

KIC 010083623

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})
010083623-01	OBS	3921.01	1.278540	131.535601	716.3	0.914	30.5	43.8	0.83	5636	2.69	1247.85
010083623-02	OBS	No	1.278670	132.272477	58.3	4.908	9.3	8.7	0.83	5636	0.71	1247.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010083623-01	OBS	FP	0.00	0	1	0	0	HAS_SEC_TCE—CENT_KIC_POS
010083623-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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 010083623-01

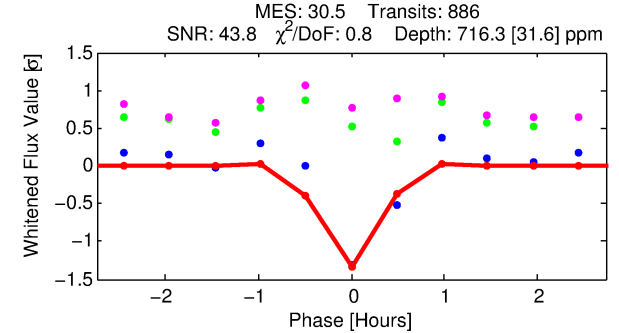
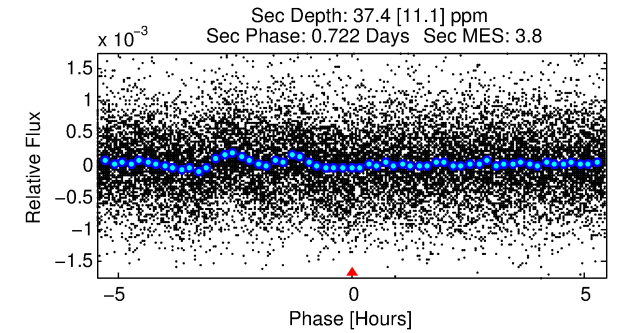
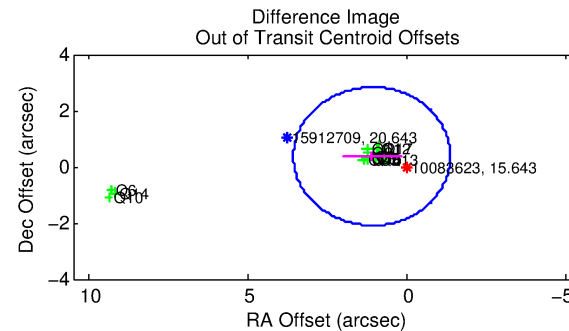
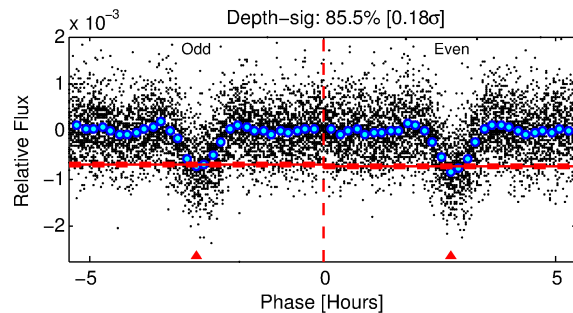
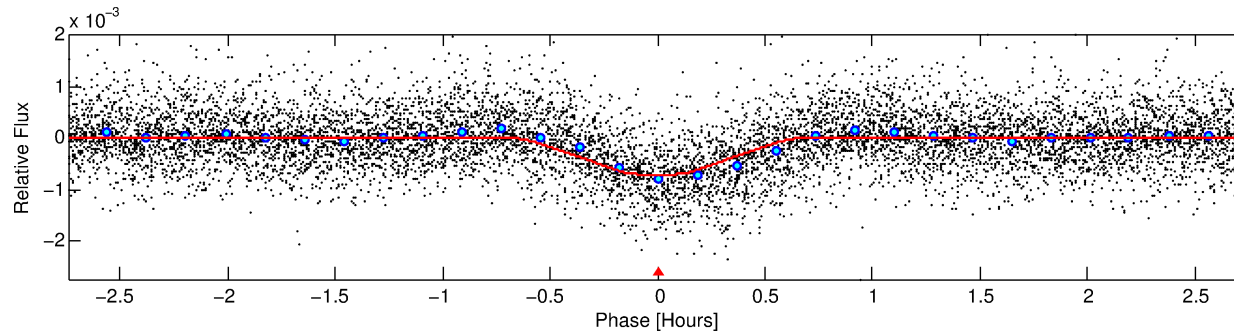
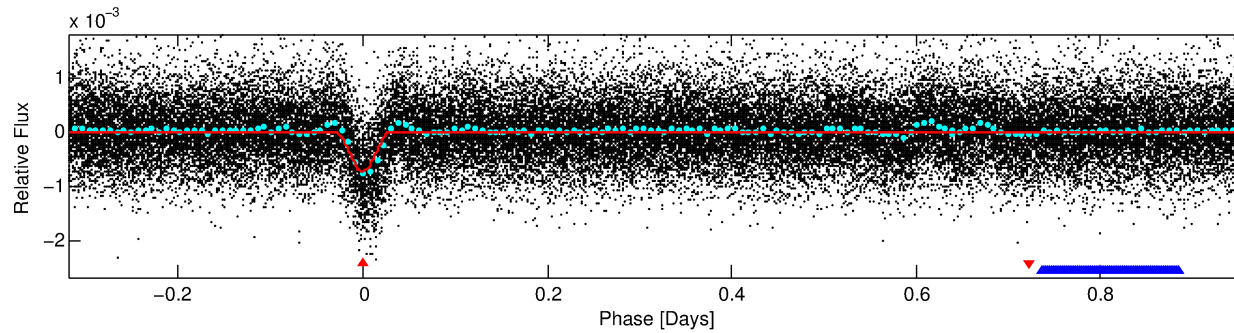
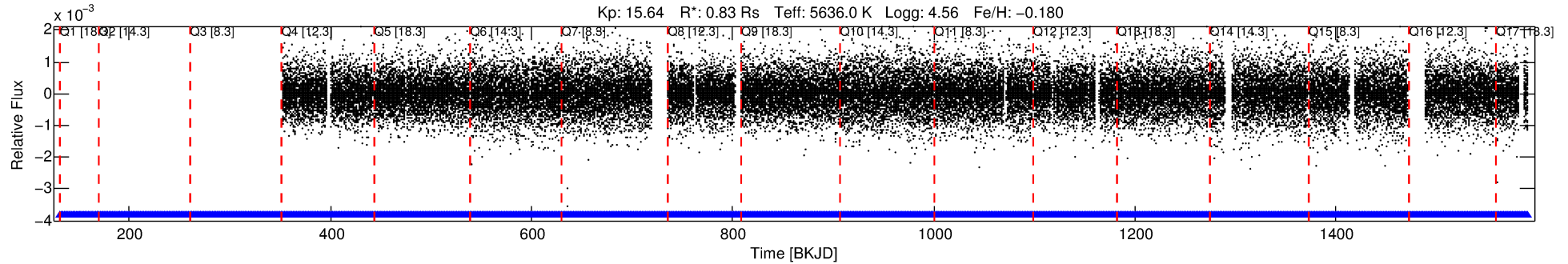
No Significant Match Found

DV One-Page Summary

KIC: 10083623 Candidate: 1 of 2 Period: 1.279 d

KOI: K03921.01 Corr: 0.801

Kp: 15.64 R*: 0.83 Rs Teff: 5636.0 K Logg: 4.56 Fe/H: -0.180



DV Fit Results:

Period = 1.27854 [0.00000] d
Epoch = 131.5356 [0.0004] BKJD
Rp/R* = 0.0298 [0.0047]
a/R* = 5.36 [3.56]
b = 0.90 [0.14]
Seff = 1247.85 [434.10]
Teq = 1516 [132] K
Rp = 2.69 [0.82] Re
a = 0.0223 [0.0049] AU
Ag = 1.41 [0.76] [0.54σ]
Teffp = 2555 [289] K [3.27σ]

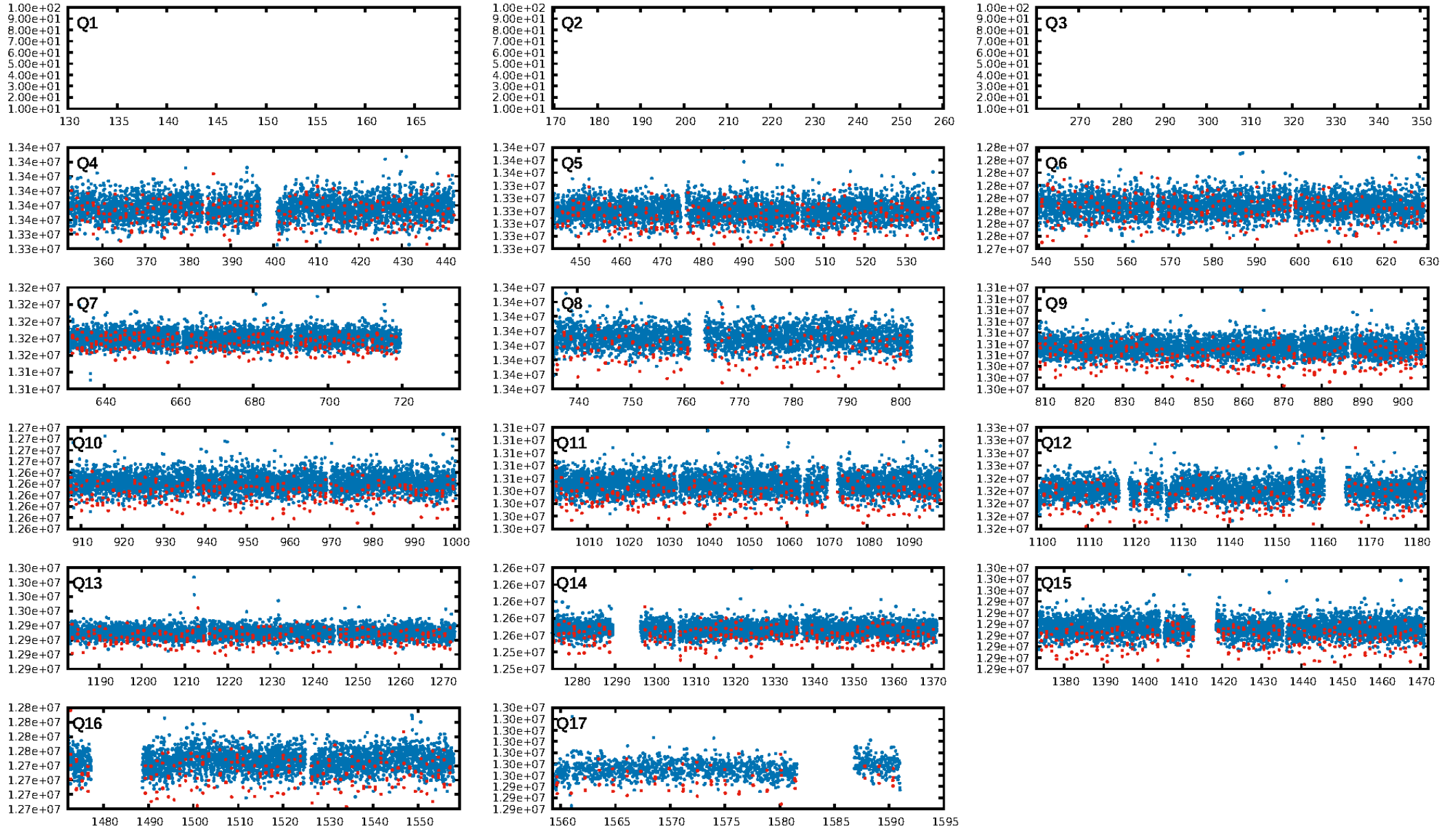
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.06e-179
RollingBand-fgt: 1.00 [865/865]
GhostDiagnostic-chr: 4.576
Centroid-sig: 0.0%
Centroid-so: 0.854 arcsec [3.61σ]
OotOffset-rm: 1.164 arcsec [1.42σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-rm: 0.410 arcsec [4.98σ]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

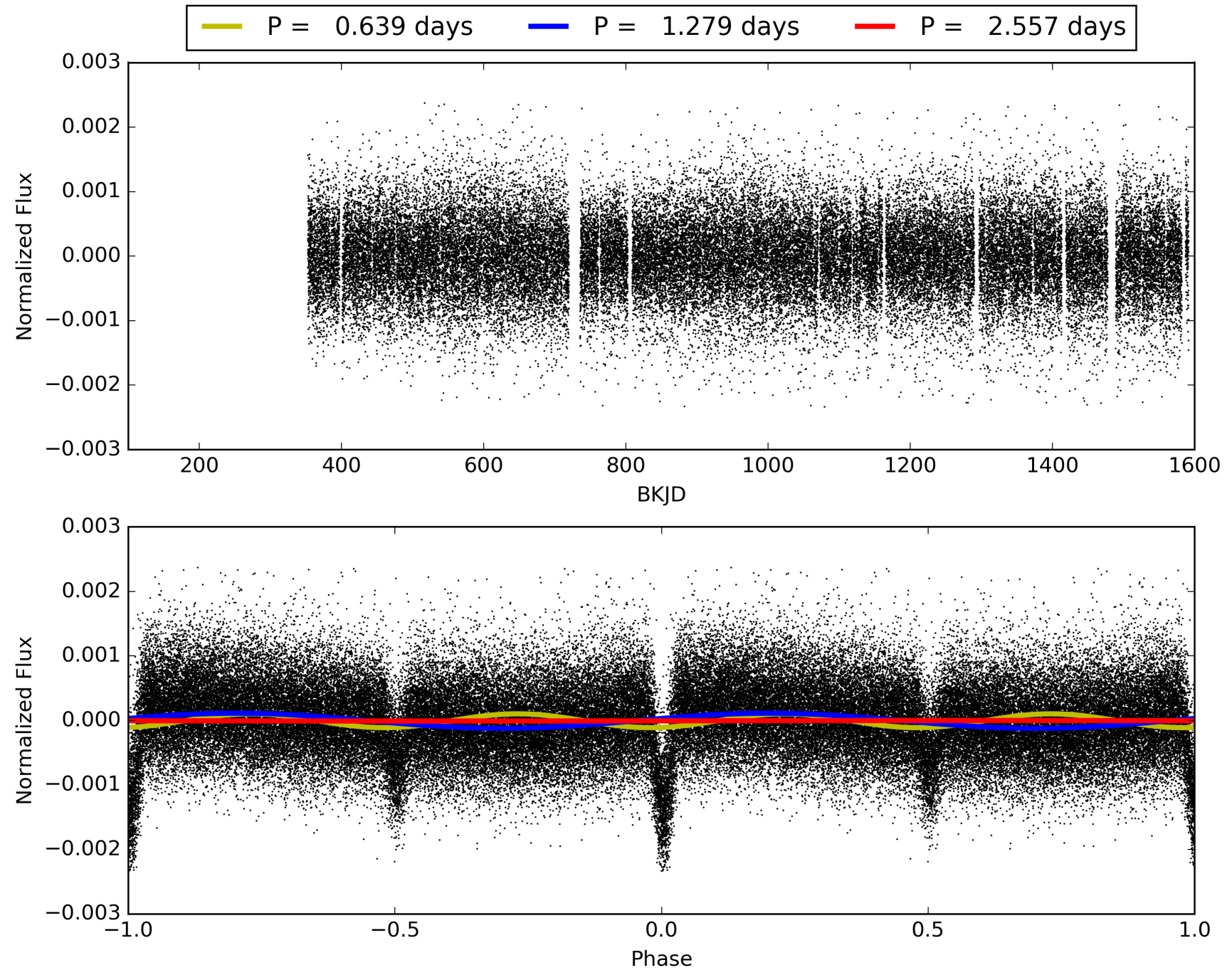
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:20:56 Z

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

TCE 010083623-01, PDC Light Curves

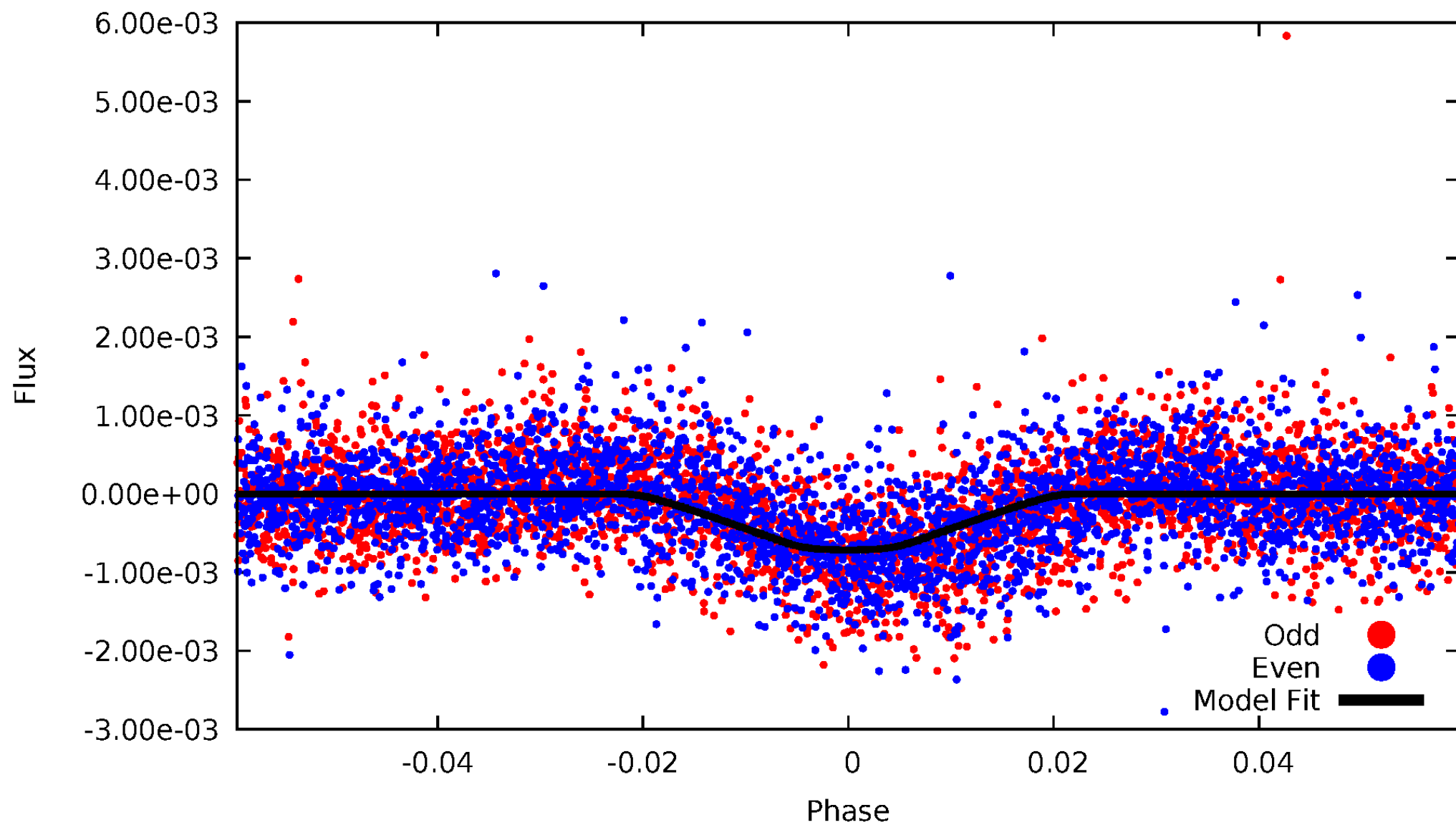


TCE 010083623-01



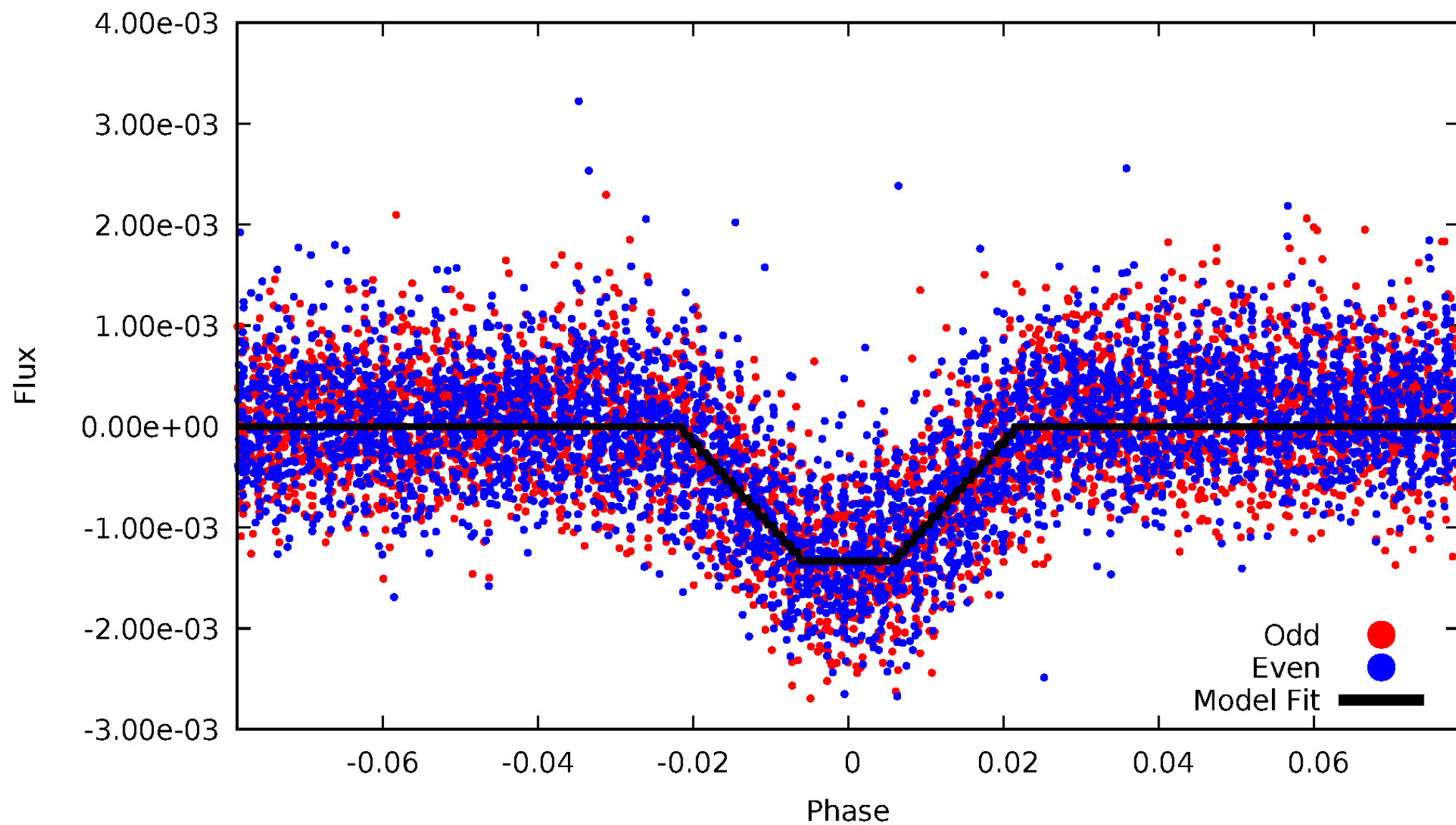
DV Odd/Even

TCE 010083623-01



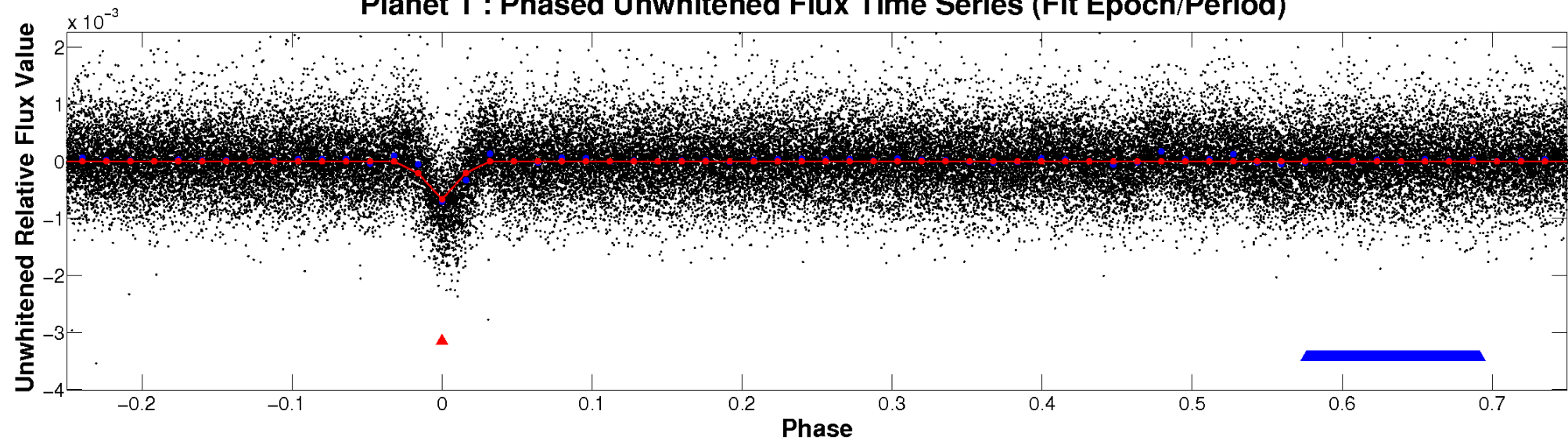
ALT Odd/Even

TCE 010083623-01

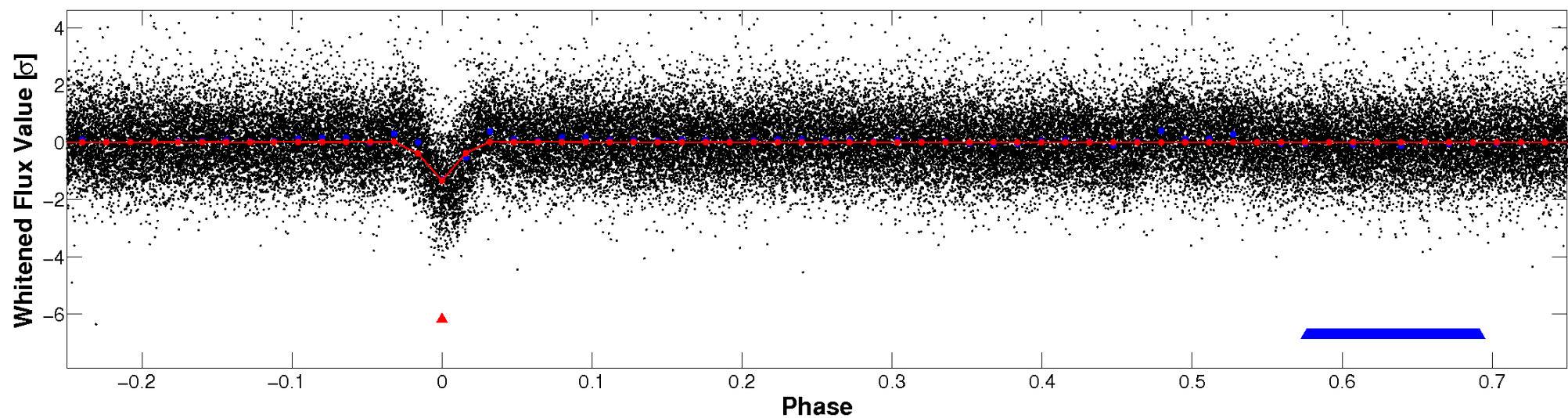


Non-Whitened Vs. Whitened Light Curve

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

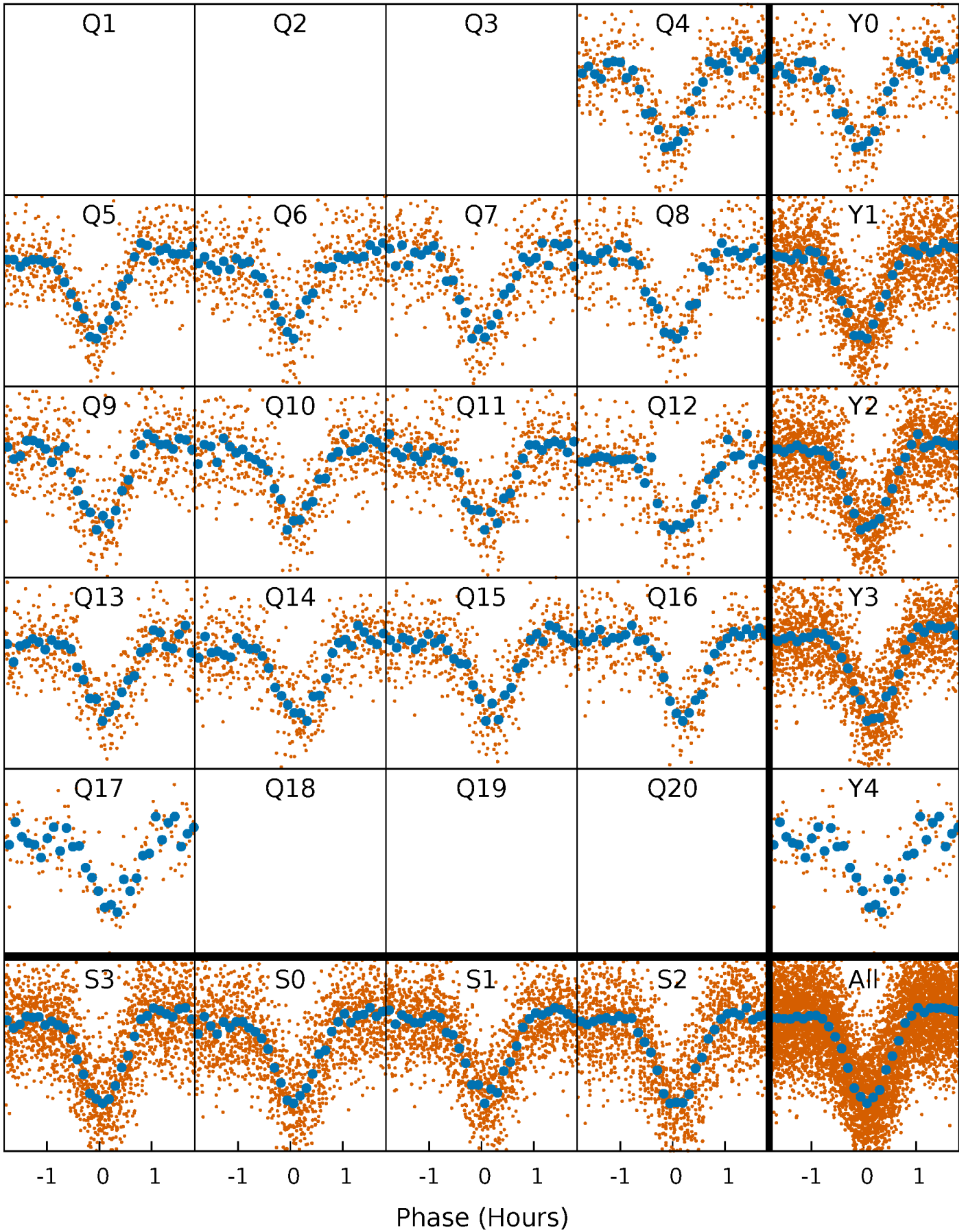


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



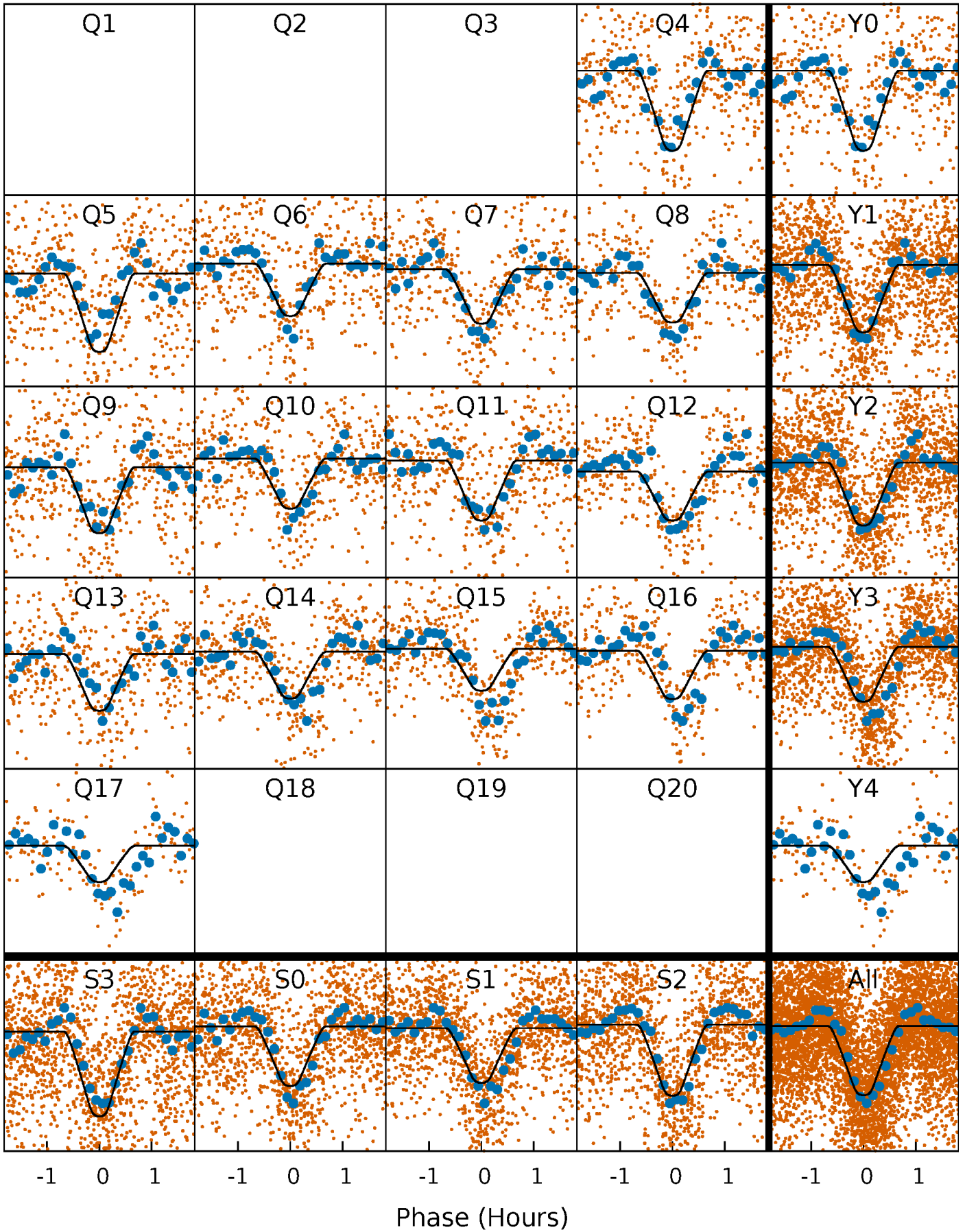
PDC Quarter-Phased Transit Curves

TCE 010083623-01 P= 1.278540 Days $T_0=131.535601$ (BKJD)



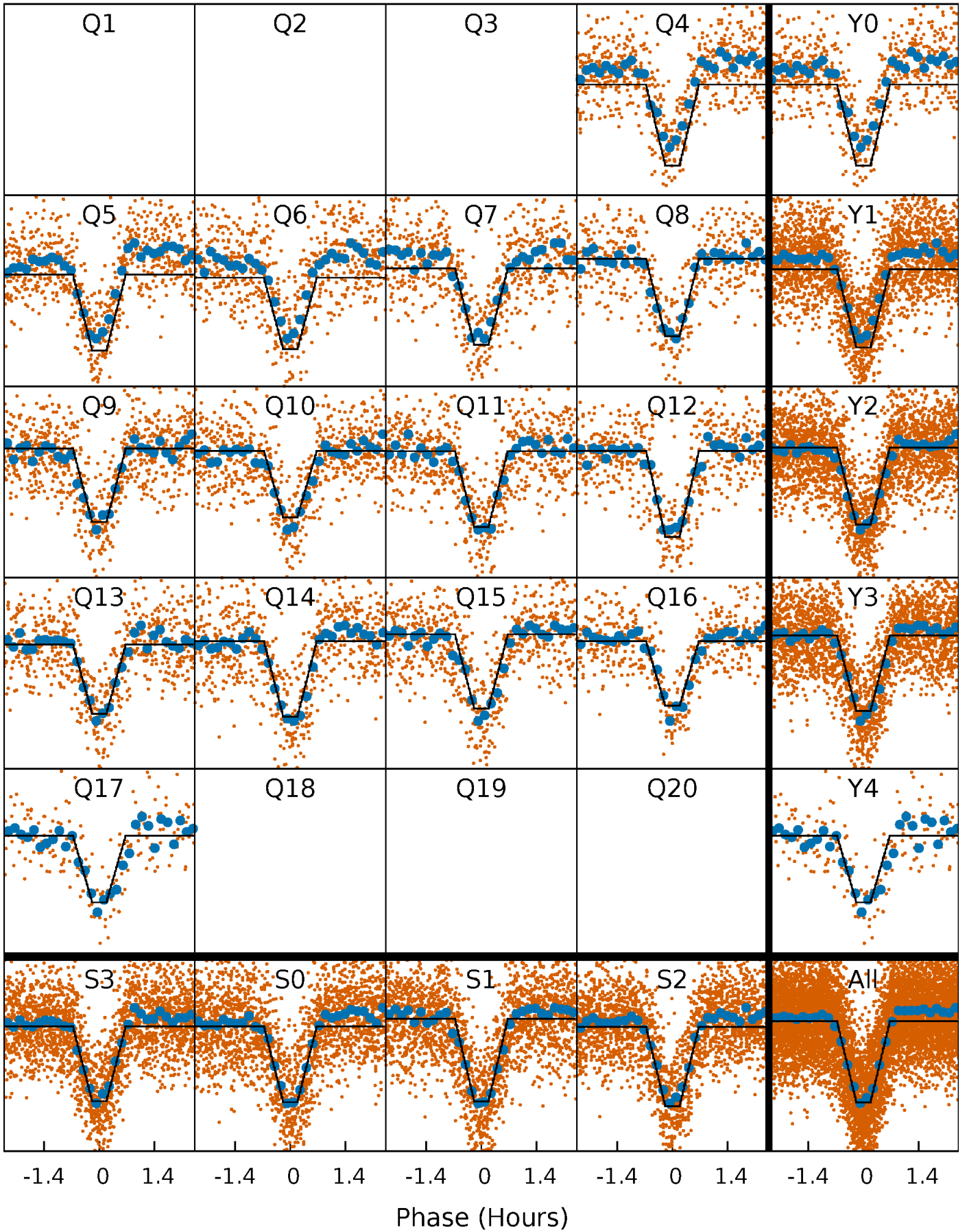
DV Quarter-Phased Transit Curves

TCE 010083623-01 P= 1.278540 Days $T_0=131.535601$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

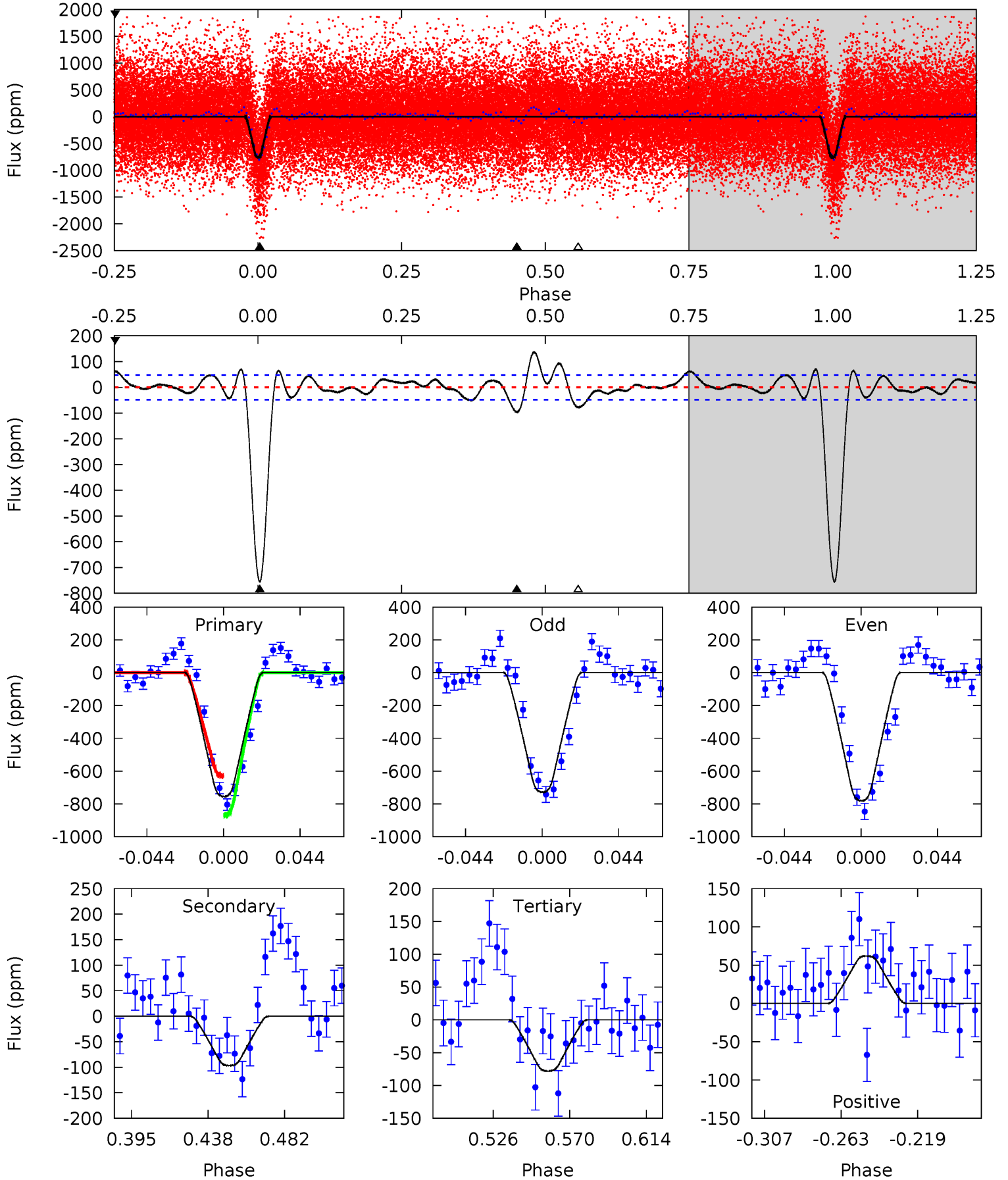
TCE 010083623-01 P= 1.278549 Days $T_0=131.533009$ (BKJD)



DV Model-Shift Uniqueness Test

010083623-01, P = 1.278540 Days, E = 131.535601 Days

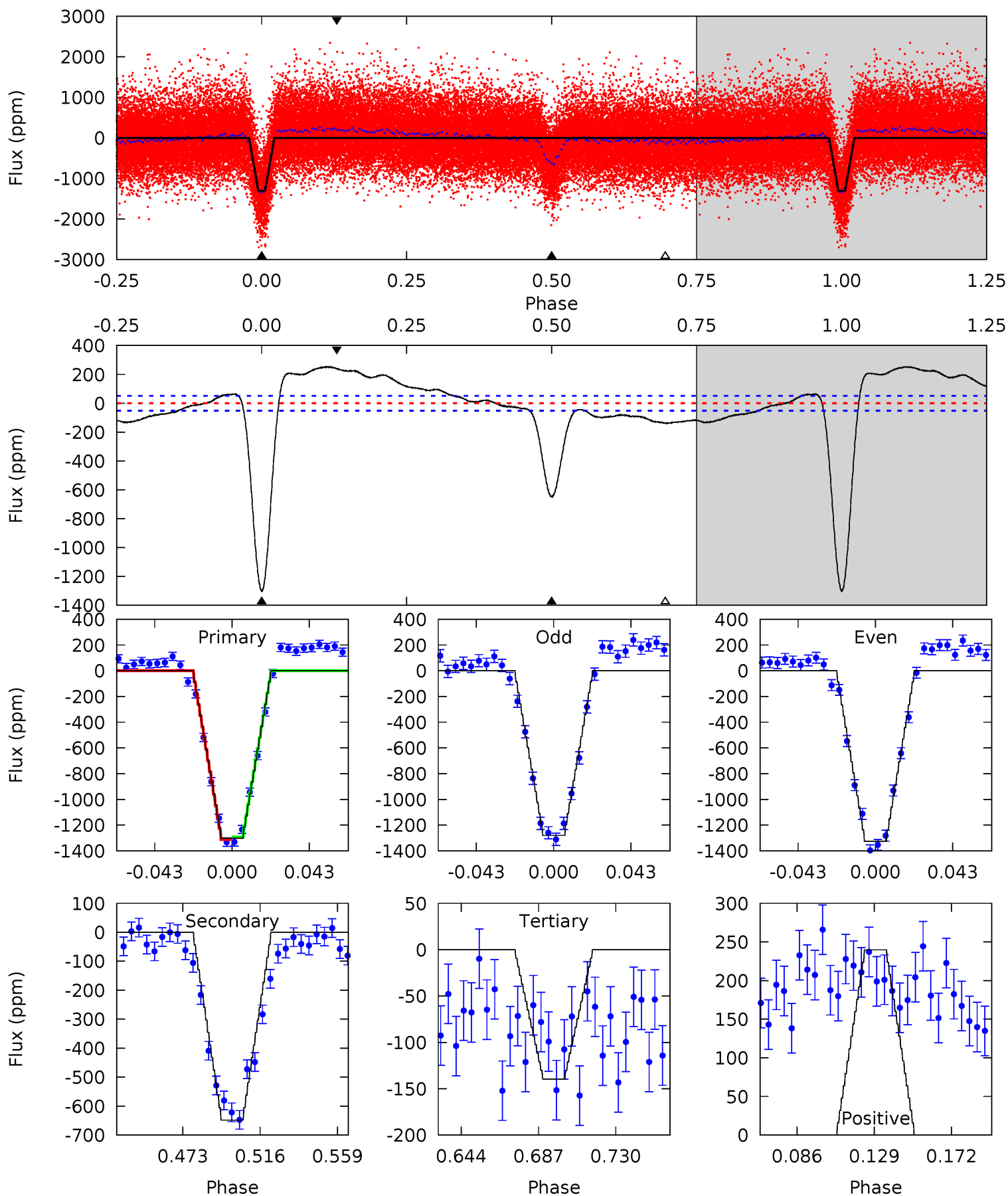
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
74.7	9.57	7.72	6.14	4.73	2.02	2.82	67.0	68.6	1.85	3.44	2.58	0.99	0.15	11.9



Alt Model-Shift Uniqueness Test

010083623-01, P = 1.278549 Days, E = 131.533009 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
120.1	59.8	12.9	22.1	4.74	2.02	11.4	107.2	98.0	46.9	37.7	2.11	0.99	0.16	0.96



Stellar Parameters For KIC 010083623

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5636^{+186}_{-186}	$4.557^{+0.044}_{-0.176}$	$-0.180^{+0.300}_{-0.300}$	$0.827^{+0.217}_{-0.078}$	$0.899^{+0.104}_{-0.095}$	$2.241^{+0.412}_{-1.106}$
	+3%/-3%	+1%/-4%	+167%/-167%	+26%/-9%	+12%/-11%	+18%/-49%
Source	KIC0	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 010083623-01 / KOI 3921.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-97 ± 10	$2.77^{+0.59}_{-0.47}$	2163^{+139}_{-101}	3607^{+262}_{-221}	$3.401^{+1.549}_{-1.142}$
Alt.	-649 ± 11	$3.43^{+0.58}_{-0.50}$	2160^{+143}_{-101}	4782^{+322}_{-247}	15^{+5}_{-4}

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

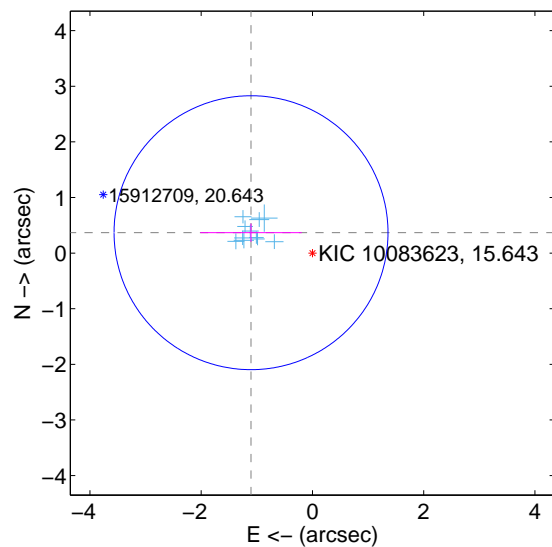
Supplemental centroid analysis for 010083623-01. Kepler magnitude: 15.64. Transit SNR 43.82

There are 14 quarters with good PRF difference image offsets

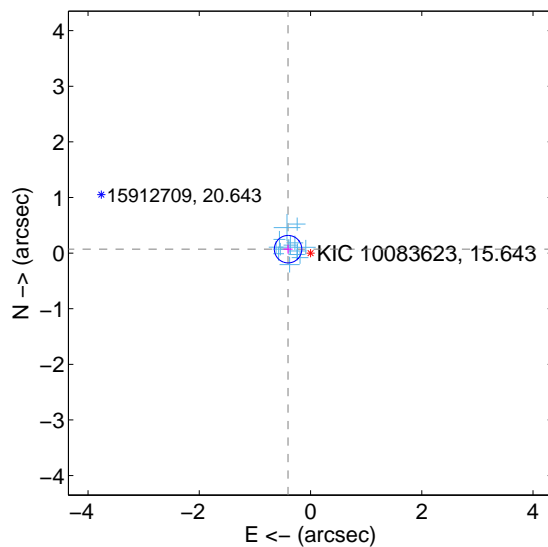
The direct PRF centroid is offset from the target star catalog position by about 0.48 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.164 ± 0.821	1.42	1.104 ± 0.912	0.367 ± 0.163
PRF-fit source offset from KIC position	0.410 ± 0.082	4.98	0.404 ± 0.082	0.071 ± 0.080
photometric centroid source offset	0.85 ± 0.24	3.61	0.85 ± 0.24	-0.03 ± 0.23

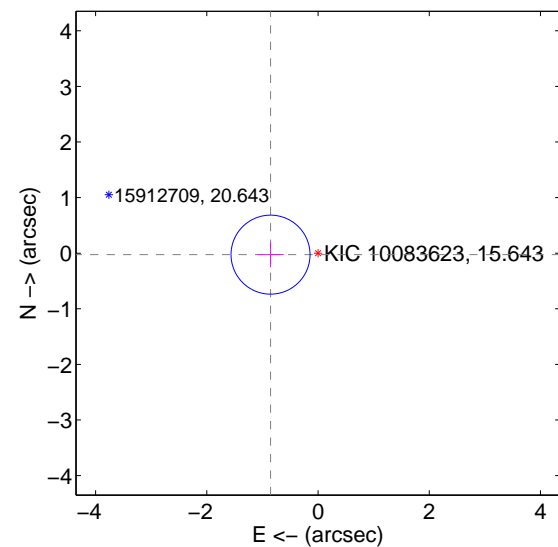
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

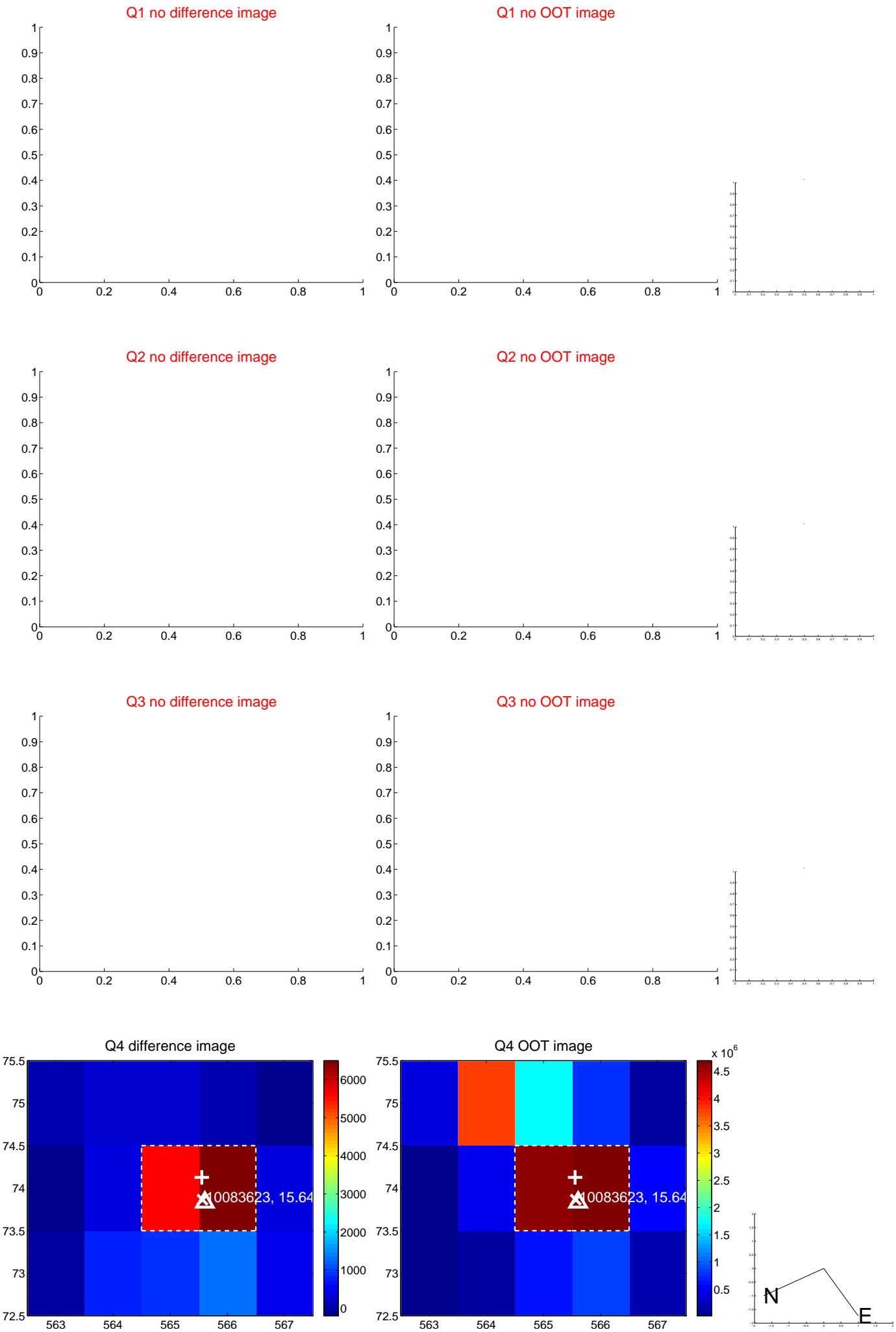


offset from photometric centroids

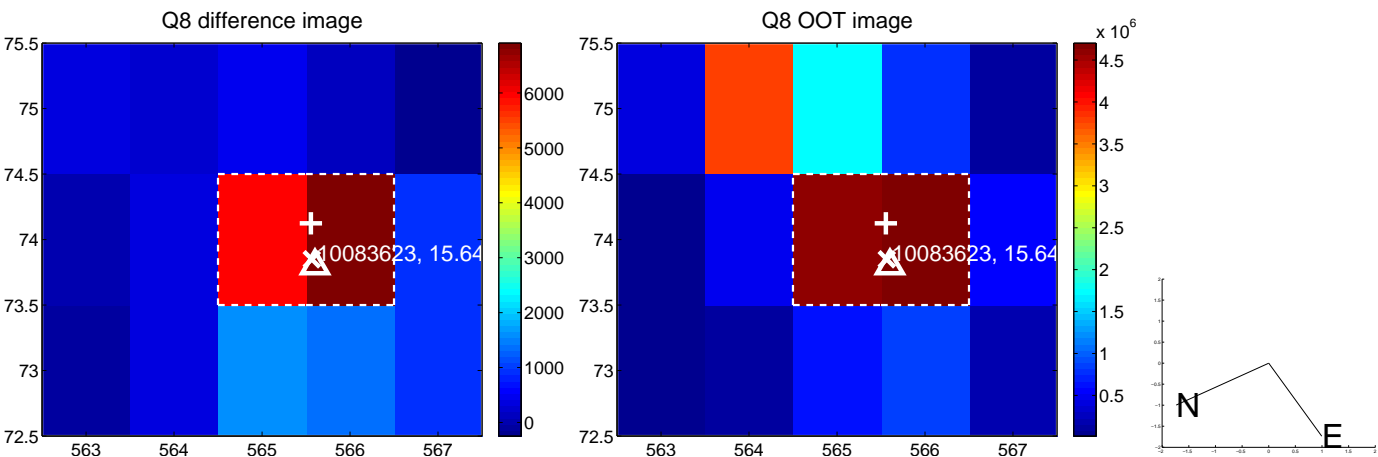
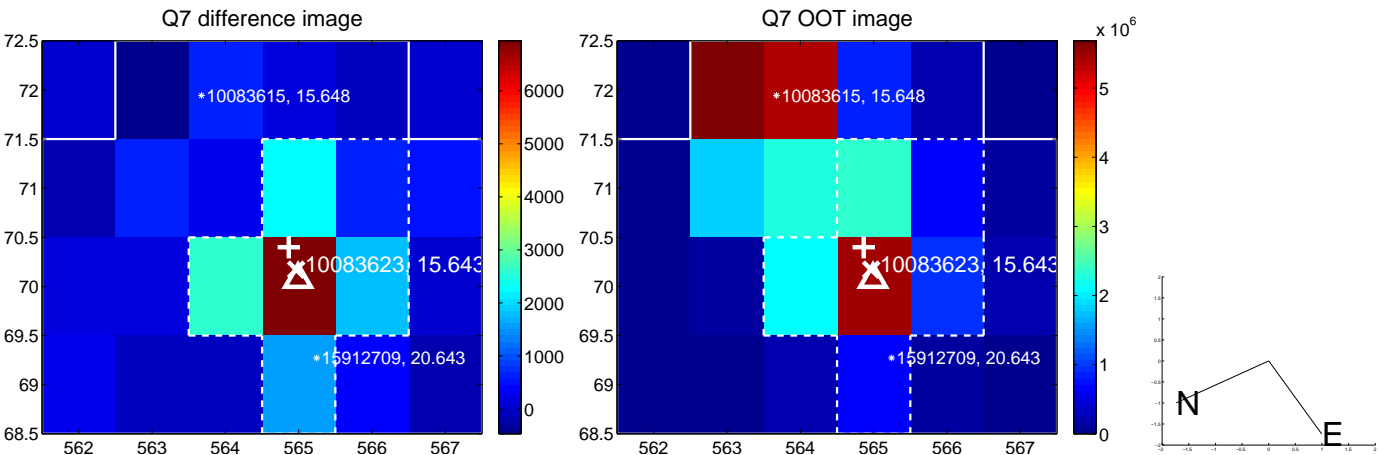
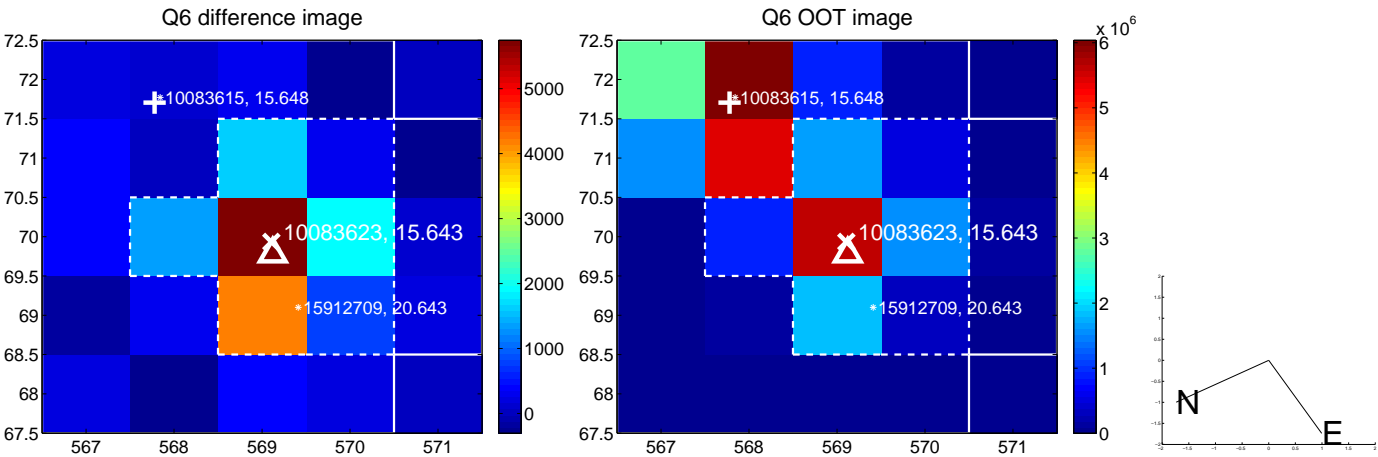
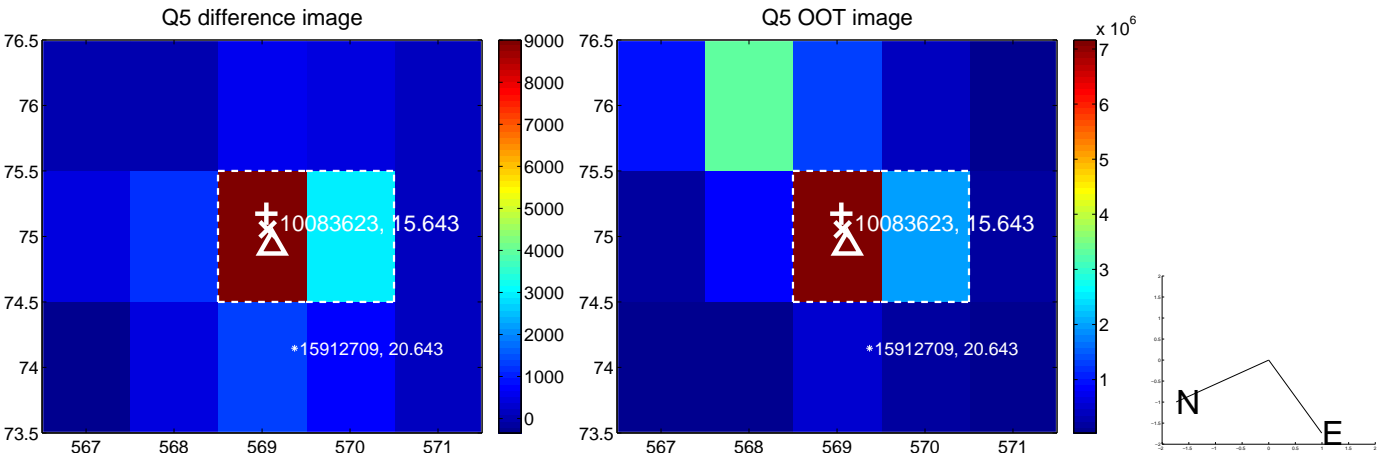


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

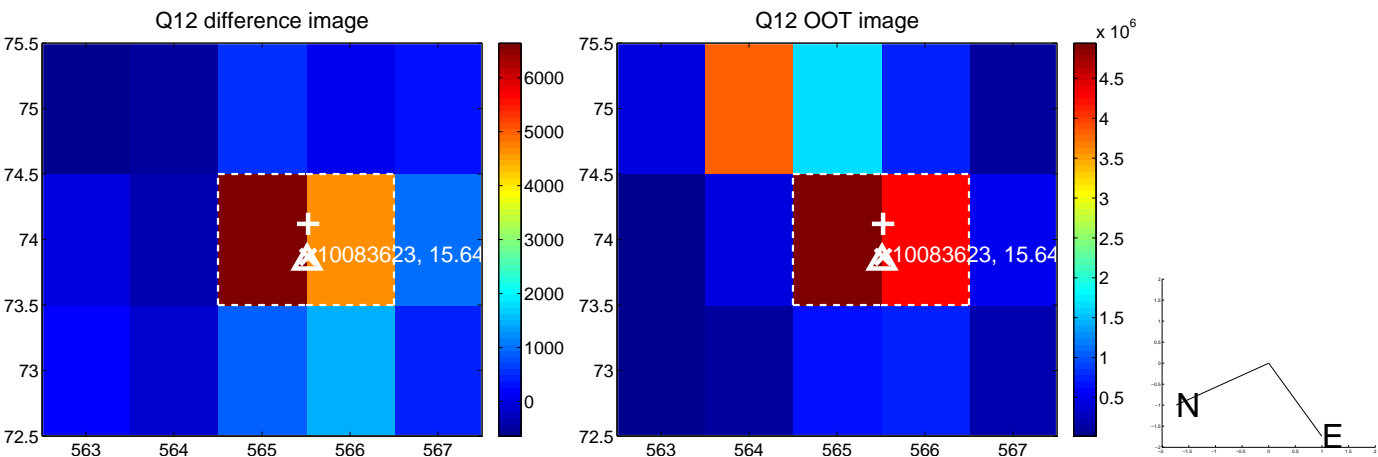
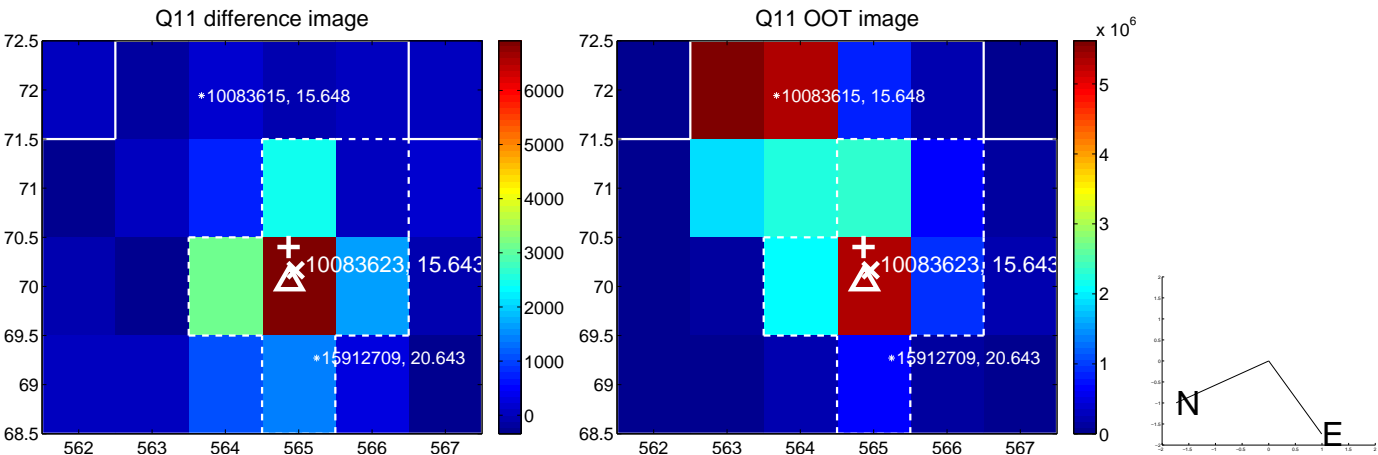
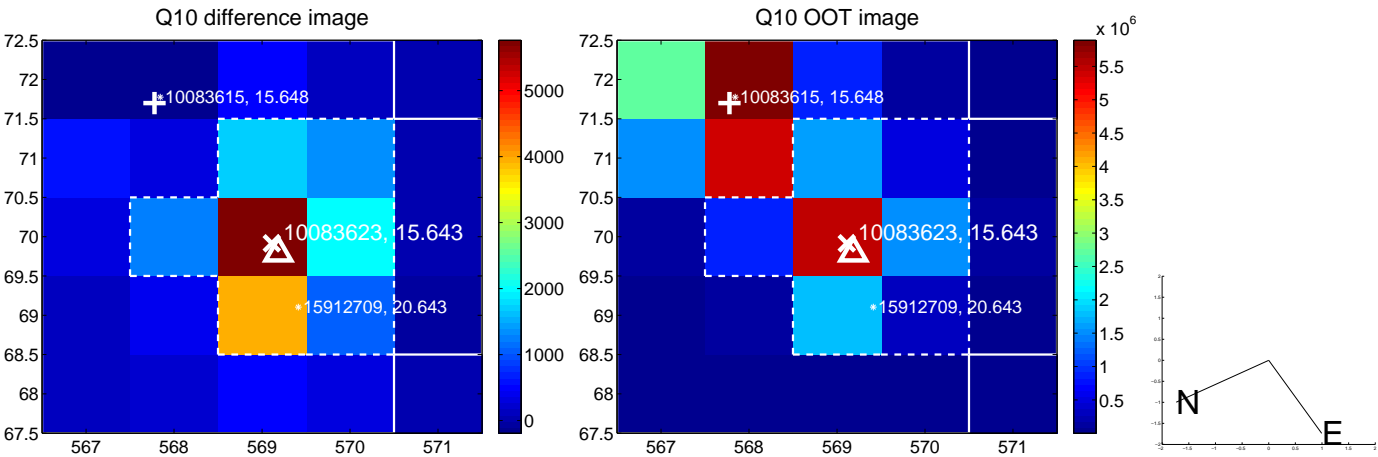
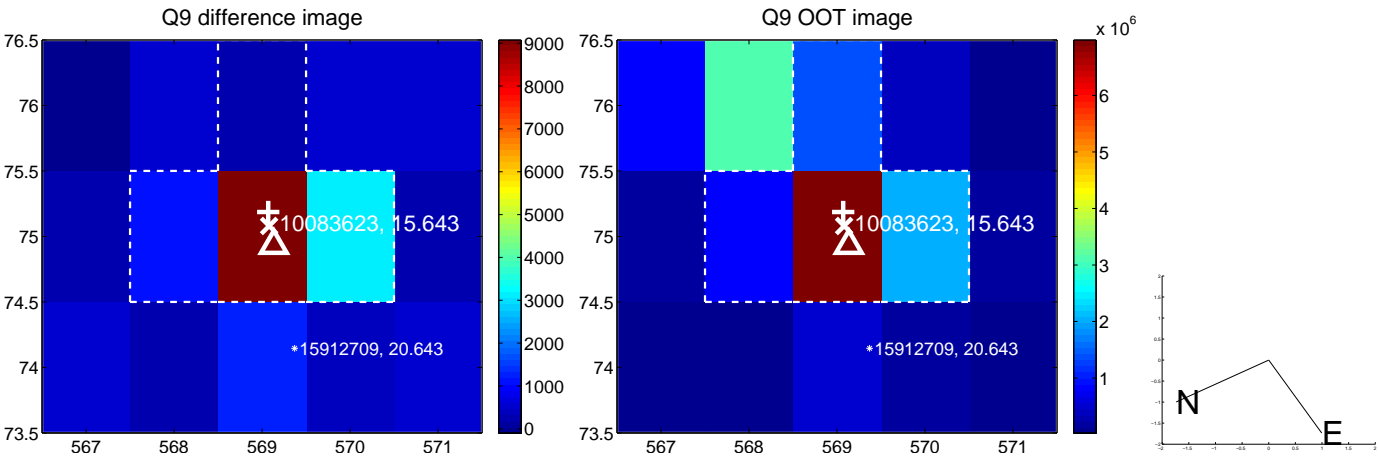
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



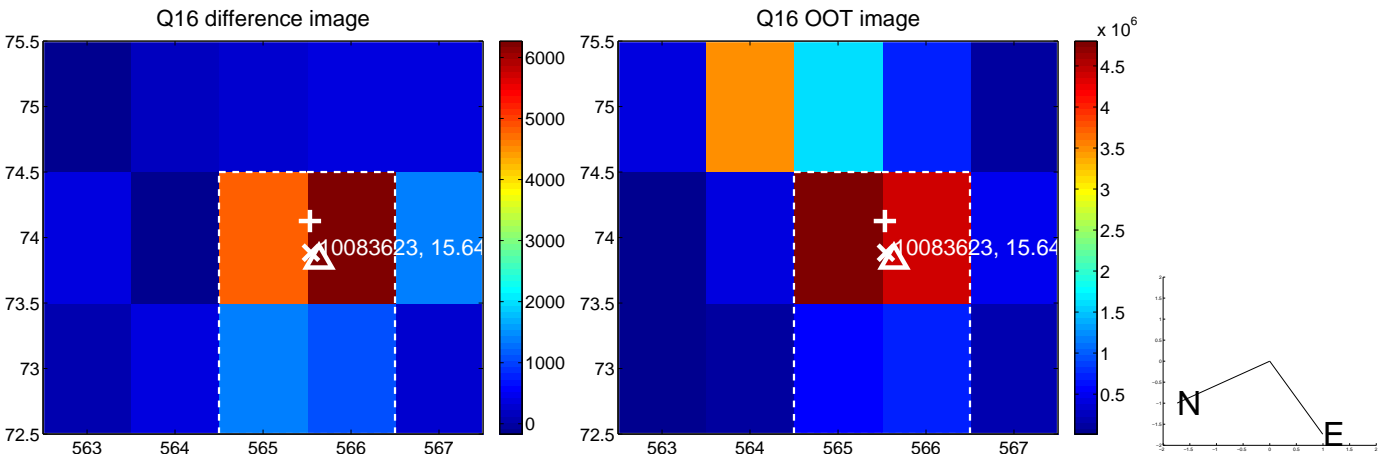
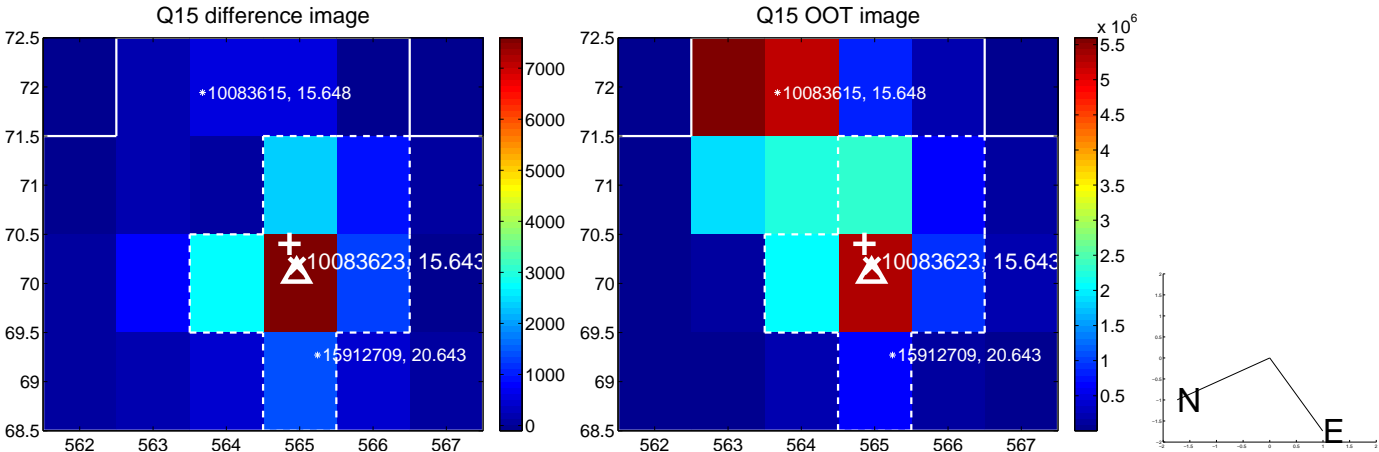
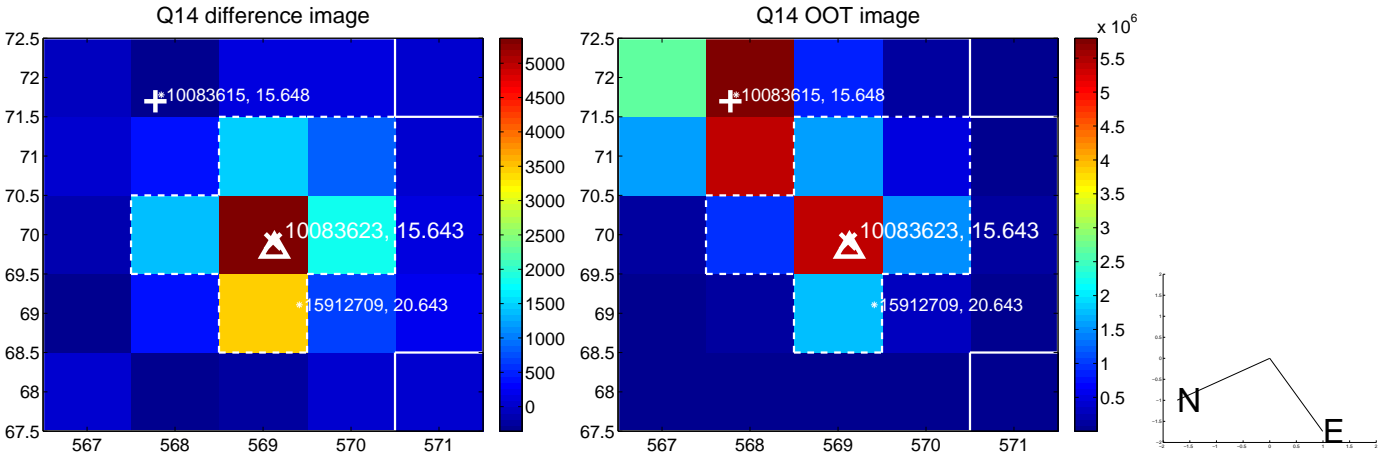
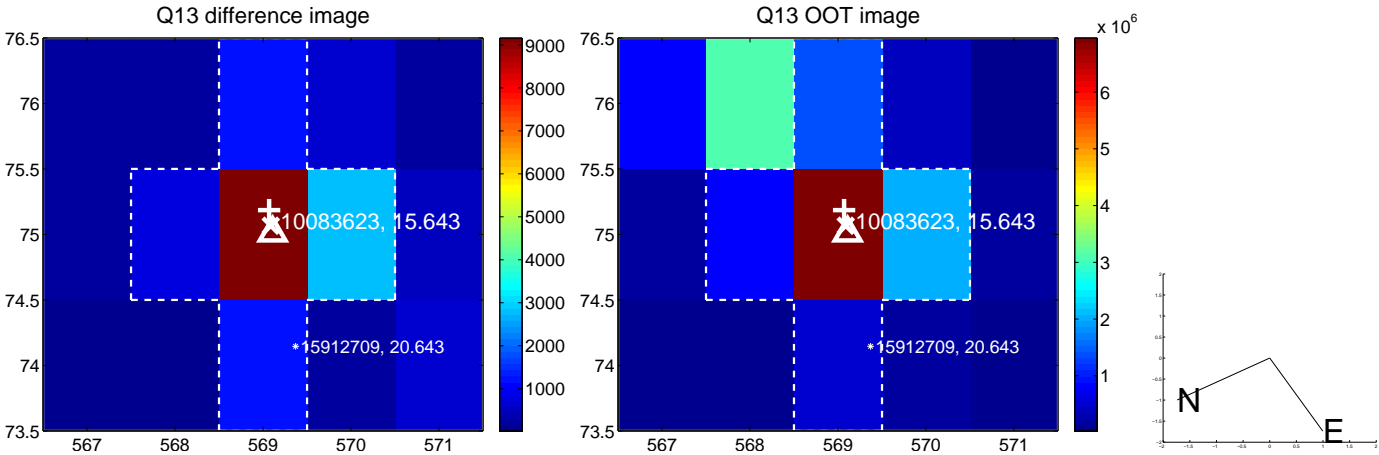
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



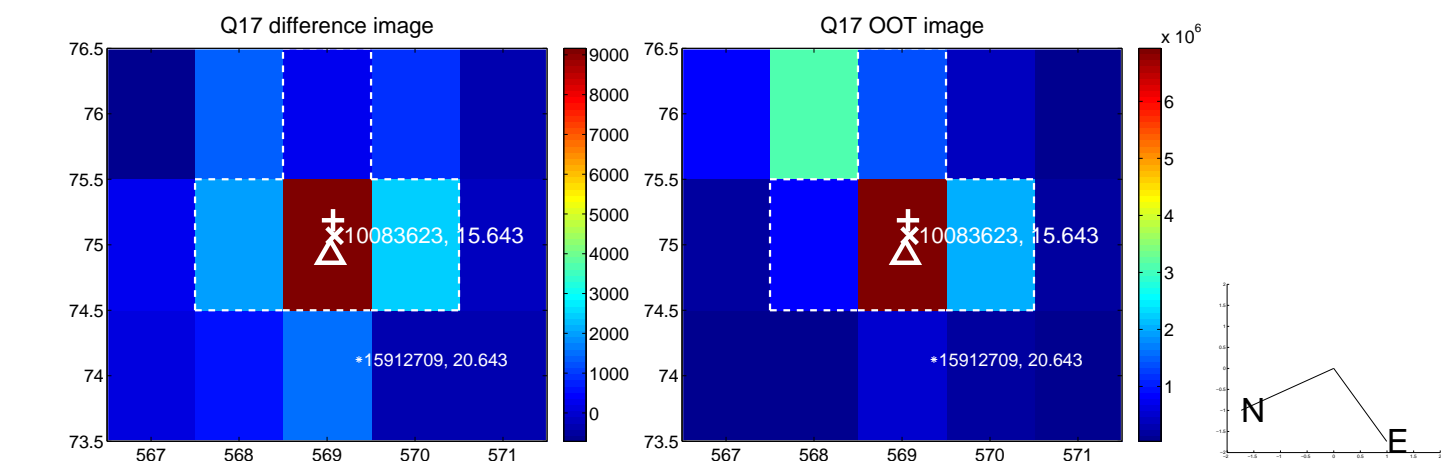
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



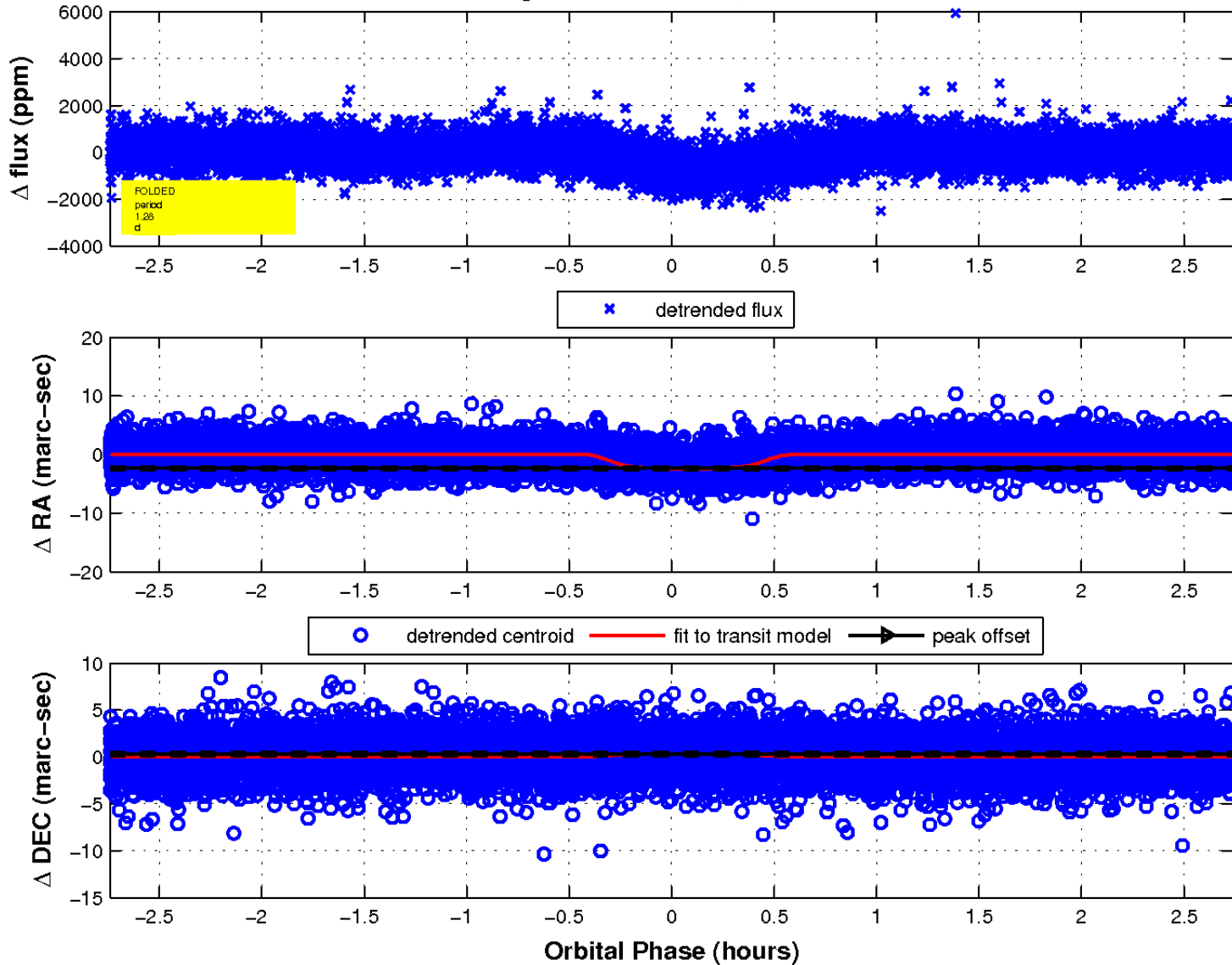
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



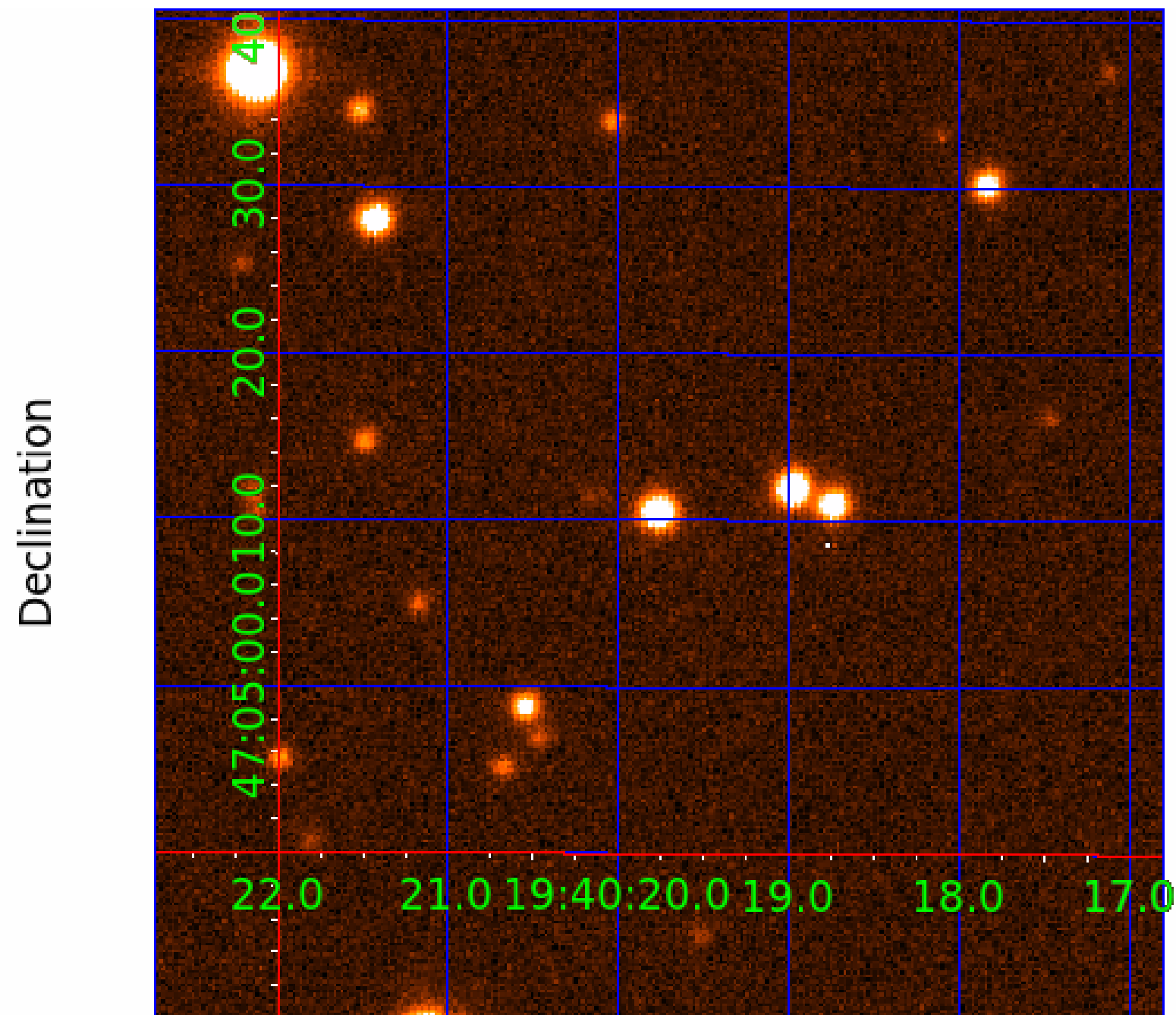
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 2



UKIRT Image



KIC 010083623

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})
010083623-01	OBS	3921.01	1.278540	131.535601	716.3	0.914	30.5	43.8	0.83	5636	2.69	1247.85
010083623-02	OBS	No	1.278670	132.272477	58.3	4.908	9.3	8.7	0.83	5636	0.71	1247.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010083623-01	OBS	FP	0.00	0	1	0	0	HAS_SEC_TCE—CENT_KIC_POS
010083623-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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 010083623-02

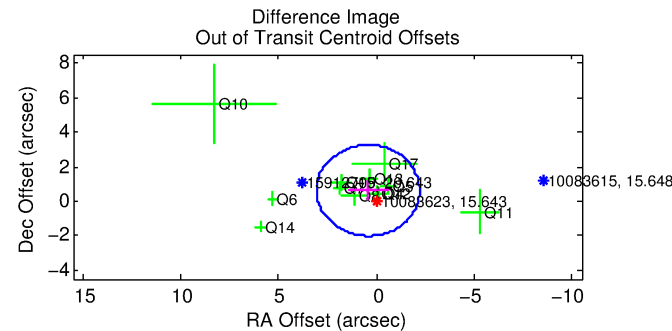
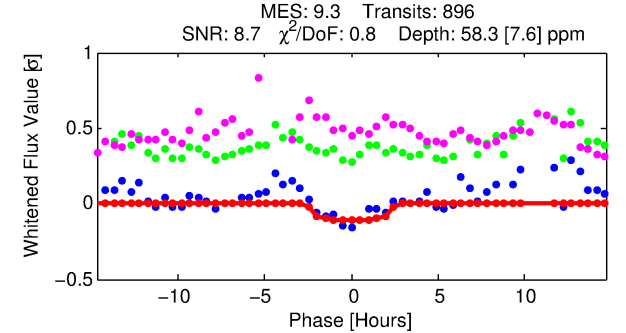
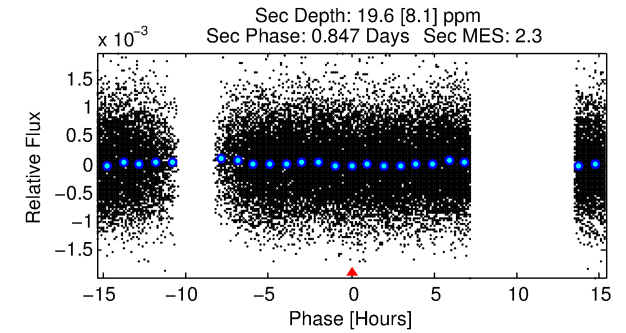
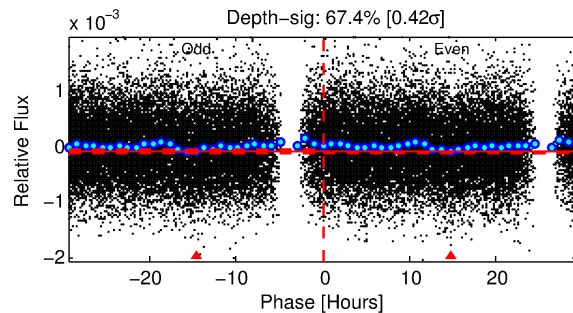
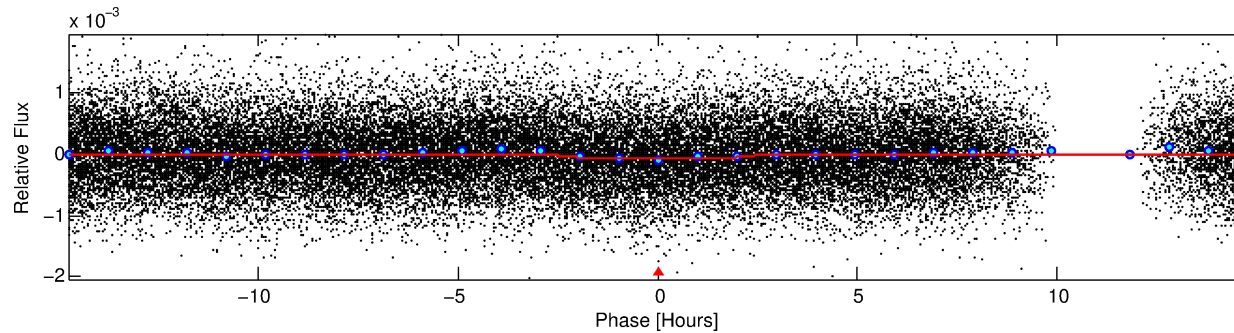
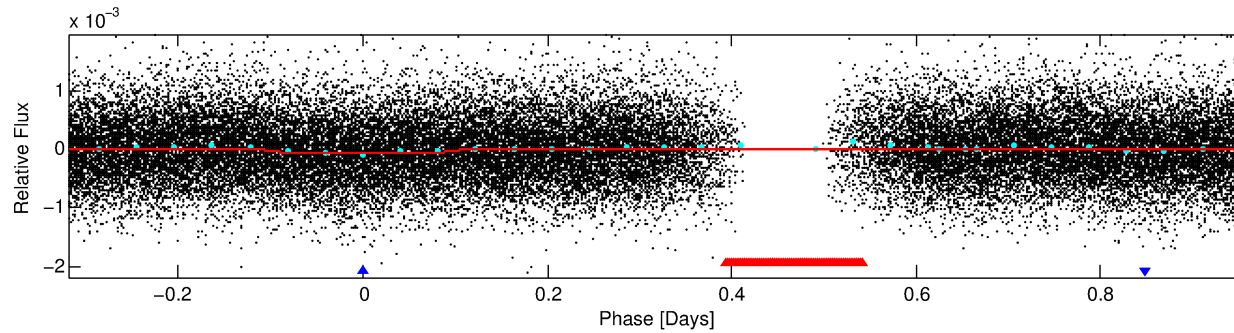
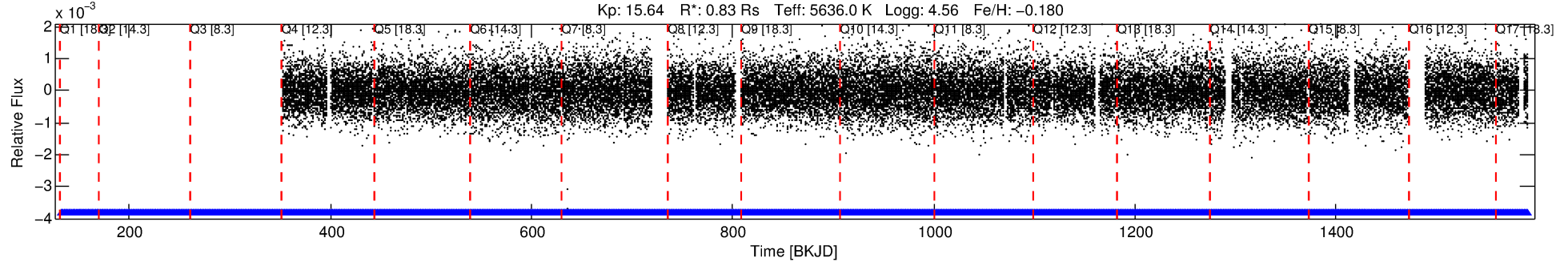
No Significant Match Found

DV One-Page Summary

KIC: 10083623 Candidate: 2 of 2 Period: 1.279 d

KOI: K03921 Corr: No Ephemeris Match

Kp: 15.64 R*: 0.83 Rs Teff: 5636.0 K Logg: 4.56 Fe/H: -0.180



DV Fit Results:

Period = 1.27867 [0.00002] d
Epoch = 132.2725 [0.0068] BKJD
Rp/R* = 0.0078 [0.0067]
a/R* = 1.48 [3.06]
b = 0.81 [1.61]
Seff = 1247.68 [434.04]
Teq = 1515 [132] K
Rp = 0.71 [0.63] Re
a = 0.0223 [0.0049] AU
Ag = 10.69 [19.04] [0.51σ]
Teffp = 4237 [1861] K [1.46σ]

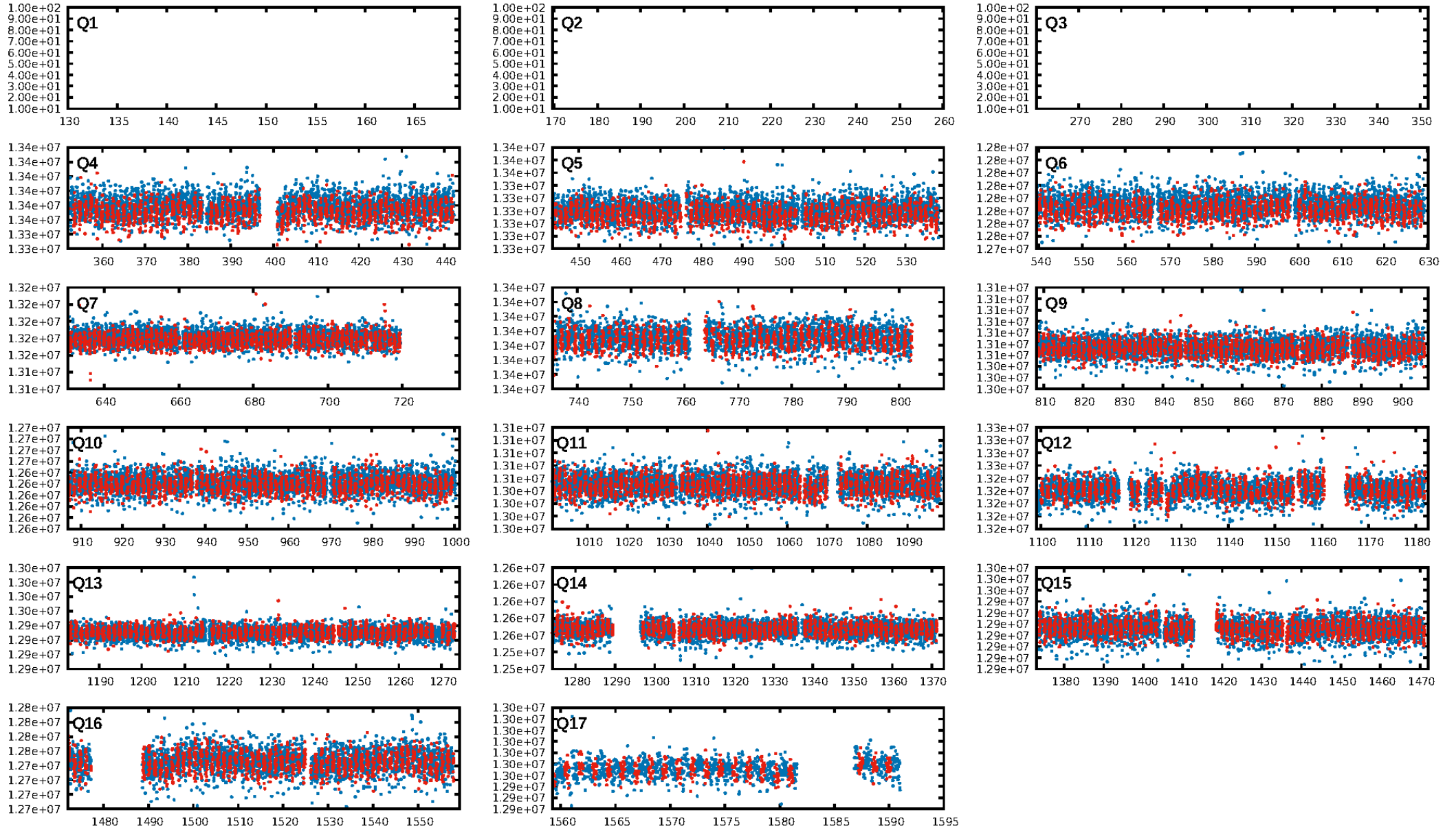
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.83e-21
RollingBand-fgt: 1.00 [875/875]
GhostDiagnostic-chr: 2.358
Centroid-sig: 96.3%
Centroid-so: 2.711 arcsec [2.31σ]
OotOffset-rm: 0.754 arcsec [0.86σ]
OotOffset-st: 3/3/3/3 [12]
KicOffset-rm: 0.318 arcsec [0.62σ]
KicOffset-st: 3/3/3/3 [12]
DiffImageQuality-fgm: 0.42 [5/12]
DiffImageOverlap-fno: 0.50 [7/14]

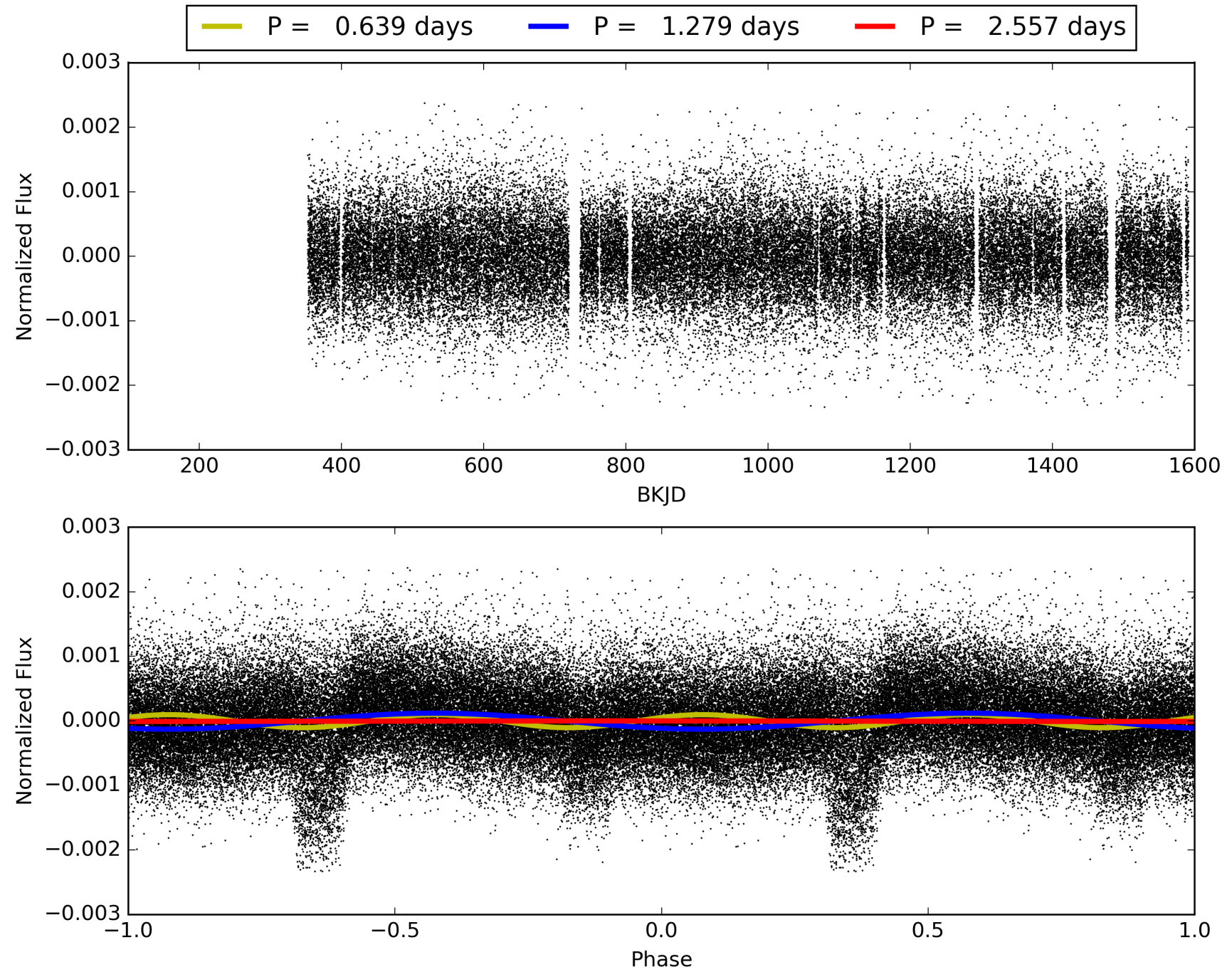
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:21:05 Z

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

TCE 010083623-02, PDC Light Curves

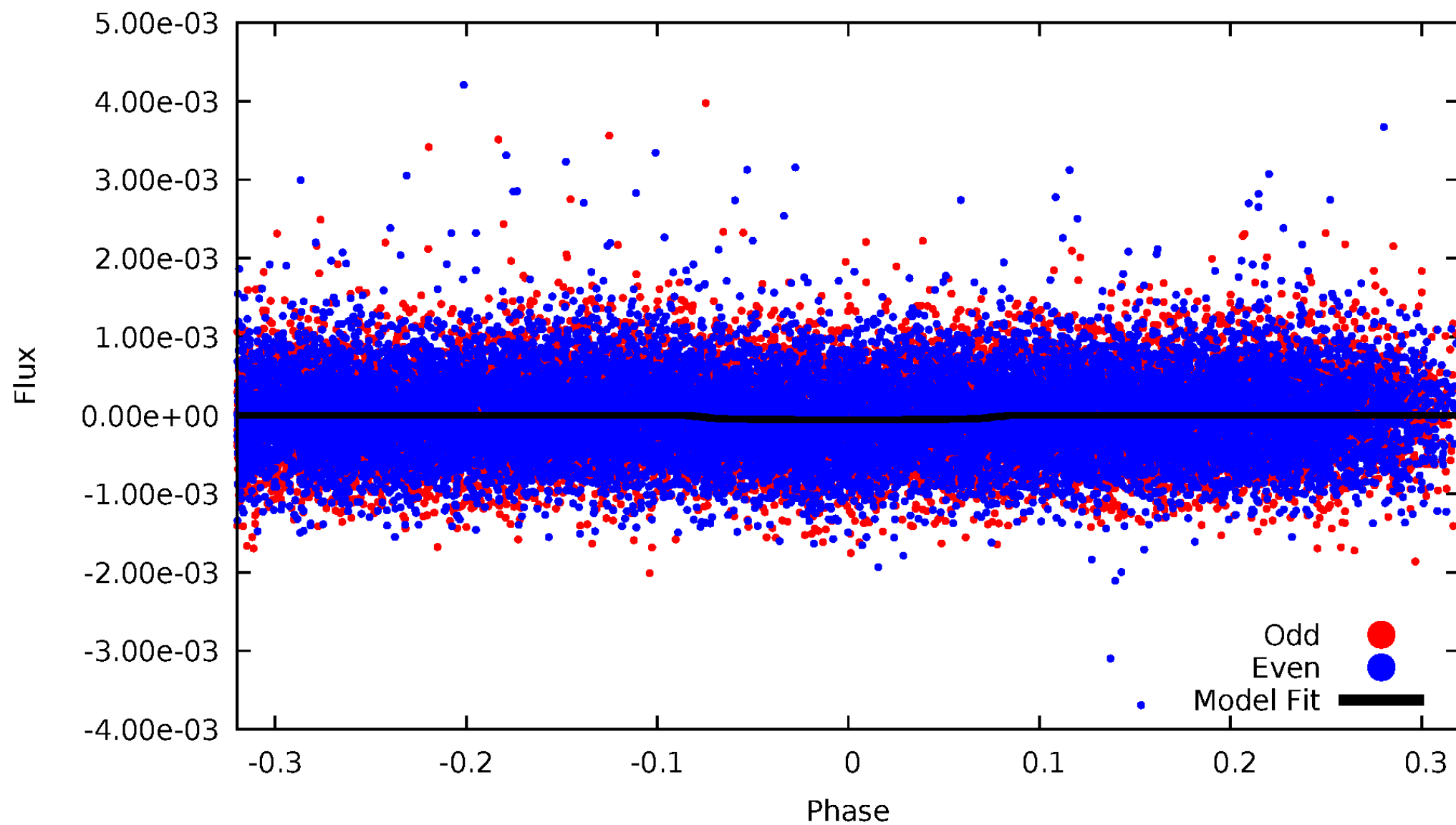


TCE 010083623-02



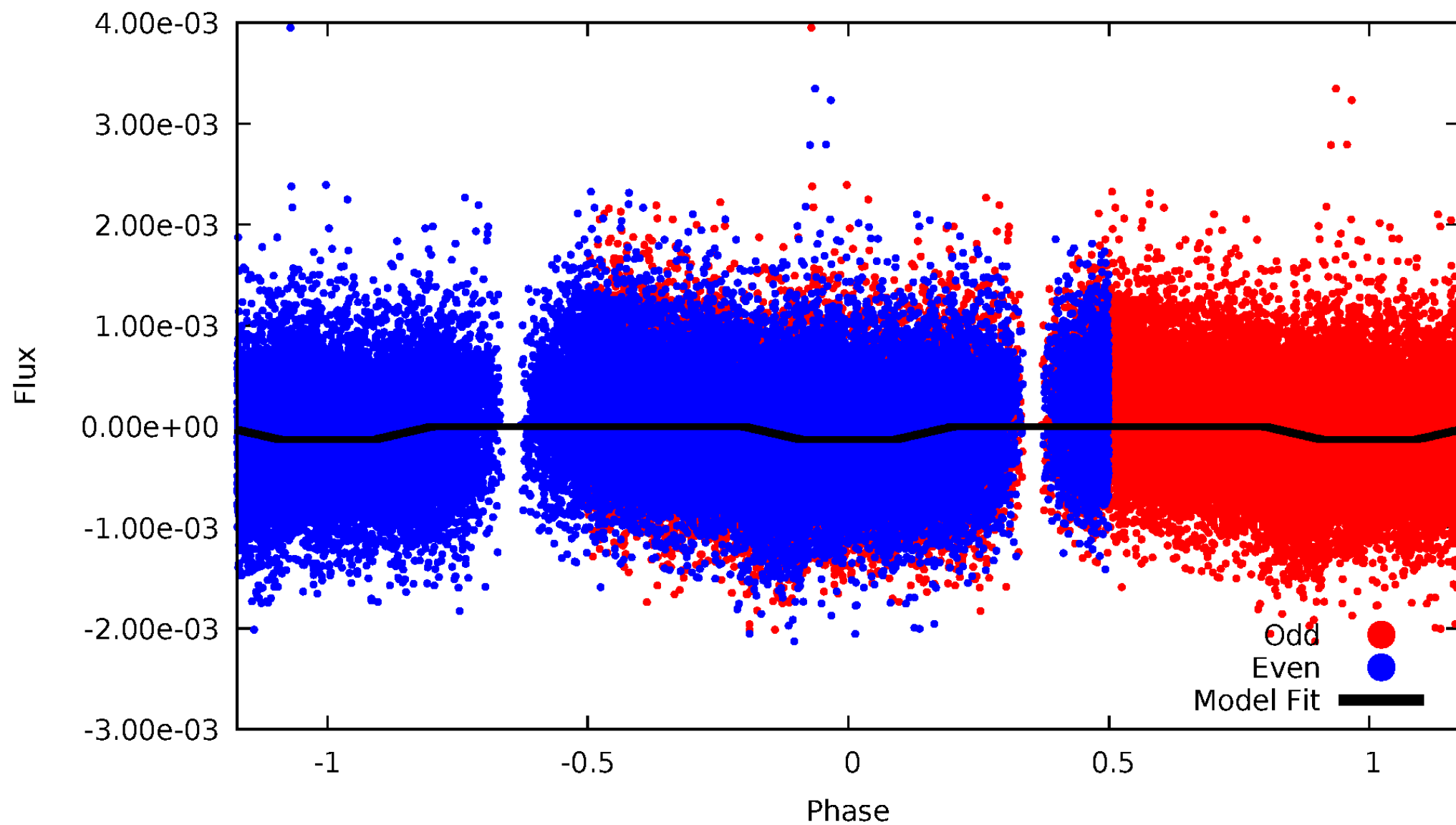
DV Odd/Even

TCE 010083623-02



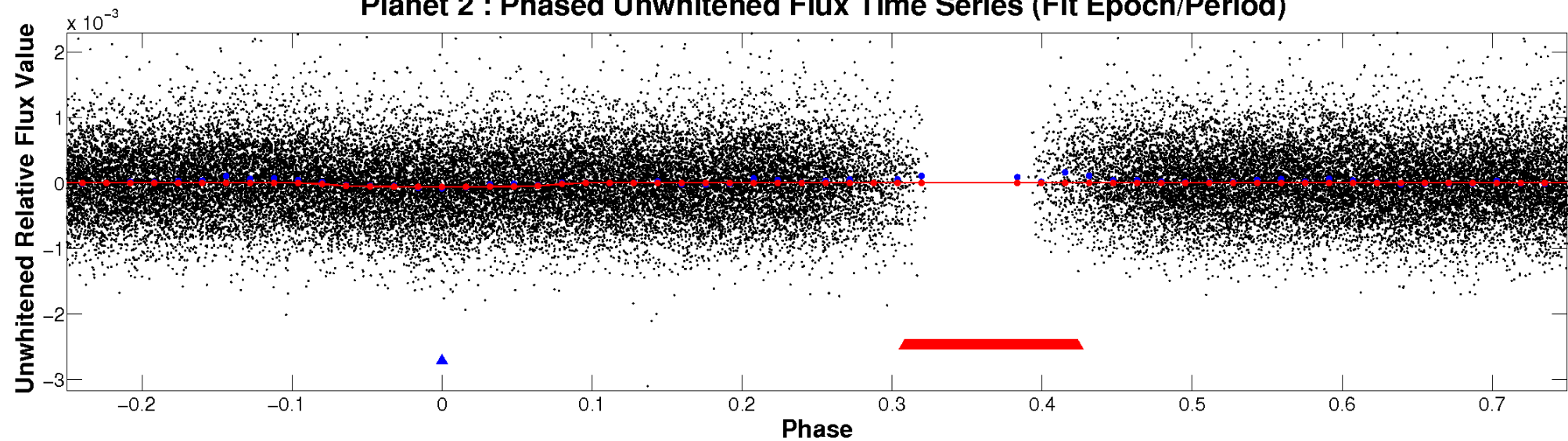
ALT Odd/Even

TCE 010083623-02

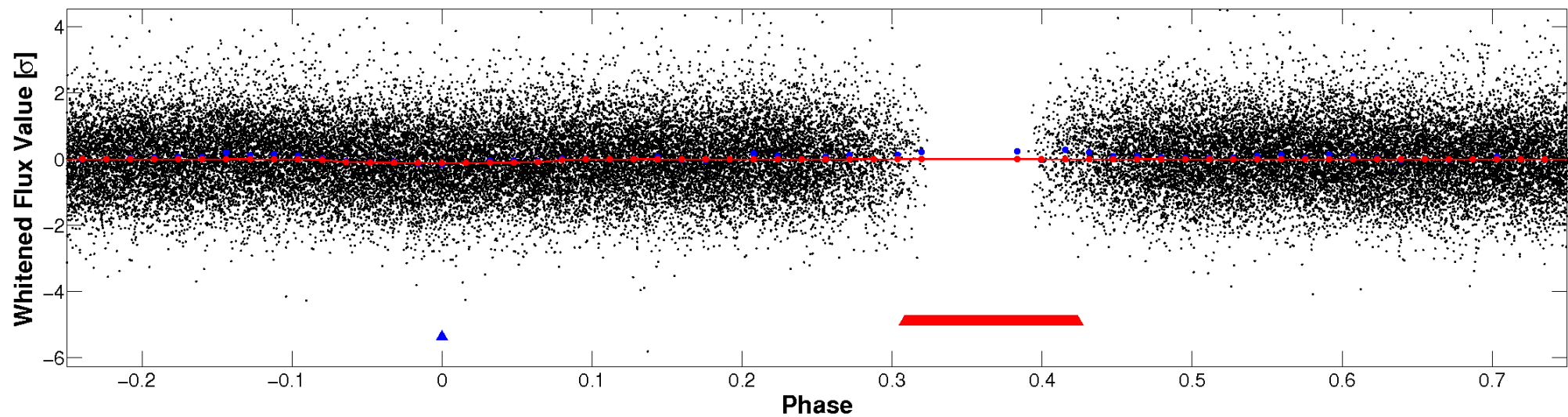


Non-Whitened Vs. Whitened Light Curve

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

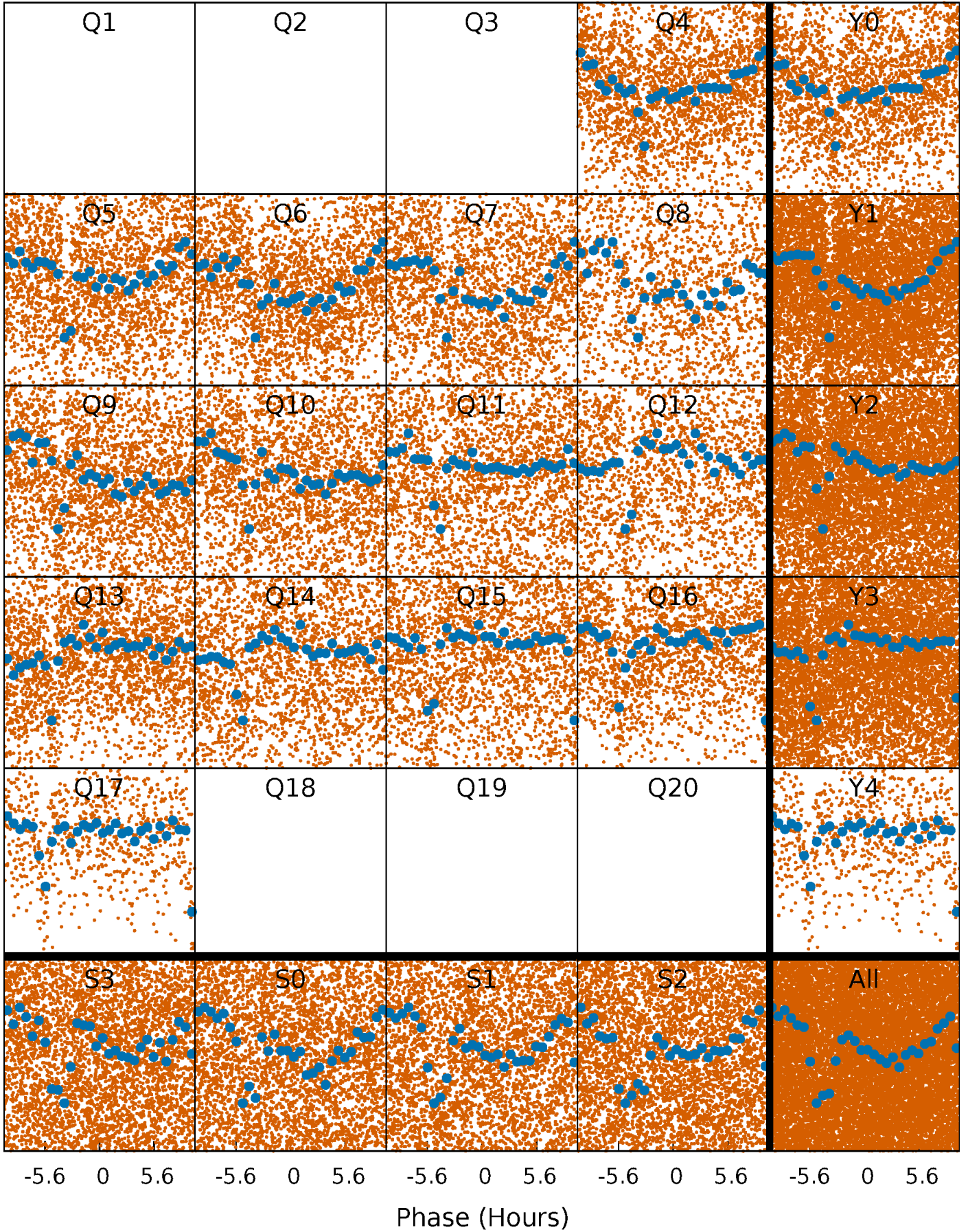


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



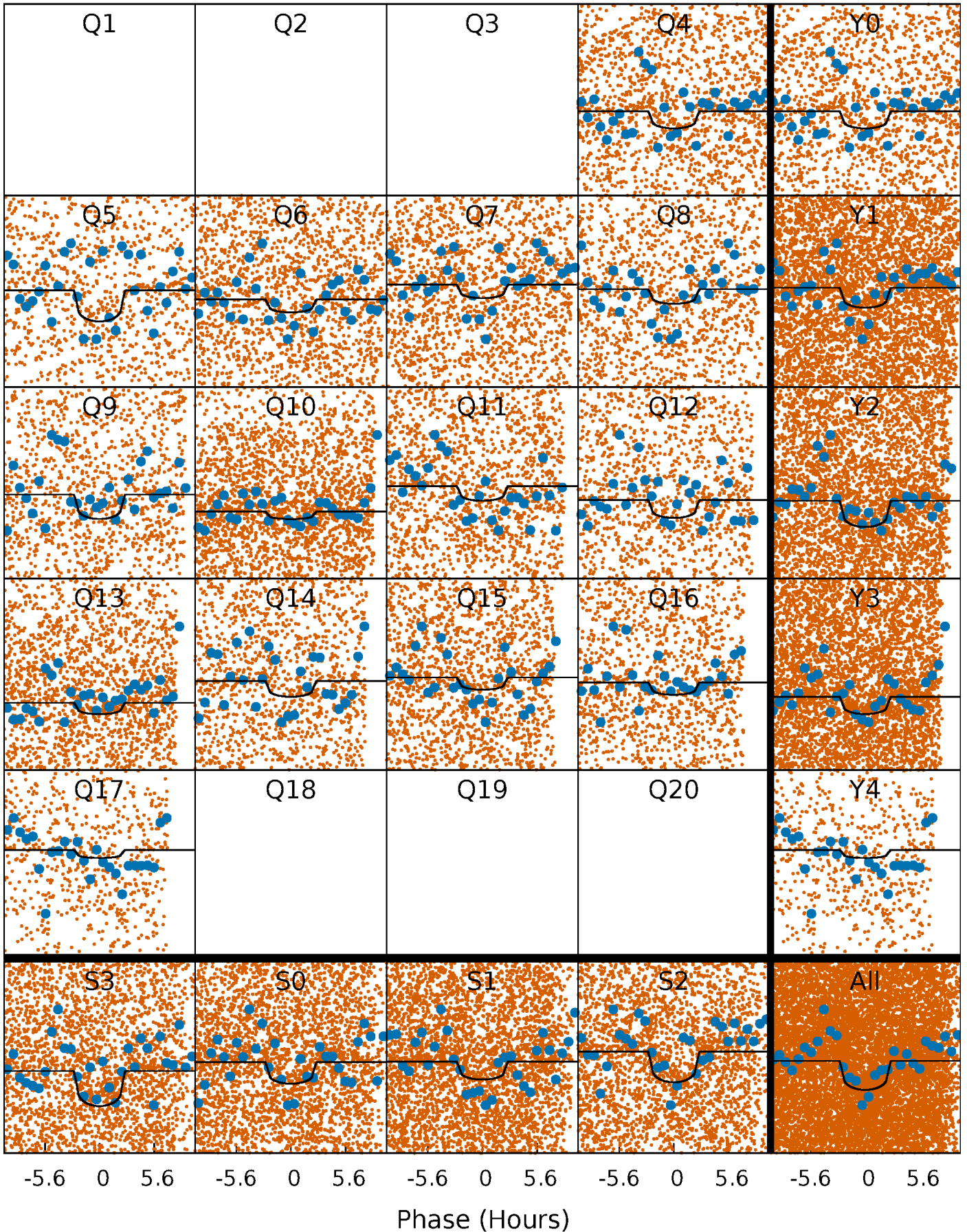
PDC Quarter-Phased Transit Curves

TCE 010083623-02 P= 1.278670 Days $T_0=132.272477$ (BKJD)



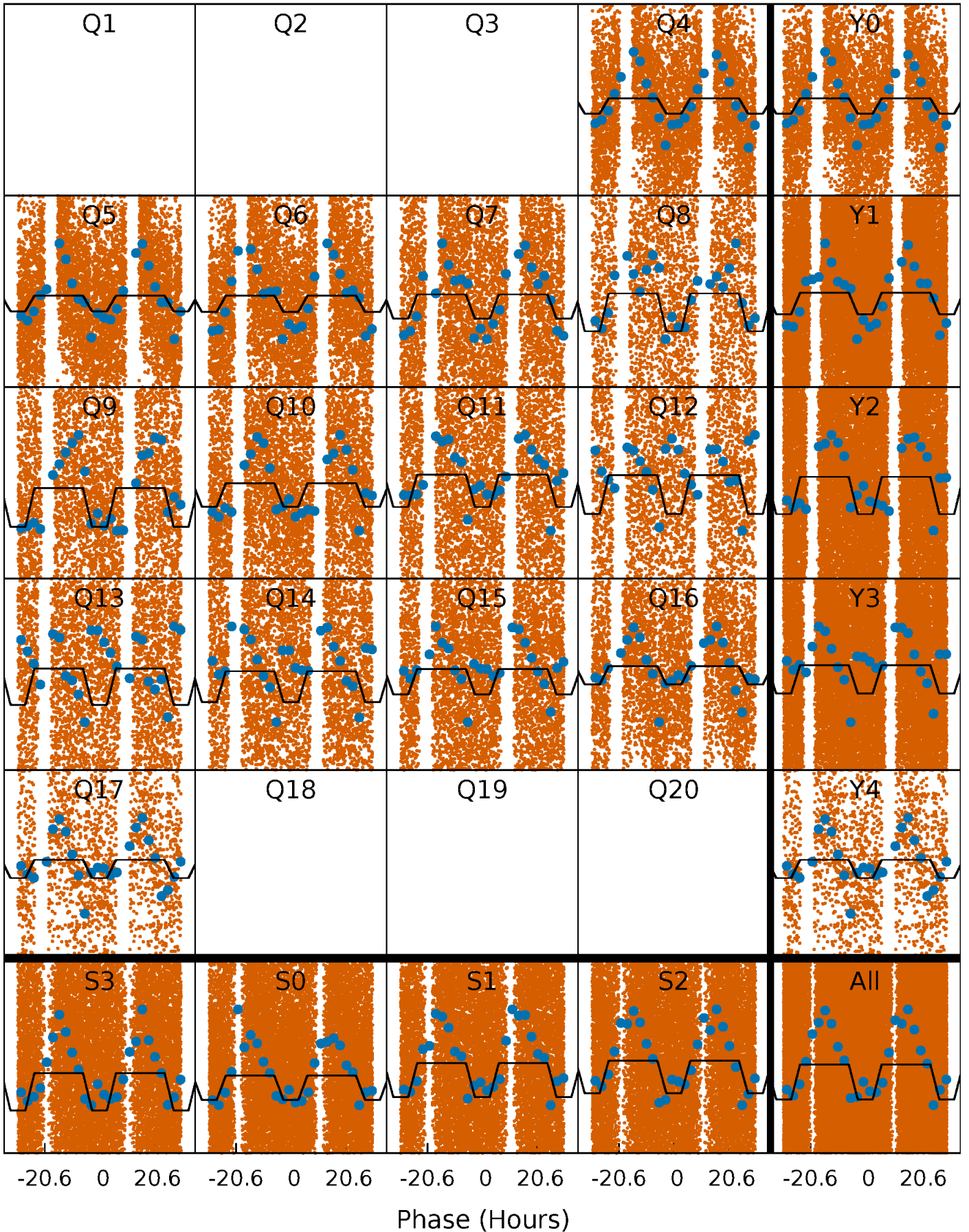
DV Quarter-Phased Transit Curves

TCE 010083623-02 P= 1.278670 Days $T_0=132.272477$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

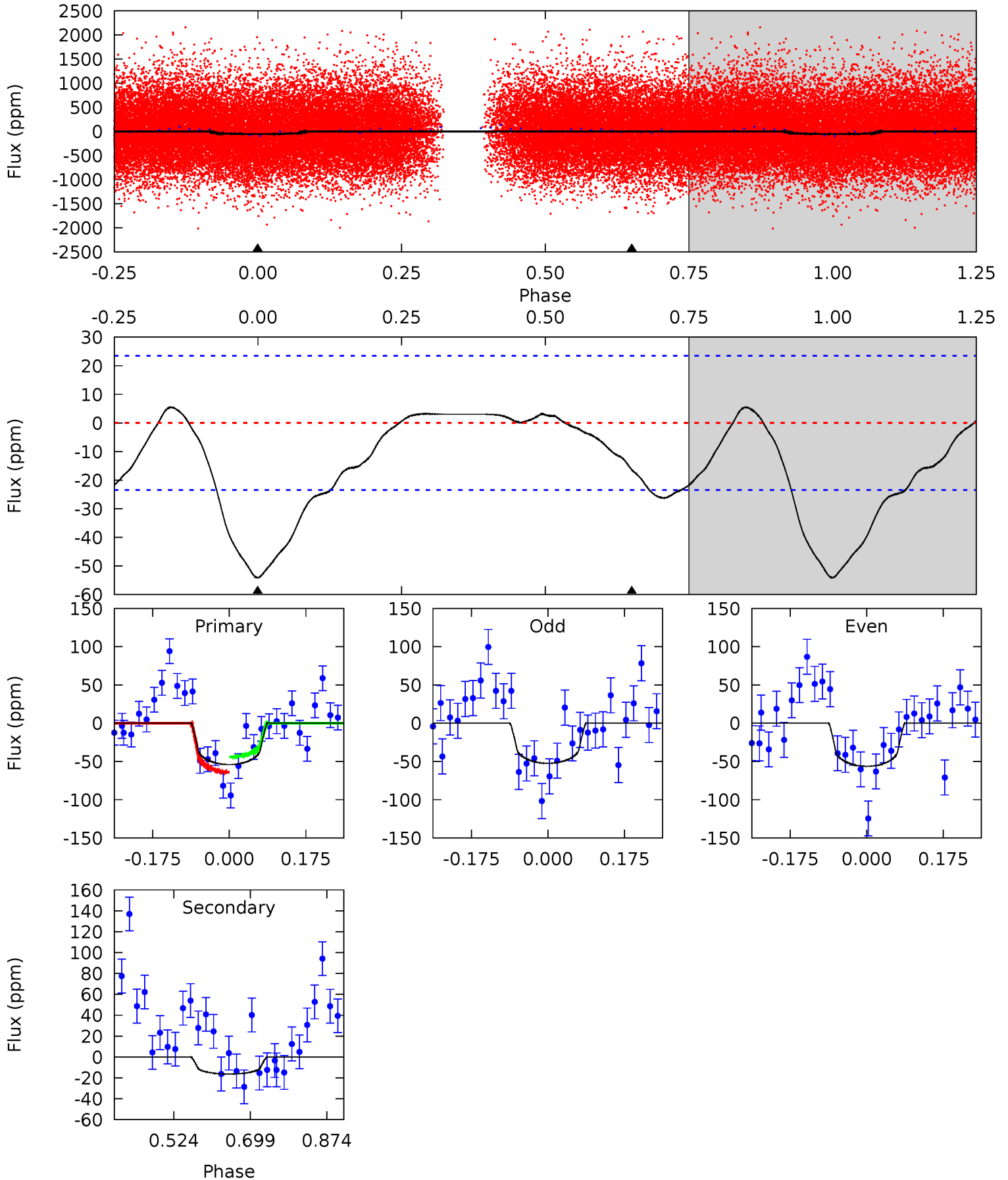
TCE 010083623-02 P= 1.278713 Days $T_0=132.249099$ (BKJD)



DV Model-Shift Uniqueness Test

010083623-02, P = 1.278670 Days, E = 132.272477 Days

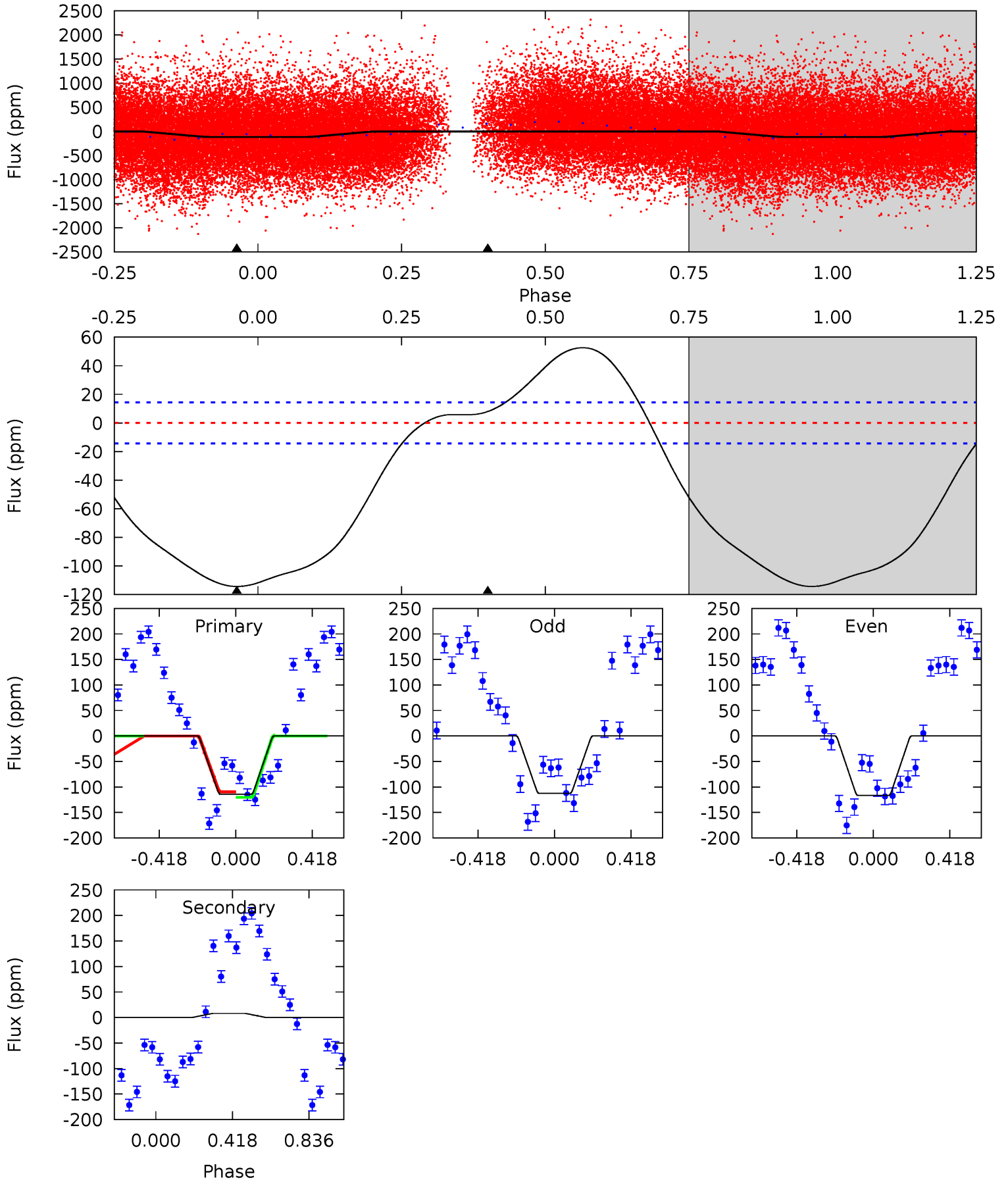
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	3.10	0	0	4.45	1.36	1.10	10.2	10.2	3.10	3.10	0.38	0.99	0.09	1.92



Alt Model-Shift Uniqueness Test

010083623-02, P = 1.278713 Days, E = 132.249099 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.9	-2.38	0	0	4.25	0.81	5.71	33.9	33.9	-2.38	-2.38	0.60	1.05	0.32	1.59



Stellar Parameters For KIC 010083623

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5636^{+186}_{-186}	$4.557^{+0.044}_{-0.176}$	$-0.180^{+0.300}_{-0.300}$	$0.827^{+0.217}_{-0.078}$	$0.899^{+0.104}_{-0.095}$	$2.241^{+0.412}_{-1.106}$
	+3%/-3%	+1%/-4%	+167%/-167%	+26%/-9%	+12%/-11%	+18%/-49%
Source	KIC0	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 010083623-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-16 ± 5	$0.88^{+0.59}_{-0.52}$	2160^{+141}_{-102}	3948^{+1707}_{-701}	$5.371^{+27.326}_{-3.526}$
Alt.	8 ± 3	$1.11^{+0.67}_{-0.59}$	2165^{+137}_{-106}	-3370^{+383}_{-988}	$-1.687^{+1.120}_{-6.448}$

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 $A_{\text{obs}} \gg 1.0$

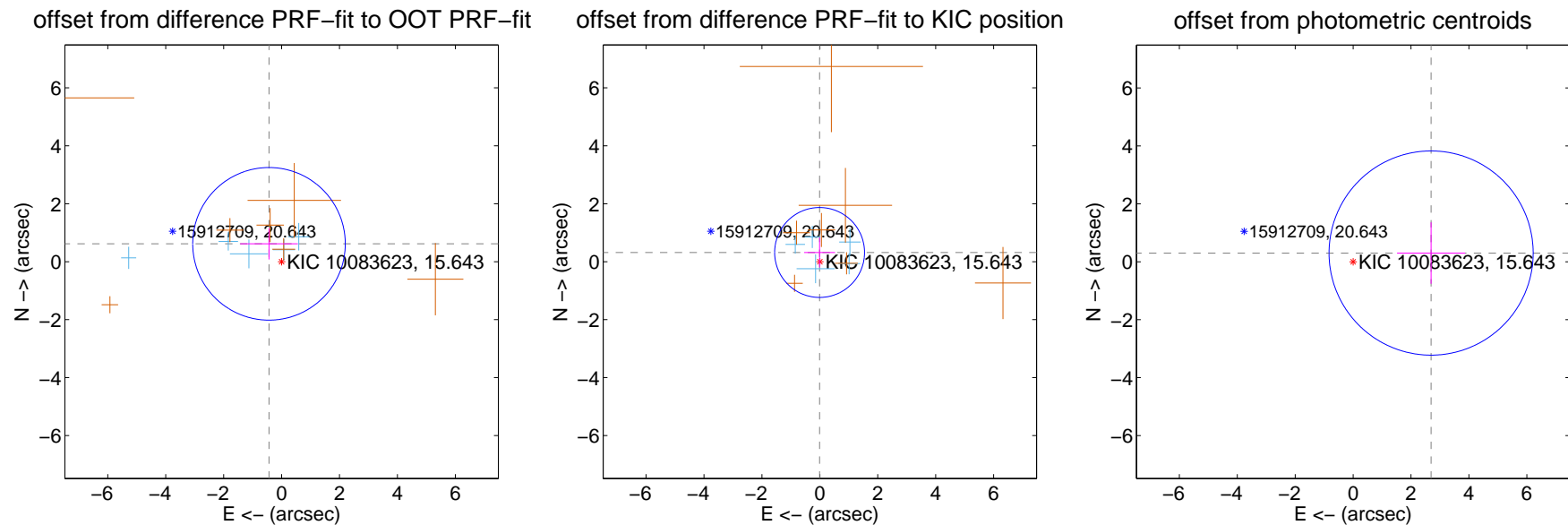
DV Centroid Data

Supplemental centroid analysis for 010083623-02. Kepler magnitude: 15.64. Transit SNR 8.73

There are 5 quarters with good PRF difference image offsets

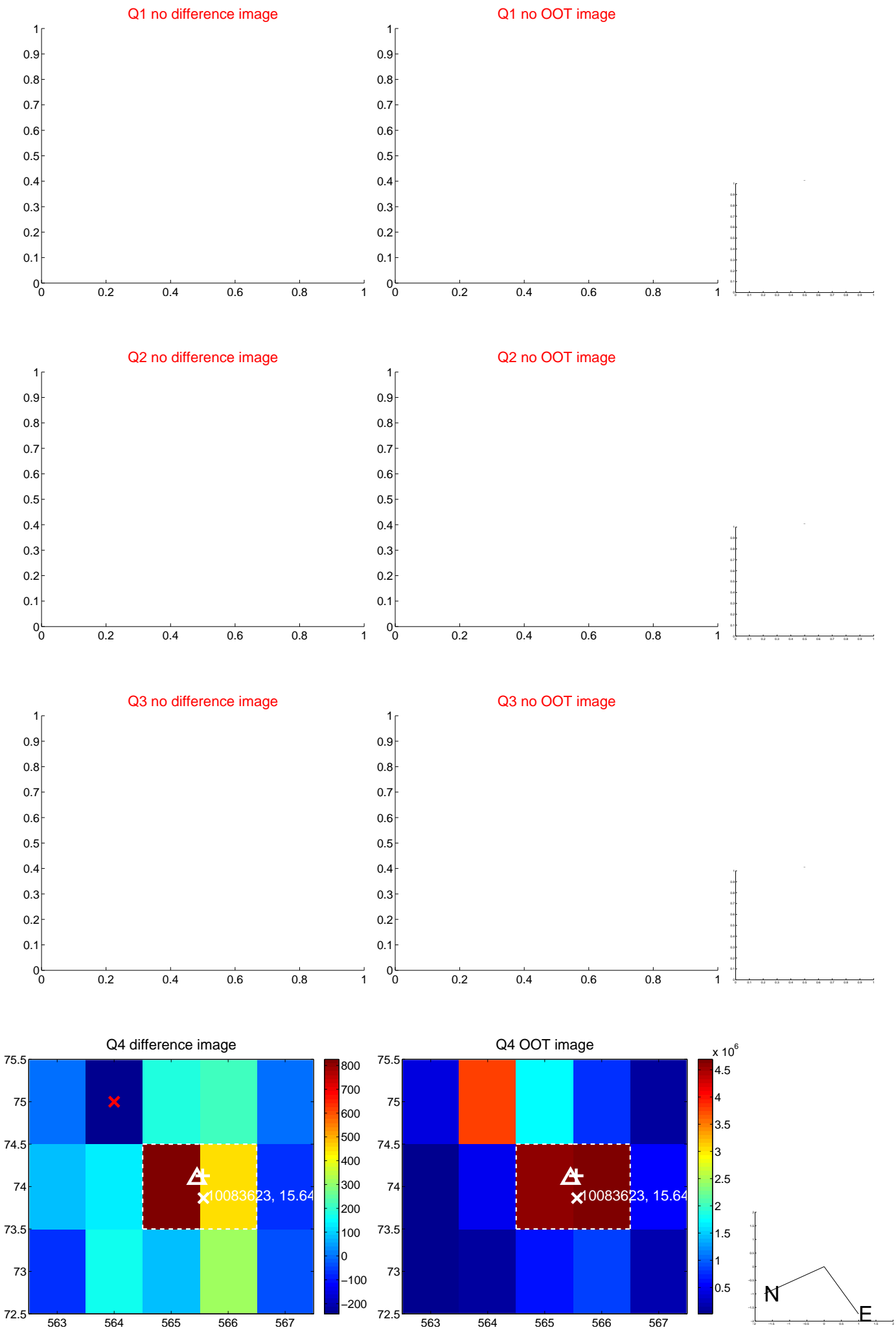
The direct PRF centroid is offset from the target star catalog position by about 0.48 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.754 ± 0.878	0.86	0.434 ± 0.996	0.617 ± 0.539
PRF-fit source offset from KIC position	0.318 ± 0.517	0.62	0.009 ± 0.535	0.318 ± 0.513
photometric centroid source offset	2.71 ± 1.18	2.31	-2.69 ± 1.18	0.30 ± 1.06

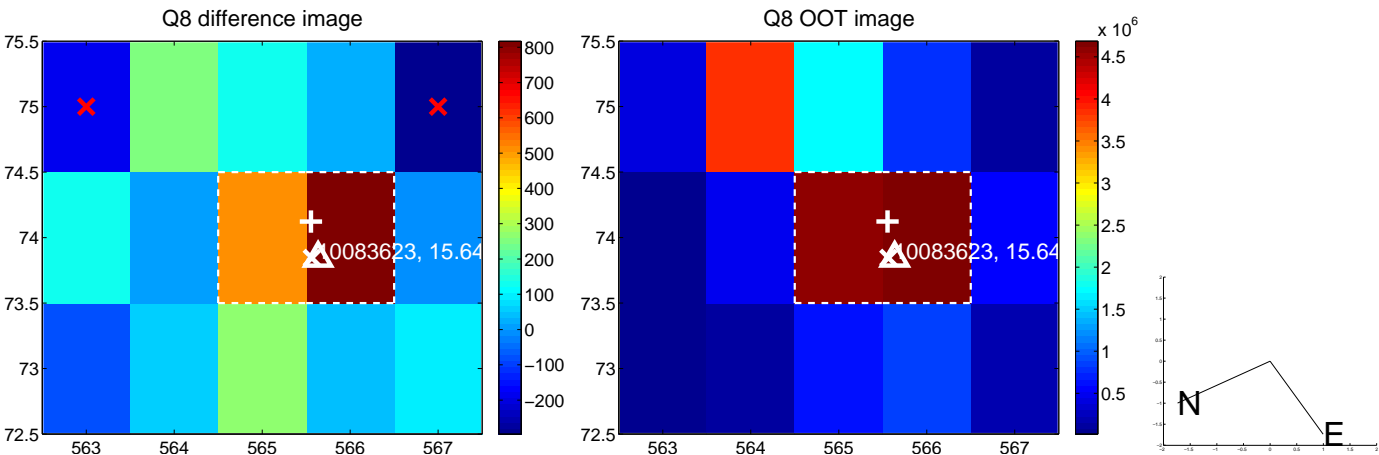
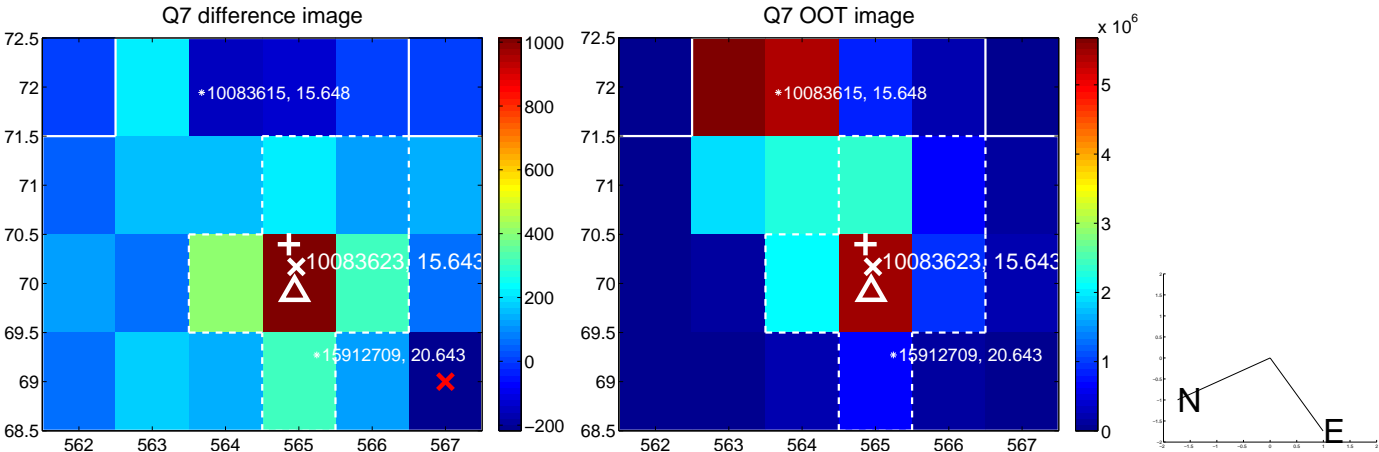
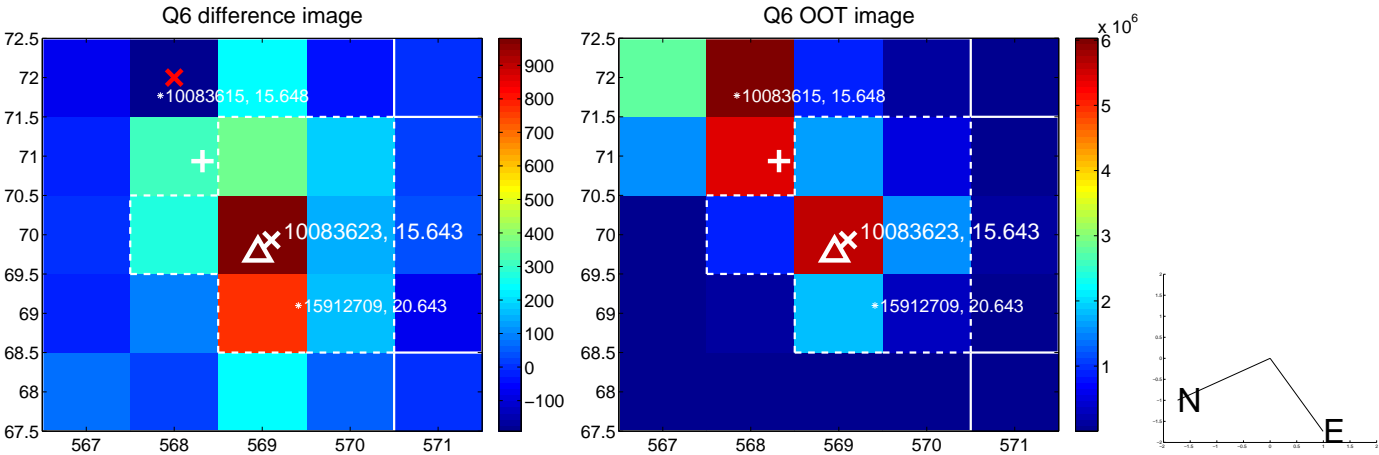
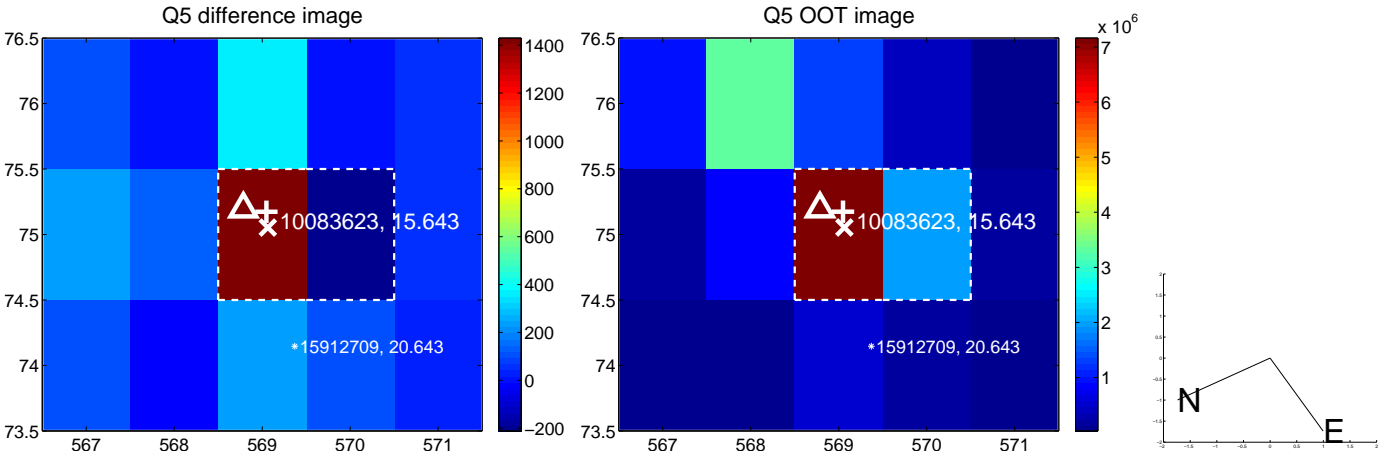


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

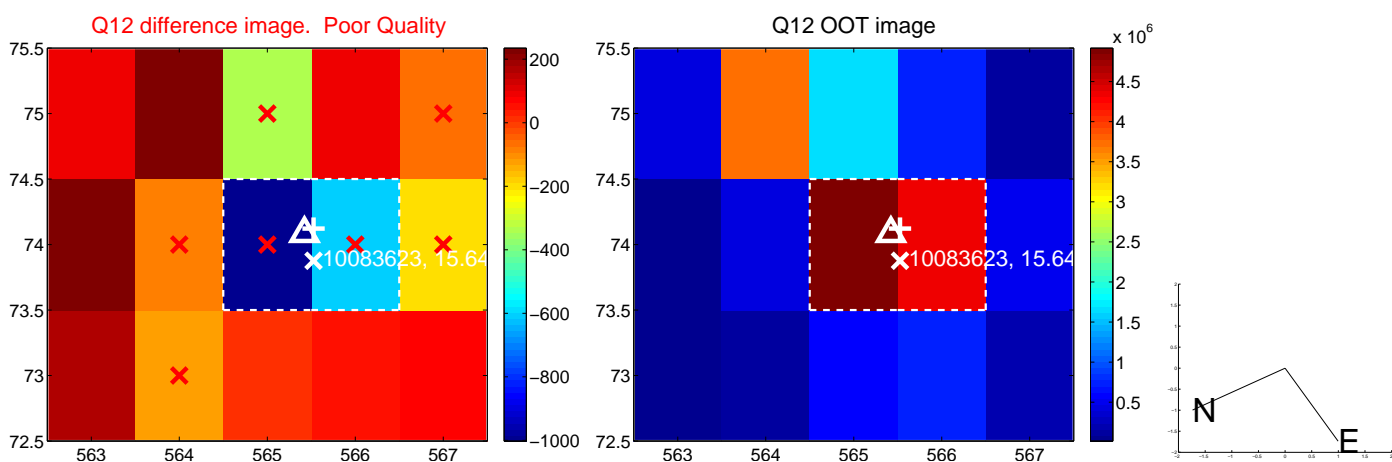
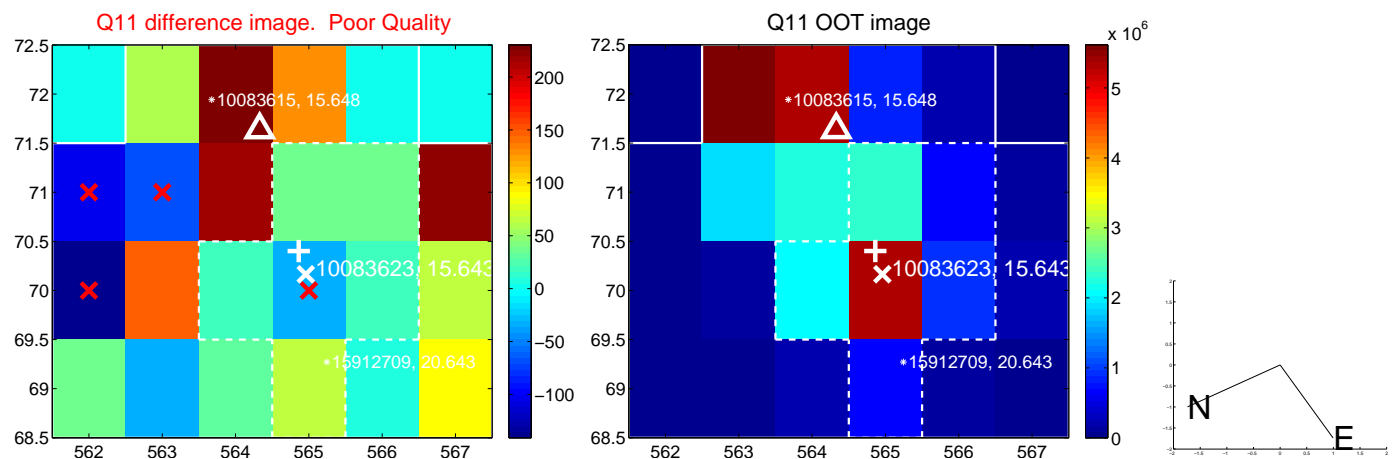
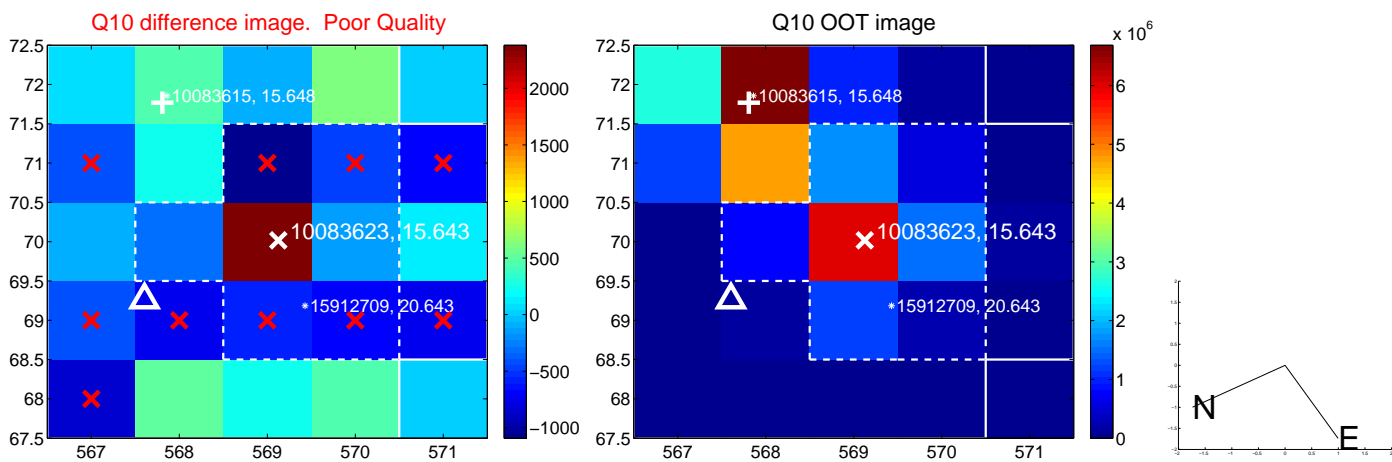
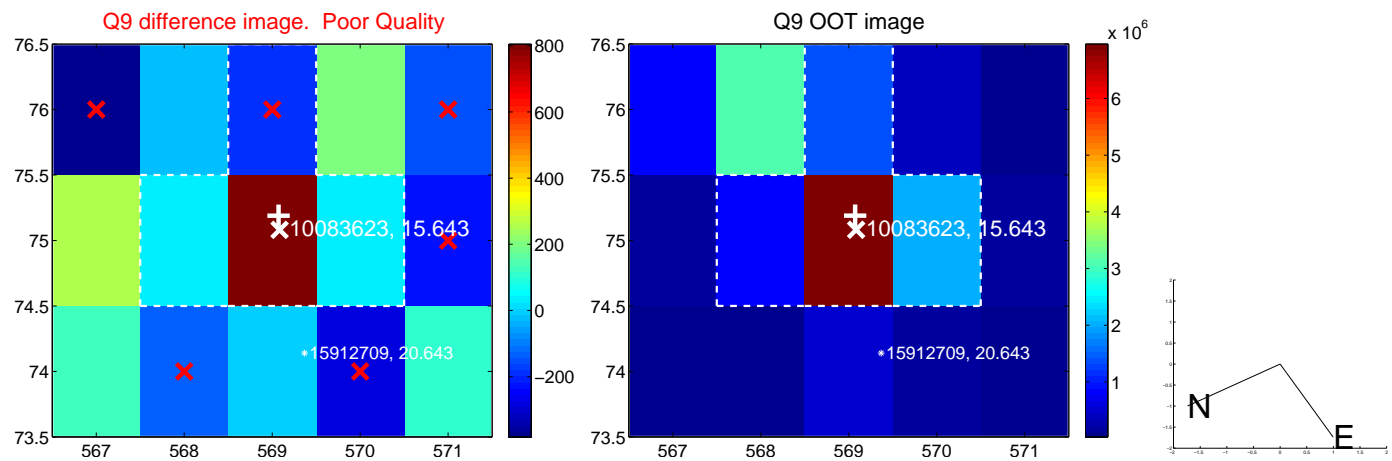
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



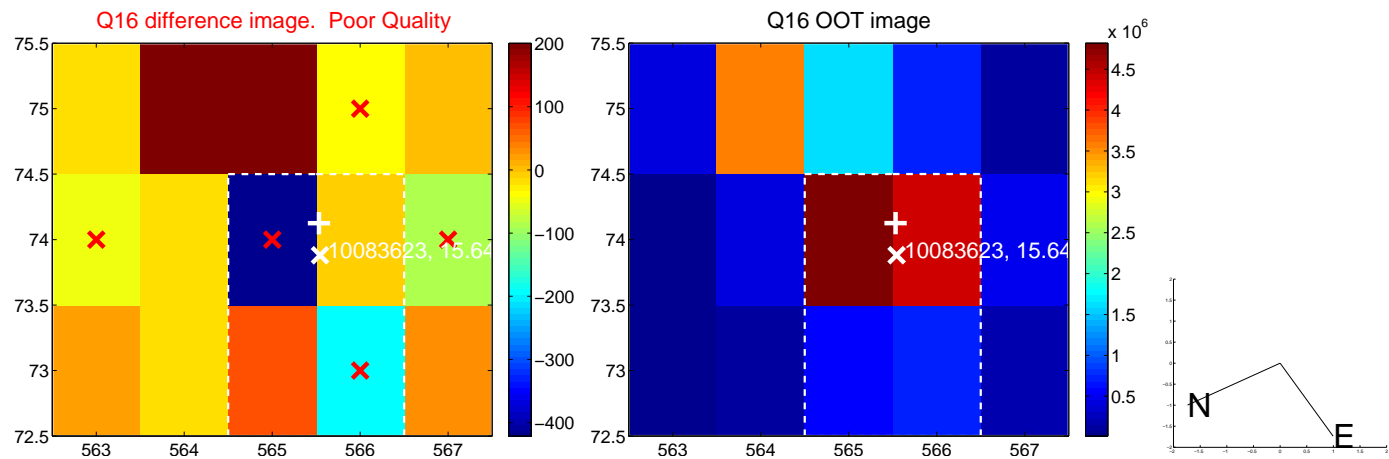
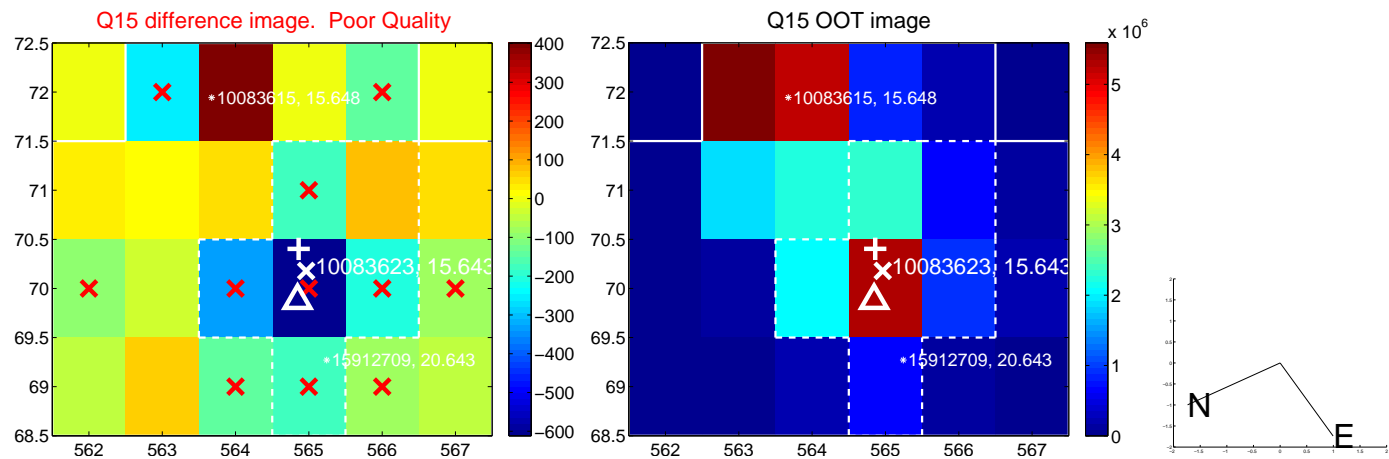
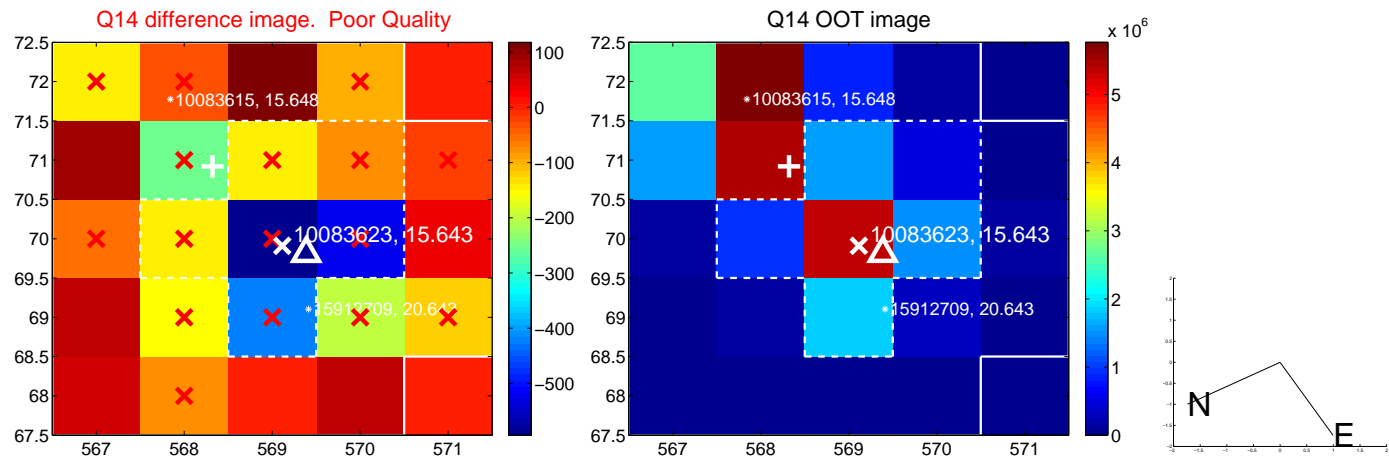
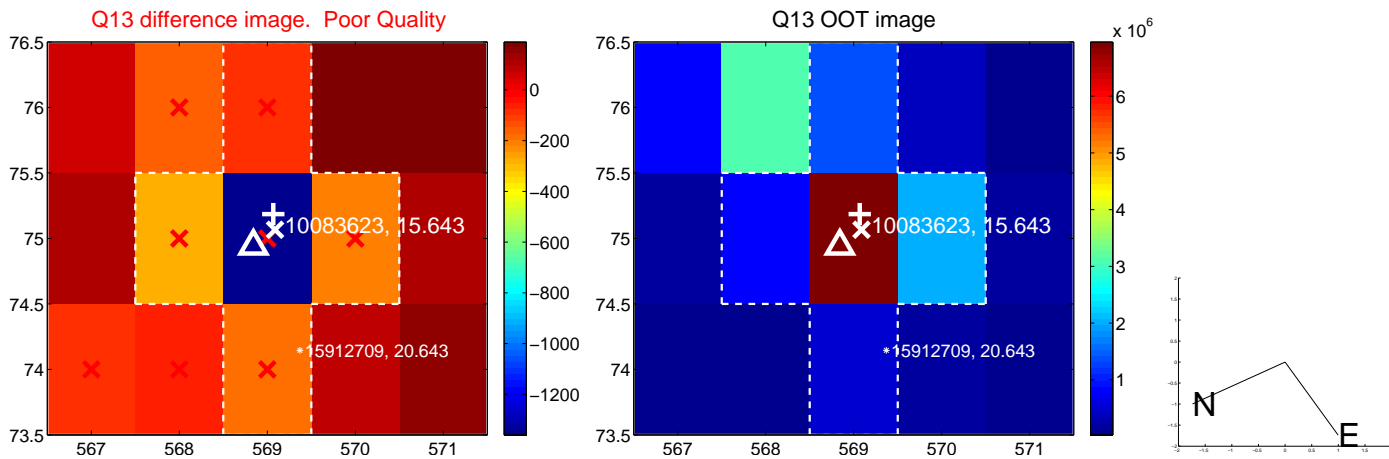
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



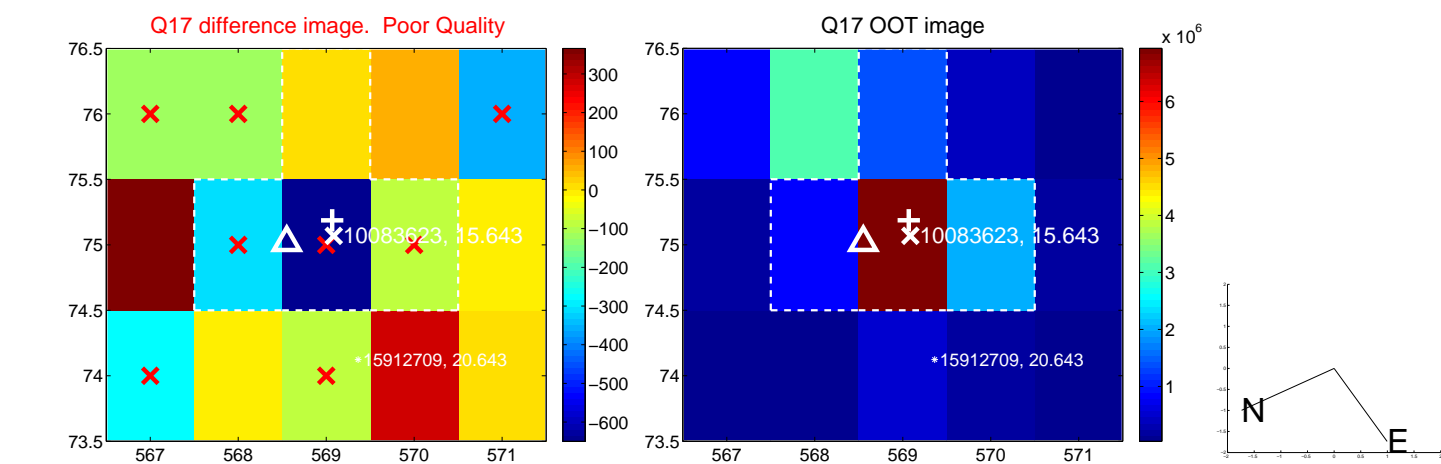
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



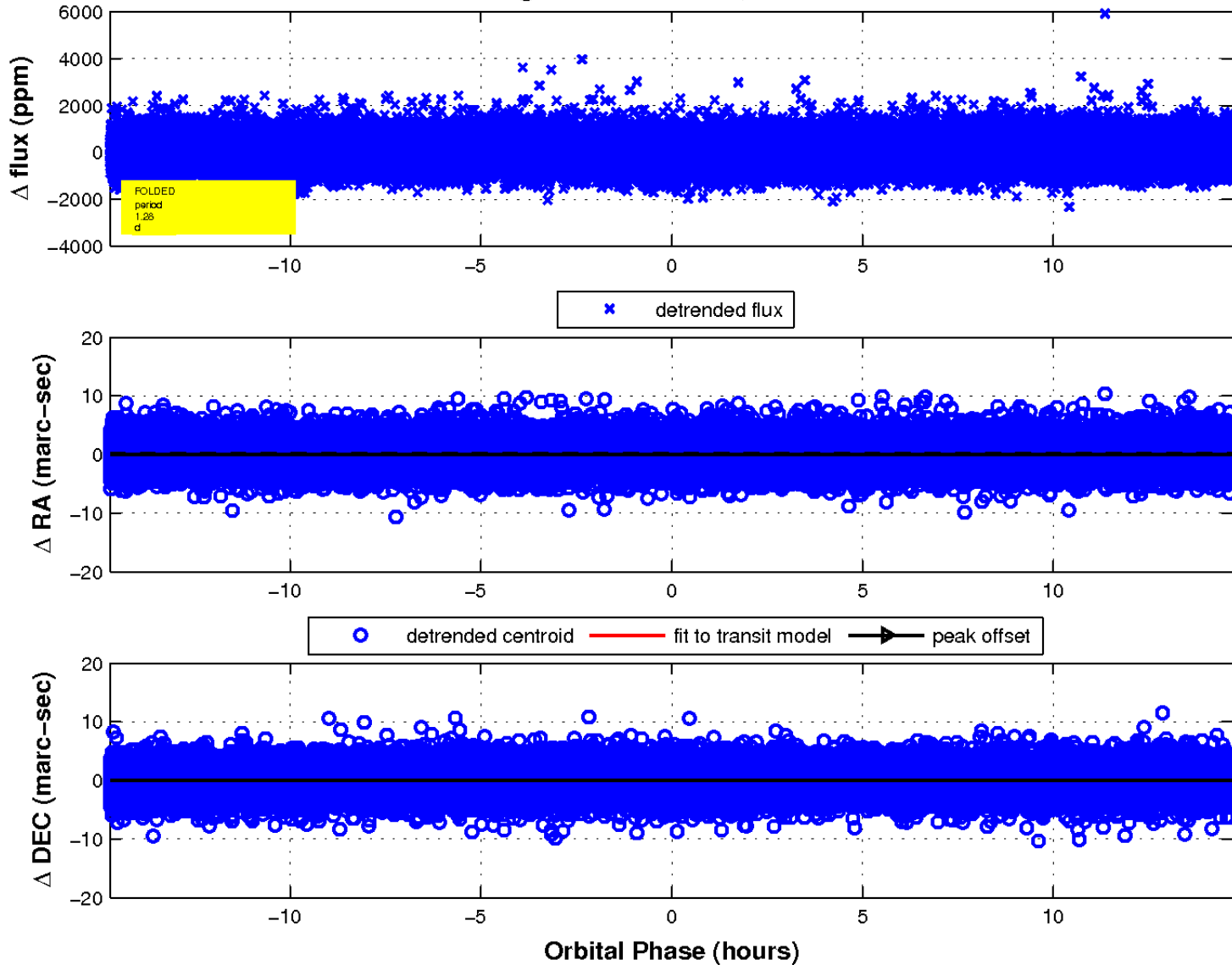
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

