

KIC 010281639

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})
010281639-01	OBS	No	0.933335	132.307995	139.2	3.694	10.7	10.7	2.48	7019	3.03	27049.72
010281639-02	OBS	No	0.933274	132.008210	159.7	3.500	14.3	-1.0	2.48	7019	3.18	27052.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010281639-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010281639-02	OBS	FP	0.00	1	0	0	0	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.

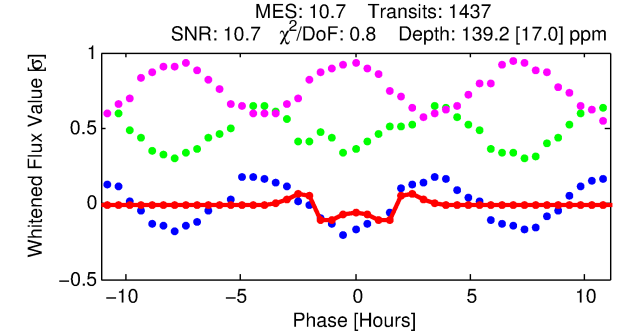
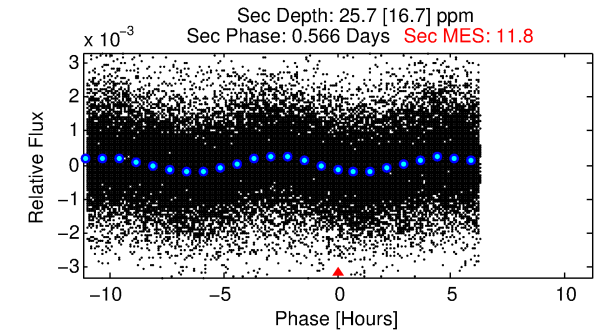
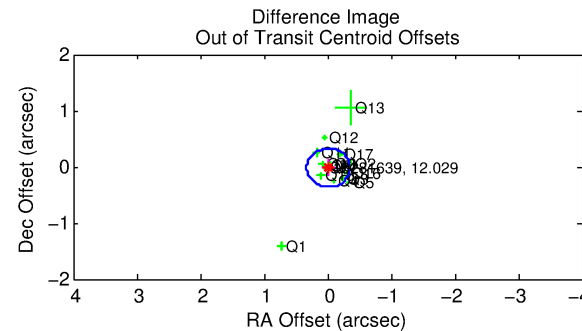
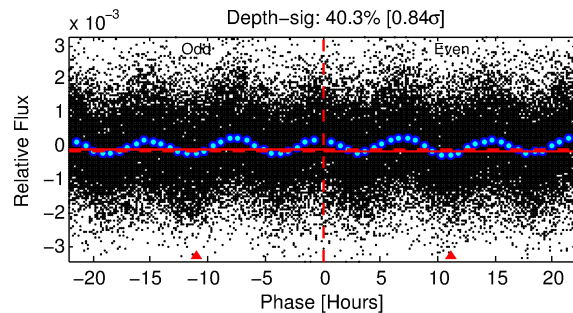
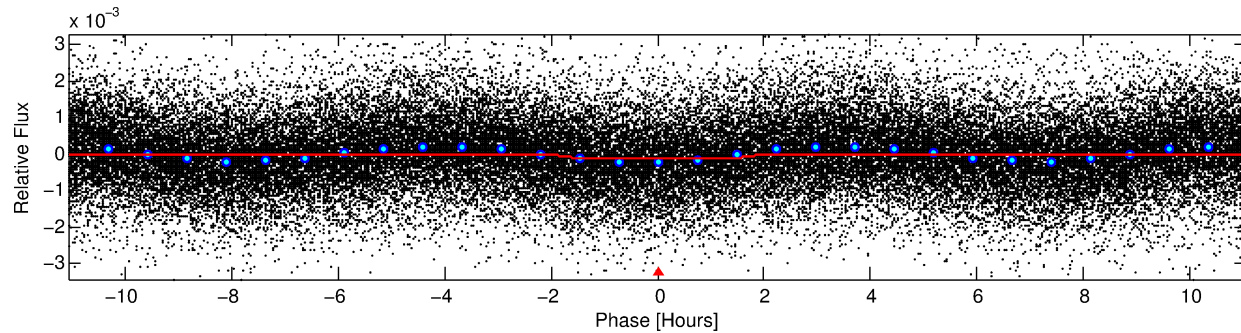
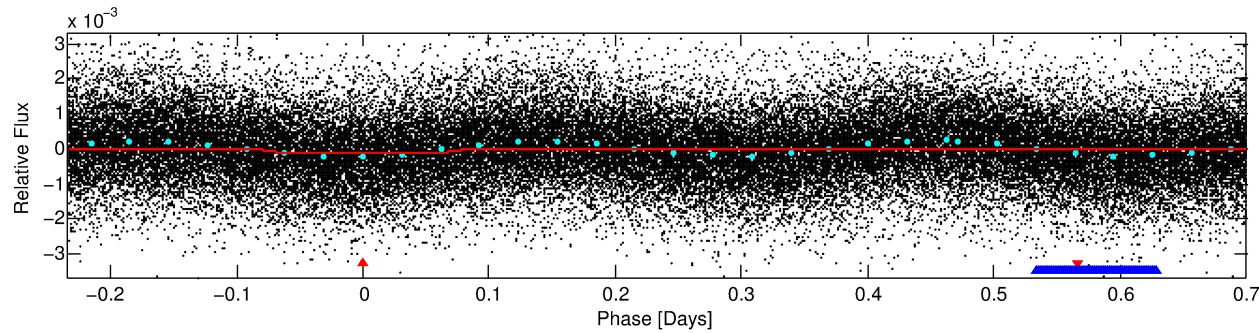
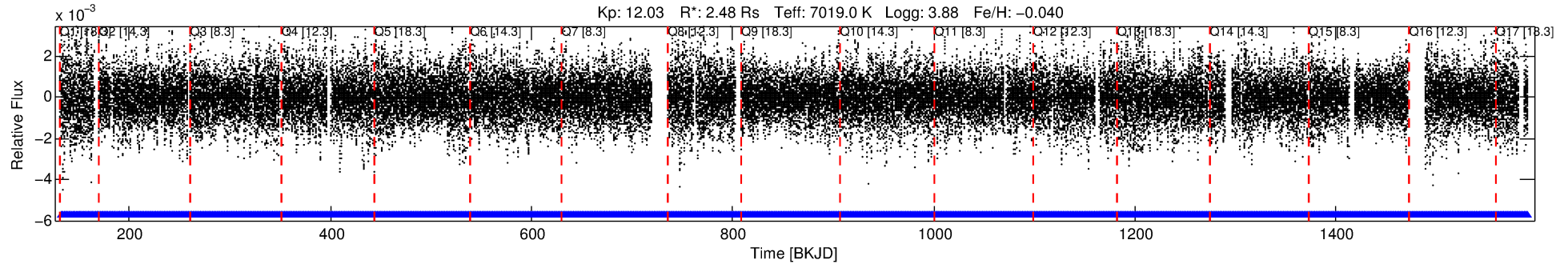
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010281639-01

No Significant Match Found

DV One-Page Summary

KIC: 10281639 Candidate: 1 of 2 Period: 0.933 d



DV Fit Results:

Period = 0.93334 [0.00001] d
Epoch = 132.3080 [0.0016] BKJD
Rp/R* = 0.0112 [0.0044]
a/R* = 1.86 [3.02]
b = 0.48 [3.67]
Seff = 27049.72 [9095.47]
Teff = 3270 [275] K
Rp = 3.03 [1.40] Re
a = 0.0223 [0.0049] AU
Ag = 0.76 [0.82] [-0.29 σ]
Teffp = 4726 [1200] K [1.18 σ]

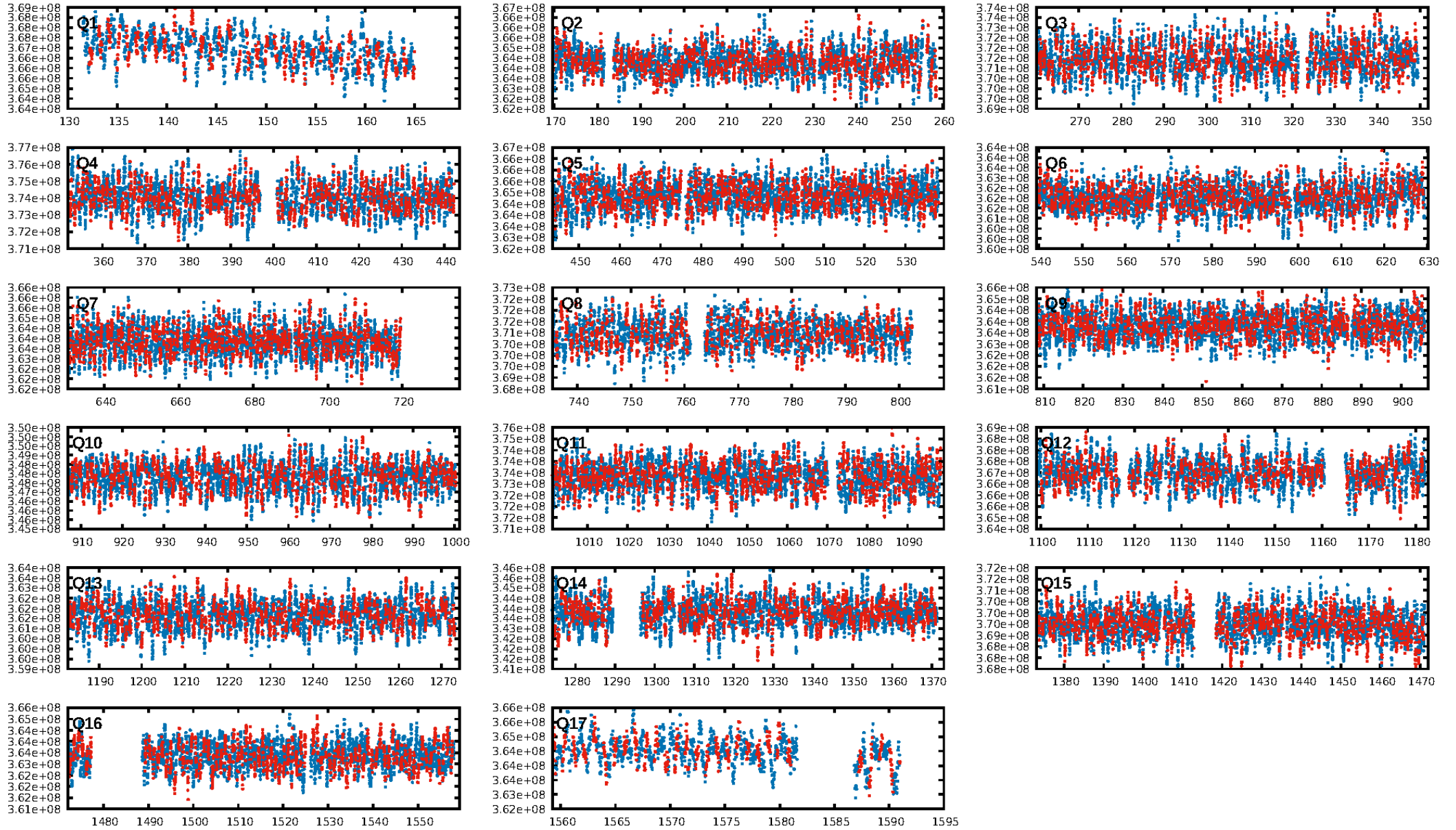
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1373/1373]
GhostDiagnostic-chr: 1.291
Centroid-sig: 70.0%
Centroid-so: 0.234 arcsec [3.69 σ]
OotOffset-rm: 0.024 arcsec [0.21 σ]
KicOffset-rm: 0.158 arcsec [1.23 σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.75 [12/16]
DiffImageOverlap-fno: 0.00 [0/17]

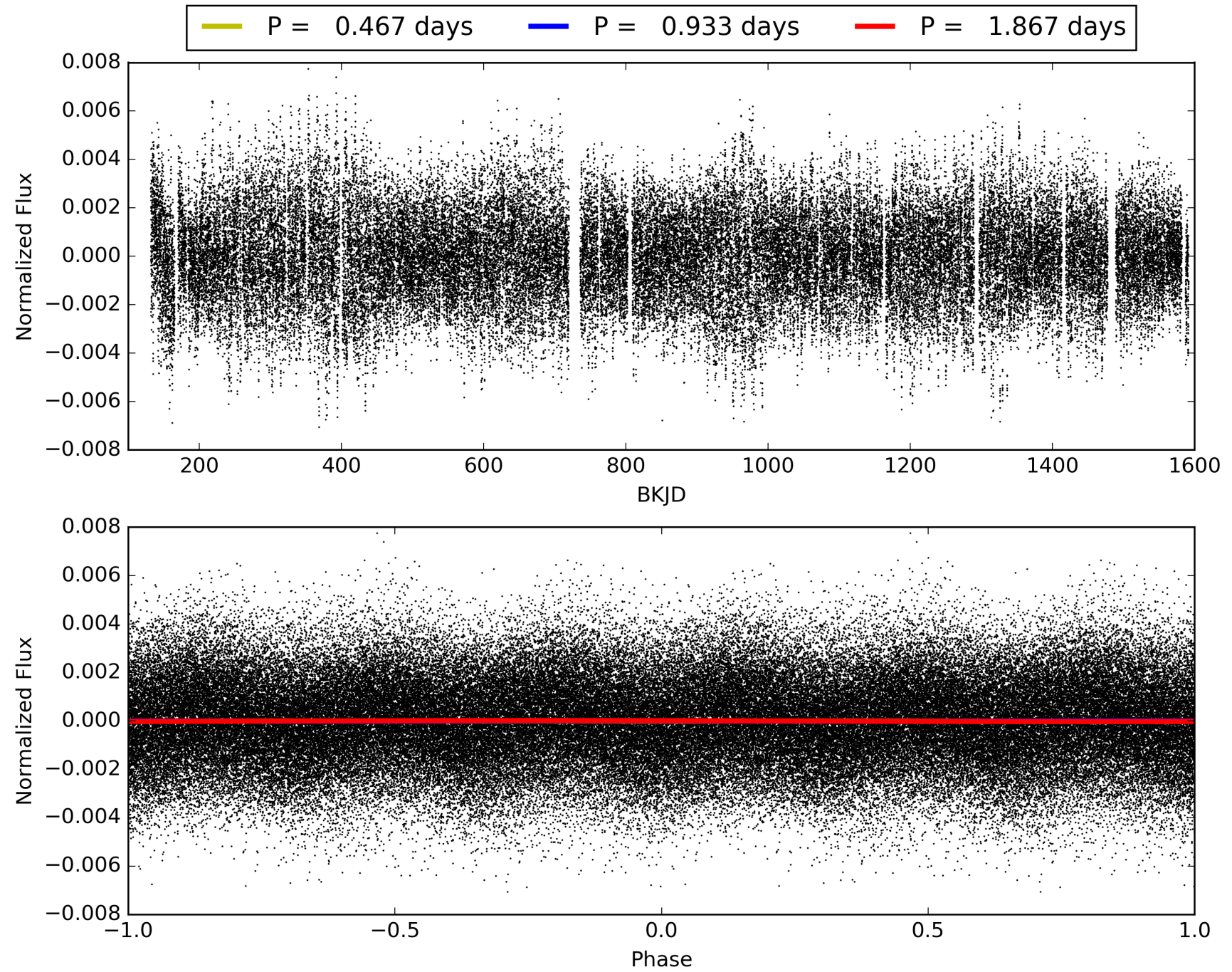
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:58:47 Z

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

TCE 010281639-01, PDC Light Curves

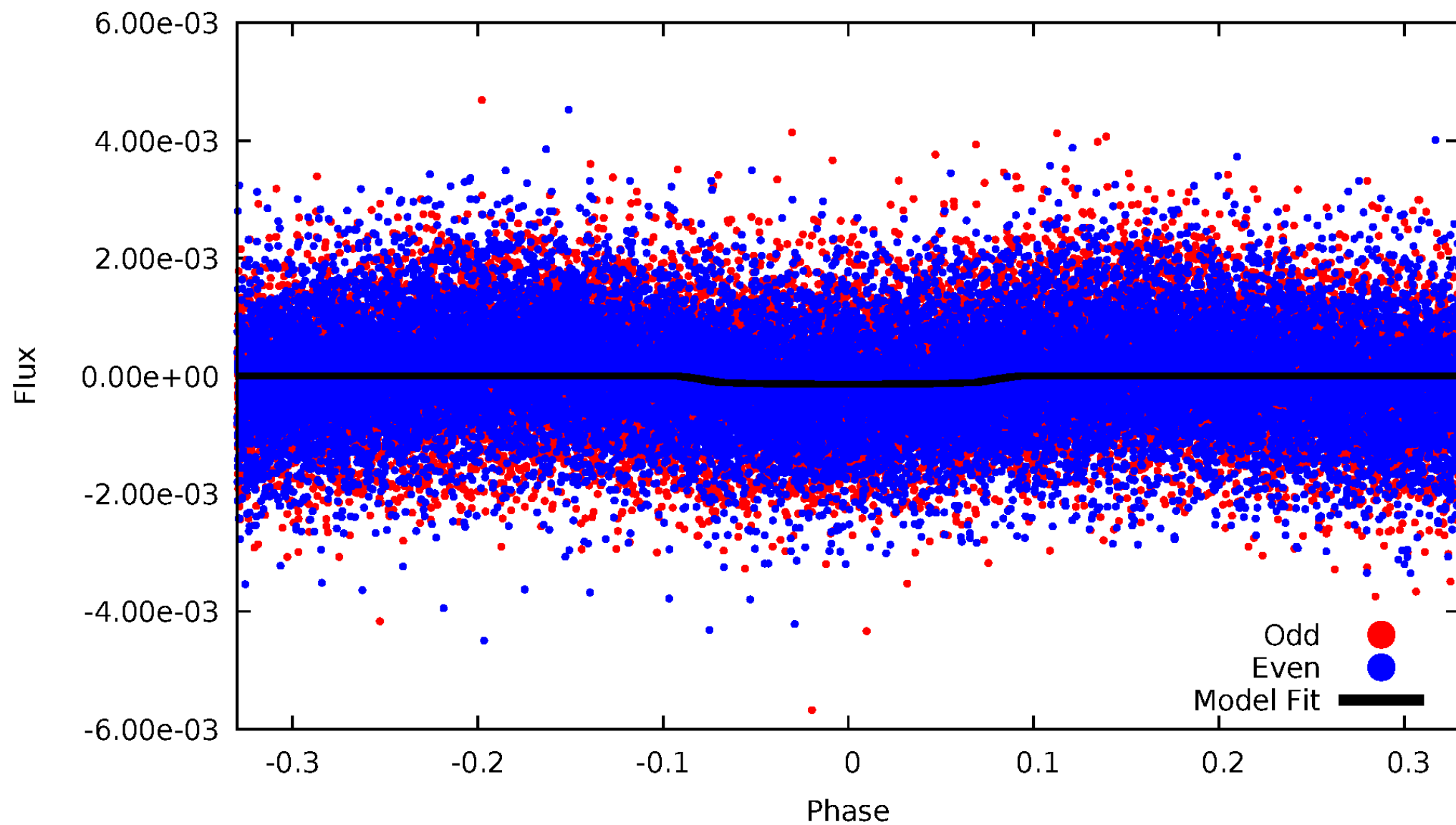


TCE 010281639-01



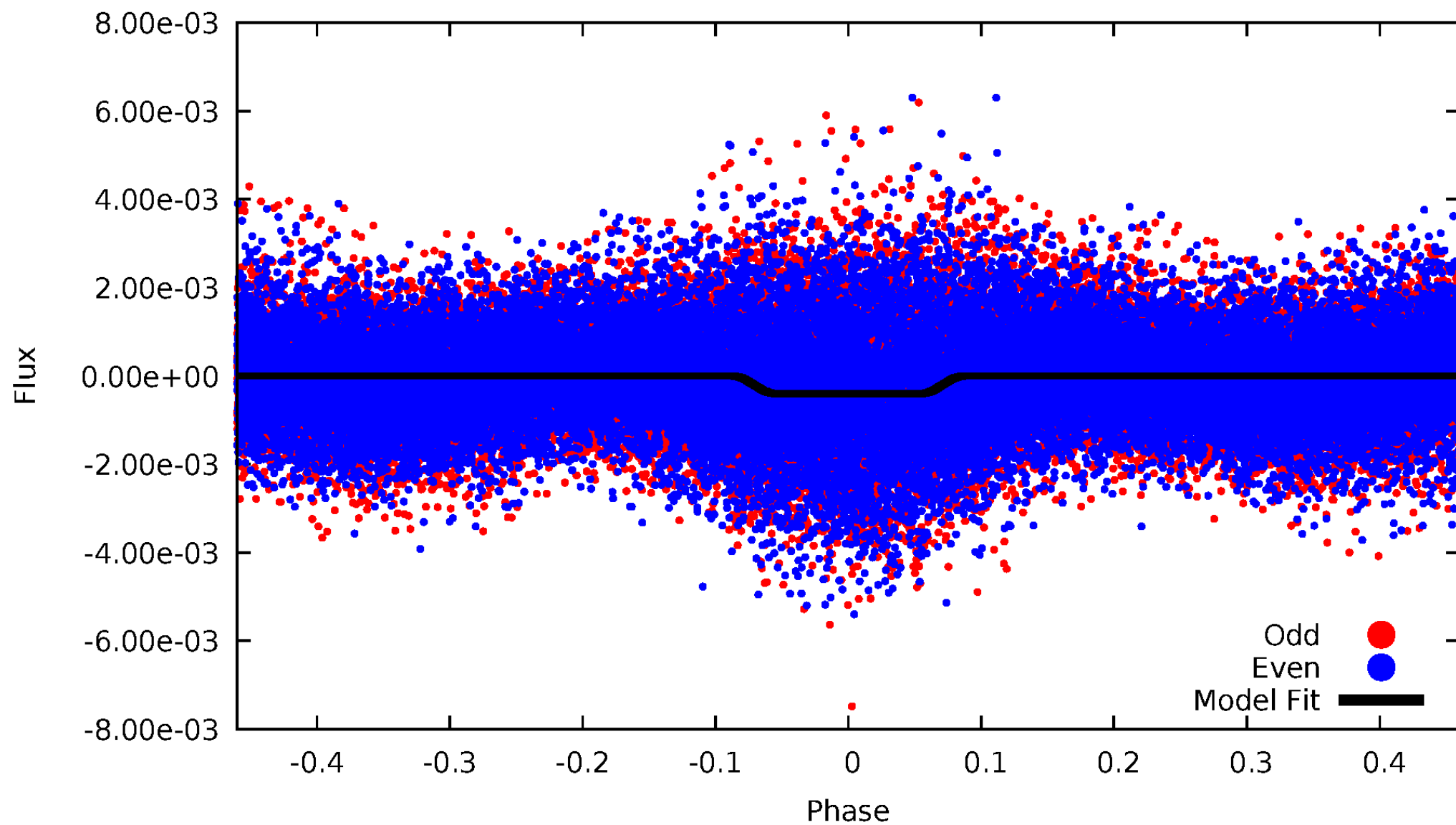
DV Odd/Even

TCE 010281639-01



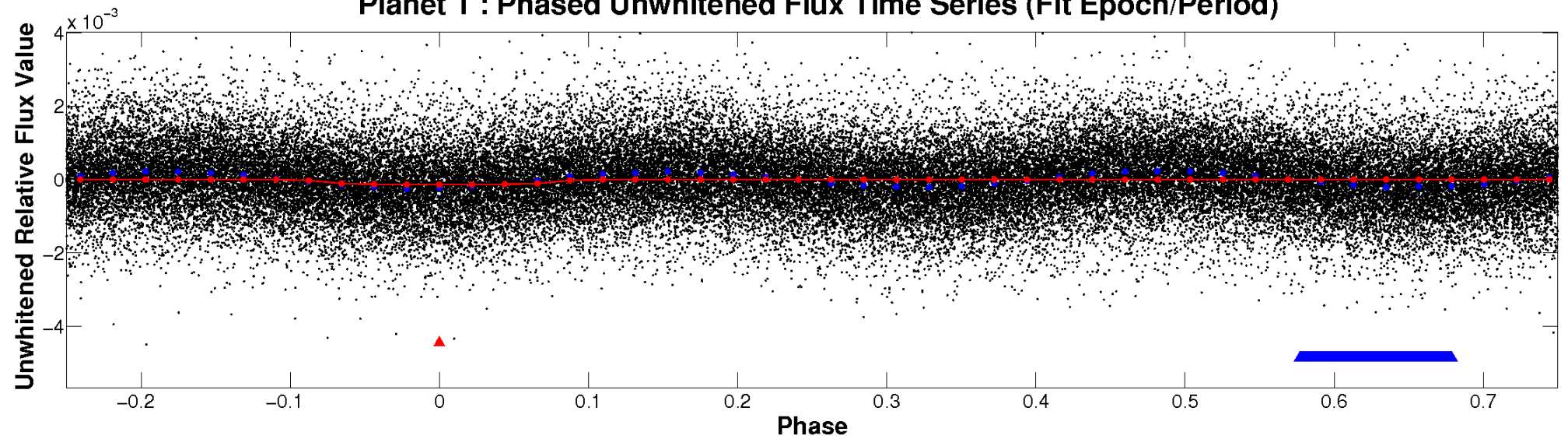
ALT Odd/Even

TCE 010281639-01

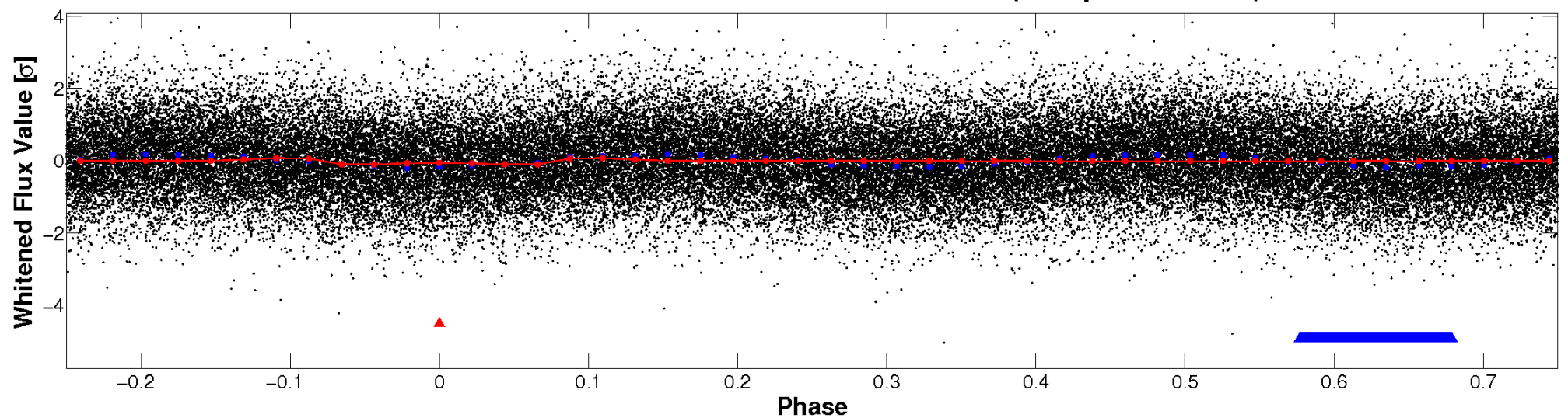


Non-Whitened Vs. Whitened Light Curve

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

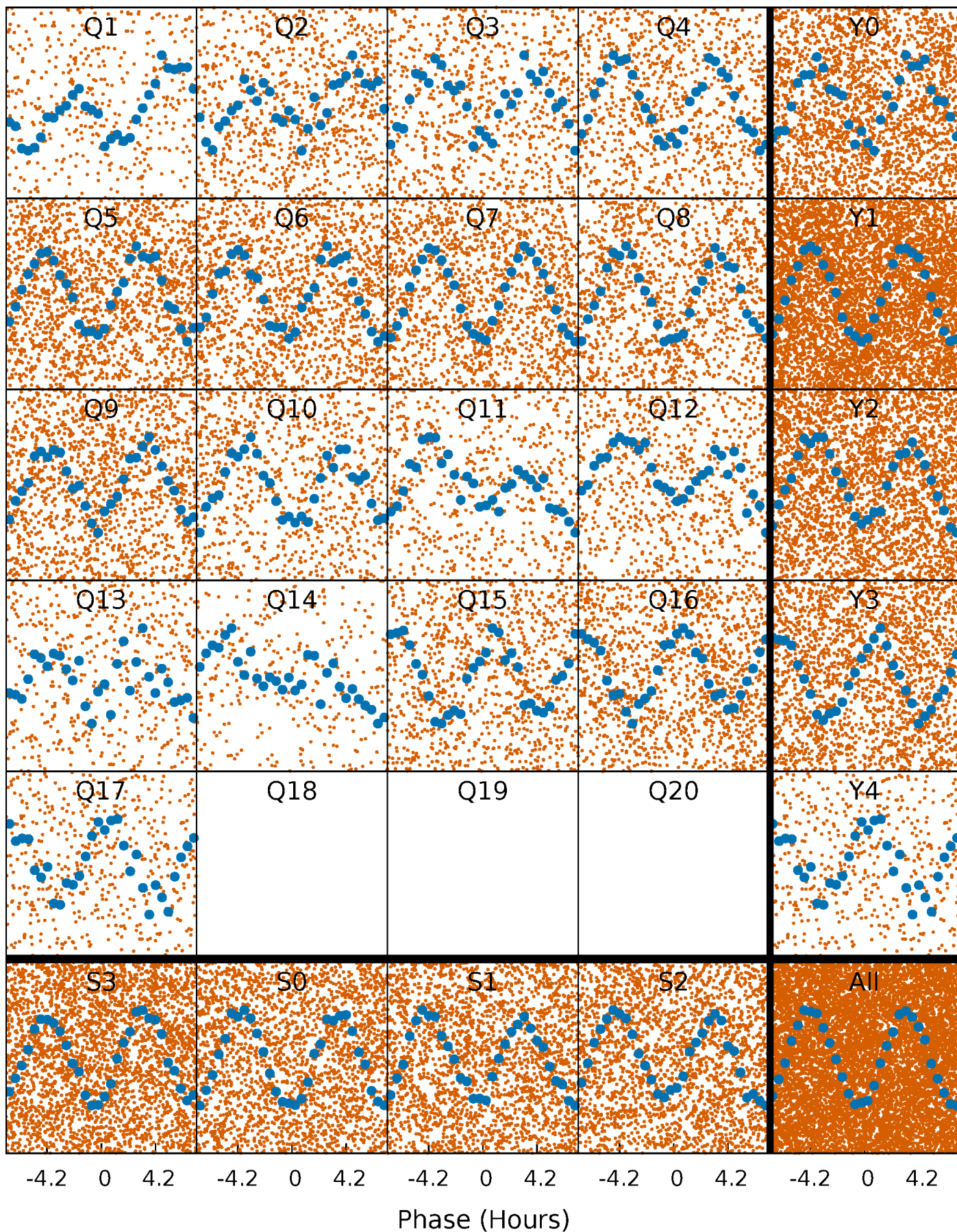


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



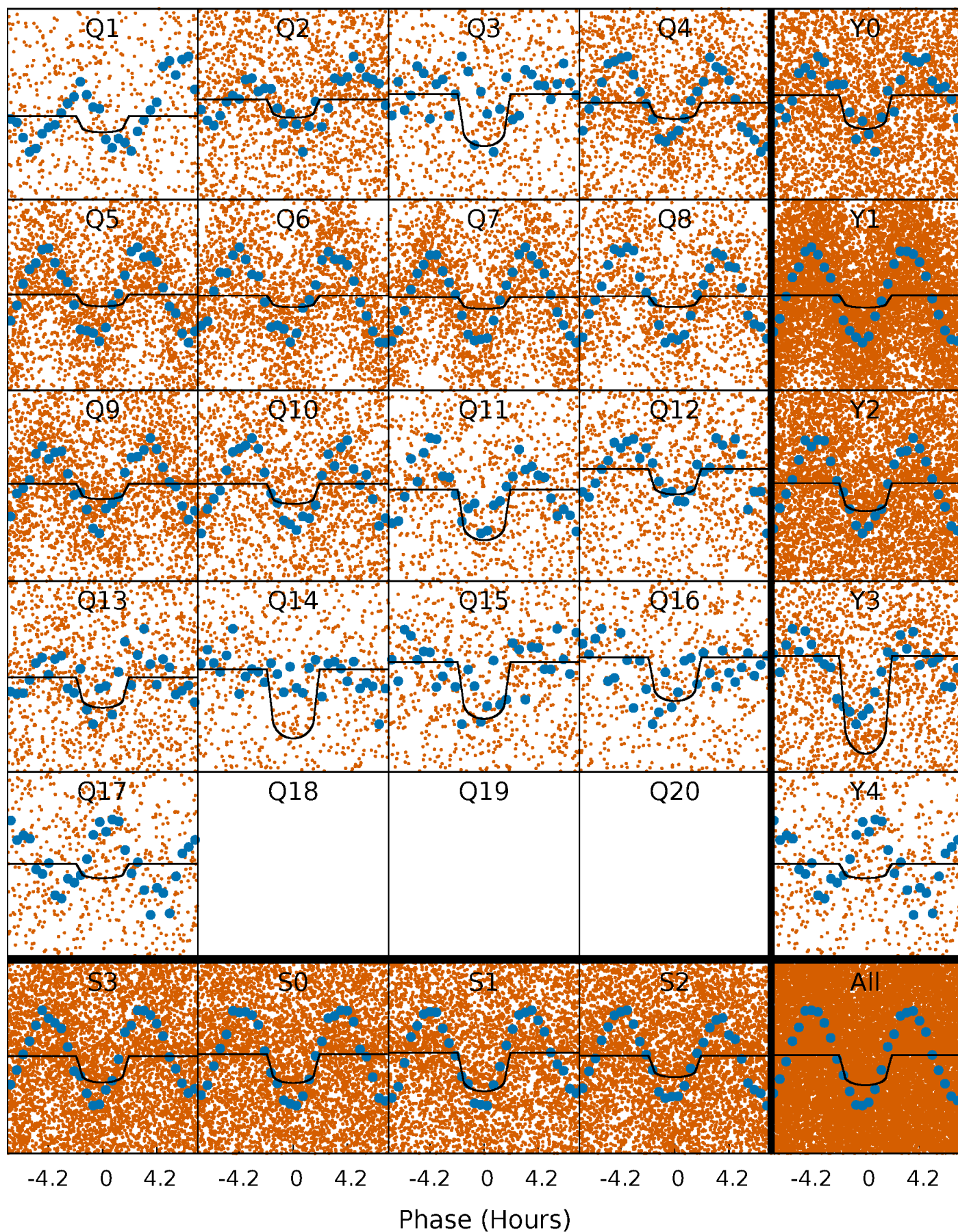
PDC Quarter-Phased Transit Curves

TCE 010281639-01 P= 0.933335 Days $T_0=132.307995$ (BKJD)



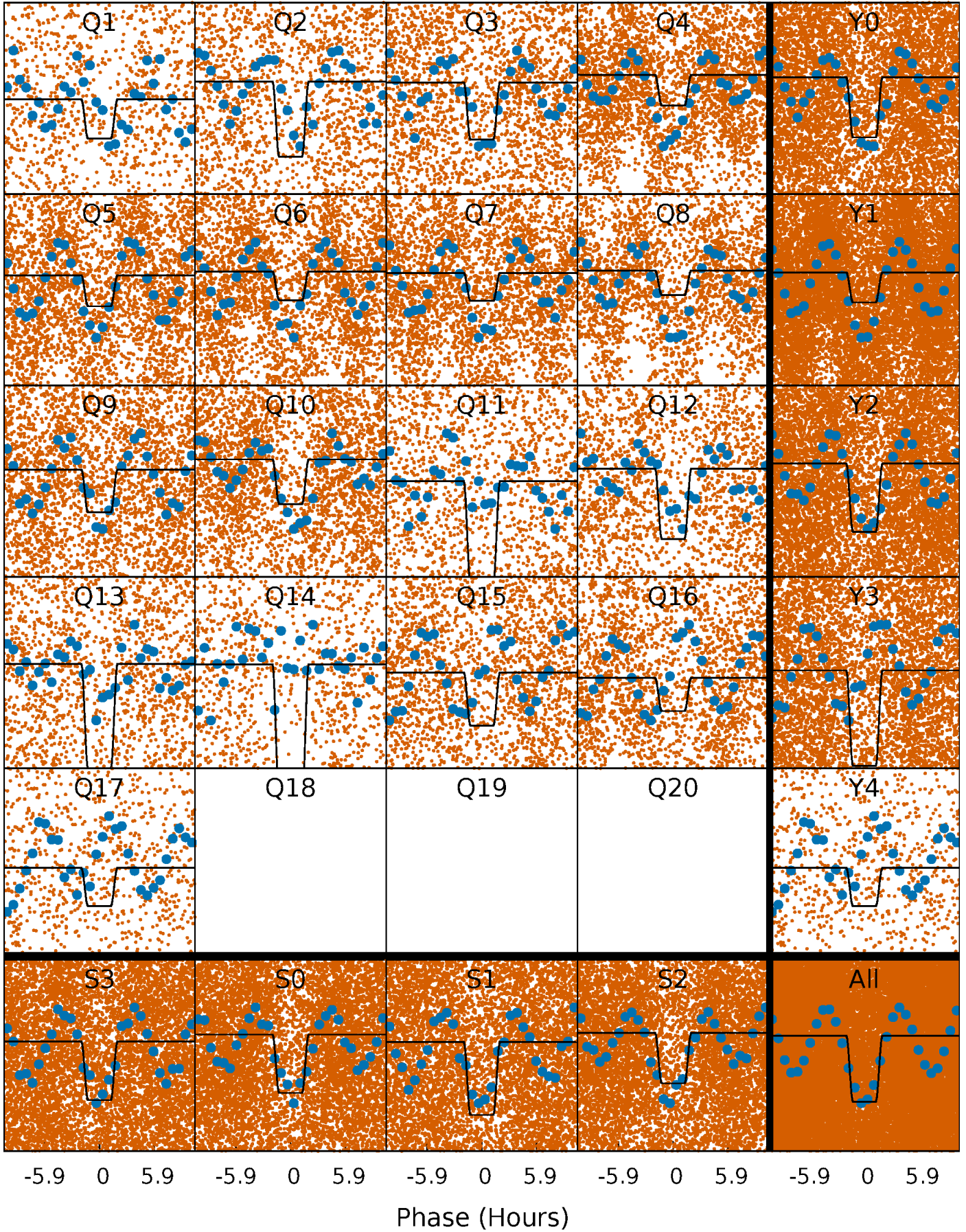
DV Quarter-Phased Transit Curves

TCE 010281639-01 P= 0.933335 Days $T_0=132.307995$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

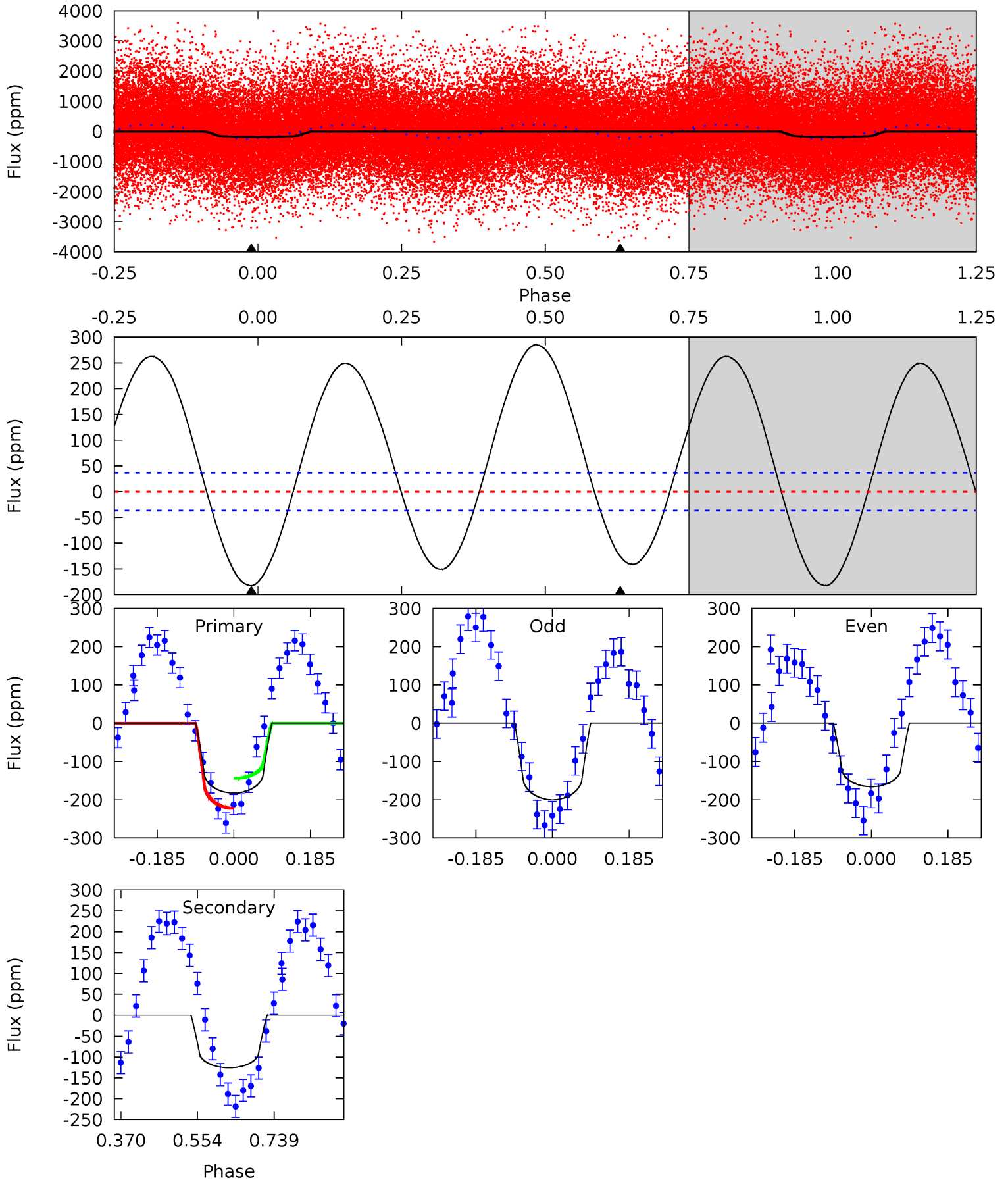
TCE 010281639-01 P= 0.933312 Days $T_0=132.305265$ (BKJD)



DV Model-Shift Uniqueness Test

010281639-01, P = 0.933335 Days, E = 131.374660 Days

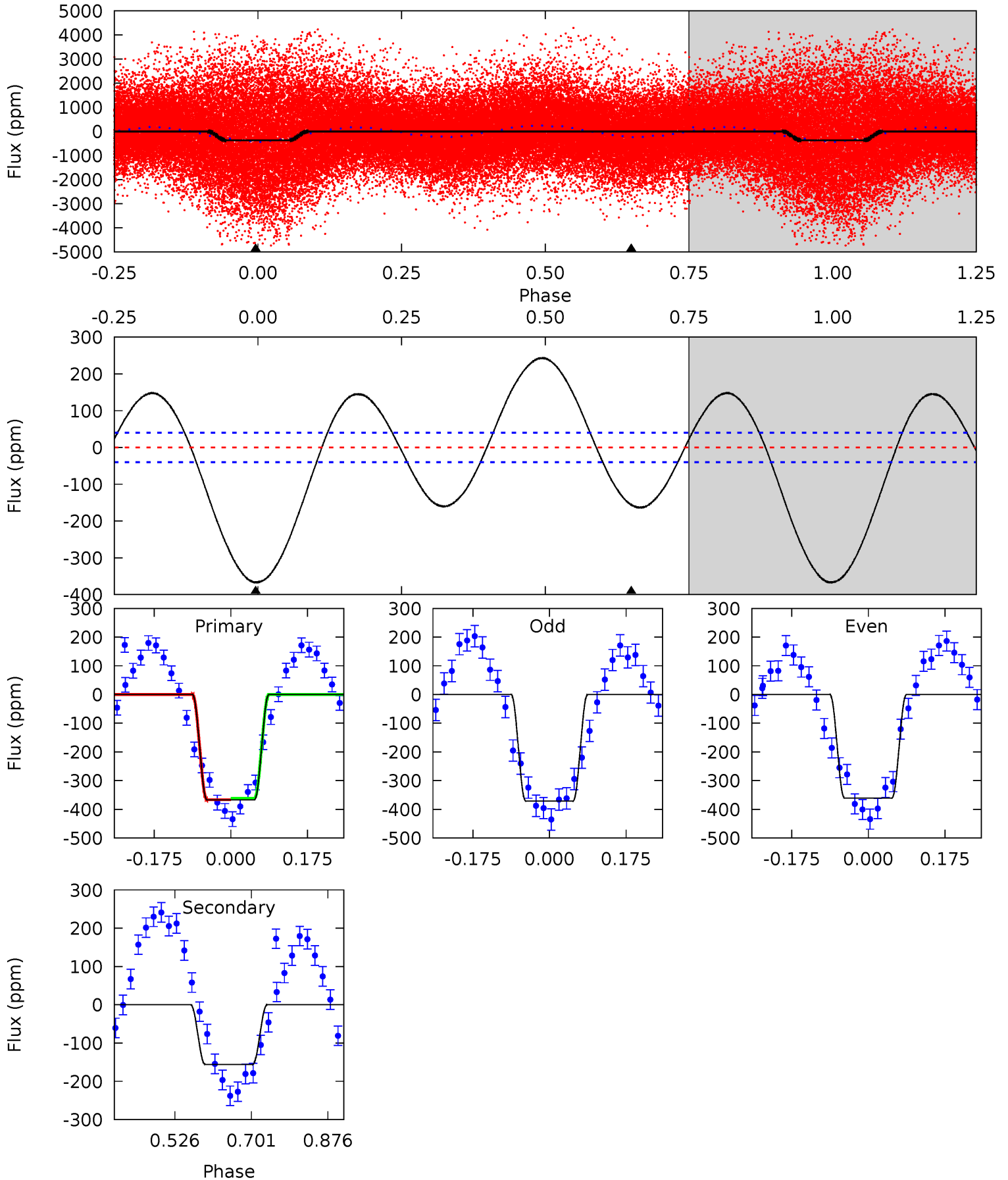
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.1	15.2	0	0	4.43	1.33	15.2	22.1	22.1	15.2	15.2	2.07	1.04	0.61	4.76



Alt Model-Shift Uniqueness Test

010281639-01, P = 0.933312 Days, E = 131.371953 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
40.8	17.3	0	0	4.45	1.36	13.4	40.8	40.8	17.3	17.3	0.57	0.94	0.40	0.32



Stellar Parameters For KIC 010281639

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7019^{+73}_{-84}	$3.876^{+0.188}_{-0.116}$	$-0.040^{+0.150}_{-0.150}$	$2.485^{+0.463}_{-0.618}$	$1.691^{+0.150}_{-0.184}$	$0.155^{+0.149}_{-0.056}$
	+1%/-1%	+5%/-3%	+375%/-375%	+19%/-25%	+9%/-11%	+96%/-36%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 010281639-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-126 ± 8	$3.00^{+1.22}_{-1.19}$	4542^{+226}_{-256}	6828^{+2501}_{-1158}	$3.758^{+6.768}_{-1.824}$
Alt.	-156 ± 9	$5.27^{+1.46}_{-1.41}$	4545^{+243}_{-272}	5247^{+875}_{-561}	$1.516^{+1.310}_{-0.568}$

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 $A_{obs} \gg 1.0$

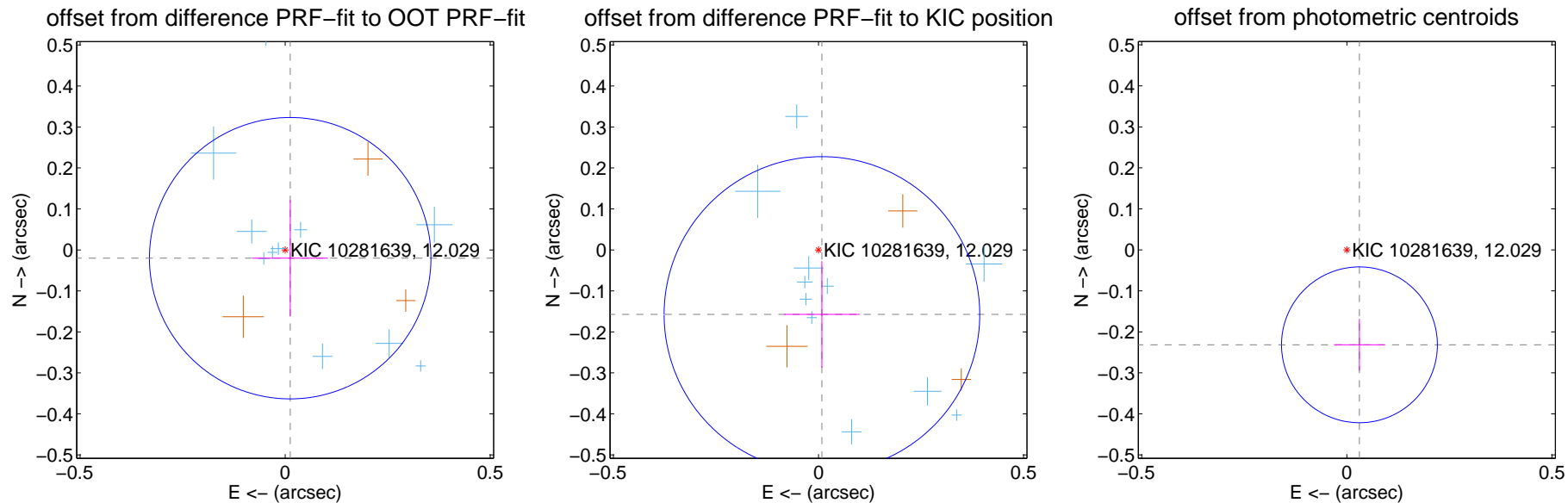
DV Centroid Data

Supplemental centroid analysis for 010281639-01. Kepler magnitude: 12.03. Transit SNR 10.66

There are 12 quarters with good PRF difference image offsets

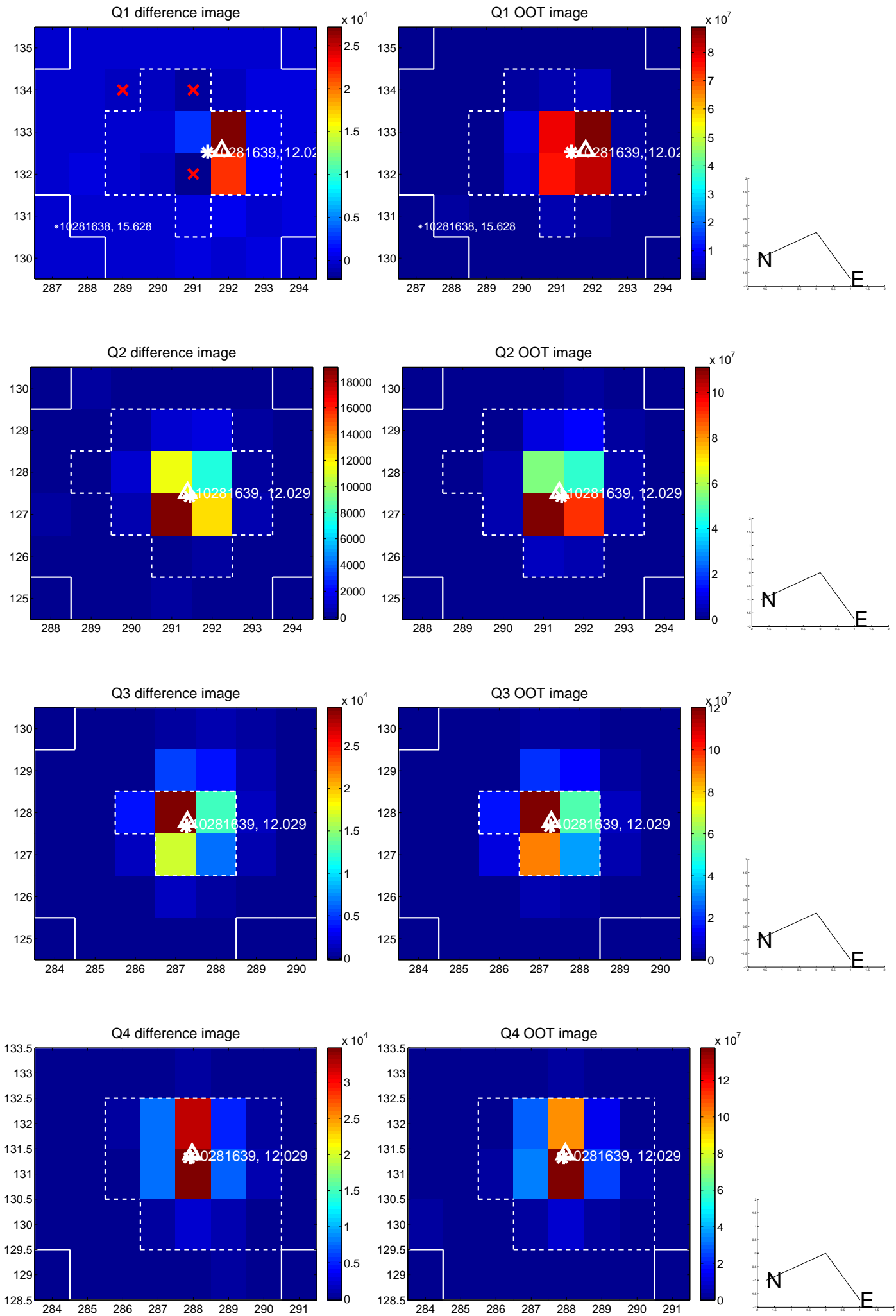
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.024 ± 0.114	0.21	-0.012 ± 0.092	-0.020 ± 0.142
PRF-fit source offset from KIC position	0.158 ± 0.128	1.23	-0.008 ± 0.092	-0.157 ± 0.130
photometric centroid source offset	0.23 ± 0.06	3.69	-0.03 ± 0.06	-0.23 ± 0.06

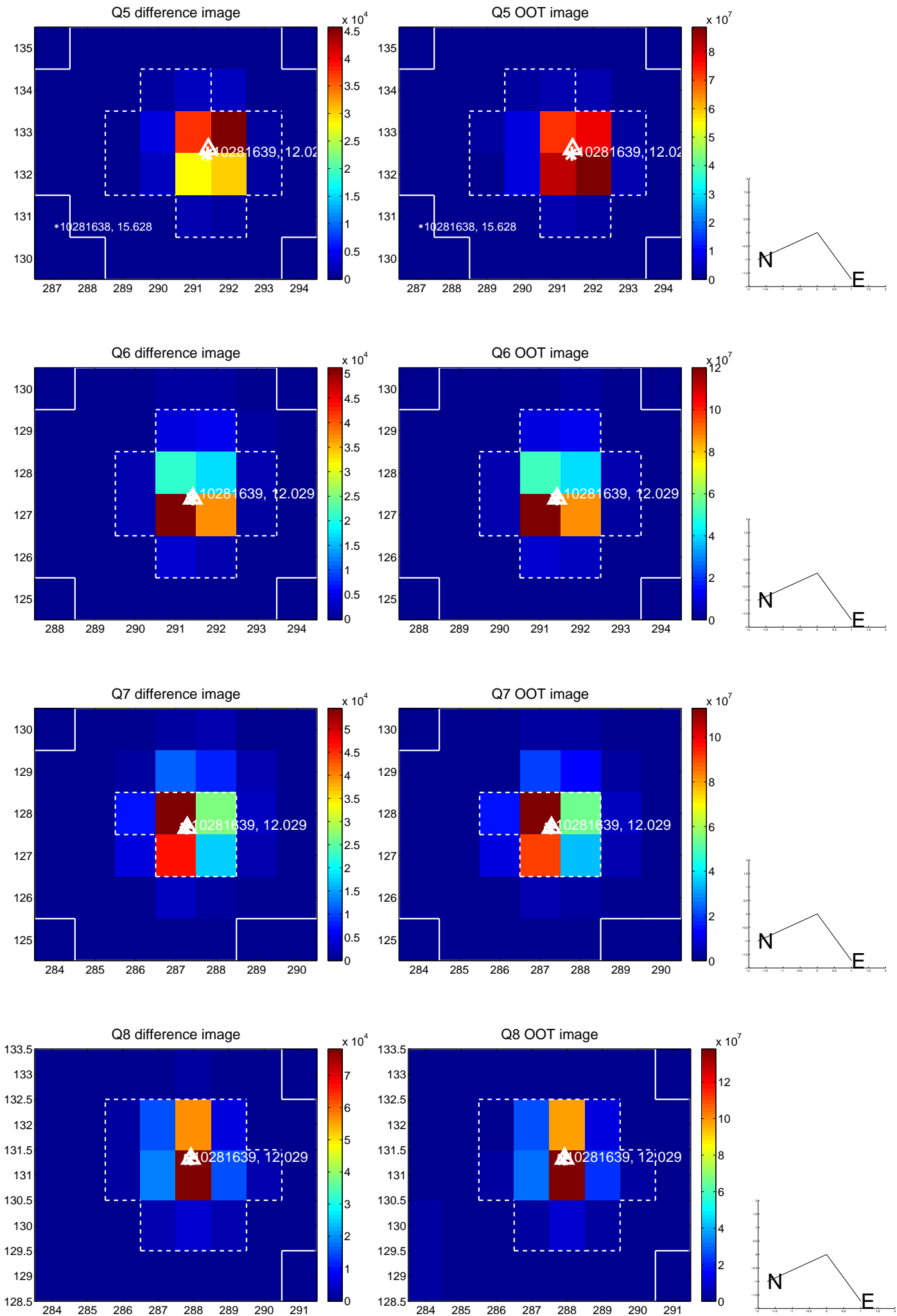


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

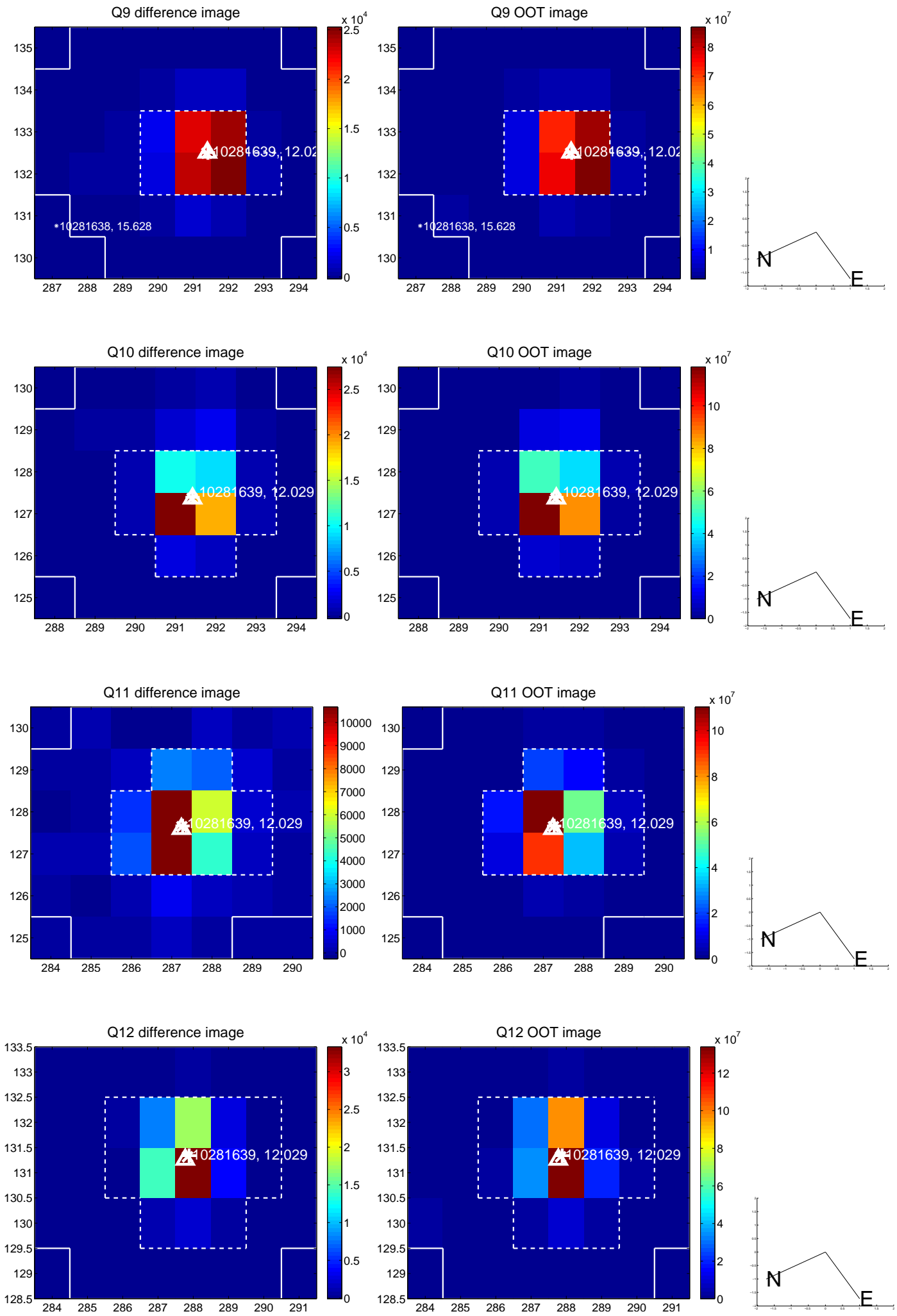
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



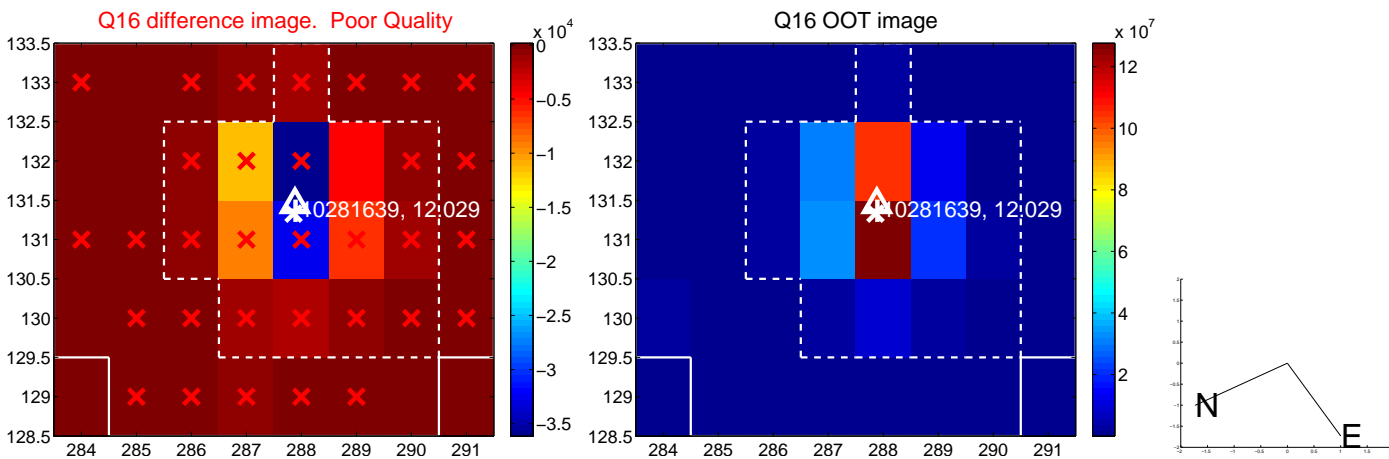
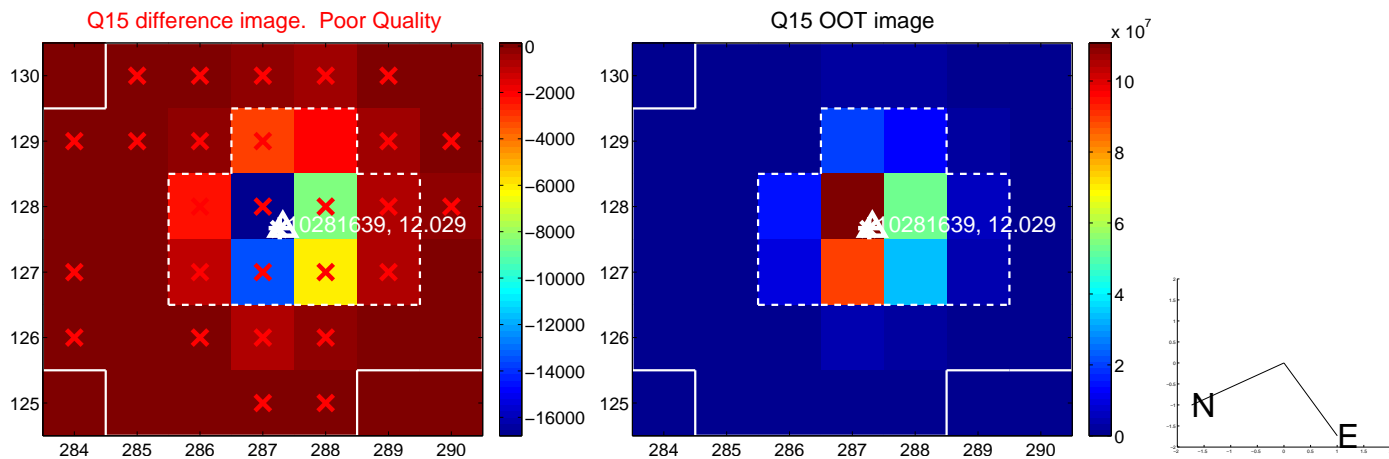
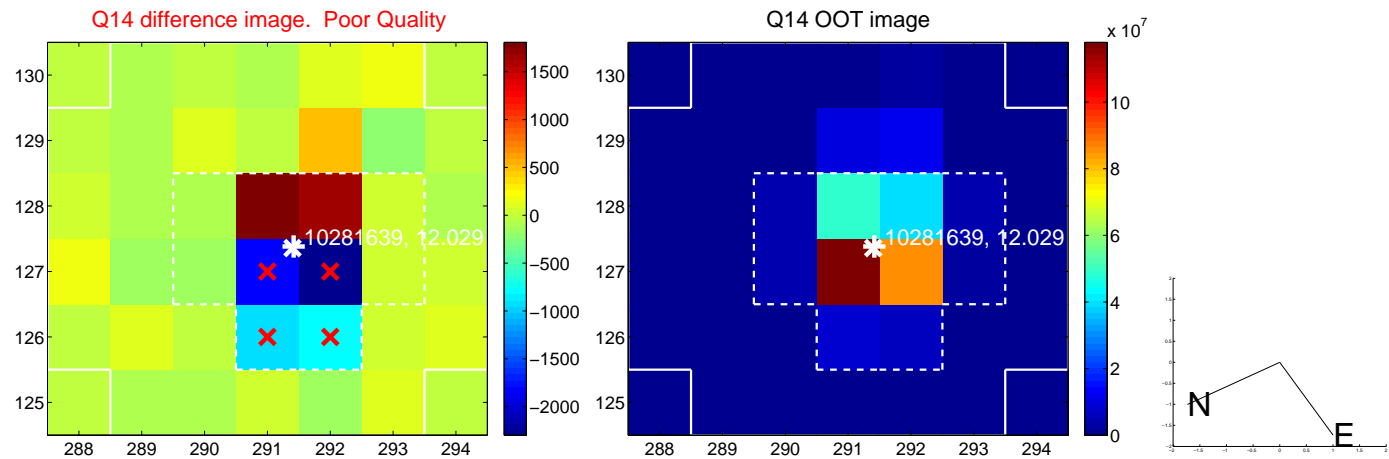
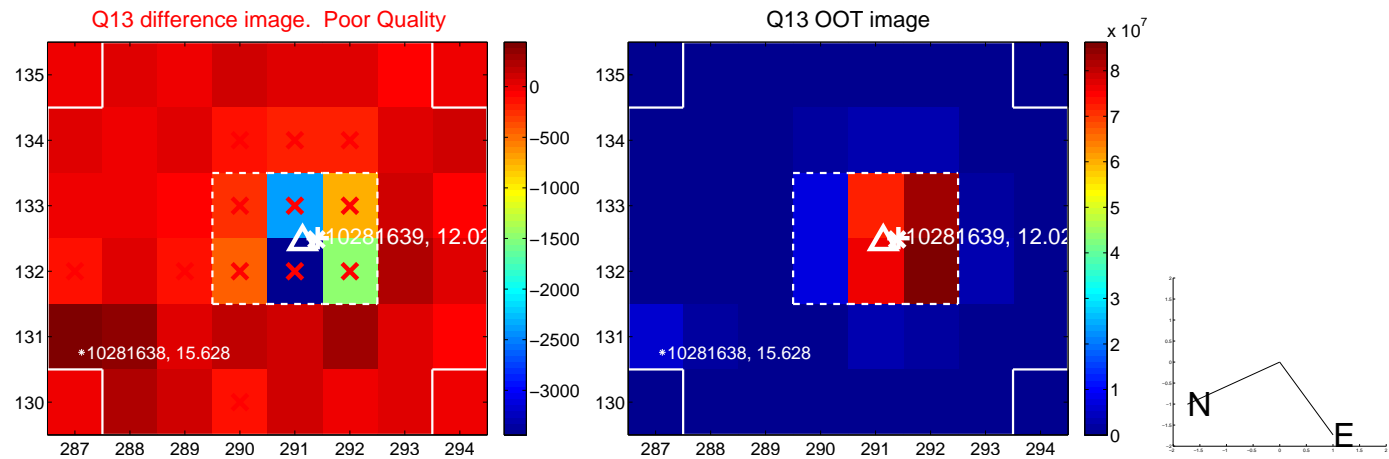
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



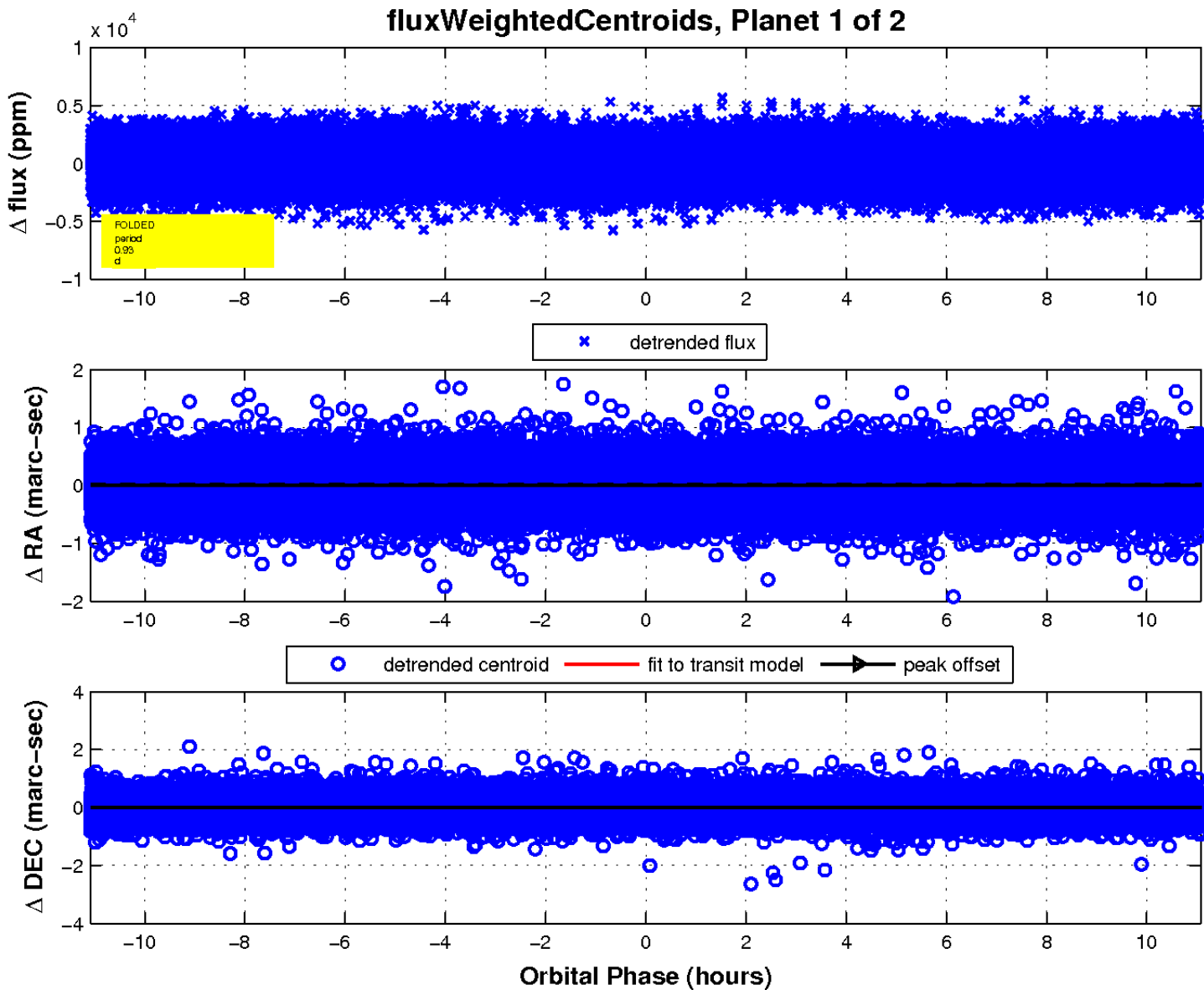
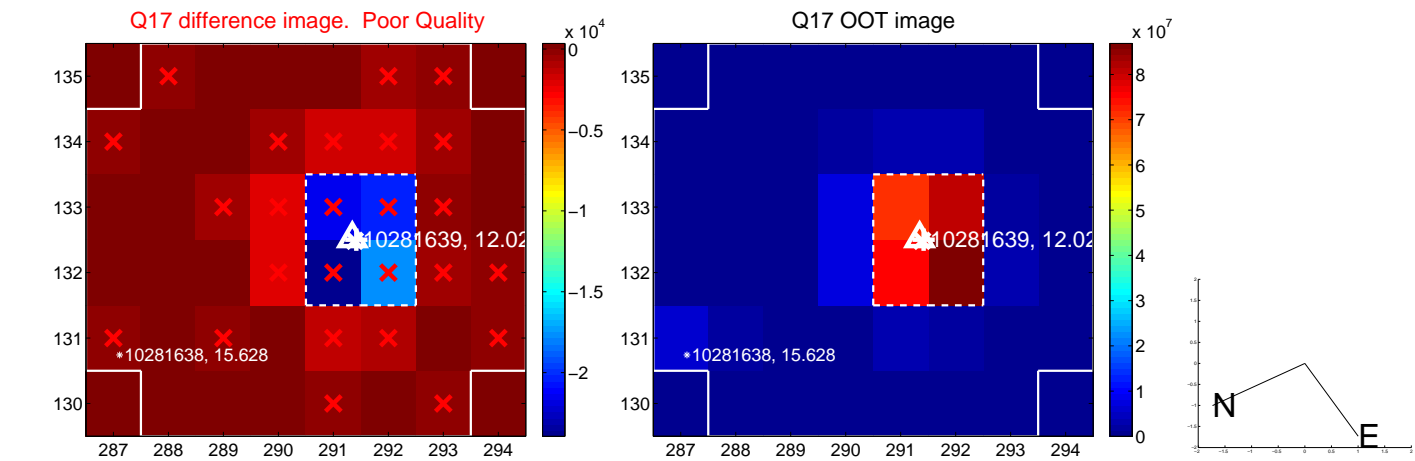
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

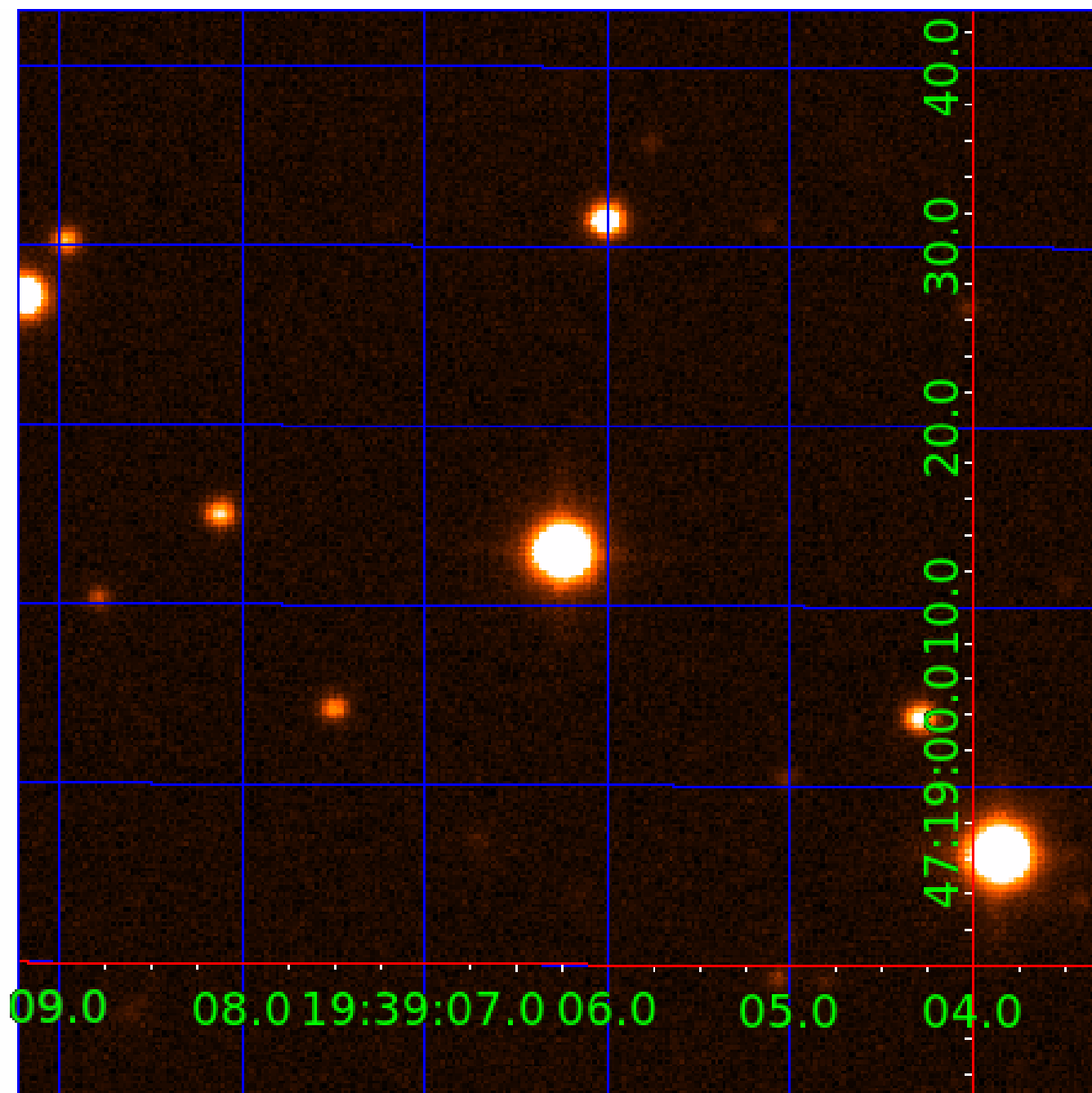


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010281639

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})
010281639-01	OBS	No	0.933335	132.307995	139.2	3.694	10.7	10.7	2.48	7019	3.03	27049.72
010281639-02	OBS	No	0.933274	132.008210	159.7	3.500	14.3	-1.0	2.48	7019	3.18	27052.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010281639-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010281639-02	OBS	FP	0.00	1	0	0	0	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.

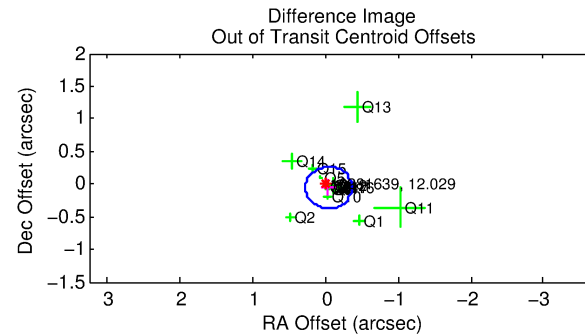
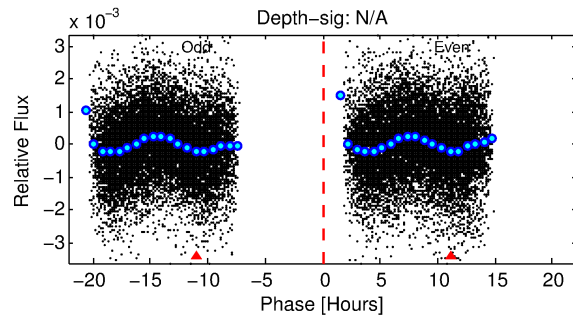
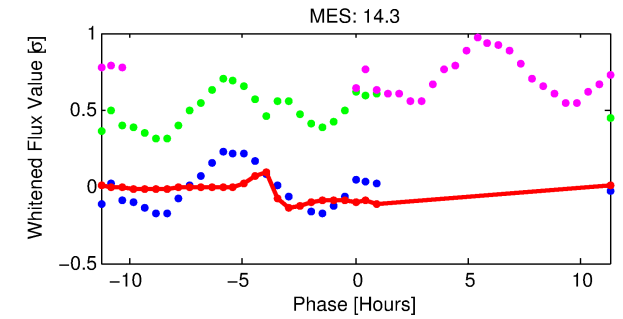
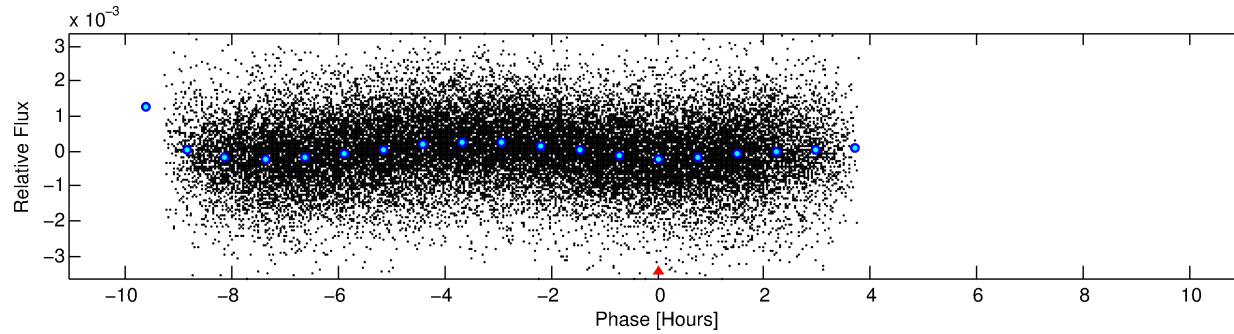
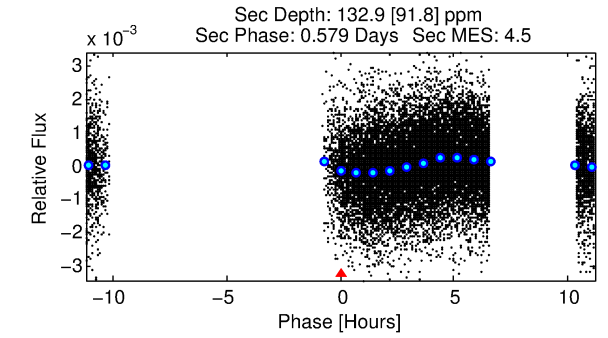
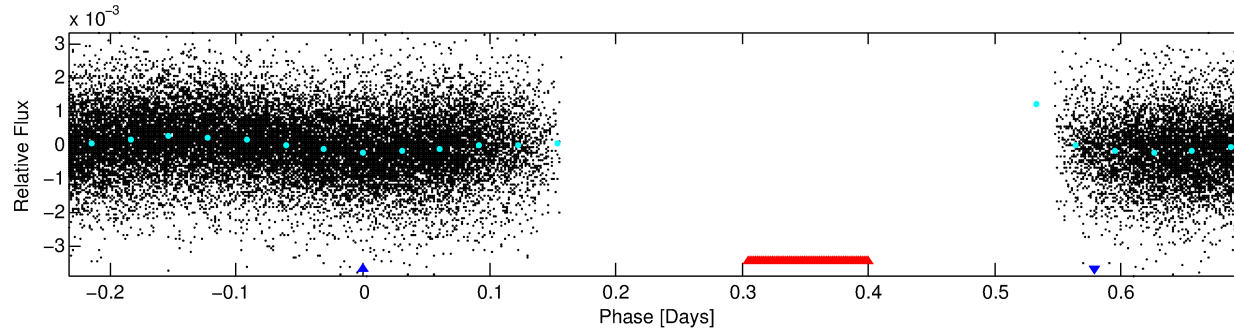
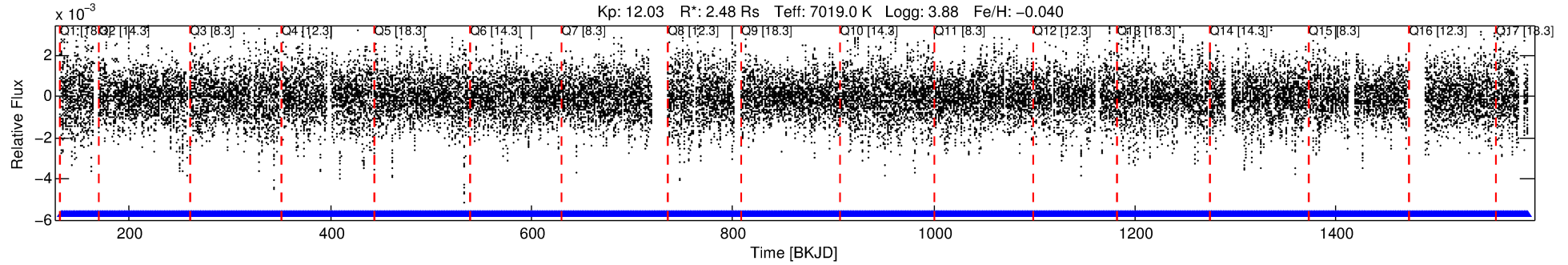
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010281639-02

No Significant Match Found

DV One-Page Summary

KIC: 10281639 Candidate: 2 of 2 Period: 0.933 d



TPS TCE Results:

Period = 0.93327 d
Epoch = 132.0082 BKJD

DV fit results are unavailable

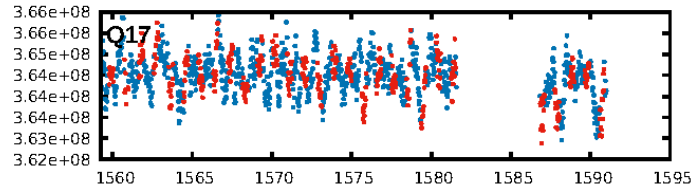
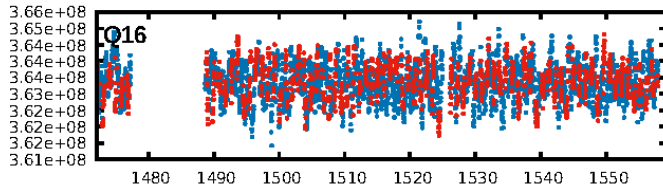
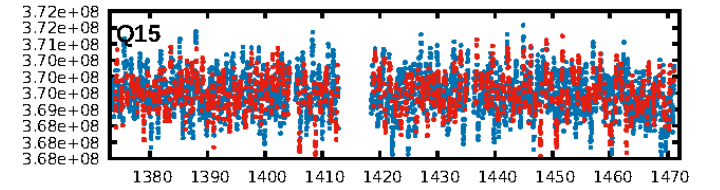
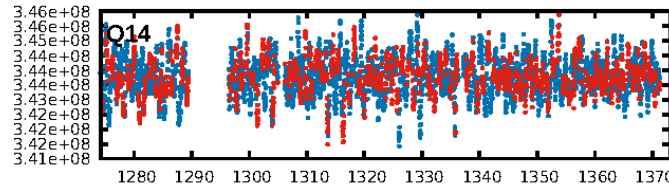
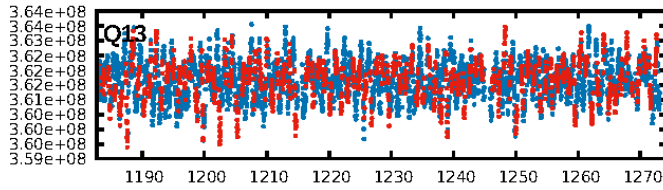
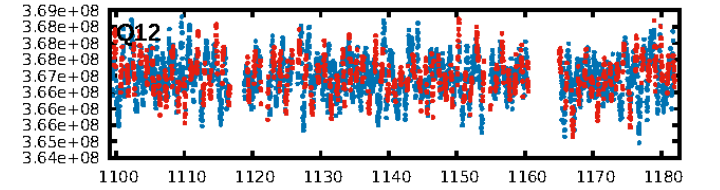
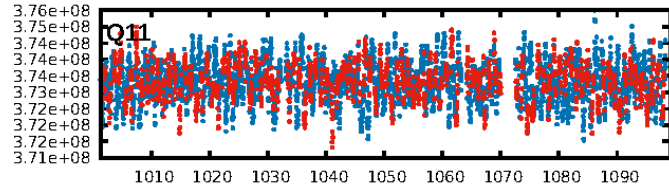
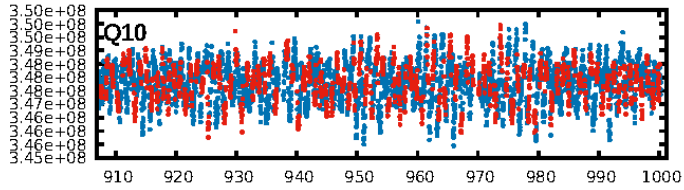
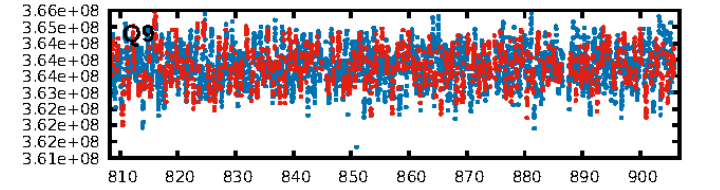
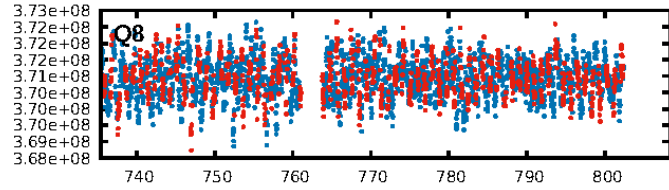
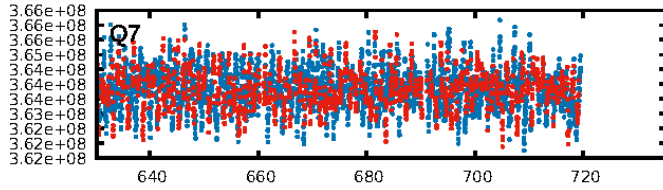
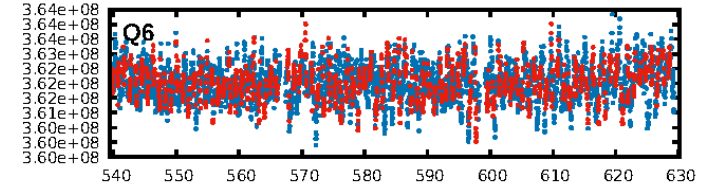
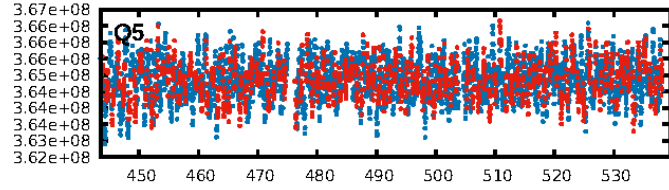
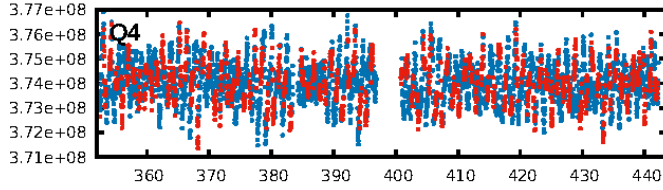
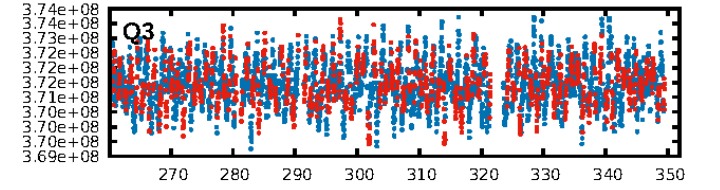
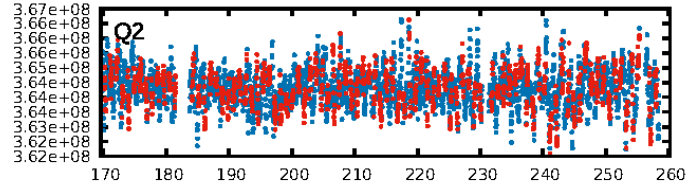
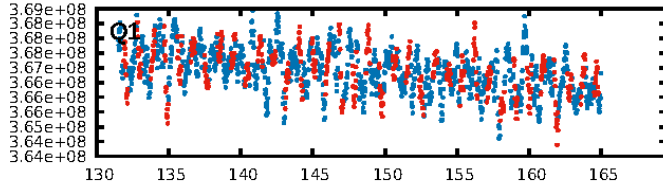
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1378/1378]
GhostDiagnostic-chr: -67.36
Centroid-sig: 7.1%
Centroid-so: 0.274 arcsec [6.96σ]
OotOffset-rm: 0.071 arcsec [0.66σ]
KicOffset-rm: 0.168 arcsec [1.57σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 0.00 [0/17]

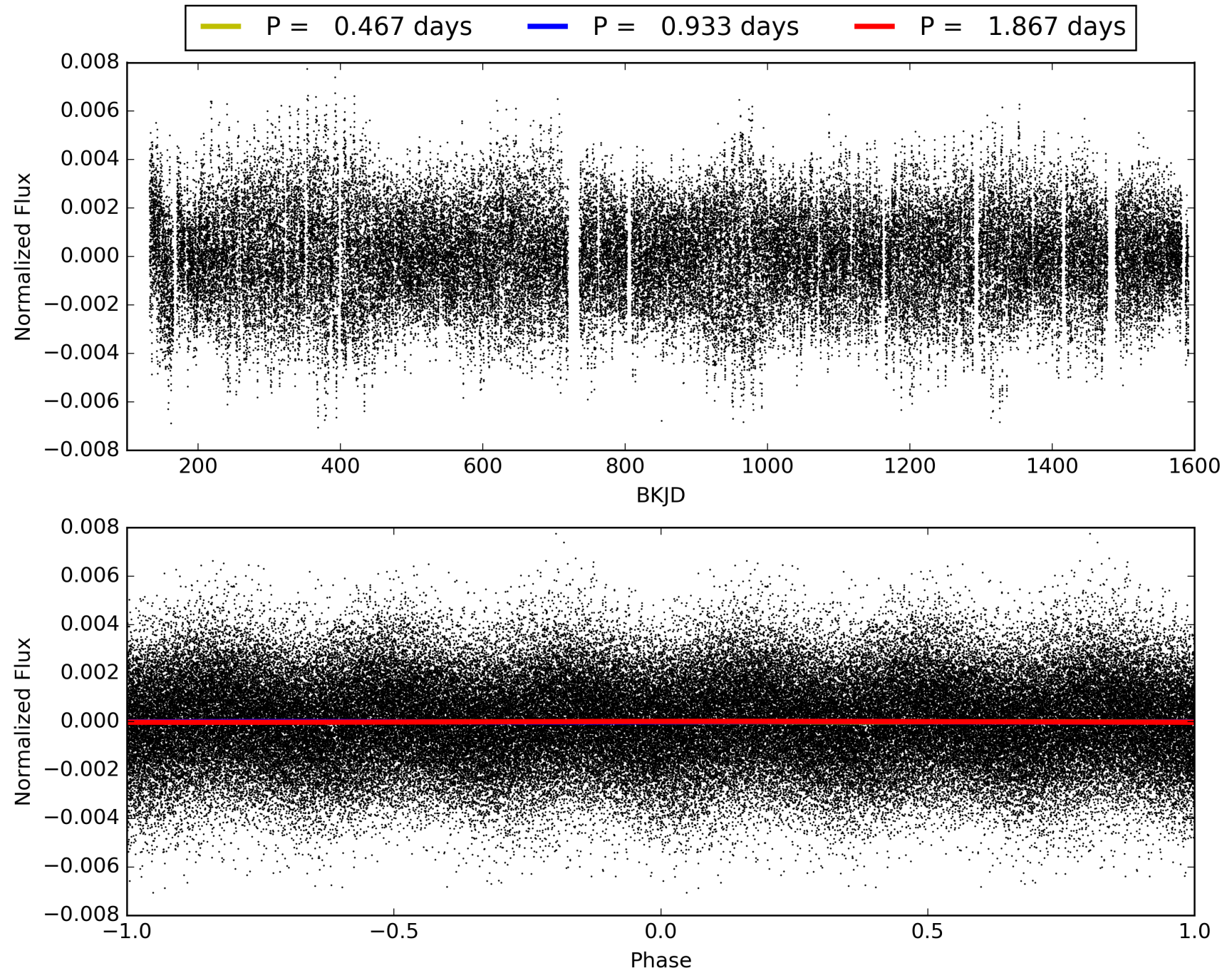
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:58:59 Z

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

TCE 010281639-02, PDC Light Curves

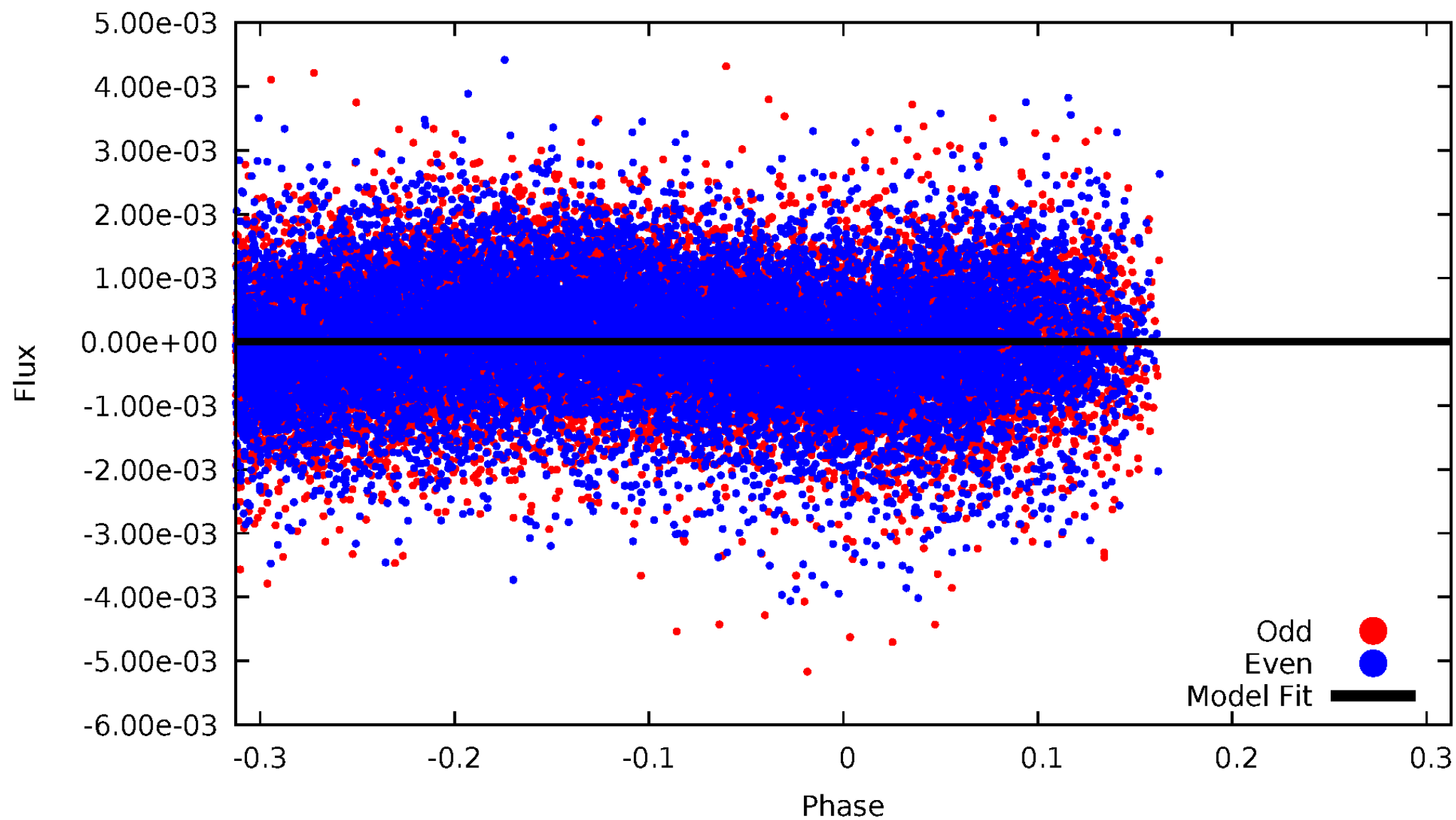


TCE 010281639-02



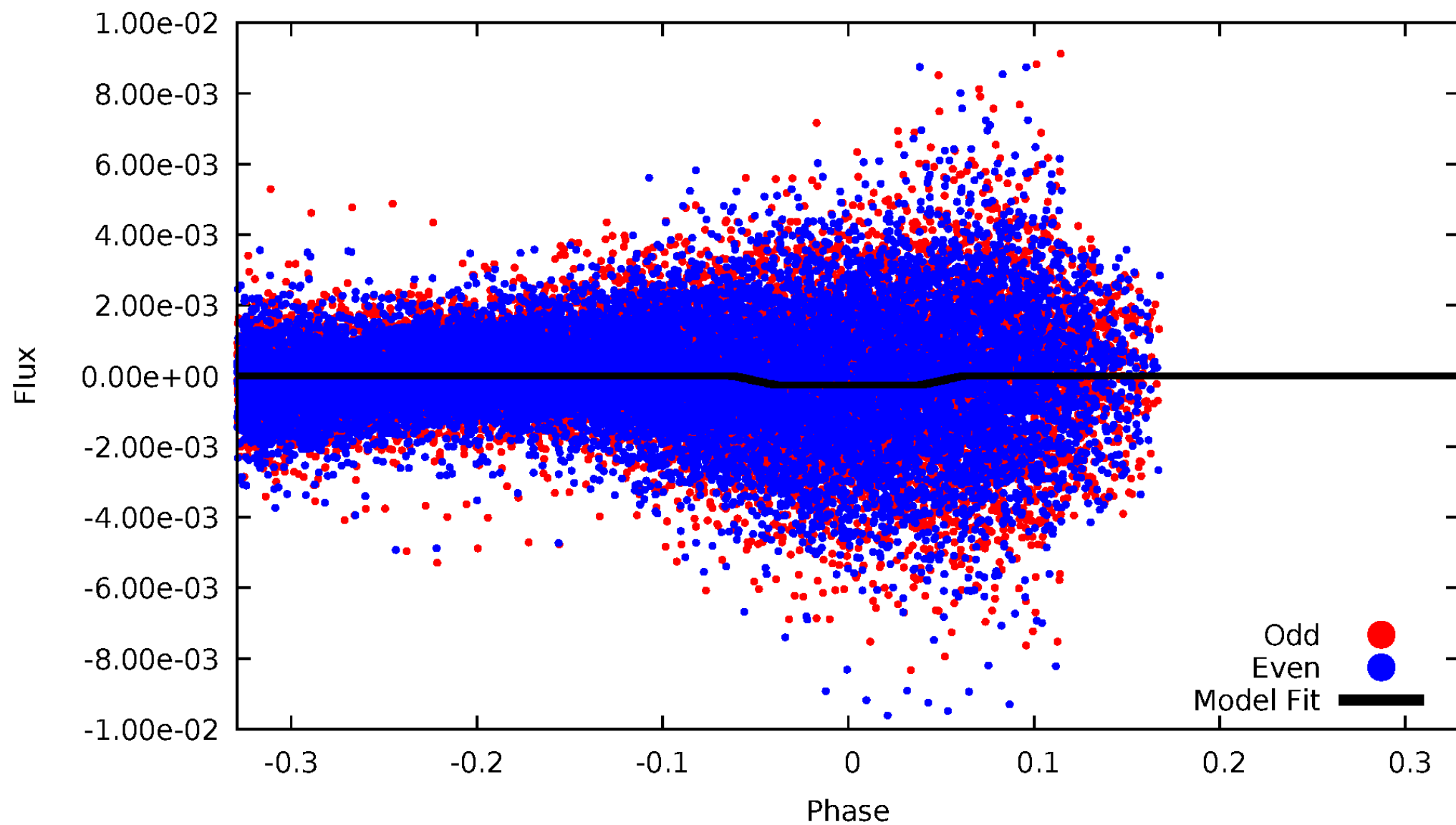
DV Odd/Even

TCE 010281639-02



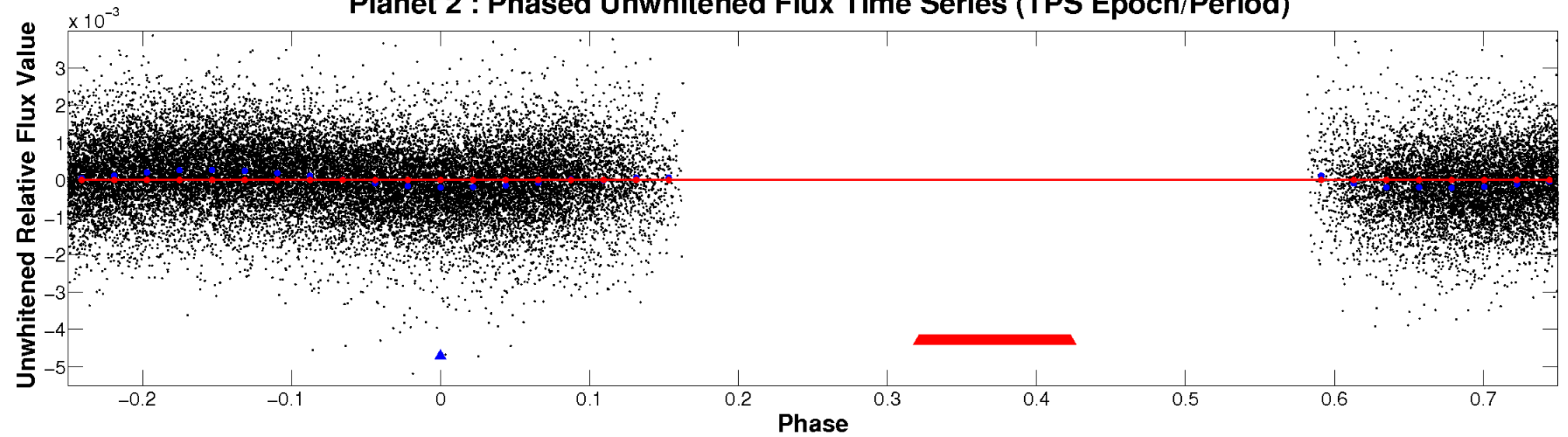
ALT Odd/Even

TCE 010281639-02

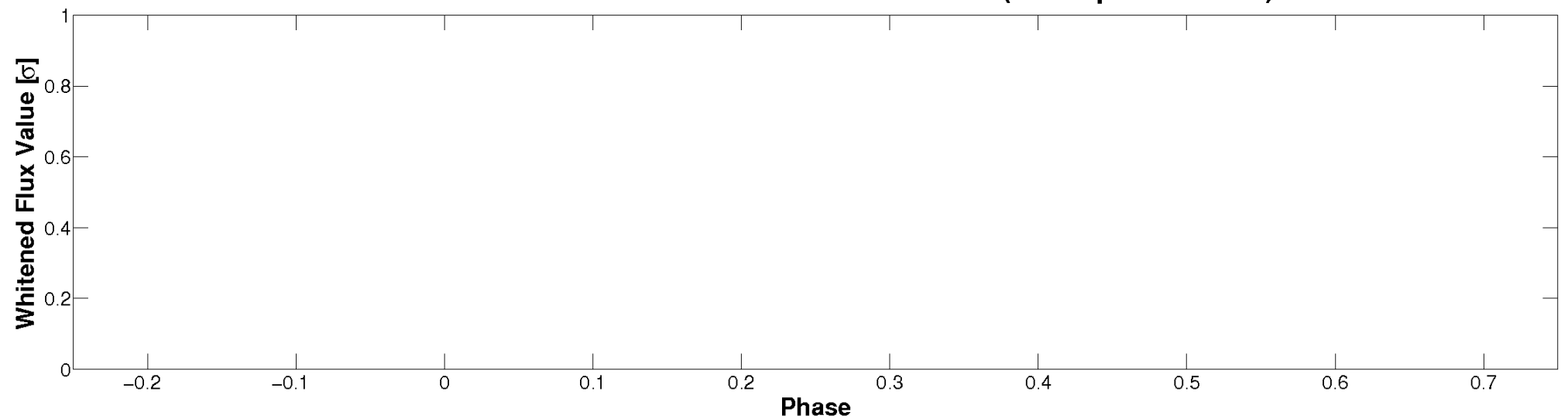


Non-Whitened Vs. Whitened Light Curve

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

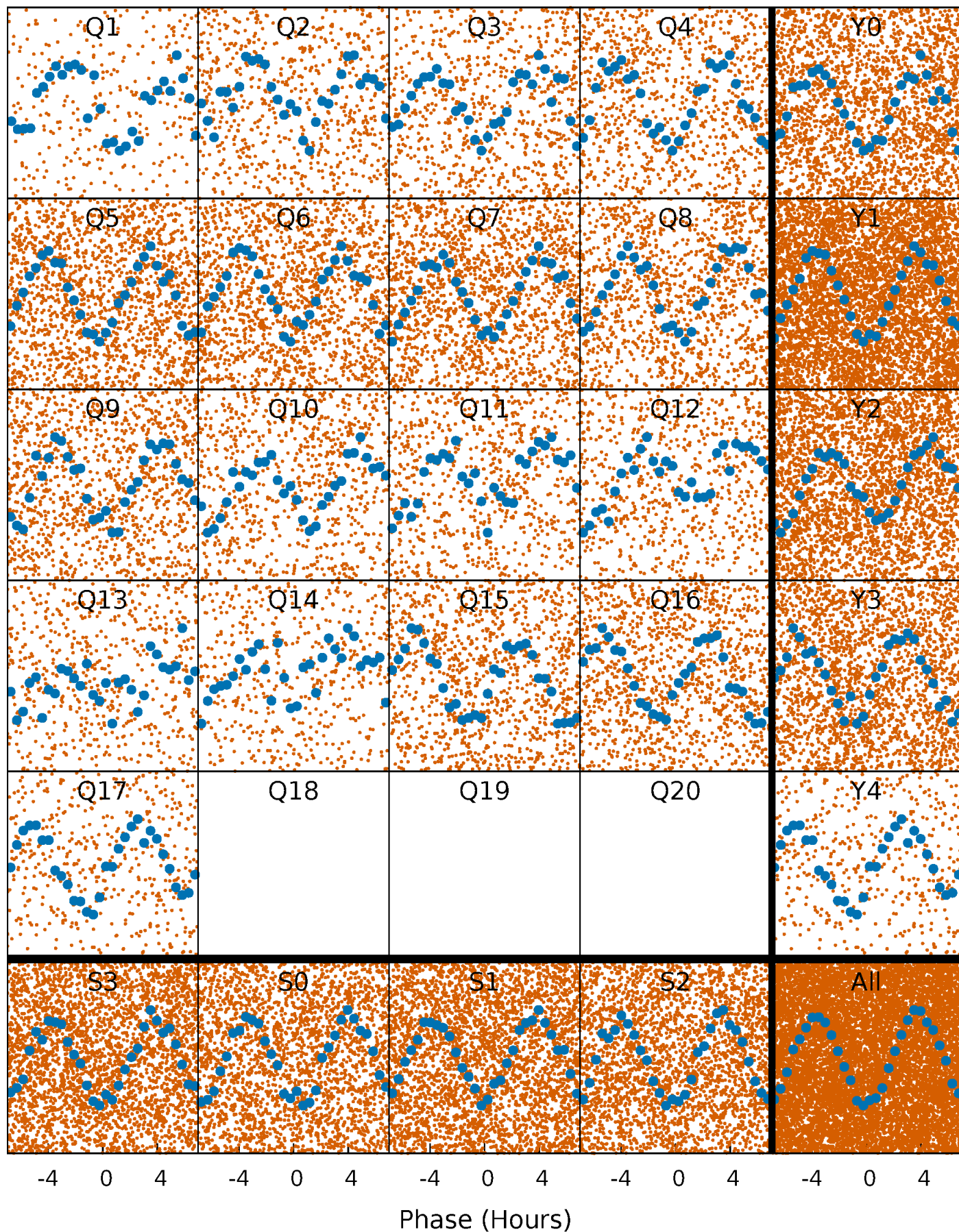


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



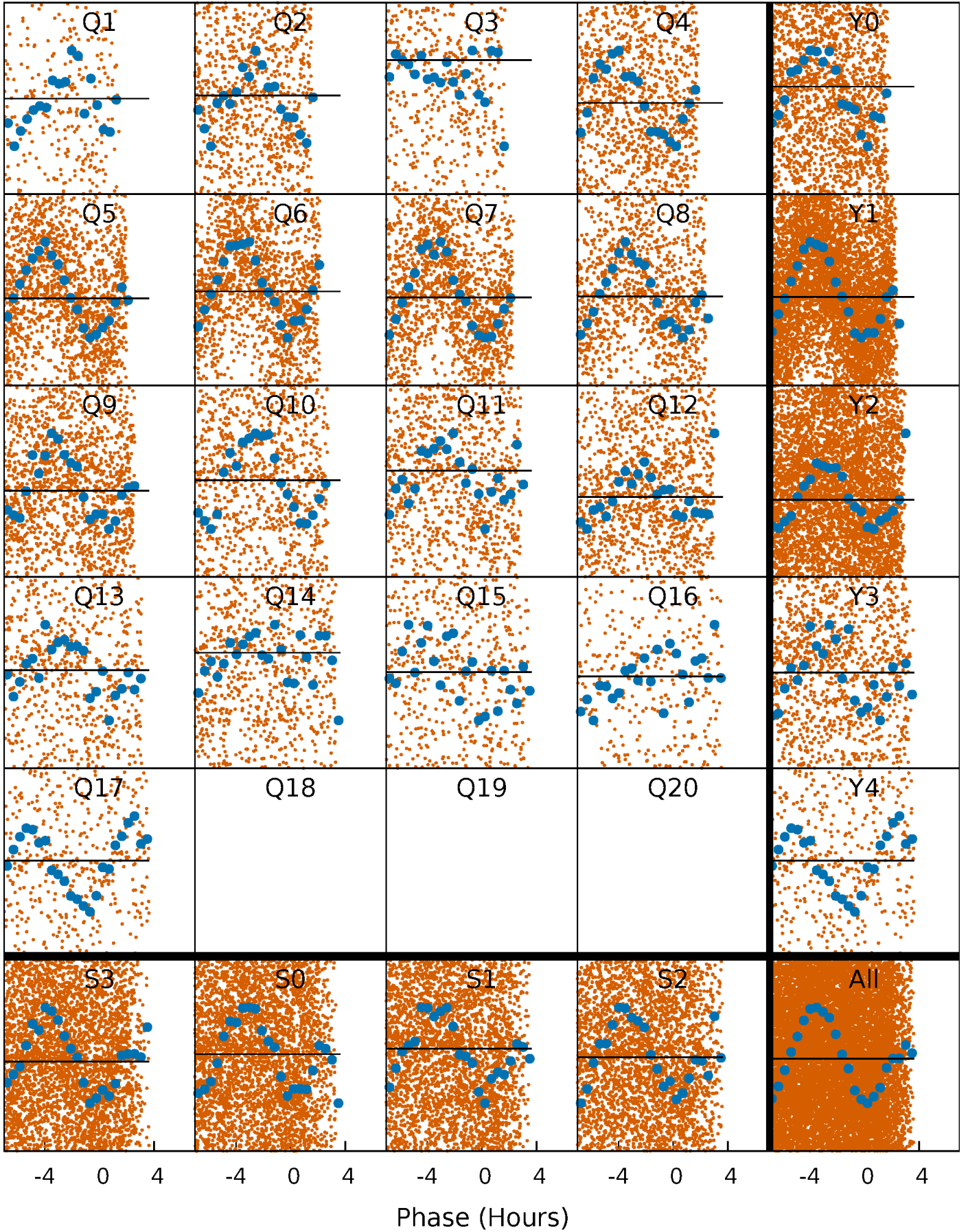
PDC Quarter-Phased Transit Curves

TCE 010281639-02 P= 0.933274 Days $T_0=132.008210$ (BKJD)



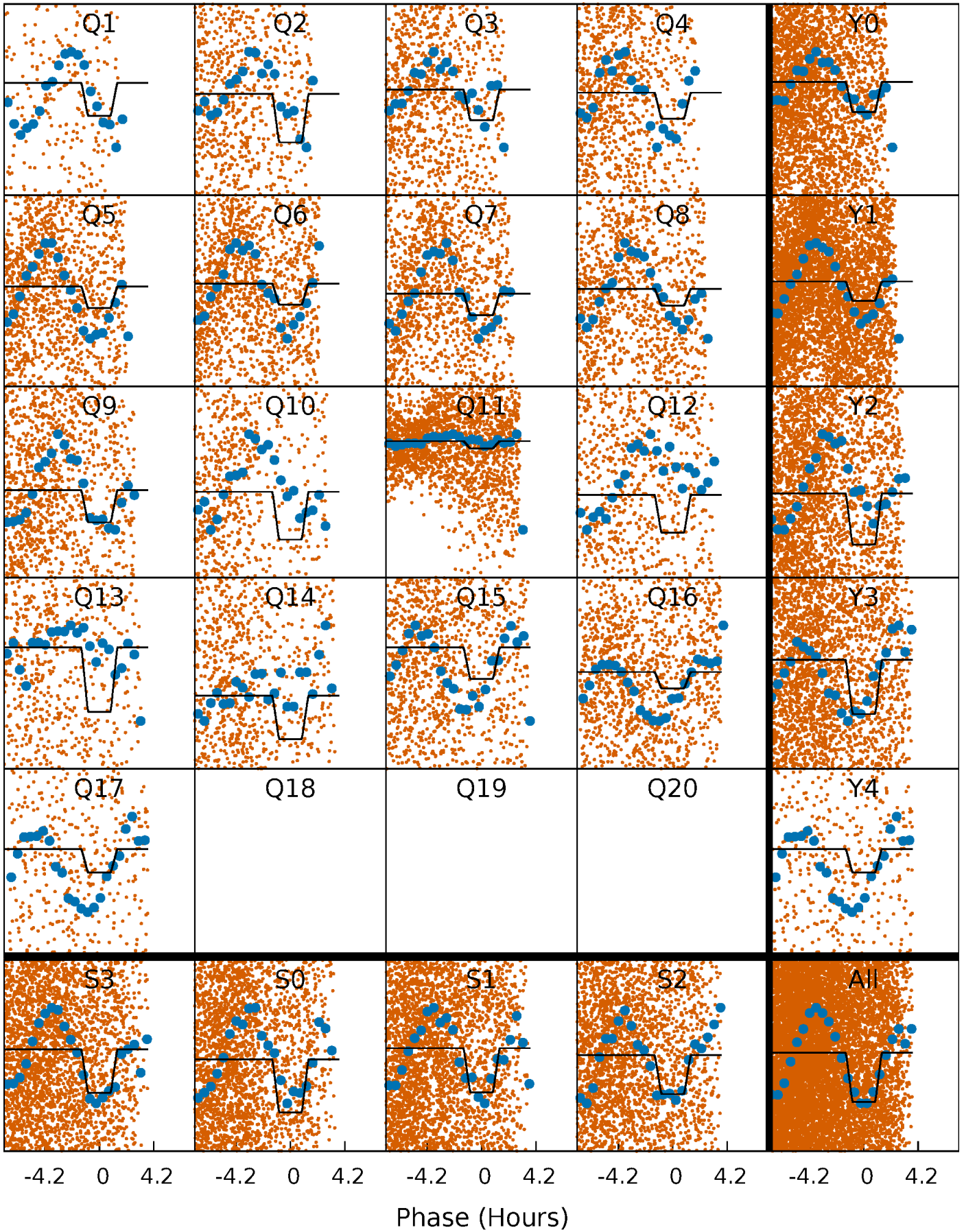
DV Quarter-Phased Transit Curves

TCE 010281639-02 P= 0.933274 Days $T_0=132.008210$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

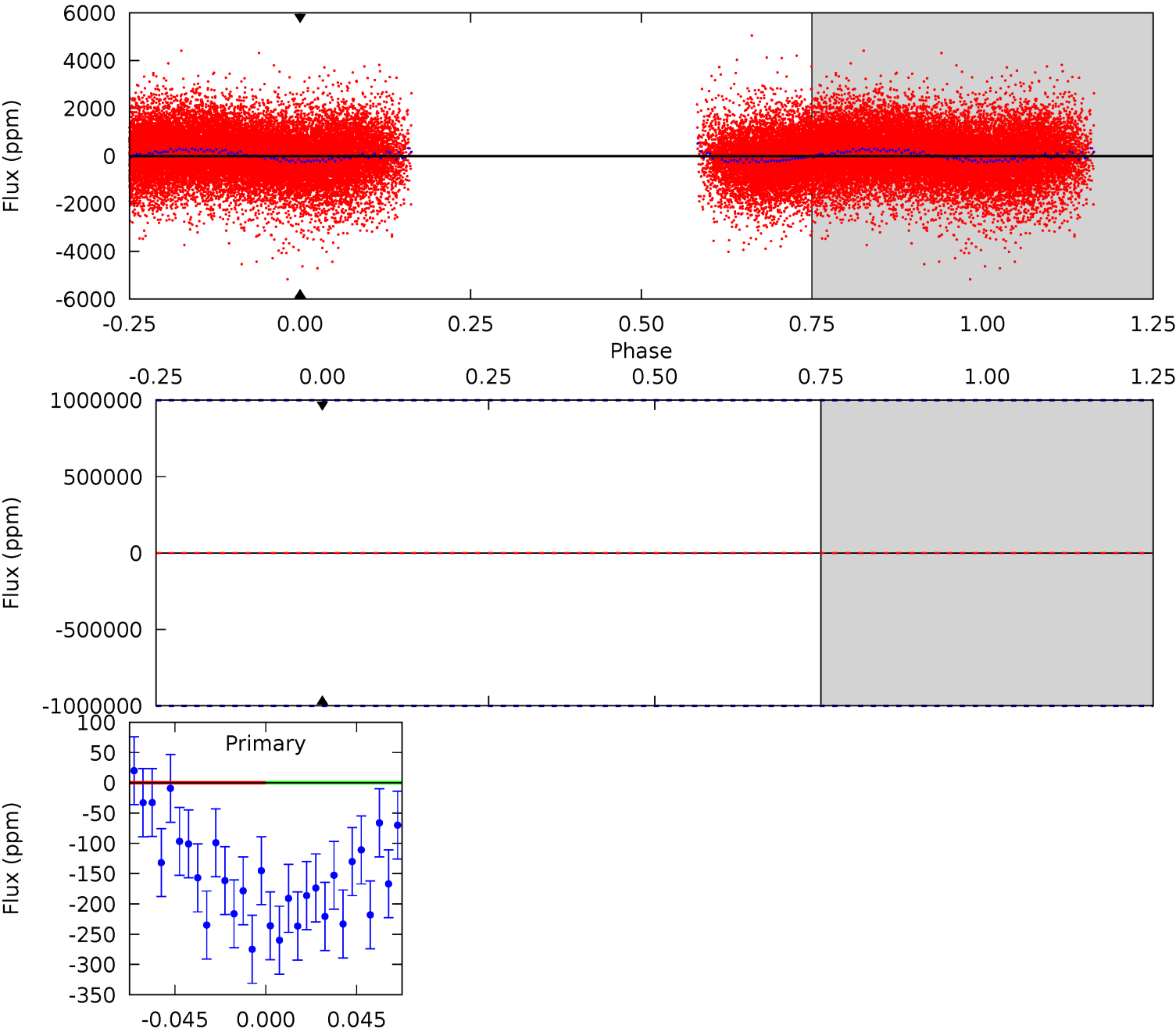
TCE 010281639-02 P= 0.933274 Days $T_0=132.003445$ (BKJD)



DV Model-Shift Uniqueness Test

010281639-02, P = 0.933274 Days, E = 131.074936 Days

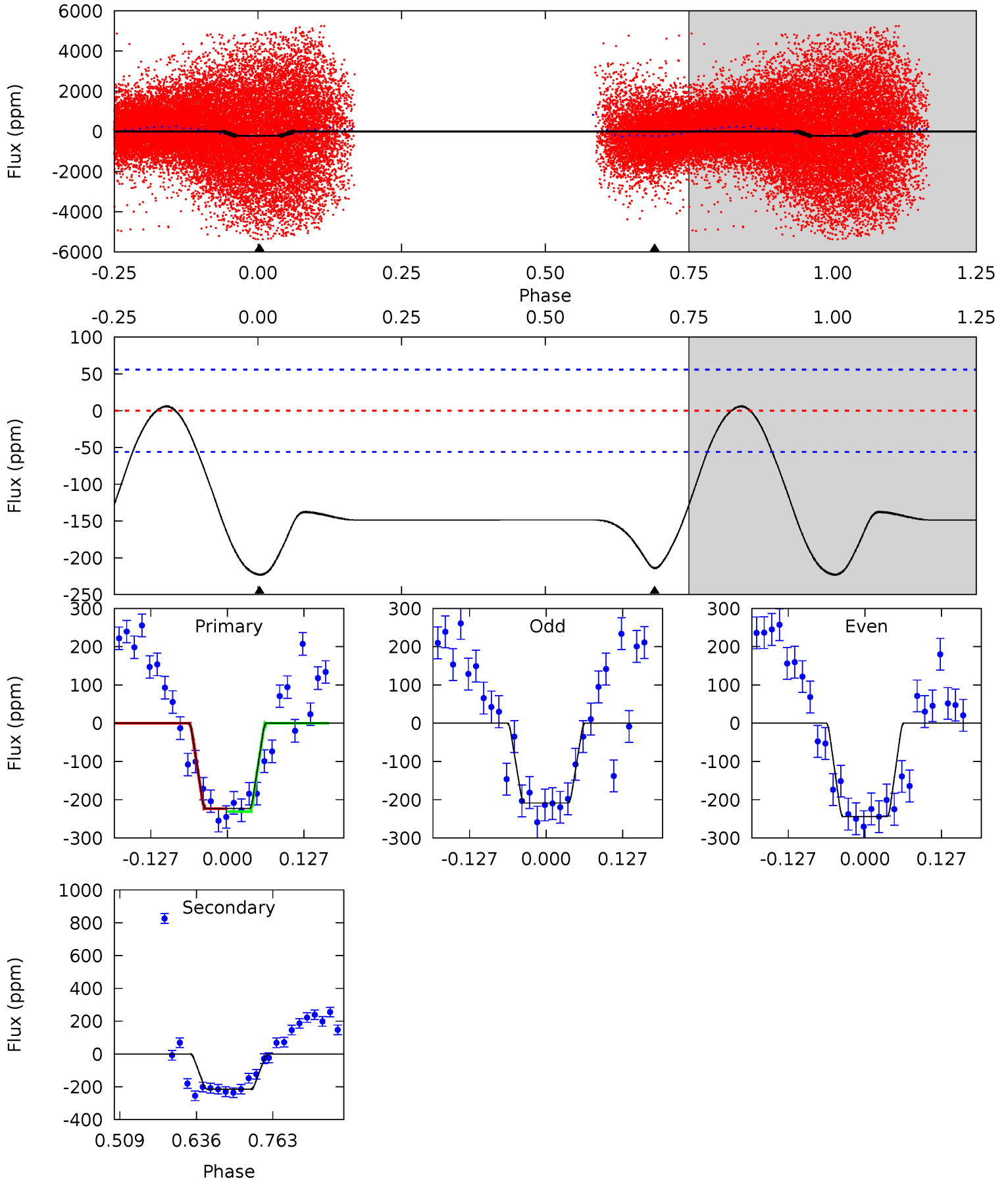
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010281639-02, P = 0.933274 Days, E = 131.070171 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.0	17.3	0	0	4.51	1.53	3.59	18.0	18.0	17.3	17.3	1.42	1.02	0.03	0.25



Stellar Parameters For KIC 010281639

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7019^{+73}_{-84}	$3.876^{+0.188}_{-0.116}$	$-0.040^{+0.150}_{-0.150}$	$2.485^{+0.463}_{-0.618}$	$1.691^{+0.150}_{-0.184}$	$0.155^{+0.149}_{-0.056}$
	+1%/-1%	+5%/-3%	+375%/-375%	+19%/-25%	+9%/-11%	+96%/-36%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 010281639-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$18.18^{+19.49}_{-12.78}$	4532^{+268}_{-280}	-5258^{+42943}_{-33436}	$-0.829^{+153.812}_{-158.458}$
Alt.	-214 ± 12	$19.12^{+21.00}_{-13.23}$	4570^{+208}_{-309}	-3478^{+8951}_{-473}	$0.160^{+1.531}_{-0.123}$

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

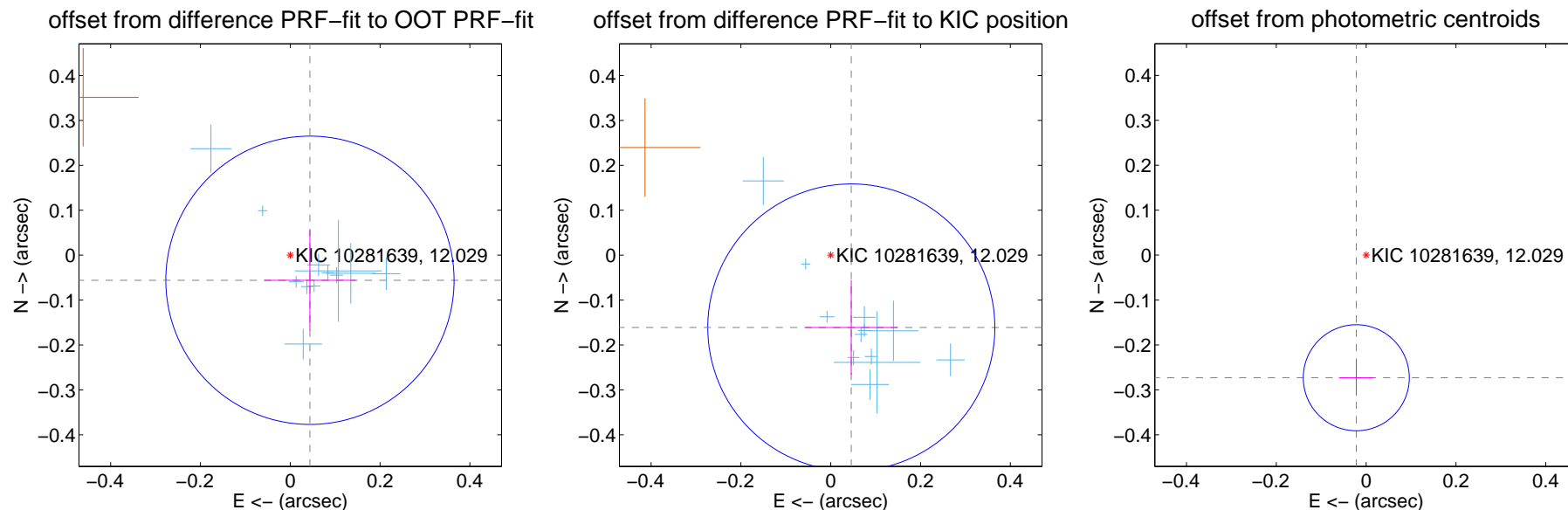
DV Centroid Data

Supplemental centroid analysis for 010281639-02. Kepler magnitude: 12.03. Transit SNR -1.00

There are 16 quarters with good PRF difference image offsets

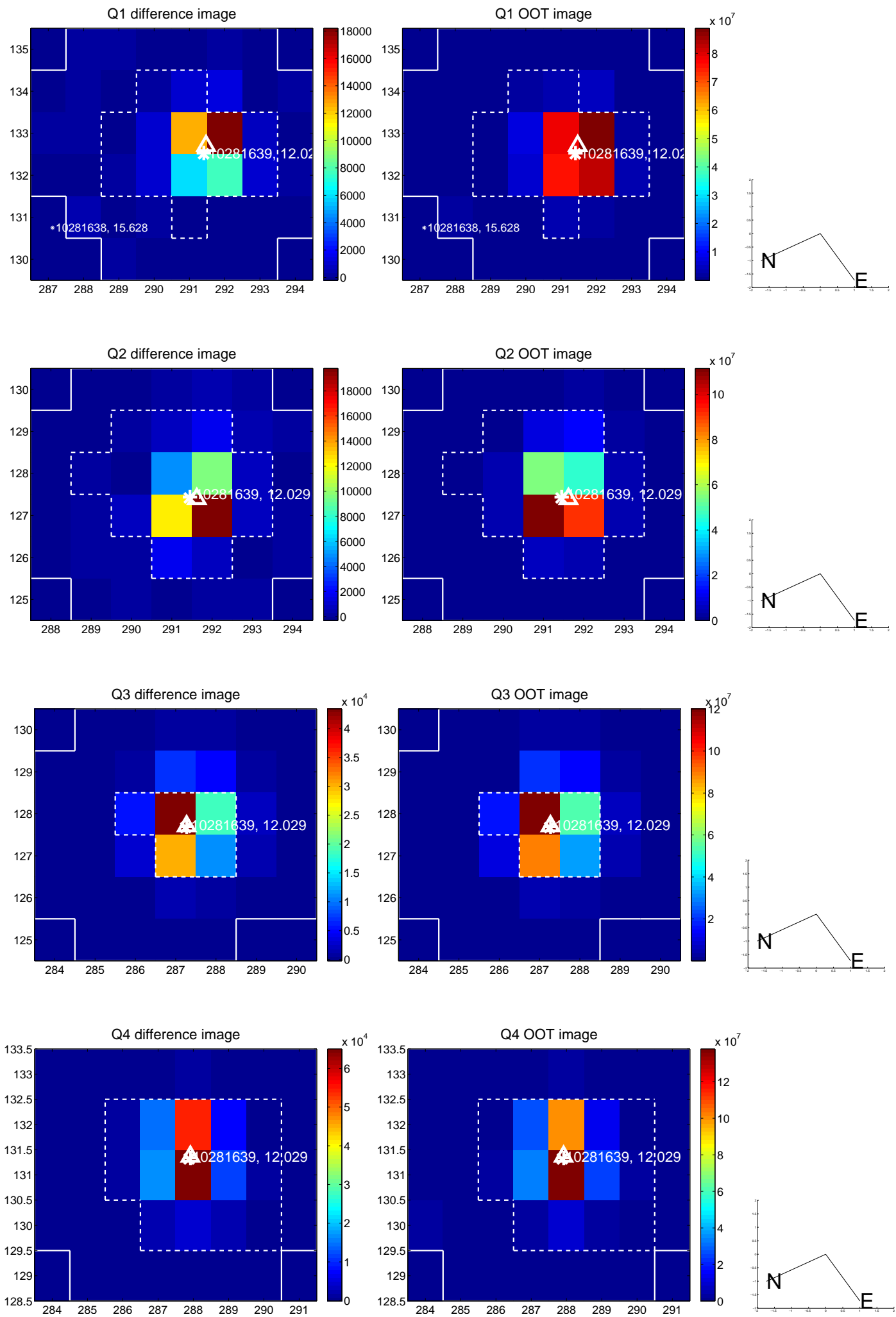
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.071 ± 0.107	0.66	-0.044 ± 0.102	-0.056 ± 0.112
PRF-fit source offset from KIC position	0.168 ± 0.107	1.57	-0.046 ± 0.103	-0.161 ± 0.106
photometric centroid source offset	0.27 ± 0.04	6.96	0.02 ± 0.04	-0.27 ± 0.04

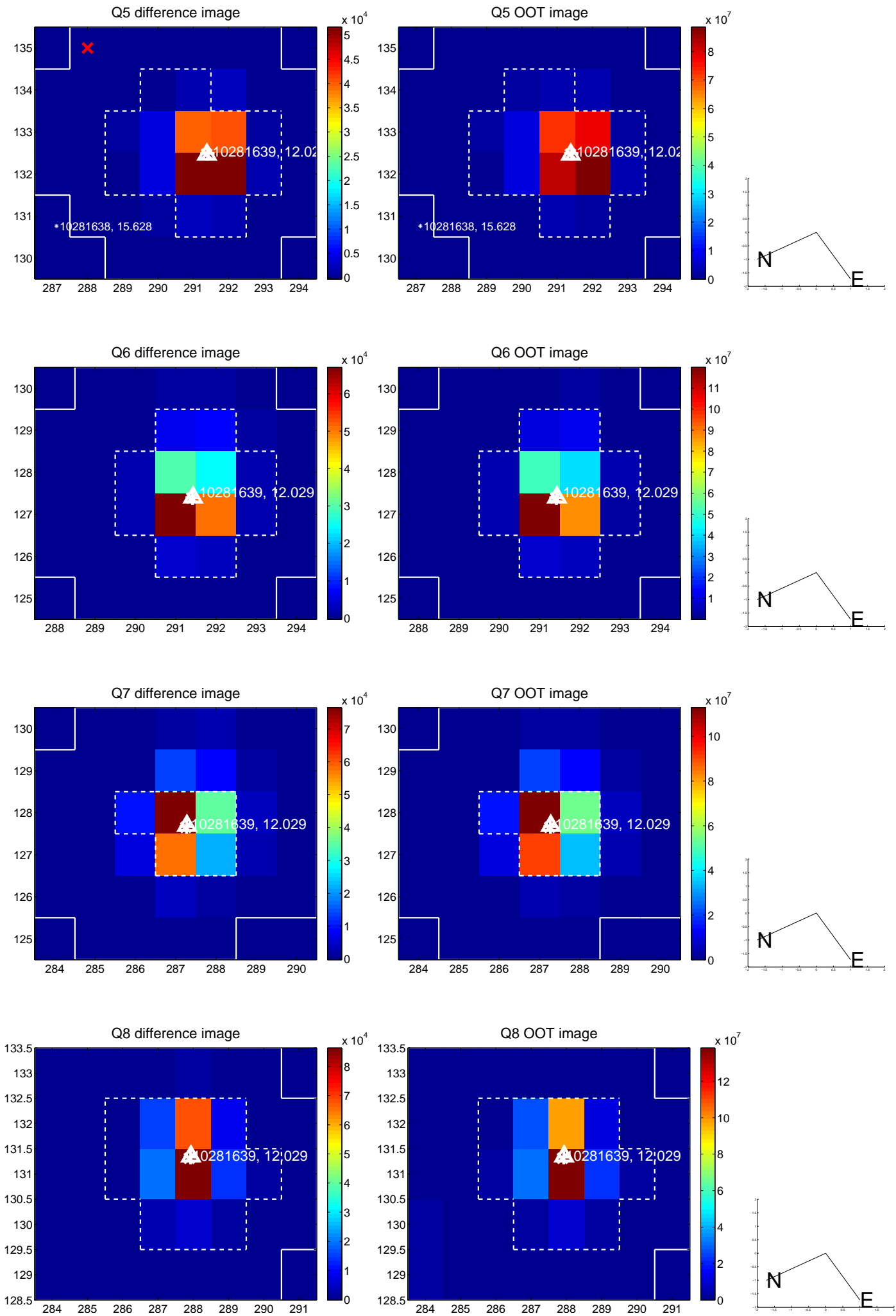


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

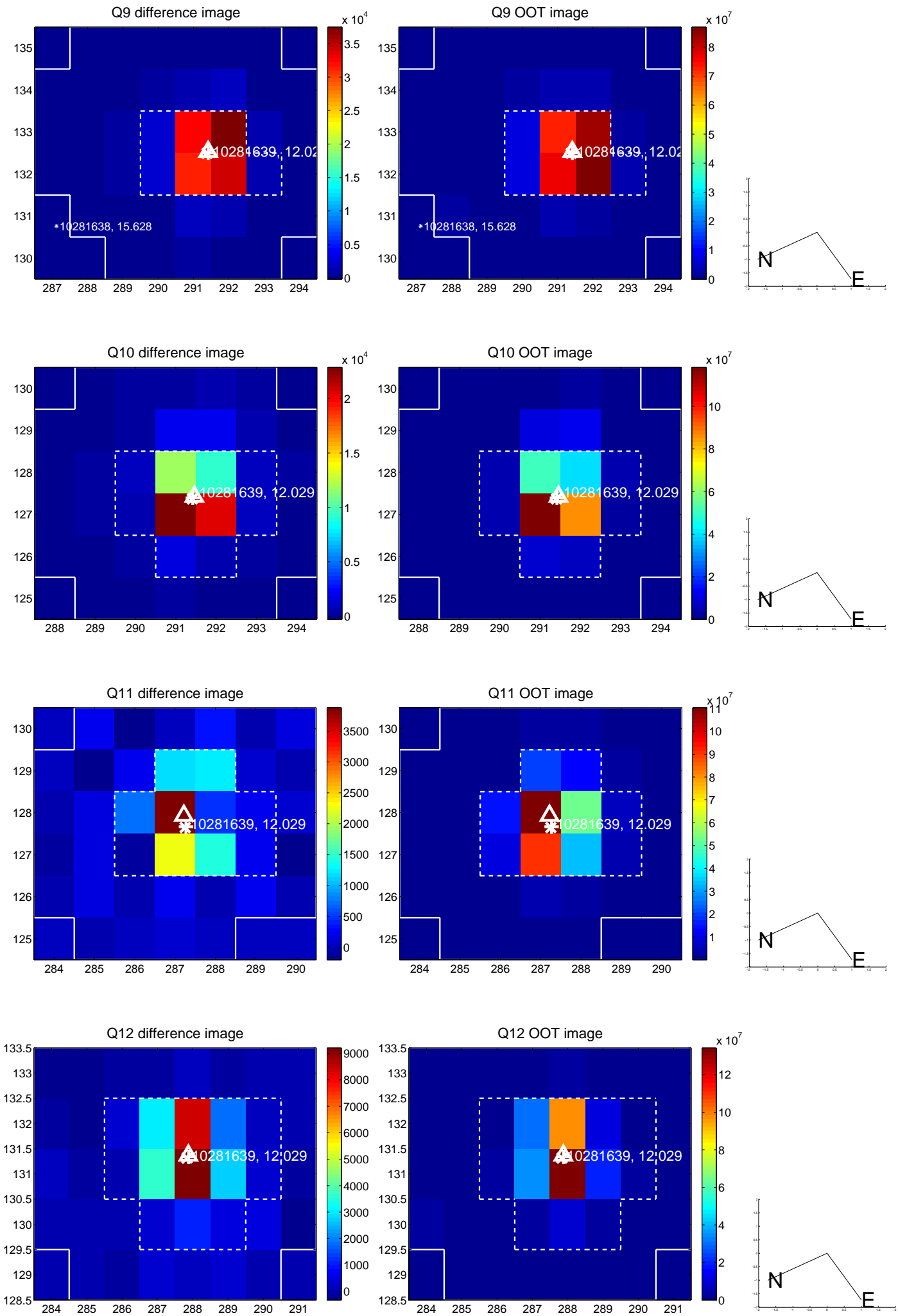
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



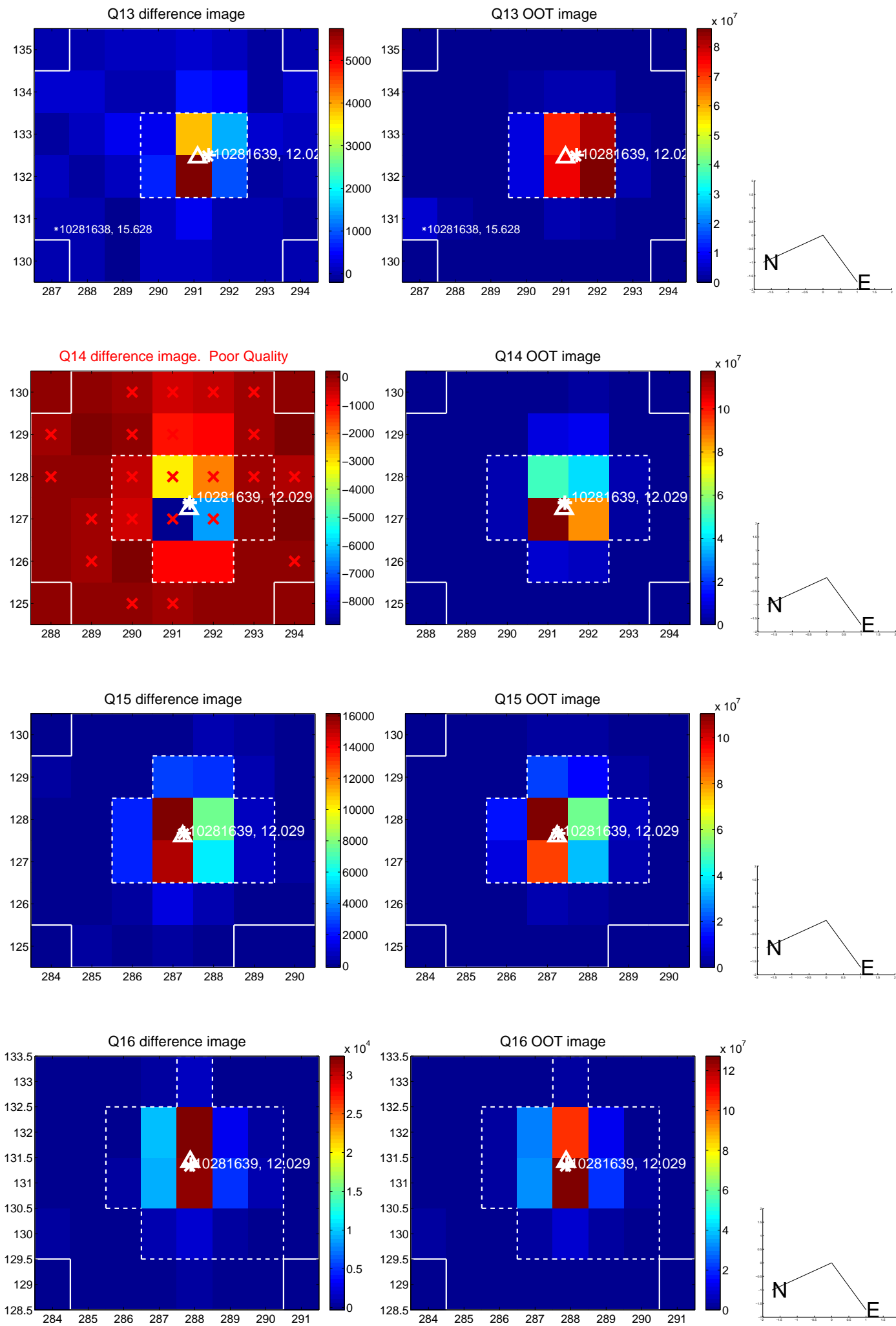
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



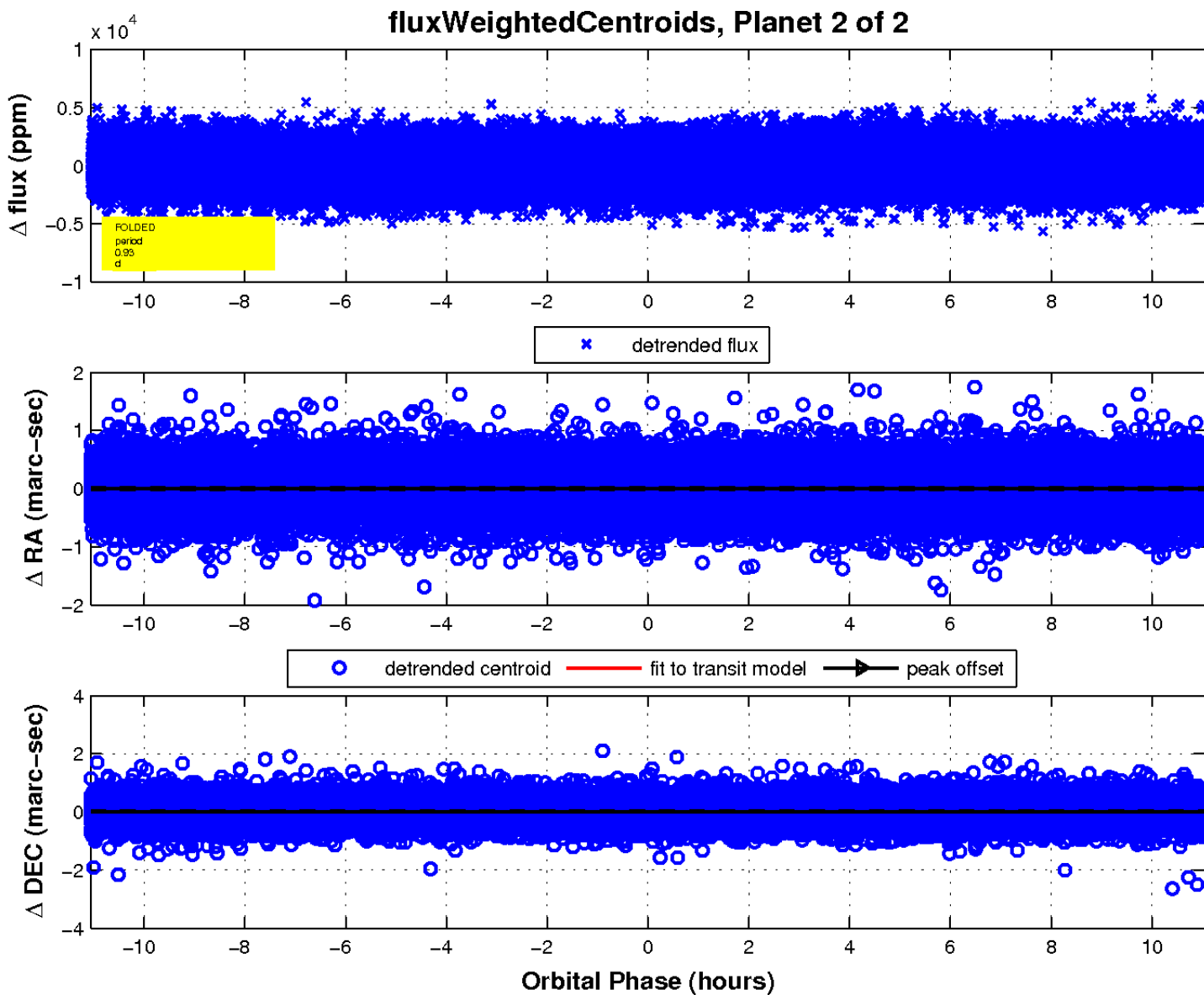
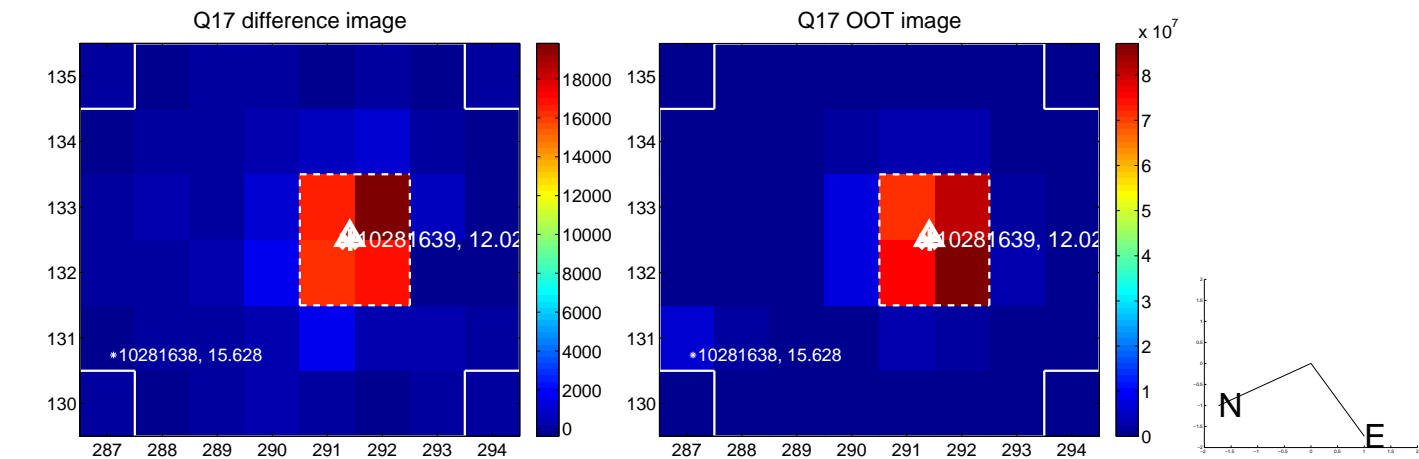
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

