

# KIC 007280785

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007280785-01	OBS	No	0.566810	131.669786	71.6	3.423	10.0	11.2	0.75	5128	0.64	2408.56
007280785-02	OBS	No	81.140363	135.172302	995.8	2.299	8.6	6.3	0.75	5128	2.77	3.22
007280785-03	OBS	No	101.365141	166.523709	1584.2	3.306	8.8	8.2	0.75	5128	3.05	2.39

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007280785-01	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
007280785-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_UNCERTAIN
007280785-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_UNRESOLVED_OFFSET

**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.

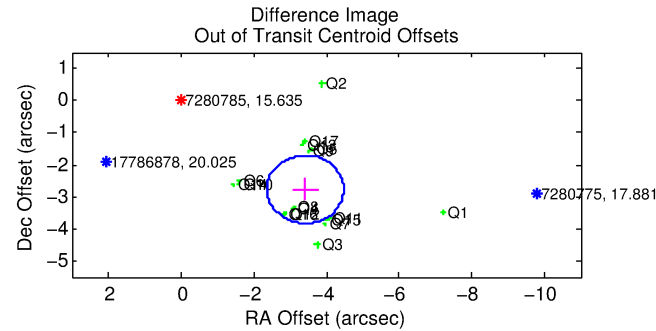
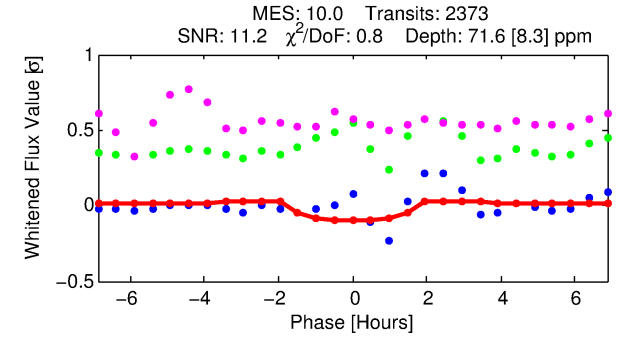
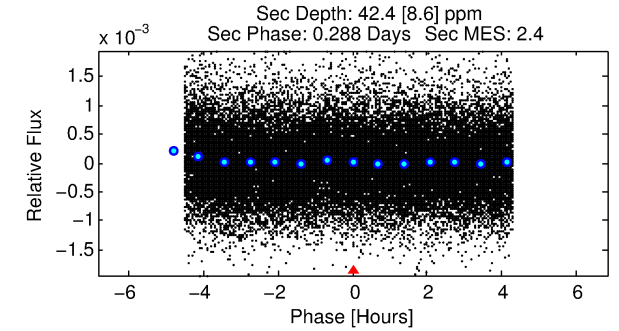
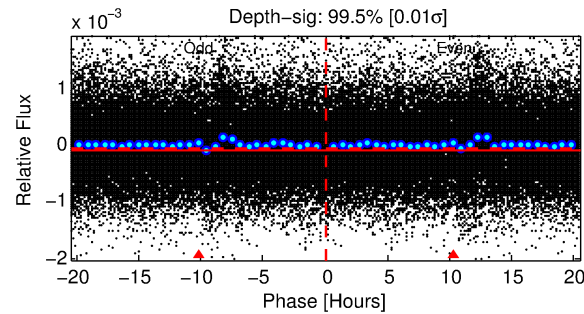
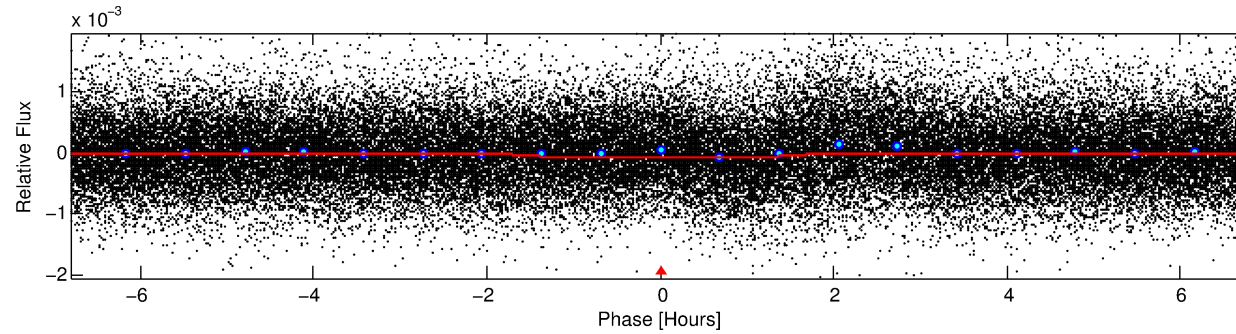
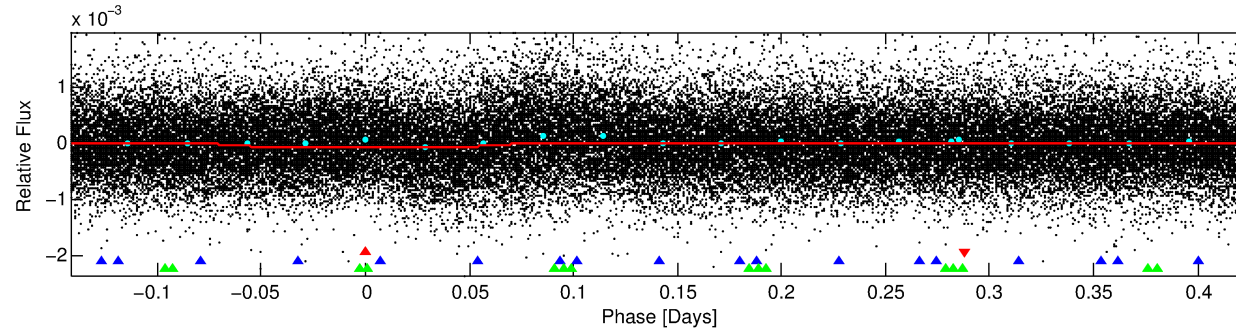
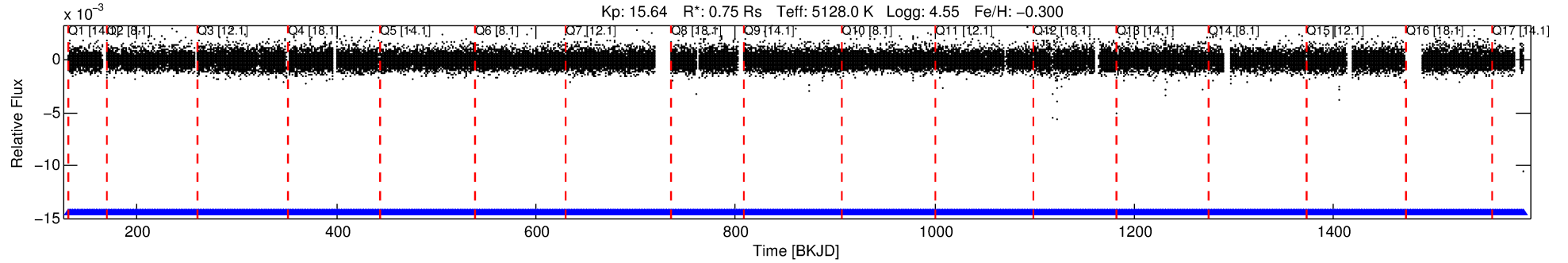
## Ephemeris Match Information For 007280785-01

TCE (1)	KIC	Parent (2)	Parent KIC	P <sub>1</sub> :P <sub>2</sub>	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	m <sub>2</sub>	m <sub>1</sub>	D <sub>2</sub> /D <sub>1</sub>	Mechanism	Flag	$\sigma_P$	$\sigma_T$
007280785-01	7280785	RR-Lyr-pri	7198959	1:1	128.4	-7	31	7.86	15.63	8656.90	Direct-PRF	0	3.66	11.61

**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column. m<sub>2</sub> and m<sub>1</sub> are the magnitudes of the parent and child. D<sub>2</sub>/D<sub>1</sub> is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 7280785 Candidate: 1 of 3 Period: 0.567 d



## DV Fit Results:

Period = 0.56681 [0.00001] d  
Epoch = 131.6698 [0.0031] BKJD  
Rp/R\* = 0.0079 [0.0065]  
a/R\* = 1.33 [1.74]  
b = 0.51 [4.57]  
Seff = 2408.56 [442.66]  
Teq = 1786 [82] K  
Rp = 0.64 [0.54] Re  
a = 0.0120 [0.0011] AU  
Ag = 8.13 [13.67] [0.52 $\sigma$ ]  
Teffp = 4664 [1958] K [1.47 $\sigma$ ]

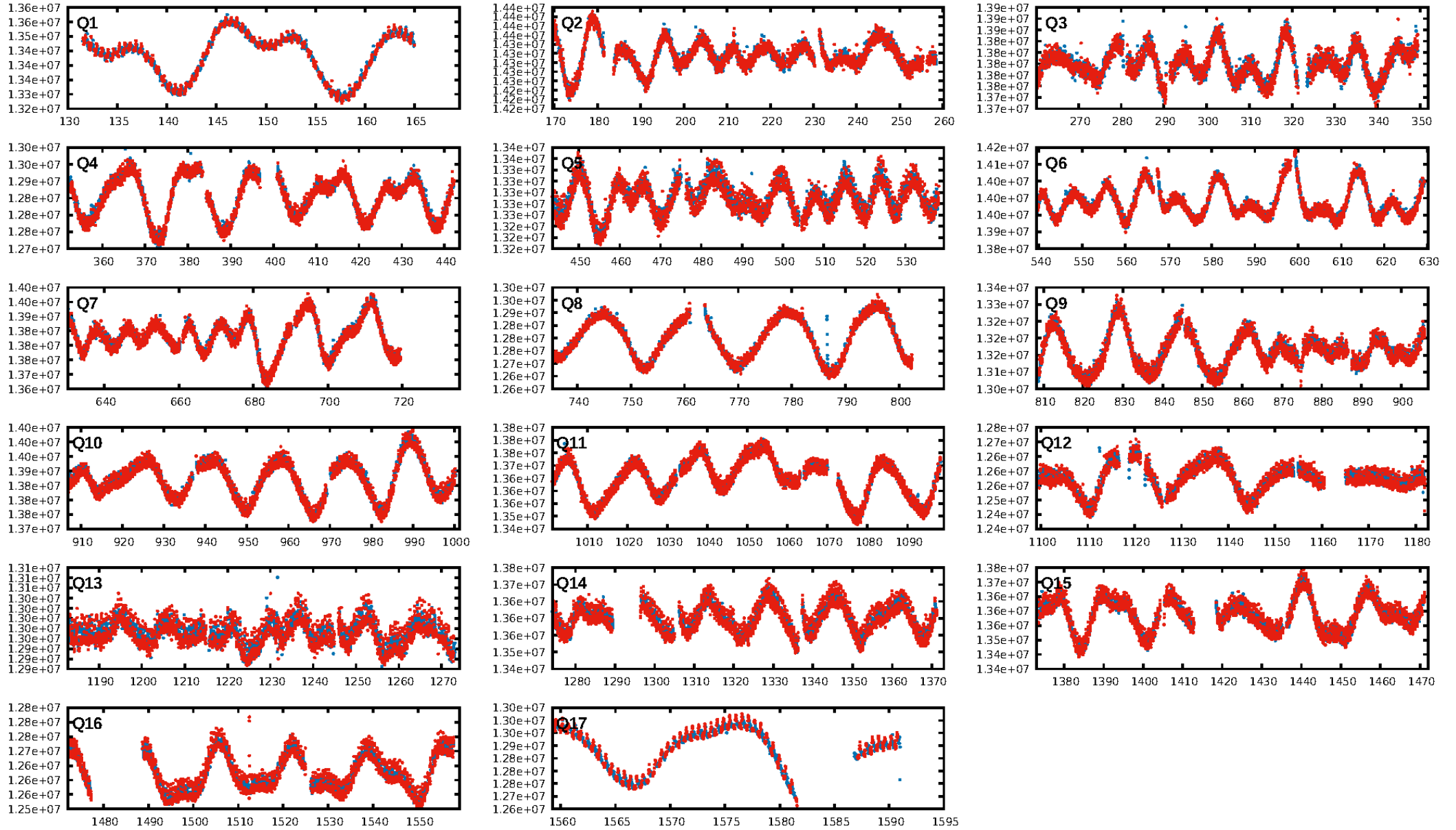
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [468.94 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.27e-19  
RollingBand-fgt: 1.00 [2267/2267]  
**GhostDiagnostic-chr: -0.1034**  
Centroid-sig: 29.4%  
Centroid-so: 0.586 arcsec [0.57 $\sigma$ ]  
**OotOffset-rm: 4.400 arcsec [12.47 $\sigma$ ]**  
**KicOffset-rm: 4.370 arcsec [12.86 $\sigma$ ]**  
**OotOffset-st: 4/4/4/5 [17]**  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.00 [0/17]  
DiffImageOverlap-fno: 1.00 [17/17]

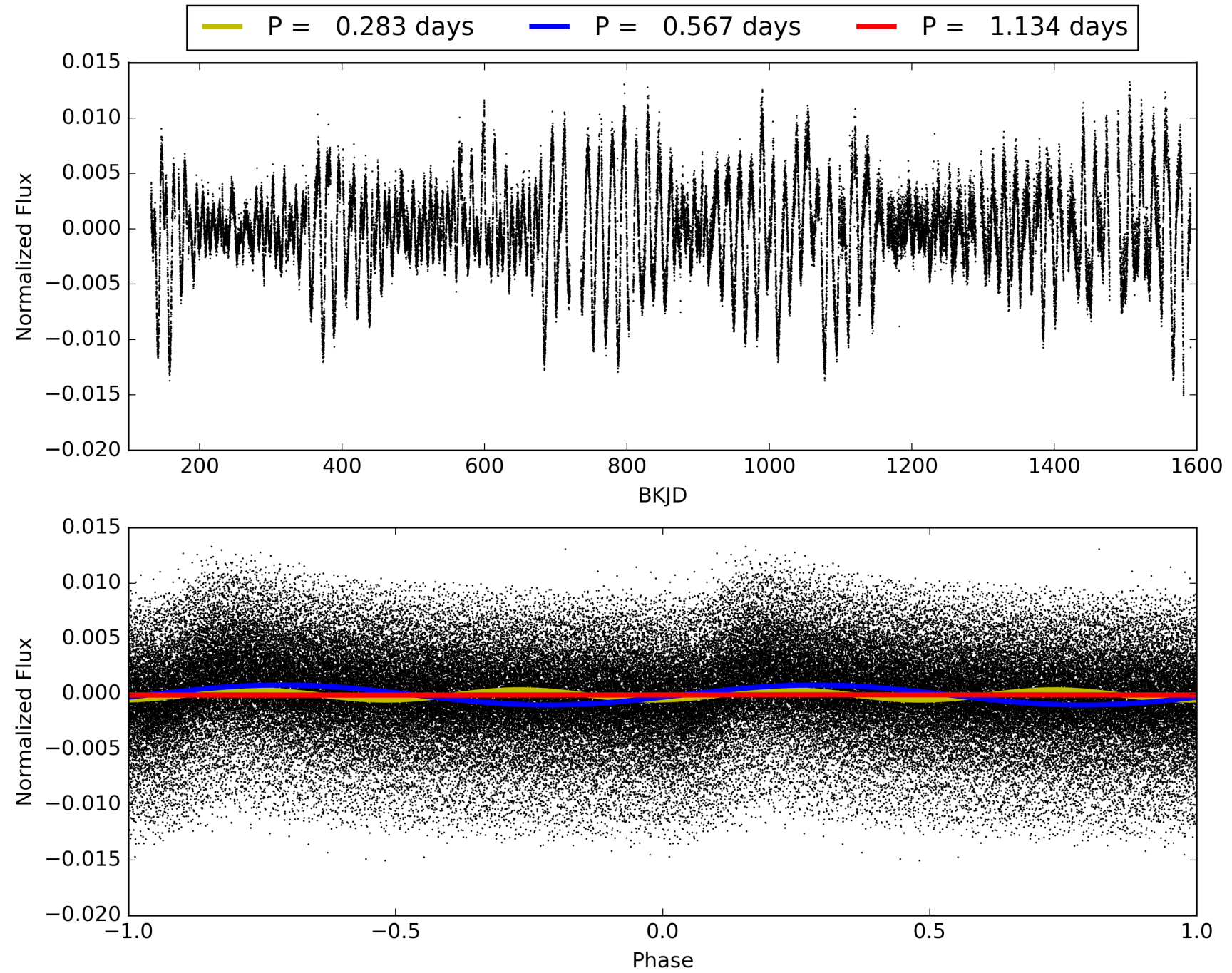
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:05:05 Z

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

# TCE 007280785-01, PDC Light Curves

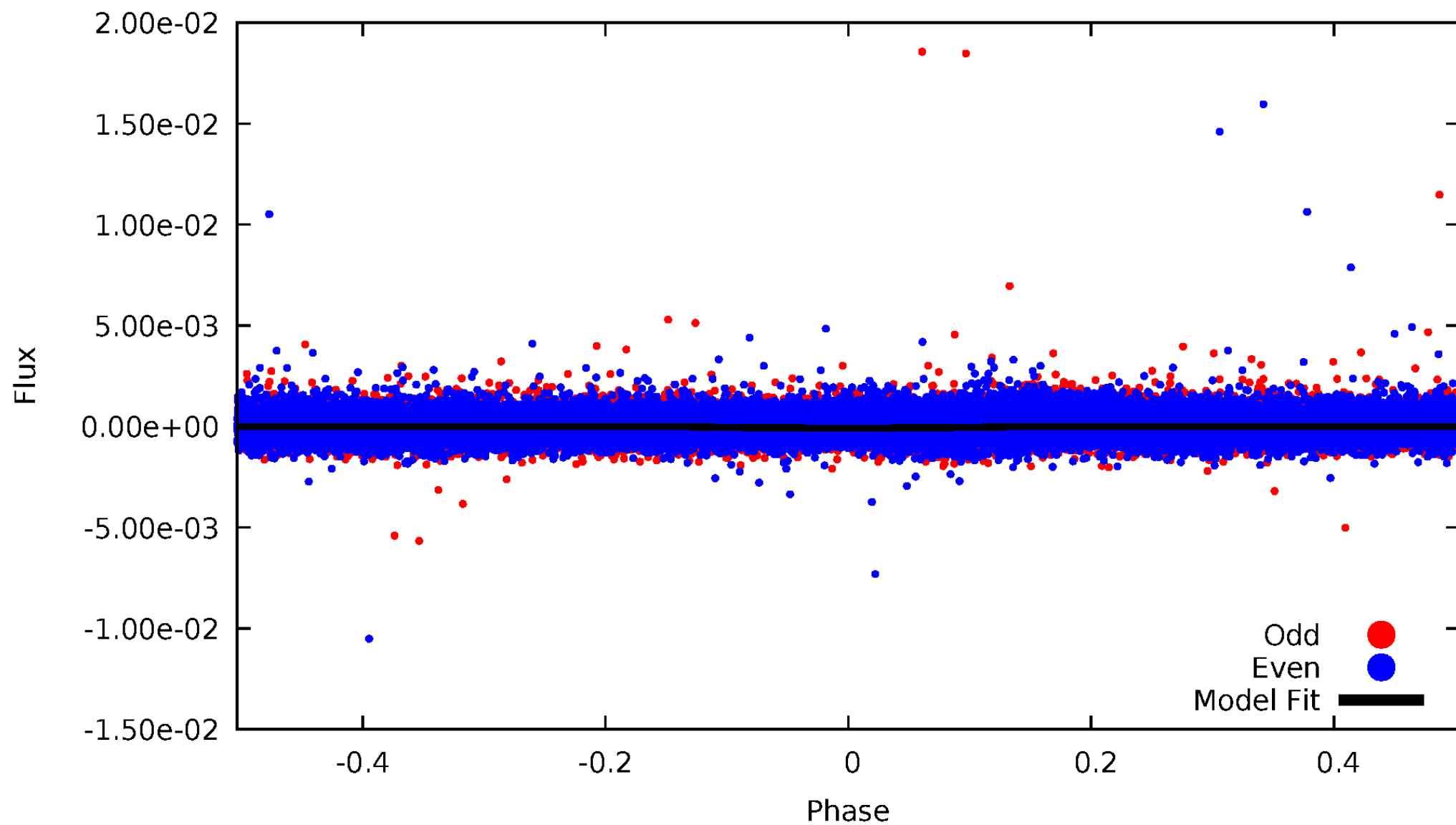


TCE 007280785-01



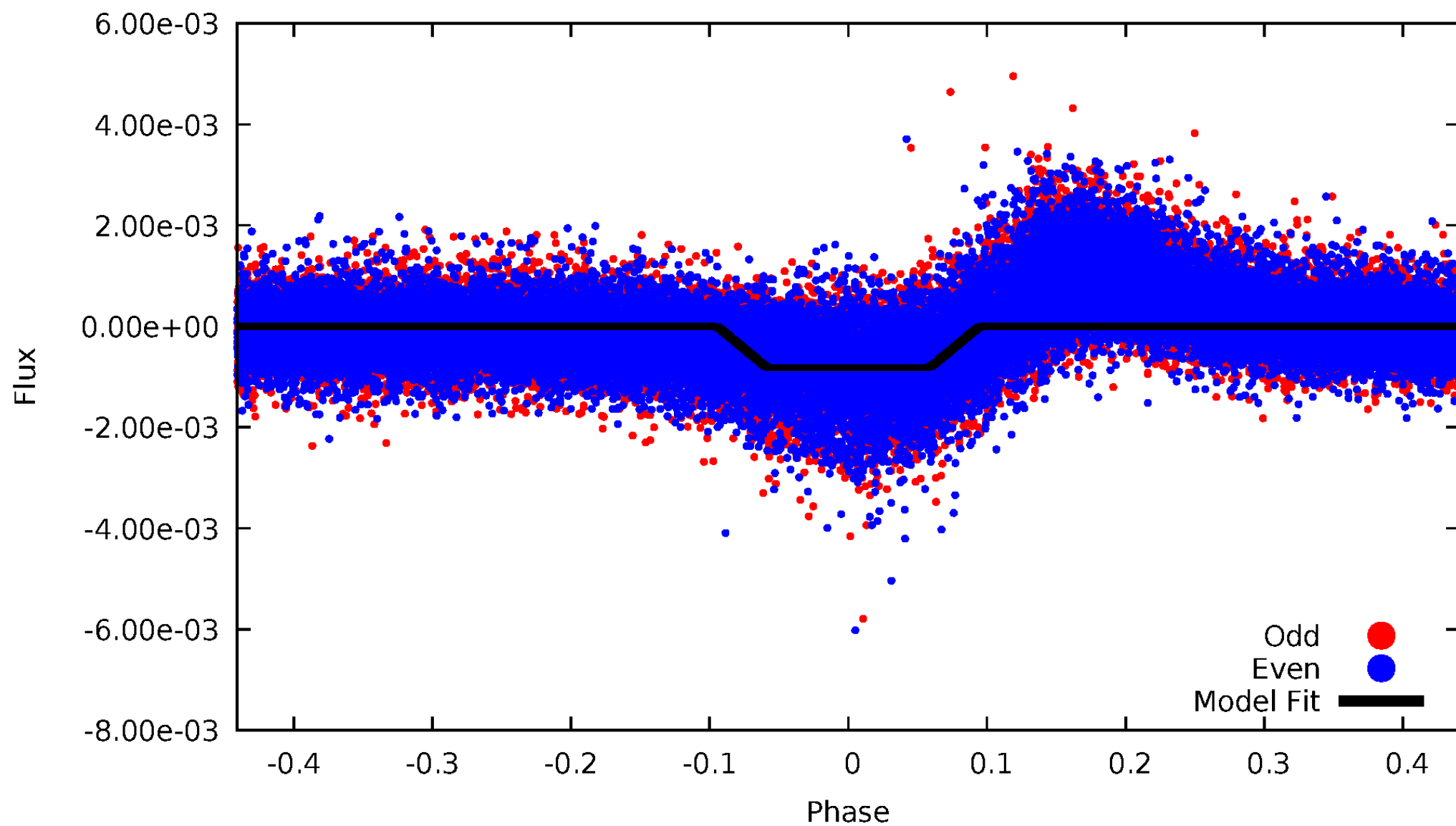
# DV Odd/Even

TCE 007280785-01



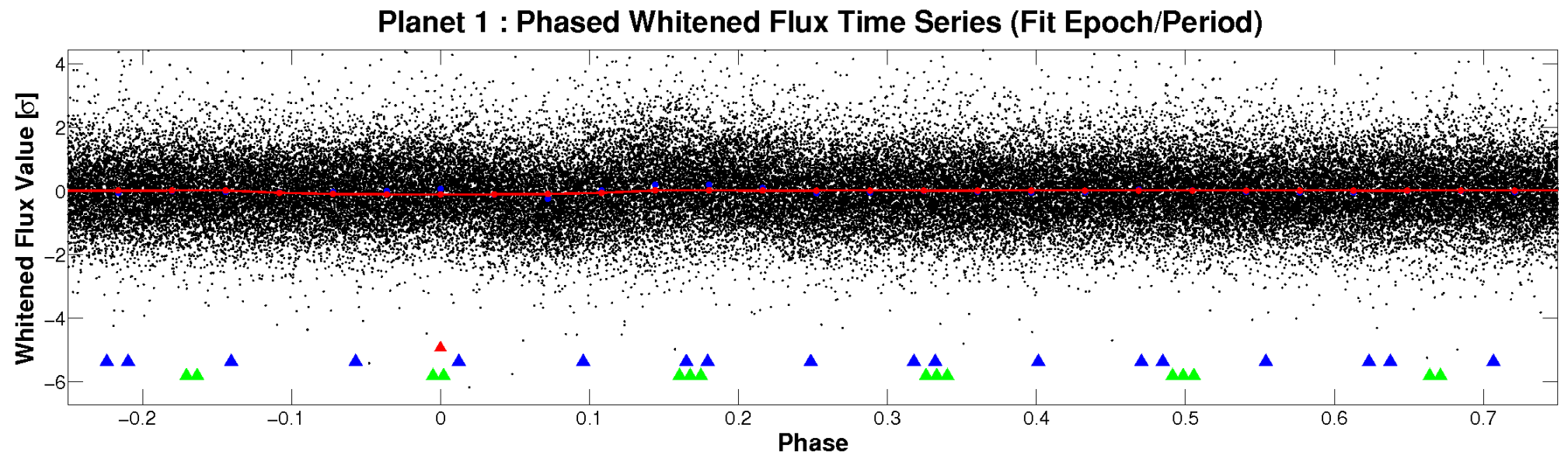
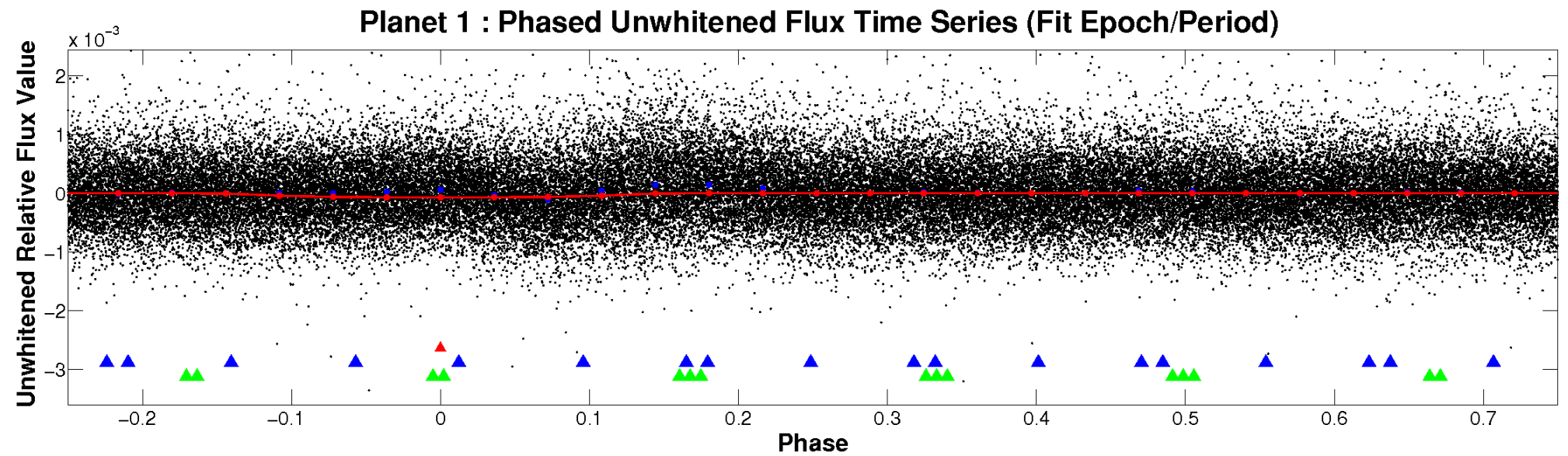
# ALT Odd/Even

TCE 007280785-01



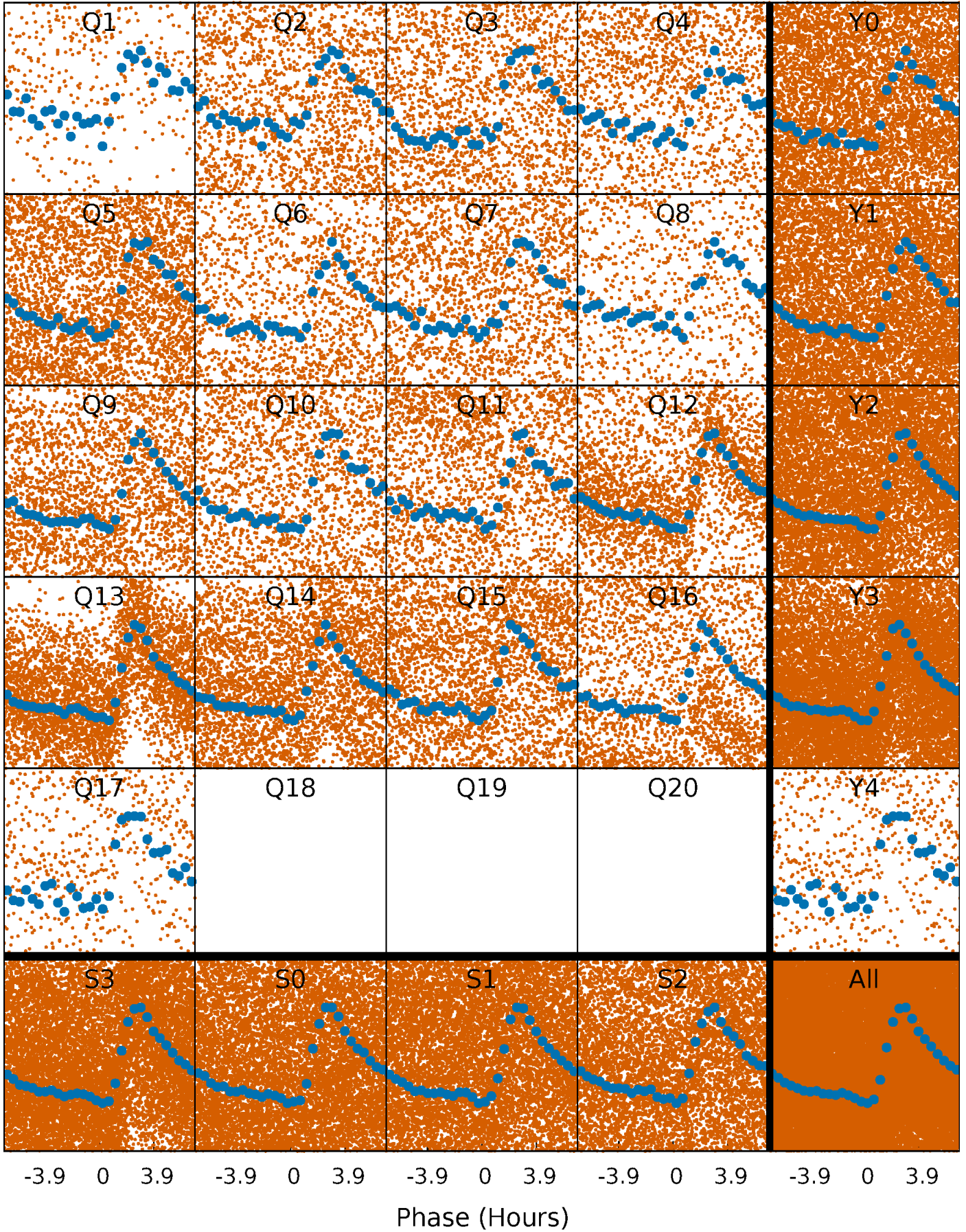


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

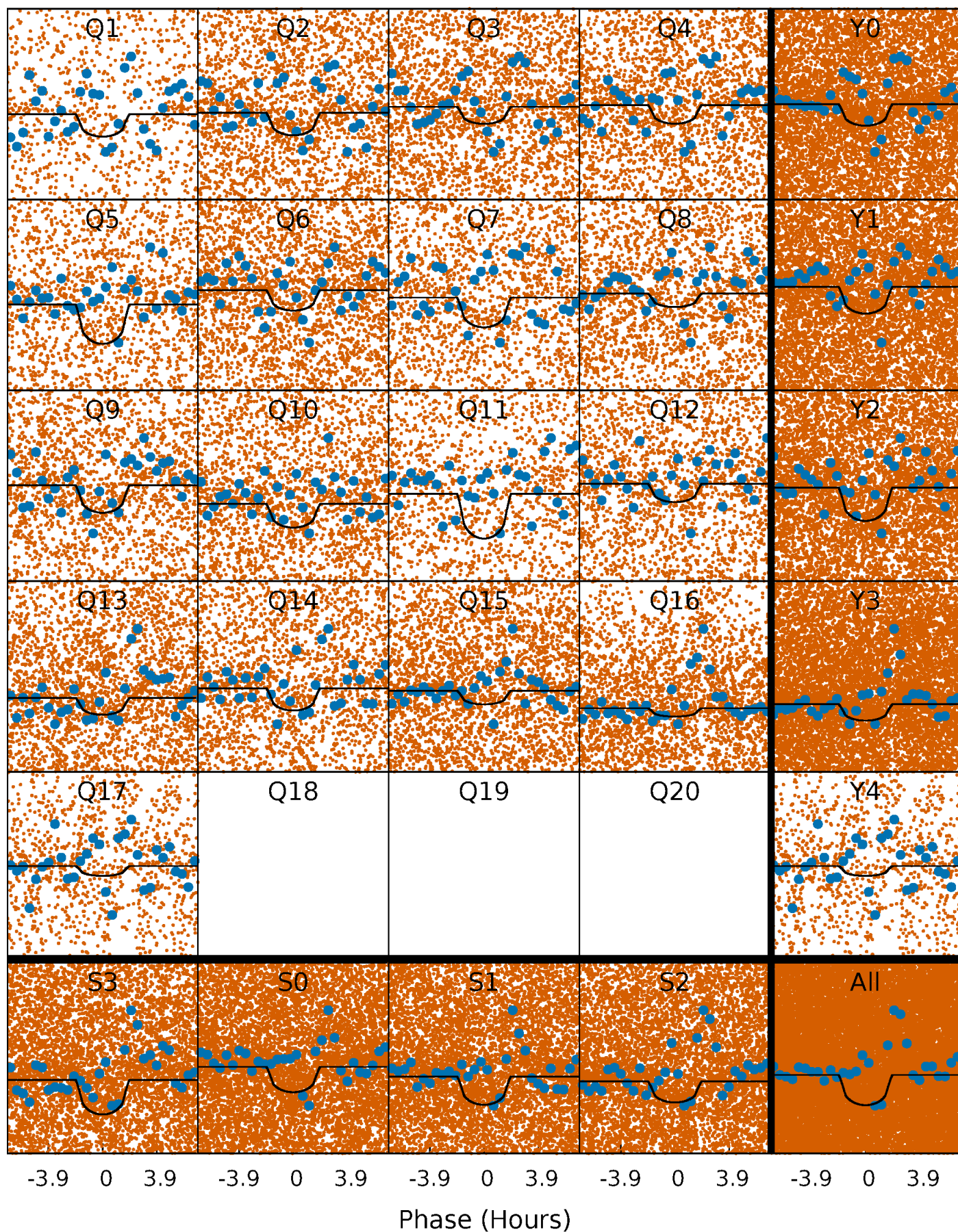
TCE 007280785-01 P= 0.566810 Days  $T_0=131.669786$  (BKJD)





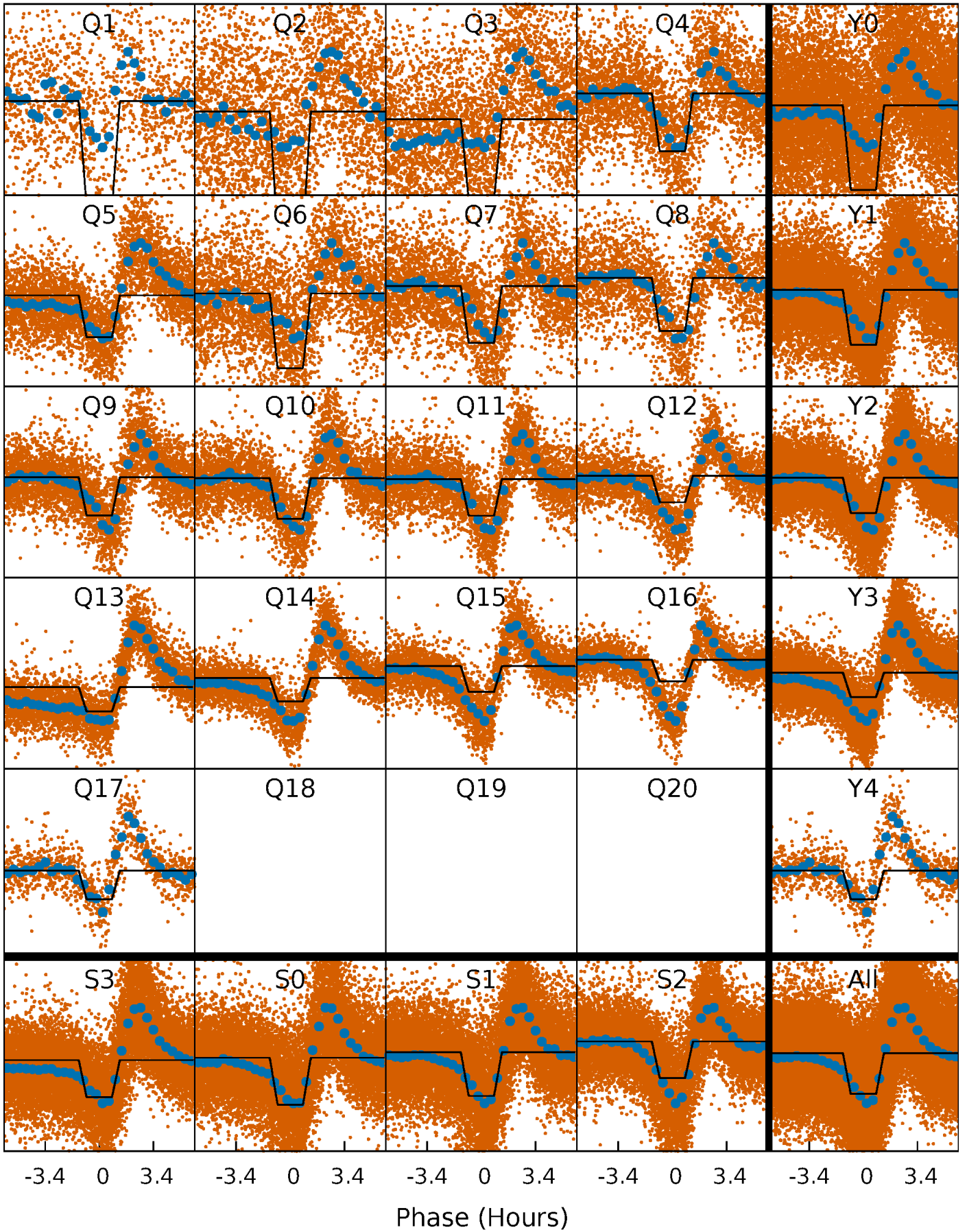
# DV Quarter-Phased Transit Curves

TCE 007280785-01 P= 0.566810 Days  $T_0=131.669786$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 007280785-01 P= 0.566808 Days  $T_0=131.681525$  (BKJD)

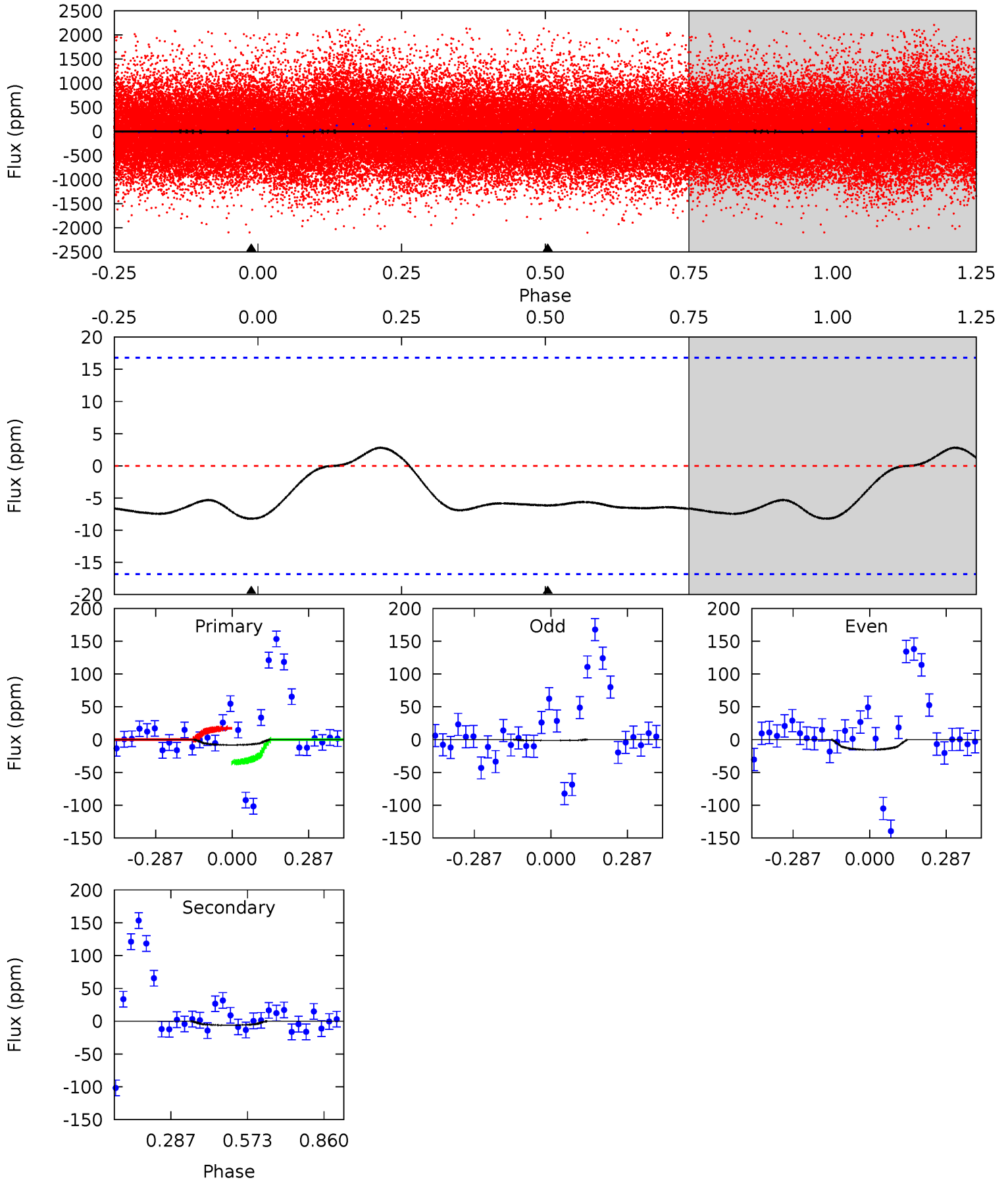




# DV Model-Shift Uniqueness Test

007280785-01, P = 0.566810 Days, E = 131.102976 Days

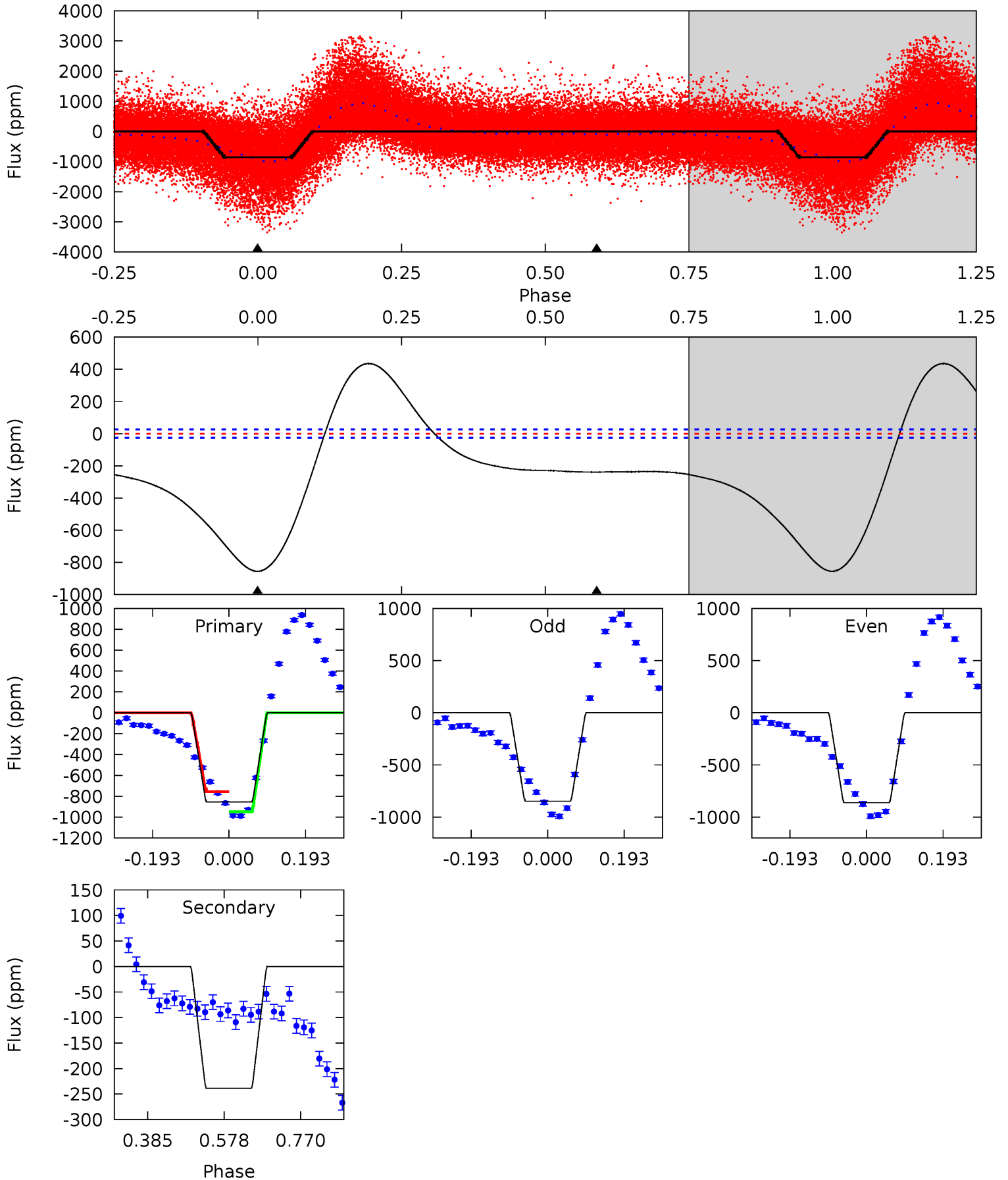
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.12	1.59	0	0	4.34	1.07	1.00	2.12	2.12	1.59	1.59	1.69	0.48	0.26	2.26



# Alt Model-Shift Uniqueness Test

007280785-01, P = 0.566808 Days, E = 131.114717 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
145.3	40.5	0	0	4.43	1.30	39.6	145.3	145.3	40.5	40.5	1.24	1.07	0.34	16.2





### Stellar Parameters For KIC 007280785

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5128^{+153}_{-153}$	$4.546^{+0.078}_{-0.052}$	$-0.300^{+0.350}_{-0.300}$	$0.749^{+0.081}_{-0.081}$	$0.719^{+0.095}_{-0.051}$	$2.413^{+0.813}_{-0.472}$
	+3%/-3%	+2%/-1%	+117%/-100%	+11%/-11%	+13%/-7%	+34%/-20%
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 007280785-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-6 \pm 4$	$0.71^{+0.53}_{-0.43}$	$2488^{+88}_{-96}$	$3011^{+1260}_{-5488}$	$0.868^{+4.879}_{-0.688}$
Alt.	$-239 \pm 6$	$2.28^{+0.57}_{-0.53}$	$2483^{+97}_{-95}$	$3989^{+453}_{-304}$	$3.670^{+2.667}_{-1.279}$

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

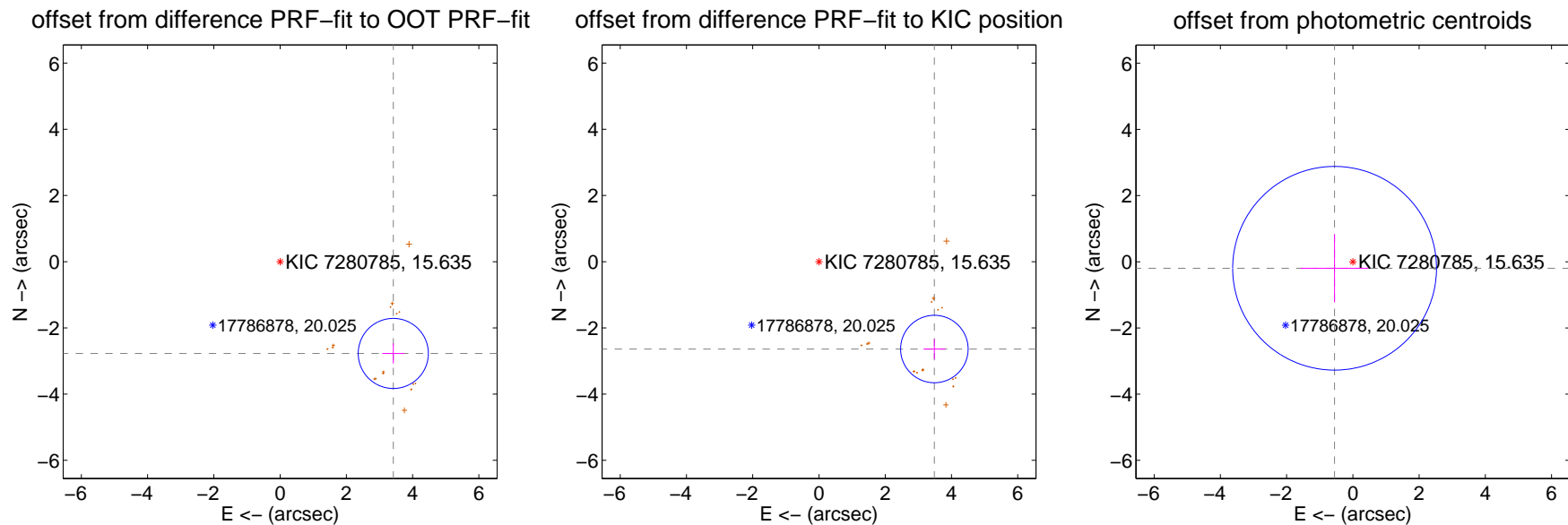
## DV Centroid Data

Supplemental centroid analysis for 007280785-01. Kepler magnitude: 15.63. Transit SNR 11.24

There are 0 quarters with good PRF difference image offsets

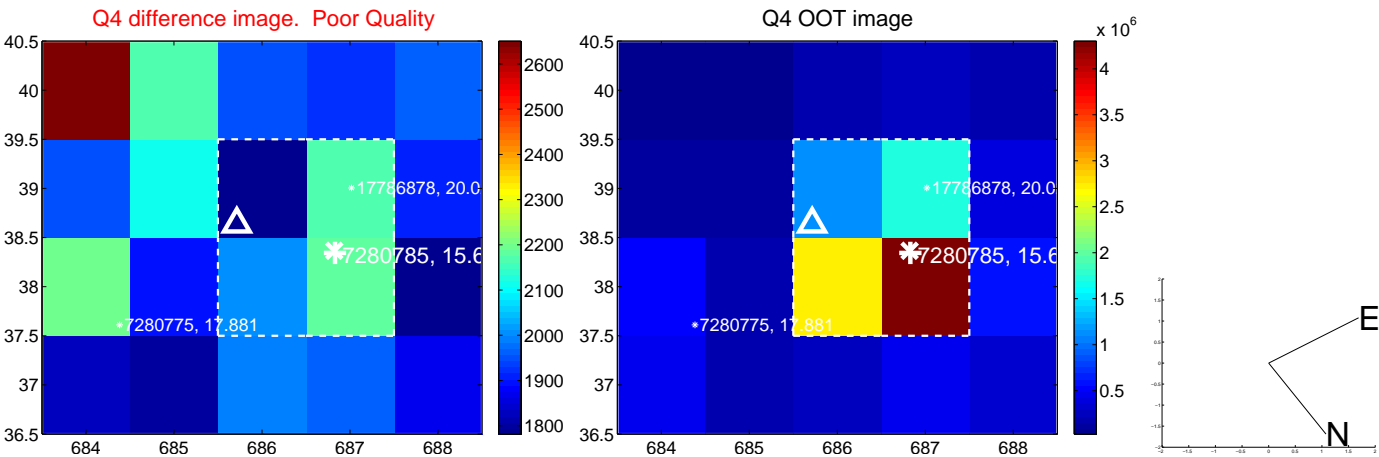
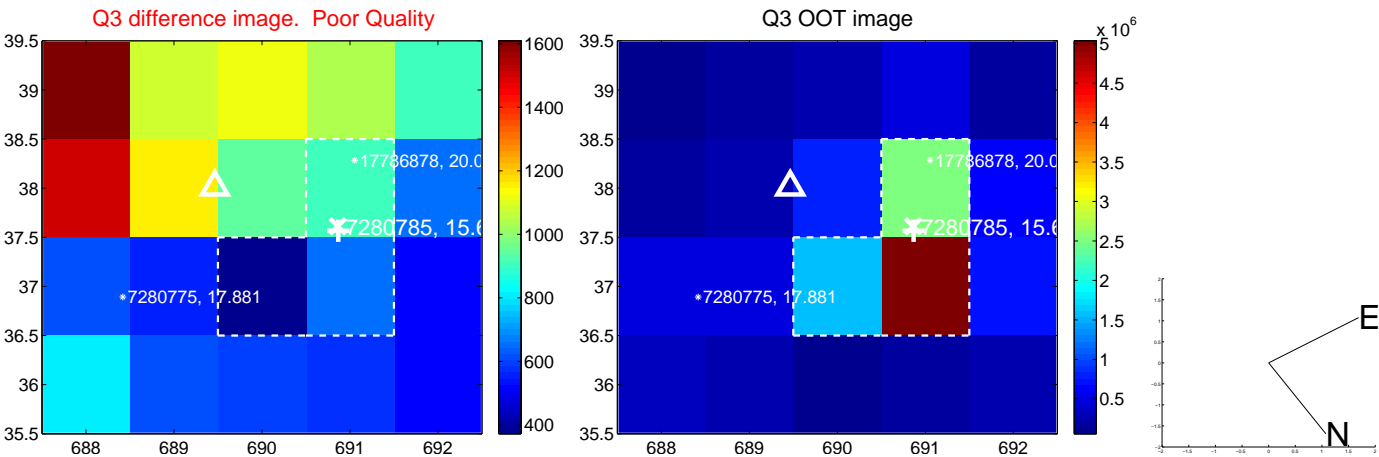
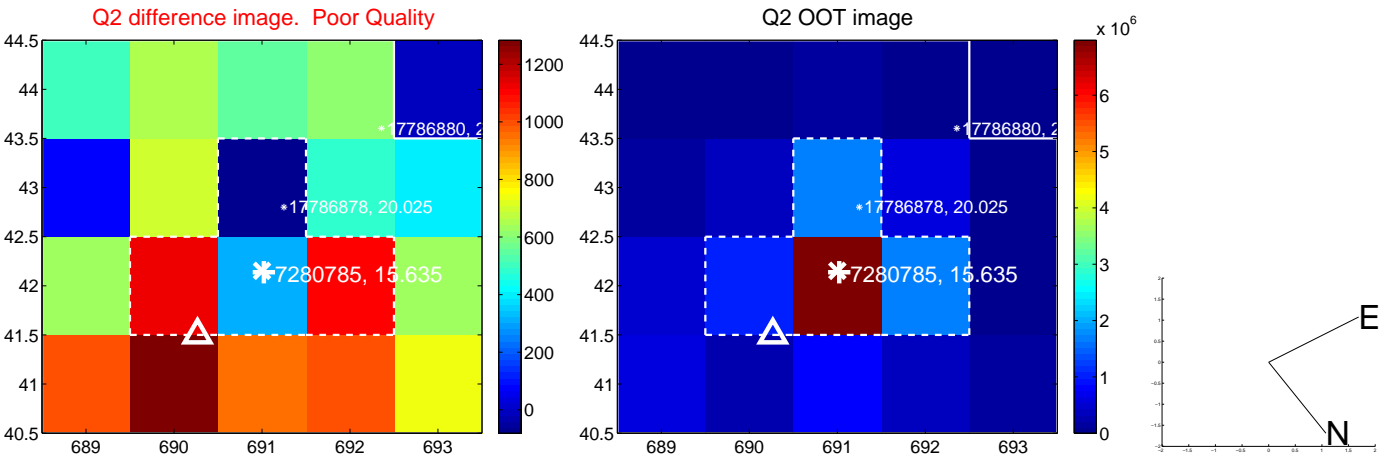
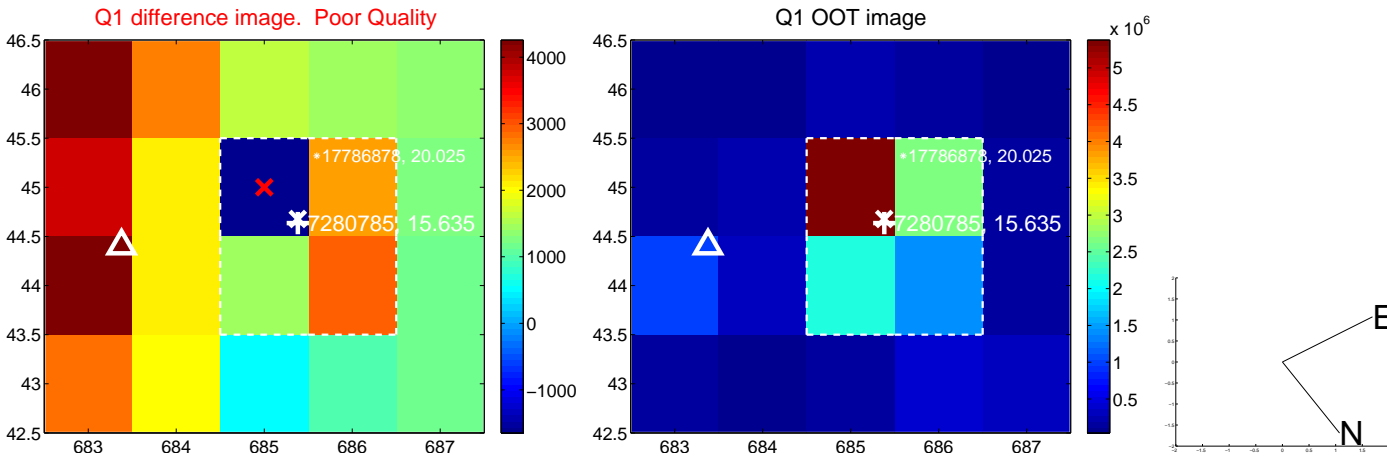
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.400 \pm 0.353$	12.47	$-3.417 \pm 0.332$	$-2.772 \pm 0.306$
PRF-fit source offset from KIC position	$4.370 \pm 0.340$	12.86	$-3.483 \pm 0.329$	$-2.638 \pm 0.301$
photometric centroid source offset	$0.59 \pm 1.03$	0.57	$0.55 \pm 1.02$	$-0.20 \pm 1.03$

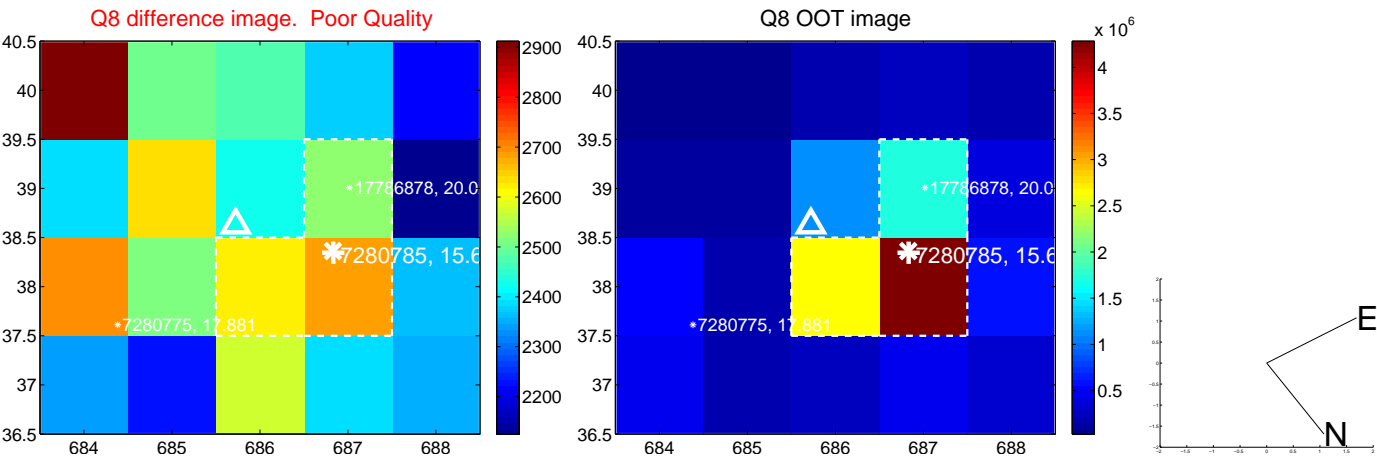
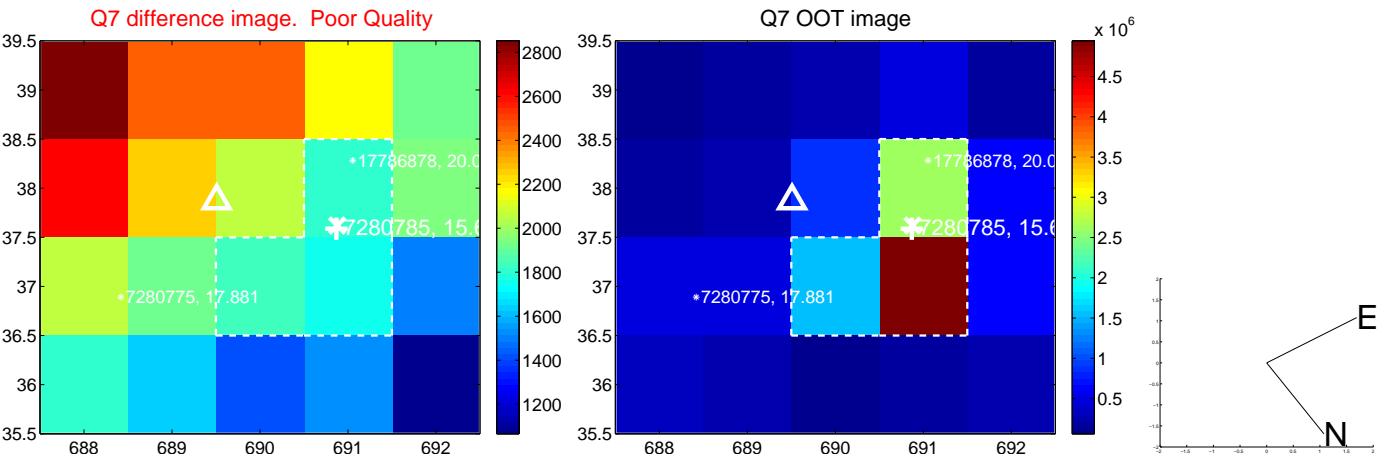
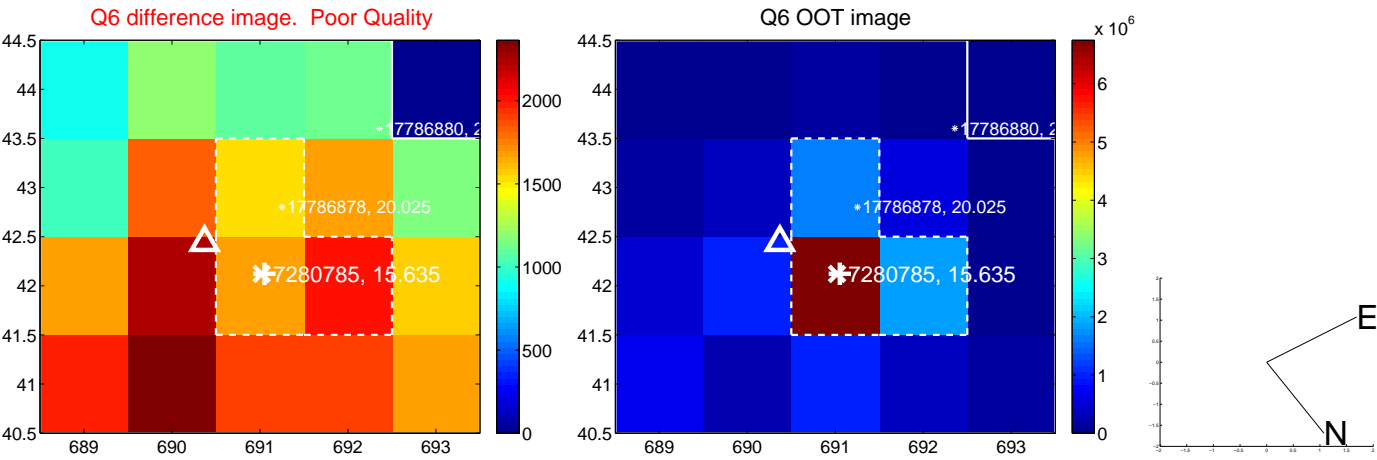
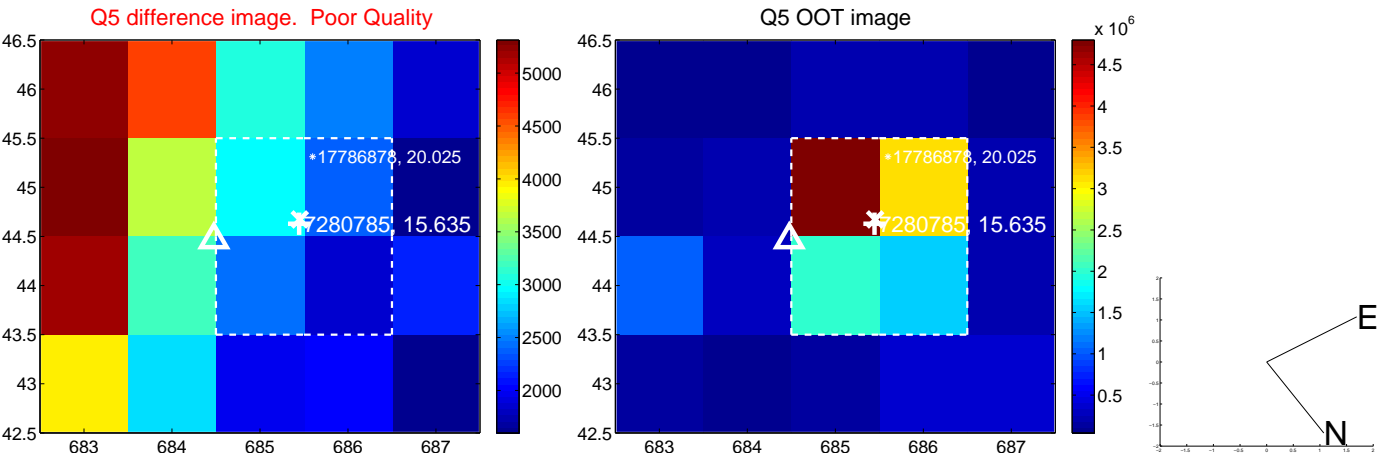


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

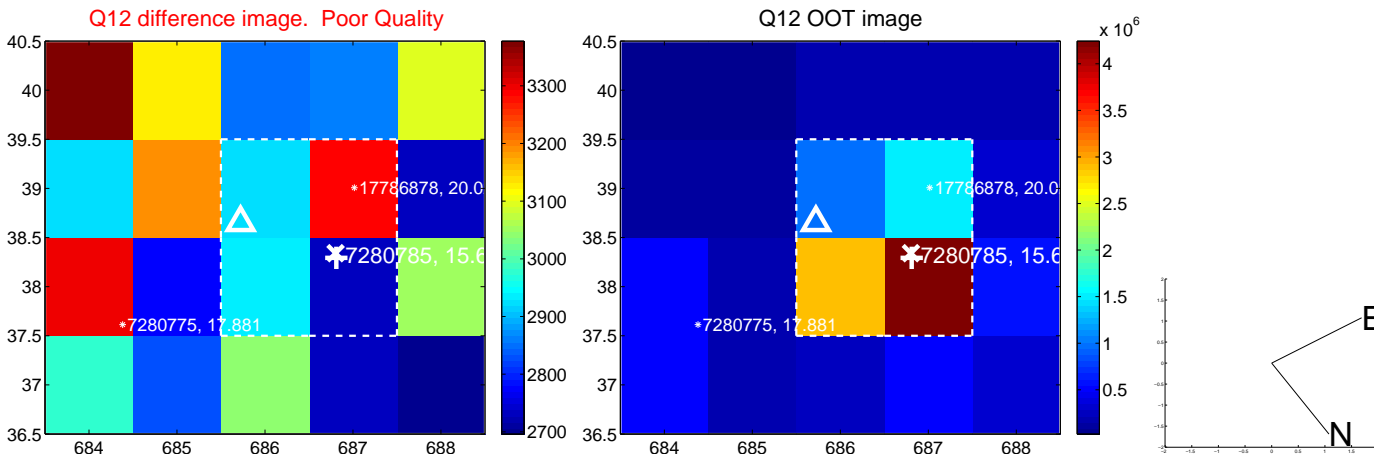
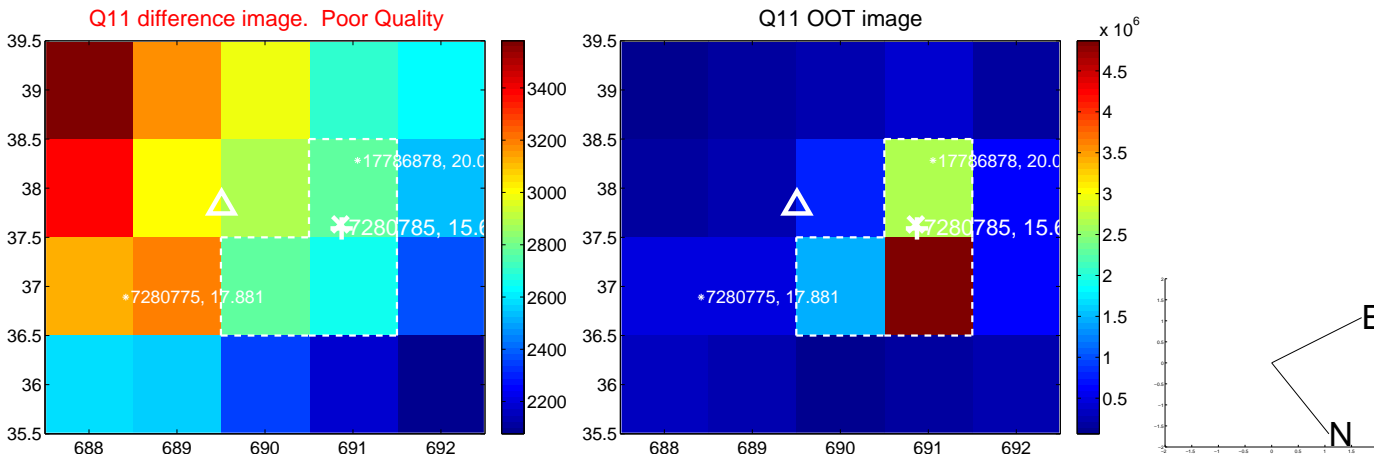
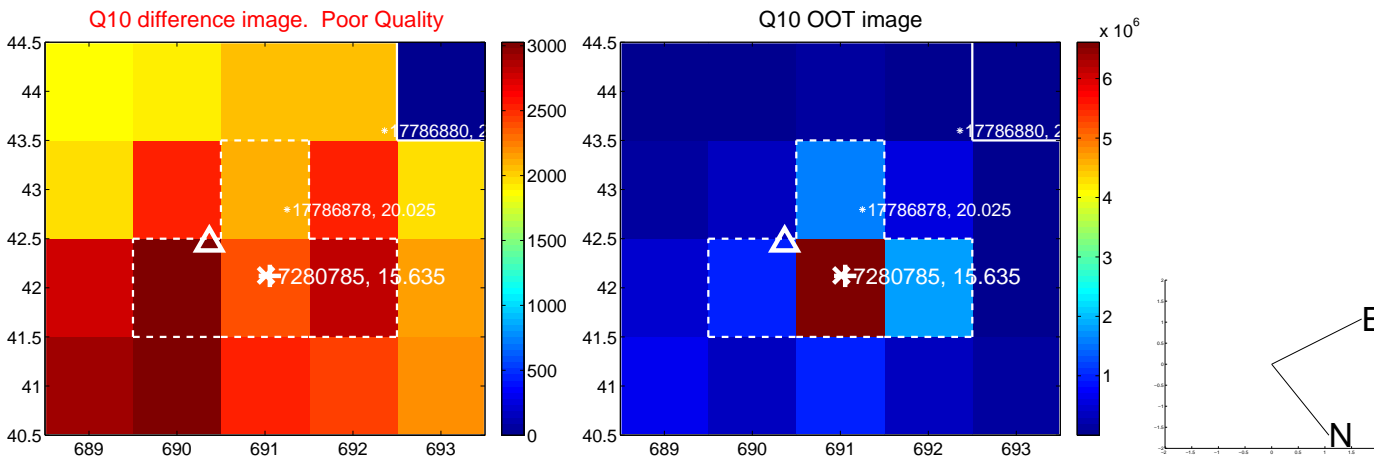
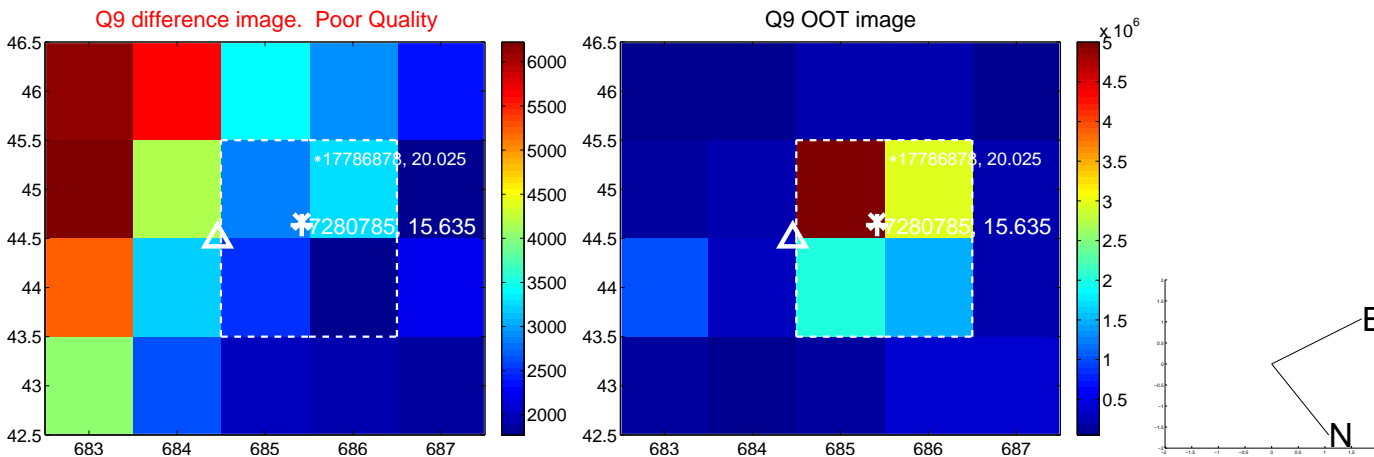


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

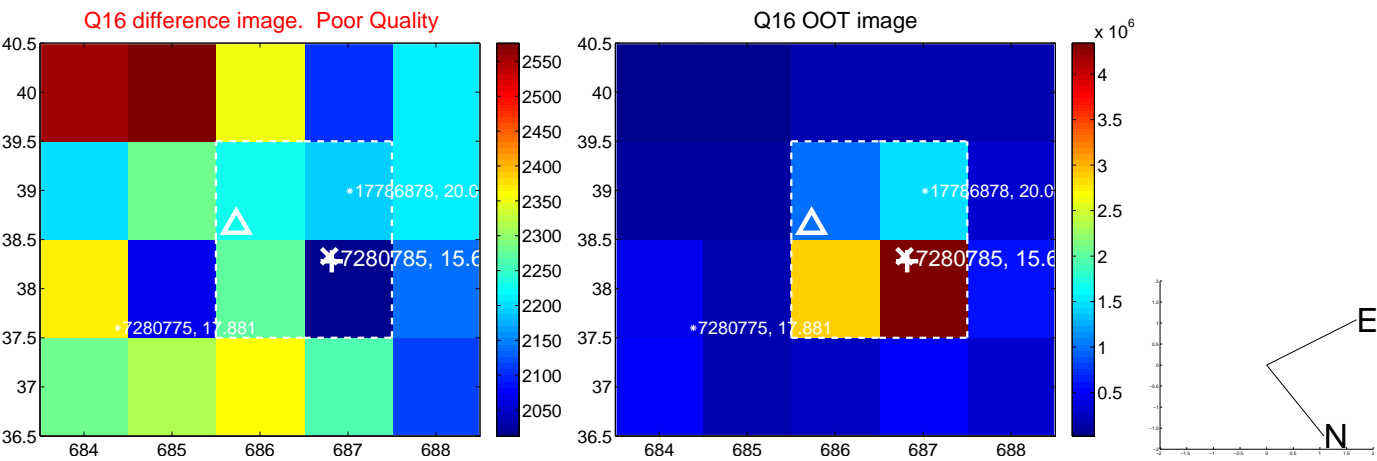
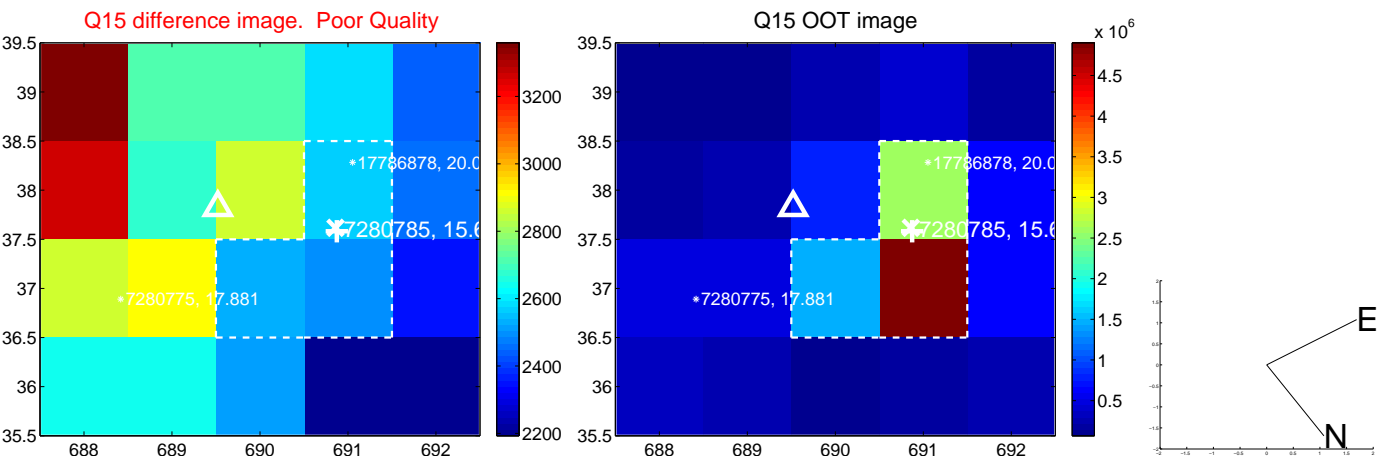
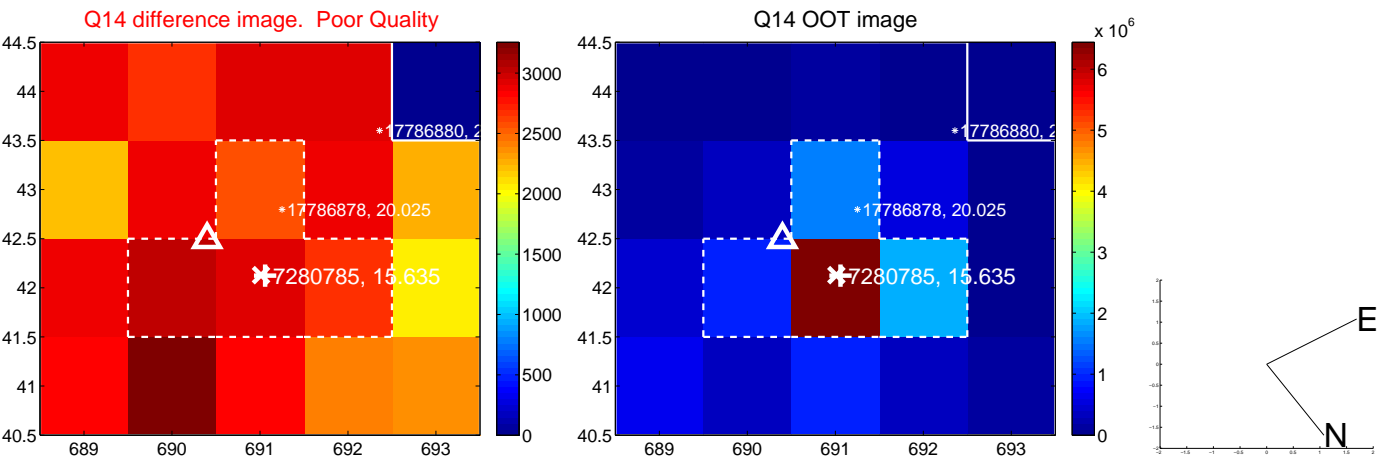
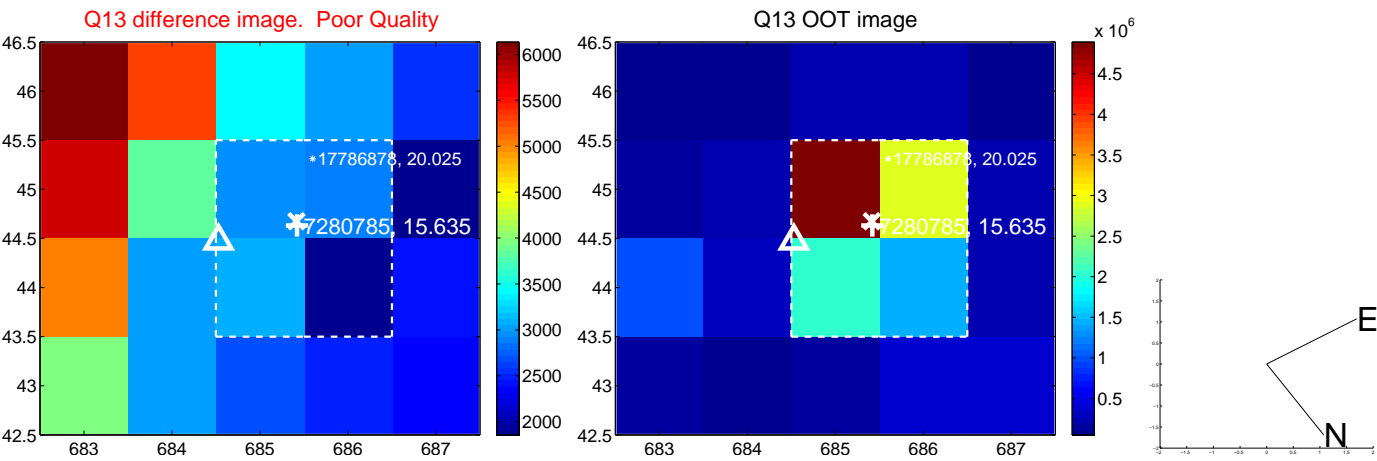




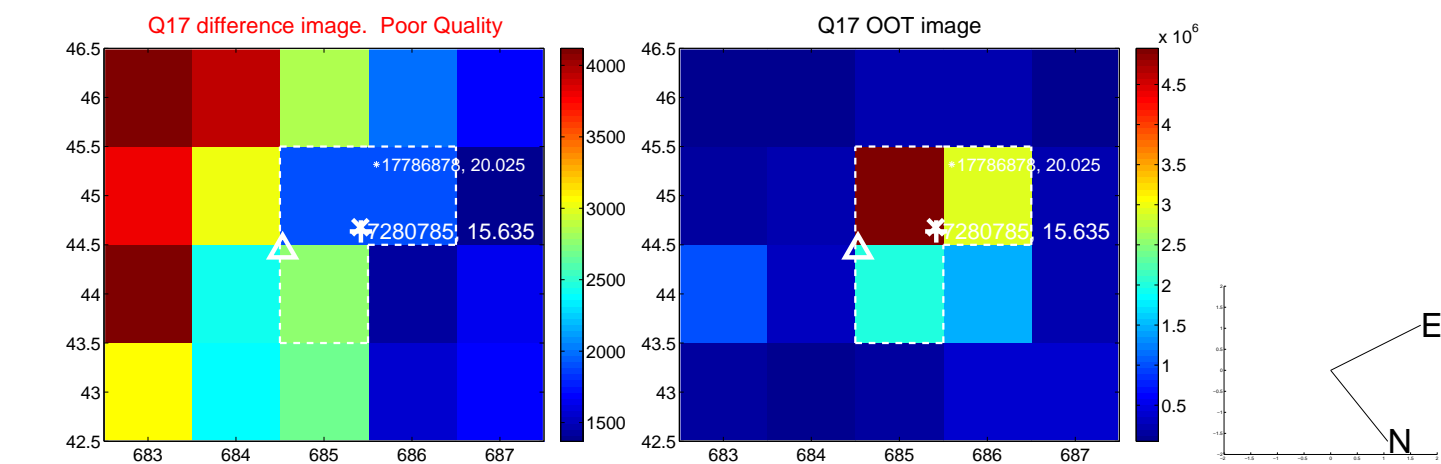
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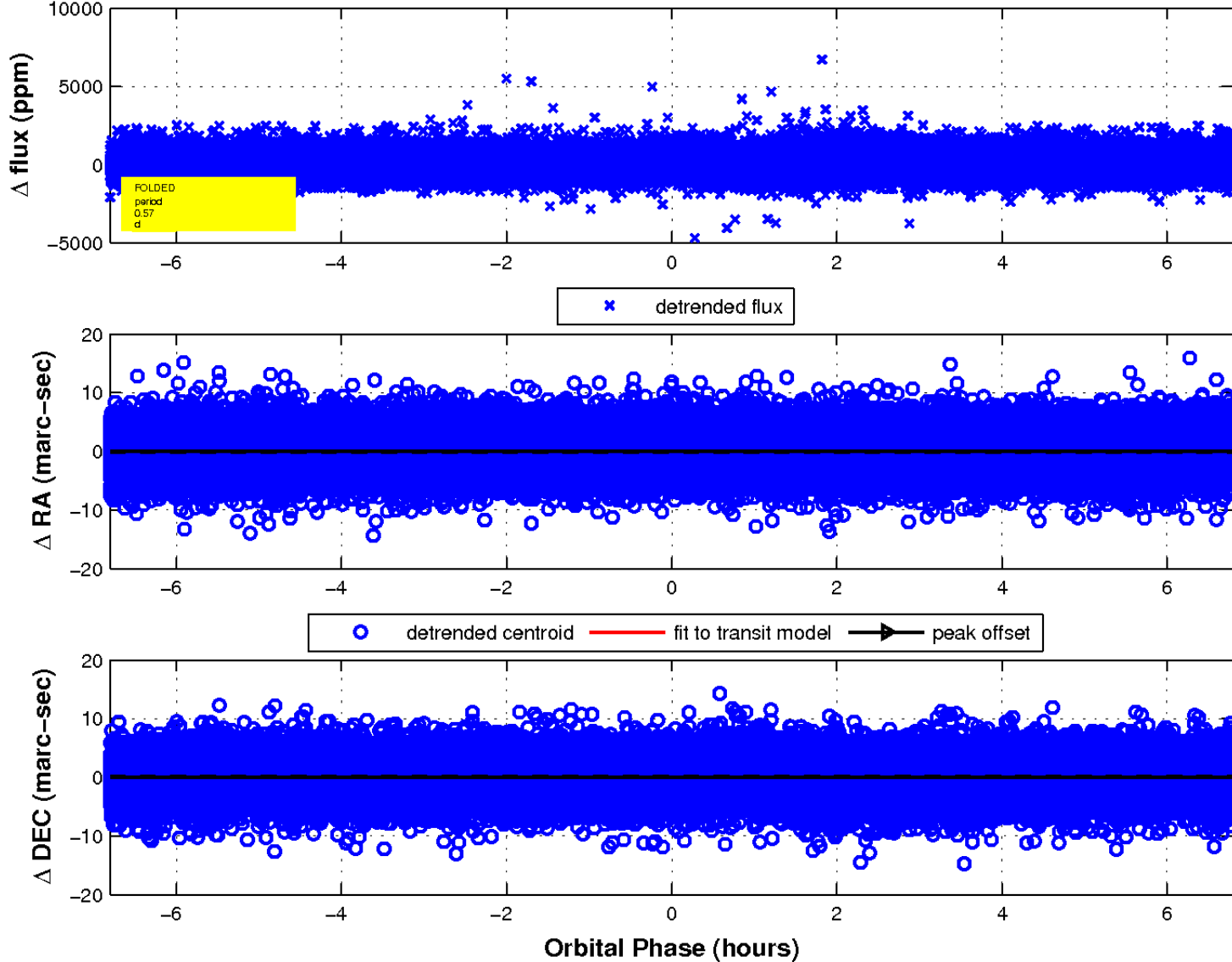
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

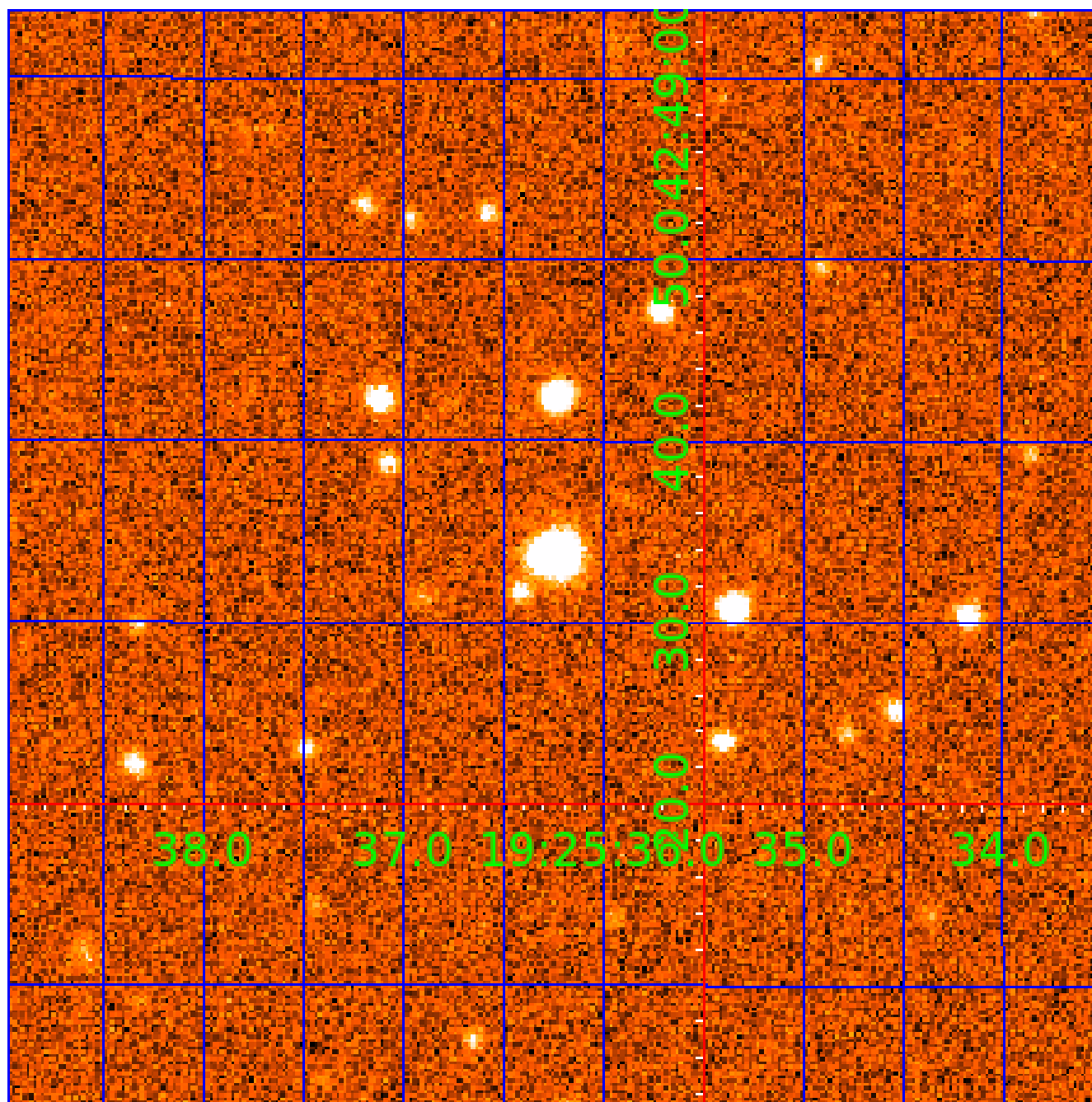


fluxWeightedCentroids, Planet 1 of 3



# UKIRT Image

Declination





# KIC 007280785

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	$R_{\star}$ ( $R_{\odot}$ )	$T_{\star}$ (K)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
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## Robovetter Results

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007280785-01	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
007280785-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_UNCERTAIN
007280785-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_UNRESOLVED_OFFSET

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

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

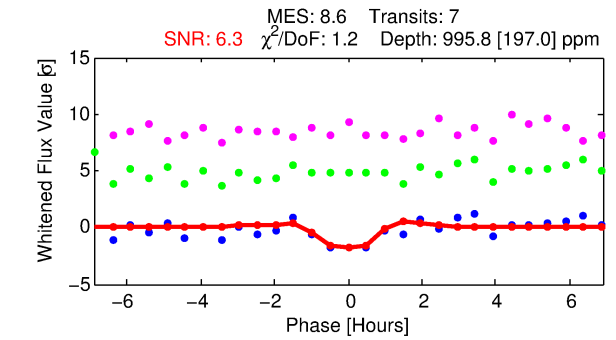
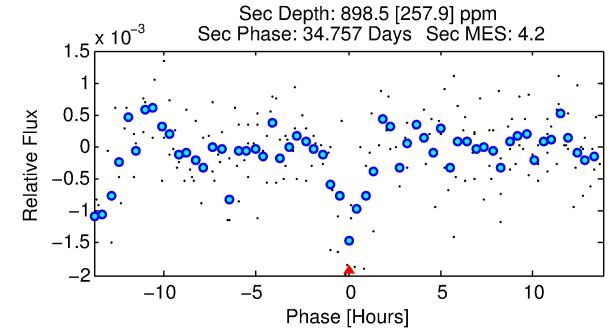
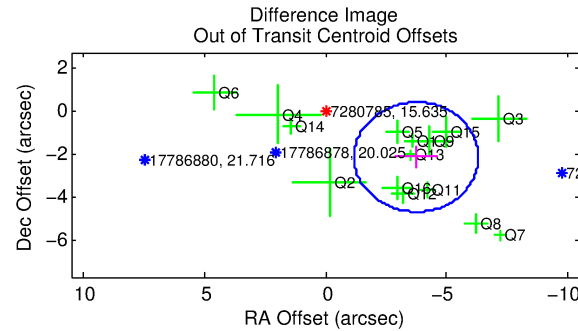
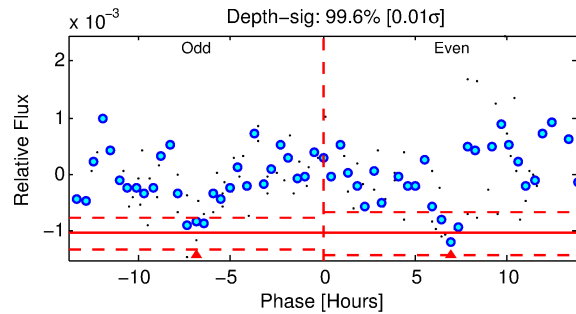
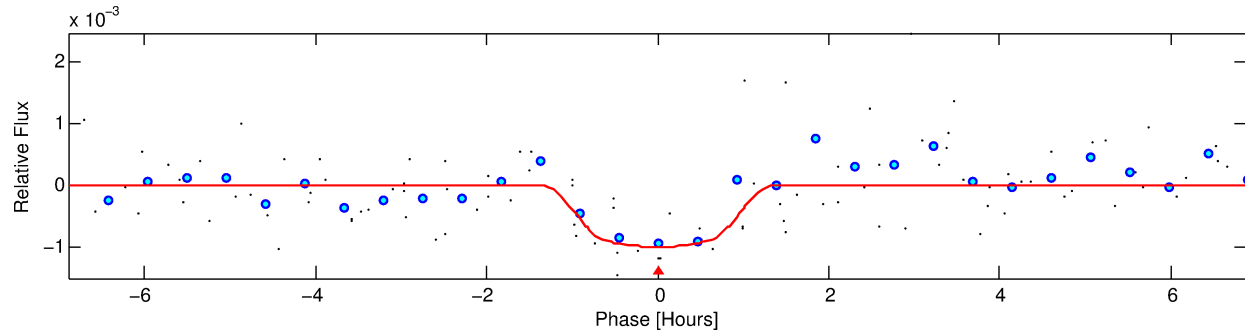
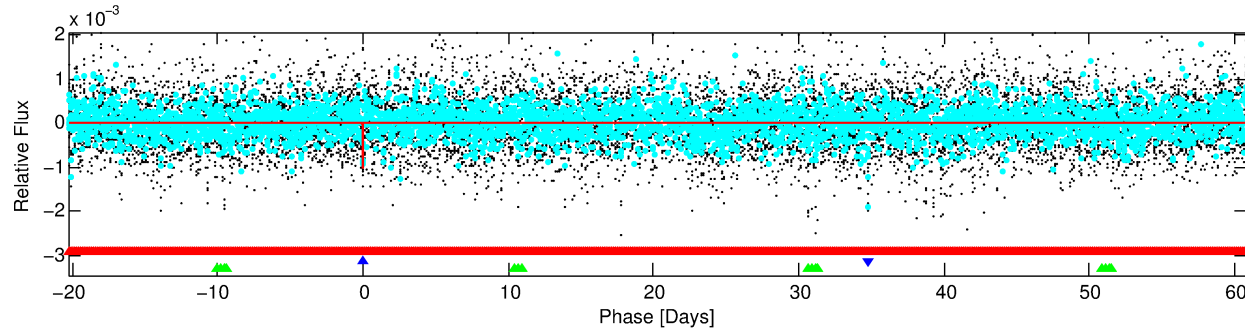
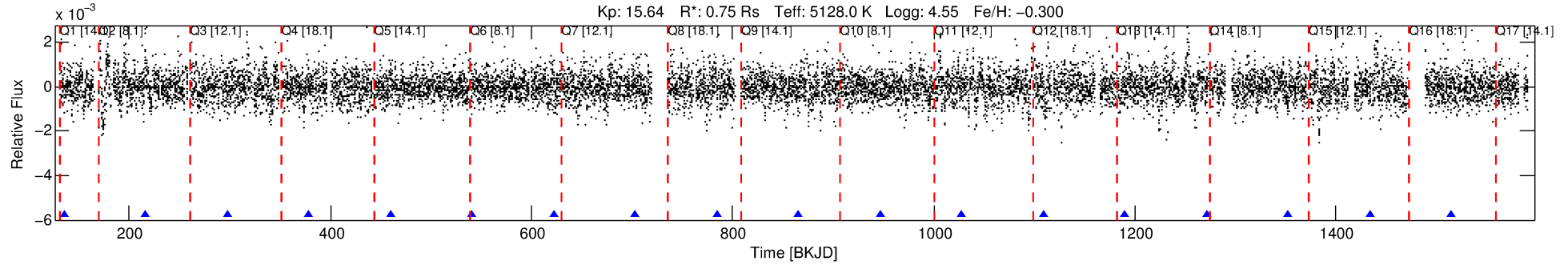
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007280785-02

No Significant Match Found

# DV One-Page Summary

KIC: 7280785 Candidate: 2 of 3 Period: 81.140 d



## DV Fit Results:

Period = 81.14036 [0.00073] d  
Epoch = 135.1723 [0.0071] BKJD  
Rp/R\* = 0.0339 [0.0546]  
a/R\* = 152.20 [966.52]  
b = 0.87 [1.89]  
Seff = 3.22 [0.59]  
Teq = 341 [16] K  
Rp = 2.77 [4.47] Re  
a = 0.3287 [0.0308] AU  
Ag = 6963.90 [22558.87] [0.31σ]  
Teffp = 4823 [3905] K [1.15σ]

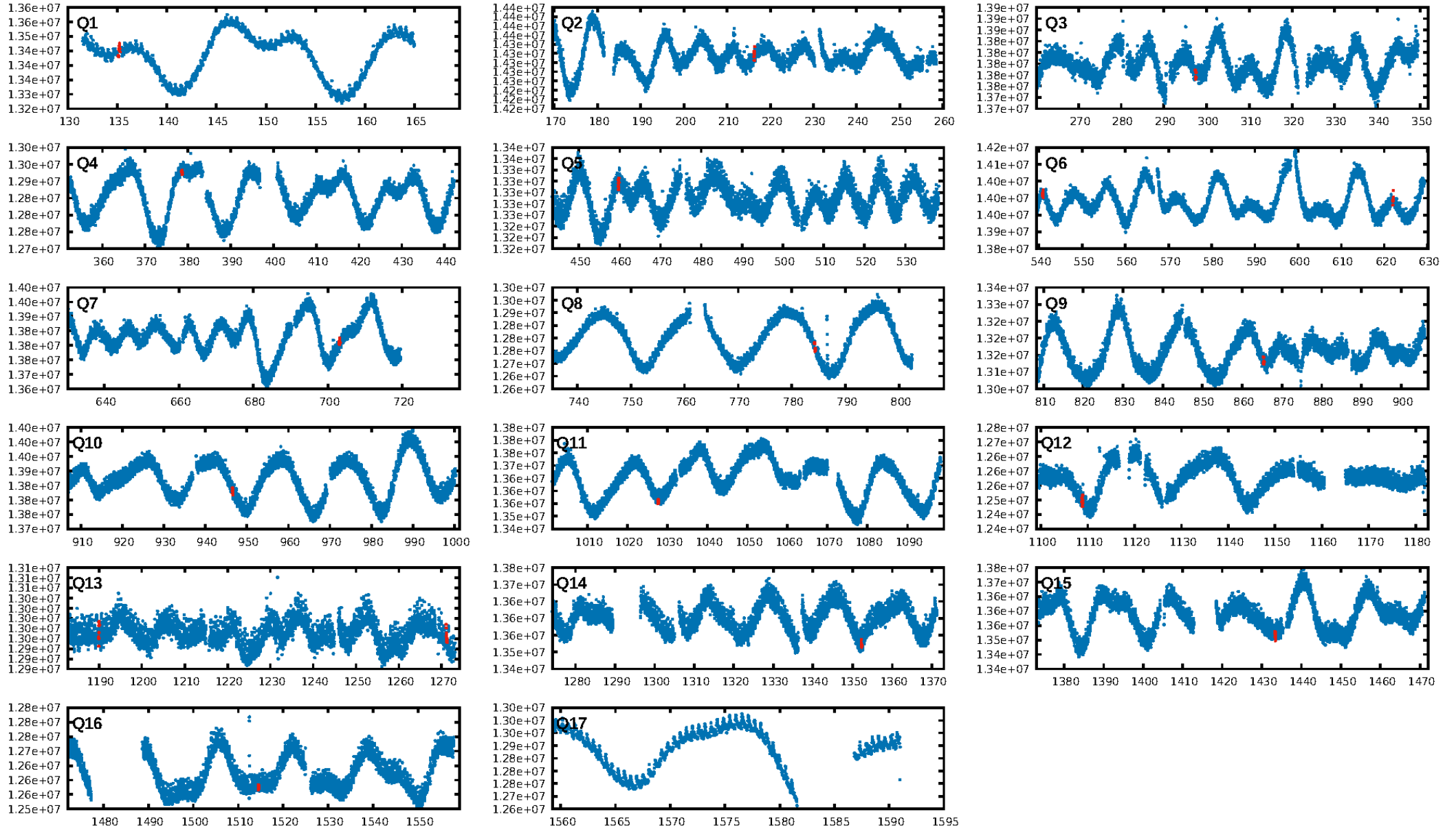
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [468.94σ]  
LongPeriod-sig: 100.0% [120.53σ]  
ModelChiSquare2-sig: 32.4%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 9.66e-12**  
RollingBand-fgt: 1.00 [7/7]  
**GhostDiagnostic-chr: 4.628**  
Centroid-sig: 27.4%  
Centroid-so: 0.464 arcsec [0.45σ]  
**OotOffset-rm: 4.310 arcsec [5.05σ]**  
**KicOffset-rm: 4.287 arcsec [4.70σ]**  
OotOffset-st: 3/4/4/4 [15]  
KicOffset-st: 3/4/4/4 [15]  
DiffImageQuality-fgm: 0.07 [1/15]  
DiffImageOverlap-fno: 0.00 [0/16]

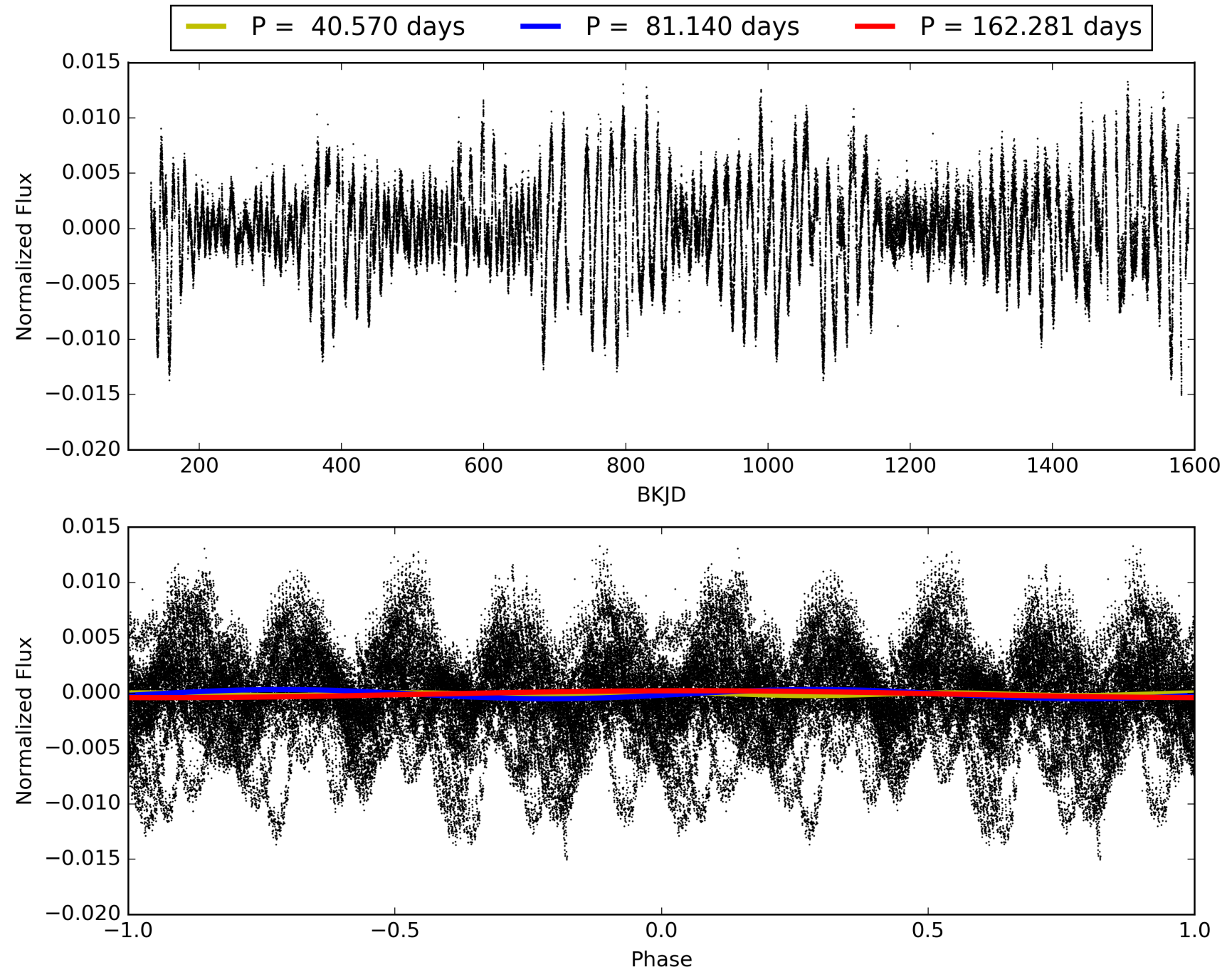
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:05:16 Z

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

# TCE 007280785-02, PDC Light Curves

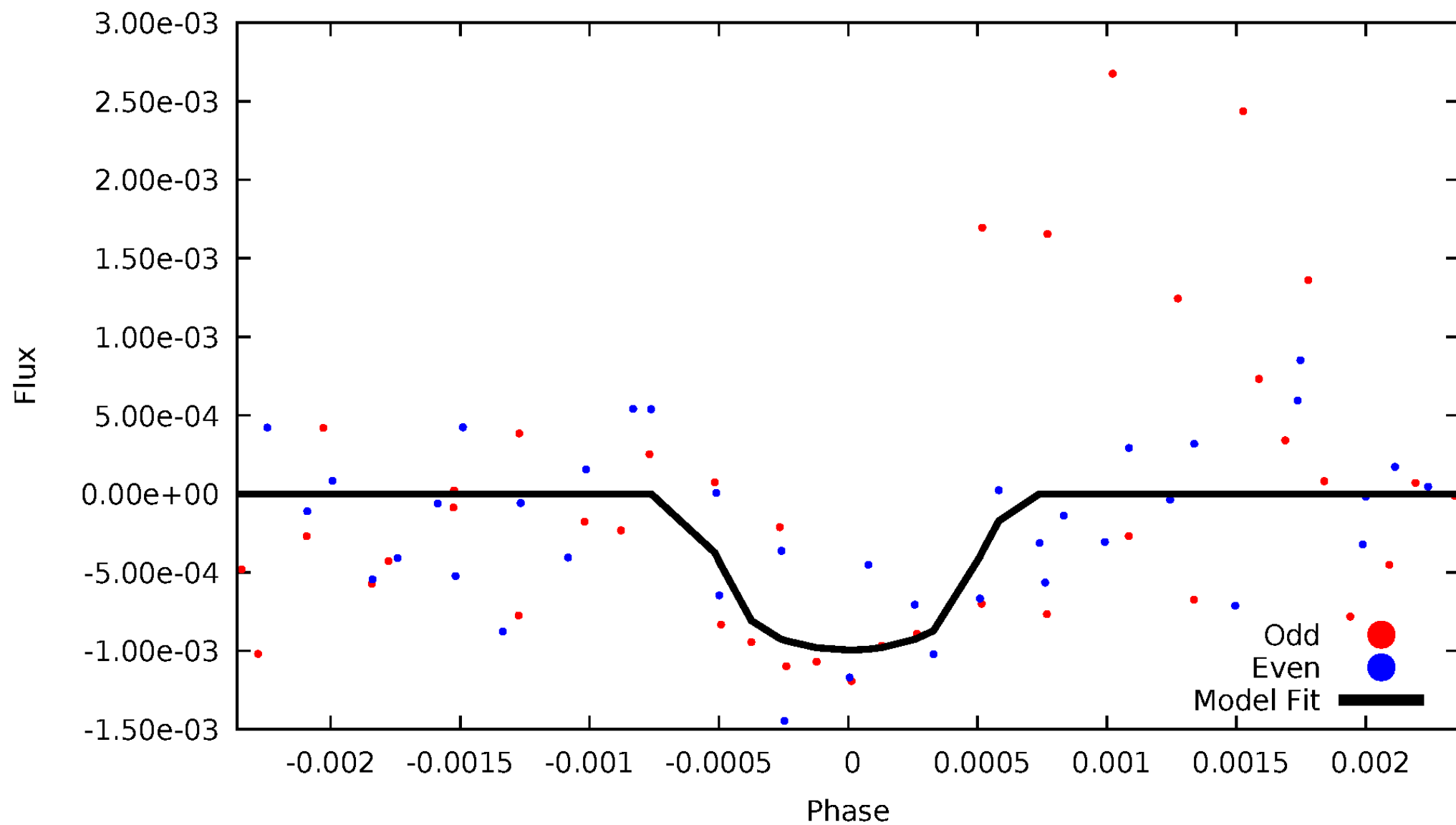


# TCE 007280785-02



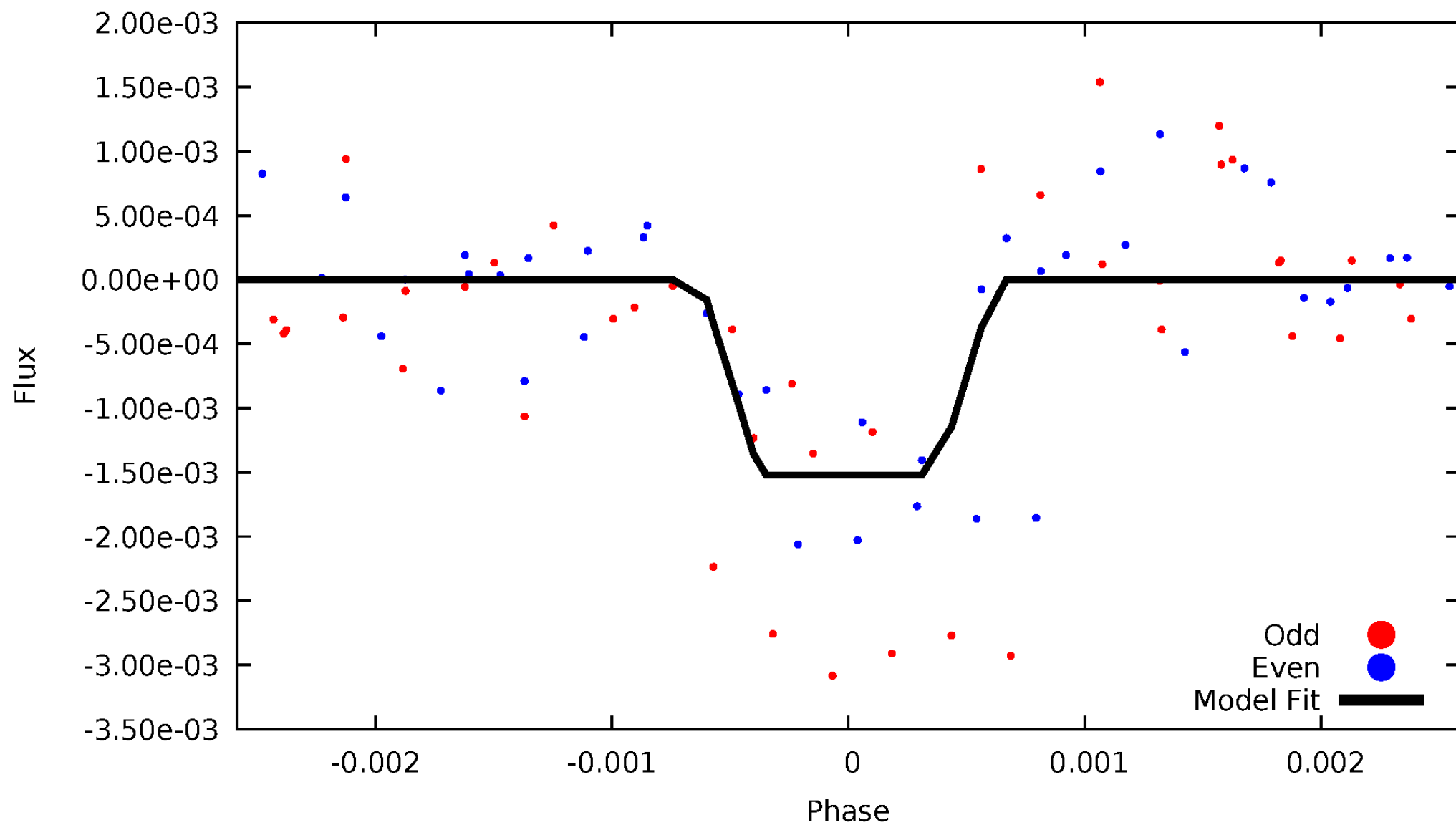
# DV Odd/Even

TCE 007280785-02



# ALT Odd/Even

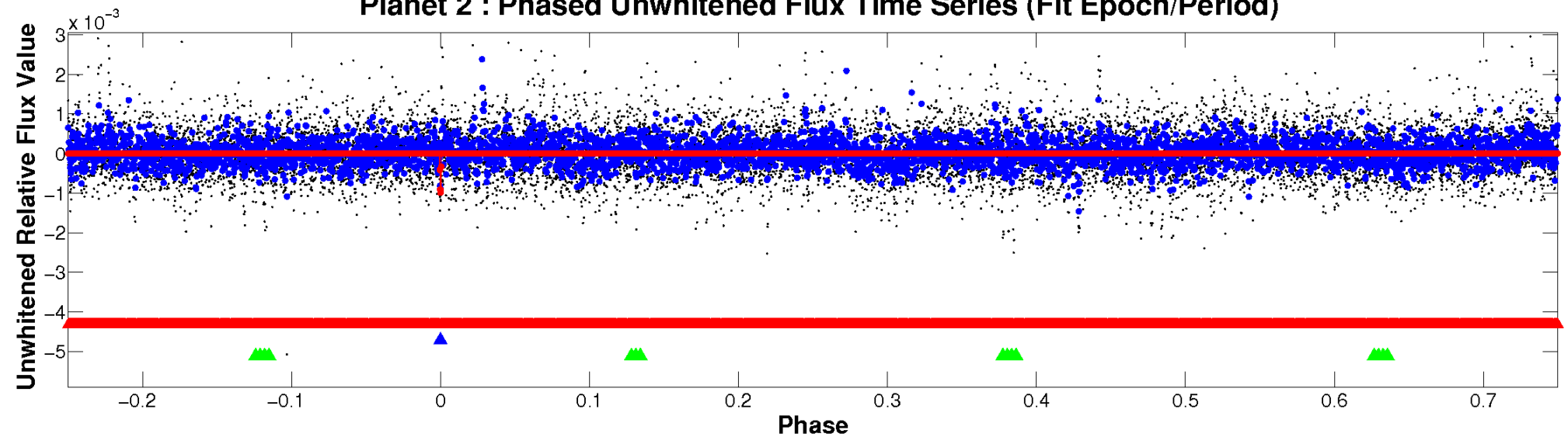
TCE 007280785-02



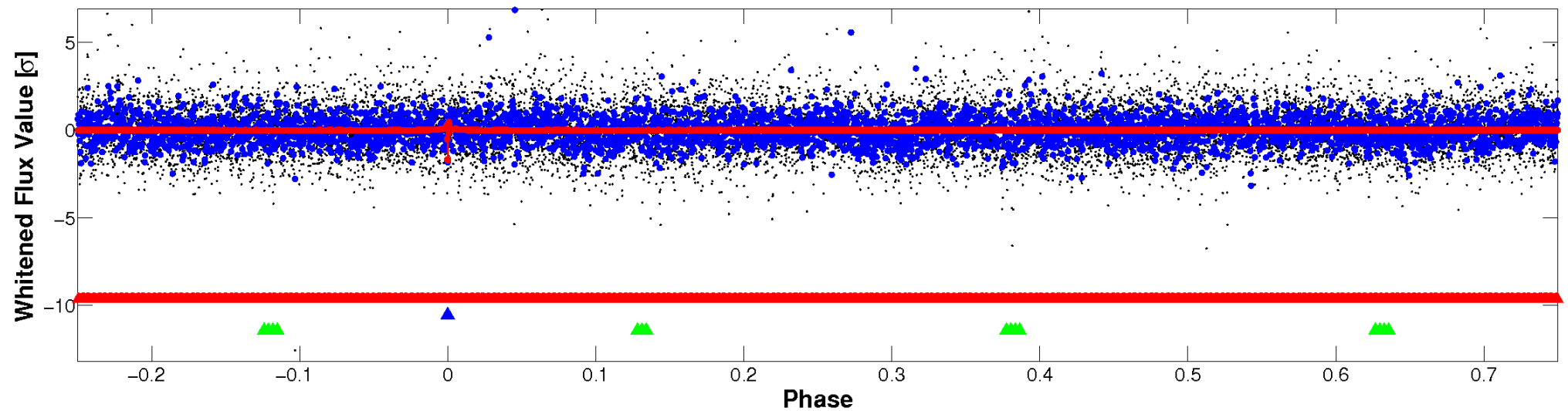


# Non-Whitened Vs. Whitened Light Curve

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

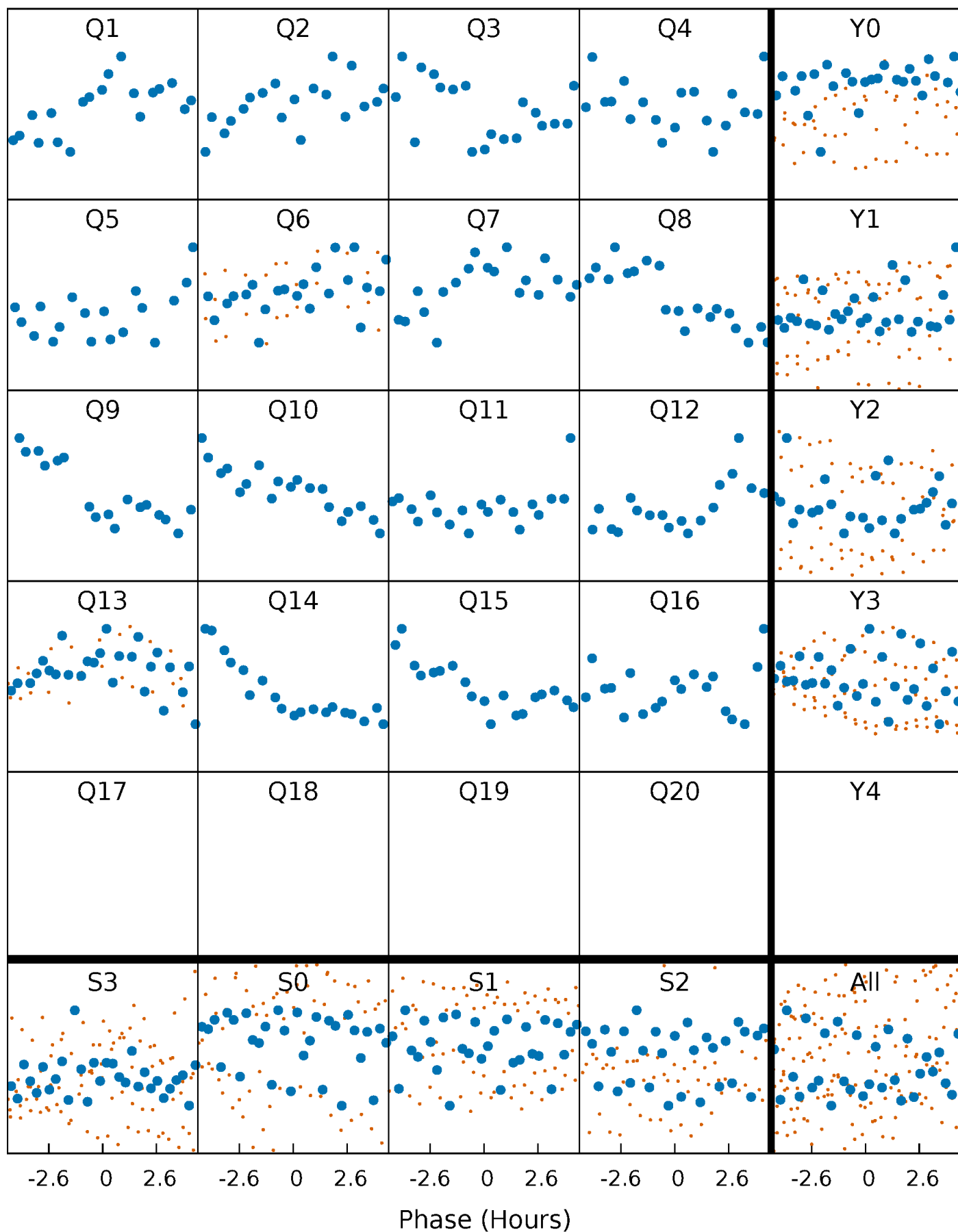


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



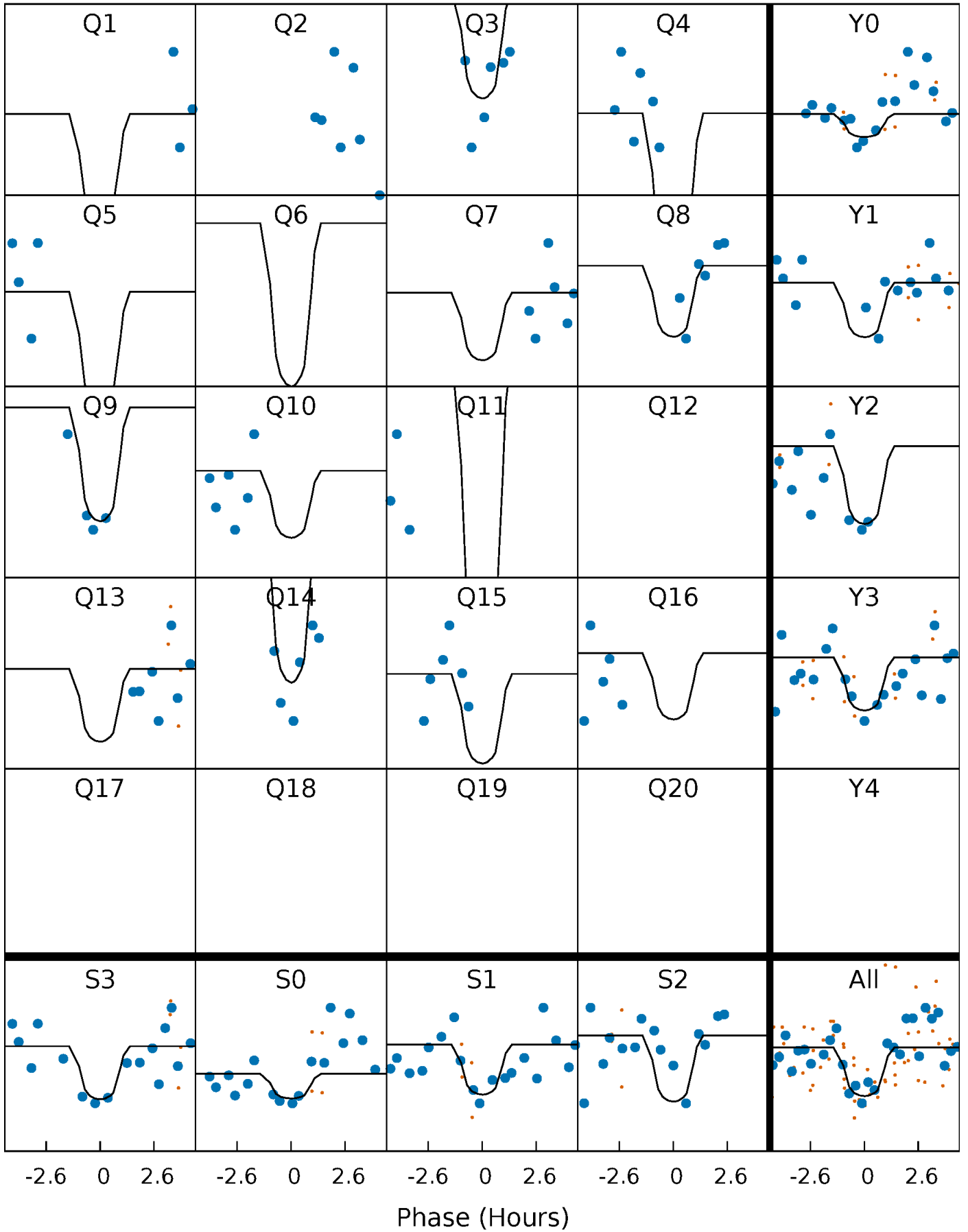
# PDC Quarter-Phased Transit Curves

TCE 007280785-02   P= 81.140363 Days    $T_0=135.172302$  (BKJD)



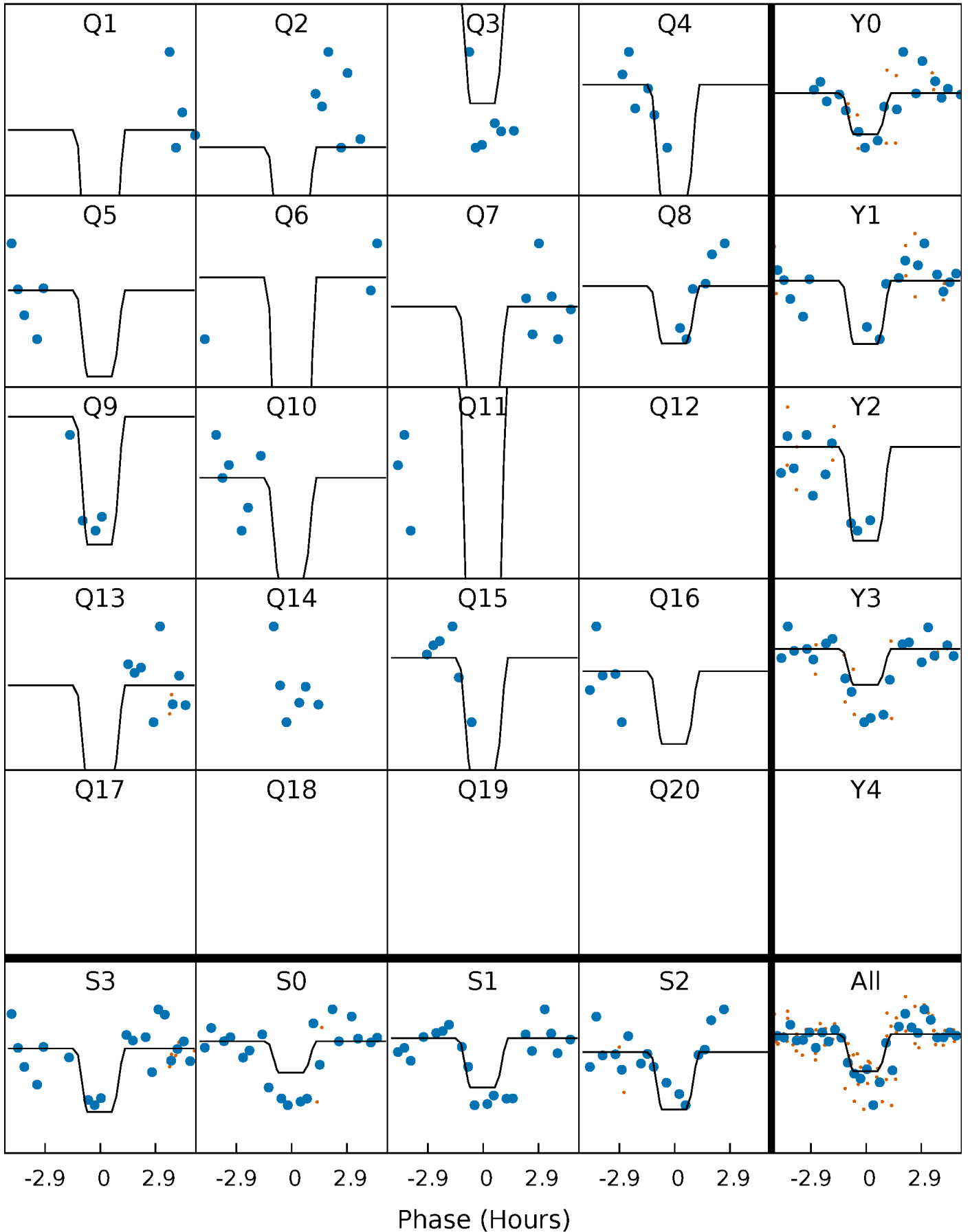
# DV Quarter-Phased Transit Curves

TCE 007280785-02     $P = 81.140363$  Days     $T_0 = 135.172302$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

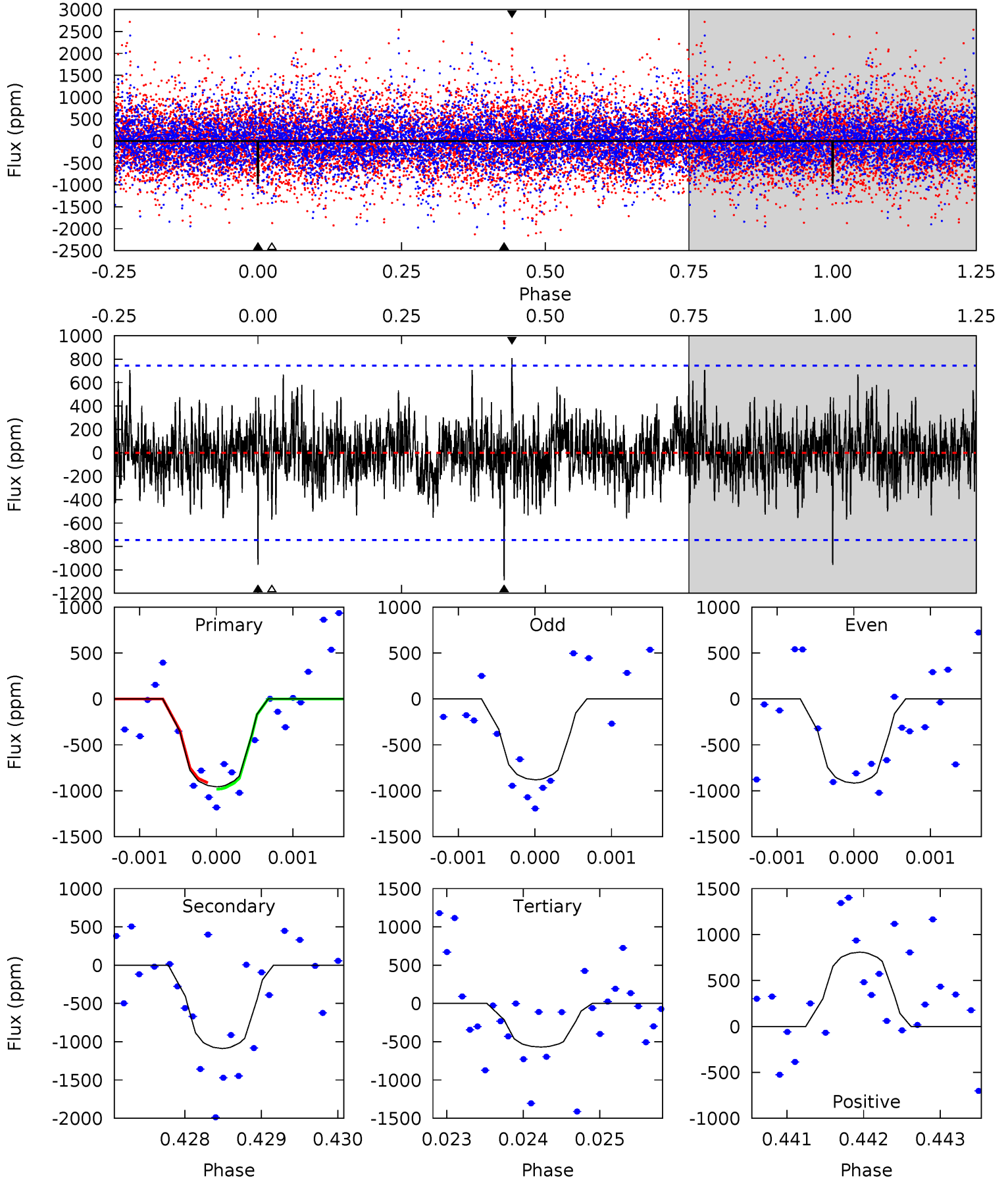
TCE 007280785-02   P= 81.141071 Days    $T_0=135.168095$  (BKJD)



# DV Model-Shift Uniqueness Test

007280785-02, P = 81.140363 Days, E = 54.031939 Days

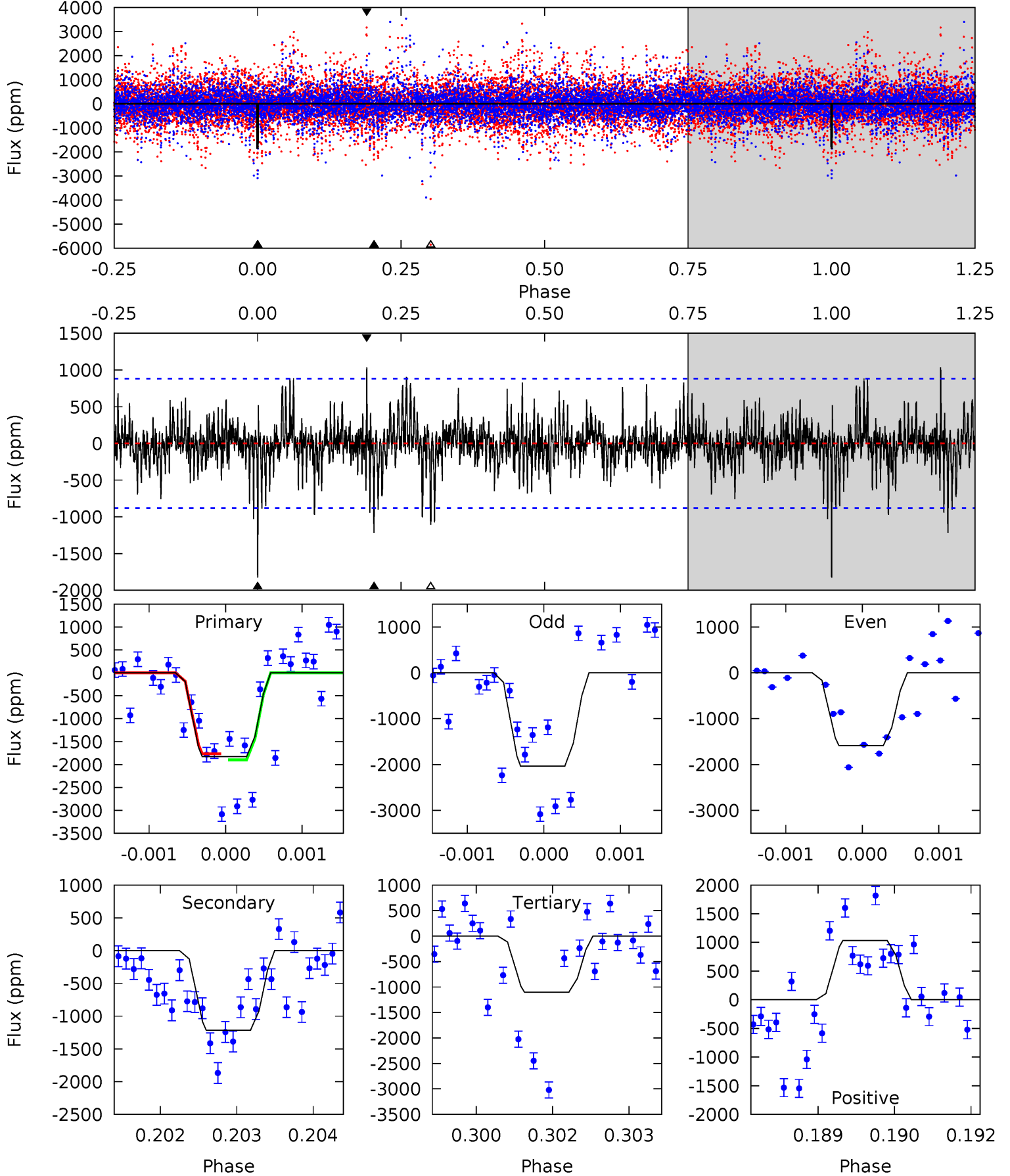
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.97	7.93	4.15	5.89	5.44	3.27	1.36	2.83	1.09	3.78	2.05	0.13	0.87	0.43	0.26



# Alt Model-Shift Uniqueness Test

007280785-02, P = 81.141071 Days, E = 54.027024 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	7.48	6.78	6.36	5.43	3.26	1.49	4.47	4.89	0.70	1.12	1.31	1.23	0.36	0.41





### Stellar Parameters For KIC 007280785

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5128^{+153}_{-153}$	$4.546^{+0.078}_{-0.052}$	$-0.300^{+0.350}_{-0.300}$	$0.749^{+0.081}_{-0.081}$	$0.719^{+0.095}_{-0.051}$	$2.413^{+0.813}_{-0.472}$
	+3%/-3%	+2%/-1%	+117%/-100%	+11%/-11%	+13%/-7%	+34%/-20%
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 007280785-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-1089 \pm 137$	$4.00^{+3.57}_{-2.95}$	$475^{+18}_{-18}$	$4359^{+3975}_{-891}$	$4098^{+55200}_{-2966}$
Alt.	$-1215 \pm 163$	$4.57^{+3.67}_{-3.03}$	$474^{+19}_{-19}$	$4241^{+2527}_{-757}$	$3495^{+27213}_{-2400}$

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

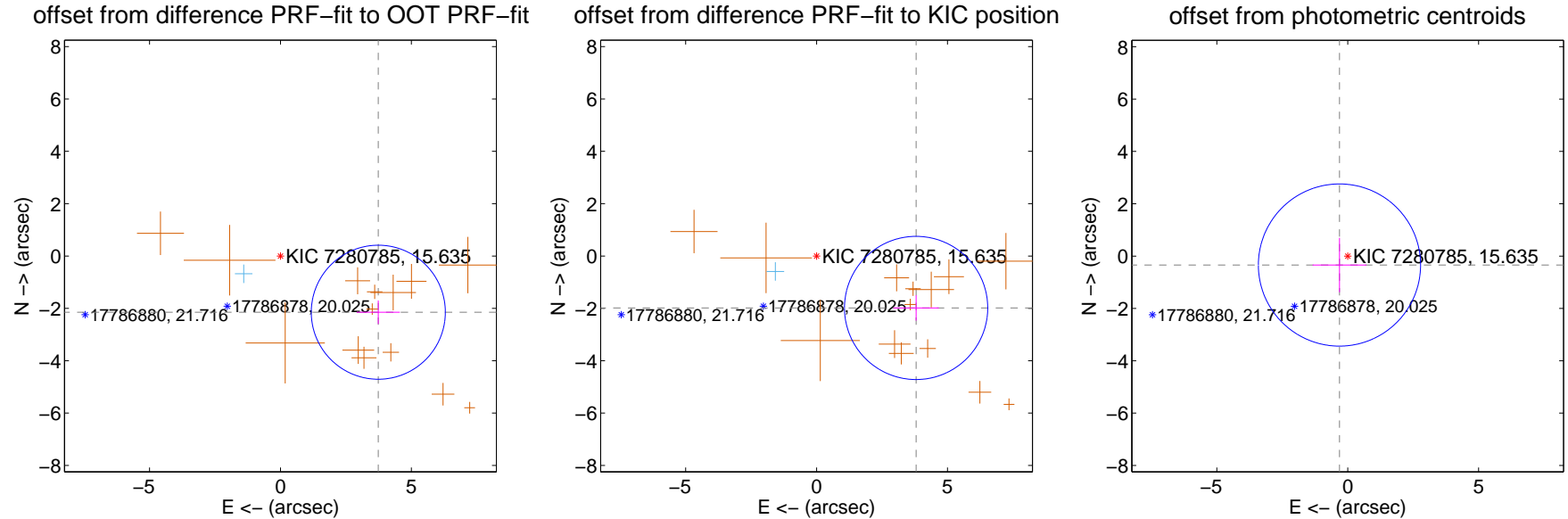
## DV Centroid Data

Supplemental centroid analysis for 007280785-02. Kepler magnitude: 15.63. Transit SNR 6.28

There are 1 quarters with good PRF difference image offsets

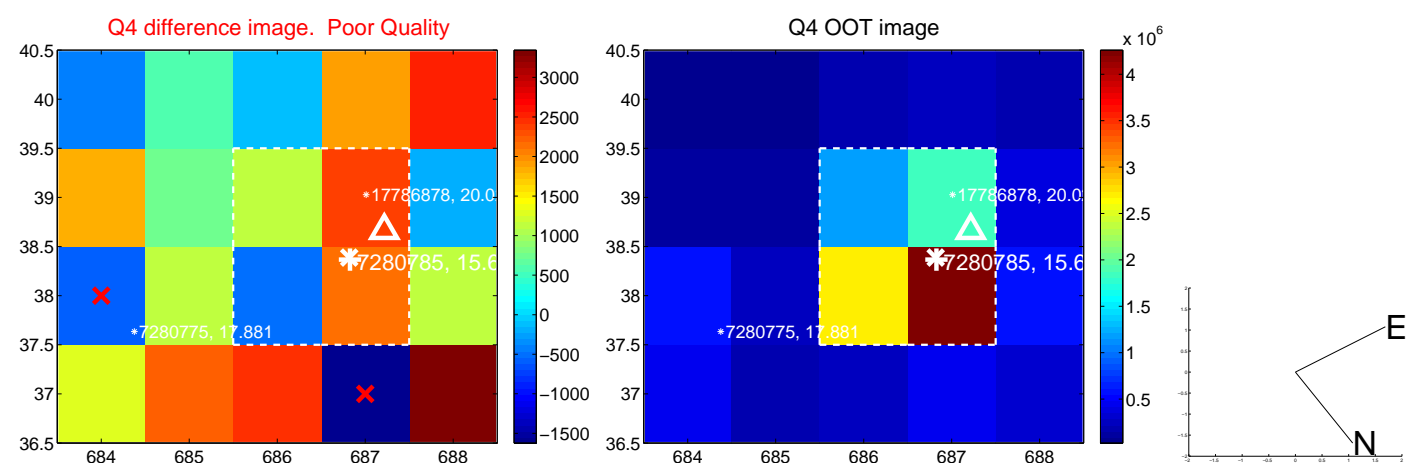
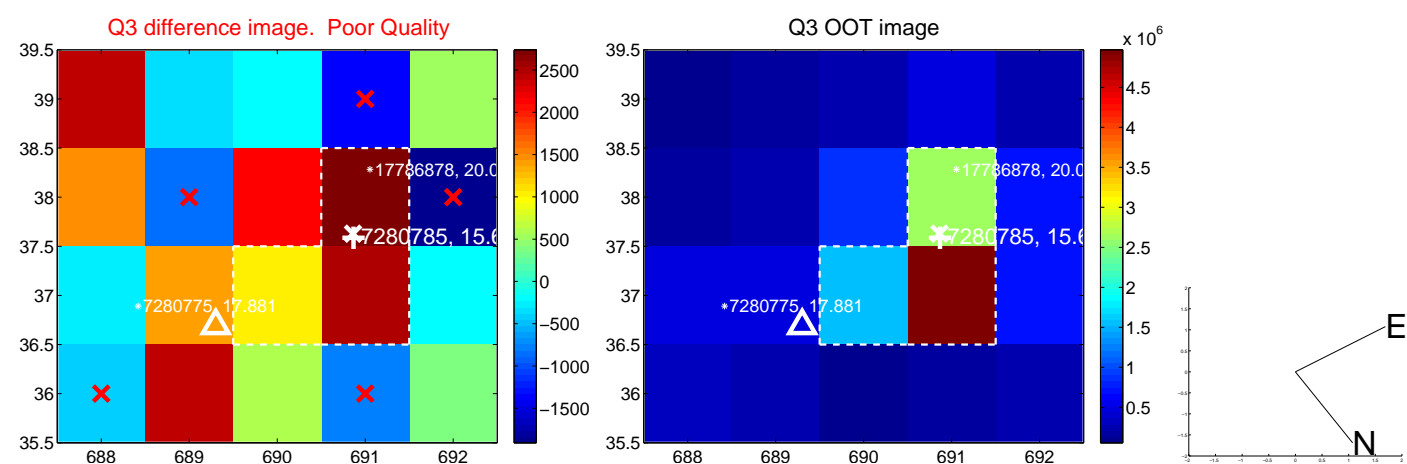
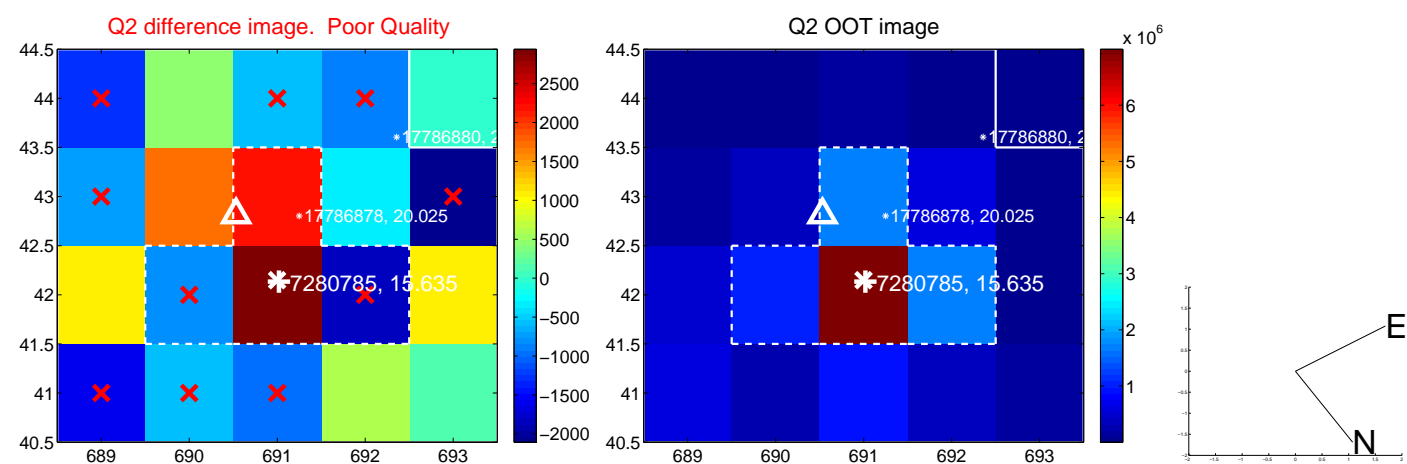
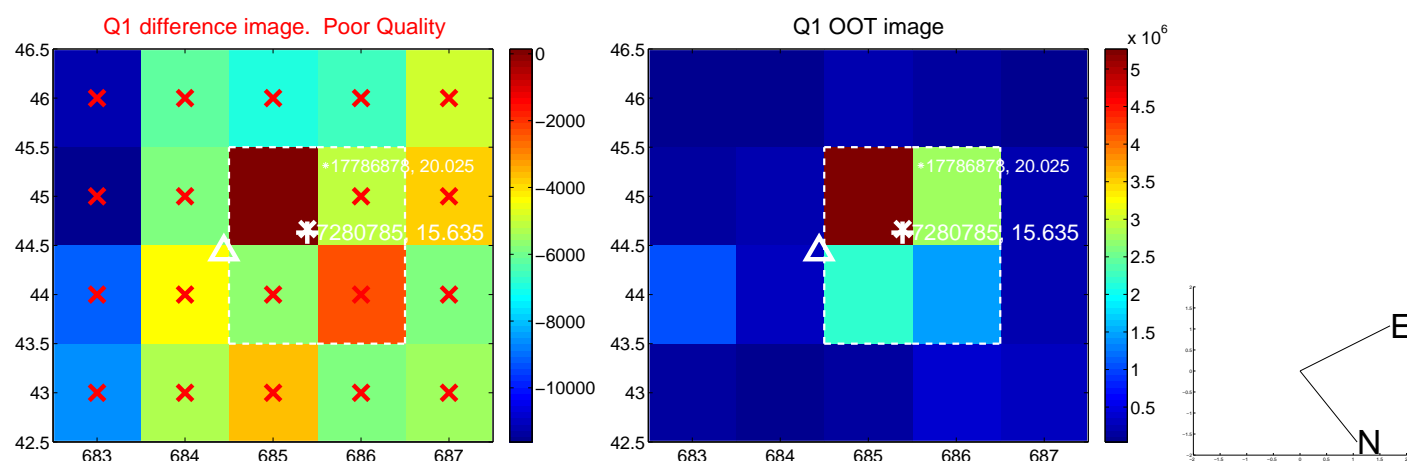
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.310 \pm 0.853$	5.05	$-3.737 \pm 0.823$	$-2.147 \pm 0.448$
PRF-fit source offset from KIC position	$4.287 \pm 0.912$	4.70	$-3.801 \pm 0.868$	$-1.983 \pm 0.486$
photometric centroid source offset	$0.46 \pm 1.03$	0.45	$0.31 \pm 1.03$	$-0.34 \pm 1.04$

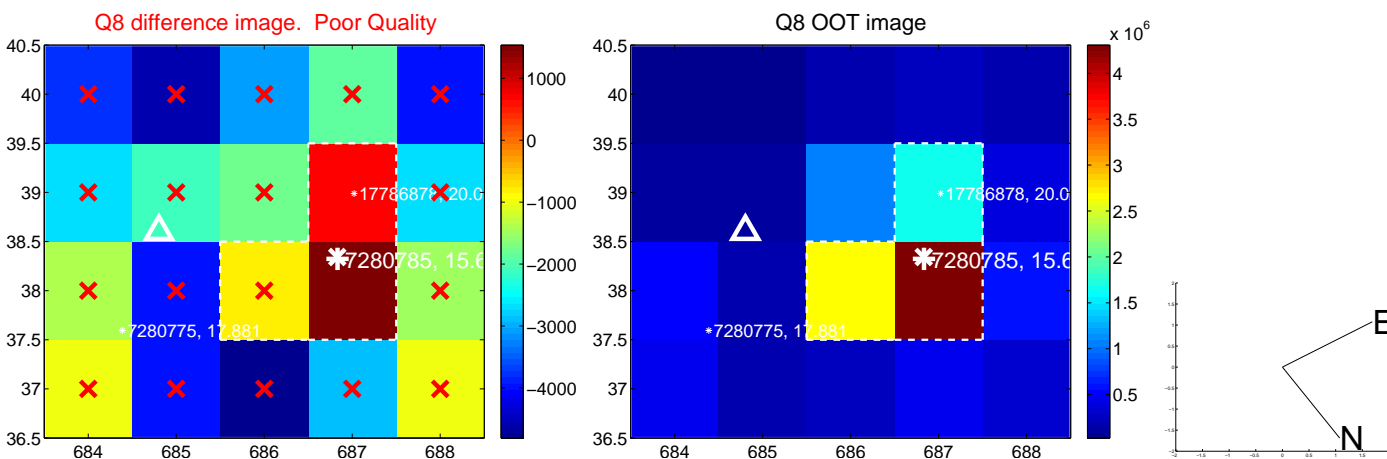
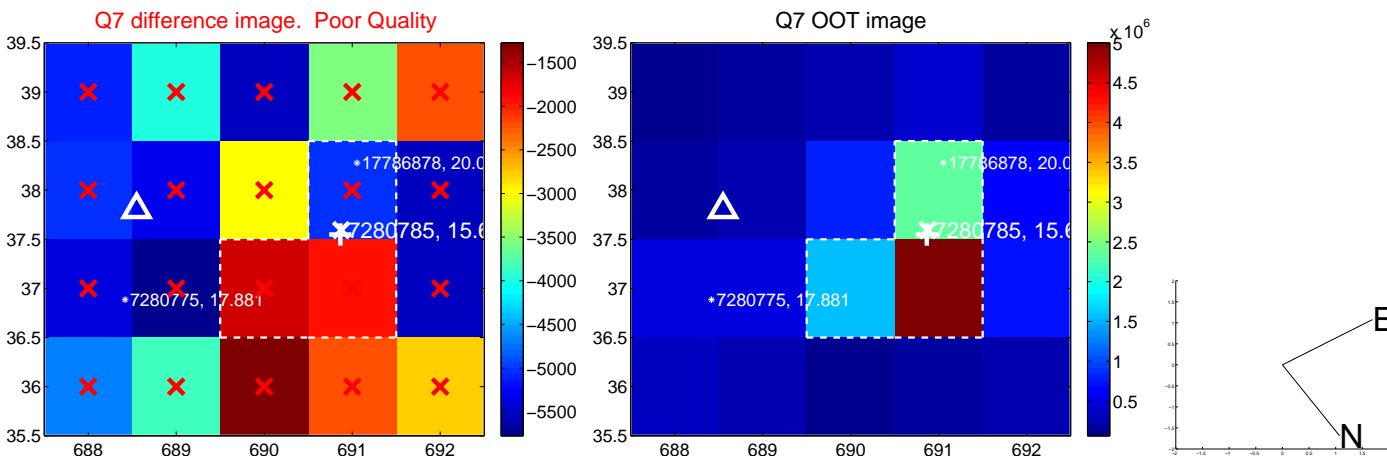
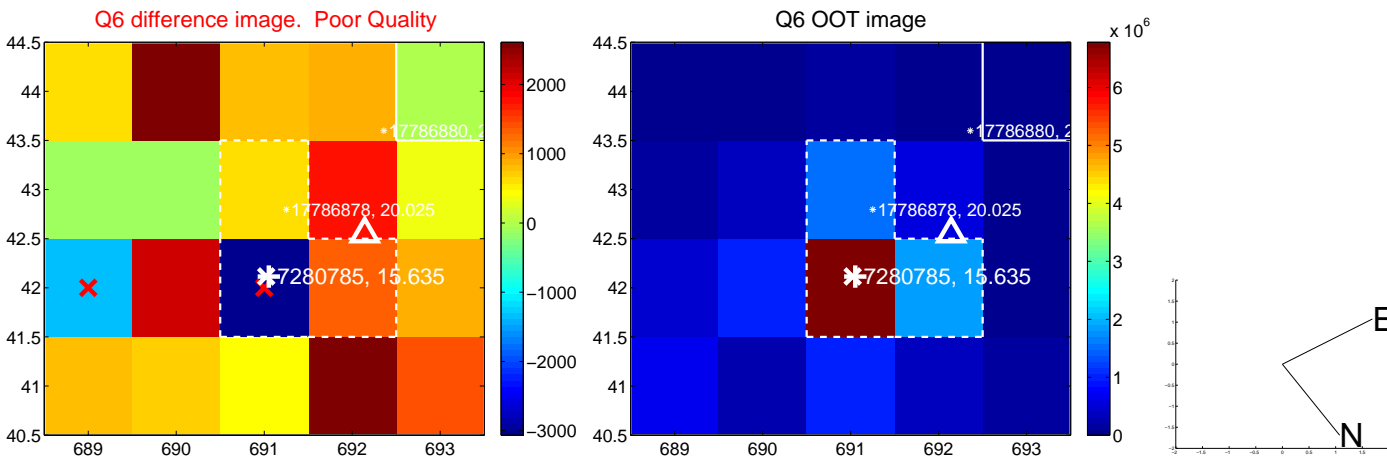
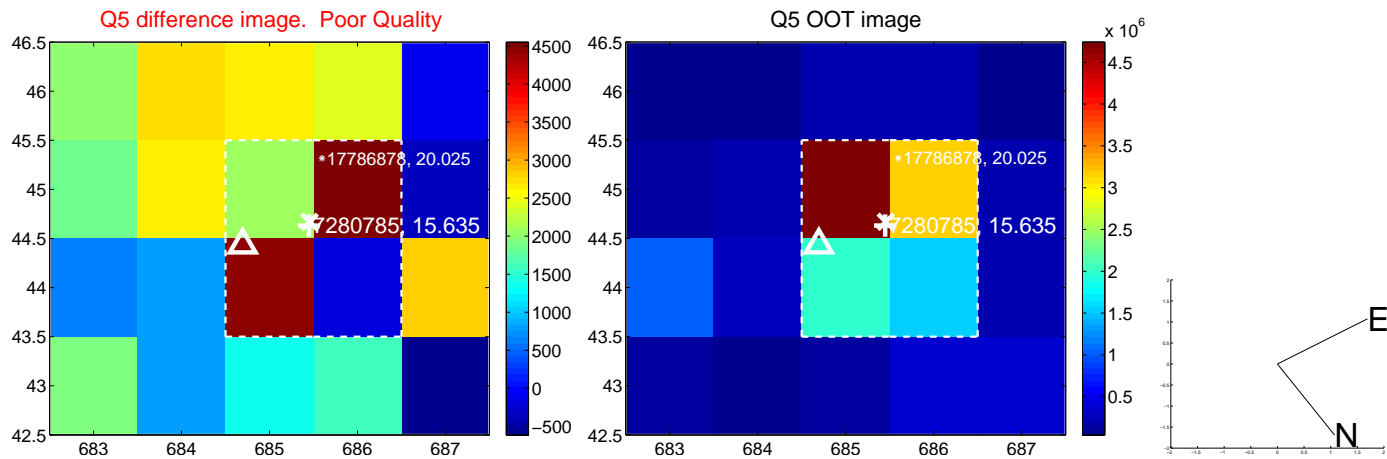


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

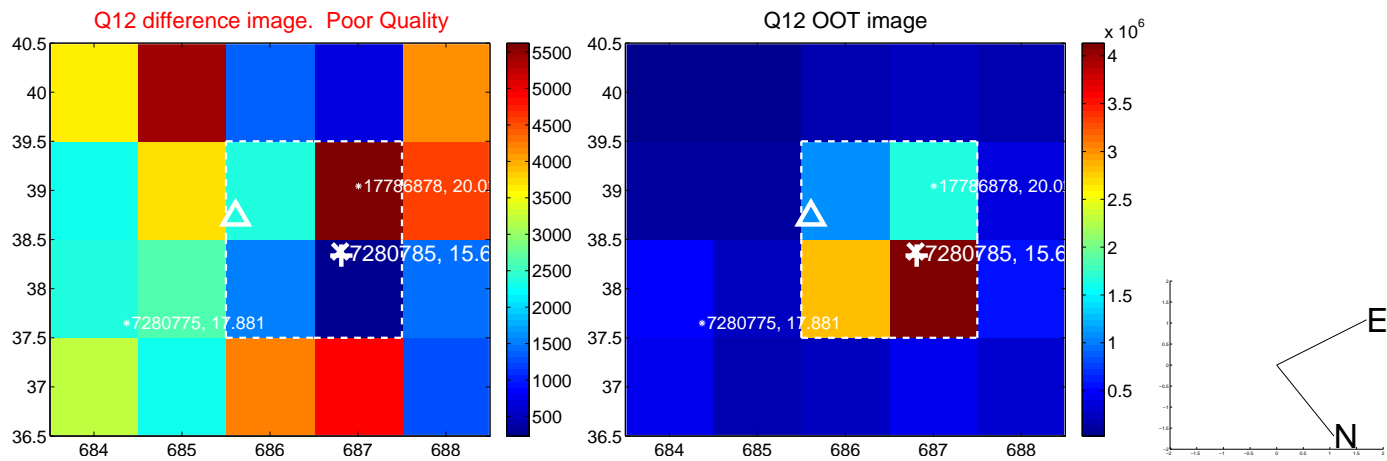
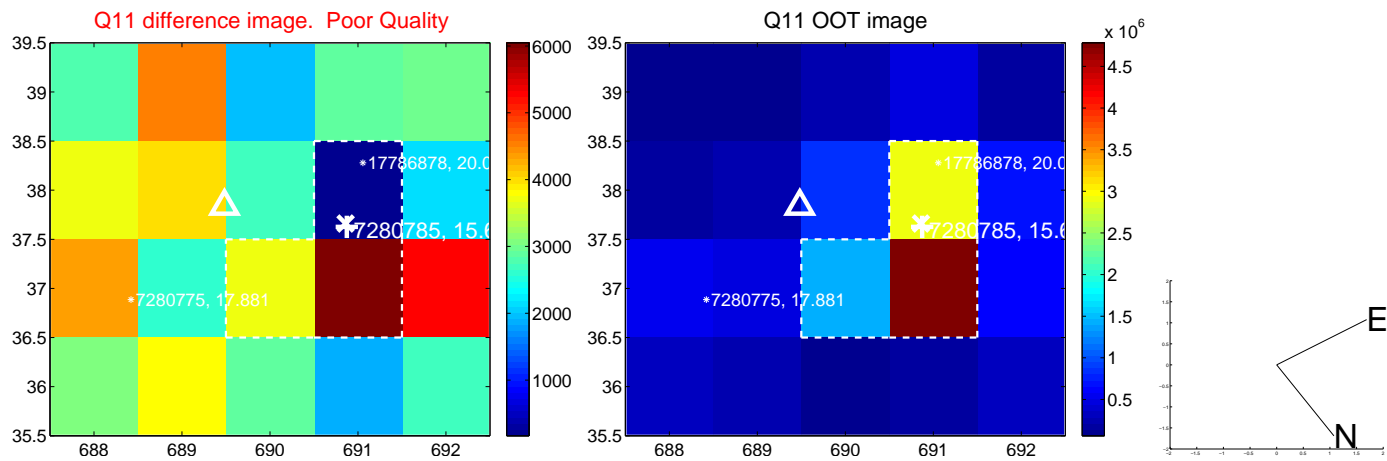
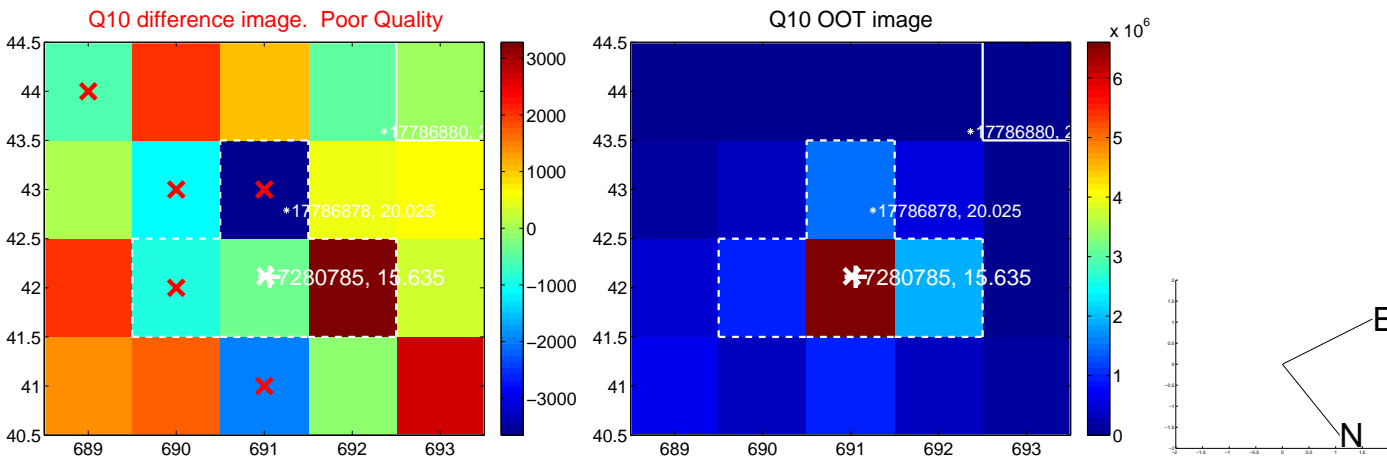
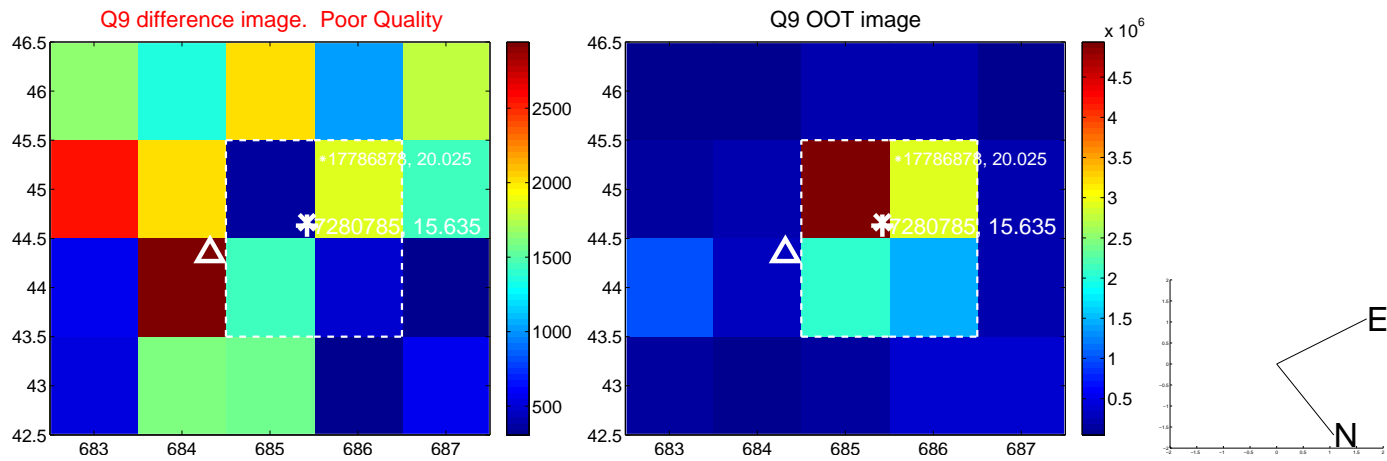
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

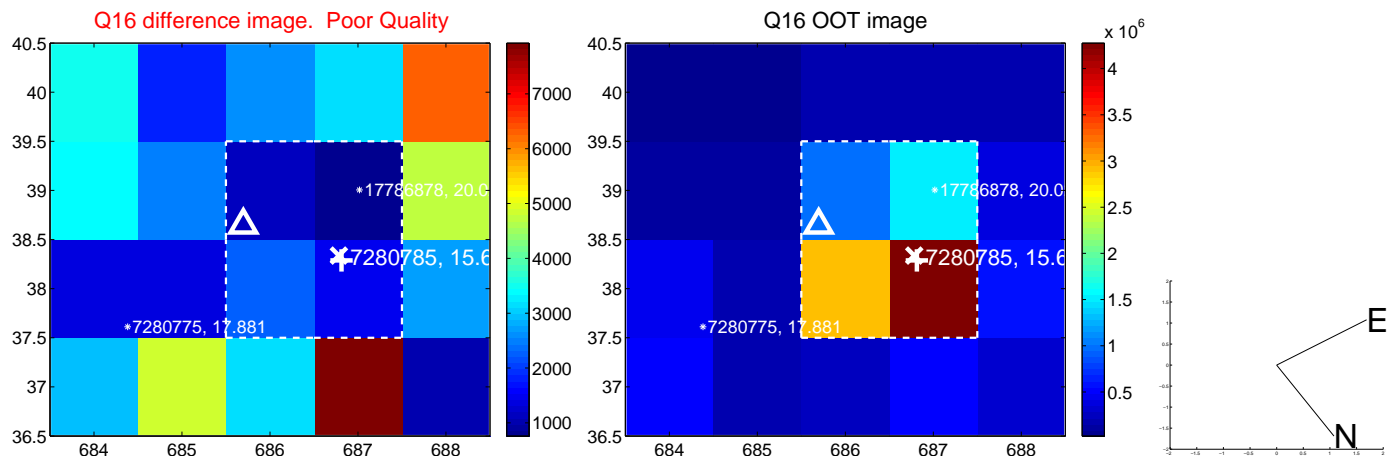
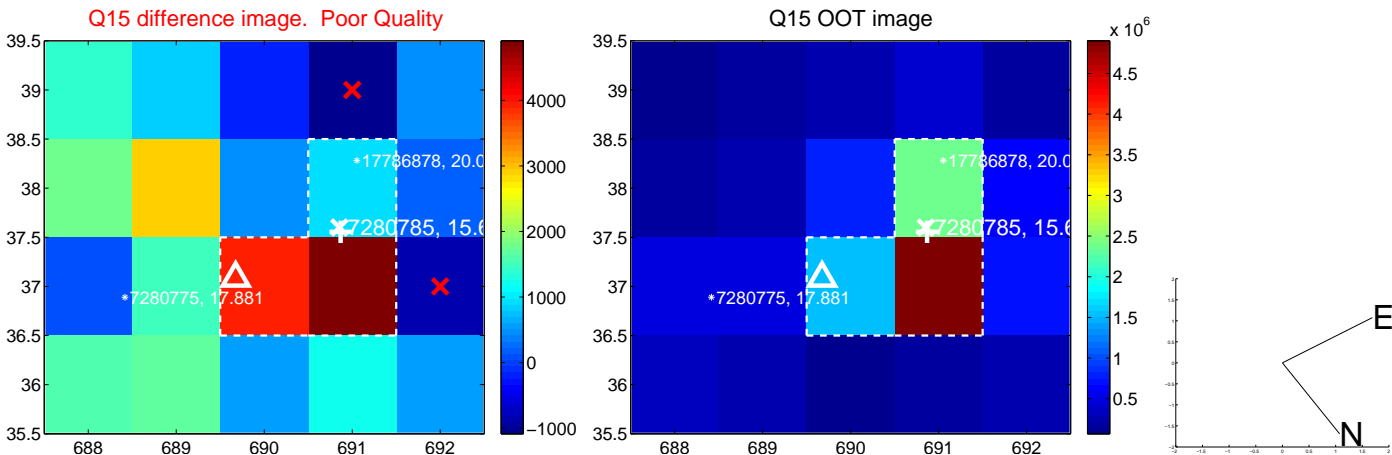
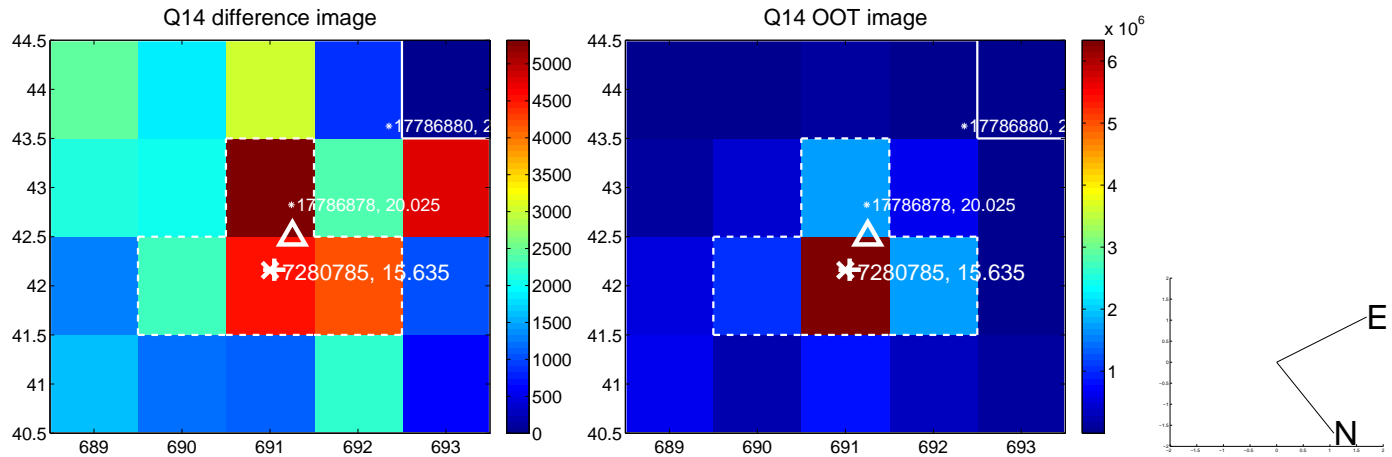
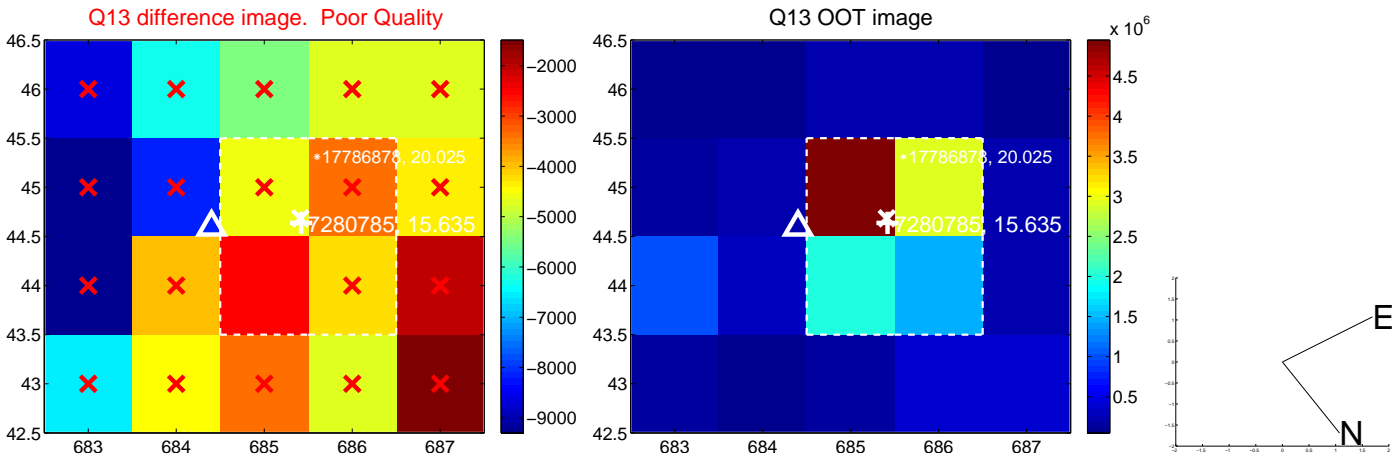


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

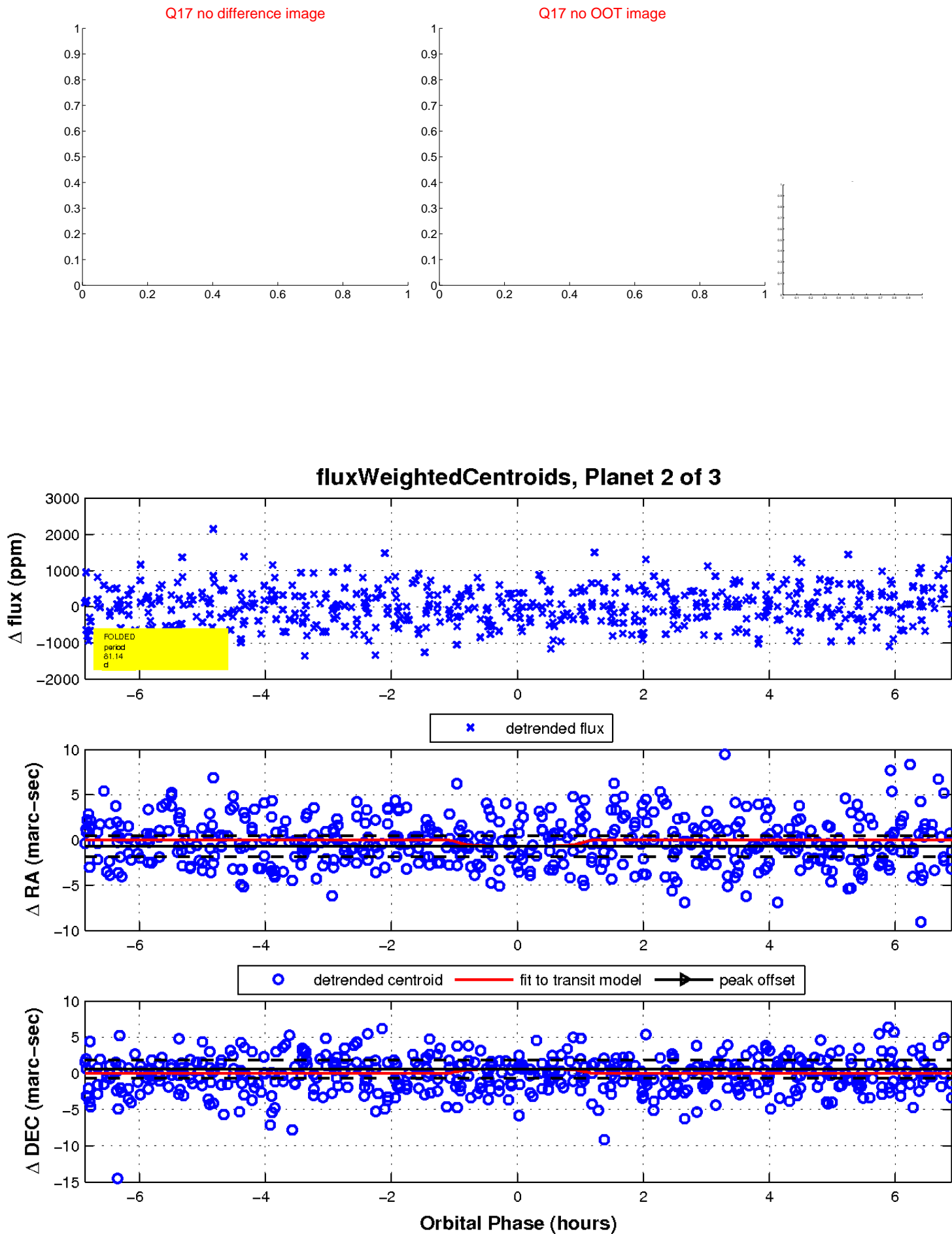




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

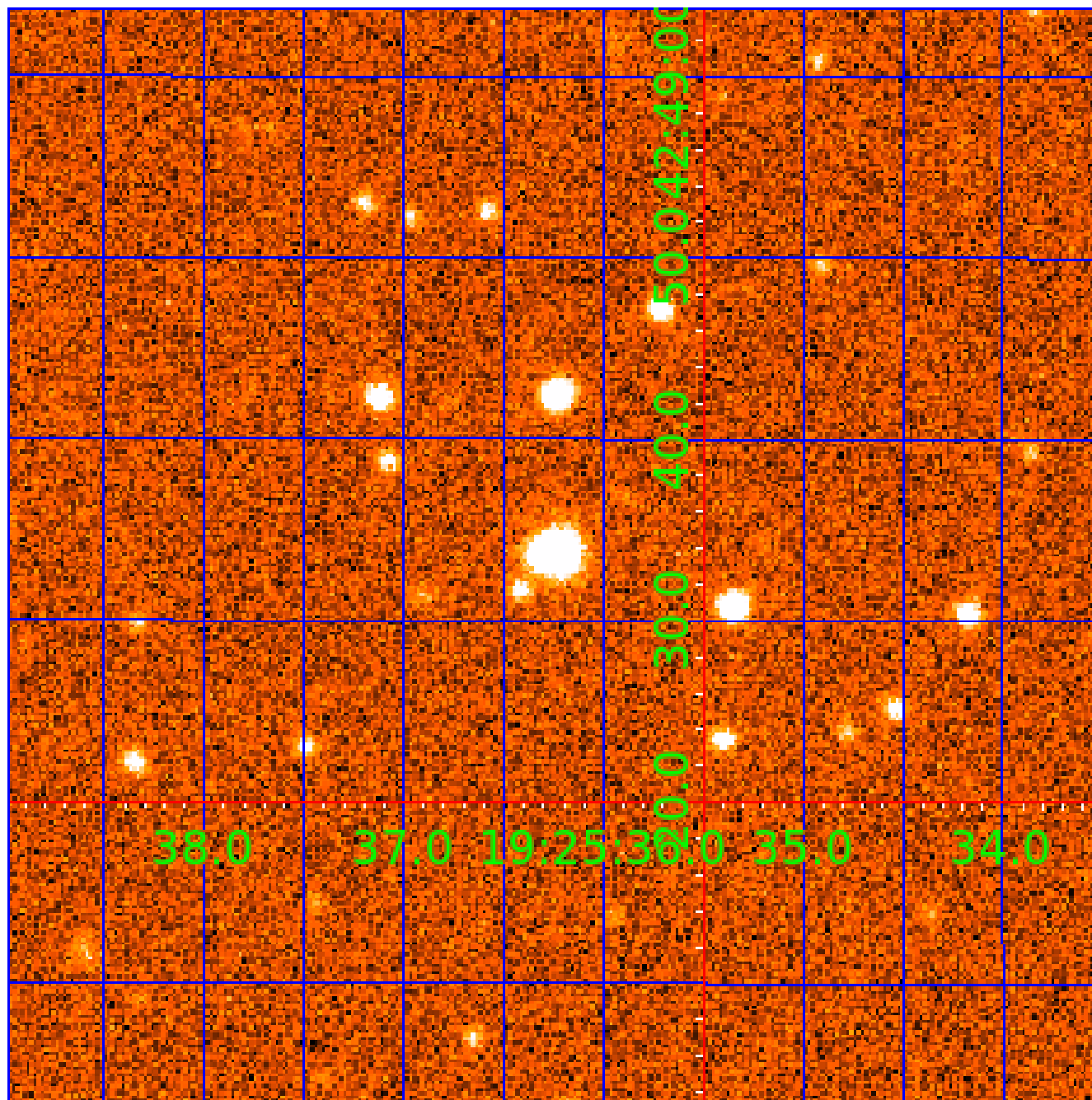


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 007280785

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007280785-01	OBS	No	0.566810	131.669786	71.6	3.423	10.0	11.2	0.75	5128	0.64	2408.56
007280785-02	OBS	No	81.140363	135.172302	995.8	2.299	8.6	6.3	0.75	5128	2.77	3.22
007280785-03	OBS	No	101.365141	166.523709	1584.2	3.306	8.8	8.2	0.75	5128	3.05	2.39

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007280785-01	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
007280785-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_UNCERTAIN
007280785-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_UNRESOLVED_OFFSET

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

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

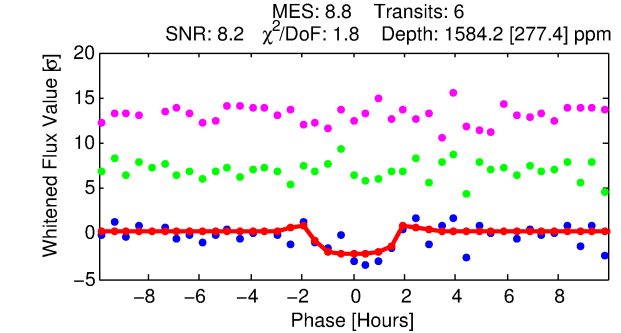
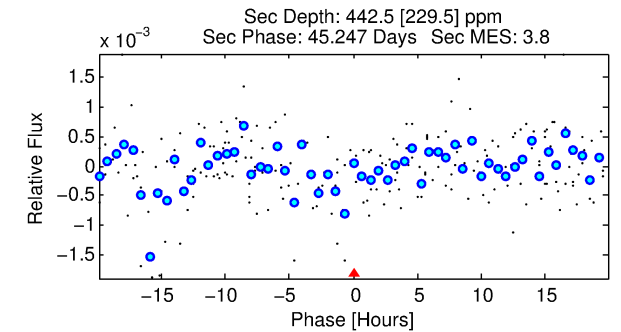
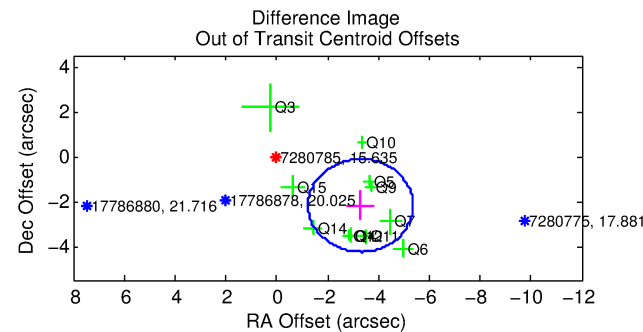
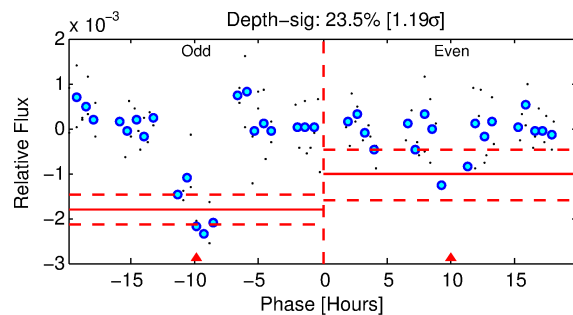
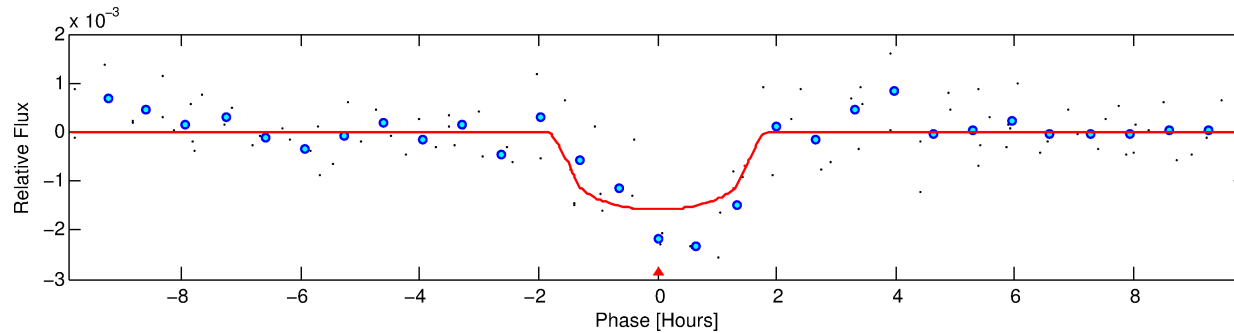
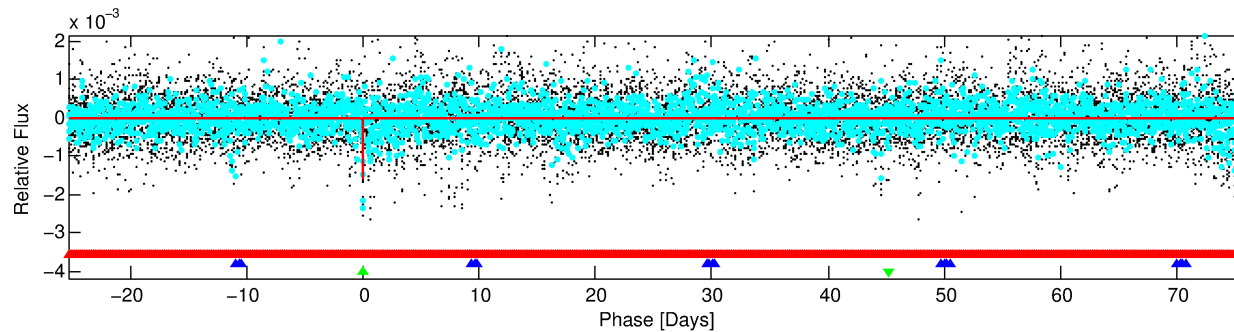
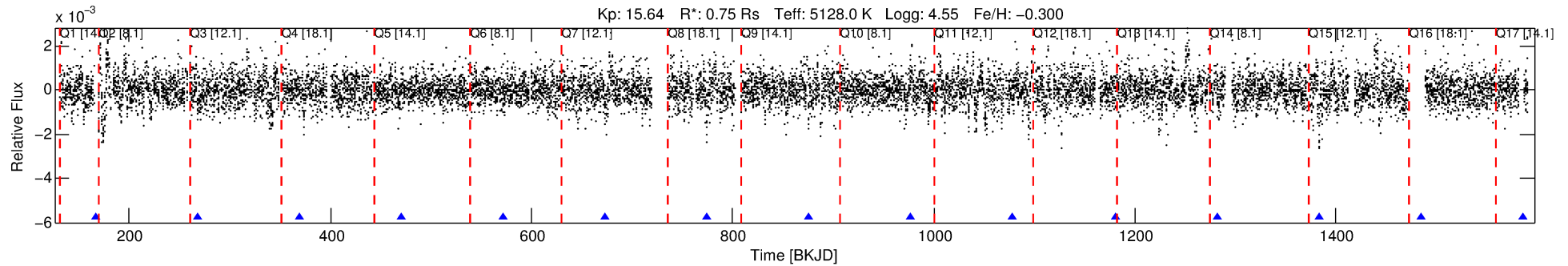
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007280785-03

No Significant Match Found

# DV One-Page Summary

KIC: 7280785 Candidate: 3 of 3 Period: 101.365 d



## DV Fit Results:

Period = 101.36514 [0.00154] d  
Epoch = 166.5237 [0.0101] BKJD  
Rp/R\* = 0.0374 [0.0964]  
a/R\* = 205.34 [1925.20]  
b = 0.55 [11.97]  
Seff = 2.39 [0.44]  
Teq = 317 [15] K  
Rp = 3.05 [7.88] Re  
a = 0.3813 [0.0357] AU  
Ag = 3795.03 [19678.69] [0.19 $\sigma$ ]  
Teffp = 3848 [4987] K [0.71 $\sigma$ ]

## DV Diagnostic Results:

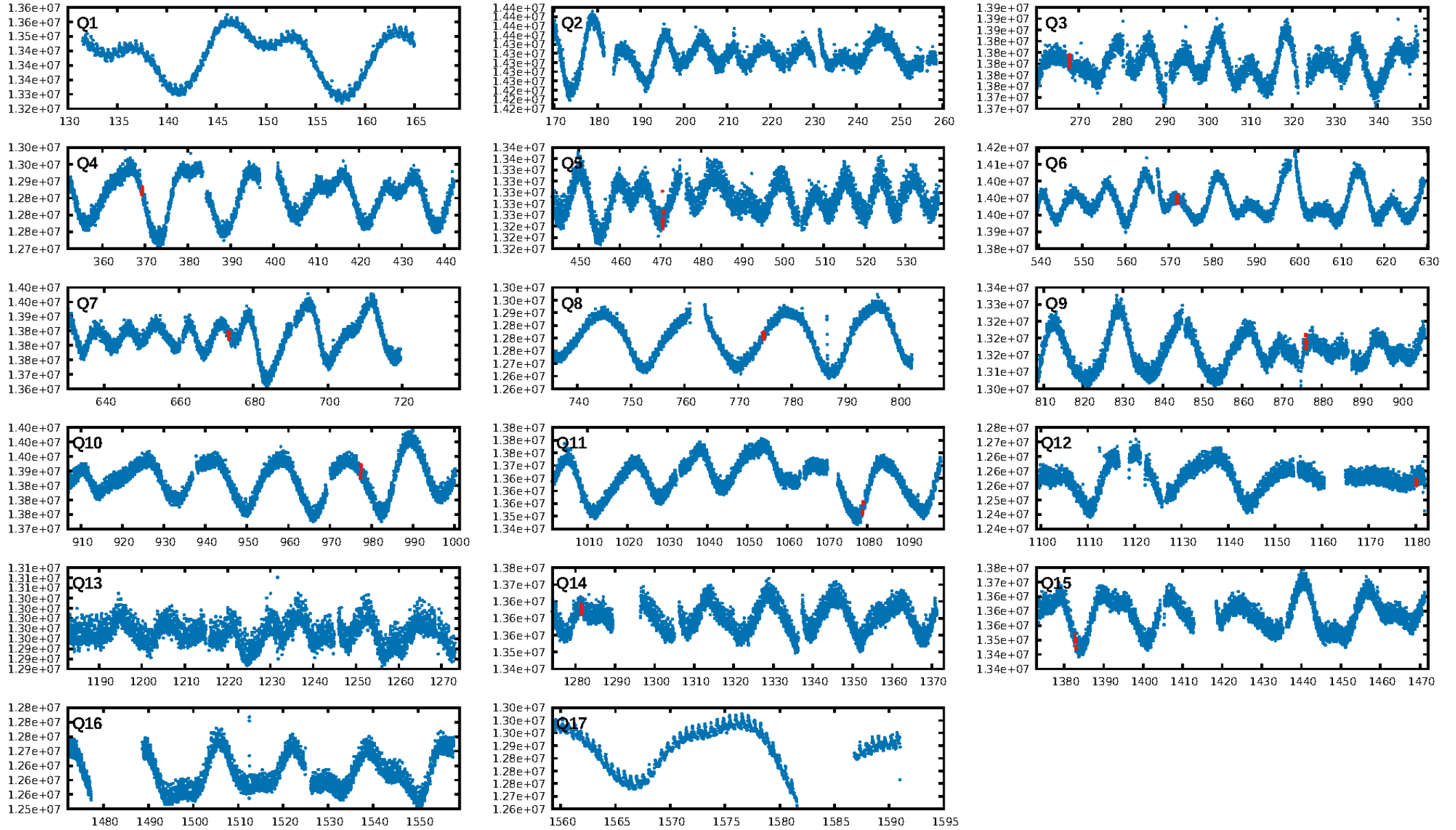
ShortPeriod-sig: 100.0% [120.53 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 38.8%  
ModelChiSquareGof-sig: 99.7%  
Bootstrap-pfa: 4.55e-13  
RollingBand-fgt: 1.00 [6/6]  
GhostDiagnostic-chr: 1.332  
Centroid-sig: 31.8%  
Centroid-so: 0.914 arcsec [1.35 $\sigma$ ]  
OotOffset-rm: 3.957 arcsec [5.75 $\sigma$ ]  
KicOffset-rm: 3.892 arcsec [5.92 $\sigma$ ]  
OotOffset-st: 3/4/2/2 [11]  
KicOffset-st: 3/4/2/2 [11]  
DiffImageQuality-fgm: 0.00 [0/11]  
DiffImageOverlap-fno: 0.00 [0/12]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:05:20 Z

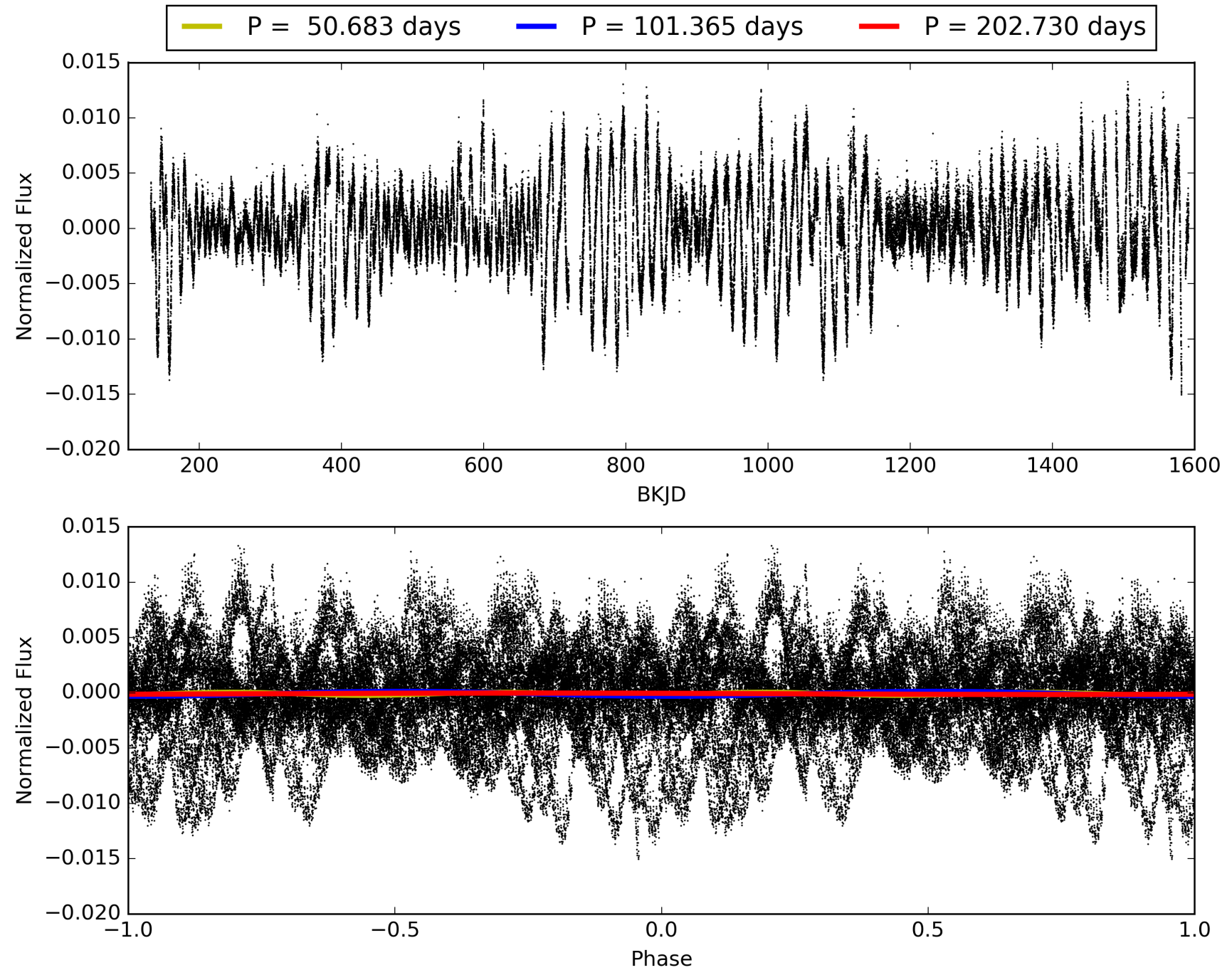
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 007280785-03, PDC Light Curves

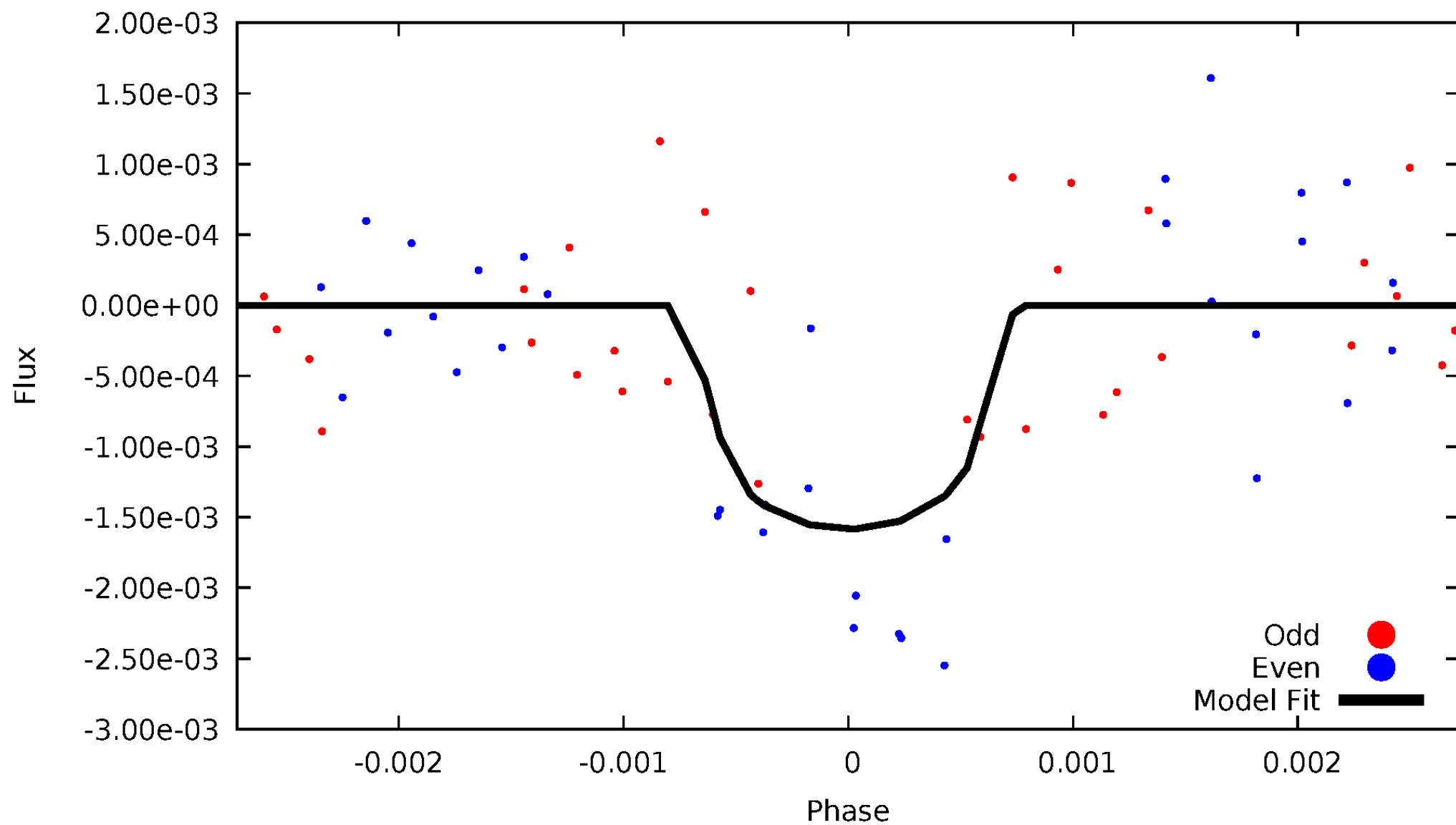


# TCE 007280785-03



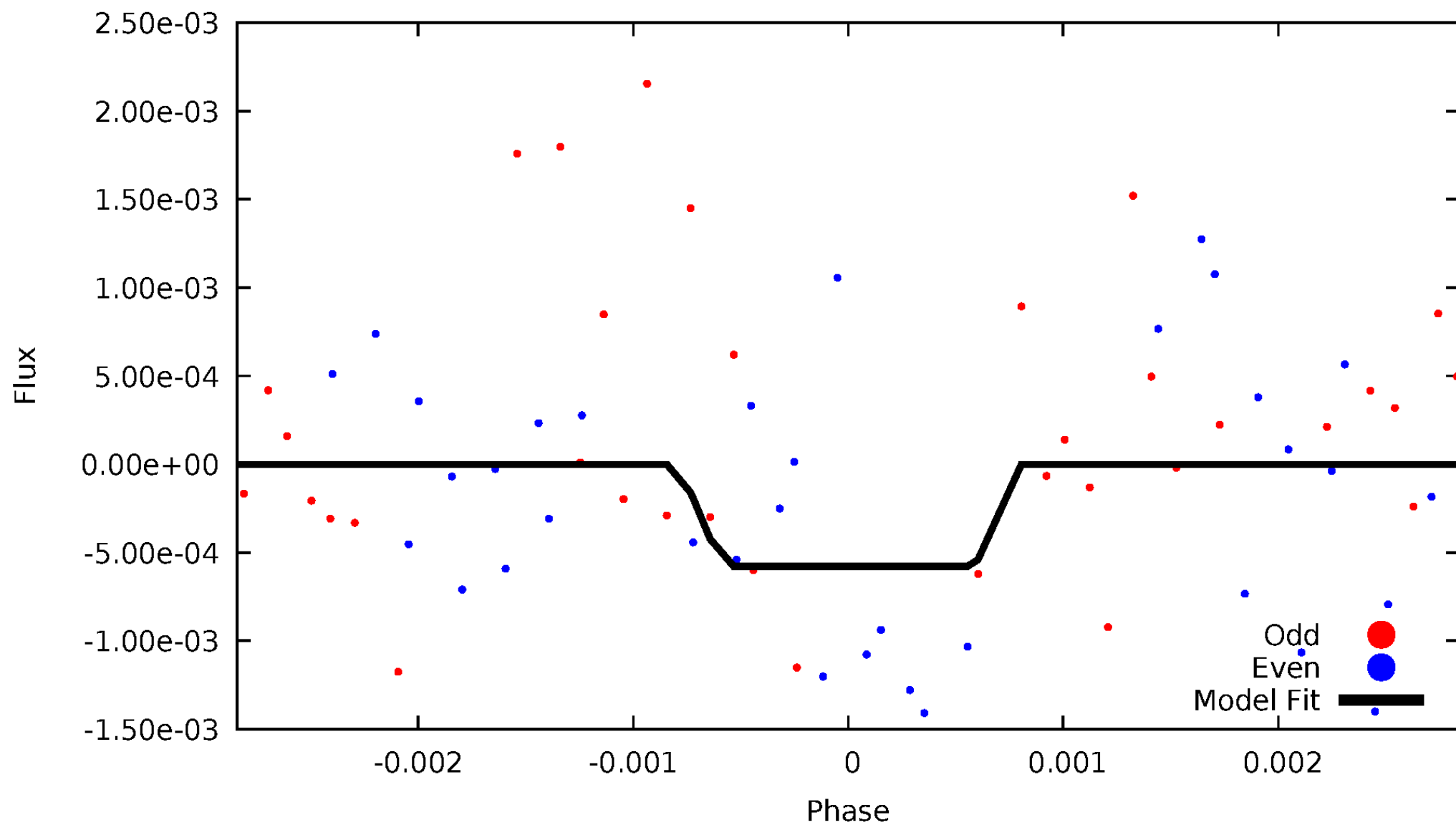
# DV Odd/Even

TCE 007280785-03



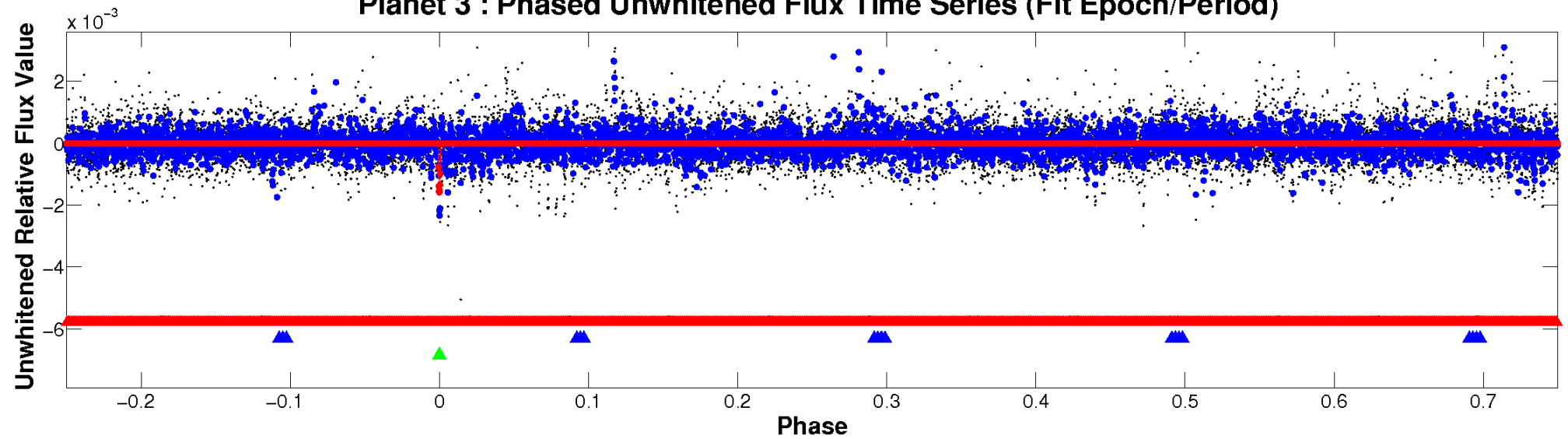
# ALT Odd/Even

TCE 007280785-03

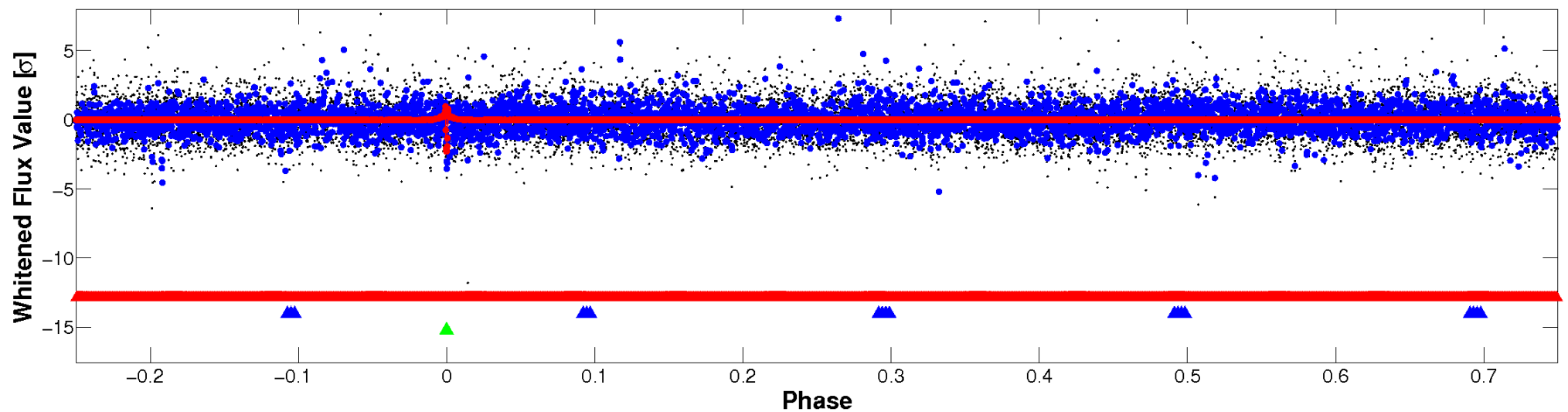


# Non-Whitened Vs. Whitened Light Curve

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

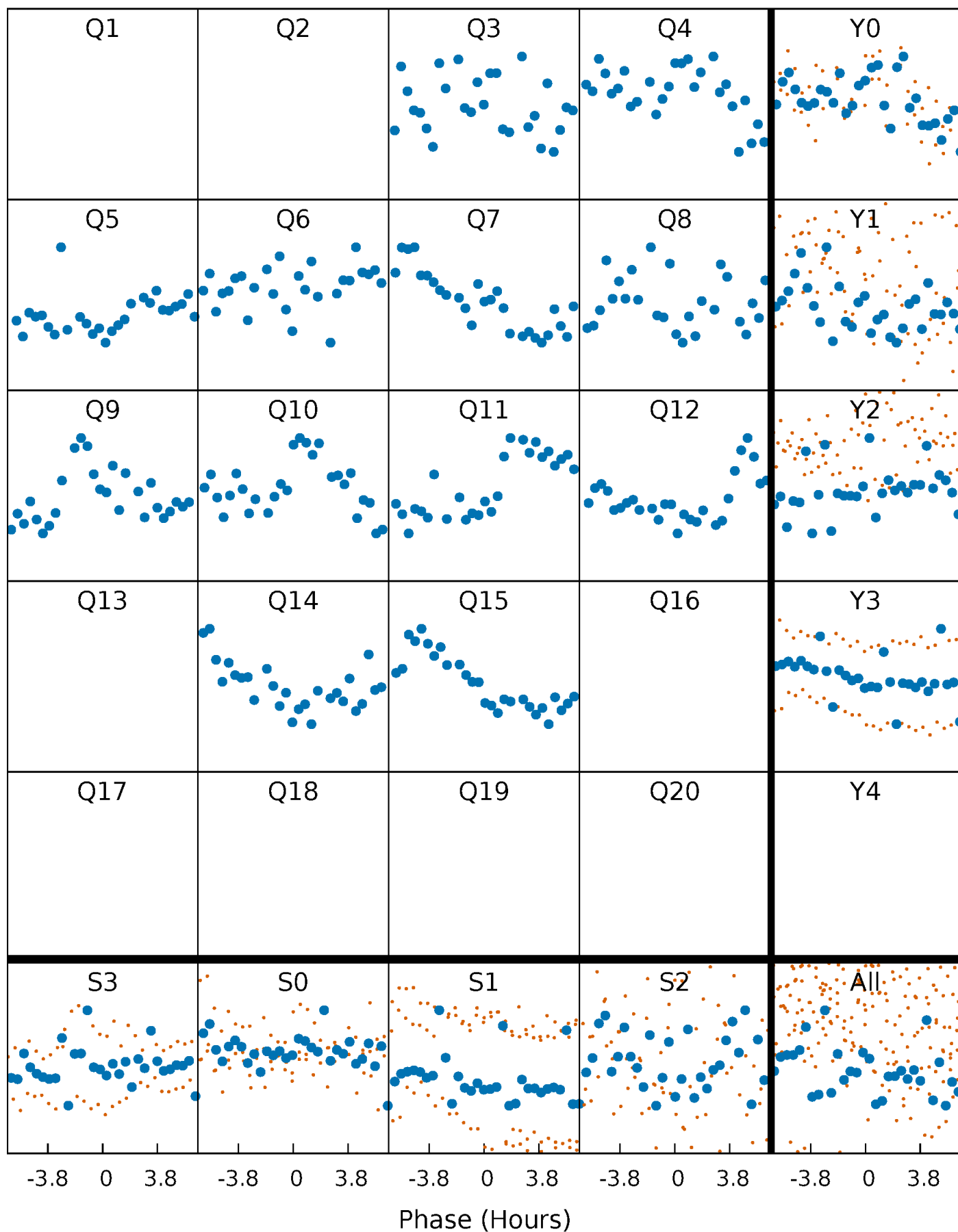


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



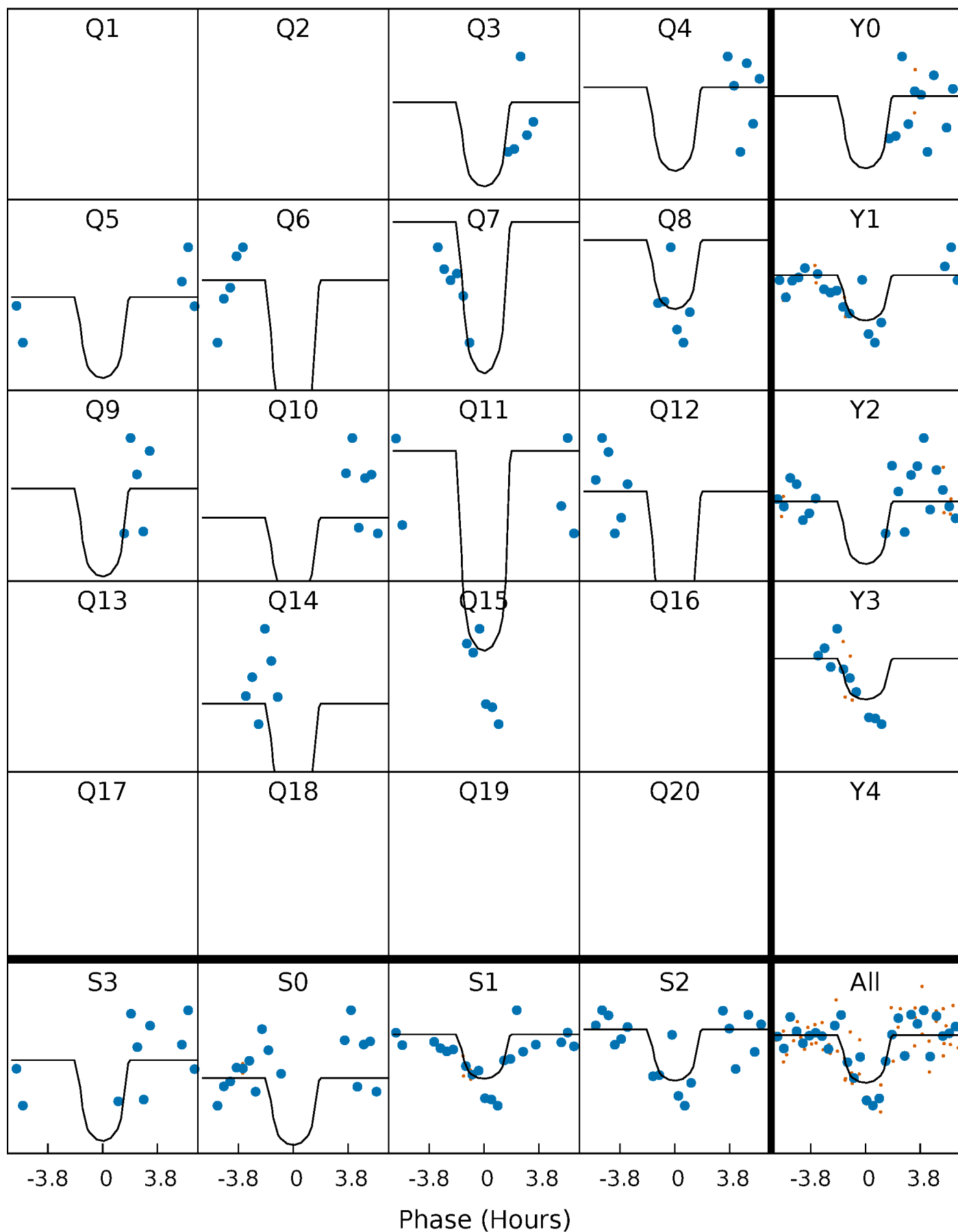
# PDC Quarter-Phased Transit Curves

TCE 007280785-03 P=101.365141 Days  $T_0=166.523709$  (BKJD)



# DV Quarter-Phased Transit Curves

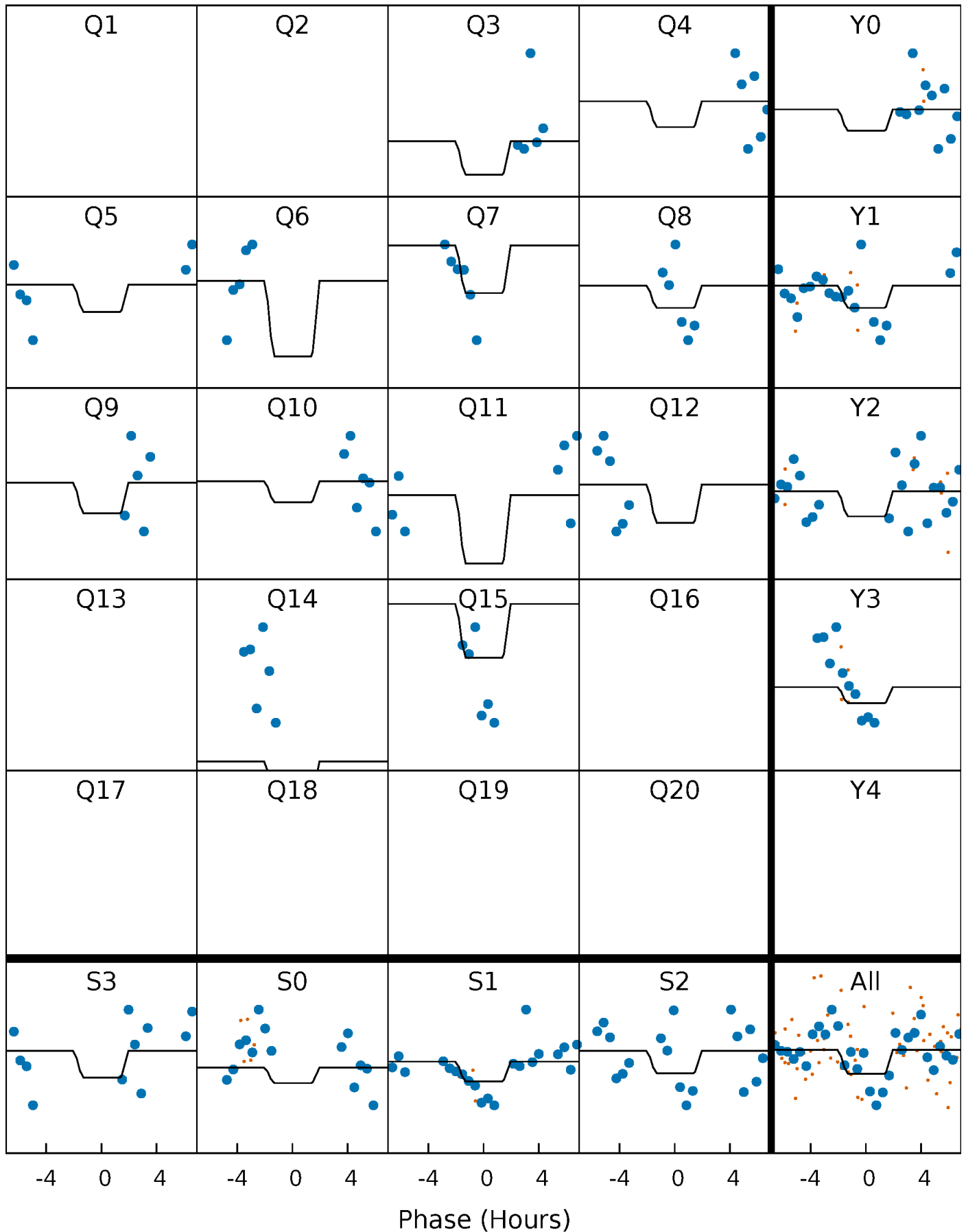
TCE 007280785-03 P=101.365141 Days  $T_0=166.523709$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

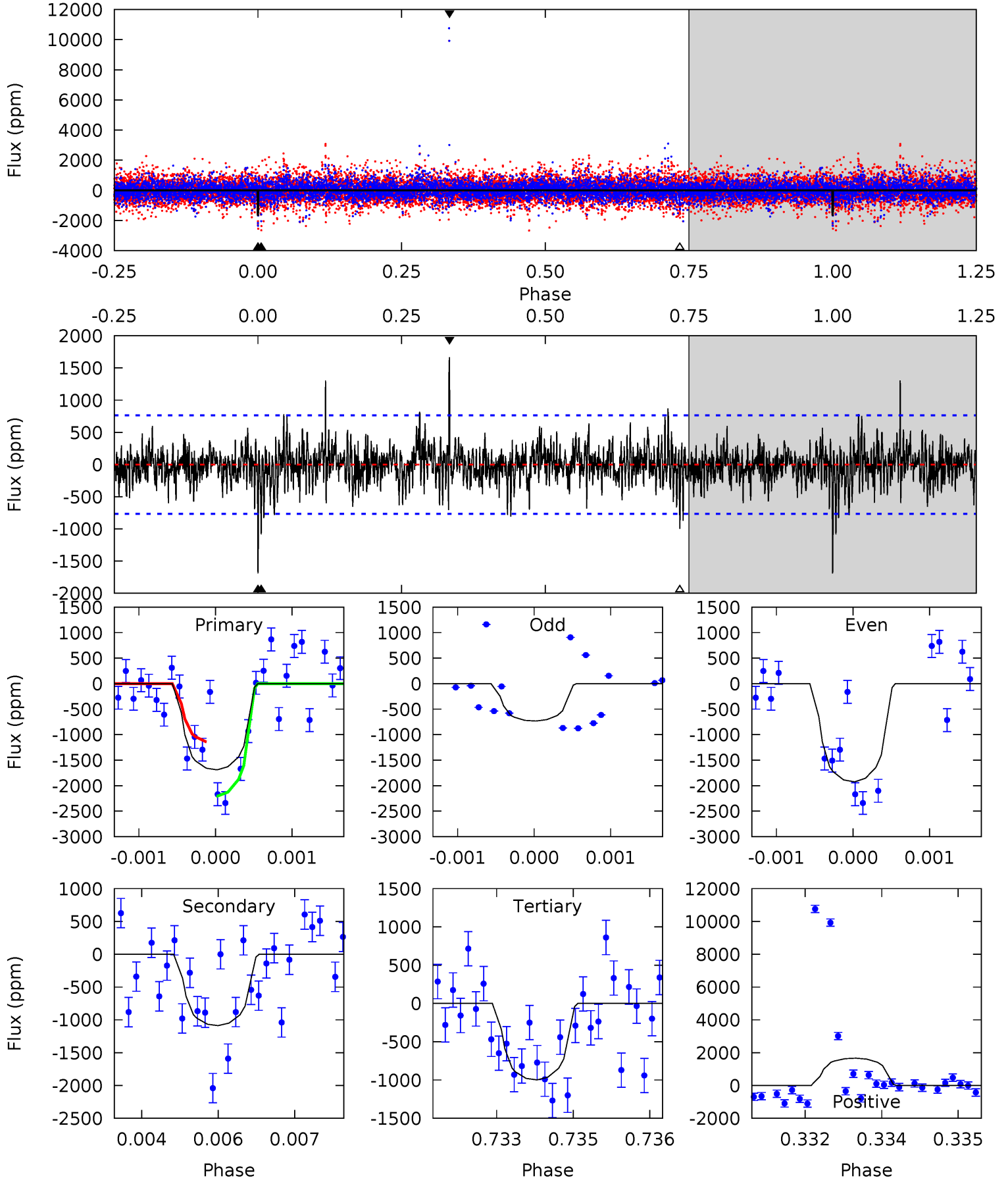
TCE 007280785-03 P=101.369508 Days  $T_0=166.485578$  (BKJD)



# DV Model-Shift Uniqueness Test

007280785-03, P = 101.365141 Days, E = 65.158568 Days

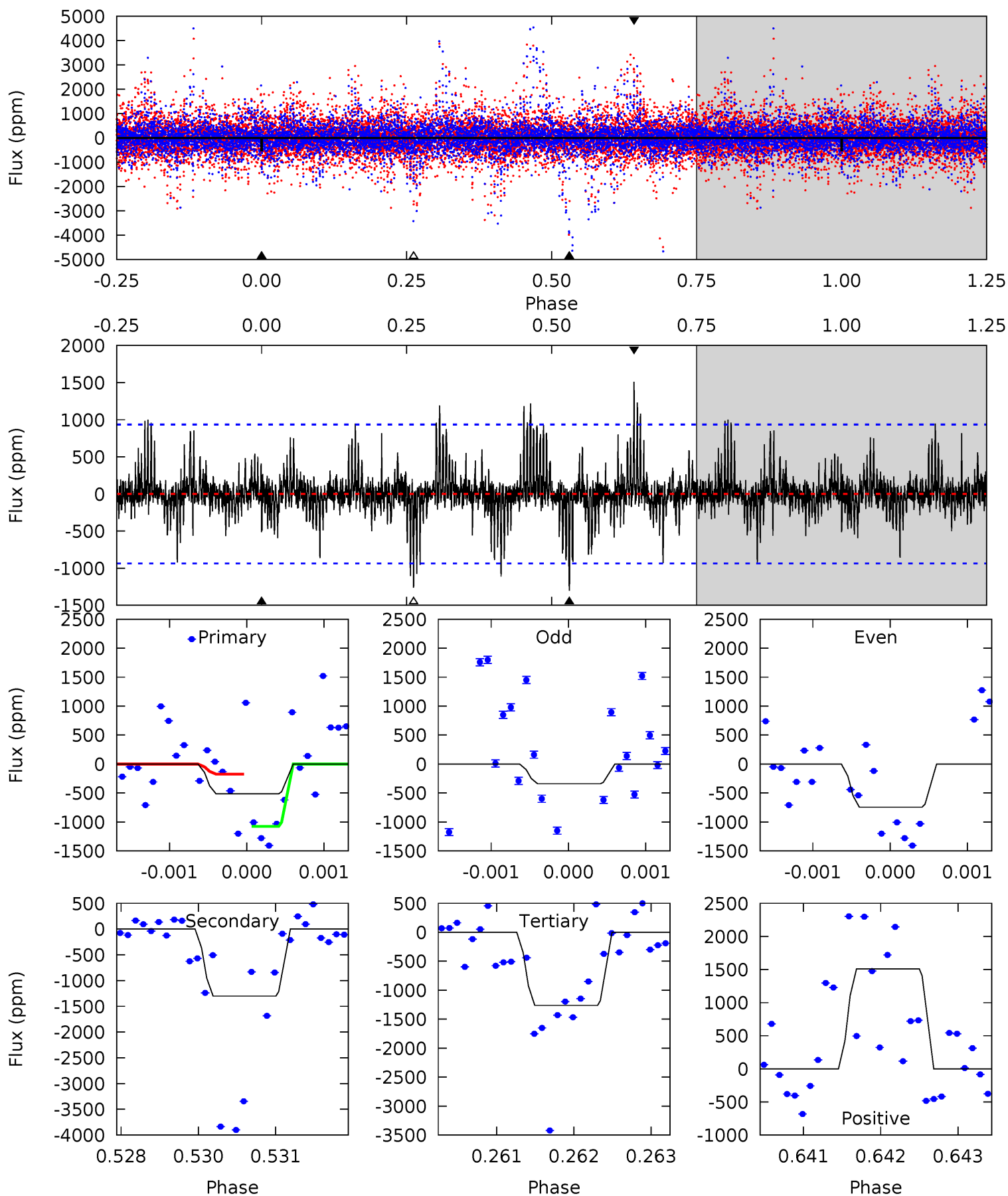
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	7.64	7.02	11.7	5.39	3.19	1.63	4.86	0.16	0.63	-4.07	3.89	0.81	0.50	3.75



# Alt Model-Shift Uniqueness Test

007280785-03, P = 101.369508 Days, E = 65.116070 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
2.96	7.51	7.29	8.71	5.40	3.21	1.40	-4.33	-5.75	0.22	-1.20	0.91	0.47	0.54	2.42



### Stellar Parameters For KIC 007280785

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5128^{+153}_{-153}$	$4.546^{+0.078}_{-0.052}$	$-0.300^{+0.350}_{-0.300}$	$0.749^{+0.081}_{-0.081}$	$0.719^{+0.095}_{-0.051}$	$2.413^{+0.813}_{-0.472}$
	+3%/-3%	+2%/-1%	+117%/-100%	+11%/-11%	+13%/-7%	+34%/-20%
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 007280785-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-1087 \pm 142$	$6.75^{+6.25}_{-4.70}$	$441^{+16}_{-17}$	$3654^{+2079}_{-702}$	$1885^{+19248}_{-1373}$
Alt.	$-1301 \pm 173$	$6.14^{+6.36}_{-4.22}$	$442^{+17}_{-18}$	$3873^{+2433}_{-770}$	$2812^{+25925}_{-2128}$

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

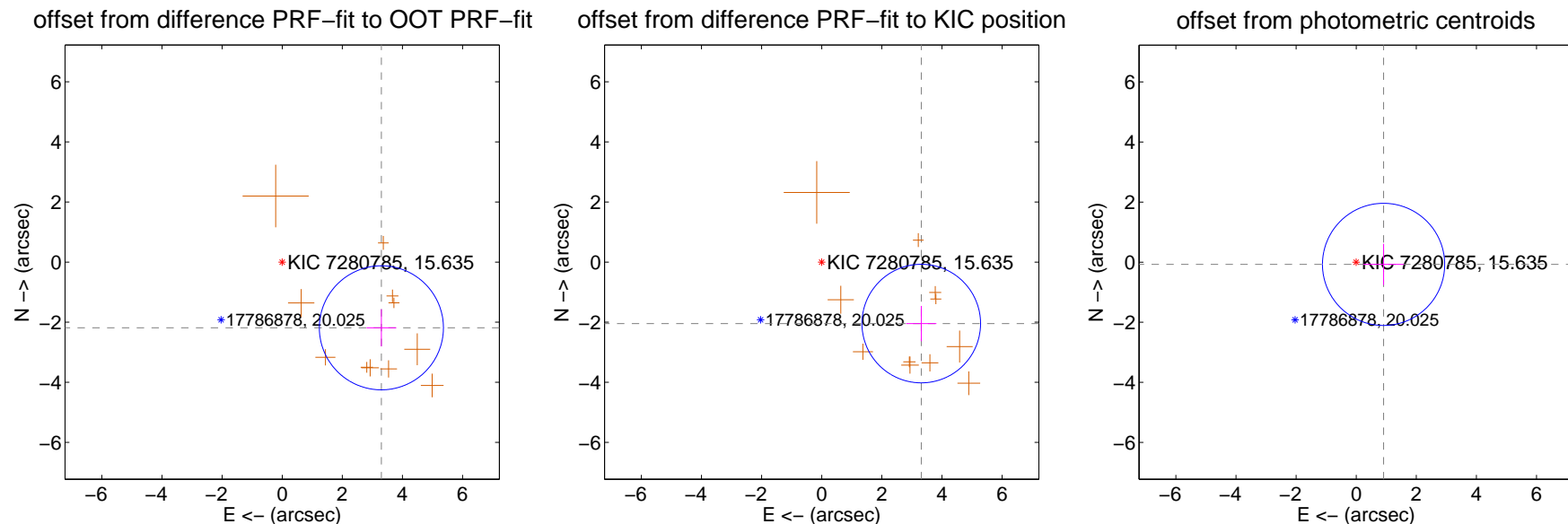
## DV Centroid Data

Supplemental centroid analysis for 007280785-03. Kepler magnitude: 15.63. Transit SNR 8.20

There are 0 quarters with good PRF difference image offsets

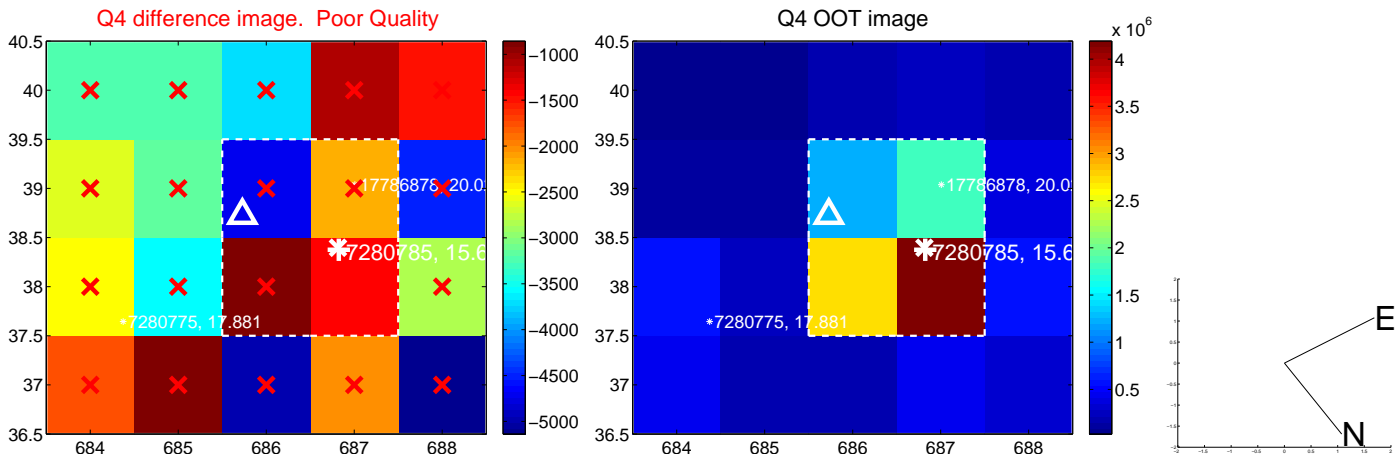
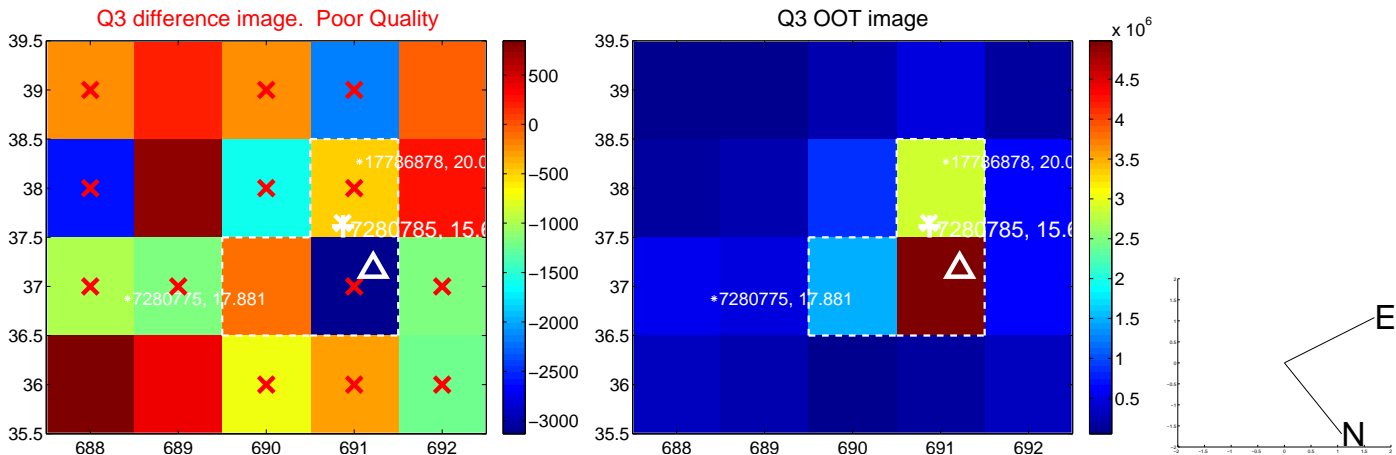
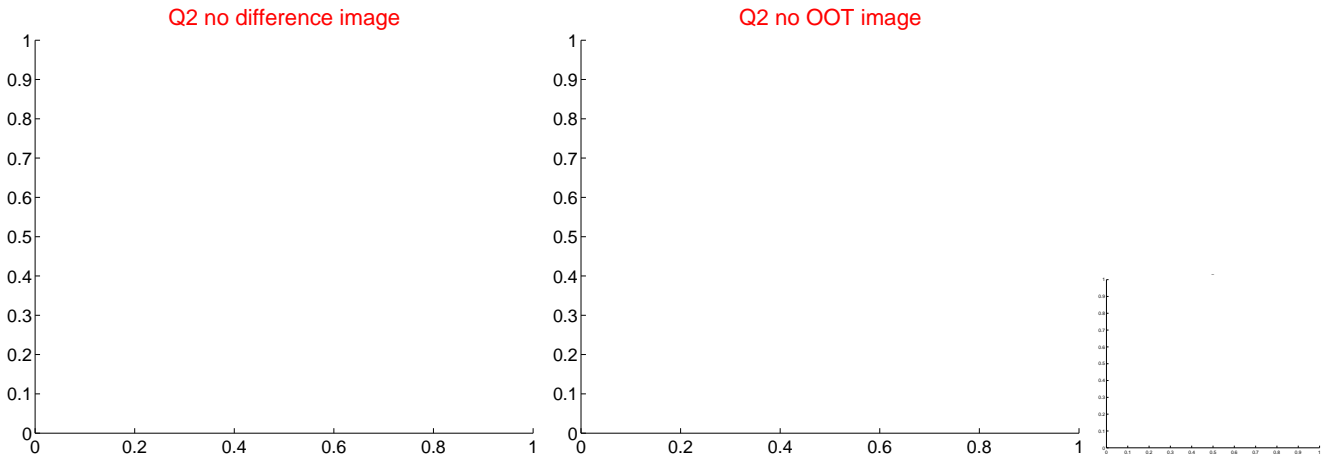
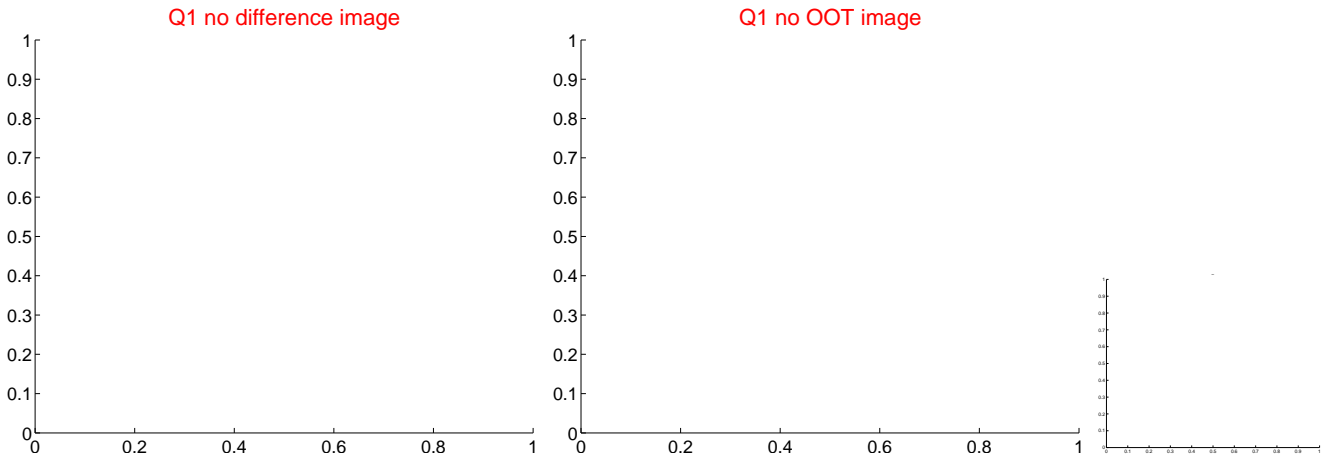
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.957 \pm 0.688$	5.75	$-3.298 \pm 0.494$	$-2.187 \pm 0.618$
PRF-fit source offset from KIC position	$3.892 \pm 0.657$	5.92	$-3.311 \pm 0.502$	$-2.046 \pm 0.589$
photometric centroid source offset	$0.91 \pm 0.68$	1.35	$-0.91 \pm 0.68$	$-0.07 \pm 0.68$

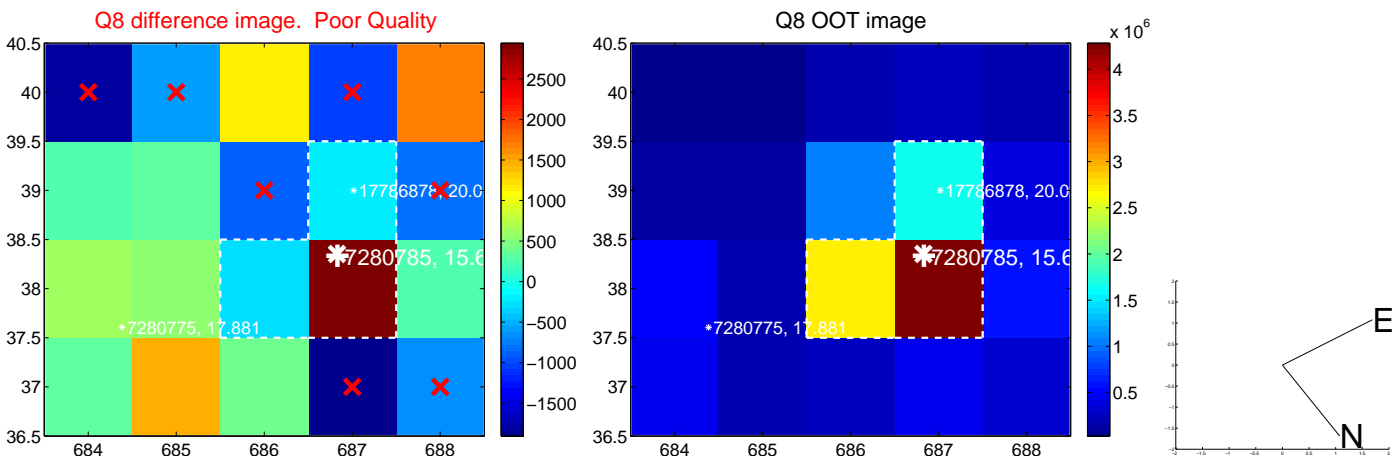
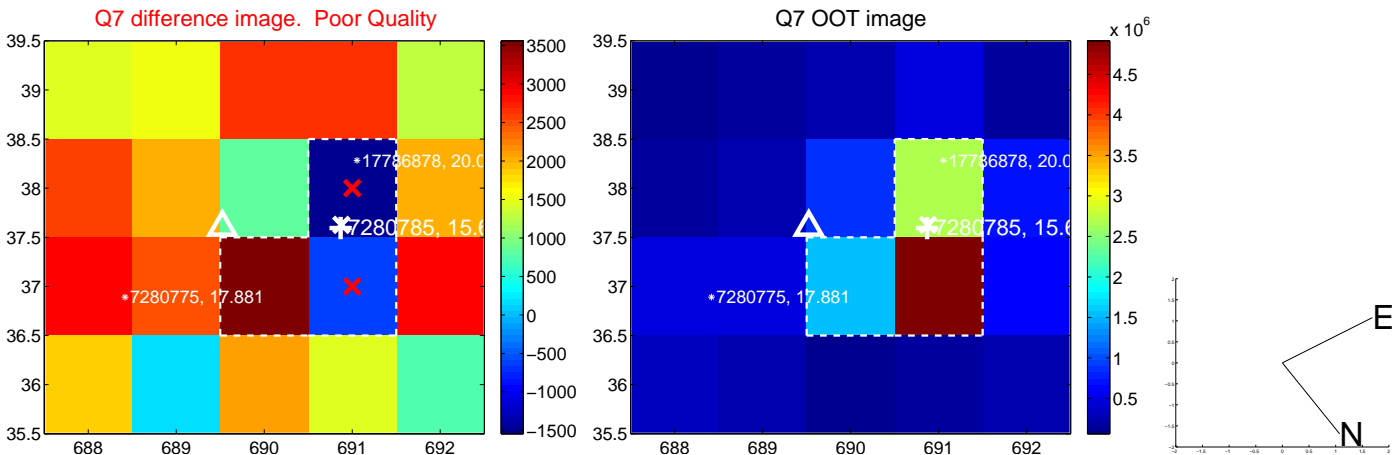
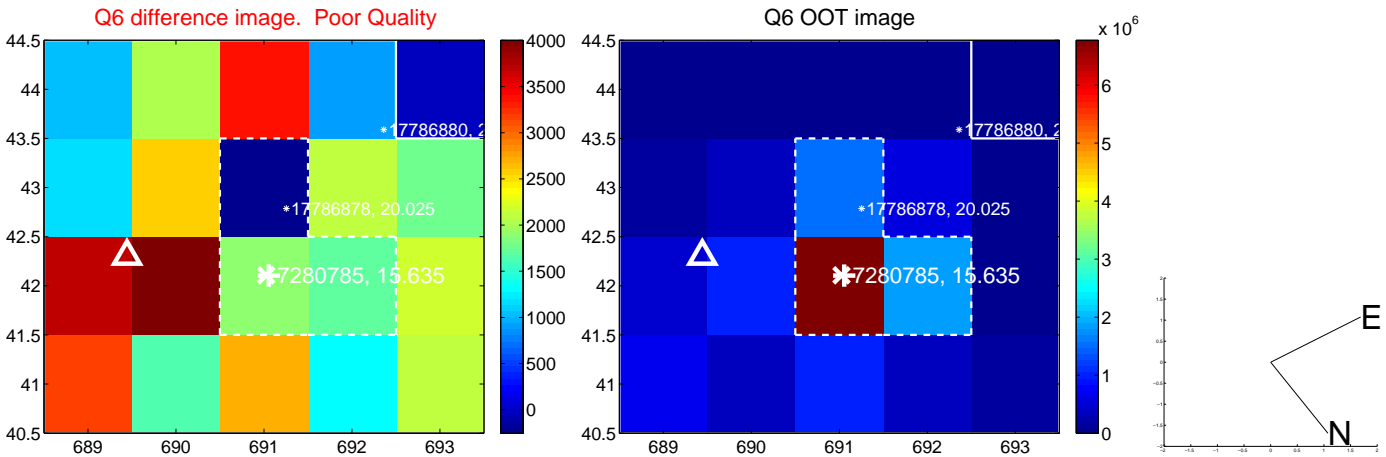
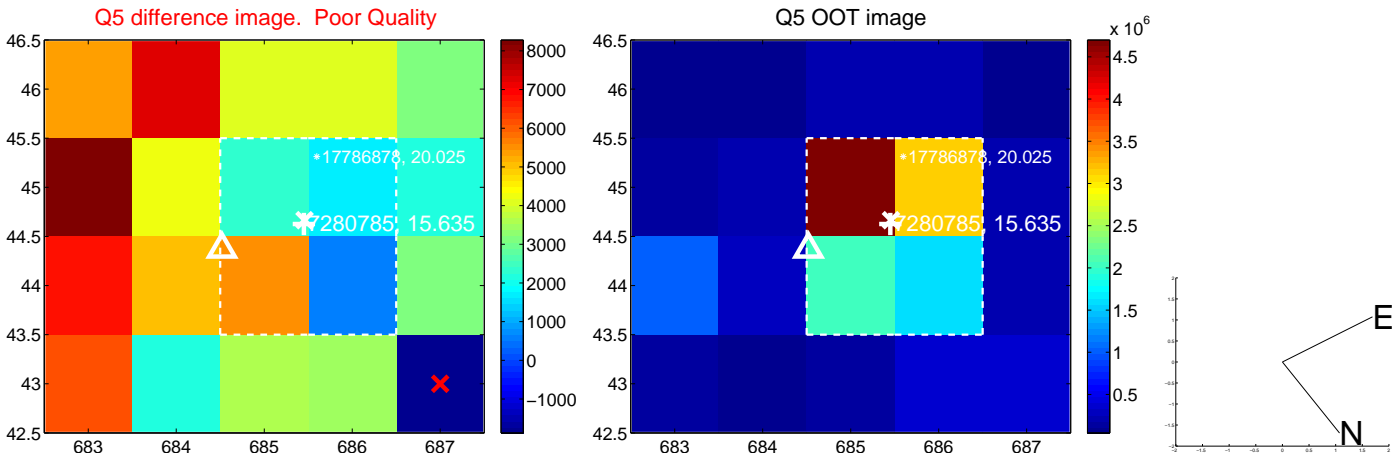


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

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

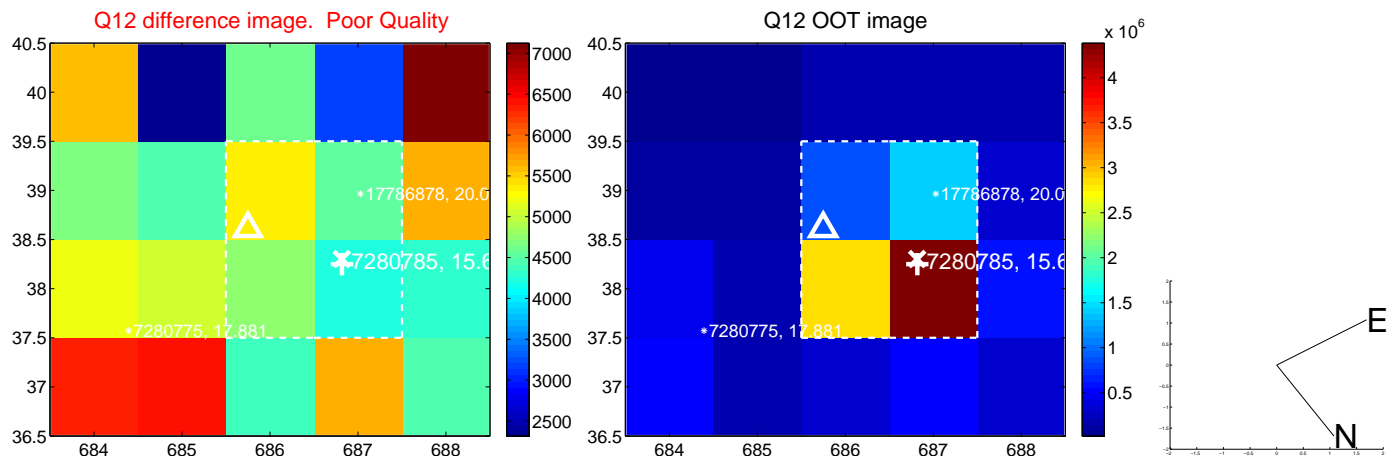
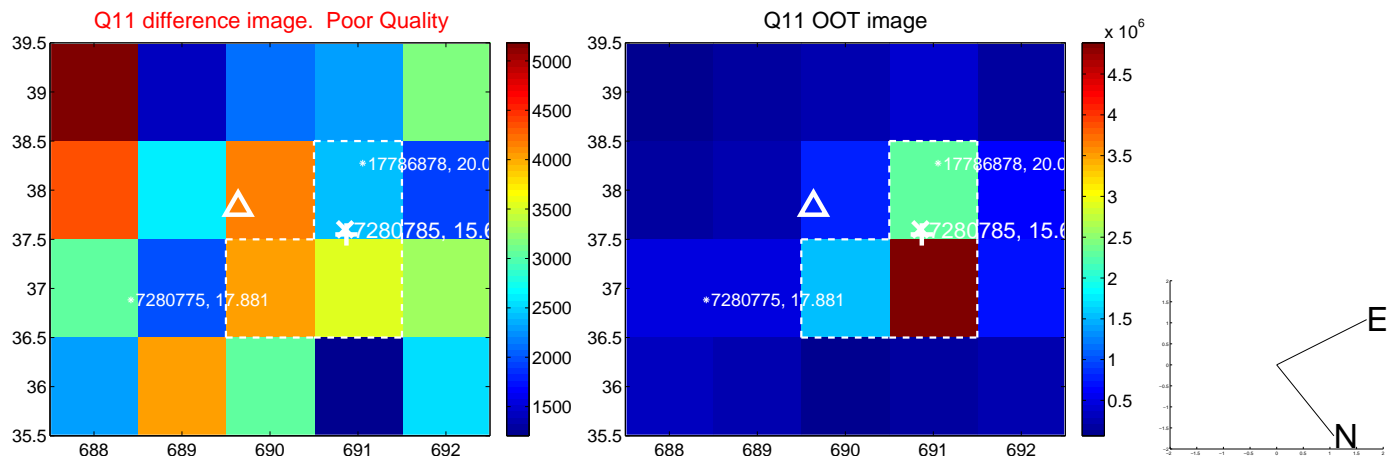
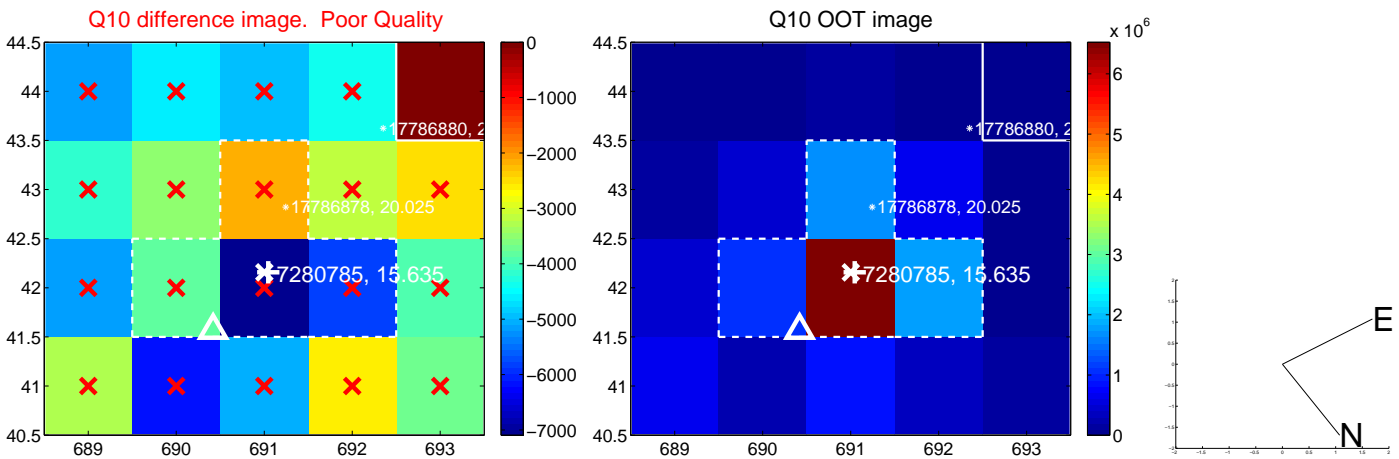
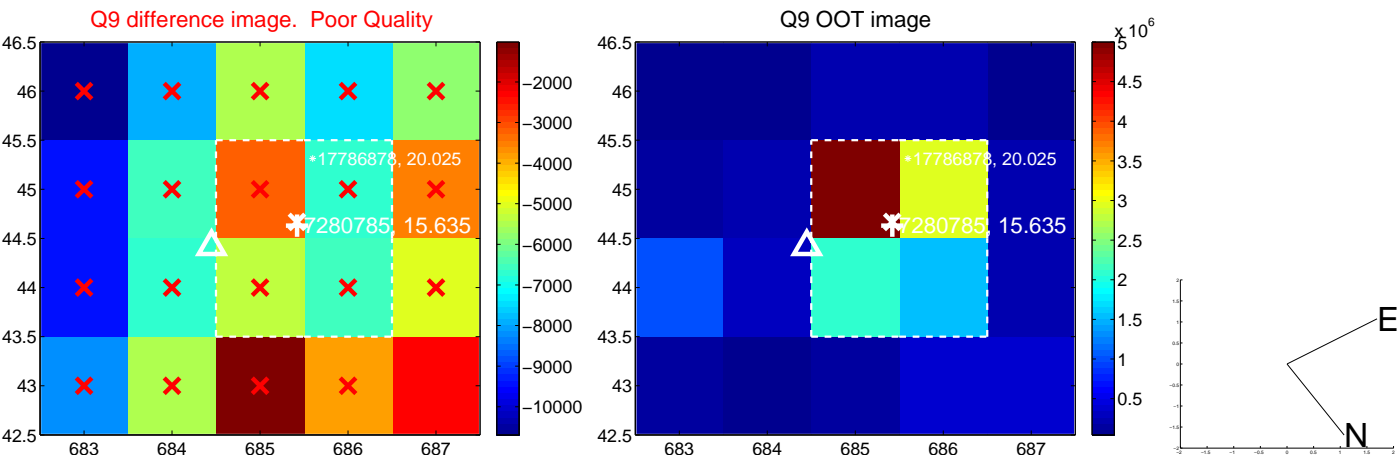


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

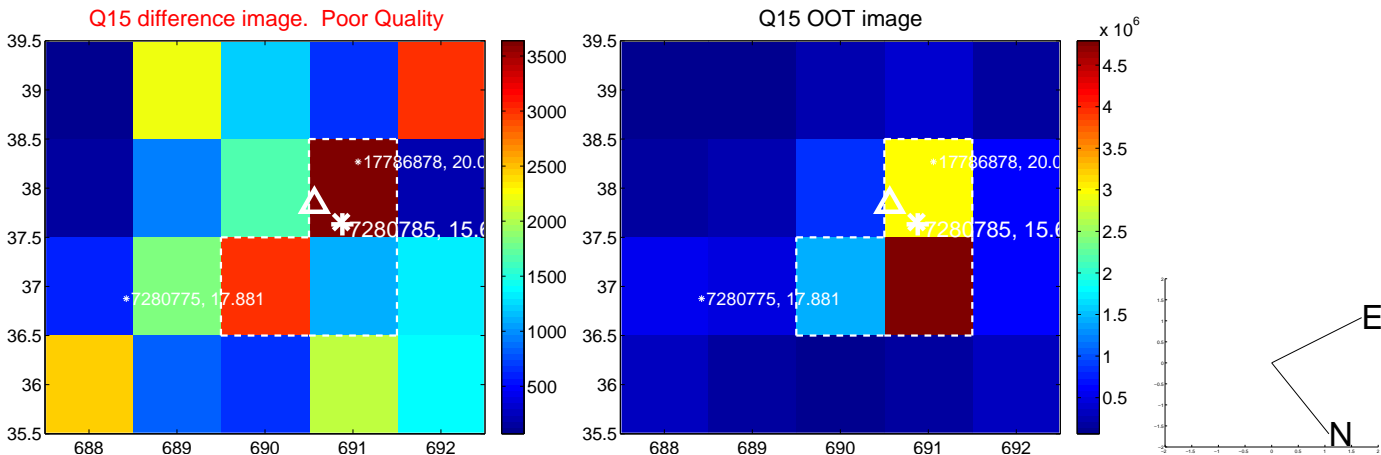
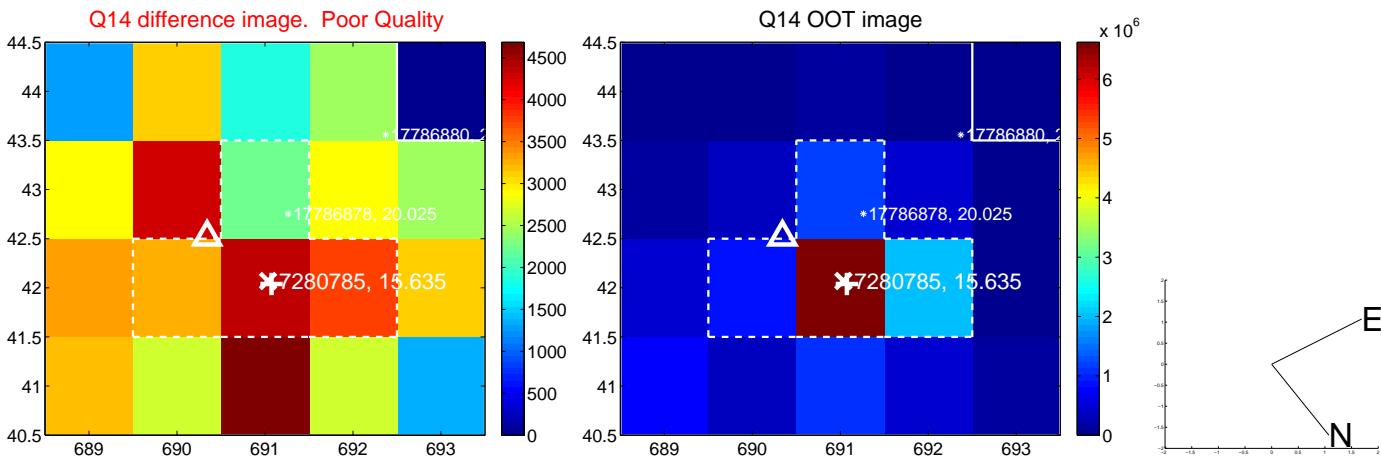




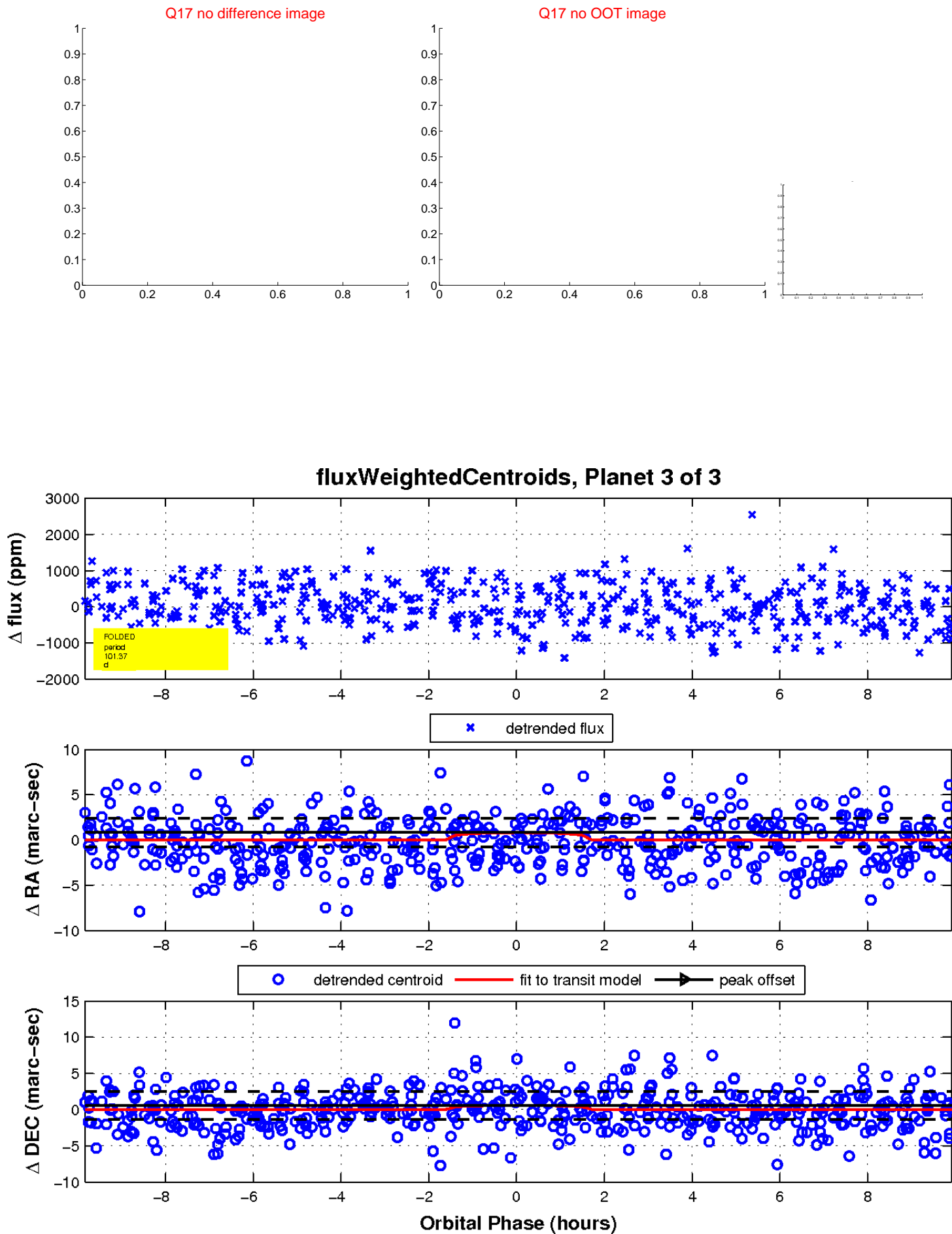
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



# UKIRT Image

Declination

