

# KIC 009715923

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009715923-01	OBS	No	0.694561	131.797987	2.7	5.202	9.1	1.7	3.64	7105	0.61	83197.88
009715923-02	OBS	No	8.985471	132.812379	202.5	0.905	12.7	11.7	3.64	7105	5.29	2739.50
009715923-04	OBS	No	9.288268	137.020221	260.0	1.287	11.3	15.7	3.64	7105	6.61	2621.07
009715923-05	OBS	No	3.847139	133.473597	178.8	1.156	12.1	15.2	3.64	7105	5.07	8489.37
009715923-06	OBS	No	8.374381	138.808874	320.5	0.587	9.3	12.2	3.64	7105	7.23	3009.23
009715923-07	OBS	No	8.976706	134.628131	164.2	1.257	10.9	10.0	3.64	7105	5.01	2743.07
009715923-08	OBS	No	6.908270	135.222405	274.6	0.699	10.8	13.0	3.64	7105	6.24	3889.56
009715923-09	OBS	No	11.309767	136.928988	256.2	0.665	9.4	10.1	3.64	7105	6.66	2015.83
009715923-10	OBS	No	10.461333	138.428607	219.1	1.442	9.8	9.3	3.64	7105	5.46	2236.71

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009715923-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_DIFFS
009715923-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009715923-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS
009715923-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV
009715923-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_DIFFS
009715923-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—HALO_GHOST
009715923-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009715923-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009715923-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_MEAS

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

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

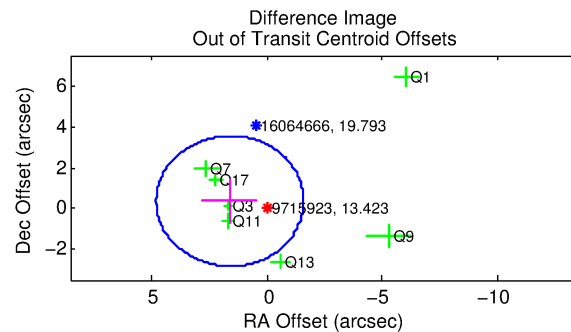
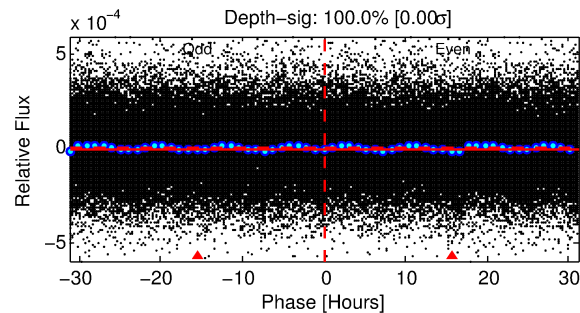
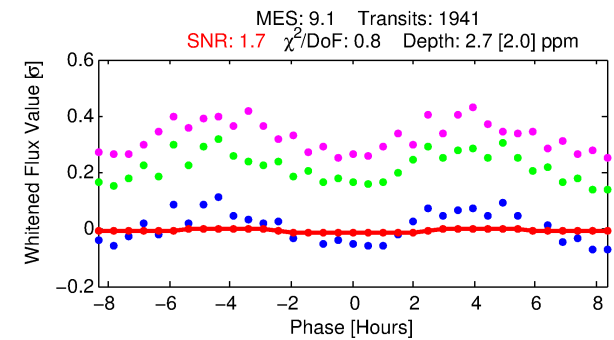
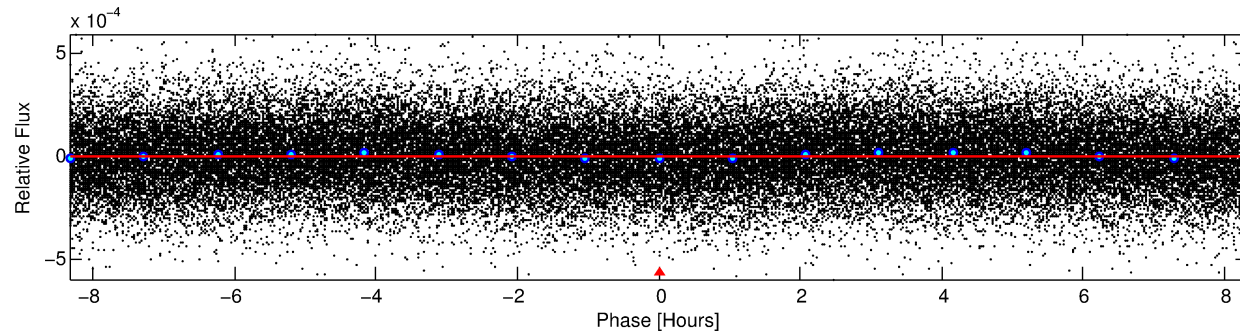
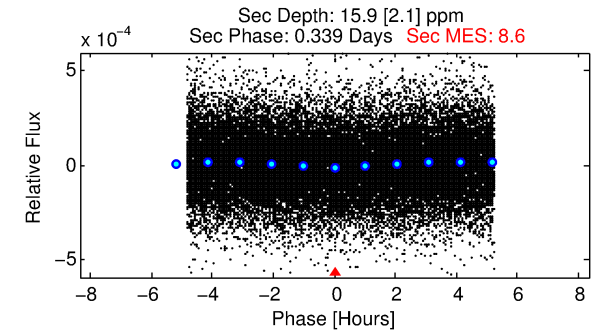
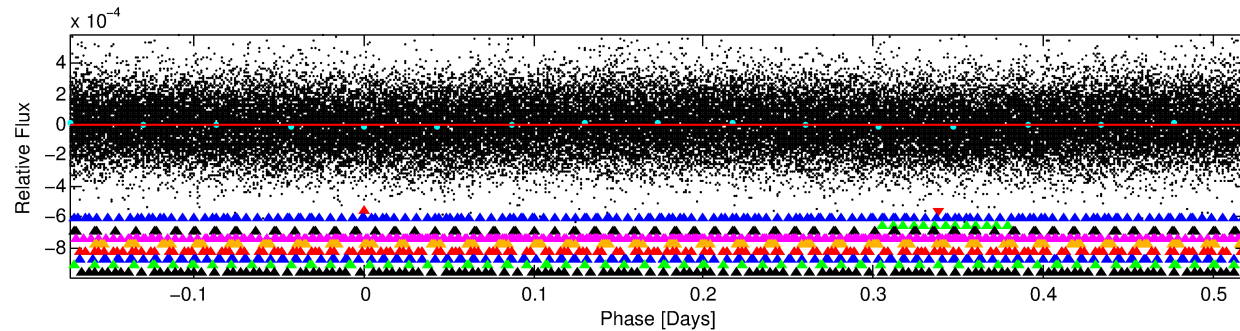
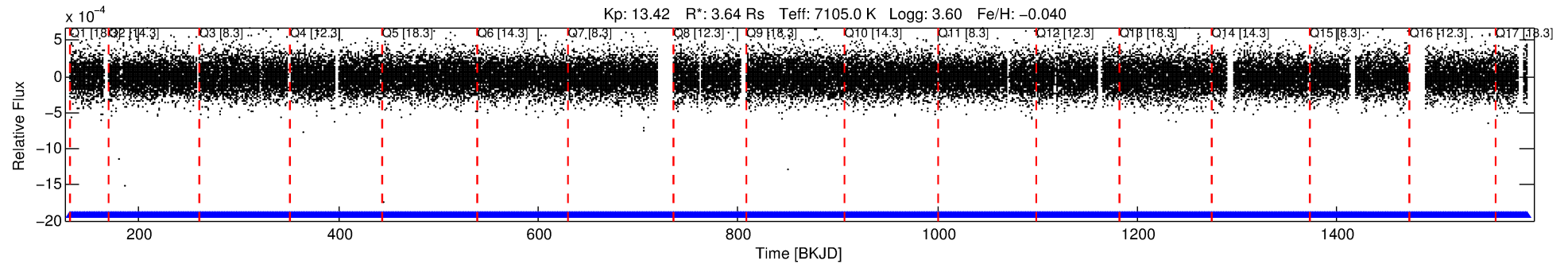
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 009715923-01

No Significant Match Found

# DV One-Page Summary

KIC: 9715923 Candidate: 1 of 10 Period: 0.695 d



## DV Fit Results:

Period = 0.69456 [0.00007] d  
Epoch = 131.7980 [0.0267] BKJD  
Rp/R\* = 0.0015 [0.0054]  
a/R\* = 1.19 [7.21]  
b = 0.30 [63.28]  
Seff = 83197.88 [43255.45]  
Teq = 4331 [563] K  
Rp = 0.61 [2.17] Re  
a = 0.0191 [0.0060] AU  
Ag = 8.65 [61.75] [0.12σ]  
Teffp = 11484 [20440] K [0.35σ]

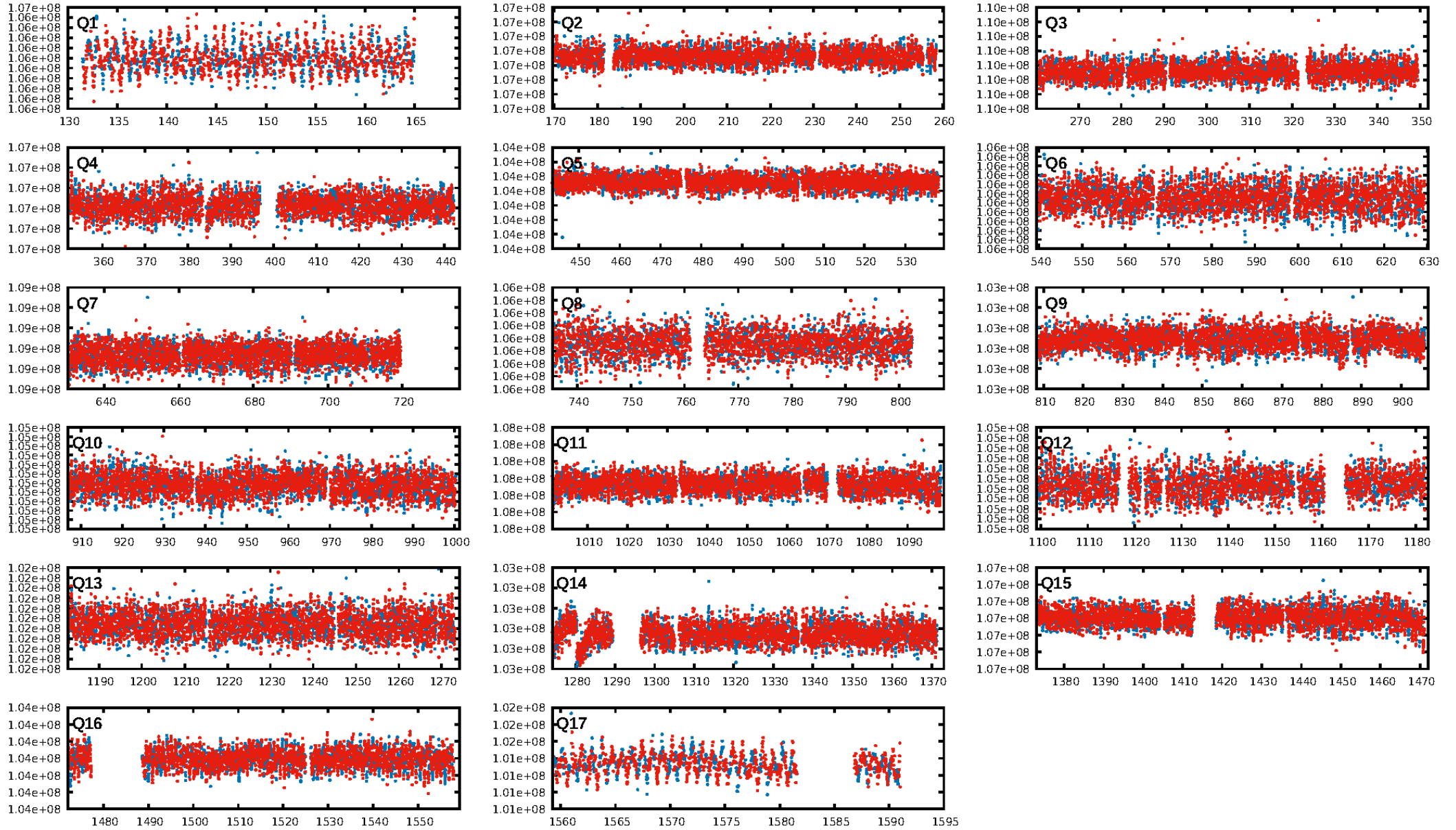
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [14.20σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1854/1854]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 1.634 arcsec [1.54σ]  
KicOffset-rm: 1.569 arcsec [1.16σ]  
OotOffset-st: 0/3/0/4 [7]  
KicOffset-st: 0/3/0/4 [7]  
DiffImageQuality-fgm: 0.57 [4/7]  
DiffImageOverlap-fno: 1.00 [17/17]

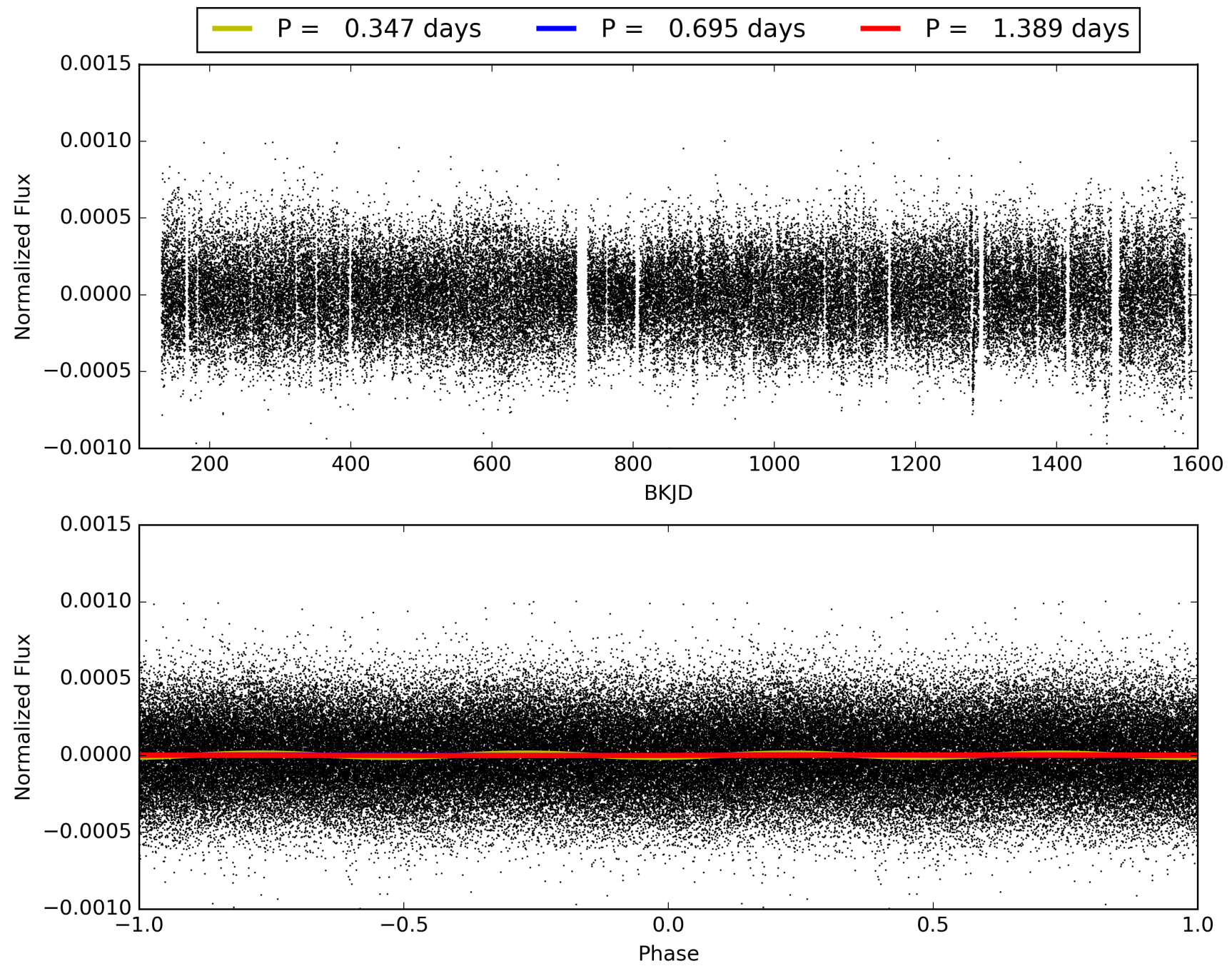
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:00:15 Z

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

# TCE 009715923-01, PDC Light Curves



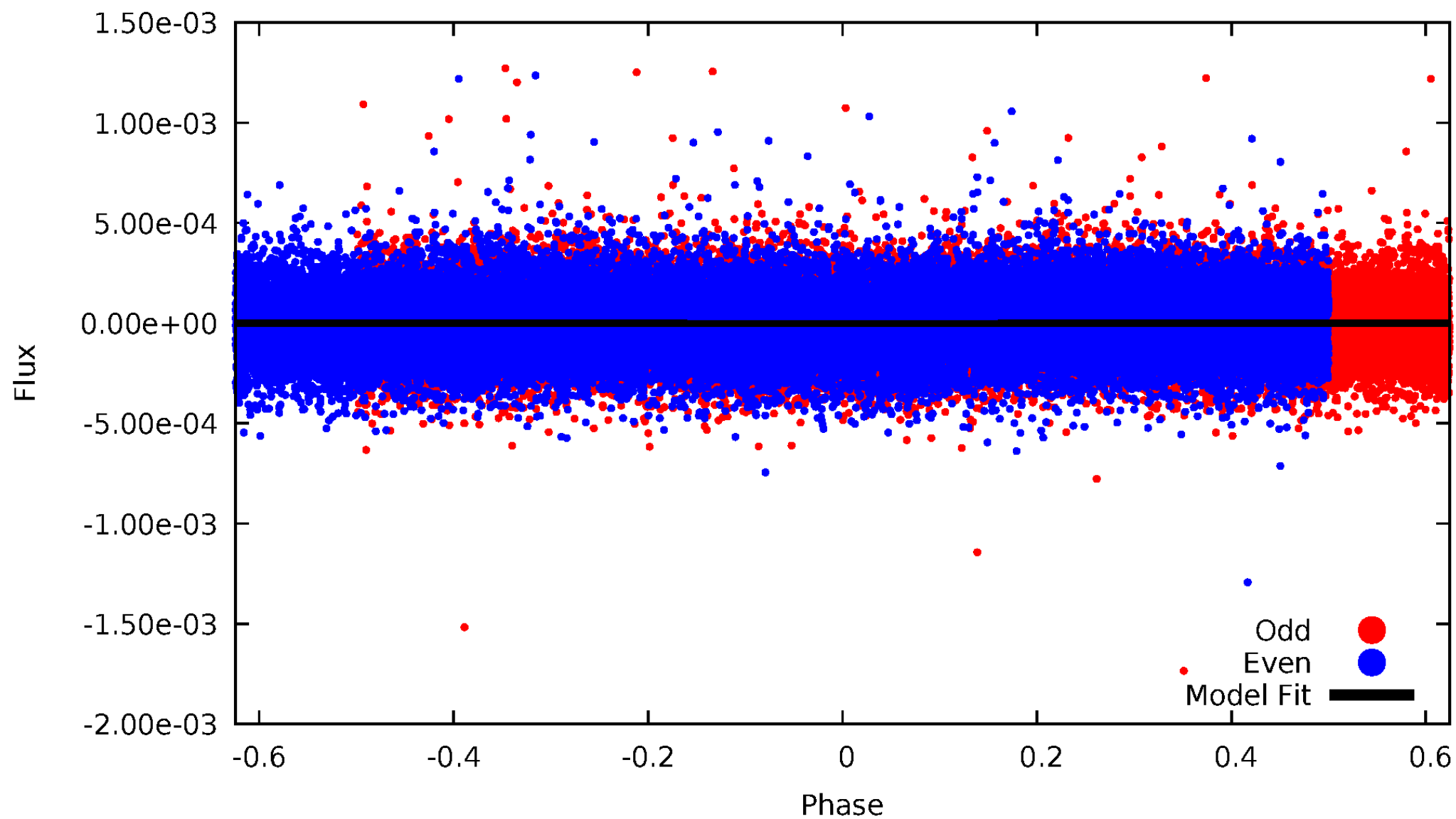
TCE 009715923-01





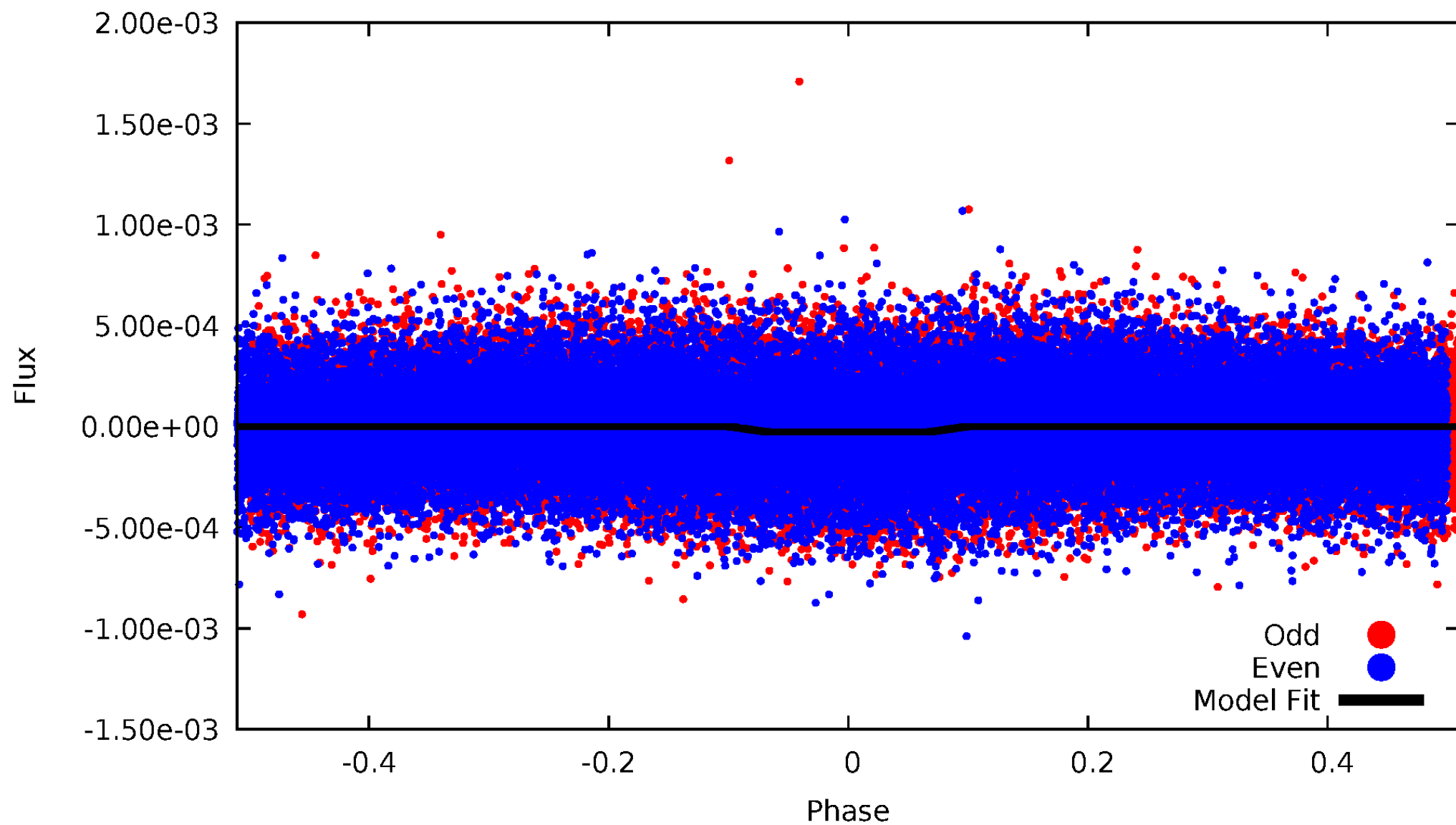
# DV Odd/Even

TCE 009715923-01



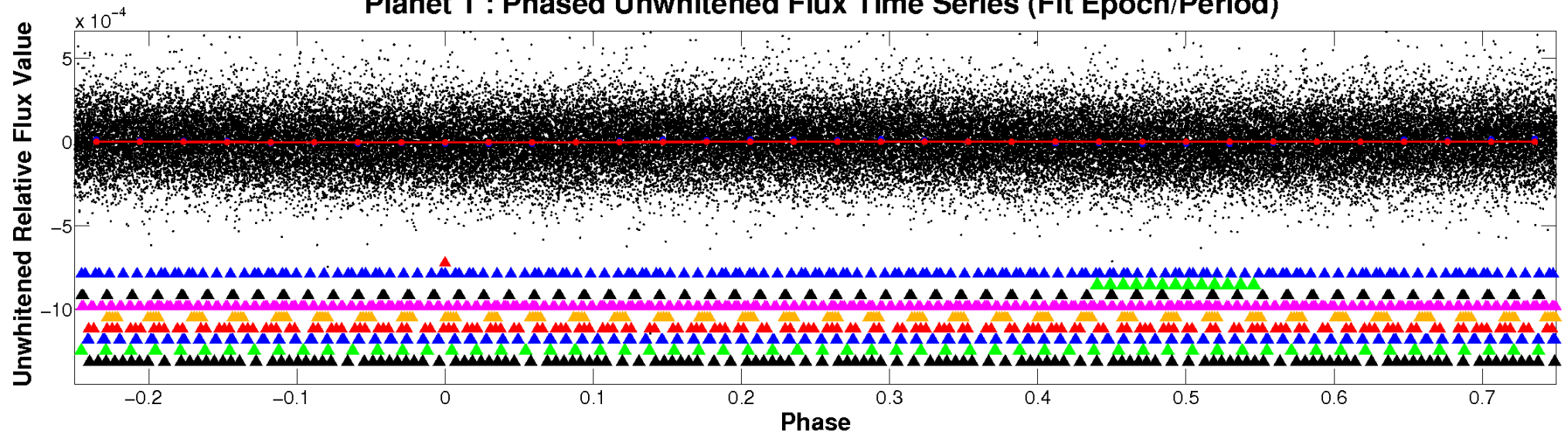
# ALT Odd/Even

TCE 009715923-01

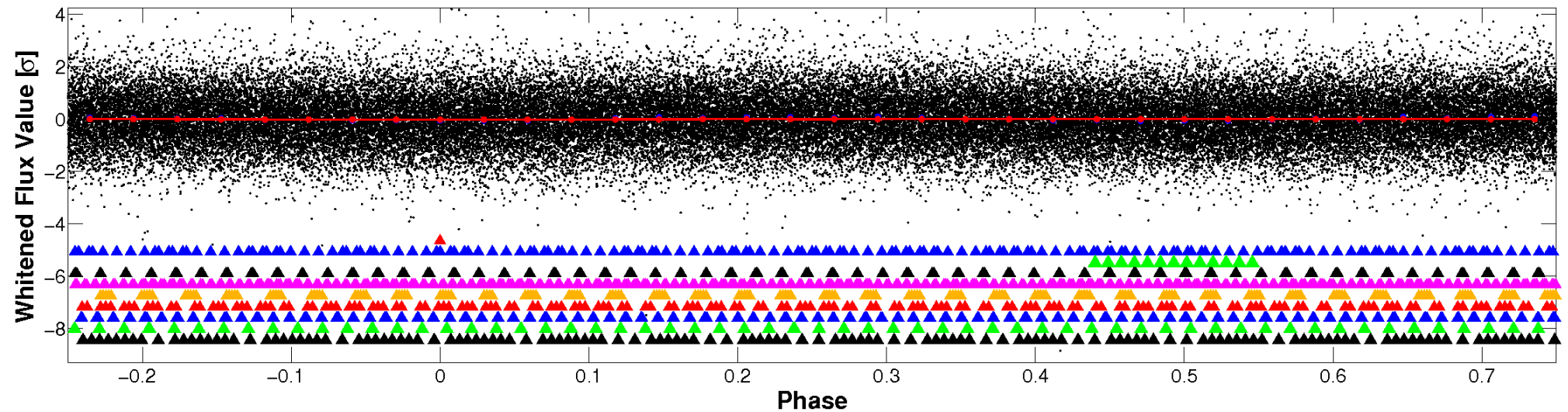


# Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

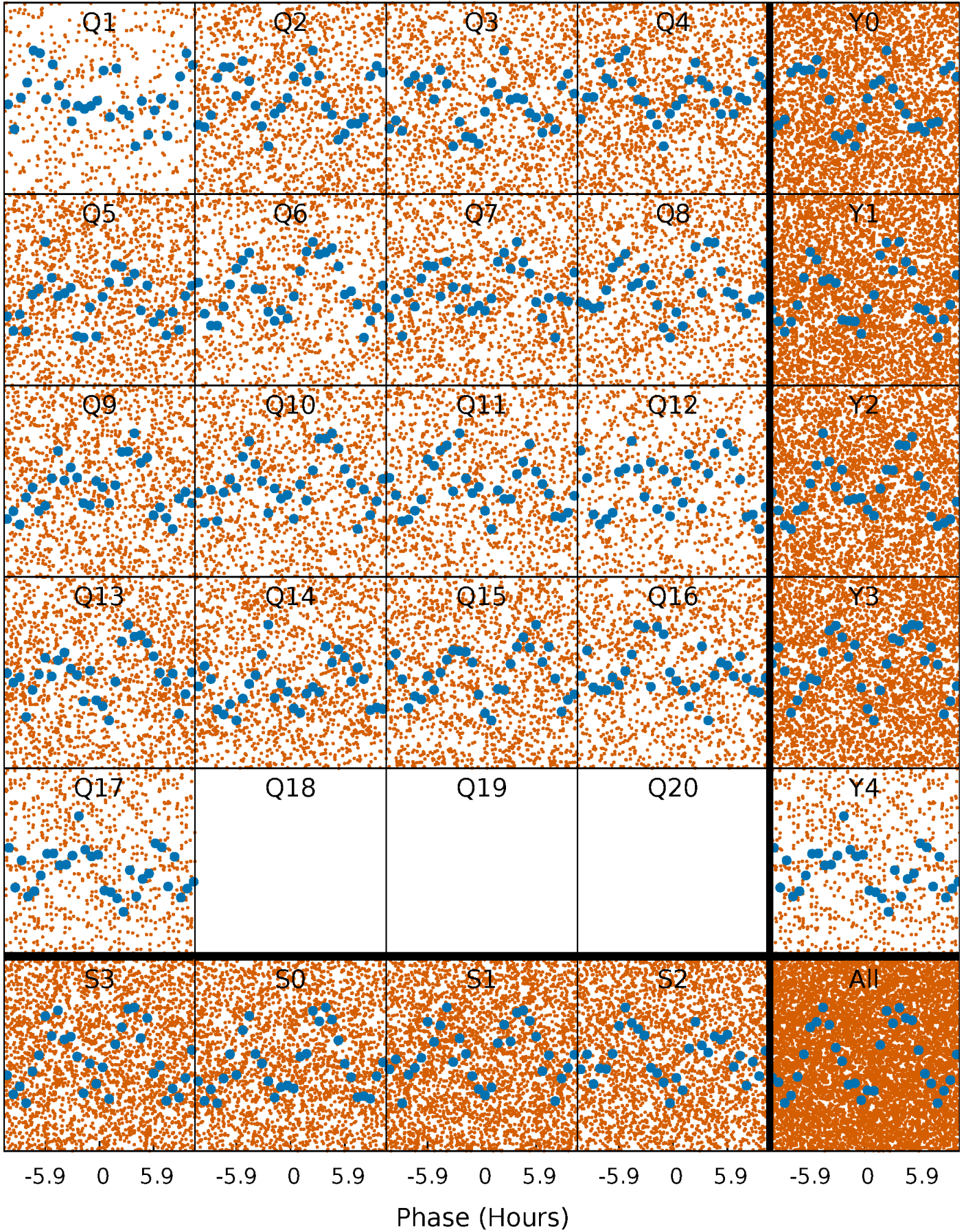


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

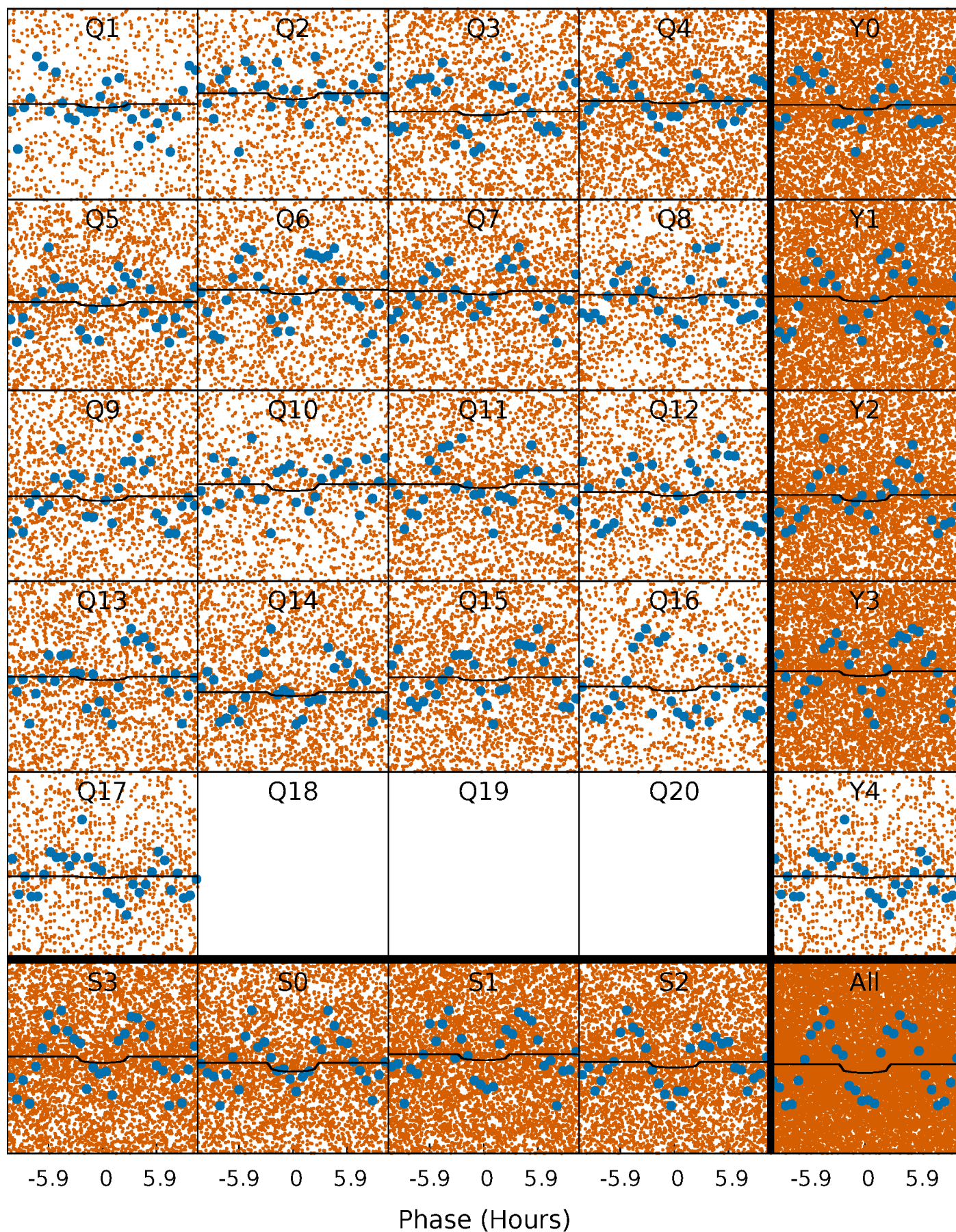
TCE 009715923-01 P= 0.694561 Days  $T_0=131.797987$  (BKJD)





# DV Quarter-Phased Transit Curves

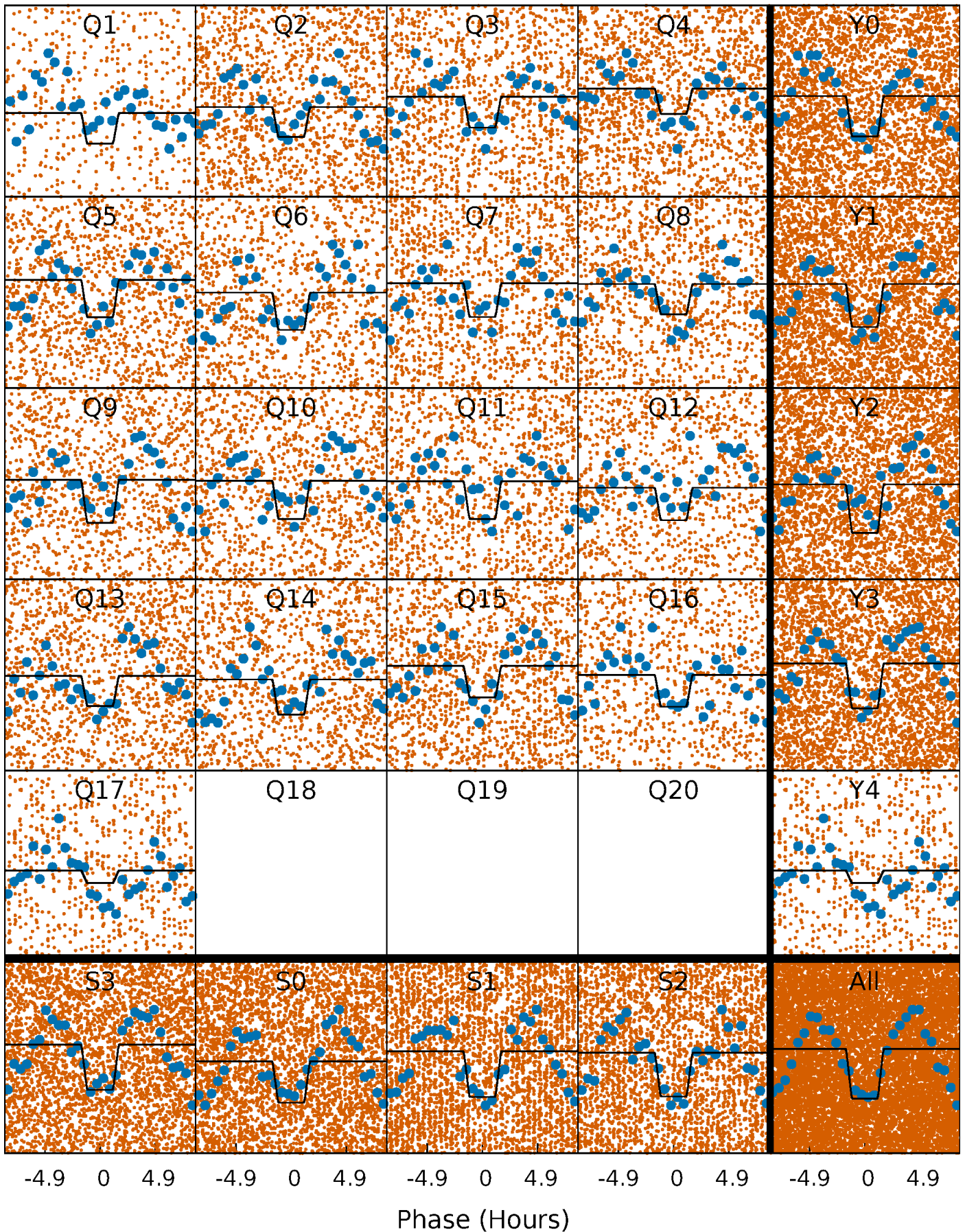
TCE 009715923-01   P= 0.694561 Days    $T_0=131.797987$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

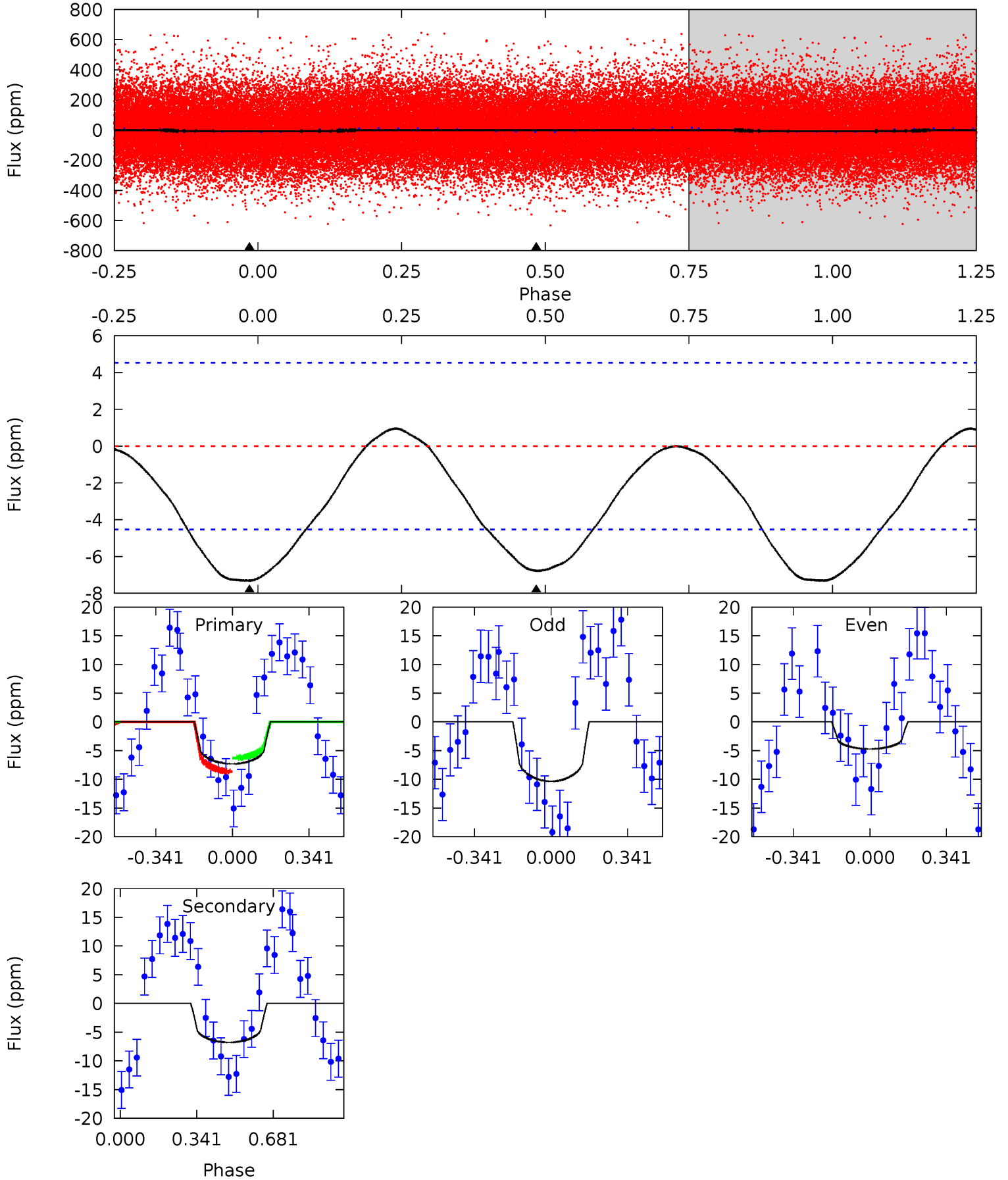
TCE 009715923-01   P= 0.694629 Days    $T_0=131.714514$  (BKJD)



# DV Model-Shift Uniqueness Test

009715923-01, P = 0.694561 Days, E = 131.103426 Days

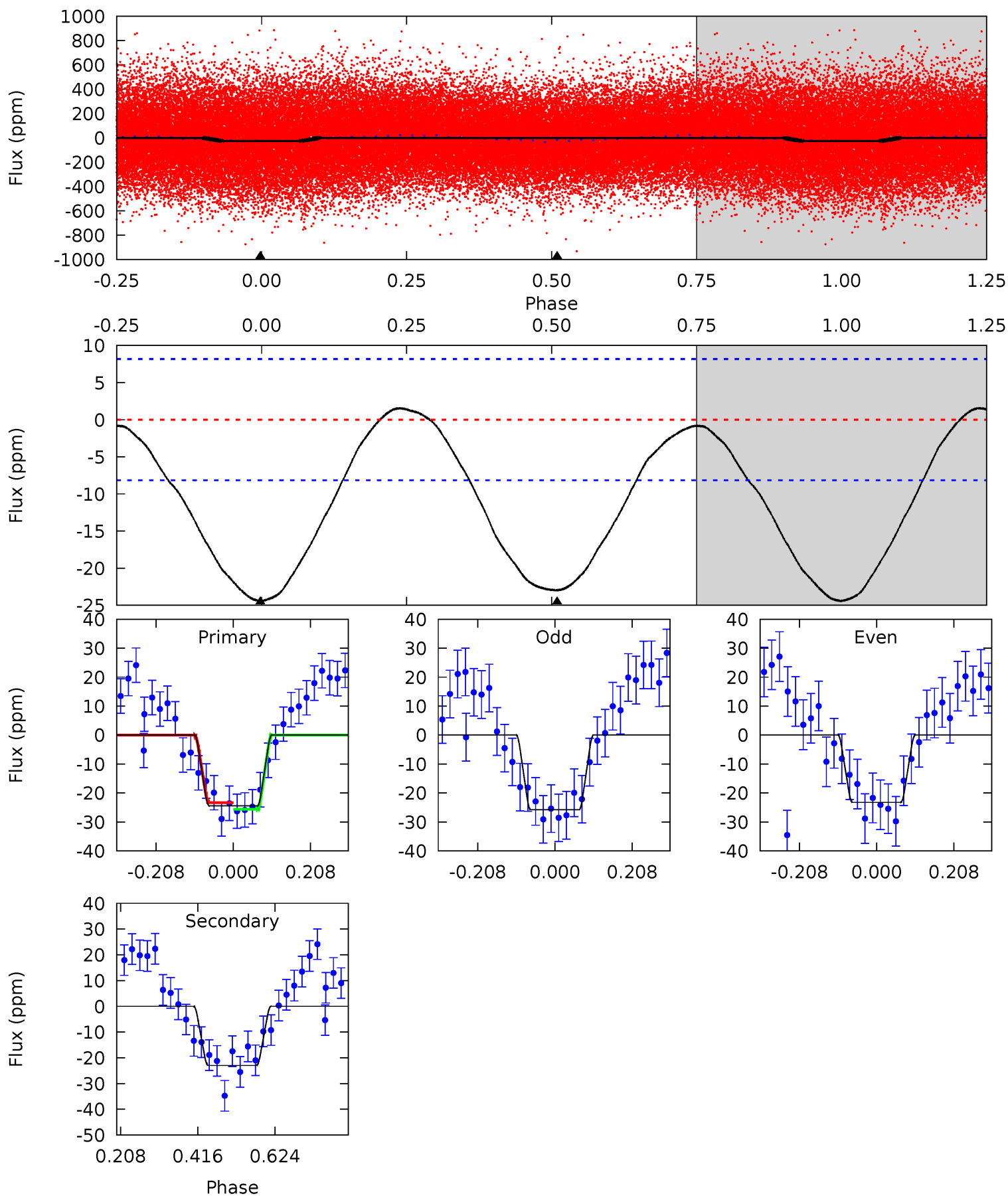
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.95	6.45	0	0	4.30	0.95	0.45	6.95	6.95	6.45	6.45	2.71	0.81	0.12	1.14



# Alt Model-Shift Uniqueness Test

009715923-01, P = 0.694629 Days, E = 131.019885 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
13.2	12.4	0	0	4.41	1.26	0.65	13.2	13.2	12.4	12.4	0.69	0.83	0.06	0.60





### Stellar Parameters For KIC 009715923

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7105^{+196}_{-270}$	$3.598^{+0.289}_{-0.051}$	$-0.040^{+0.250}_{-0.250}$	$3.638^{+0.306}_{-1.225}$	$1.912^{+0.168}_{-0.311}$	$0.056^{+0.111}_{-0.010}$
	+3%/-4%	+8%/-1%	+625%/-625%	+8%/-34%	+9%/-16%	+199%/-18%
Source	PHO1	FLK73	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 009715923-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-7 \pm 1$	$1.60^{+1.59}_{-1.13}$	$5892^{+321}_{-498}$	$4582^{+6380}_{-8938}$	$0.513^{+5.631}_{-0.378}$
Alt.	$-23 \pm 2$	$2.30^{+1.85}_{-1.45}$	$5888^{+302}_{-509}$	$5532^{+5605}_{-8720}$	$0.887^{+5.438}_{-0.615}$

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

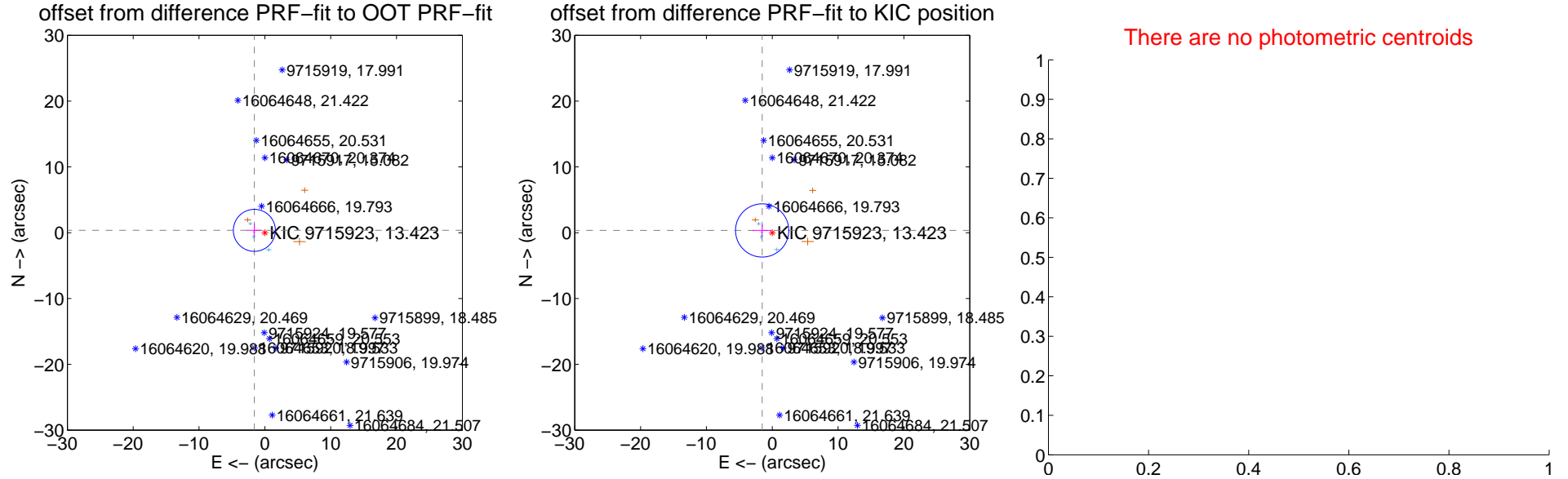
## DV Centroid Data

Supplemental centroid analysis for 009715923-01. Kepler magnitude: 13.42. Transit SNR 1.67

There are 4 quarters with good PRF difference image offsets

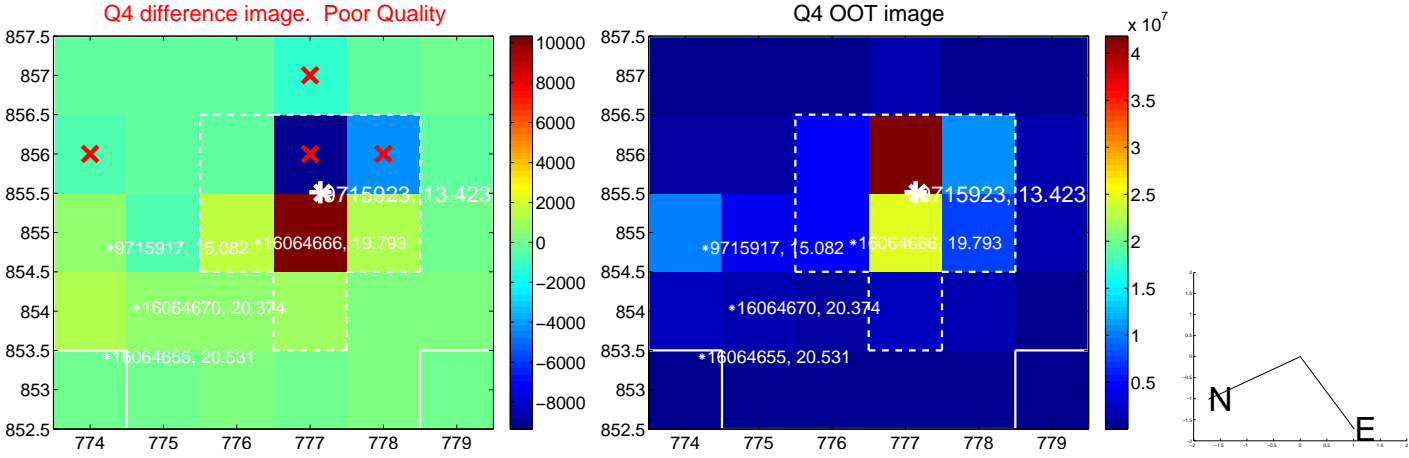
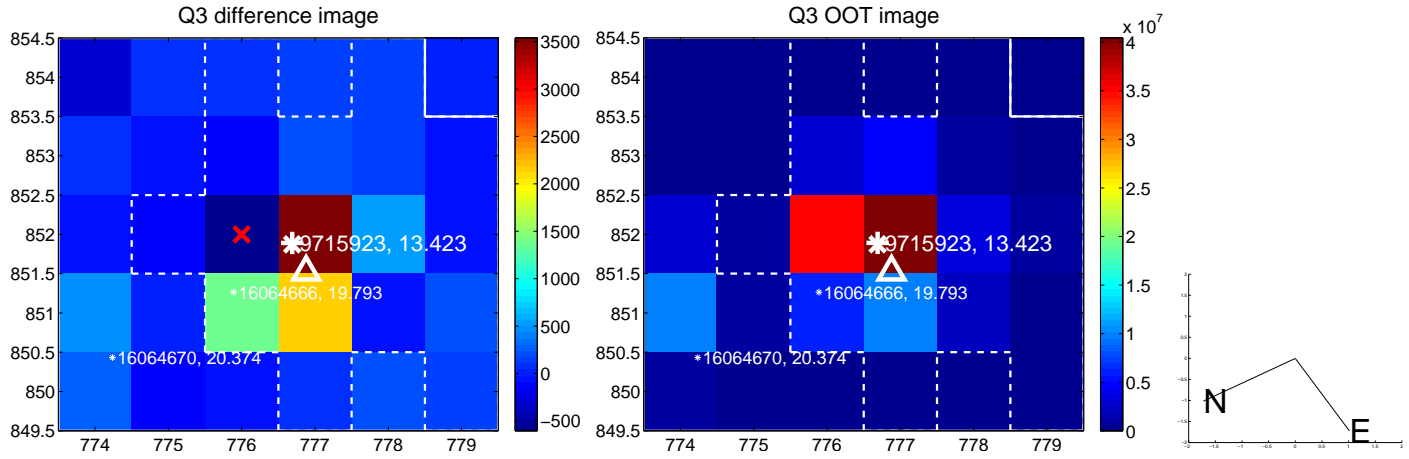
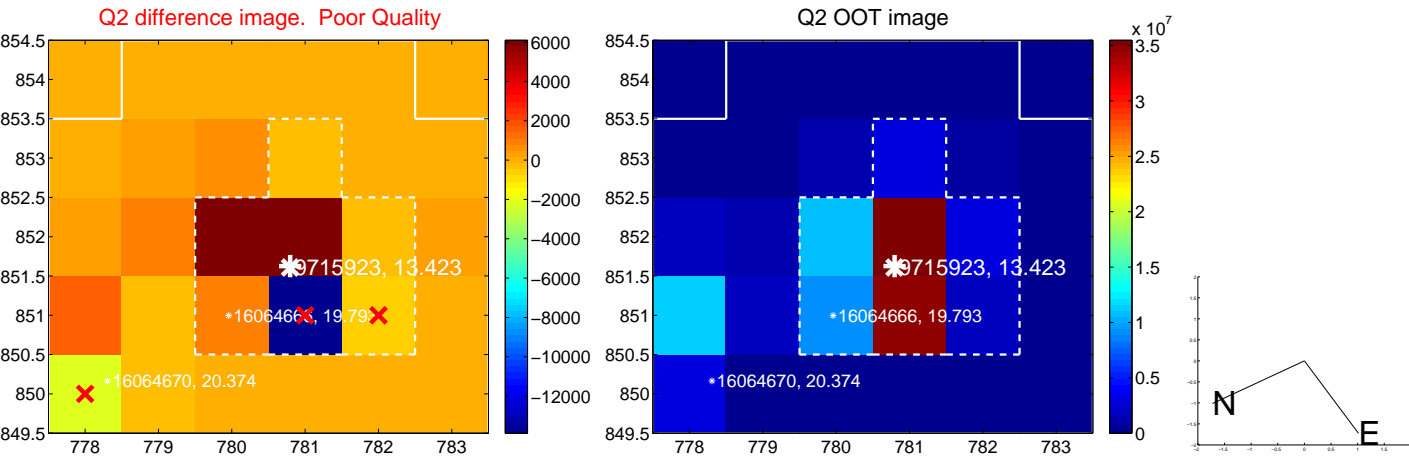
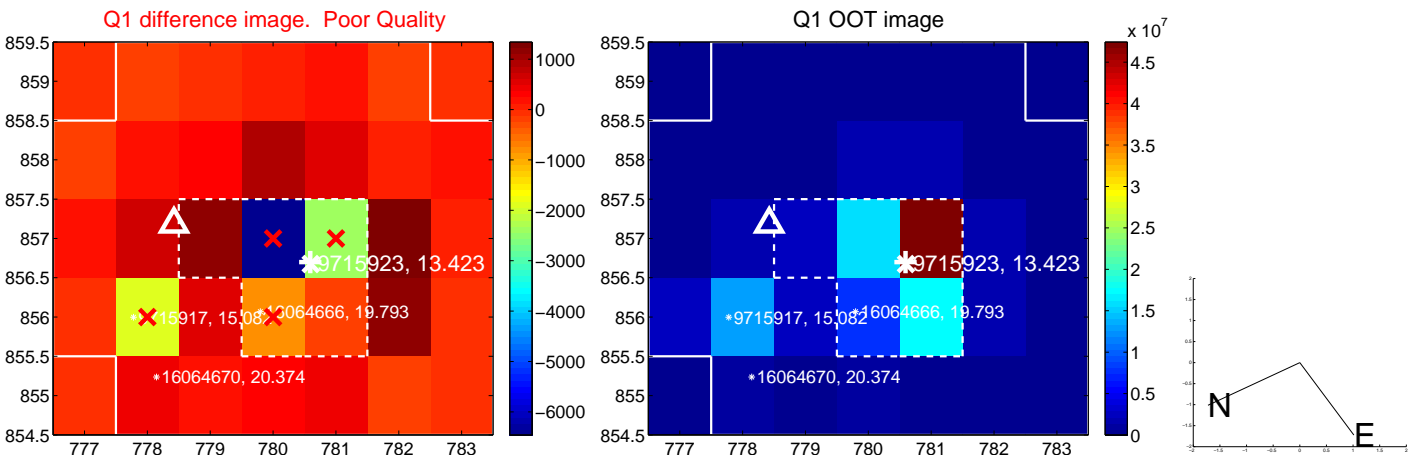
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.634 \pm 1.064$	1.54	$1.594 \pm 1.170$	$0.359 \pm 1.044$
PRF-fit source offset from KIC position	$1.569 \pm 1.348$	1.16	$1.532 \pm 1.467$	$0.341 \pm 0.949$
photometric centroid source offset	—	—	—	—

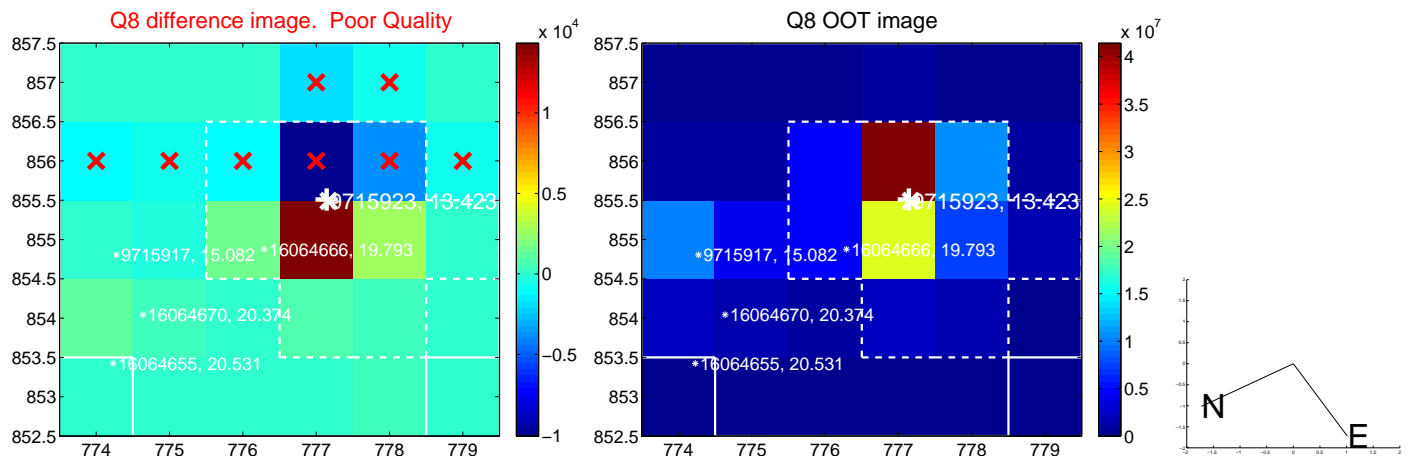
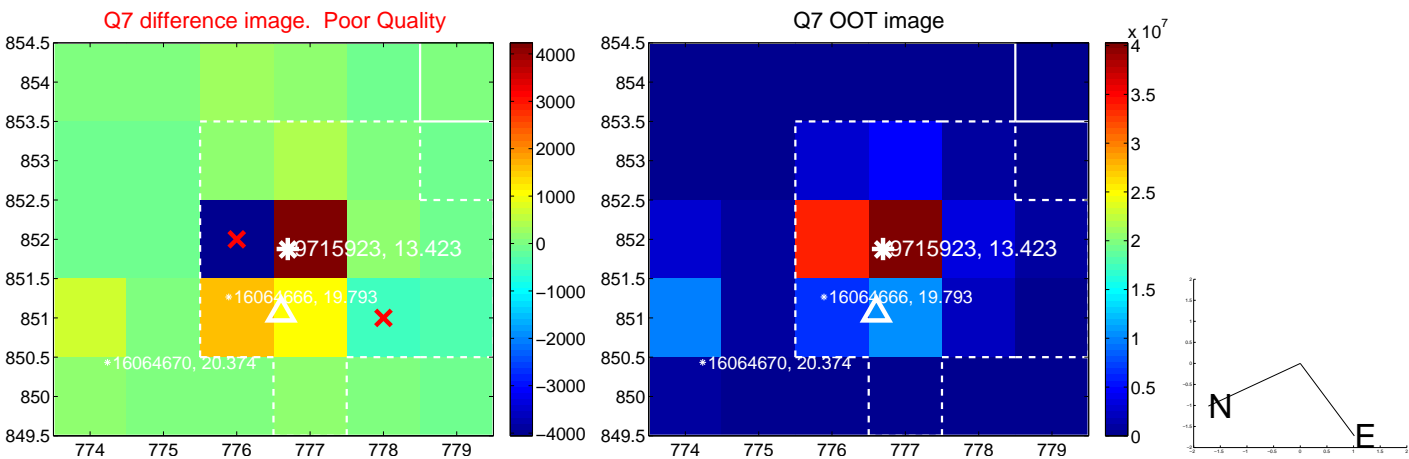
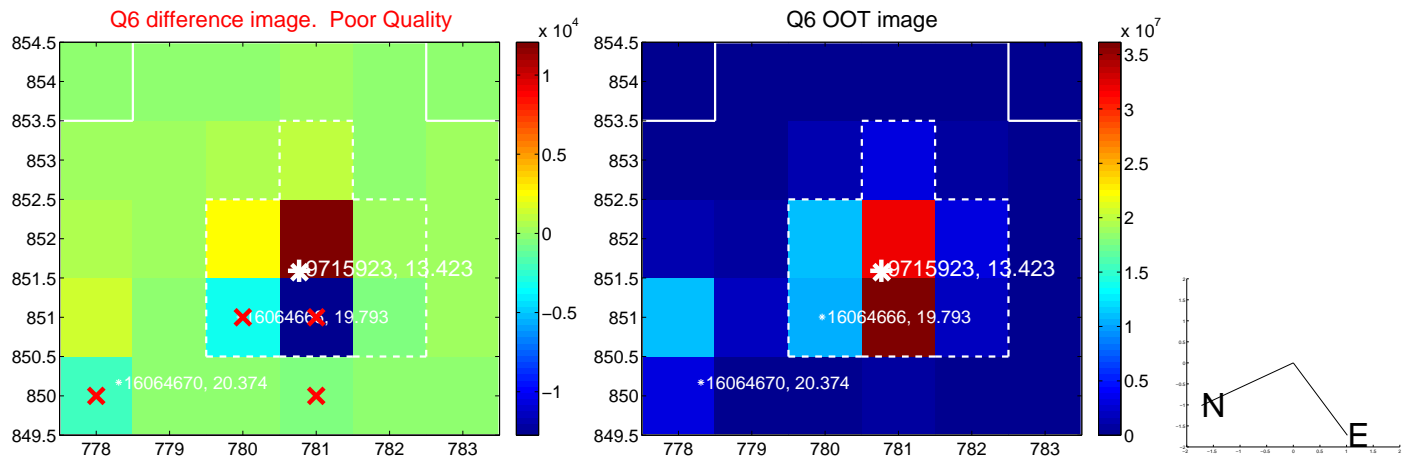
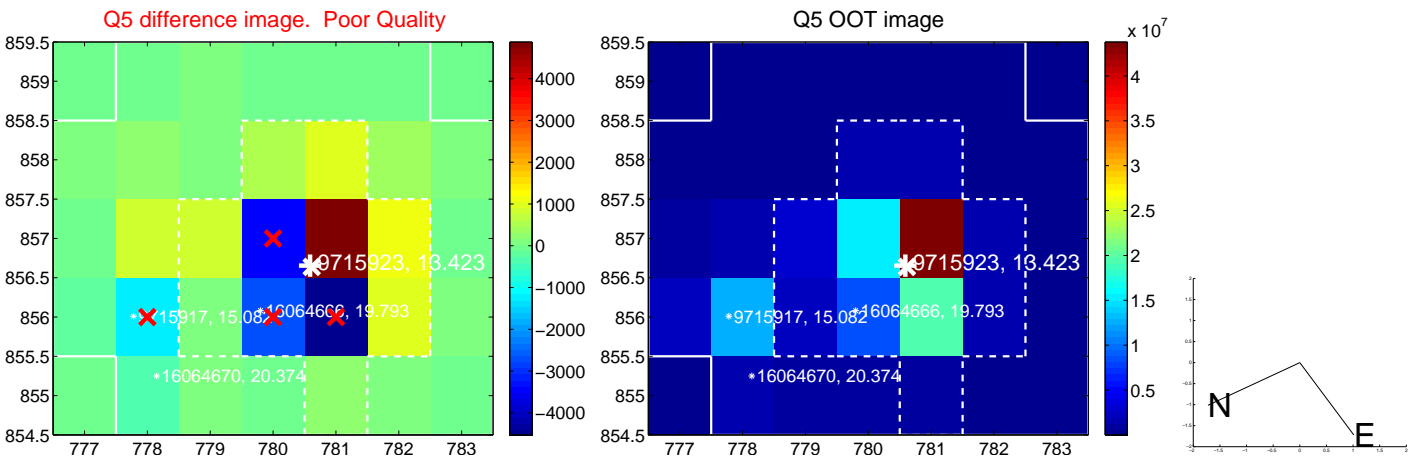


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

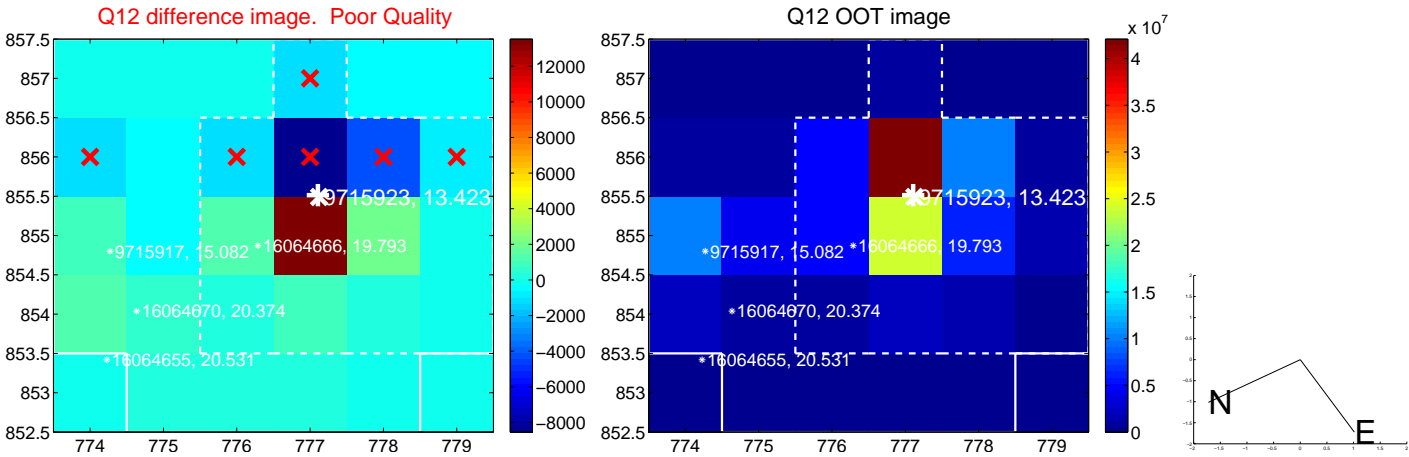
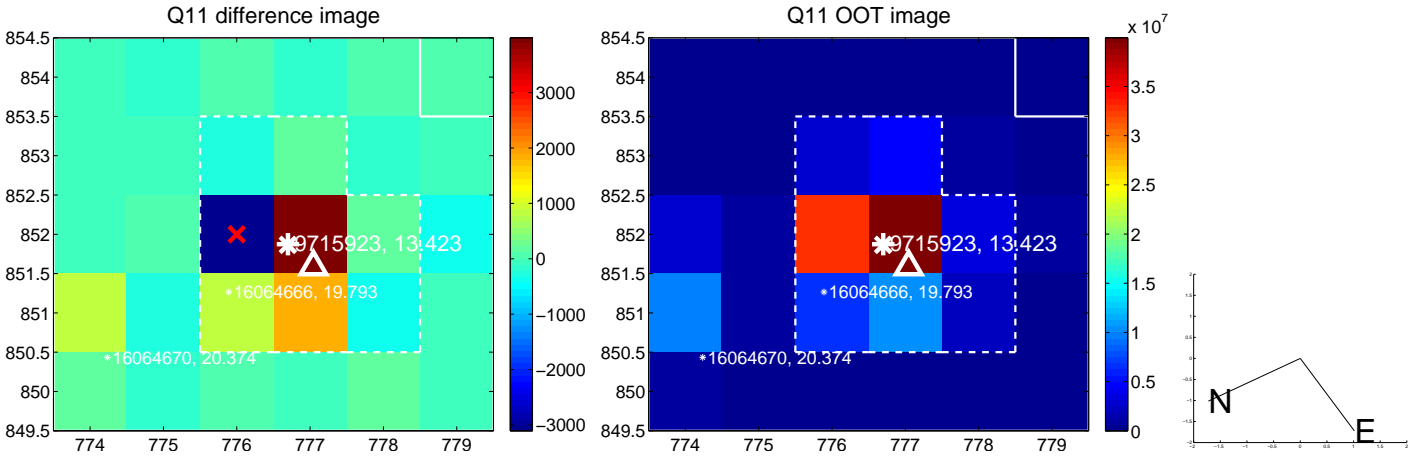
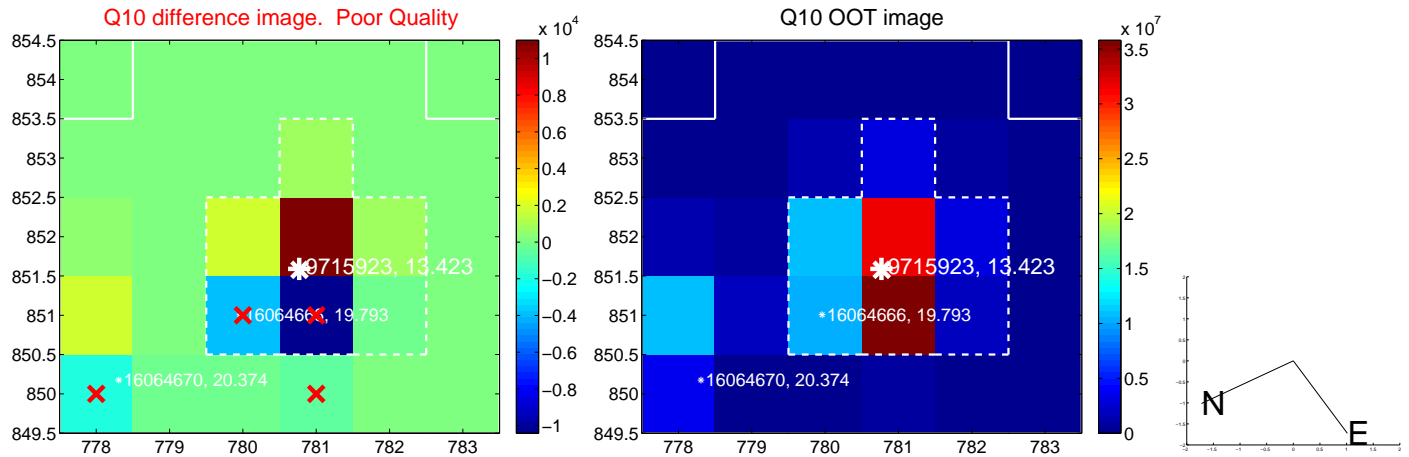
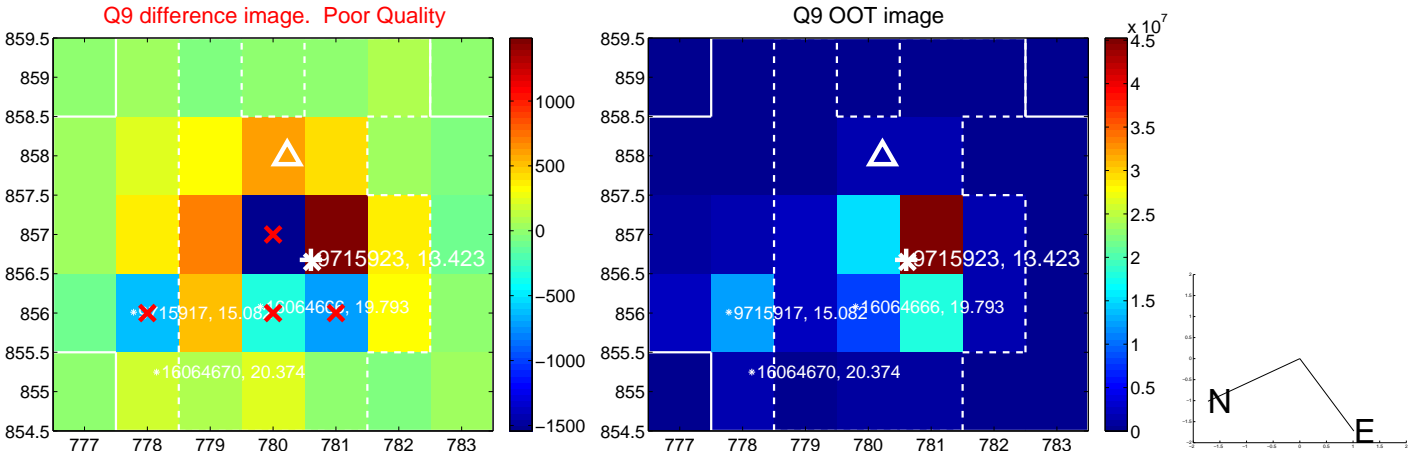


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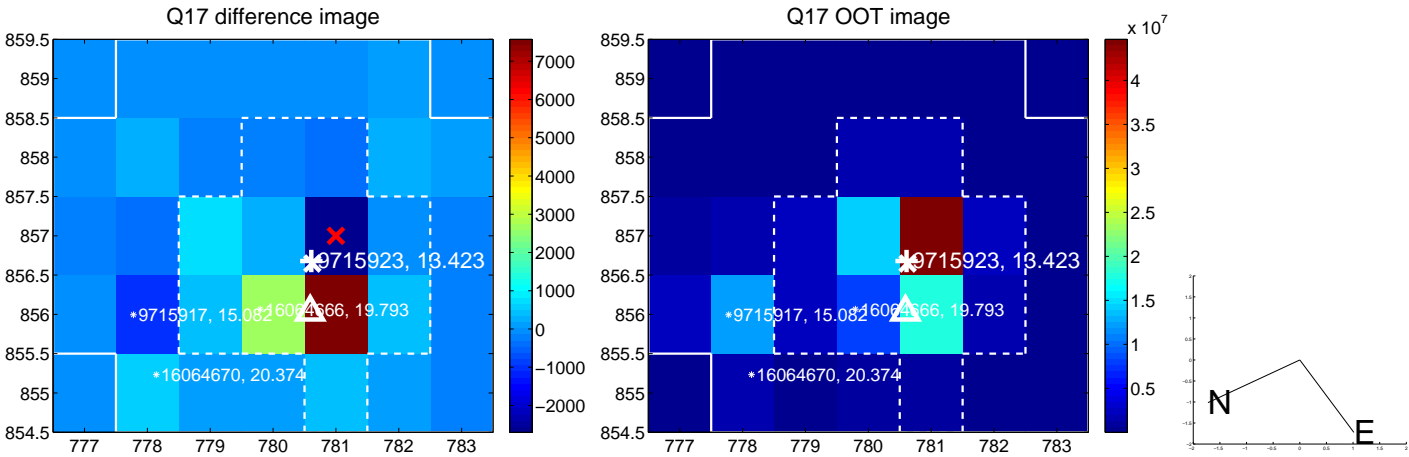


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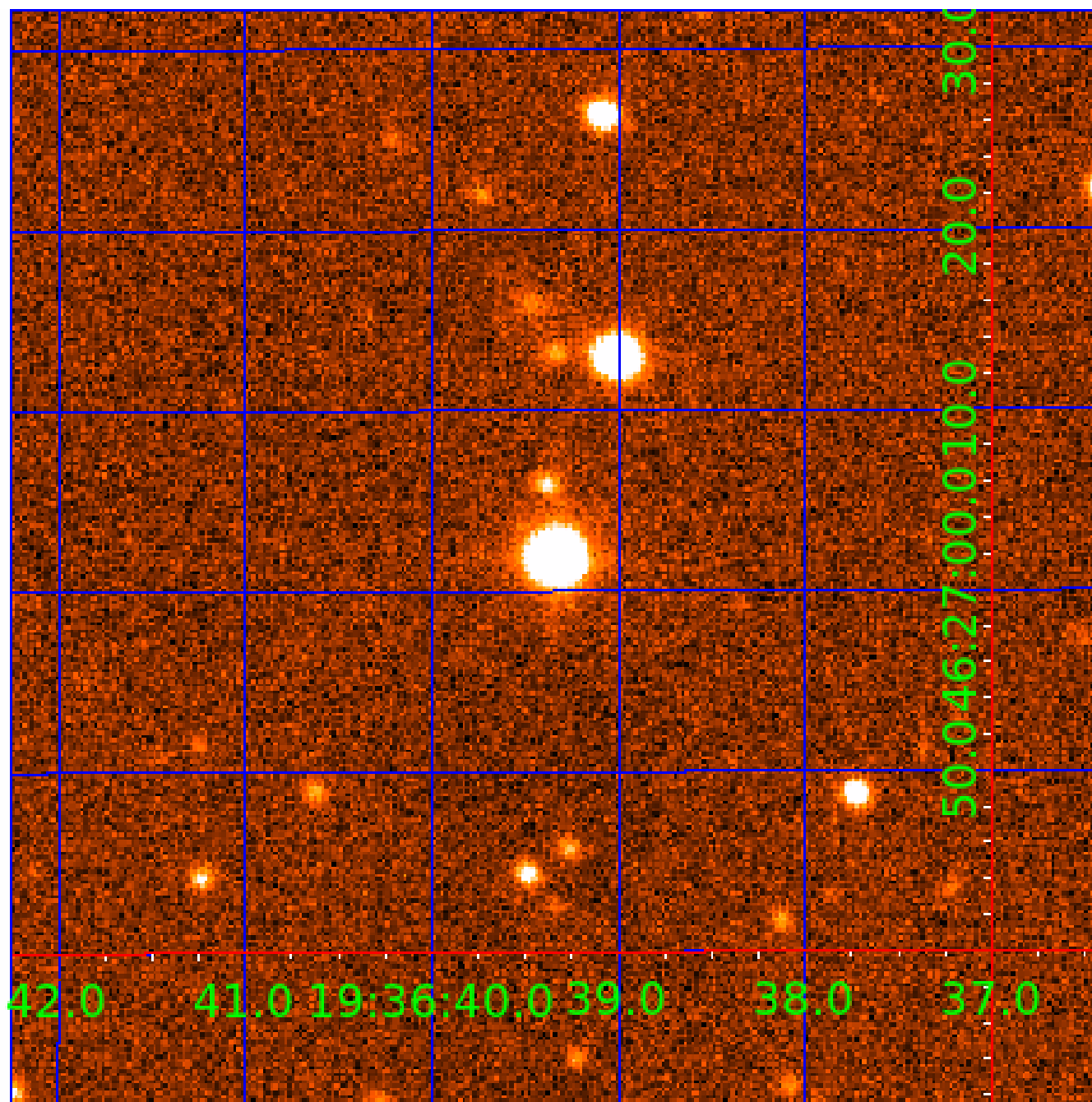
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folded centroid time series figure for this object.

UKIRT Image

Declination





# KIC 009715923

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	$R_{\star}$ ( $R_{\odot}$ )	$T_{\star}$ (K)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
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009715923-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS
009715923-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV
009715923-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_DIFFS
009715923-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—HALO_GHOST
009715923-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009715923-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009715923-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_MEAS

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

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

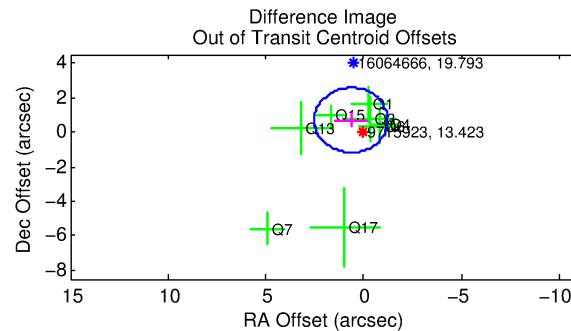
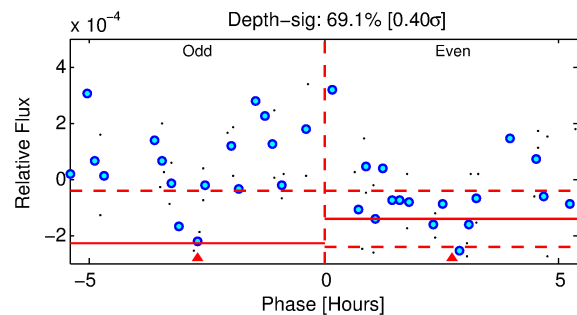
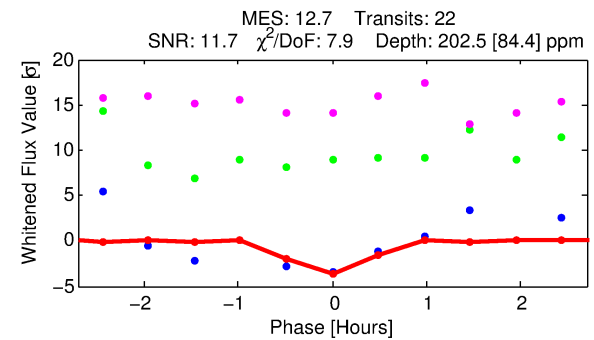
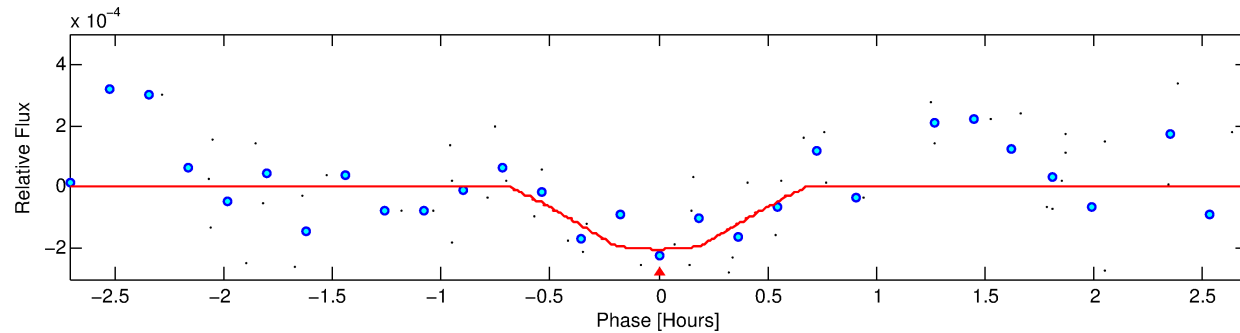
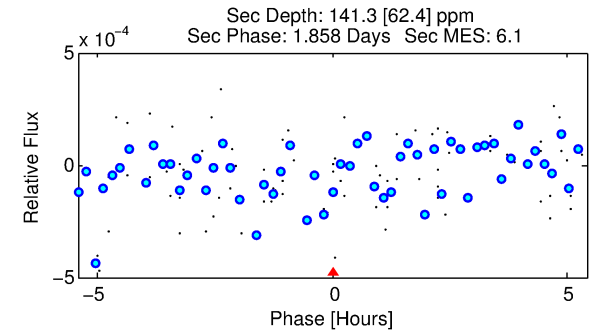
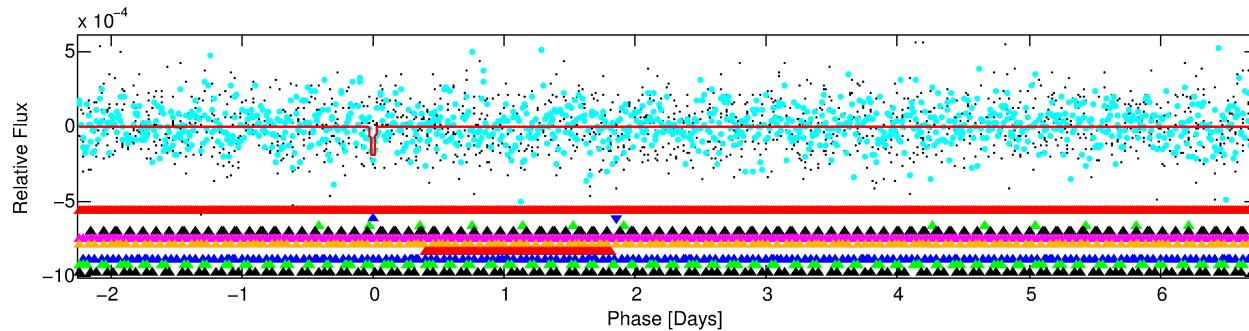
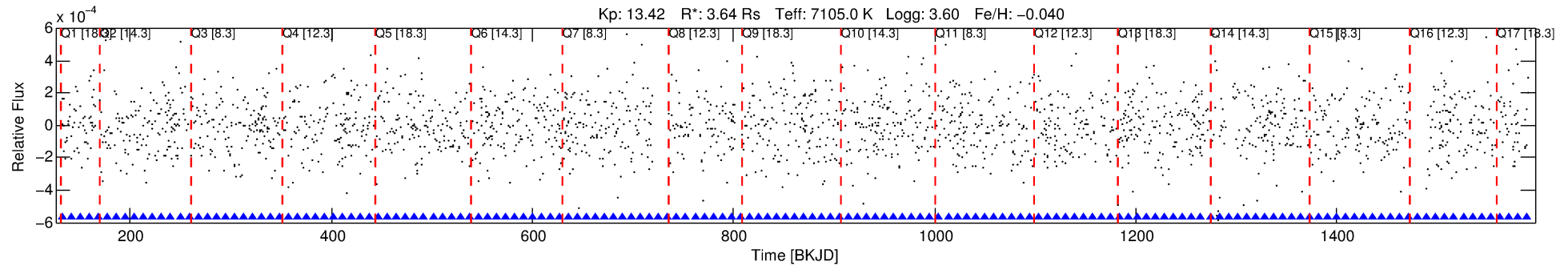
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 009715923-02

No Significant Match Found

# DV One-Page Summary

KIC: 9715923 Candidate: 2 of 10 Period: 8.985 d



## DV Fit Results:

Period = 8.98547 [0.00013] d  
Epoch = 132.8124 [0.0098] BKJD  
Rp/R\* = 0.0133 [0.0963]  
a/R\* = 76.57 [3135.32]  
b = 0.09 [467.01]  
Seff = 2739.50 [1424.29]  
Teq = 1845 [240] K  
Rp = 5.29 [38.29] Re  
a = 0.1050 [0.0331] AU  
Ag = 30.70 [444.71] [0.07 $\sigma$ ]  
Teffp = 6714 [24302] K [0.20 $\sigma$ ]

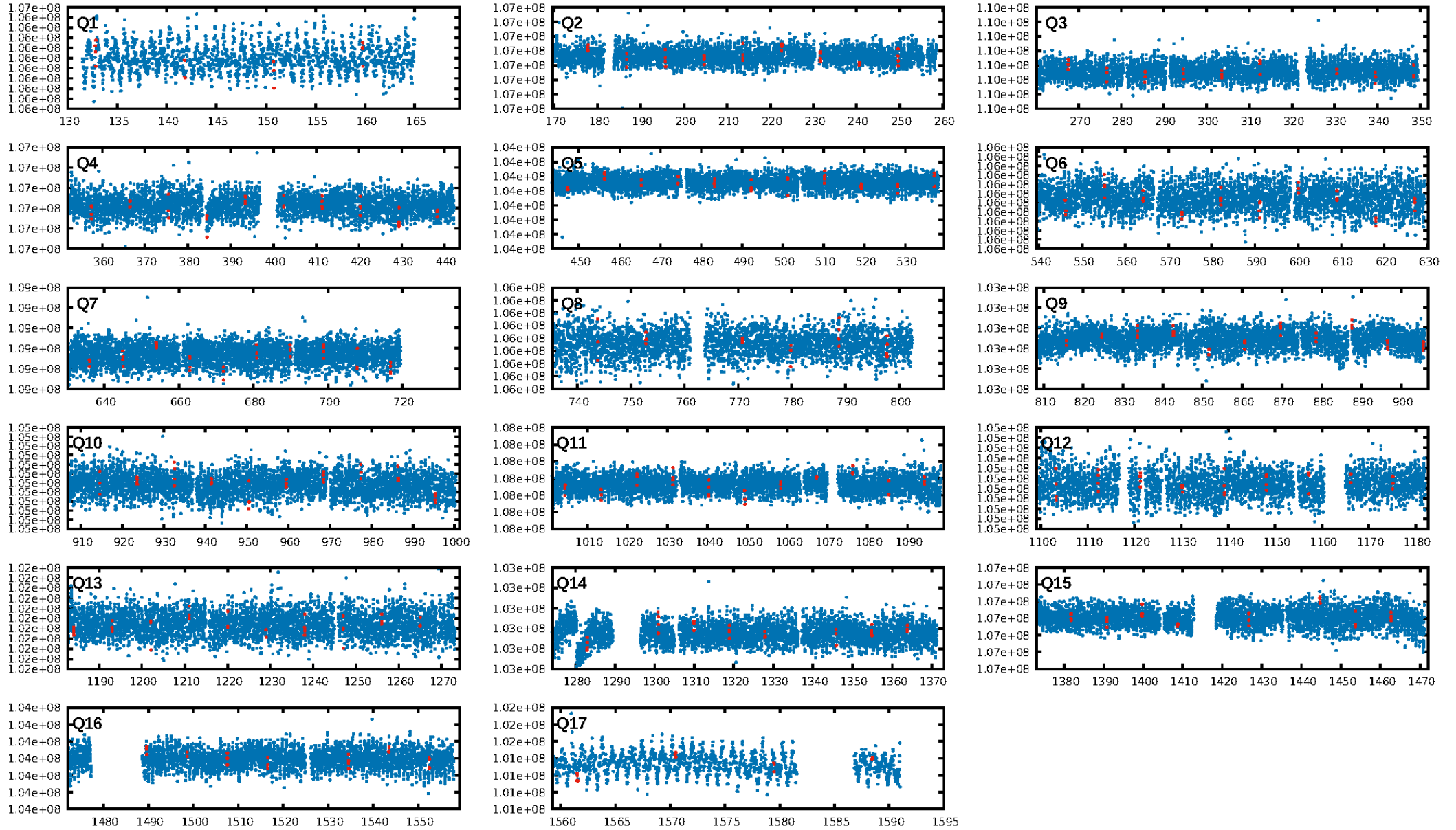
## DV Diagnostic Results:

ShortPeriod-sig: 10.8% [0.14 $\sigma$ ]  
LongPeriod-sig: 100.0% [4.62 $\sigma$ ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.2%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [21/21]  
GhostDiagnostic-chr: -3.822  
Centroid-sig: 16.1%  
Centroid-so: 0.516 arcsec [0.94 $\sigma$ ]  
OotOffset-rm: 0.955 arcsec [1.53 $\sigma$ ]  
KicOffset-rm: 0.914 arcsec [1.58 $\sigma$ ]  
OotOffset-st: 1/3/1/3 [8]  
KicOffset-st: 1/3/1/3 [8]  
DiffImageQuality-fgm: 0.38 [3/8]  
DiffImageOverlap-fno: 0.24 [4/17]

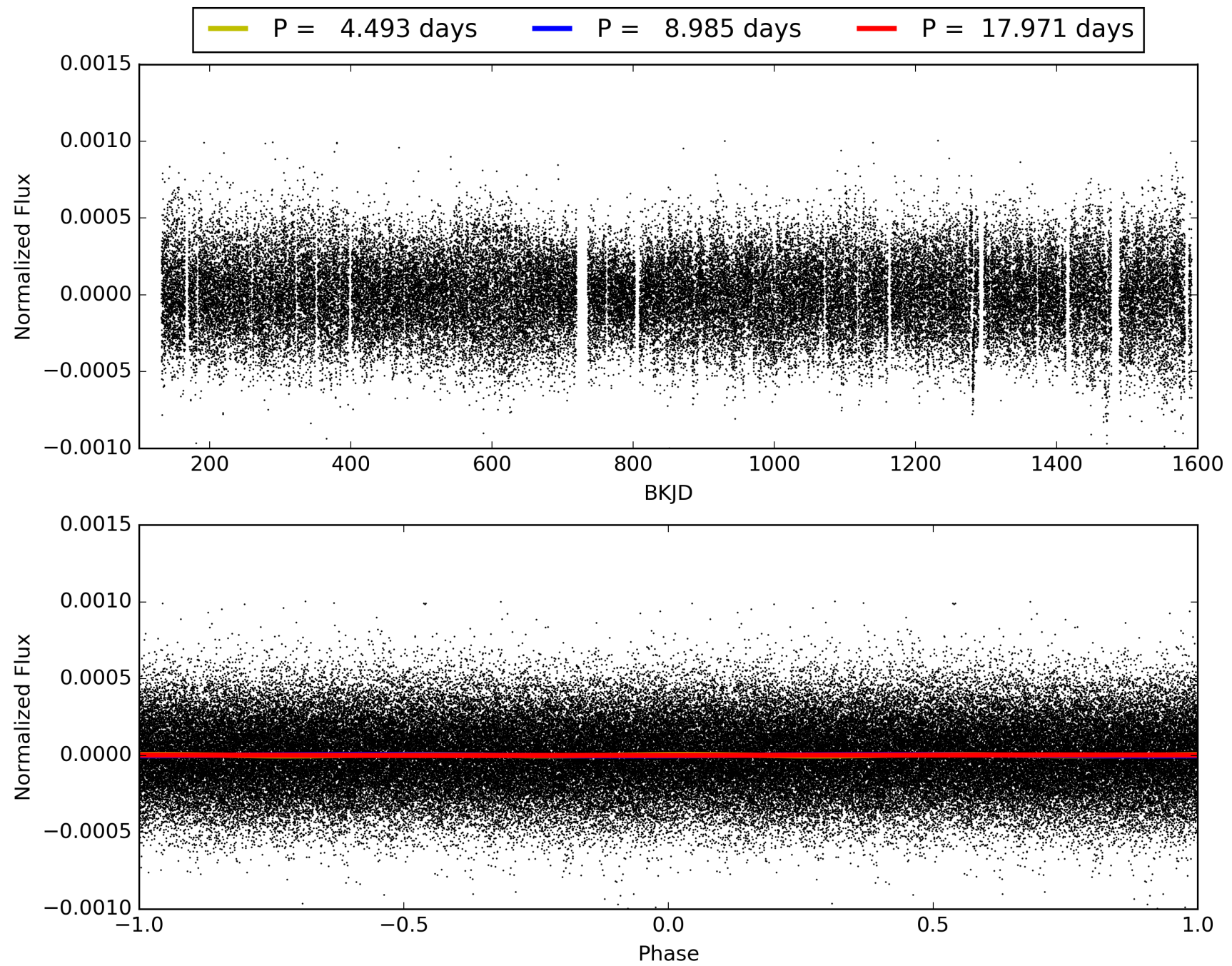
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:00:27 Z

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

# TCE 009715923-02, PDC Light Curves

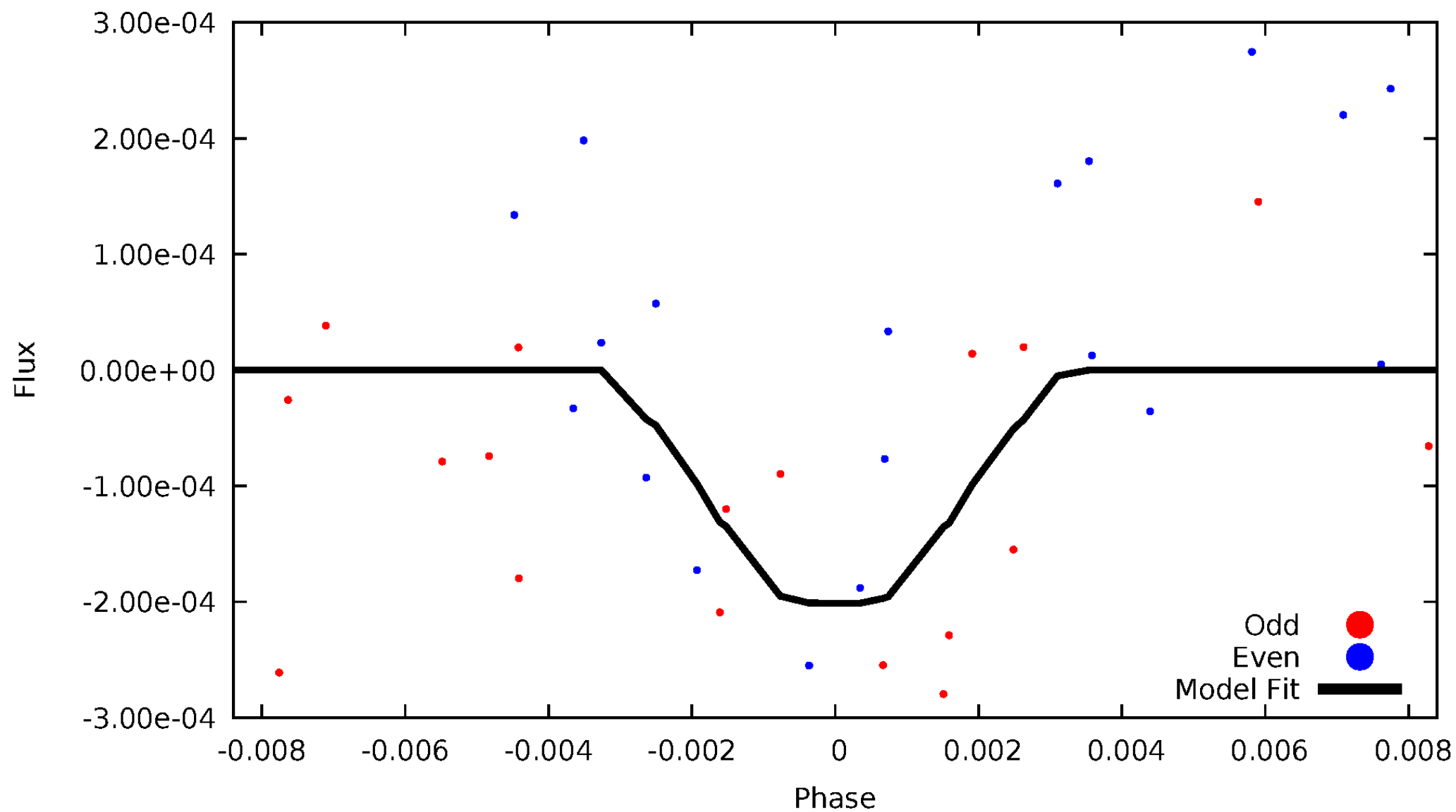


TCE 009715923-02



# DV Odd/Even

TCE 009715923-02





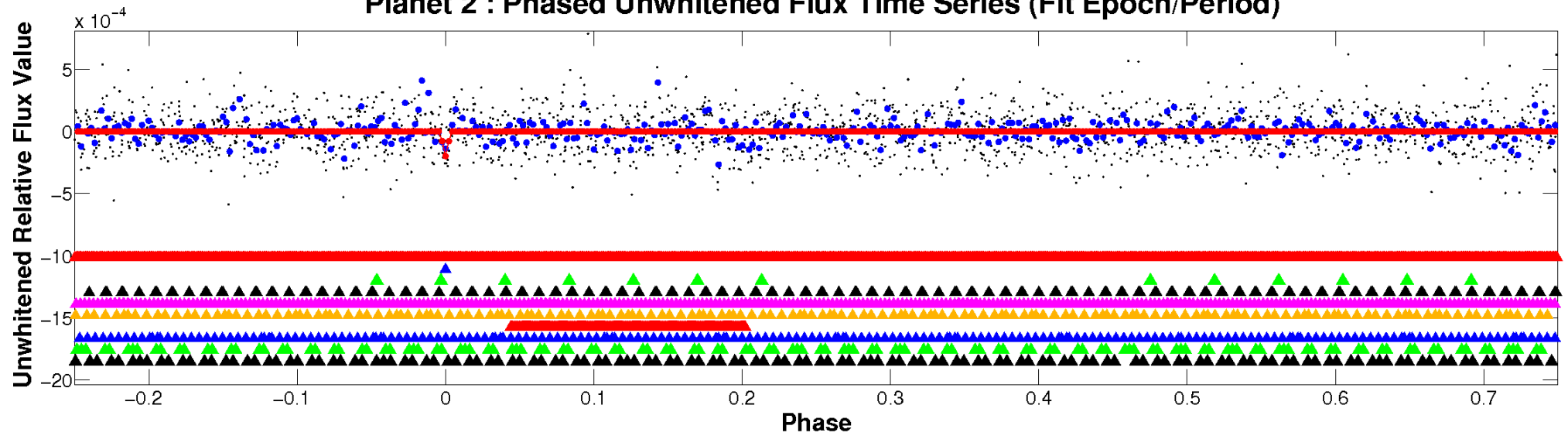


ALT Odd/Even

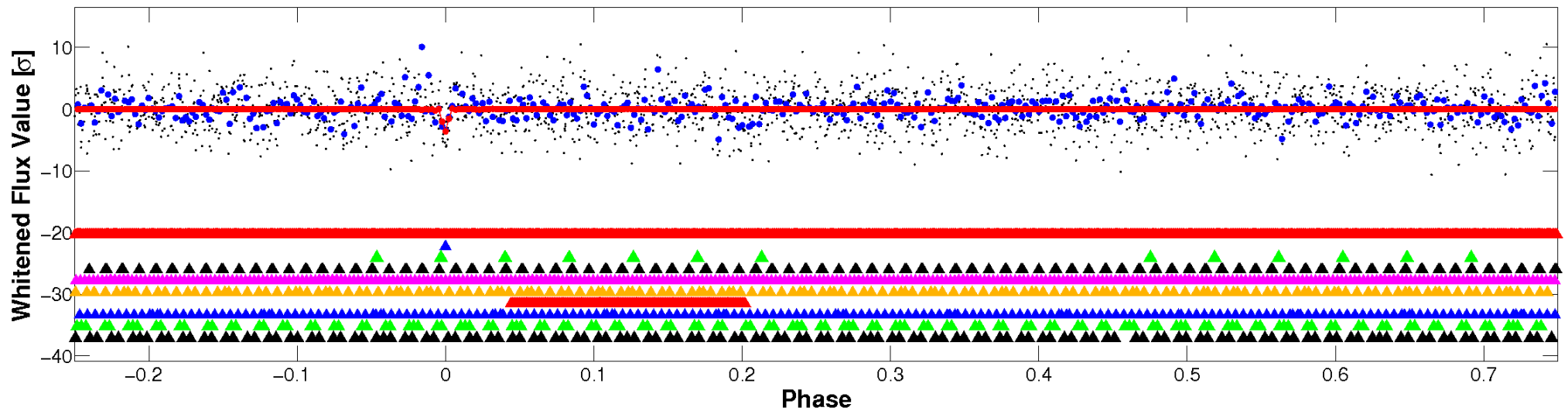
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

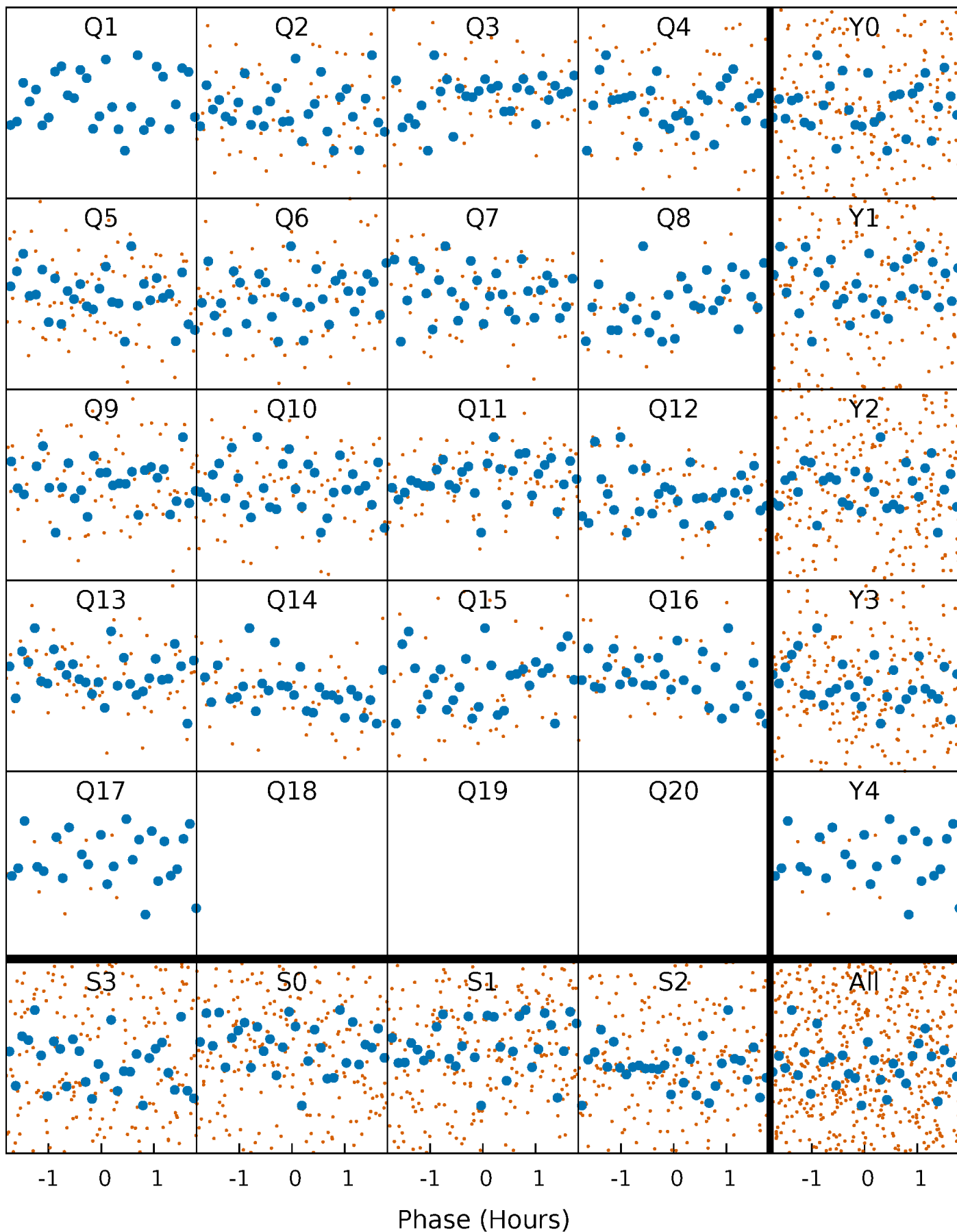


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



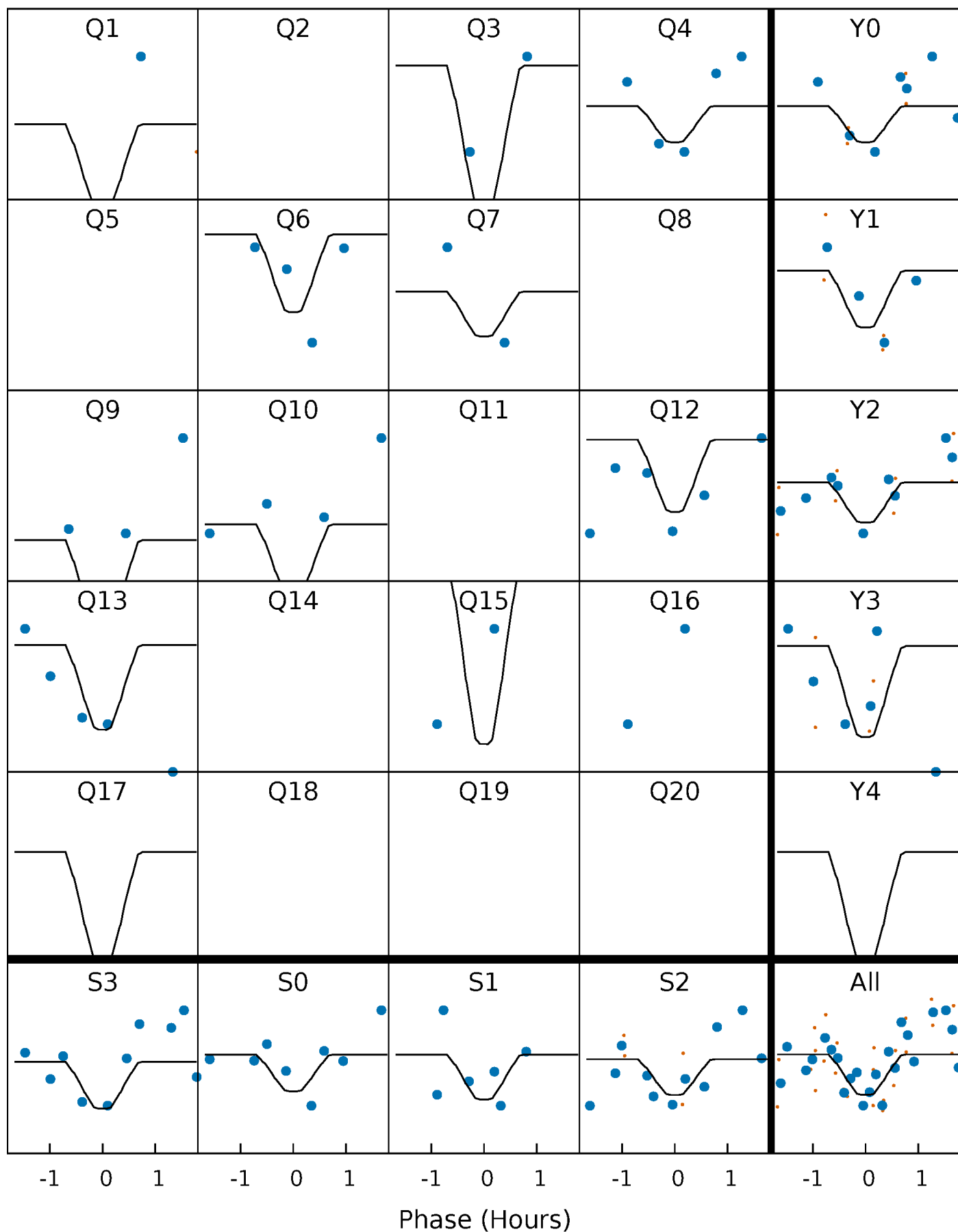
# PDC Quarter-Phased Transit Curves

TCE 009715923-02   P= 8.985471 Days    $T_0=132.812379$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 009715923-02 P= 8.985471 Days  $T_0=132.812379$  (BKJD)



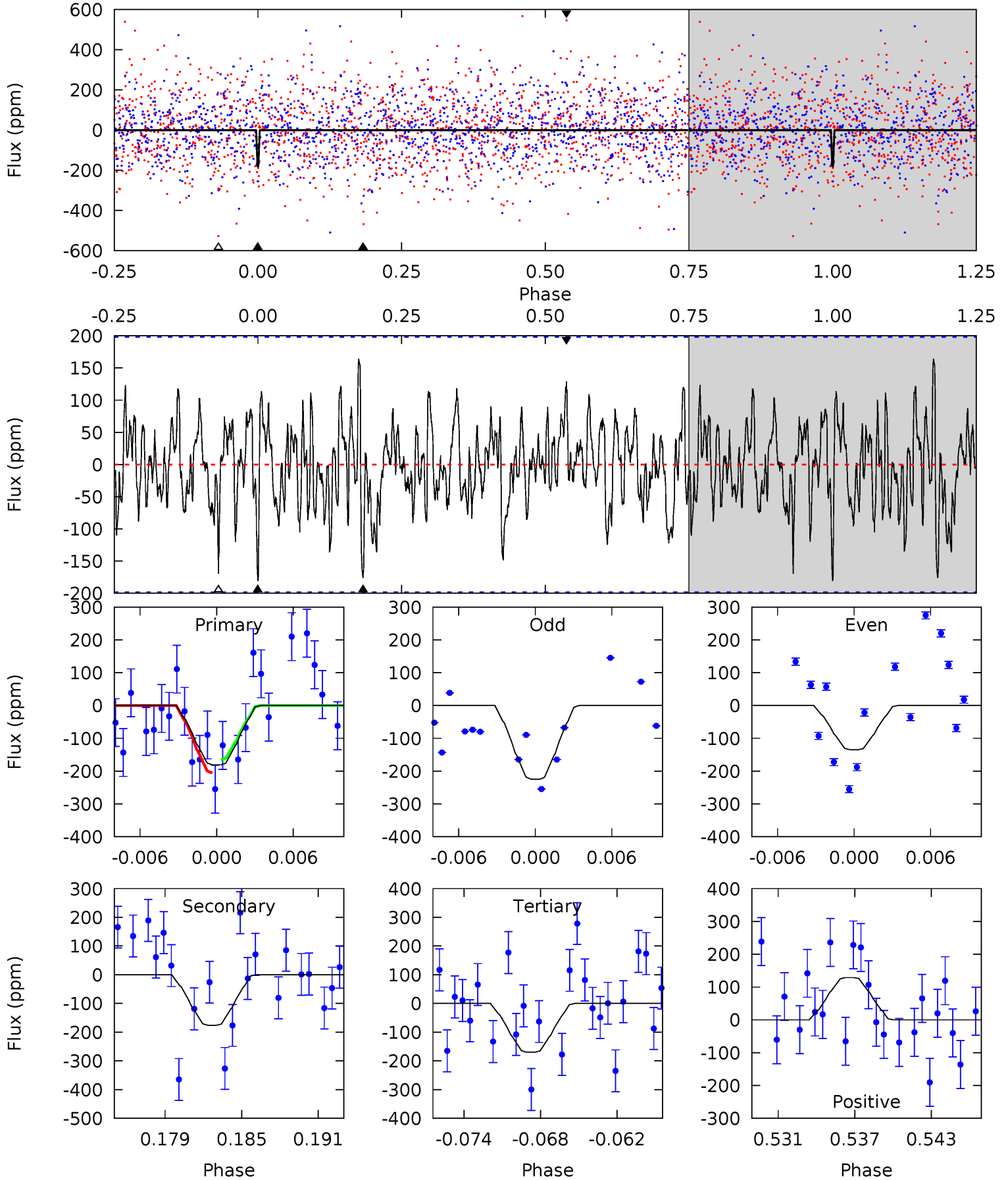
This plot does not exist for this TCE.



# DV Model-Shift Uniqueness Test

009715923-02, P = 8.985471 Days, E = 123.826908 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
4.66	4.54	4.38	3.33	5.12	2.74	1.37	0.29	1.34	0.17	1.22	1.15	0.99	0.48	0.51



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 009715923

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7105^{+196}_{-270}$	$3.598^{+0.289}_{-0.051}$	$-0.040^{+0.250}_{-0.250}$	$3.638^{+0.306}_{-1.225}$	$1.912^{+0.168}_{-0.311}$	$0.056^{+0.111}_{-0.010}$
	+3%/-4%	+8%/-1%	+625%/-625%	+8%/-34%	+9%/-16%	+199%/-18%
Source	PHO1	FLK73	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 009715923-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-176 \pm 39$	$27.81^{+26.17}_{-19.53}$	$2523^{+120}_{-224}$	$3324^{+2051}_{-1088}$	$1.398^{+13.893}_{-1.047}$
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  $A_{\text{obs}} \gg 1.0$

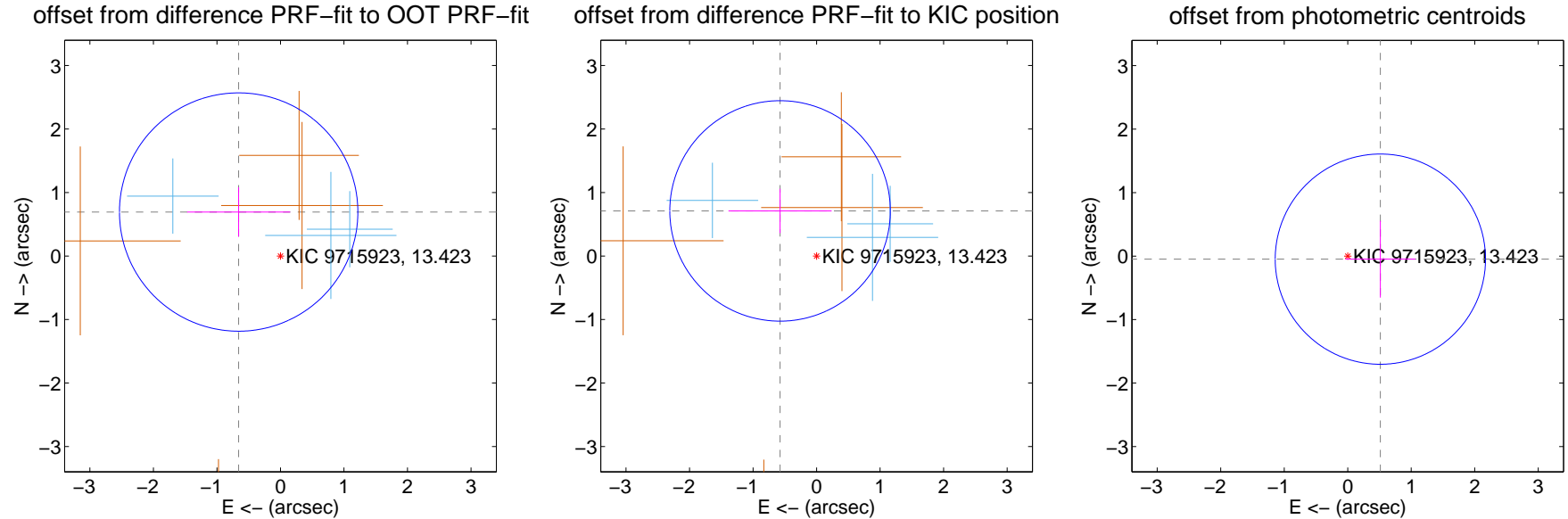
## DV Centroid Data

Supplemental centroid analysis for 009715923-02. Kepler magnitude: 13.42. Transit SNR 11.71

There are 3 quarters with good PRF difference image offsets

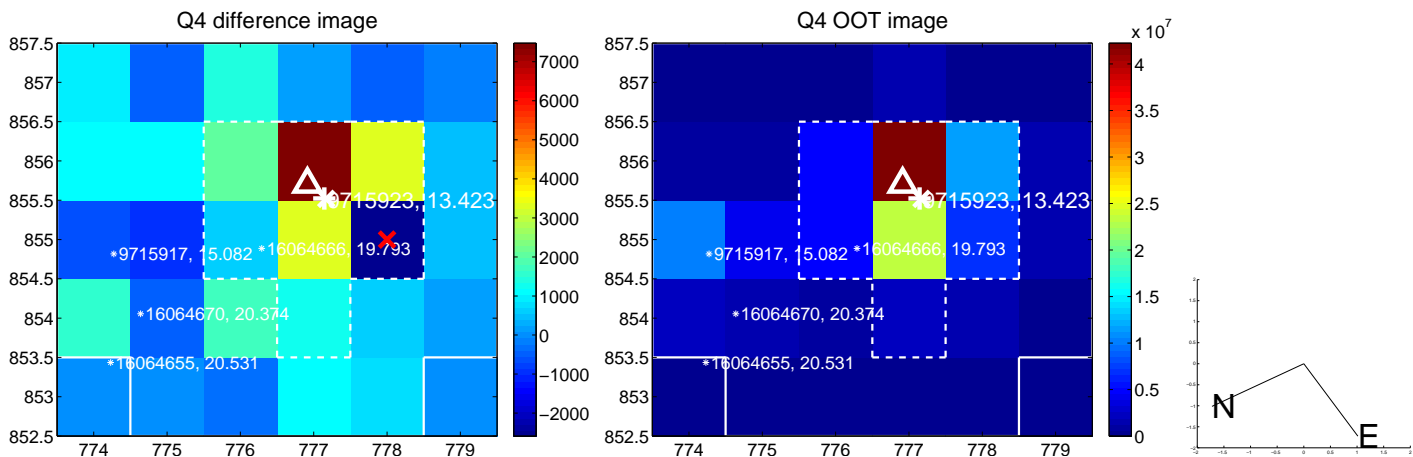
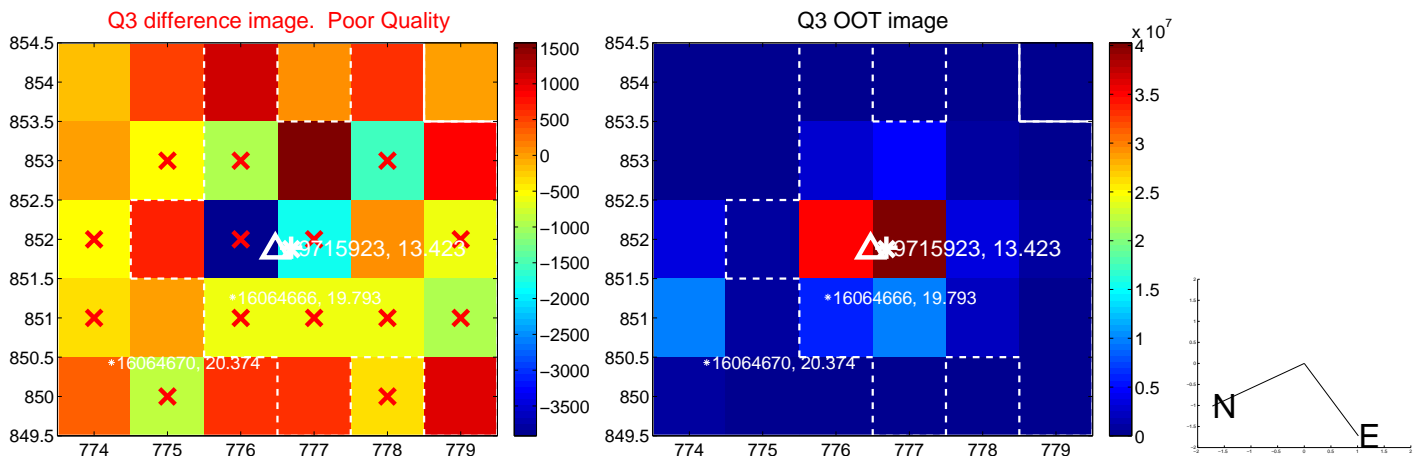
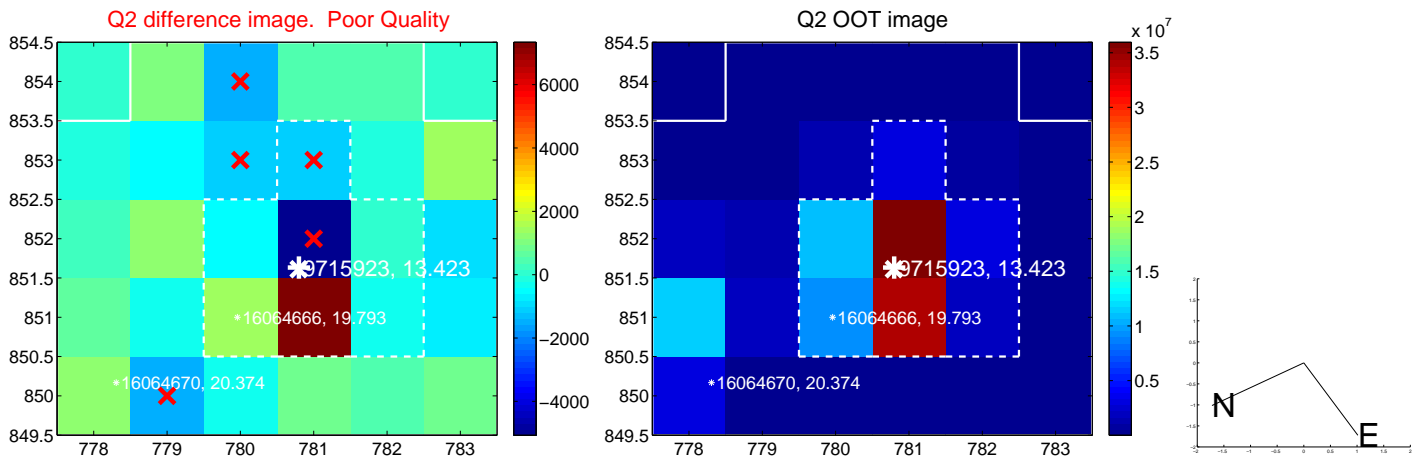
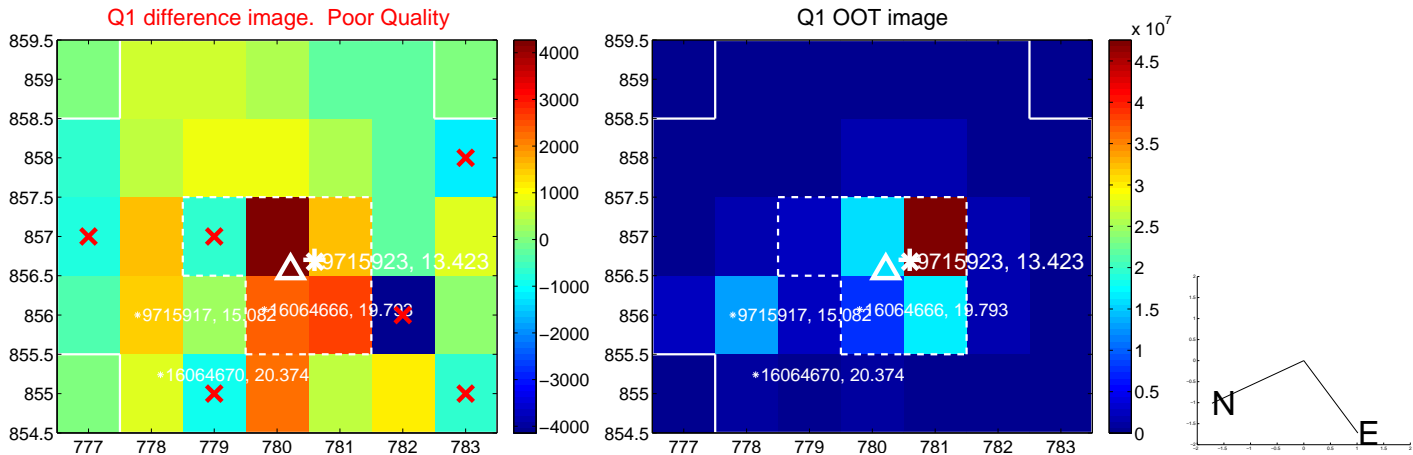
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.955 \pm 0.626$	1.53	$0.658 \pm 0.811$	$0.693 \pm 0.389$
PRF-fit source offset from KIC position	$0.914 \pm 0.579$	1.58	$0.575 \pm 0.812$	$0.710 \pm 0.349$
photometric centroid source offset	$0.52 \pm 0.55$	0.94	$-0.51 \pm 0.55$	$-0.05 \pm 0.61$

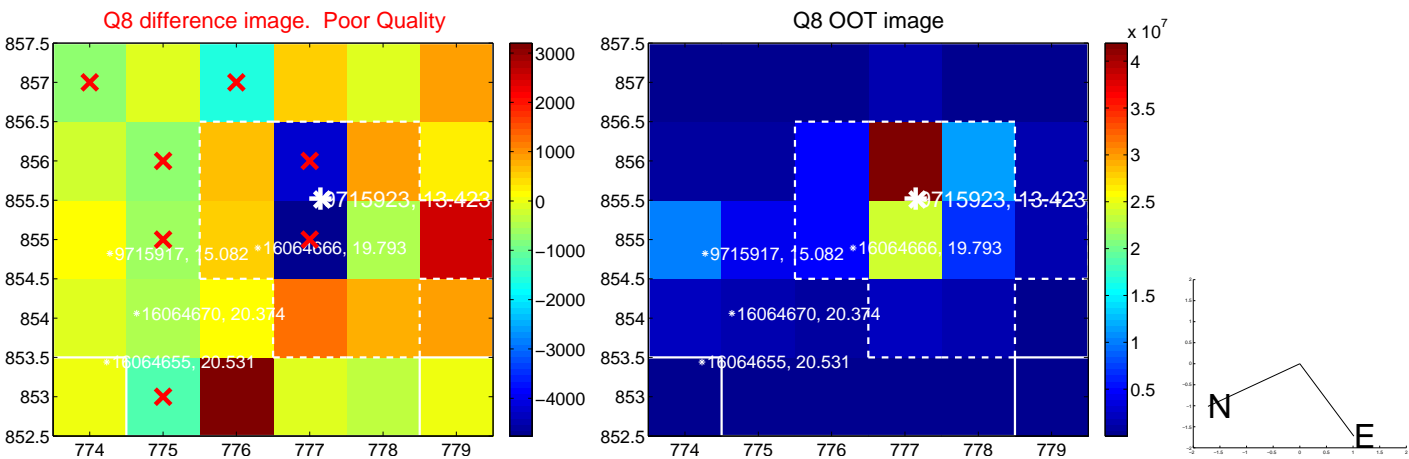
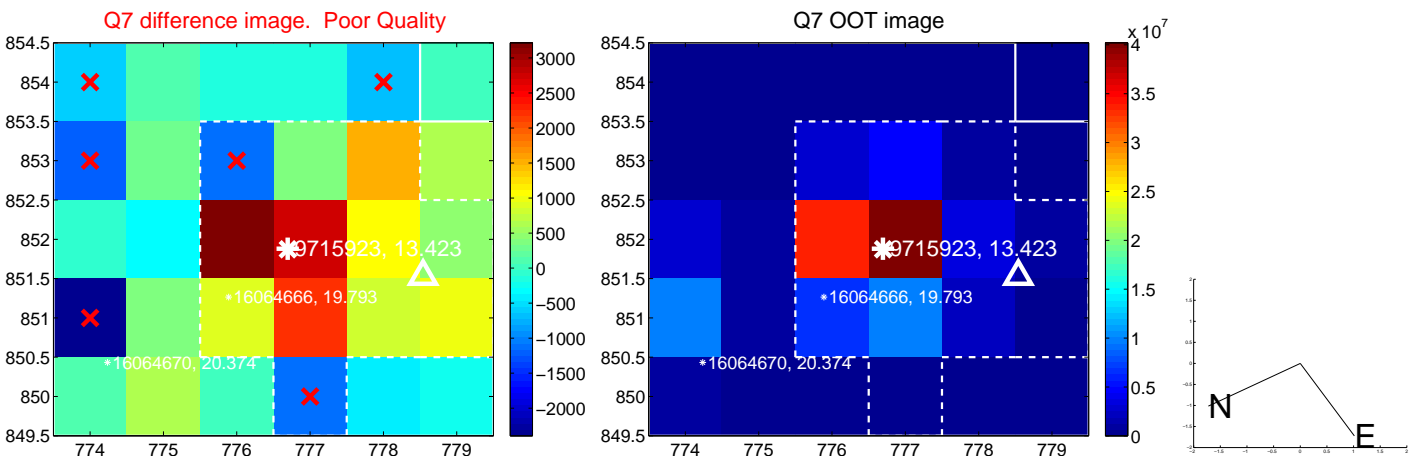
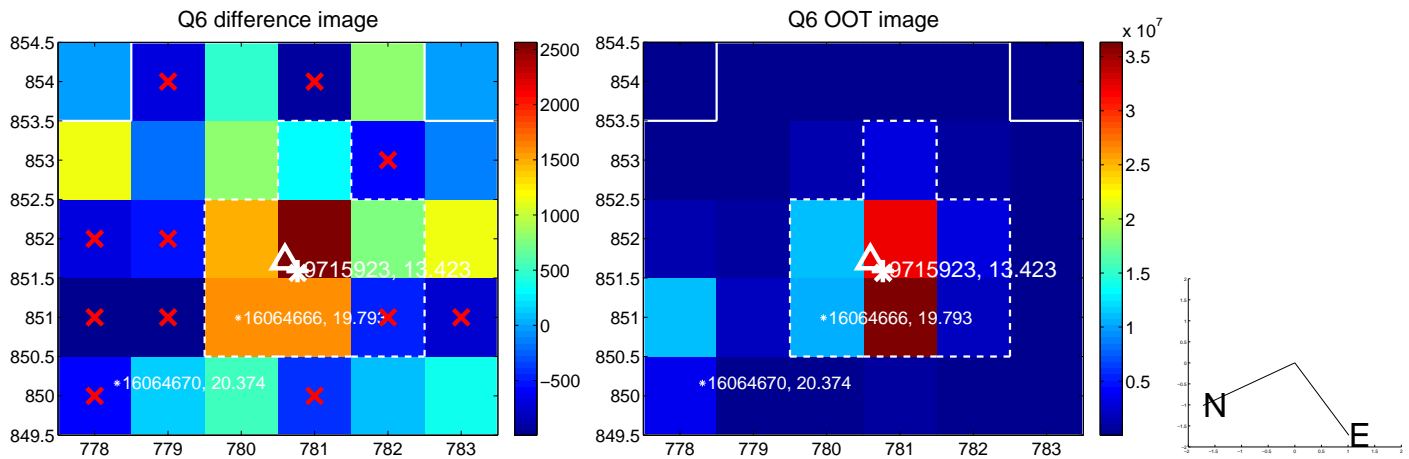
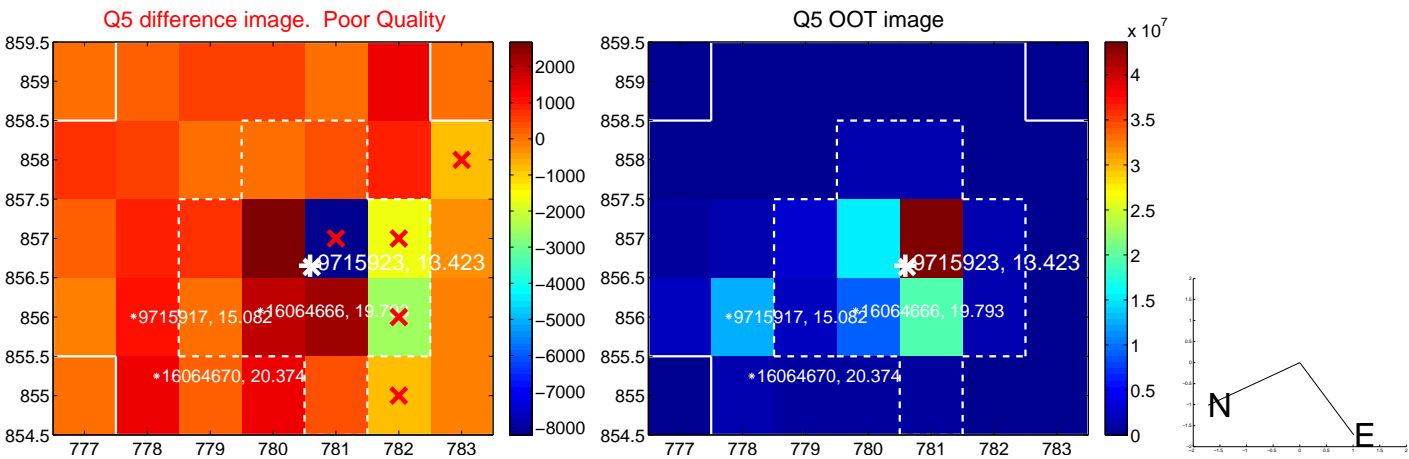


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

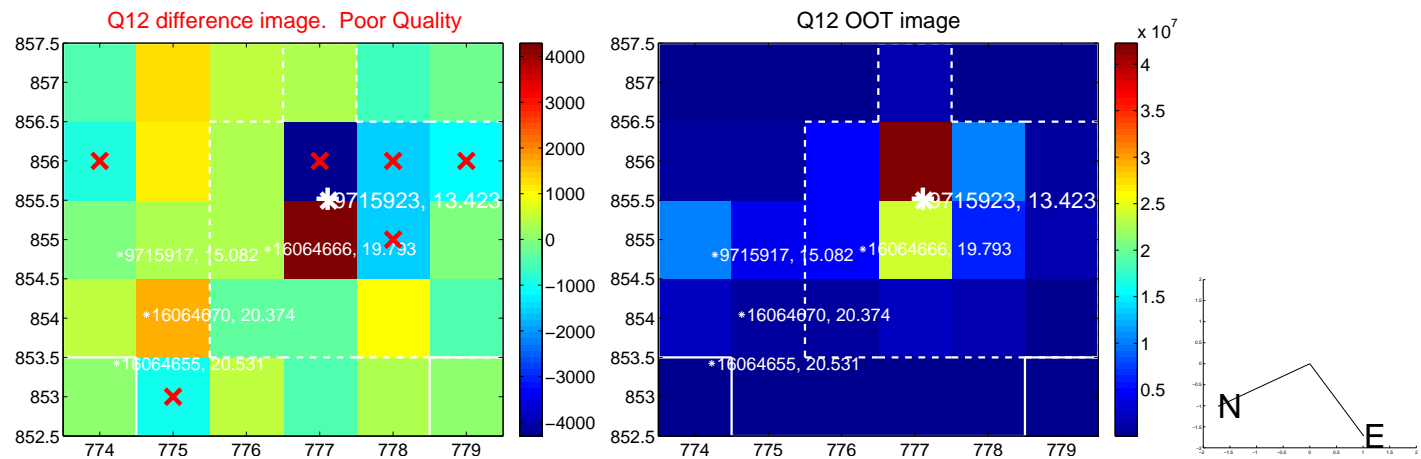
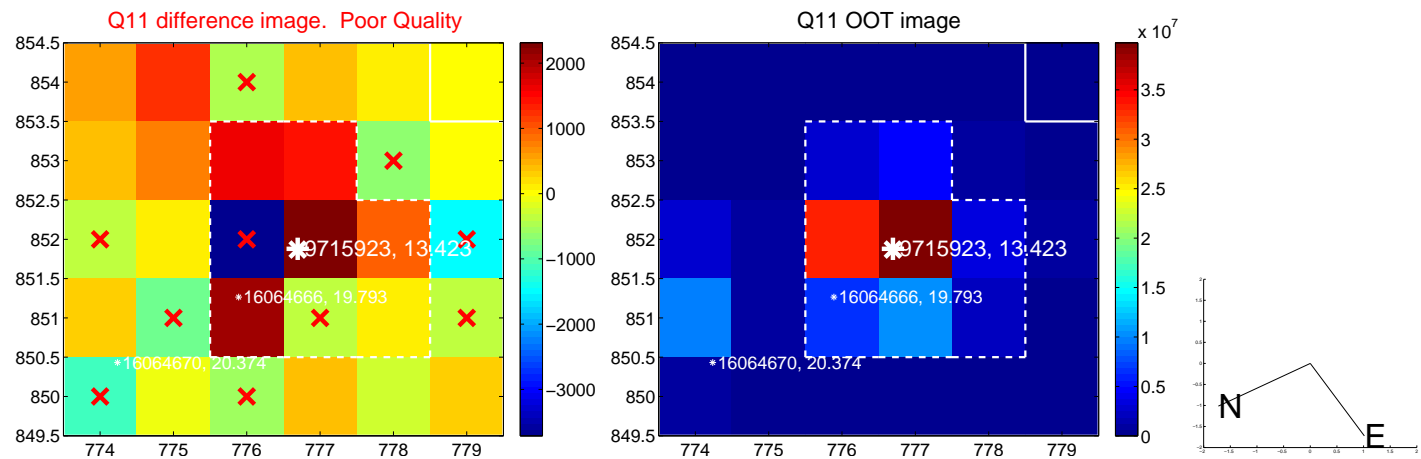
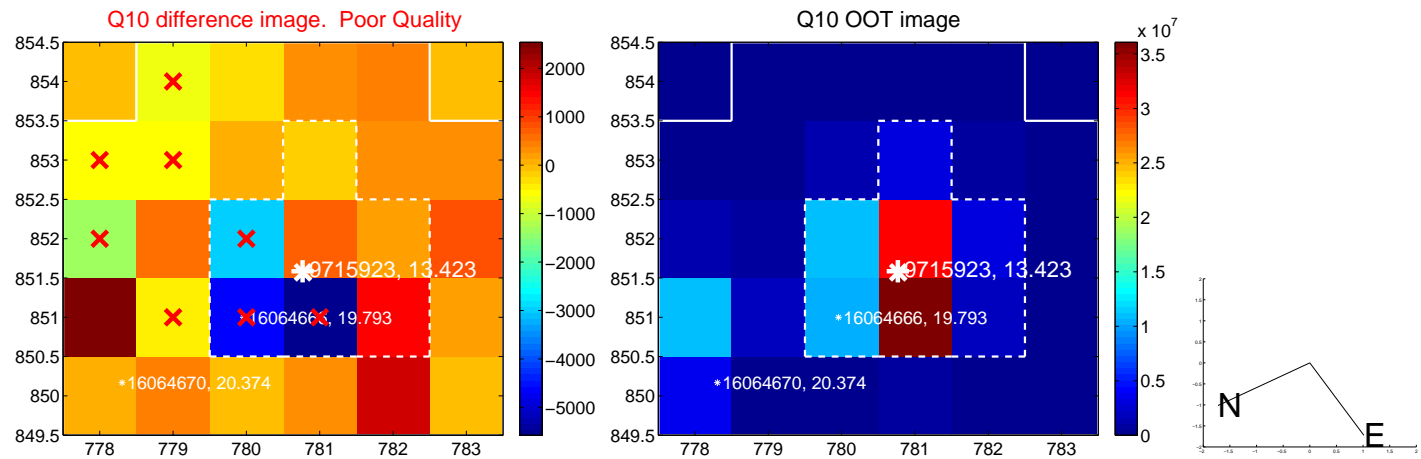
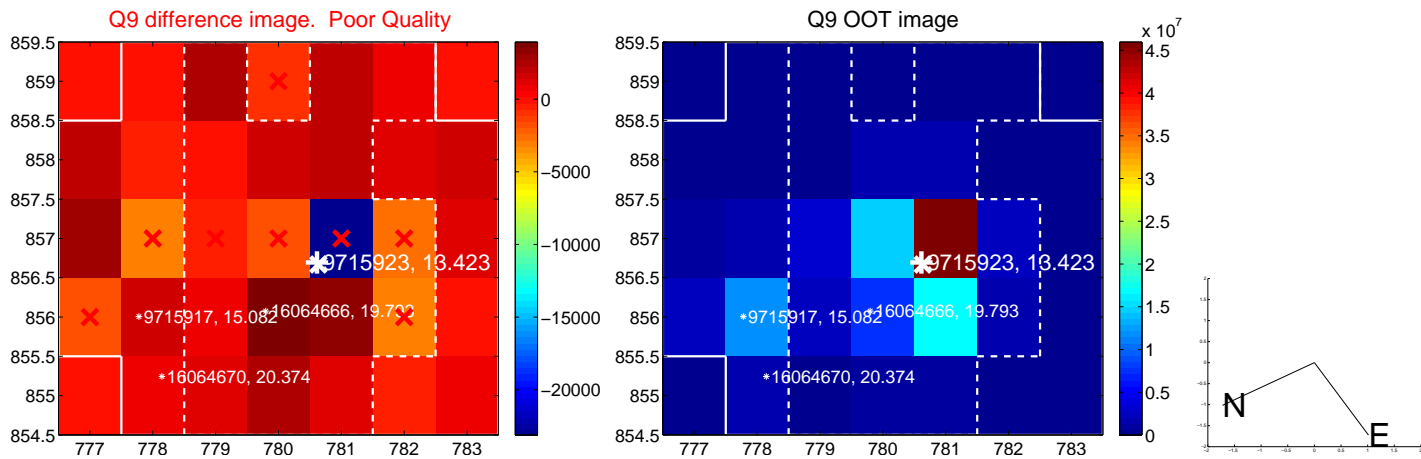


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

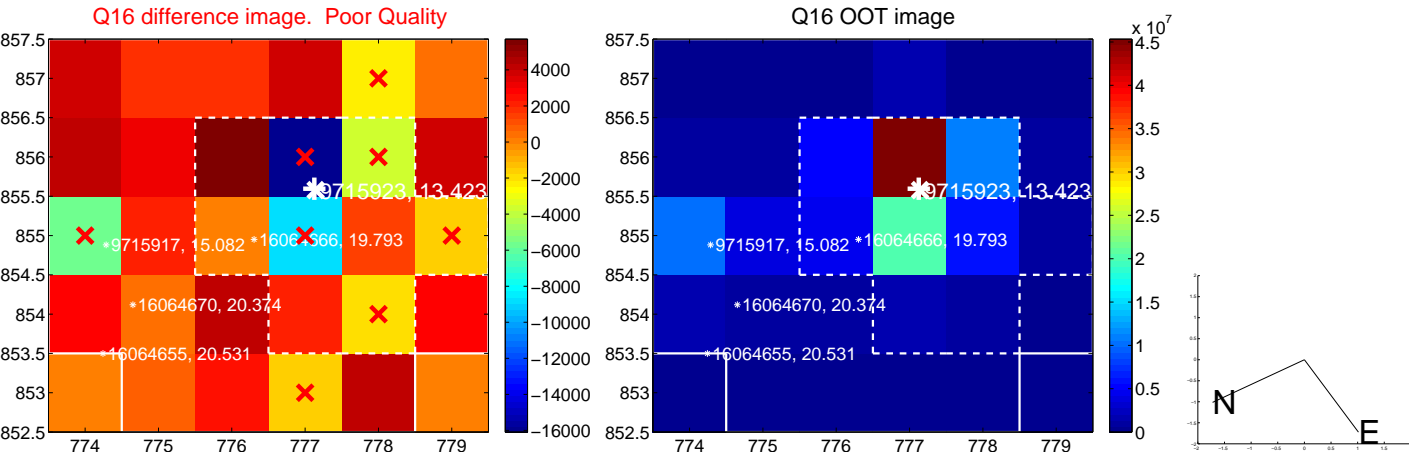
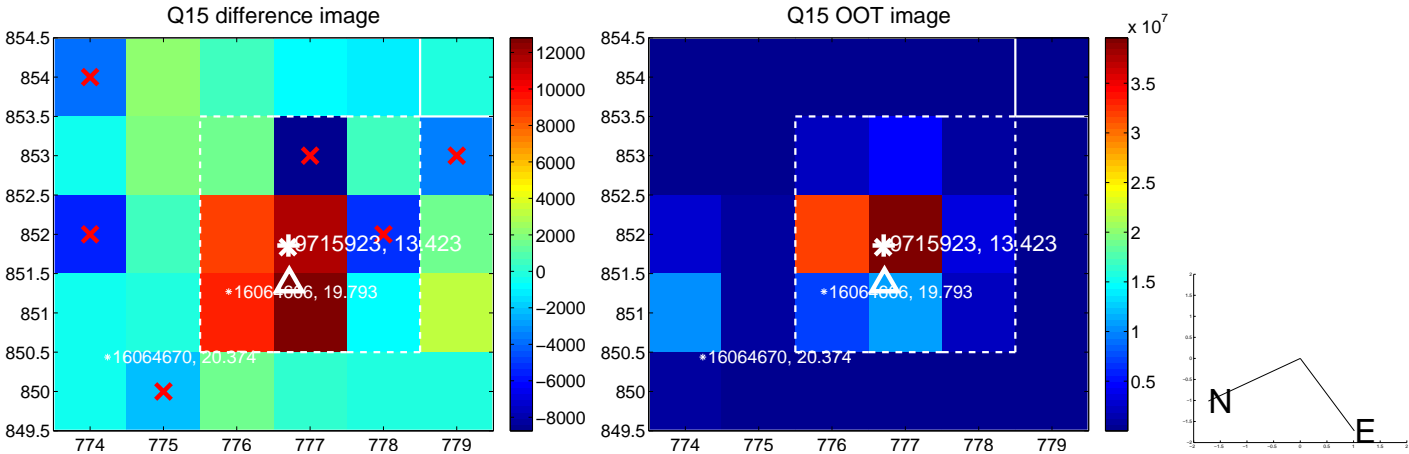
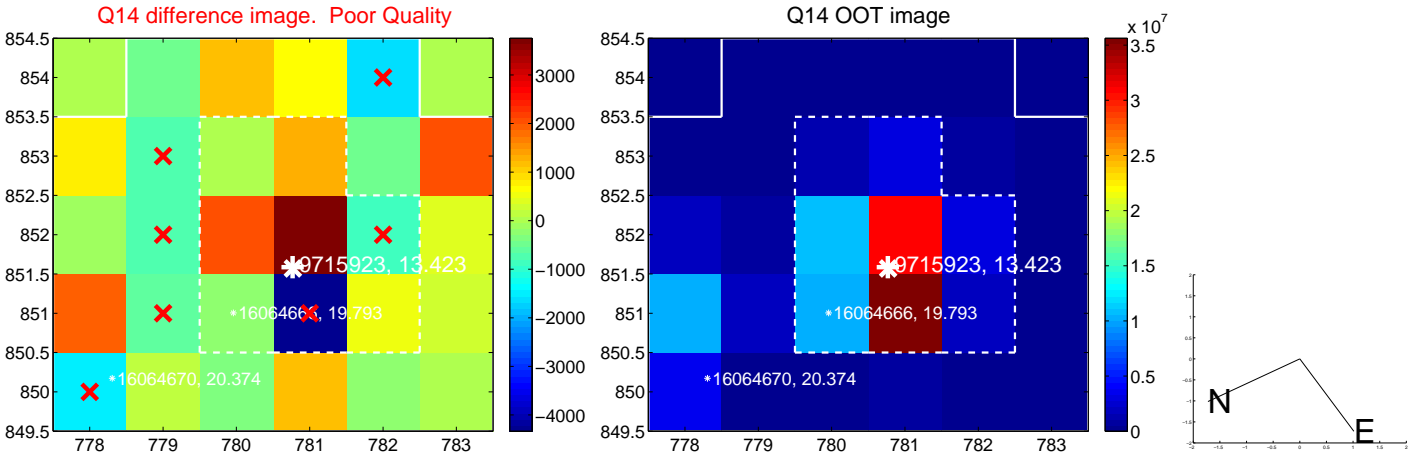
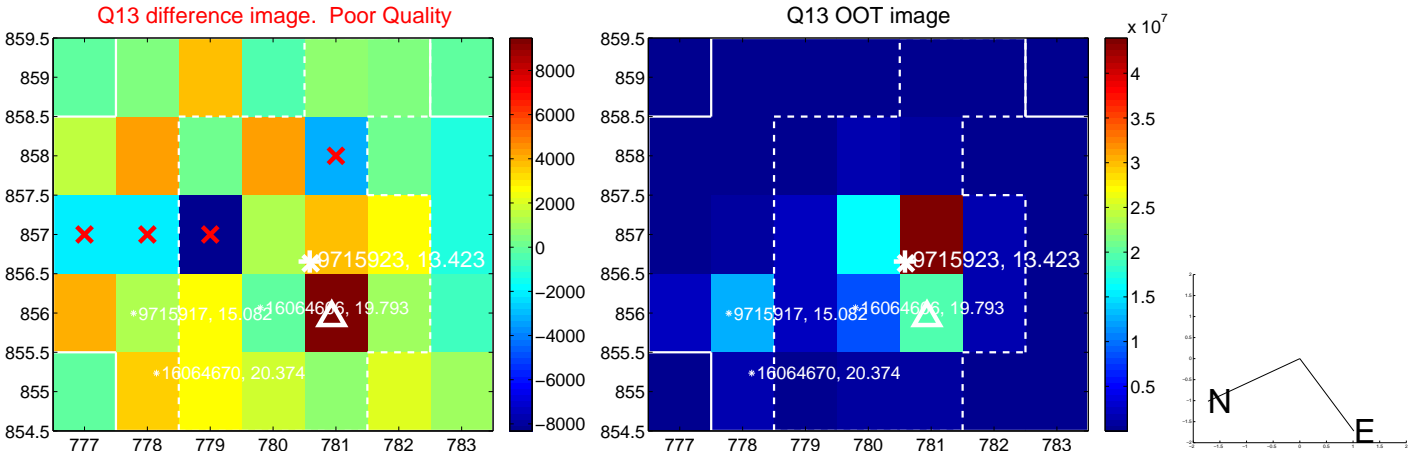




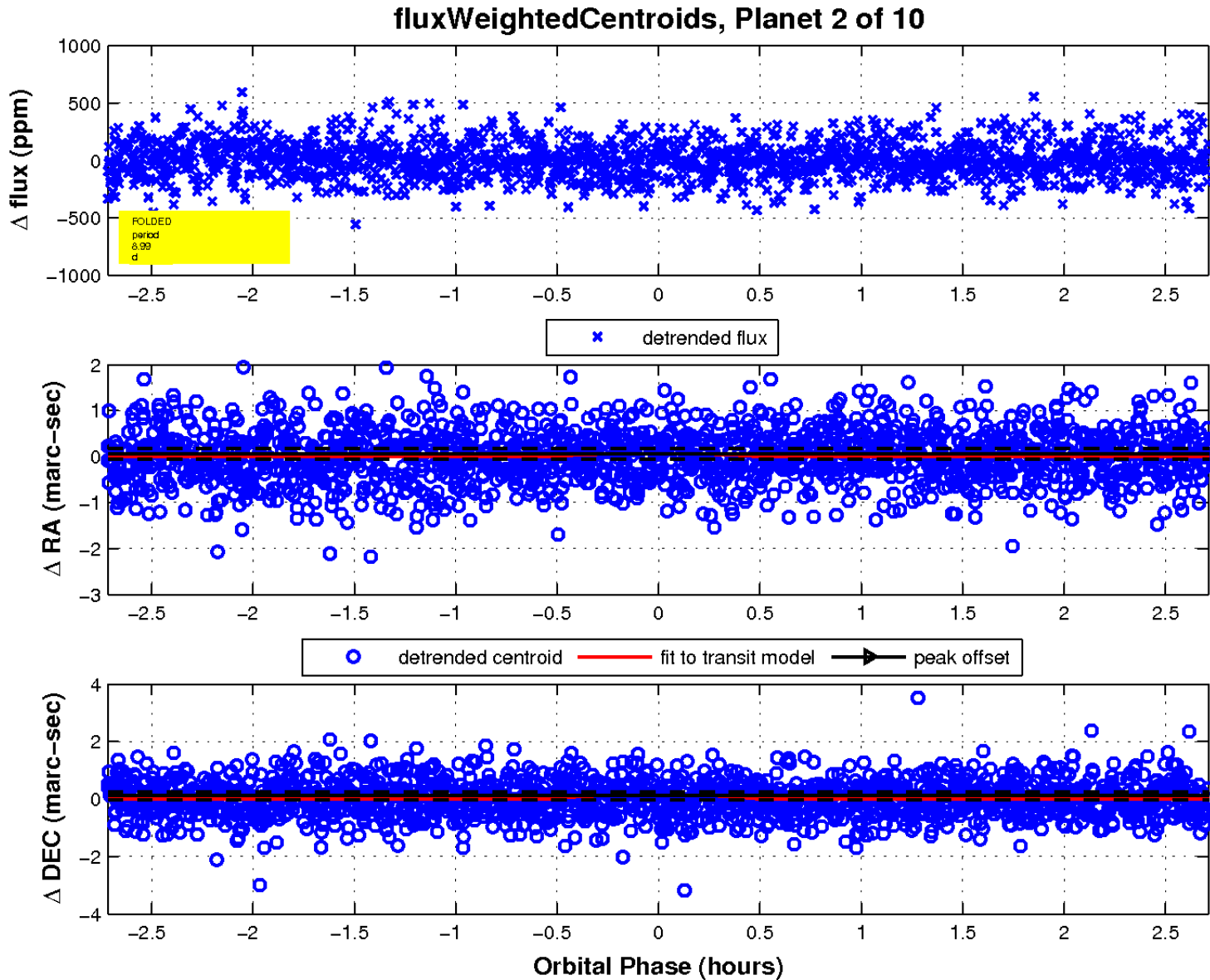
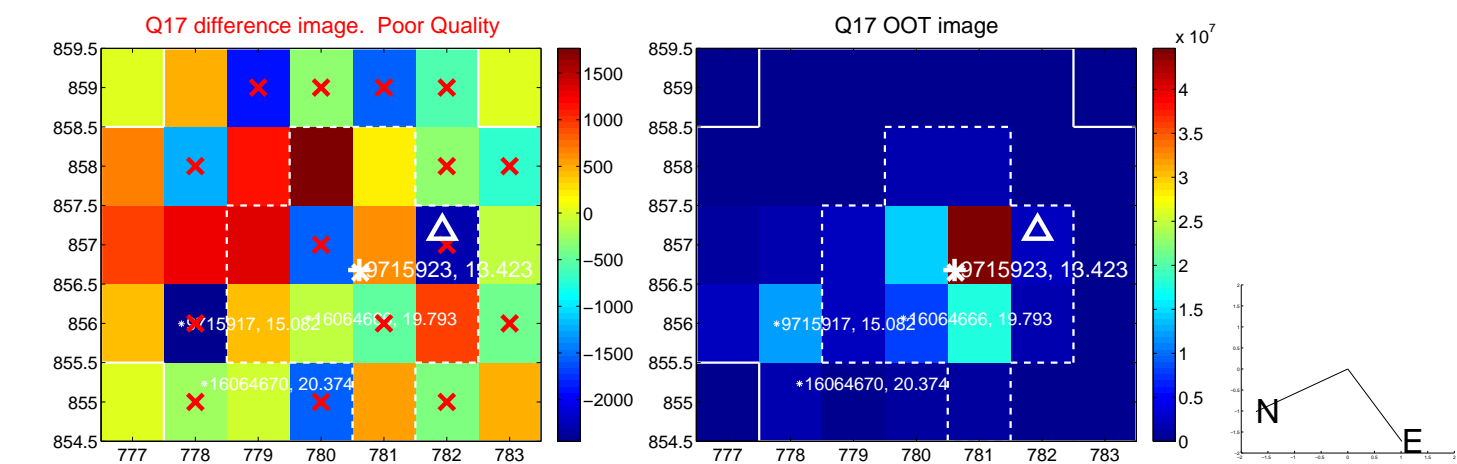
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

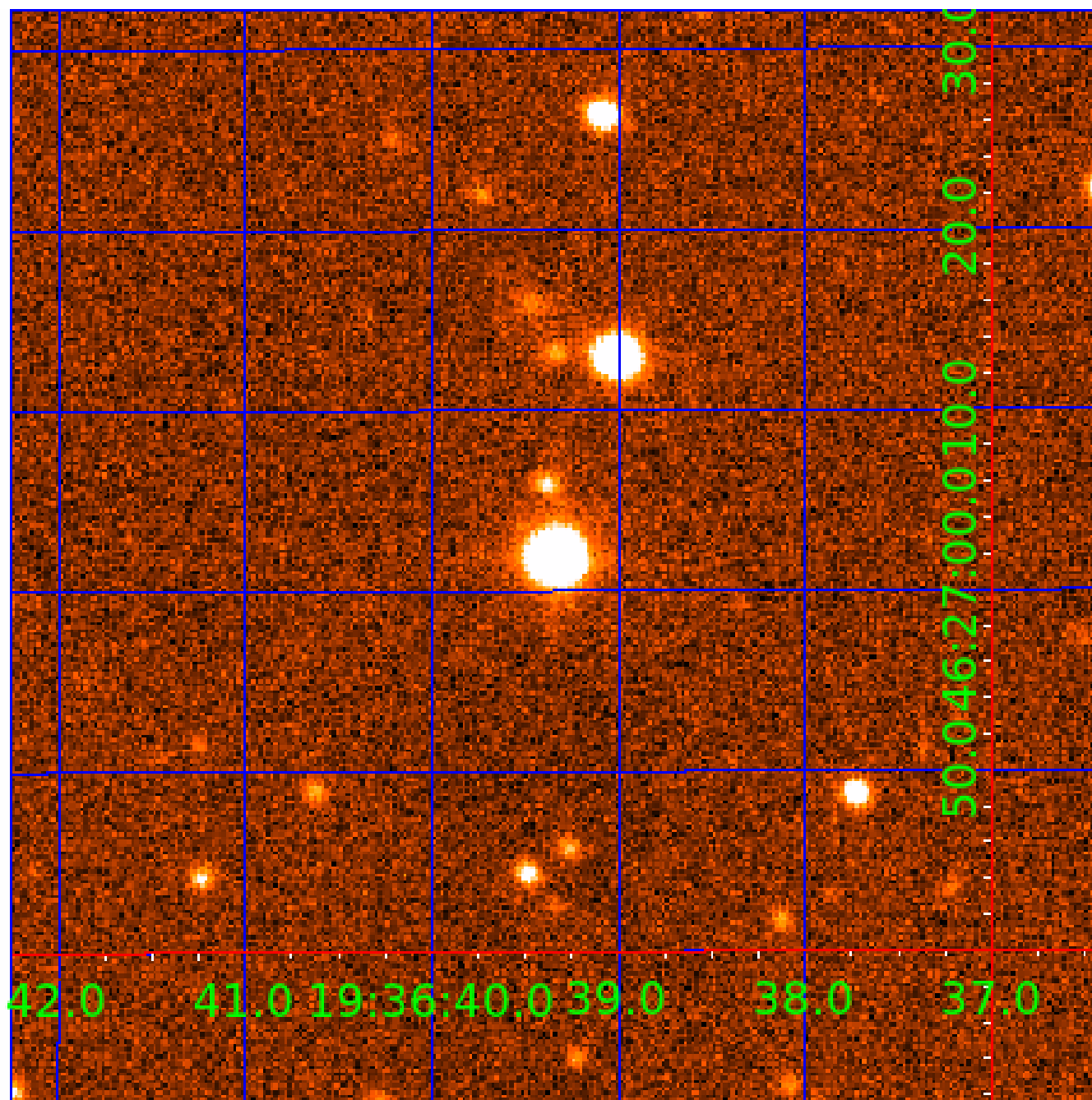


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 009715923

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009715923-01	OBS	No	0.694561	131.797987	2.7	5.202	9.1	1.7	3.64	7105	0.61	83197.88
009715923-02	OBS	No	8.985471	132.812379	202.5	0.905	12.7	11.7	3.64	7105	5.29	2739.50
009715923-04	OBS	No	9.288268	137.020221	260.0	1.287	11.3	15.7	3.64	7105	6.61	2621.07
009715923-05	OBS	No	3.847139	133.473597	178.8	1.156	12.1	15.2	3.64	7105	5.07	8489.37
009715923-06	OBS	No	8.374381	138.808874	320.5	0.587	9.3	12.2	3.64	7105	7.23	3009.23
009715923-07	OBS	No	8.976706	134.628131	164.2	1.257	10.9	10.0	3.64	7105	5.01	2743.07
009715923-08	OBS	No	6.908270	135.222405	274.6	0.699	10.8	13.0	3.64	7105	6.24	3889.56
009715923-09	OBS	No	11.309767	136.928988	256.2	0.665	9.4	10.1	3.64	7105	6.66	2015.83
009715923-10	OBS	No	10.461333	138.428607	219.1	1.442	9.8	9.3	3.64	7105	5.46	2236.71

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009715923-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_DIFFS
009715923-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009715923-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS
009715923-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV
009715923-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_DIFFS
009715923-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—HALO_GHOST
009715923-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009715923-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009715923-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_MEAS

**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.

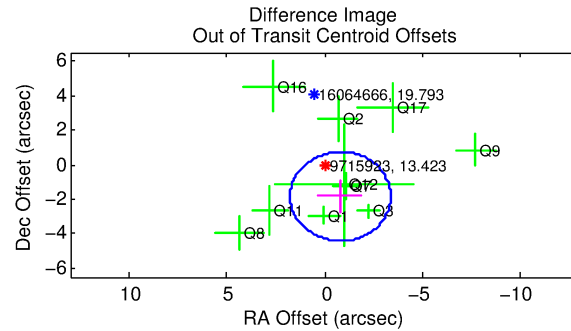
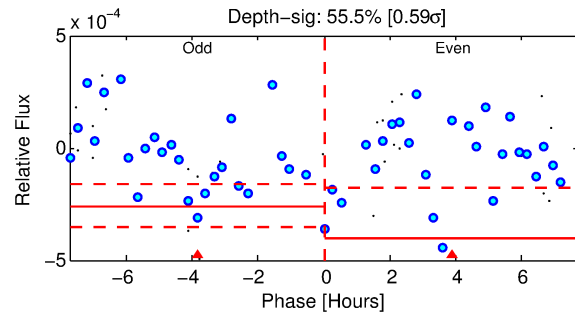
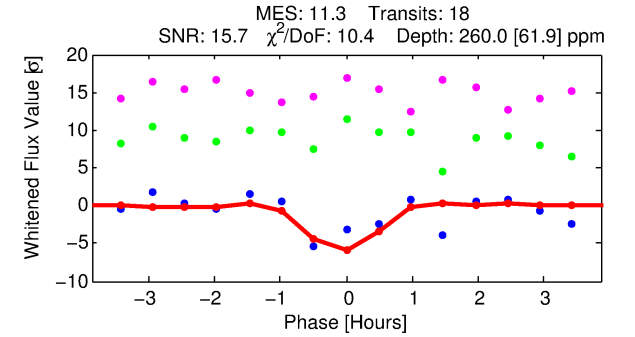
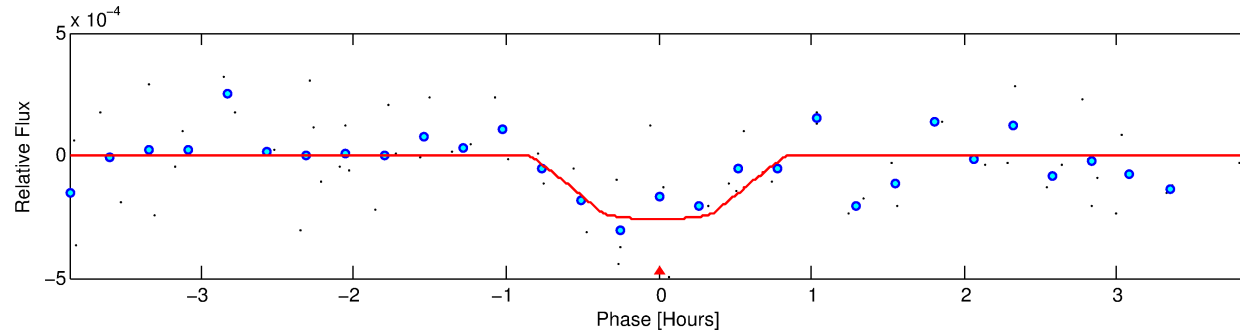
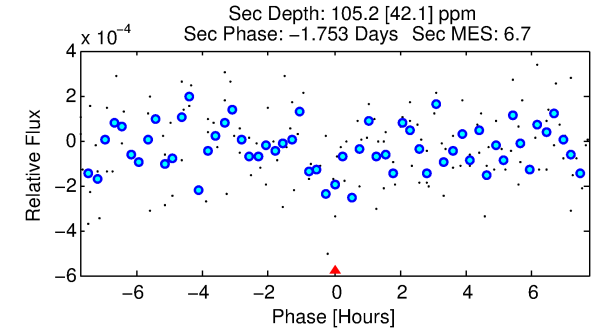
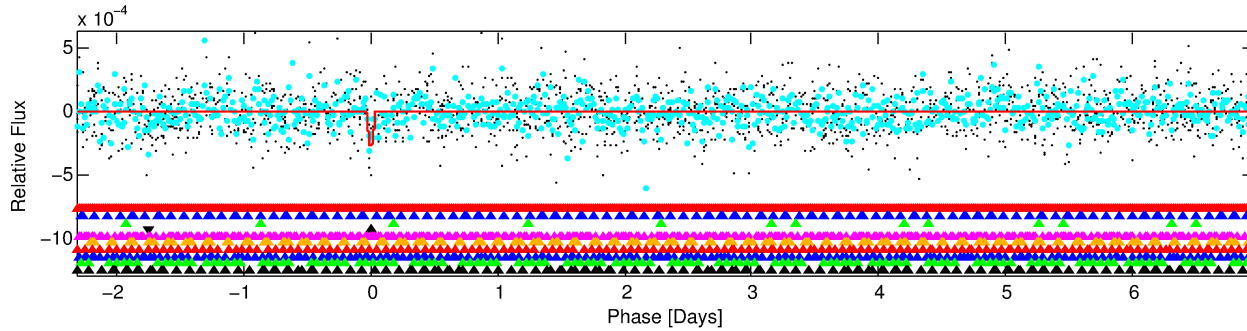
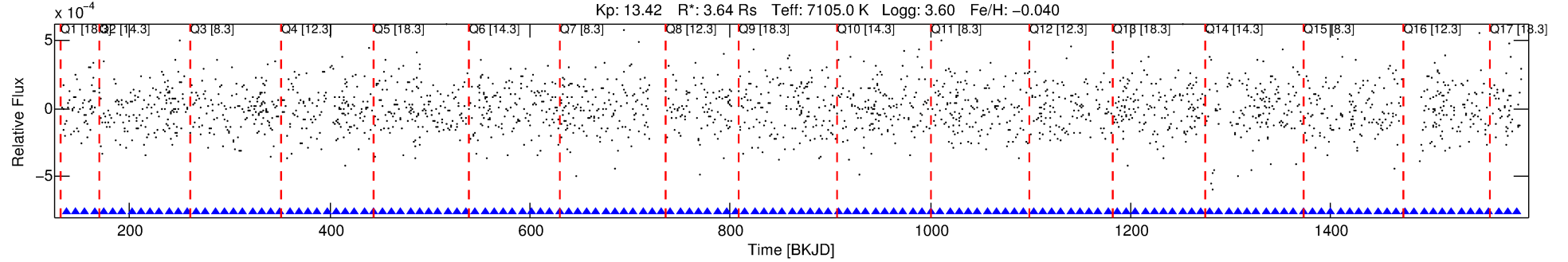
Ephemeris Match Information For 009715923-04

No Significant Match Found



# DV One-Page Summary

KIC: 9715923 Candidate: 4 of 10 Period: 9.288 d



## DV Fit Results:

Period = 9.28827 [0.00012] d  
Epoch = 137.0202 [0.0095] BKJD  
Rp/R\* = 0.0166 [0.0356]  
a/R\* = 31.44 [416.51]  
b = 0.84 [4.63]  
Seff = 2621.08 [1362.72]  
Teq = 1825 [237] K  
Rp = 6.61 [14.32] Re  
a = 0.1074 [0.0339] AU  
Ag = 15.28 [66.10] [0.22 $\sigma$ ]  
Teffp = 5577 [5996] K [0.63 $\sigma$ ]

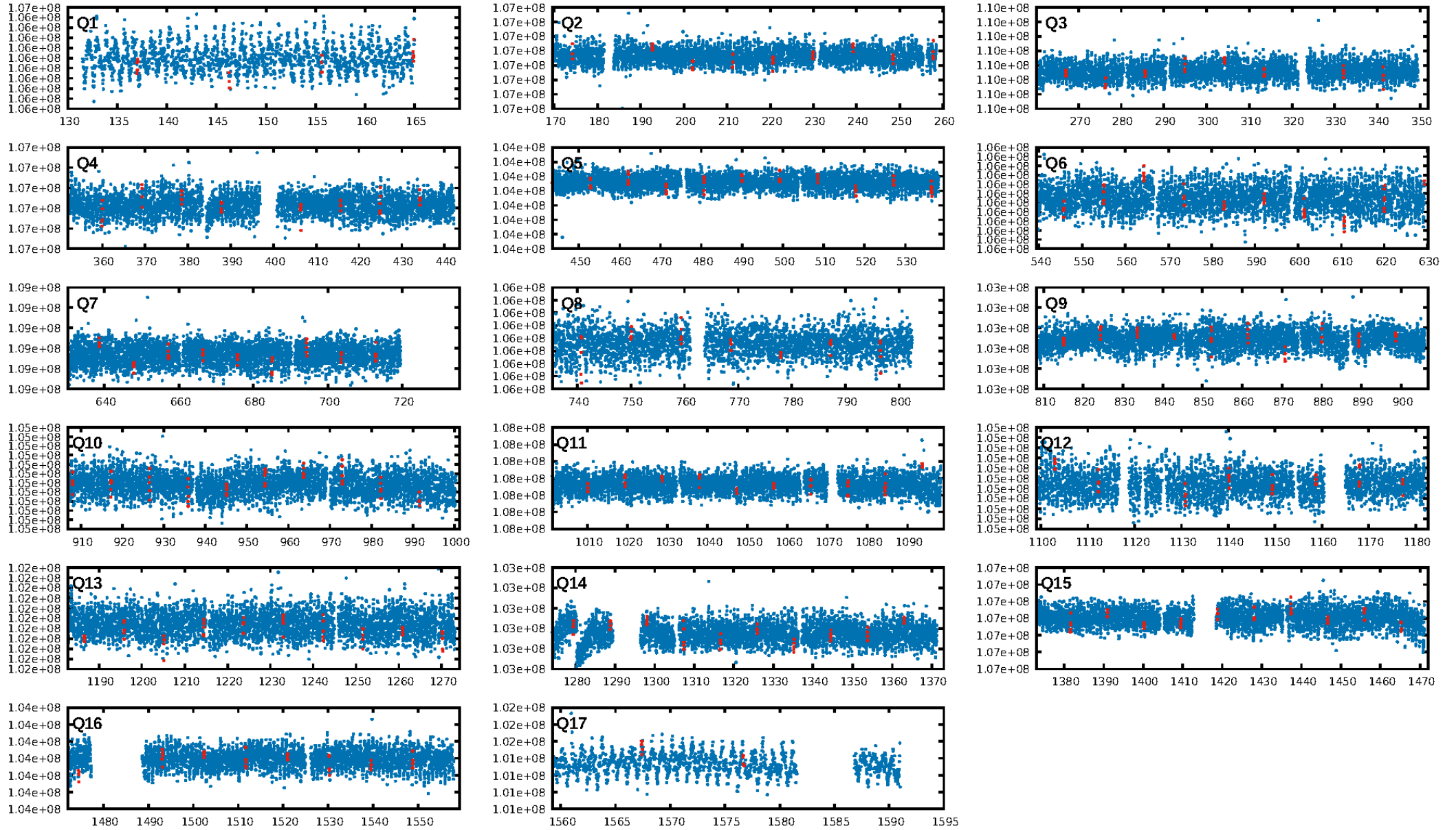
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.62 $\sigma$ ]  
LongPeriod-sig: 100.0% [14.56 $\sigma$ ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.1%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [17/17]  
GhostDiagnostic-chr: -0.5557  
Centroid-sig: 1.0%  
Centroid-so: 1.176 arcsec [2.84 $\sigma$ ]  
OotOffset-rm: 2.008 arcsec [2.34 $\sigma$ ]  
KicOffset-rm: 2.053 arcsec [2.59 $\sigma$ ]  
OotOffset-st: 1/3/3/3 [10]  
KicOffset-st: 1/3/3/3 [10]  
DiffImageQuality-fgm: 0.10 [1/10]  
DiffImageOverlap-fno: 0.24 [4/17]

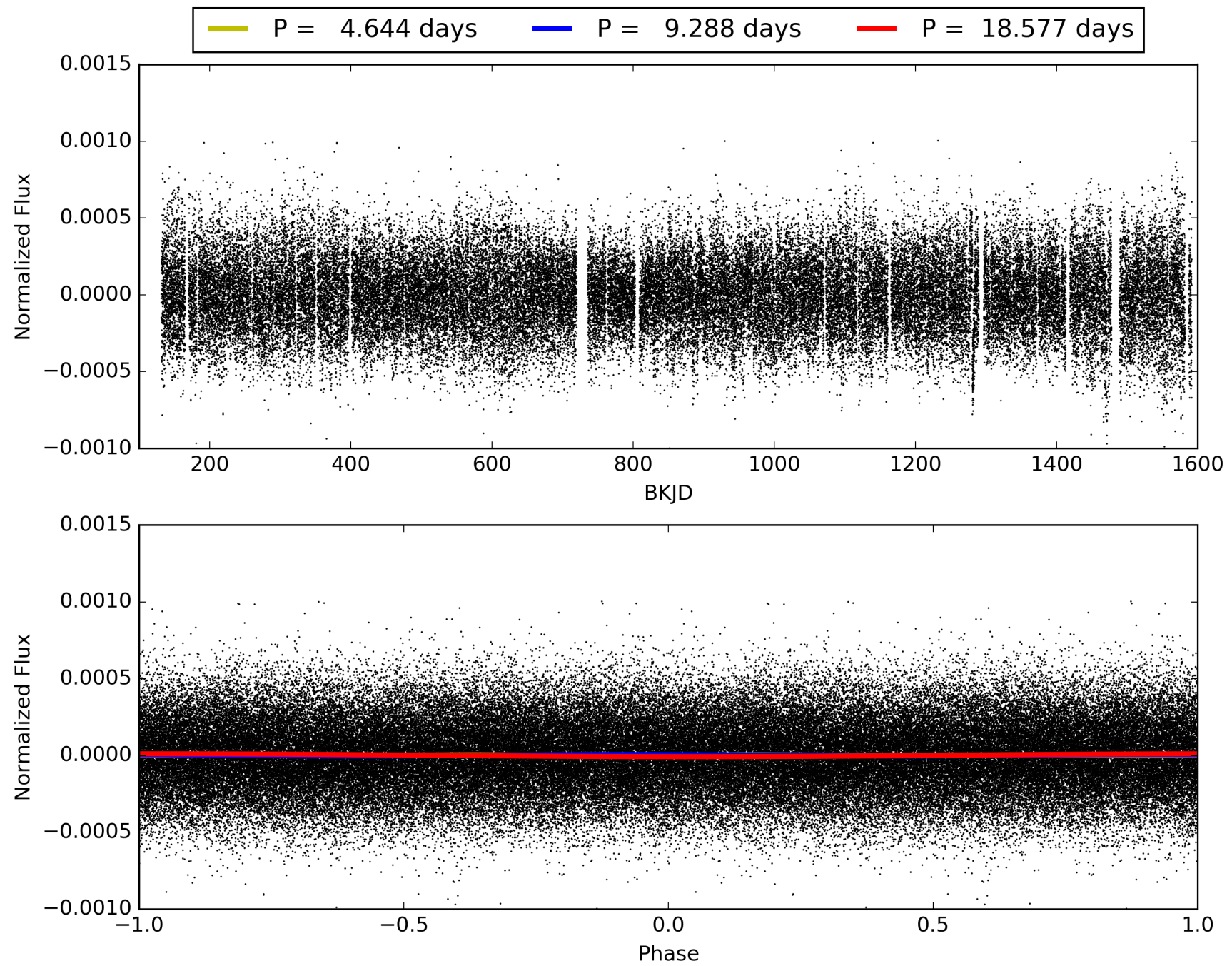
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:00:32 Z

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

# TCE 009715923-04, PDC Light Curves

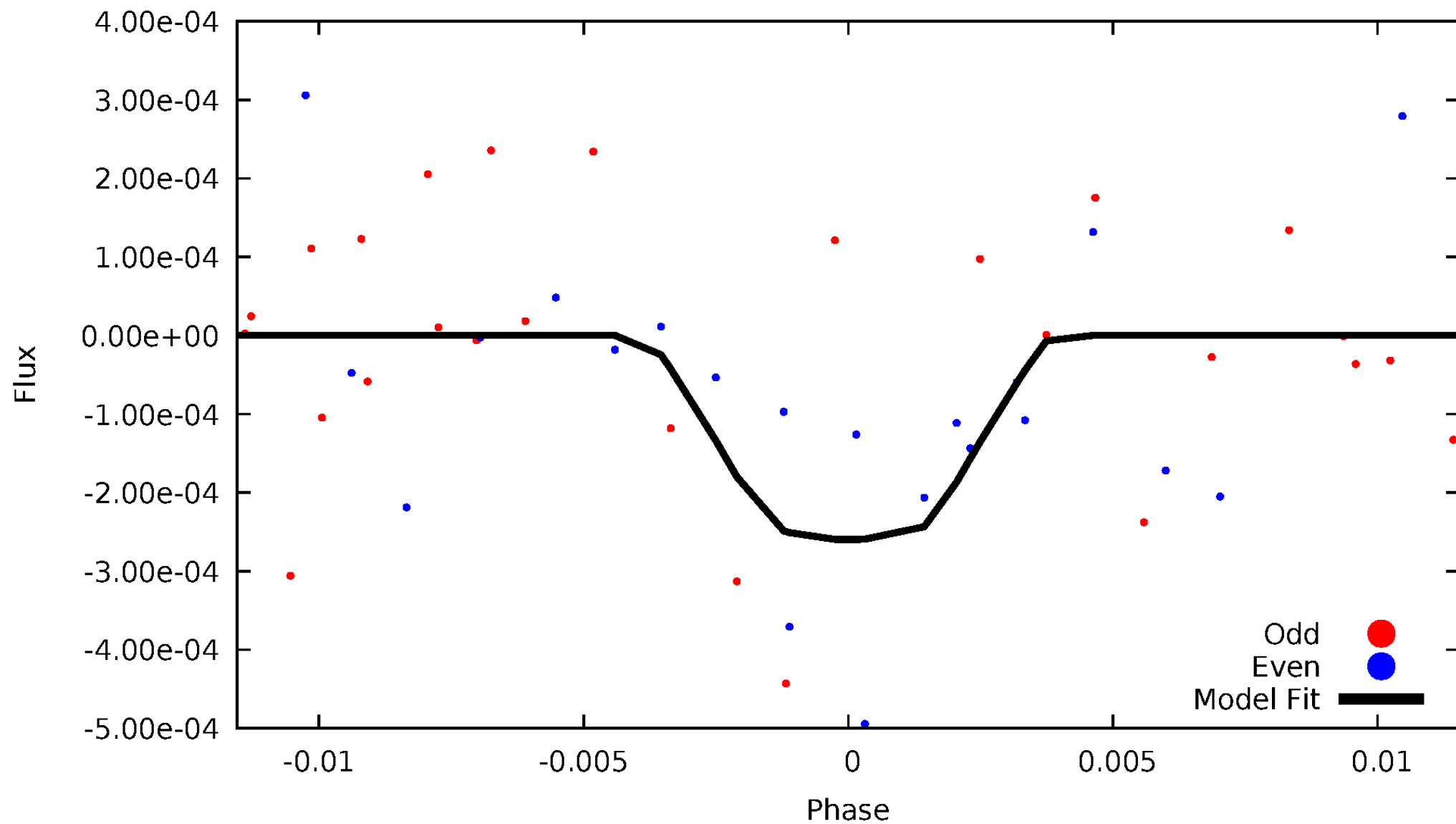


TCE 009715923-04



# DV Odd/Even

TCE 009715923-04





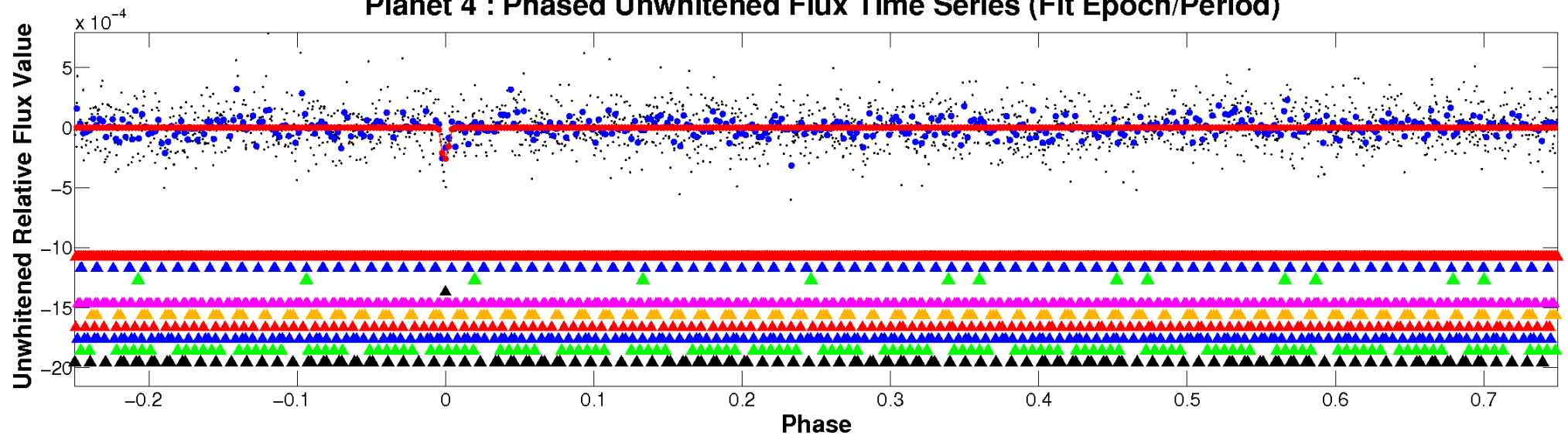
ALT Odd/Even

This plot does not exist for this TCE.

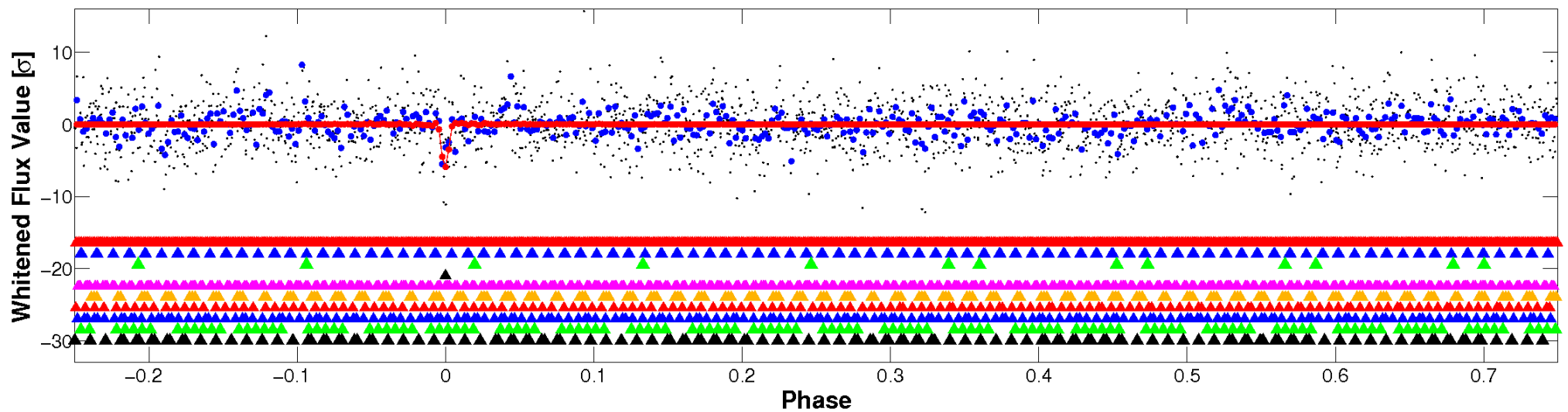


# Non-Whitened Vs. Whitened Light Curve

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

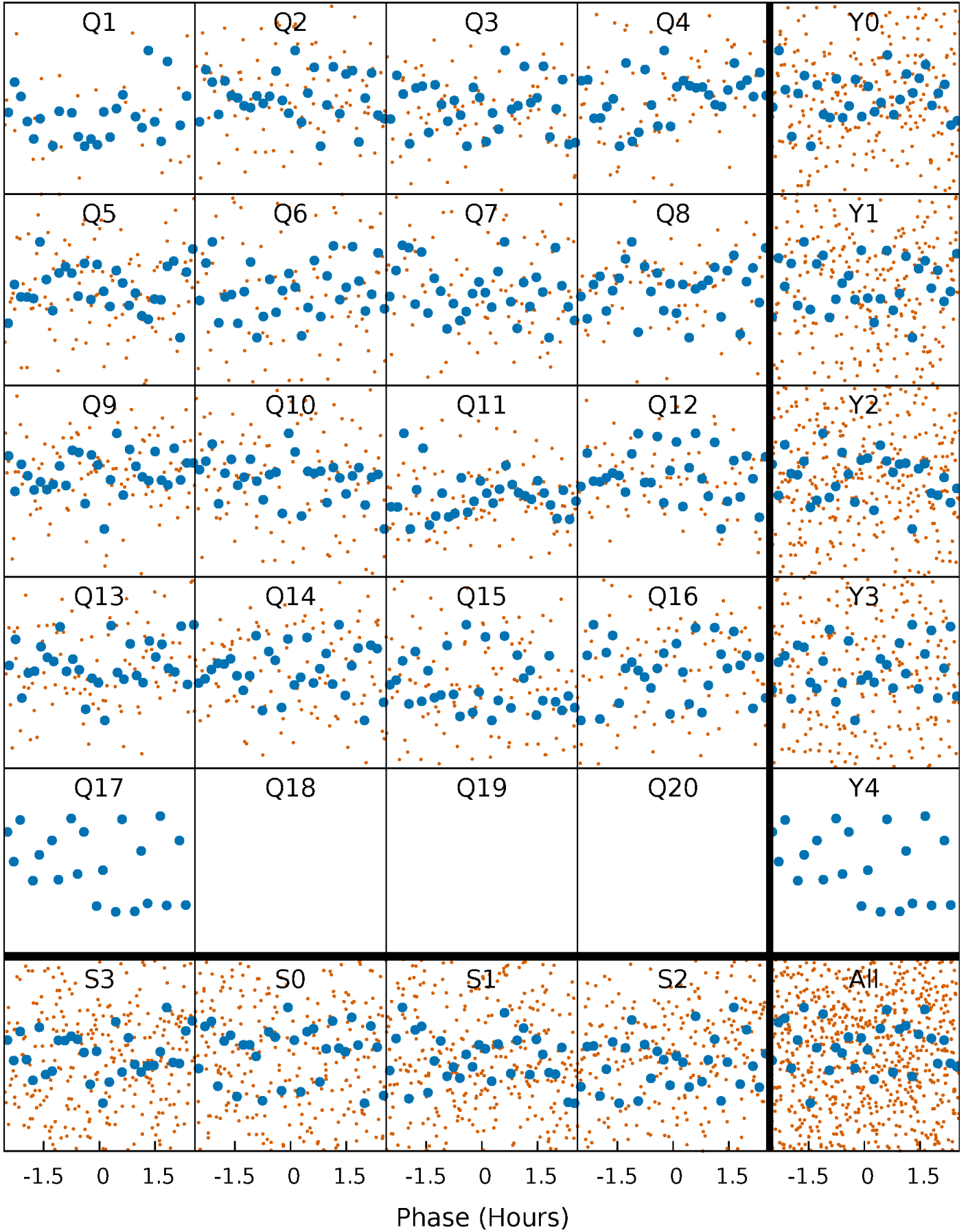


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



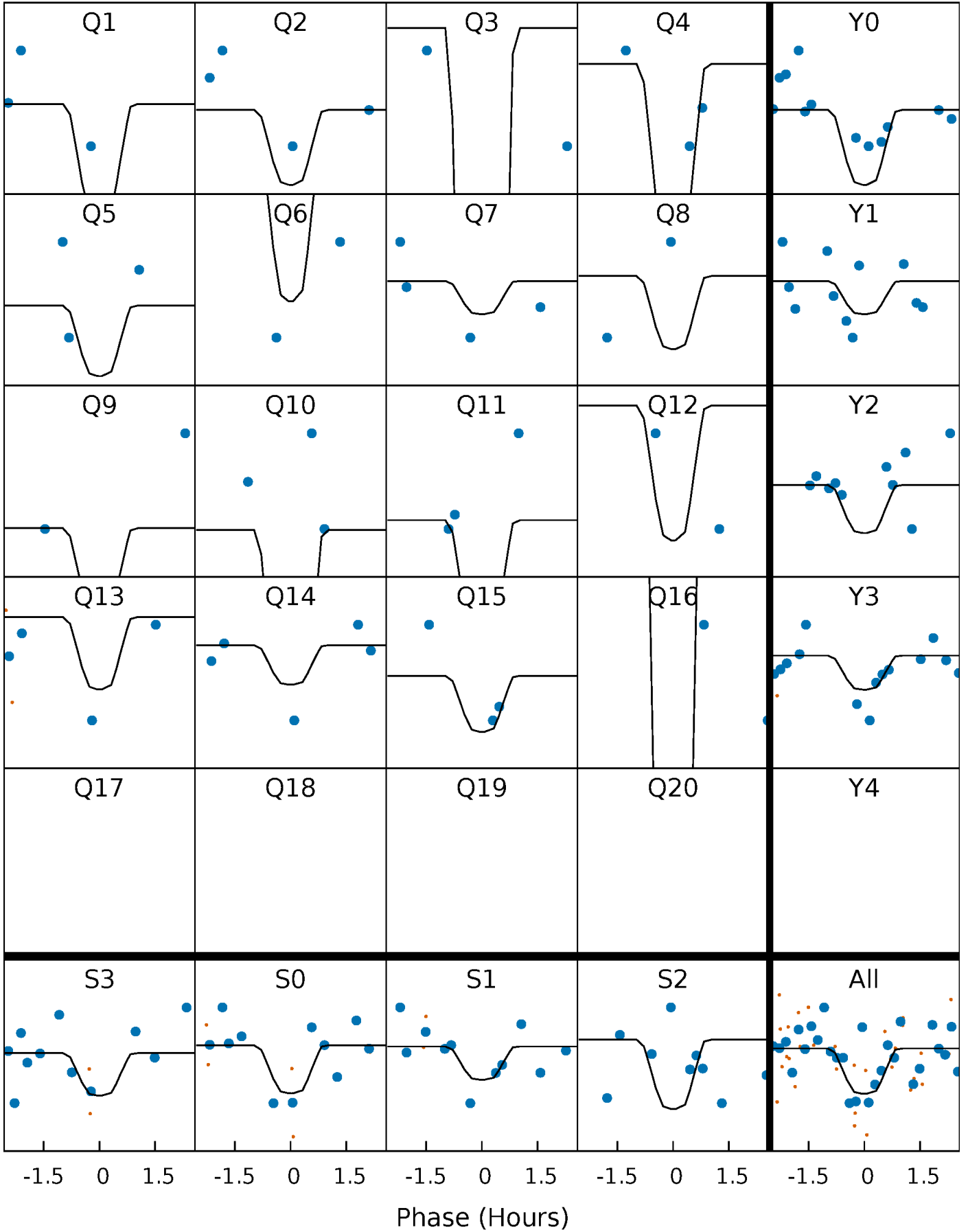
# PDC Quarter-Phased Transit Curves

TCE 009715923-04   P= 9.288268 Days    $T_0=137.020221$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 009715923-04   P= 9.288268 Days    $T_0=137.020221$  (BKJD)

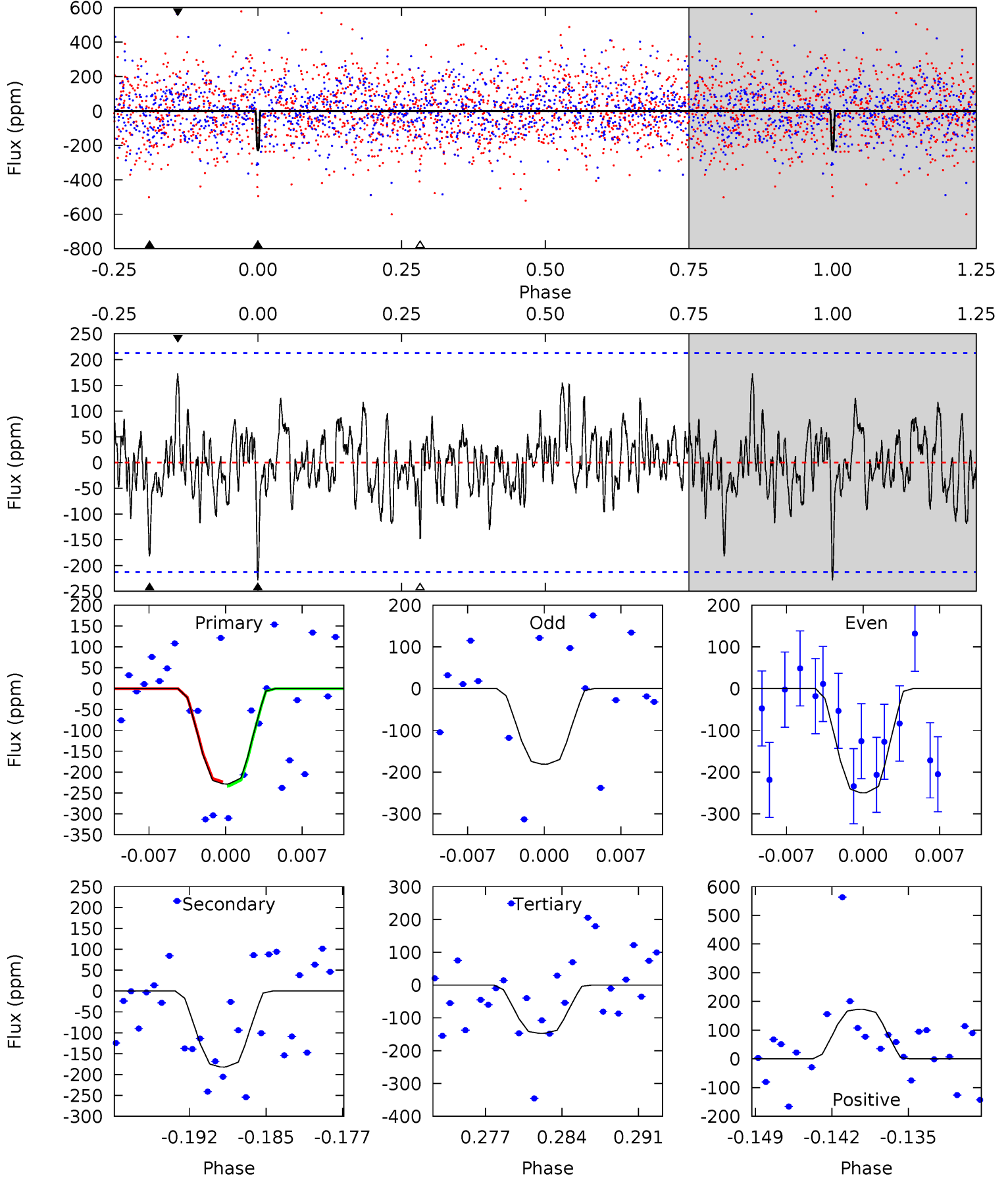


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

009715923-04, P = 9.288268 Days, E = 127.731953 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
5.47	4.35	3.52	4.14	5.09	2.69	1.20	1.95	1.33	0.83	0.22	0.75	0	0.43	0.12



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.



### Stellar Parameters For KIC 009715923

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7105^{+196}_{-270}$	$3.598^{+0.289}_{-0.051}$	$-0.040^{+0.250}_{-0.250}$	$3.638^{+0.306}_{-1.225}$	$1.912^{+0.168}_{-0.311}$	$0.056^{+0.111}_{-0.010}$
	+3%/-4%	+8%/-1%	+625%/-625%	+8%/-34%	+9%/-16%	+199%/-18%
Source	PHO1	FLK73	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 009715923-04 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-182 \pm 42$	$11.75^{+11.43}_{-7.40}$	$2485^{+119}_{-188}$	$4661^{+3059}_{-1080}$	$8.056^{+58.845}_{-5.936}$
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

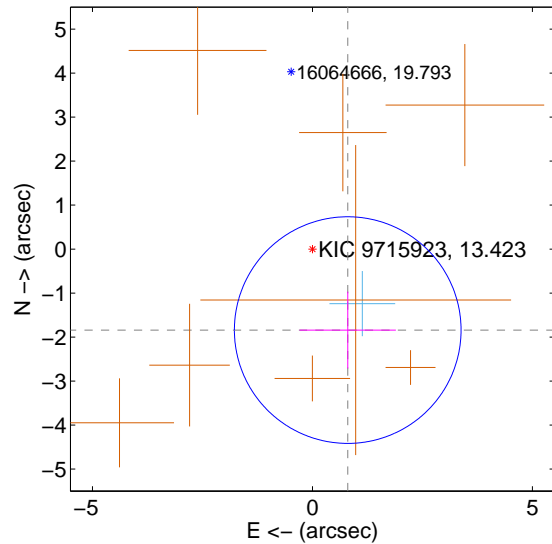
Supplemental centroid analysis for 009715923-04. Kepler magnitude: 13.42. Transit SNR 15.70

There are 1 quarters with good PRF difference image offsets

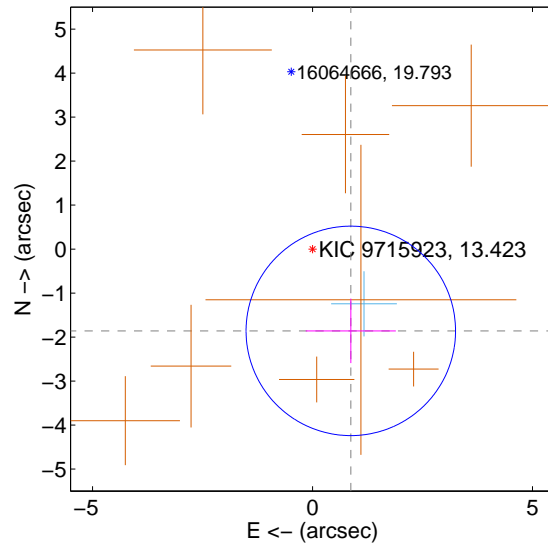
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.008 \pm 0.859$	2.34	$-0.802 \pm 1.095$	$-1.841 \pm 0.874$
PRF-fit source offset from KIC position	$2.053 \pm 0.794$	2.59	$-0.870 \pm 1.024$	$-1.859 \pm 0.734$
photometric centroid source offset	$1.18 \pm 0.41$	2.84	$0.06 \pm 0.37$	$1.17 \pm 0.41$

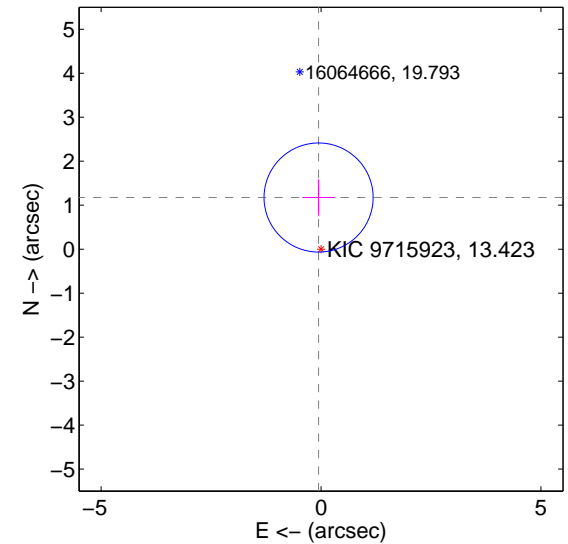
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

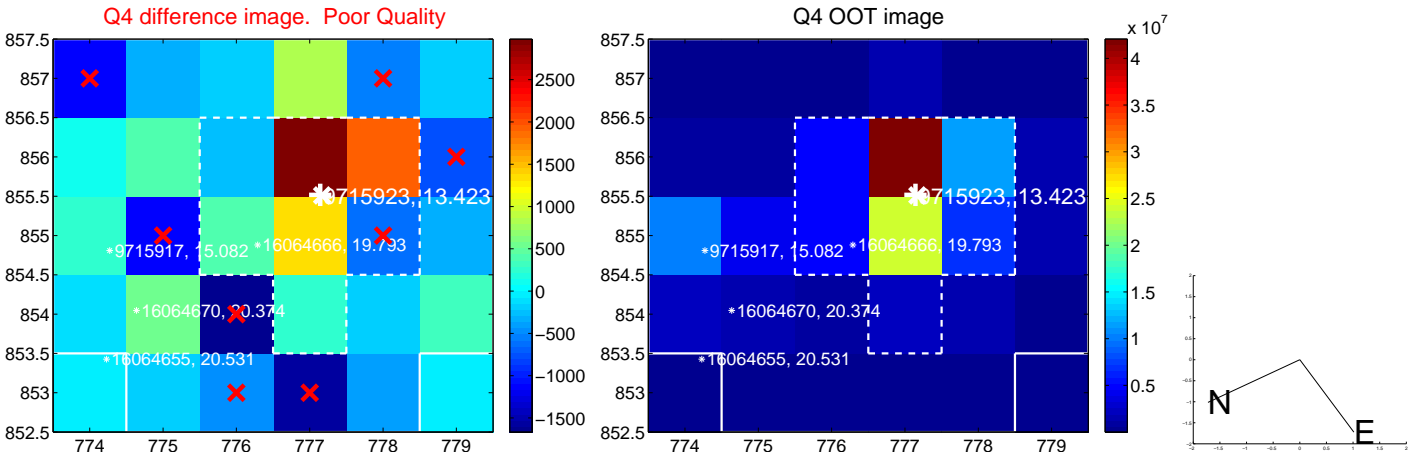
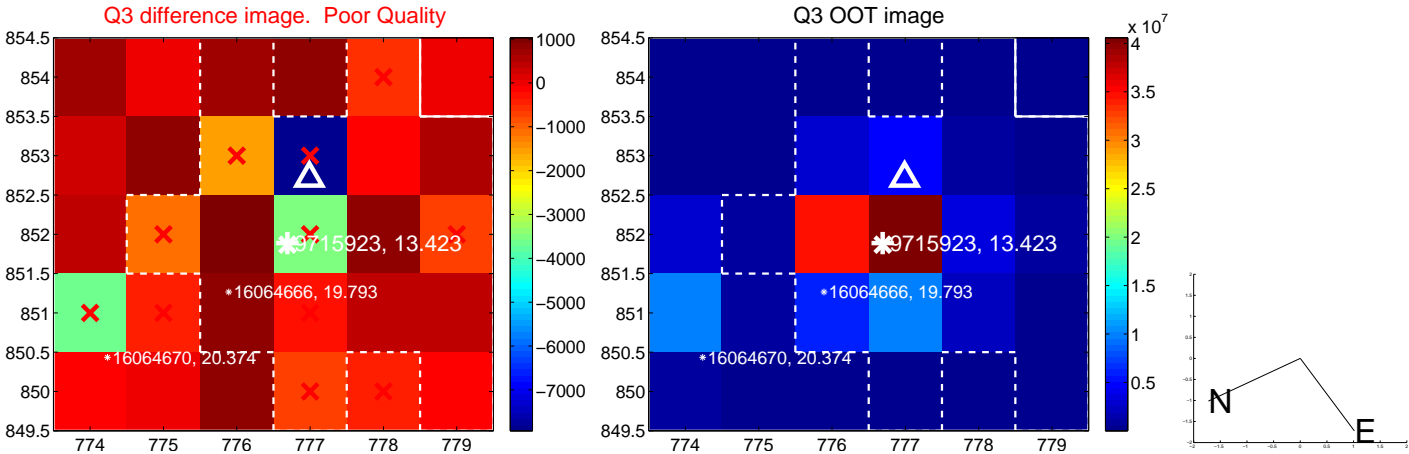
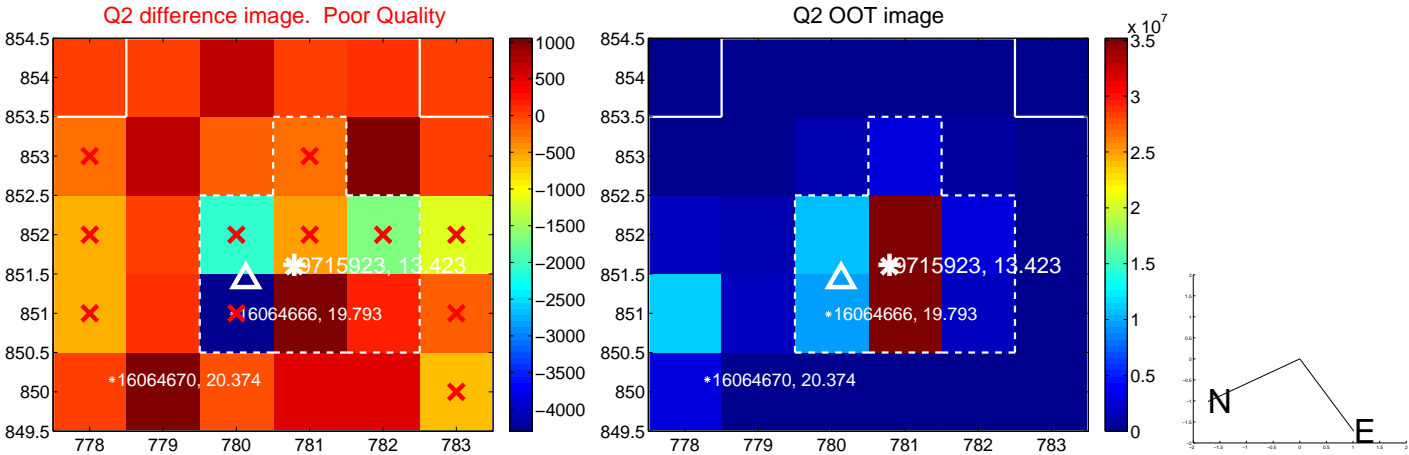
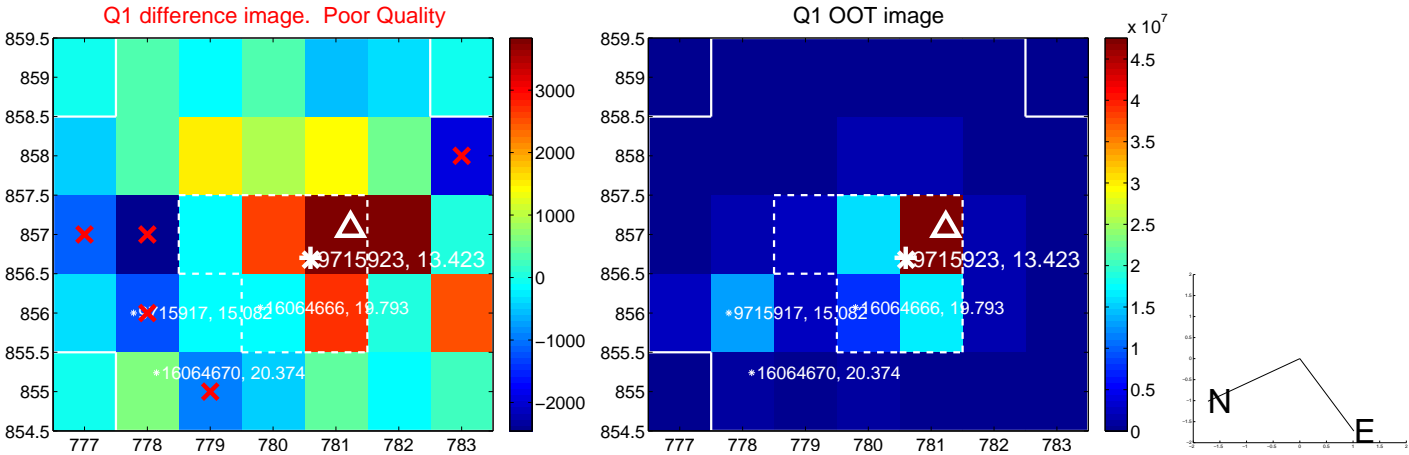


offset from photometric centroids

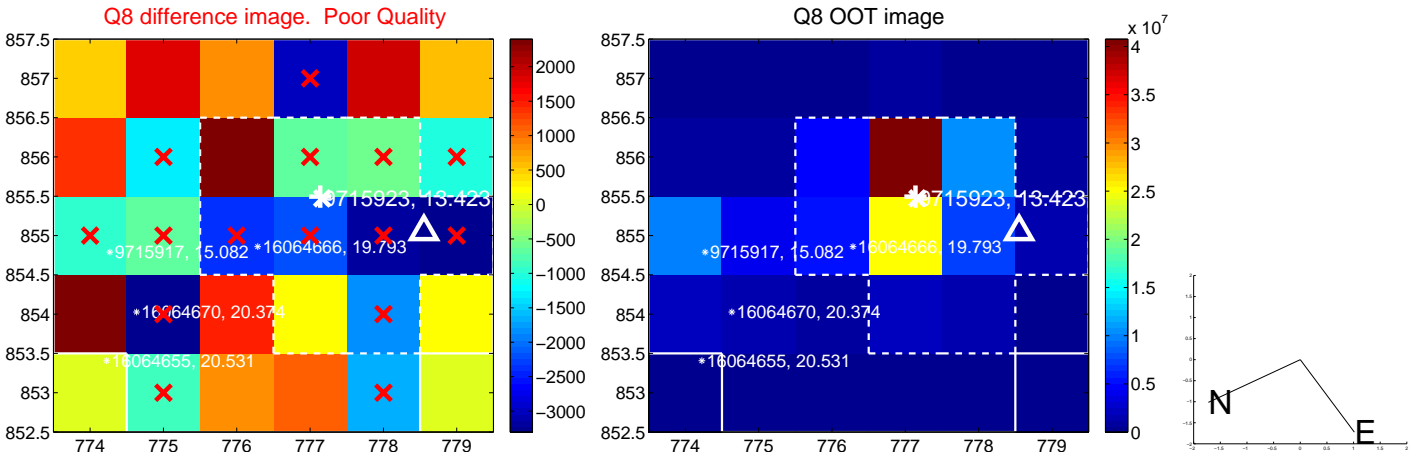
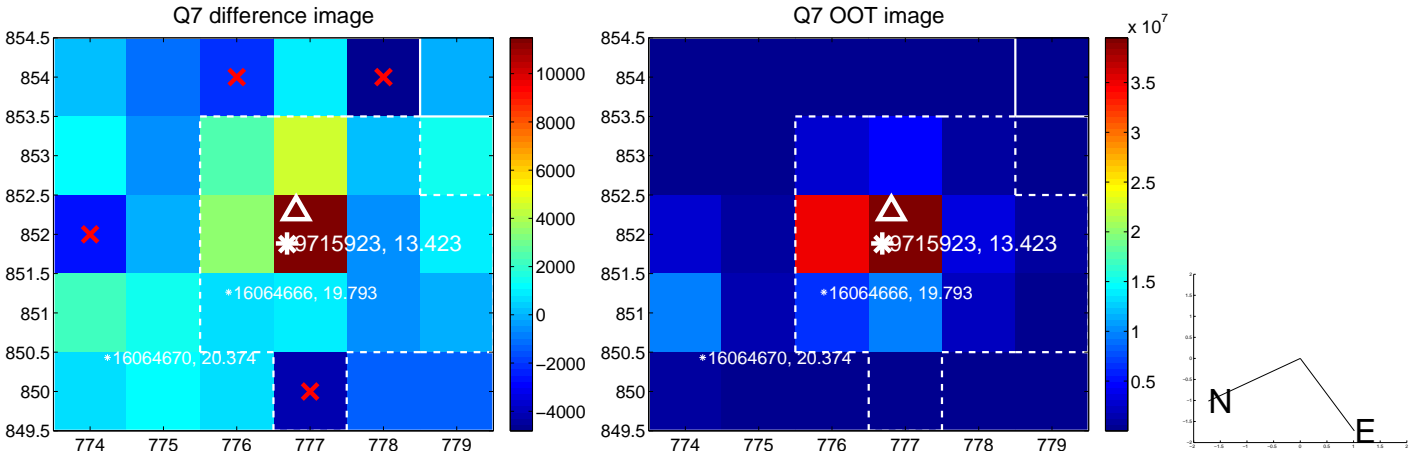
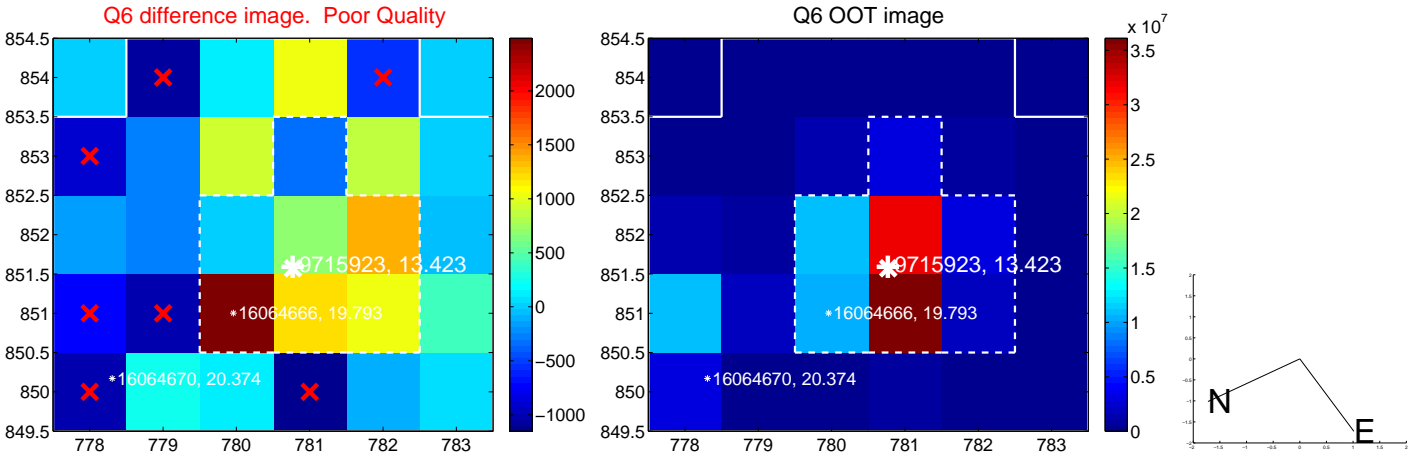
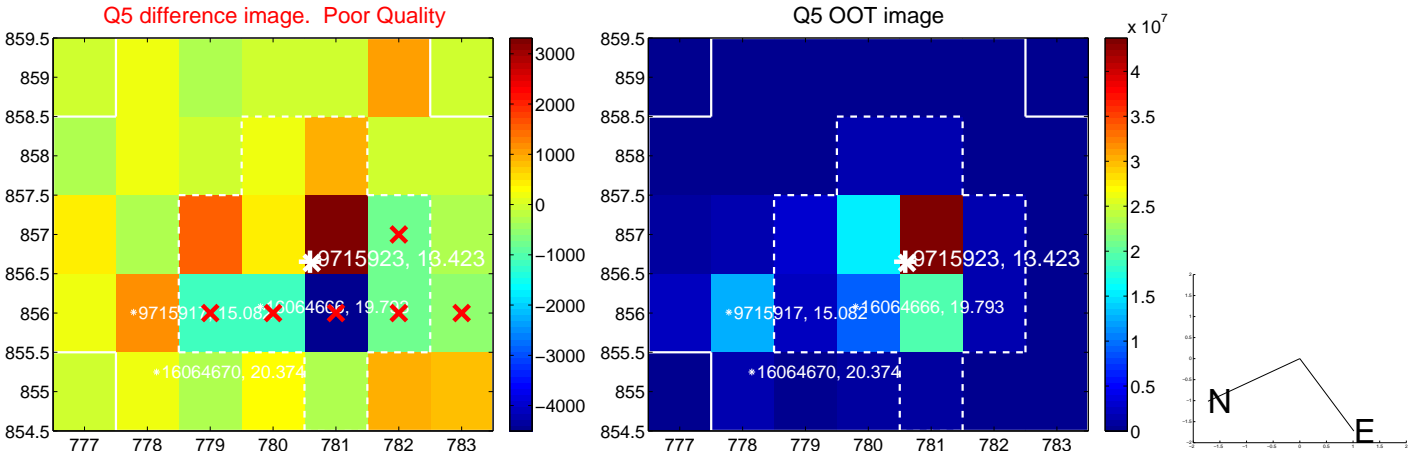


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

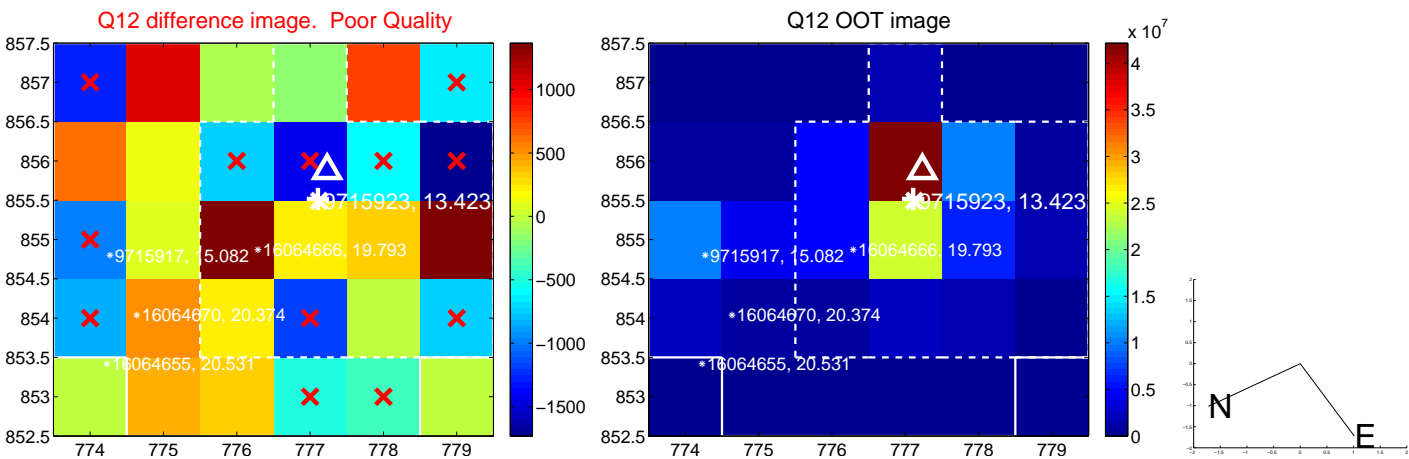
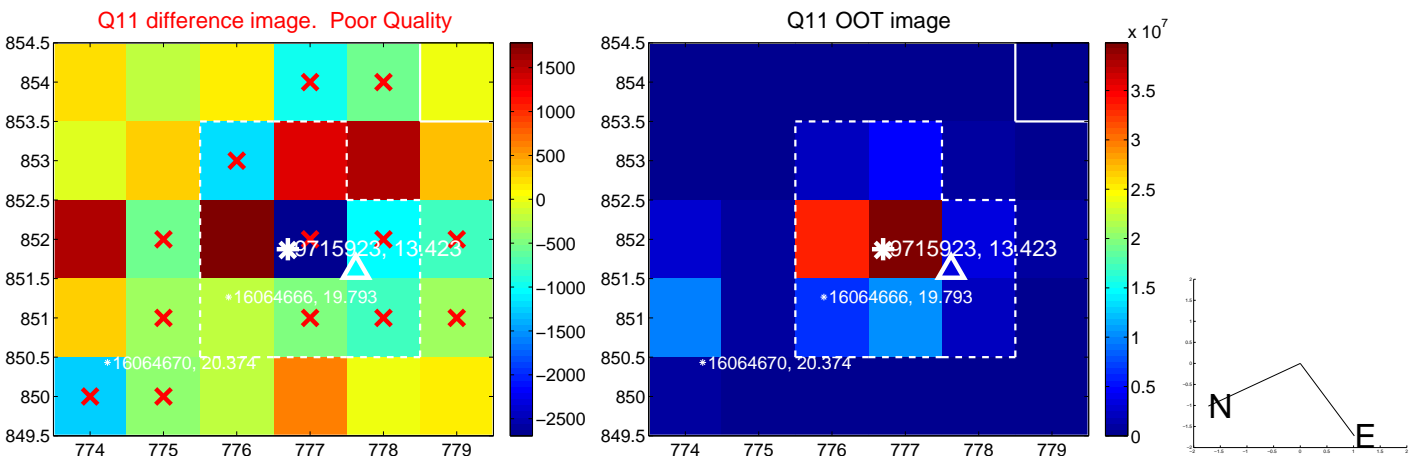
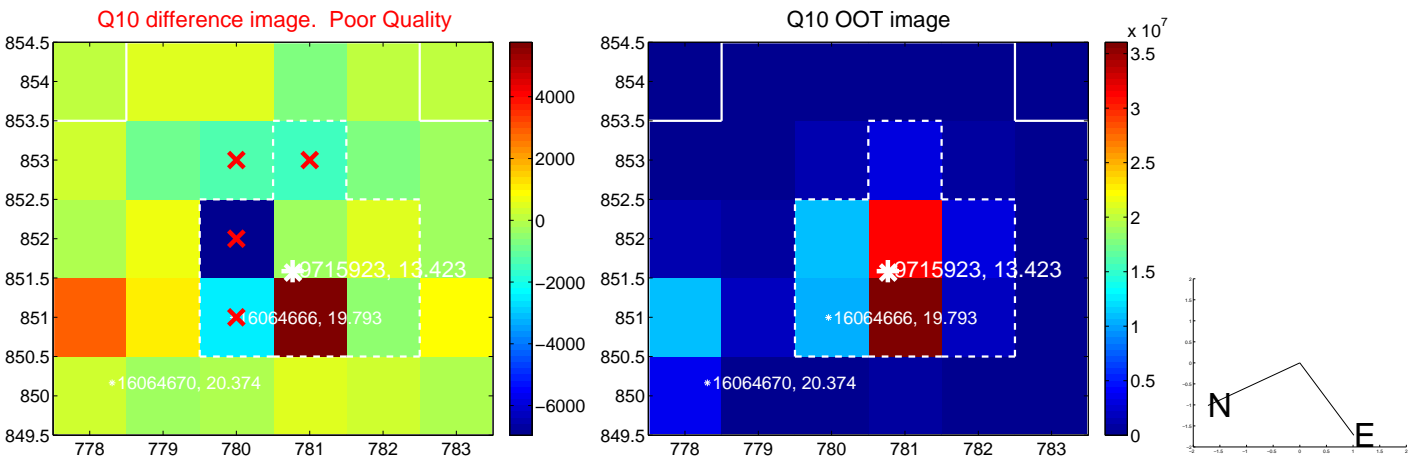
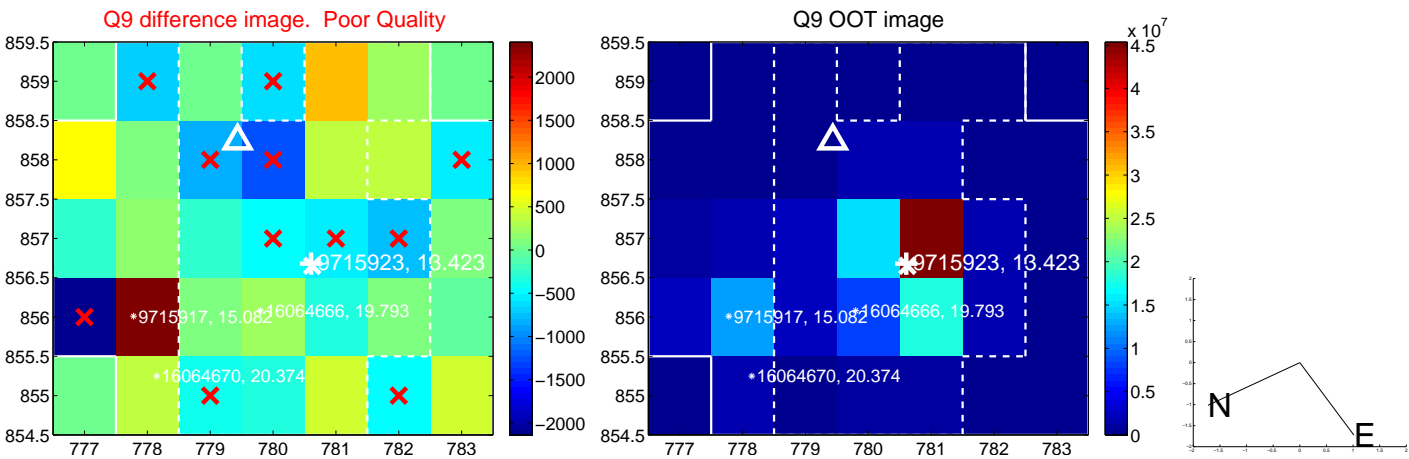
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



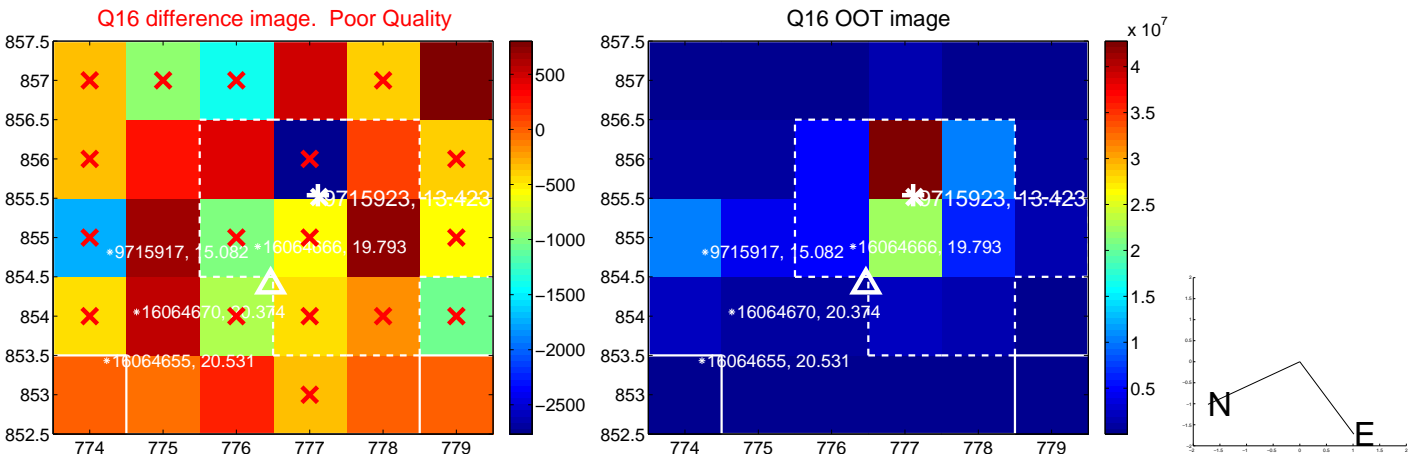
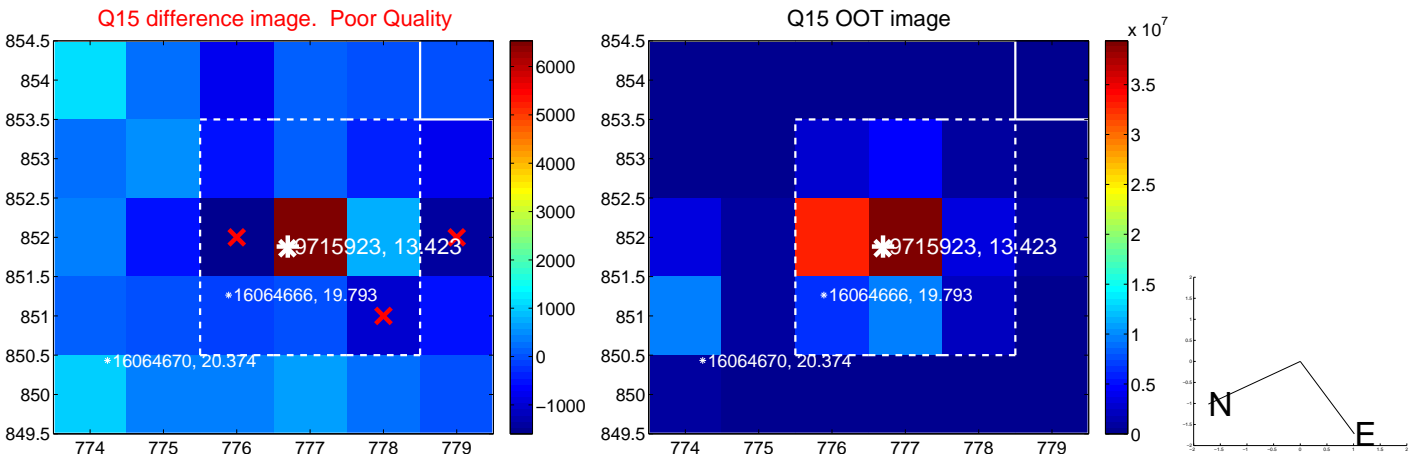
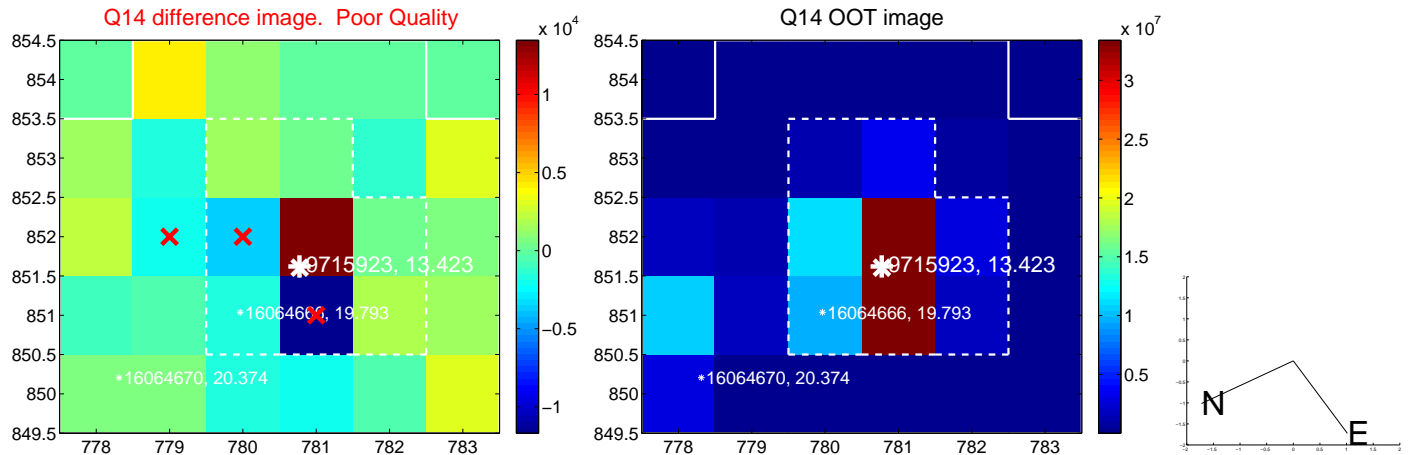
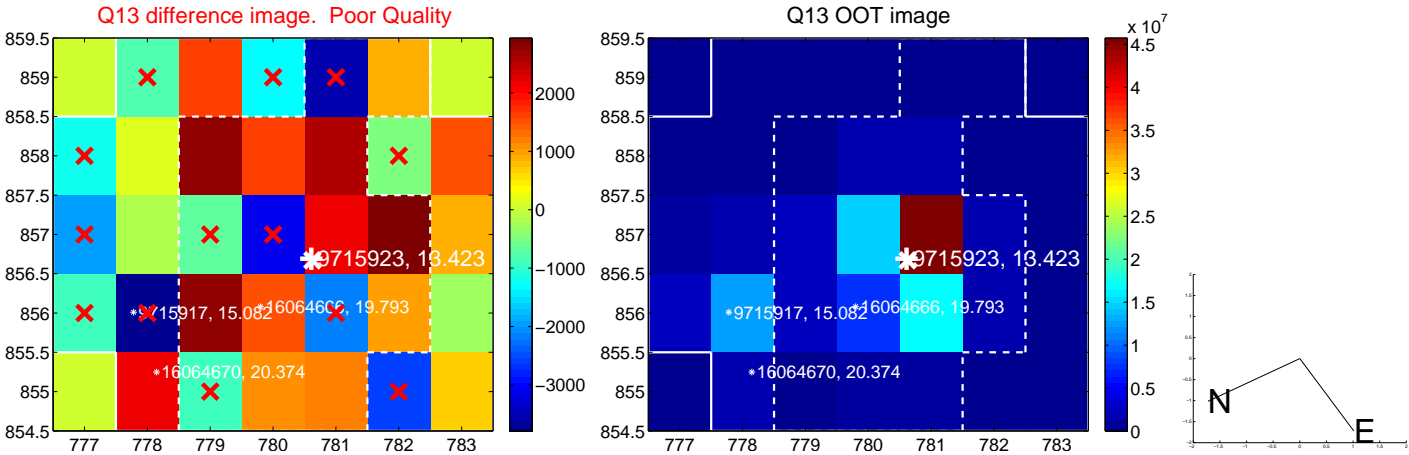
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

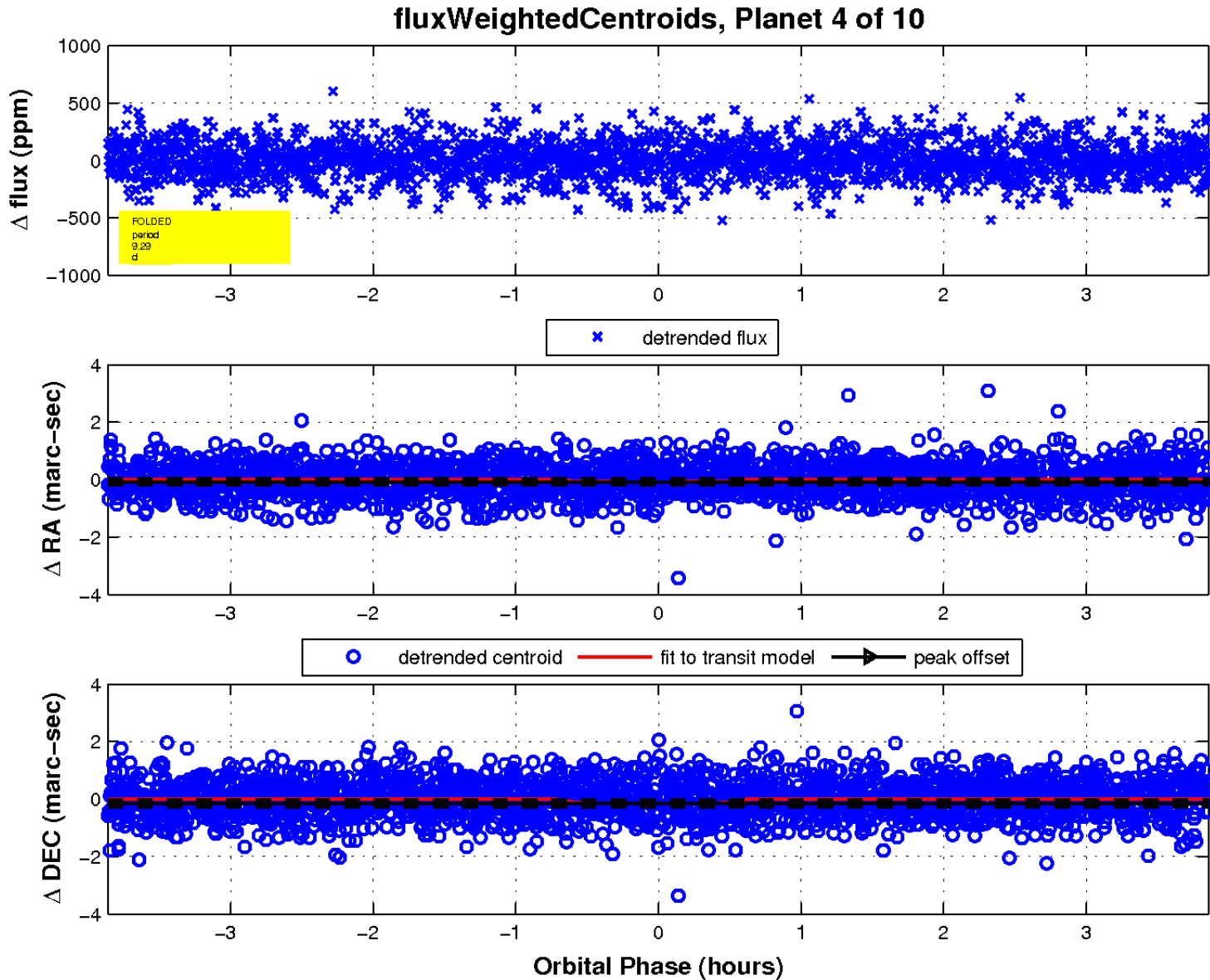
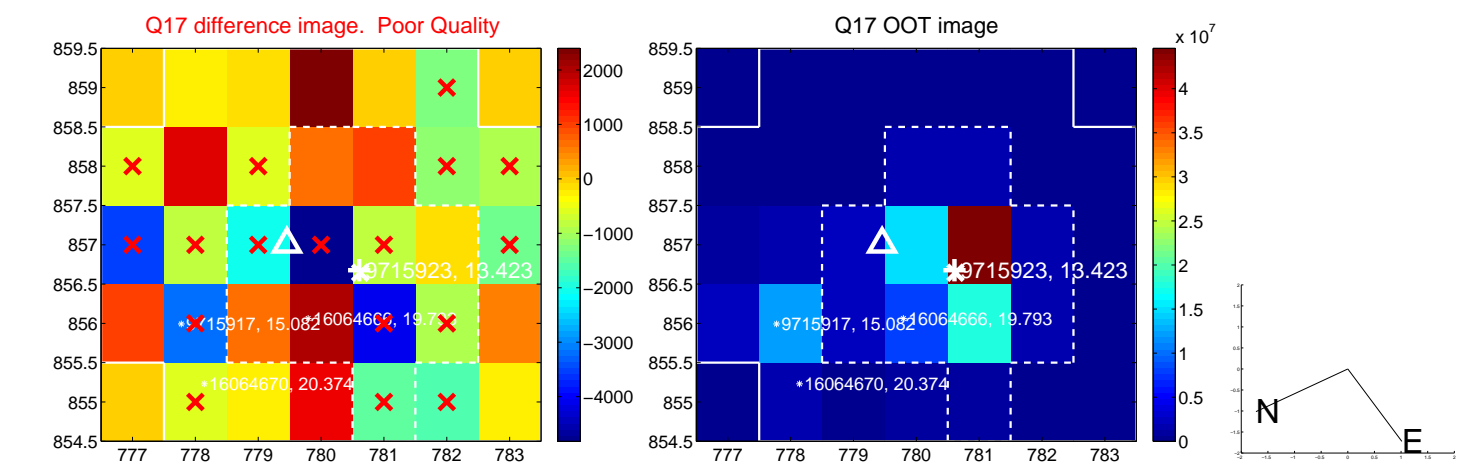


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



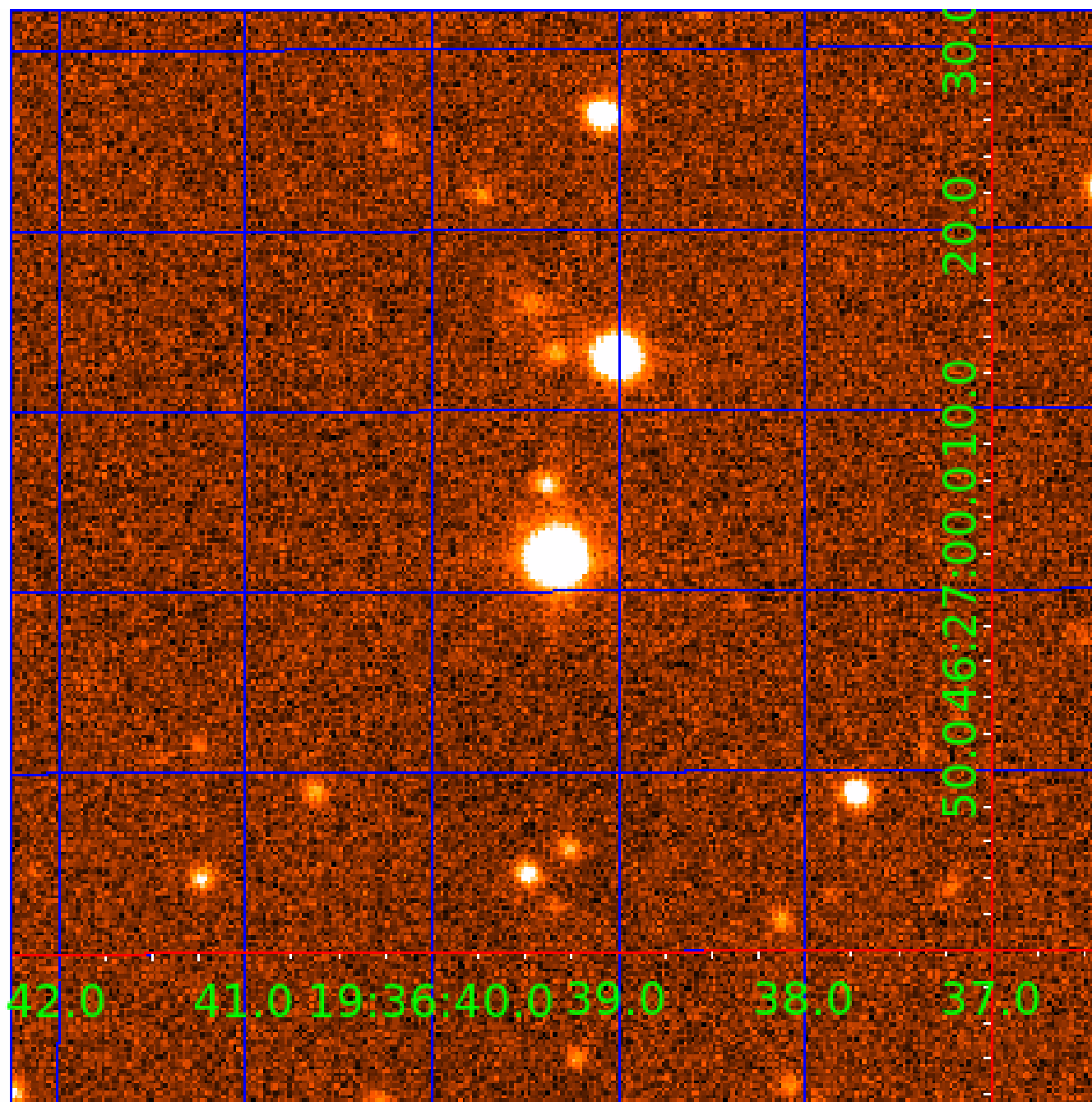


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\Delta$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 009715923

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009715923-01	OBS	No	0.694561	131.797987	2.7	5.202	9.1	1.7	3.64	7105	0.61	83197.88
009715923-02	OBS	No	8.985471	132.812379	202.5	0.905	12.7	11.7	3.64	7105	5.29	2739.50
009715923-04	OBS	No	9.288268	137.020221	260.0	1.287	11.3	15.7	3.64	7105	6.61	2621.07
009715923-05	OBS	No	3.847139	133.473597	178.8	1.156	12.1	15.2	3.64	7105	5.07	8489.37
009715923-06	OBS	No	8.374381	138.808874	320.5	0.587	9.3	12.2	3.64	7105	7.23	3009.23
009715923-07	OBS	No	8.976706	134.628131	164.2	1.257	10.9	10.0	3.64	7105	5.01	2743.07
009715923-08	OBS	No	6.908270	135.222405	274.6	0.699	10.8	13.0	3.64	7105	6.24	3889.56
009715923-09	OBS	No	11.309767	136.928988	256.2	0.665	9.4	10.1	3.64	7105	6.66	2015.83
009715923-10	OBS	No	10.461333	138.428607	219.1	1.442	9.8	9.3	3.64	7105	5.46	2236.71

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009715923-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_DIFFS
009715923-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009715923-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS
009715923-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV
009715923-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_DIFFS
009715923-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—HALO_GHOST
009715923-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009715923-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009715923-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_MEAS

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

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

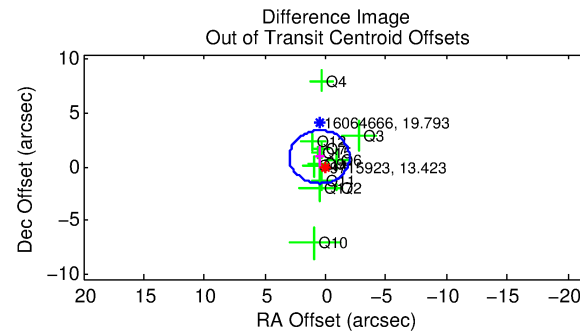
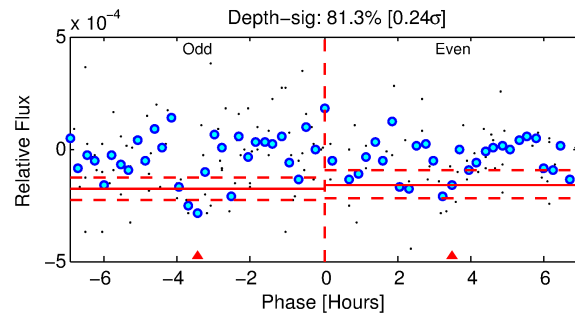
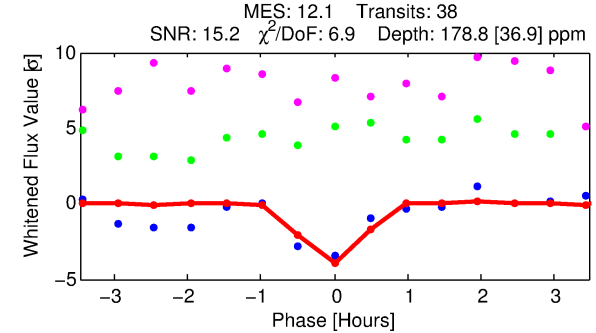
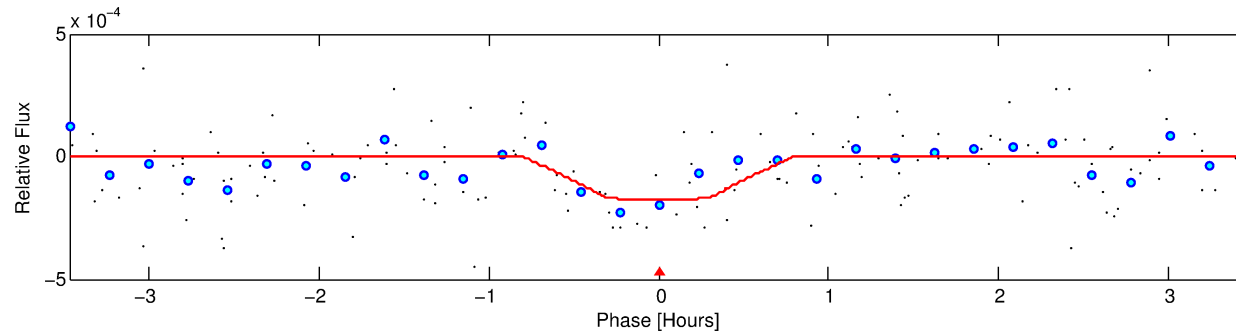
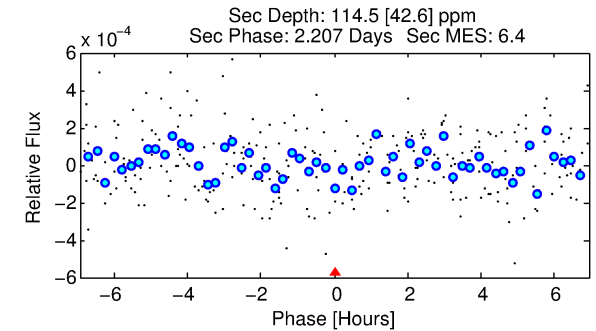
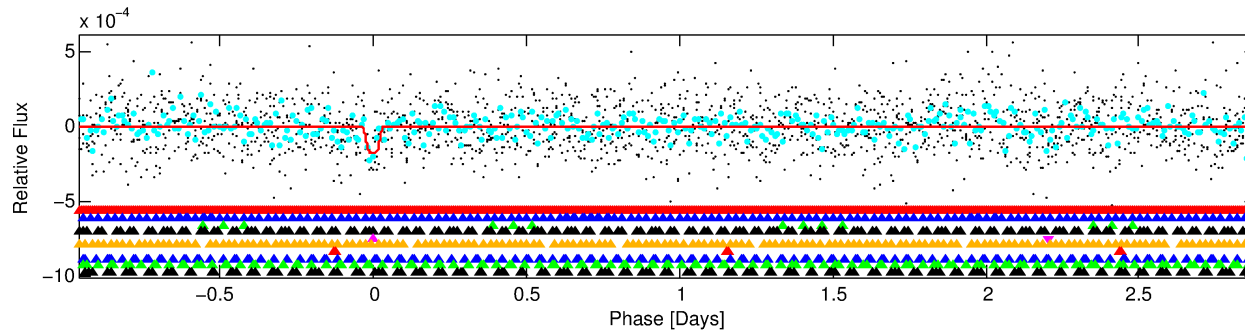
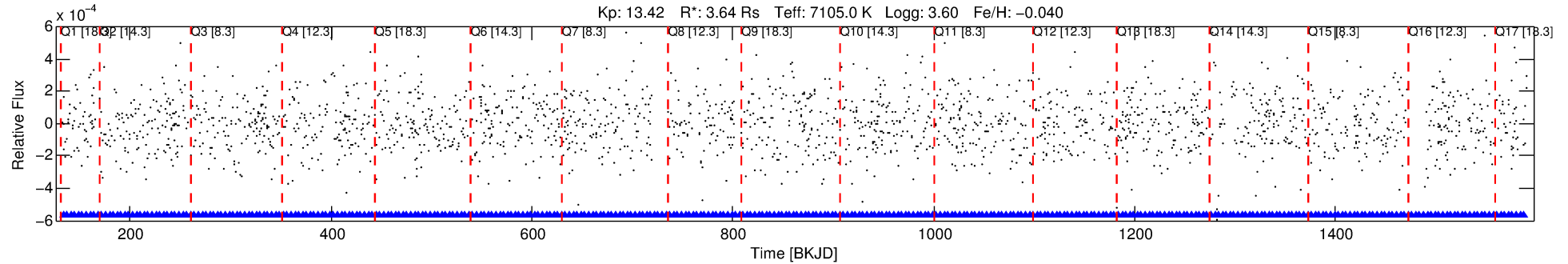
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 009715923-05

No Significant Match Found

# DV One-Page Summary

KIC: 9715923 Candidate: 5 of 10 Period: 3.847 d



## DV Fit Results:

Period = 3.84714 [0.00003] d  
Epoch = 133.4736 [0.0048] BKJD  
Rp/R\* = 0.0128 [0.0155]  
a/R\* = 22.33 [159.31]  
b = 0.50 [10.64]  
Seff = 8489.37 [4413.71]  
Teq = 2448 [318] K  
Rp = 5.07 [6.40] Re  
a = 0.0597 [0.0188] AU  
Ag = 8.71 [21.84] [0.35σ]  
Teffp = 6500 [4004] K [1.01σ]

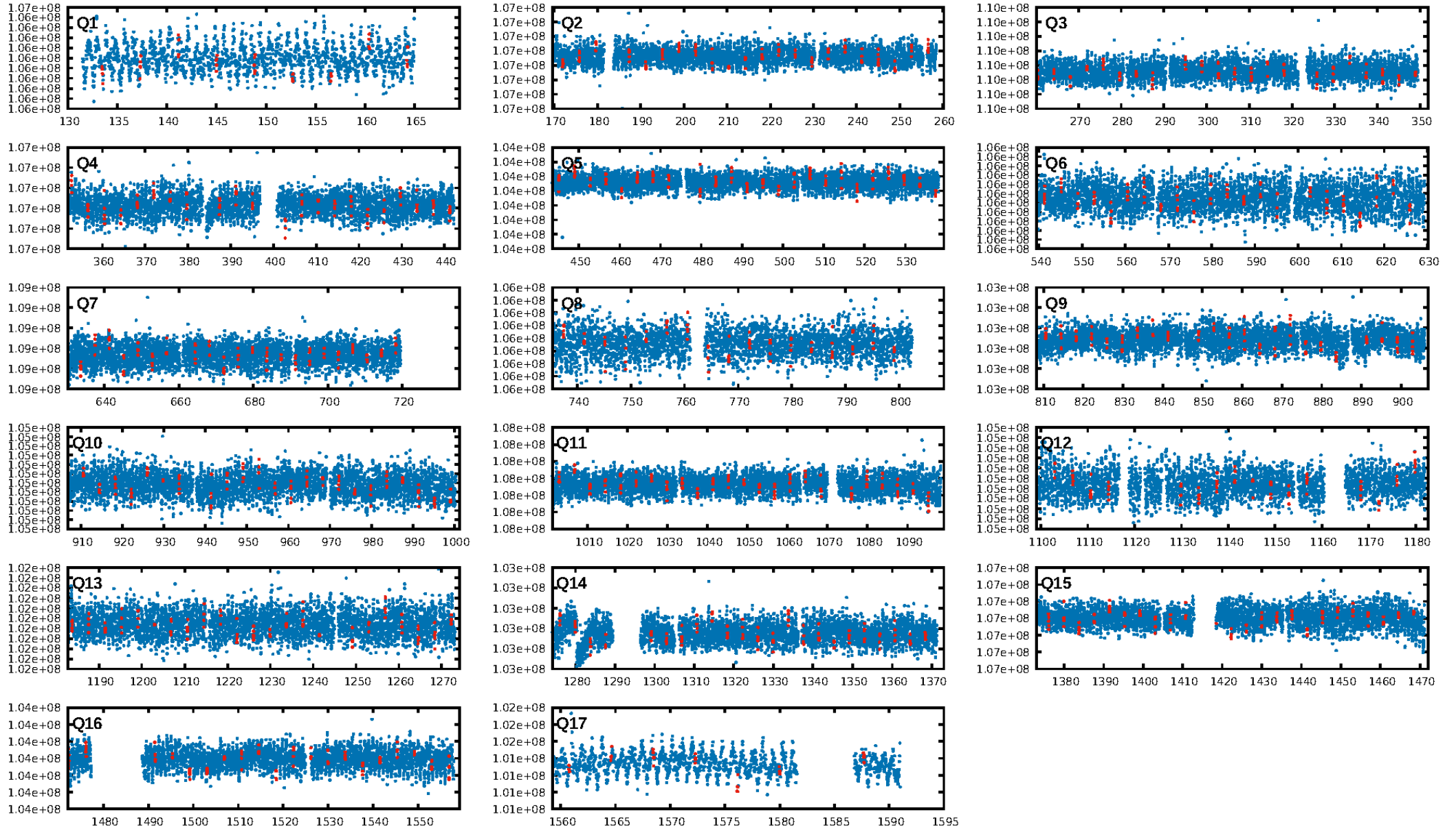
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [14.20σ]  
LongPeriod-sig: 100.0% [54.38σ]  
**ModelChiSquare2-sig: 0.0%**  
ModelChiSquareGof-sig: 1.9%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [36/36]  
GhostDiagnostic-chr: 1.696  
Centroid-sig: 14.1%  
Centroid-so: 0.612 arcsec [1.58σ]  
OotOffset-rm: 1.042 arcsec [1.26σ]  
KicOffset-rm: 0.990 arcsec [1.16σ]  
OotOffset-st: 4/4/2/2 [12]  
KicOffset-st: 4/4/2/2 [12]  
DiffImageQuality-fgm: 0.50 [6/12]  
DiffImageOverlap-fno: 0.41 [7/17]

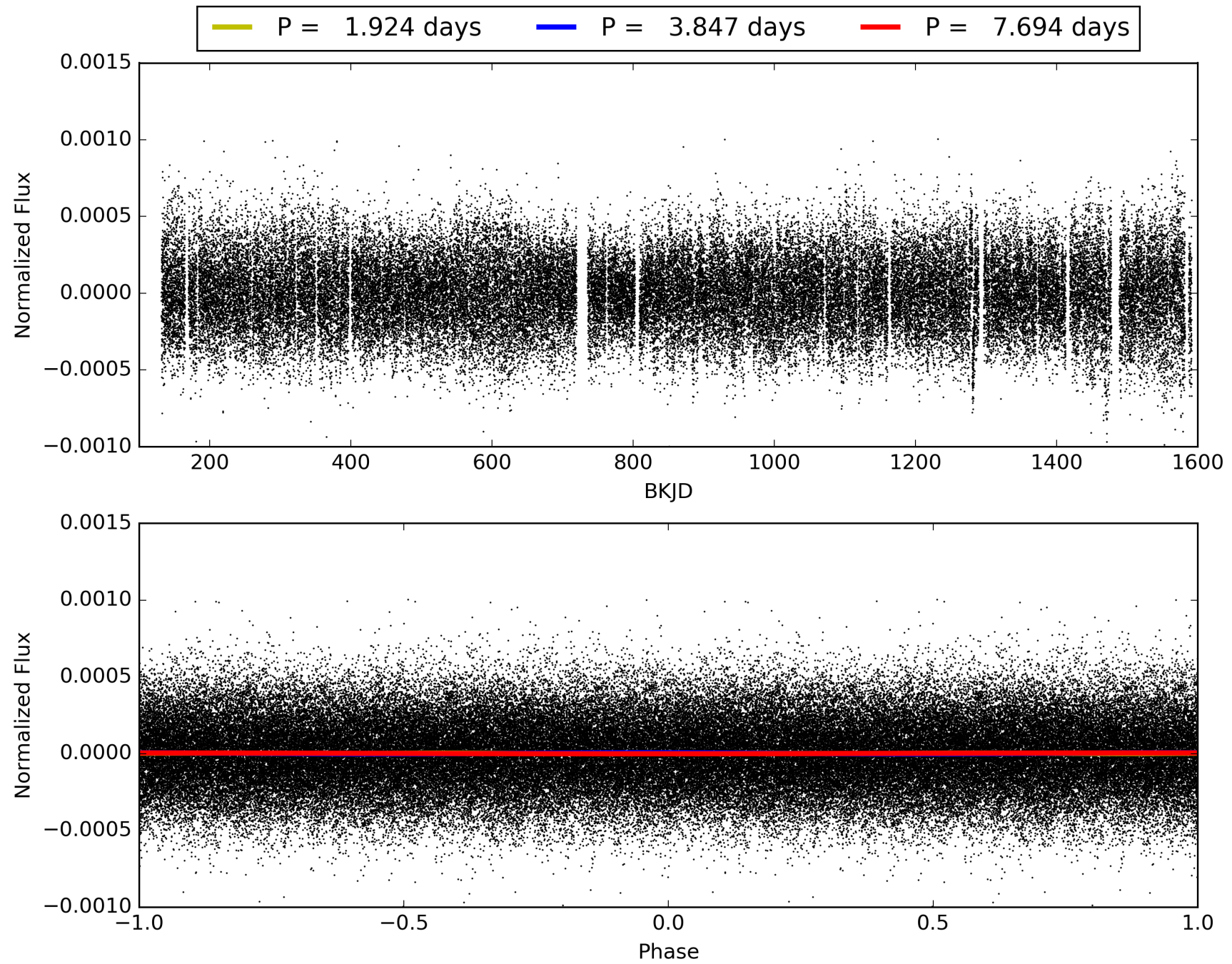
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:00:35 Z

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

# TCE 009715923-05, PDC Light Curves



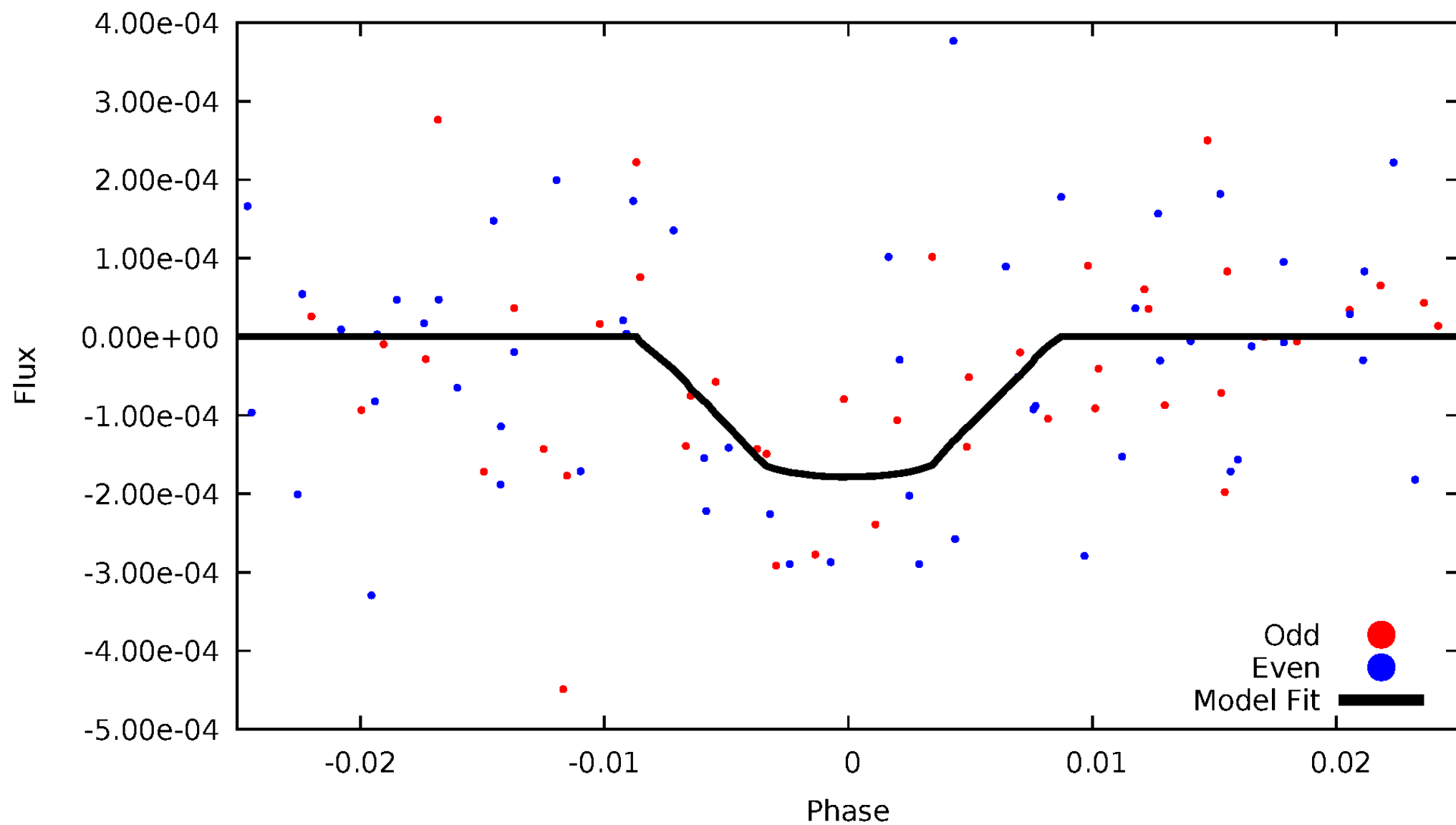
TCE 009715923-05





# DV Odd/Even

TCE 009715923-05





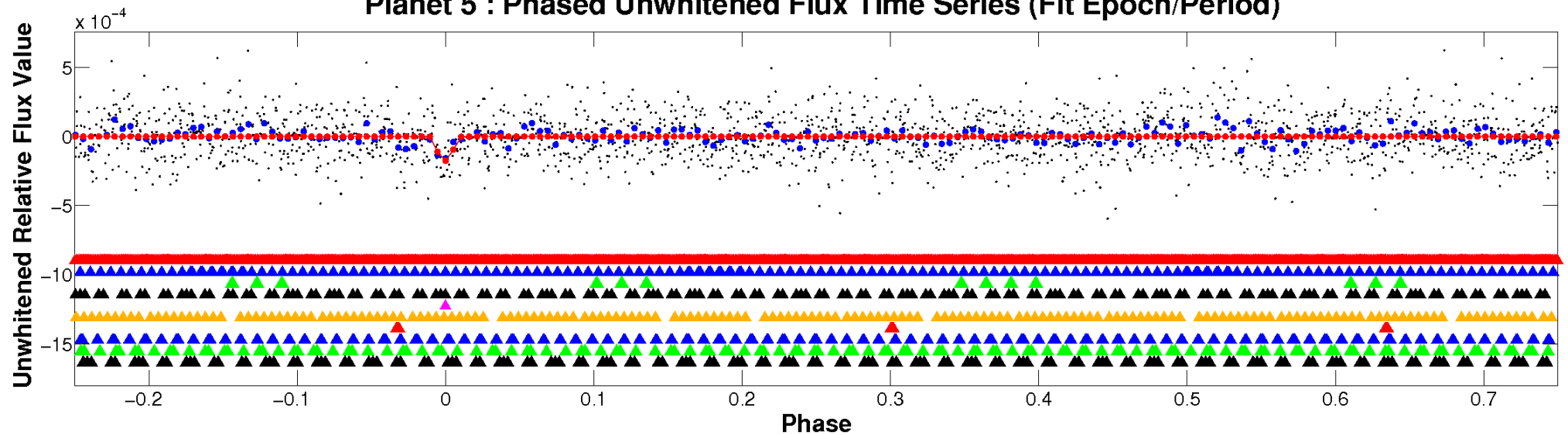


ALT Odd/Even

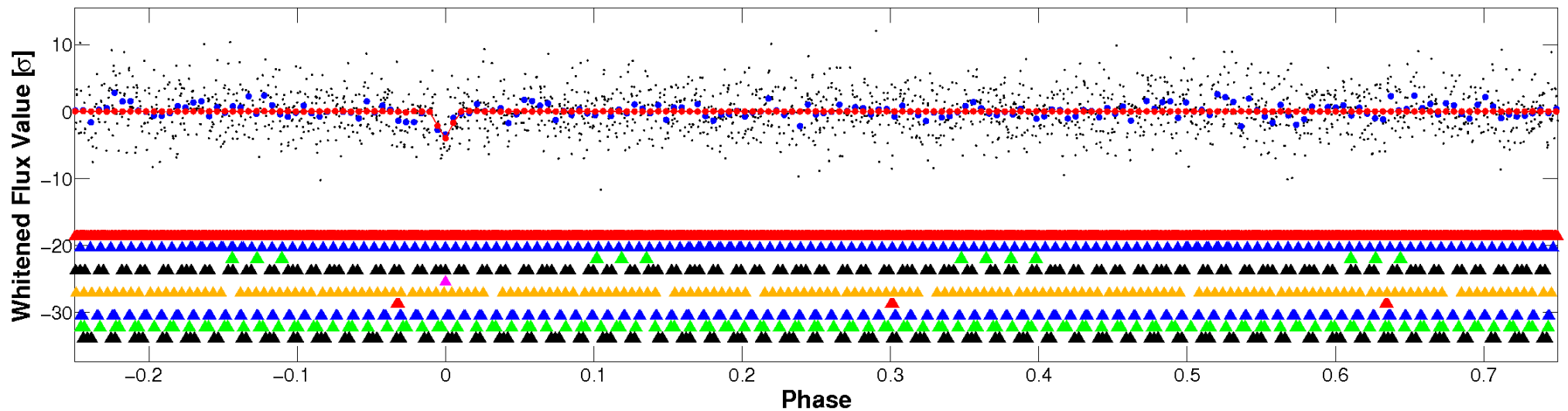
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

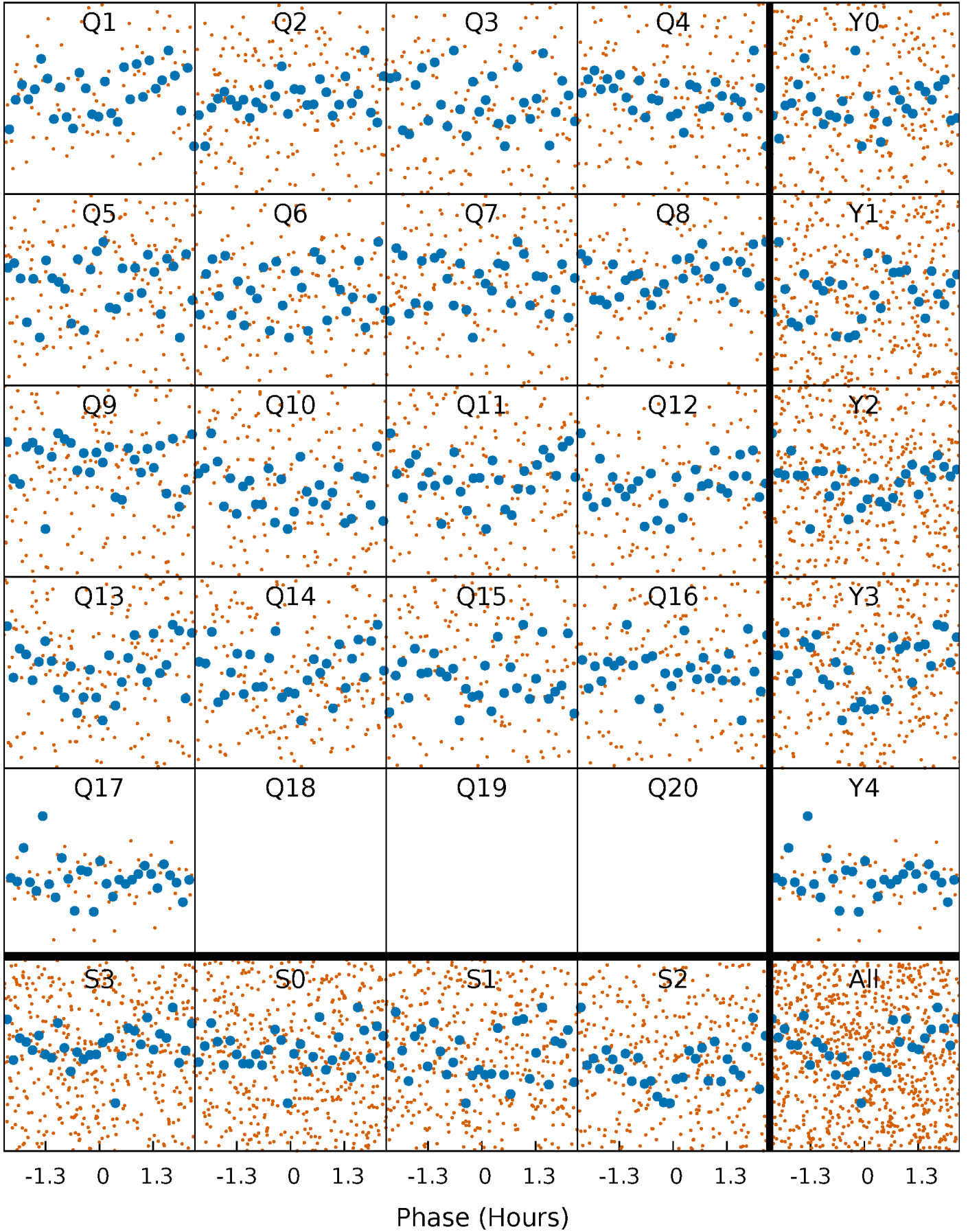


## Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



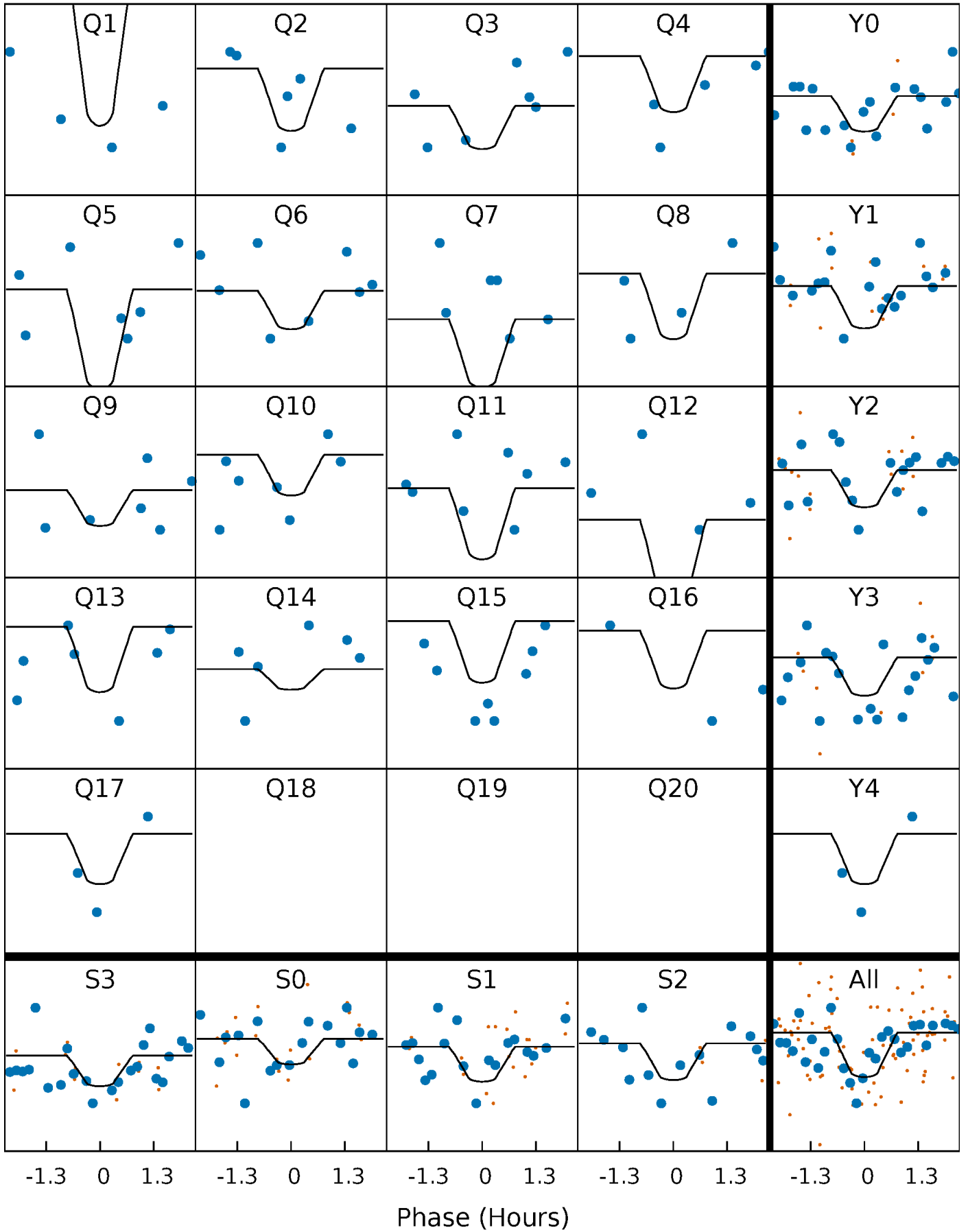
# PDC Quarter-Phased Transit Curves

TCE 009715923-05   P= 3.847139 Days    $T_0=133.473597$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 009715923-05   P= 3.847139 Days    $T_0=133.473597$  (BKJD)

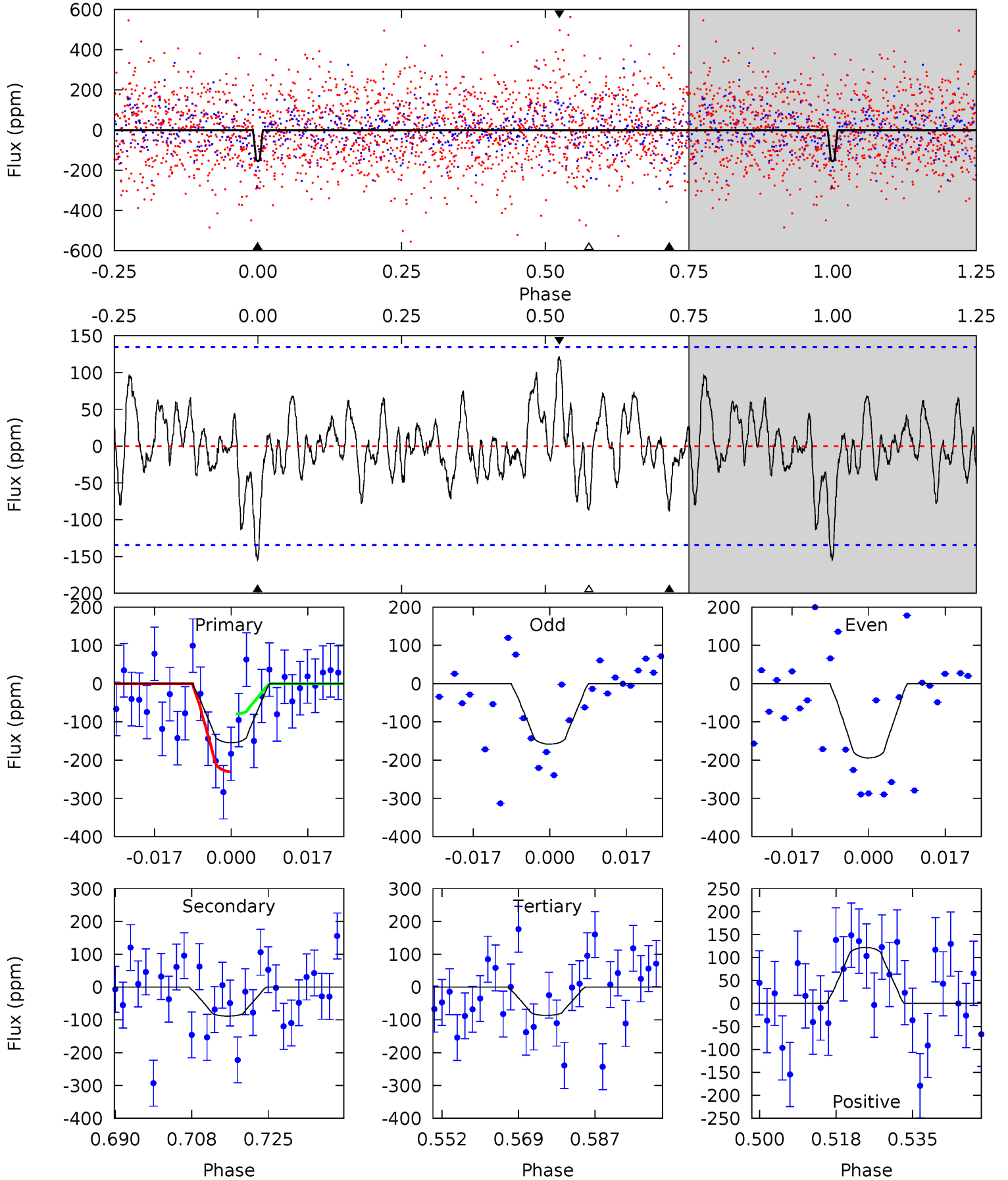


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

009715923-05, P = 3.847139 Days, E = 129.626458 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
5.66	3.24	3.16	4.46	4.92	2.38	1.39	2.50	1.20	0.08	-1.22	0.66	0.76	0.44	2.76





## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 009715923

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7105^{+196}_{-270}$	$3.598^{+0.289}_{-0.051}$	$-0.040^{+0.250}_{-0.250}$	$3.638^{+0.306}_{-1.225}$	$1.912^{+0.168}_{-0.311}$	$0.056^{+0.111}_{-0.010}$
	+3%/-4%	+8%/-1%	+625%/-625%	+8%/-34%	+9%/-16%	+199%/-18%
Source	PHO1	FLK73	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 009715923-05 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-89 \pm 27$	$6.24^{+5.45}_{-4.11}$	$3333^{+174}_{-296}$	$5185^{+3990}_{-1312}$	$4.451^{+30.628}_{-3.290}$
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  $A_{obs} \gg 1.0$

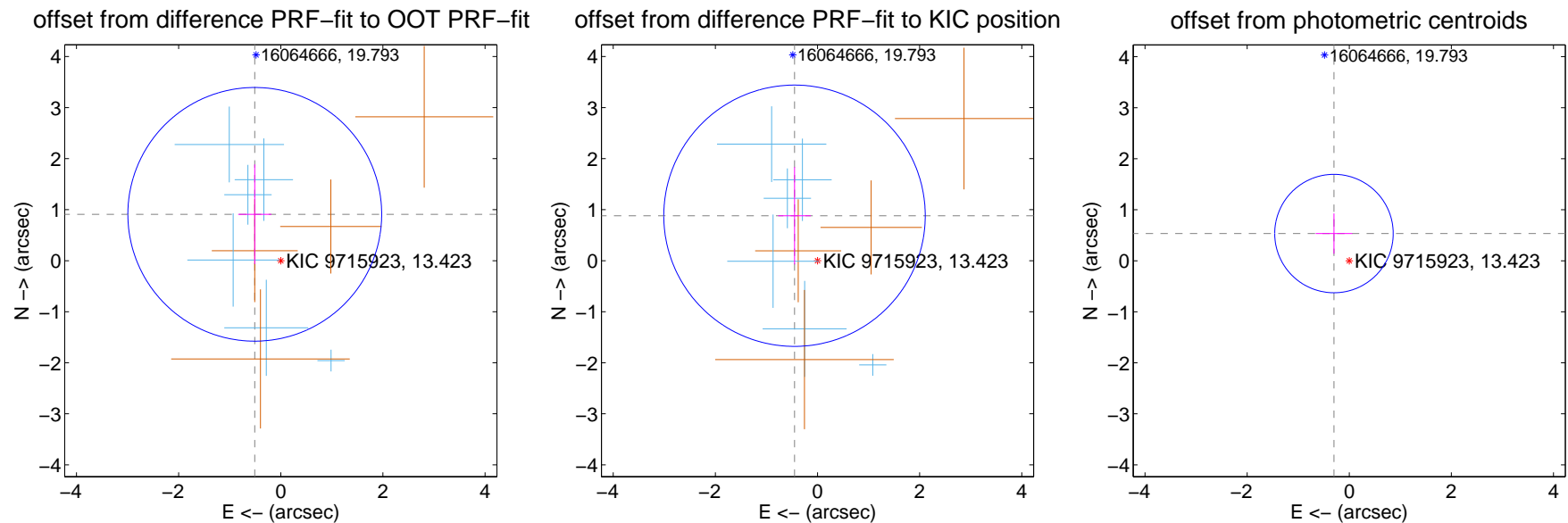
## DV Centroid Data

Supplemental centroid analysis for 009715923-05. Kepler magnitude: 13.42. Transit SNR 15.19

There are 6 quarters with good PRF difference image offsets

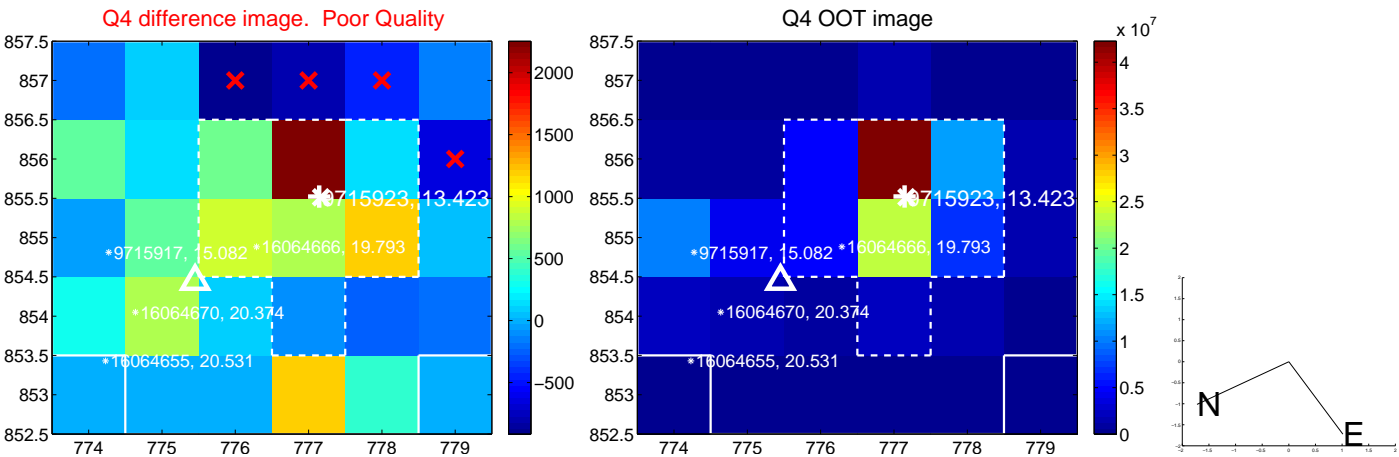
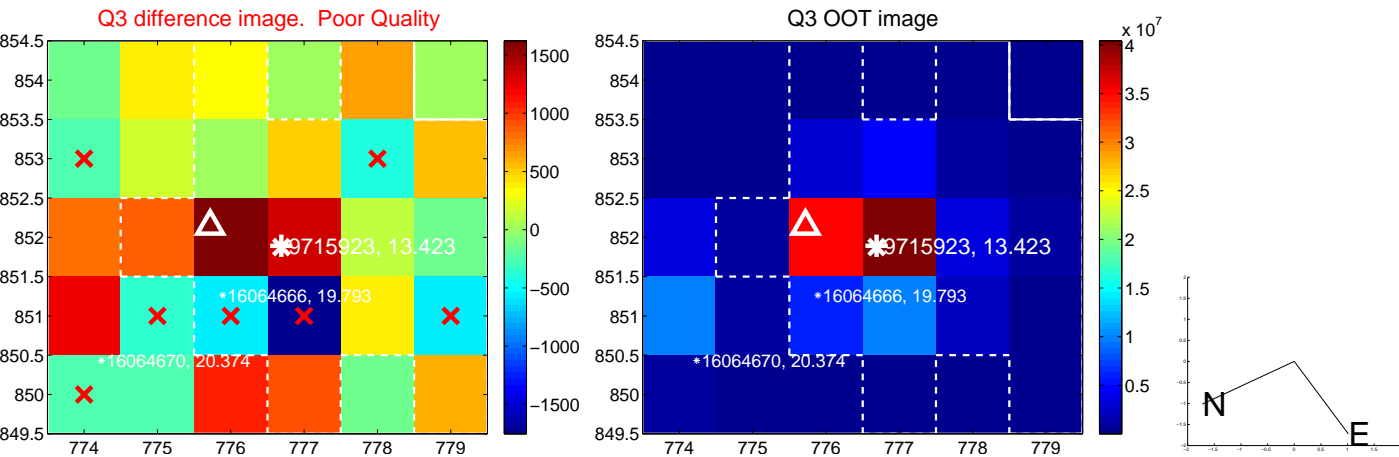
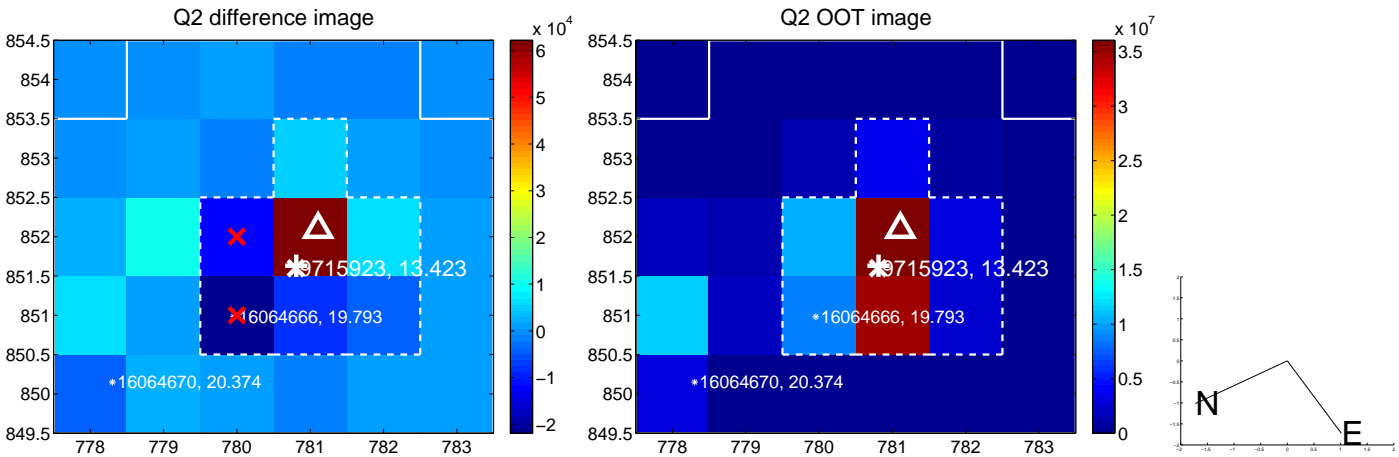
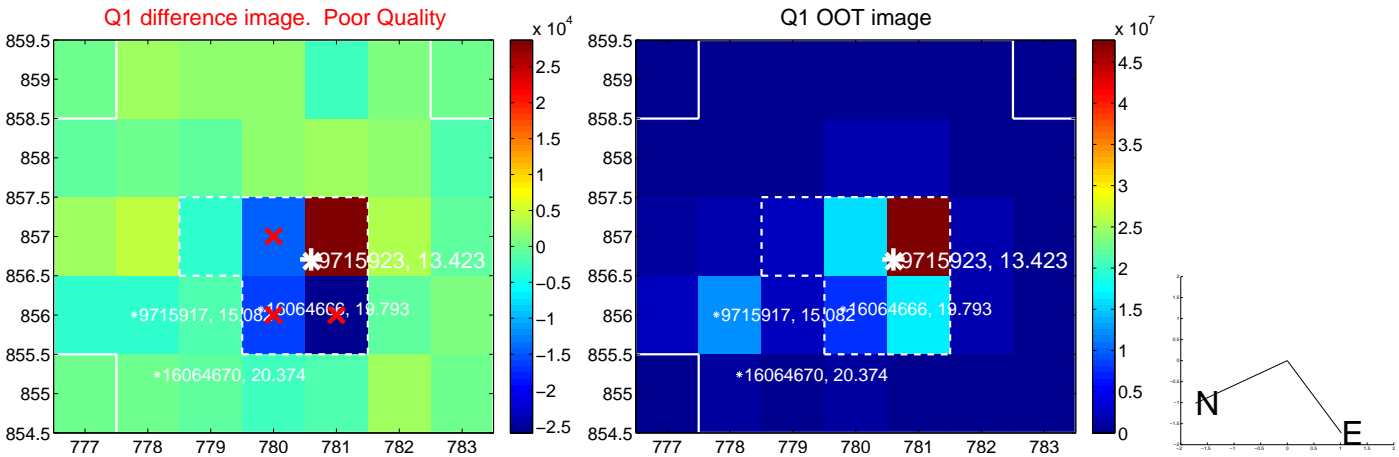
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.042 \pm 0.828$	1.26	$0.509 \pm 0.326$	$0.909 \pm 0.976$
PRF-fit source offset from KIC position	$0.990 \pm 0.853$	1.16	$0.450 \pm 0.320$	$0.881 \pm 0.955$
photometric centroid source offset	$0.61 \pm 0.39$	1.58	$0.30 \pm 0.36$	$0.53 \pm 0.40$

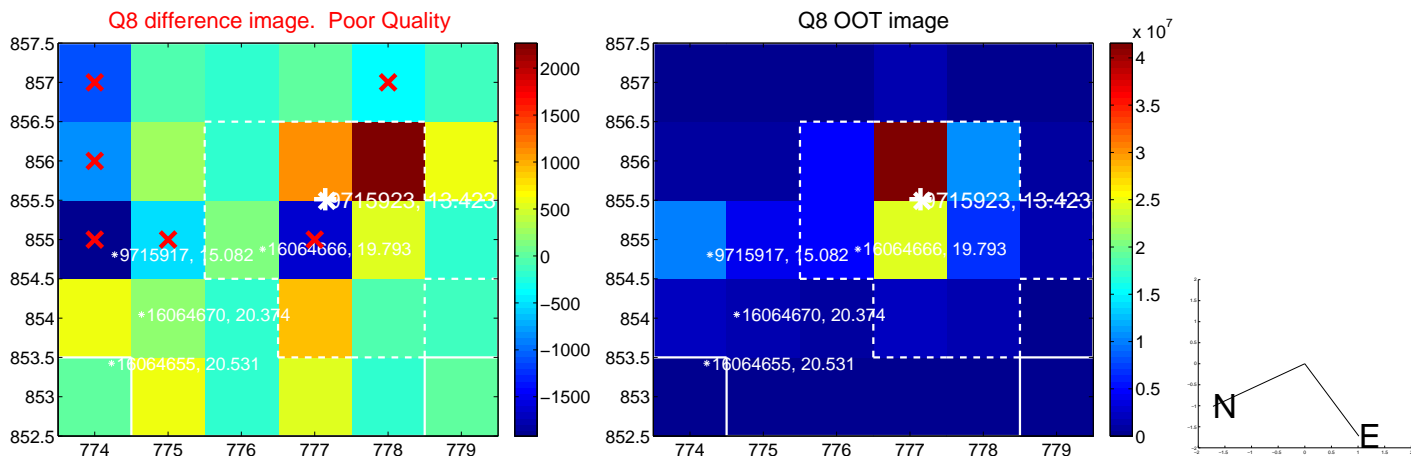
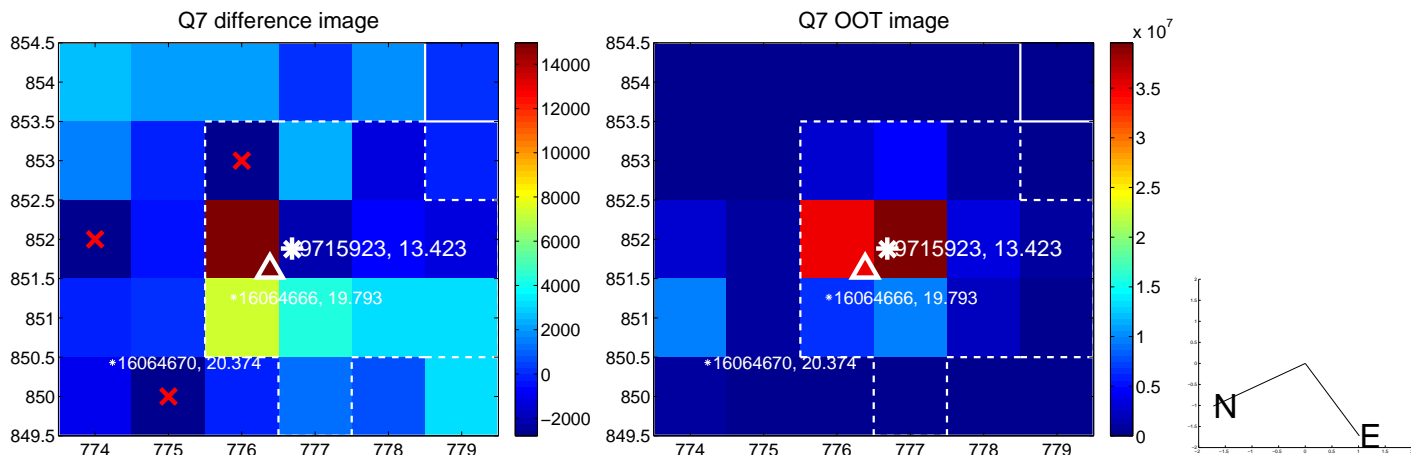
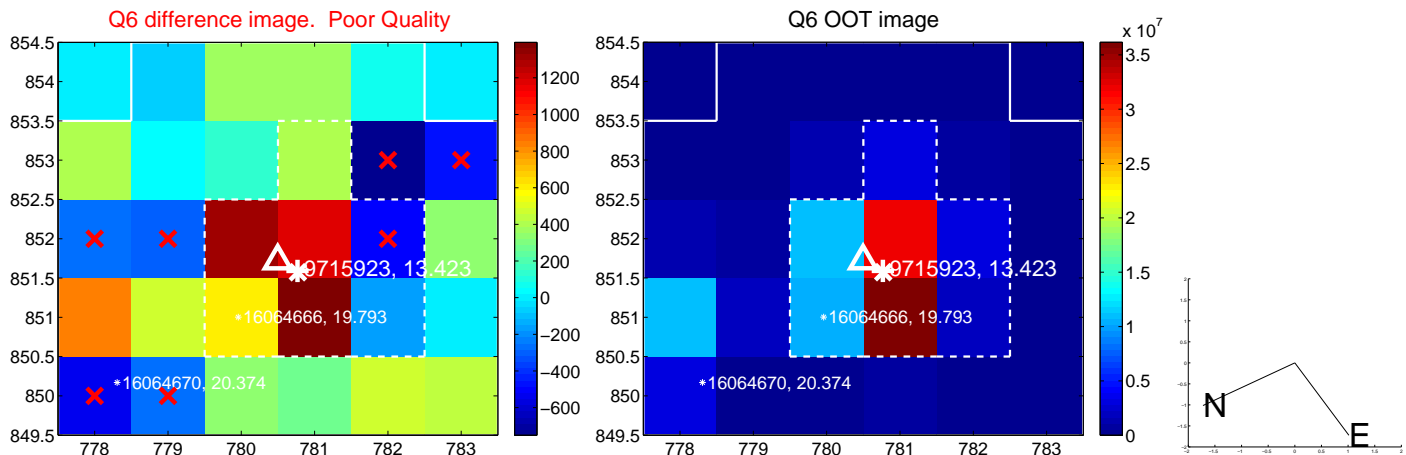
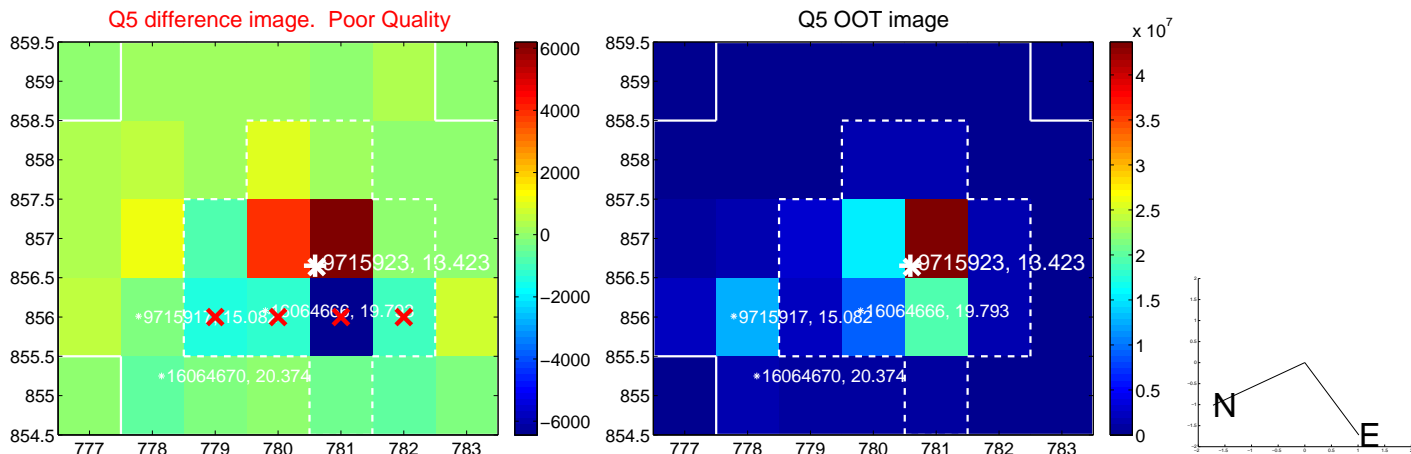


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

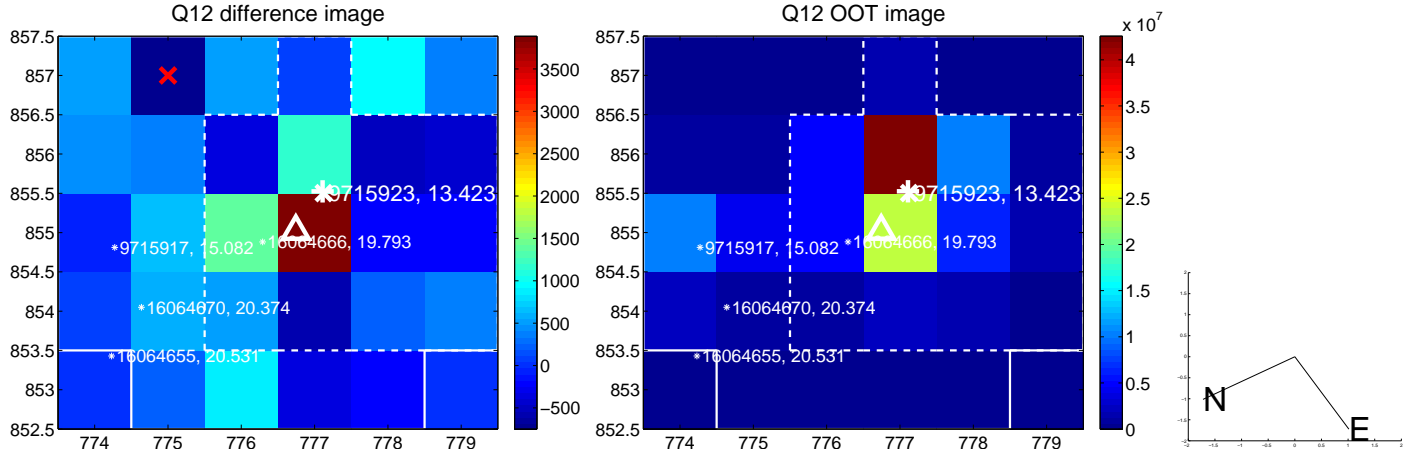
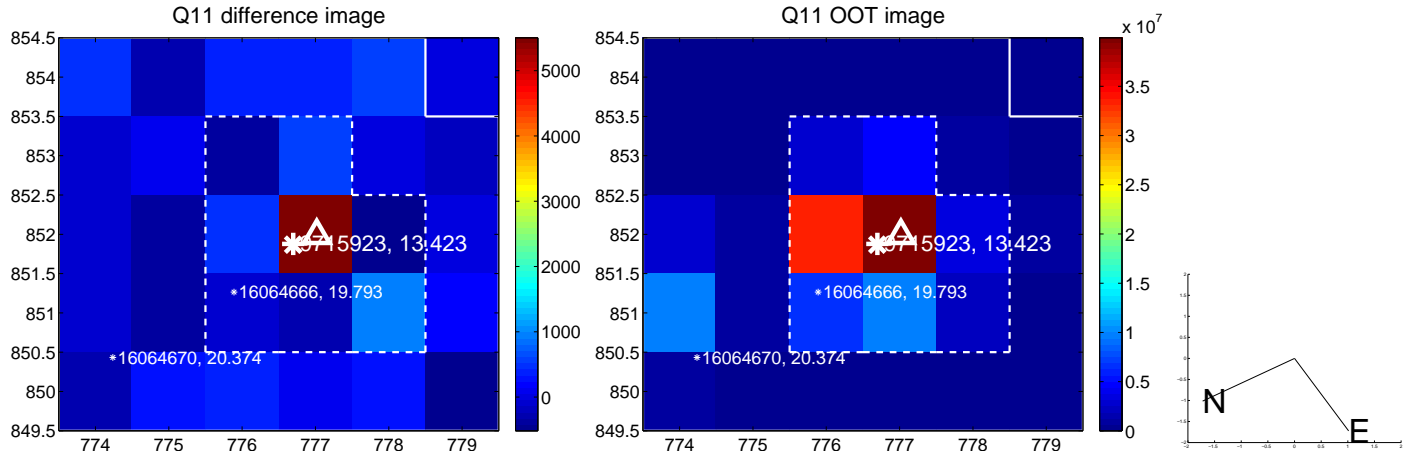
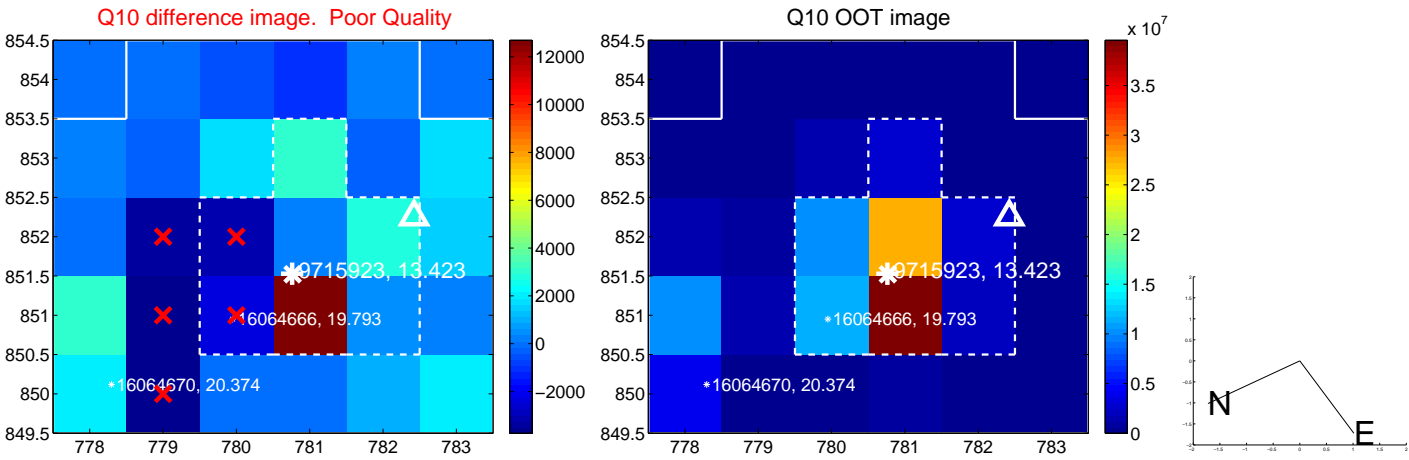
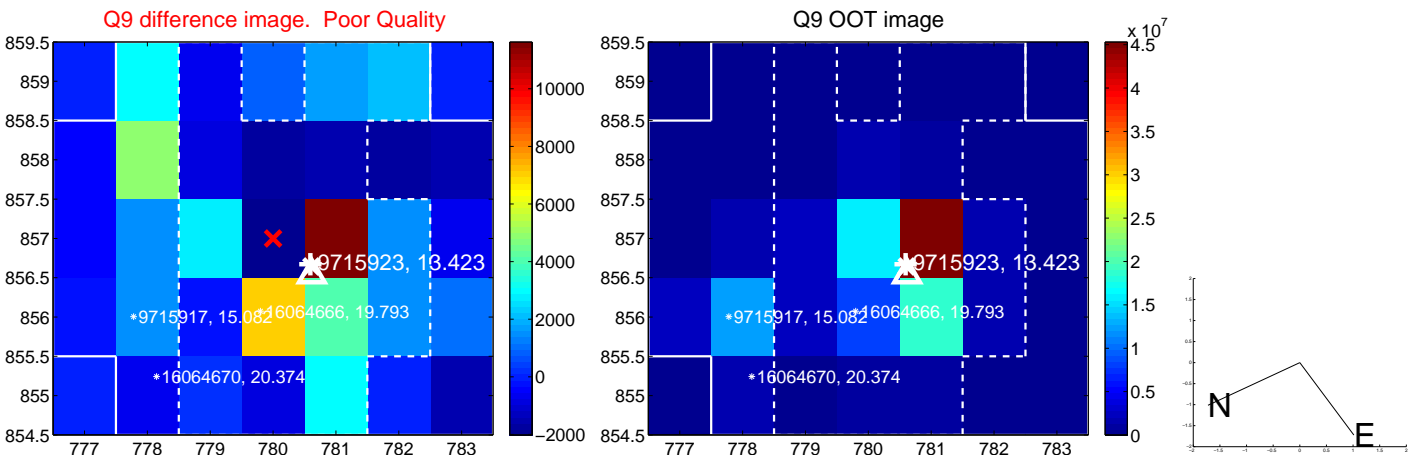
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



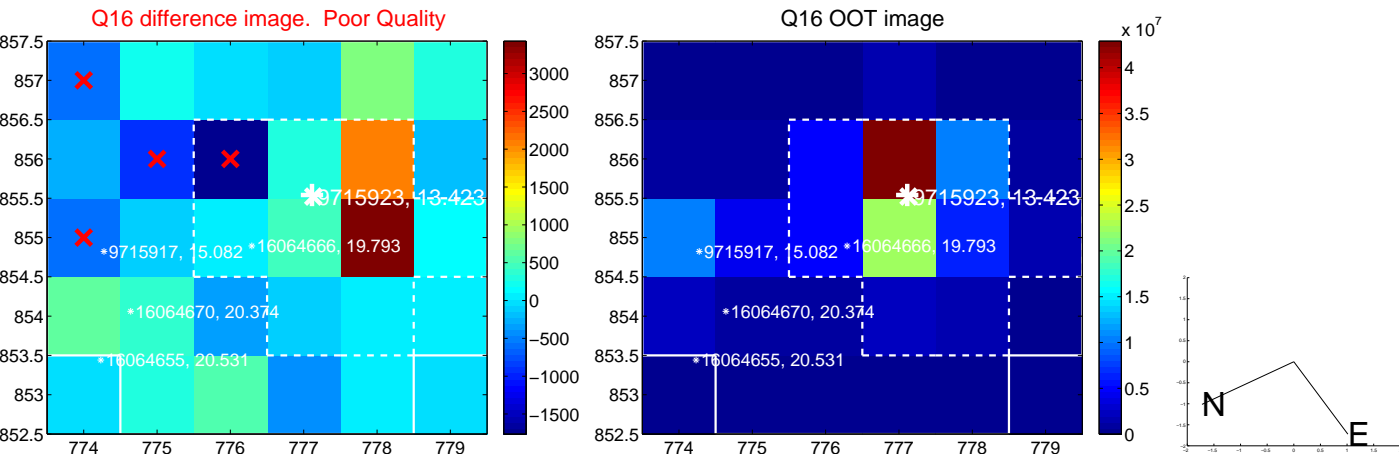
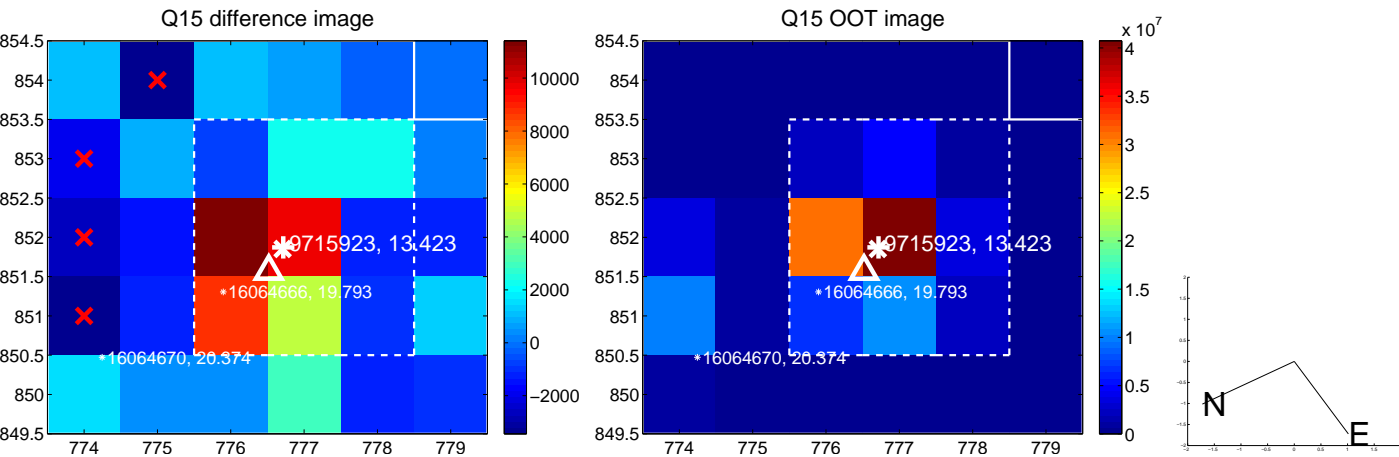
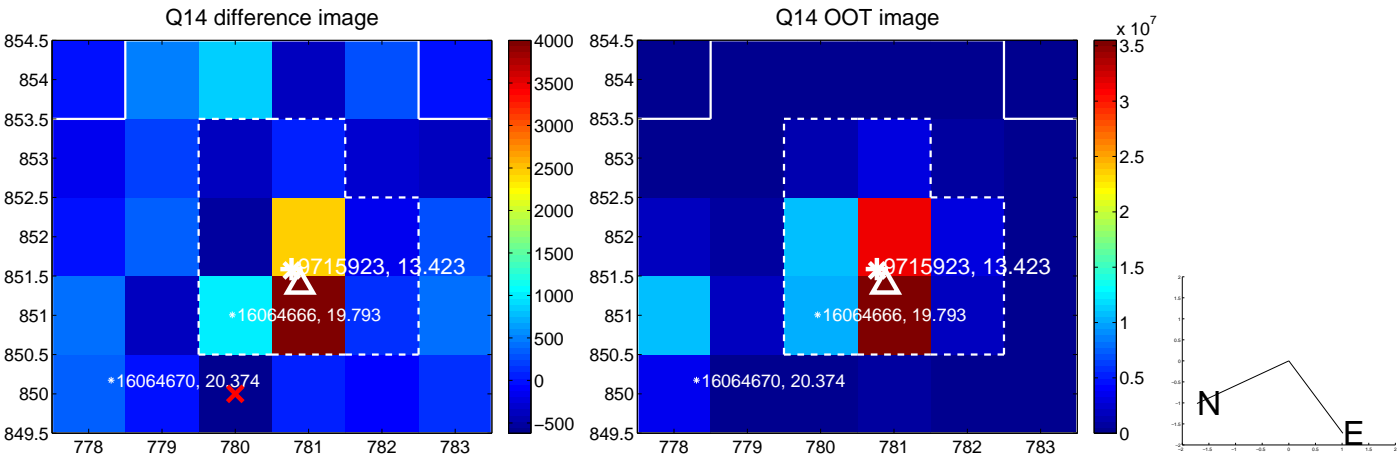
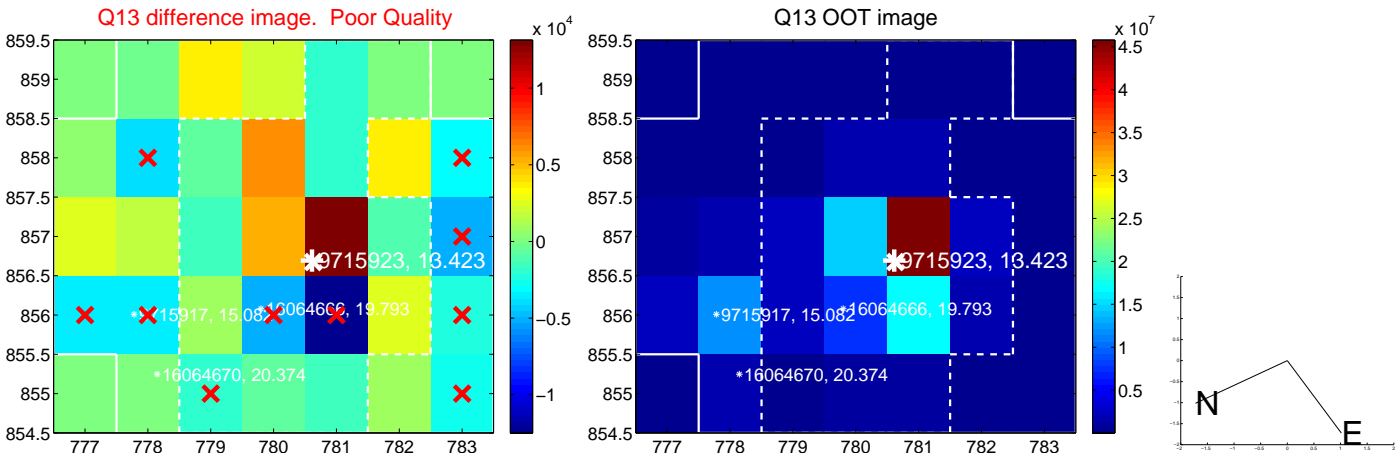
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

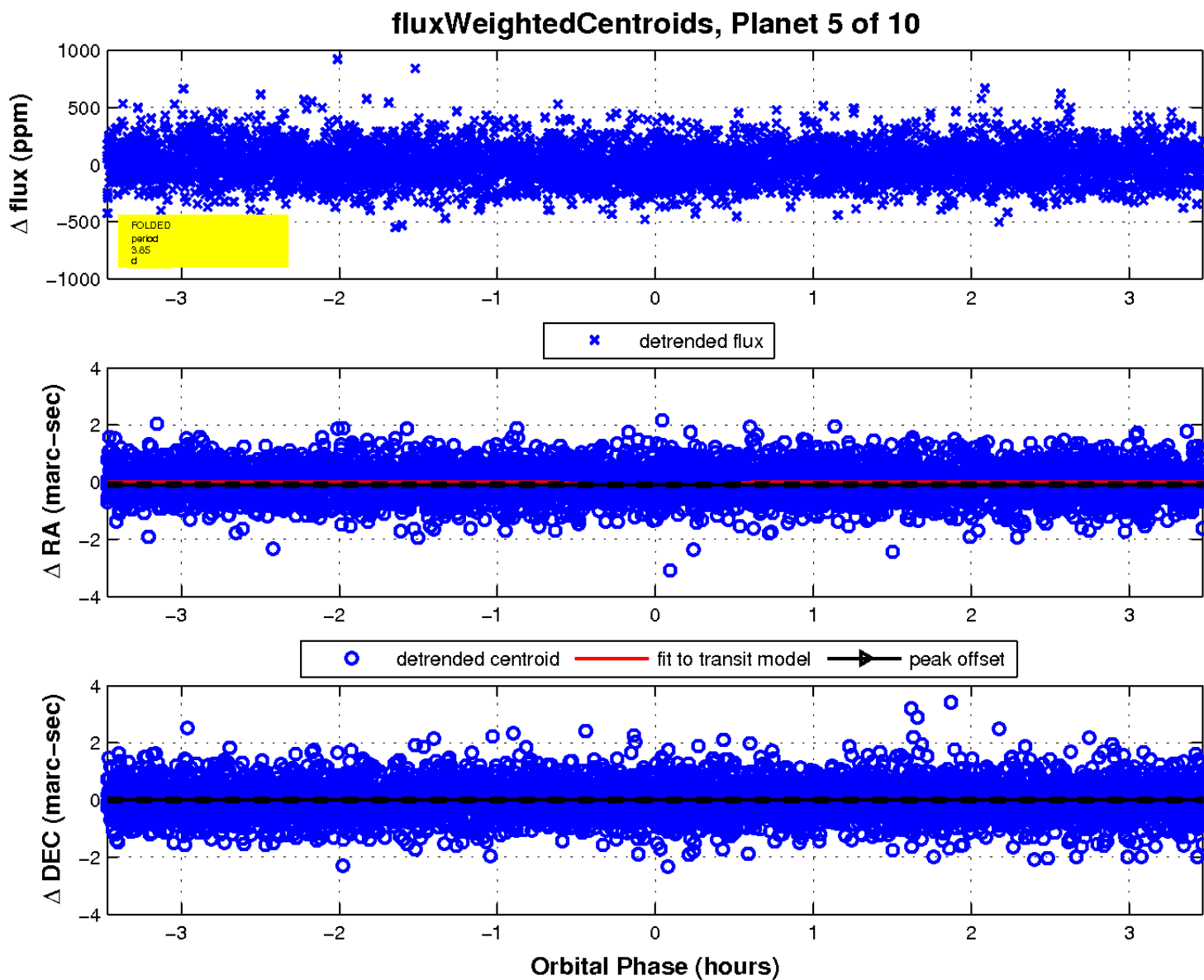
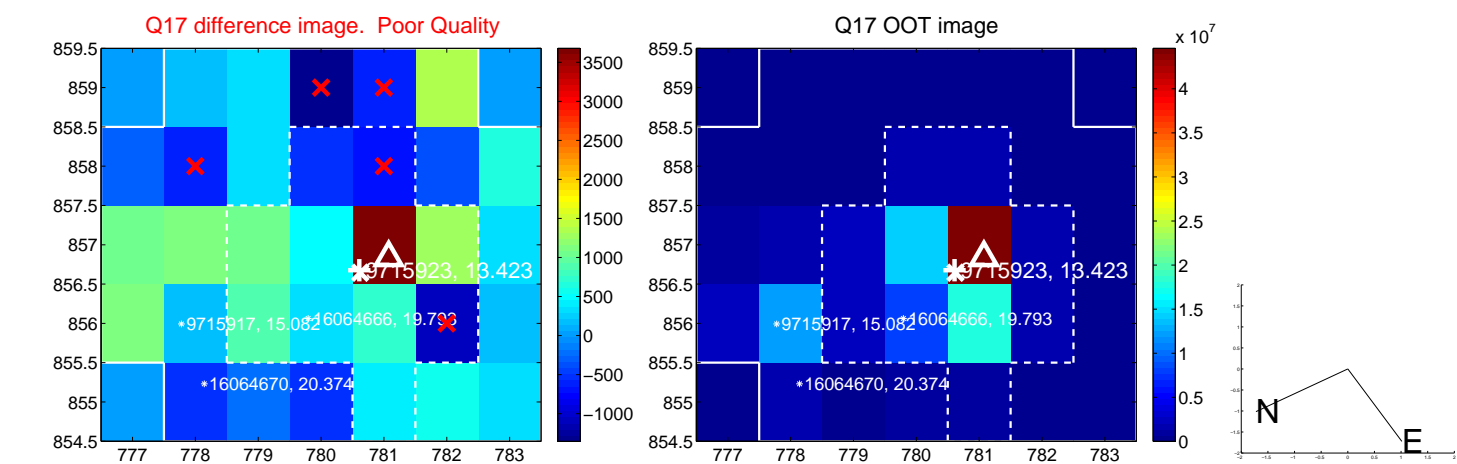


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



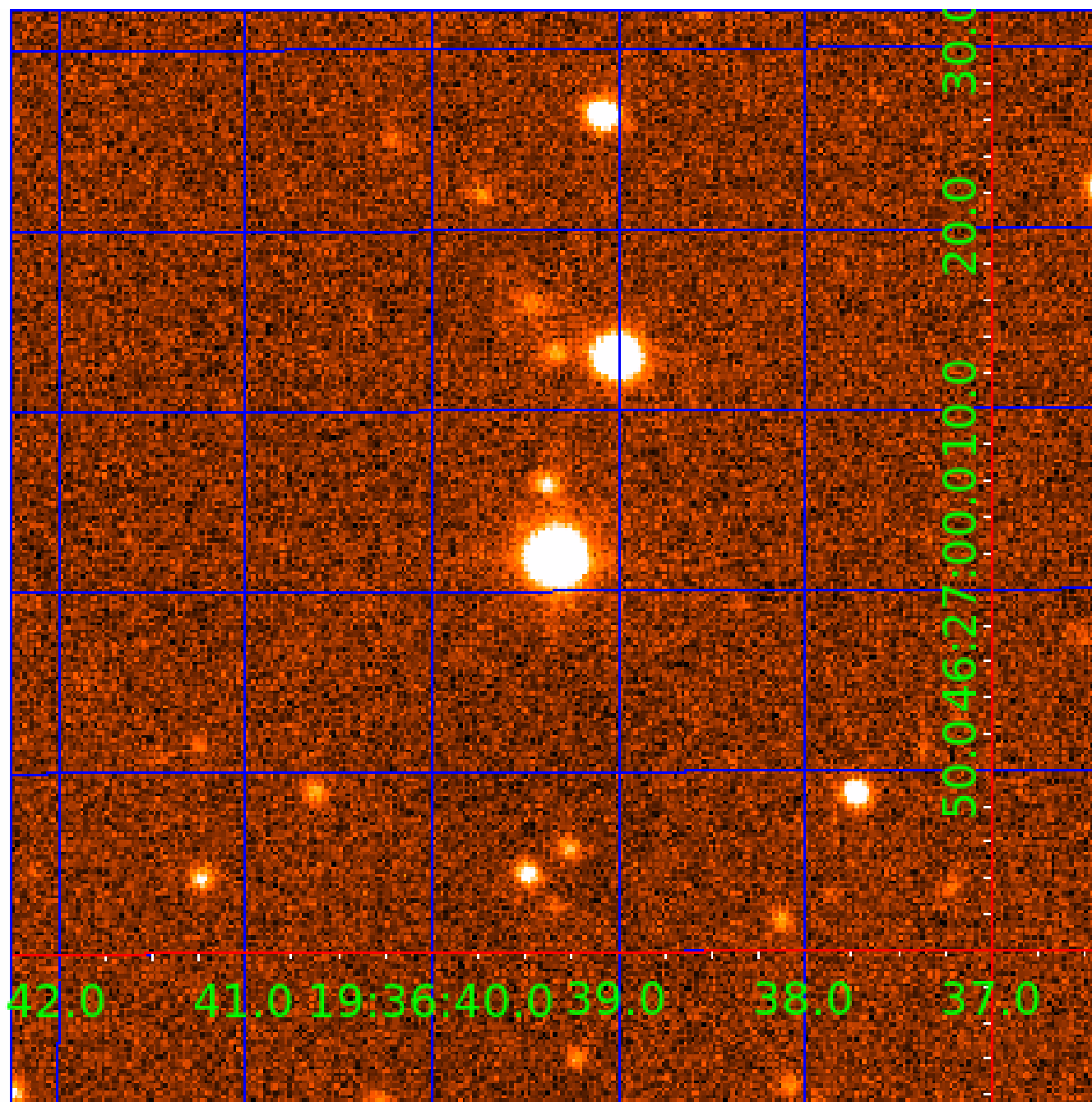


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 009715923

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009715923-01	OBS	No	0.694561	131.797987	2.7	5.202	9.1	1.7	3.64	7105	0.61	83197.88
009715923-02	OBS	No	8.985471	132.812379	202.5	0.905	12.7	11.7	3.64	7105	5.29	2739.50
009715923-04	OBS	No	9.288268	137.020221	260.0	1.287	11.3	15.7	3.64	7105	6.61	2621.07
009715923-05	OBS	No	3.847139	133.473597	178.8	1.156	12.1	15.2	3.64	7105	5.07	8489.37
009715923-06	OBS	No	8.374381	138.808874	320.5	0.587	9.3	12.2	3.64	7105	7.23	3009.23
009715923-07	OBS	No	8.976706	134.628131	164.2	1.257	10.9	10.0	3.64	7105	5.01	2743.07
009715923-08	OBS	No	6.908270	135.222405	274.6	0.699	10.8	13.0	3.64	7105	6.24	3889.56
009715923-09	OBS	No	11.309767	136.928988	256.2	0.665	9.4	10.1	3.64	7105	6.66	2015.83
009715923-10	OBS	No	10.461333	138.428607	219.1	1.442	9.8	9.3	3.64	7105	5.46	2236.71

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009715923-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_DIFFS
009715923-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009715923-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS
009715923-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV
009715923-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_DIFFS
009715923-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—HALO_GHOST
009715923-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009715923-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009715923-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_MEAS

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

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

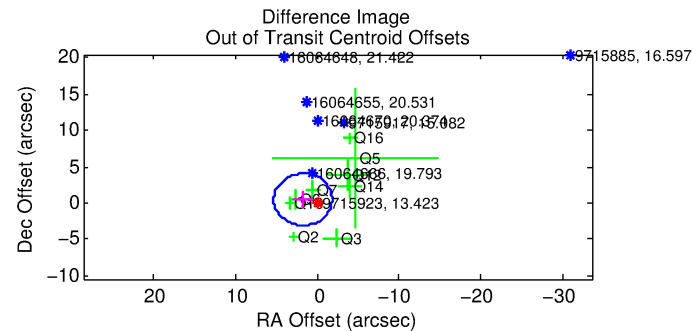
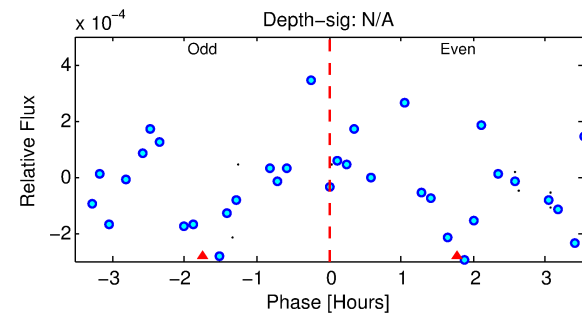
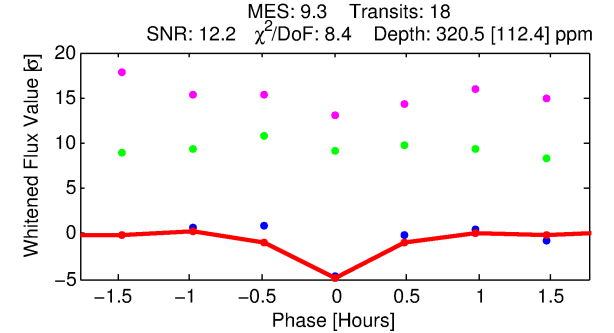
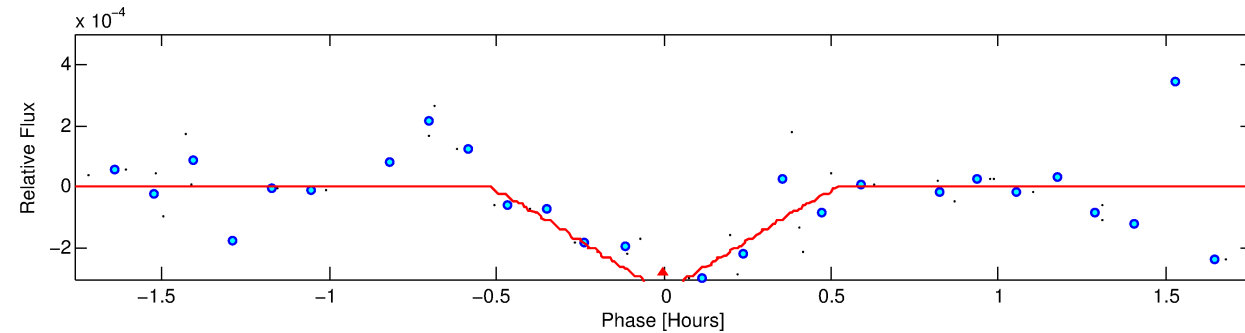
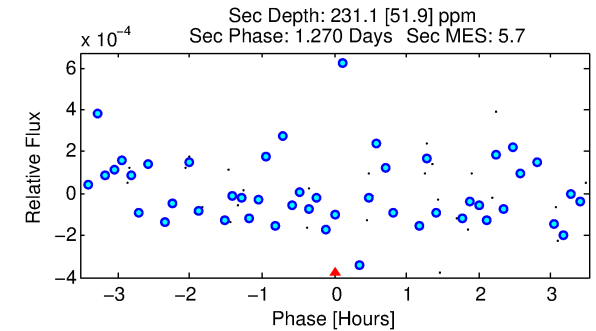
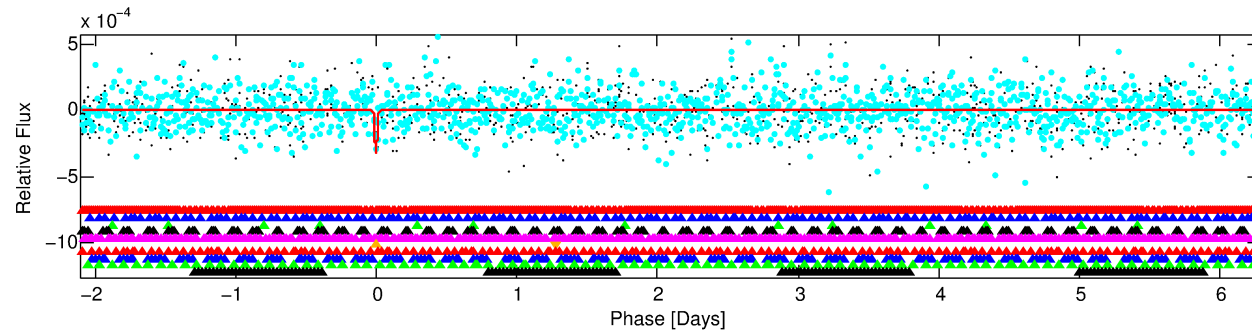
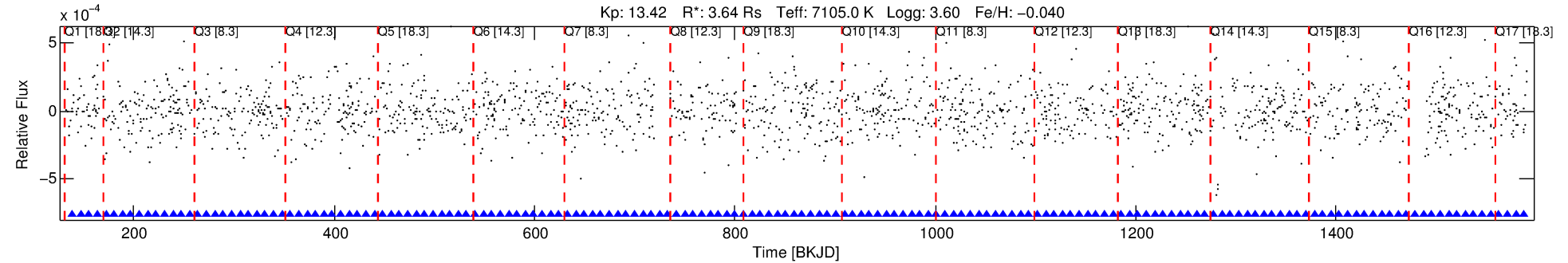
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 009715923-06

No Significant Match Found

# DV One-Page Summary

KIC: 9715923 Candidate: 6 of 10 Period: 8.374 d



## DV Fit Results:

Period = 8.37438 [0.00009] d  
Epoch = 138.8089 [0.0074] BKJD  
Rp/R\* = 0.0182 [0.0230]  
a/R\* = 76.94 [582.94]  
b = 0.73 [4.87]  
Seff = 3009.23 [1564.53]  
Teff = 1889 [245] K  
Rp = 7.23 [9.46] Re  
a = 0.1002 [0.0316] AU  
Ag = 24.45 [63.31] [0.37σ]  
Teffp = 6493 [4132] K [1.11σ]

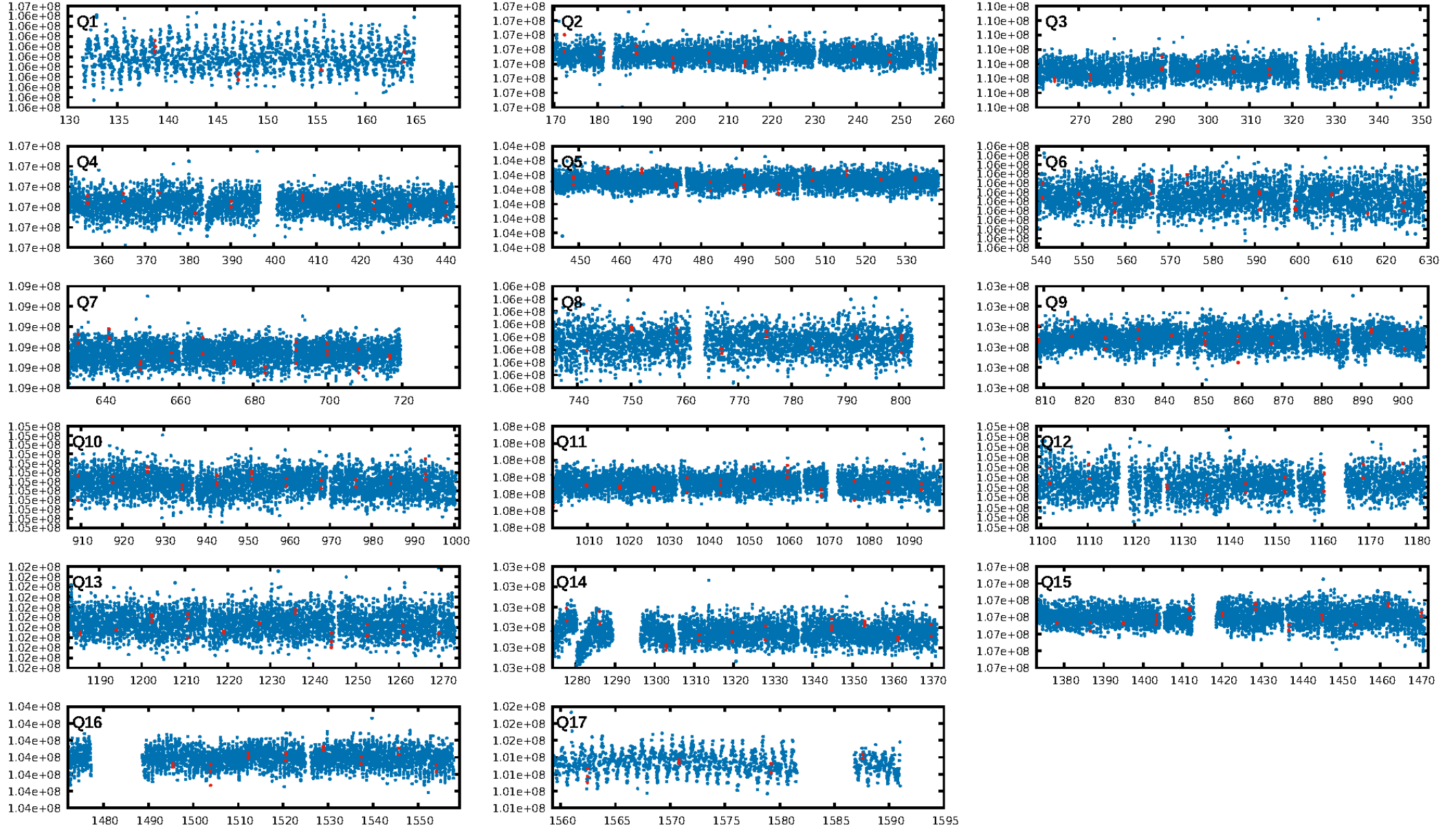
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [38.55σ]  
LongPeriod-sig: 100.0% [10.42σ]  
ModelChiSquare2-sig: 0.1%  
ModelChiSquareGof-sig: 21.9%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [18/18]  
GhostDiagnostic-chr: -1.299  
Centroid-sig: 90.5%  
Centroid-so: 0.679 arcsec [1.46σ]  
OotOffset-rm: 1.799 arcsec [1.51σ]  
OotOffset-st: 4/2/2/1 [9]  
KicOffset-rm: 1.747 arcsec [1.47σ]  
KicOffset-st: 4/2/2/1 [9]  
DiffImageQuality-fgm: 0.00 [0/9]  
DiffImageOverlap-fno: 0.13 [2/15]

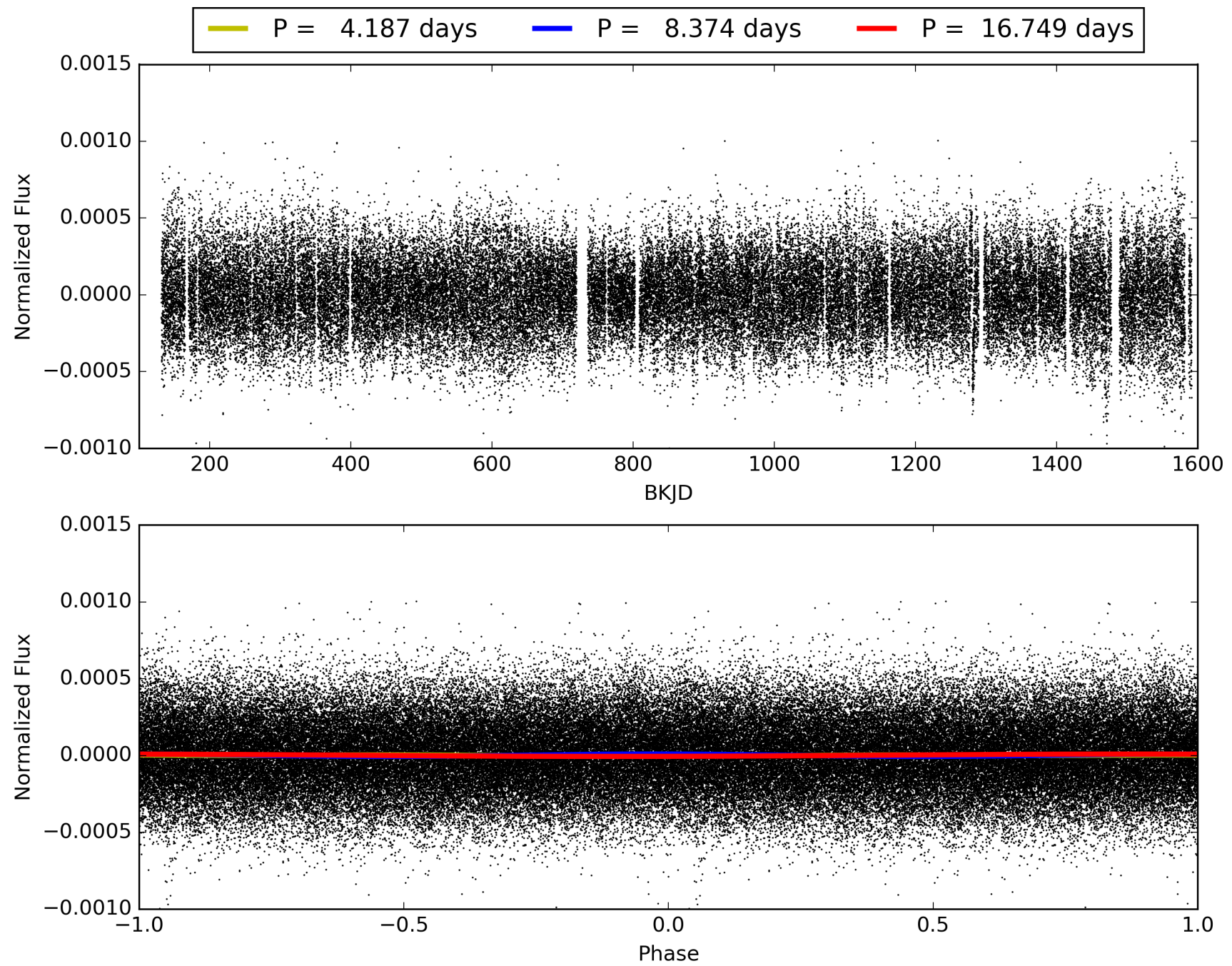
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:00:38 Z

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

# TCE 009715923-06, PDC Light Curves



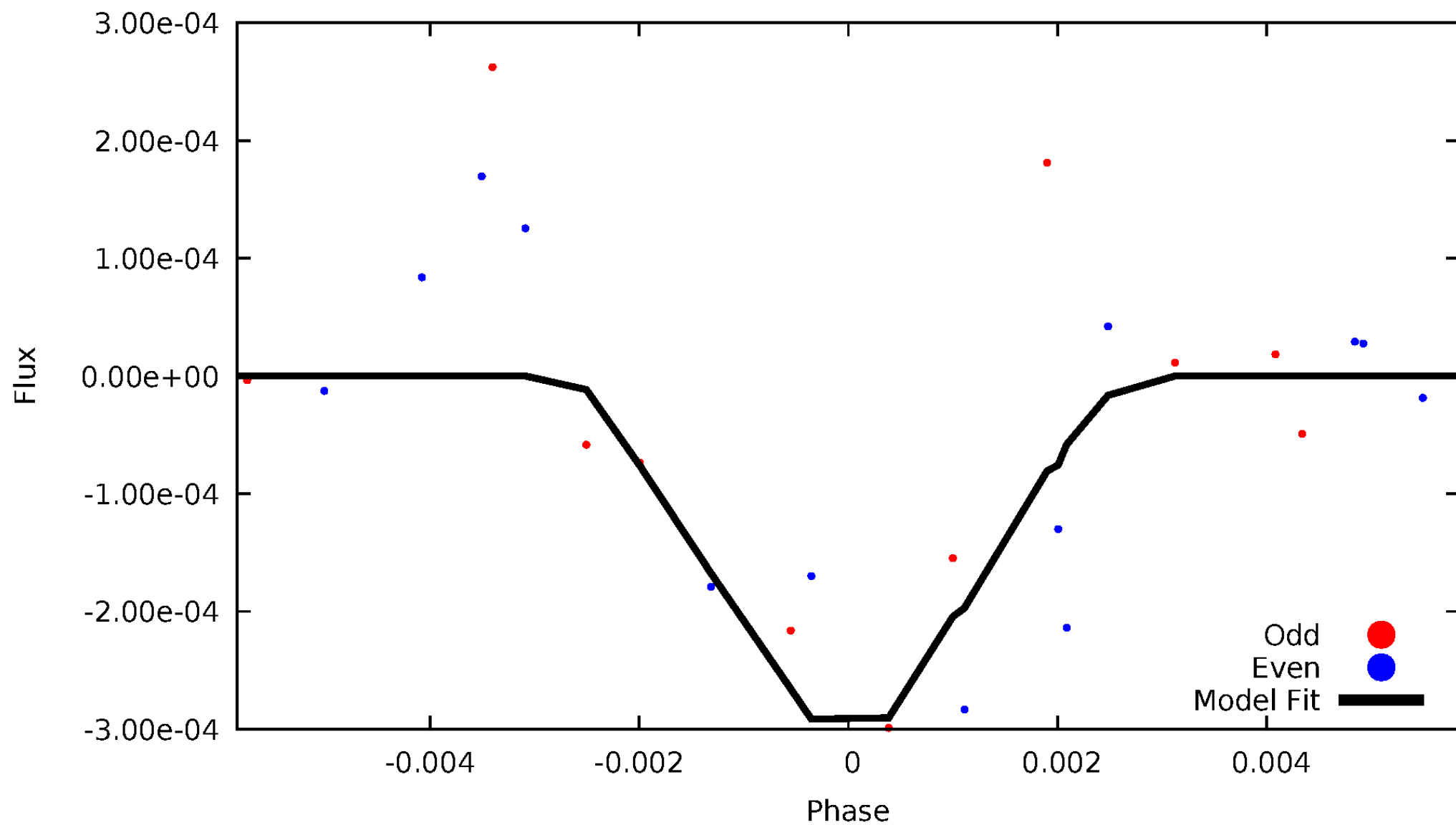
TCE 009715923-06





# DV Odd/Even

TCE 009715923-06





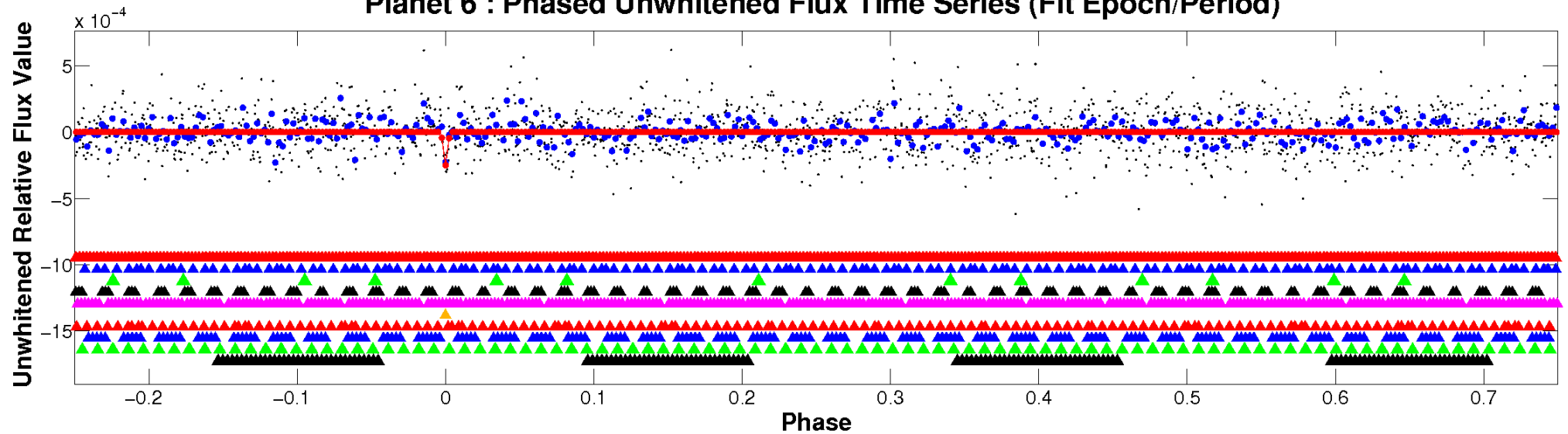


ALT Odd/Even

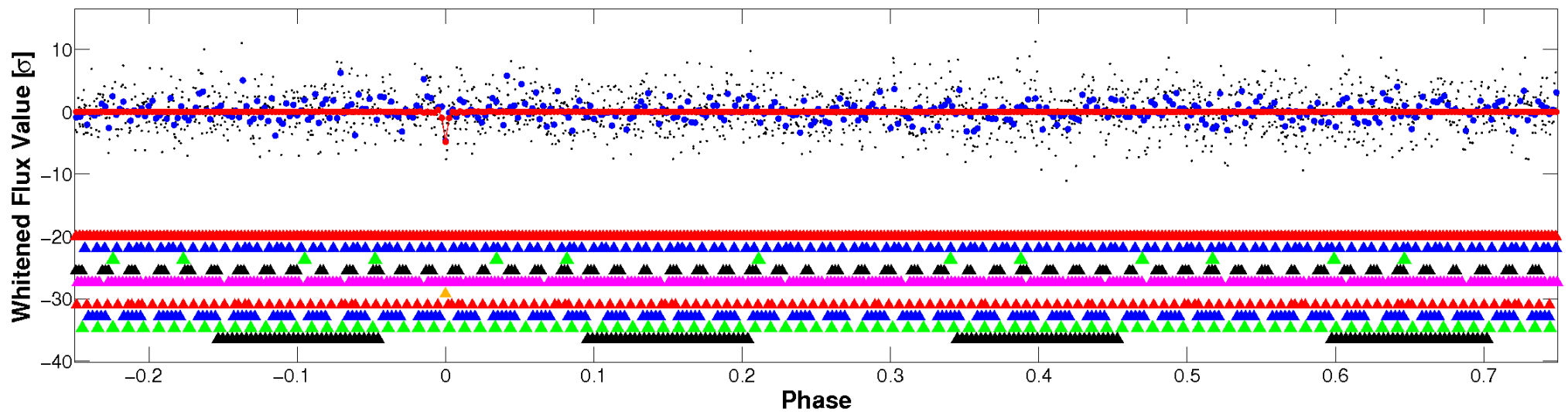
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

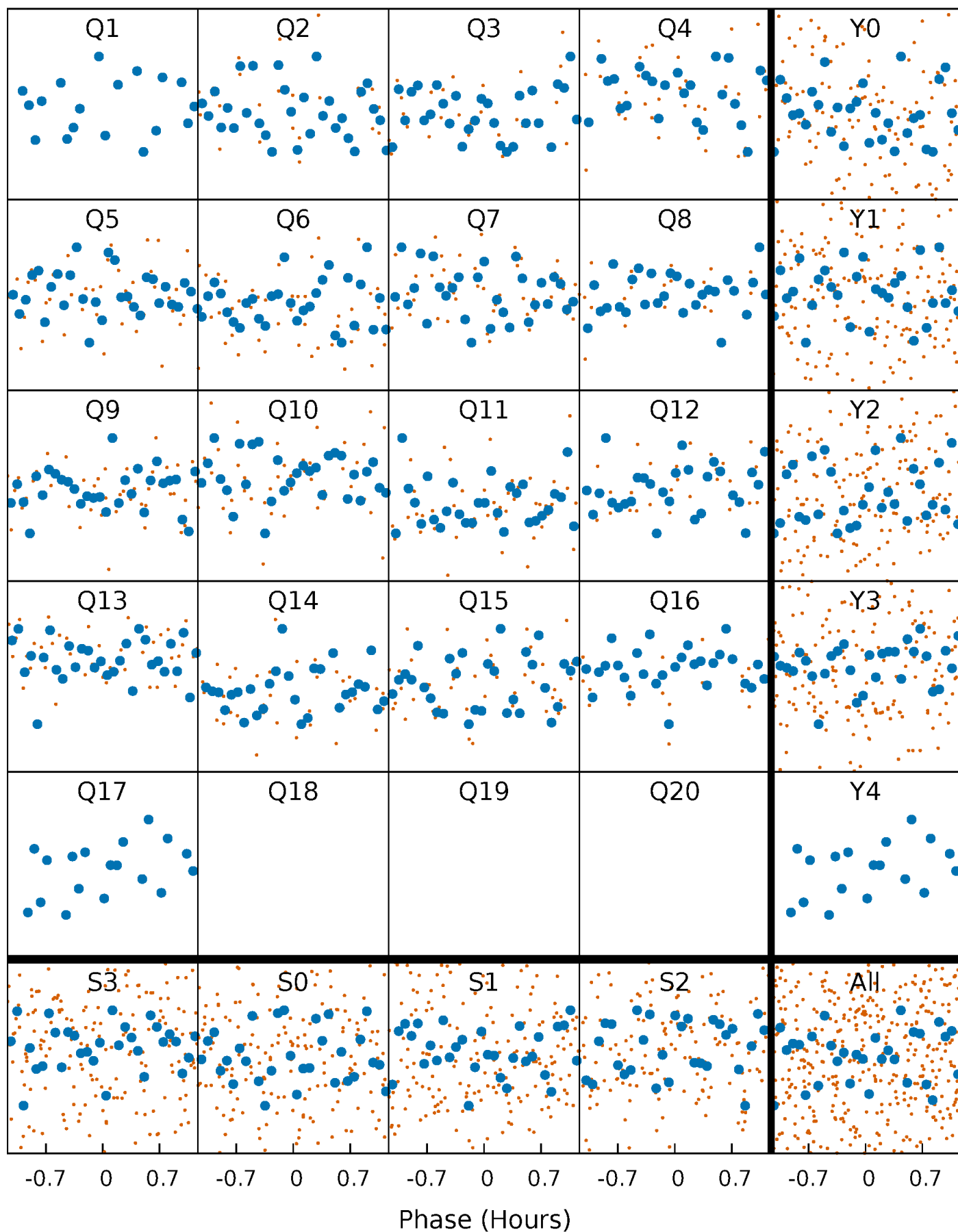


## Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



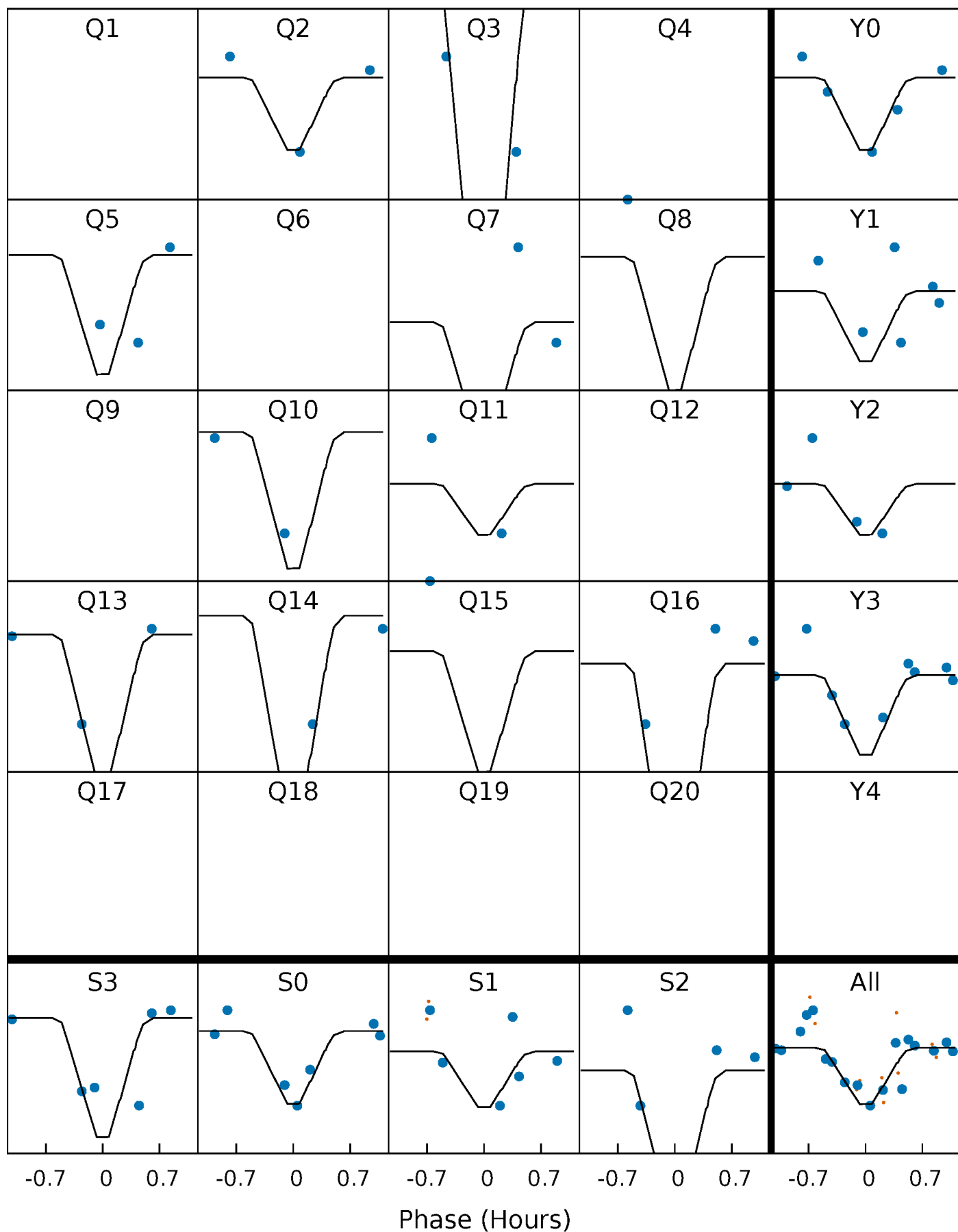
# PDC Quarter-Phased Transit Curves

TCE 009715923-06 P= 8.374381 Days  $T_0=138.808874$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 009715923-06 P= 8.374381 Days  $T_0=138.808874$  (BKJD)

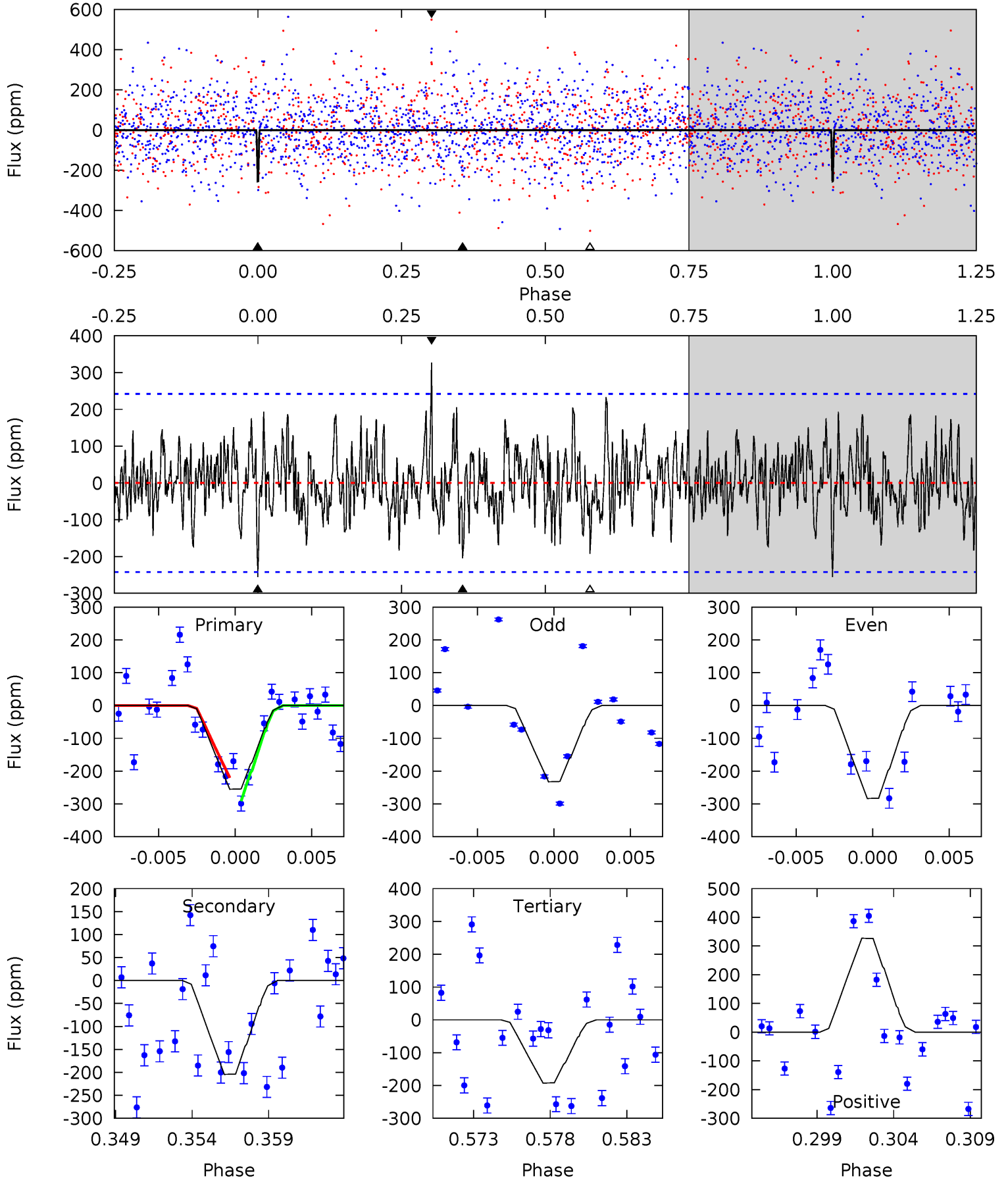


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

009715923-06, P = 8.374381 Days, E = 130.434493 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
5.44	4.35	4.10	6.97	5.16	2.81	1.58	1.33	-1.53	0.25	-2.61	0.53	1.00	0.56	0.74



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.



### Stellar Parameters For KIC 009715923

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7105^{+196}_{-270}$	$3.598^{+0.289}_{-0.051}$	$-0.040^{+0.250}_{-0.250}$	$3.638^{+0.306}_{-1.225}$	$1.912^{+0.168}_{-0.311}$	$0.056^{+0.111}_{-0.010}$
	+3%/-4%	+8%/-1%	+625%/-625%	+8%/-34%	+9%/-16%	+199%/-18%
Source	PHO1	FLK73	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 009715923-06 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-204 \pm 47$	$8.65^{+8.18}_{-5.46}$	$2571^{+130}_{-213}$	$5488^{+4265}_{-1311}$	$15^{+105}_{-11}$
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  $A_{\text{obs}} \gg 1.0$

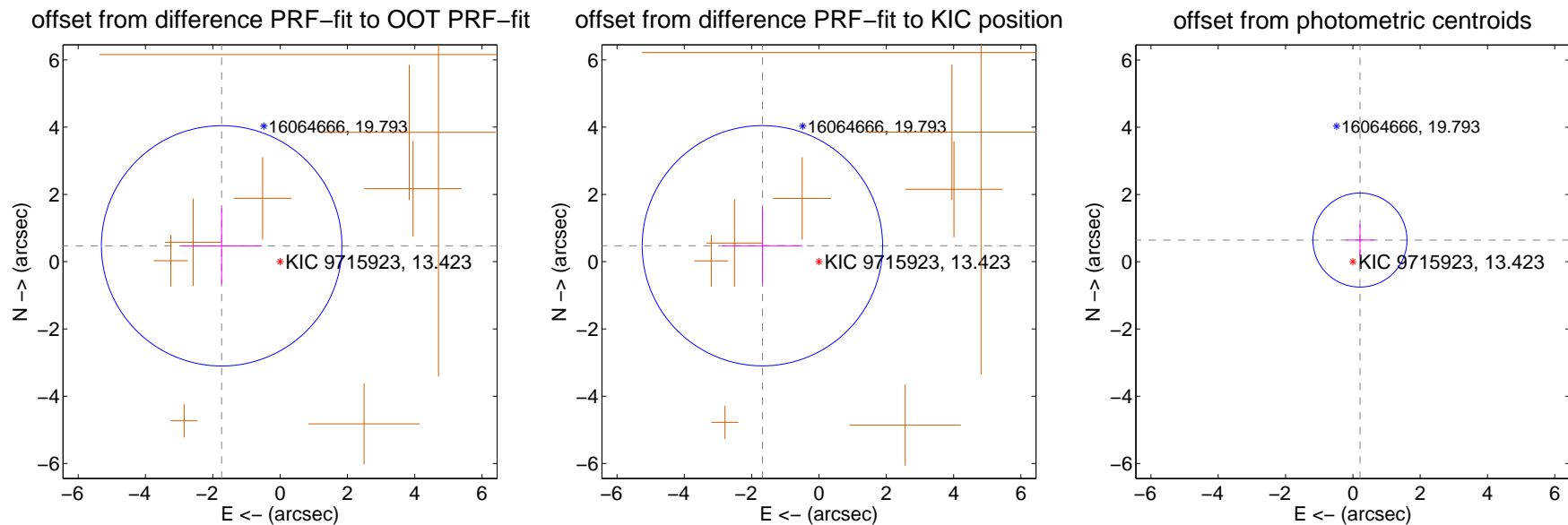
## DV Centroid Data

Supplemental centroid analysis for 009715923-06. Kepler magnitude: 13.42. Transit SNR 12.22

There are 0 quarters with good PRF difference image offsets

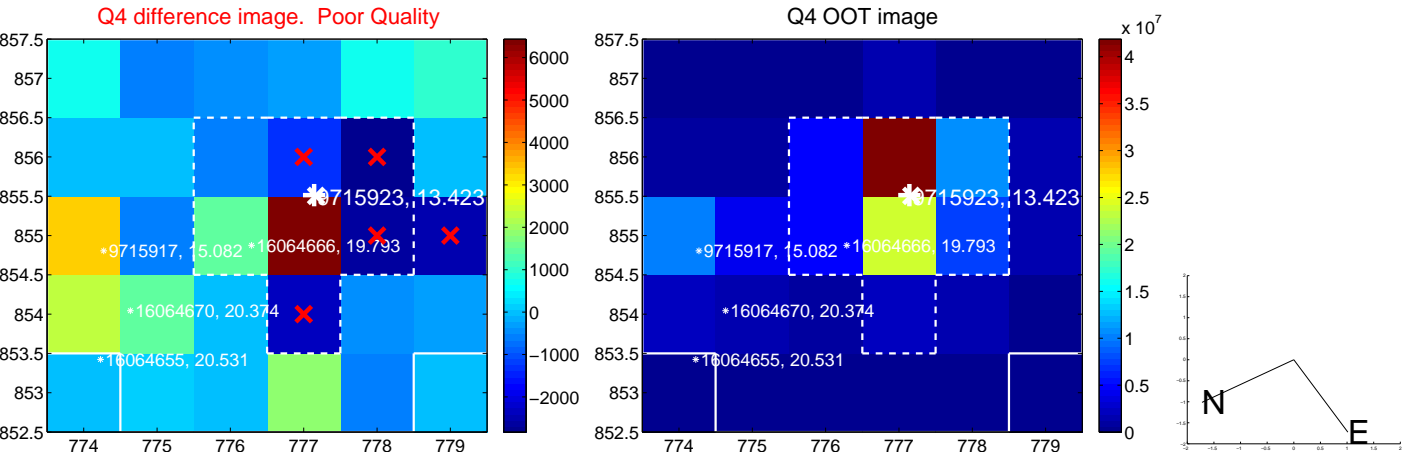
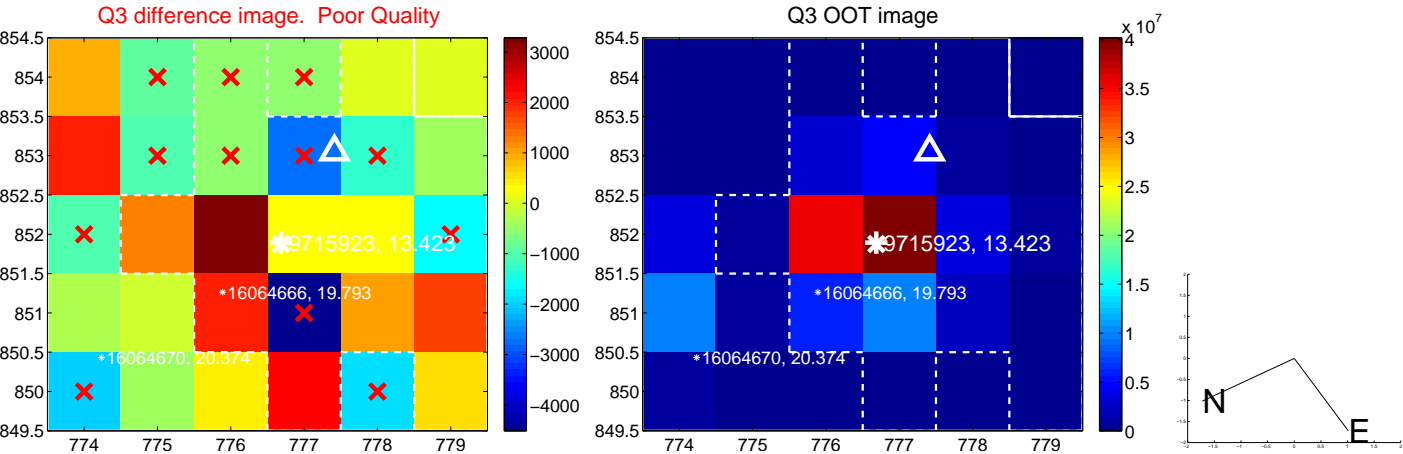
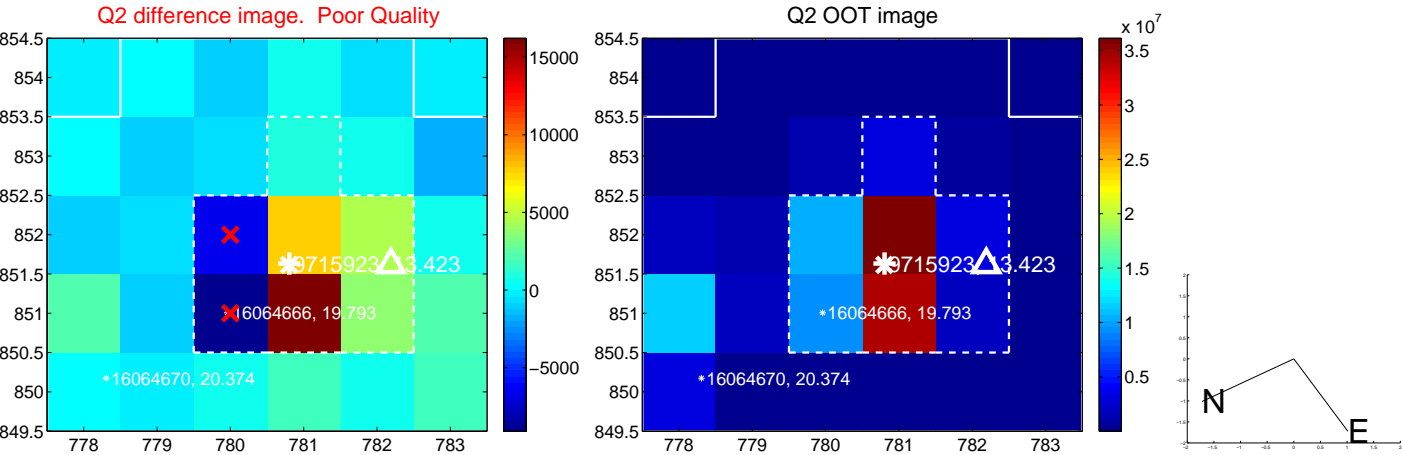
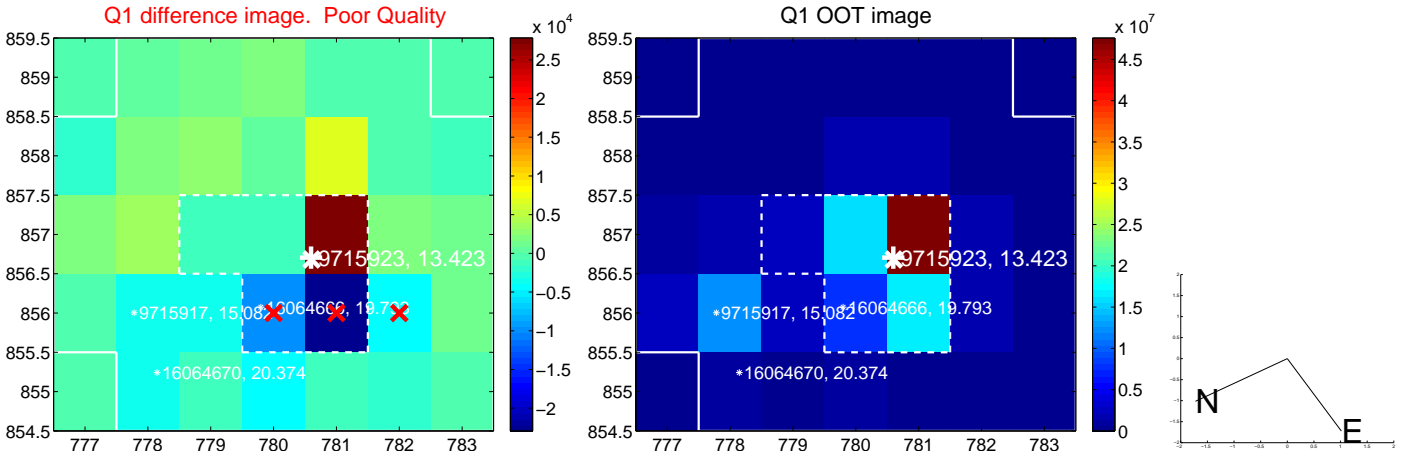
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.799 \pm 1.191$	1.51	$1.736 \pm 1.195$	$0.471 \pm 1.133$
PRF-fit source offset from KIC position	$1.747 \pm 1.191$	1.47	$1.681 \pm 1.195$	$0.475 \pm 1.133$
photometric centroid source offset	$0.68 \pm 0.47$	1.46	$-0.21 \pm 0.42$	$0.65 \pm 0.47$

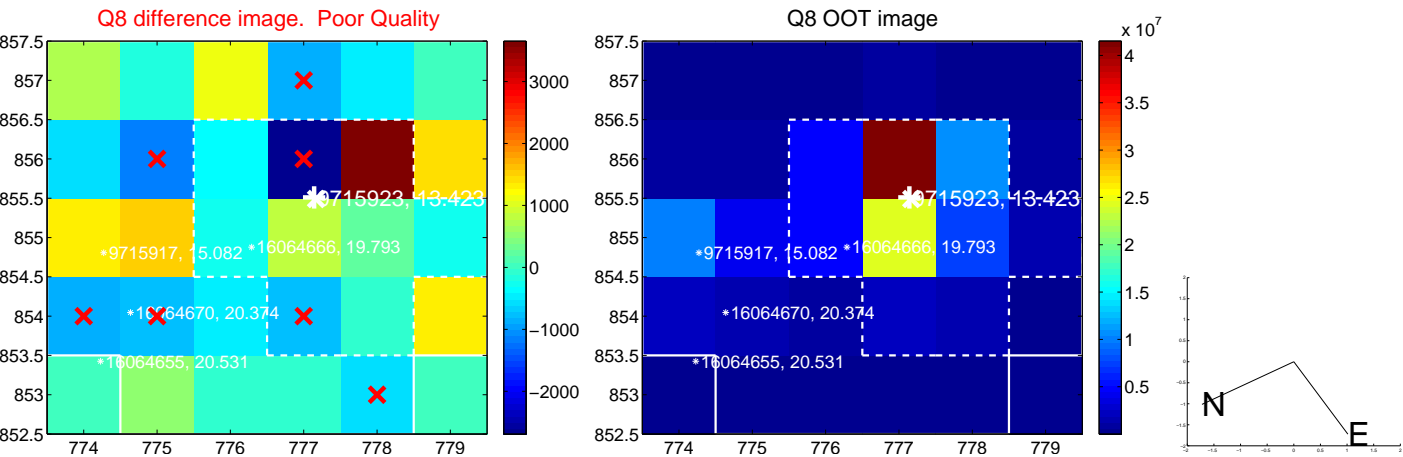
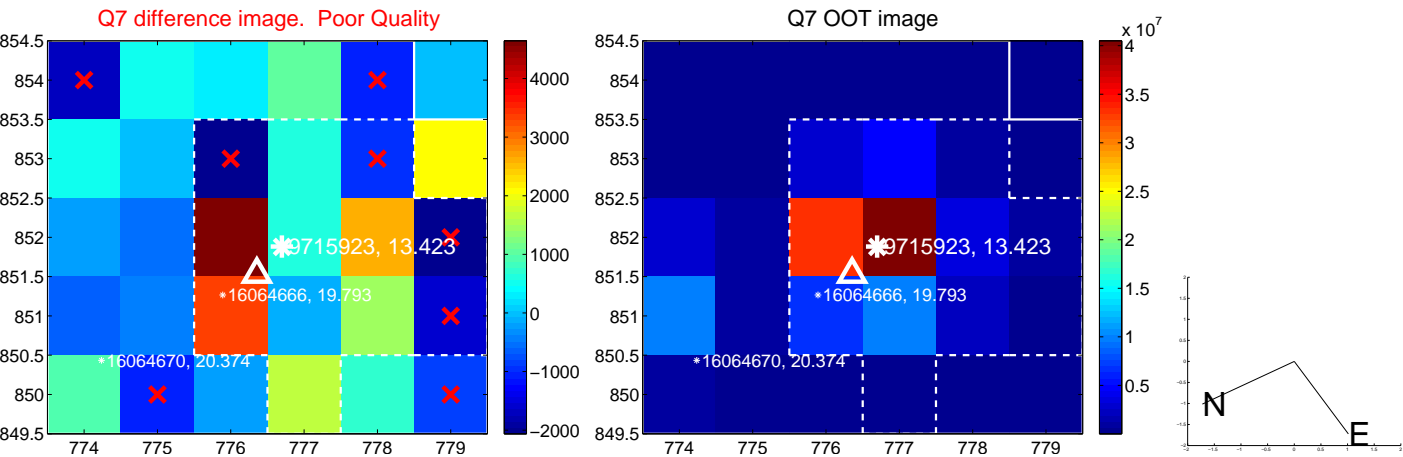
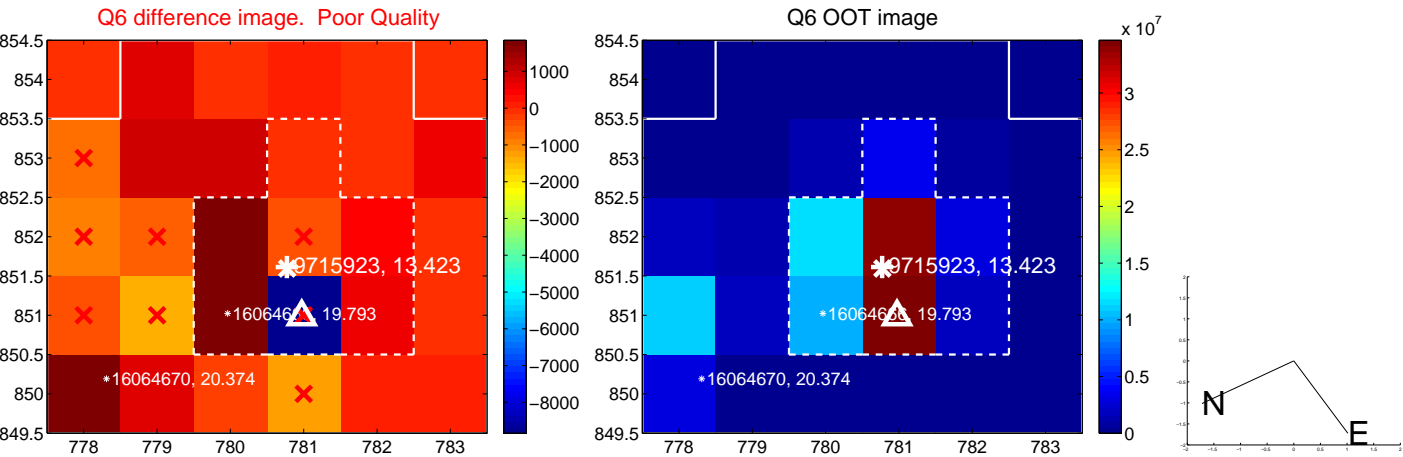
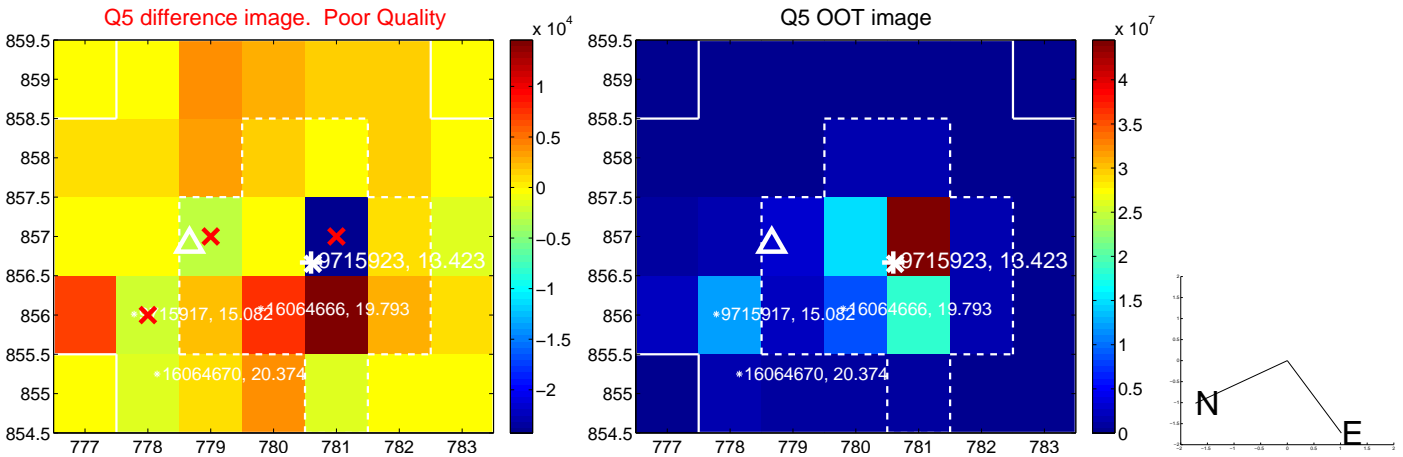


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

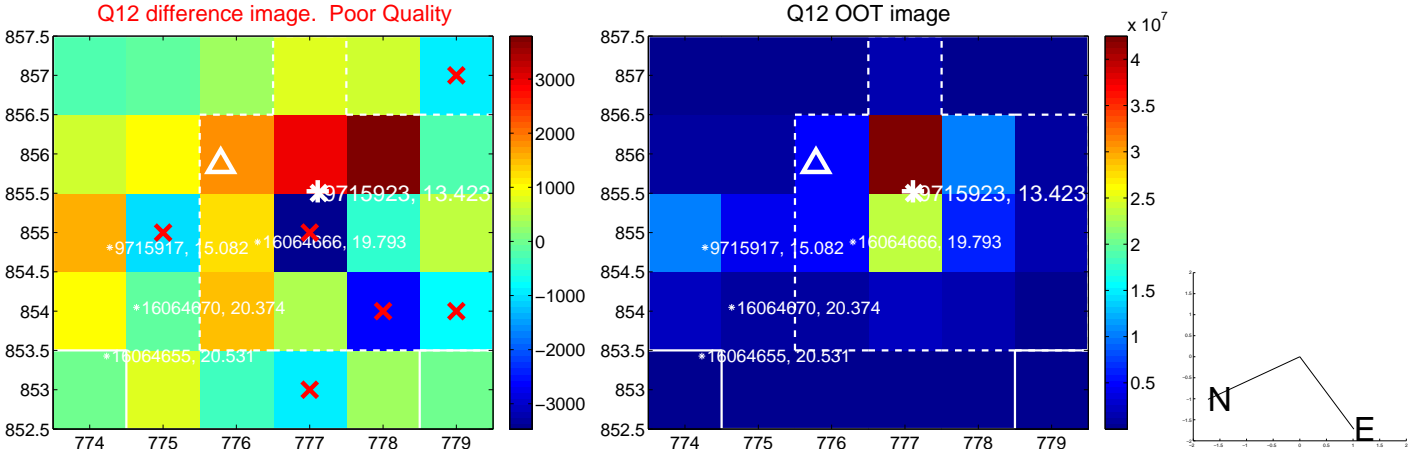
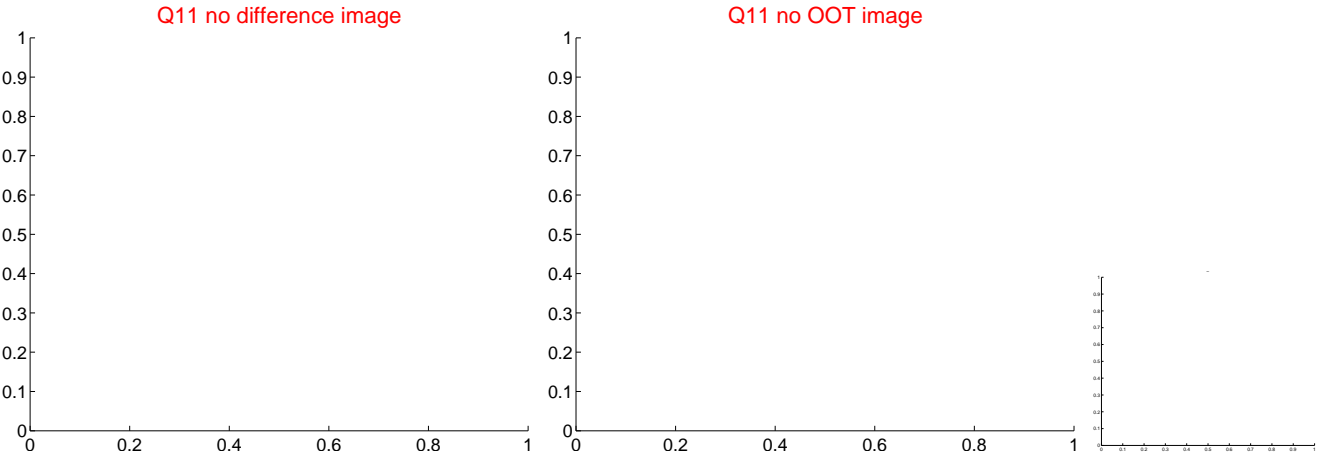
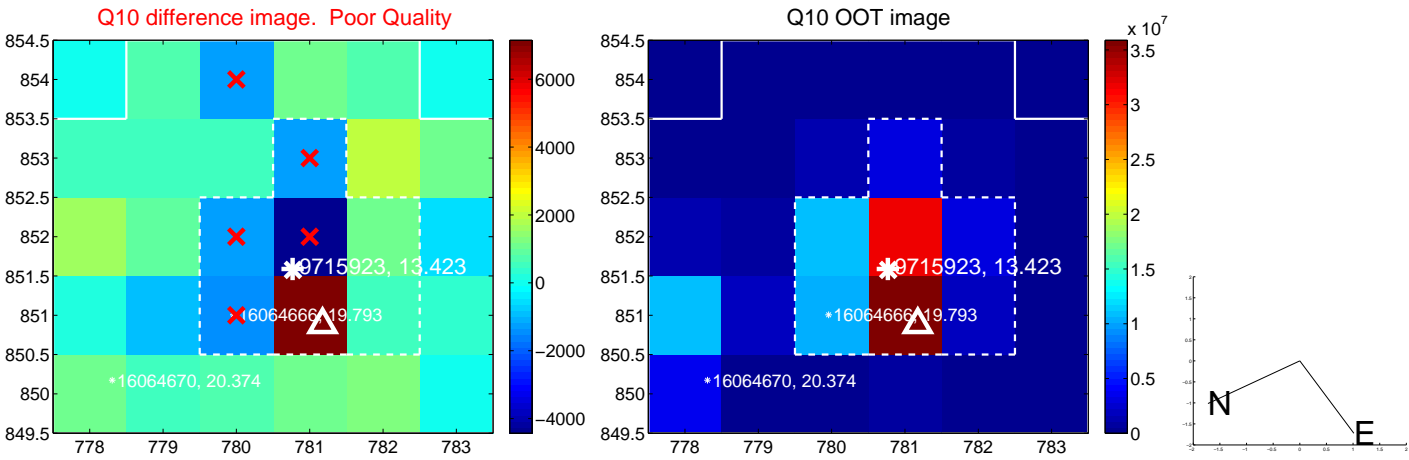
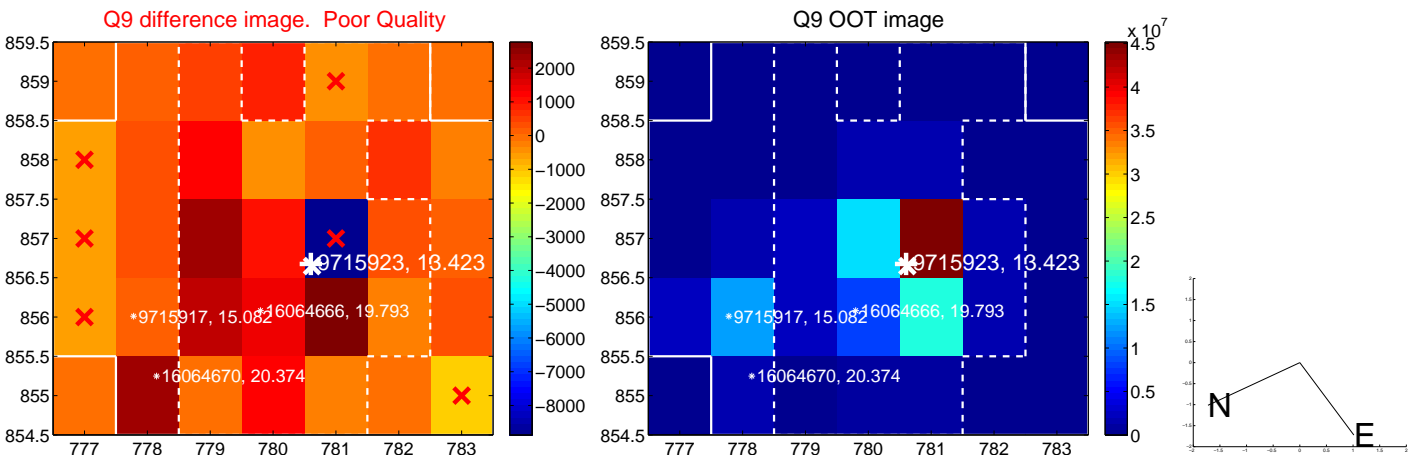
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



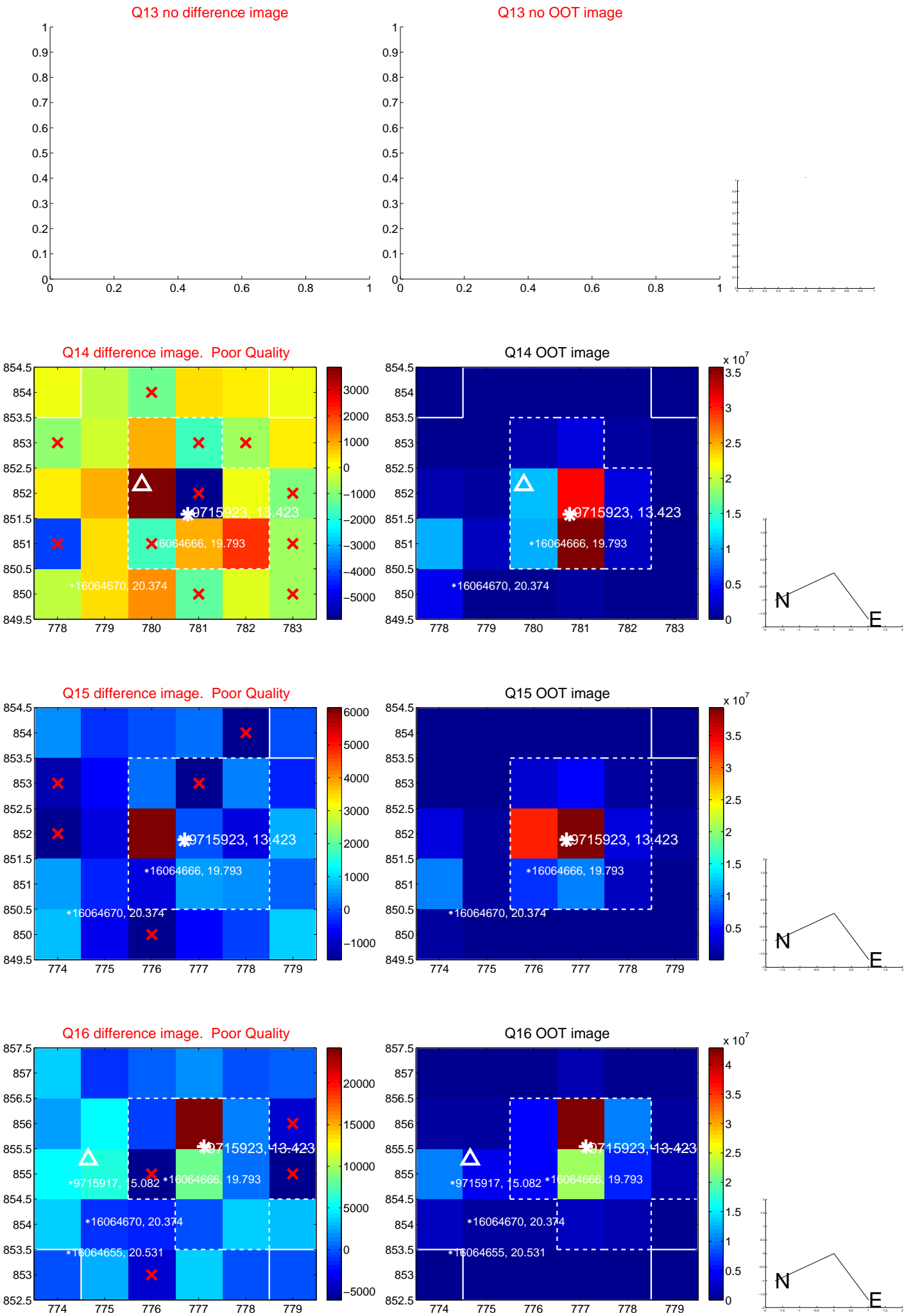
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



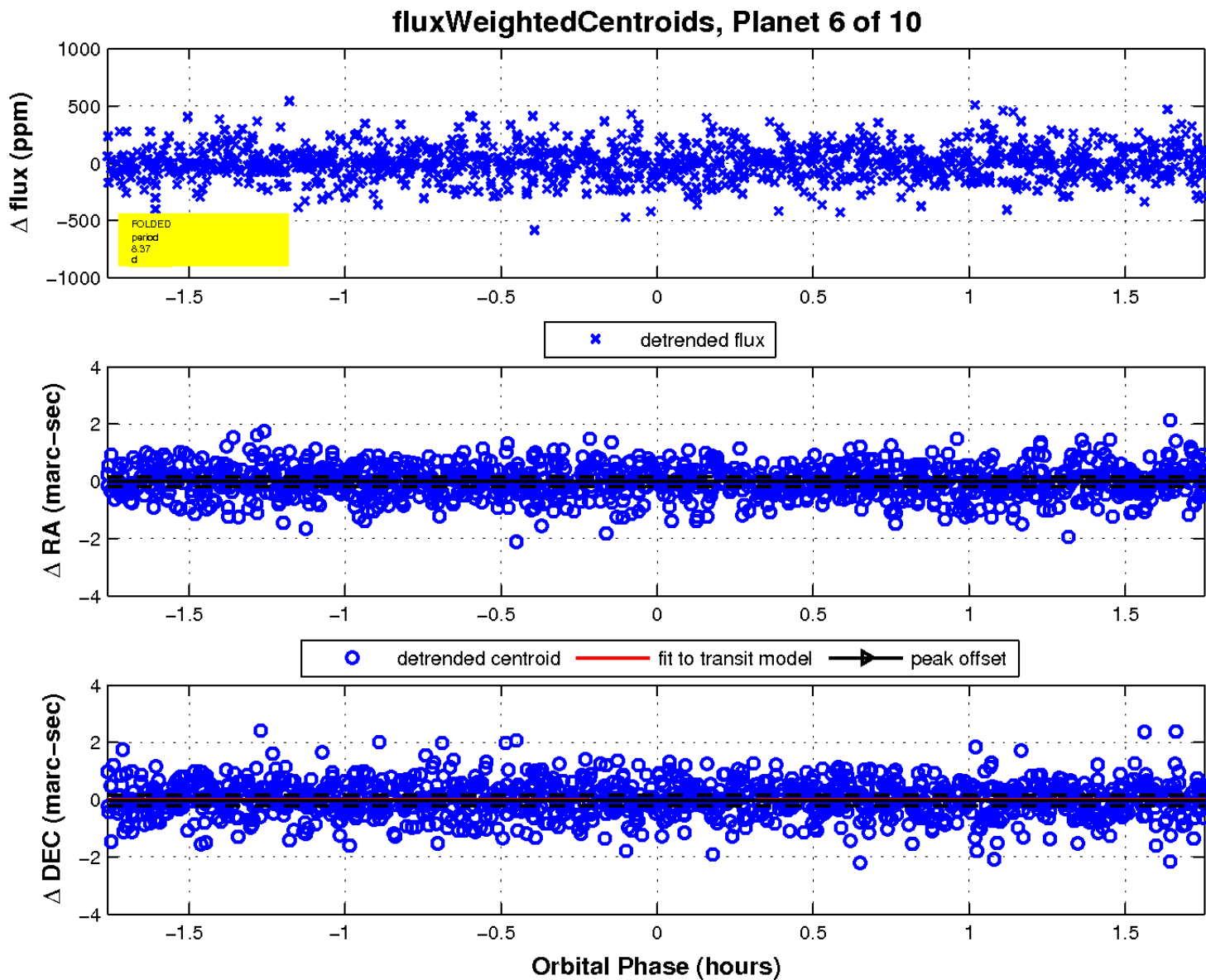
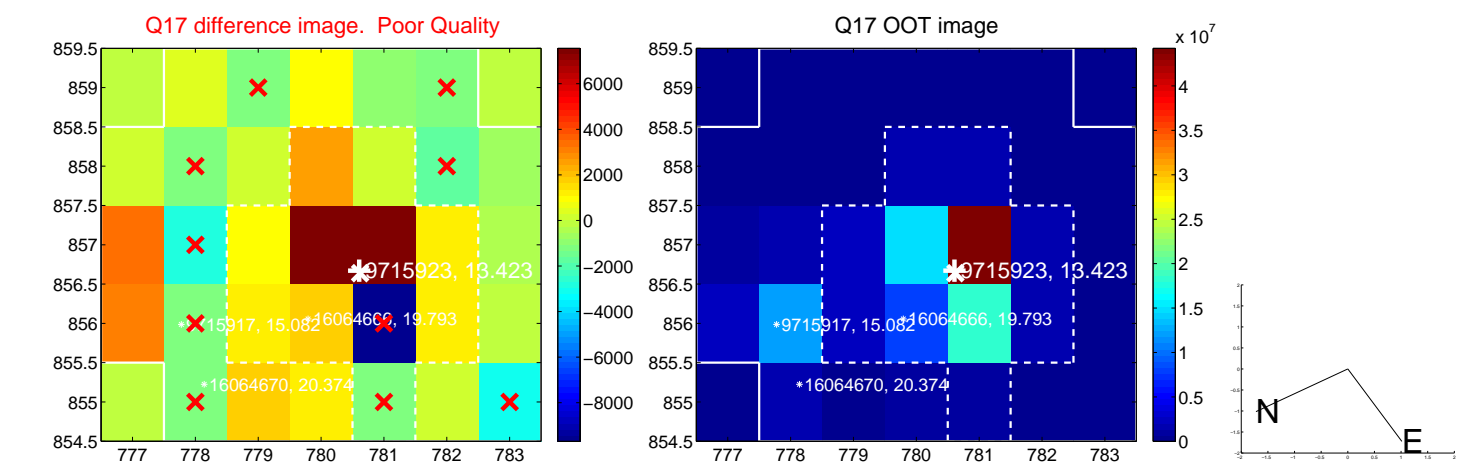
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white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

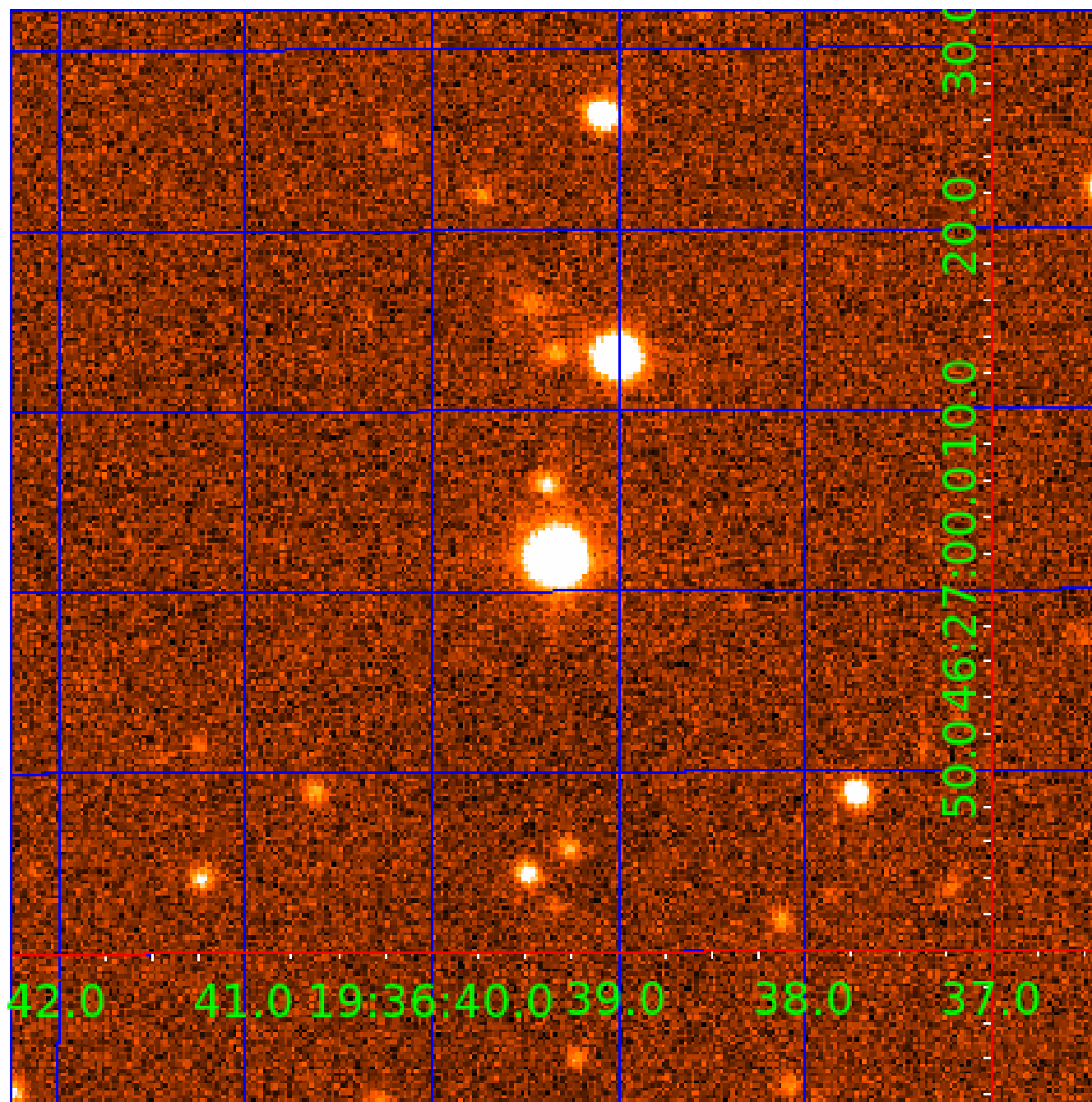


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 009715923

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009715923-01	OBS	No	0.694561	131.797987	2.7	5.202	9.1	1.7	3.64	7105	0.61	83197.88
009715923-02	OBS	No	8.985471	132.812379	202.5	0.905	12.7	11.7	3.64	7105	5.29	2739.50
009715923-04	OBS	No	9.288268	137.020221	260.0	1.287	11.3	15.7	3.64	7105	6.61	2621.07
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009715923-06	OBS	No	8.374381	138.808874	320.5	0.587	9.3	12.2	3.64	7105	7.23	3009.23
009715923-07	OBS	No	8.976706	134.628131	164.2	1.257	10.9	10.0	3.64	7105	5.01	2743.07
009715923-08	OBS	No	6.908270	135.222405	274.6	0.699	10.8	13.0	3.64	7105	6.24	3889.56
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## Robovetter Results

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009715923-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009715923-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS
009715923-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV
009715923-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_DIFFS
009715923-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—HALO_GHOST
009715923-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009715923-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009715923-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_MEAS

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

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

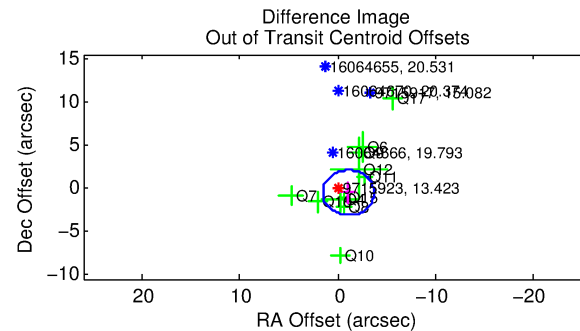
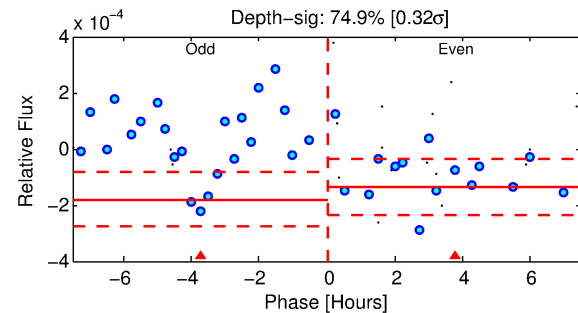
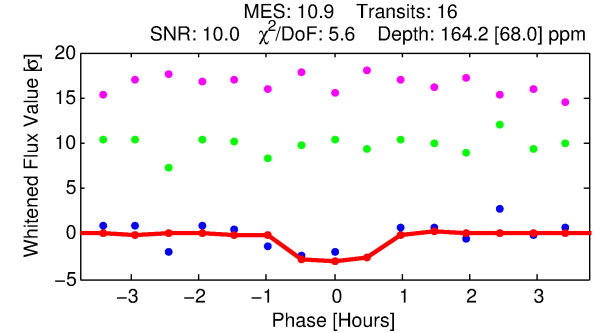
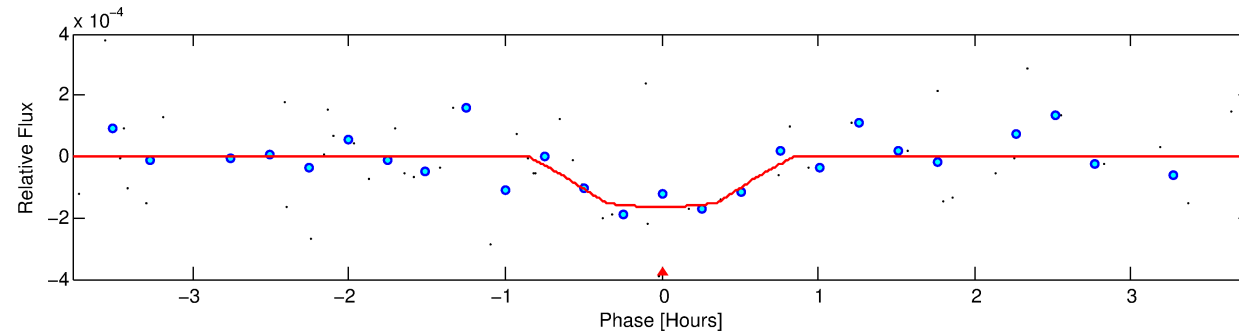
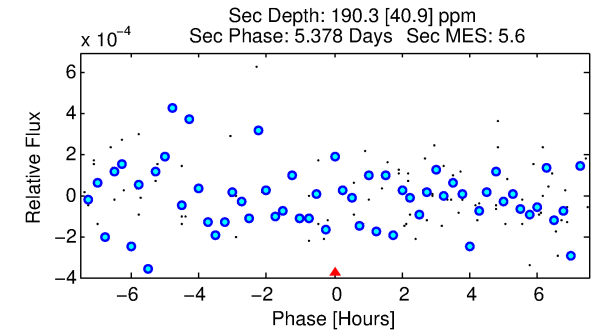
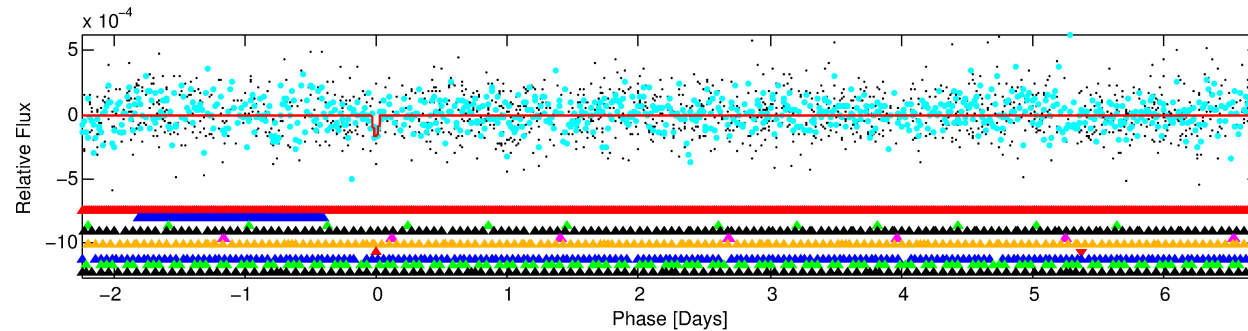
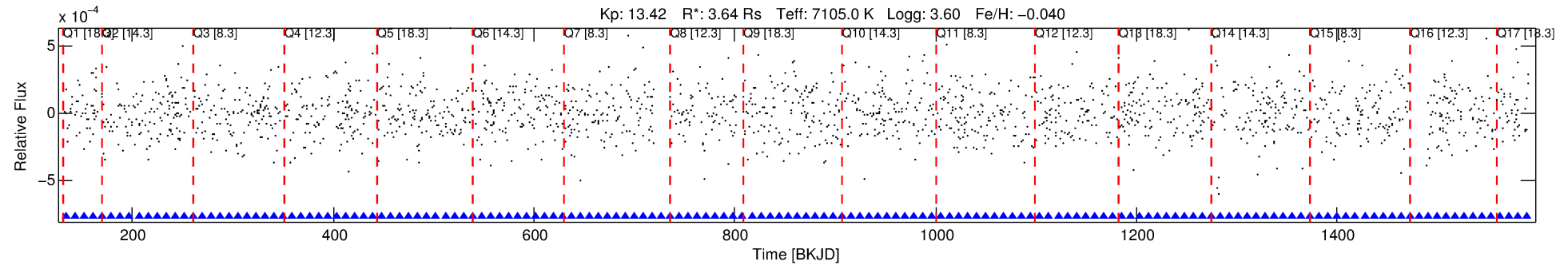
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 009715923-07

No Significant Match Found

# DV One-Page Summary

KIC: 9715923 Candidate: 7 of 10 Period: 8.977 d



## DV Fit Results:

Period = 8.97671 [0.00014] d  
Epoch = 134.6281 [0.0099] BKJD  
Rp/R\* = 0.0126 [0.0139]  
a/R\* = 40.03 [260.09]  
b = 0.70 [4.72]  
Seff = 2743.07 [1426.15]  
Teff = 1845 [240] K  
Rp = 5.01 [5.79] Re  
a = 0.1050 [0.0331] AU  
Ag = 45.87 [104.26] [0.43σ]  
Teffp = 7425 [4127] K [1.35σ]

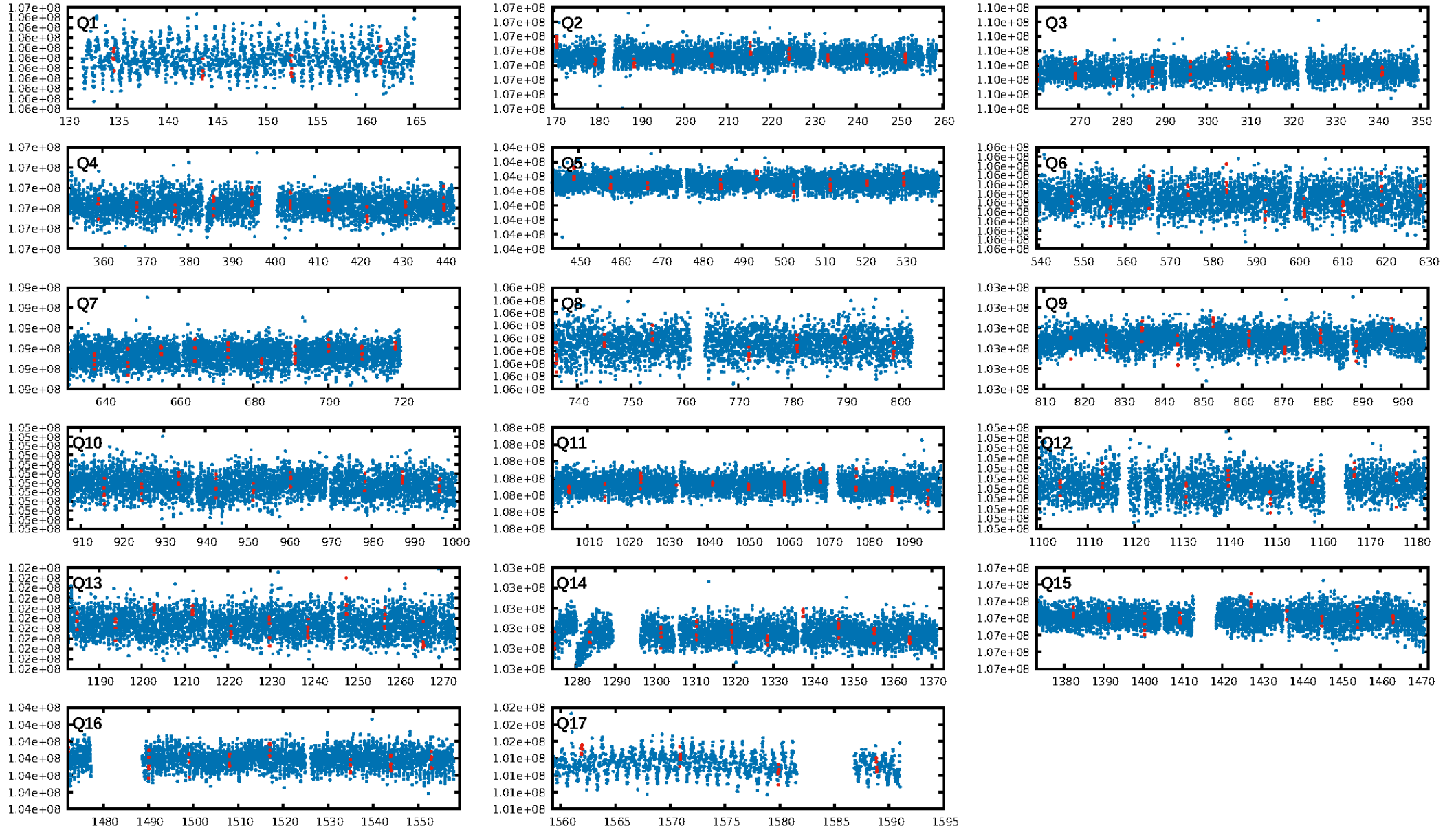
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [10.42σ]  
LongPeriod-sig: 10.8% [0.14σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 69.9%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [16/16]  
GhostDiagnostic-chr: -0.03436  
Centroid-sig: 96.2%  
Centroid-so: 0.651 arcsec [1.02σ]  
OotOffset-rm: 1.209 arcsec [1.39σ]  
KicOffset-rm: 1.279 arcsec [1.49σ]  
OotOffset-st: 2/3/4/2 [11]  
KicOffset-st: 2/3/4/2 [11]  
DiffImageQuality-fgm: 0.00 [0/11]  
DiffImageOverlap-fno: 0.12 [2/17]

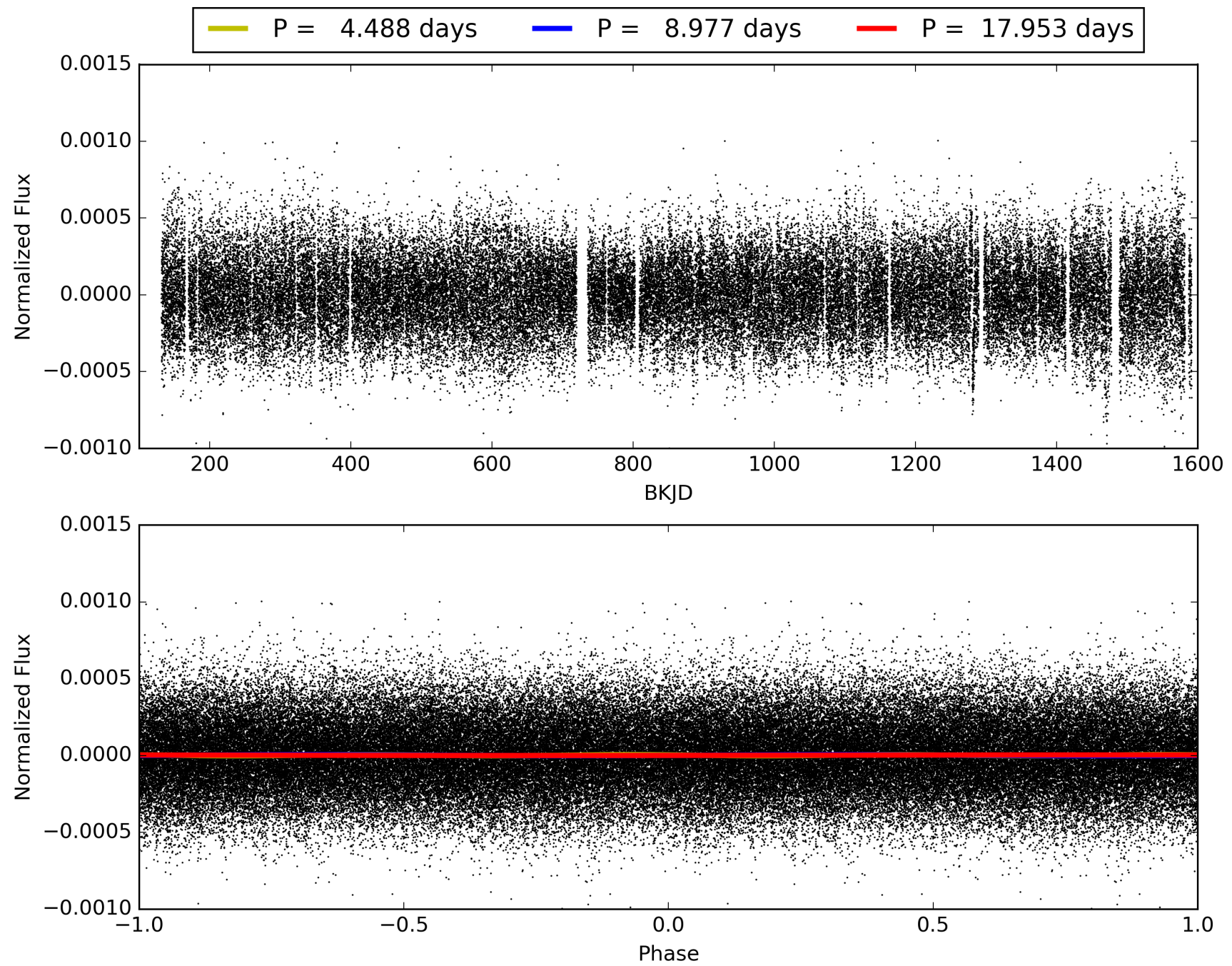
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:00:41 Z

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

# TCE 009715923-07, PDC Light Curves

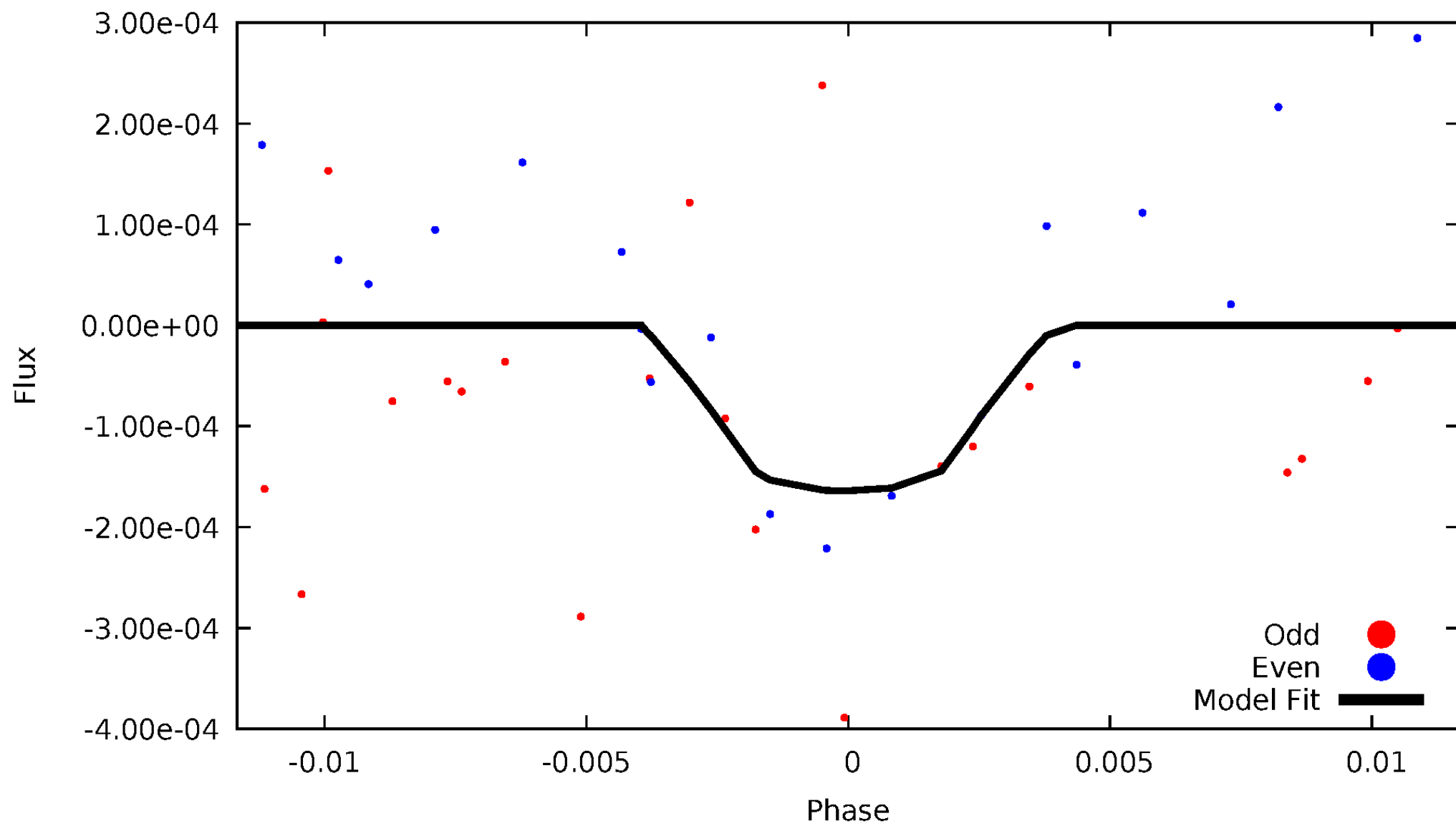


TCE 009715923-07



# DV Odd/Even

TCE 009715923-07



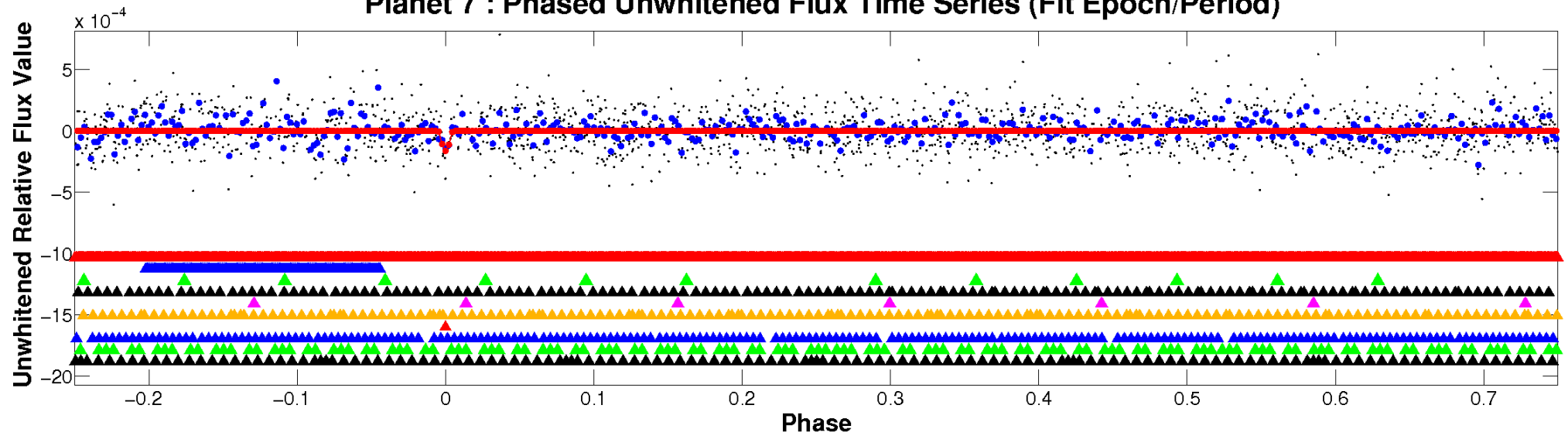


ALT Odd/Even

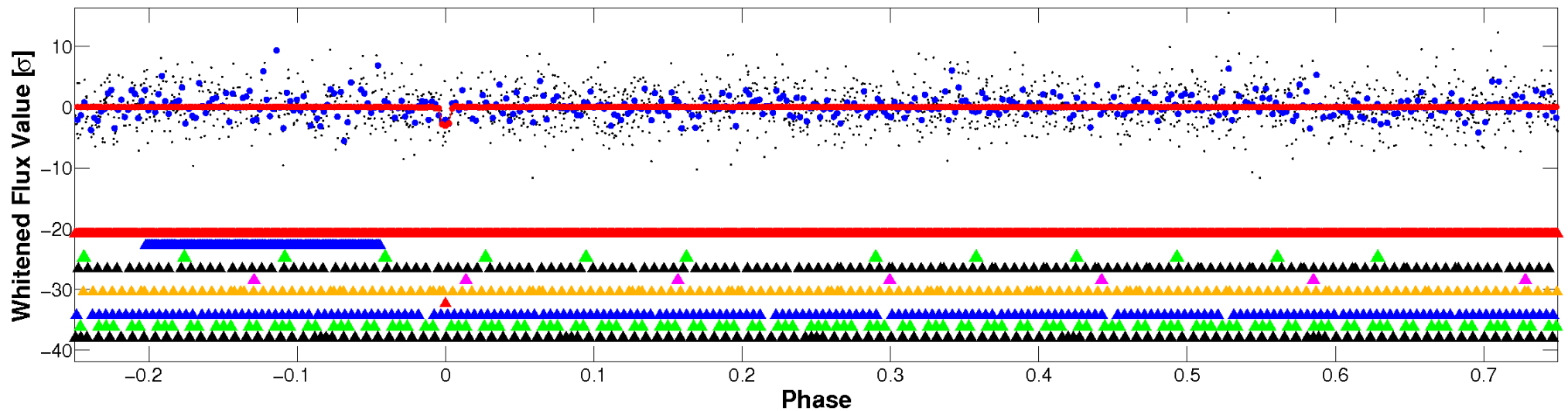
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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



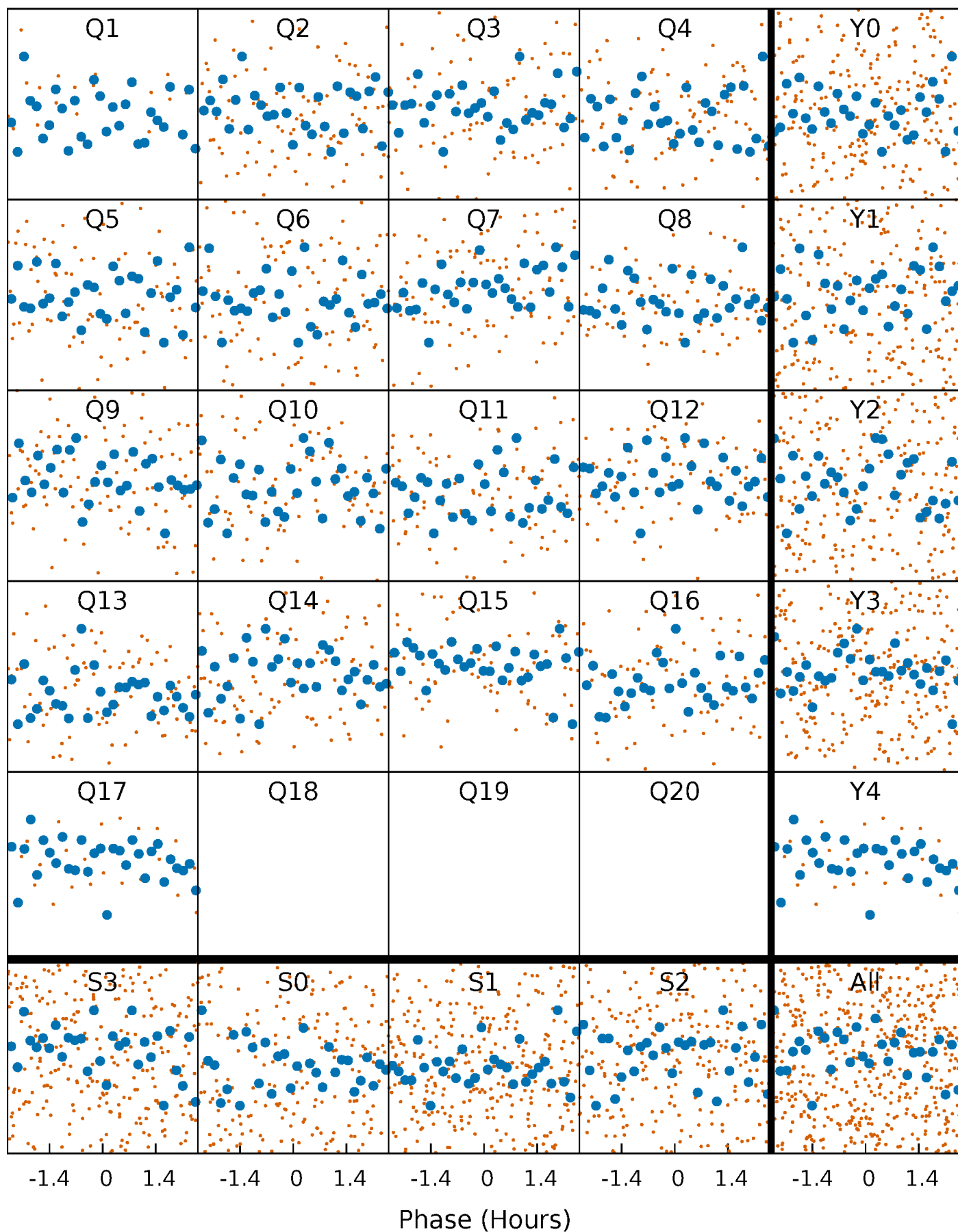
## Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)





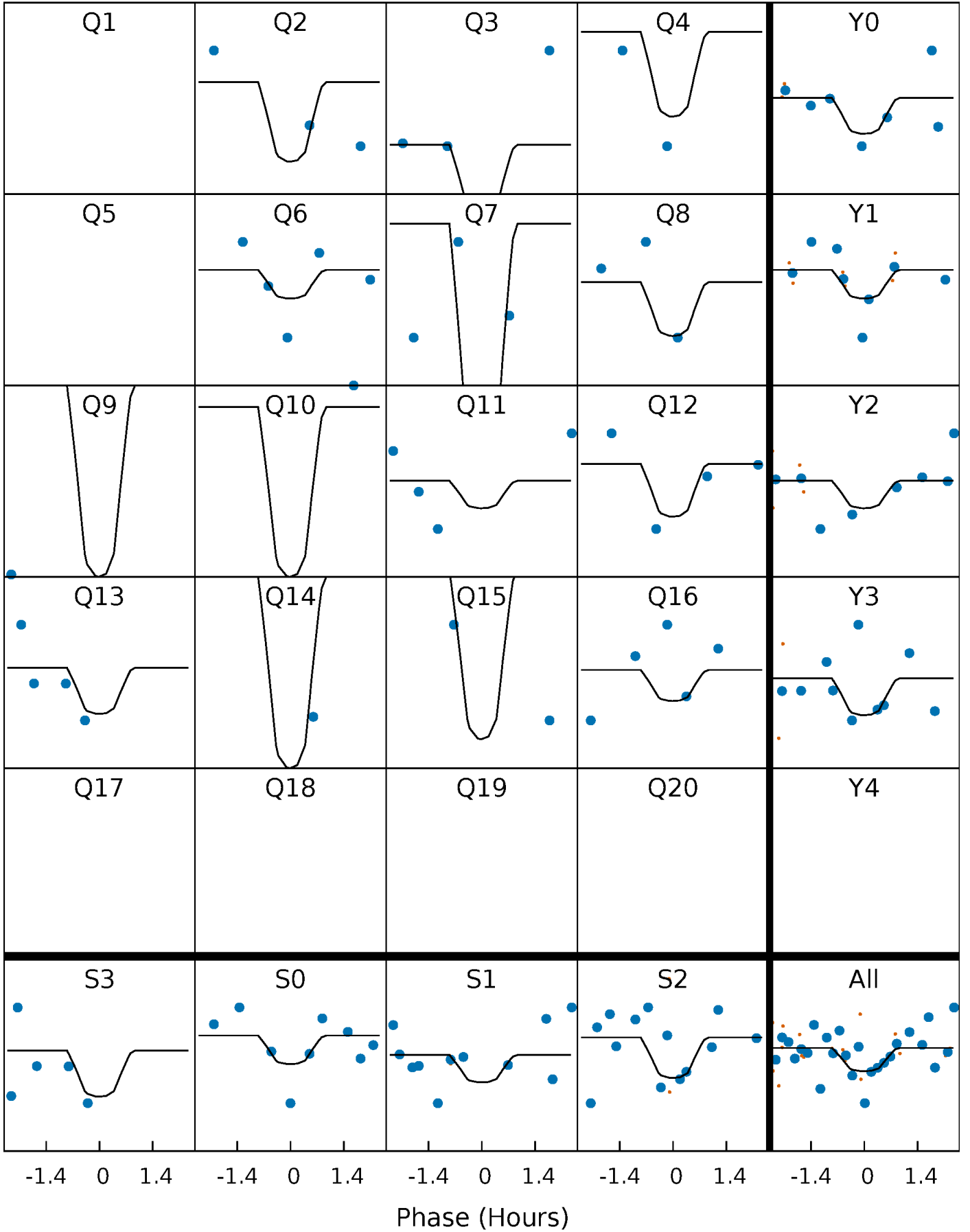
# PDC Quarter-Phased Transit Curves

TCE 009715923-07   P= 8.976706 Days    $T_0=134.628131$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 009715923-07 P= 8.976706 Days  $T_0=134.628131$  (BKJD)

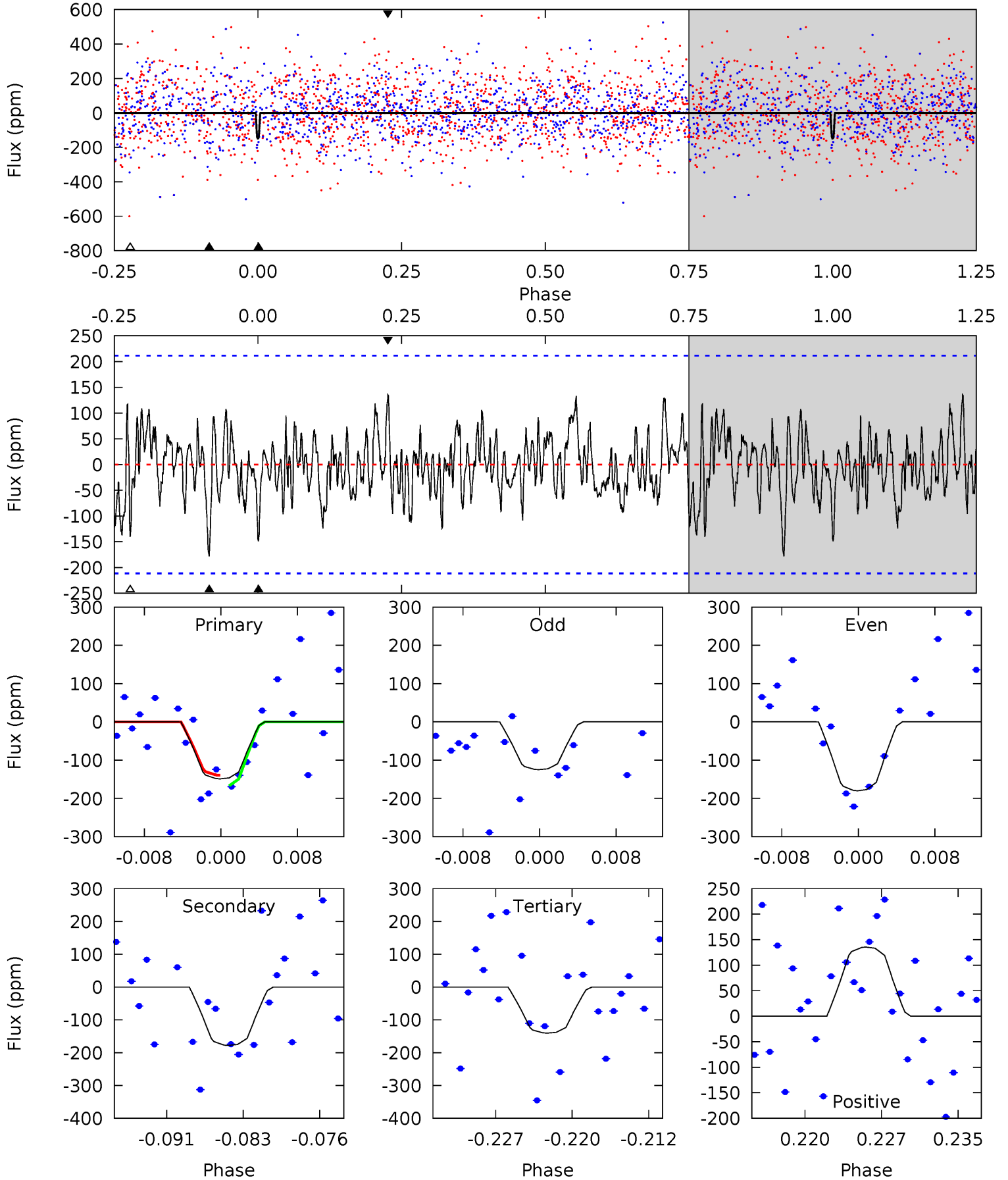


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

009715923-07, P = 8.976706 Days, E = 125.651425 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.58	4.28	3.37	3.26	5.08	2.67	1.23	0.21	0.32	0.91	1.02	0.66	0.75	0.43	0.32



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 009715923

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7105^{+196}_{-270}$	$3.598^{+0.289}_{-0.051}$	$-0.040^{+0.250}_{-0.250}$	$3.638^{+0.306}_{-1.225}$	$1.912^{+0.168}_{-0.311}$	$0.056^{+0.111}_{-0.010}$
	+3%/-4%	+8%/-1%	+625%/-625%	+8%/-34%	+9%/-16%	+199%/-18%
Source	PHO1	FLK73	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 009715923-07 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-178 \pm 42$	$6.08^{+4.27}_{-3.87}$	$2511^{+132}_{-210}$	$6310^{+5670}_{-1453}$	$29^{+190}_{-19}$
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  $A_{\text{obs}} \gg 1.0$

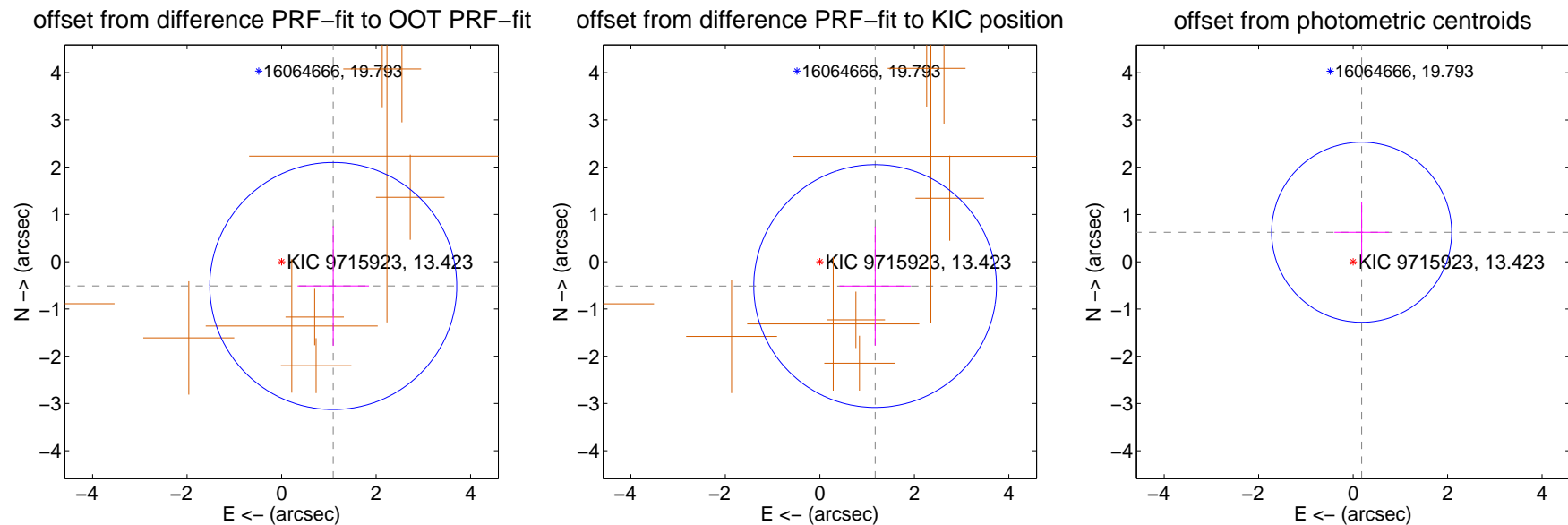
## DV Centroid Data

Supplemental centroid analysis for 009715923-07. Kepler magnitude: 13.42. Transit SNR 9.96

There are 0 quarters with good PRF difference image offsets

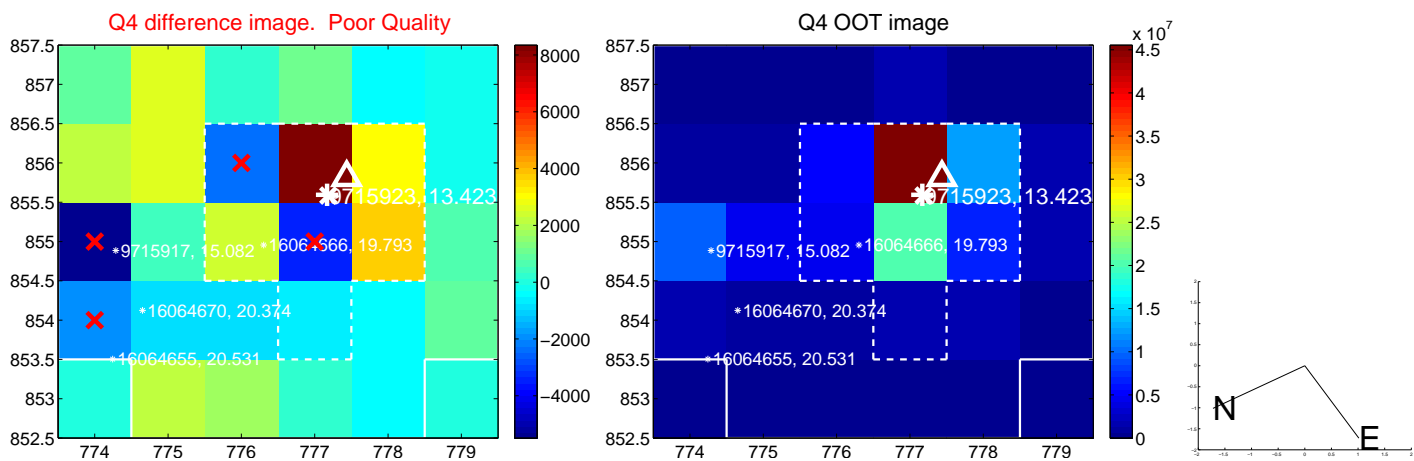
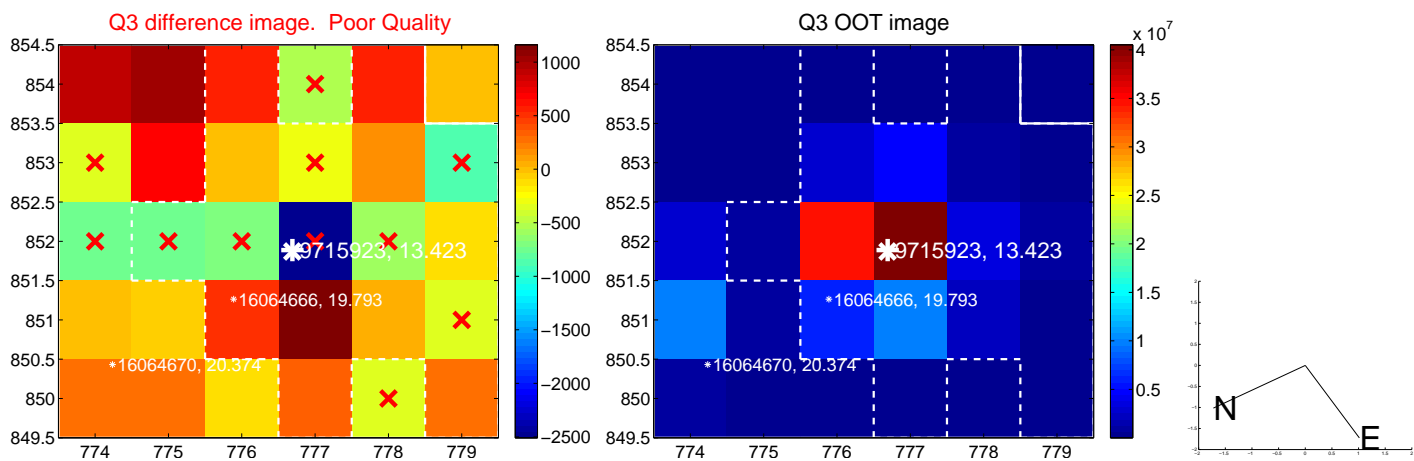
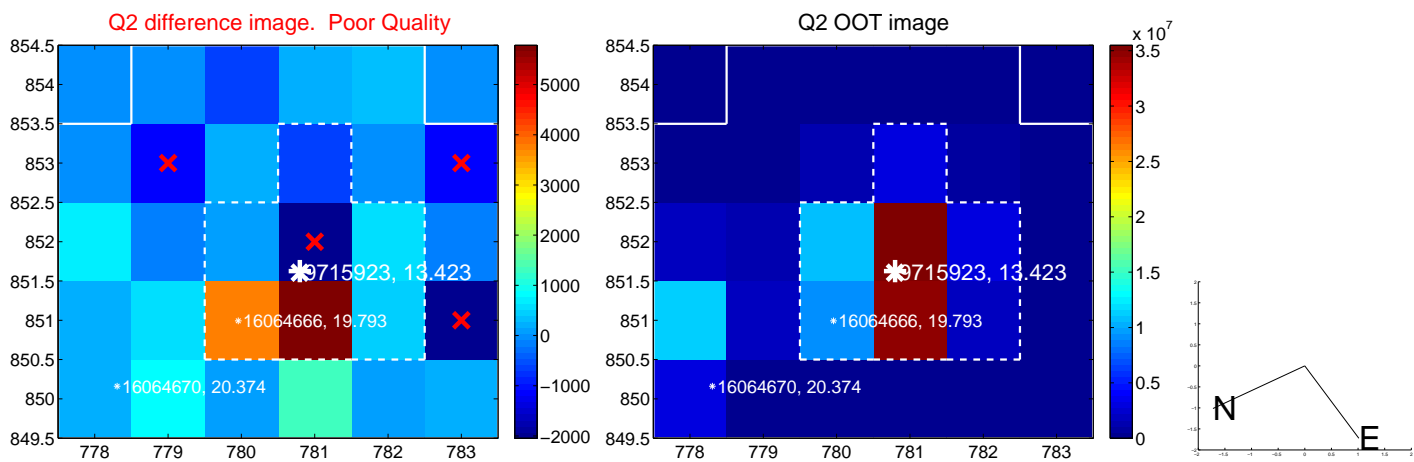
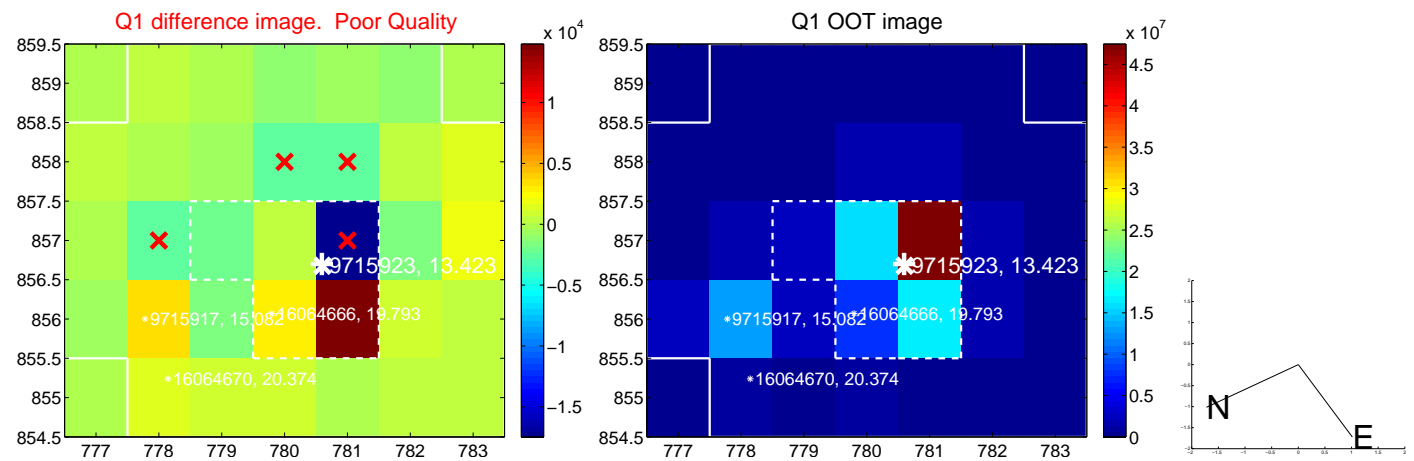
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.209 \pm 0.871$	1.39	$-1.094 \pm 0.757$	$-0.514 \pm 1.266$
PRF-fit source offset from KIC position	$1.279 \pm 0.856$	1.49	$-1.170 \pm 0.753$	$-0.516 \pm 1.260$
photometric centroid source offset	$0.65 \pm 0.64$	1.02	$-0.18 \pm 0.58$	$0.62 \pm 0.64$



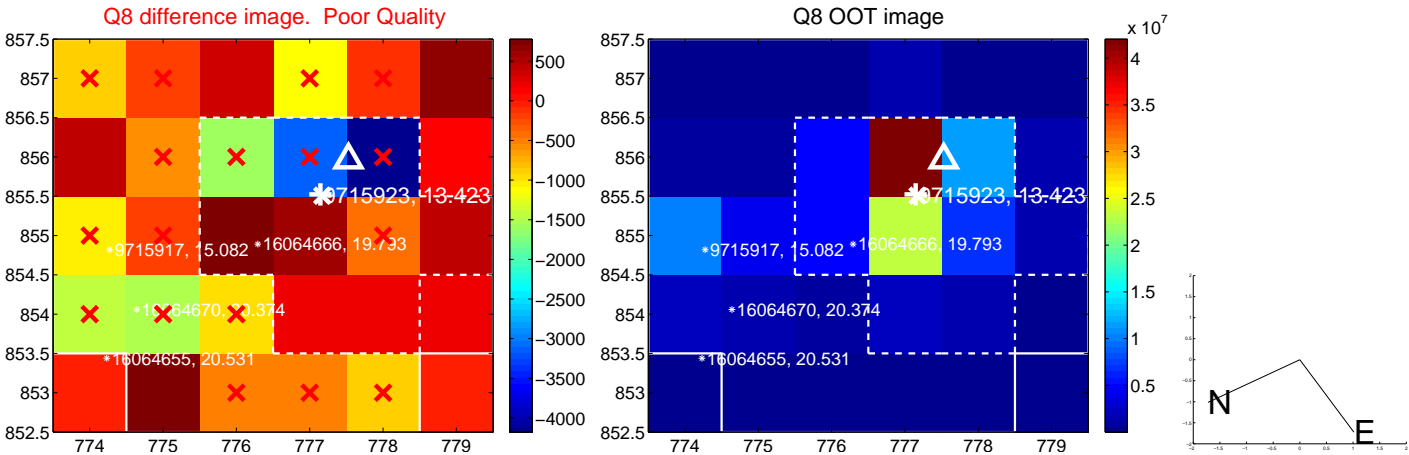
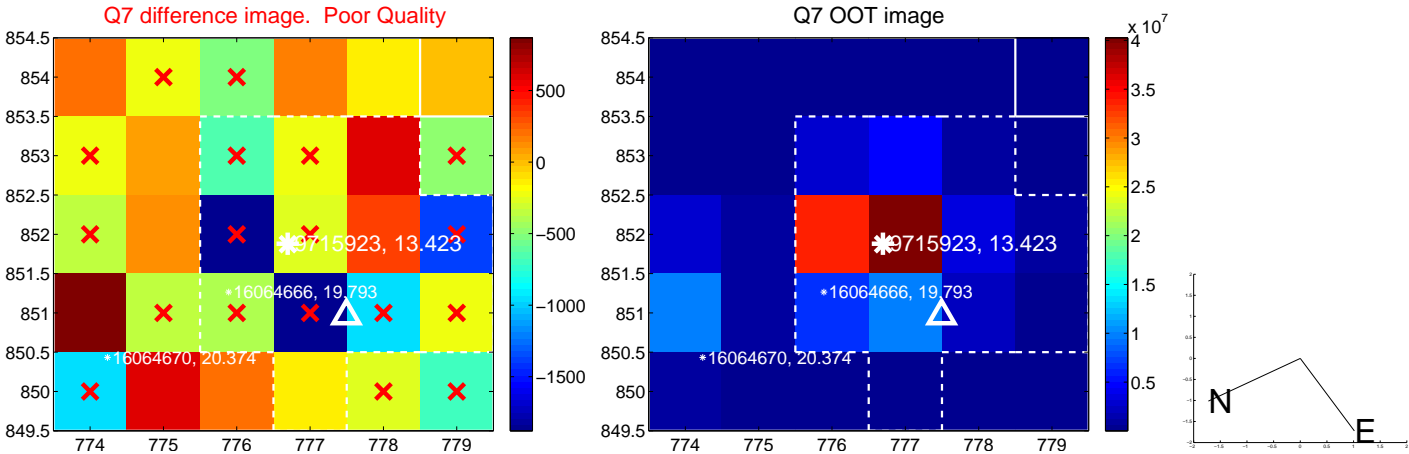
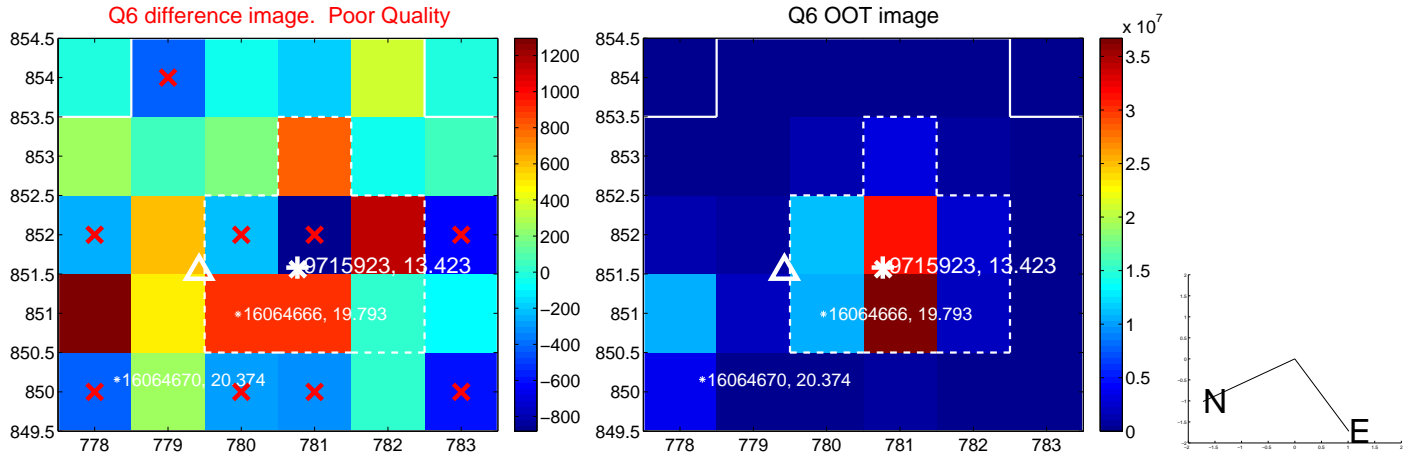
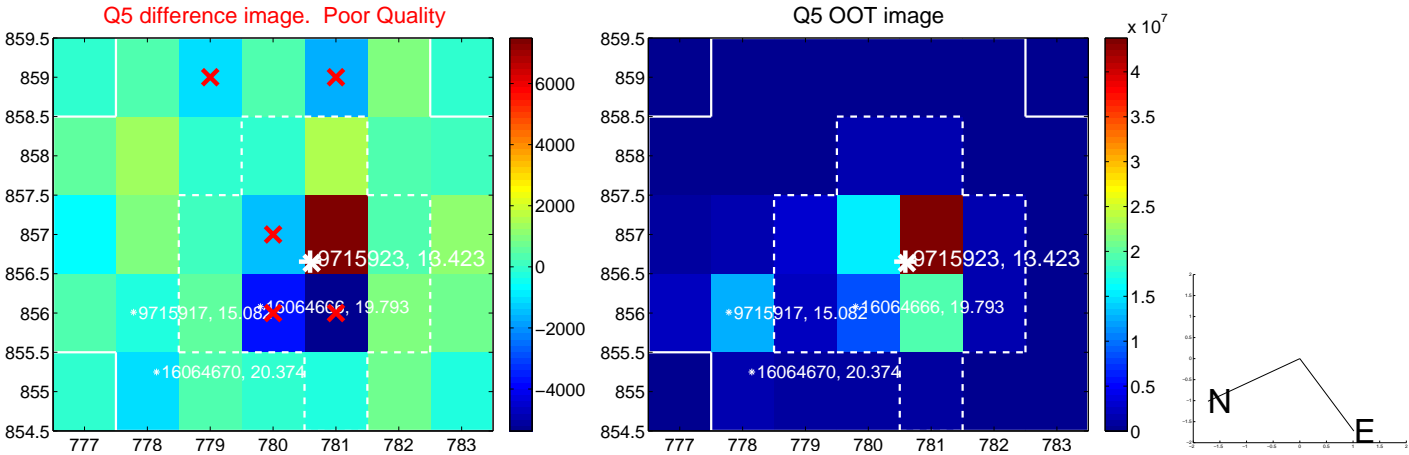
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

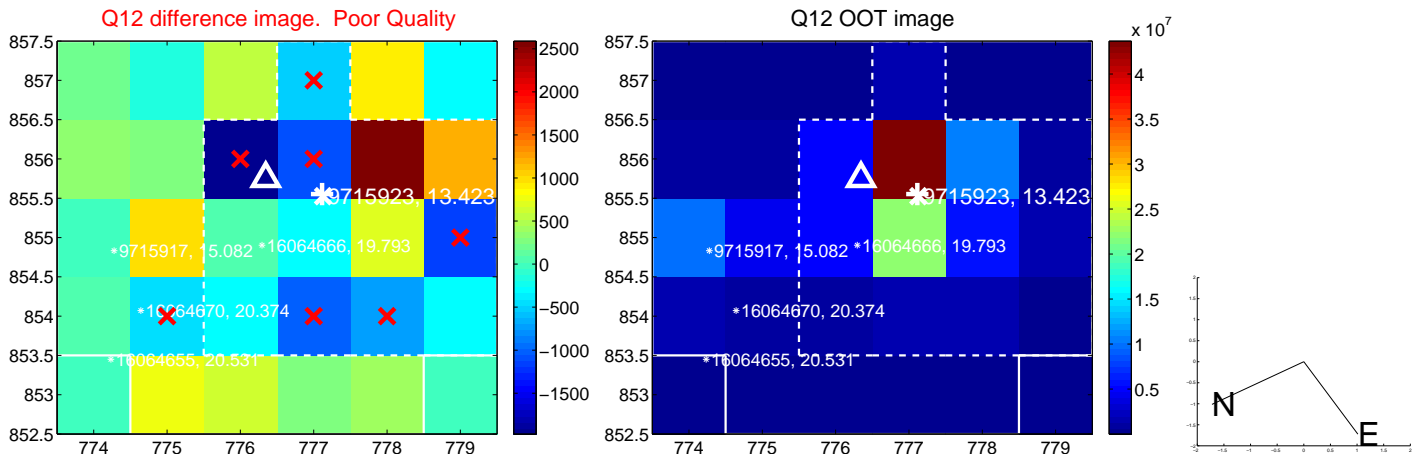
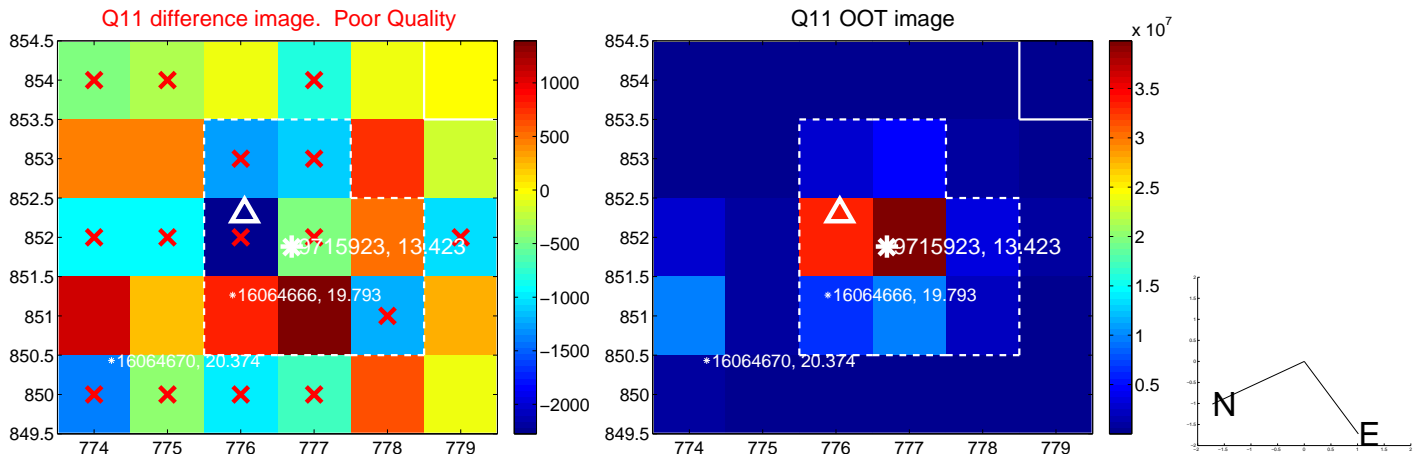
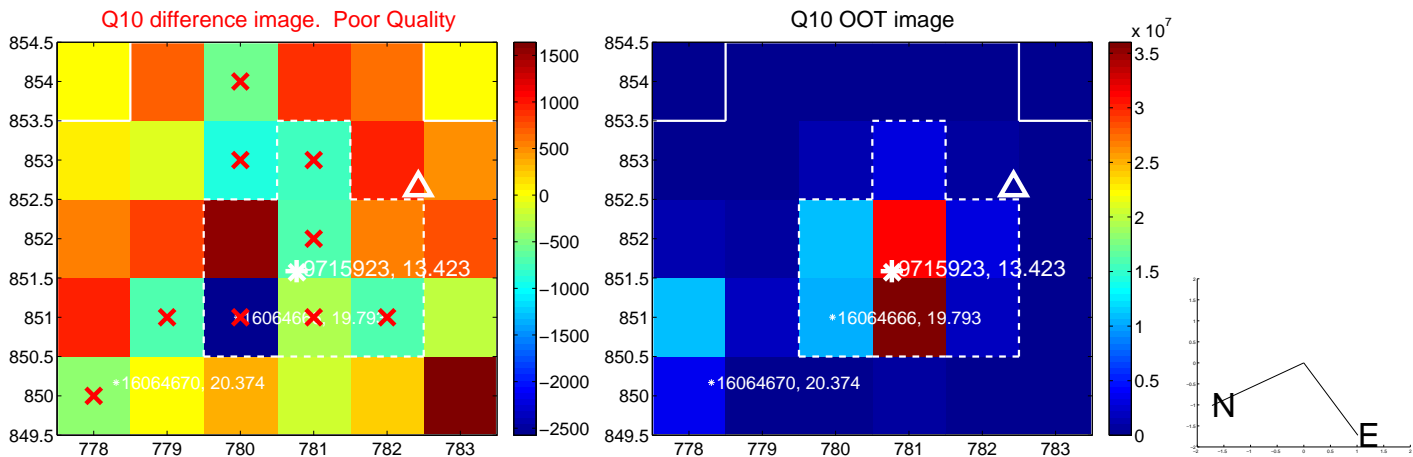
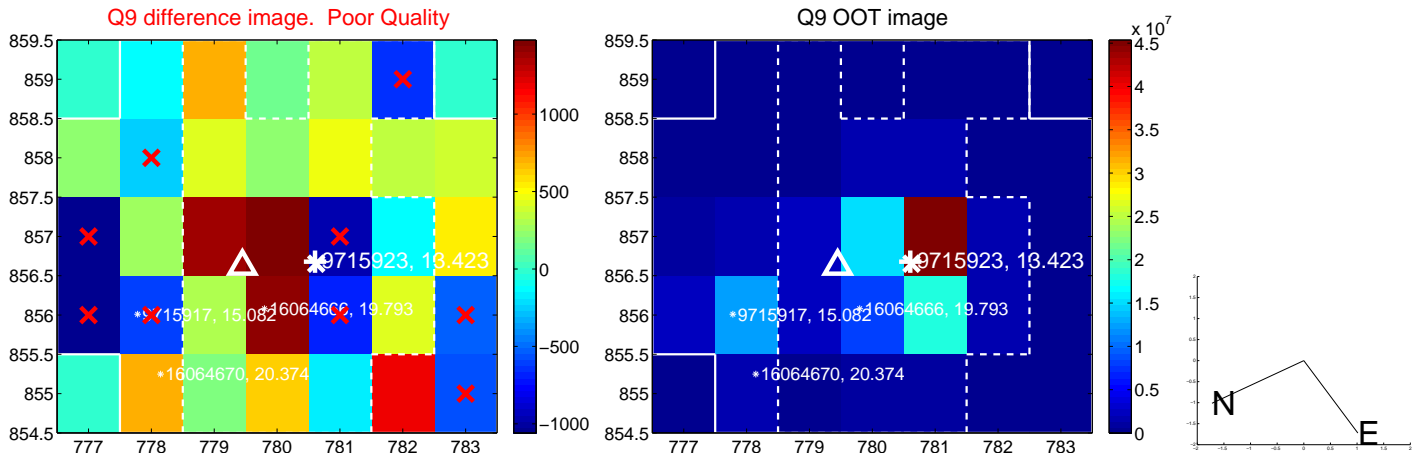




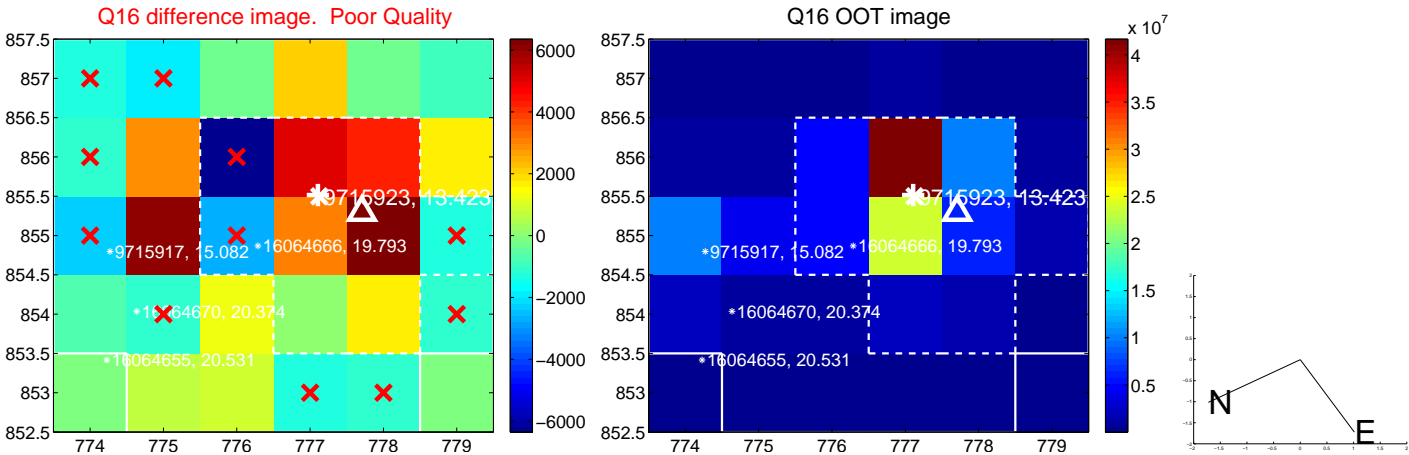
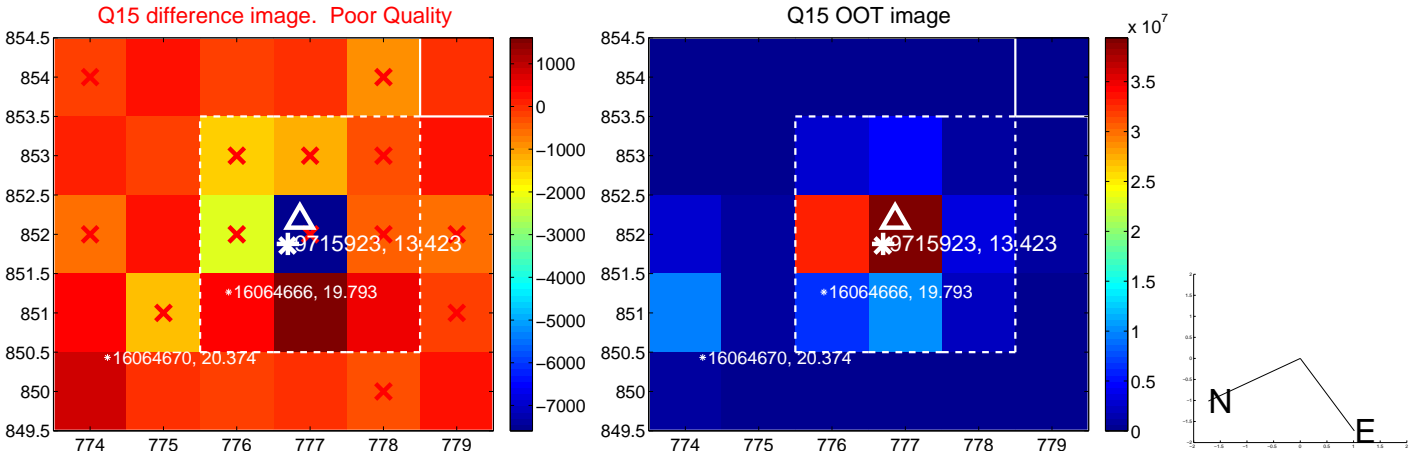
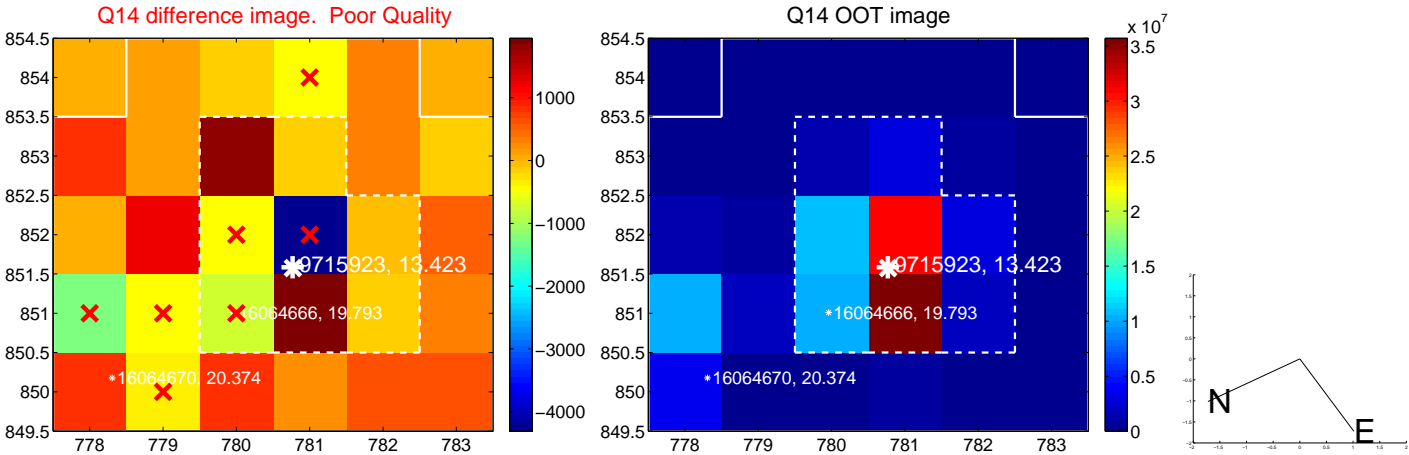
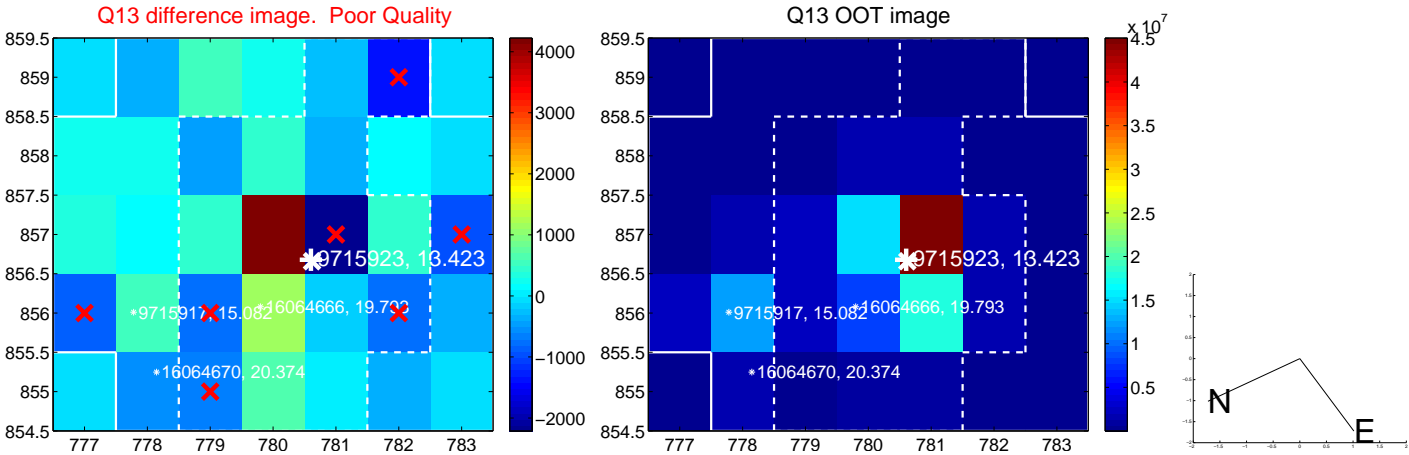
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



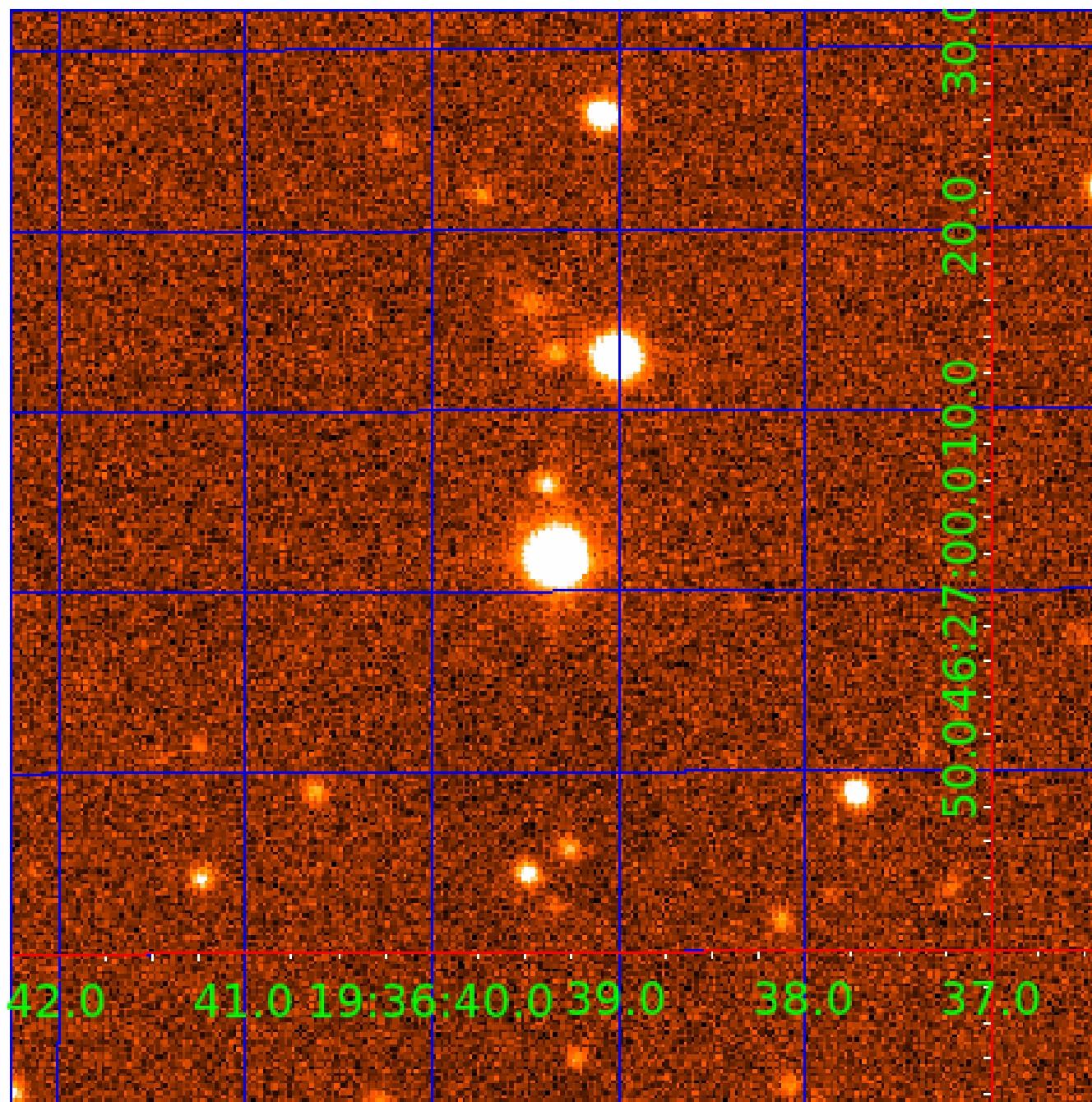
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





UKIRT Image

Declination



# KIC 009715923

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009715923-01	OBS	No	0.694561	131.797987	2.7	5.202	9.1	1.7	3.64	7105	0.61	83197.88
009715923-02	OBS	No	8.985471	132.812379	202.5	0.905	12.7	11.7	3.64	7105	5.29	2739.50
009715923-04	OBS	No	9.288268	137.020221	260.0	1.287	11.3	15.7	3.64	7105	6.61	2621.07
009715923-05	OBS	No	3.847139	133.473597	178.8	1.156	12.1	15.2	3.64	7105	5.07	8489.37
009715923-06	OBS	No	8.374381	138.808874	320.5	0.587	9.3	12.2	3.64	7105	7.23	3009.23
009715923-07	OBS	No	8.976706	134.628131	164.2	1.257	10.9	10.0	3.64	7105	5.01	2743.07
009715923-08	OBS	No	6.908270	135.222405	274.6	0.699	10.8	13.0	3.64	7105	6.24	3889.56
009715923-09	OBS	No	11.309767	136.928988	256.2	0.665	9.4	10.1	3.64	7105	6.66	2015.83
009715923-10	OBS	No	10.461333	138.428607	219.1	1.442	9.8	9.3	3.64	7105	5.46	2236.71

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009715923-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_DIFFS
009715923-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009715923-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS
009715923-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV
009715923-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_DIFFS
009715923-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—HALO_GHOST
009715923-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009715923-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009715923-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_MEAS

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

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

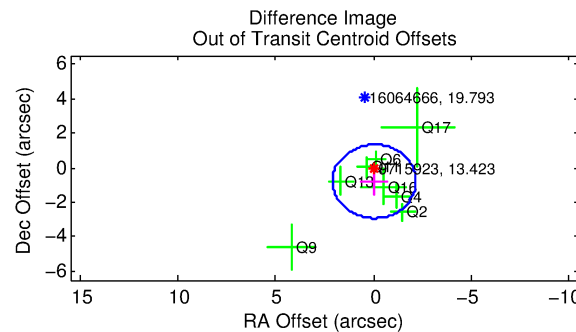
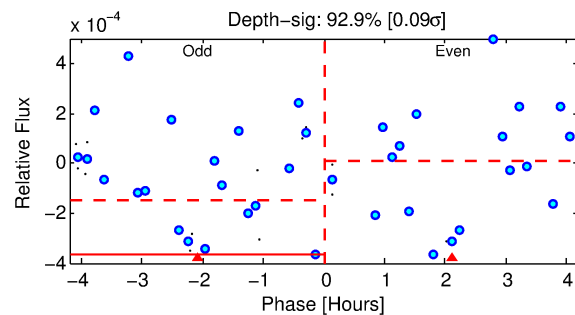
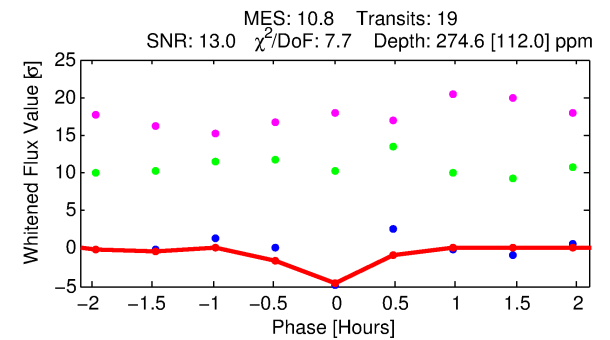
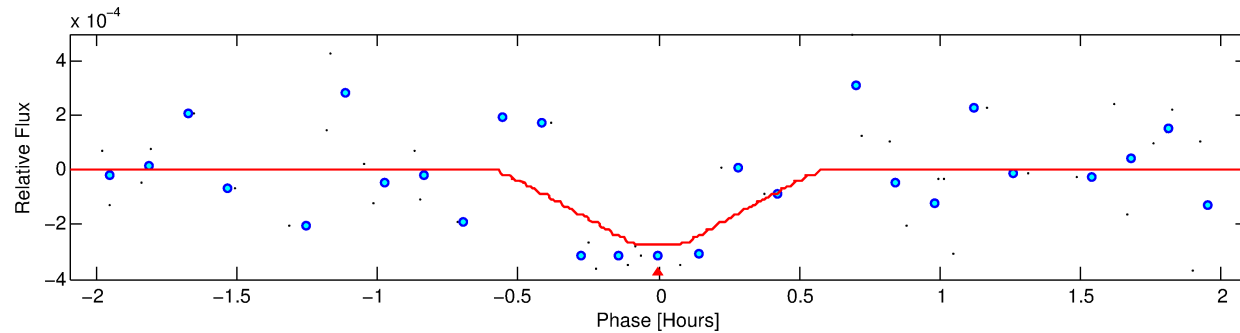
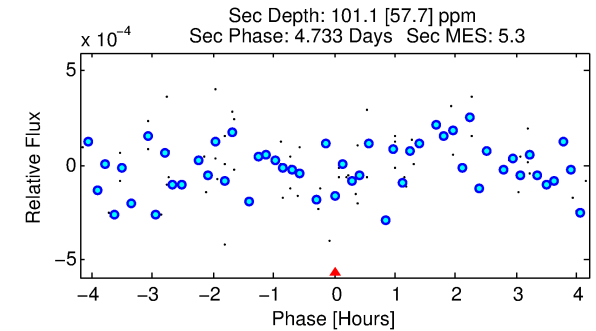
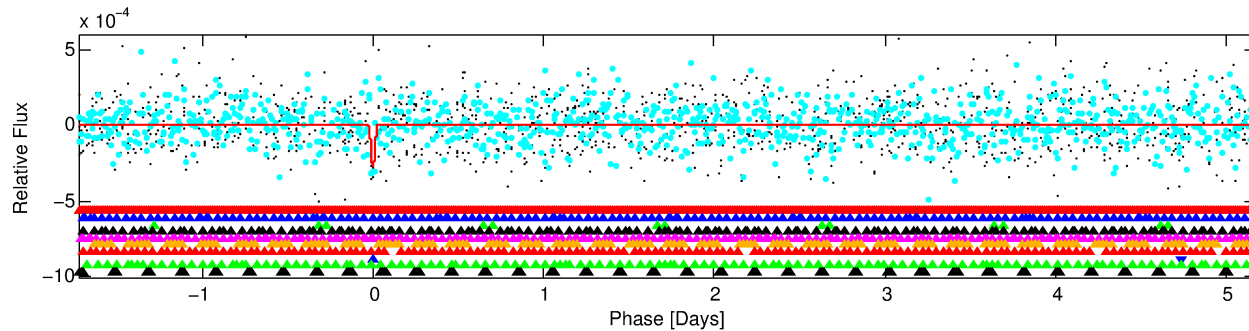
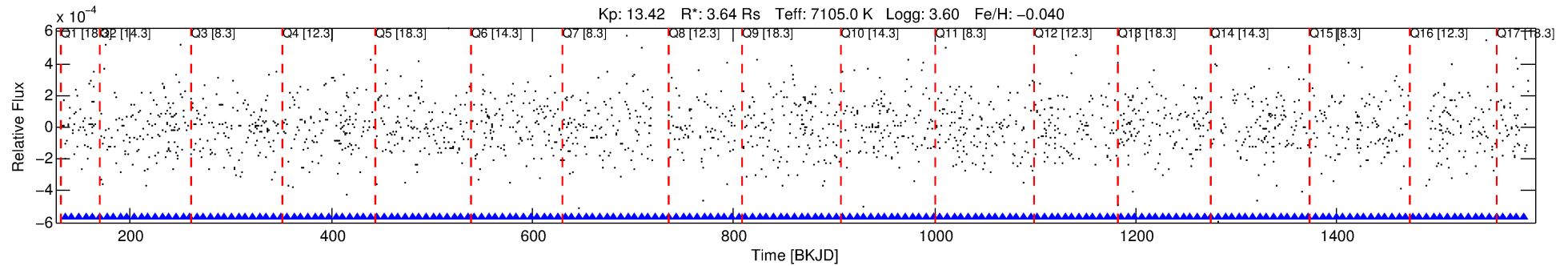
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 009715923-08

No Significant Match Found

# DV One-Page Summary

KIC: 9715923 Candidate: 8 of 10 Period: 6.908 d



## DV Fit Results:

Period = 6.90827 [0.00010] d  
Epoch = 135.2224 [0.0080] BKJD  
Rp/R\* = 0.0157 [0.1100]  
a/R\* = 74.12 [3053.01]  
b = 0.26 [145.72]  
Seff = 3889.56 [2022.22]  
Teq = 2014 [262] K  
Rp = 6.24 [43.73] Re  
a = 0.0881 [0.0278] AU  
Ag = 11.10 [155.62] [0.06σ]  
Teffp = 5683 [19909] K [0.18σ]

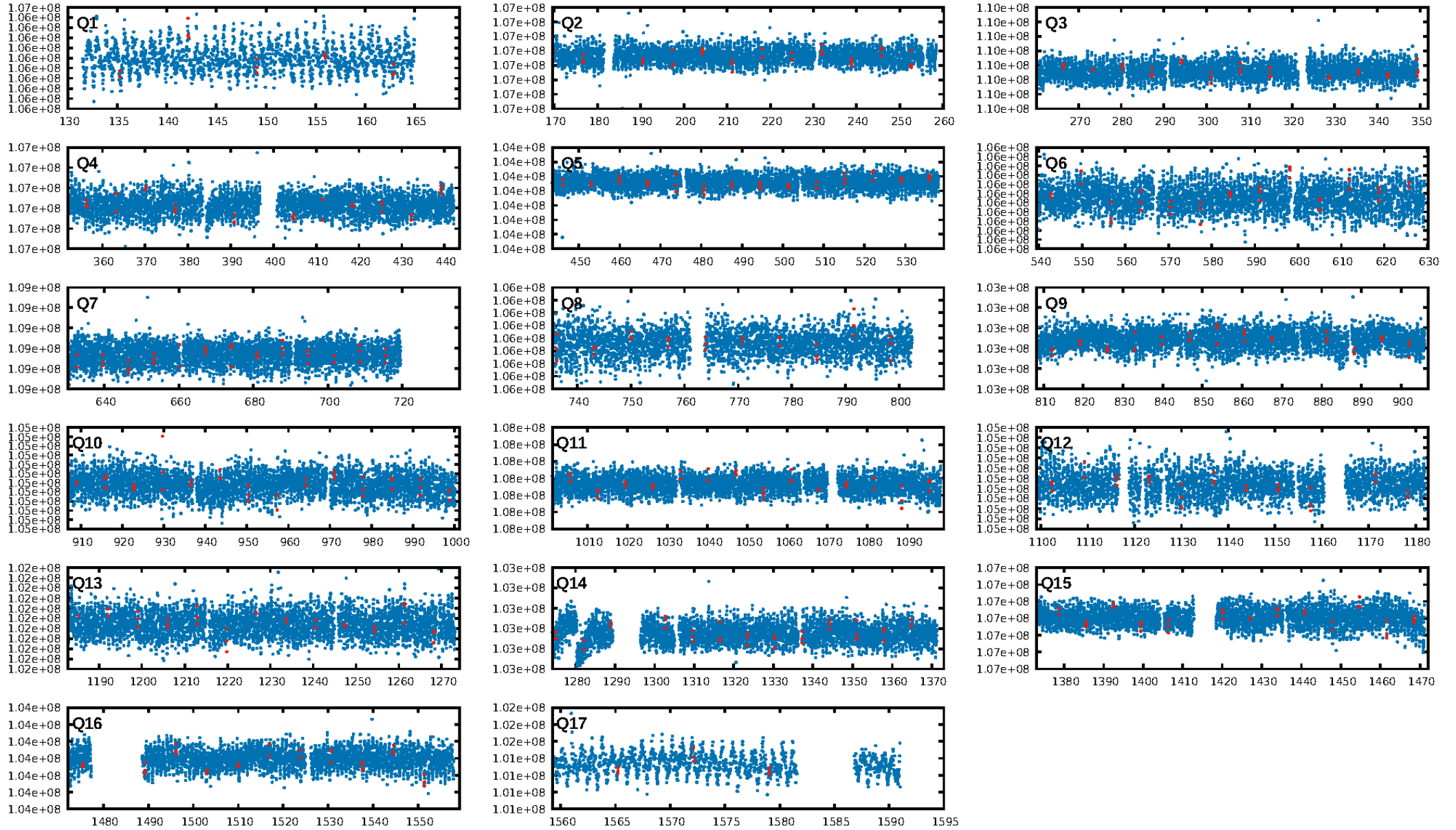
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [54.38σ]  
LongPeriod-sig: 100.0% [38.55σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 5.7%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [19/19]  
GhostDiagnostic-chr: 1.218  
Centroid-sig: 5.3%  
Centroid-so: 0.351 arcsec [0.86σ]  
OotOffset-rm: 0.800 arcsec [1.13σ]  
OotOffset-st: 2/1/2/3 [8]  
KicOffset-rm: 0.796 arcsec [1.14σ]  
KicOffset-st: 2/1/2/3 [8]  
DiffImageQuality-fgm: 0.38 [3/8]  
DiffImageOverlap-fno: 0.19 [3/16]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:00:44 Z

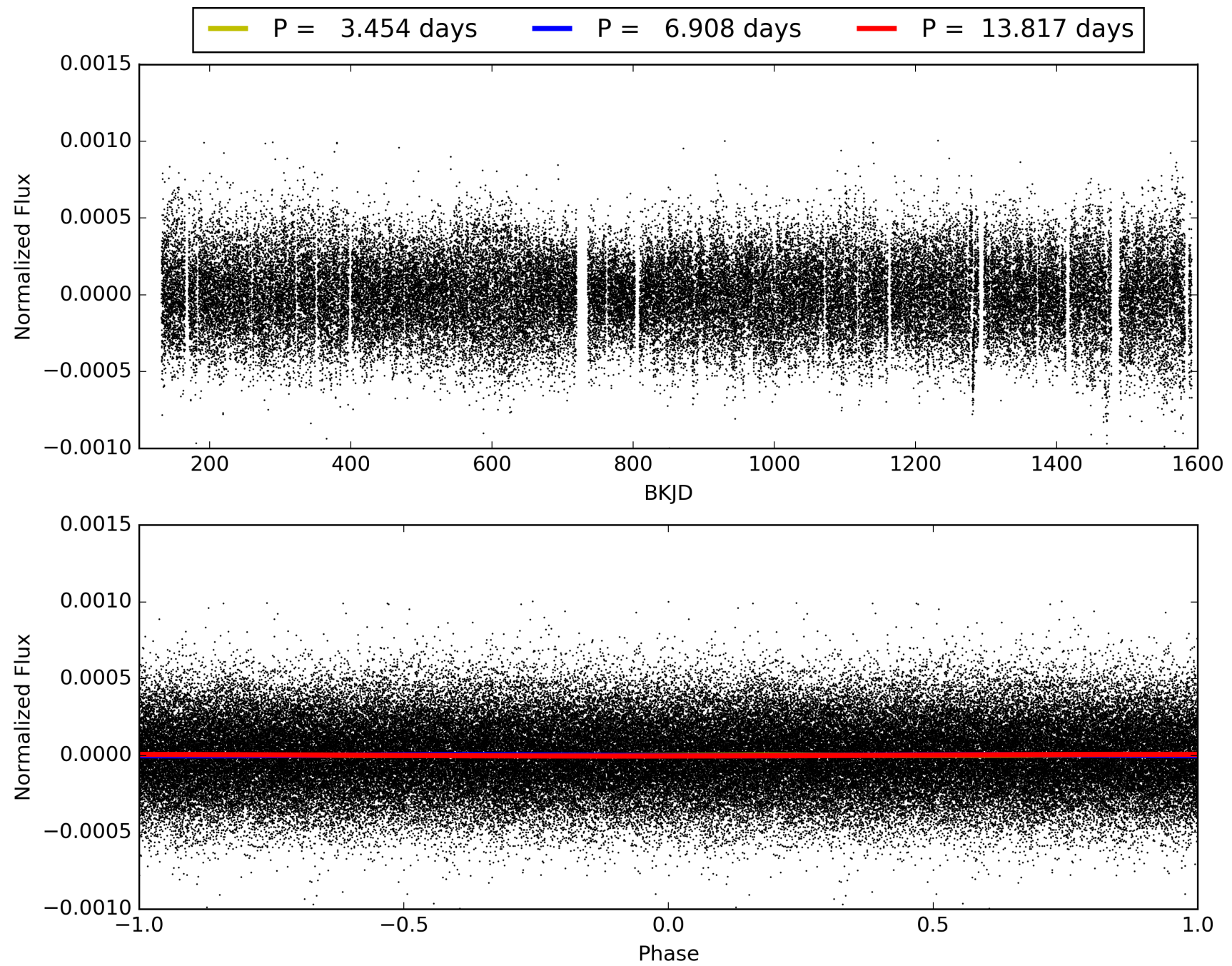
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 009715923-08, PDC Light Curves



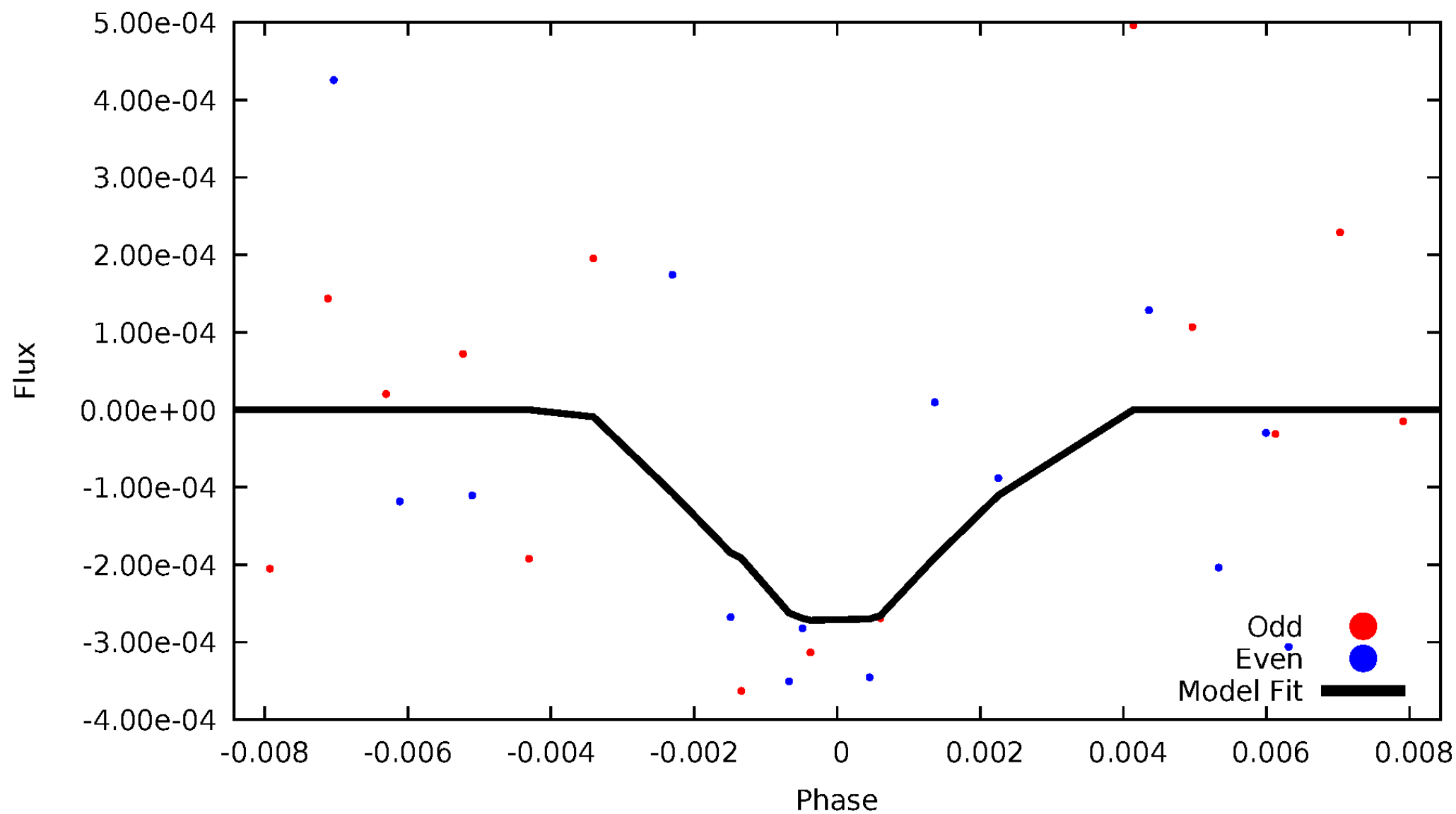


TCE 009715923-08



# DV Odd/Even

TCE 009715923-08



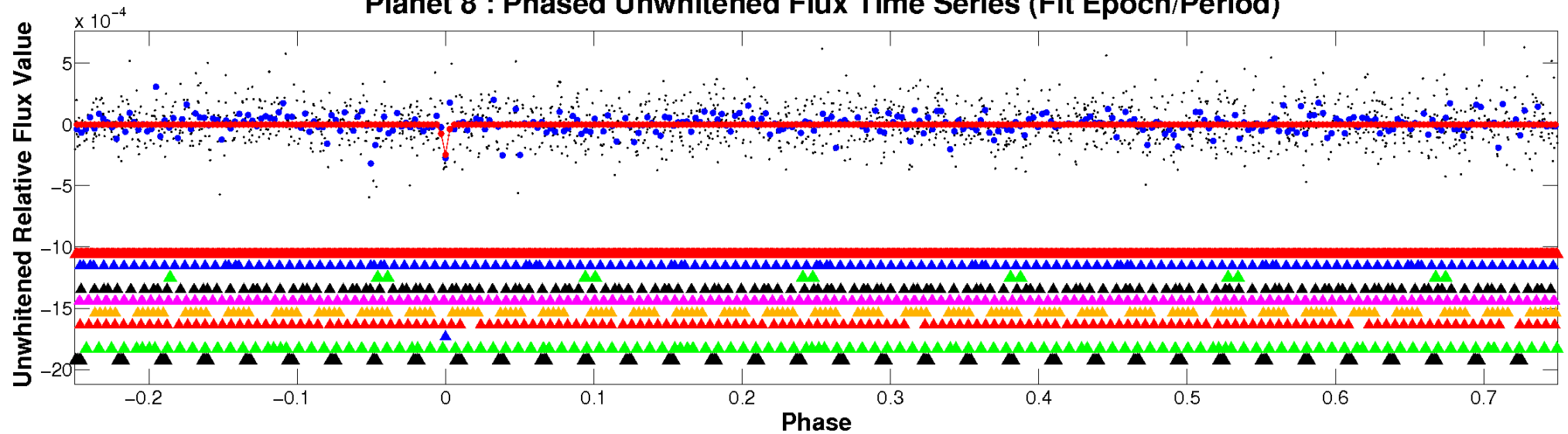


ALT Odd/Even

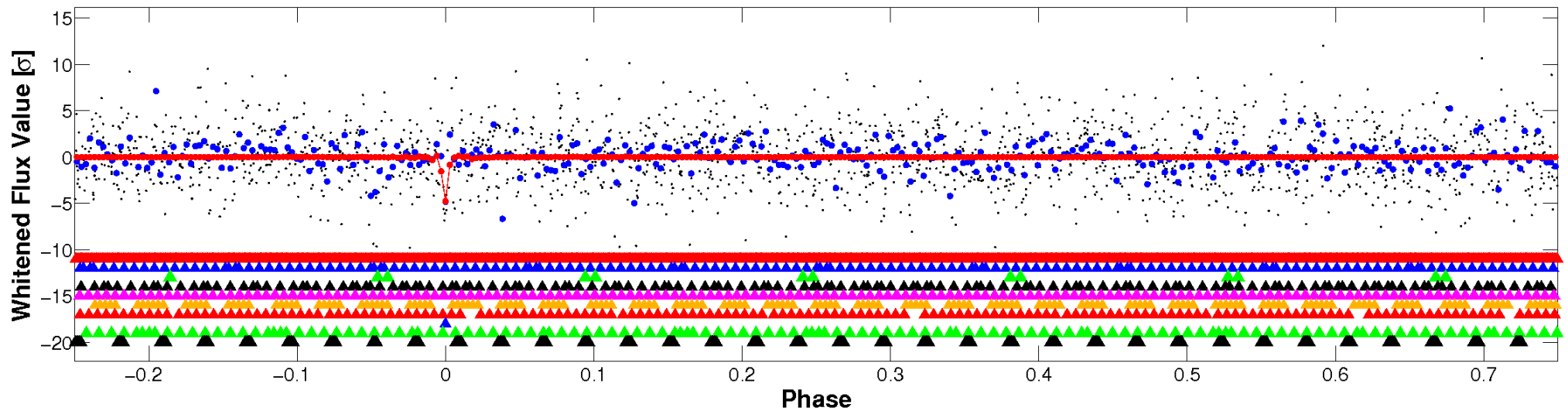
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

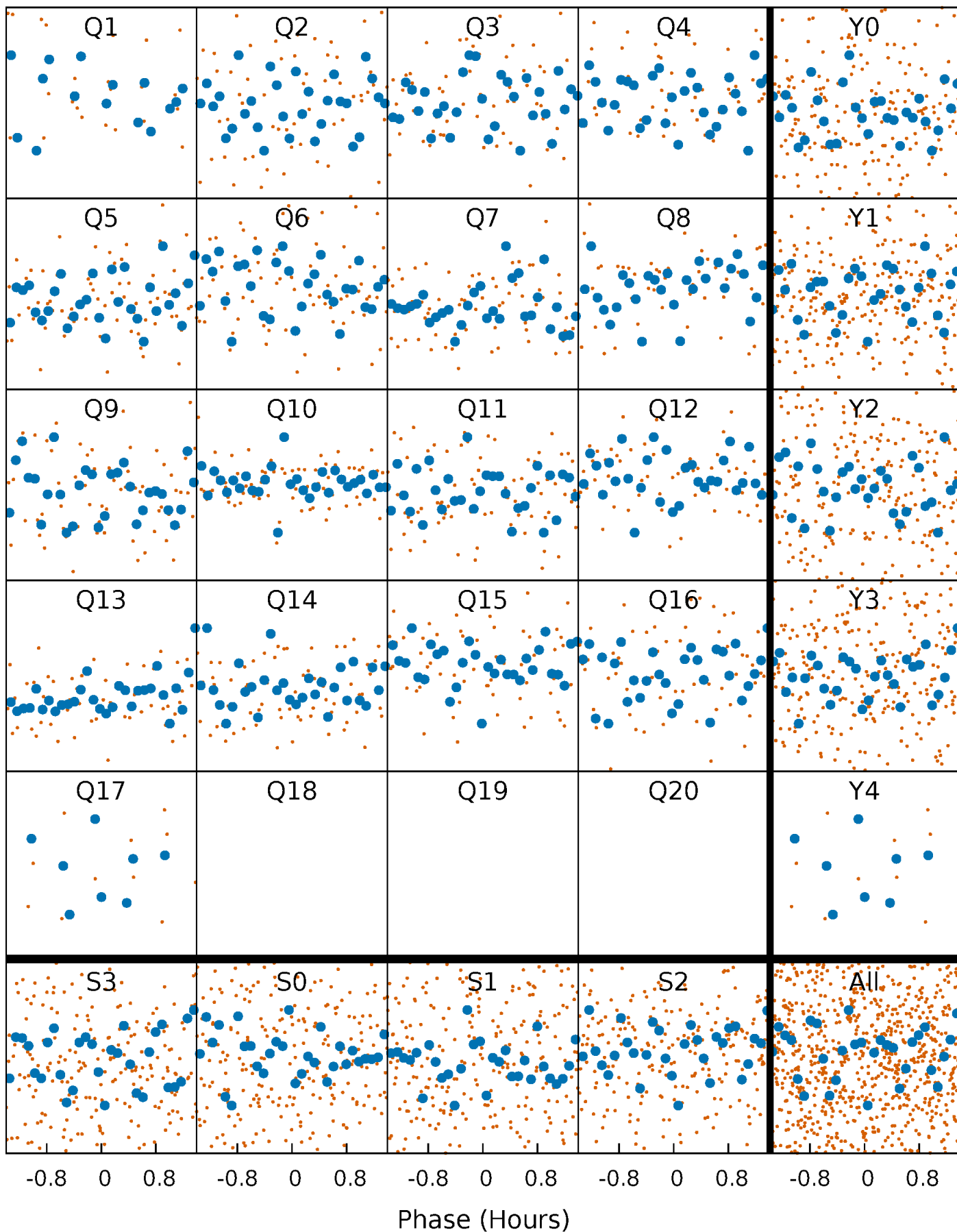


## Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



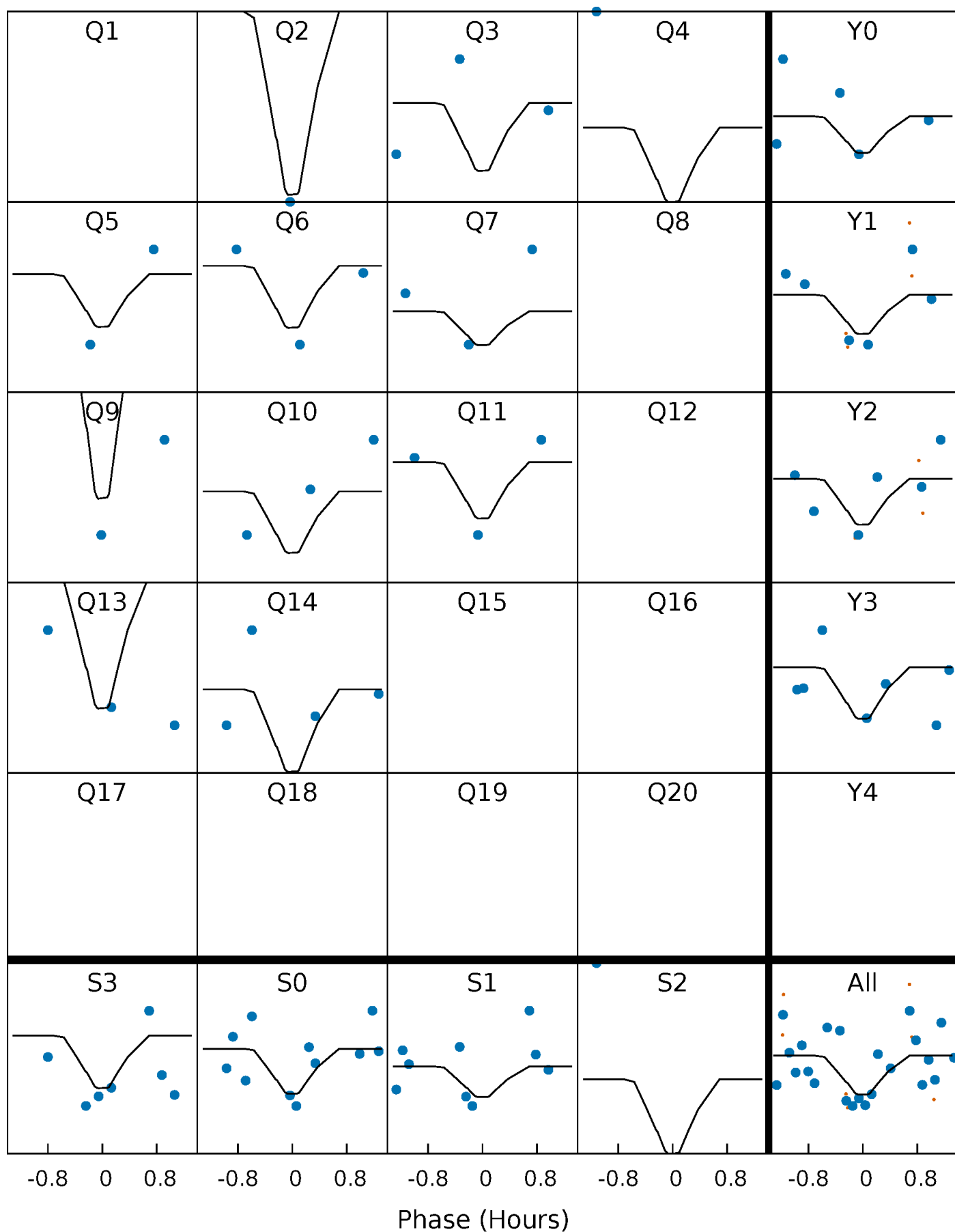
# PDC Quarter-Phased Transit Curves

TCE 009715923-08 P= 6.908270 Days  $T_0=135.222405$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 009715923-08 P= 6.908270 Days  $T_0=135.222405$  (BKJD)



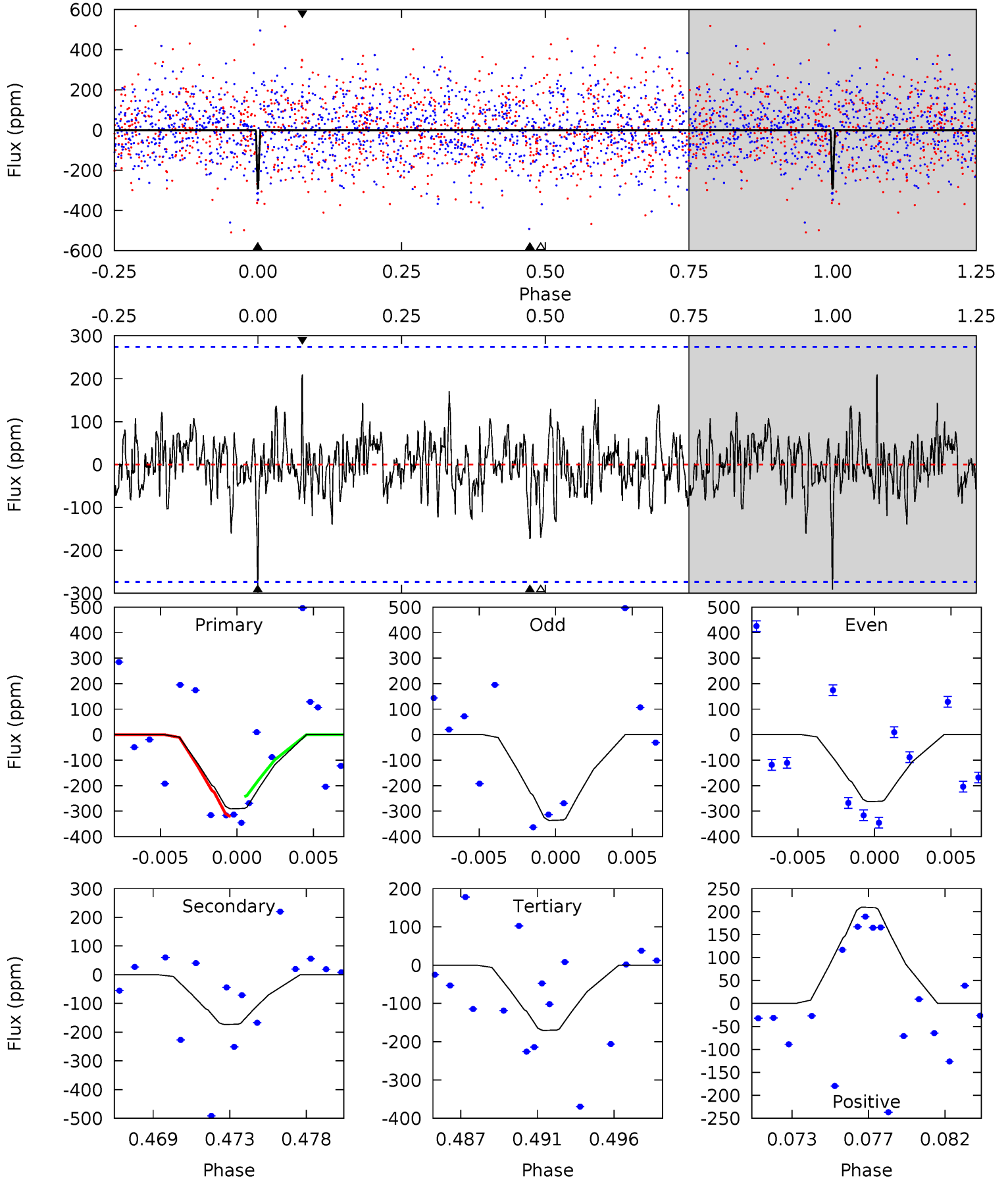
This plot does not exist for this TCE.



# DV Model-Shift Uniqueness Test

009715923-08, P = 6.908270 Days, E = 128.314135 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
5.50	3.27	3.22	3.96	5.18	2.84	1.00	2.27	1.53	0.05	-0.69	0.71	0	0.42	0.72



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 009715923

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7105^{+196}_{-270}$	$3.598^{+0.289}_{-0.051}$	$-0.040^{+0.250}_{-0.250}$	$3.638^{+0.306}_{-1.225}$	$1.912^{+0.168}_{-0.311}$	$0.056^{+0.111}_{-0.010}$
	+3%/-4%	+8%/-1%	+625%/-625%	+8%/-34%	+9%/-16%	+199%/-18%
Source	PHO1	FLK73	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 009715923-08 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-173 \pm 53$	$28.08^{+33.65}_{-19.38}$	$2739^{+152}_{-227}$	$3174^{+2075}_{-5764}$	$0.895^{+8.080}_{-0.718}$
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  $A_{obs} \gg 1.0$

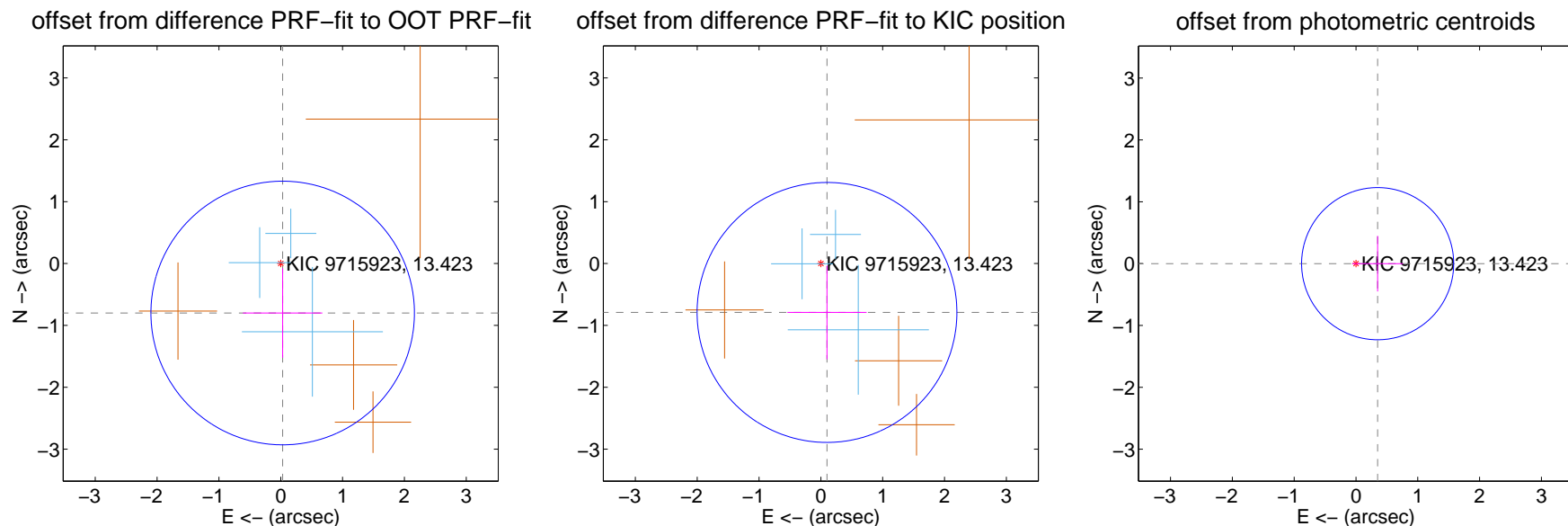
## DV Centroid Data

Supplemental centroid analysis for 009715923-08. Kepler magnitude: 13.42. Transit SNR 13.03

There are 3 quarters with good PRF difference image offsets

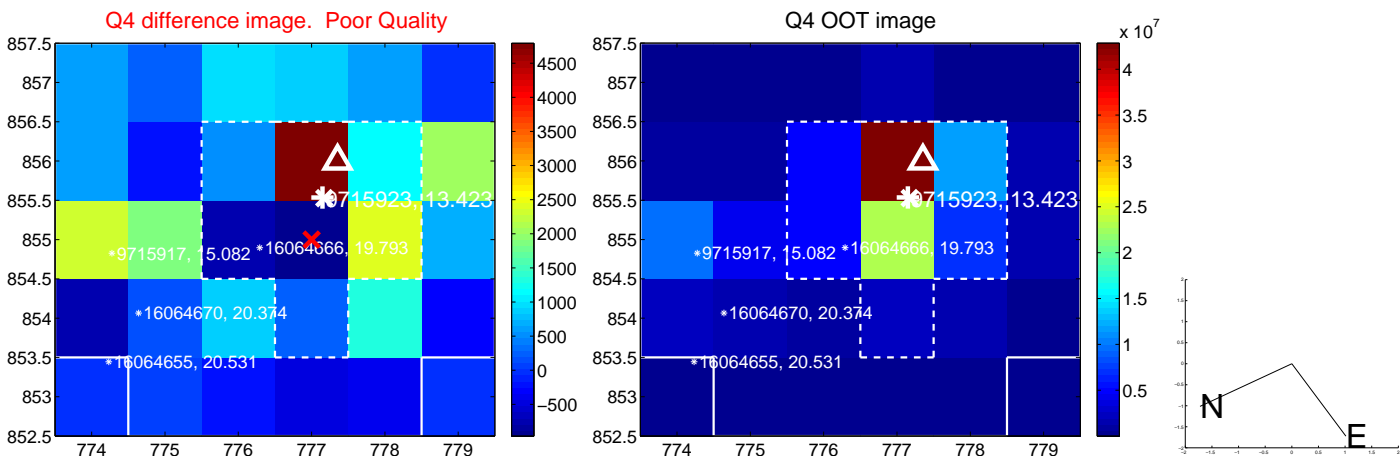
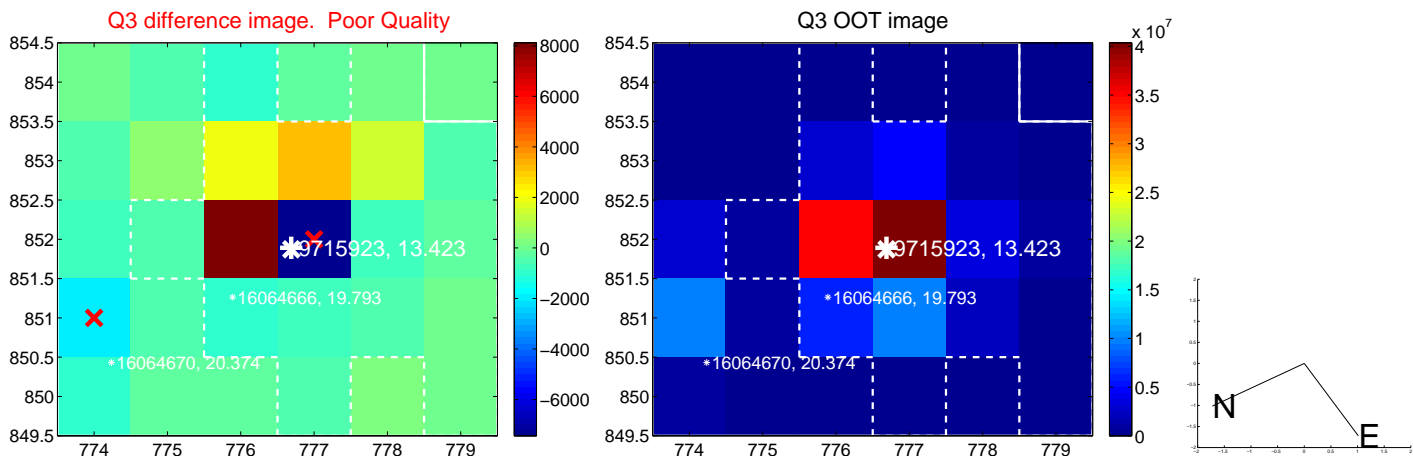
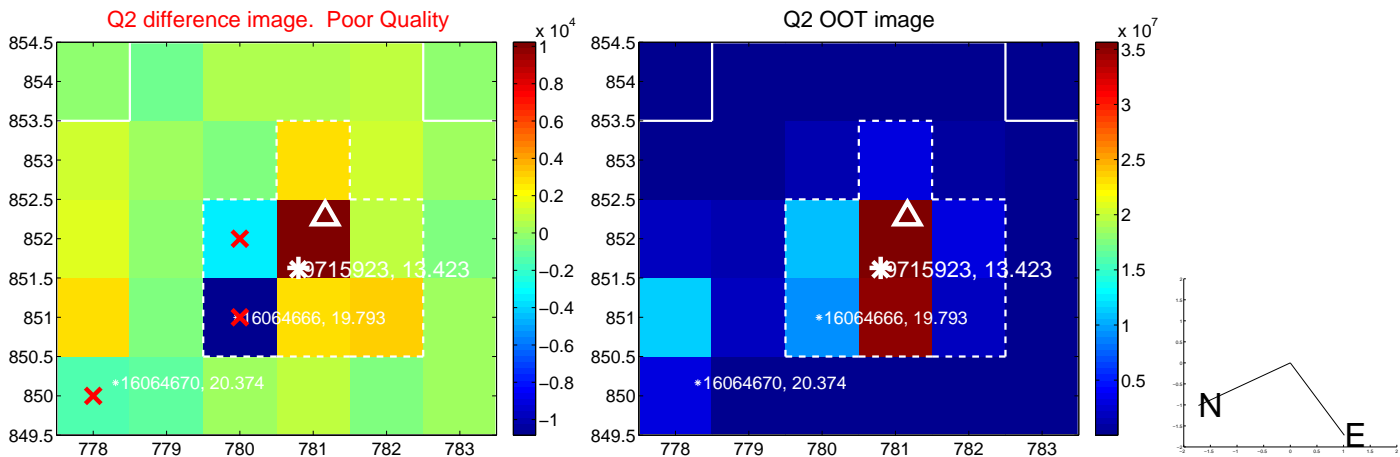
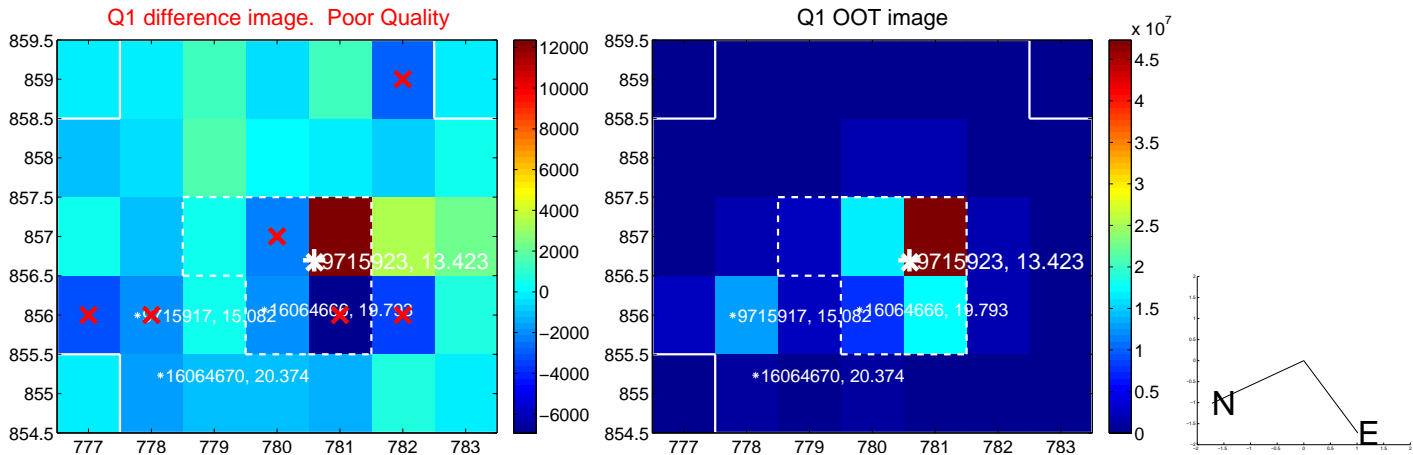
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.800 \pm 0.710$	1.13	$-0.031 \pm 0.643$	$-0.799 \pm 0.723$
PRF-fit source offset from KIC position	$0.796 \pm 0.700$	1.14	$-0.099 \pm 0.641$	$-0.790 \pm 0.756$
photometric centroid source offset	$0.35 \pm 0.41$	0.86	$-0.35 \pm 0.41$	$-0.00 \pm 0.45$

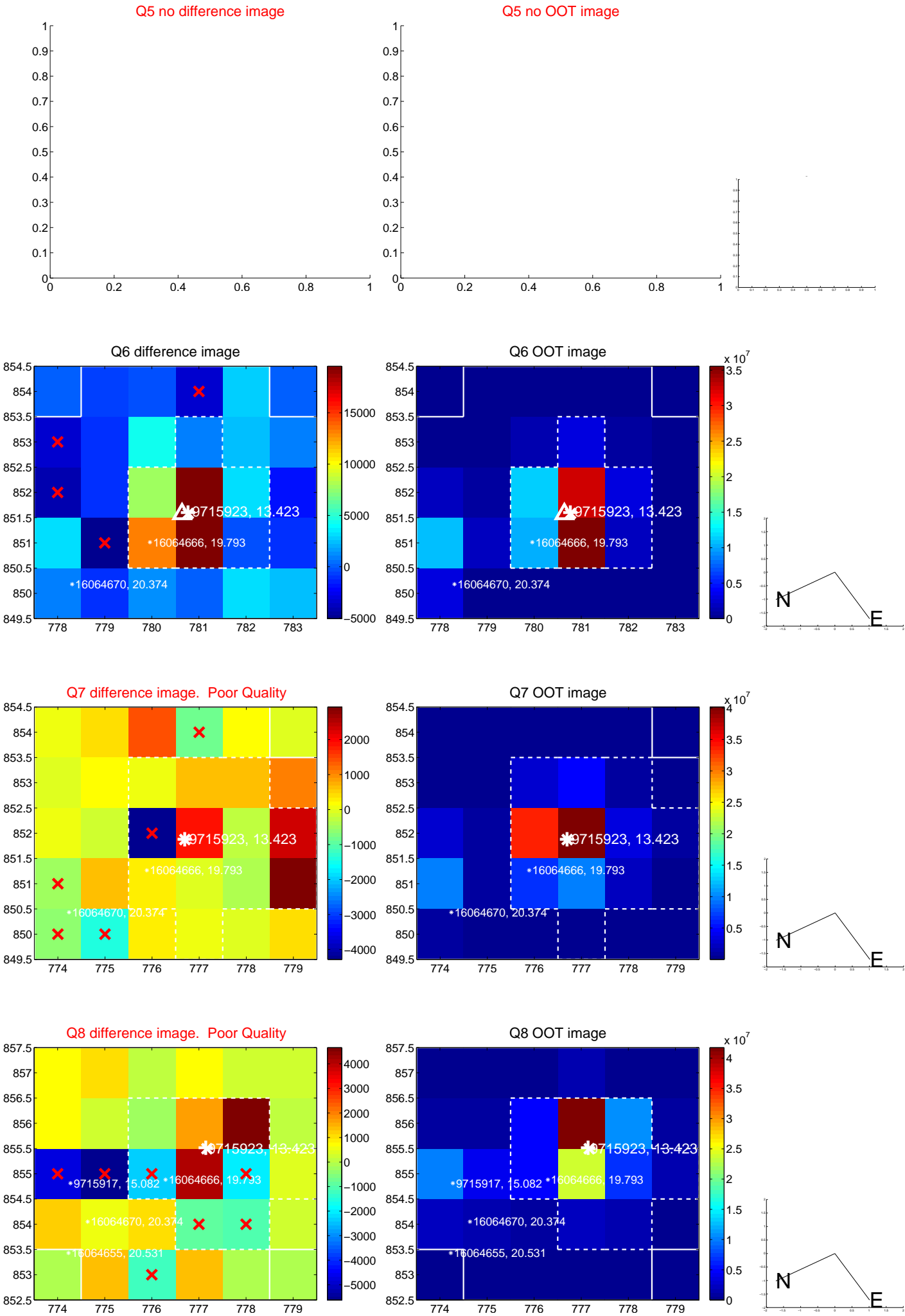


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

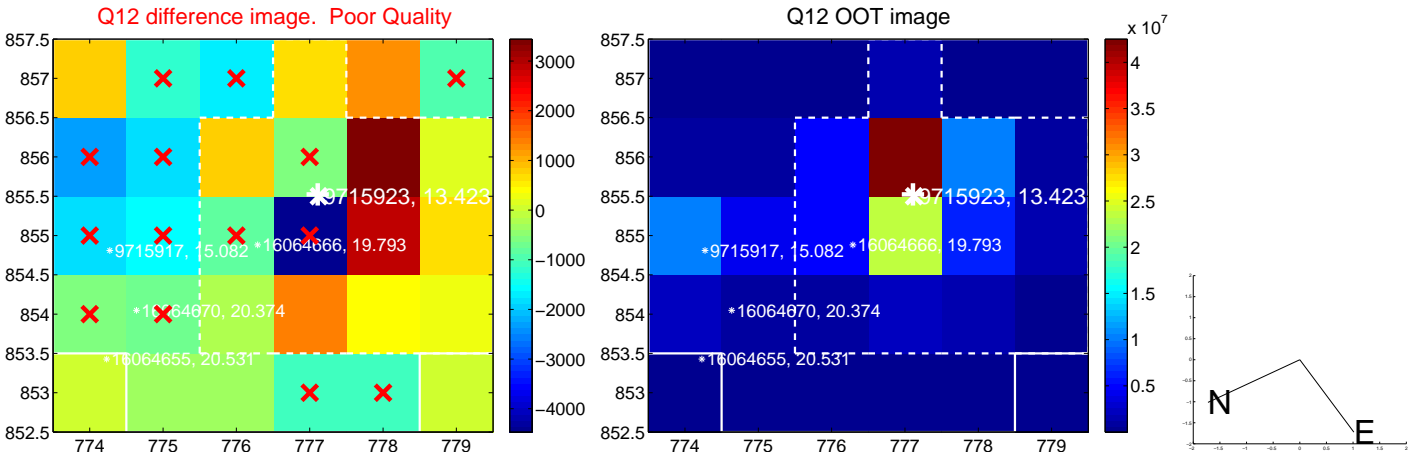
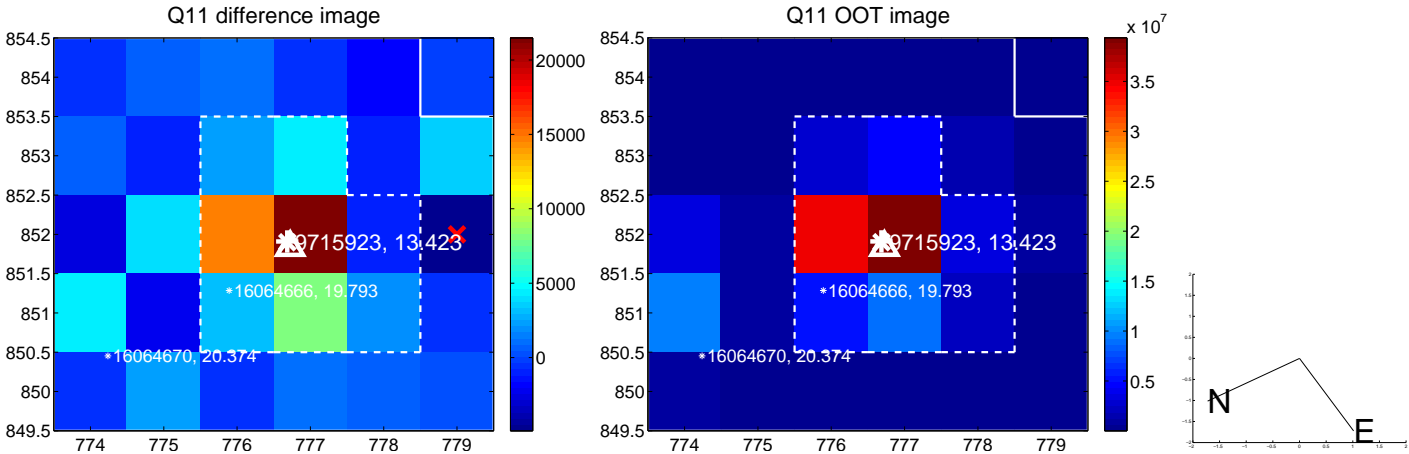
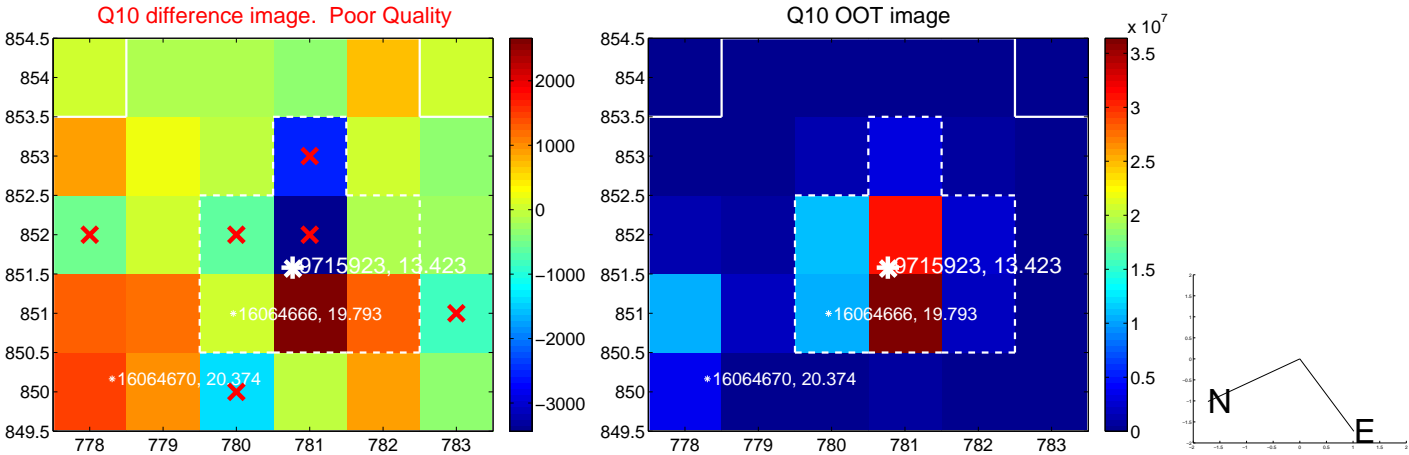
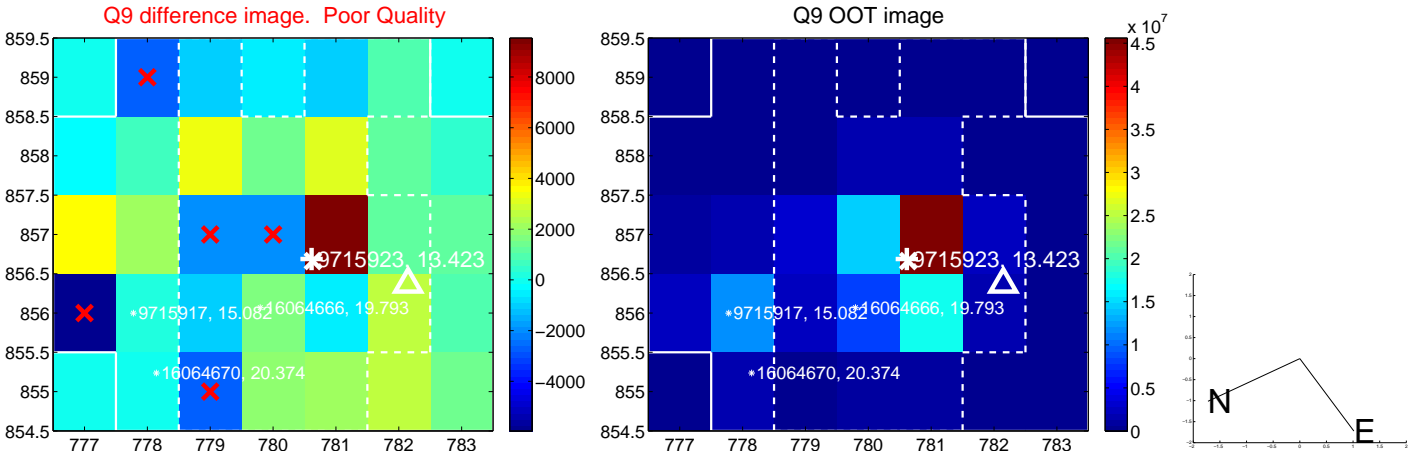
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



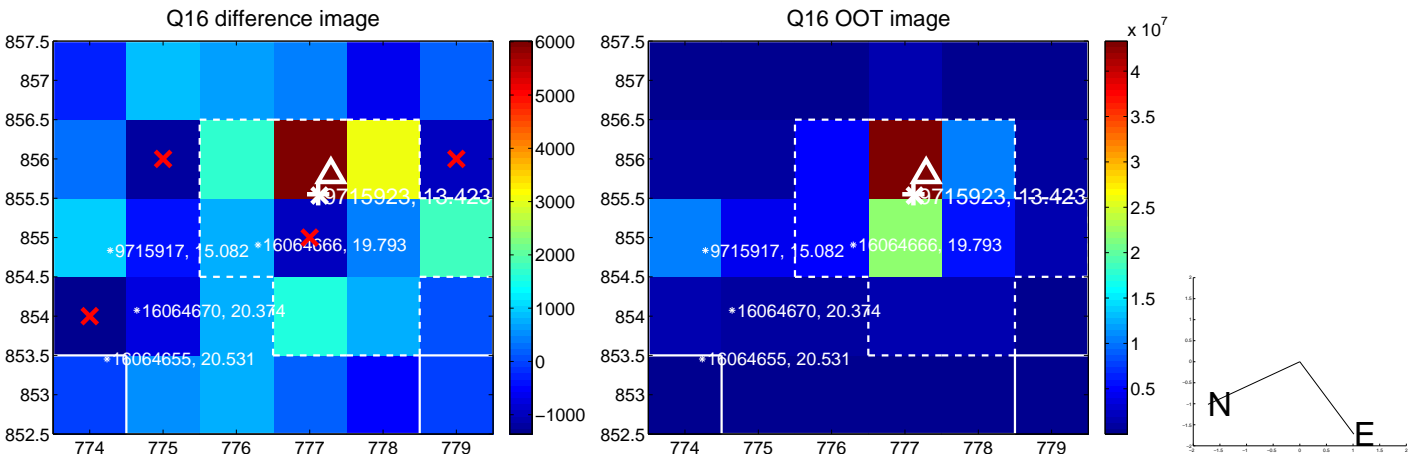
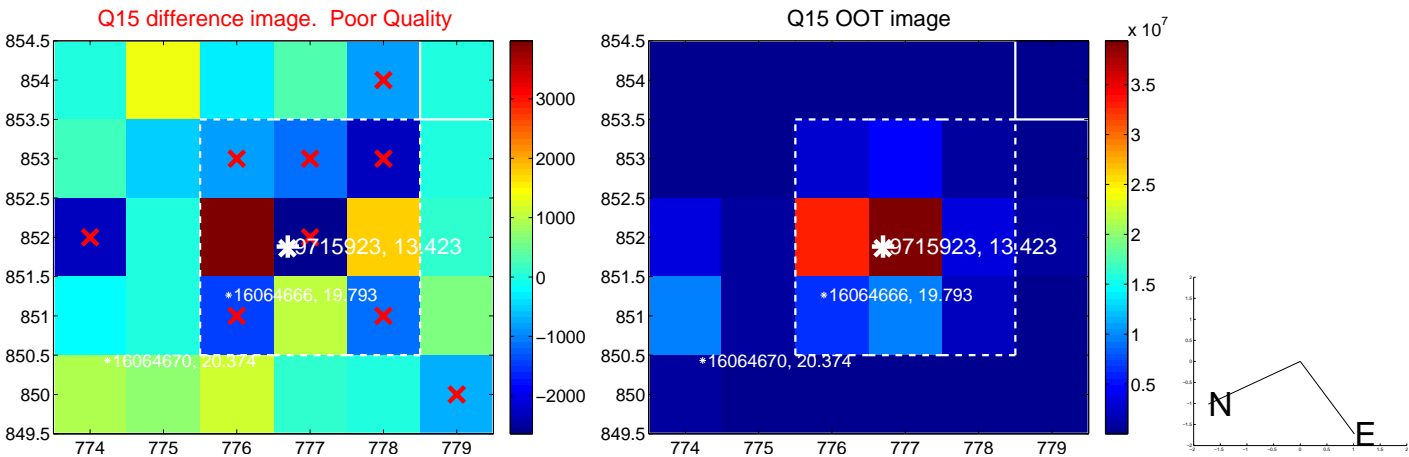
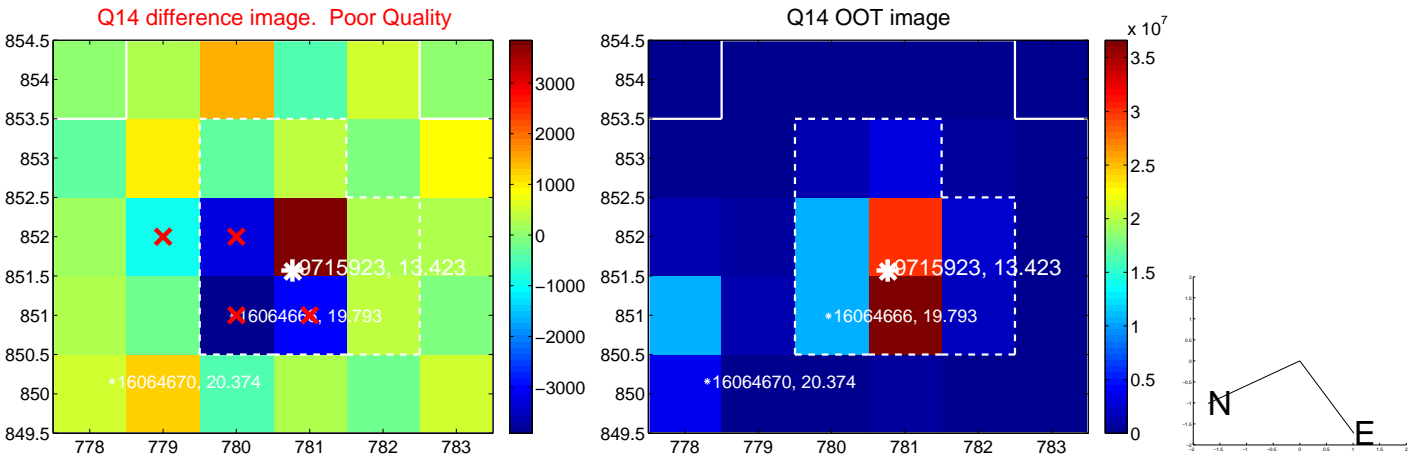
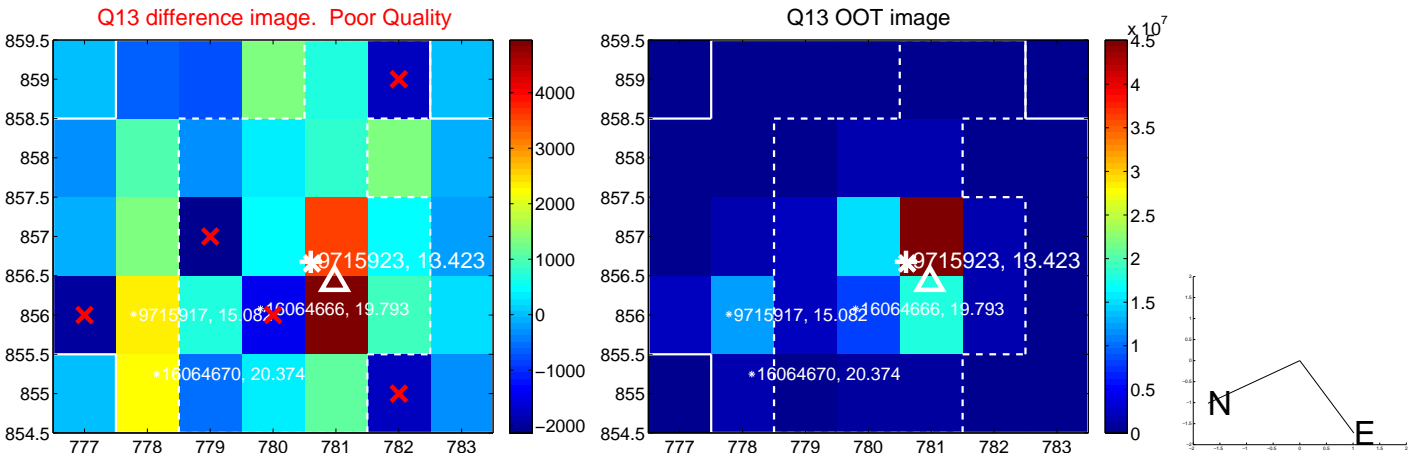
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

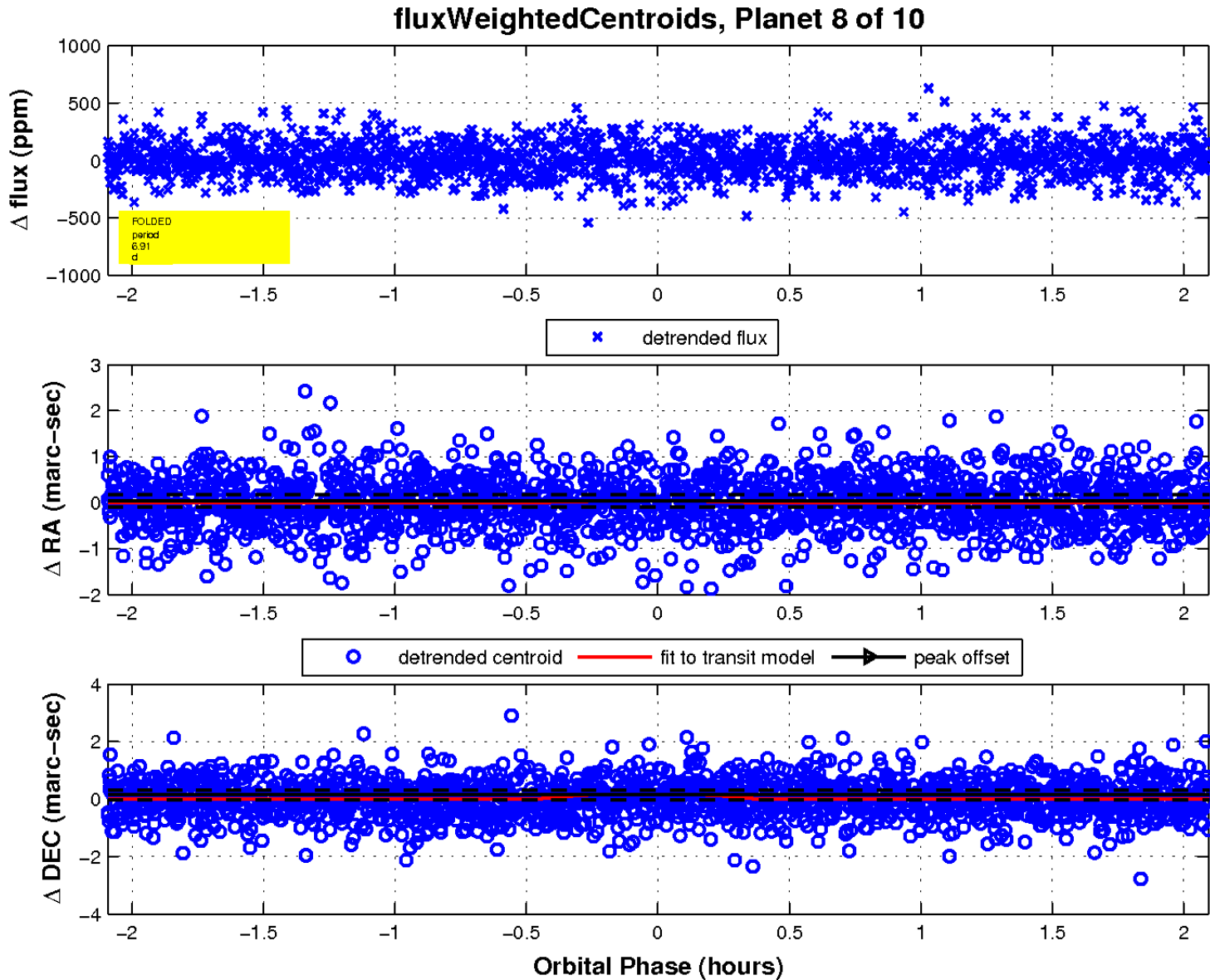
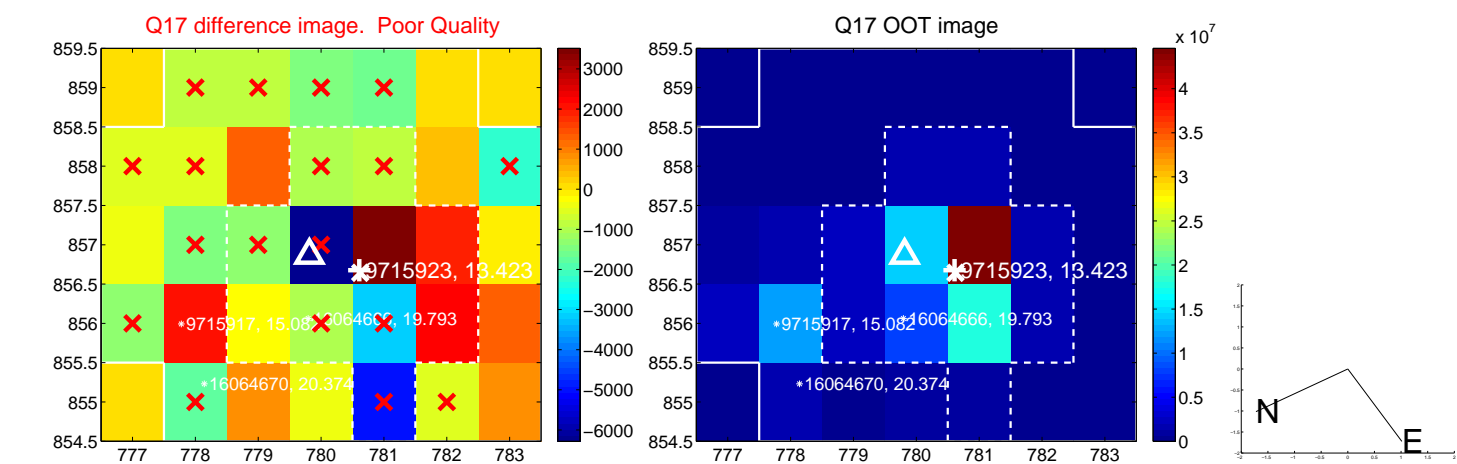


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



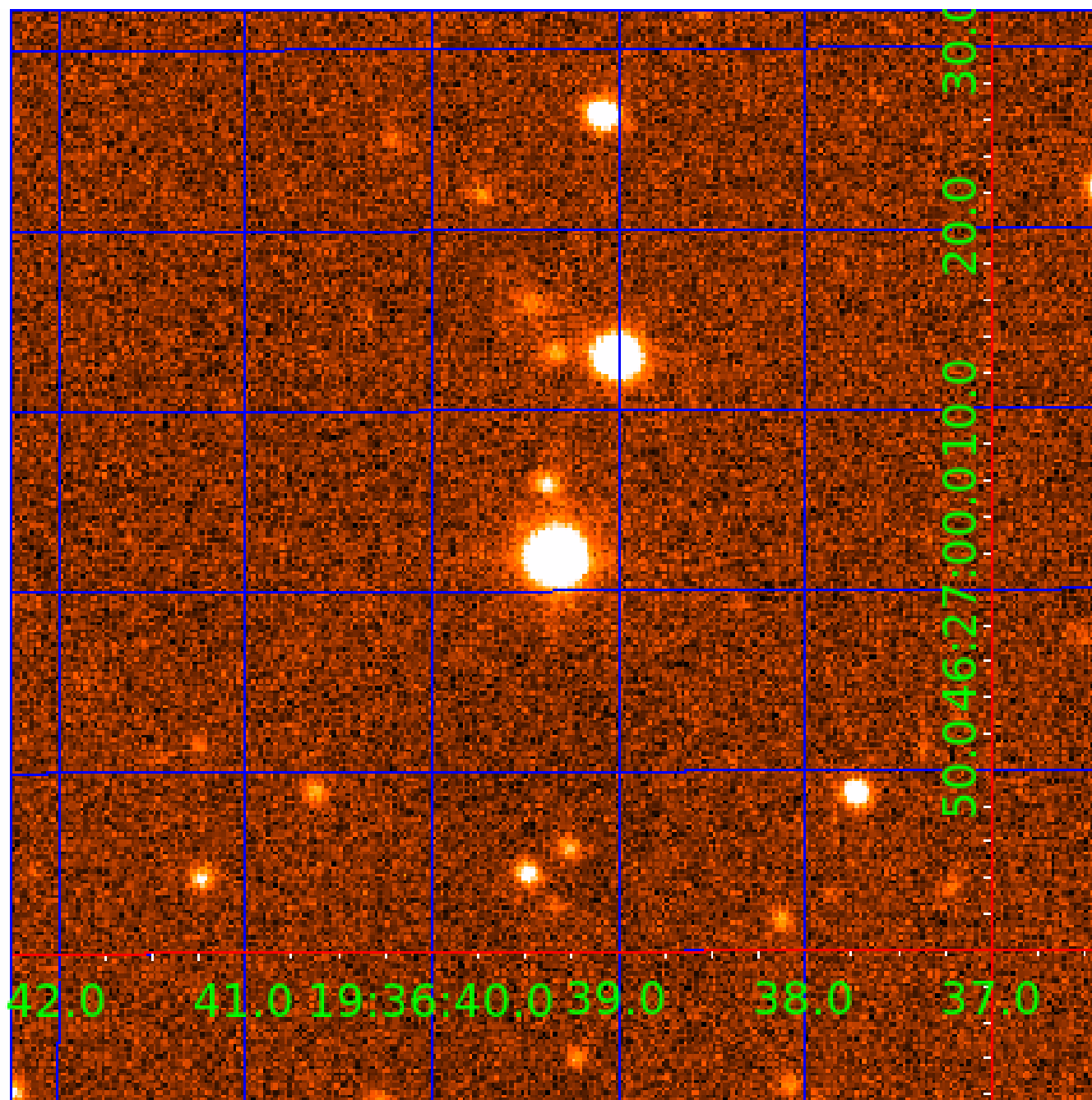


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 009715923

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009715923-01	OBS	No	0.694561	131.797987	2.7	5.202	9.1	1.7	3.64	7105	0.61	83197.88
009715923-02	OBS	No	8.985471	132.812379	202.5	0.905	12.7	11.7	3.64	7105	5.29	2739.50
009715923-04	OBS	No	9.288268	137.020221	260.0	1.287	11.3	15.7	3.64	7105	6.61	2621.07
009715923-05	OBS	No	3.847139	133.473597	178.8	1.156	12.1	15.2	3.64	7105	5.07	8489.37
009715923-06	OBS	No	8.374381	138.808874	320.5	0.587	9.3	12.2	3.64	7105	7.23	3009.23
009715923-07	OBS	No	8.976706	134.628131	164.2	1.257	10.9	10.0	3.64	7105	5.01	2743.07
009715923-08	OBS	No	6.908270	135.222405	274.6	0.699	10.8	13.0	3.64	7105	6.24	3889.56
009715923-09	OBS	No	11.309767	136.928988	256.2	0.665	9.4	10.1	3.64	7105	6.66	2015.83
009715923-10	OBS	No	10.461333	138.428607	219.1	1.442	9.8	9.3	3.64	7105	5.46	2236.71

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009715923-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_DIFFS
009715923-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009715923-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS
009715923-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV
009715923-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_DIFFS
009715923-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—HALO_GHOST
009715923-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009715923-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009715923-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_MEAS

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

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

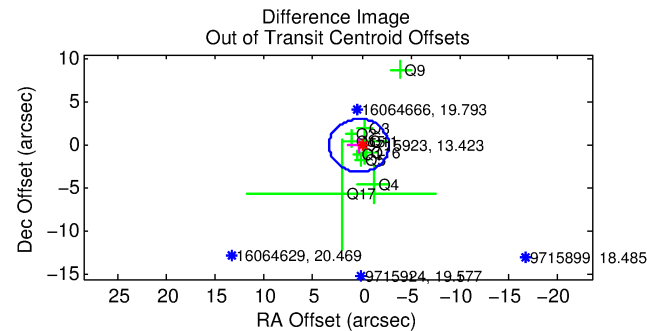
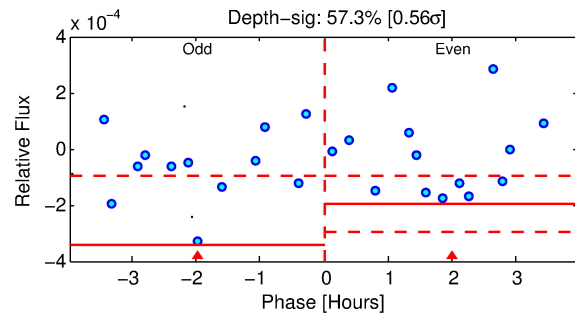
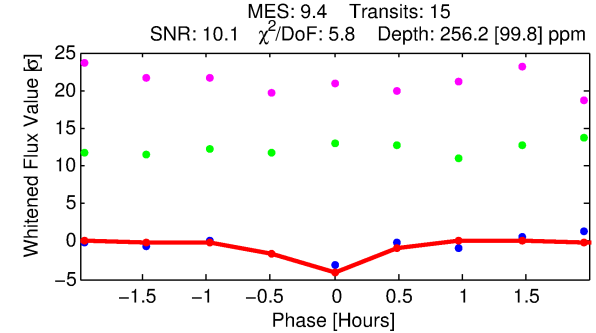
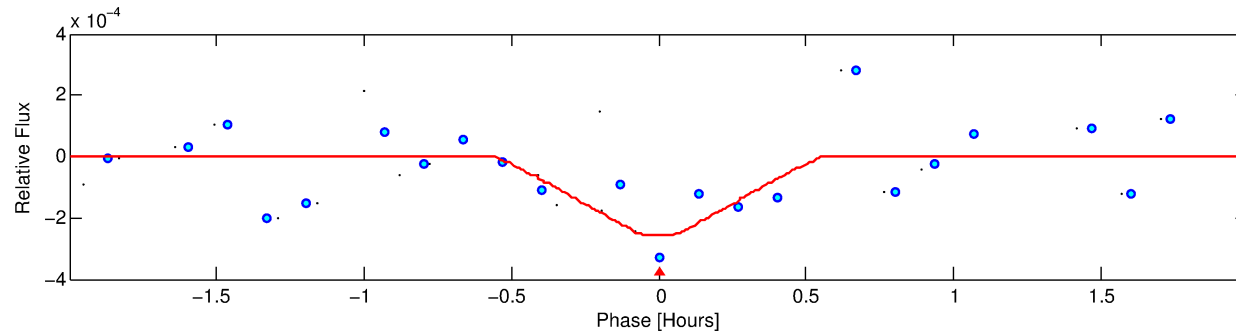
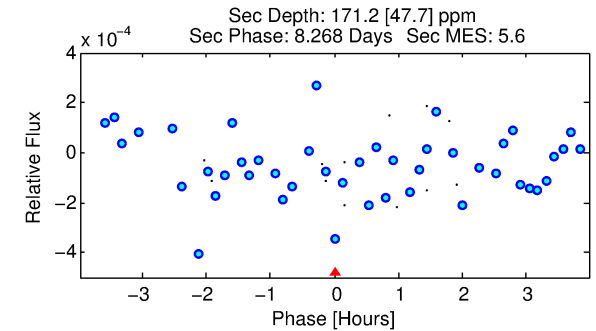
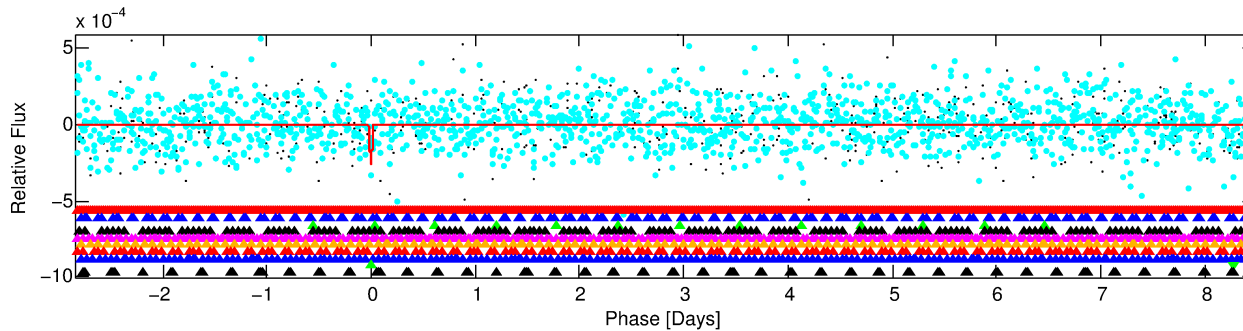
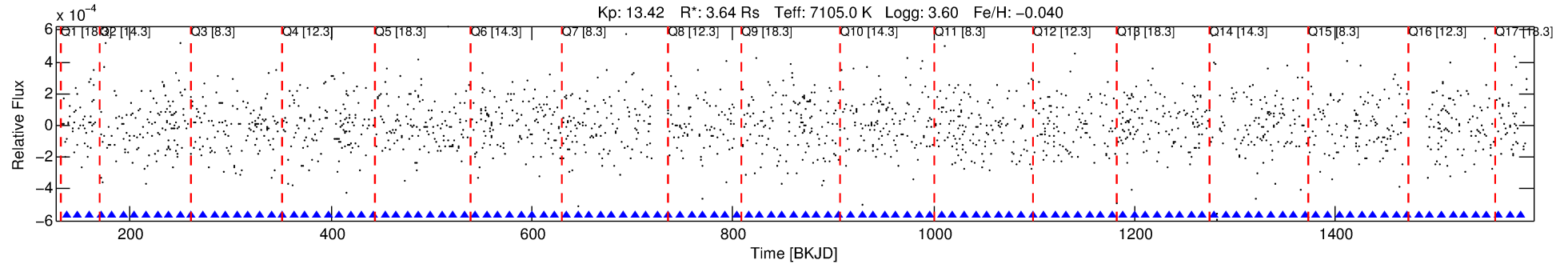
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 009715923-09

No Significant Match Found

# DV One-Page Summary

KIC: 9715923 Candidate: 9 of 10 Period: 11.310 d



## DV Fit Results:

Period = 11.30977 [0.00018] d  
Epoch = 136.9290 [0.0086] BKJD  
Rp/R\* = 0.0168 [0.0188]  
a/R\* = 74.13 [562.58]  
b = 0.84 [2.64]  
Seff = 2015.83 [1048.05]  
Teq = 1709 [222] K  
Rp = 6.66 [7.78] Re  
a = 0.1224 [0.0386] AU  
Ag = 31.83 [73.53] [0.42 $\sigma$ ]  
Teffp = 6275 [3547] K [1.28 $\sigma$ ]

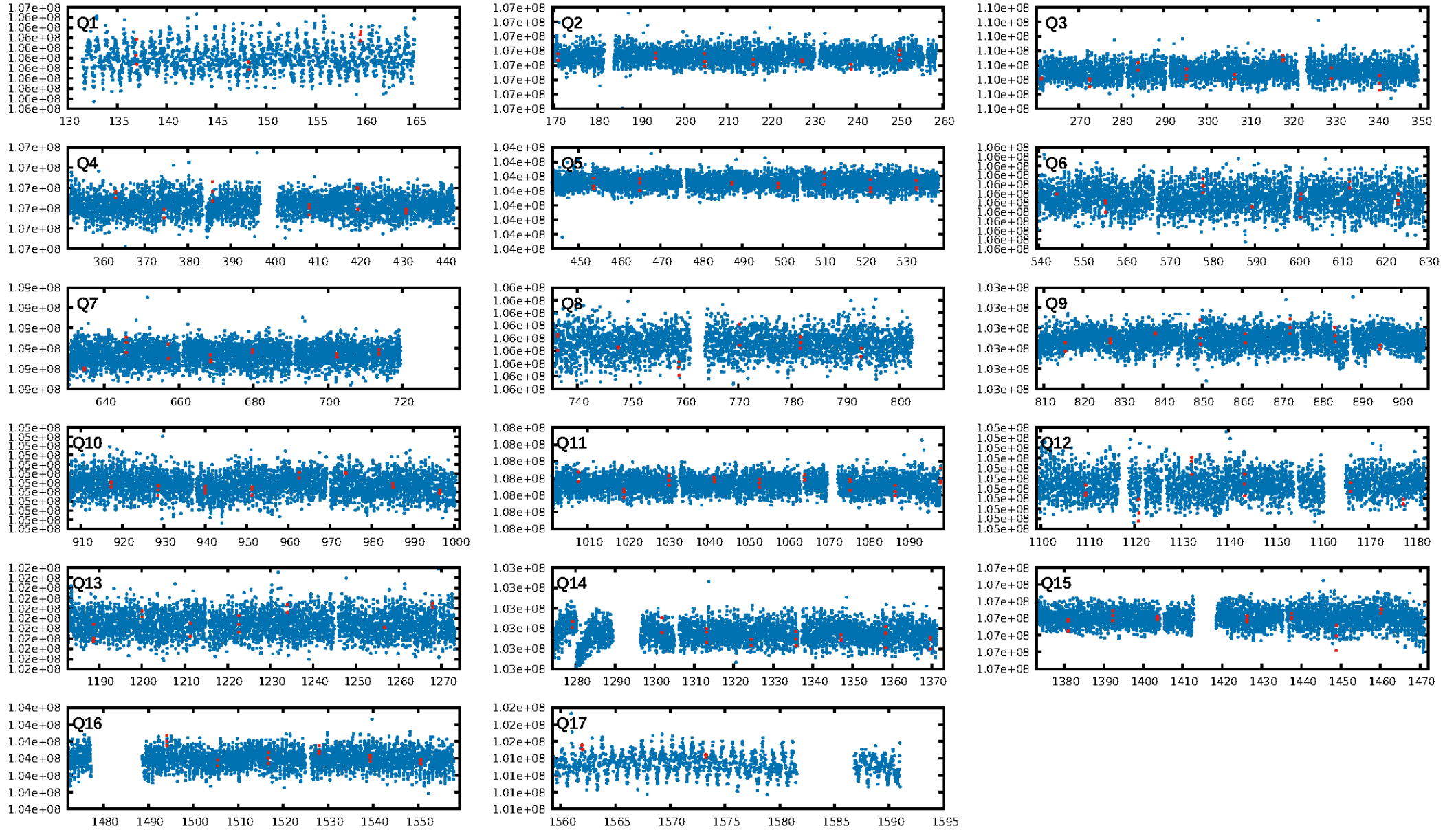
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [12.82 $\sigma$ ]  
LongPeriod-sig: 100.0% [938.89 $\sigma$ ]  
ModelChiSquare2-sig: 0.1%  
ModelChiSquareGoF-sig: 16.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [15/15]  
GhostDiagnostic-chr: -4.717  
Centroid-sig: 59.0%  
Centroid-so: 0.958 arcsec [1.44 $\sigma$ ]  
OotOffset-rm: 0.333 arcsec [0.33 $\sigma$ ]  
KicOffset-rm: 0.263 arcsec [0.26 $\sigma$ ]  
OotOffset-st: 1/3/2/4 [10]  
KicOffset-st: 1/3/2/4 [10]  
DiffImageQuality-fgm: 0.40 [4/10]  
DiffImageOverlap-fno: 0.12 [2/17]

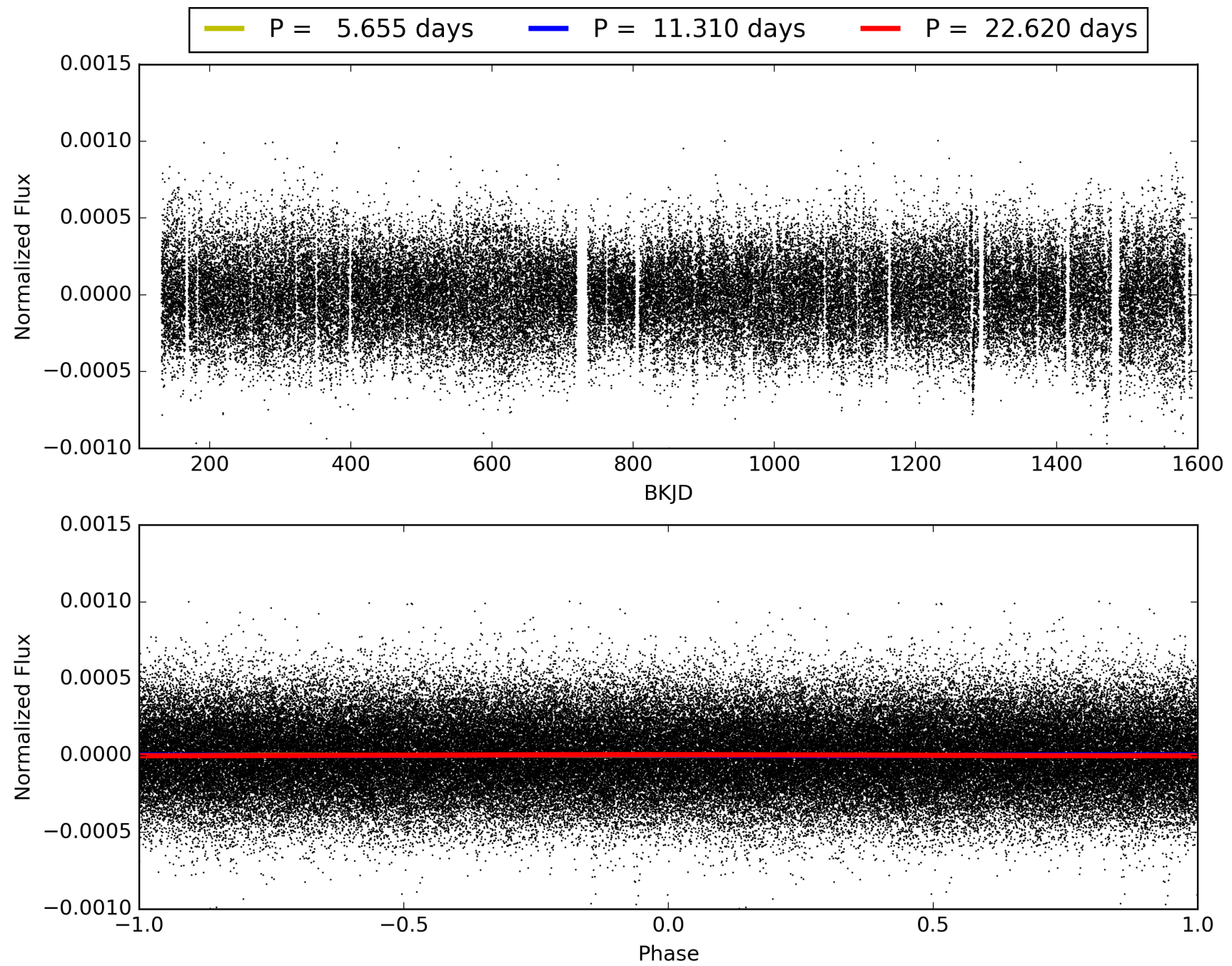
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:00:47 Z

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

# TCE 009715923-09, PDC Light Curves



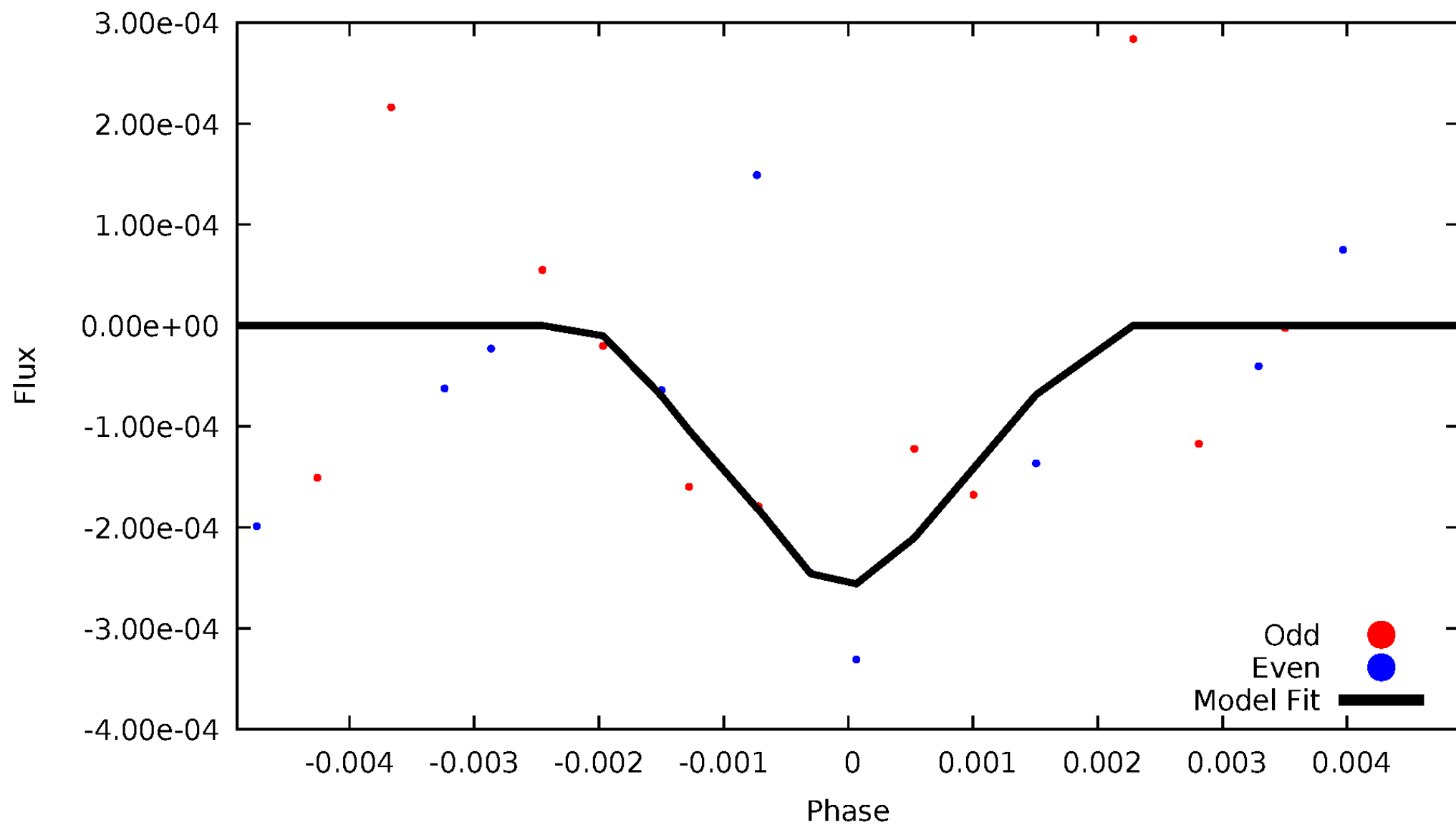
TCE 009715923-09





# DV Odd/Even

TCE 009715923-09





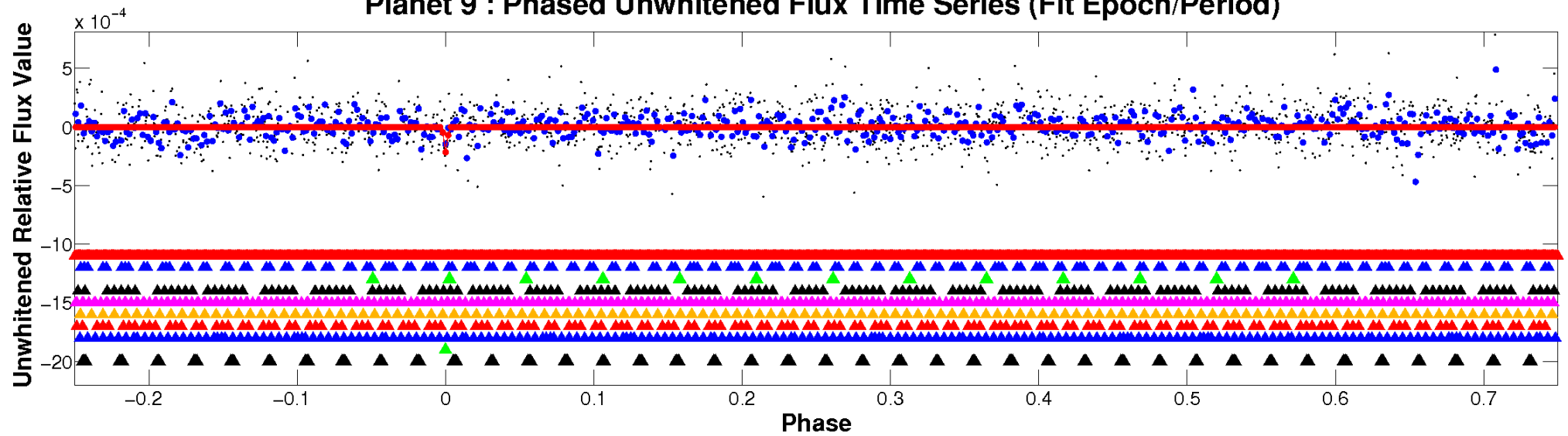


ALT Odd/Even

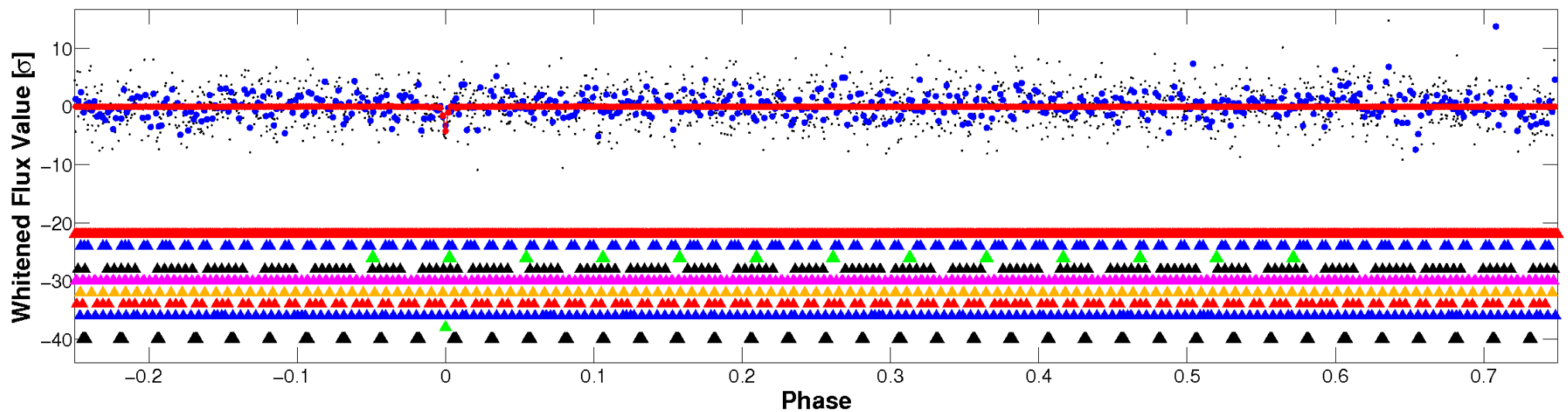
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

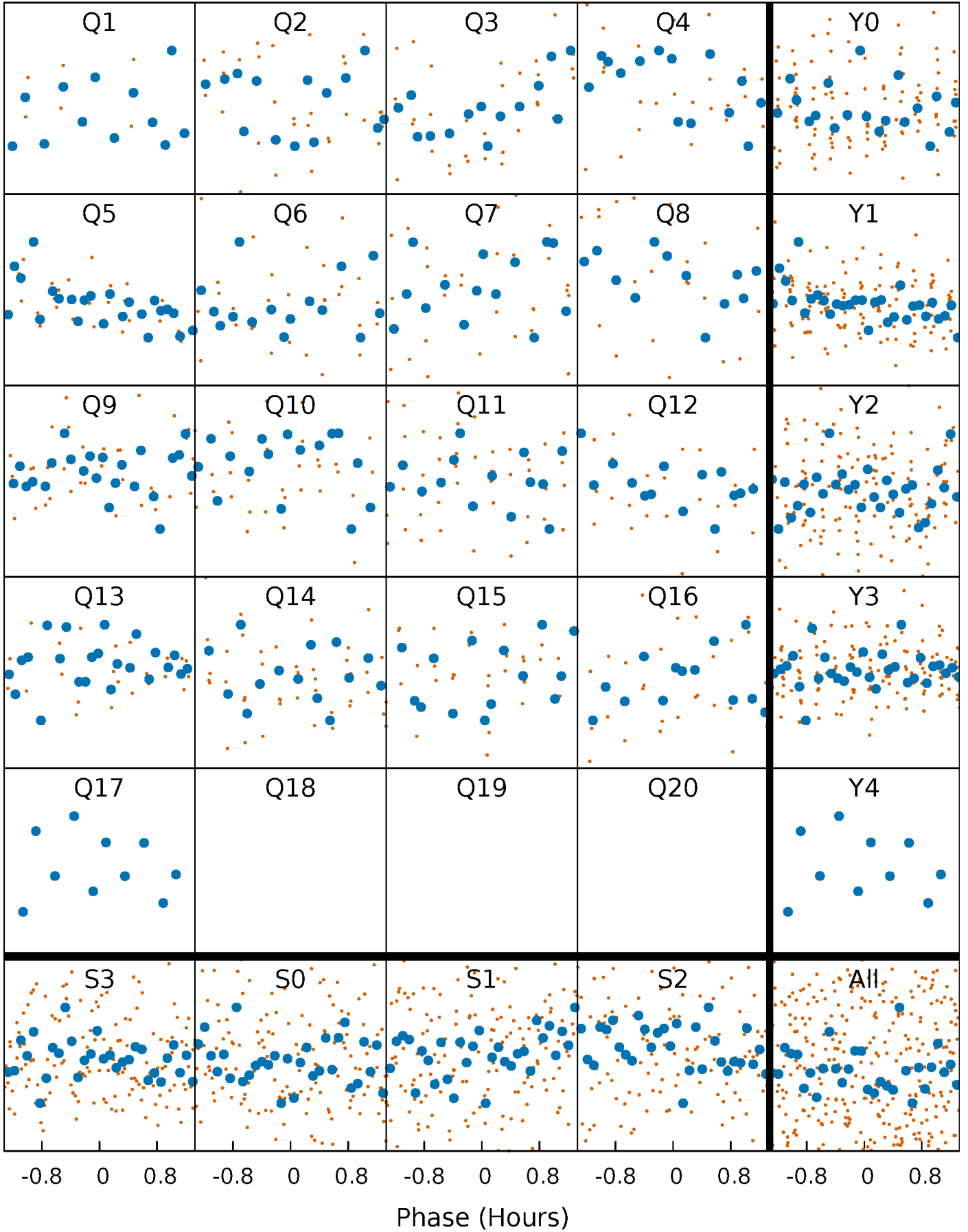


## Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



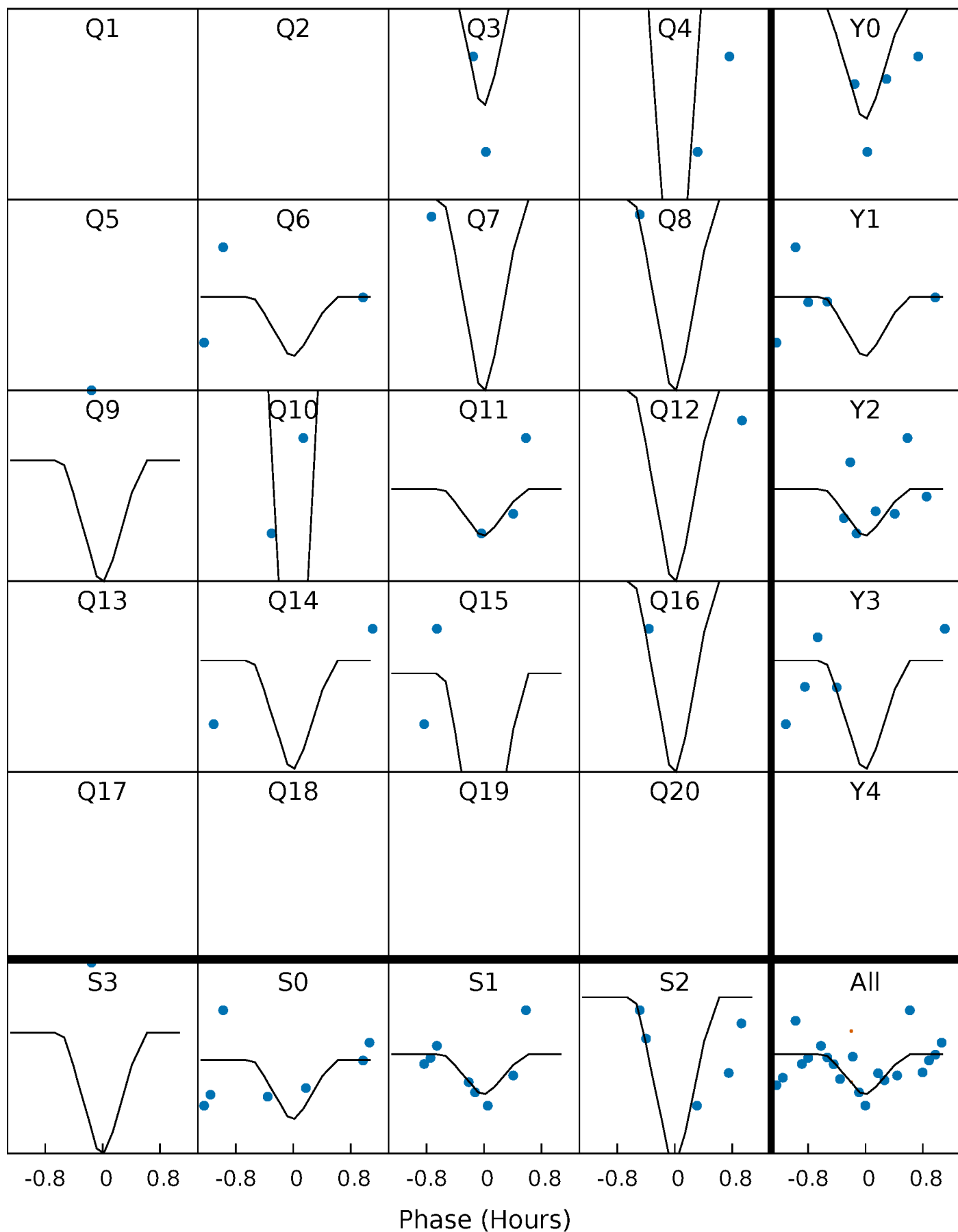
# PDC Quarter-Phased Transit Curves

TCE 009715923-09   P= 11.309767 Days    $T_0=136.928988$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 009715923-09 P= 11.309767 Days  $T_0=136.928988$  (BKJD)

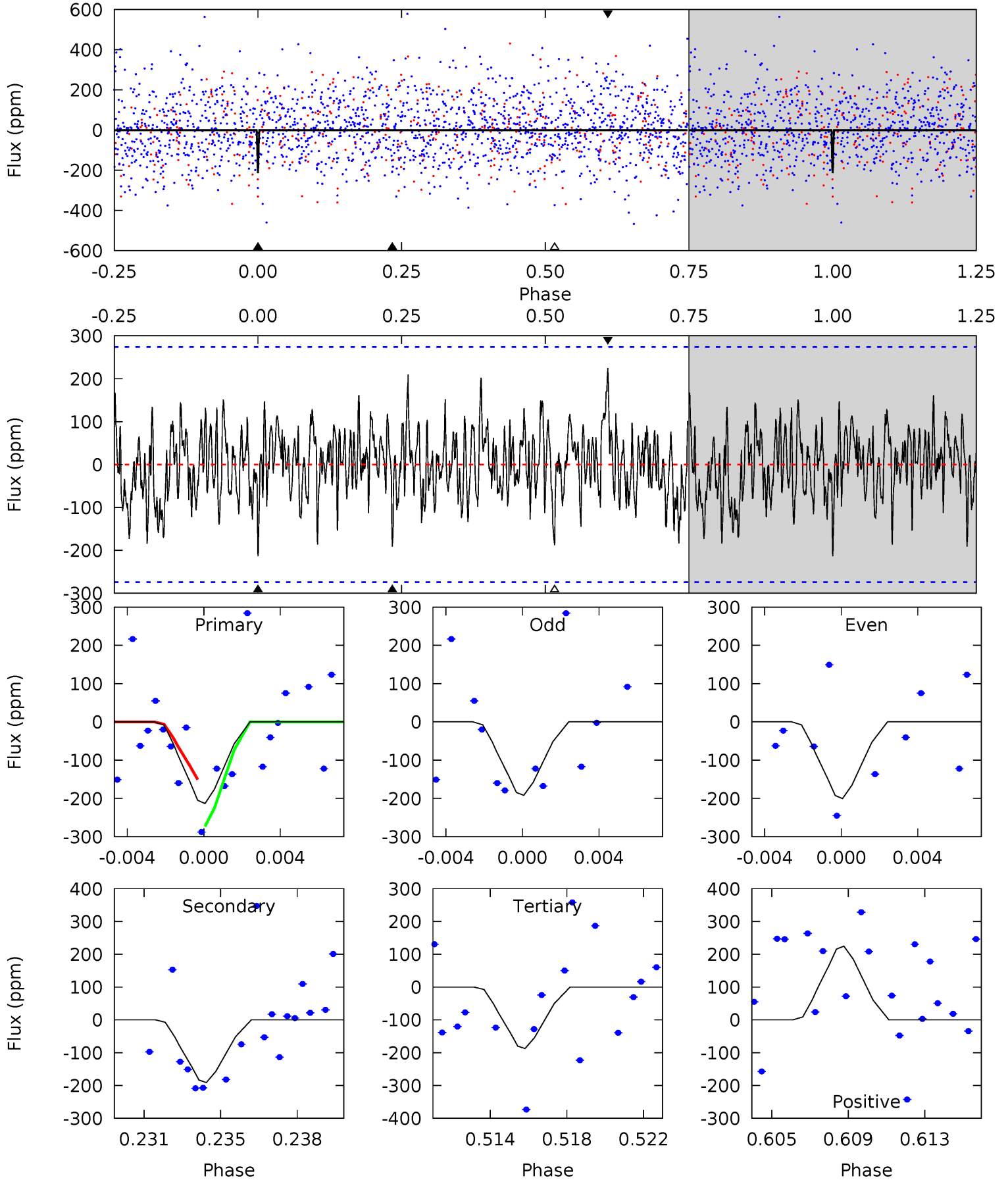


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

009715923-09, P = 11.309767 Days, E = 125.619221 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
4.06	3.64	3.56	4.27	5.21	2.90	1.33	0.49	-0.21	0.07	-0.64	0.08	1.00	0.51	1.18



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 009715923

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7105^{+196}_{-270}$	$3.598^{+0.289}_{-0.051}$	$-0.040^{+0.250}_{-0.250}$	$3.638^{+0.306}_{-1.225}$	$1.912^{+0.168}_{-0.311}$	$0.056^{+0.111}_{-0.010}$
	+3%/-4%	+8%/-1%	+625%/-625%	+8%/-34%	+9%/-16%	+199%/-18%
Source	PHO1	FLK73	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 009715923-09 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-191 \pm 53$	$7.87^{+6.14}_{-4.85}$	$2322^{+131}_{-182}$	$5641^{+4520}_{-1273}$	$25^{+161}_{-17}$
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  $A_{obs} \gg 1.0$



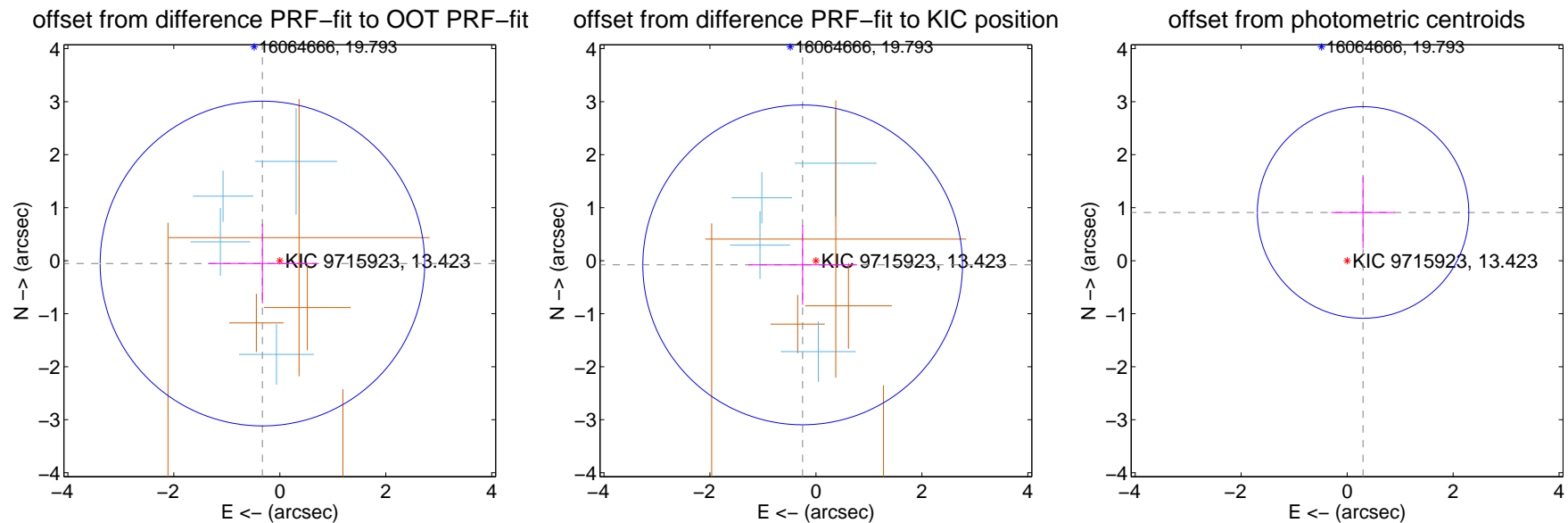
## DV Centroid Data

Supplemental centroid analysis for 009715923-09. Kepler magnitude: 13.42. Transit SNR 10.05

There are 4 quarters with good PRF difference image offsets

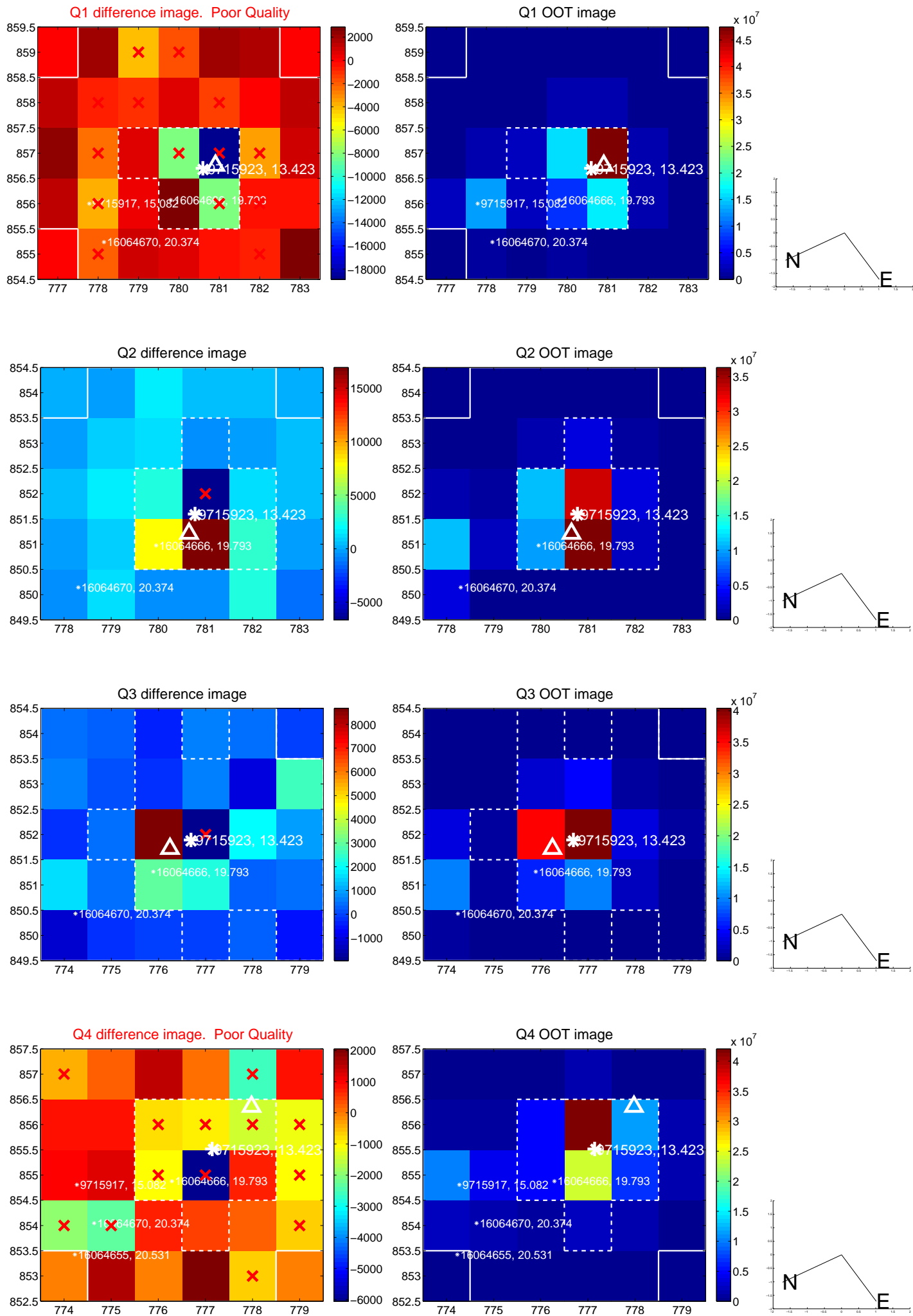
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.333 \pm 1.021$	0.33	$0.328 \pm 1.027$	$-0.054 \pm 0.752$
PRF-fit source offset from KIC position	$0.263 \pm 1.005$	0.26	$0.251 \pm 1.027$	$-0.079 \pm 0.752$
photometric centroid source offset	$0.96 \pm 0.67$	1.44	$-0.30 \pm 0.60$	$0.91 \pm 0.67$

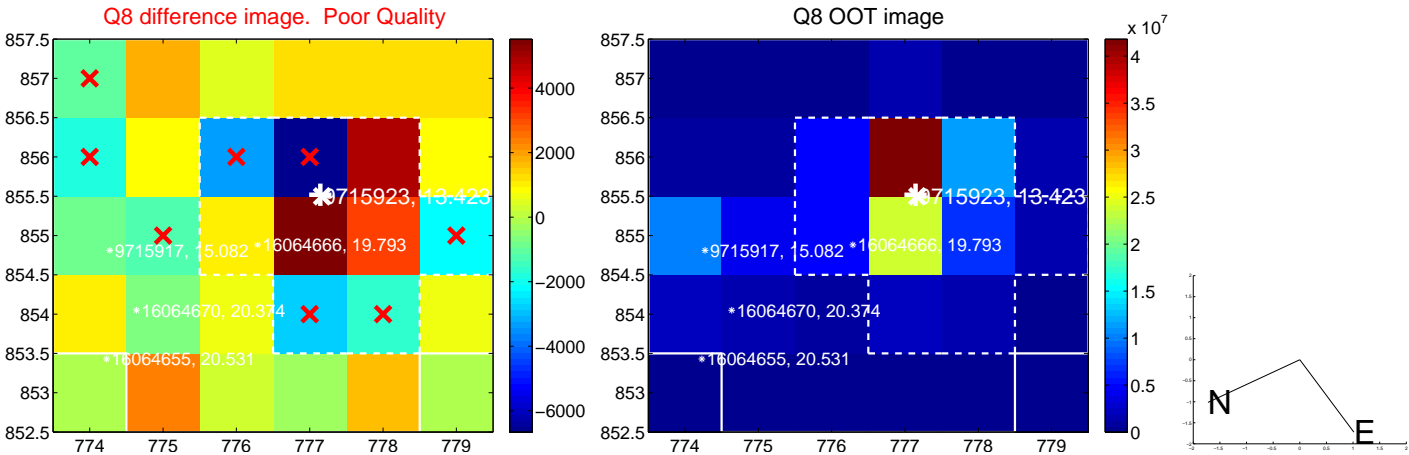
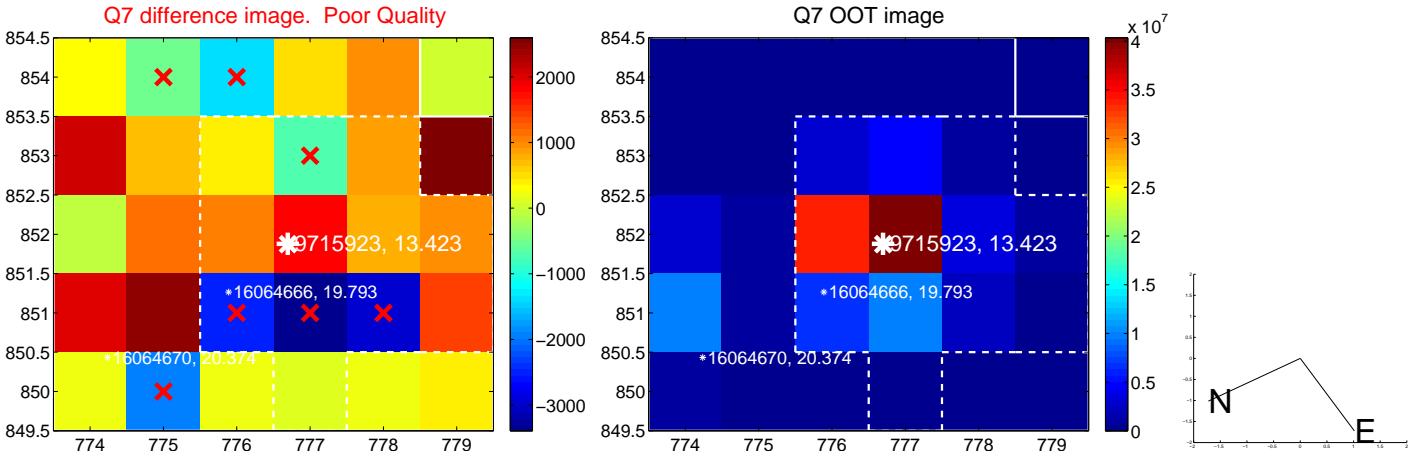
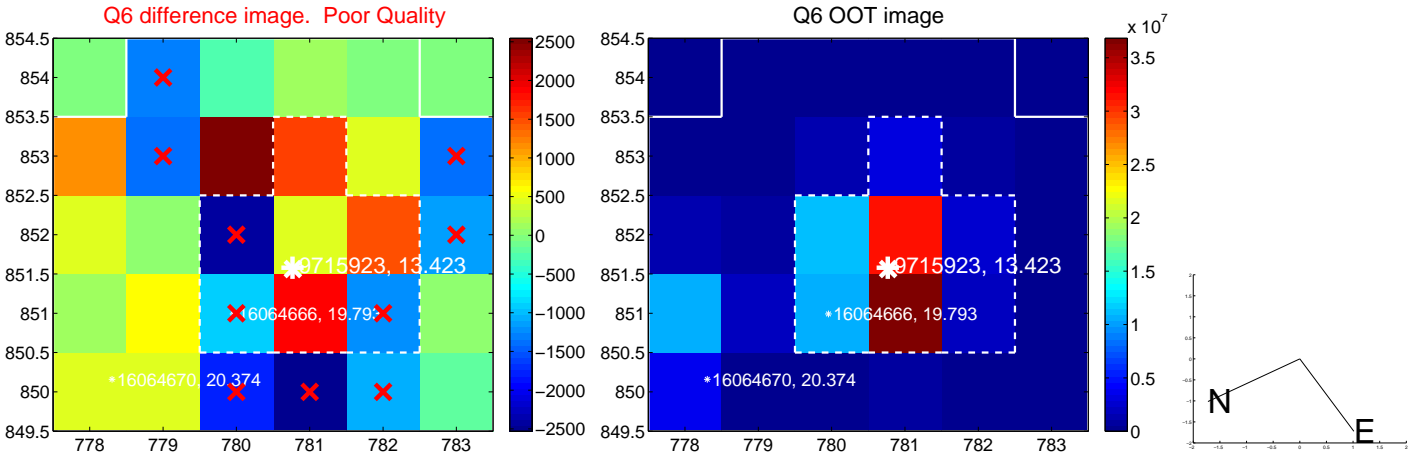
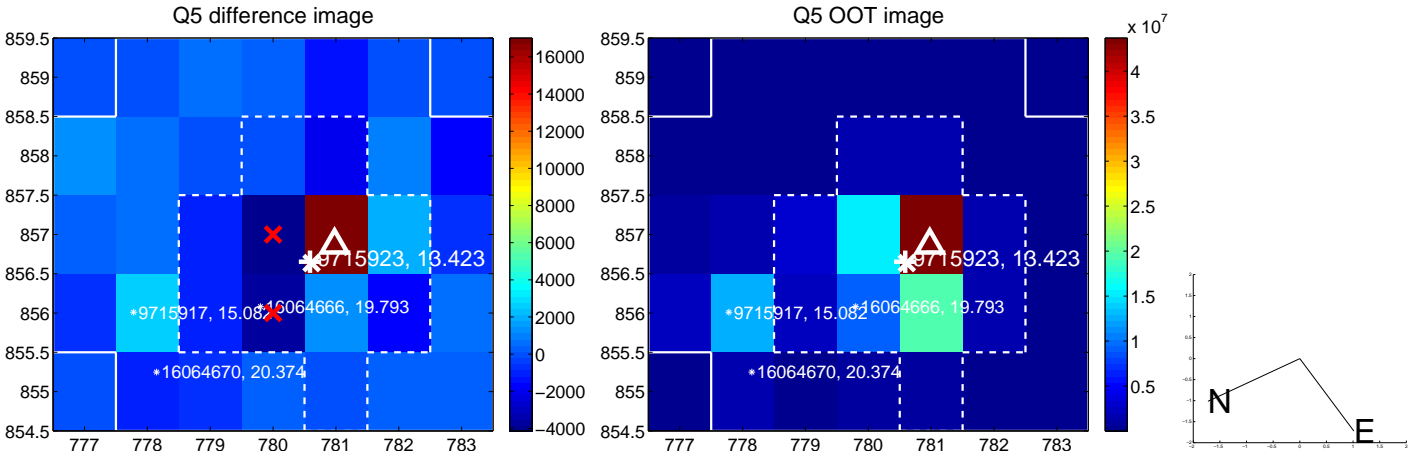


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

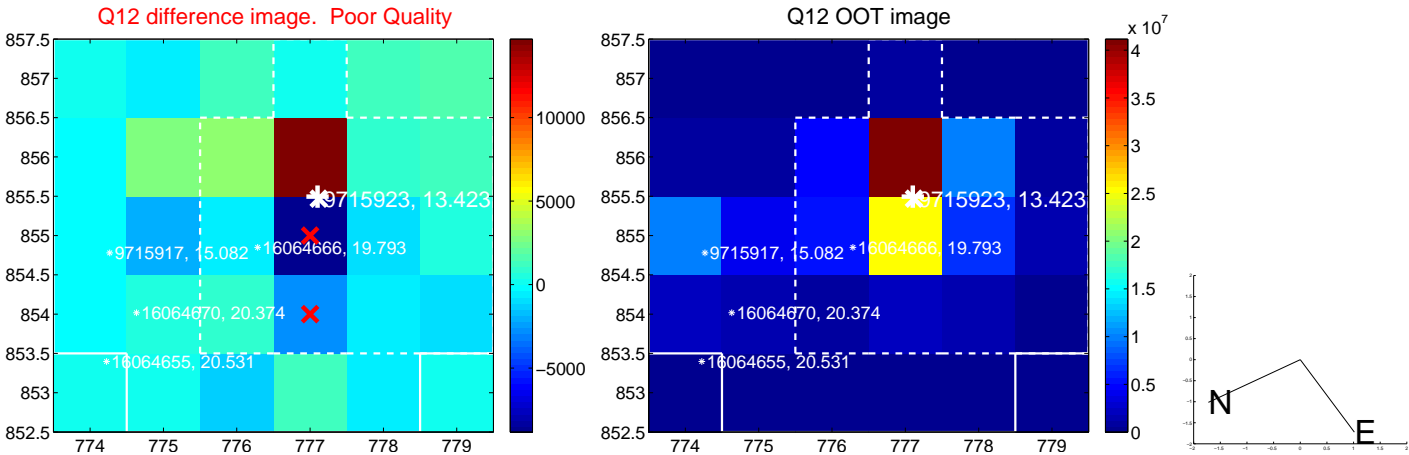
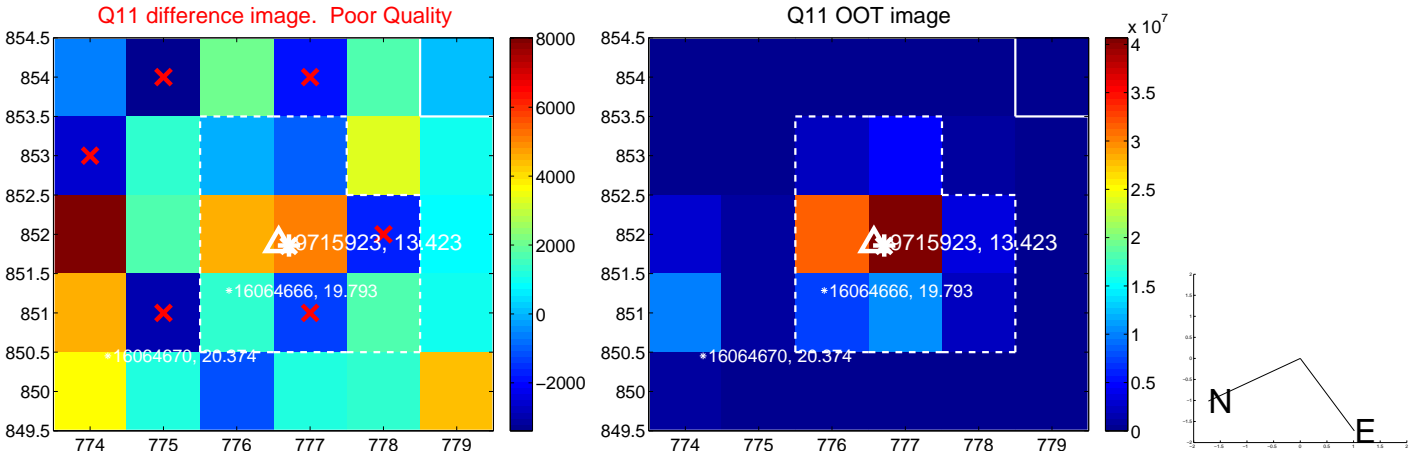
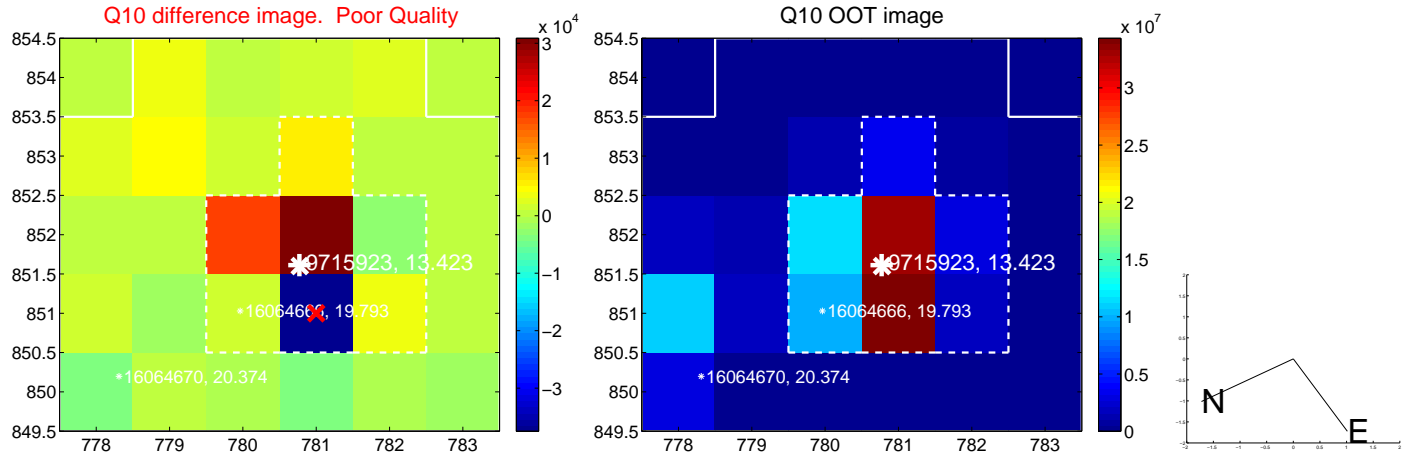
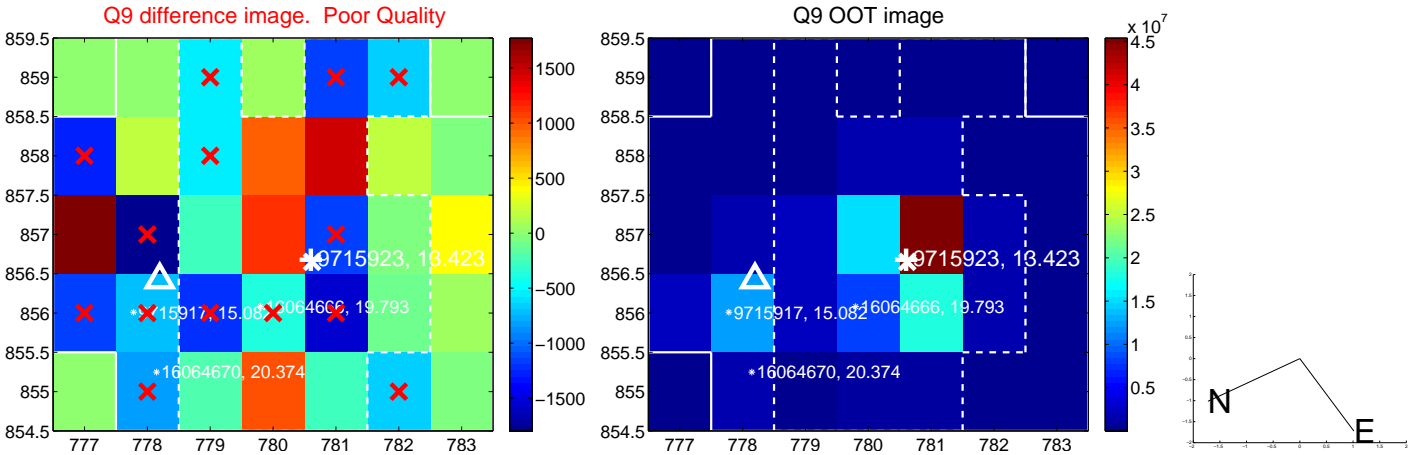
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



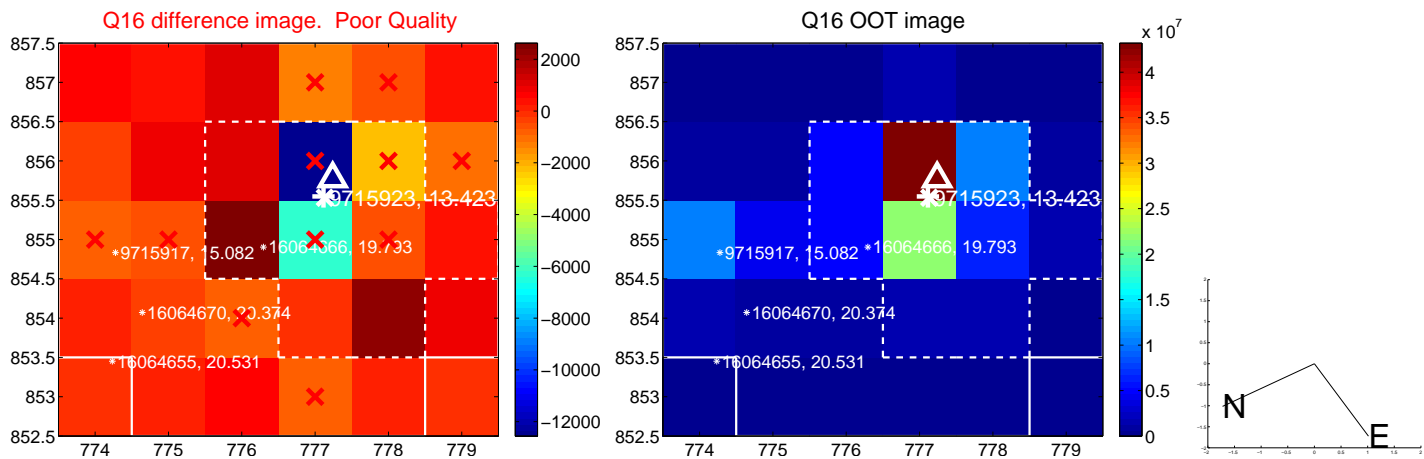
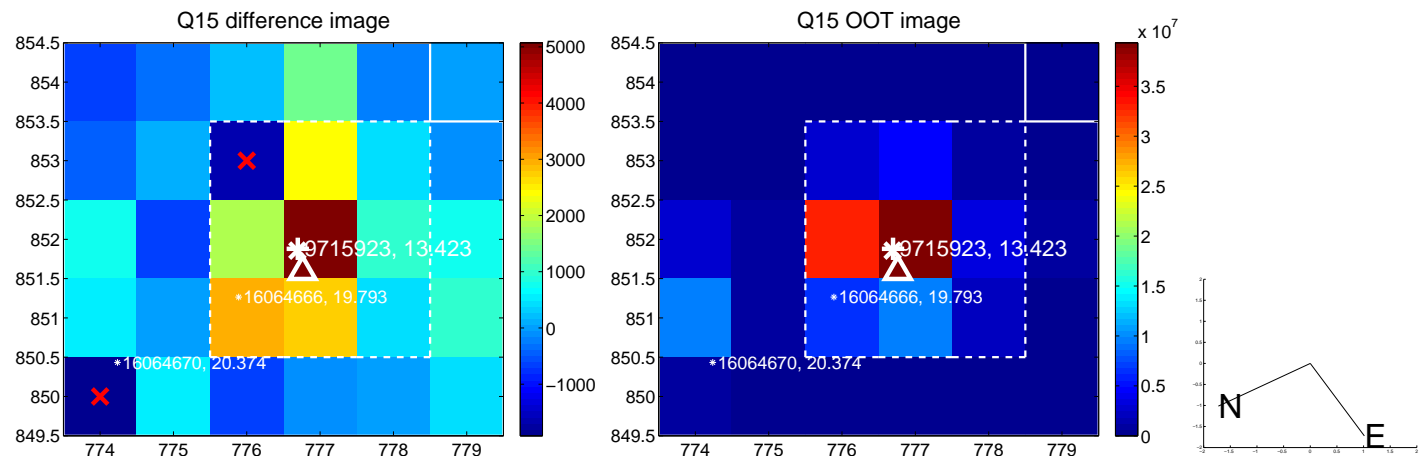
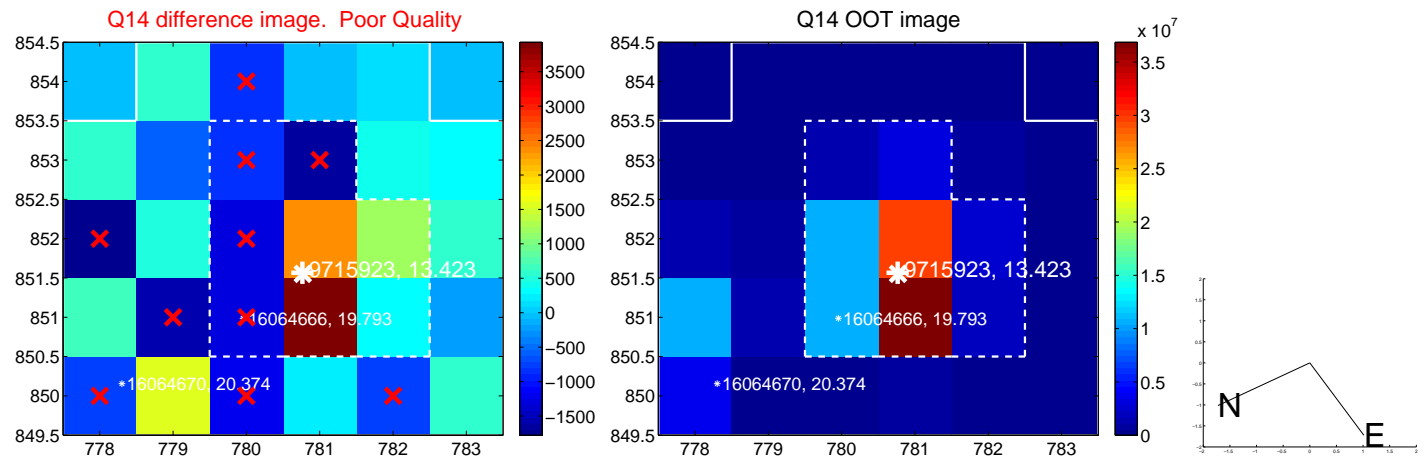
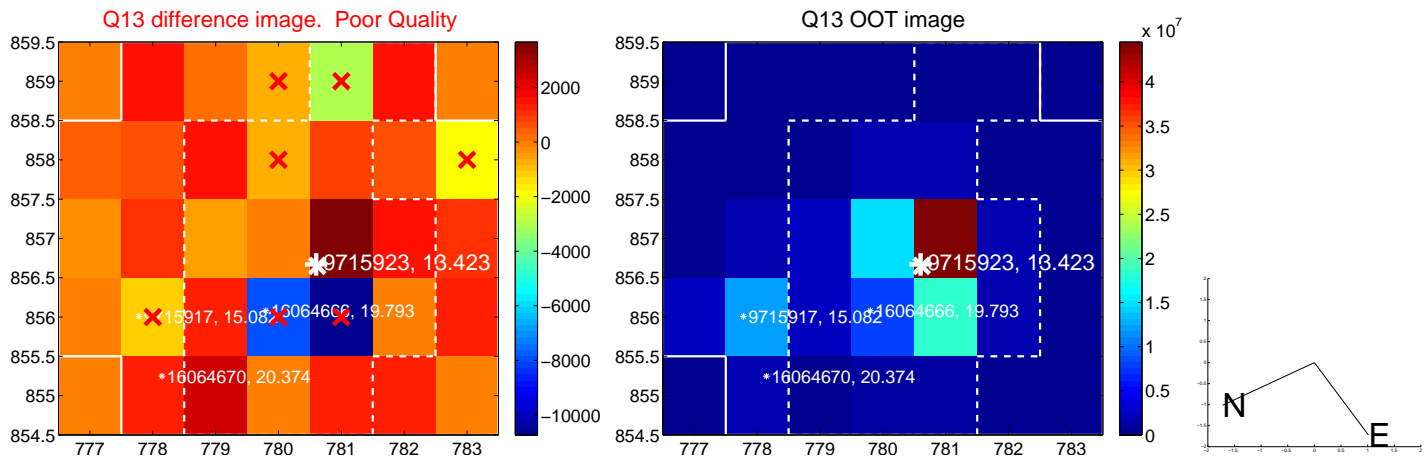
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



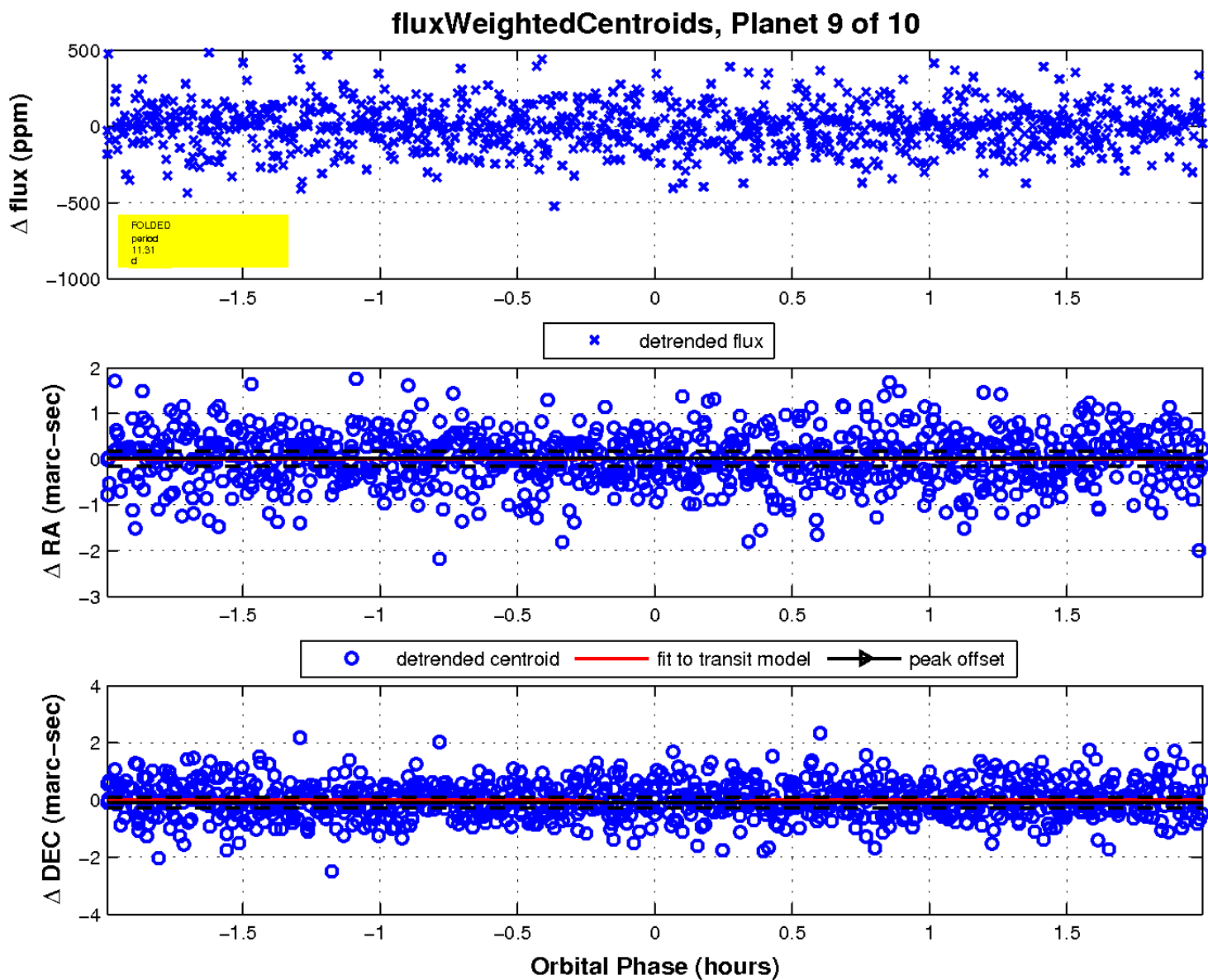
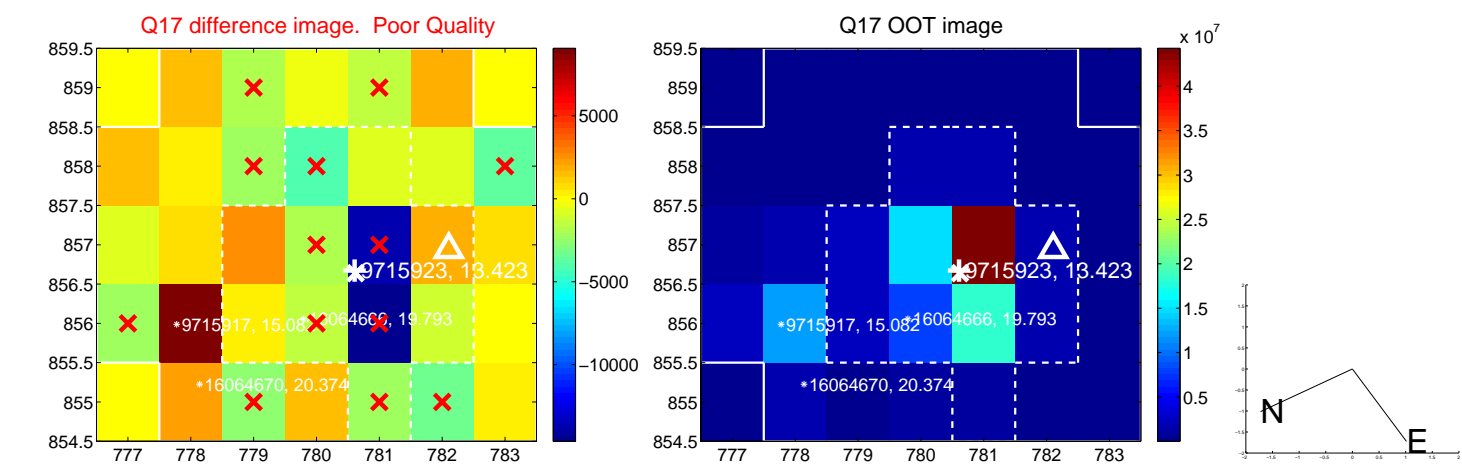
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

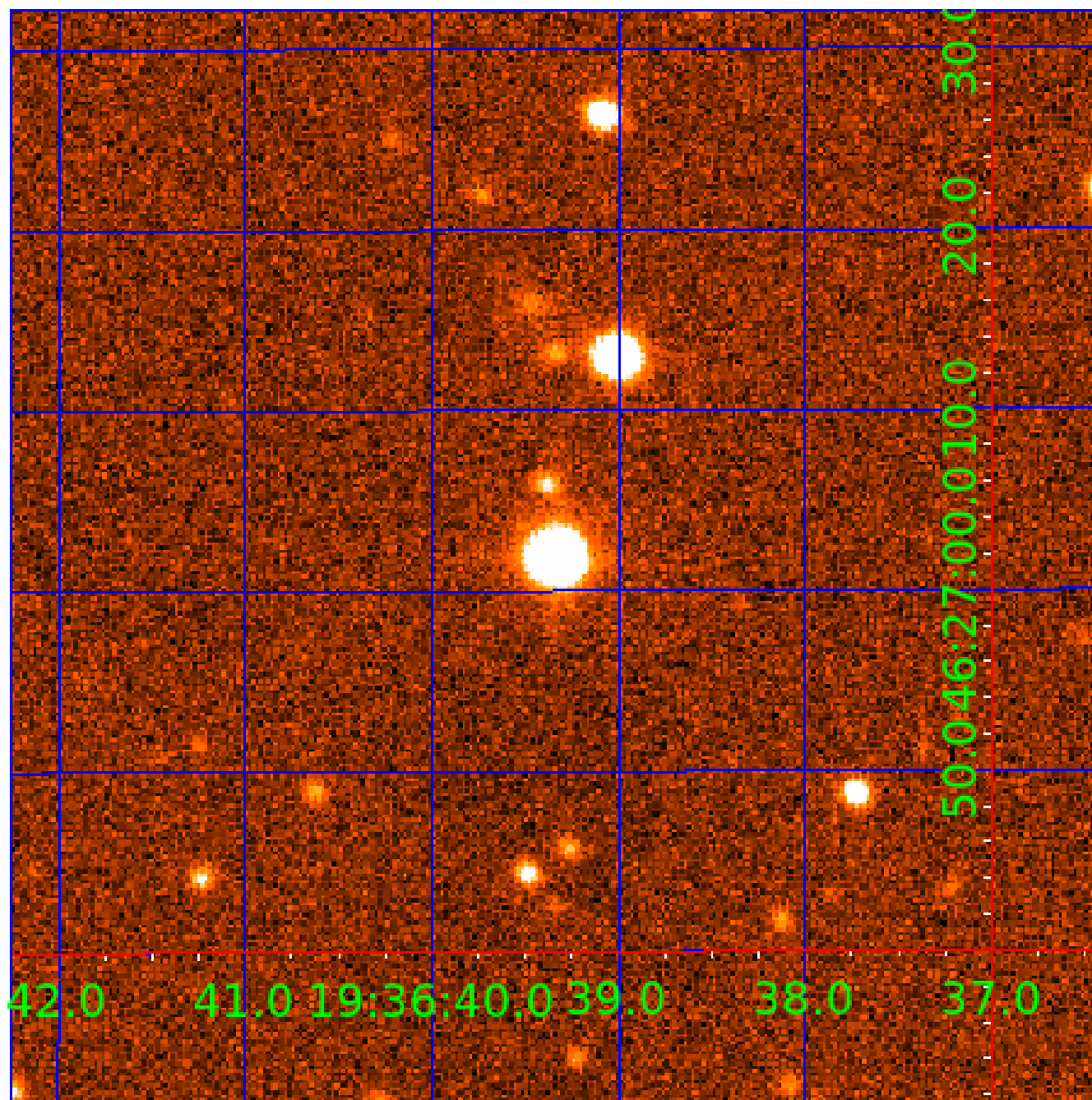


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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# KIC 009715923

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009715923-01	OBS	No	0.694561	131.797987	2.7	5.202	9.1	1.7	3.64	7105	0.61	83197.88
009715923-02	OBS	No	8.985471	132.812379	202.5	0.905	12.7	11.7	3.64	7105	5.29	2739.50
009715923-04	OBS	No	9.288268	137.020221	260.0	1.287	11.3	15.7	3.64	7105	6.61	2621.07
009715923-05	OBS	No	3.847139	133.473597	178.8	1.156	12.1	15.2	3.64	7105	5.07	8489.37
009715923-06	OBS	No	8.374381	138.808874	320.5	0.587	9.3	12.2	3.64	7105	7.23	3009.23
009715923-07	OBS	No	8.976706	134.628131	164.2	1.257	10.9	10.0	3.64	7105	5.01	2743.07
009715923-08	OBS	No	6.908270	135.222405	274.6	0.699	10.8	13.0	3.64	7105	6.24	3889.56
009715923-09	OBS	No	11.309767	136.928988	256.2	0.665	9.4	10.1	3.64	7105	6.66	2015.83
009715923-10	OBS	No	10.461333	138.428607	219.1	1.442	9.8	9.3	3.64	7105	5.46	2236.71

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009715923-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_DIFFS
009715923-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009715923-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS
009715923-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV
009715923-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_DIFFS
009715923-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—HALO_GHOST
009715923-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009715923-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009715923-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_MEAS

**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.

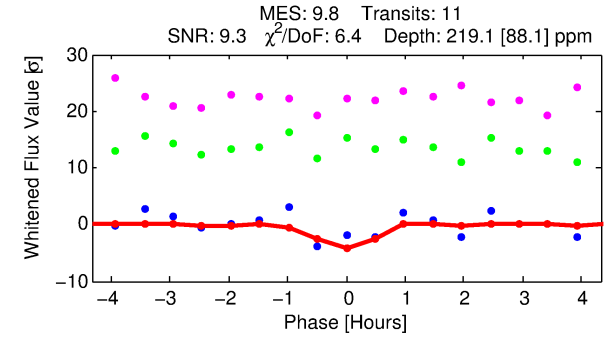
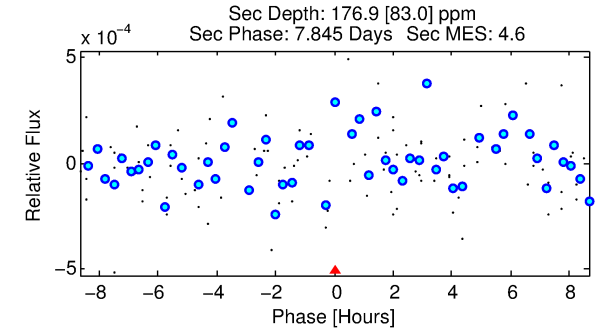
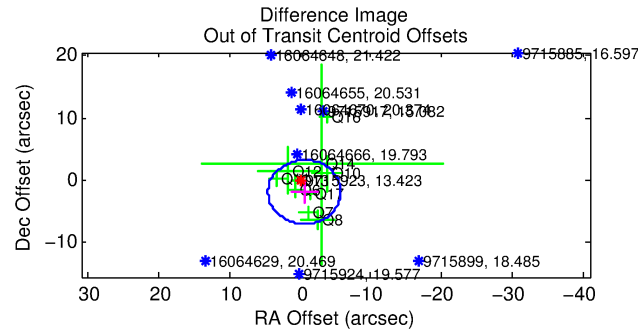
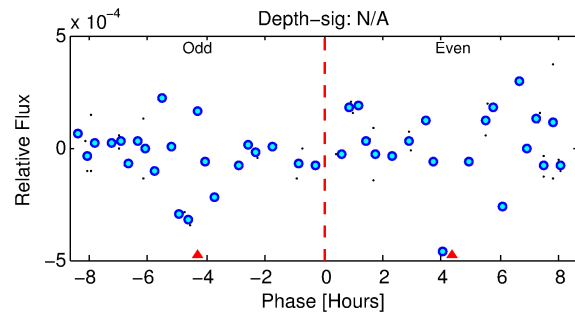
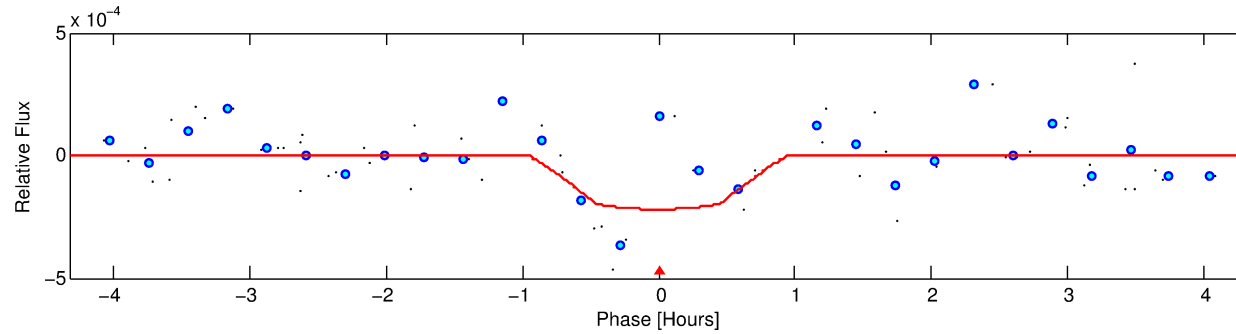
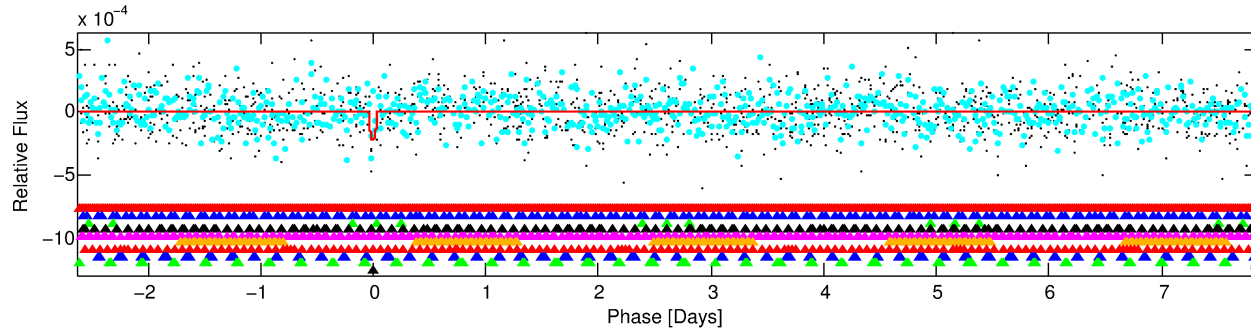
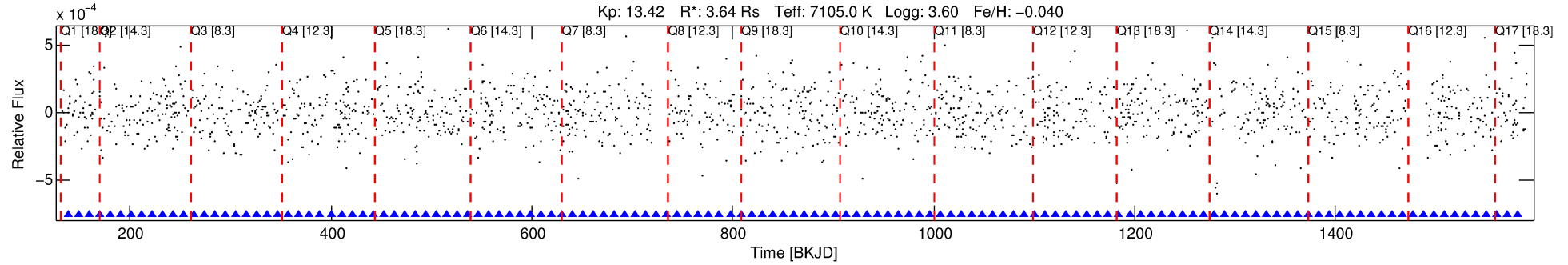
Ephemeris Match Information For 009715923-10

No Significant Match Found



# DV One-Page Summary

KIC: 9715923 Candidate: 10 of 10 Period: 10.461 d



## DV Fit Results:

Period = 10.46133 [0.00020] d  
Epoch = 138.4286 [0.0098] BKJD  
Rp/R\* = 0.0138 [0.0482]  
a/R\* = 55.93 [1116.25]  
b = 0.09 [210.76]  
Seff = 2236.71 [1162.89]  
Teq = 1754 [228] K  
Rp = 5.47 [19.21] Re  
a = 0.1162 [0.0367] AU  
Ag = 44.02 [309.52] [0.14] $\sigma$   
Teffp = 6984 [12248] K [0.43] $\sigma$

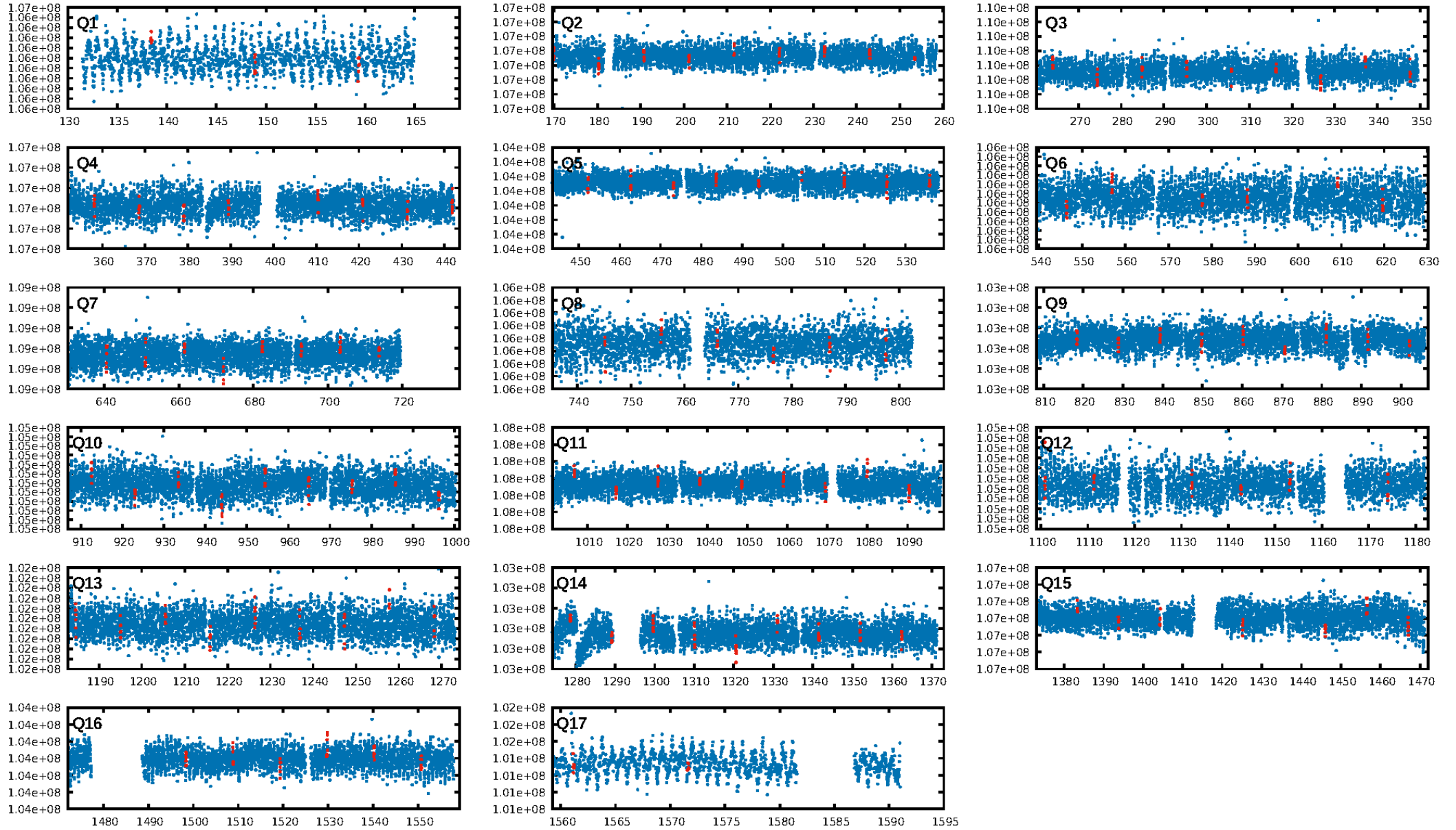
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [14.56] $\sigma$   
LongPeriod-sig: 100.0% [12.82] $\sigma$   
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 29.3%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [10/10]  
GhostDiagnostic-chr: -2.711  
Centroid-sig: 0.6%  
Centroid-so: 1.273 arcsec [2.61] $\sigma$   
OotOffset-rm: 1.954 arcsec [1.14] $\sigma$   
KicOffset-rm: 1.990 arcsec [1.16] $\sigma$   
OotOffset-st: 3/2/3/2 [10]  
KicOffset-st: 3/2/3/2 [10]  
DiffImageQuality-fgm: 0.10 [1/10]  
DiffImageOverlap-fno: 0.18 [3/17]

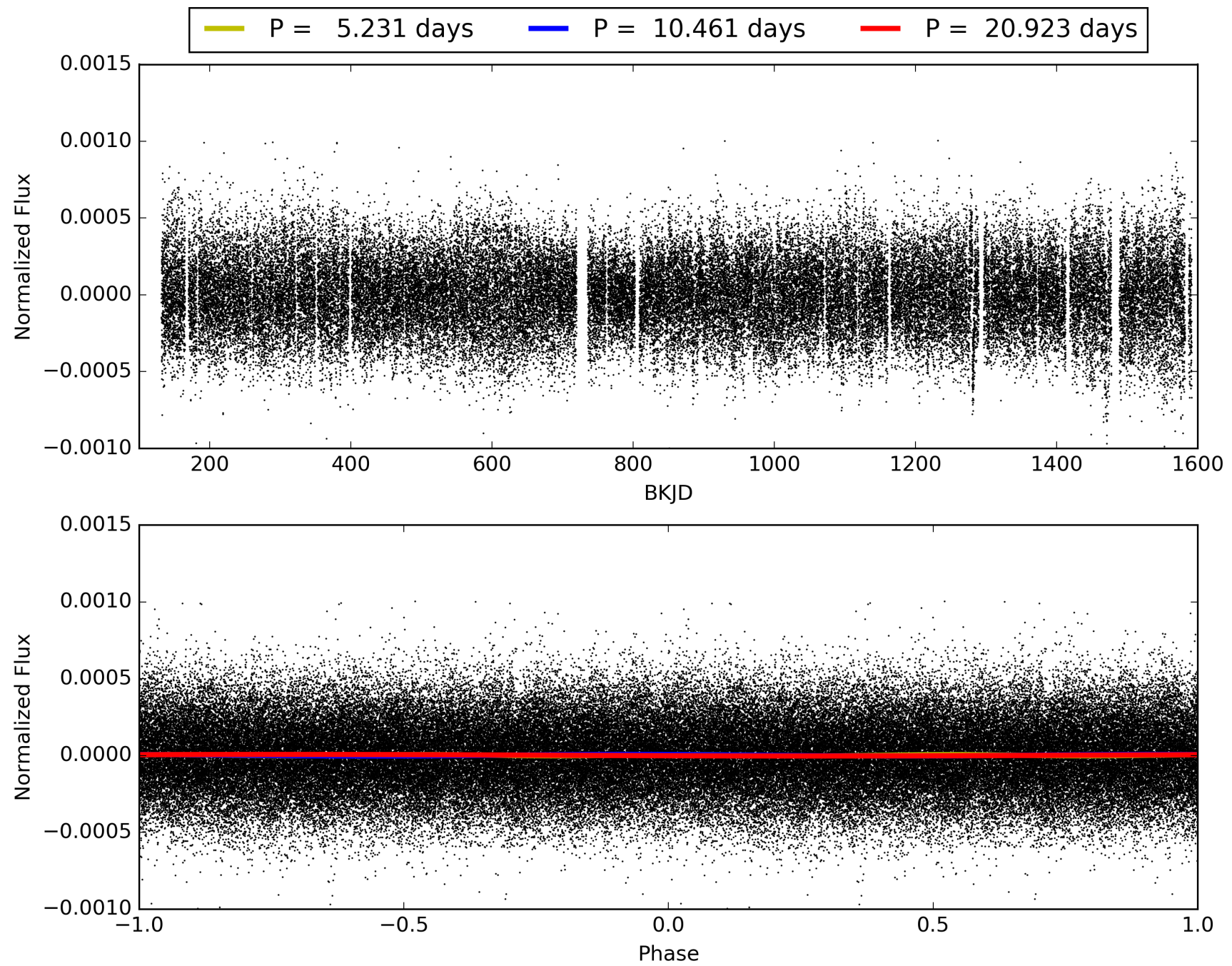
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:00:50 Z

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

# TCE 009715923-10, PDC Light Curves

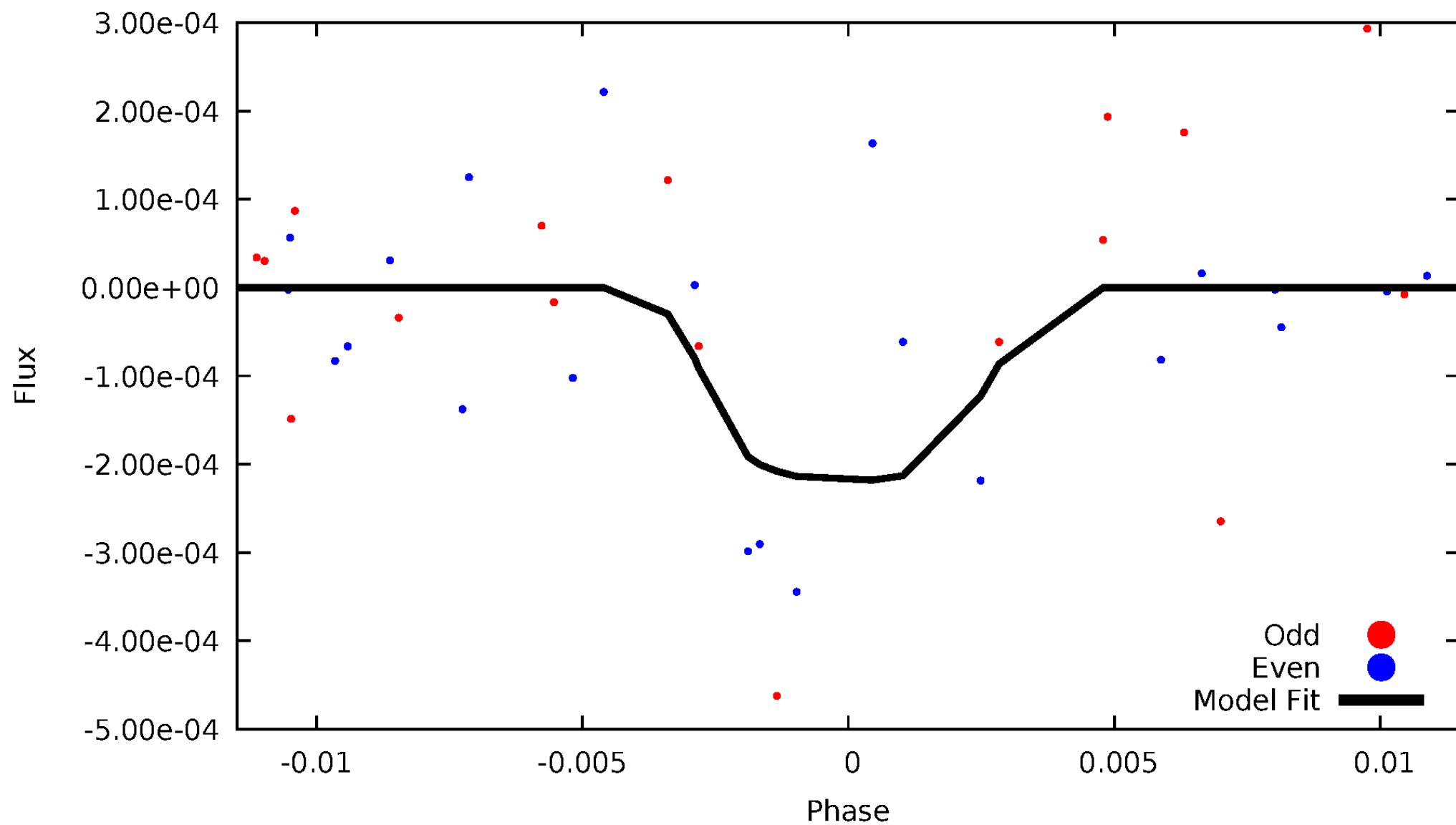


# TCE 009715923-10



# DV Odd/Even

TCE 009715923-10



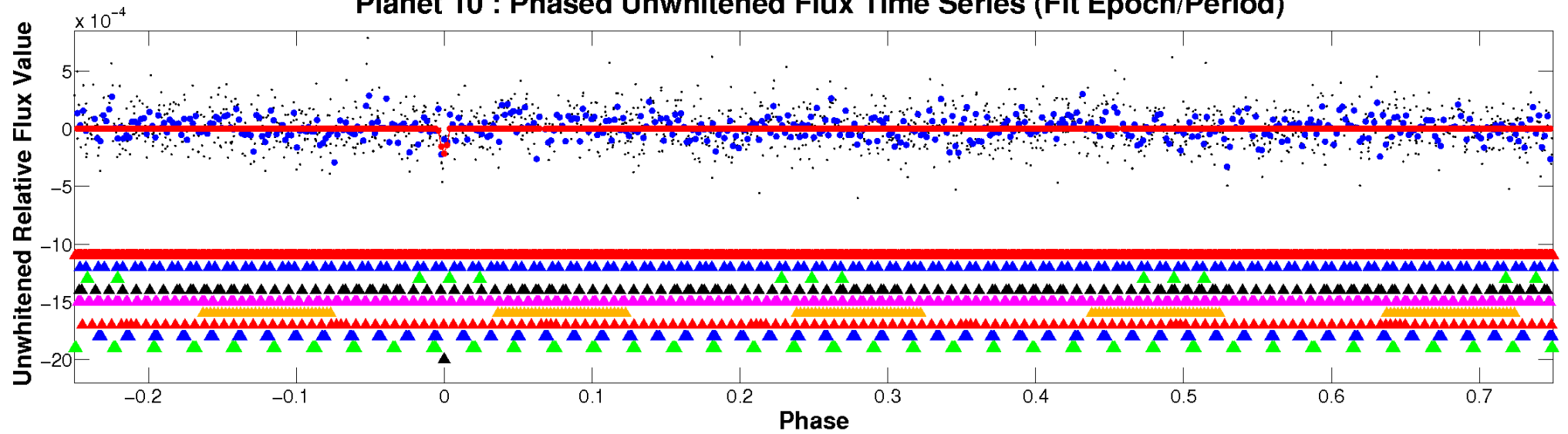


ALT Odd/Even

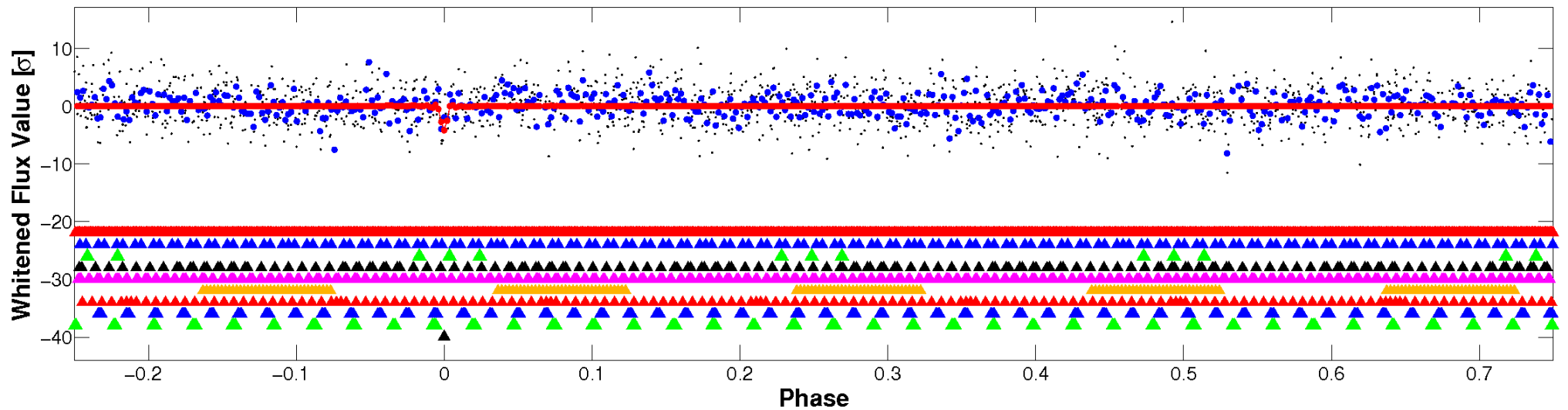
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

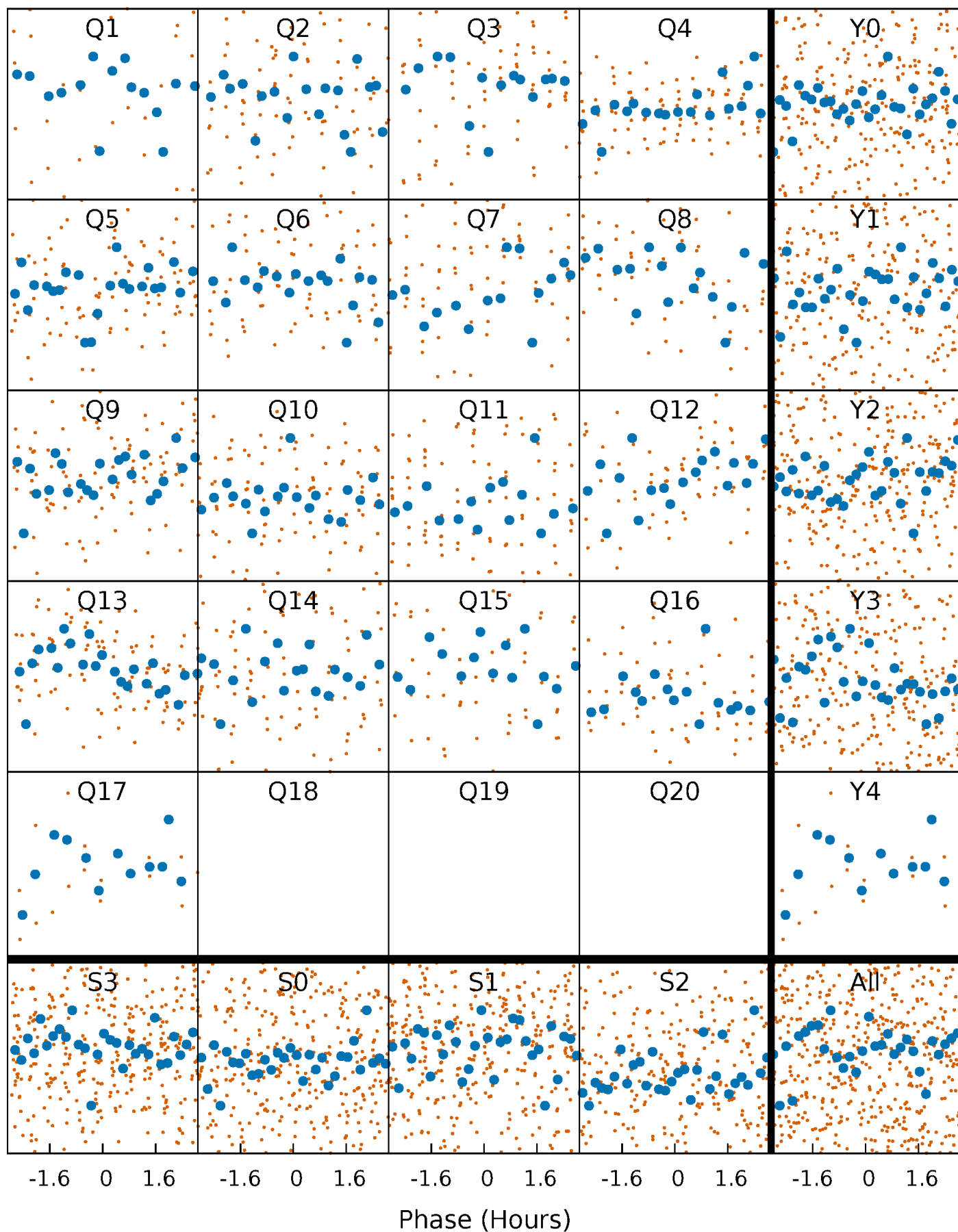


Planet 10 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

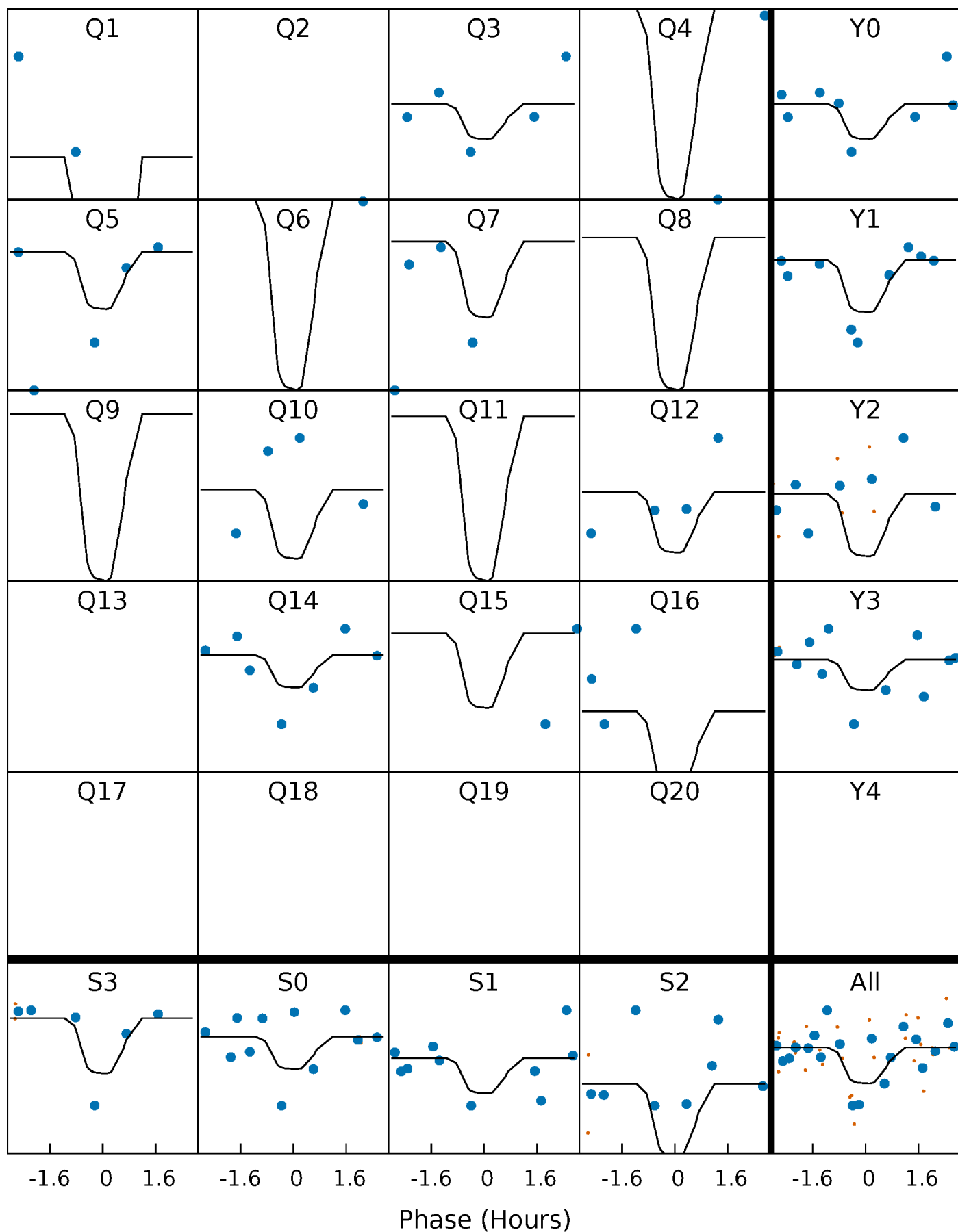
TCE 009715923-10 P= 10.461333 Days  $T_0=138.428607$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 009715923-10 P= 10.461333 Days  $T_0=138.428607$  (BKJD)

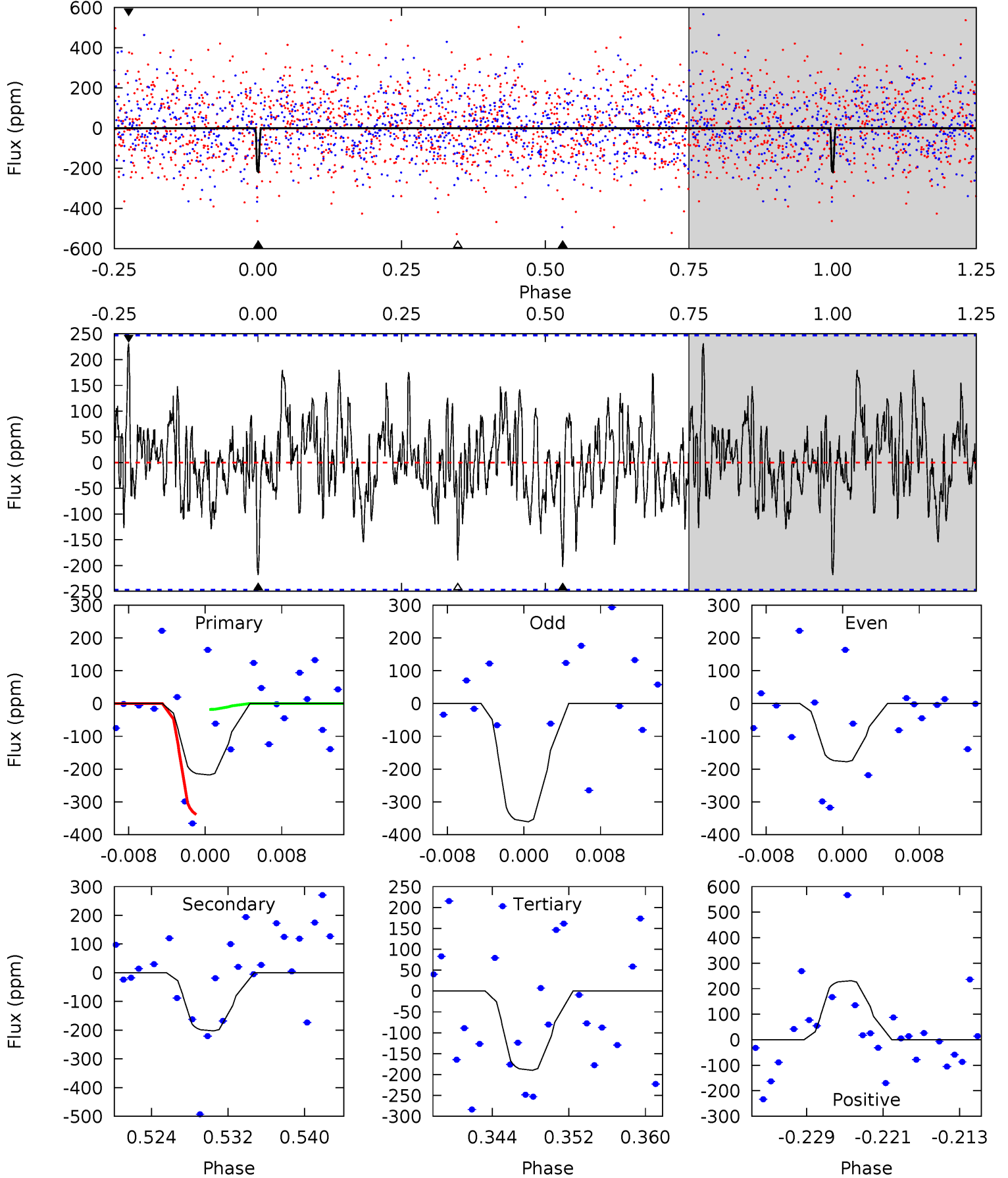


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

009715923-10, P = 10.461333 Days, E = 127.967274 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
4.47	4.15	3.89	4.74	5.06	2.64	1.30	0.58	-0.27	0.26	-0.59	1.69	0	0.51	3.23



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 009715923

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7105^{+196}_{-270}$	$3.598^{+0.289}_{-0.051}$	$-0.040^{+0.250}_{-0.250}$	$3.638^{+0.306}_{-1.225}$	$1.912^{+0.168}_{-0.311}$	$0.056^{+0.111}_{-0.010}$
	+3%/-4%	+8%/-1%	+625%/-625%	+8%/-34%	+9%/-16%	+199%/-18%
Source	PHO1	FLK73	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 009715923-10 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-202 \pm 49$	$14.18^{+15.37}_{-9.31}$	$2390^{+127}_{-195}$	$4418^{+3087}_{-1050}$	$7.434^{+51.880}_{-5.708}$
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  $A_{\text{obs}} \gg 1.0$

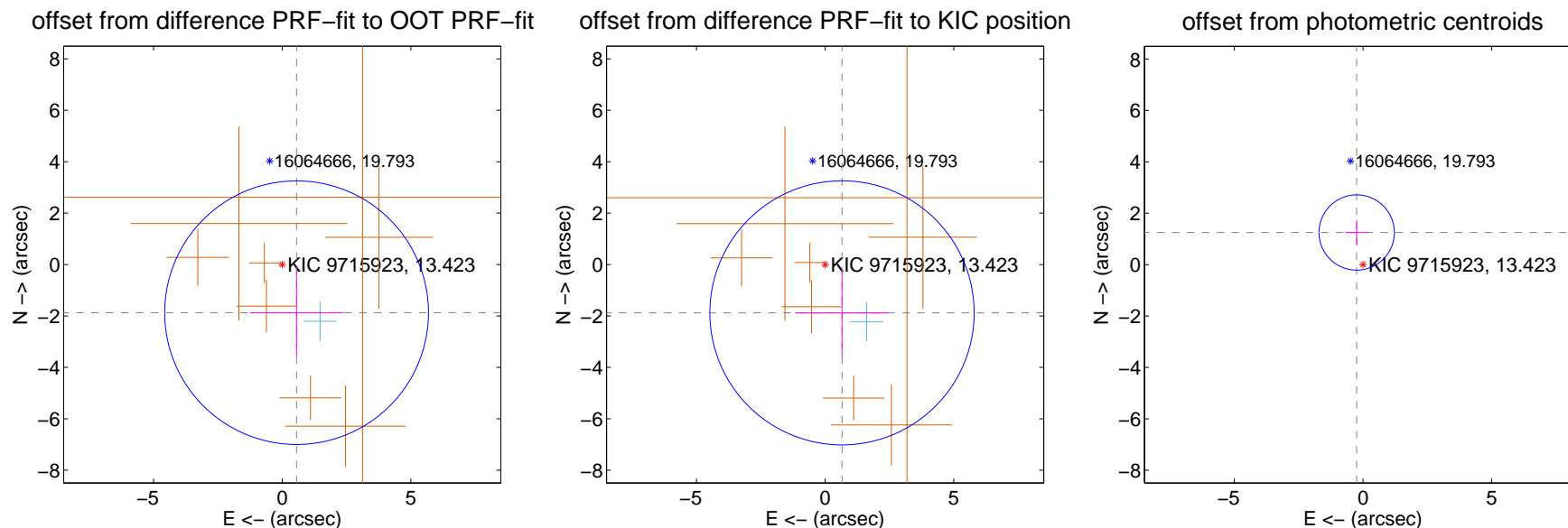
## DV Centroid Data

Supplemental centroid analysis for 009715923-10. Kepler magnitude: 13.42. Transit SNR 9.31

There are 1 quarters with good PRF difference image offsets

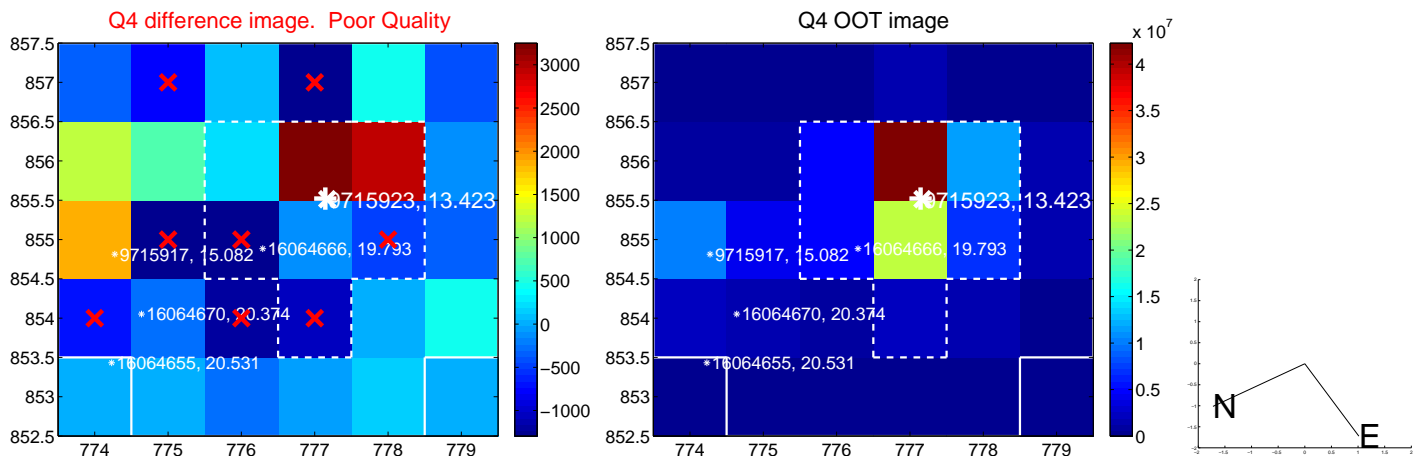
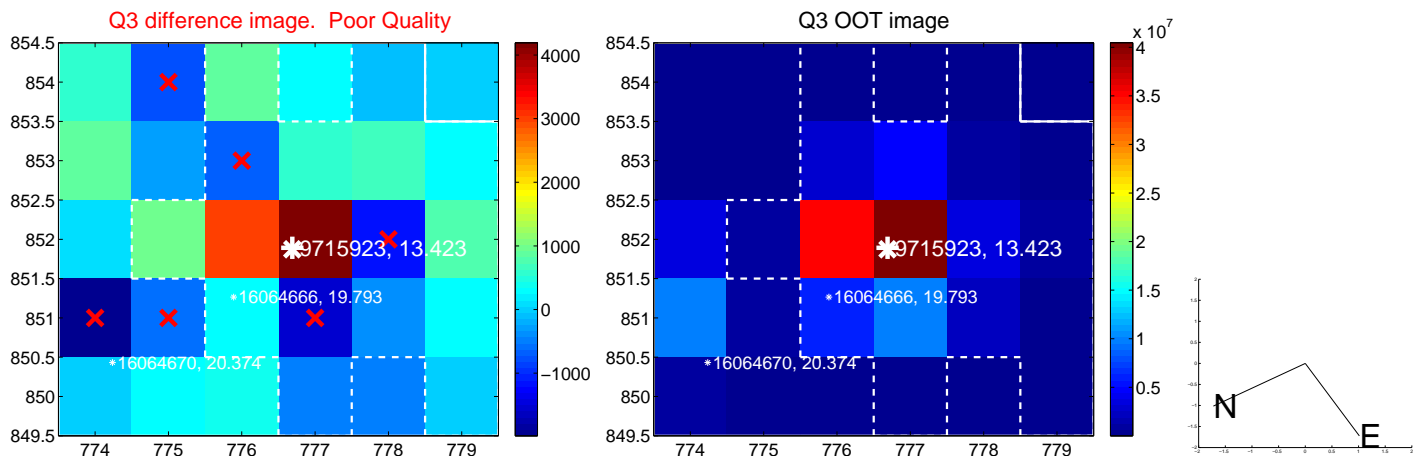
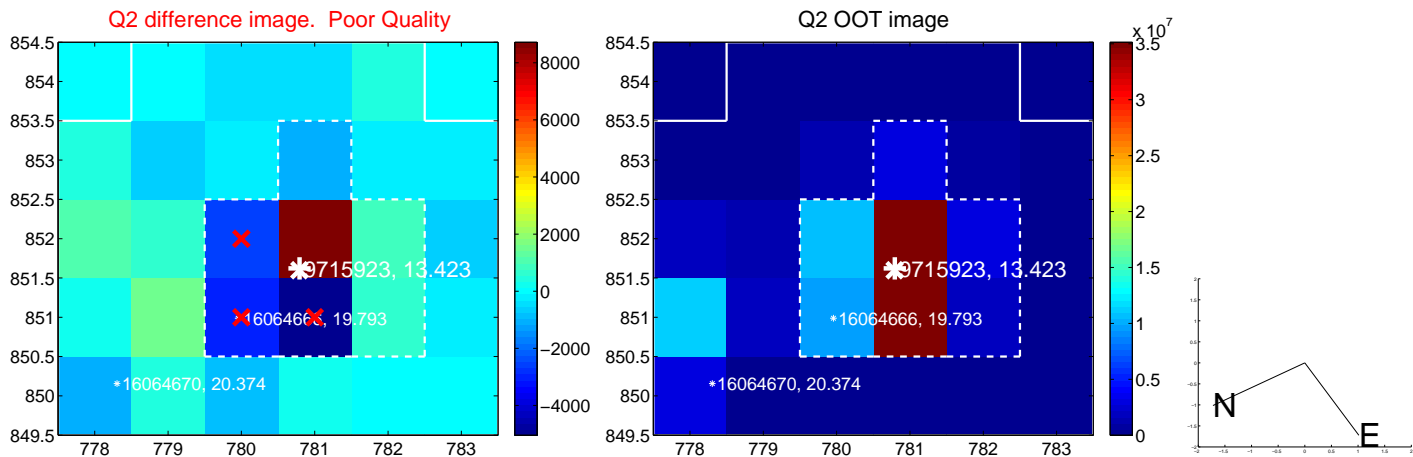
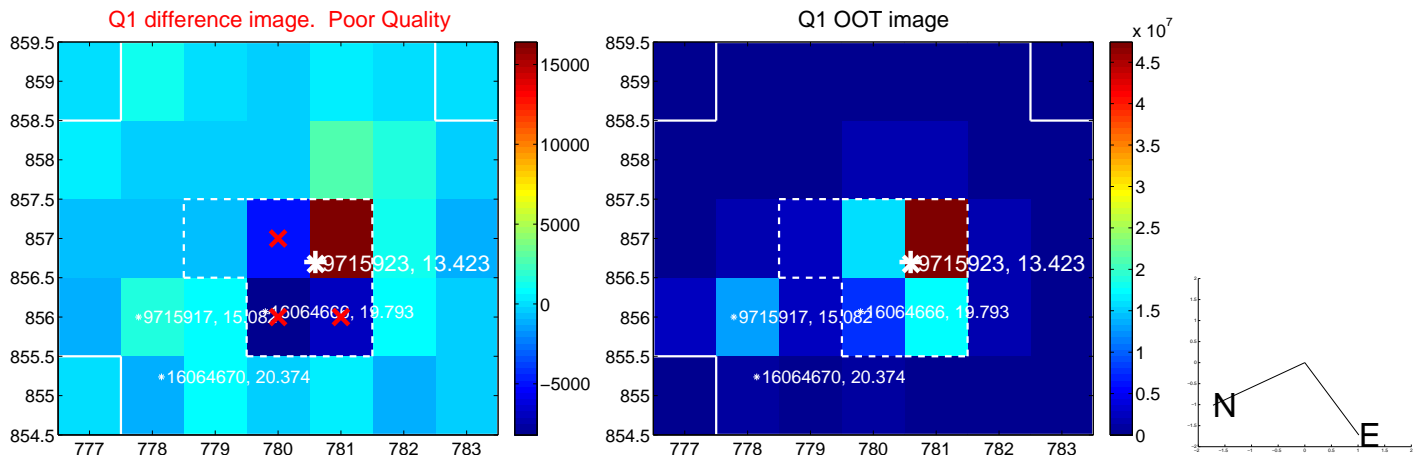
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.954 \pm 1.709$	1.14	$-0.559 \pm 1.814$	$-1.872 \pm 1.699$
PRF-fit source offset from KIC position	$1.990 \pm 1.712$	1.16	$-0.657 \pm 1.814$	$-1.879 \pm 1.699$
photometric centroid source offset	$1.27 \pm 0.49$	2.61	$0.25 \pm 0.44$	$1.25 \pm 0.49$

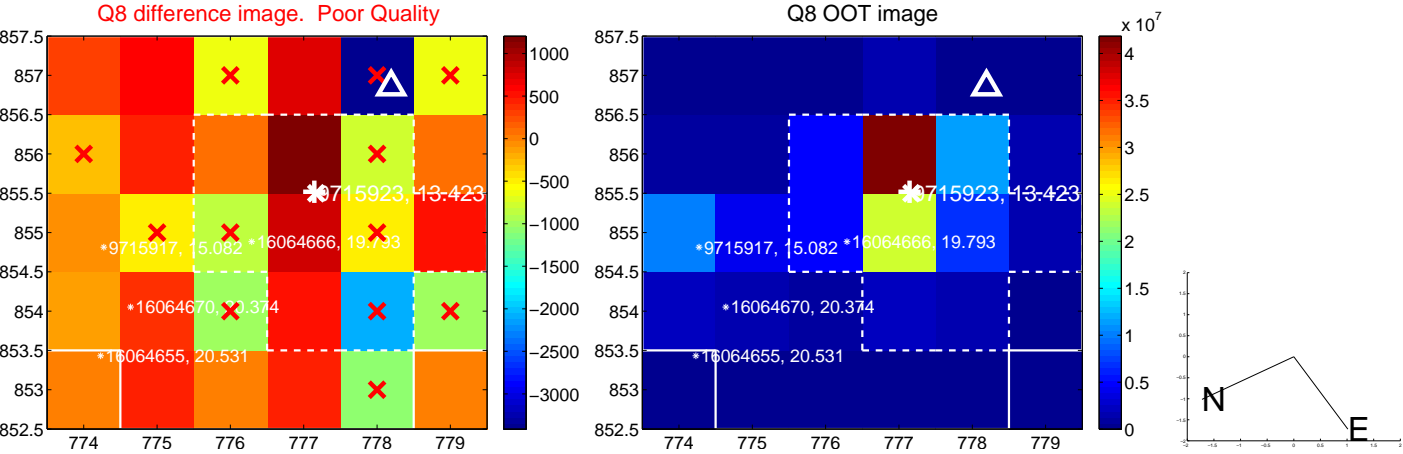
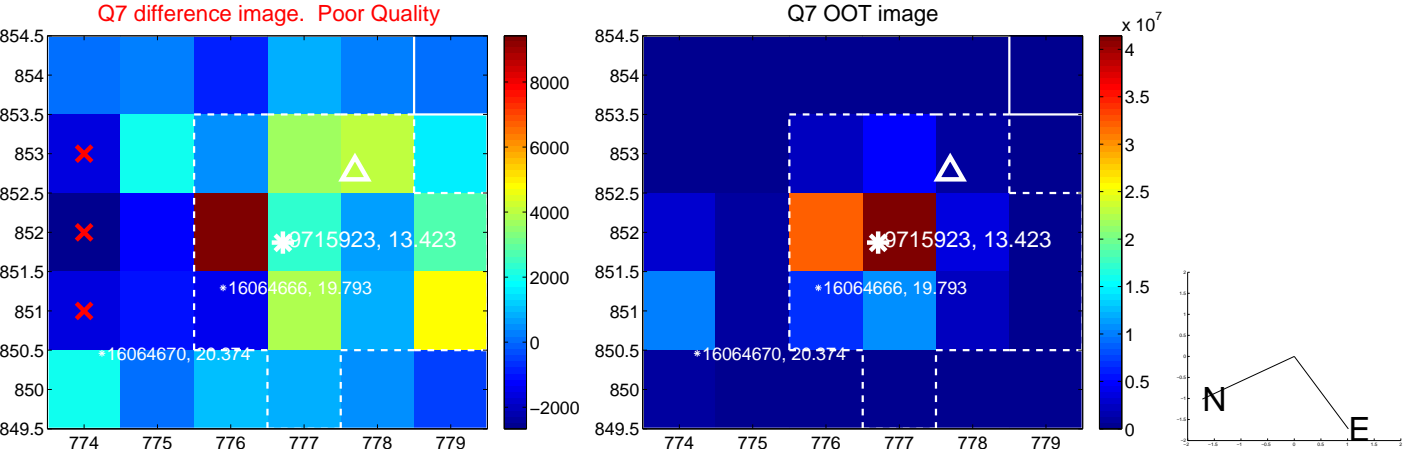
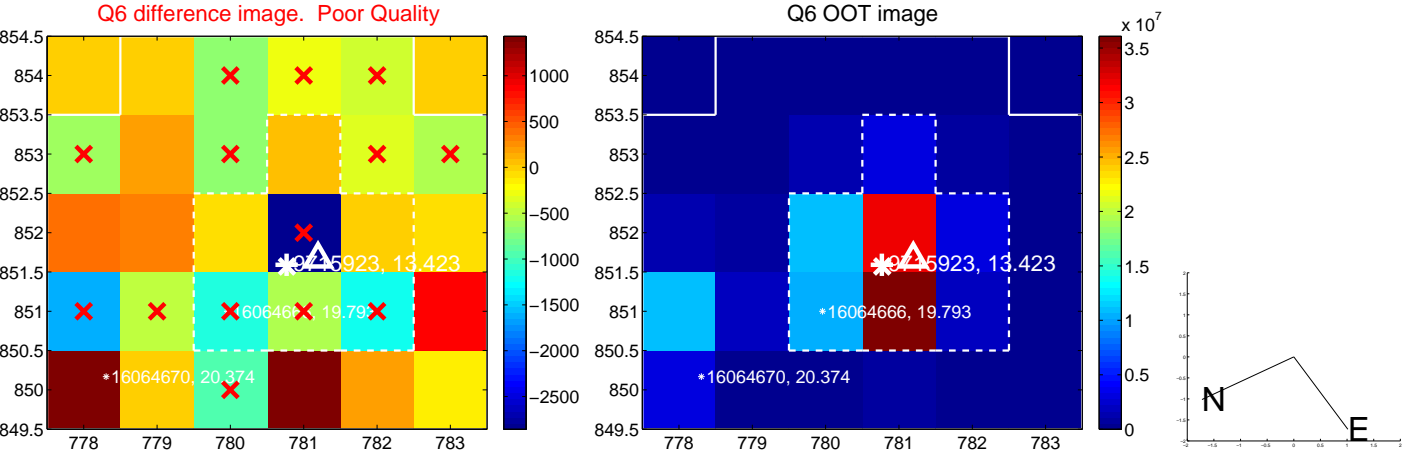
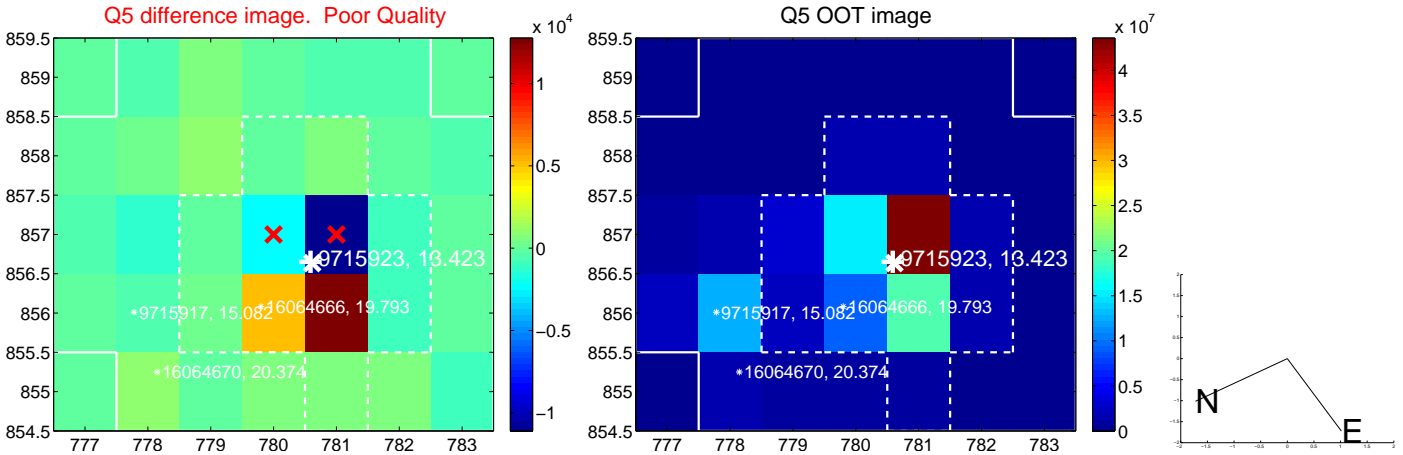


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

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

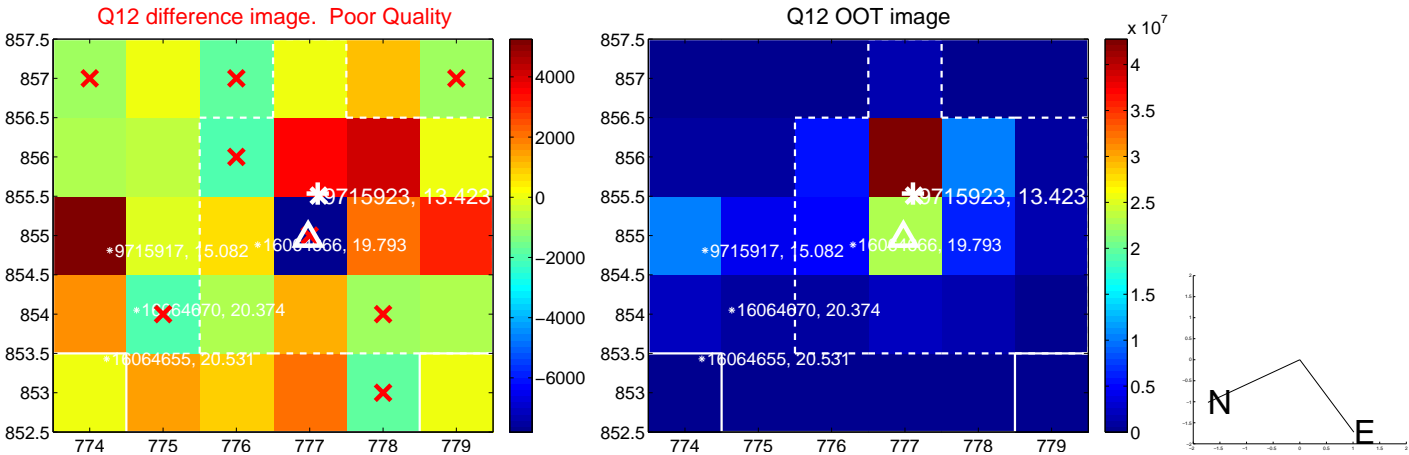
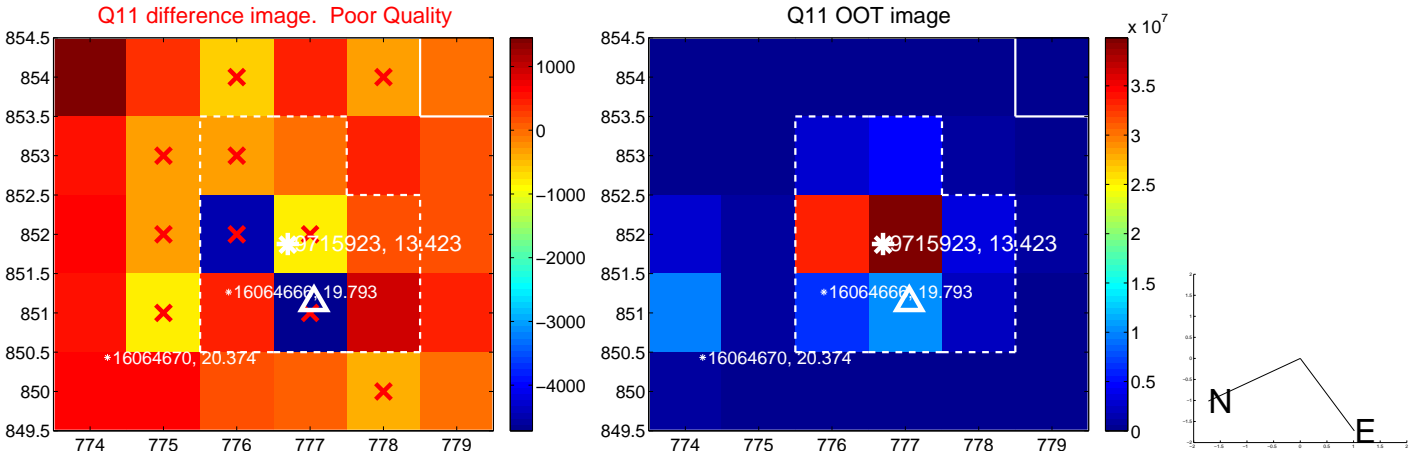
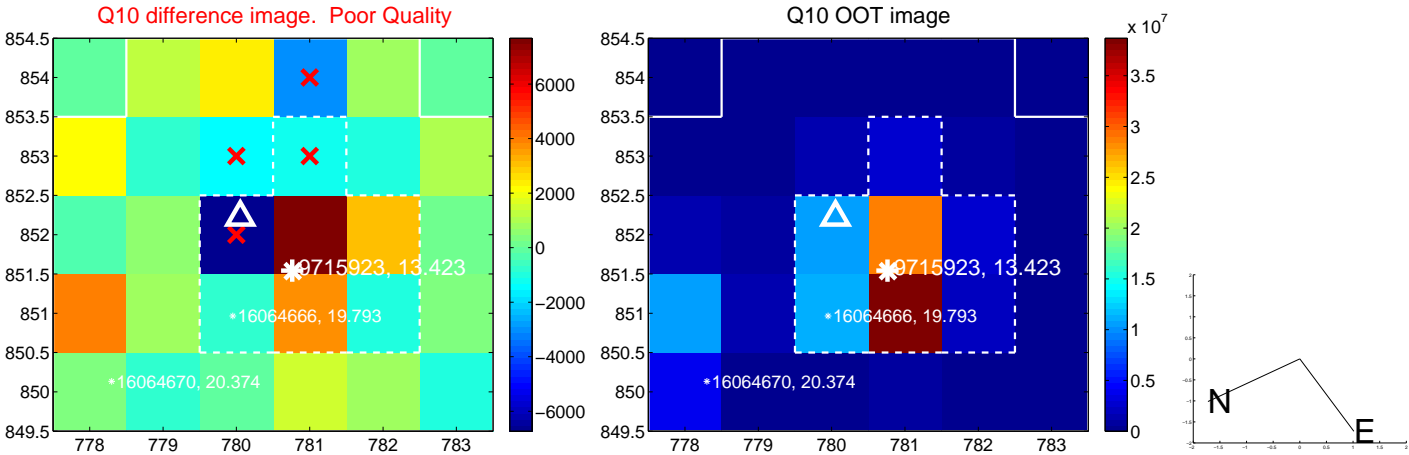
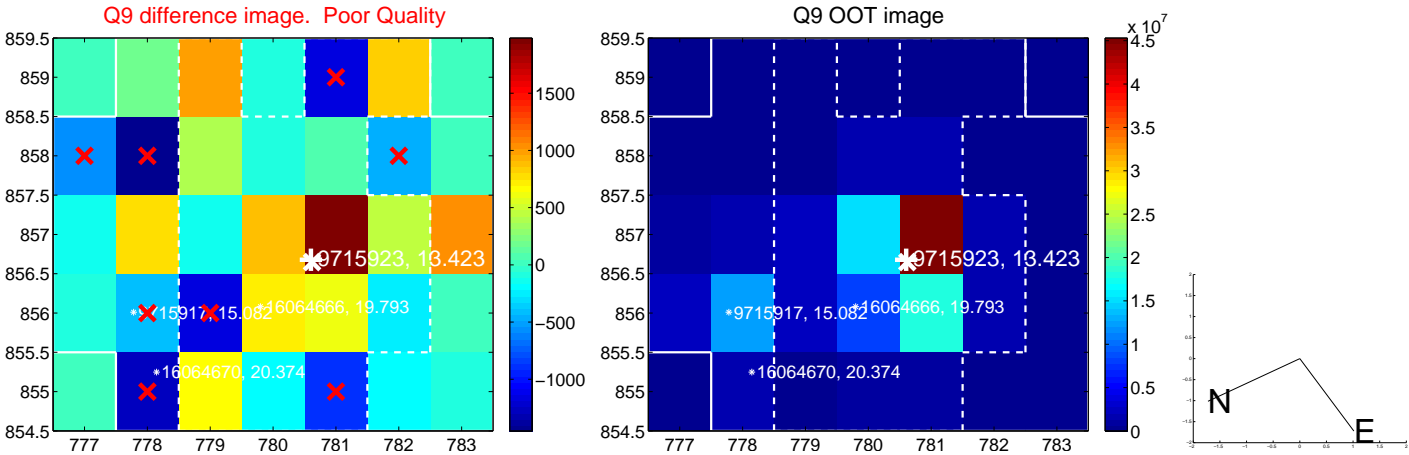


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

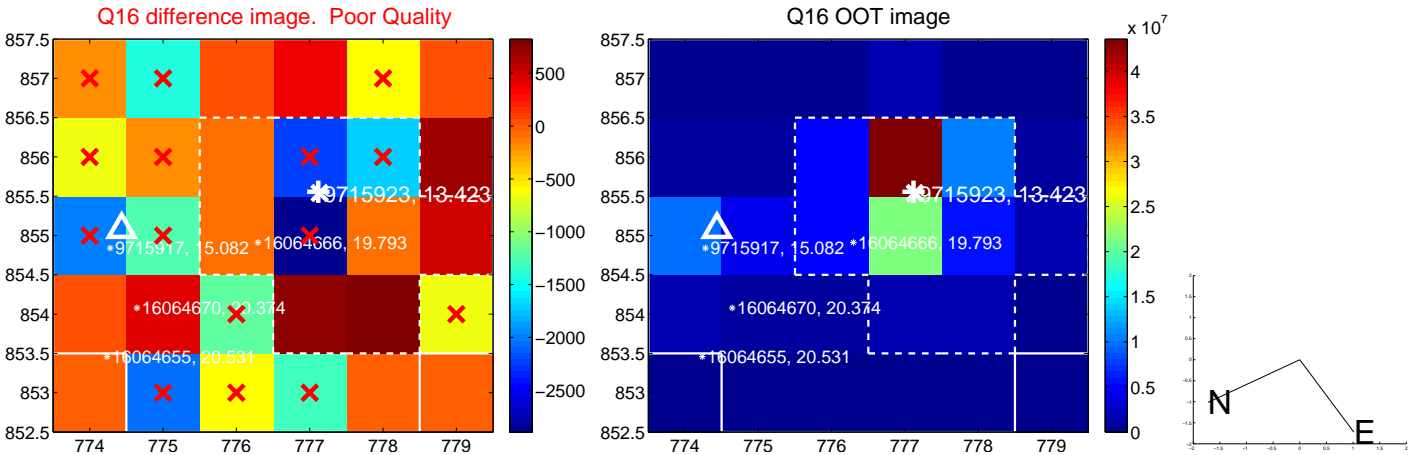
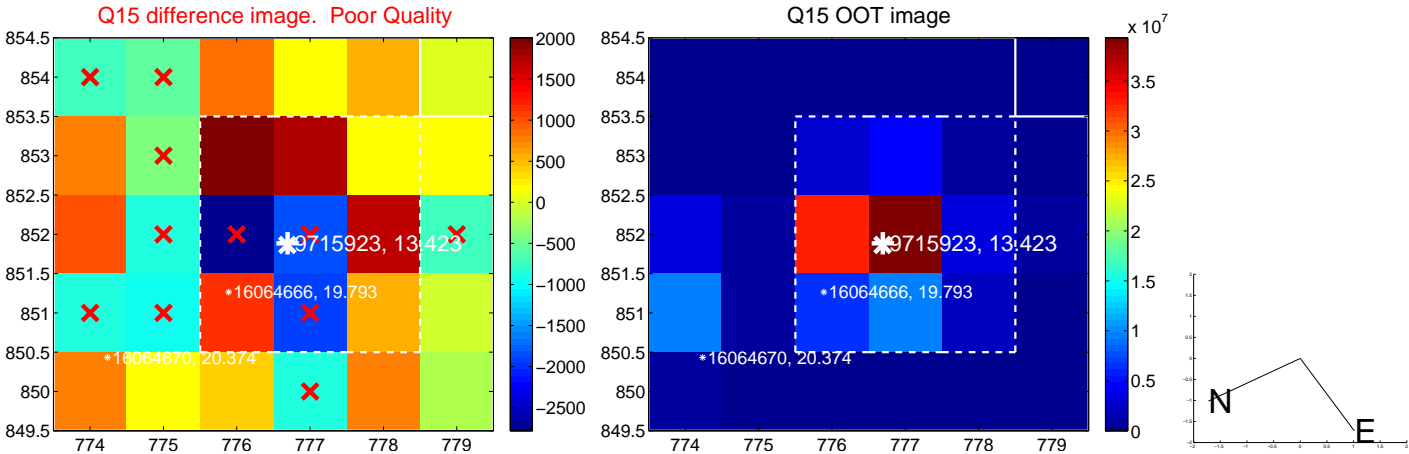
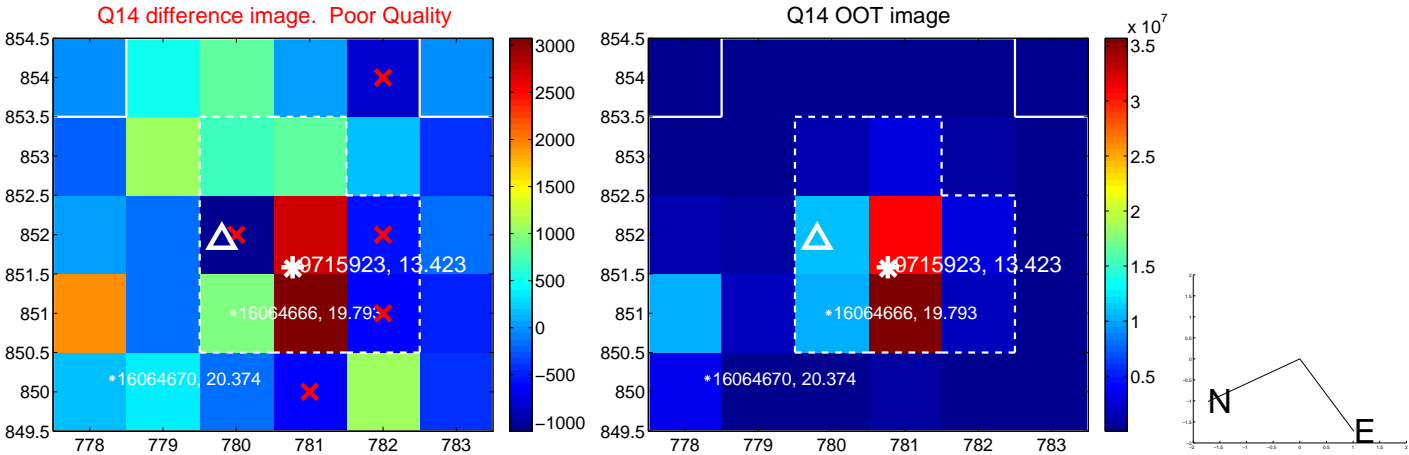
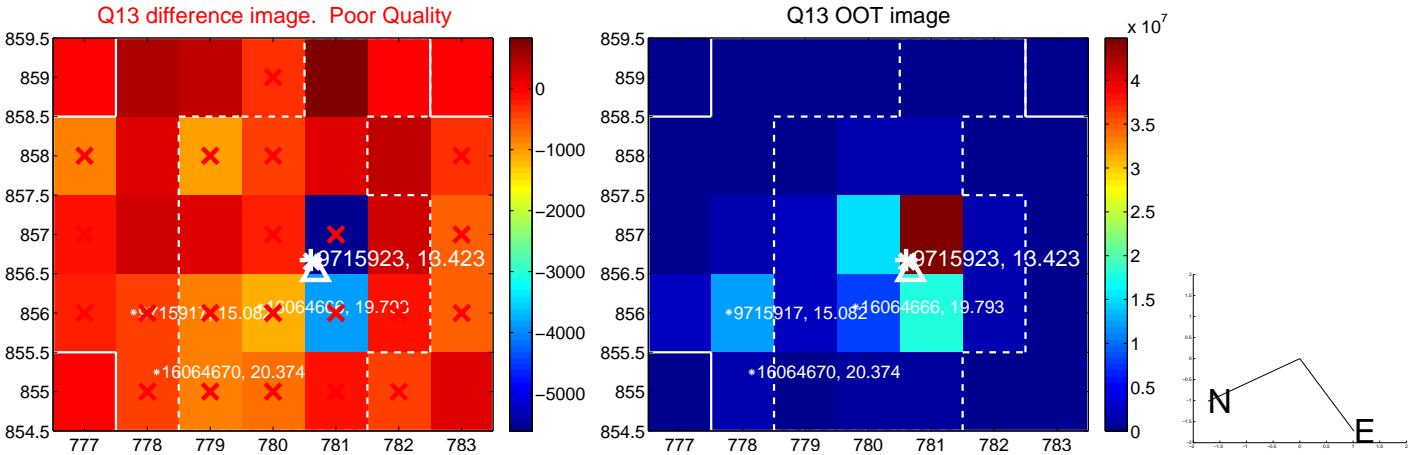




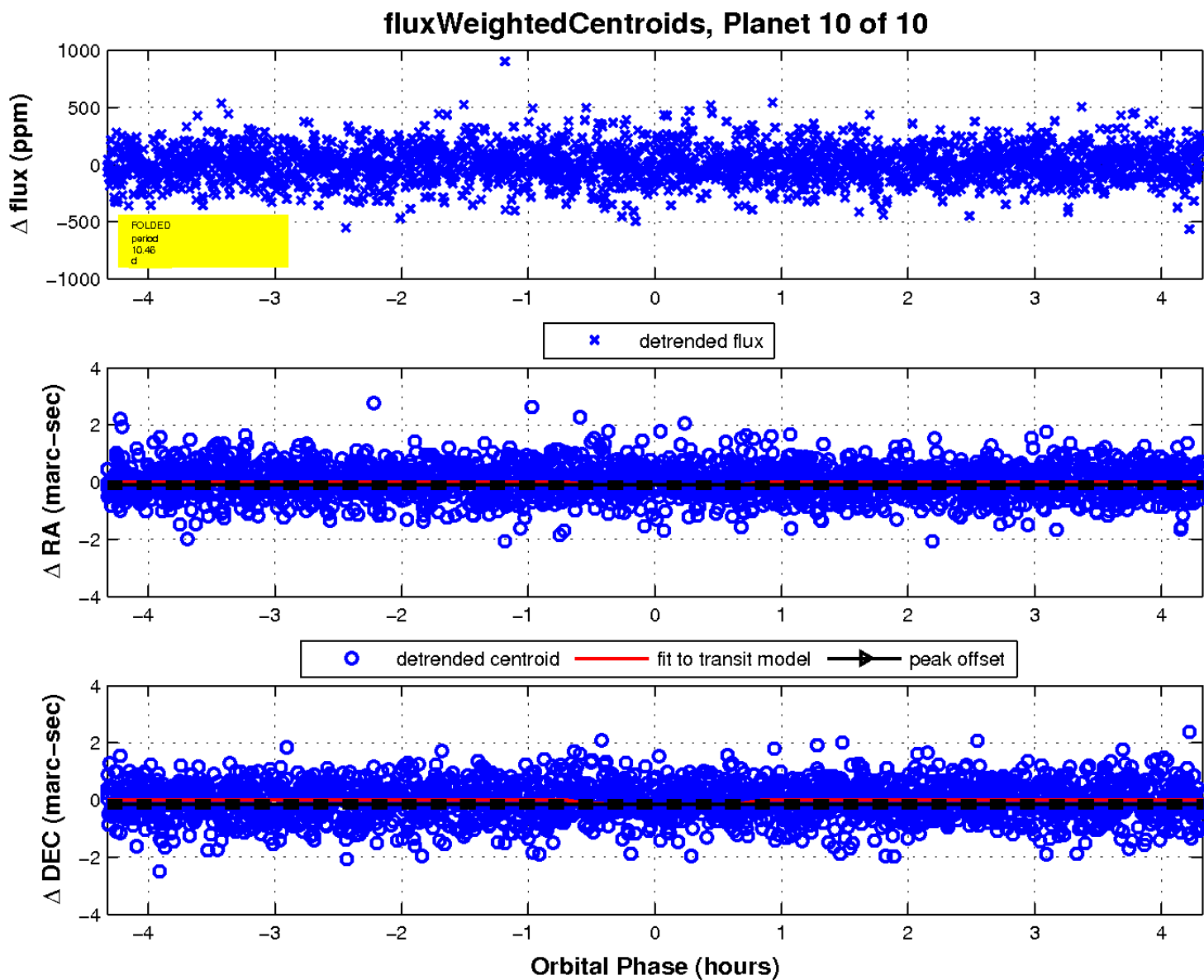
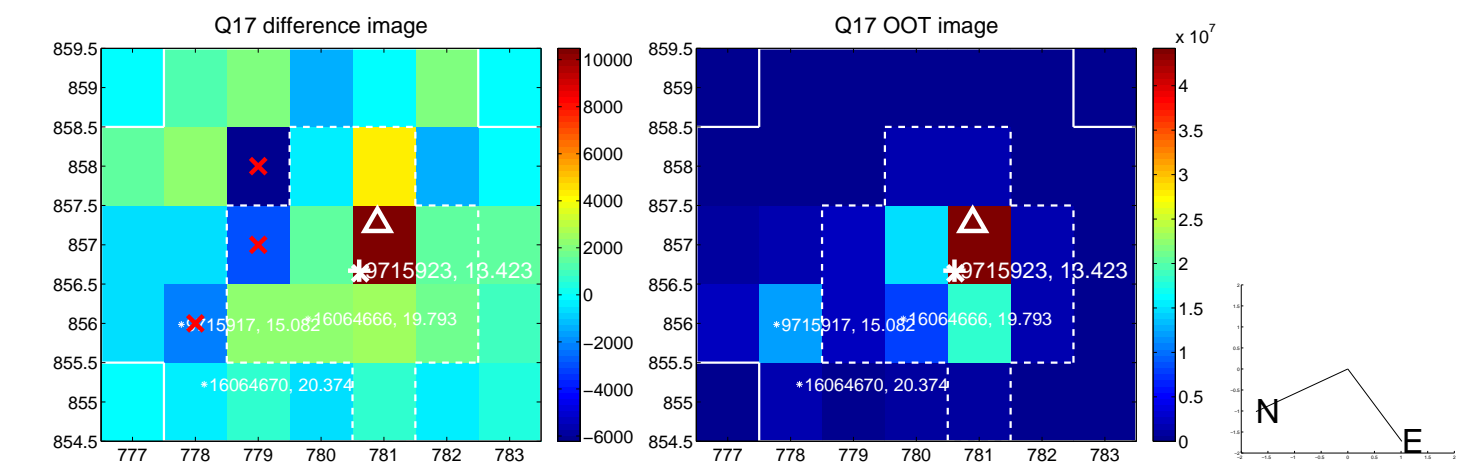
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

