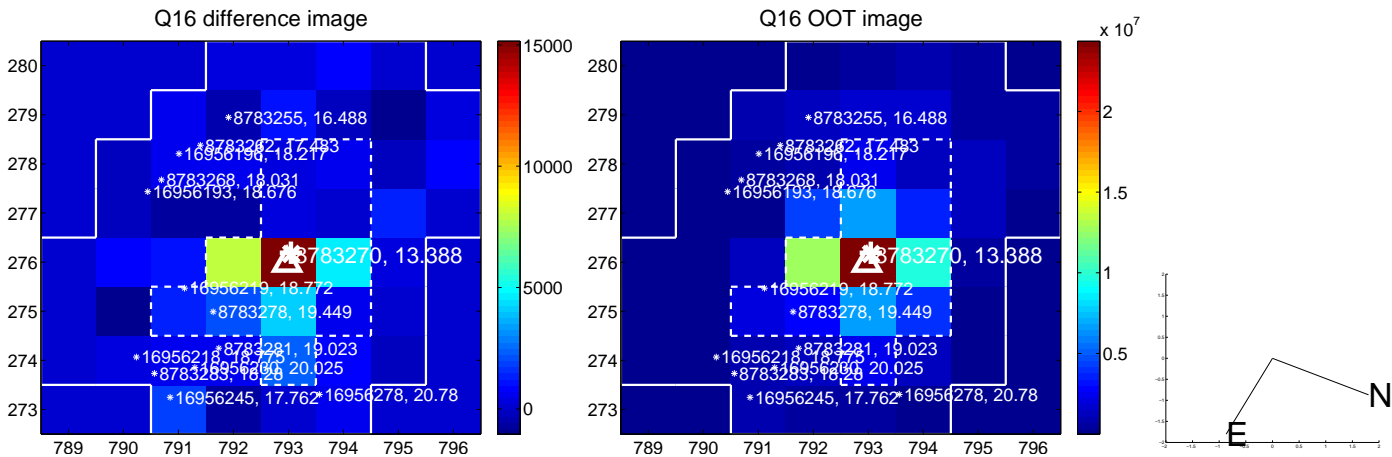
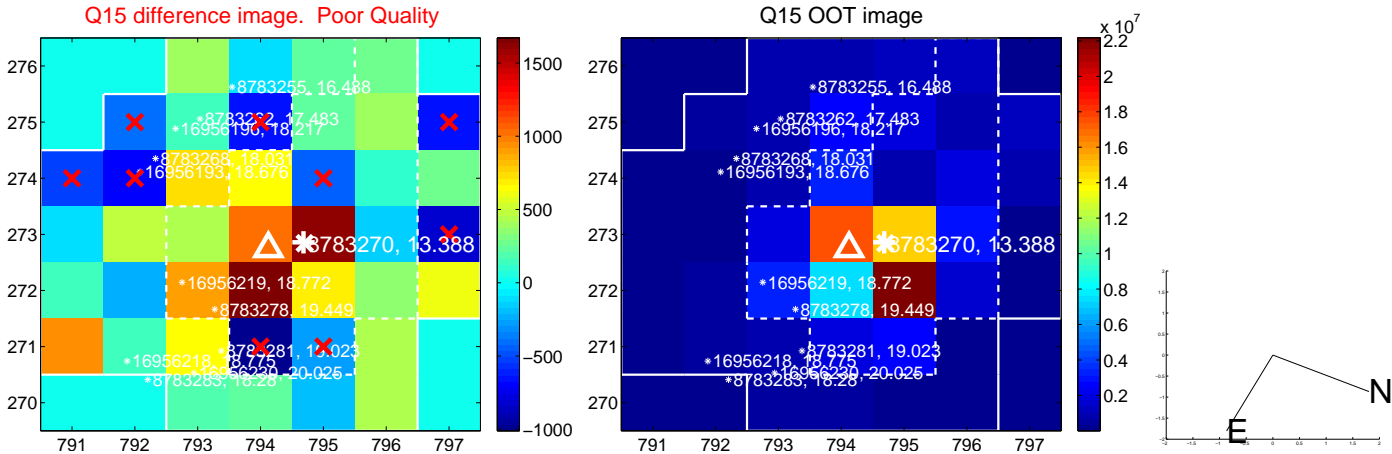
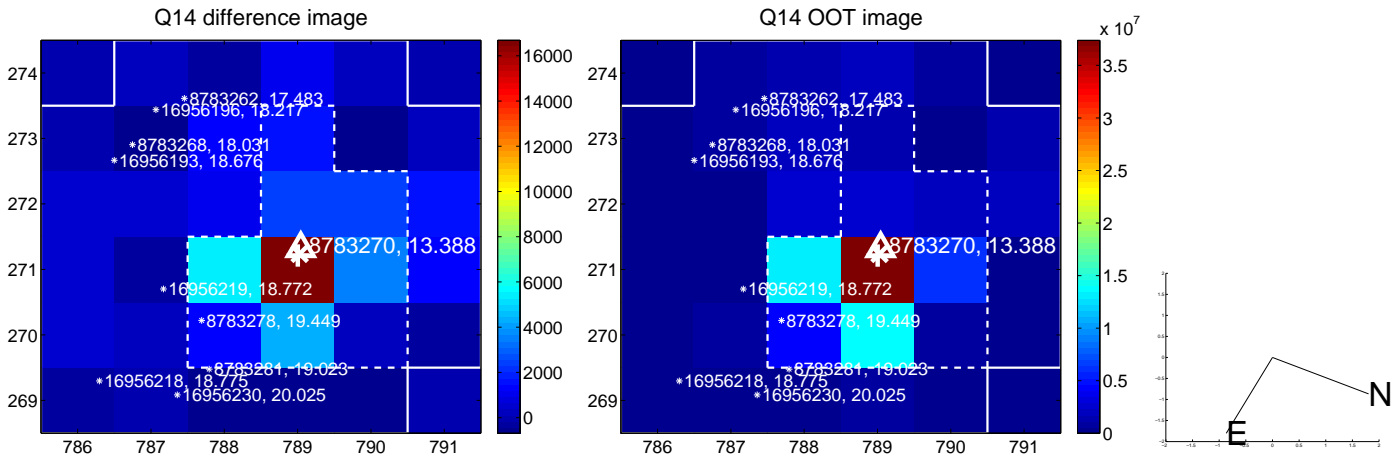
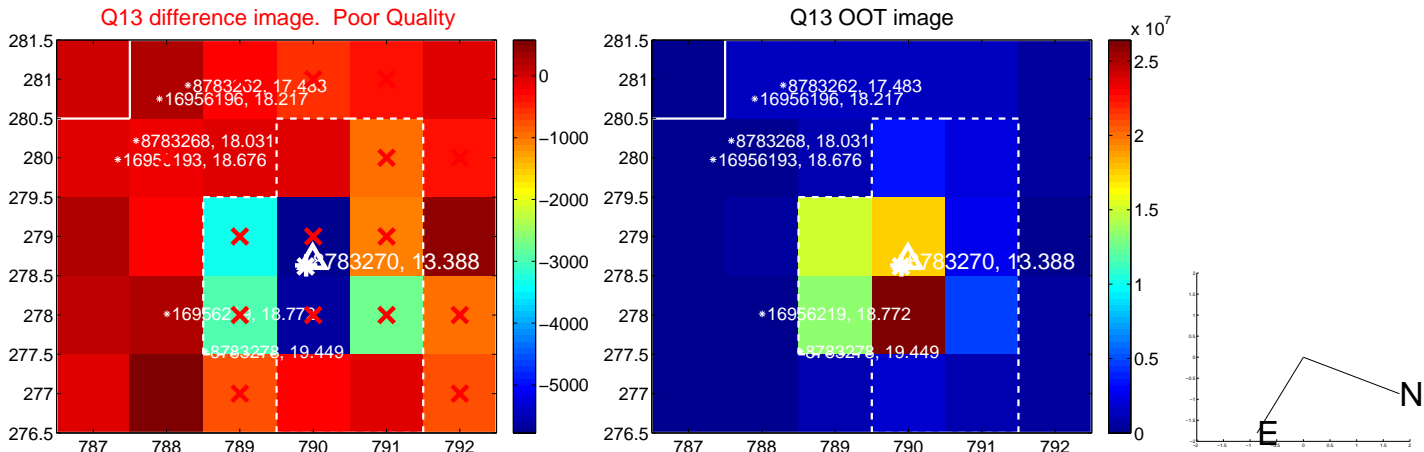
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



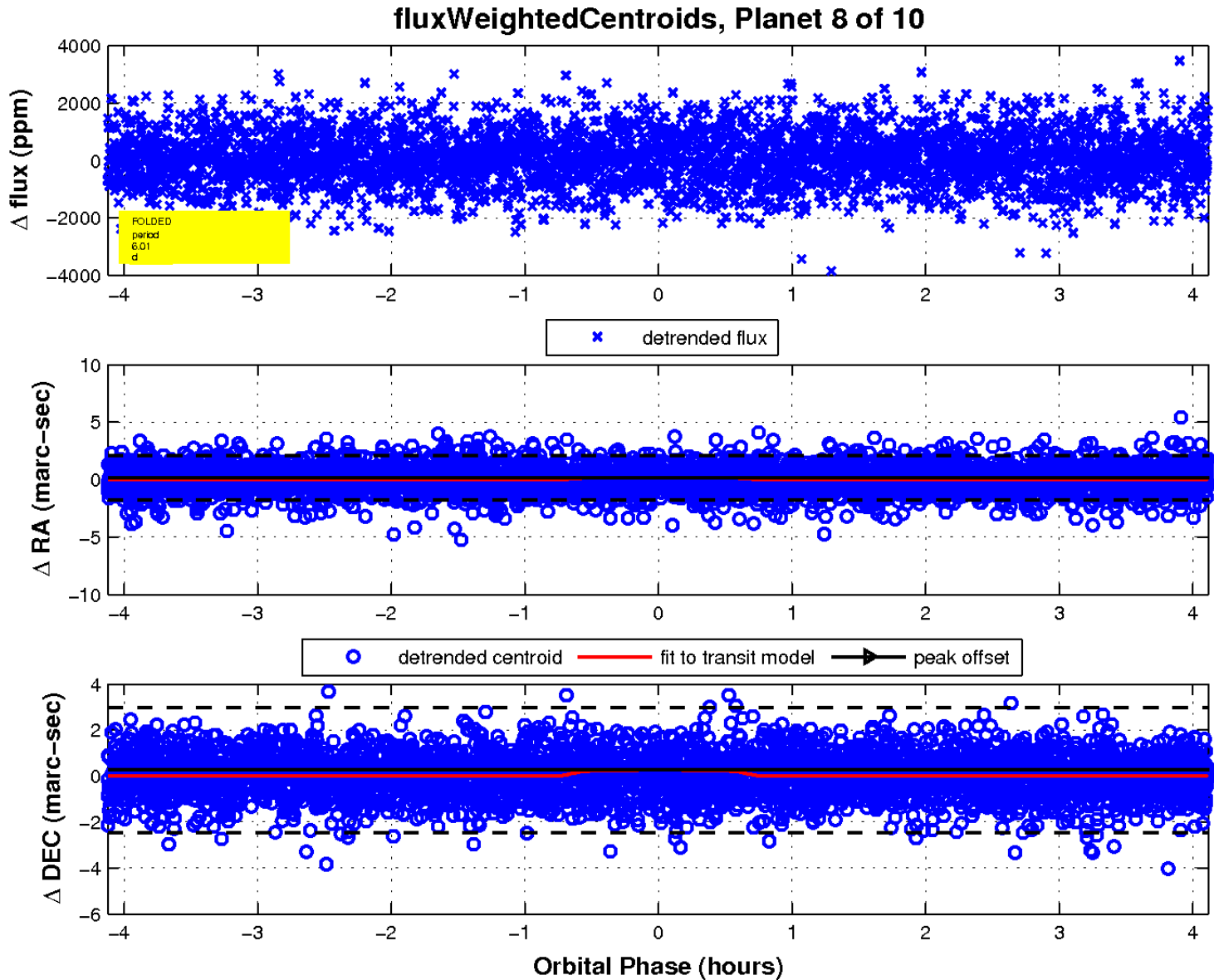
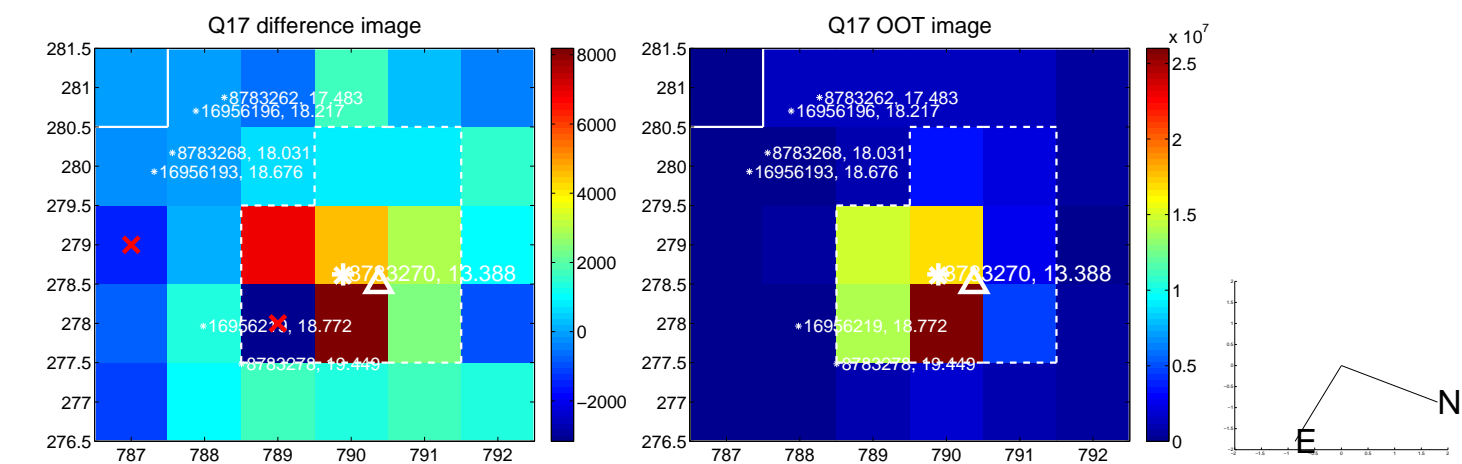
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



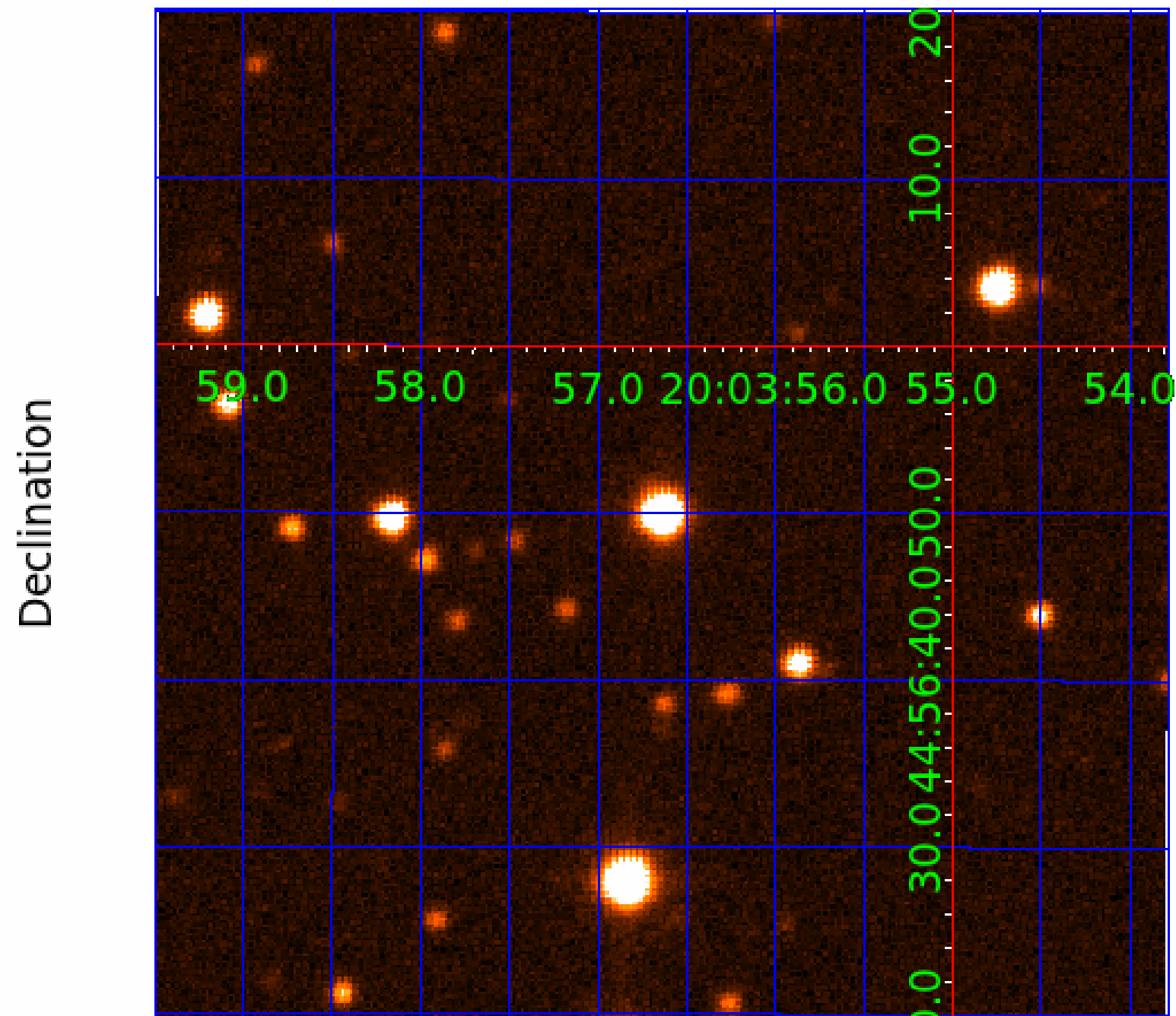
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image





# KIC 008783270

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008783270-01	OBS	No	0.519352	131.609633	77.2	3.910	15.0	13.0	2.45	7094	2.22	60407.78
008783270-02	OBS	No	4.505537	133.517654	691.1	1.274	12.3	10.2	2.45	7094	6.57	3388.81
008783270-03	OBS	No	6.986826	132.625777	665.5	2.000	13.1	-1.0	2.45	7094	6.42	1888.00
008783270-04	OBS	No	8.258431	139.501621	930.3	1.500	14.2	-1.0	2.45	7094	7.60	1510.70
008783270-05	OBS	No	19.737546	144.223497	644.1	1.500	13.9	-1.0	2.45	7094	6.32	472.77
008783270-06	OBS	No	3.577228	133.596172	487.7	2.372	14.1	11.2	2.45	7094	5.54	4609.42
008783270-07	OBS	No	7.824958	139.131252	1052.0	2.203	11.4	18.5	2.45	7094	8.09	1623.30
008783270-08	OBS	No	6.005497	133.207915	1459.7	1.374	13.0	19.8	2.45	7094	9.53	2310.17
008783270-09	OBS	No	6.216187	132.163758	1887.3	0.529	12.1	18.0	2.45	7094	13.61	2206.36
008783270-10	OBS	No	8.919382	136.025778	332.3	3.000	7.9	-1.0	2.45	7094	4.53	1363.31

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008783270-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_MEAS
008783270-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
008783270-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
008783270-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
008783270-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
008783270-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
008783270-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS

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

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

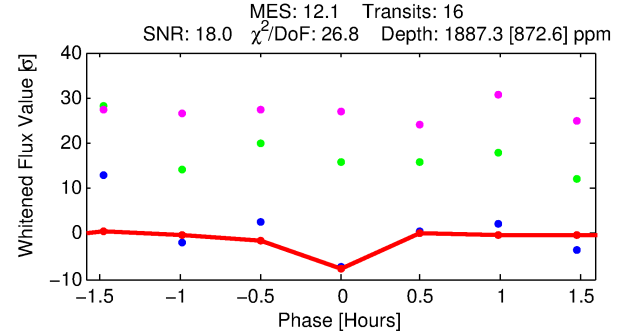
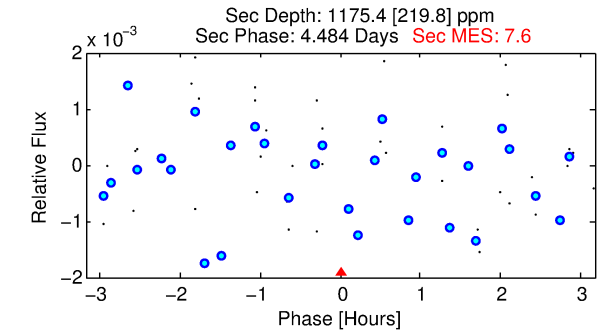
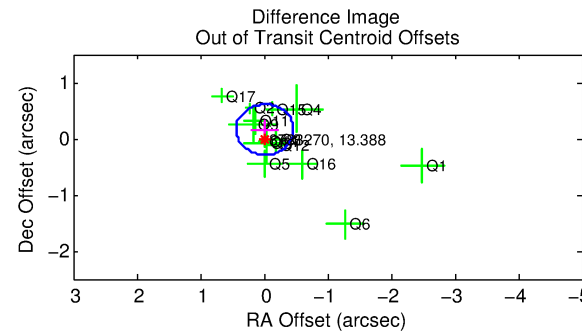
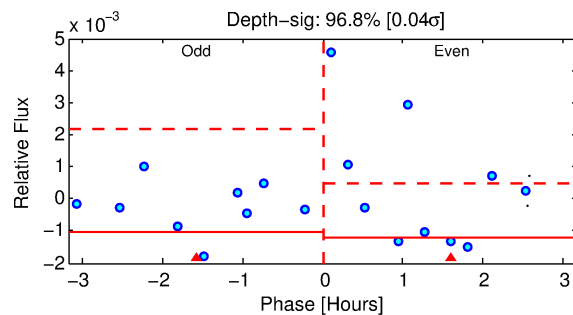
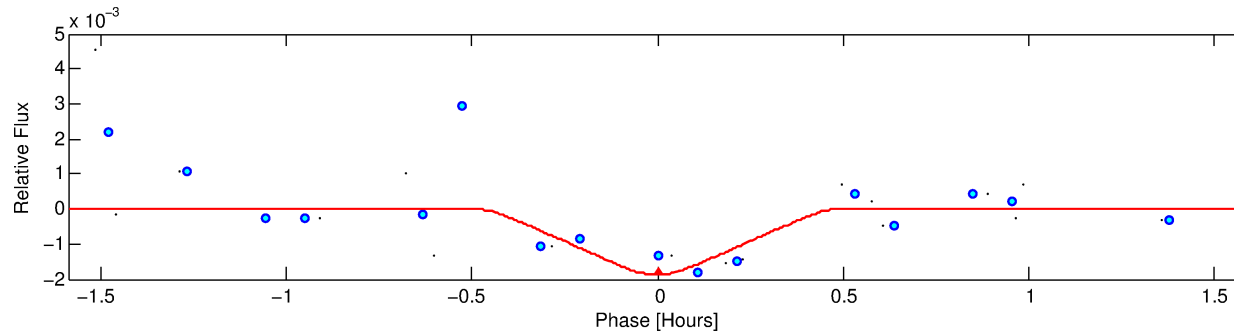
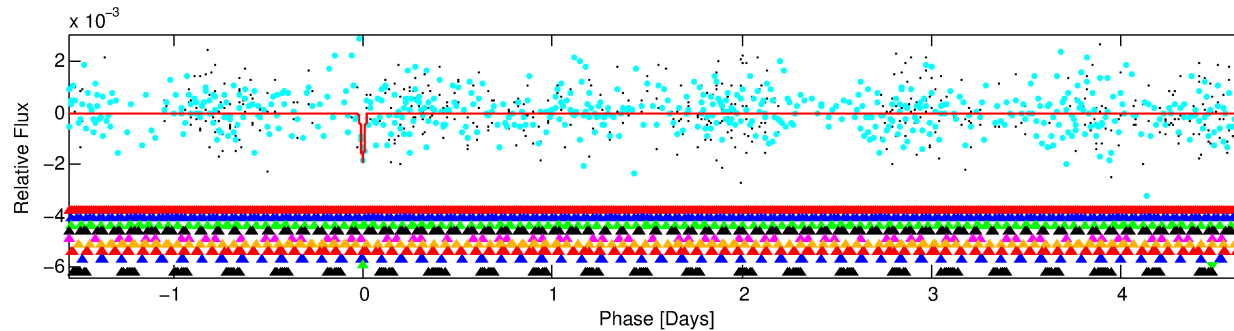
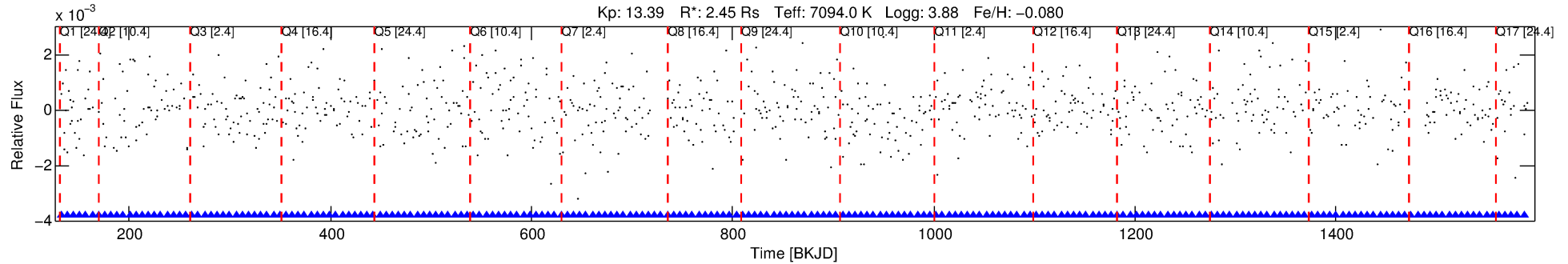
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008783270-09

No Significant Match Found

# DV One-Page Summary

KIC: 8783270 Candidate: 9 of 10 Period: 6.216 d



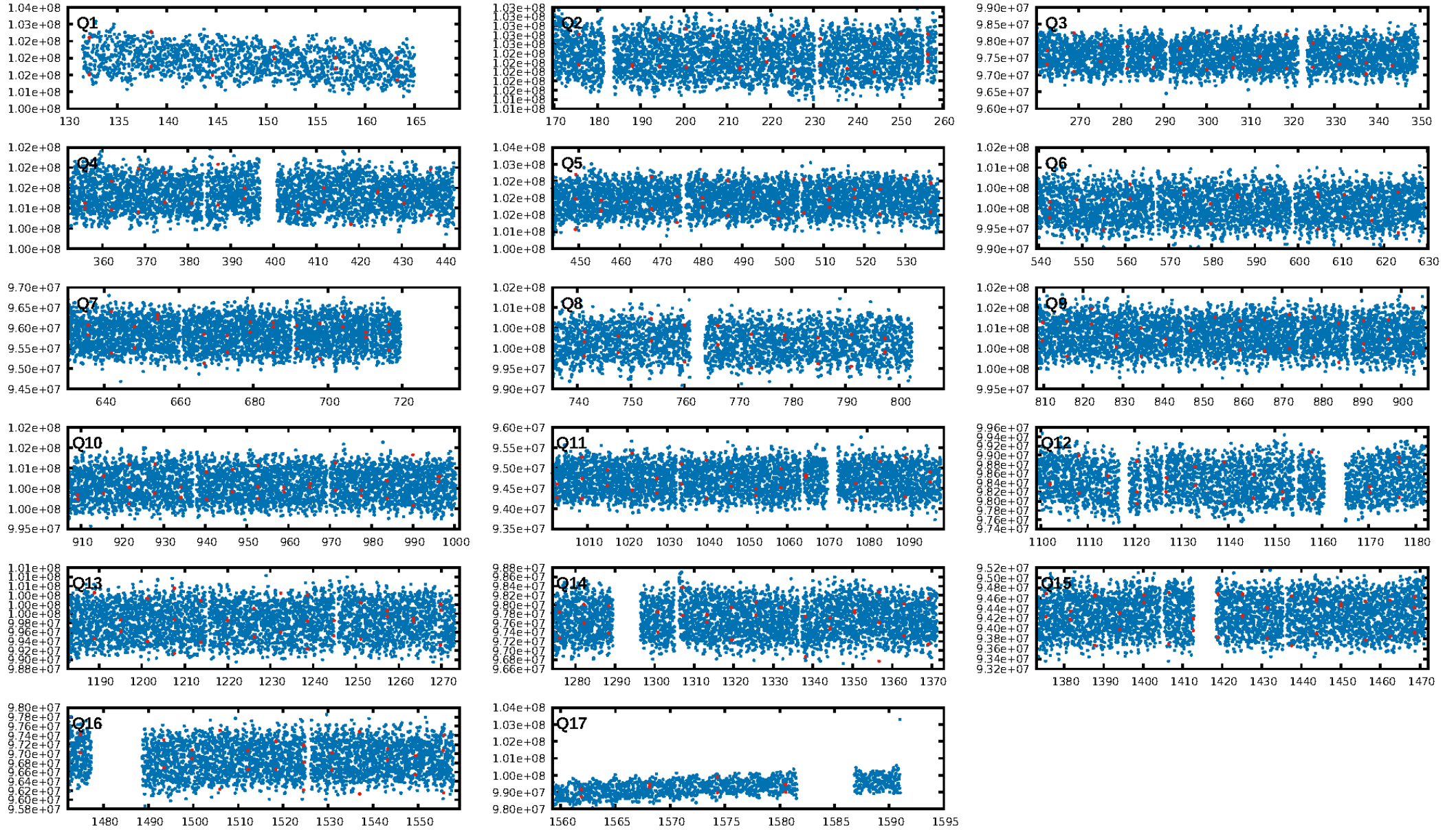
## DV Fit Results:

Period = 6.21619 [0.00004] d  
Epoch = 132.1638 [0.0070] BKJD  
Rp/R\* = 0.0508 [0.1378]  
a/R\* = 50.79 [540.40]  
b = 0.89 [2.74]  
Seff = 2206.36 [1379.18]  
Teq = 1748 [273] K  
Rp = 13.61 [37.30] Re  
a = 0.0787 [0.0299] AU  
Ag = 21.61 [117.87] [0.17σ]  
Teffp = 5826 [7902] K [0.52σ]

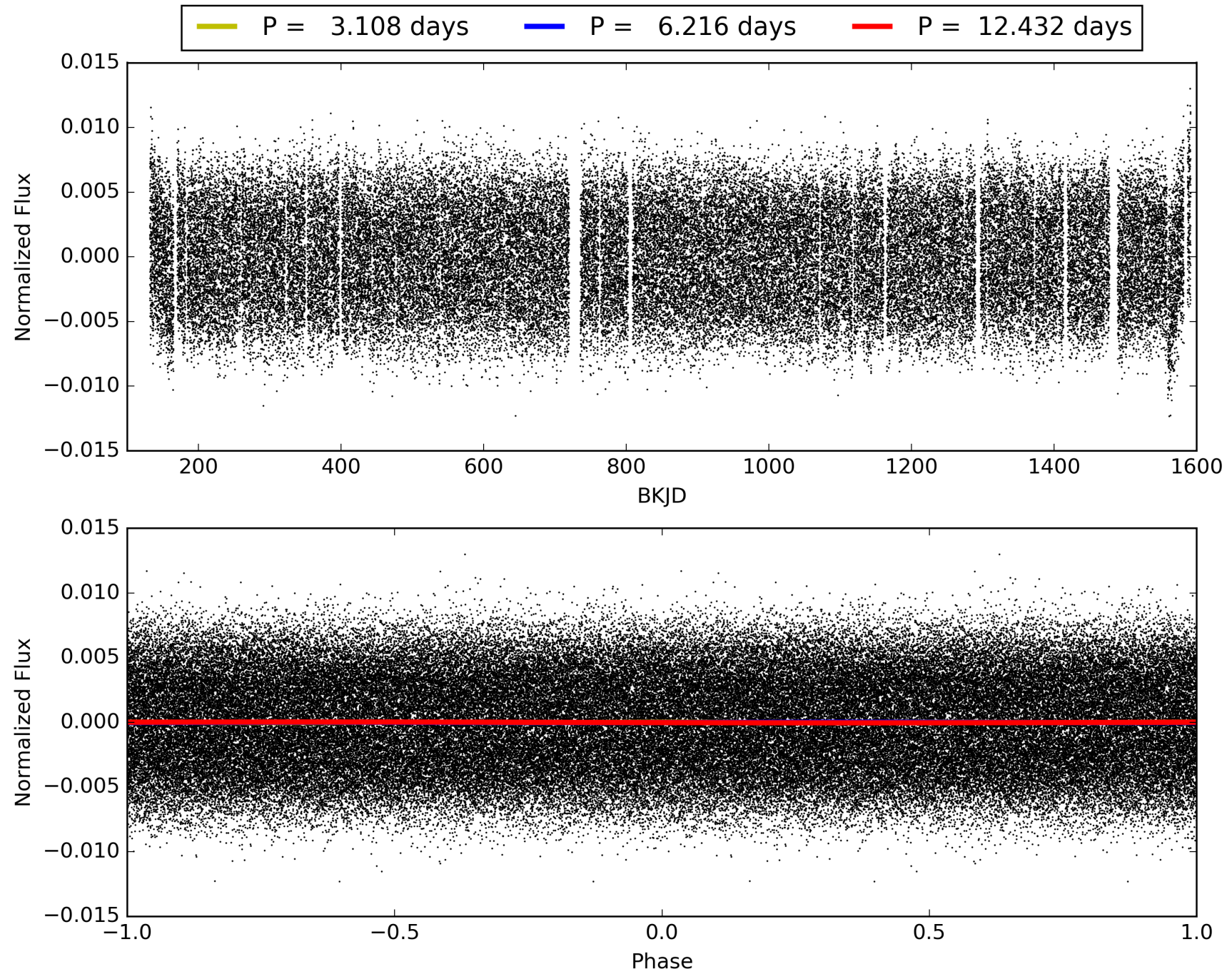
## DV Diagnostic Results:

ShortPeriod-sig: 99.9% [3.43σ]  
LongPeriod-sig: 100.0% [8.94σ]  
ModelChiSquare2-sig: 0.1%  
ModelChiSquareGof-sig: 5.5%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [16/16]  
GhostDiagnostic-chr: -1.35  
Centroid-sig: 64.6%  
Centroid-so: 0.470 arcsec [4.01σ]  
OotOffset-rm: 0.159 arcsec [1.06σ]  
KicOffset-rm: 0.104 arcsec [0.56σ]  
OotOffset-st: 3/3/4/4 [14]  
KicOffset-st: 3/3/4/4 [14]  
DiffImageQuality-fgm: 0.57 [8/14]  
DiffImageOverlap-fno: 0.00 [0/17]

# TCE 008783270-09, PDC Light Curves

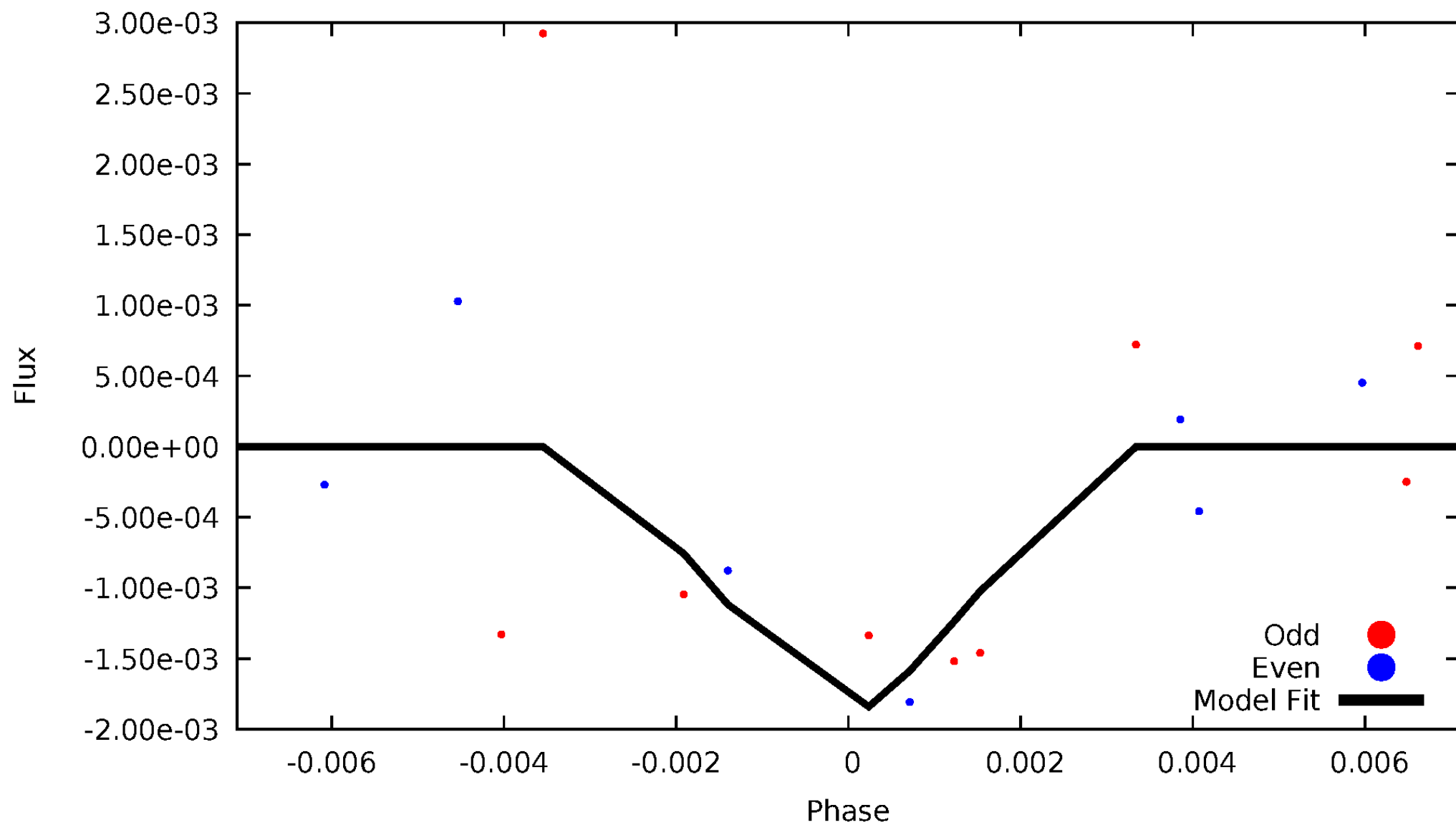


TCE 008783270-09



# DV Odd/Even

TCE 008783270-09





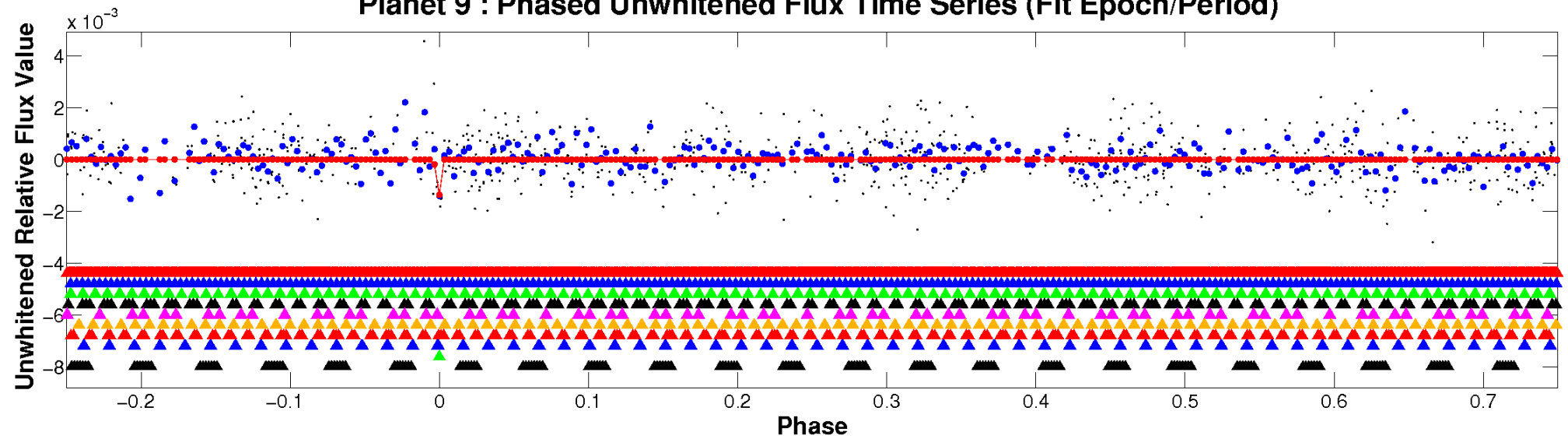


ALT Odd/Even

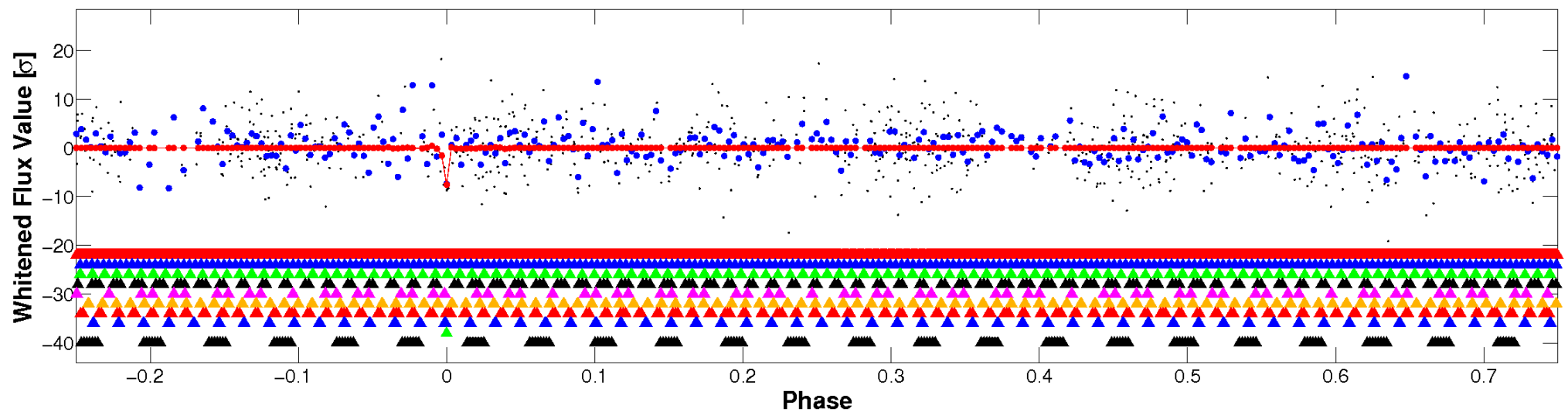
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

## Planet 9 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)



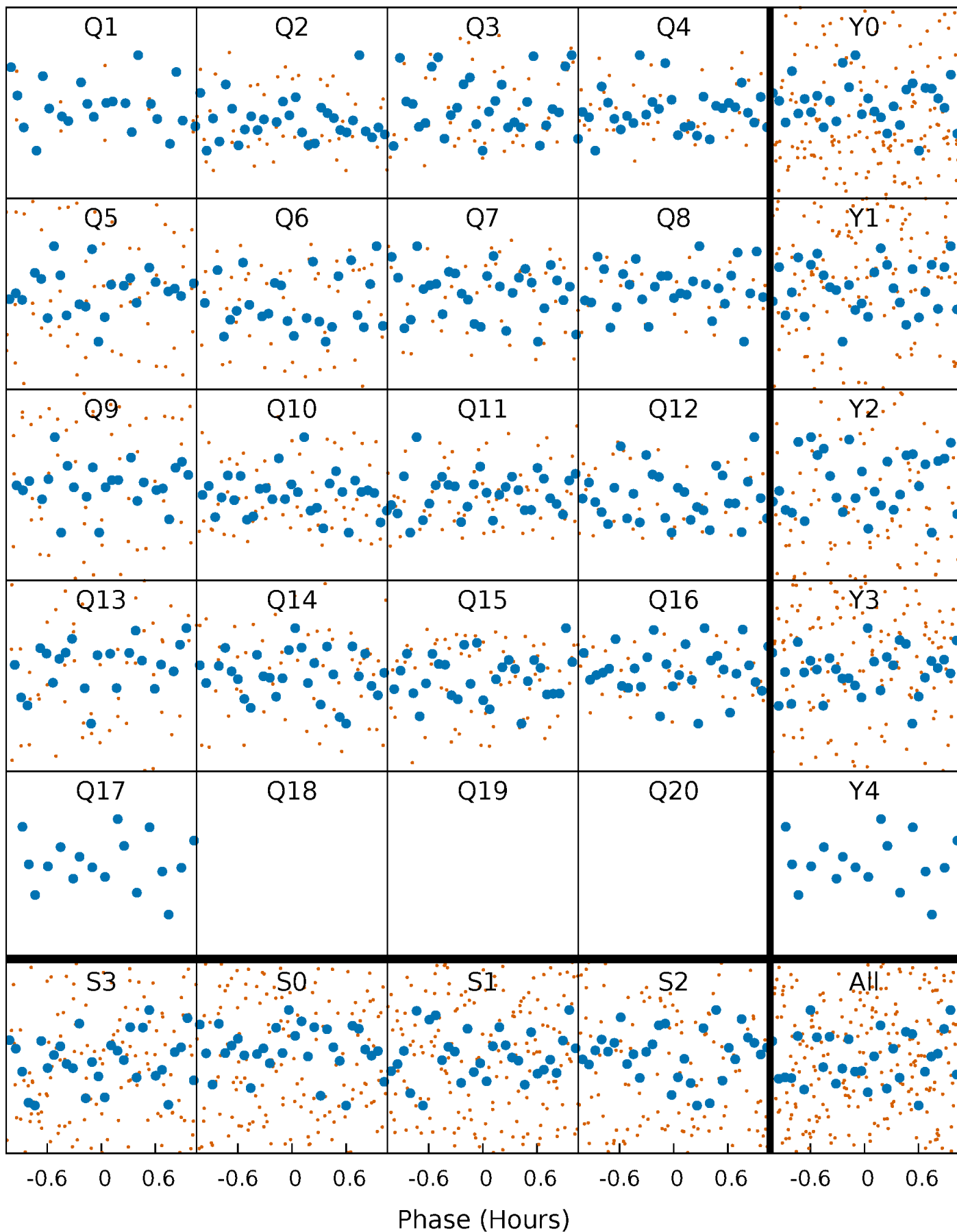
## Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)





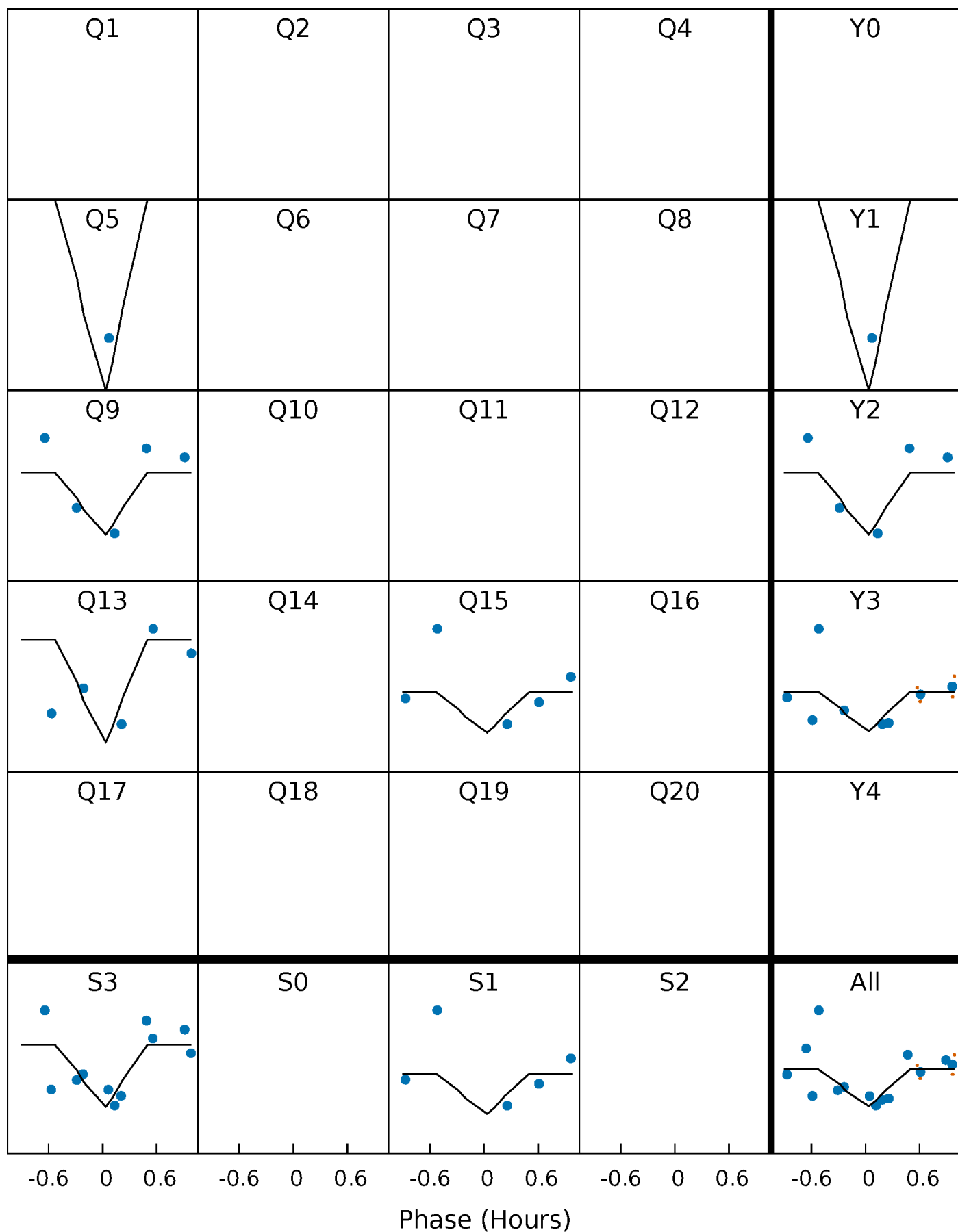
# PDC Quarter-Phased Transit Curves

TCE 008783270-09 P= 6.216187 Days  $T_0=132.163758$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 008783270-09   P= 6.216187 Days    $T_0=132.163758$  (BKJD)

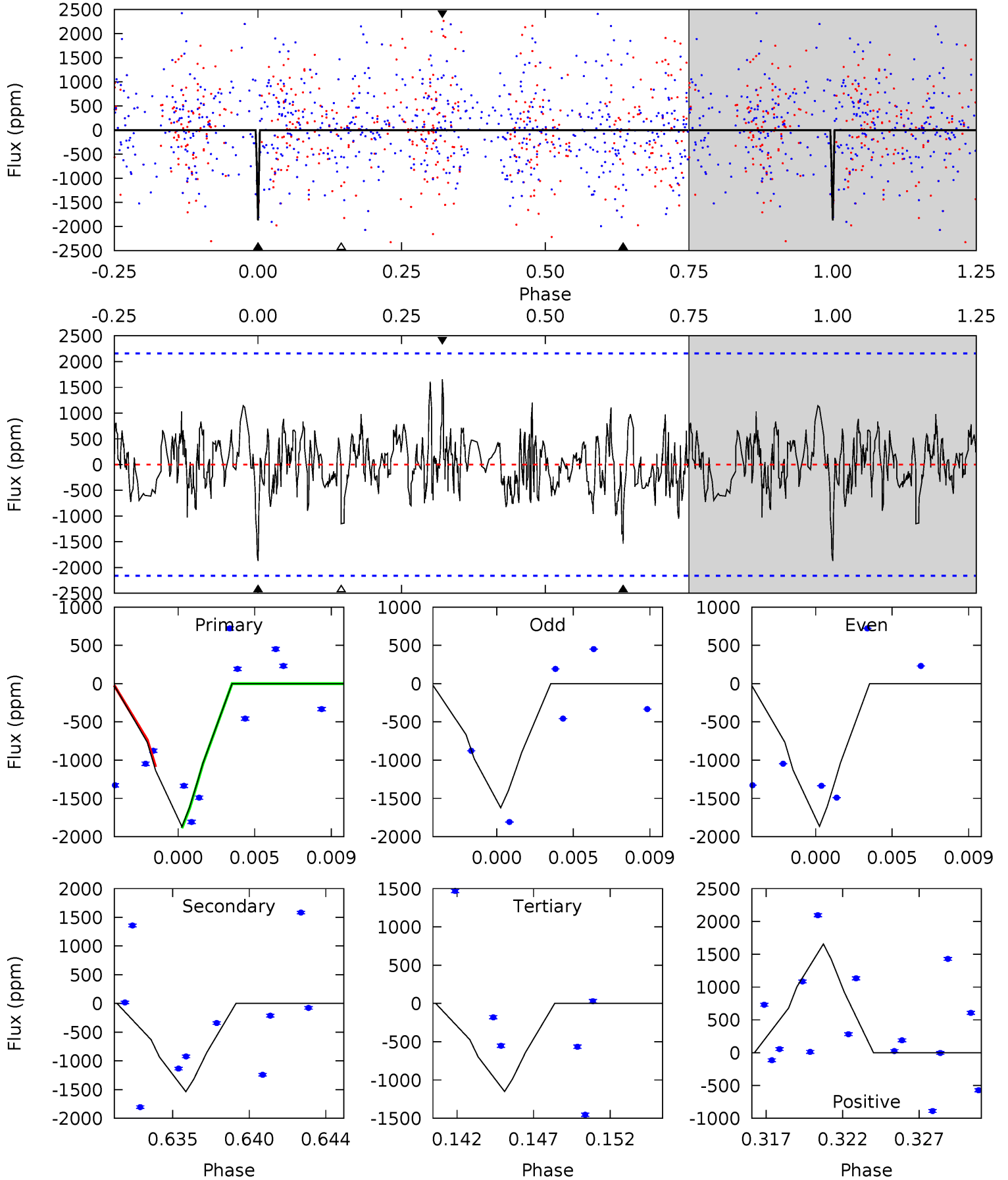


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

008783270-09, P = 6.216187 Days, E = 132.163758 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.48	3.68	2.75	3.96	5.17	2.82	1.08	1.72	0.51	0.92	-0.29	0.25	0	0.47	0.00



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 008783270

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7094^{+225}_{-338}$	$3.884^{+0.345}_{-0.138}$	$-0.080^{+0.250}_{-0.350}$	$2.454^{+0.539}_{-1.001}$	$1.682^{+0.165}_{-0.385}$	$0.160^{+0.427}_{-0.063}$
	+3%/-5%	+9%/-4%	+312%/-438%	+22%/-41%	+10%/-23%	+266%/-40%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 008783270-09 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-1536 \pm 418$	$28.13^{+29.76}_{-19.97}$	$2397^{+194}_{-241}$	$4358^{+3365}_{-1123}$	$6.591^{+69.946}_{-5.211}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

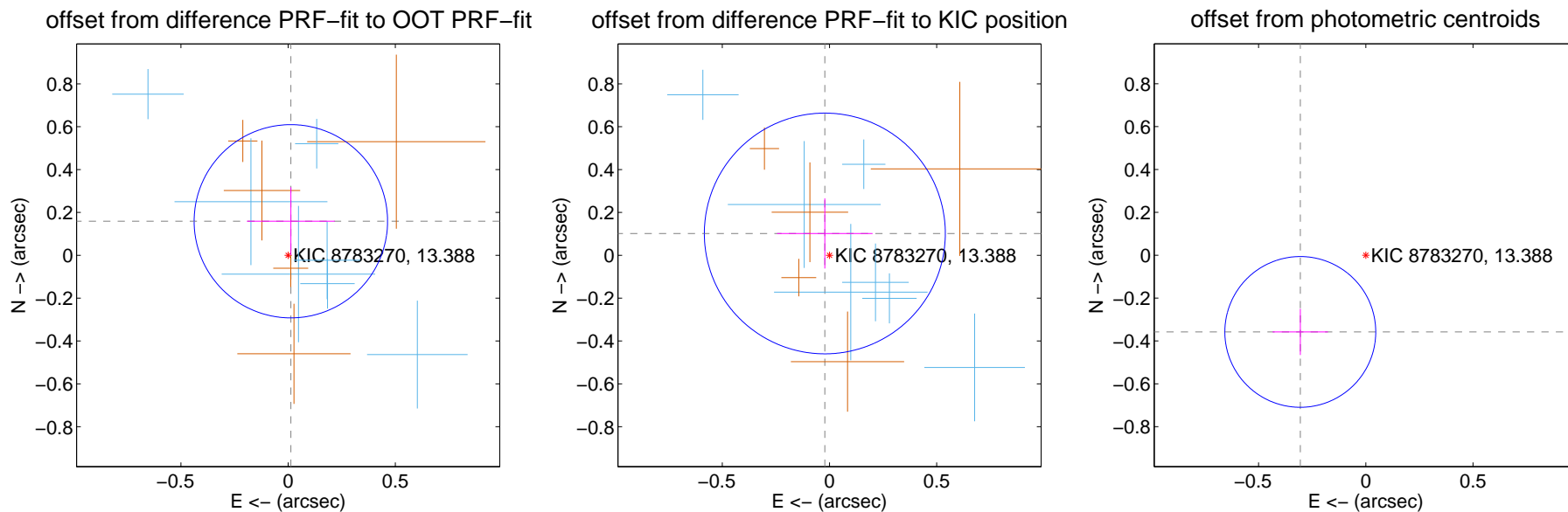
## DV Centroid Data

Supplemental centroid analysis for 008783270-09. Kepler magnitude: 13.39. Transit SNR 18.00

There are 8 quarters with good PRF difference image offsets

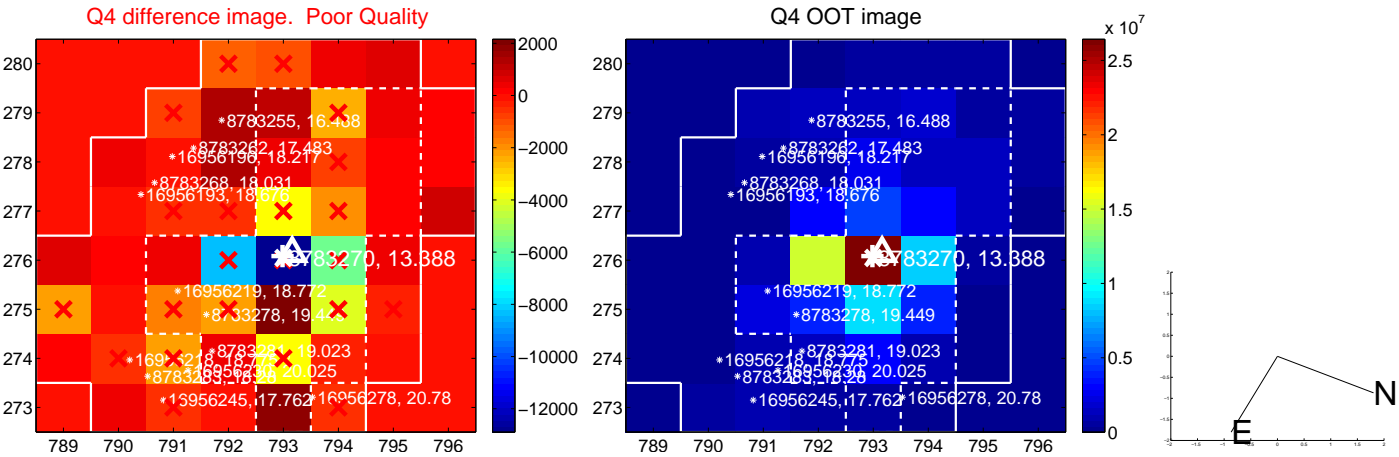
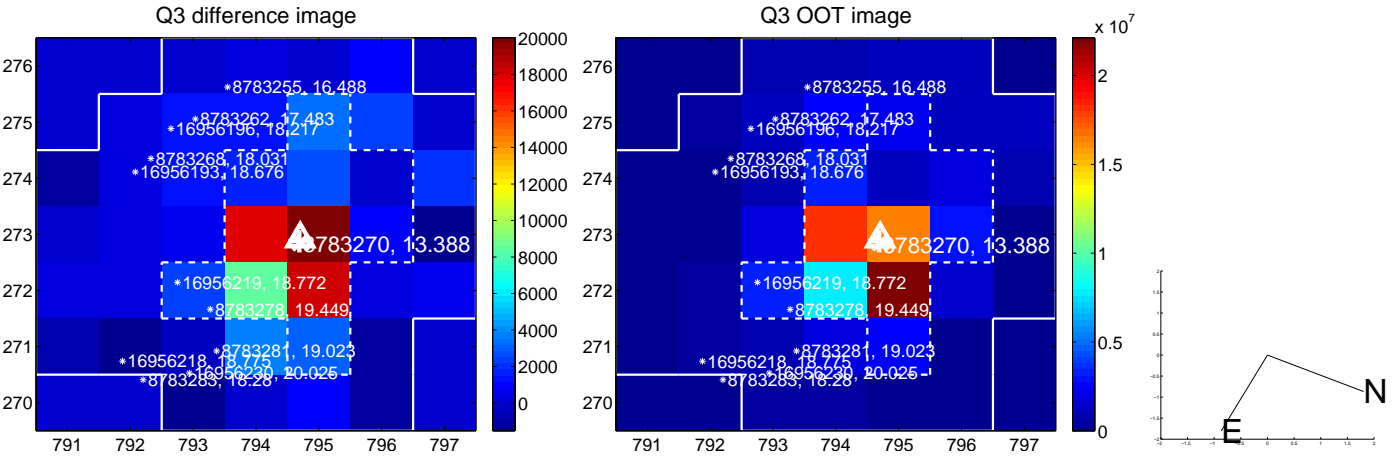
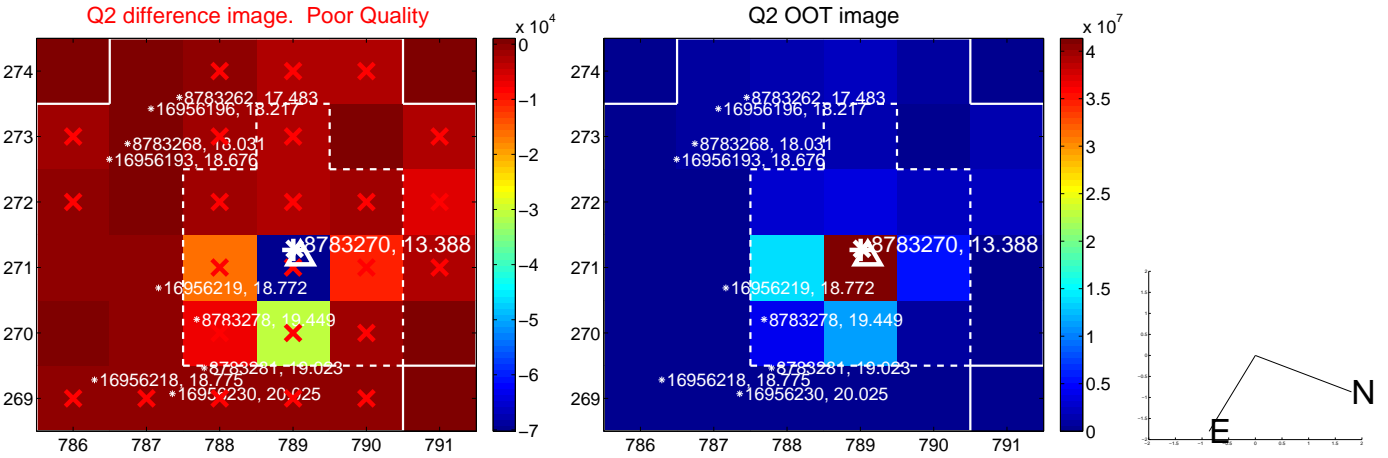
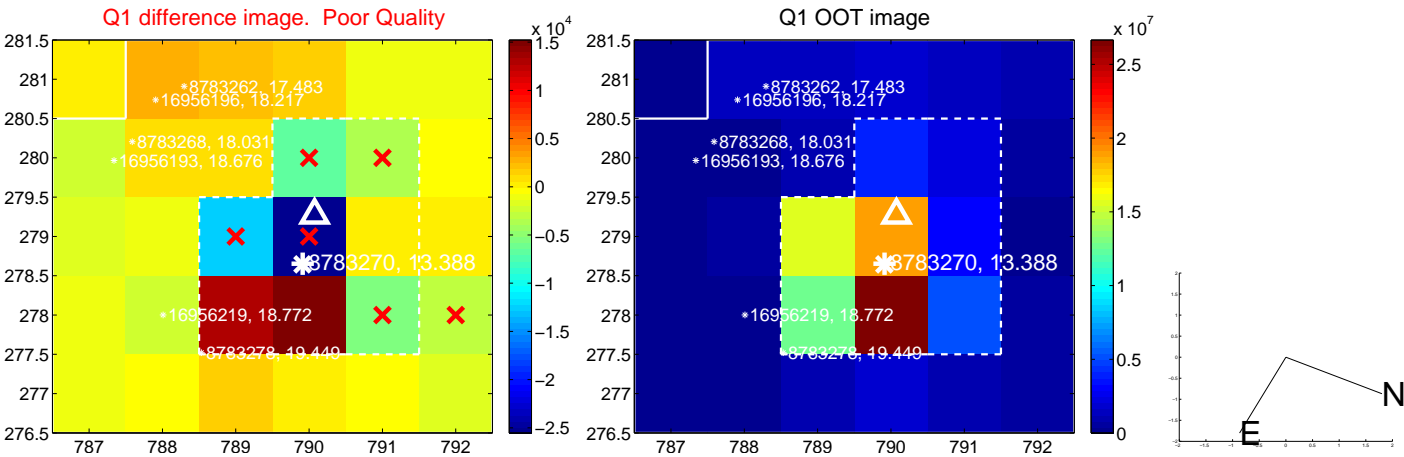
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.159 \pm 0.150$	1.06	$-0.013 \pm 0.205$	$0.159 \pm 0.159$
PRF-fit source offset from KIC position	$0.104 \pm 0.187$	0.56	$0.022 \pm 0.223$	$0.102 \pm 0.164$
photometric centroid source offset	$0.47 \pm 0.12$	4.01	$0.31 \pm 0.13$	$-0.36 \pm 0.11$



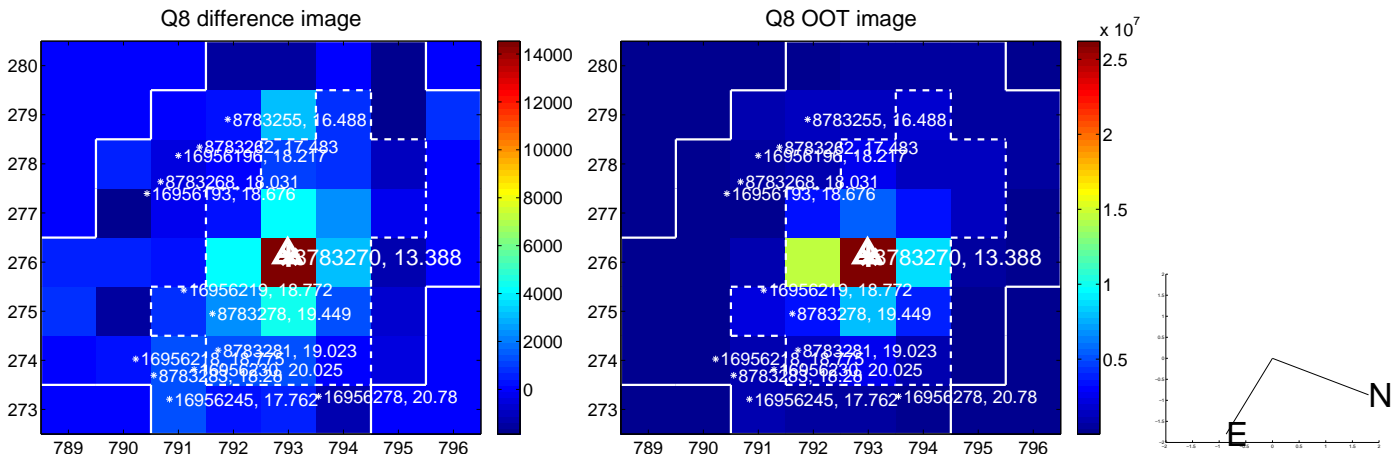
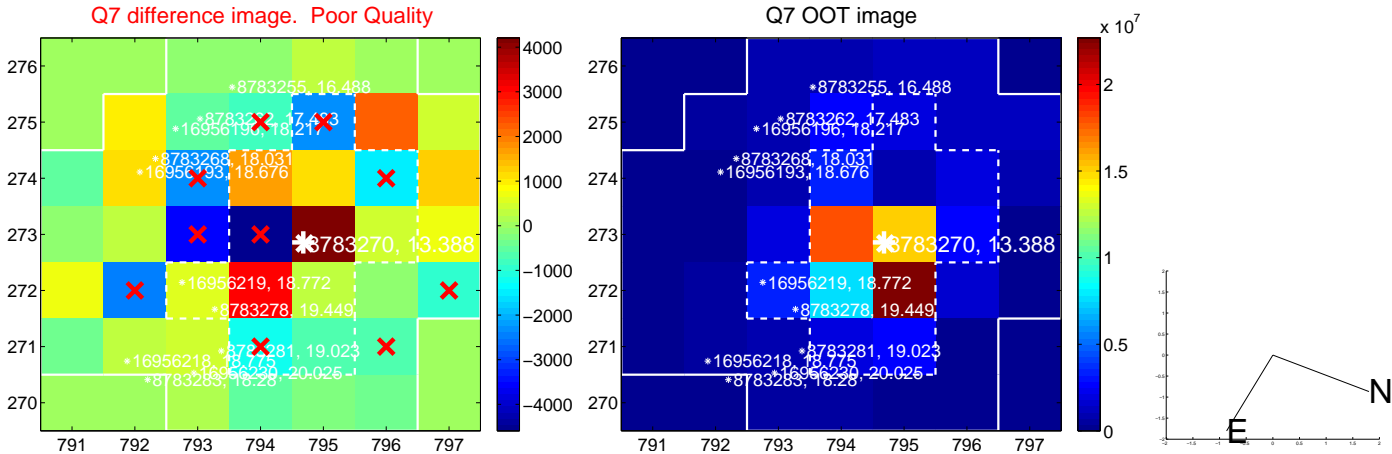
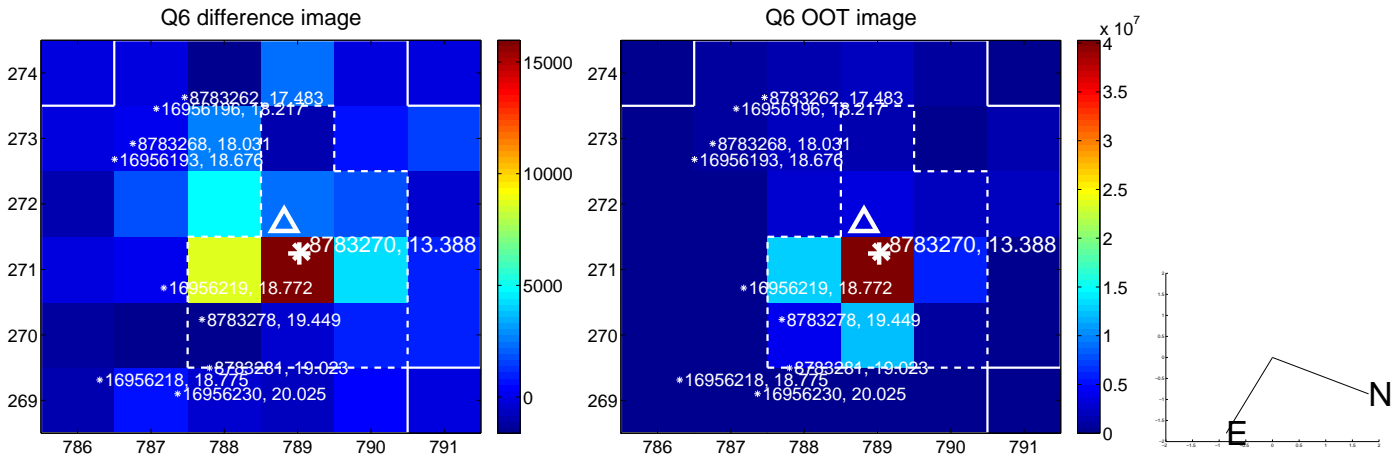
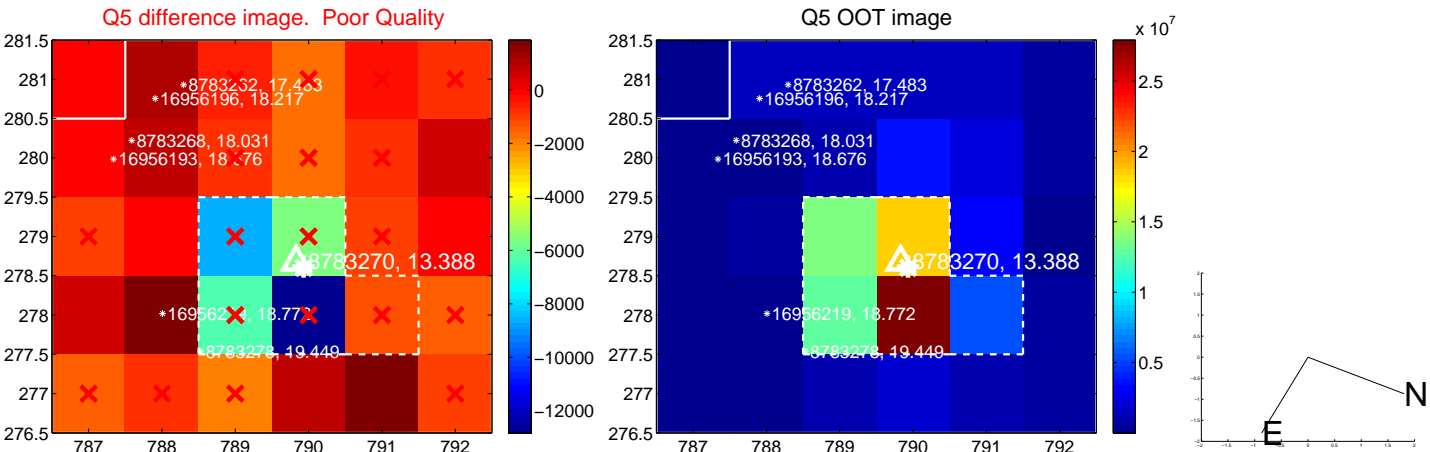
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

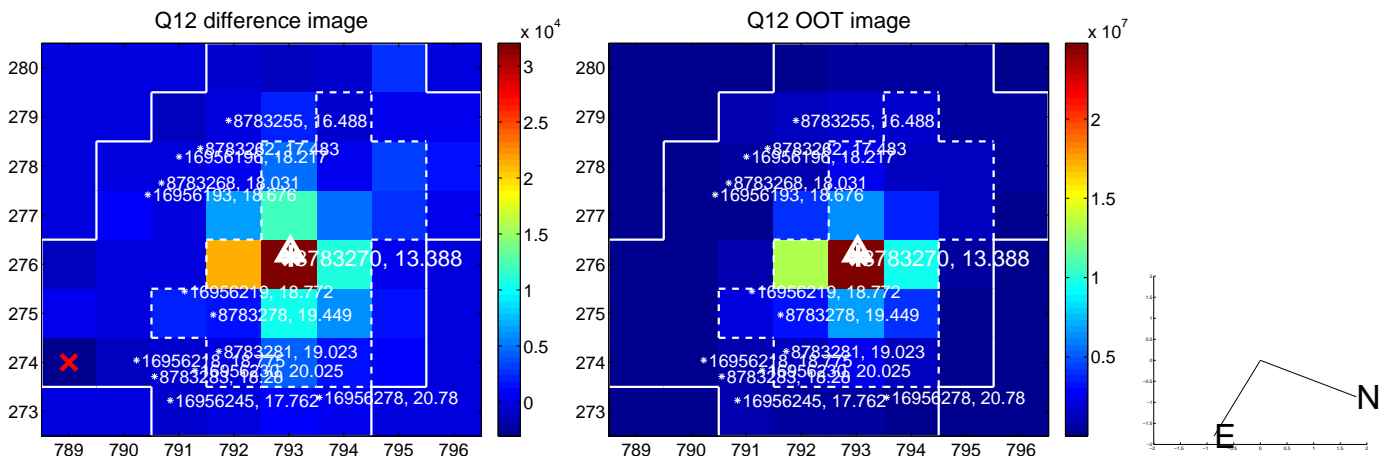
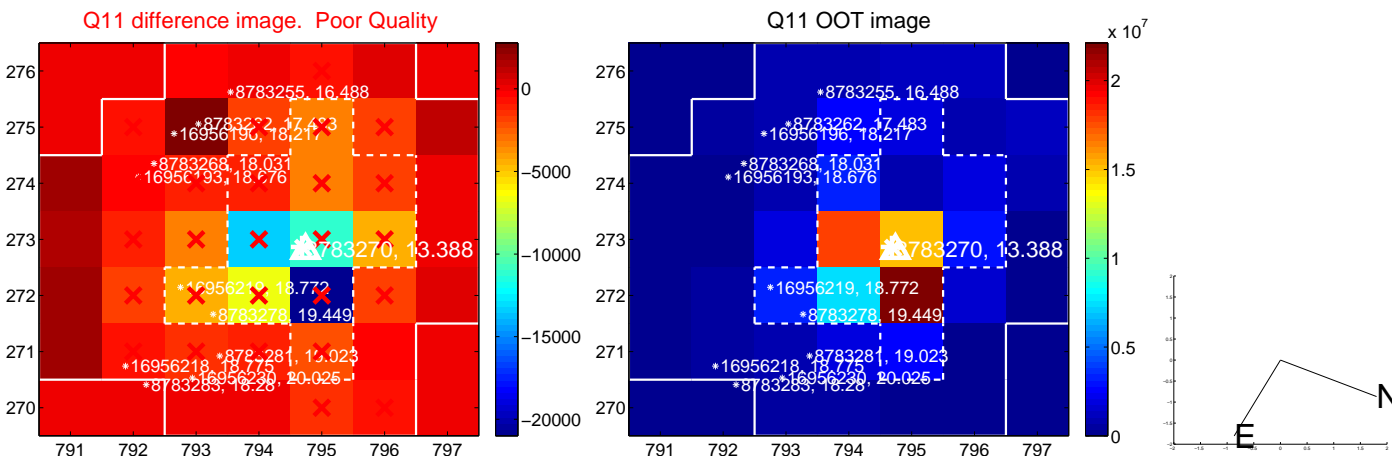
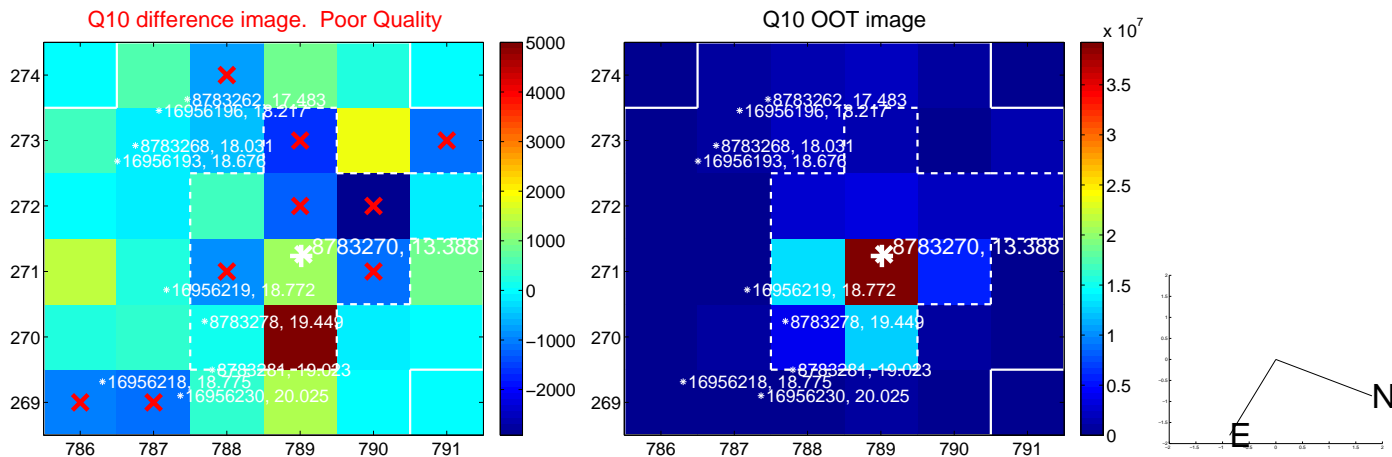
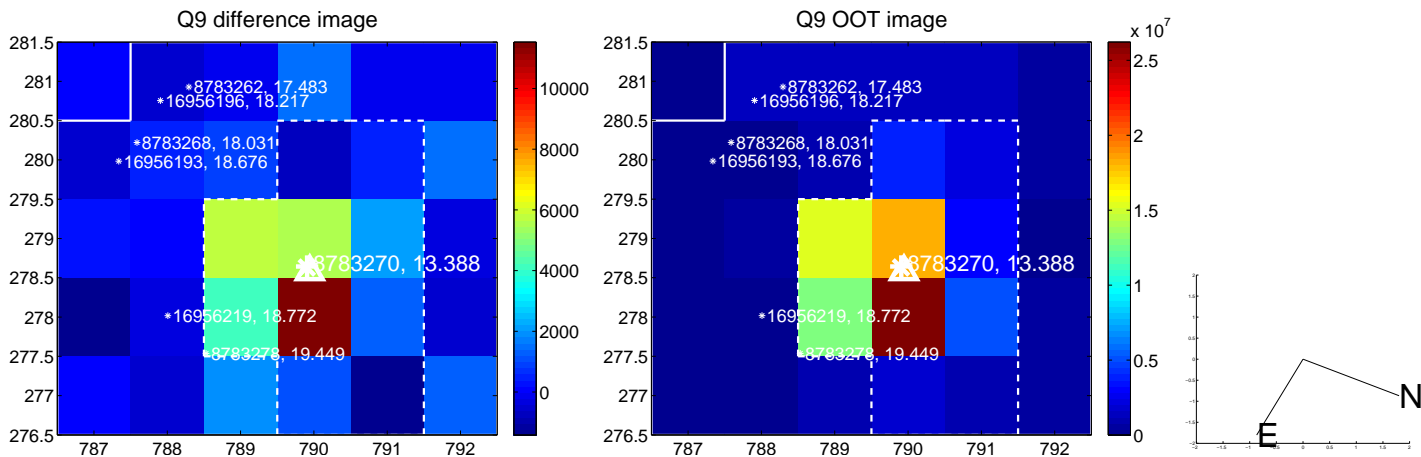




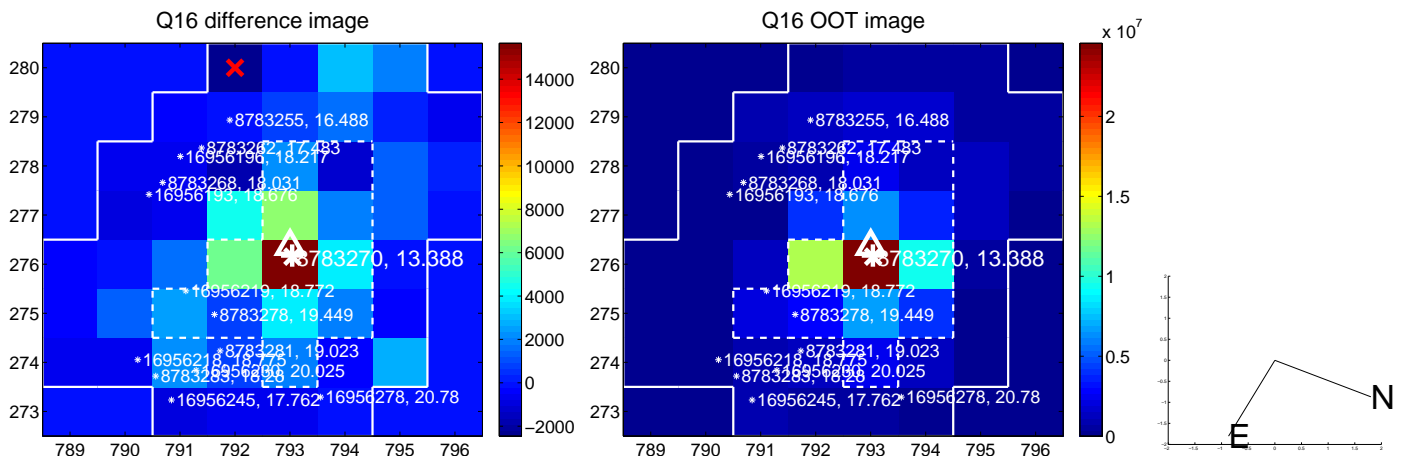
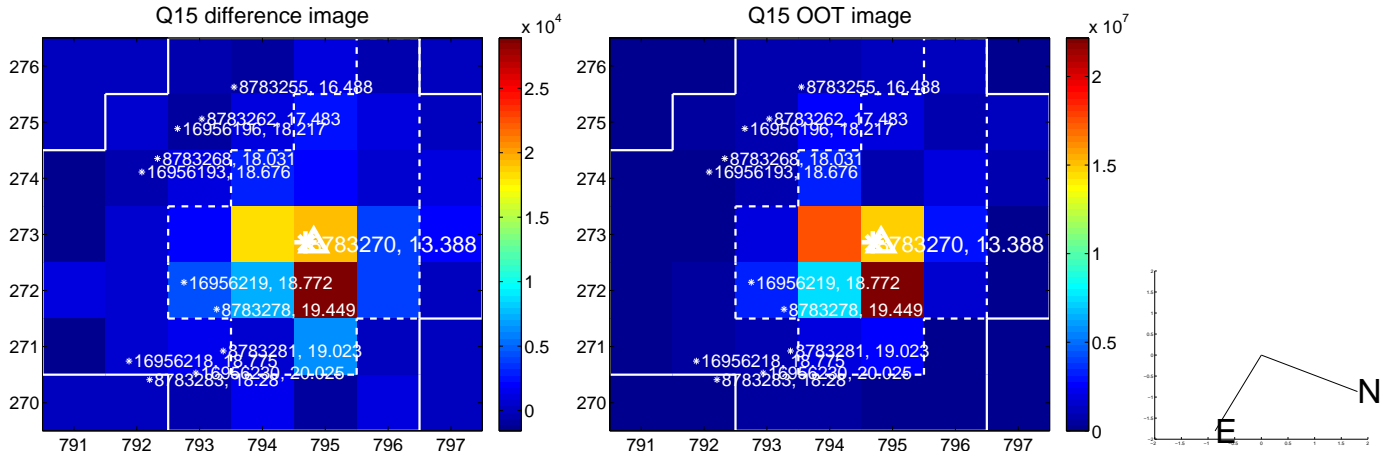
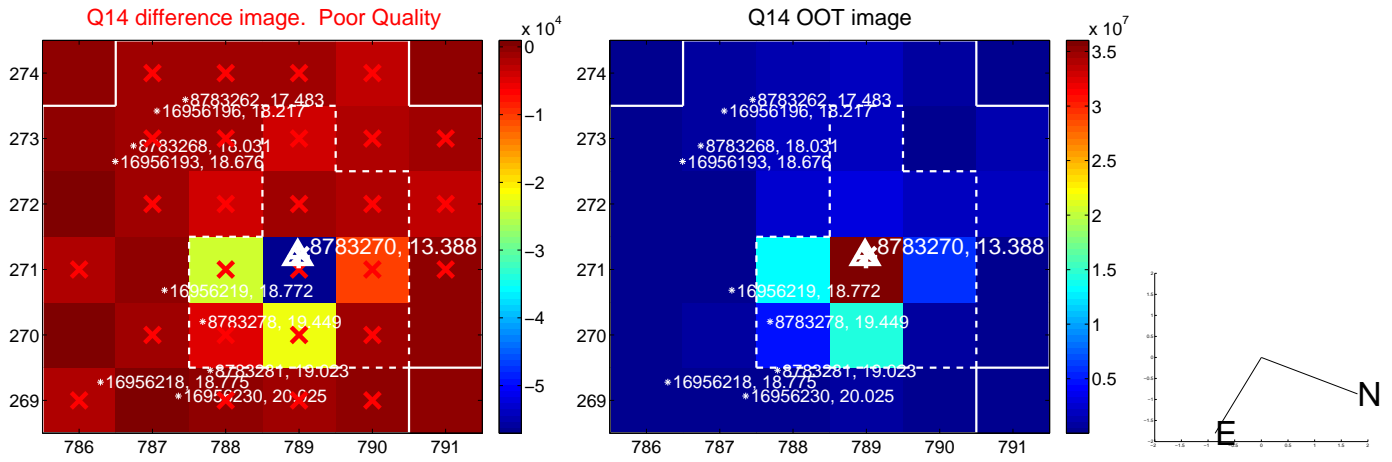
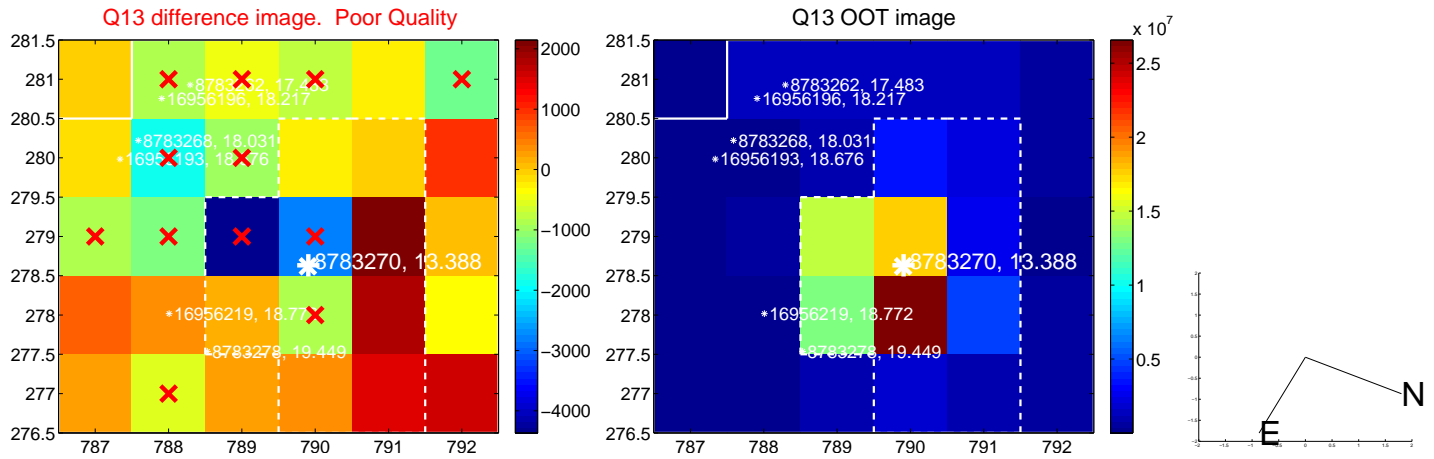
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



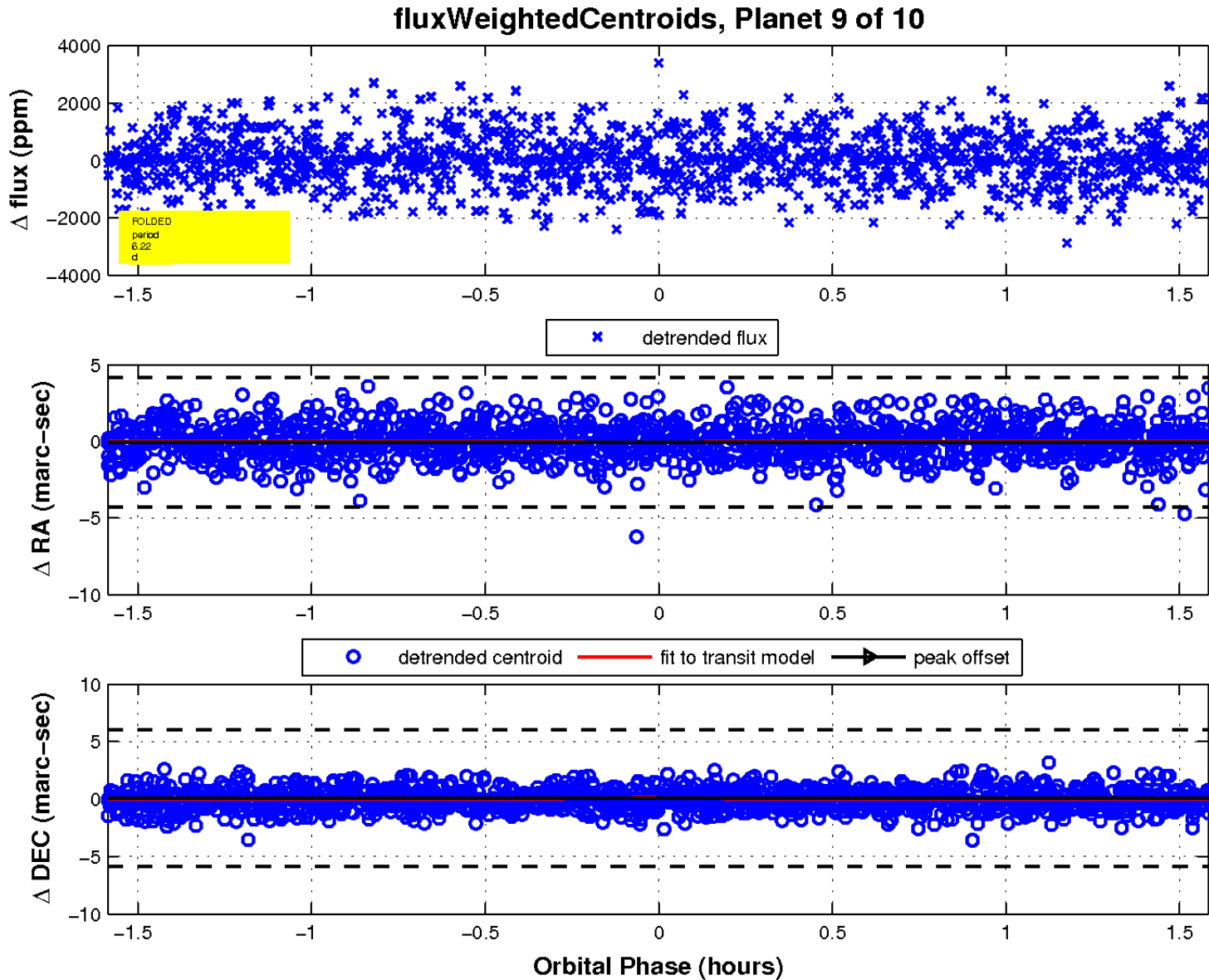
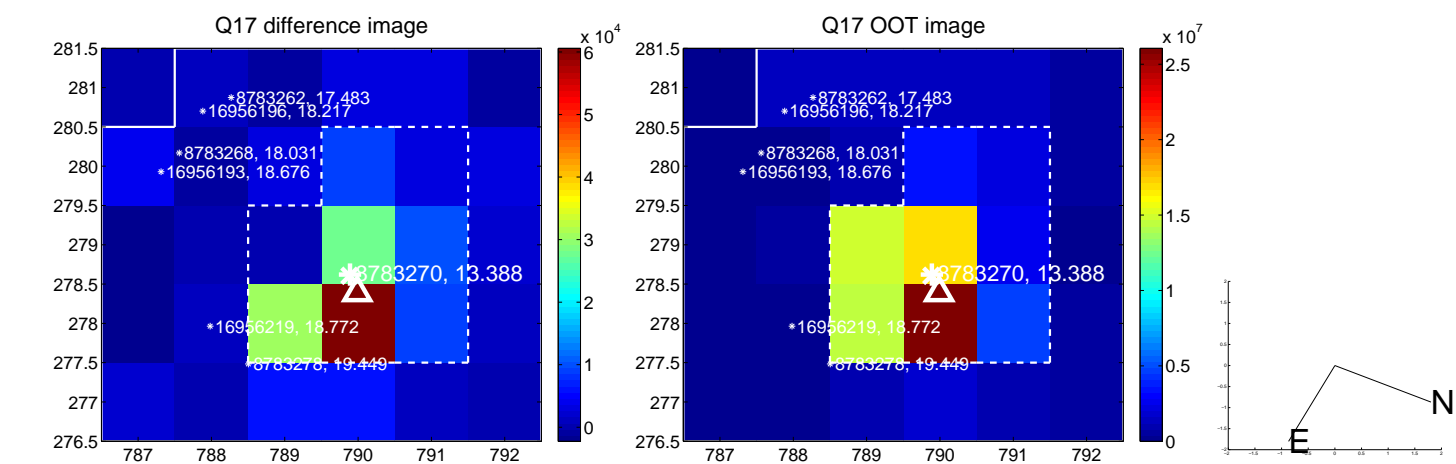
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



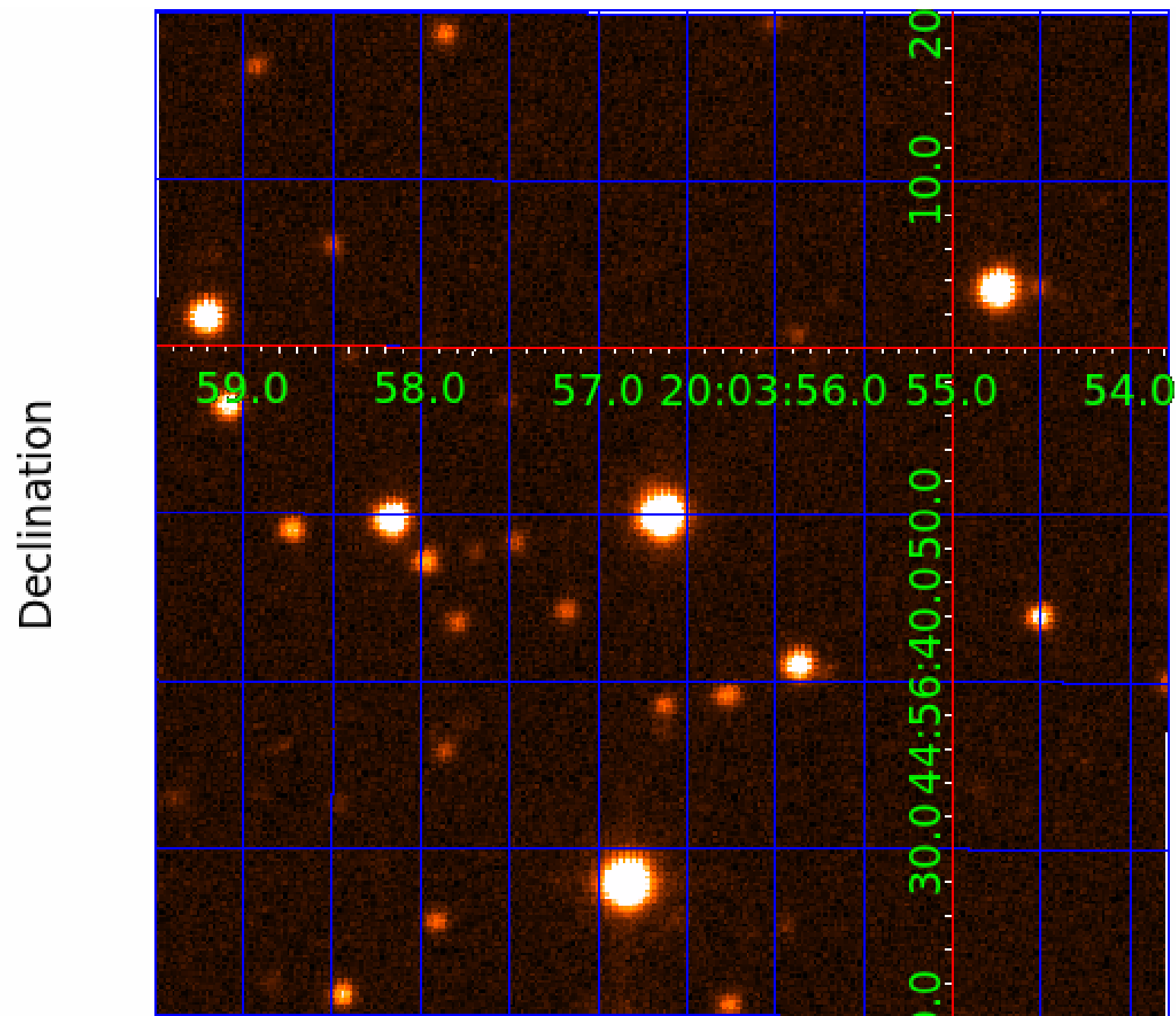
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image



# KIC 008783270

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008783270-01	OBS	No	0.519352	131.609633	77.2	3.910	15.0	13.0	2.45	7094	2.22	60407.78
008783270-02	OBS	No	4.505537	133.517654	691.1	1.274	12.3	10.2	2.45	7094	6.57	3388.81
008783270-03	OBS	No	6.986826	132.625777	665.5	2.000	13.1	-1.0	2.45	7094	6.42	1888.00
008783270-04	OBS	No	8.258431	139.501621	930.3	1.500	14.2	-1.0	2.45	7094	7.60	1510.70
008783270-05	OBS	No	19.737546	144.223497	644.1	1.500	13.9	-1.0	2.45	7094	6.32	472.77
008783270-06	OBS	No	3.577228	133.596172	487.7	2.372	14.1	11.2	2.45	7094	5.54	4609.42
008783270-07	OBS	No	7.824958	139.131252	1052.0	2.203	11.4	18.5	2.45	7094	8.09	1623.30
008783270-08	OBS	No	6.005497	133.207915	1459.7	1.374	13.0	19.8	2.45	7094	9.53	2310.17
008783270-09	OBS	No	6.216187	132.163758	1887.3	0.529	12.1	18.0	2.45	7094	13.61	2206.36
008783270-10	OBS	No	8.919382	136.025778	332.3	3.000	7.9	-1.0	2.45	7094	4.53	1363.31

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008783270-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_MEAS
008783270-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
008783270-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
008783270-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
008783270-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
008783270-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
008783270-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
008783270-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS

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

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

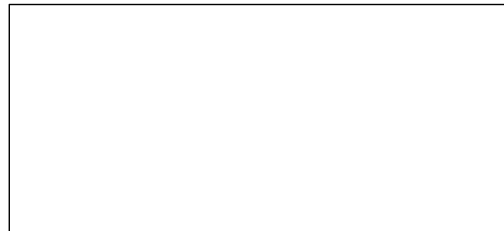
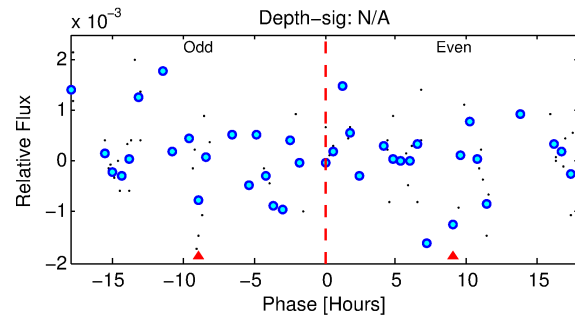
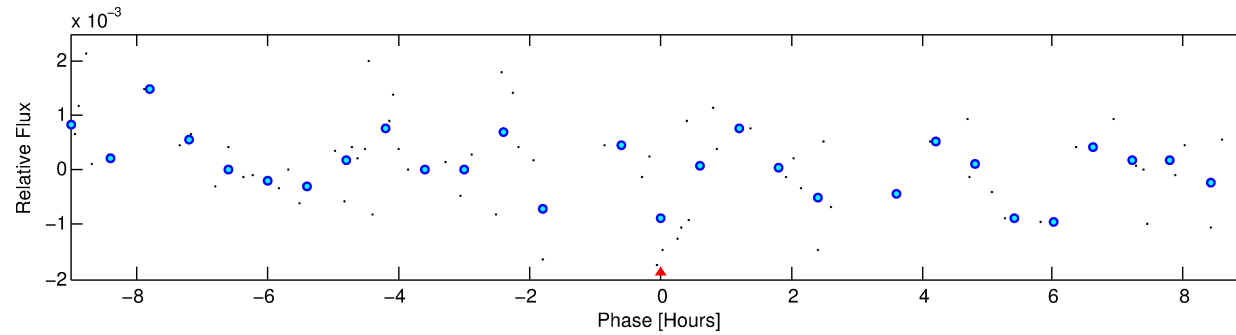
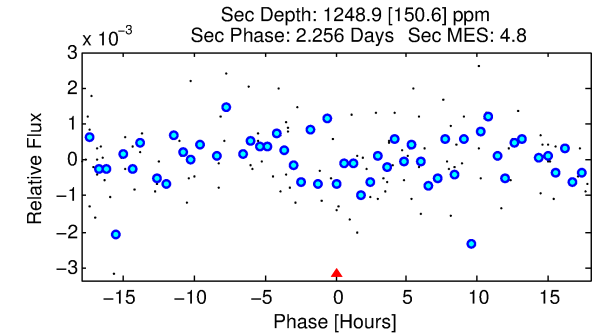
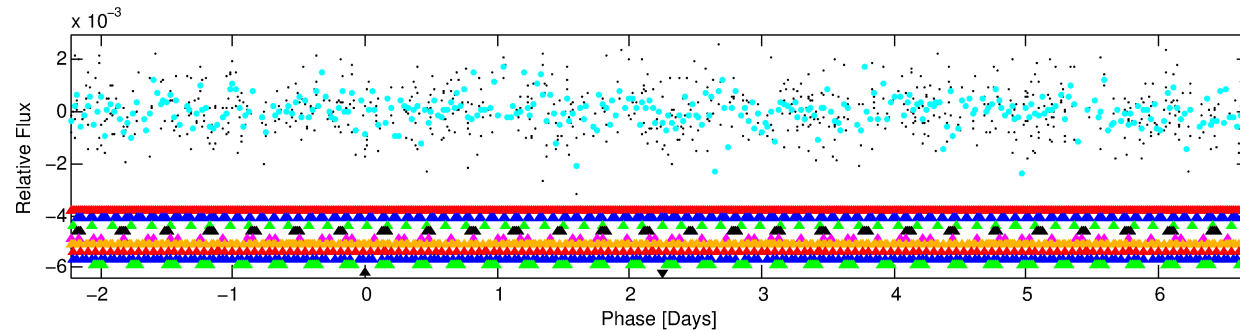
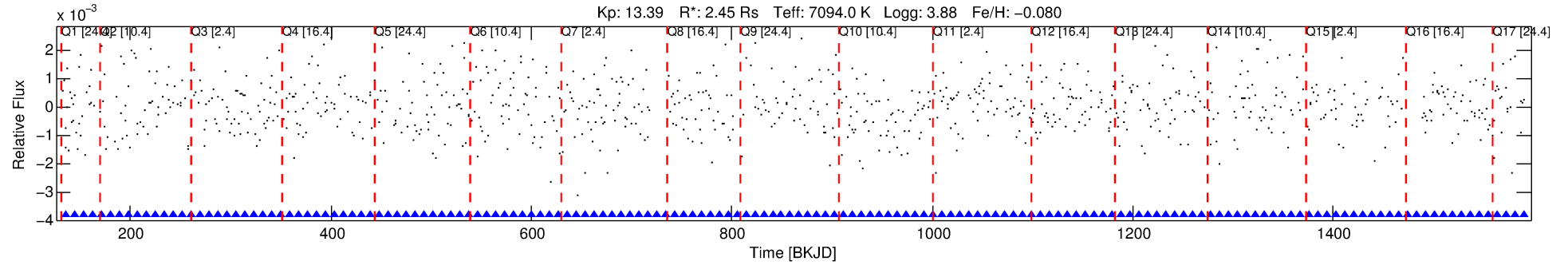
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008783270-10

No Significant Match Found

# DV One-Page Summary

KIC: 8783270 Candidate: 10 of 10 Period: 8.919 d



## TPS TCE Results:

Period = 8.91938 d  
Epoch = 136.0258 BKJD

DV fit results are unavailable

## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.73 $\sigma$ ]  
LongPeriod-sig: 100.0% [77.41 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: N/A  
GhostDiagnostic-chr: N/A

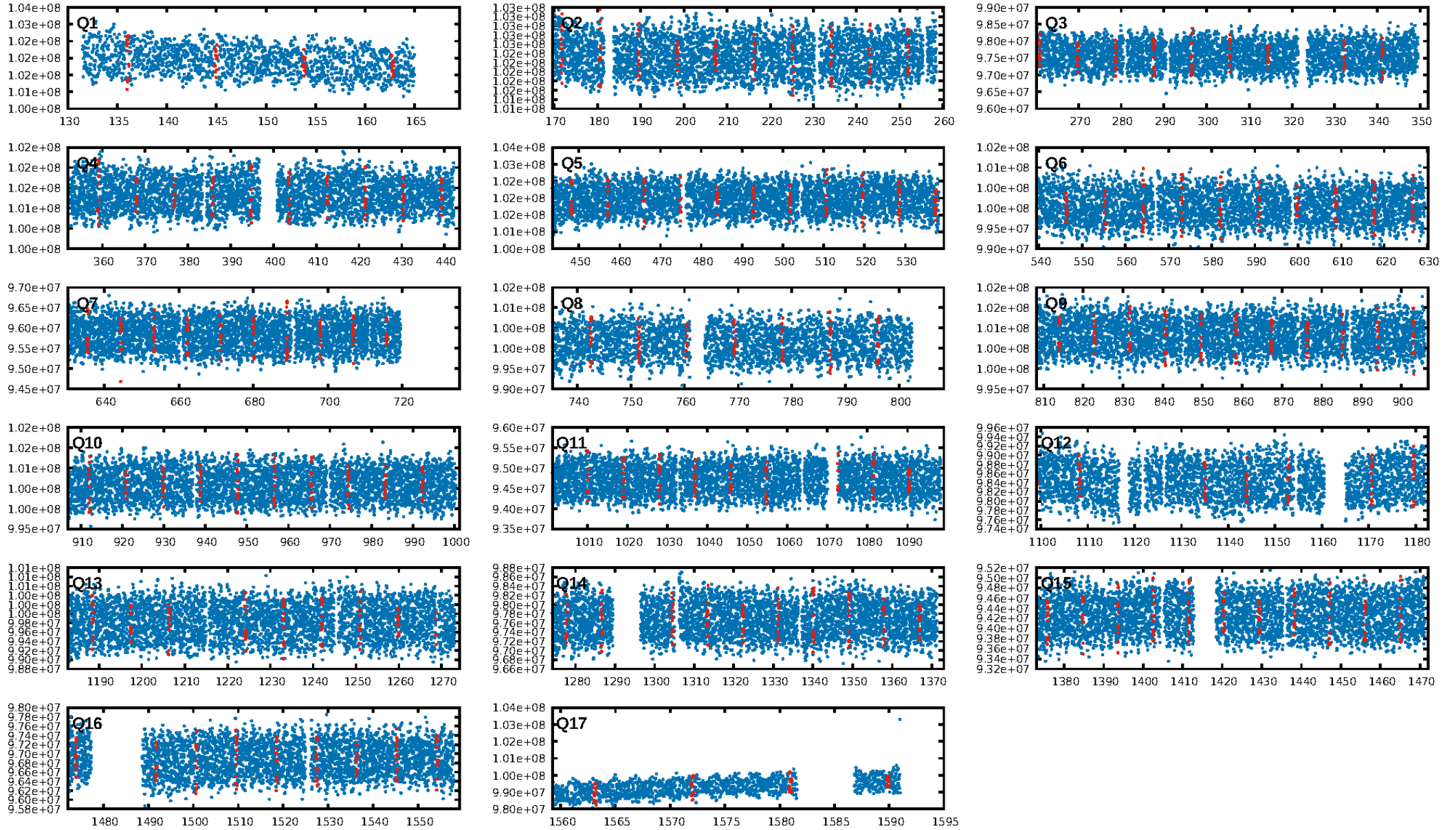
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0/0 [0]  
KicOffset-st: 0/0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: N/A

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:22:45 Z

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

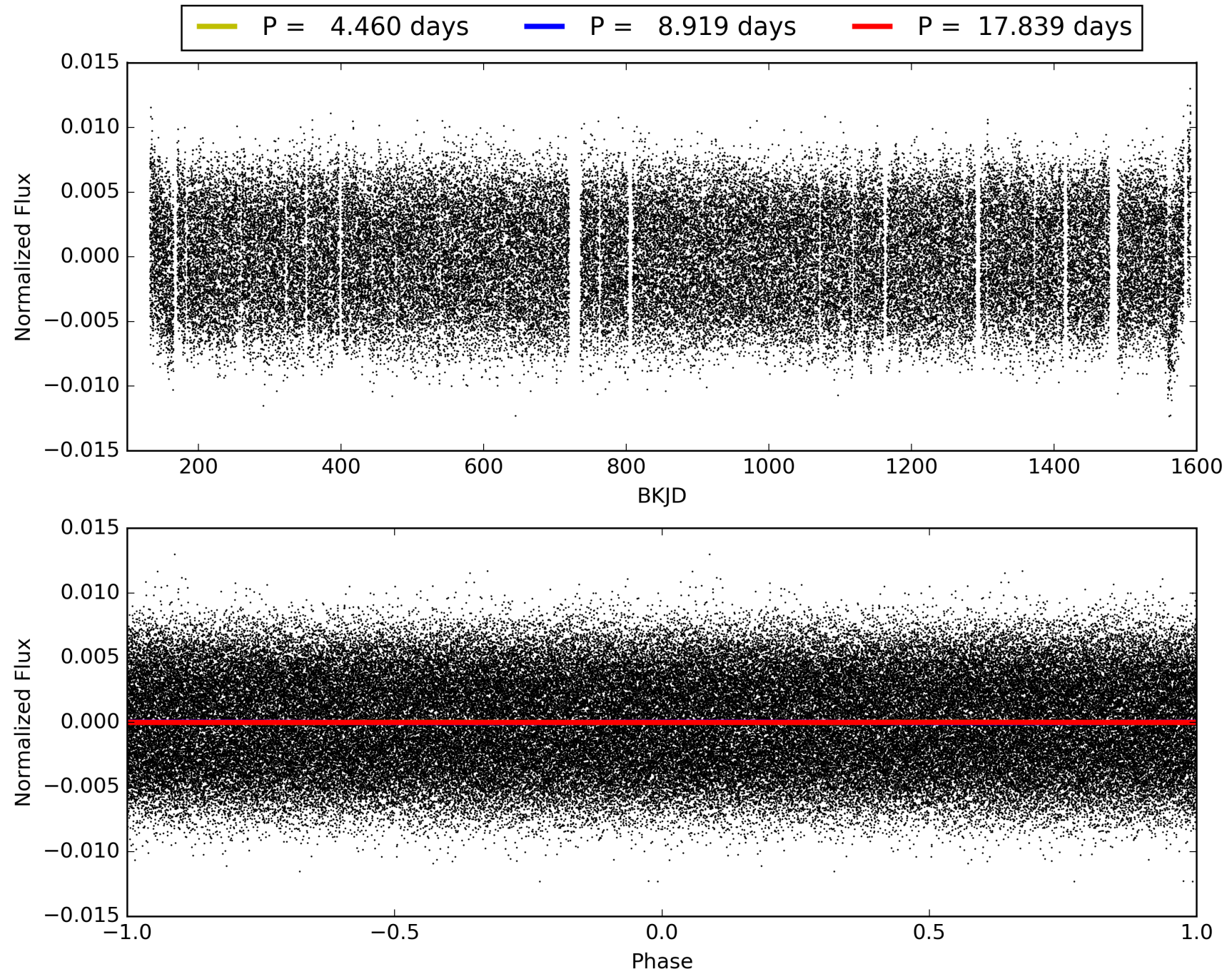


# TCE 008783270-10, PDC Light Curves



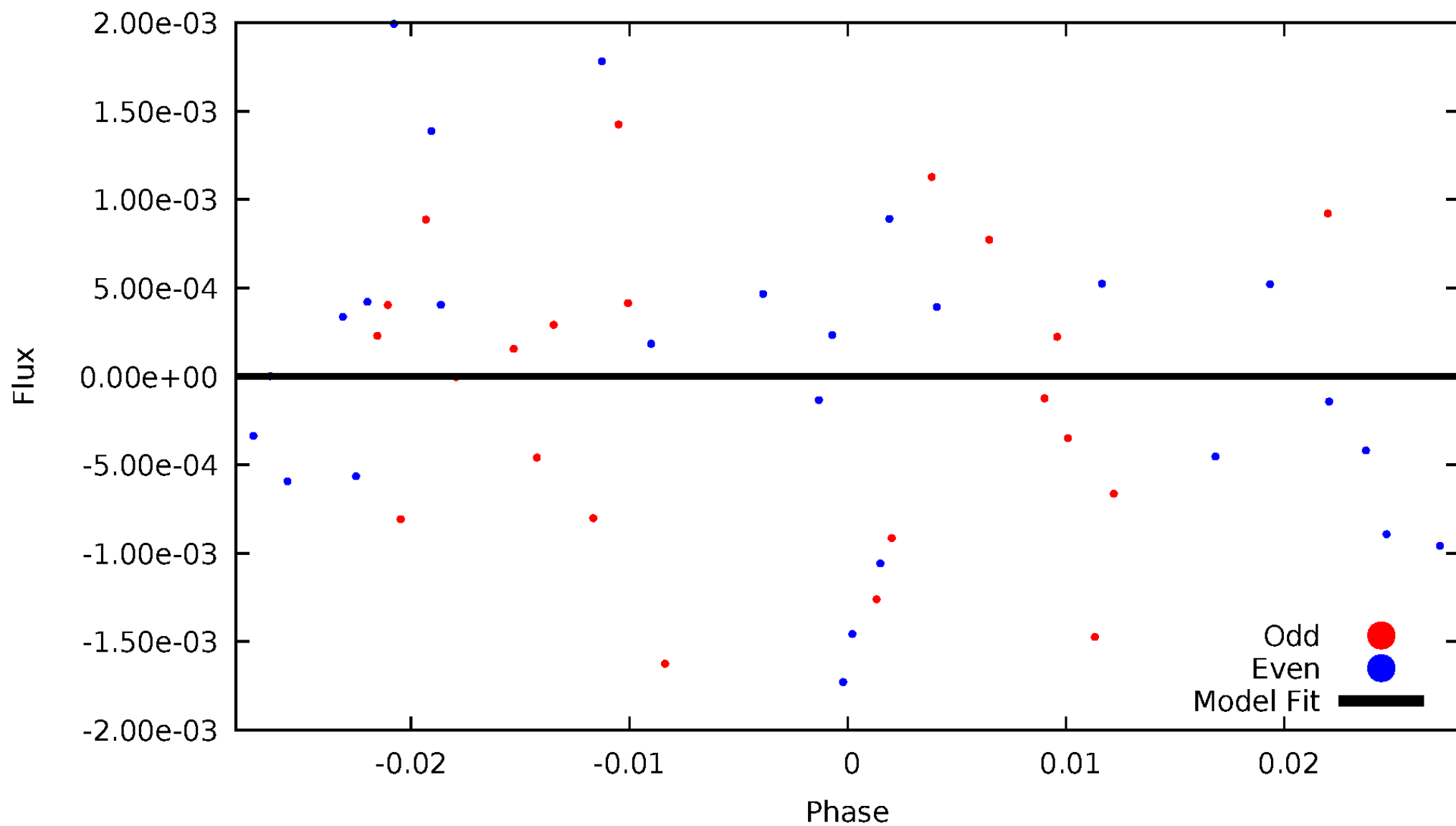


TCE 008783270-10



# DV Odd/Even

TCE 008783270-10



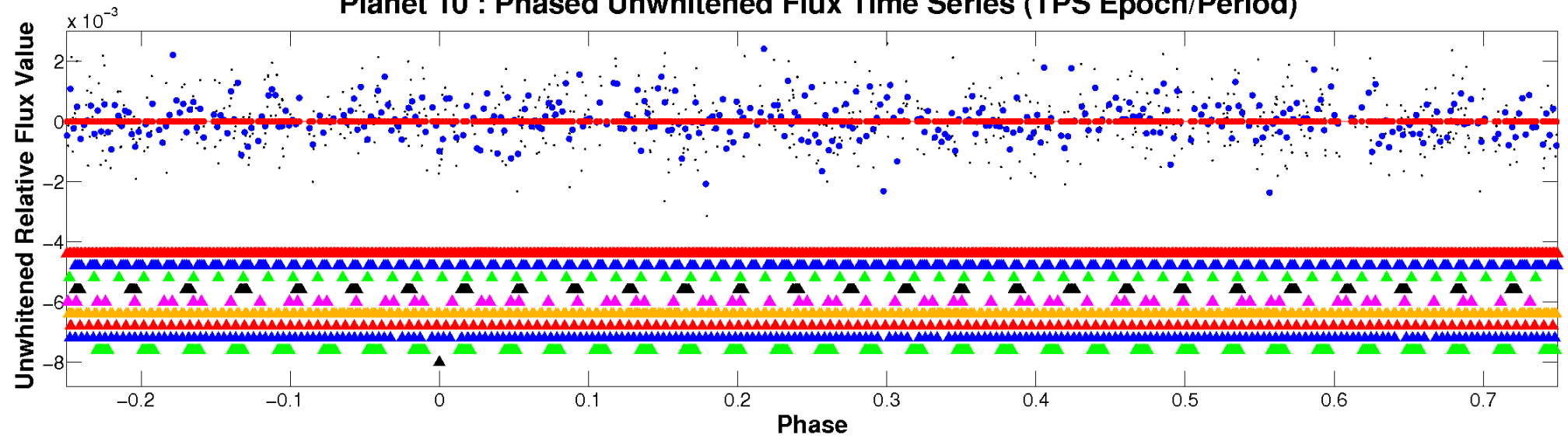


ALT Odd/Even

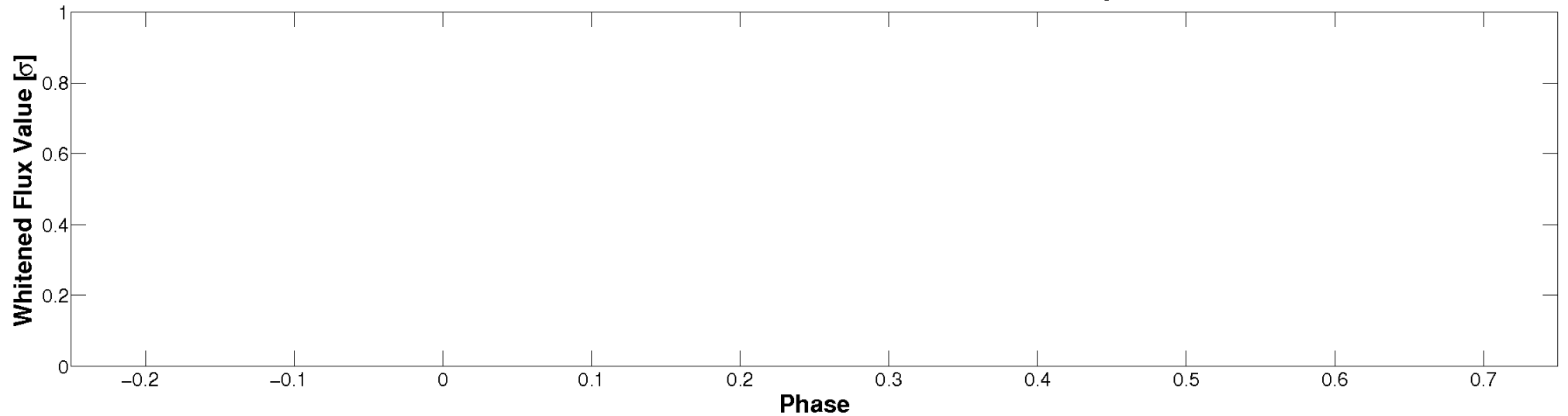
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

Planet 10 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

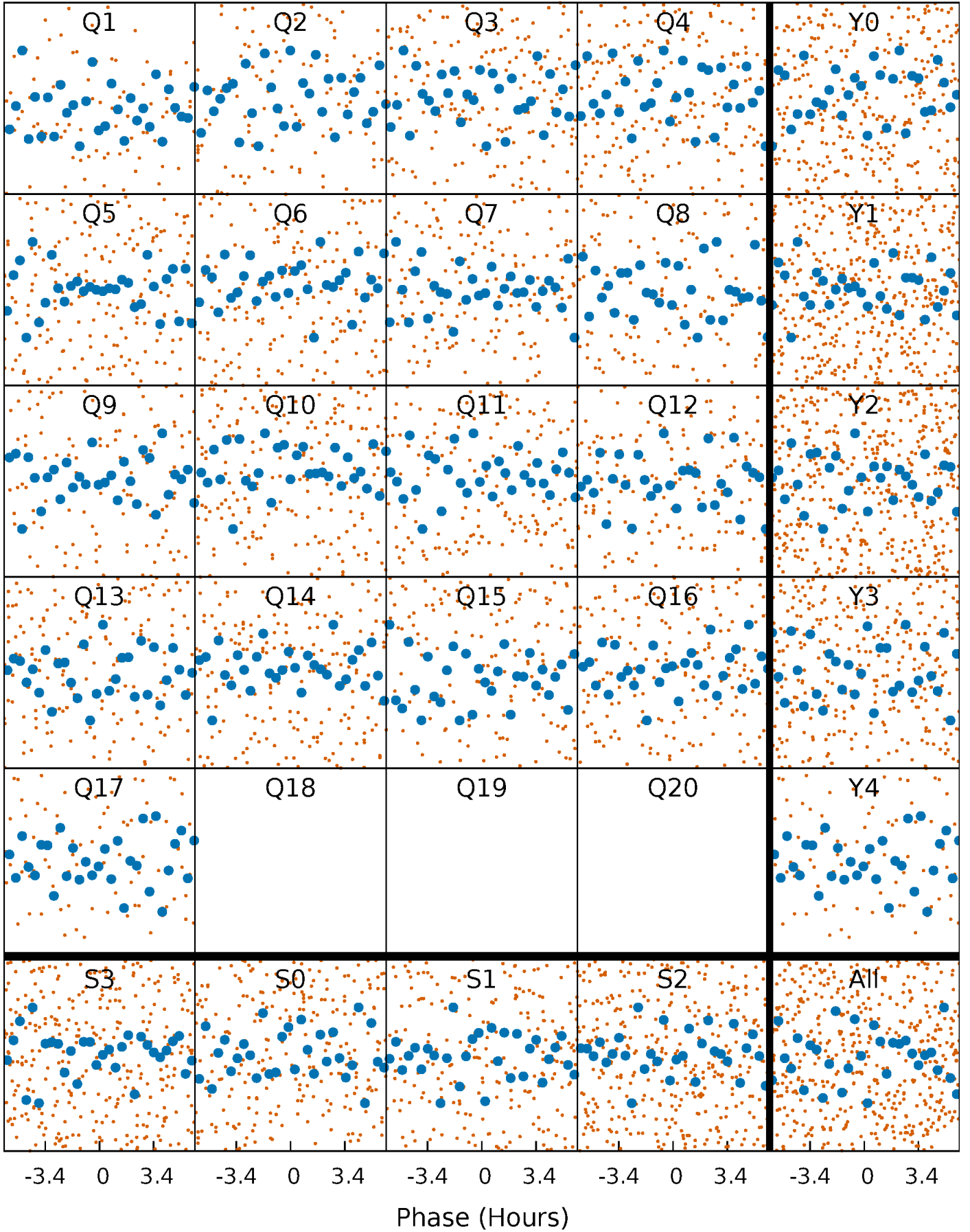


Planet 10 : Phased Whitened Flux Time Series (TPS Epoch/Period)



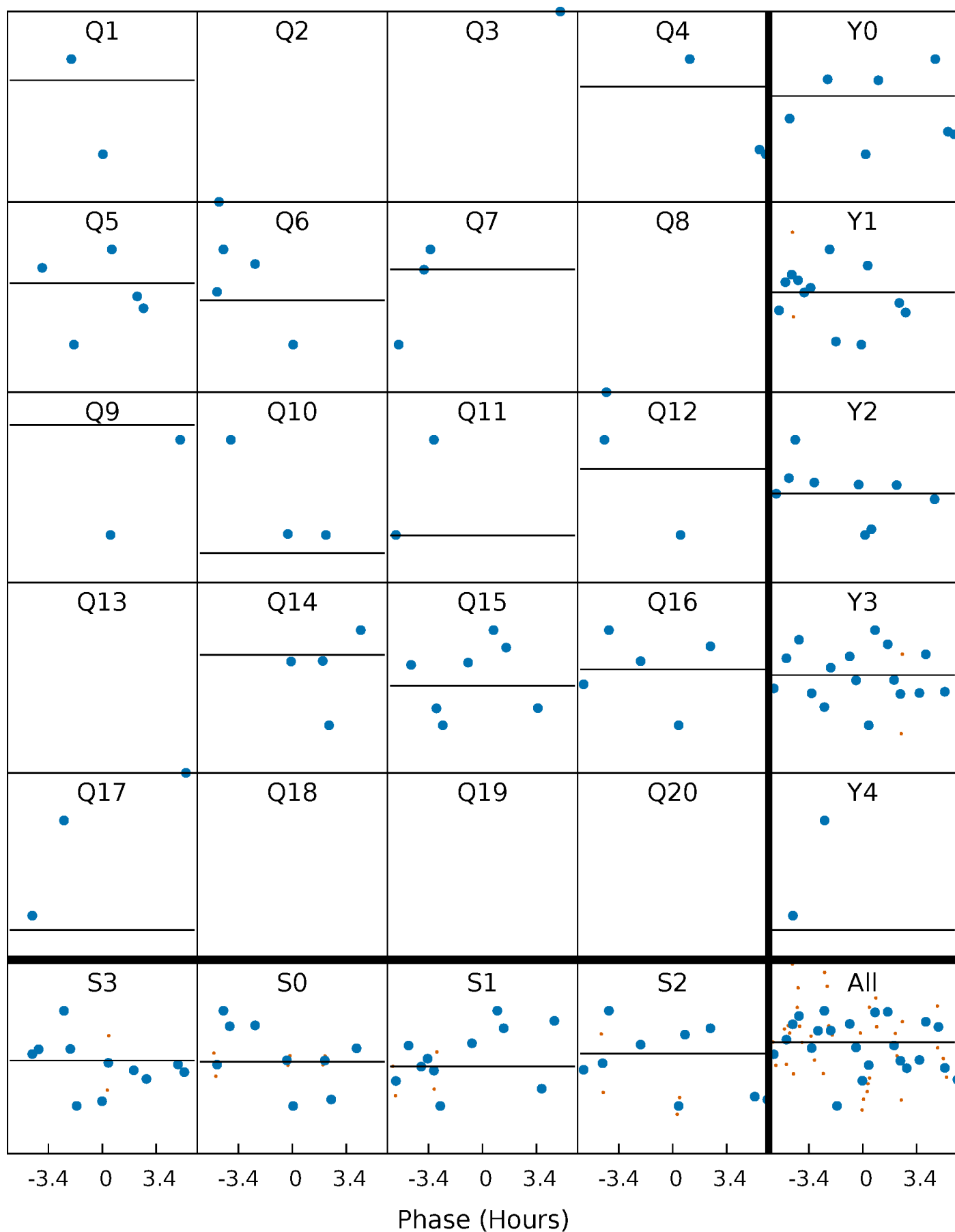
# PDC Quarter-Phased Transit Curves

TCE 008783270-10   P= 8.919382 Days    $T_0=136.025778$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 008783270-10 P= 8.919382 Days  $T_0=136.025778$  (BKJD)



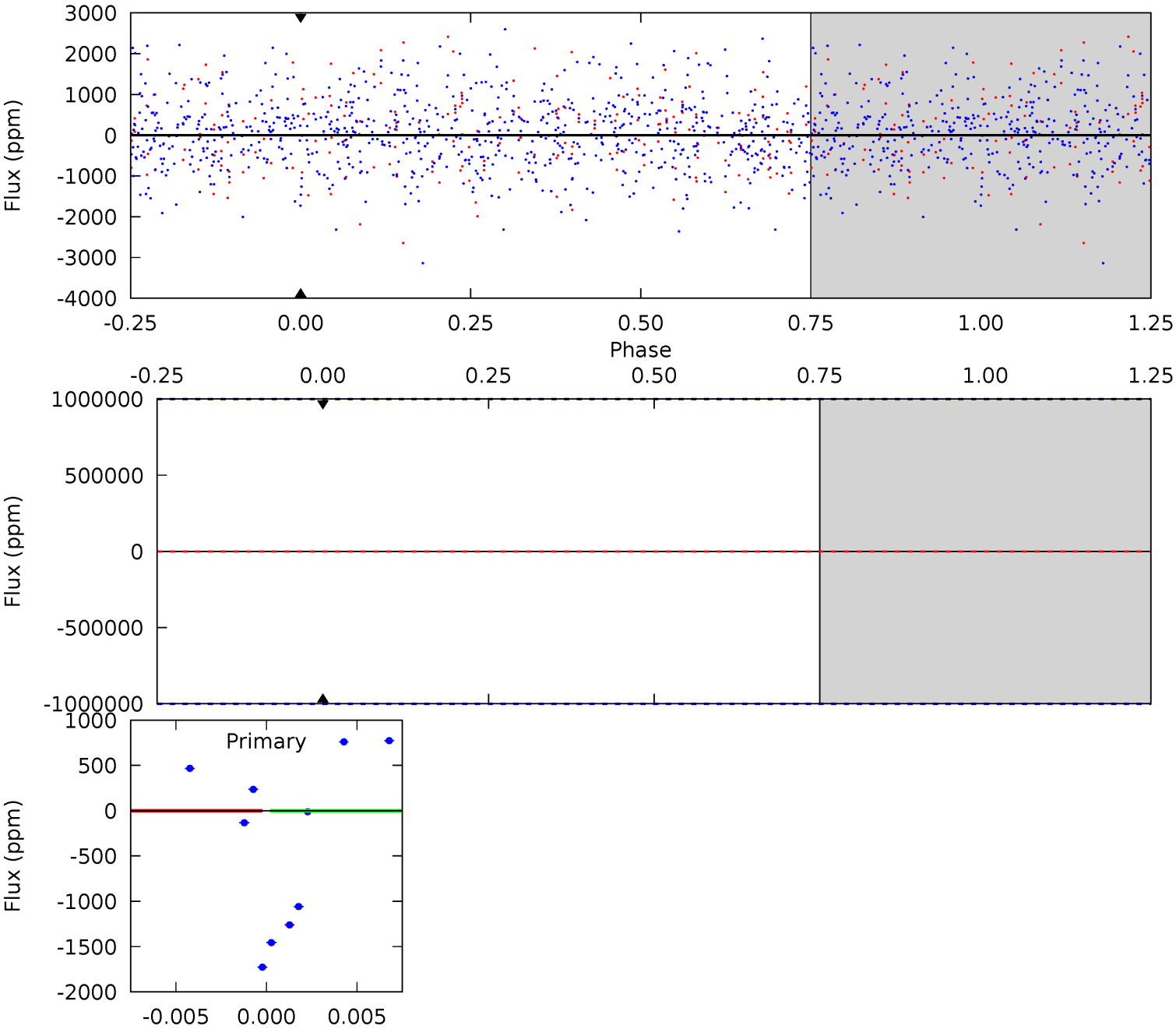
This plot does not exist for this TCE.



# DV Model-Shift Uniqueness Test

008783270-10, P = 8.919382 Days, E = 127.106396 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

This plot does not exist for this TCE.

### Stellar Parameters For KIC 008783270

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7094^{+225}_{-338}$	$3.884^{+0.345}_{-0.138}$	$-0.080^{+0.250}_{-0.350}$	$2.454^{+0.539}_{-1.001}$	$1.682^{+0.165}_{-0.385}$	$0.160^{+0.427}_{-0.063}$
	+3%/-5%	+9%/-4%	+312%/-438%	+22%/-41%	+10%/-23%	+266%/-40%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 008783270-10 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$18.46^{+18.16}_{-12.72}$	$2117^{+180}_{-209}$	$-5751^{+41055}_{-26758}$	$-38.793^{+3173.695}_{-2486.285}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

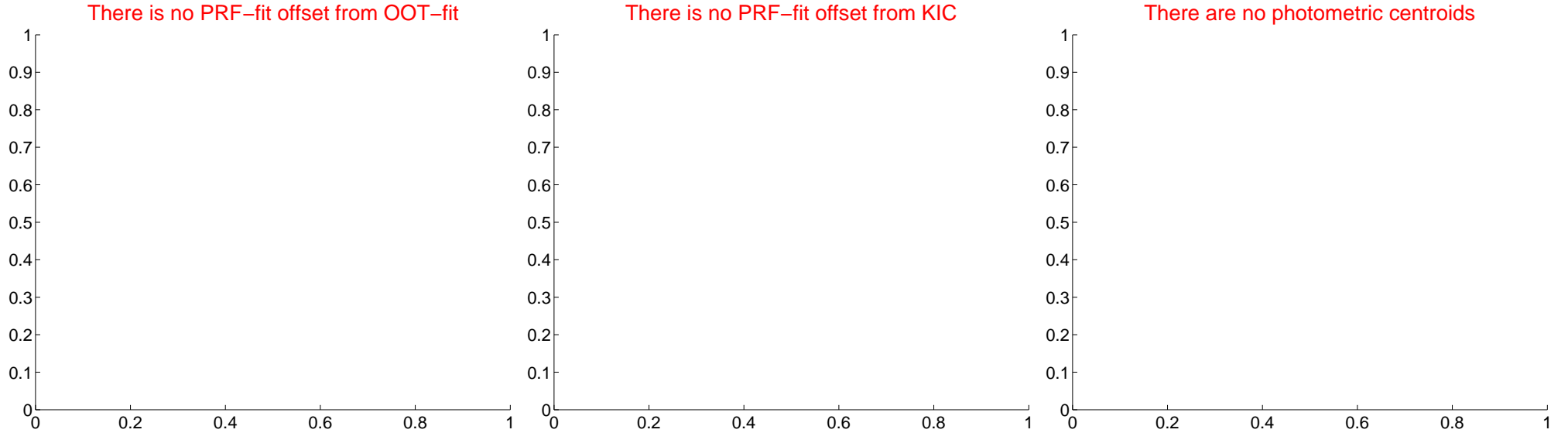
## DV Centroid Data

Supplemental centroid analysis for 008783270-10. Kepler magnitude: 13.39. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	—	—	—	—



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.



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folded centroid time series figure for this object.

UKIRT Image

