

KIC 008280511

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})
008280511-01	OBS	1151.01	10.435458	134.825016	198.3	3.571	29.6	31.0	0.85	5528	1.44	78.42
008280511-02	OBS	1151.02	7.410873	135.751810	123.2	3.351	21.5	23.0	0.85	5528	1.12	123.78
008280511-03	OBS	1151.03	5.249731	135.466552	67.7	2.647	12.2	13.6	0.85	5528	0.79	196.01
008280511-04	OBS	1151.04	17.453473	146.649659	79.4	4.022	8.4	10.0	0.85	5528	0.87	39.50
008280511-05	OBS	1151.05	21.720052	134.776794	81.1	4.398	7.8	9.3	0.85	5528	0.92	29.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008280511-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008280511-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008280511-03	OBS	PC	0.97	0	0	0	0	NO_COMMENT
008280511-04	OBS	PC	0.90	0	0	0	0	NO_COMMENT
008280511-05	OBS	PC	0.80	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.

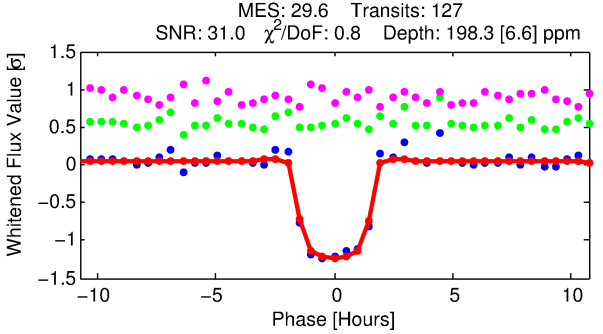
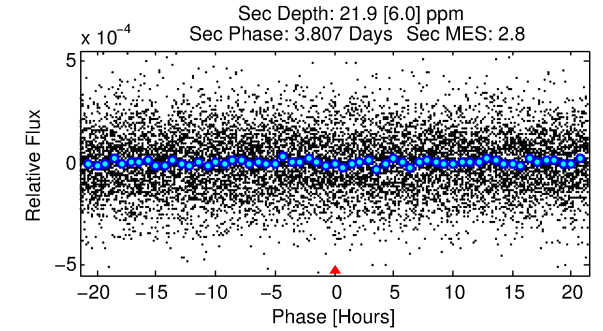
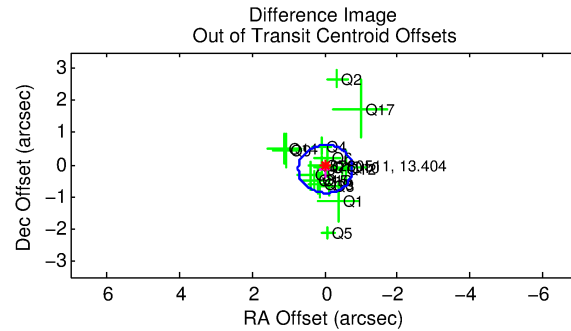
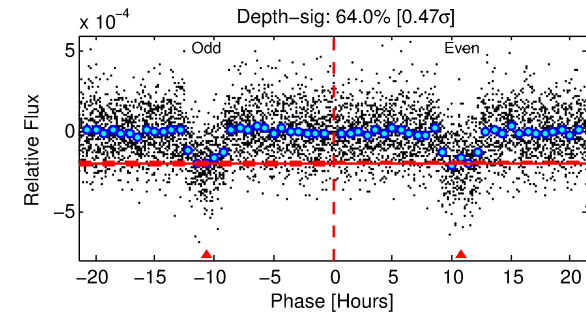
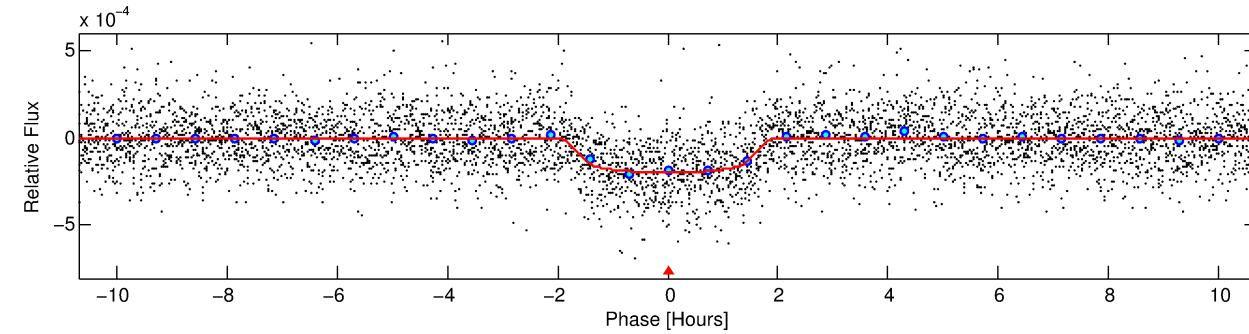
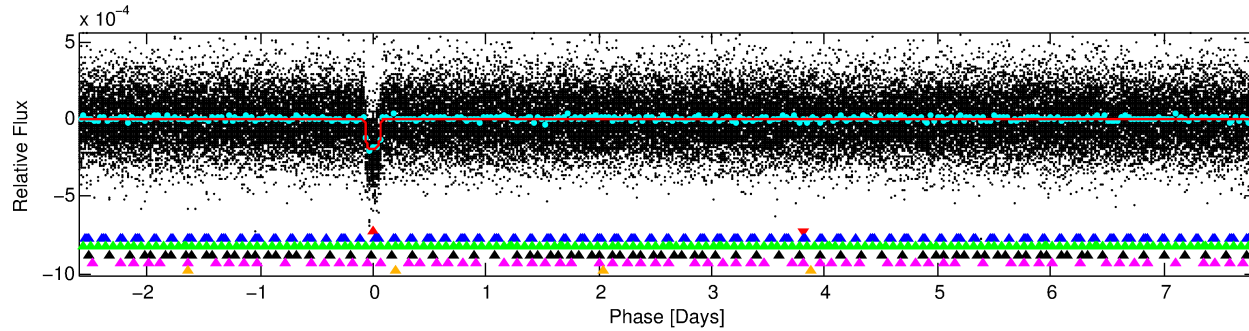
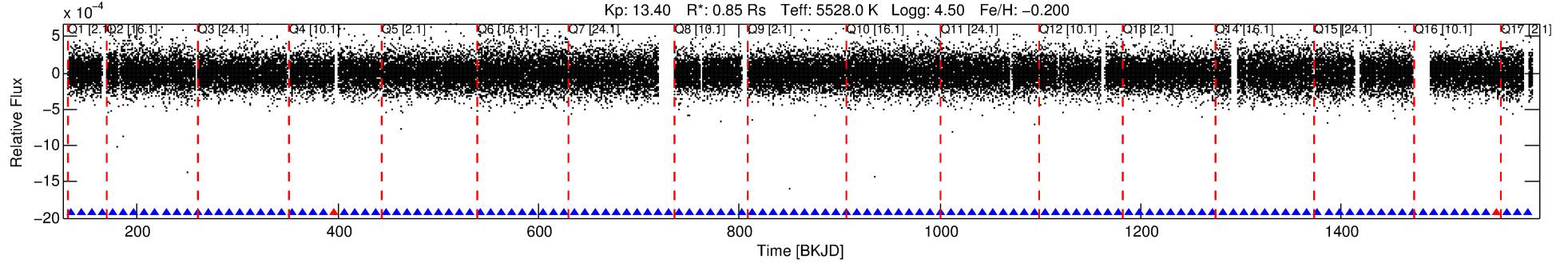
Ephemeris Match Information For 008280511-01

No Significant Match Found

DV One-Page Summary

KIC: 8280511 Candidate: 1 of 6 Period: 10.435 d
KOI: K01151.01 Name: Kepler-271b Corr: 0.977

Kp: 13.40 R*: 0.85 Rs Teff: 5528.0 K Logg: 4.50 Fe/H: -0.200



DV Fit Results:

Period = 10.43546 [0.00003] d
Epoch = 134.8250 [0.0023] BKJD
Rp/R* = 0.0154 [0.0024]
a/R* = 10.54 [7.35]
b = 0.90 [0.15]
Seff = 78.42 [12.44]
Teq = 759 [30] K
Rp = 1.43 [0.27] Re
a = 0.0881 [0.0080] AU
Ag = 45.33 [19.67] [2.25σ]
Teffp = 3044 [319] K [7.13σ]

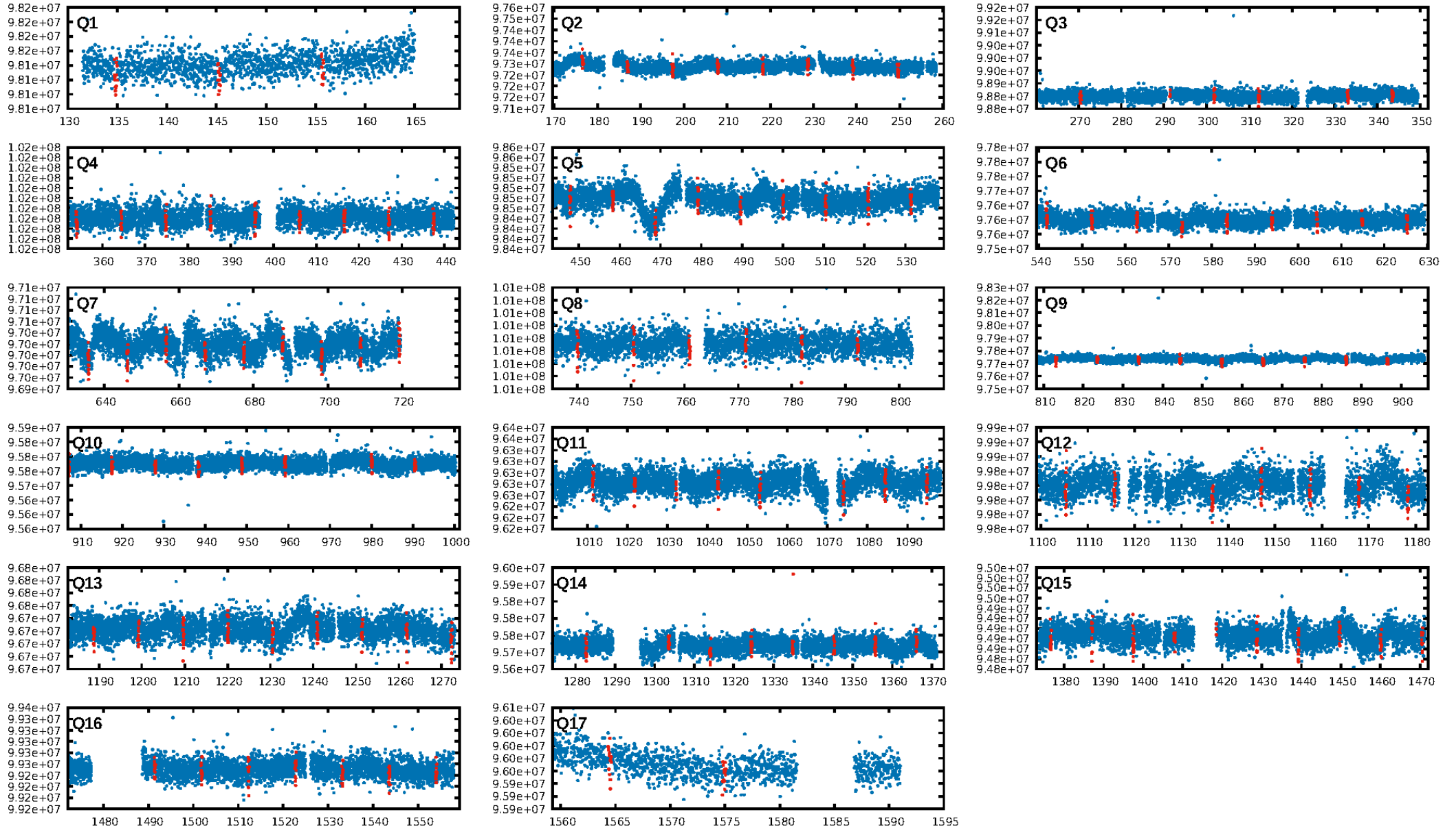
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [14.82σ]
LongPeriod-sig: 100.0% [31.31σ]
ModelChiSquare2-sig: 99.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.13e-184
RollingBand-fgt: 0.98 [120/122]
GhostDiagnostic-chr: 6.342
Centroid-sig: N/A
Centroid-so: 0.707 arcsec [1.52σ]
OotOffset-rm: 0.138 arcsec [0.55σ]
KicOffset-rm: 0.356 arcsec [1.43σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

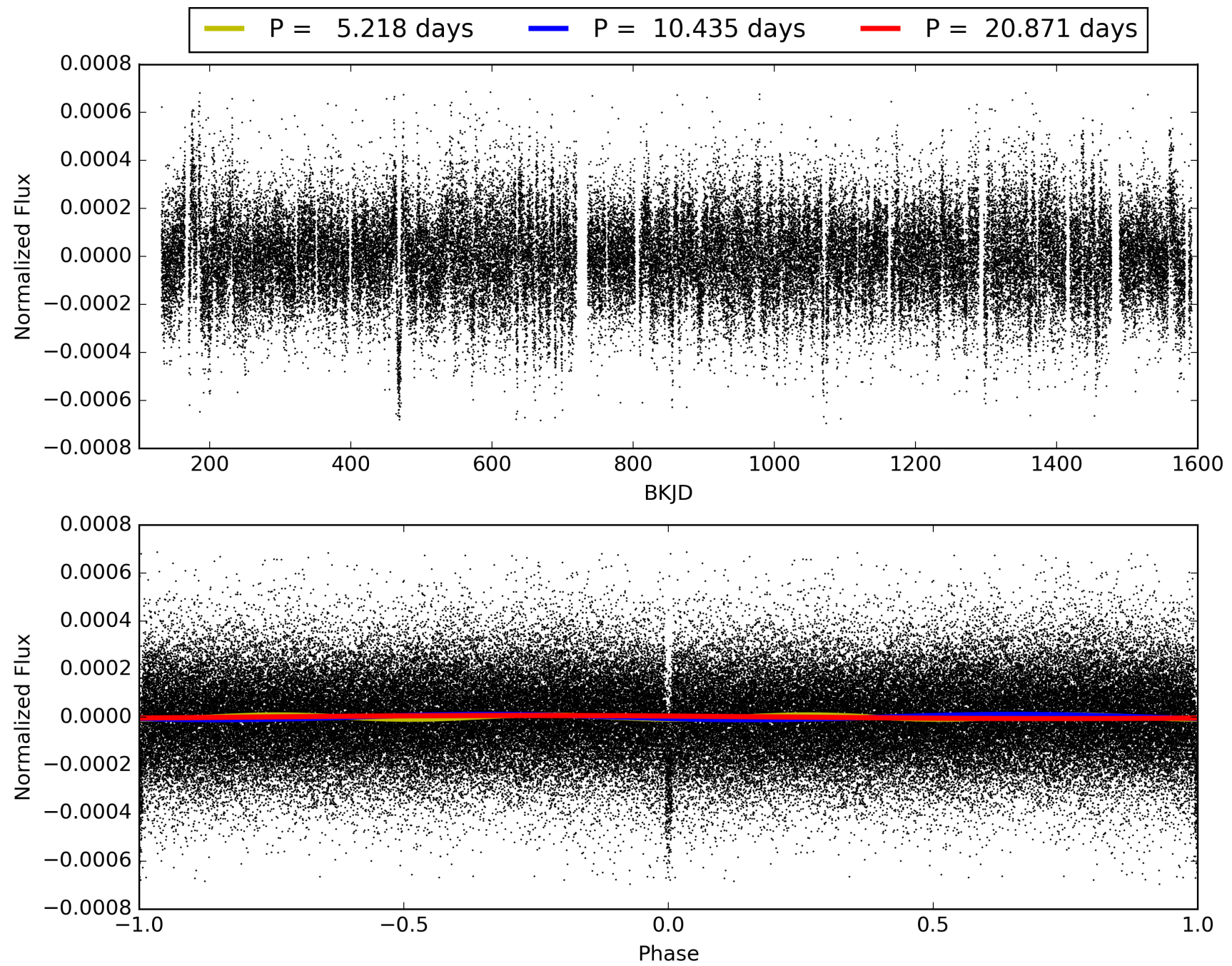
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 18:06:56 Z

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

TCE 008280511-01, PDC Light Curves

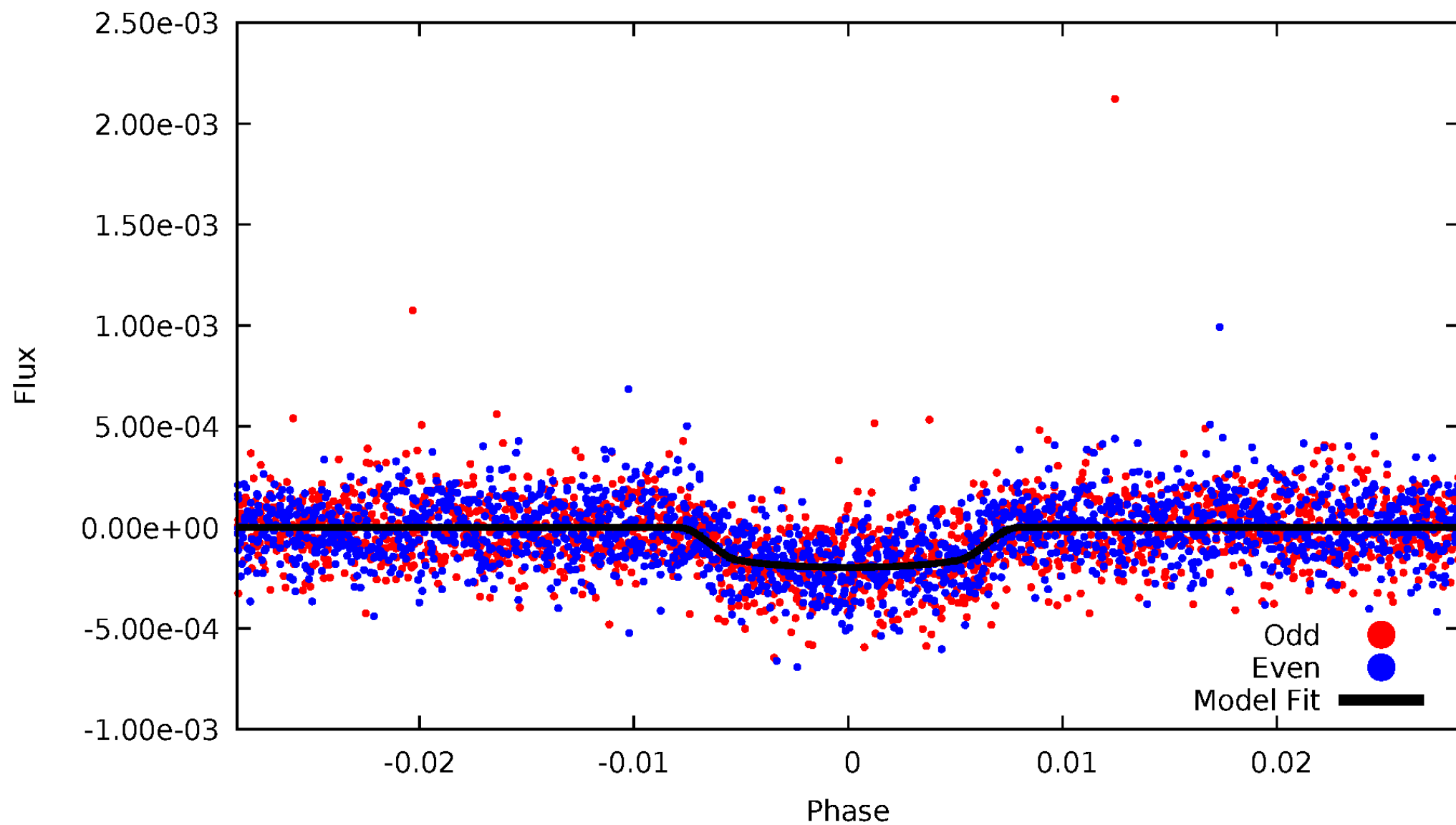


TCE 008280511-01



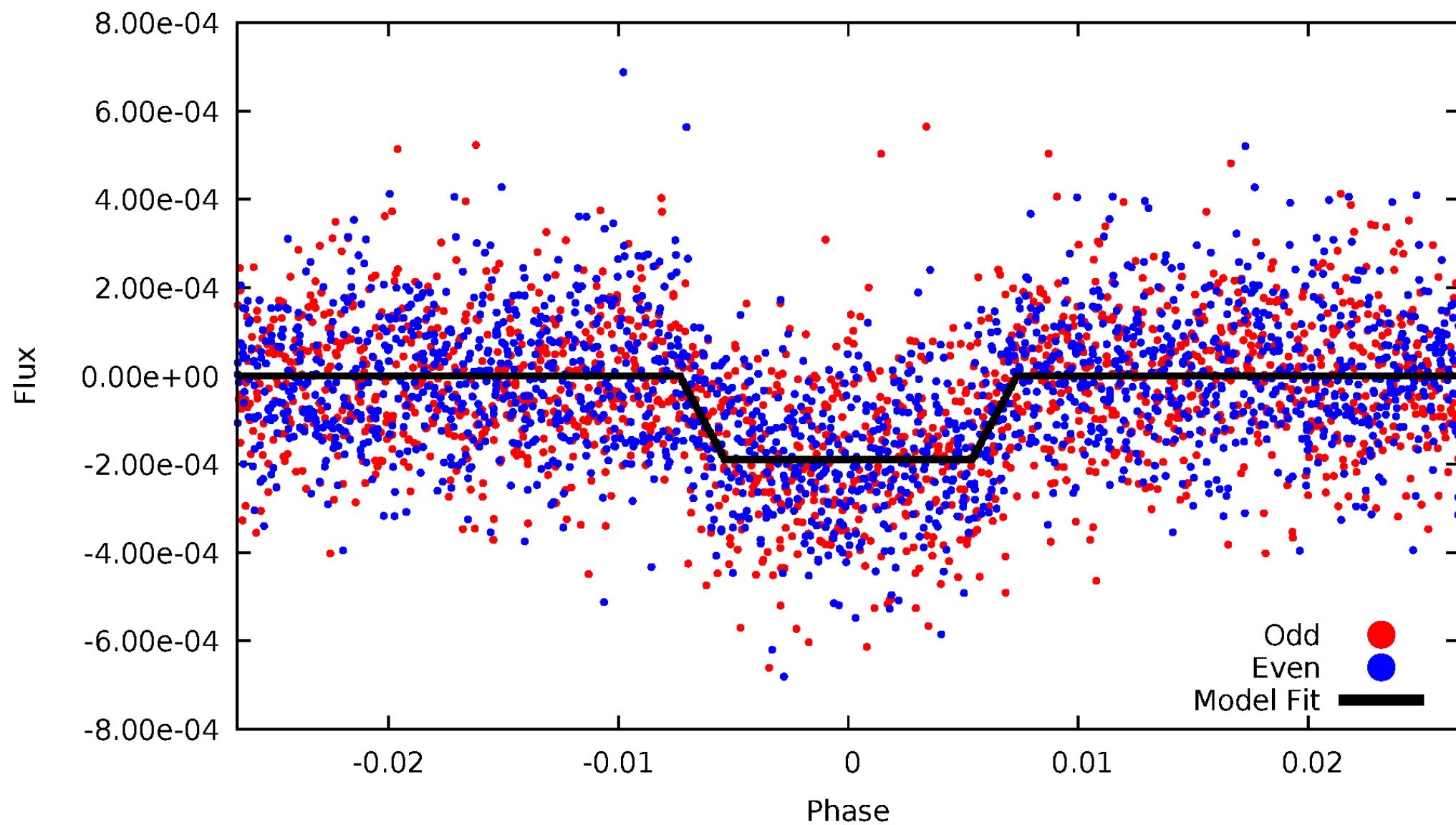
DV Odd/Even

TCE 008280511-01

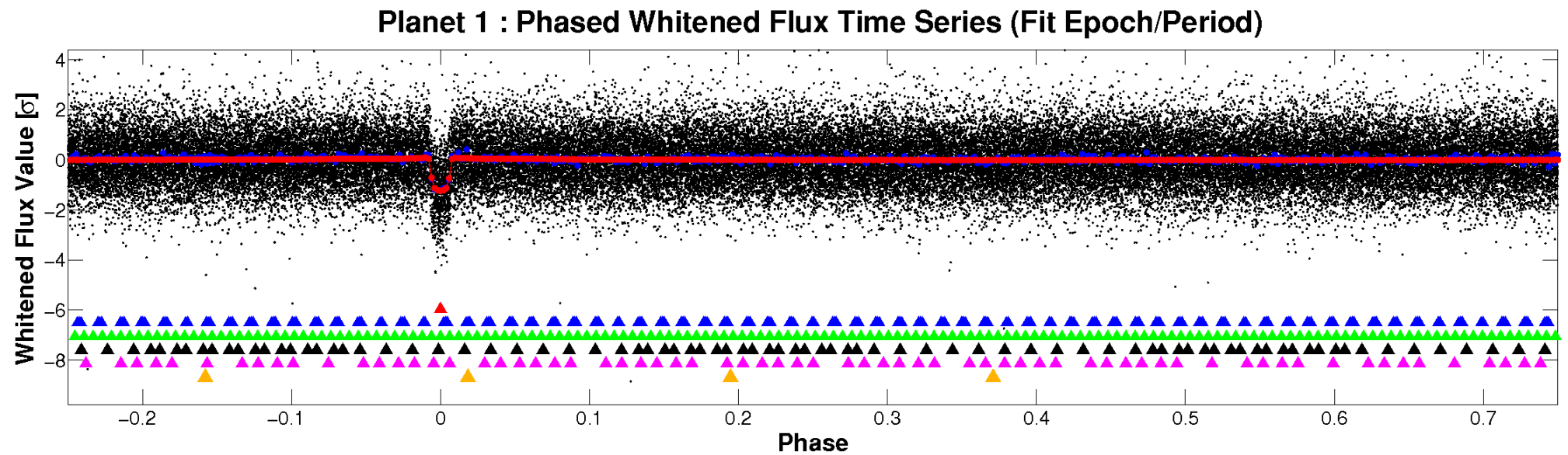
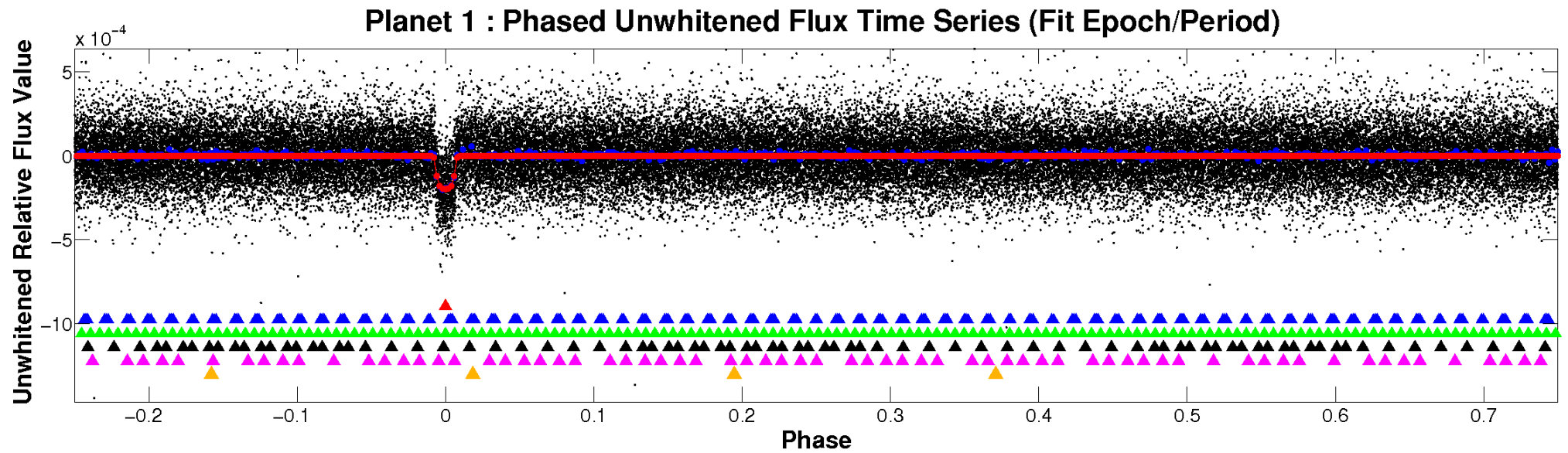


ALT Odd/Even

TCE 008280511-01

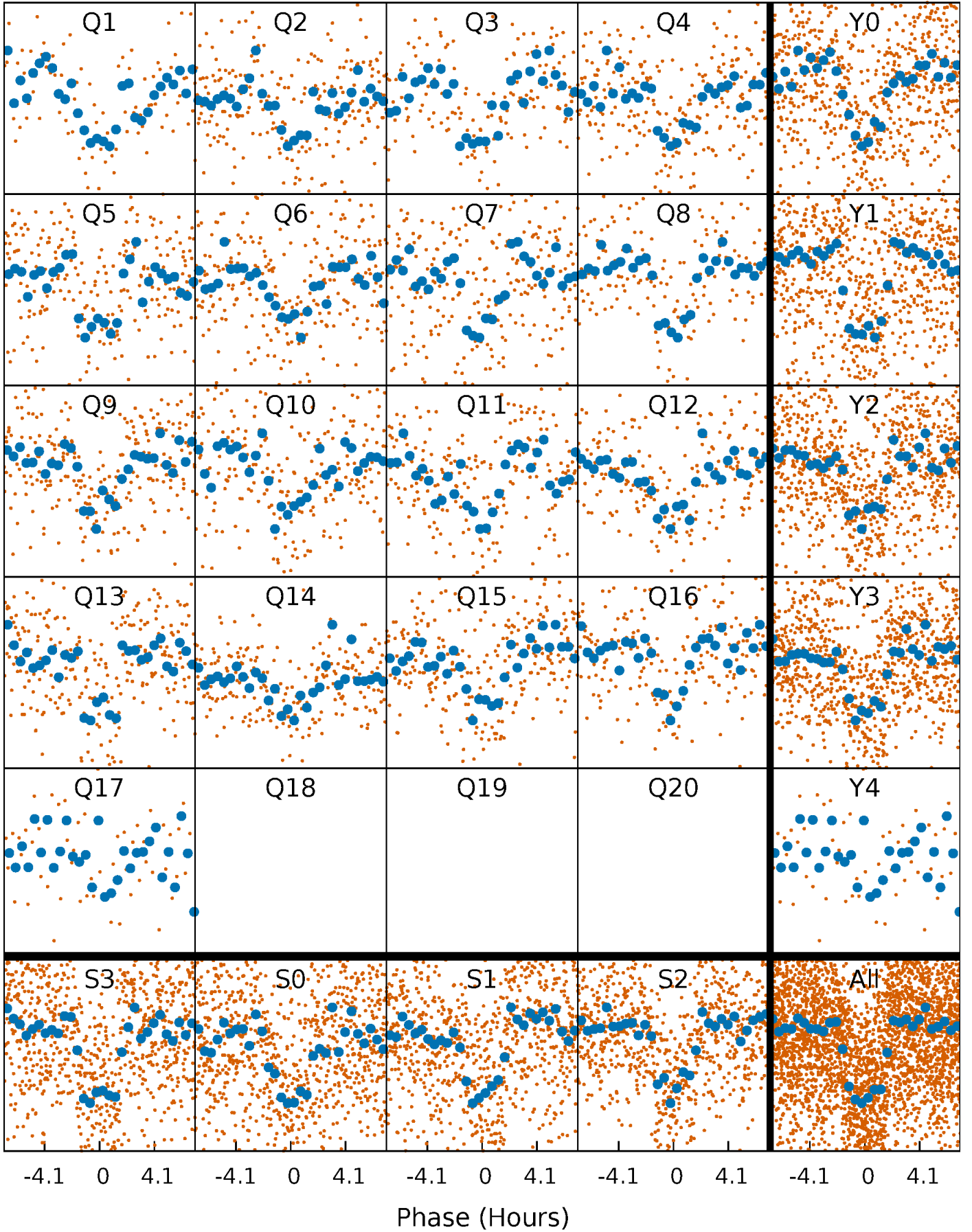


Non-Whitened Vs. Whitened Light Curve



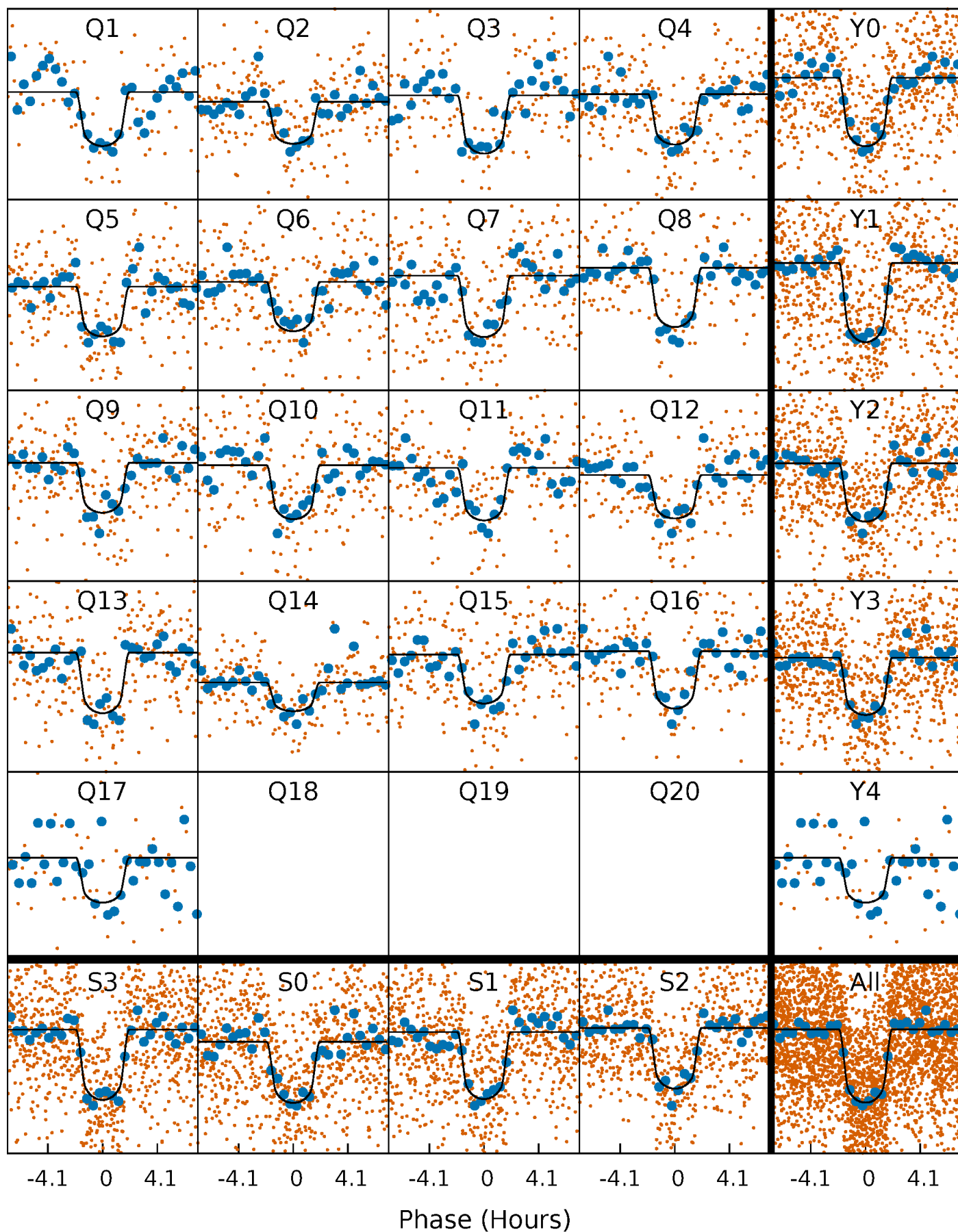
PDC Quarter-Phased Transit Curves

TCE 008280511-01 P= 10.435458 Days $T_0=134.825016$ (BKJD)



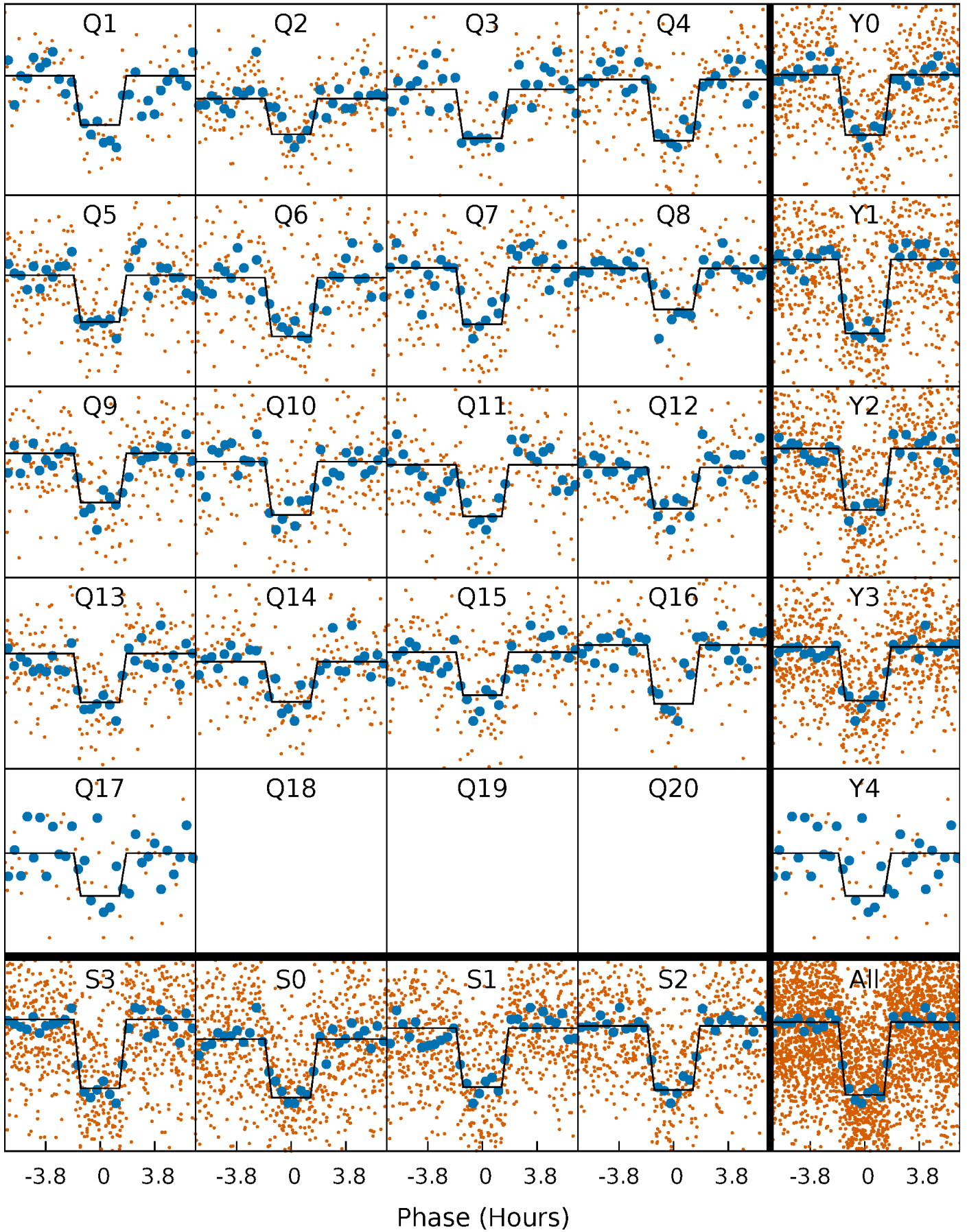
DV Quarter-Phased Transit Curves

TCE 008280511-01 P= 10.435458 Days $T_0=134.825016$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

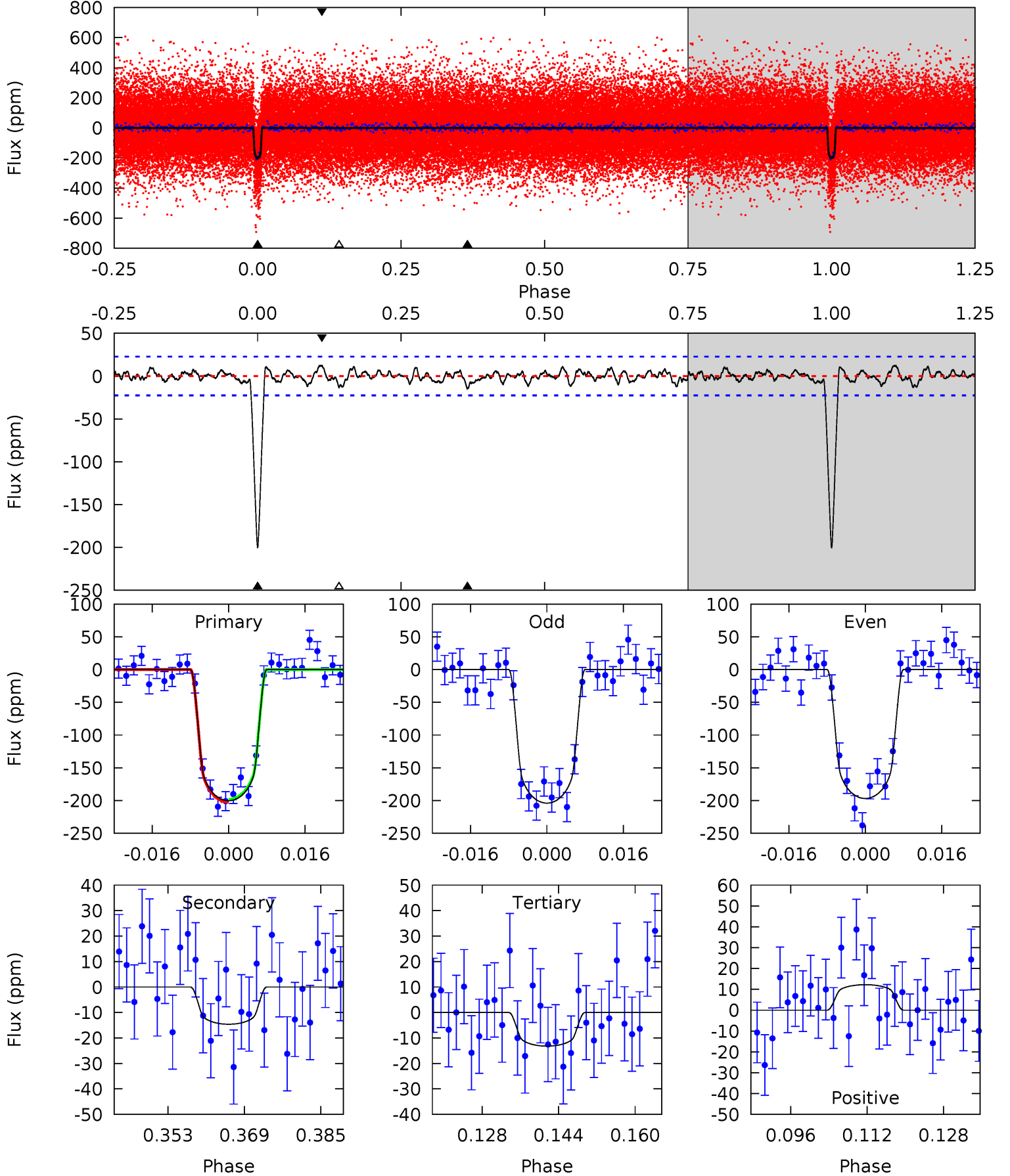
TCE 008280511-01 P= 10.435538 Days $T_0=134.819696$ (BKJD)



DV Model-Shift Uniqueness Test

008280511-01, P = 10.435458 Days, E = 124.389558 Days

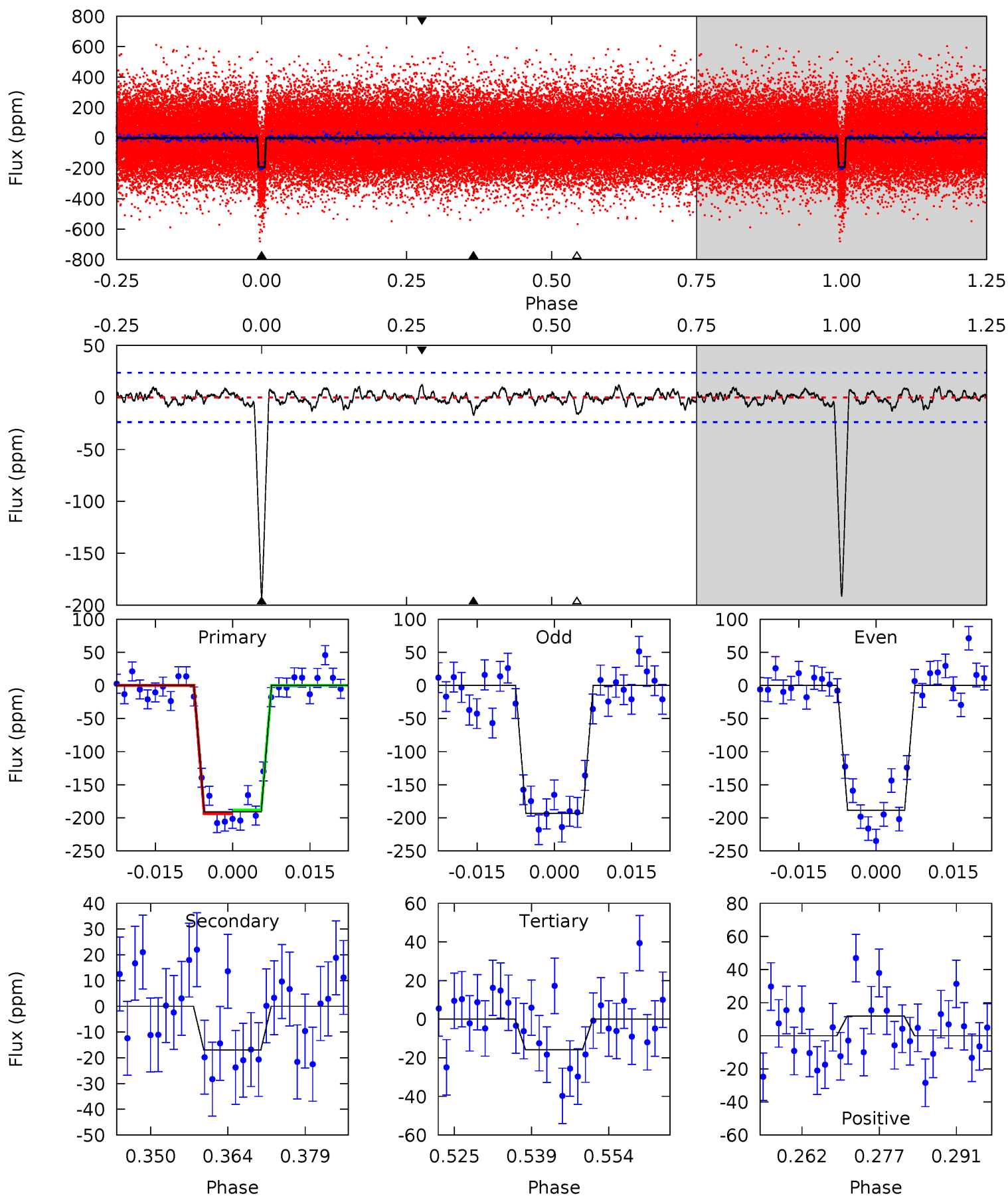
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
43.7	3.19	2.88	2.66	4.93	2.41	1.04	40.8	41.0	0.31	0.52	0.77	1.02	0.06	0.47



Alt Model-Shift Uniqueness Test

008280511-01, P = 10.435538 Days, E = 124.384158 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
39.7	3.53	3.29	2.47	4.95	2.44	0.95	36.4	37.3	0.24	1.06	0.48	1.00	0.06	0.64



Stellar Parameters For KIC 008280511

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5528^{+110}_{-110}	$4.499^{+0.063}_{-0.077}$	$-0.200^{+0.150}_{-0.150}$	$0.853^{+0.089}_{-0.067}$	$0.838^{+0.056}_{-0.046}$	$1.899^{+0.488}_{-0.464}$
	+2%/-2%	+1%/-2%	+75%/-75%	+10%/-8%	+7%/-5%	+26%/-24%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 008280511-01 / KOI 1151.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-15 ± 5	$1.44^{+0.24}_{-0.25}$	1060^{+38}_{-32}	3276^{+250}_{-221}	29^{+16}_{-11}
Alt.	-17 ± 5	$1.30^{+0.22}_{-0.23}$	1064^{+30}_{-32}	3488^{+263}_{-238}	43^{+24}_{-16}

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

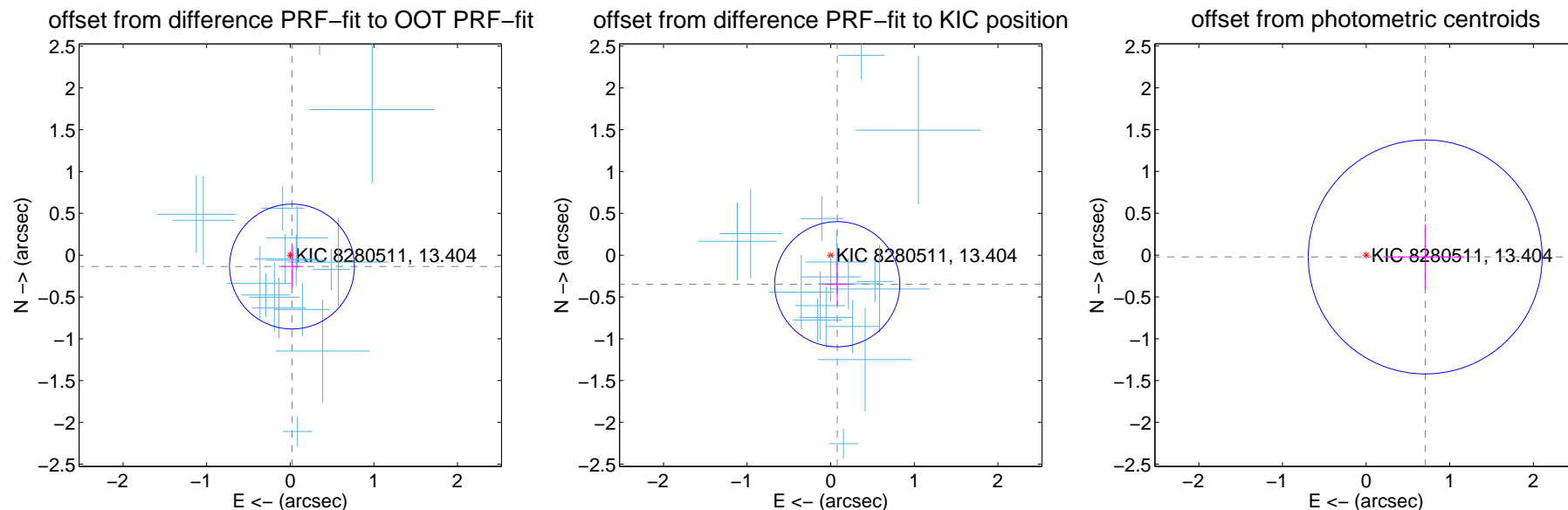
DV Centroid Data

Supplemental centroid analysis for 008280511-01. Kepler magnitude: 13.40. Transit SNR 31.02

There are 17 quarters with good PRF difference image offsets

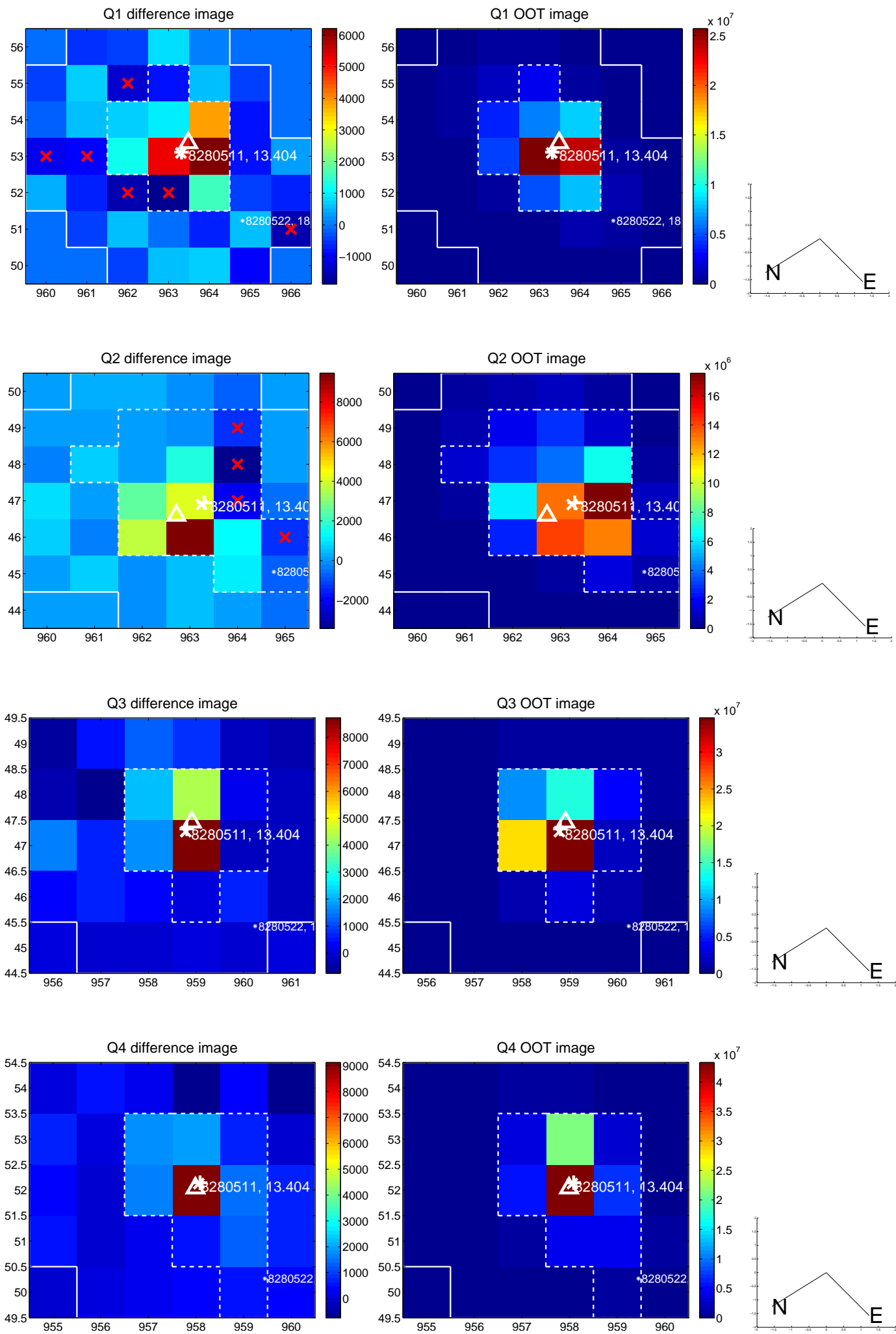
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.138 ± 0.249	0.55	-0.021 ± 0.133	-0.136 ± 0.253
PRF-fit source offset from KIC position	0.356 ± 0.249	1.43	-0.078 ± 0.143	-0.348 ± 0.257
photometric centroid source offset	0.71 ± 0.47	1.52	-0.71 ± 0.47	-0.02 ± 0.39

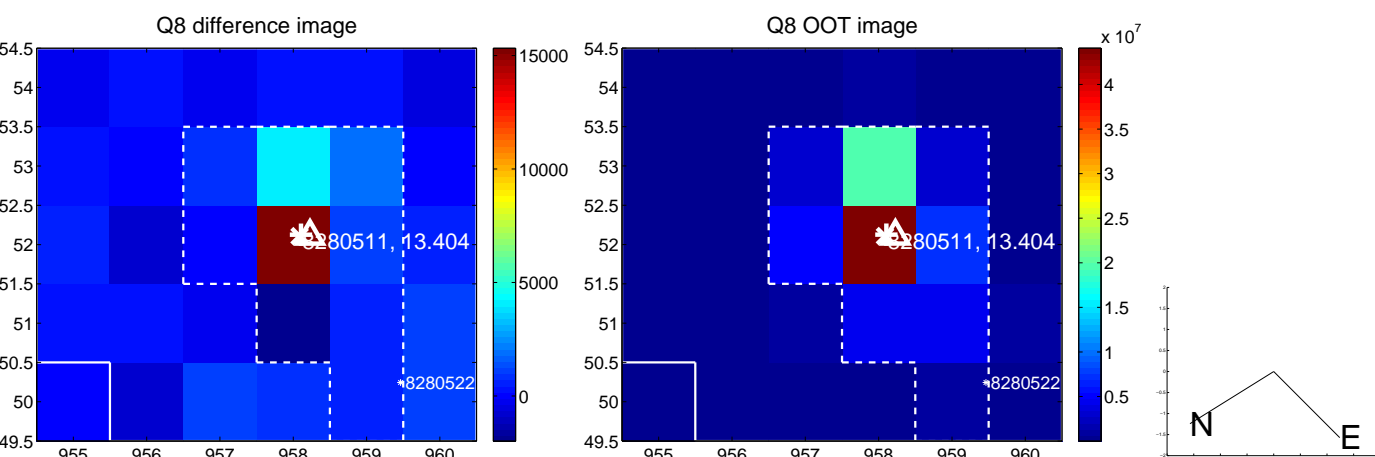
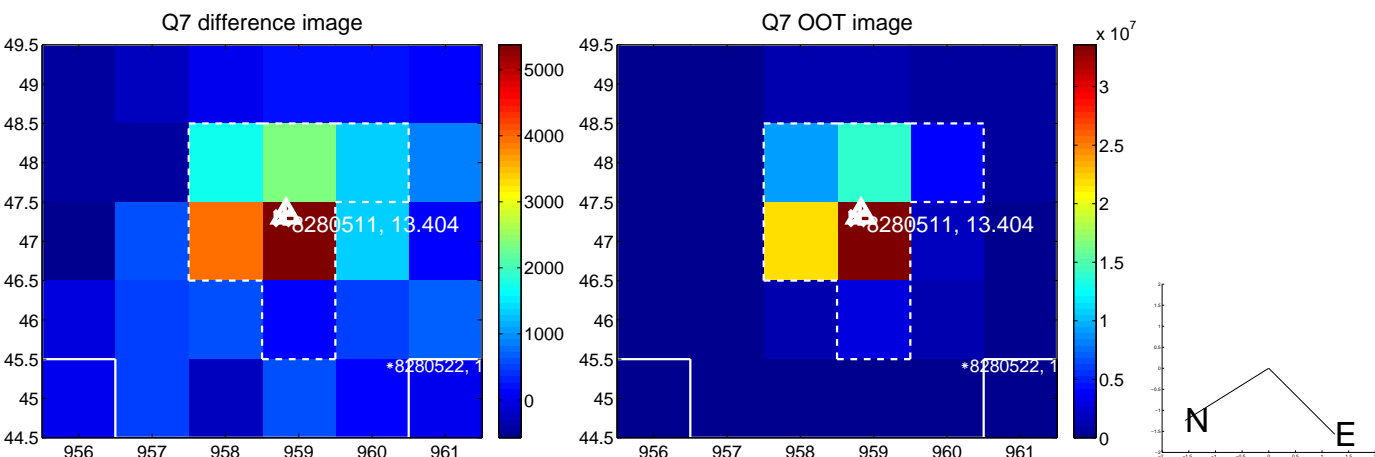
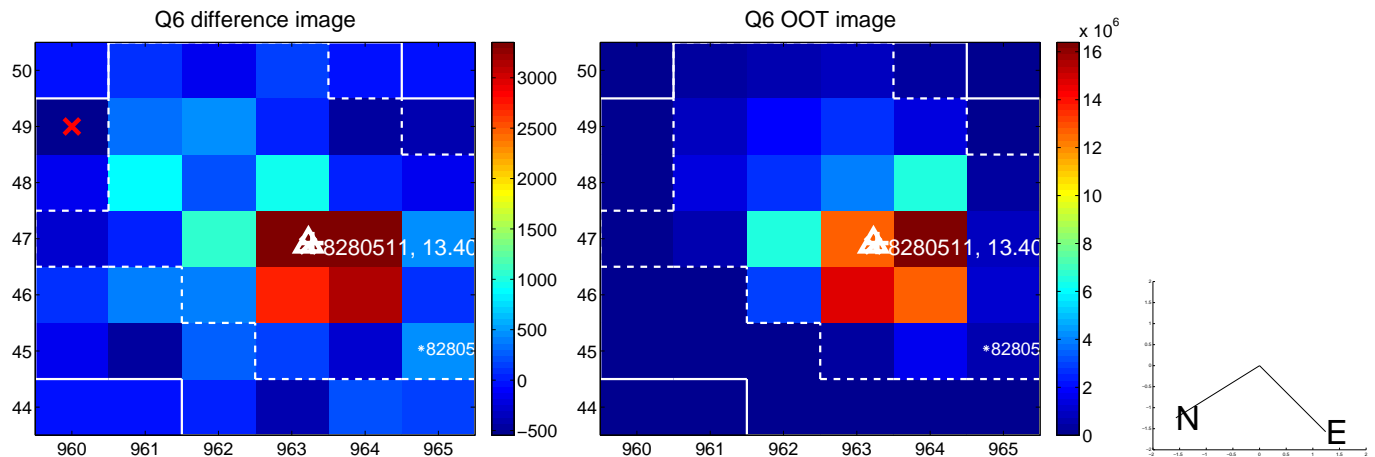
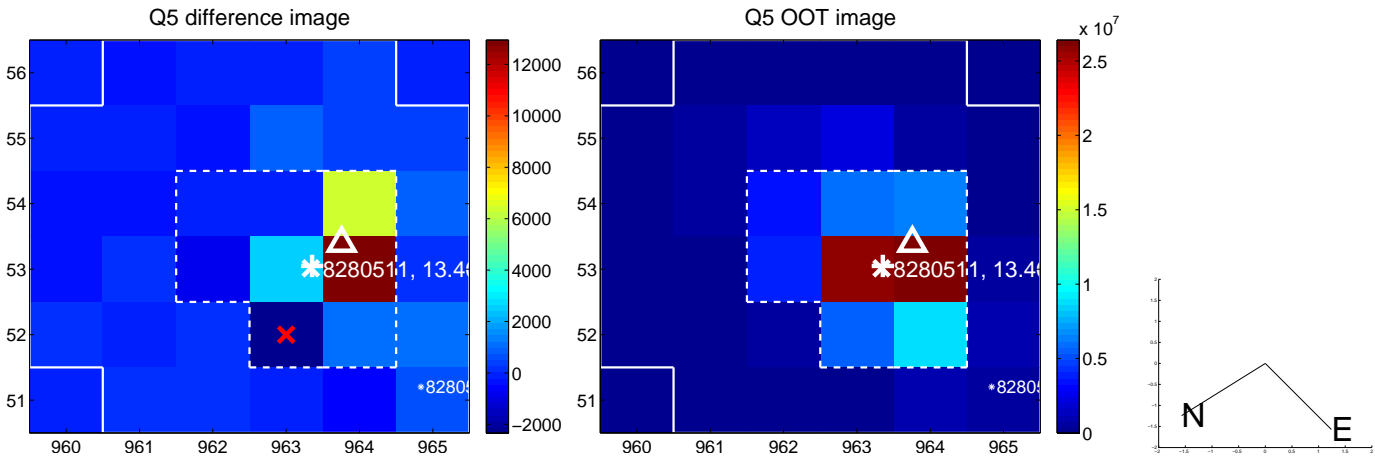


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

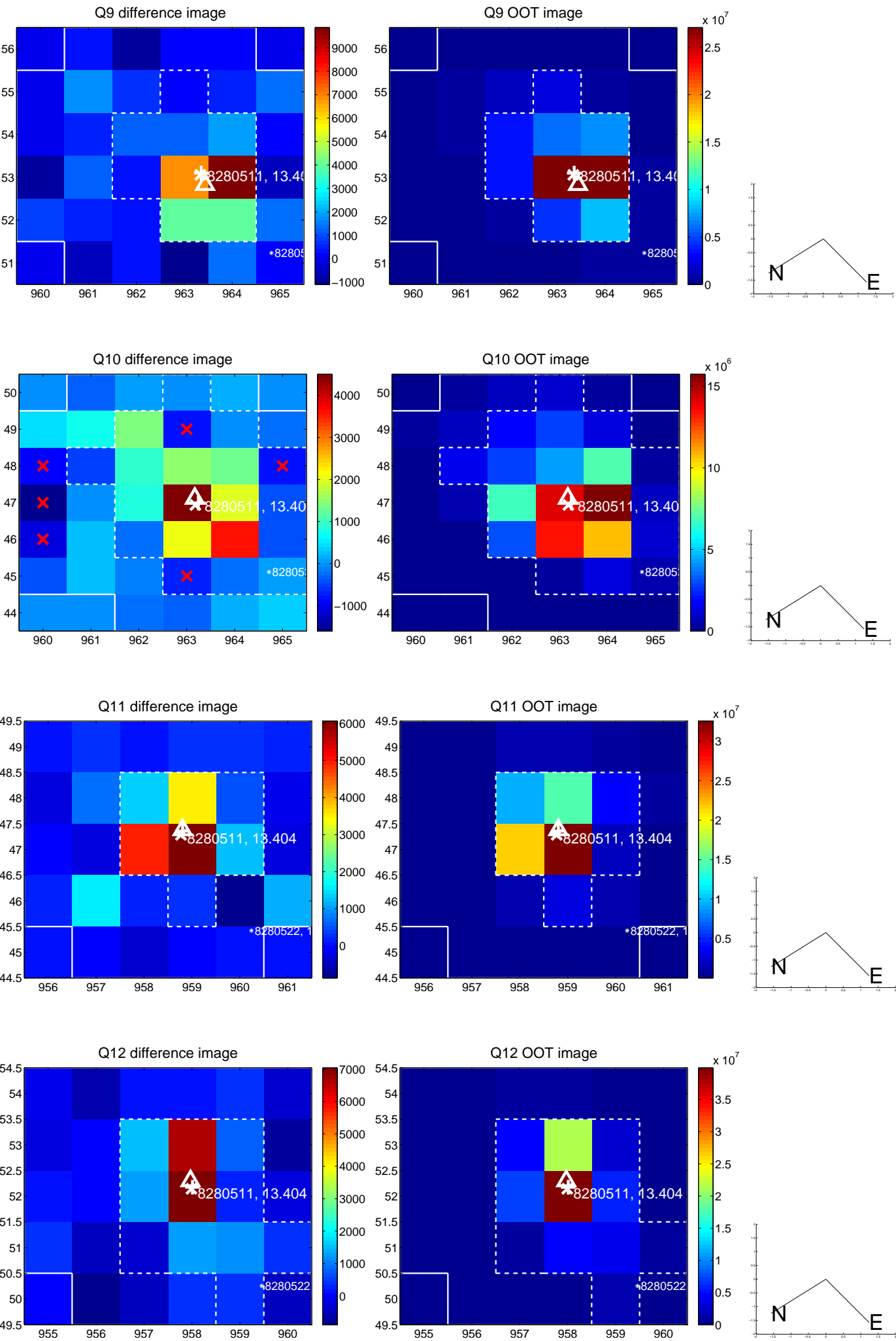
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



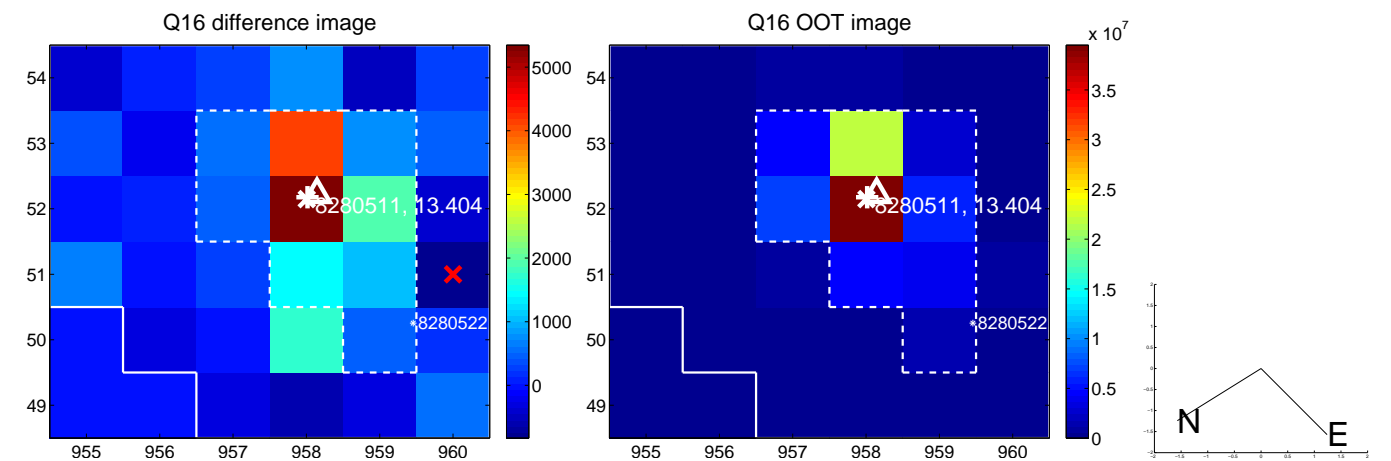
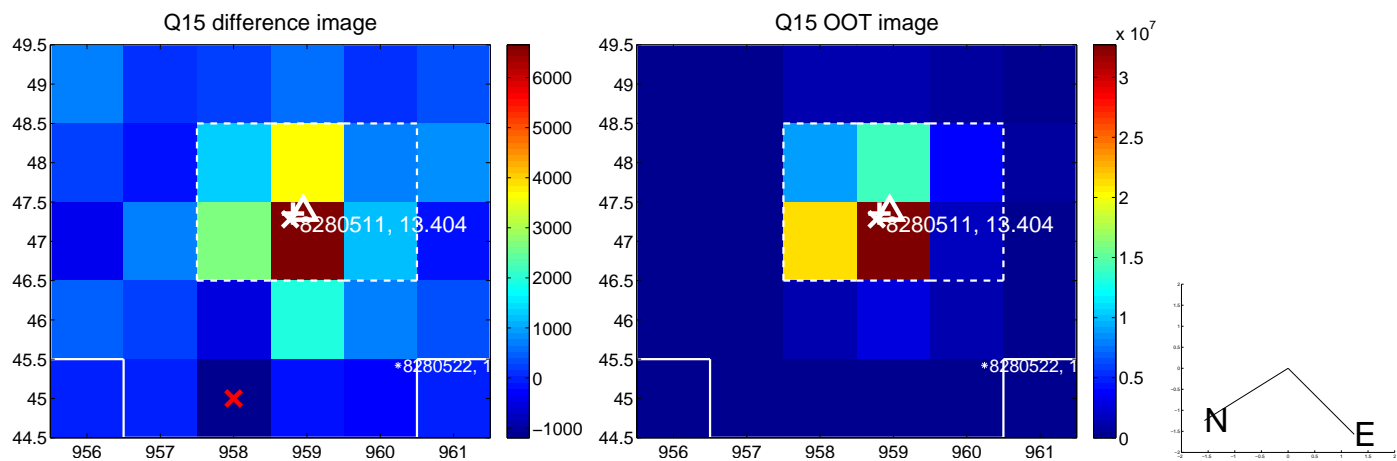
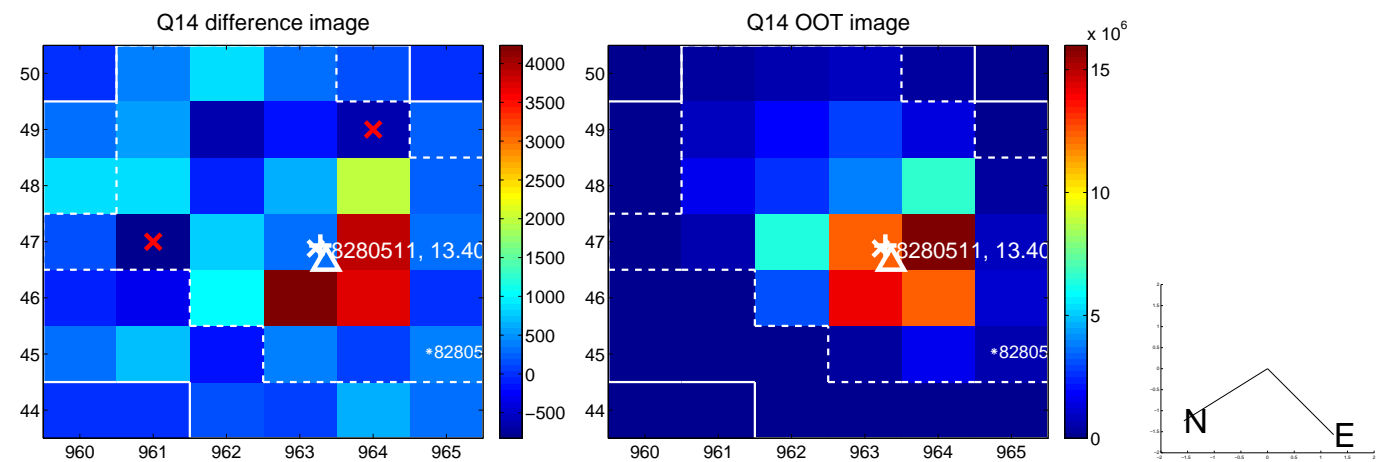
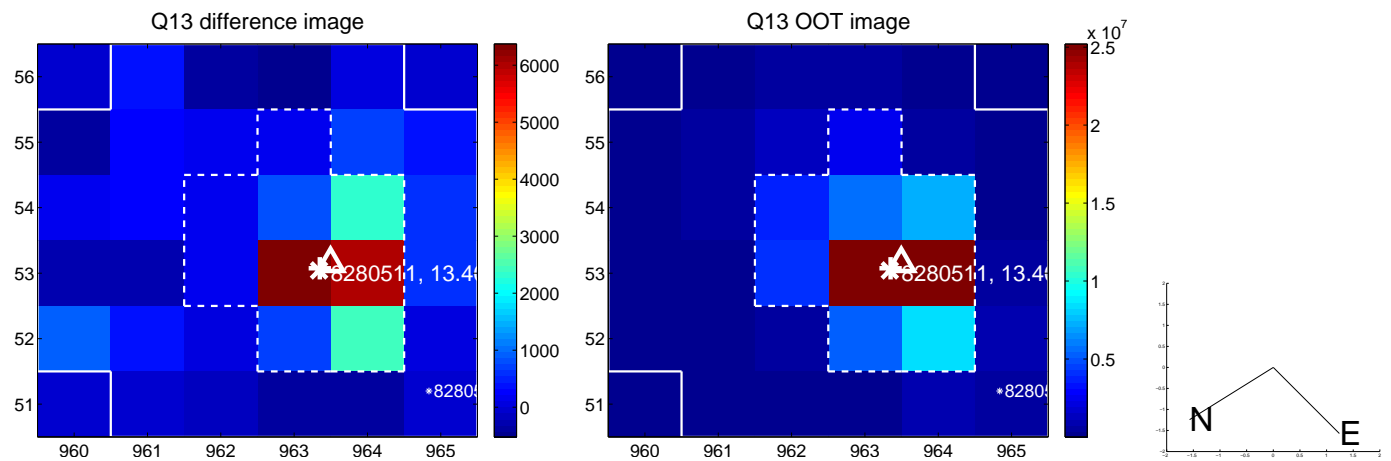
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



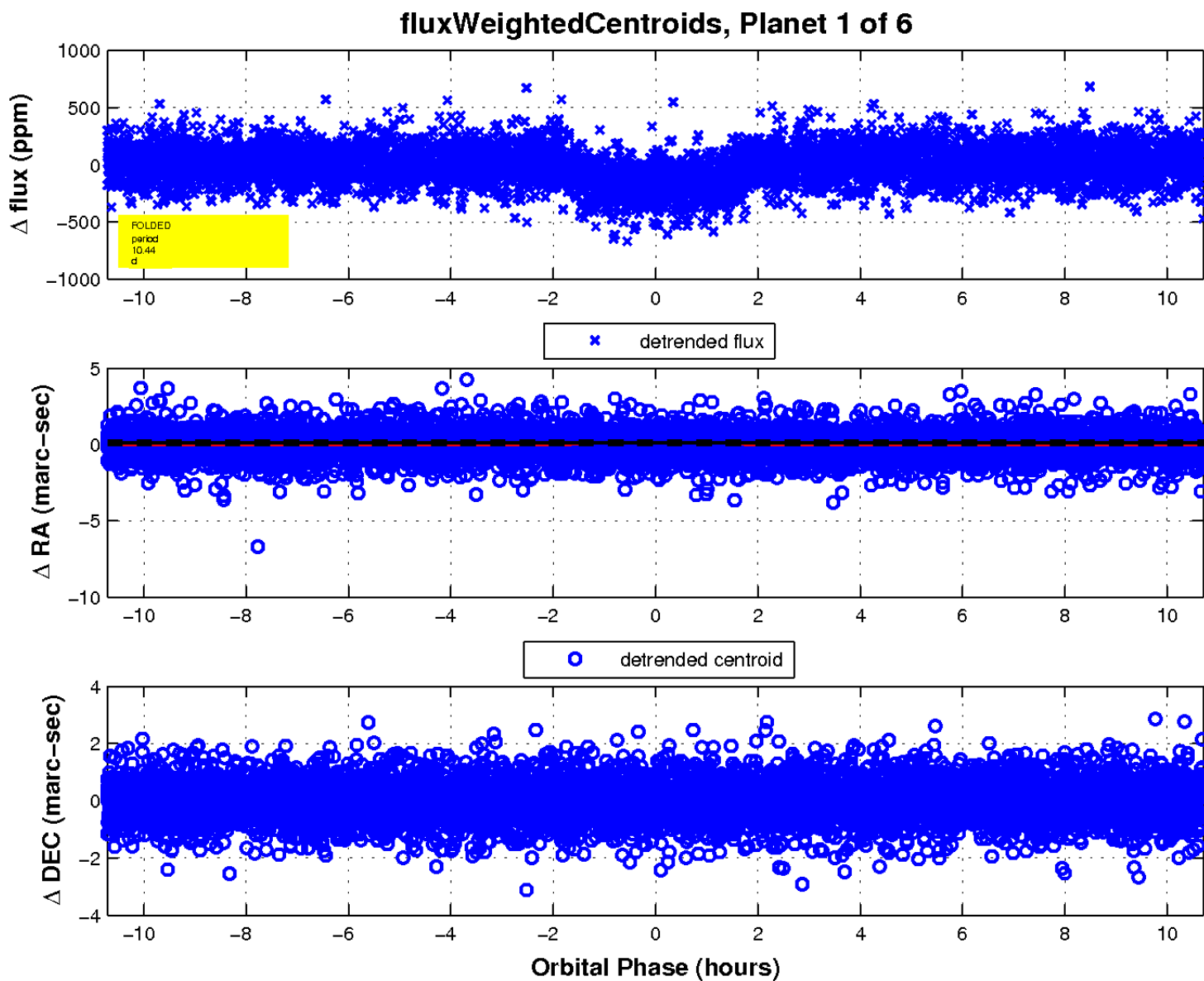
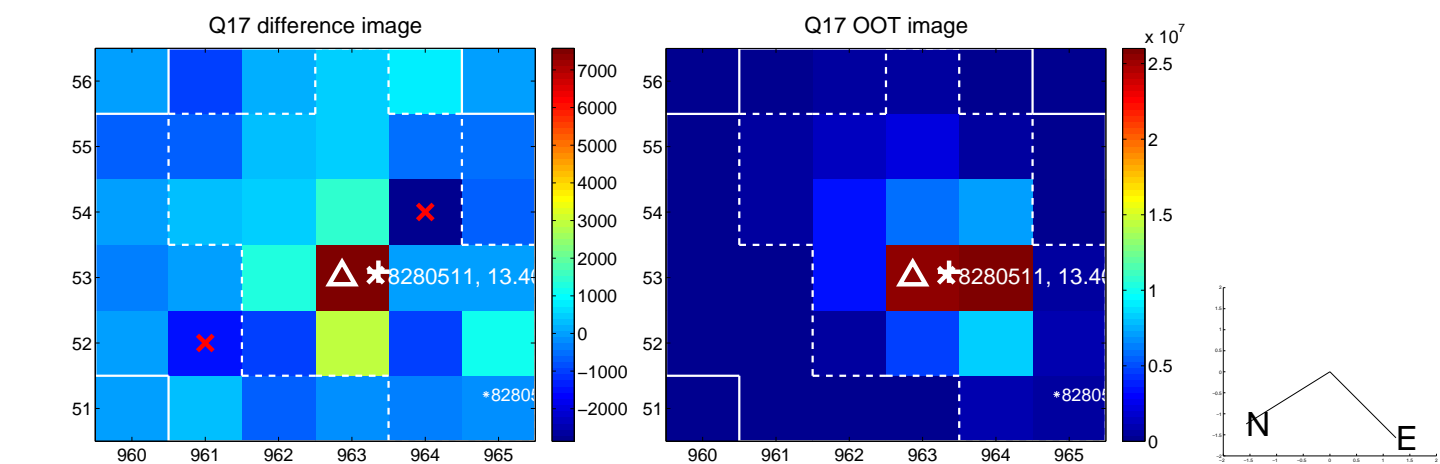
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



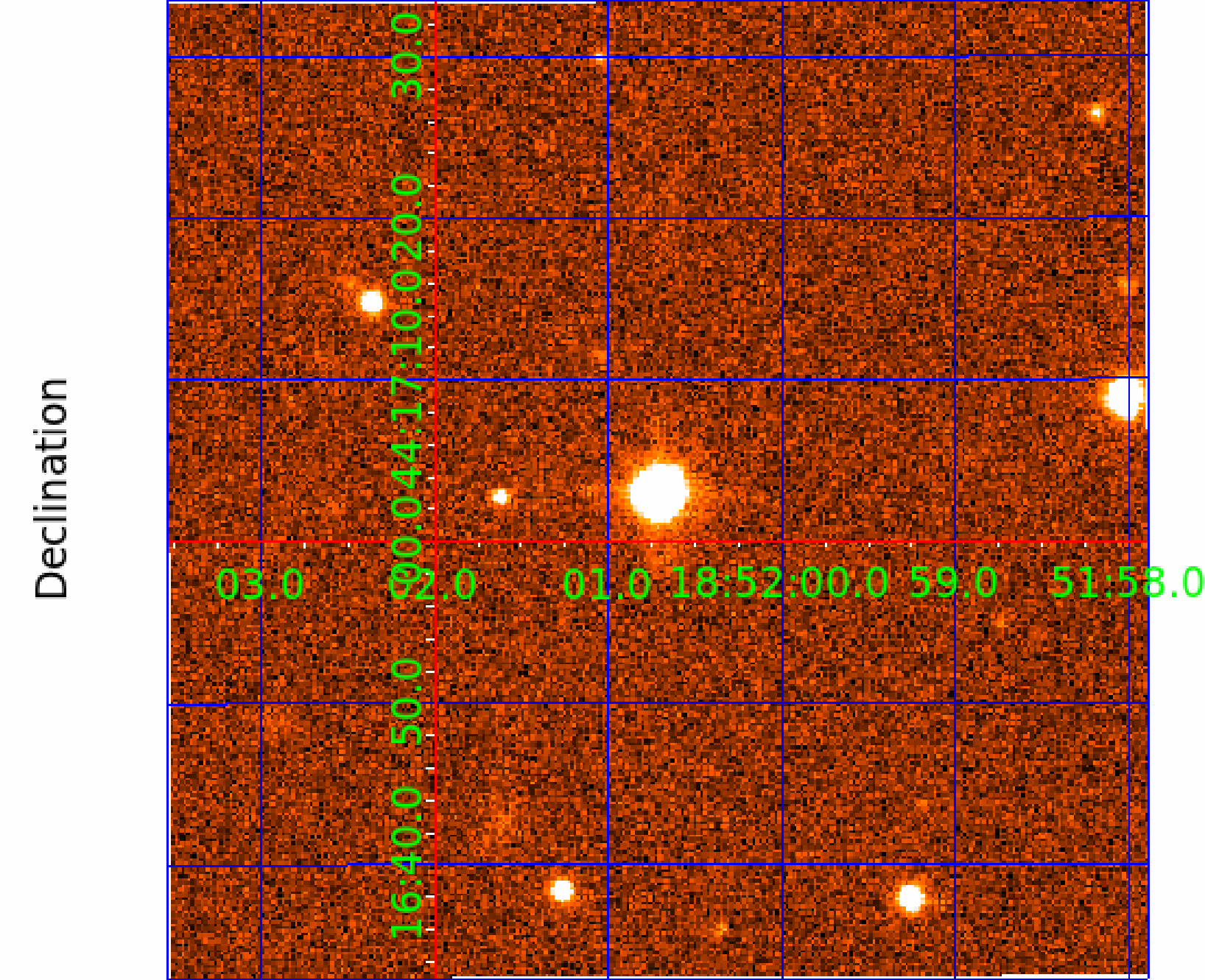
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008280511

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})
008280511-01	OBS	1151.01	10.435458	134.825016	198.3	3.571	29.6	31.0	0.85	5528	1.44	78.42
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008280511-04	OBS	1151.04	17.453473	146.649659	79.4	4.022	8.4	10.0	0.85	5528	0.87	39.50
008280511-05	OBS	1151.05	21.720052	134.776794	81.1	4.398	7.8	9.3	0.85	5528	0.92	29.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008280511-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008280511-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008280511-03	OBS	PC	0.97	0	0	0	0	NO_COMMENT
008280511-04	OBS	PC	0.90	0	0	0	0	NO_COMMENT
008280511-05	OBS	PC	0.80	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.

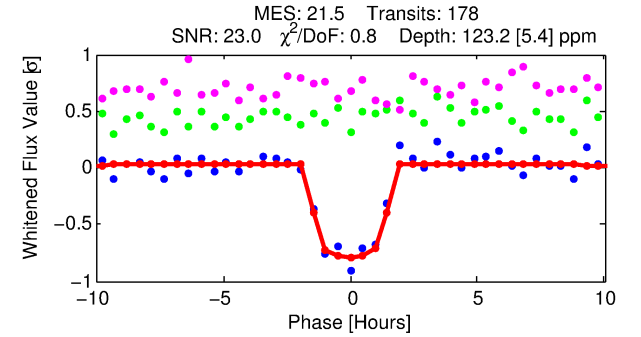
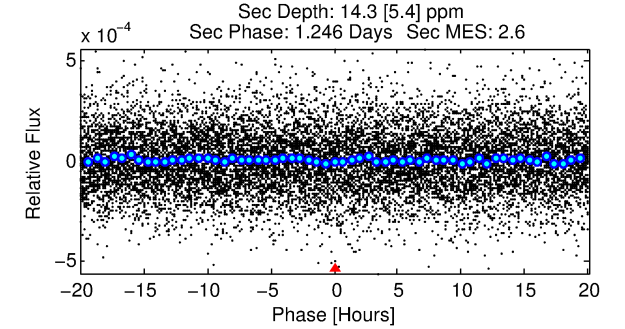
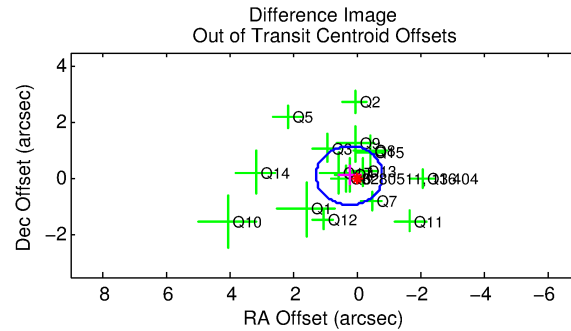
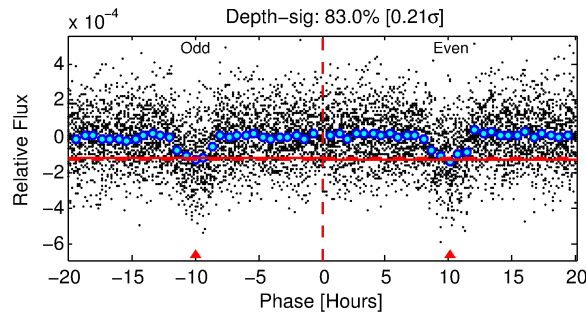
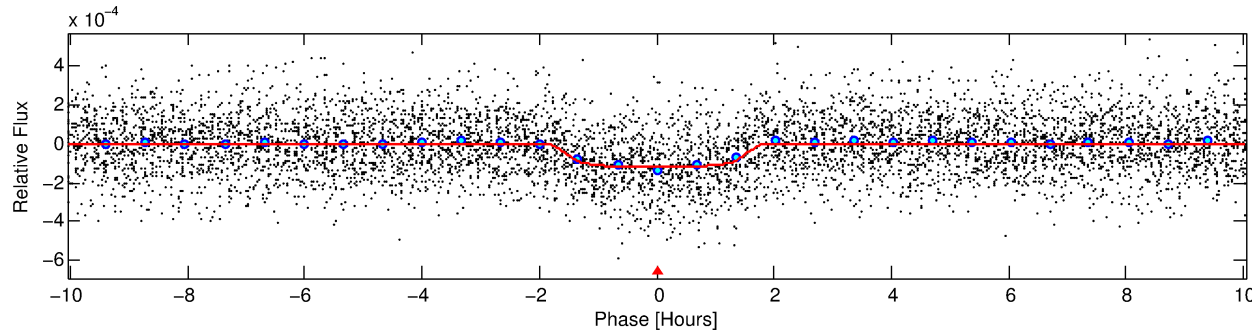
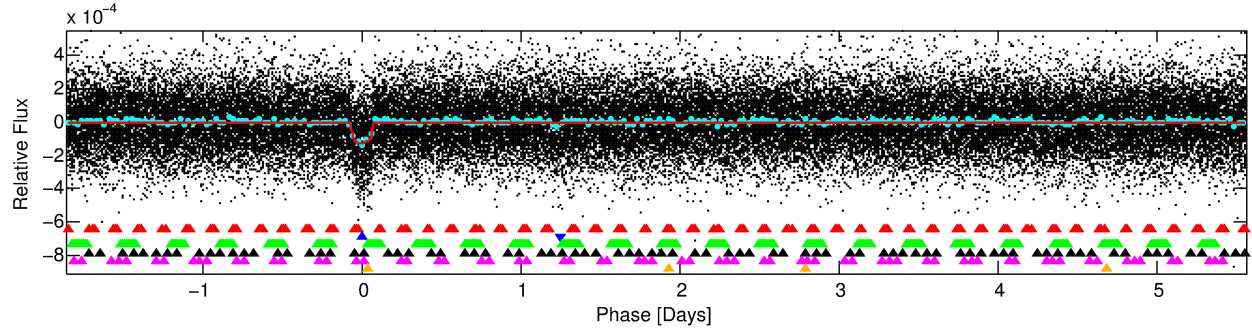
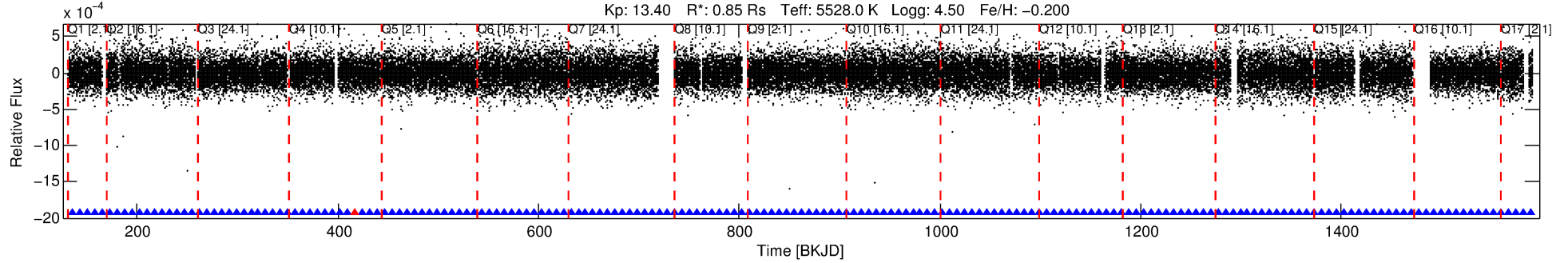
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008280511-02

No Significant Match Found

DV One-Page Summary

KIC: 8280511 Candidate: 2 of 6 Period: 7.411 d
KOI: K01151.02 Name: Kepler-271c Corr: 0.989



DV Fit Results:

Period = 7.41087 [0.00003] d
Epoch = 135.7518 [0.0027] BKJD
Rp/R* = 0.0121 [0.0036]
a/R* = 8.13 [11.00]
b = 0.89 [0.32]
Seff = 123.78 [19.63]
Teff = 851 [34] K
Rp = 1.12 [0.35] Re
a = 0.0701 [0.0064] AU
Ag = 30.76 [22.06] [1.35σ]
Teffp = 3097 [548] K [4.09σ]

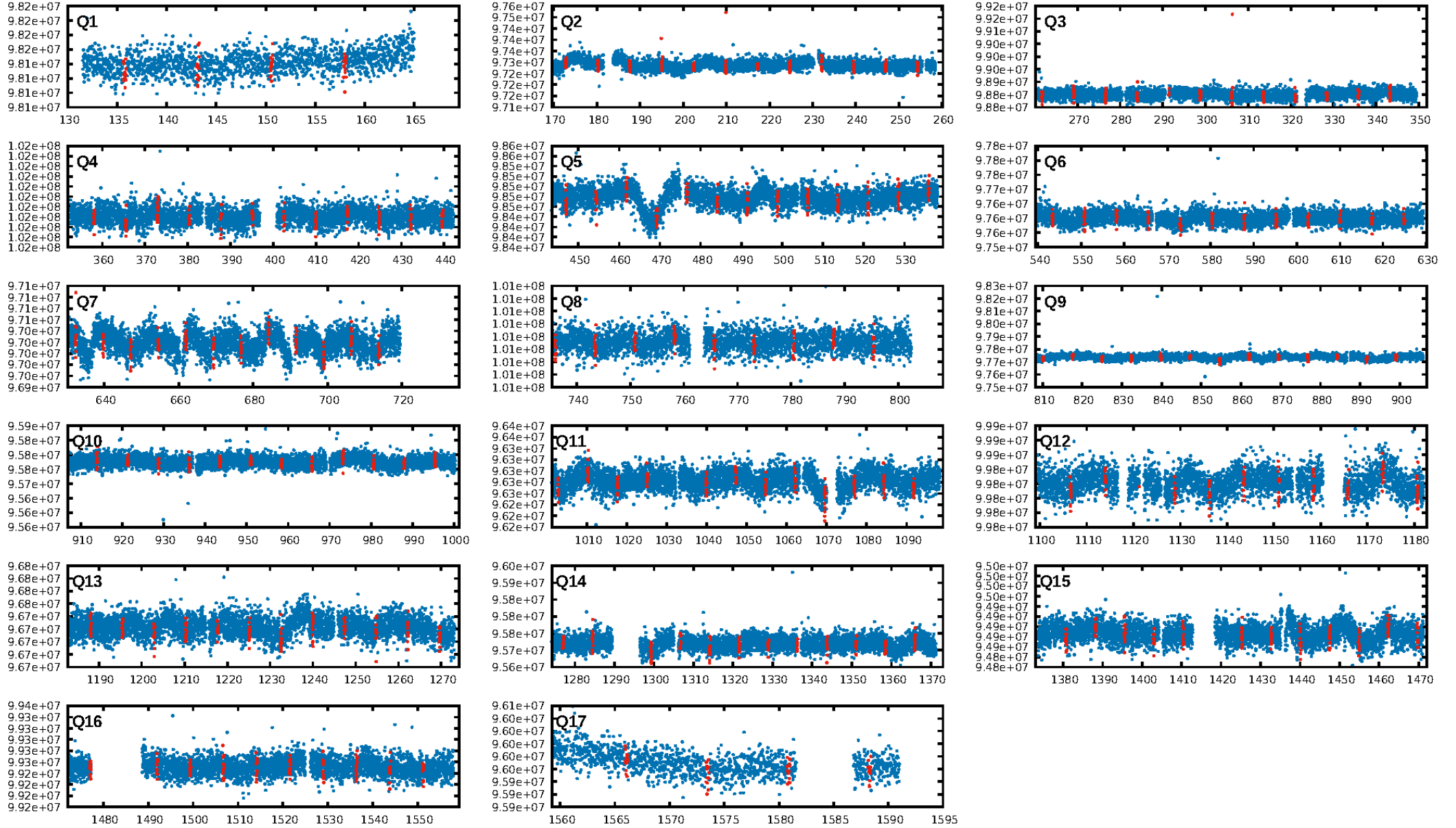
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [12.15σ]
LongPeriod-sig: 100.0% [14.82σ]
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.61e-99
RollingBand-fgt: 0.99 [169/170]
GhostDiagnostic-chr: 8.244
Centroid-sig: N/A
Centroid-so: 1.129 arcsec [1.93σ]
OotOffset-rm: 0.250 arcsec [0.72σ]
KicOffset-rm: 0.183 arcsec [0.44σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 1.00 [17/17]

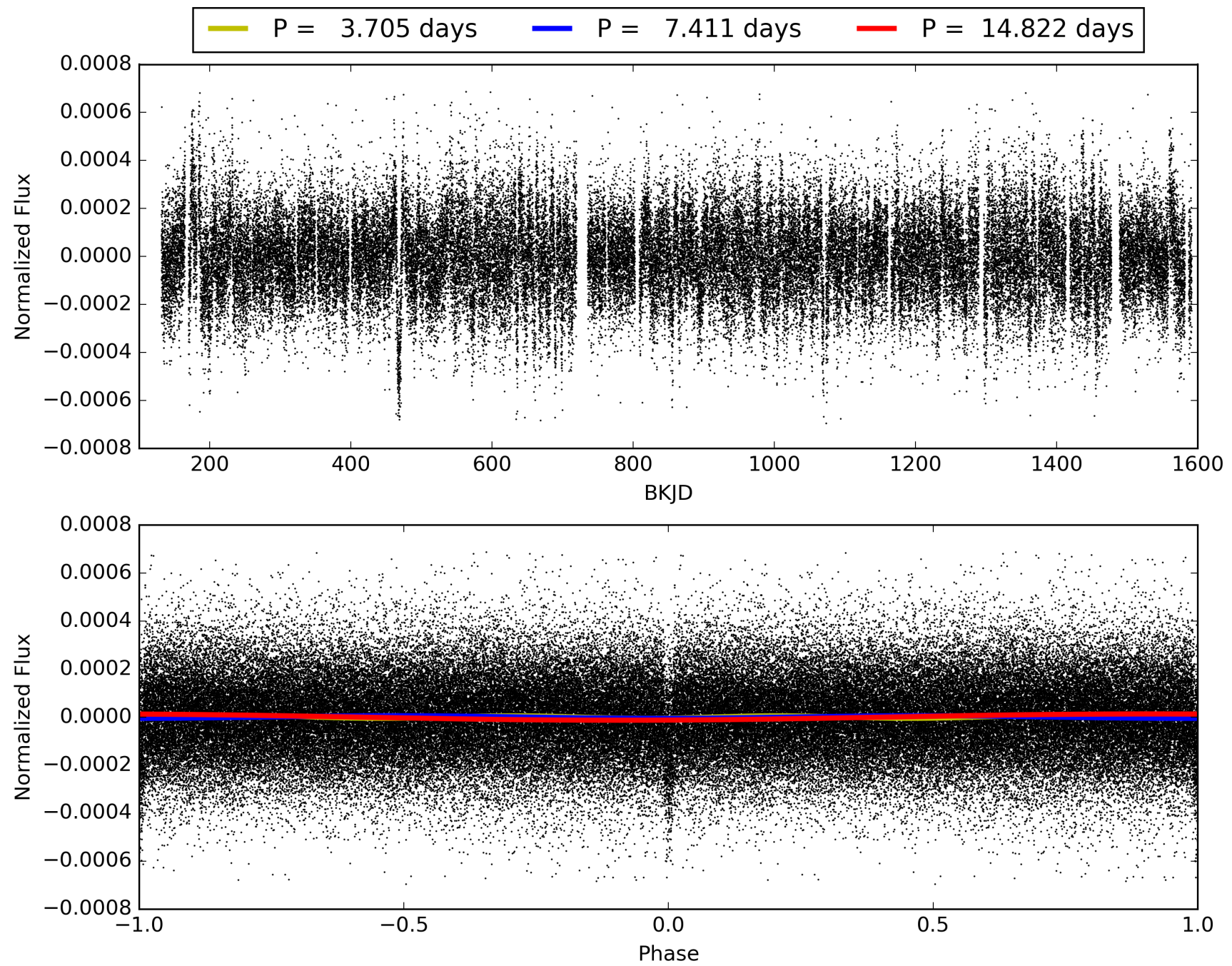
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 18:07:03 Z

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

TCE 008280511-02, PDC Light Curves

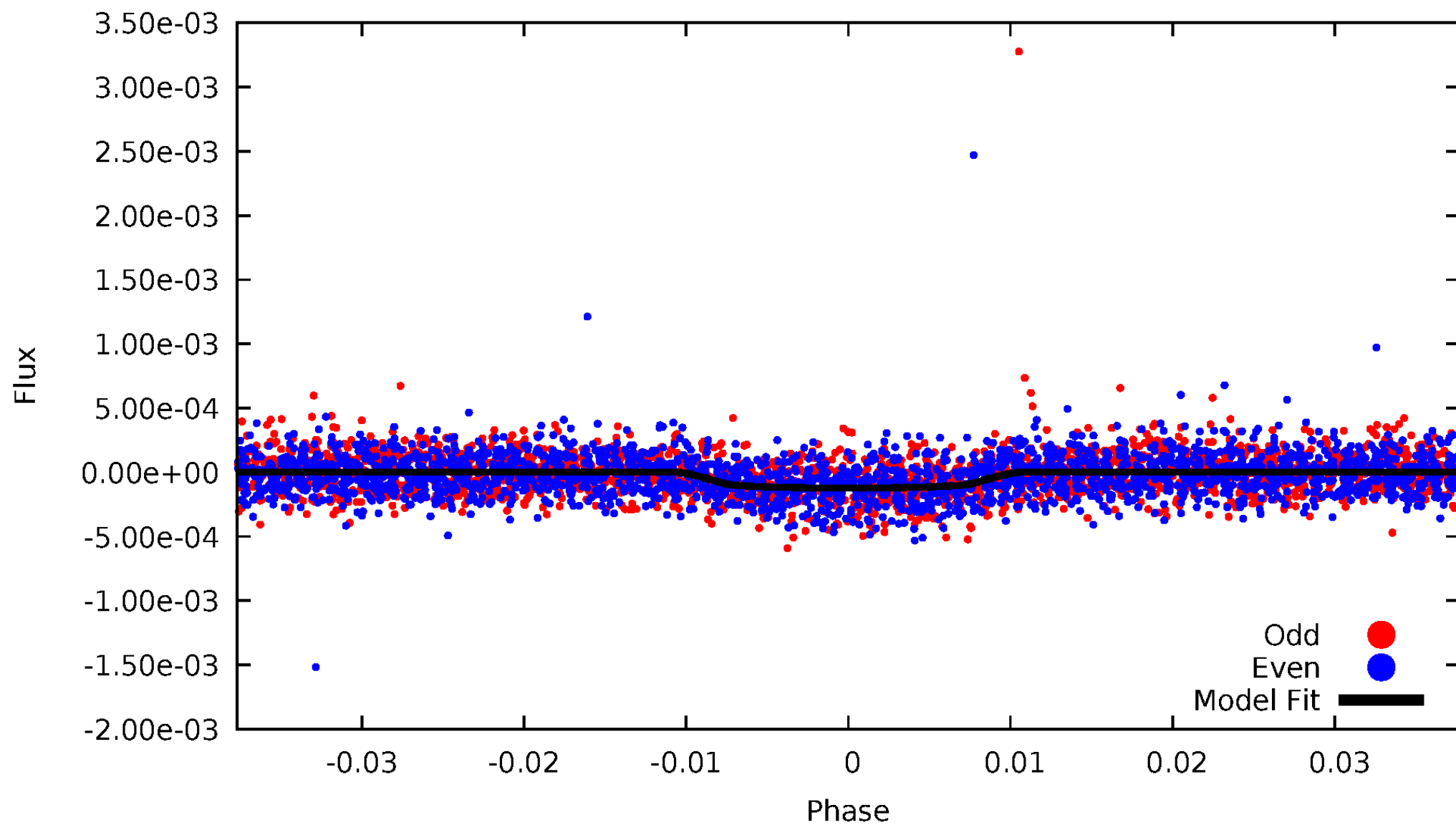


TCE 008280511-02



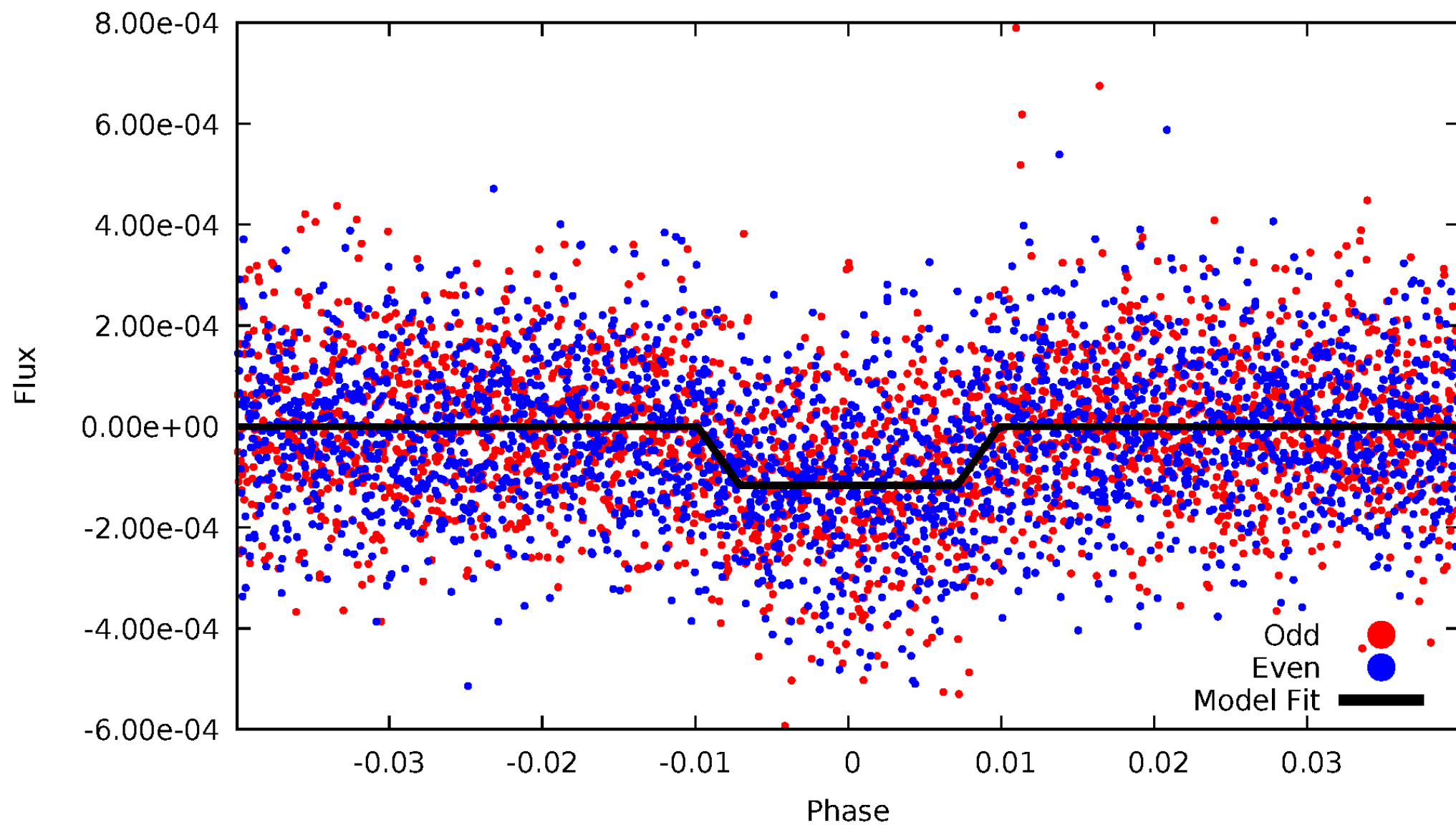
DV Odd/Even

TCE 008280511-02



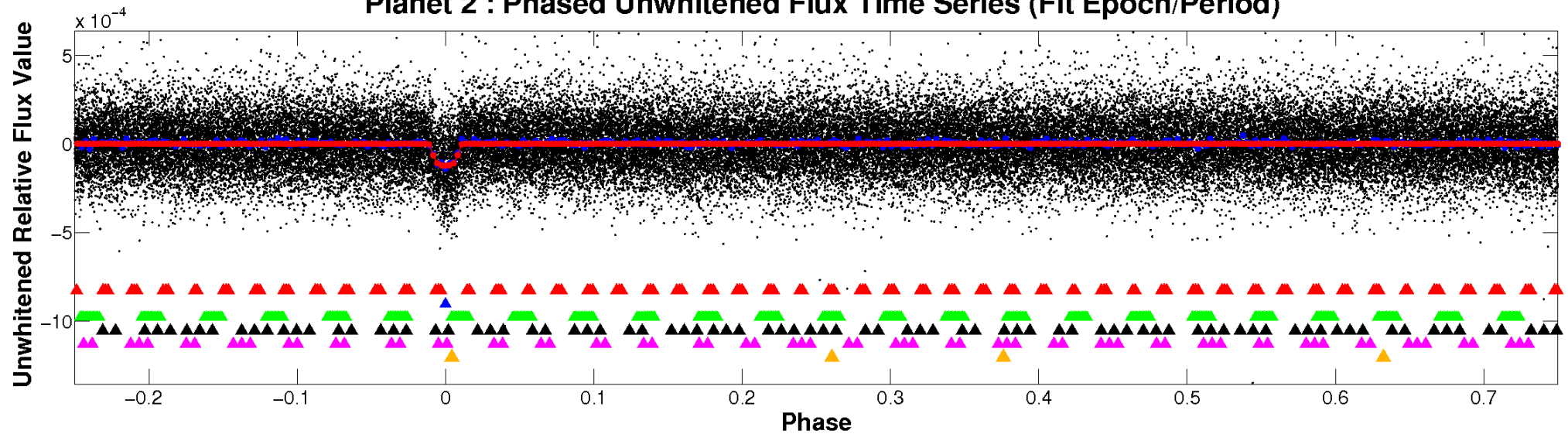
ALT Odd/Even

TCE 008280511-02

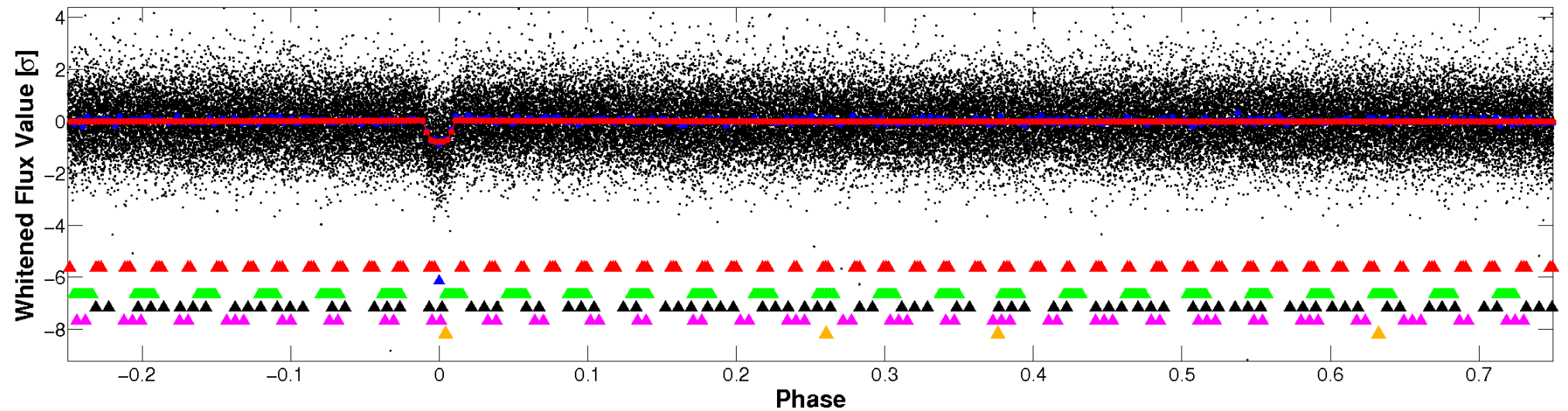


Non-Whitened Vs. Whitened Light Curve

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

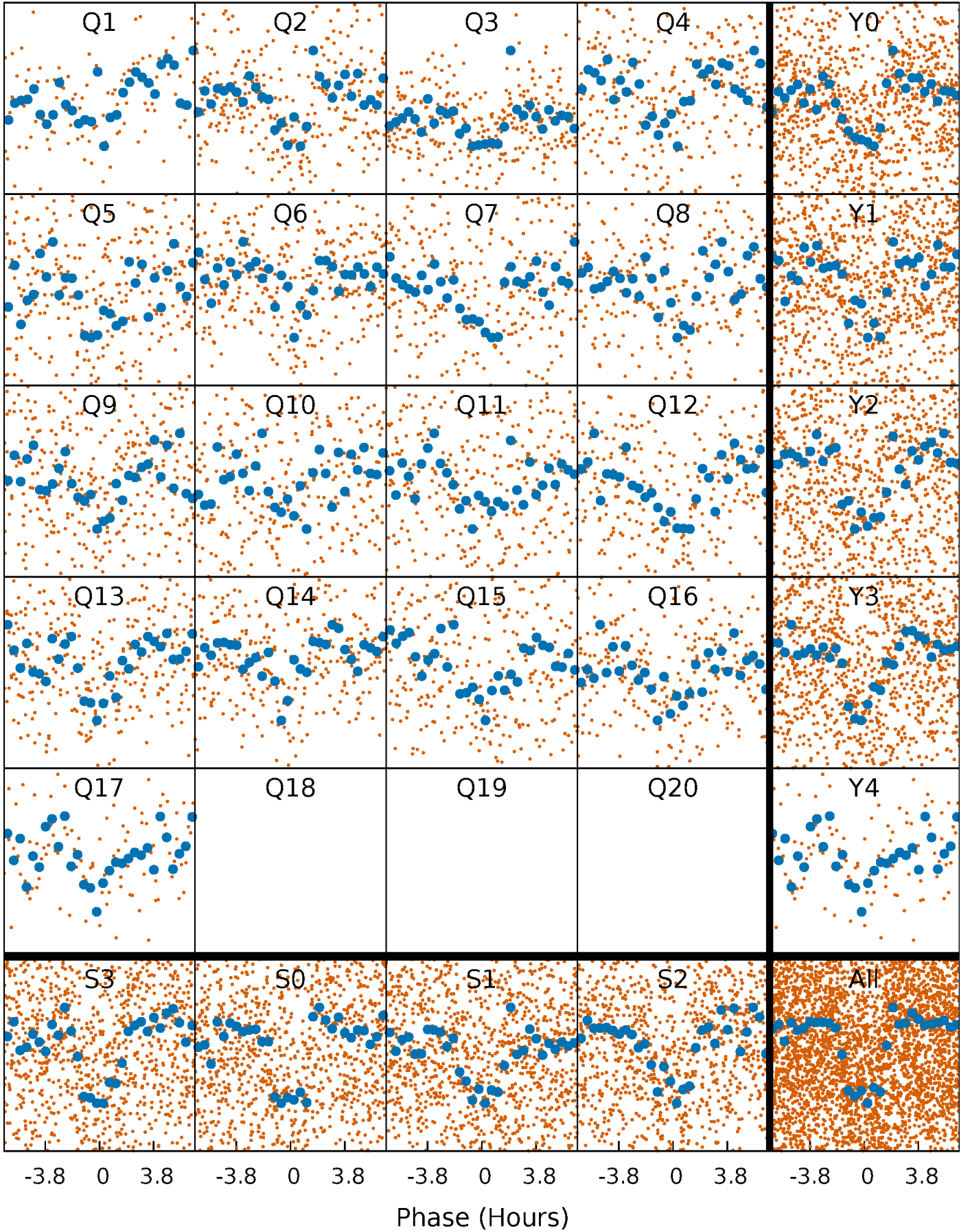


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



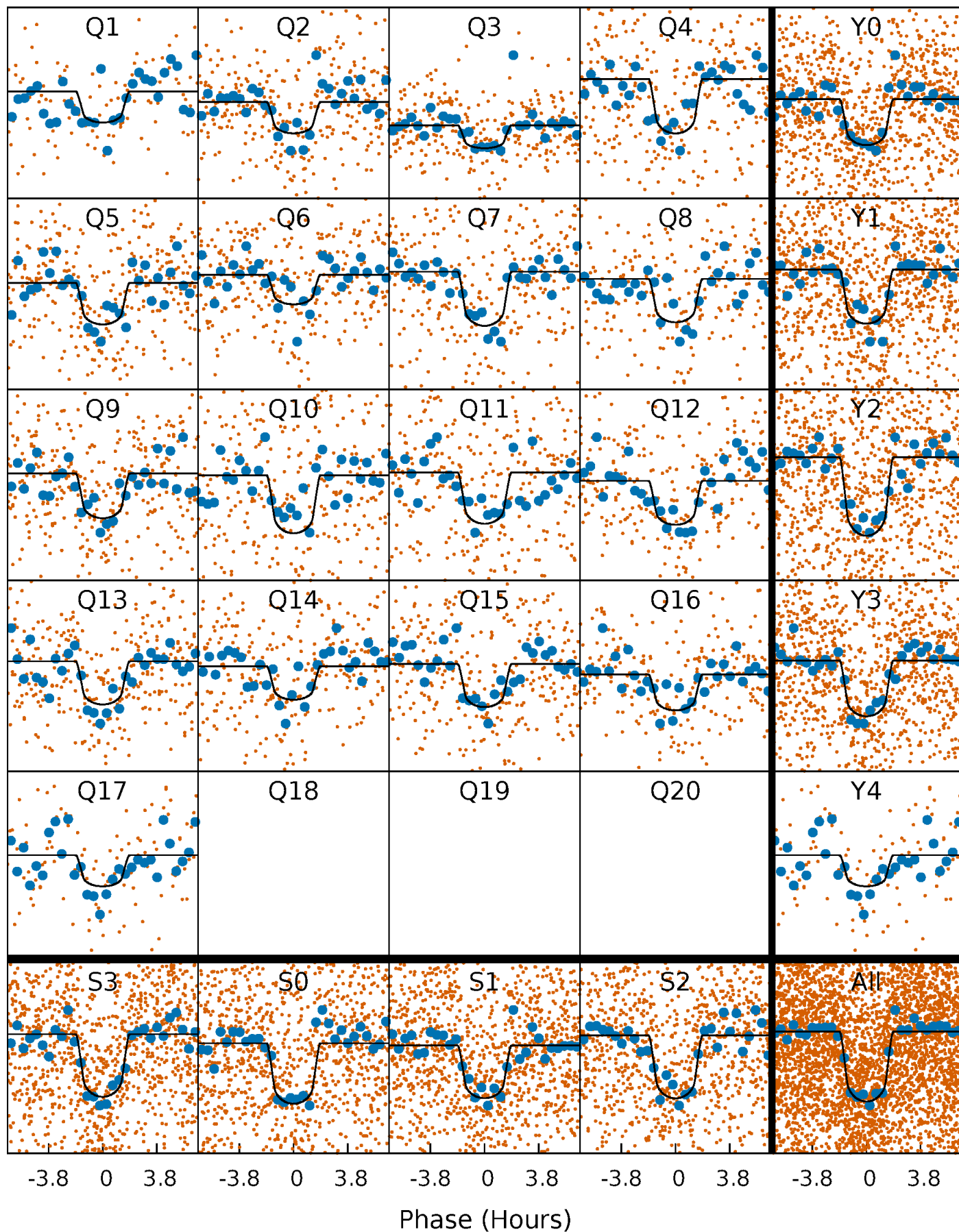
PDC Quarter-Phased Transit Curves

TCE 008280511-02 P= 7.410873 Days $T_0=135.751810$ (BKJD)



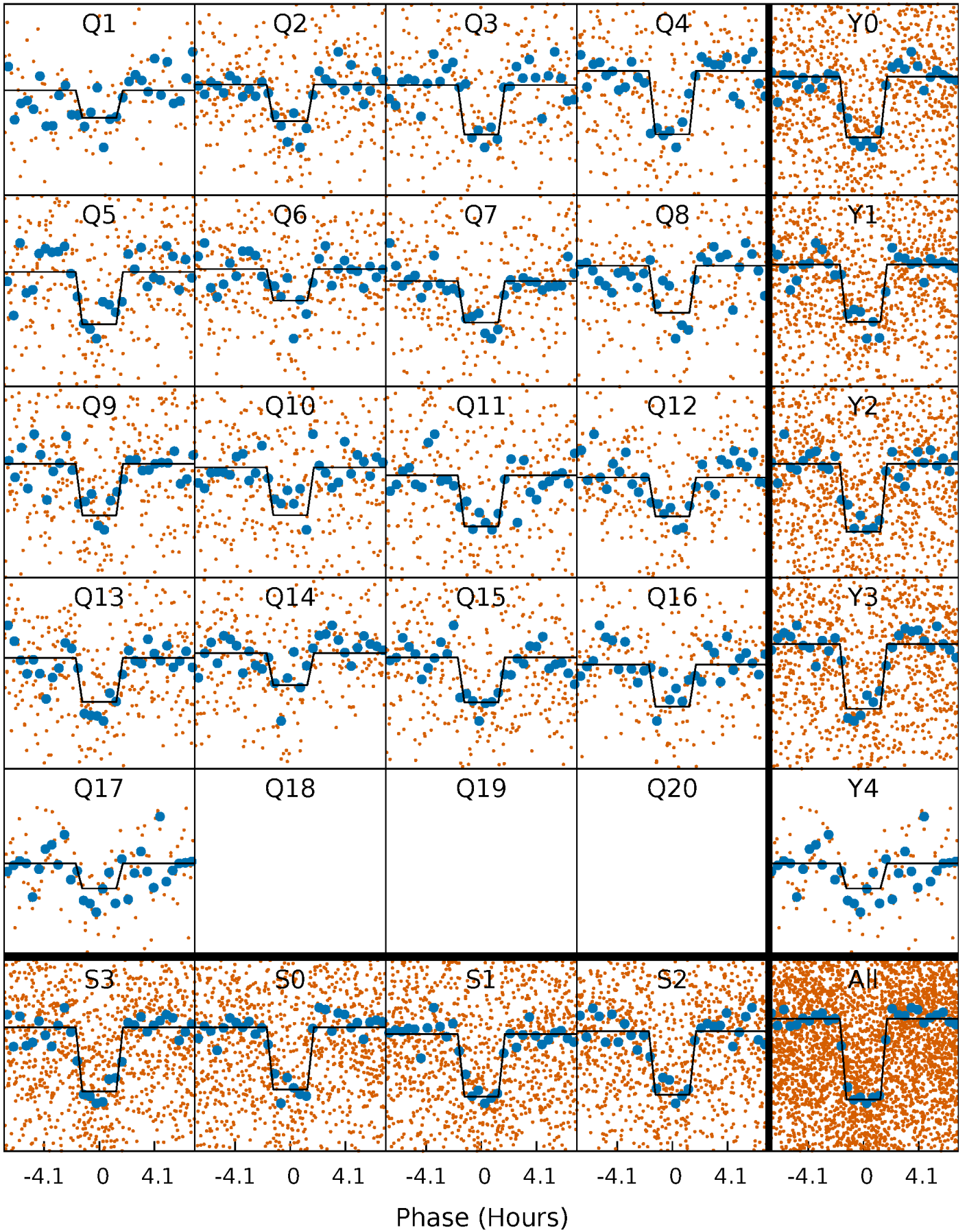
DV Quarter-Phased Transit Curves

TCE 008280511-02 P= 7.410873 Days $T_0=135.751810$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

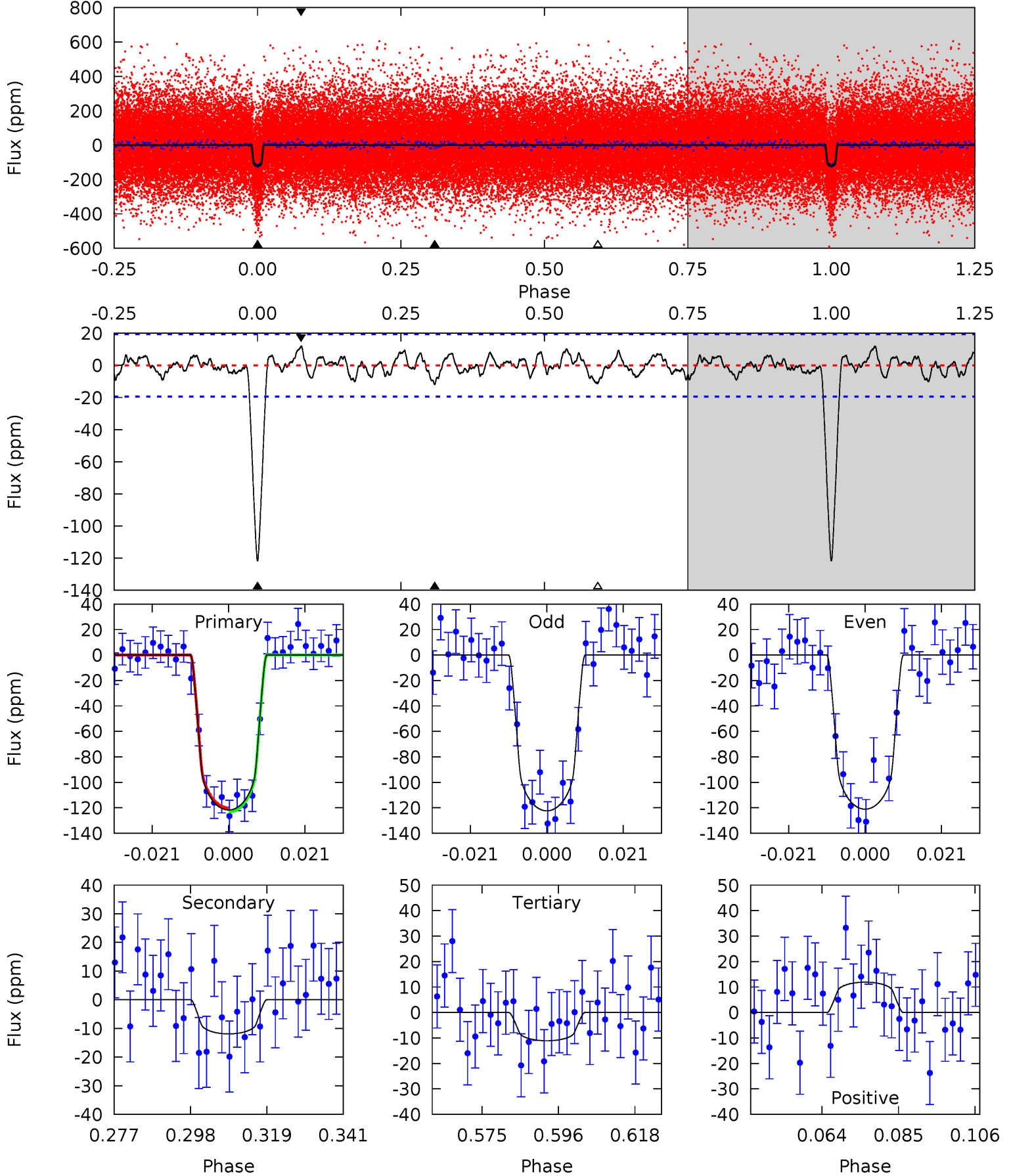
TCE 008280511-02 P= 7.410908 Days $T_0=135.748907$ (BKJD)



DV Model-Shift Uniqueness Test

008280511-02, P = 7.410873 Days, E = 128.340937 Days

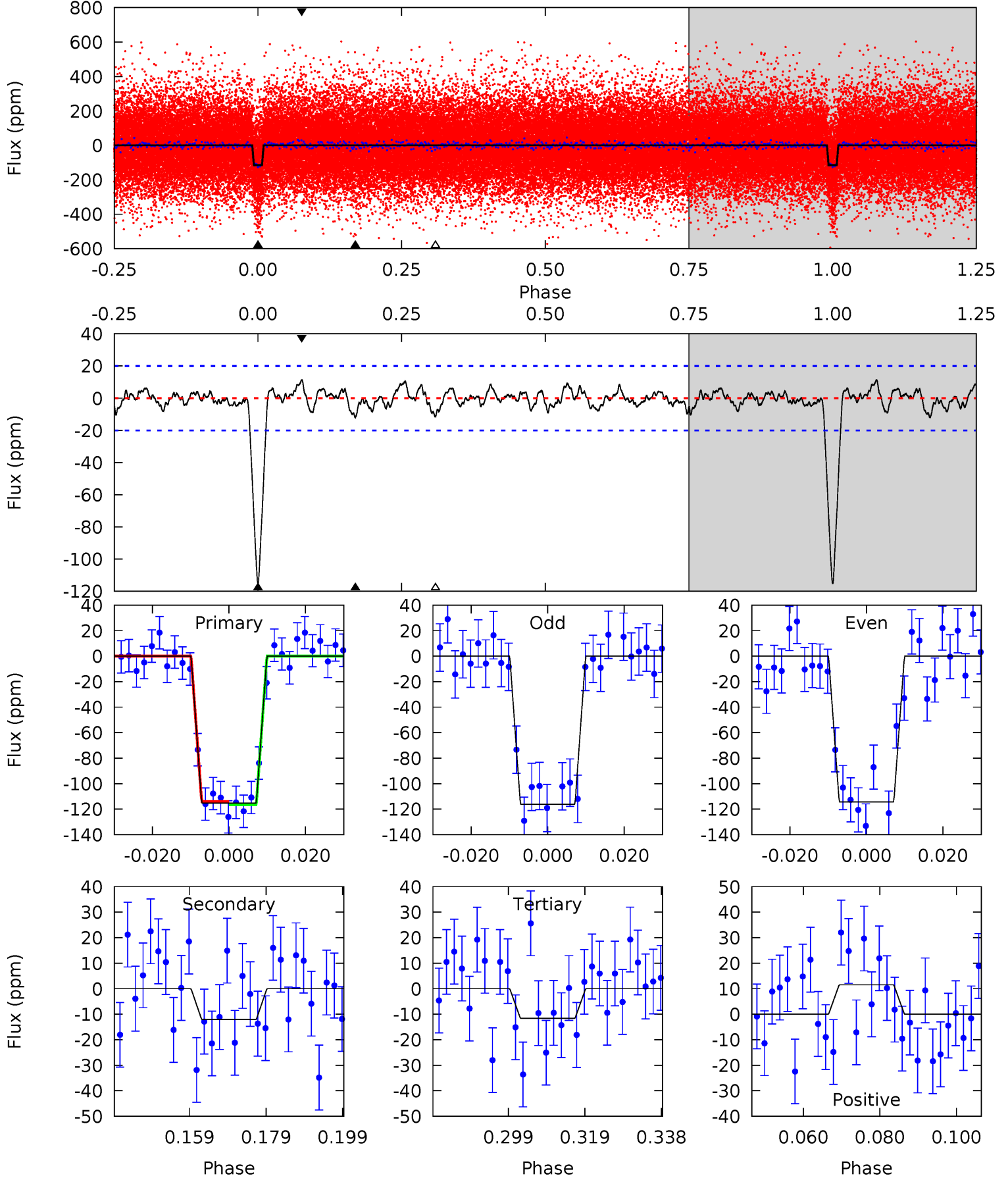
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.6	3.00	2.79	3.00	4.88	2.30	1.13	27.8	27.6	0.21	0.00	0.16	0.94	0.09	0.38



Alt Model-Shift Uniqueness Test

008280511-02, P = 7.410908 Days, E = 128.337999 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.2	2.96	2.84	2.82	4.89	2.33	1.01	25.3	25.4	0.11	0.14	0.23	1.01	0.09	0.31



Stellar Parameters For KIC 008280511

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5528^{+110}_{-110}	$4.499^{+0.063}_{-0.077}$	$-0.200^{+0.150}_{-0.150}$	$0.853^{+0.089}_{-0.067}$	$0.838^{+0.056}_{-0.046}$	$1.899^{+0.488}_{-0.464}$
	+2%/-2%	+1%/-2%	+75%/-75%	+10%/-8%	+7%/-5%	+26%/-24%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 008280511-02 / KOI 1151.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-12 ± 4	$1.12^{+0.35}_{-0.33}$	1192^{+36}_{-37}	3416^{+466}_{-314}	24^{+27}_{-11}
Alt.	-12 ± 4	$0.99^{+0.37}_{-0.32}$	1191^{+41}_{-39}	3588^{+572}_{-394}	33^{+43}_{-18}

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

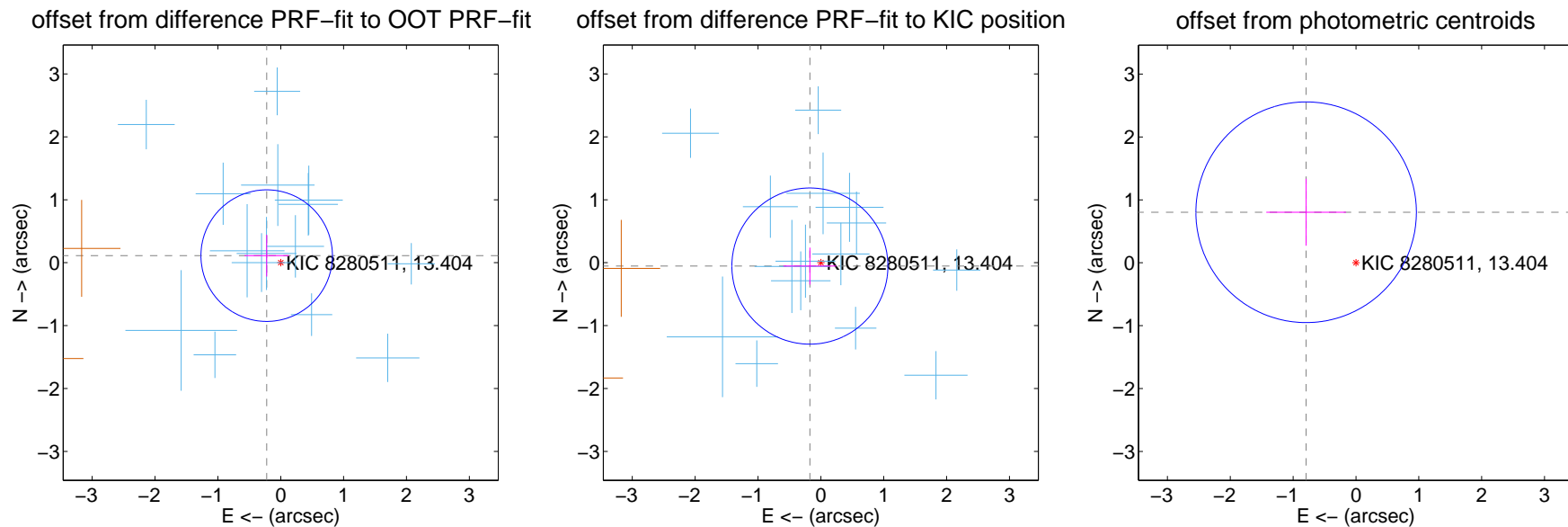
DV Centroid Data

Supplemental centroid analysis for 008280511-02. Kepler magnitude: 13.40. Transit SNR 23.00

There are 15 quarters with good PRF difference image offsets

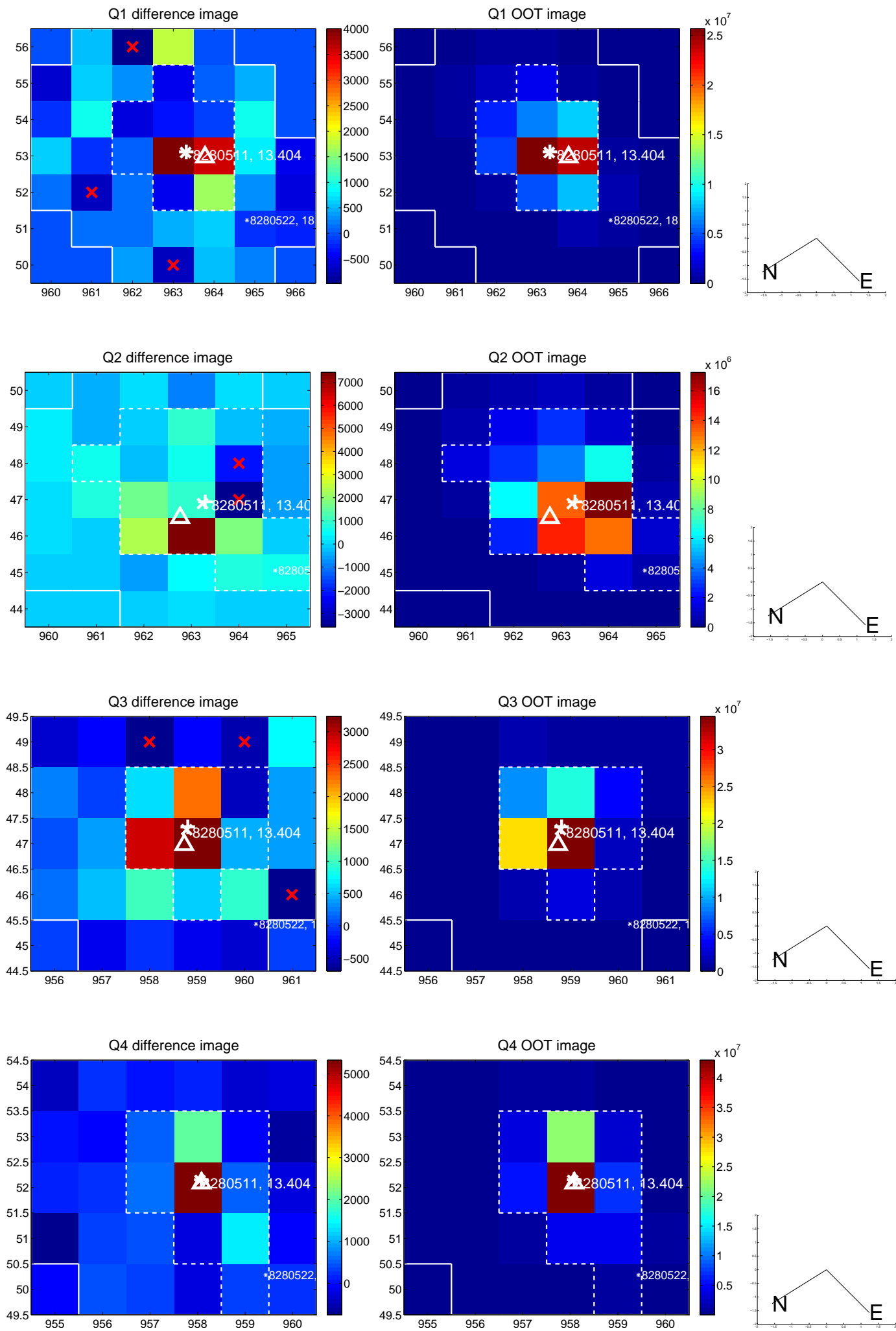
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.250 ± 0.349	0.72	0.224 ± 0.353	0.112 ± 0.332
PRF-fit source offset from KIC position	0.183 ± 0.414	0.44	0.174 ± 0.420	-0.054 ± 0.294
photometric centroid source offset	1.13 ± 0.58	1.93	0.79 ± 0.63	0.80 ± 0.53

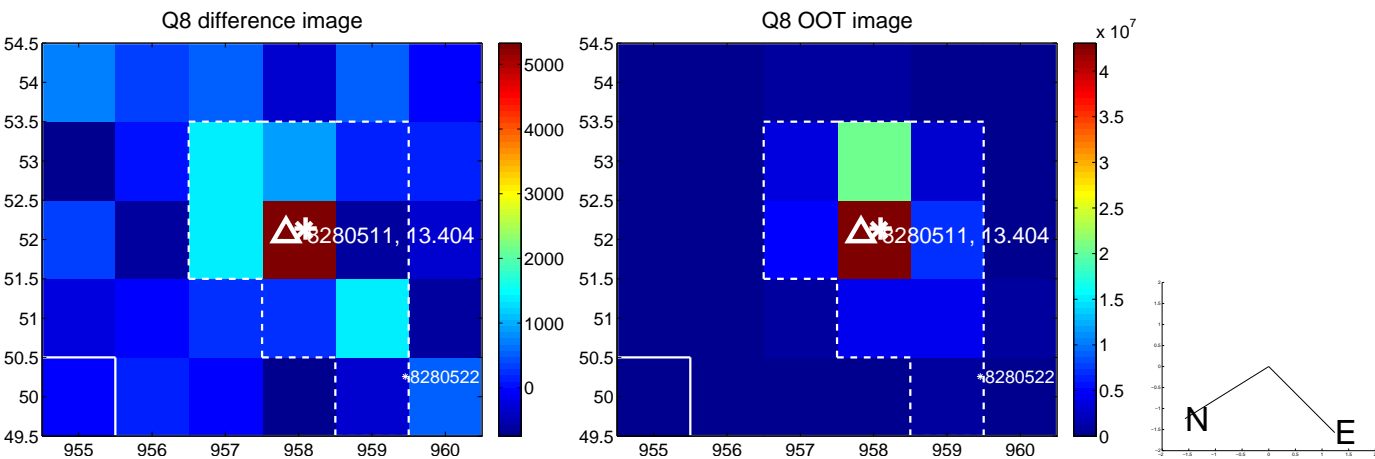
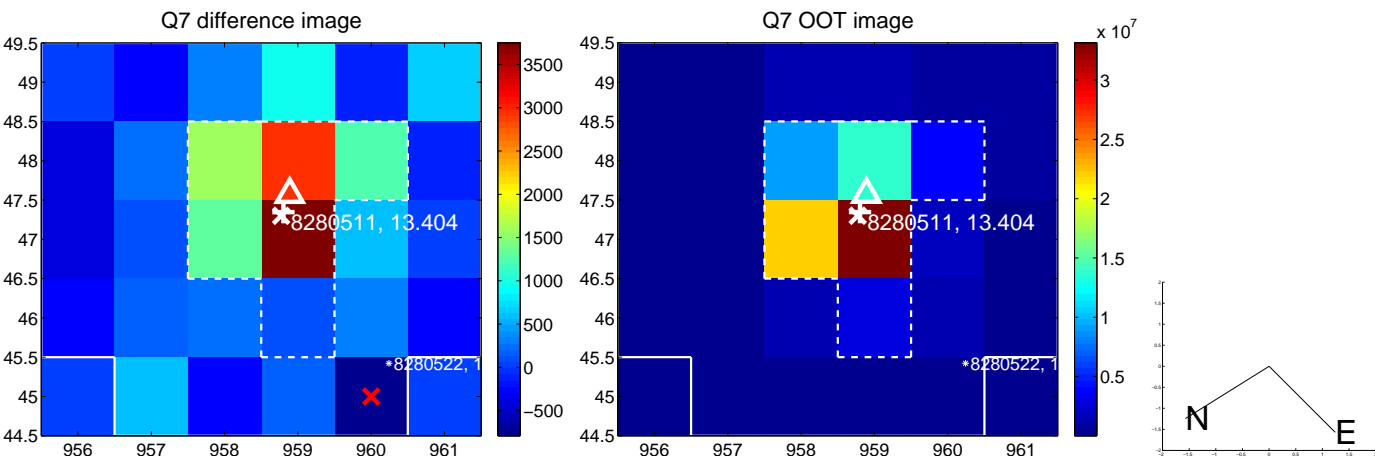
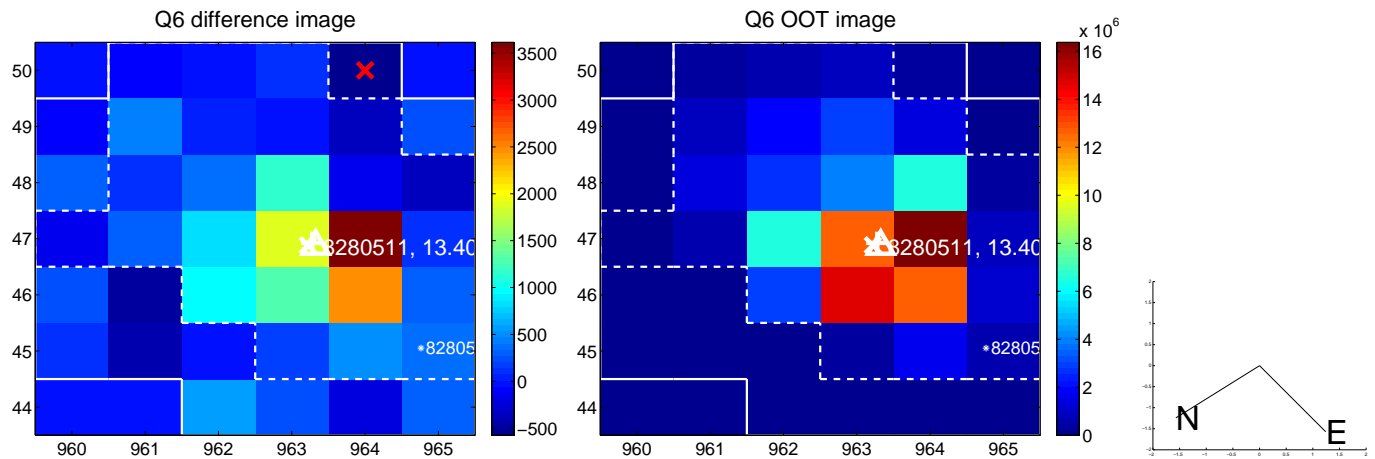
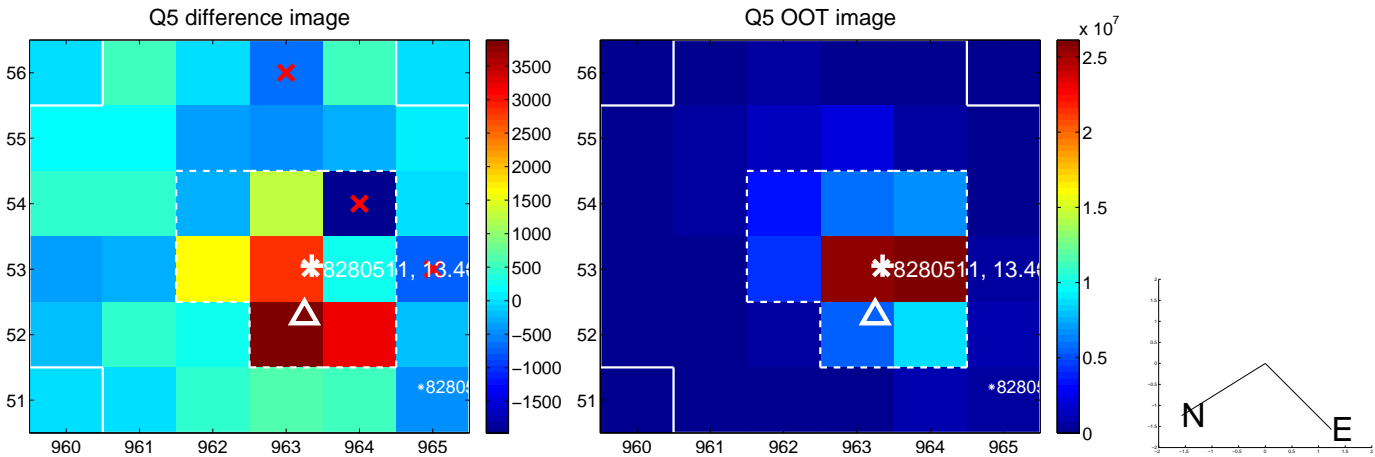


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

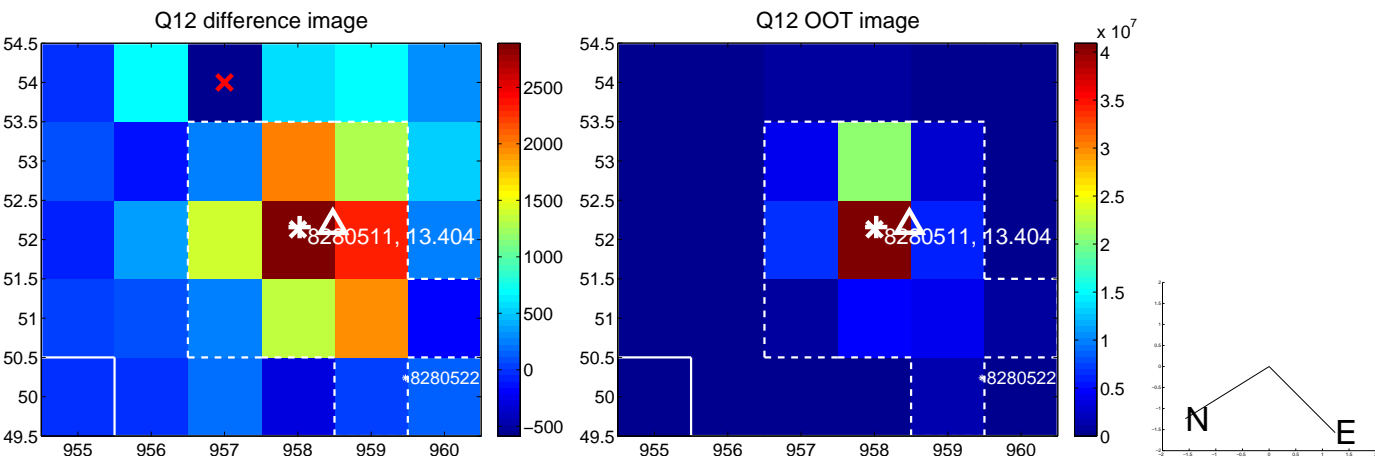
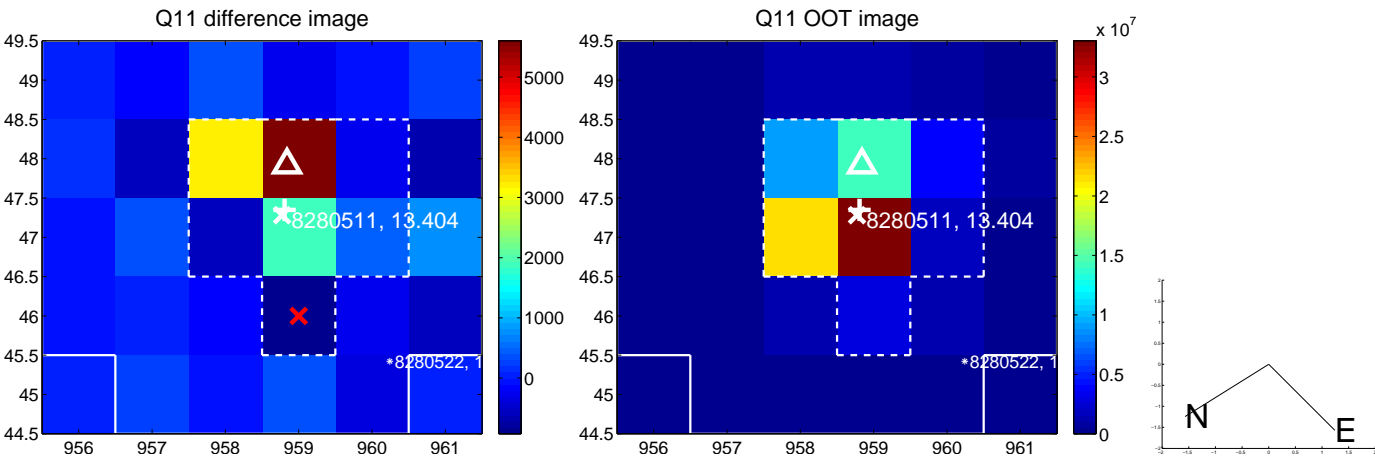
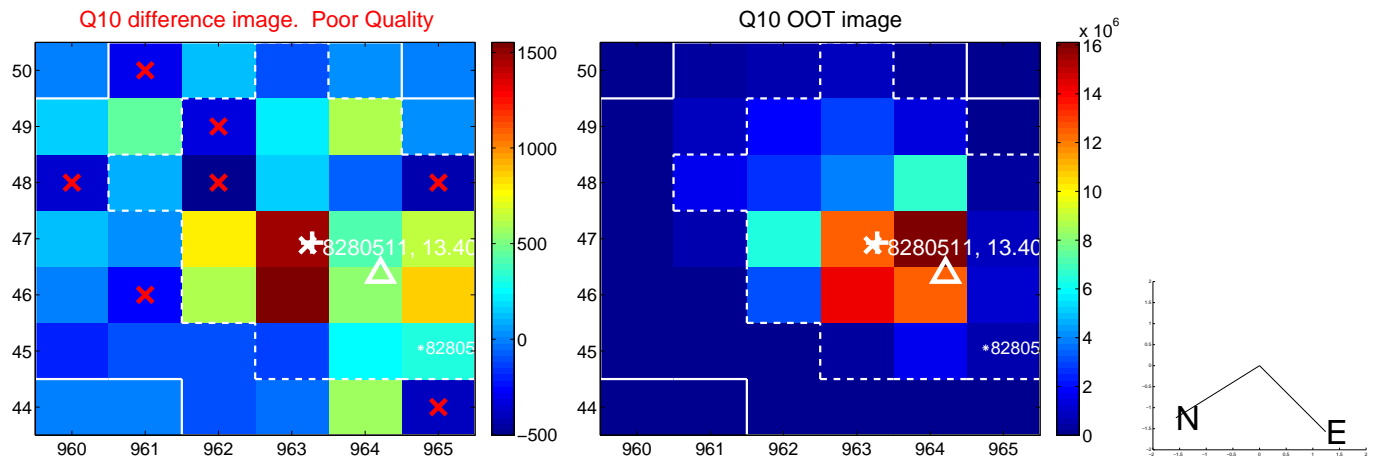
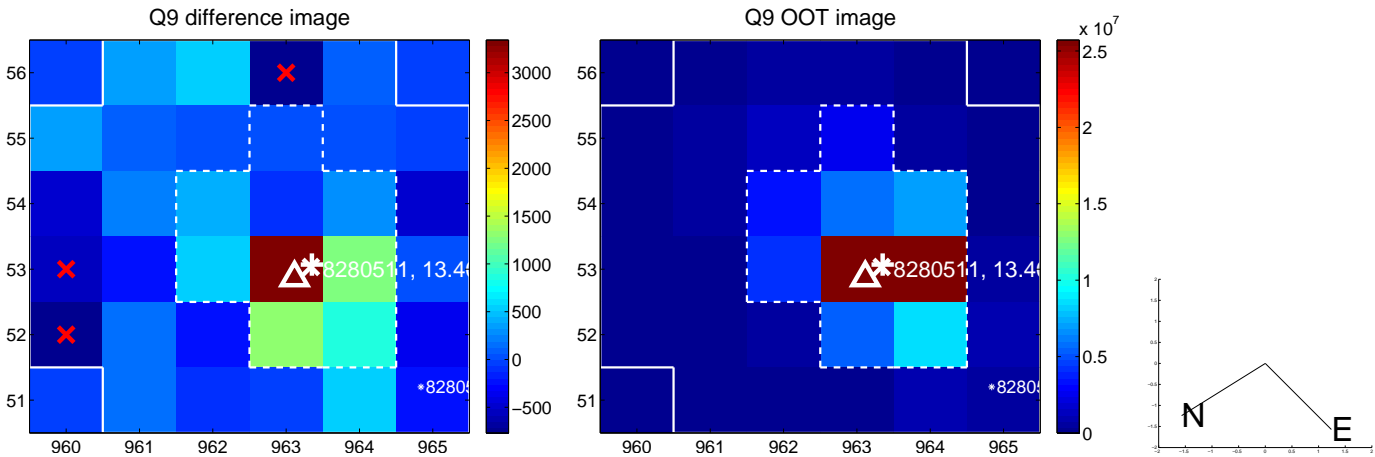
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



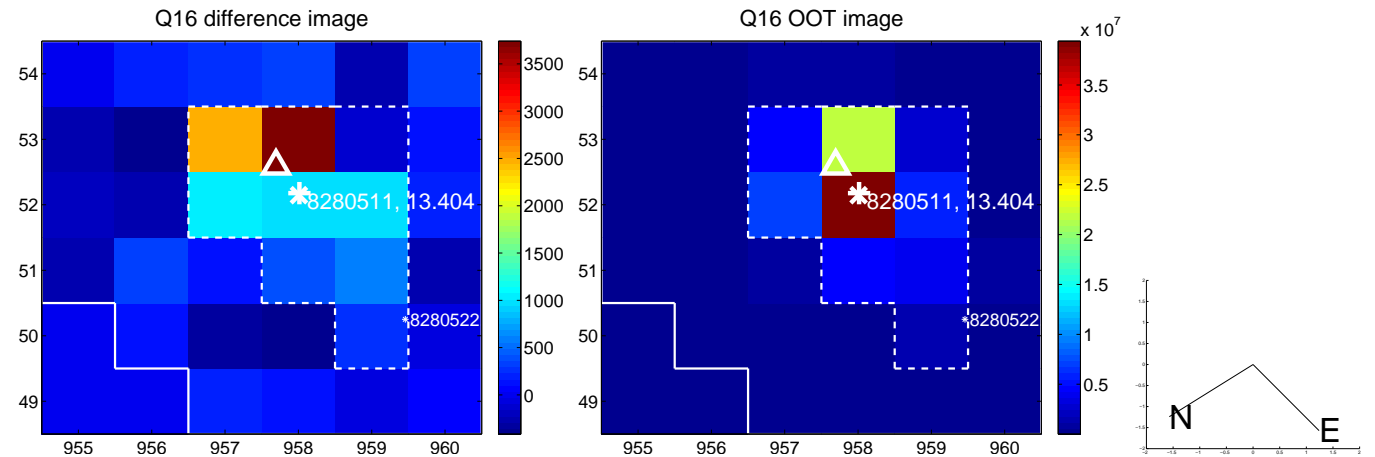
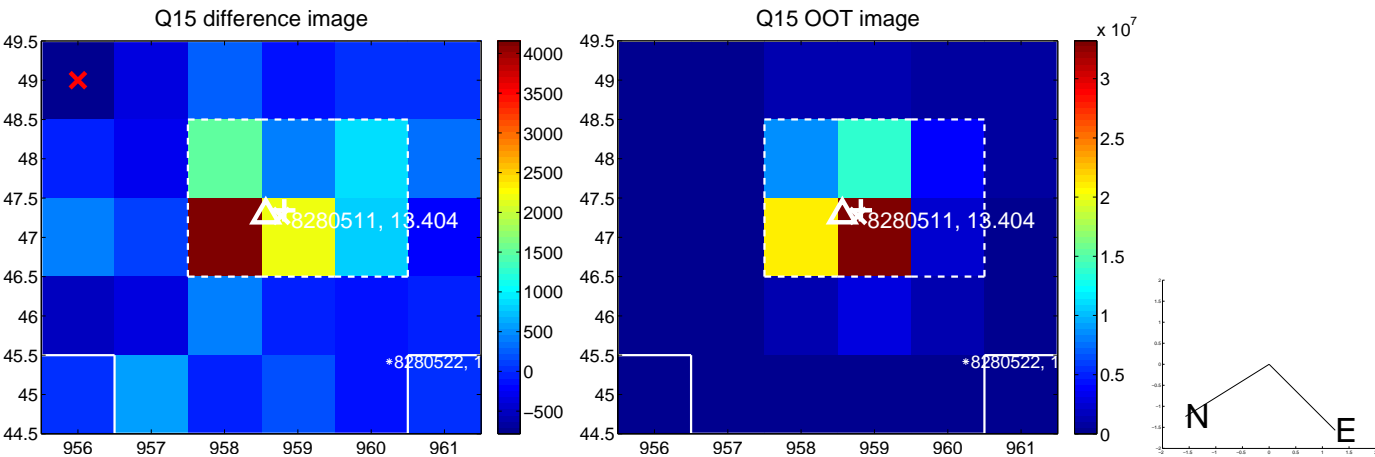
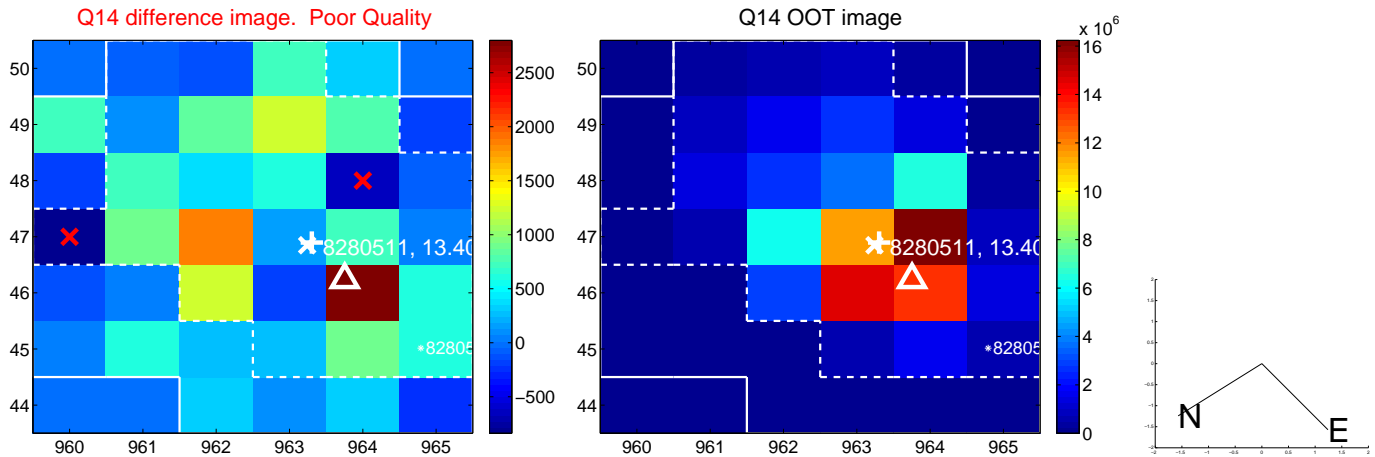
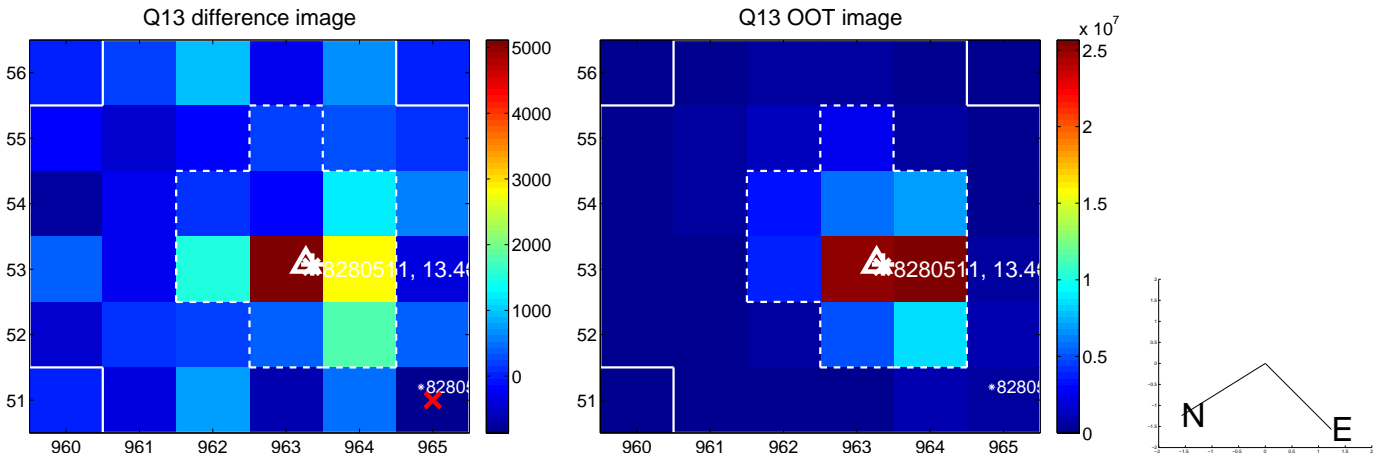
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



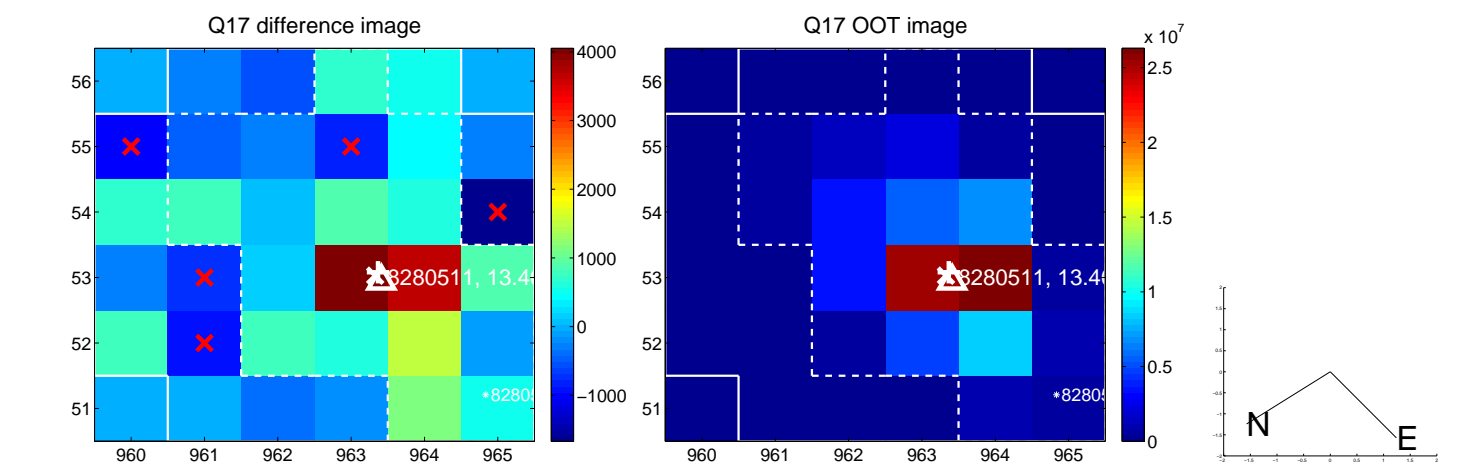
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



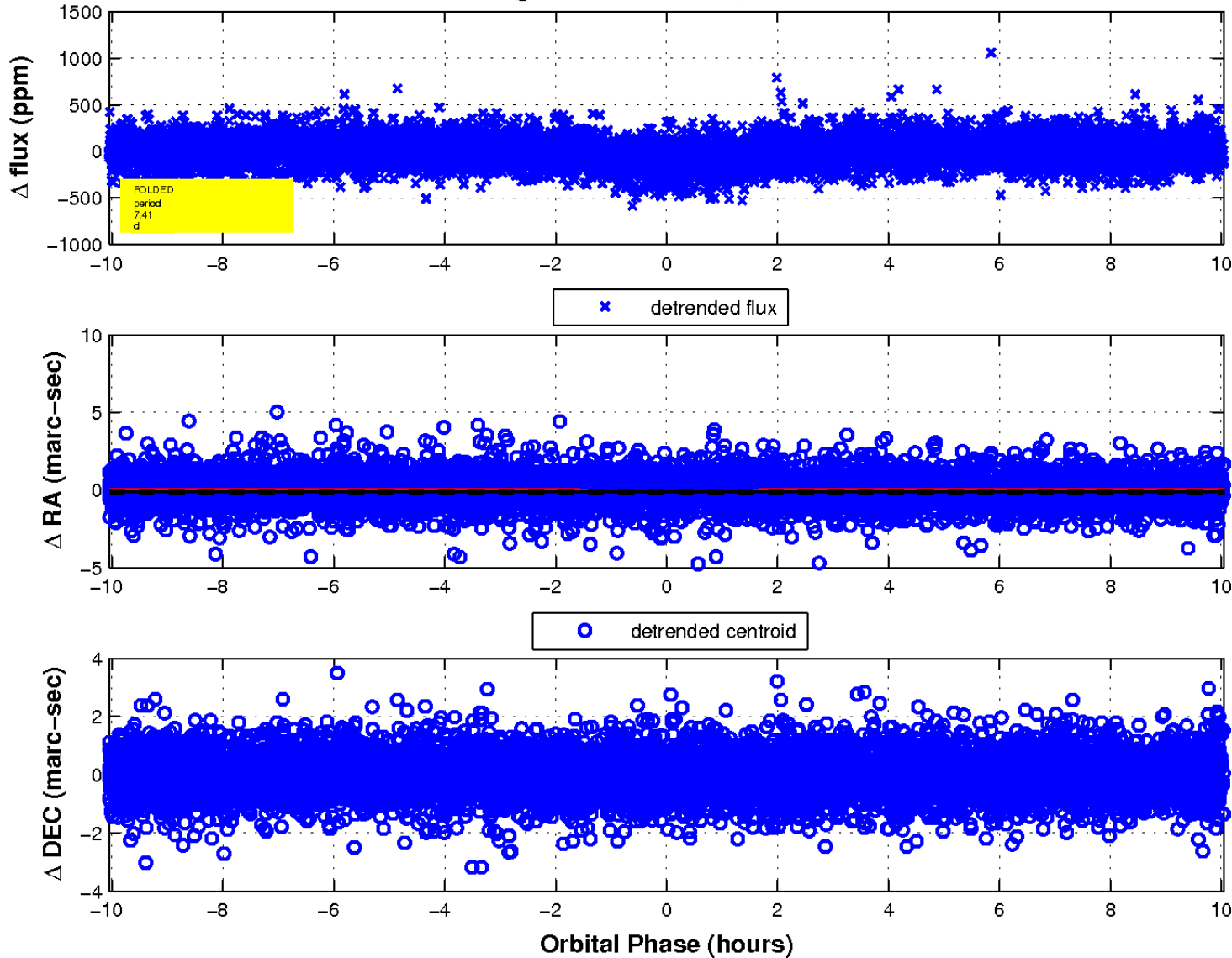
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



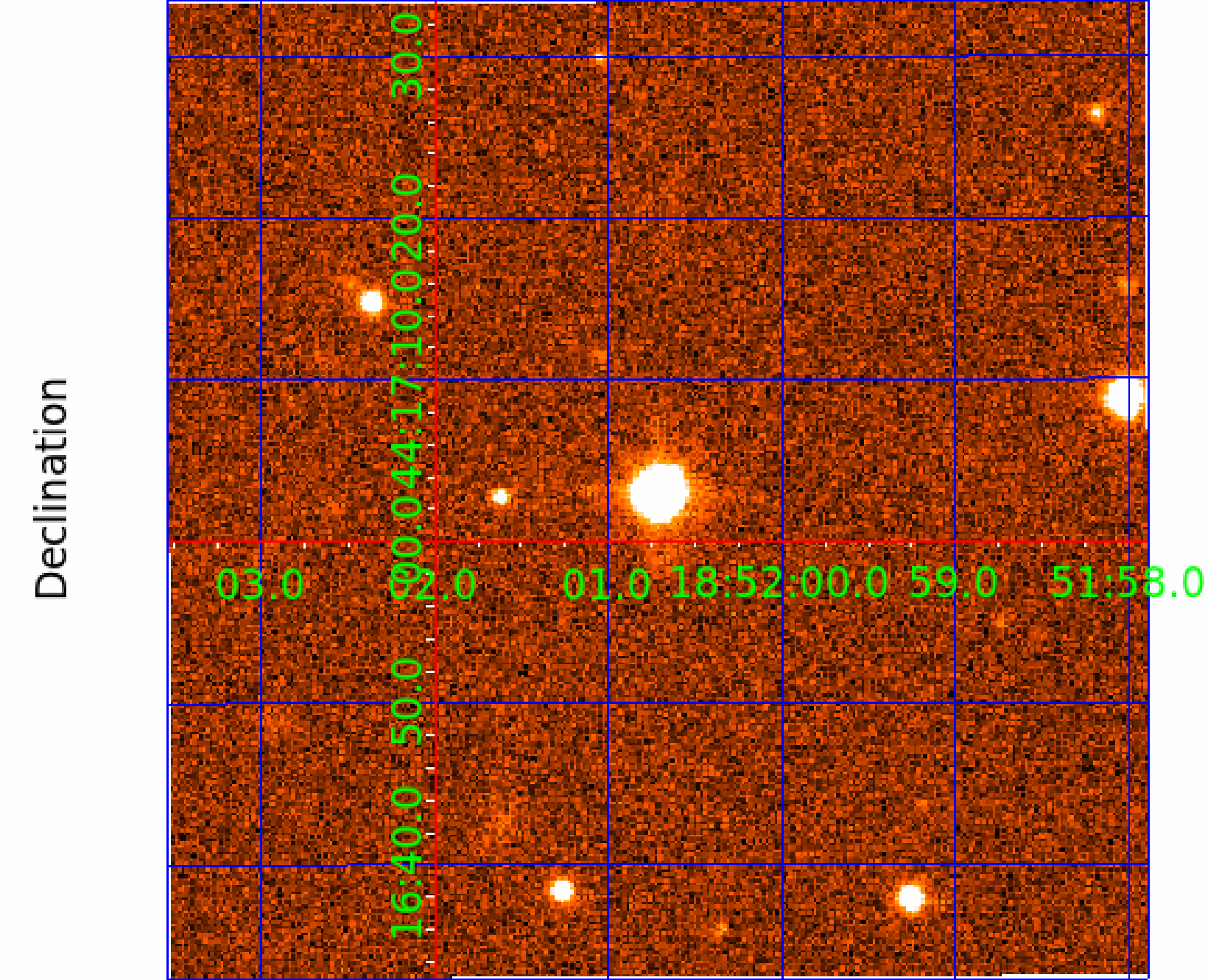
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 2 of 6



UKIRT Image



KIC 008280511

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})
008280511-01	OBS	1151.01	10.435458	134.825016	198.3	3.571	29.6	31.0	0.85	5528	1.44	78.42
008280511-02	OBS	1151.02	7.410873	135.751810	123.2	3.351	21.5	23.0	0.85	5528	1.12	123.78
008280511-03	OBS	1151.03	5.249731	135.466552	67.7	2.647	12.2	13.6	0.85	5528	0.79	196.01
008280511-04	OBS	1151.04	17.453473	146.649659	79.4	4.022	8.4	10.0	0.85	5528	0.87	39.50
008280511-05	OBS	1151.05	21.720052	134.776794	81.1	4.398	7.8	9.3	0.85	5528	0.92	29.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008280511-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008280511-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008280511-03	OBS	PC	0.97	0	0	0	0	NO_COMMENT
008280511-04	OBS	PC	0.90	0	0	0	0	NO_COMMENT
008280511-05	OBS	PC	0.80	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.

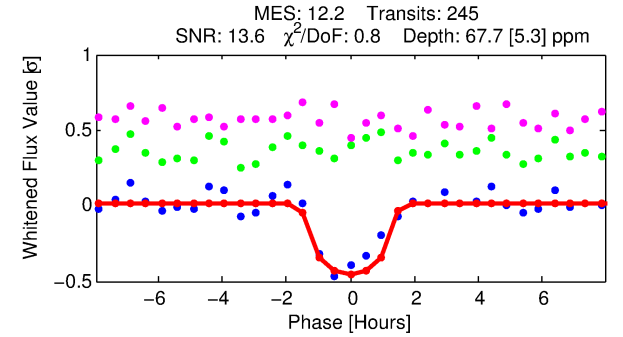
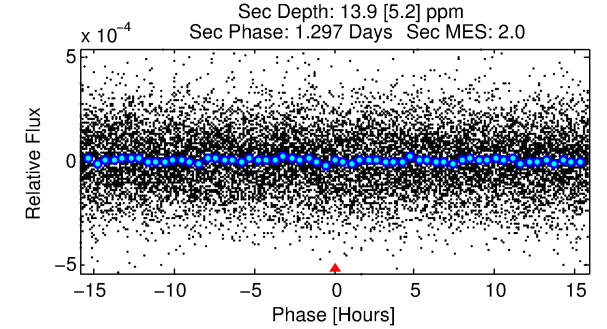
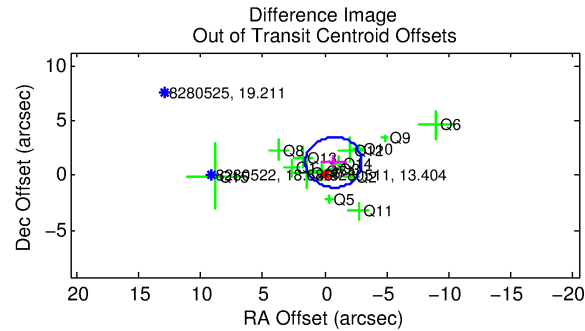
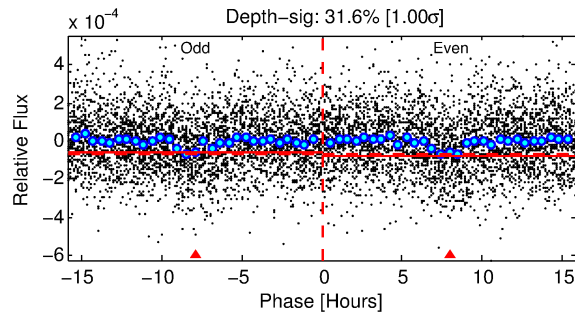
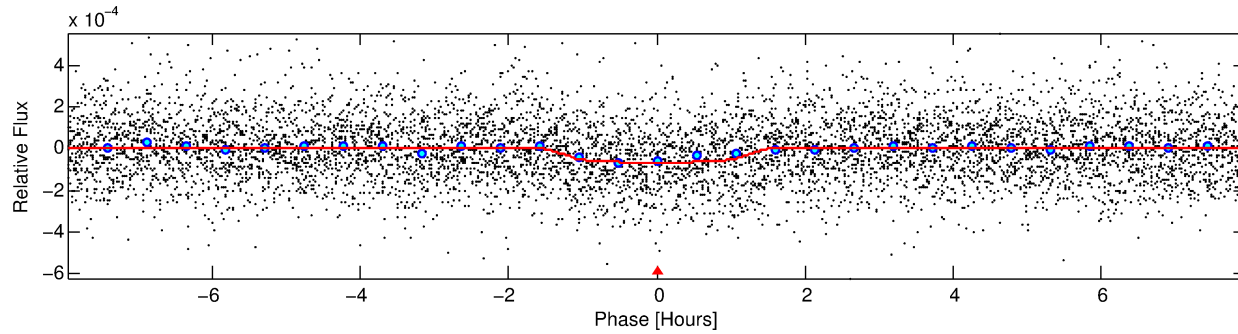
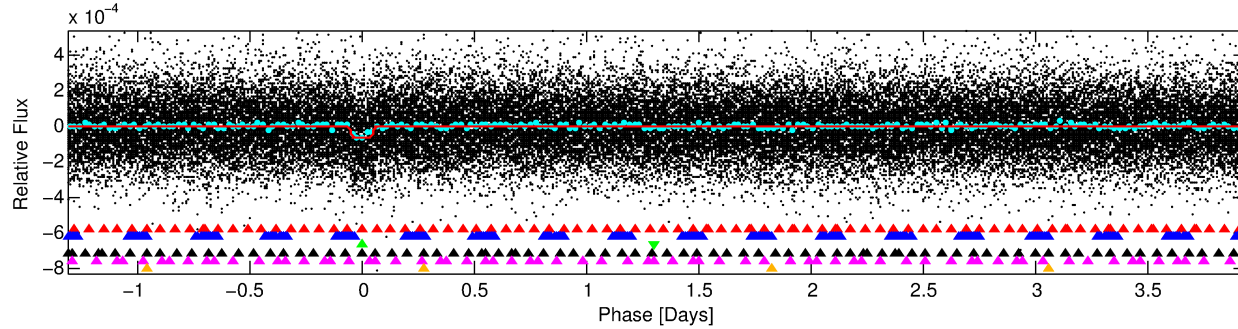
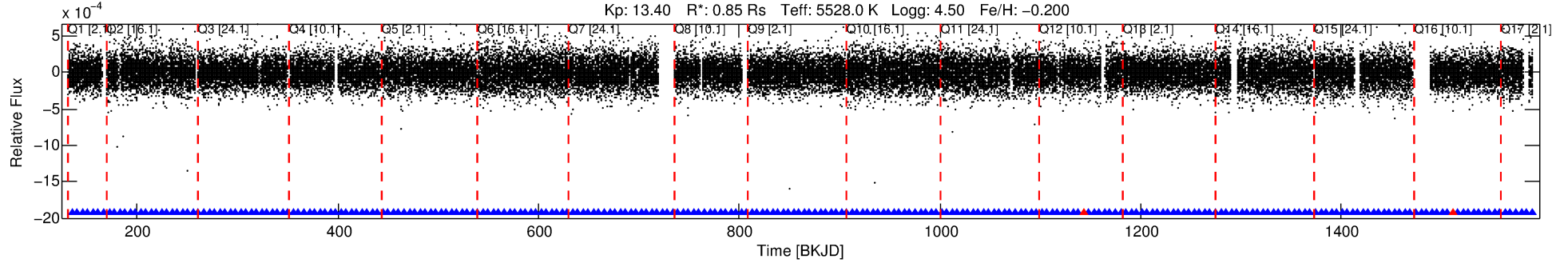
Ephemeris Match Information For 008280511-03

No Significant Match Found

DV One-Page Summary

KIC: 8280511 Candidate: 3 of 6 Period: 5.250 d

KOI: K01151.03 Corr: 0.977



DV Fit Results:

Period = 5.24973 [0.00003] d
Epoch = 135.4666 [0.0037] BKJD
Rp/R* = 0.0085 [0.0043]
a/R* = 8.99 [19.70]
b = 0.82 [0.92]
Seff = 196.01 [31.08]
Teq = 954 [38] K
Rp = 0.79 [0.41] Re
a = 0.0557 [0.0051] AU
Ag = 38.22 [42.14] [0.88 σ]
Teffp = 3668 [1006] K [2.70 σ]

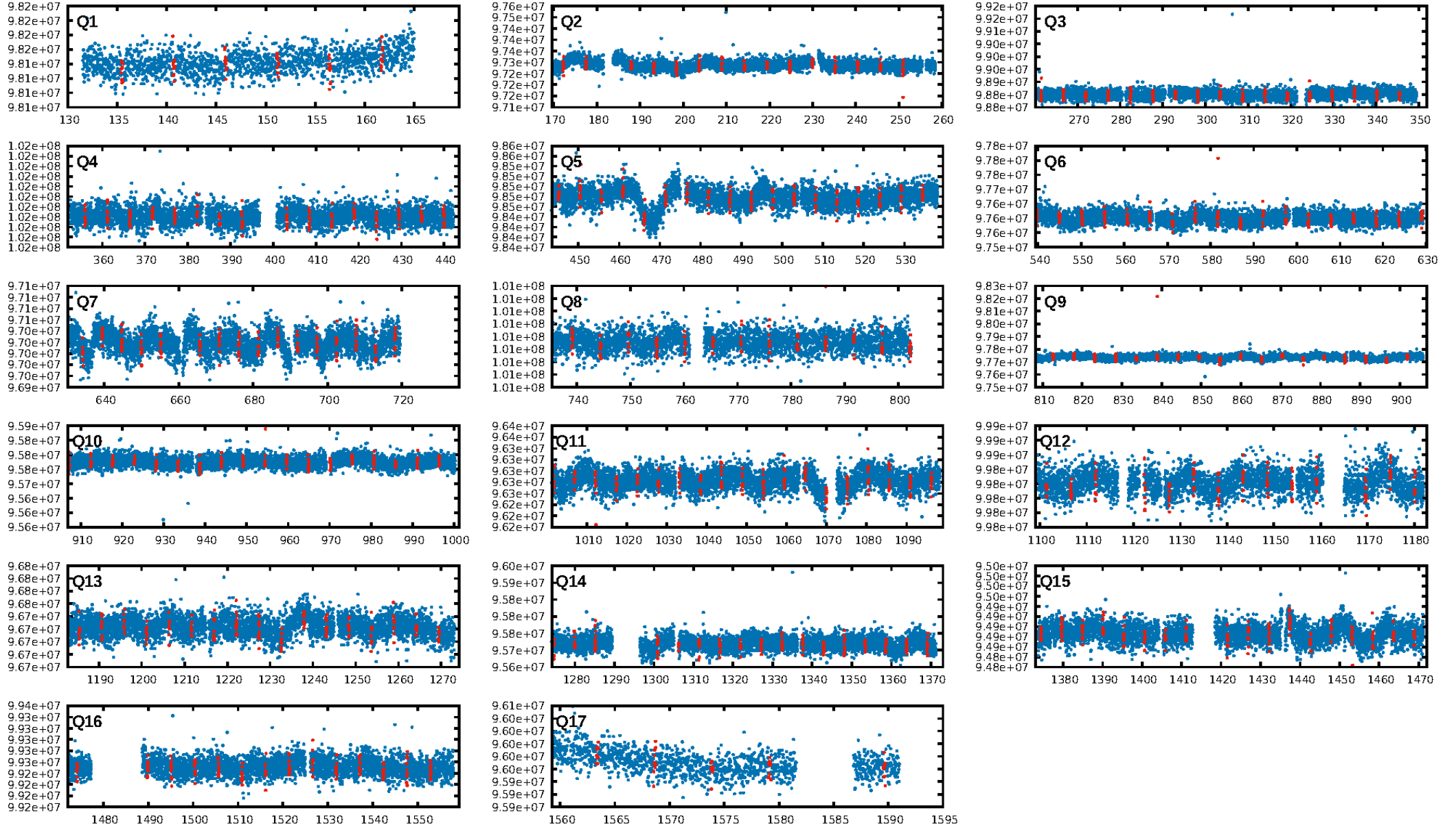
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [12.15 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.54e-33
RollingBand-fgt: 0.99 [232/234]
GhostDiagnostic-chr: 39.08
Centroid-sig: N/A
Centroid-so: 1.340 arcsec [1.38 σ]
OotOffset-rm: 1.414 arcsec [1.86 σ]
KicOffset-rm: 1.268 arcsec [1.39 σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-st: 4/4/3/4 [15]
DiffImageQuality-fgm: 0.53 [8/15]
DiffImageOverlap-fno: 1.00 [17/17]

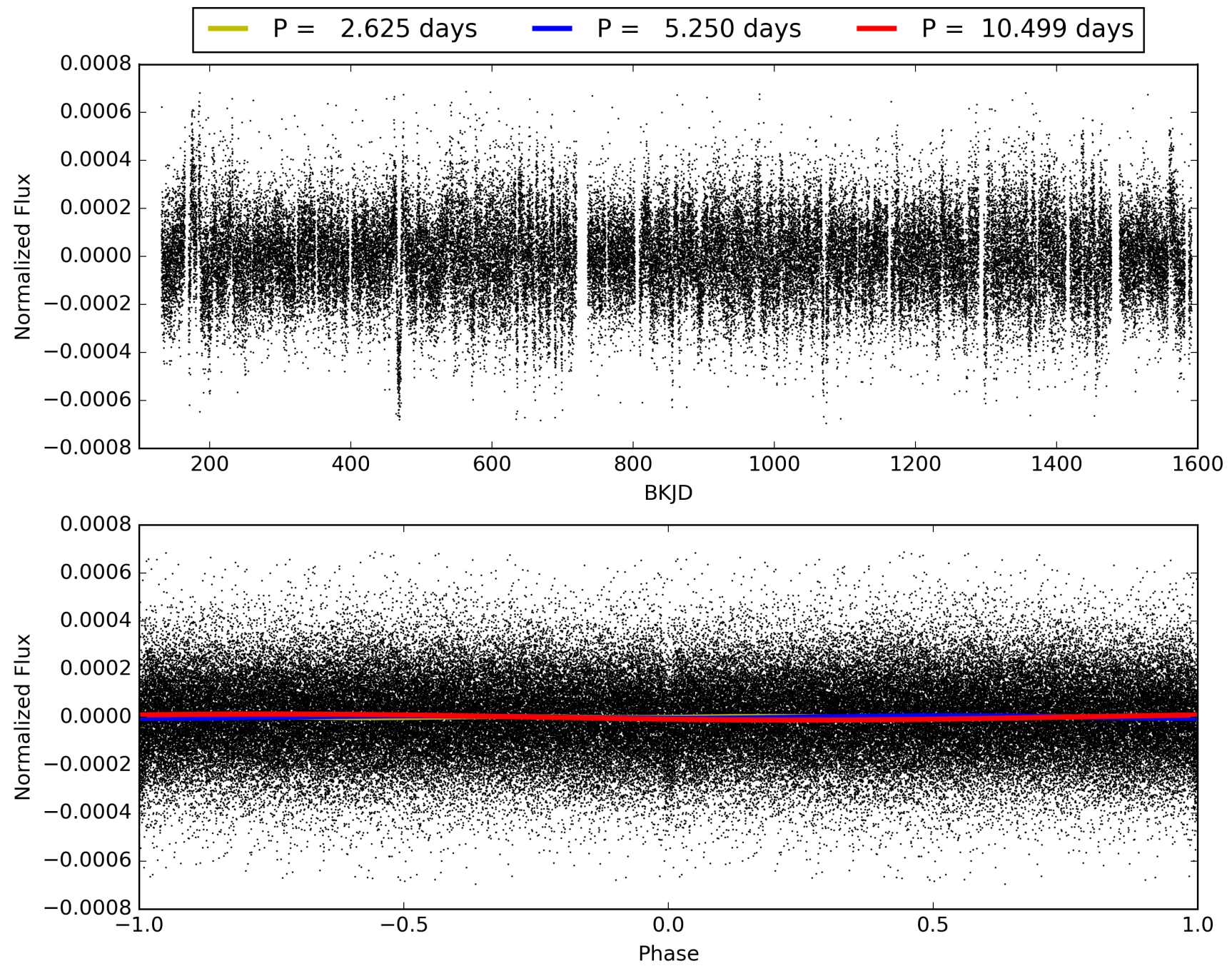
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 18:07:10 Z

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

TCE 008280511-03, PDC Light Curves

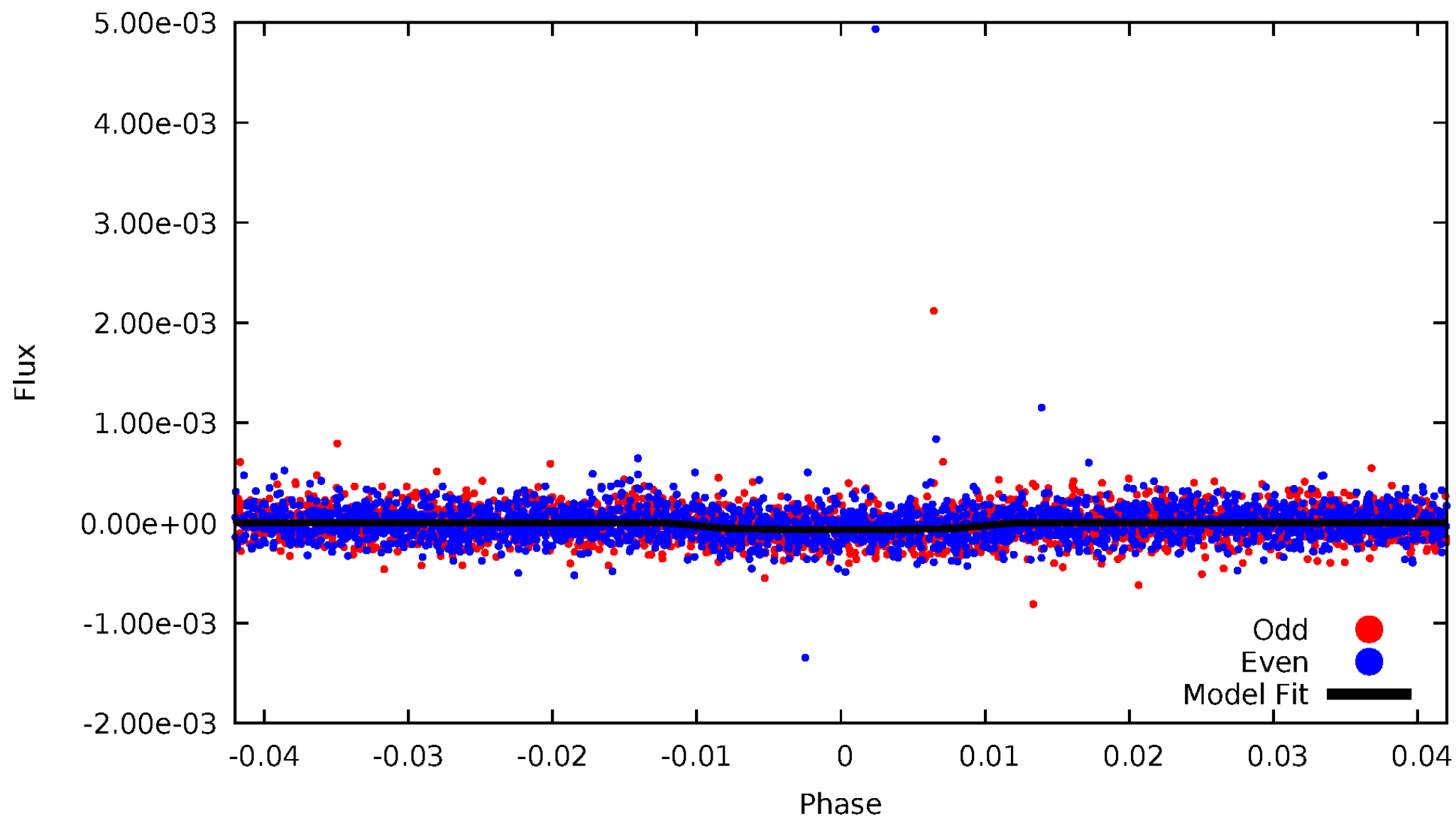


TCE 008280511-03



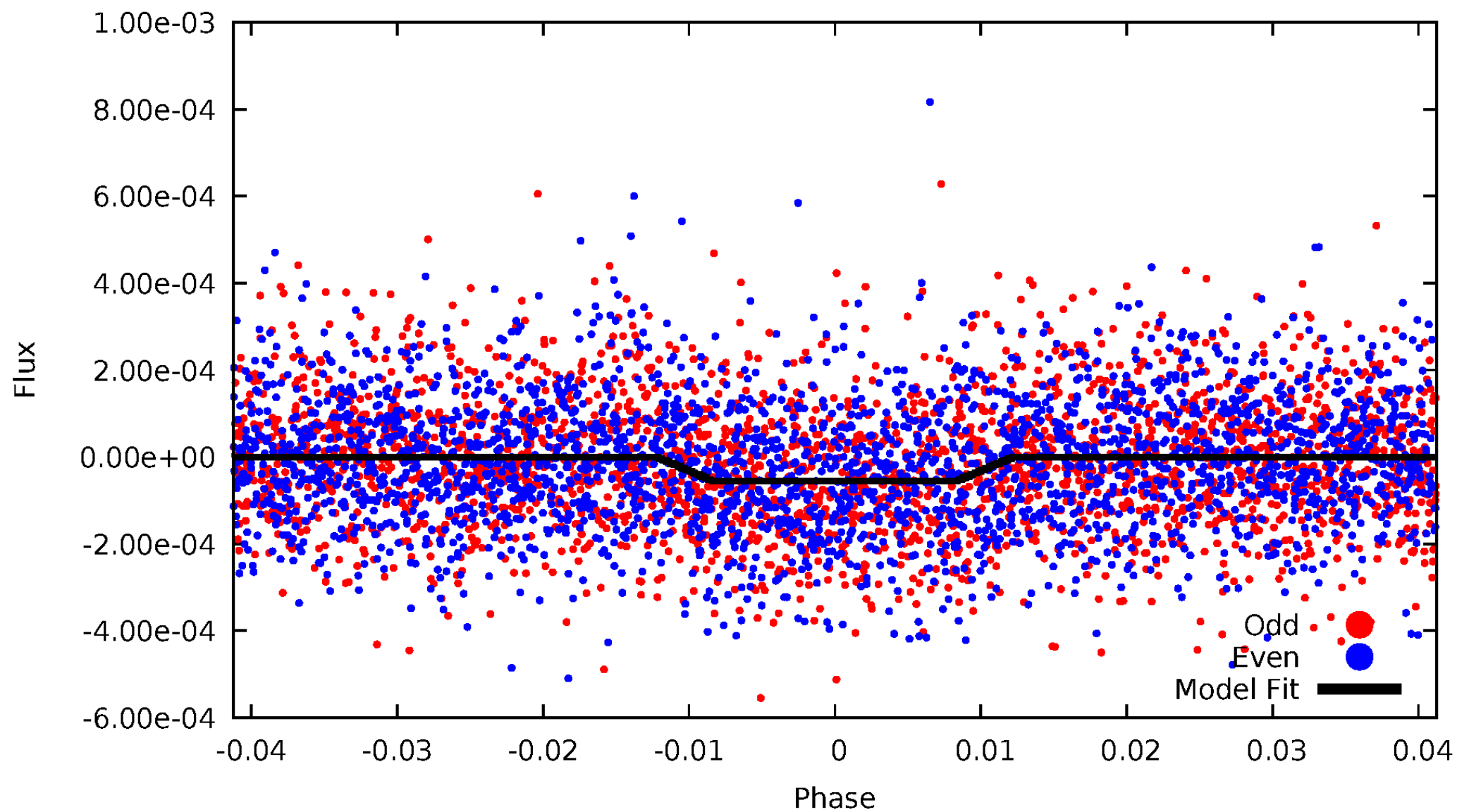
DV Odd/Even

TCE 008280511-03



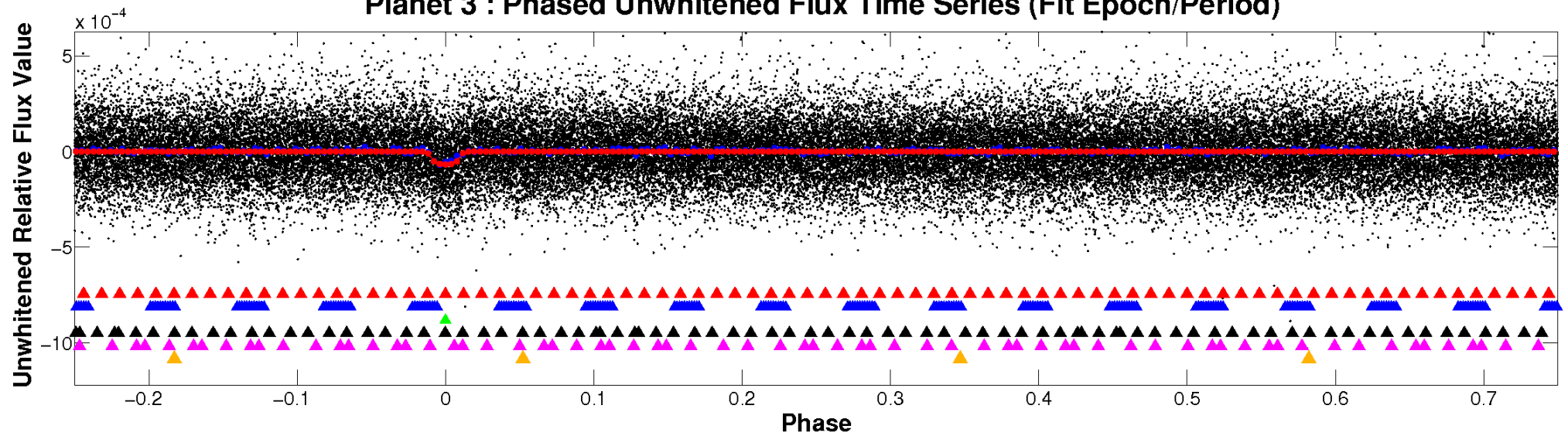
ALT Odd/Even

TCE 008280511-03

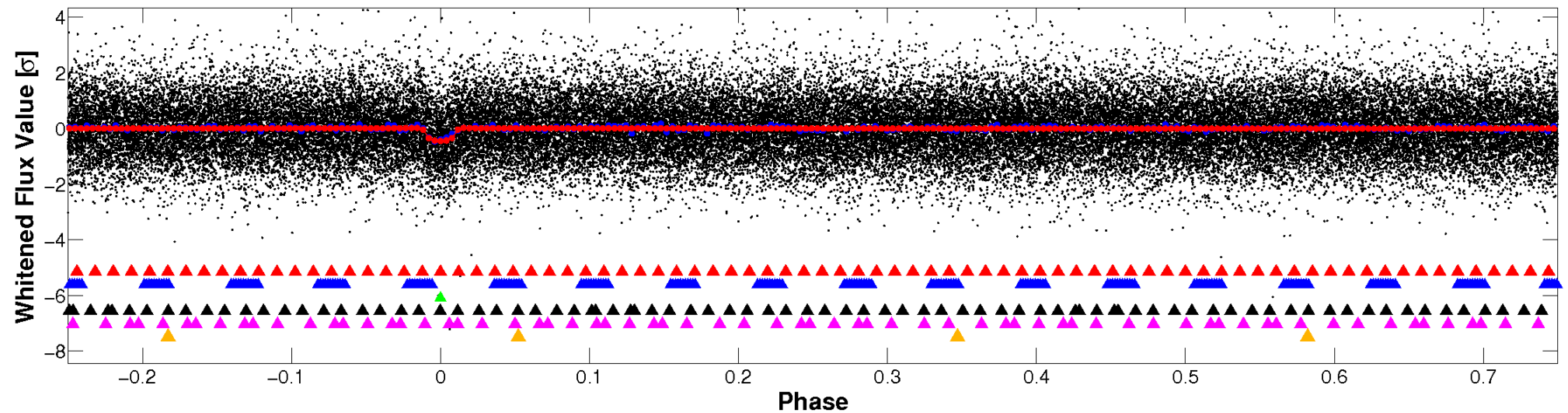


Non-Whitened Vs. Whitened Light Curve

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

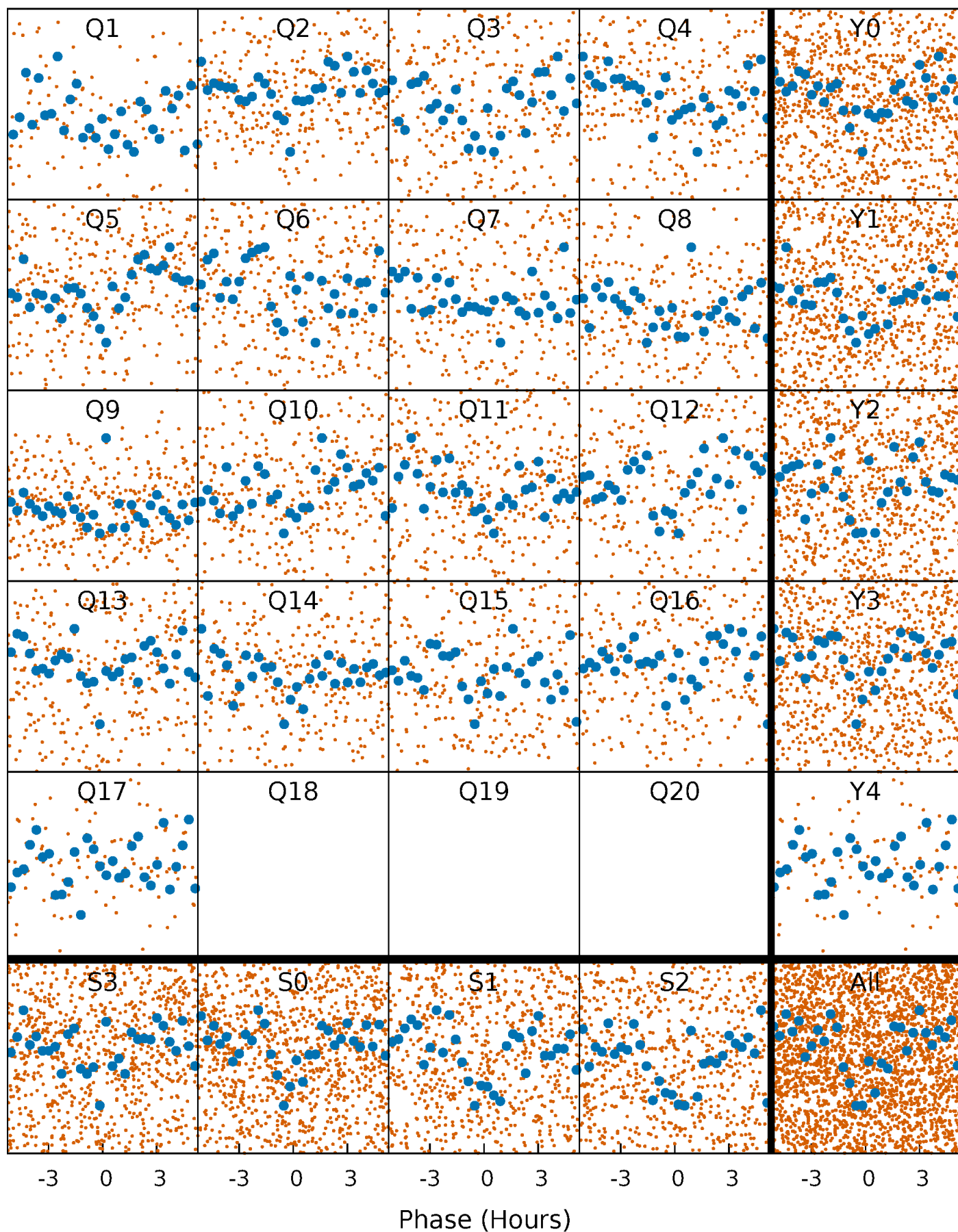


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



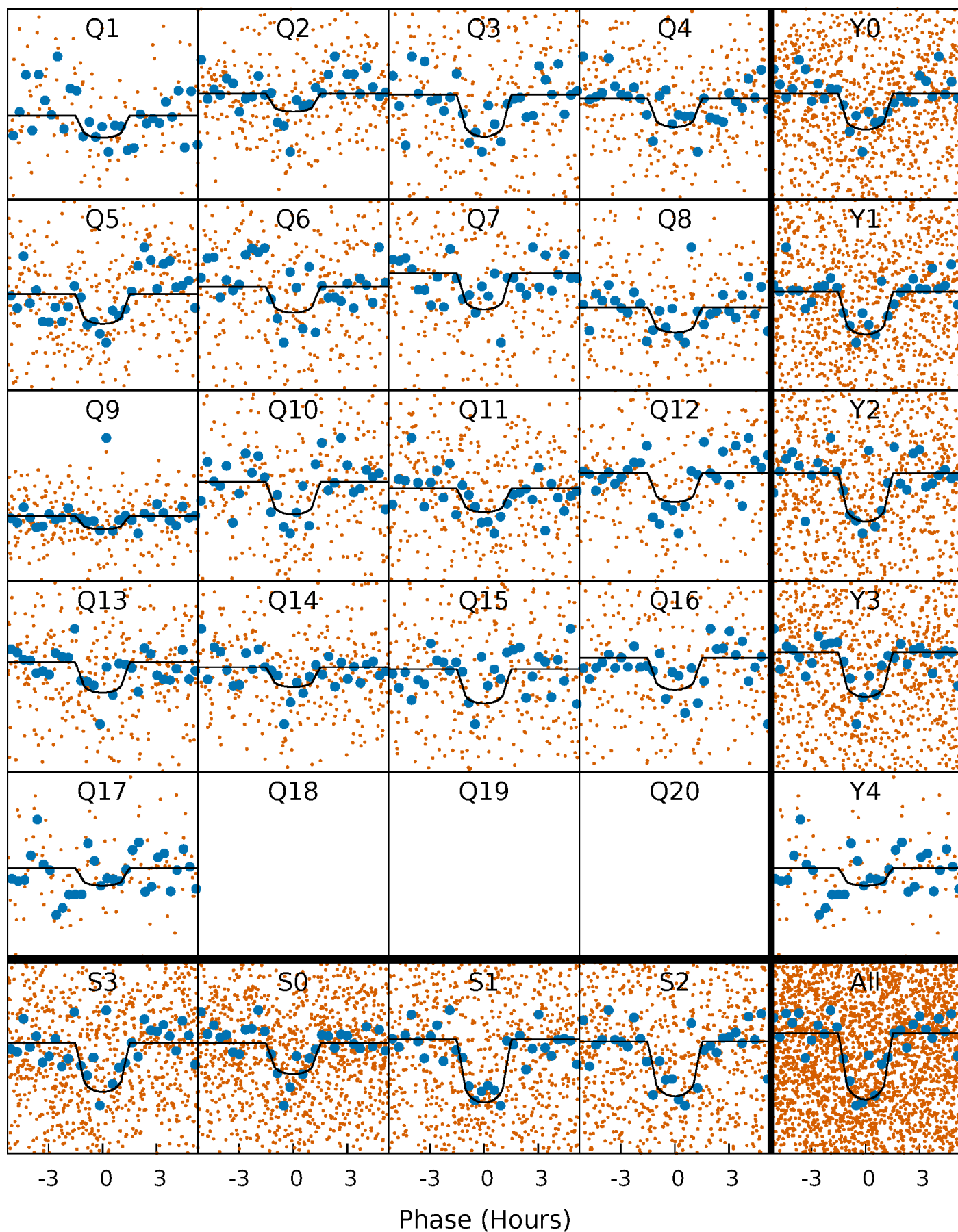
PDC Quarter-Phased Transit Curves

TCE 008280511-03 P= 5.249731 Days $T_0=135.466553$ (BKJD)



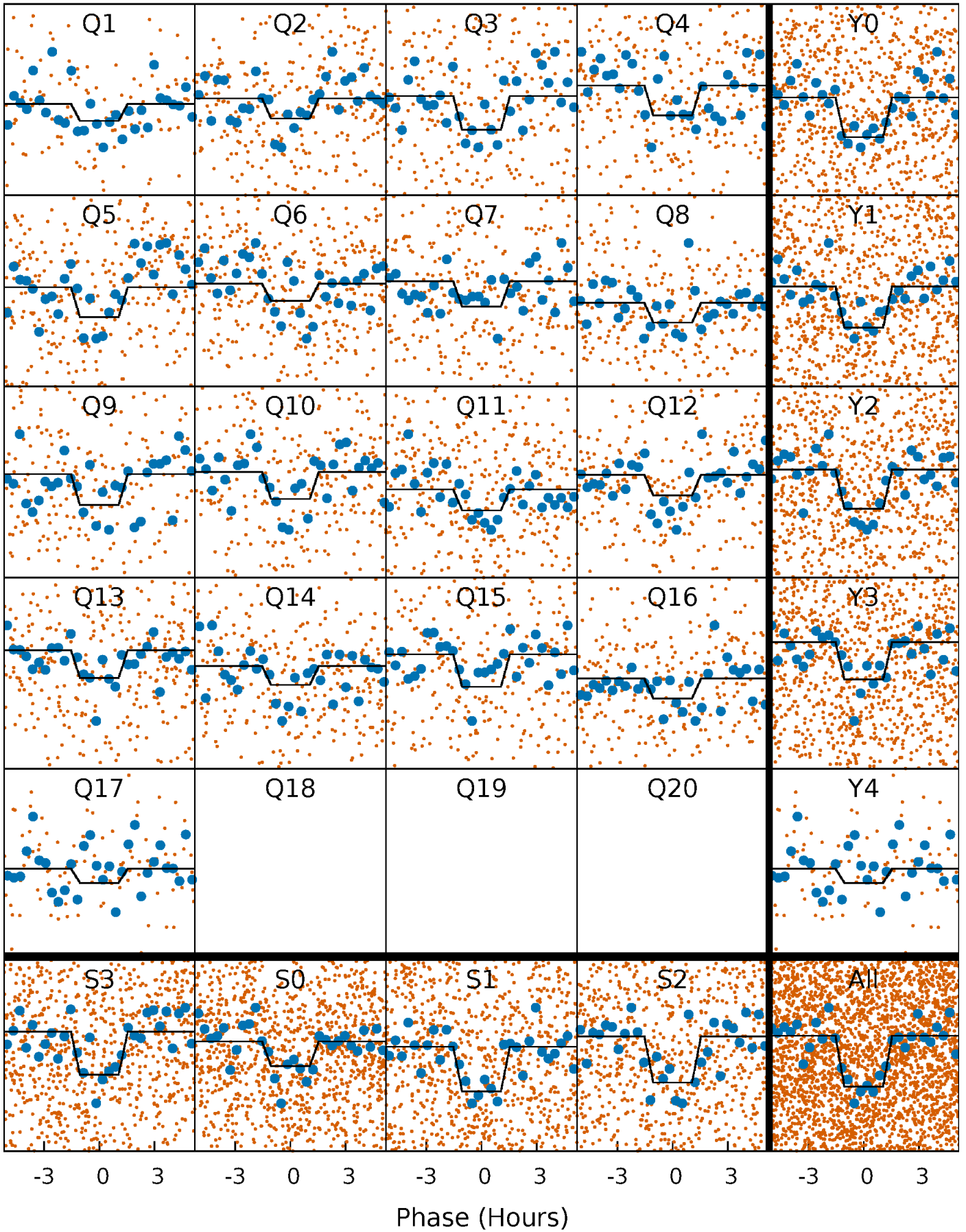
DV Quarter-Phased Transit Curves

TCE 008280511-03 P= 5.249731 Days $T_0=135.466553$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

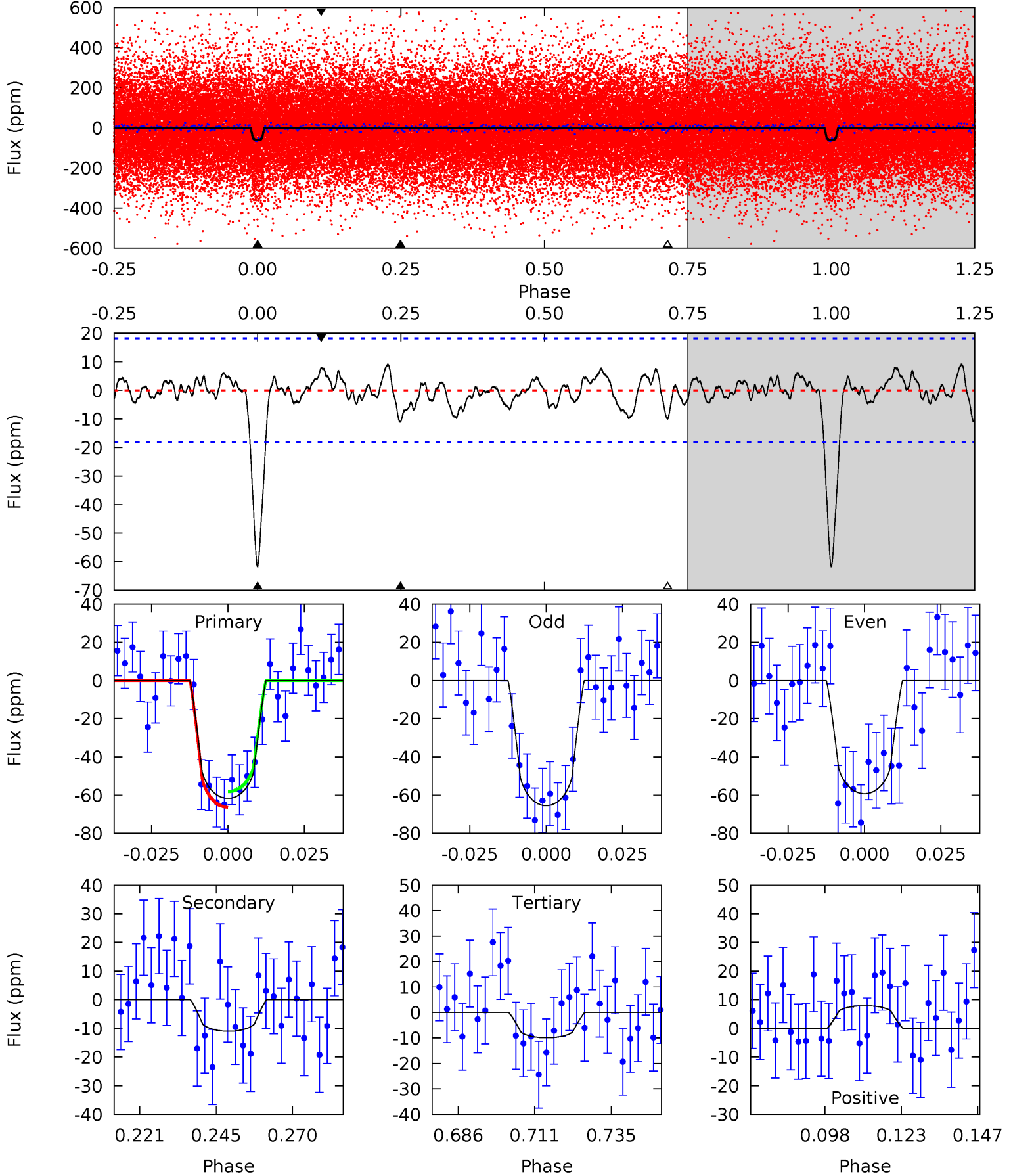
TCE 008280511-03 P= 5.249715 Days $T_0=135.469098$ (BKJD)



DV Model-Shift Uniqueness Test

008280511-03, P = 5.249731 Days, E = 130.216822 Days

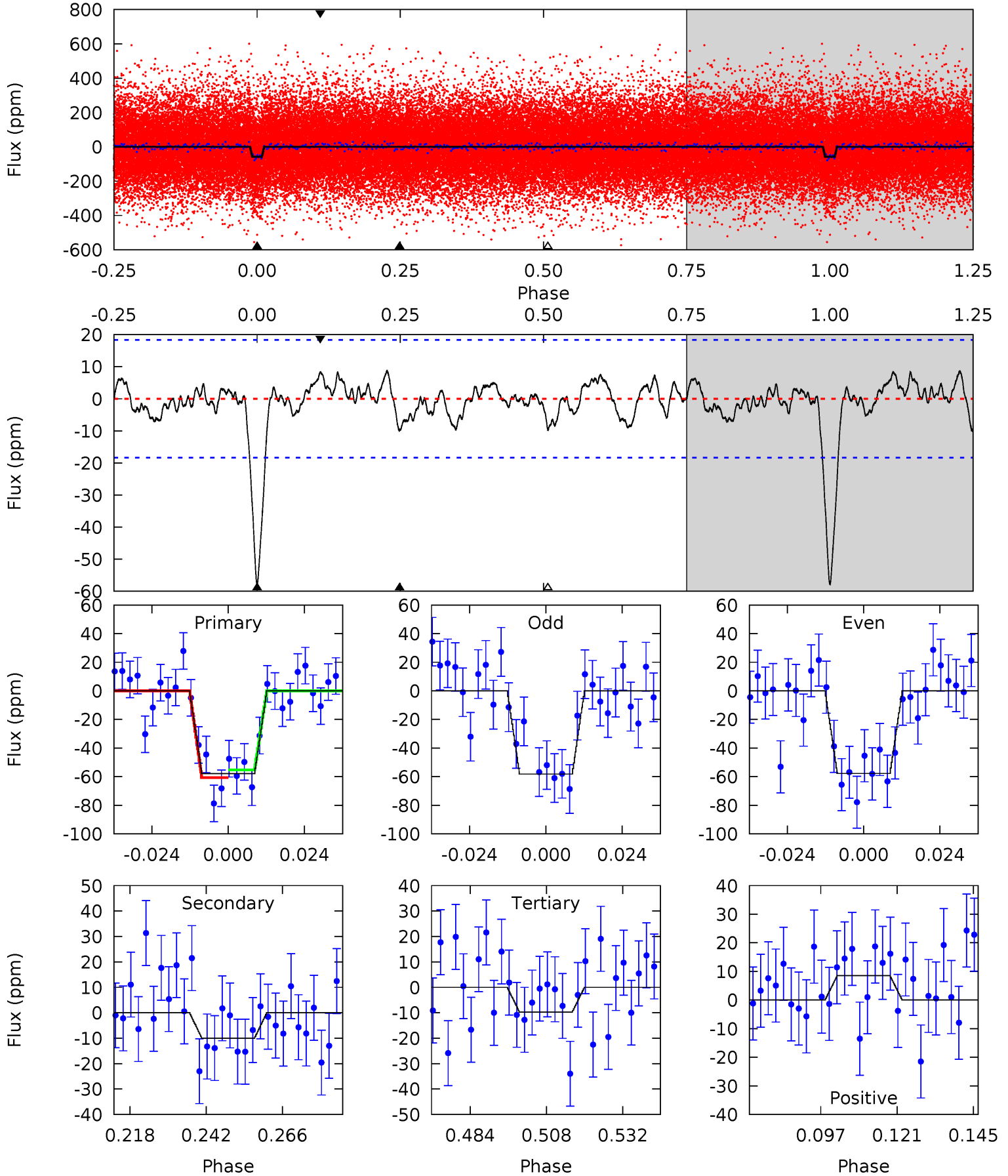
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.4	2.93	2.65	2.11	4.85	2.25	1.00	13.8	14.3	0.28	0.82	0.84	0.86	0.13	1.09



Alt Model-Shift Uniqueness Test

008280511-03, P = 5.249715 Days, E = 130.219383 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.3	2.64	2.57	2.25	4.85	2.25	1.02	12.8	13.1	0.07	0.39	0.05	0.95	0.13	0.71



Stellar Parameters For KIC 008280511

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5528^{+110}_{-110}	$4.499^{+0.063}_{-0.077}$	$-0.200^{+0.150}_{-0.150}$	$0.853^{+0.089}_{-0.067}$	$0.838^{+0.056}_{-0.046}$	$1.899^{+0.488}_{-0.464}$
	+2%/-2%	+1%/-2%	+75%/-75%	+10%/-8%	+7%/-5%	+26%/-24%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 008280511-03 / KOI 1151.03

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-11 ± 4	$0.83^{+0.41}_{-0.40}$	1335^{+44}_{-39}	3724^{+1069}_{-487}	26^{+76}_{-15}
Alt.	-10 ± 4	$0.73^{+0.41}_{-0.38}$	1335^{+46}_{-40}	3812^{+1269}_{-578}	30^{+94}_{-19}

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

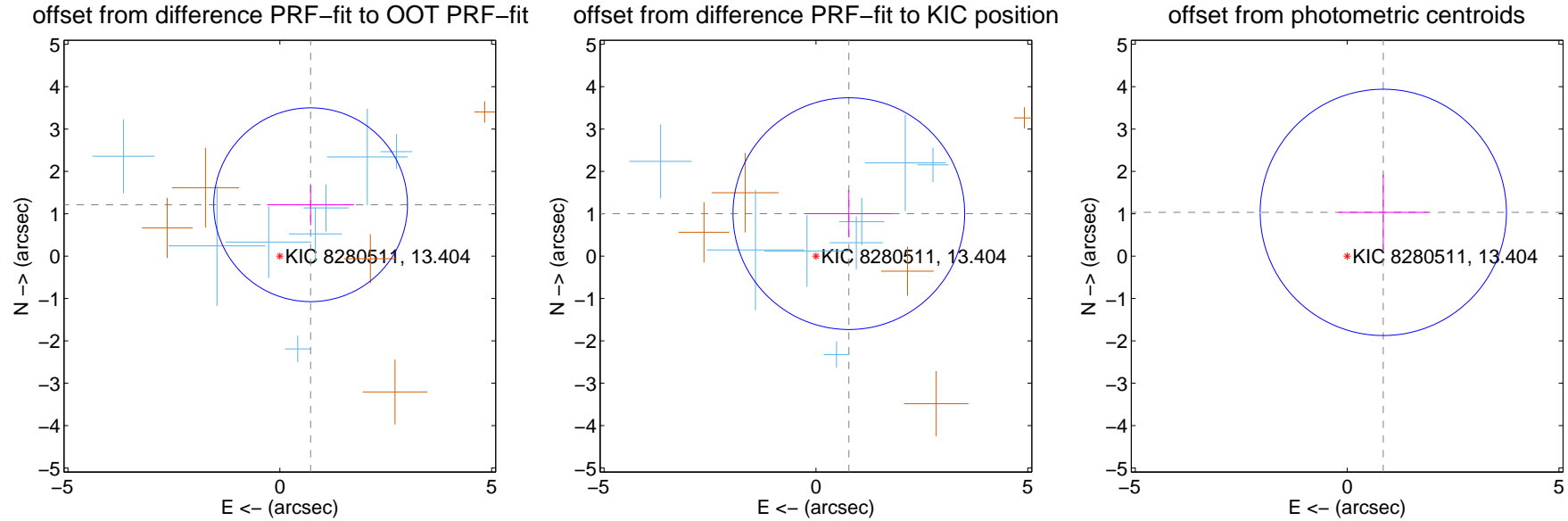
DV Centroid Data

Supplemental centroid analysis for 008280511-03. Kepler magnitude: 13.40. Transit SNR 13.63

There are 8 quarters with good PRF difference image offsets

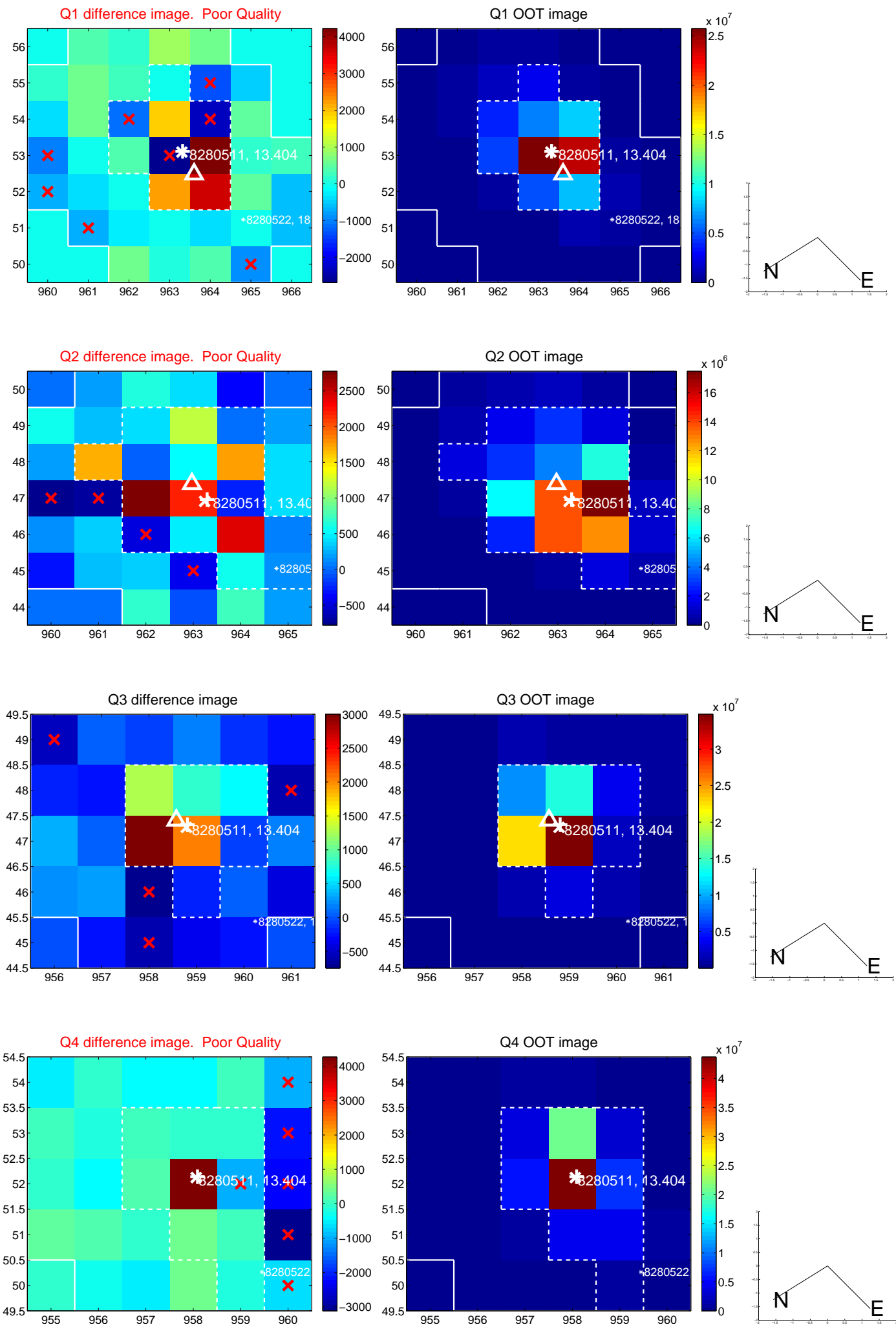
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.414 ± 0.762	1.86	-0.727 ± 1.027	1.213 ± 0.489
PRF-fit source offset from KIC position	1.268 ± 0.912	1.39	-0.777 ± 1.034	1.003 ± 0.561
photometric centroid source offset	1.34 ± 0.97	1.38	-0.85 ± 1.06	1.03 ± 0.90

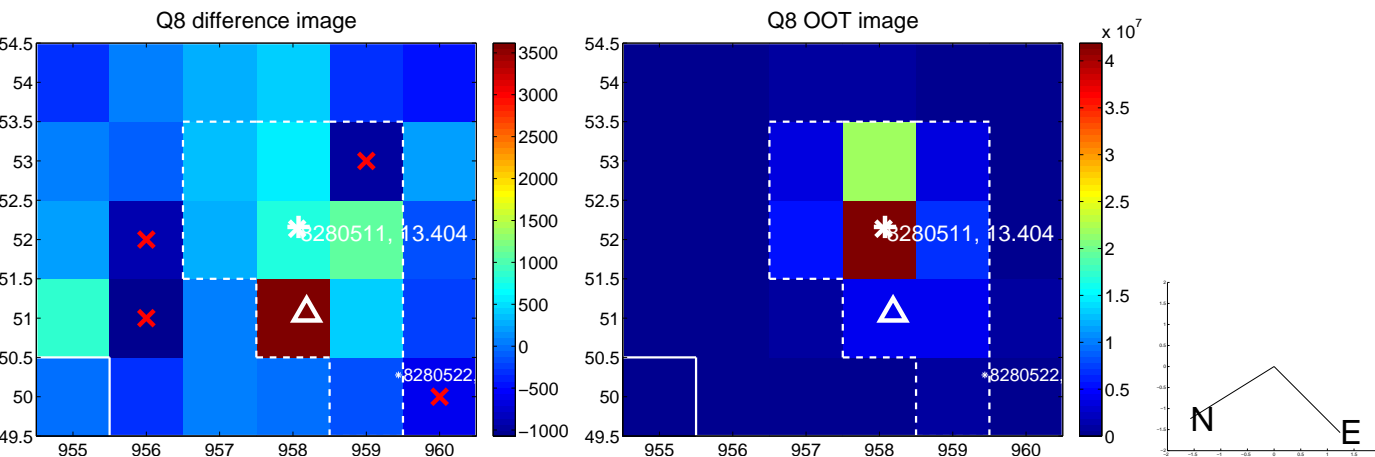
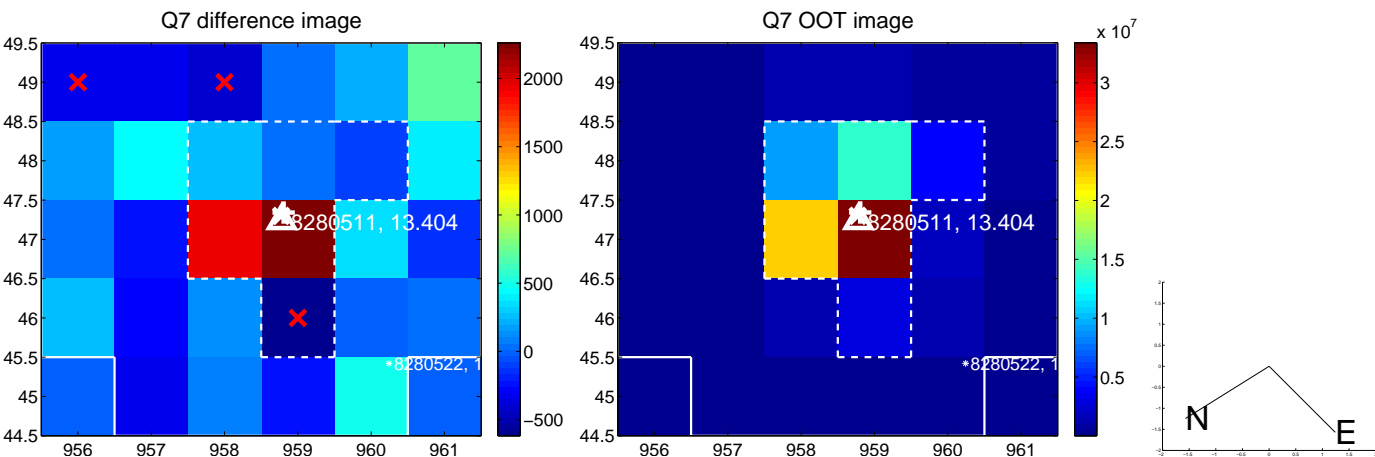
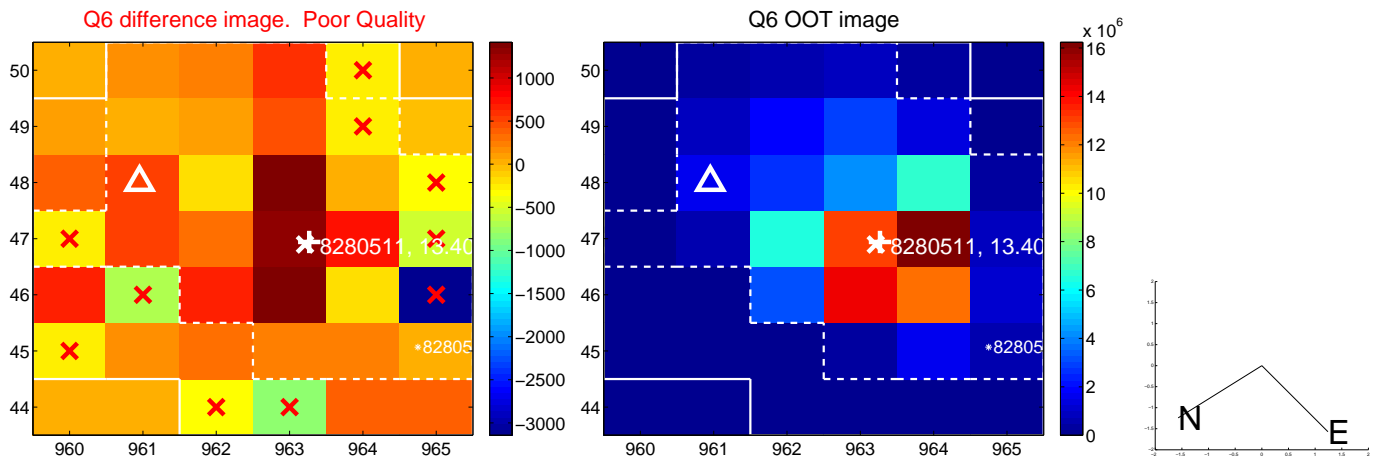
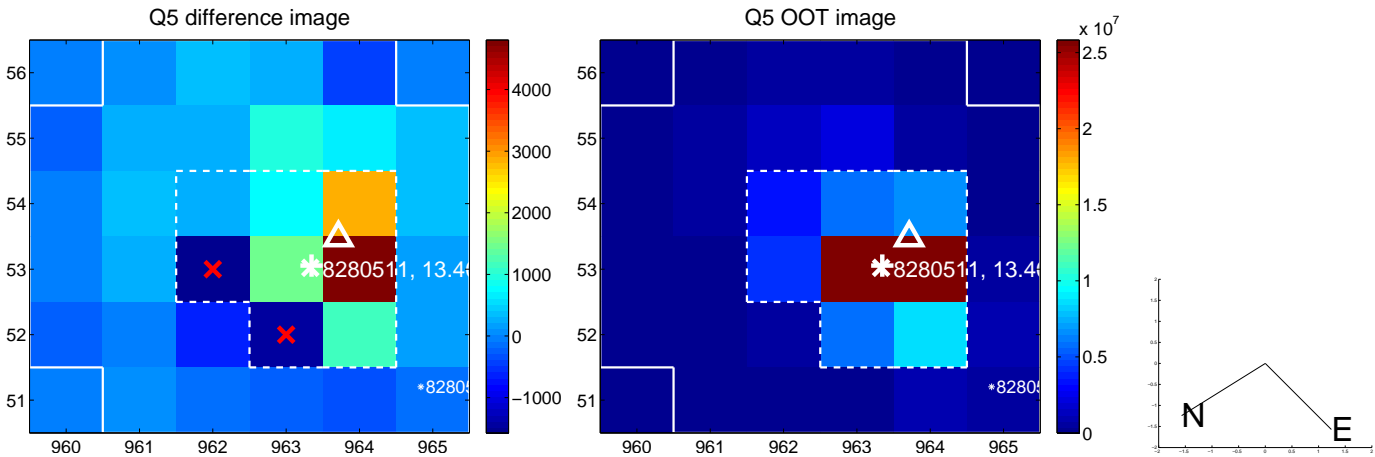


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

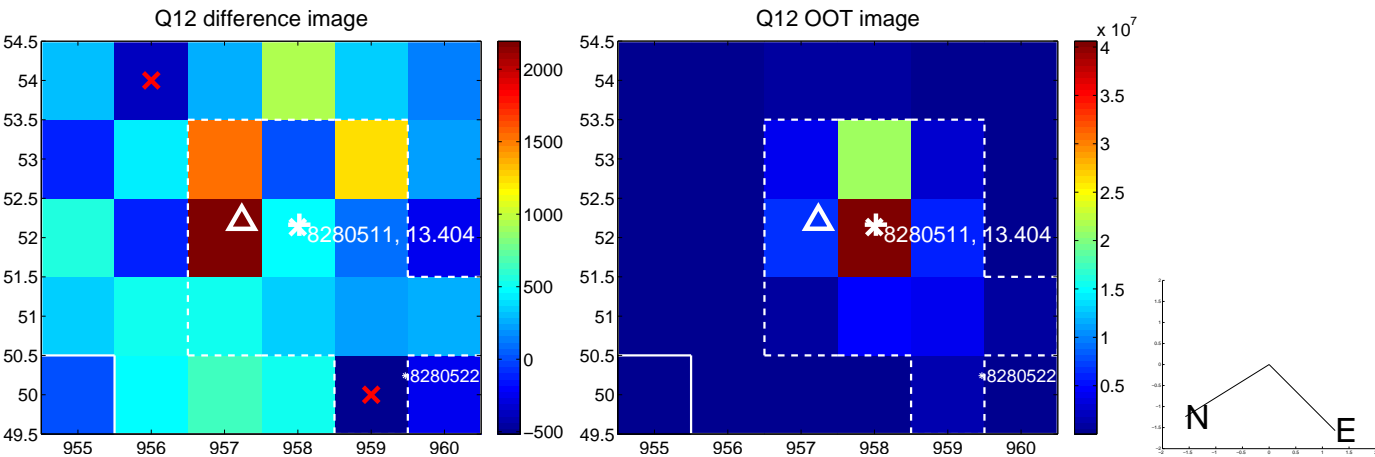
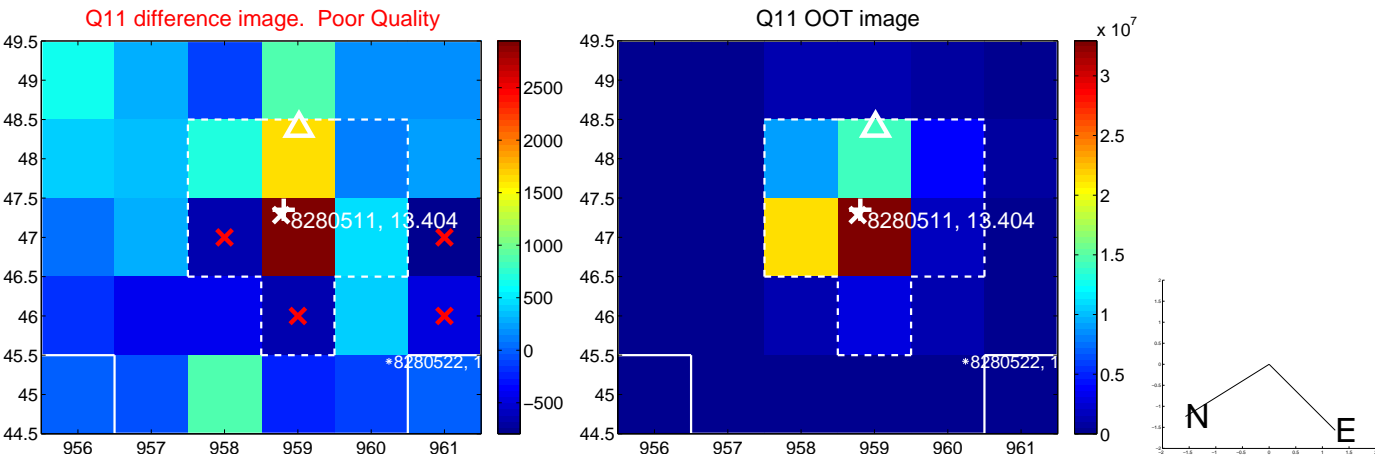
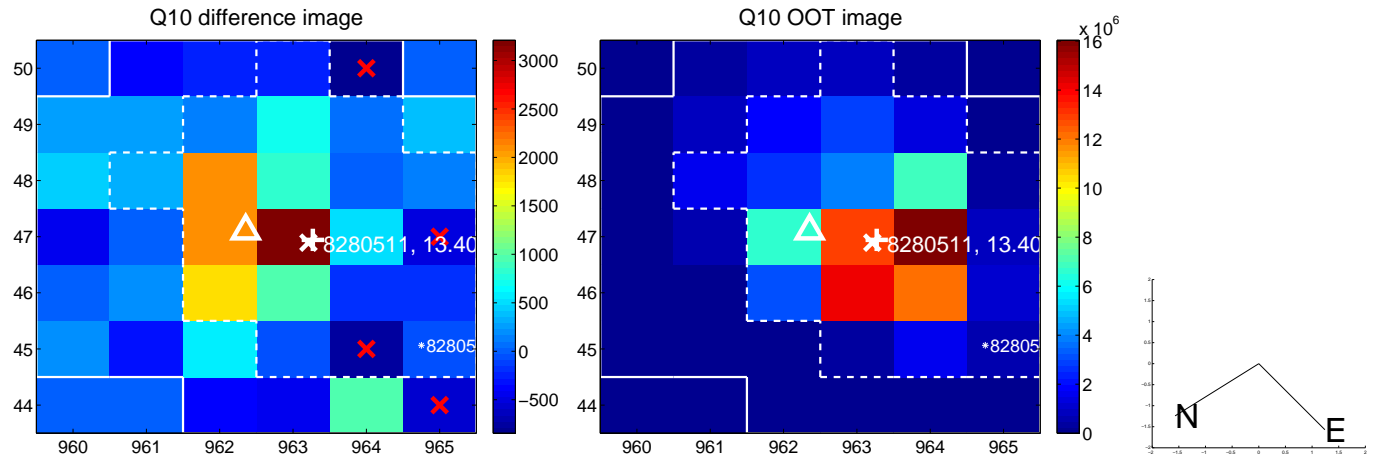
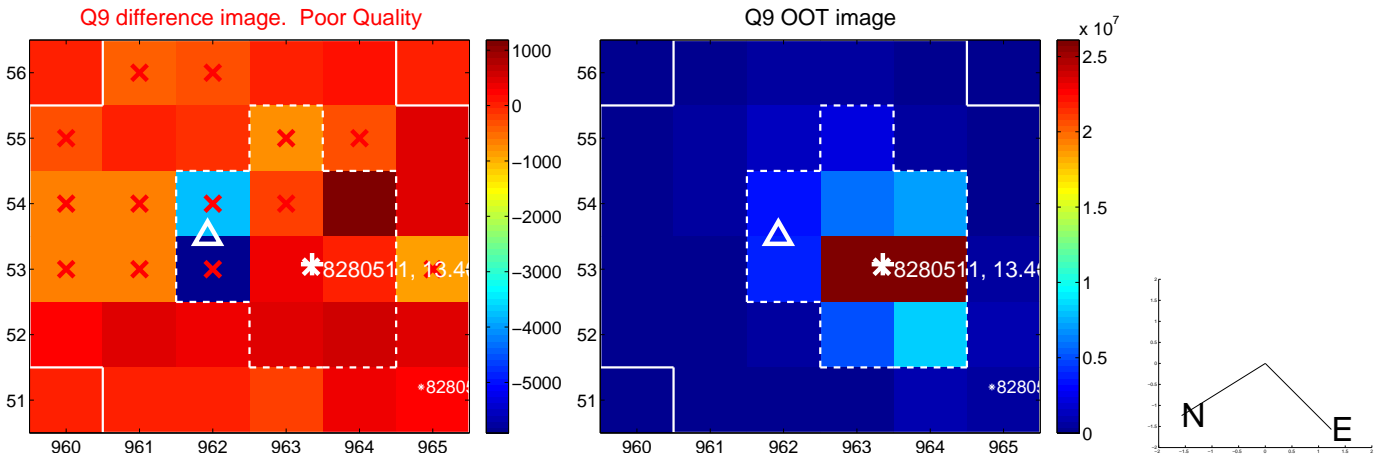
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



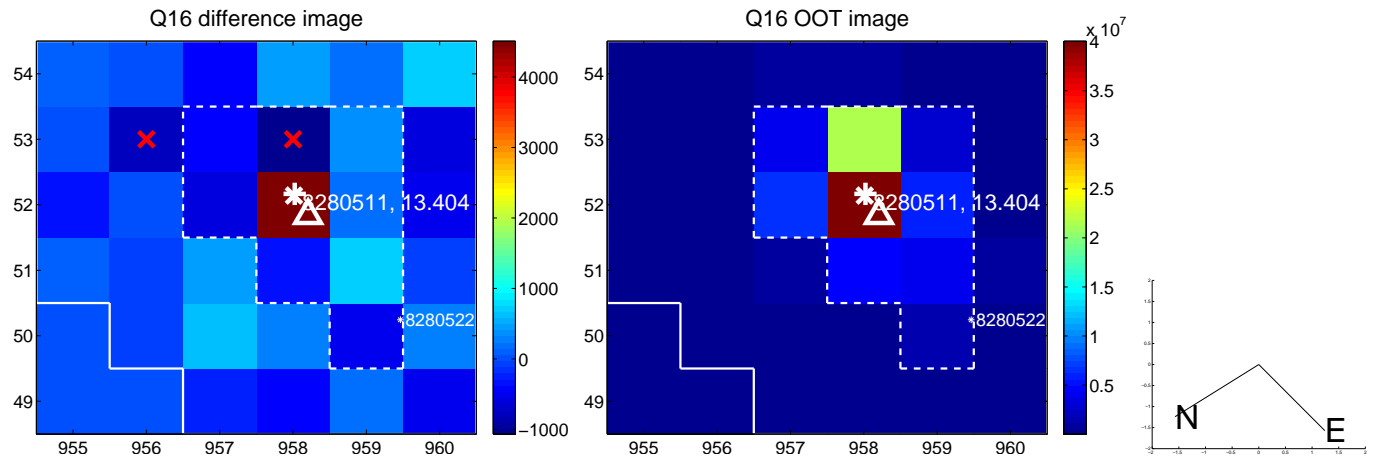
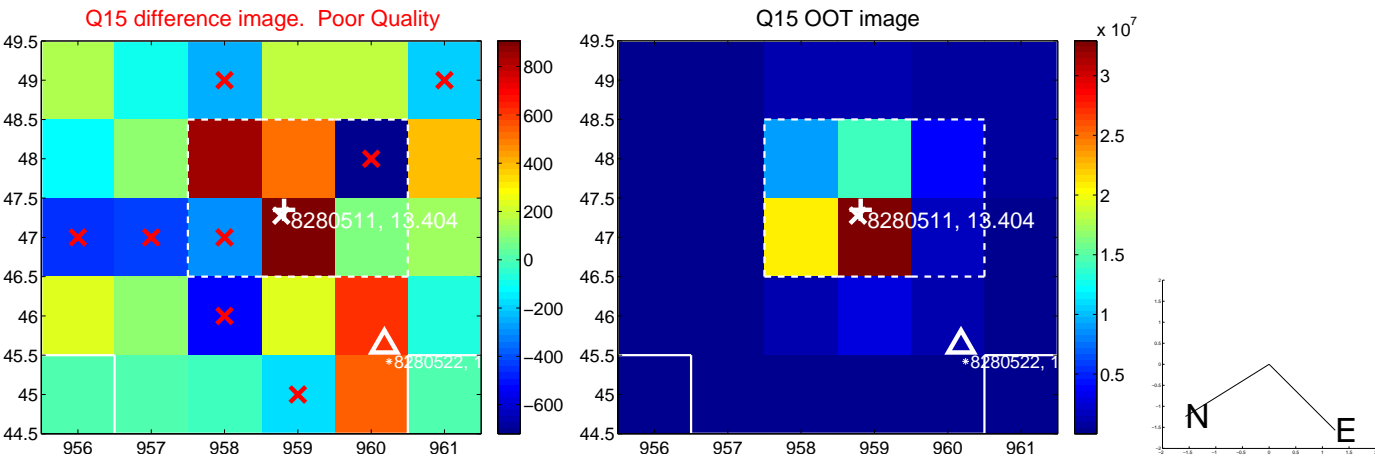
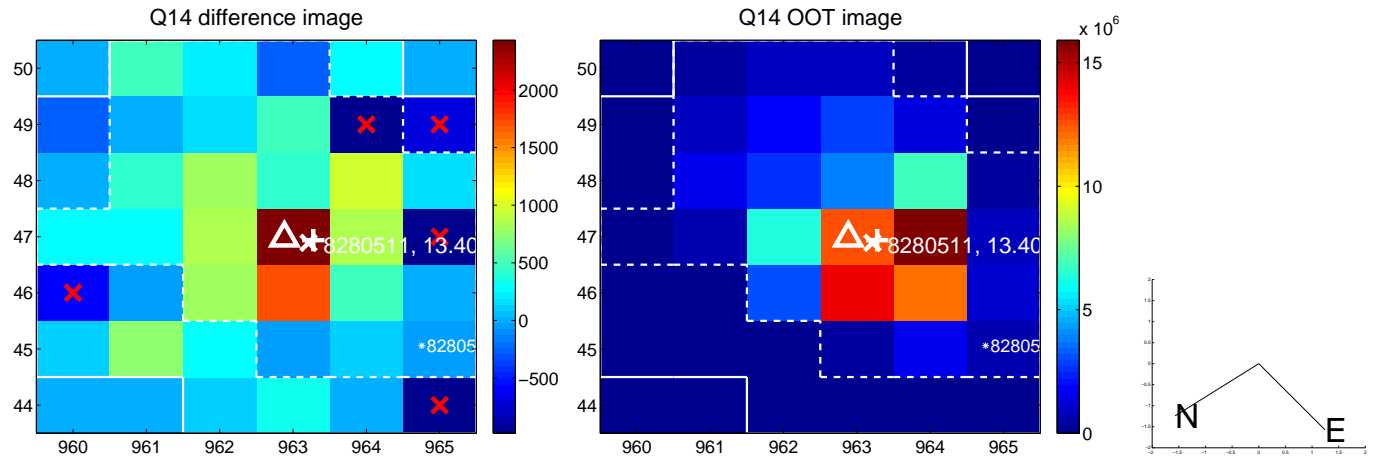
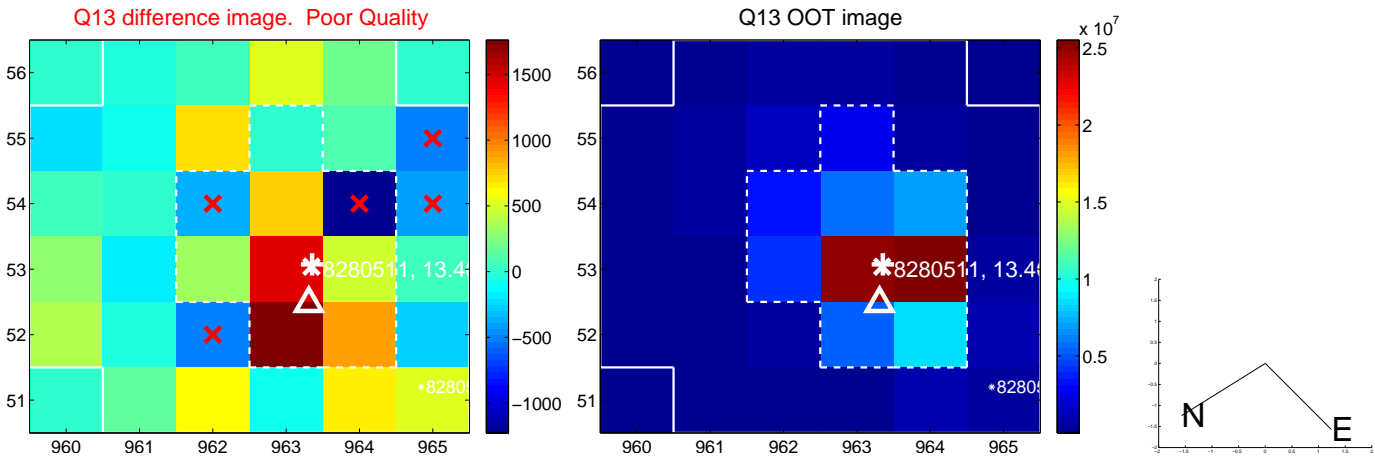
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



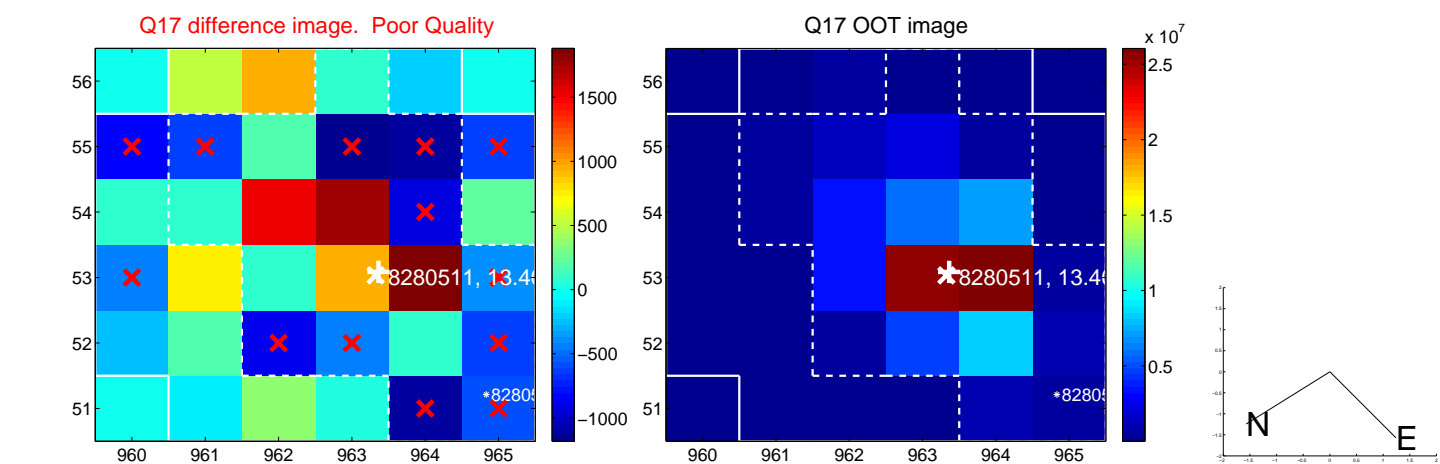
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



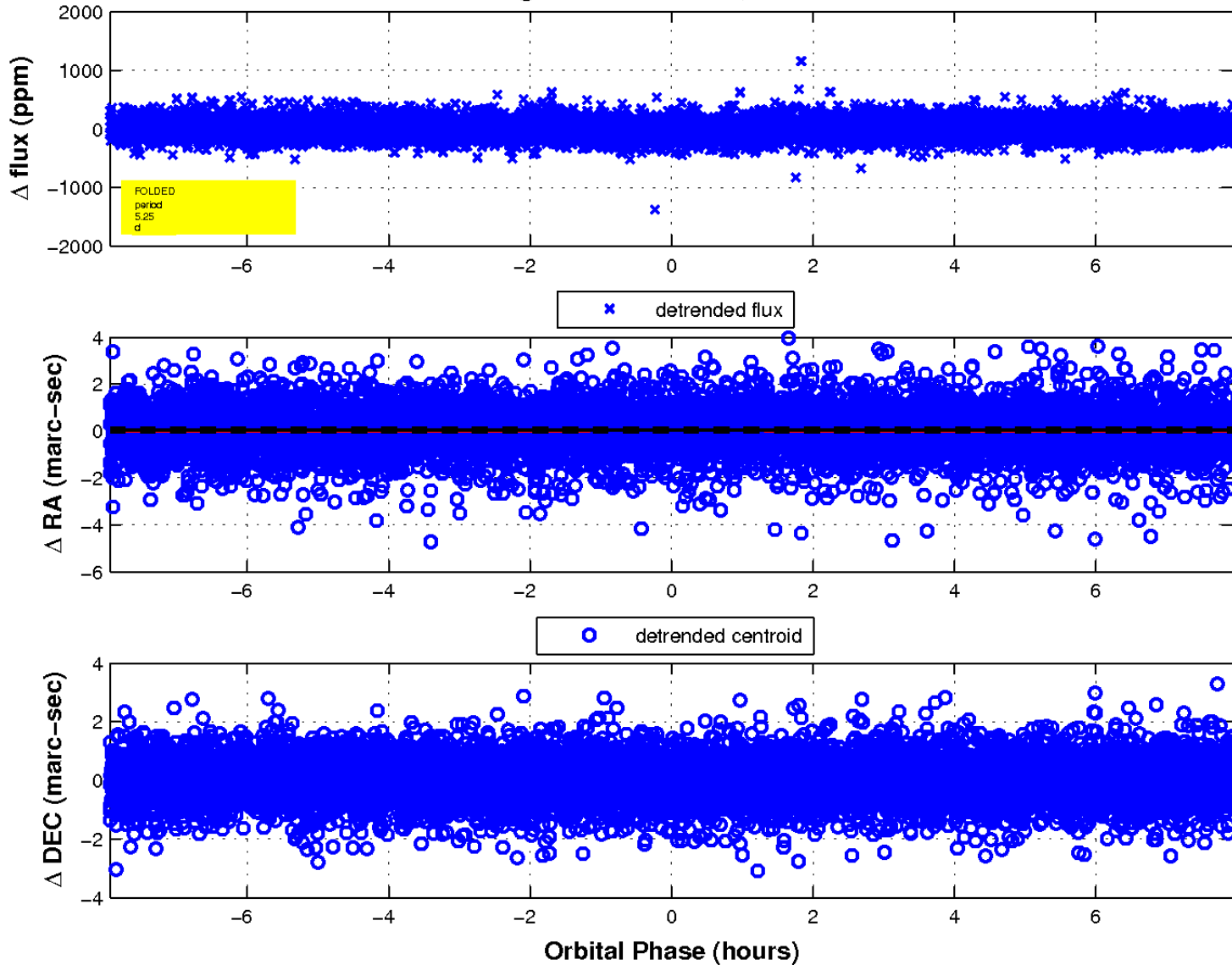
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

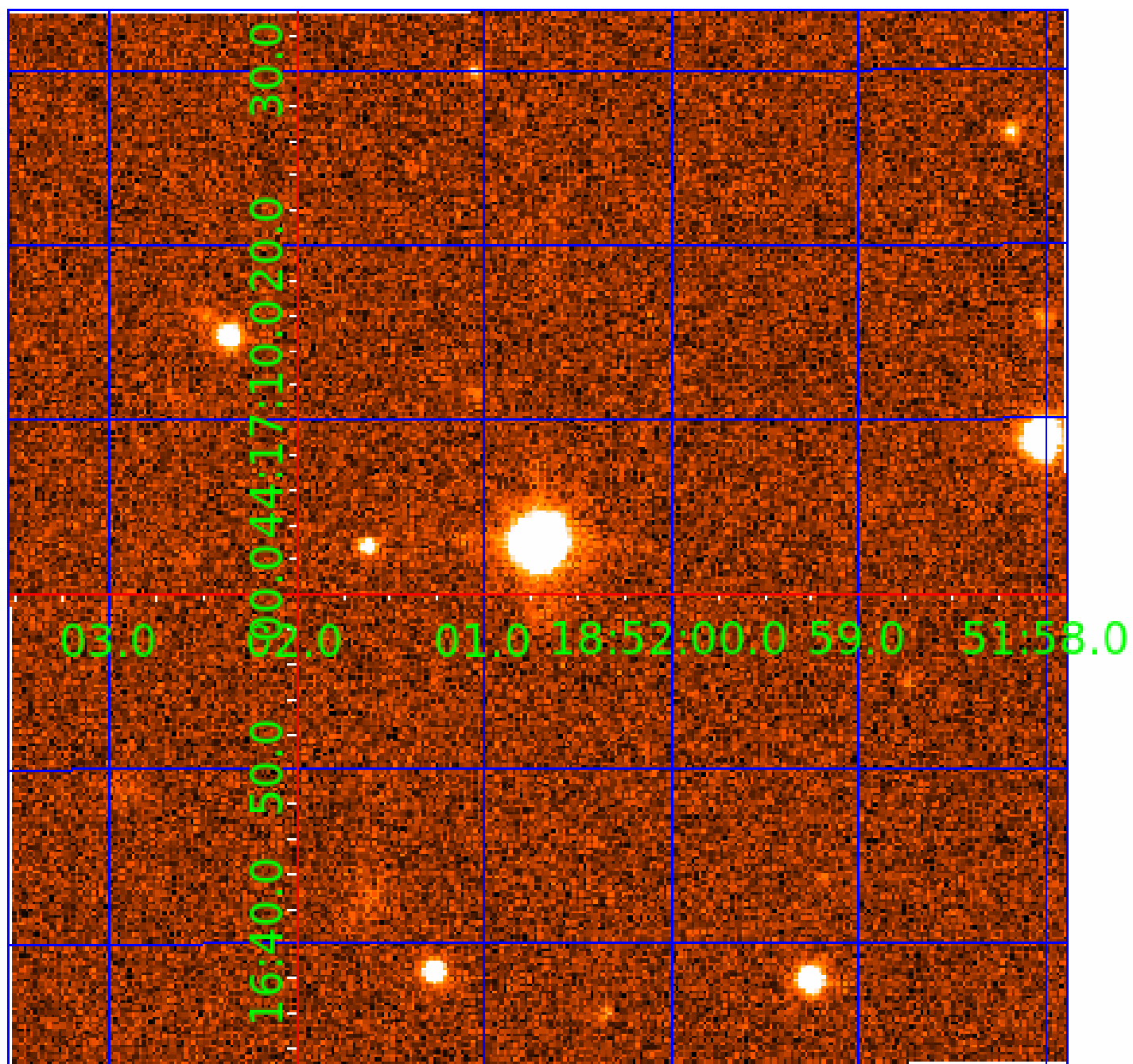


fluxWeightedCentroids, Planet 3 of 6



UKIRT Image

Declination



KIC 008280511

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})
008280511-01	OBS	1151.01	10.435458	134.825016	198.3	3.571	29.6	31.0	0.85	5528	1.44	78.42
008280511-02	OBS	1151.02	7.410873	135.751810	123.2	3.351	21.5	23.0	0.85	5528	1.12	123.78
008280511-03	OBS	1151.03	5.249731	135.466552	67.7	2.647	12.2	13.6	0.85	5528	0.79	196.01
008280511-04	OBS	1151.04	17.453473	146.649659	79.4	4.022	8.4	10.0	0.85	5528	0.87	39.50
008280511-05	OBS	1151.05	21.720052	134.776794	81.1	4.398	7.8	9.3	0.85	5528	0.92	29.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008280511-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008280511-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008280511-03	OBS	PC	0.97	0	0	0	0	NO_COMMENT
008280511-04	OBS	PC	0.90	0	0	0	0	NO_COMMENT
008280511-05	OBS	PC	0.80	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.

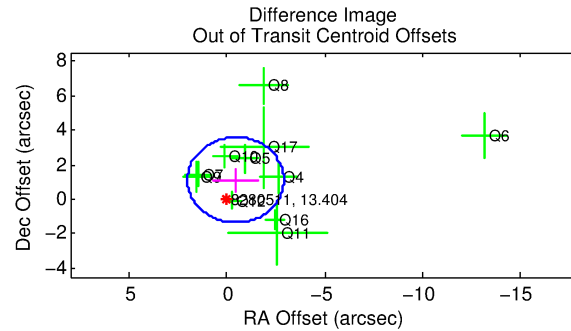
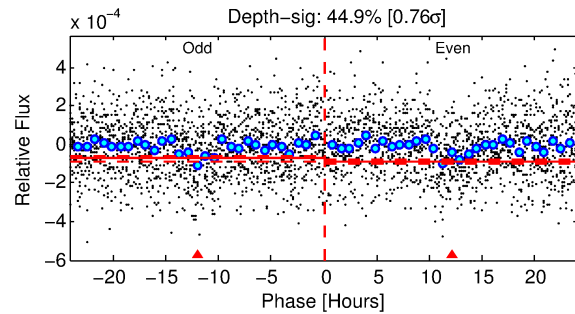
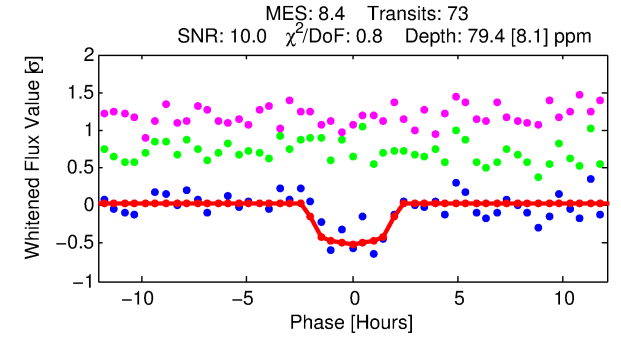
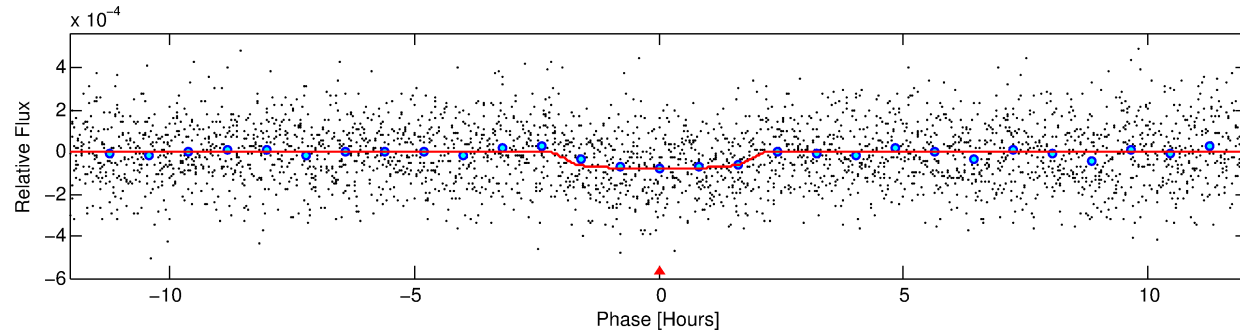
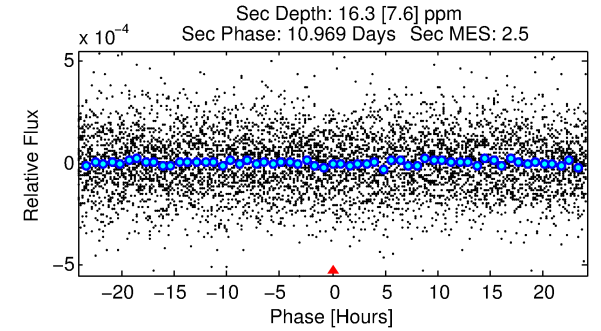
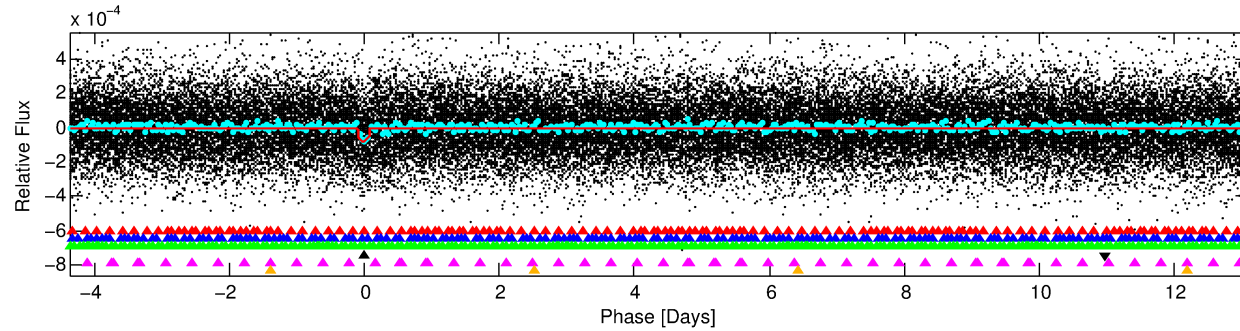
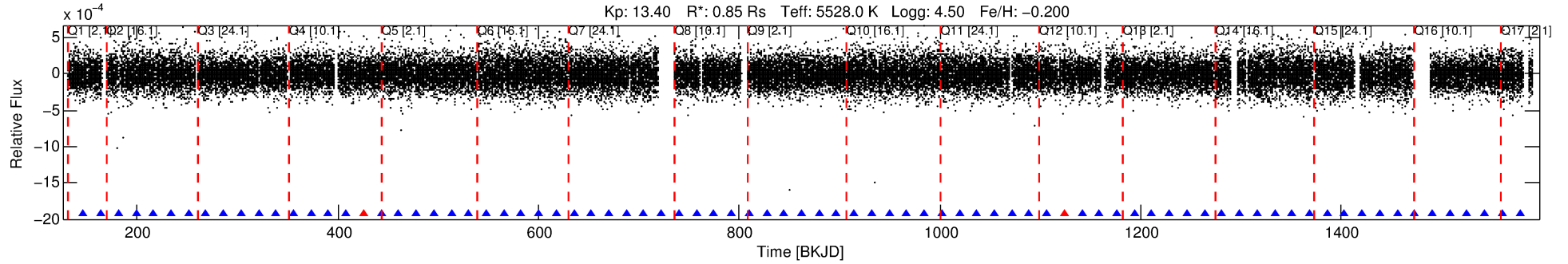
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008280511-04

No Significant Match Found

DV One-Page Summary

KIC: 8280511 Candidate: 4 of 6 Period: 17.453 d
KOI: K01151.04 Corr: 0.970



DV Fit Results:

Period = 17.45347 [0.00018] d
Epoch = 146.6497 [0.0085] BKJD
Rp/R* = 0.0094 [0.0063]
a/R* = 17.82 [52.89]
b = 0.85 [0.96]
Seff = 39.50 [6.26]
Teq = 639 [25] K
Rp = 0.87 [0.59] Re
a = 0.1241 [0.0113] AU
Ag = 181.31 [257.20] [0.70σ]
Teffp = 3627 [1282] K [2.33σ]

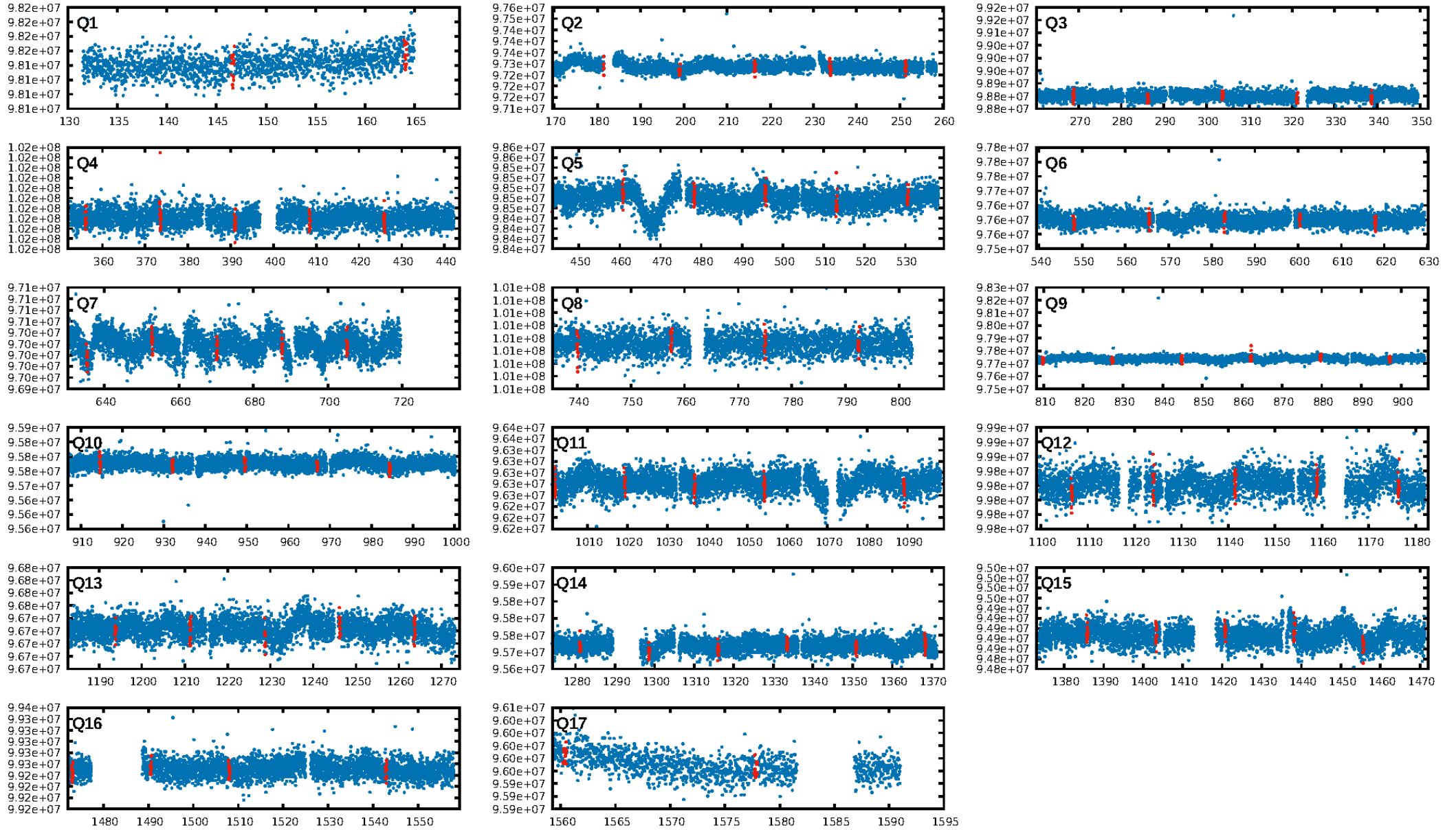
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [31.31σ]
LongPeriod-sig: 100.0% [17.18σ]
ModelChiSquare2-sig: 99.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.99e-17
RollingBand-fgt: 0.97 [67/69]
GhostDiagnostic-chr: 2.228
Centroid-sig: N/A
Centroid-so: 2.583 arcsec [1.89σ]
OotOffset-rm: 1.199 arcsec [1.46σ]
OotOffset-st: 2/2/4/3 [11]
KicOffset-rm: 1.041 arcsec [1.28σ]
KicOffset-st: 2/2/4/3 [11]
DiffImageQuality-fgm: 0.45 [5/11]
DiffImageOverlap-fno: 1.00 [17/17]

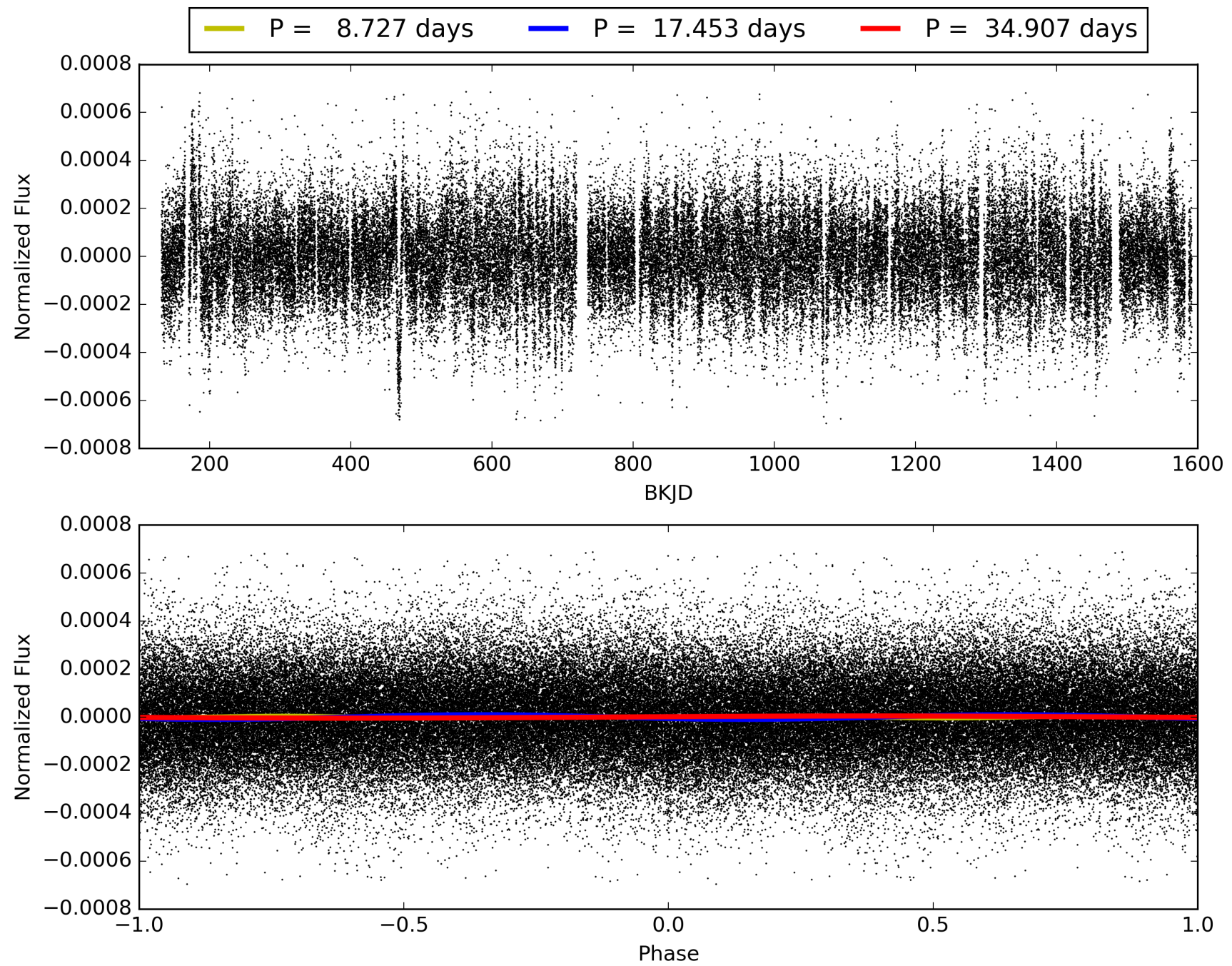
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 18:07:17 Z

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

TCE 008280511-04, PDC Light Curves

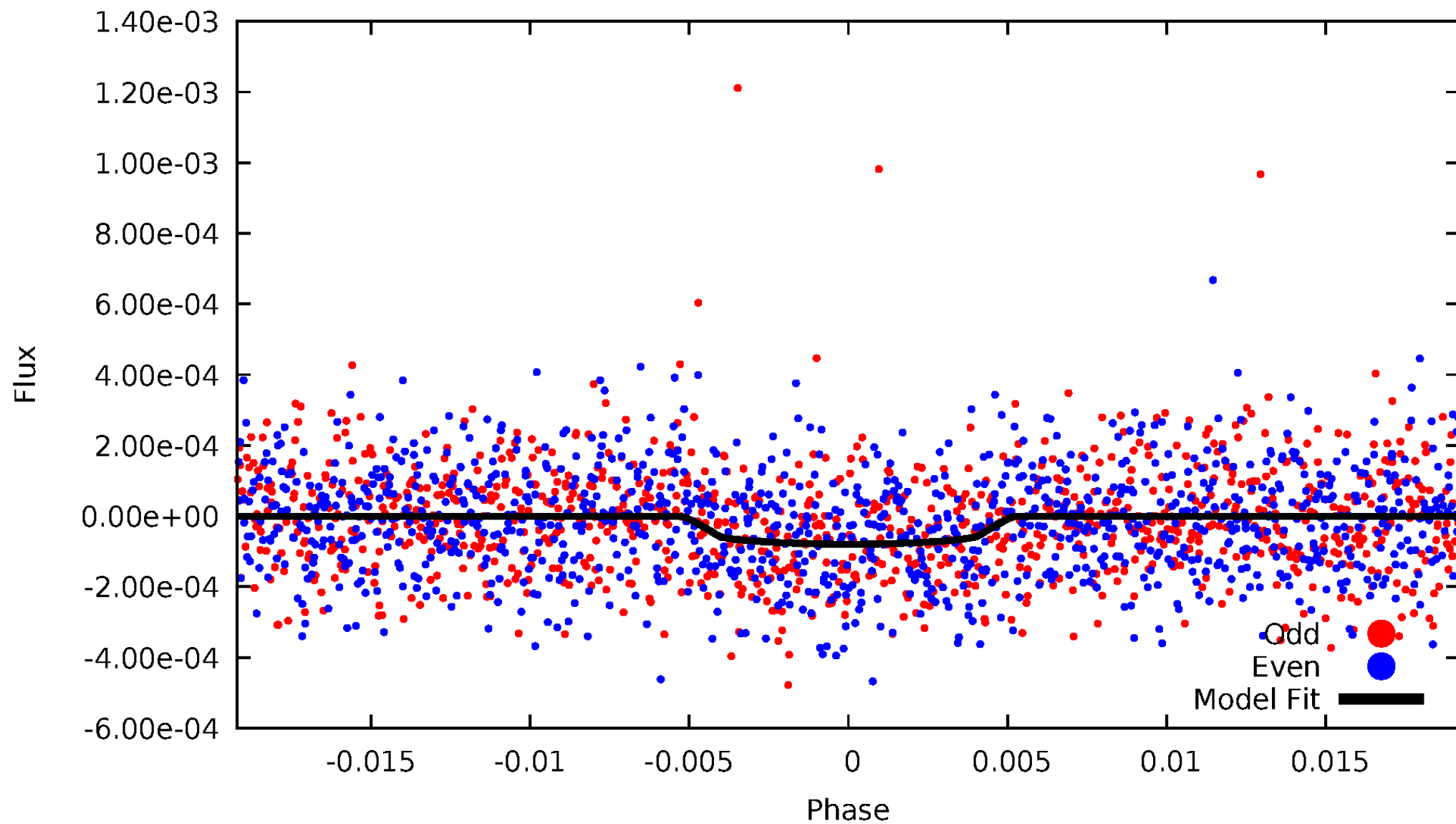


TCE 008280511-04



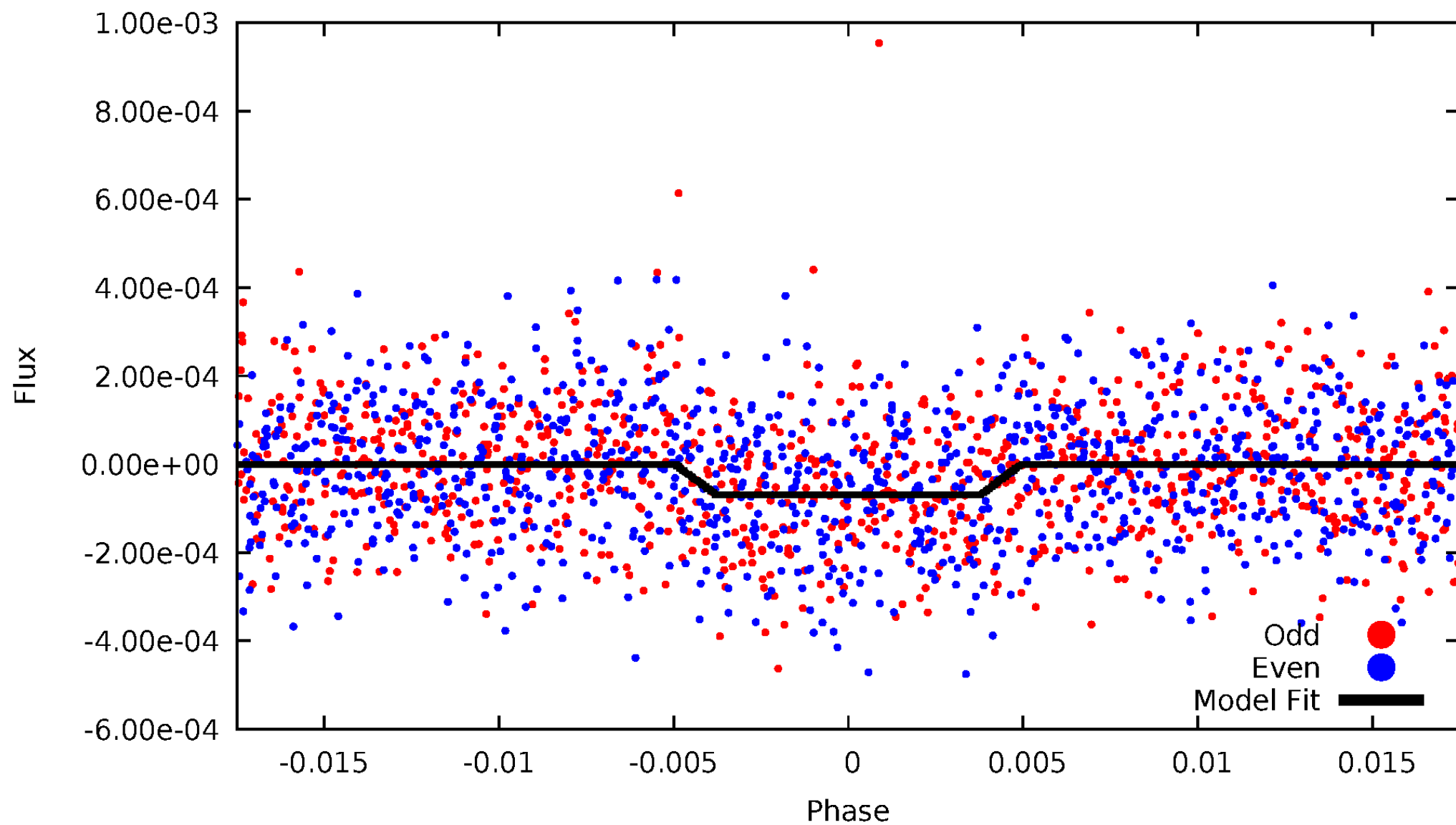
DV Odd/Even

TCE 008280511-04



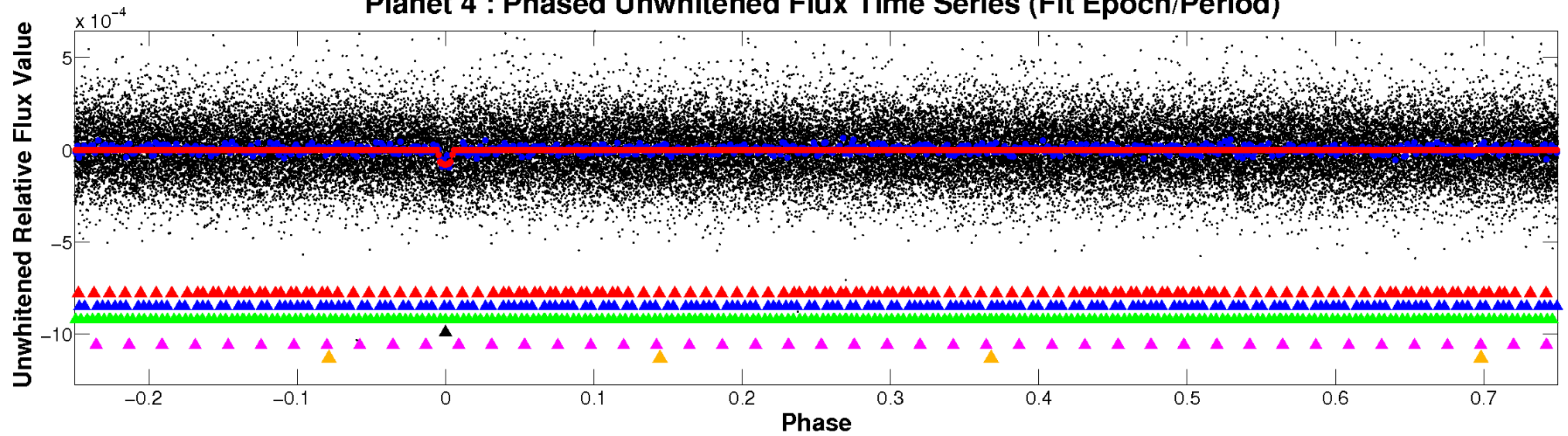
ALT Odd/Even

TCE 008280511-04

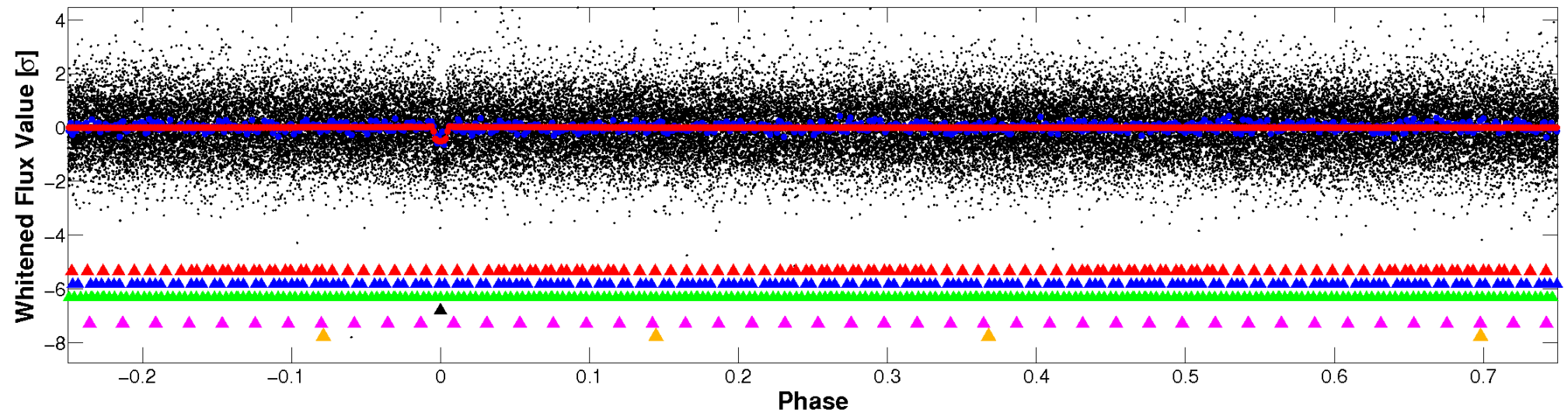


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

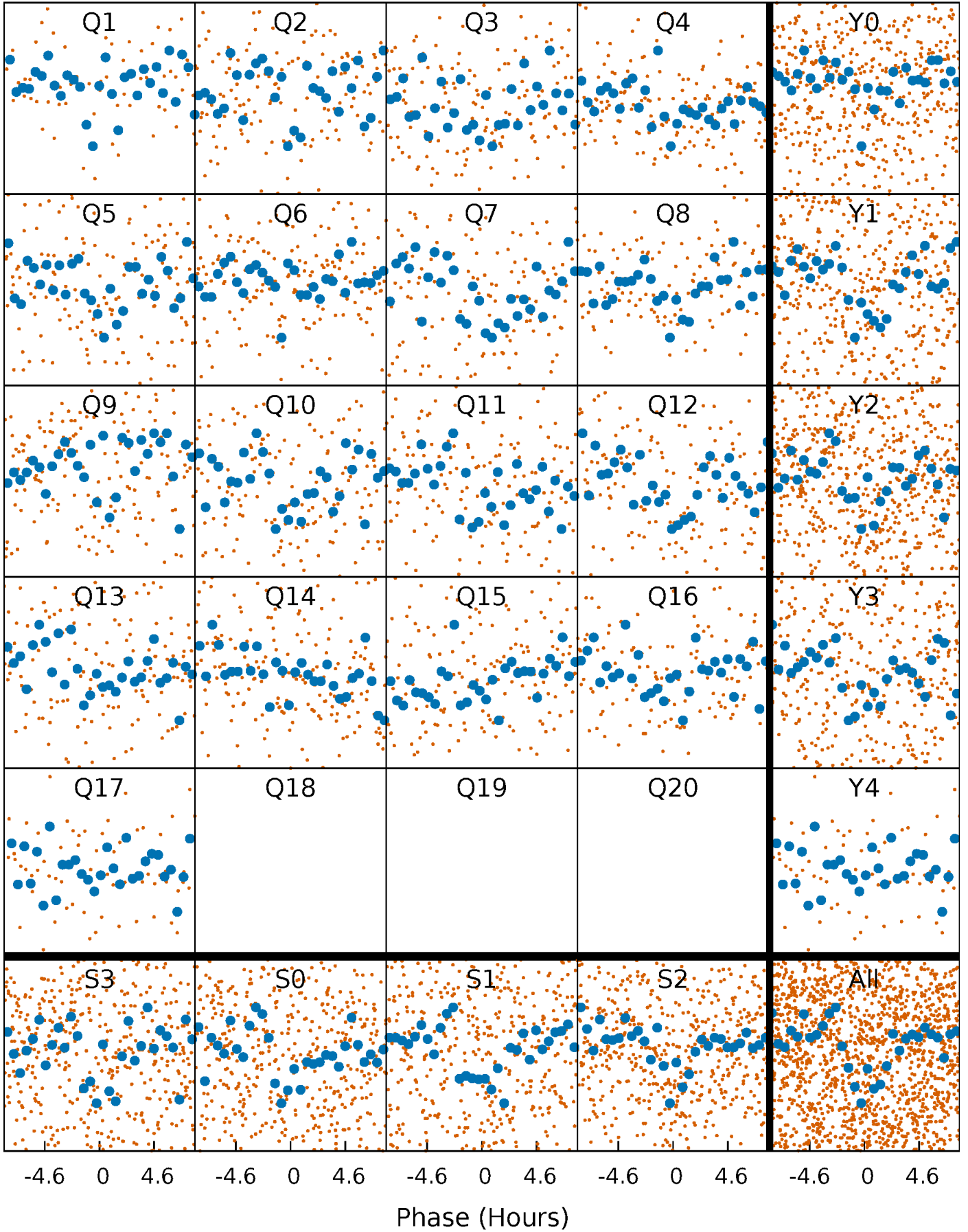


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



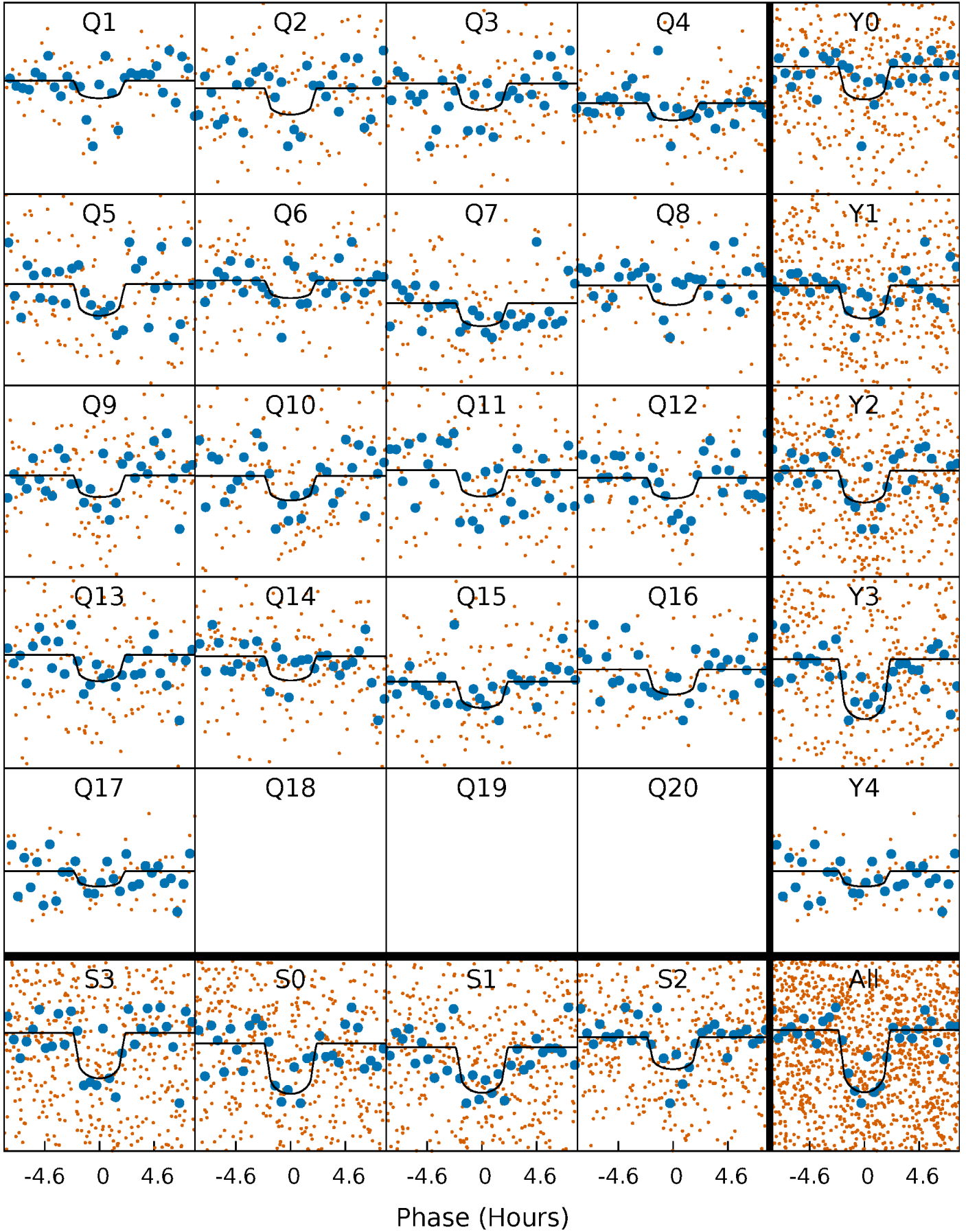
PDC Quarter-Phased Transit Curves

TCE 008280511-04 P= 17.453473 Days $T_0=146.649659$ (BKJD)



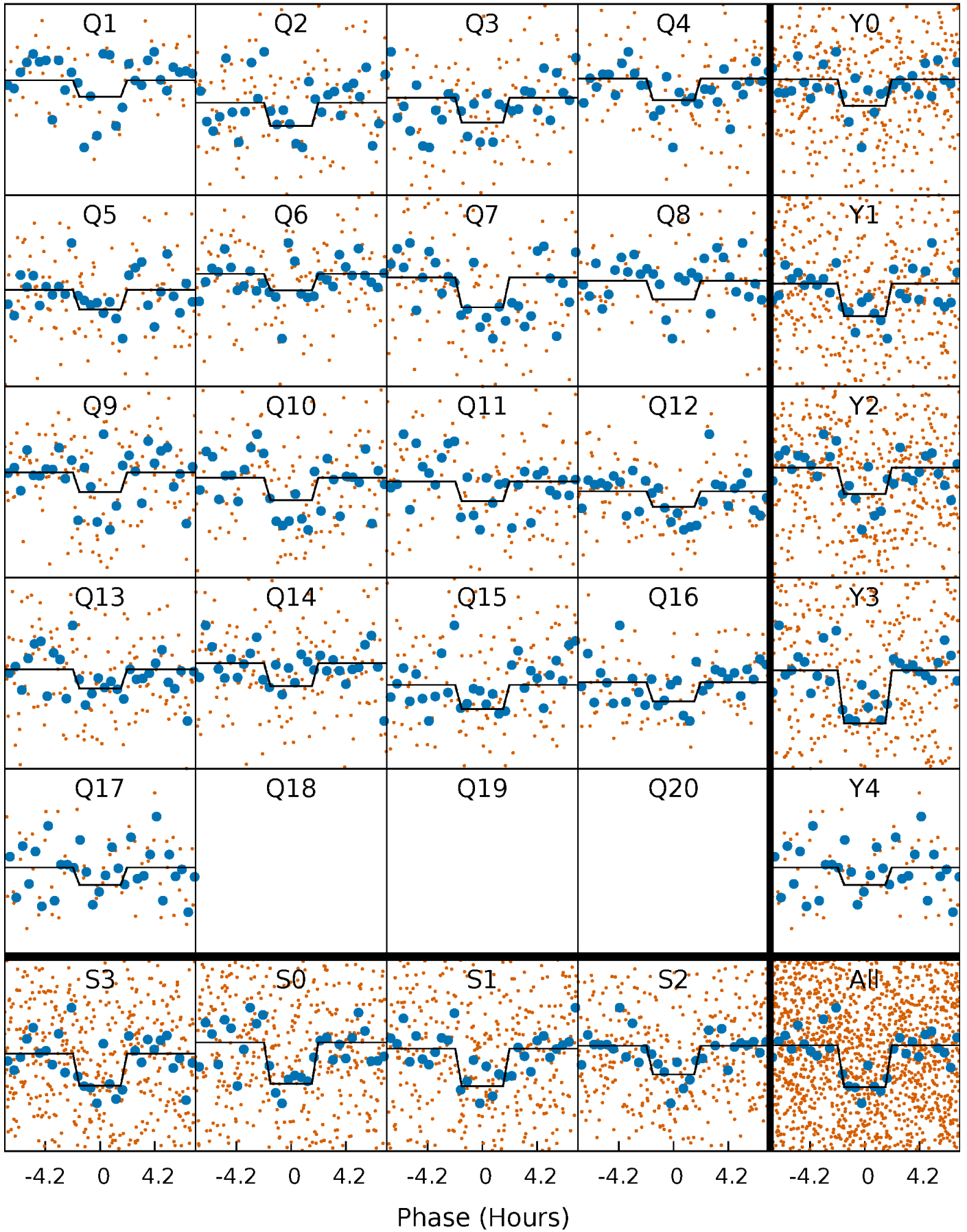
DV Quarter-Phased Transit Curves

TCE 008280511-04 P= 17.453473 Days $T_0=146.649659$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

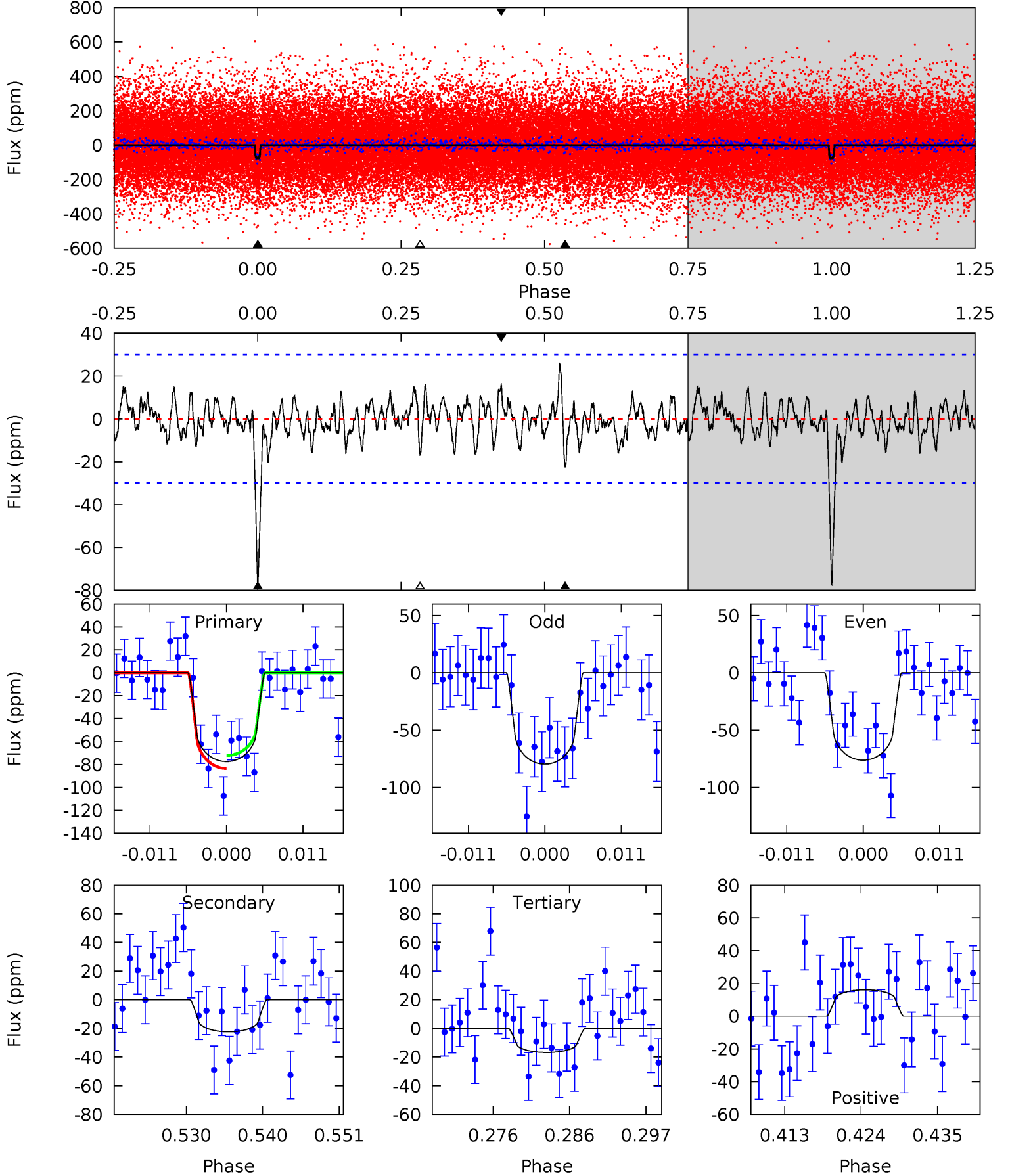
TCE 008280511-04 P= 17.453419 Days $T_0=146.653224$ (BKJD)



DV Model-Shift Uniqueness Test

008280511-04, $P = 17.453473$ Days, $E = 129.196186$ Days

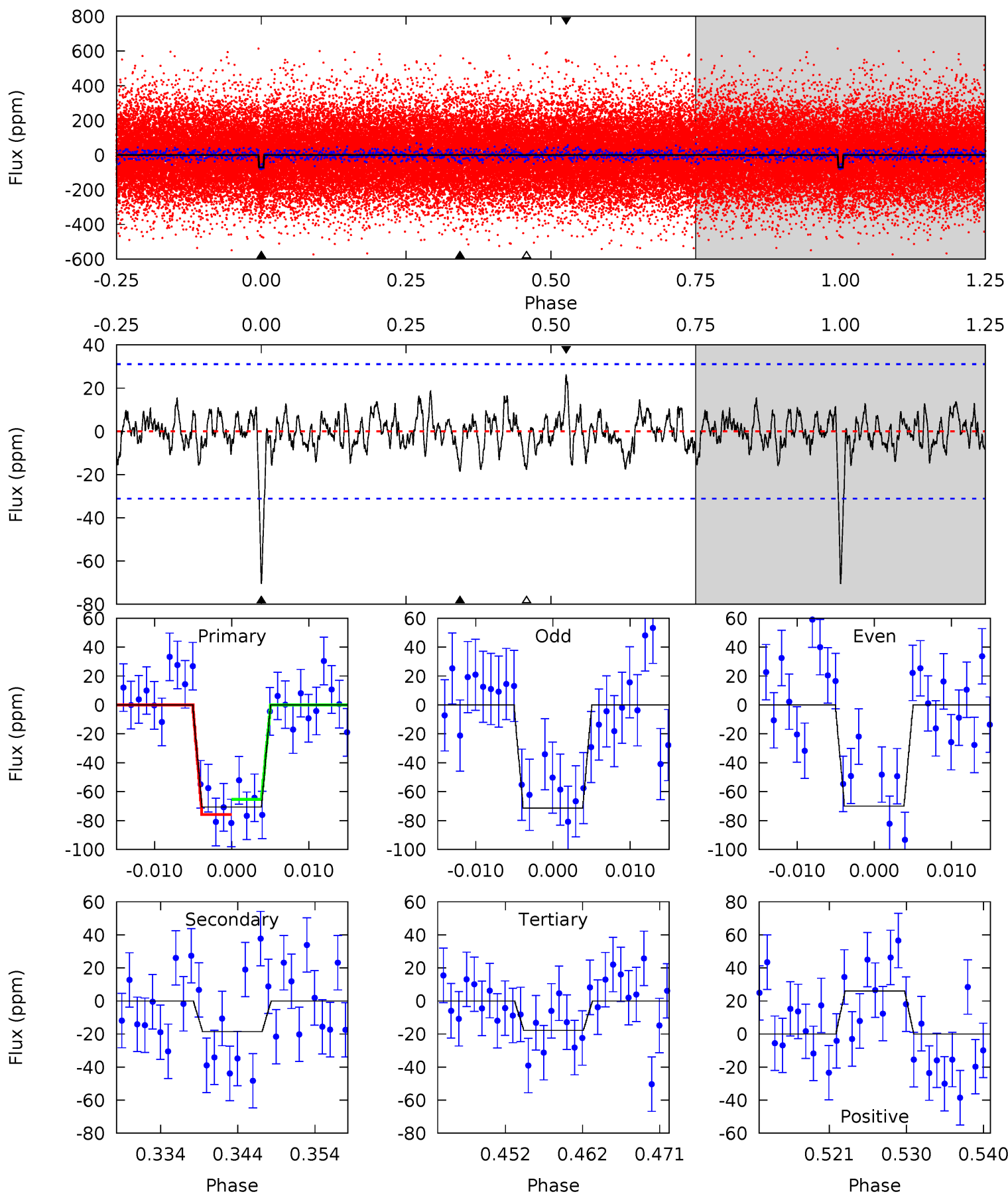
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	3.75	2.81	2.70	5.02	2.56	1.11	10.2	10.3	0.94	1.05	0.29	0.96	0.25	0.95



Alt Model-Shift Uniqueness Test

008280511-04, P = 17.453419 Days, E = 129.199805 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	3.01	2.88	4.22	5.03	2.58	1.09	8.54	7.20	0.13	-1.21	0.12	1.00	0.27	0.85



Stellar Parameters For KIC 008280511

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5528^{+110}_{-110}	$4.499^{+0.063}_{-0.077}$	$-0.200^{+0.150}_{-0.150}$	$0.853^{+0.089}_{-0.067}$	$0.838^{+0.056}_{-0.046}$	$1.899^{+0.488}_{-0.464}$
	+2%/-2%	+1%/-2%	+75%/-75%	+10%/-8%	+7%/-5%	+26%/-24%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 008280511-04 / KOI 1151.04

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-22 ± 6	$0.90^{+0.55}_{-0.50}$	894^{+28}_{-27}	4150^{+1594}_{-667}	235^{+908}_{-151}
Alt.	-19 ± 6	$0.84^{+0.58}_{-0.47}$	896^{+29}_{-30}	4082^{+1656}_{-716}	215^{+914}_{-144}

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 $A_{obs} \gg 1.0$

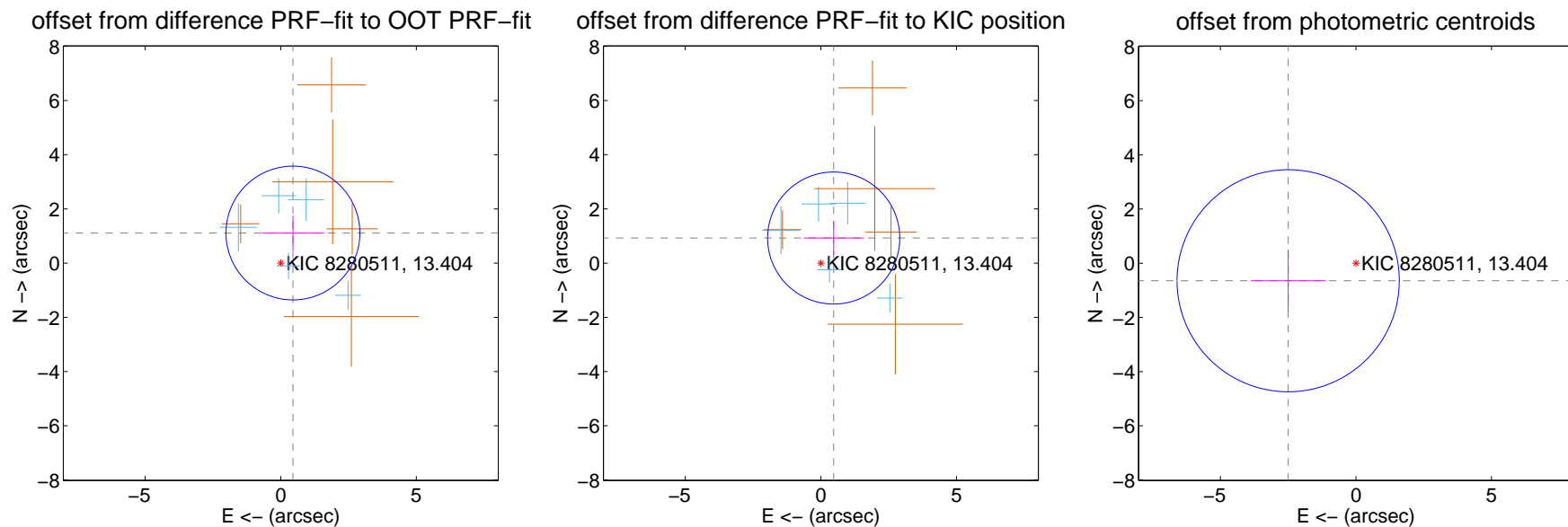
DV Centroid Data

Supplemental centroid analysis for 008280511-04. Kepler magnitude: 13.40. Transit SNR 10.00

There are 5 quarters with good PRF difference image offsets

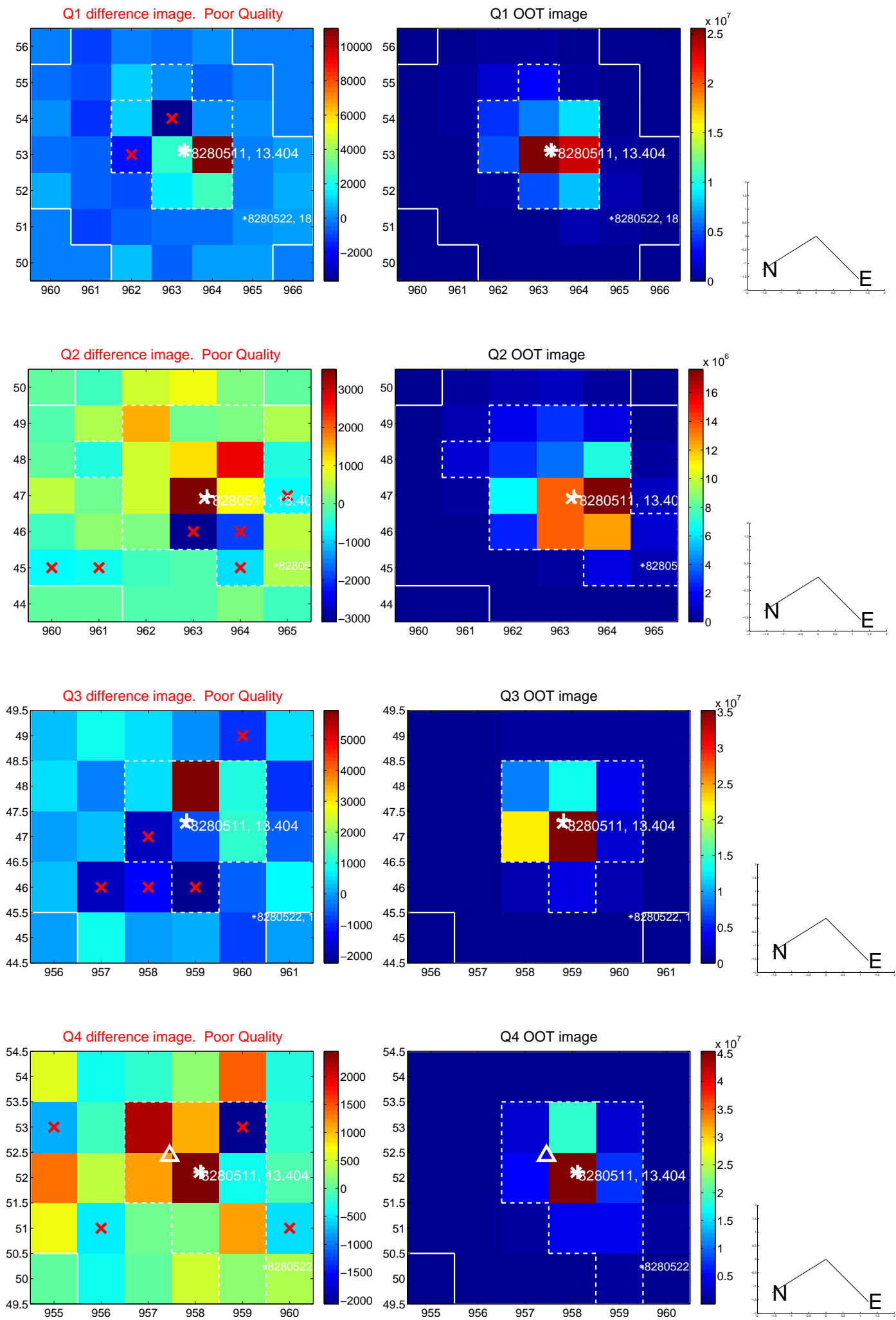
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.199 ± 0.823	1.46	-0.449 ± 1.148	1.111 ± 0.647
PRF-fit source offset from KIC position	1.041 ± 0.812	1.28	-0.473 ± 1.106	0.927 ± 0.638
photometric centroid source offset	2.58 ± 1.37	1.89	2.50 ± 1.38	-0.65 ± 1.15

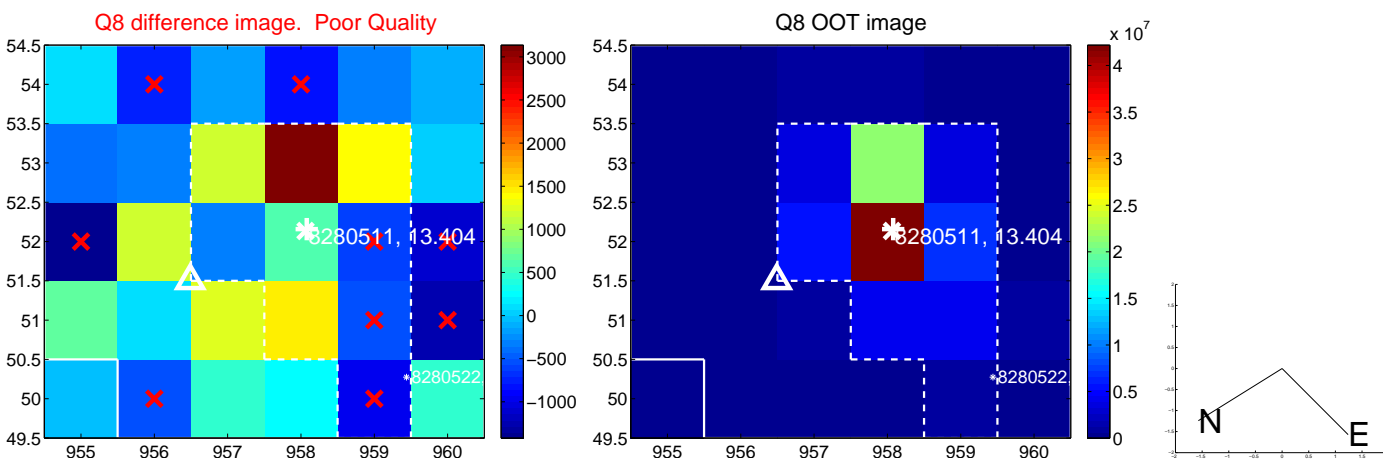
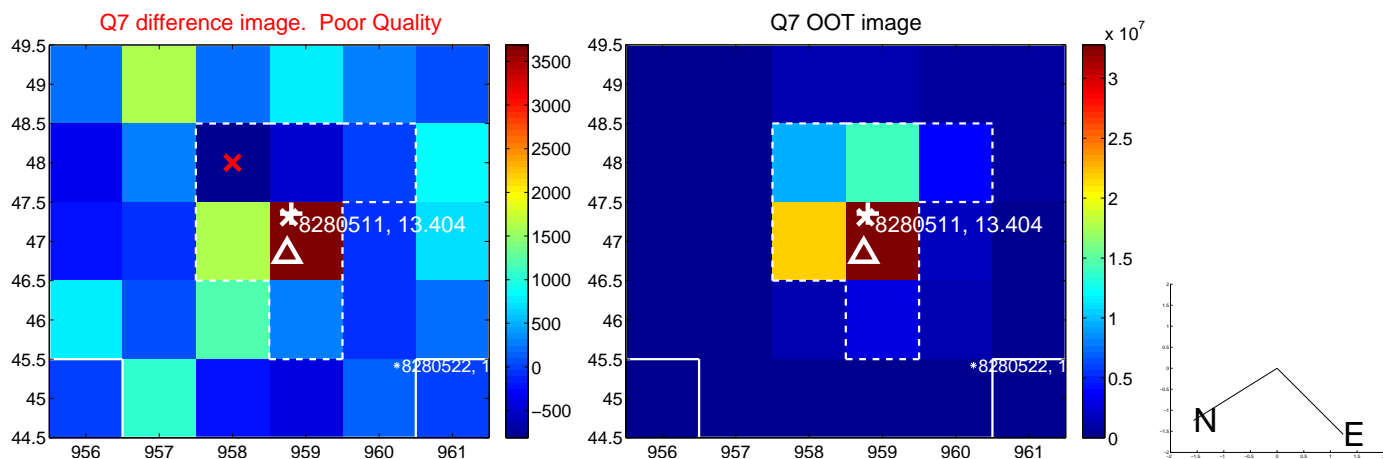
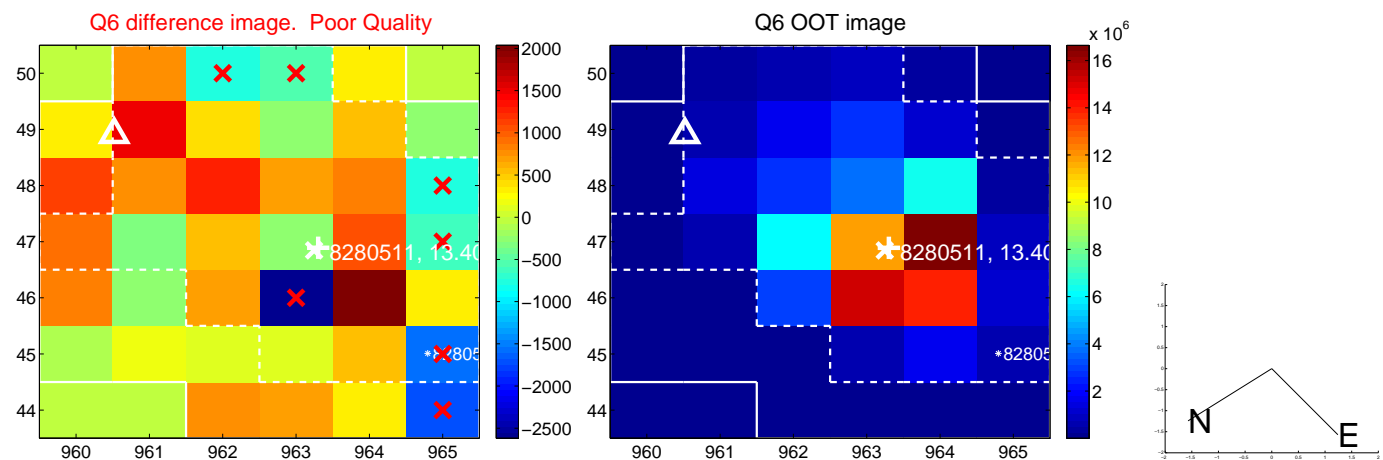
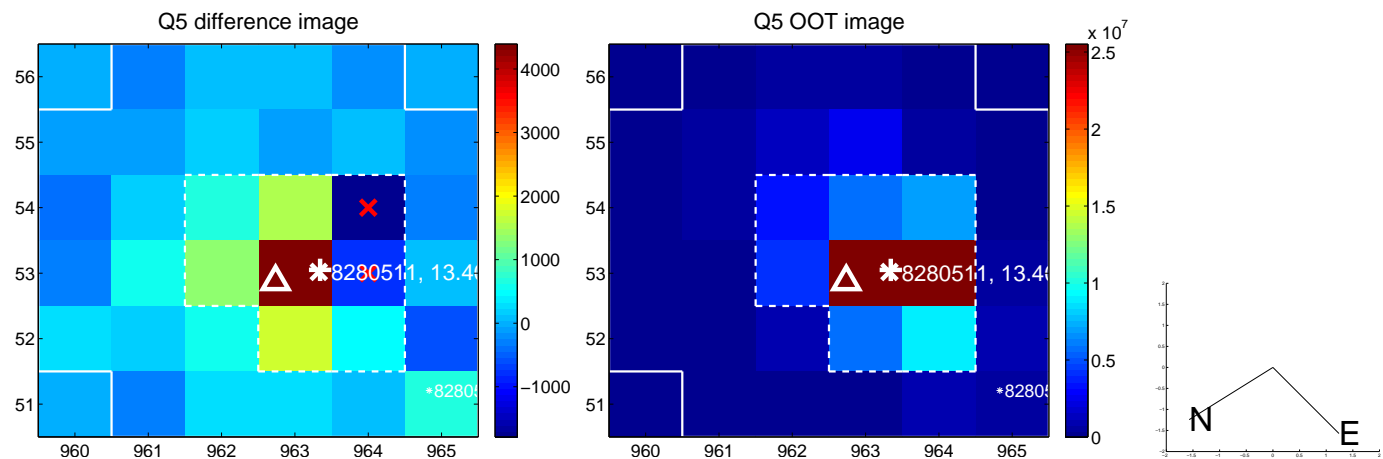


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

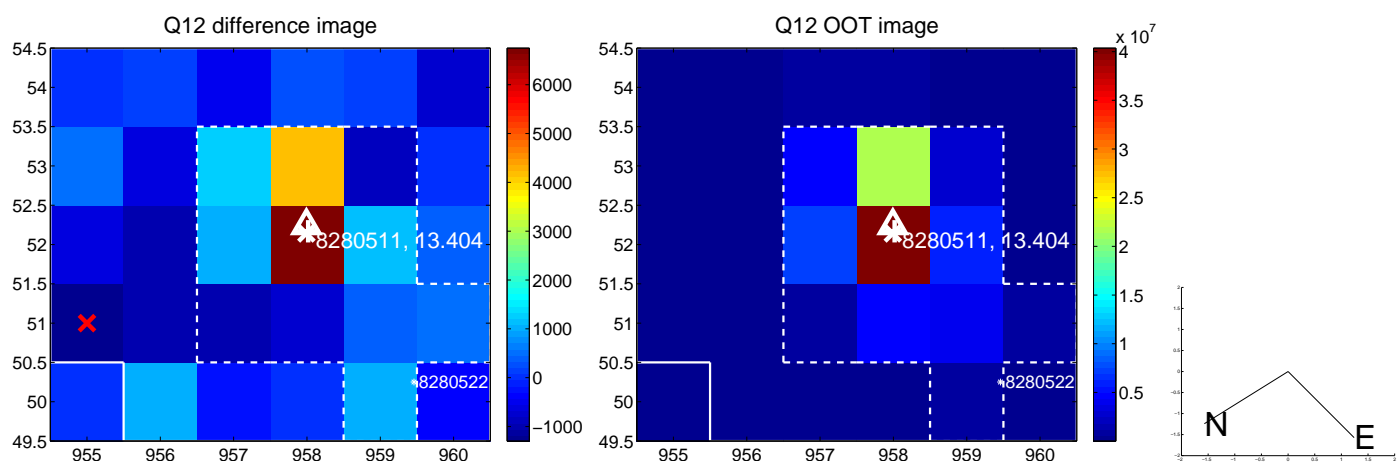
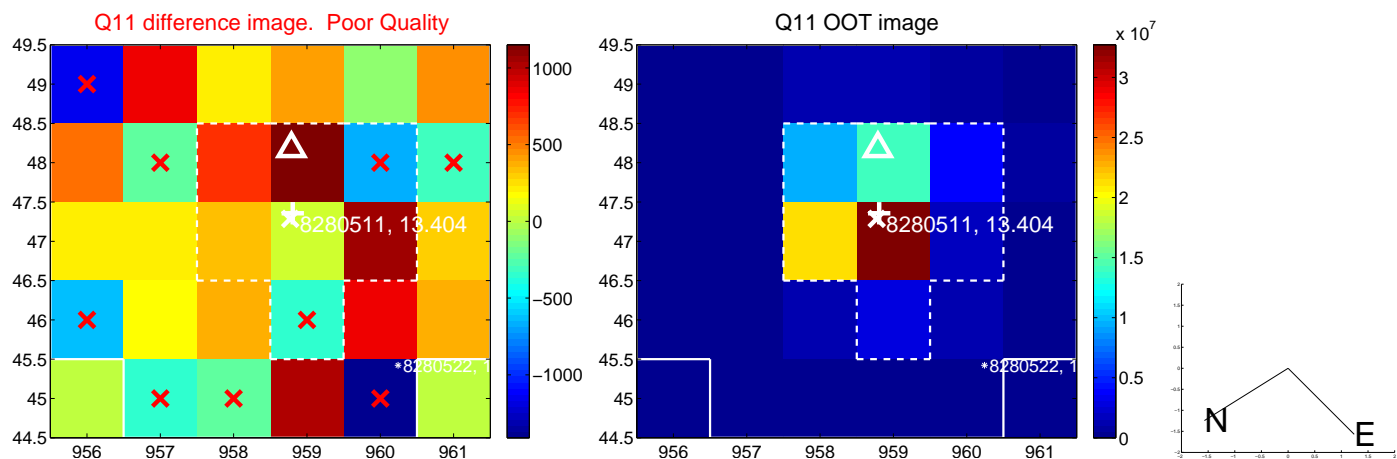
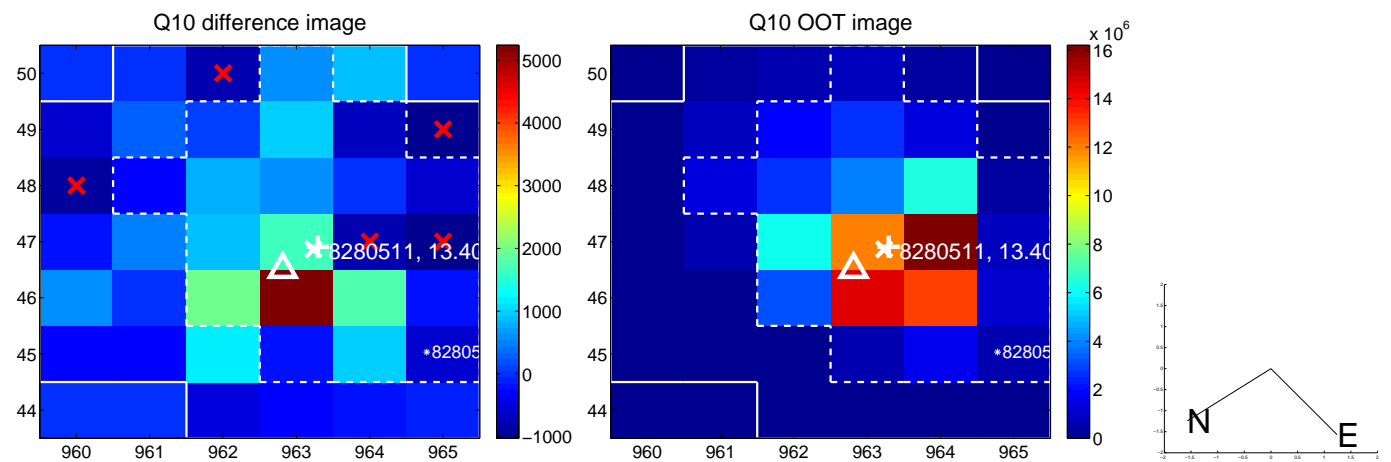
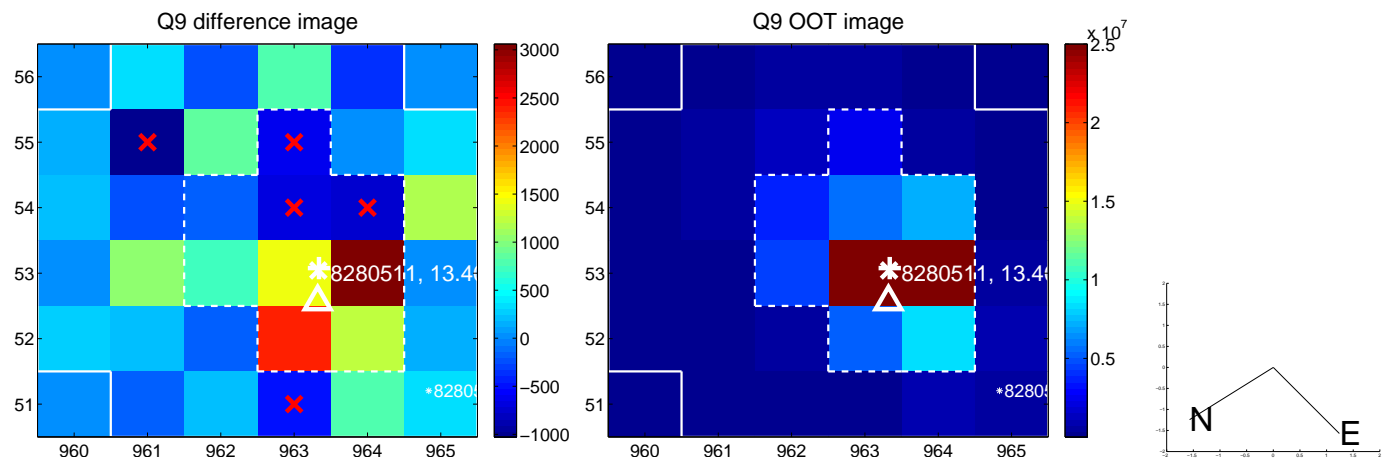
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



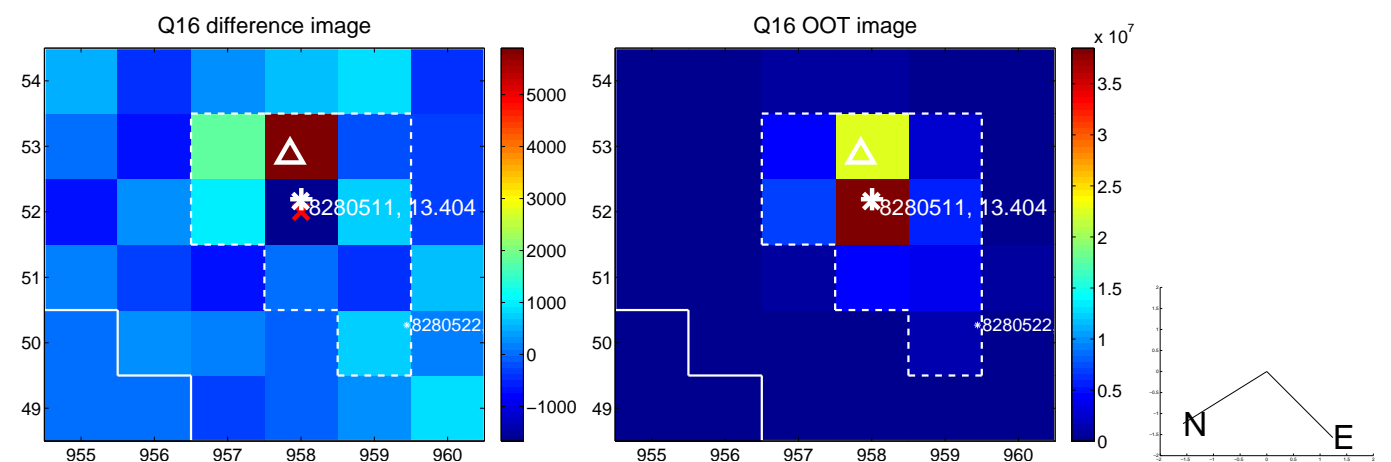
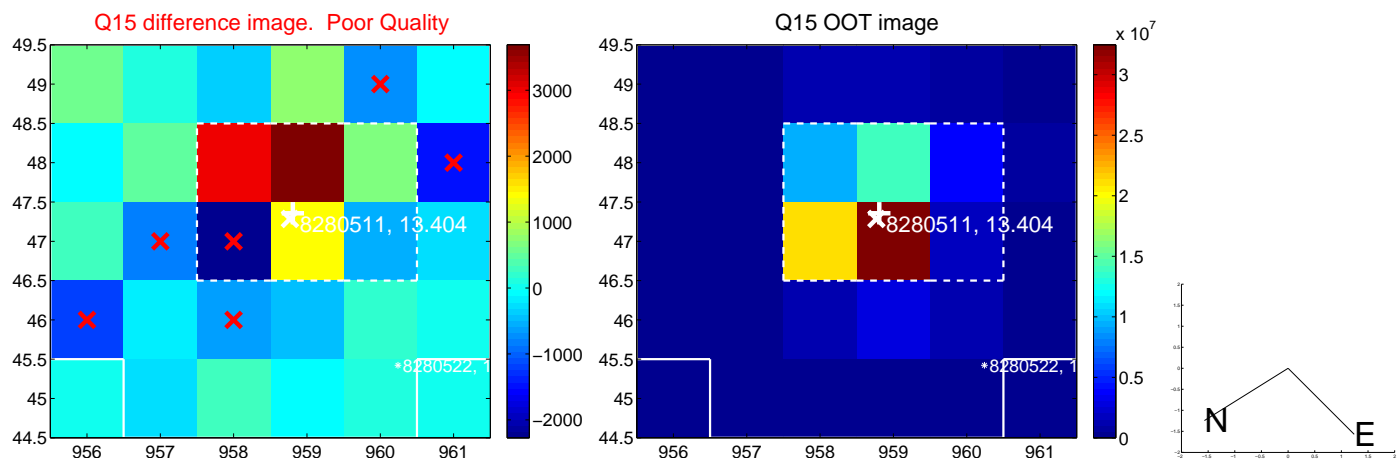
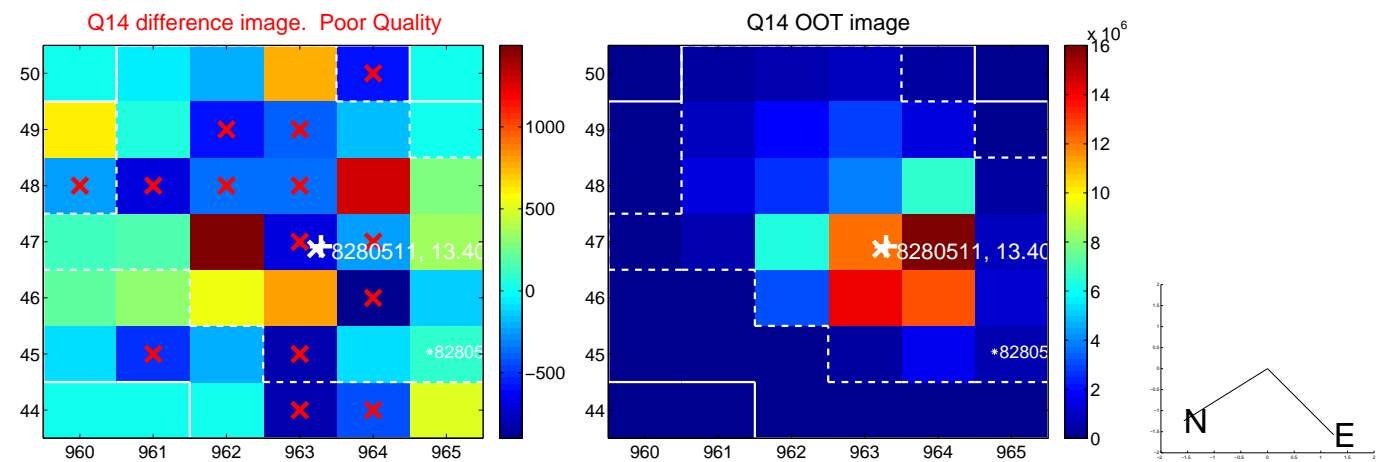
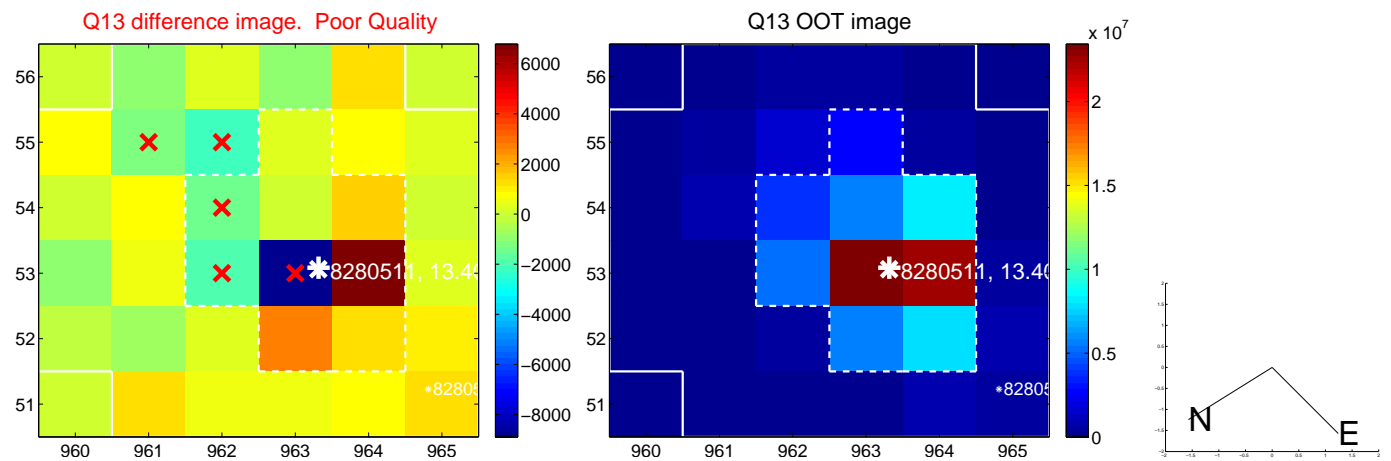
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



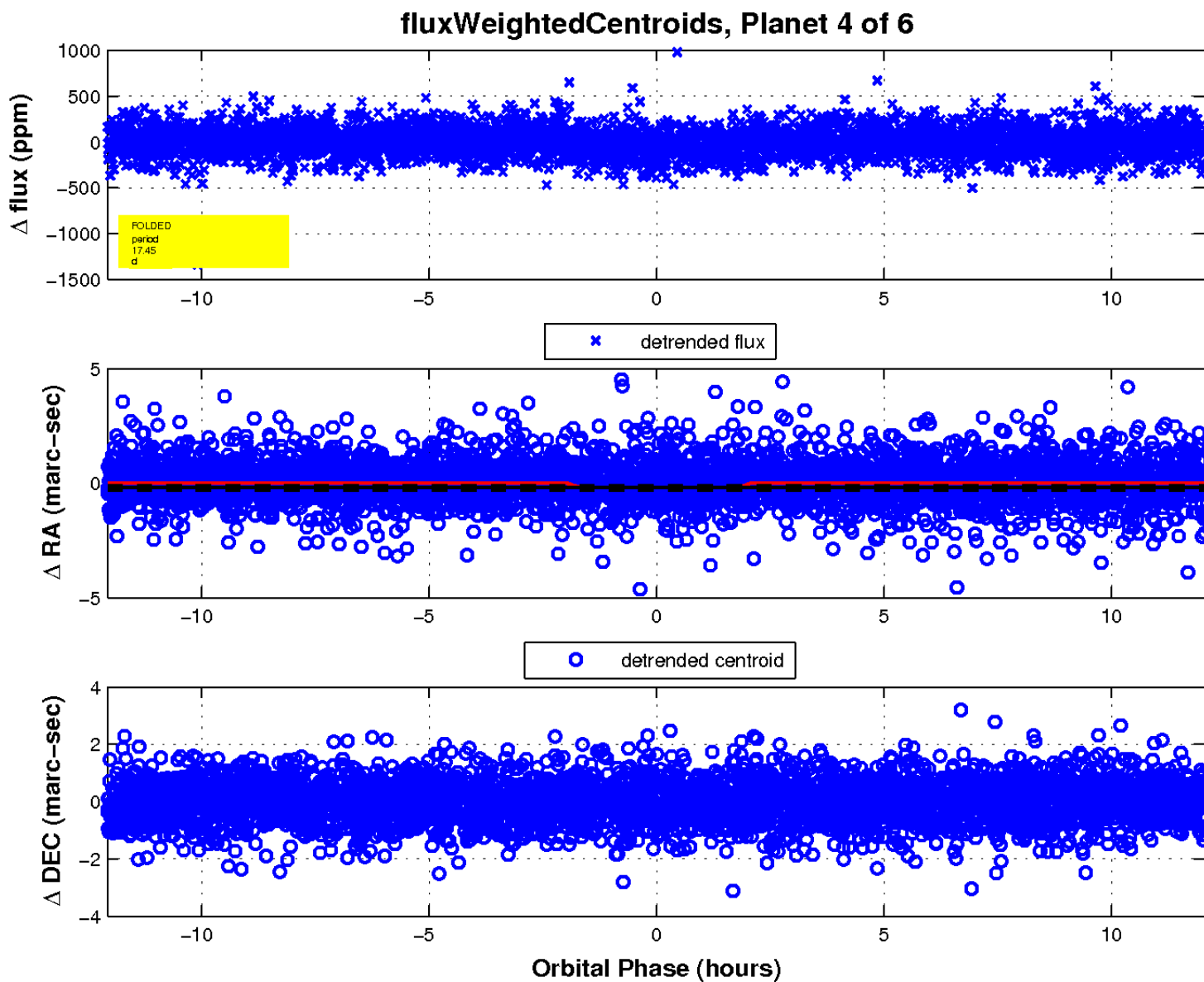
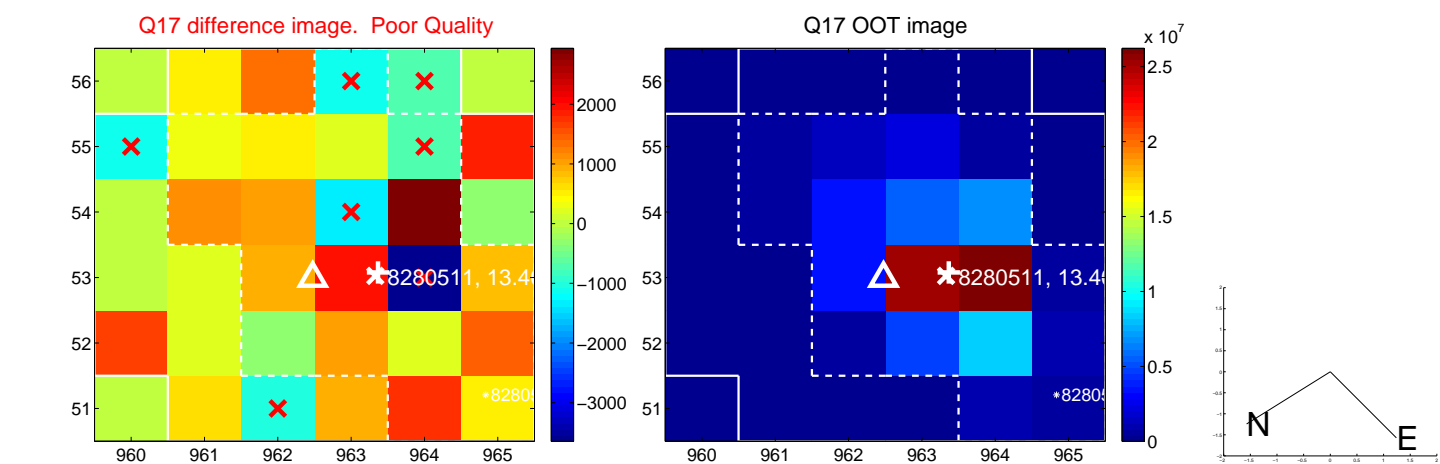
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

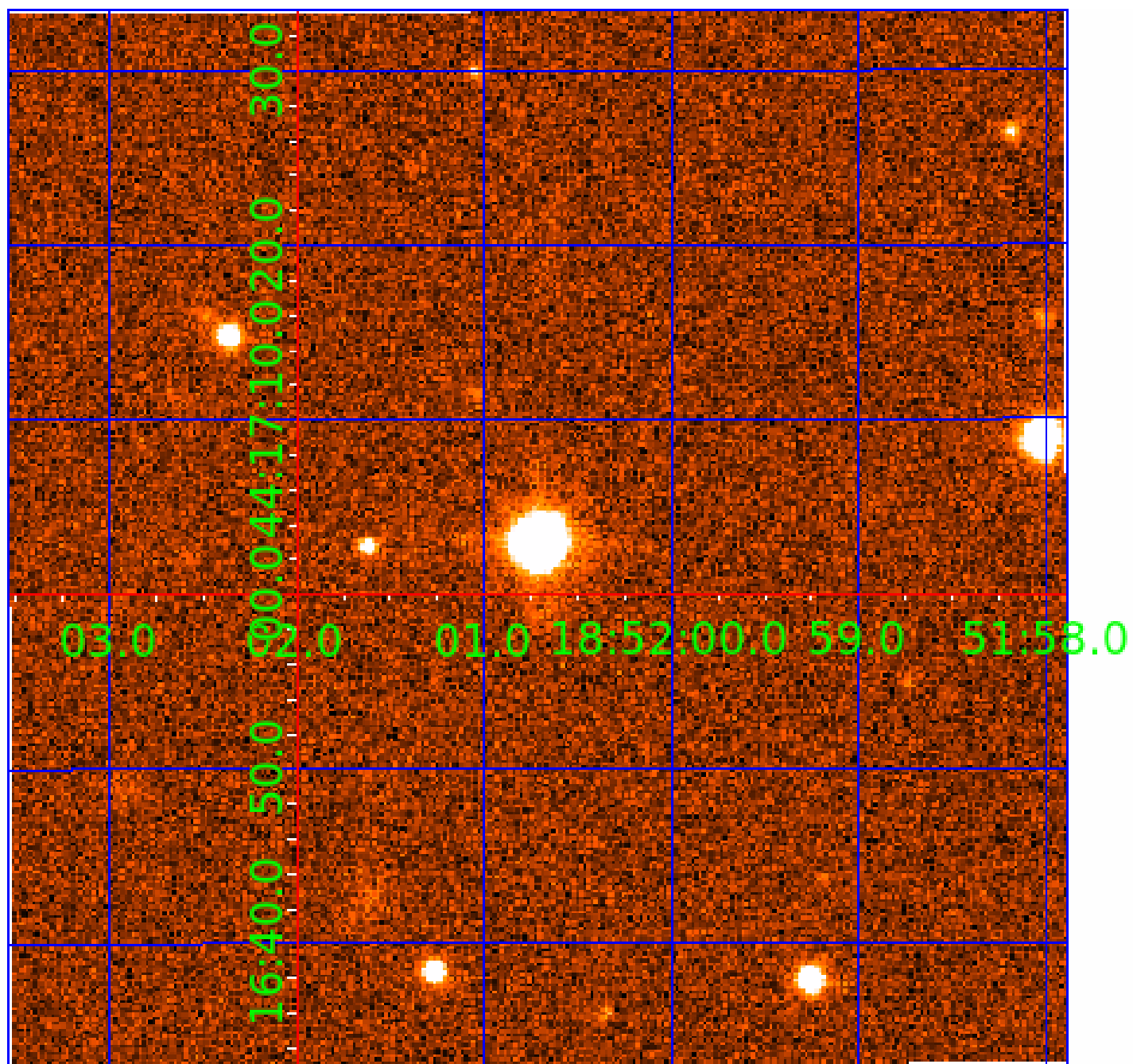


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008280511

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})
008280511-01	OBS	1151.01	10.435458	134.825016	198.3	3.571	29.6	31.0	0.85	5528	1.44	78.42
008280511-02	OBS	1151.02	7.410873	135.751810	123.2	3.351	21.5	23.0	0.85	5528	1.12	123.78
008280511-03	OBS	1151.03	5.249731	135.466552	67.7	2.647	12.2	13.6	0.85	5528	0.79	196.01
008280511-04	OBS	1151.04	17.453473	146.649659	79.4	4.022	8.4	10.0	0.85	5528	0.87	39.50
008280511-05	OBS	1151.05	21.720052	134.776794	81.1	4.398	7.8	9.3	0.85	5528	0.92	29.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008280511-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008280511-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008280511-03	OBS	PC	0.97	0	0	0	0	NO_COMMENT
008280511-04	OBS	PC	0.90	0	0	0	0	NO_COMMENT
008280511-05	OBS	PC	0.80	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.

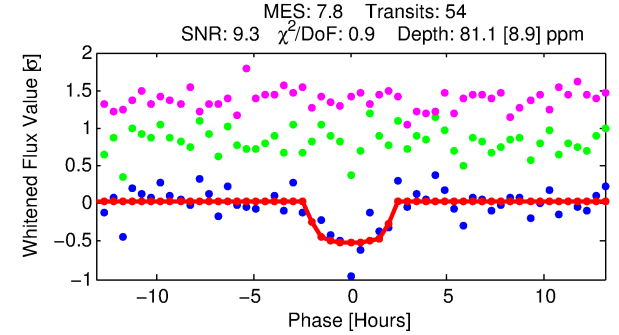
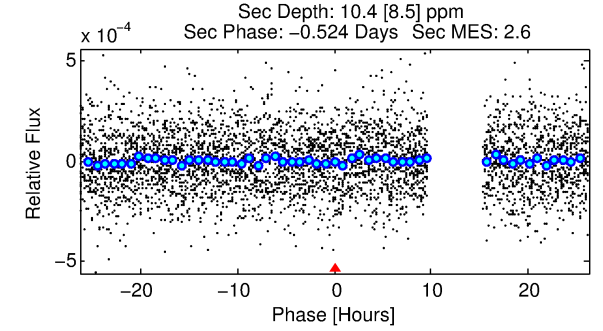
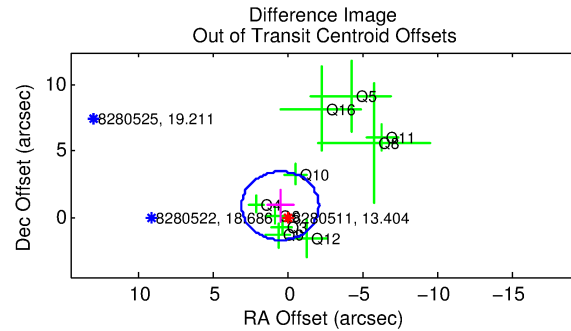
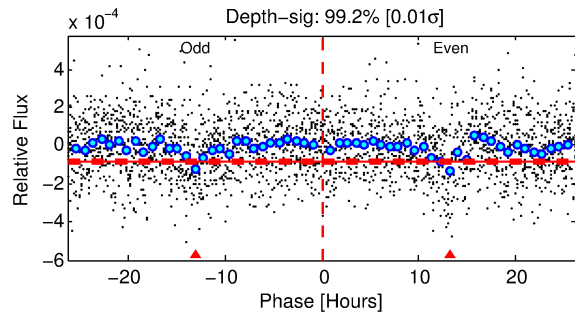
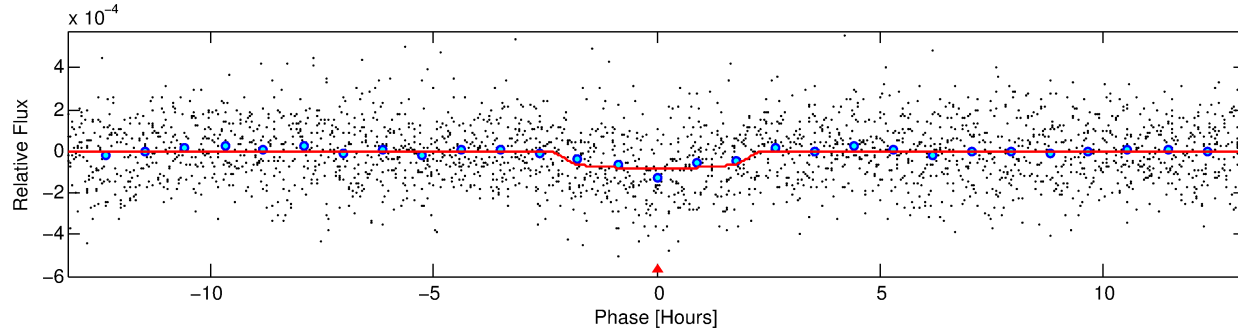
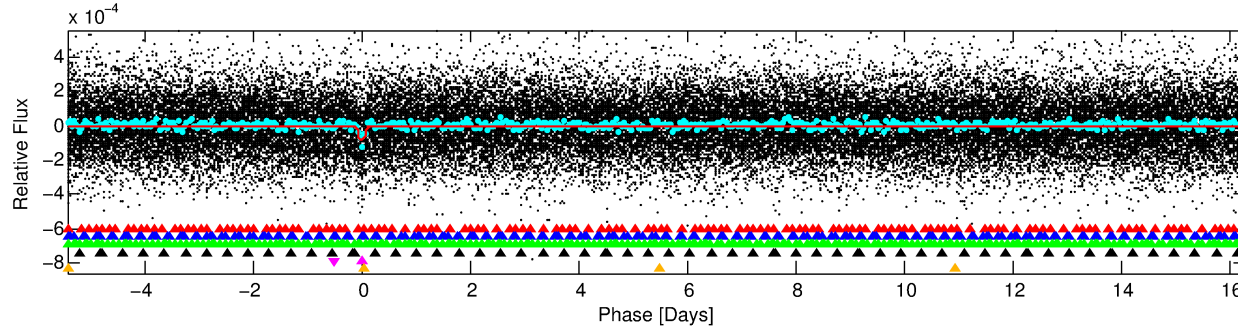
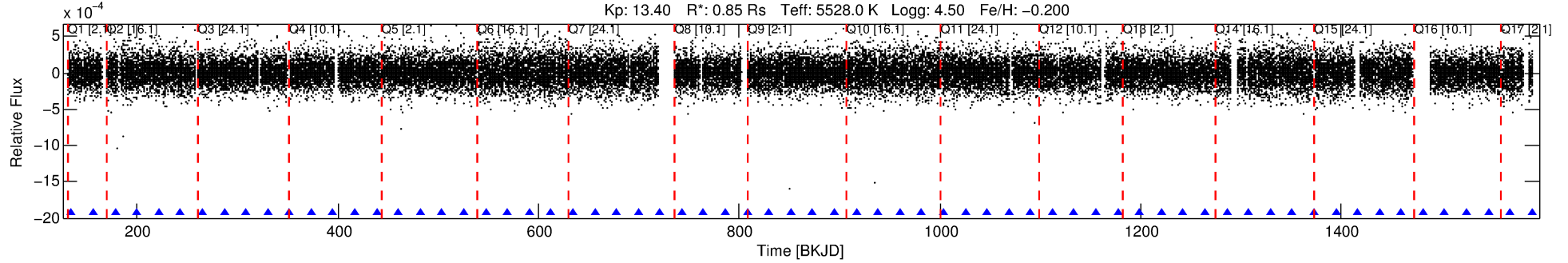
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008280511-05

No Significant Match Found

DV One-Page Summary

KIC: 8280511 Candidate: 5 of 6 Period: 21.720 d
KOI: K01151.05 Corr: 0.953



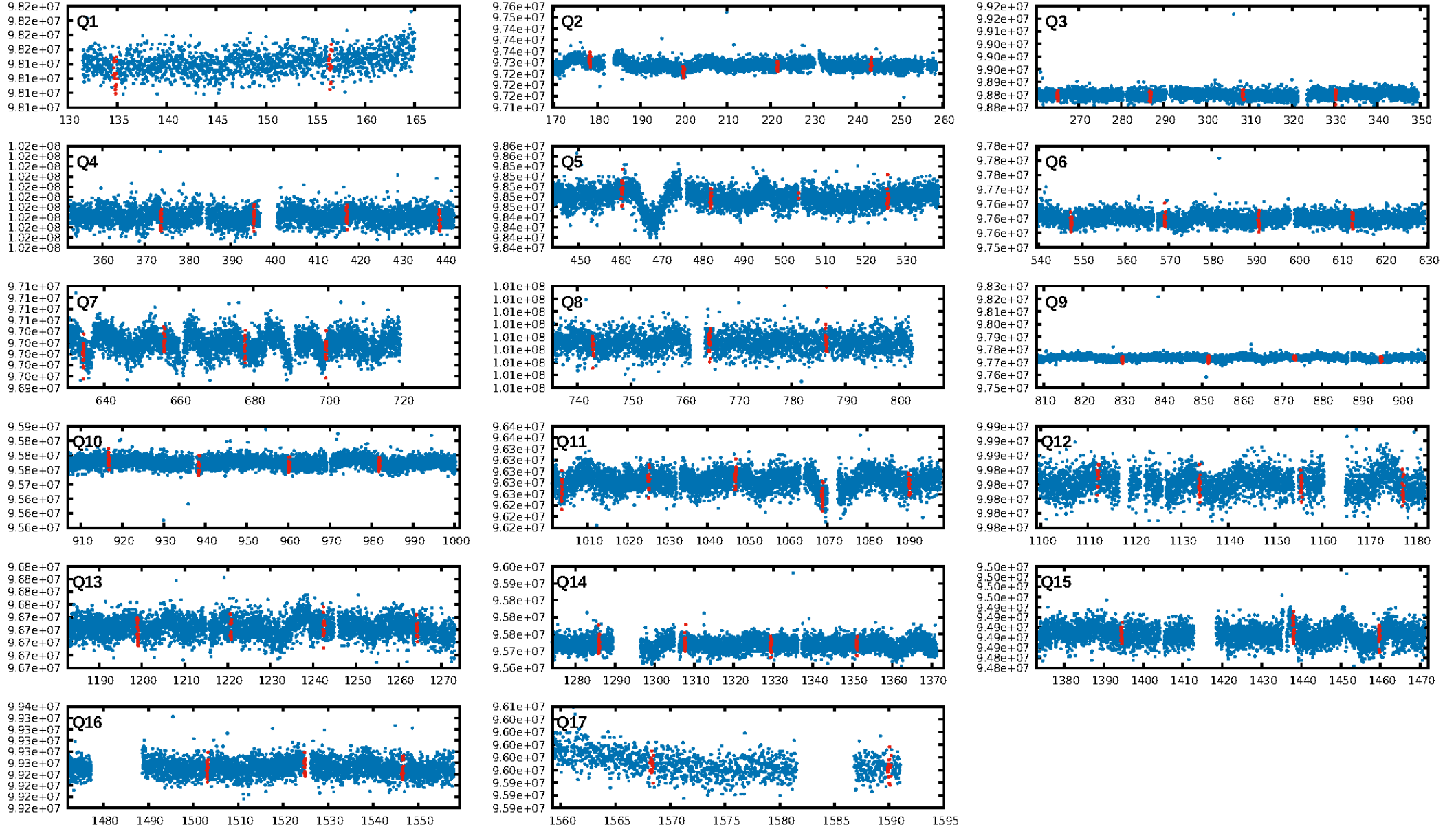
DV Fit Results:

Period = 21.72005 [0.00028] d
Epoch = 134.7768 [0.0110] BKJD
Rp/R* = 0.0098 [0.0062]
a/R* = 17.38 [50.66]
b = 0.90 [0.64]
Seff = 29.51 [4.68]
Teq = 594 [24] K
Rp = 0.92 [0.59] Re
a = 0.1436 [0.0131] AU
Ag = 140.36 [211.66] [0.66σ]
Teffp = 3163 [1189] K [2.16σ]

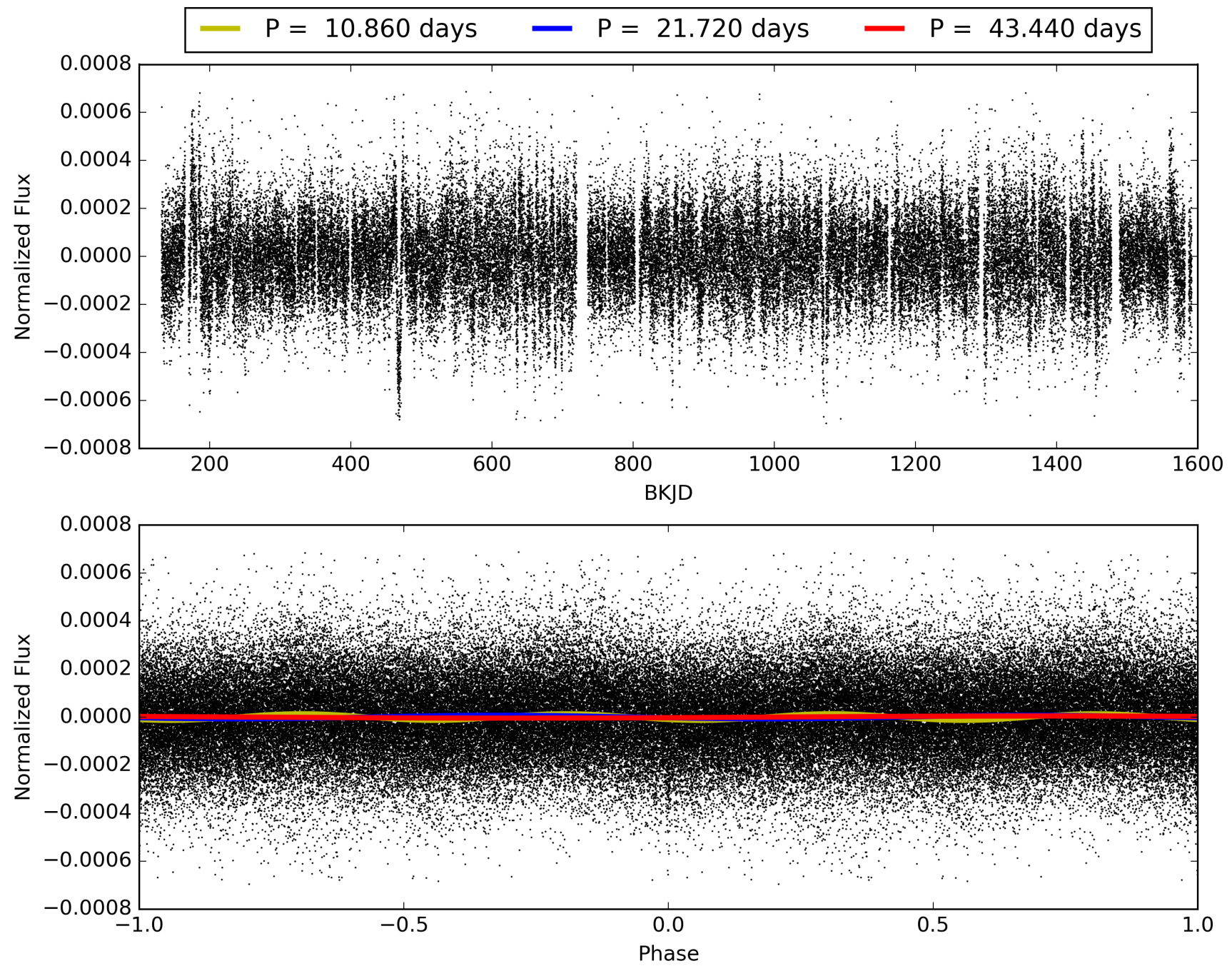
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [17.18σ]
LongPeriod-sig: 100.0% [532.53σ]
ModelChiSquare2-sig: 98.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.57e-15
RollingBand-fgt: 1.00 [52/52]
GhostDiagnostic-chr: 4.298
Centroid-sig: N/A
Centroid-so: 1.871 arcsec [1.33σ]
OotOffset-rm: 0.998 arcsec [1.16σ]
KicOffset-rm: 0.794 arcsec [0.96σ]
OotOffset-st: 2/2/4/2 [10]
KicOffset-st: 2/2/4/2 [10]
DiffImageQuality-fgm: 0.50 [5/10]
DiffImageOverlap-fno: 0.82 [14/17]

TCE 008280511-05, PDC Light Curves

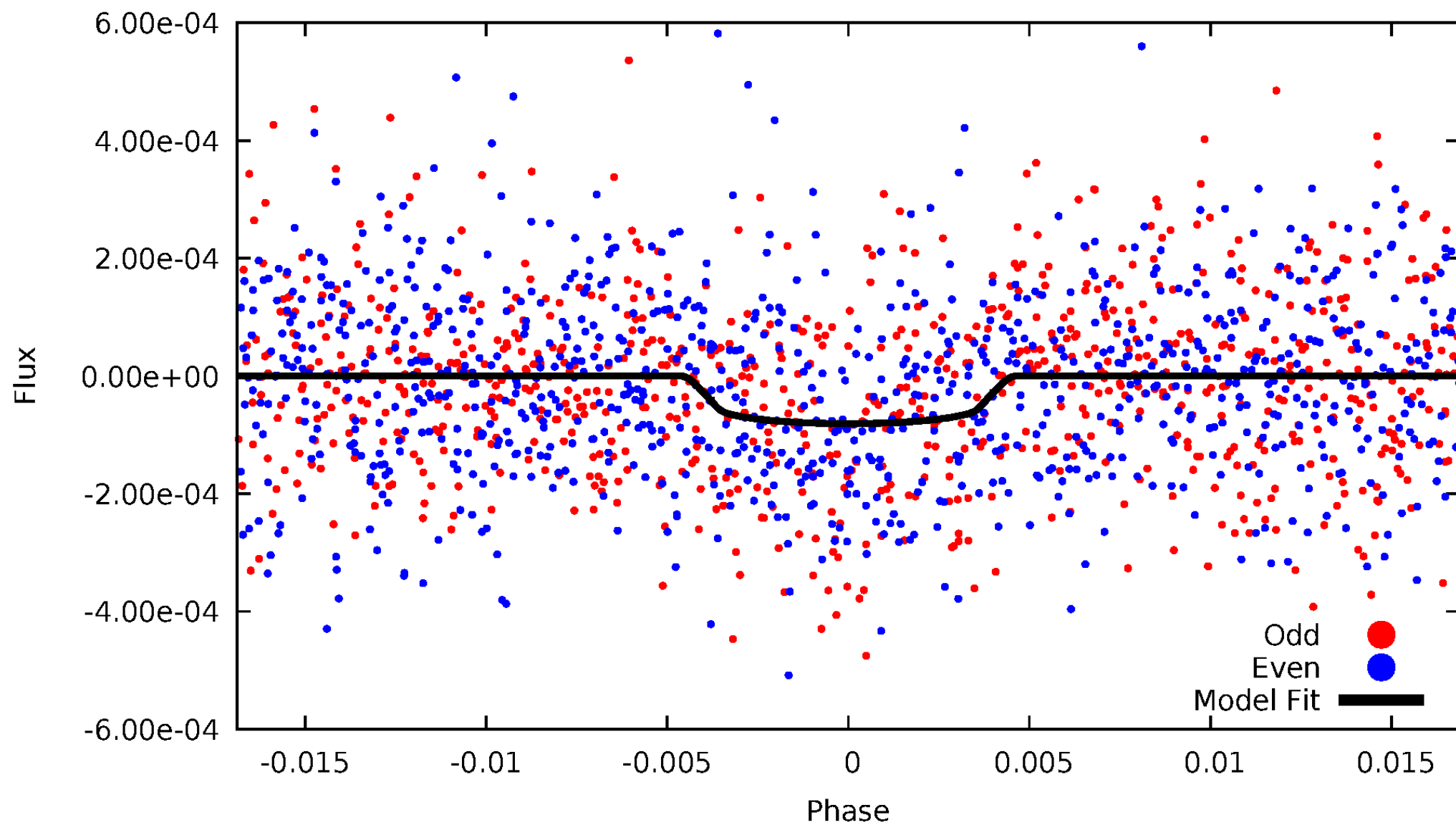


TCE 008280511-05



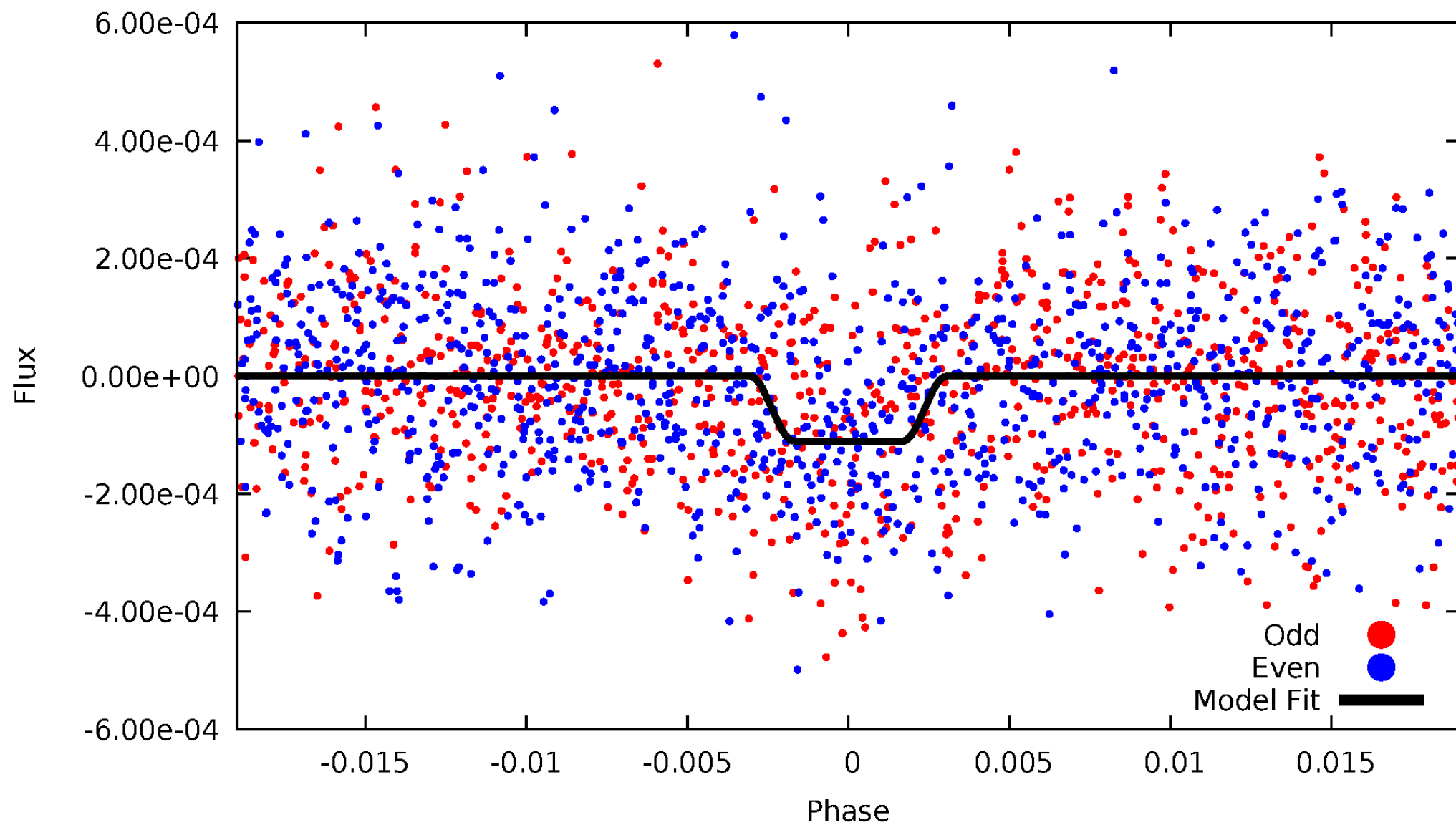
DV Odd/Even

TCE 008280511-05



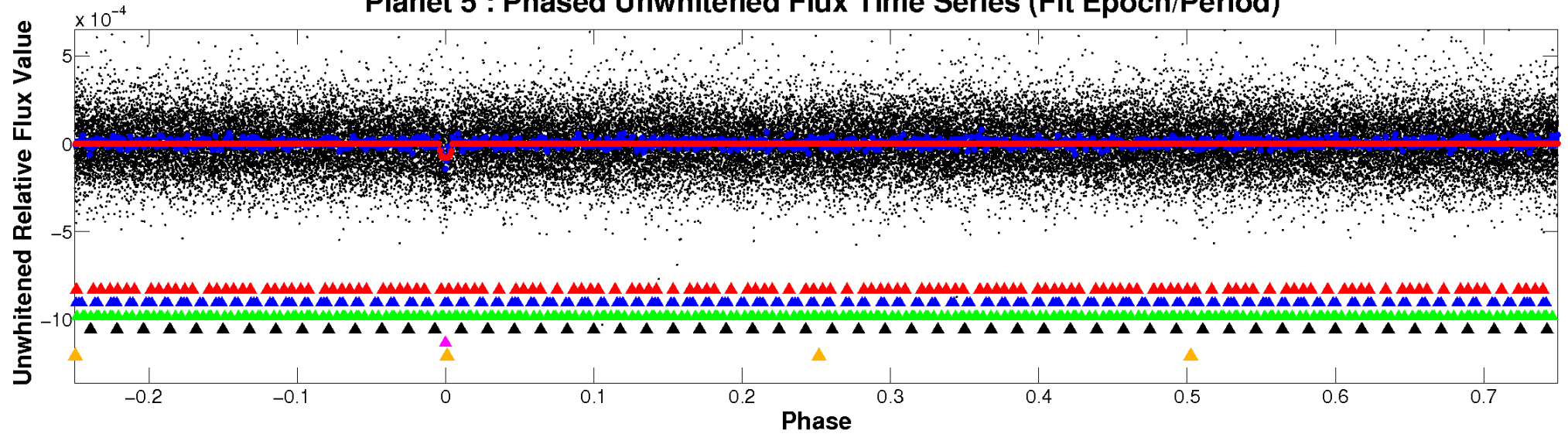
ALT Odd/Even

TCE 008280511-05

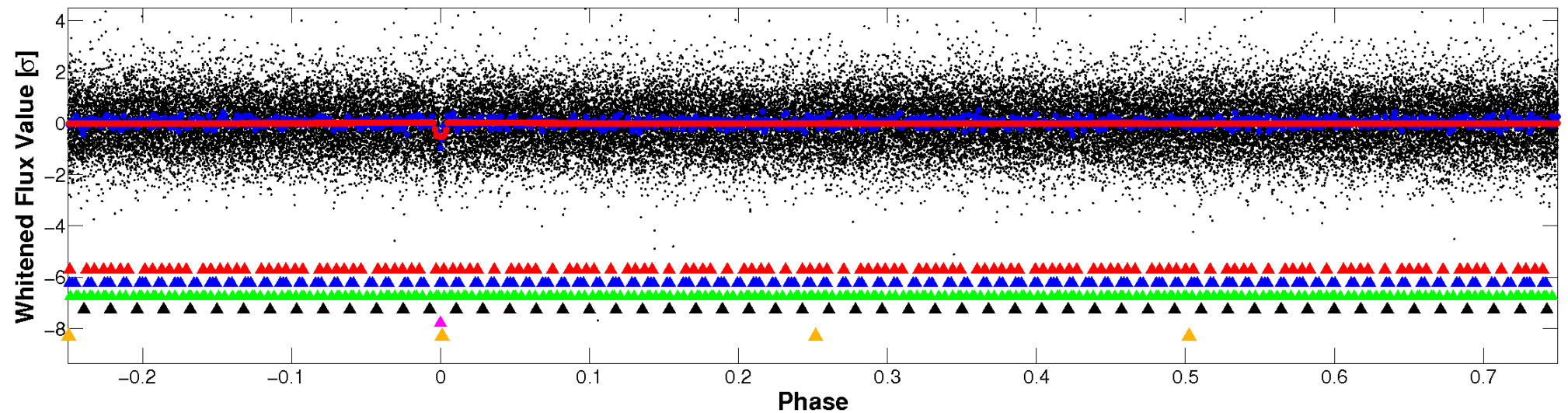


Non-Whitened Vs. Whitened Light Curve

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

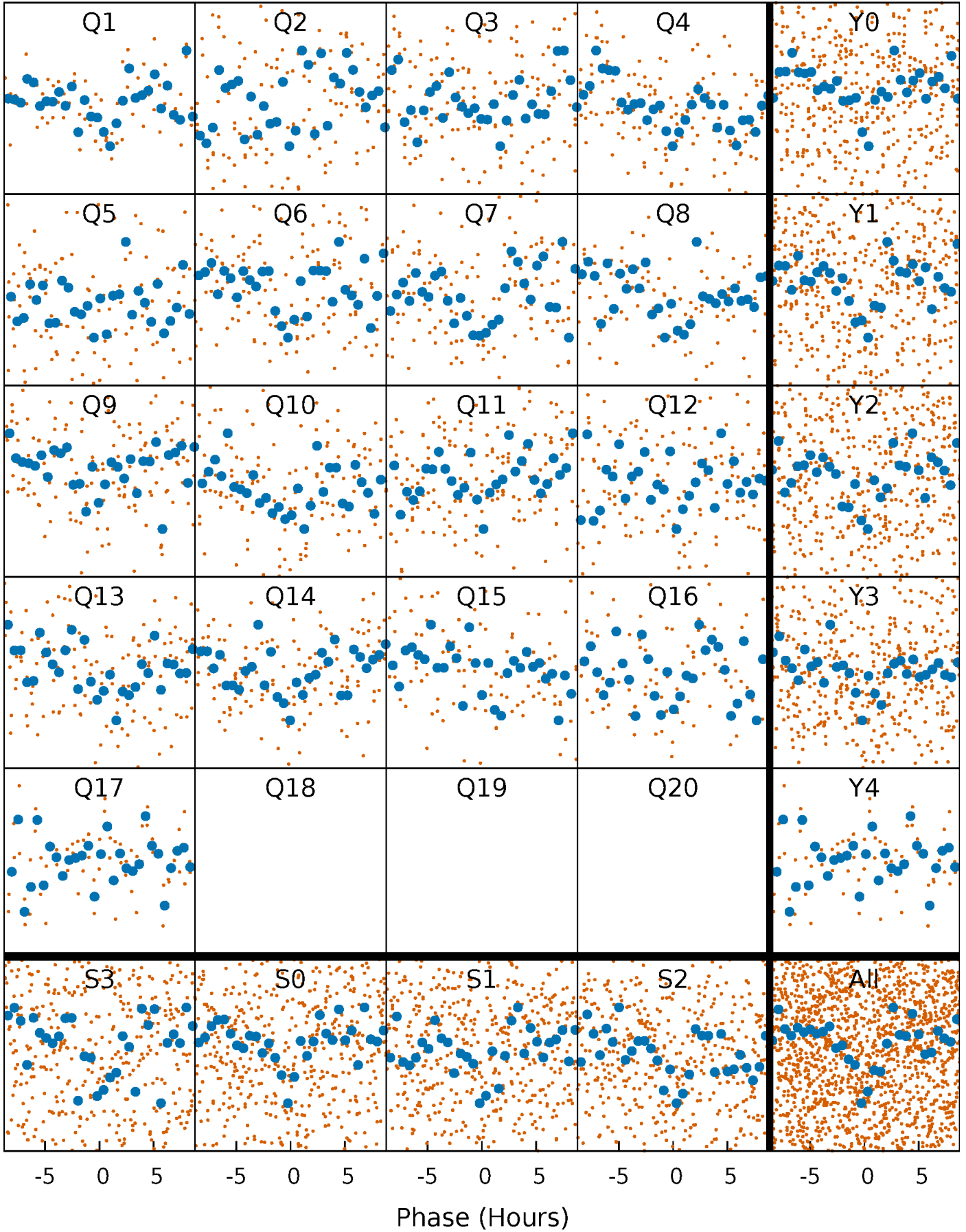


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



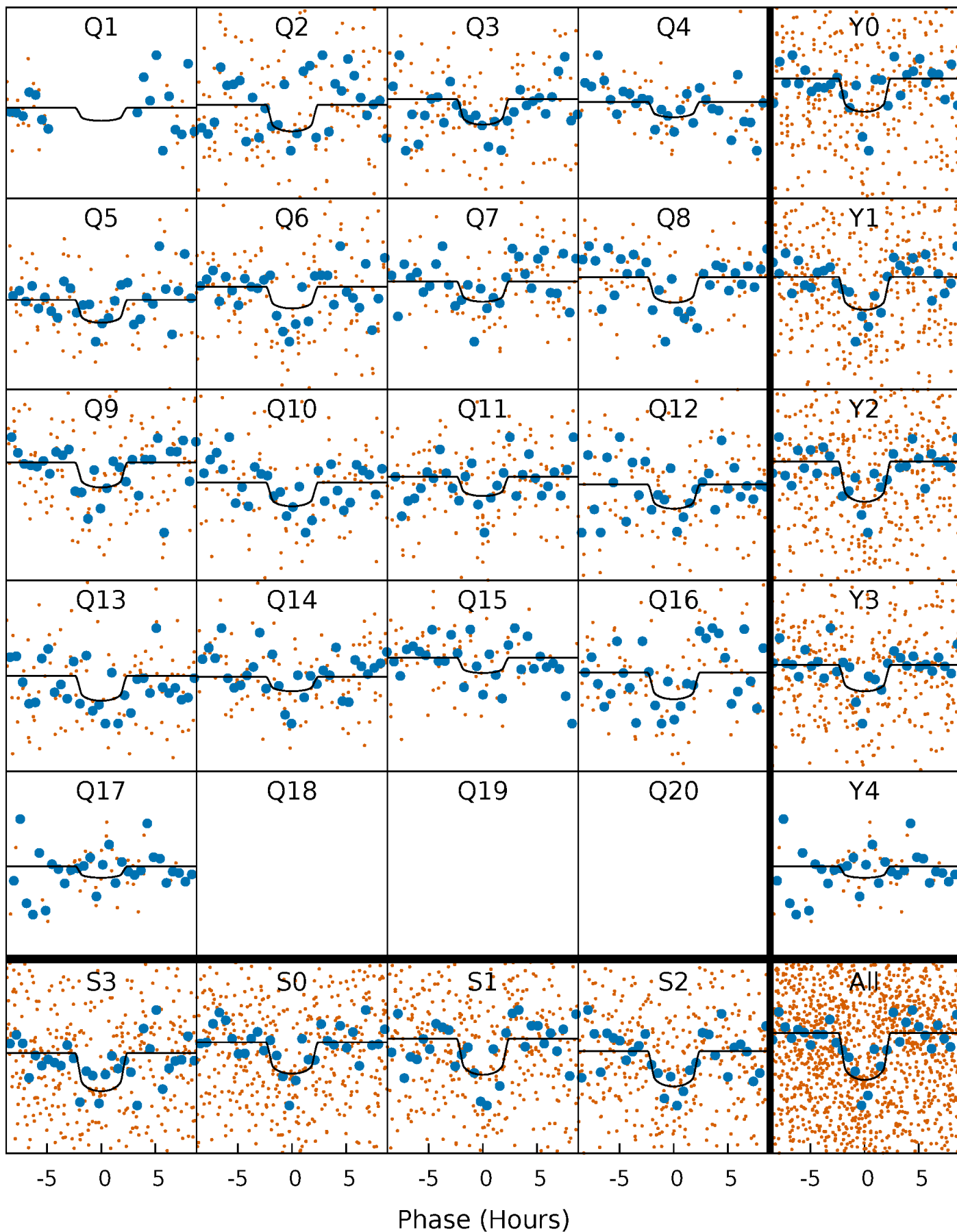
PDC Quarter-Phased Transit Curves

TCE 008280511-05 P= 21.720052 Days $T_0=134.776794$ (BKJD)



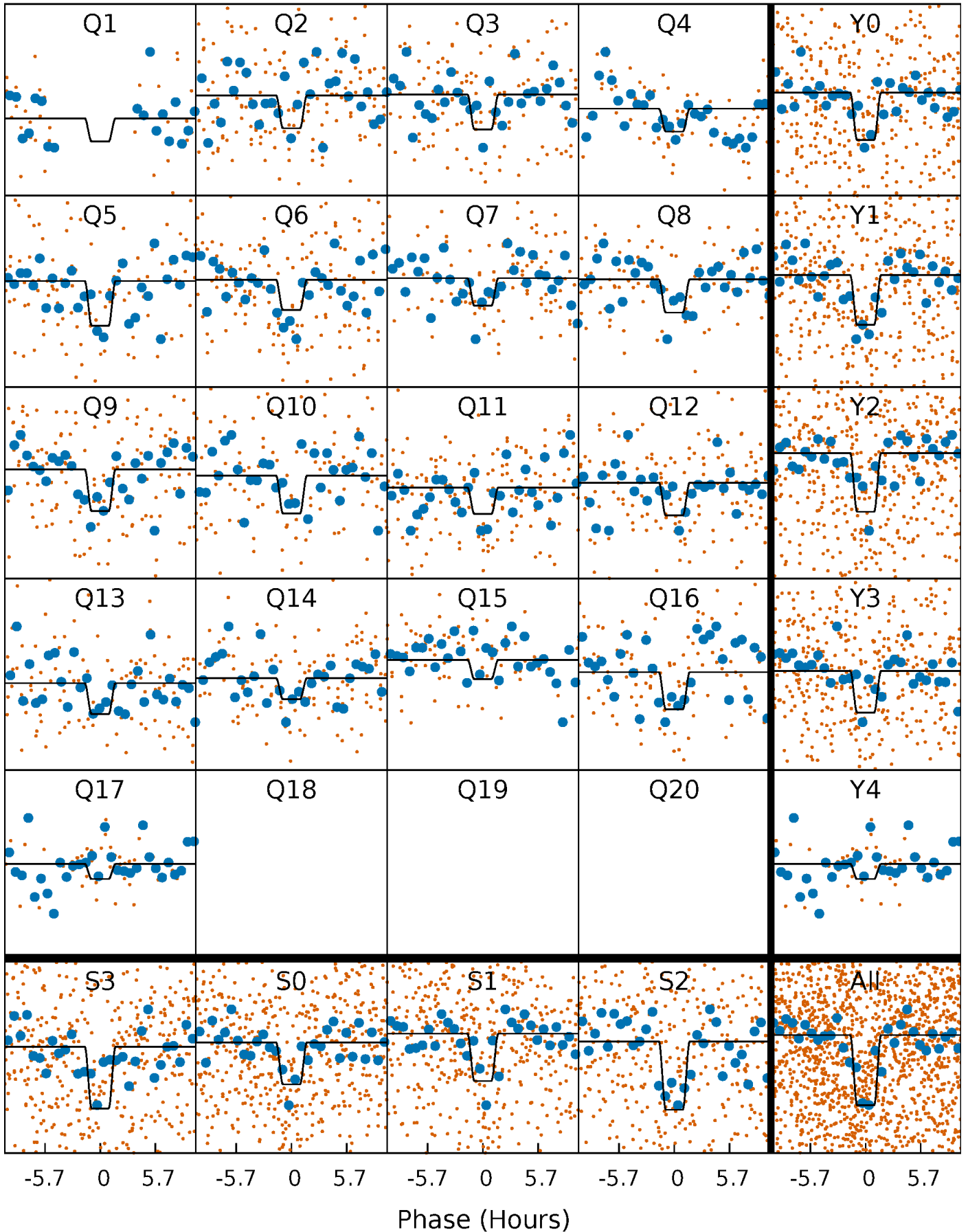
DV Quarter-Phased Transit Curves

TCE 008280511-05 P= 21.720052 Days $T_0=134.776794$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

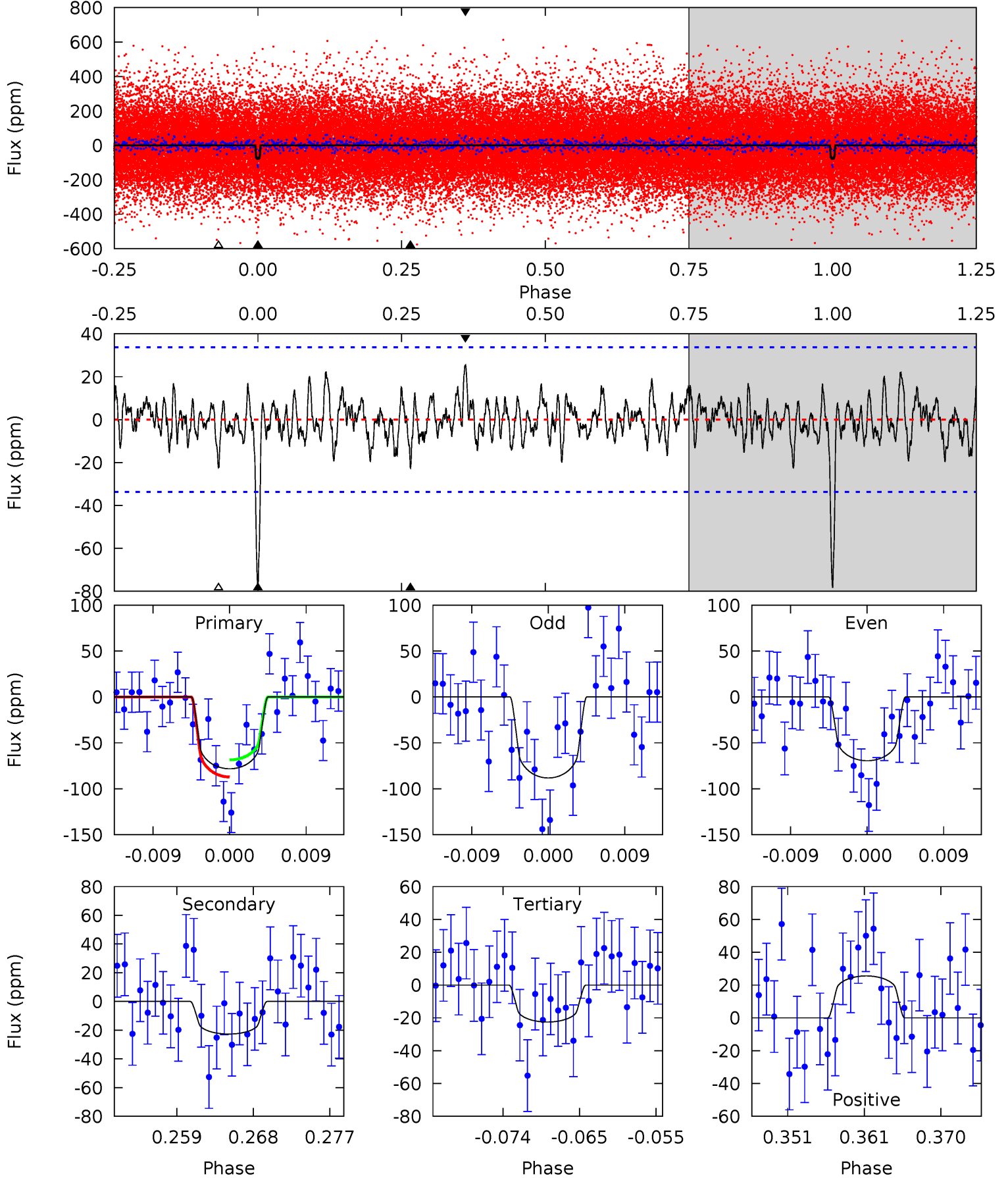
TCE 008280511-05 $P = 21.719995$ Days $T_0 = 134.776724$ (BKJD)



DV Model-Shift Uniqueness Test

008280511-05, P = 21.720052 Days, E = 113.056742 Days

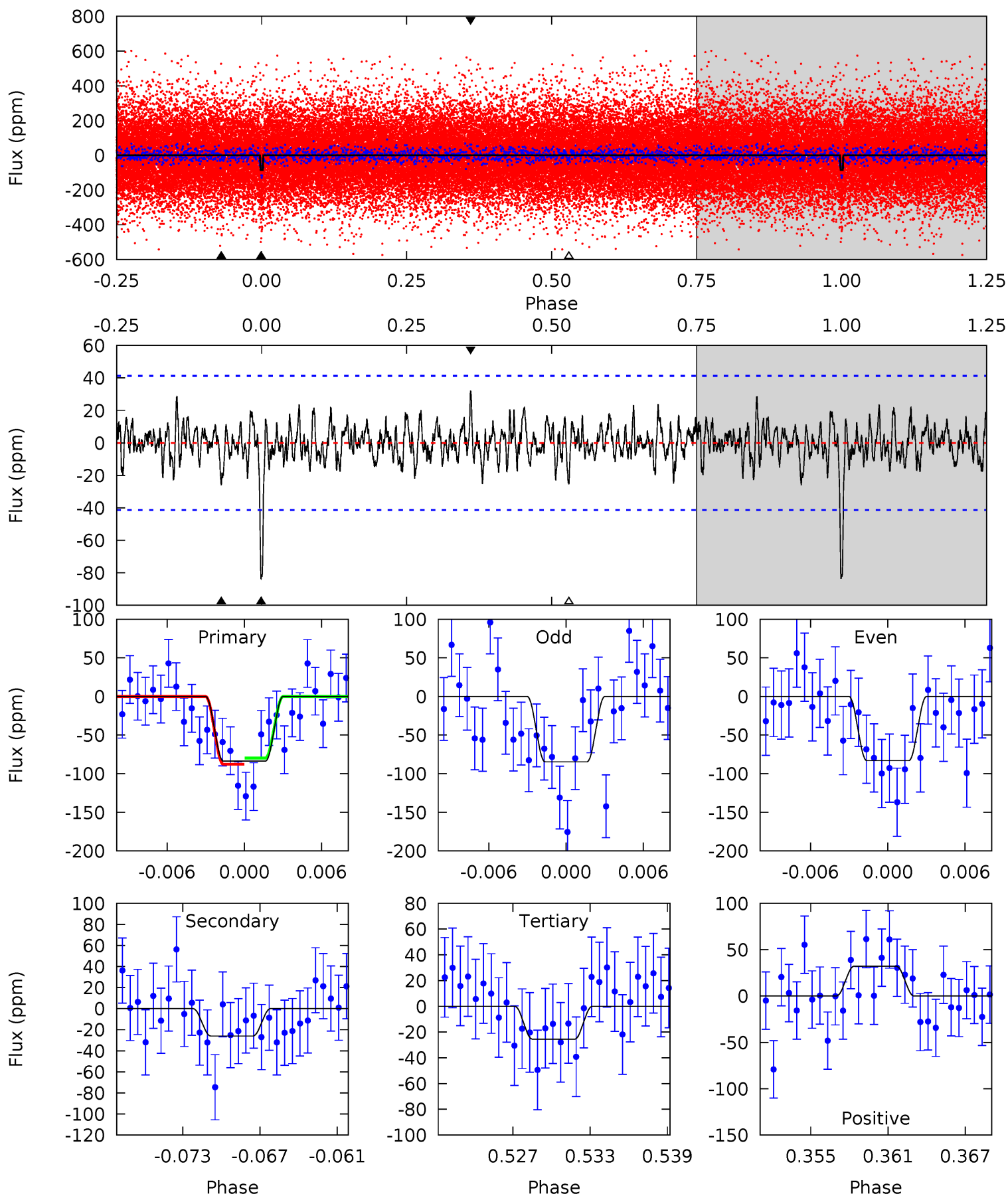
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	3.39	3.37	3.82	5.04	2.60	1.13	8.33	7.87	0.02	-0.43	1.40	1.01	0.25	1.39



Alt Model-Shift Uniqueness Test

008280511-05, P = 21.719995 Days, E = 113.056729 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	3.22	3.16	3.99	5.12	2.74	1.09	7.22	6.40	0.06	-0.76	0.09	0.95	0.28	0.50



Stellar Parameters For KIC 008280511

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5528^{+110}_{-110}	$4.499^{+0.063}_{-0.077}$	$-0.200^{+0.150}_{-0.150}$	$0.853^{+0.089}_{-0.067}$	$0.838^{+0.056}_{-0.046}$	$1.899^{+0.488}_{-0.464}$
	+2%/-2%	+1%/-2%	+75%/-75%	+10%/-8%	+7%/-5%	+26%/-24%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 008280511-05 / KOI 1151.05

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-23 ± 7	$0.96^{+0.57}_{-0.52}$	833^{+28}_{-27}	4053^{+1490}_{-638}	279^{+1058}_{-180}
Alt.	-26 ± 8	$1.06^{+0.58}_{-0.51}$	833^{+26}_{-27}	4000^{+1187}_{-561}	265^{+705}_{-160}

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 $A_{obs} \gg 1.0$

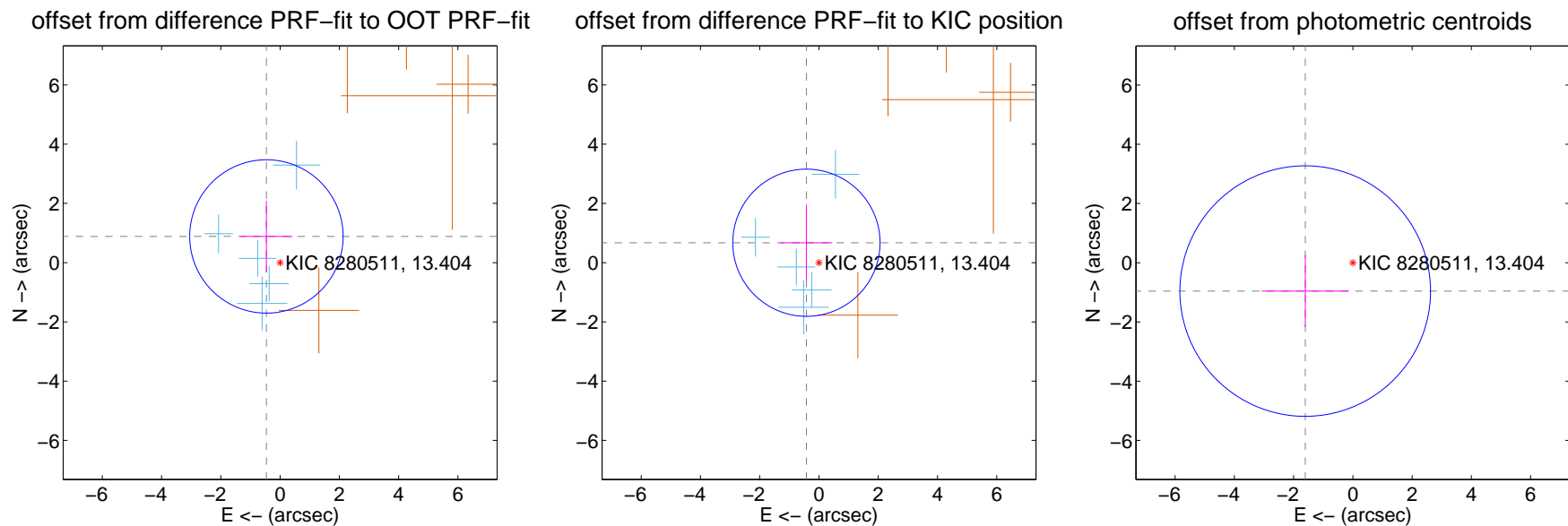
DV Centroid Data

Supplemental centroid analysis for 008280511-05. Kepler magnitude: 13.40. Transit SNR 9.27

There are 5 quarters with good PRF difference image offsets

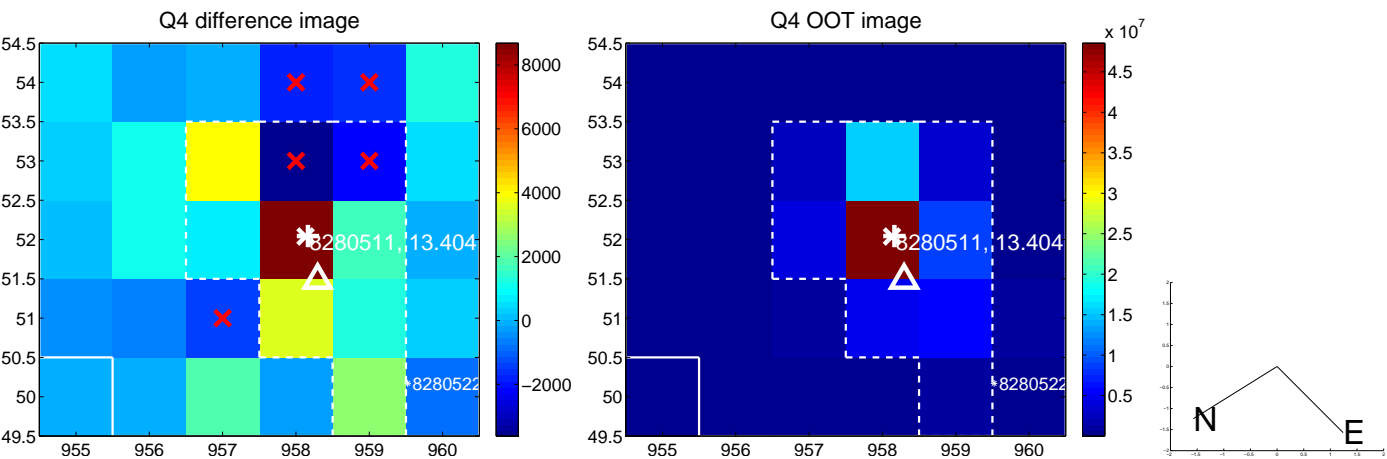
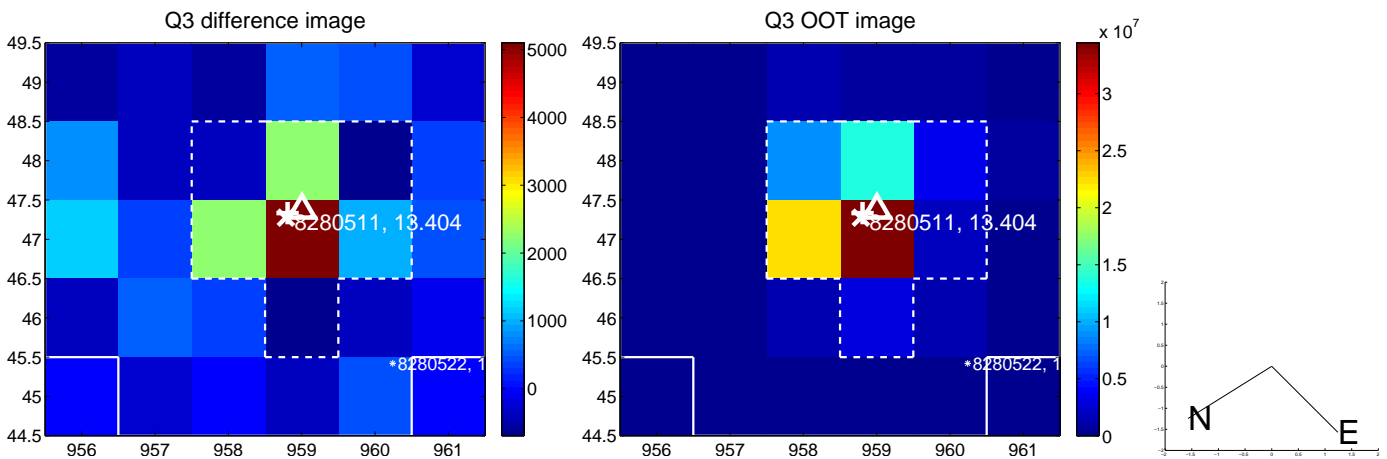
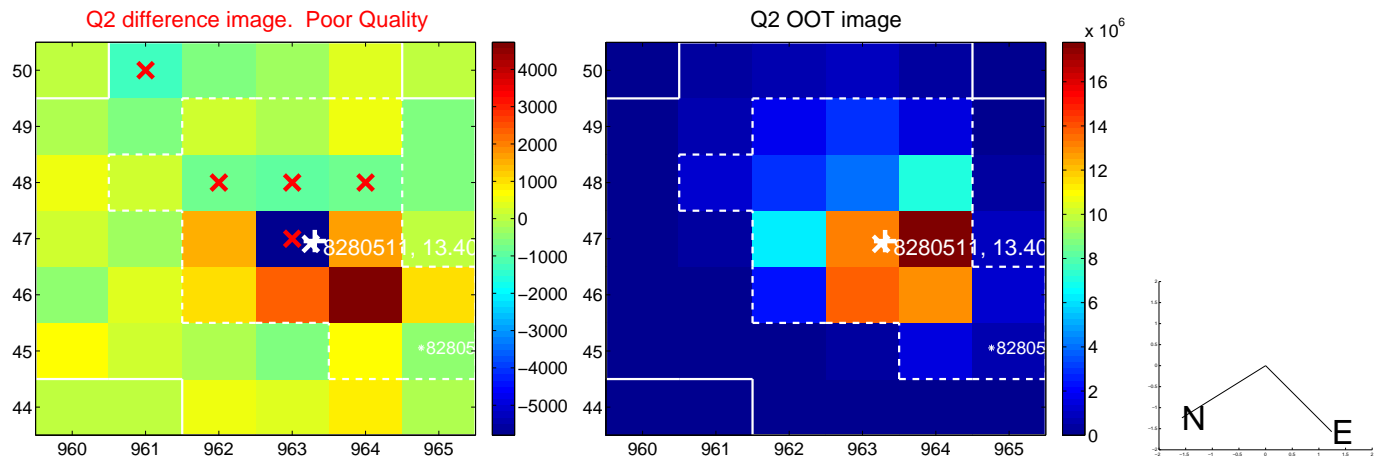
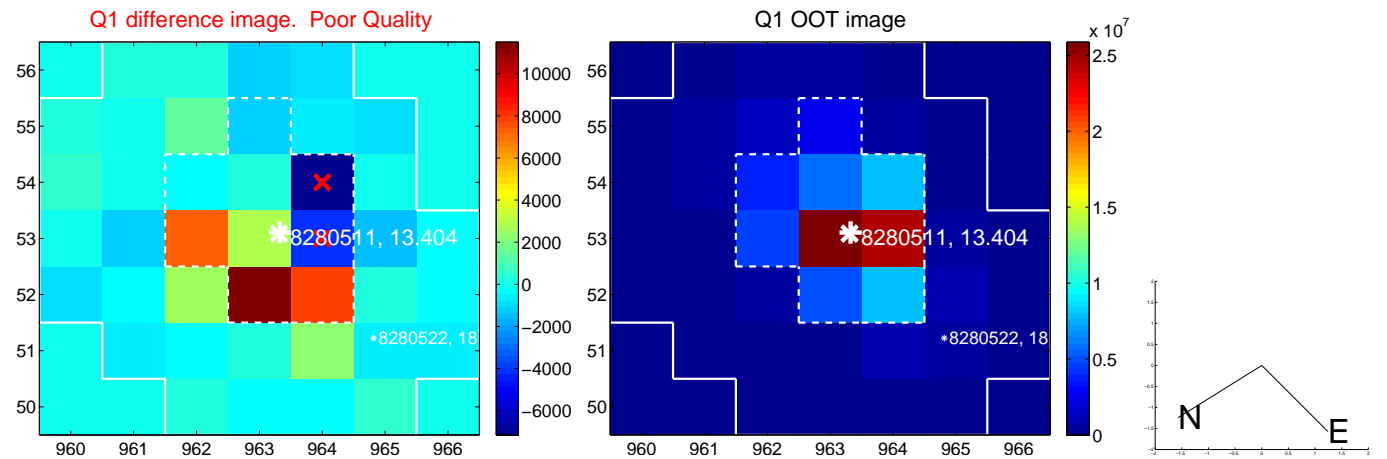
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.998 ± 0.863	1.16	0.462 ± 0.882	0.885 ± 1.203
PRF-fit source offset from KIC position	0.794 ± 0.828	0.96	0.424 ± 0.877	0.672 ± 1.287
photometric centroid source offset	1.87 ± 1.41	1.33	1.61 ± 1.47	-0.96 ± 1.22

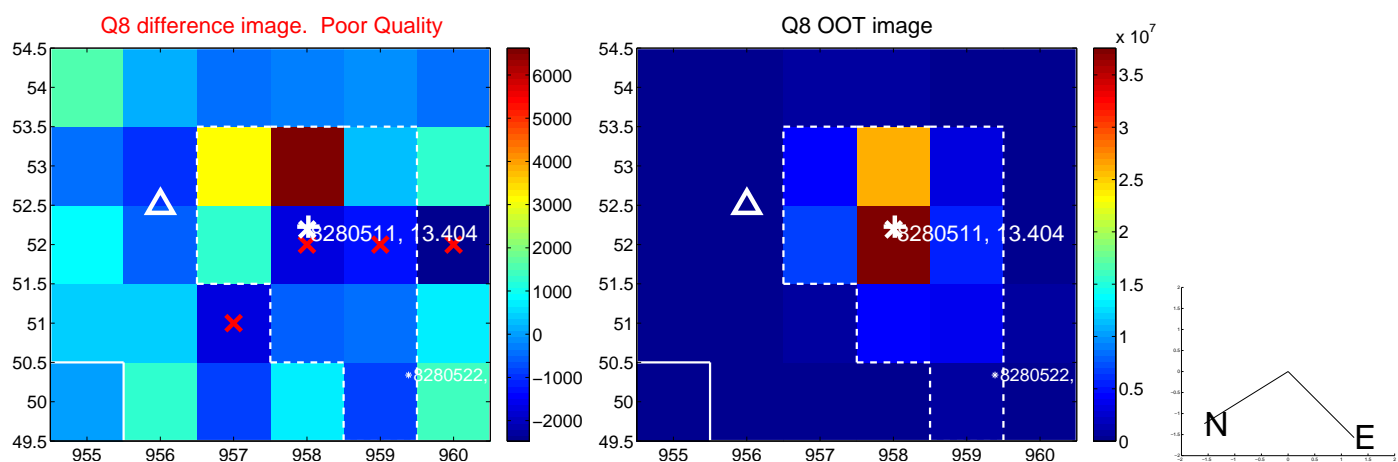
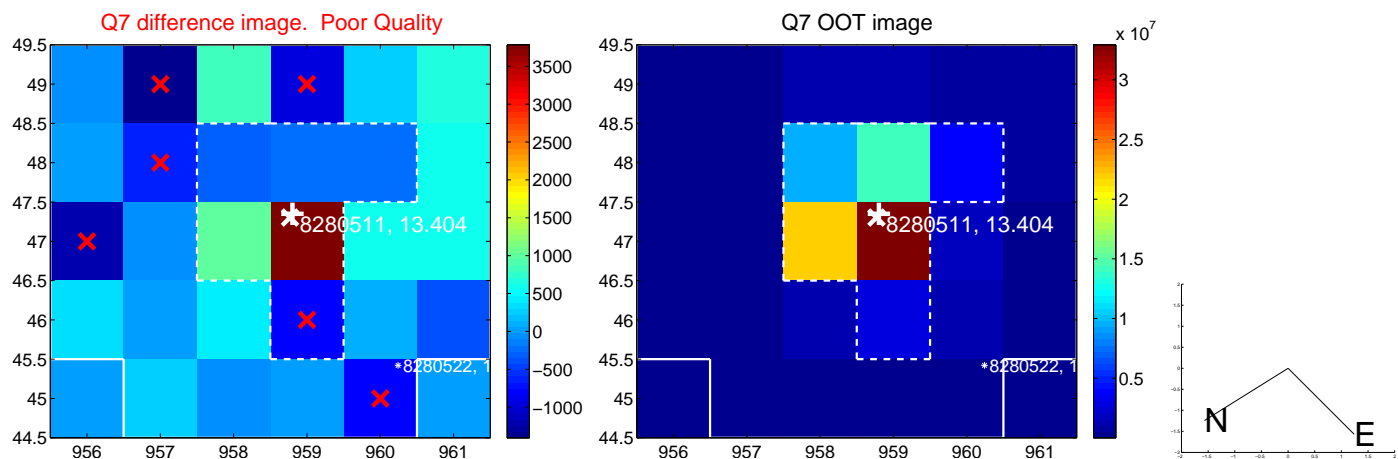
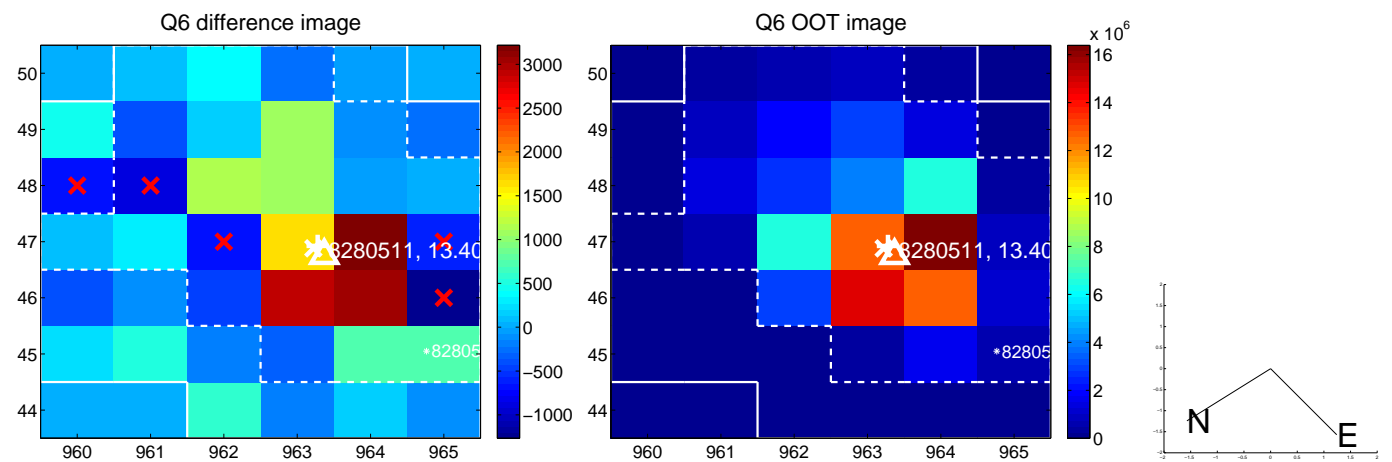
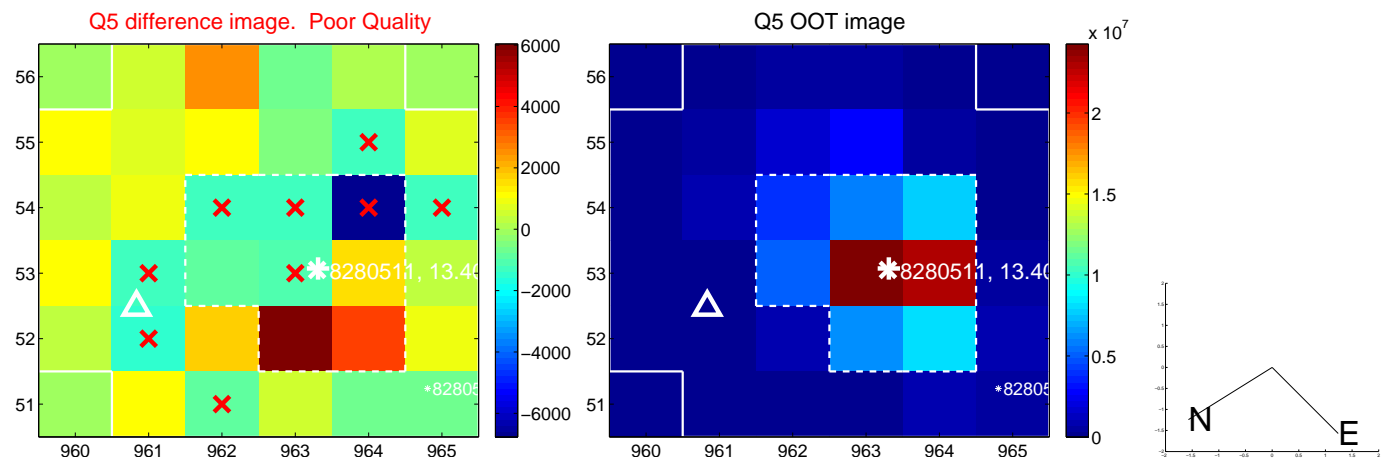


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

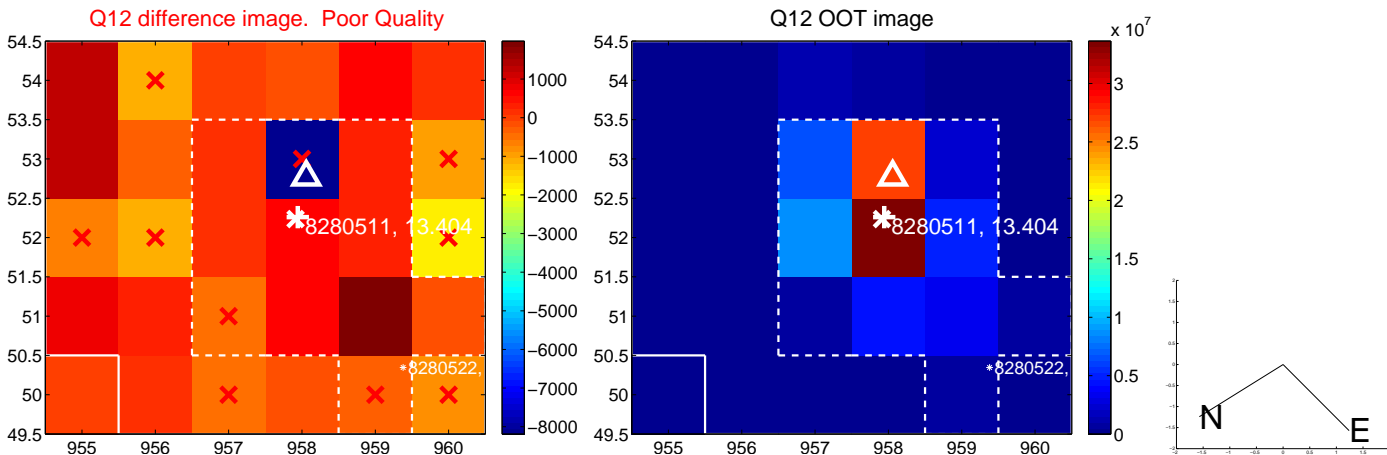
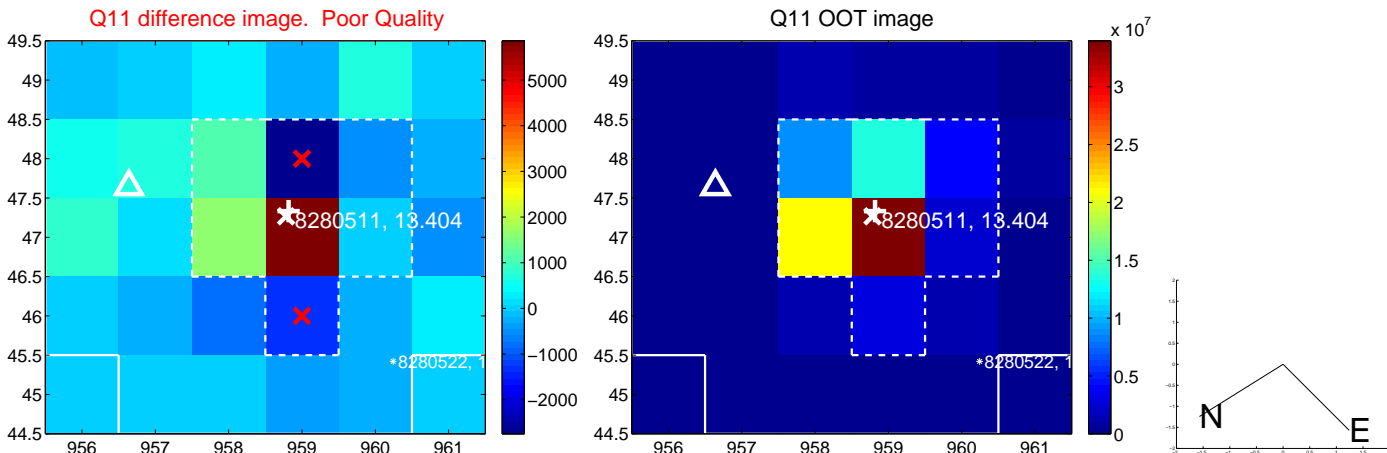
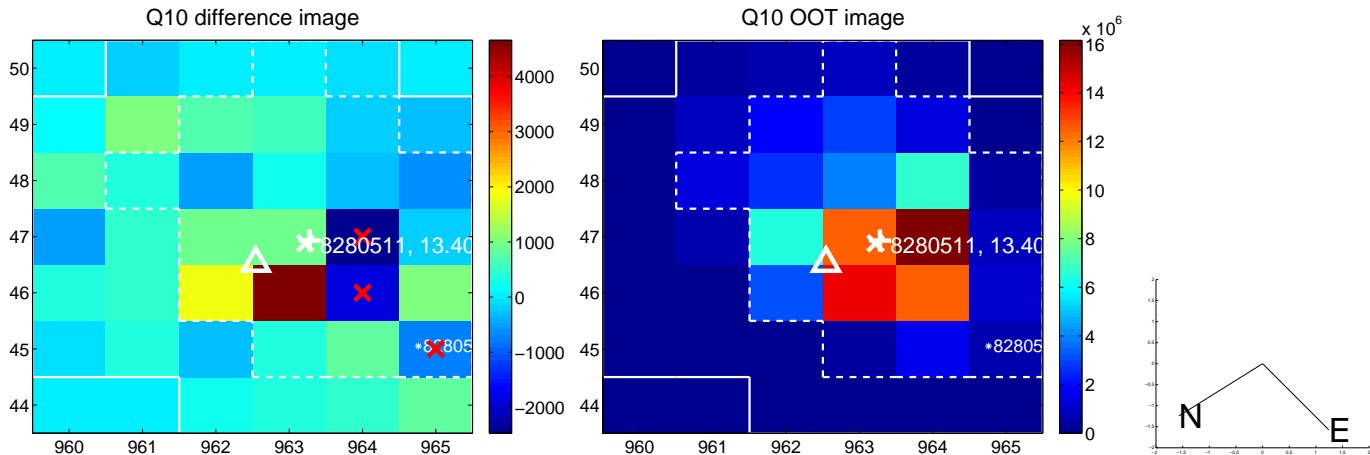
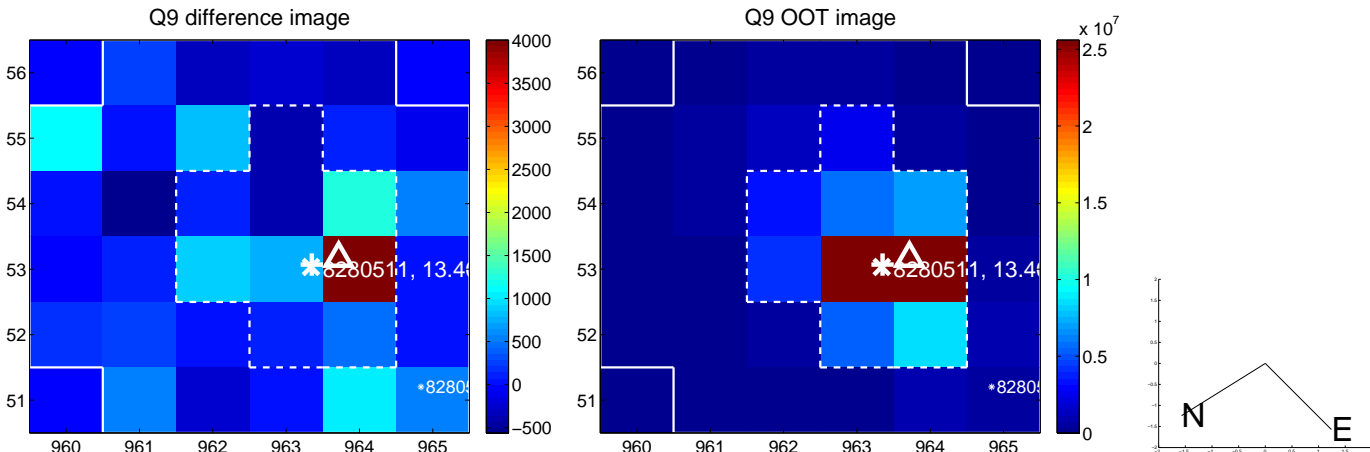
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



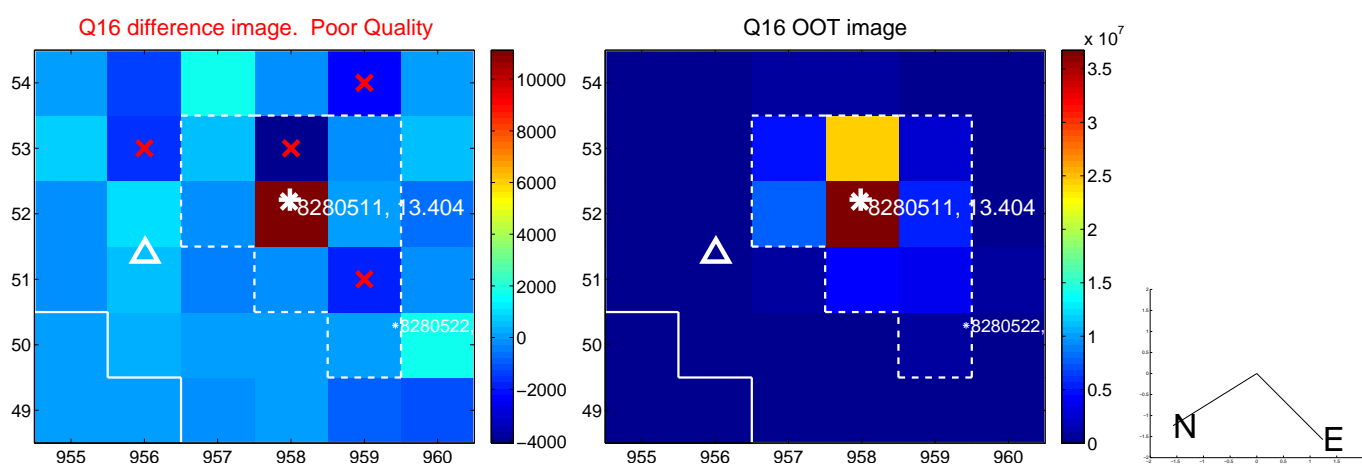
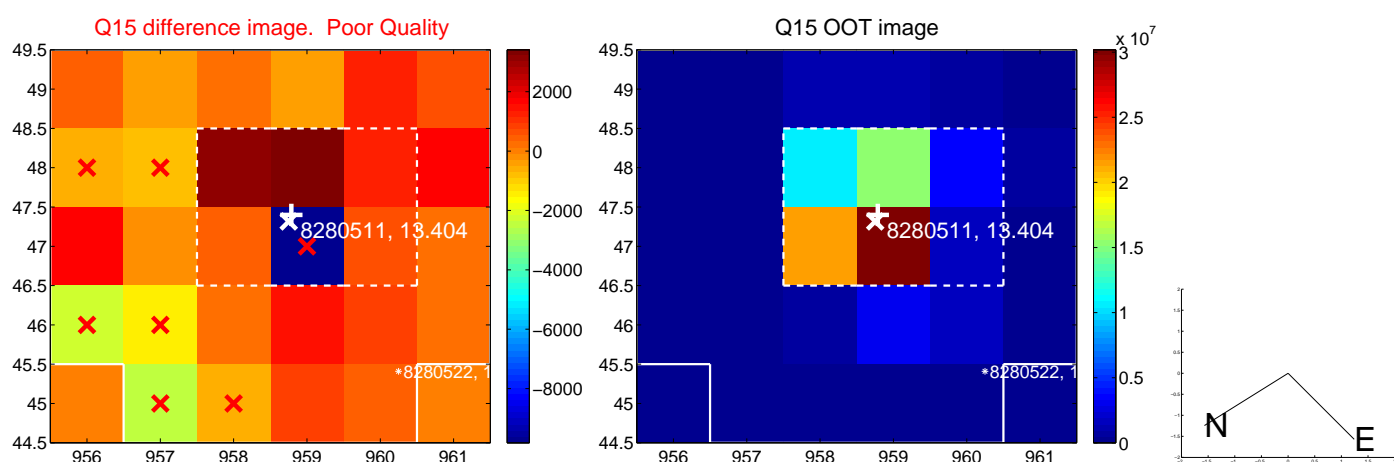
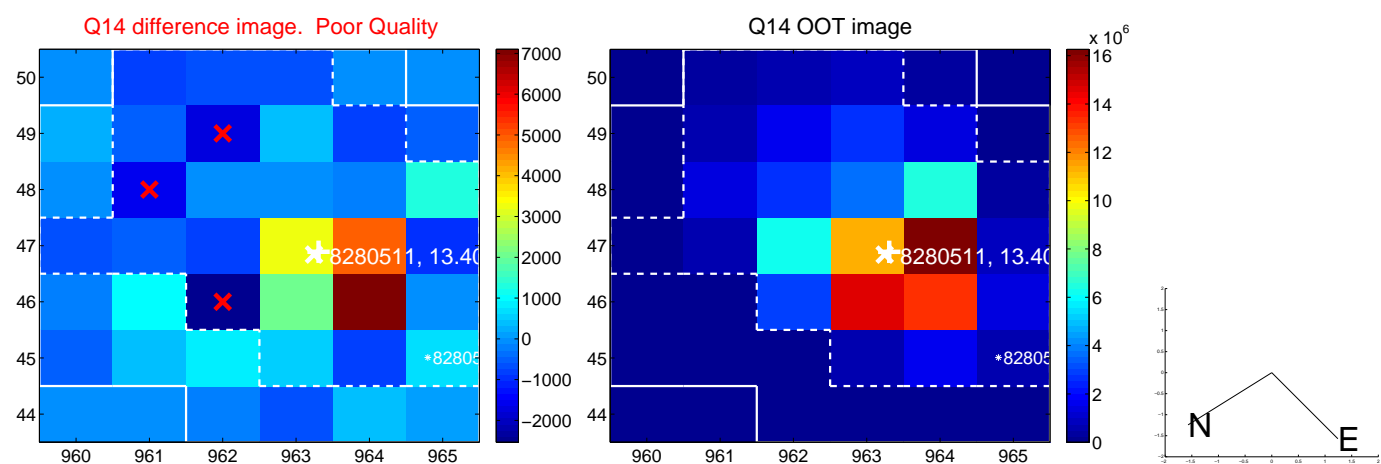
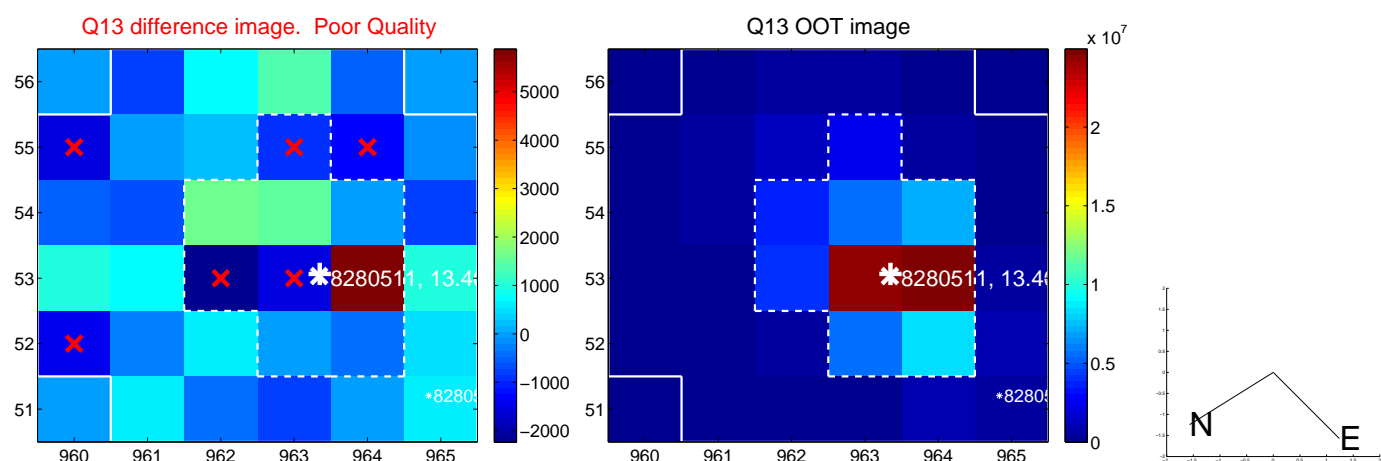
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



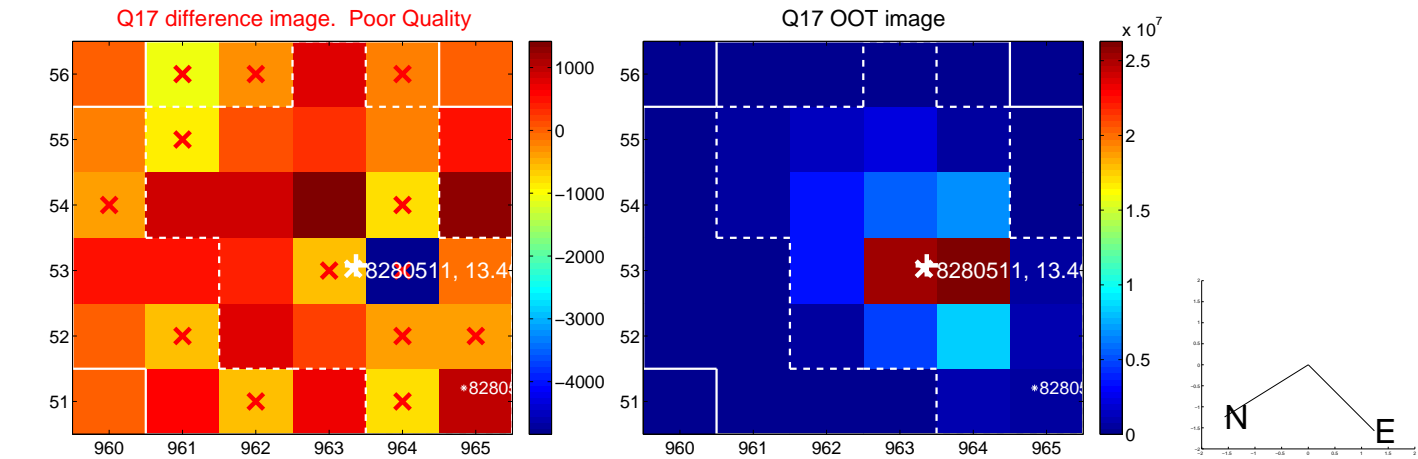
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



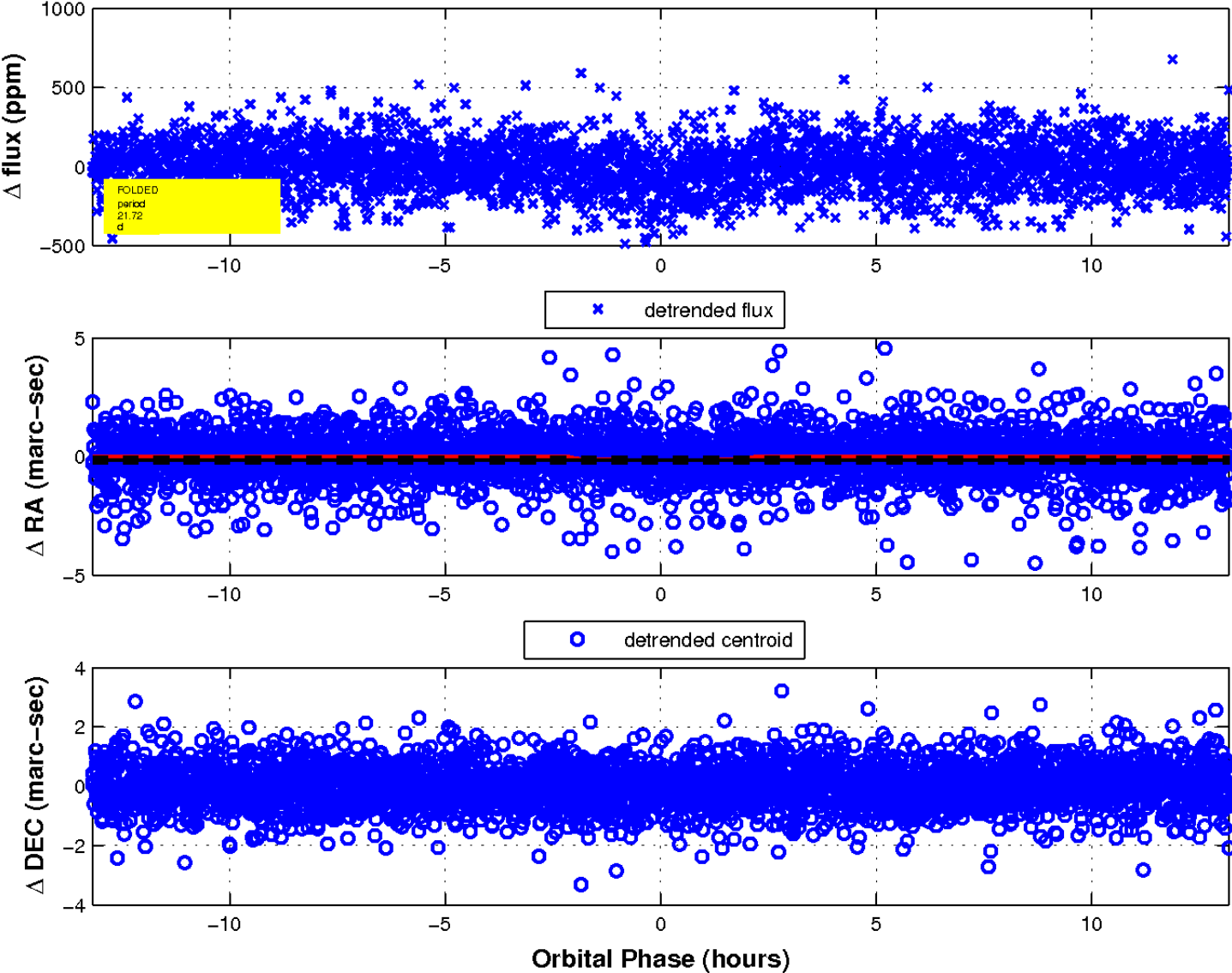
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 5 of 6



UKIRT Image

