

# KIC 004274480

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004274480-01	OBS	No	1.020922	132.423067	24.5	5.151	9.1	3.0	1.50	7123	0.77	10563.55
004274480-02	OBS	No	1.020904	131.784182	80.3	2.296	9.9	9.4	1.50	7123	1.56	10563.80
004274480-03	OBS	No	123.596770	252.324432	2316.8	7.043	10.8	11.6	1.50	7123	13.15	17.64
004274480-05	OBS	No	79.582334	208.609557	1660.5	5.721	8.3	8.7	1.50	7123	11.24	31.72
004274480-06	OBS	No	172.571842	162.600655	229.3	6.000	7.4	-1.0	1.50	7123	2.30	11.30

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004274480-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004274480-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
004274480-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT
004274480-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004274480-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

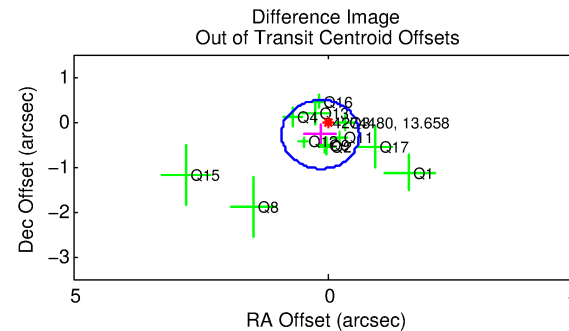
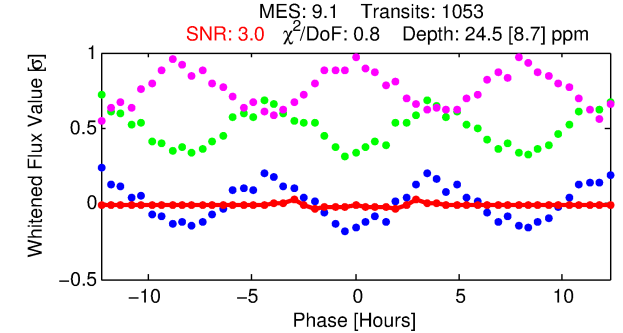
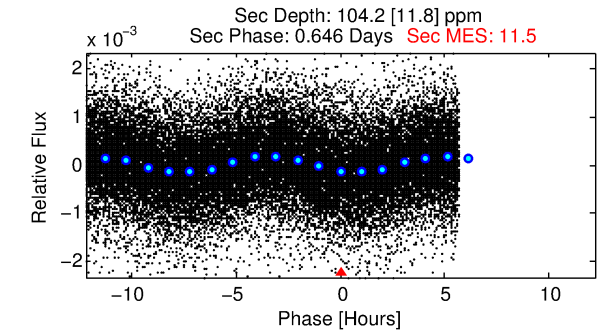
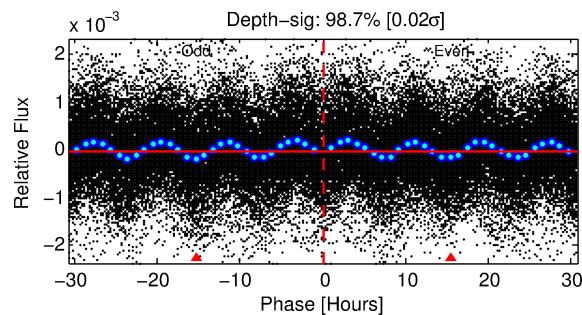
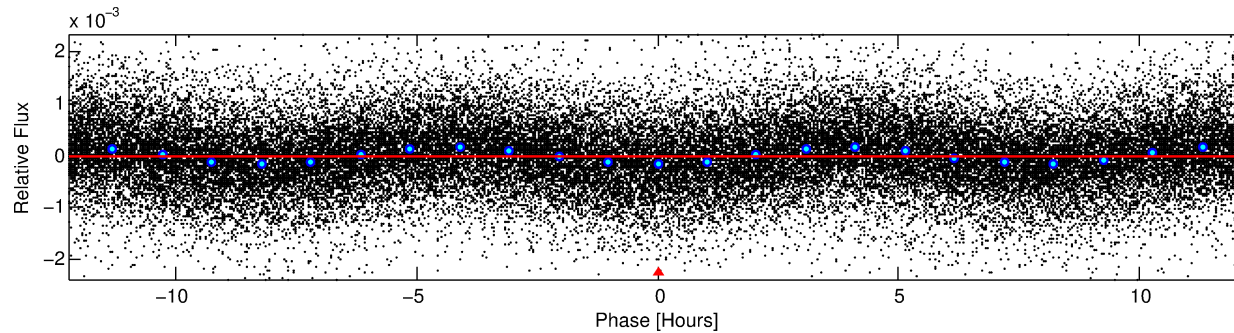
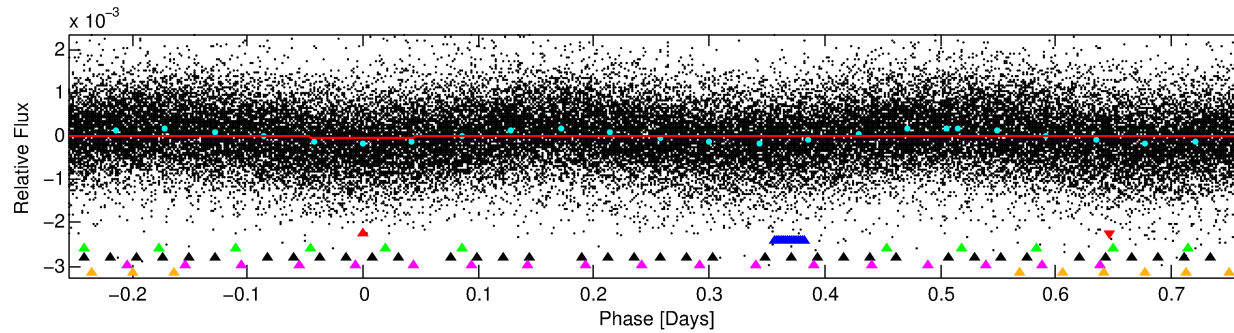
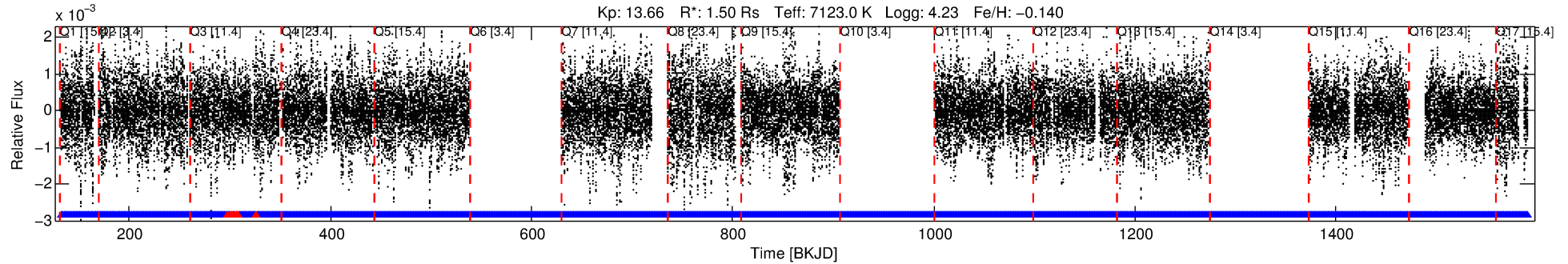
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004274480-01

No Significant Match Found

# DV One-Page Summary

KIC: 4274480 Candidate: 1 of 6 Period: 1.021 d



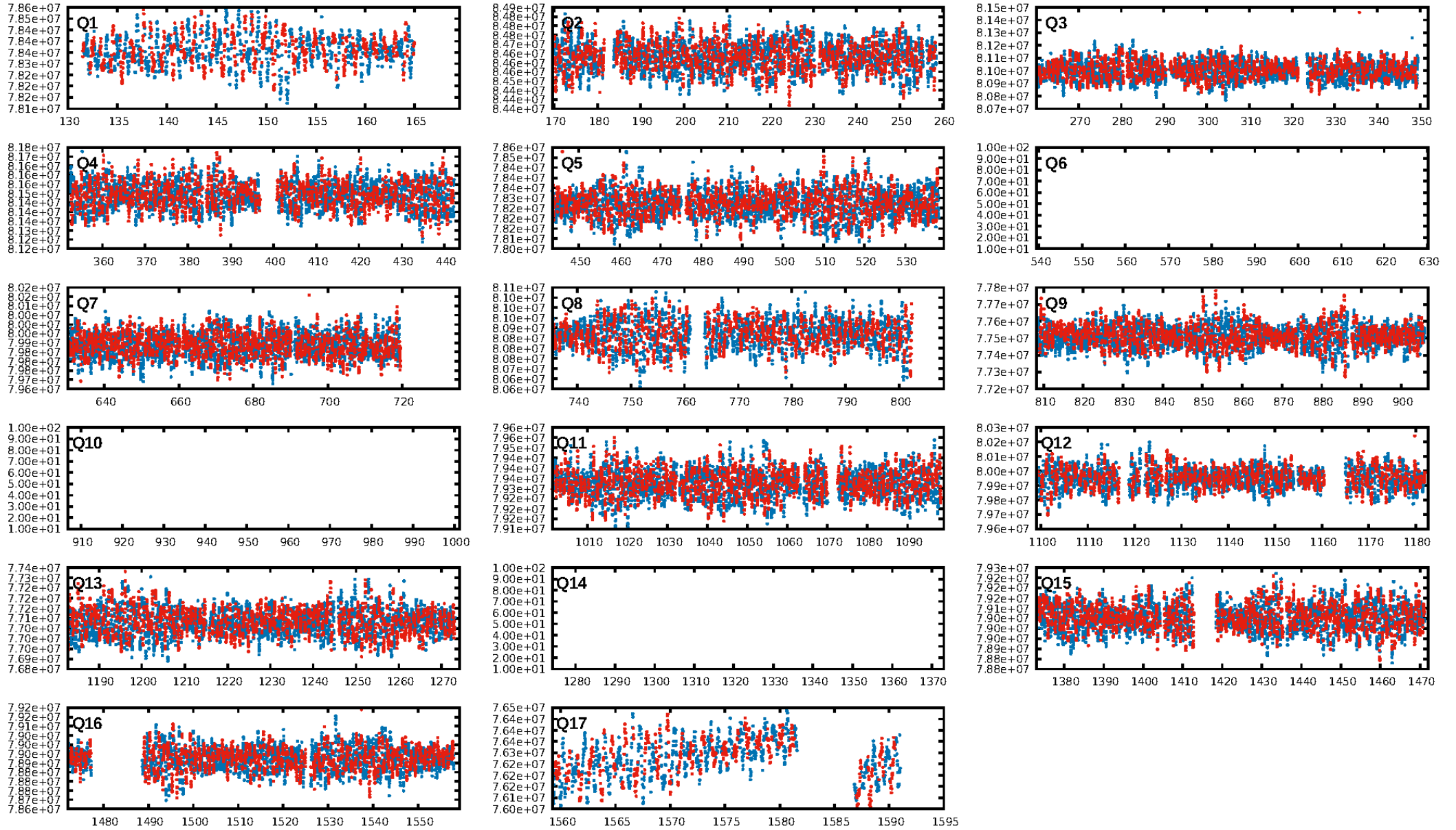
## DV Fit Results:

Period = 1.02092 [0.00003] d  
Epoch = 132.4231 [0.0058] BKJD  
Rp/R\* = 0.0047 [0.0022]  
a/R\* = 1.50 [2.18]  
b = 0.51 [3.81]  
Seff = 10563.55 [4394.96]  
Teq = 2585 [269] K  
Rp = 0.77 [0.44] Re  
a = 0.0222 [0.0060] AU  
Ag = 47.39 [47.80] [0.97 $\sigma$ ]  
**Teffp = 10487 [2488] K [3.1 $\sigma$ ]**

## DV Diagnostic Results:

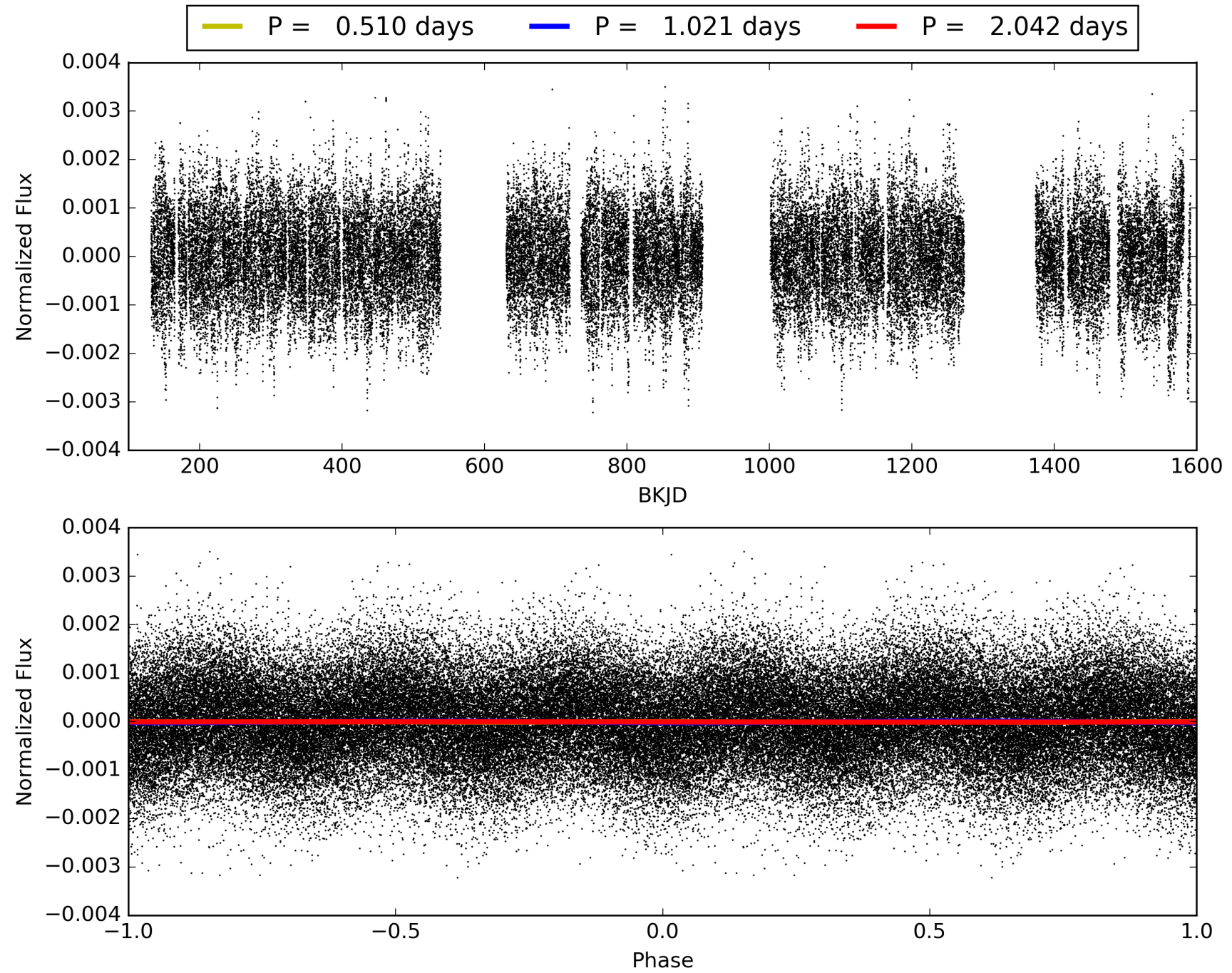
**ShortPeriod-sig: 0.0% [0.00 $\sigma$ ]**  
LongPeriod-sig: 100.0% [98.64 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.99 [986/993]  
GhostDiagnostic-chr: 4.753  
Centroid-sig: 17.6%  
Centroid-so: 1.497 arcsec [1.19 $\sigma$ ]  
OotOffset-rm: 0.315 arcsec [1.24 $\sigma$ ]  
OotOffset-st: 1/3/4/4 [12]  
KicOffset-rm: 0.352 arcsec [1.65 $\sigma$ ]  
KicOffset-st: 1/3/4/4 [12]  
DiffImageQuality-fgm: 0.83 [10/12]  
DiffImageOverlap-fno: 0.00 [0/14]

# TCE 004274480-01, PDC Light Curves





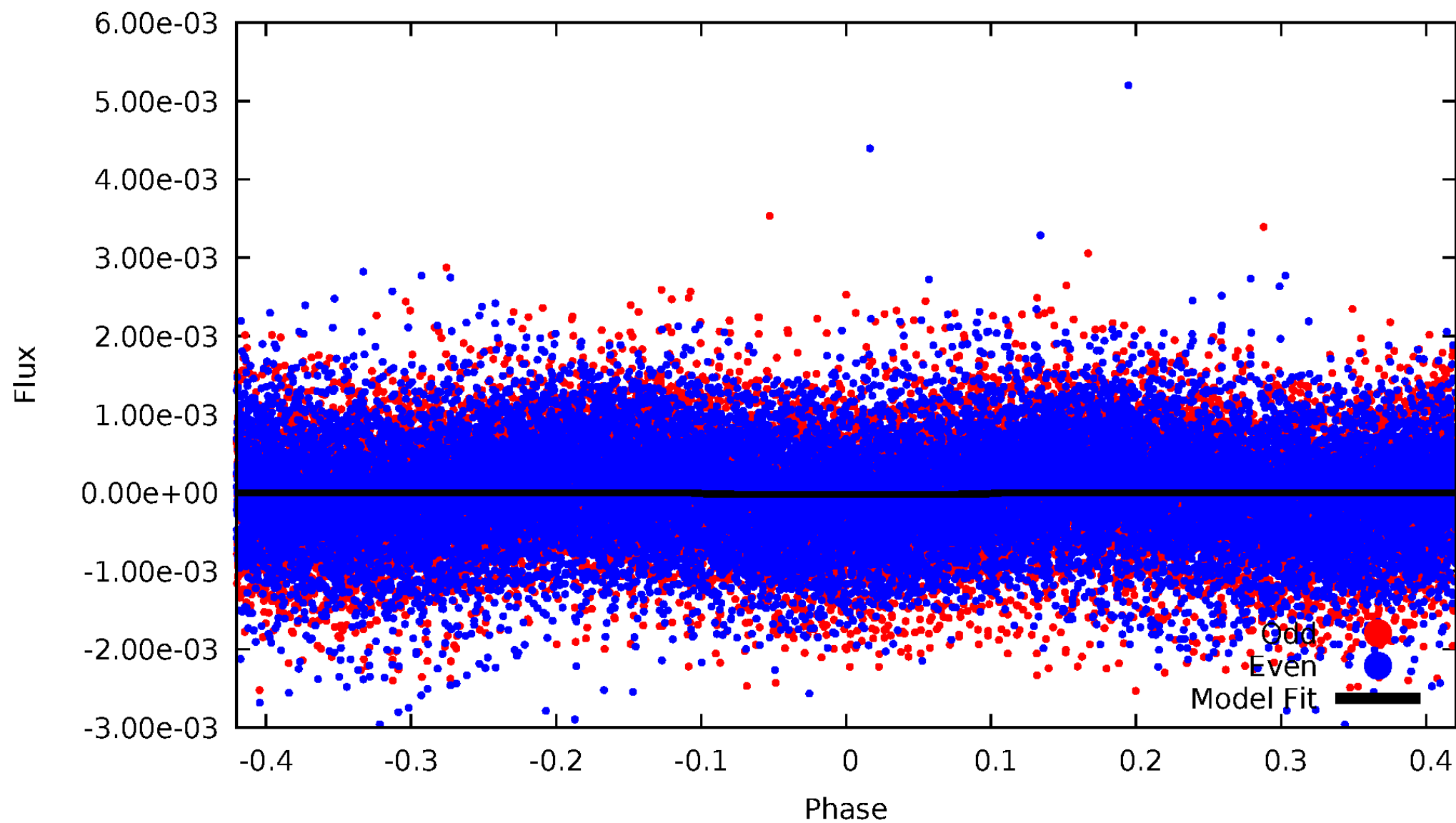
TCE 004274480-01





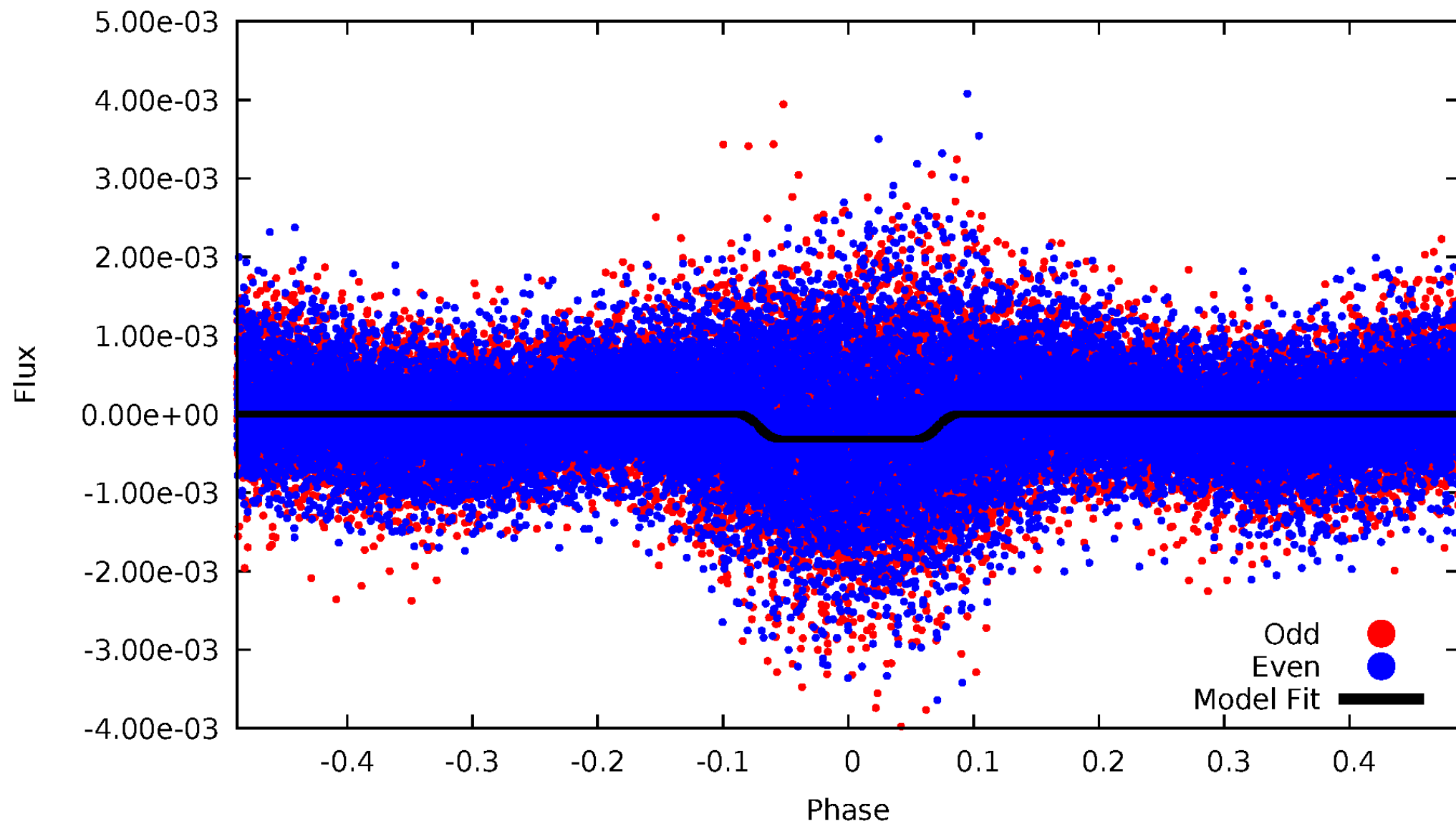
# DV Odd/Even

TCE 004274480-01

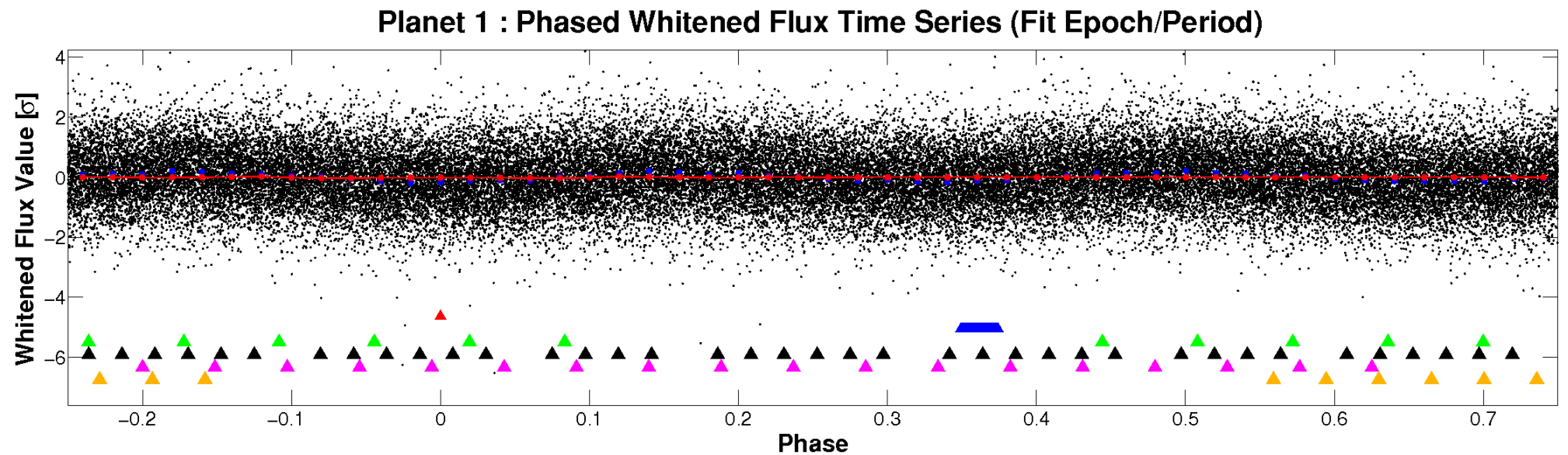
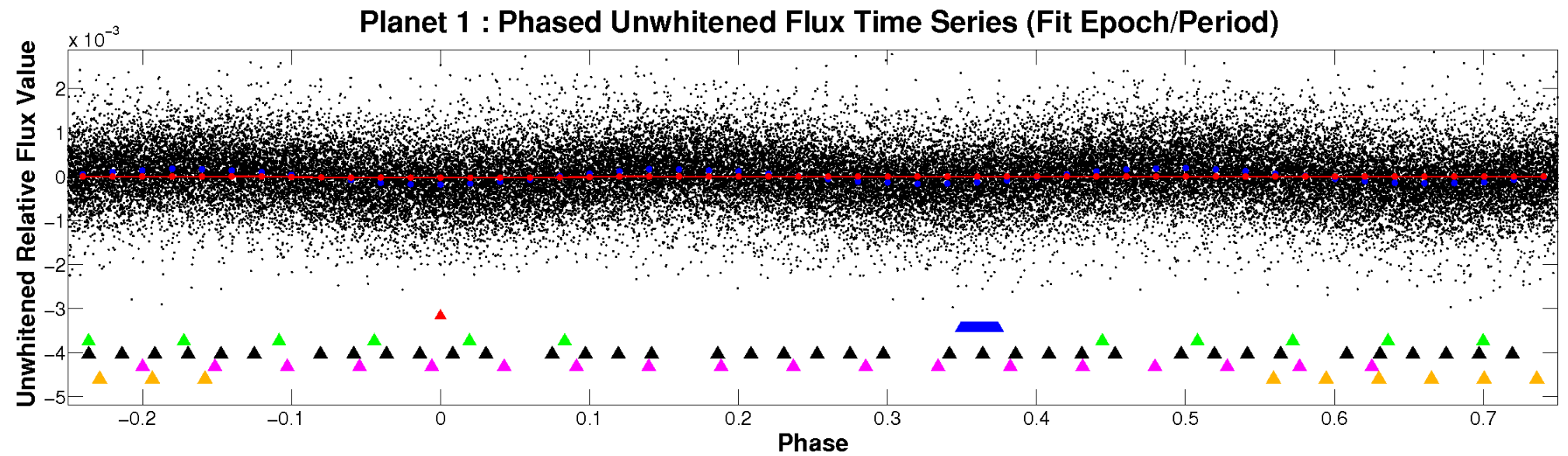


# ALT Odd/Even

TCE 004274480-01



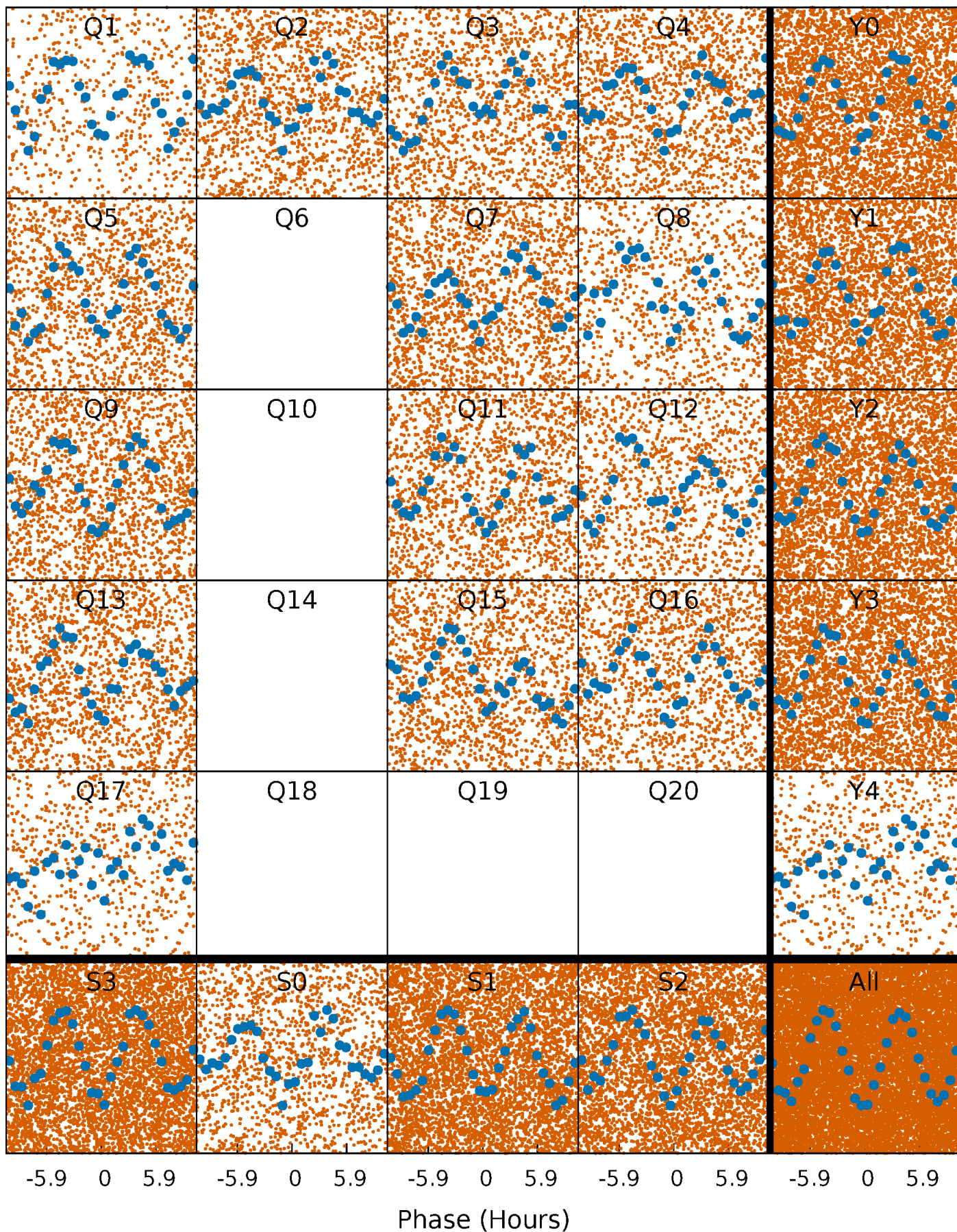
# Non-Whitened Vs. Whitened Light Curve





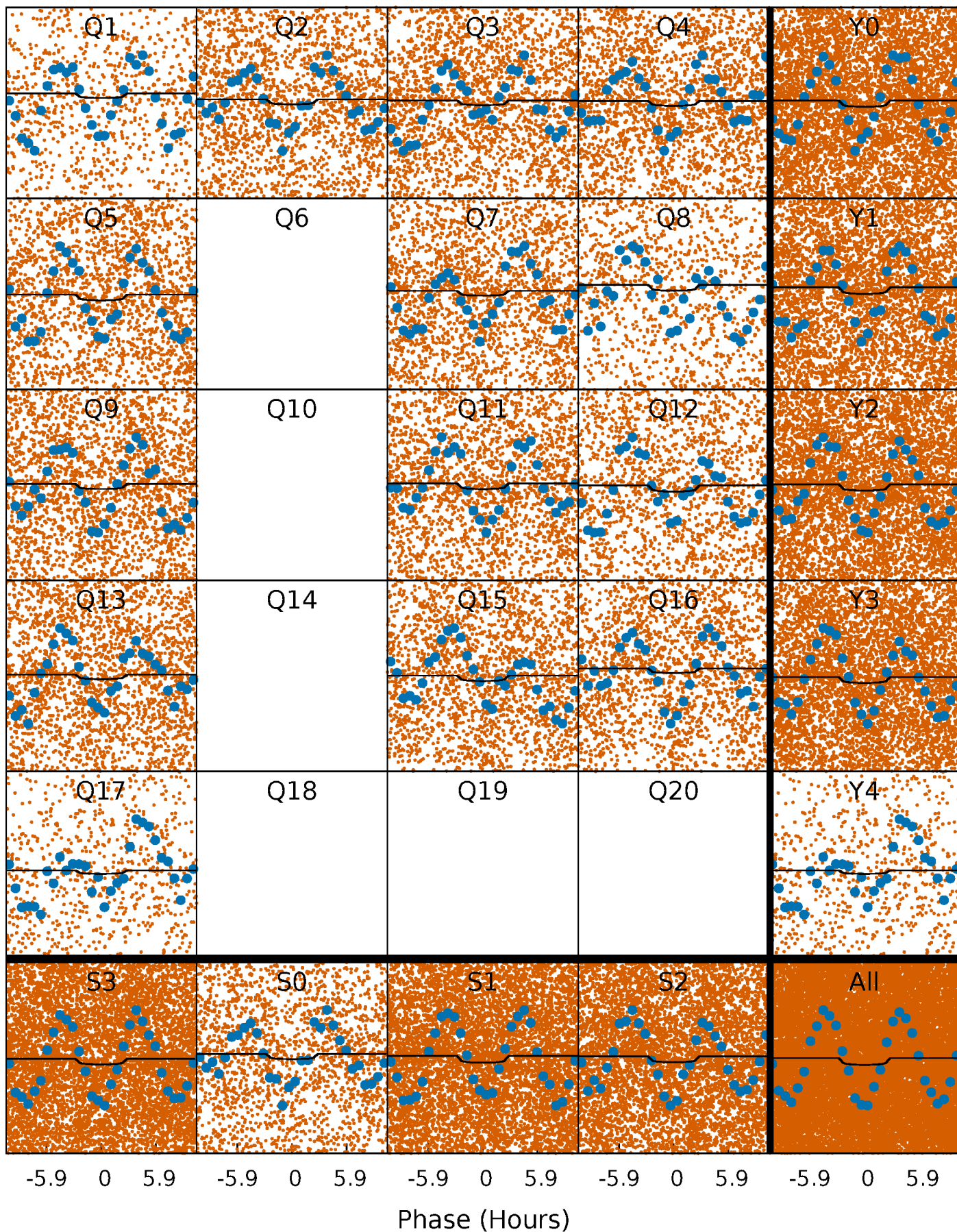
# PDC Quarter-Phased Transit Curves

TCE 004274480-01 P= 1.020922 Days  $T_0=132.423067$  (BKJD)



# DV Quarter-Phased Transit Curves

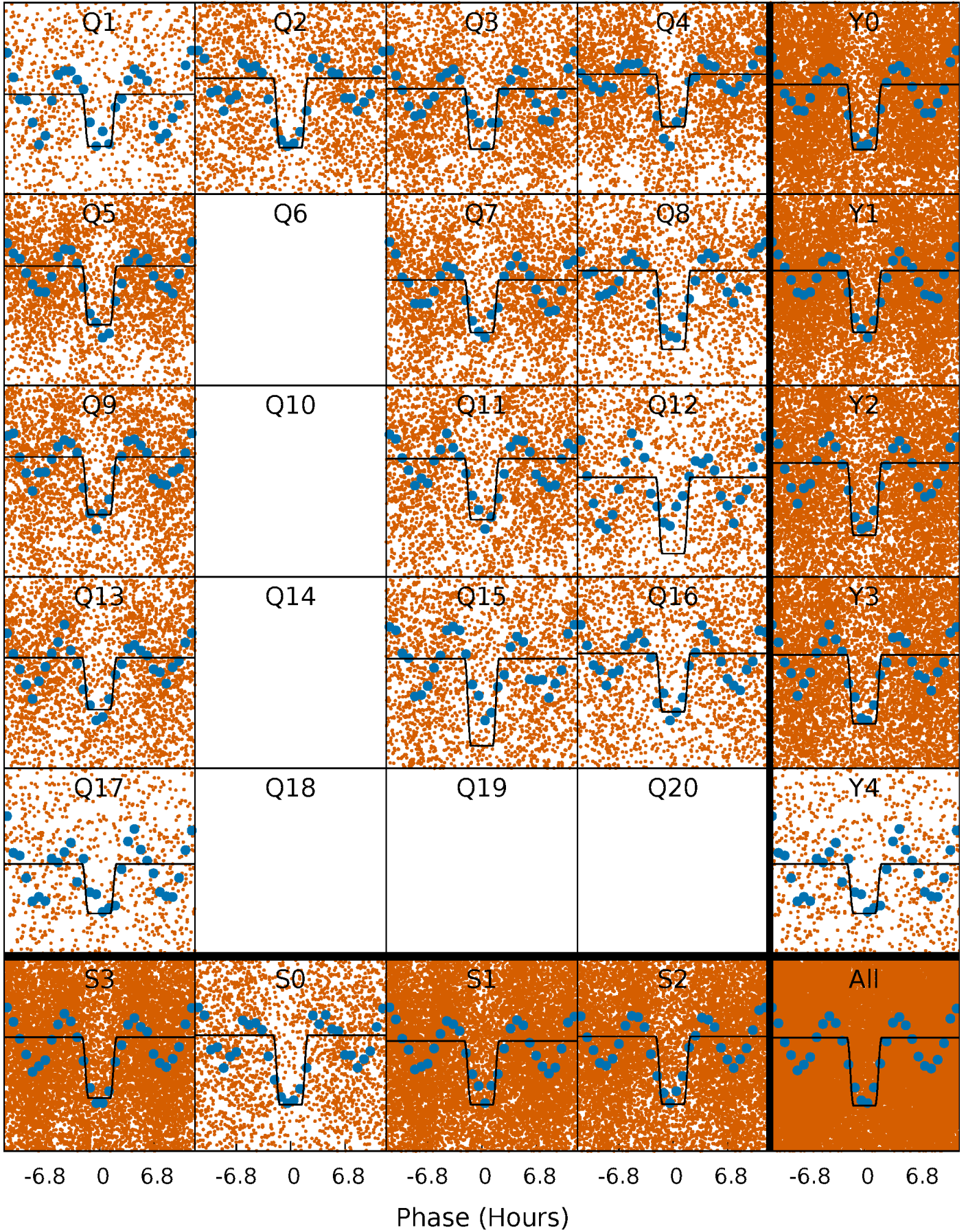
TCE 004274480-01 P= 1.020922 Days  $T_0=132.423067$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 004274480-01   P= 1.020937 Days    $T_0=132.406682$  (BKJD)

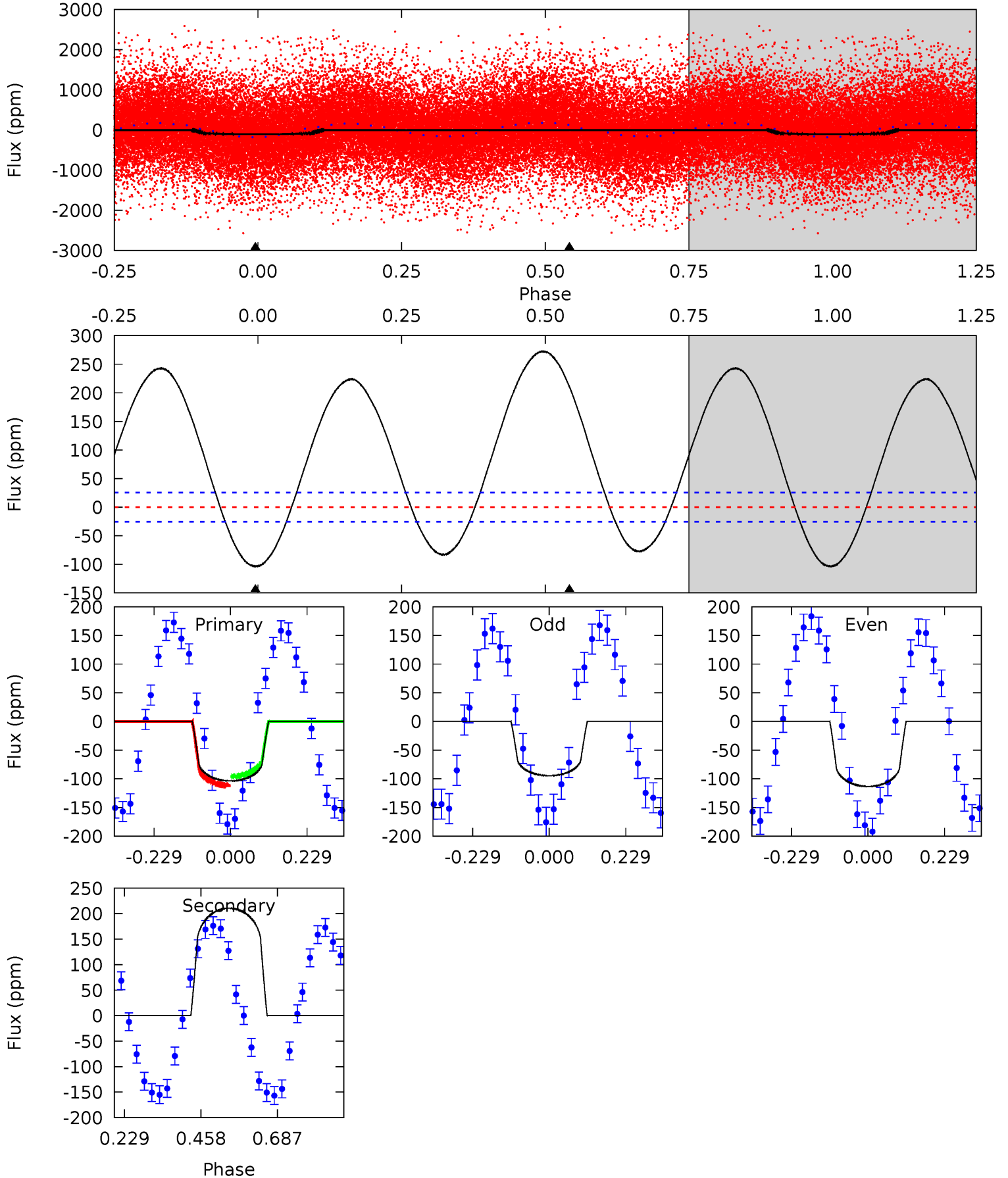




# DV Model-Shift Uniqueness Test

004274480-01, P = 1.020922 Days, E = 131.402145 Days

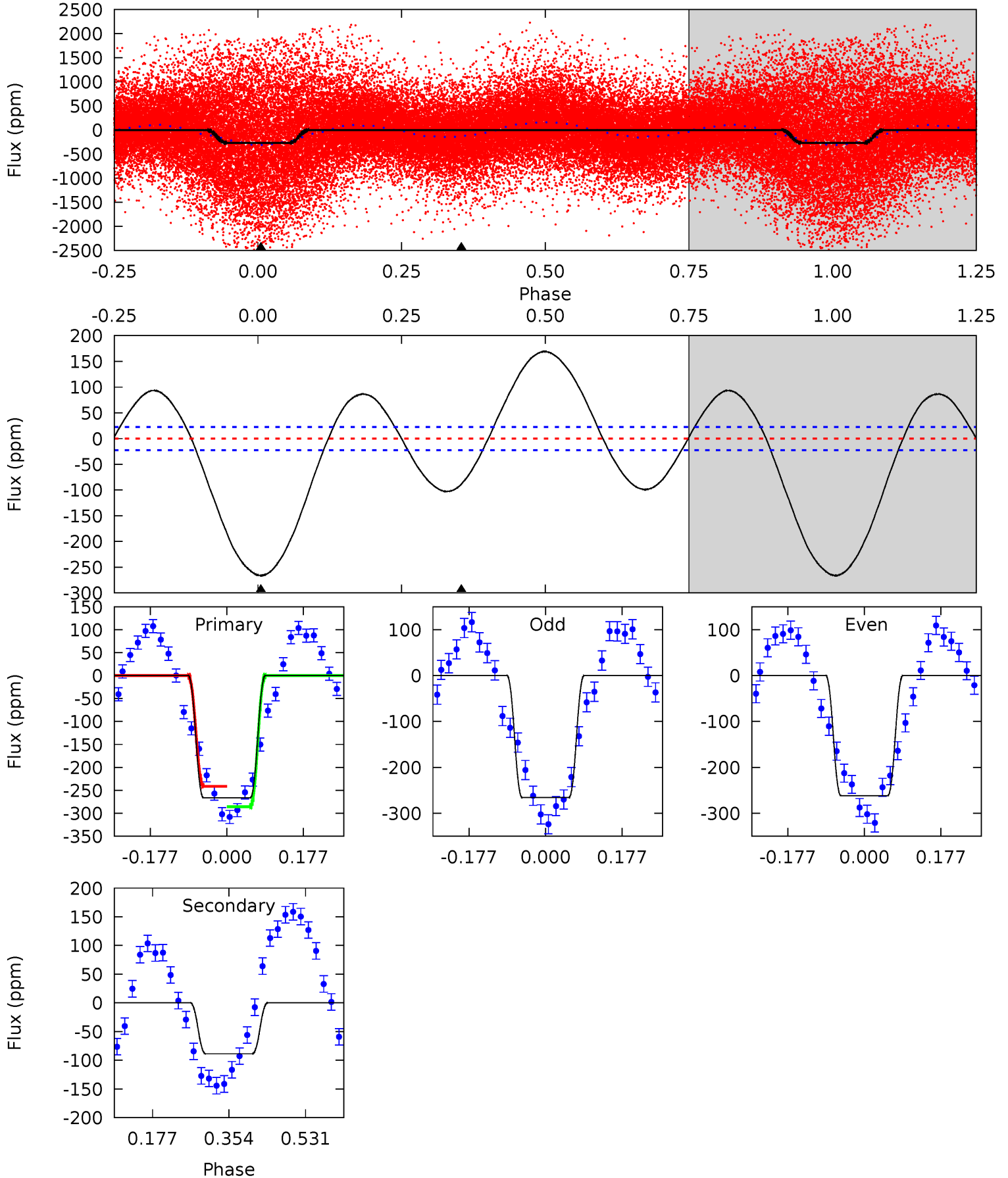
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.7	-36.1	0	0	4.39	1.20	12.4	17.7	17.7	-36.1	-36.1	1.60	1.07	0.72	1.37



# Alt Model-Shift Uniqueness Test

004274480-01, P = 1.020937 Days, E = 131.385745 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
52.3	17.4	0	0	4.44	1.35	14.8	52.3	52.3	17.4	17.4	0.38	1.01	0.39	4.51



### Stellar Parameters For KIC 004274480

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7123^{+200}_{-300}$	$4.230^{+0.108}_{-0.201}$	$-0.140^{+0.250}_{-0.350}$	$1.501^{+0.501}_{-0.231}$	$1.402^{+0.218}_{-0.218}$	$0.584^{+0.288}_{-0.303}$
	+3%/-4%	+3%/-5%	+179%/-250%	+33%/-15%	+16%/-16%	+49%/-52%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 004274480-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$211 \pm 6$	$0.80^{+0.40}_{-0.35}$	$3635^{+275}_{-237}$	$-16062^{+4543}_{-17109}$	$-86.056^{+47.467}_{-180.687}$
Alt.	$-89 \pm 5$	$2.96^{+0.65}_{-0.46}$	$3636^{+278}_{-226}$	$5024^{+368}_{-319}$	$2.653^{+1.092}_{-0.795}$

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



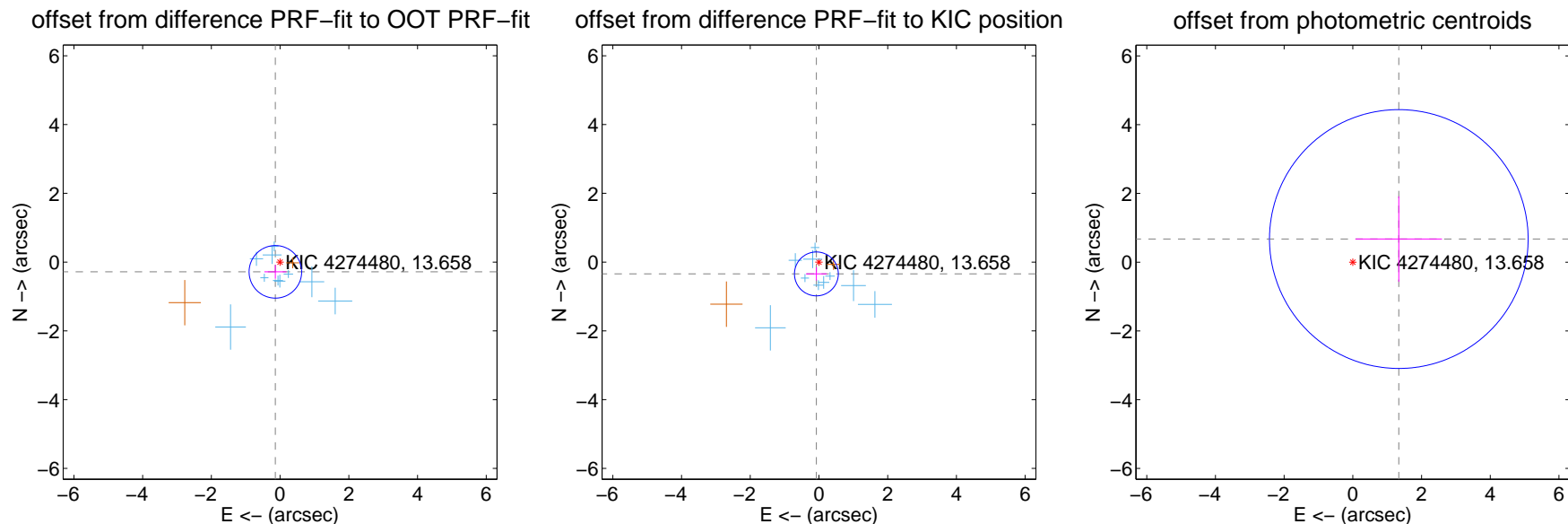
## DV Centroid Data

Supplemental centroid analysis for 004274480-01. Kepler magnitude: 13.66. Transit SNR 3.04

There are 10 quarters with good PRF difference image offsets

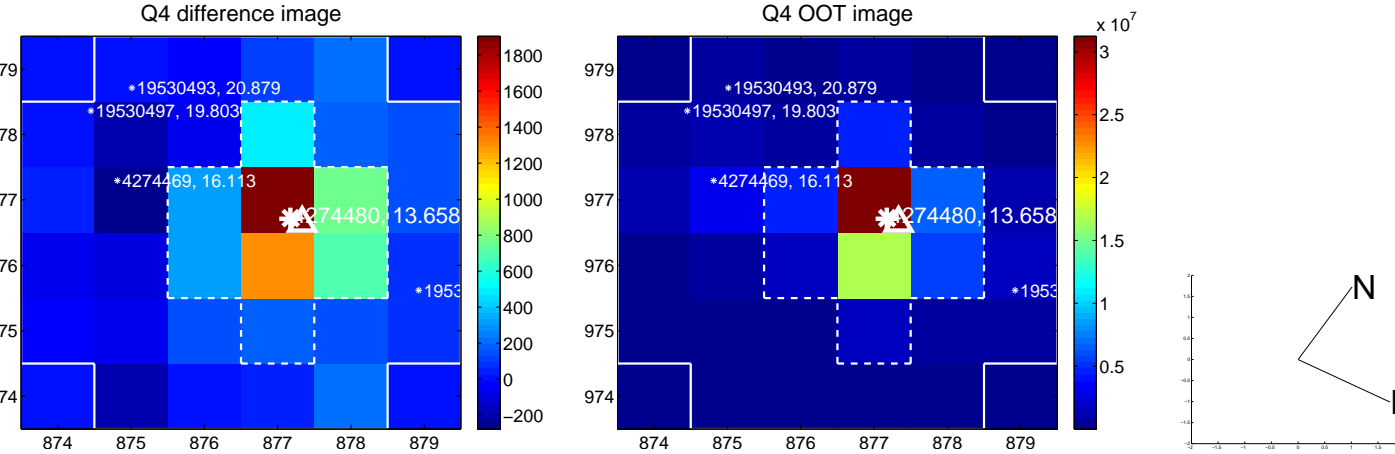
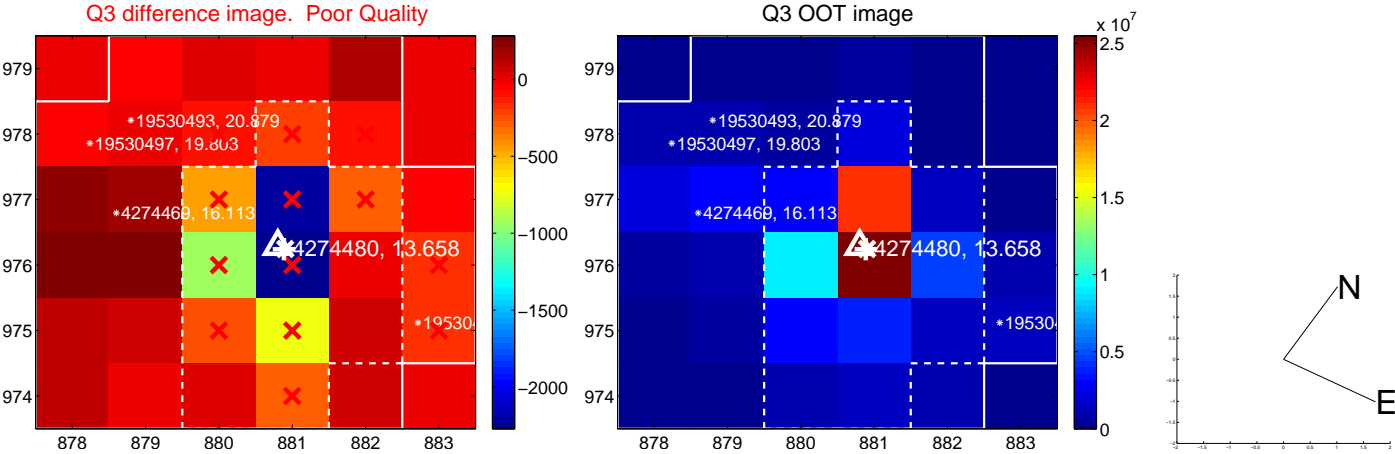
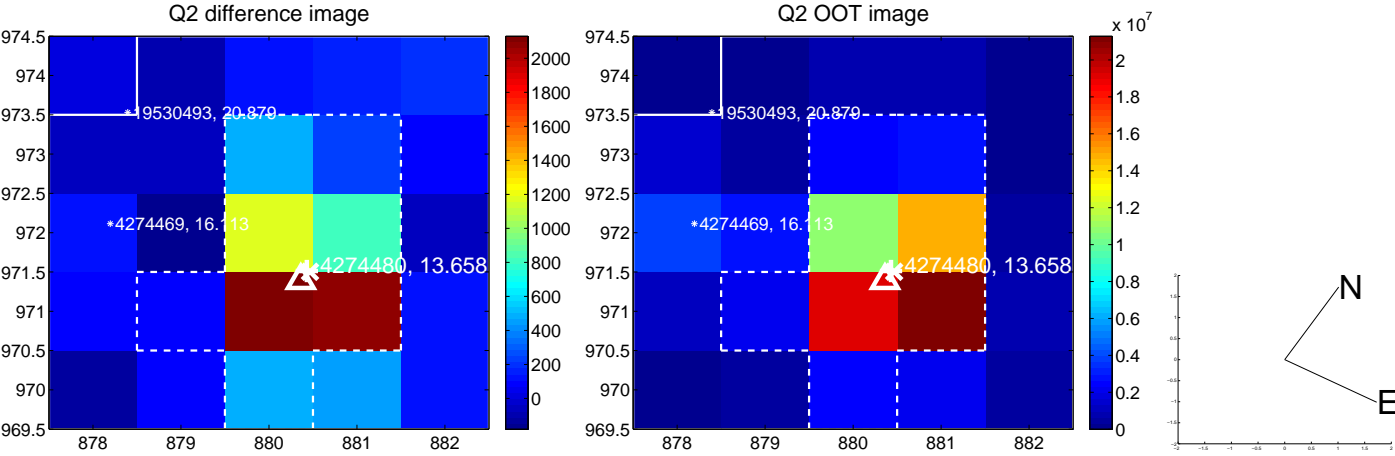
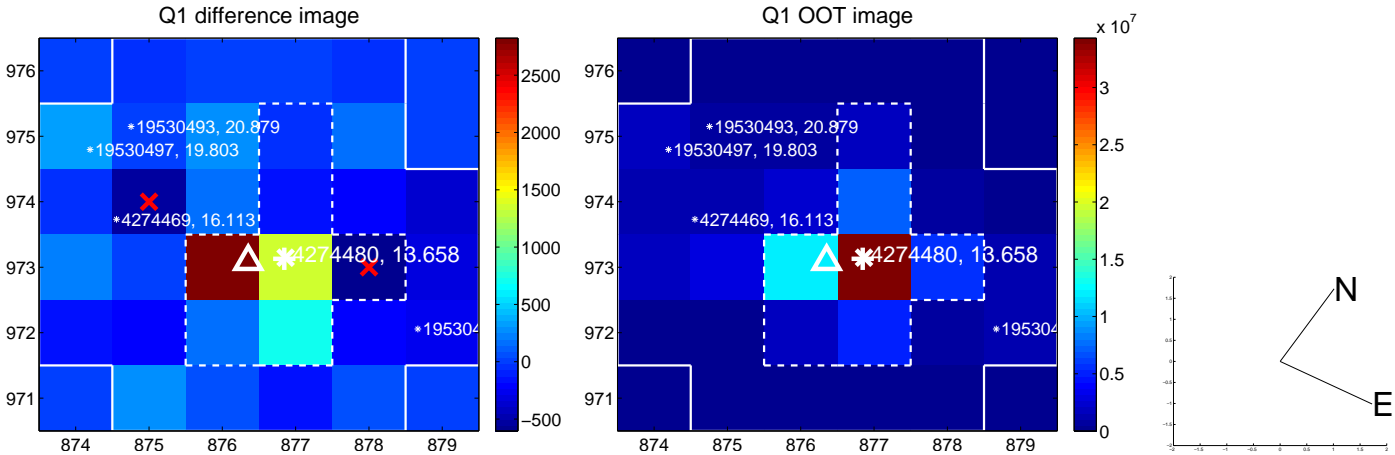
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.315 \pm 0.255$	1.24	$0.138 \pm 0.321$	$-0.283 \pm 0.202$
PRF-fit source offset from KIC position	$0.352 \pm 0.213$	1.65	$0.075 \pm 0.301$	$-0.344 \pm 0.193$
photometric centroid source offset	$1.50 \pm 1.25$	1.19	$-1.34 \pm 1.26$	$0.67 \pm 1.24$

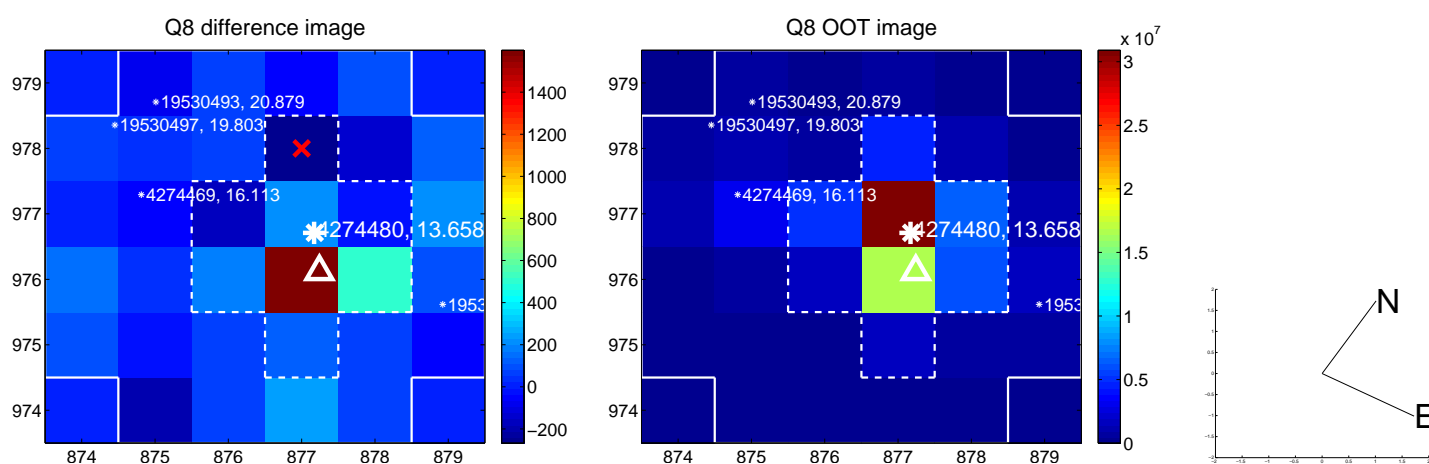
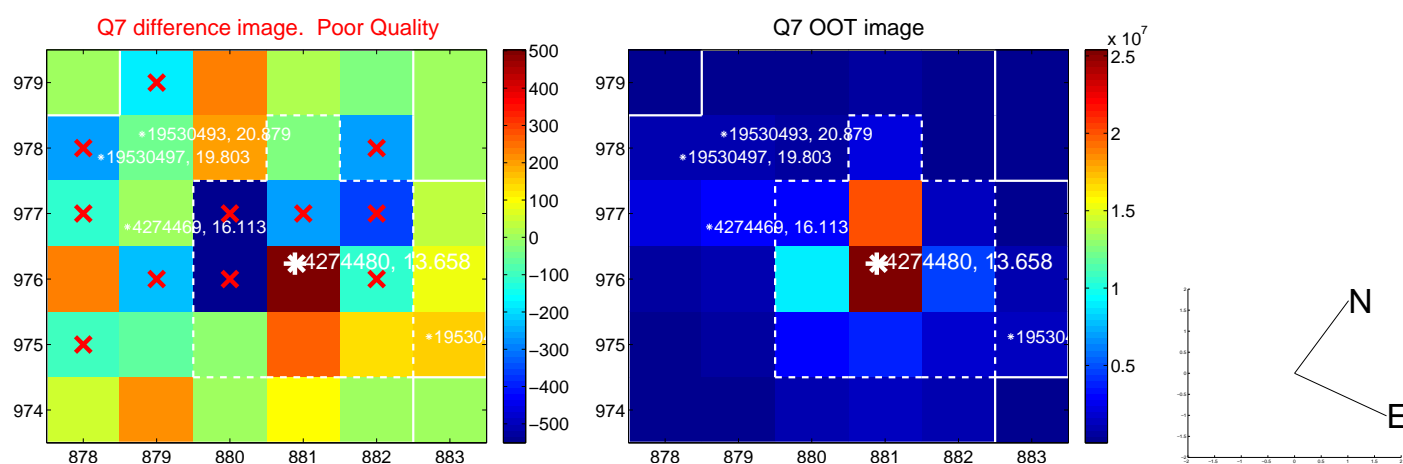
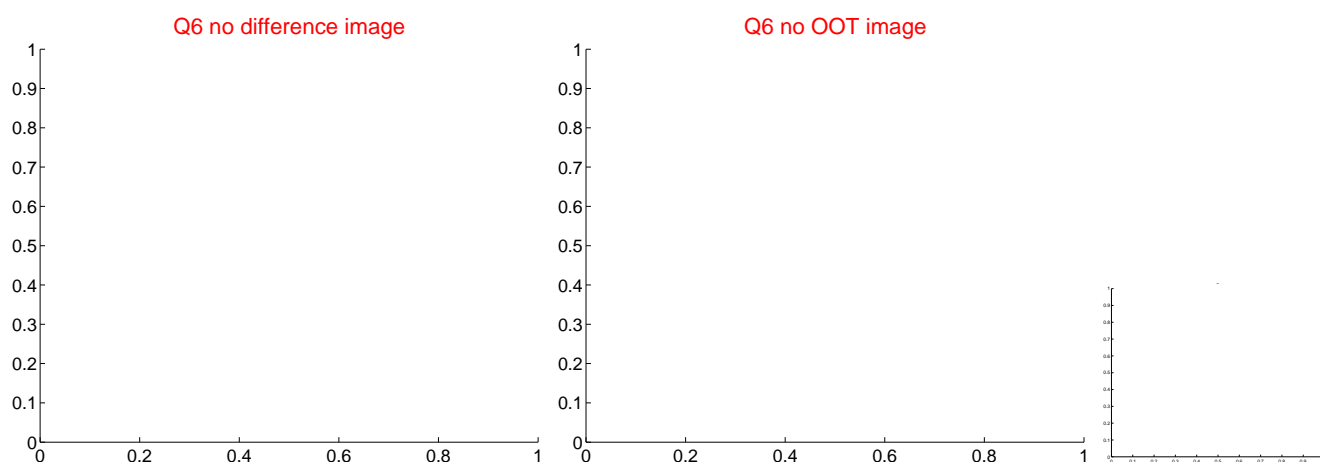
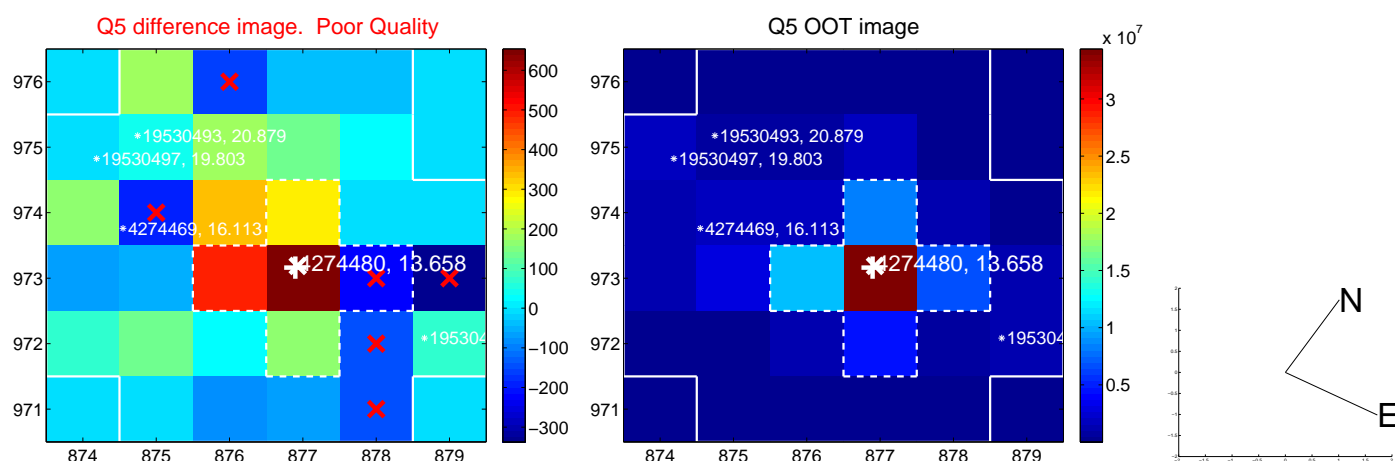


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

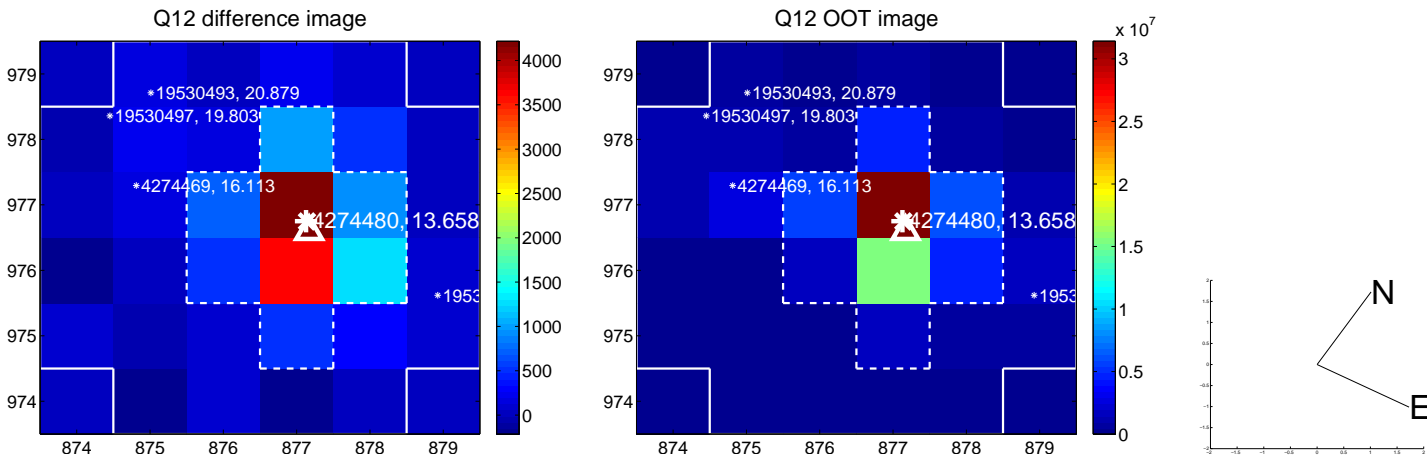
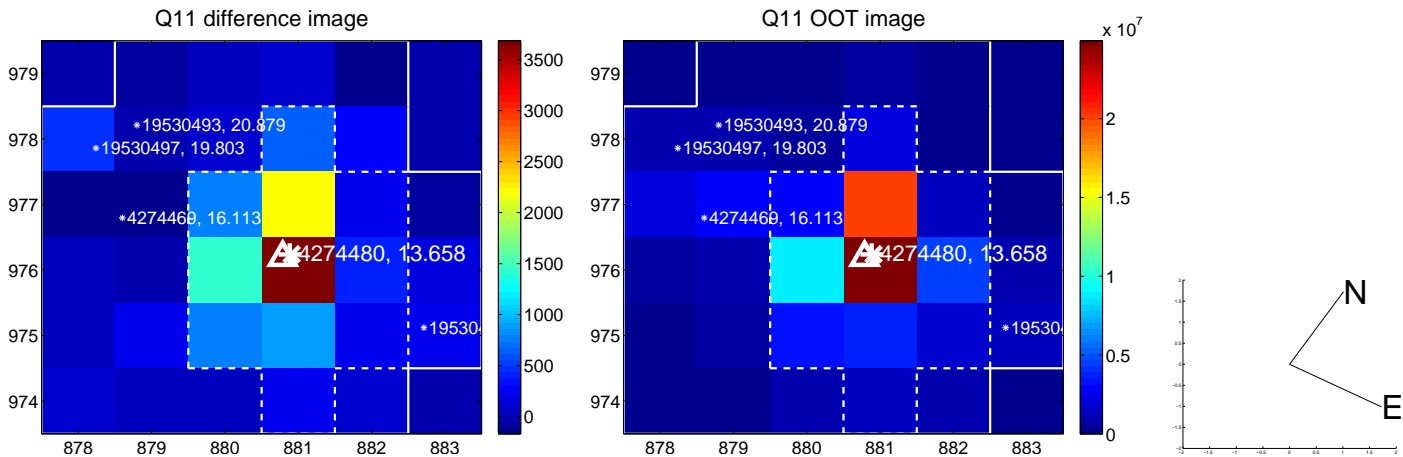
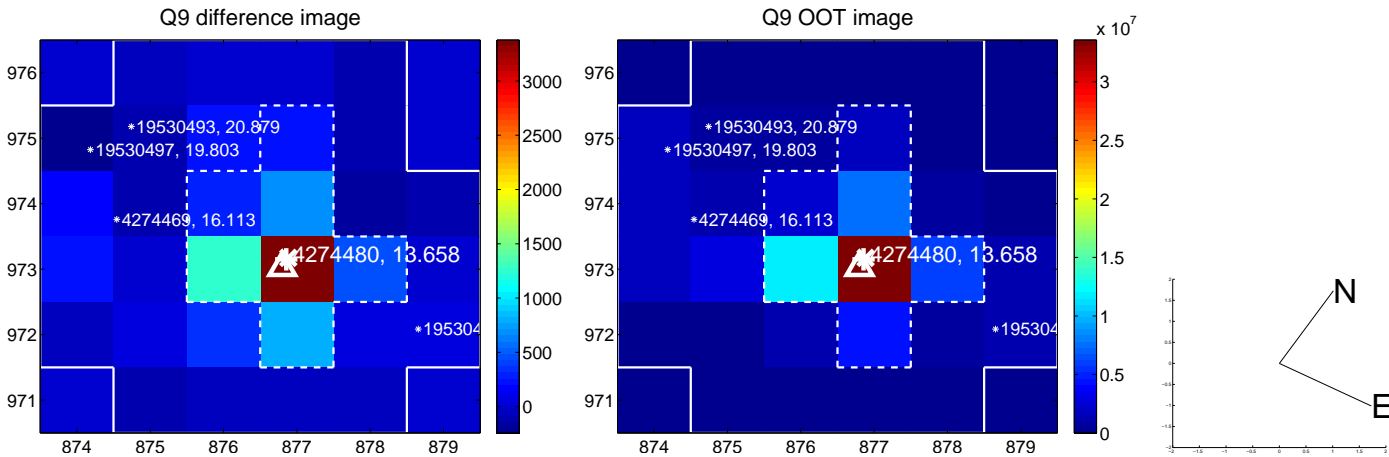


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

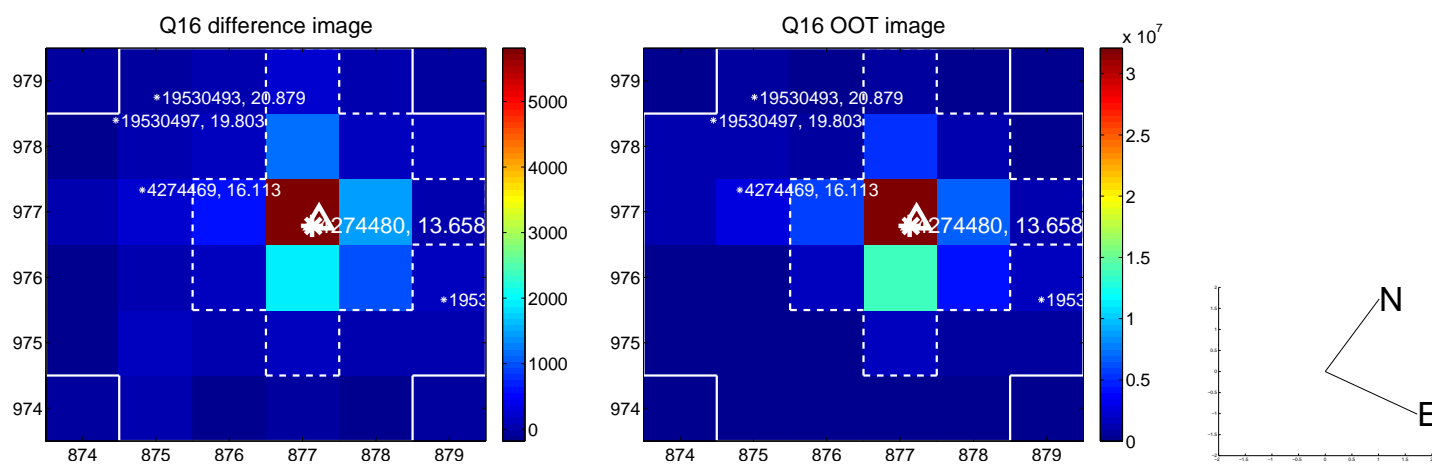
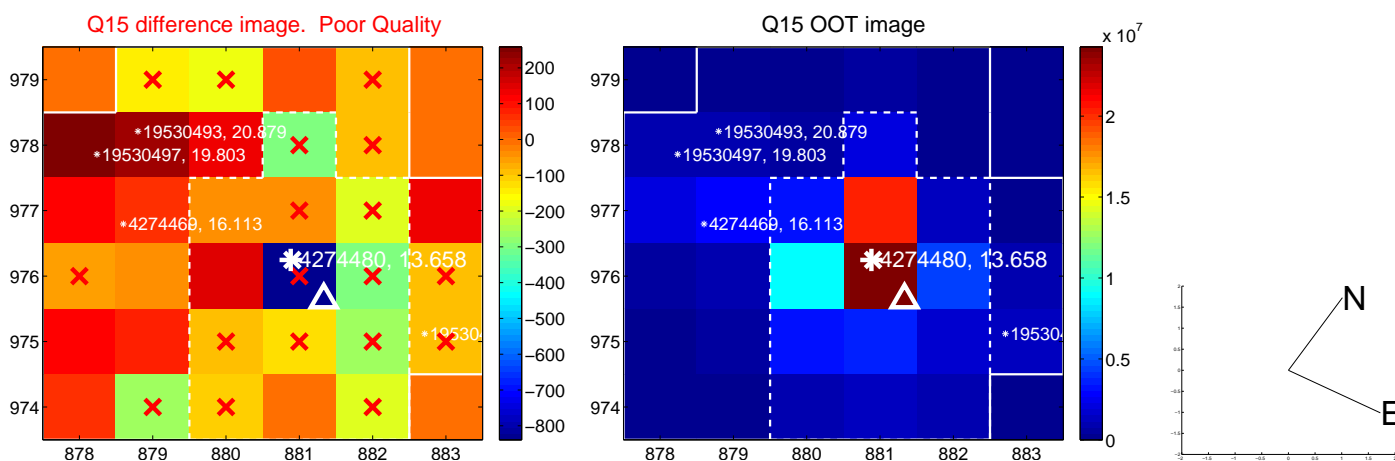
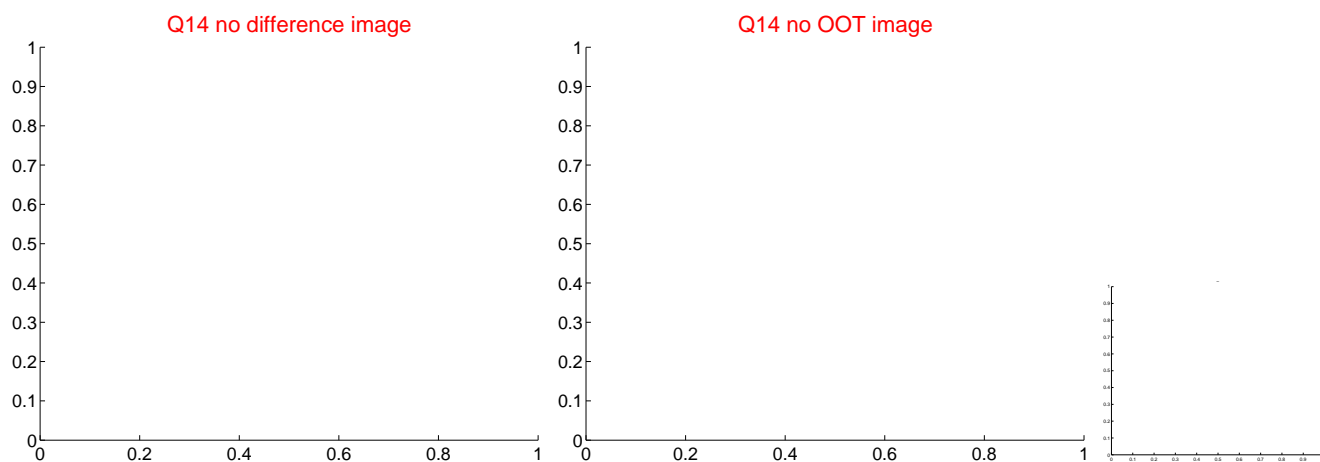
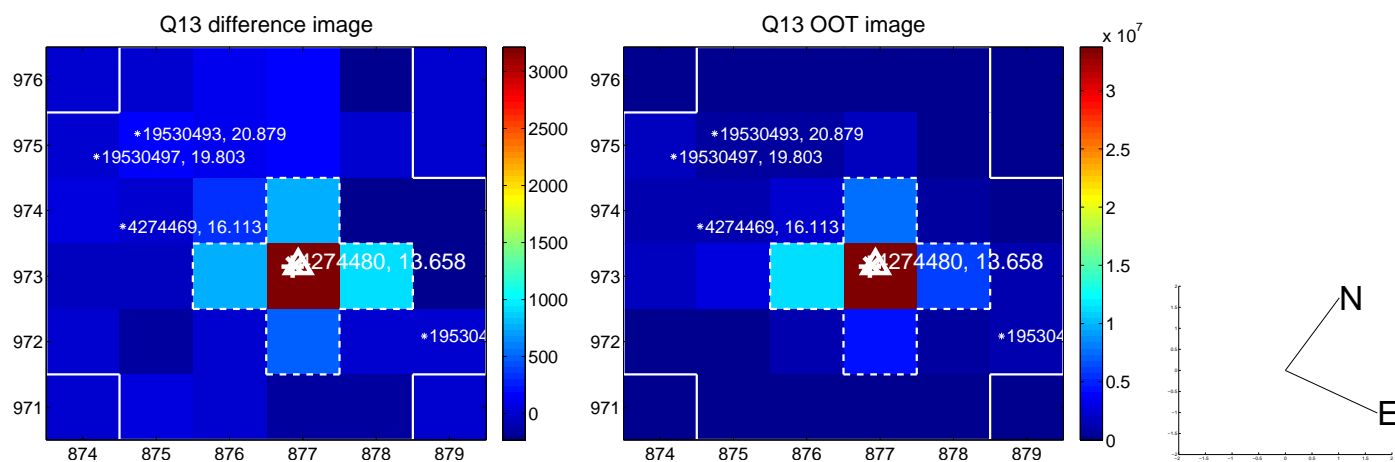




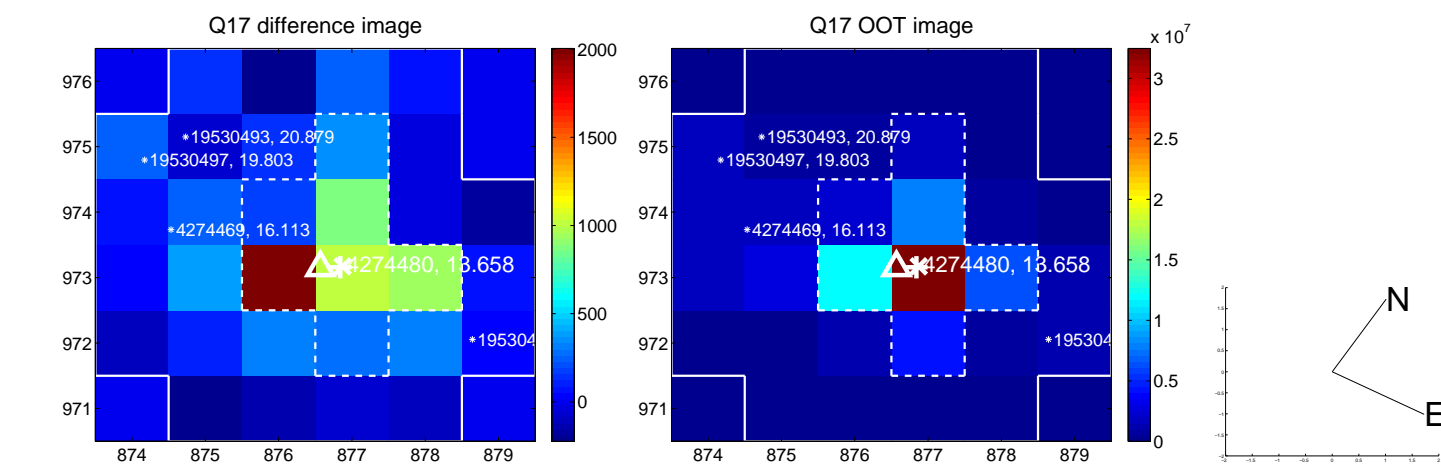
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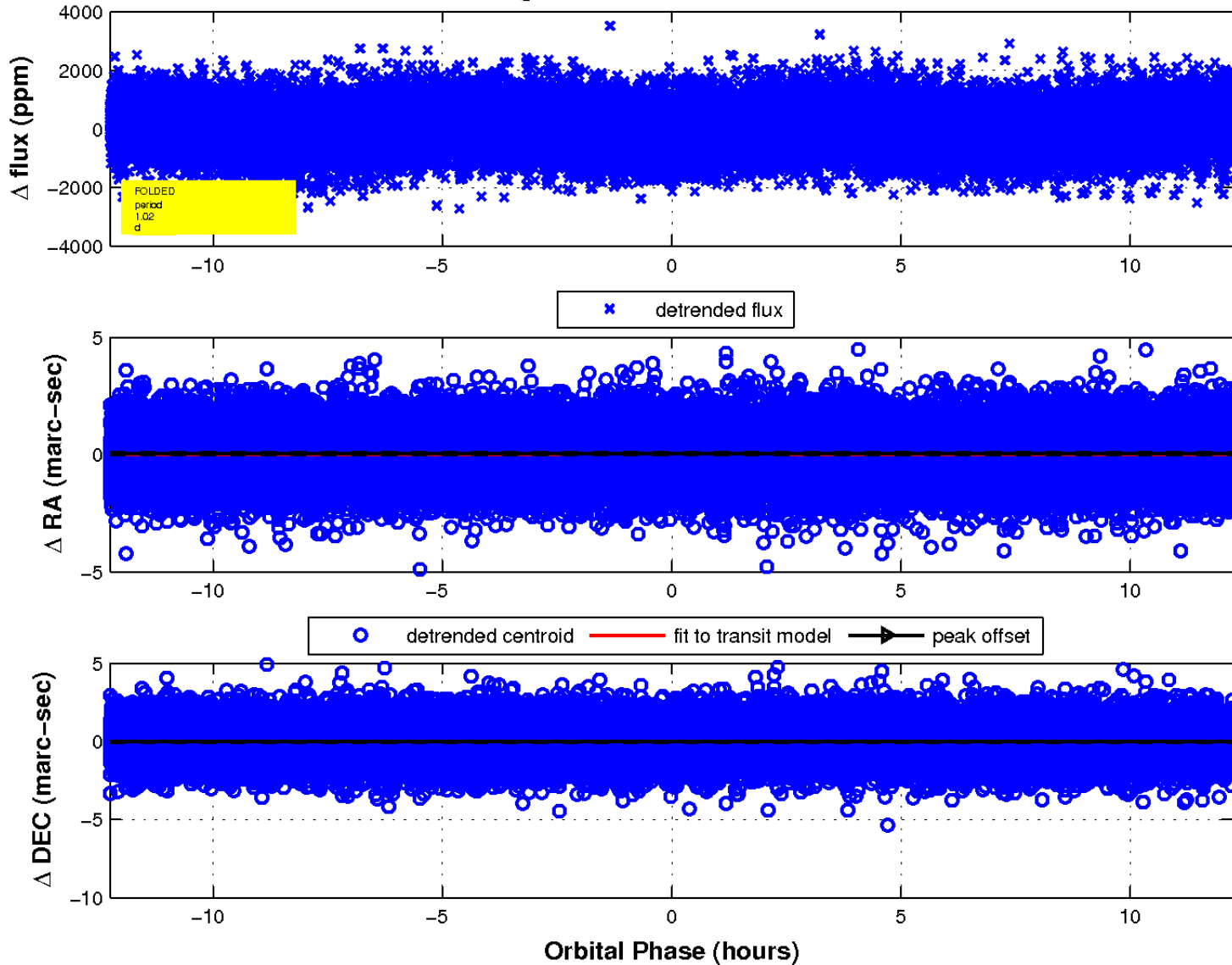
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

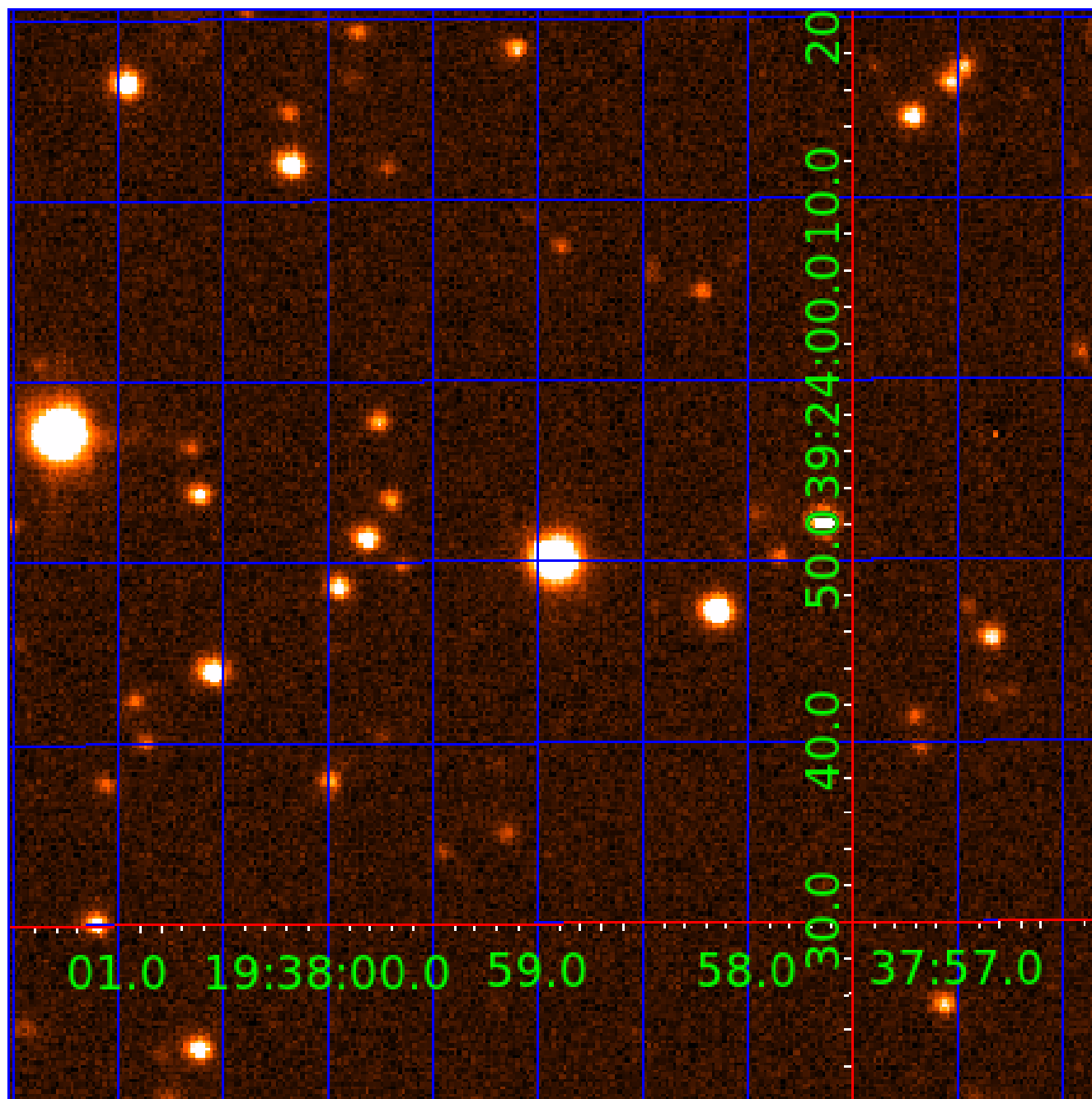


fluxWeightedCentroids, Planet 1 of 6



UKIRT Image

Declination



# KIC 004274480

## Q1-17 DR25 TCE Parameters

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

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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004274480-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT
004274480-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004274480-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

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

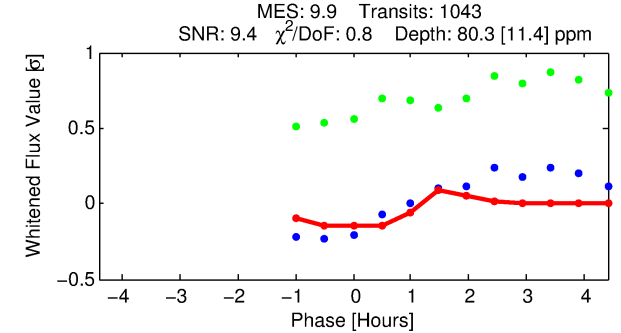
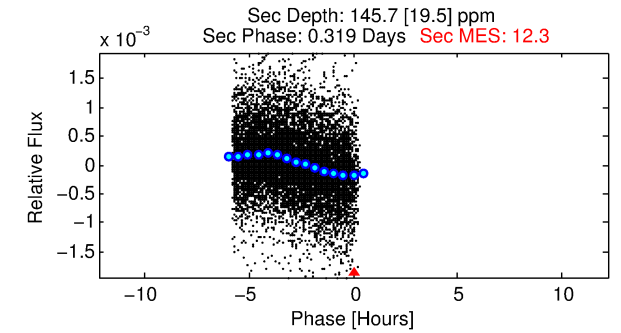
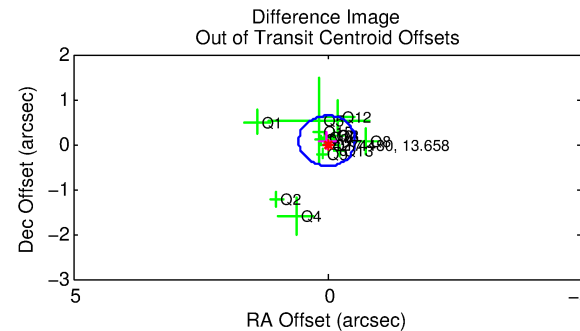
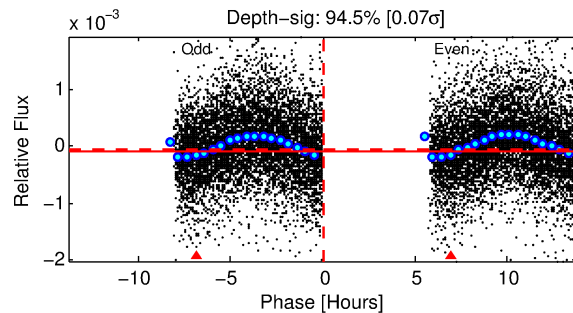
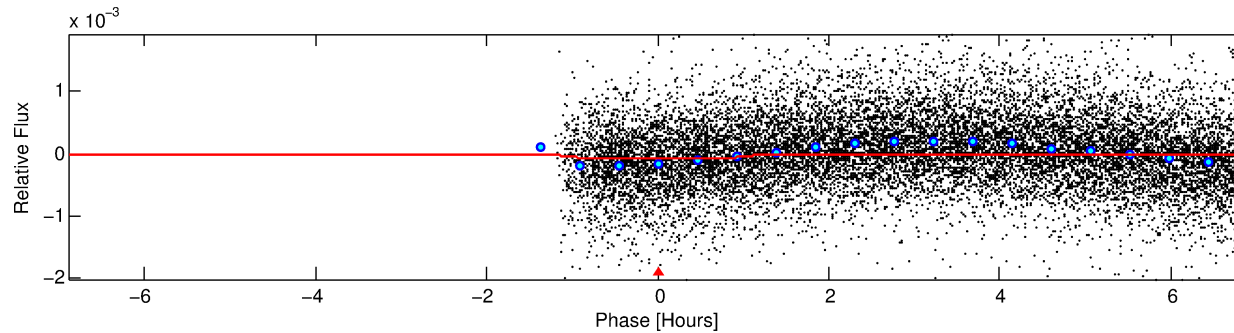
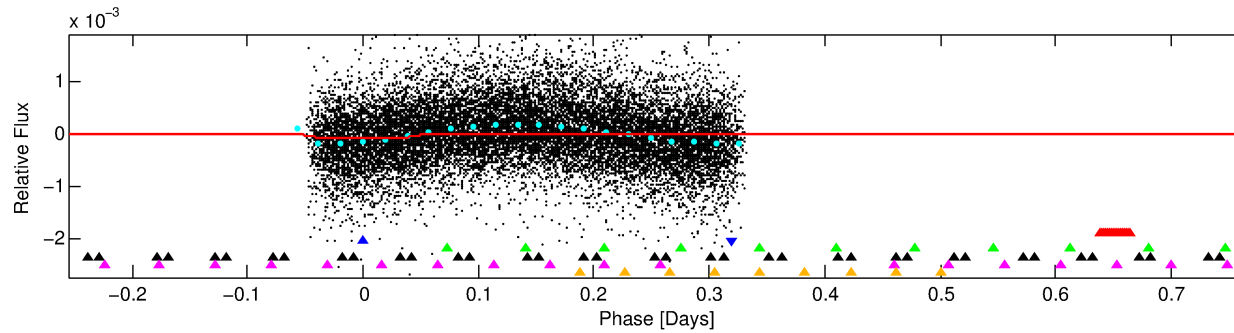
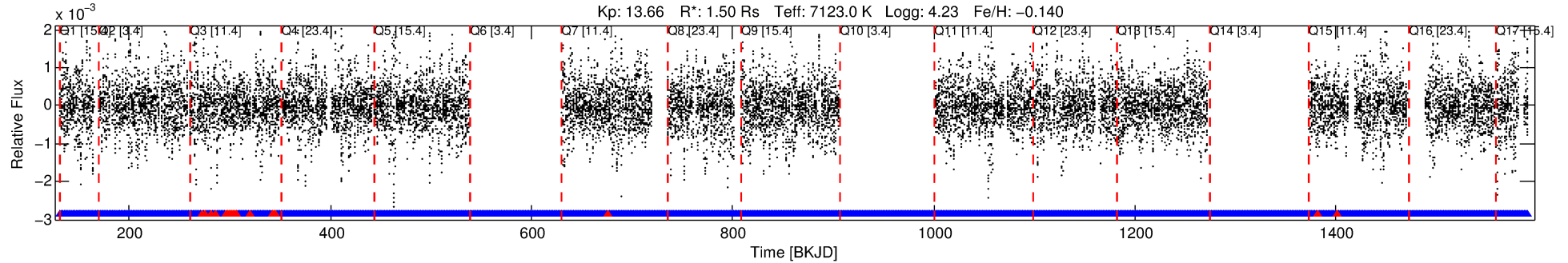
## Ephemeris Match Information For 004274480-02

No Significant Match Found



# DV One-Page Summary

KIC: 4274480 Candidate: 2 of 6 Period: 1.021 d



## DV Fit Results:

Period = 1.02090 [0.00001] d  
Epoch = 131.7842 [0.0025] BKJD  
Rp/R\* = 0.0095 [0.0038]  
a/R\* = 1.81 [3.04]  
b = 0.90 [0.51]  
Seff = 10563.80 [4395.06]  
Teff = 2585 [269] K  
Rp = 1.56 [0.81] Re  
a = 0.0222 [0.0060] AU  
Ag = 16.15 [14.28] [1.06 $\sigma$ ]  
**Teffp = 8012 [1635] K [3.28 $\sigma$ ]**

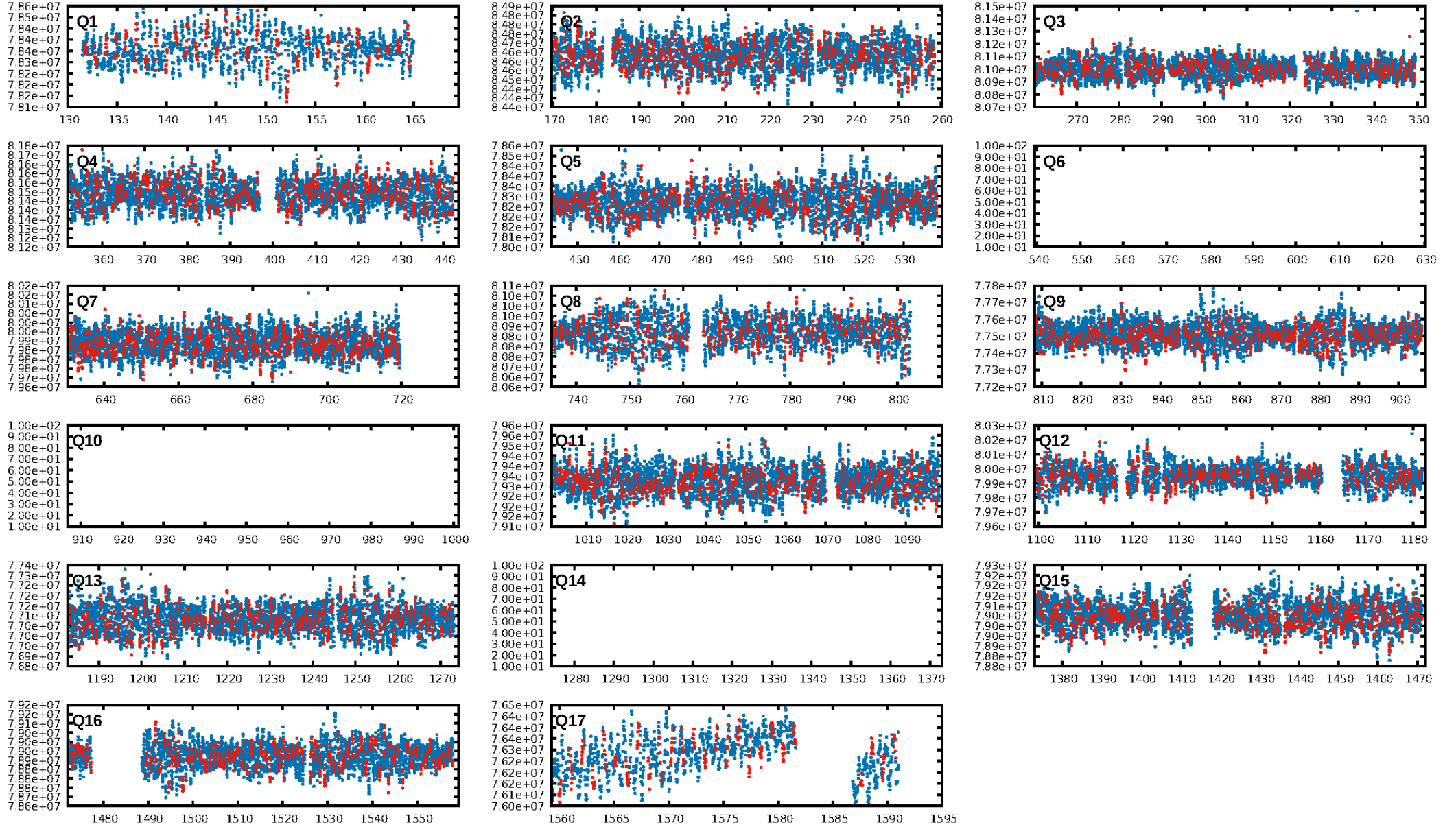
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
**LongPeriod-sig: 0.0% [0.00 $\sigma$ ]**  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.98 [963/984]  
**GhostDiagnostic-chr: 0.5398**  
Centroid-sig: 84.2%  
Centroid-so: 0.194 arcsec [0.35 $\sigma$ ]  
OotOffset-rm: 0.076 arcsec [0.41 $\sigma$ ]  
OotOffset-st: 1/4/4/5 [14]  
KicOffset-rm: 0.057 arcsec [0.35 $\sigma$ ]  
KicOffset-st: 1/4/4/5 [14]  
DiffImageQuality-fgm: 0.86 [12/14]  
DiffImageOverlap-fno: 0.36 [5/14]

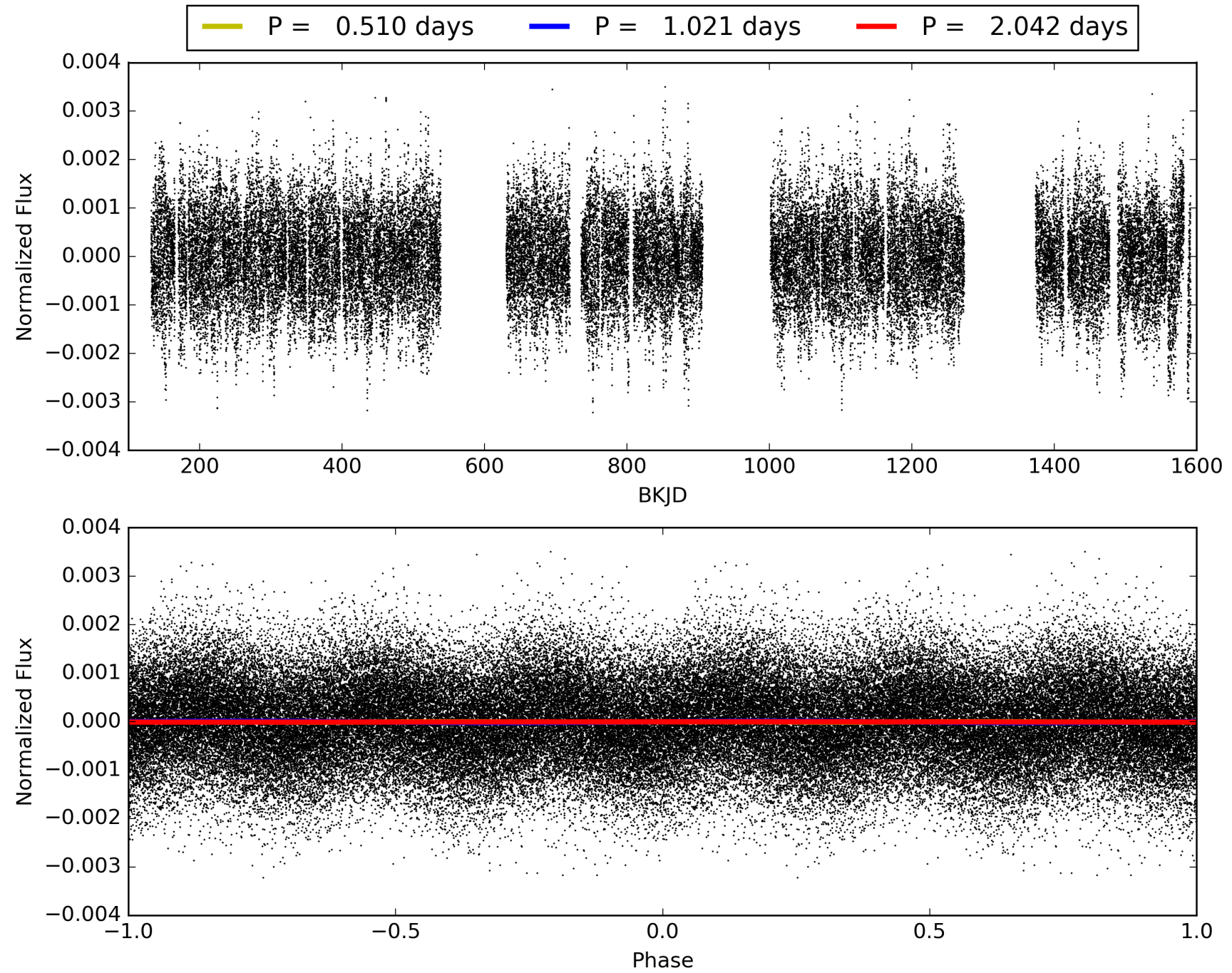
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:35:56 Z

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

# TCE 004274480-02, PDC Light Curves

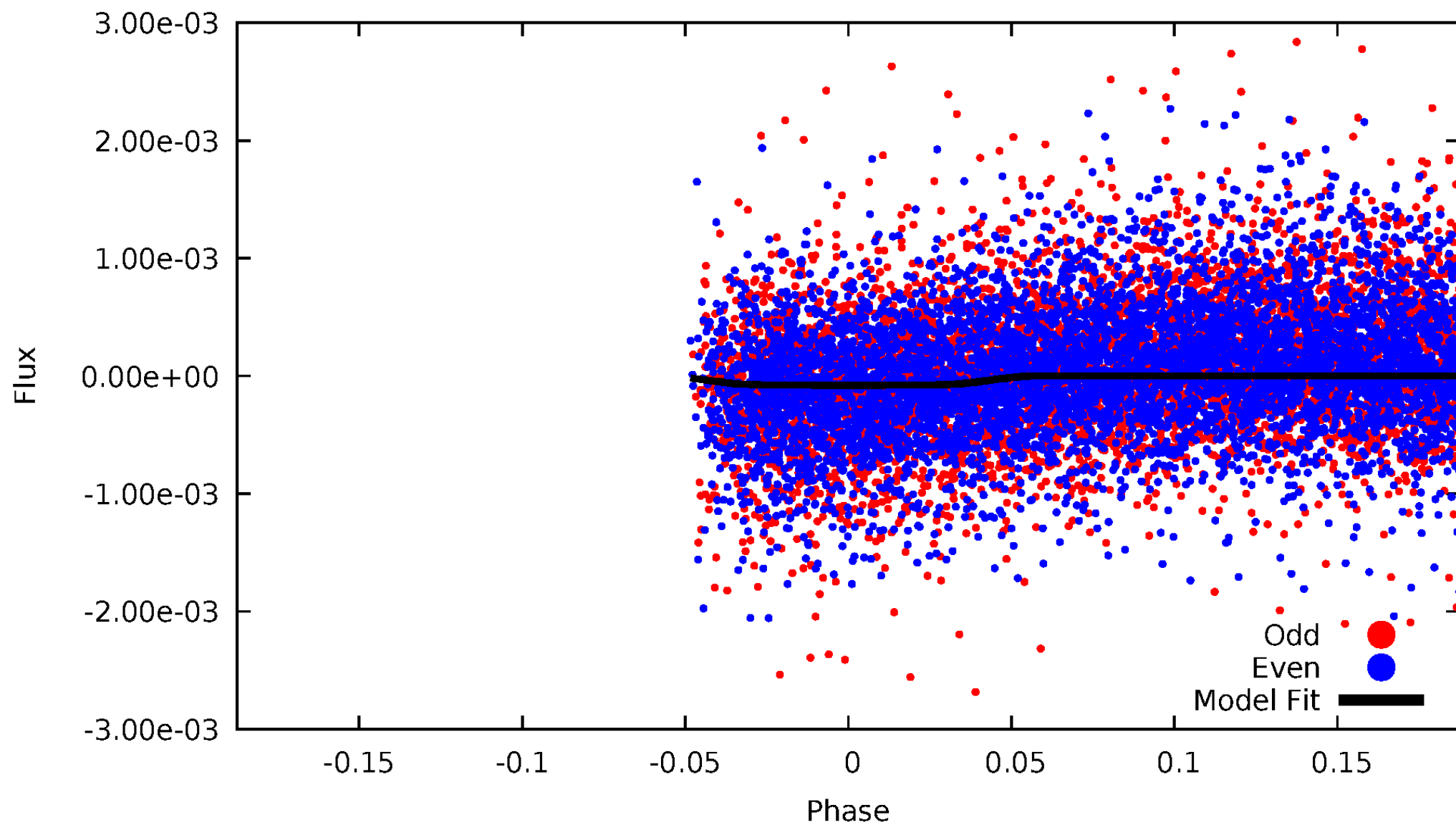


# TCE 004274480-02



DV Odd/Even

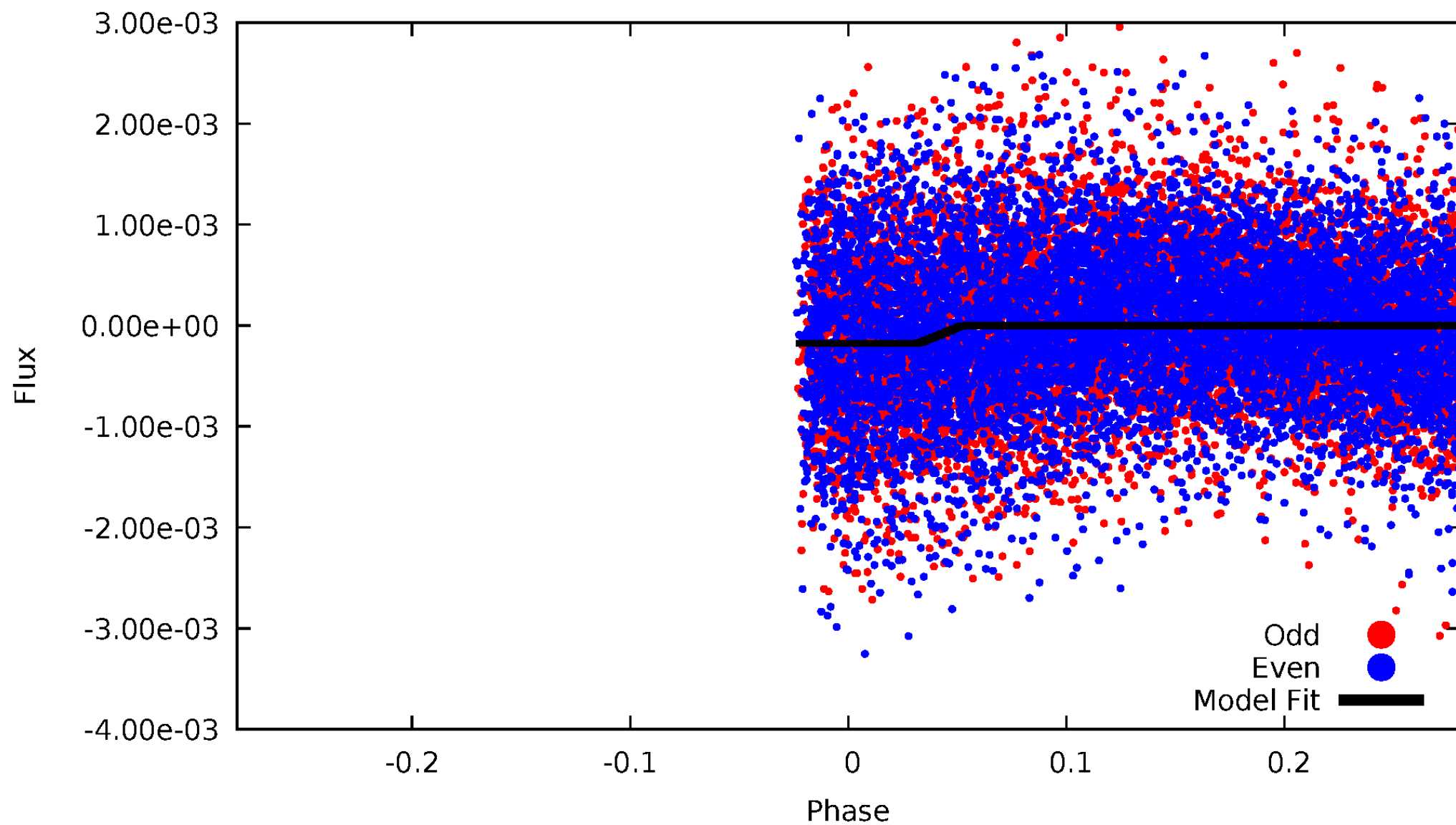
TCE 004274480-02





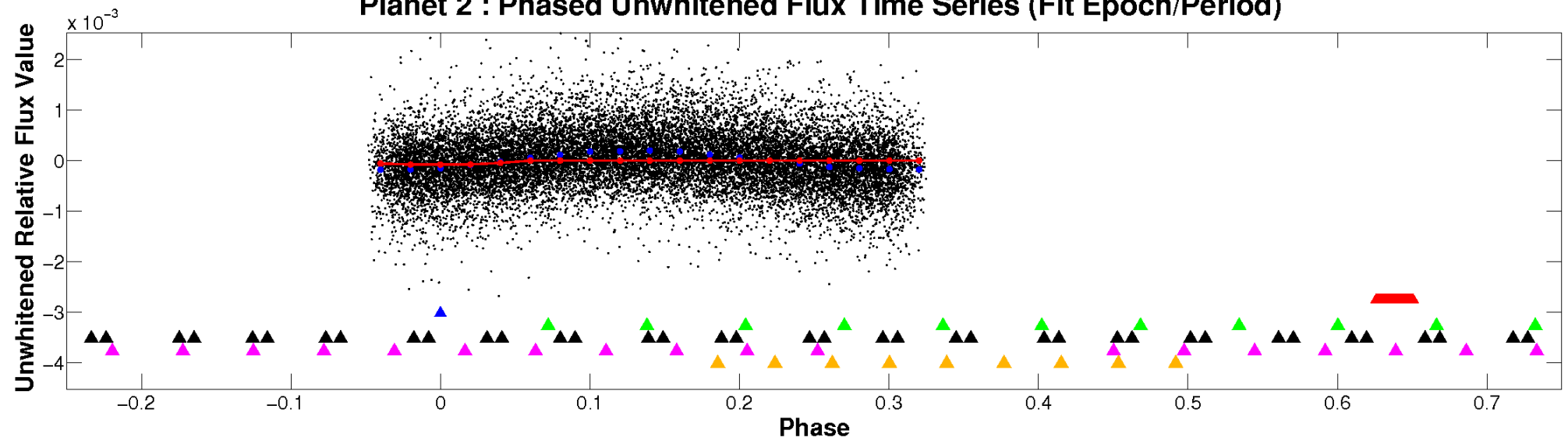
# ALT Odd/Even

TCE 004274480-02

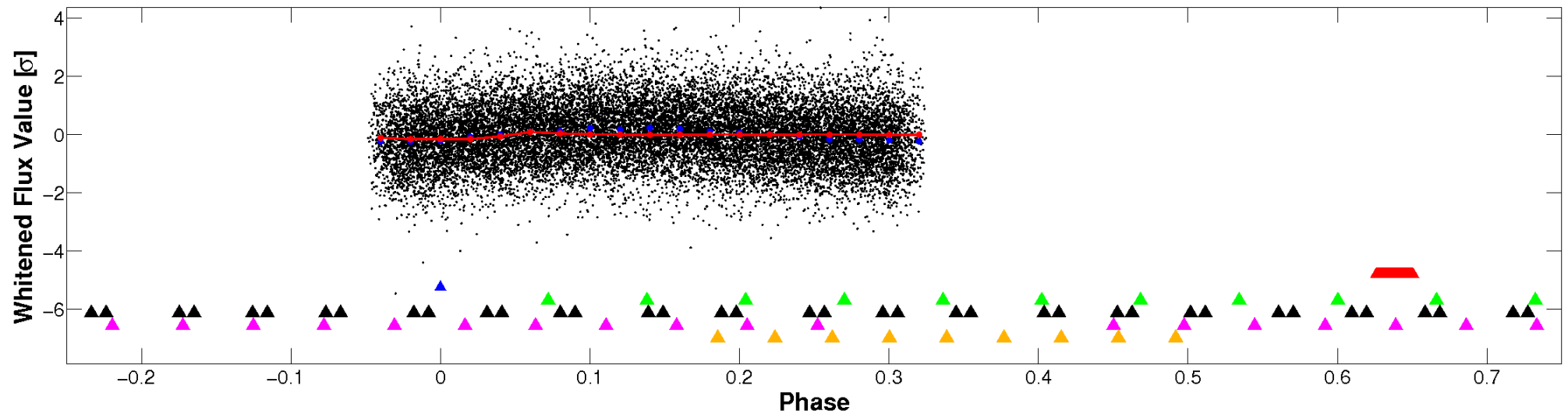


# Non-Whitened Vs. Whitened Light Curve

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

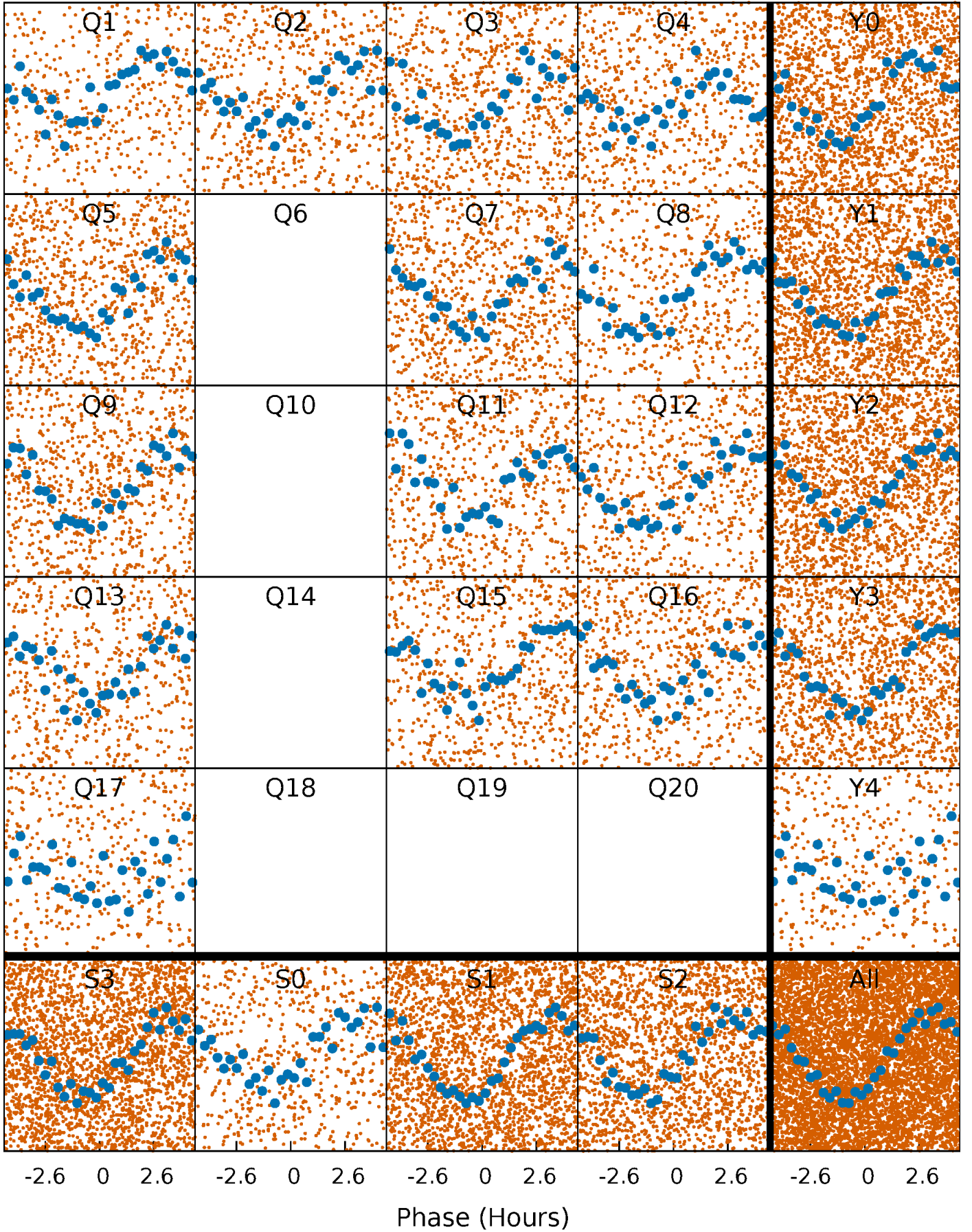


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



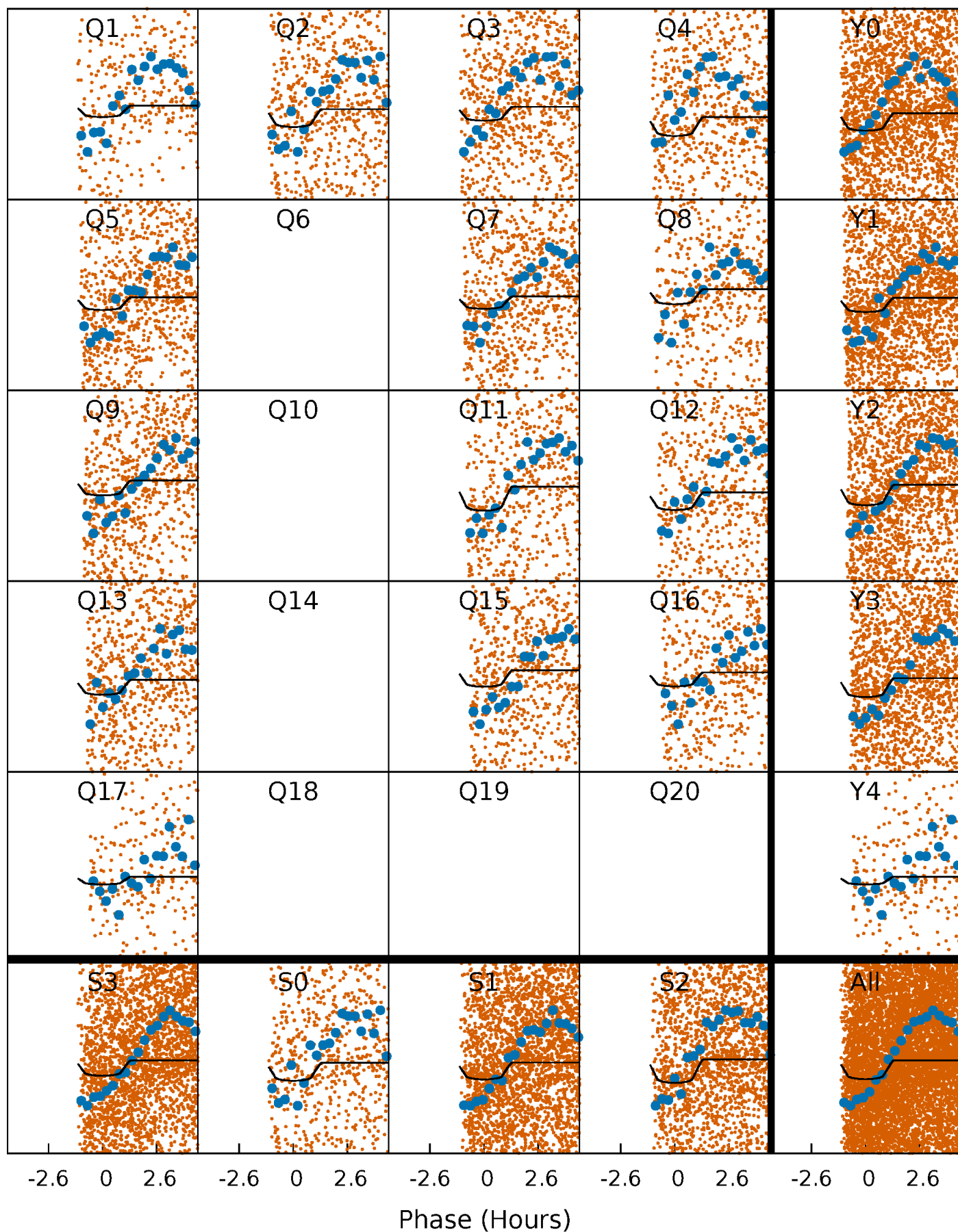
# PDC Quarter-Phased Transit Curves

TCE 004274480-02   P= 1.020904 Days    $T_0=131.784182$  (BKJD)



# DV Quarter-Phased Transit Curves

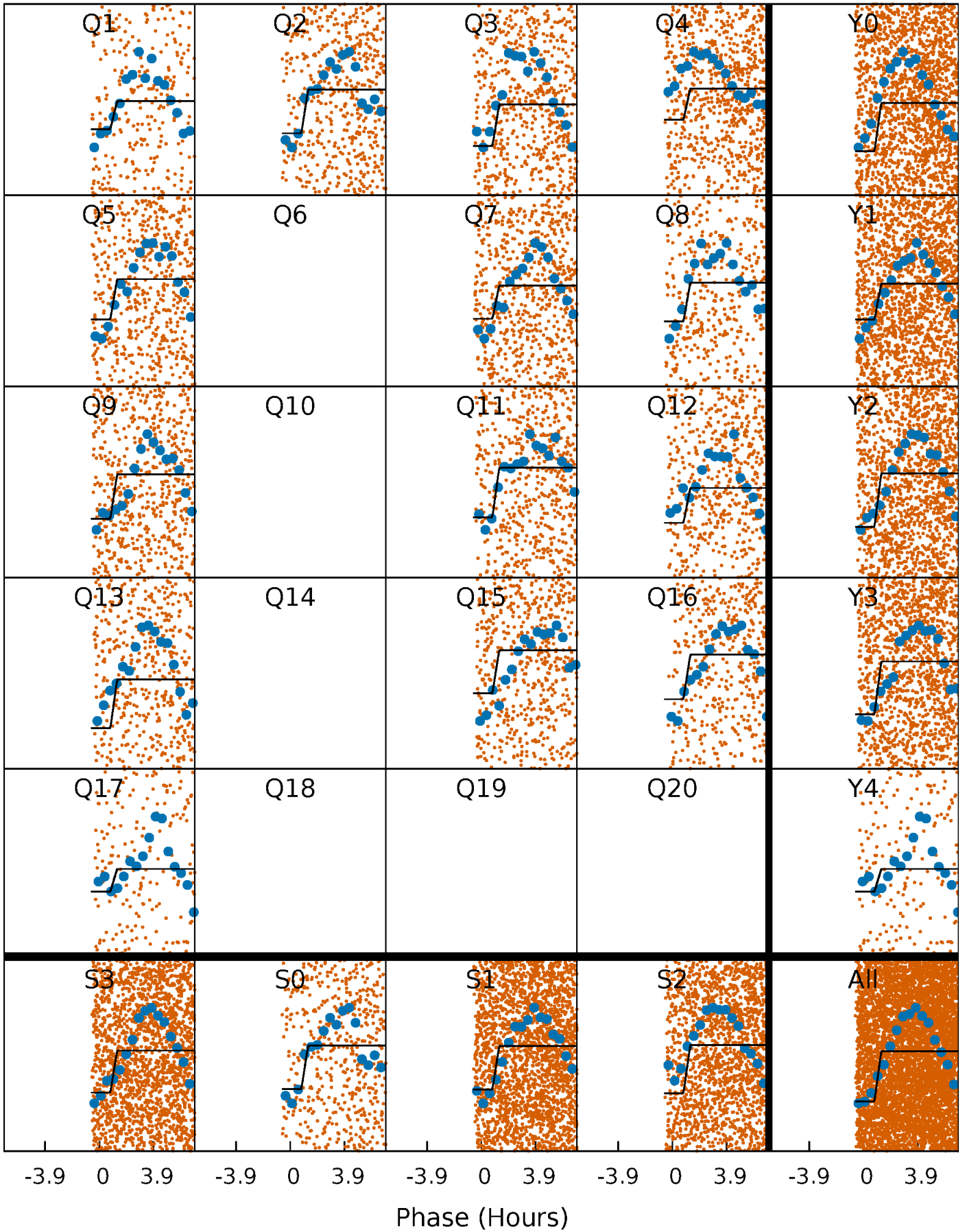
TCE 004274480-02   P= 1.020904 Days    $T_0=131.784182$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

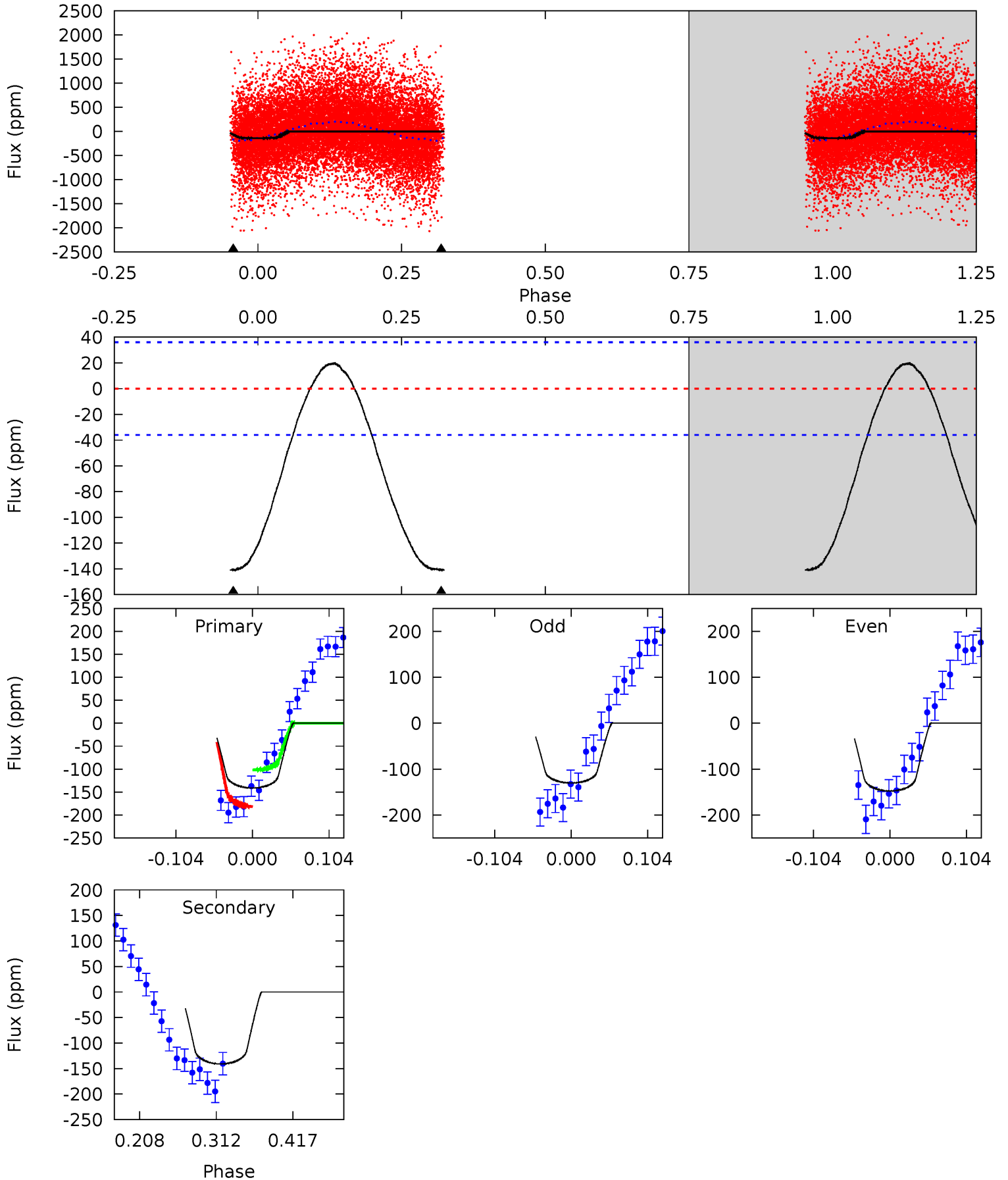
TCE 004274480-02   P= 1.020913 Days    $T_0=131.758956$  (BKJD)



# DV Model-Shift Uniqueness Test

004274480-02, P = 1.020904 Days, E = 130.763278 Days

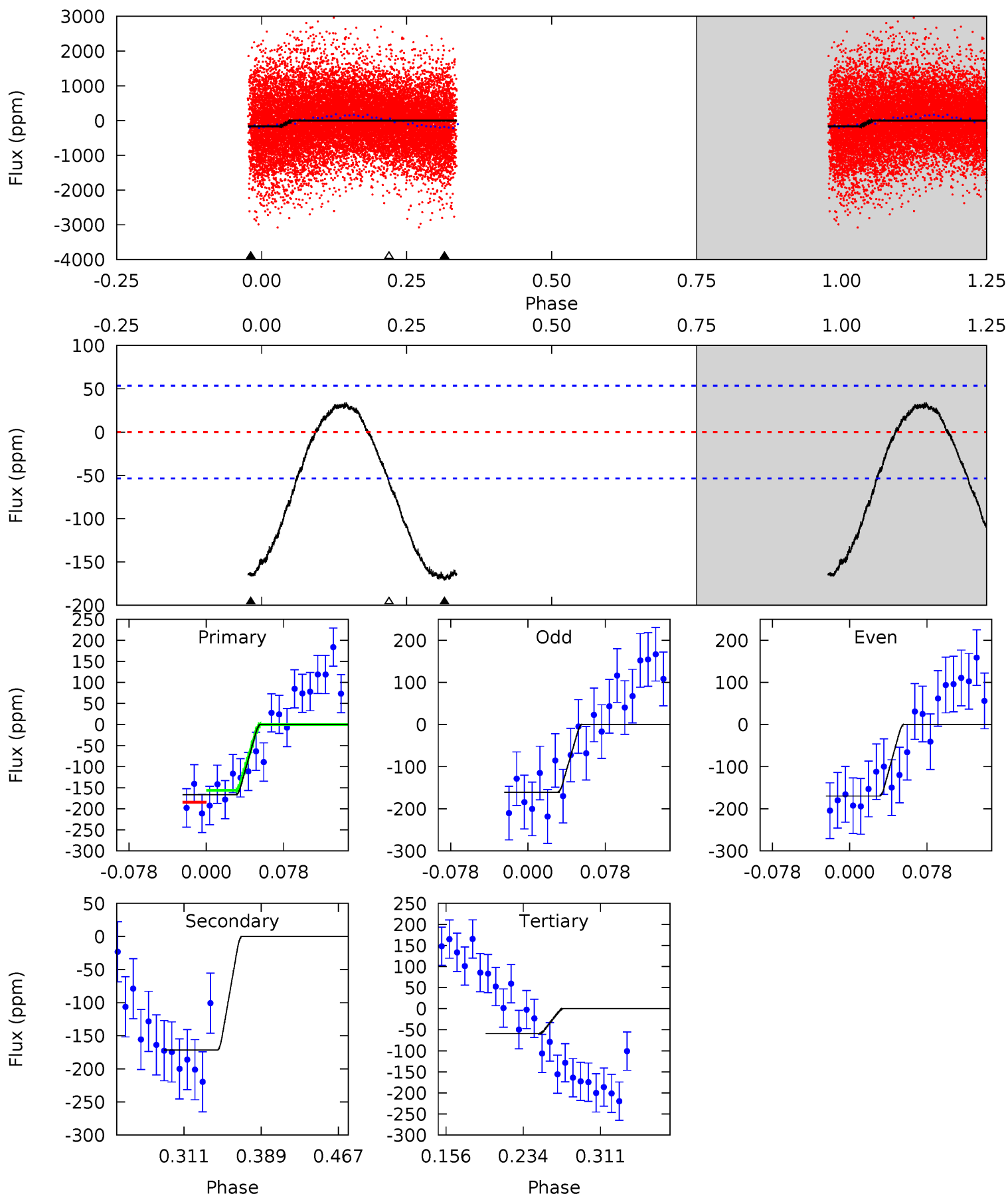
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.8	17.8	0	0	4.56	1.62	3.16	17.8	17.8	17.8	17.8	1.11	1.17	0.13	5.14



# Alt Model-Shift Uniqueness Test

004274480-02, P = 1.020913 Days, E = 130.738043 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
14.4	14.8	5.13	0	4.62	1.76	4.55	9.25	14.4	9.69	14.8	0.38	1.01	0.17	0.85



### Stellar Parameters For KIC 004274480

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7123^{+200}_{-300}$	$4.230^{+0.108}_{-0.201}$	$-0.140^{+0.250}_{-0.350}$	$1.501^{+0.501}_{-0.231}$	$1.402^{+0.218}_{-0.218}$	$0.584^{+0.288}_{-0.303}$
	+3%/-4%	+3%/-5%	+179%/-250%	+33%/-15%	+16%/-16%	+49%/-52%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 004274480-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-141 \pm 8$	$1.60^{+0.70}_{-0.60}$	$3632^{+270}_{-219}$	$7976^{+3259}_{-1499}$	$14^{+24}_{-7}$
Alt.	$-171 \pm 12$	$2.25^{+0.70}_{-0.67}$	$3647^{+291}_{-229}$	$6963^{+1548}_{-908}$	$9.016^{+8.992}_{-3.799}$

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



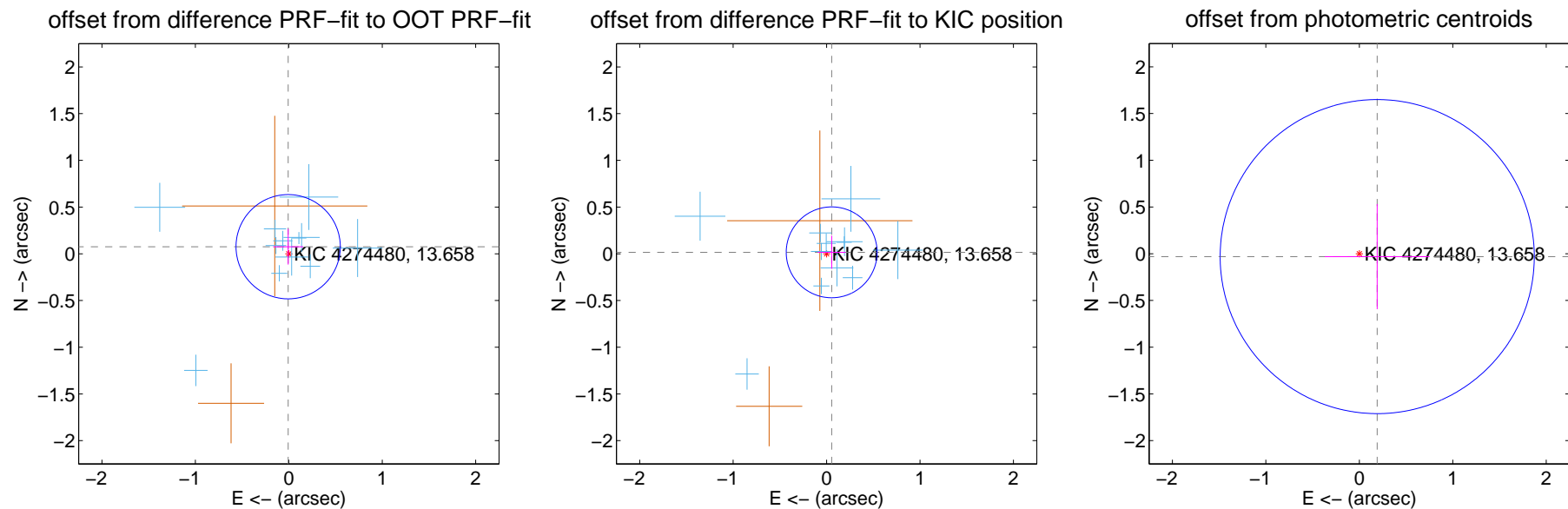
## DV Centroid Data

Supplemental centroid analysis for 004274480-02. Kepler magnitude: 13.66. Transit SNR 9.38

There are 12 quarters with good PRF difference image offsets

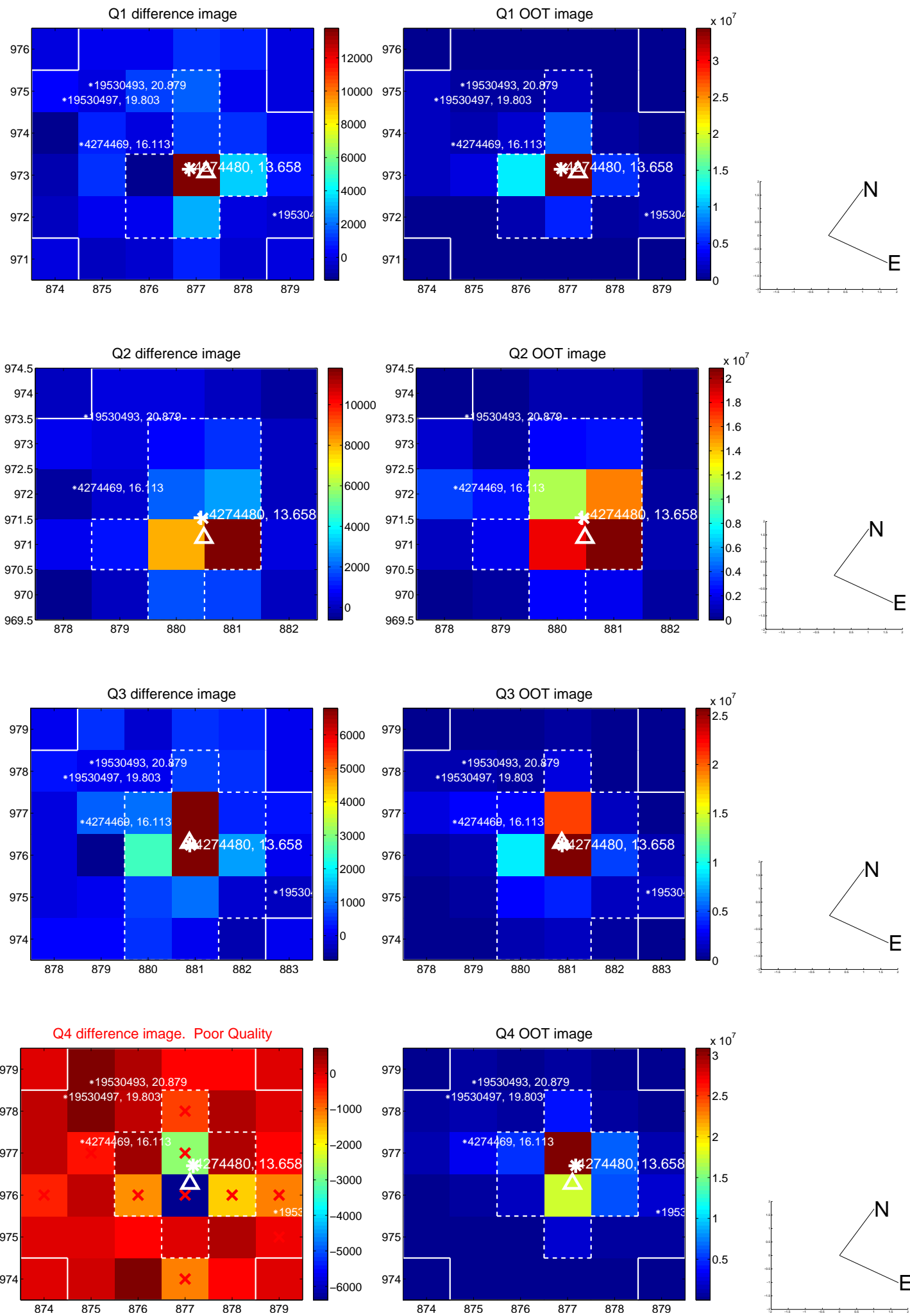
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.076 \pm 0.186$	0.41	$0.007 \pm 0.161$	$0.076 \pm 0.191$
PRF-fit source offset from KIC position	$0.057 \pm 0.162$	0.35	$-0.054 \pm 0.149$	$0.016 \pm 0.177$
photometric centroid source offset	$0.19 \pm 0.56$	0.35	$-0.19 \pm 0.56$	$-0.03 \pm 0.56$

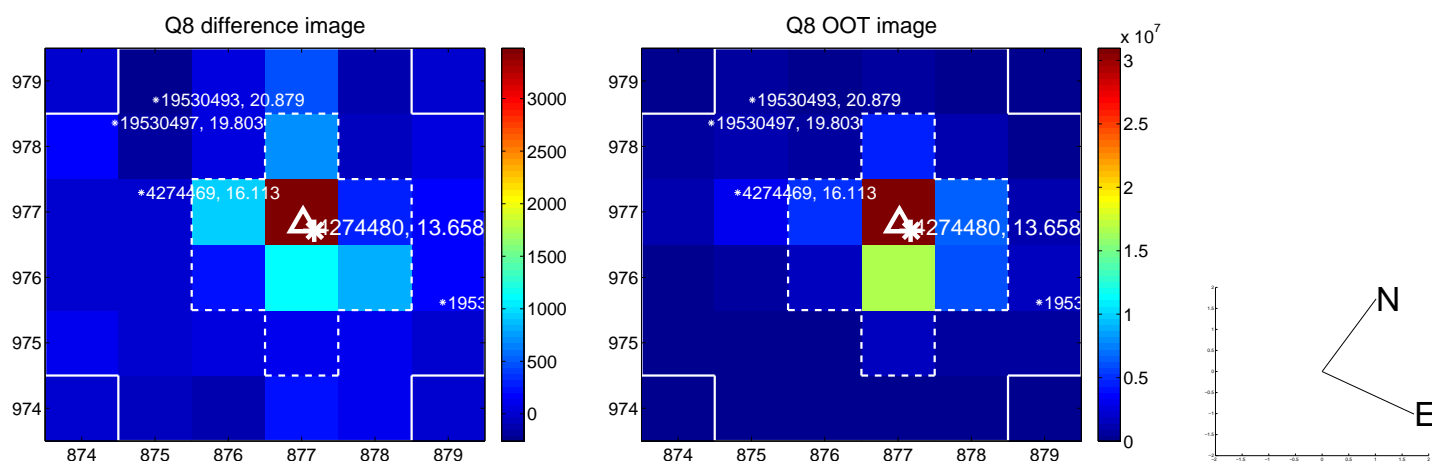
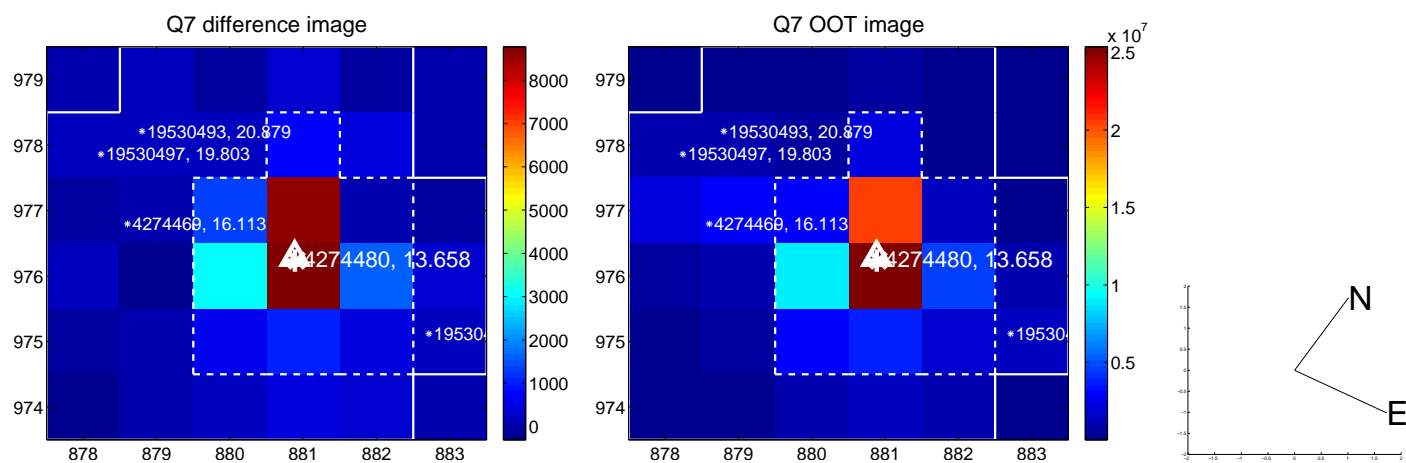
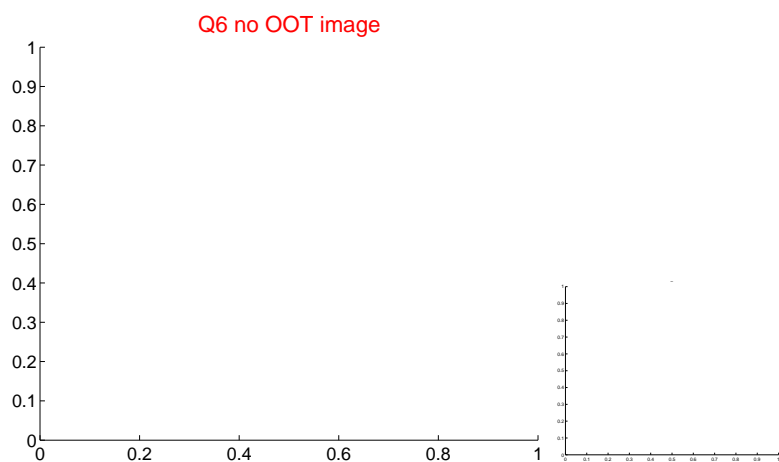
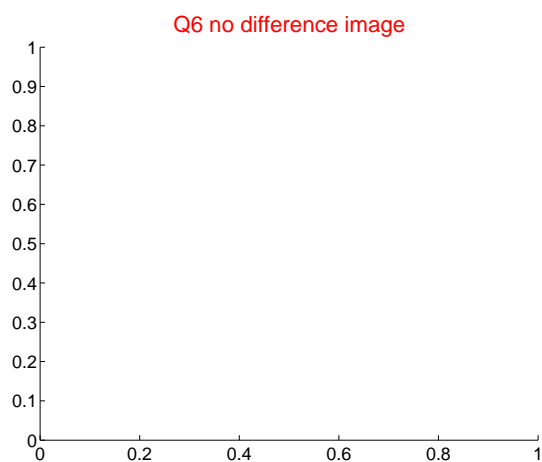
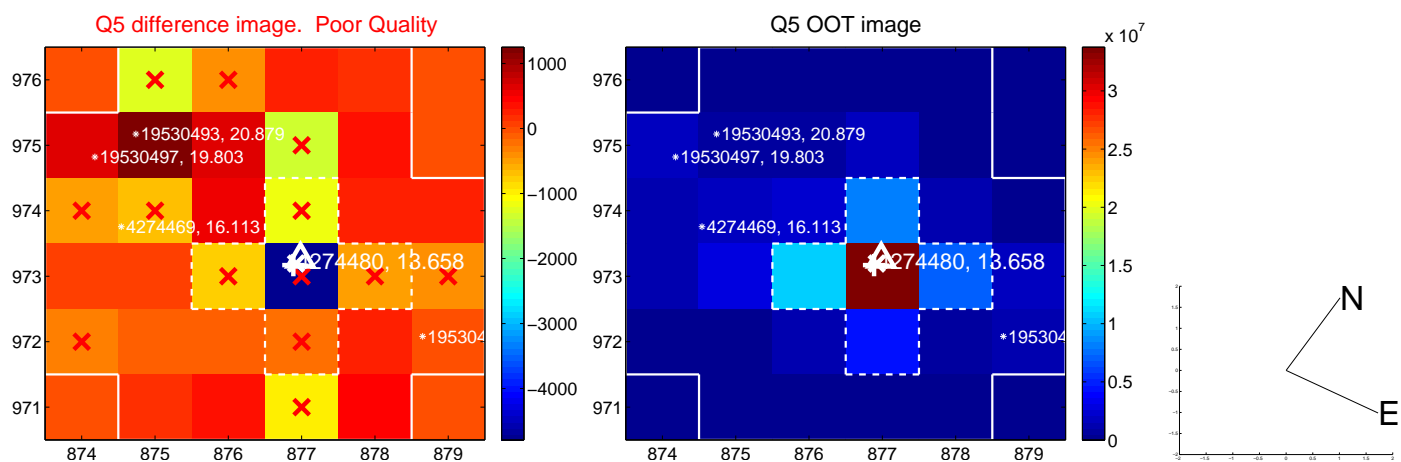


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

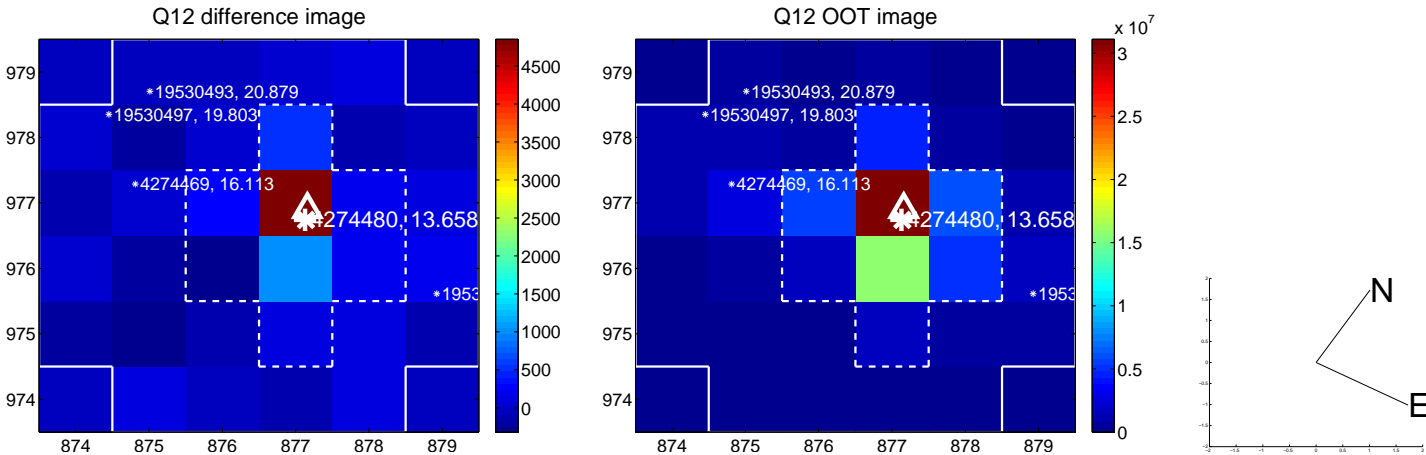
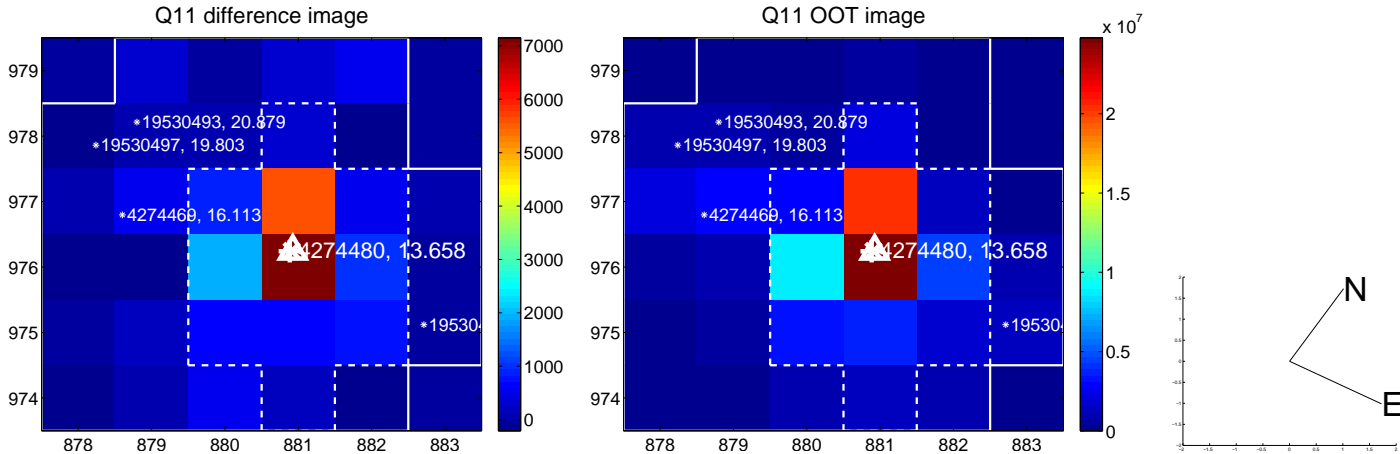
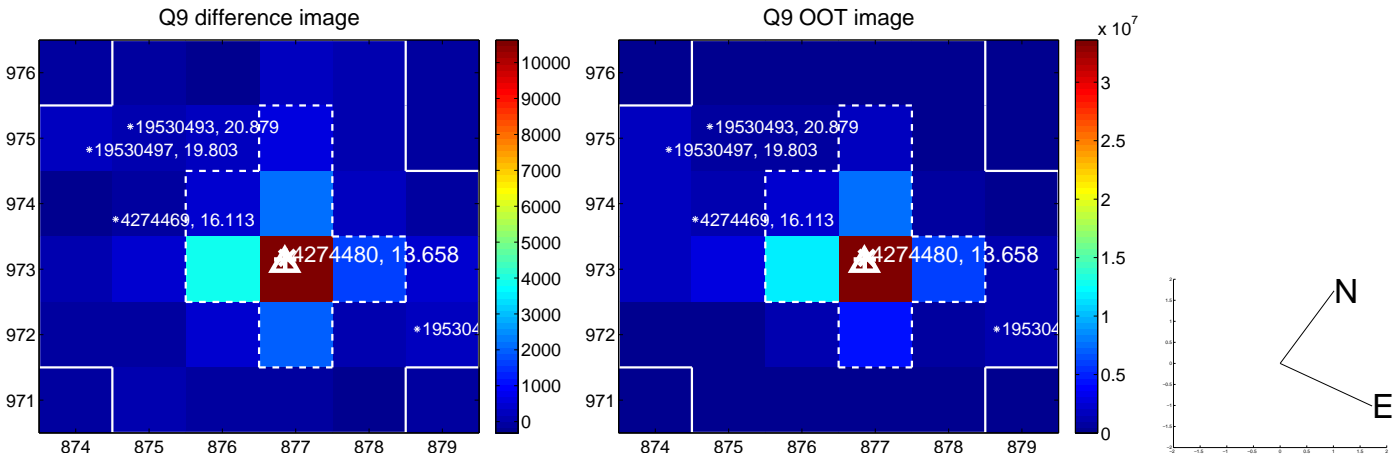
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



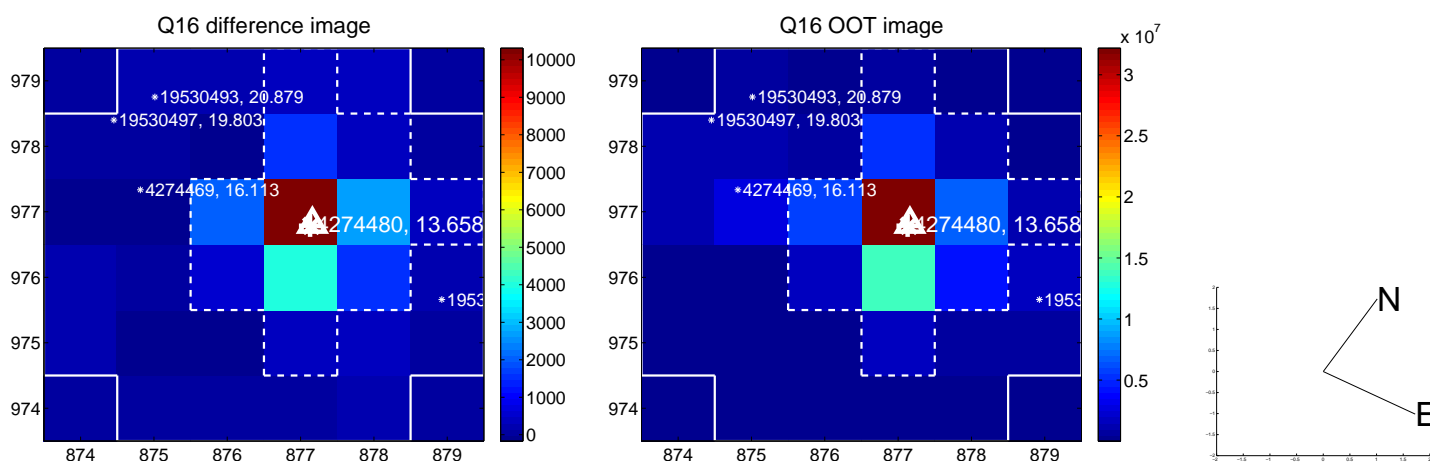
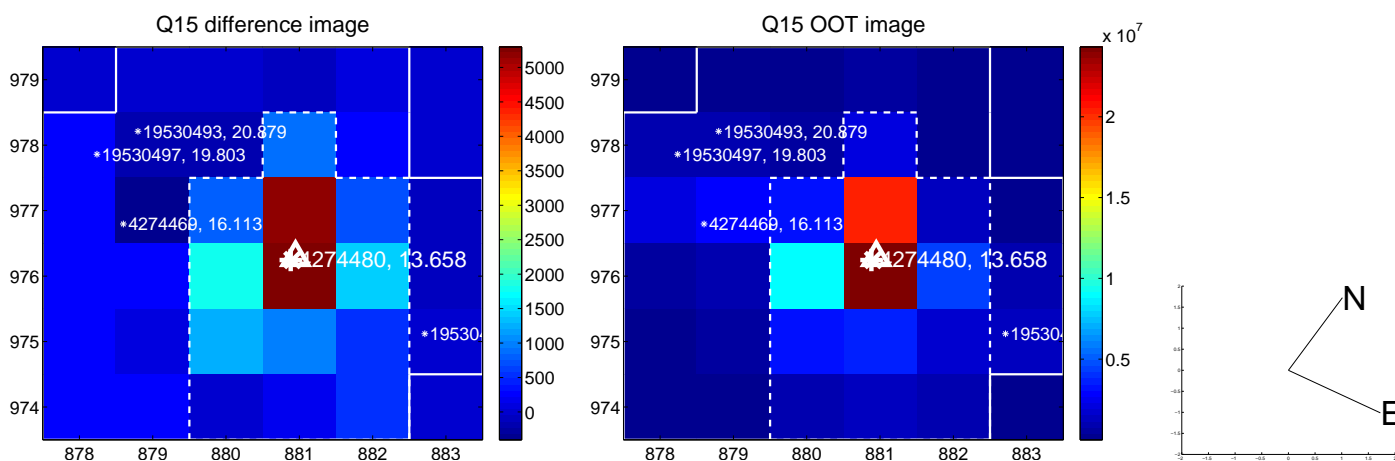
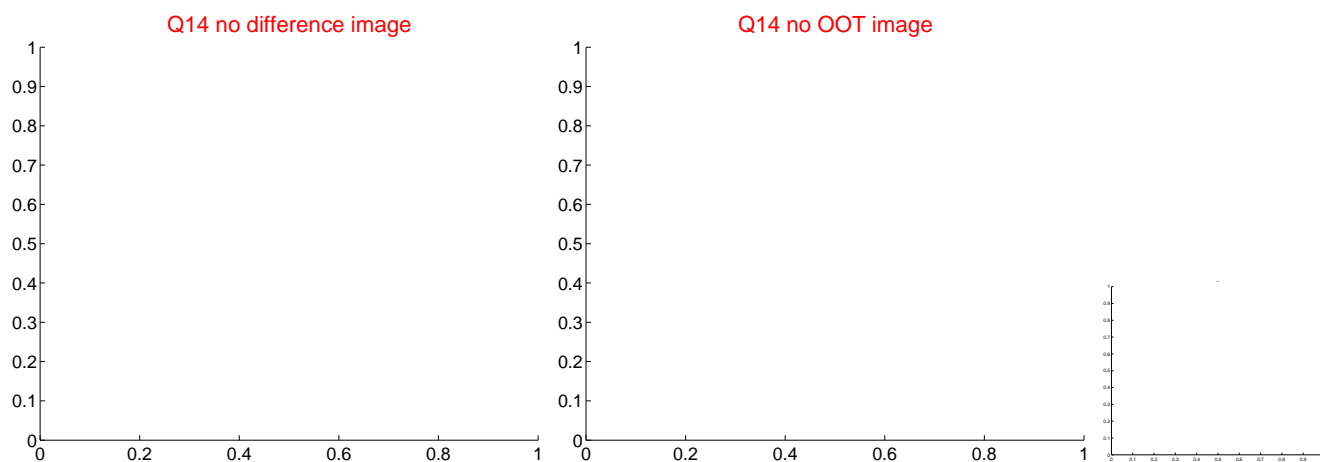
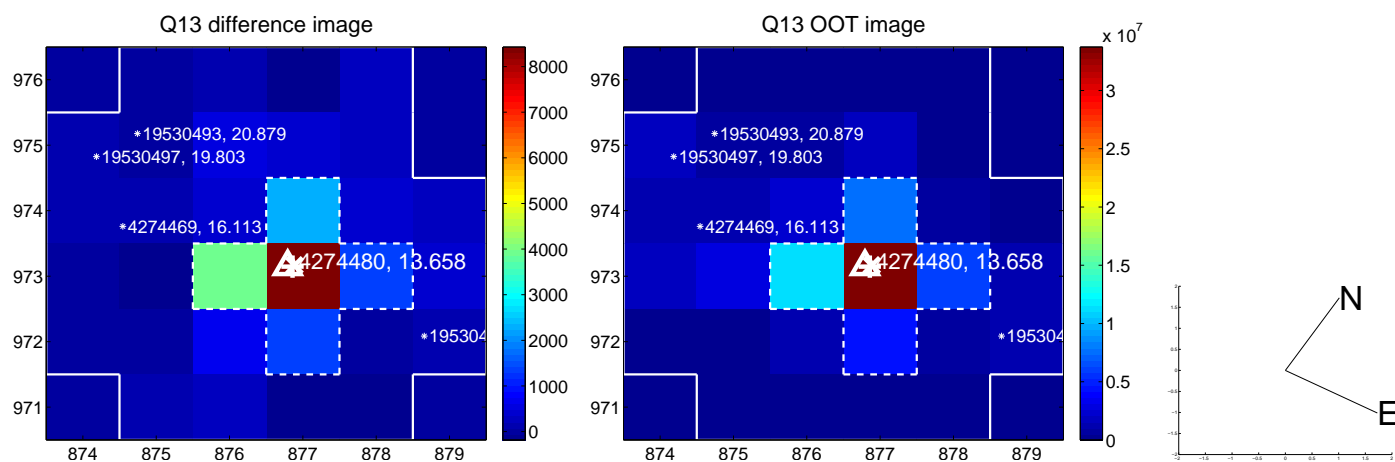
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

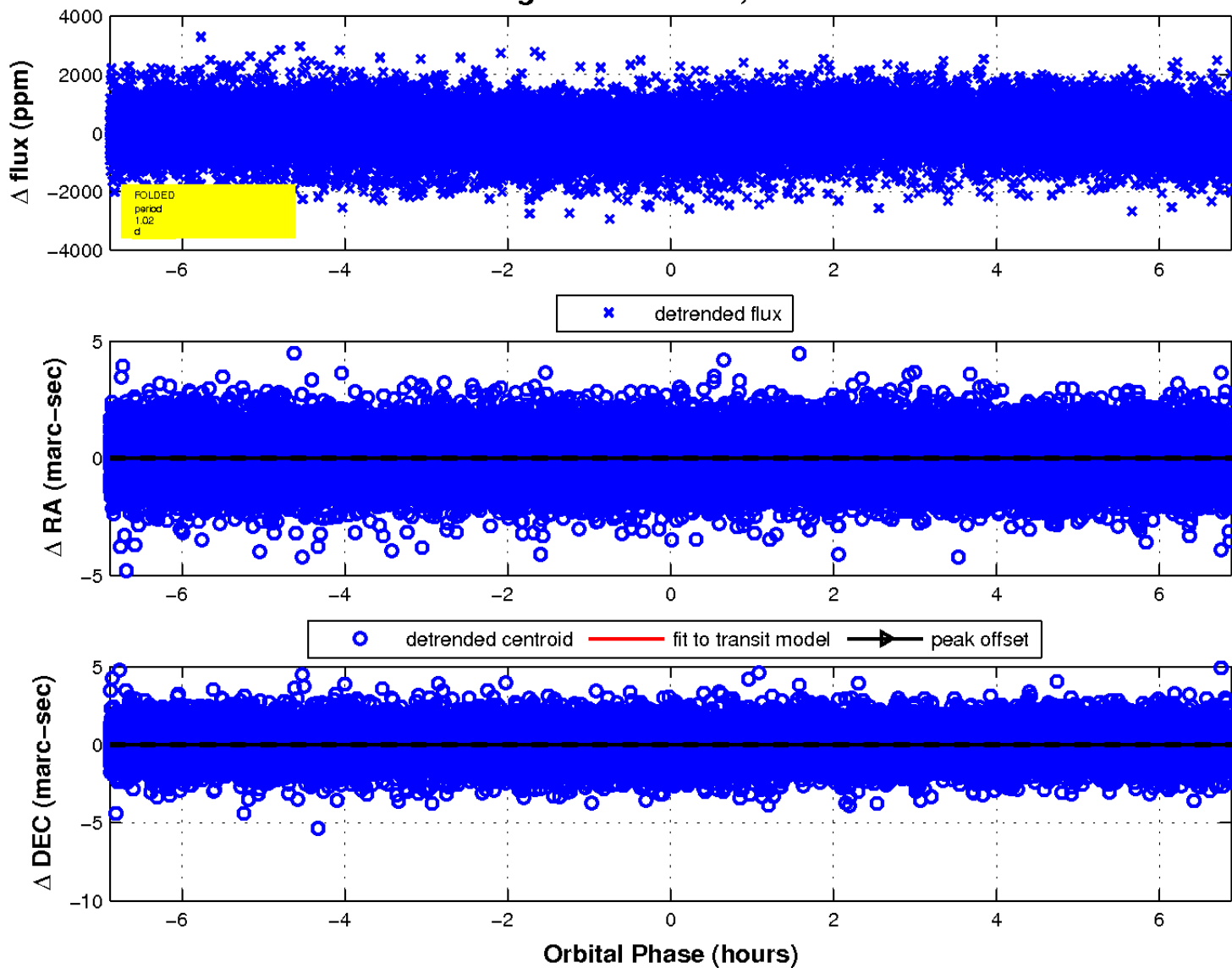
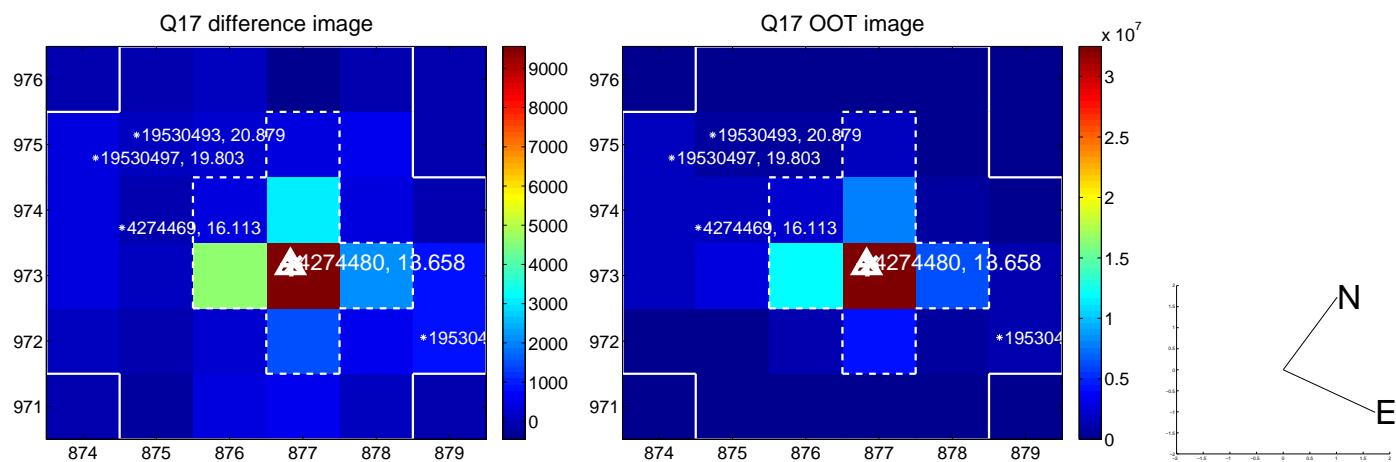


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



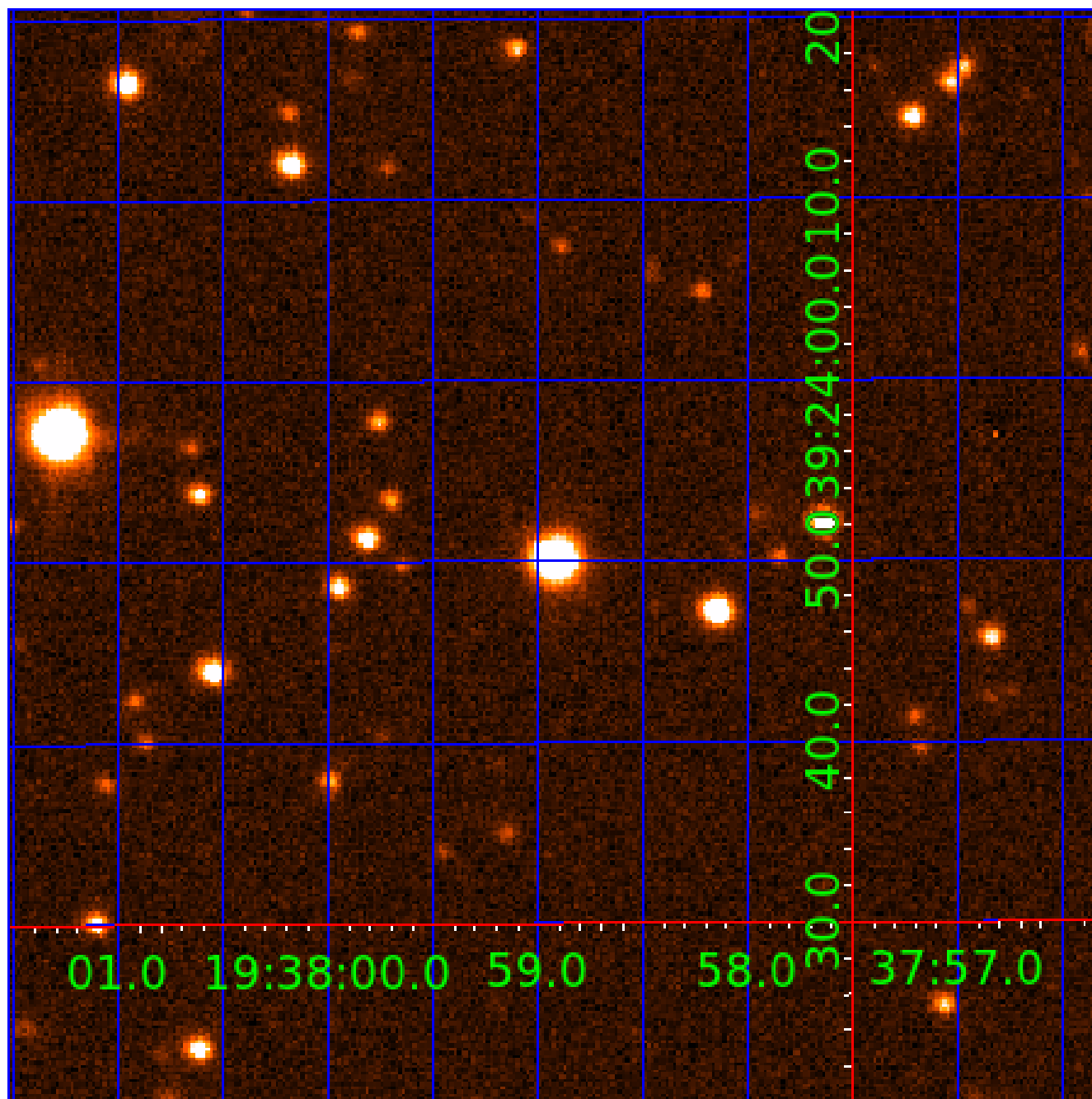


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 004274480

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004274480-01	OBS	No	1.020922	132.423067	24.5	5.151	9.1	3.0	1.50	7123	0.77	10563.55
004274480-02	OBS	No	1.020904	131.784182	80.3	2.296	9.9	9.4	1.50	7123	1.56	10563.80
004274480-03	OBS	No	123.596770	252.324432	2316.8	7.043	10.8	11.6	1.50	7123	13.15	17.64
004274480-05	OBS	No	79.582334	208.609557	1660.5	5.721	8.3	8.7	1.50	7123	11.24	31.72
004274480-06	OBS	No	172.571842	162.600655	229.3	6.000	7.4	-1.0	1.50	7123	2.30	11.30

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004274480-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004274480-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
004274480-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT
004274480-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004274480-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

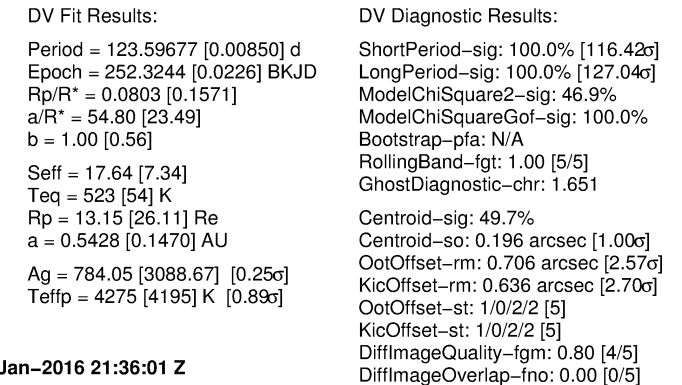
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

## Ephemeris Match Information For 004274480-03

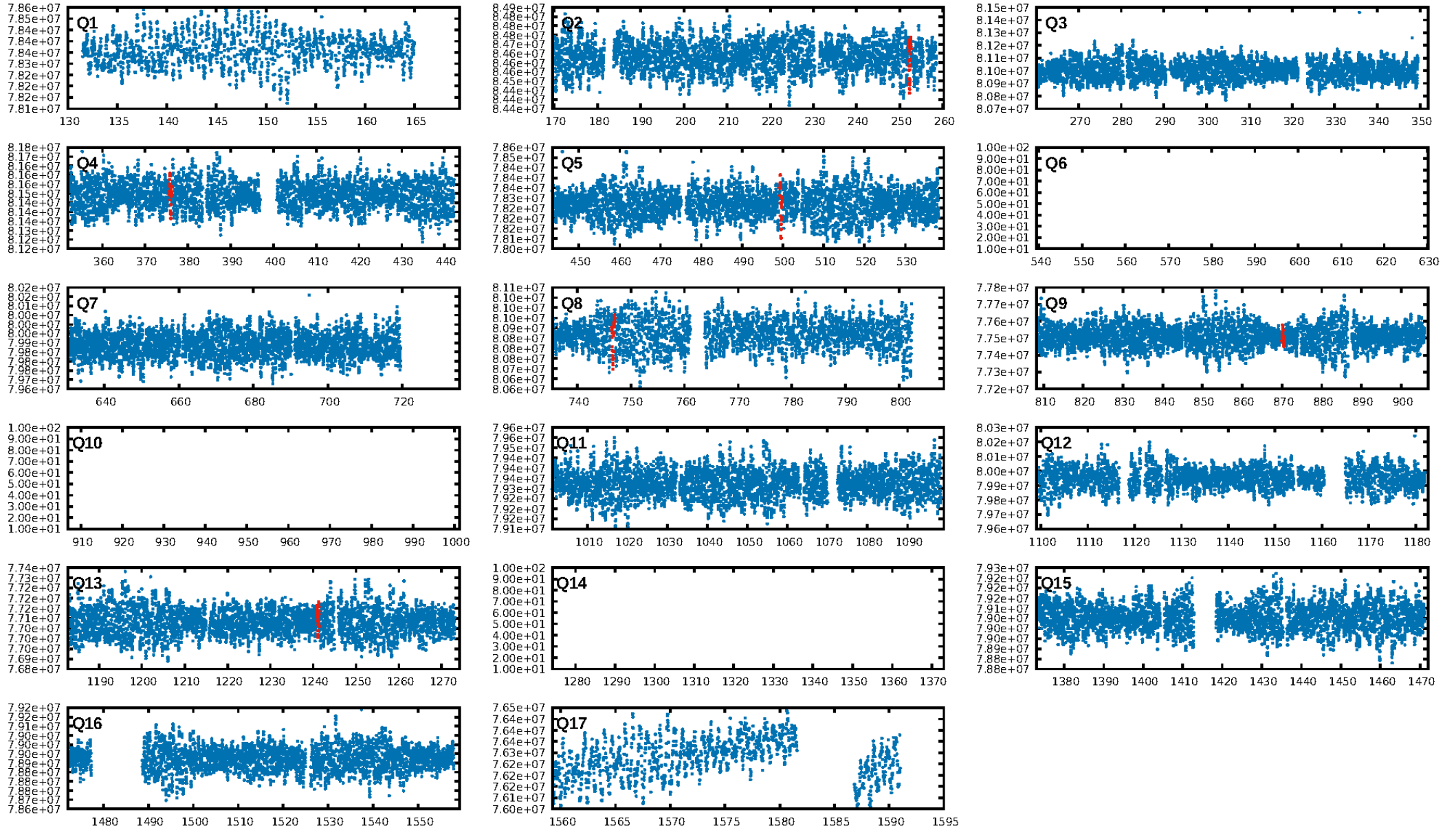
No Significant Match Found

## KIC: 4274480    Candidate: 3 of 6    Period: 123.597 d

Software Revision: [svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958](https://murzim/repo/soc/tags/release/9.3.42@60958) -- Date Generated: 31-Jan-2016 21:36:01 Z

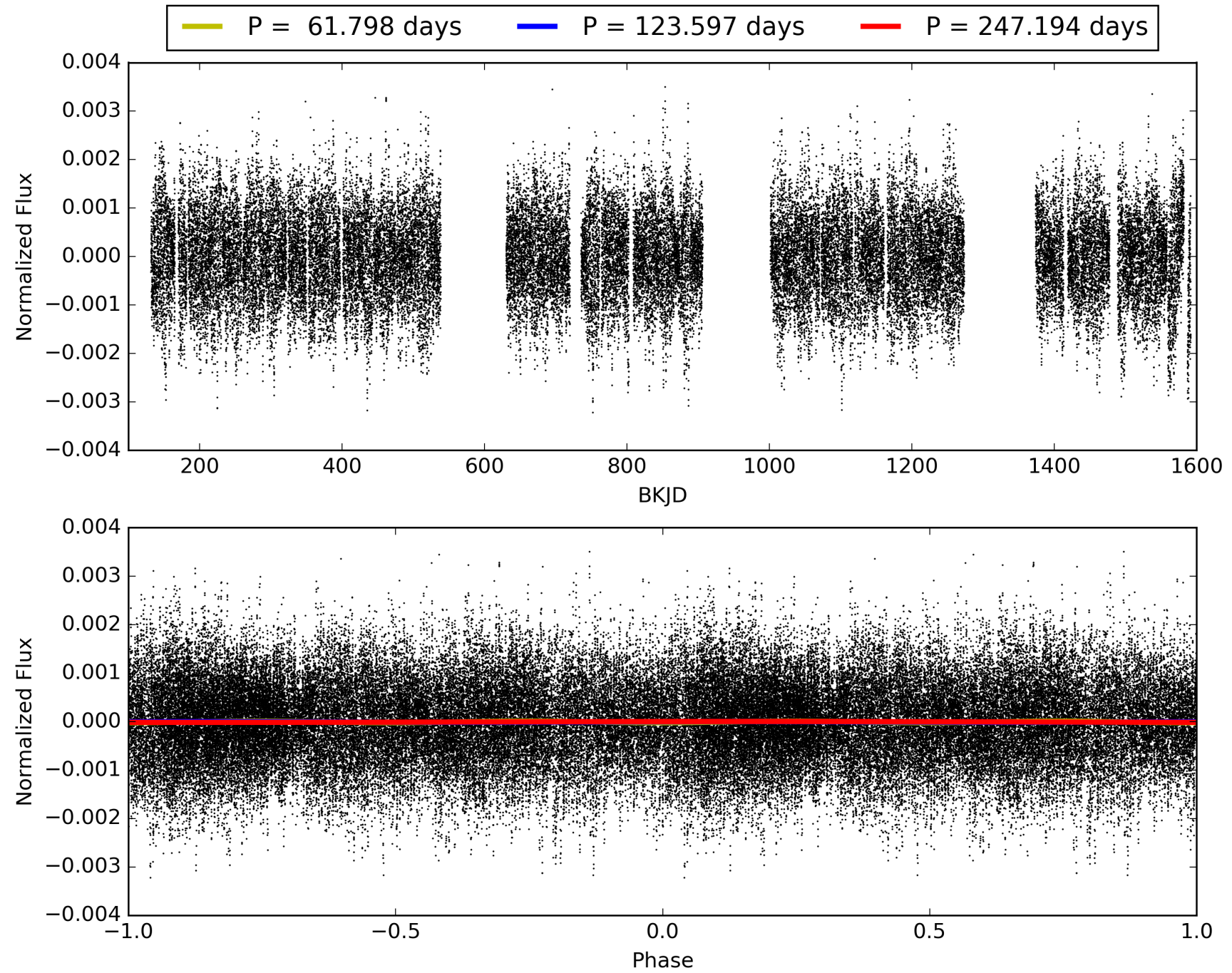
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 004274480-03, PDC Light Curves



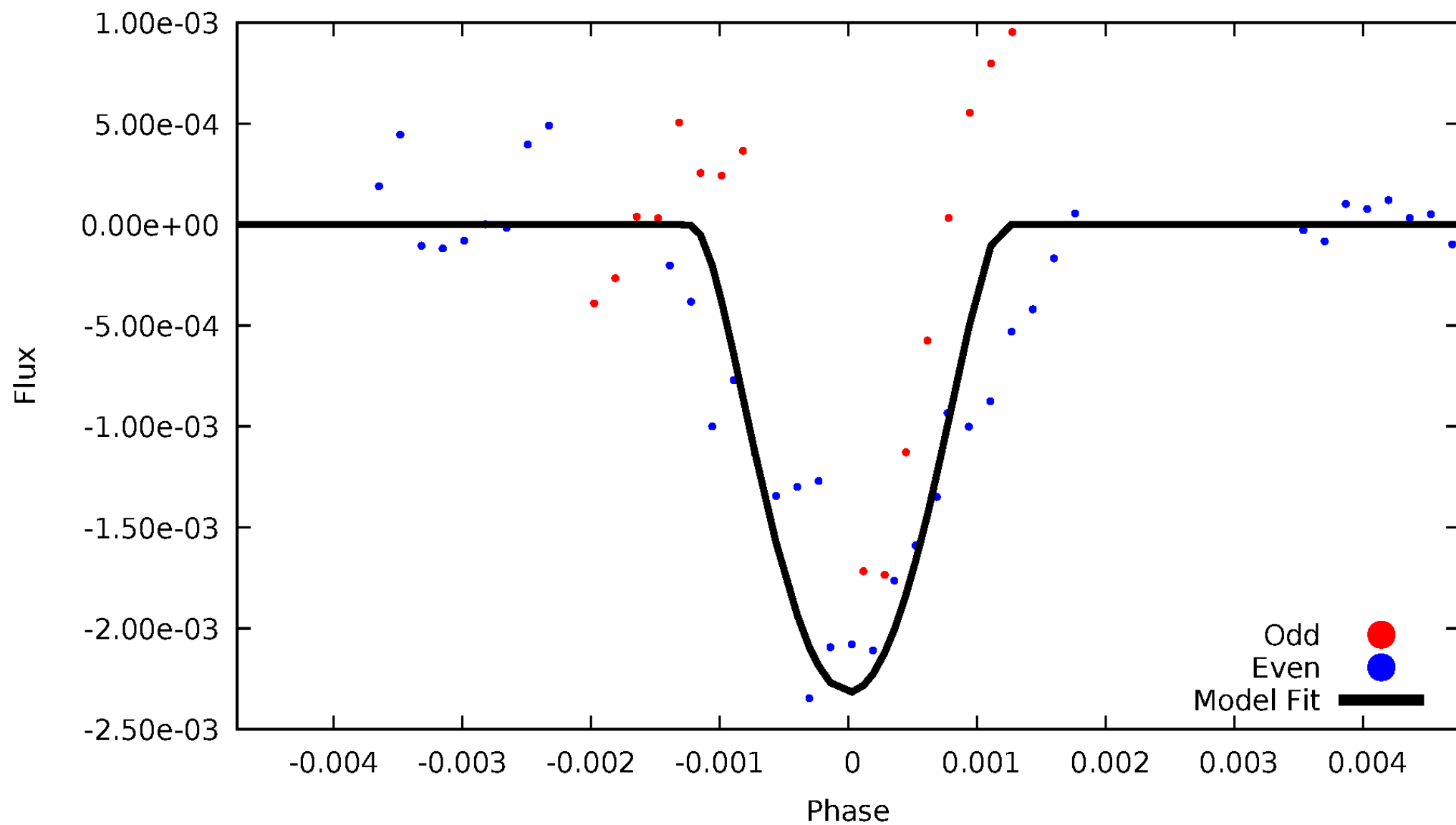


# TCE 004274480-03



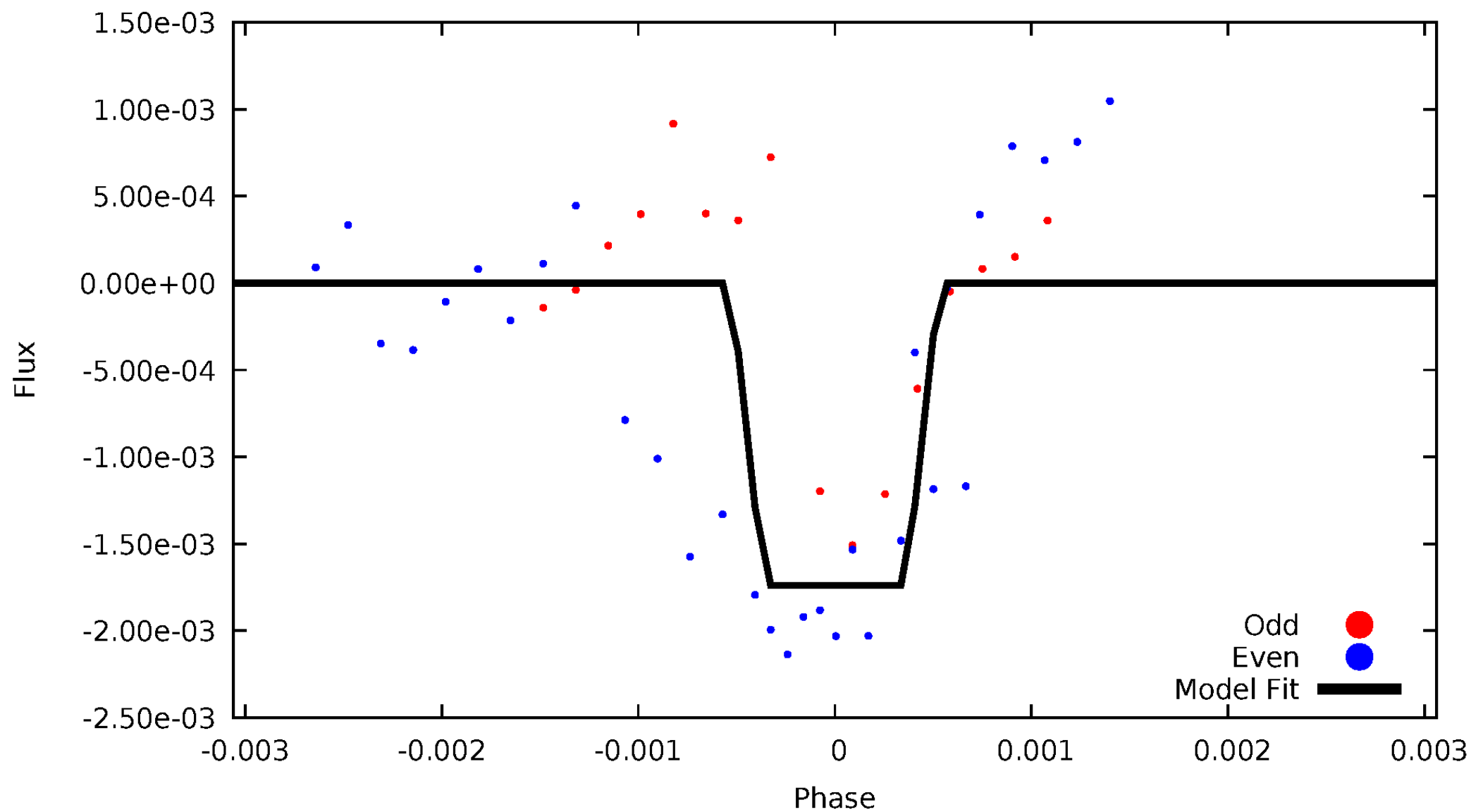
# DV Odd/Even

TCE 004274480-03



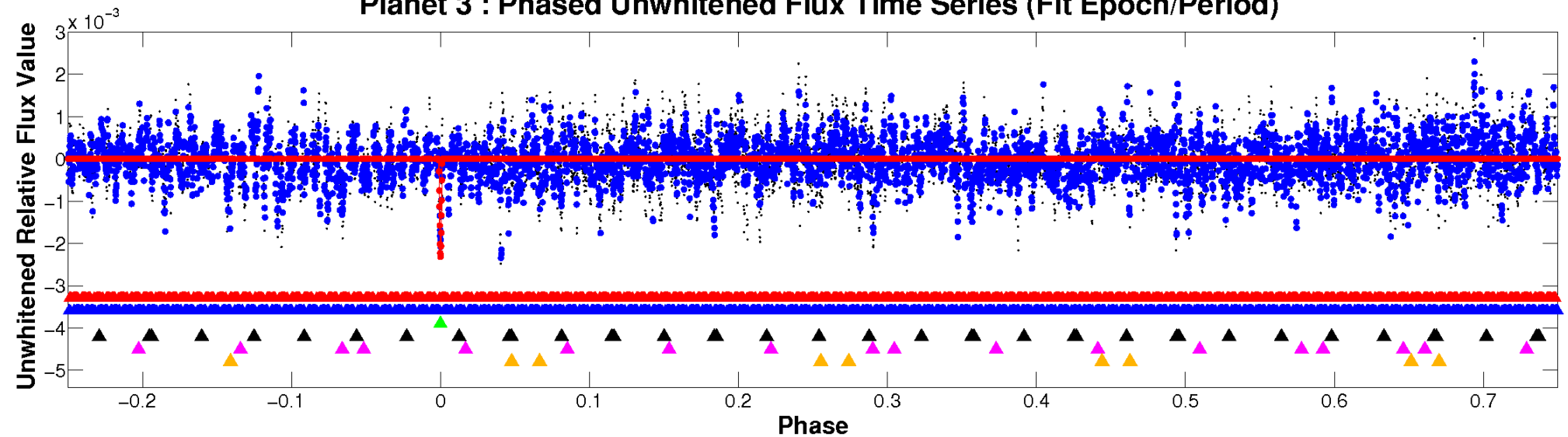
# ALT Odd/Even

TCE 004274480-03

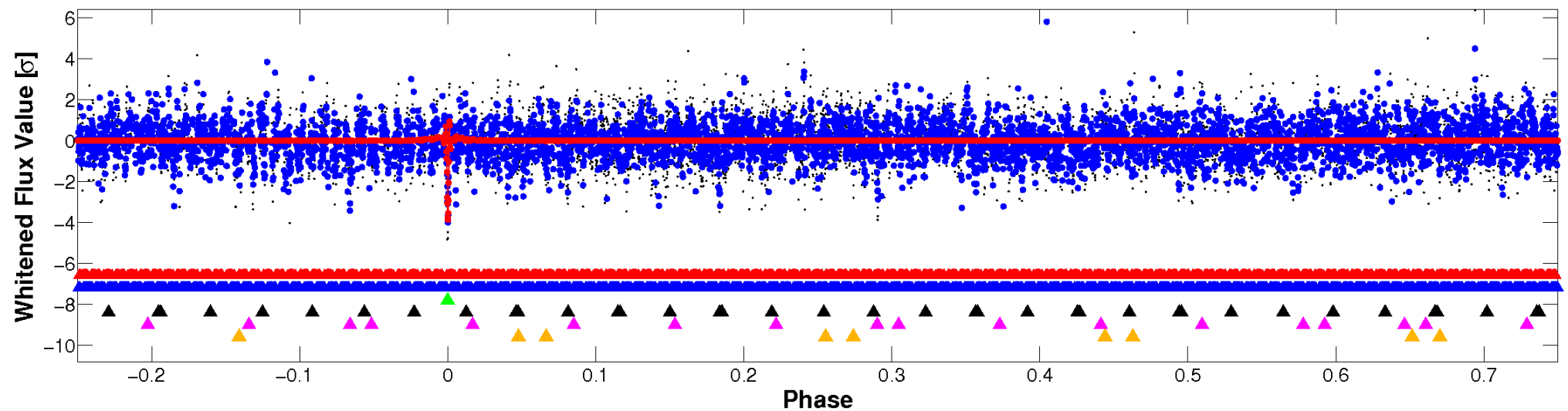


# Non-Whitened Vs. Whitened Light Curve

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

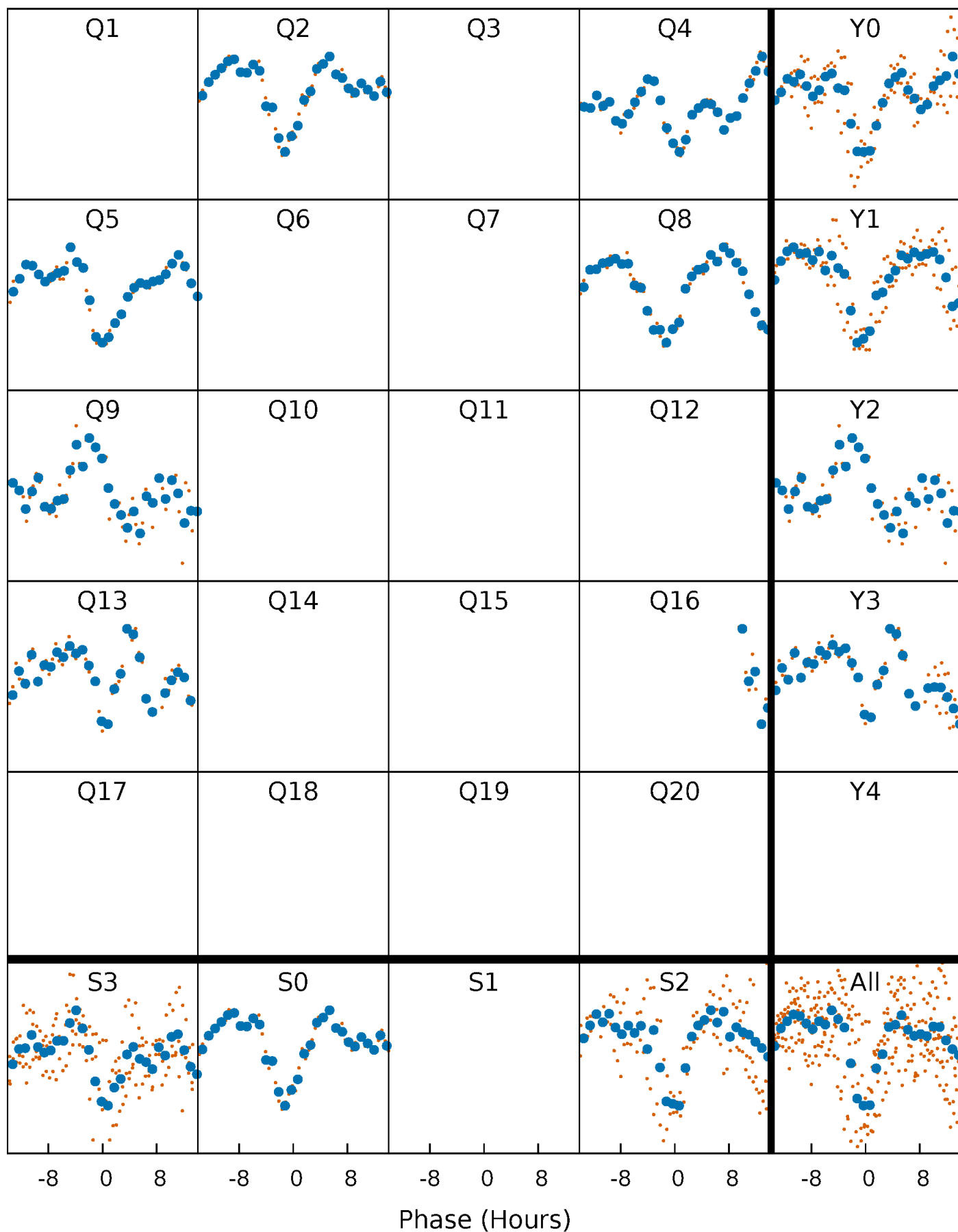


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

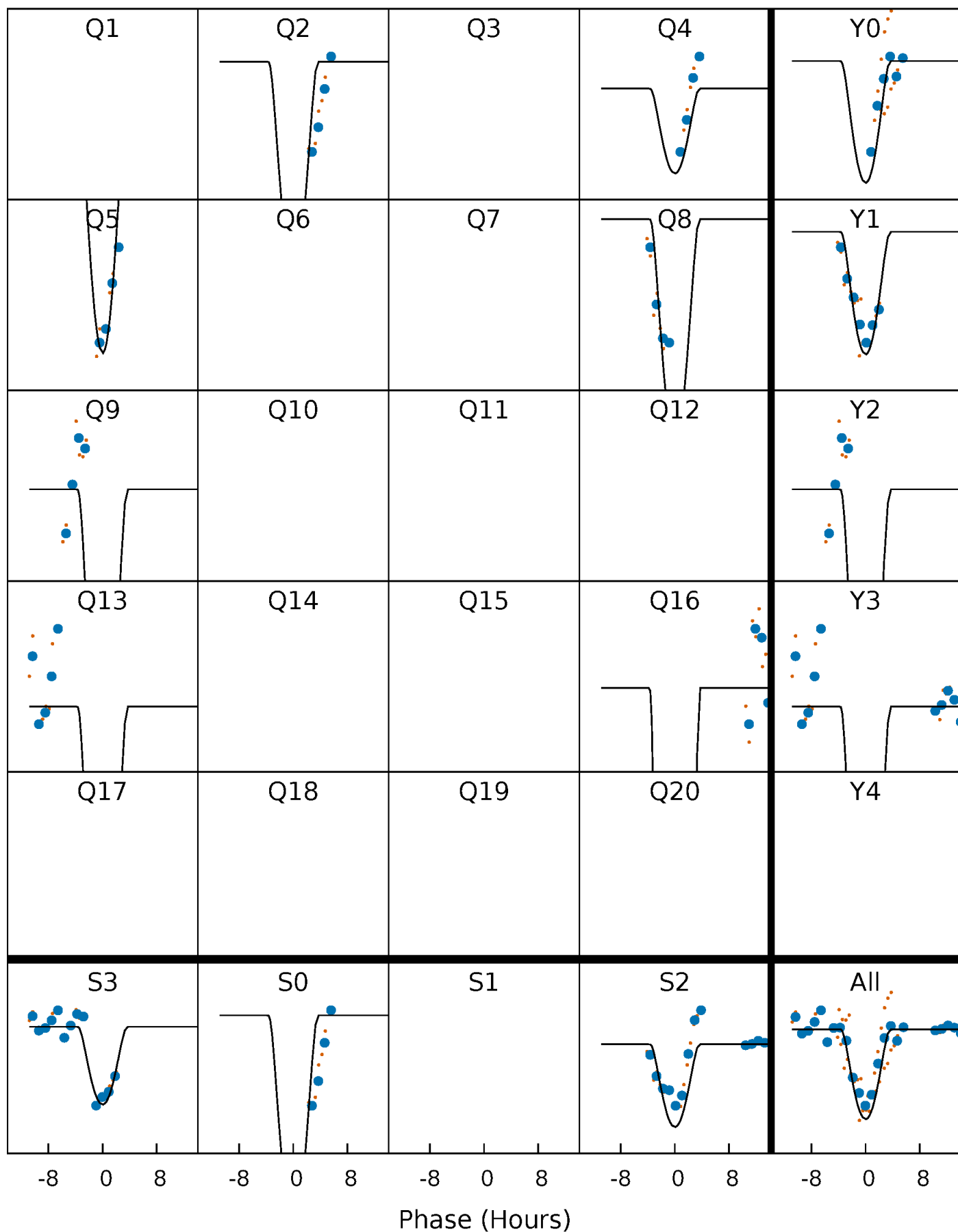
TCE 004274480-03 P=123.596770 Days  $T_0=252.324432$  (BKJD)





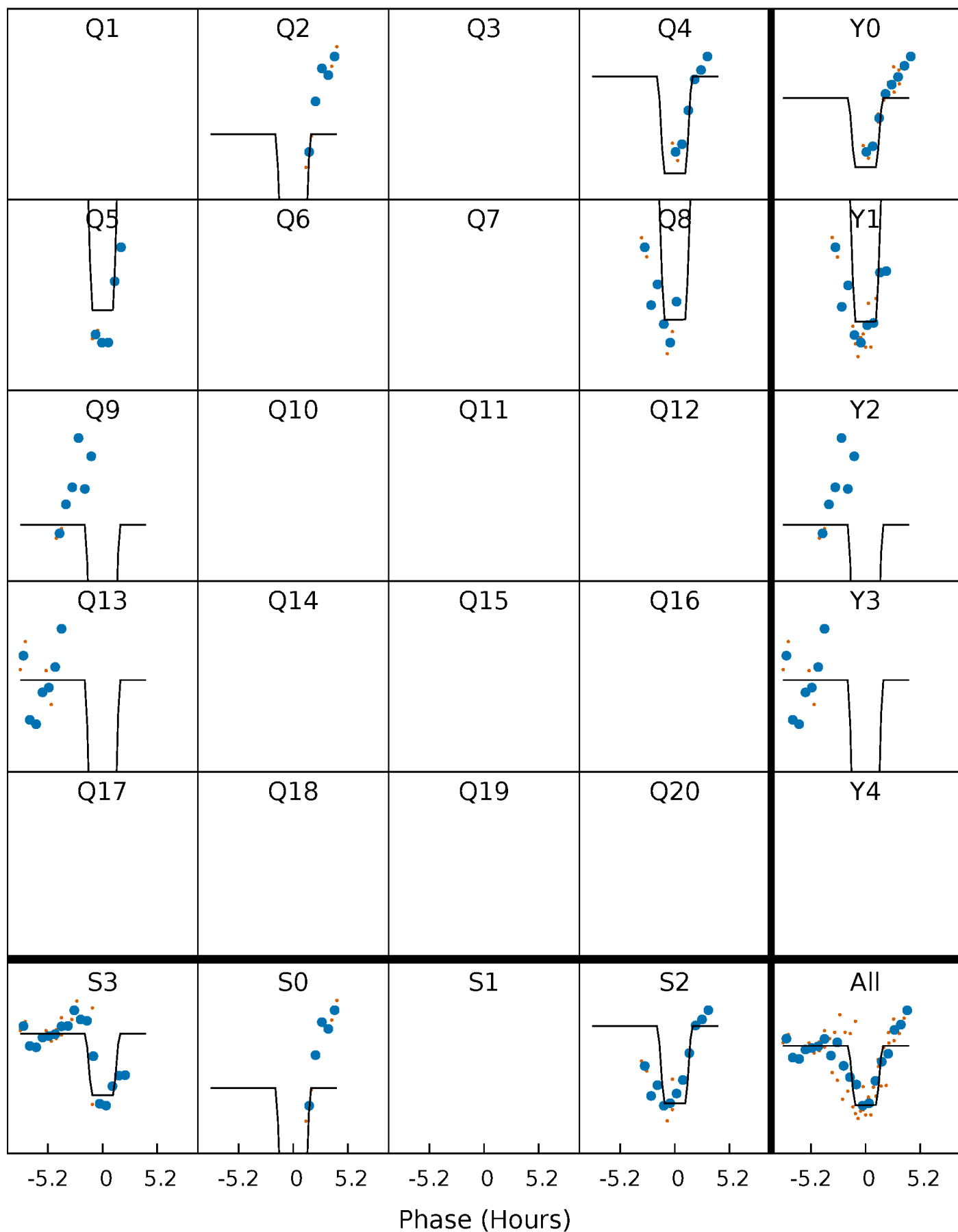
# DV Quarter-Phased Transit Curves

TCE 004274480-03     $P=123.596770$  Days     $T_0=252.324432$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

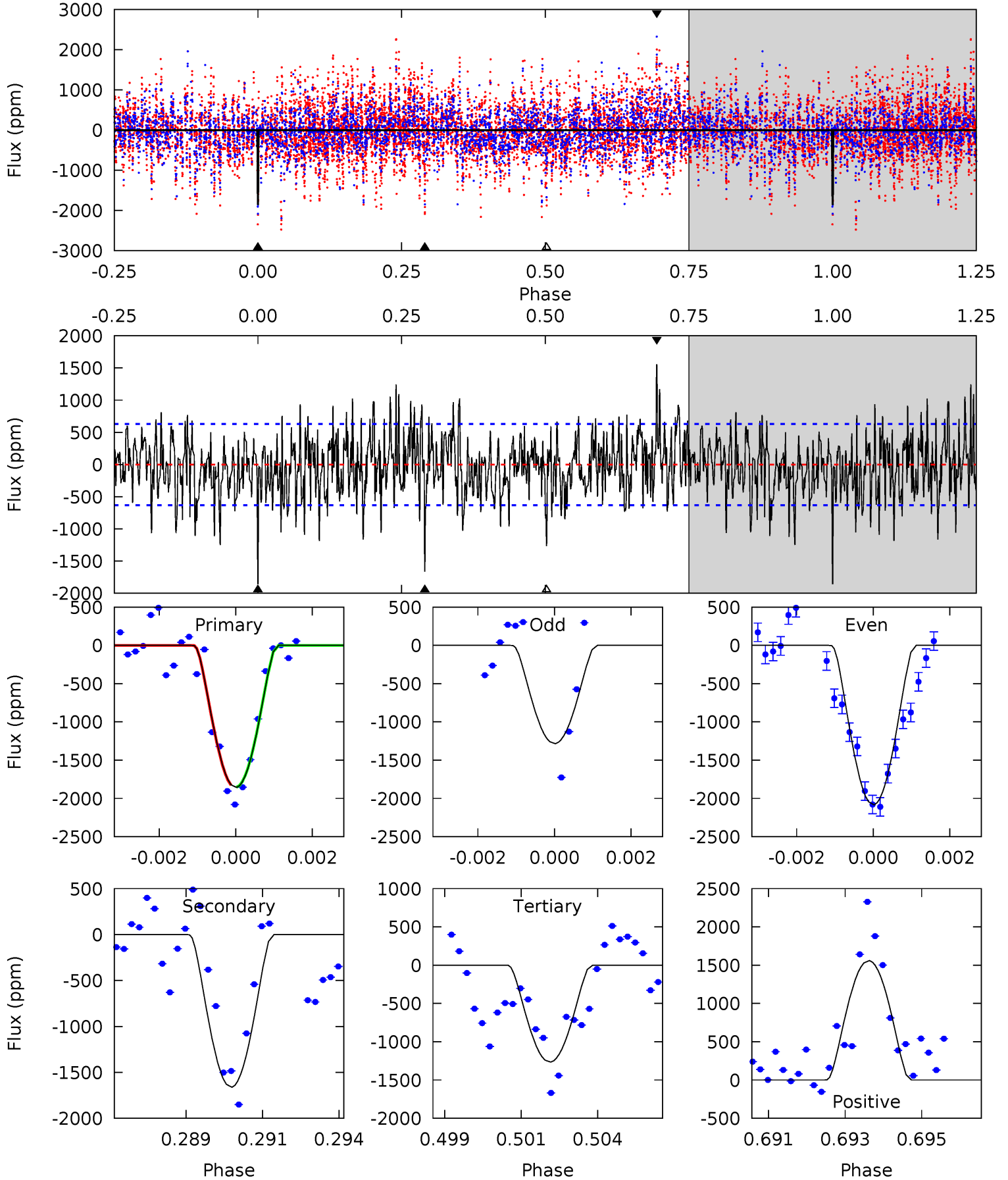
TCE 004274480-03 P=123.575584 Days  $T_0=252.369564$  (BKJD)



# DV Model-Shift Uniqueness Test

004274480-03, P = 123.596770 Days, E = 128.727662 Days

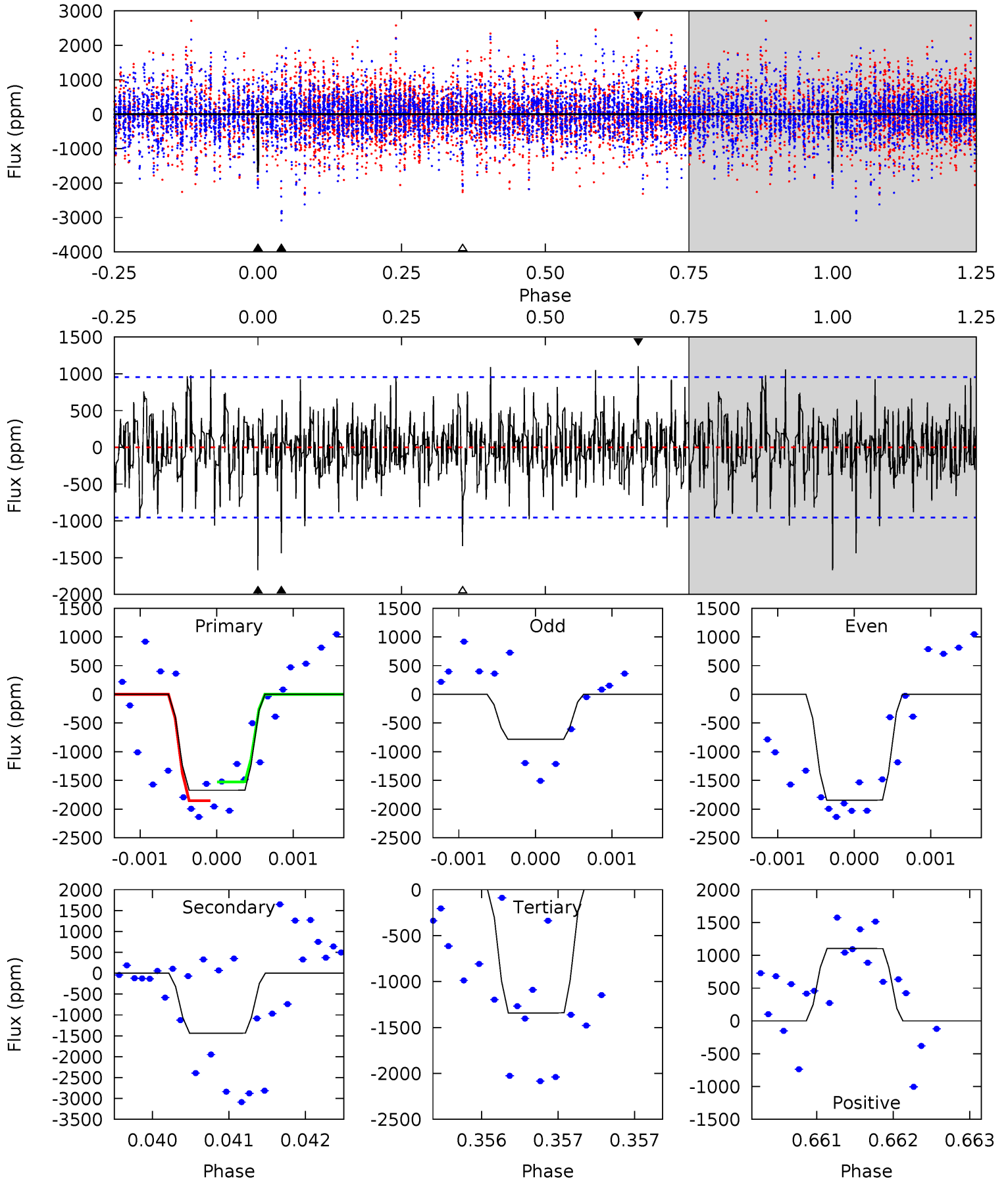
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.6	14.0	10.6	13.1	5.30	3.05	3.39	4.97	2.50	3.34	0.86	3.19	0.83	0.46	0.11



# Alt Model-Shift Uniqueness Test

004274480-03, P = 123.575584 Days, E = 128.793980 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.57	8.23	7.68	6.32	5.47	3.32	1.79	1.89	3.25	0.55	1.91	3.04	0.68	0.40	0.92



### Stellar Parameters For KIC 004274480

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7123^{+200}_{-300}$	$4.230^{+0.108}_{-0.201}$	$-0.140^{+0.250}_{-0.350}$	$1.501^{+0.501}_{-0.231}$	$1.402^{+0.218}_{-0.218}$	$0.584^{+0.288}_{-0.303}$
	+3%/-4%	+3%/-5%	+179%/-250%	+33%/-15%	+16%/-16%	+49%/-52%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 004274480-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-1663 \pm 119$	$23.65^{+23.02}_{-15.33}$	$735^{+58}_{-42}$	$4073^{+2261}_{-787}$	$471^{+3298}_{-350}$
Alt.	$-1438 \pm 175$	$19.30^{+22.28}_{-13.20}$	$737^{+52}_{-46}$	$4259^{+3047}_{-958}$	$612^{+5678}_{-485}$

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



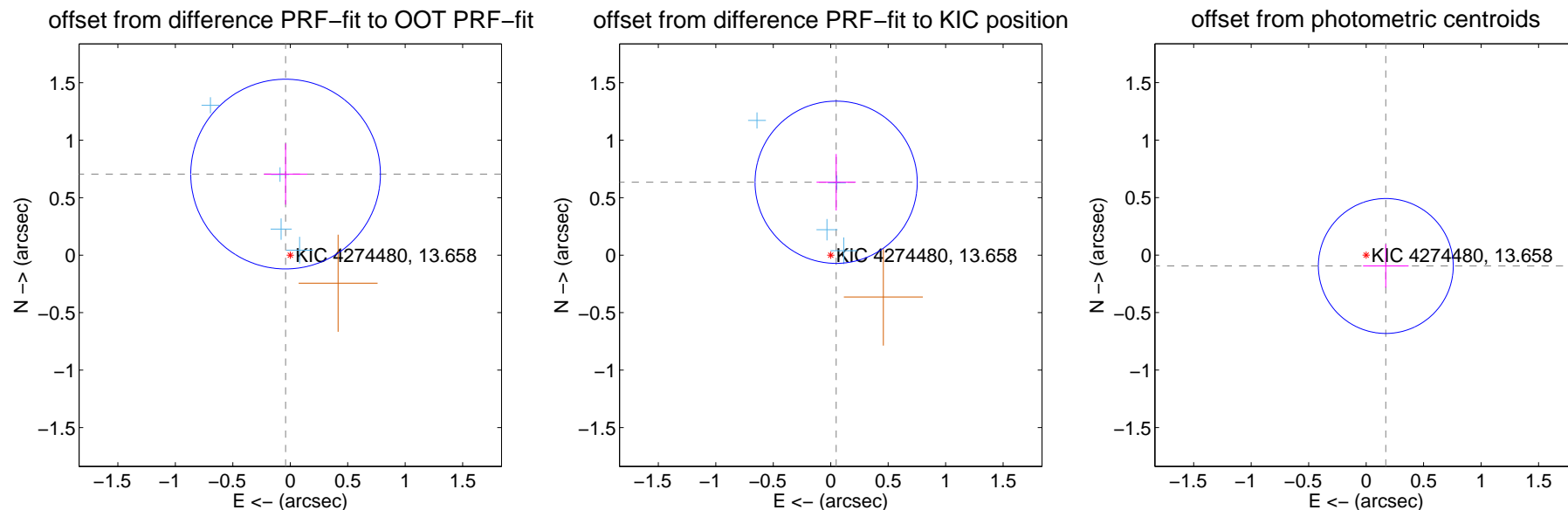
## DV Centroid Data

Supplemental centroid analysis for 004274480-03. Kepler magnitude: 13.66. Transit SNR 11.62

There are 4 quarters with good PRF difference image offsets

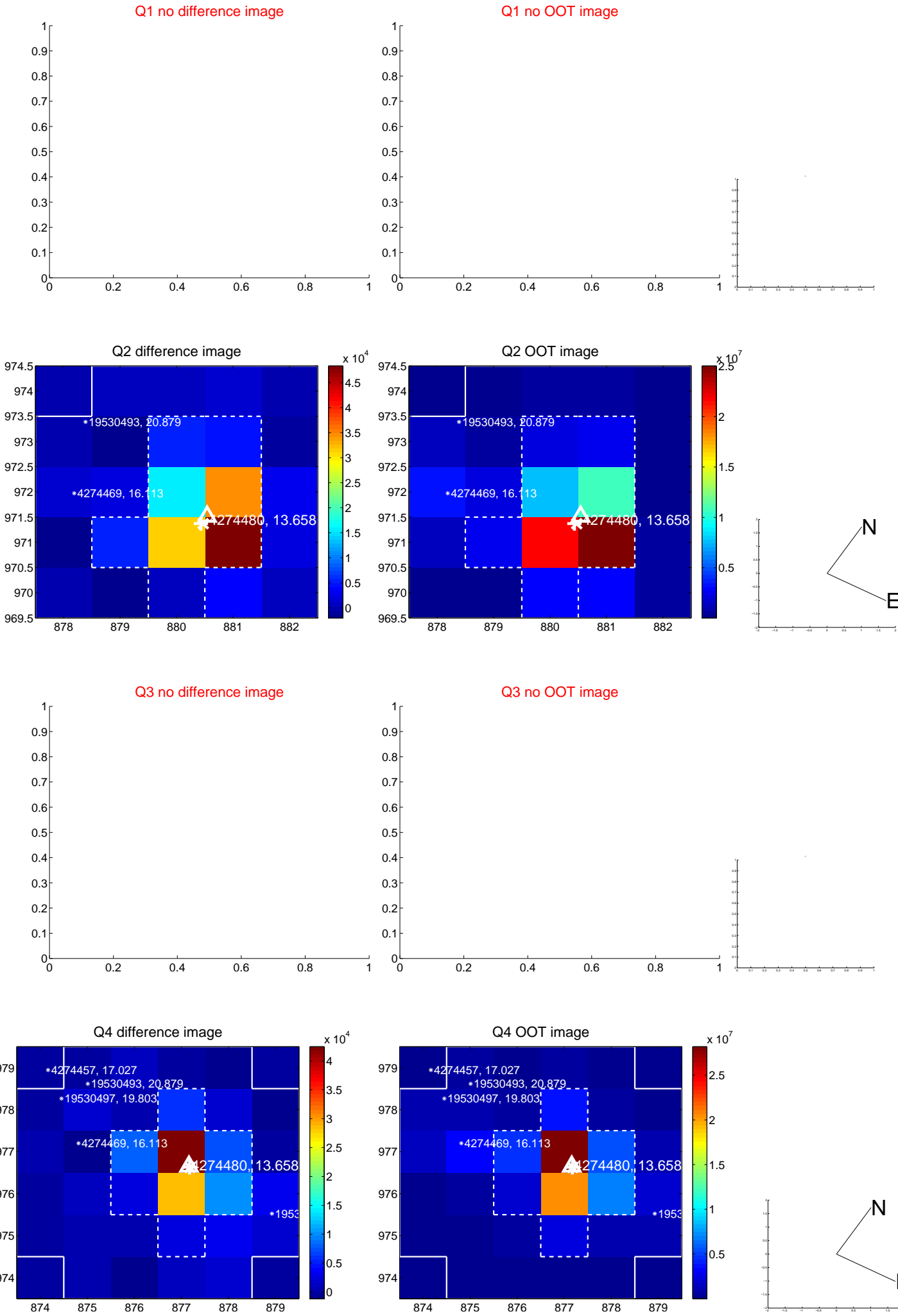
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.706 \pm 0.275$	2.57	$0.041 \pm 0.189$	$0.705 \pm 0.266$
PRF-fit source offset from KIC position	$0.636 \pm 0.235$	2.70	$-0.047 \pm 0.171$	$0.634 \pm 0.246$
photometric centroid source offset	$0.20 \pm 0.20$	1.00	$-0.17 \pm 0.20$	$-0.09 \pm 0.19$

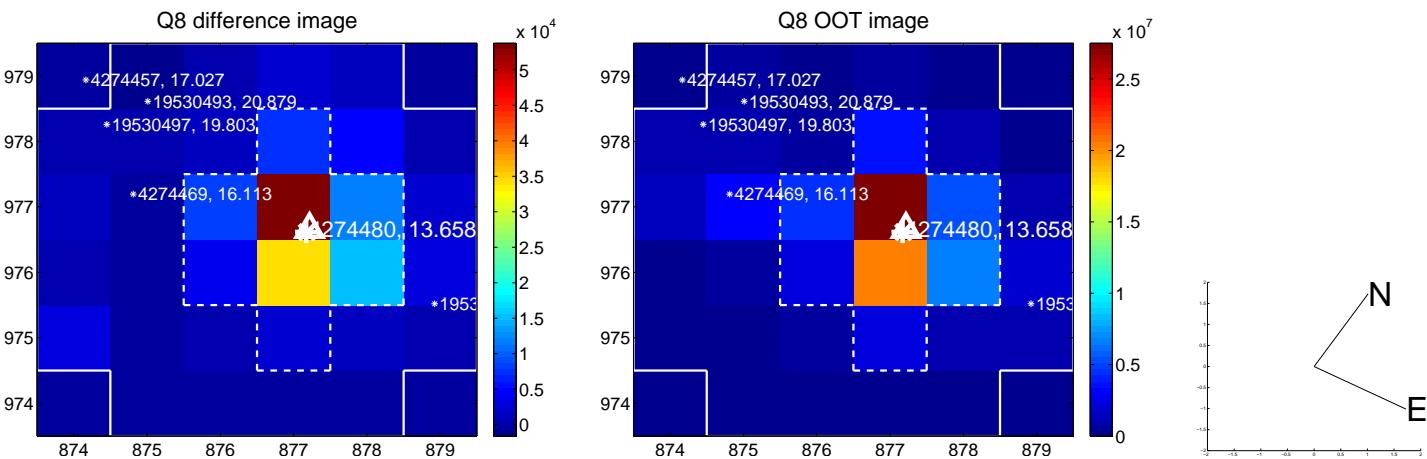
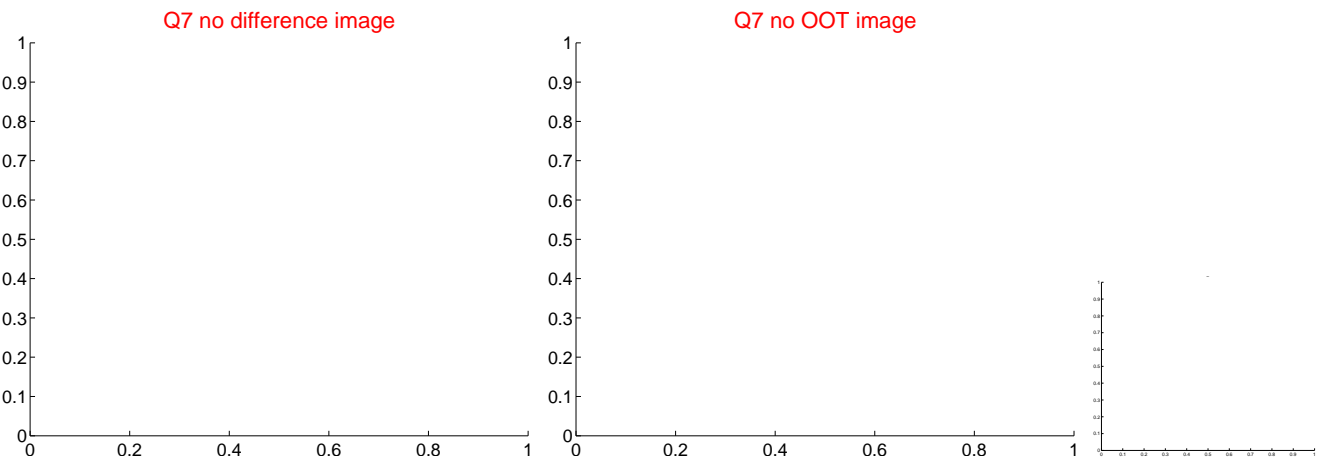
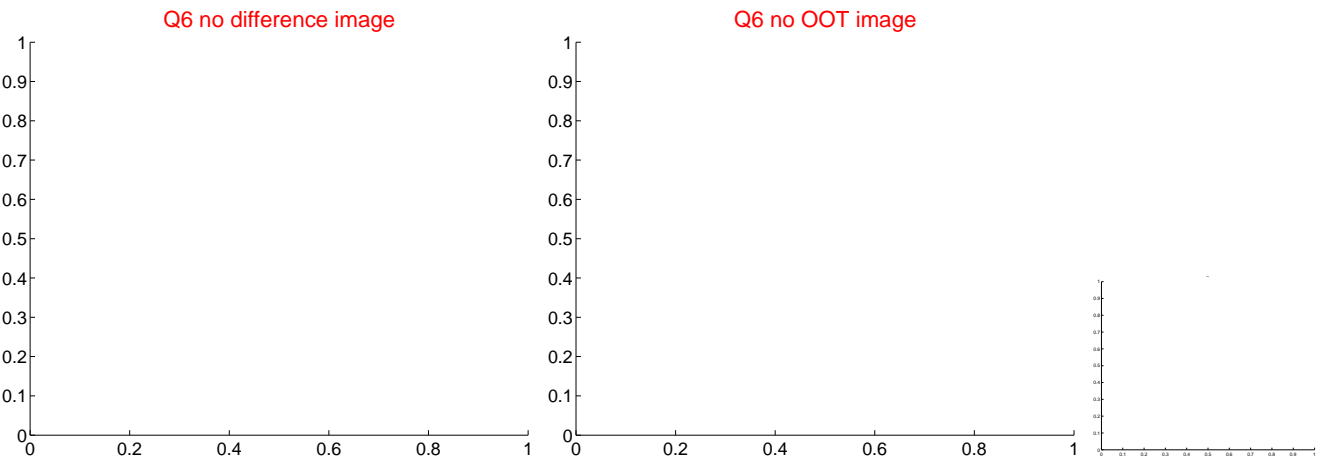
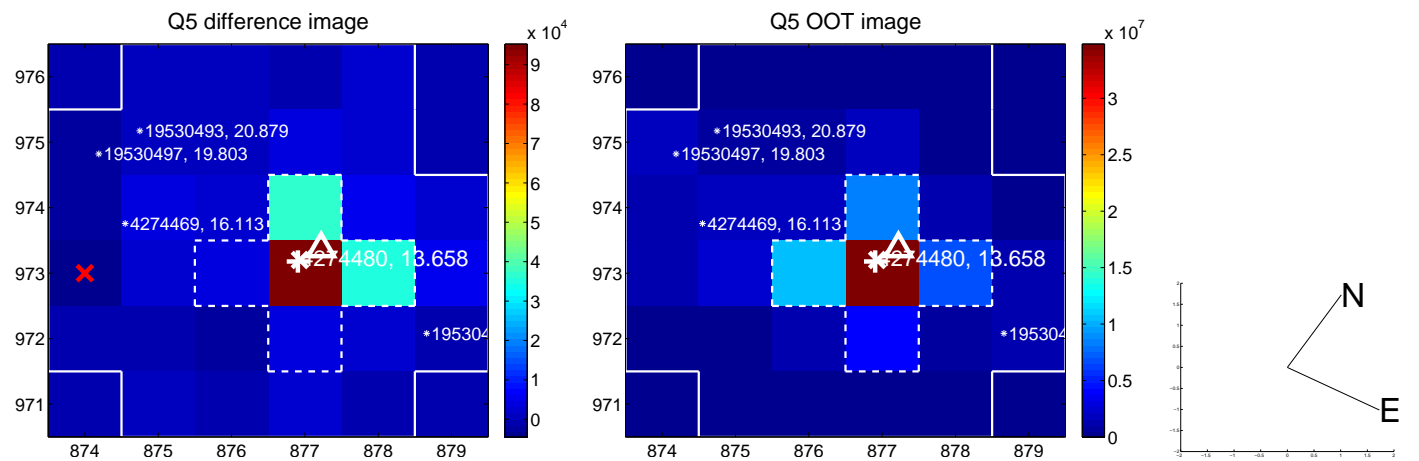


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

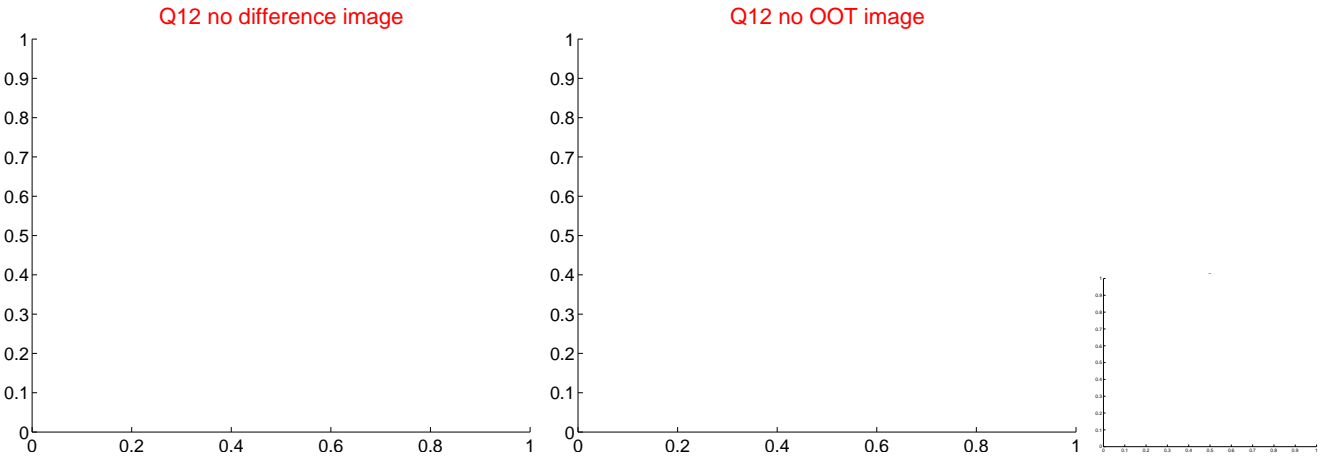
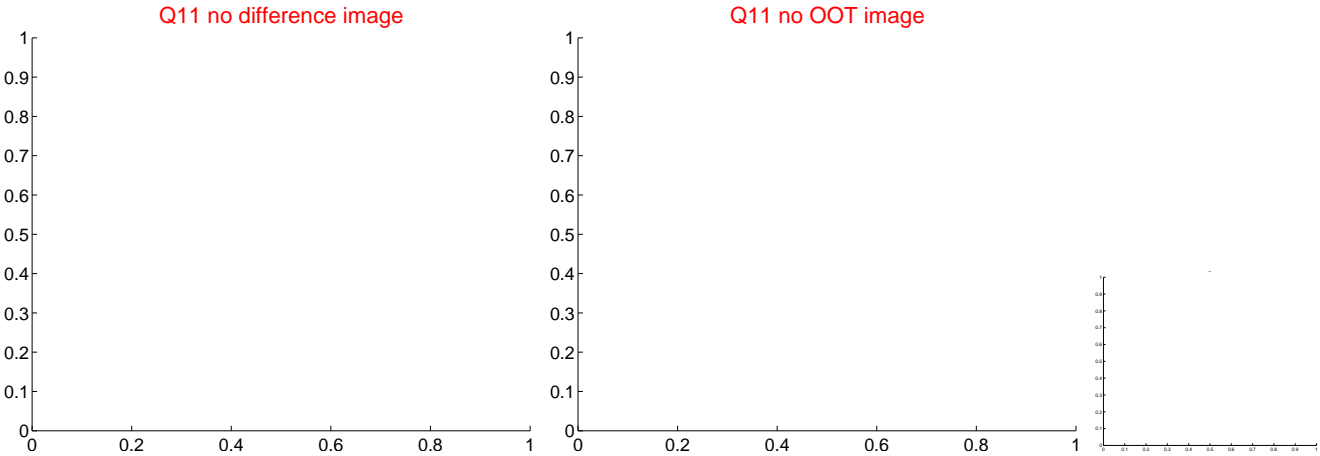
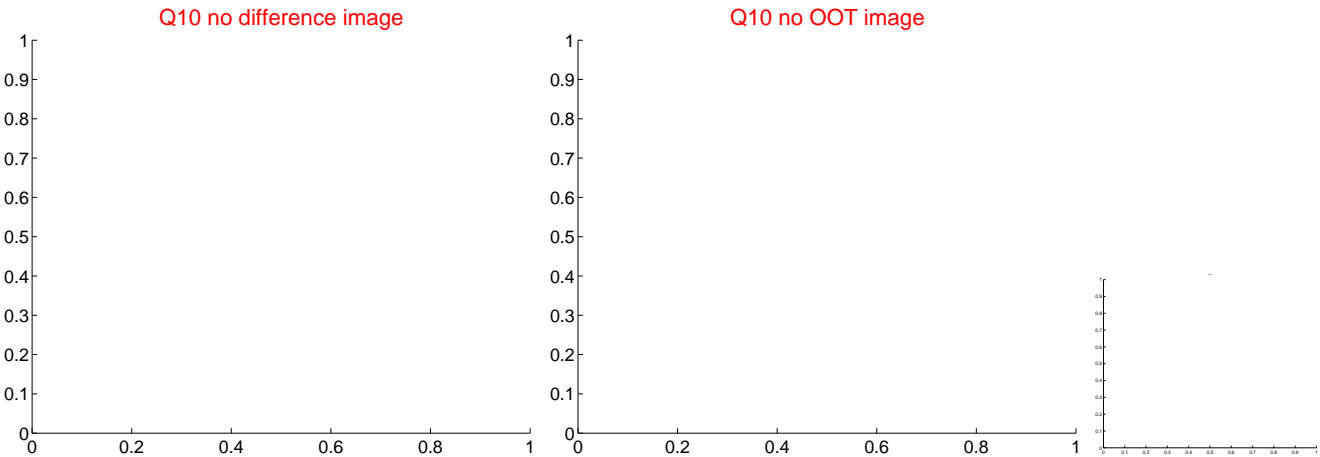
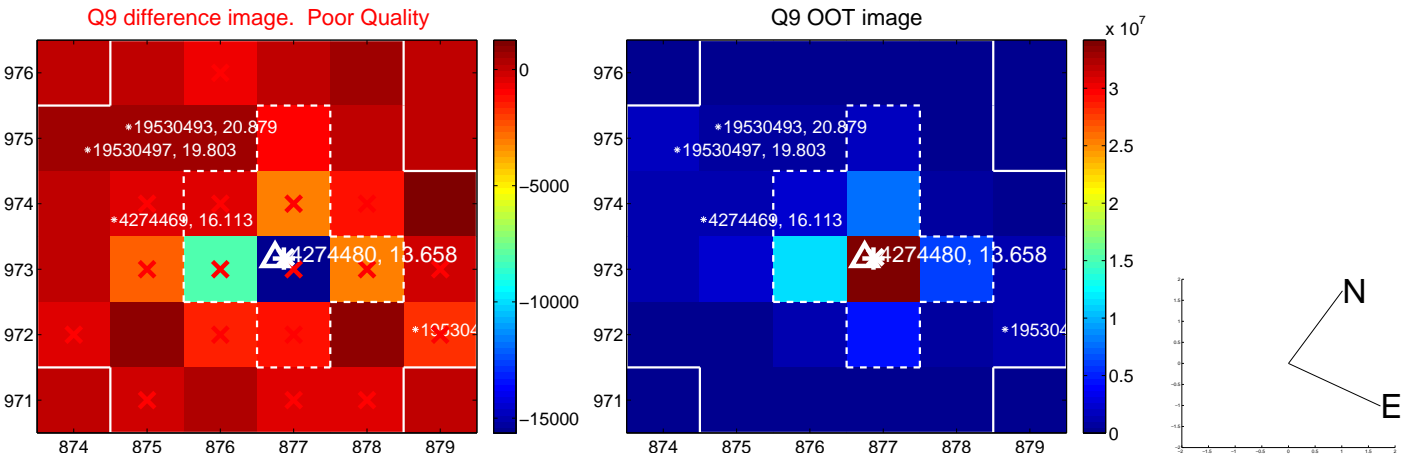
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.

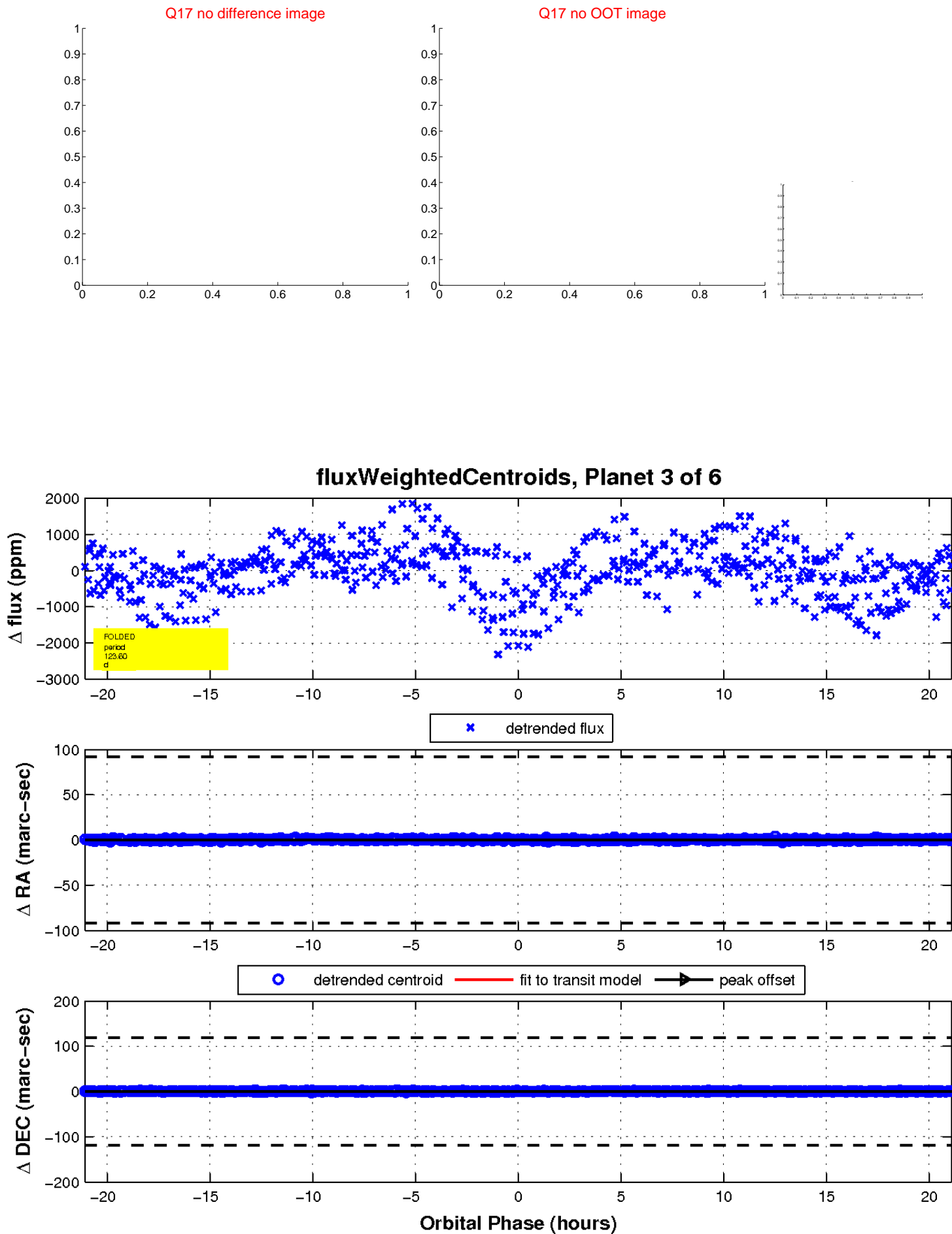


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



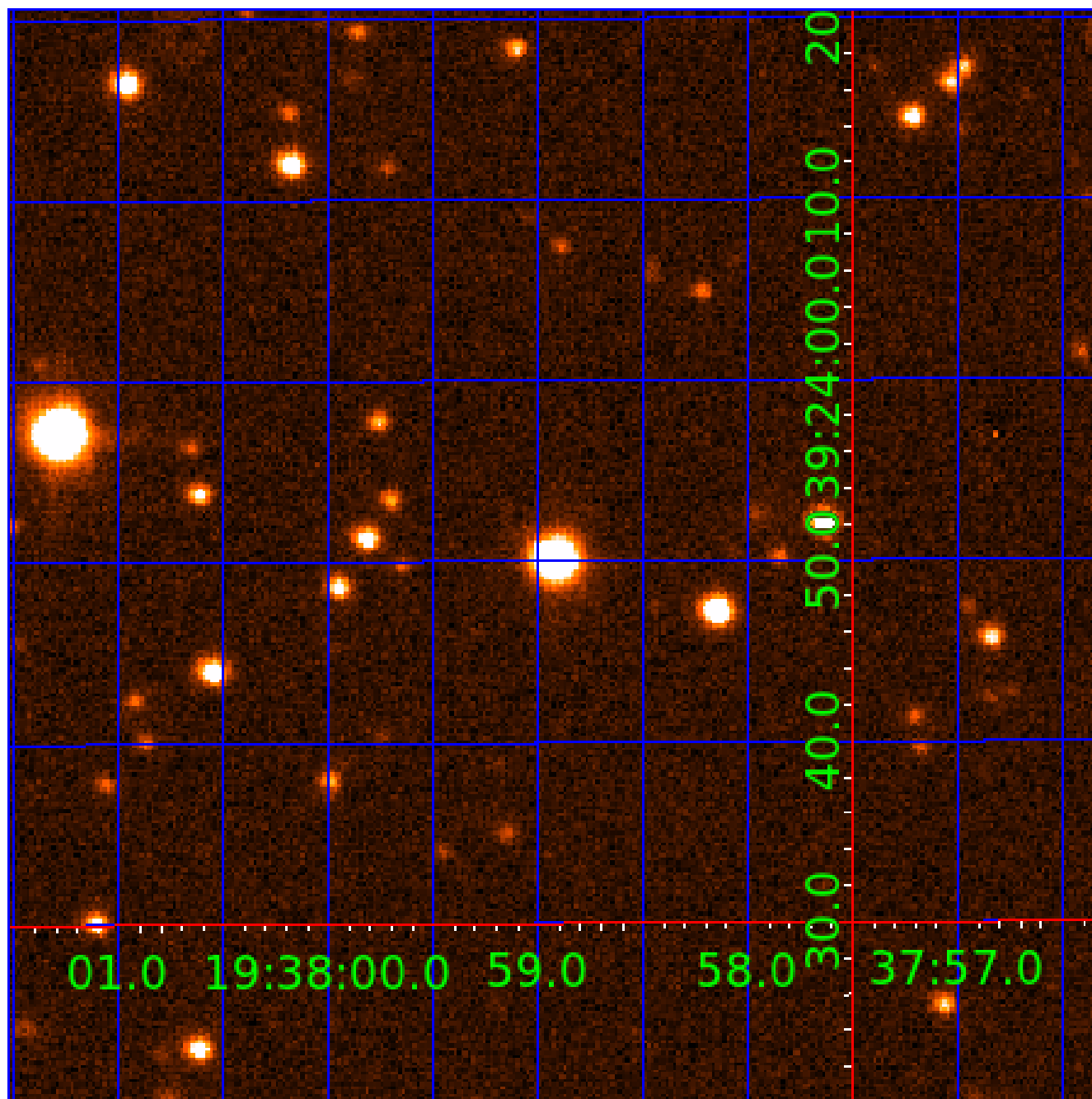


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 004274480

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004274480-01	OBS	No	1.020922	132.423067	24.5	5.151	9.1	3.0	1.50	7123	0.77	10563.55
004274480-02	OBS	No	1.020904	131.784182	80.3	2.296	9.9	9.4	1.50	7123	1.56	10563.80
004274480-03	OBS	No	123.596770	252.324432	2316.8	7.043	10.8	11.6	1.50	7123	13.15	17.64
004274480-05	OBS	No	79.582334	208.609557	1660.5	5.721	8.3	8.7	1.50	7123	11.24	31.72
004274480-06	OBS	No	172.571842	162.600655	229.3	6.000	7.4	-1.0	1.50	7123	2.30	11.30

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004274480-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004274480-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
004274480-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT
004274480-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004274480-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

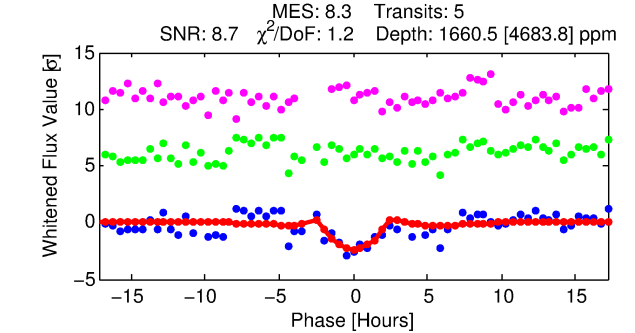
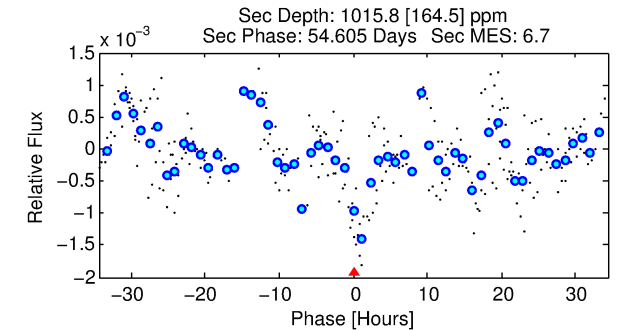
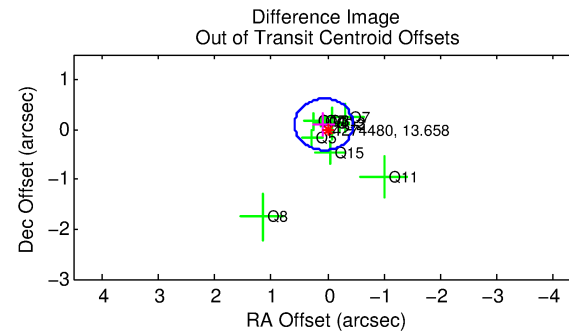
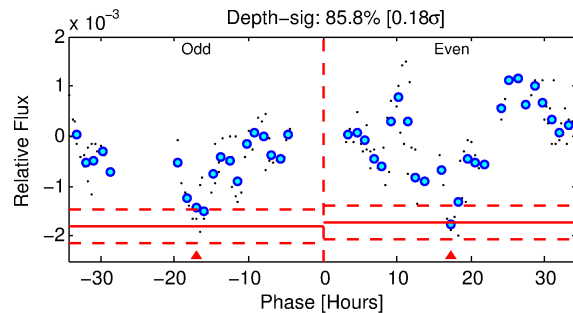
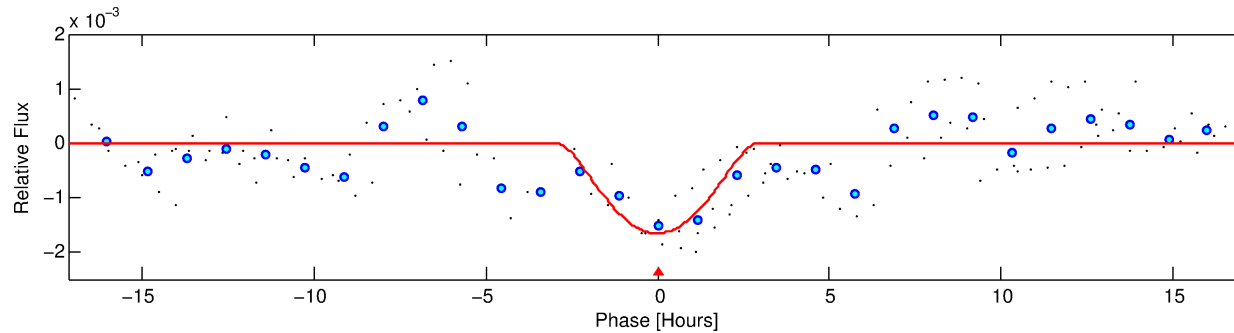
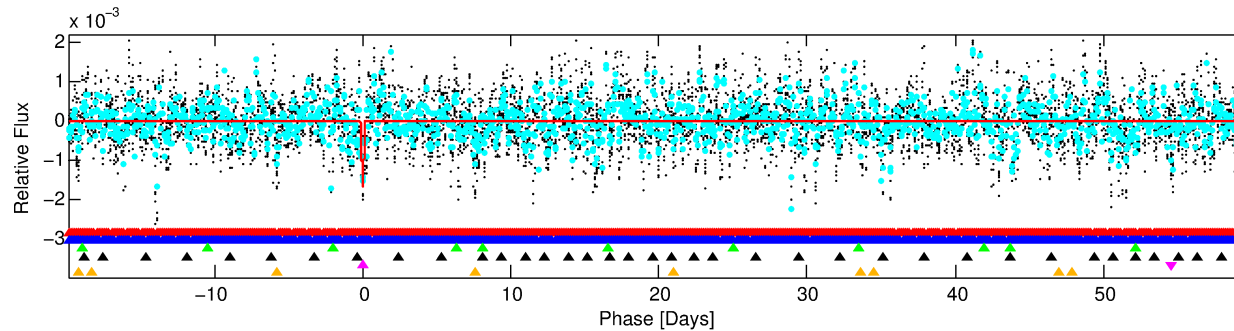
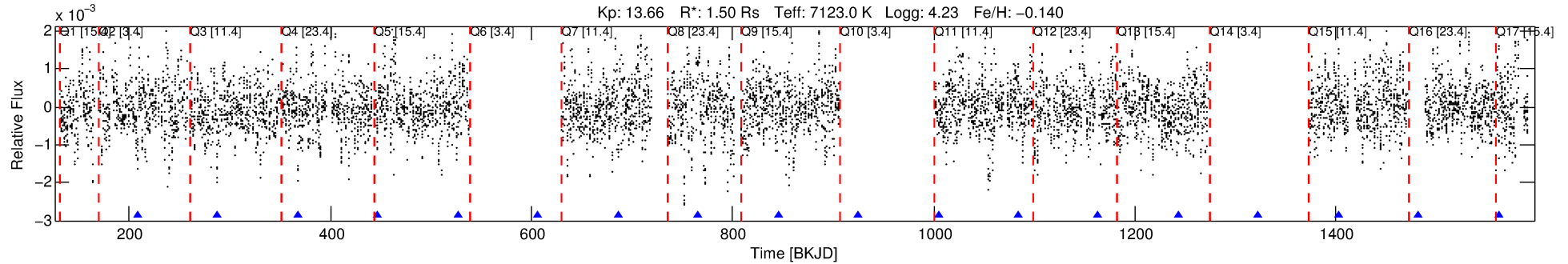
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004274480-05

No Significant Match Found

# DV One-Page Summary

KIC: 4274480 Candidate: 5 of 6 Period: 79.582 d



## DV Fit Results:

Period = 79.58233 [0.00390] d  
Epoch = 208.6096 [0.0113] BKJD  
Rp/R\* = 0.0686 [0.1834]  
a/R\* = 40.05 [24.97]  
b = 1.00 [0.13]  
Seff = 31.72 [13.20]  
Teq = 605 [63] K  
Rp = 11.24 [30.27] Re  
a = 0.4047 [0.1096] AU  
Ag = 724.56 [3884.47] [0.19 $\sigma$ ]  
Teffp = 4854 [6493] K [0.65 $\sigma$ ]

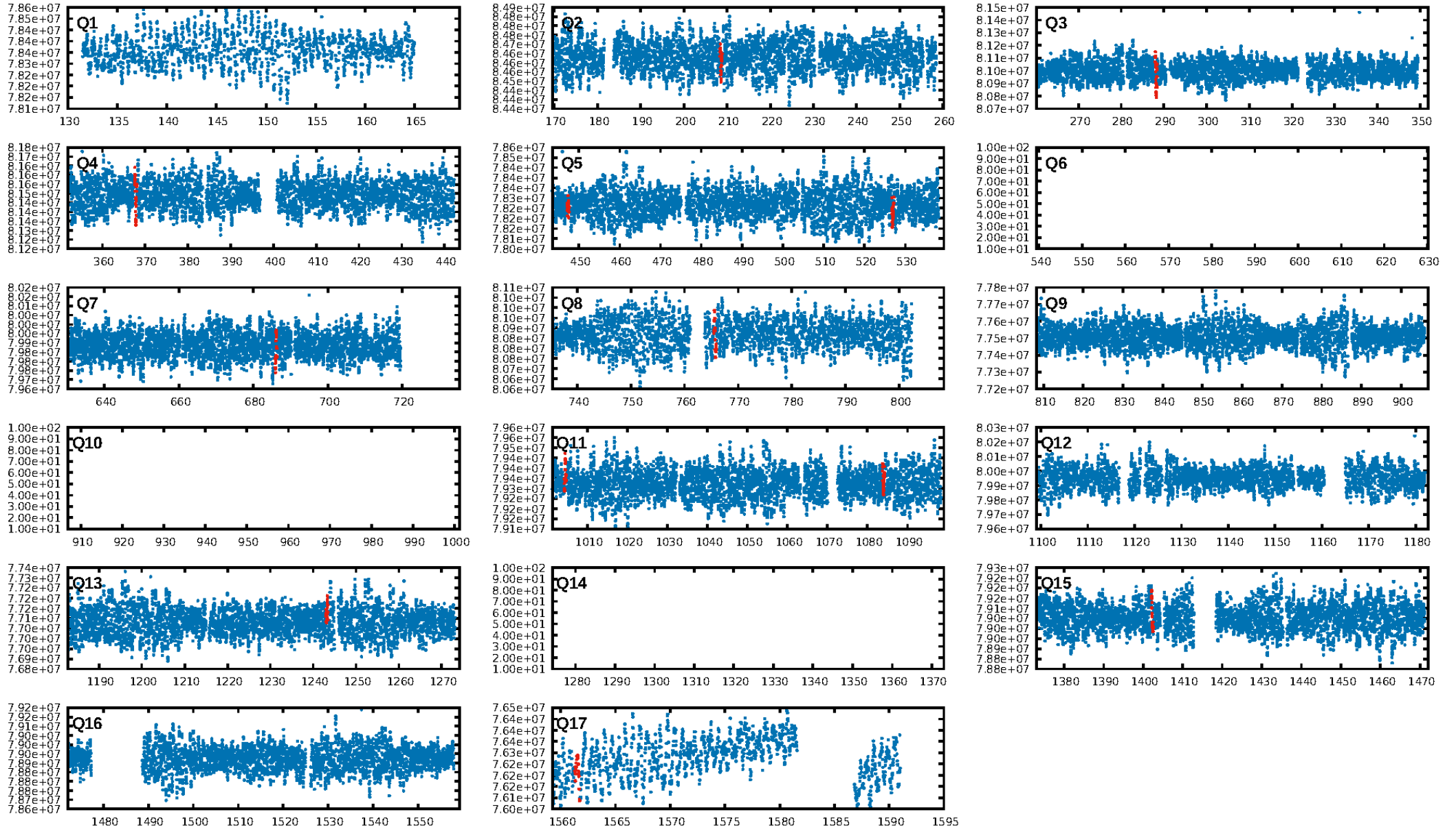
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [105.00 $\sigma$ ]  
LongPeriod-sig: 100.0% [116.42 $\sigma$ ]  
ModelChiSquare2-sig: 34.8%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: 1.177  
Centroid-sig: 23.5%  
Centroid-so: 0.516 arcsec [2.34 $\sigma$ ]  
OotOffset-rm: 0.117 arcsec [0.68 $\sigma$ ]  
KicOffset-rm: 0.041 arcsec [0.21 $\sigma$ ]  
OotOffset-st: 1/4/2/3 [10]  
KicOffset-st: 1/4/2/3 [10]  
DiffImageQuality-fgm: 0.70 [7/10]  
DiffImageOverlap-fno: 0.00 [0/10]

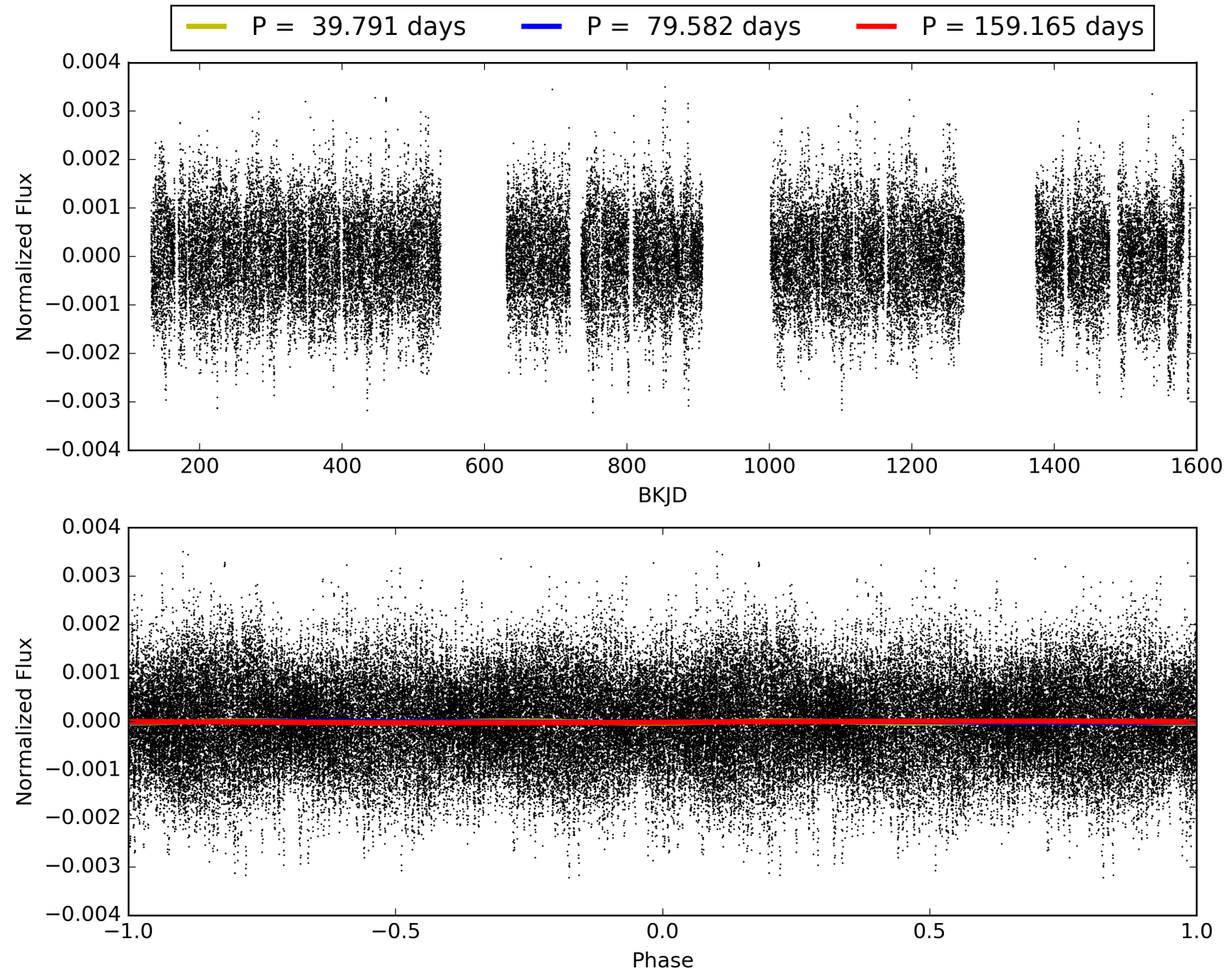
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:36:08 Z

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

# TCE 004274480-05, PDC Light Curves



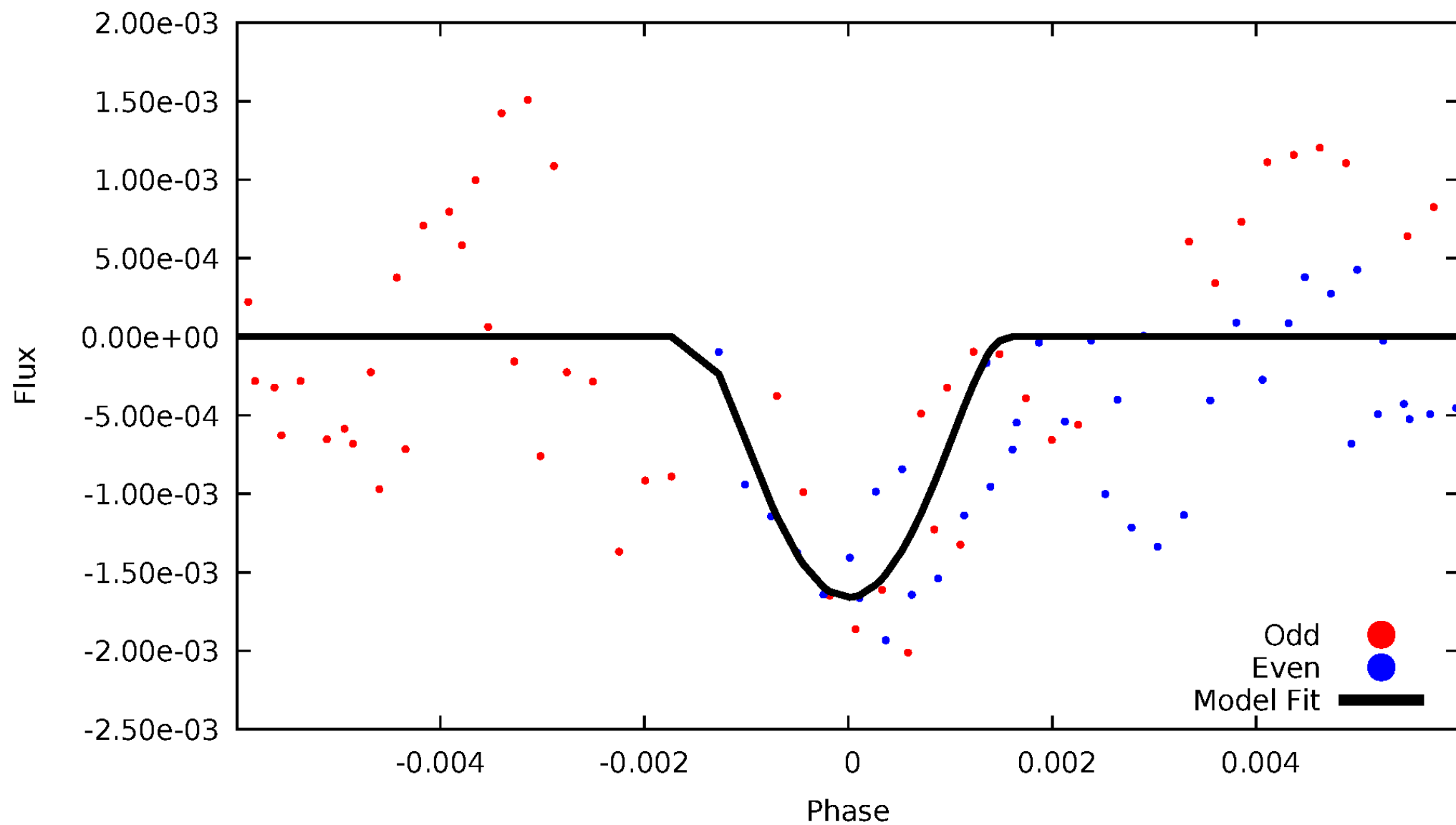
TCE 004274480-05





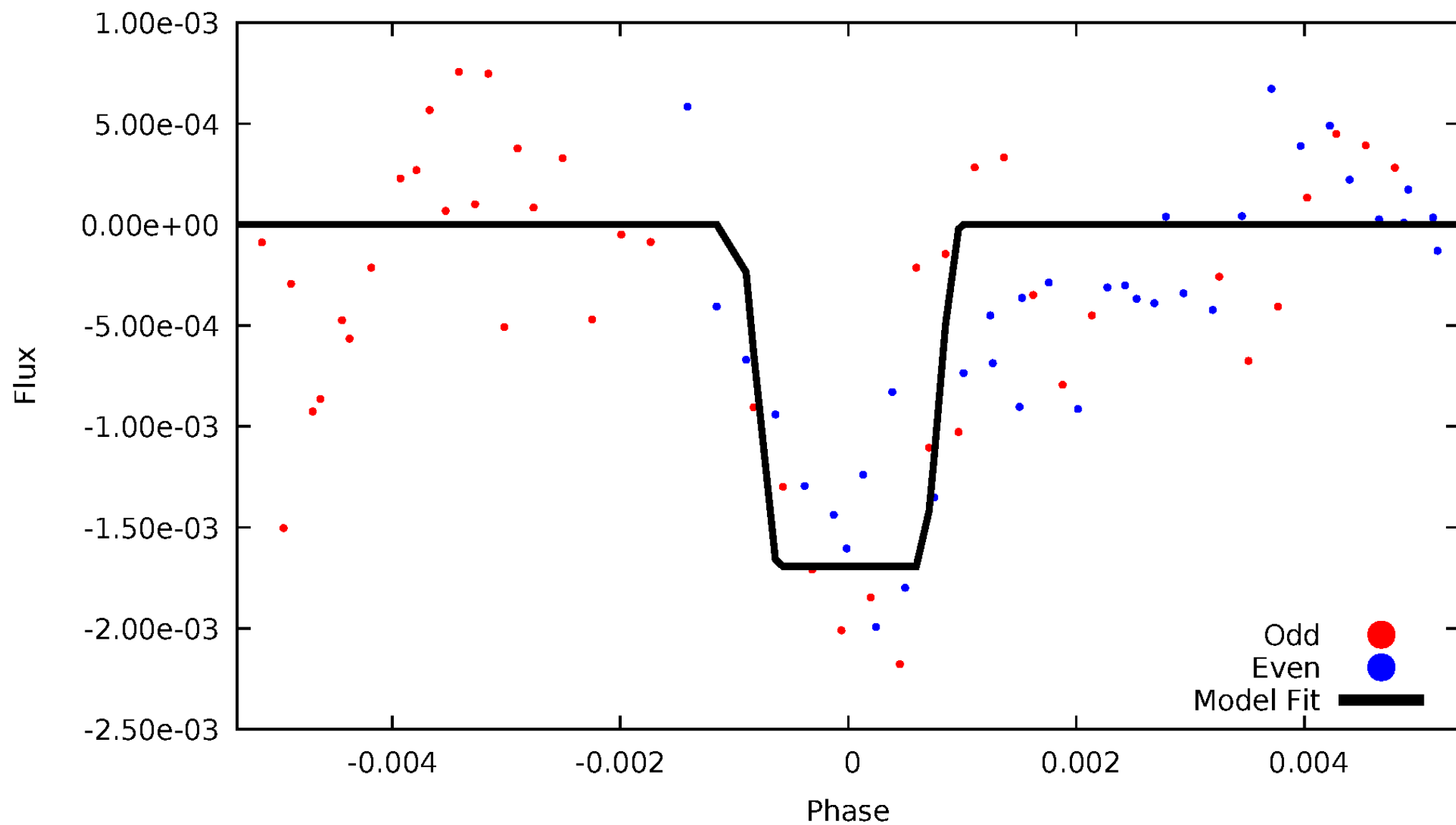
# DV Odd/Even

TCE 004274480-05



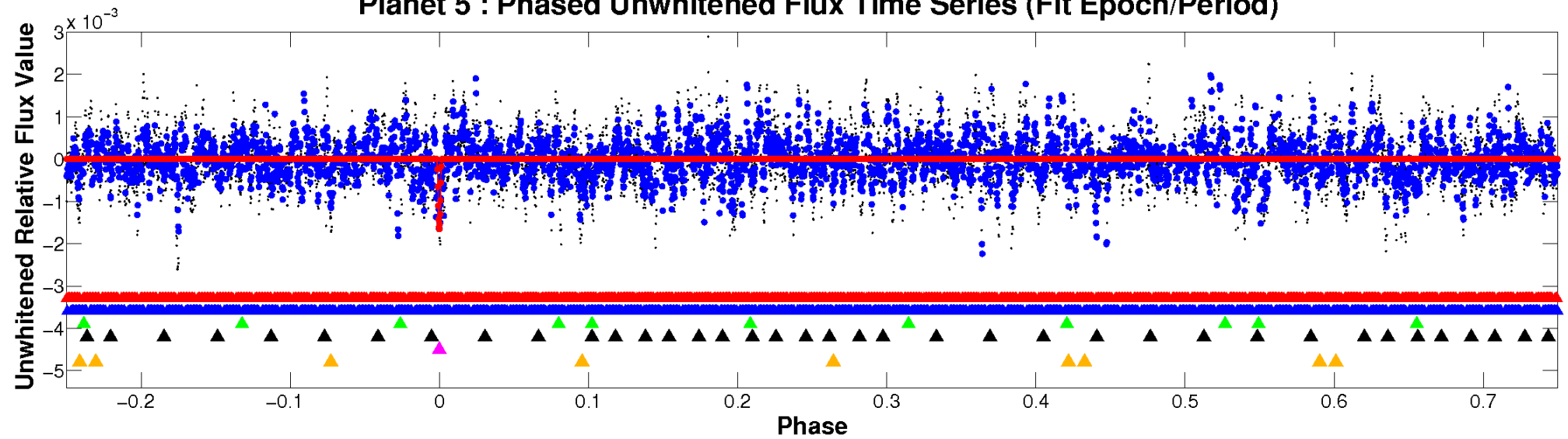
# ALT Odd/Even

TCE 004274480-05

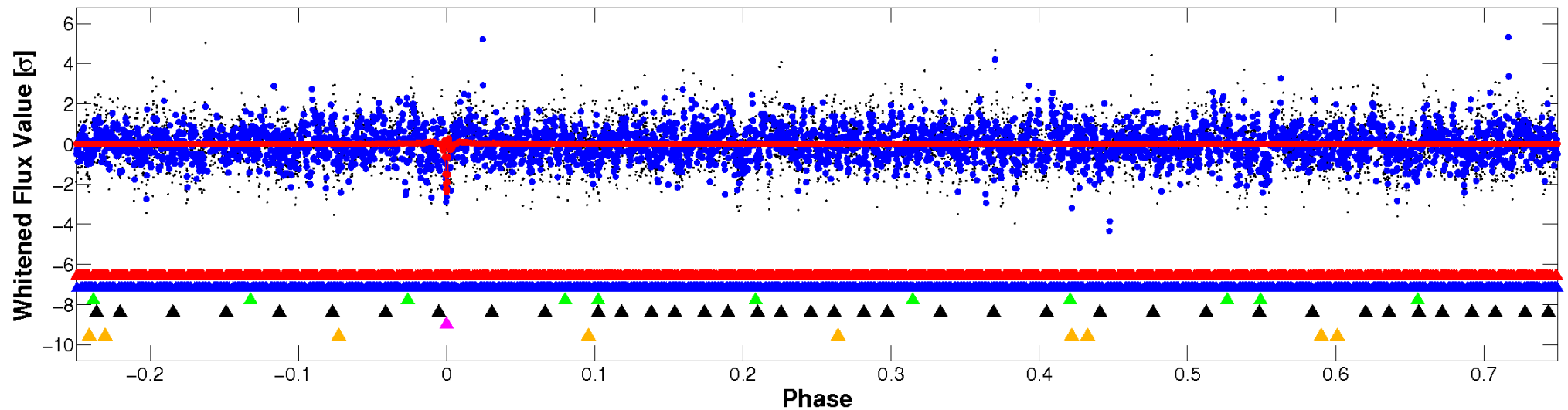


# Non-Whitened Vs. Whitened Light Curve

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

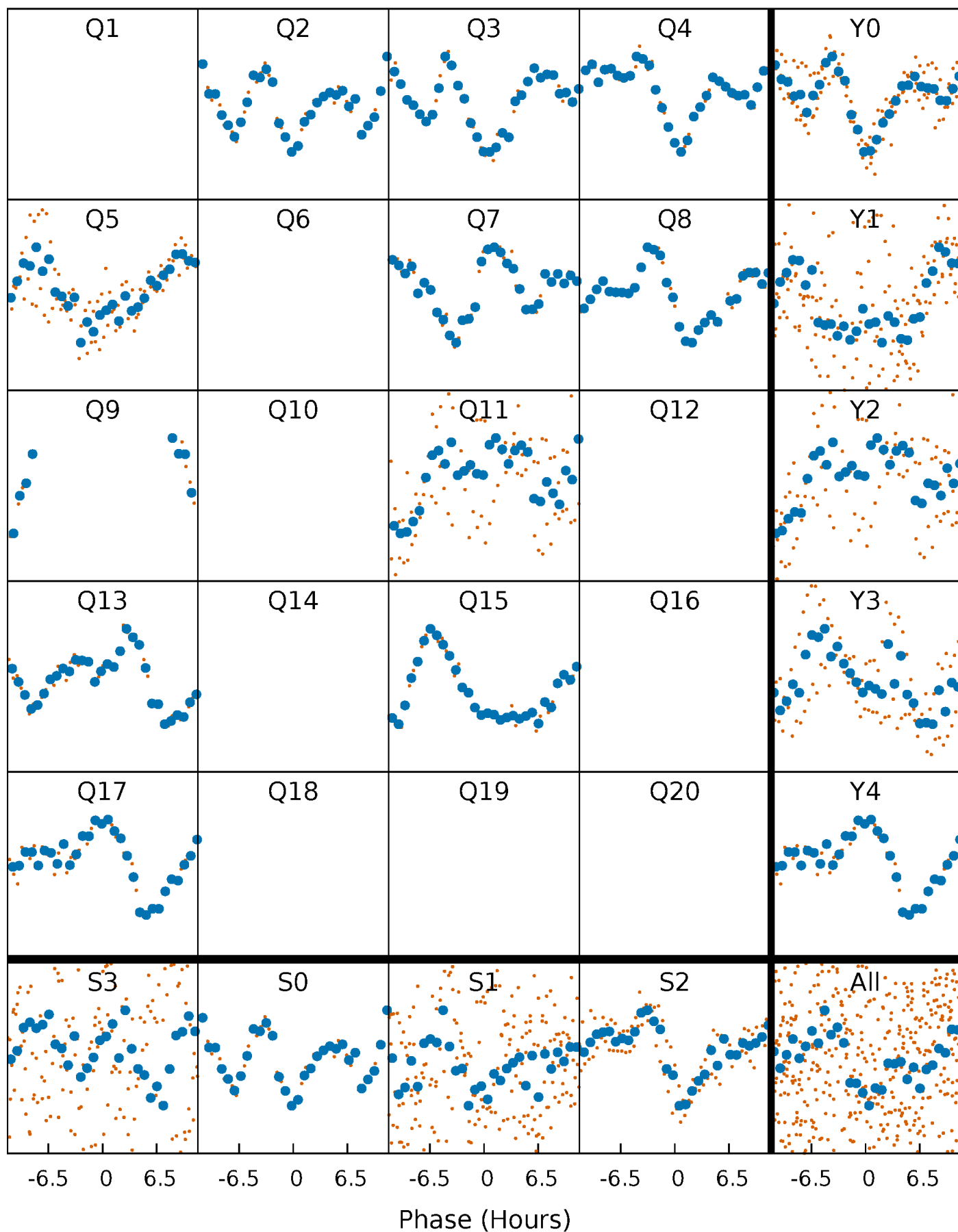


## Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



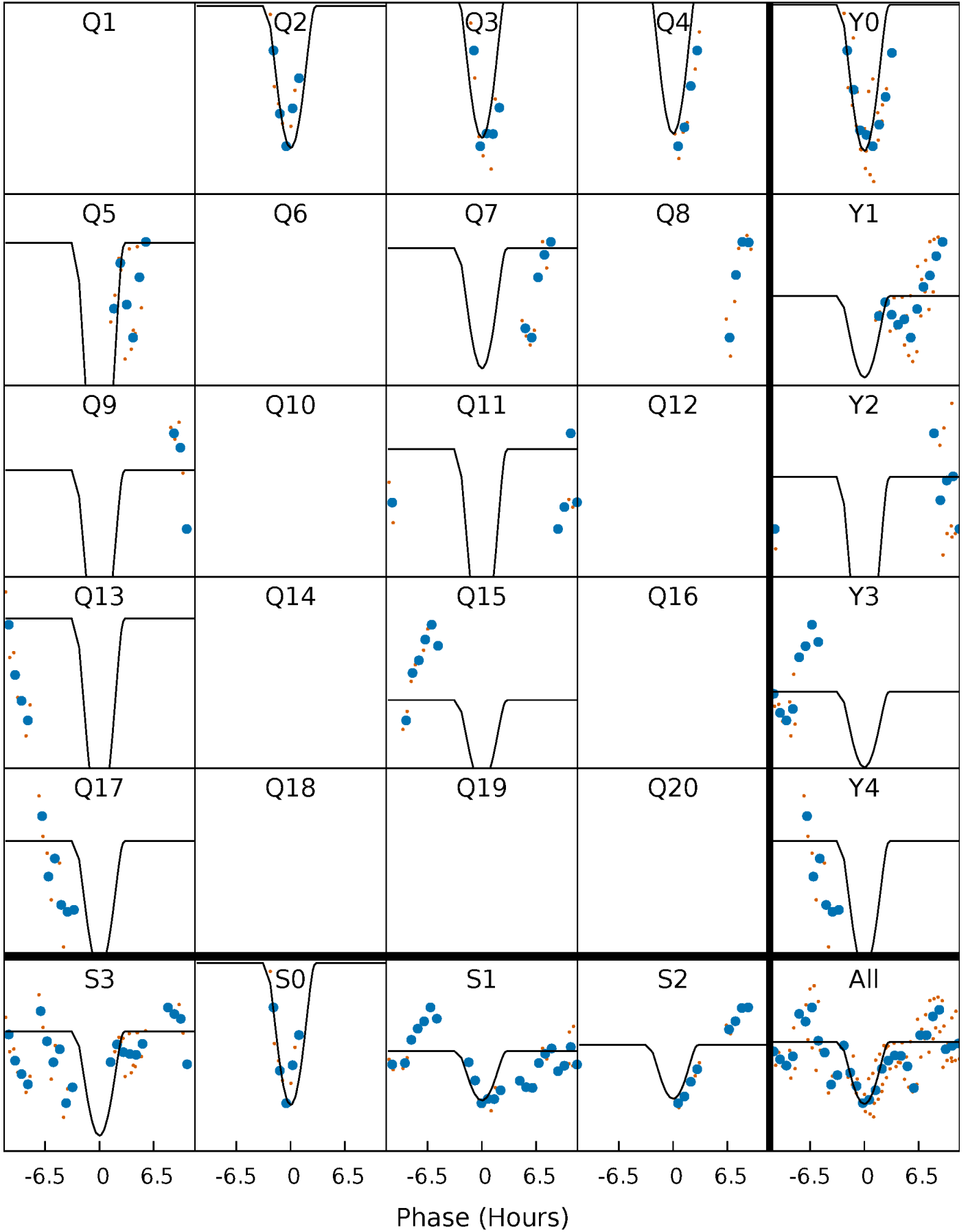
# PDC Quarter-Phased Transit Curves

TCE 004274480-05   P= 79.582334 Days    $T_0=208.609557$  (BKJD)



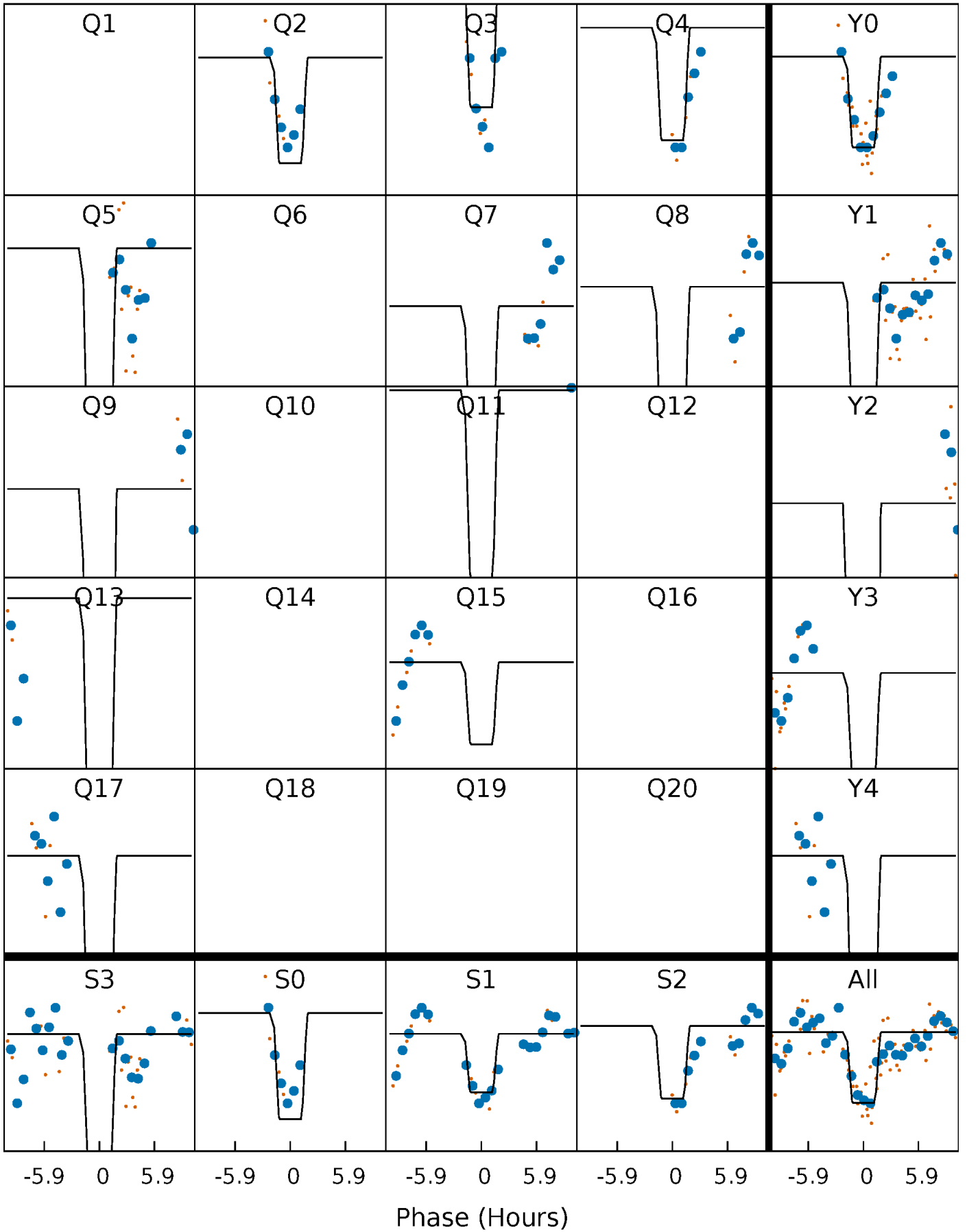
# DV Quarter-Phased Transit Curves

TCE 004274480-05     $P = 79.582334$  Days     $T_0 = 208.609557$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 004274480-05     $P = 79.581677$  Days     $T_0 = 208.620812$  (BKJD)

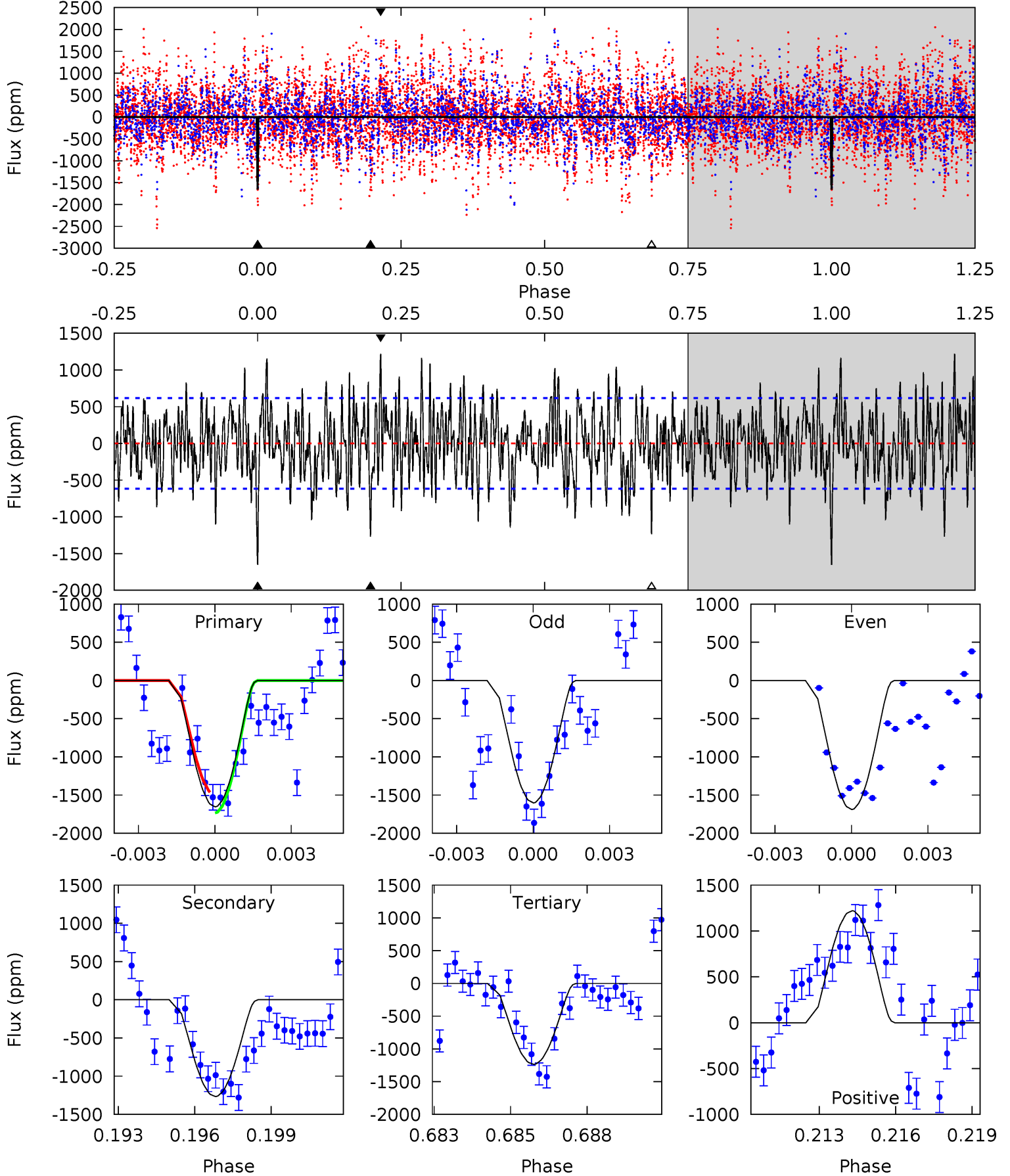




# DV Model-Shift Uniqueness Test

004274480-05,  $P = 79.582334$  Days,  $E = 129.027223$  Days

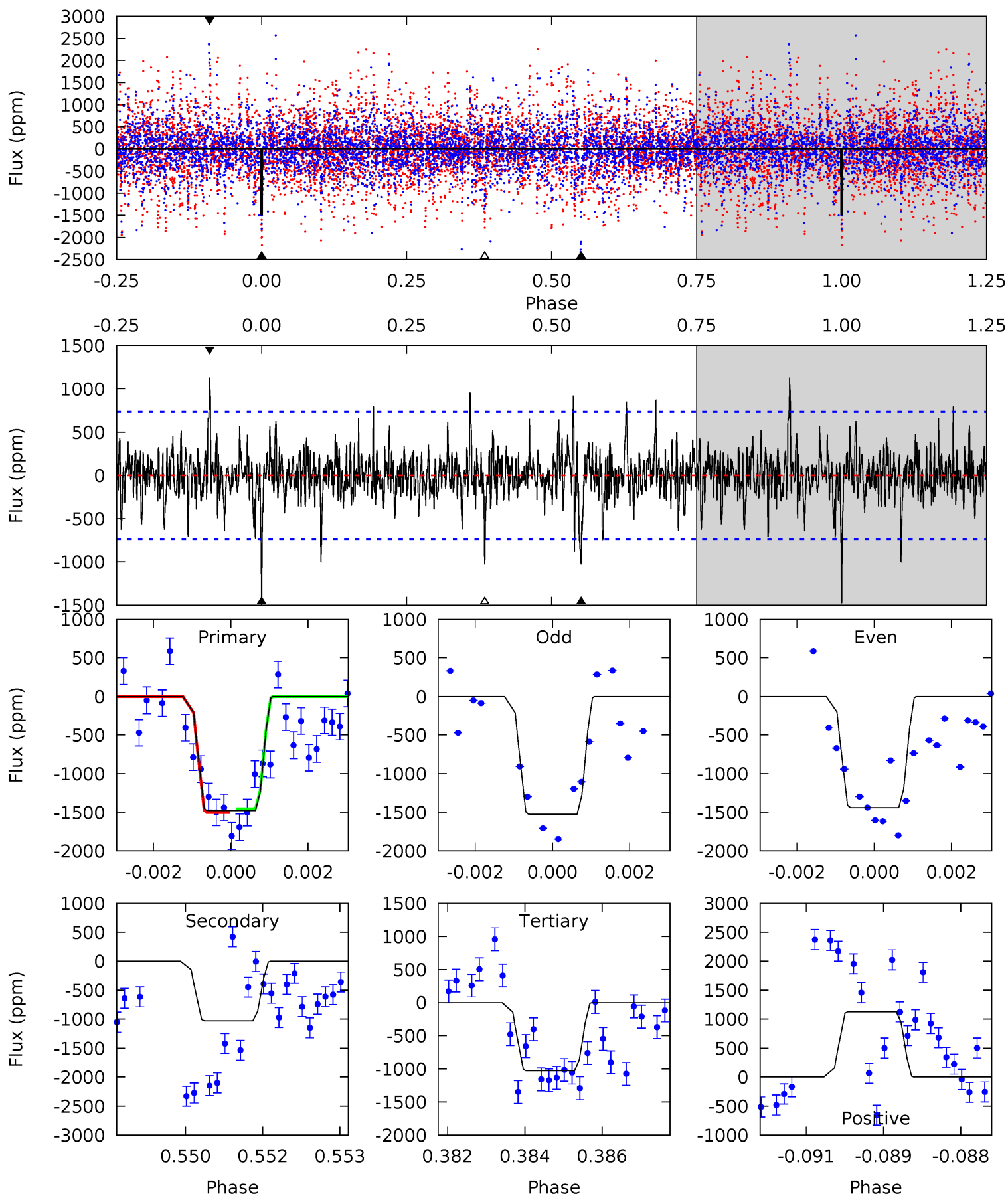
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.1	10.8	10.5	10.4	5.26	2.98	3.39	3.56	3.69	0.26	0.39	0.37	0.95	0.42	1.04



# Alt Model-Shift Uniqueness Test

004274480-05, P = 79.581677 Days, E = 129.039135 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
10.8	7.49	7.49	8.22	5.34	3.11	1.66	3.27	2.55	0.00	-0.73	0.32	0.85	0.43	0.18



### Stellar Parameters For KIC 004274480

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7123^{+200}_{-300}$	$4.230^{+0.108}_{-0.201}$	$-0.140^{+0.250}_{-0.350}$	$1.501^{+0.501}_{-0.231}$	$1.402^{+0.218}_{-0.218}$	$0.584^{+0.288}_{-0.303}$
	+3%/-4%	+3%/-5%	+179%/-250%	+33%/-15%	+16%/-16%	+49%/-52%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 004274480-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-1267 \pm 117$	$26.36^{+22.81}_{-18.47}$	$849^{+64}_{-46}$	$3731^{+2260}_{-664}$	$163^{+1747}_{-115}$
Alt.	$-1028 \pm 137$	$23.09^{+25.04}_{-15.67}$	$852^{+66}_{-49}$	$3809^{+2205}_{-809}$	$179^{+1541}_{-139}$

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

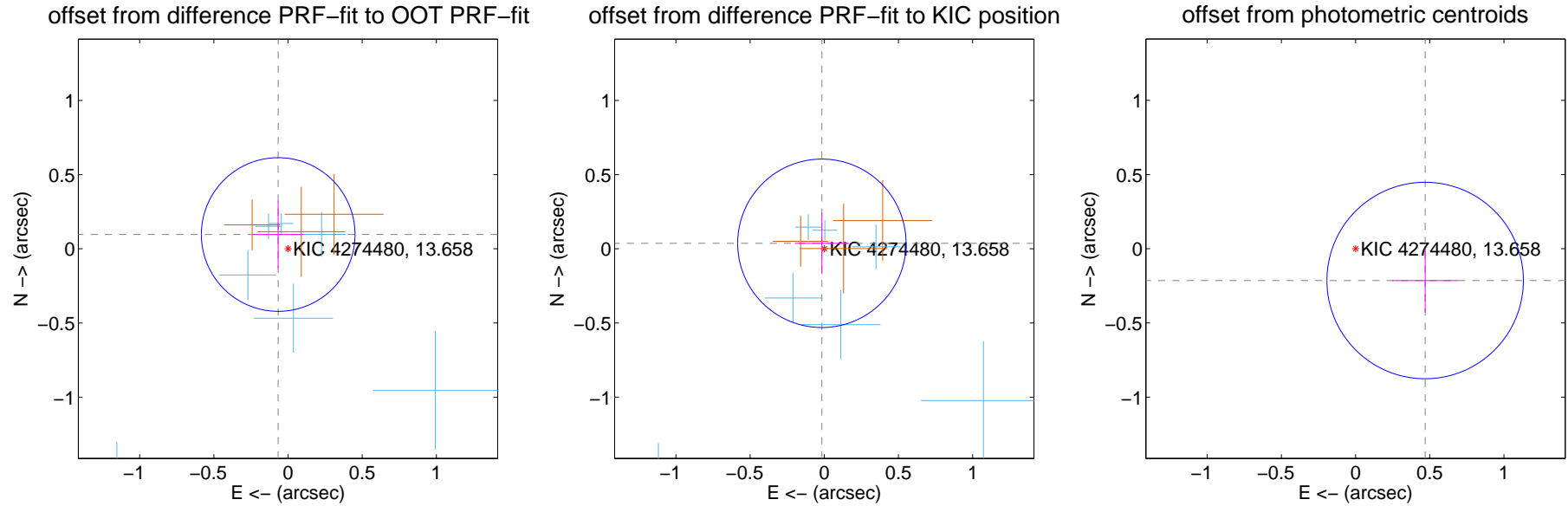
## DV Centroid Data

Supplemental centroid analysis for 004274480-05. Kepler magnitude: 13.66. Transit SNR 8.65

There are 7 quarters with good PRF difference image offsets

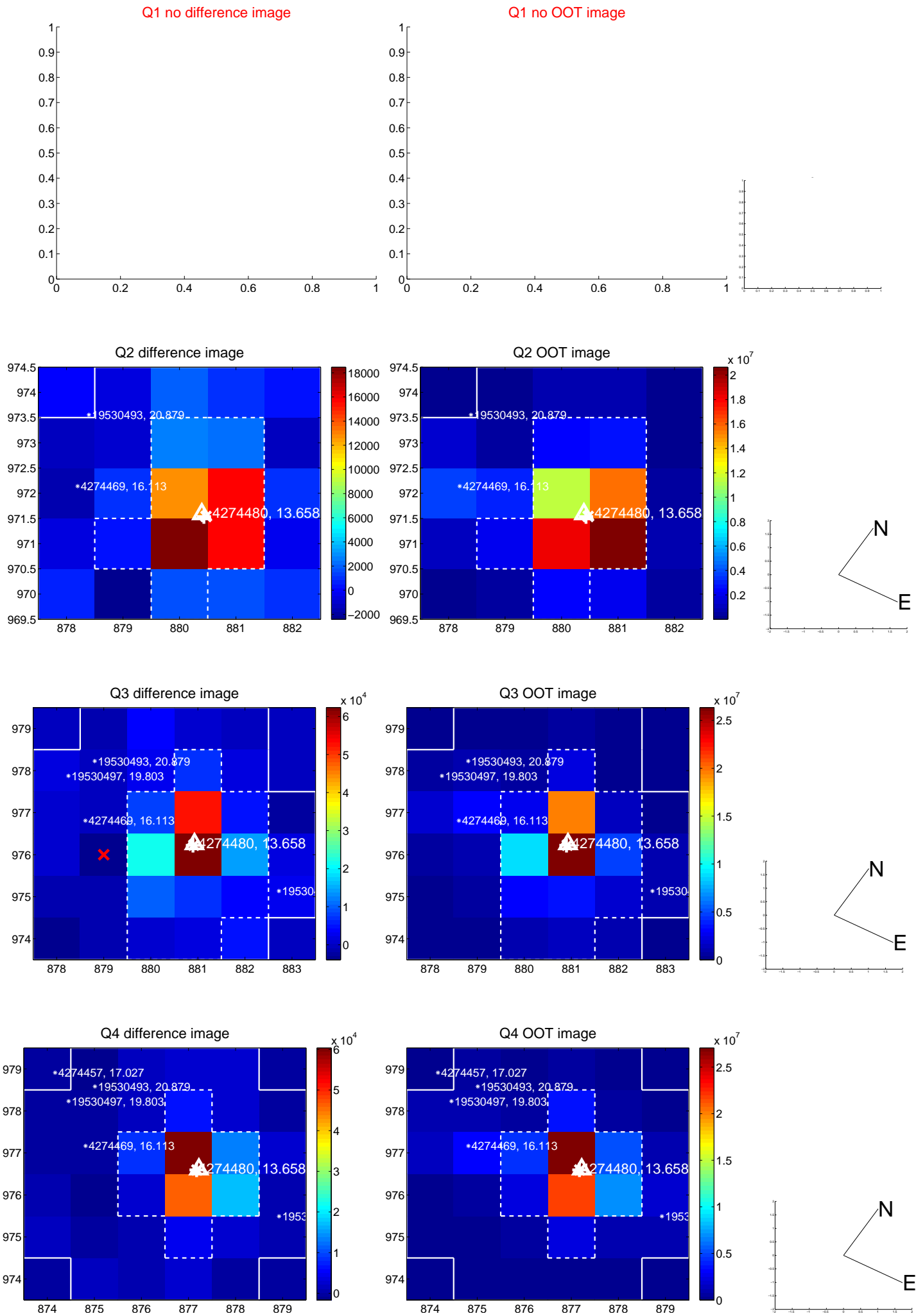
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.117 \pm 0.173$	0.68	$0.066 \pm 0.169$	$0.096 \pm 0.228$
PRF-fit source offset from KIC position	$0.041 \pm 0.189$	0.21	$0.016 \pm 0.182$	$0.037 \pm 0.207$
photometric centroid source offset	$0.52 \pm 0.22$	2.34	$-0.47 \pm 0.22$	$-0.21 \pm 0.22$

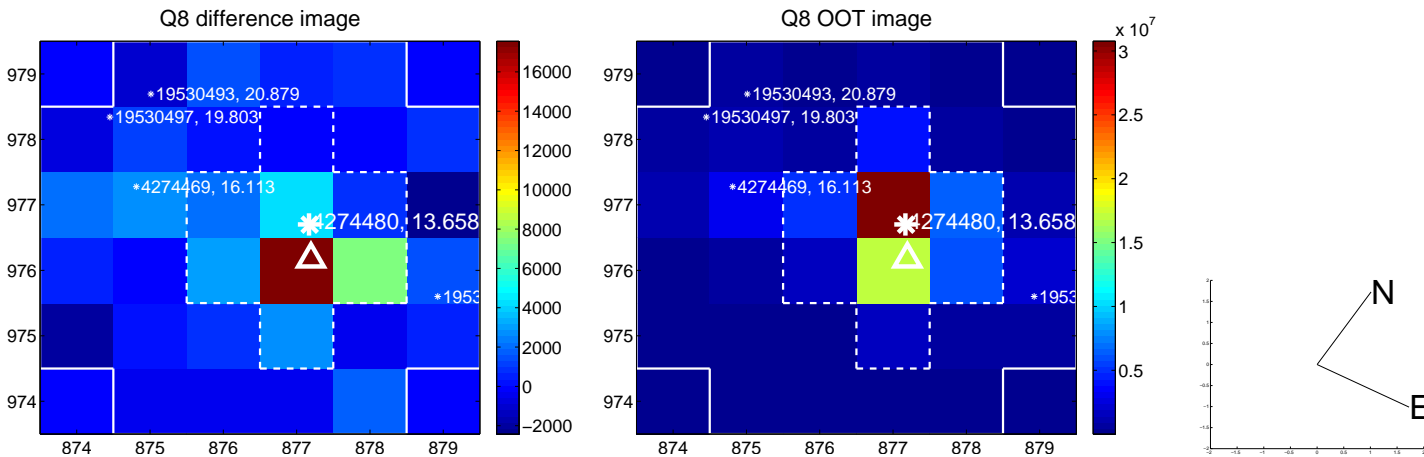
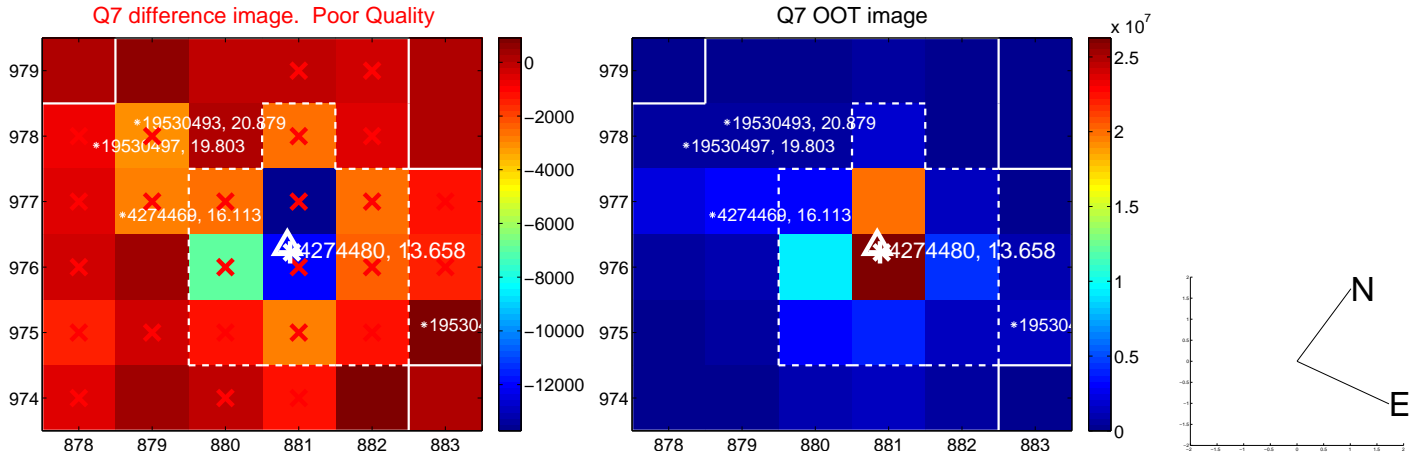
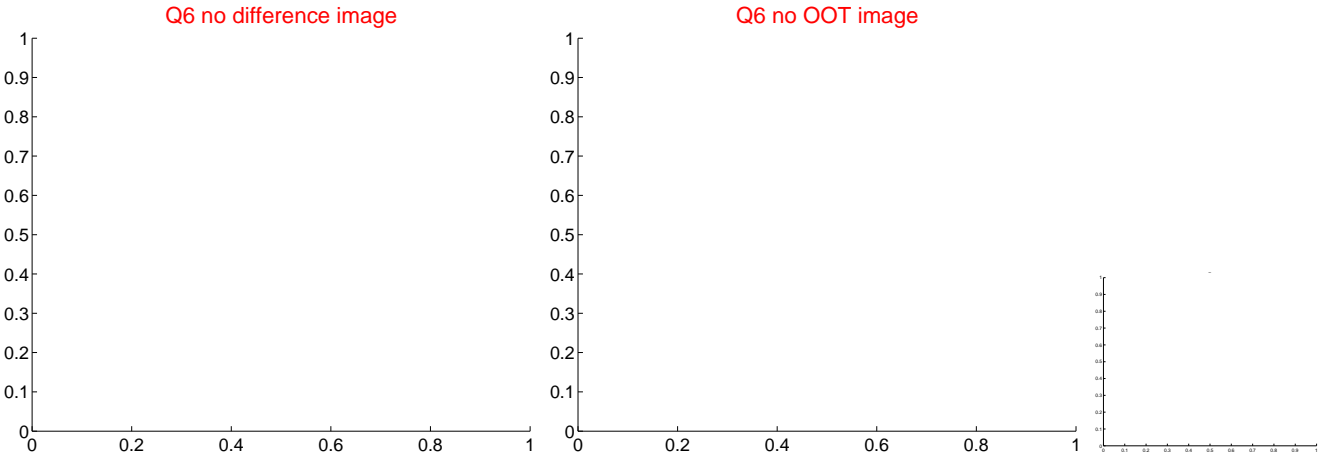
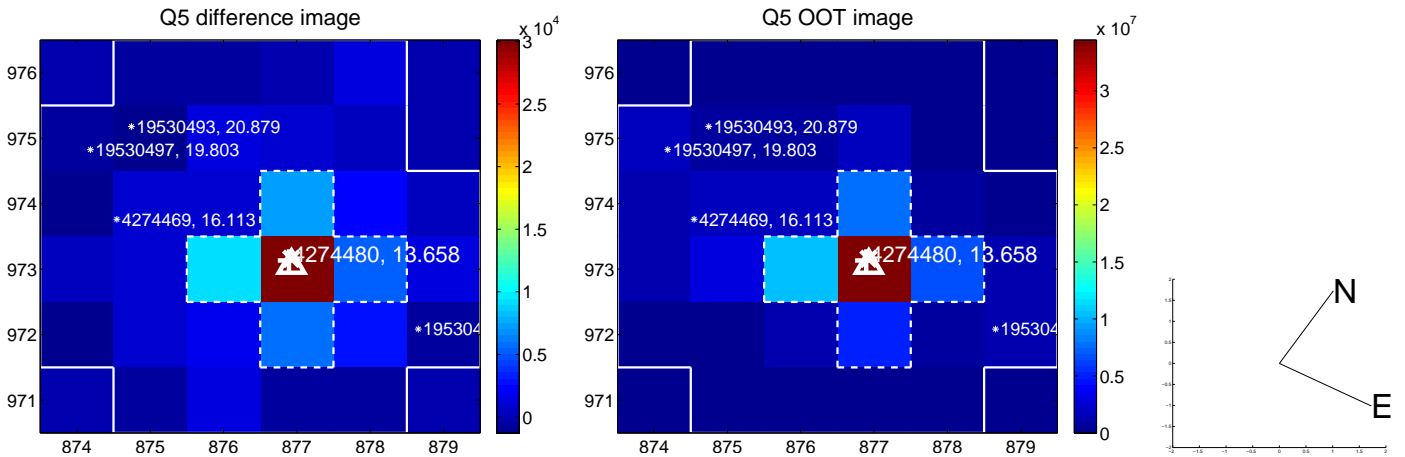


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

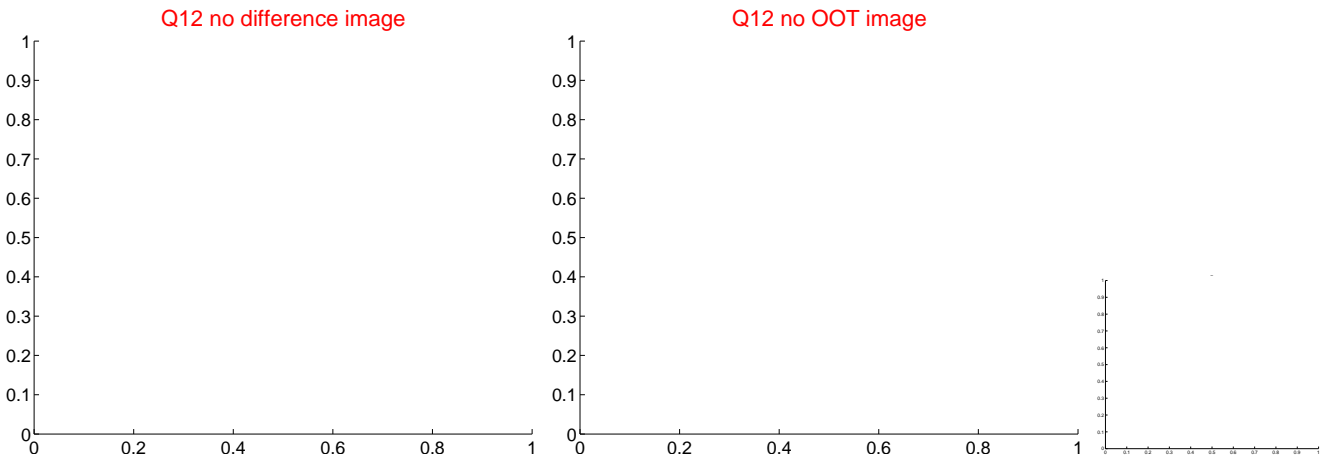
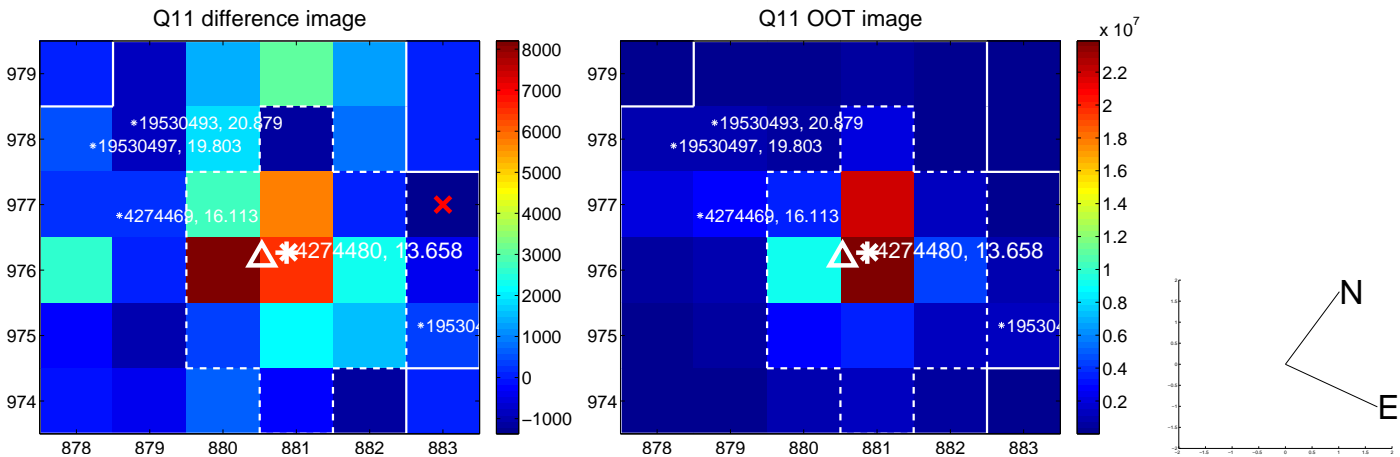
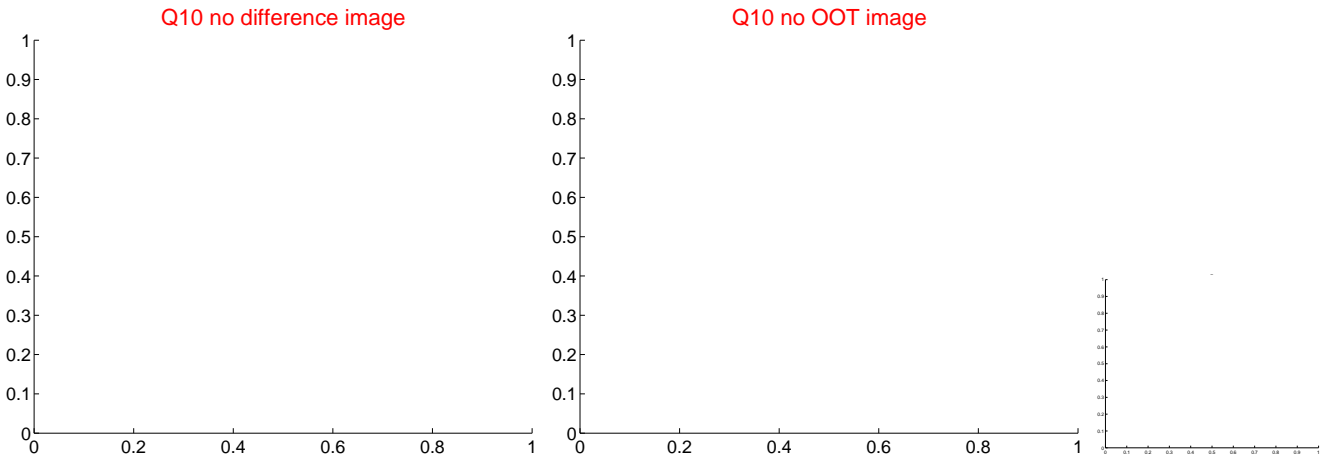
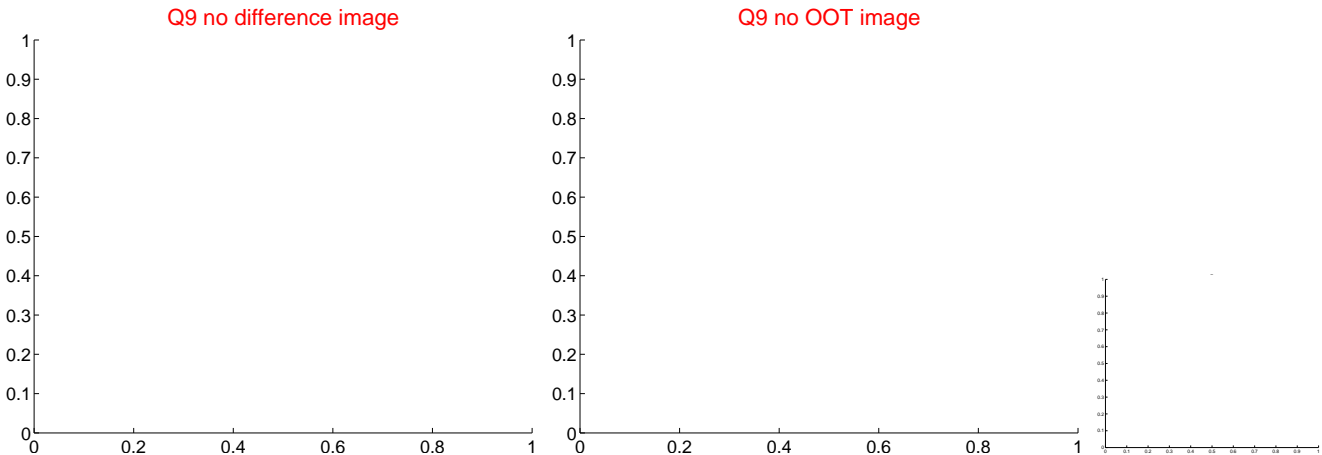


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

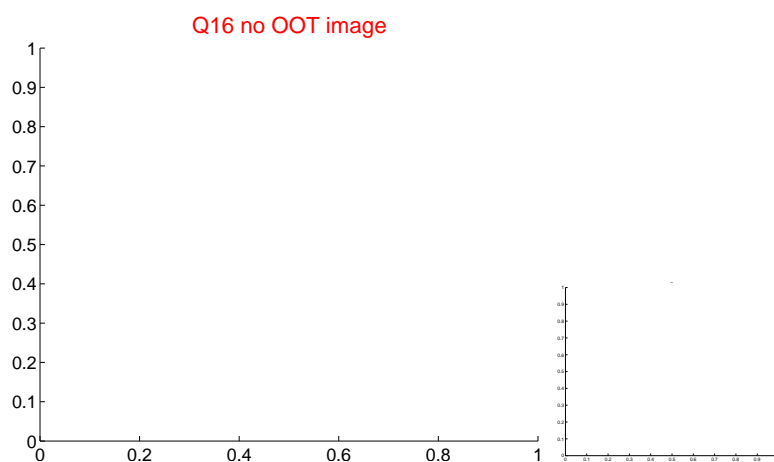
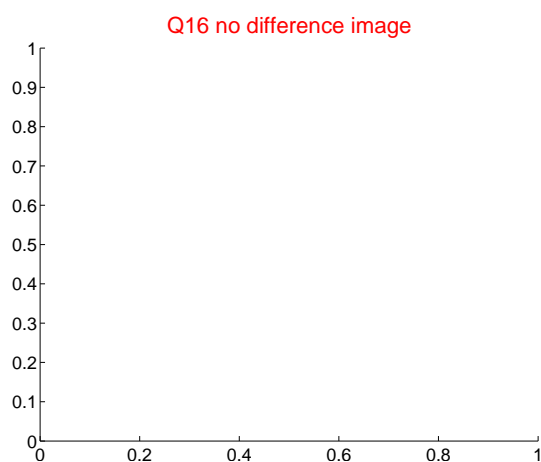
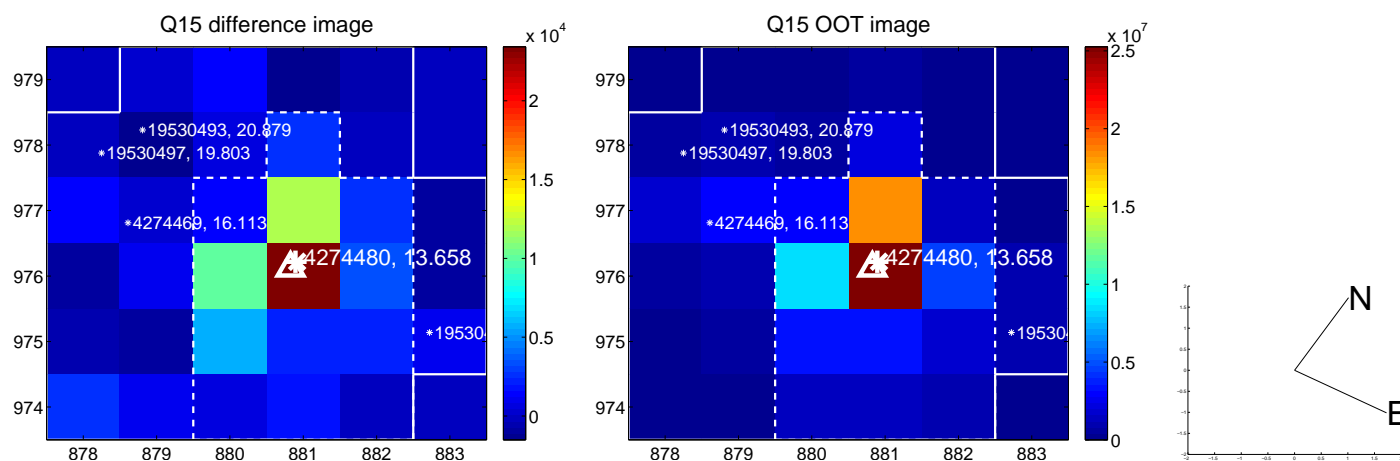
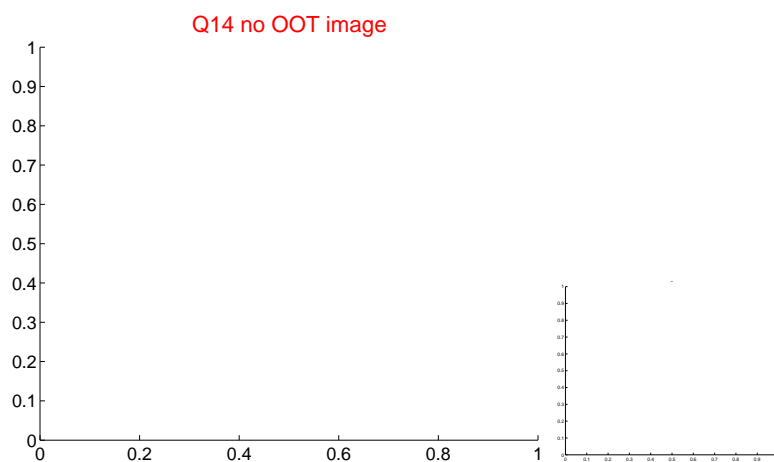
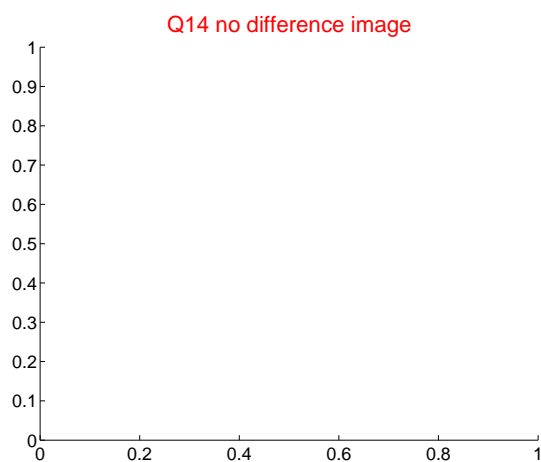
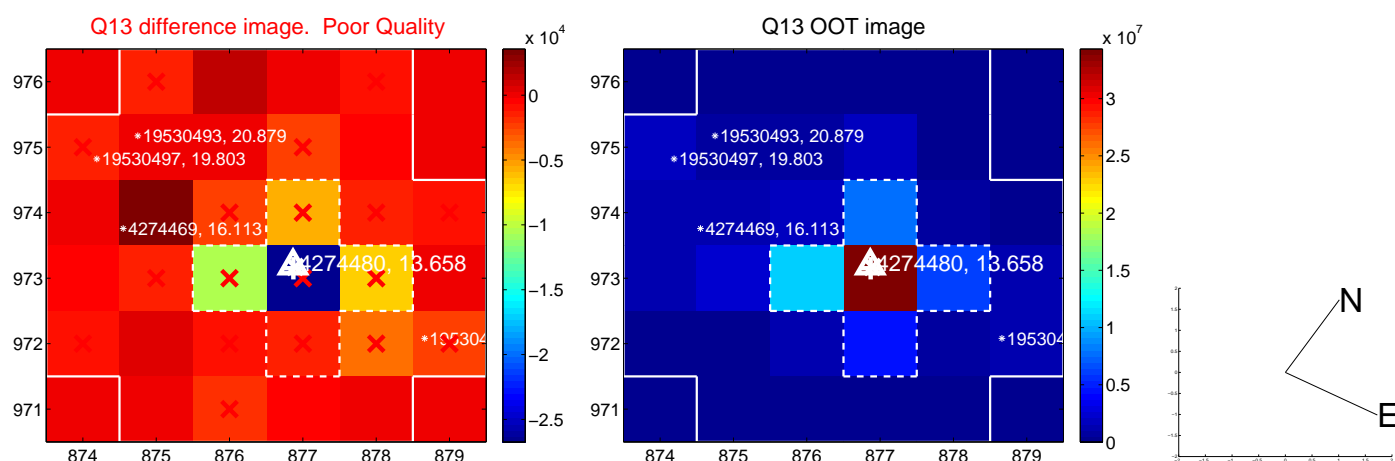




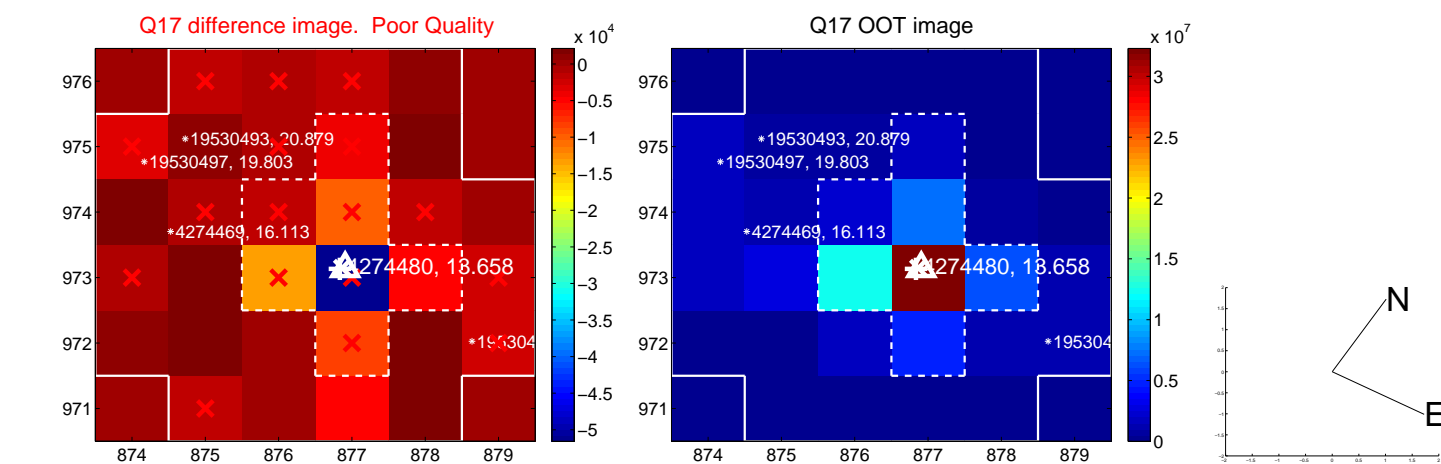
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



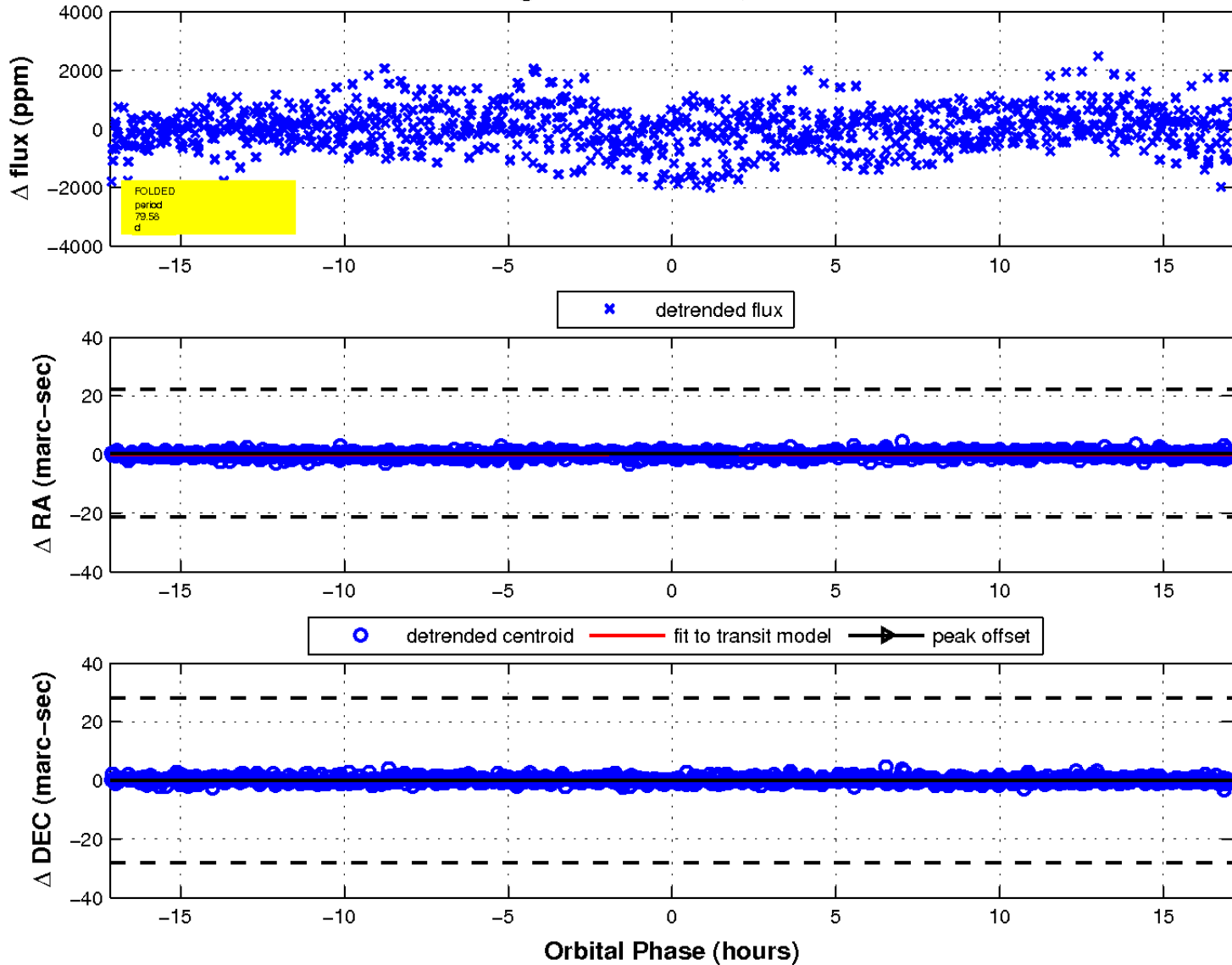
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

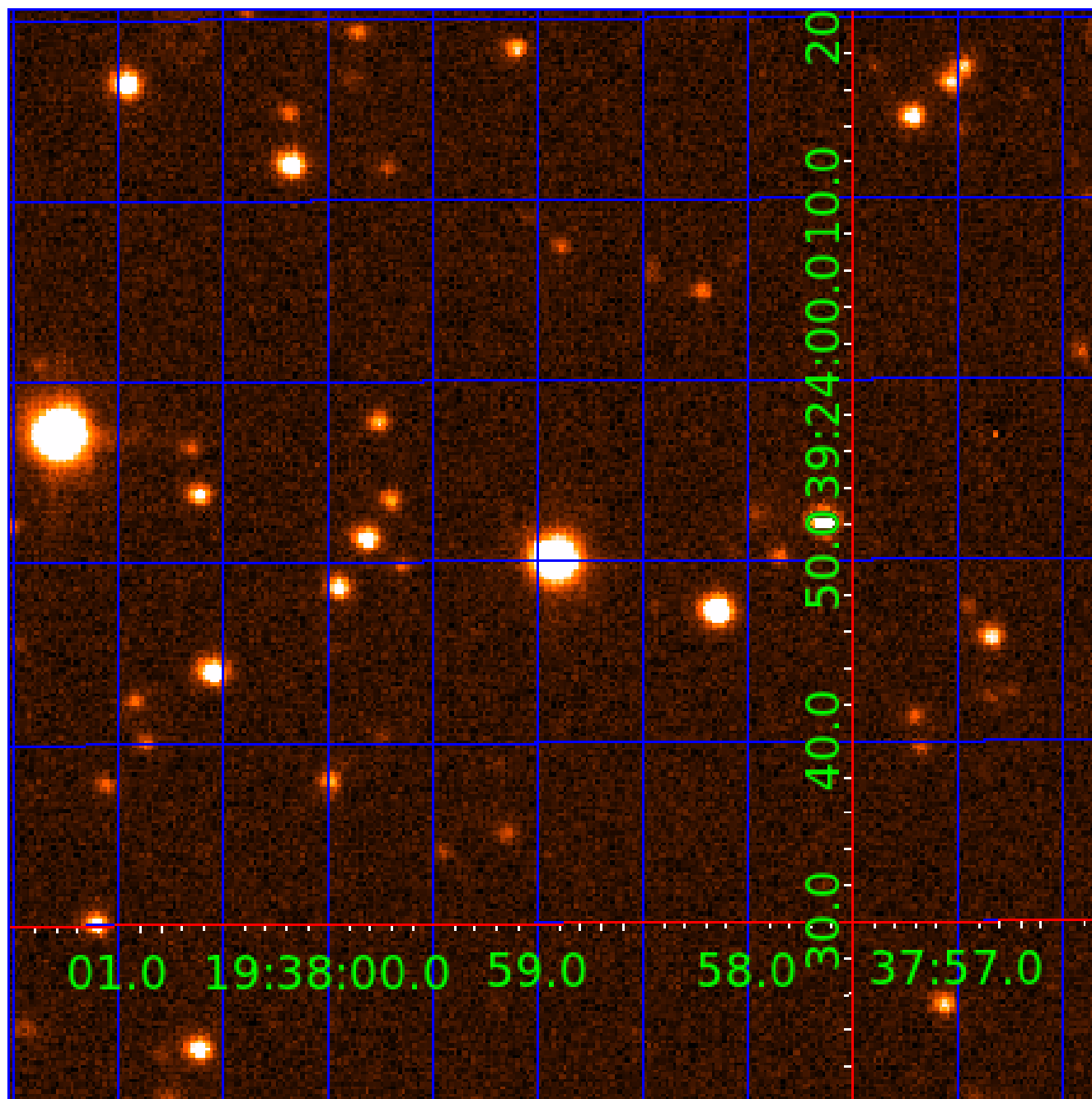


fluxWeightedCentroids, Planet 5 of 6



UKIRT Image

Declination



# KIC 004274480

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004274480-01	OBS	No	1.020922	132.423067	24.5	5.151	9.1	3.0	1.50	7123	0.77	10563.55
004274480-02	OBS	No	1.020904	131.784182	80.3	2.296	9.9	9.4	1.50	7123	1.56	10563.80
004274480-03	OBS	No	123.596770	252.324432	2316.8	7.043	10.8	11.6	1.50	7123	13.15	17.64
004274480-05	OBS	No	79.582334	208.609557	1660.5	5.721	8.3	8.7	1.50	7123	11.24	31.72
004274480-06	OBS	No	172.571842	162.600655	229.3	6.000	7.4	-1.0	1.50	7123	2.30	11.30

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004274480-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004274480-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
004274480-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT
004274480-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004274480-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

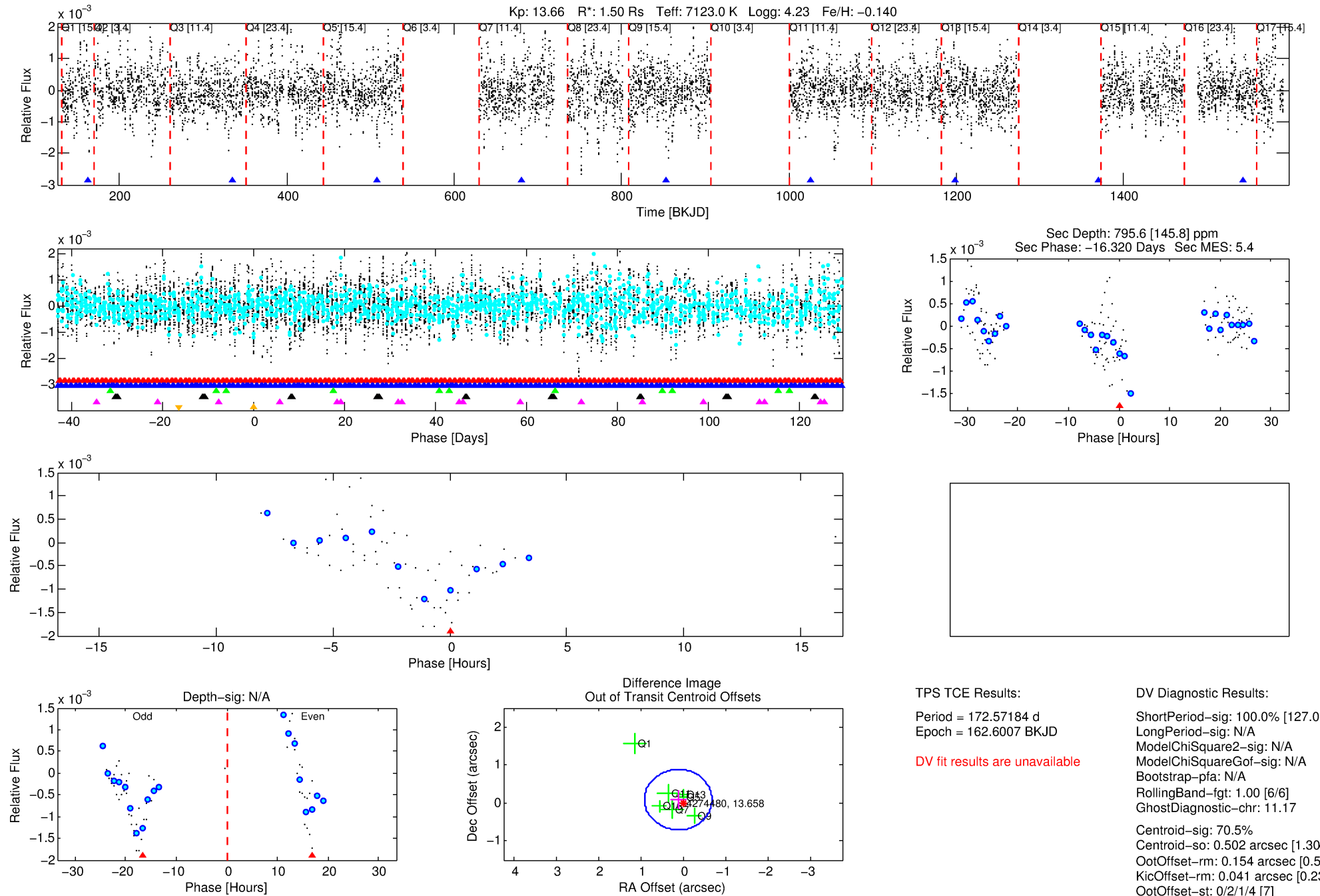
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004274480-06

No Significant Match Found

# DV One-Page Summary

KIC: 4274480 Candidate: 6 of 6 Period: 172.572 d



## TPS TCE Results:

Period = 172.57184 d  
Epoch = 162.6007 BKJD

DV fit results are unavailable

## DV Diagnostic Results:

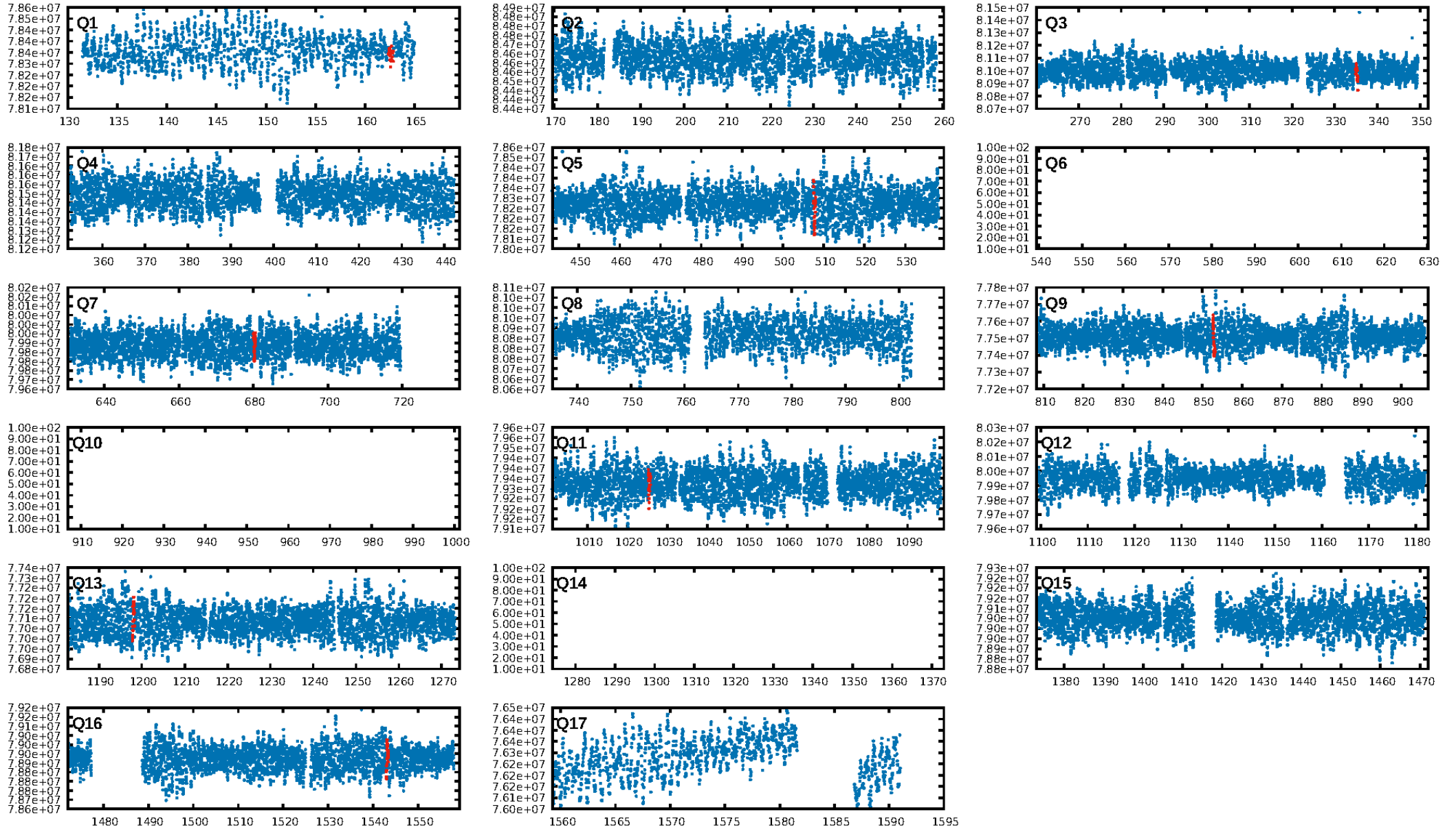
ShortPeriod-sig: 100.0% [127.04 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [6/6]  
GhostDiagnostic-chr: 11.17  
Centroid-sig: 70.5%  
Centroid-so: 0.502 arcsec [1.30 $\sigma$ ]  
OotOffset-rm: 0.154 arcsec [0.58 $\sigma$ ]  
KicOffset-rm: 0.041 arcsec [0.23 $\sigma$ ]  
OotOffset-st: 0/2/1/4 [7]  
KicOffset-st: 0/2/1/4 [7]  
DiffImageQuality-fgm: 0.71 [5/7]  
DiffImageOverlap-fno: 0.00 [0/8]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:36:12 Z

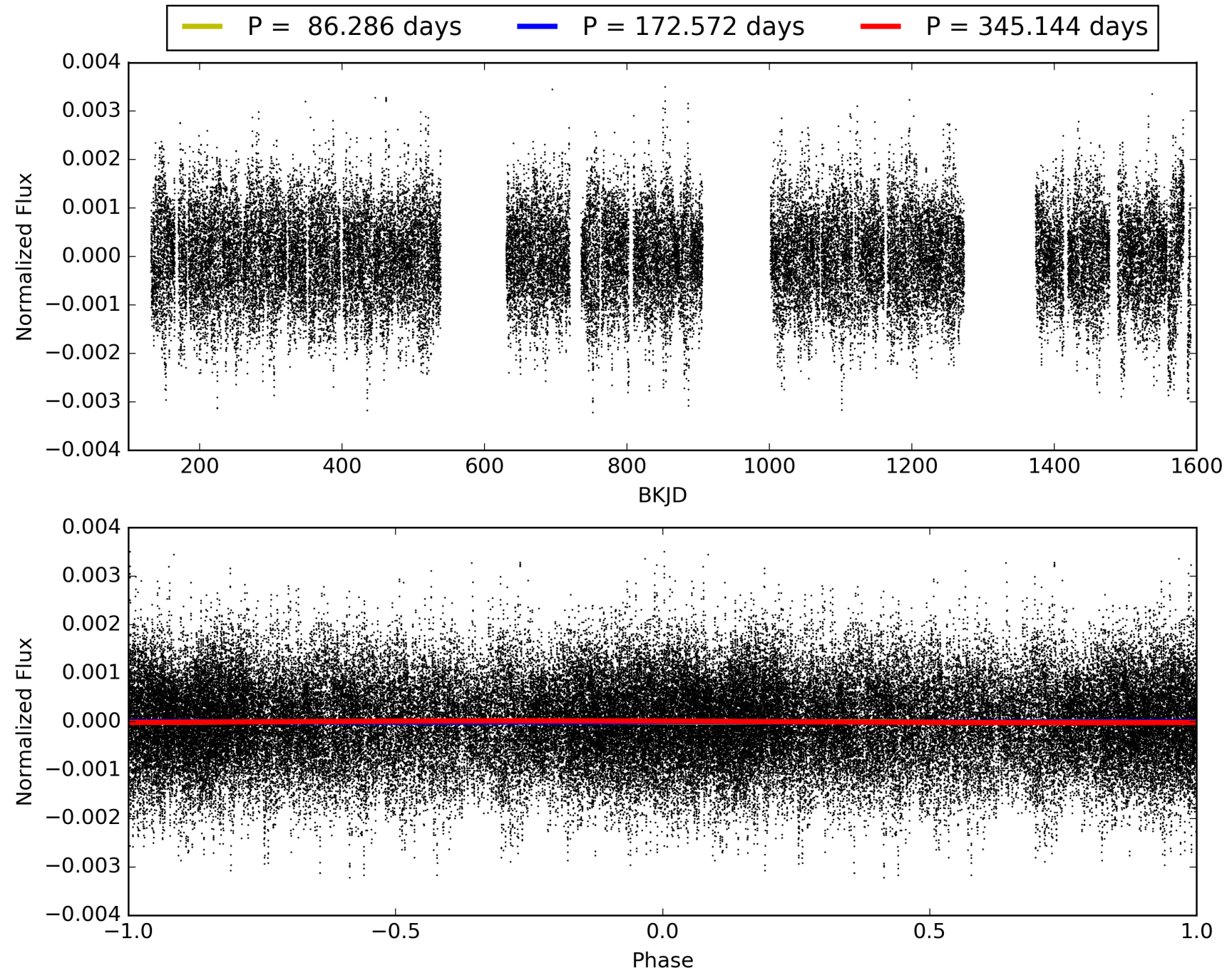
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 004274480-06, PDC Light Curves

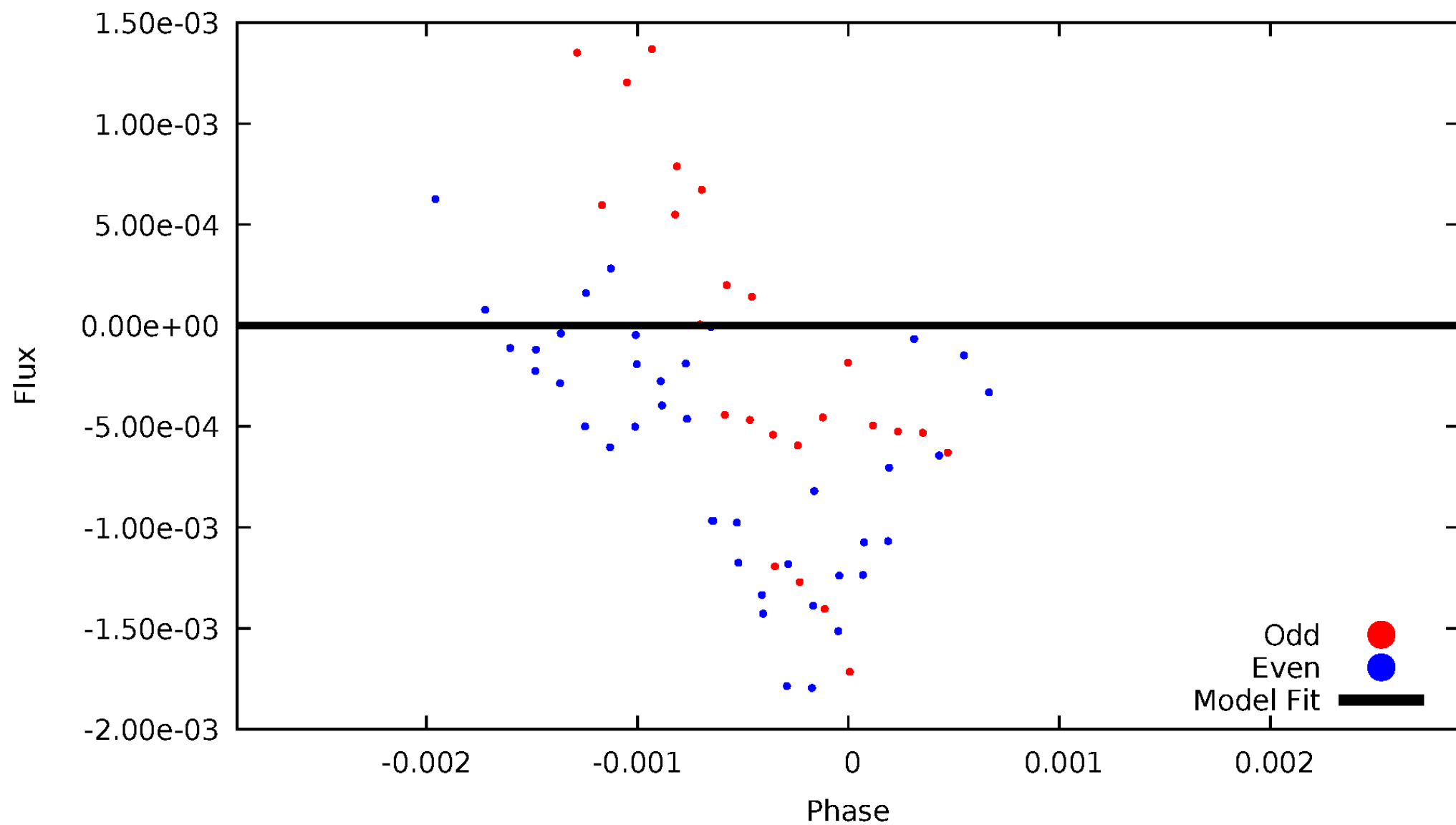


TCE 004274480-06



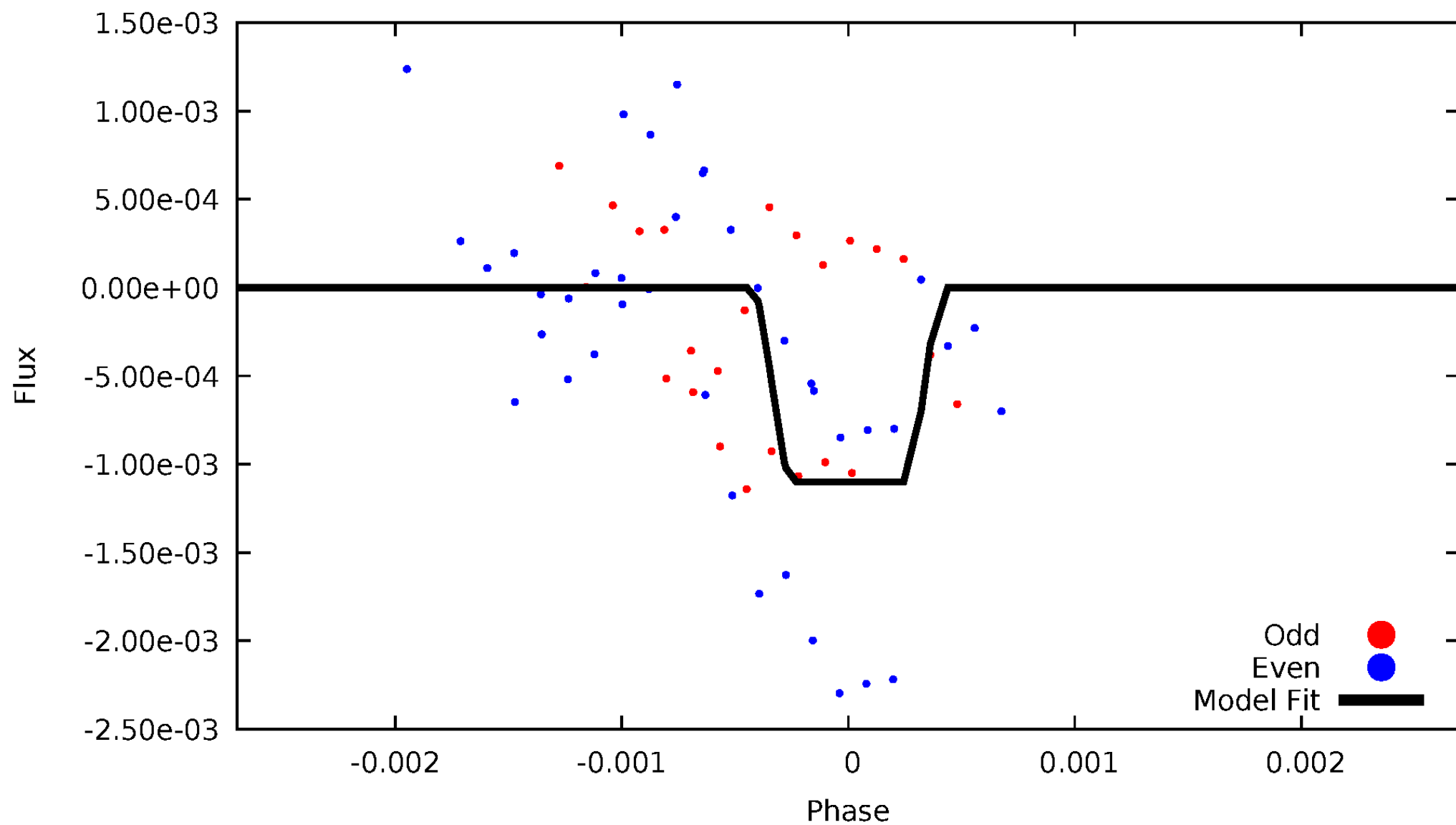
# DV Odd/Even

TCE 004274480-06



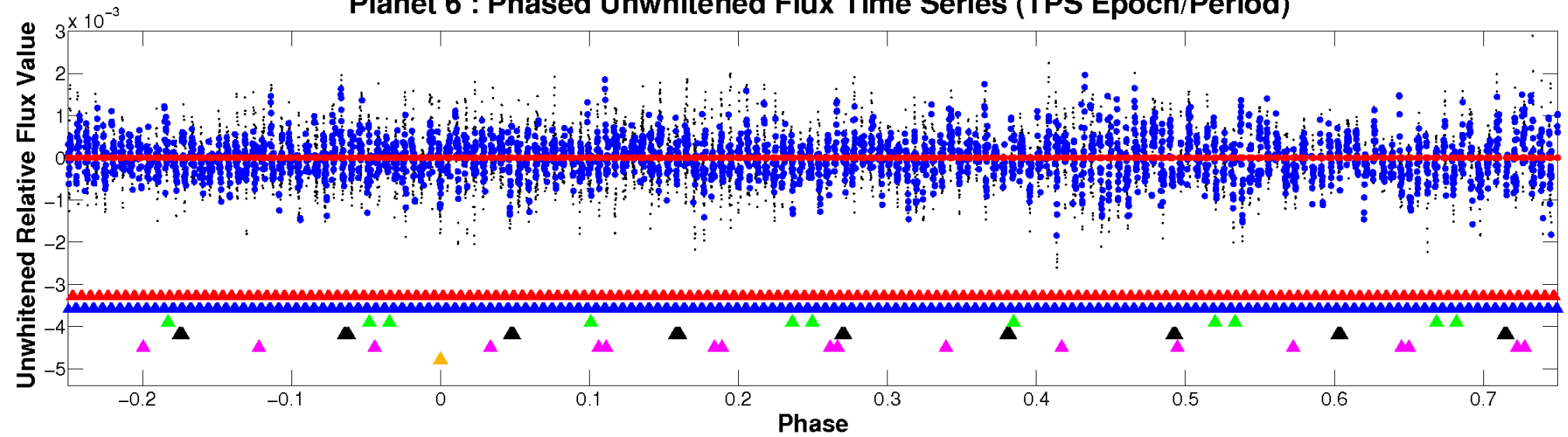
# ALT Odd/Even

TCE 004274480-06

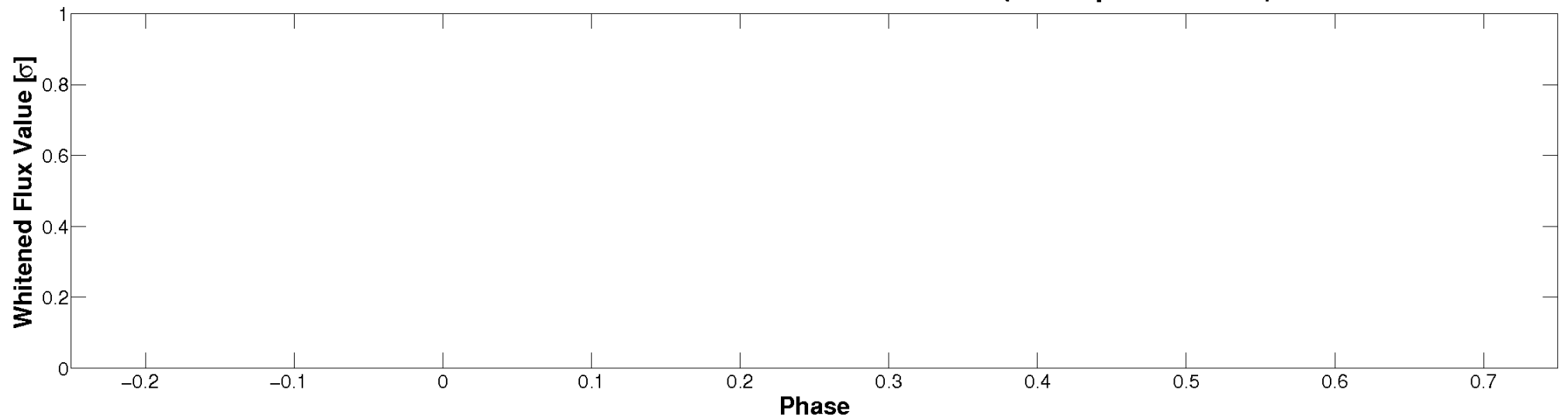


# Non-Whitened Vs. Whitened Light Curve

**Planet 6 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**

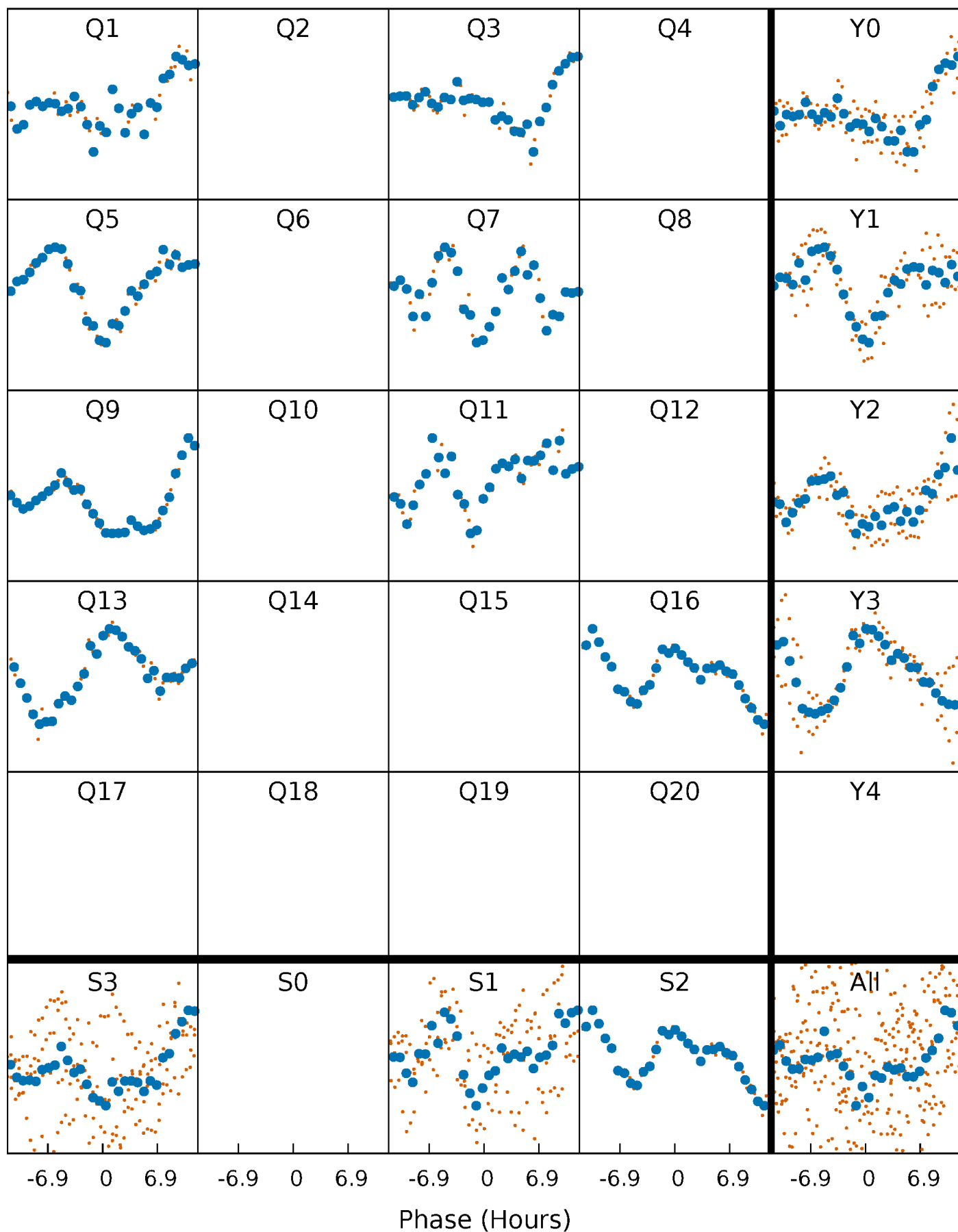


**Planet 6 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



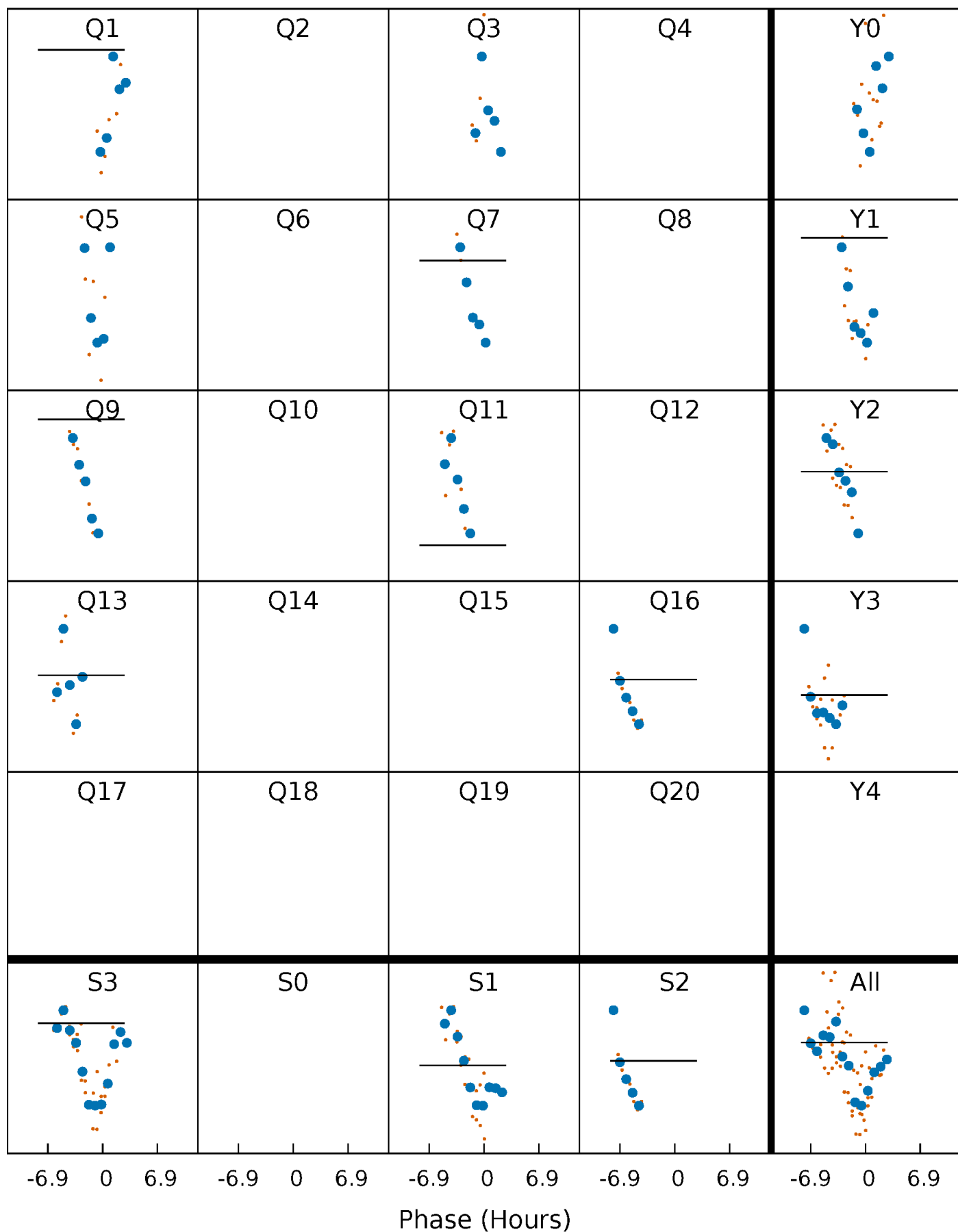
# PDC Quarter-Phased Transit Curves

TCE 004274480-06 P=172.571842 Days  $T_0=162.600655$  (BKJD)



# DV Quarter-Phased Transit Curves

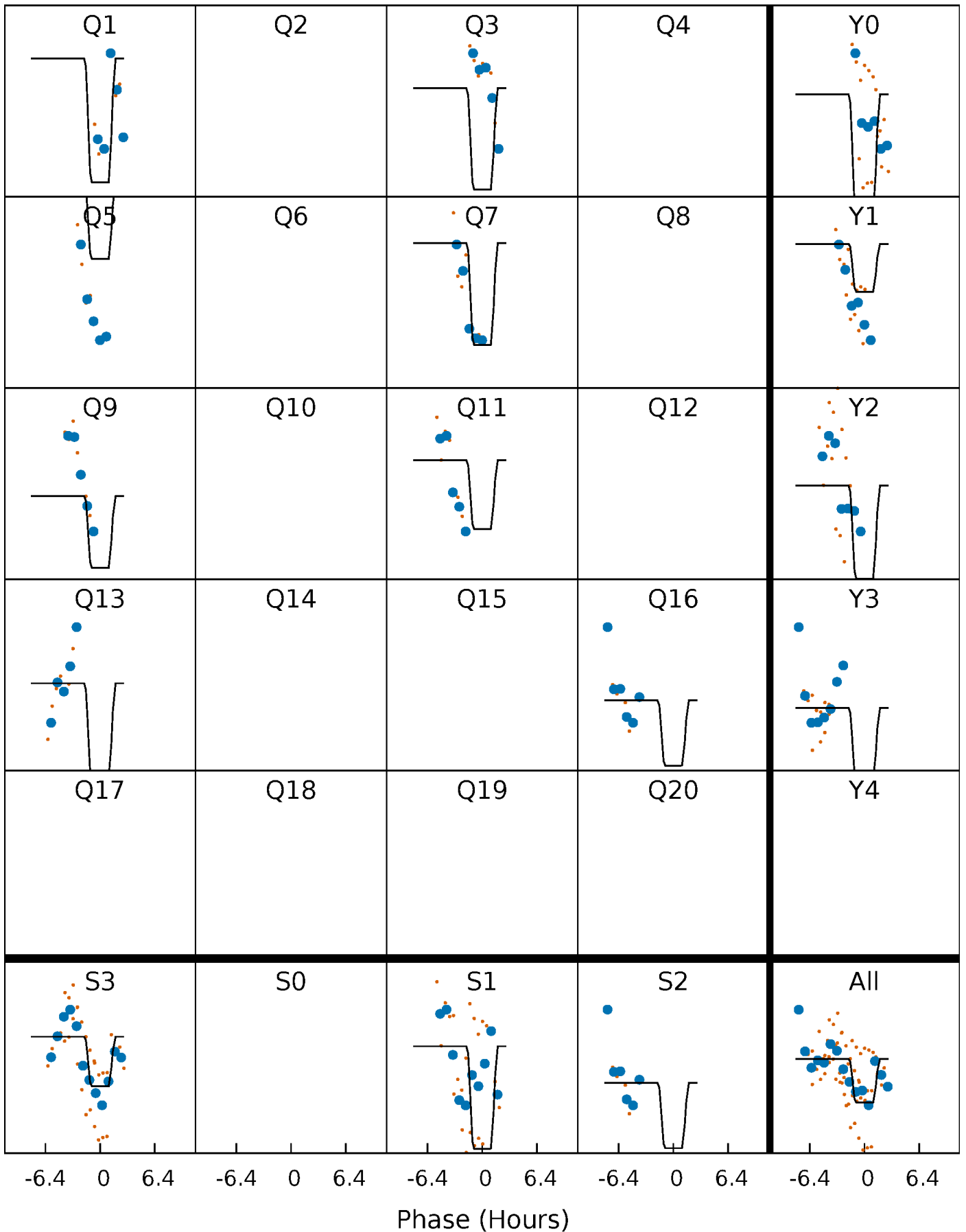
TCE 004274480-06     $P=172.571842$  Days     $T_0=162.600655$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

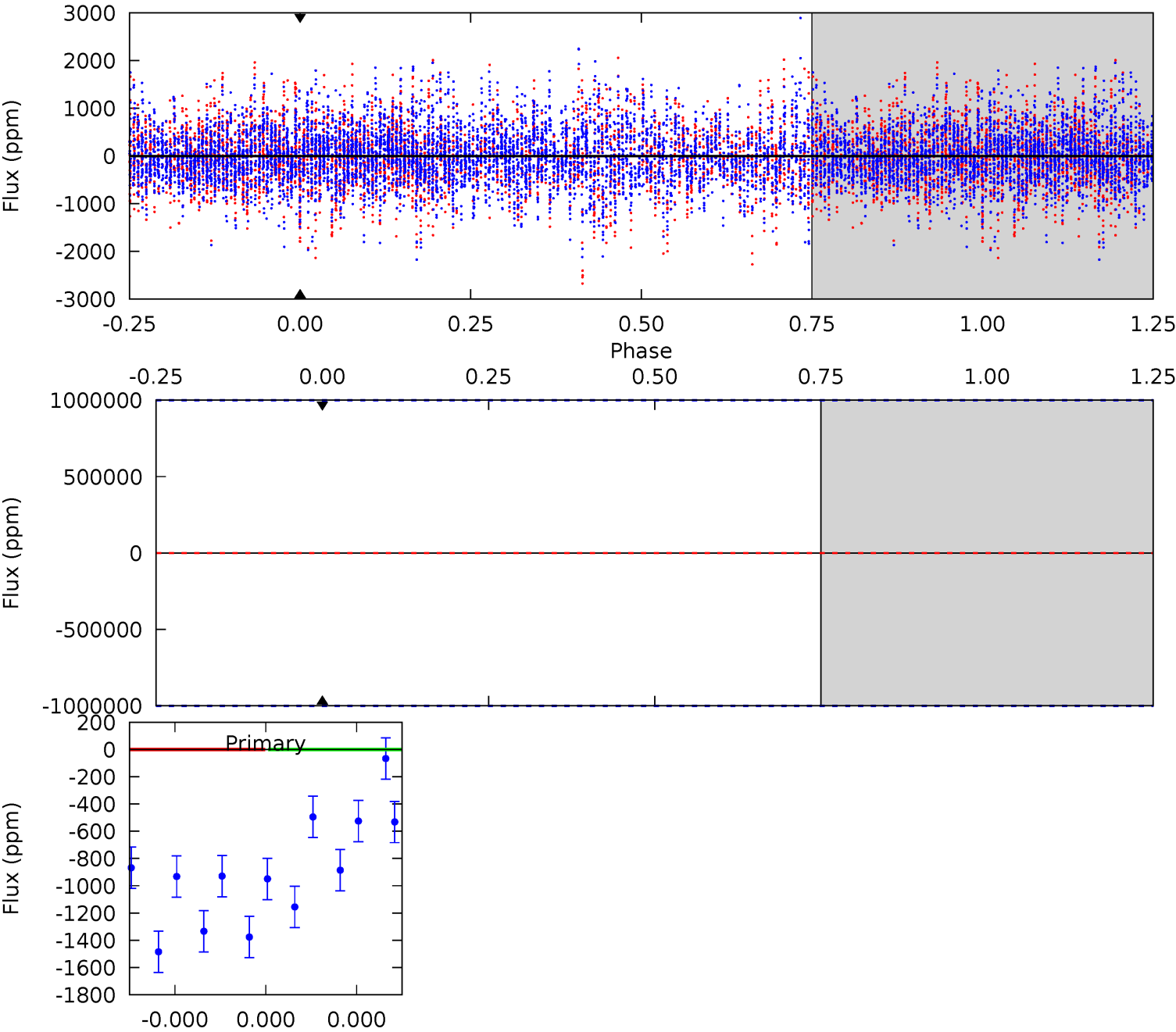
TCE 004274480-06 P=172.571842 Days  $T_0=162.599069$  (BKJD)



DV Model-Shift Uniqueness Test

004274480-06, P = 172.571842 Days, E = 162.600655 Days

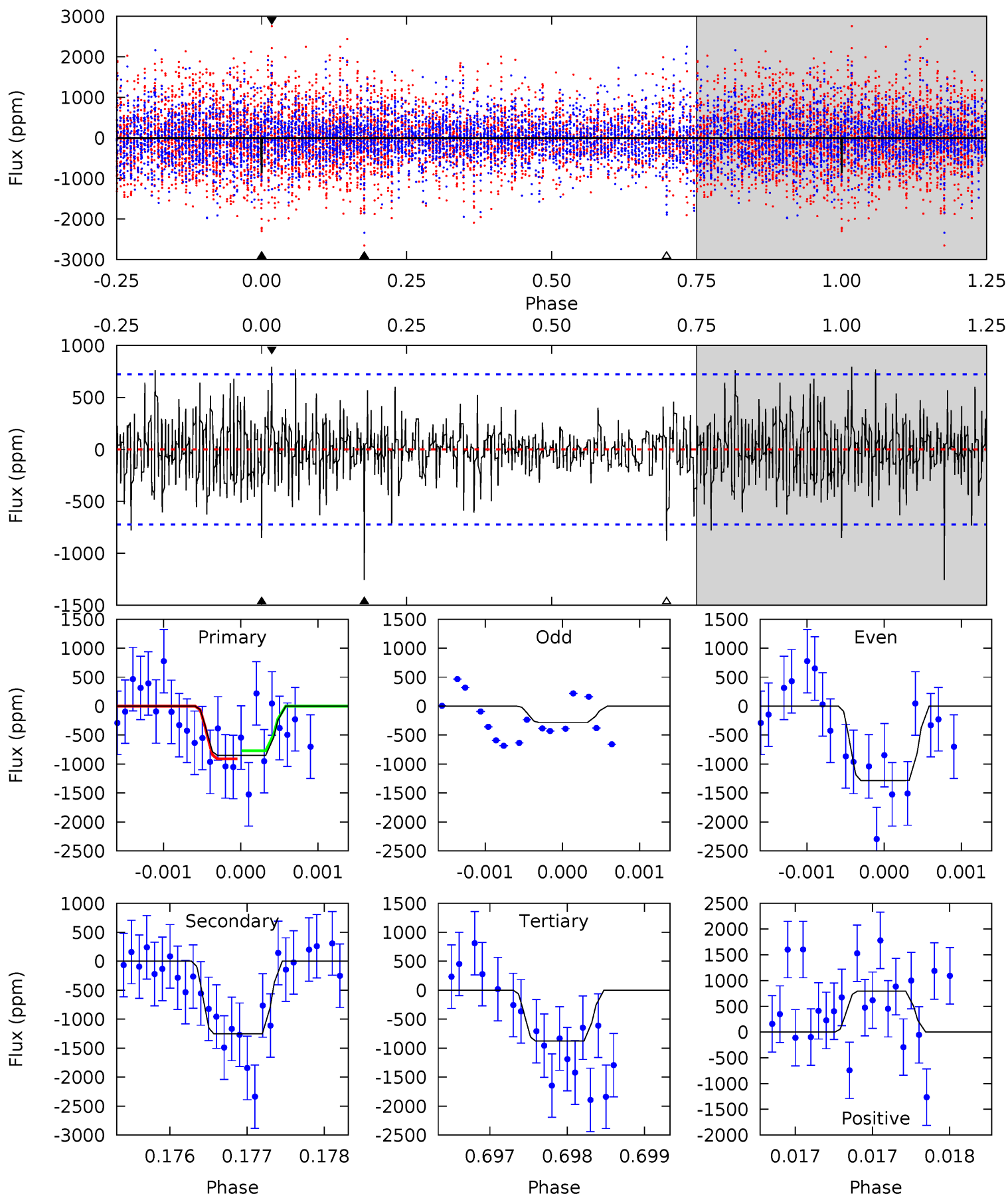
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

004274480-06, P = 172.571842 Days, E = 162.599069 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
6.48	9.55	6.68	6.05	5.50	3.37	1.68	-0.21	0.43	2.86	3.50	3.69	1.22	0.39	0.53



### Stellar Parameters For KIC 004274480

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7123^{+200}_{-300}$	$4.230^{+0.108}_{-0.201}$	$-0.140^{+0.250}_{-0.350}$	$1.501^{+0.501}_{-0.231}$	$1.402^{+0.218}_{-0.218}$	$0.584^{+0.288}_{-0.303}$
	+3%/-4%	+3%/-5%	+179%/-250%	+33%/-15%	+16%/-16%	+49%/-52%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 004274480-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$12.34^{+12.66}_{-8.48}$	$658^{+52}_{-40}$	$6597^{+35915}_{-34799}$	$7220^{+366353}_{-197517}$
Alt.	$-1254 \pm 131$	$13.55^{+14.38}_{-8.82}$	$657^{+49}_{-43}$	$4734^{+3496}_{-1039}$	$1644^{+12375}_{-1237}$

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

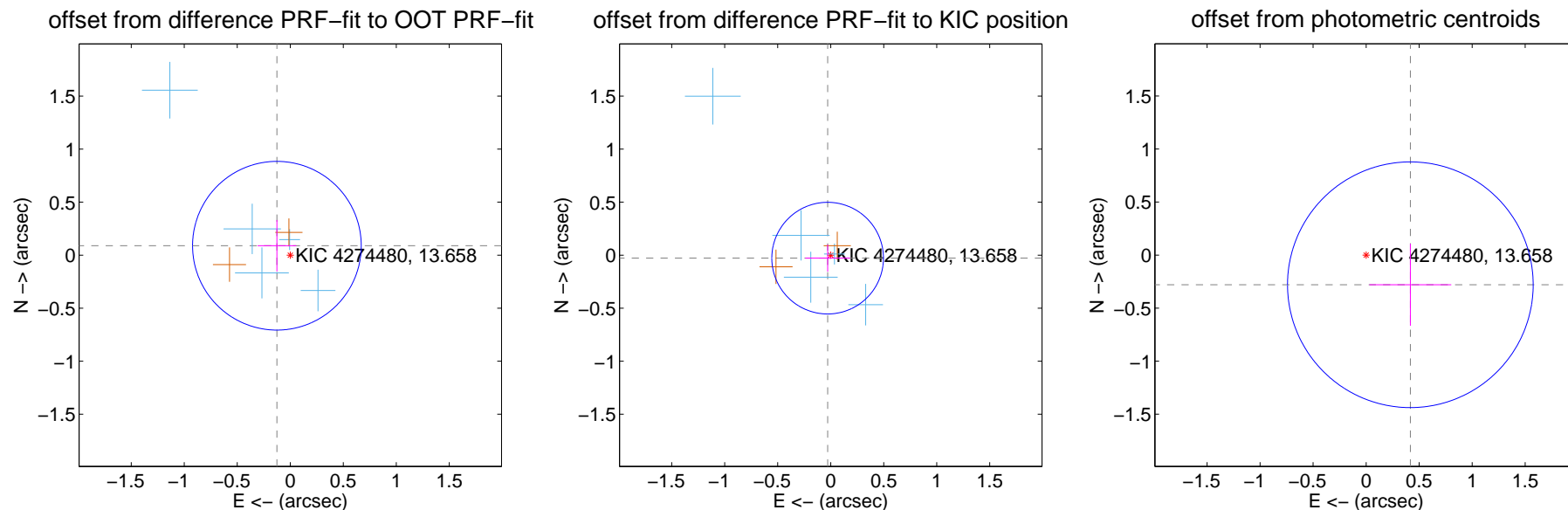
## DV Centroid Data

Supplemental centroid analysis for 004274480-06. Kepler magnitude: 13.66. Transit SNR -1.00

There are 5 quarters with good PRF difference image offsets

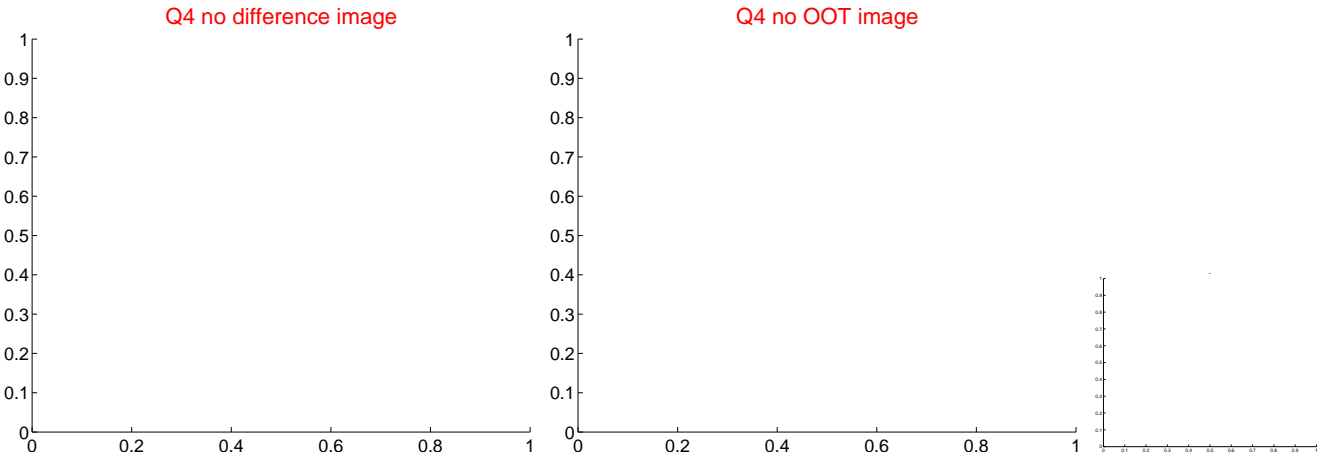
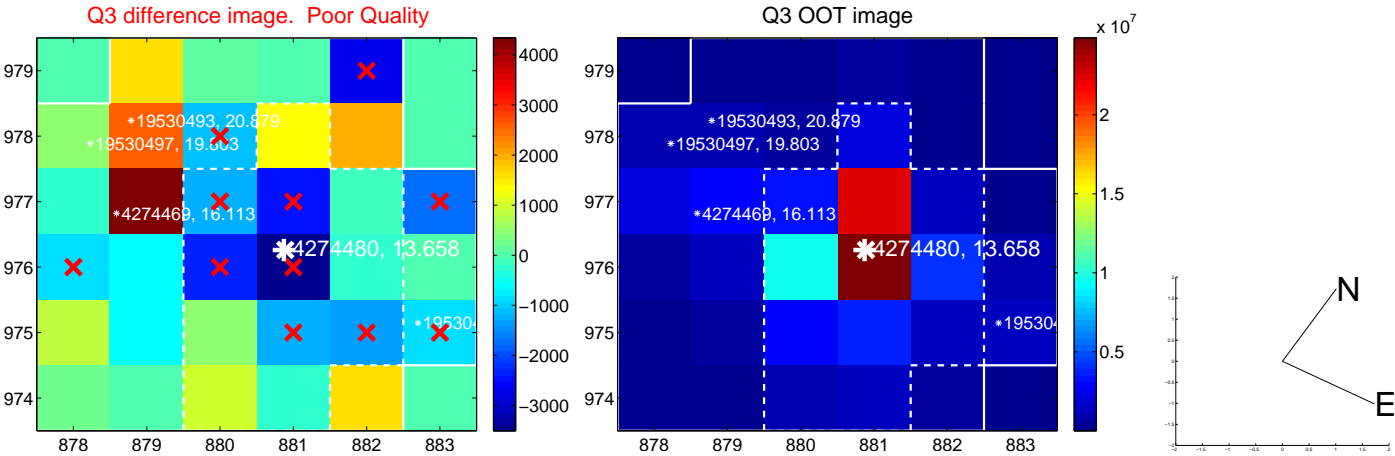
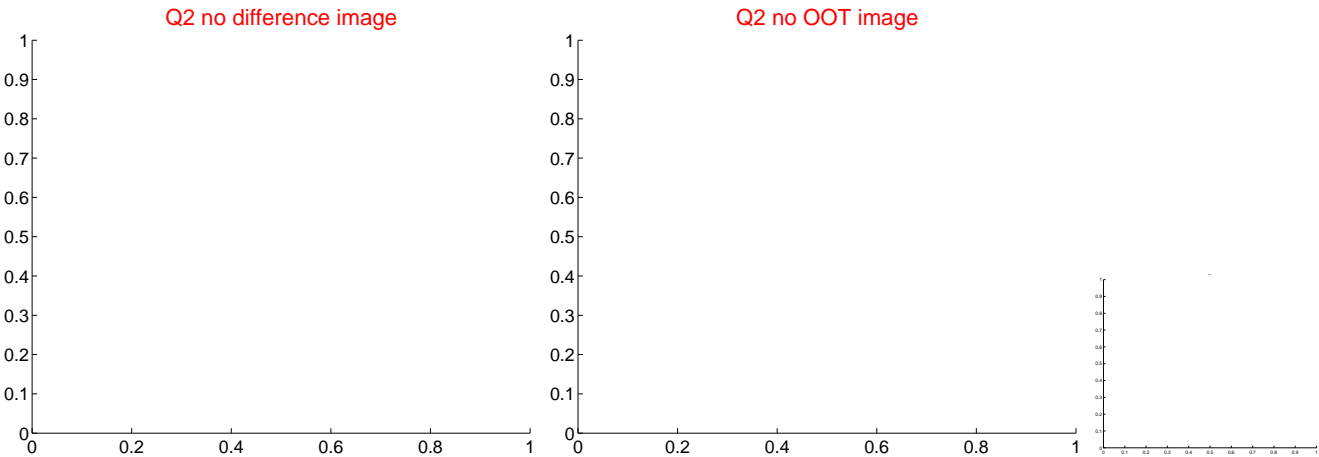
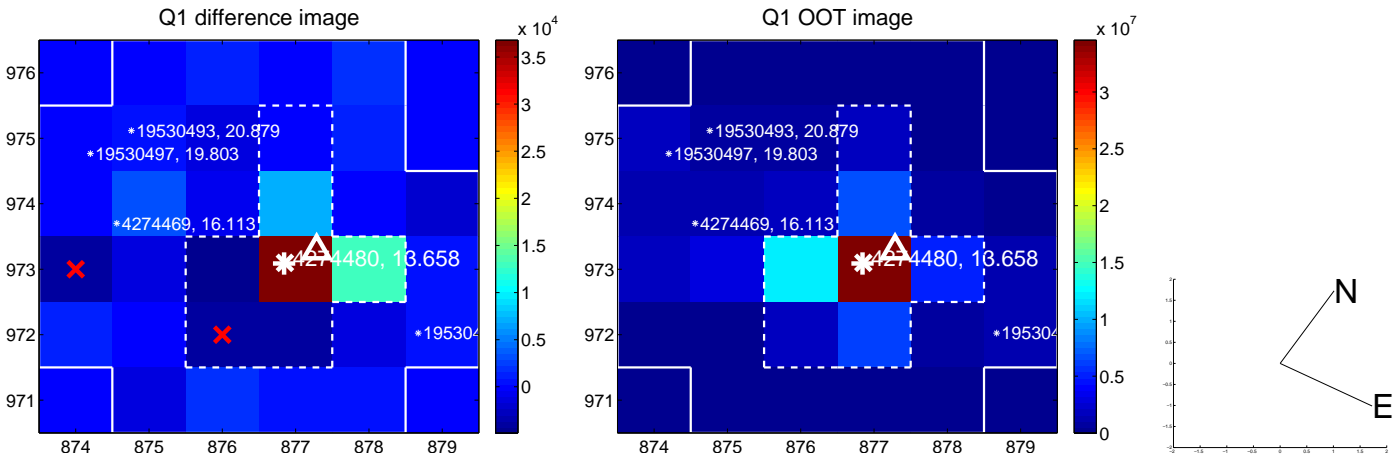
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.154 \pm 0.265$	0.58	$0.126 \pm 0.182$	$0.089 \pm 0.242$
PRF-fit source offset from KIC position	$0.041 \pm 0.175$	0.23	$0.029 \pm 0.211$	$-0.028 \pm 0.127$
photometric centroid source offset	$0.50 \pm 0.39$	1.30	$-0.42 \pm 0.39$	$-0.28 \pm 0.39$

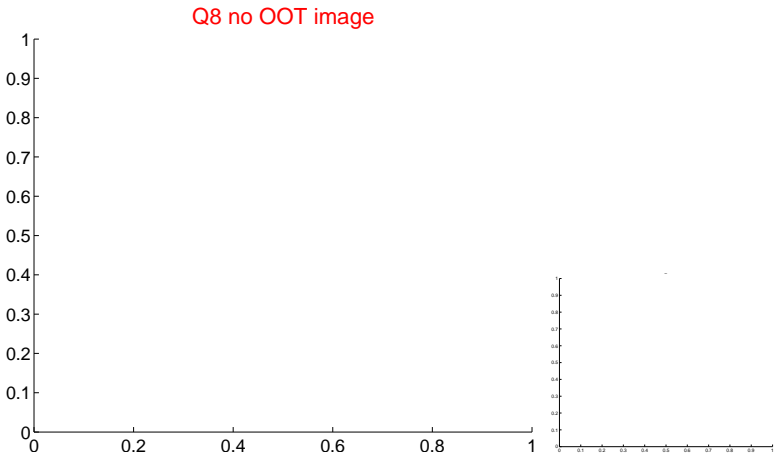
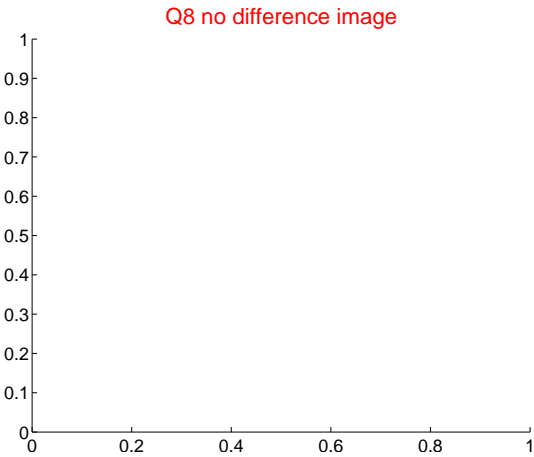
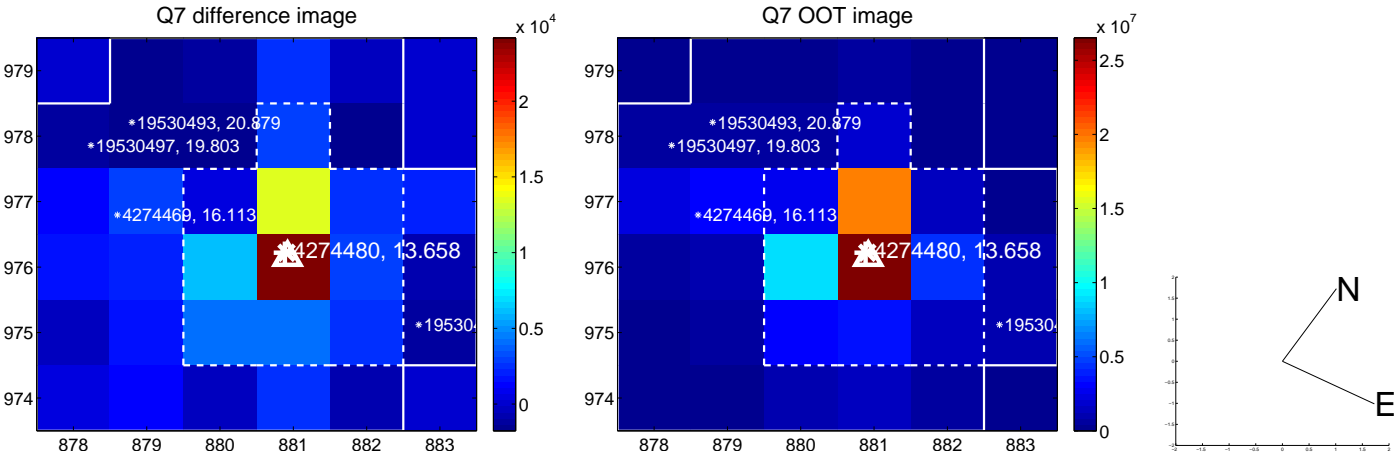
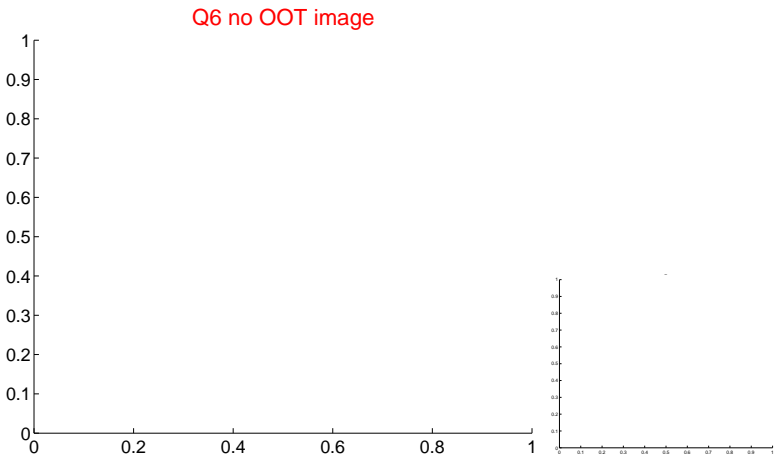
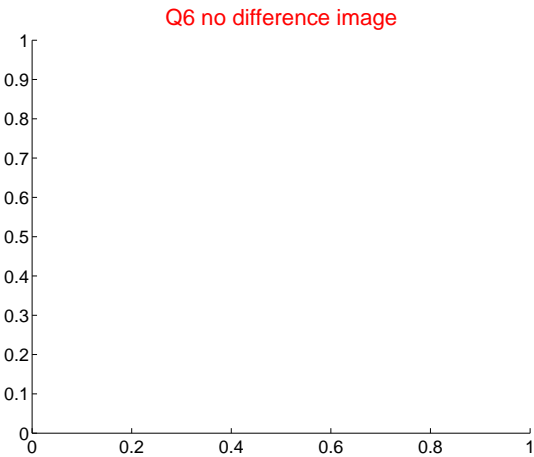
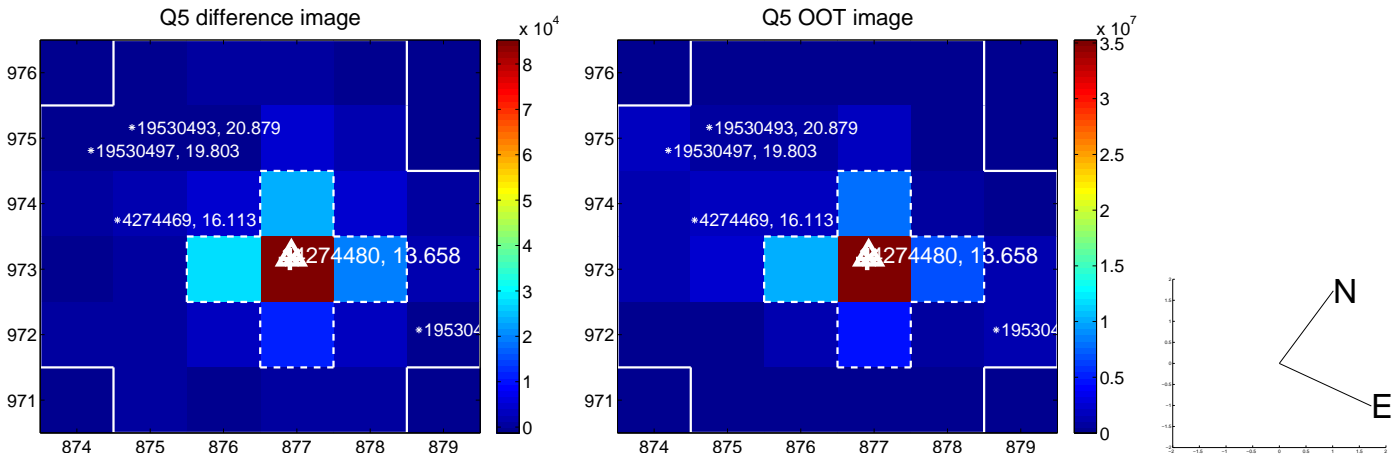


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

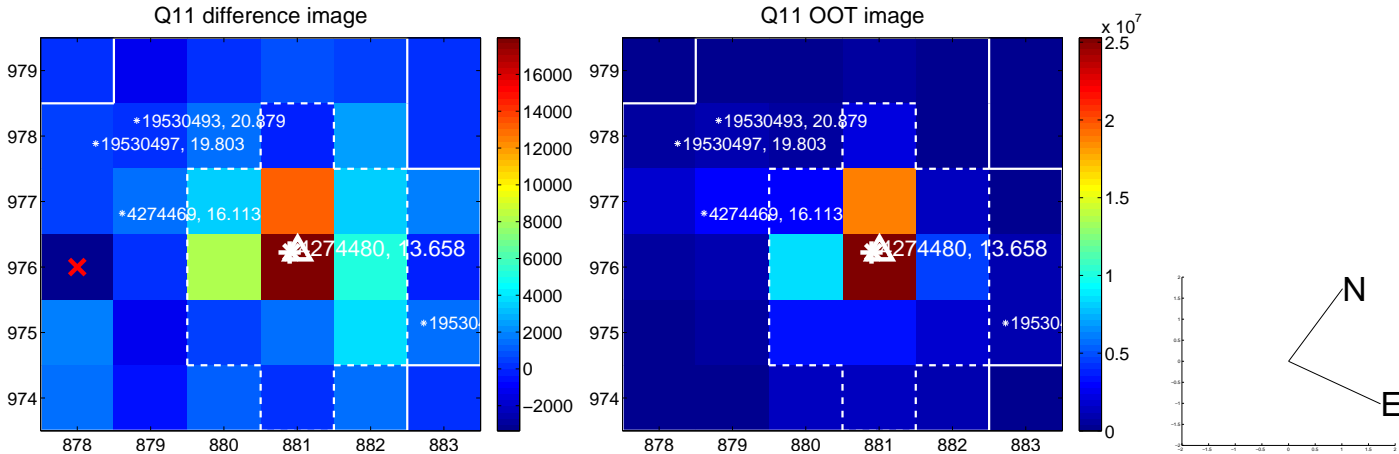
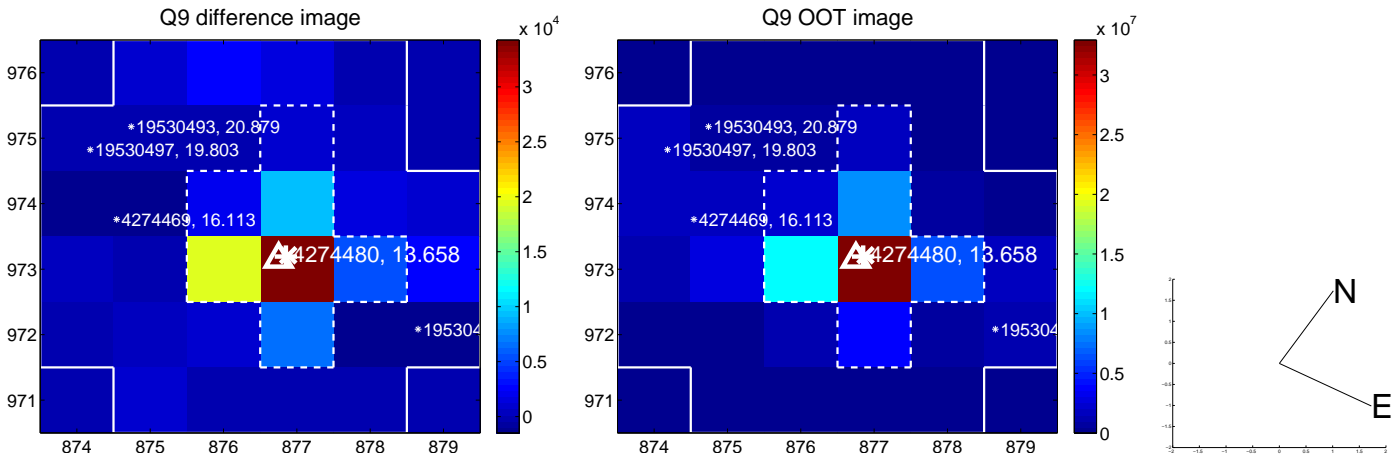


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

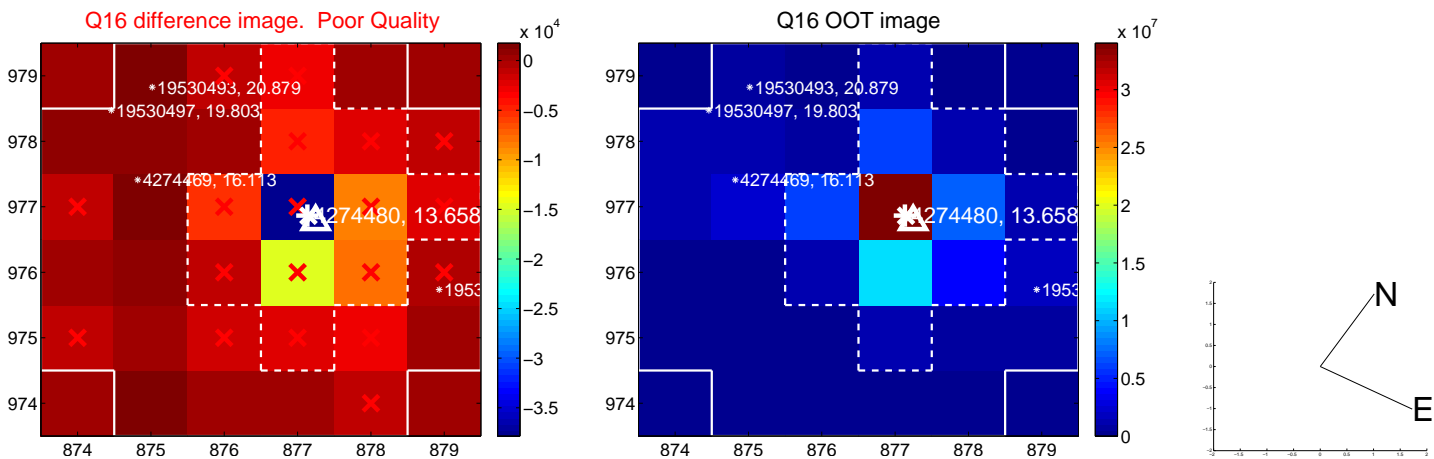
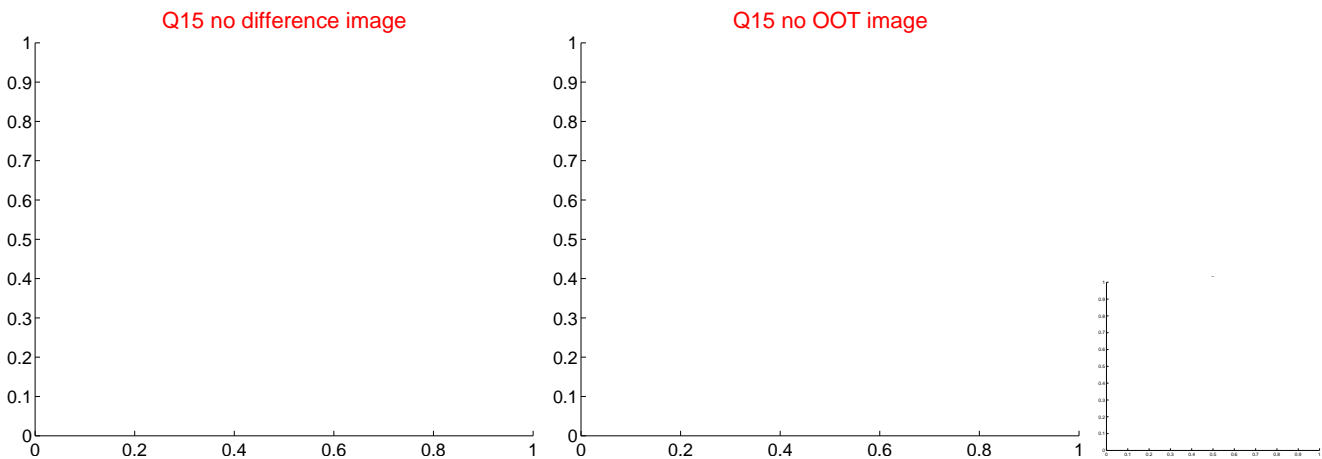
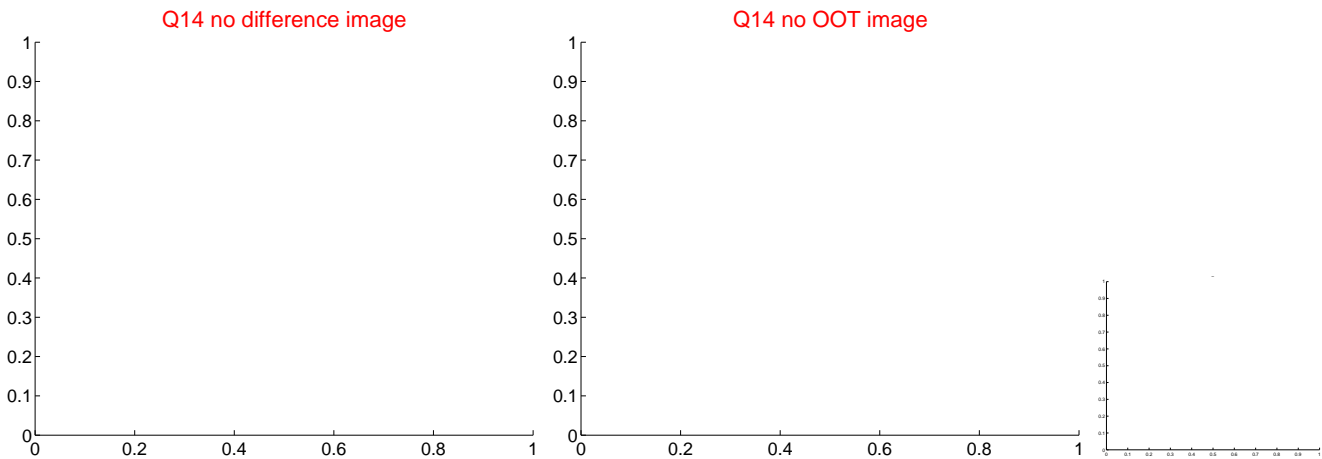
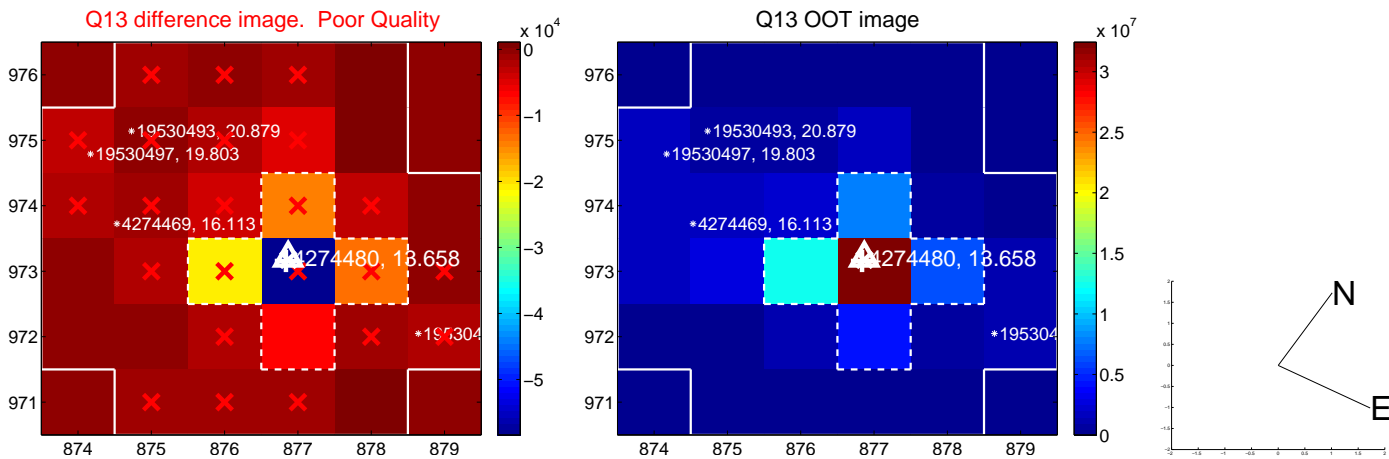




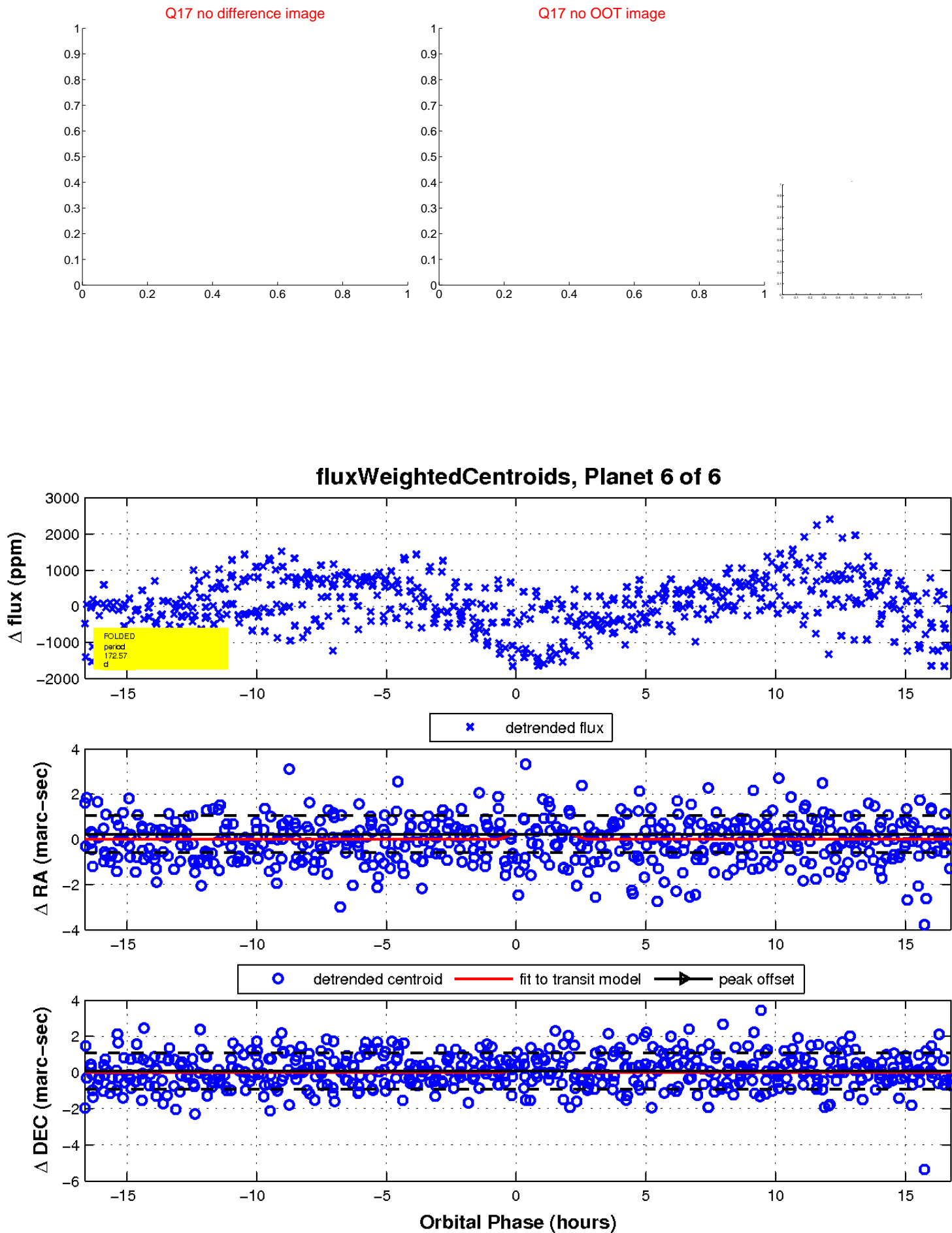
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

