

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007200463-01	OBS	No	0.566758	131.840663	30.2	3.735	8.9	4.8	0.57	3907	0.30	544.02
007200463-02	OBS	No	69.558006	189.973834	1591.5	0.599	9.5	6.6	0.57	3907	2.38	0.89
007200463-03	OBS	No	30.758930	159.909444	759.5	1.554	9.9	7.2	0.57	3907	1.65	2.65
007200463-04	OBS	No	29.082206	151.599782	987.7	2.567	8.8	9.4	0.57	3907	2.41	2.85
007200463-05	OBS	No	40.105384	144.167690	943.7	2.453	7.6	9.2	0.57	3907	1.99	1.86
007200463-06	OBS	No	16.502004	140.509425	986.5	0.762	9.3	9.4	0.57	3907	1.78	6.07
007200463-07	OBS	No	32.122218	142.928559	1031.9	1.754	7.9	8.3	0.57	3907	1.78	2.50
007200463-08	OBS	No	56.830874	139.594999	950.5	2.699	8.2	9.6	0.57	3907	2.05	1.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007200463-01	OBS	FP	0.00	1	0	0	1	LPP_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS—EPHEM_MATCH
007200463-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200463-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS
007200463-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200463-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200463-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
007200463-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007200463-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

**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.

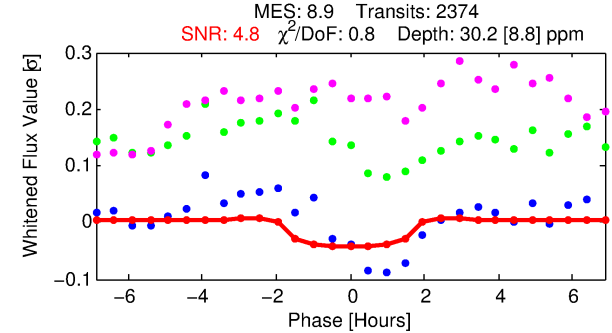
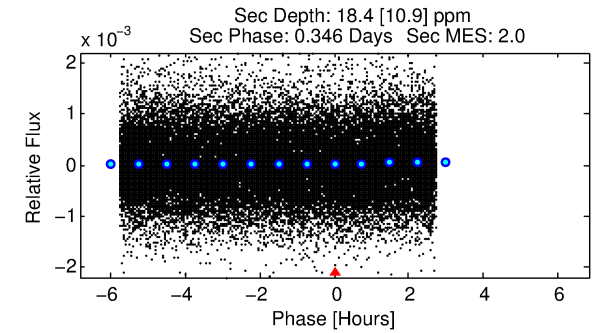
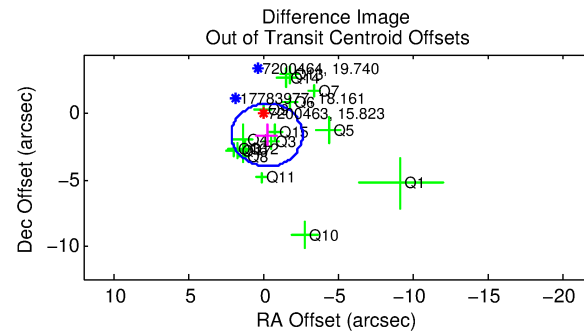
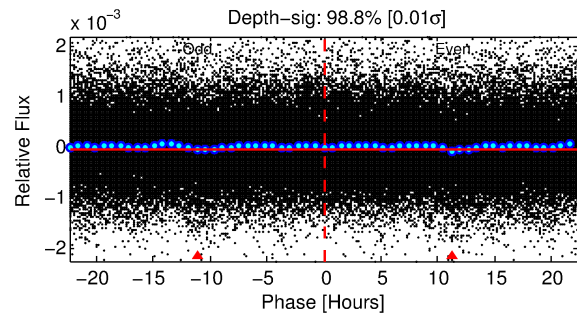
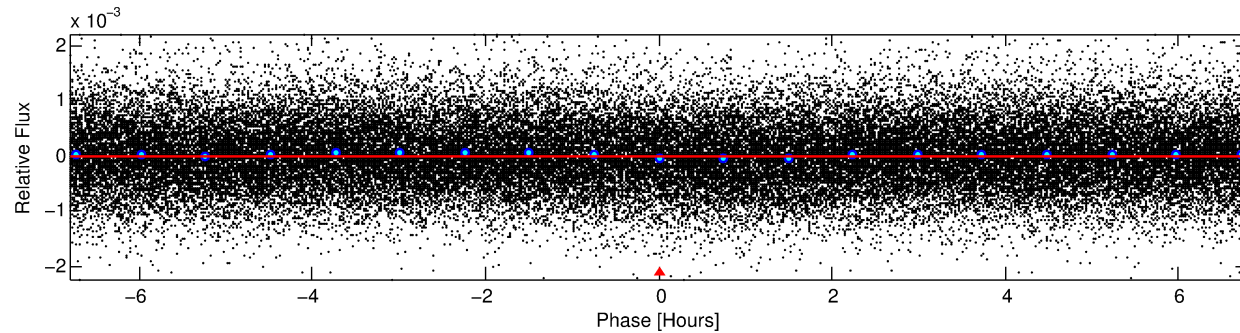
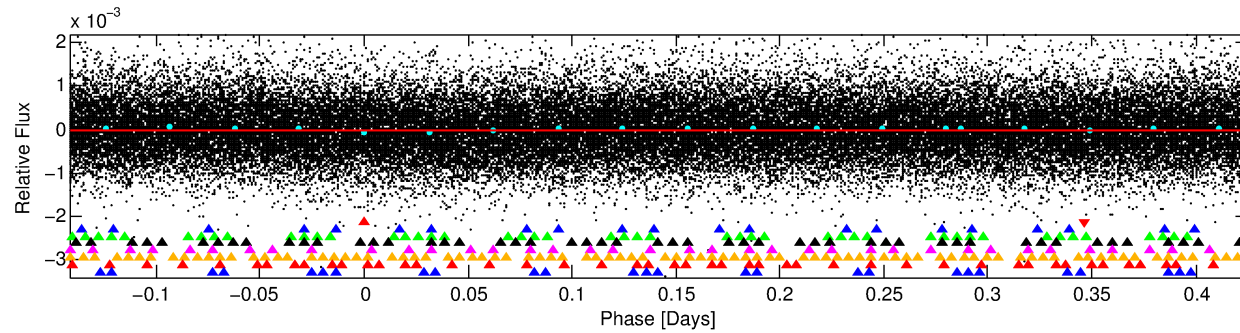
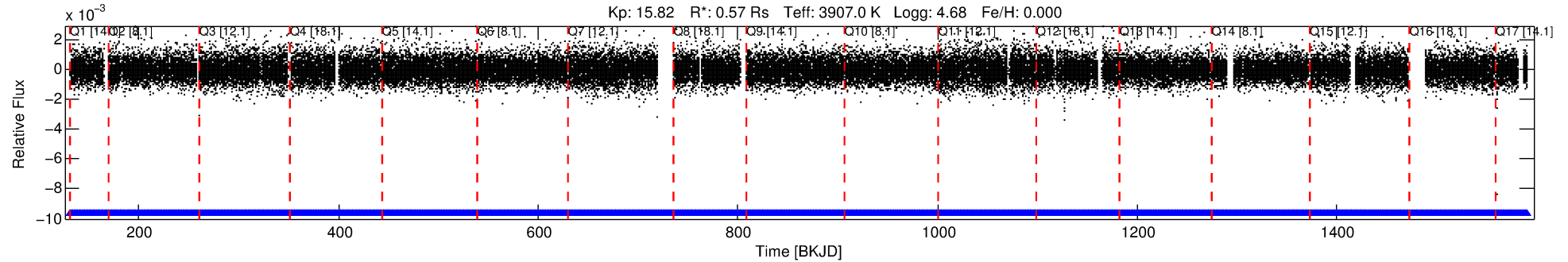
## Ephemeris Match Information For 007200463-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
007200463-01	7200463	RR-Lyr-pri	7198959	1:1	1228.9	212	224	7.86	15.82	20777.00	Direct-PRF	0	2.04	24.11

**Notes:**  $P_1:P_2$  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.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  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: 7200463 Candidate: 1 of 8 Period: 0.567 d



## DV Fit Results:

Period = 0.56676 [0.00002] d  
Epoch = 131.8407 [0.0083] BKJD  
Rp/R\* = 0.0049 [0.0110]  
a/R\* = 1.32 [4.62]  
b = 0.10 [82.94]  
Seff = 544.02 [61.08]  
Teq = 1231 [35] K  
Rp = 0.30 [0.68] Re  
a = 0.0111 [0.0006] AU  
Ag = 13.47 [60.44] [0.21 $\sigma$ ]  
Teffp = 3648 [4092] K [0.59 $\sigma$ ]

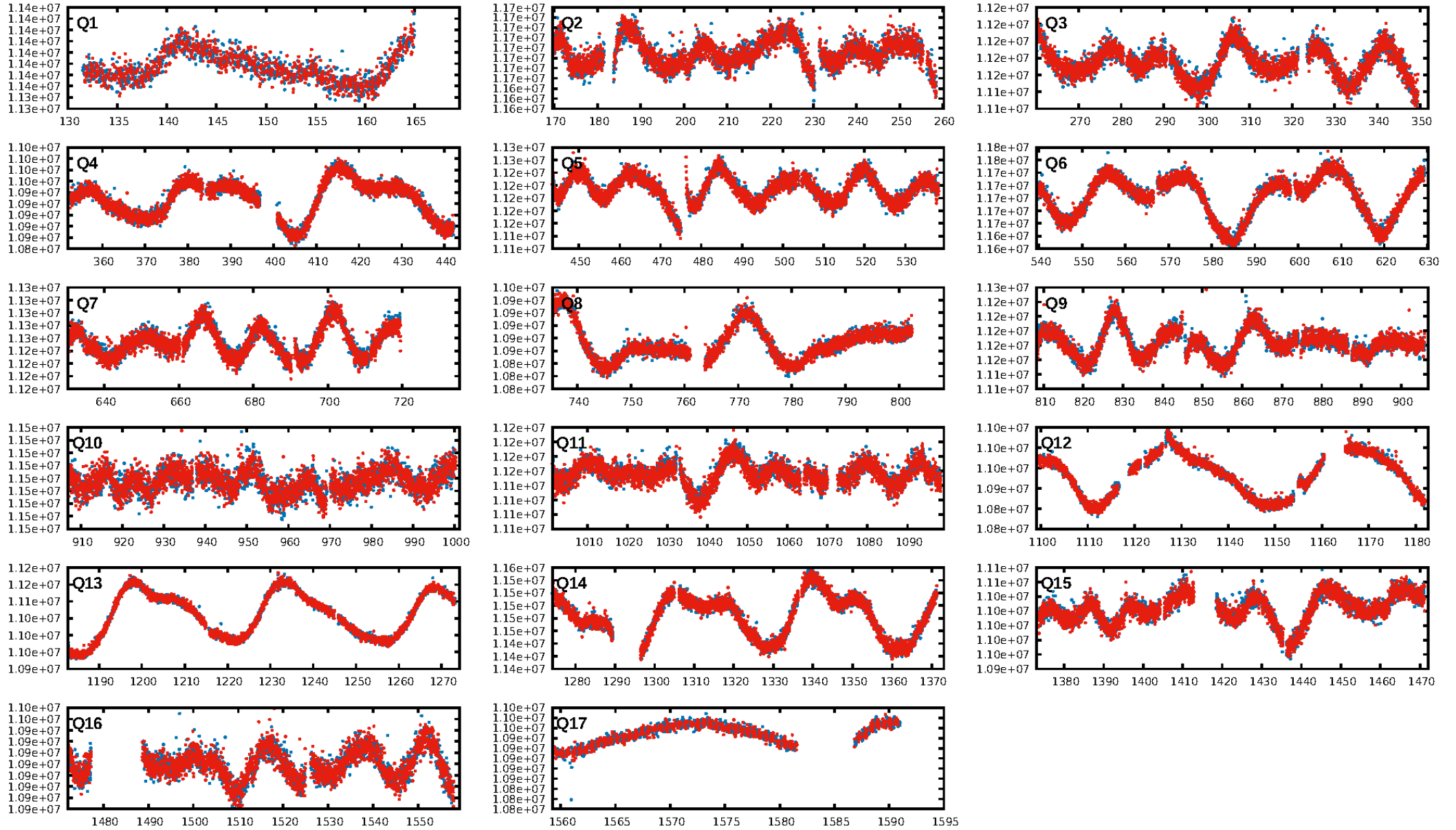
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [100.34 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.46e-13  
RollingBand-fgt: 1.00 [2268/2268]  
**GhostDiagnostic-chr: 0.3068**  
Centroid-sig: 2.0%  
Centroid-so: 4.208 arcsec [1.67 $\sigma$ ]  
OotOffset-rm: 1.617 arcsec [2.04 $\sigma$ ]  
OotOffset-st: 3/4/4/5 [16]  
KicOffset-rm: 1.955 arcsec [2.59 $\sigma$ ]  
KicOffset-st: 3/4/4/5 [16]  
DiffImageQuality-fgm: 0.19 [3/16]  
DiffImageOverlap-fno: 1.00 [17/17]

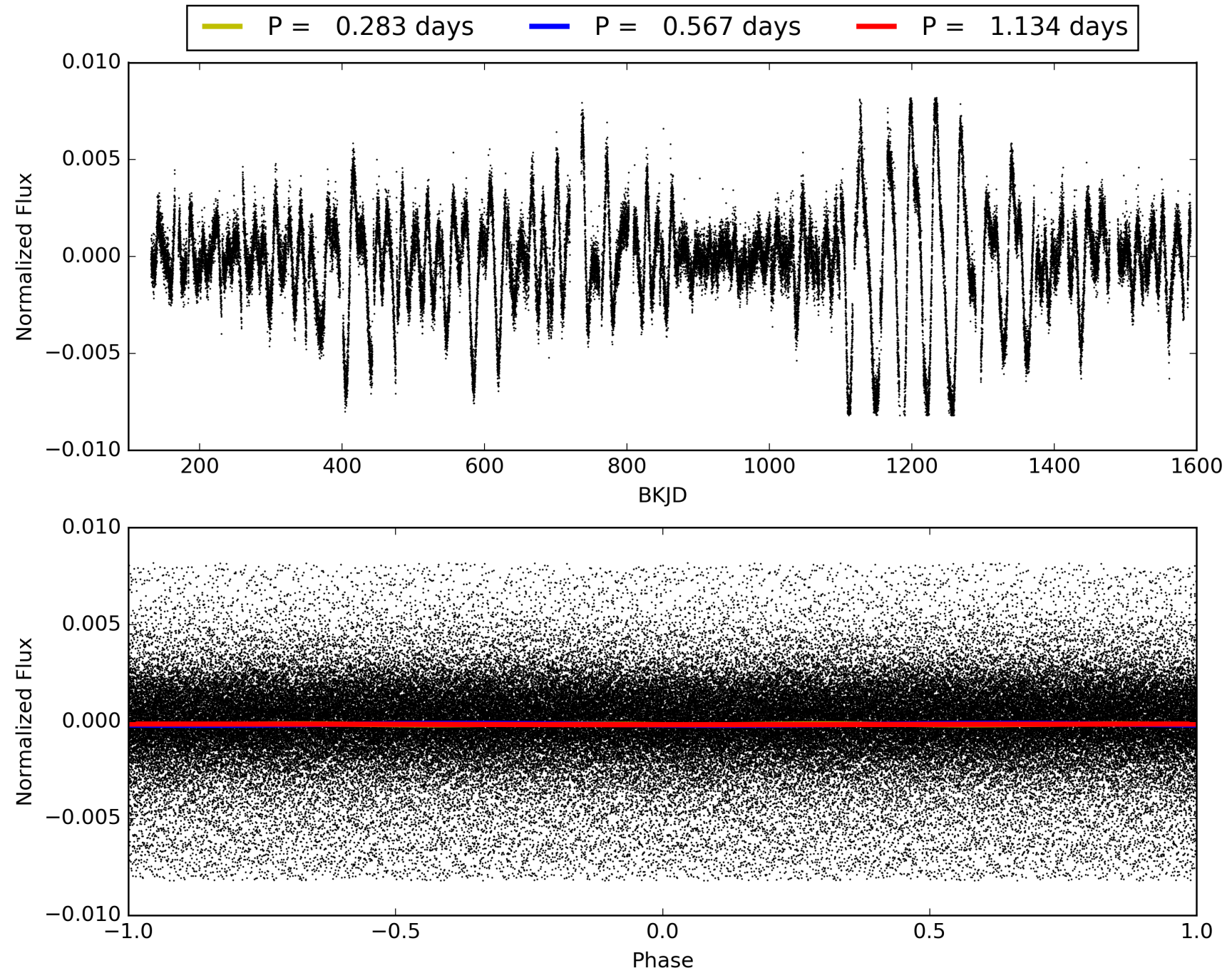
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 07:12:42 Z

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

# TCE 007200463-01, PDC Light Curves



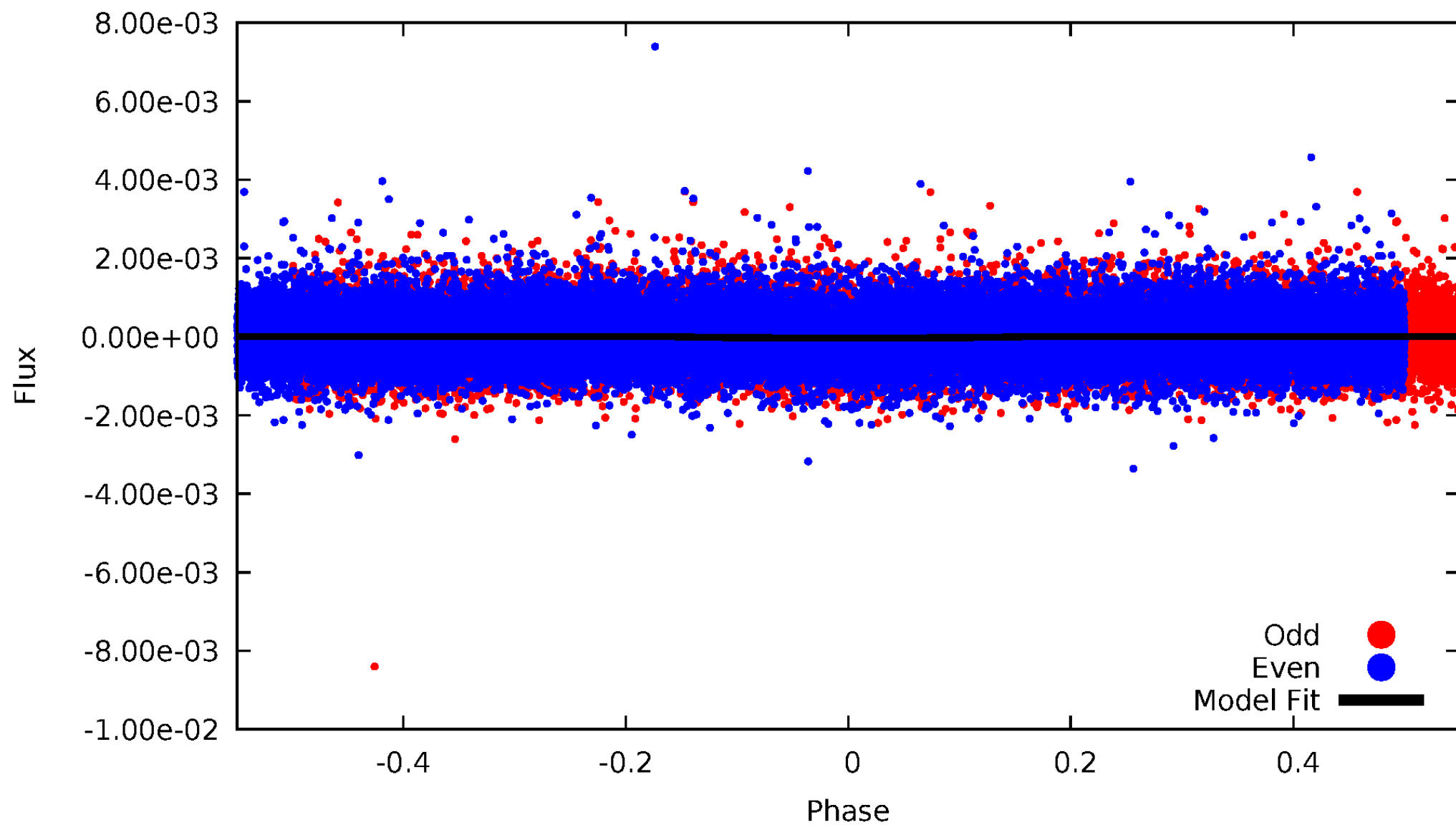
TCE 007200463-01





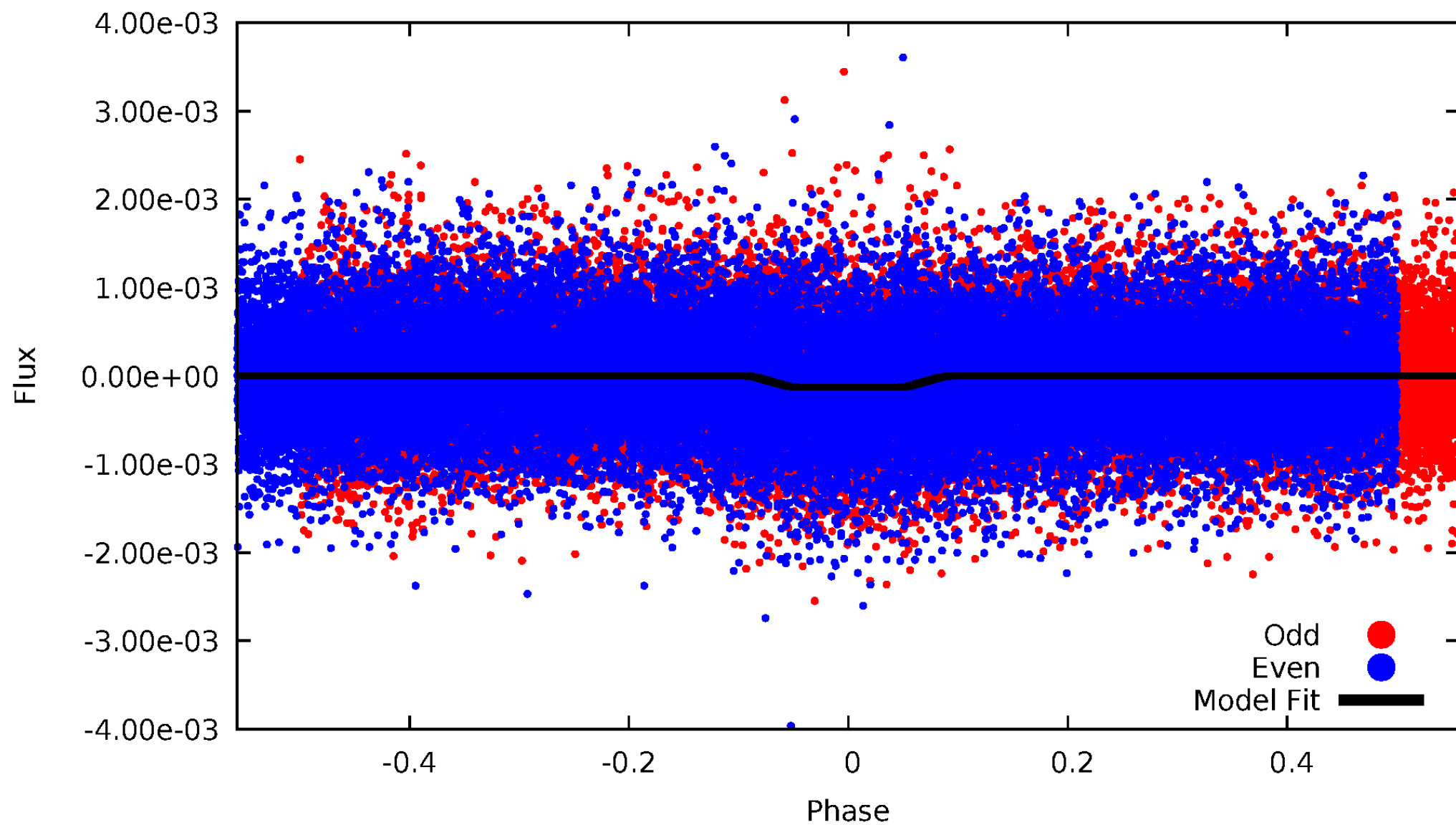
# DV Odd/Even

TCE 007200463-01

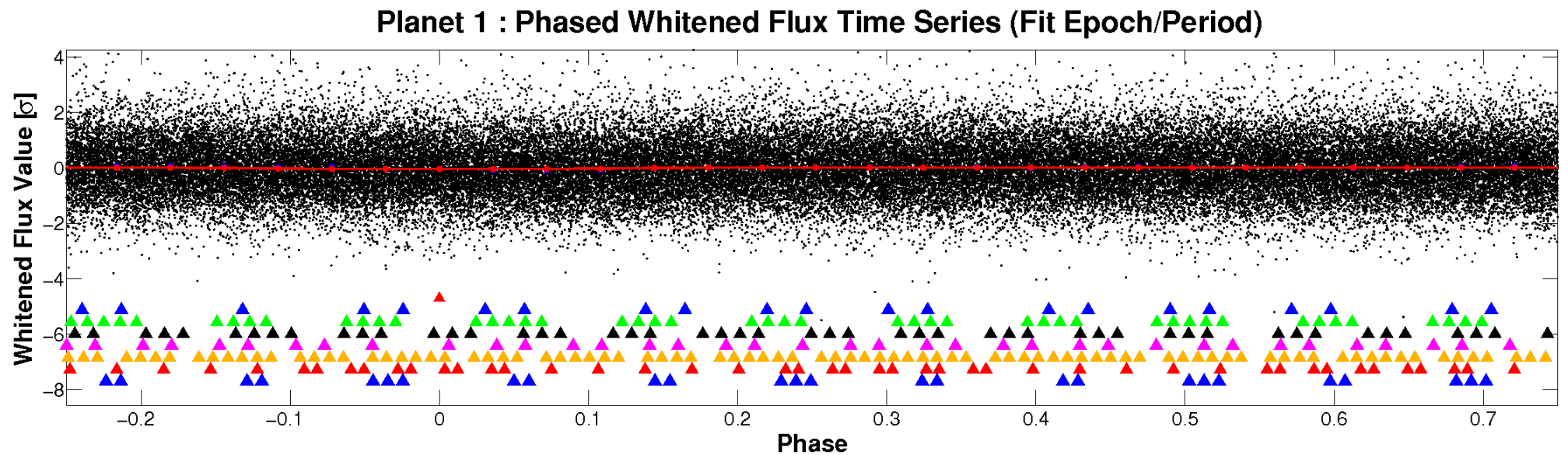
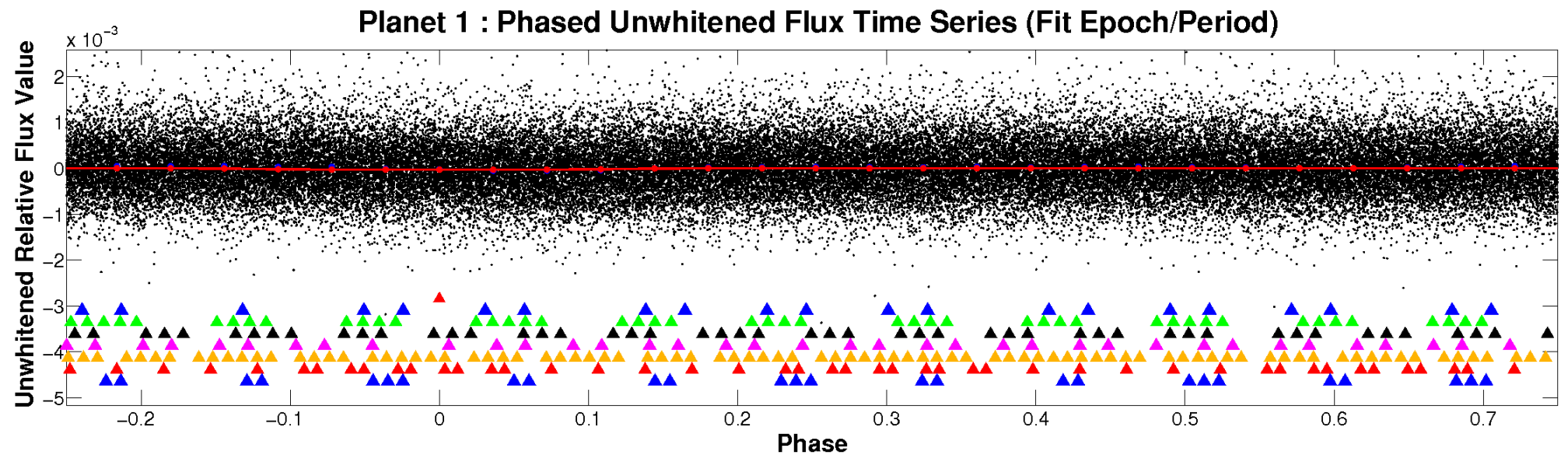


# ALT Odd/Even

TCE 007200463-01

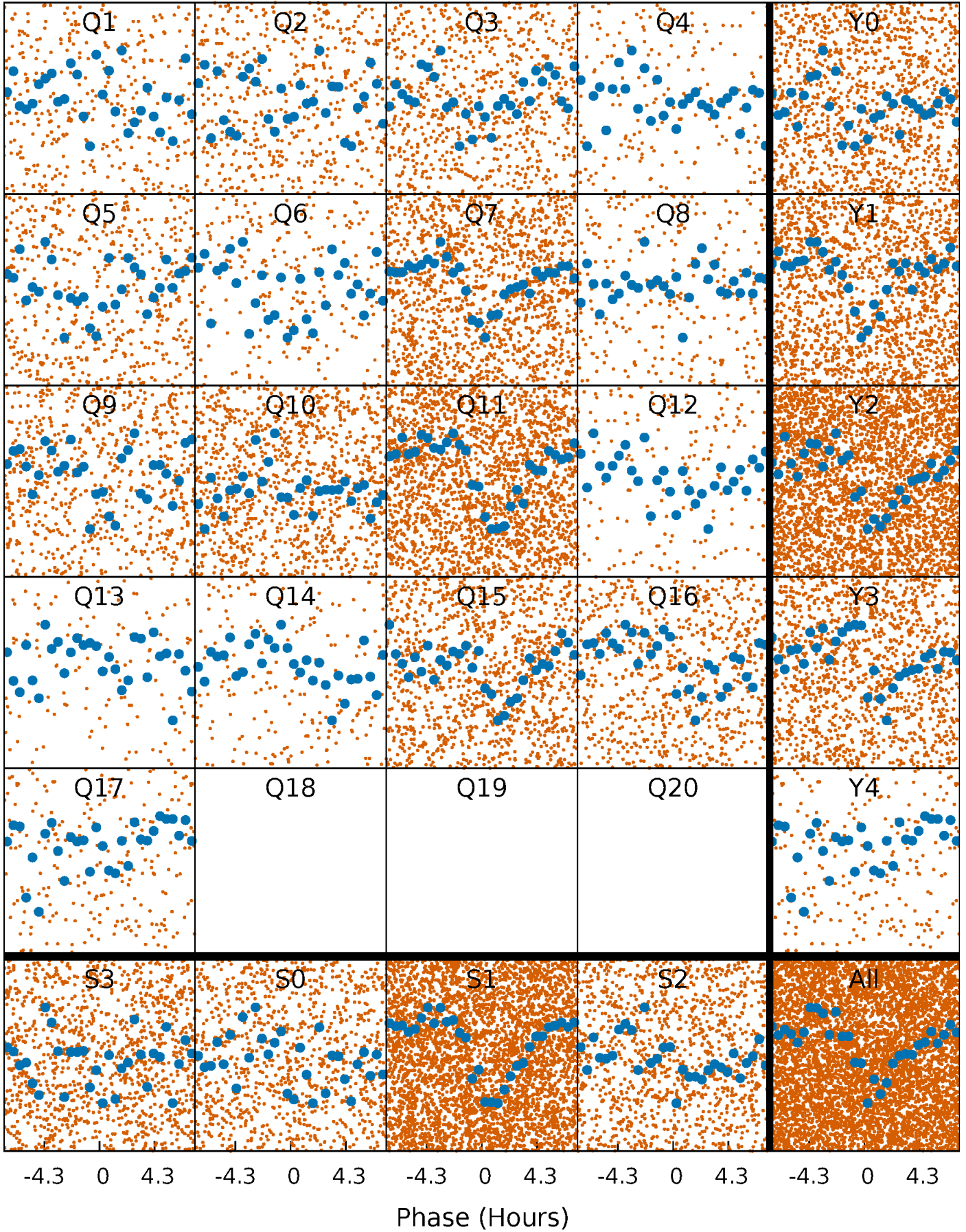


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

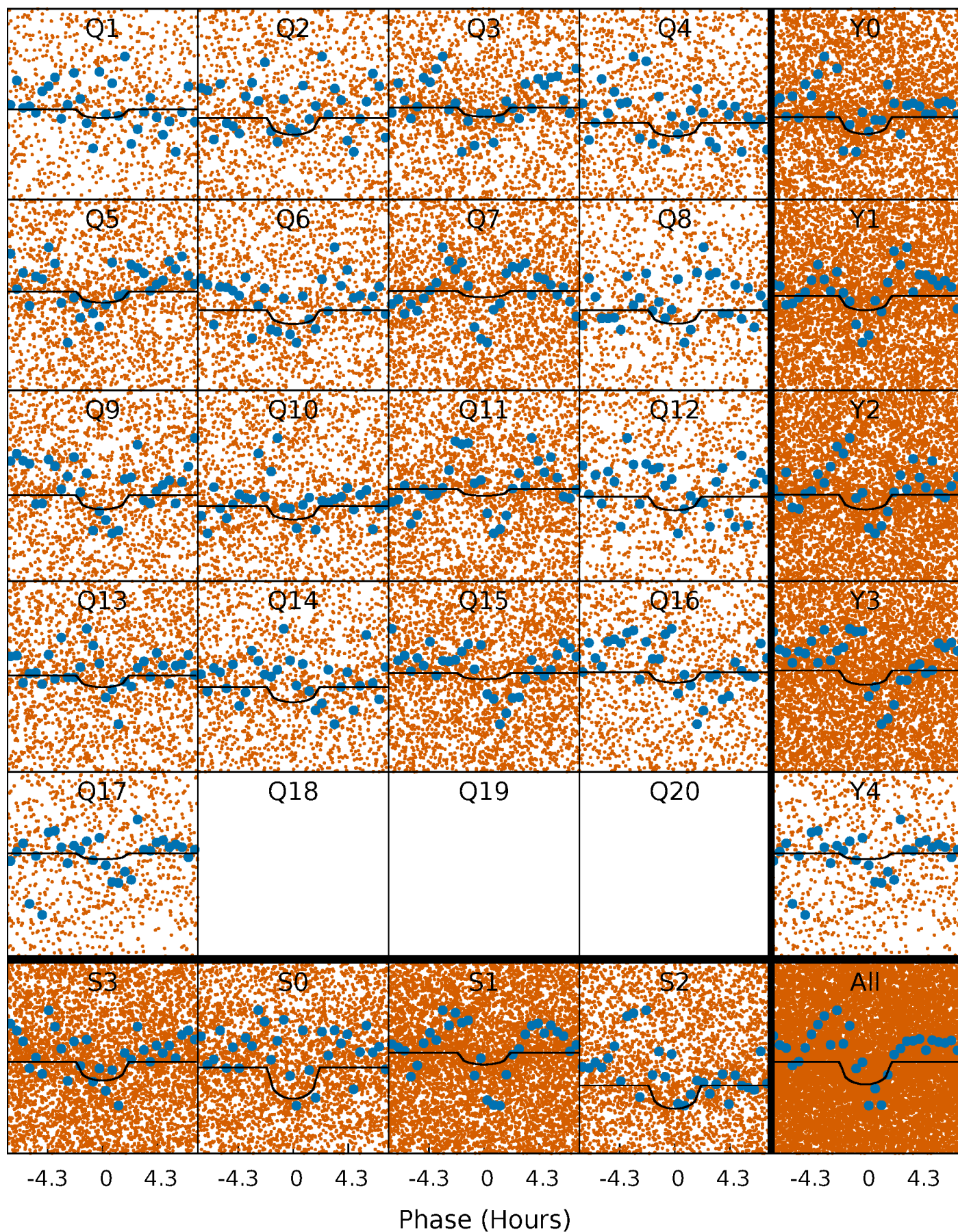
TCE 007200463-01 P= 0.566758 Days  $T_0=131.840663$  (BKJD)





# DV Quarter-Phased Transit Curves

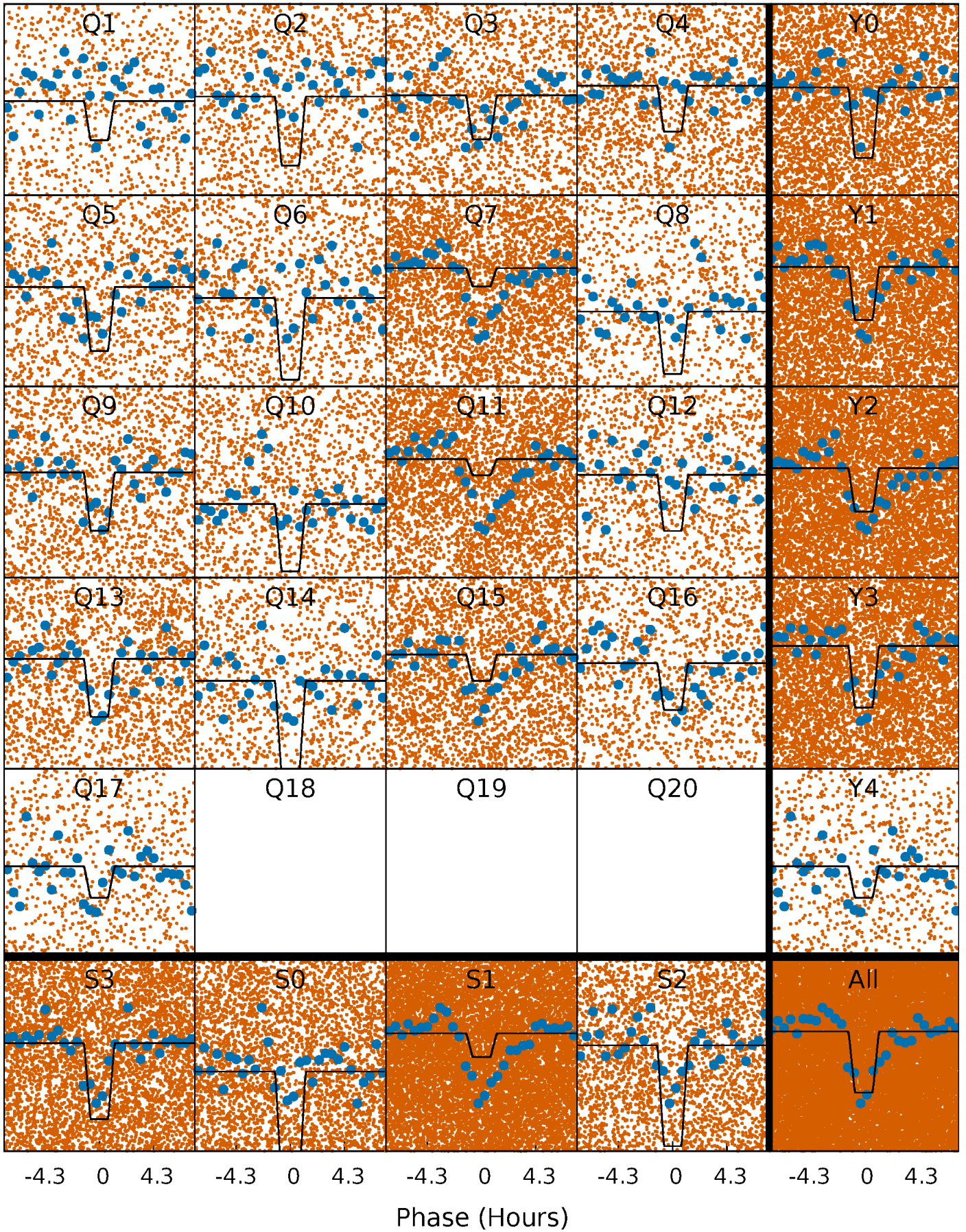
TCE 007200463-01 P= 0.566758 Days  $T_0=131.840663$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

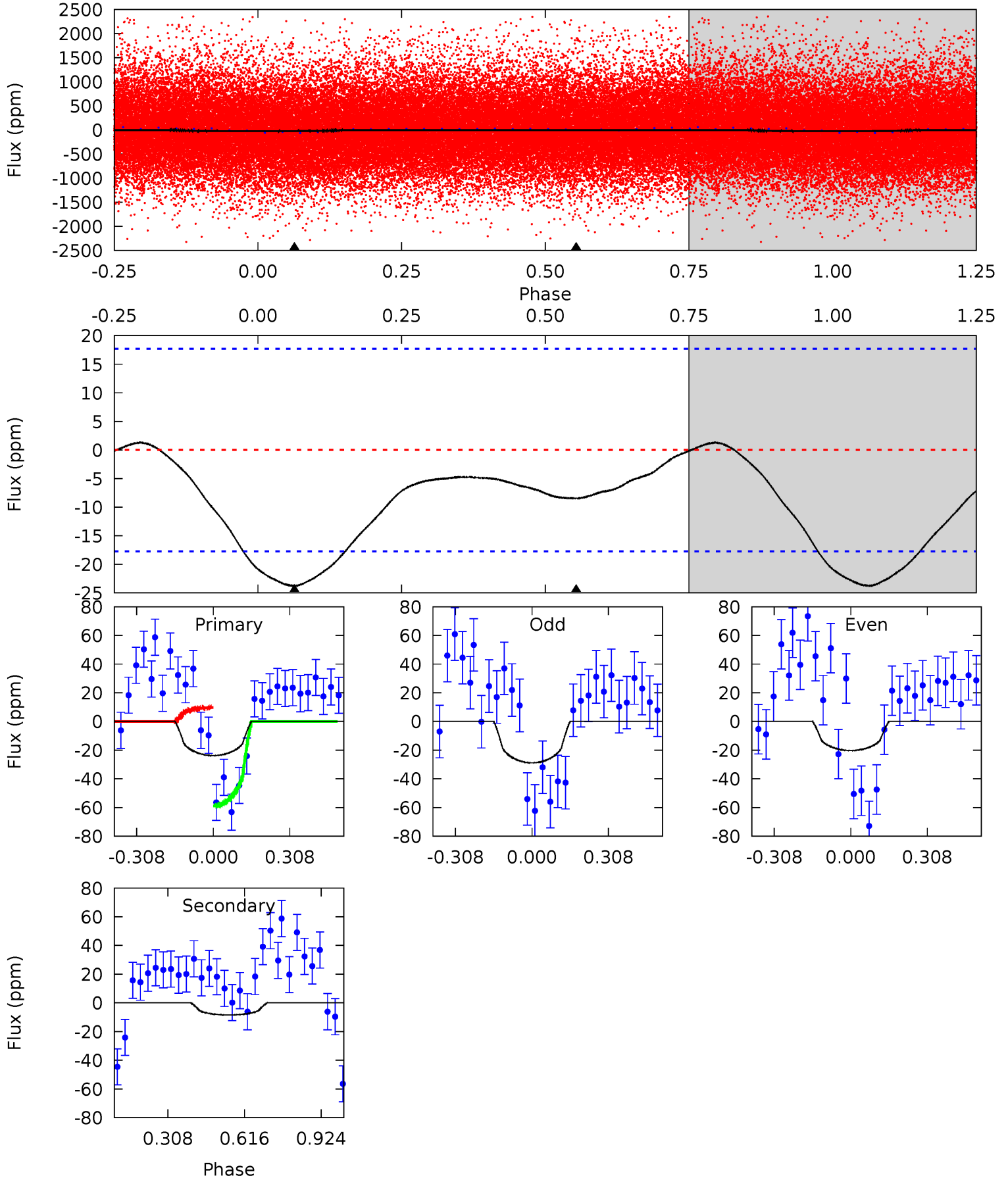
TCE 007200463-01 P= 0.566801 Days  $T_0=131.804954$  (BKJD)



# DV Model-Shift Uniqueness Test

007200463-01, P = 0.566758 Days, E = 131.273905 Days

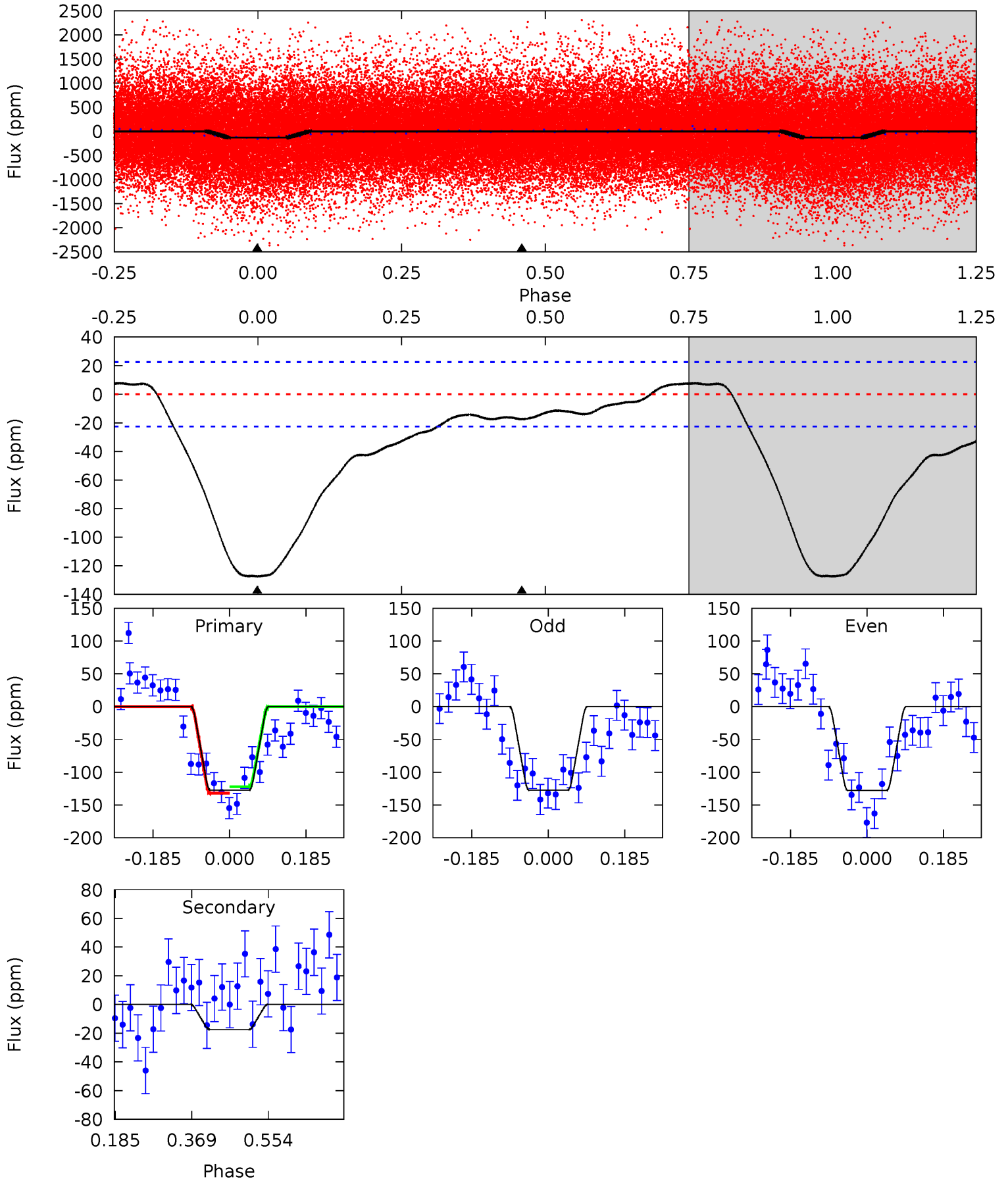
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.80	2.06	0	0	4.32	1.02	0.72	5.80	5.80	2.06	2.06	1.05	1.02	0.05	5.91



# Alt Model-Shift Uniqueness Test

007200463-01, P = 0.566801 Days, E = 131.238153 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
25.1	3.43	0	0	4.43	1.33	3.87	25.1	25.1	3.43	3.43	0.05	1.15	0.06	0.95





### Stellar Parameters For KIC 007200463

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3907^{+86}_{-86}$	$4.685^{+0.036}_{-0.015}$	$0.000^{+0.100}_{-0.100}$	$0.566^{+0.022}_{-0.036}$	$0.565^{+0.032}_{-0.026}$	$4.395^{+0.686}_{-0.307}$
	+2%/-2%	+1%/-0%	+inf%/-inf%	+4%/-6%	+6%/-5%	+16%/-7%
Source	PHO2	PHO2	PHO2	DSEP		

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

### Secondary Eclipse Parameters for KIC 007200463-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-8 \pm 4$	$0.59^{+0.57}_{-0.39}$	$1715^{+42}_{-43}$	$2610^{+1105}_{-895}$	$1.511^{+13.317}_{-1.186}$
Alt.	$-17 \pm 5$	$0.79^{+0.67}_{-0.49}$	$1713^{+45}_{-42}$	$2726^{+965}_{-550}$	$1.897^{+11.158}_{-1.361}$

$T_{\text{max}}$  = 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

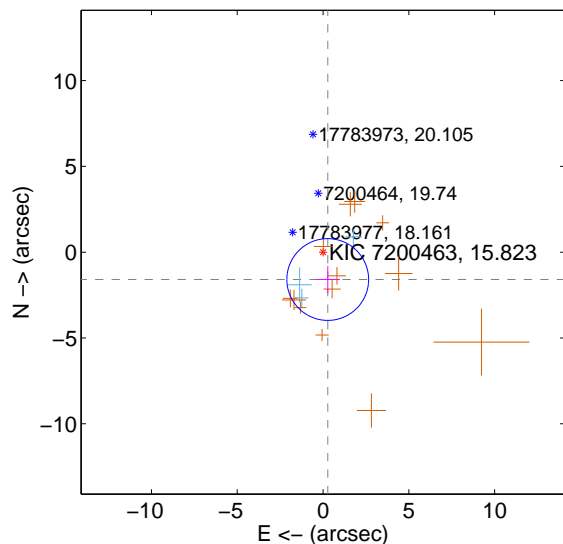
Supplemental centroid analysis for 007200463-01. Kepler magnitude: 15.82. Transit SNR 4.84

There are 3 quarters with good PRF difference image offsets

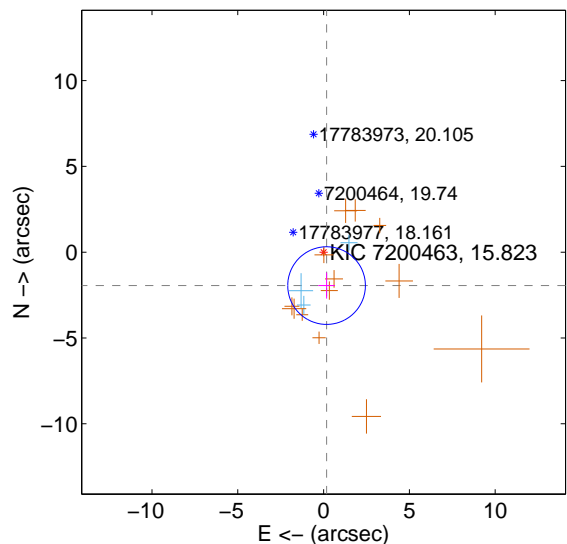
The direct PRF centroid is offset from the target star catalog position by about 0.51 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.617 \pm 0.794$	2.04	$-0.274 \pm 0.711$	$-1.593 \pm 0.786$
PRF-fit source offset from KIC position	$1.955 \pm 0.754$	2.59	$-0.174 \pm 0.485$	$-1.947 \pm 0.756$
photometric centroid source offset	$4.21 \pm 2.51$	1.67	$-1.97 \pm 2.57$	$-3.72 \pm 2.50$

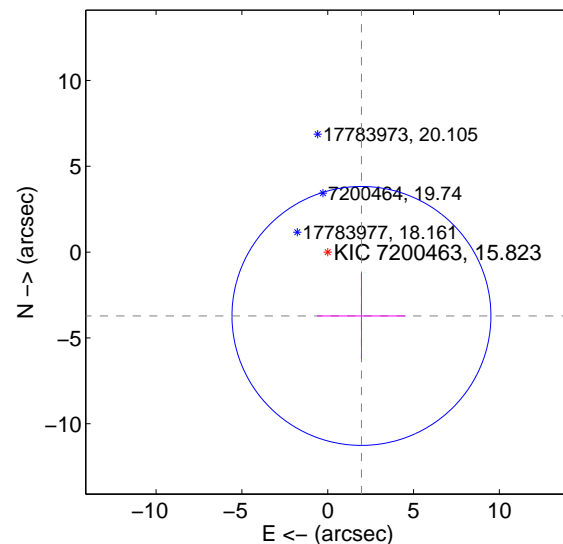
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

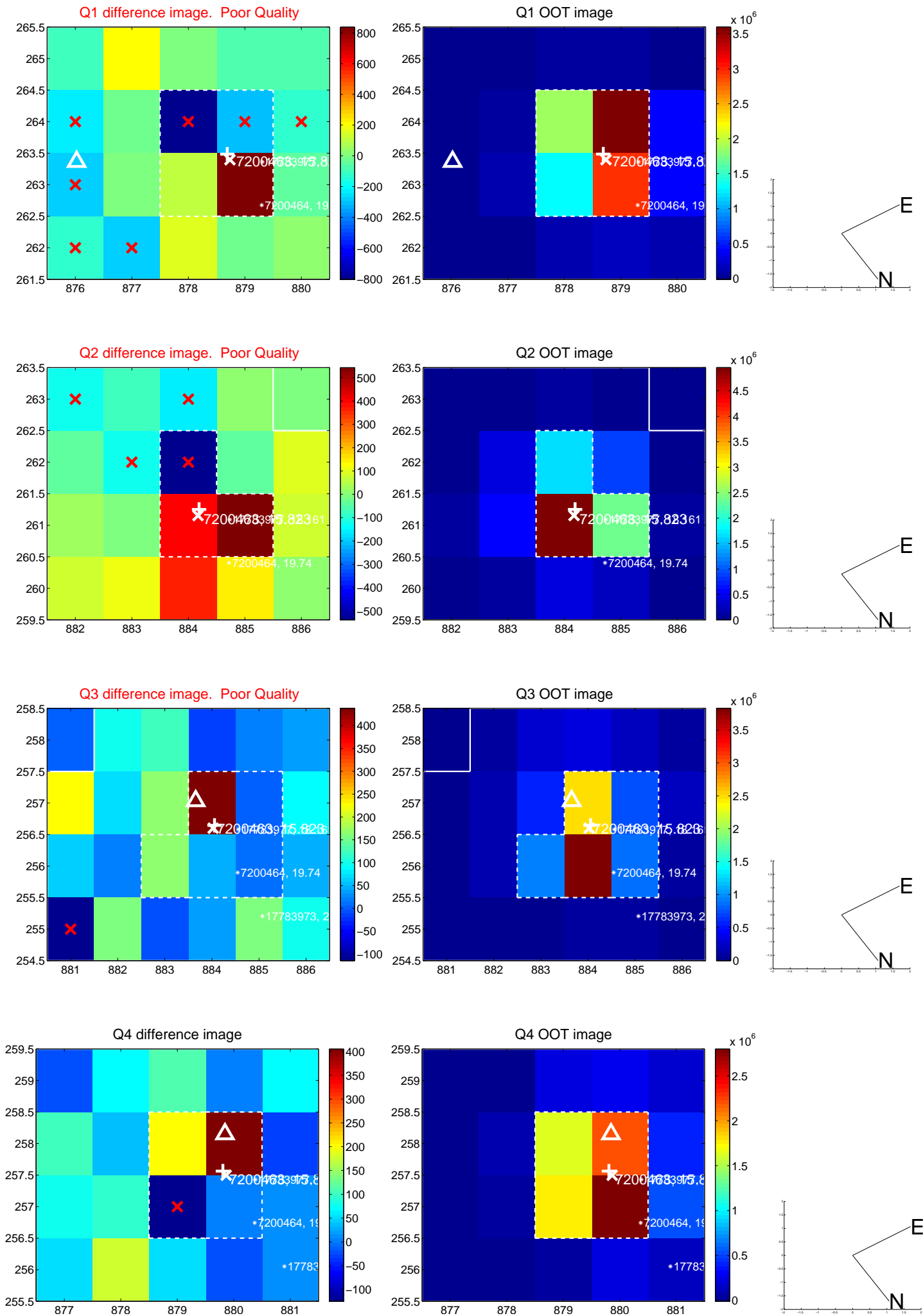


offset from photometric centroids

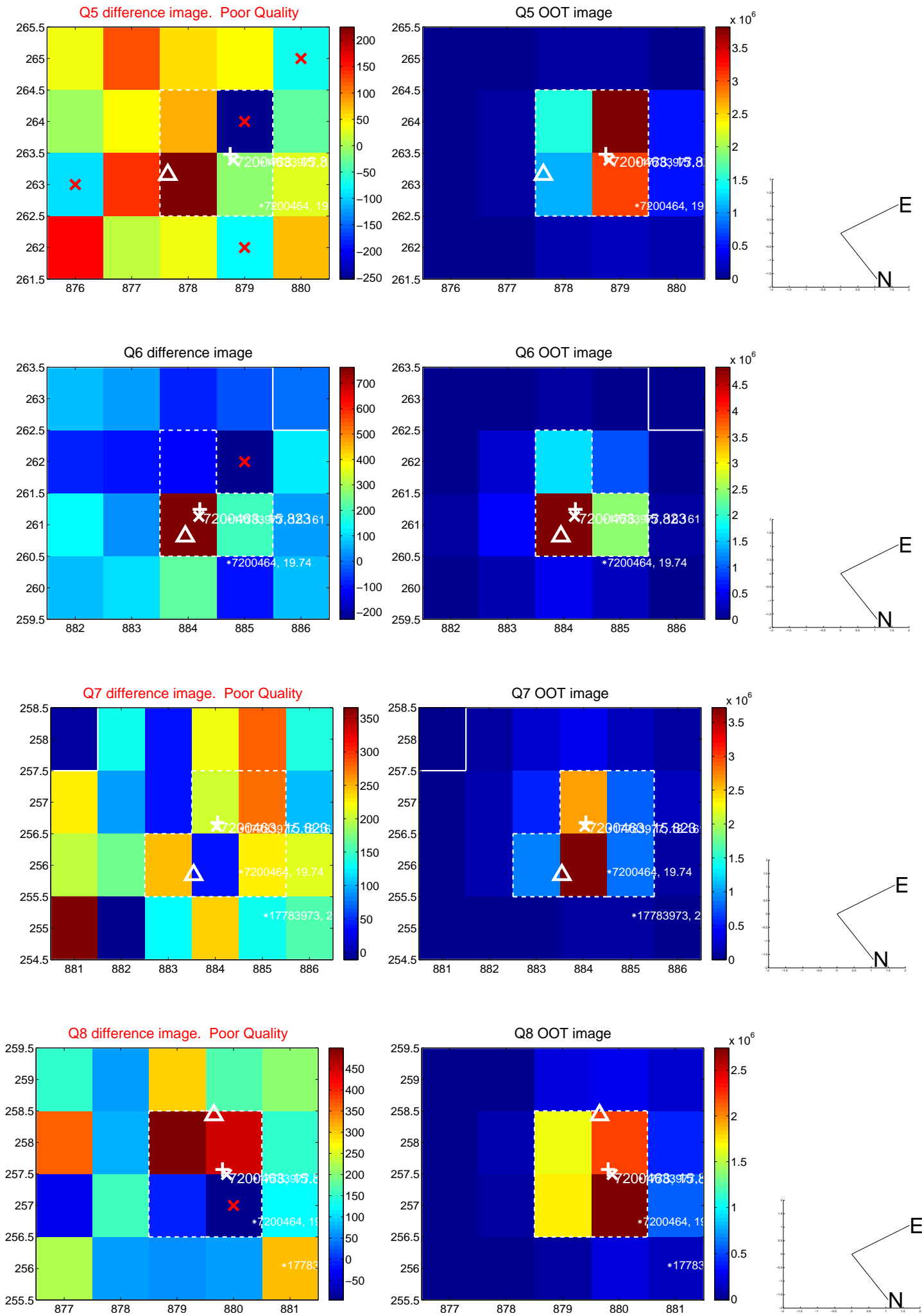


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

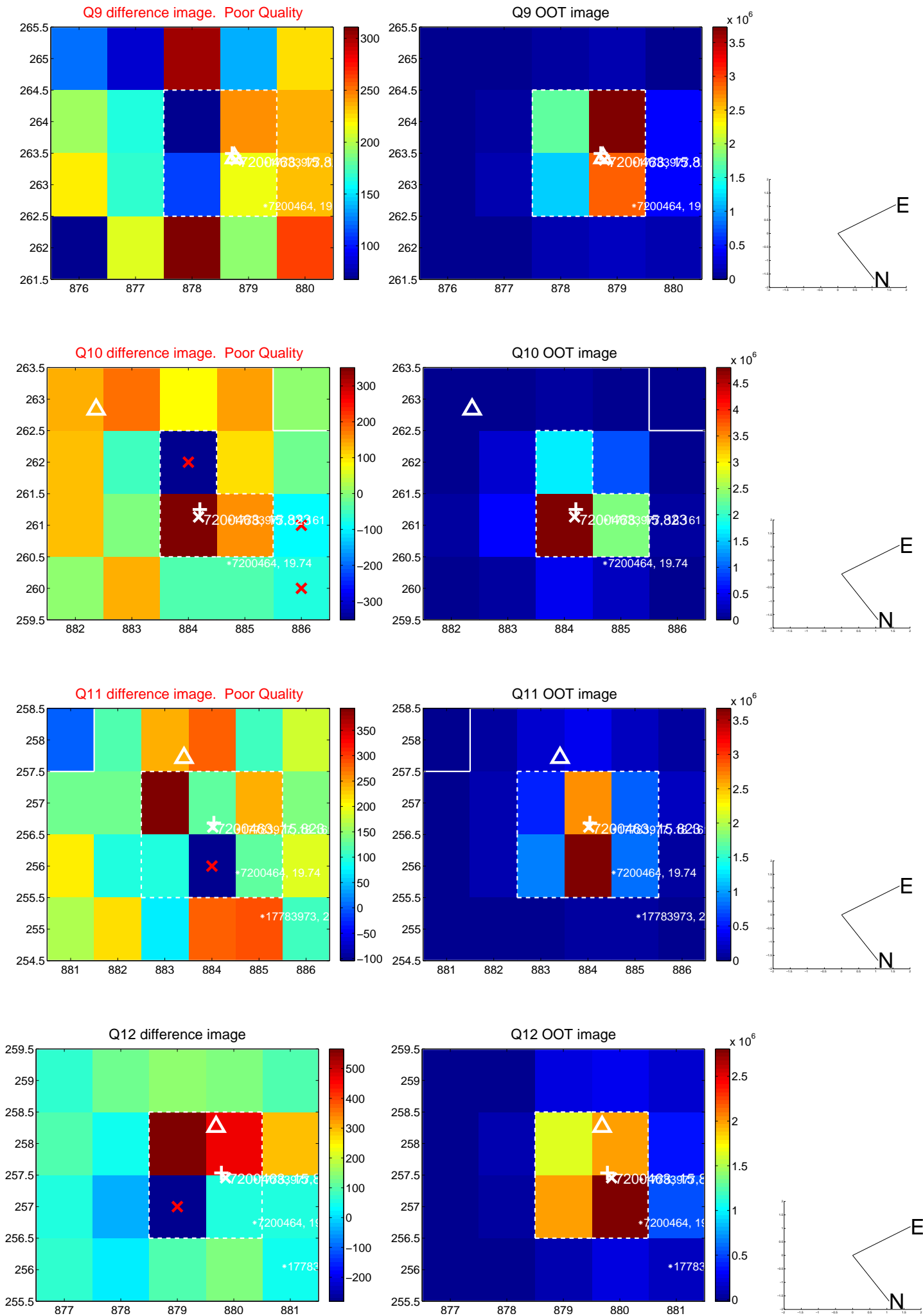


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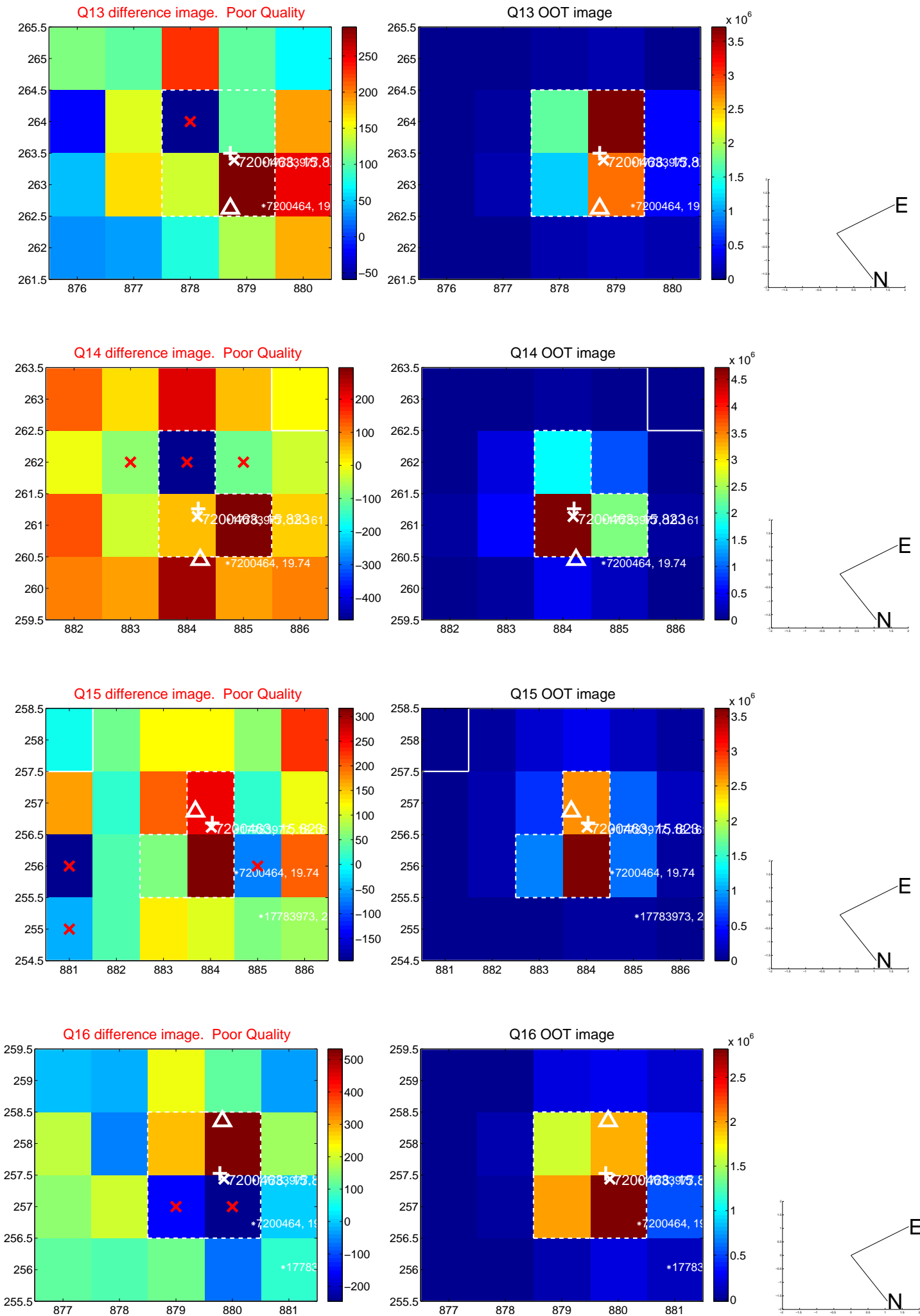




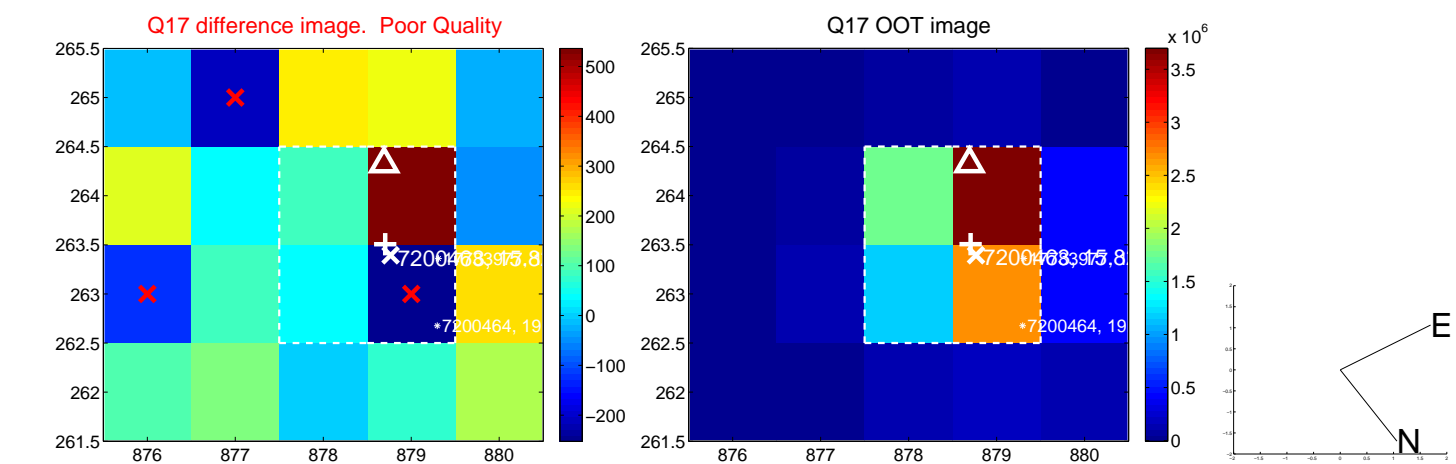
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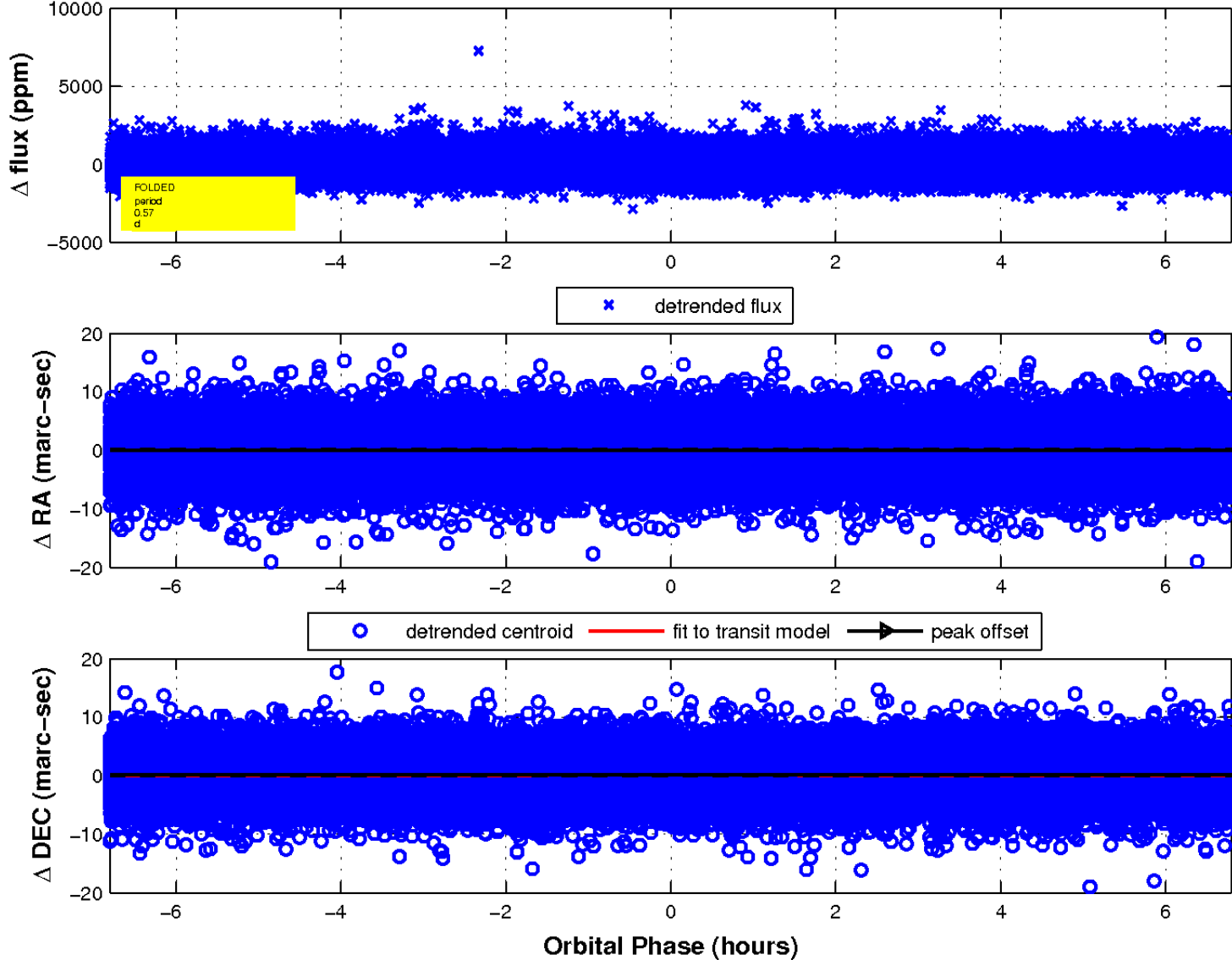
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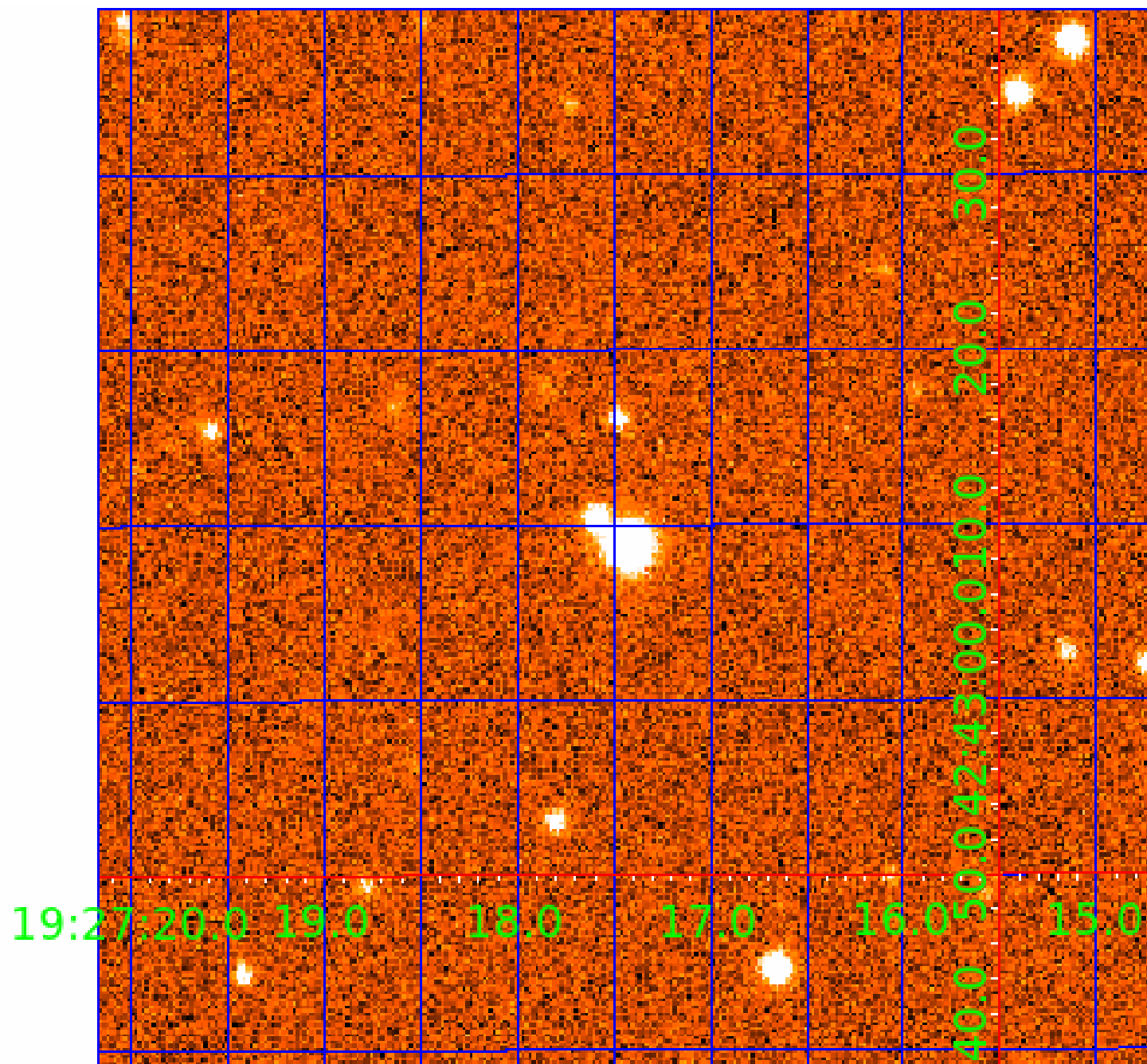


fluxWeightedCentroids, Planet 1 of 8



# UKIRT Image

Declination





# KIC 007200463

## Q1-17 DR25 TCE Parameters

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007200463-06	OBS	No	16.502004	140.509425	986.5	0.762	9.3	9.4	0.57	3907	1.78	6.07
007200463-07	OBS	No	32.122218	142.928559	1031.9	1.754	7.9	8.3	0.57	3907	1.78	2.50
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007200463-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS
007200463-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200463-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200463-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
007200463-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007200463-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— CENT_FEW_DIFFS

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

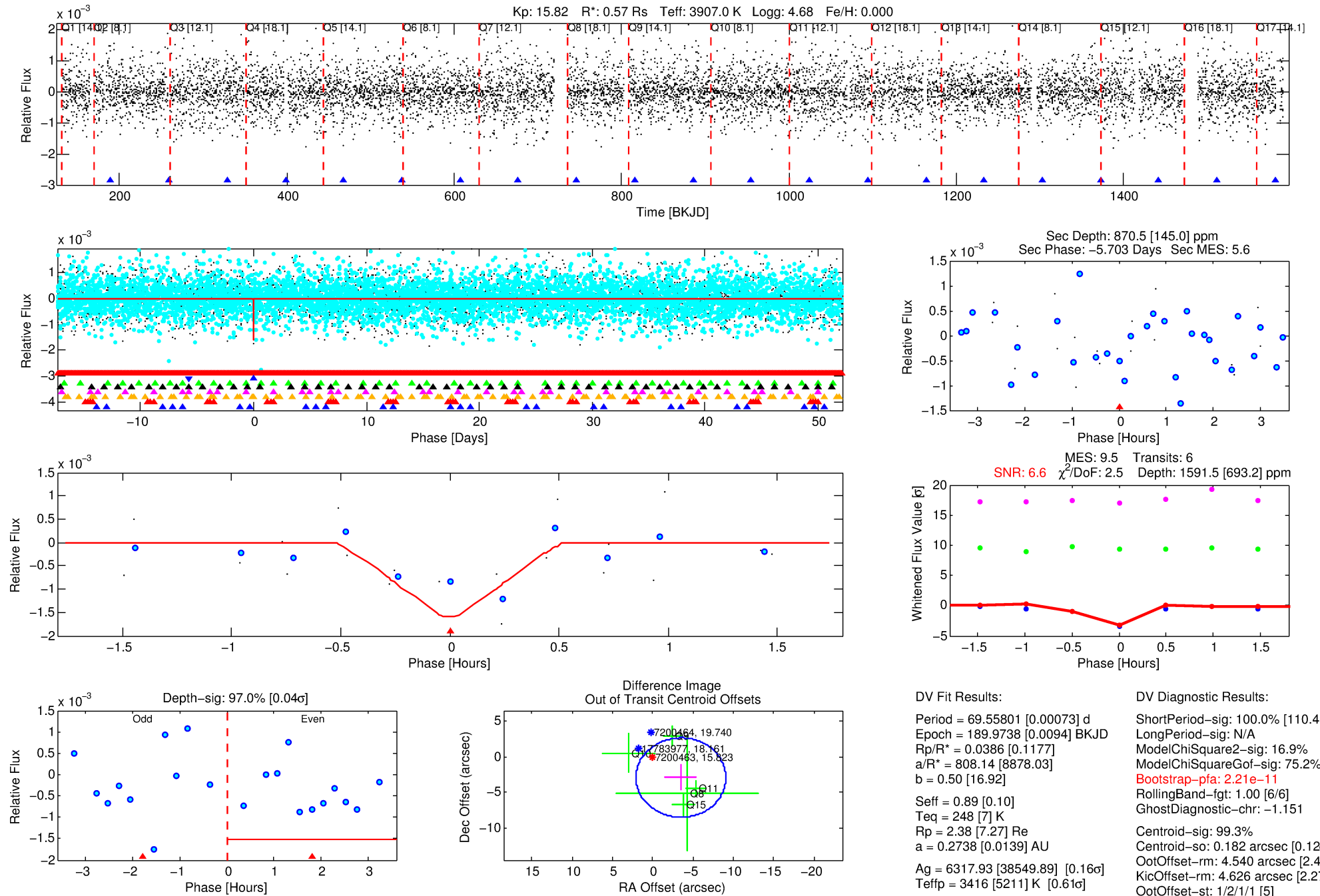
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007200463-02

No Significant Match Found

# DV One-Page Summary

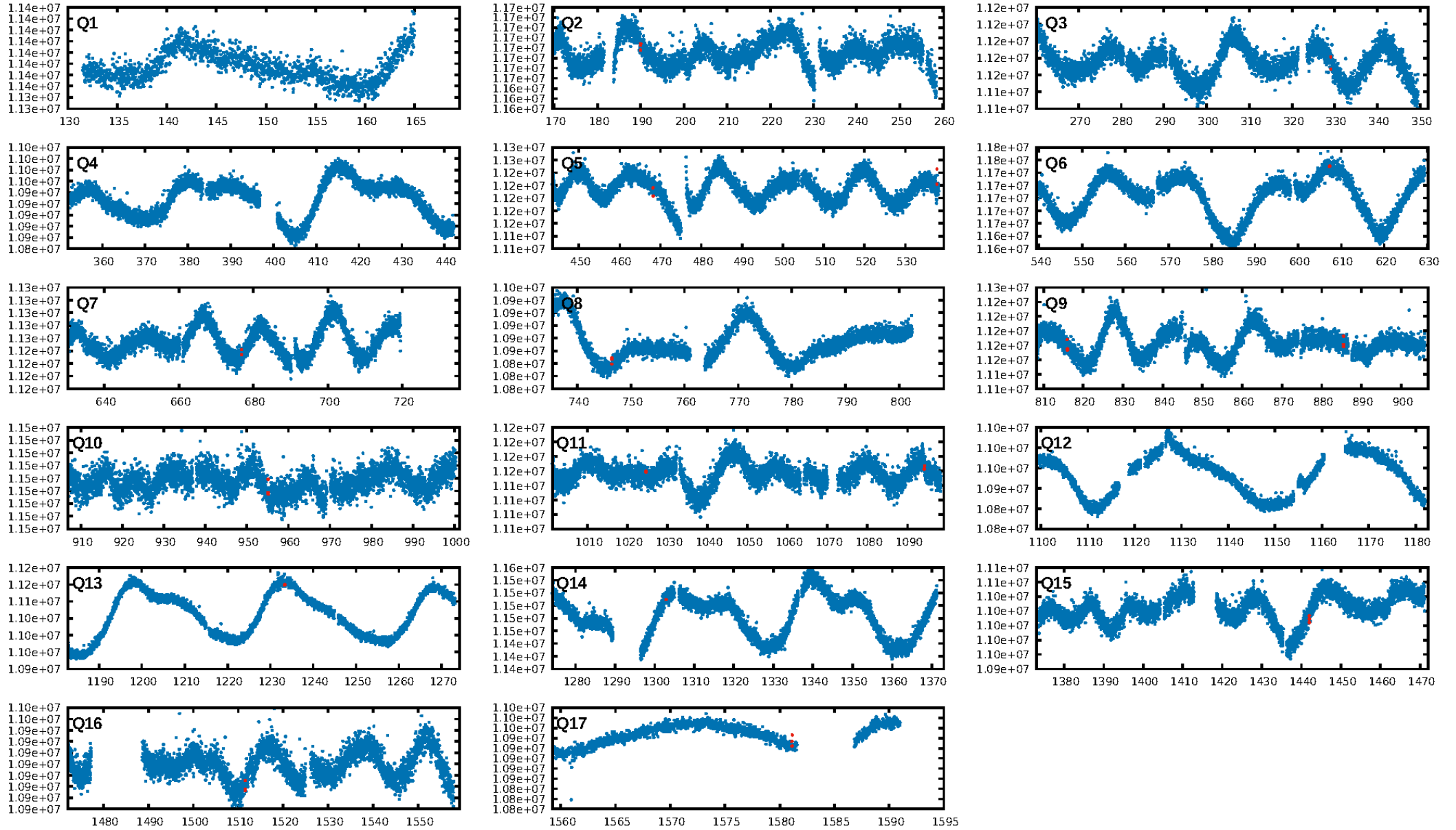
KIC: 7200463 Candidate: 2 of 8 Period: 69.558 d



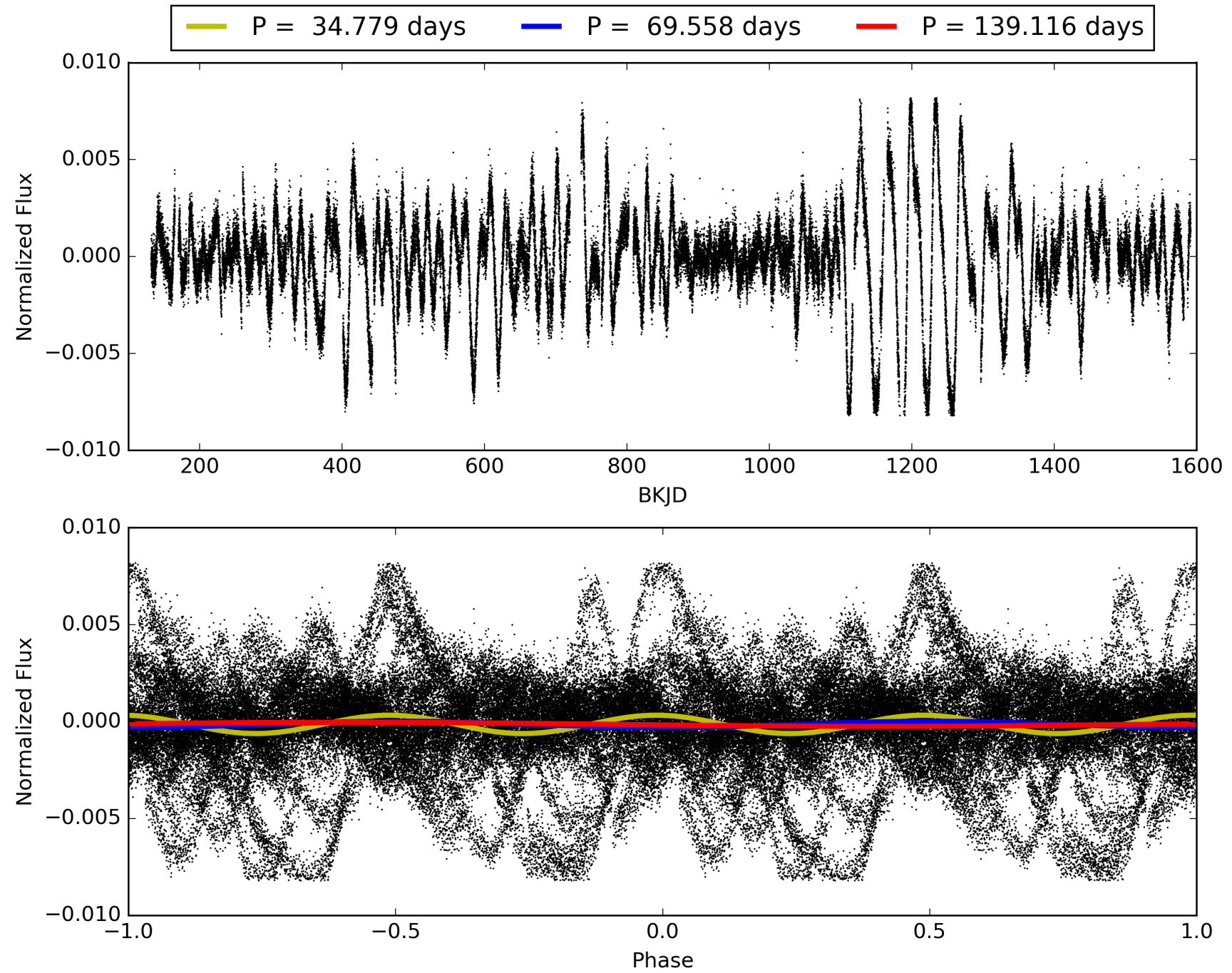
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 07:12:55 Z

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

# TCE 007200463-02, PDC Light Curves

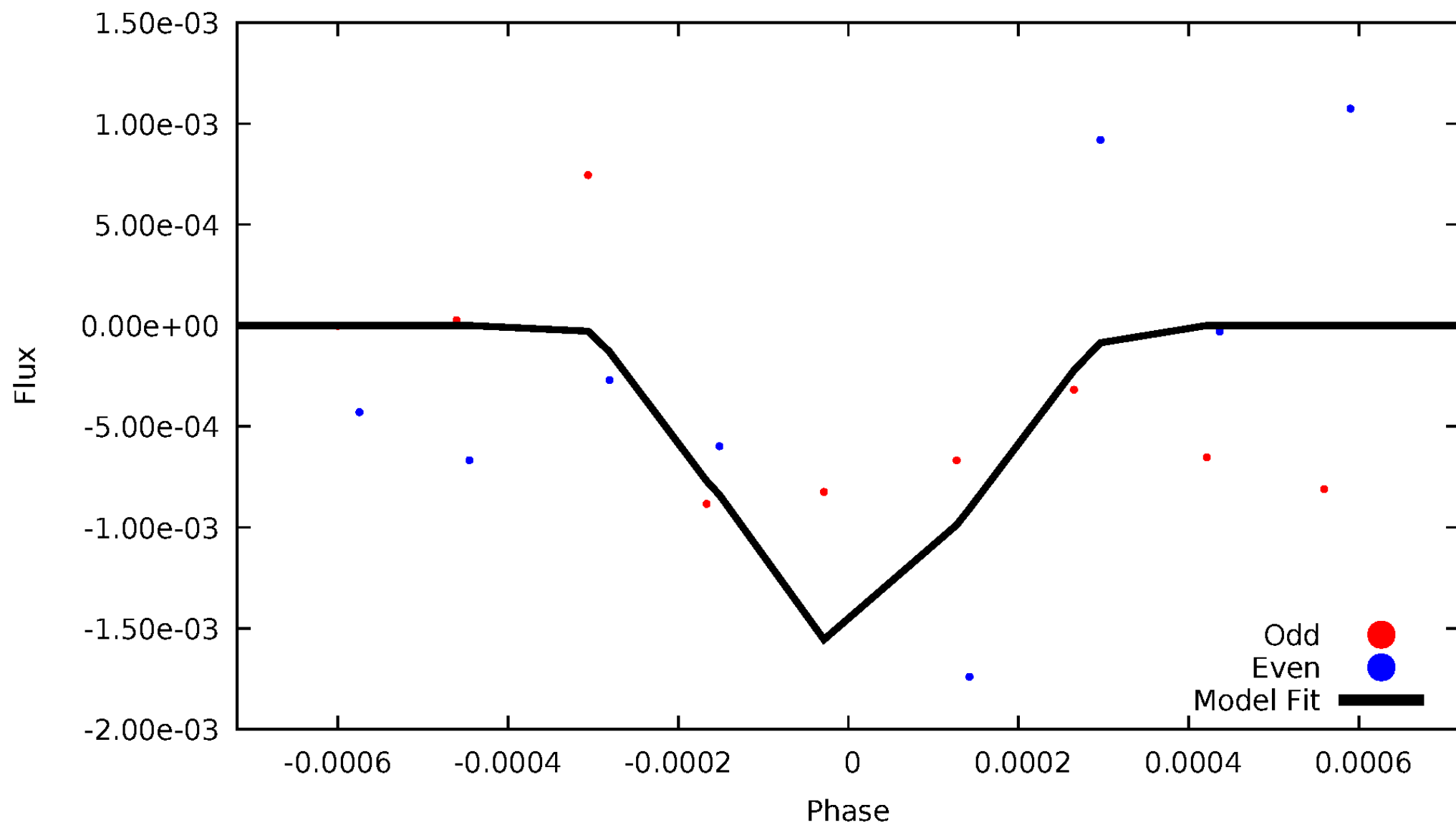


TCE 007200463-02



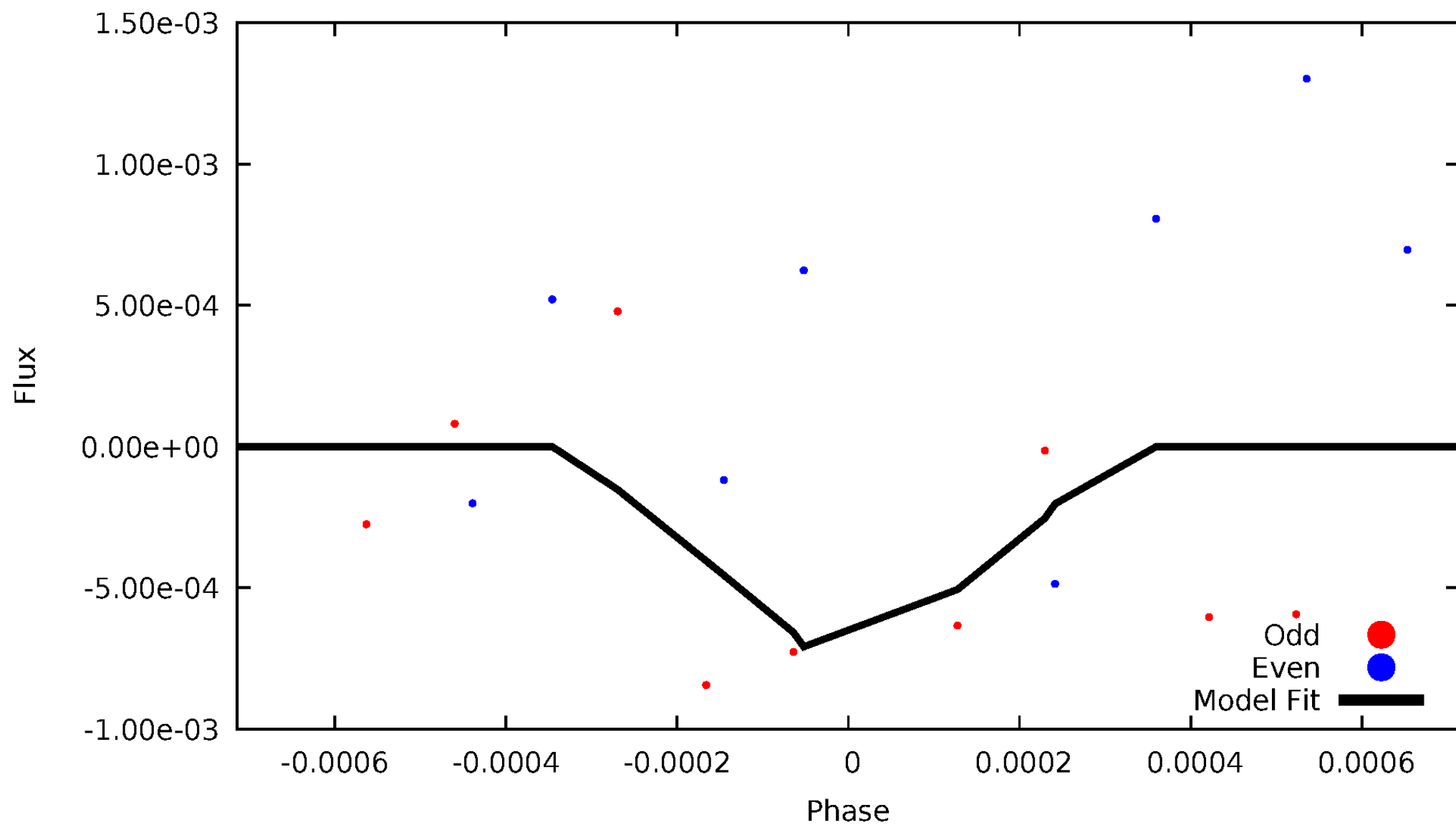
# DV Odd/Even

TCE 007200463-02



# ALT Odd/Even

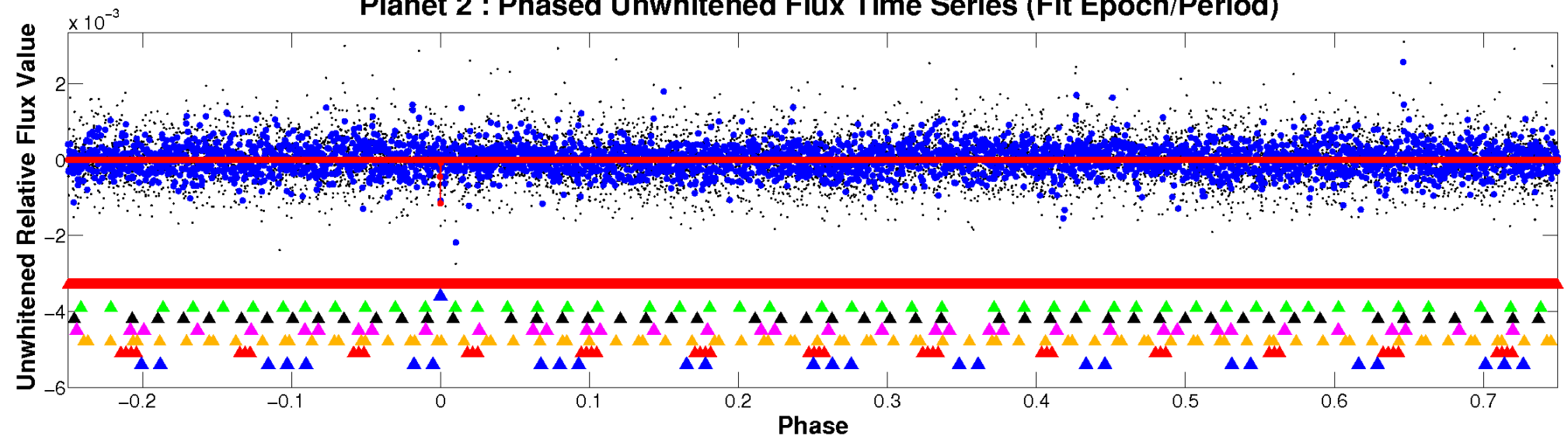
TCE 007200463-02



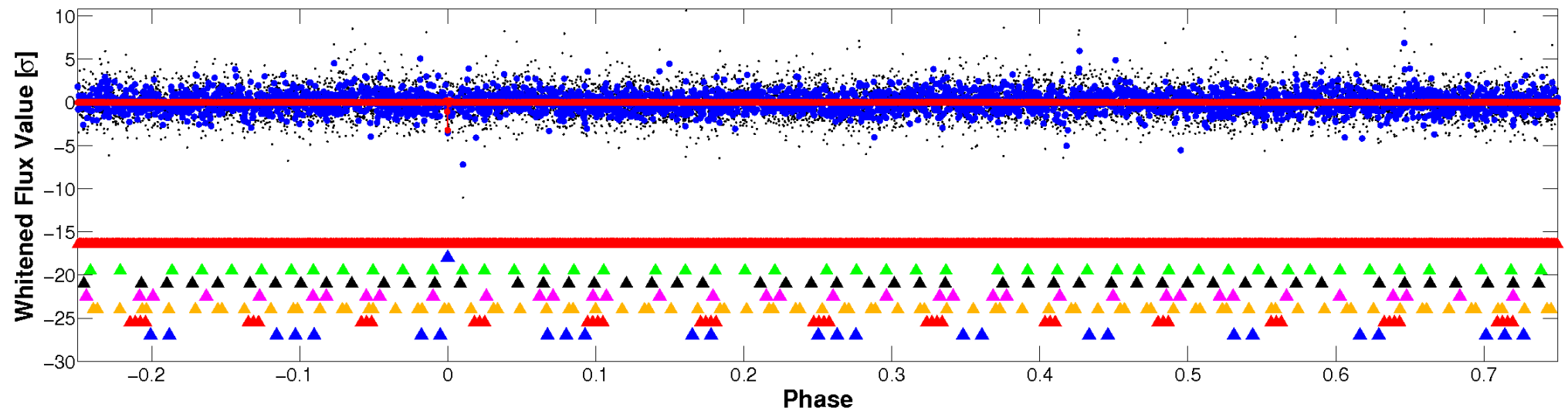


# Non-Whitened Vs. Whitened Light Curve

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

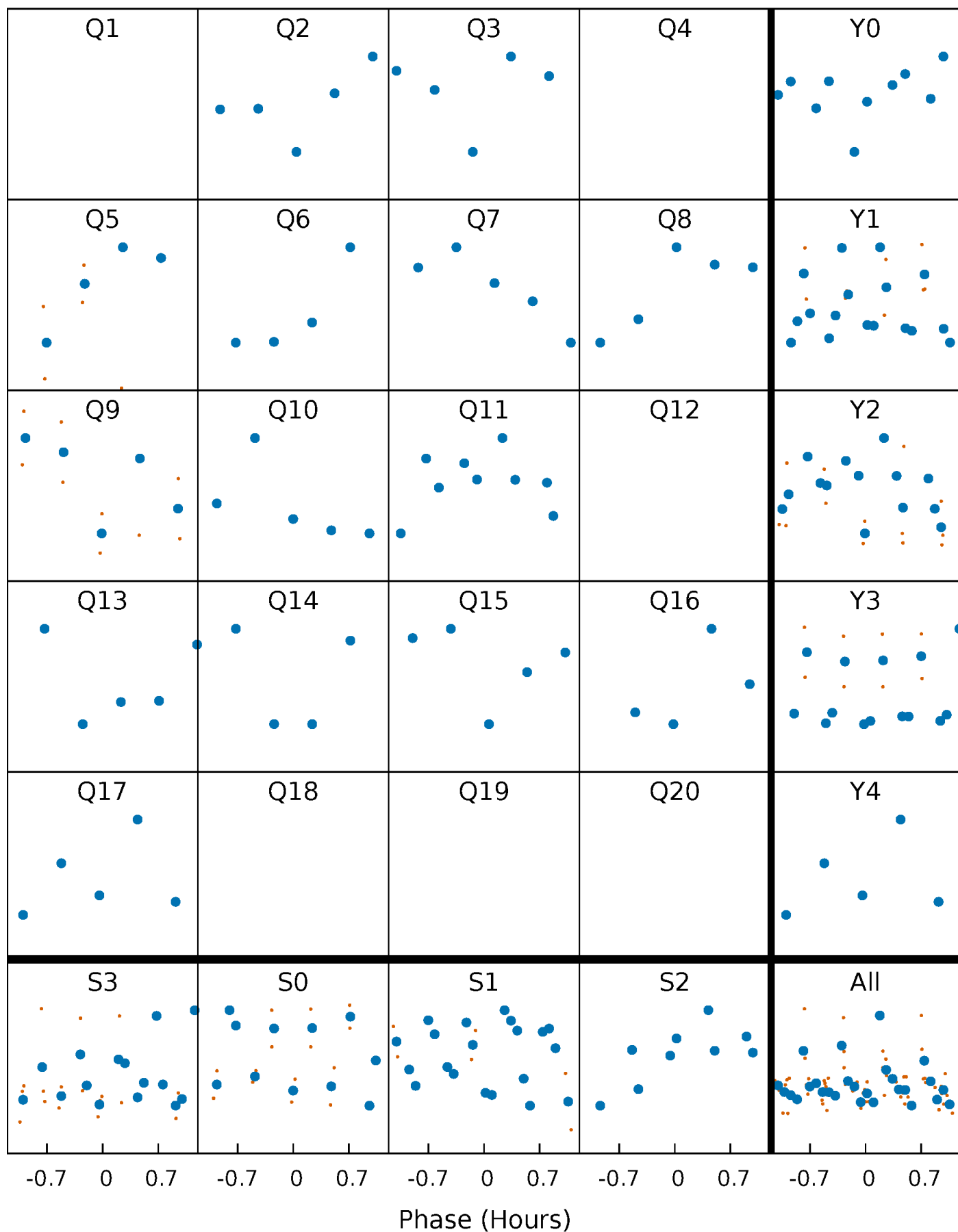


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



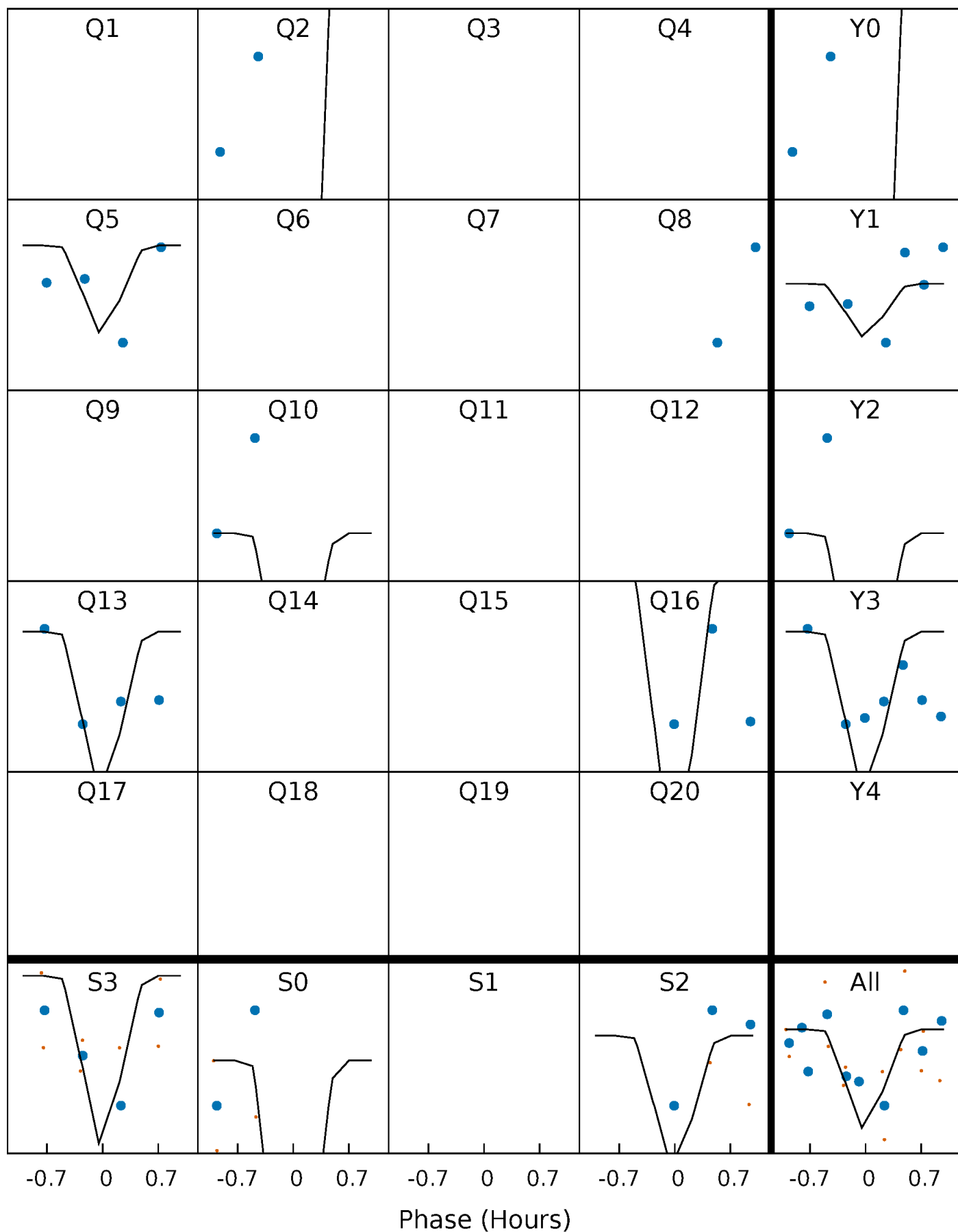
# PDC Quarter-Phased Transit Curves

TCE 007200463-02 P= 69.558006 Days  $T_0=189.973834$  (BKJD)



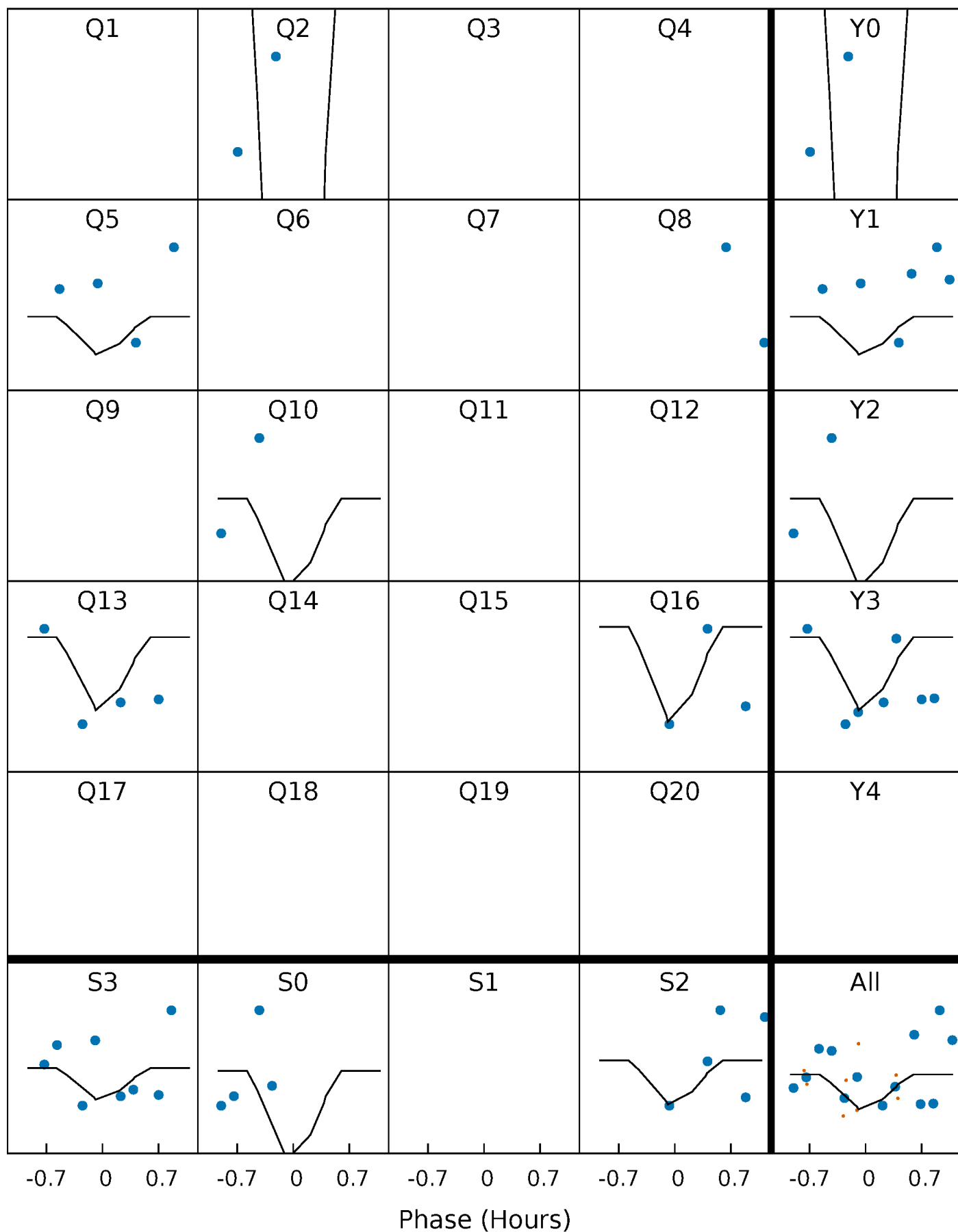
# DV Quarter-Phased Transit Curves

TCE 007200463-02 P= 69.558006 Days  $T_0=189.973834$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

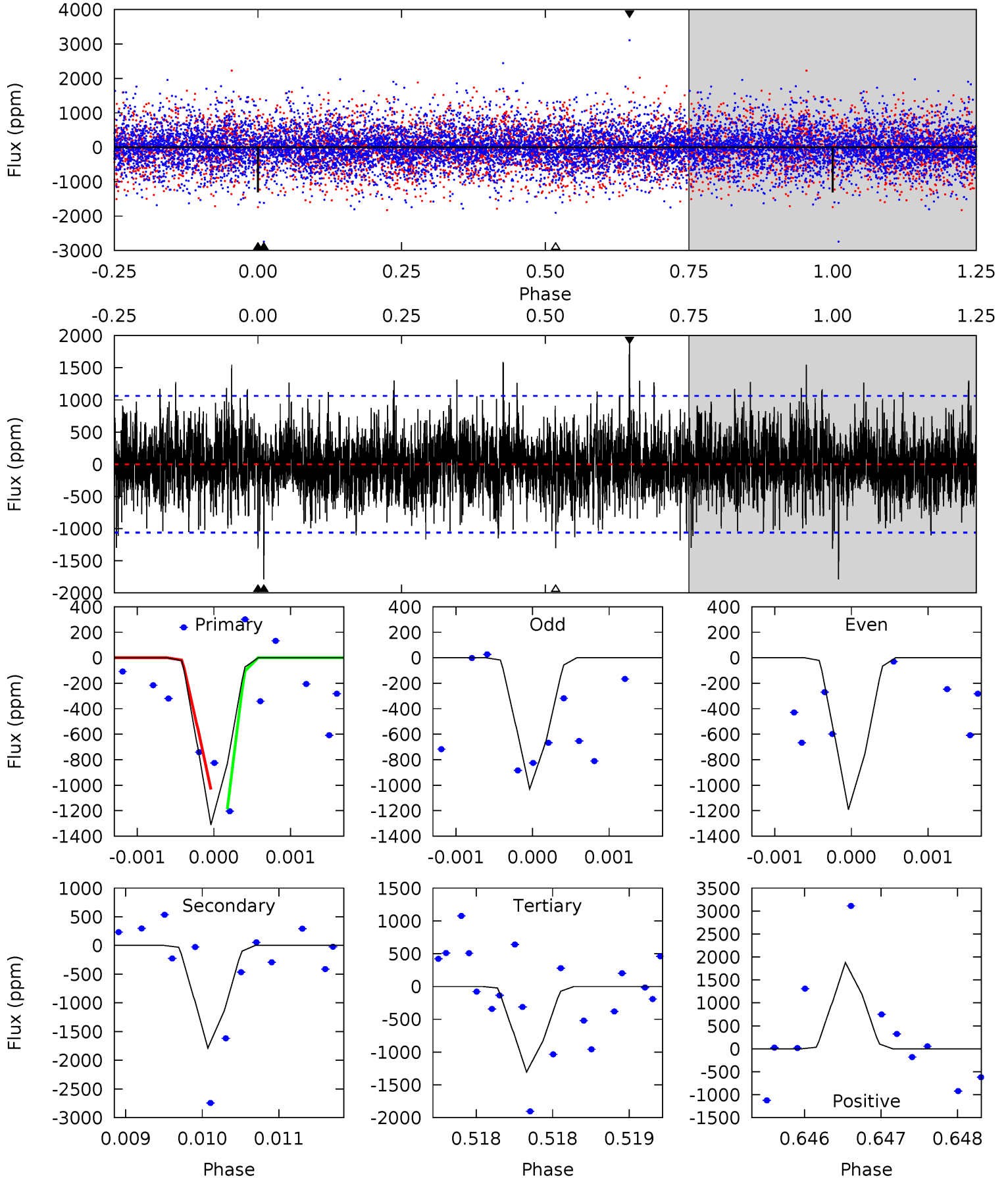
TCE 007200463-02 P= 69.558632 Days  $T_0=189.964415$  (BKJD)



# DV Model-Shift Uniqueness Test

007200463-02, P = 69.558006 Days, E = 120.415828 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
6.79	9.27	6.76	9.73	5.51	3.38	1.87	0.03	-2.94	2.51	-0.47	0.42	1.08	0.51	0.40

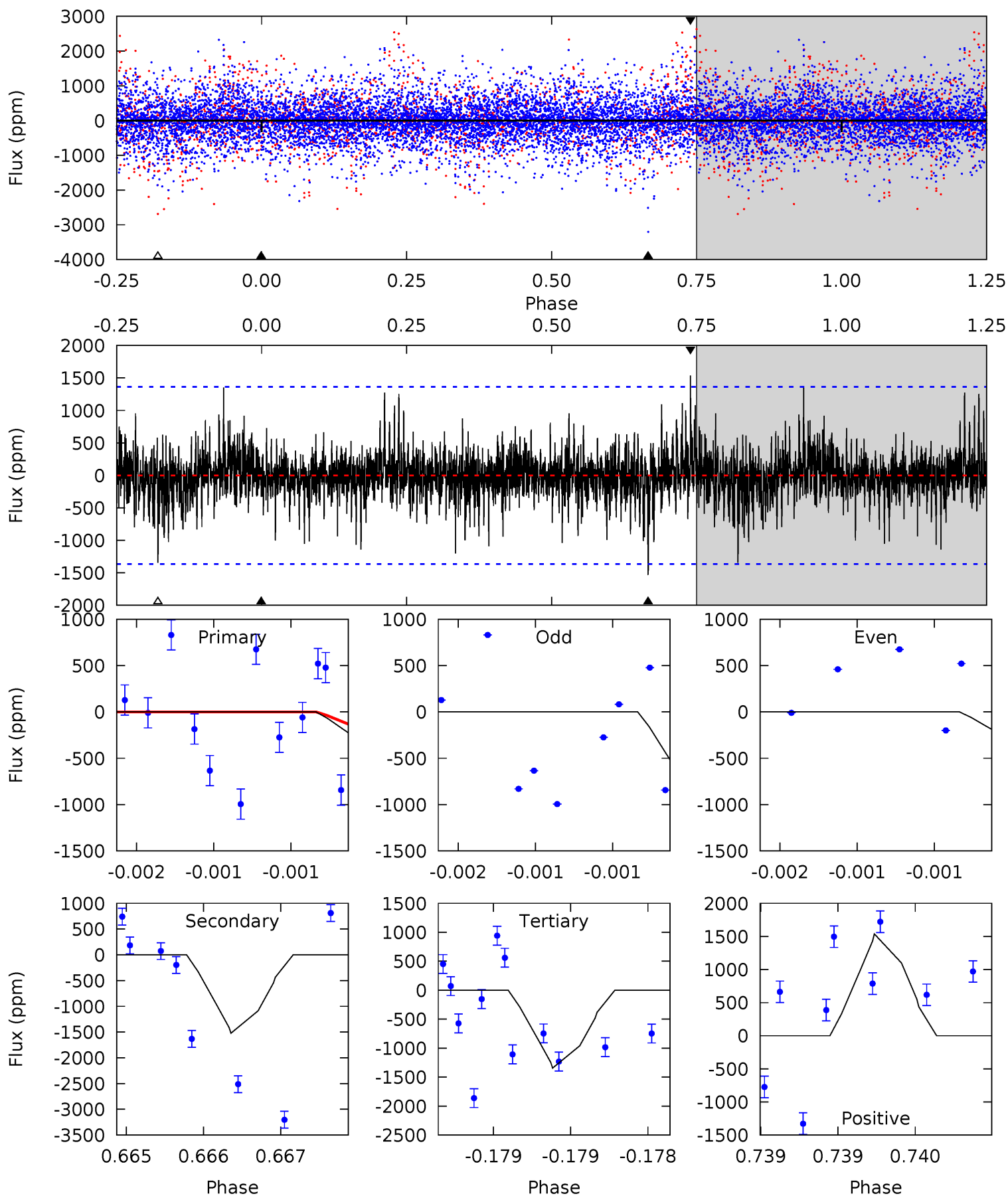




# Alt Model-Shift Uniqueness Test

007200463-02, P = 69.558632 Days, E = 120.405783 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.34	6.21	5.48	6.28	5.57	3.47	1.21	-4.15	-4.94	0.73	-0.06	0.86	0.66	0.50	0.79



### Stellar Parameters For KIC 007200463

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3907^{+86}_{-86}$	$4.685^{+0.036}_{-0.015}$	$0.000^{+0.100}_{-0.100}$	$0.566^{+0.022}_{-0.036}$	$0.565^{+0.032}_{-0.026}$	$4.395^{+0.686}_{-0.307}$
	+2%/-2%	+1%/-0%	+inf%/-inf%	+4%/-6%	+6%/-5%	+16%/-7%
Source	PHO2	PHO2	PHO2	DSEP		

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

### Secondary Eclipse Parameters for KIC 007200463-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-1788 \pm 193$	$6.07^{+6.22}_{-3.96}$	$345^{+8}_{-9}$	$3015^{+1144}_{-530}$	$2056^{+14216}_{-1569}$
Alt.	$-1522 \pm 245$	$5.72^{+5.25}_{-3.88}$	$345^{+8}_{-8}$	$2972^{+1338}_{-471}$	$1901^{+16765}_{-1398}$

$T_{max}$  = 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

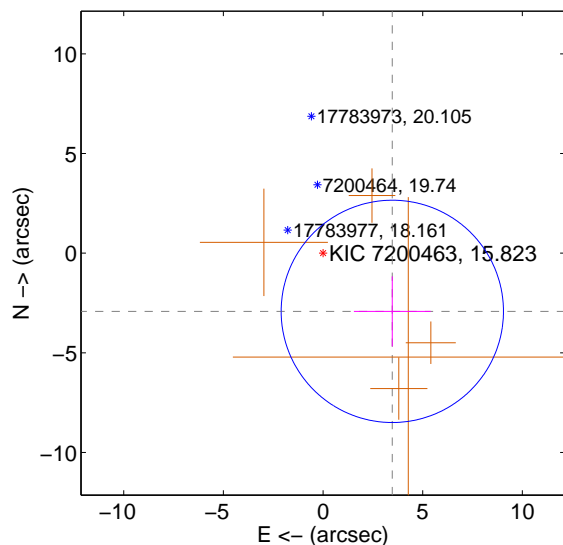
Supplemental centroid analysis for 007200463-02. Kepler magnitude: 15.82. Transit SNR 6.61

There are 0 quarters with good PRF difference image offsets

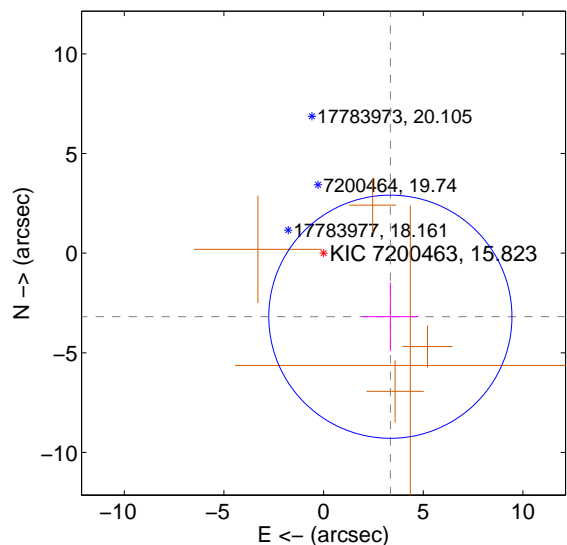
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.540 \pm 1.859$	2.44	$-3.476 \pm 1.927$	$-2.920 \pm 1.758$
PRF-fit source offset from KIC position	$4.626 \pm 2.034$	2.27	$-3.351 \pm 1.410$	$-3.189 \pm 1.718$
photometric centroid source offset	$0.18 \pm 1.46$	0.12	$0.14 \pm 1.49$	$-0.12 \pm 1.42$

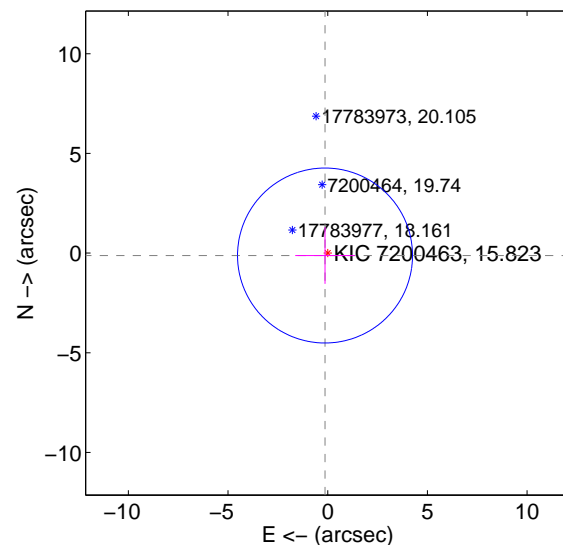
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

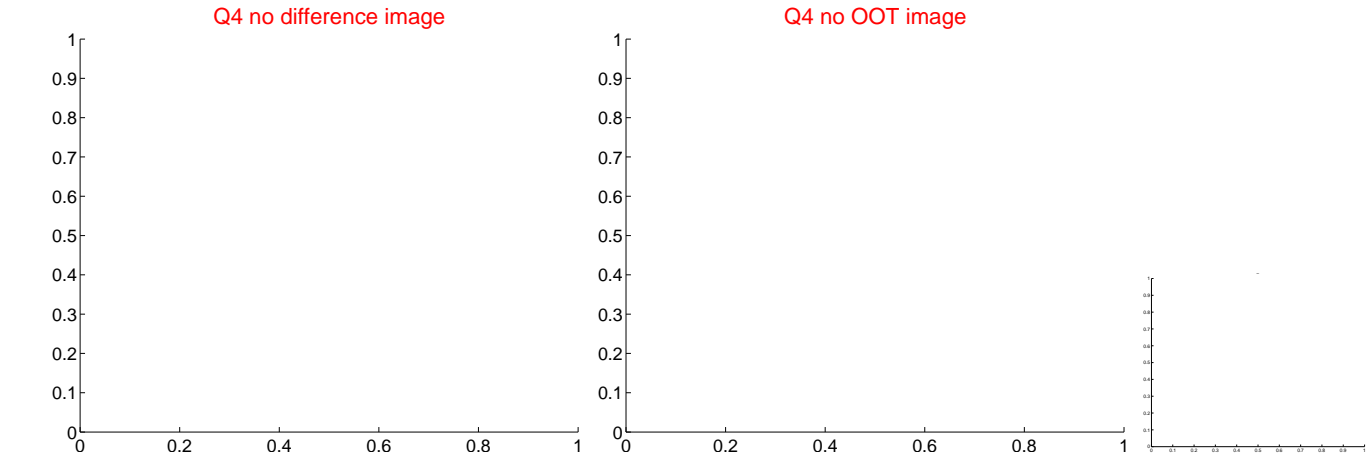
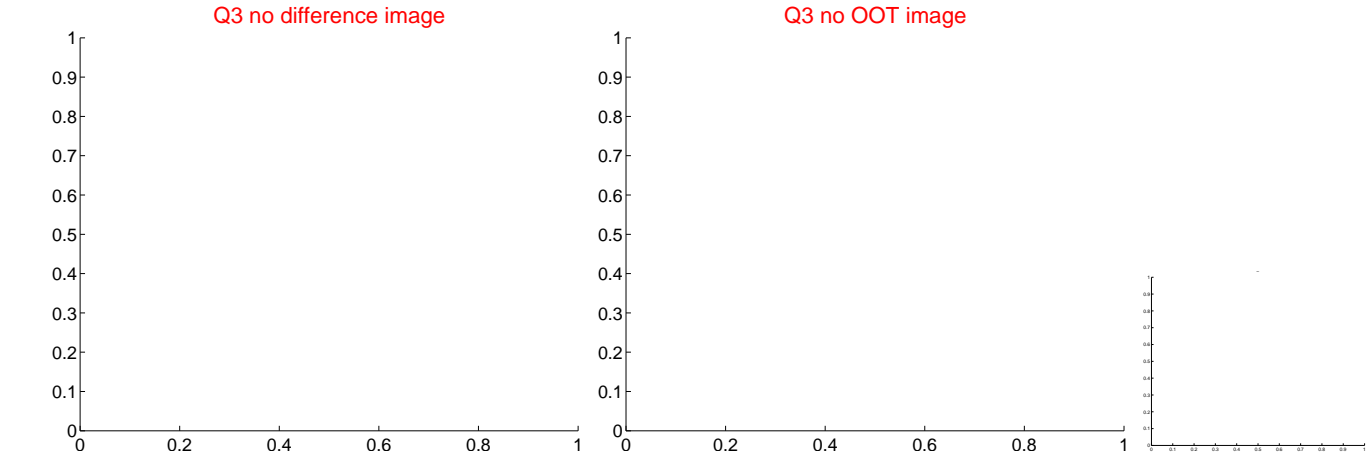
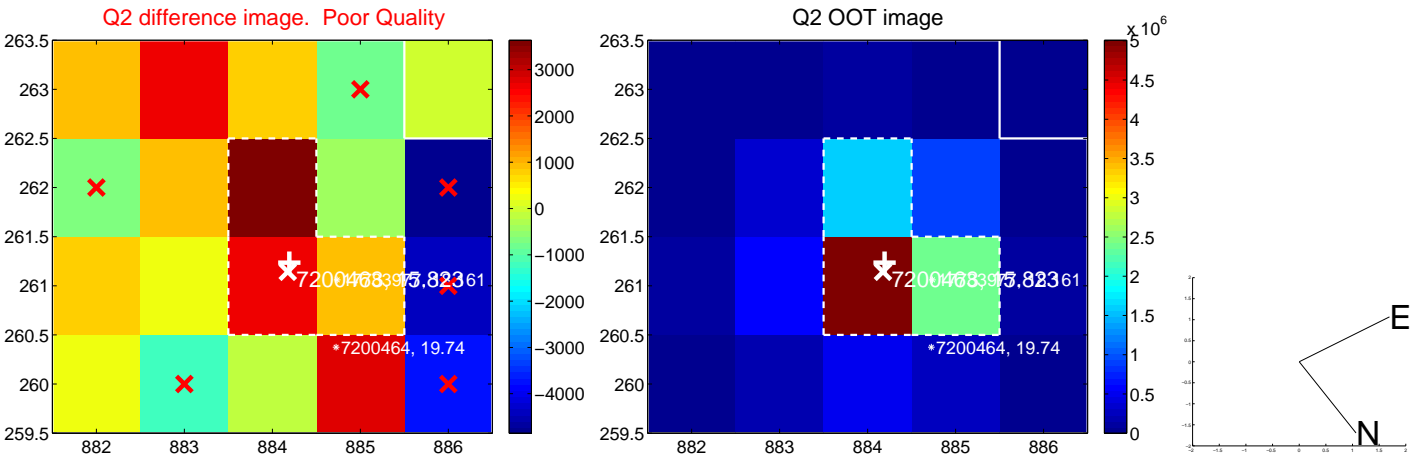
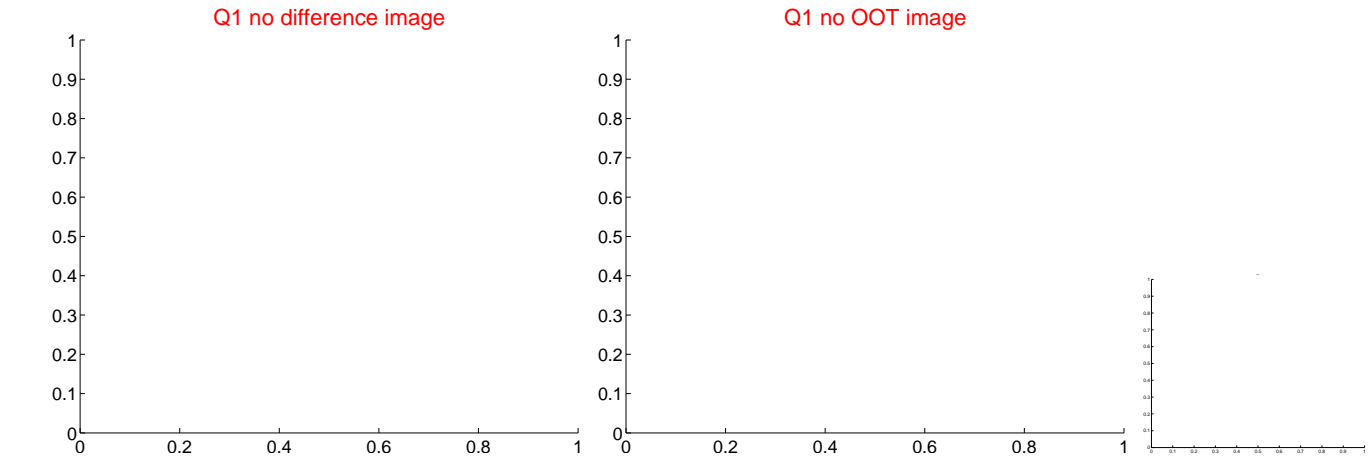


offset from photometric centroids

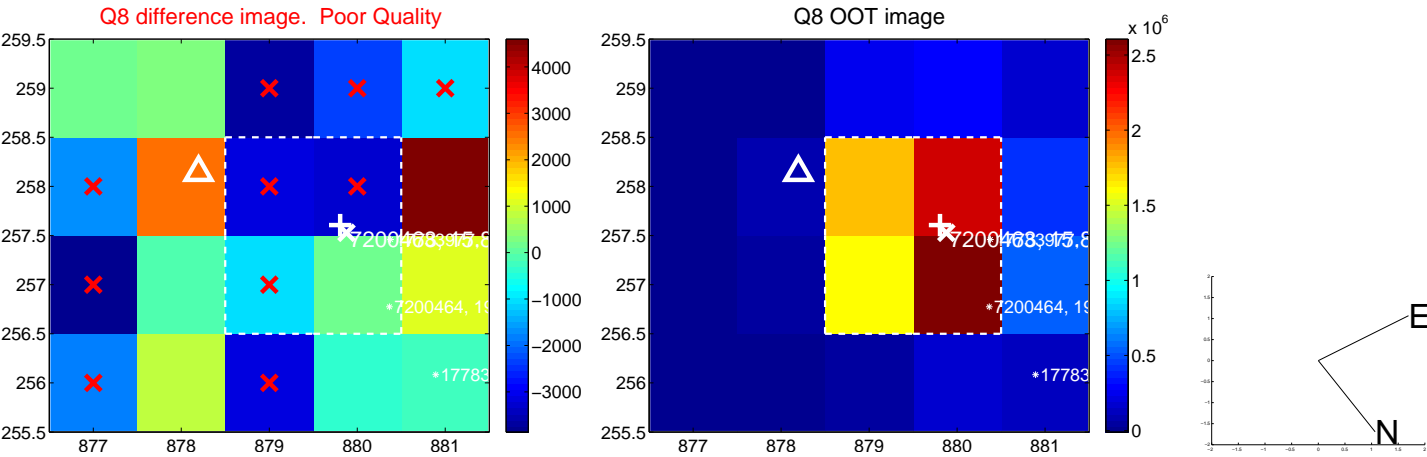
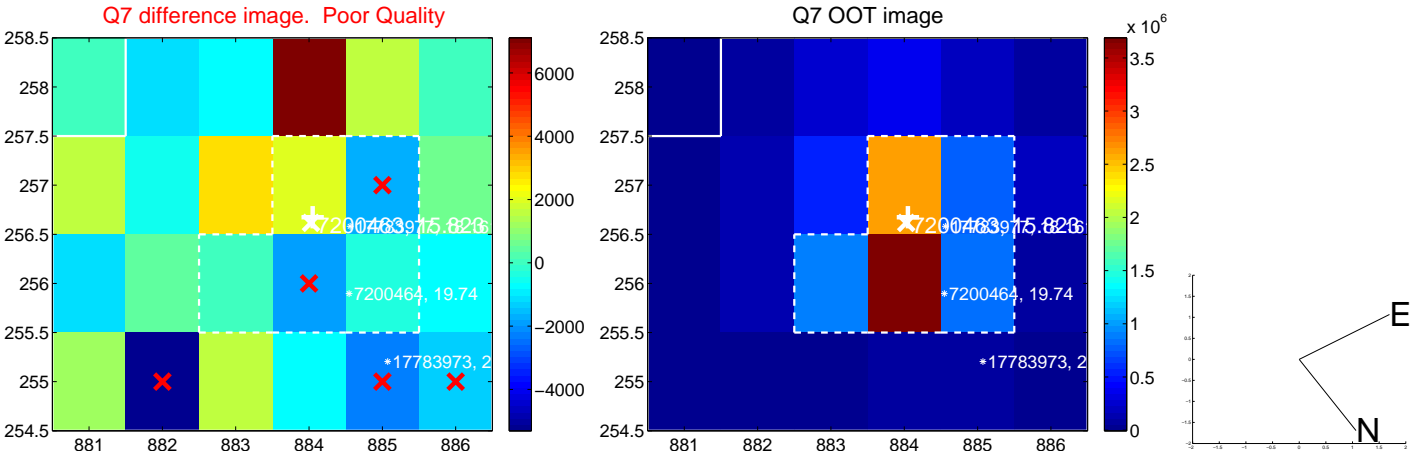


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

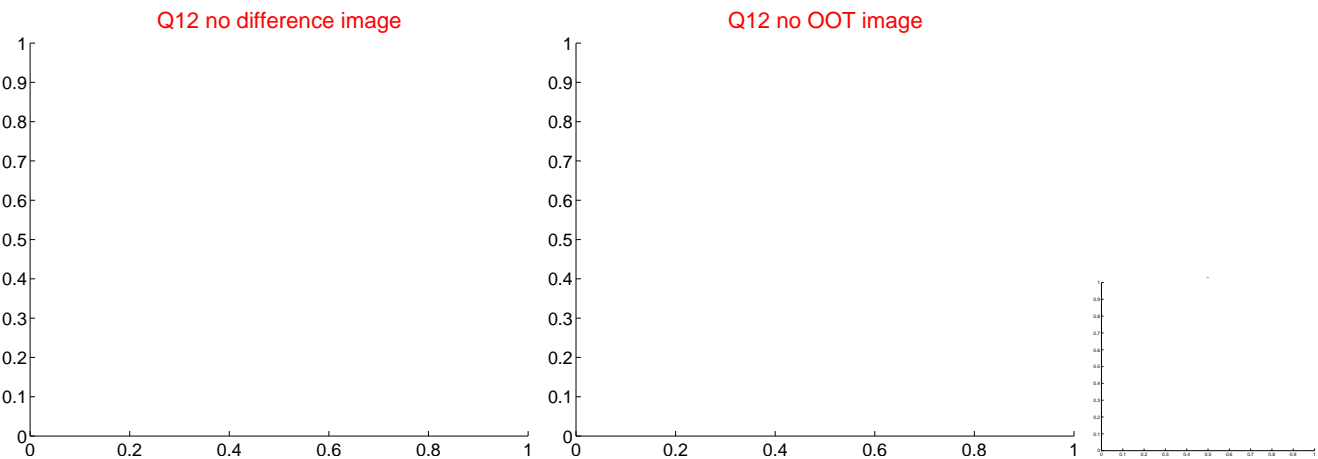
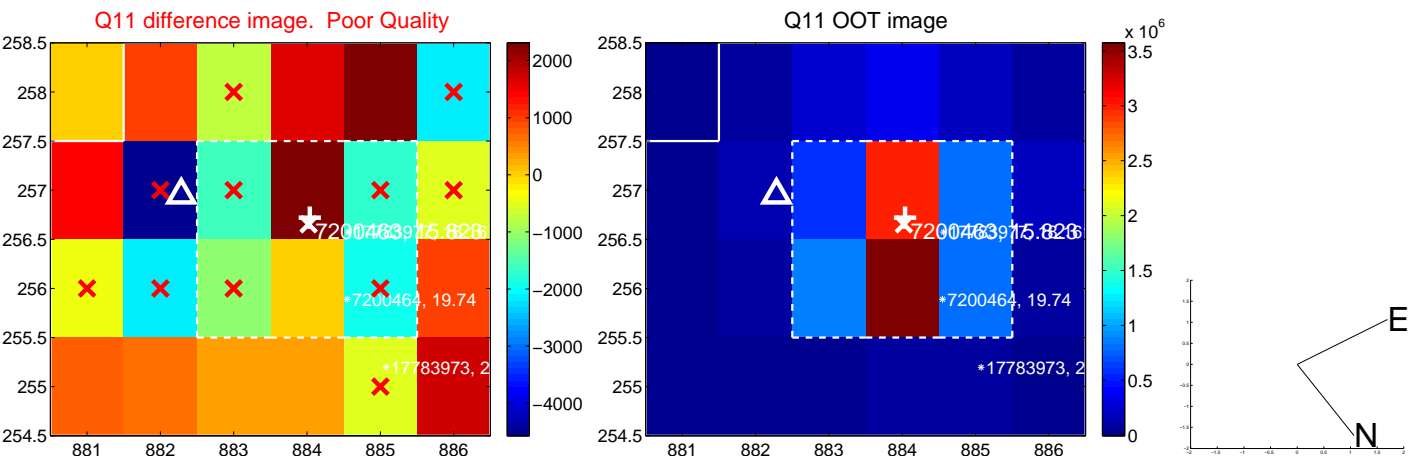
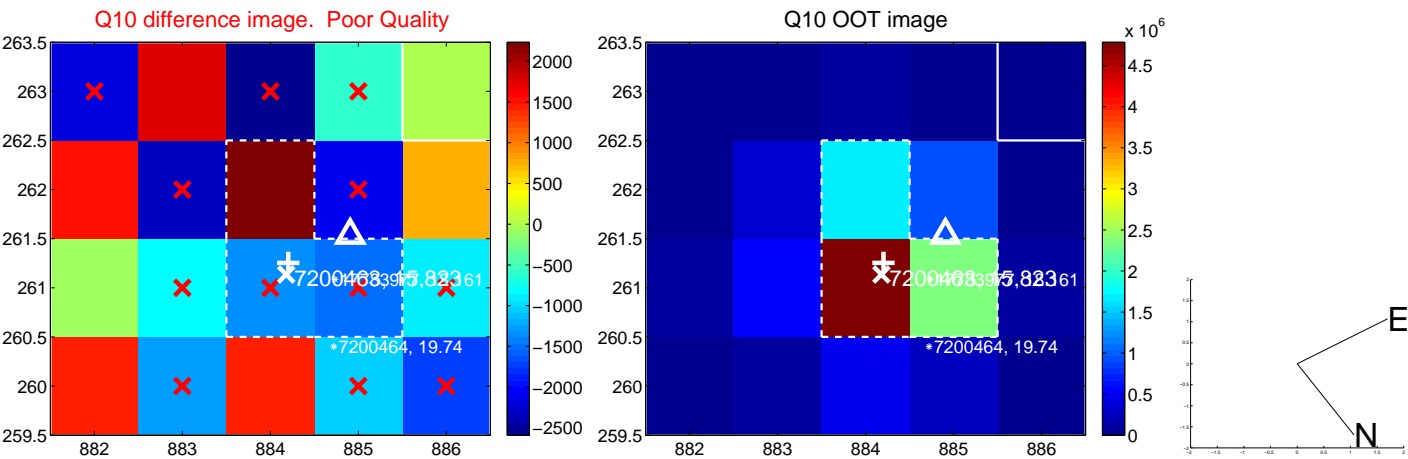
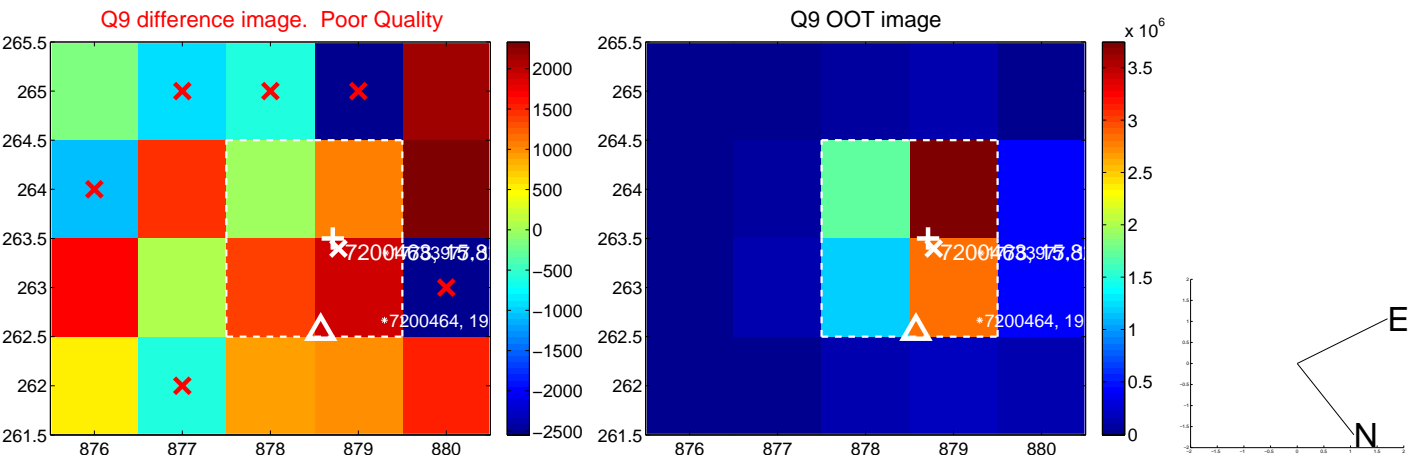


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

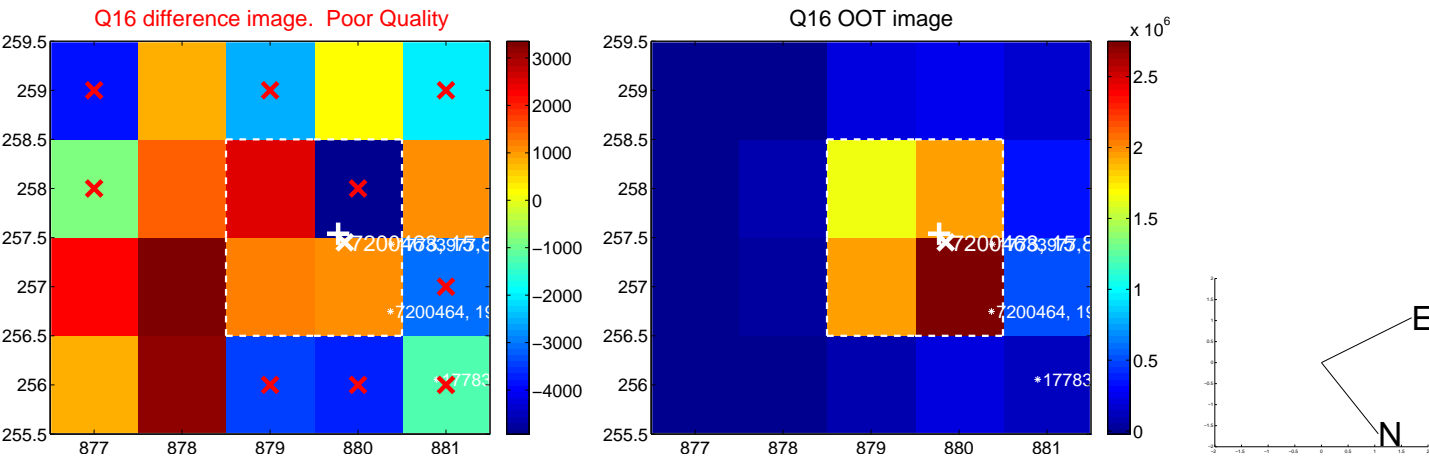
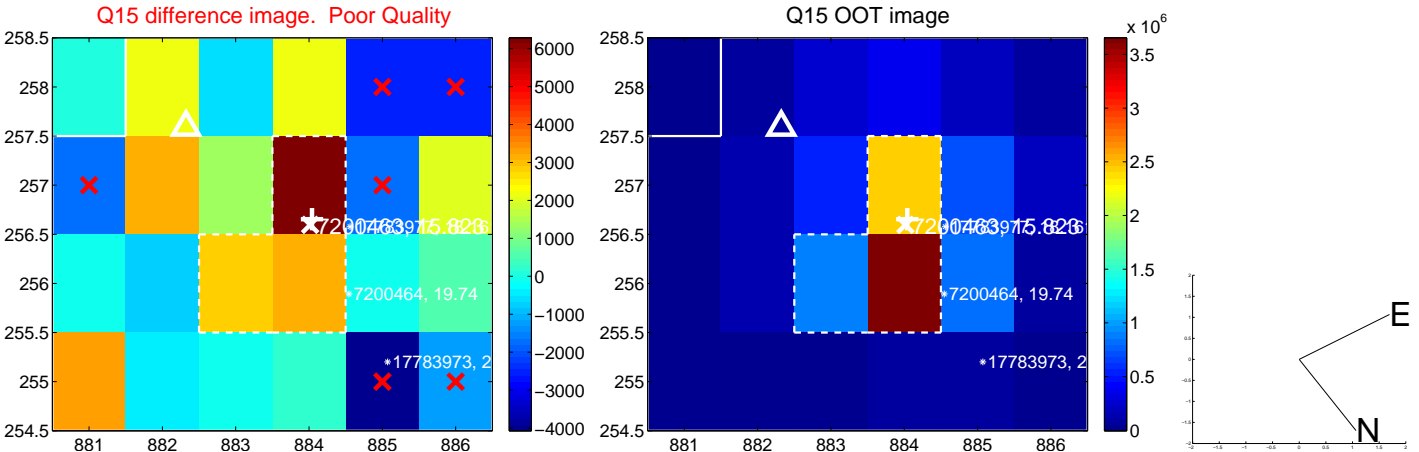




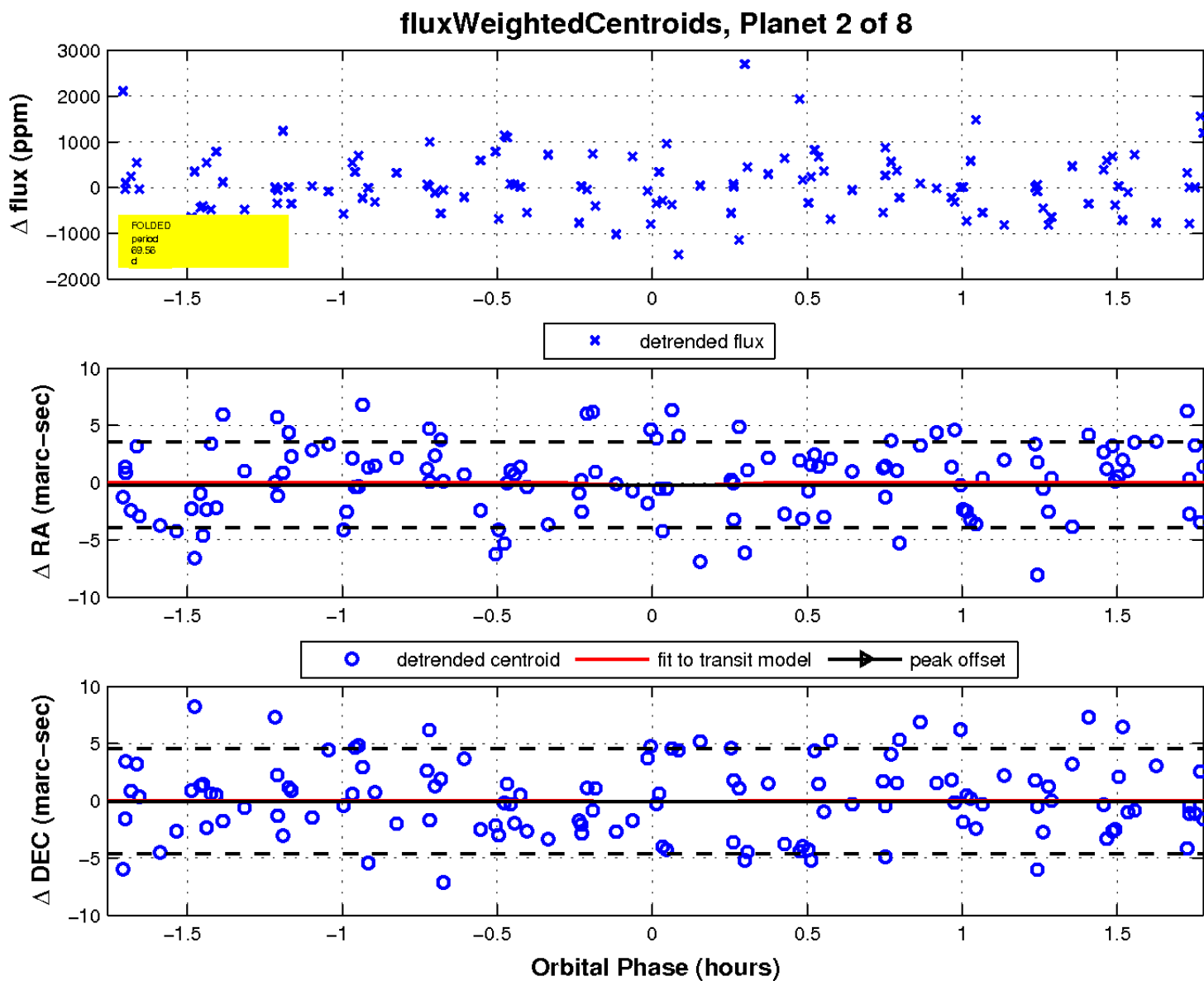
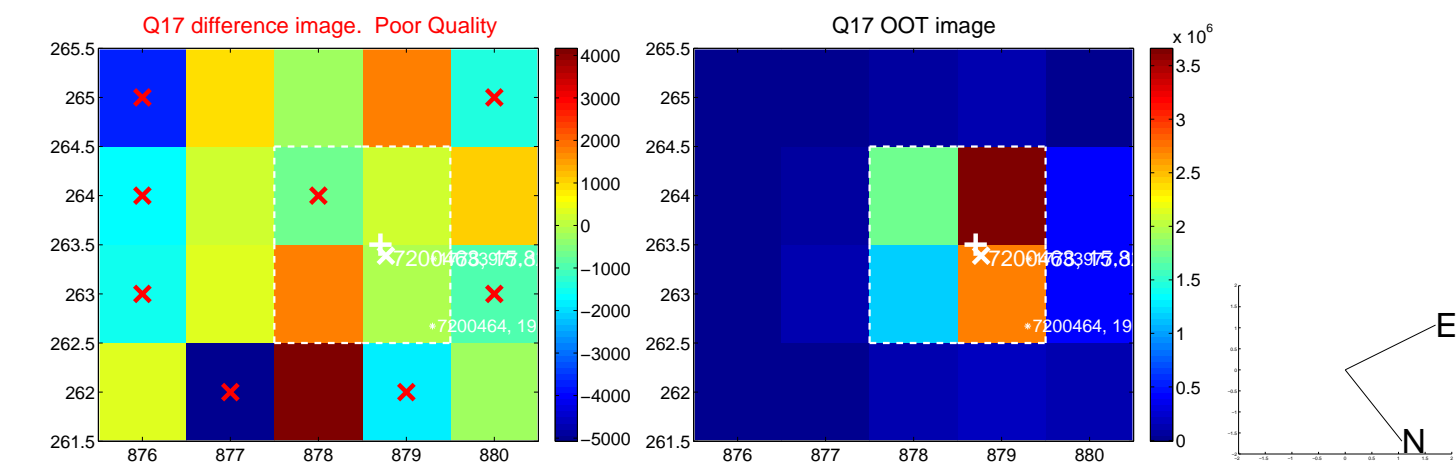
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

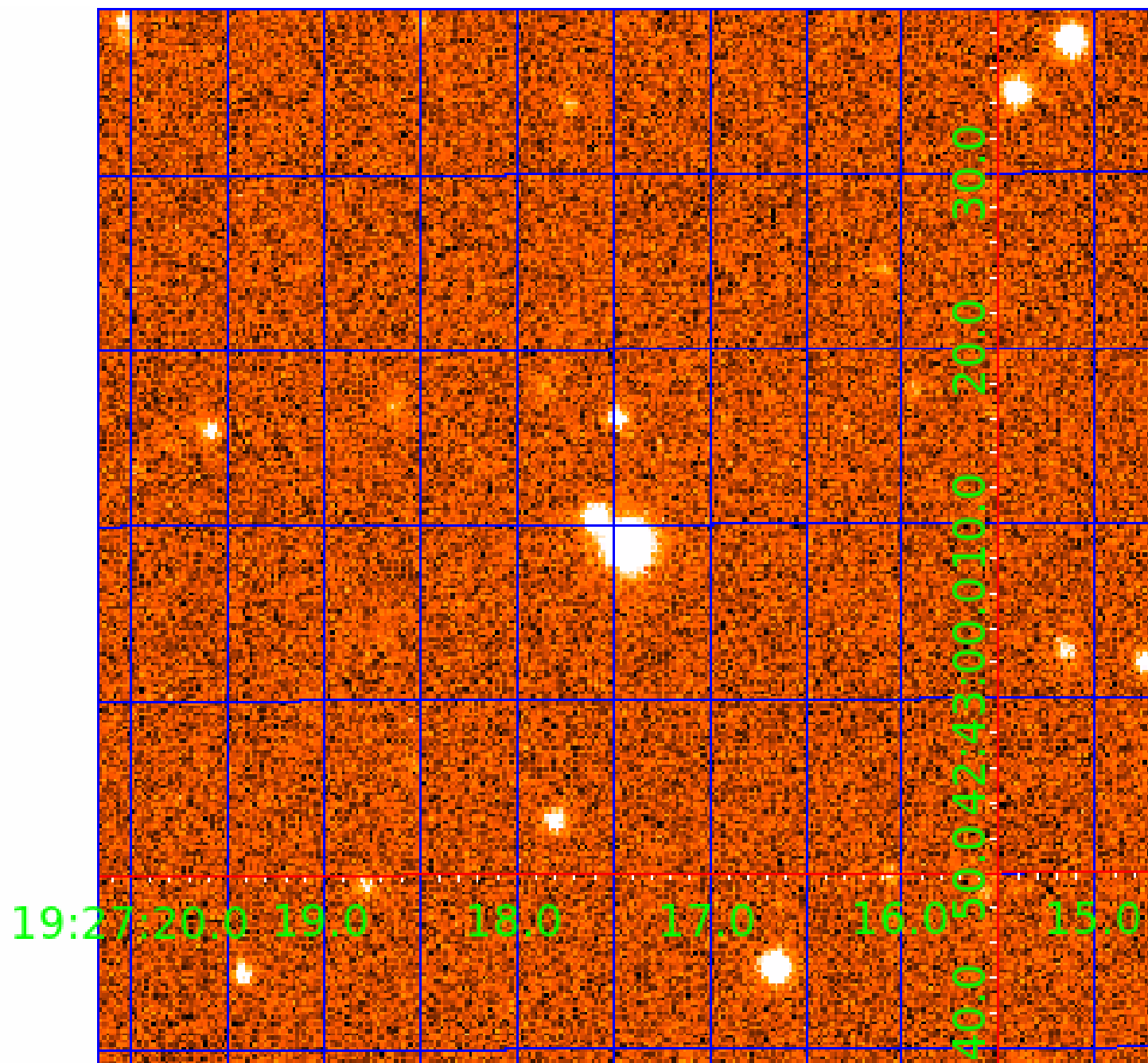


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination



# KIC 007200463

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007200463-01	OBS	No	0.566758	131.840663	30.2	3.735	8.9	4.8	0.57	3907	0.30	544.02
007200463-02	OBS	No	69.558006	189.973834	1591.5	0.599	9.5	6.6	0.57	3907	2.38	0.89
007200463-03	OBS	No	30.758930	159.909444	759.5	1.554	9.9	7.2	0.57	3907	1.65	2.65
007200463-04	OBS	No	29.082206	151.599782	987.7	2.567	8.8	9.4	0.57	3907	2.41	2.85
007200463-05	OBS	No	40.105384	144.167690	943.7	2.453	7.6	9.2	0.57	3907	1.99	1.86
007200463-06	OBS	No	16.502004	140.509425	986.5	0.762	9.3	9.4	0.57	3907	1.78	6.07
007200463-07	OBS	No	32.122218	142.928559	1031.9	1.754	7.9	8.3	0.57	3907	1.78	2.50
007200463-08	OBS	No	56.830874	139.594999	950.5	2.699	8.2	9.6	0.57	3907	2.05	1.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007200463-01	OBS	FP	0.00	1	0	0	1	LPP_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS—EPHEM_MATCH
007200463-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200463-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS
007200463-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200463-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200463-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
007200463-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007200463-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

**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.

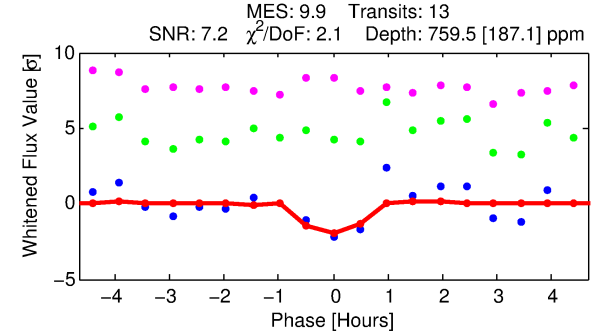
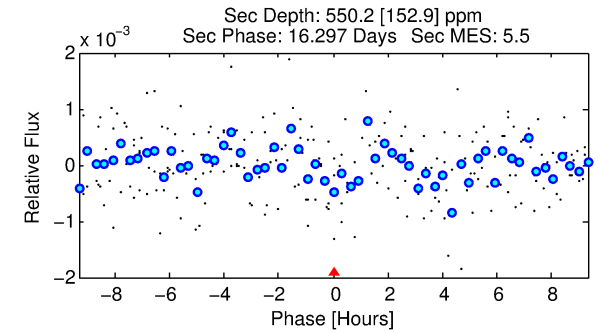
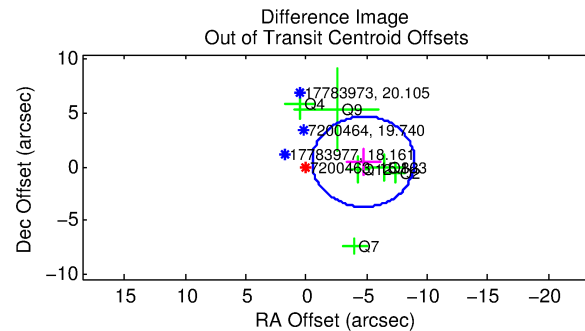
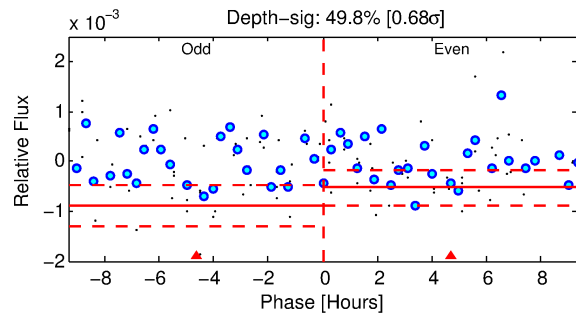
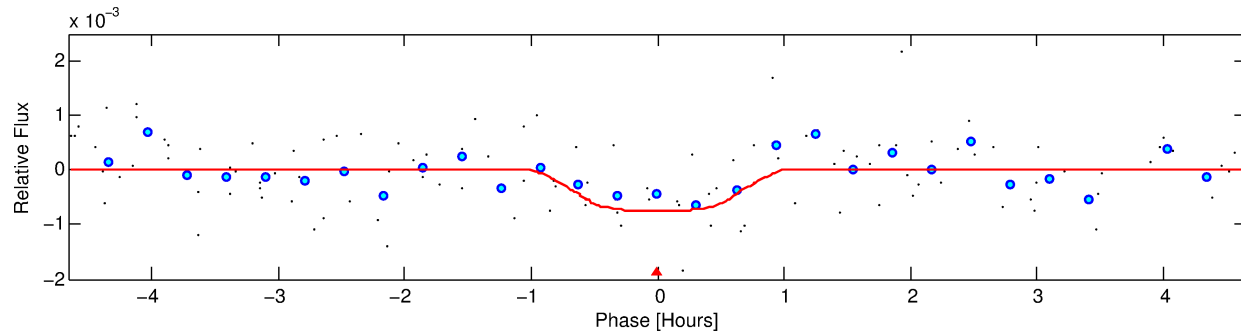
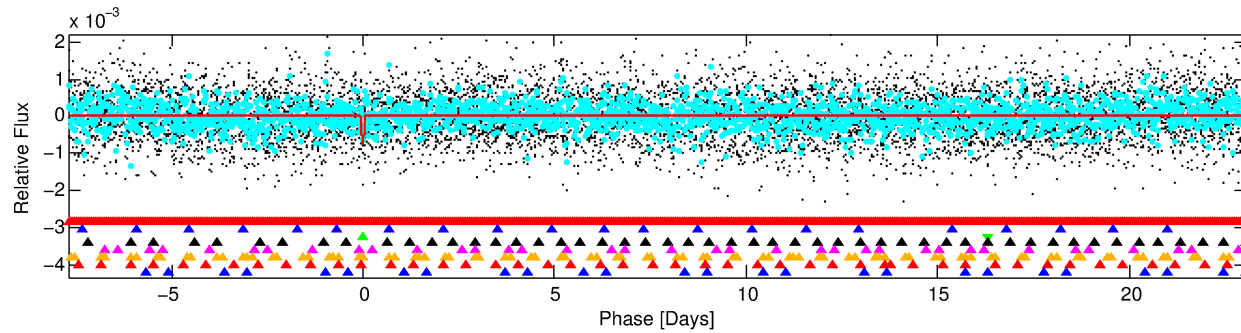
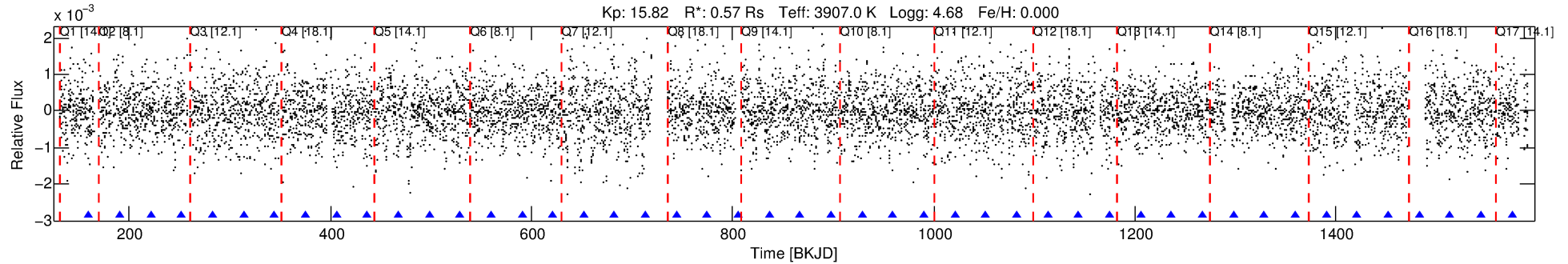
Ephemeris Match Information For 007200463-03

No Significant Match Found



# DV One-Page Summary

KIC: 7200463 Candidate: 3 of 8 Period: 30.759 d



## DV Fit Results:

Period = 30.75893 [0.00042] d  
Epoch = 159.9094 [0.0128] BKJD  
Rp/R\* = 0.0268 [0.1231]  
a/R\* = 117.93 [2097.31]  
b = 0.67 [14.98]  
Seff = 2.65 [0.30]  
Teq = 325 [9] K  
Rp = 1.65 [7.60] Re  
a = 0.1589 [0.0080] AU  
Ag = 2797.04 [25737.18] [0.11 $\sigma$ ]  
Teffp = 3657 [8413] K [0.40 $\sigma$ ]

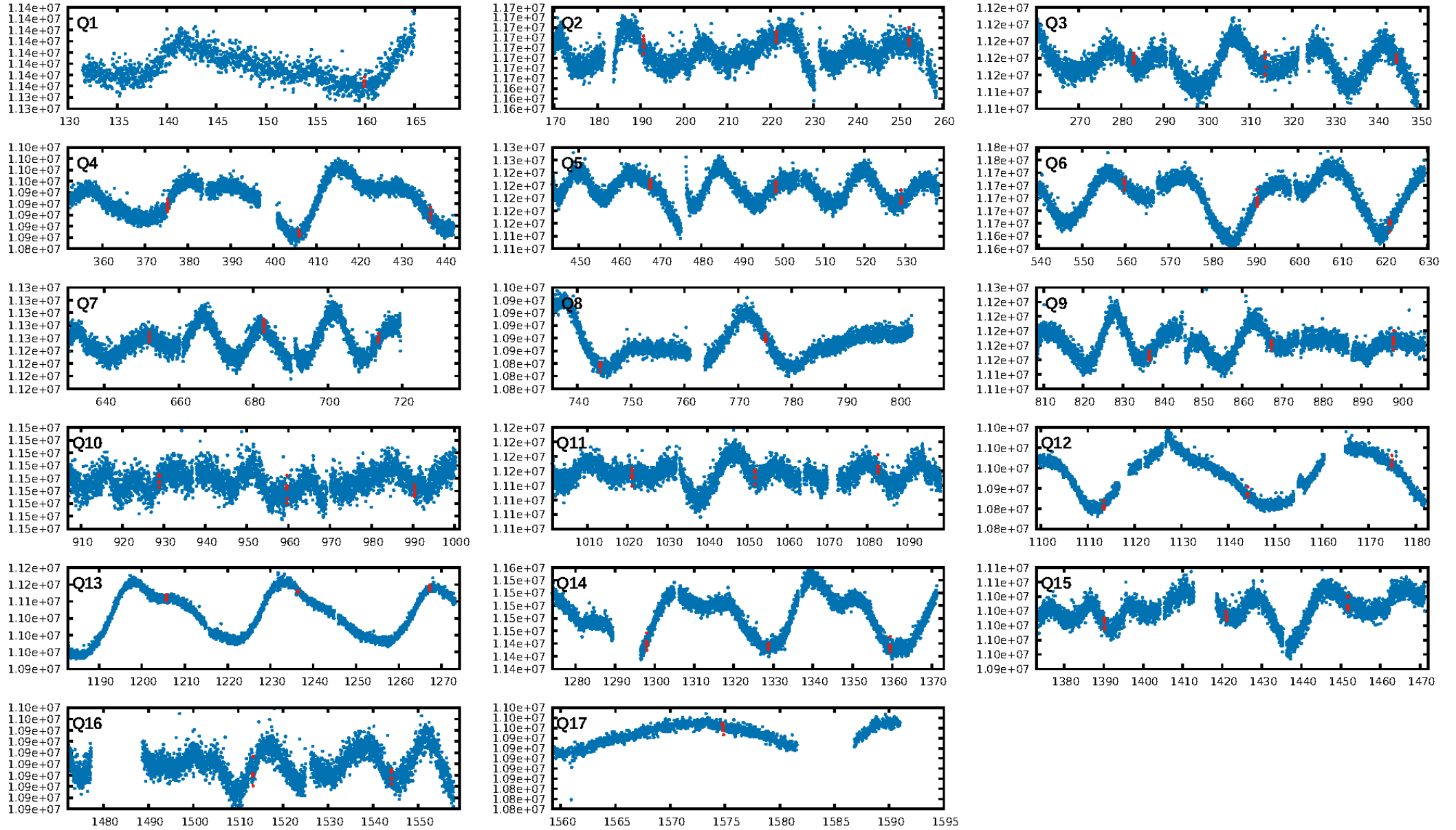
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [13.41 $\sigma$ ]  
LongPeriod-sig: 100.0% [13.96 $\sigma$ ]  
ModelChiSquare2-sig: 0.1%  
ModelChiSquareGof-sig: 72.6%  
Bootstrap-pfa: 2.96e-11  
RollingBand-fgt: 1.00 [12/12]  
GhostDiagnostic-chr: -6.304  
Centroid-sig: 1.1%  
Centroid-so: 2.178 arcsec [1.97 $\sigma$ ]  
OotOffset-rm: 4.739 arcsec [3.37 $\sigma$ ]  
KicOffset-rm: 4.652 arcsec [3.55 $\sigma$ ]  
OotOffset-st: 1/1/3/1 [6]  
KicOffset-st: 1/1/3/1 [6]  
DiffImageQuality-fgm: 0.00 [0/6]  
DiffImageOverlap-fno: 0.00 [0/17]

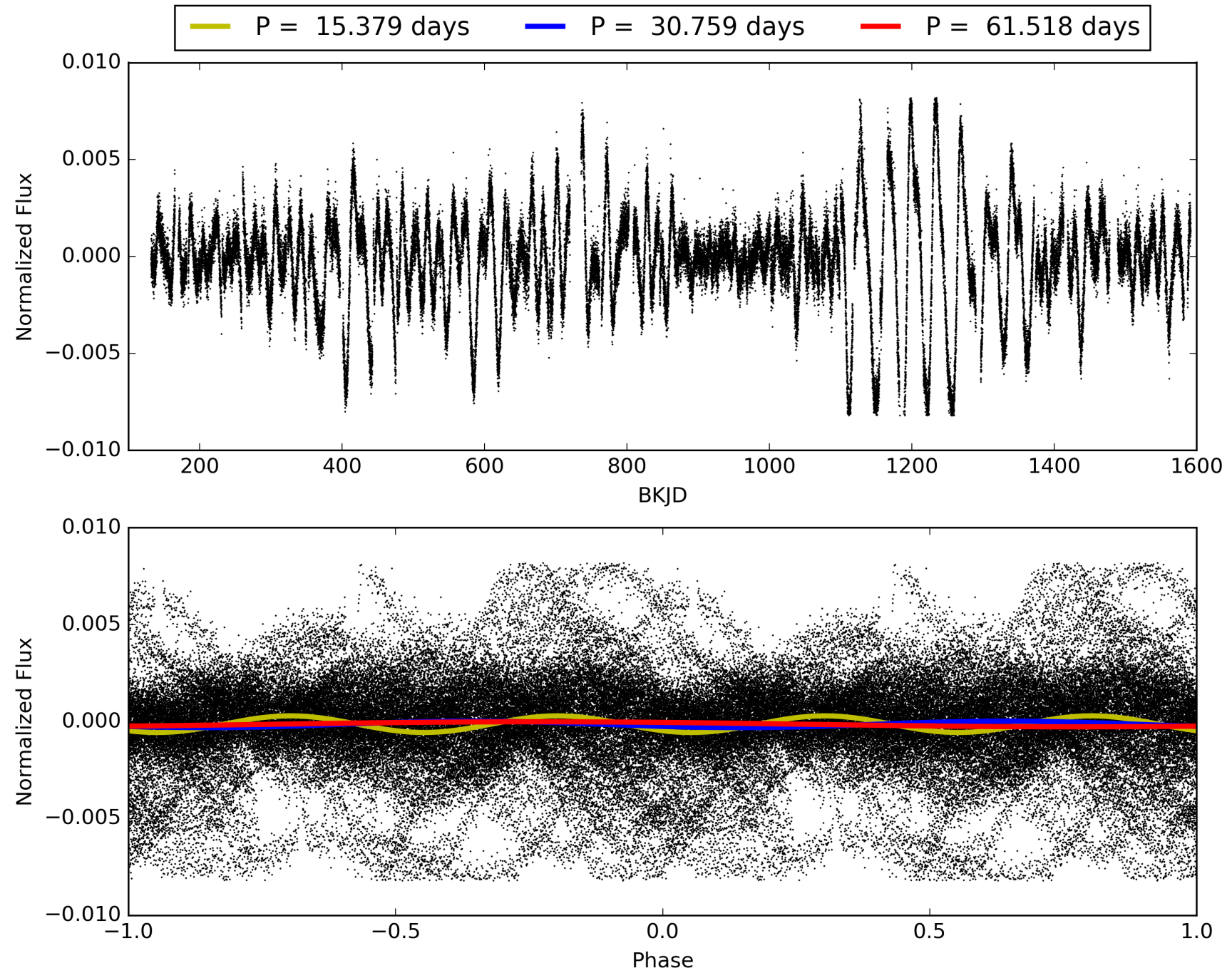
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 07:12:59 Z

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

# TCE 007200463-03, PDC Light Curves

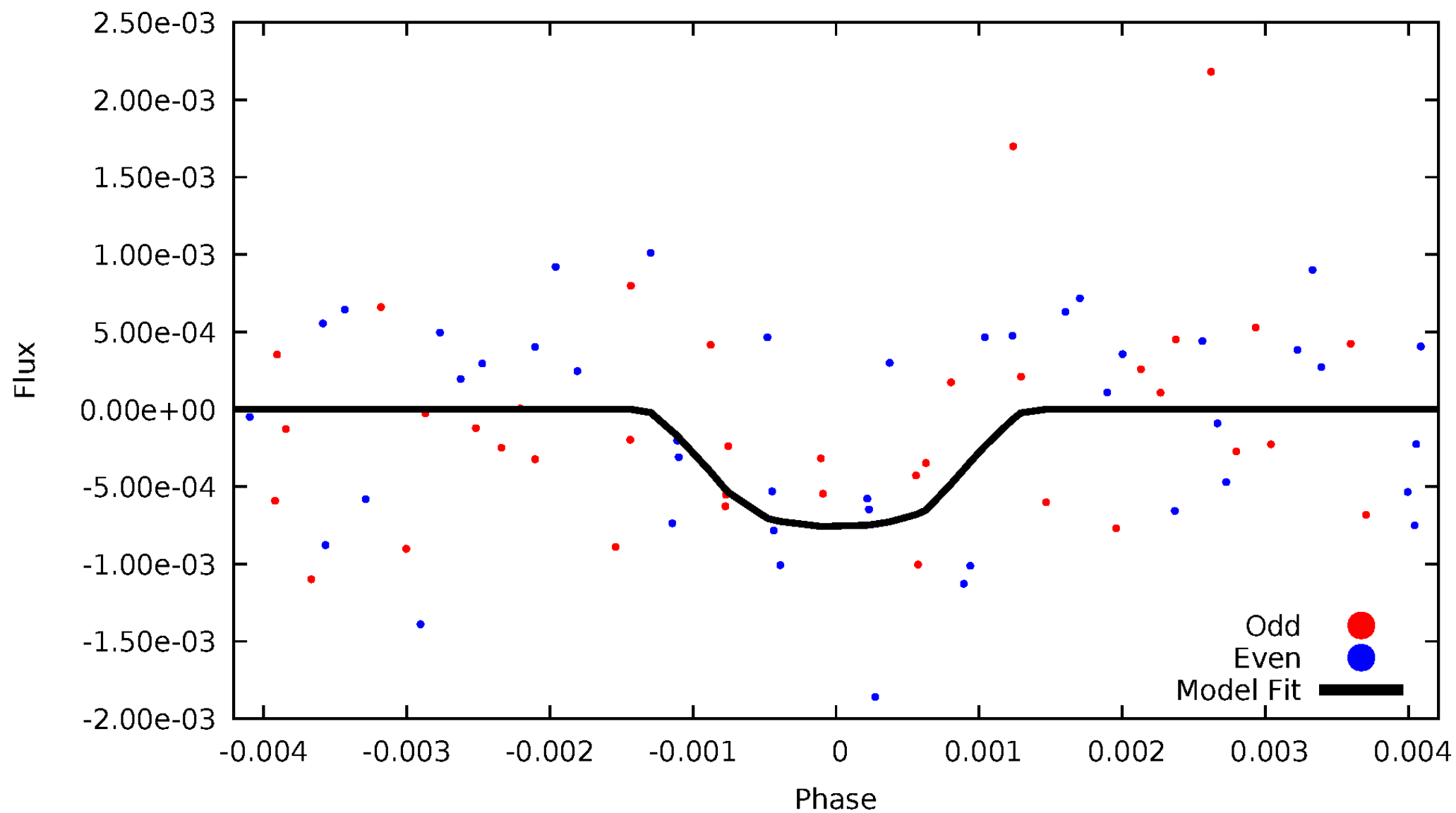


TCE 007200463-03



# DV Odd/Even

TCE 007200463-03



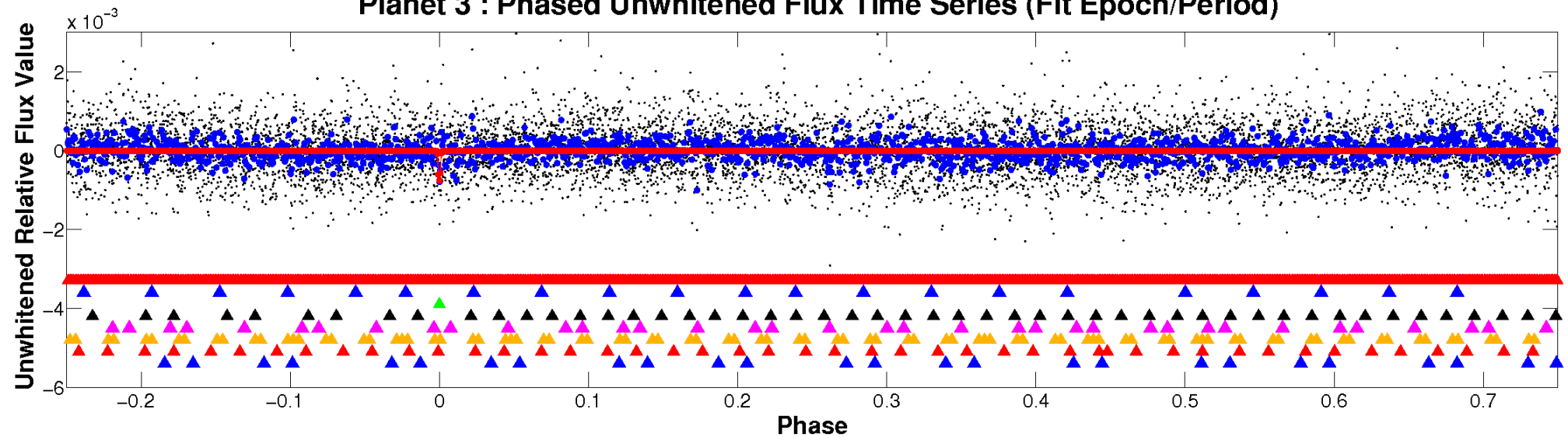


ALT Odd/Even

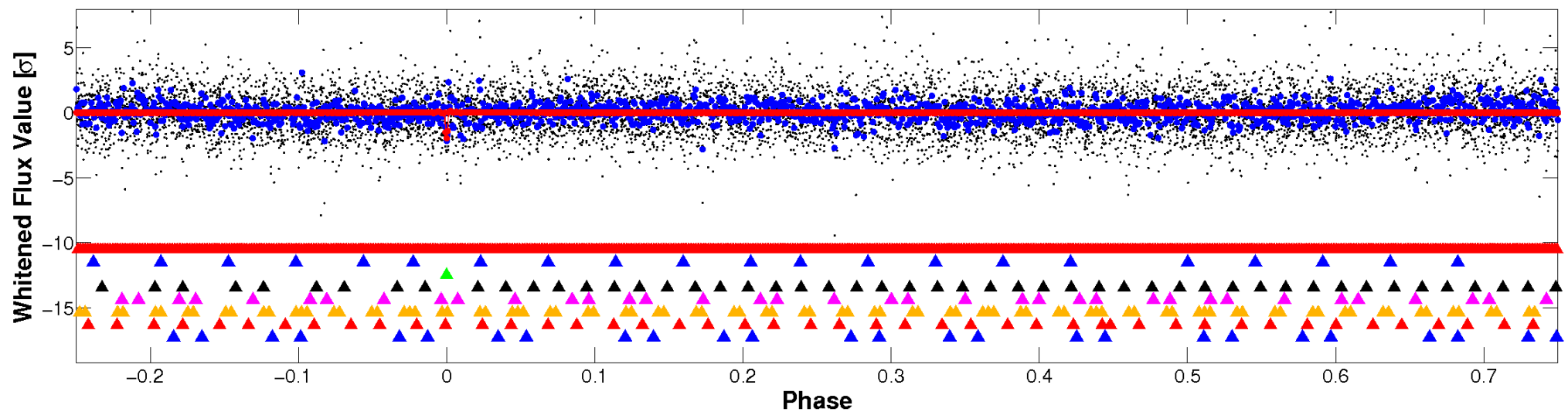
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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



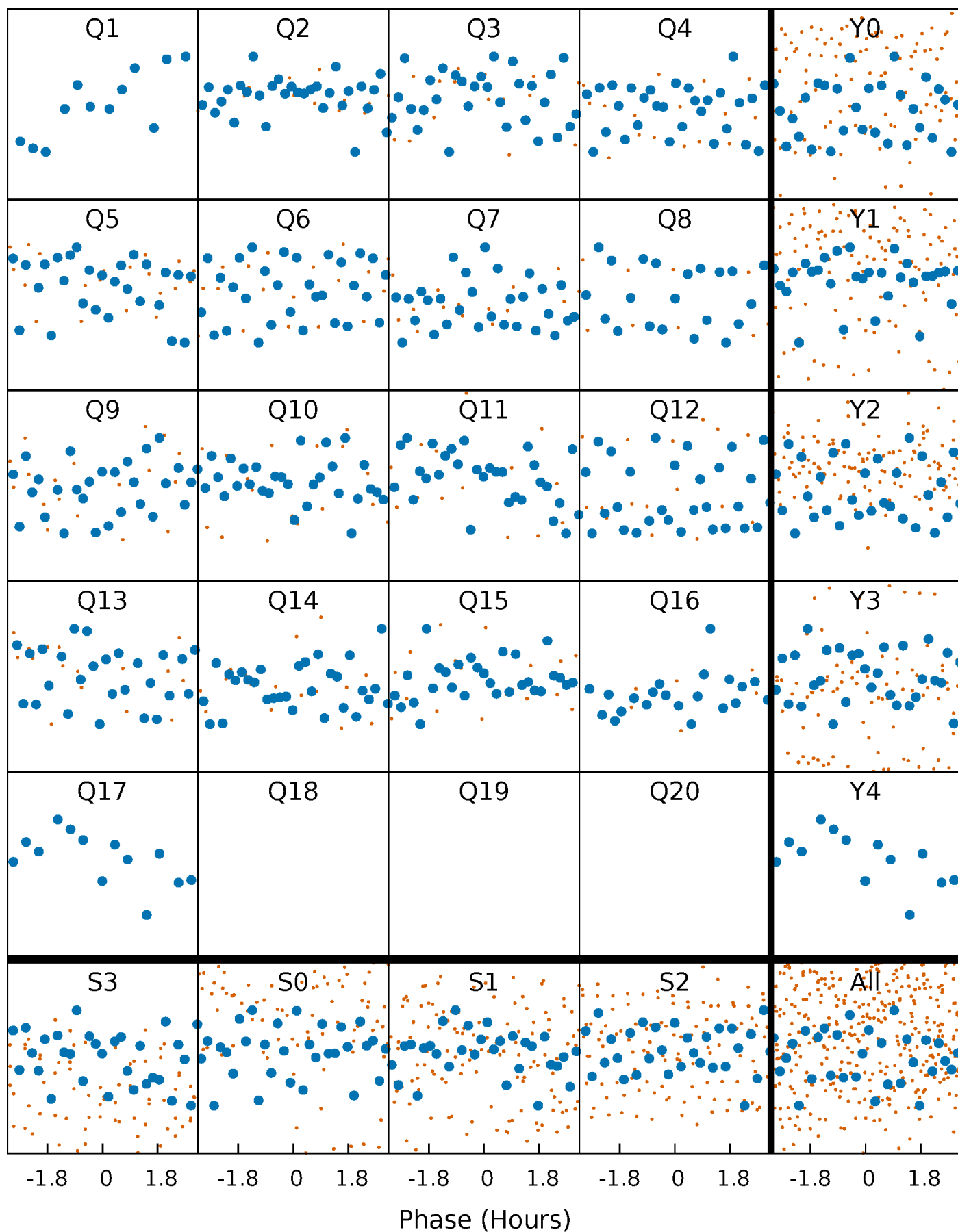
## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)





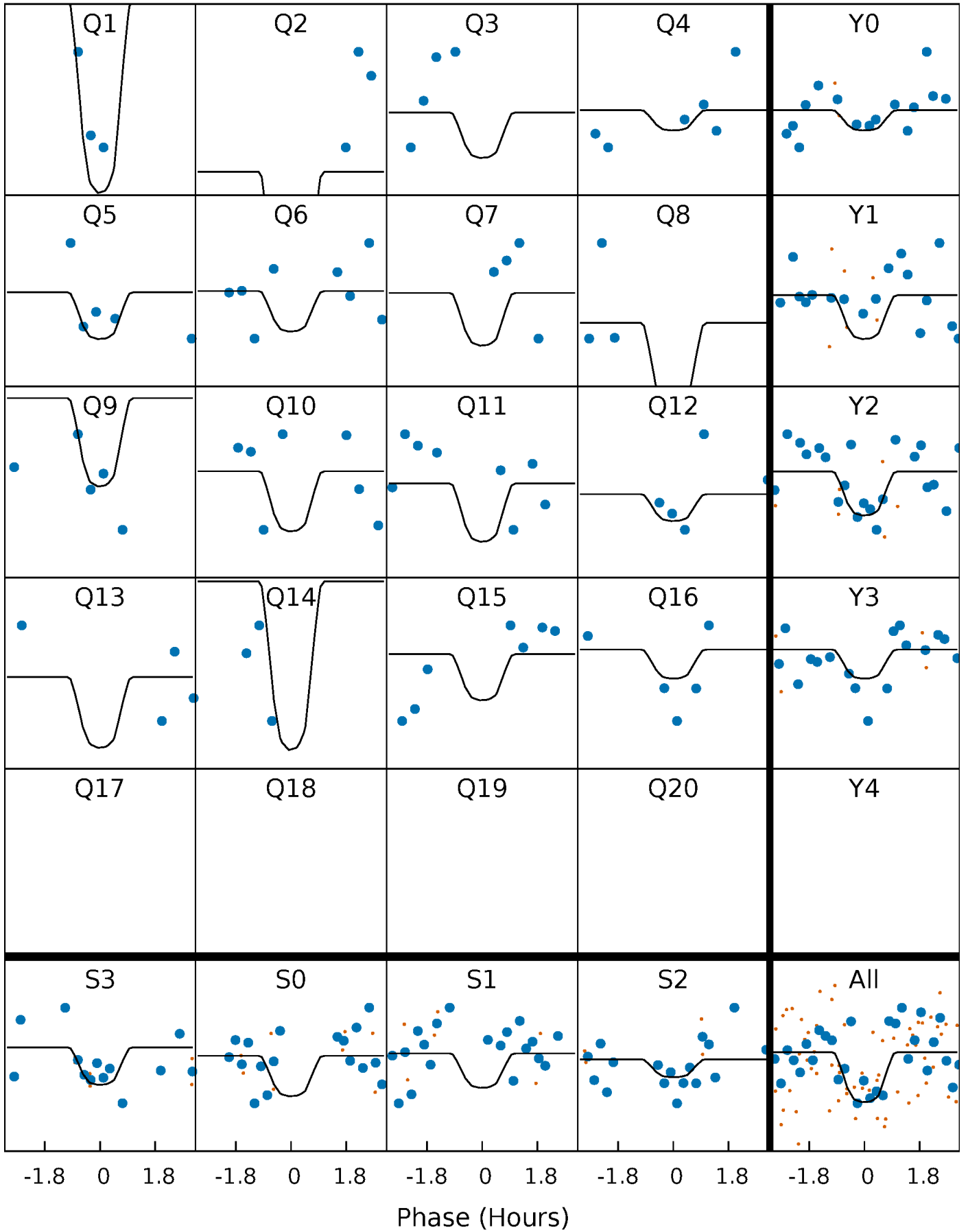
# PDC Quarter-Phased Transit Curves

TCE 007200463-03 P= 30.758930 Days  $T_0=159.909444$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 007200463-03   P= 30.758930 Days    $T_0=159.909444$  (BKJD)

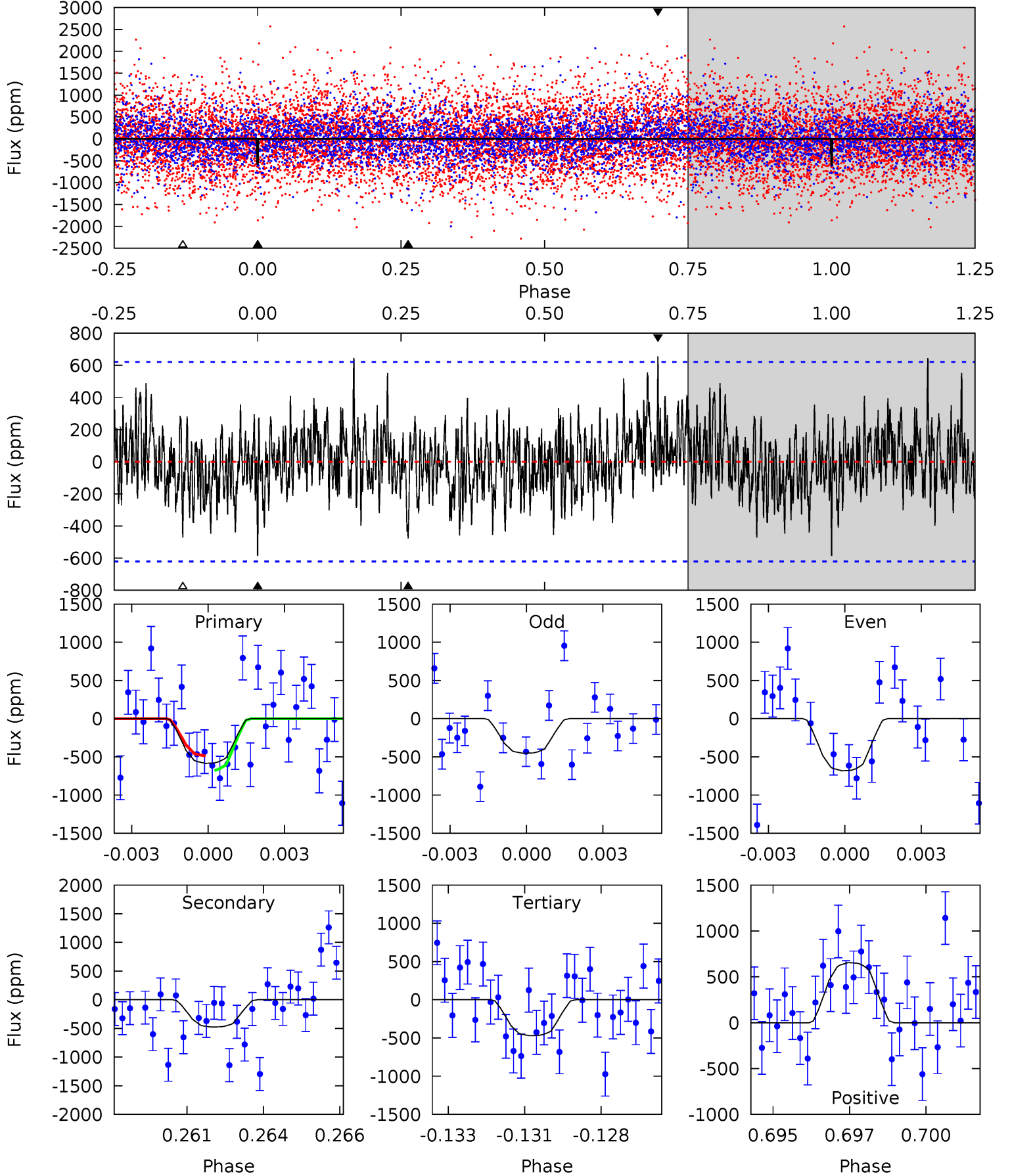


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

007200463-03, P = 30.758930 Days, E = 129.150514 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
4.97	4.05	4.00	5.56	5.28	3.01	1.45	0.97	-0.60	0.05	-1.51	0.98	0.90	0.53	0.81



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 007200463

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$3907^{+86}_{-86}$	$4.685^{+0.036}_{-0.015}$	$0.000^{+0.100}_{-0.100}$	$0.566^{+0.022}_{-0.036}$	$0.565^{+0.032}_{-0.026}$	$4.395^{+0.686}_{-0.307}$
	+2%/-2%	+1%/-0%	+inf%/-inf%	+4%/-6%	+6%/-5%	+16%/-7%
Source	PHO2	PHO2	PHO2	DSEP		

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

### Secondary Eclipse Parameters for KIC 007200463-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-477 \pm 118$	$5.65^{+5.68}_{-3.90}$	$452^{+10}_{-11}$	$2578^{+978}_{-394}$	$218^{+1898}_{-167}$
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

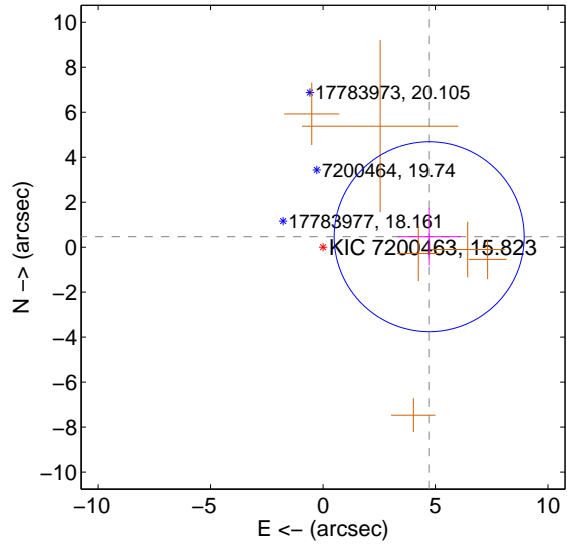
Supplemental centroid analysis for 007200463-03. Kepler magnitude: 15.82. Transit SNR 7.22

There are 0 quarters with good PRF difference image offsets

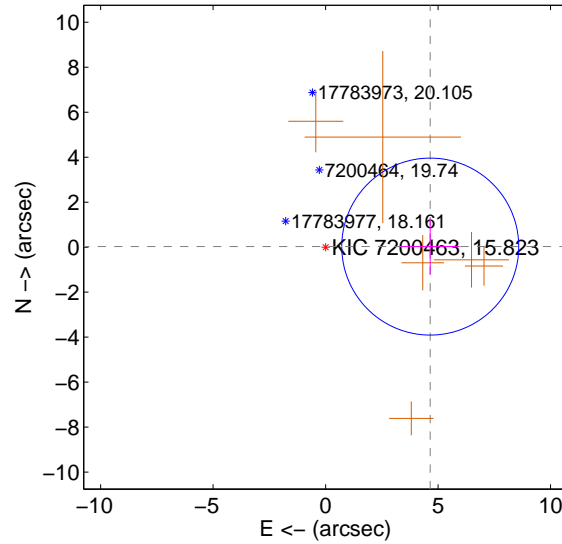
The direct PRF centroid is offset from the target star catalog position by about 0.46 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.739 \pm 1.407$	3.37	$-4.717 \pm 1.409$	$0.465 \pm 1.270$
PRF-fit source offset from KIC position	$4.652 \pm 1.311$	3.55	$-4.652 \pm 1.311$	$0.026 \pm 1.242$
photometric centroid source offset	$2.18 \pm 1.11$	1.97	$-0.07 \pm 1.16$	$-2.18 \pm 1.11$

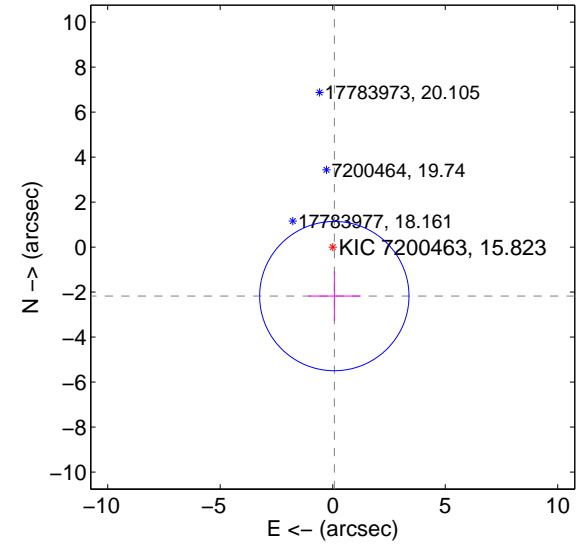
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



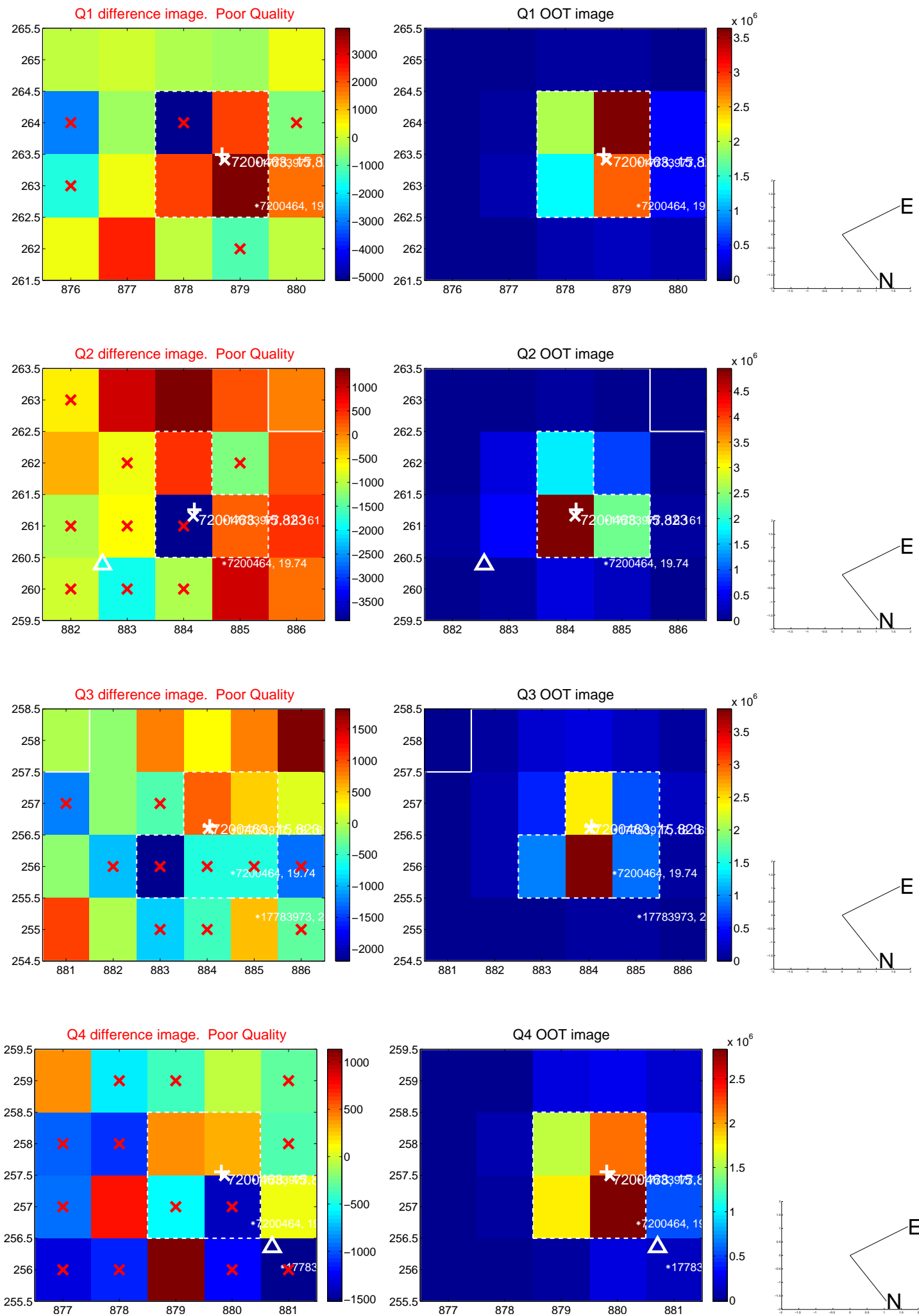
offset from photometric centroids



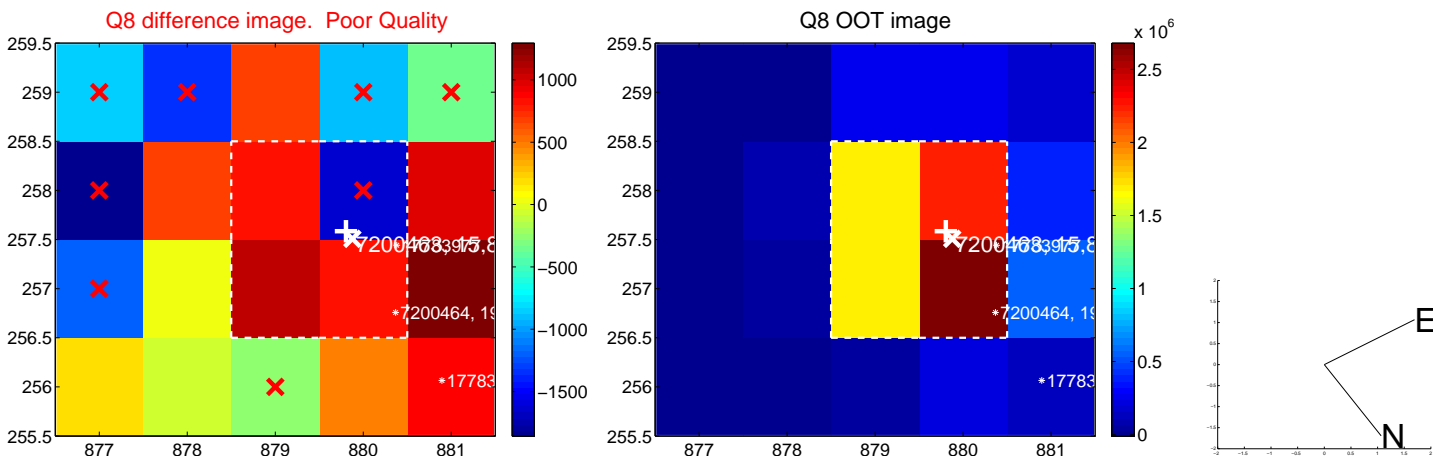
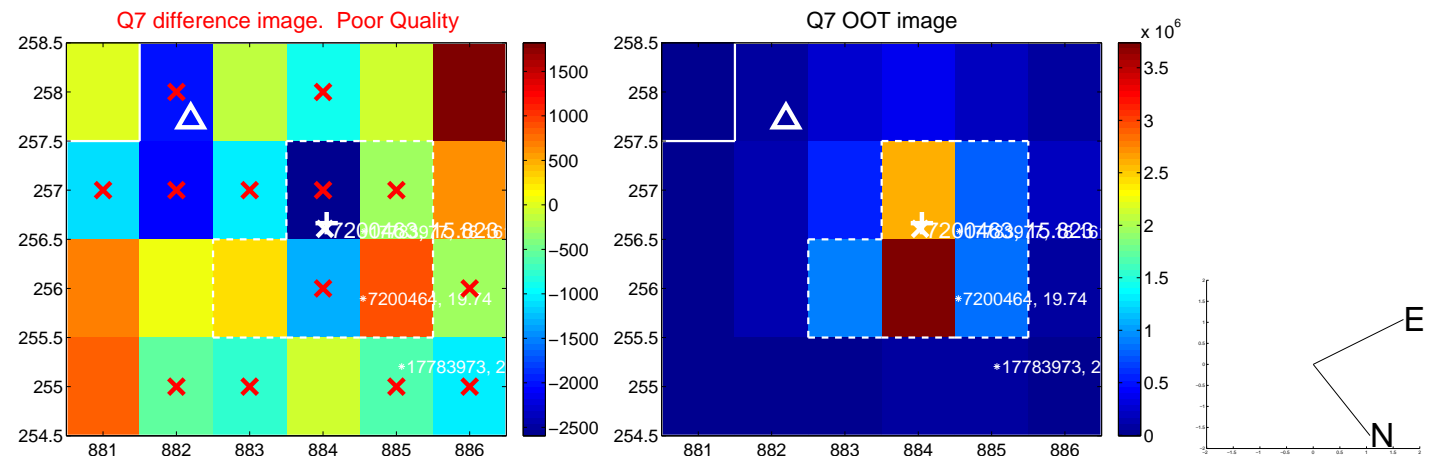
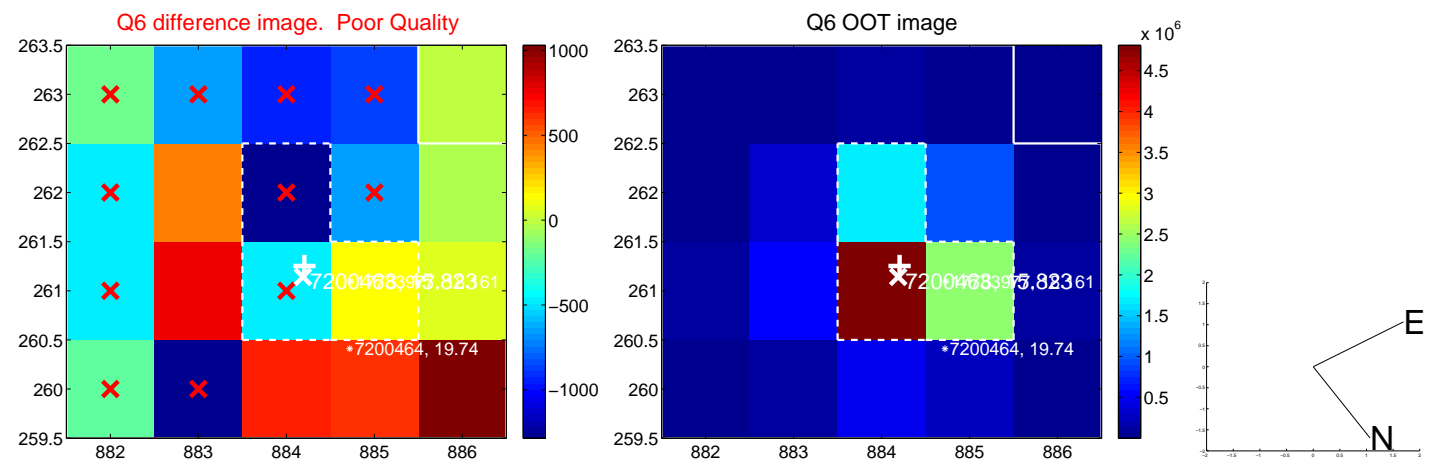
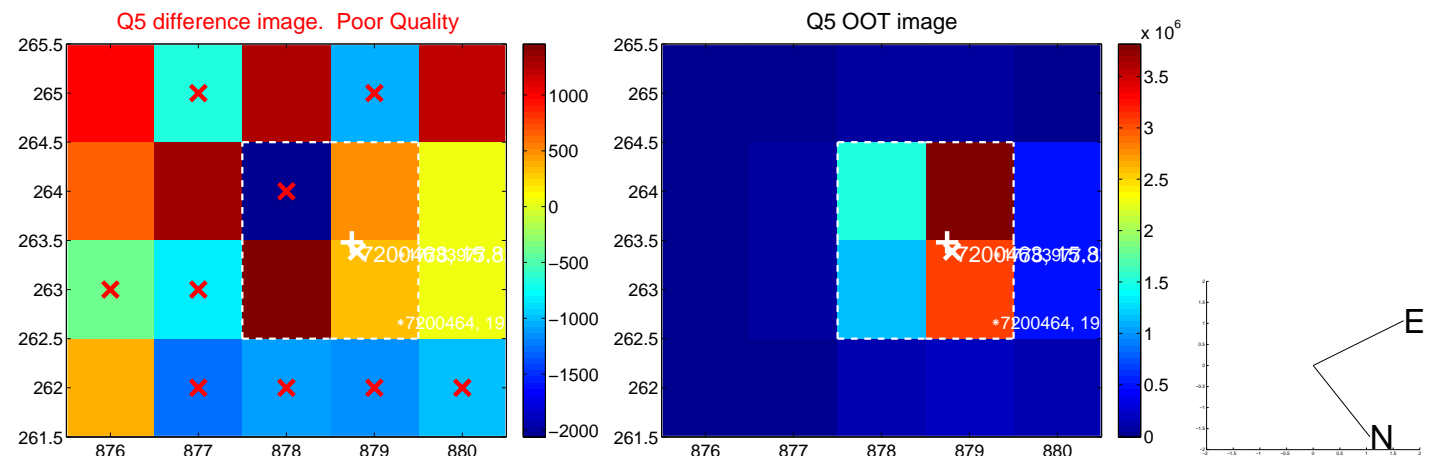
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



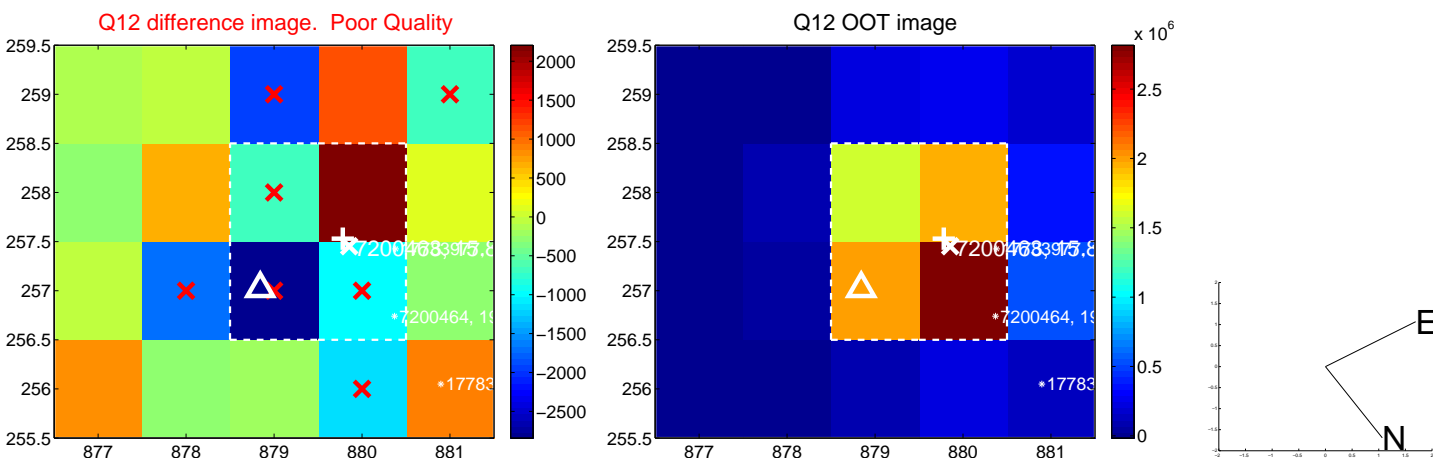
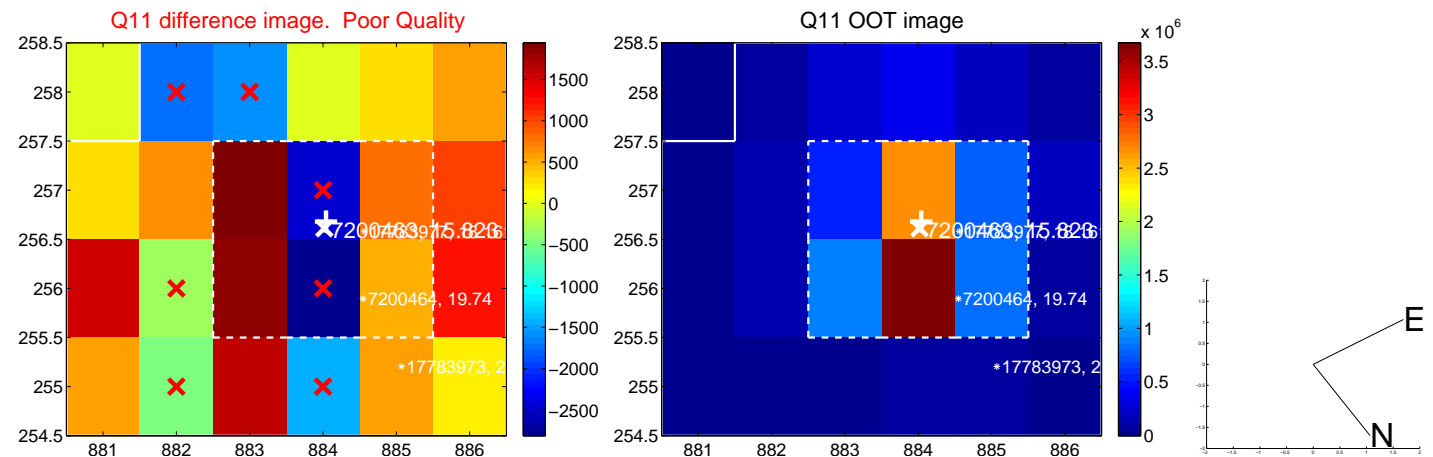
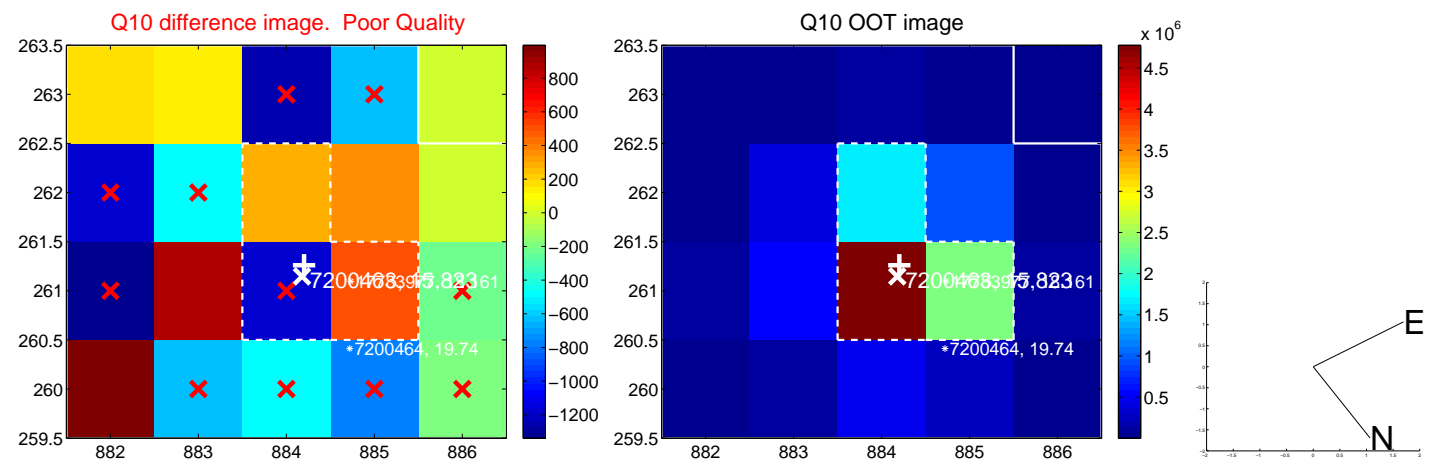
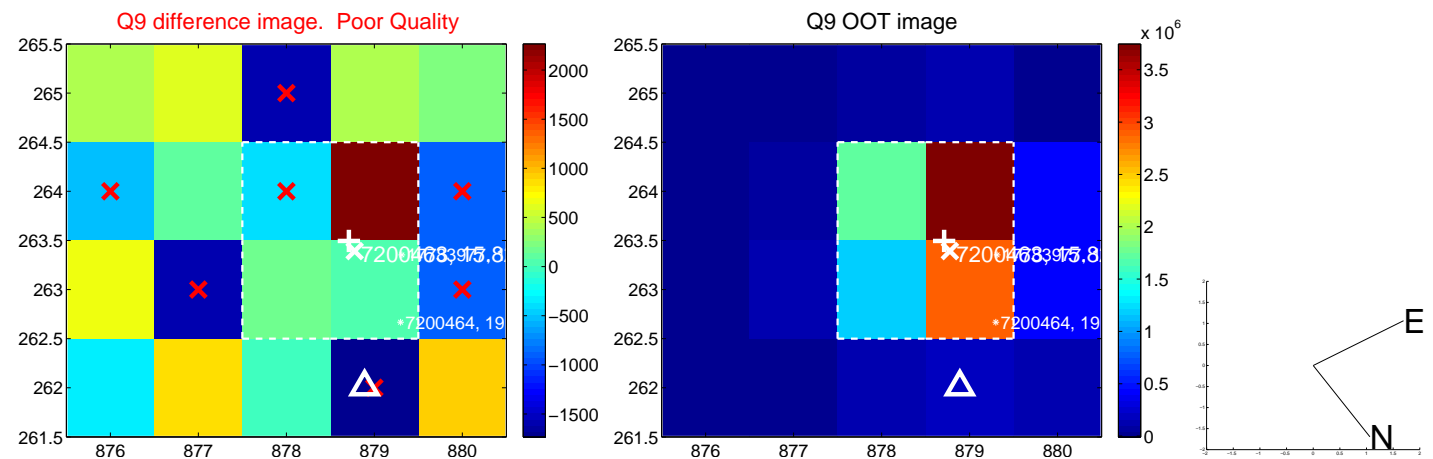
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



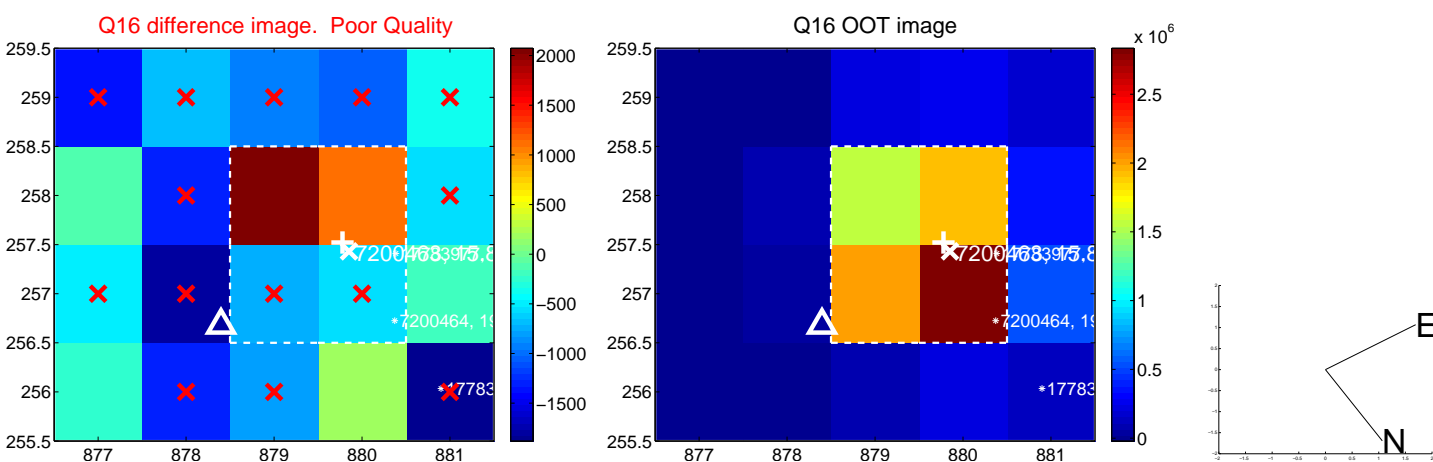
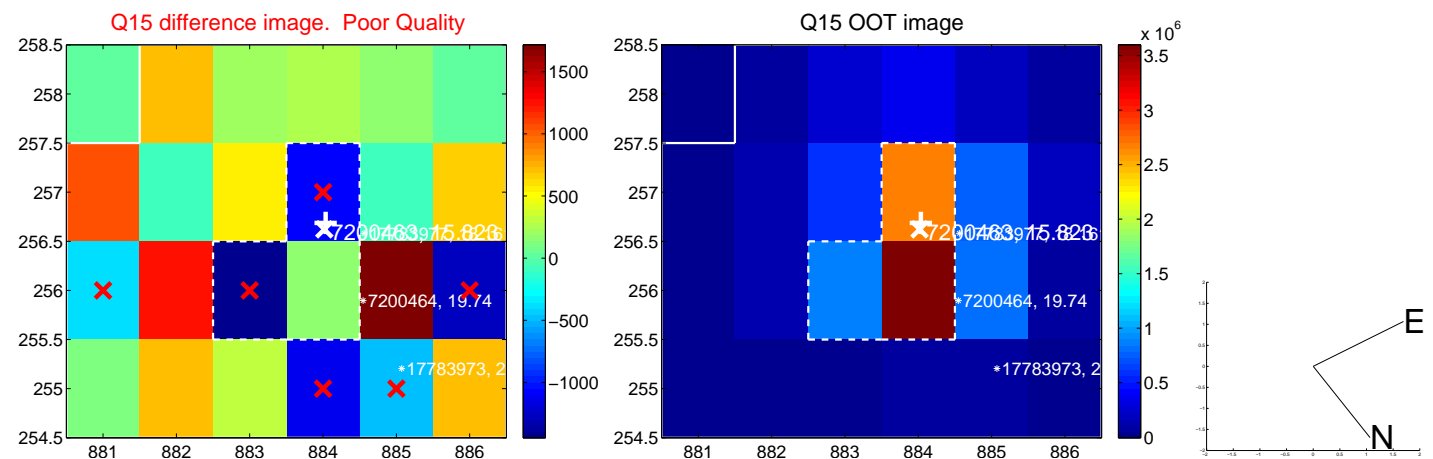
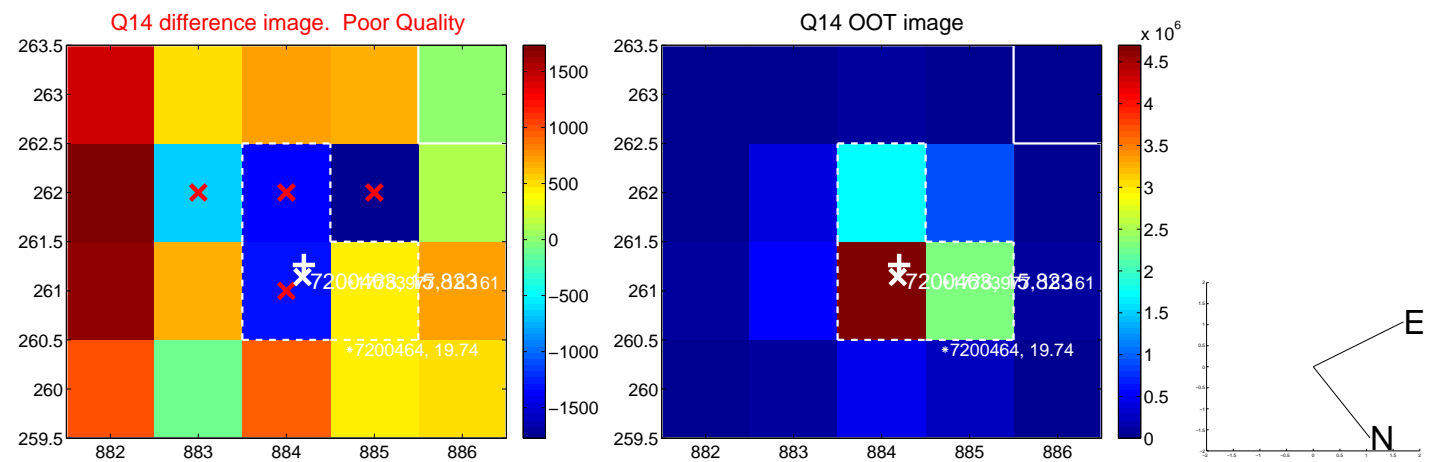
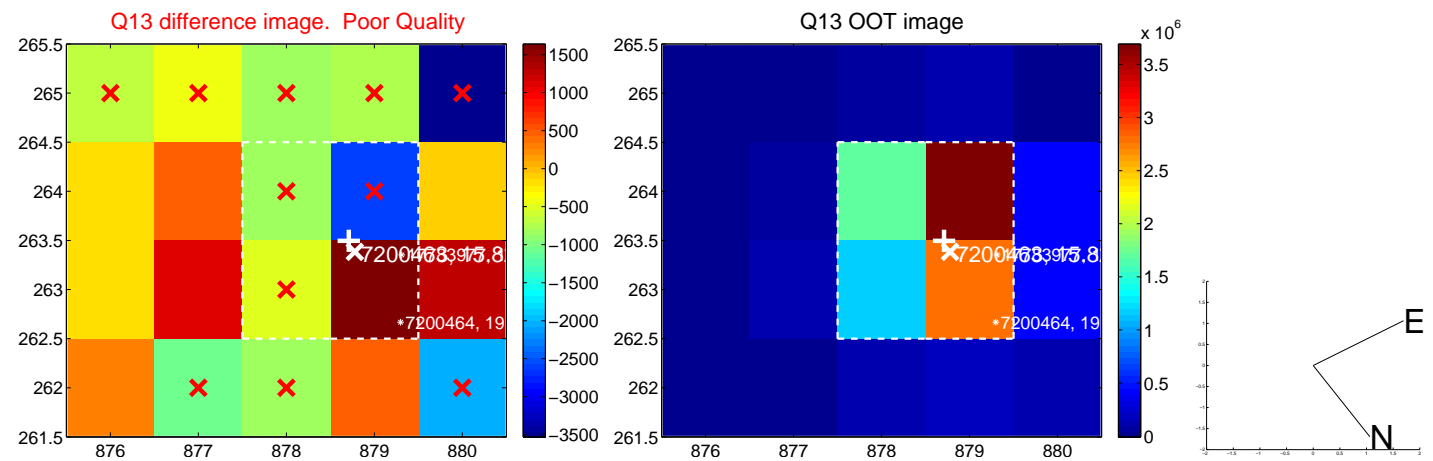
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



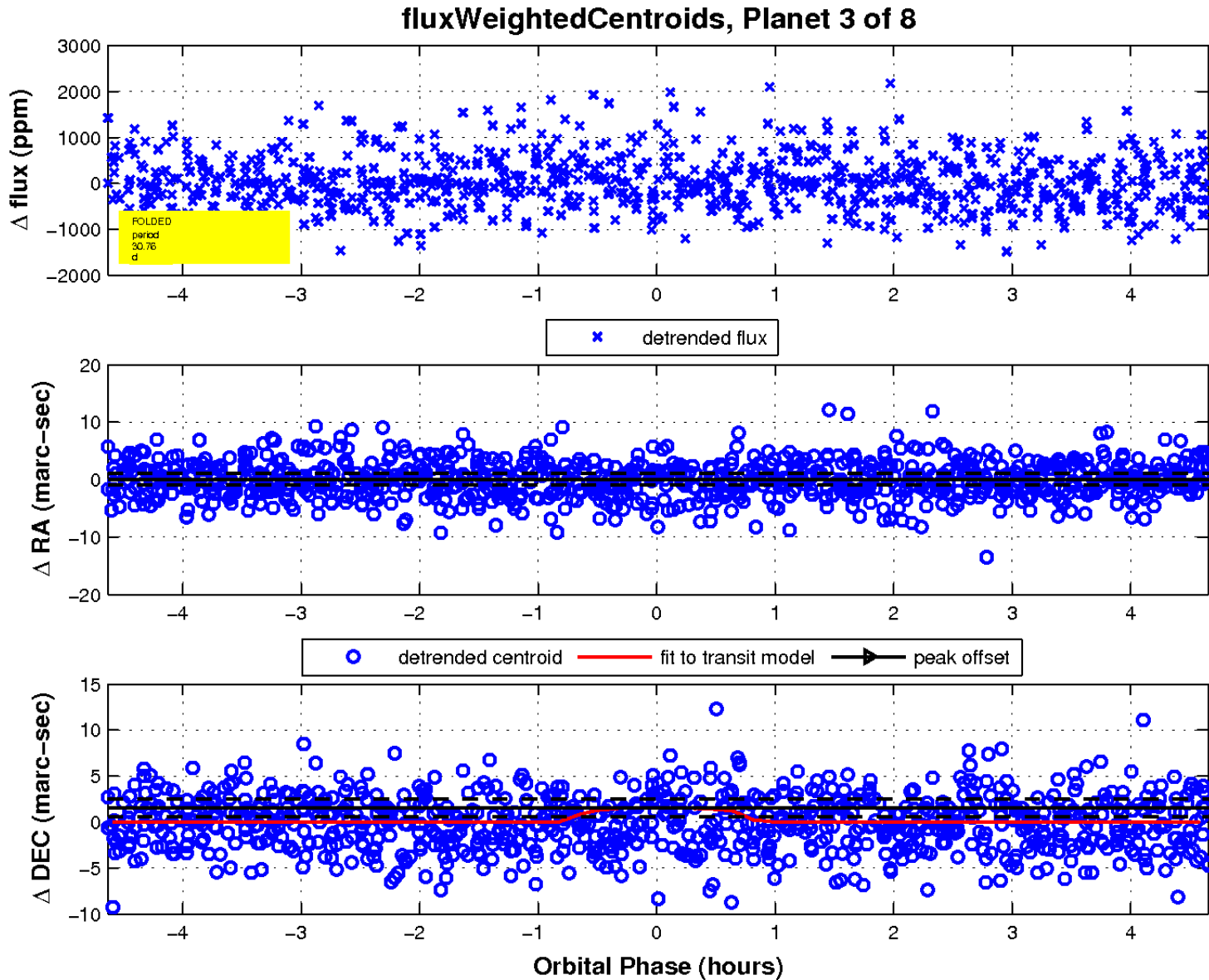
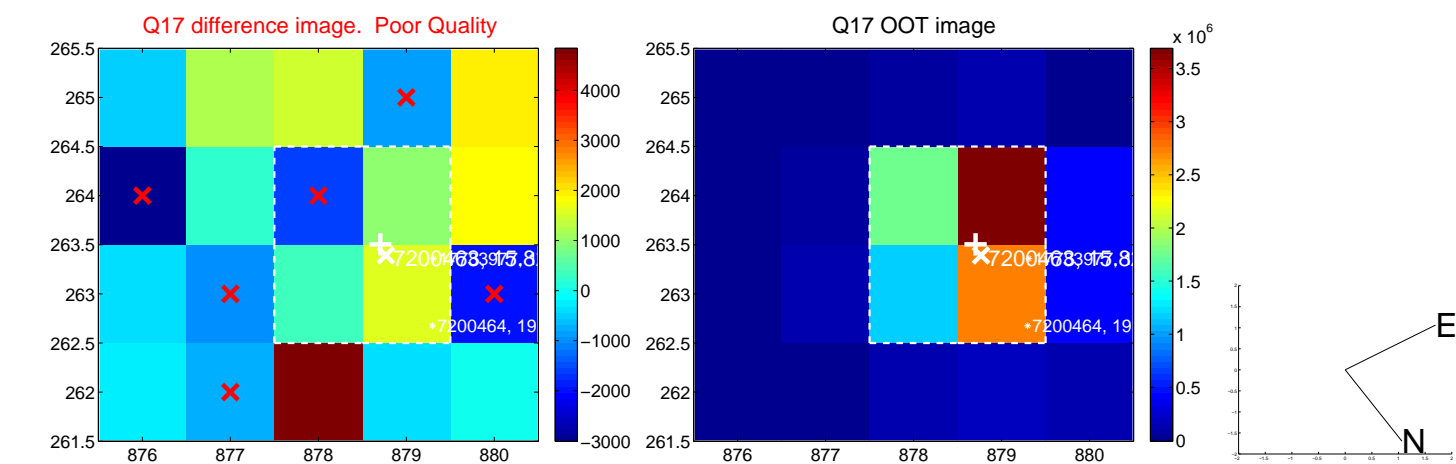
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

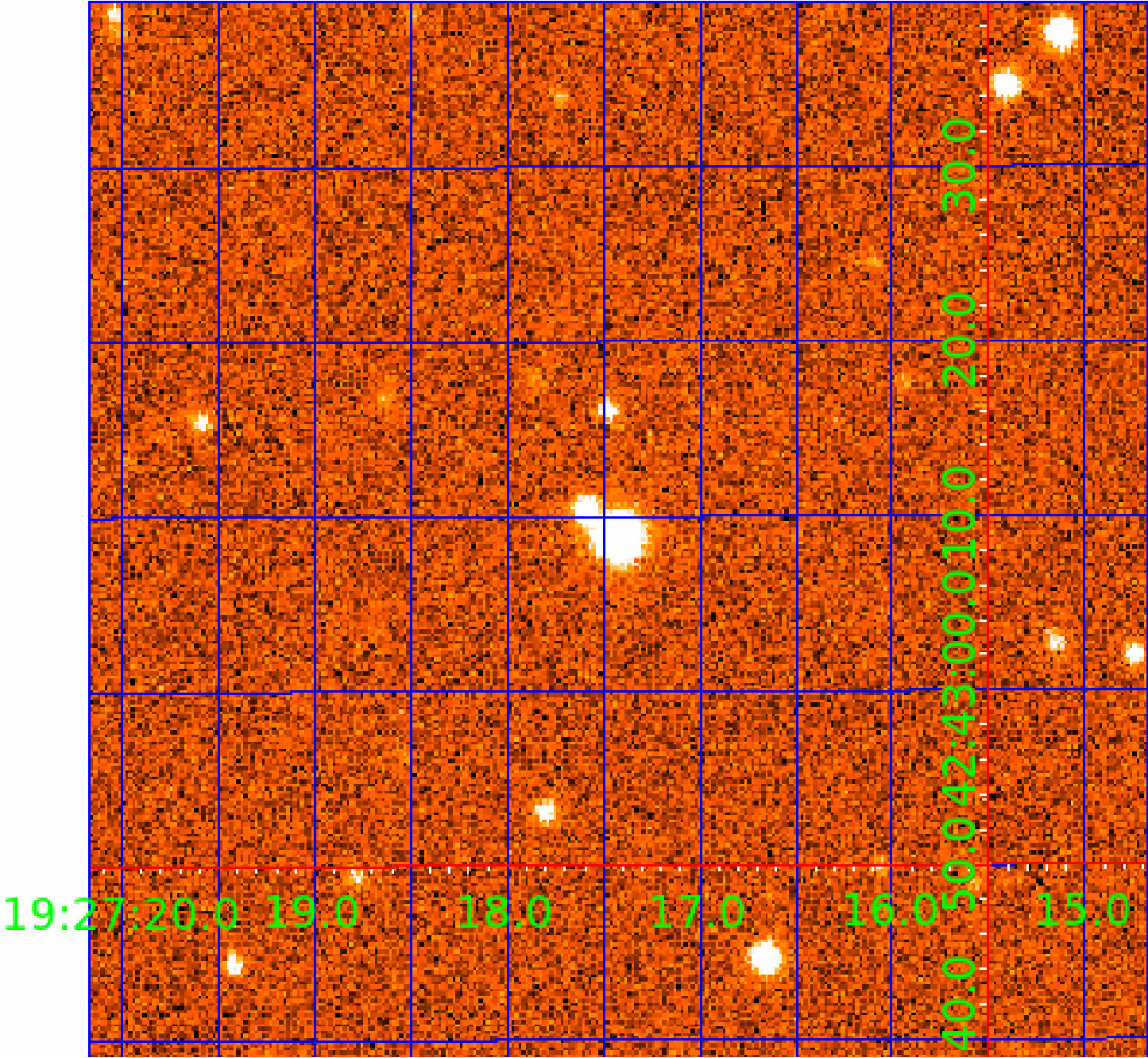


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 007200463

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007200463-01	OBS	No	0.566758	131.840663	30.2	3.735	8.9	4.8	0.57	3907	0.30	544.02
007200463-02	OBS	No	69.558006	189.973834	1591.5	0.599	9.5	6.6	0.57	3907	2.38	0.89
007200463-03	OBS	No	30.758930	159.909444	759.5	1.554	9.9	7.2	0.57	3907	1.65	2.65
007200463-04	OBS	No	29.082206	151.599782	987.7	2.567	8.8	9.4	0.57	3907	2.41	2.85
007200463-05	OBS	No	40.105384	144.167690	943.7	2.453	7.6	9.2	0.57	3907	1.99	1.86
007200463-06	OBS	No	16.502004	140.509425	986.5	0.762	9.3	9.4	0.57	3907	1.78	6.07
007200463-07	OBS	No	32.122218	142.928559	1031.9	1.754	7.9	8.3	0.57	3907	1.78	2.50
007200463-08	OBS	No	56.830874	139.594999	950.5	2.699	8.2	9.6	0.57	3907	2.05	1.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007200463-01	OBS	FP	0.00	1	0	0	1	LPP_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS—EPHEM_MATCH
007200463-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200463-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS
007200463-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200463-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200463-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
007200463-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007200463-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

**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.

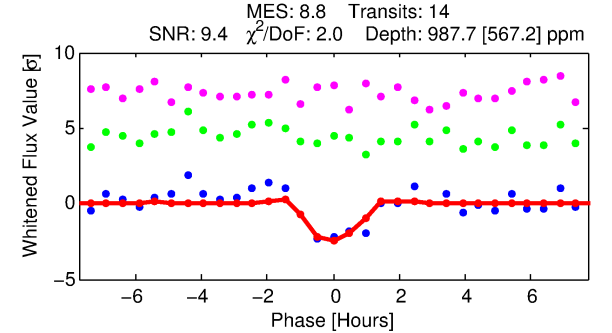
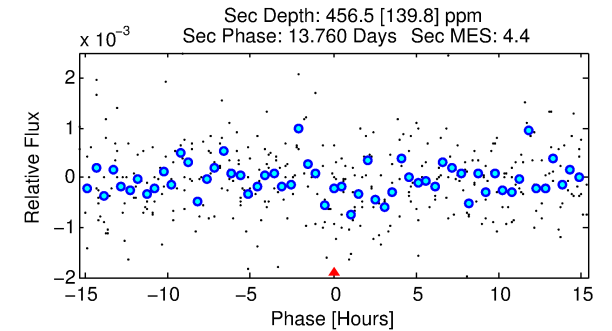
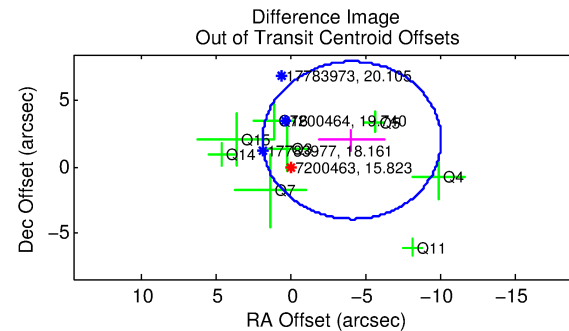
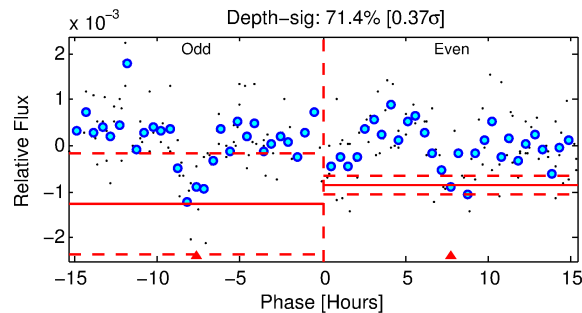
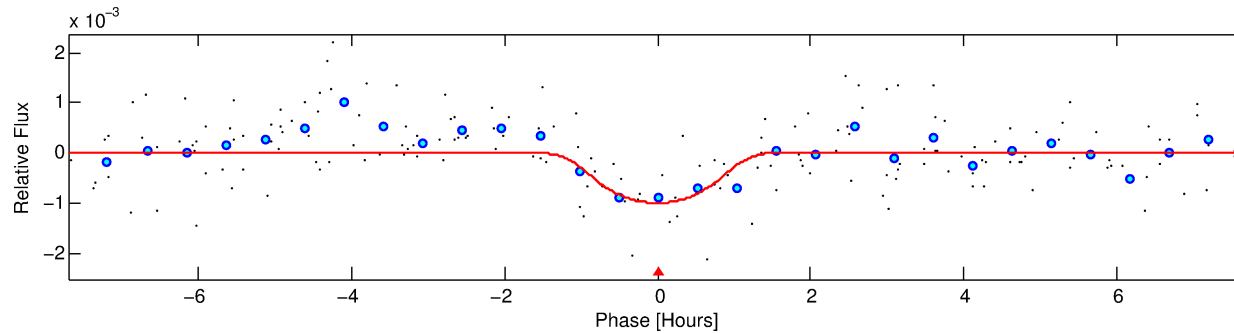
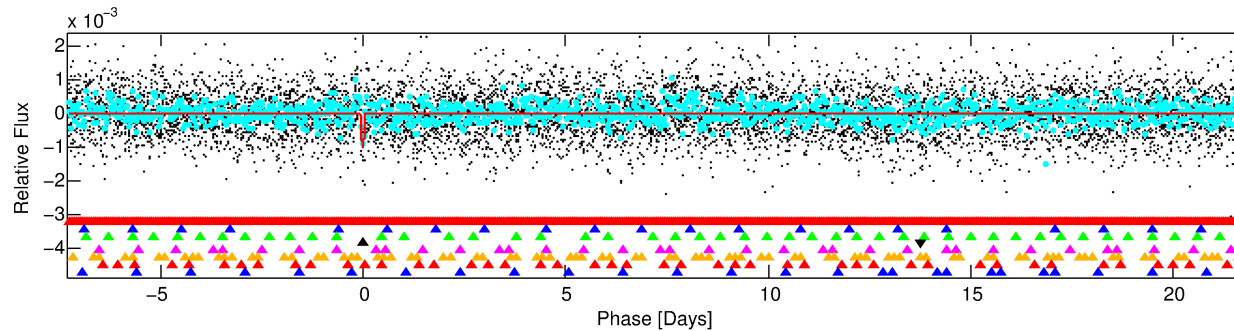
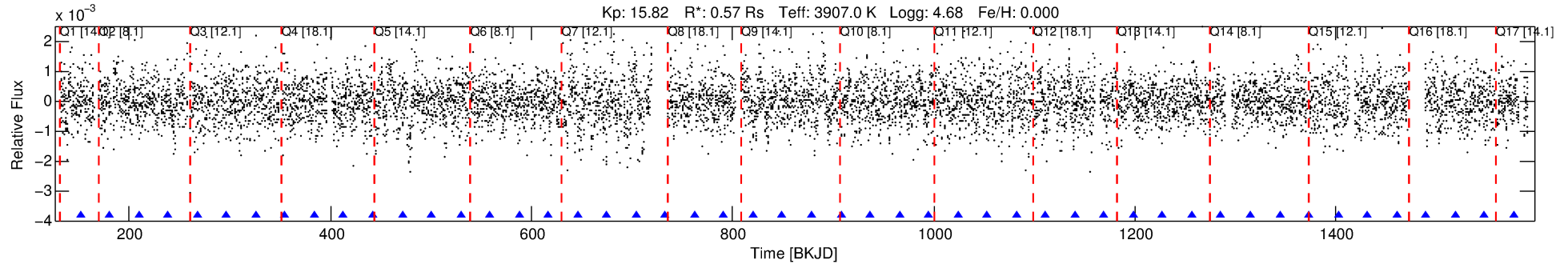
Ephemeris Match Information For 007200463-04

No Significant Match Found



# DV One-Page Summary

KIC: 7200463 Candidate: 4 of 8 Period: 29.082 d



## DV Fit Results:

Period = 29.08221 [0.00035] d  
Epoch = 151.5998 [0.0101] BKJD  
Rp/R\* = 0.0390 [0.0242]  
a/R\* = 34.08 [23.22]  
b = 0.96 [0.09]  
Seff = 2.85 [0.32]  
Teq = 331 [9] K  
Rp = 2.41 [1.50] Re  
a = 0.1531 [0.0077] AU  
Ag = 1014.05 [1297.62] [0.78 $\sigma$ ]  
Teffp = 2891 [926] K [2.77 $\sigma$ ]

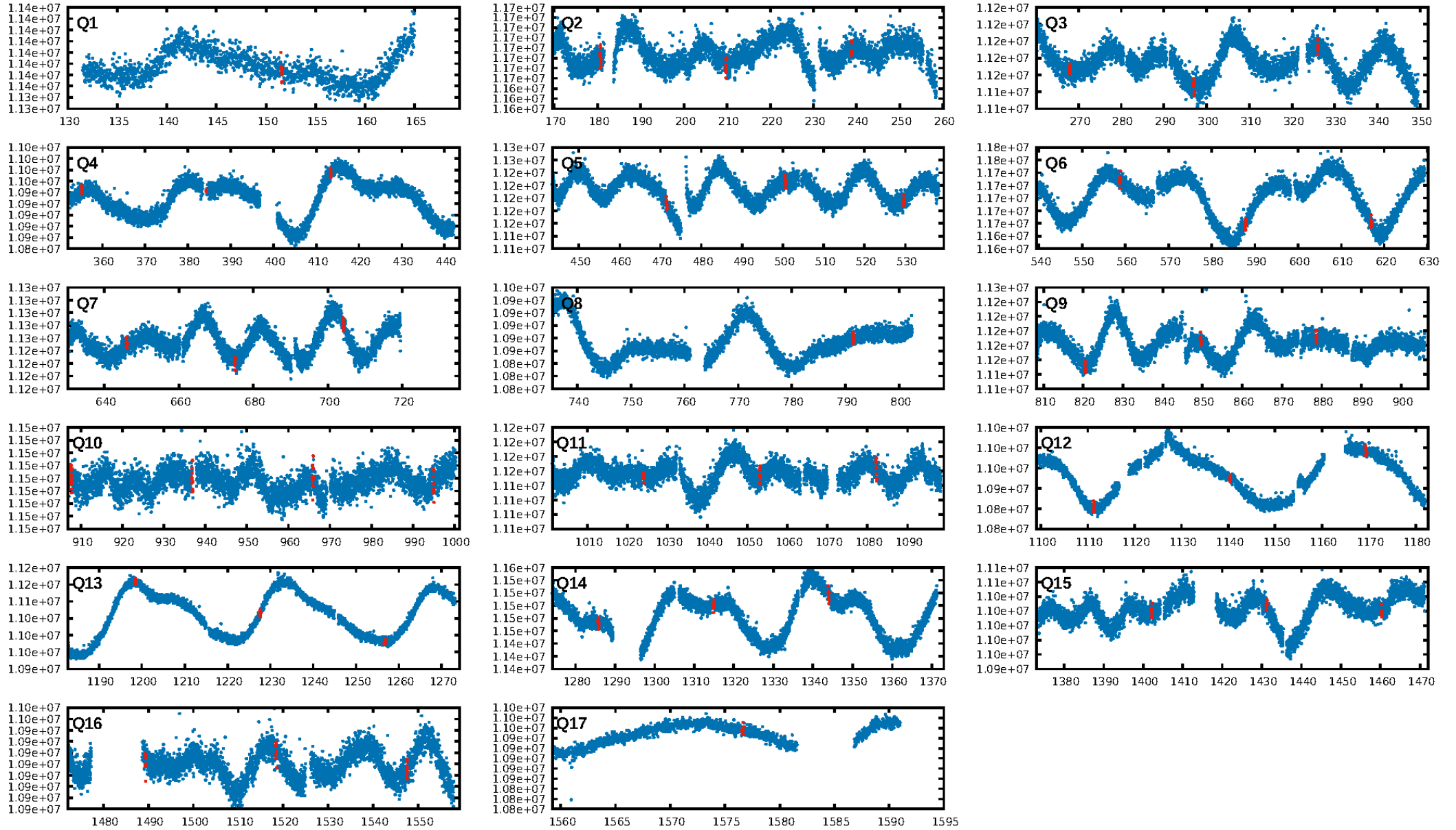
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [112.78 $\sigma$ ]  
LongPeriod-sig: 100.0% [13.41 $\sigma$ ]  
ModelChiSquare2-sig: 30.8%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 2.33e-10**  
RollingBand-fgt: 1.00 [14/14]  
**GhostDiagnostic-chr: 0.4784**  
Centroid-sig: 52.2%  
Centroid-so: 0.707 arcsec [0.87 $\sigma$ ]  
OotOffset-rm: 4.579 arcsec [2.30 $\sigma$ ]  
OotOffset-st: 1/4/2/1 [8]  
KicOffset-rm: 4.364 arcsec [2.15 $\sigma$ ]  
KicOffset-st: 1/4/2/1 [8]  
DiffImageQuality-fgm: 0.12 [1/8]  
DiffImageOverlap-fno: 0.00 [0/17]

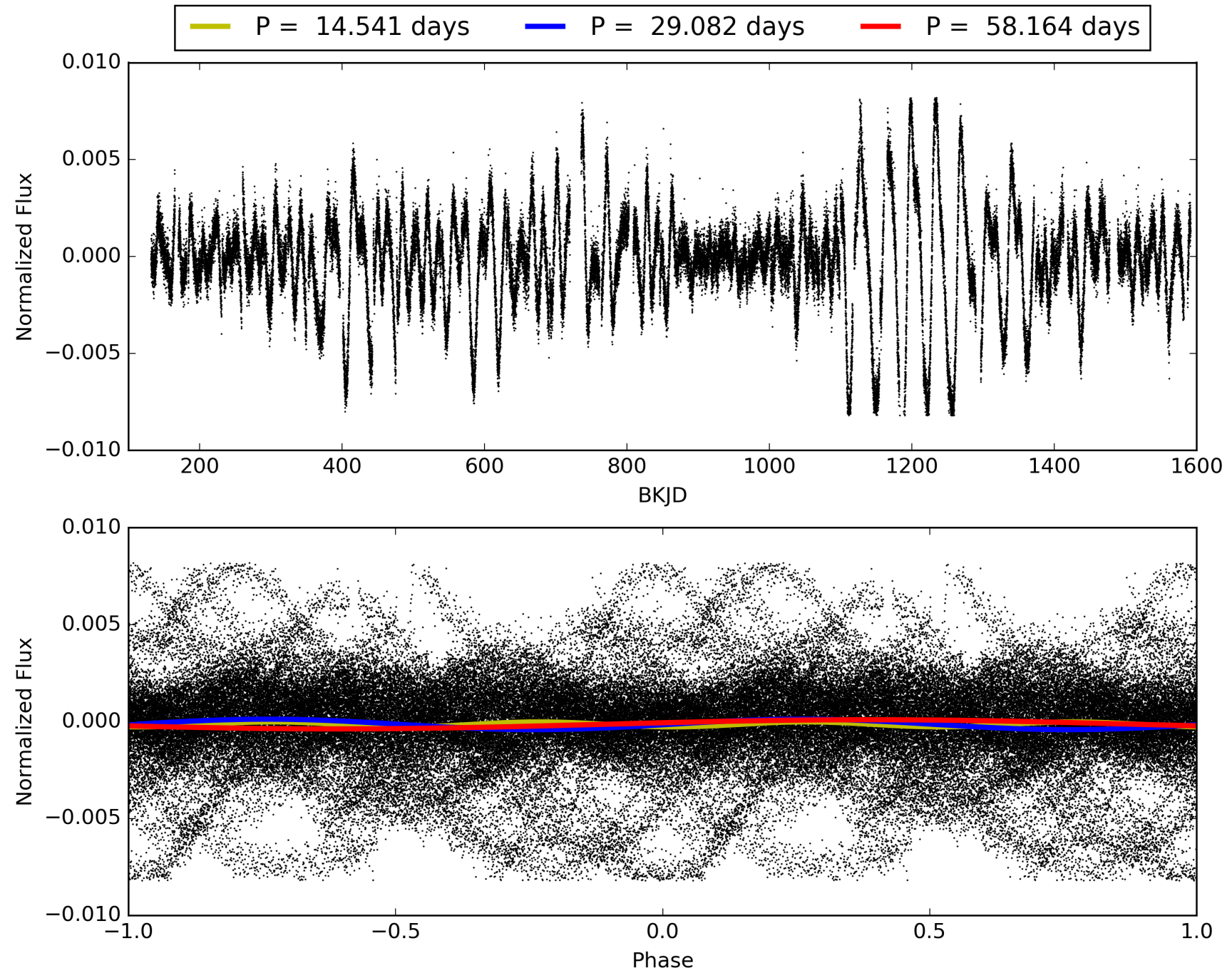
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 07:13:02 Z

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

# TCE 007200463-04, PDC Light Curves

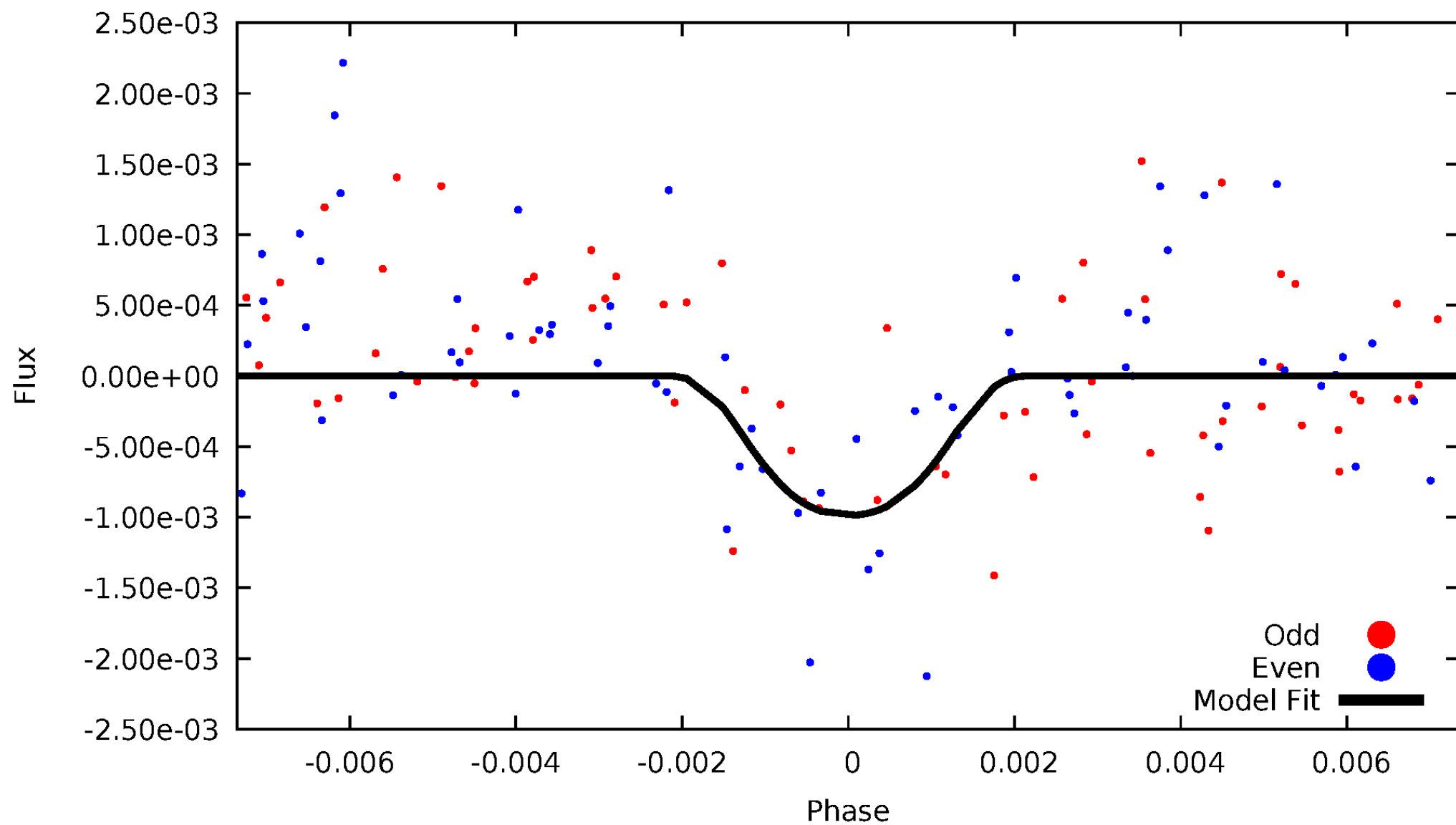


TCE 007200463-04



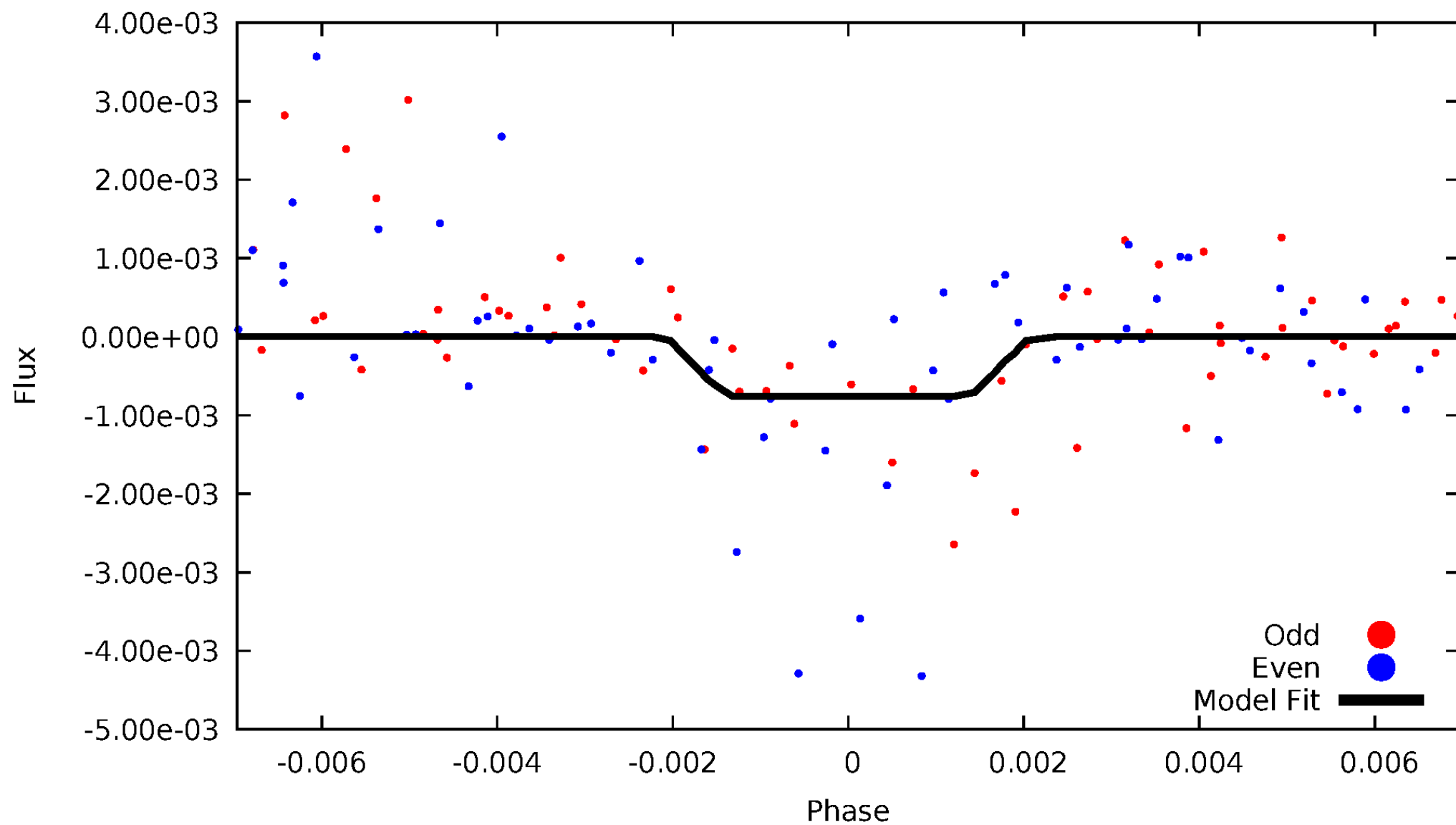
# DV Odd/Even

TCE 007200463-04



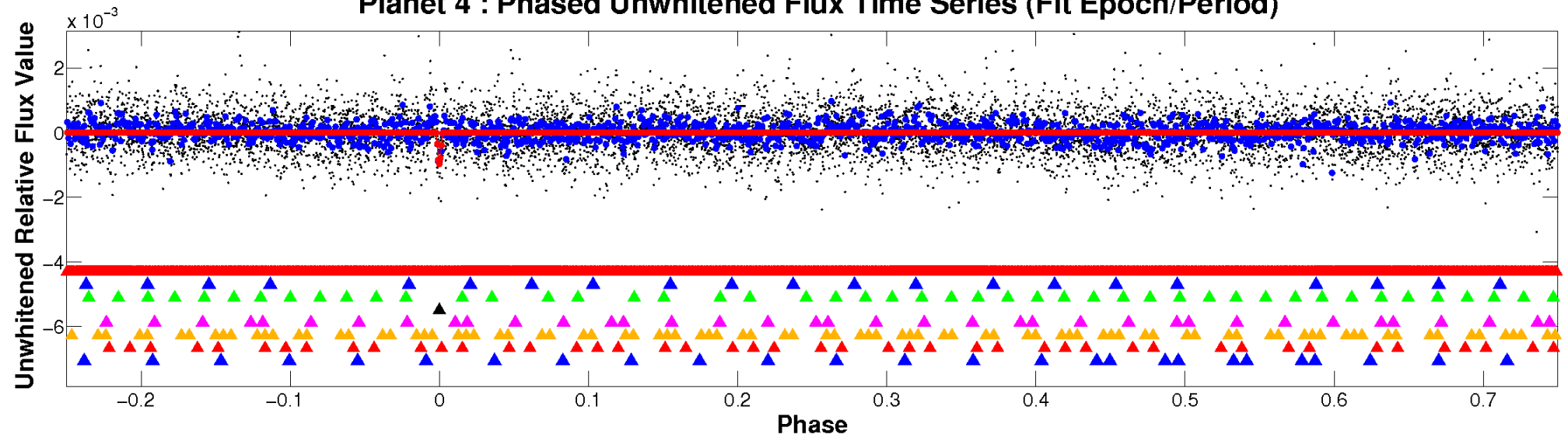
# ALT Odd/Even

TCE 007200463-04

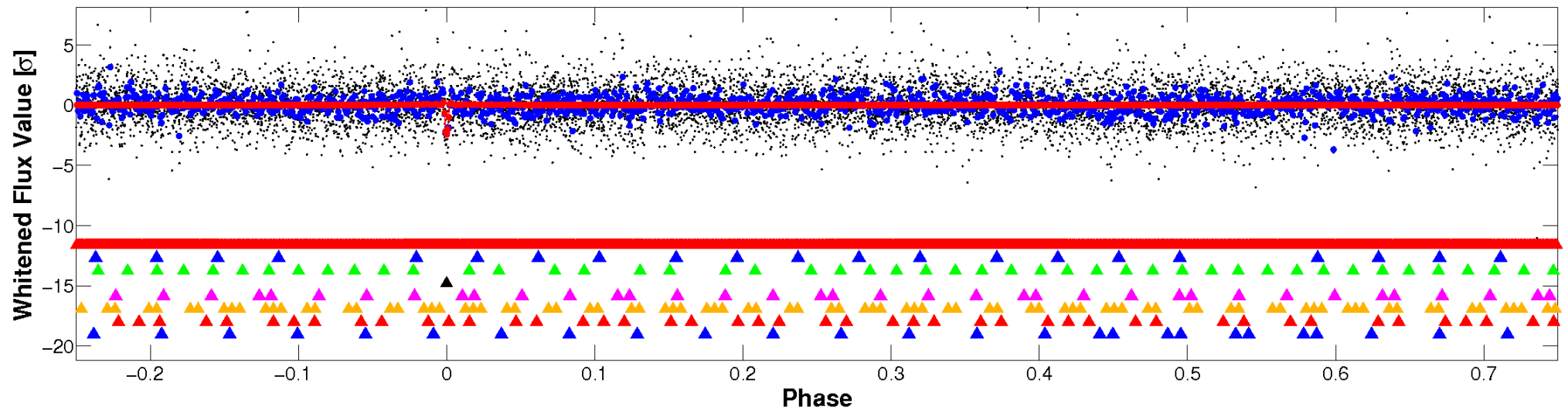


# Non-Whitened Vs. Whitened Light Curve

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

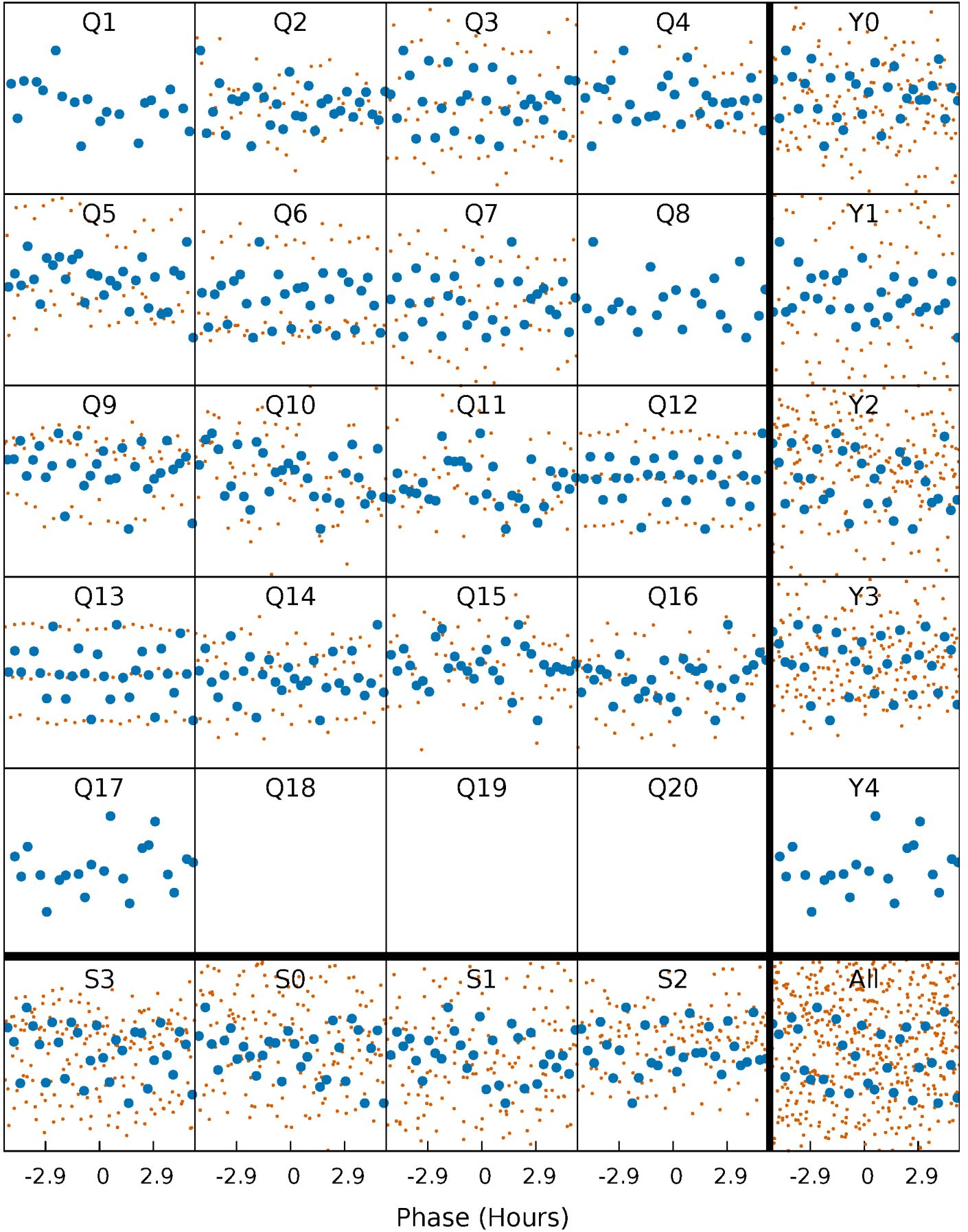


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

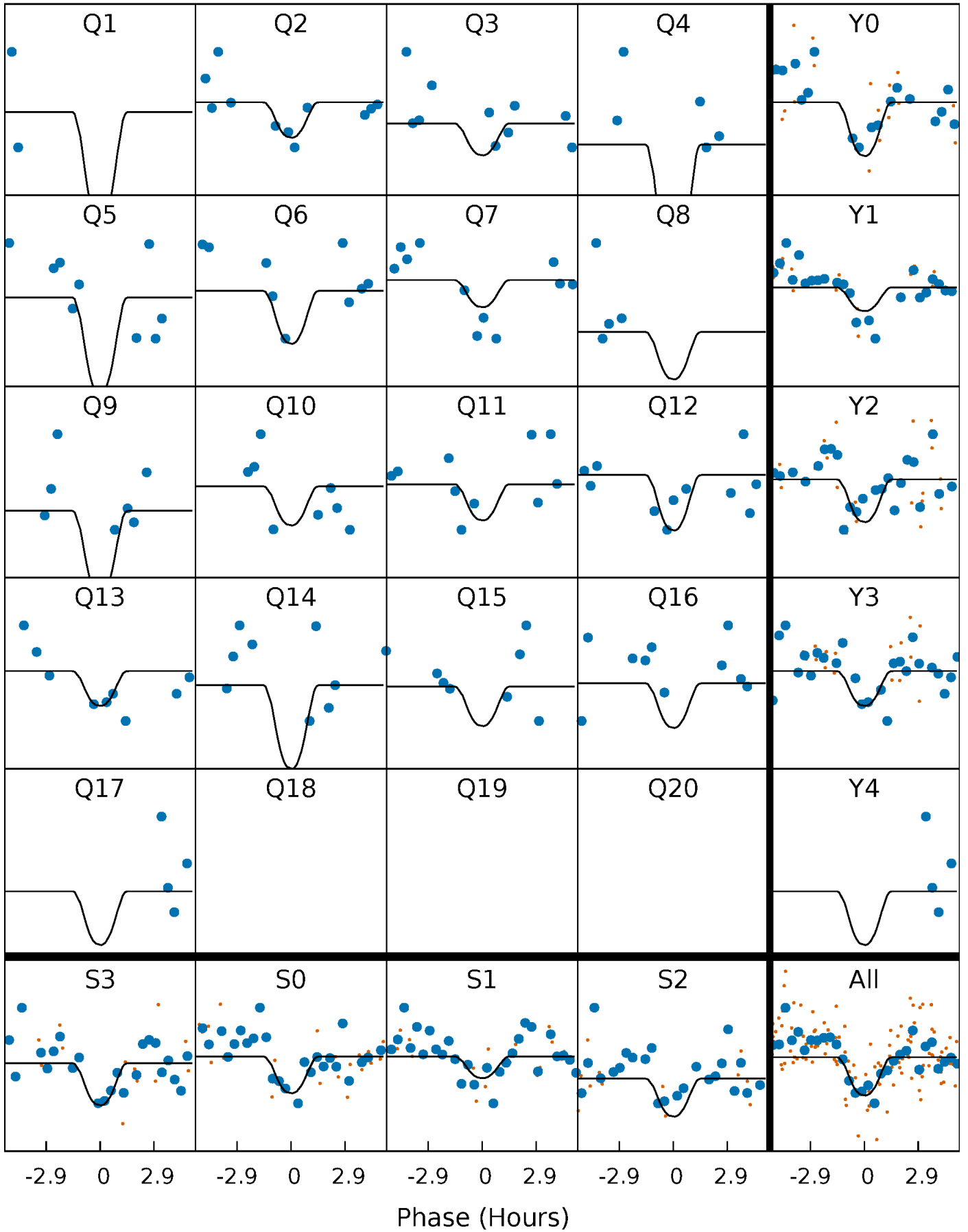
TCE 007200463-04 P= 29.082206 Days  $T_0=151.599782$  (BKJD)





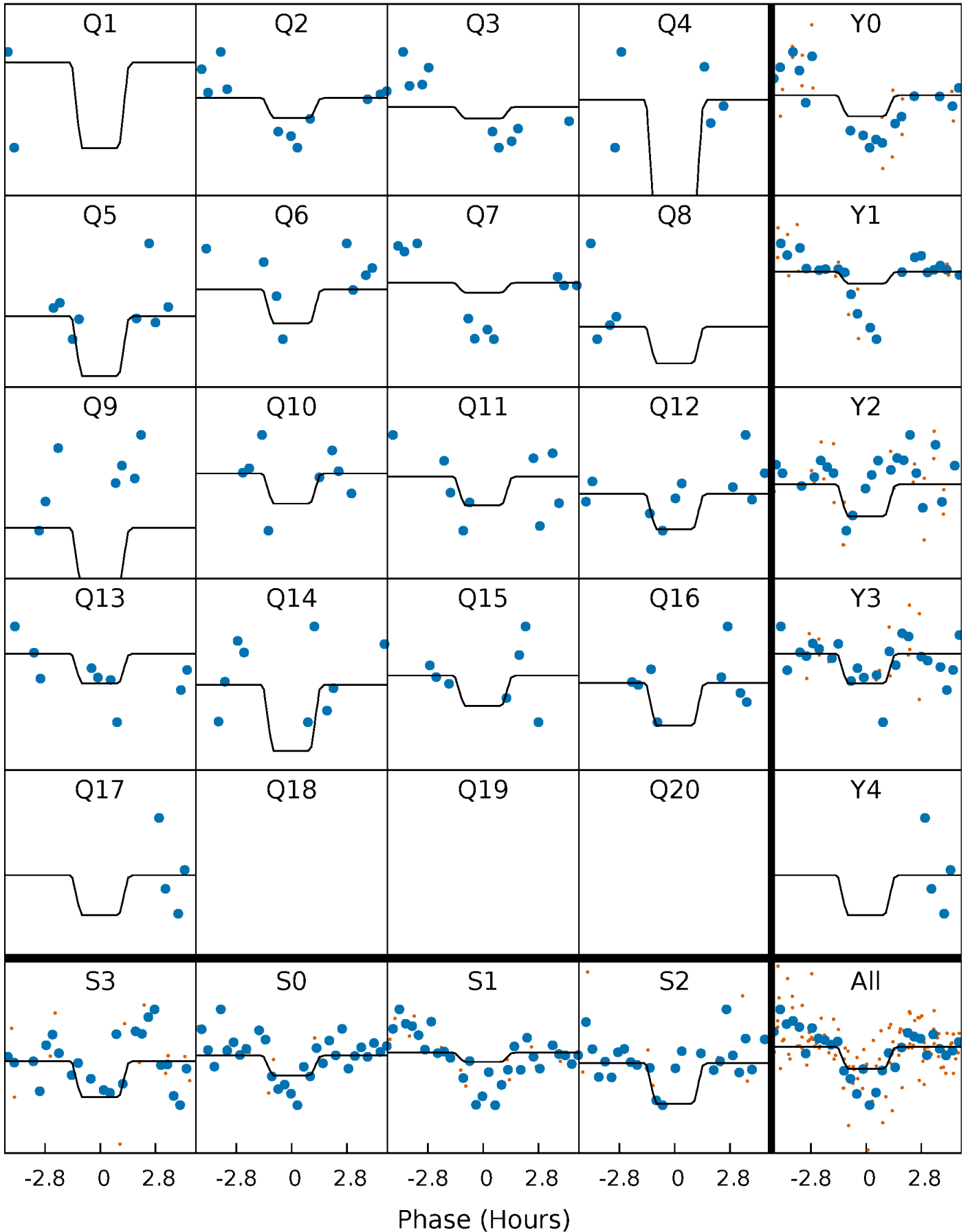
# DV Quarter-Phased Transit Curves

TCE 007200463-04 P= 29.082206 Days  $T_0=151.599782$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

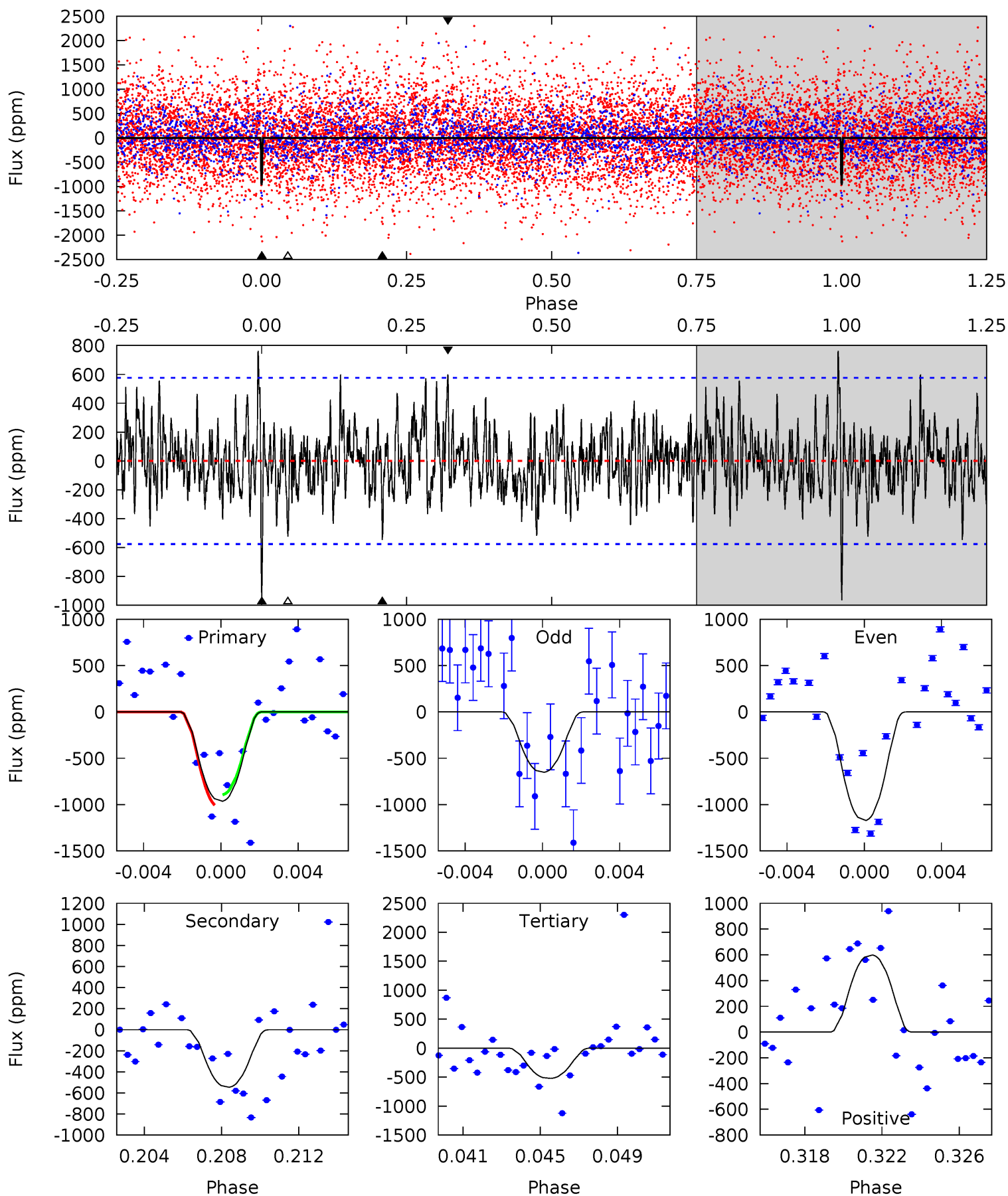
TCE 007200463-04 P= 29.082523 Days  $T_0=151.597192$  (BKJD)



# DV Model-Shift Uniqueness Test

007200463-04, P = 29.082206 Days, E = 122.517576 Days

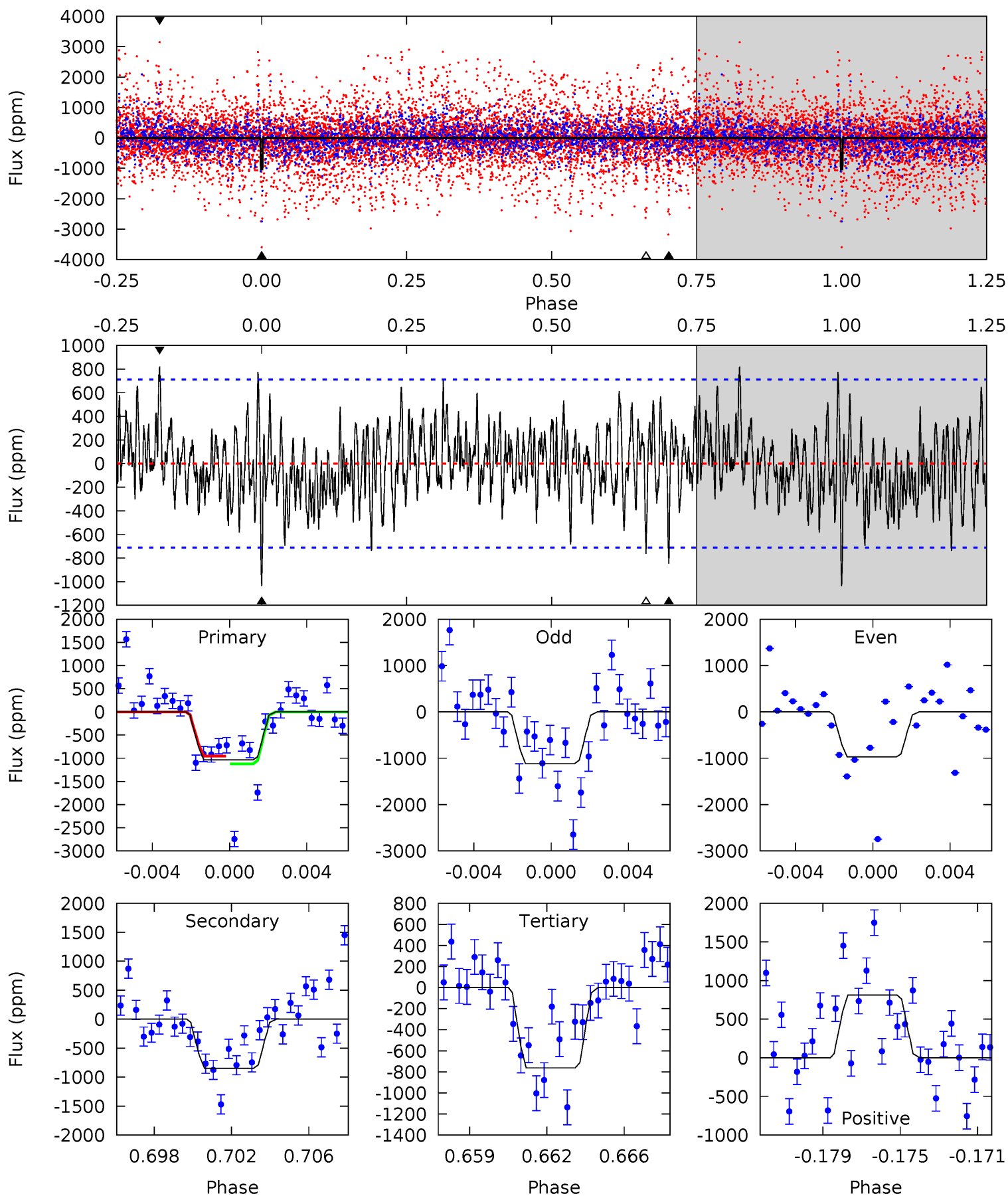
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.70	4.93	4.72	5.40	5.20	2.87	1.68	3.98	3.30	0.21	-0.47	2.29	0.89	0.44	0.50



# Alt Model-Shift Uniqueness Test

007200463-04, P = 29.082523 Days, E = 122.514669 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	6.19	5.57	5.94	5.20	2.88	1.81	2.00	1.64	0.62	0.25	0.51	1.39	0.44	0.64



### Stellar Parameters For KIC 007200463

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3907^{+86}_{-86}$	$4.685^{+0.036}_{-0.015}$	$0.000^{+0.100}_{-0.100}$	$0.566^{+0.022}_{-0.036}$	$0.565^{+0.032}_{-0.026}$	$4.395^{+0.686}_{-0.307}$
	+2%/-2%	+1%/-0%	+inf%/-inf%	+4%/-6%	+6%/-5%	+16%/-7%
Source	PHO2	PHO2	PHO2	DSEP		

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

### Secondary Eclipse Parameters for KIC 007200463-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-546 \pm 111$	$2.55^{+1.43}_{-1.33}$	$461^{+12}_{-12}$	$3243^{+900}_{-410}$	$1067^{+3487}_{-652}$
Alt.	$-847 \pm 137$	$1.99^{+1.29}_{-1.19}$	$461^{+12}_{-11}$	$3771^{+1585}_{-573}$	$2715^{+14607}_{-1726}$

$T_{max}$  = 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

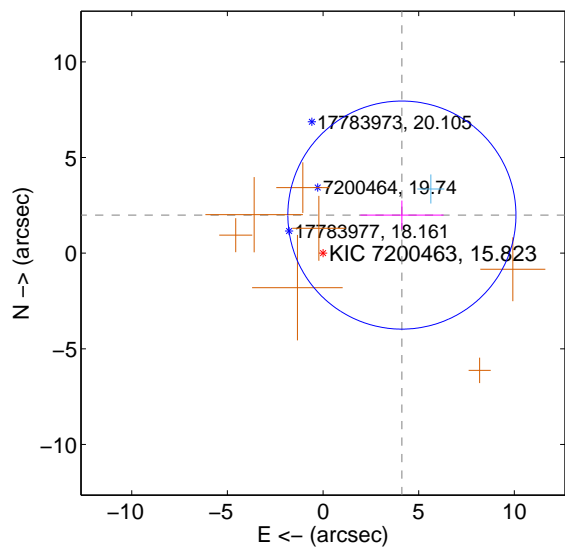
Supplemental centroid analysis for 007200463-04. Kepler magnitude: 15.82. Transit SNR 9.43

There are 1 quarters with good PRF difference image offsets

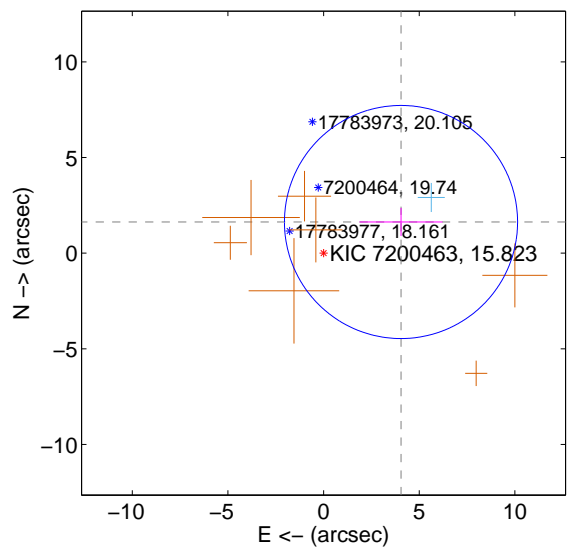
The direct PRF centroid is offset from the target star catalog position by about 0.45 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.579 \pm 1.988$	2.30	$-4.123 \pm 2.177$	$1.992 \pm 0.757$
PRF-fit source offset from KIC position	$4.364 \pm 2.031$	2.15	$-4.048 \pm 2.170$	$1.629 \pm 0.730$
photometric centroid source offset	$0.71 \pm 0.81$	0.87	$0.69 \pm 0.81$	$-0.16 \pm 0.79$

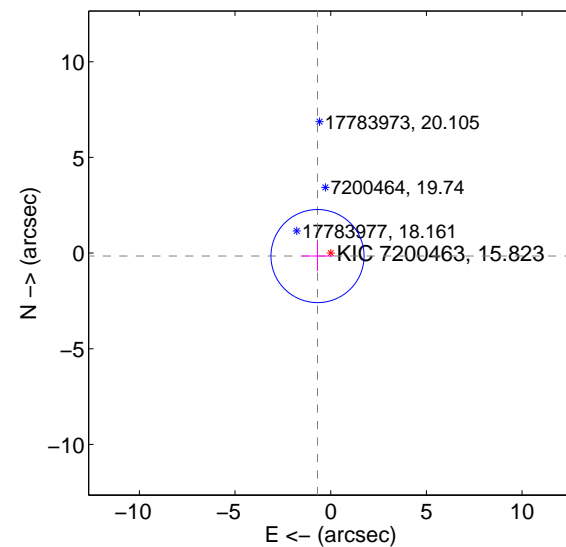
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

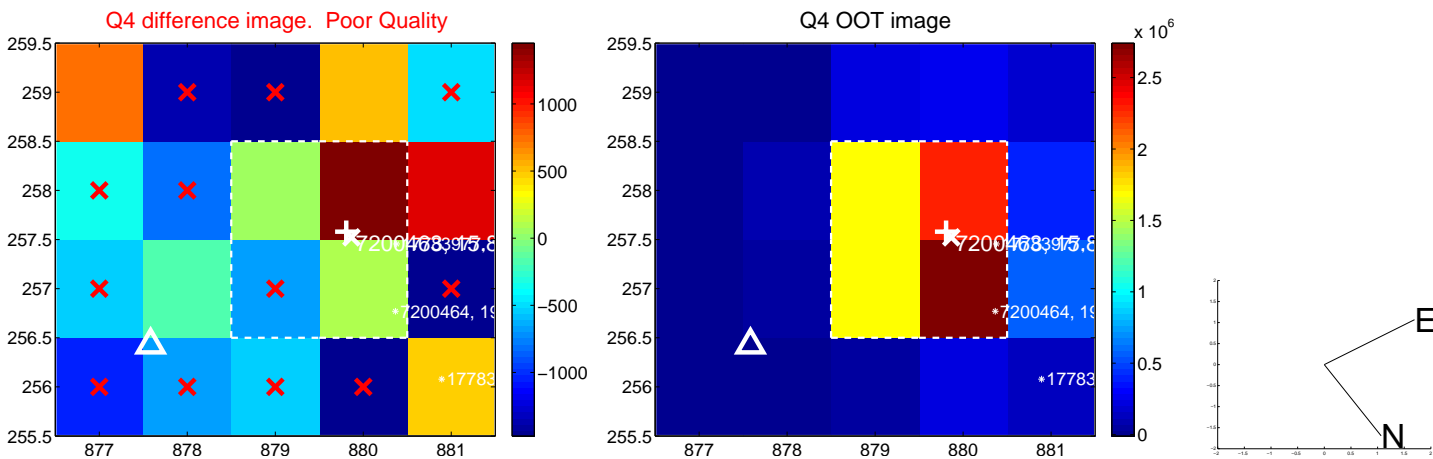
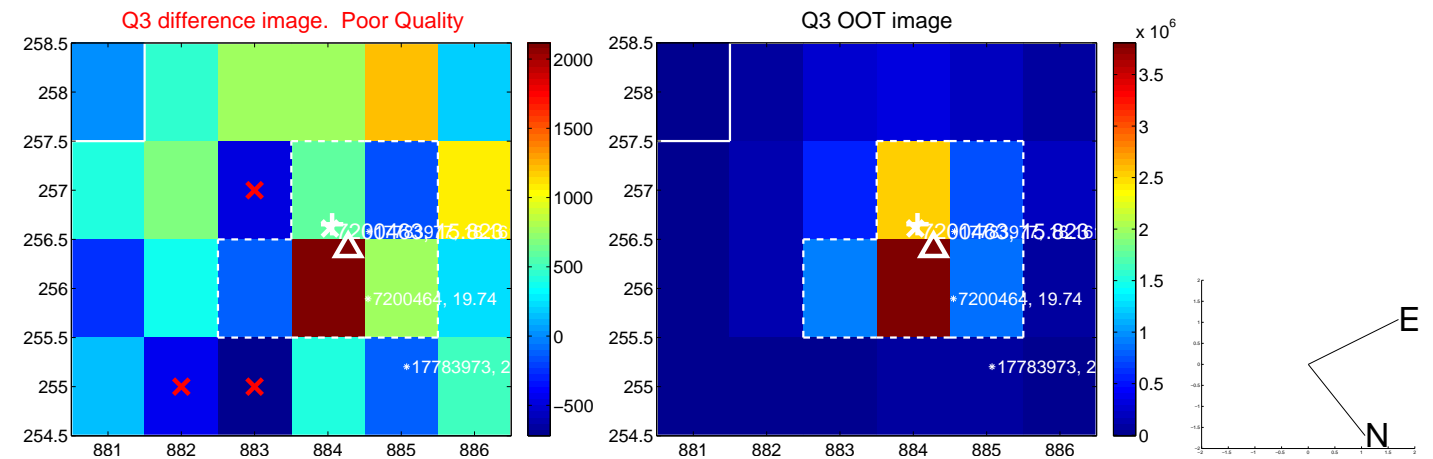
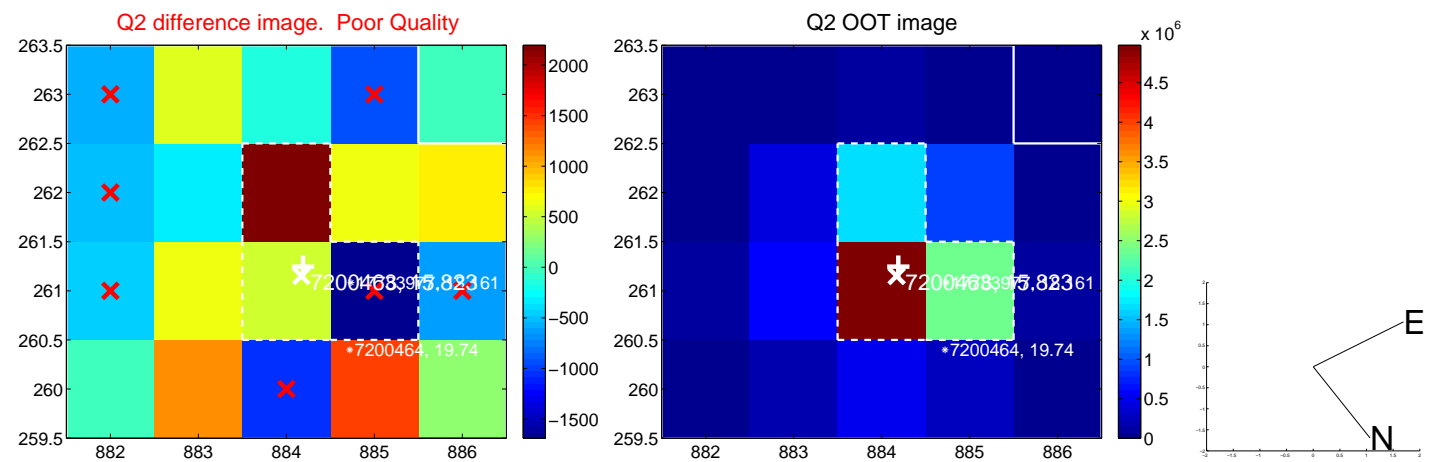
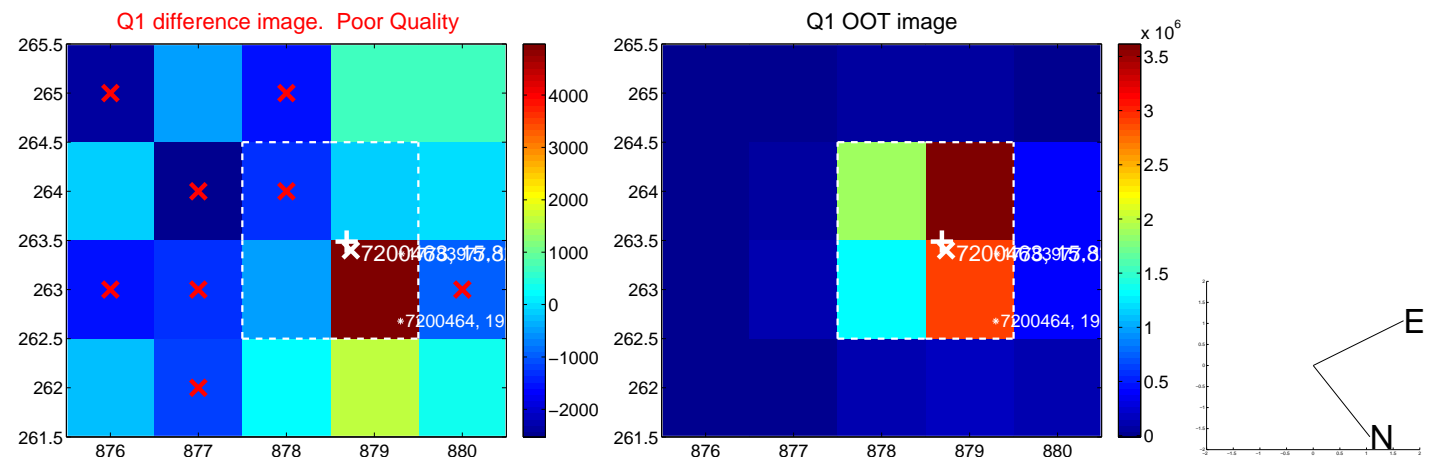


offset from photometric centroids

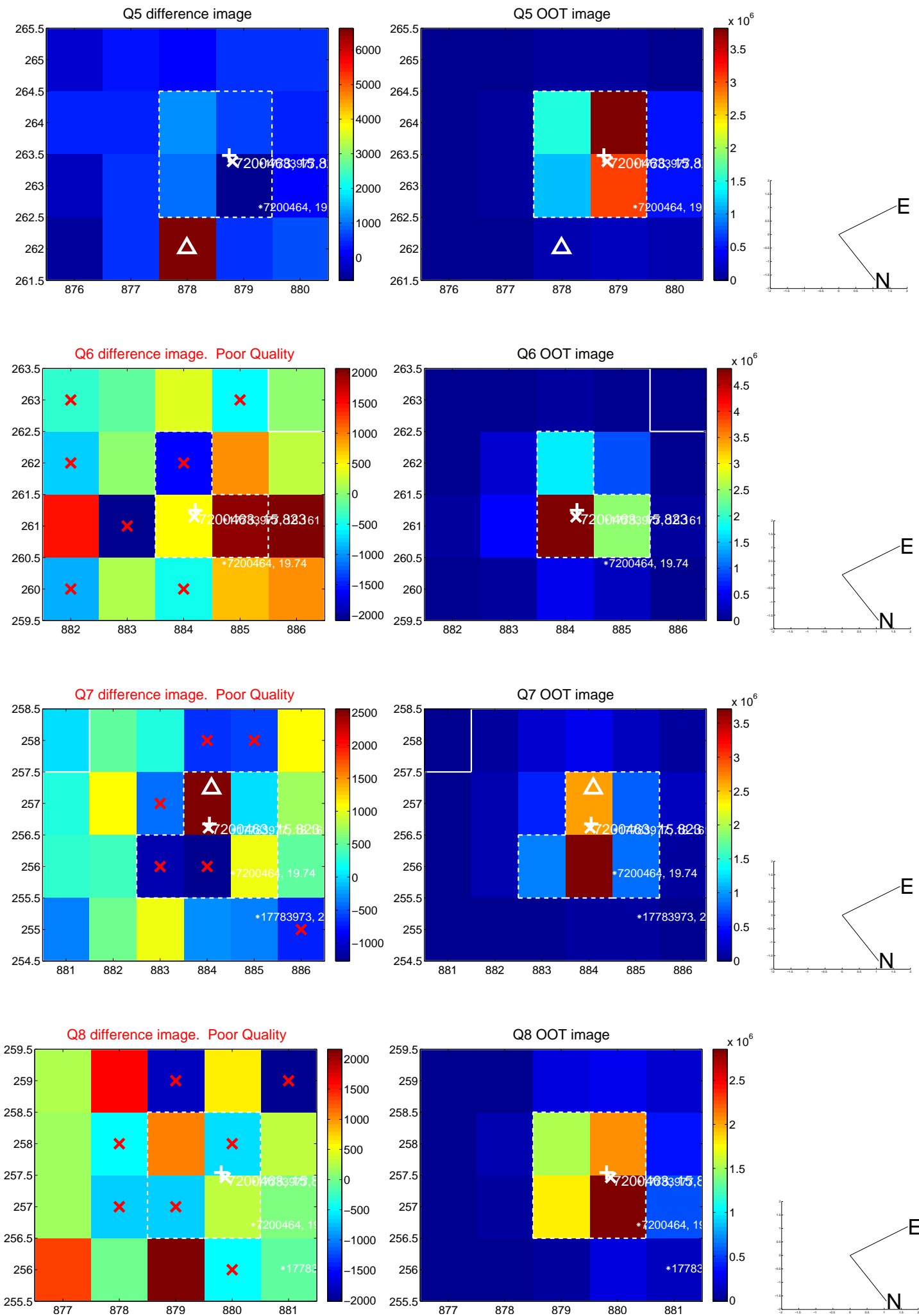


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

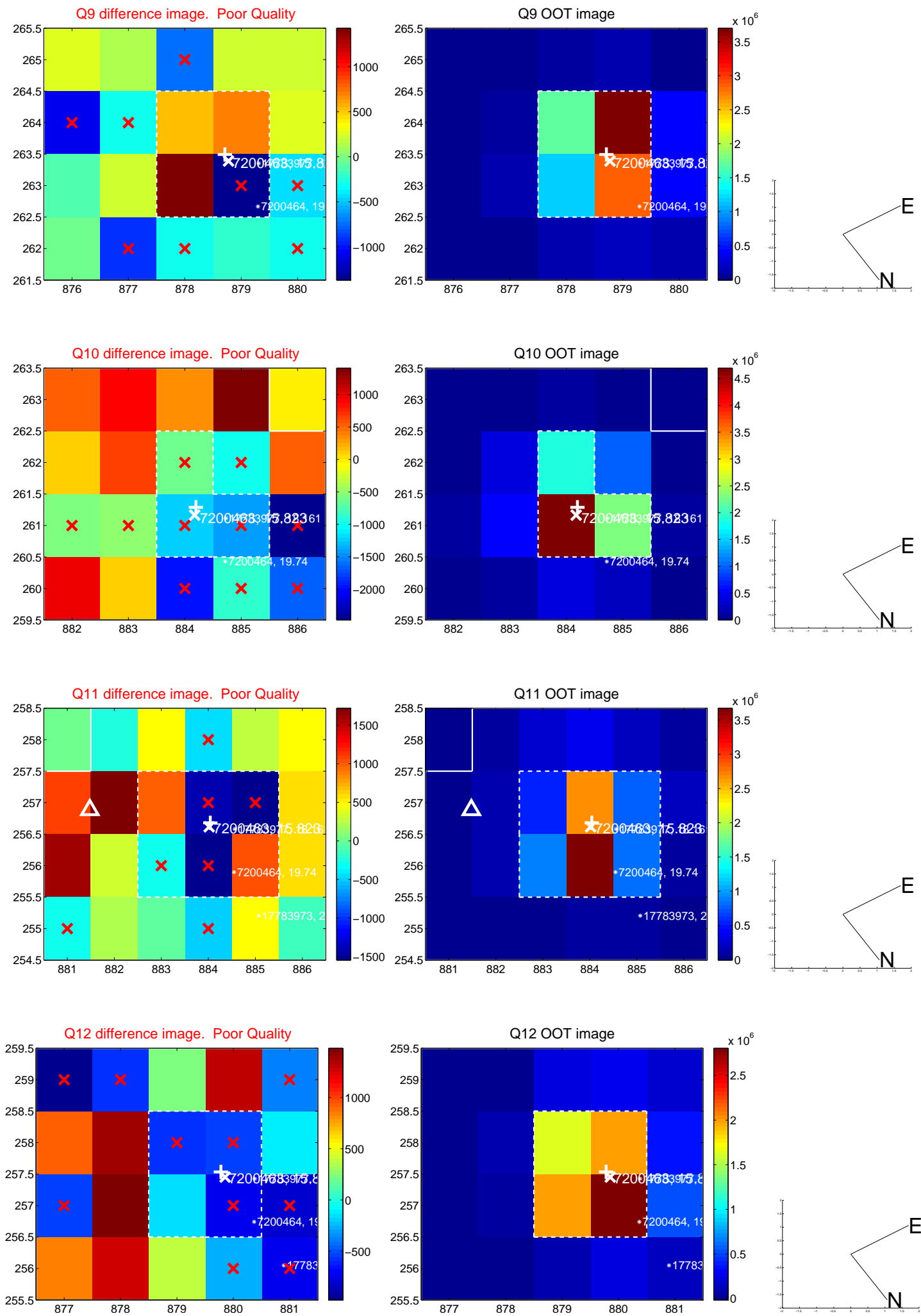


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

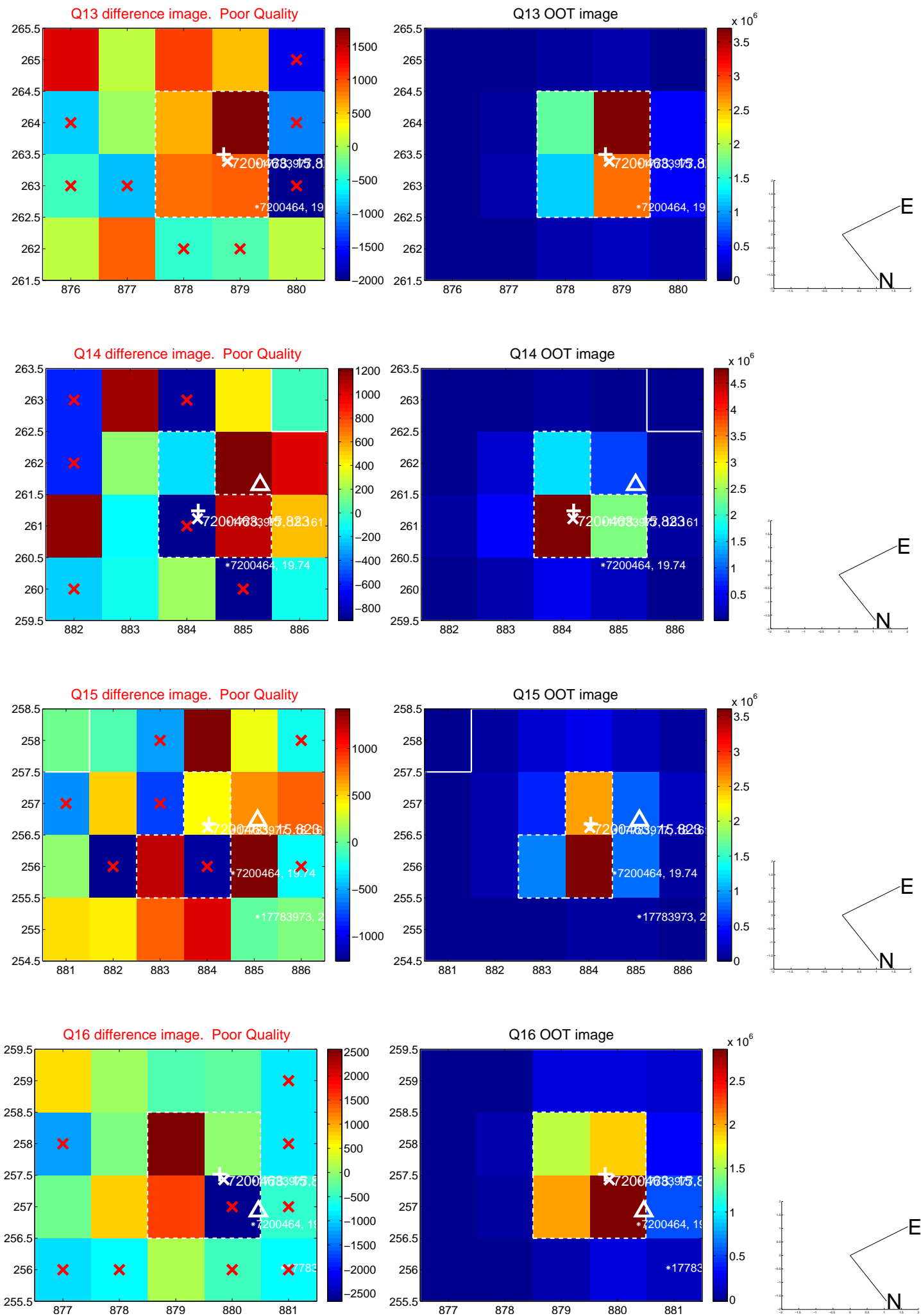




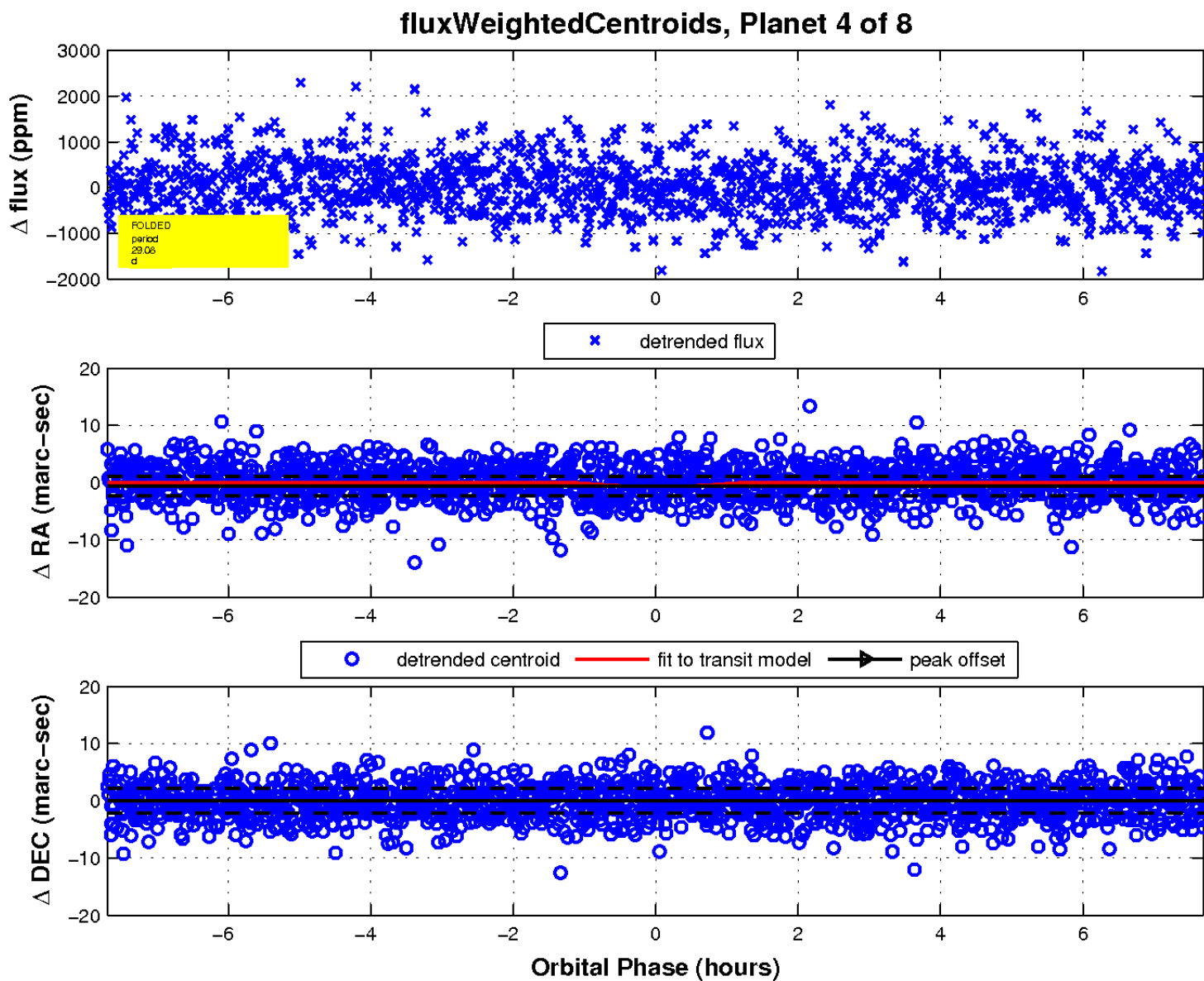
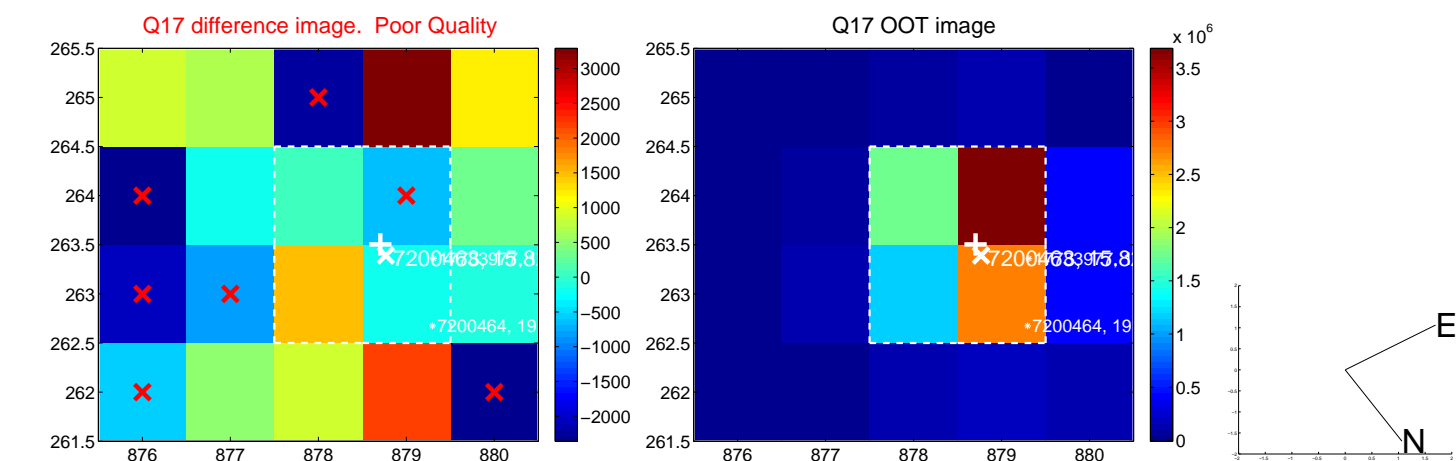
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

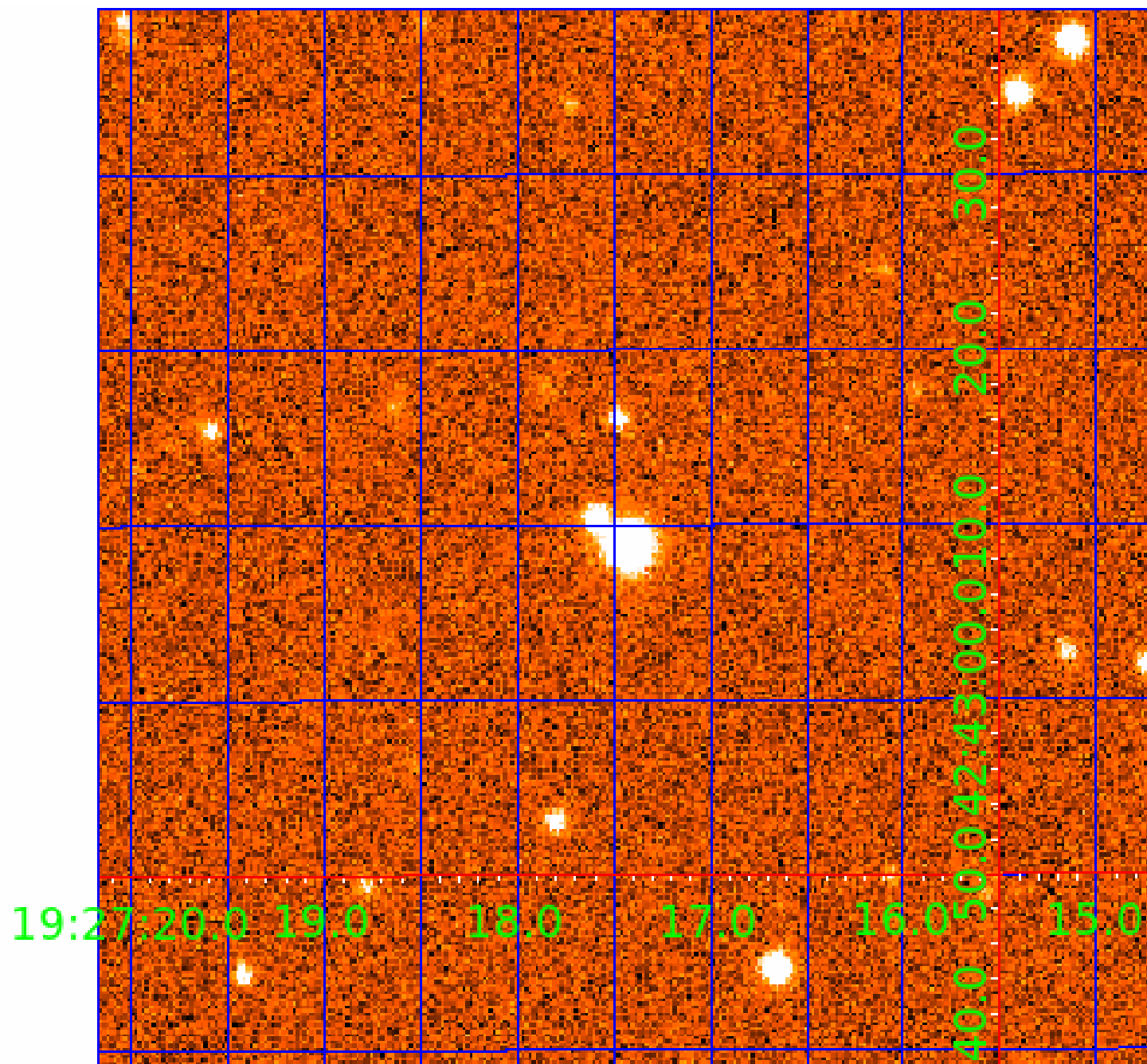


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination



# KIC 007200463

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007200463-01	OBS	No	0.566758	131.840663	30.2	3.735	8.9	4.8	0.57	3907	0.30	544.02
007200463-02	OBS	No	69.558006	189.973834	1591.5	0.599	9.5	6.6	0.57	3907	2.38	0.89
007200463-03	OBS	No	30.758930	159.909444	759.5	1.554	9.9	7.2	0.57	3907	1.65	2.65
007200463-04	OBS	No	29.082206	151.599782	987.7	2.567	8.8	9.4	0.57	3907	2.41	2.85
007200463-05	OBS	No	40.105384	144.167690	943.7	2.453	7.6	9.2	0.57	3907	1.99	1.86
007200463-06	OBS	No	16.502004	140.509425	986.5	0.762	9.3	9.4	0.57	3907	1.78	6.07
007200463-07	OBS	No	32.122218	142.928559	1031.9	1.754	7.9	8.3	0.57	3907	1.78	2.50
007200463-08	OBS	No	56.830874	139.594999	950.5	2.699	8.2	9.6	0.57	3907	2.05	1.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007200463-01	OBS	FP	0.00	1	0	0	1	LPP_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS—EPHEM_MATCH
007200463-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200463-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS
007200463-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200463-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200463-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
007200463-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007200463-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

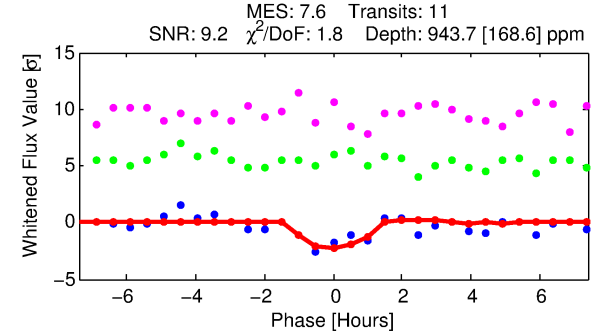
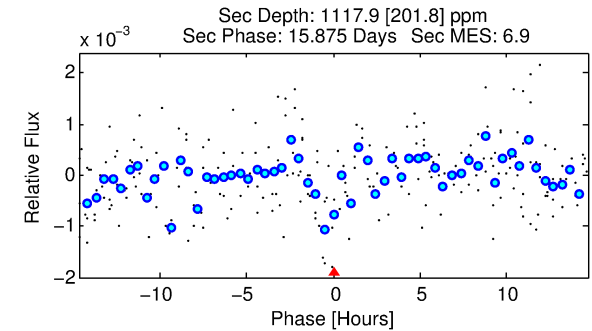
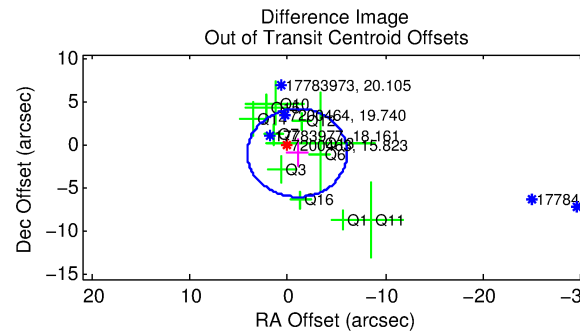
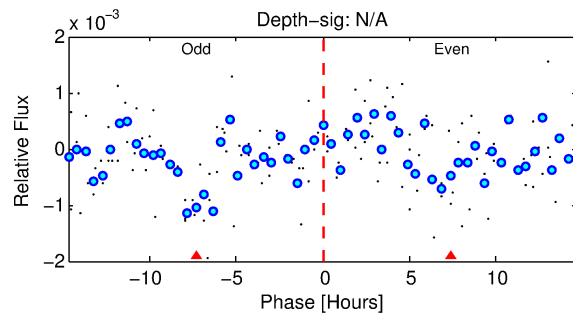
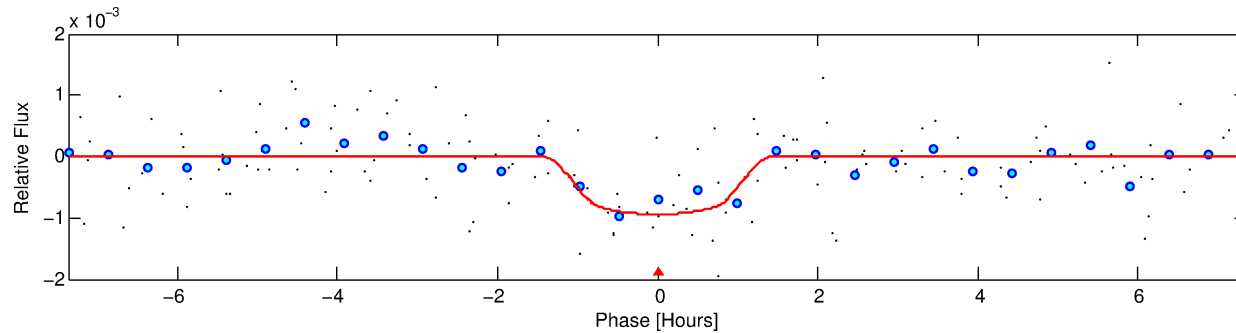
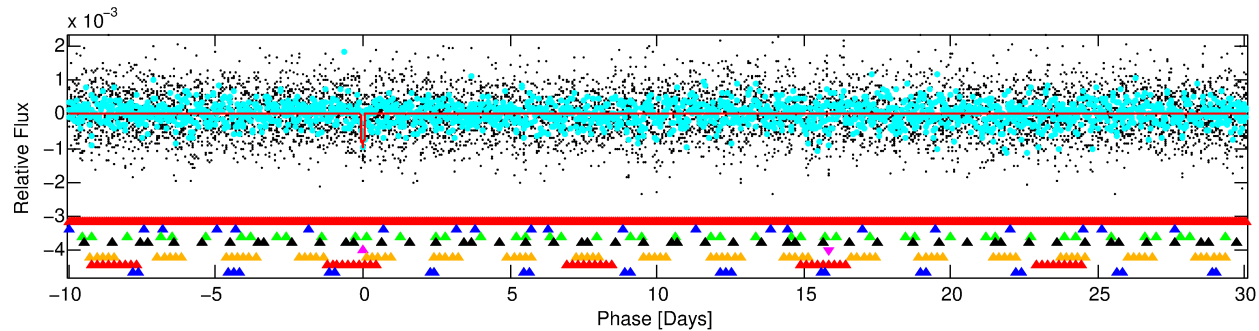
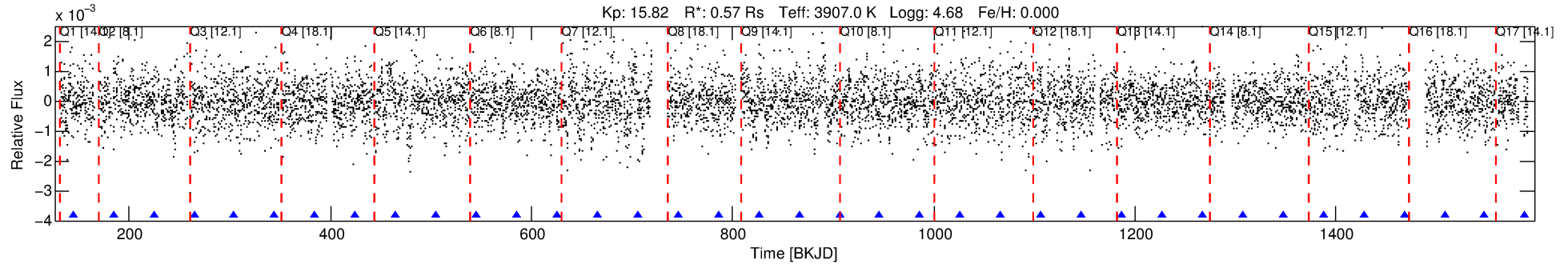
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007200463-05

No Significant Match Found

# DV One-Page Summary

KIC: 7200463 Candidate: 5 of 8 Period: 40.105 d



## DV Fit Results:

Period = 40.10538 [0.00052] d  
Epoch = 144.1677 [0.0108] BKJD  
Rp/R\* = 0.0322 [0.0375]  
a/R\* = 75.07 [346.49]  
b = 0.84 [1.66]  
Seff = 1.86 [0.21]  
Teq = 298 [8] K  
Rp = 1.99 [2.32] Re  
a = 0.1897 [0.0096] AU  
Ag = 5595.60 [13077.75] [0.43σ]  
Teffp = 3981 [2327] K [1.58σ]

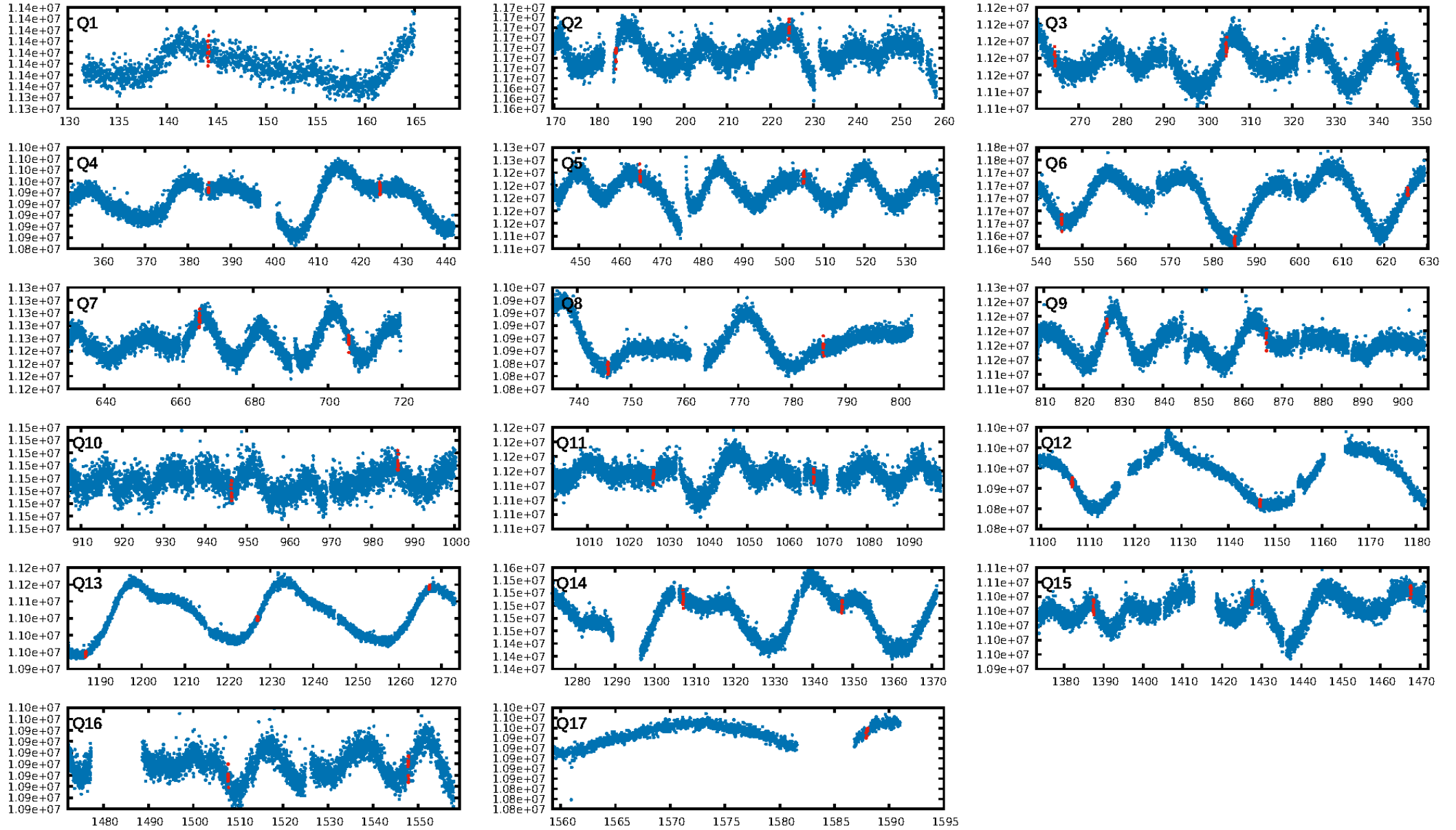
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [63.53σ]  
LongPeriod-sig: 100.0% [110.07σ]  
ModelChiSquare2-sig: 7.2%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 3.56e-08**  
RollingBand-fgt: 1.00 [11/11]  
GhostDiagnostic-chr: -1.491  
Centroid-sig: 0.8%  
Centroid-so: 1.631 arcsec [2.01σ]  
OotOffset-rm: 1.343 arcsec [0.79σ]  
KicOffset-rm: 1.213 arcsec [0.67σ]  
OotOffset-st: 3/4/2/2 [11]  
KicOffset-st: 3/4/2/2 [11]  
DiffImageQuality-fgm: 0.00 [0/11]  
DiffImageOverlap-fno: 0.00 [0/16]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 07:13:06 Z

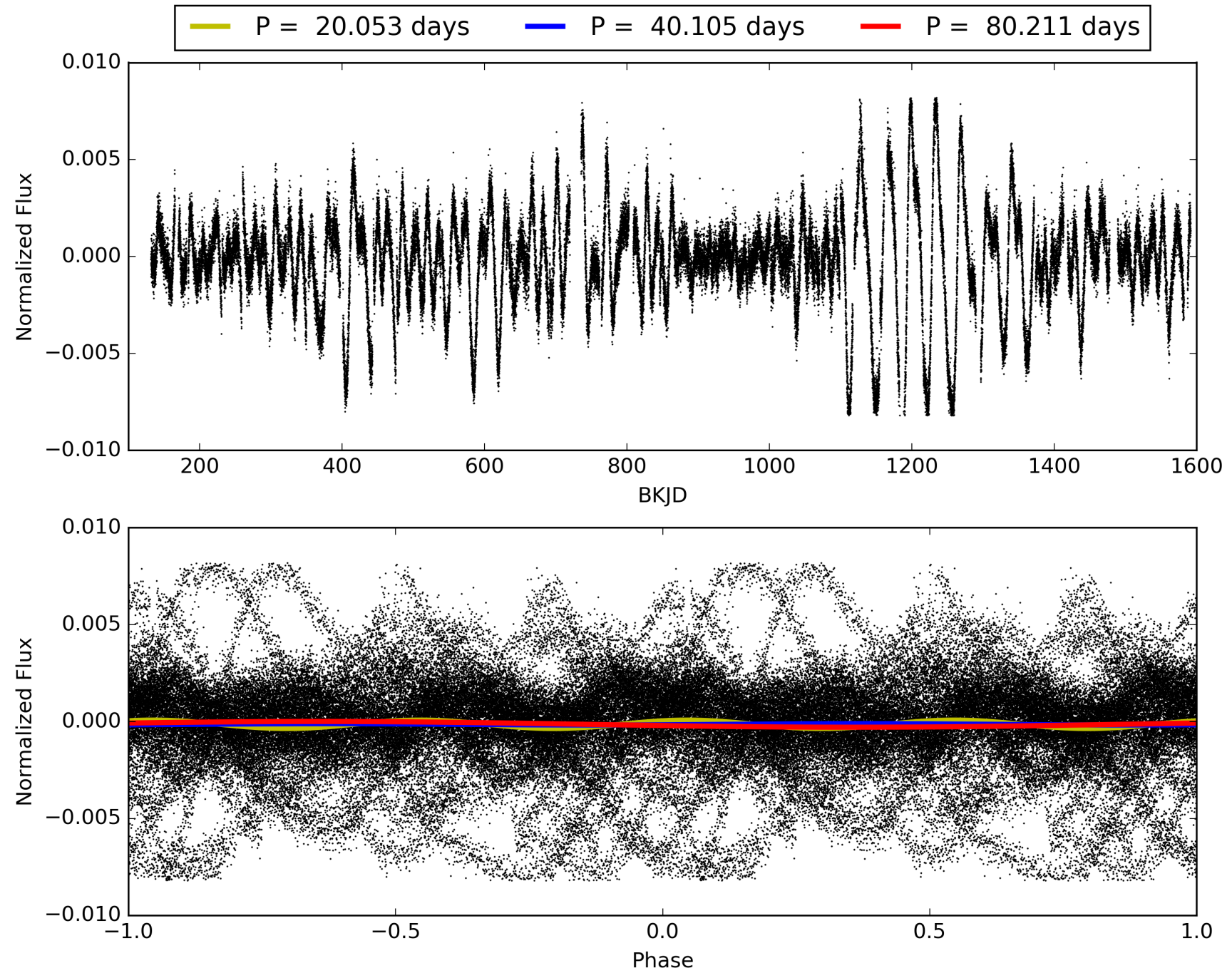
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007200463-05, PDC Light Curves





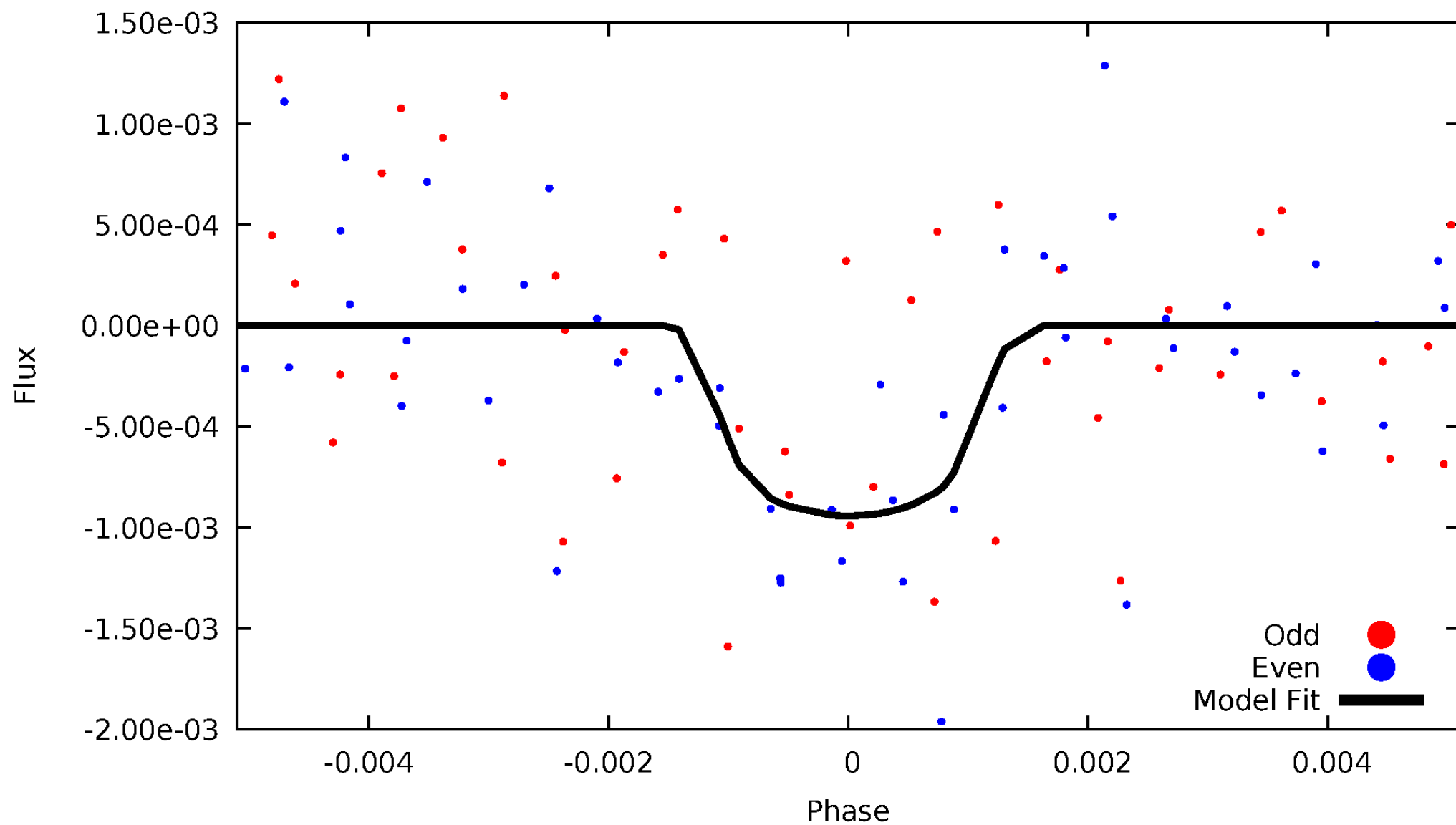
TCE 007200463-05





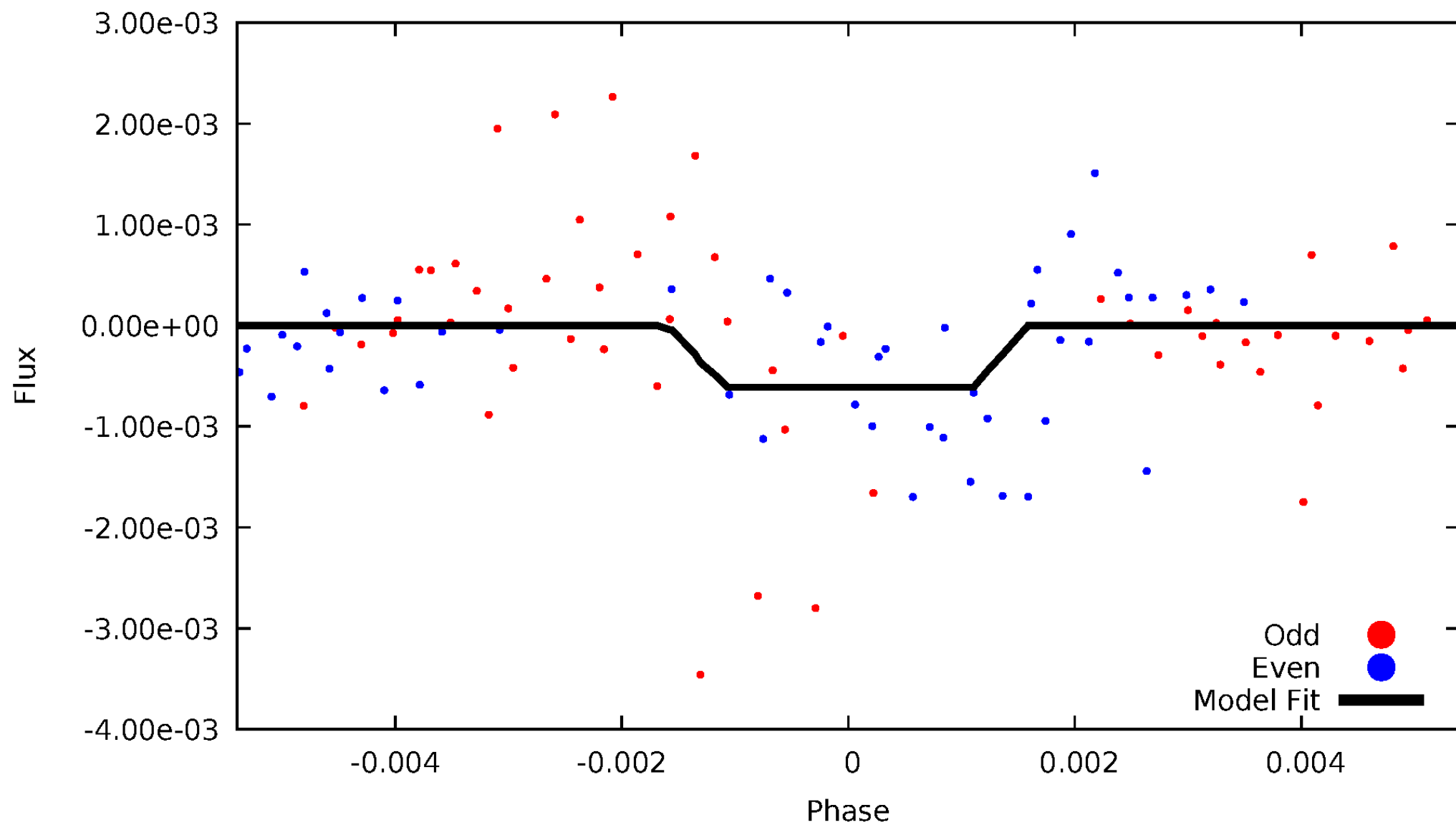
# DV Odd/Even

TCE 007200463-05



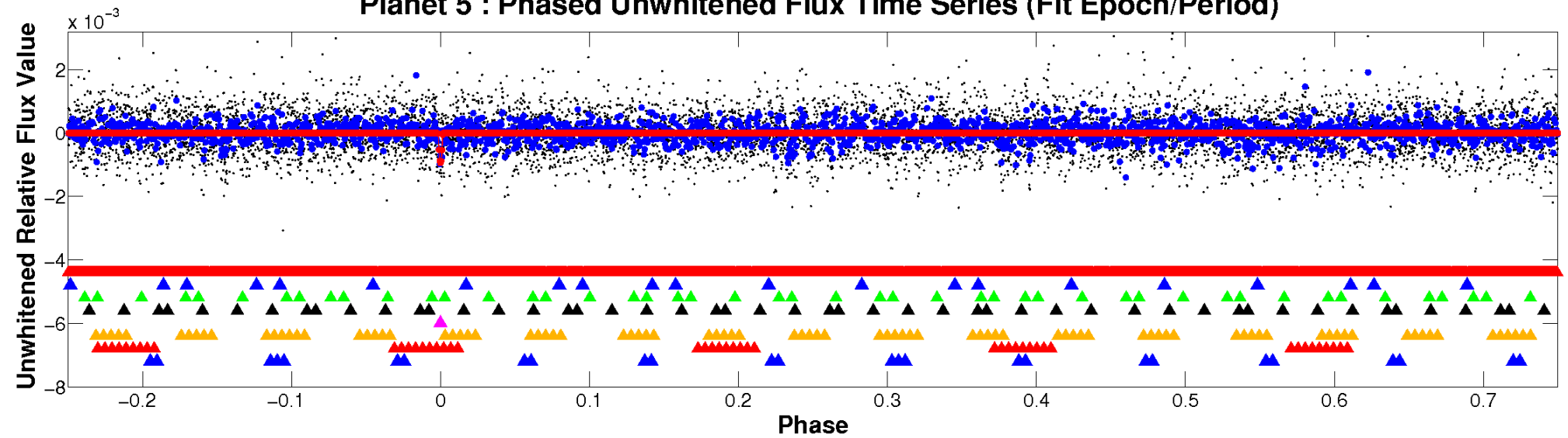
# ALT Odd/Even

TCE 007200463-05

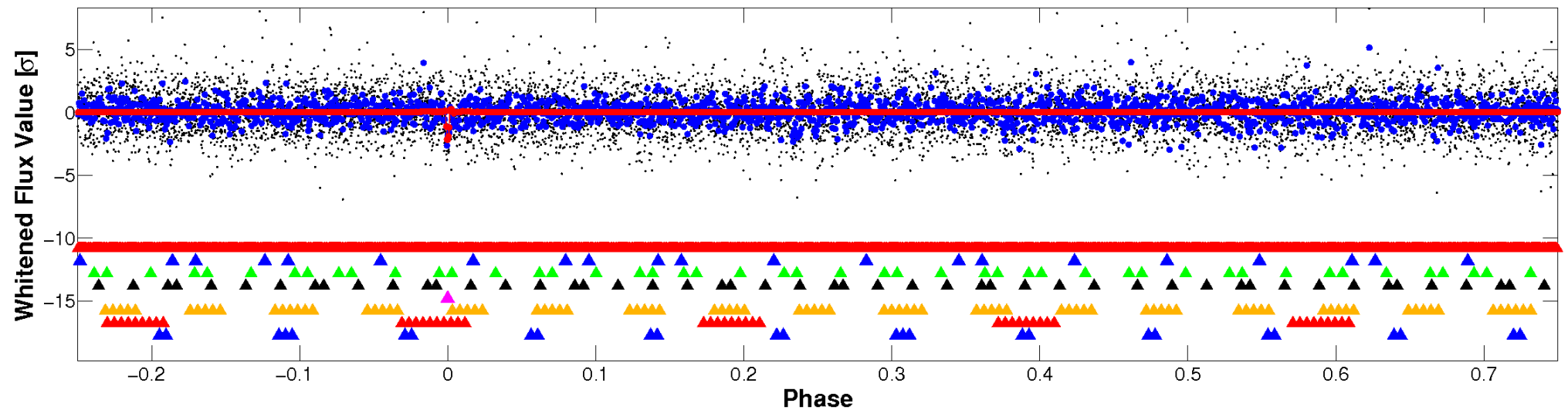


# Non-Whitened Vs. Whitened Light Curve

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

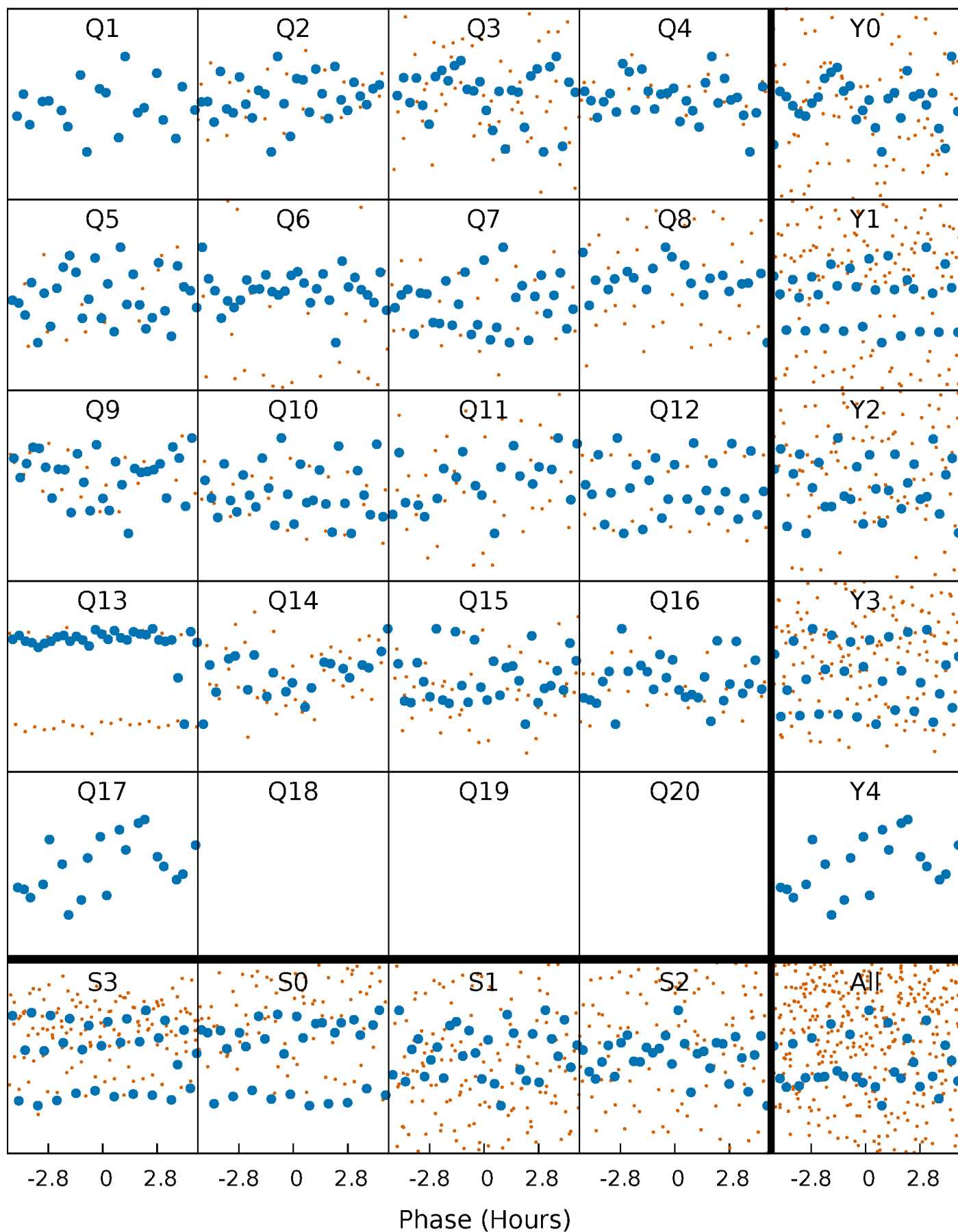


## Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



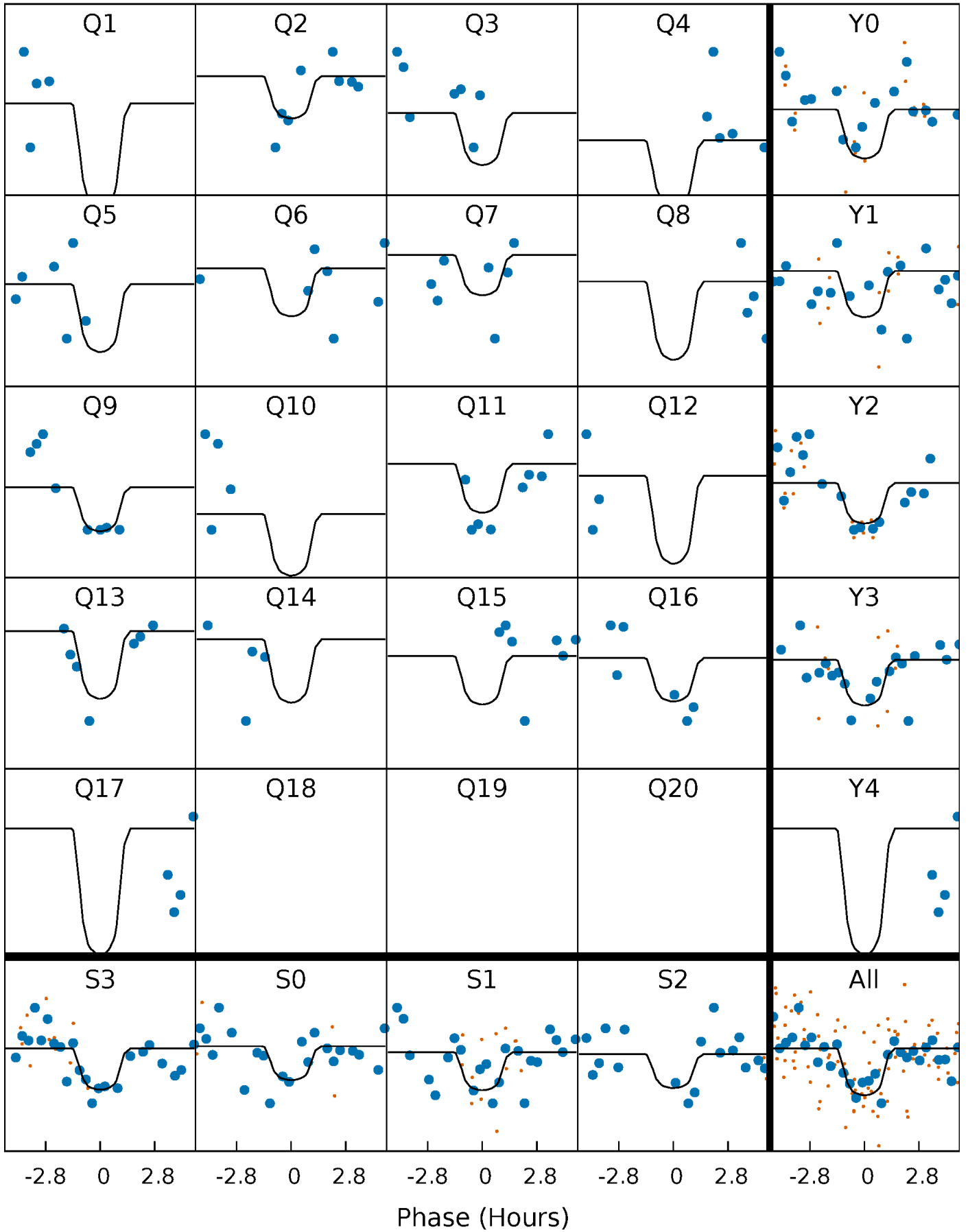
# PDC Quarter-Phased Transit Curves

TCE 007200463-05     $P = 40.105384$  Days     $T_0 = 144.167690$  (BKJD)



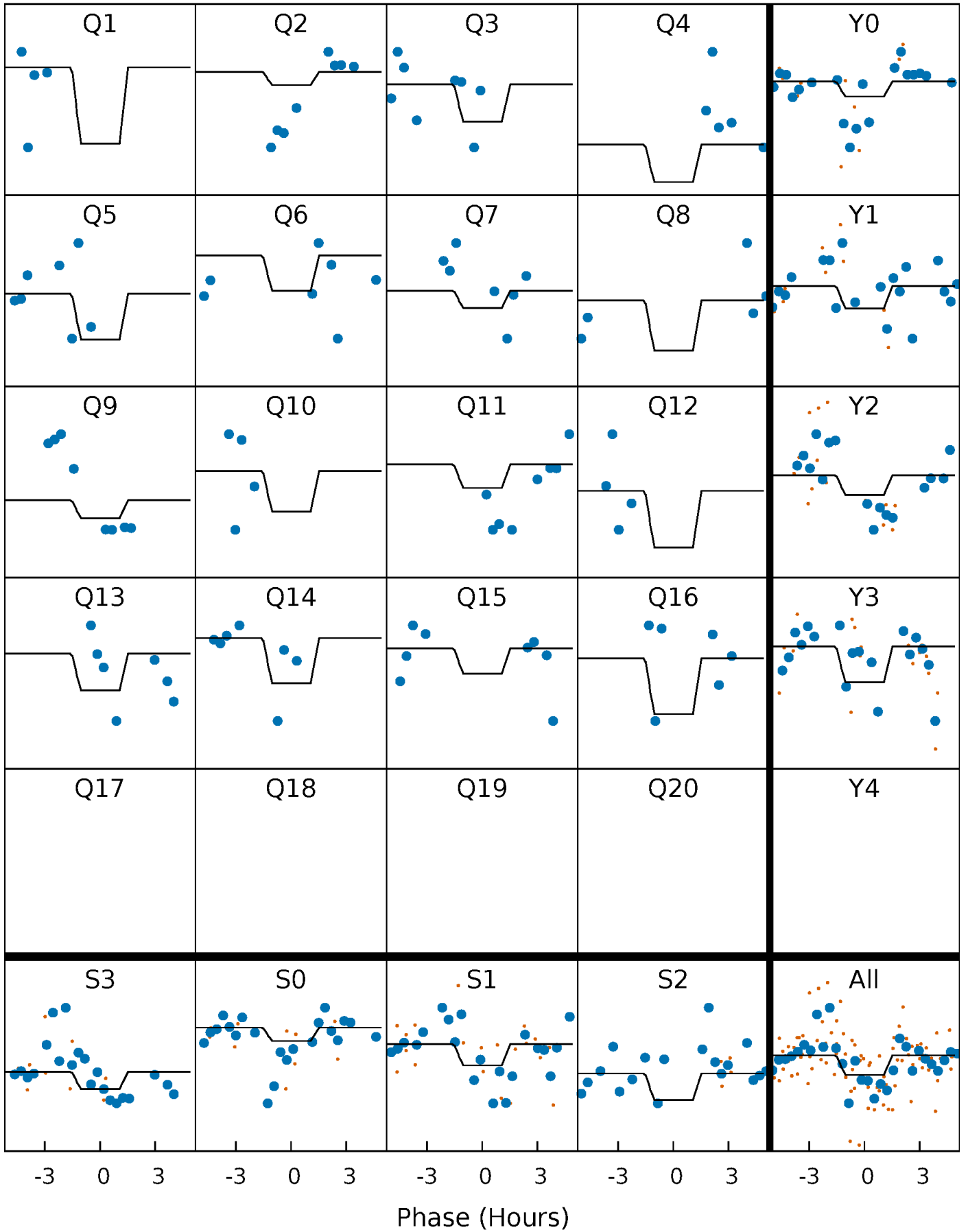
# DV Quarter-Phased Transit Curves

TCE 007200463-05   P= 40.105384 Days    $T_0=144.167690$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

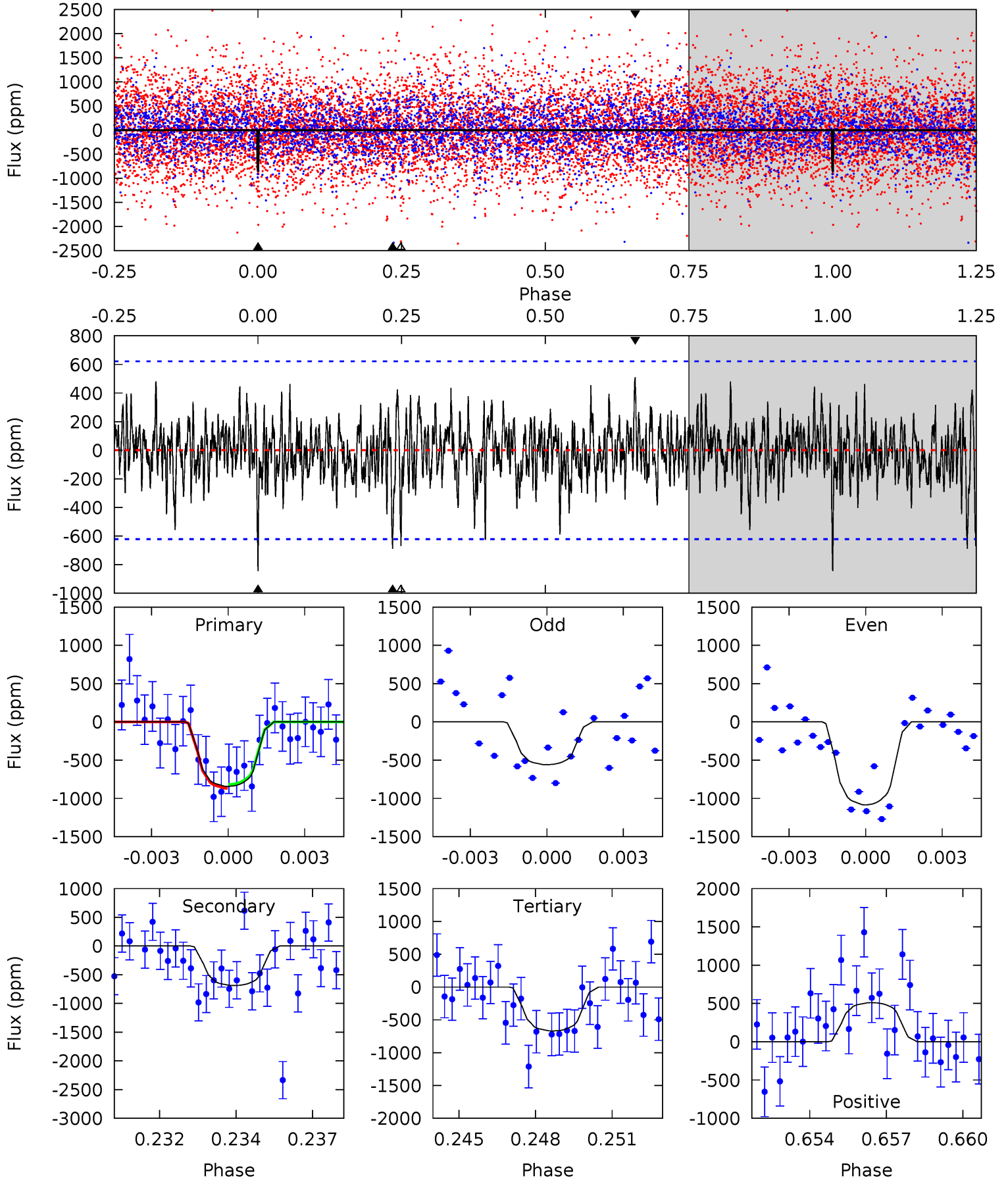
TCE 007200463-05     $P = 40.102641$  Days     $T_0 = 144.182614$  (BKJD)



# DV Model-Shift Uniqueness Test

007200463-05, P = 40.105384 Days, E = 104.062306 Days

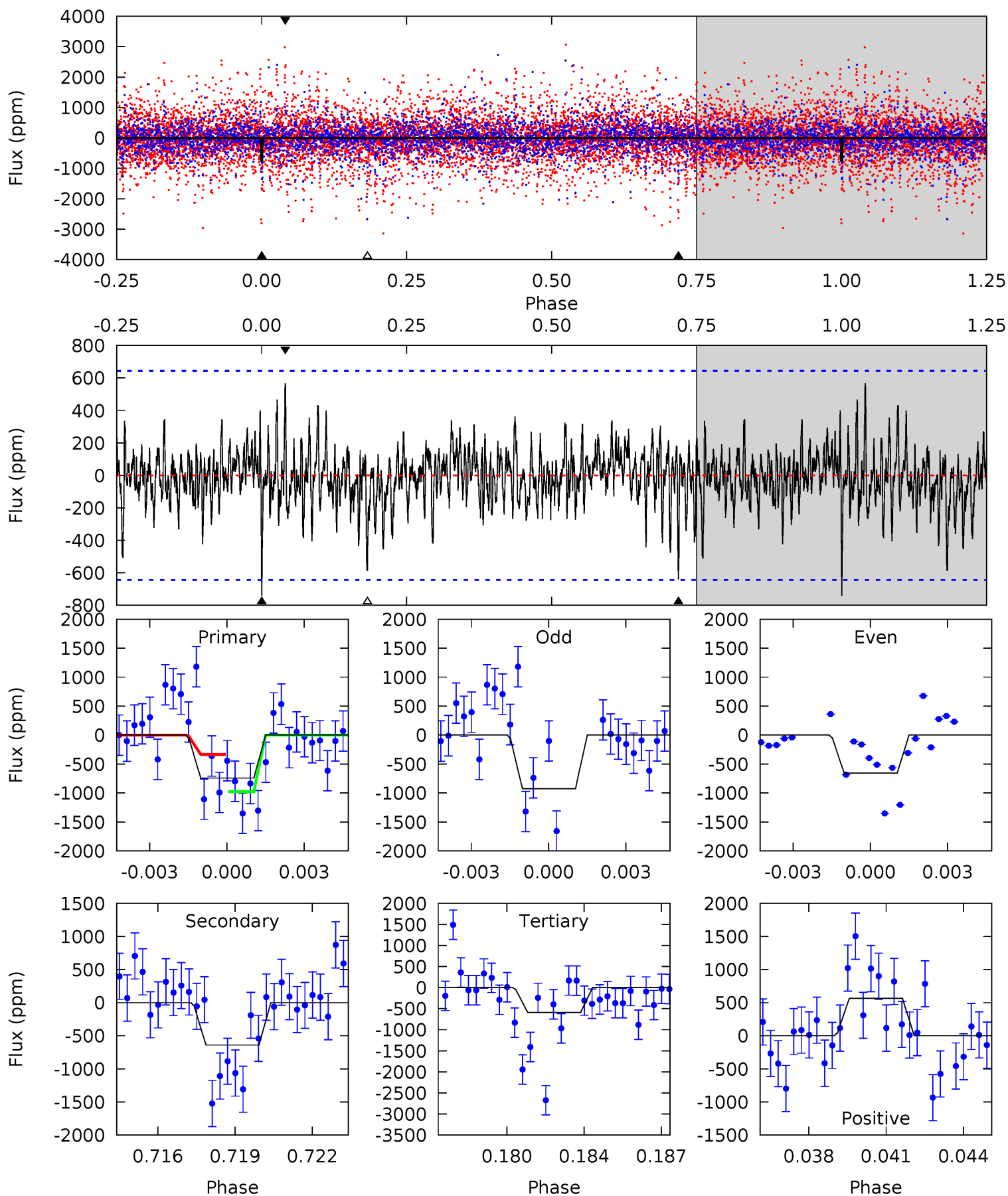
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.15	5.84	5.68	4.33	5.27	3.00	1.38	1.47	2.82	0.16	1.51	2.23	0.80	0.38	0.21



# Alt Model-Shift Uniqueness Test

007200463-05, P = 40.102641 Days, E = 104.079973 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
6.04	5.21	4.78	4.62	5.24	2.95	1.19	1.26	1.43	0.43	0.60	1.04	1.47	0.43	2.61





### Stellar Parameters For KIC 007200463

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$3907^{+86}_{-86}$	$4.685^{+0.036}_{-0.015}$	$0.000^{+0.100}_{-0.100}$	$0.566^{+0.022}_{-0.036}$	$0.565^{+0.032}_{-0.026}$	$4.395^{+0.686}_{-0.307}$
	+2%/-2%	+1%/-0%	+inf%/-inf%	+4%/-6%	+6%/-5%	+16%/-7%
Source	PHO2	PHO2	PHO2	DSEP		

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

### Secondary Eclipse Parameters for KIC 007200463-05 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-689 \pm 118$	$2.47^{+2.16}_{-1.54}$	$414^{+11}_{-10}$	$3387^{+1422}_{-553}$	$2254^{+14228}_{-1619}$
Alt.	$-640 \pm 123$	$2.16^{+2.05}_{-1.44}$	$414^{+10}_{-10}$	$3491^{+1779}_{-622}$	$2719^{+21675}_{-2010}$

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

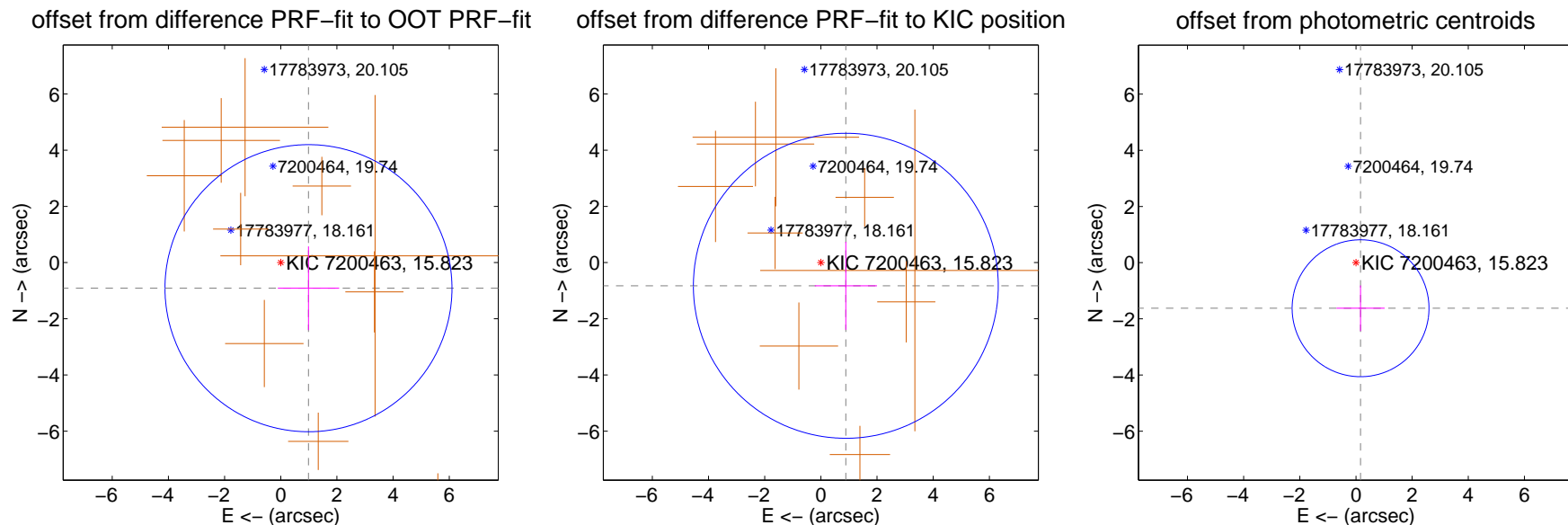
## DV Centroid Data

Supplemental centroid analysis for 007200463-05. Kepler magnitude: 15.82. Transit SNR 9.16

There are 0 quarters with good PRF difference image offsets

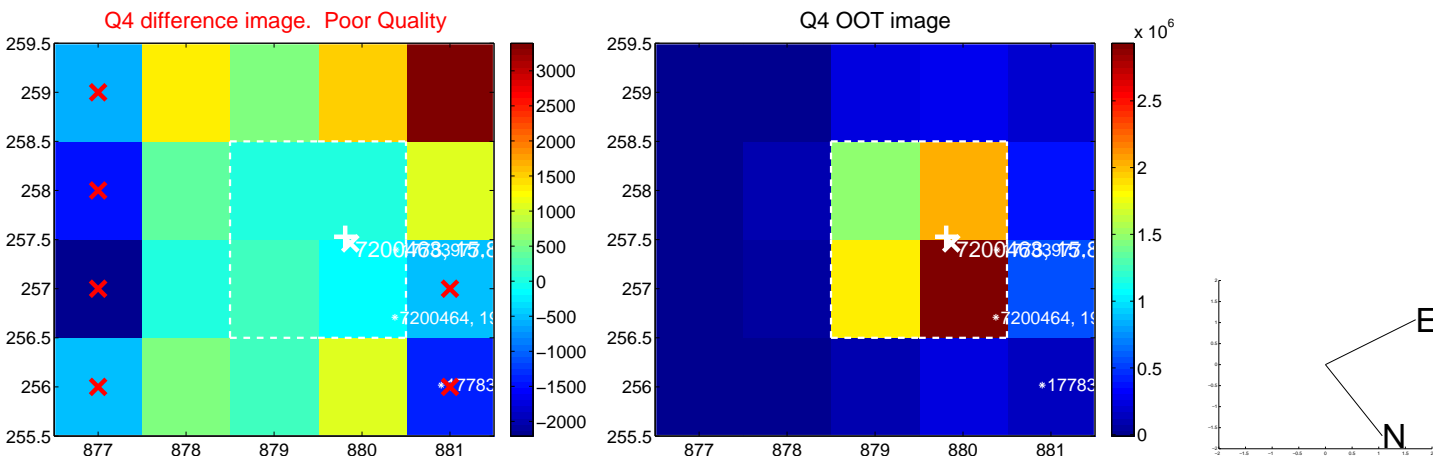
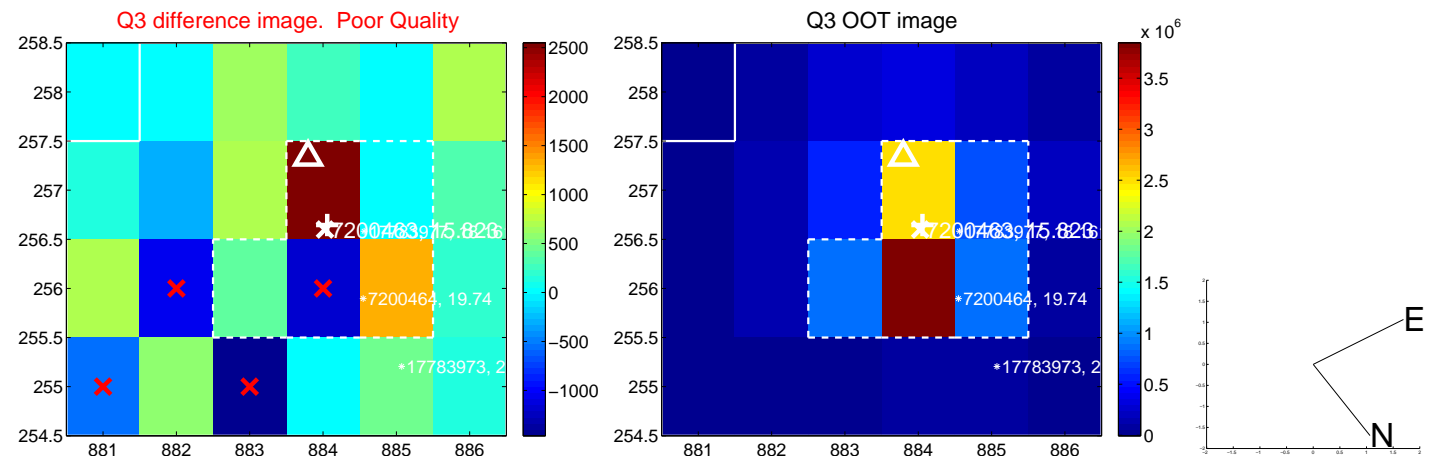
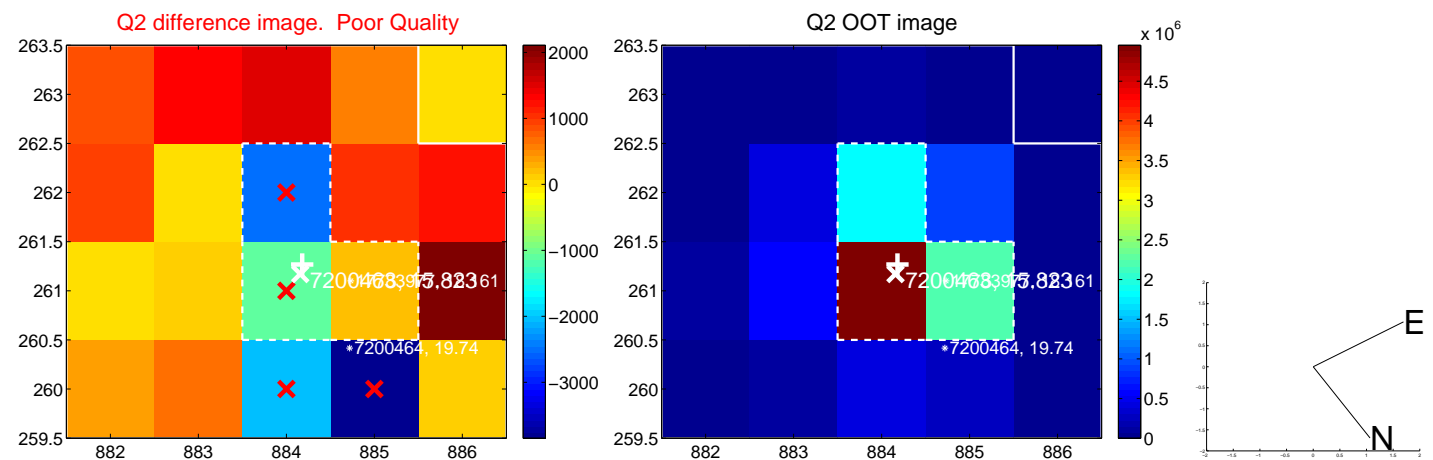
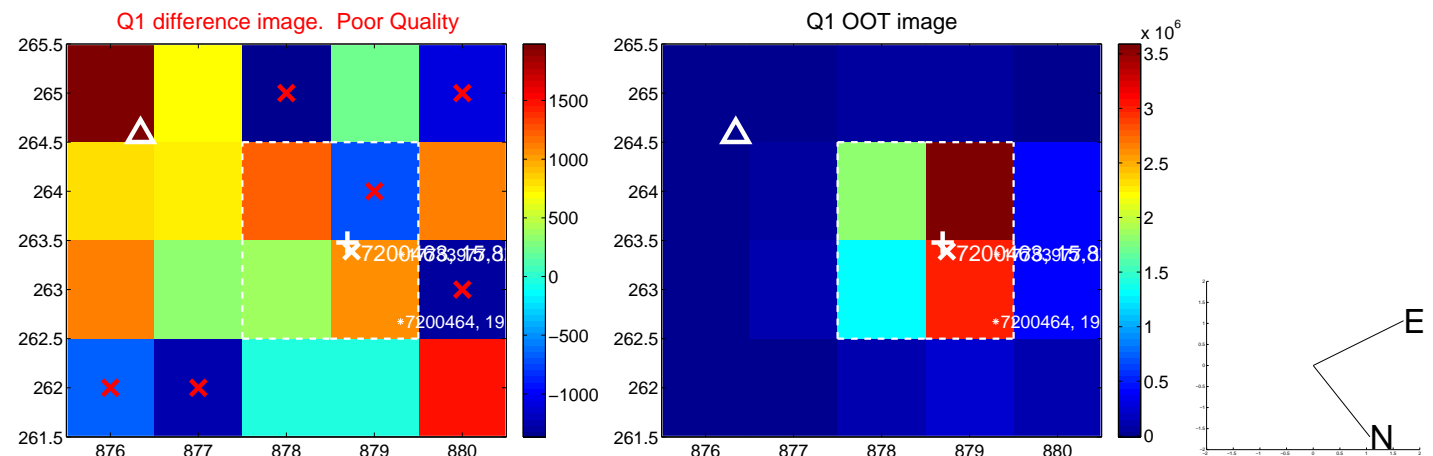
The direct PRF centroid is offset from the target star catalog position by about 0.47 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.343 \pm 1.703$	0.79	$-0.987 \pm 1.092$	$-0.911 \pm 1.489$
PRF-fit source offset from KIC position	$1.213 \pm 1.809$	0.67	$-0.889 \pm 1.108$	$-0.825 \pm 1.565$
photometric centroid source offset	$1.63 \pm 0.81$	2.01	$-0.16 \pm 0.86$	$-1.62 \pm 0.81$

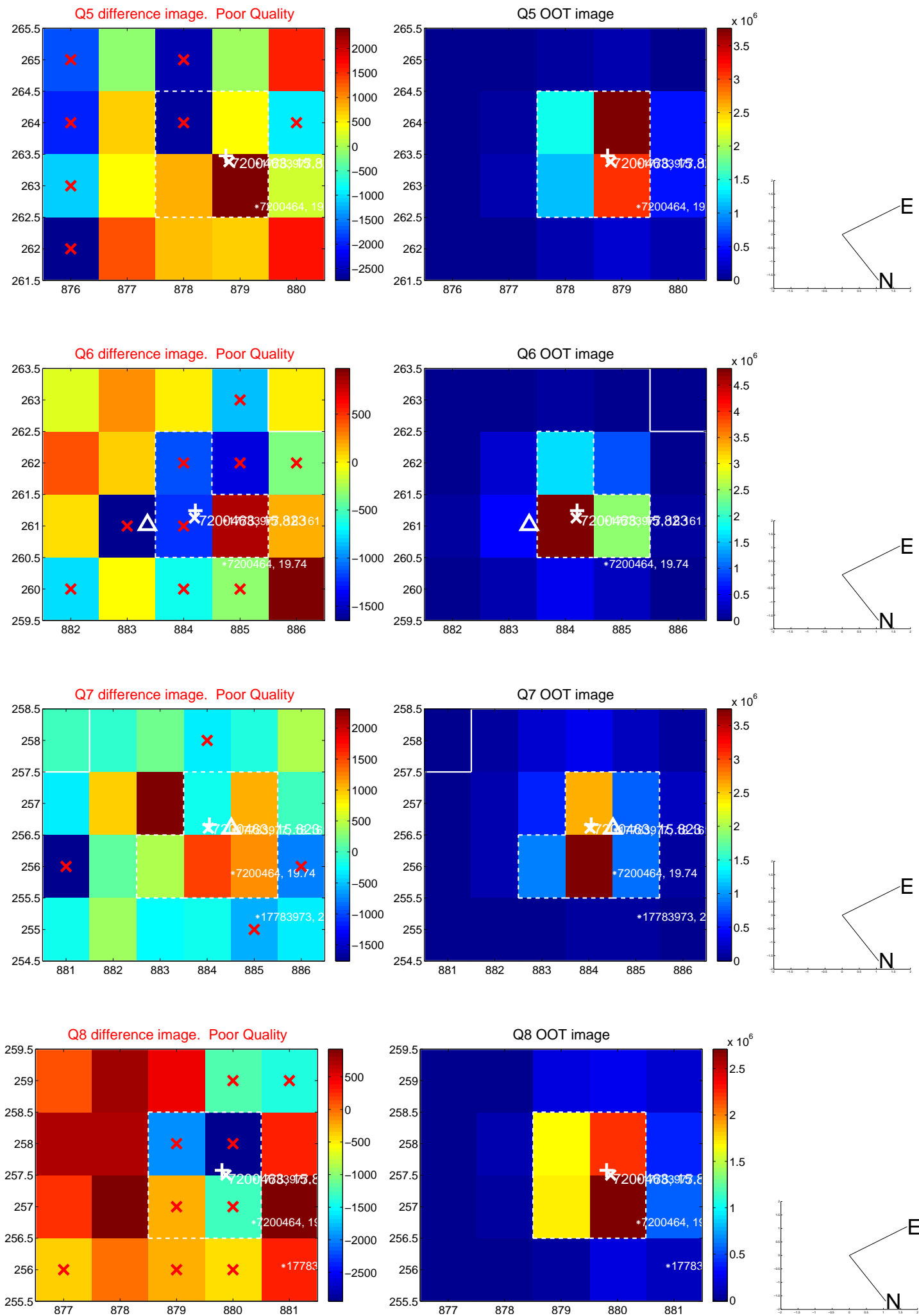


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

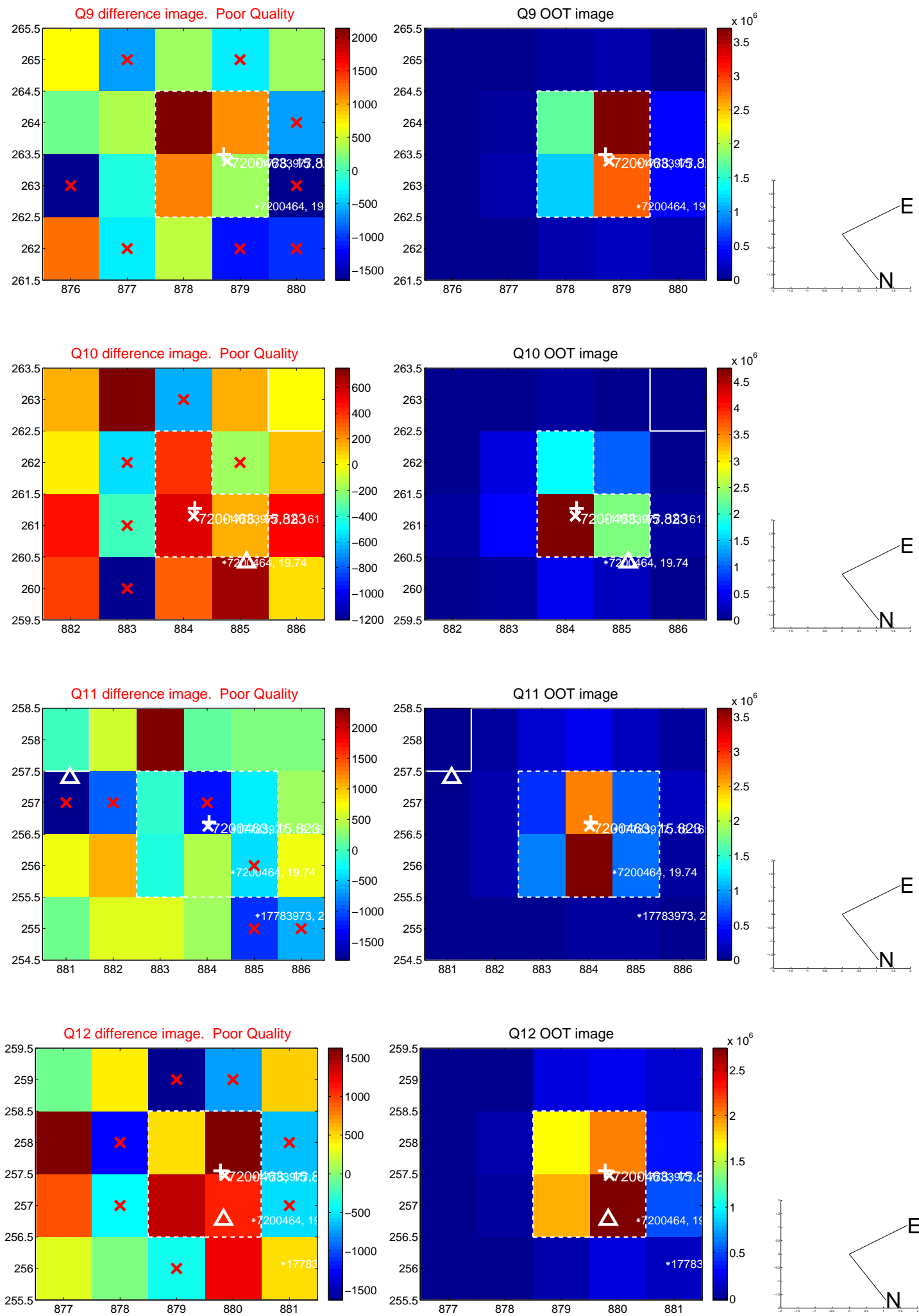
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



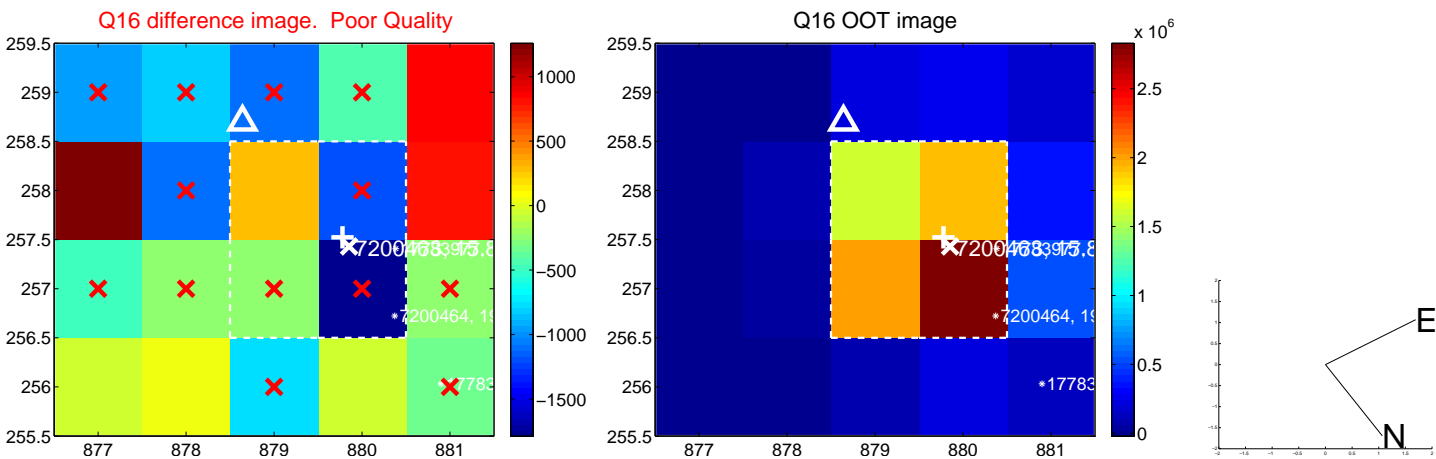
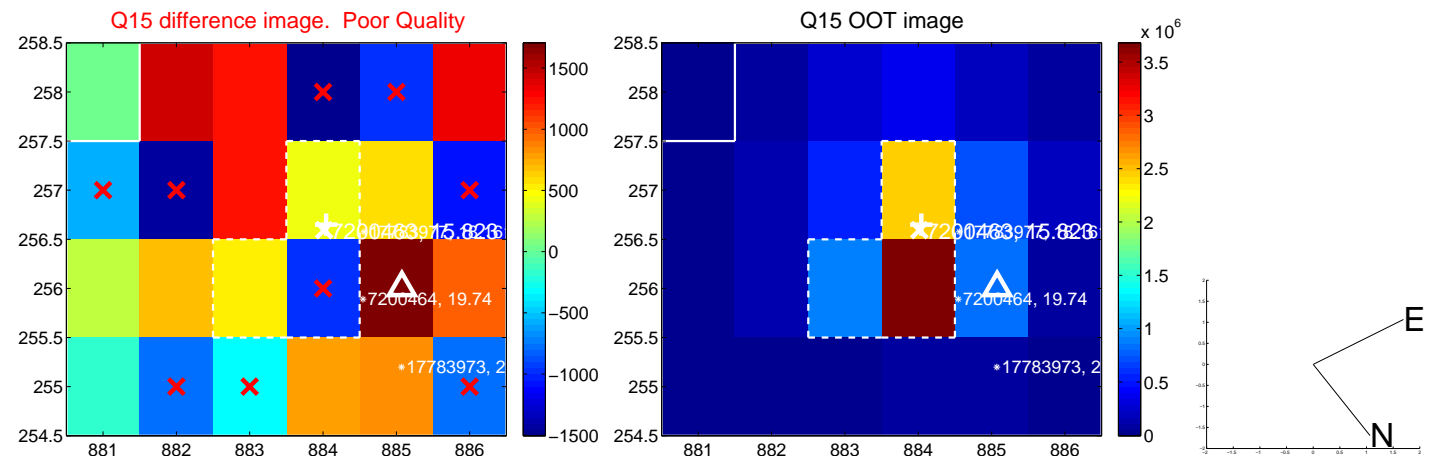
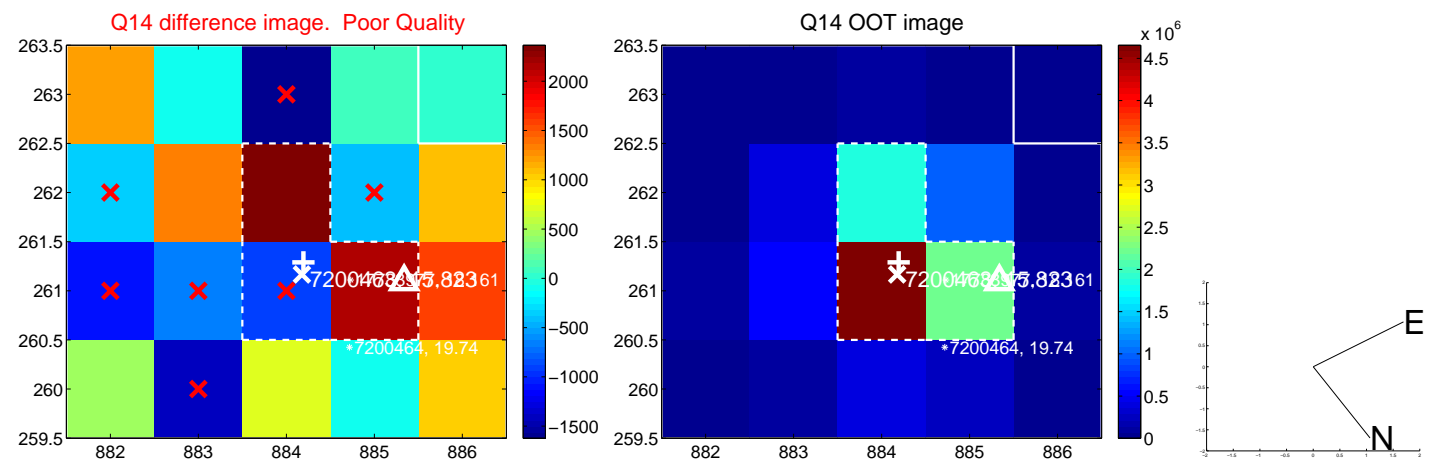
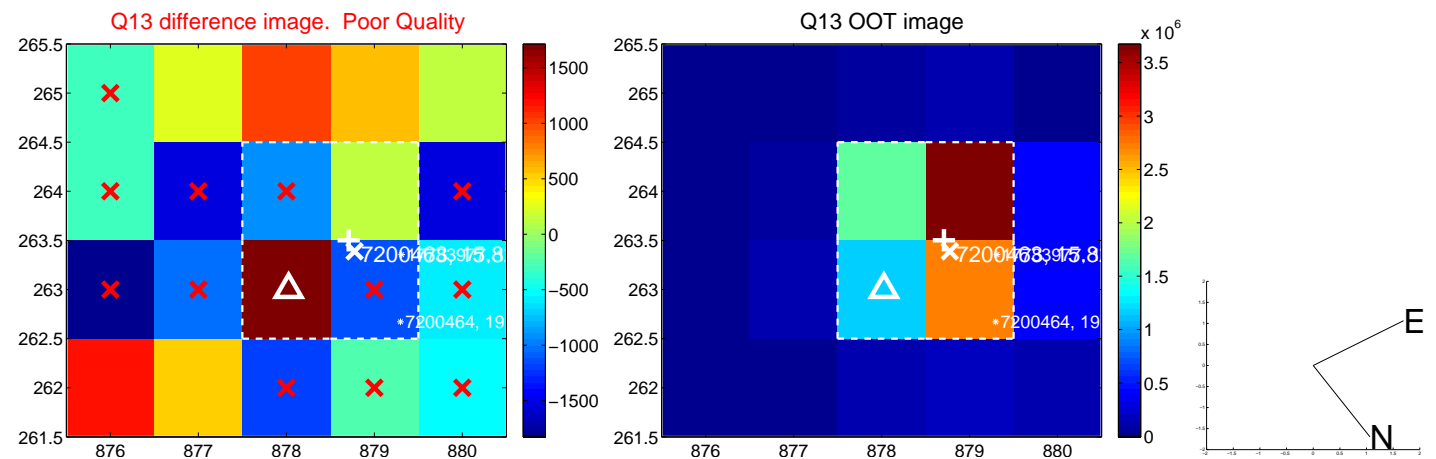
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



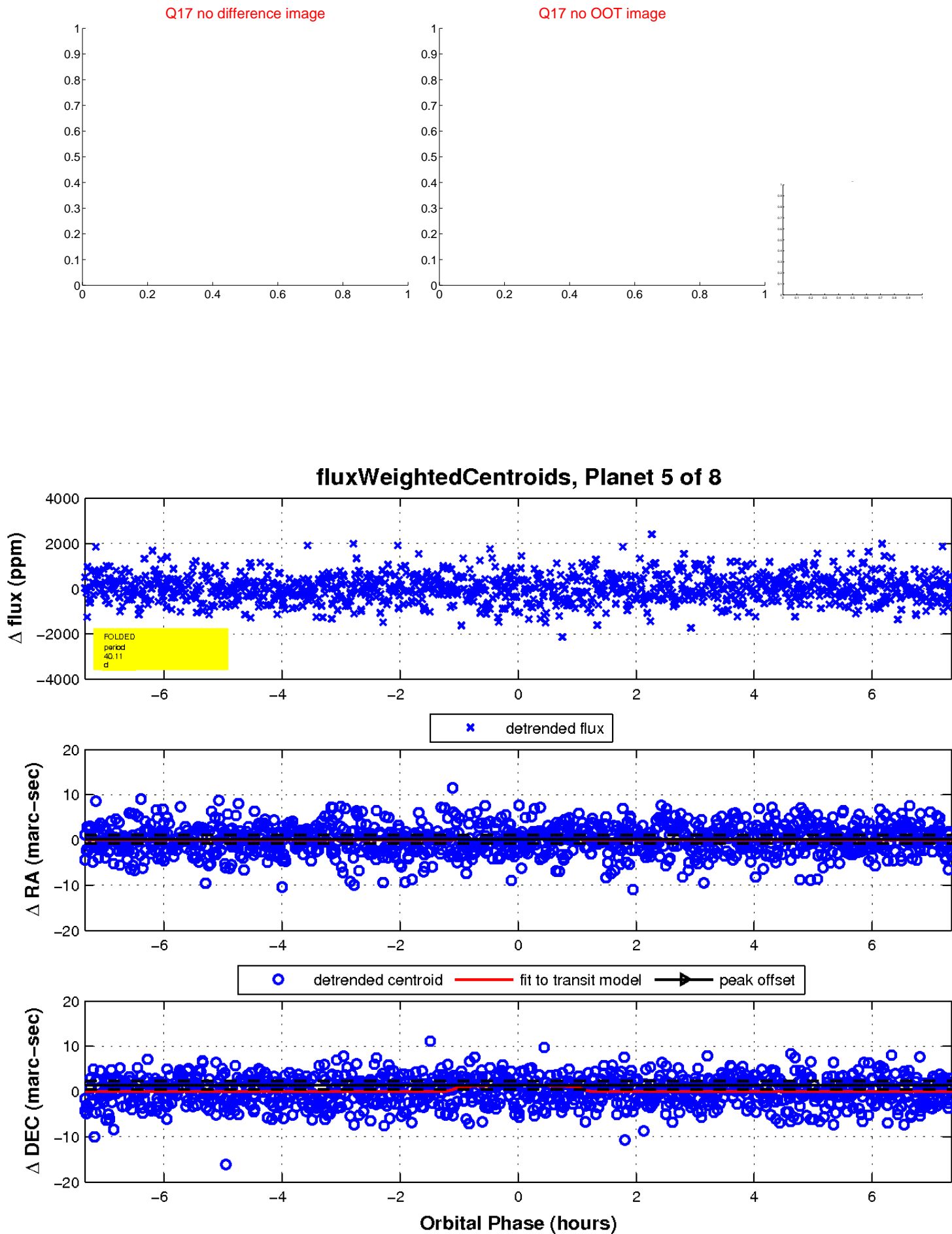
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

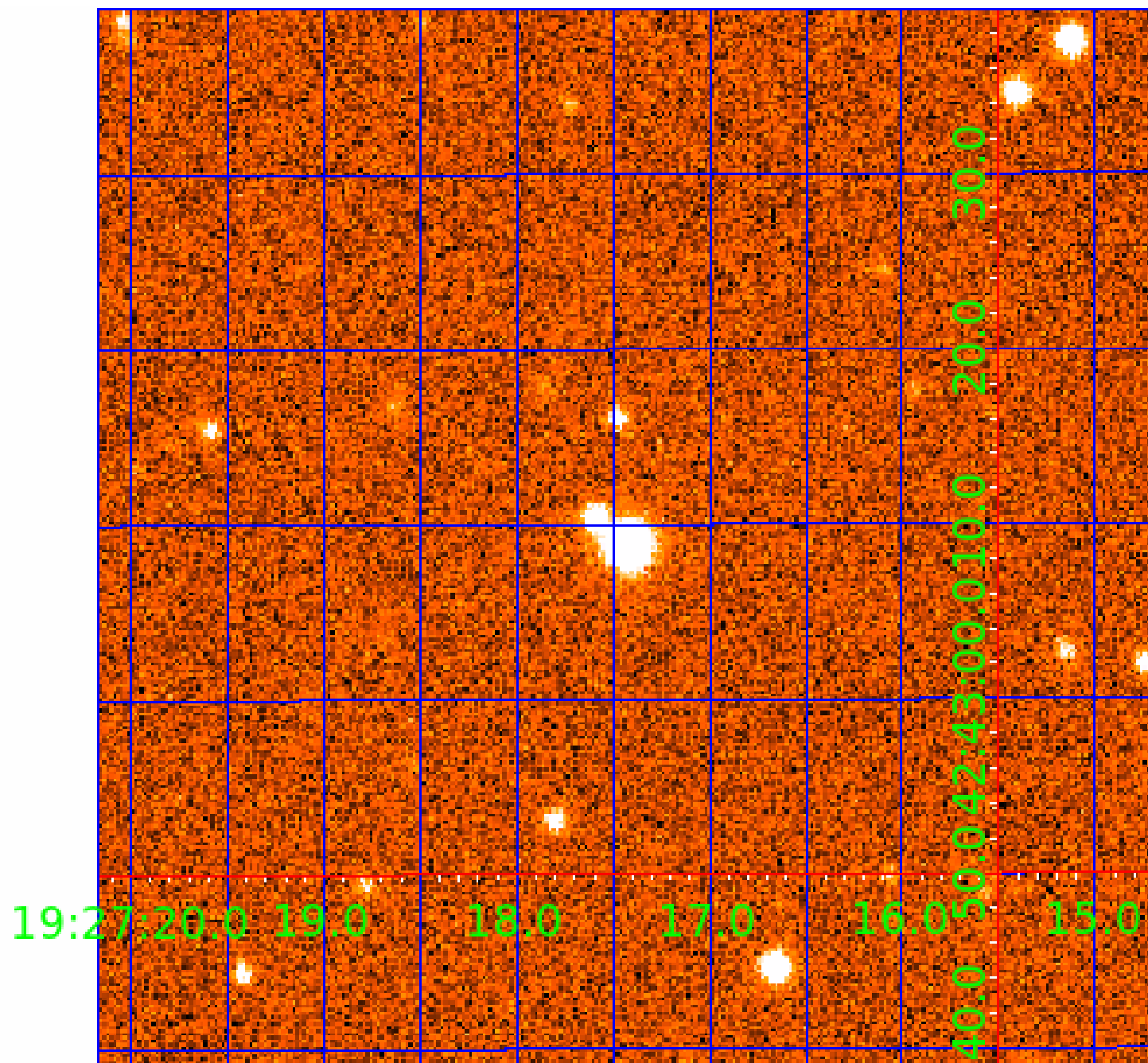


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination





# KIC 007200463

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007200463-01	OBS	No	0.566758	131.840663	30.2	3.735	8.9	4.8	0.57	3907	0.30	544.02
007200463-02	OBS	No	69.558006	189.973834	1591.5	0.599	9.5	6.6	0.57	3907	2.38	0.89
007200463-03	OBS	No	30.758930	159.909444	759.5	1.554	9.9	7.2	0.57	3907	1.65	2.65
007200463-04	OBS	No	29.082206	151.599782	987.7	2.567	8.8	9.4	0.57	3907	2.41	2.85
007200463-05	OBS	No	40.105384	144.167690	943.7	2.453	7.6	9.2	0.57	3907	1.99	1.86
007200463-06	OBS	No	16.502004	140.509425	986.5	0.762	9.3	9.4	0.57	3907	1.78	6.07
007200463-07	OBS	No	32.122218	142.928559	1031.9	1.754	7.9	8.3	0.57	3907	1.78	2.50
007200463-08	OBS	No	56.830874	139.594999	950.5	2.699	8.2	9.6	0.57	3907	2.05	1.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007200463-01	OBS	FP	0.00	1	0	0	1	LPP_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS—EPHEM_MATCH
007200463-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200463-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS
007200463-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200463-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200463-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
007200463-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007200463-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

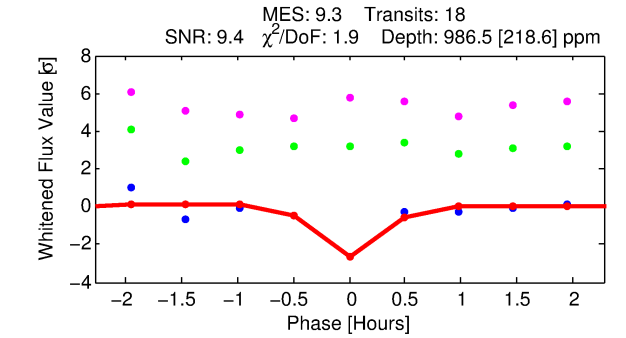
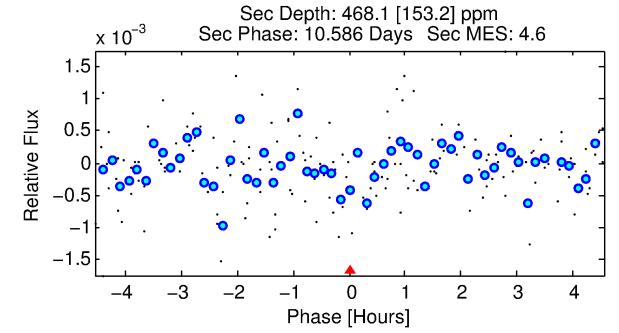
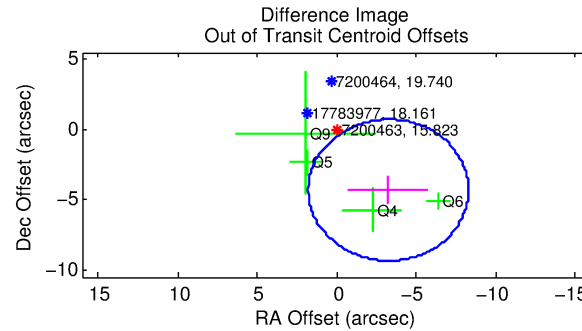
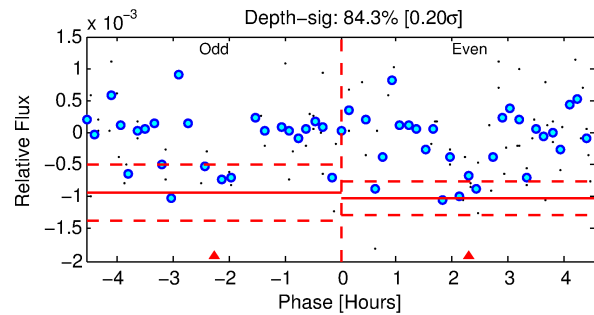
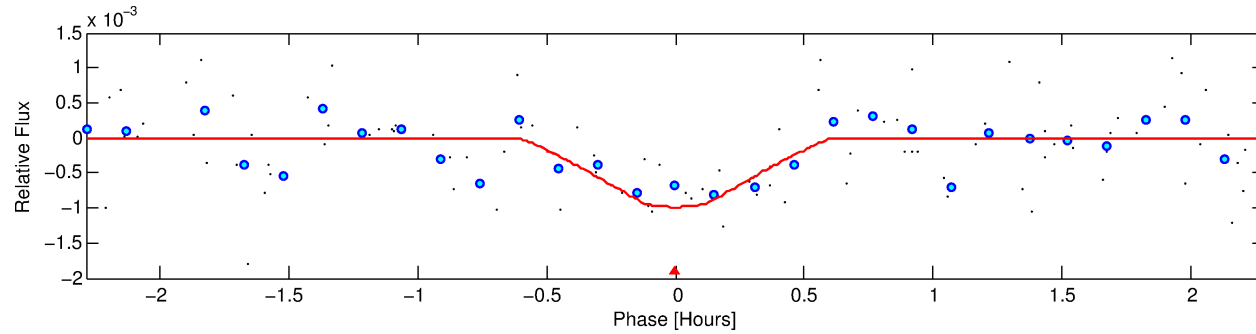
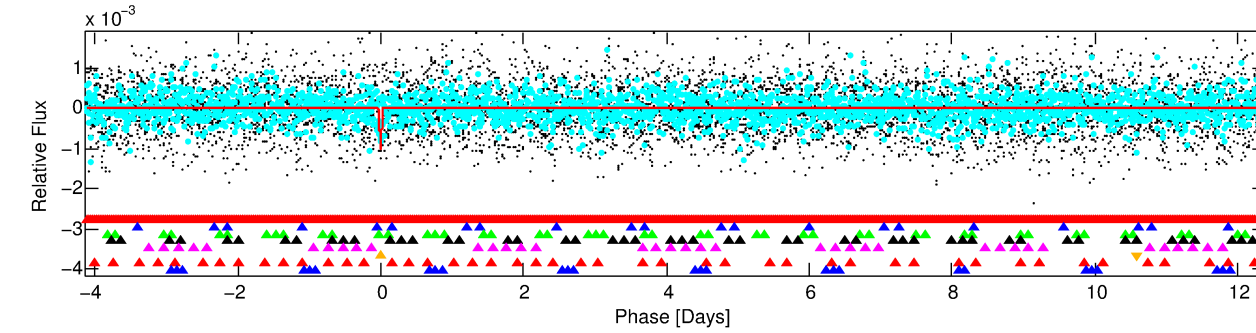
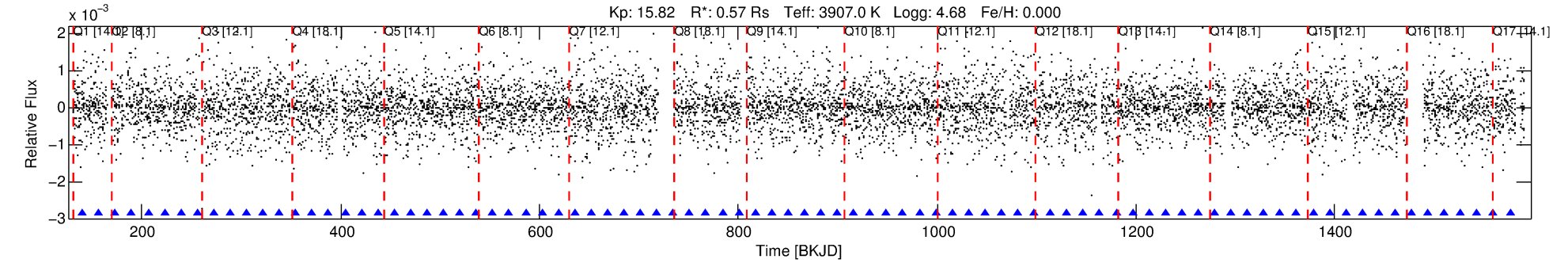
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007200463-06

No Significant Match Found

# DV One-Page Summary

KIC: 7200463 Candidate: 6 of 8 Period: 16.502 d



## DV Fit Results:

Period = 16.50200 [0.00010] d  
Epoch = 140.5094 [0.0050] BKJD  
Rp/R\* = 0.0289 [0.0627]  
a/R\* = 166.04 [1302.99]  
b = 0.23 [33.31]  
Seff = 6.07 [0.68]  
Teq = 400 [11] K  
Rp = 1.79 [3.87] Re  
a = 0.1049 [0.0053] AU  
Ag = 889.53 [3870.42] [0.23 $\sigma$ ]  
Teff = 3380 [3677] K [0.81 $\sigma$ ]

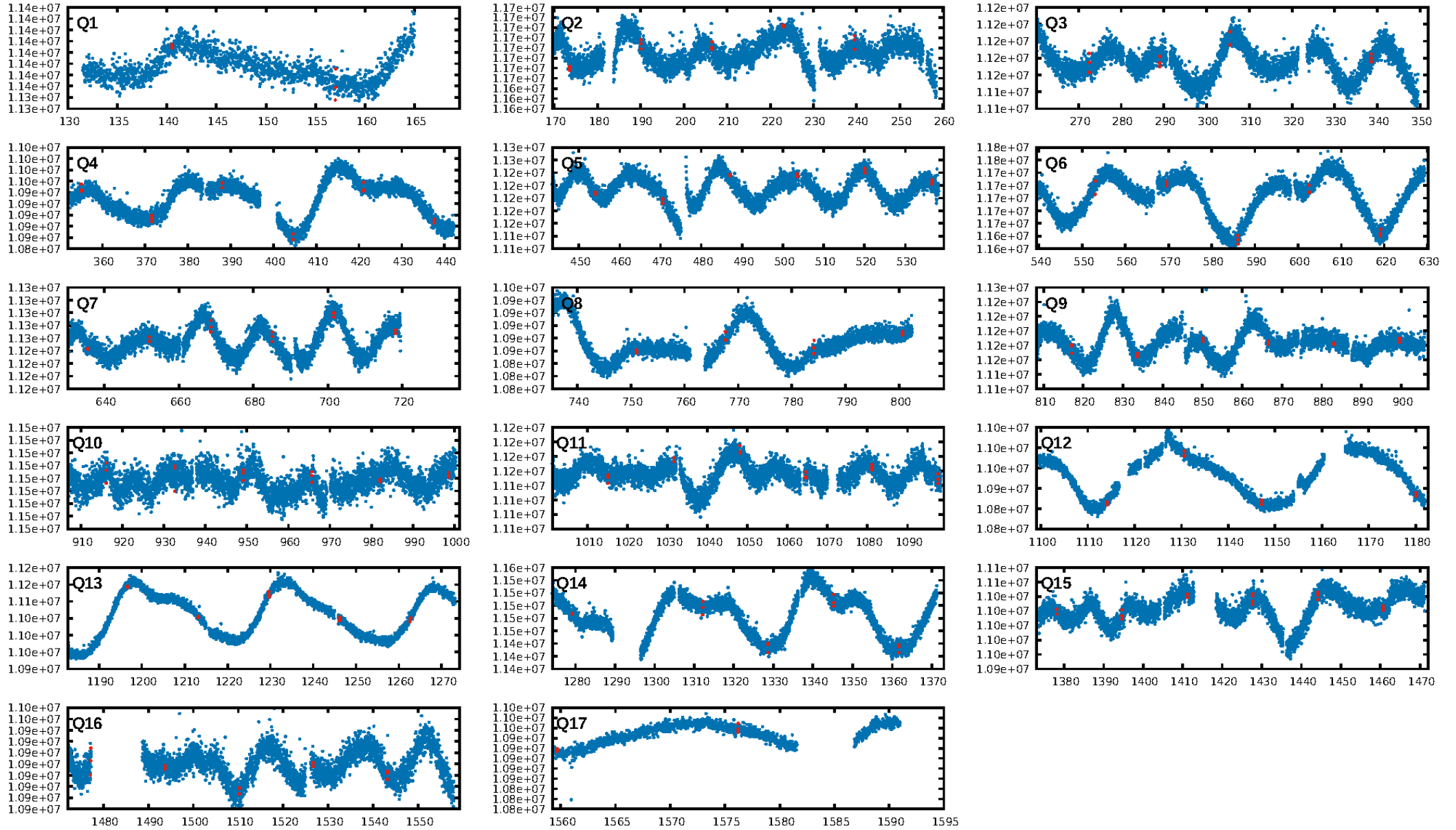
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [100.34 $\sigma$ ]  
LongPeriod-sig: 100.0% [112.78 $\sigma$ ]  
ModelChiSquare2-sig: 15.7%  
ModelChiSquareGof-sig: 90.3%  
**Bootstrap-pfa: 1.33e-10**  
RollingBand-fgt: 1.00 [16/16]  
GhostDiagnostic-chr: -1.192  
Centroid-sig: 4.1%  
Centroid-so: 1.531 arcsec [1.63 $\sigma$ ]  
**OotOffset-rm: 5.404 arcsec [3.22 $\sigma$ ]**  
**KicOffset-rm: 5.615 arcsec [3.26 $\sigma$ ]**  
OotOffset-st: 1/0/1/2 [4]  
KicOffset-st: 1/0/1/2 [4]  
DiffImageQuality-fgm: 0.00 [0/4]  
DiffImageOverlap-fno: 0.00 [0/17]

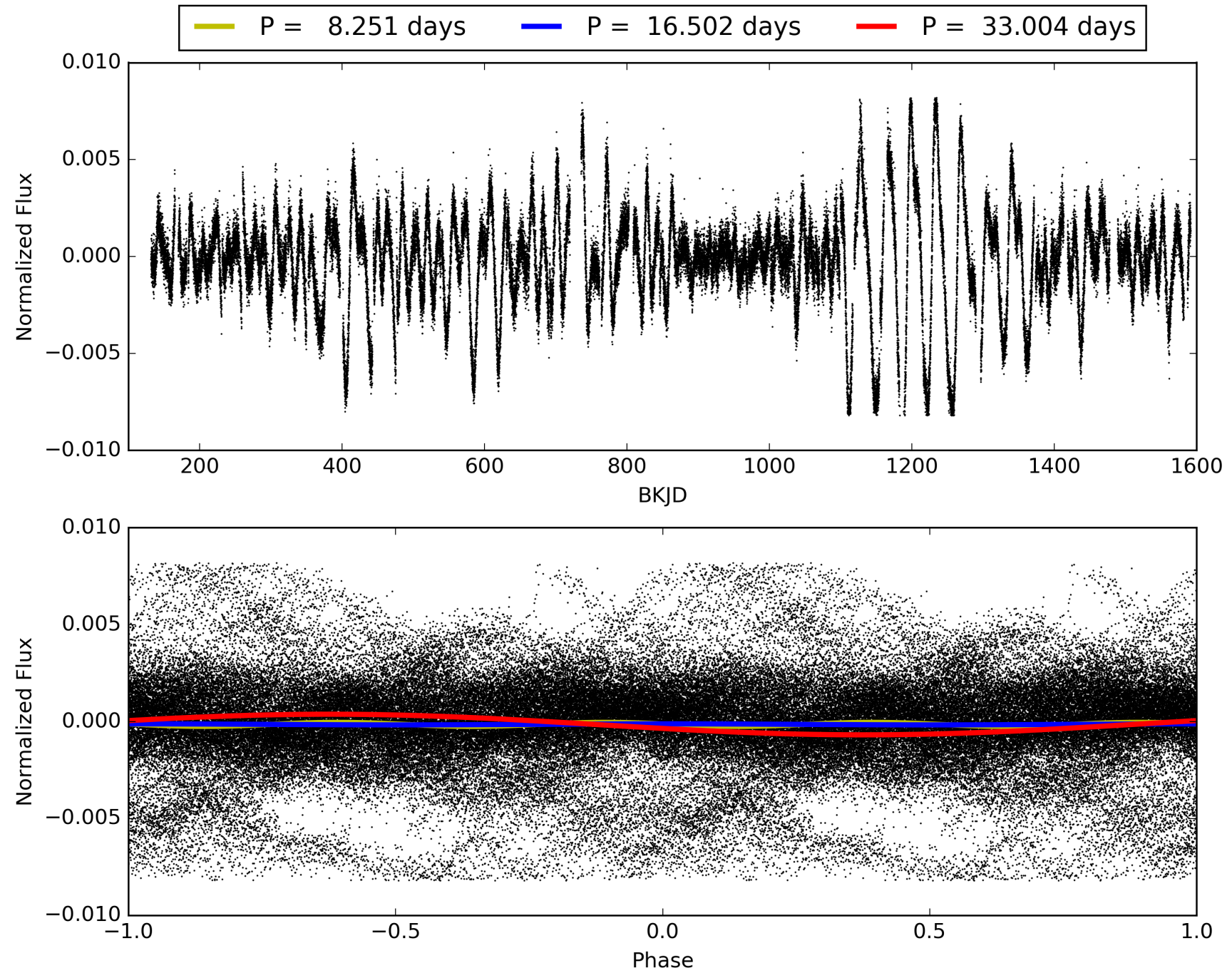
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 07:13:09 Z

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

# TCE 007200463-06, PDC Light Curves

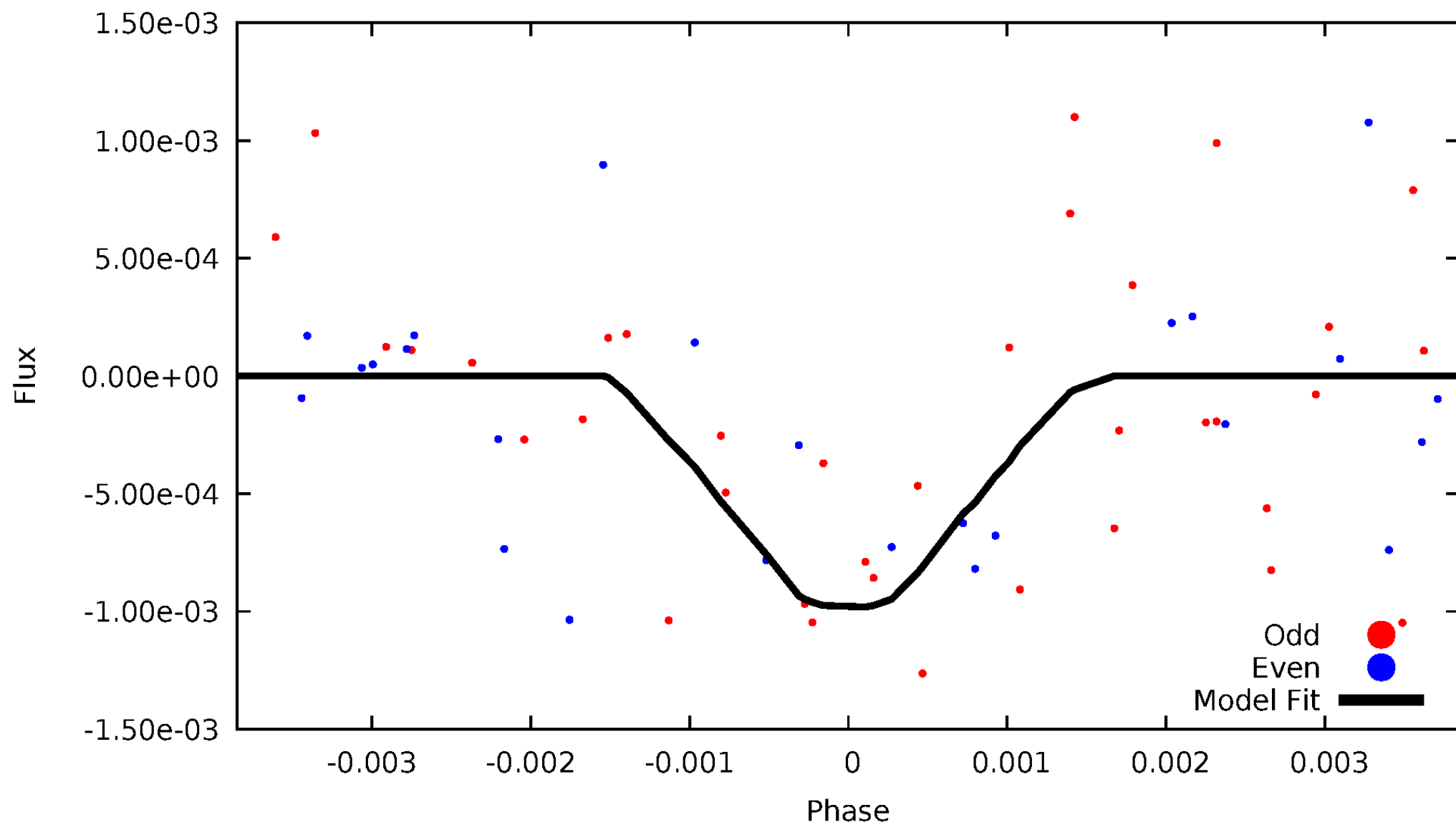


TCE 007200463-06



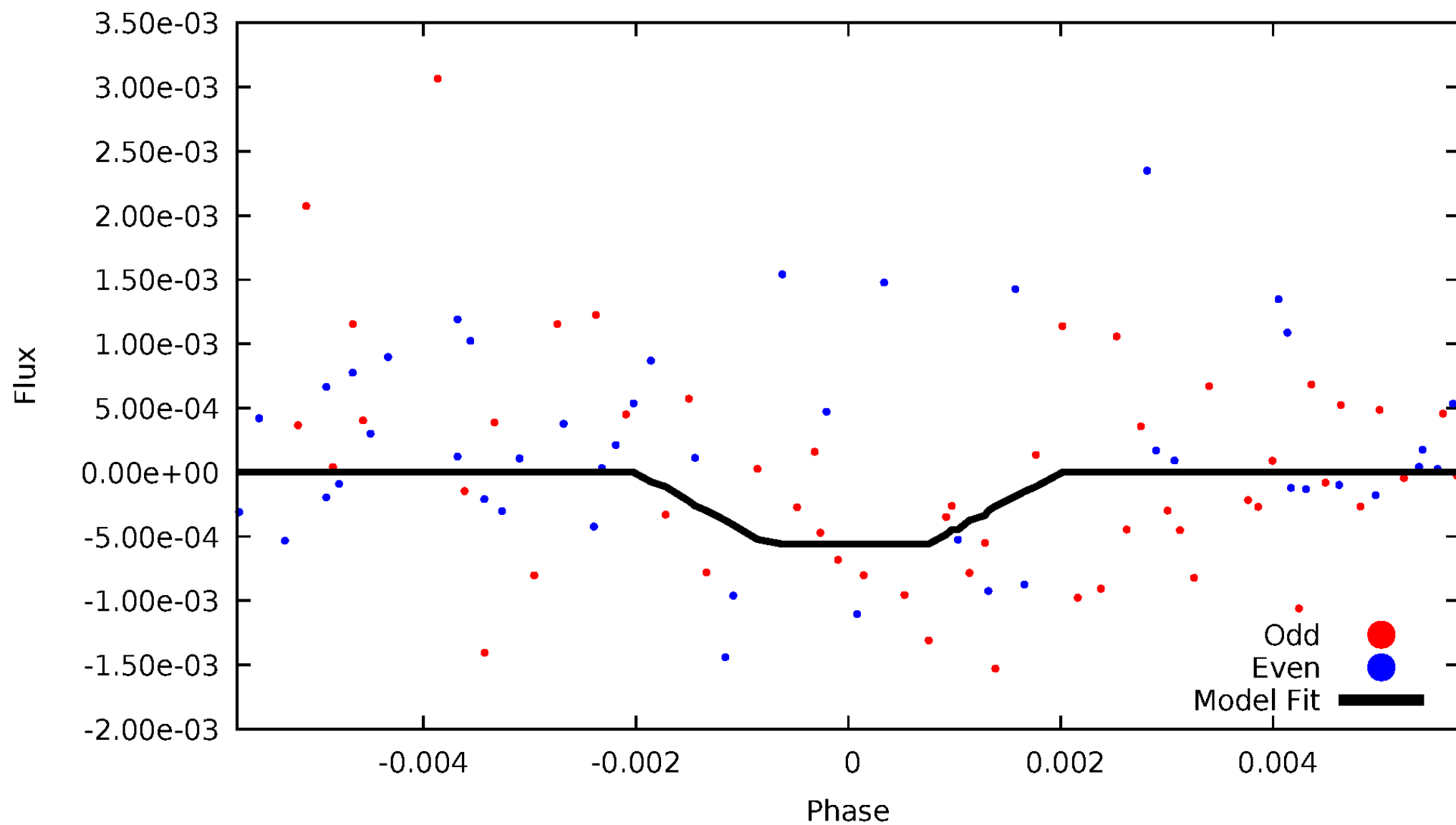
# DV Odd/Even

TCE 007200463-06



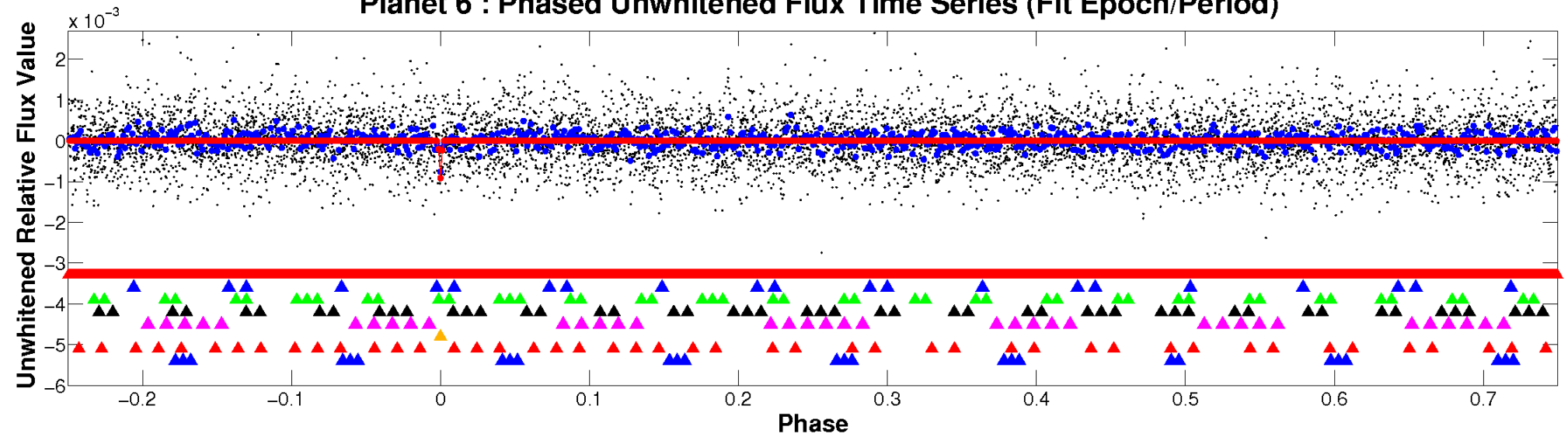
# ALT Odd/Even

TCE 007200463-06

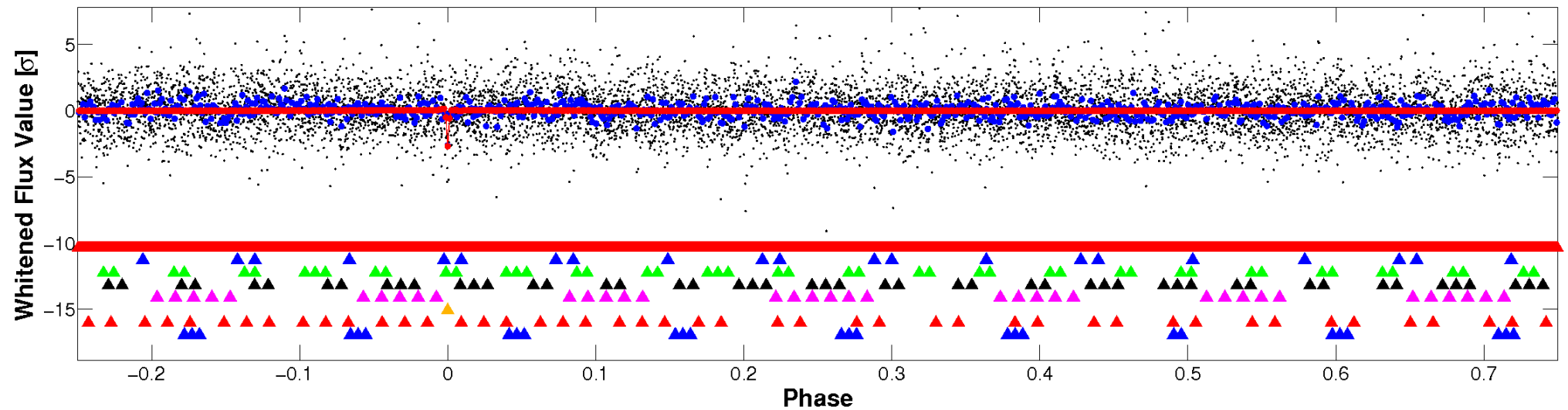


# Non-Whitened Vs. Whitened Light Curve

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



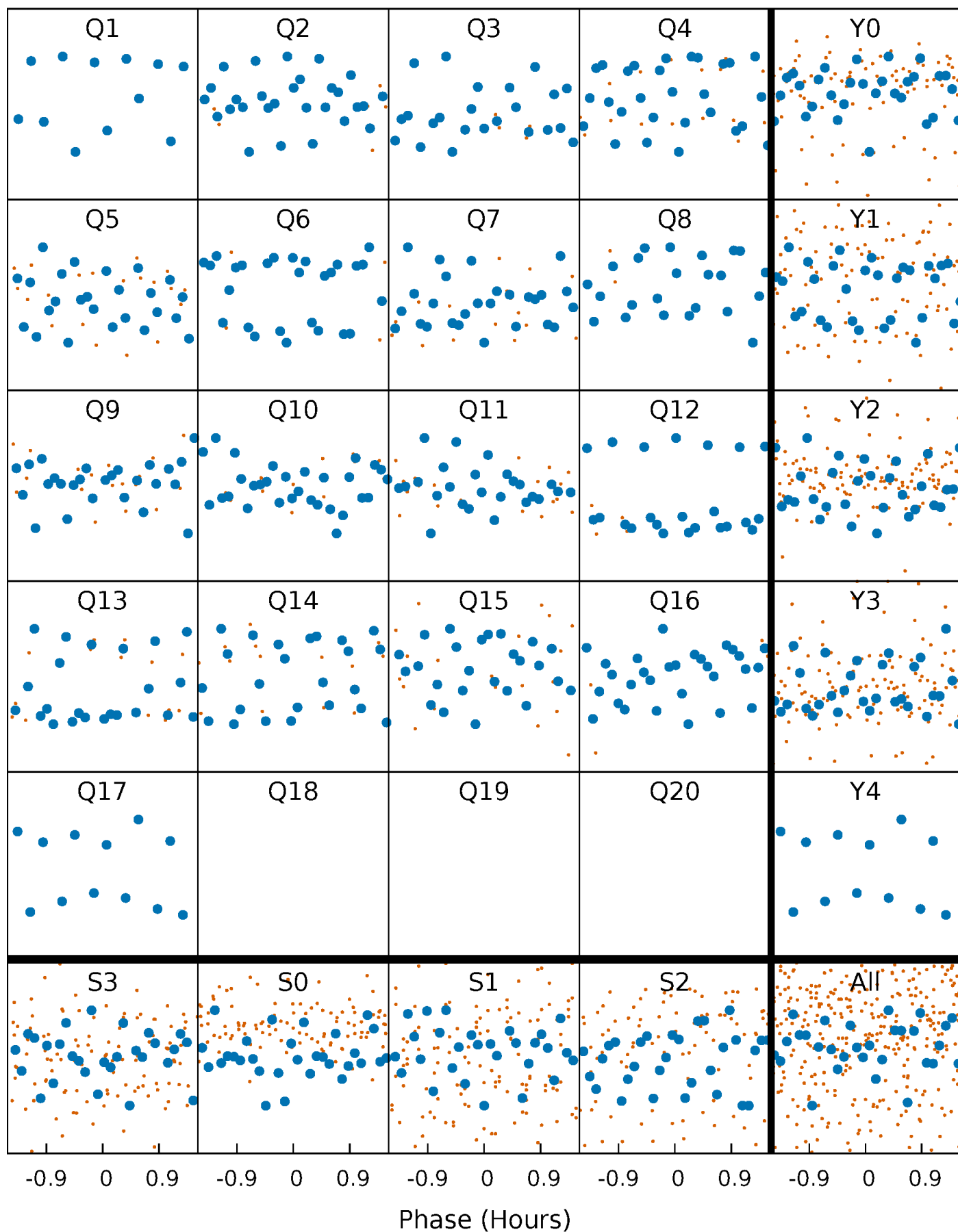
## Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)





# PDC Quarter-Phased Transit Curves

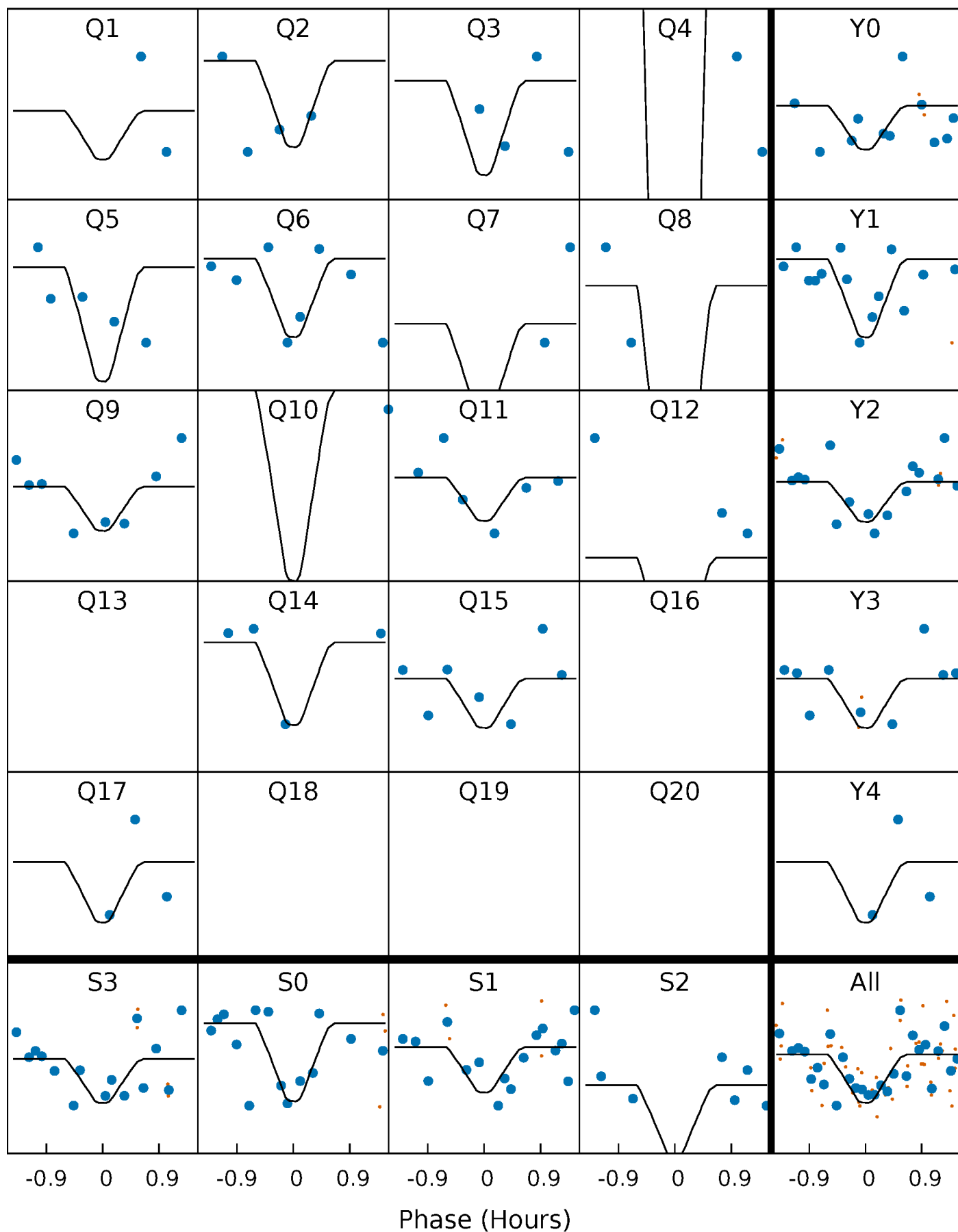
TCE 007200463-06 P= 16.502004 Days  $T_0=140.509425$  (BKJD)





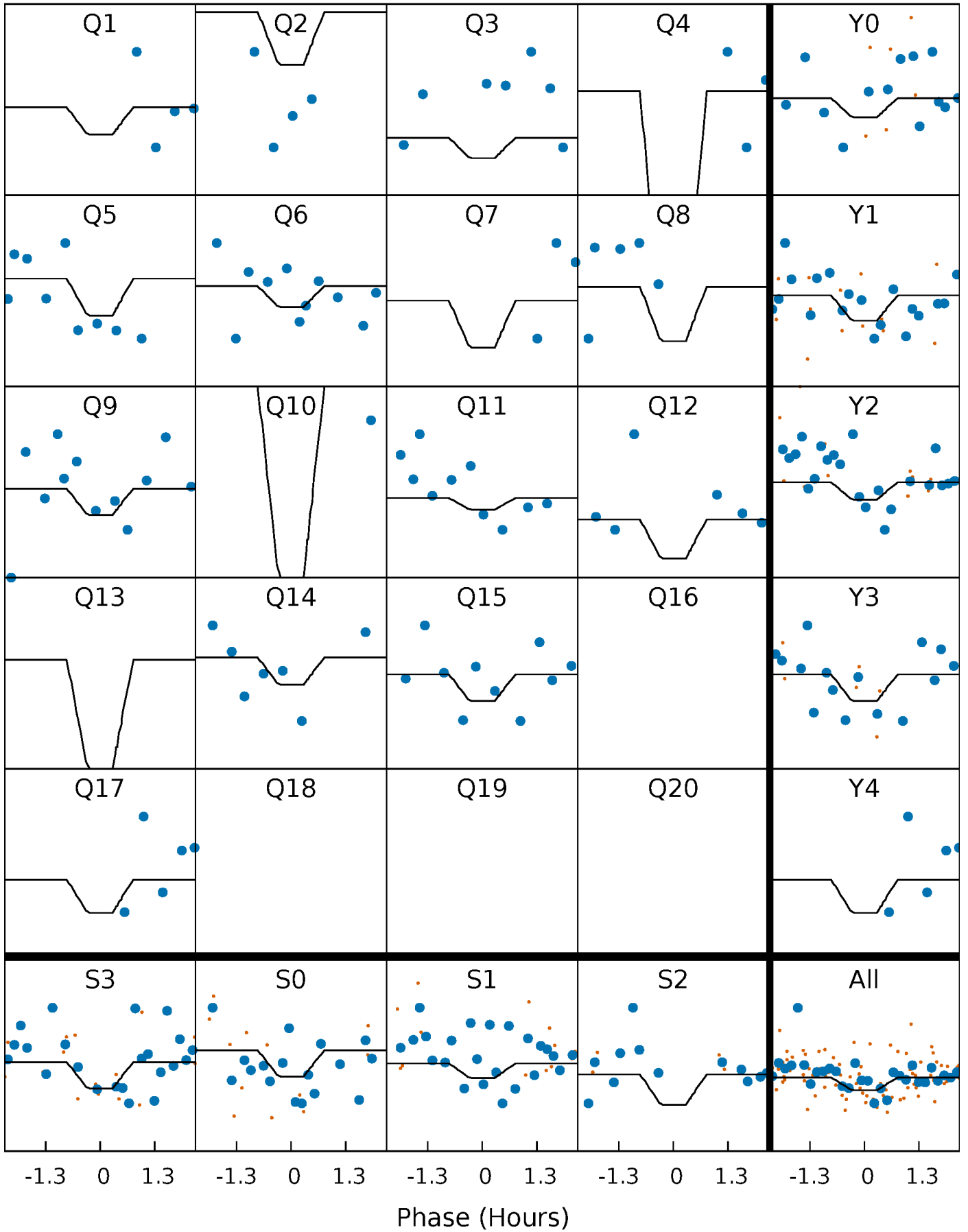
# DV Quarter-Phased Transit Curves

TCE 007200463-06 P= 16.502004 Days  $T_0=140.509425$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

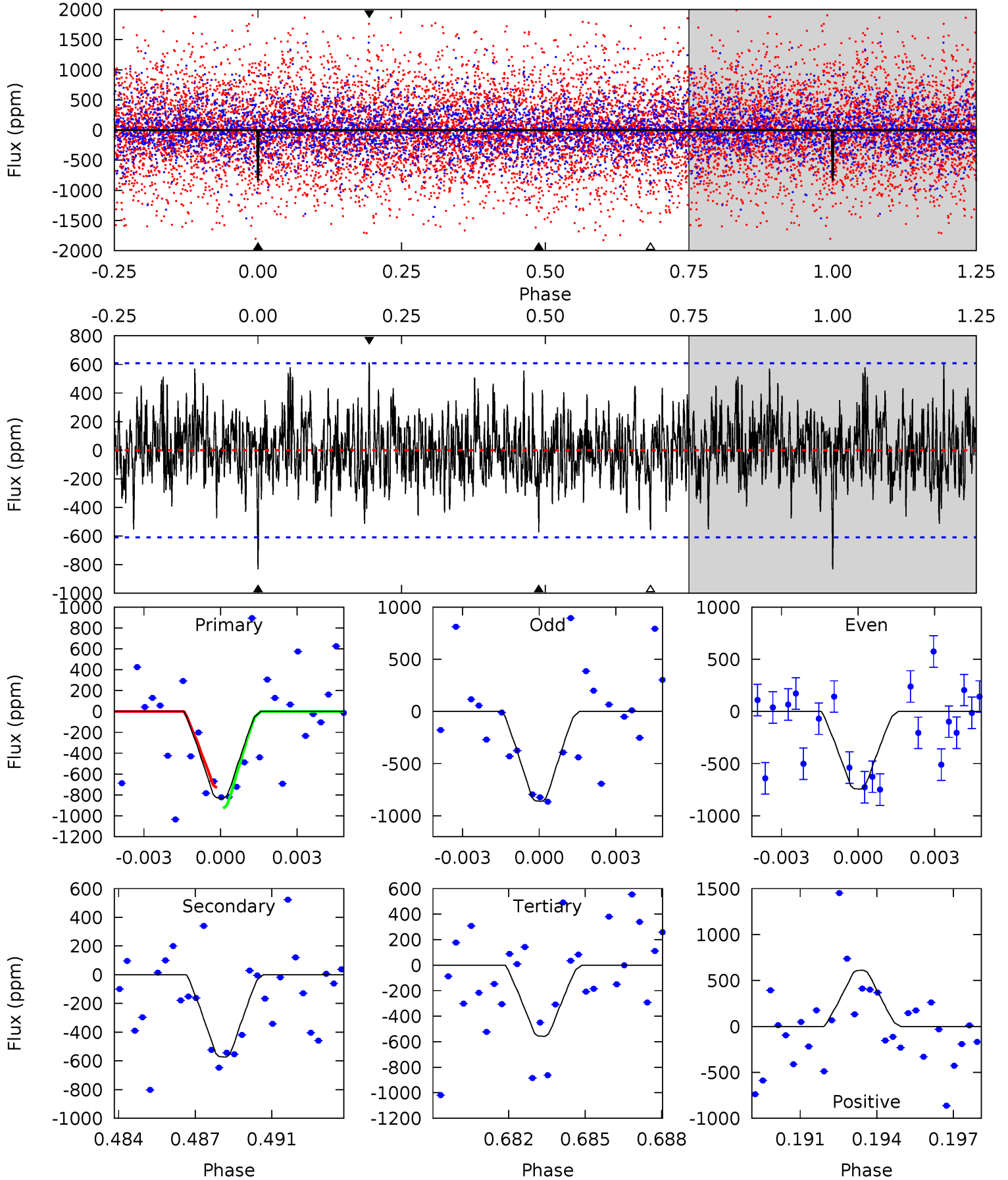
TCE 007200463-06 P= 16.501901 Days  $T_0=140.499762$  (BKJD)



# DV Model-Shift Uniqueness Test

007200463-06, P = 16.502004 Days, E = 124.007421 Days

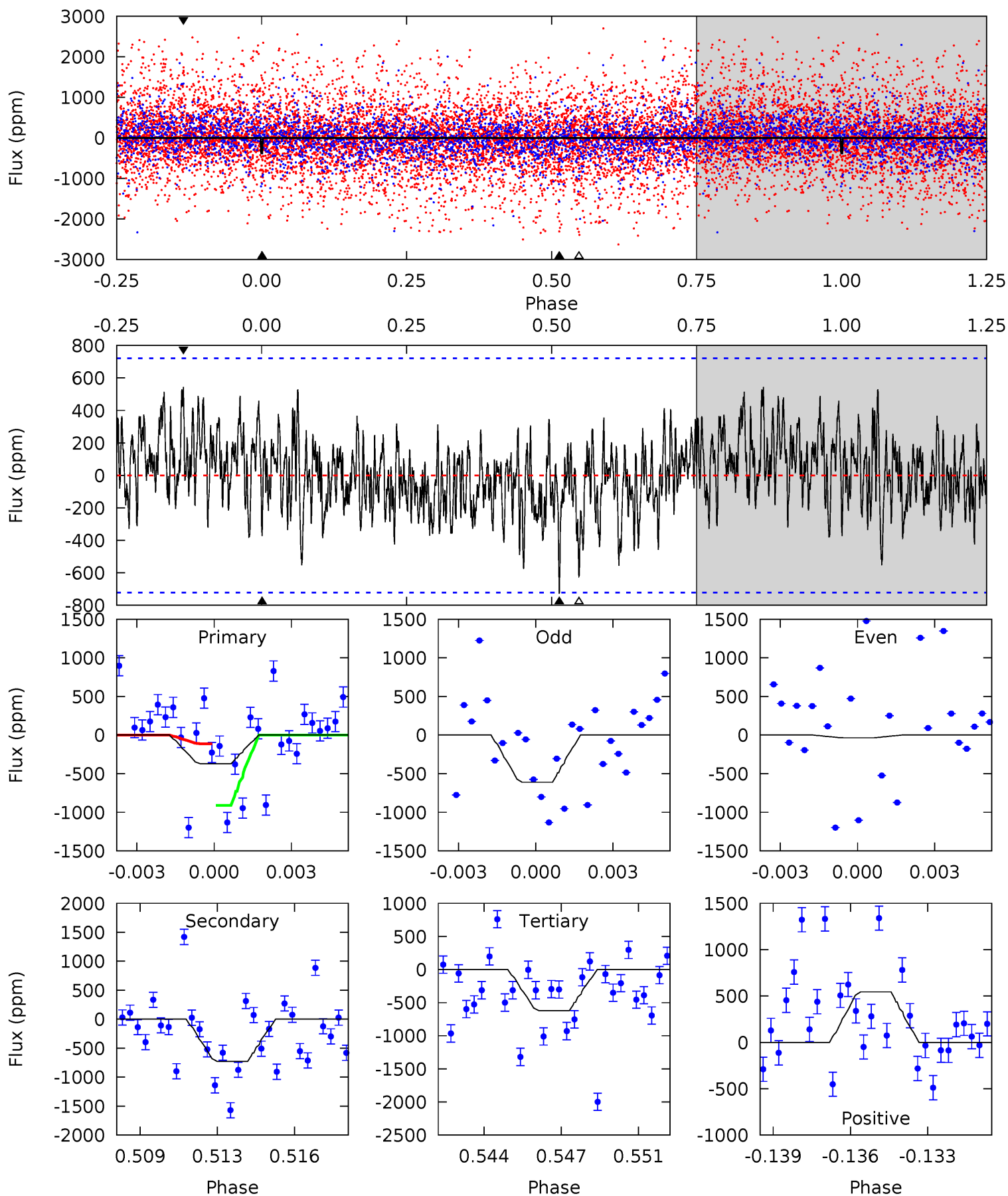
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.17	4.94	4.81	5.27	5.24	2.95	1.52	2.36	1.90	0.14	-0.33	0.48	0.97	0.42	0.85



# Alt Model-Shift Uniqueness Test

007200463-06, P = 16.501901 Days, E = 123.997861 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
2.70	5.28	4.50	3.94	5.22	2.92	1.40	-1.80	-1.24	0.78	1.33	2.05	0.42	0.43	2.86



### Stellar Parameters For KIC 007200463

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$3907^{+86}_{-86}$	$4.685^{+0.036}_{-0.015}$	$0.000^{+0.100}_{-0.100}$	$0.566^{+0.022}_{-0.036}$	$0.565^{+0.032}_{-0.026}$	$4.395^{+0.686}_{-0.307}$
	+2%/-2%	+1%/-0%	+inf%/-inf%	+4%/-6%	+6%/-5%	+16%/-7%
Source	PHO2	PHO2	PHO2	DSEP		

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

### Secondary Eclipse Parameters for KIC 007200463-06 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-574 \pm 116$	$3.26^{+3.45}_{-2.17}$	$557^{+13}_{-15}$	$3020^{+1404}_{-526}$	$314^{+2928}_{-240}$
Alt.	$-728 \pm 138$	$3.46^{+2.78}_{-2.50}$	$557^{+13}_{-14}$	$3128^{+1655}_{-510}$	$383^{+4348}_{-275}$

$T_{max}$  = 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

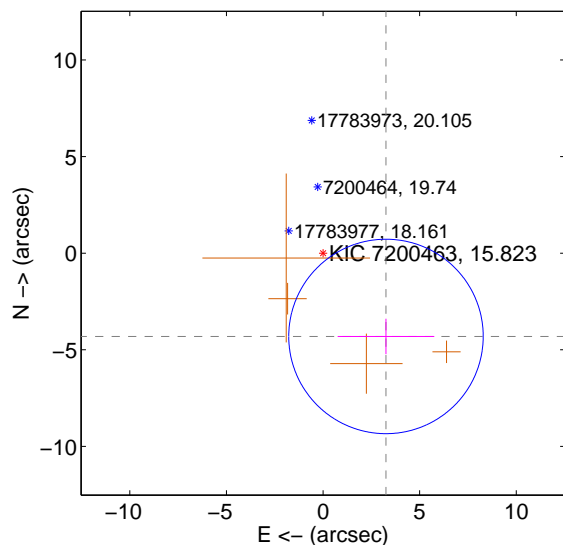
Supplemental centroid analysis for 007200463-06. Kepler magnitude: 15.82. Transit SNR 9.43

There are 0 quarters with good PRF difference image offsets

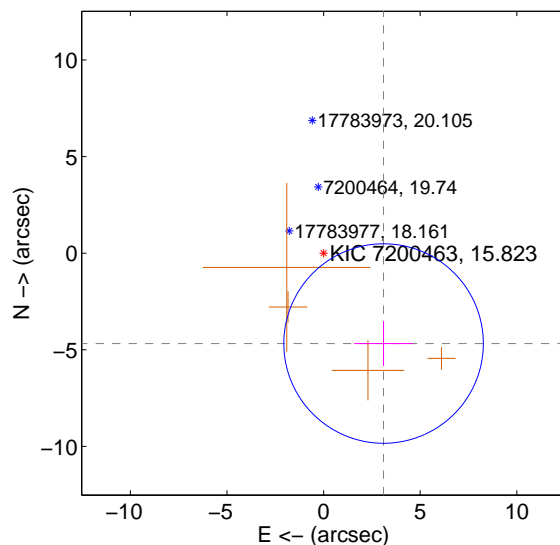
The direct PRF centroid is offset from the target star catalog position by about 0.49 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$5.404 \pm 1.678$	3.22	$-3.259 \pm 2.502$	$-4.311 \pm 0.920$
PRF-fit source offset from KIC position	$5.615 \pm 1.721$	3.26	$-3.106 \pm 1.518$	$-4.678 \pm 1.162$
photometric centroid source offset	$1.53 \pm 0.94$	1.63	$-0.73 \pm 0.99$	$-1.35 \pm 0.93$

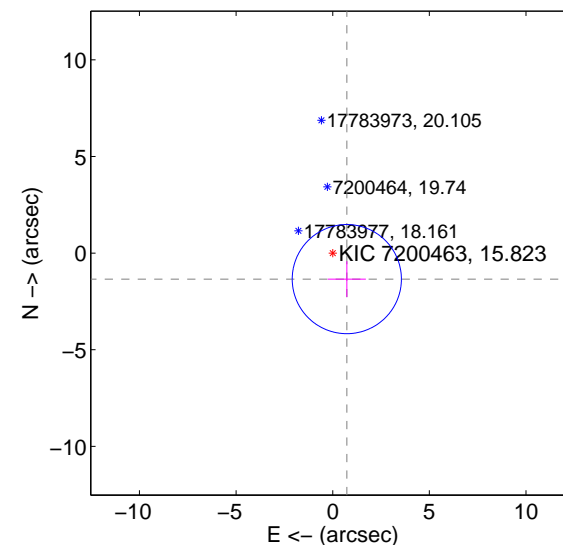
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

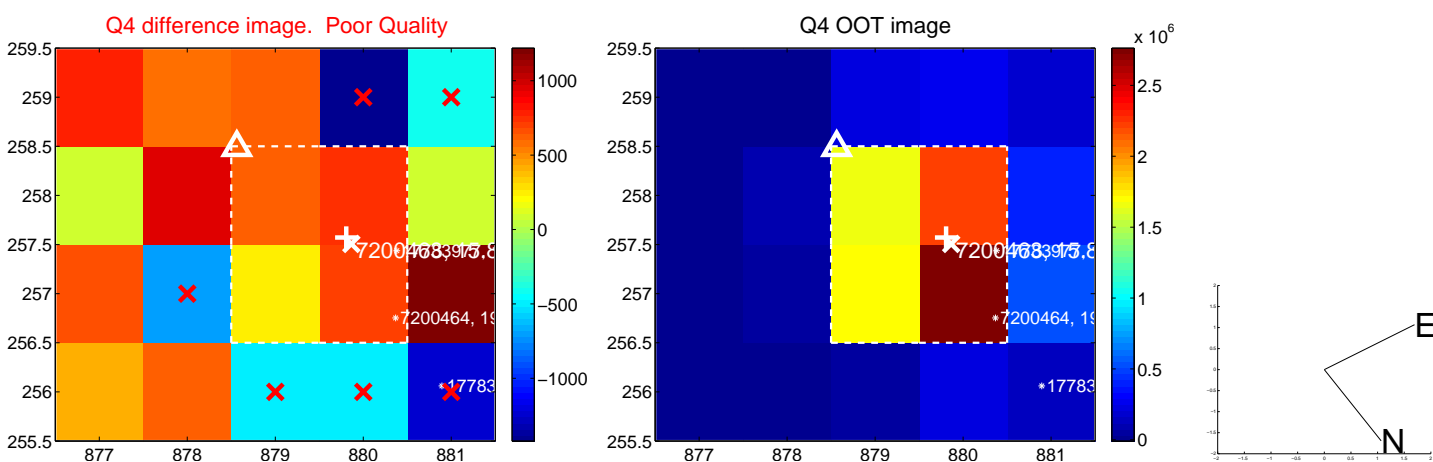
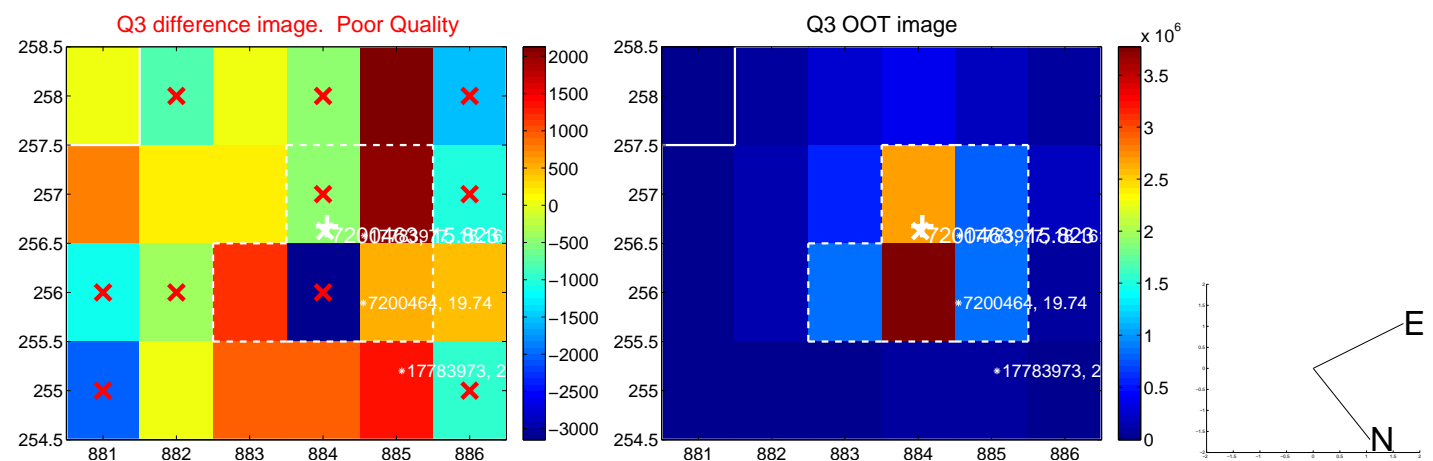
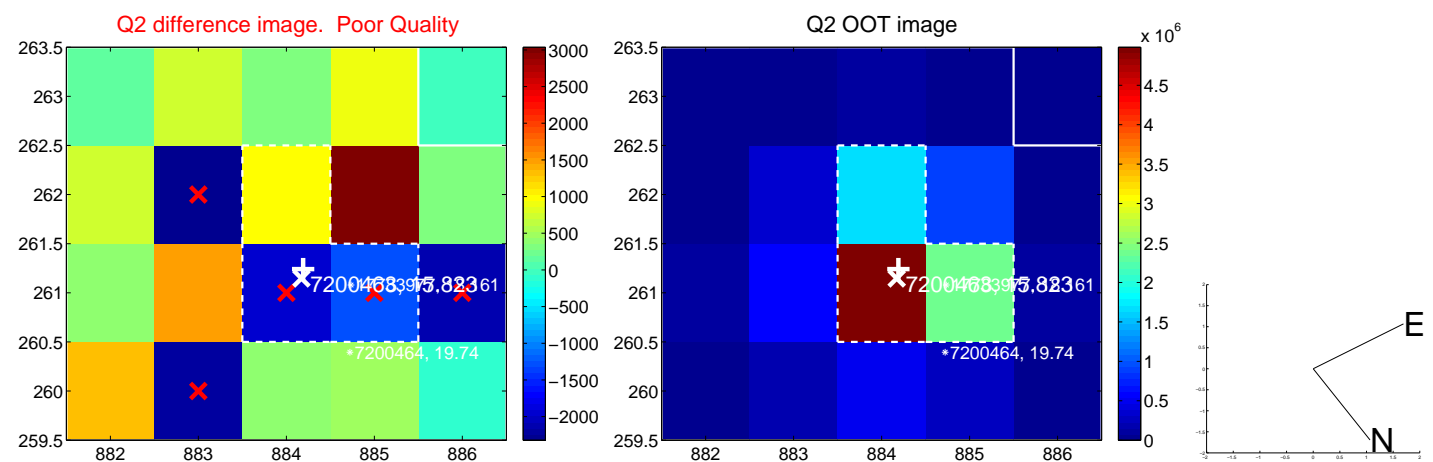
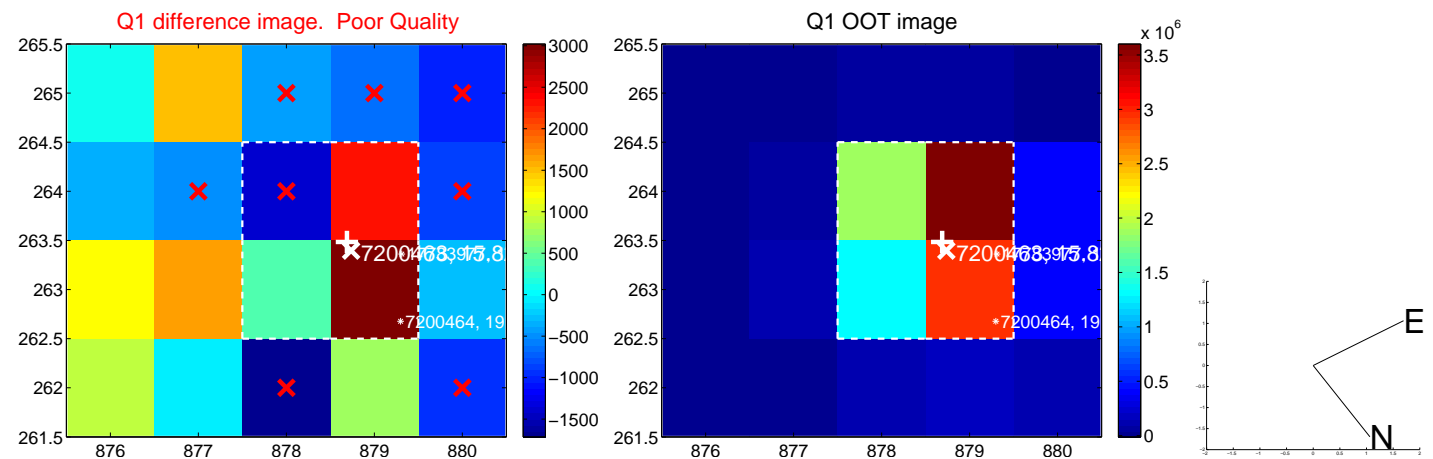


offset from photometric centroids

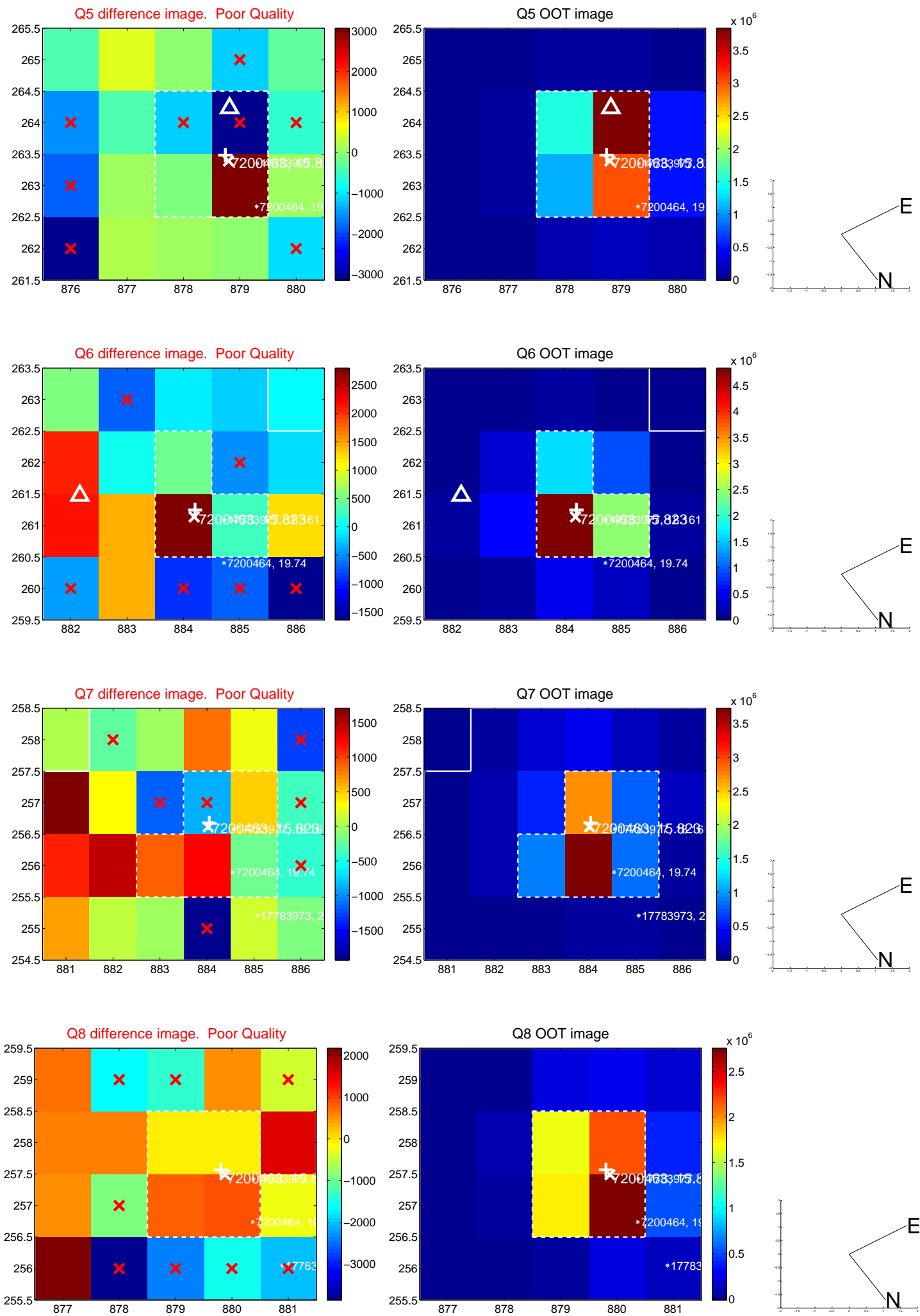


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

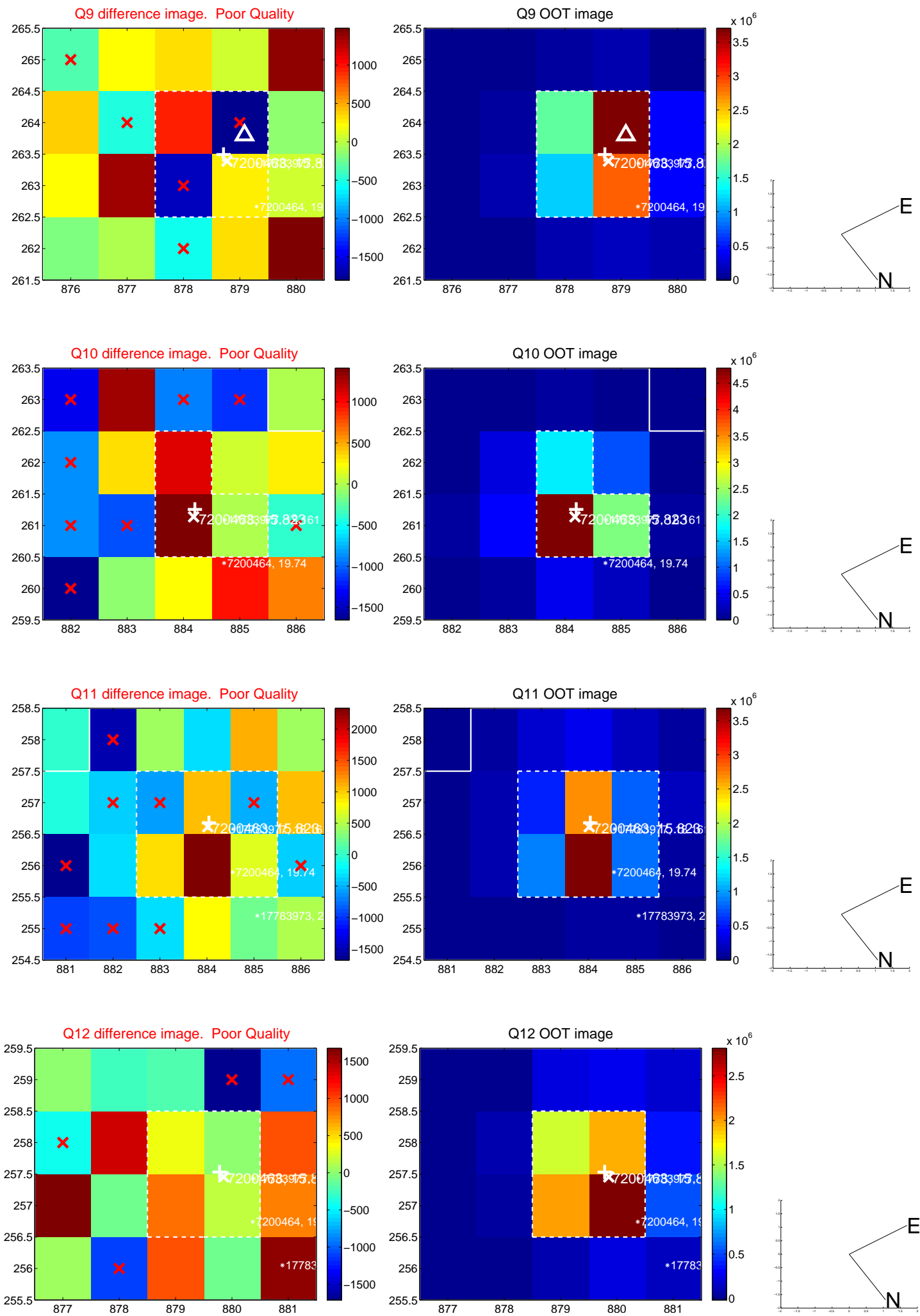


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

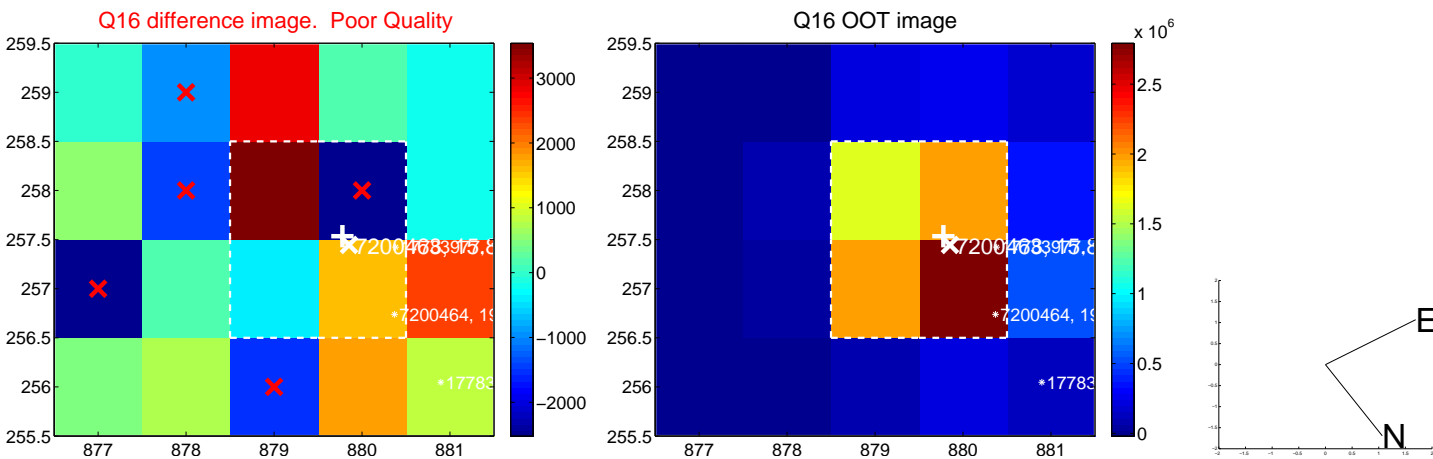
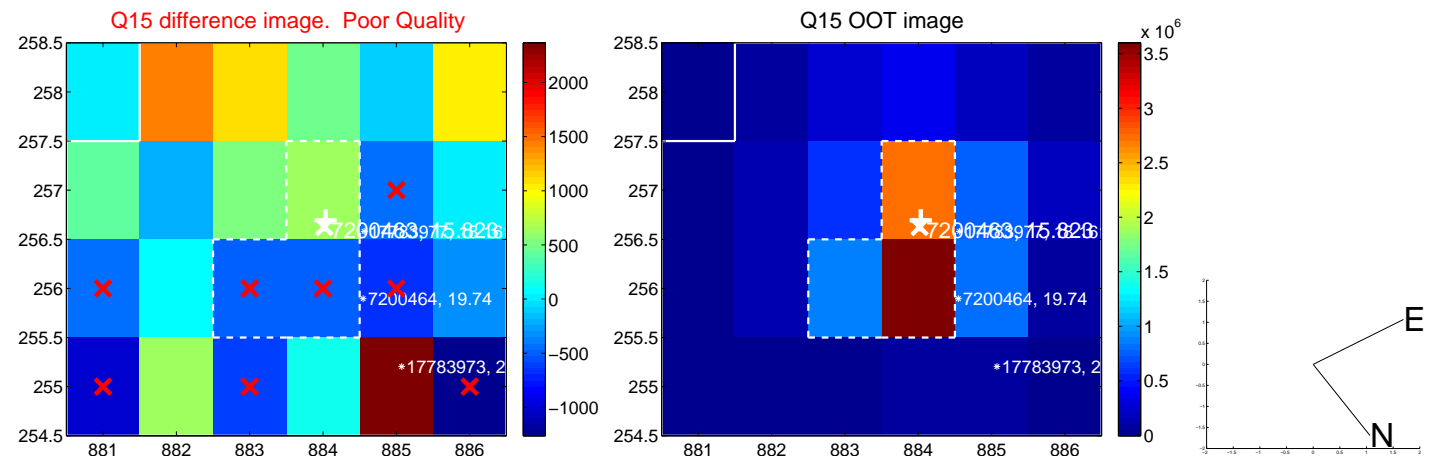
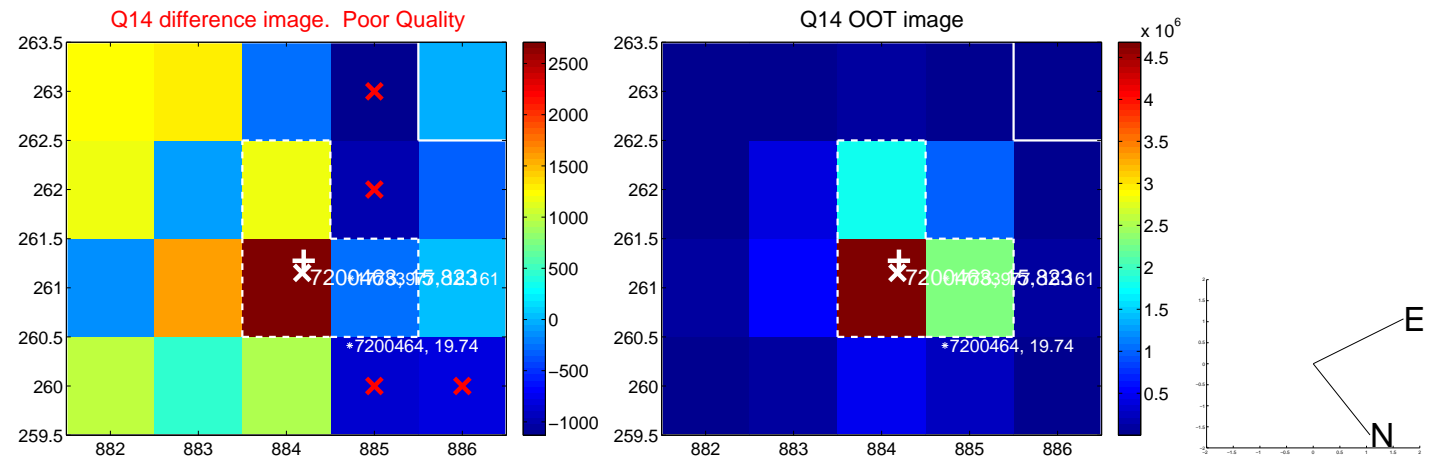
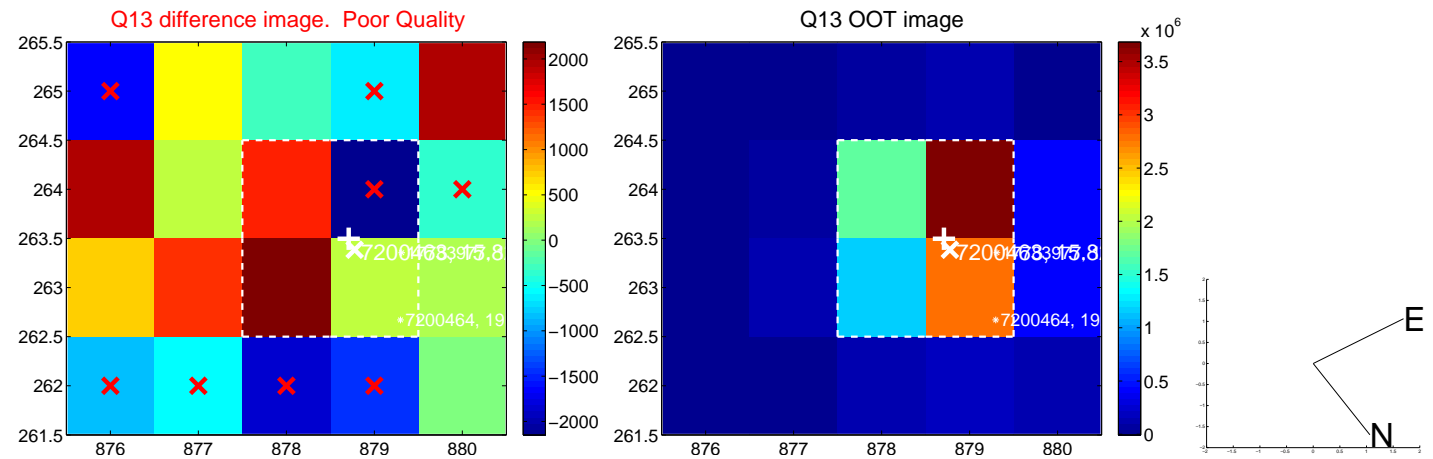




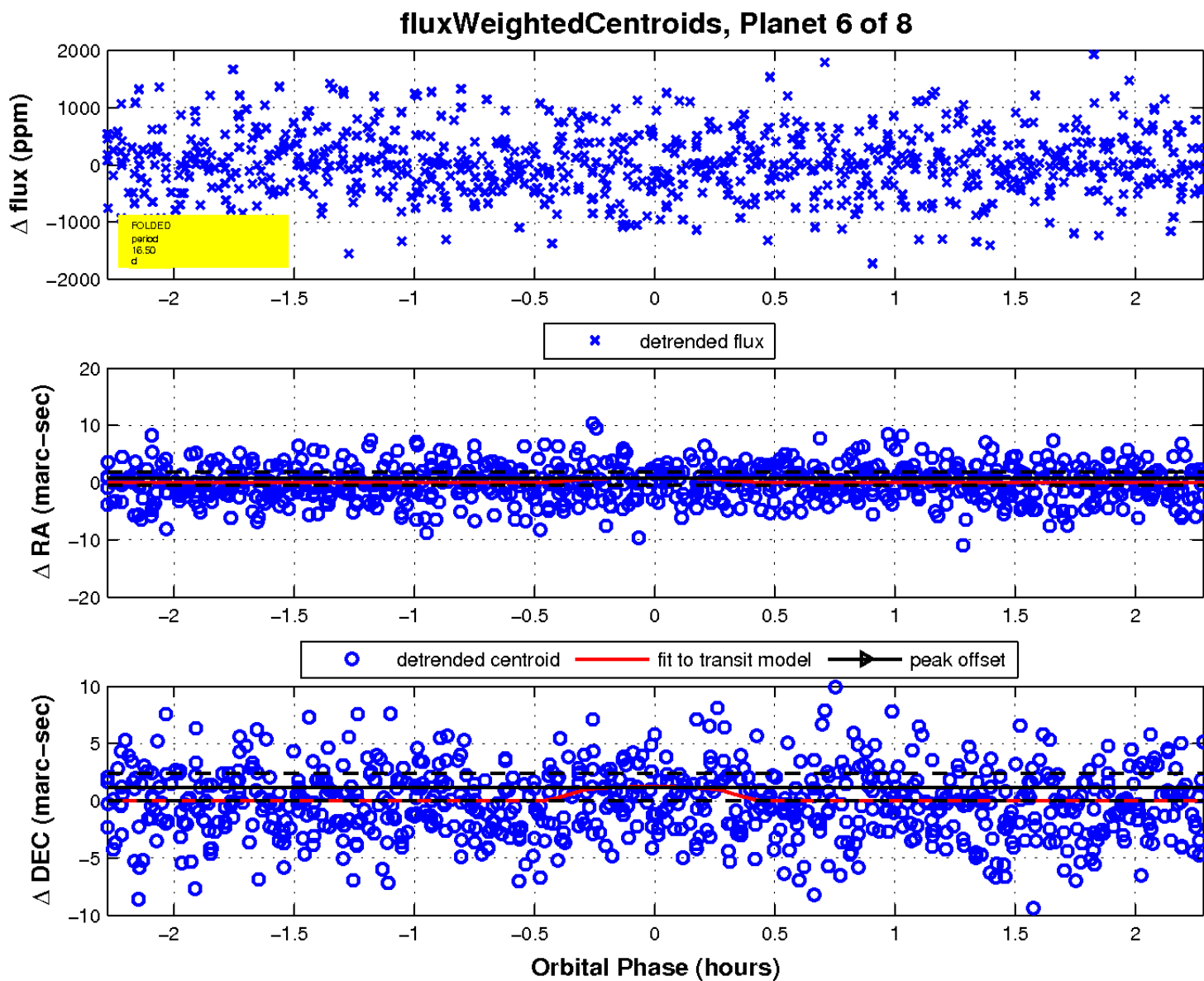
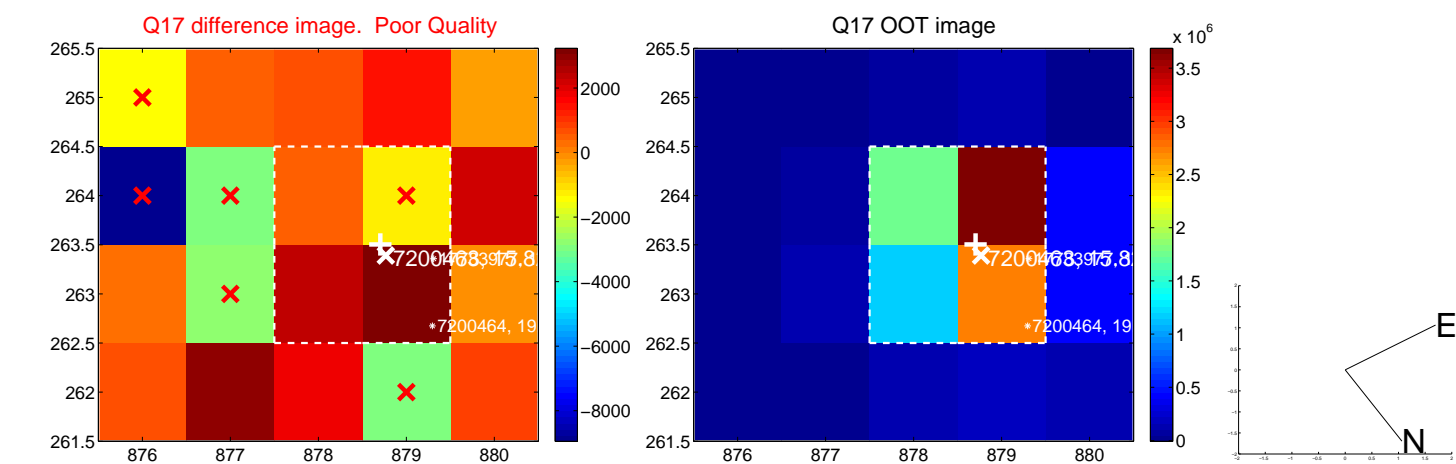
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

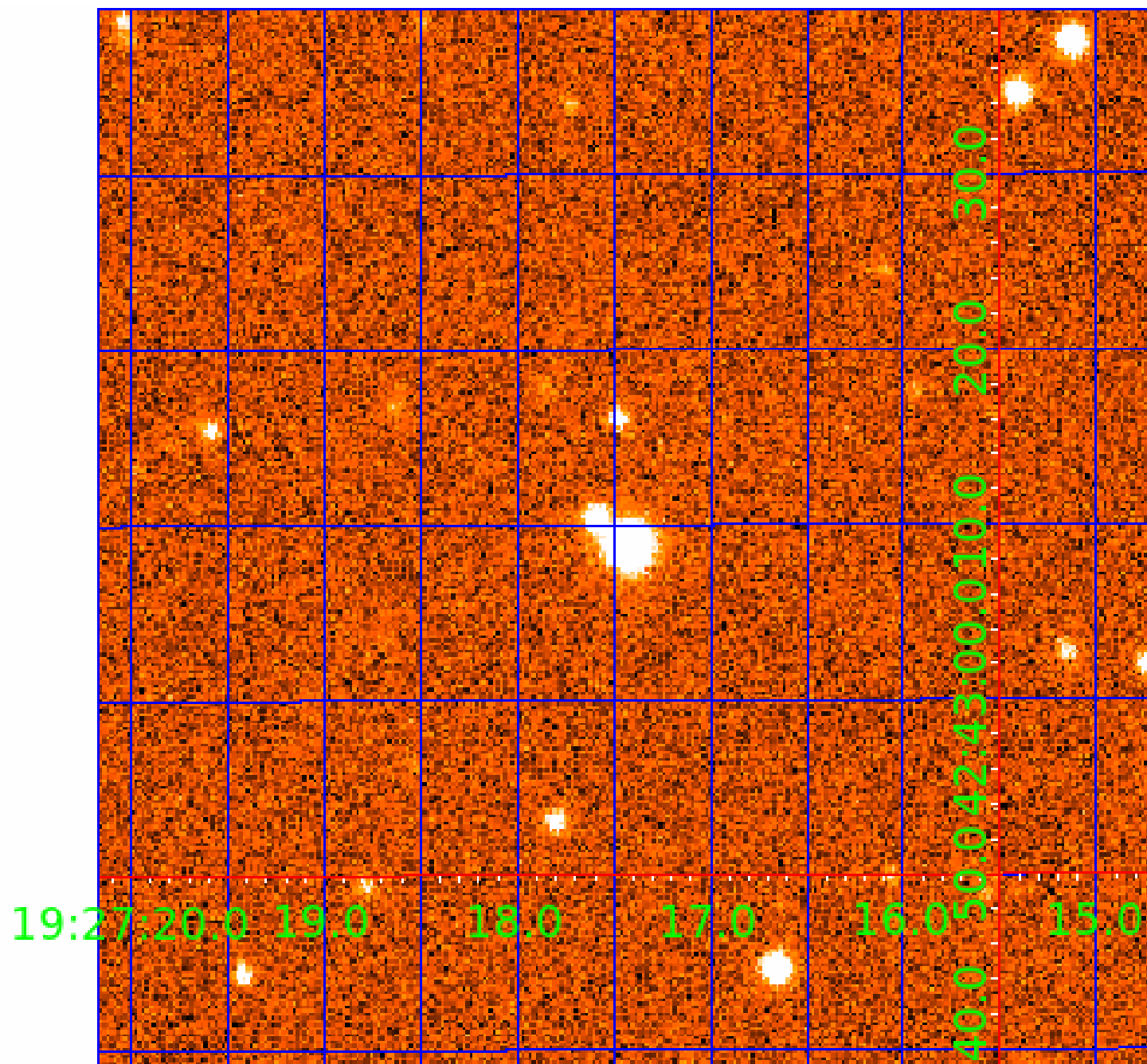


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination



# KIC 007200463

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007200463-01	OBS	No	0.566758	131.840663	30.2	3.735	8.9	4.8	0.57	3907	0.30	544.02
007200463-02	OBS	No	69.558006	189.973834	1591.5	0.599	9.5	6.6	0.57	3907	2.38	0.89
007200463-03	OBS	No	30.758930	159.909444	759.5	1.554	9.9	7.2	0.57	3907	1.65	2.65
007200463-04	OBS	No	29.082206	151.599782	987.7	2.567	8.8	9.4	0.57	3907	2.41	2.85
007200463-05	OBS	No	40.105384	144.167690	943.7	2.453	7.6	9.2	0.57	3907	1.99	1.86
007200463-06	OBS	No	16.502004	140.509425	986.5	0.762	9.3	9.4	0.57	3907	1.78	6.07
007200463-07	OBS	No	32.122218	142.928559	1031.9	1.754	7.9	8.3	0.57	3907	1.78	2.50
007200463-08	OBS	No	56.830874	139.594999	950.5	2.699	8.2	9.6	0.57	3907	2.05	1.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007200463-01	OBS	FP	0.00	1	0	0	1	LPP_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS—EPHEM_MATCH
007200463-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200463-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS
007200463-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200463-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200463-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
007200463-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007200463-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

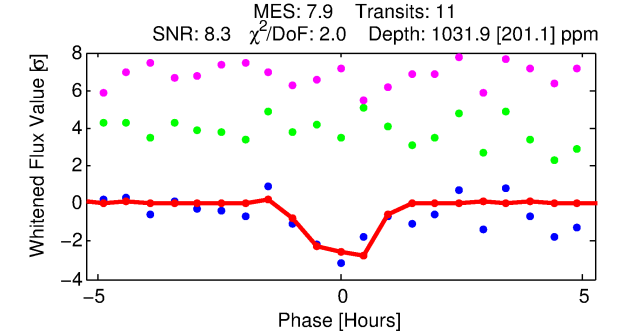
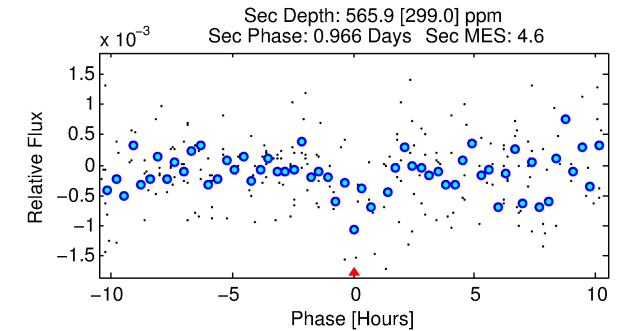
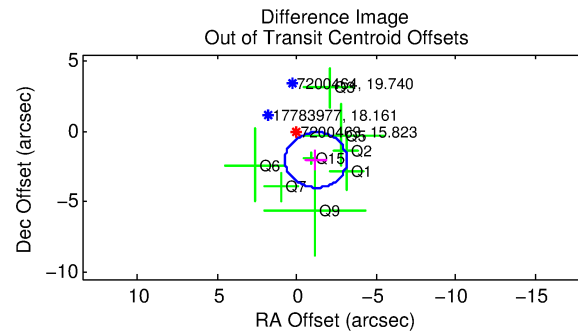
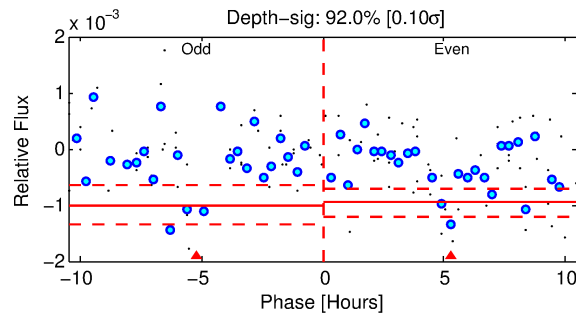
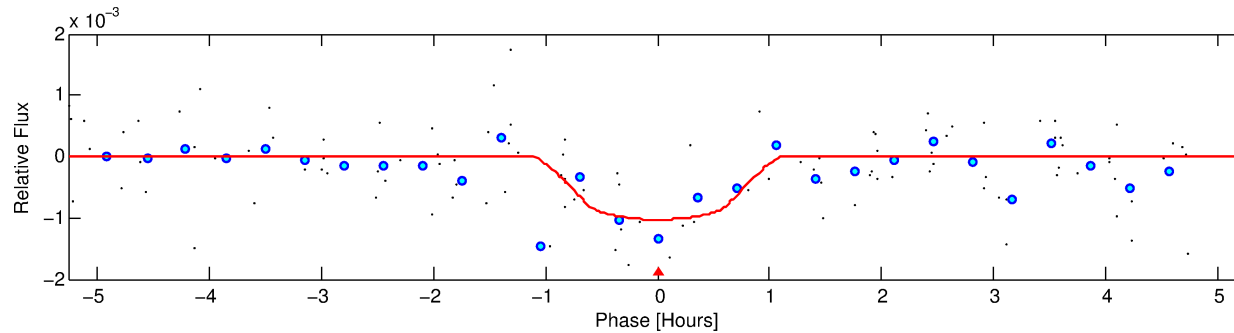
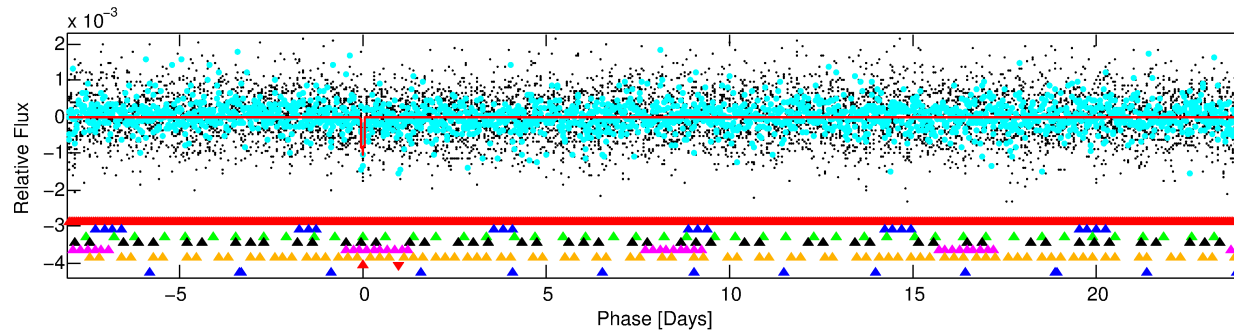
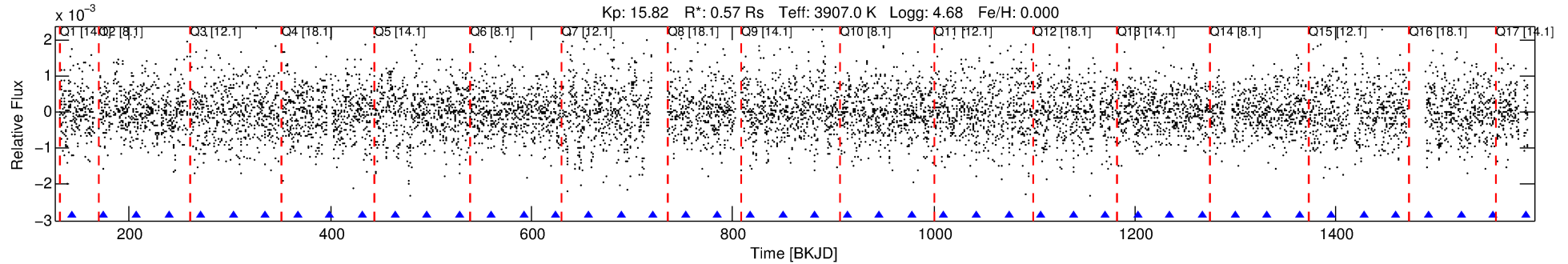
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007200463-07

No Significant Match Found

# DV One-Page Summary

KIC: 7200463 Candidate: 7 of 8 Period: 32.122 d



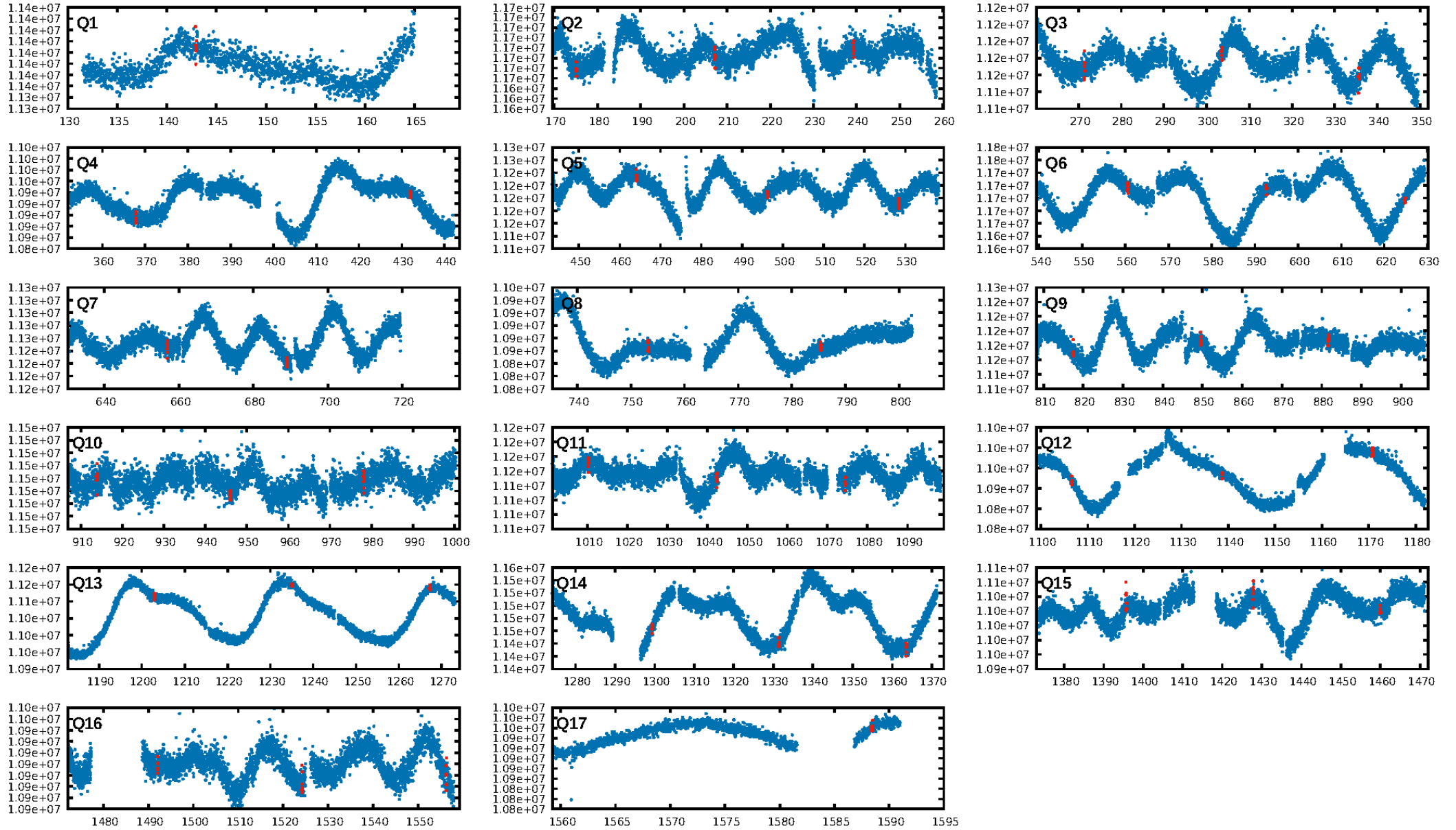
## DV Fit Results:

Period = 32.12222 [0.00036] d  
Epoch = 142.9286 [0.0100] BKJD  
Rp/R\* = 0.0289 [0.0734]  
a/R\* = 142.83 [1317.95]  
b = 0.13 [72.09]  
Seff = 2.50 [0.28]  
Teq = 321 [9] K  
Rp = 1.78 [4.53] Re  
a = 0.1636 [0.0083] AU  
Ag = 2618.87 [13380.35] [0.20 $\sigma$ ]  
Teffp = 3546 [4529] K [0.71 $\sigma$ ]

## DV Diagnostic Results:

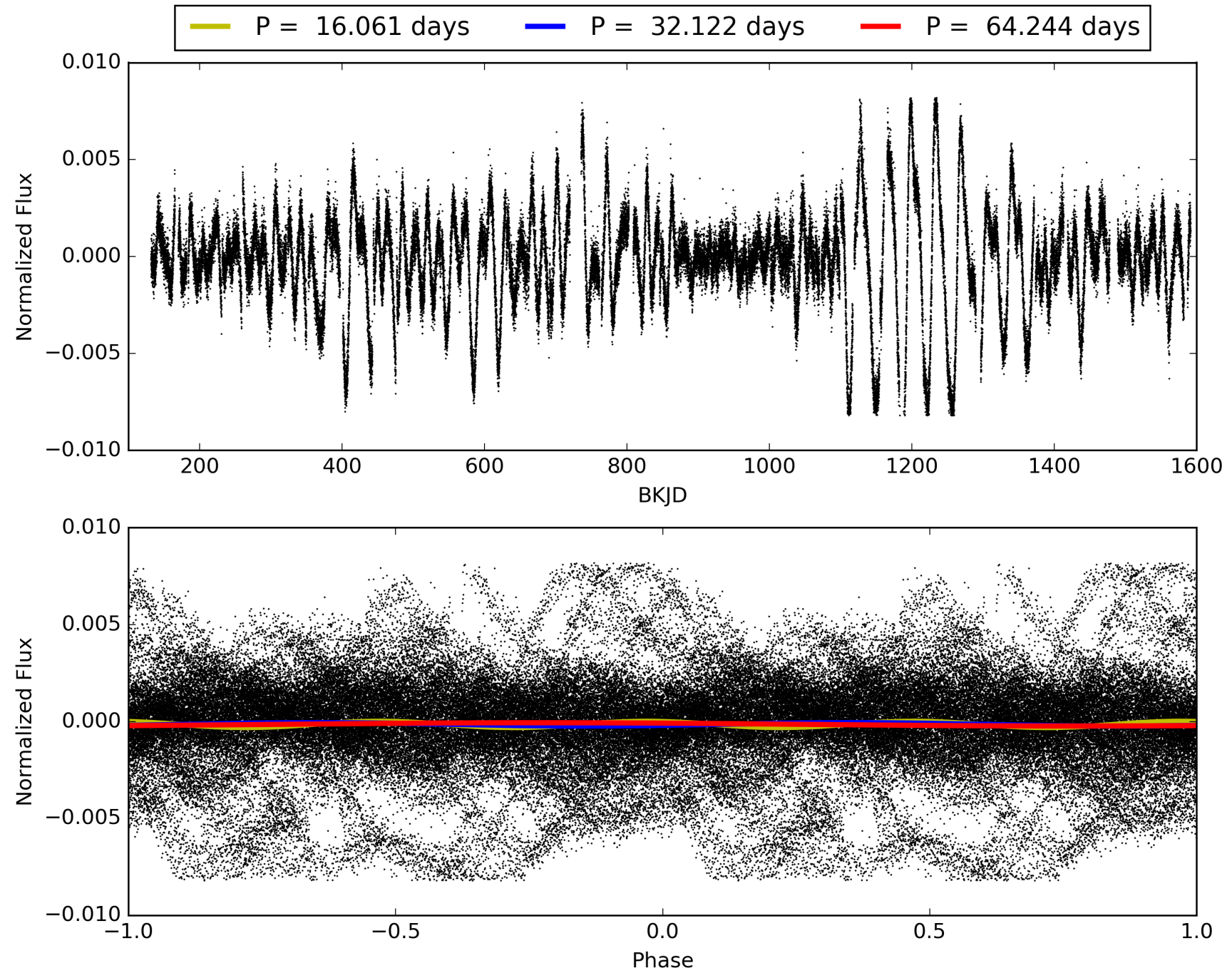
ShortPeriod-sig: 100.0% [13.96 $\sigma$ ]  
LongPeriod-sig: 100.0% [63.53 $\sigma$ ]  
ModelChiSquare2-sig: 1.6%  
ModelChiSquareGof-sig: 99.7%  
**Bootstrap-pfa: 6.37e-08**  
RollingBand-fgt: 1.00 [10/10]  
**GhostDiagnostic-chr: 42.18**  
**Centroid-sig: 0.2%**  
Centroid-so: 1.342 arcsec [1.75 $\sigma$ ]  
**OotOffset-rm: 2.359 arcsec [3.61 $\sigma$ ]**  
**KicOffset-rm: 2.456 arcsec [3.47 $\sigma$ ]**  
OotOffset-st: 2/3/0/3 [8]  
KicOffset-st: 2/3/0/3 [8]  
DiffImageQuality-fgm: 0.00 [0/8]  
DiffImageOverlap-fno: 0.00 [0/17]

# TCE 007200463-07, PDC Light Curves





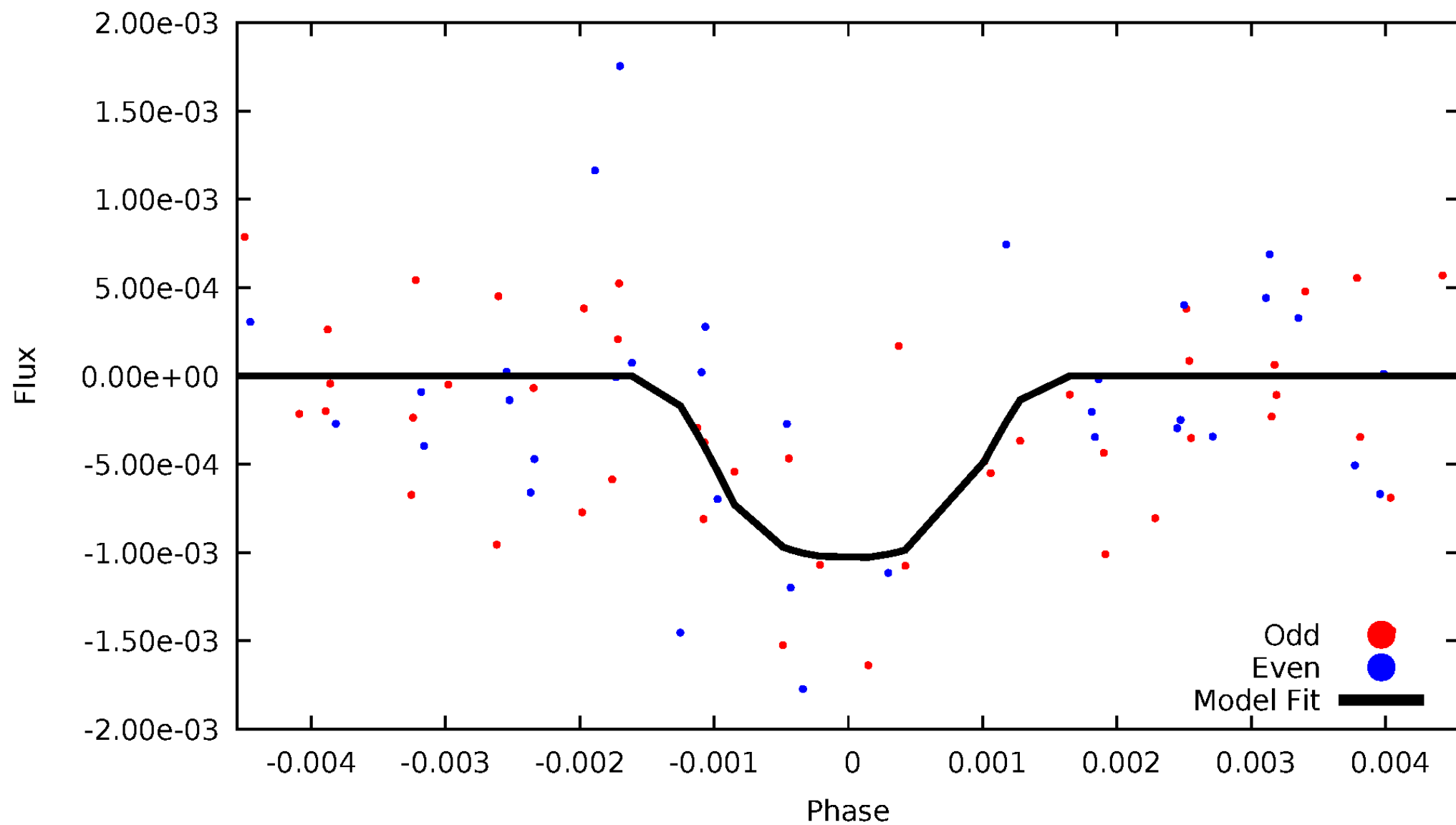
TCE 007200463-07





# DV Odd/Even

TCE 007200463-07



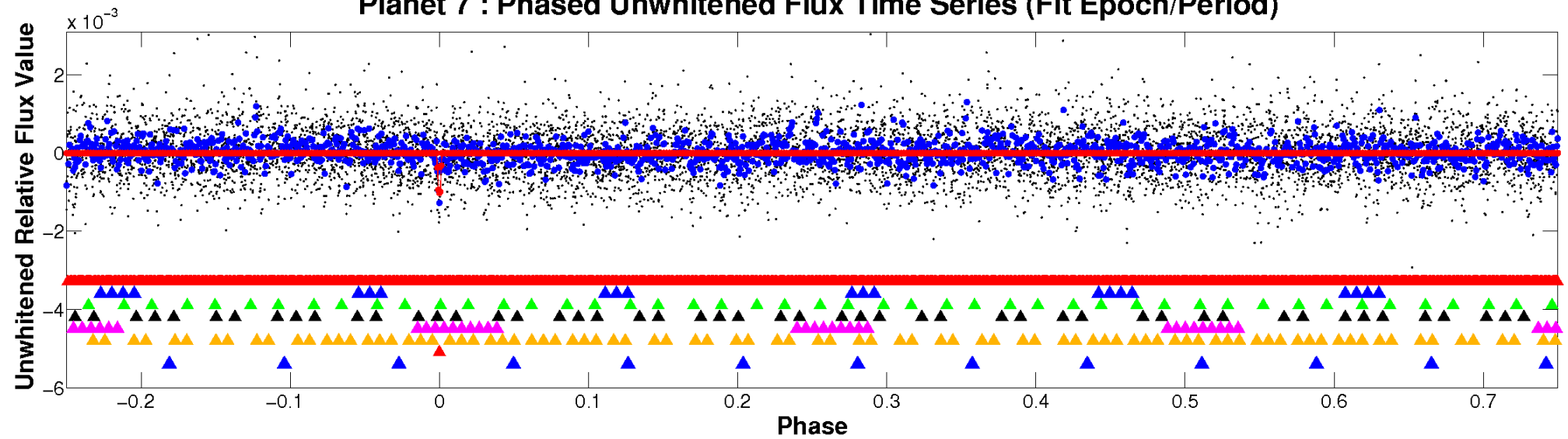


ALT Odd/Even

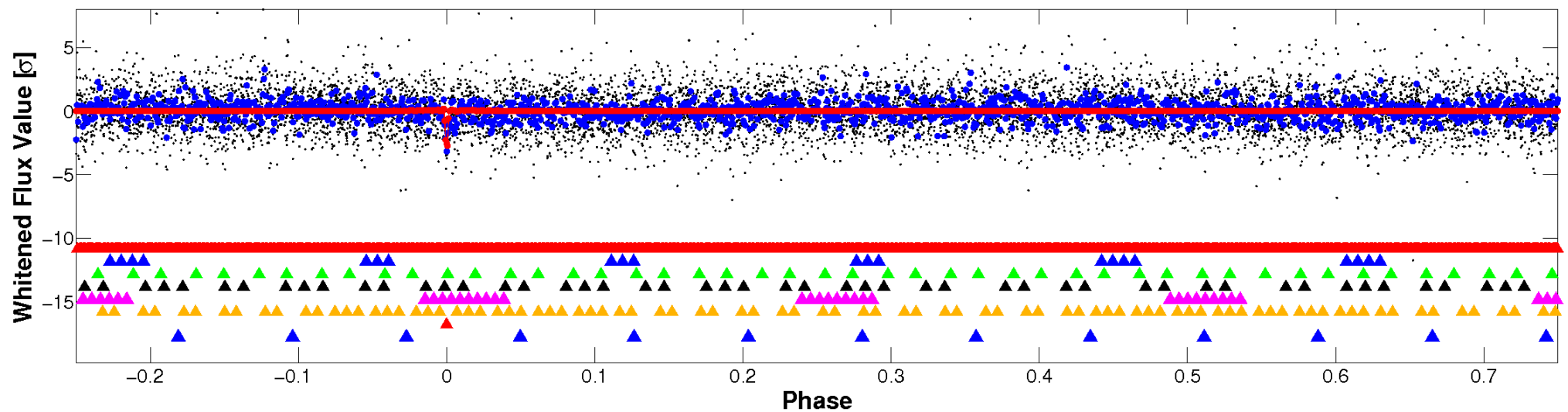
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

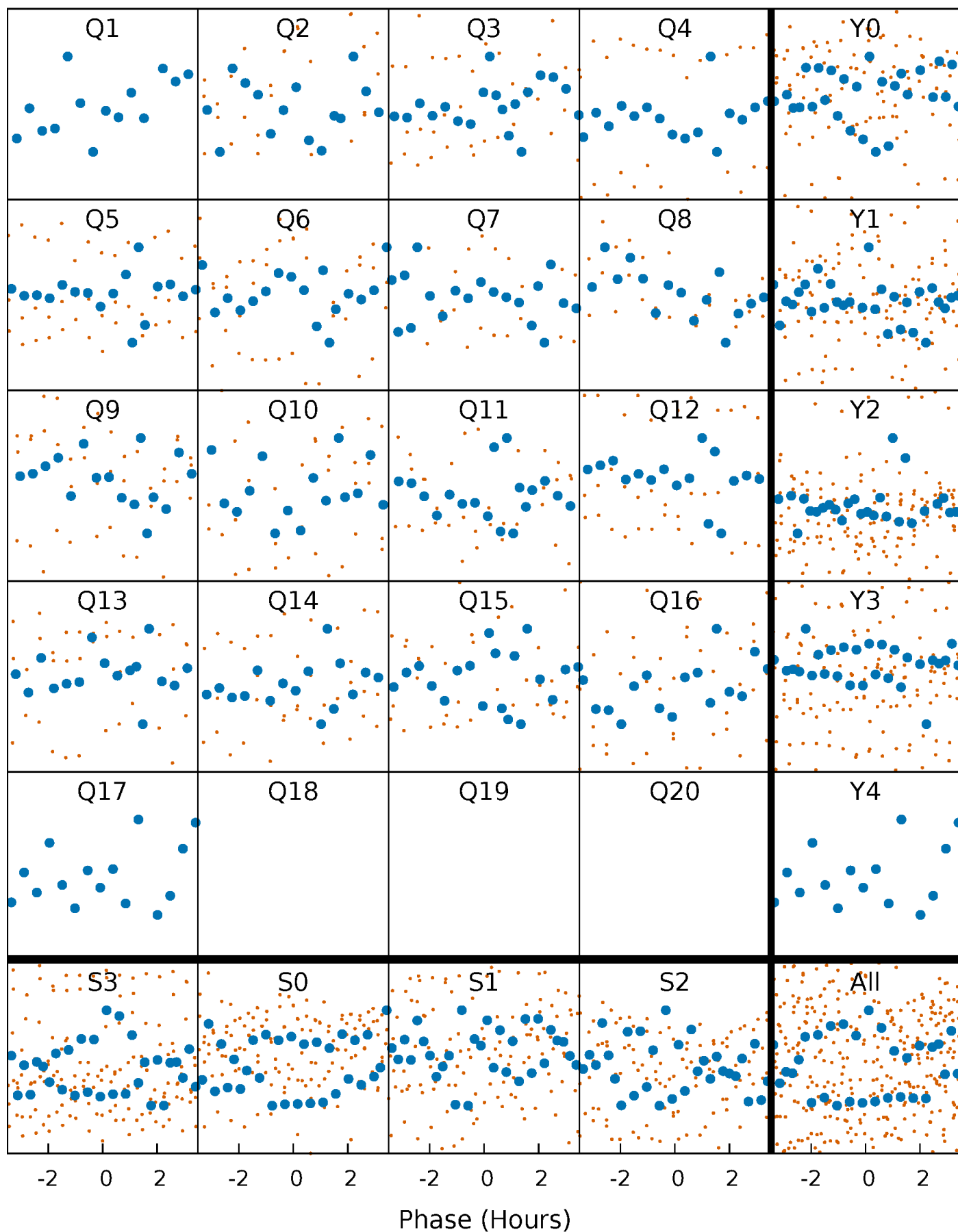


## Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



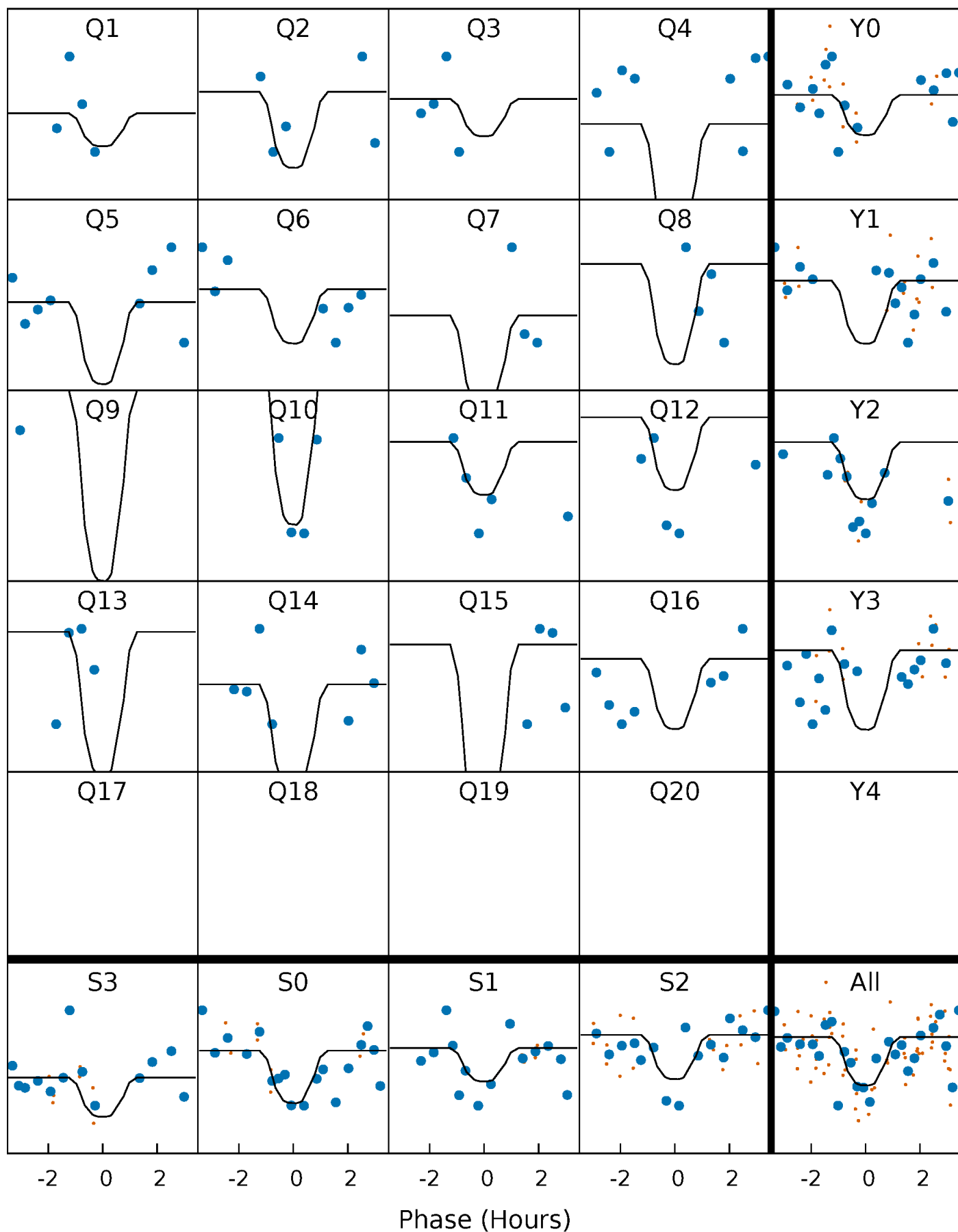
# PDC Quarter-Phased Transit Curves

TCE 007200463-07   P= 32.122218 Days    $T_0=142.928559$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 007200463-07   P= 32.122218 Days    $T_0=142.928559$  (BKJD)

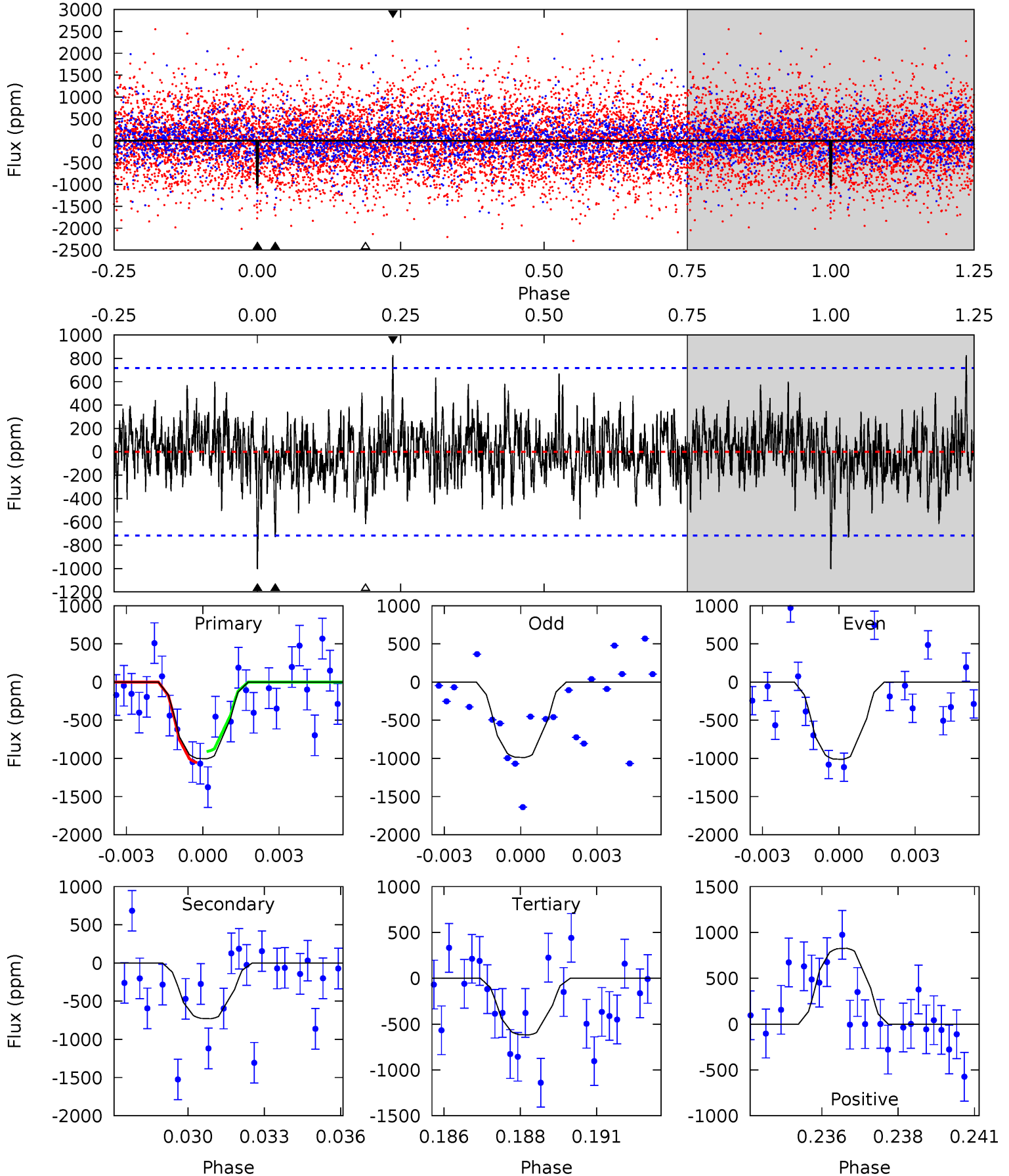


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

007200463-07, P = 32.122218 Days, E = 110.806341 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
7.38	5.36	4.54	6.08	5.27	2.99	1.40	2.84	1.30	0.82	-0.72	0.08	0.90	0.45	0.53





## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 007200463

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3907^{+86}_{-86}$	$4.685^{+0.036}_{-0.015}$	$0.000^{+0.100}_{-0.100}$	$0.566^{+0.022}_{-0.036}$	$0.565^{+0.032}_{-0.026}$	$4.395^{+0.686}_{-0.307}$
	+2%/-2%	+1%/-0%	+inf%/-inf%	+4%/-6%	+6%/-5%	+16%/-7%
Source	PHO2	PHO2	PHO2	DSEP		

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

### Secondary Eclipse Parameters for KIC 007200463-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-730 \pm 136$	$3.73^{+3.74}_{-2.41}$	$446^{+11}_{-12}$	$3029^{+1163}_{-509}$	$783^{+5295}_{-595}$
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  $A_{obs} \gg 1.0$

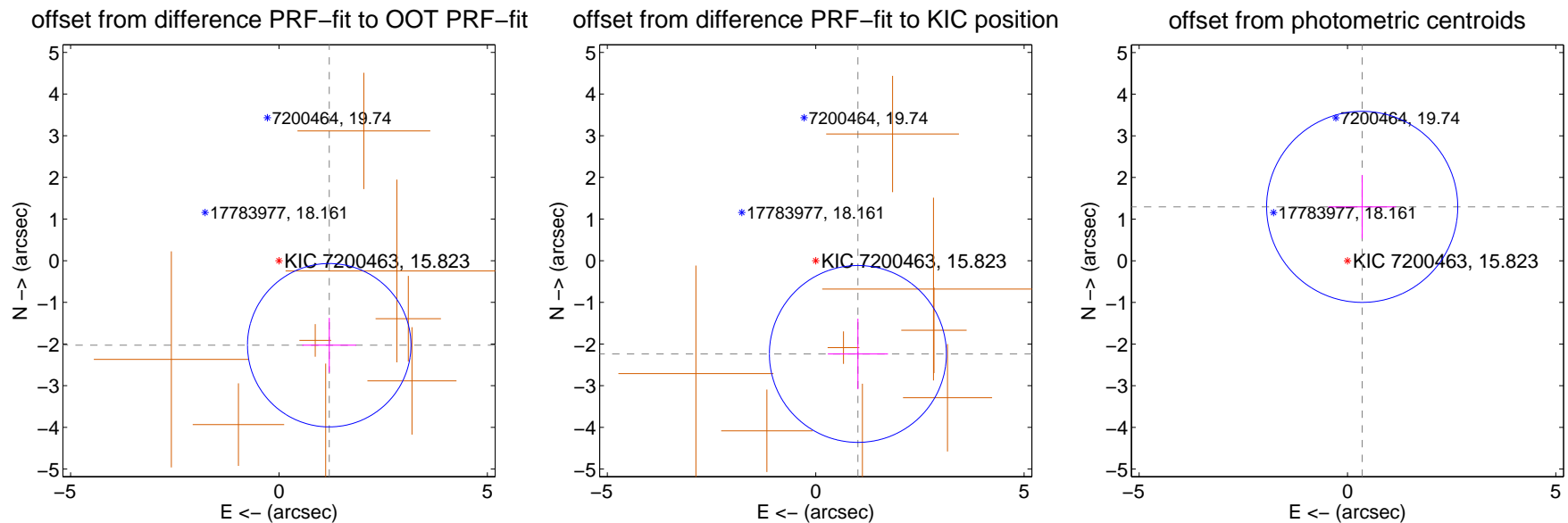
## DV Centroid Data

Supplemental centroid analysis for 007200463-07. Kepler magnitude: 15.82. Transit SNR 8.33

There are 0 quarters with good PRF difference image offsets

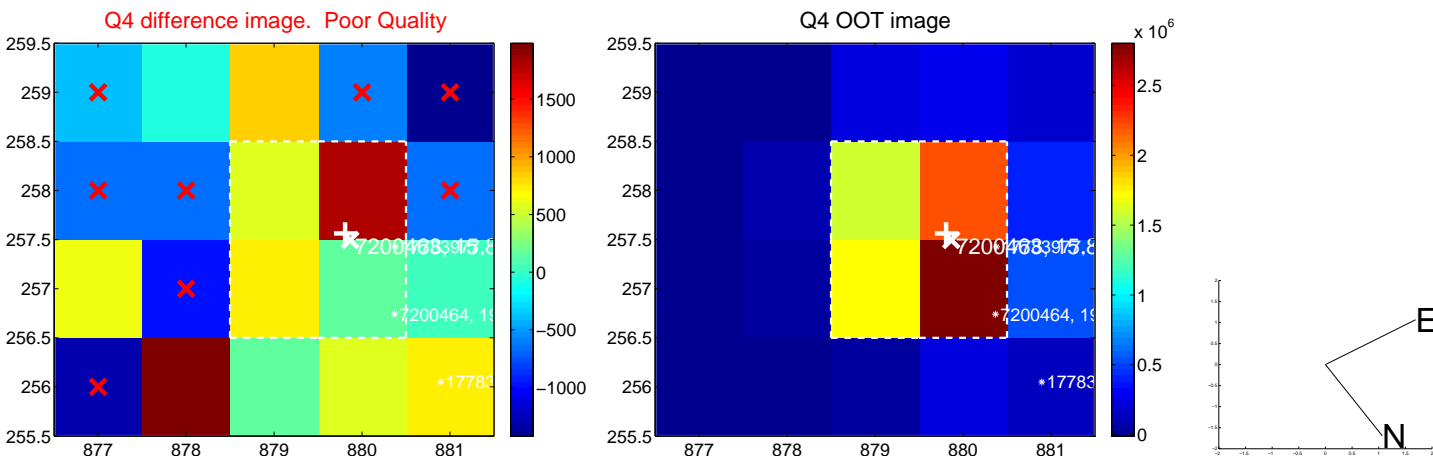
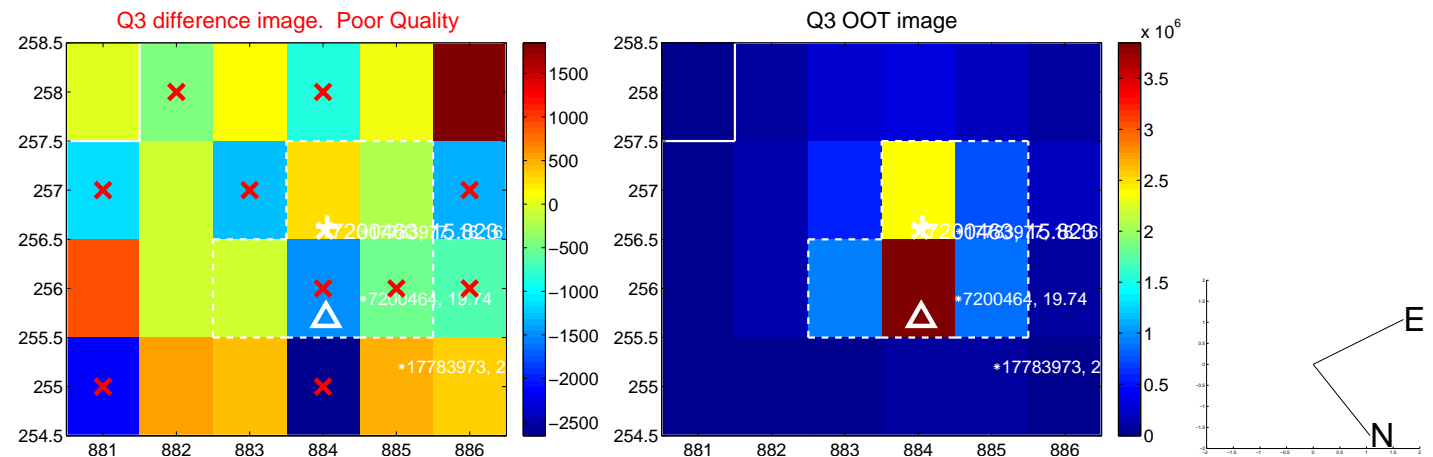
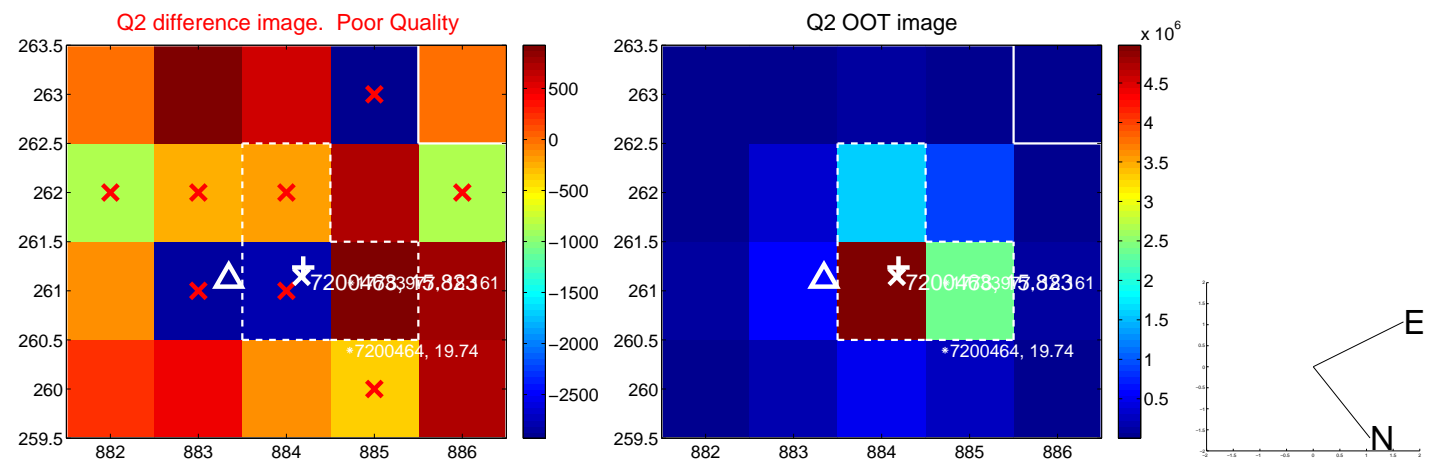
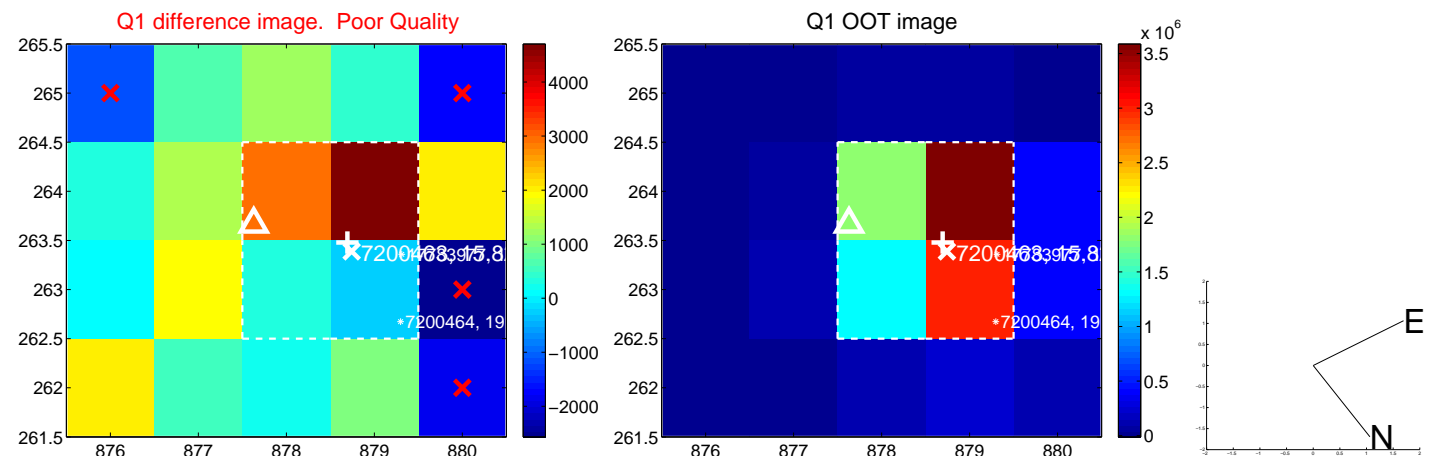
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.359 \pm 0.654$	3.61	$-1.205 \pm 0.646$	$-2.028 \pm 0.656$
PRF-fit source offset from KIC position	$2.456 \pm 0.708$	3.47	$-1.012 \pm 0.722$	$-2.238 \pm 0.848$
photometric centroid source offset	$1.34 \pm 0.76$	1.75	$-0.35 \pm 0.81$	$1.29 \pm 0.76$

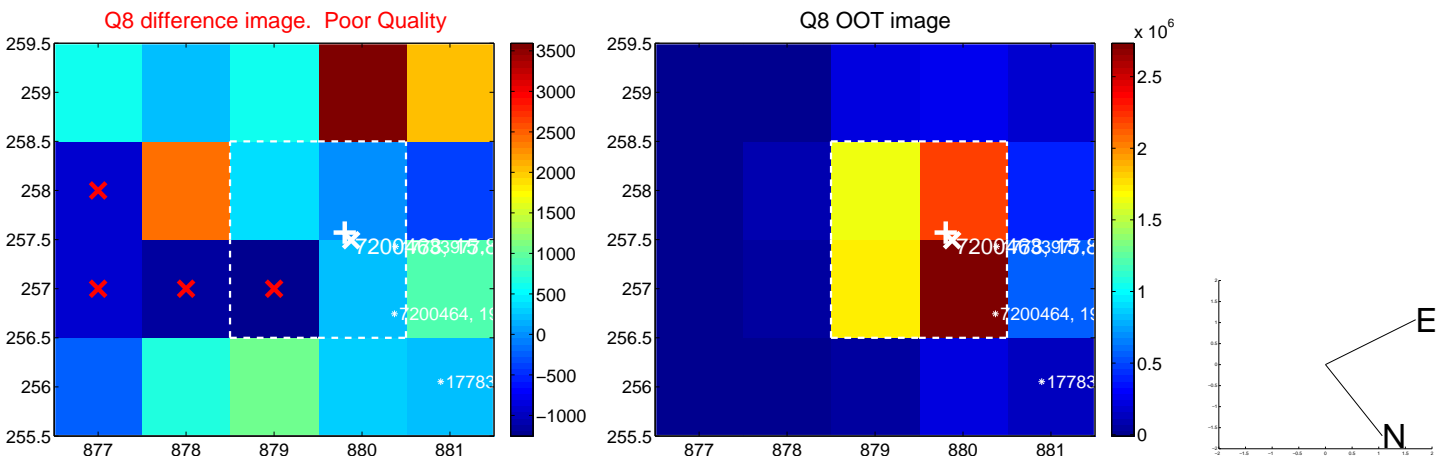
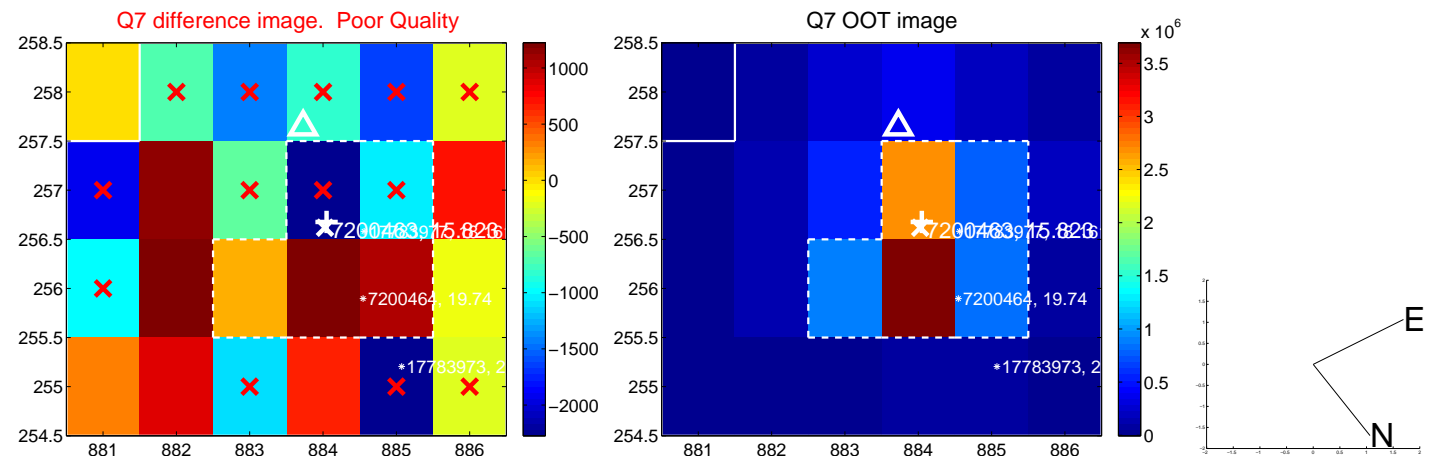
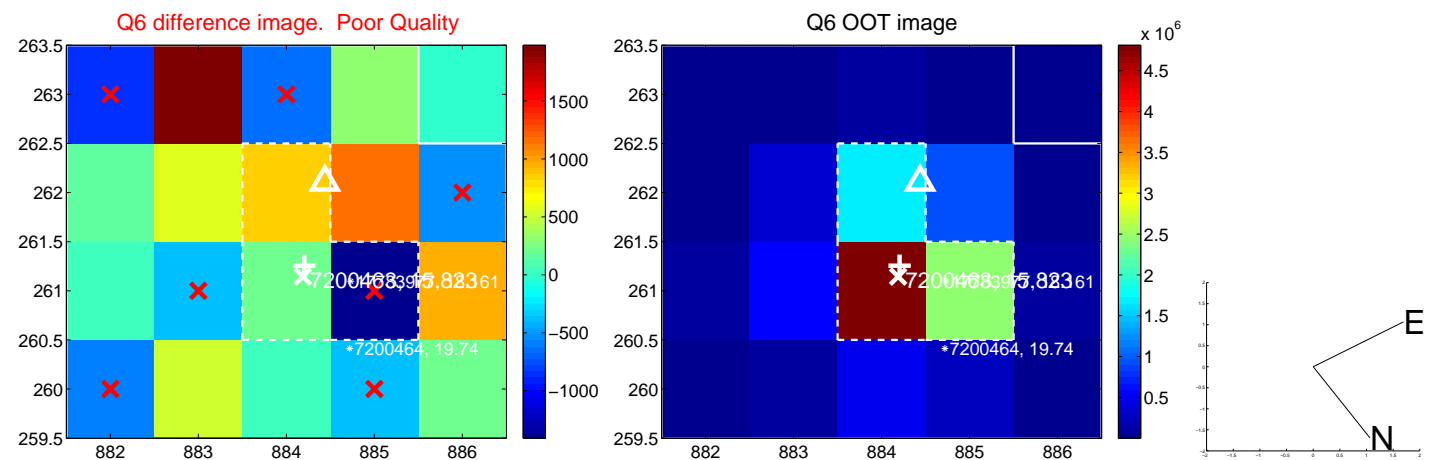
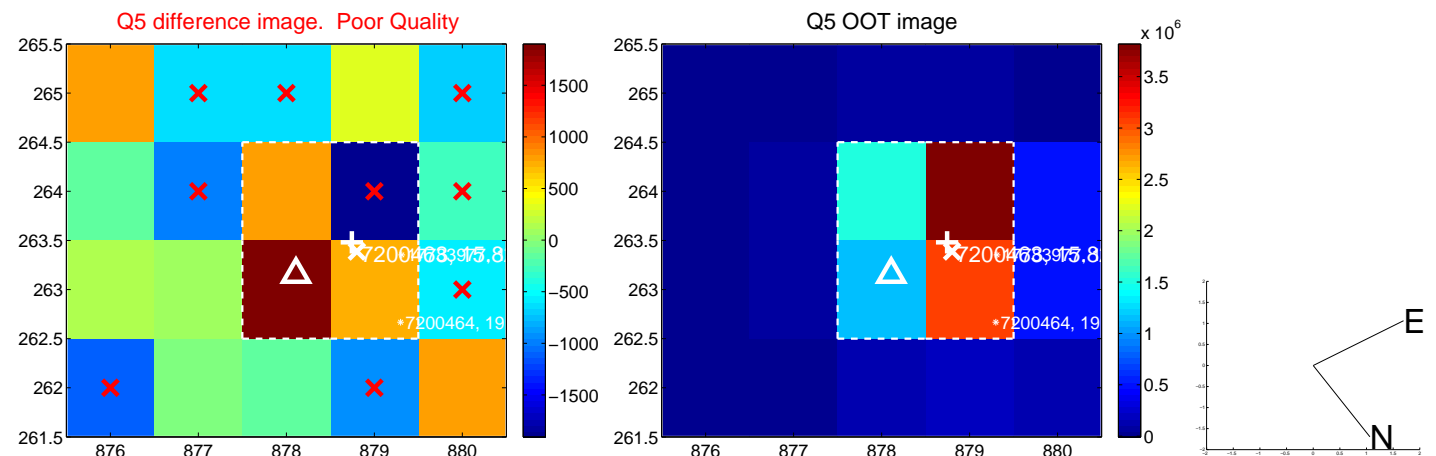


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

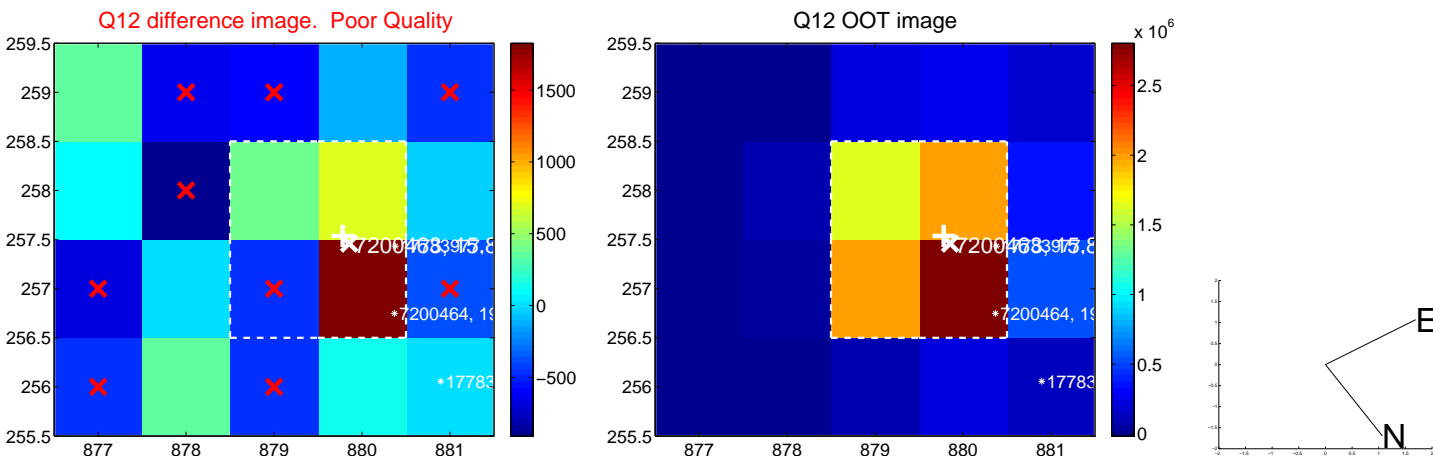
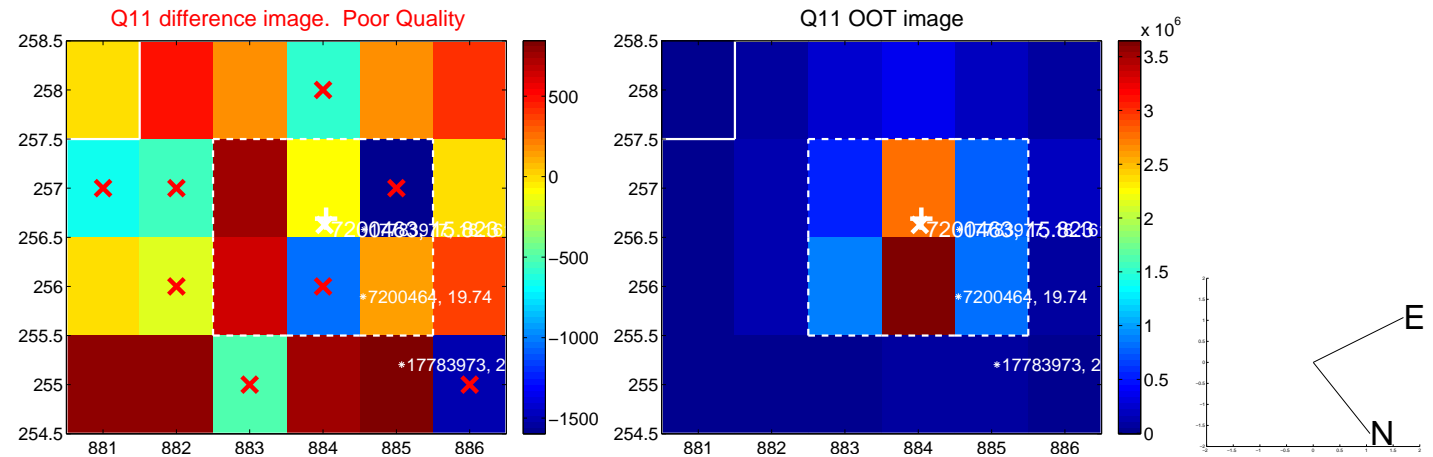
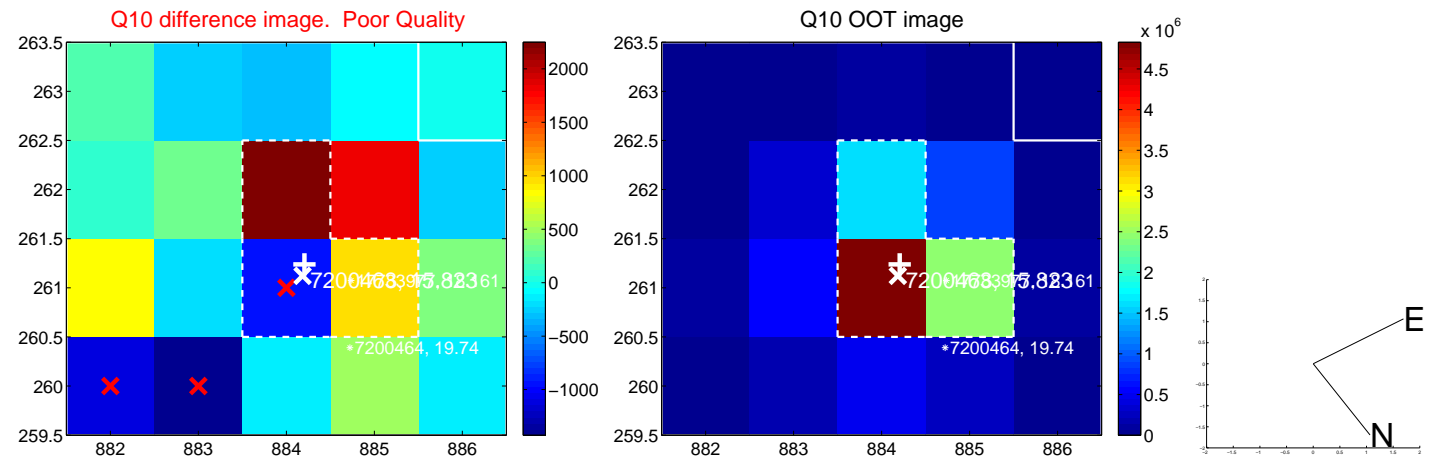
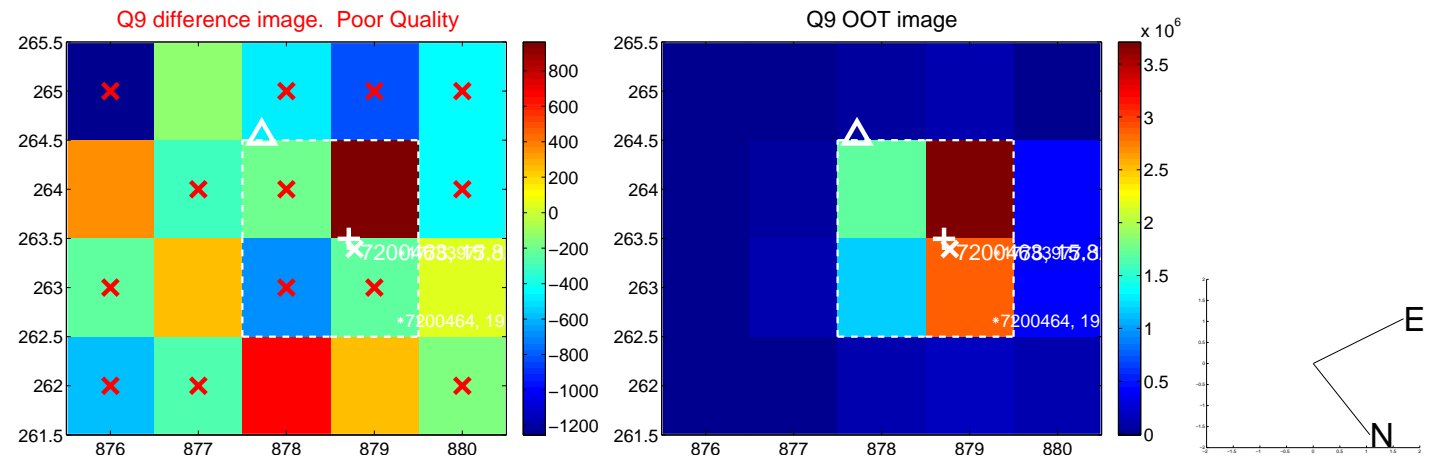
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



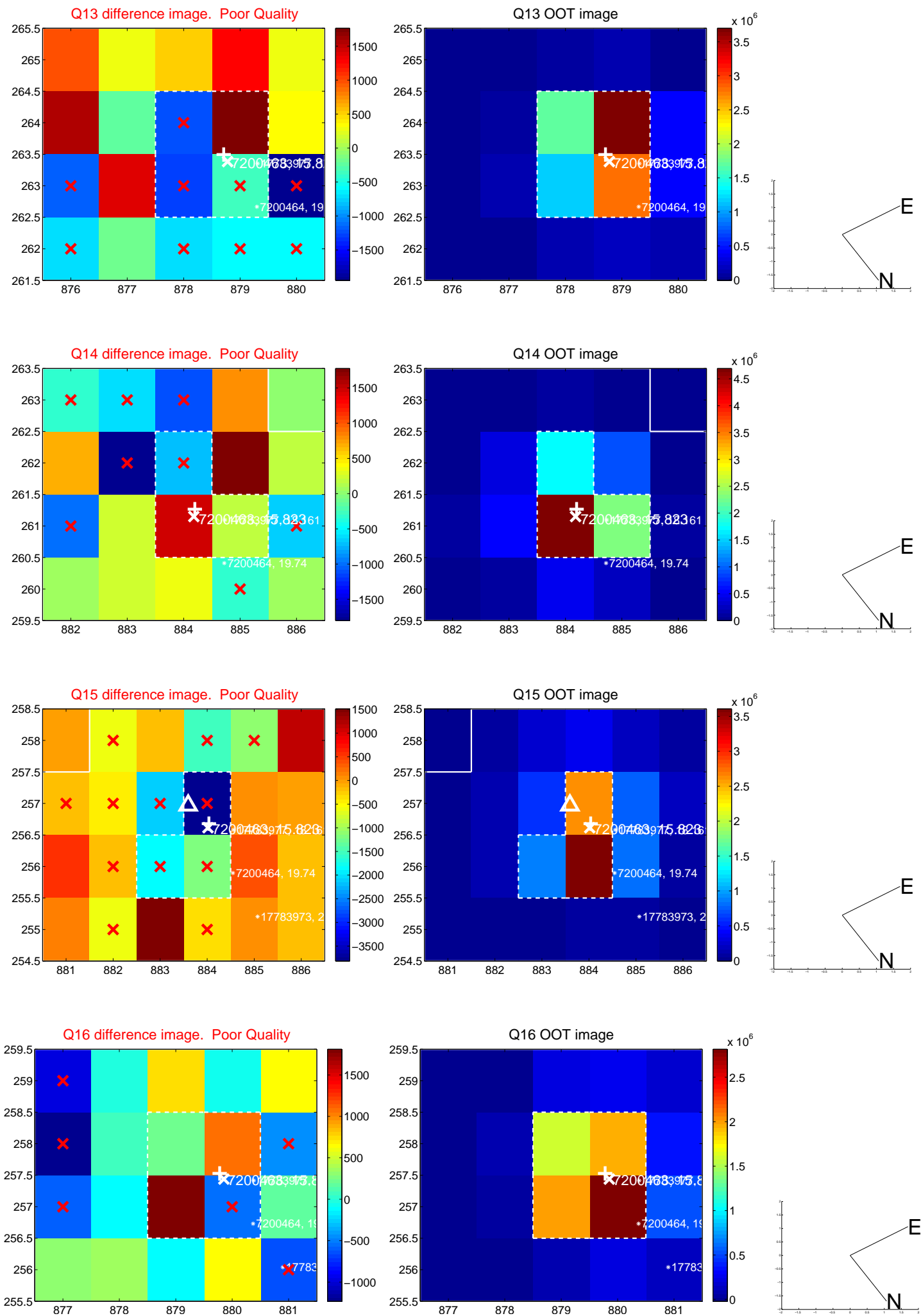
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



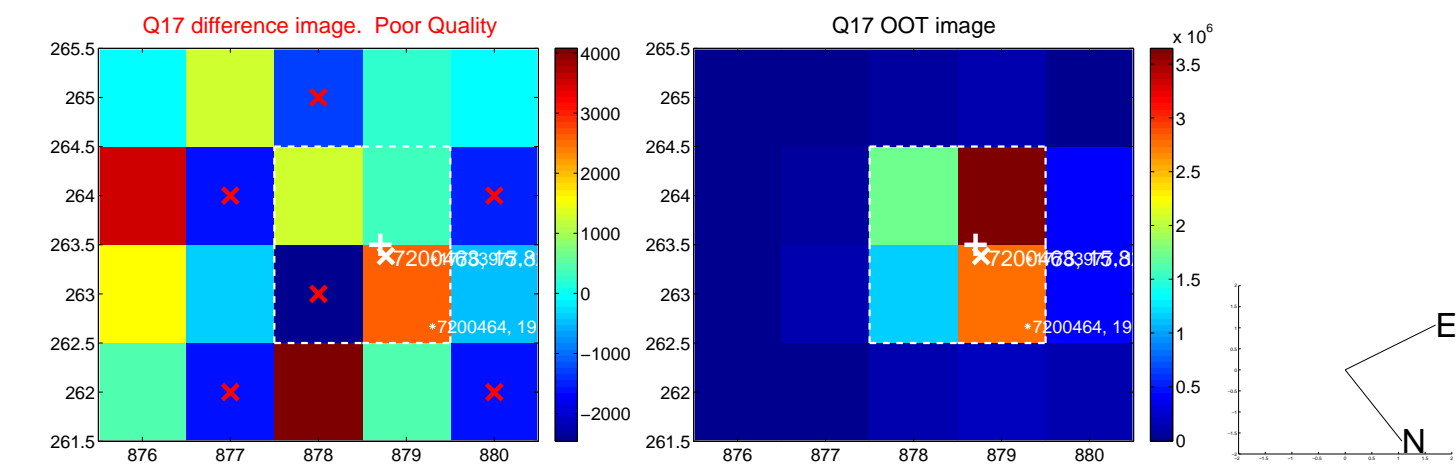
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



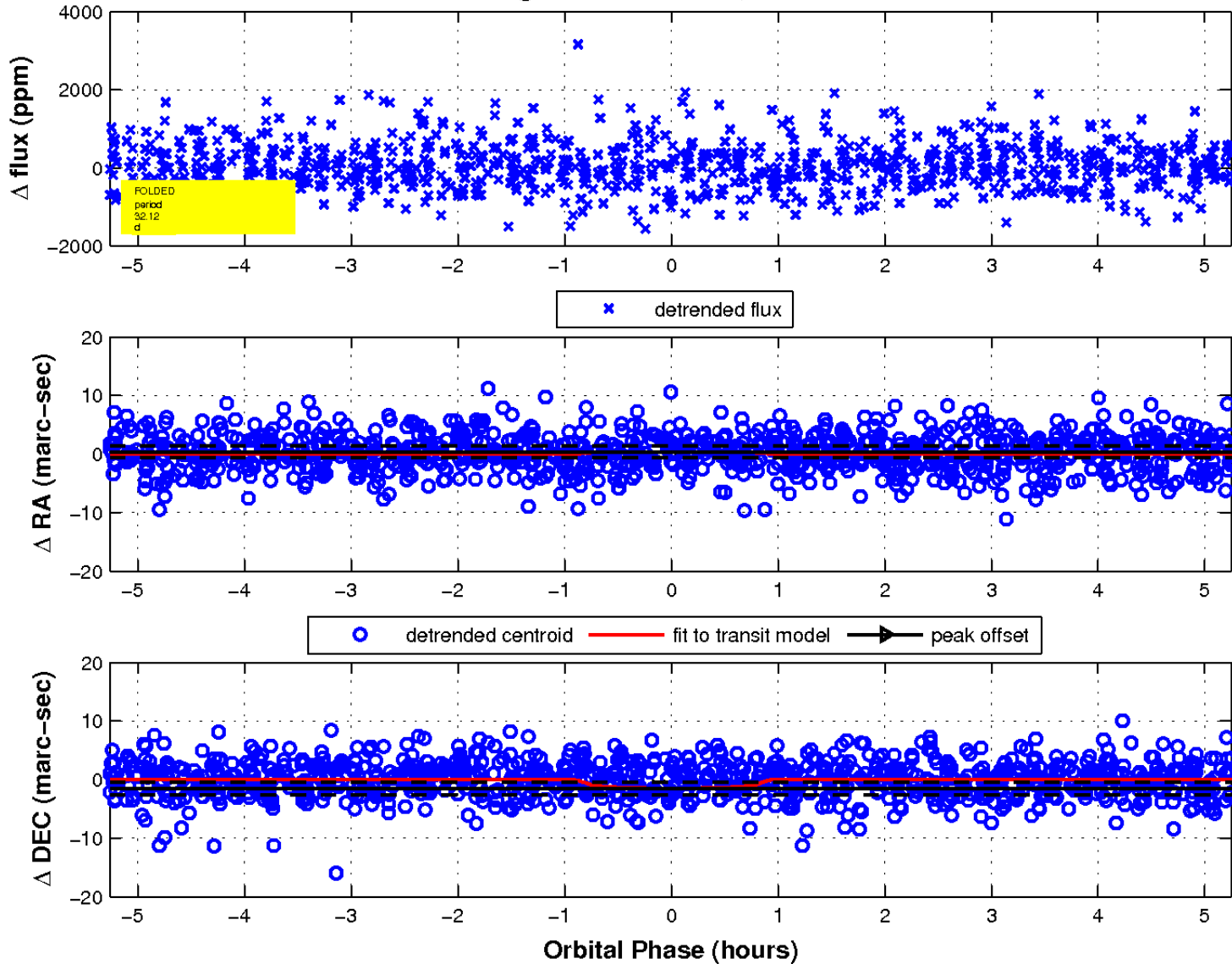
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



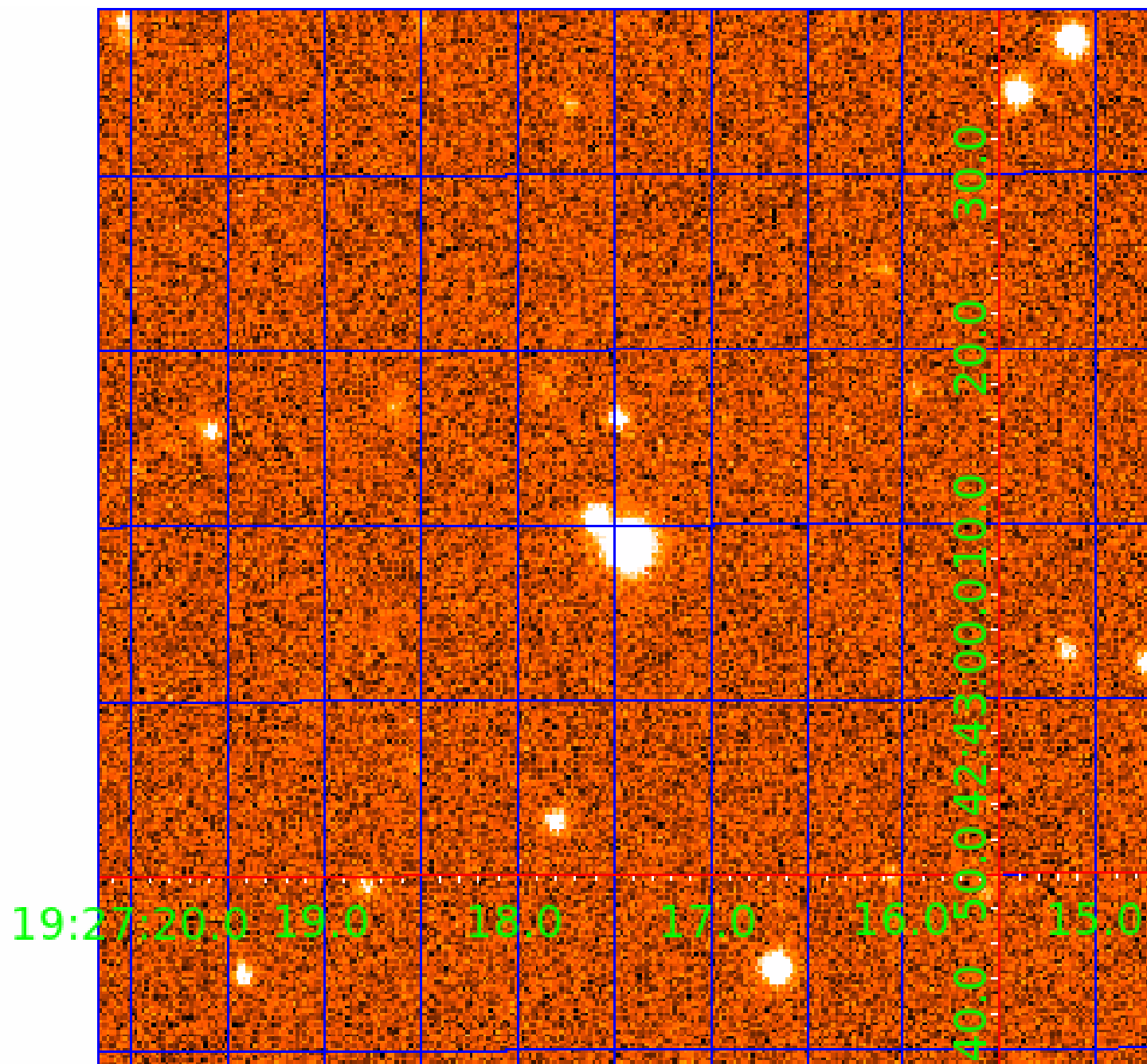
fluxWeightedCentroids, Planet 7 of 8





# UKIRT Image

Declination



# KIC 007200463

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007200463-01	OBS	No	0.566758	131.840663	30.2	3.735	8.9	4.8	0.57	3907	0.30	544.02
007200463-02	OBS	No	69.558006	189.973834	1591.5	0.599	9.5	6.6	0.57	3907	2.38	0.89
007200463-03	OBS	No	30.758930	159.909444	759.5	1.554	9.9	7.2	0.57	3907	1.65	2.65
007200463-04	OBS	No	29.082206	151.599782	987.7	2.567	8.8	9.4	0.57	3907	2.41	2.85
007200463-05	OBS	No	40.105384	144.167690	943.7	2.453	7.6	9.2	0.57	3907	1.99	1.86
007200463-06	OBS	No	16.502004	140.509425	986.5	0.762	9.3	9.4	0.57	3907	1.78	6.07
007200463-07	OBS	No	32.122218	142.928559	1031.9	1.754	7.9	8.3	0.57	3907	1.78	2.50
007200463-08	OBS	No	56.830874	139.594999	950.5	2.699	8.2	9.6	0.57	3907	2.05	1.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007200463-01	OBS	FP	0.00	1	0	0	1	LPP_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS—EPHEM_MATCH
007200463-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200463-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS
007200463-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200463-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007200463-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
007200463-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007200463-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

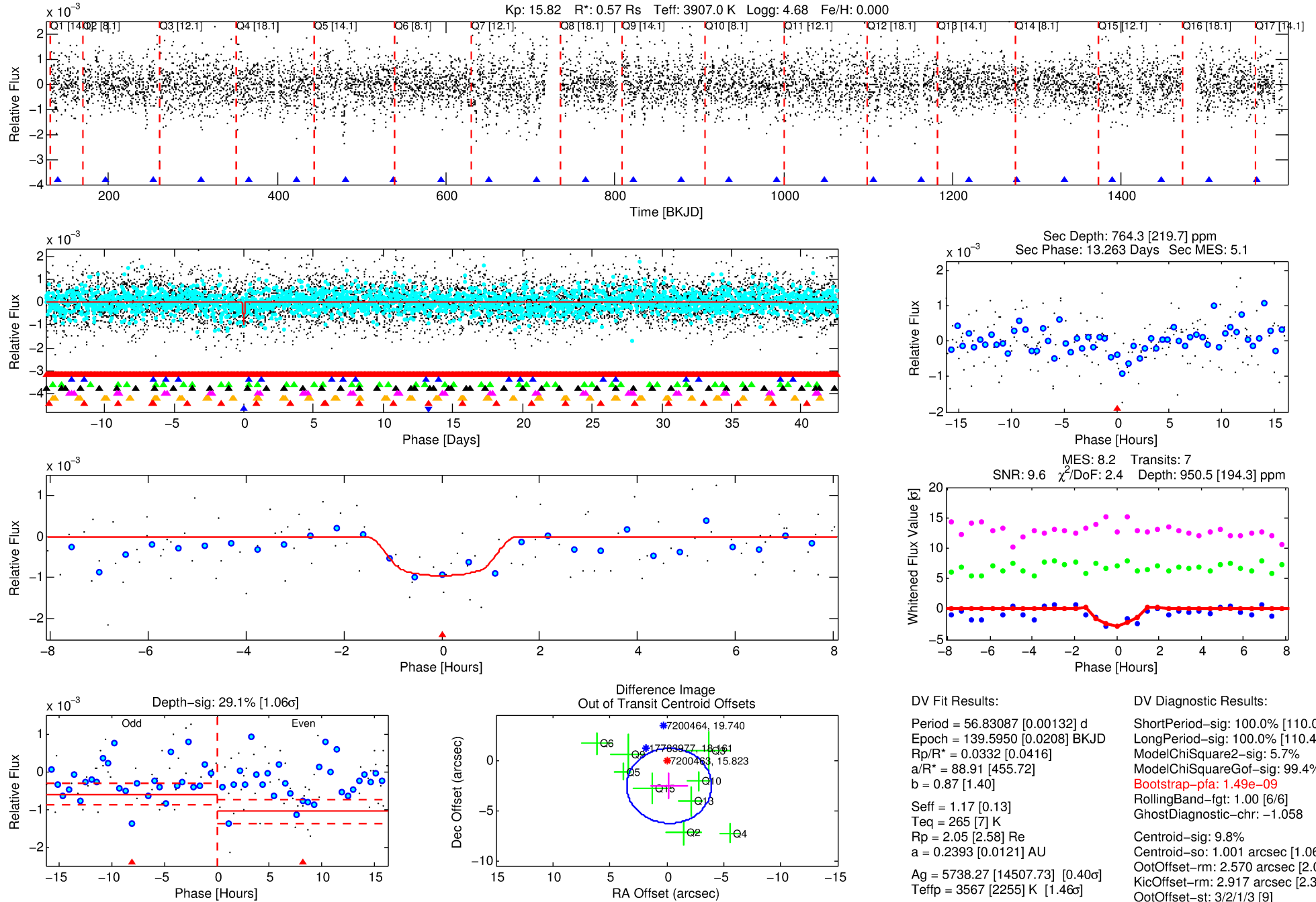
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007200463-08

No Significant Match Found

# DV One-Page Summary

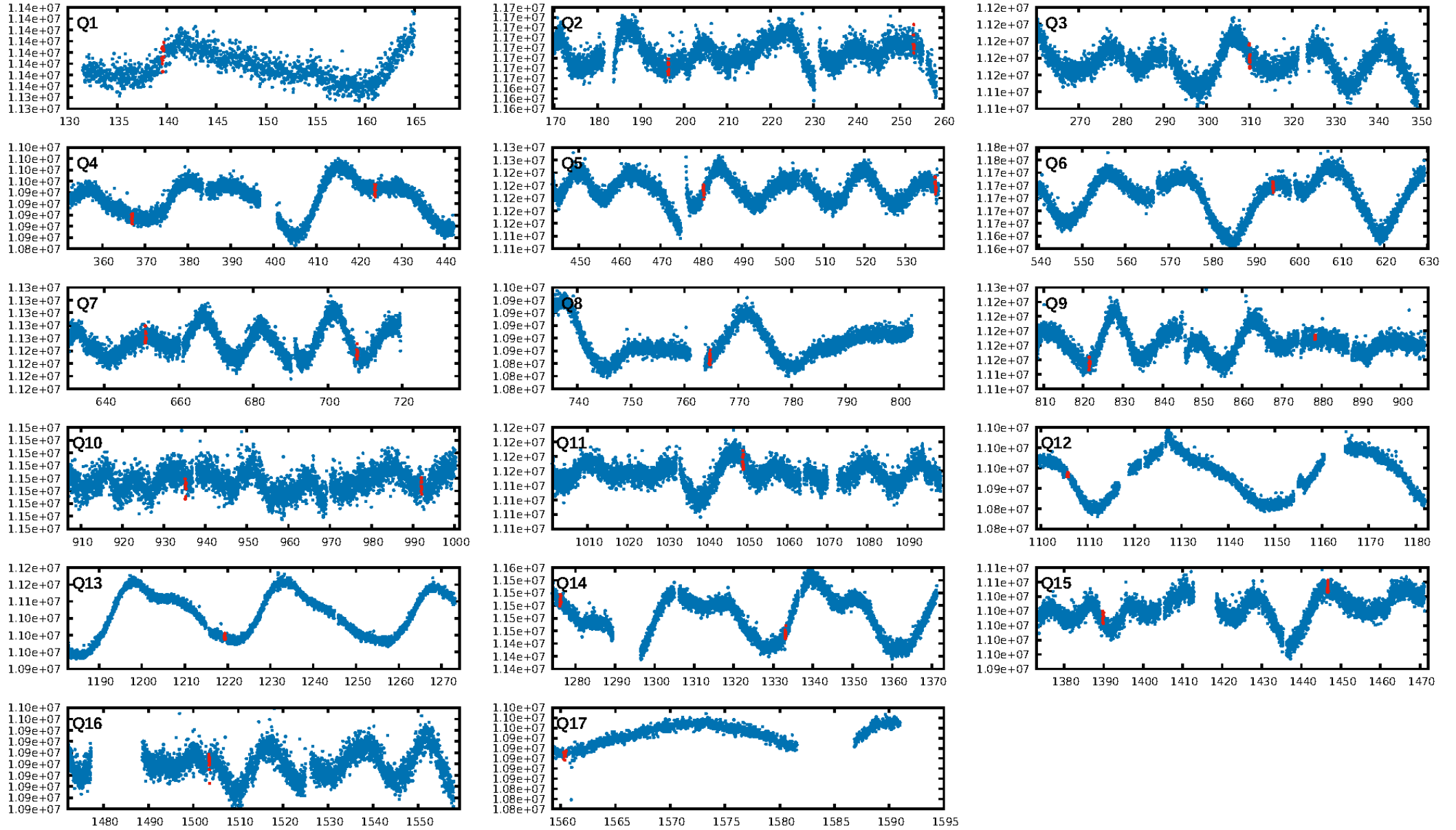
KIC: 7200463 Candidate: 8 of 8 Period: 56.831 d



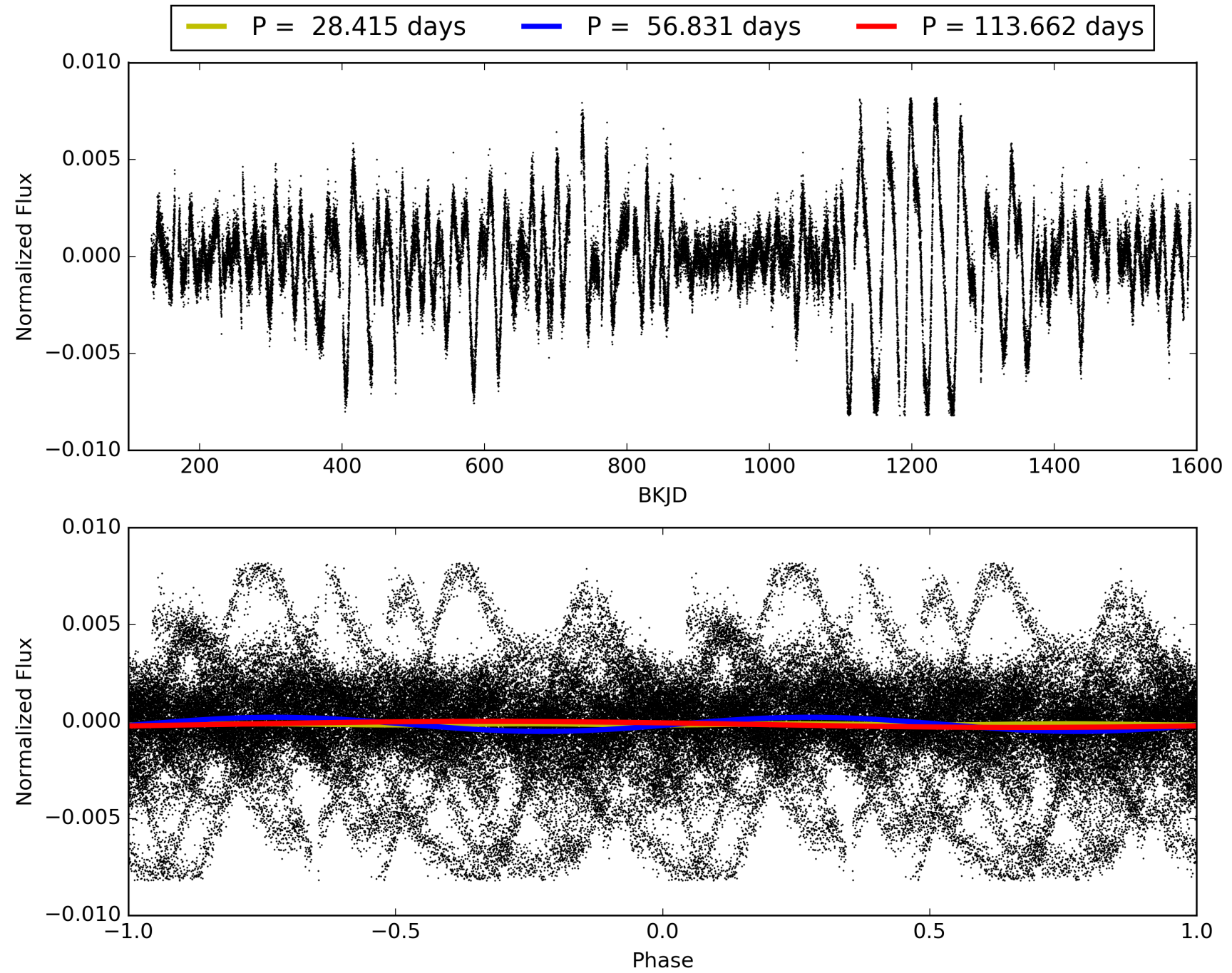
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 07:13:17 Z

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

# TCE 007200463-08, PDC Light Curves

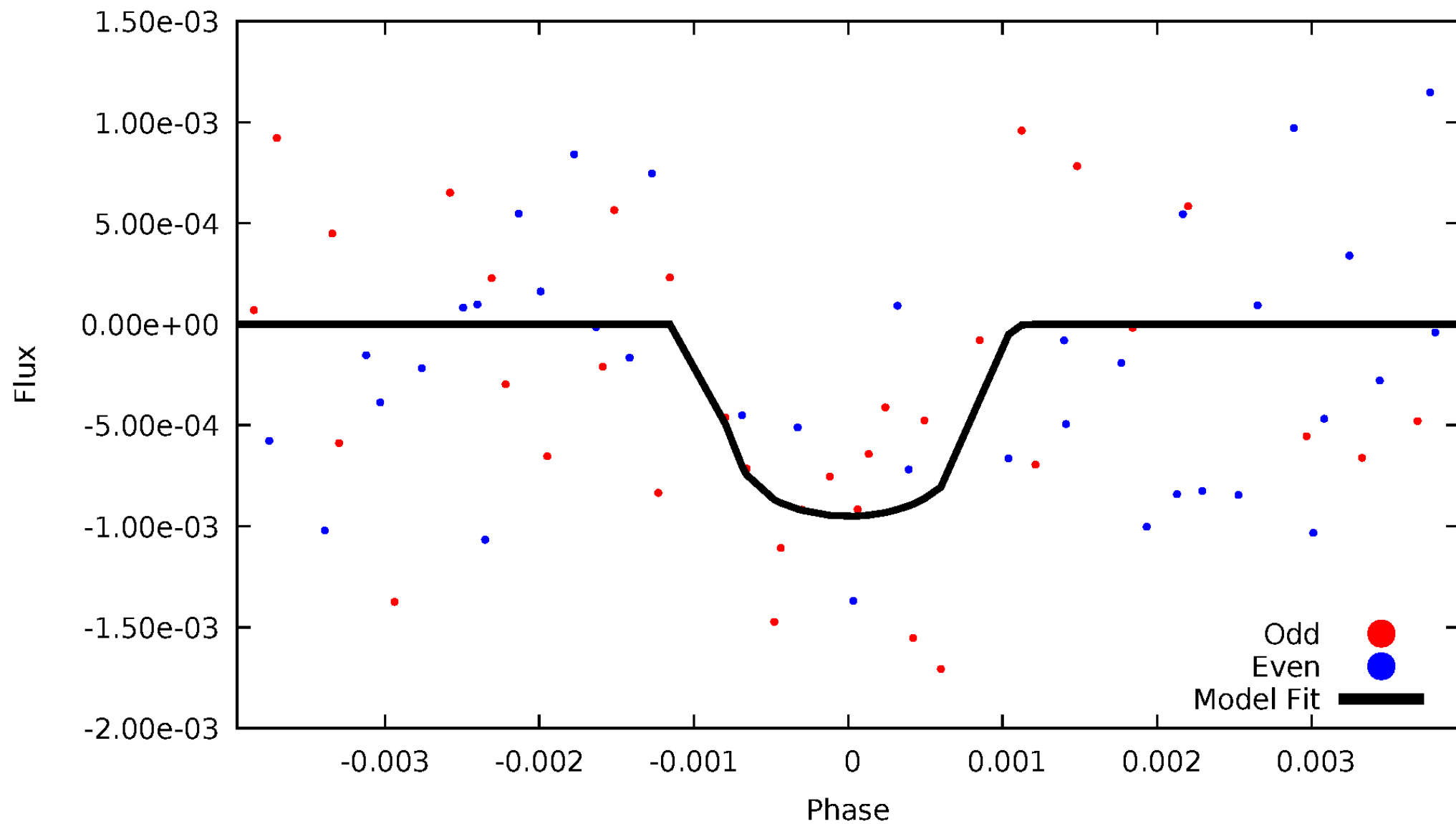


TCE 007200463-08



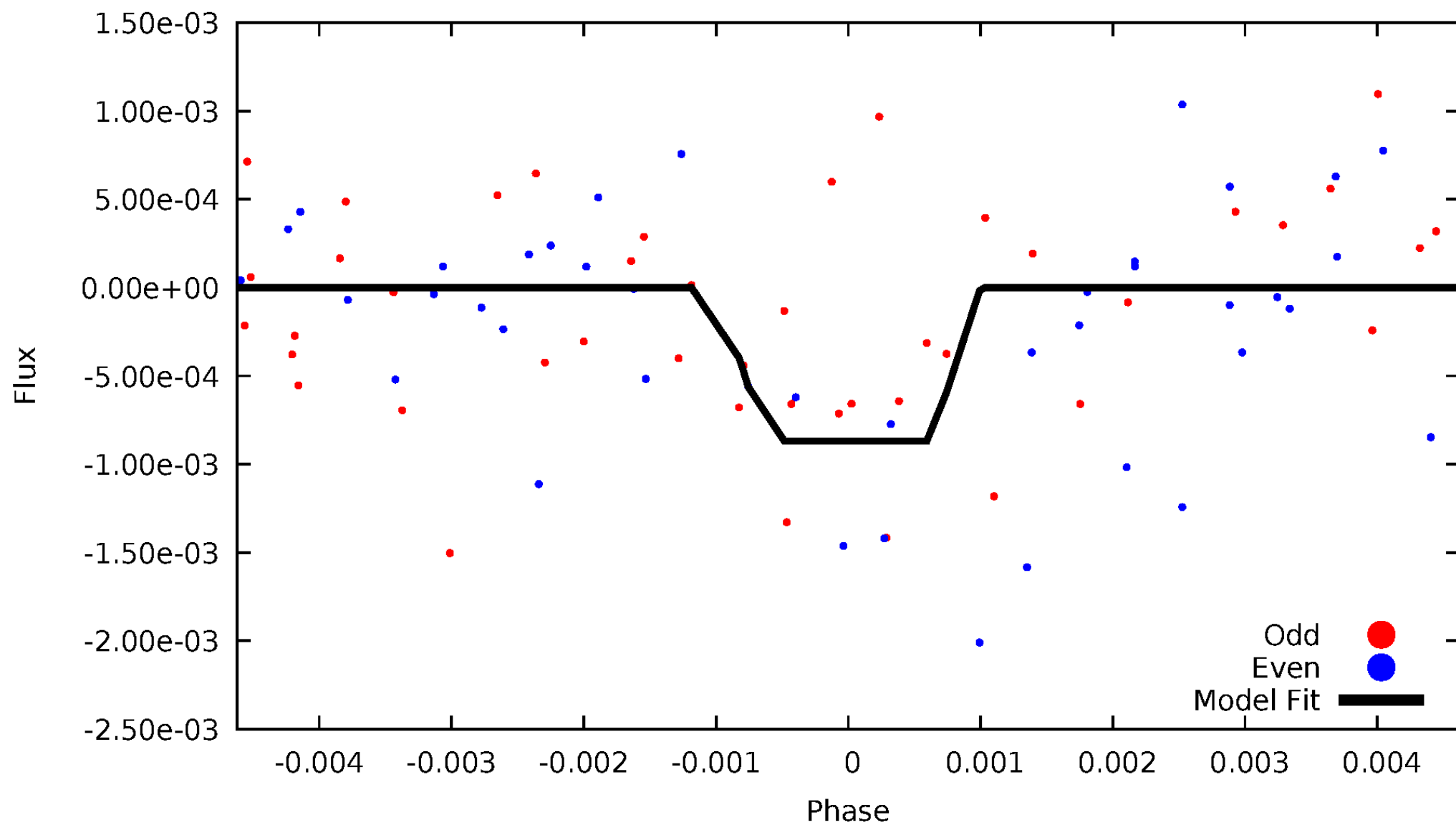
# DV Odd/Even

TCE 007200463-08



# ALT Odd/Even

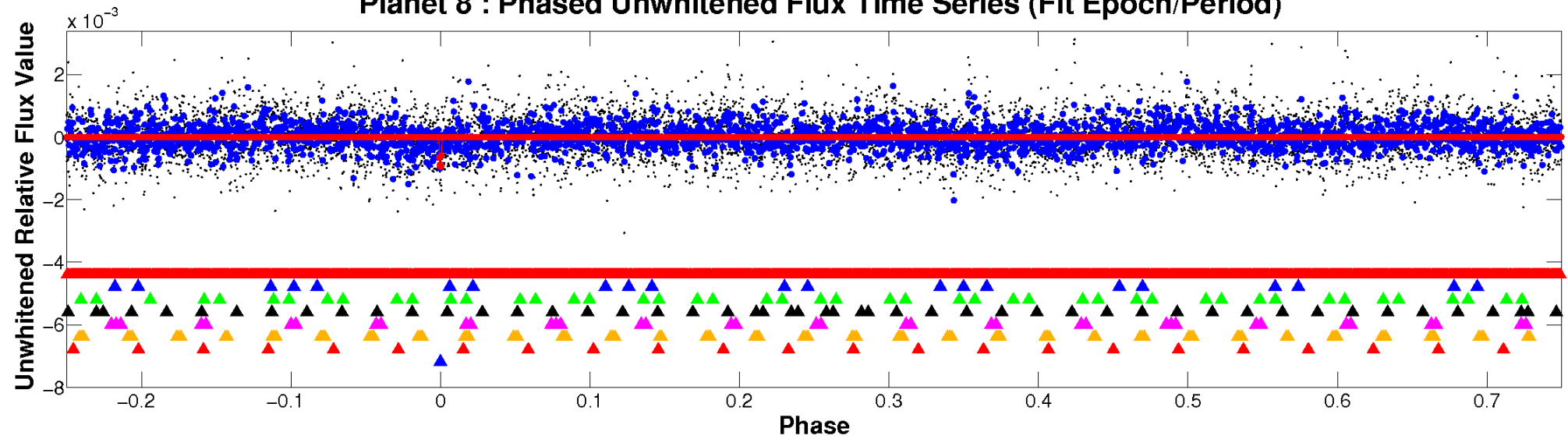
TCE 007200463-08



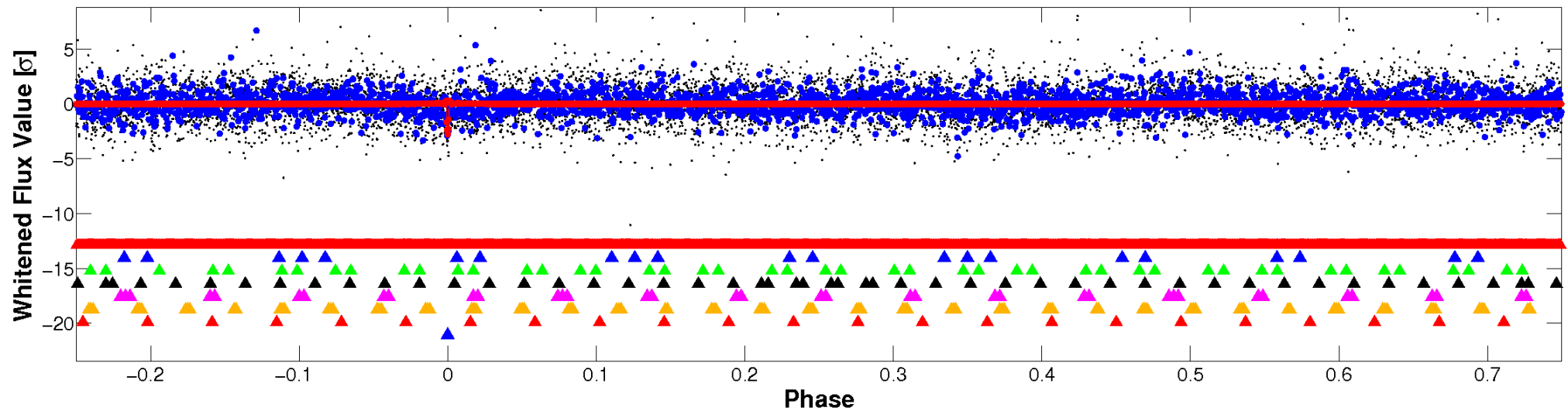


# Non-Whitened Vs. Whitened Light Curve

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



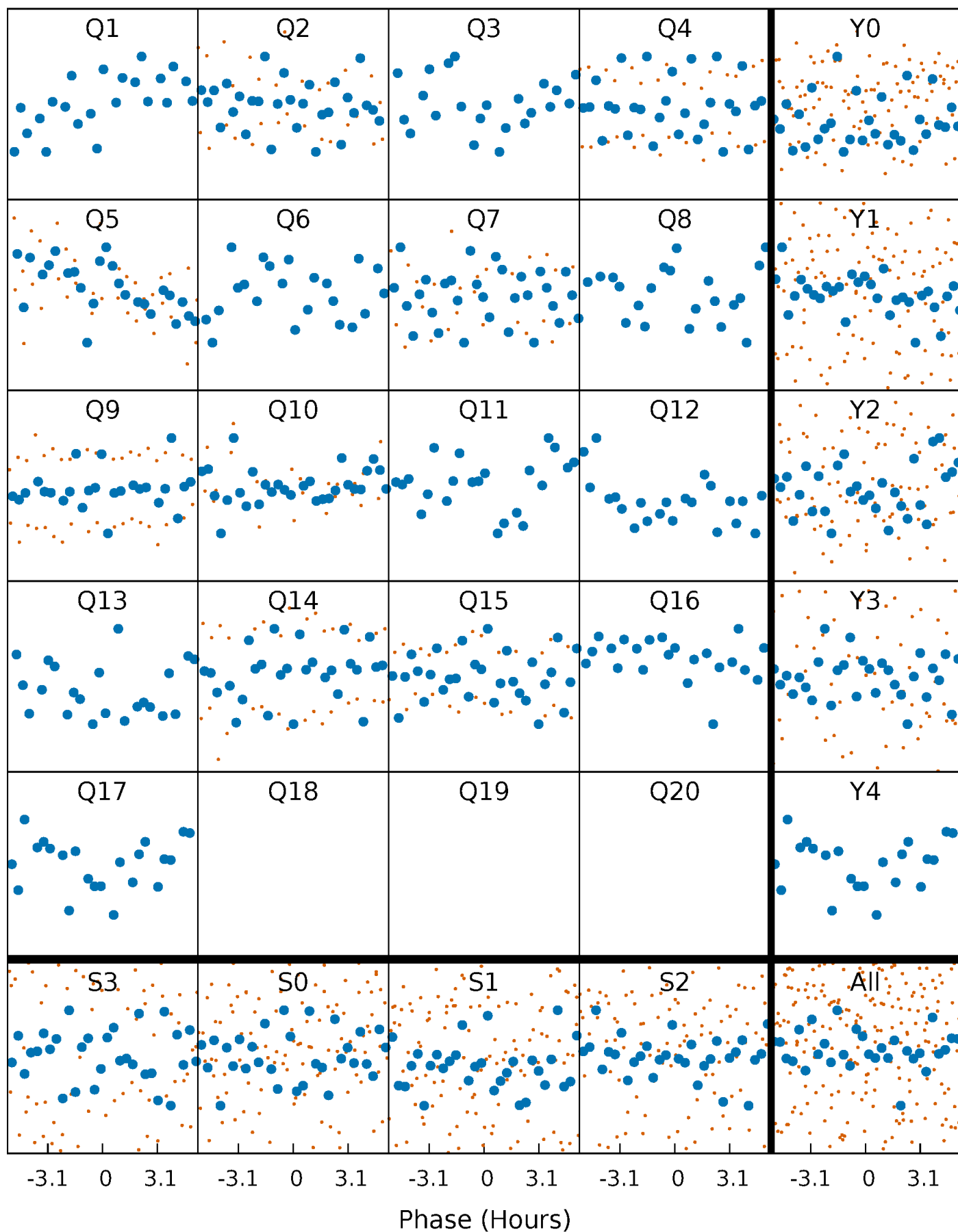
Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)





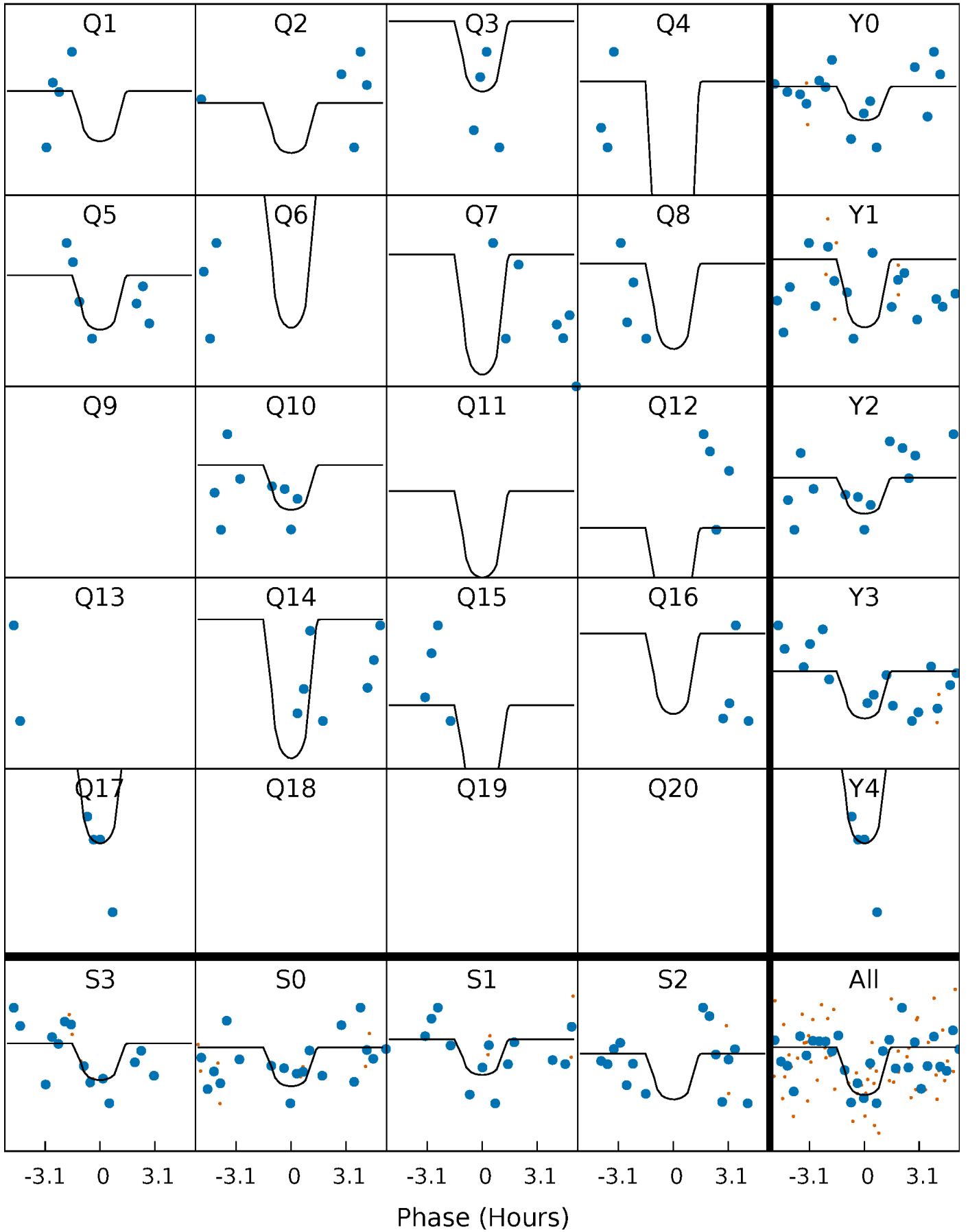
# PDC Quarter-Phased Transit Curves

TCE 007200463-08 P= 56.830874 Days  $T_0=139.594999$  (BKJD)



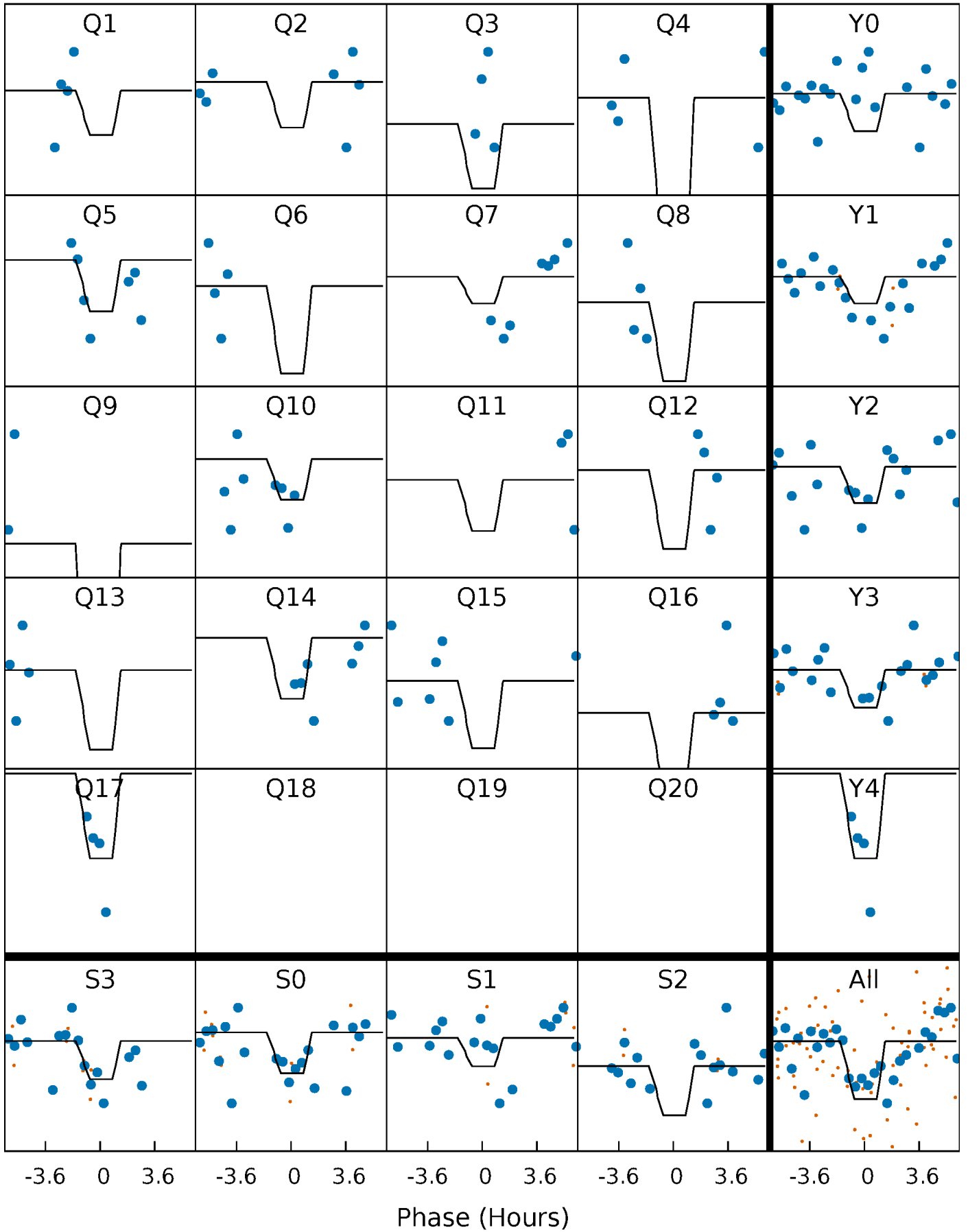
# DV Quarter-Phased Transit Curves

TCE 007200463-08 P= 56.830874 Days  $T_0=139.594999$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

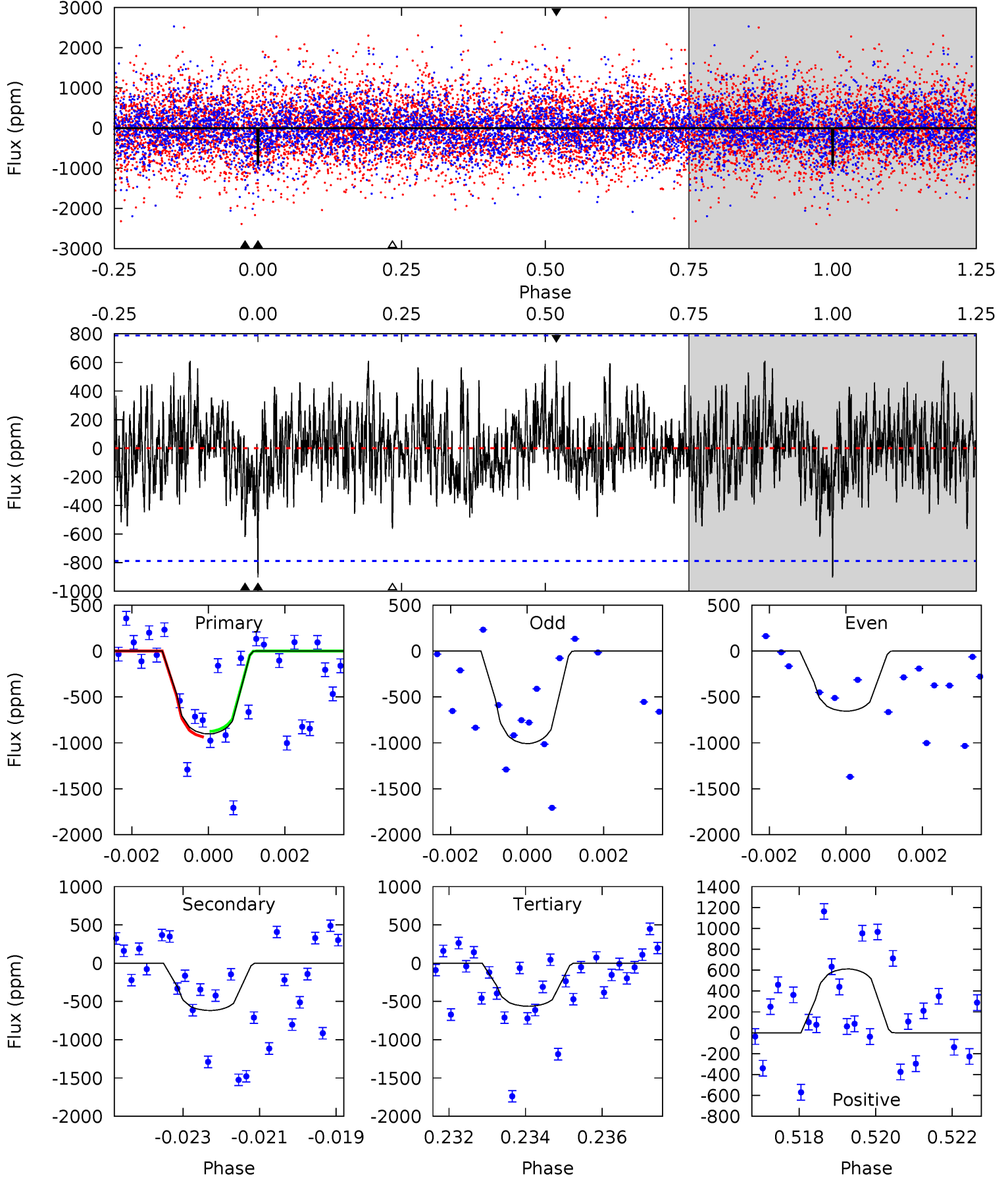
TCE 007200463-08 P= 56.831198 Days  $T_0=139.594399$  (BKJD)



# DV Model-Shift Uniqueness Test

007200463-08, P = 56.830874 Days, E = 82.764125 Days

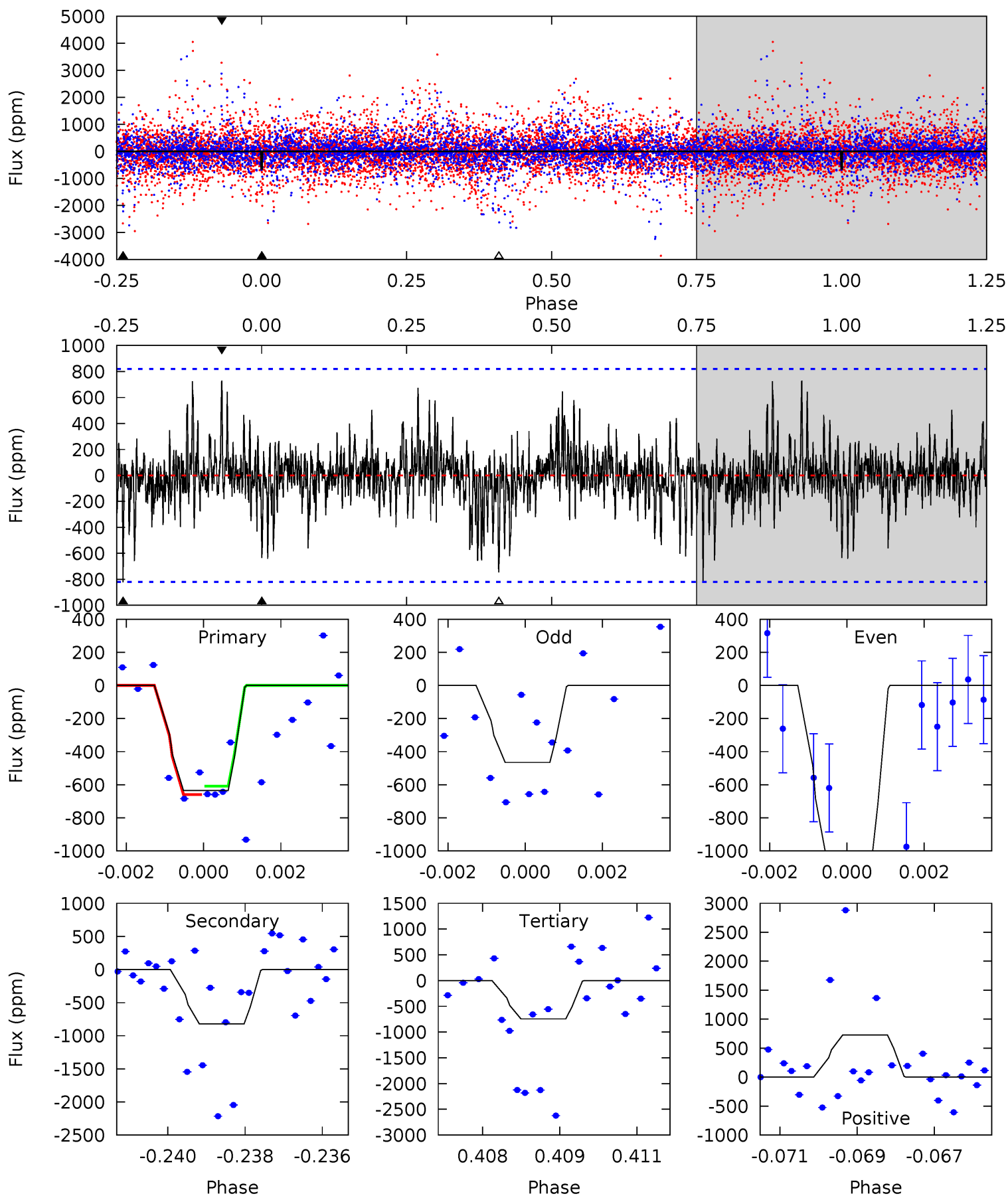
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.11	4.18	3.81	4.14	5.33	3.10	1.33	2.30	1.97	0.38	0.05	1.11	0.80	0.40	0.20



# Alt Model-Shift Uniqueness Test

007200463-08, P = 56.831198 Days, E = 82.763201 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
4.14	5.35	4.86	4.75	5.34	3.11	1.14	-0.72	-0.61	0.50	0.61	1.64	0.90	0.47	0.17



### Stellar Parameters For KIC 007200463

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3907^{+86}_{-86}$	$4.685^{+0.036}_{-0.015}$	$0.000^{+0.100}_{-0.100}$	$0.566^{+0.022}_{-0.036}$	$0.565^{+0.032}_{-0.026}$	$4.395^{+0.686}_{-0.307}$
	+2%/-2%	+1%/-0%	+inf%/-inf%	+4%/-6%	+6%/-5%	+16%/-7%
Source	PHO2	PHO2	PHO2	DSEP		

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

### Secondary Eclipse Parameters for KIC 007200463-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-618 \pm 148$	$2.88^{+2.21}_{-1.85}$	$369^{+9}_{-9}$	$3213^{+1252}_{-498}$	$2480^{+15278}_{-1741}$
Alt.	$-822 \pm 153$	$2.62^{+2.27}_{-1.61}$	$369^{+9}_{-8}$	$3406^{+1425}_{-562}$	$3747^{+22081}_{-2744}$

$T_{max}$  = 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

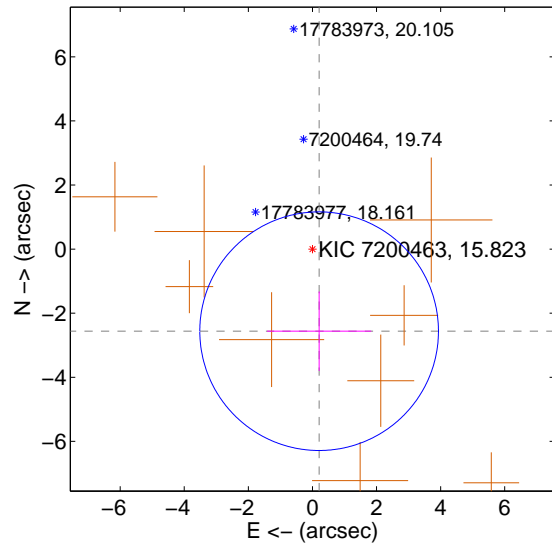
Supplemental centroid analysis for 007200463-08. Kepler magnitude: 15.82. Transit SNR 9.64

There are 0 quarters with good PRF difference image offsets

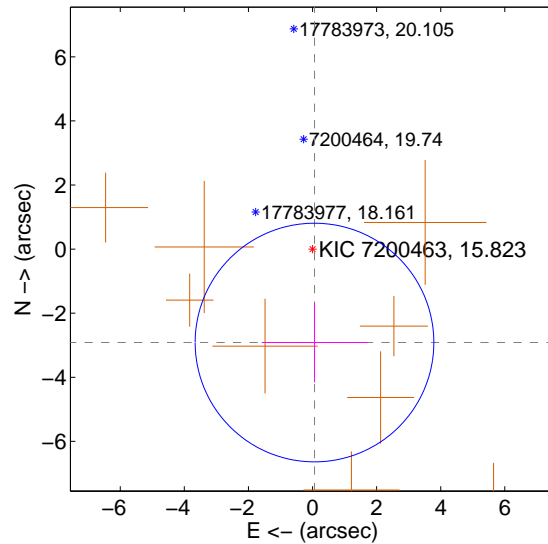
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.570 \pm 1.241$	2.07	$-0.209 \pm 1.627$	$-2.562 \pm 1.238$
PRF-fit source offset from KIC position	$2.917 \pm 1.241$	2.35	$-0.062 \pm 1.648$	$-2.916 \pm 1.241$
photometric centroid source offset	$1.00 \pm 0.94$	1.06	$-0.21 \pm 0.97$	$0.98 \pm 0.94$

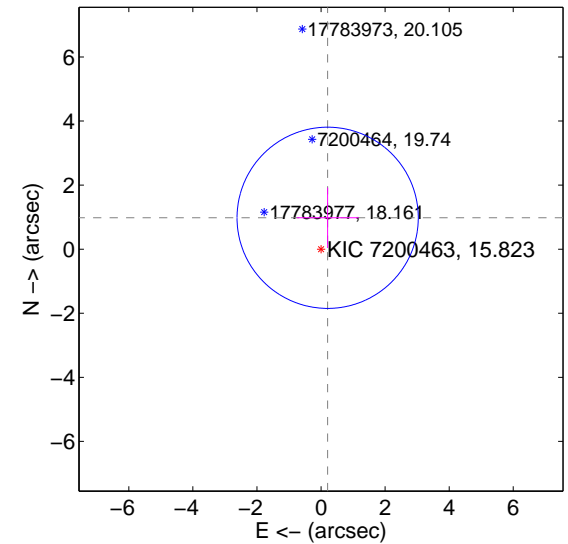
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

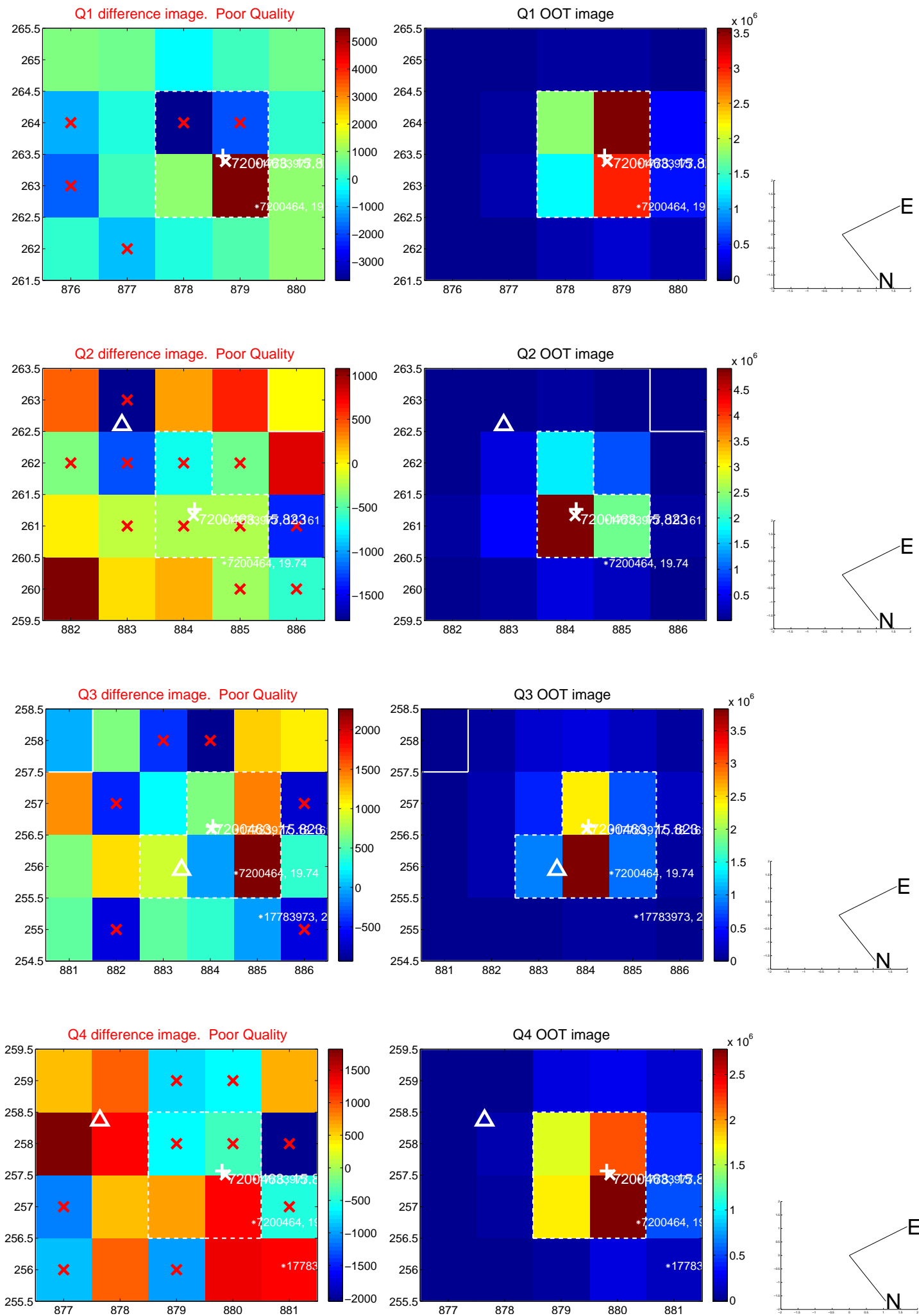


offset from photometric centroids



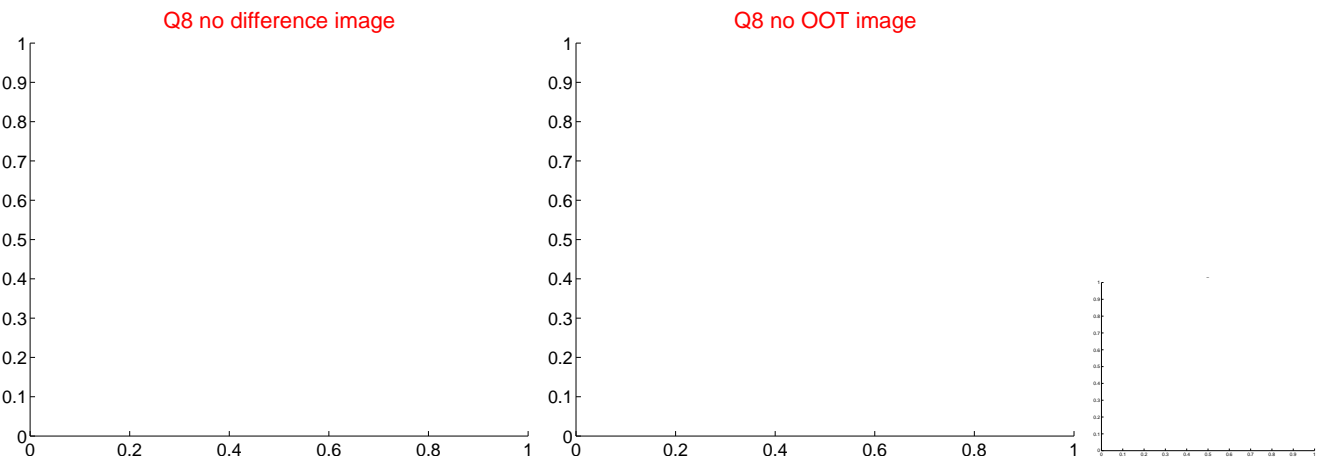
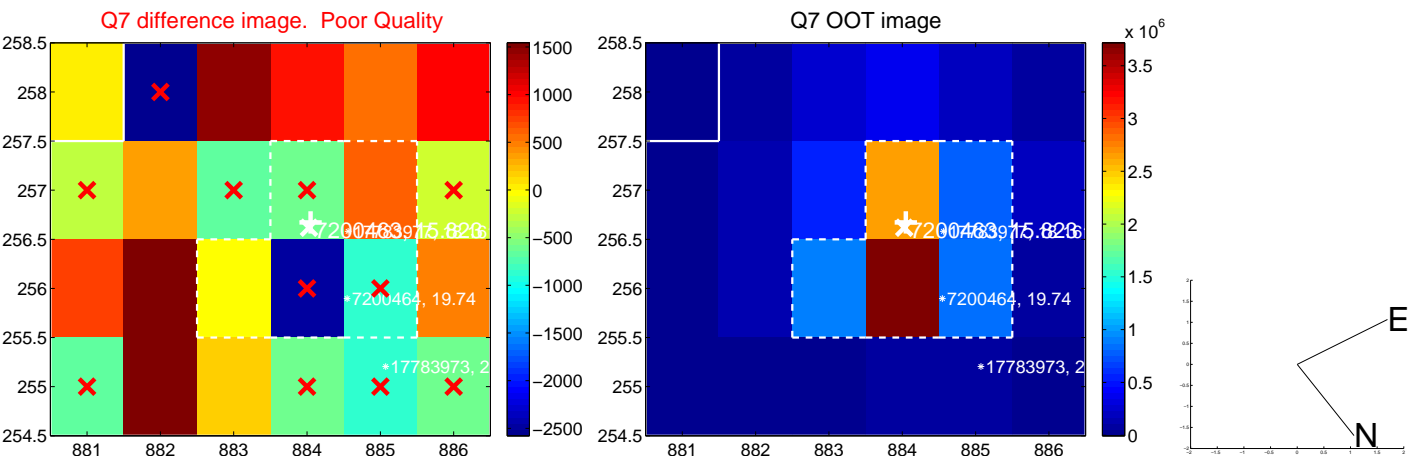
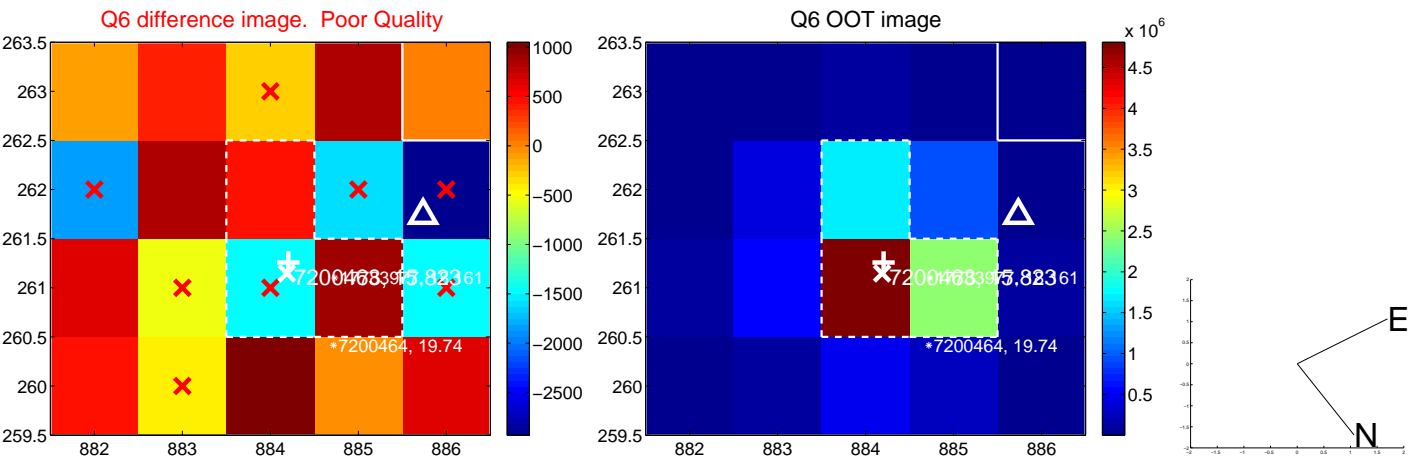
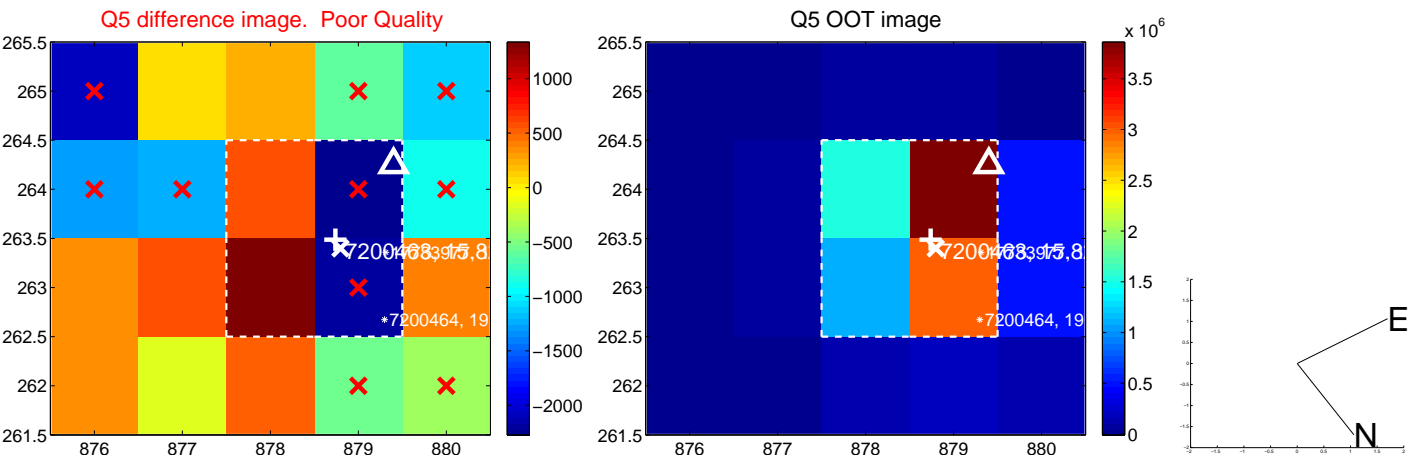
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

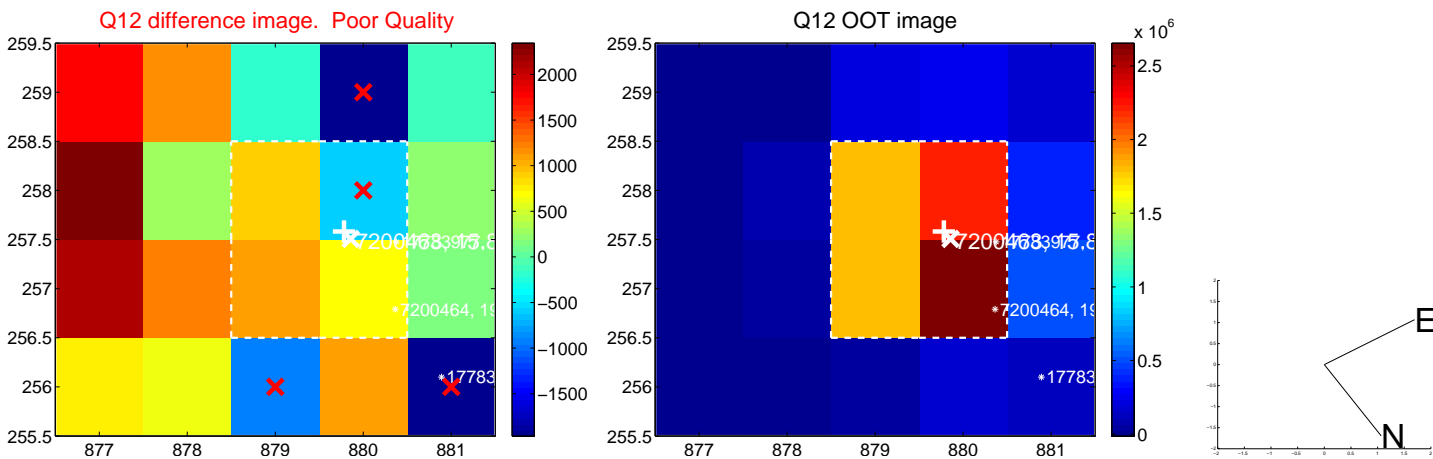
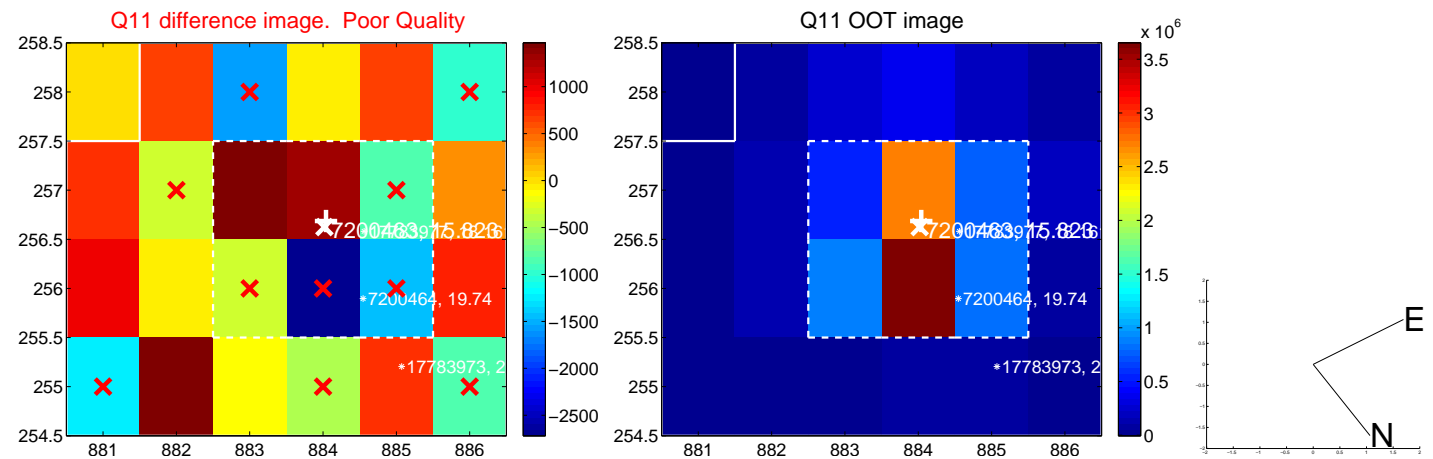
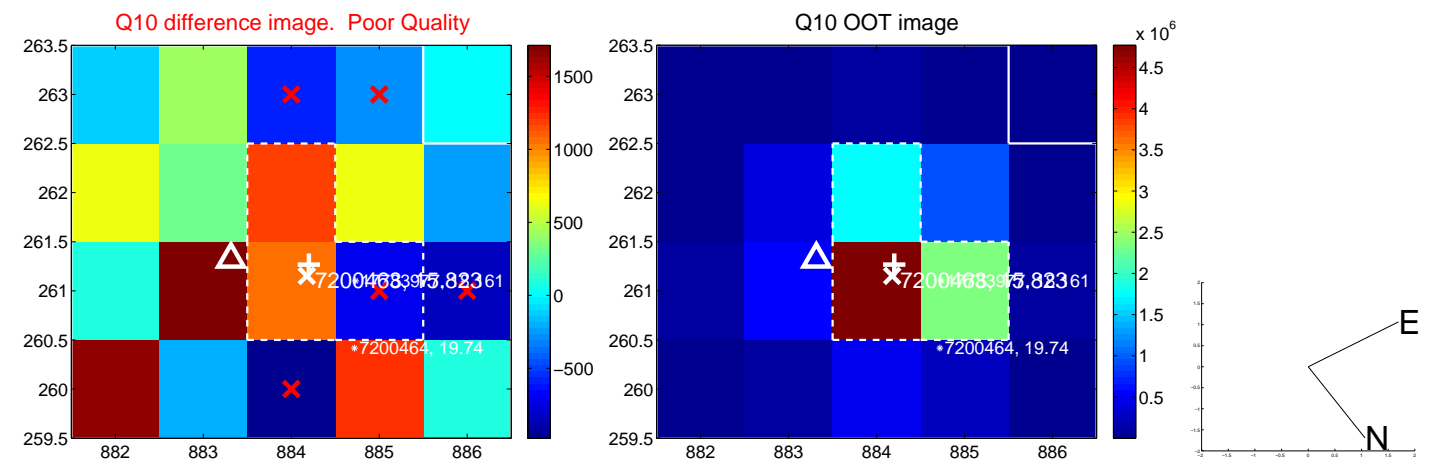
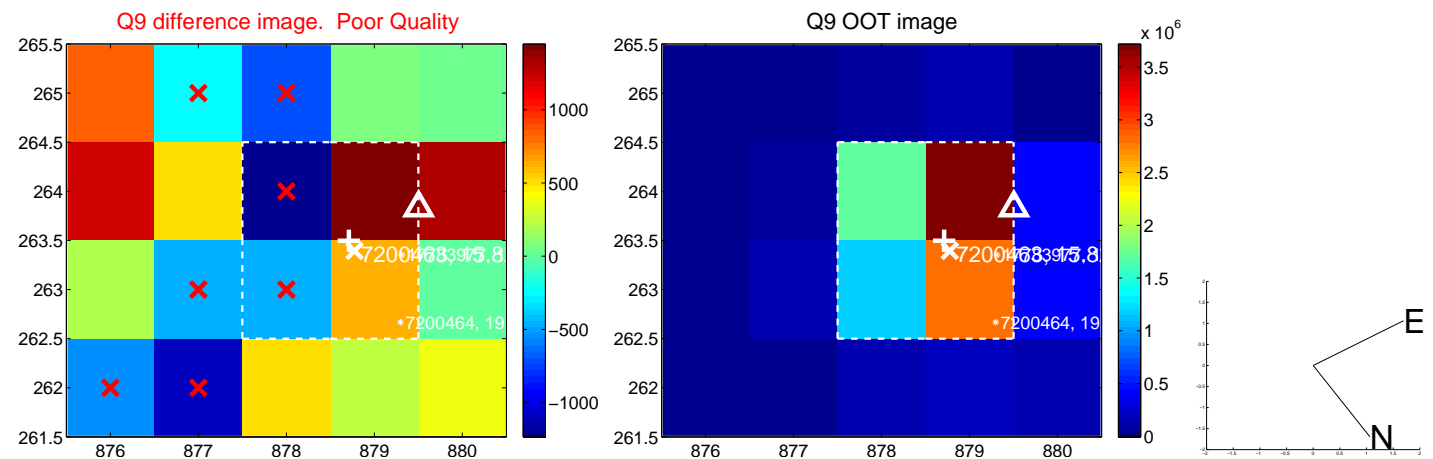




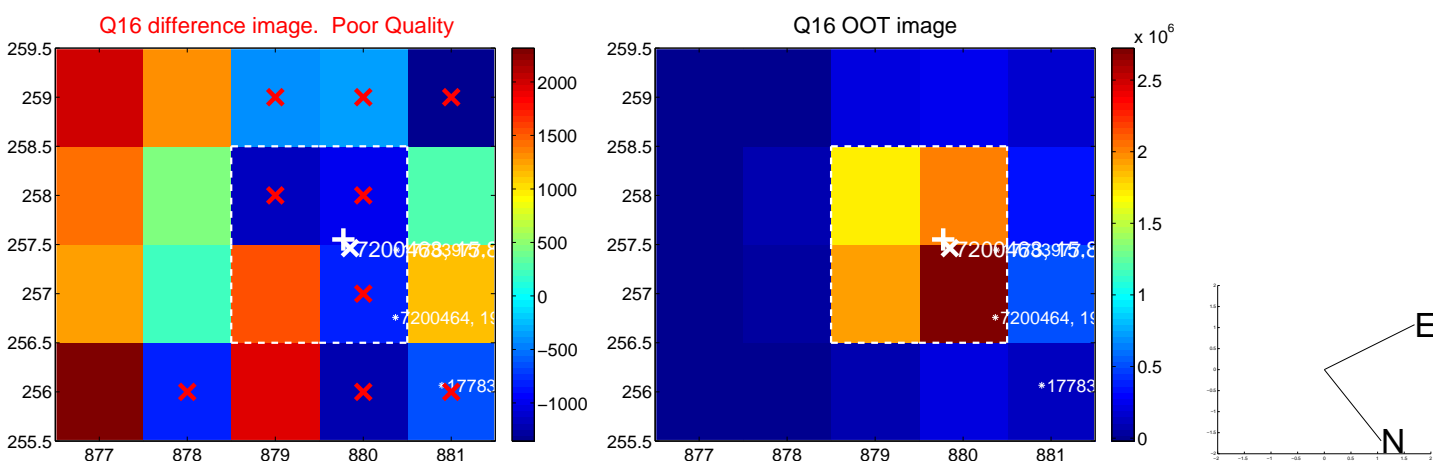
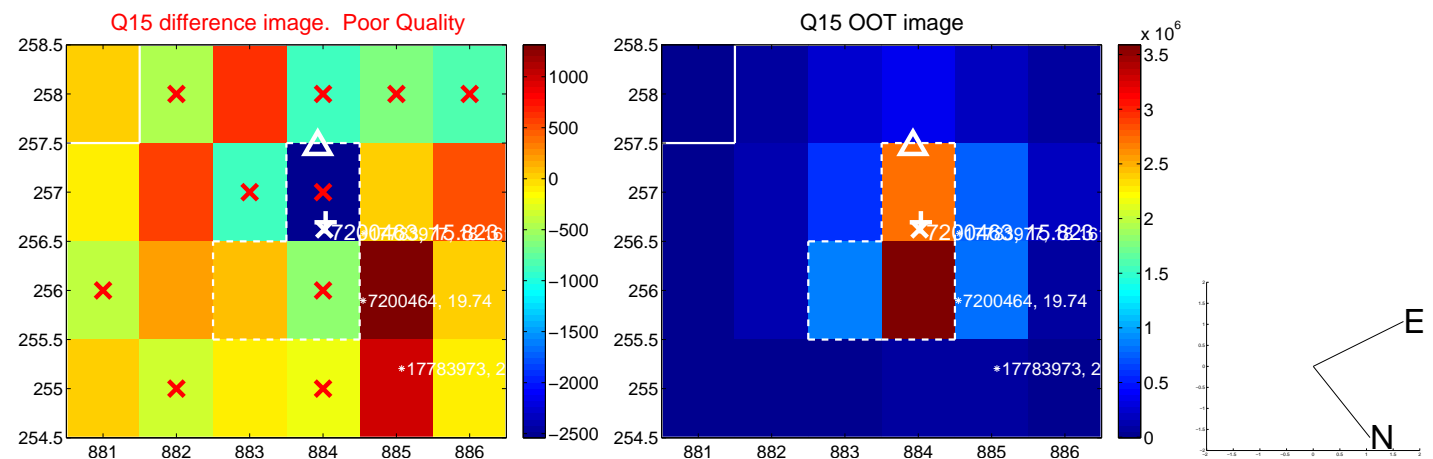
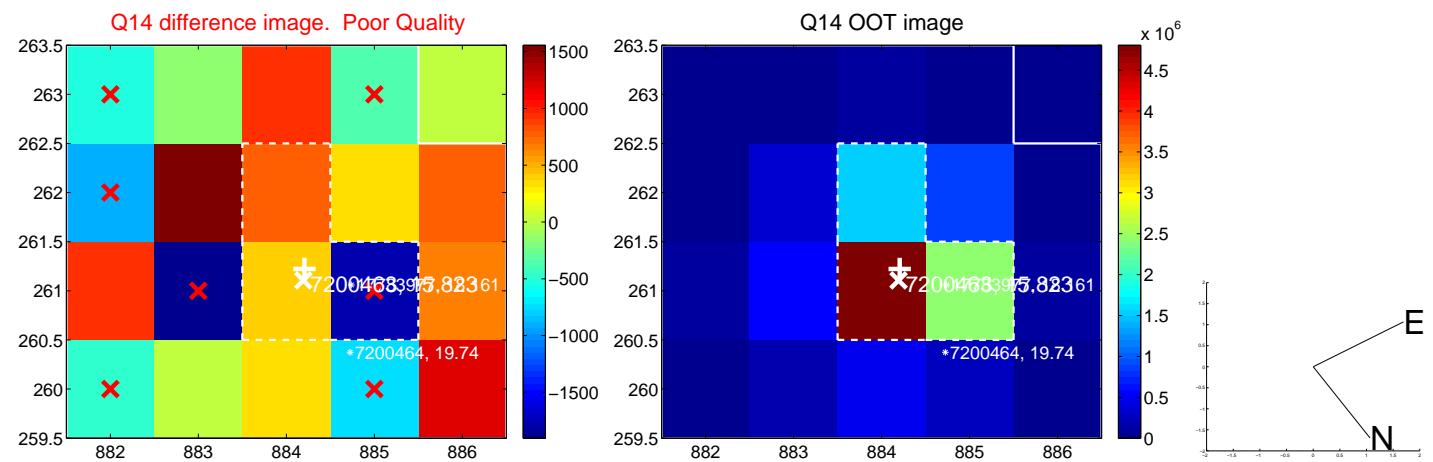
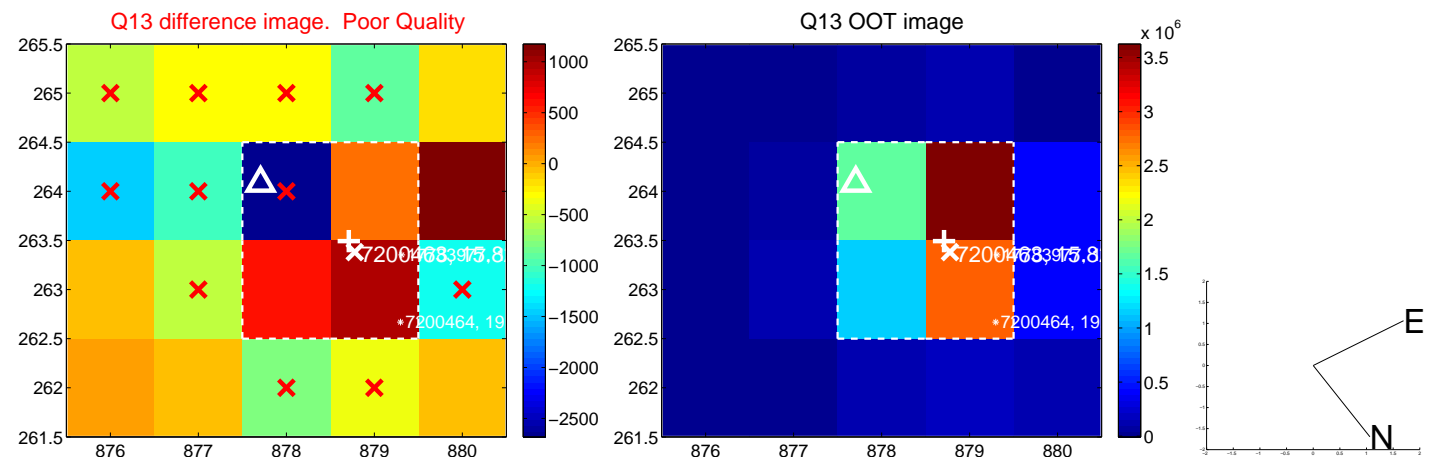
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



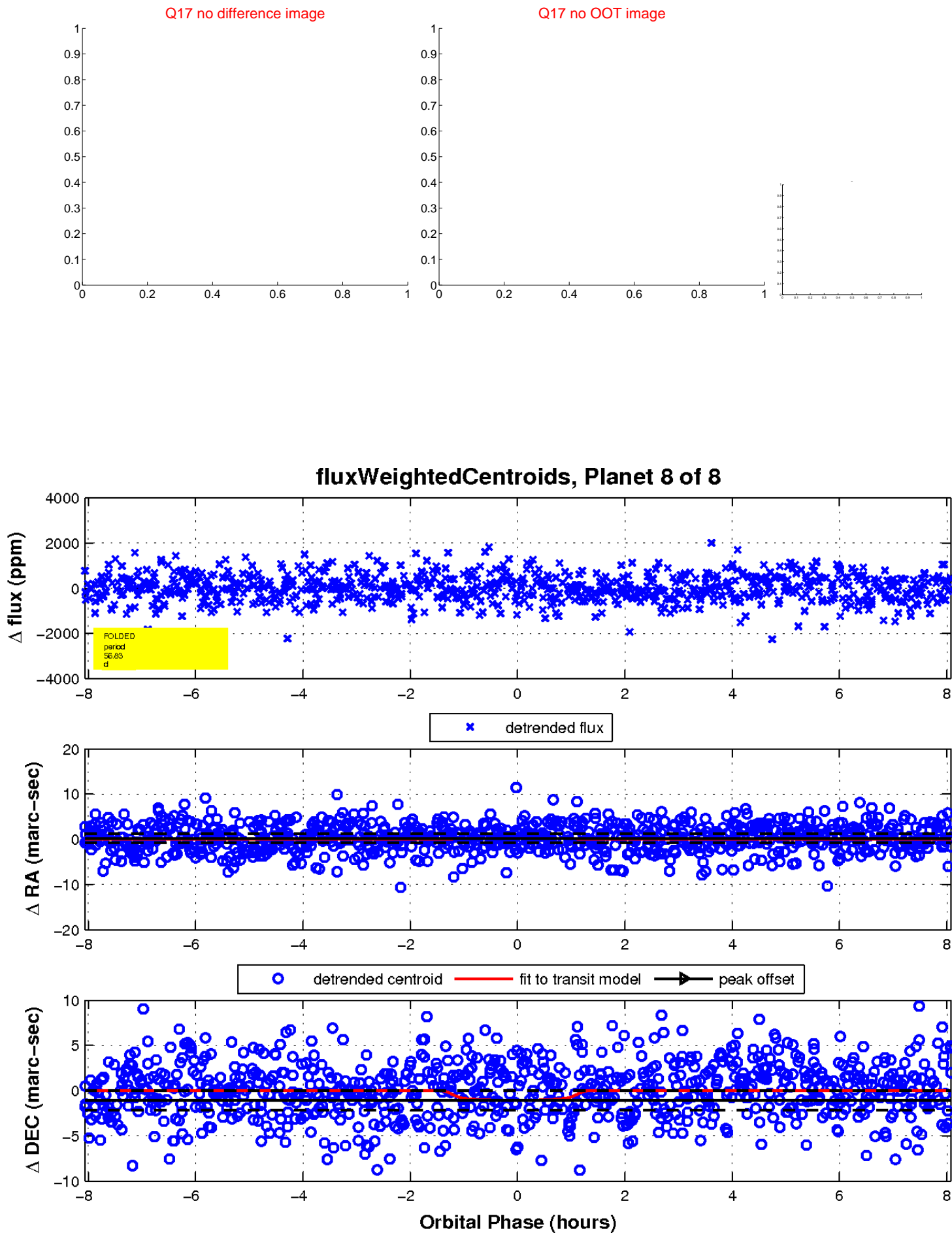
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

Declination

