

KIC 007978226

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})
007978226-01	OBS	No	1.290086	132.376015	170.3	4.500	12.3	-1.0	2.30	6623	3.02	13443.79
007978226-02	OBS	No	1.290152	131.756197	194.2	4.500	9.7	-1.0	2.30	6623	3.23	13442.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007978226-01	OBS	FP	0.00	1	0	1	0	SWEET_NTL—LPP_DV—CENT_NOFITS—HALO_GHOST
007978226-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

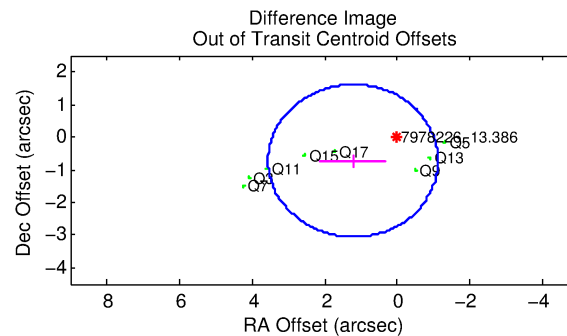
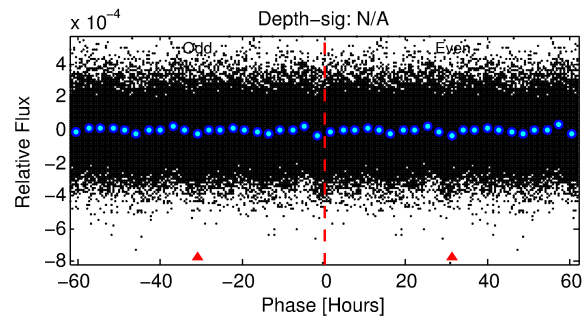
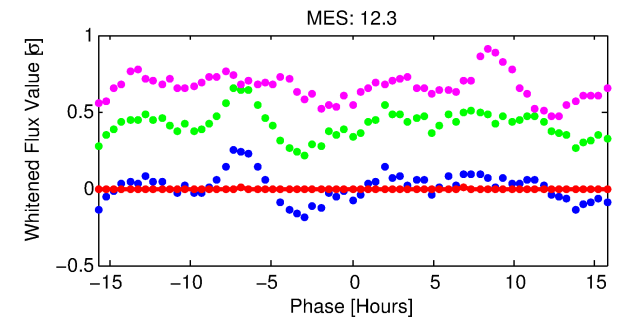
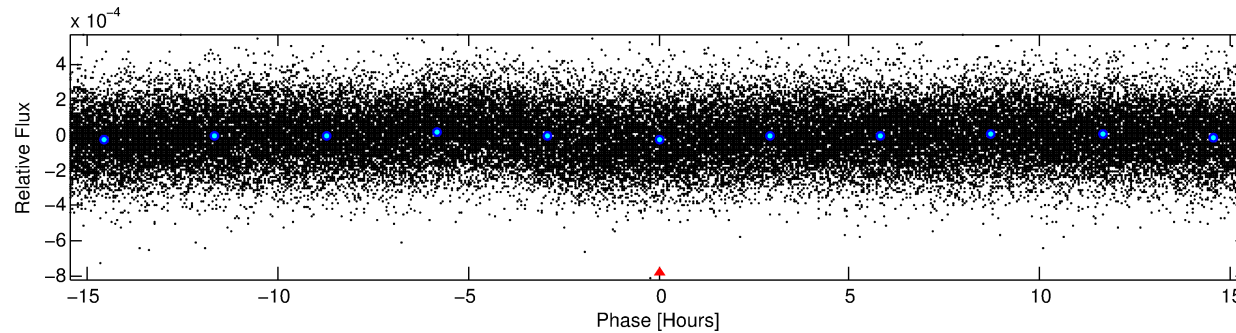
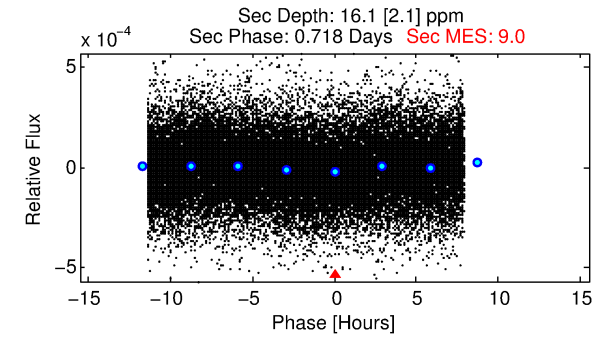
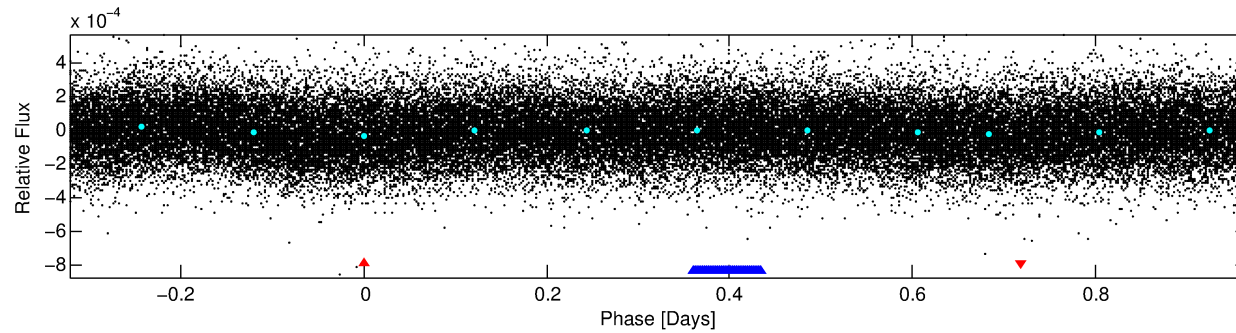
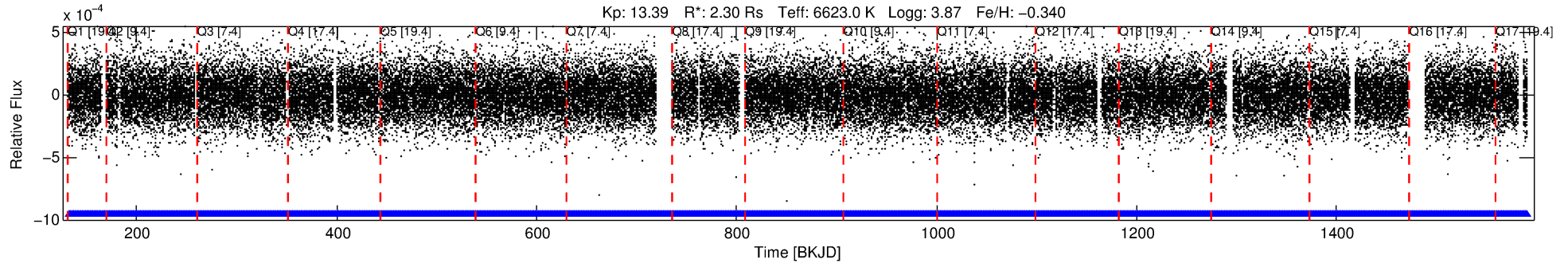
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007978226-01

No Significant Match Found

DV One-Page Summary

KIC: 7978226 Candidate: 1 of 2 Period: 1.290 d



TPS TCE Results:

Period = 1.29009 d
Epoch = 132.3760 BKJD

DV fit results are unavailable

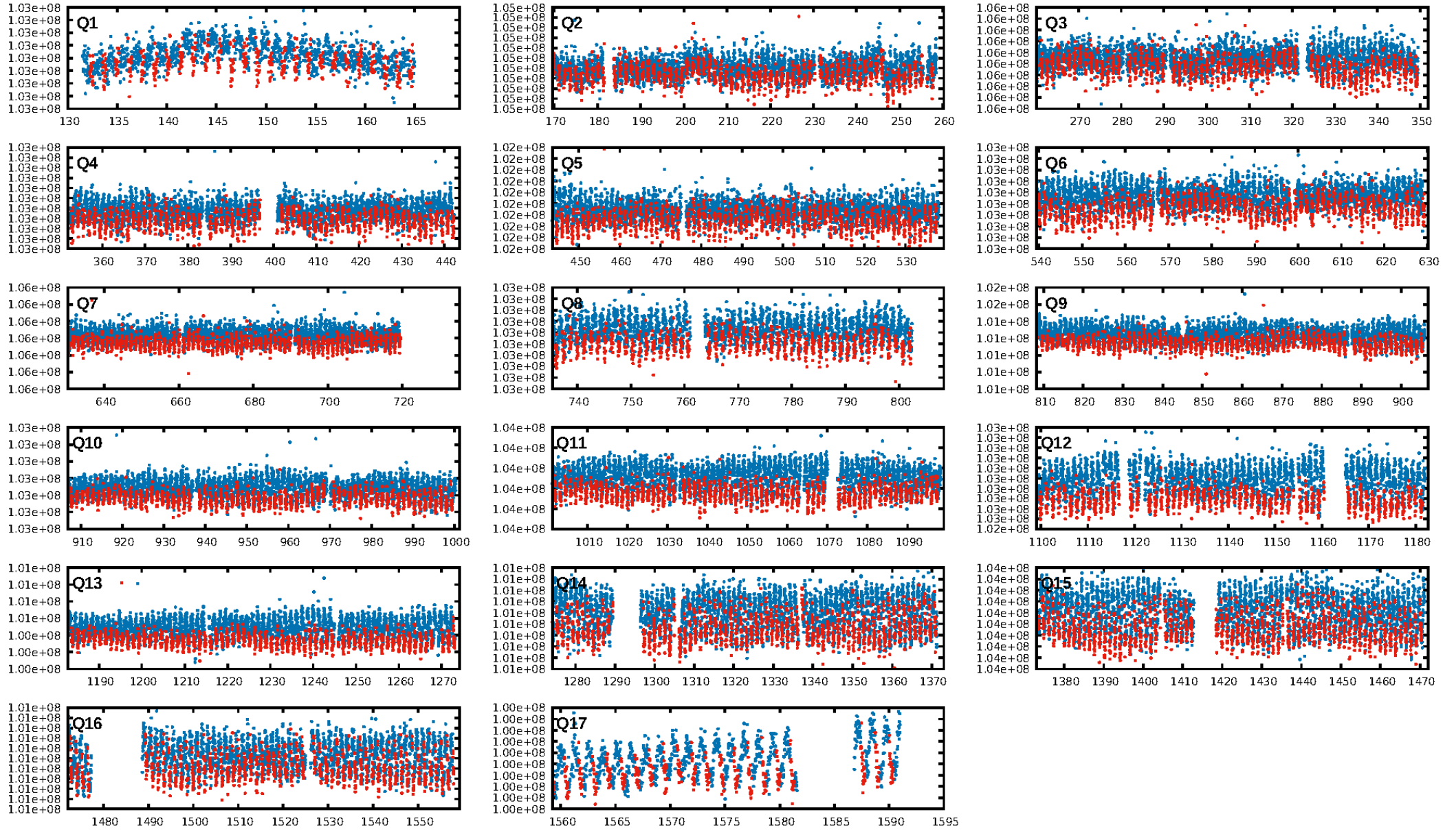
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.81e-45
RollingBand-fgt: 1.00 [1011/1011]
GhostDiagnostic-chr: 0.1007
Centroid-sig: 3.0%
Centroid-so: 0.057 arcsec [0.99σ]
OotOffset-rm: 1.416 arcsec [1.82σ]
KicOffset-rm: 1.437 arcsec [1.86σ]
OotOffset-st: 0/4/0/4 [8]
KicOffset-st: 0/4/0/4 [8]
DiffImageQuality-fgm: 0.75 [6/8]
DiffImageOverlap-fno: 0.00 [0/17]

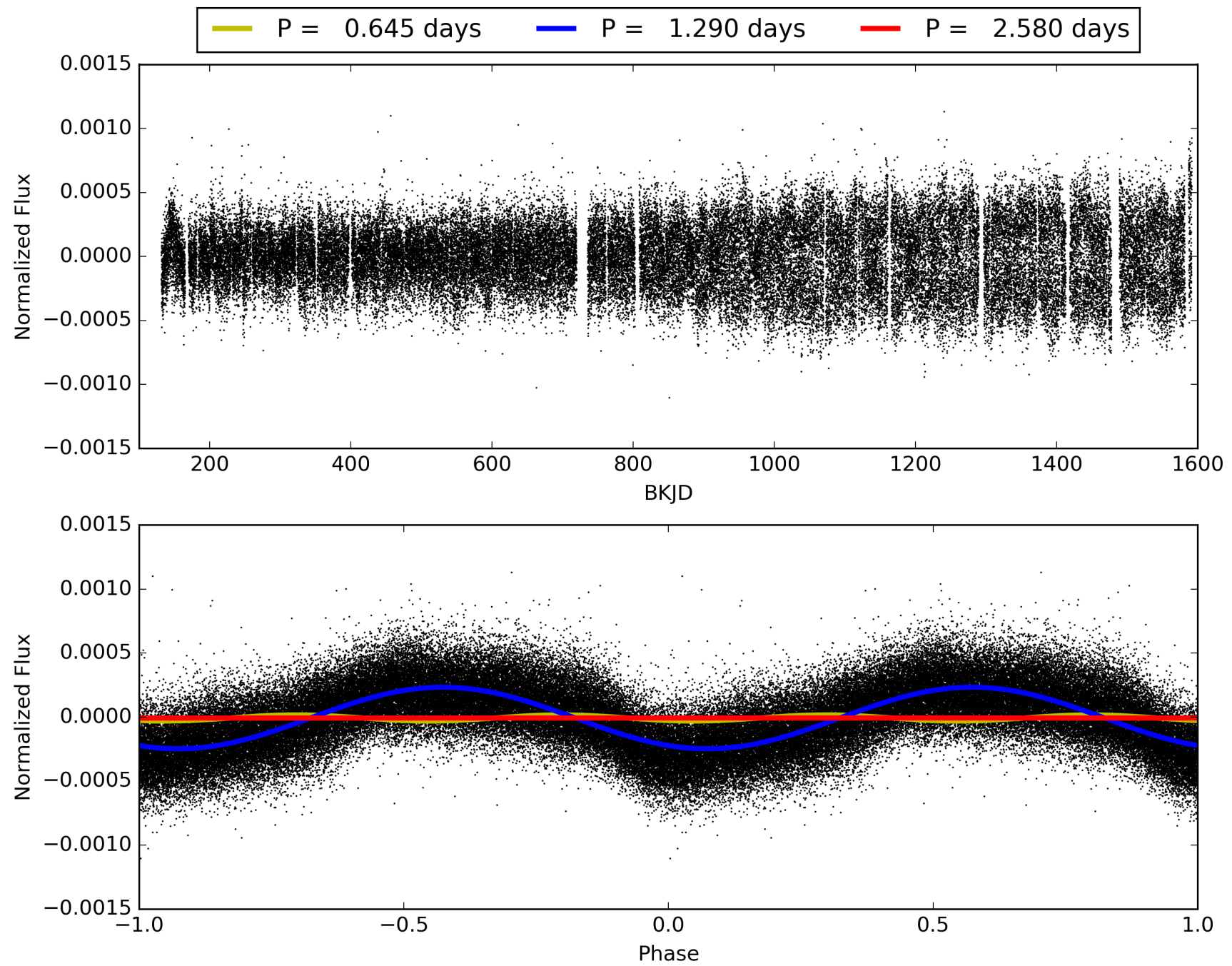
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:45:17 Z

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

TCE 007978226-01, PDC Light Curves

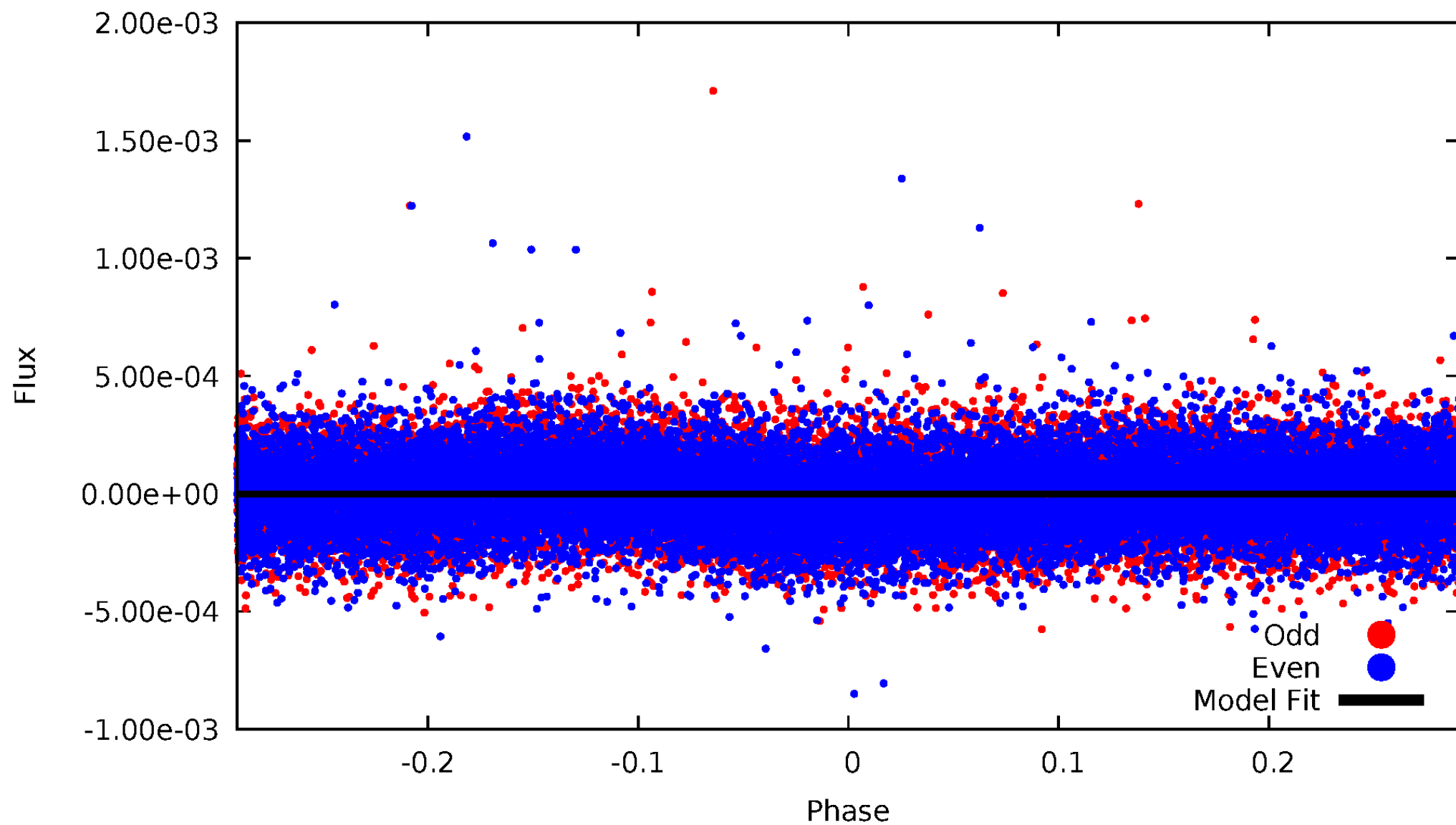


TCE 007978226-01



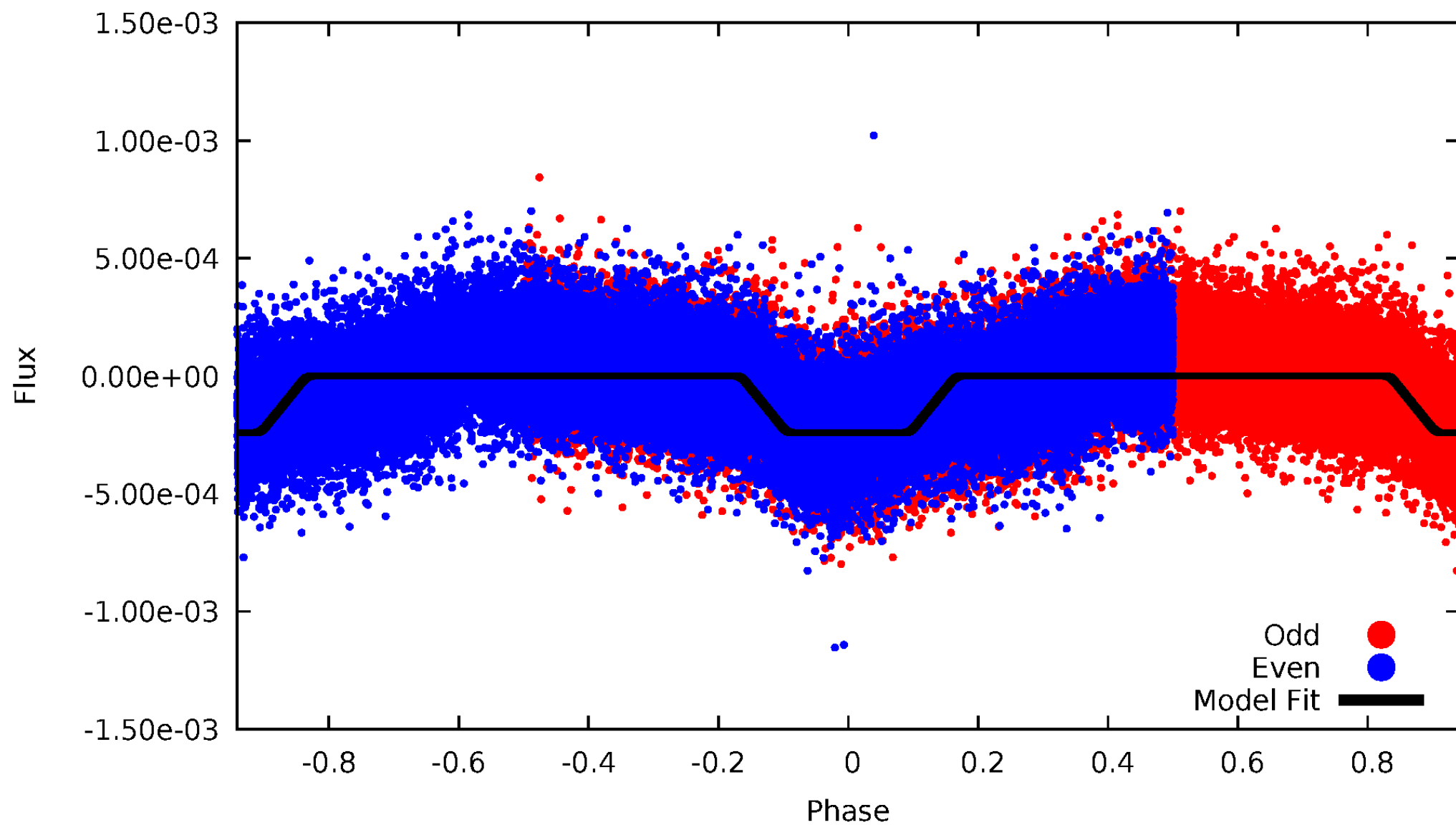
DV Odd/Even

TCE 007978226-01



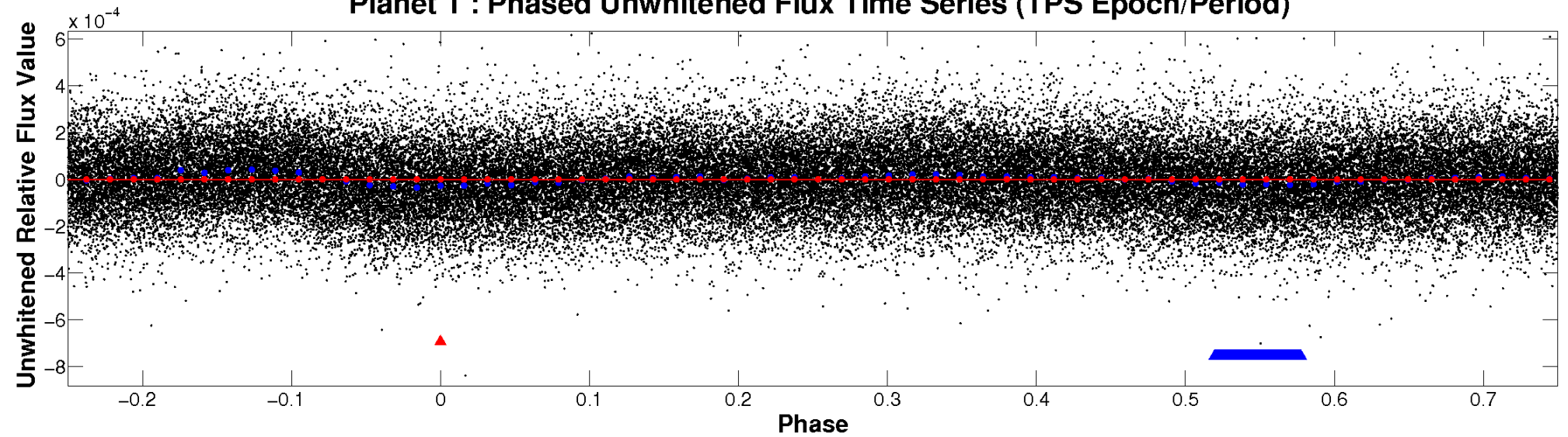
ALT Odd/Even

TCE 007978226-01

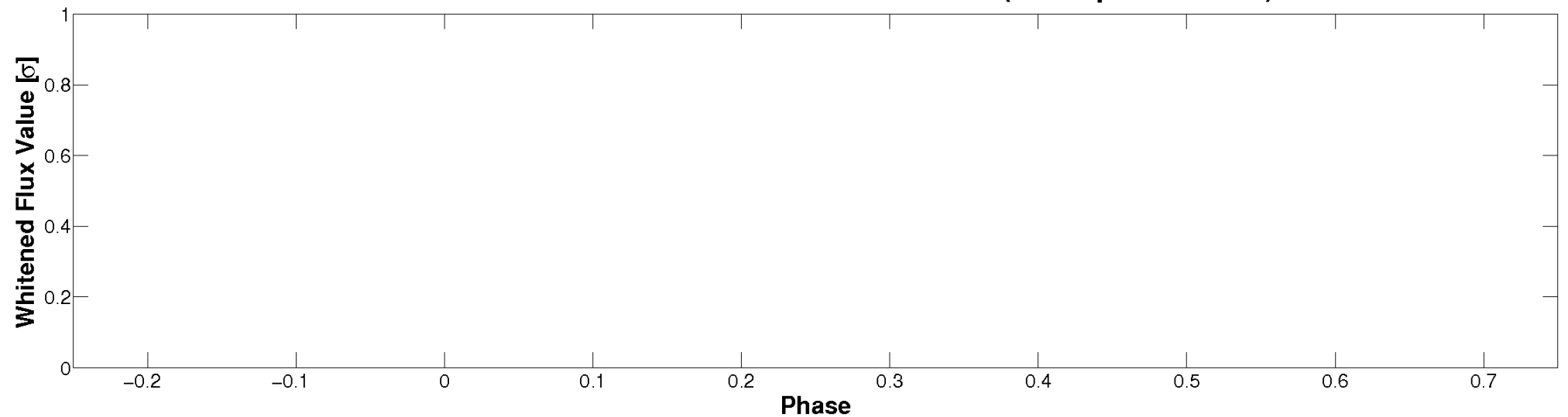


Non-Whitened Vs. Whitened Light Curve

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

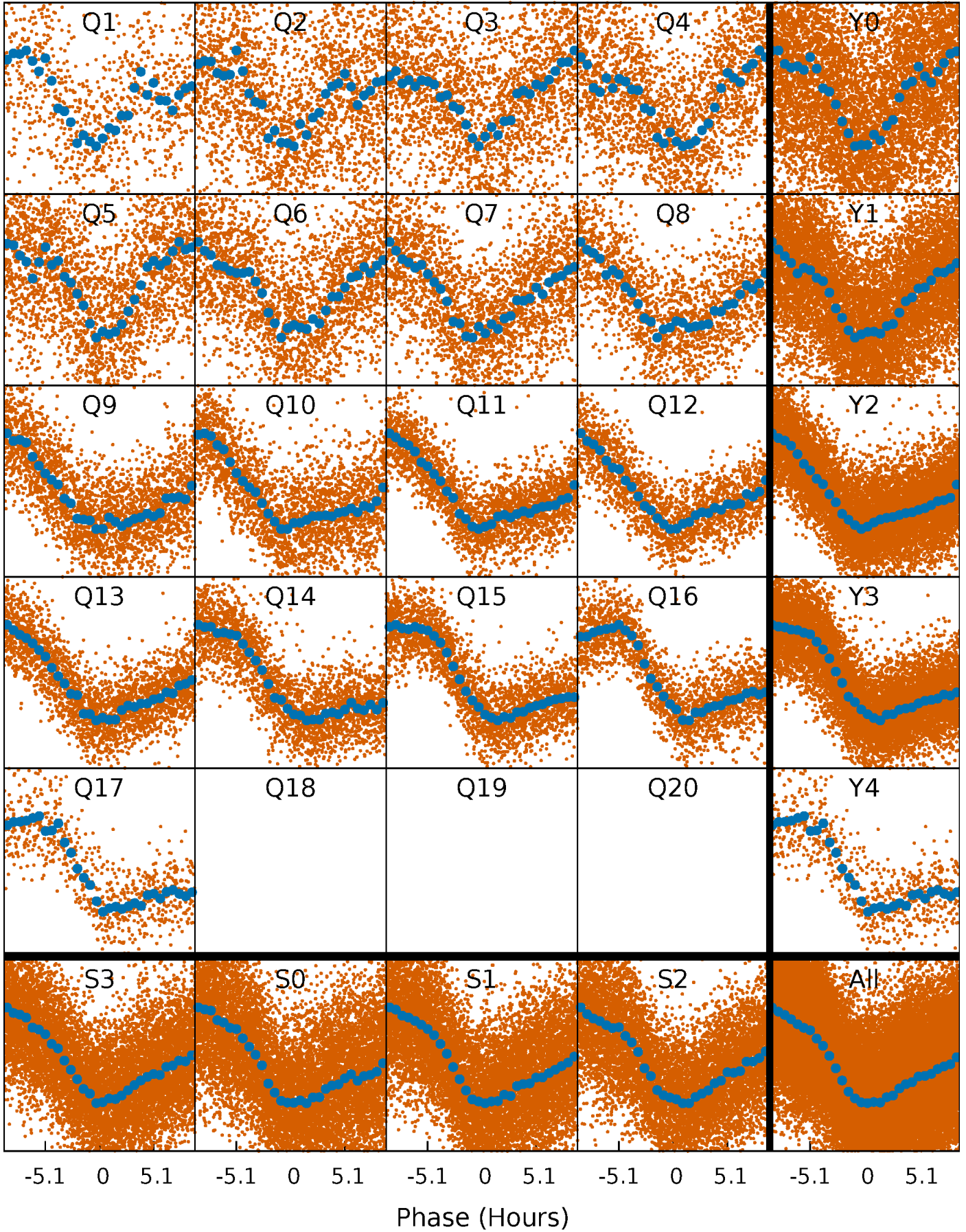


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



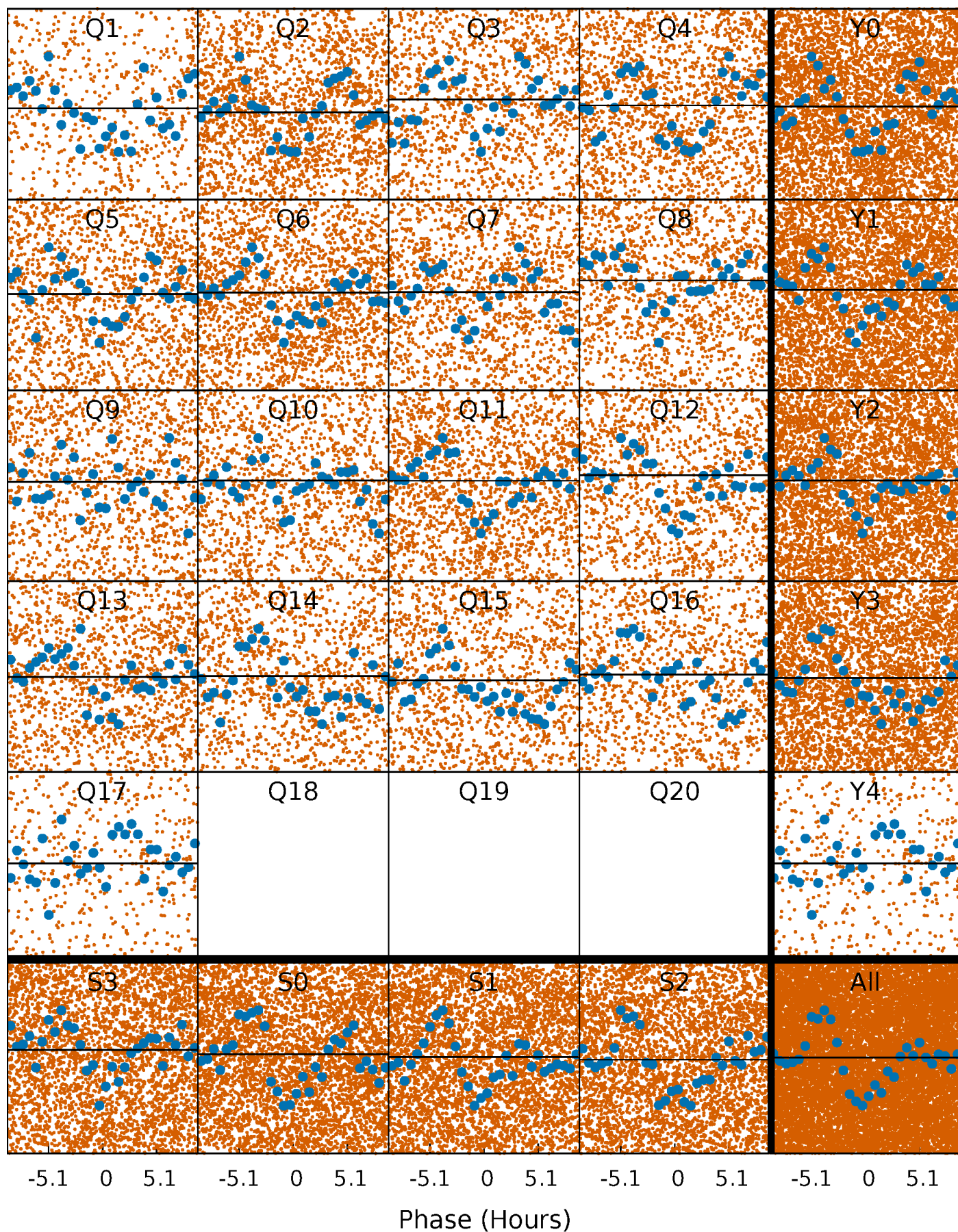
PDC Quarter-Phased Transit Curves

TCE 007978226-01 P= 1.290086 Days $T_0=132.376014$ (BKJD)



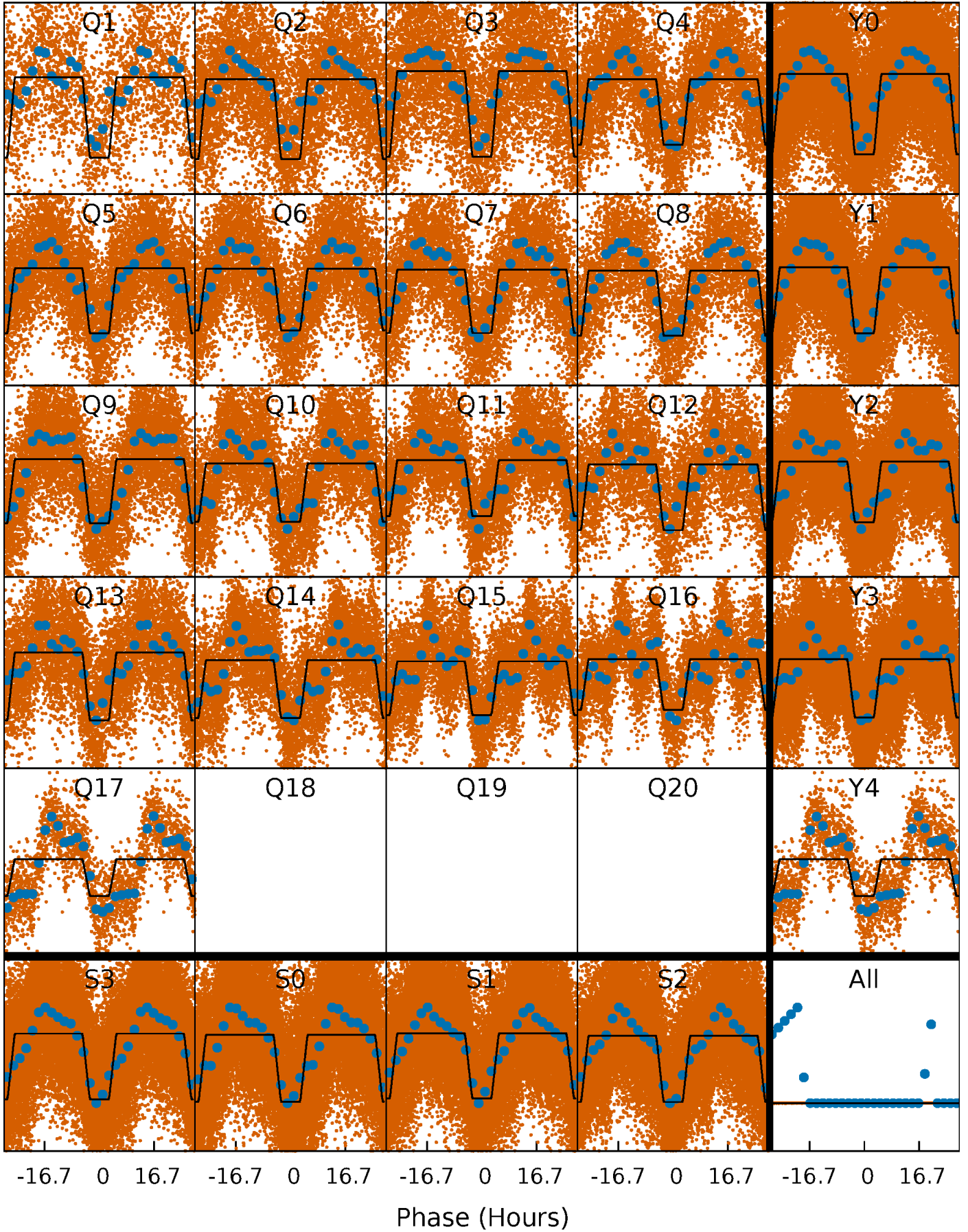
DV Quarter-Phased Transit Curves

TCE 007978226-01 P= 1.290086 Days $T_0=132.376014$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

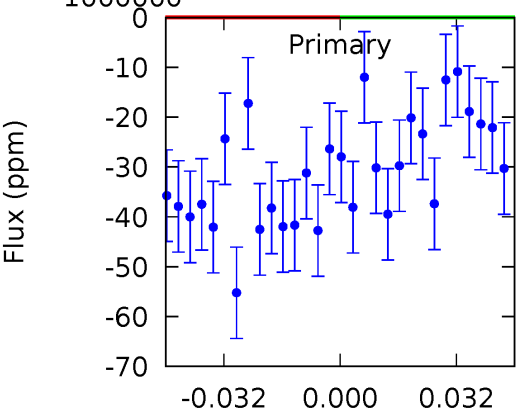
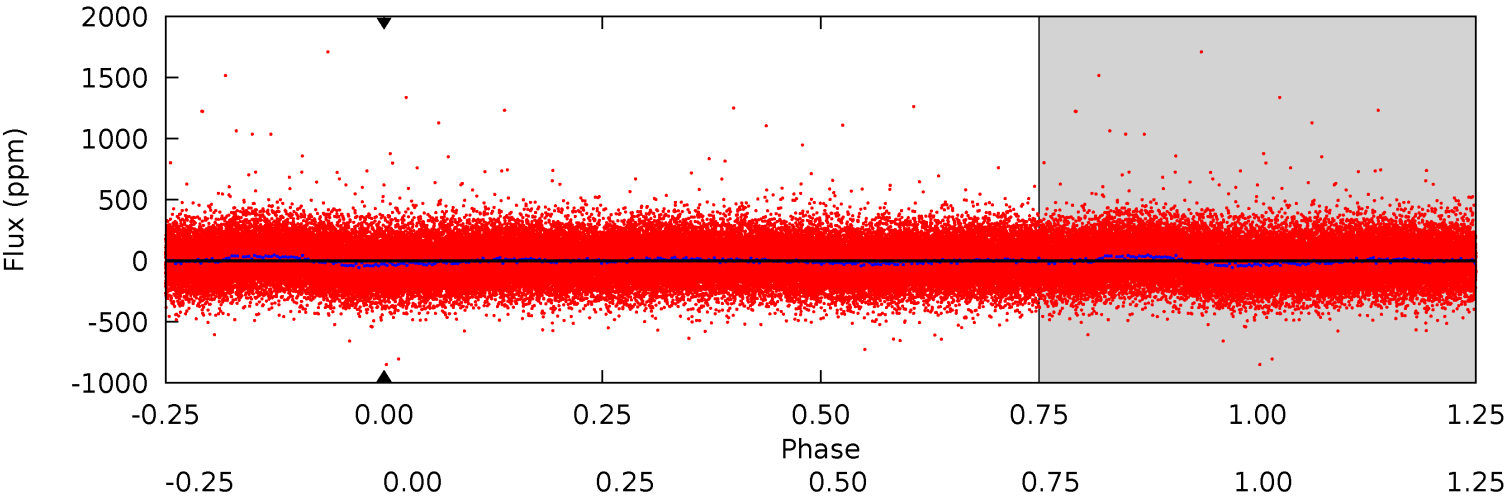
TCE 007978226-01 P= 1.290086 Days $T_0=132.406271$ (BKJD)



DV Model-Shift Uniqueness Test

007978226-01, P = 1.290086 Days, E = 131.085928 Days

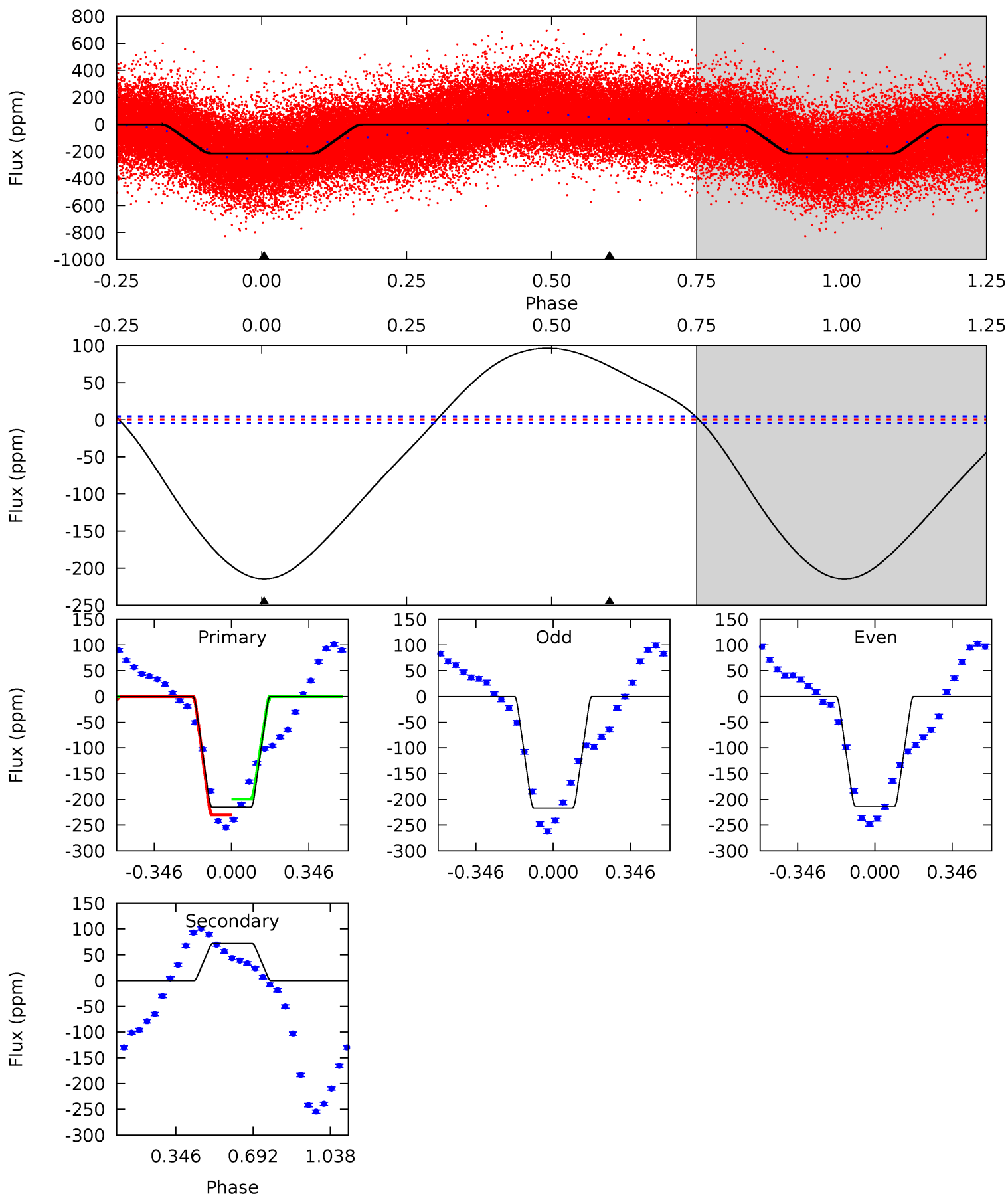
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007978226-01, P = 1.290086 Days, E = 131.116185 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
204.5	-68.6	0	0	4.30	0.94	23.3	204.5	204.5	-68.6	-68.6	1.54	1.00	0.31	14.9



Stellar Parameters For KIC 007978226

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6623^{+180}_{-220}	$3.865^{+0.292}_{-0.097}$	$-0.340^{+0.300}_{-0.250}$	$2.298^{+0.426}_{-0.792}$	$1.412^{+0.199}_{-0.299}$	$0.164^{+0.332}_{-0.050}$
	+3%/-3%	+8%/-3%	+88%/-74%	+19%/-34%	+14%/-21%	+202%/-30%
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 007978226-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$16.47^{+17.76}_{-11.89}$	3758^{+245}_{-322}	-4582^{+34916}_{-28443}	$-1.180^{+233.415}_{-263.267}$
Alt.	72 ± 1	$17.32^{+19.06}_{-12.82}$	3739^{+227}_{-324}	-3723^{+210}_{-915}	$-0.086^{+0.066}_{-1.262}$

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 $A_{obs} \gg 1.0$

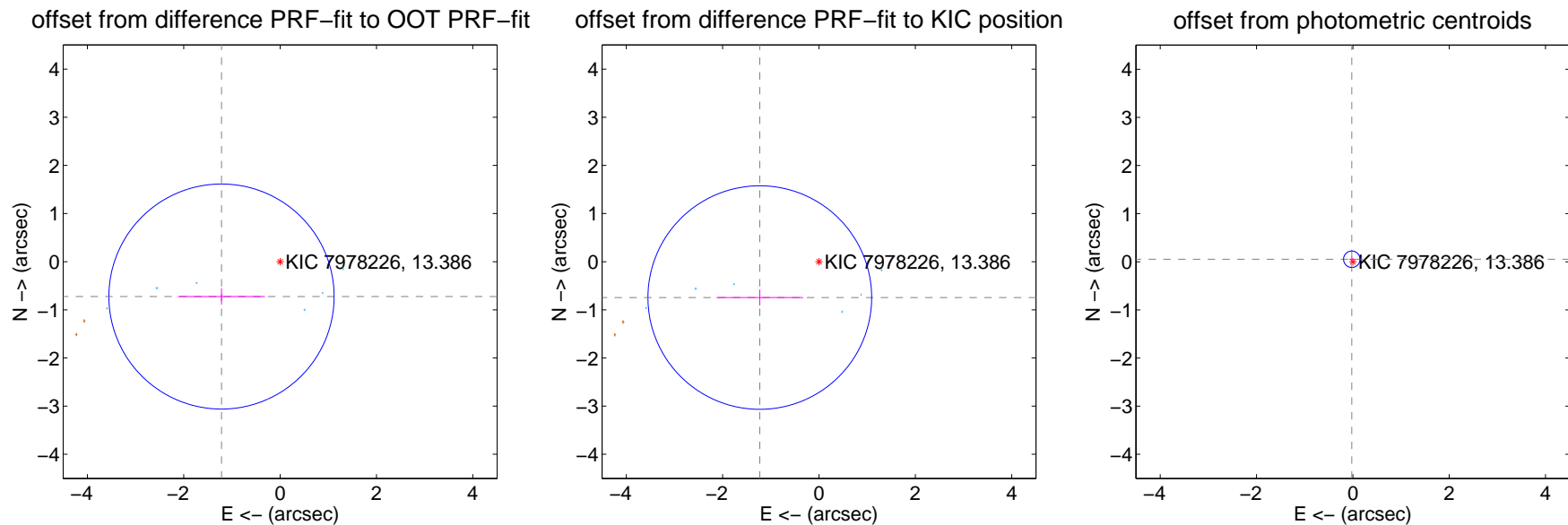
DV Centroid Data

Supplemental centroid analysis for 007978226-01. Kepler magnitude: 13.39. Transit SNR -1.00

There are 6 quarters with good PRF difference image offsets

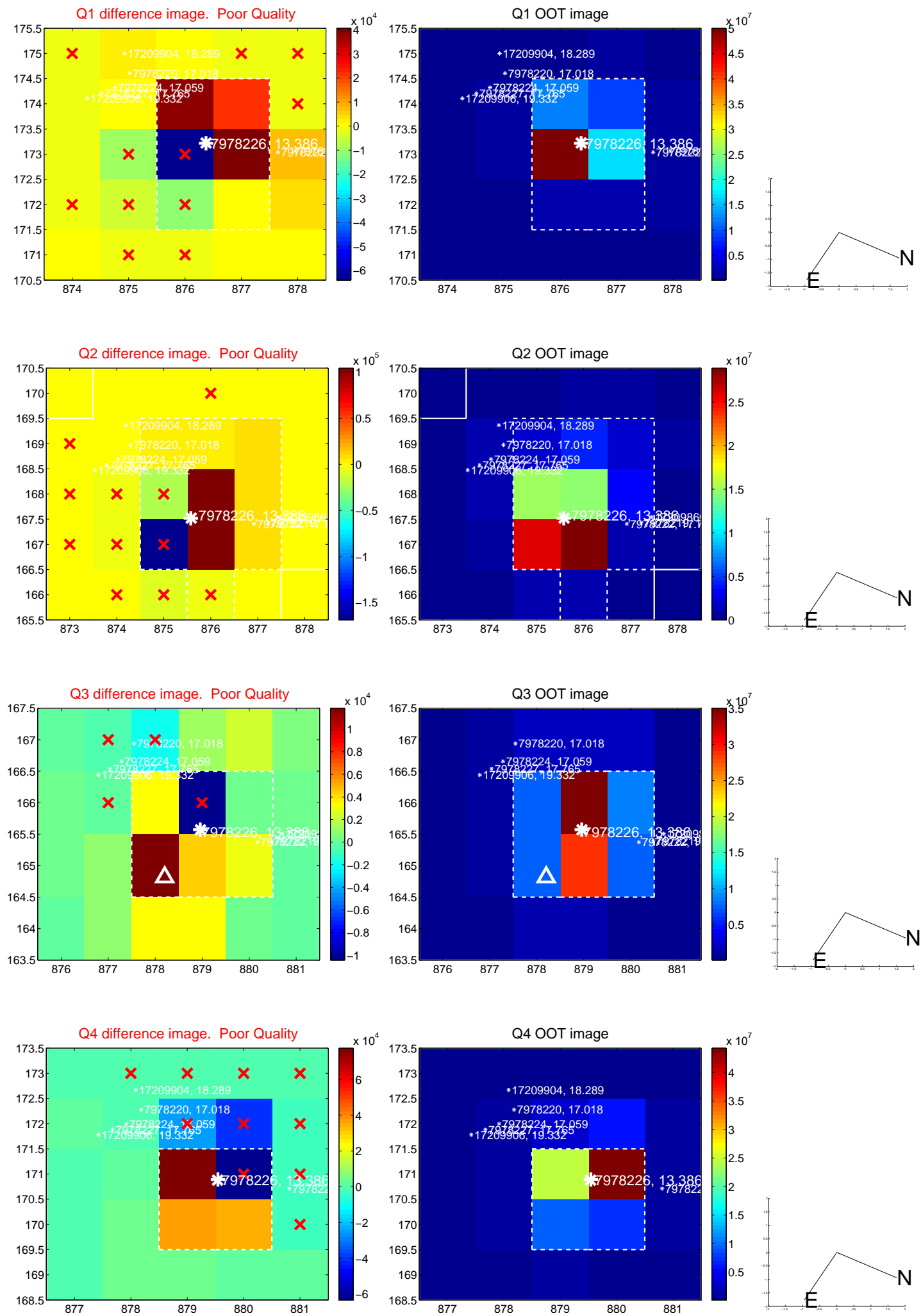
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.416 ± 0.779	1.82	1.217 ± 0.901	-0.724 ± 0.170
PRF-fit source offset from KIC position	1.437 ± 0.774	1.86	1.229 ± 0.900	-0.745 ± 0.167
photometric centroid source offset	0.06 ± 0.06	0.99	0.02 ± 0.05	0.05 ± 0.06

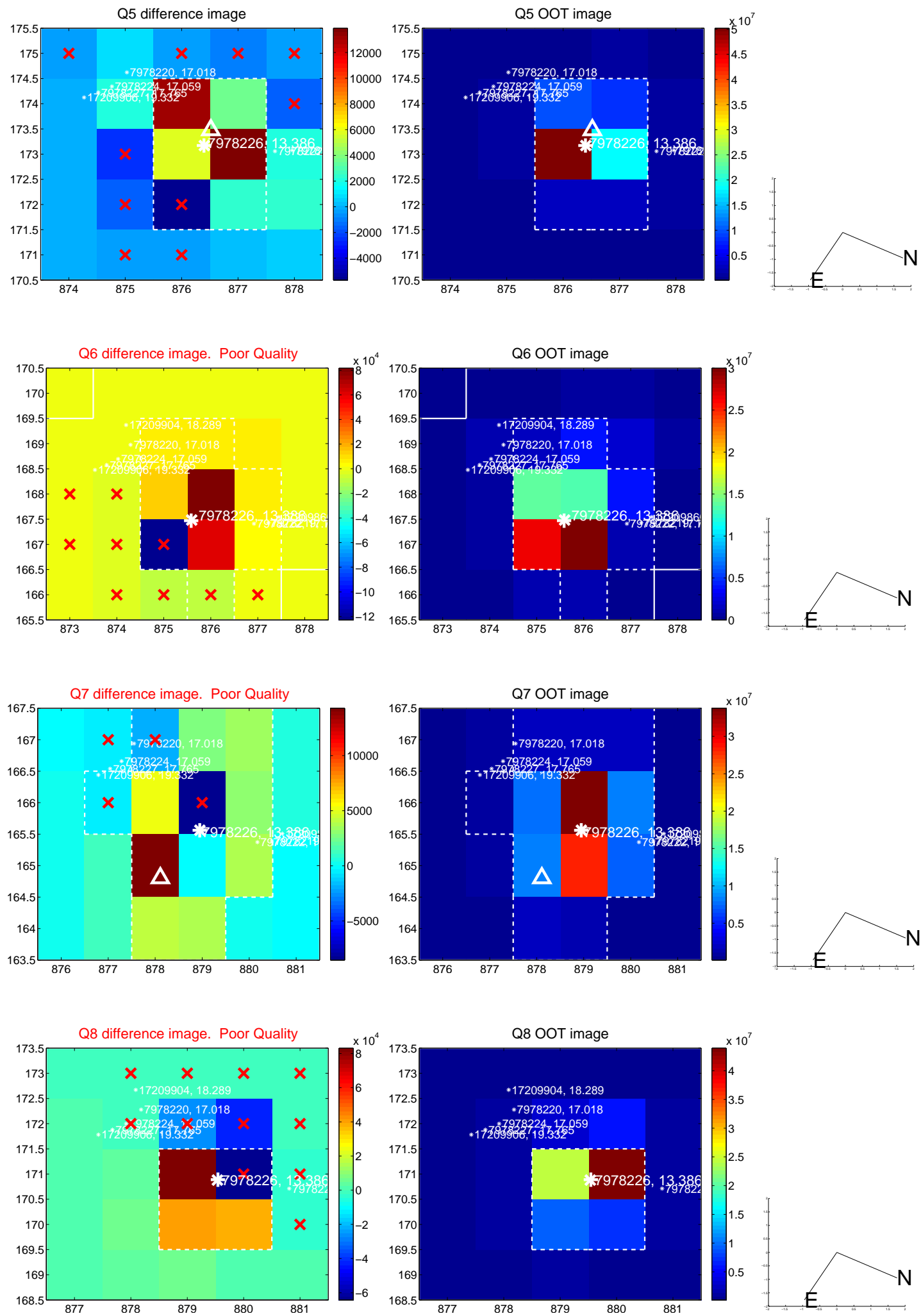


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

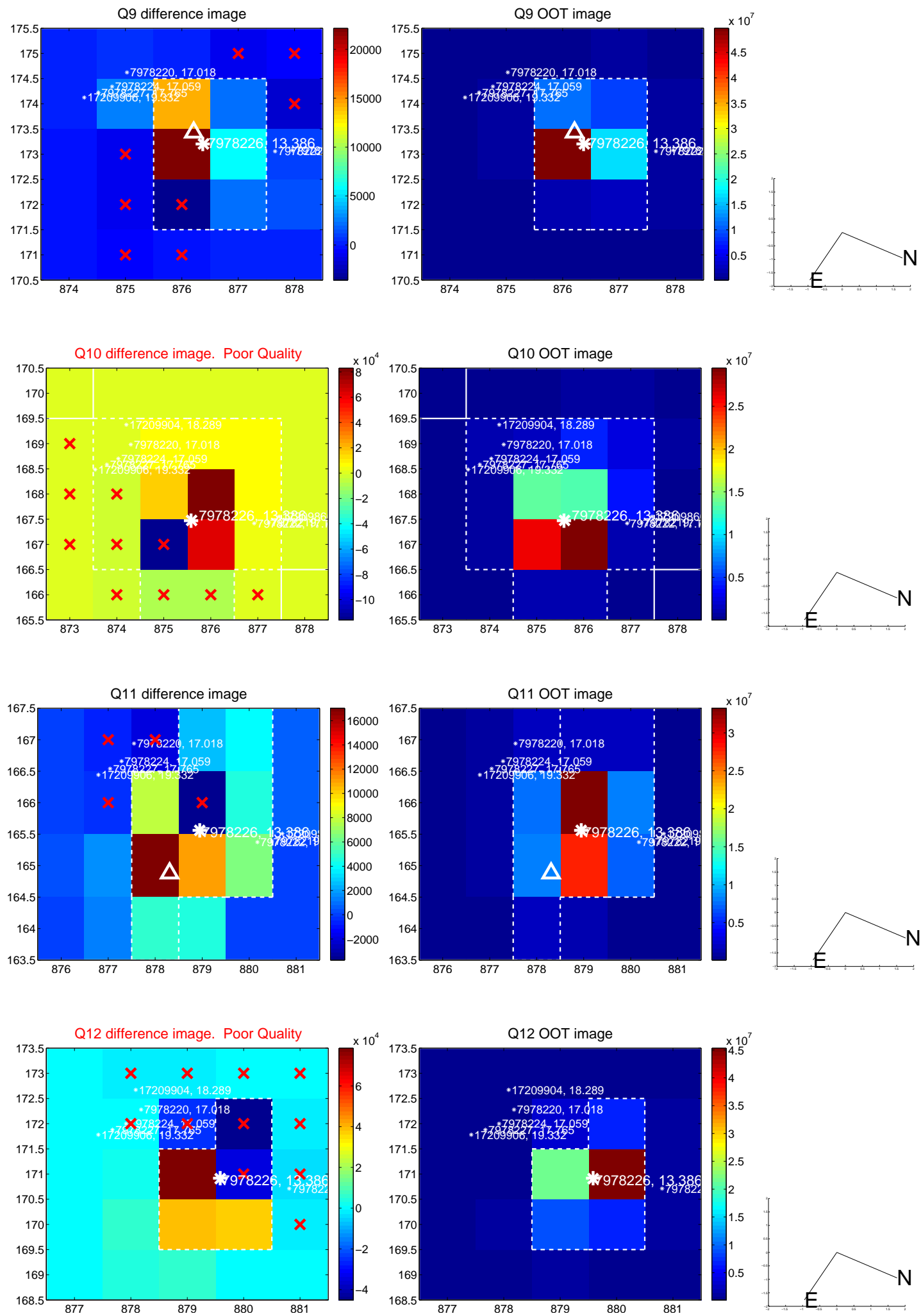
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



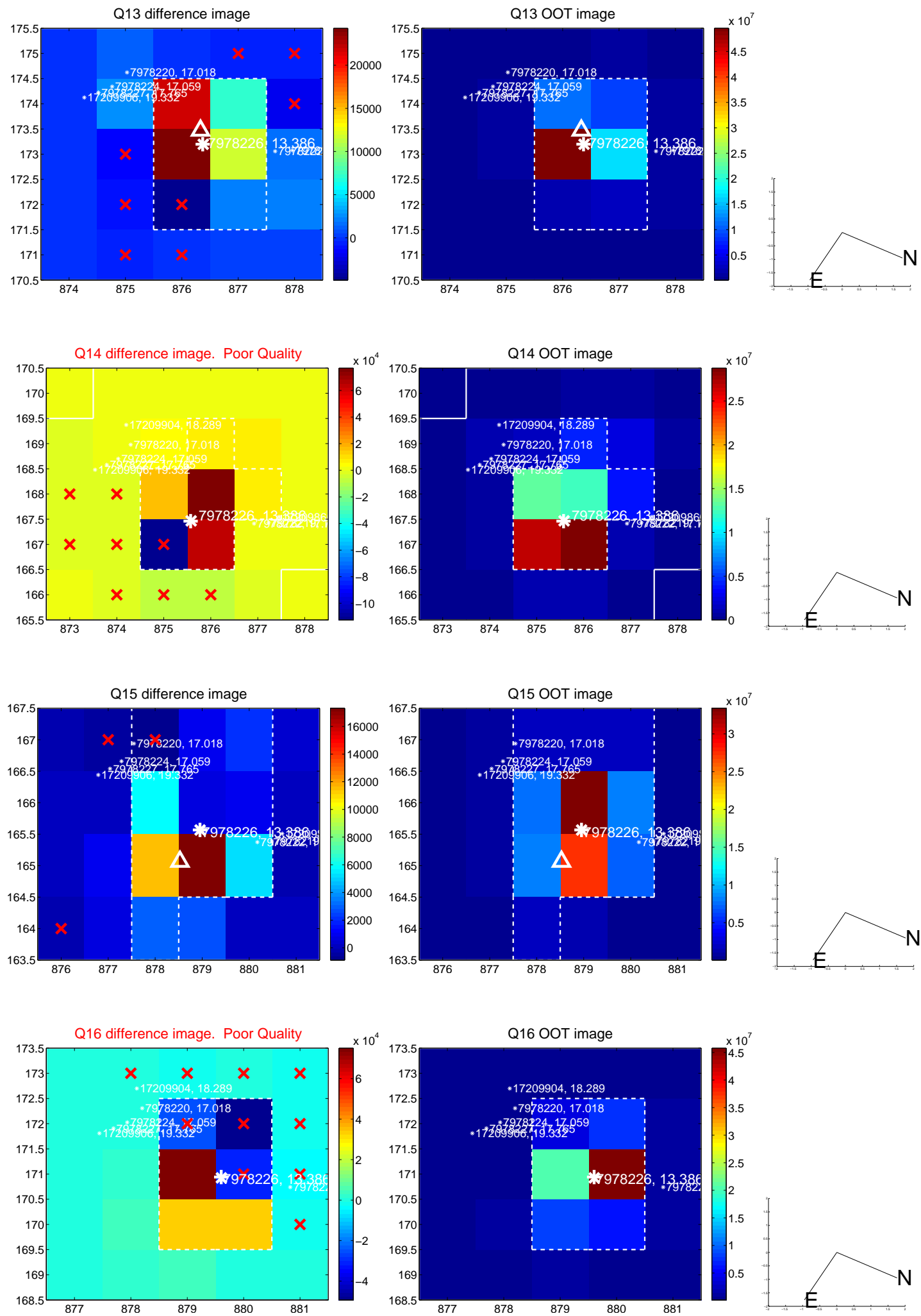
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



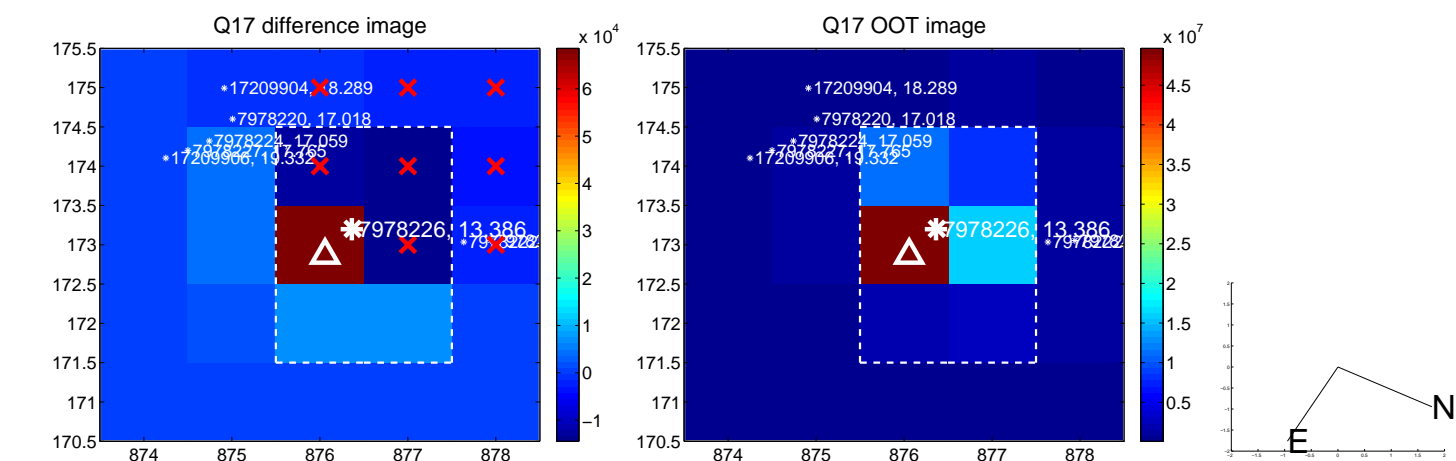
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



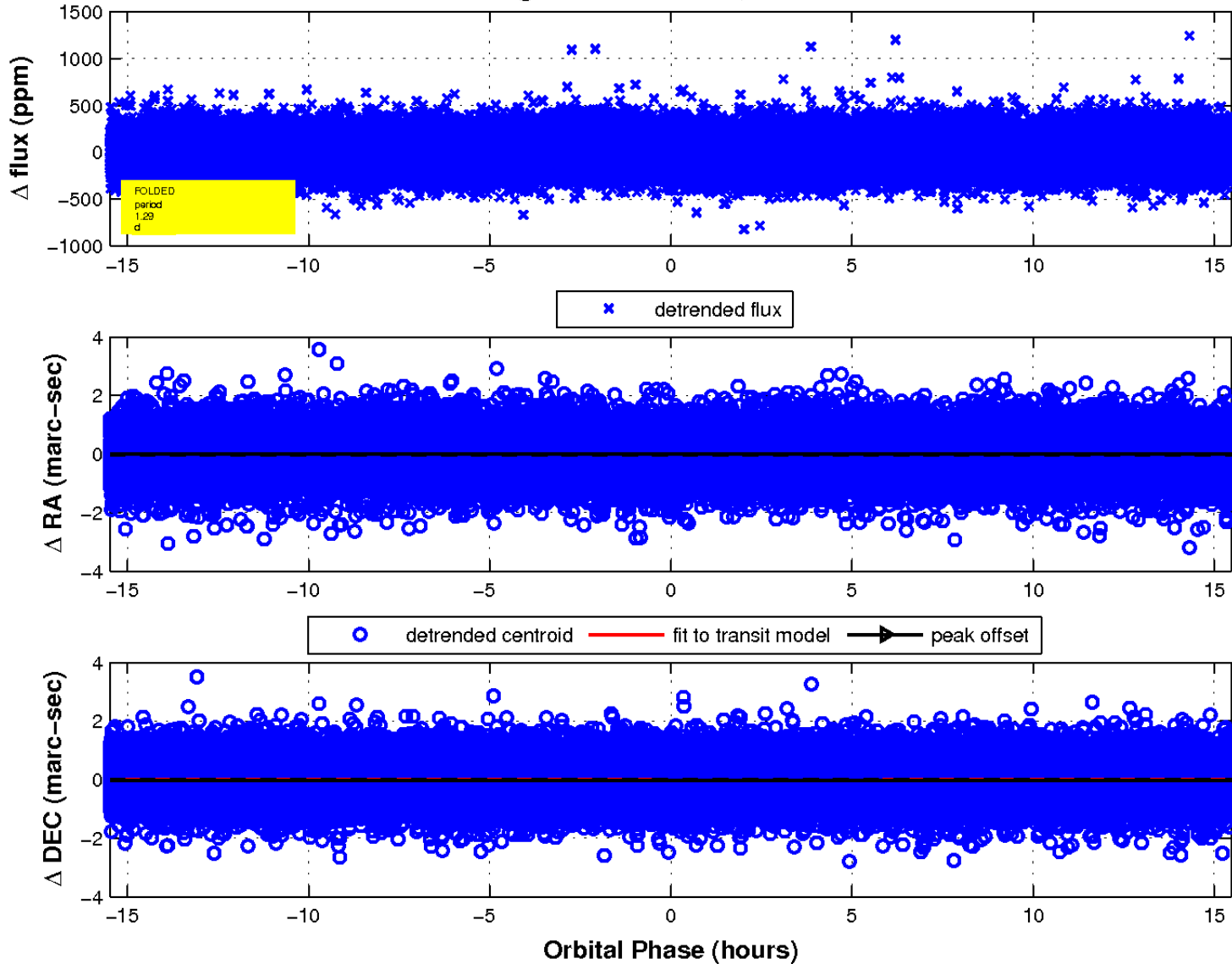
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

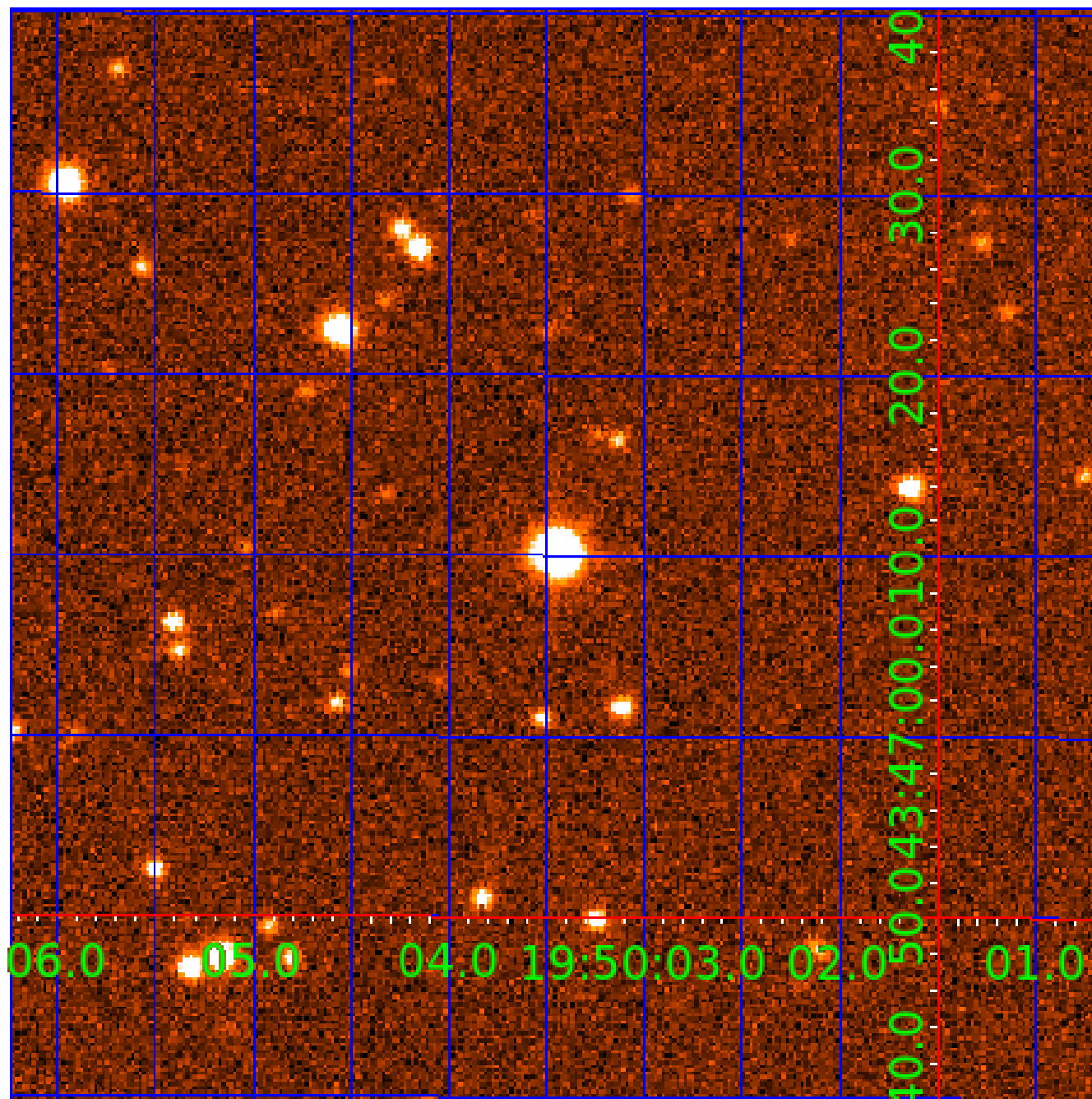


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 007978226

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})
007978226-01	OBS	No	1.290086	132.376015	170.3	4.500	12.3	-1.0	2.30	6623	3.02	13443.79
007978226-02	OBS	No	1.290152	131.756197	194.2	4.500	9.7	-1.0	2.30	6623	3.23	13442.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007978226-01	OBS	FP	0.00	1	0	1	0	SWEET_NTL—LPP_DV—CENT_NOFITS—HALO_GHOST
007978226-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

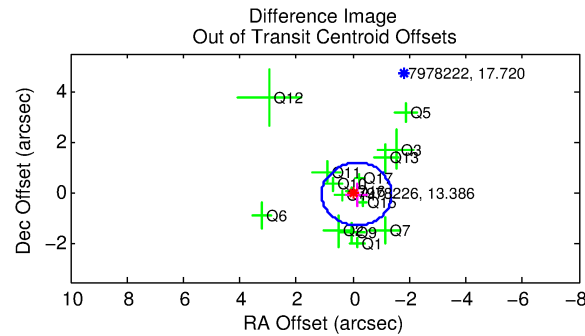
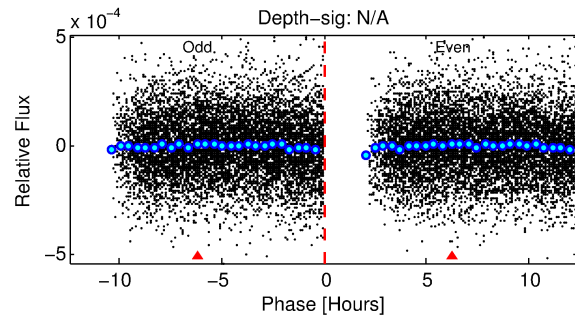
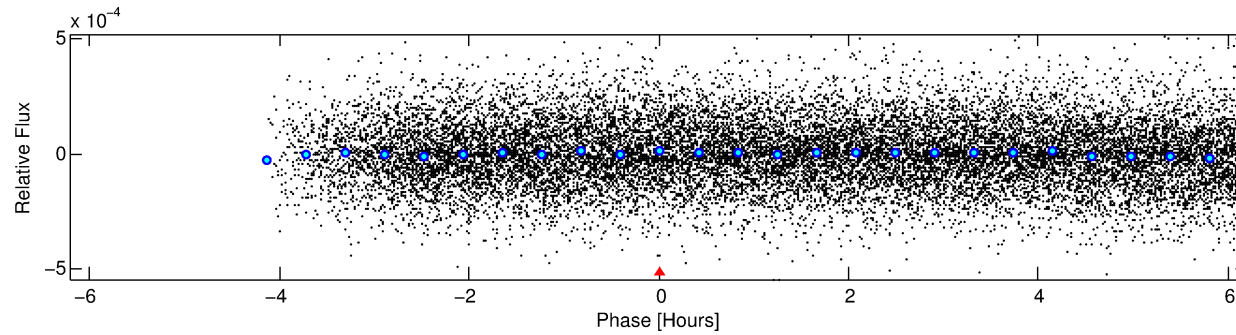
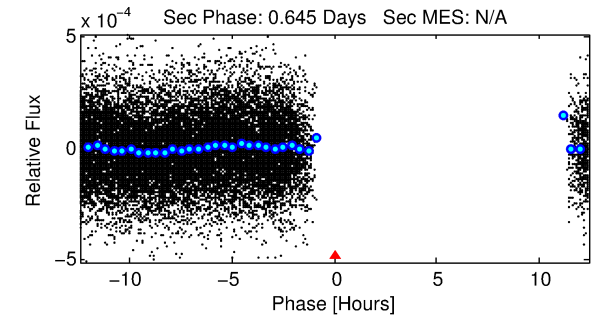
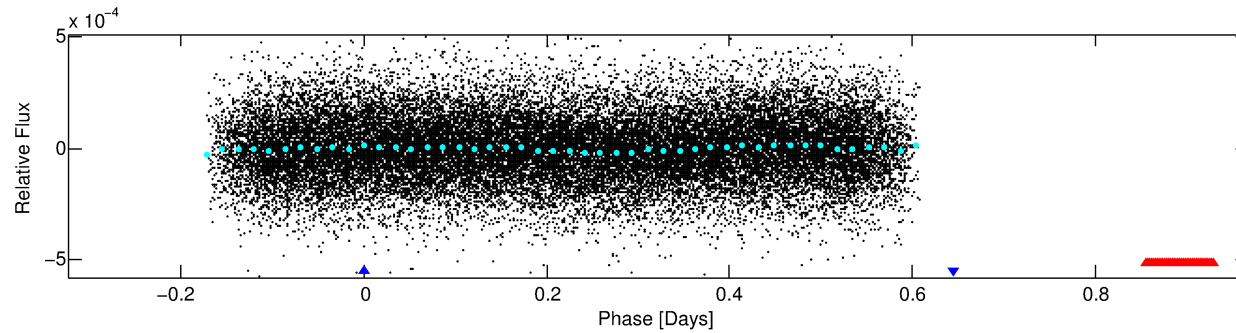
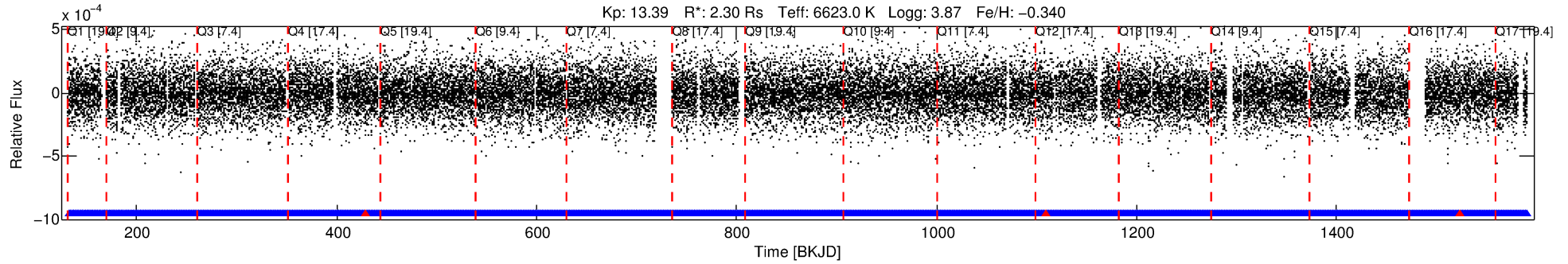
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007978226-02

No Significant Match Found

DV One-Page Summary

KIC: 7978226 Candidate: 2 of 2 Period: 1.290 d



TPS TCE Results:

Period = 1.29015 d
Epoch = 131.7562 BKJD

DV fit results are unavailable

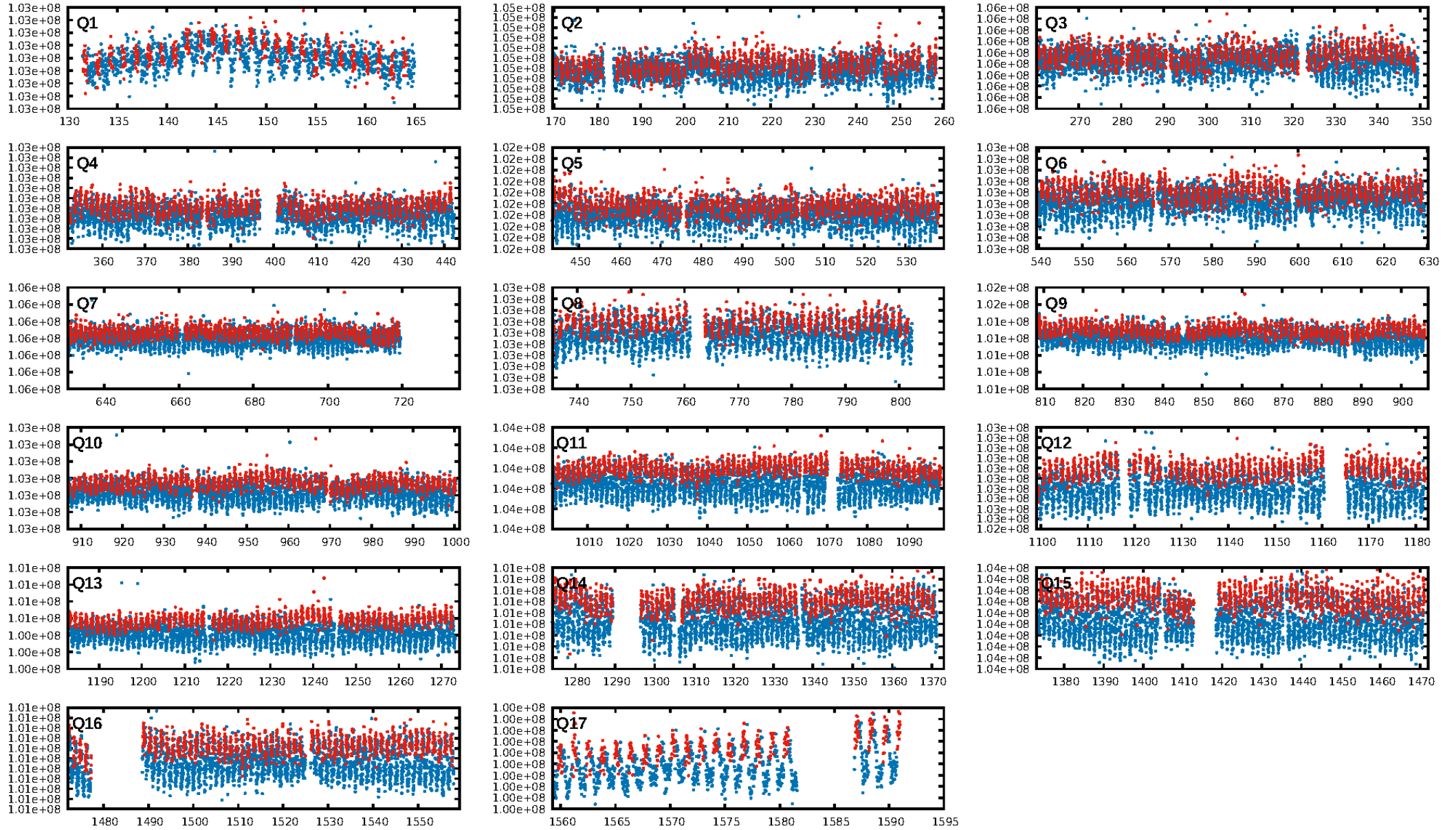
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.96e-30
RollingBand-fgt: 1.00 [993/996]
GhostDiagnostic-chr: -0.4121
Centroid-sig: 0.9%
Centroid-so: 1.790 arcsec [1.64 σ]
OotOffset-rm: 0.136 arcsec [0.33 σ]
KicOffset-rm: 0.157 arcsec [0.41 σ]
OotOffset-st: 4/4/2/5 [15]
KicOffset-st: 4/4/2/5 [15]
DiffImageQuality-fgm: 0.53 [8/15]
DiffImageOverlap-fno: 0.00 [0/17]

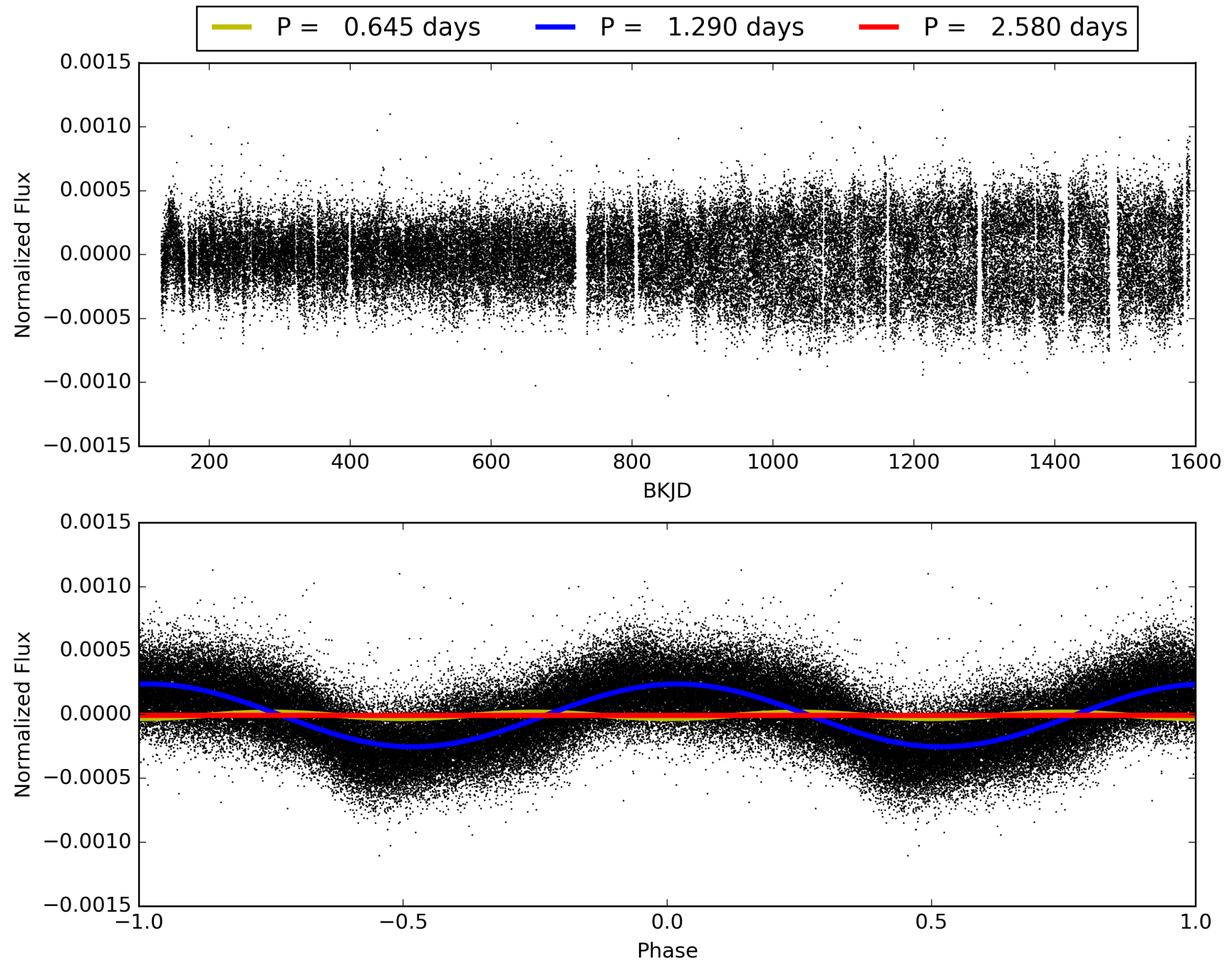
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:45:29 Z

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

TCE 007978226-02, PDC Light Curves

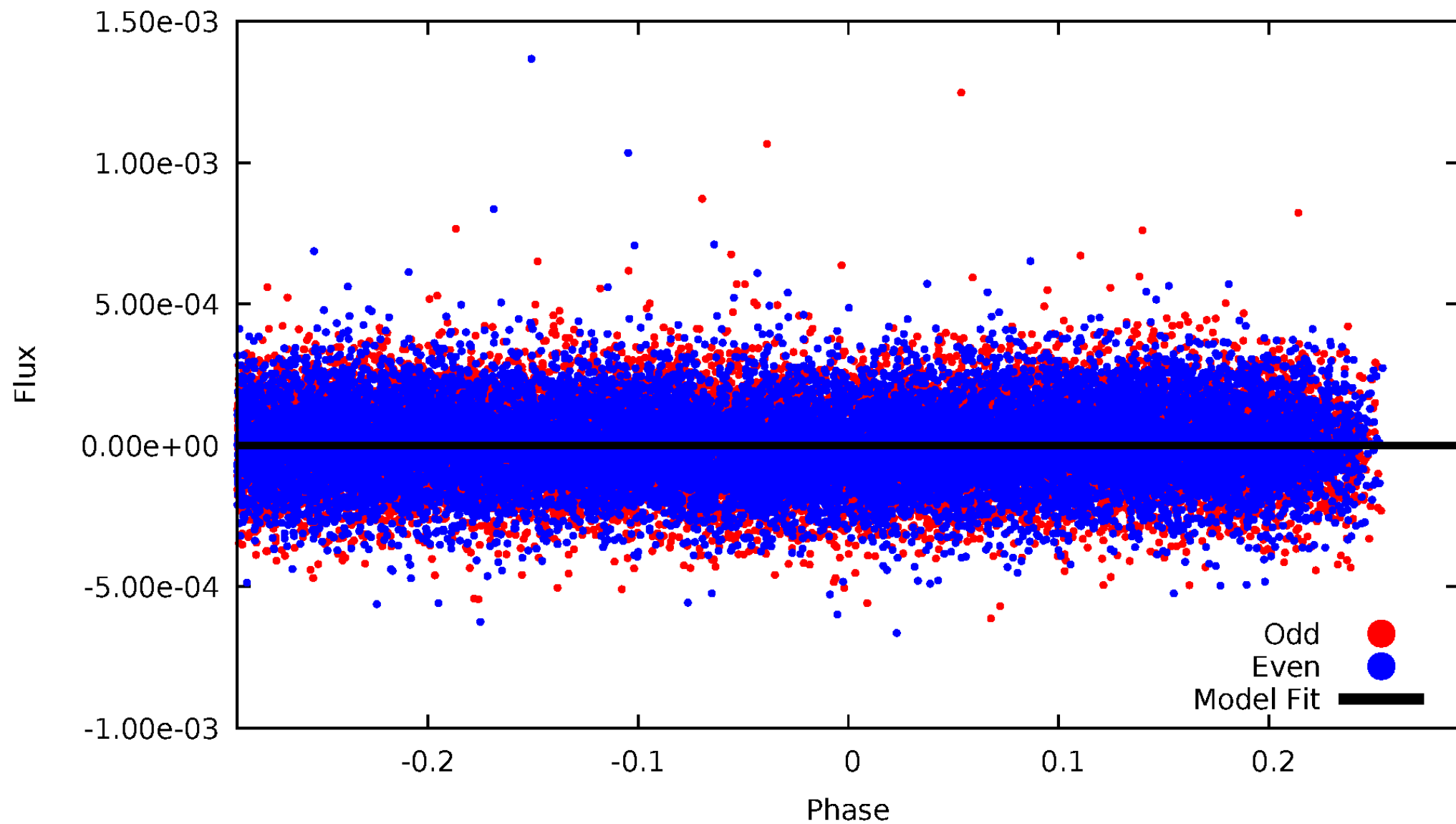


TCE 007978226-02



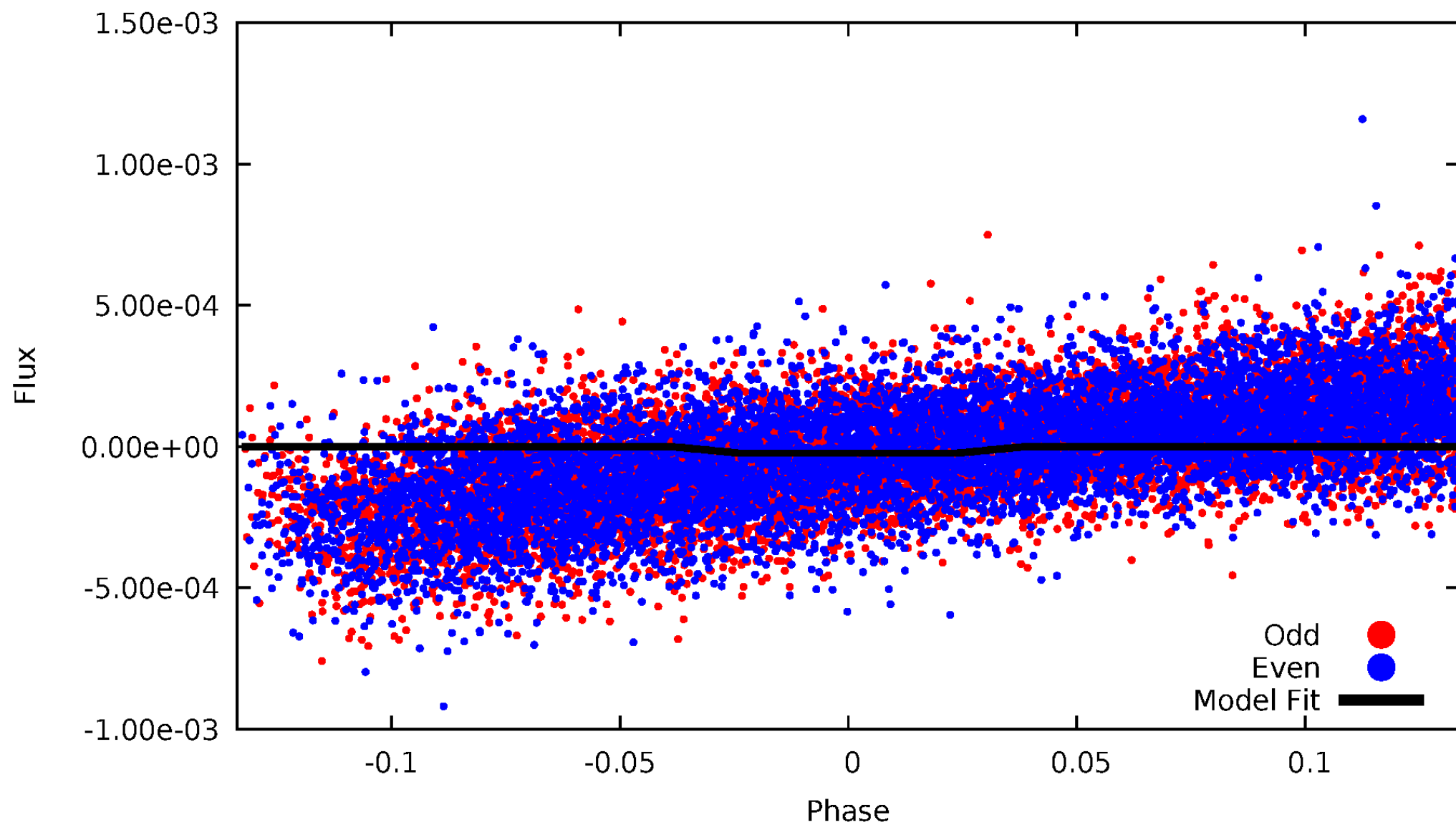
DV Odd/Even

TCE 007978226-02



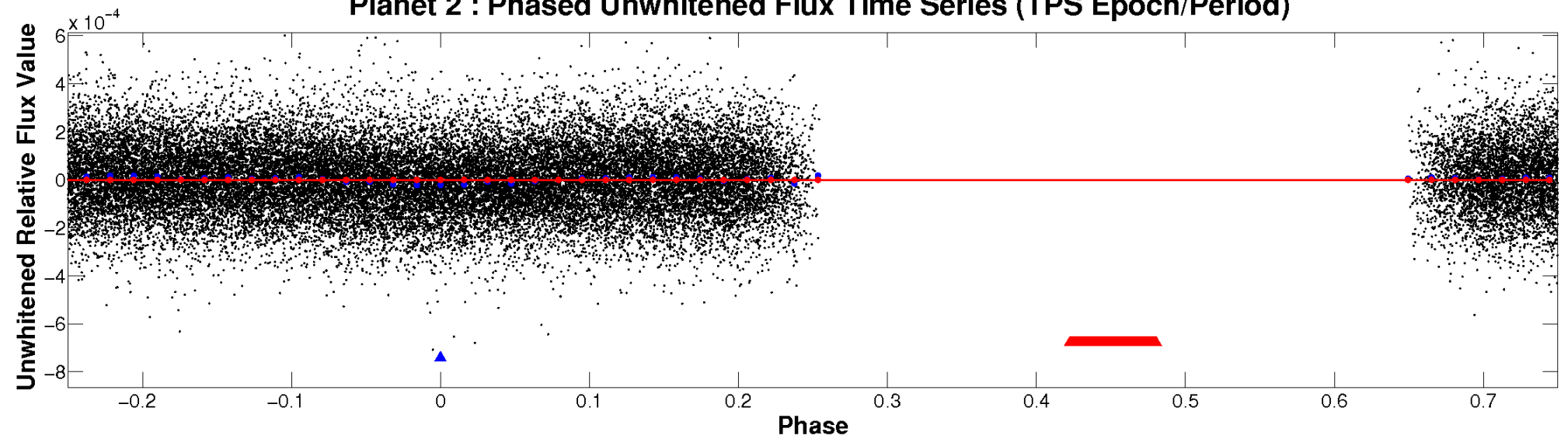
ALT Odd/Even

TCE 007978226-02

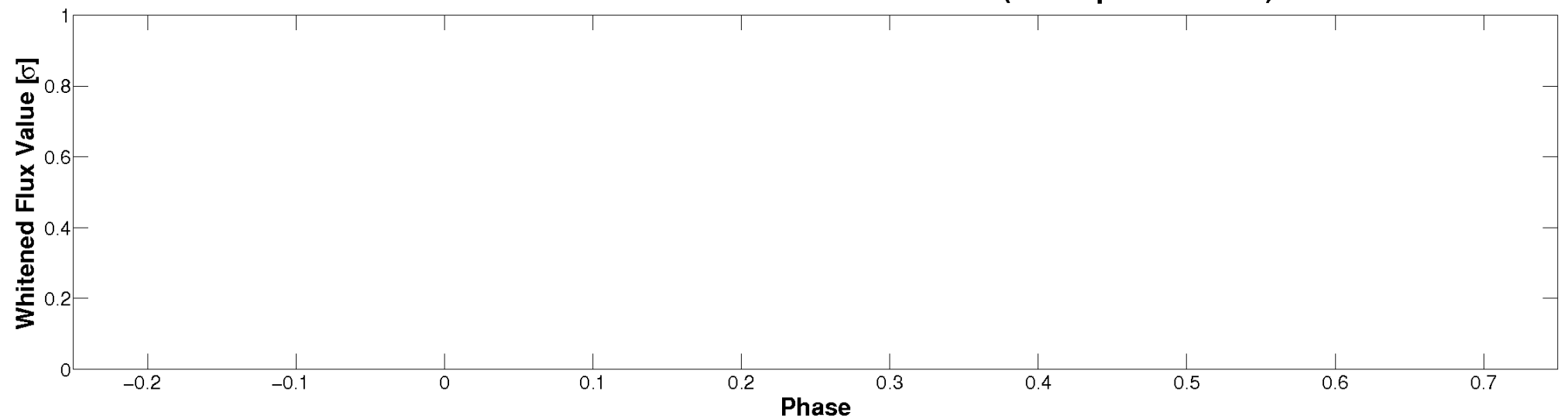


Non-Whitened Vs. Whitened Light Curve

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

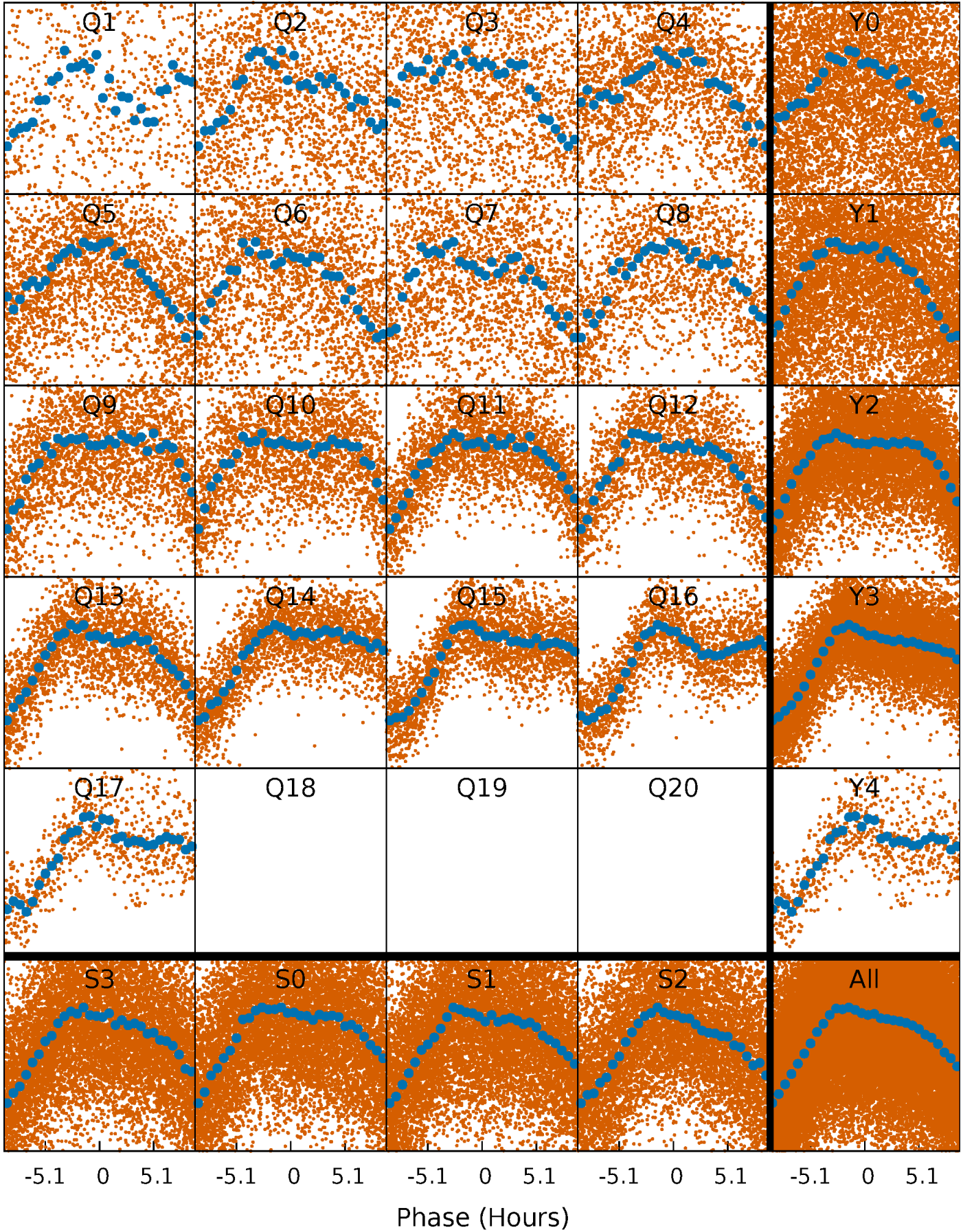


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



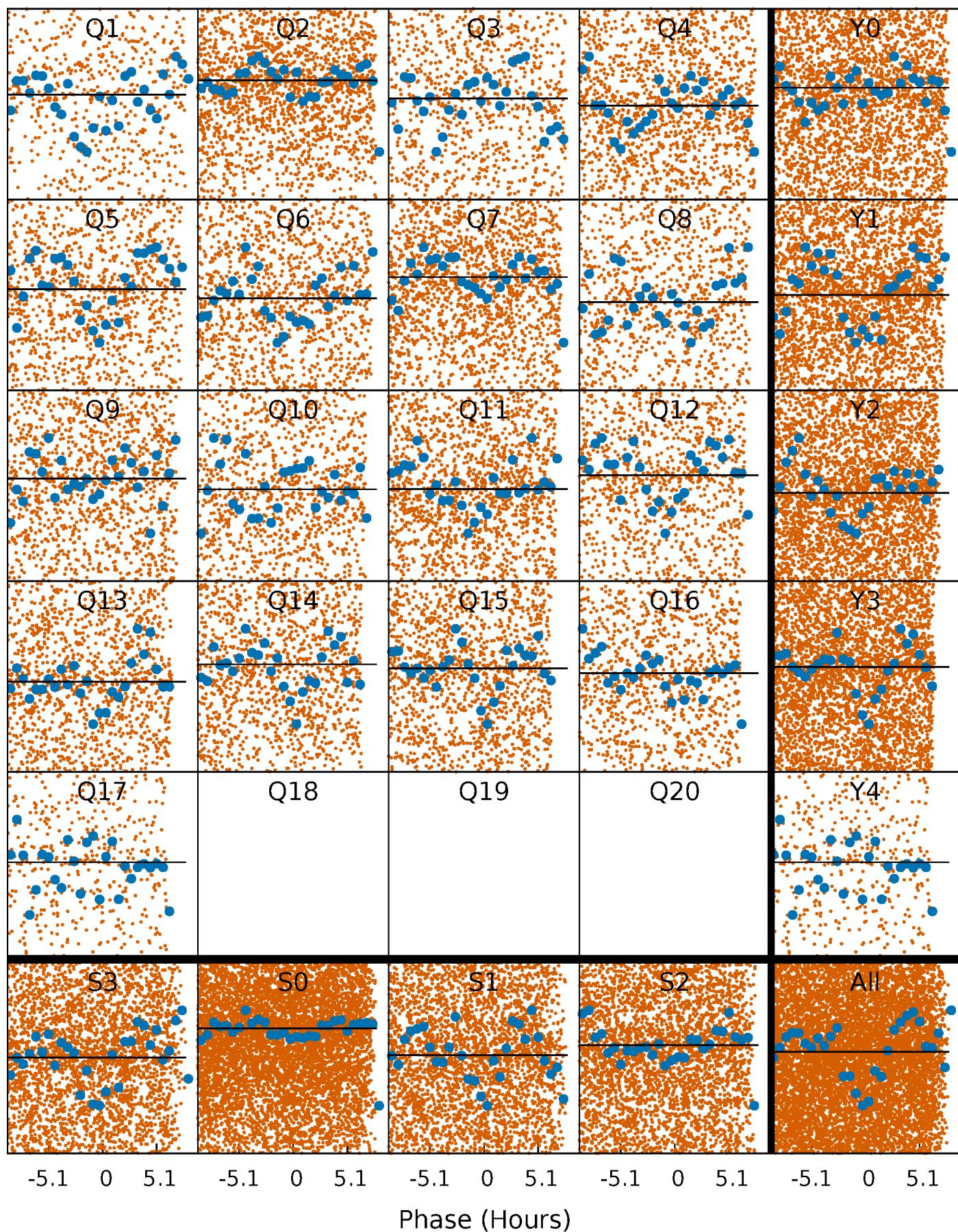
PDC Quarter-Phased Transit Curves

TCE 007978226-02 P= 1.290152 Days $T_0=131.756196$ (BKJD)



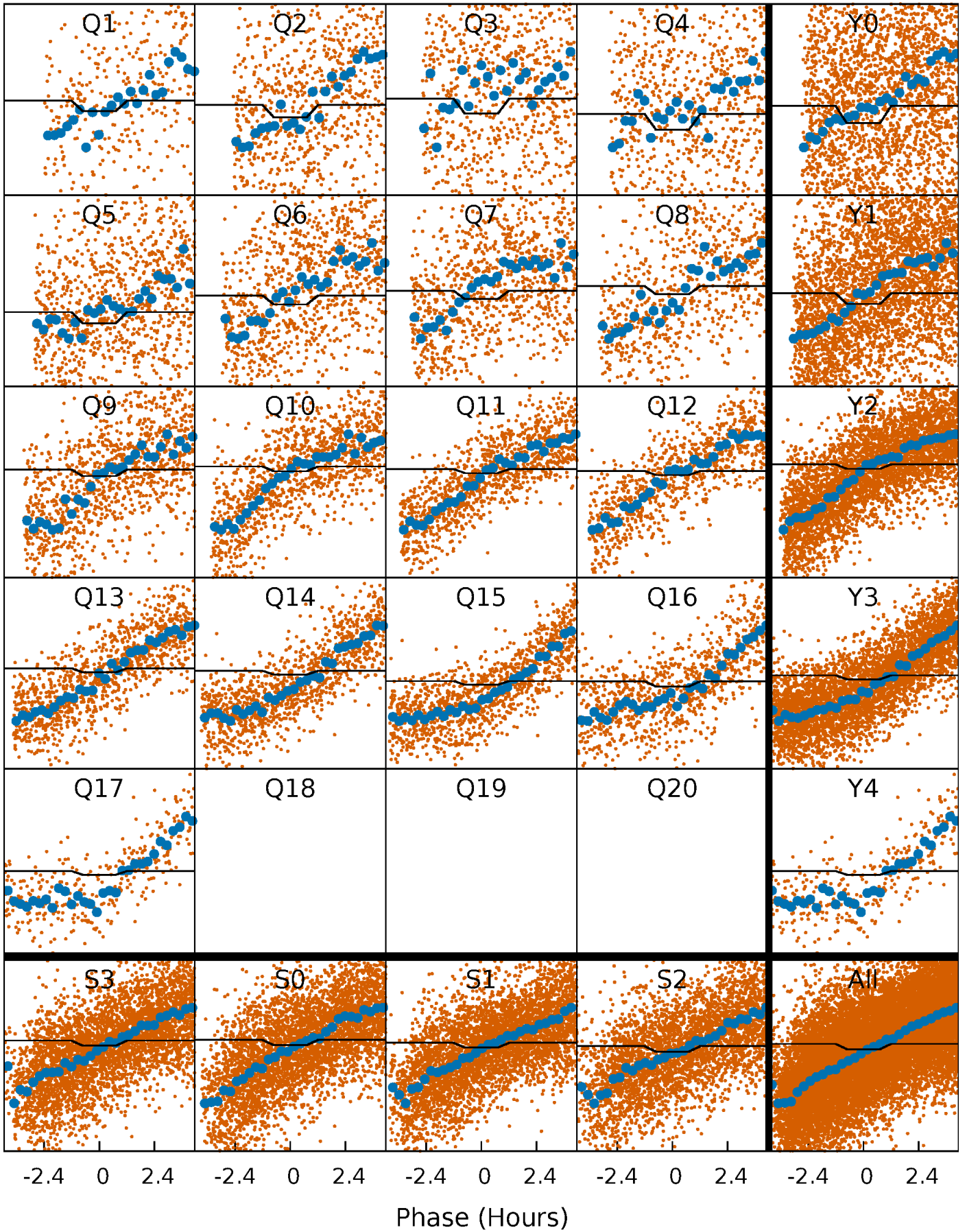
DV Quarter-Phased Transit Curves

TCE 007978226-02 P= 1.290152 Days $T_0=131.756196$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

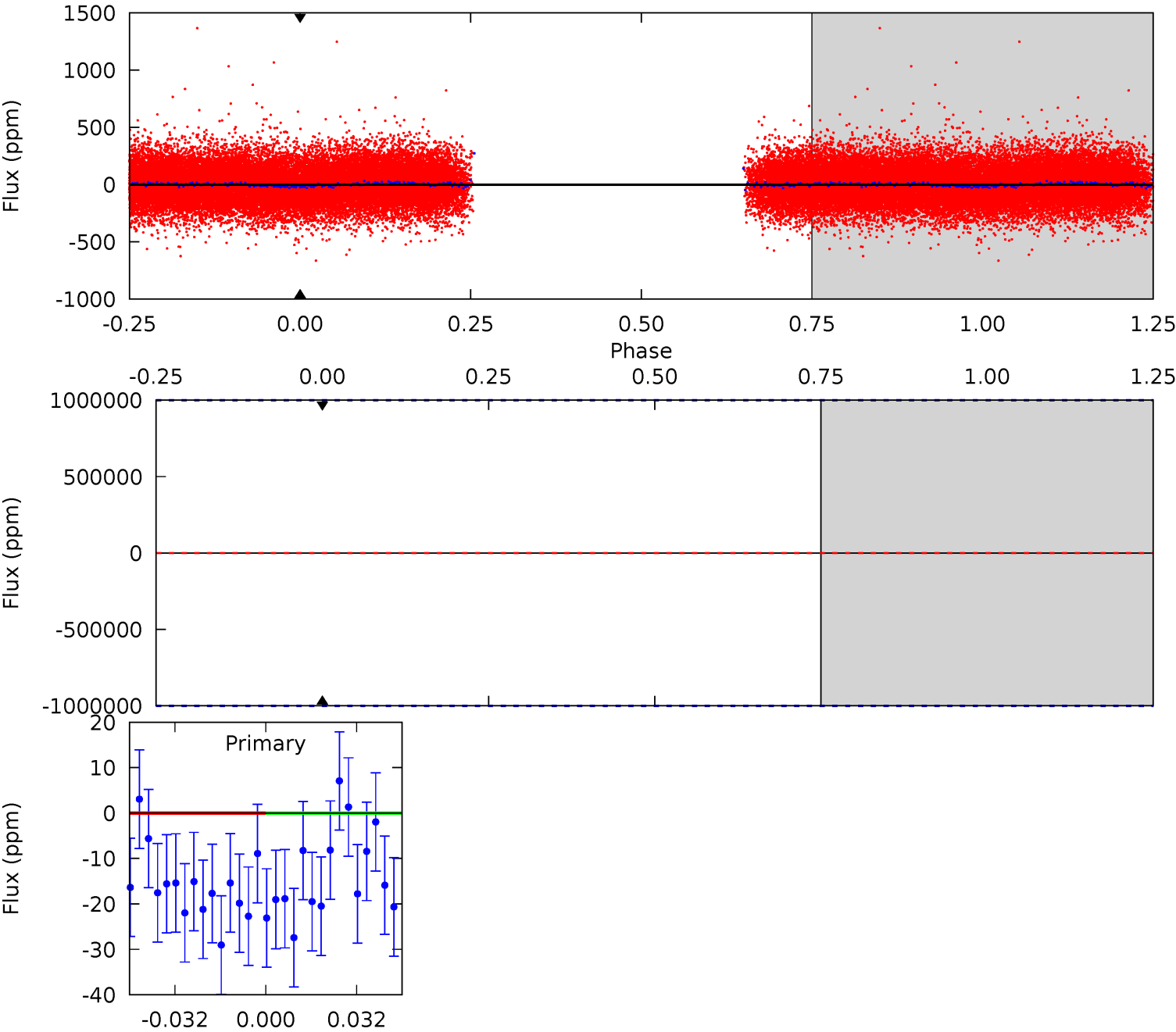
TCE 007978226-02 P= 1.290152 Days $T_0=132.766033$ (BKJD)



DV Model-Shift Uniqueness Test

007978226-02, P = 1.290152 Days, E = 130.466044 Days

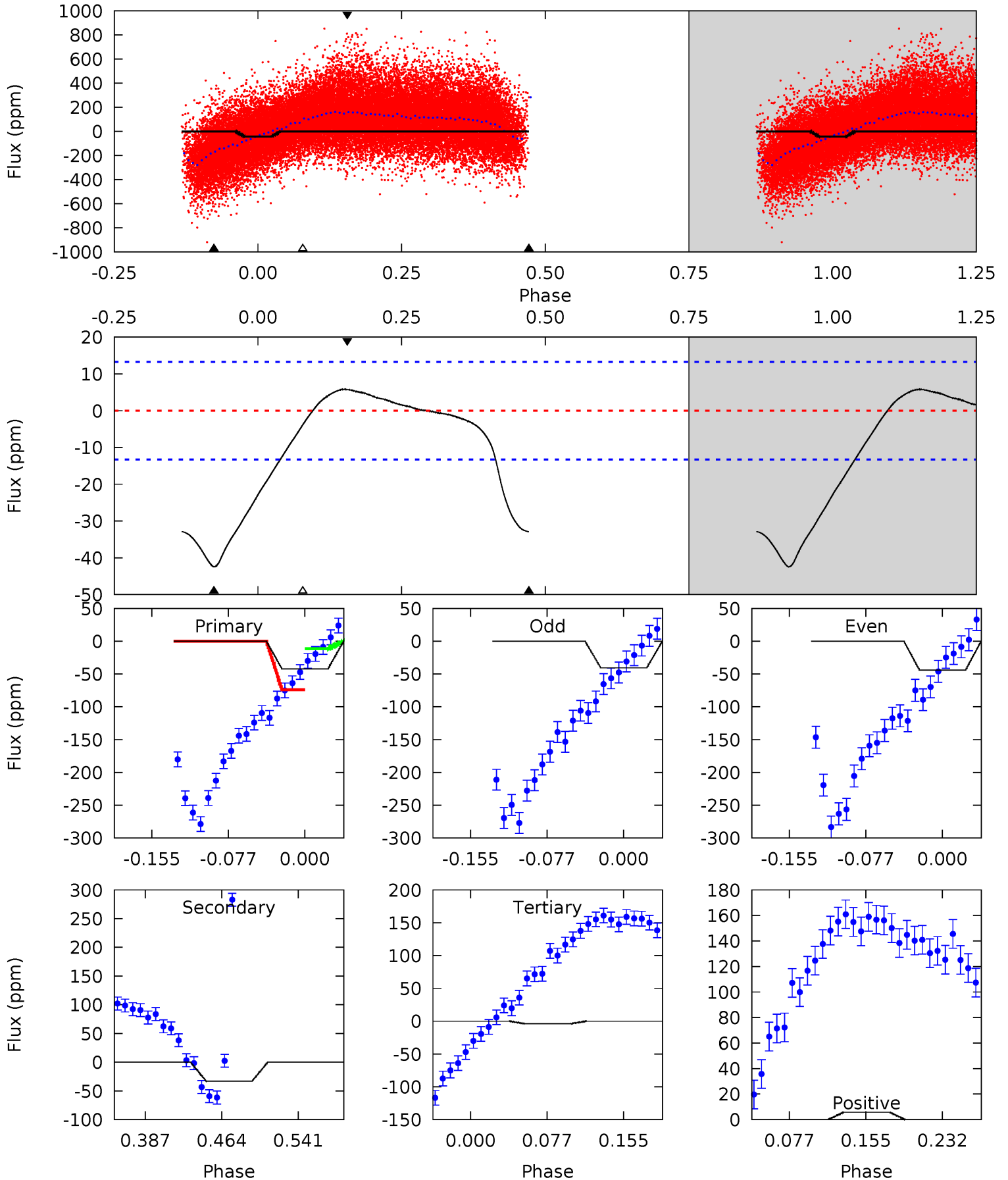
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007978226-02, P = 1.290152 Days, E = 131.475881 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.7	11.4	1.33	2.00	4.62	1.77	2.36	13.4	12.8	10.1	9.43	0.62	1.07	0.12	11.4



Stellar Parameters For KIC 007978226

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6623^{+180}_{-220}	$3.865^{+0.292}_{-0.097}$	$-0.340^{+0.300}_{-0.250}$	$2.298^{+0.426}_{-0.792}$	$1.412^{+0.199}_{-0.299}$	$0.164^{+0.332}_{-0.050}$
	+3%/-3%	+8%/-3%	+88%/-74%	+19%/-34%	+14%/-21%	+202%/-30%
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 007978226-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$17.69^{+17.16}_{-12.18}$	3765^{+238}_{-353}	-5750^{+32830}_{-20290}	$-3.551^{+193.927}_{-187.958}$
Alt.	-33 ± 3	$17.00^{+18.42}_{-11.88}$	3755^{+235}_{-336}	-3377^{+6478}_{-231}	$0.043^{+0.403}_{-0.033}$

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

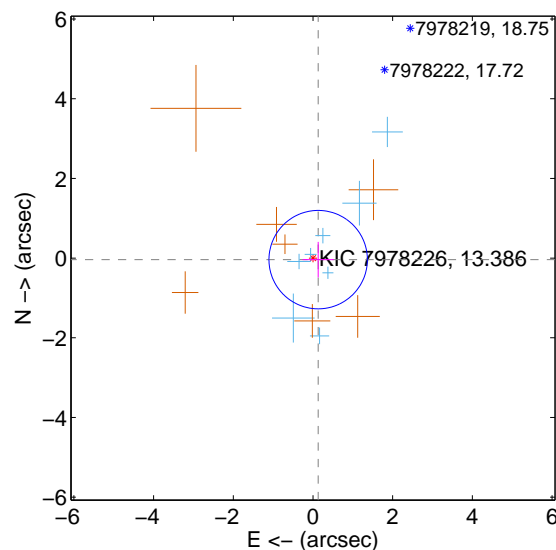
Supplemental centroid analysis for 007978226-02. Kepler magnitude: 13.39. Transit SNR -1.00

There are 8 quarters with good PRF difference image offsets

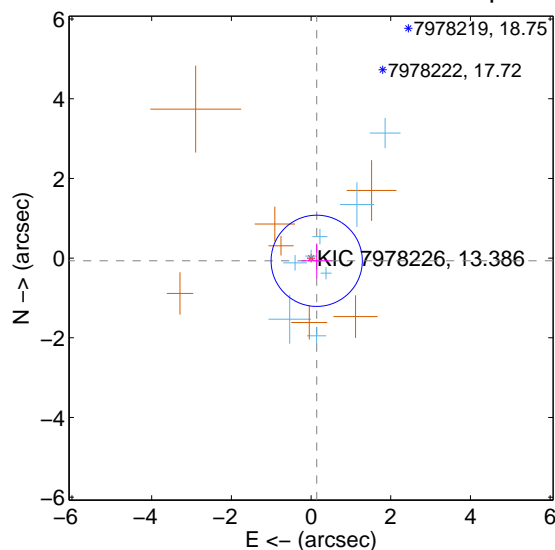
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.136 ± 0.412	0.33	-0.131 ± 0.390	-0.039 ± 0.447
PRF-fit source offset from KIC position	0.157 ± 0.382	0.41	-0.142 ± 0.382	-0.068 ± 0.436
photometric centroid source offset	1.79 ± 1.09	1.64	-0.60 ± 1.07	1.69 ± 1.09

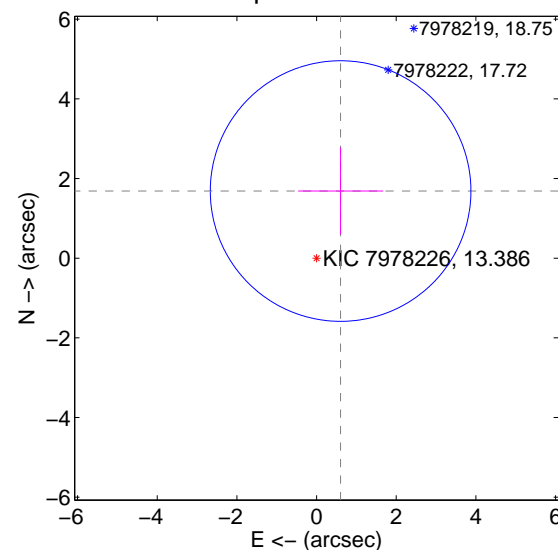
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

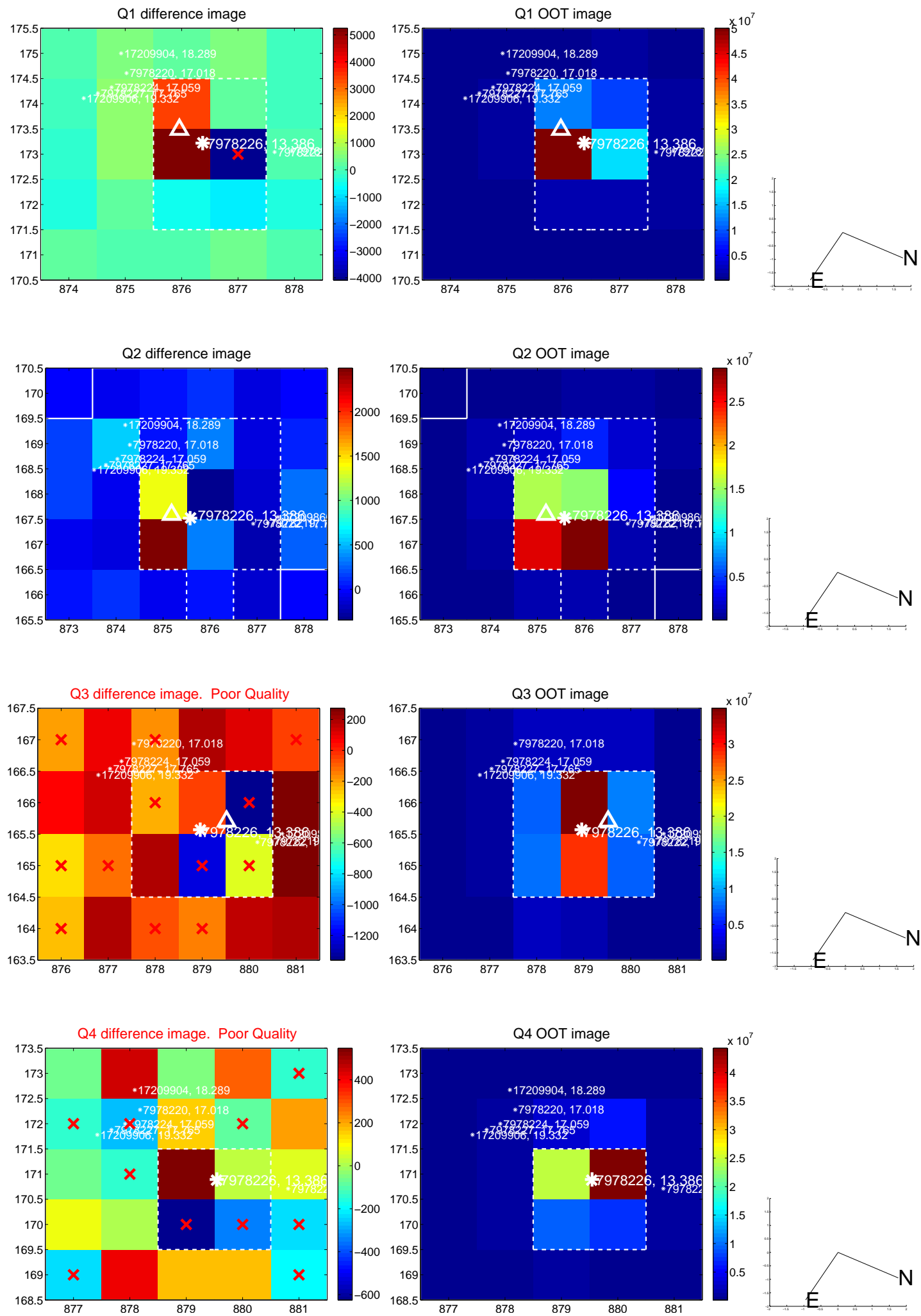


offset from photometric centroids

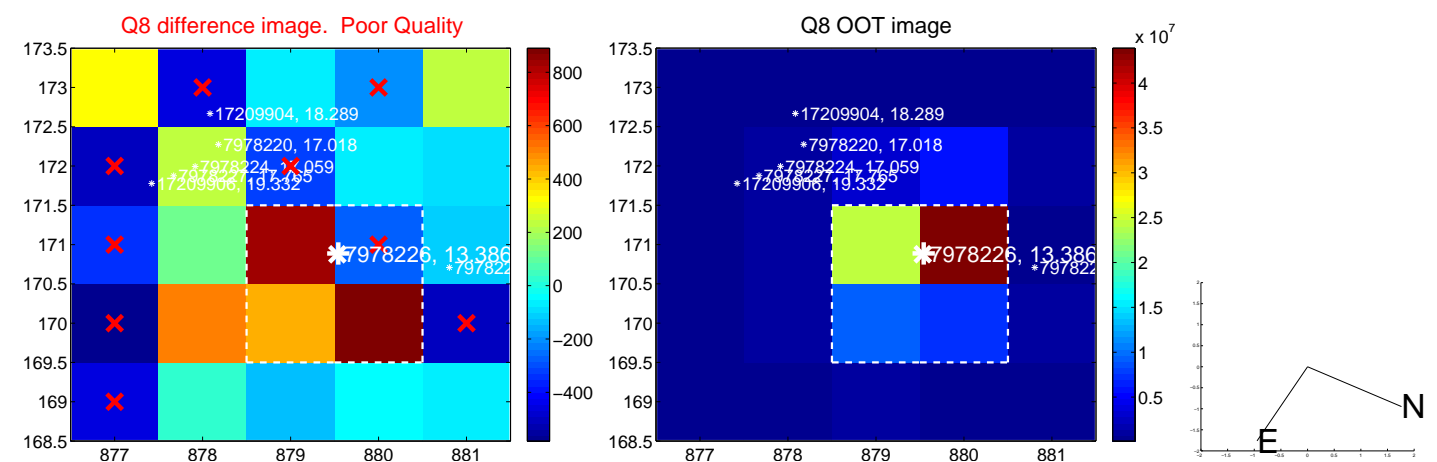
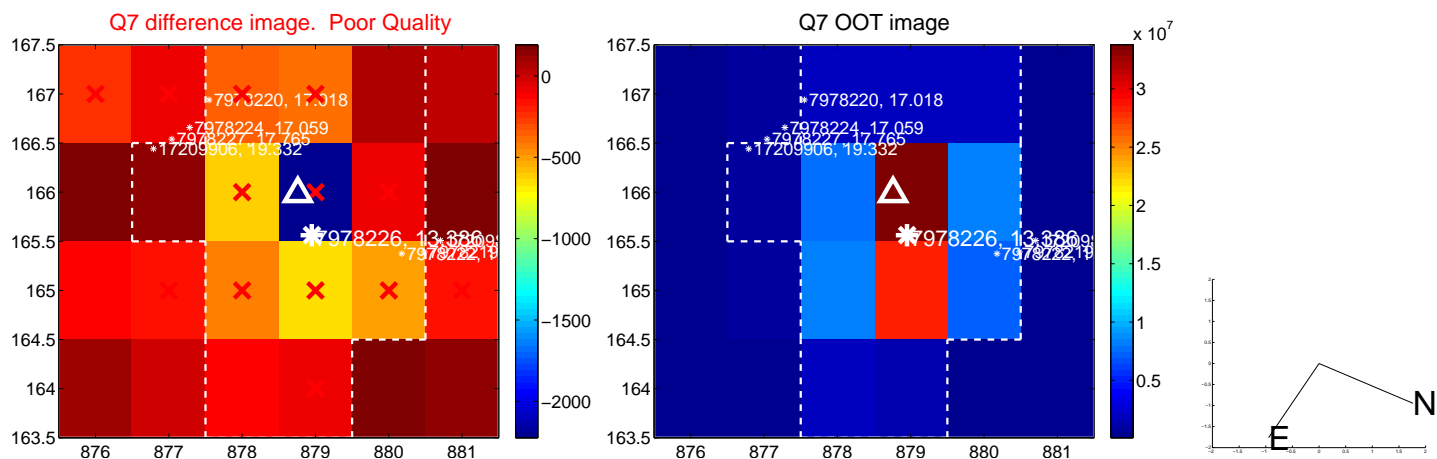
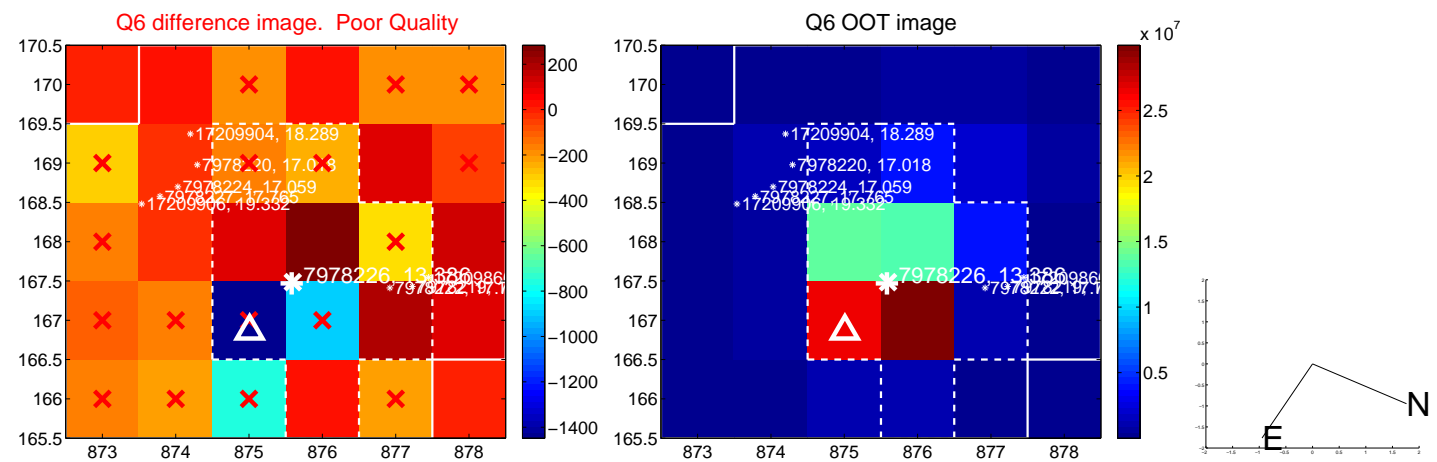
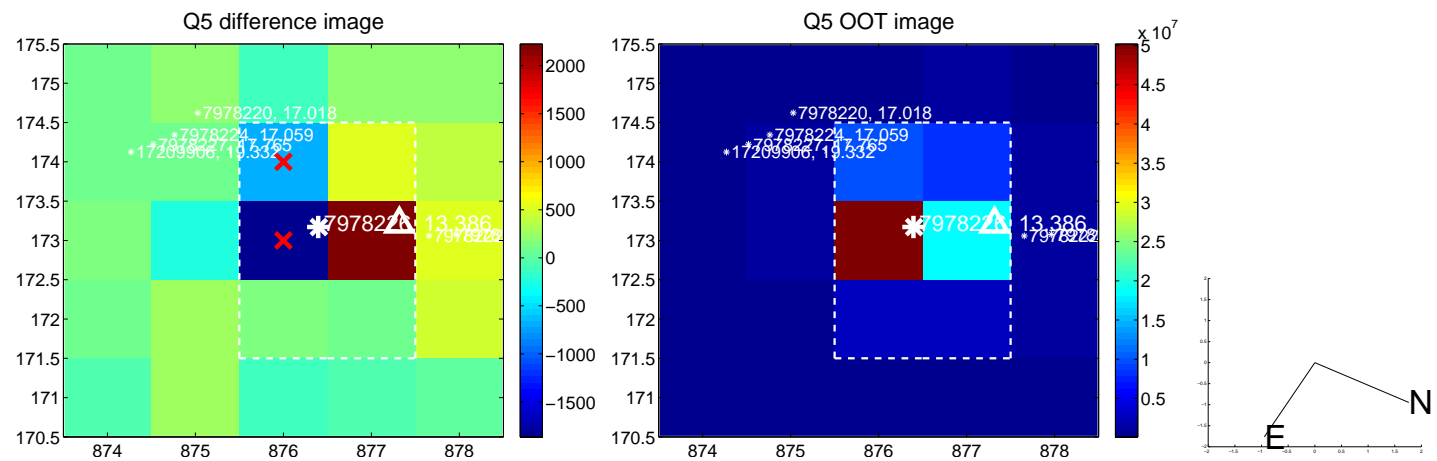


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

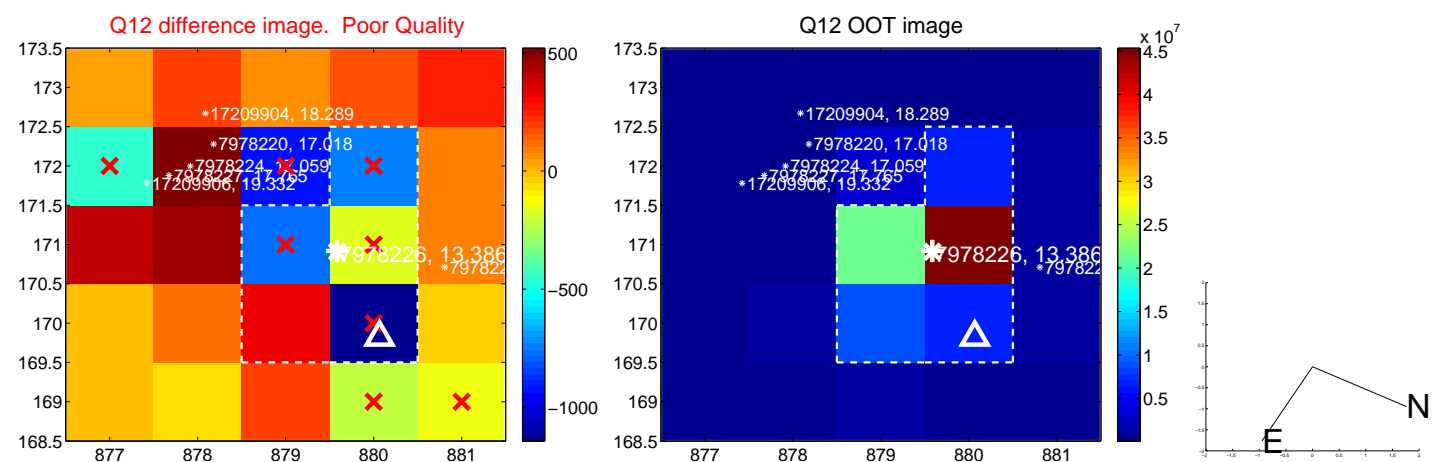
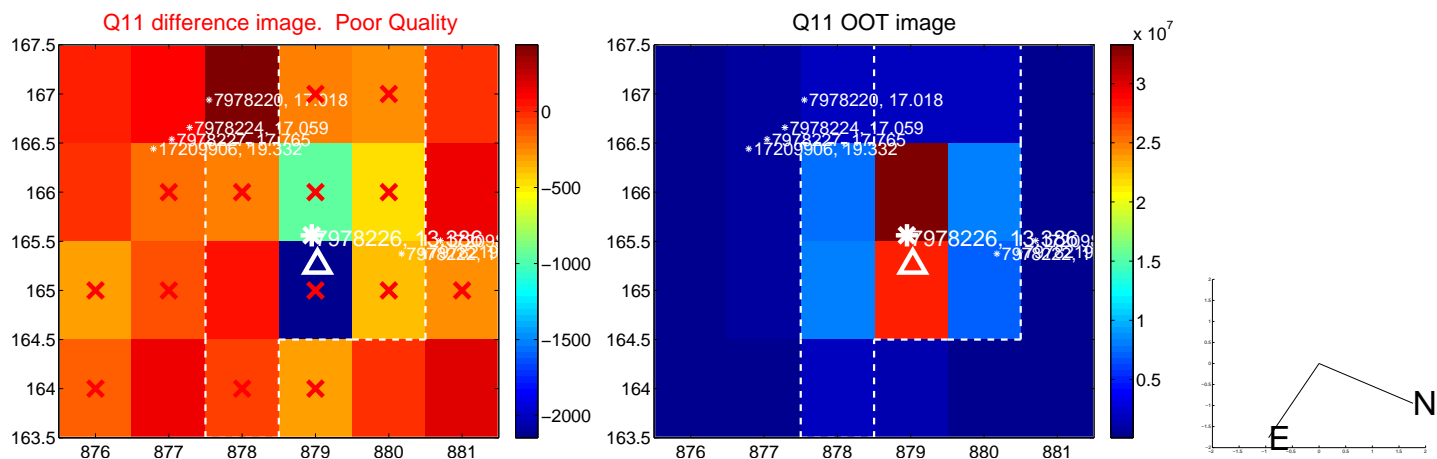
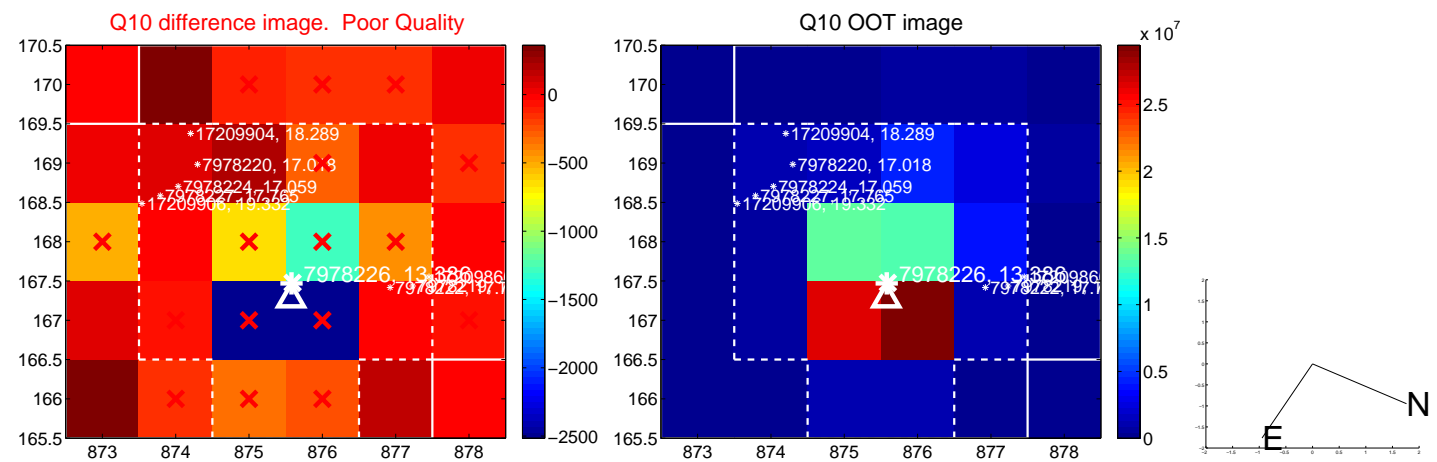
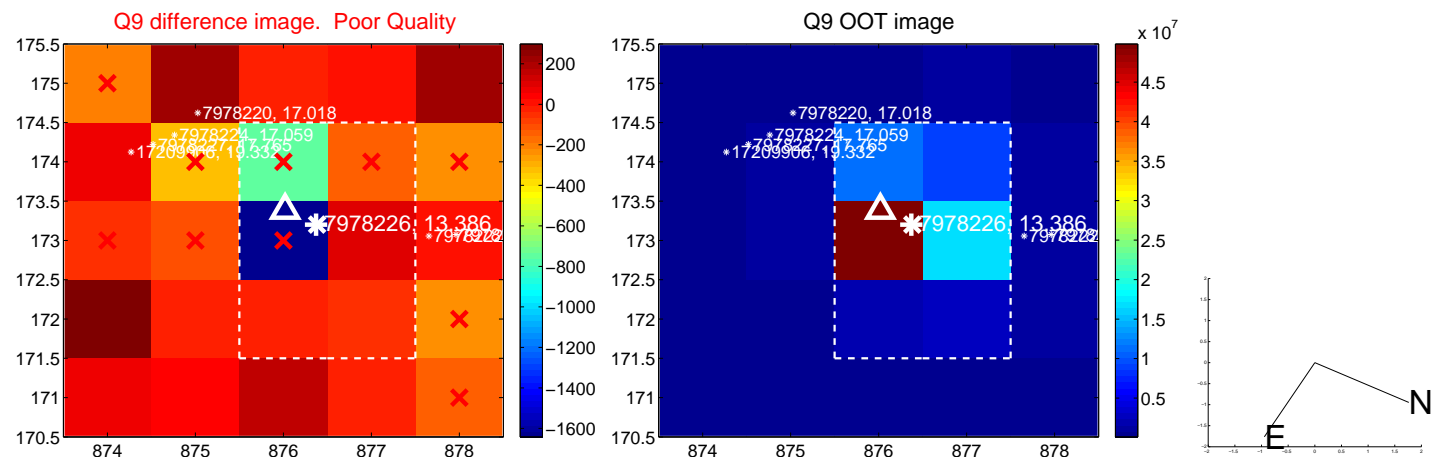
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



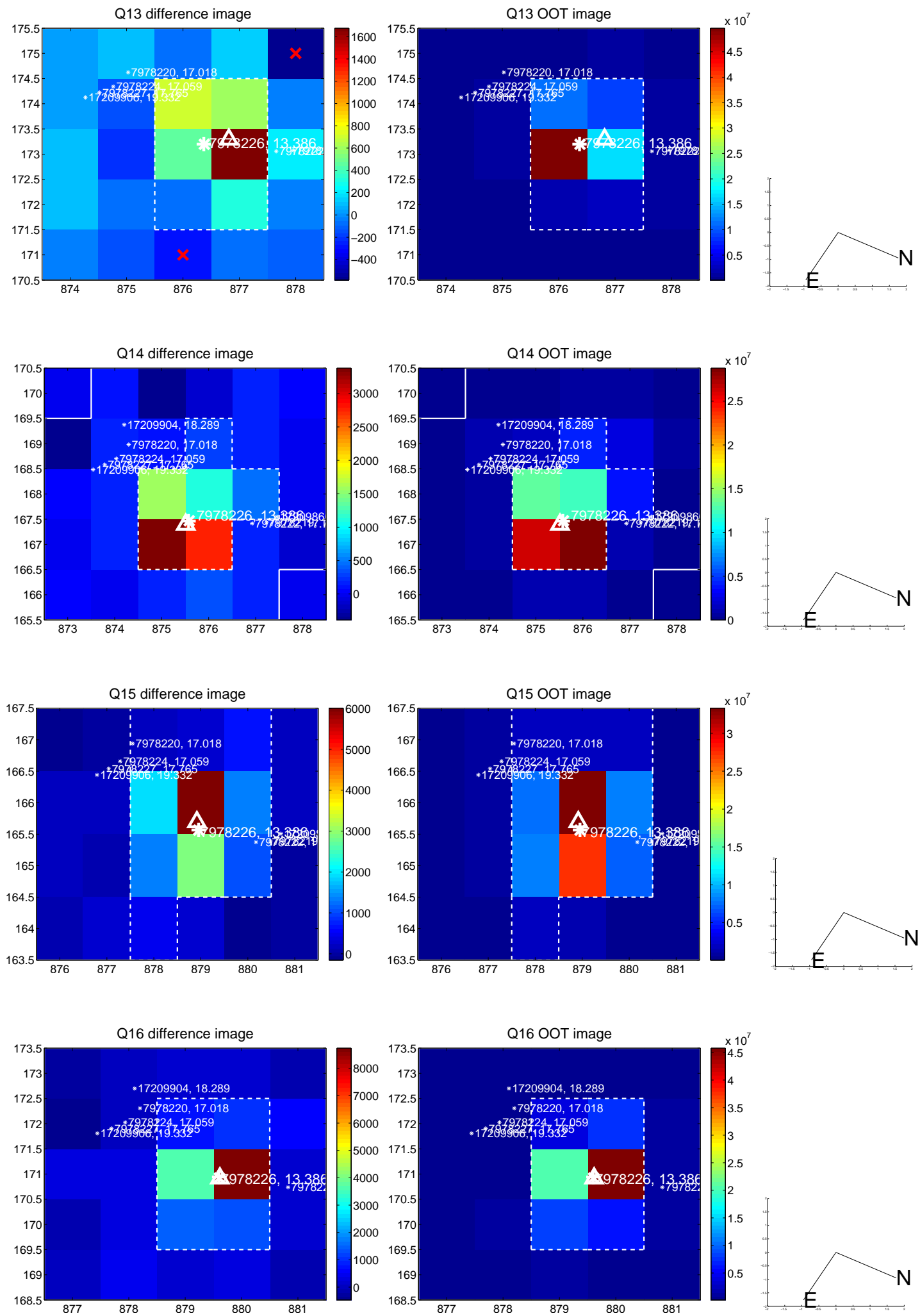
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



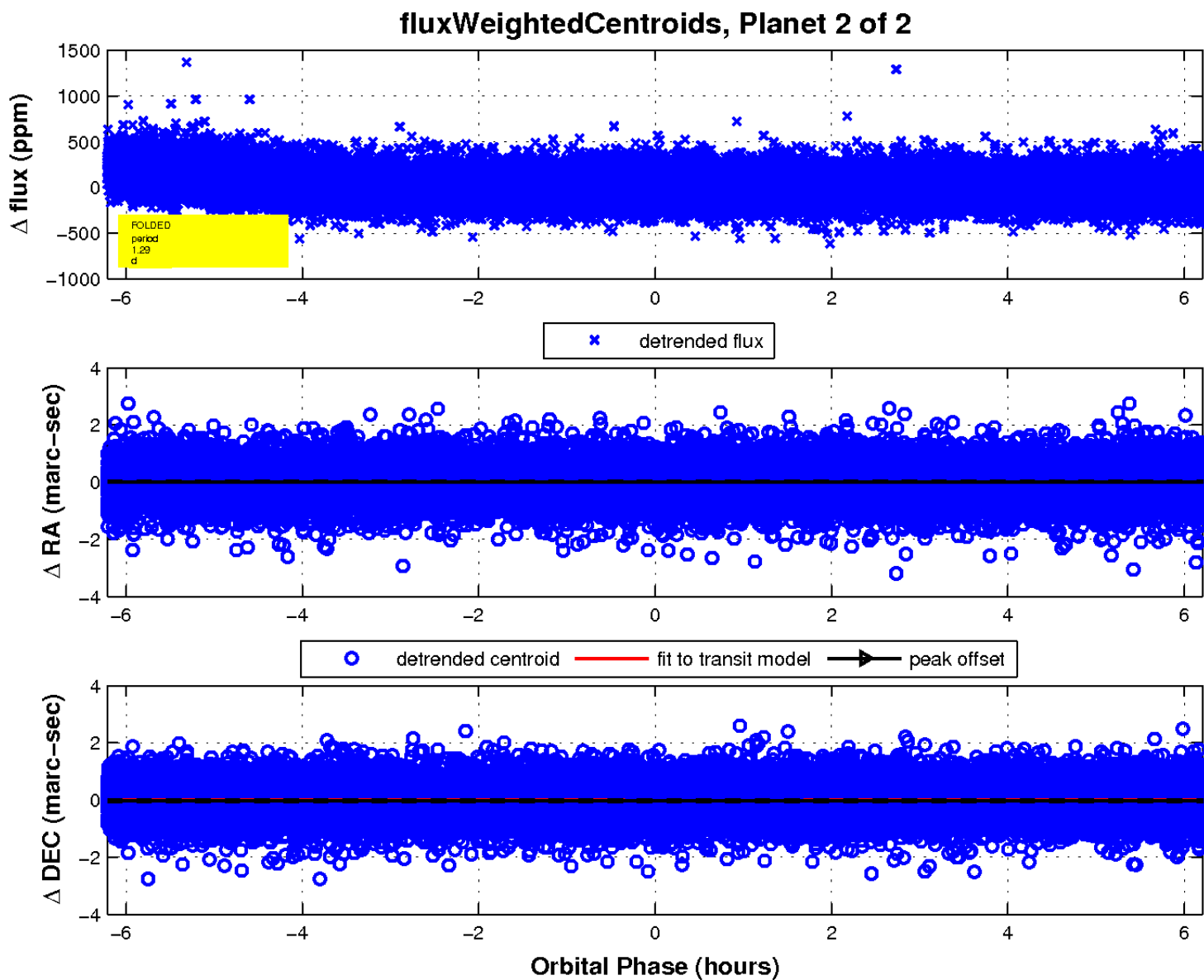
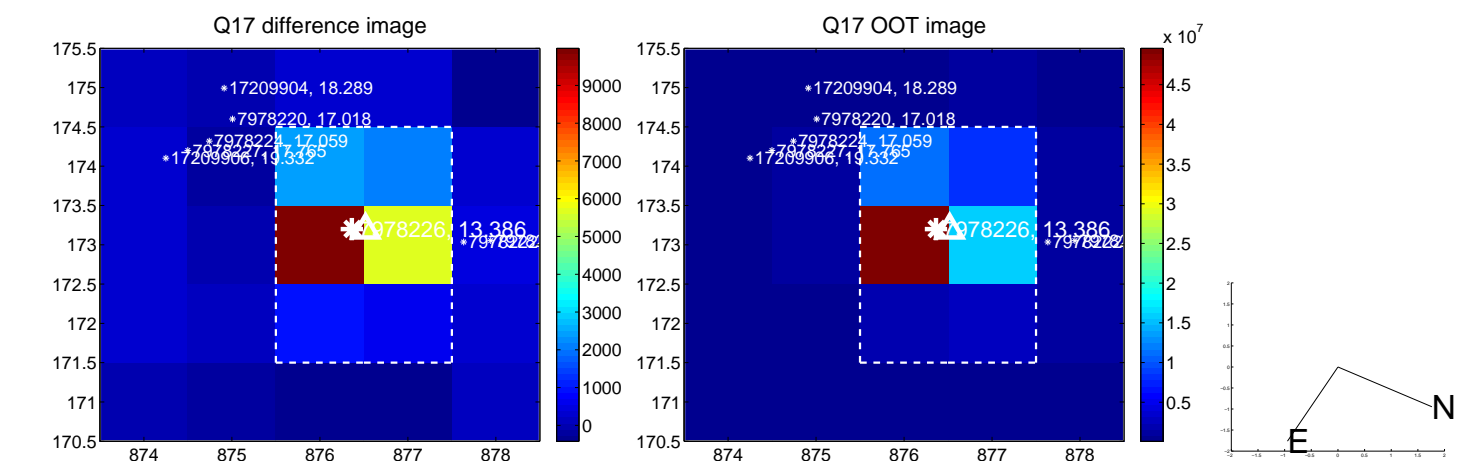
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

