

KIC 010872983

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})
010872983-01	OBS	0756.01	11.094317	137.918172	1505.8	4.621	55.2	59.6	0.97	6046	3.96	115.10
010872983-02	OBS	0756.02	4.134423	131.637745	671.5	3.453	33.5	37.7	0.97	6046	3.05	429.20
010872983-03	OBS	0756.03	2.566577	133.361295	206.6	2.647	12.3	13.3	0.97	6046	1.56	810.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010872983-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010872983-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010872983-03	OBS	PC	0.99	0	0	0	0	NO_COMMENT

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.

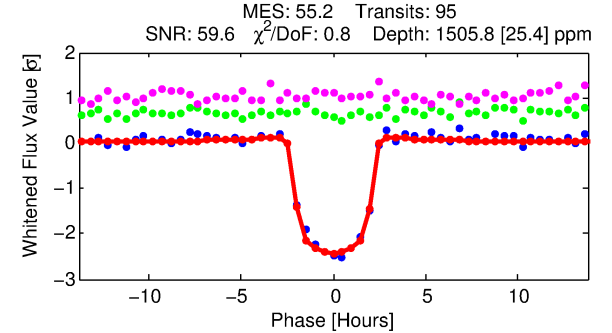
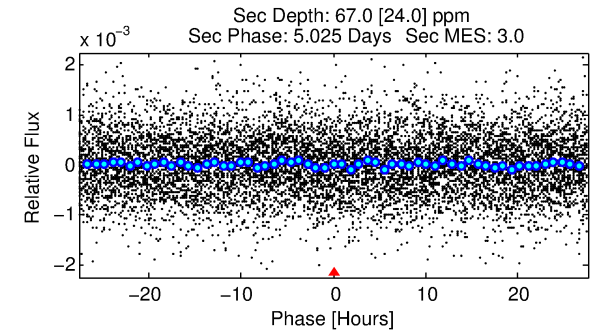
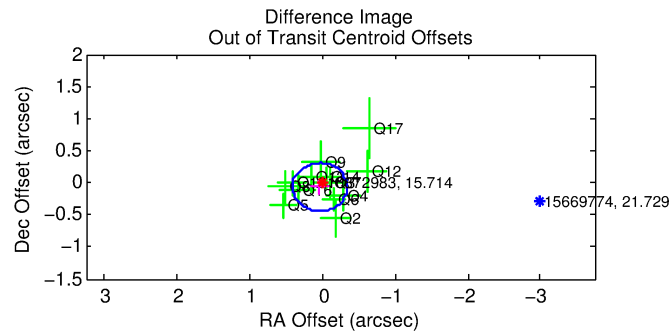
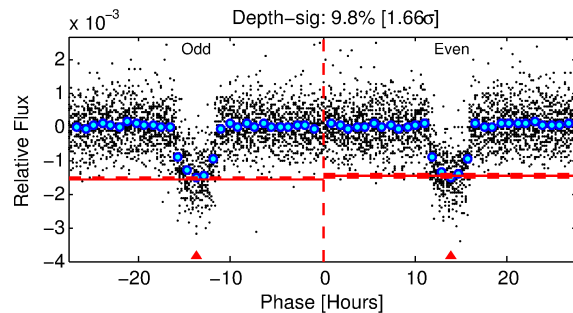
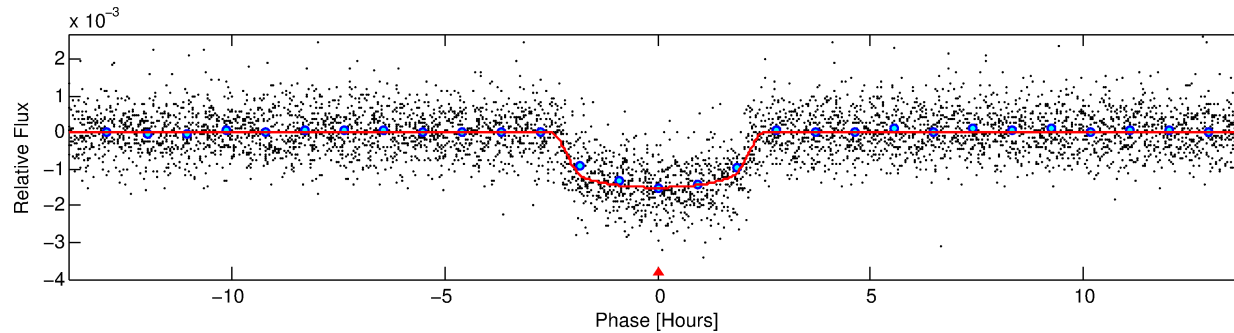
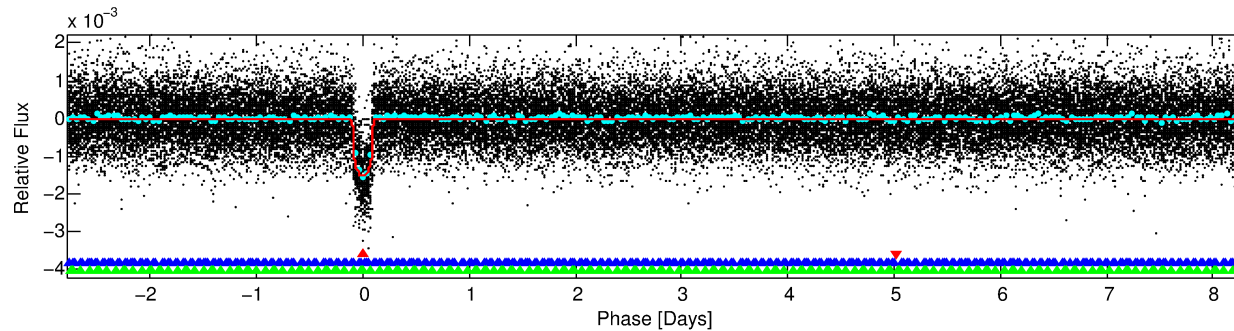
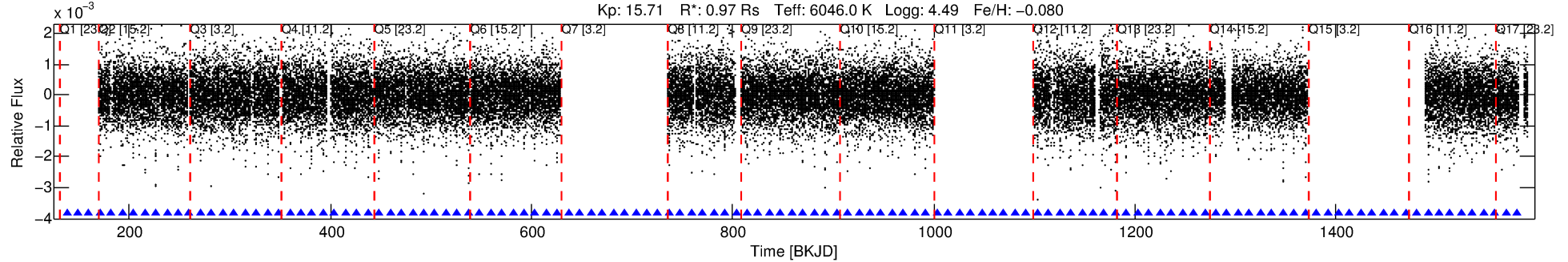
Ephemeris Match Information For 010872983-01

No Significant Match Found

DV One-Page Summary

KIC: 10872983 Candidate: 1 of 3 Period: 11.094 d
KOI: K00756.01 Name: Kepler-228d Corr: 0.992

Kp: 15.71 R*: 0.97 Rs Teff: 6046.0 K Logg: 4.49 Fe/H: -0.080



DV Fit Results:

Period = 11.09432 [0.00002] d
Epoch = 137.9182 [0.0015] BKJD
Rp/R* = 0.0374 [0.0044]
a/R* = 15.10 [8.30]
b = 0.63 [0.53]
Seff = 115.10 [50.67]
Teq = 835 [92] K
Rp = 3.97 [1.37] Re
a = 0.0991 [0.0276] AU
Ag = 23.04 [13.69] [1.61σ]
Teffp = 2829 [321] K [5.97σ]

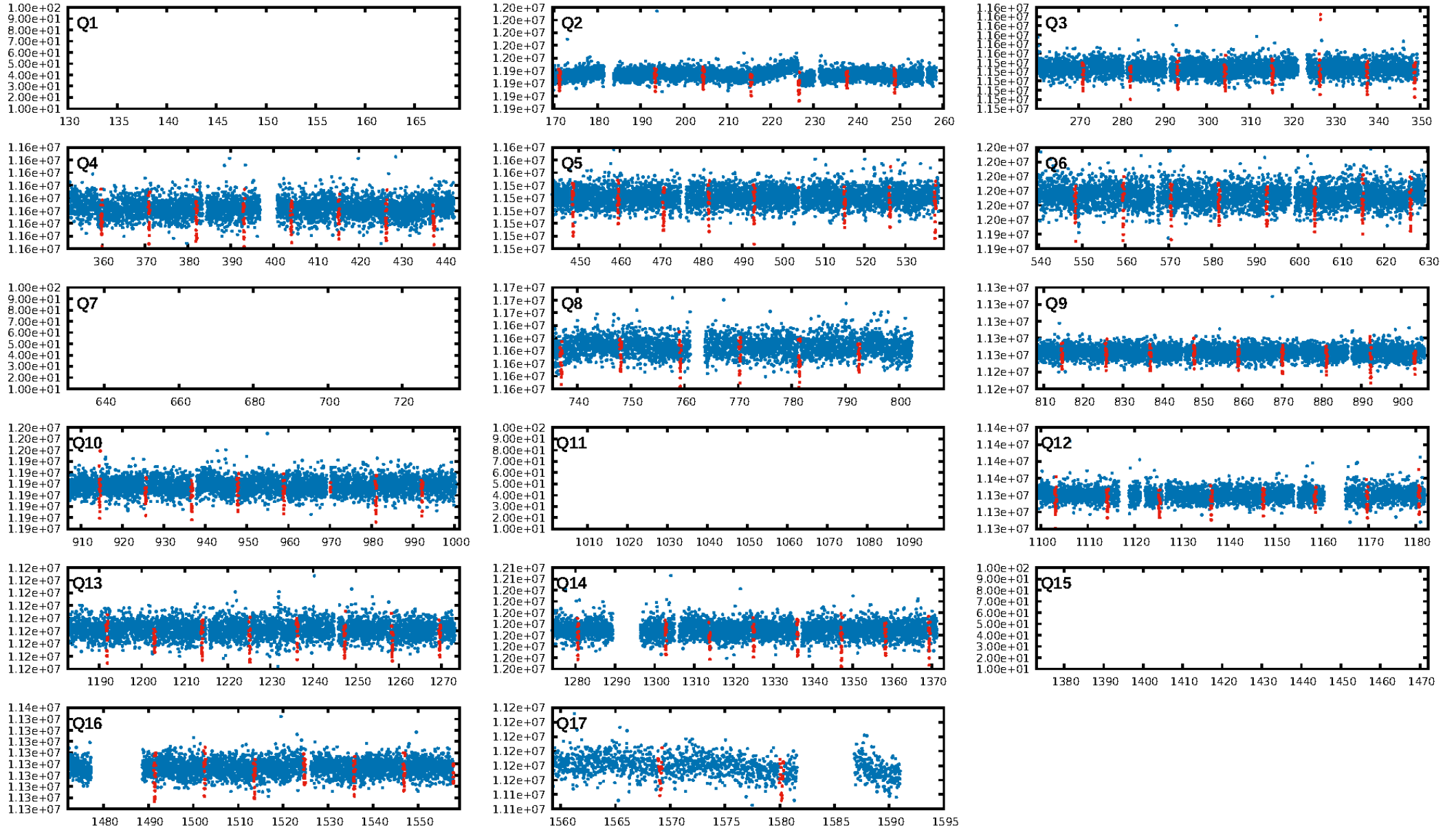
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [28.96σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 97.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [93/93]
GhostDiagnostic-chr: 4.174
Centroid-sig: N/A
Centroid-so: 0.184 arcsec [0.80σ]
OotOffset-rm: 0.076 arcsec [0.61σ]
KicOffset-rm: 0.083 arcsec [0.80σ]
OotOffset-st: 4/1/4/4 [13]
KicOffset-st: 4/1/4/4 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [13/13]

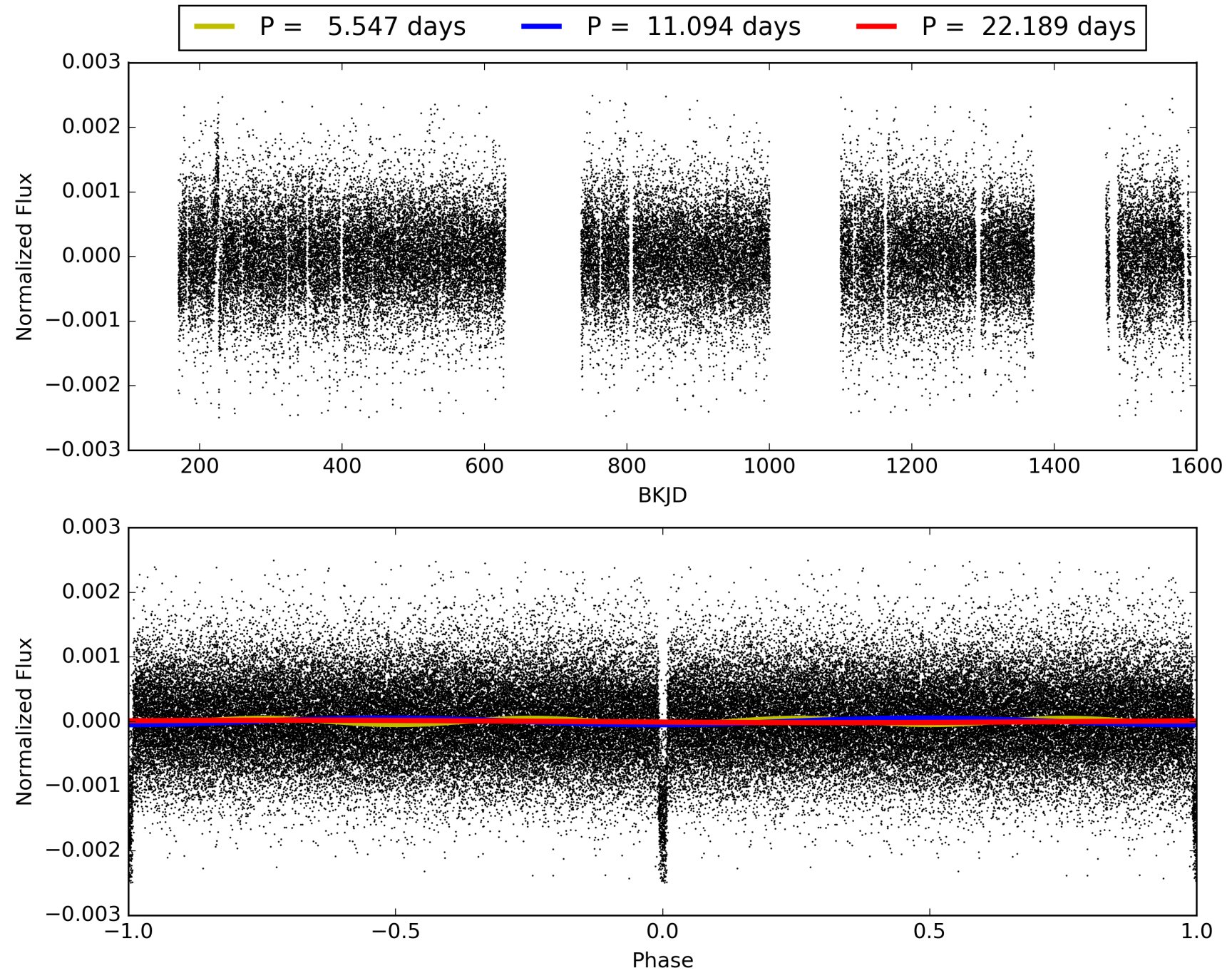
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 11:45:32 Z

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

TCE 010872983-01, PDC Light Curves

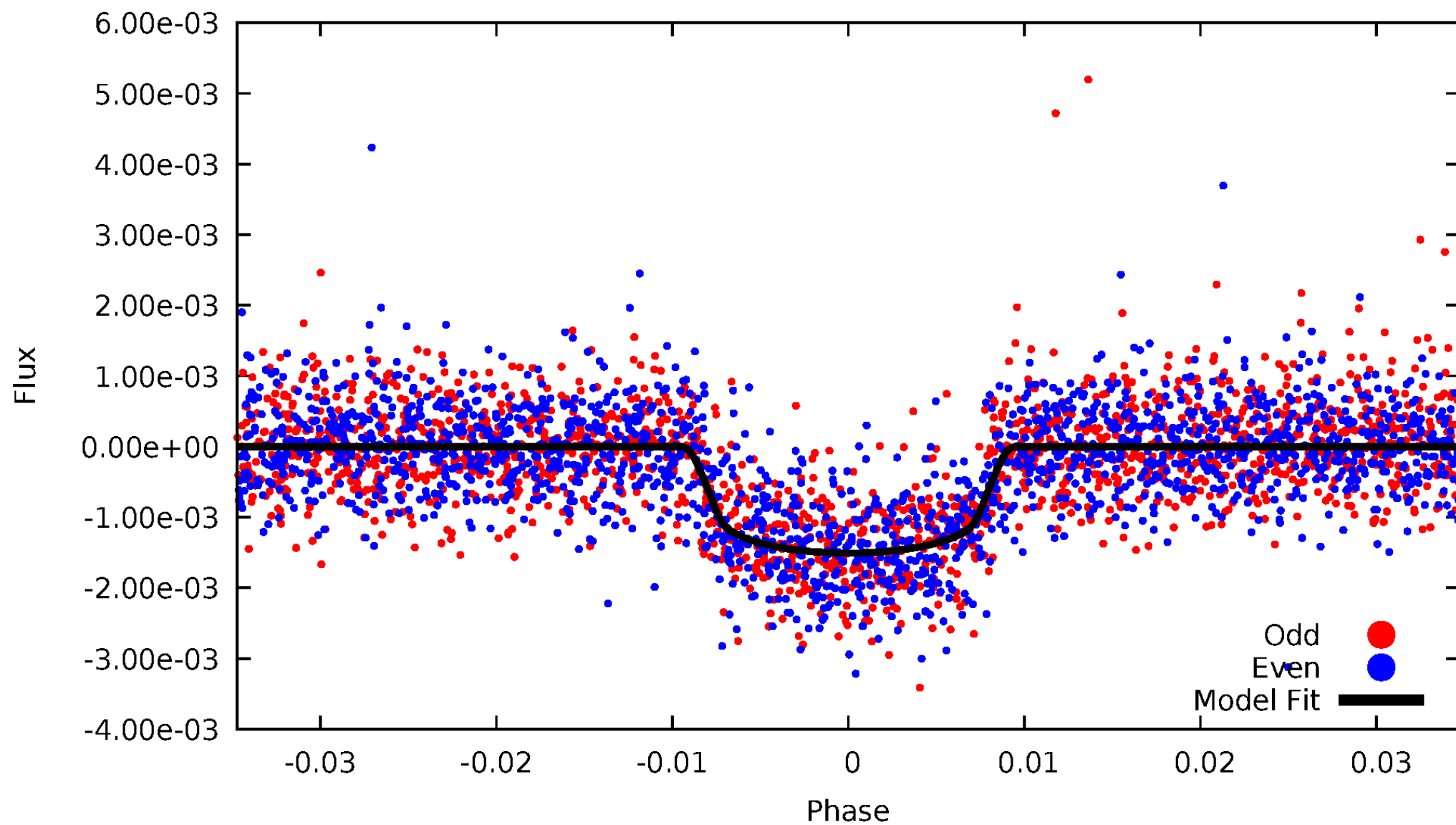


TCE 010872983-01



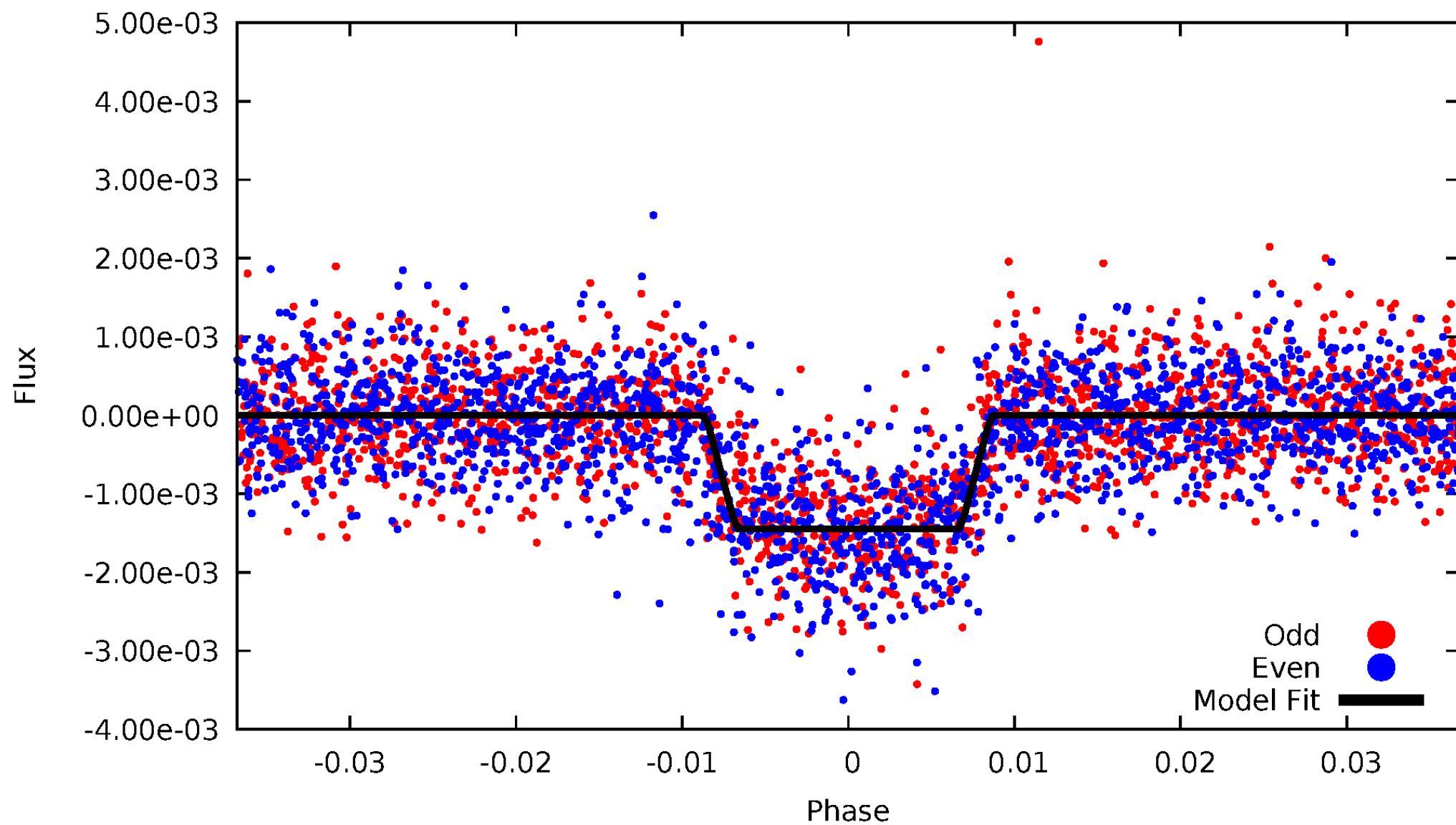
DV Odd/Even

TCE 010872983-01



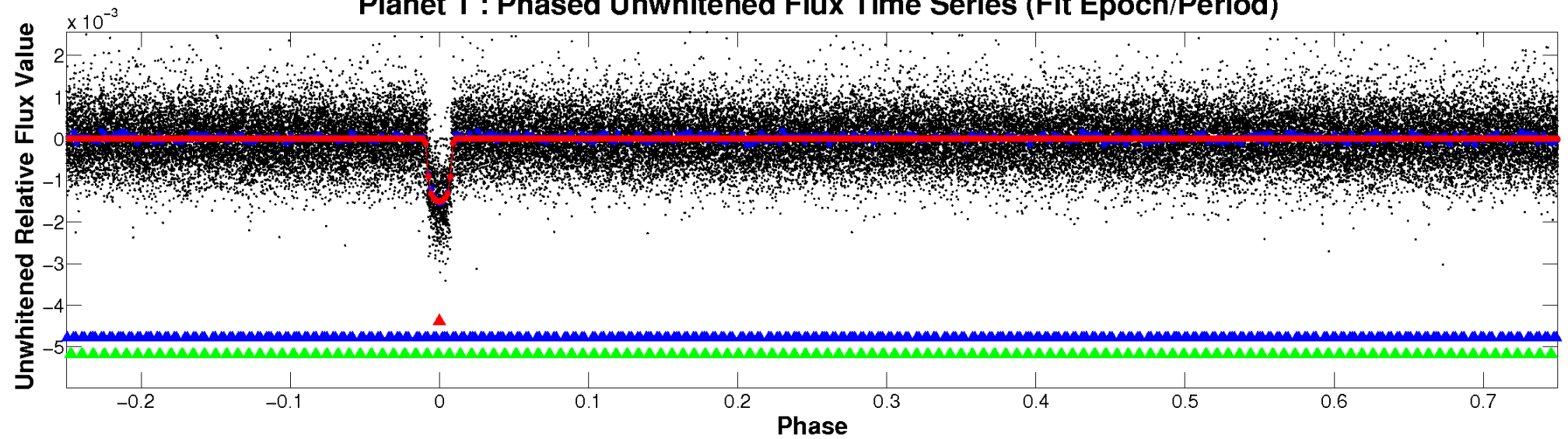
ALT Odd/Even

TCE 010872983-01

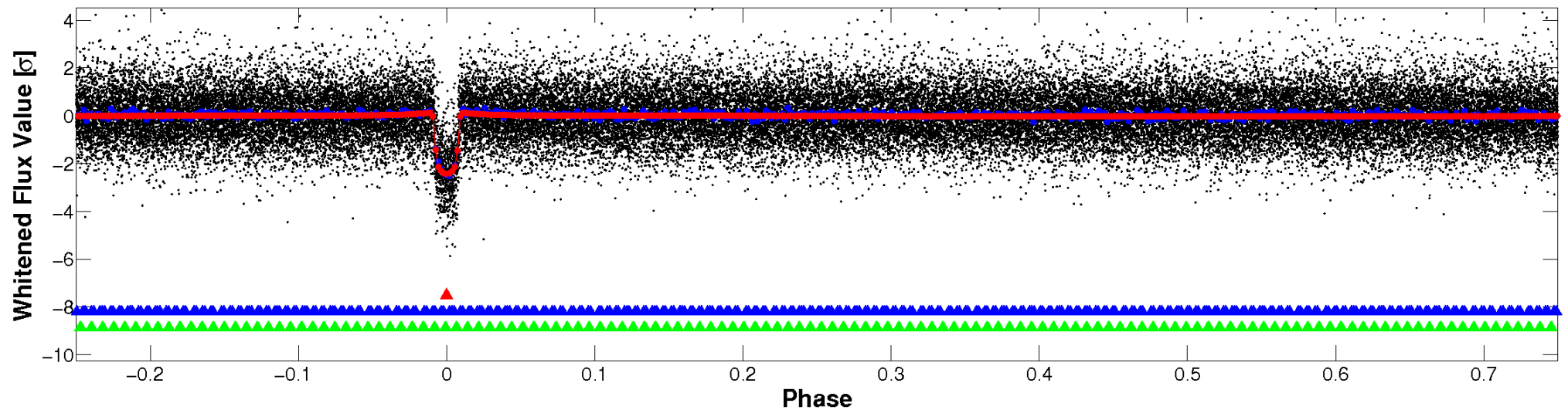


Non-Whitened Vs. Whitened Light Curve

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

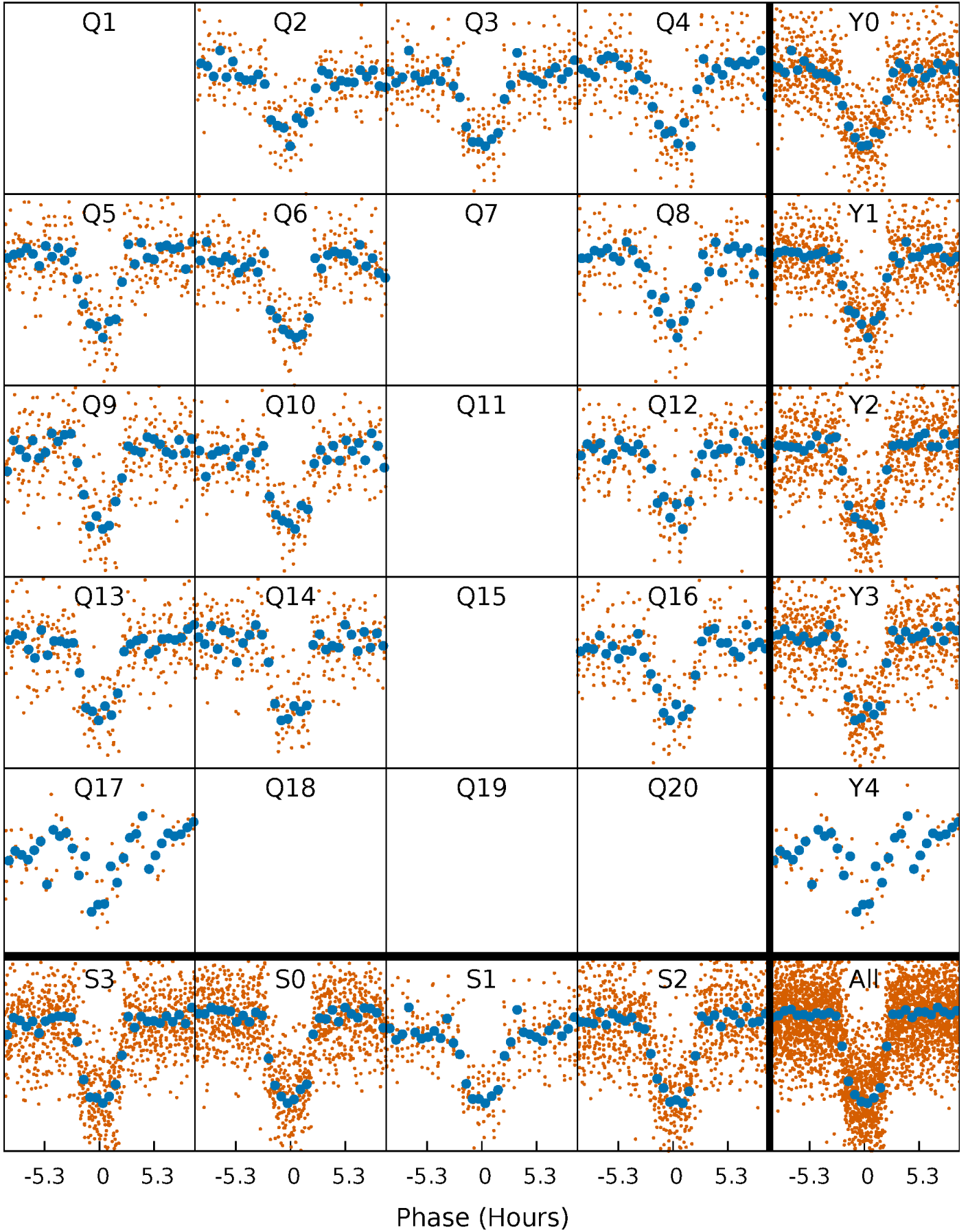


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



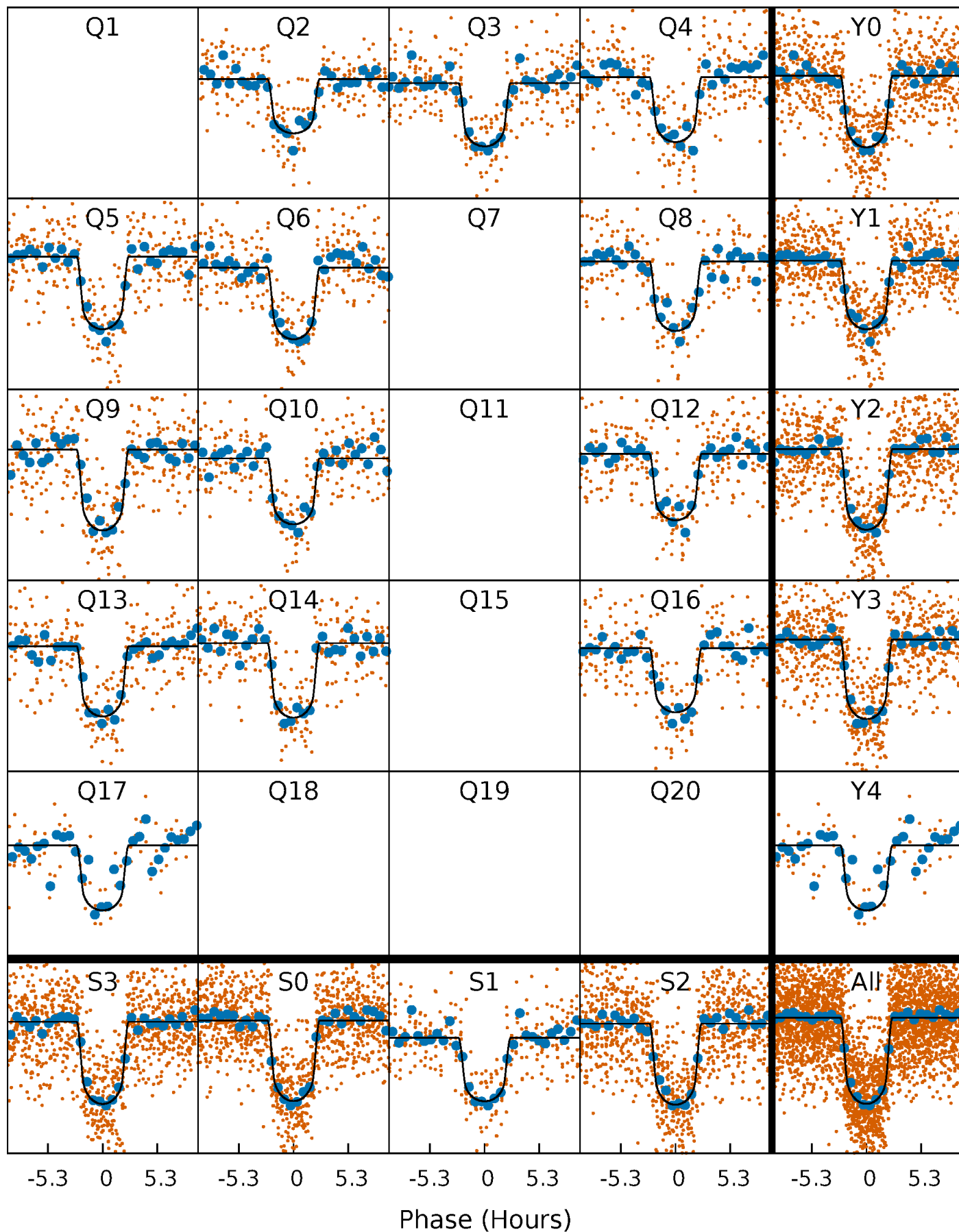
PDC Quarter-Phased Transit Curves

TCE 010872983-01 P= 11.094317 Days $T_0=137.918172$ (BKJD)



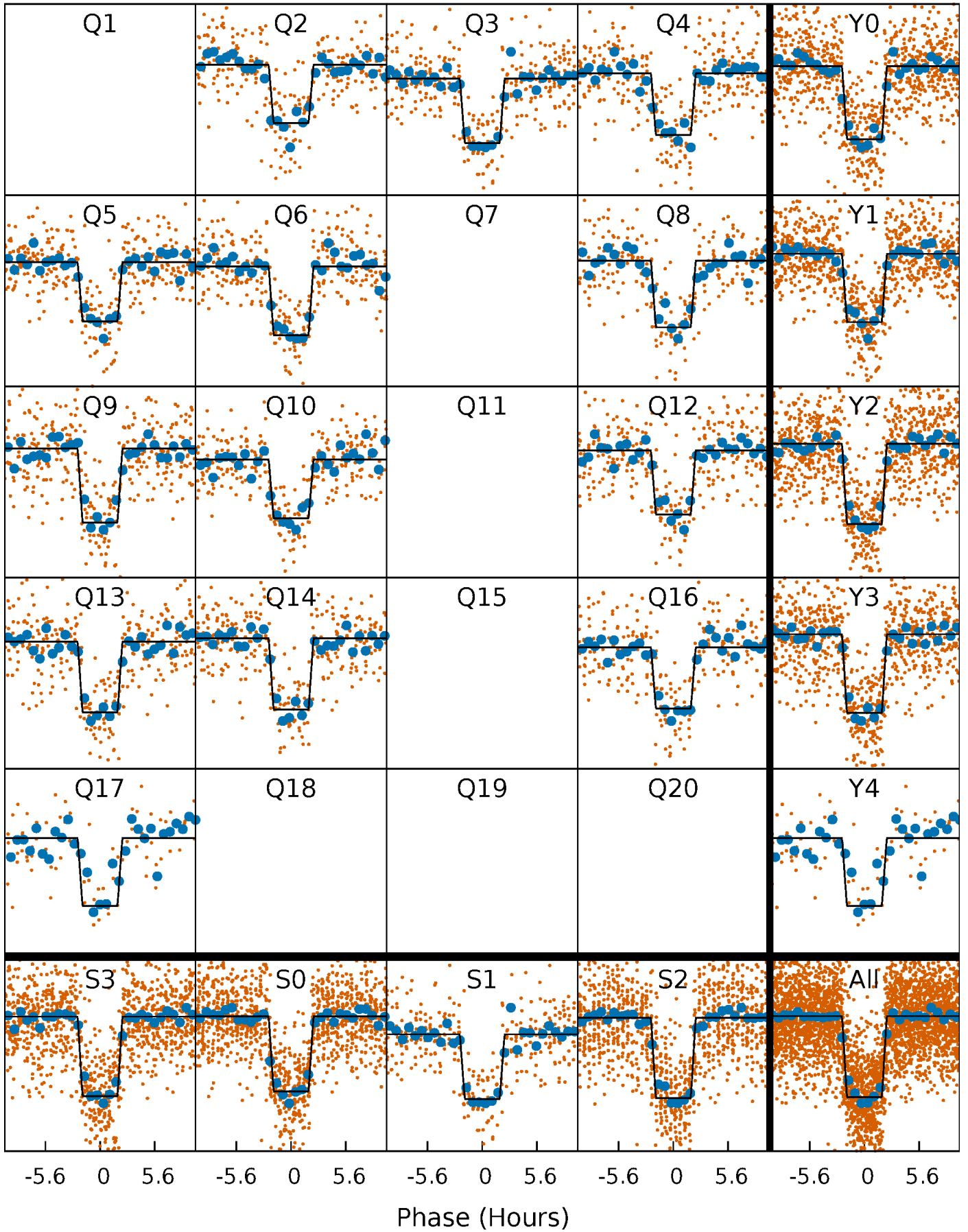
DV Quarter-Phased Transit Curves

TCE 010872983-01 P= 11.094317 Days $T_0=137.918172$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

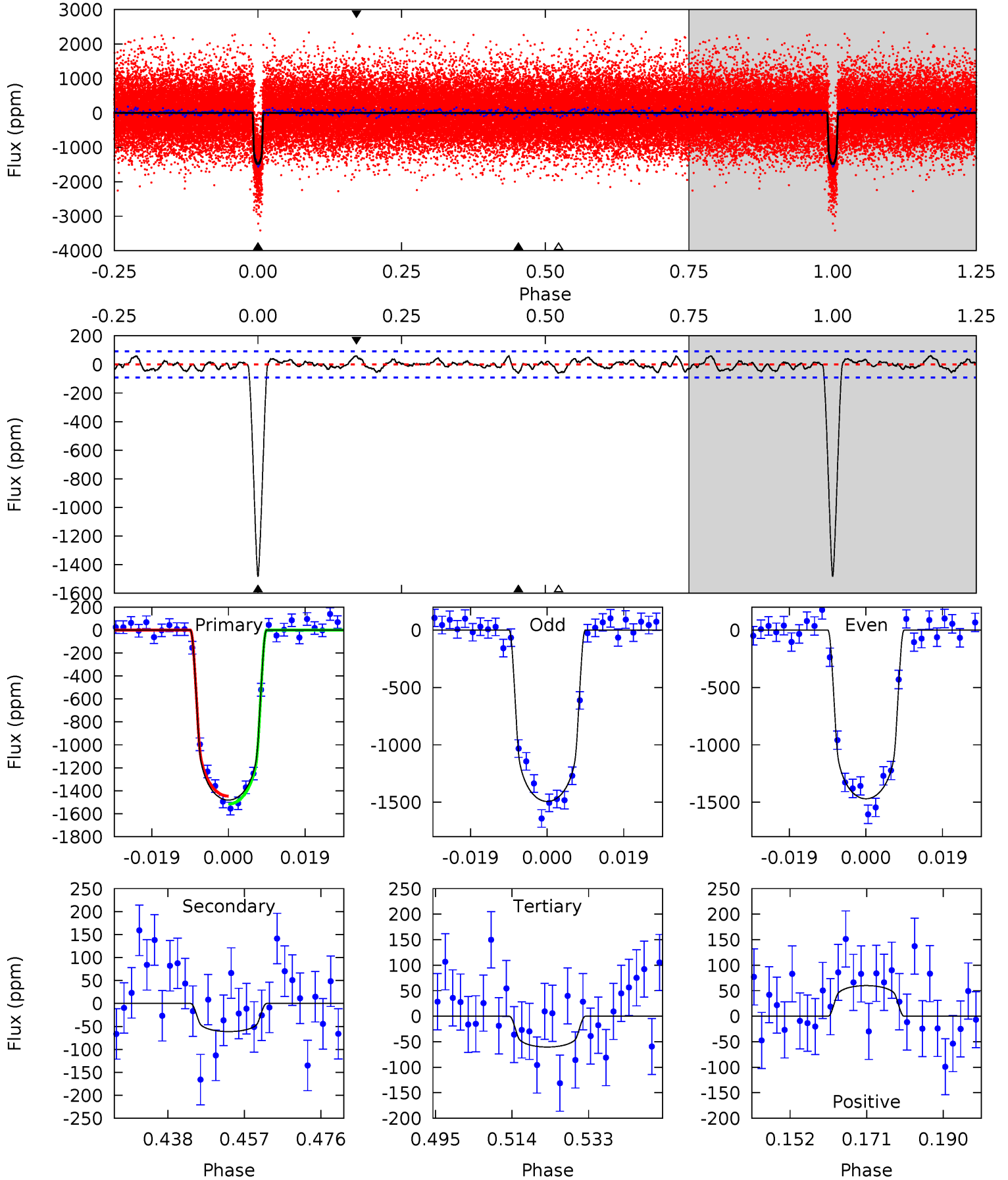
TCE 010872983-01 P= 11.094255 Days $T_0=137.922686$ (BKJD)



DV Model-Shift Uniqueness Test

010872983-01, P = 11.094317 Days, E = 137.918172 Days

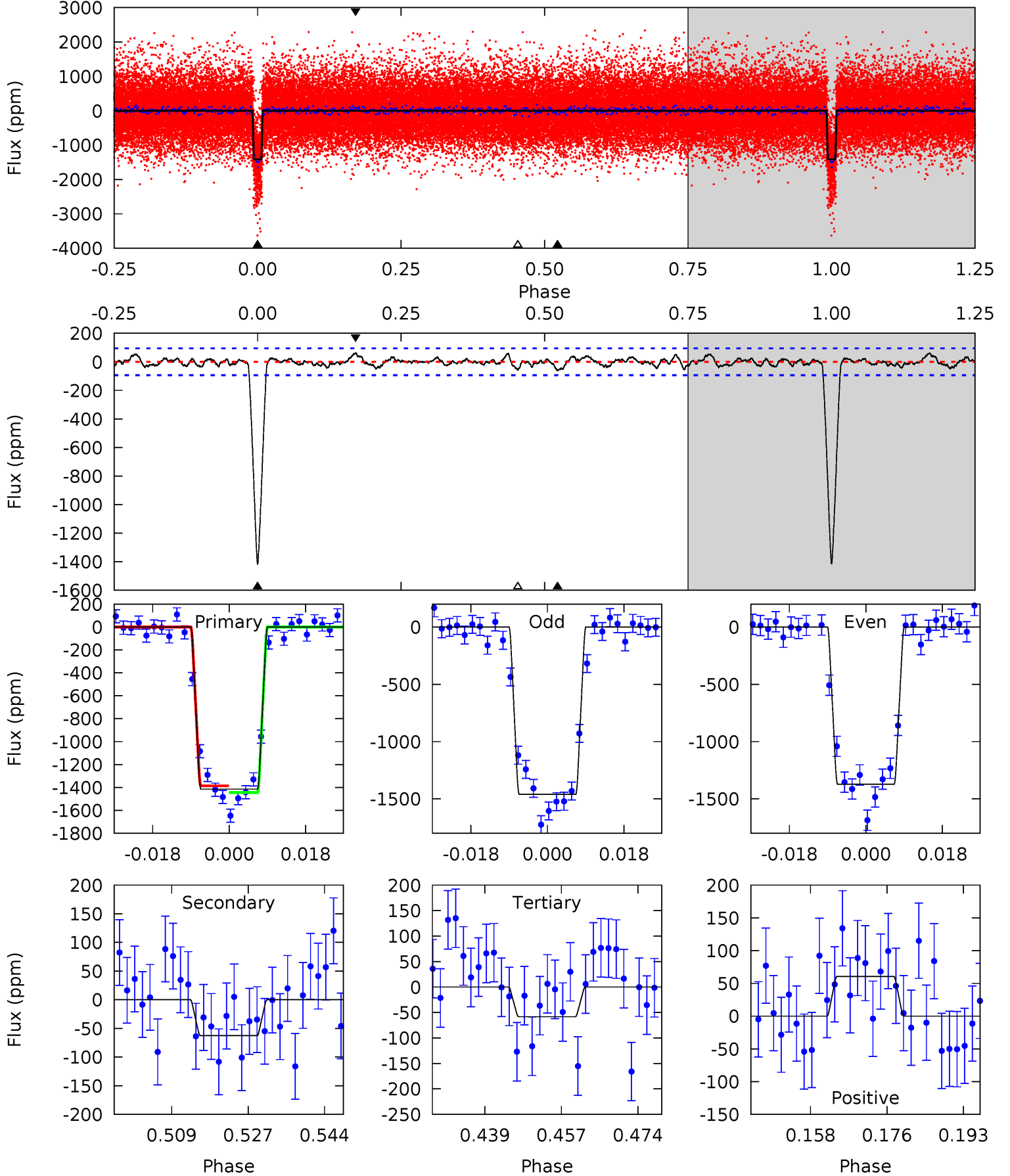
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
79.2	3.27	3.23	3.20	4.90	2.34	1.30	75.9	76.0	0.05	0.07	0.62	1.00	0.04	1.86



Alt Model-Shift Uniqueness Test

010872983-01, $P = 11.094255$ Days, $E = 137.922686$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
73.9	3.27	3.05	3.17	4.92	2.37	1.09	70.8	70.7	0.22	0.10	2.30	1.02	0.04	1.52



Stellar Parameters For KIC 010872983

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6046^{+189}_{-232}	$4.486^{+0.054}_{-0.229}$	$-0.080^{+0.250}_{-0.300}$	$0.972^{+0.315}_{-0.105}$	$1.053^{+0.135}_{-0.150}$	$1.615^{+0.468}_{-0.856}$
	+3%/-4%	+1%/-5%	+312%/-375%	+32%/-11%	+13%/-14%	+29%/-53%
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 010872983-01 / KOI 0756.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-61 ± 19	$4.10^{+0.83}_{-0.64}$	1194^{+91}_{-64}	3300^{+237}_{-207}	19^{+11}_{-7}
Alt.	-63 ± 19	$4.24^{+0.84}_{-0.65}$	1195^{+94}_{-65}	3272^{+213}_{-193}	18^{+9}_{-7}

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 $A_{obs} \gg 1.0$

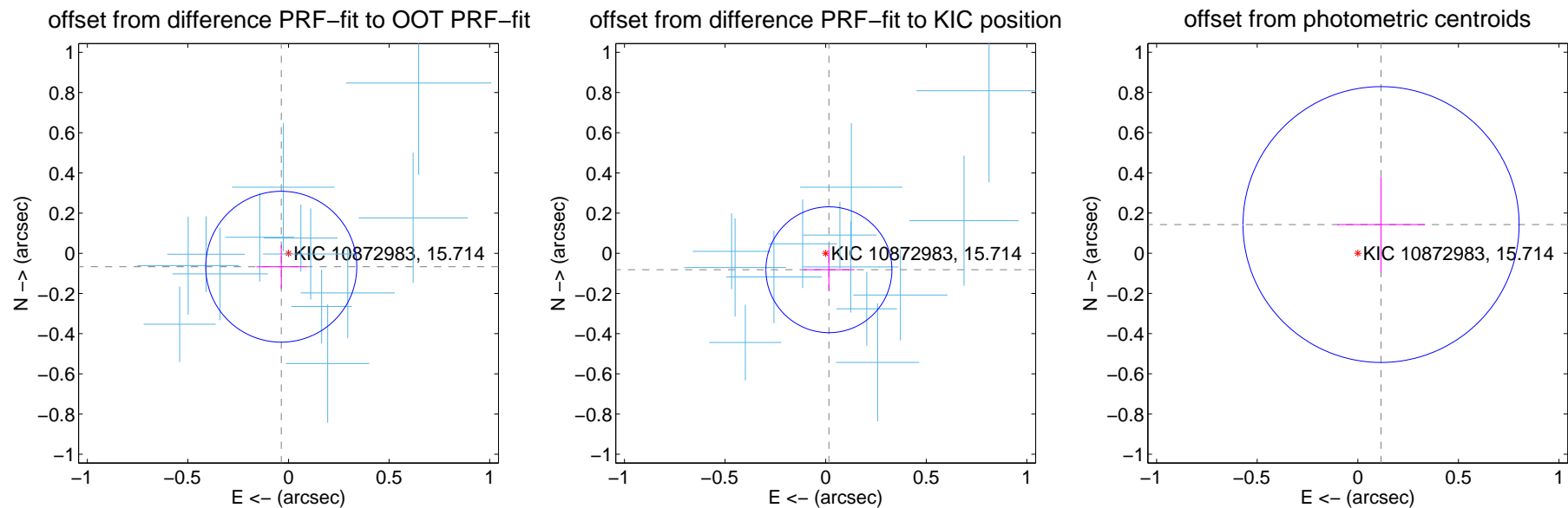
DV Centroid Data

Supplemental centroid analysis for 010872983-01. Kepler magnitude: 15.71. Transit SNR 59.64

There are 13 quarters with good PRF difference image offsets

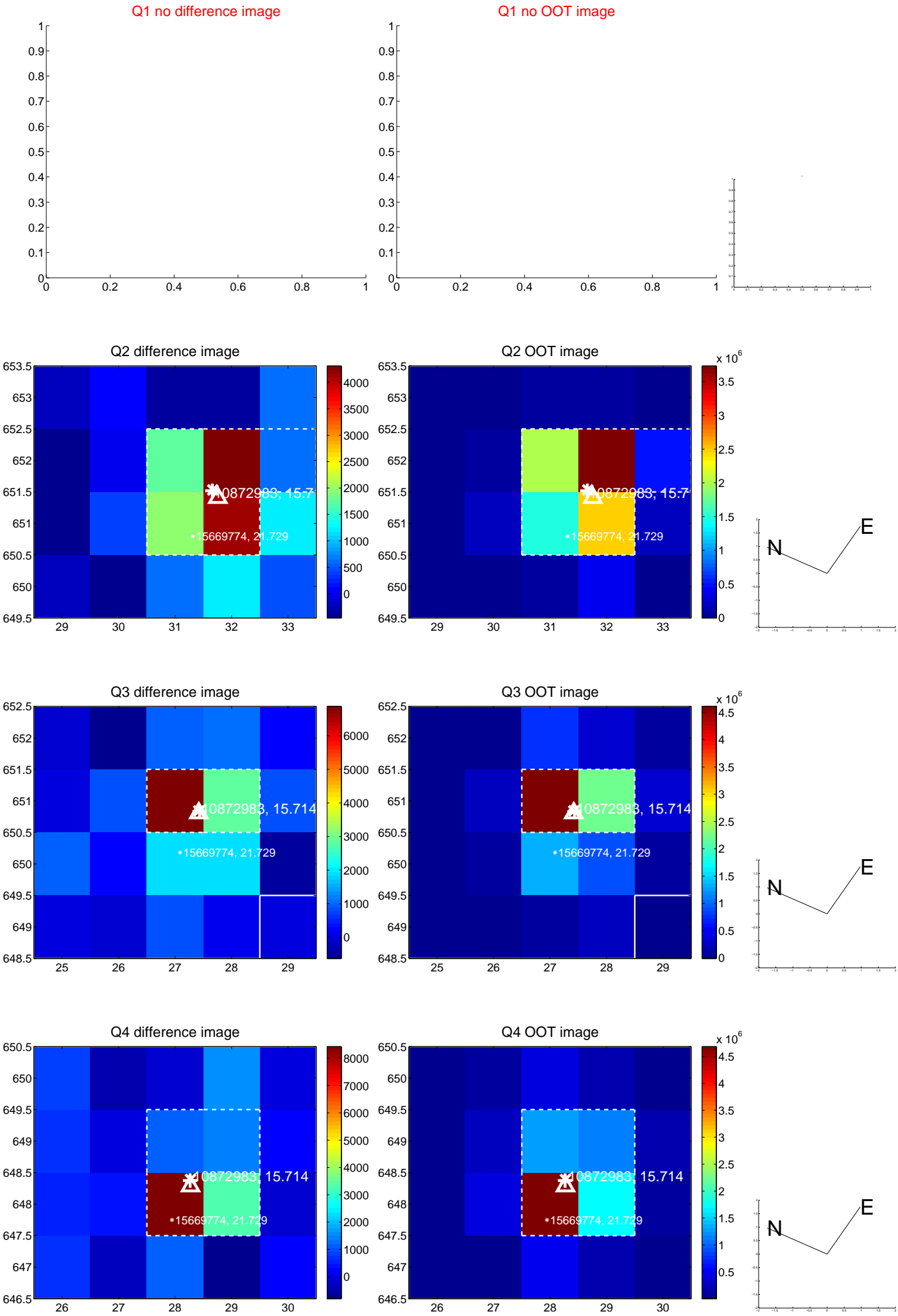
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.076 ± 0.125	0.61	0.036 ± 0.123	-0.067 ± 0.109
PRF-fit source offset from KIC position	0.083 ± 0.104	0.80	-0.016 ± 0.127	-0.082 ± 0.103
photometric centroid source offset	0.18 ± 0.23	0.80	-0.12 ± 0.22	0.14 ± 0.24

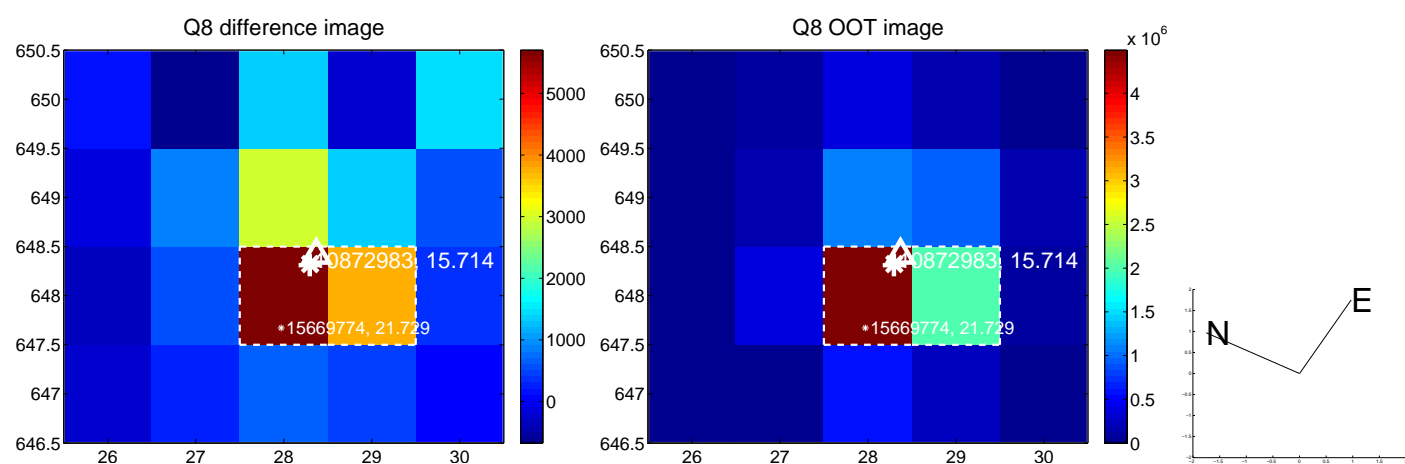
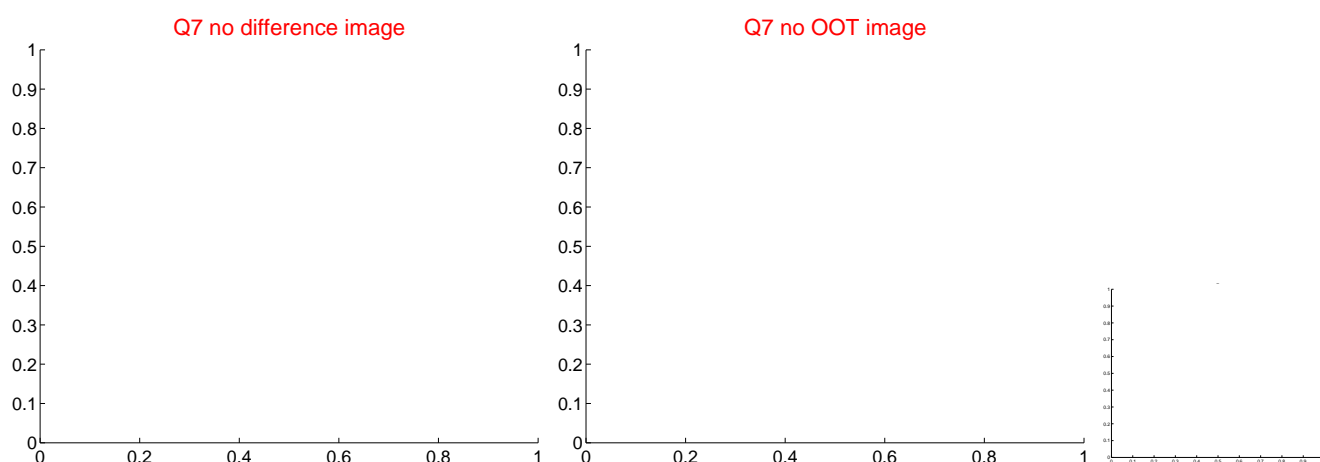
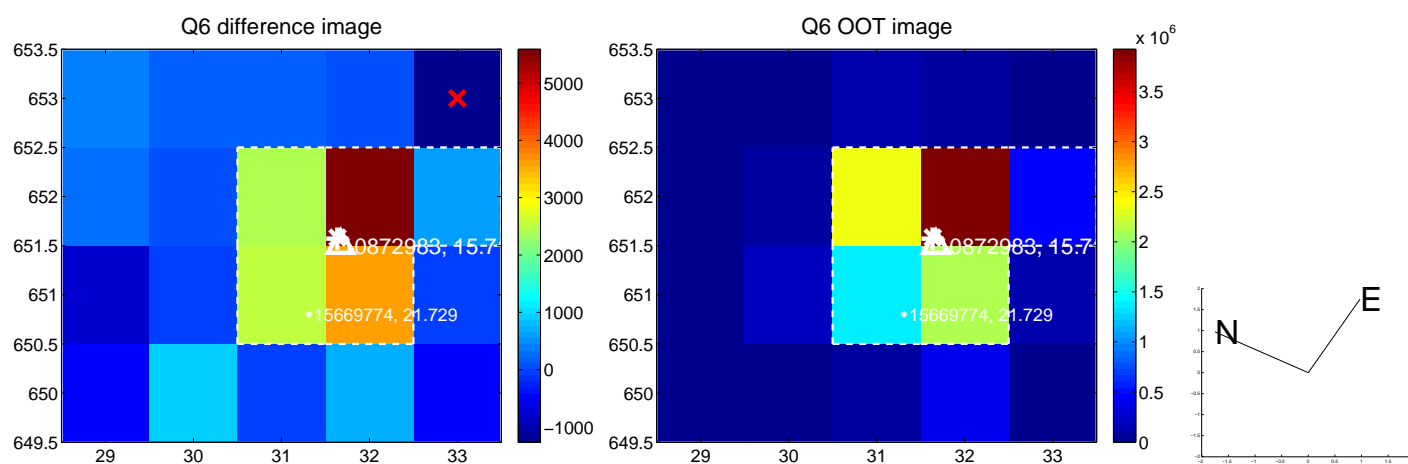
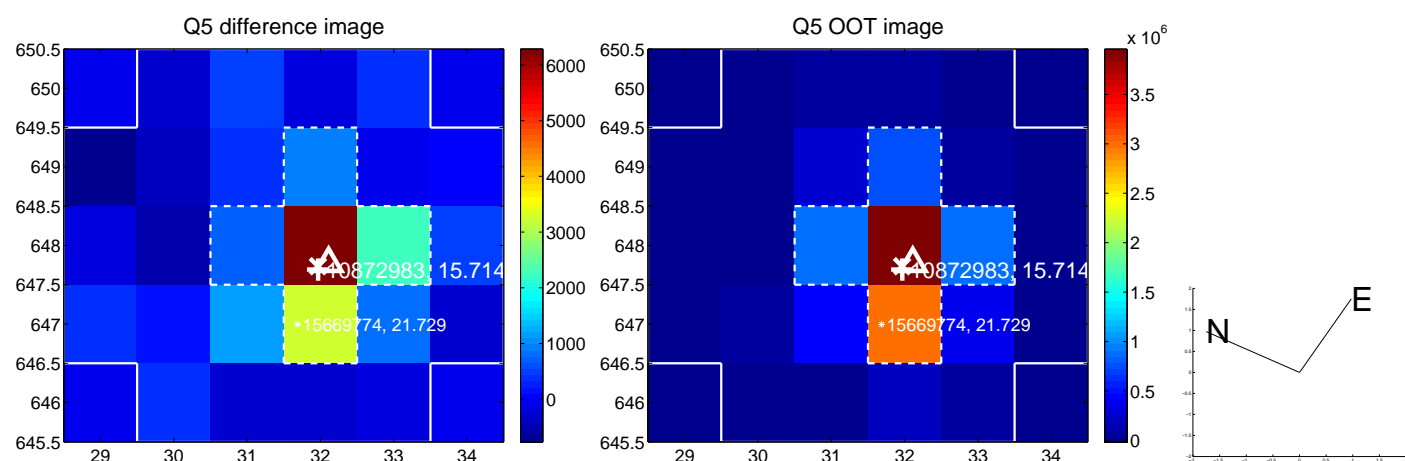


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

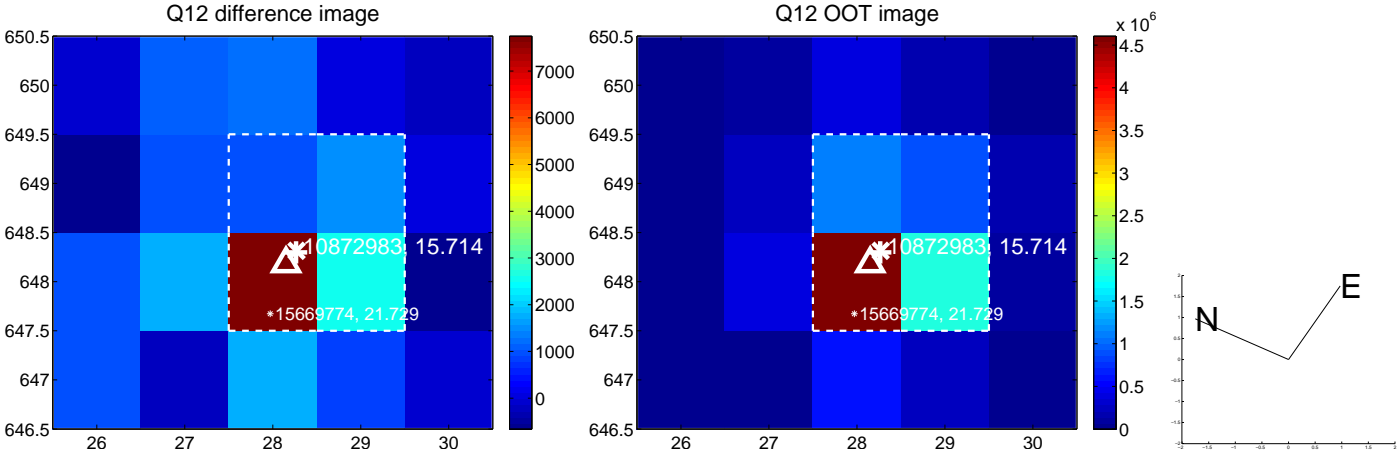
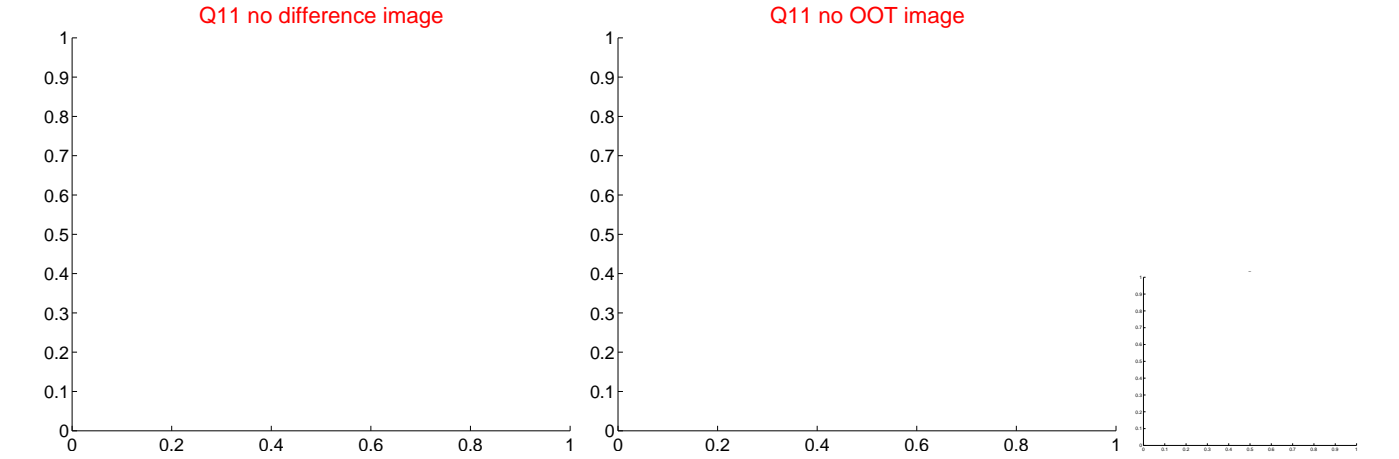
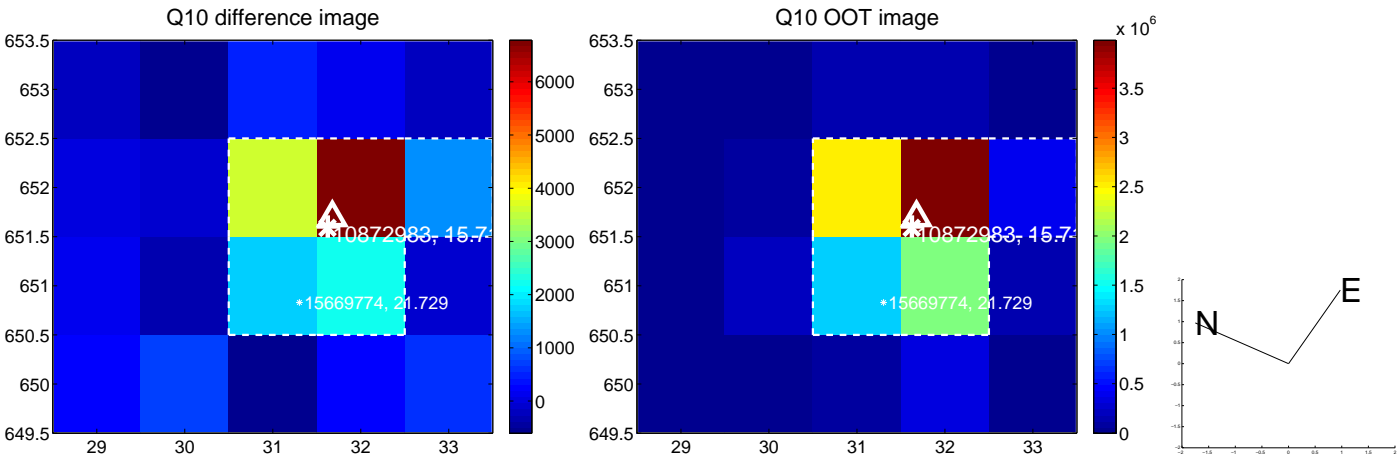
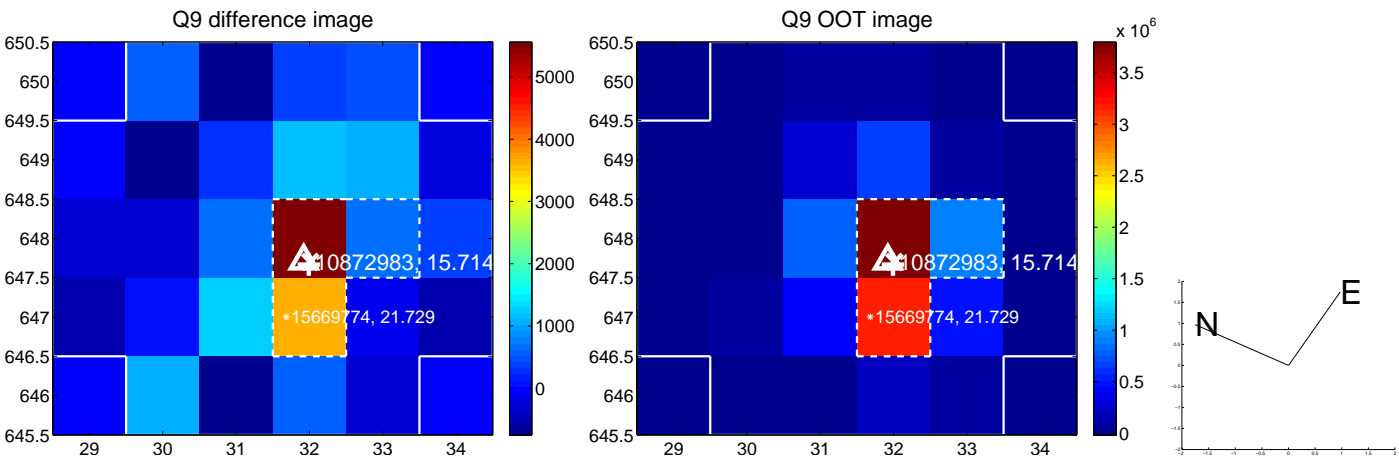
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



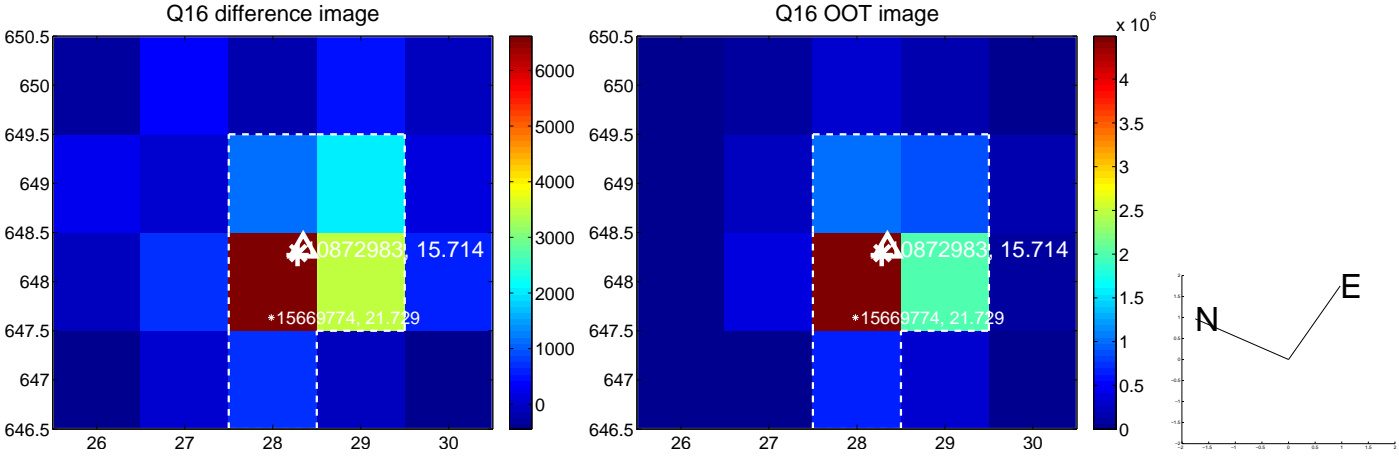
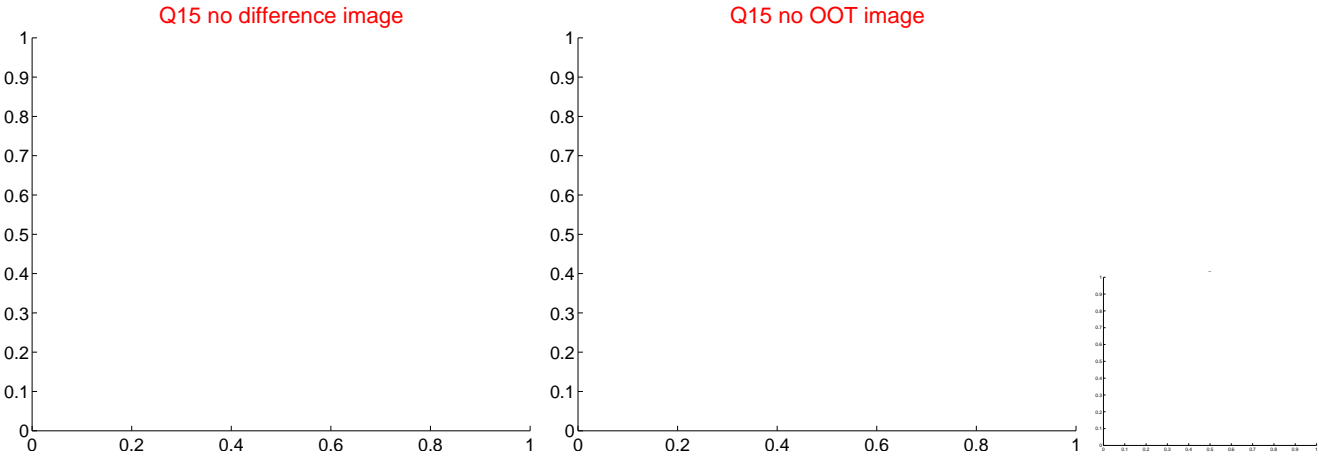
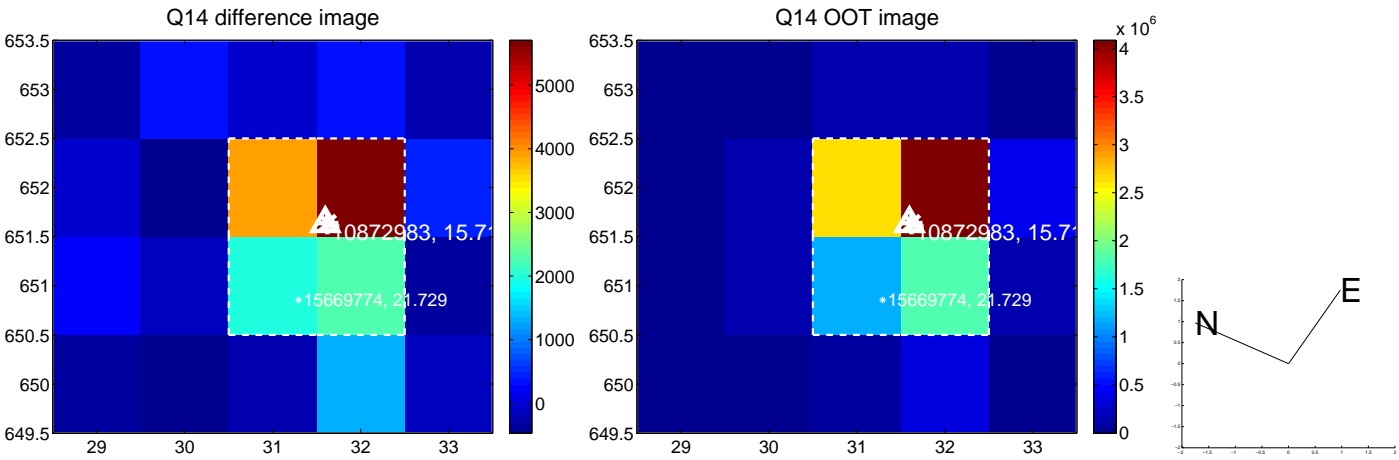
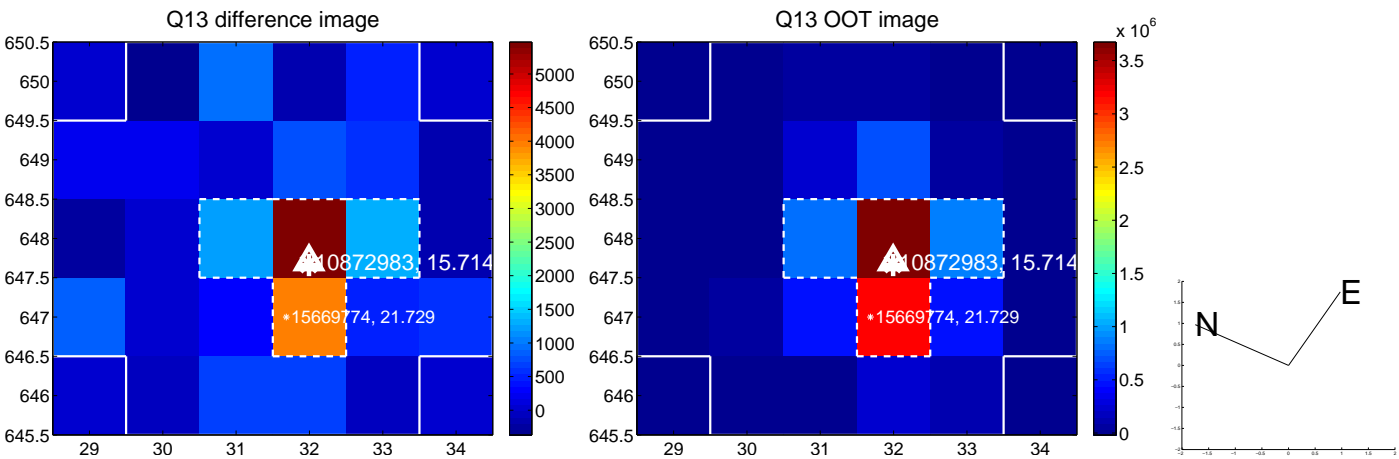
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



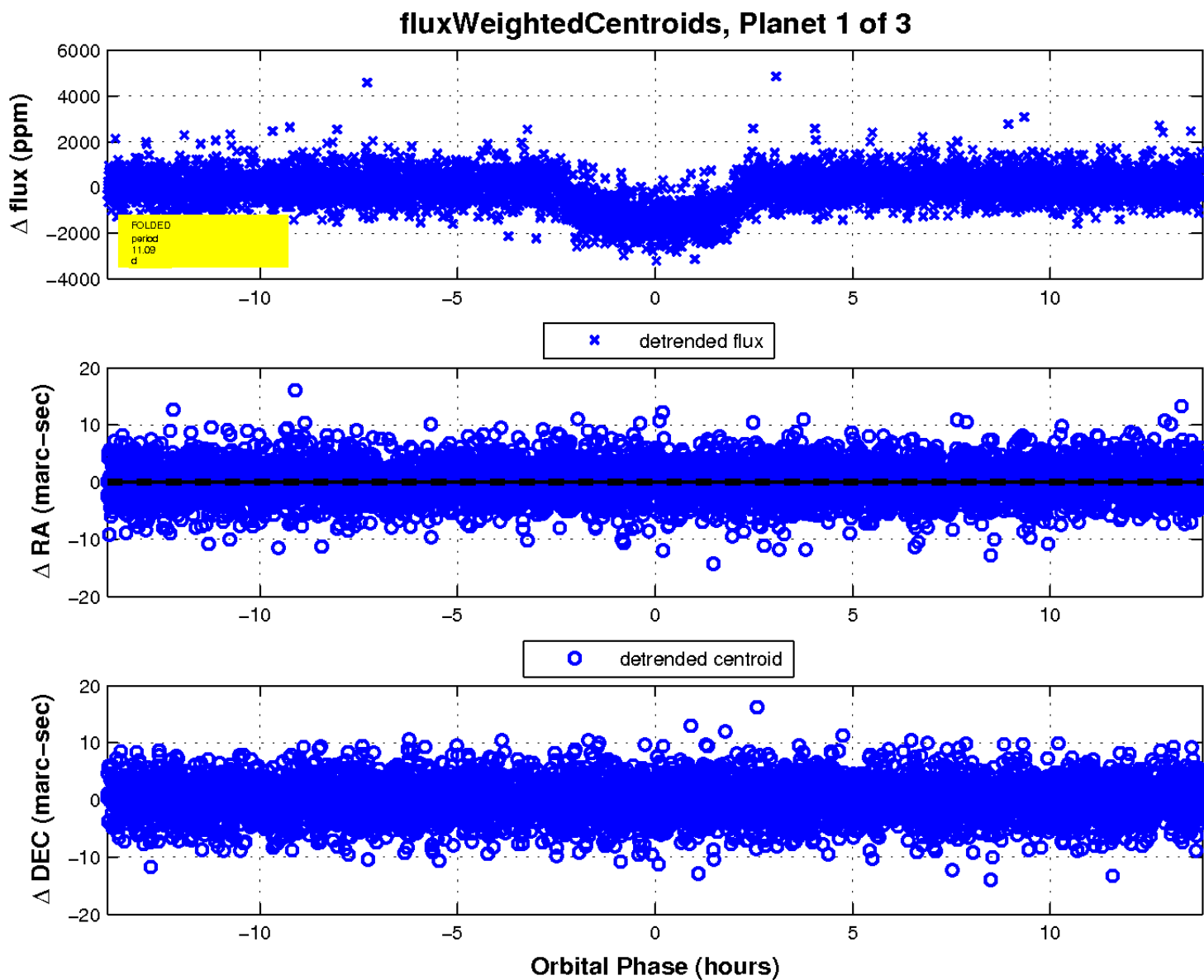
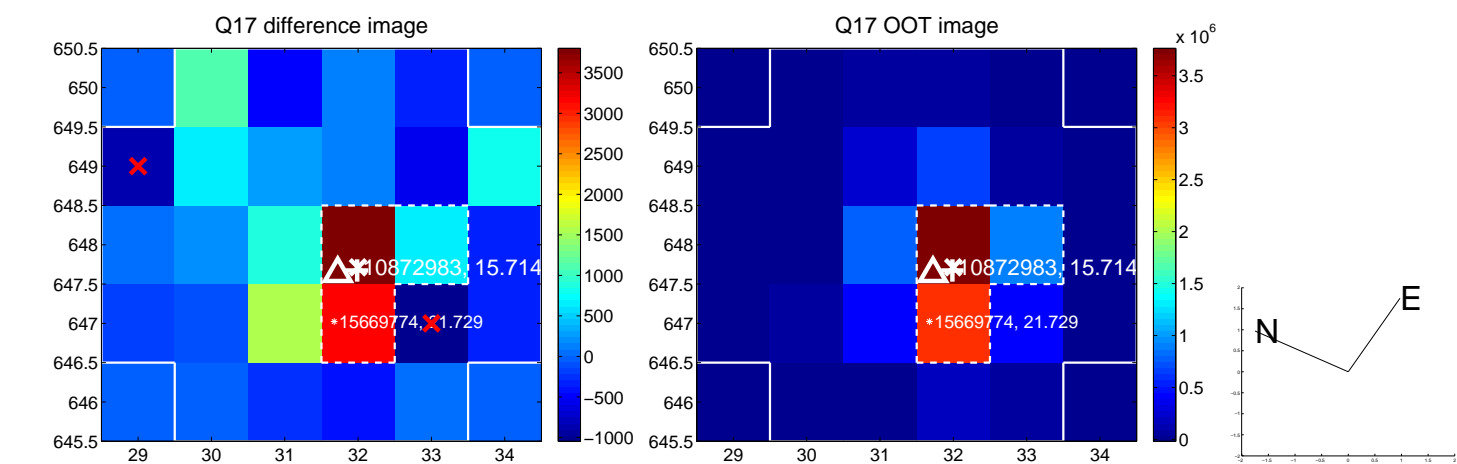
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



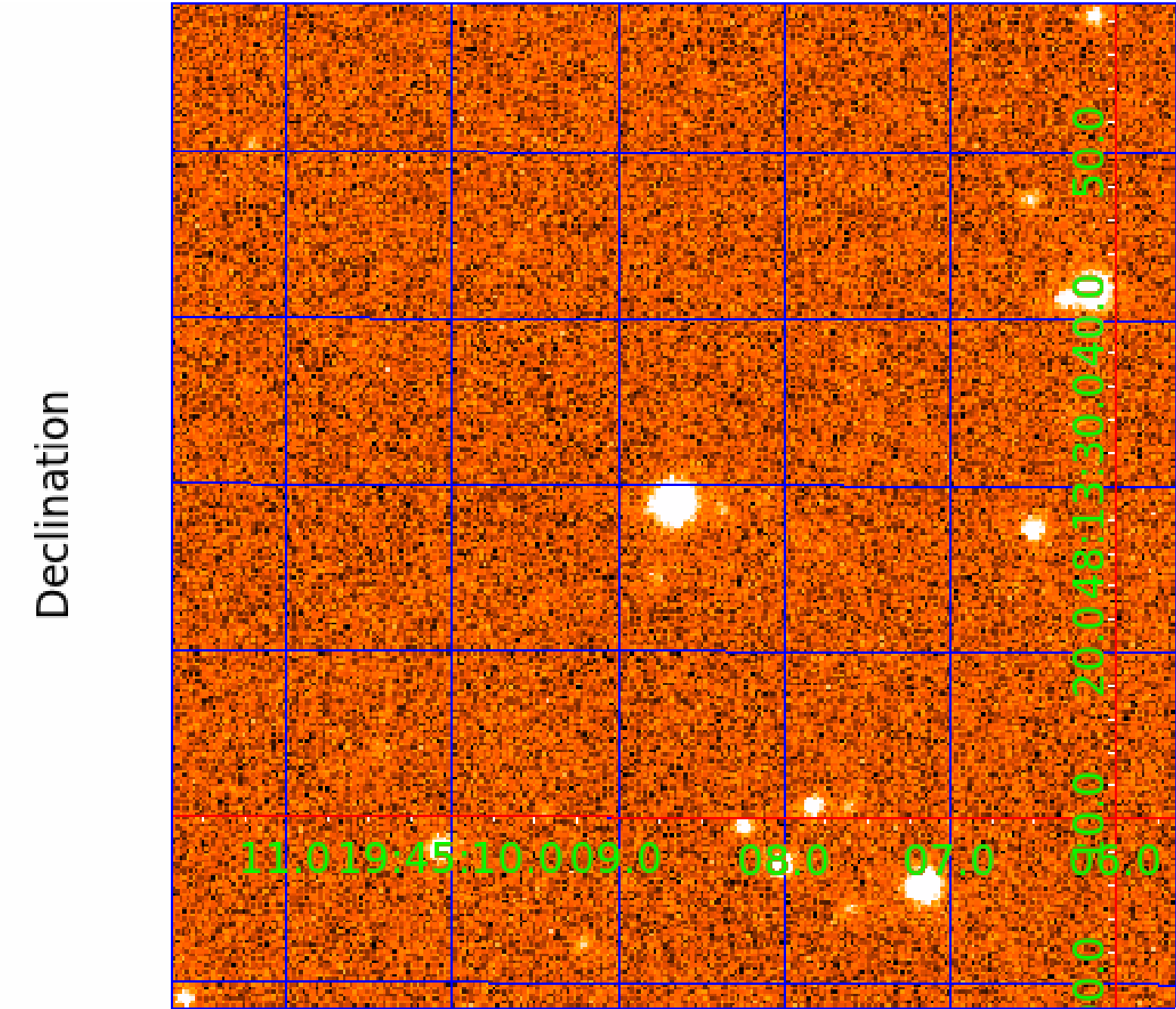
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 010872983

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})
010872983-01	OBS	0756.01	11.094317	137.918172	1505.8	4.621	55.2	59.6	0.97	6046	3.96	115.10
010872983-02	OBS	0756.02	4.134423	131.637745	671.5	3.453	33.5	37.7	0.97	6046	3.05	429.20
010872983-03	OBS	0756.03	2.566577	133.361295	206.6	2.647	12.3	13.3	0.97	6046	1.56	810.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010872983-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010872983-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010872983-03	OBS	PC	0.99	0	0	0	0	NO_COMMENT

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.

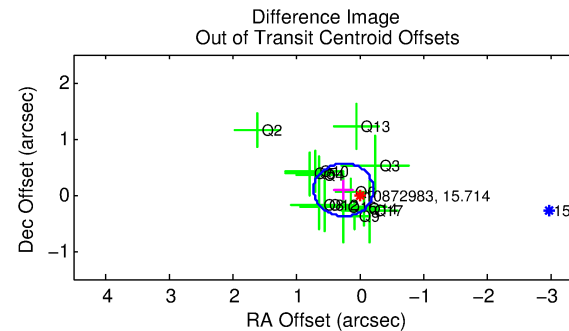
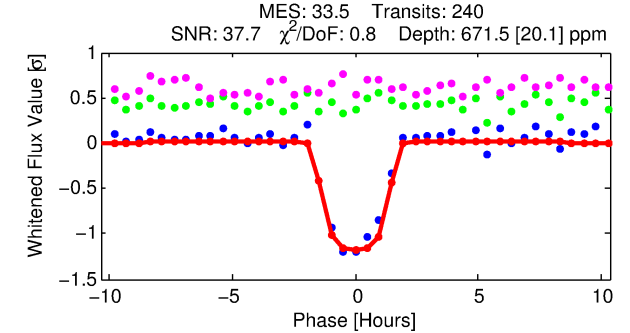
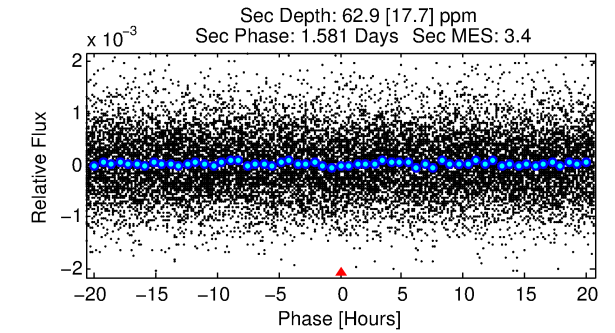
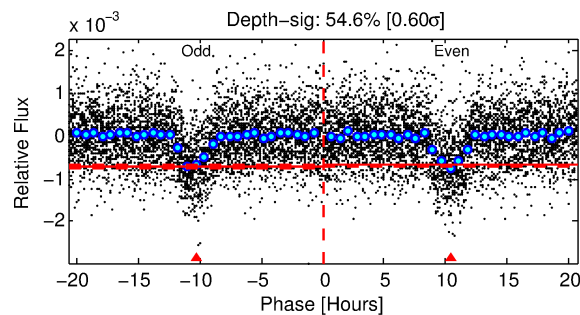
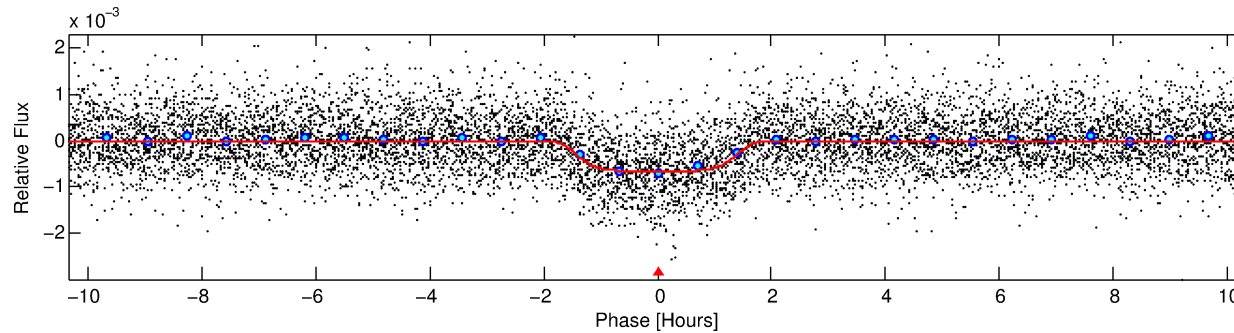
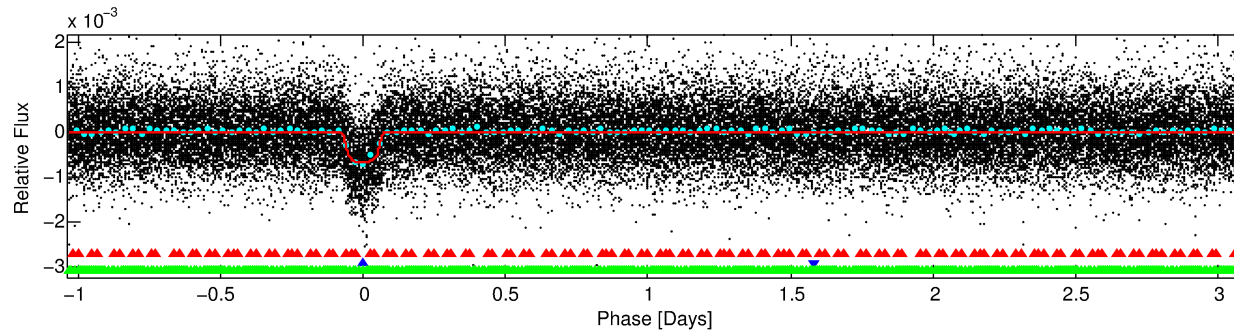
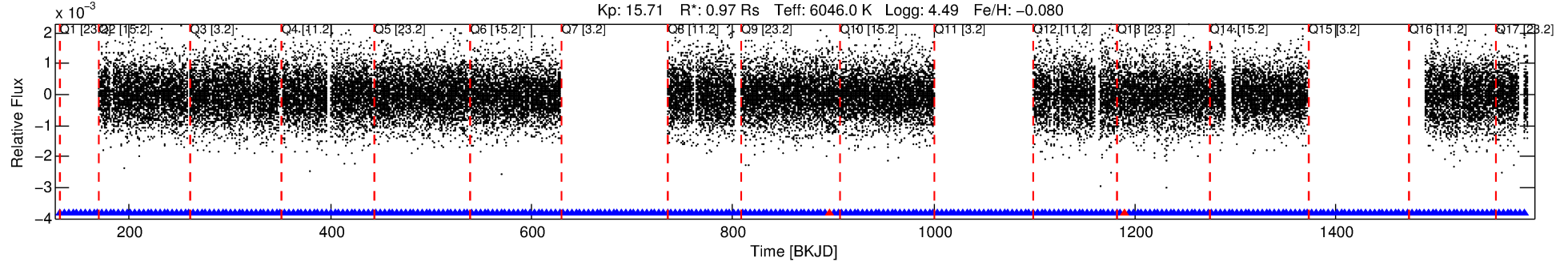
Ephemeris Match Information For 010872983-02

No Significant Match Found

DV One-Page Summary

KIC: 10872983 Candidate: 2 of 3 Period: 4.134 d
KOI: K00756.02 Name: Kepler-228c Corr: 0.960

Kp: 15.71 R*: 0.97 Rs Teff: 6046.0 K Logg: 4.49 Fe/H: -0.080



DV Fit Results:

Period = 4.13442 [0.00001] d
Epoch = 131.6377 [0.0017] BKJD
Rp/R* = 0.0288 [0.0012]
a/R* = 4.23 [0.76]
b = 0.92 [0.03]
Seff = 429.20 [188.95]
Teff = 1161 [128] K
Rp = 3.05 [1.00] Re
a = 0.0513 [0.0143] AU
Ag = 9.80 [4.96] [1.77σ]
Teffp = 3175 [263] K [6.89σ]

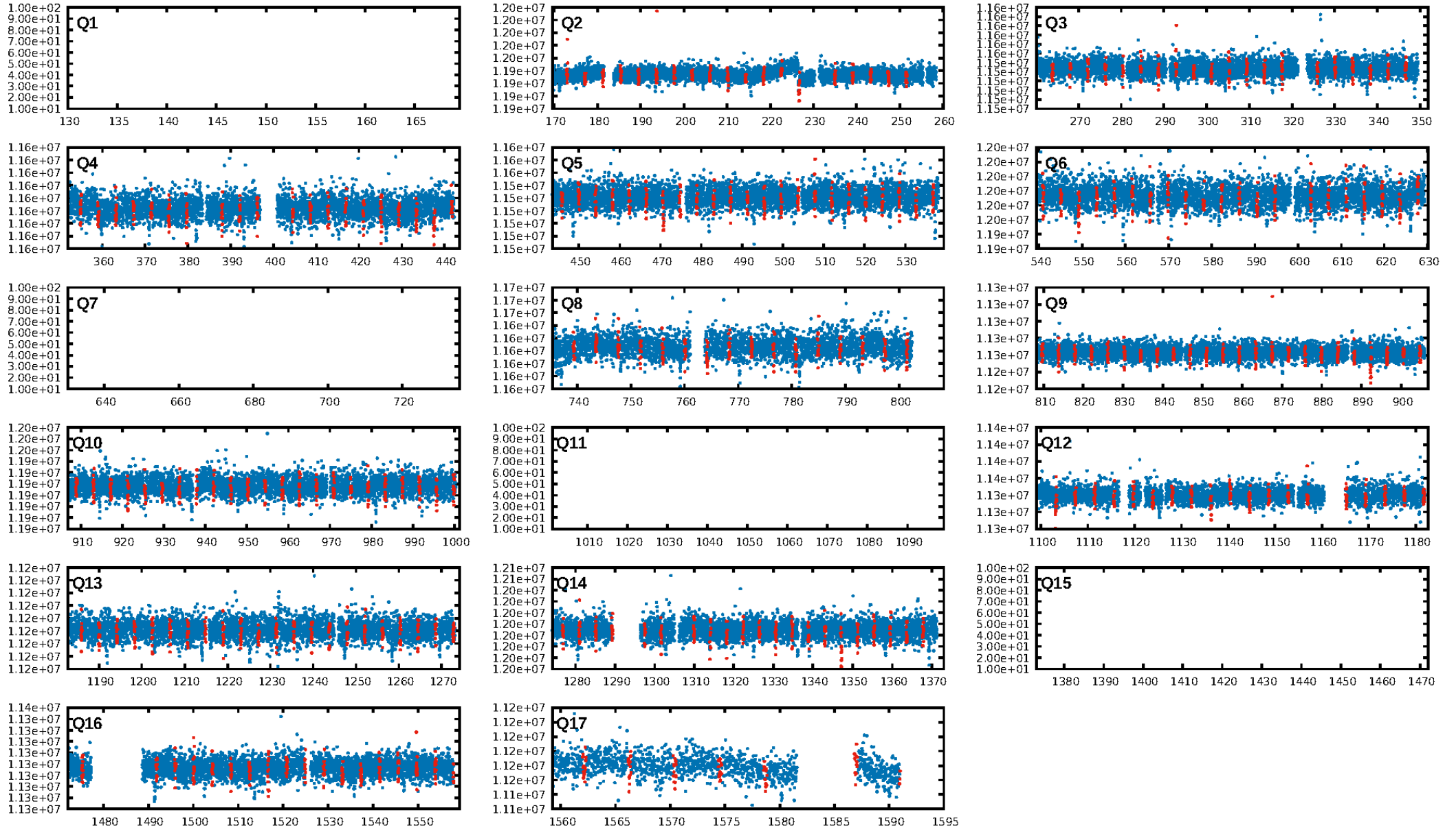
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [8.65σ]
LongPeriod-sig: 100.0% [28.96σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.26e-242
RollingBand-fgt: 0.99 [232/234]
GhostDiagnostic-chr: 5.023
Centroid-sig: N/A
Centroid-so: 0.354 arcsec [0.90σ]
OotOffset-rm: 0.264 arcsec [1.68σ]
KicOffset-rm: 0.192 arcsec [1.14σ]
OotOffset-st: 4/1/4/4 [13]
KicOffset-st: 4/1/4/4 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [13/13]

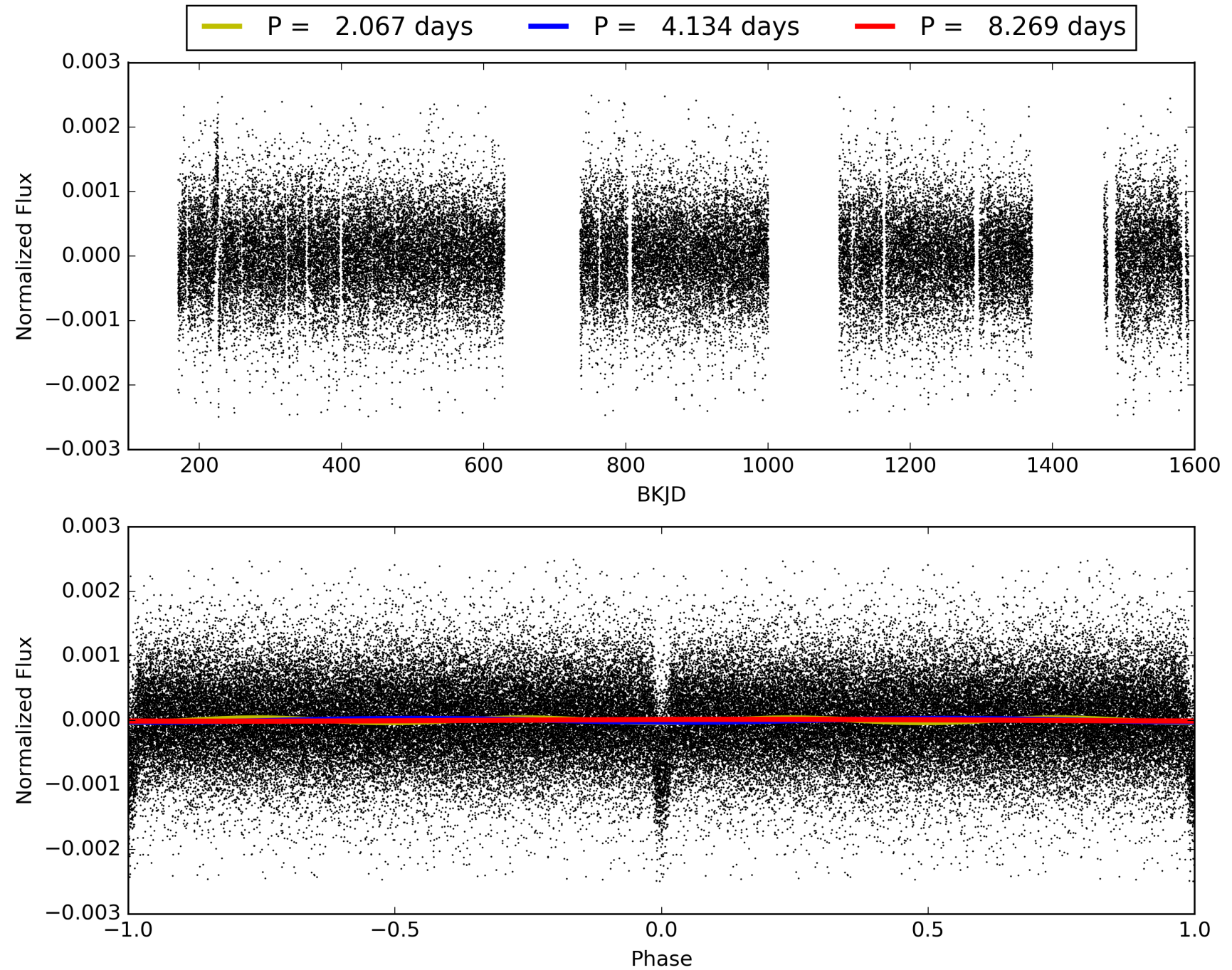
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 11:45:38 Z

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

TCE 010872983-02, PDC Light Curves

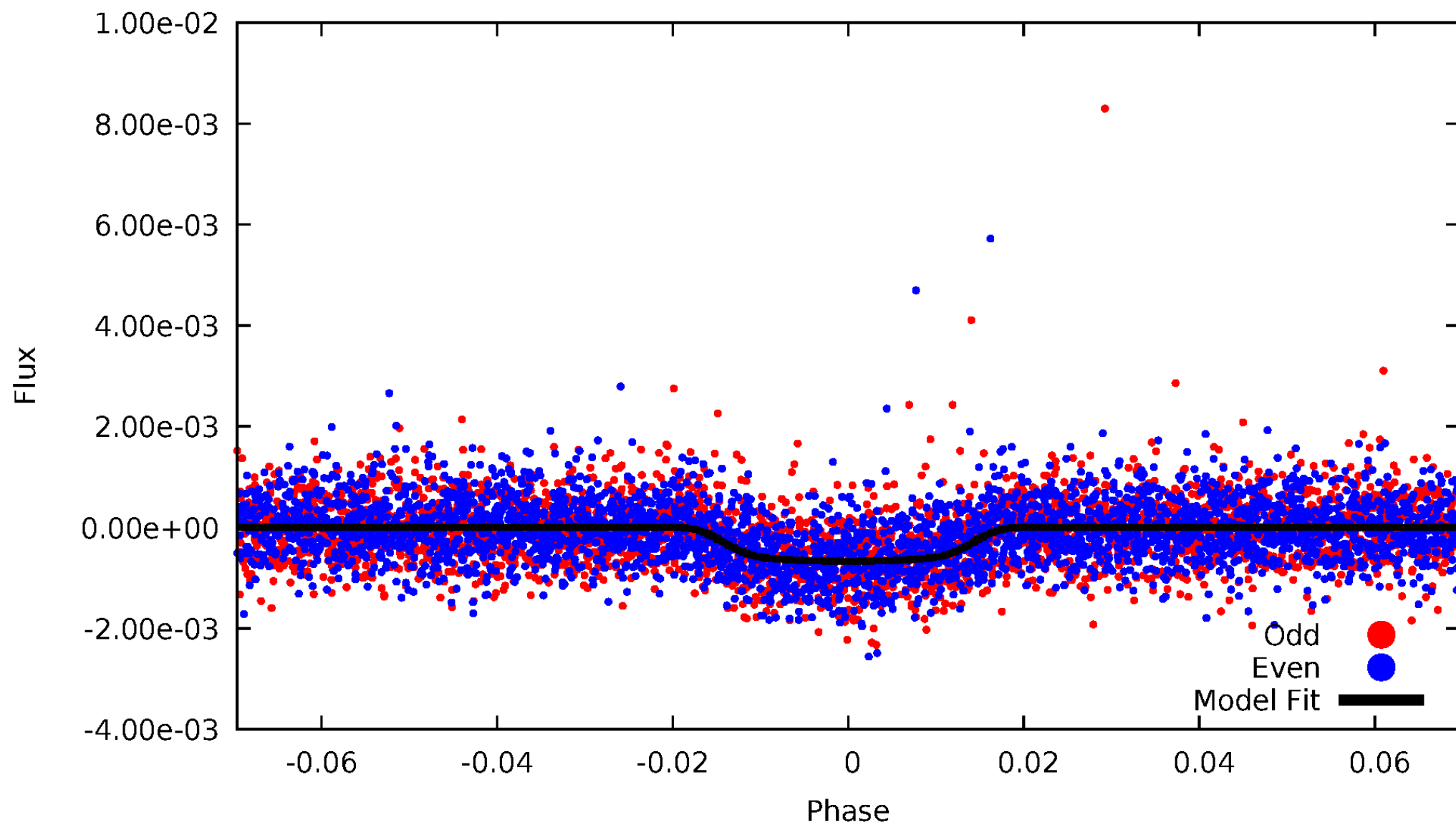


TCE 010872983-02



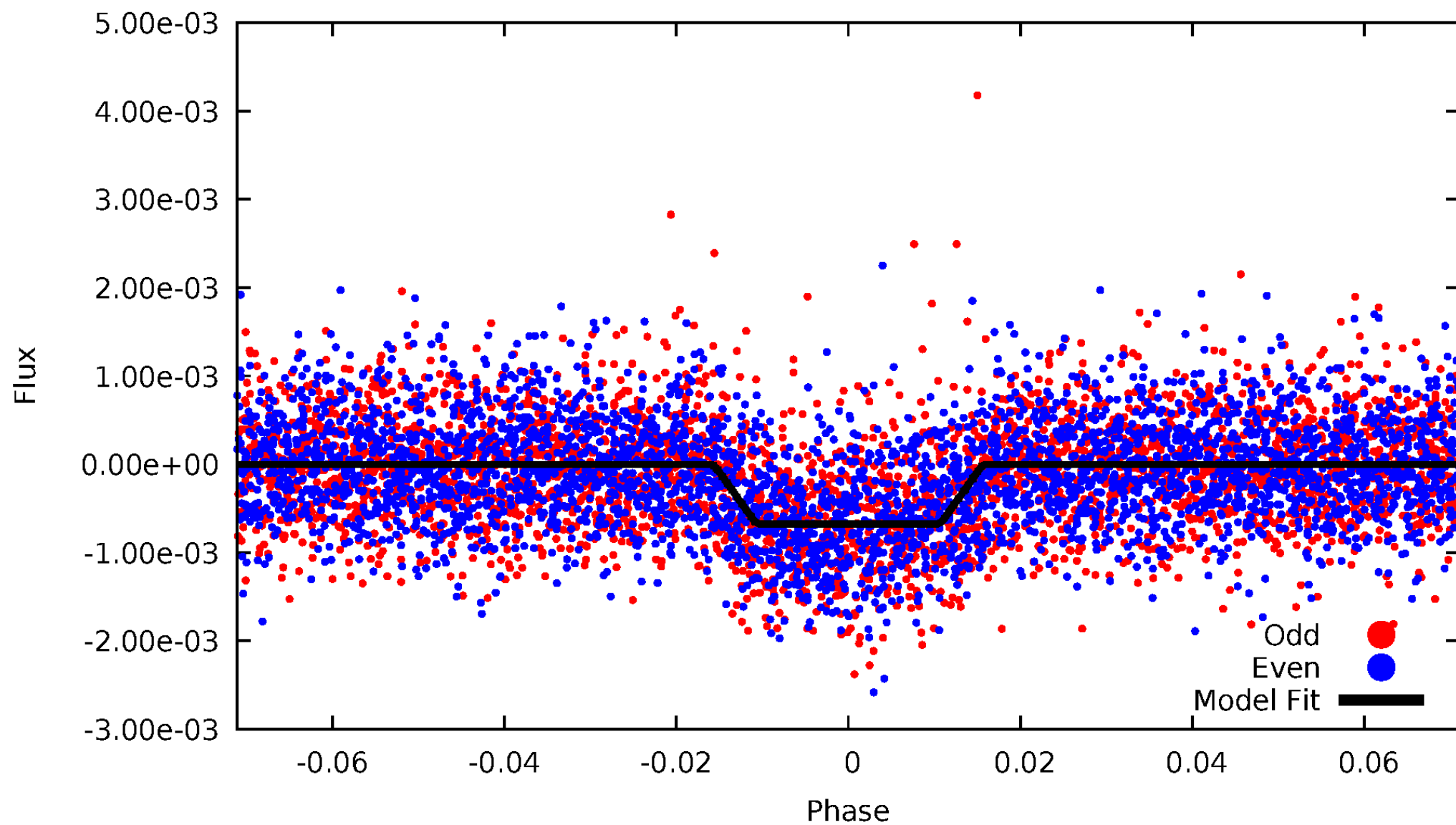
DV Odd/Even

TCE 010872983-02



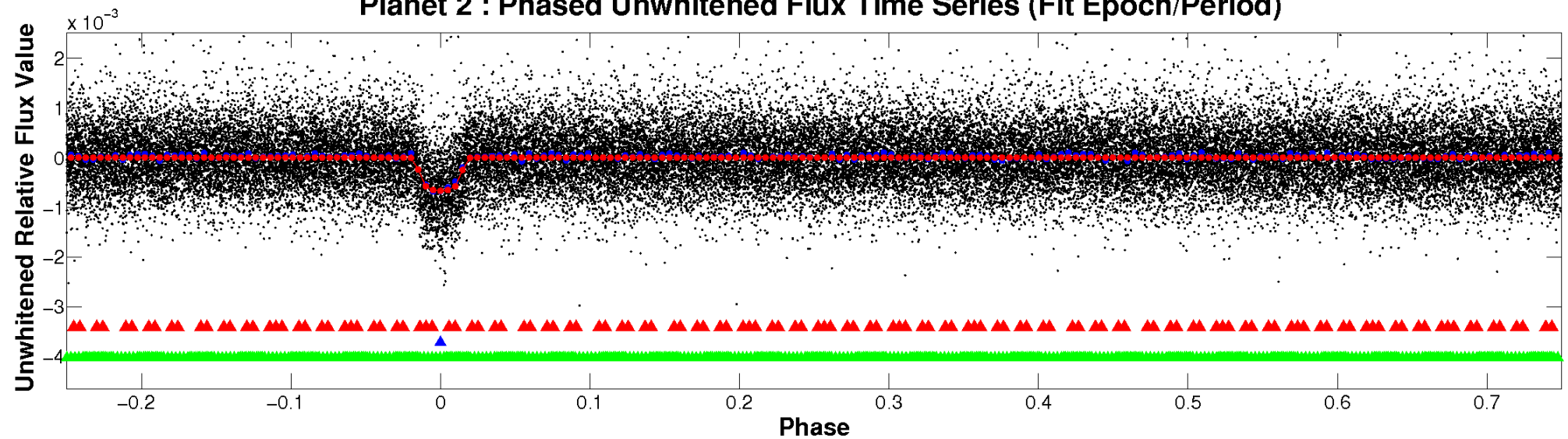
ALT Odd/Even

TCE 010872983-02

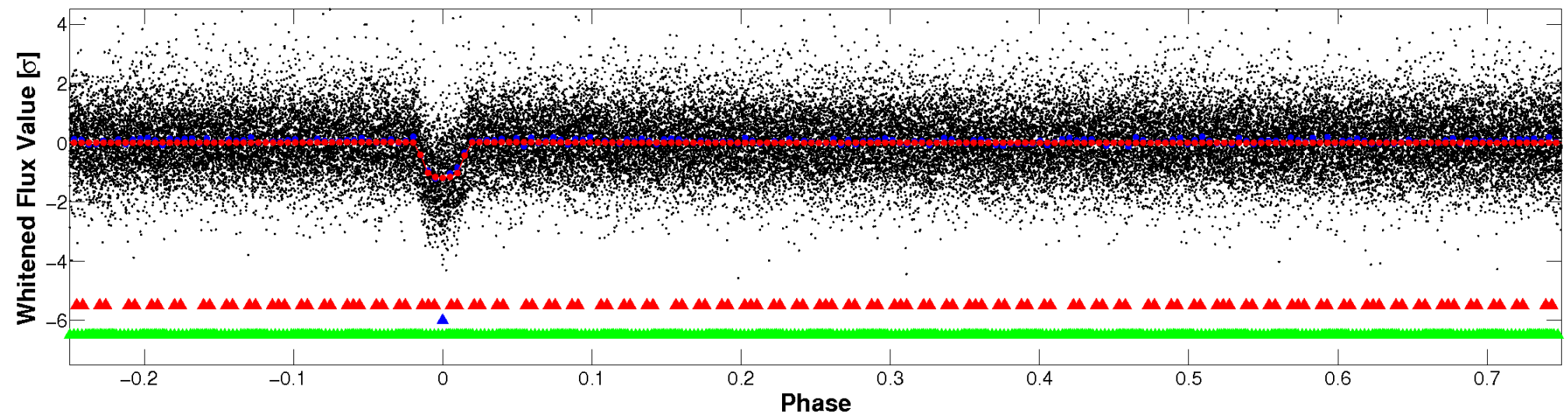


Non-Whitened Vs. Whitened Light Curve

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

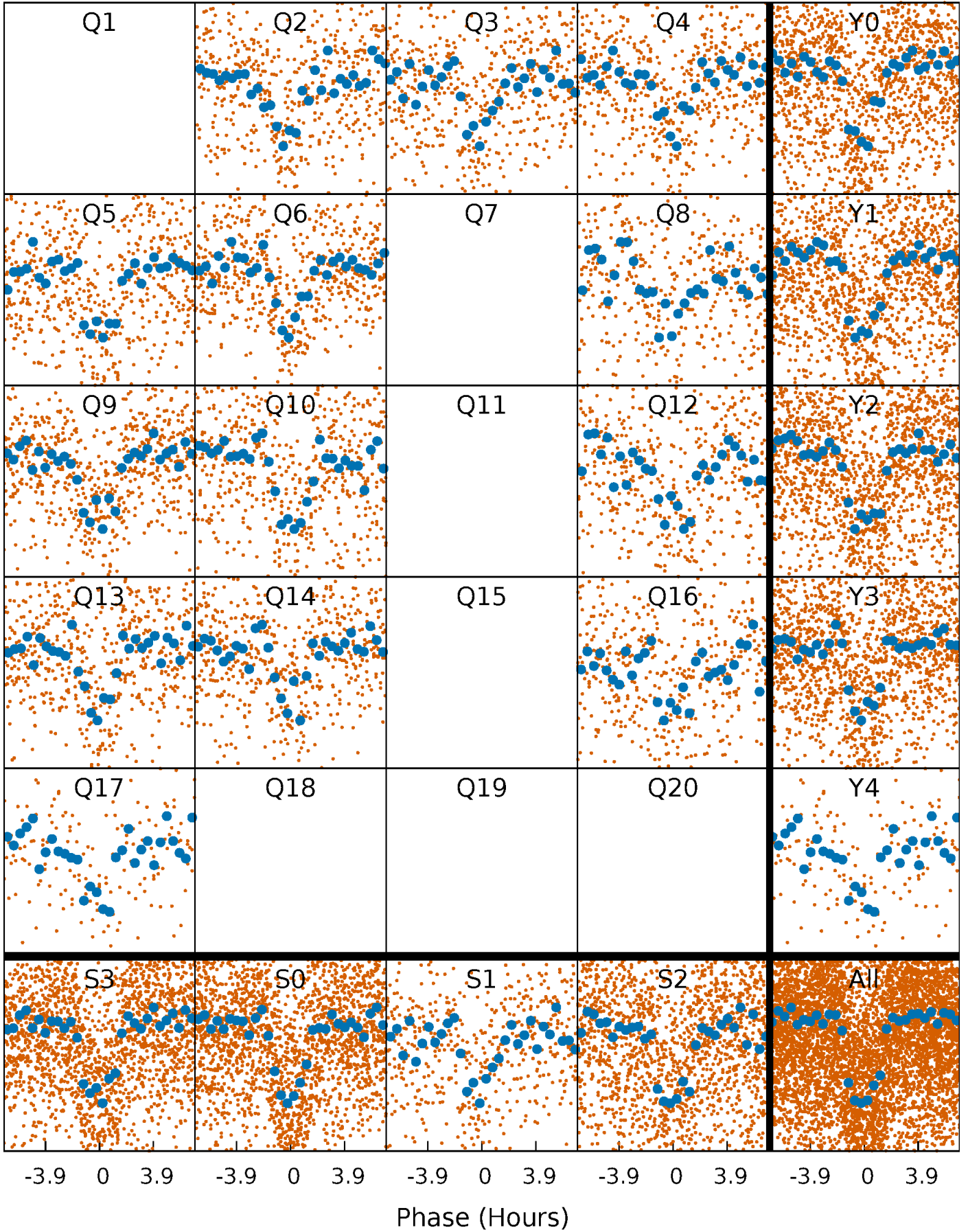


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



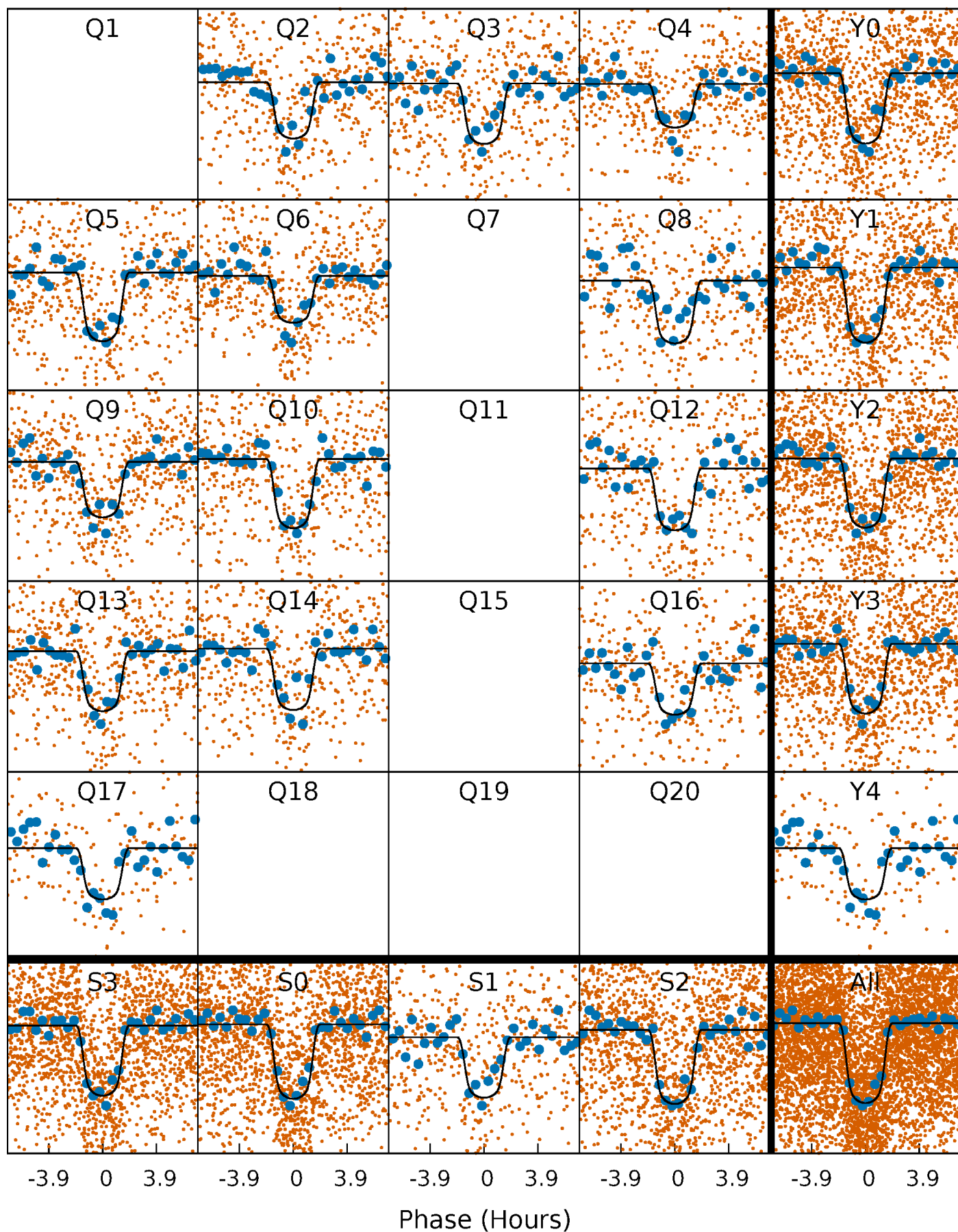
PDC Quarter-Phased Transit Curves

TCE 010872983-02 P= 4.134423 Days $T_0=131.637745$ (BKJD)



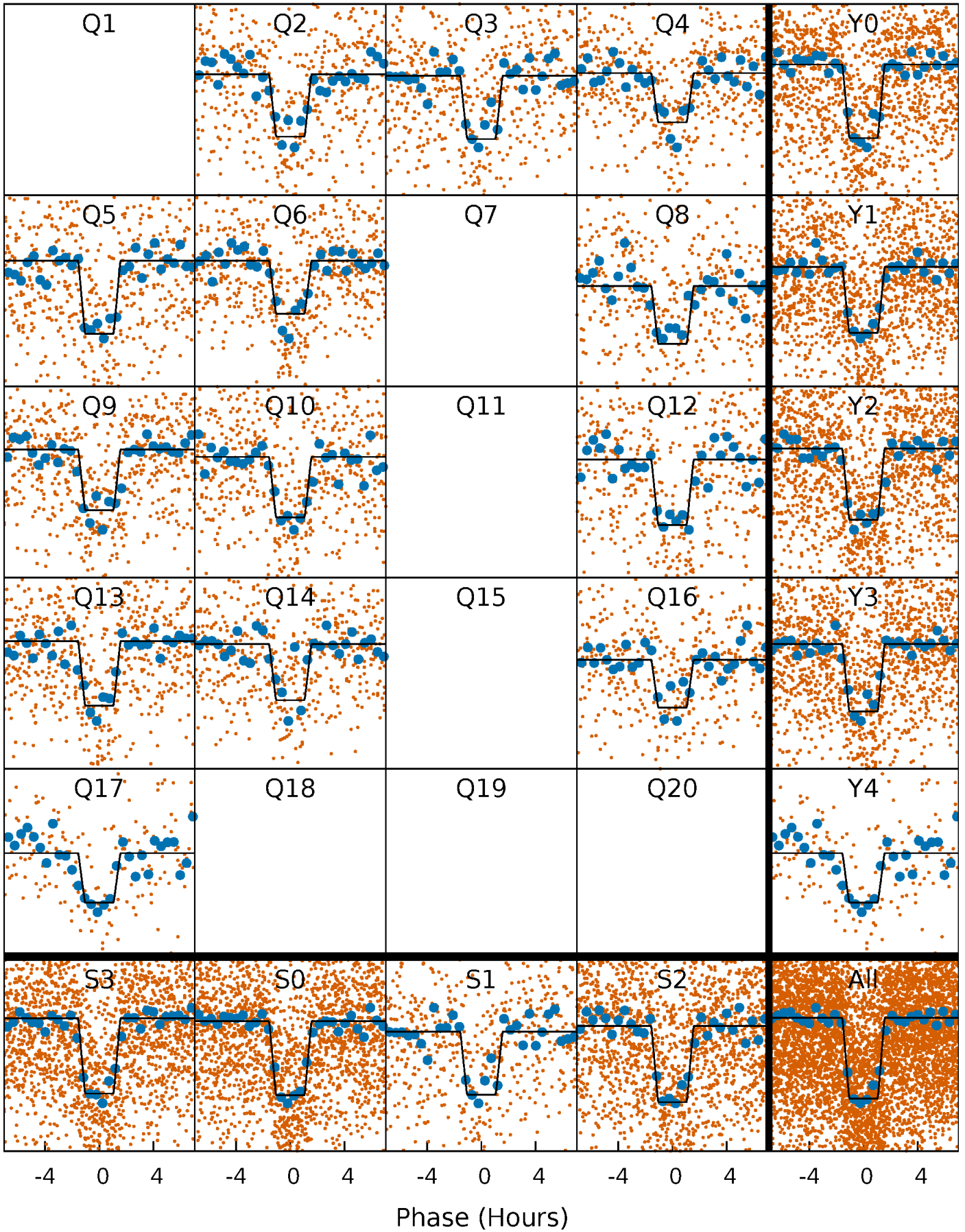
DV Quarter-Phased Transit Curves

TCE 010872983-02 P= 4.134423 Days $T_0=131.637745$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

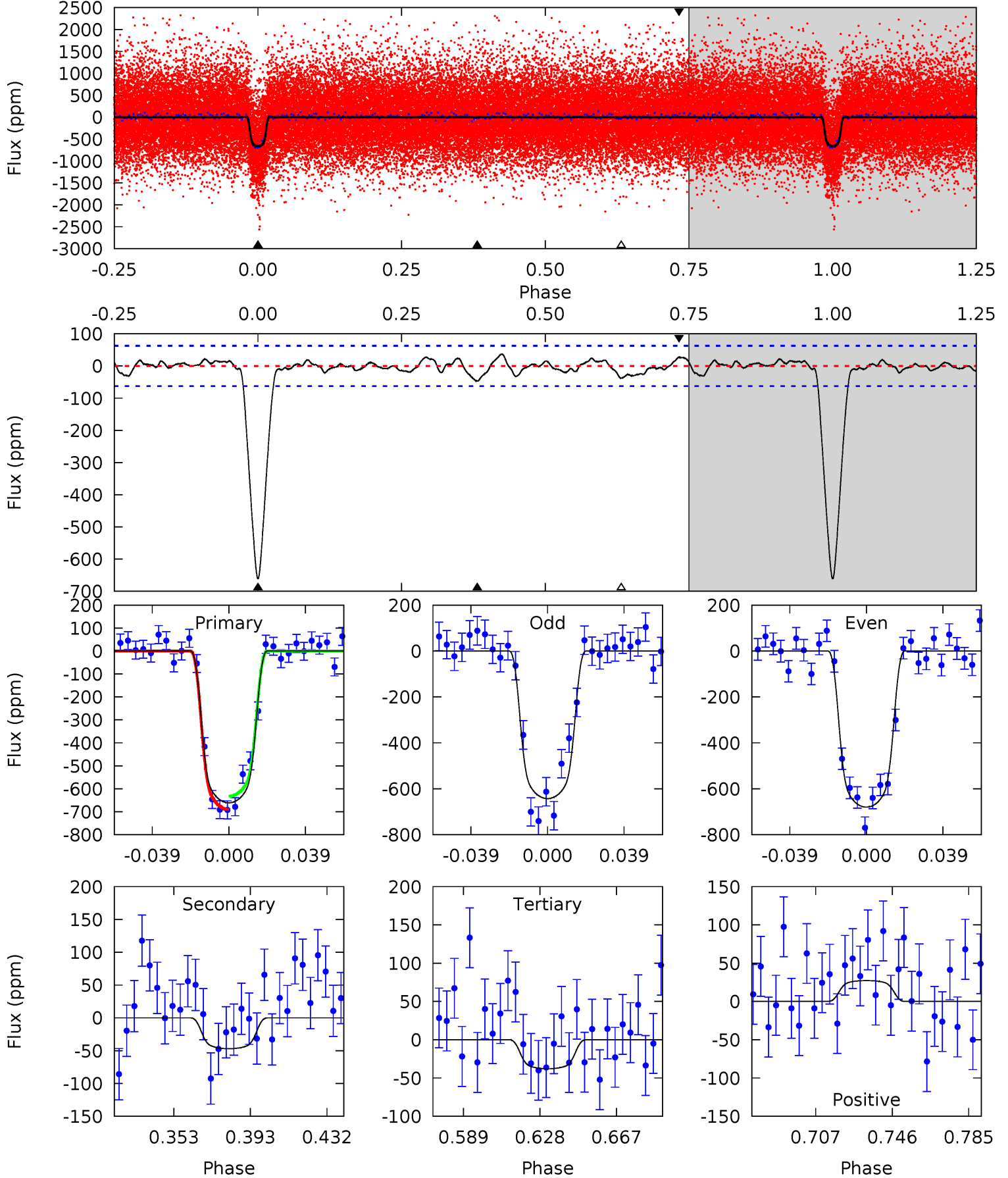
TCE 010872983-02 P= 4.134448 Days $T_0=131.632599$ (BKJD)



DV Model-Shift Uniqueness Test

010872983-02, P = 4.134423 Days, E = 131.637745 Days

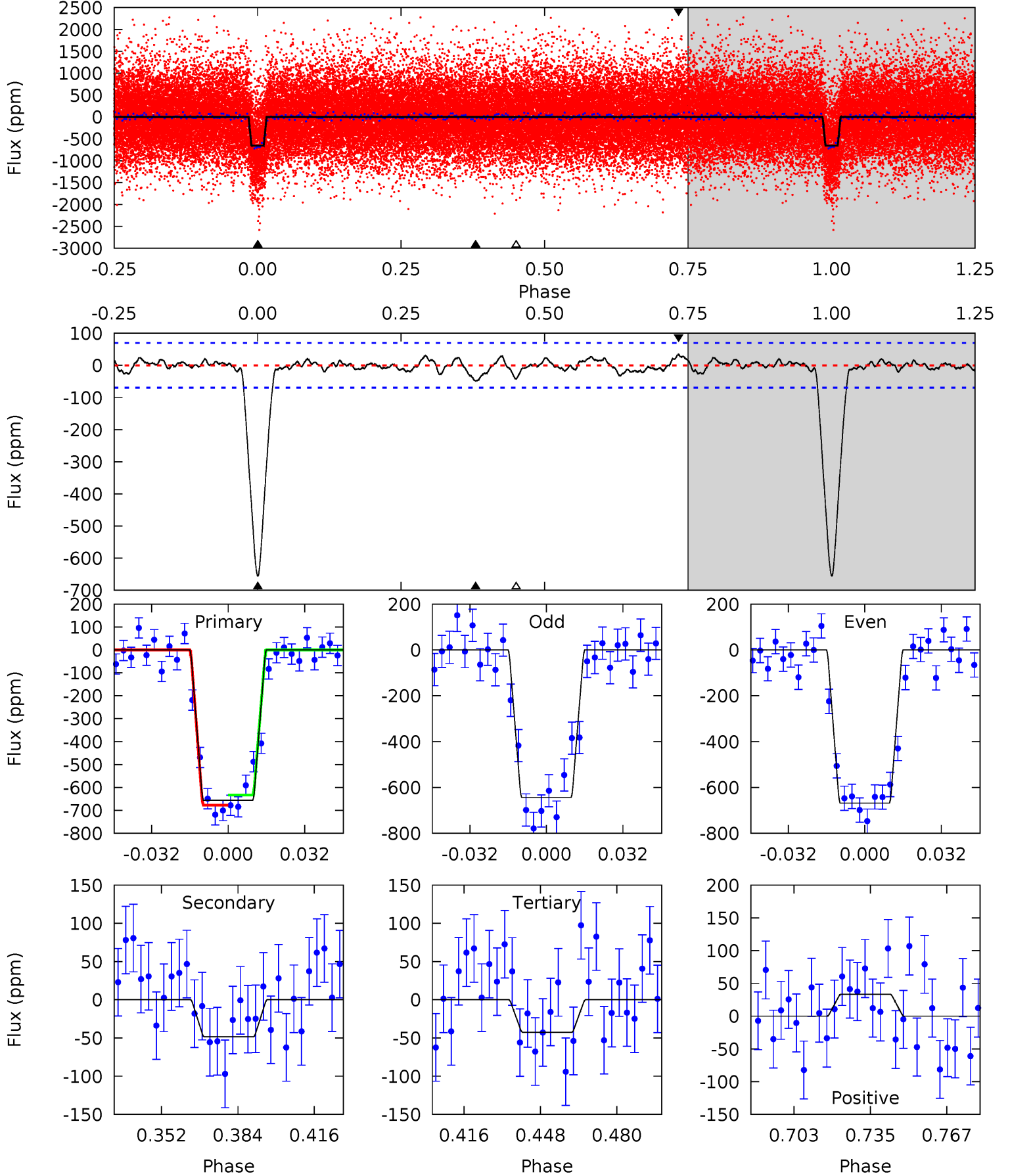
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.1	3.56	2.88	2.07	4.76	2.06	1.10	47.3	48.1	0.69	1.49	1.42	0.99	0.05	2.17



Alt Model-Shift Uniqueness Test

010872983-02, P = 4.134448 Days, E = 131.632599 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
45.2	3.35	2.93	2.31	4.80	2.14	0.95	42.3	42.9	0.41	1.04	0.84	1.00	0.05	1.52



Stellar Parameters For KIC 010872983

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6046^{+189}_{-232}	$4.486^{+0.054}_{-0.229}$	$-0.080^{+0.250}_{-0.300}$	$0.972^{+0.315}_{-0.105}$	$1.053^{+0.135}_{-0.150}$	$1.615^{+0.468}_{-0.856}$
	+3%/-4%	+1%/-5%	+312%/-375%	+32%/-11%	+13%/-14%	+29%/-53%
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 010872983-02 / KOI 0756.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-47 ± 13	$3.13^{+0.58}_{-0.29}$	1660^{+124}_{-89}	3423^{+160}_{-192}	$6.478^{+2.640}_{-2.300}$
Alt.	-49 ± 15	$2.86^{+0.50}_{-0.30}$	1659^{+121}_{-85}	3540^{+210}_{-211}	$7.989^{+3.666}_{-3.018}$

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

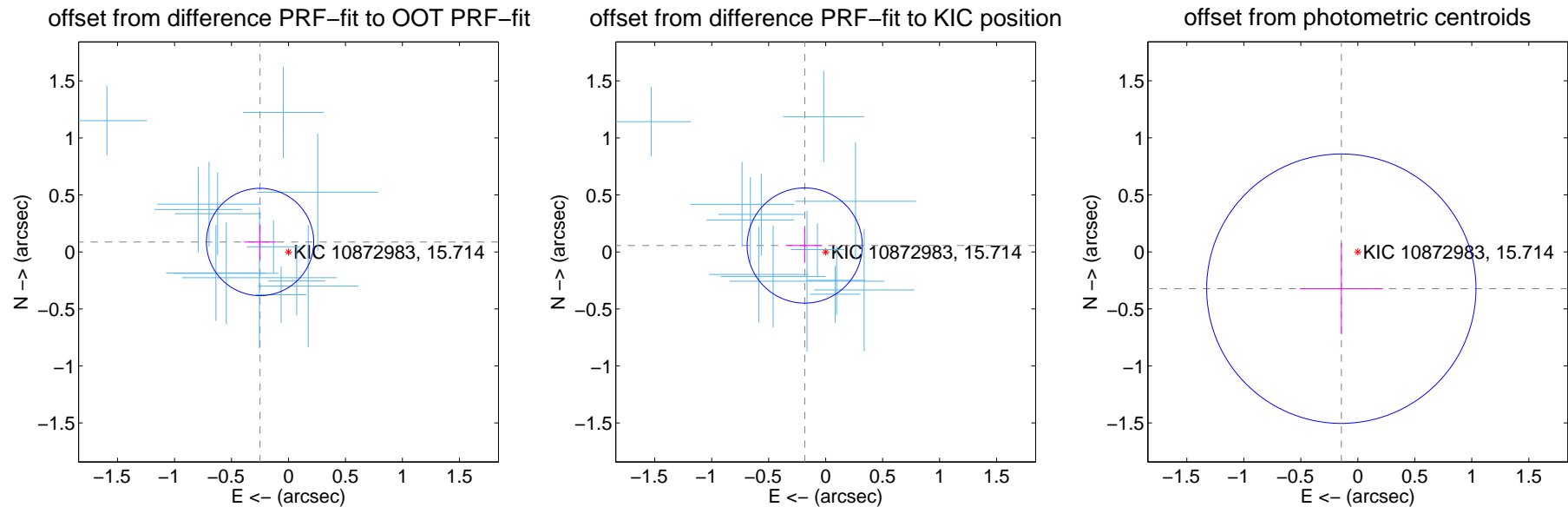
DV Centroid Data

Supplemental centroid analysis for 010872983-02. Kepler magnitude: 15.71. Transit SNR 37.73

There are 13 quarters with good PRF difference image offsets

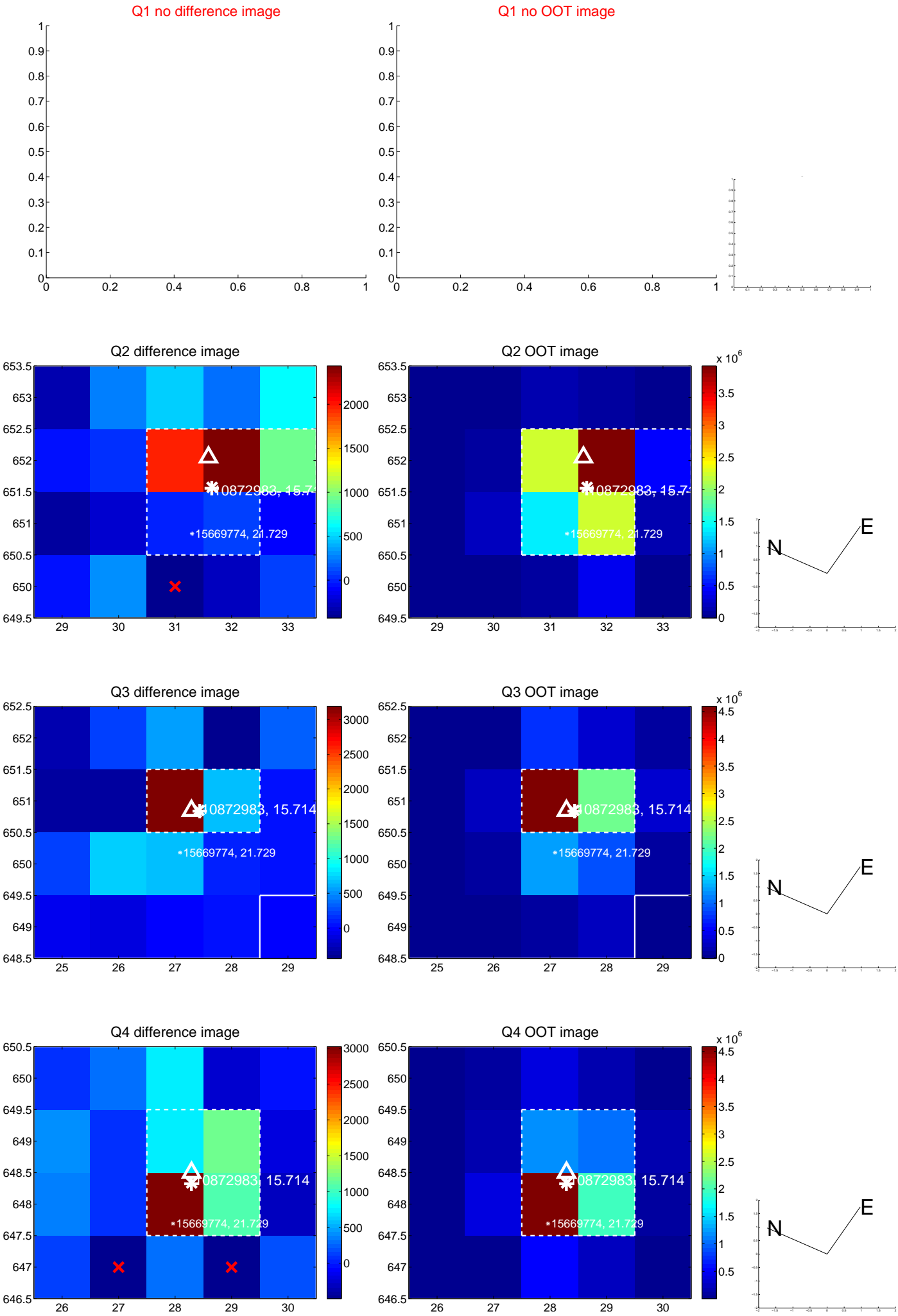
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.264 ± 0.157	1.68	0.249 ± 0.140	0.087 ± 0.156
PRF-fit source offset from KIC position	0.192 ± 0.168	1.14	0.184 ± 0.152	0.056 ± 0.151
photometric centroid source offset	0.35 ± 0.39	0.90	0.14 ± 0.36	-0.32 ± 0.40

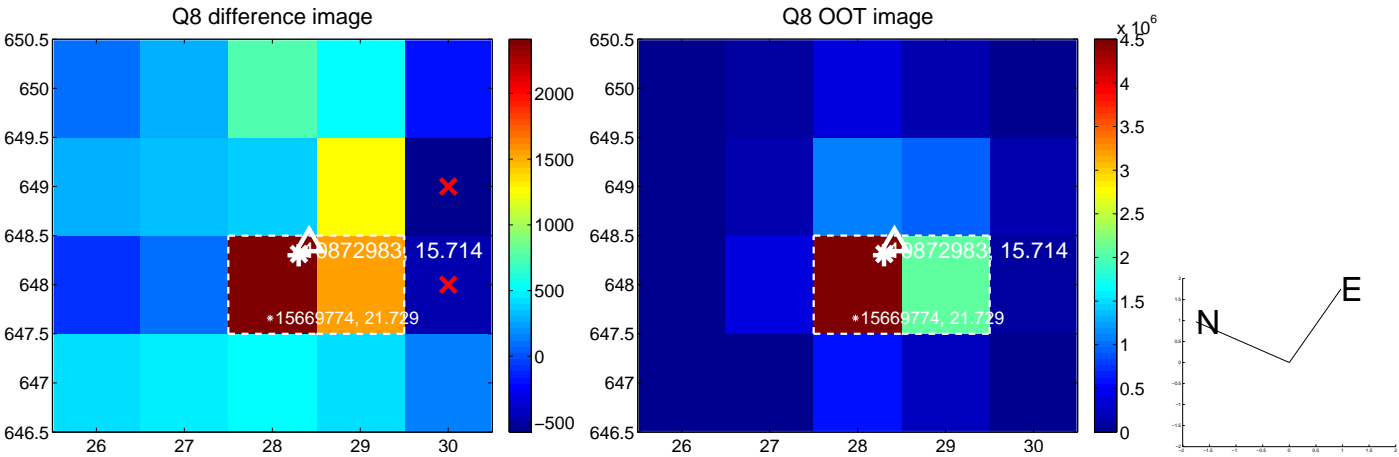
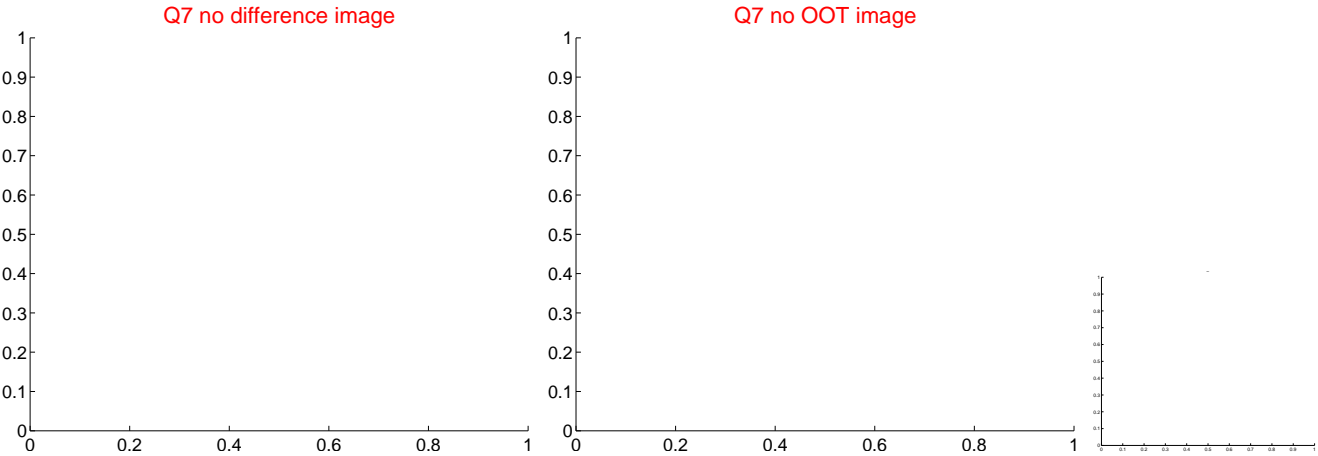
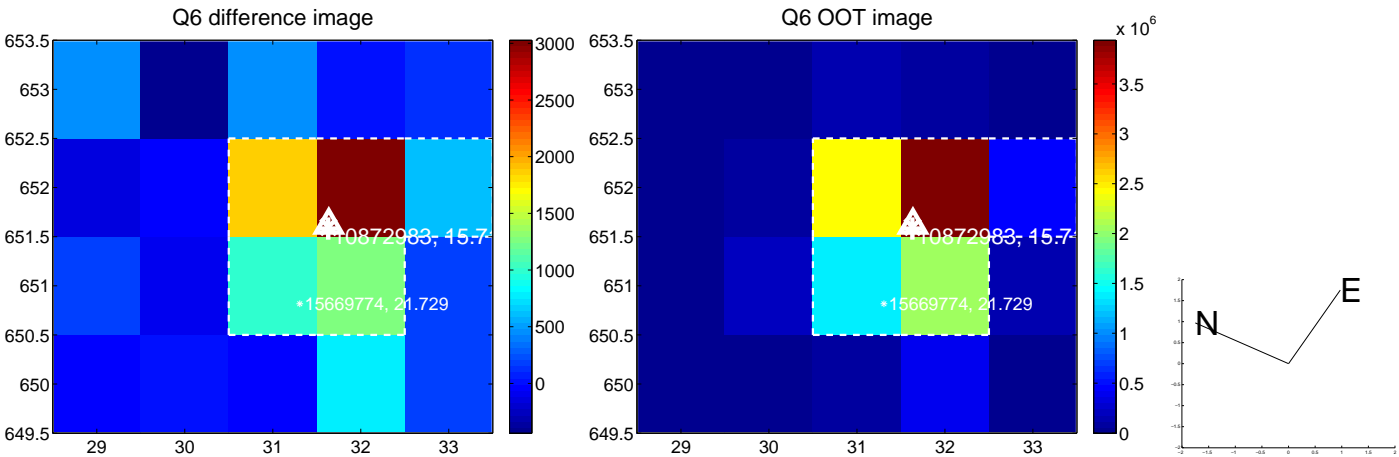
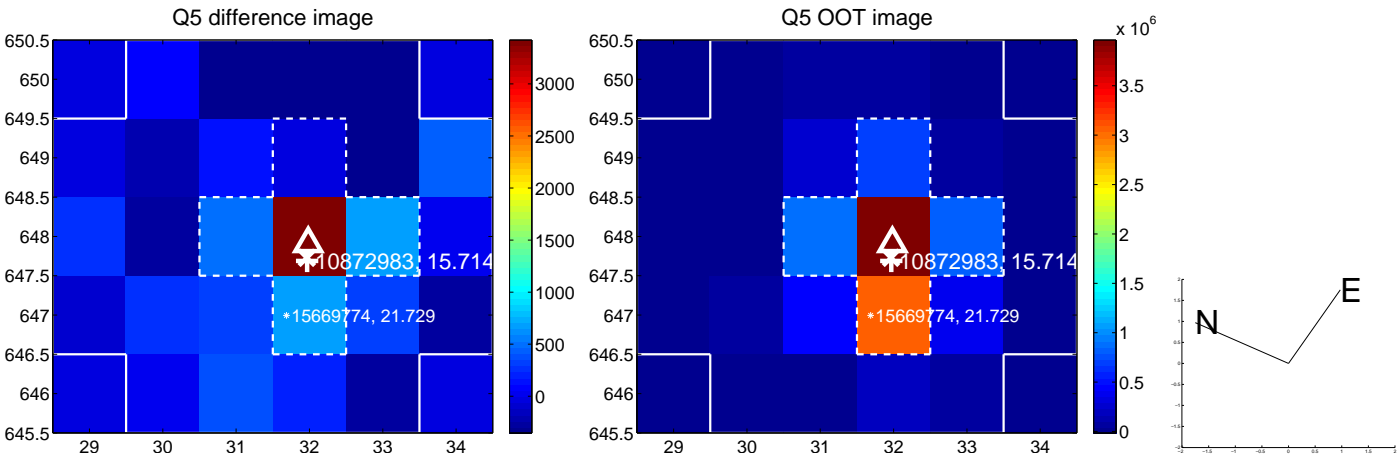


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

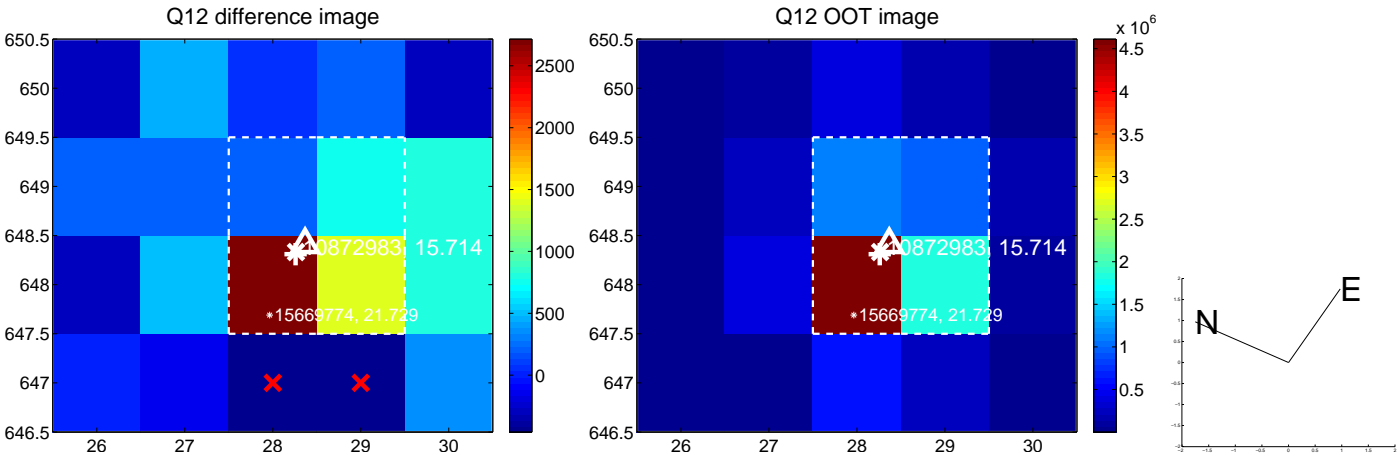
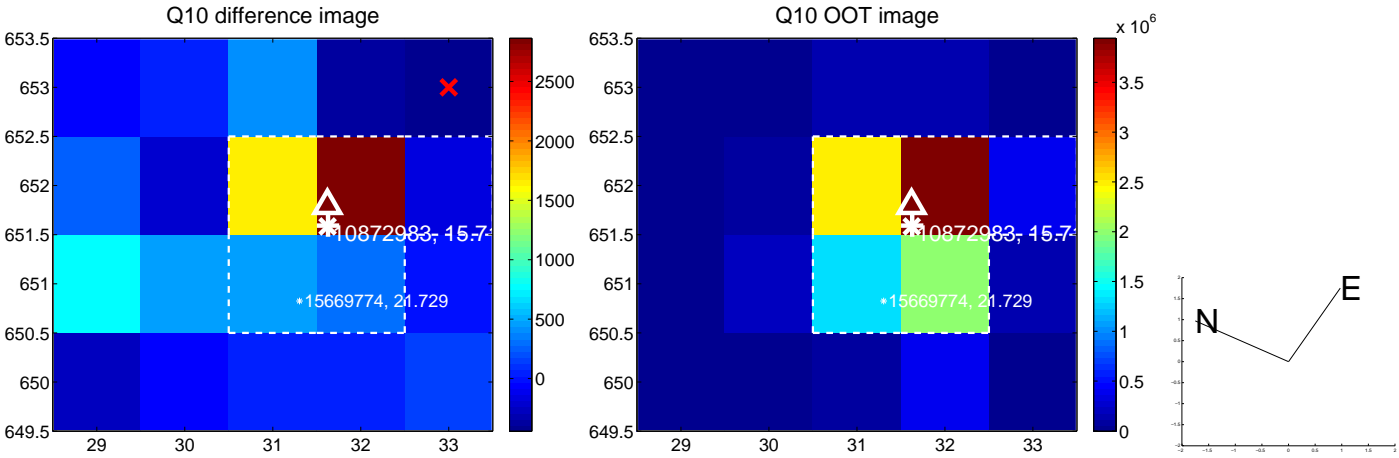
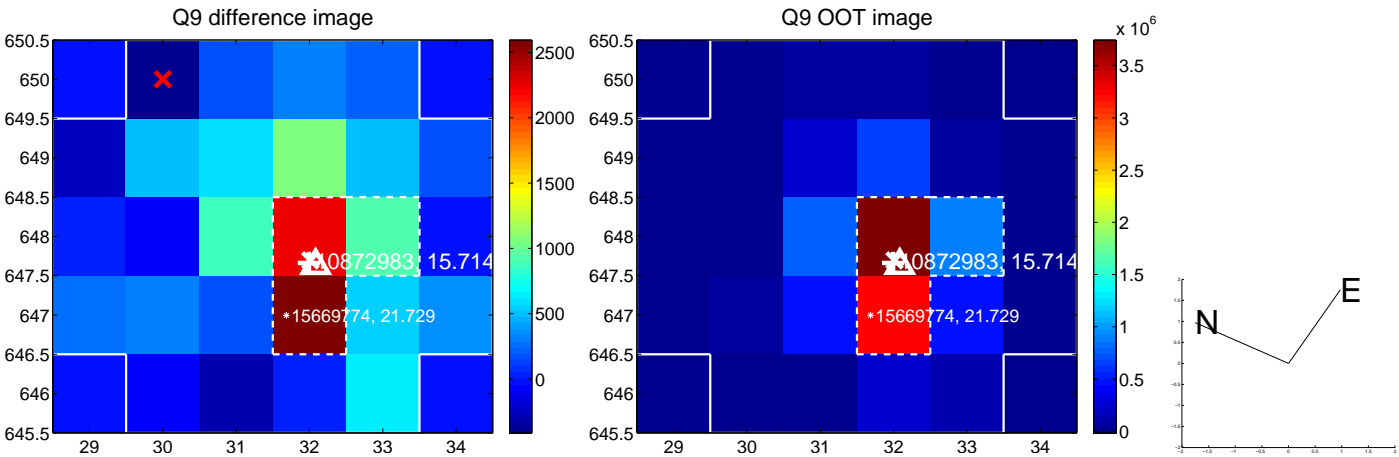
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



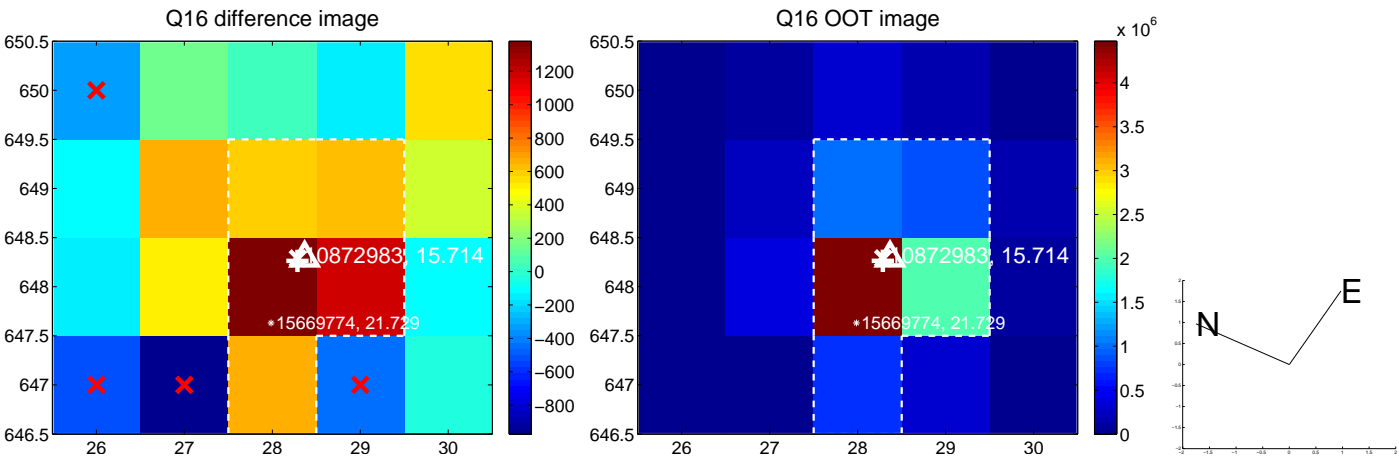
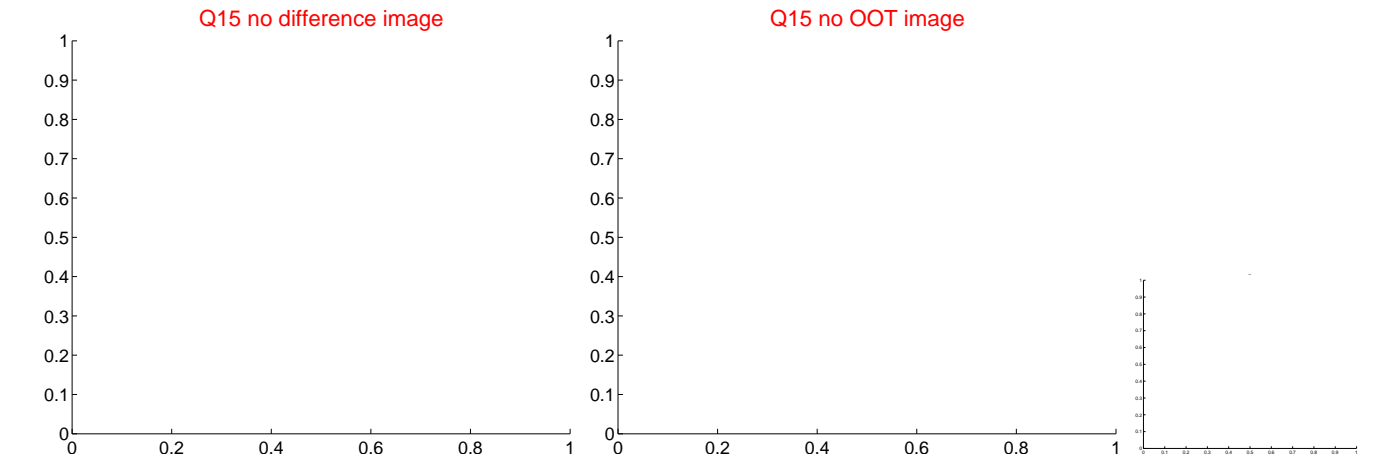
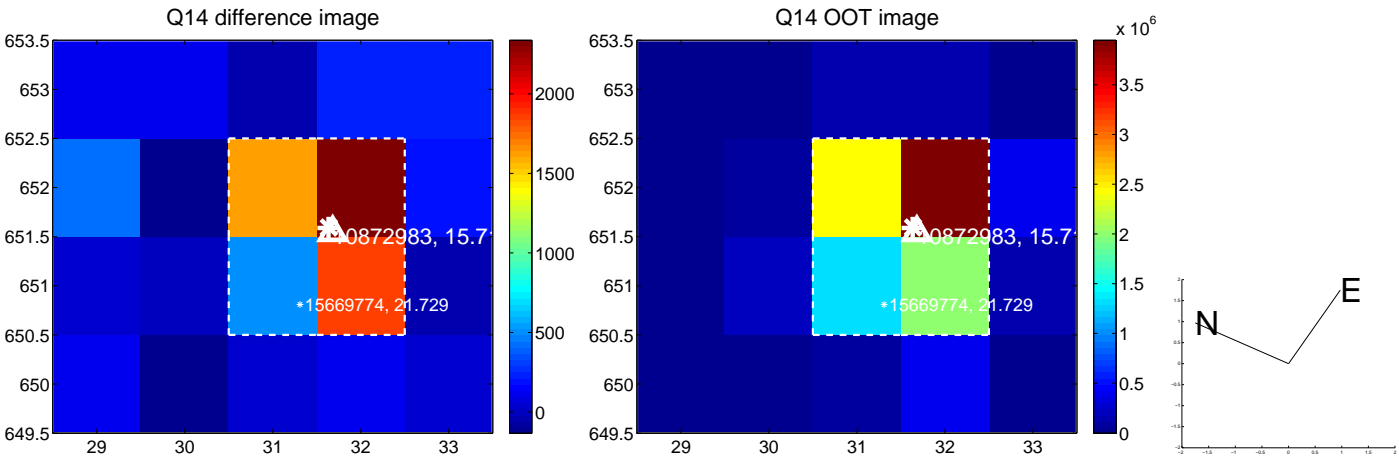
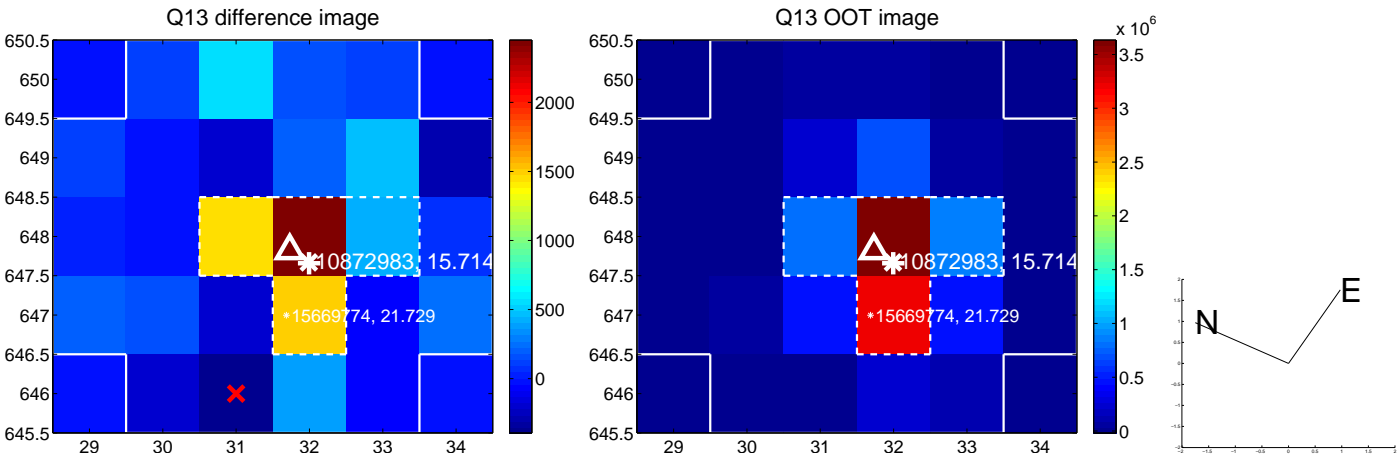
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



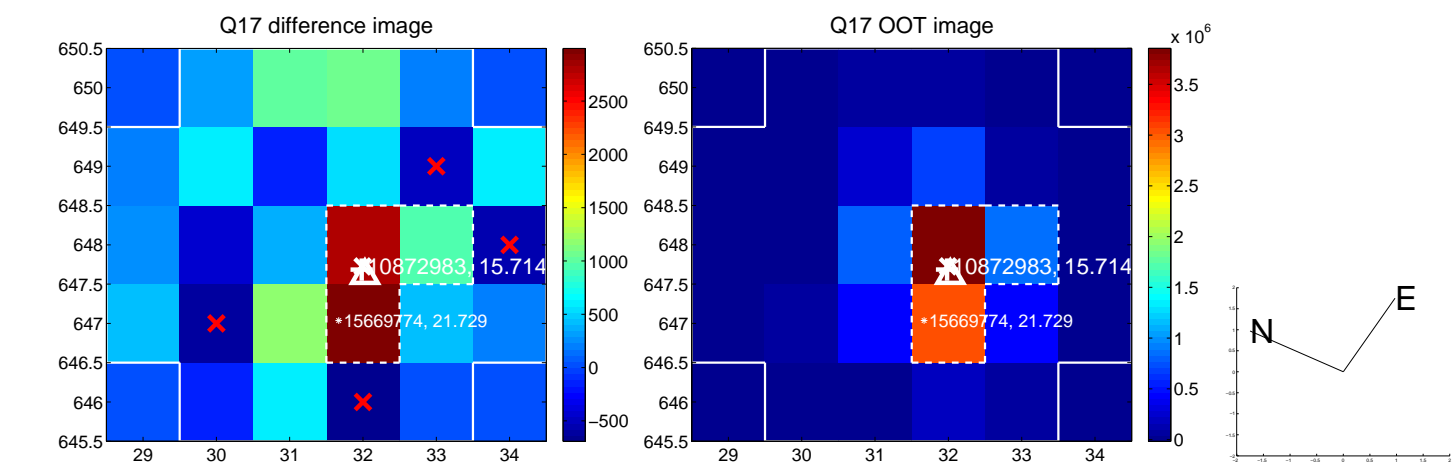
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



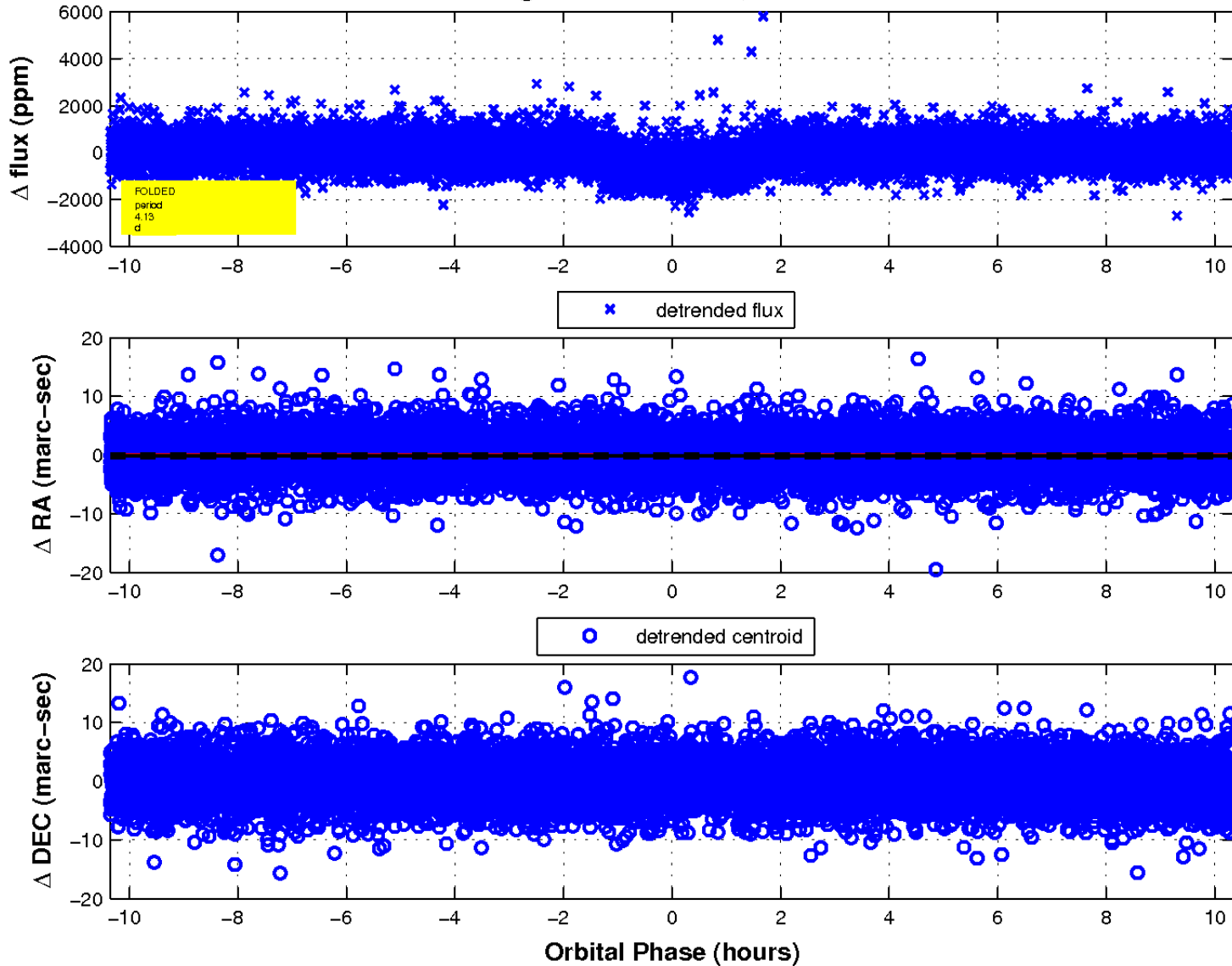
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

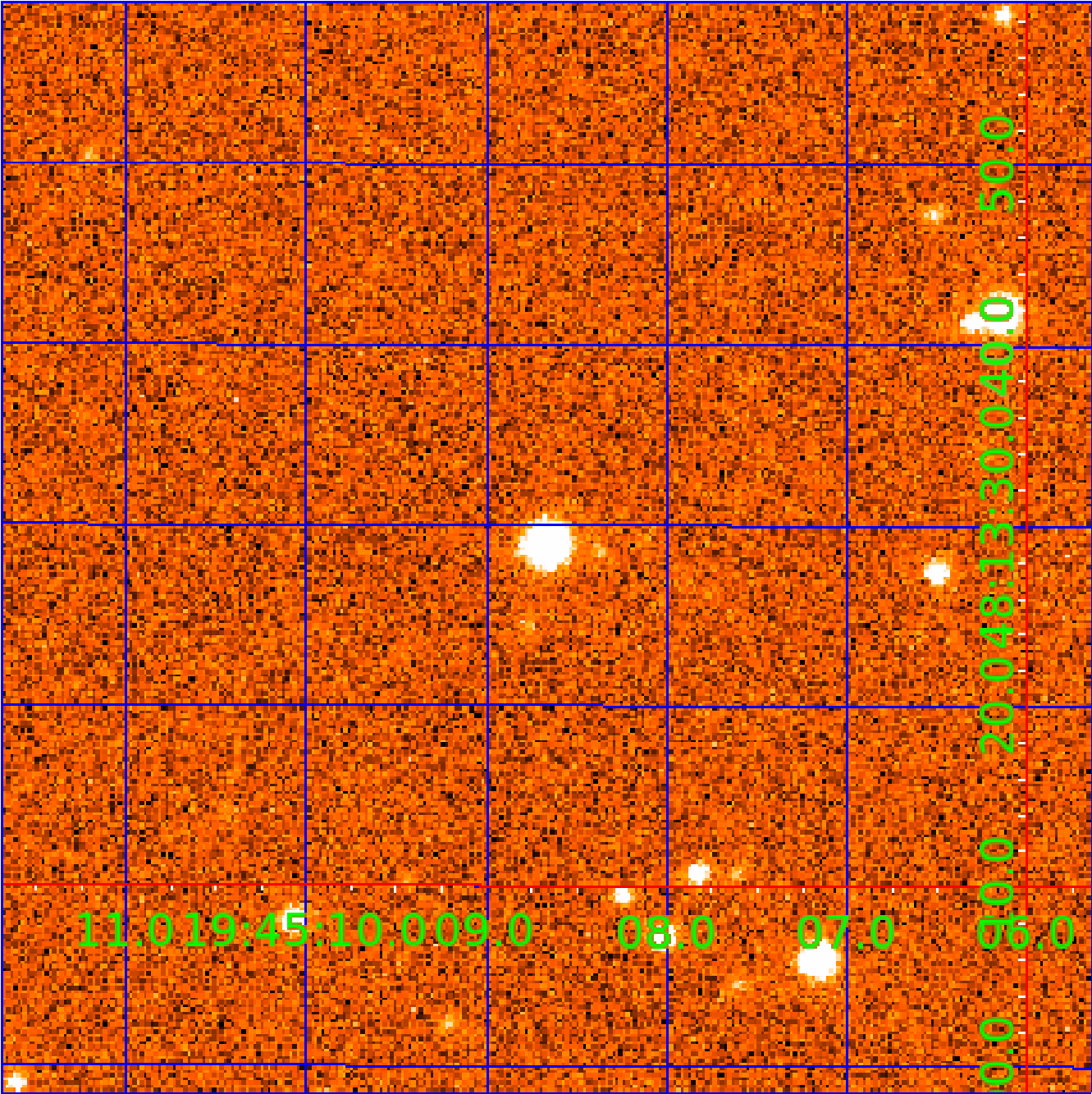


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 010872983

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})
010872983-01	OBS	0756.01	11.094317	137.918172	1505.8	4.621	55.2	59.6	0.97	6046	3.96	115.10
010872983-02	OBS	0756.02	4.134423	131.637745	671.5	3.453	33.5	37.7	0.97	6046	3.05	429.20
010872983-03	OBS	0756.03	2.566577	133.361295	206.6	2.647	12.3	13.3	0.97	6046	1.56	810.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010872983-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010872983-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010872983-03	OBS	PC	0.99	0	0	0	0	NO_COMMENT

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.

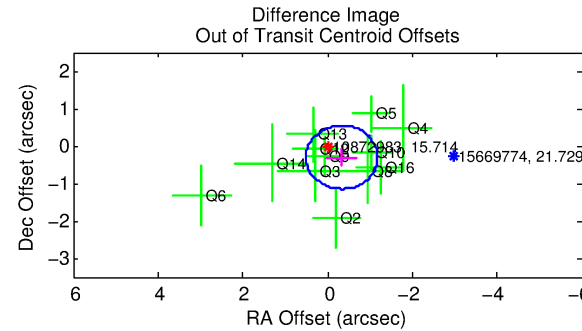
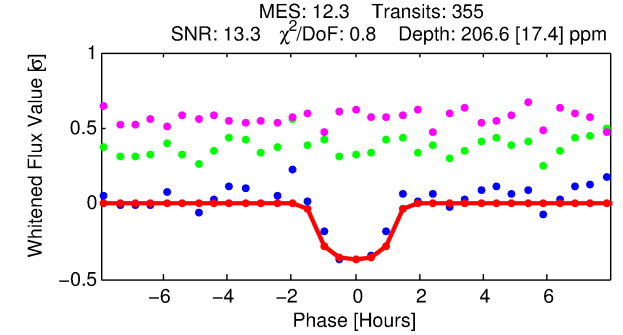
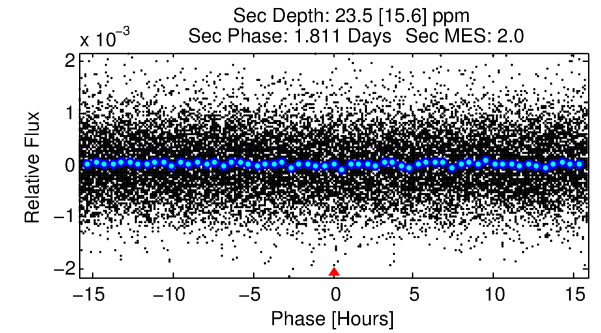
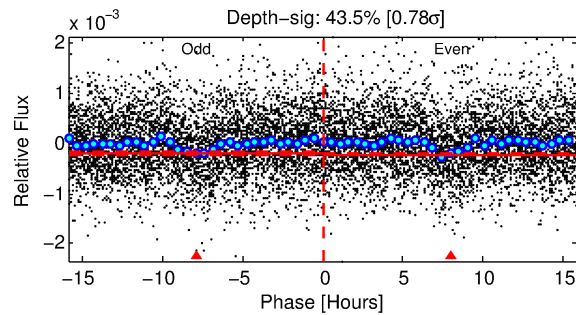
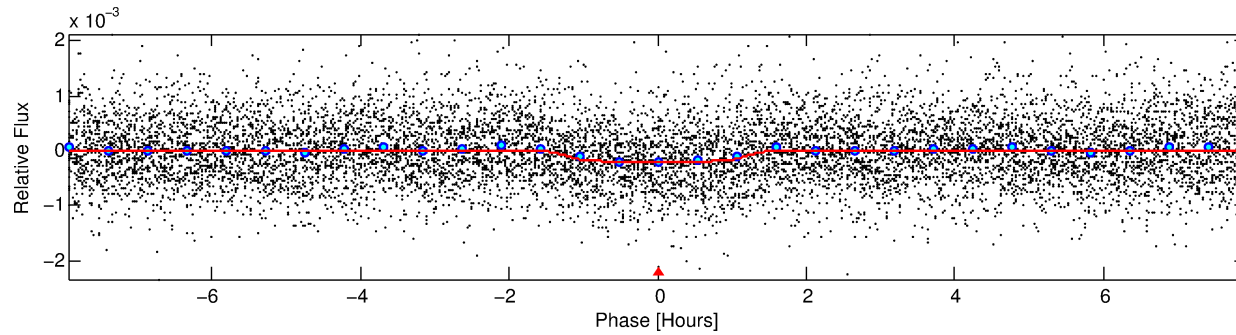
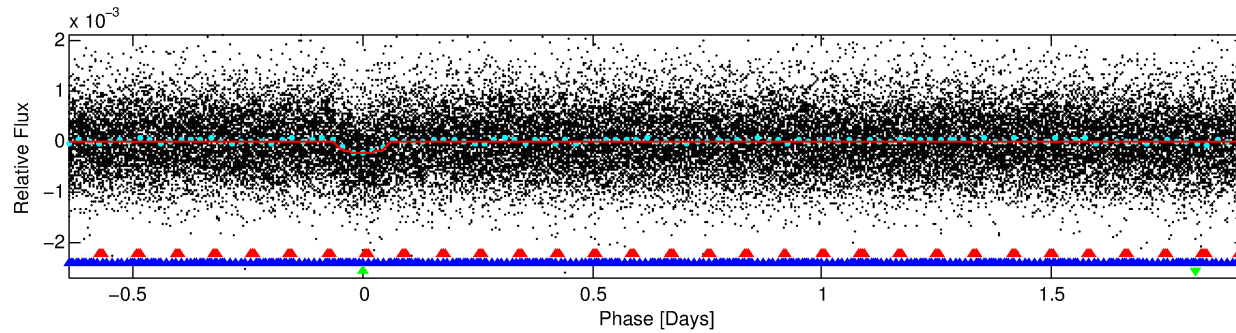
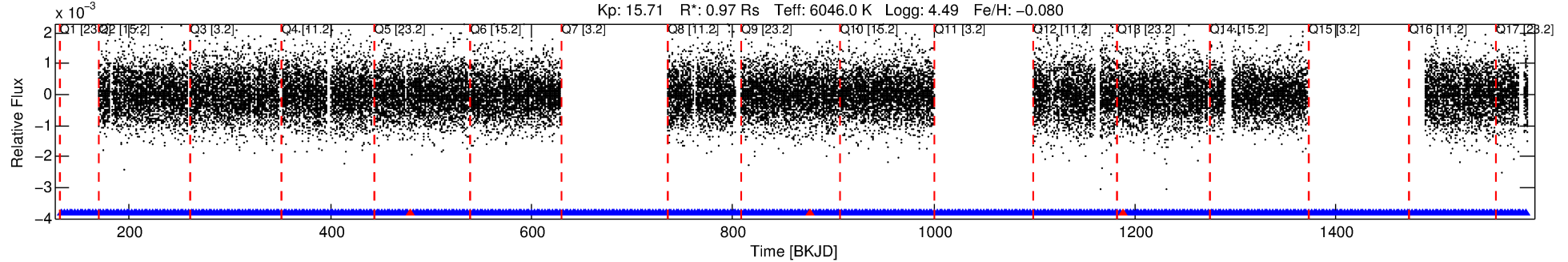
Ephemeris Match Information For 010872983-03

No Significant Match Found

DV One-Page Summary

KIC: 10872983 Candidate: 3 of 3 Period: 2.567 d
KOI: K00756.03 Name: Kepler-228b Corr: 0.950

Kp: 15.71 R*: 0.97 Rs Teff: 6046.0 K Logg: 4.49 Fe/H: -0.080



DV Fit Results:

Period = 2.56658 [0.00001] d
Epoch = 133.3613 [0.0032] BKJD
Rp/R* = 0.0147 [0.0111]
a/R* = 4.54 [16.12]
b = 0.82 [1.54]
Seff = 810.47 [356.80]
Teq = 1361 [150] K
Rp = 1.56 [1.28] Re
a = 0.0374 [0.0104] AU
Ag = 7.40 [12.54] [0.51σ]
Teff = 3470 [1431] K [1.47σ]

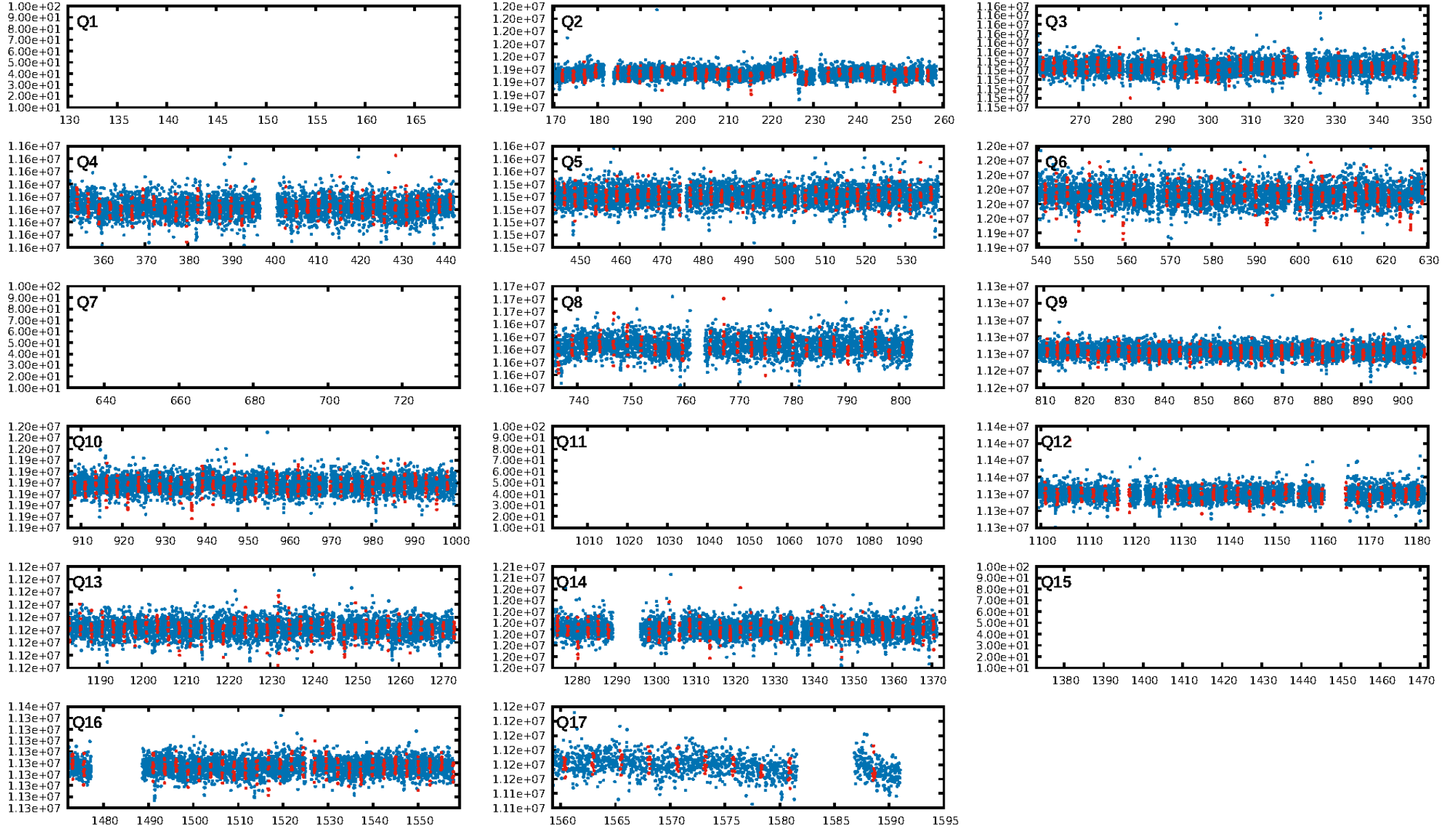
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [8.65σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.69e-36
RollingBand-fgt: 0.99 [342/345]
GhostDiagnostic-chr: -11.33
Centroid-sig: N/A
Centroid-so: 0.346 arcsec [0.32σ]
OotOffset-rm: 0.450 arcsec [1.59σ]
KicOffset-rm: 0.501 arcsec [1.68σ]
OotOffset-st: 4/1/4/3 [12]
KicOffset-st: 4/1/4/3 [12]
DiffImageQuality-fgm: 0.83 [10/12]
DiffImageOverlap-fno: 1.00 [13/13]

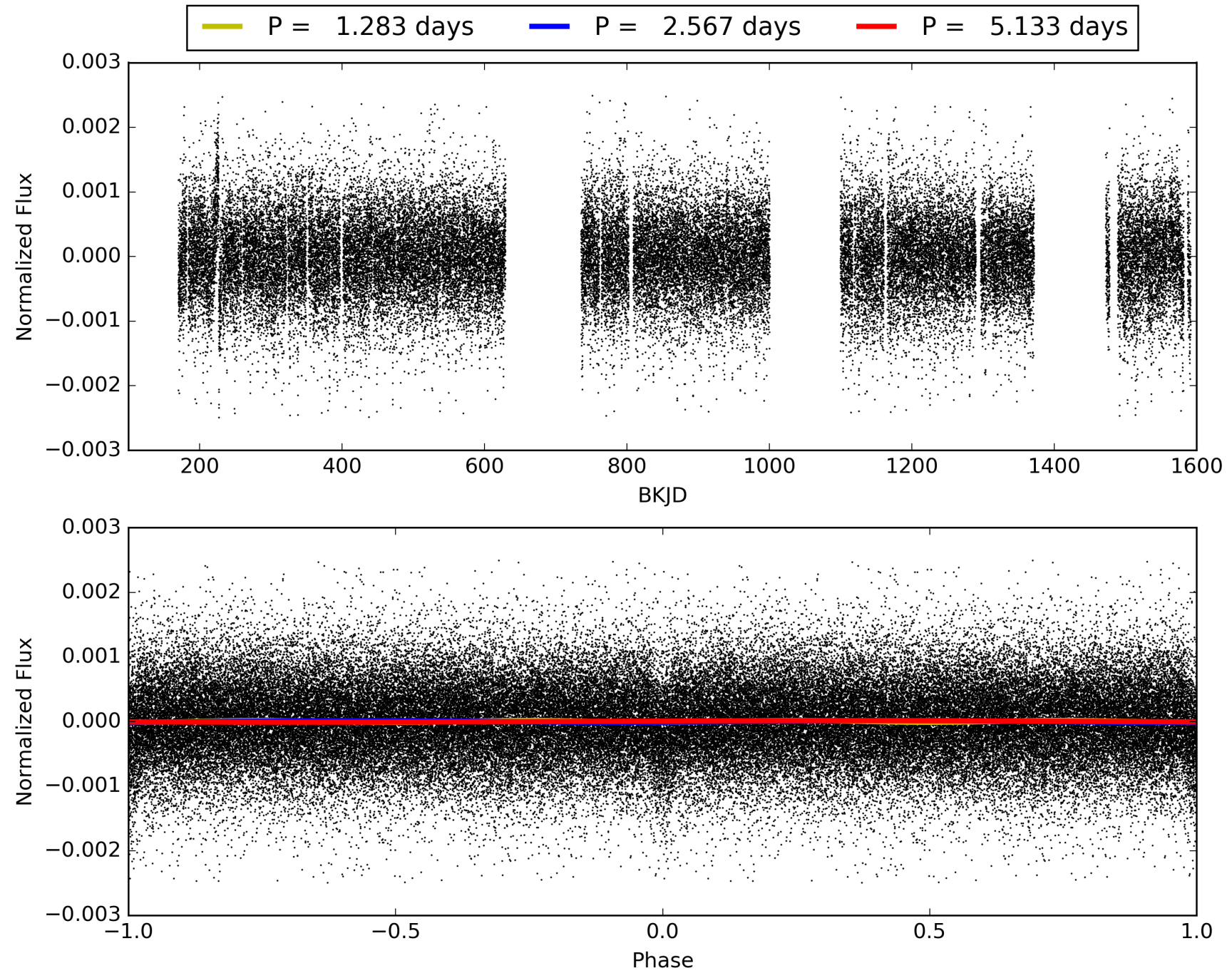
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 11:45:45 Z

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

TCE 010872983-03, PDC Light Curves

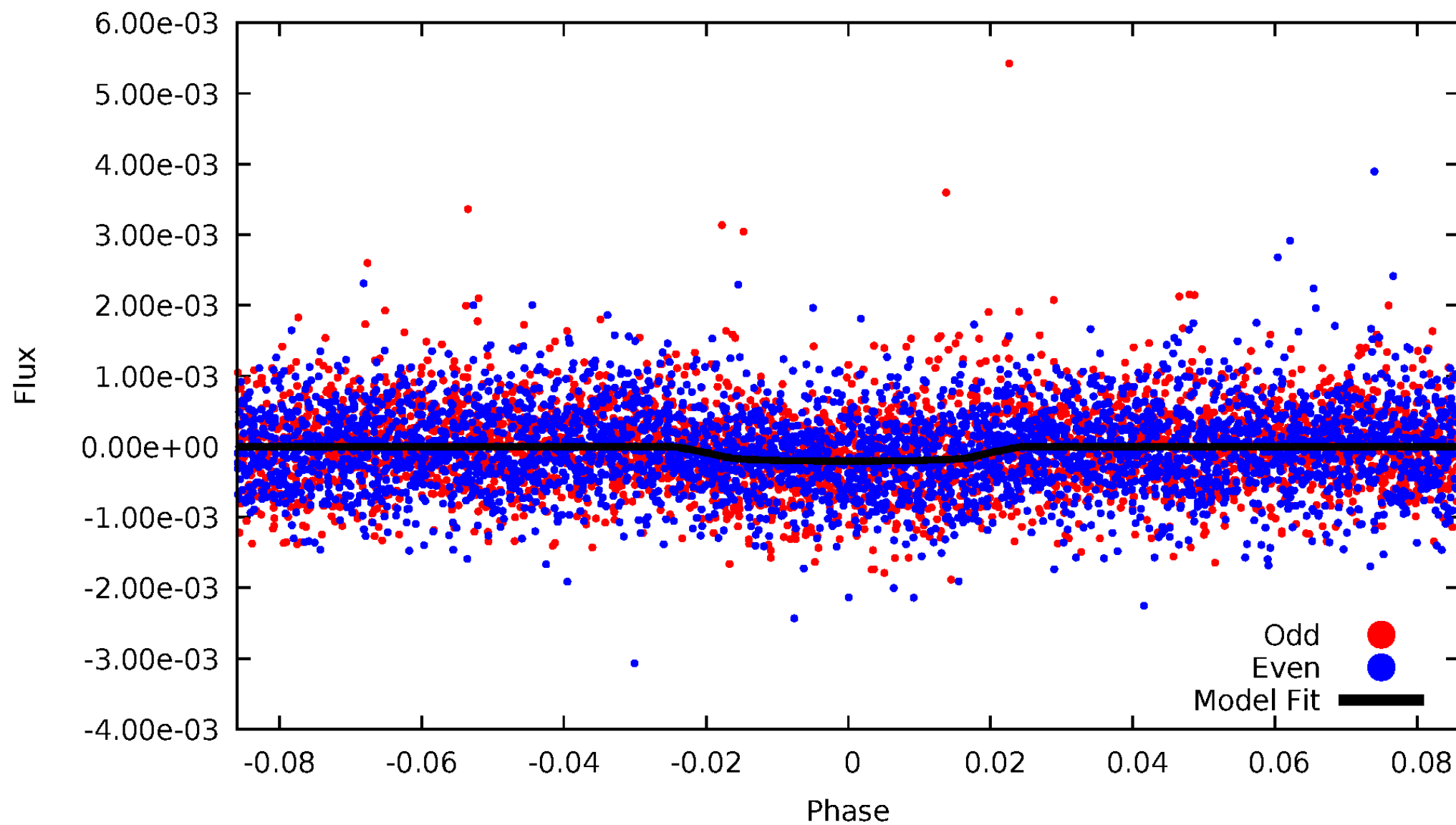


TCE 010872983-03



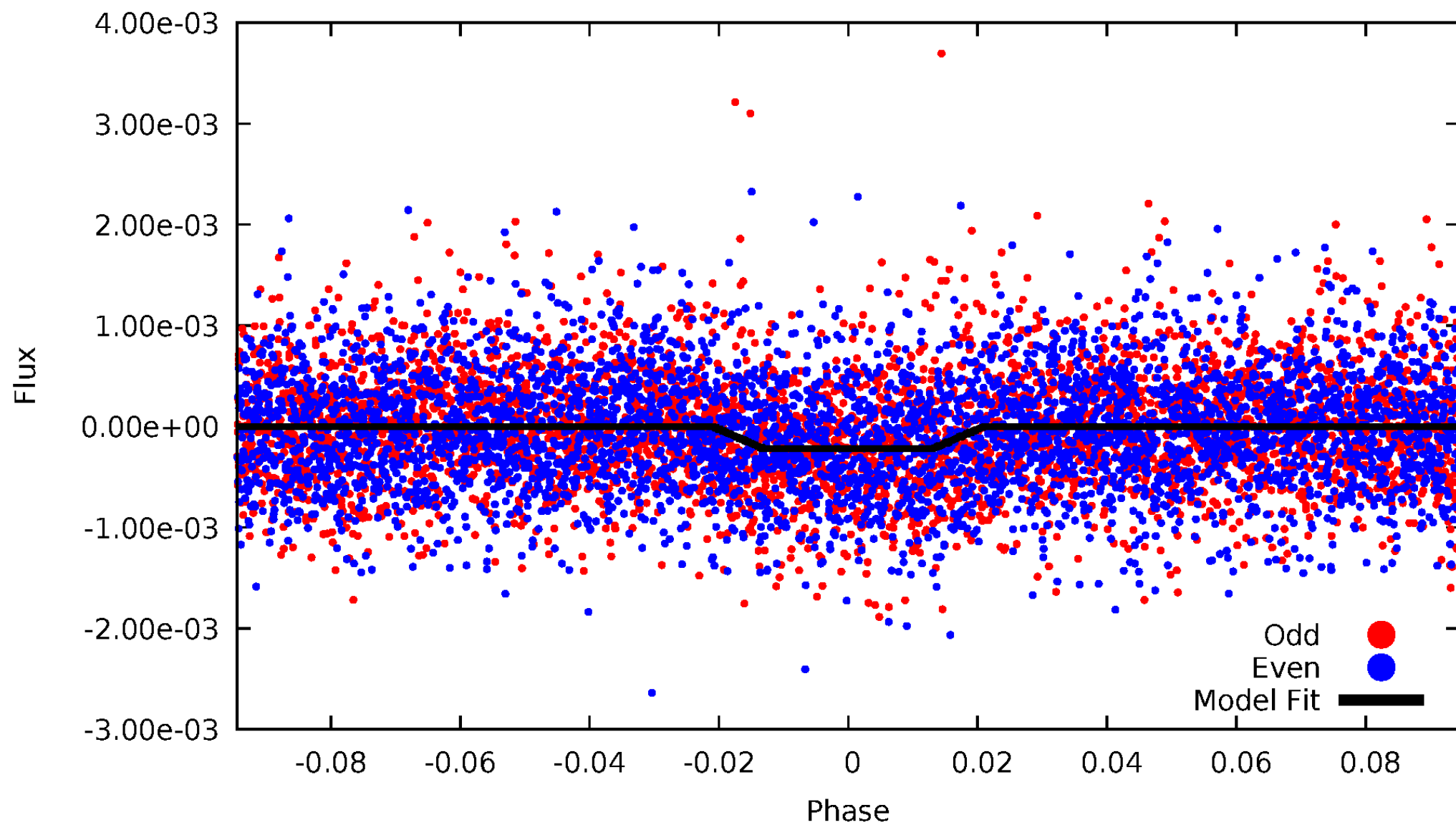
DV Odd/Even

TCE 010872983-03



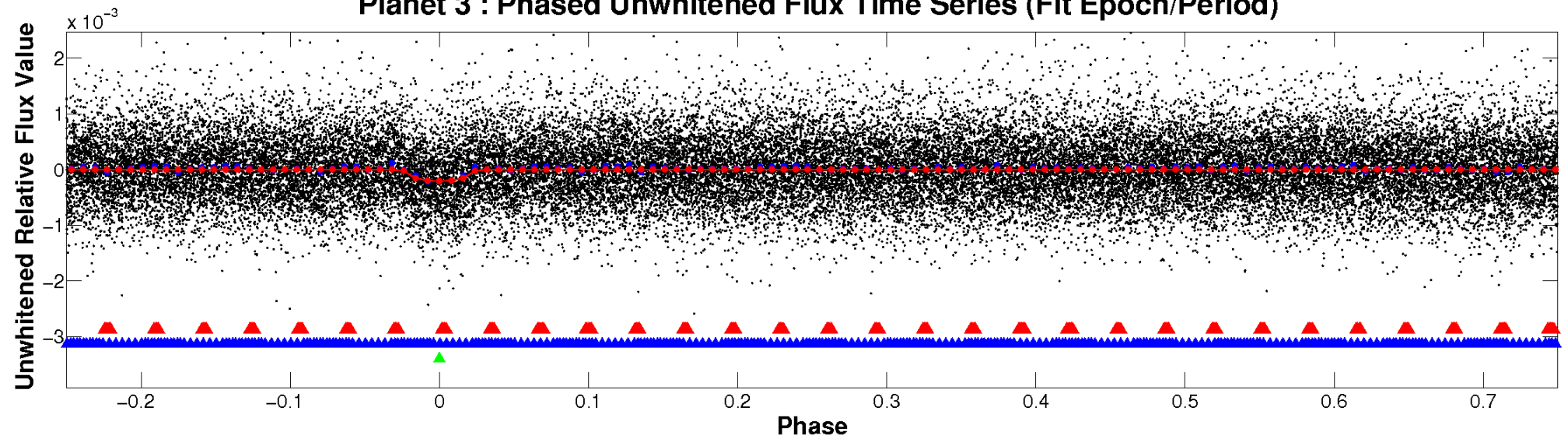
ALT Odd/Even

TCE 010872983-03

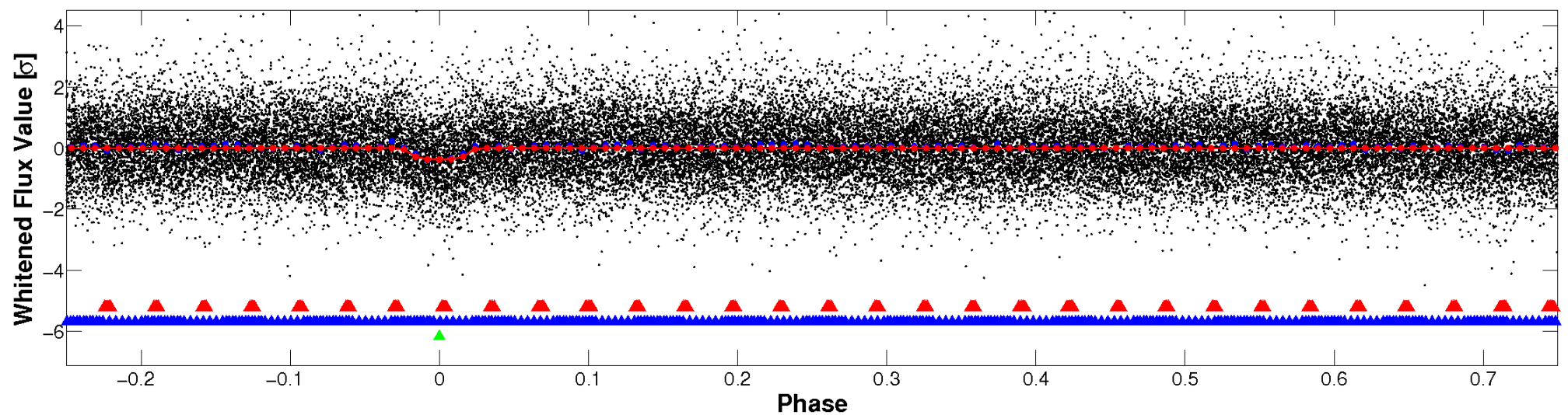


Non-Whitened Vs. Whitened Light Curve

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

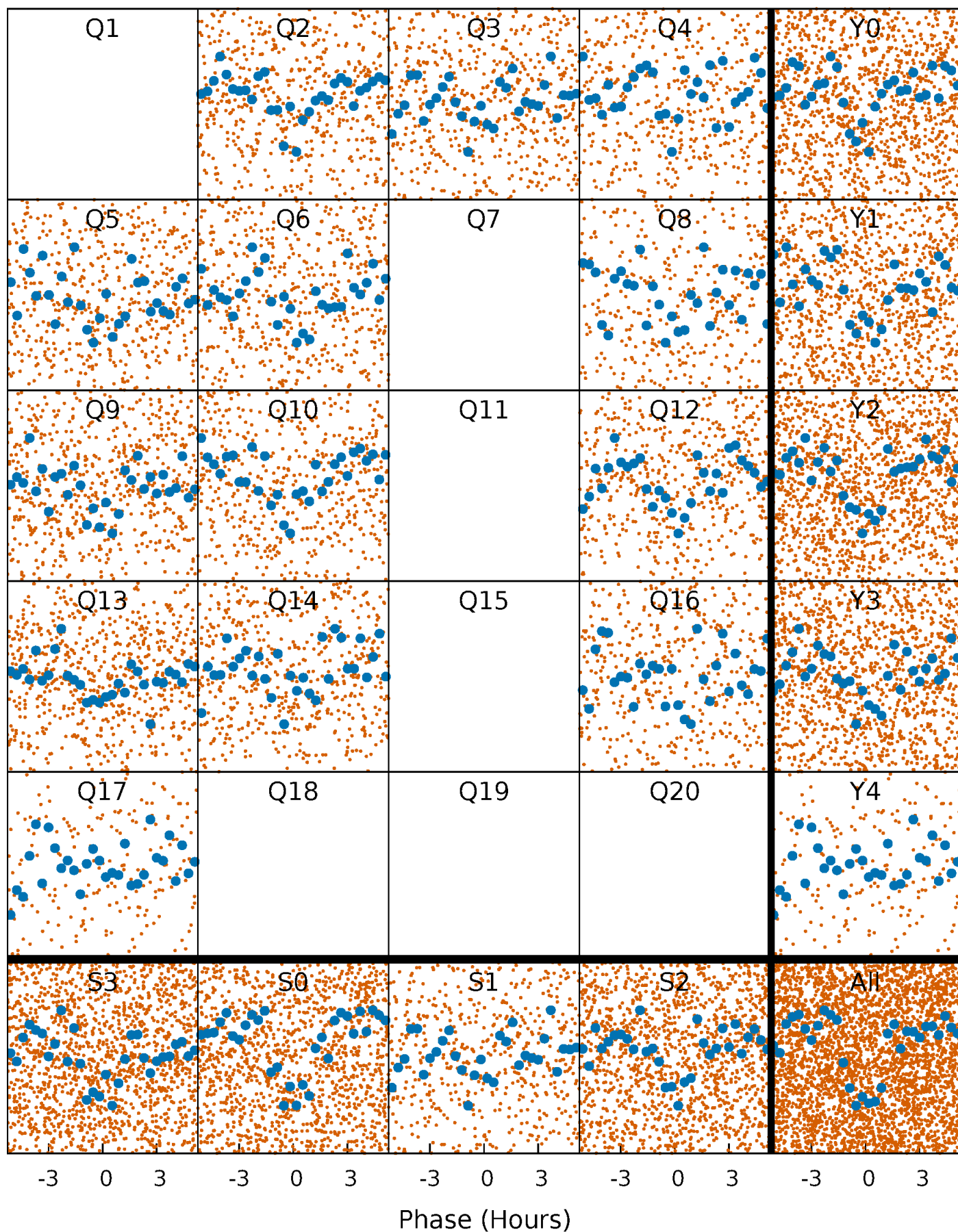


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



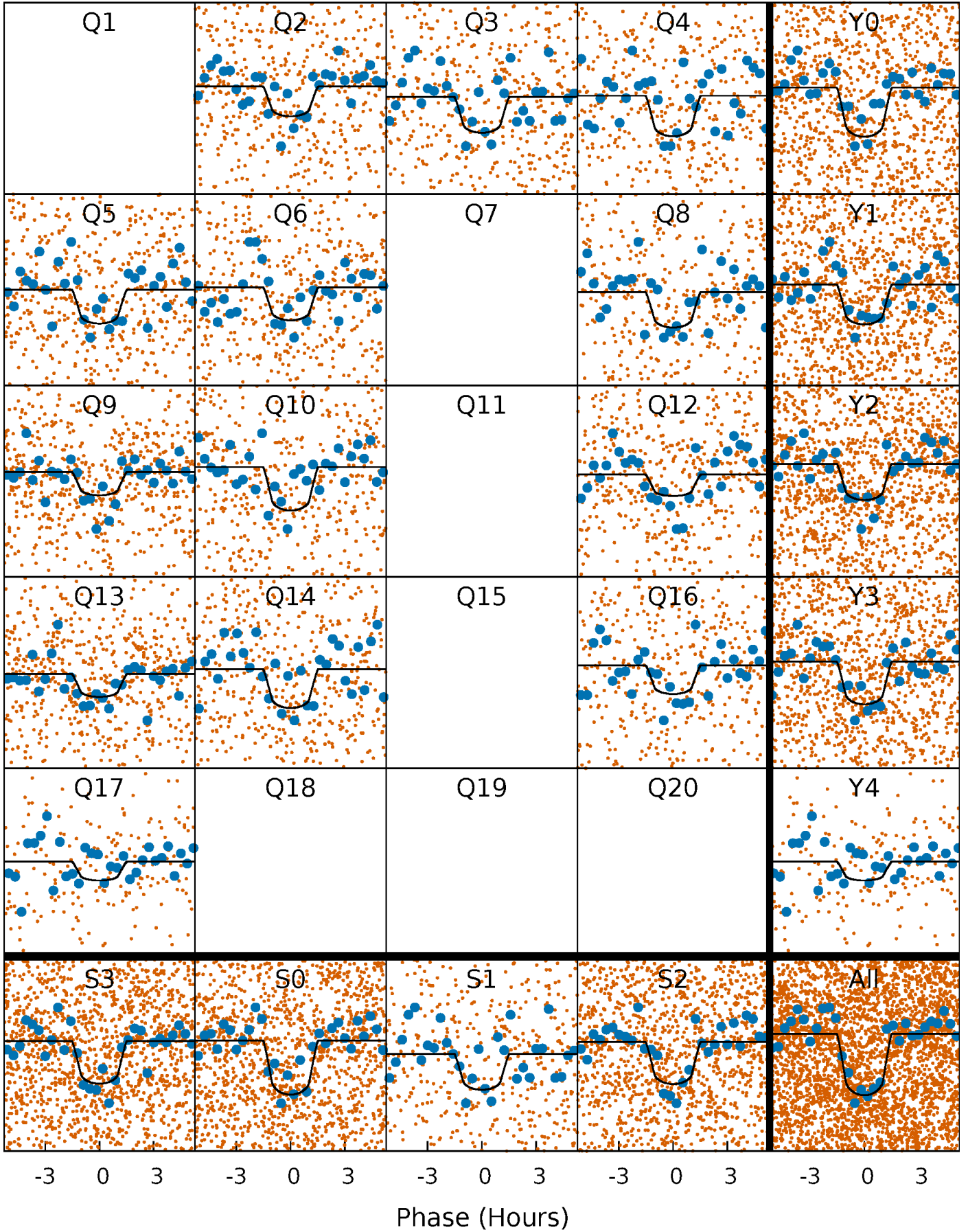
PDC Quarter-Phased Transit Curves

TCE 010872983-03 P= 2.566577 Days $T_0=133.361295$ (BKJD)



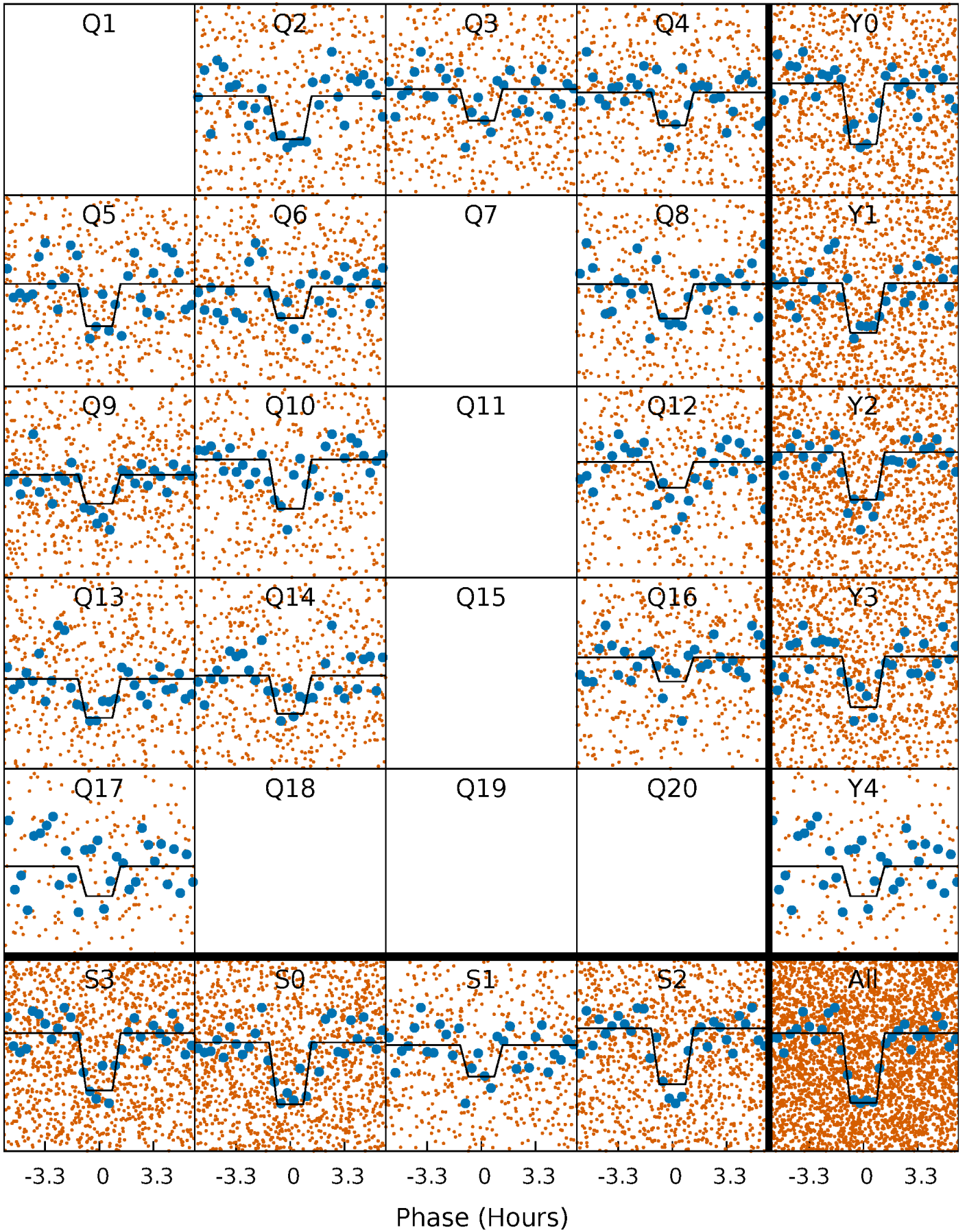
DV Quarter-Phased Transit Curves

TCE 010872983-03 P= 2.566577 Days $T_0=133.361295$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

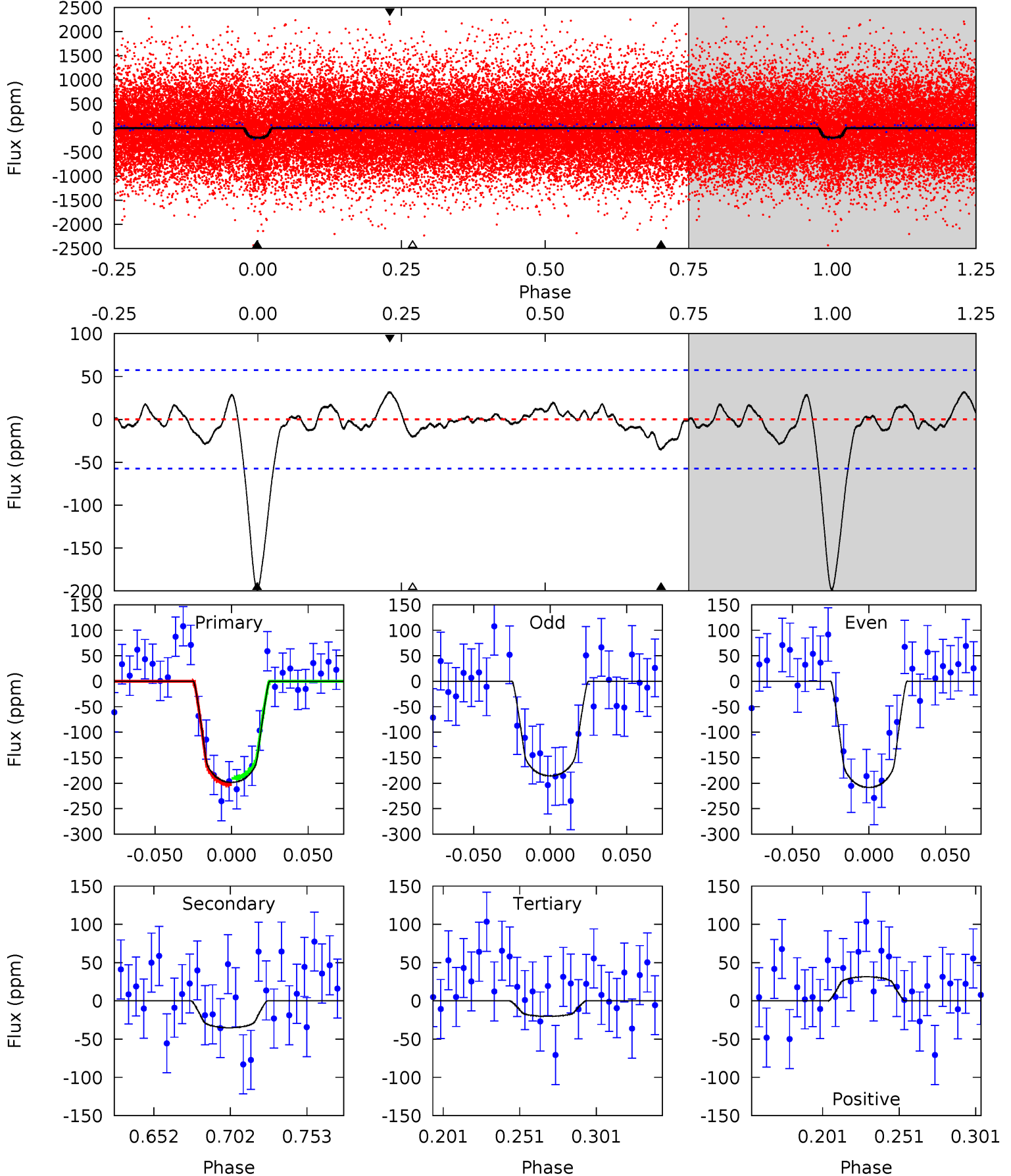
TCE 010872983-03 $P = 2.566584$ Days $T_0 = 133.358655$ (BKJD)



DV Model-Shift Uniqueness Test

010872983-03, P = 2.566577 Days, E = 133.361295 Days

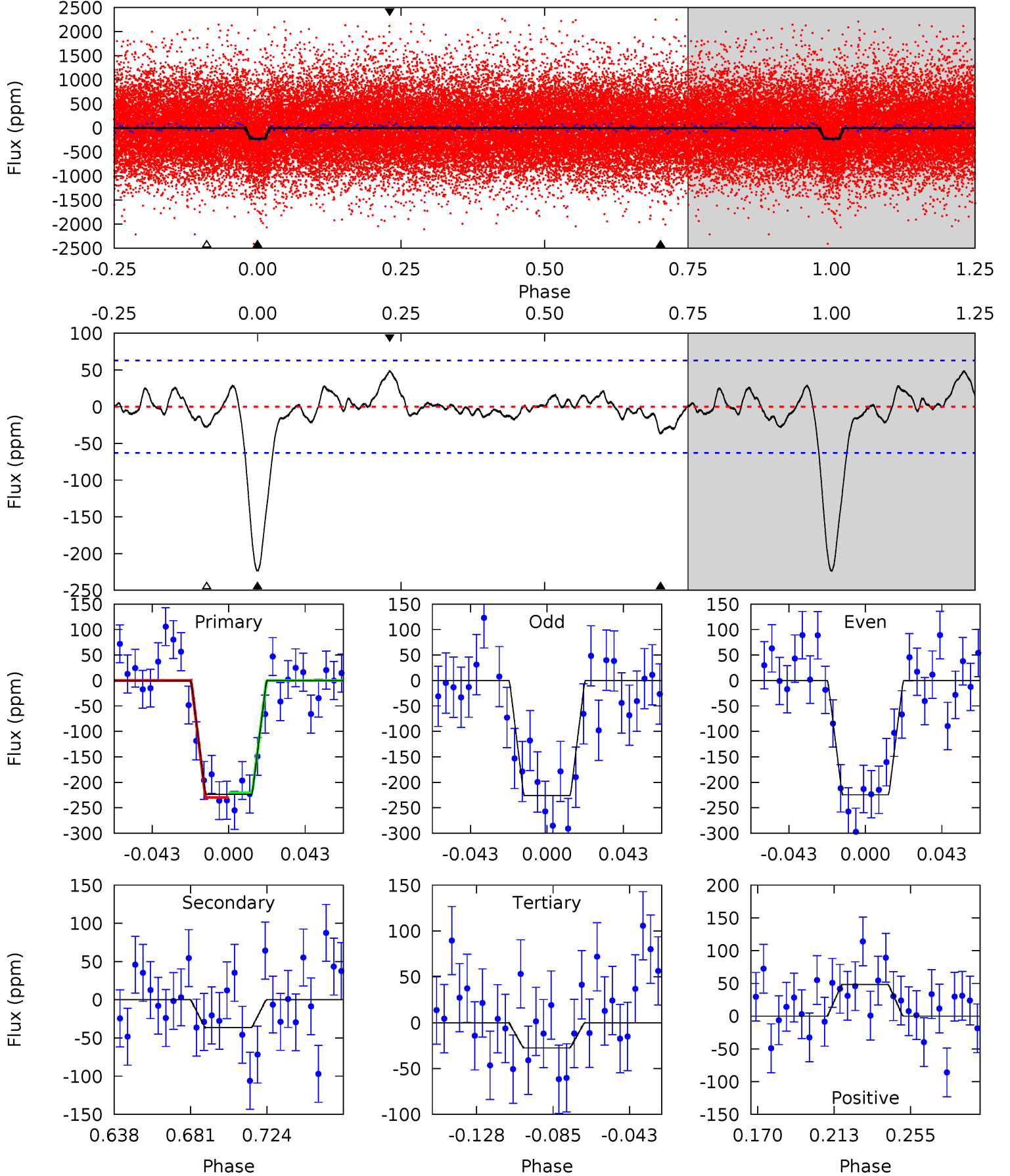
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.3	2.88	1.66	2.58	4.71	1.96	0.88	14.6	13.7	1.22	0.30	0.93	0.85	0.14	0.50



Alt Model-Shift Uniqueness Test

010872983-03, P = 2.566584 Days, E = 133.358655 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.8	2.75	2.08	3.65	4.74	2.03	1.02	14.8	13.2	0.67	-0.89	0.06	0.93	0.18	0.33



Stellar Parameters For KIC 010872983

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6046^{+189}_{-232}	$4.486^{+0.054}_{-0.229}$	$-0.080^{+0.250}_{-0.300}$	$0.972^{+0.315}_{-0.105}$	$1.053^{+0.135}_{-0.150}$	$1.615^{+0.468}_{-0.856}$
	+3%/-4%	+1%/-5%	+312%/-375%	+32%/-11%	+13%/-14%	+29%/-53%
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 010872983-03 / KOI 0756.03

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-35 ± 12	$1.75^{+1.21}_{-0.99}$	1955^{+149}_{-112}	3991^{+1554}_{-713}	$8.030^{+34.359}_{-5.429}$
Alt.	-37 ± 13	$1.78^{+1.14}_{-1.09}$	1938^{+137}_{-93}	3954^{+1933}_{-686}	$8.234^{+43.998}_{-5.512}$

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

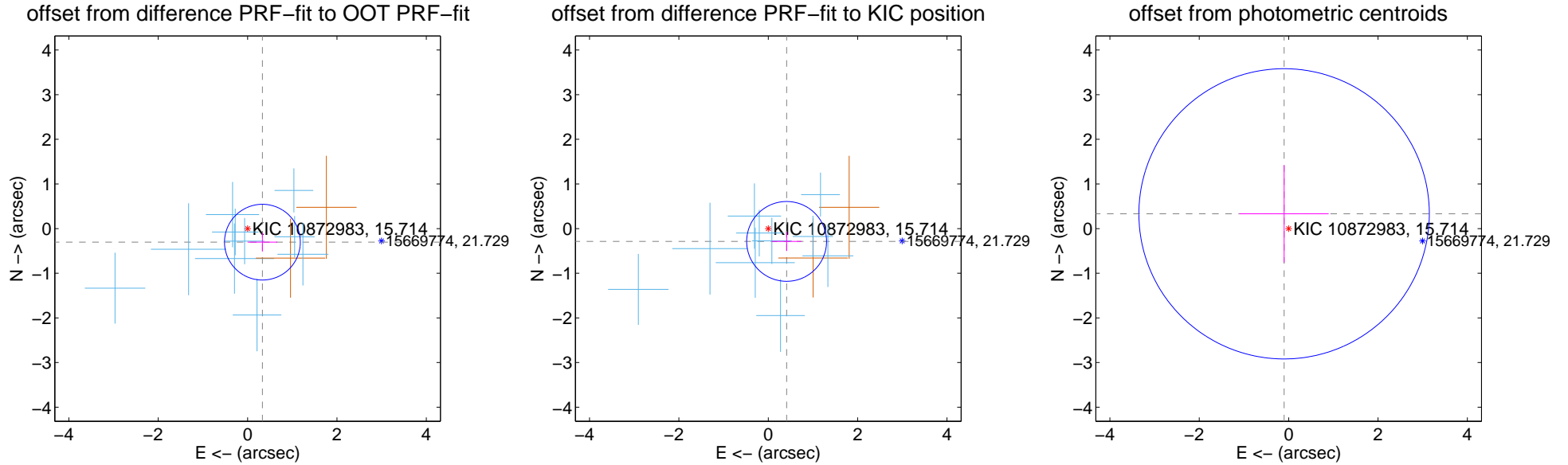
DV Centroid Data

Supplemental centroid analysis for 010872983-03. Kepler magnitude: 15.71. Transit SNR 13.29

There are 10 quarters with good PRF difference image offsets

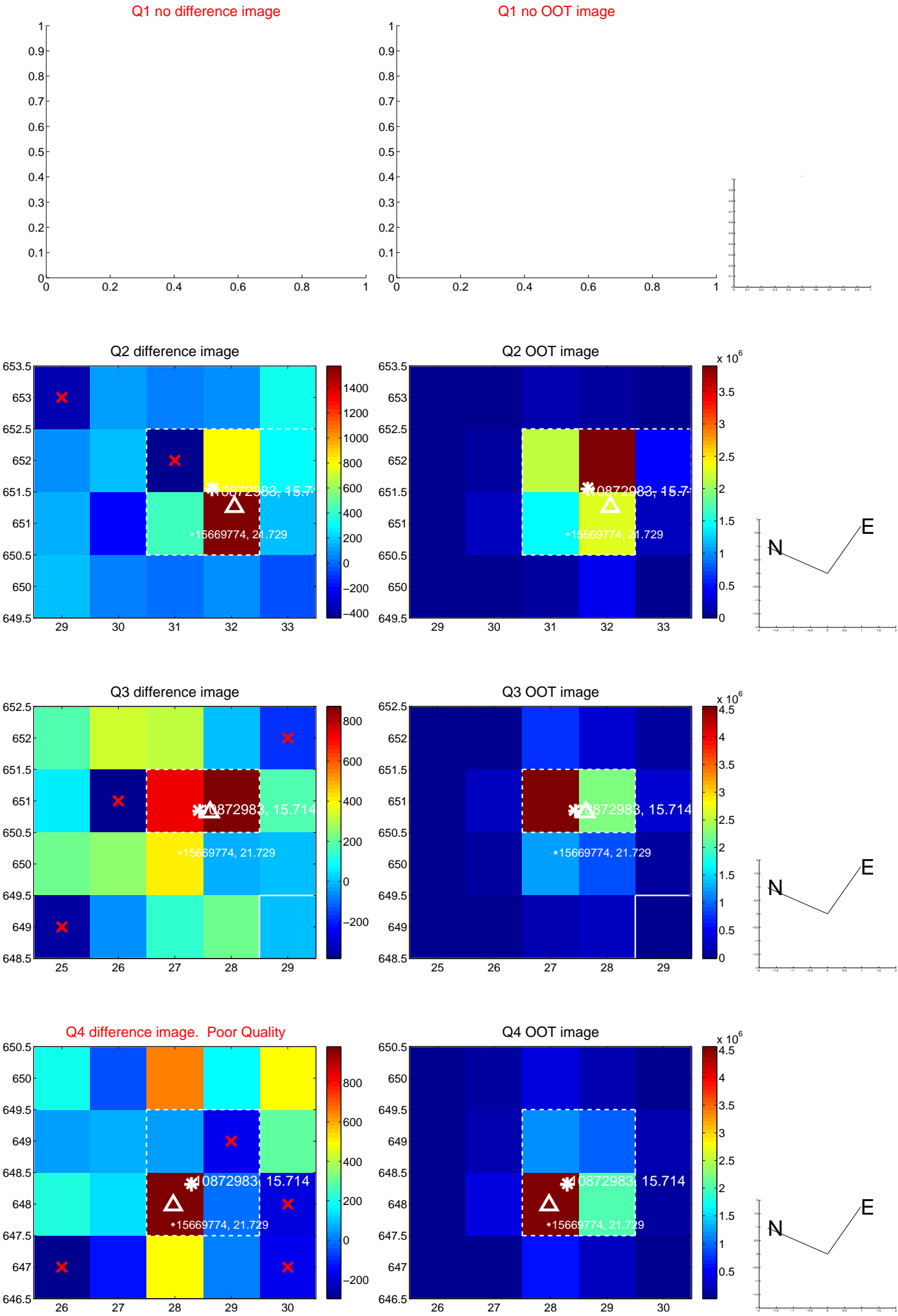
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.450 ± 0.283	1.59	-0.332 ± 0.332	-0.304 ± 0.209
PRF-fit source offset from KIC position	0.501 ± 0.298	1.68	-0.411 ± 0.331	-0.287 ± 0.214
photometric centroid source offset	0.35 ± 1.08	0.32	0.10 ± 1.00	0.33 ± 1.09

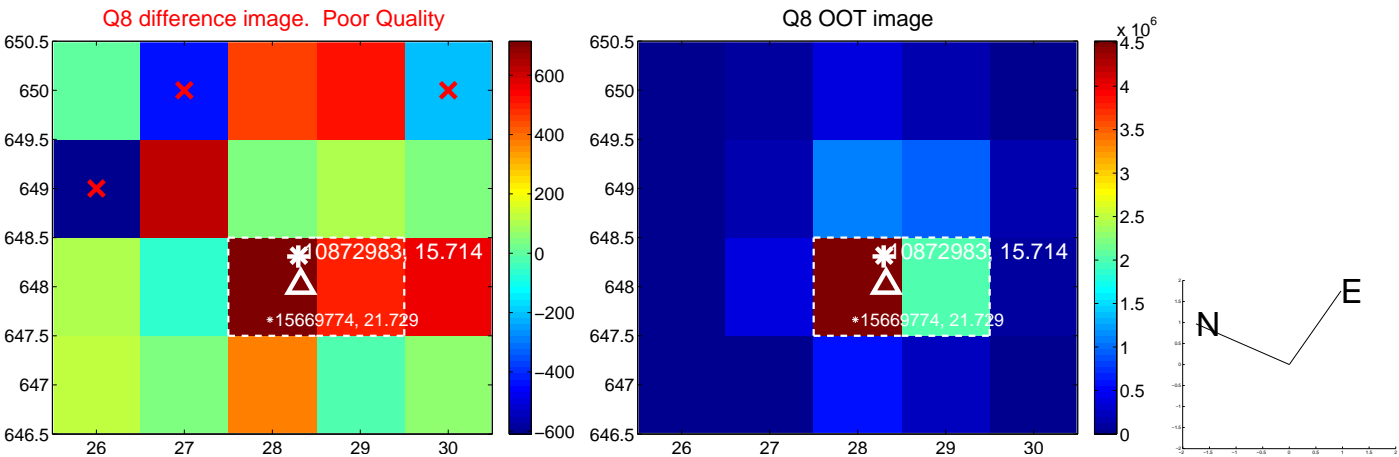
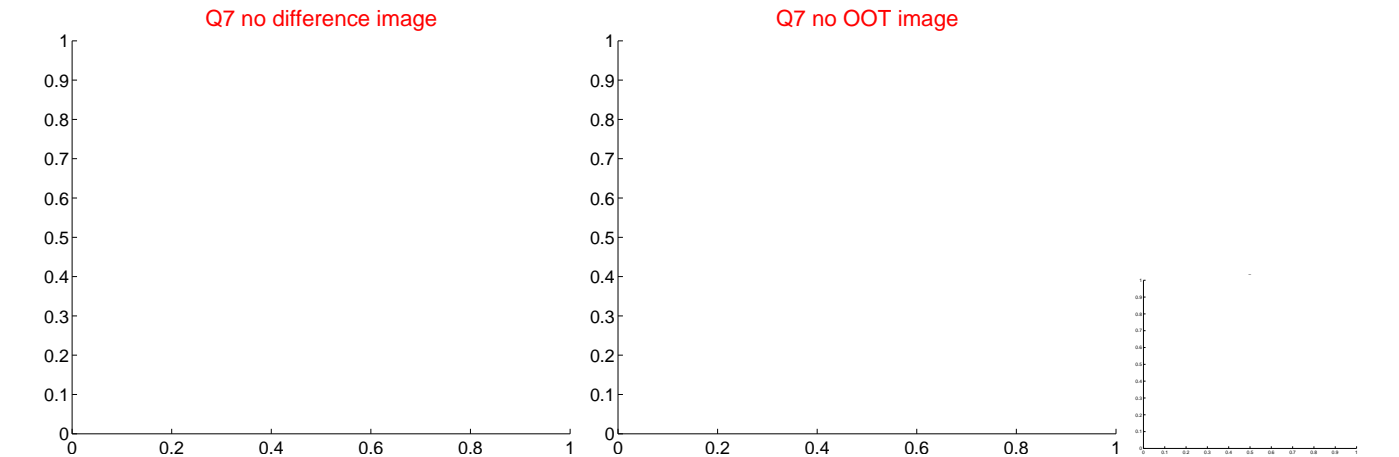
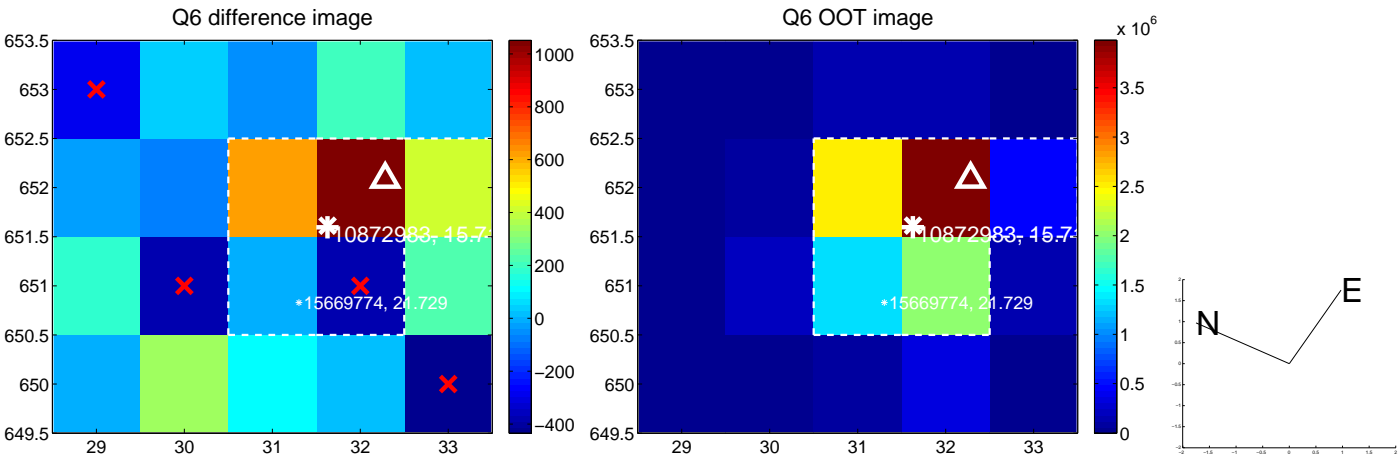
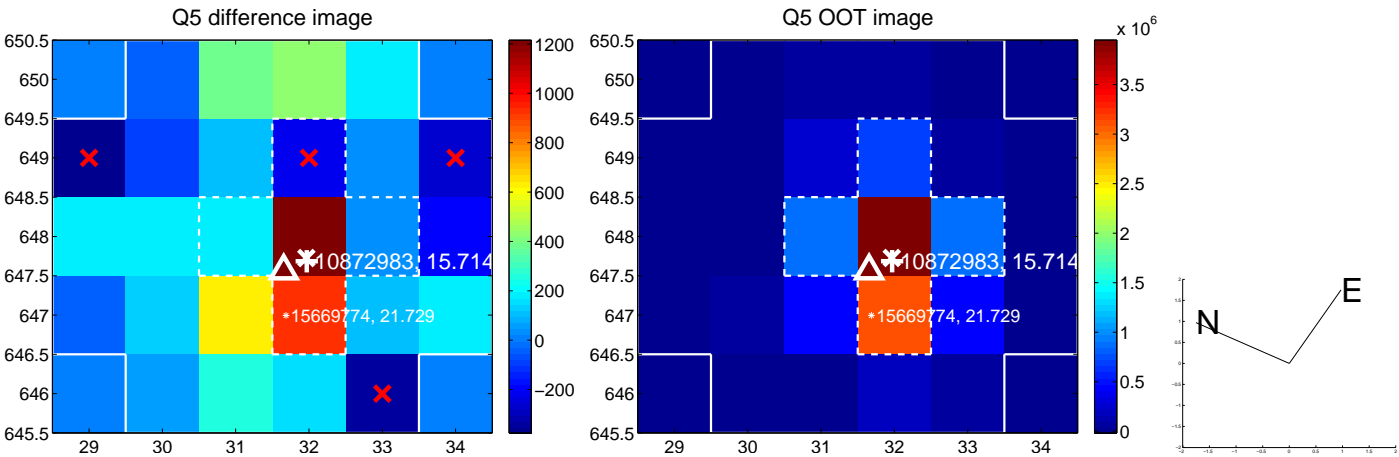


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

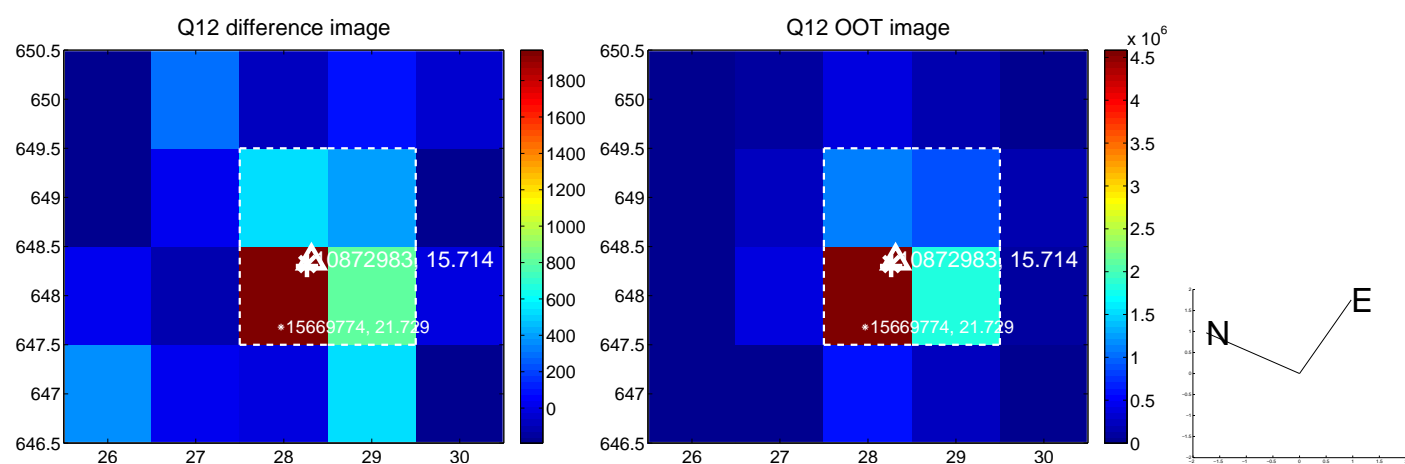
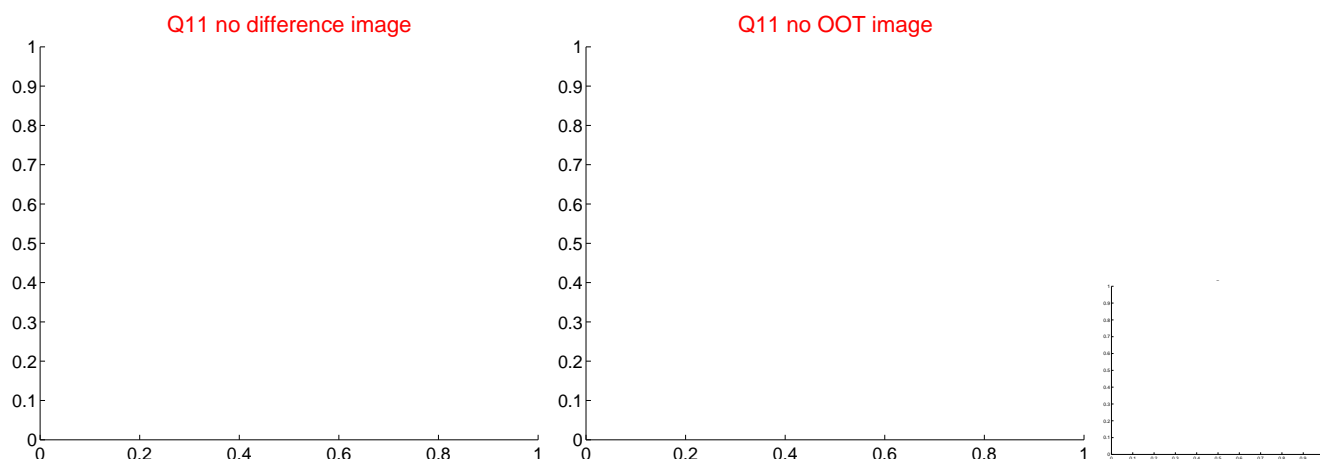
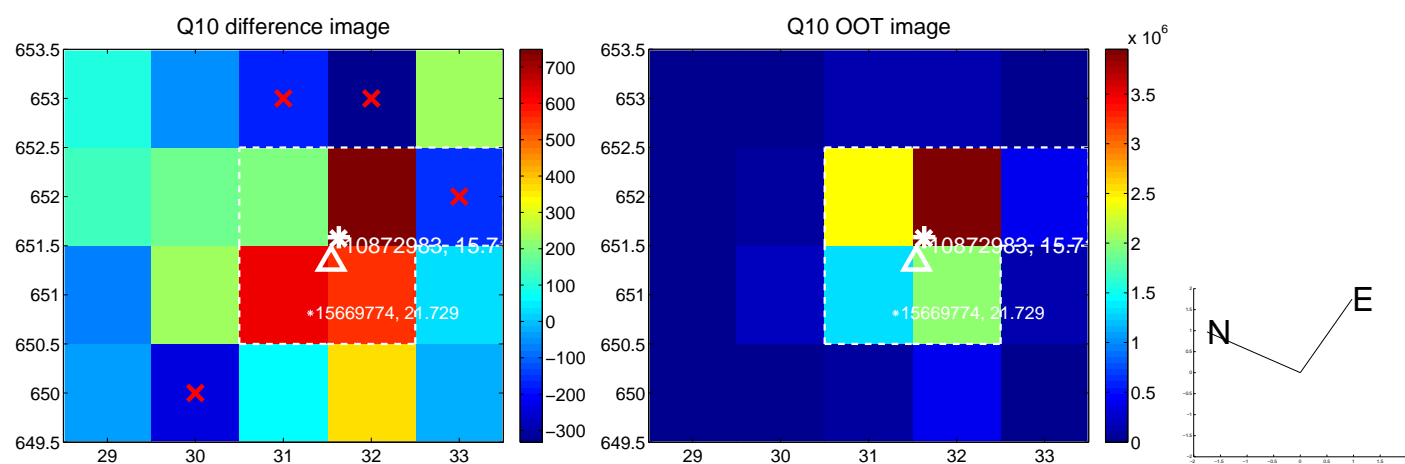
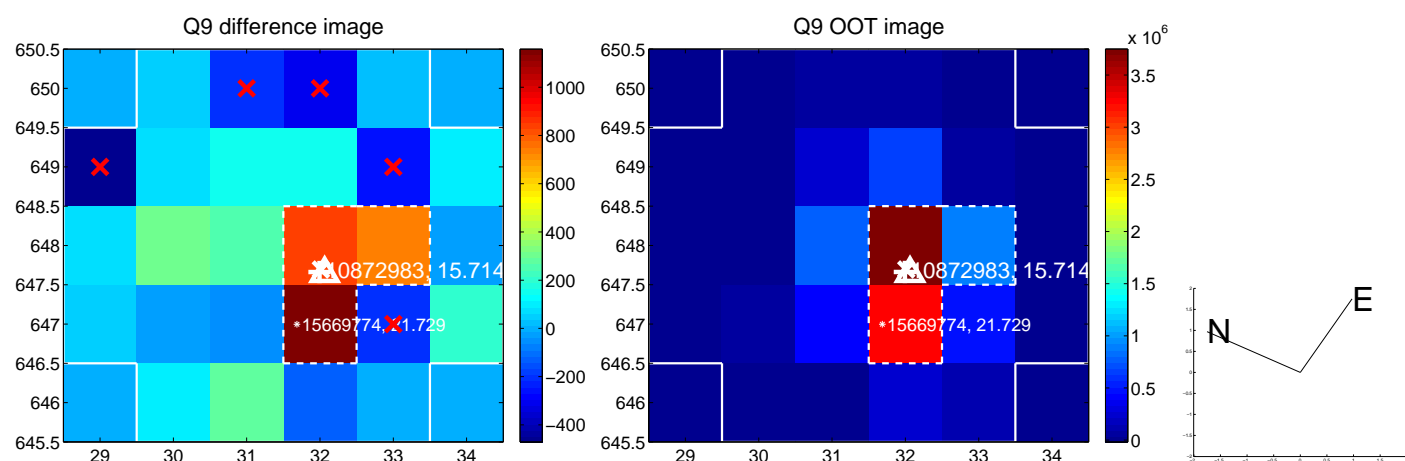
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



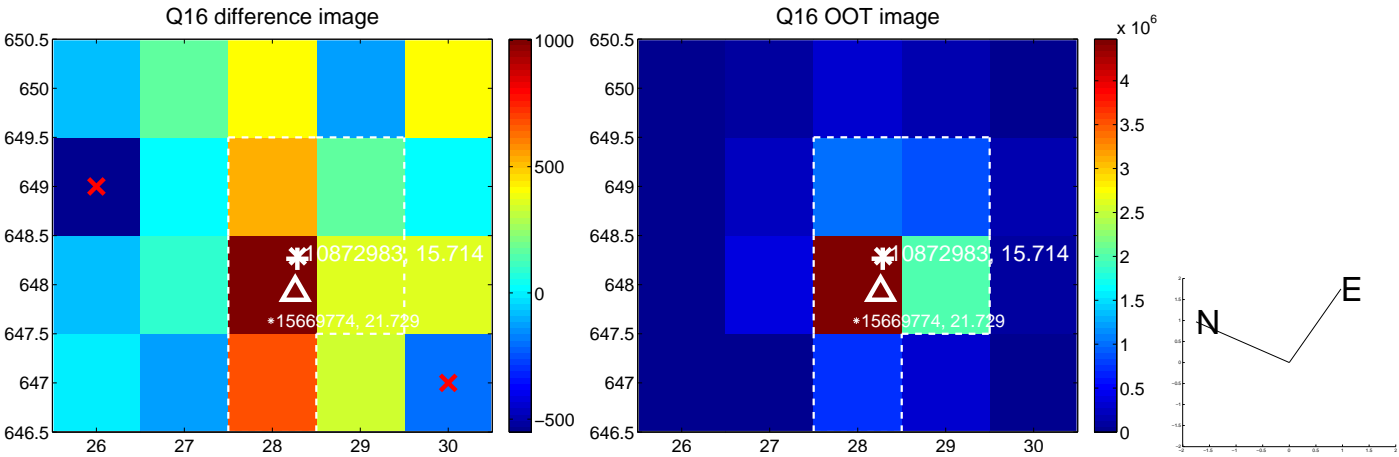
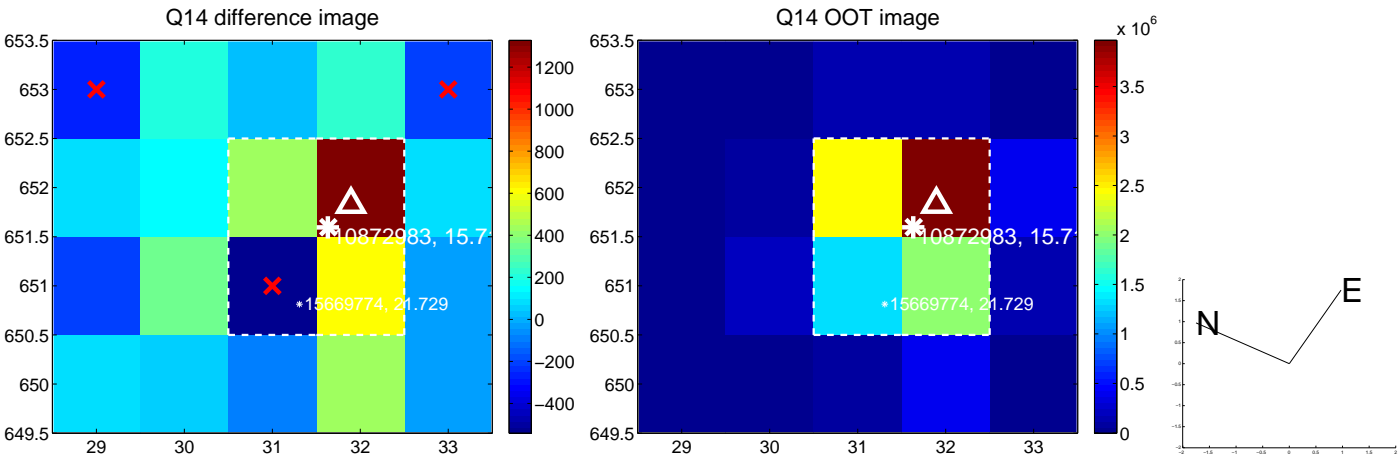
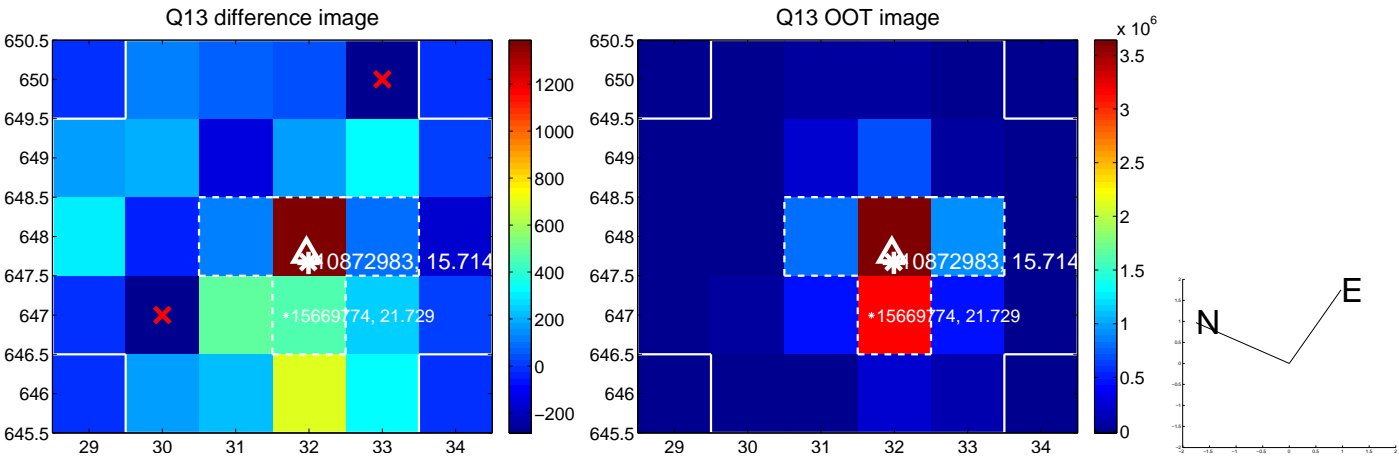
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



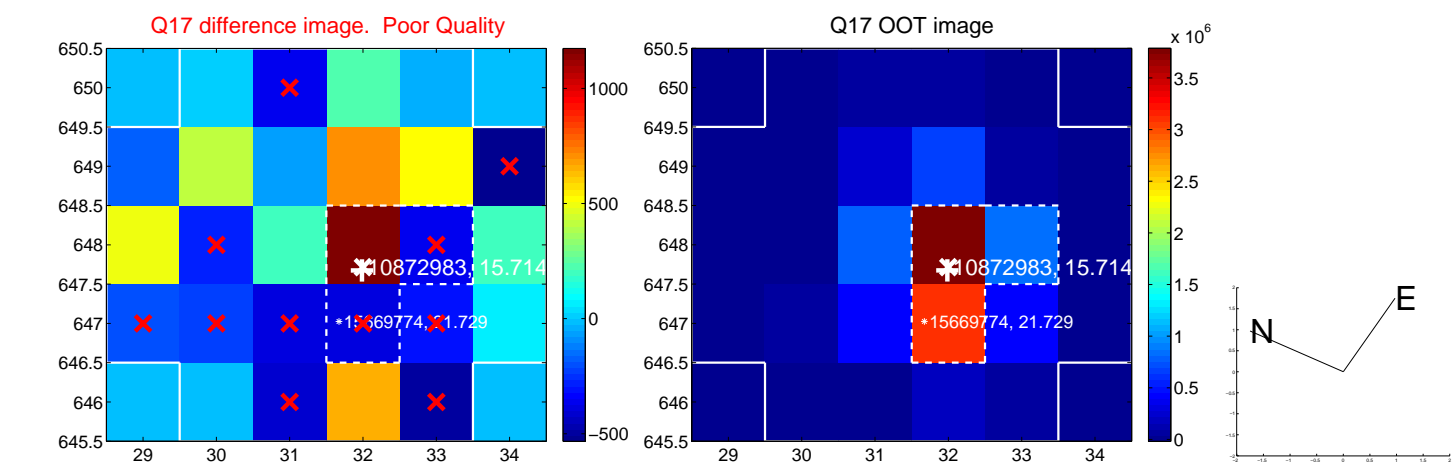
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



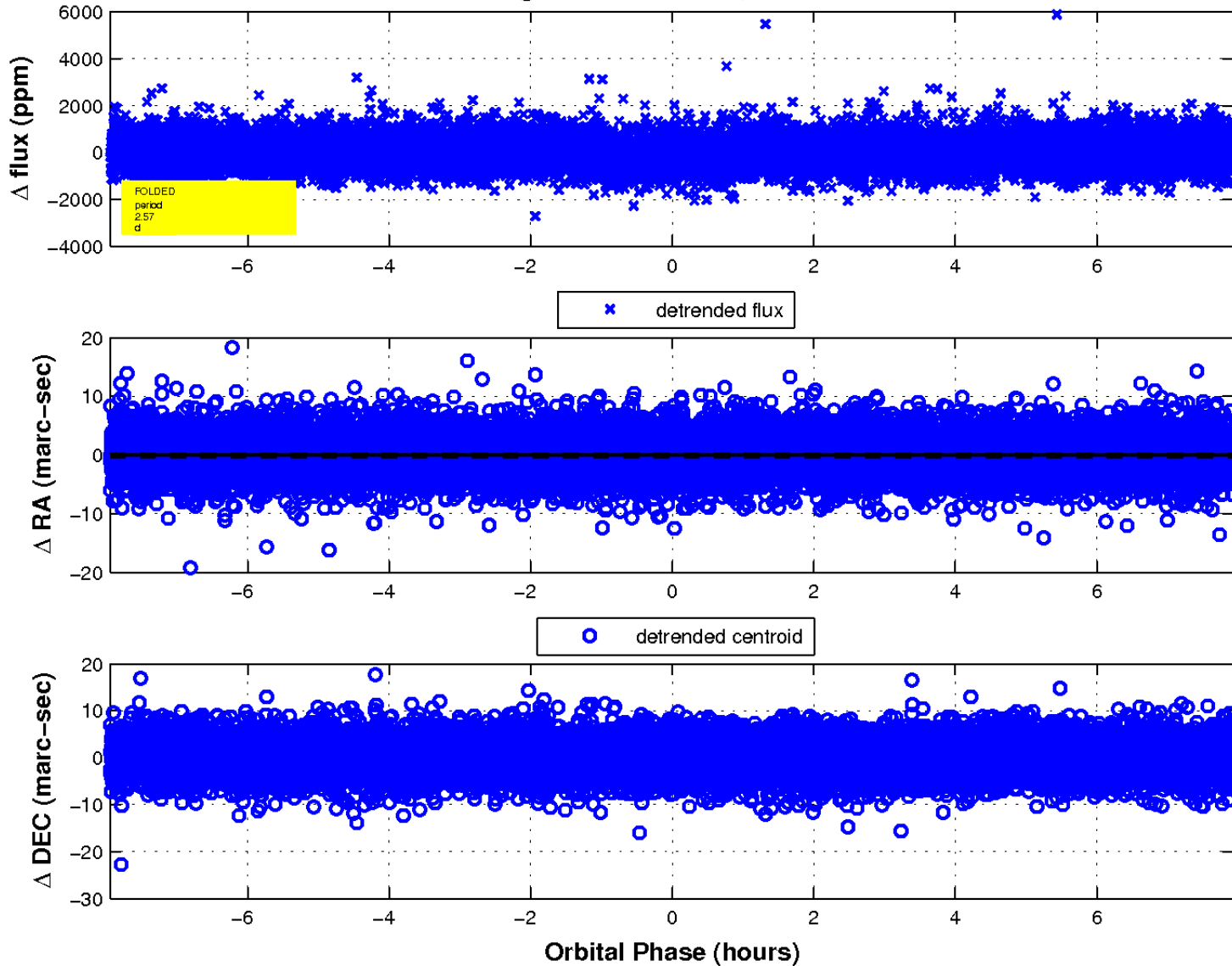
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

