

KIC 005978913

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})
005978913-01	OBS	No	0.792386	131.554942	9.8	4.381	9.6	2.0	1.35	6637	0.45	9907.62
005978913-02	OBS	No	0.674598	131.627327	159.0	8.095	9.6	17.8	1.35	6637	2.26	12278.86

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005978913-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
005978913-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—CENT_UNRESOLVED_OFFSET

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

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

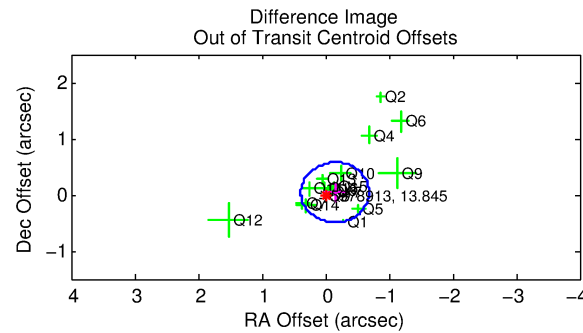
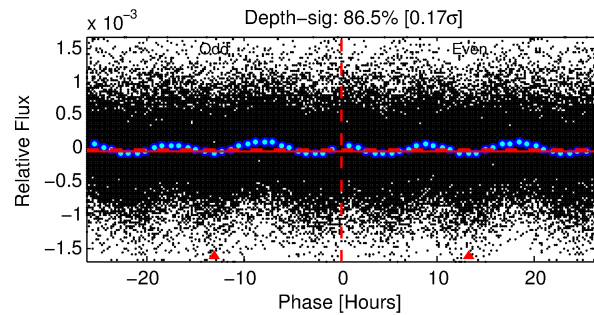
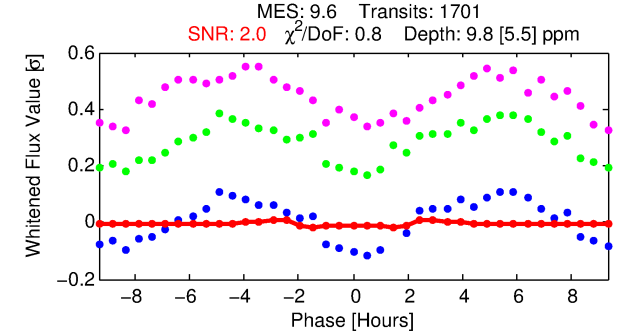
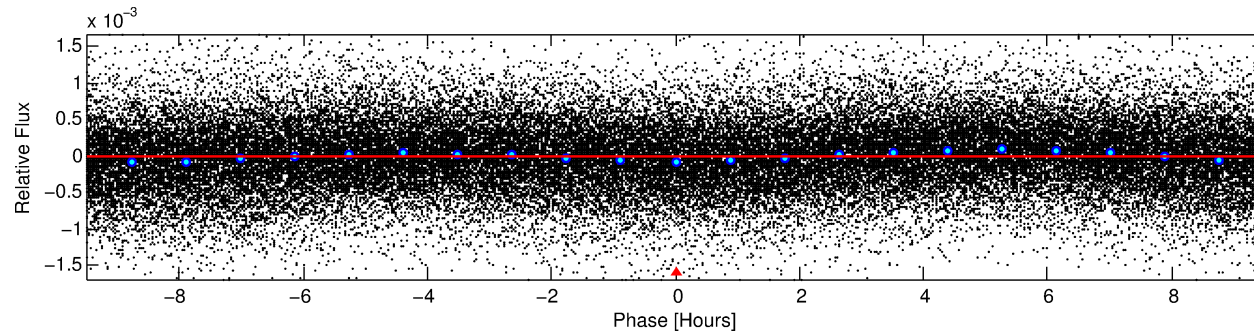
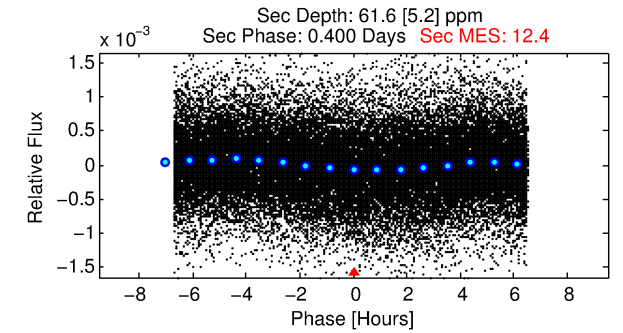
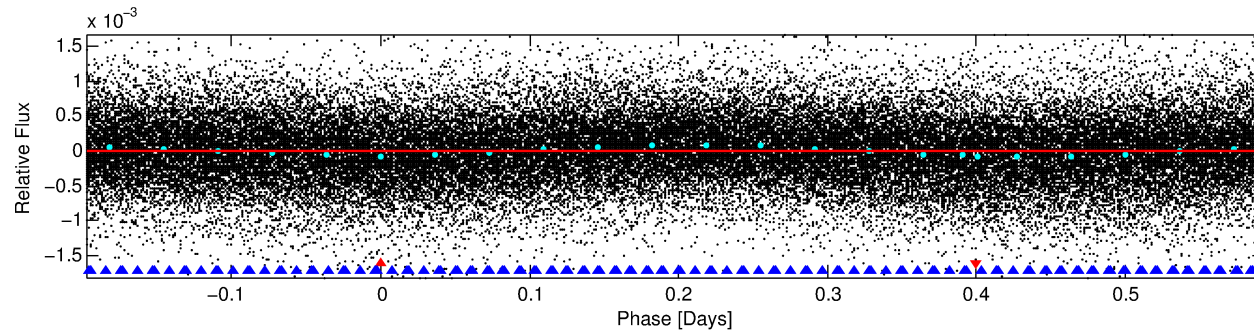
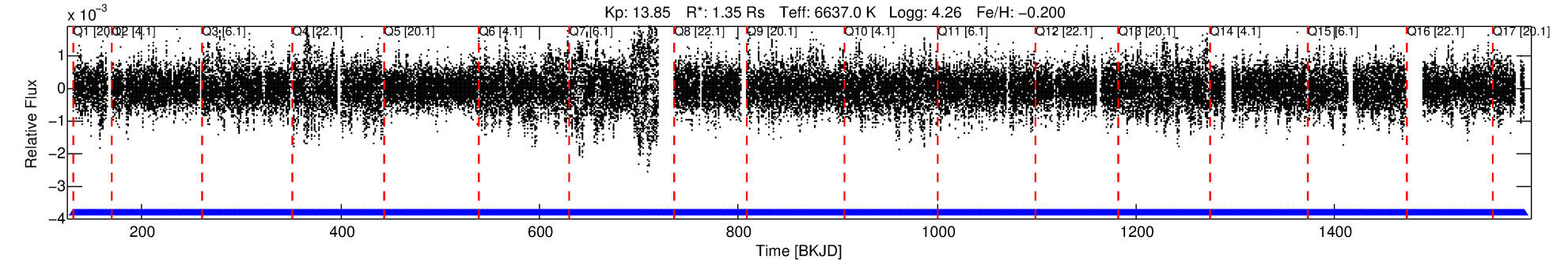
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005978913-01

No Significant Match Found

DV One-Page Summary

KIC: 5978913 Candidate: 1 of 2 Period: 0.792 d



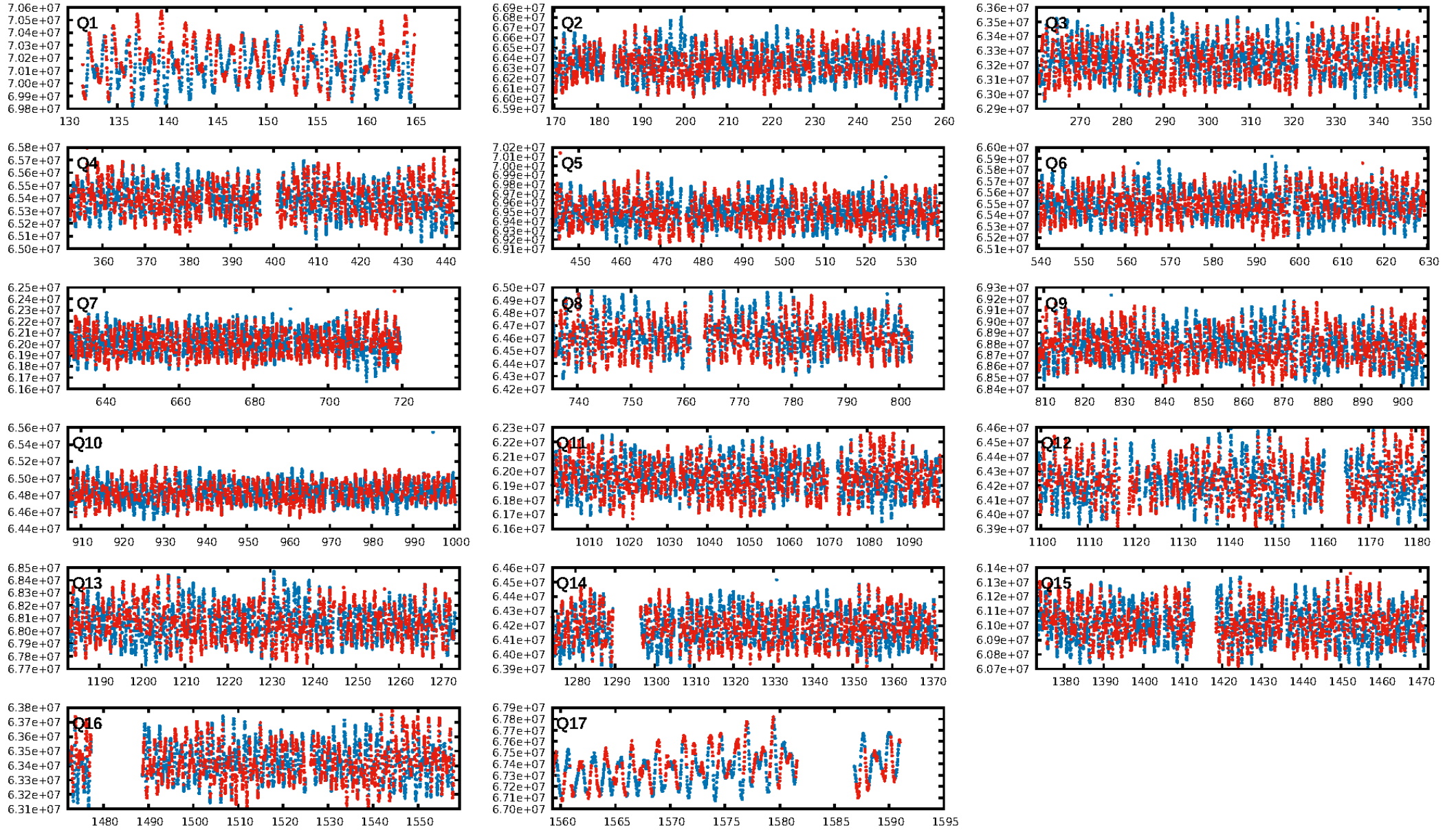
DV Fit Results:

Period = 0.79239 [0.00005] d
Epoch = 131.5549 [0.0110] BKJD
Rp/R* = 0.0031 [0.0019]
a/R* = 1.29 [1.56]
b = 0.71 [2.19]
Seff = 9907.62 [3947.34]
Teff = 2544 [253] K
Rp = 0.45 [0.31] Re
a = 0.0179 [0.0047] AU
Ag = 52.71 [66.65] [0.78σ]
Teffp = 10598 [3223] K [2.49σ]

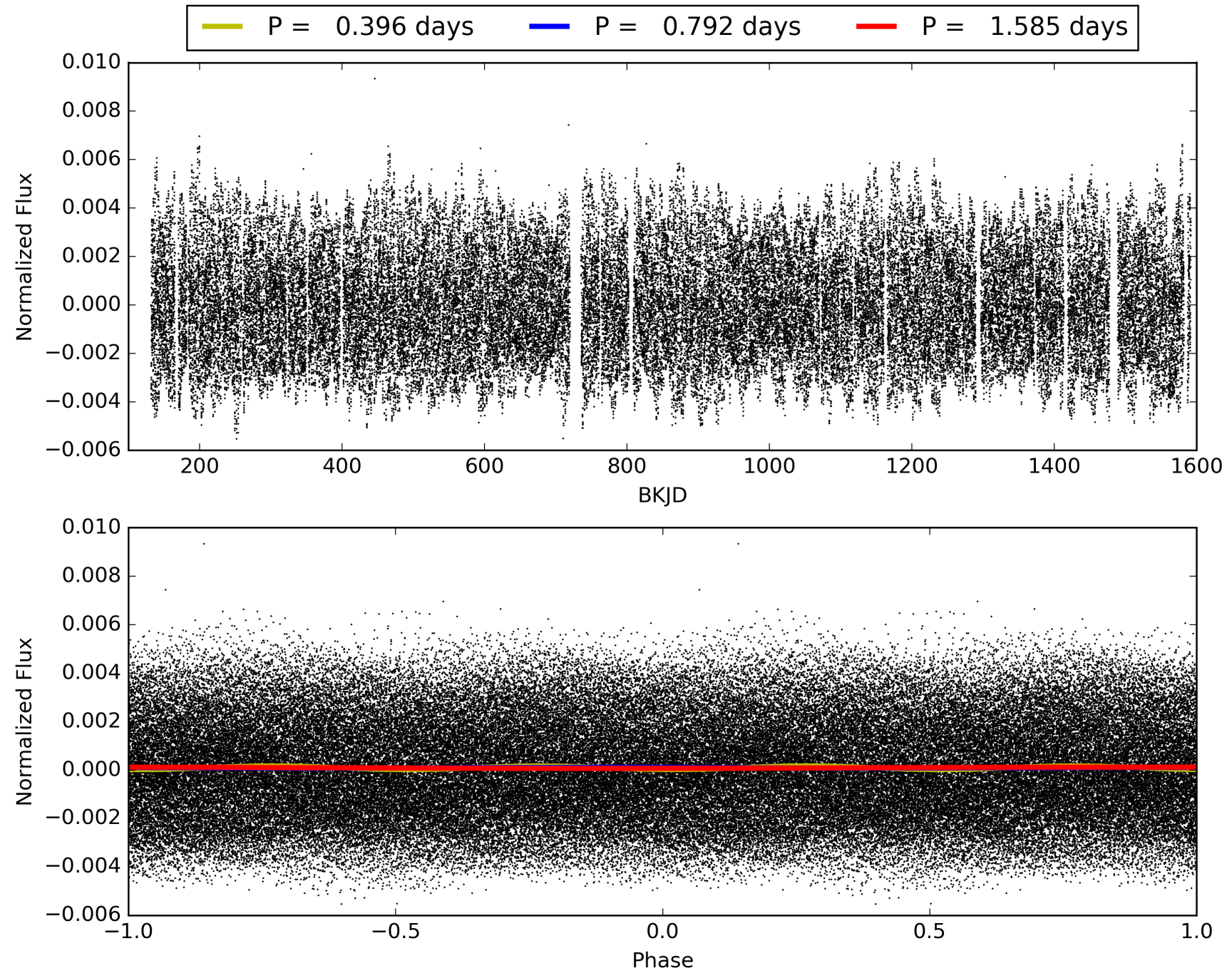
DV Diagnostic Results:

ShortPeriod-sig: 24.1% [0.31σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1624/1624]
GhostDiagnostic-chr: 1.099
Centroid-sig: 4.1%
Centroid-so: 3.526 arcsec [1.43σ]
OotOffset-rm: 0.155 arcsec [0.87σ]
KicOffset-rm: 0.188 arcsec [1.03σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.71 [12/17]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 005978913-01, PDC Light Curves

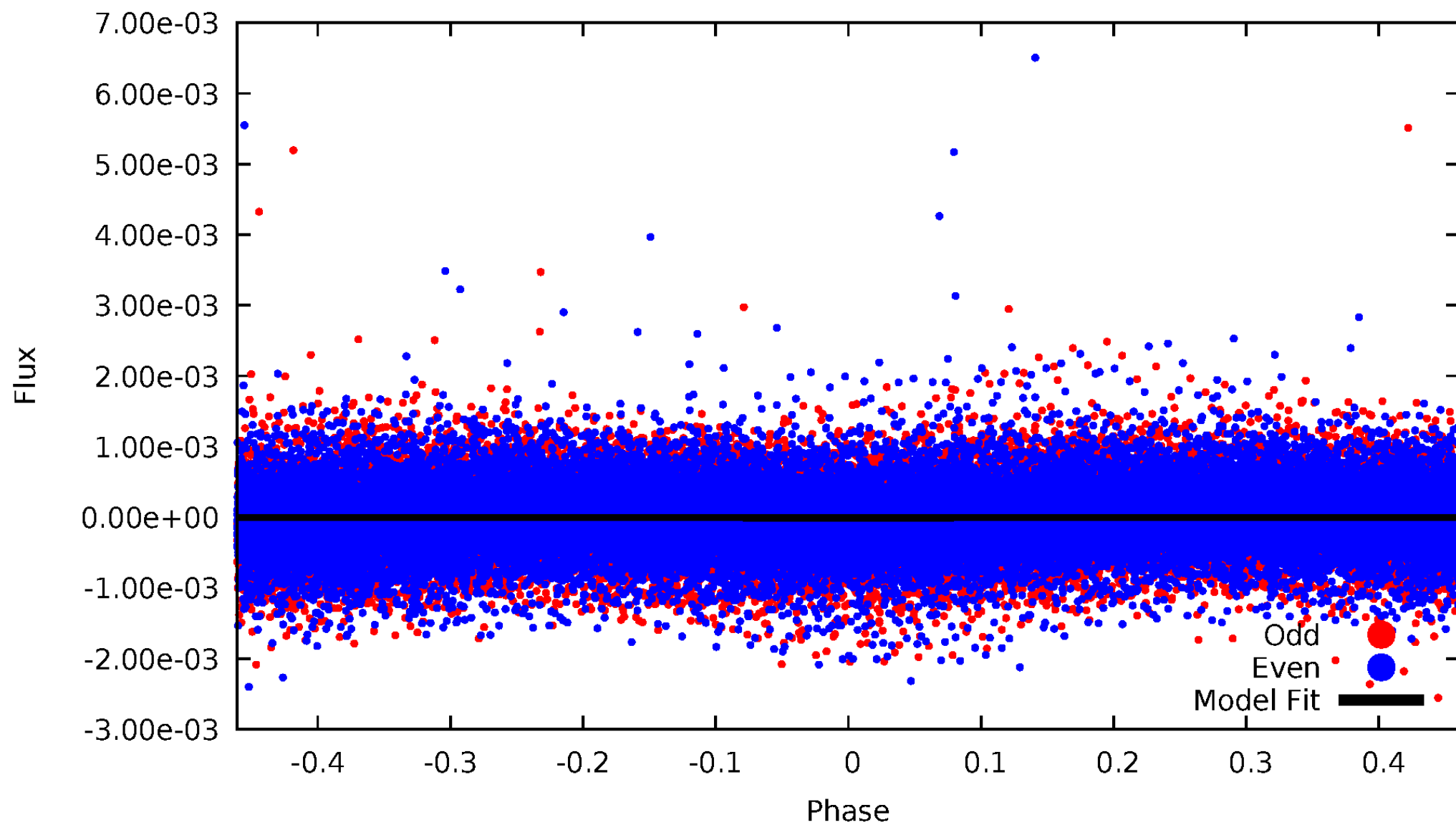


TCE 005978913-01



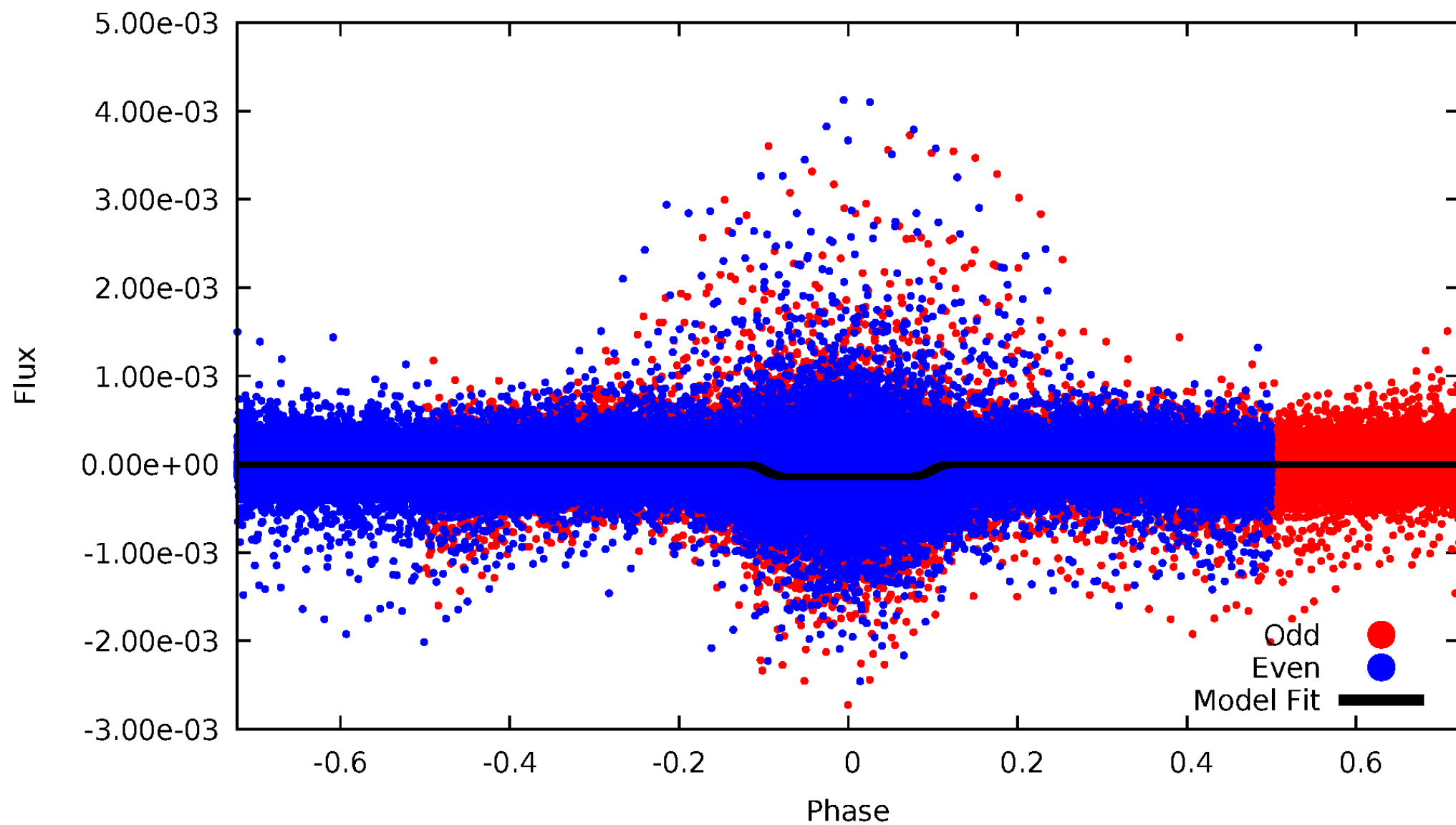
DV Odd/Even

TCE 005978913-01



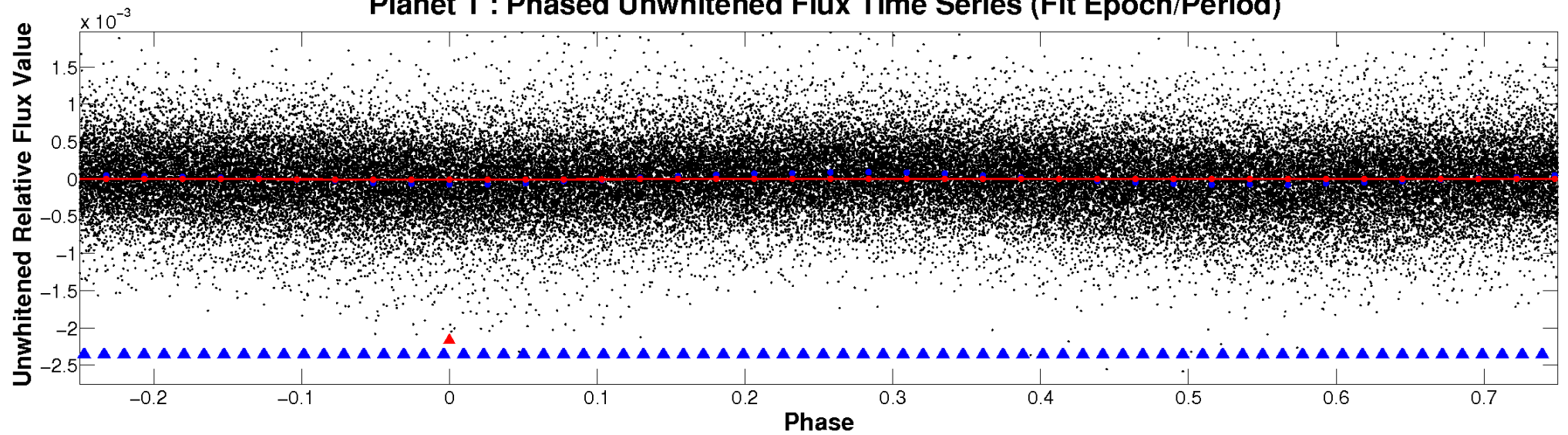
ALT Odd/Even

TCE 005978913-01

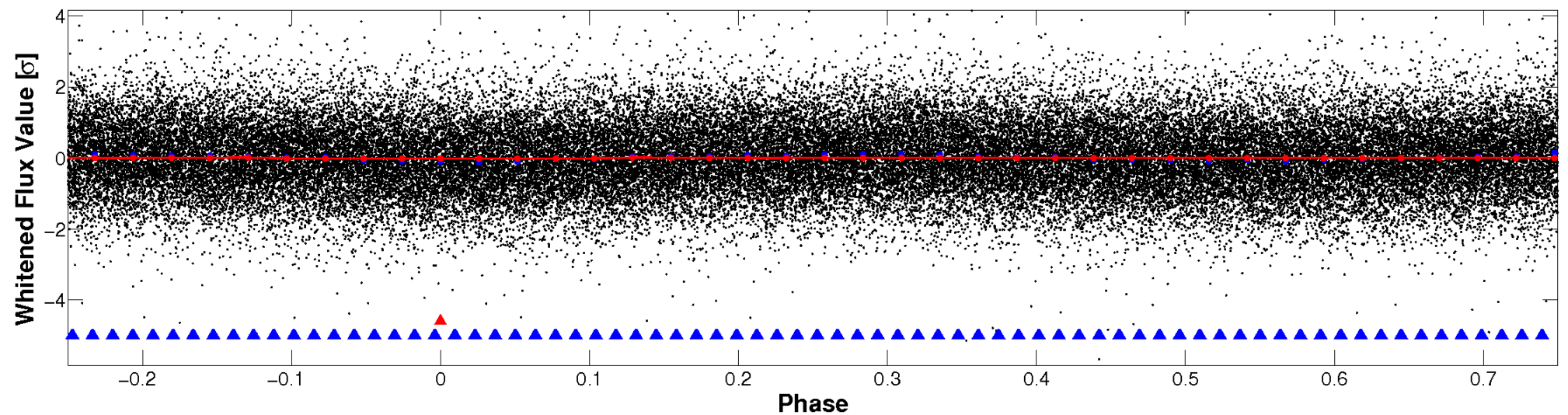


Non-Whitened Vs. Whitened Light Curve

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

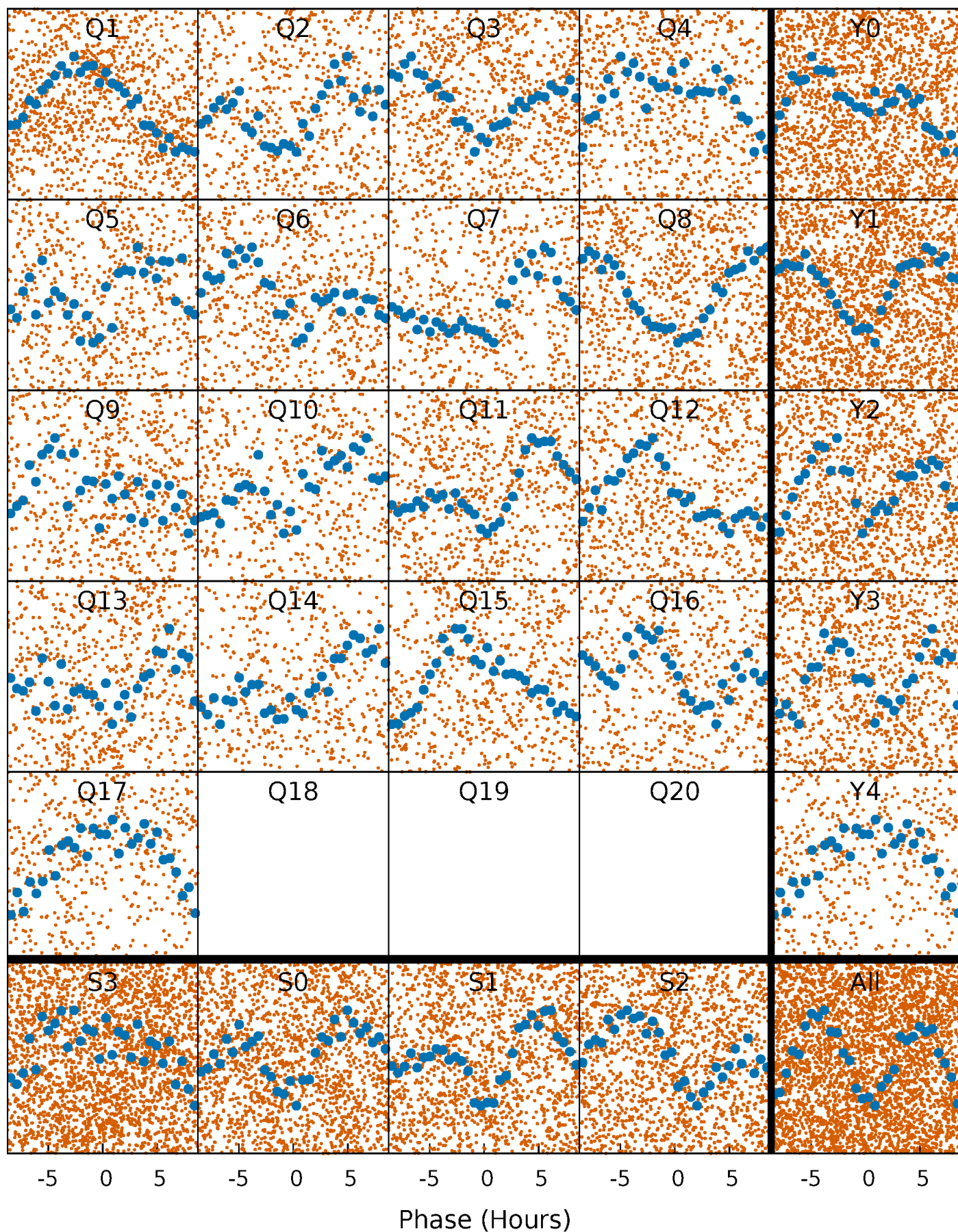


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



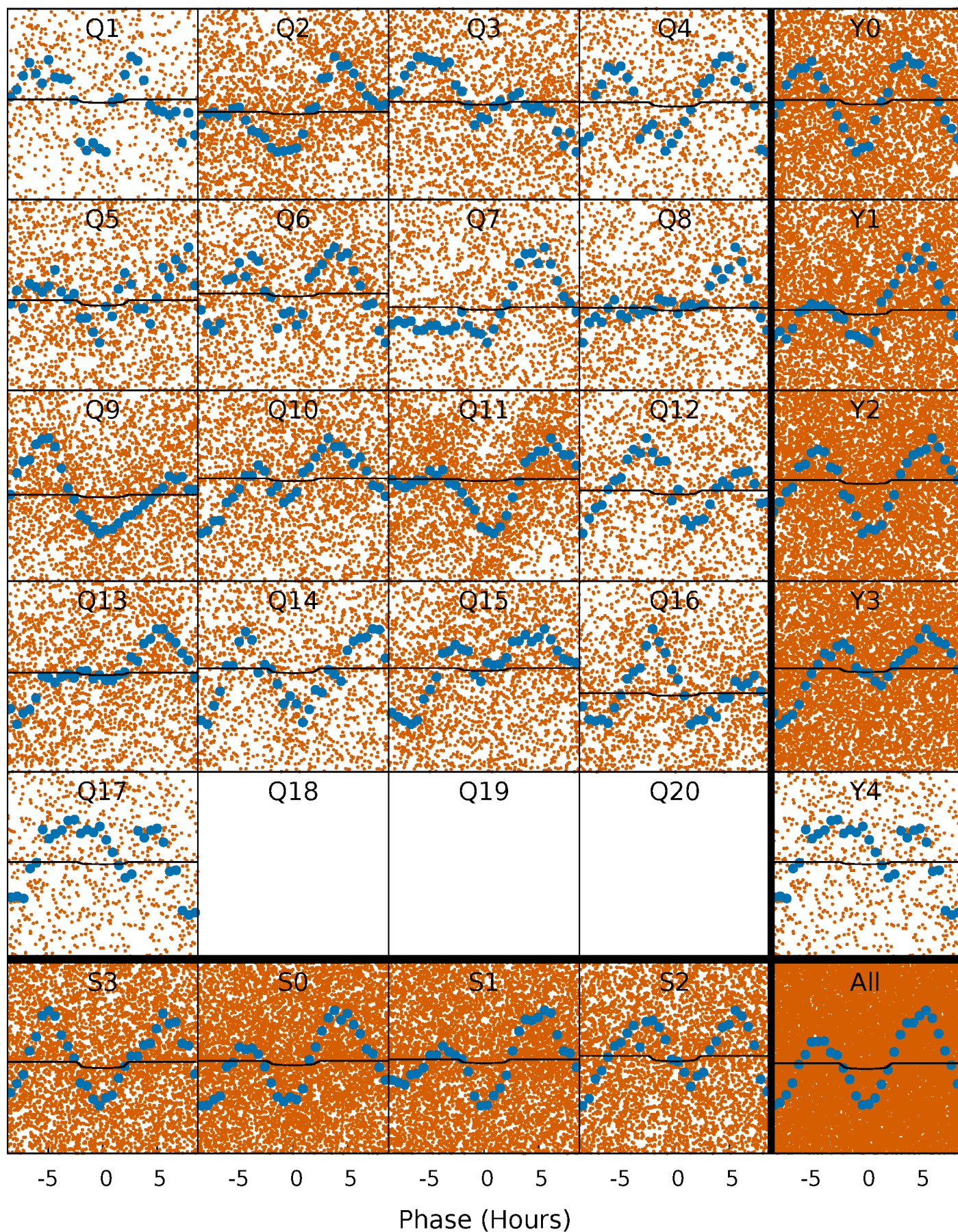
PDC Quarter-Phased Transit Curves

TCE 005978913-01 P= 0.792386 Days $T_0=131.554942$ (BKJD)



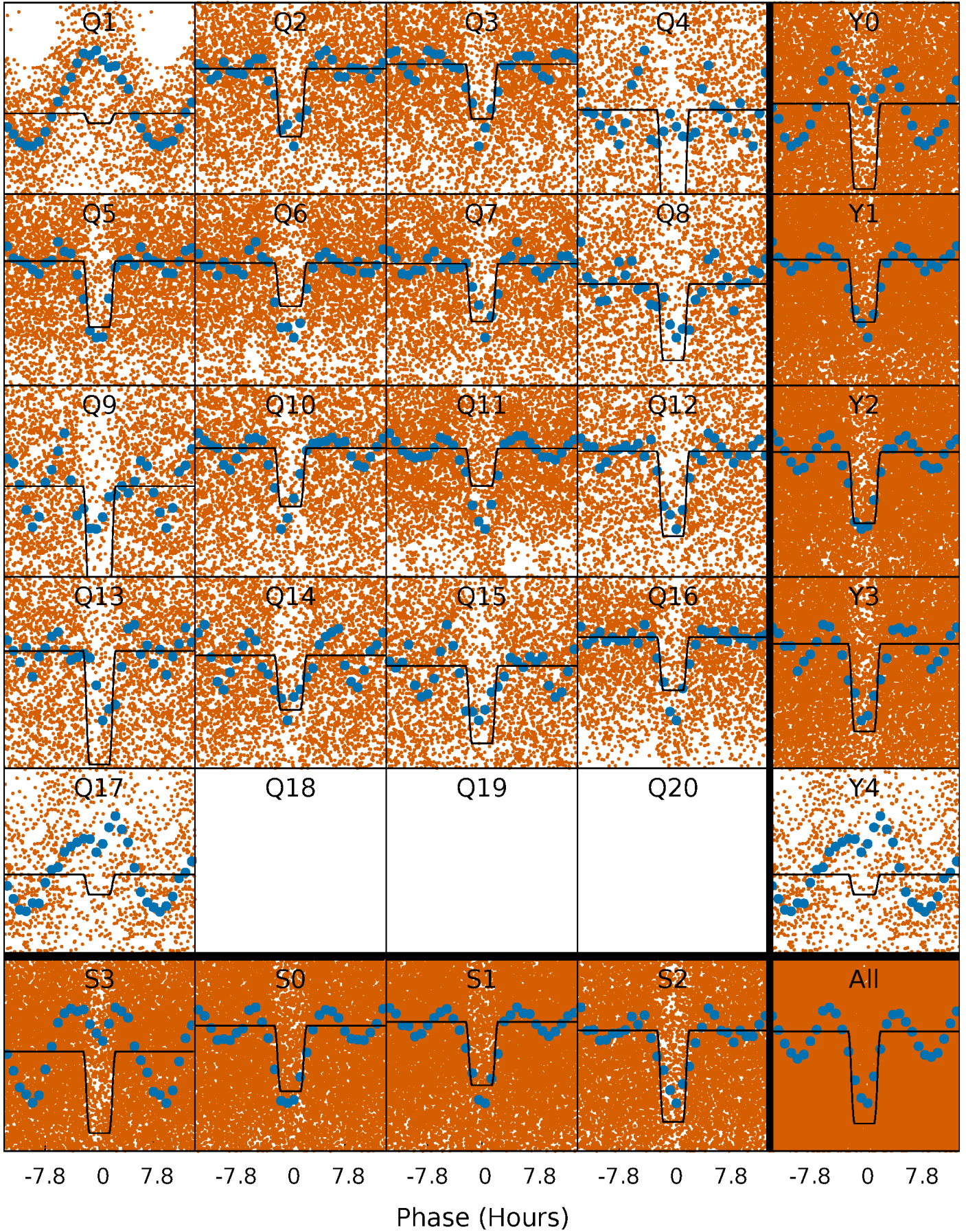
DV Quarter-Phased Transit Curves

TCE 005978913-01 P= 0.792386 Days $T_0=131.554942$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

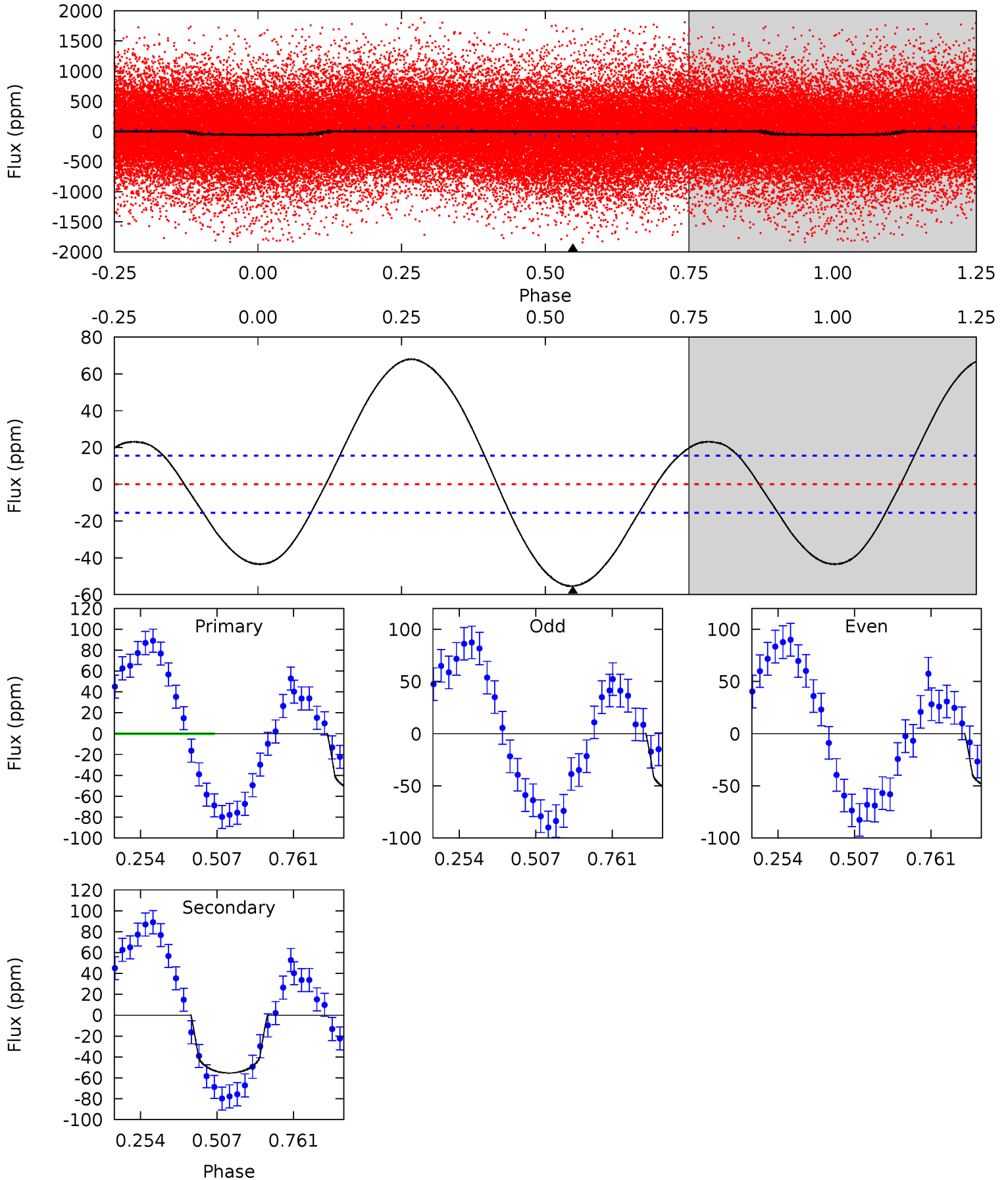
TCE 005978913-01 P= 0.792447 Days $T_0=131.516347$ (BKJD)



DV Model-Shift Uniqueness Test

005978913-01, P = 0.792386 Days, E = 130.762556 Days

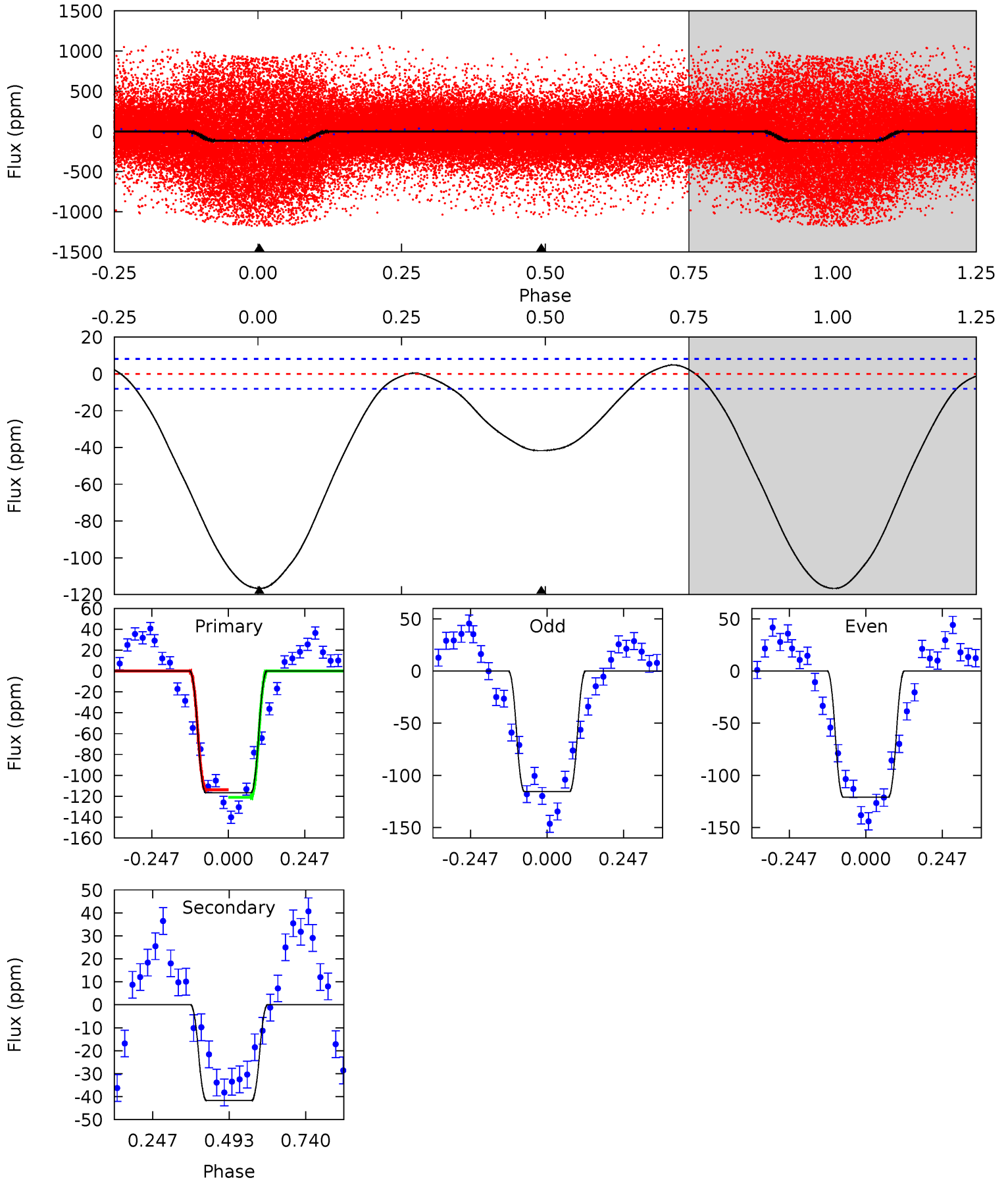
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	15.5	0	0	4.37	1.14	10.5	15.5	15.5	15.5	15.5	0.36	1.45	0.55	0.68



Alt Model-Shift Uniqueness Test

005978913-01, P = 0.792447 Days, E = 130.723900 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
62.8	22.4	0	0	4.37	1.16	1.62	62.8	62.8	22.4	22.4	1.40	0.80	0.04	2.00



Stellar Parameters For KIC 005978913

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6637^{+162}_{-232}	$4.262^{+0.108}_{-0.201}$	$-0.200^{+0.250}_{-0.300}$	$1.351^{+0.425}_{-0.229}$	$1.221^{+0.175}_{-0.195}$	$0.698^{+0.430}_{-0.363}$
	+2%/-3%	+3%/-5%	+125%/-150%	+31%/-17%	+14%/-16%	+62%/-52%
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 005978913-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-55 ± 4	$0.49^{+0.26}_{-0.27}$	3606^{+264}_{-231}	11374^{+12393}_{-3077}	40^{+146}_{-23}
Alt.	-42 ± 2	$1.77^{+0.41}_{-0.34}$	3580^{+265}_{-199}	4830^{+420}_{-372}	$2.318^{+1.115}_{-0.746}$

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 $A_{obs} \gg 1.0$

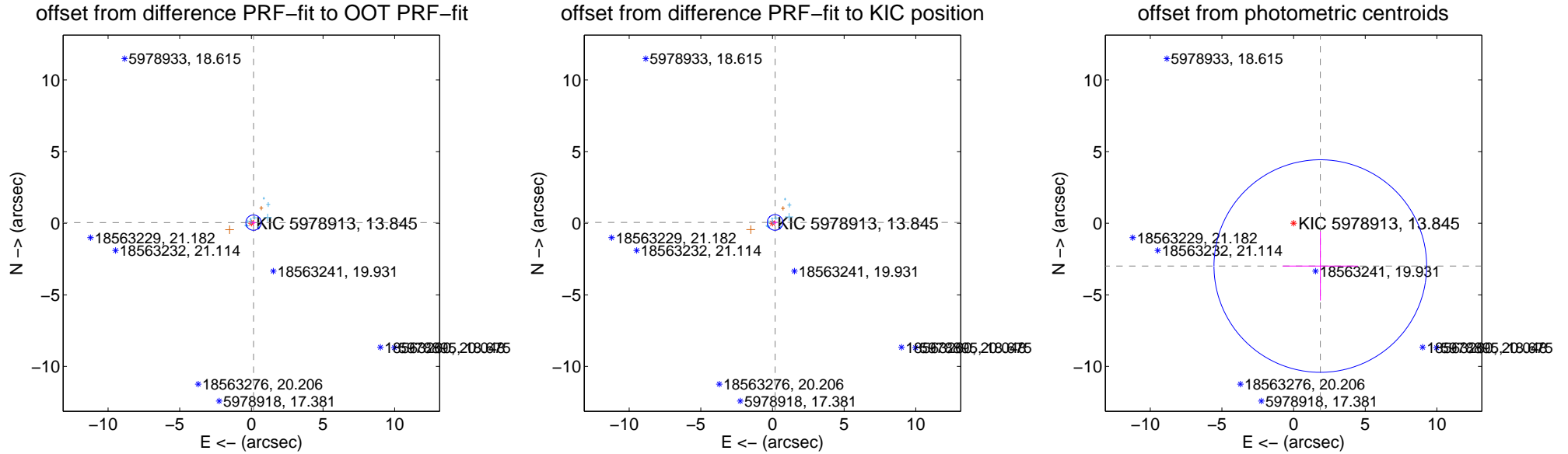
DV Centroid Data

Supplemental centroid analysis for 005978913-01. Kepler magnitude: 13.85. Transit SNR 1.99

There are 12 quarters with good PRF difference image offsets

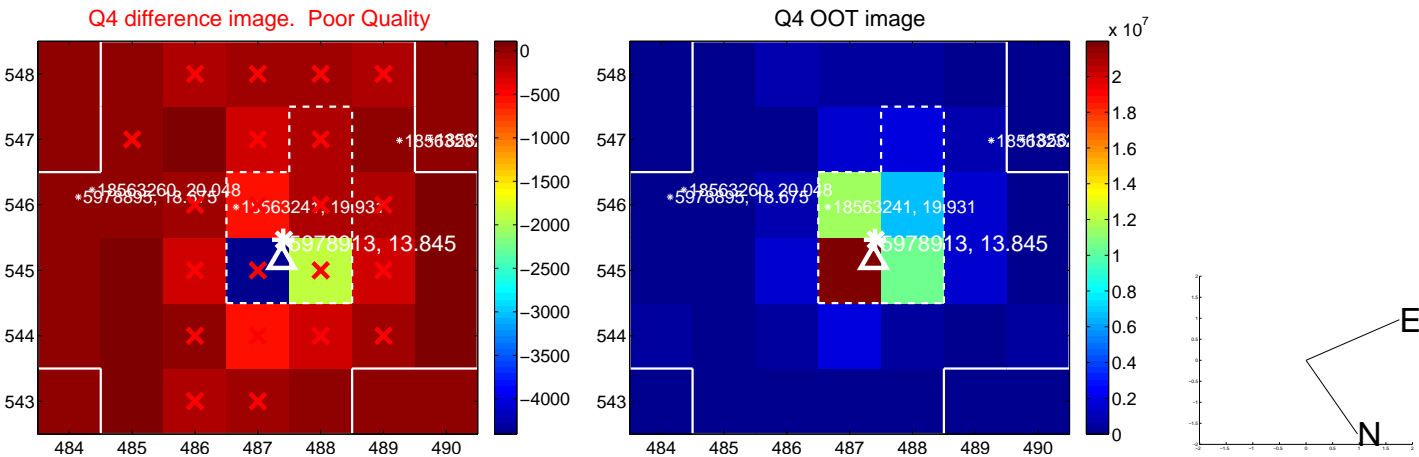
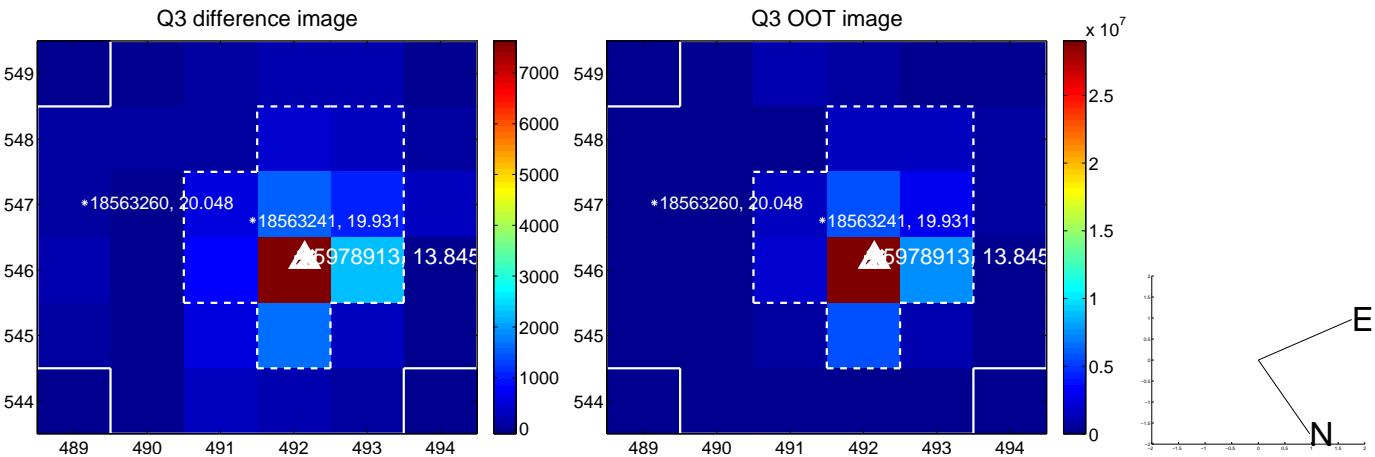
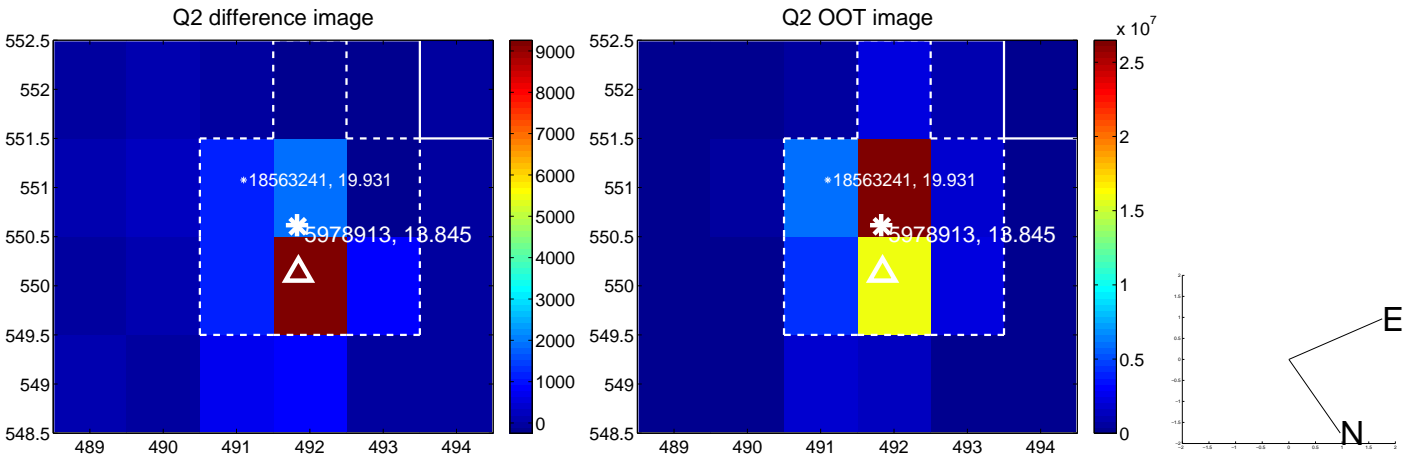
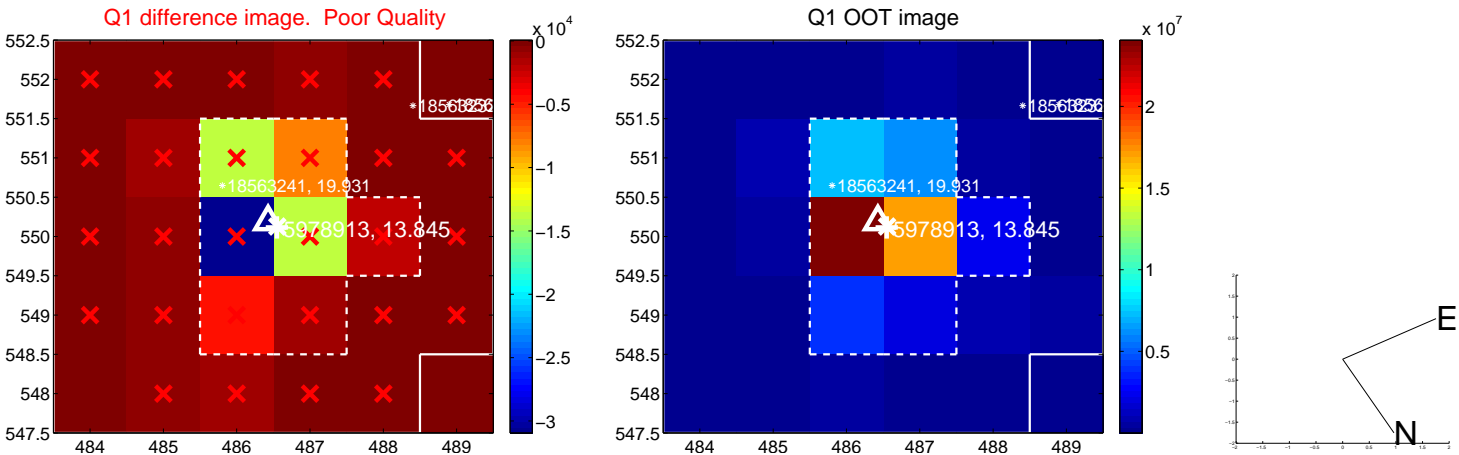
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.155 ± 0.178	0.87	-0.149 ± 0.158	0.039 ± 0.159
PRF-fit source offset from KIC position	0.188 ± 0.182	1.03	-0.181 ± 0.163	0.051 ± 0.148
photometric centroid source offset	3.53 ± 2.47	1.43	-1.87 ± 2.64	-2.99 ± 2.41

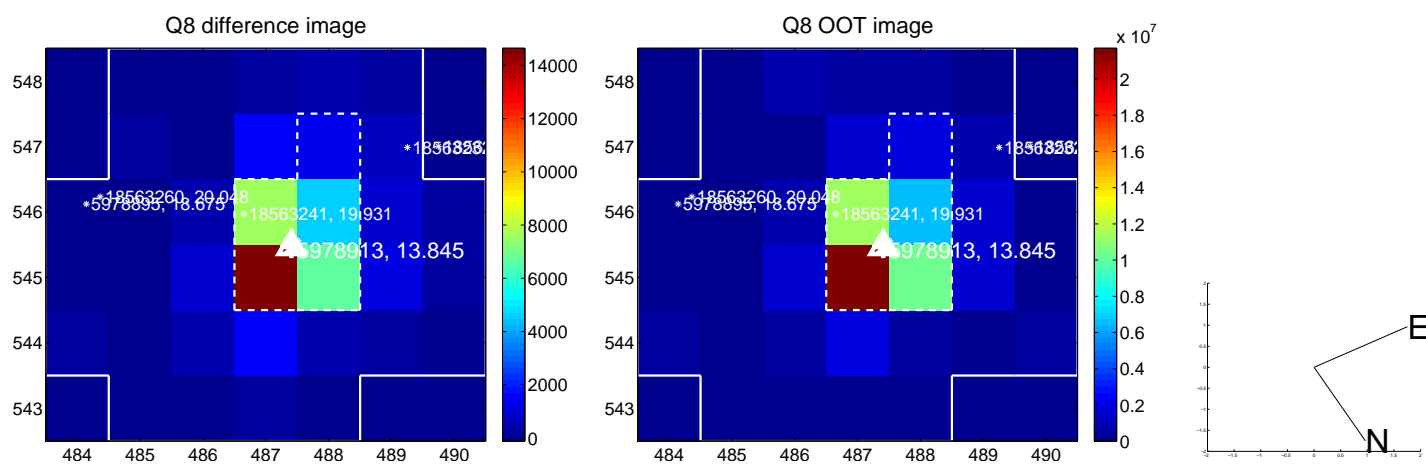
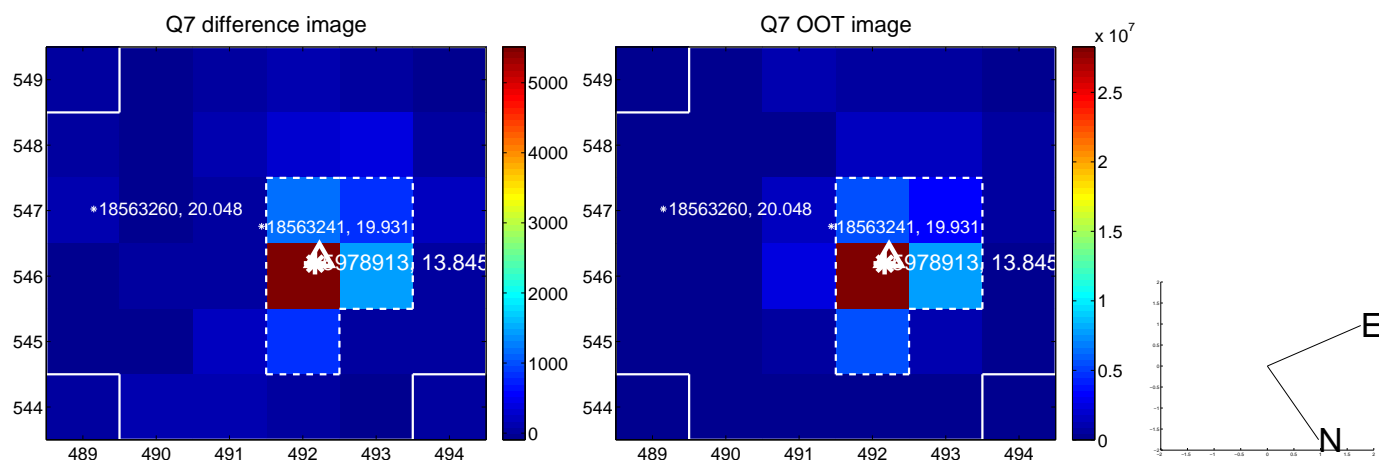
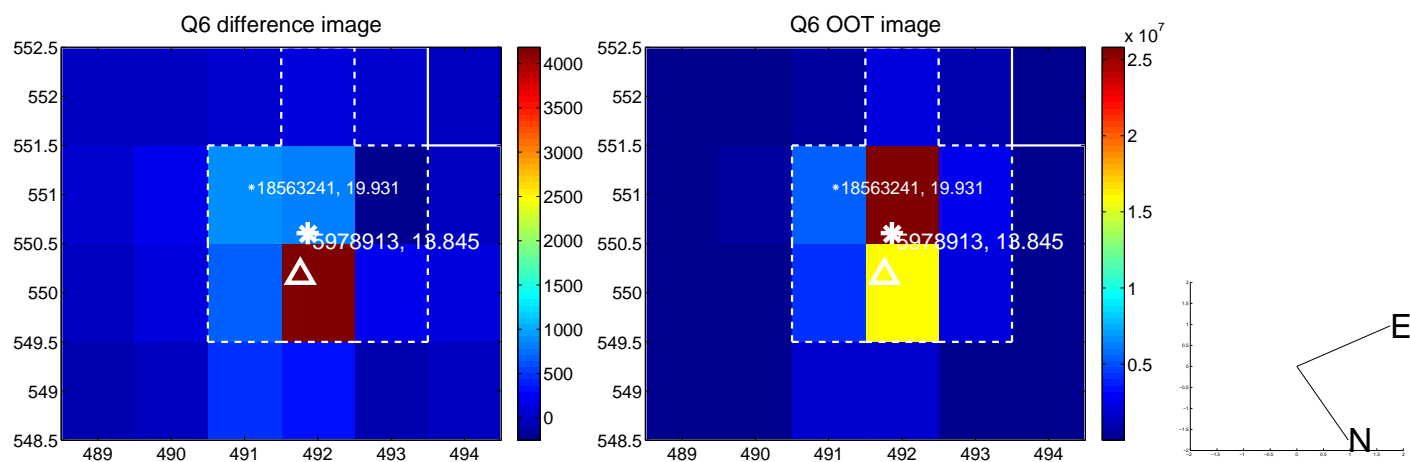
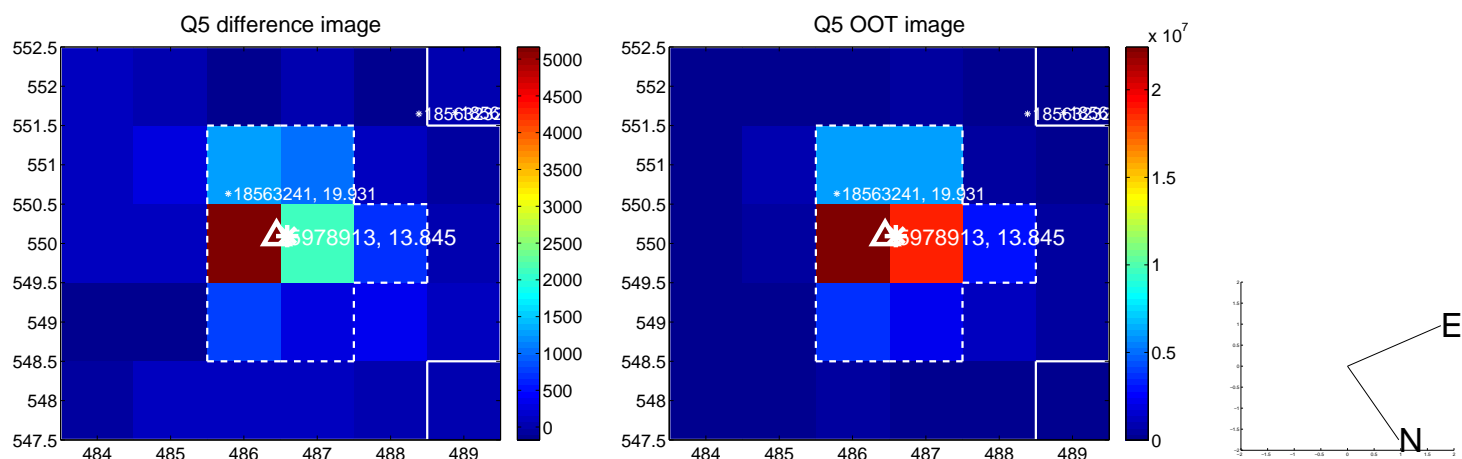


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

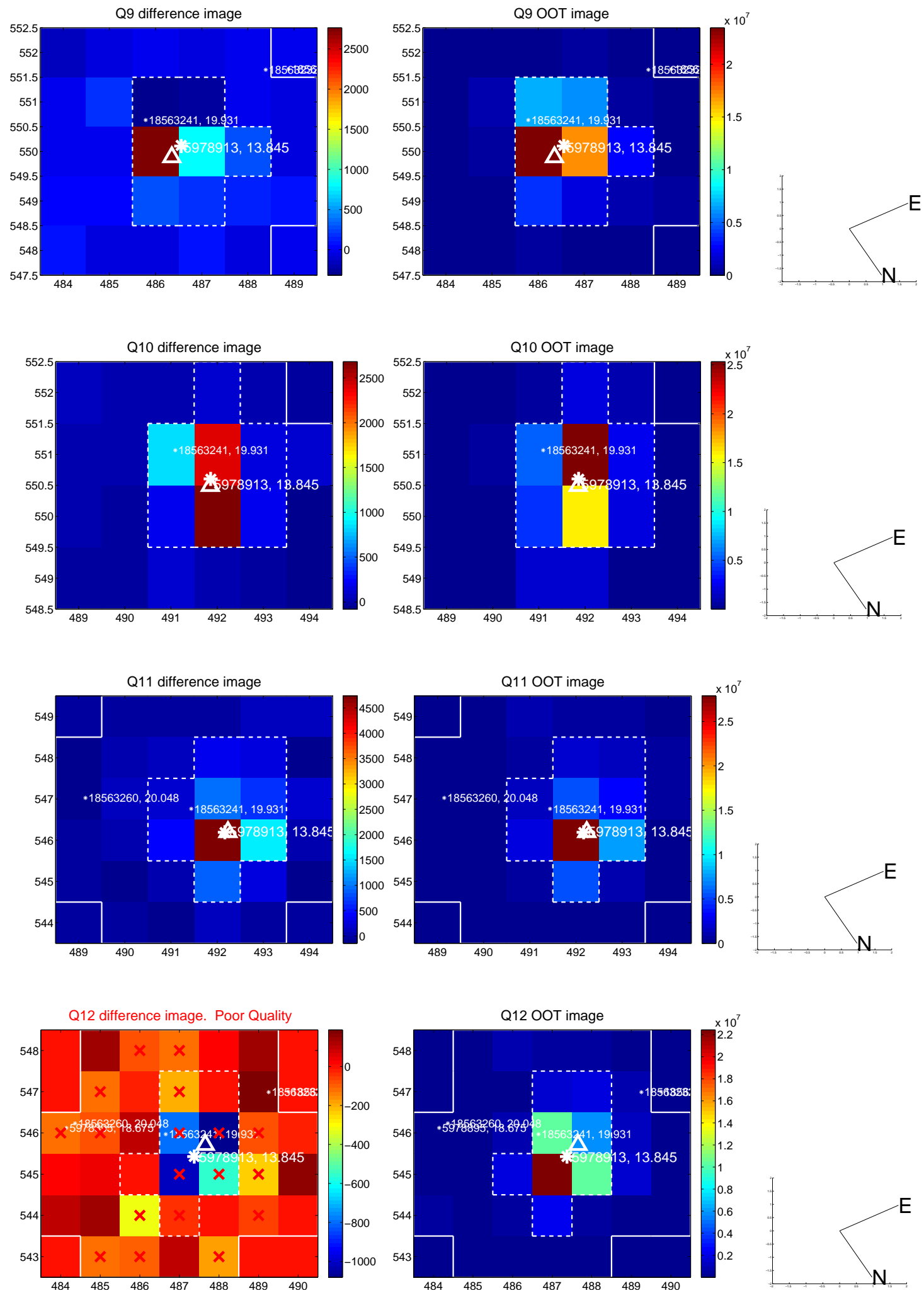
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



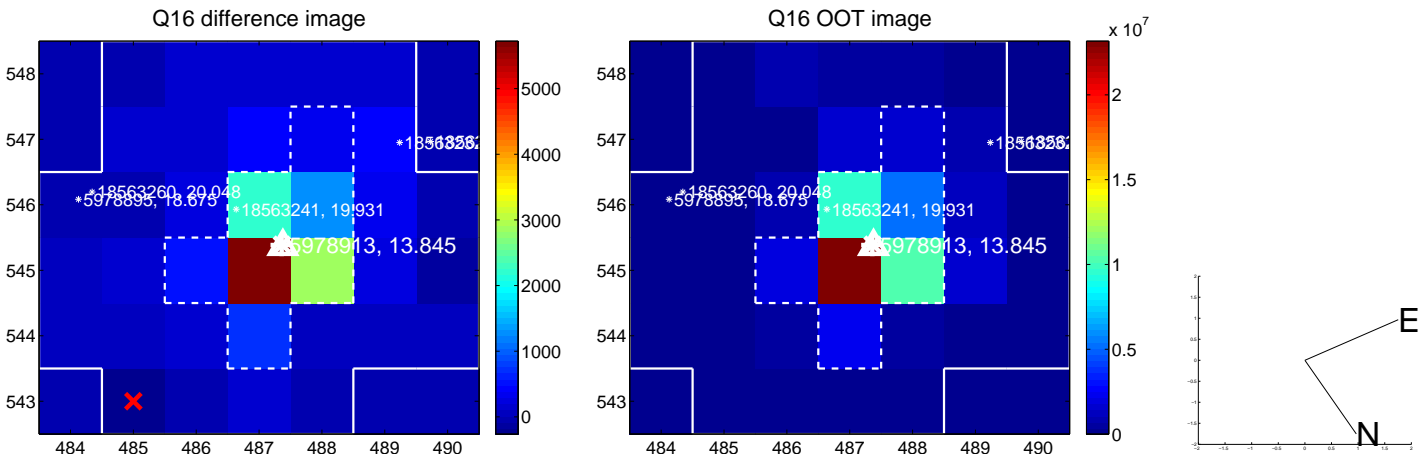
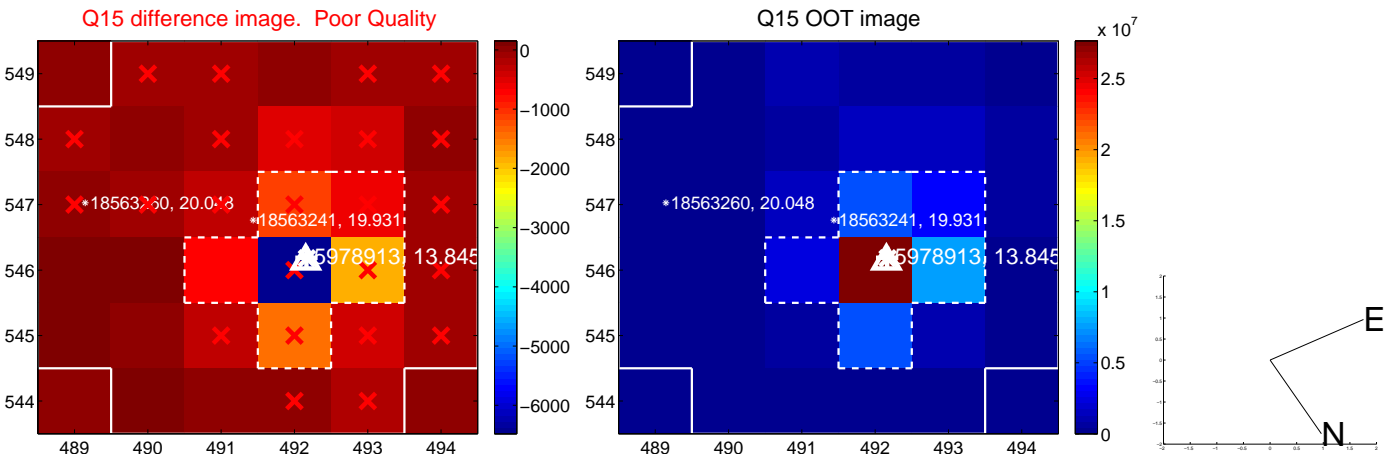
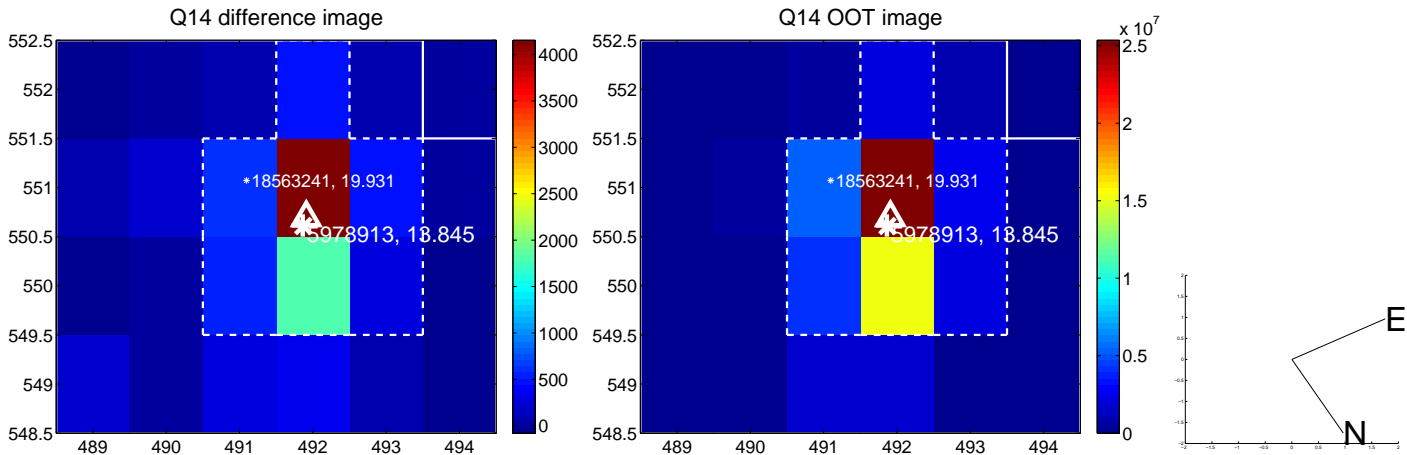
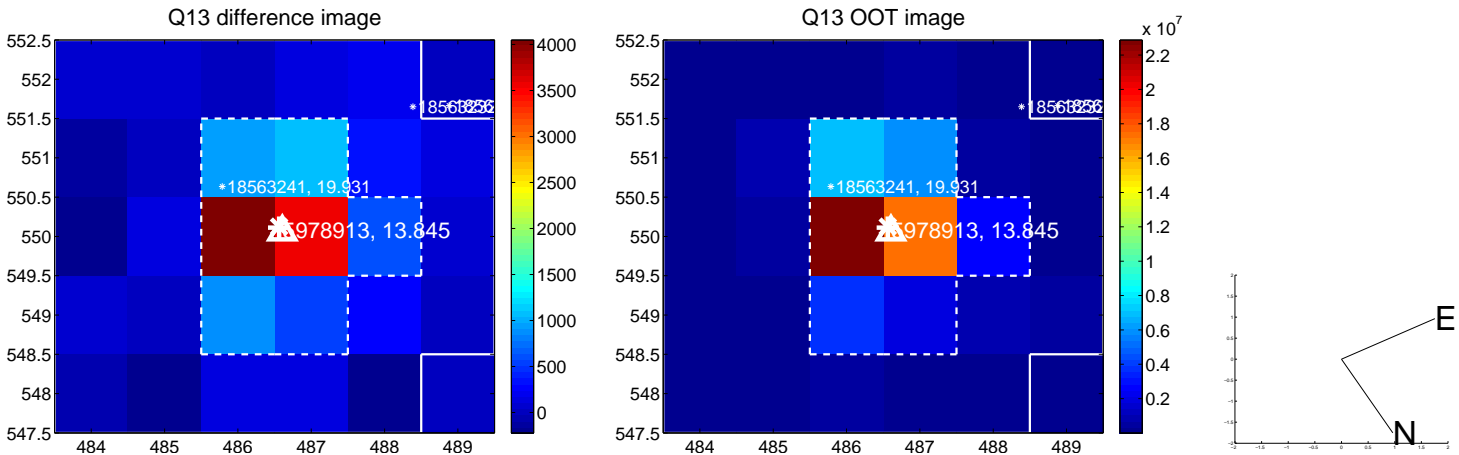
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



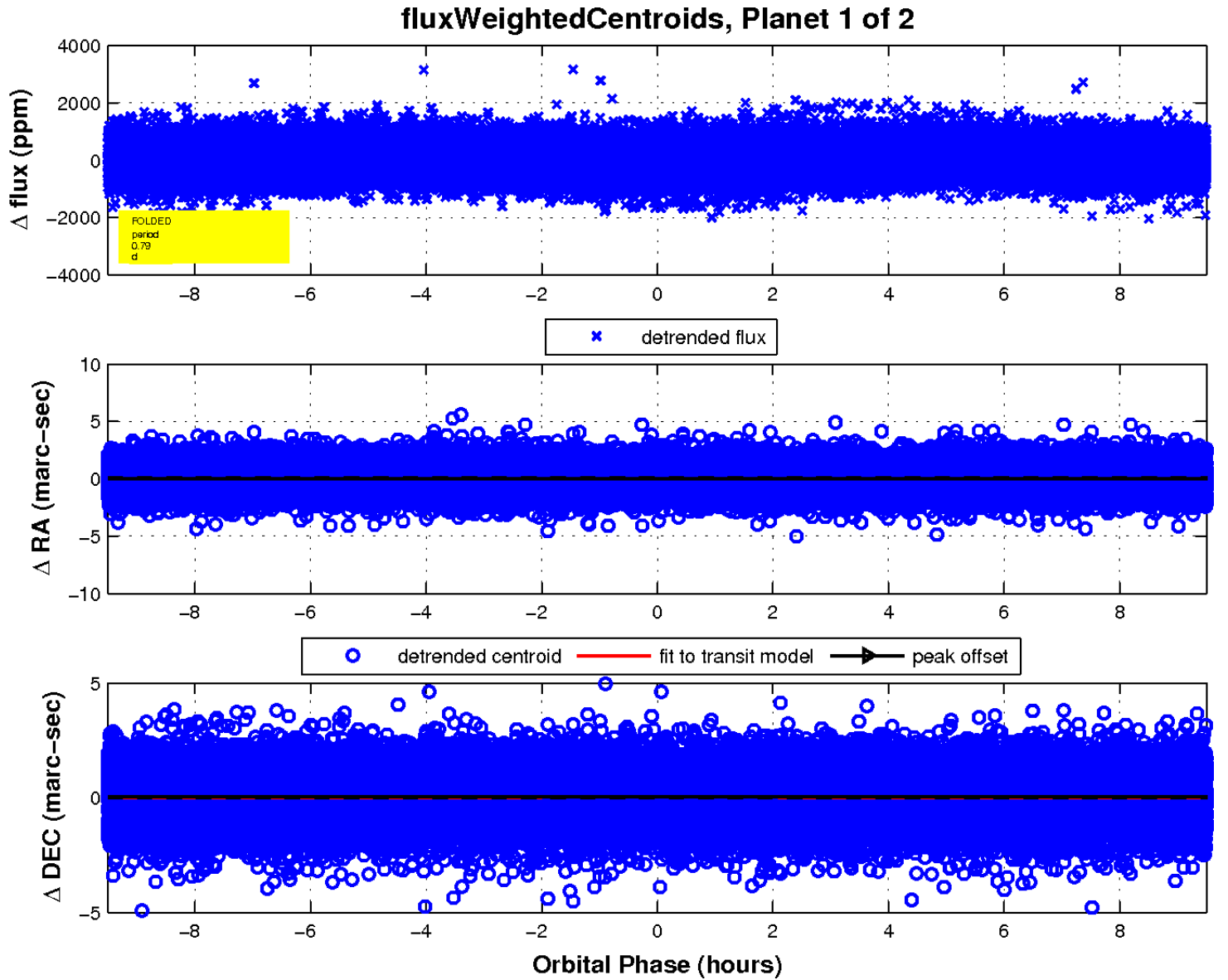
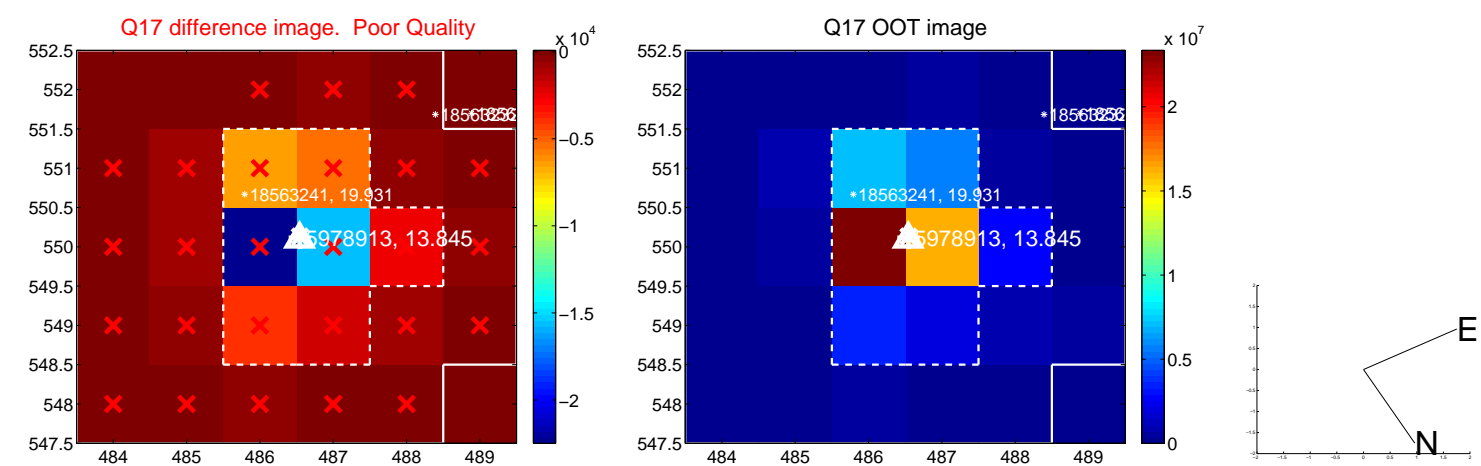
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

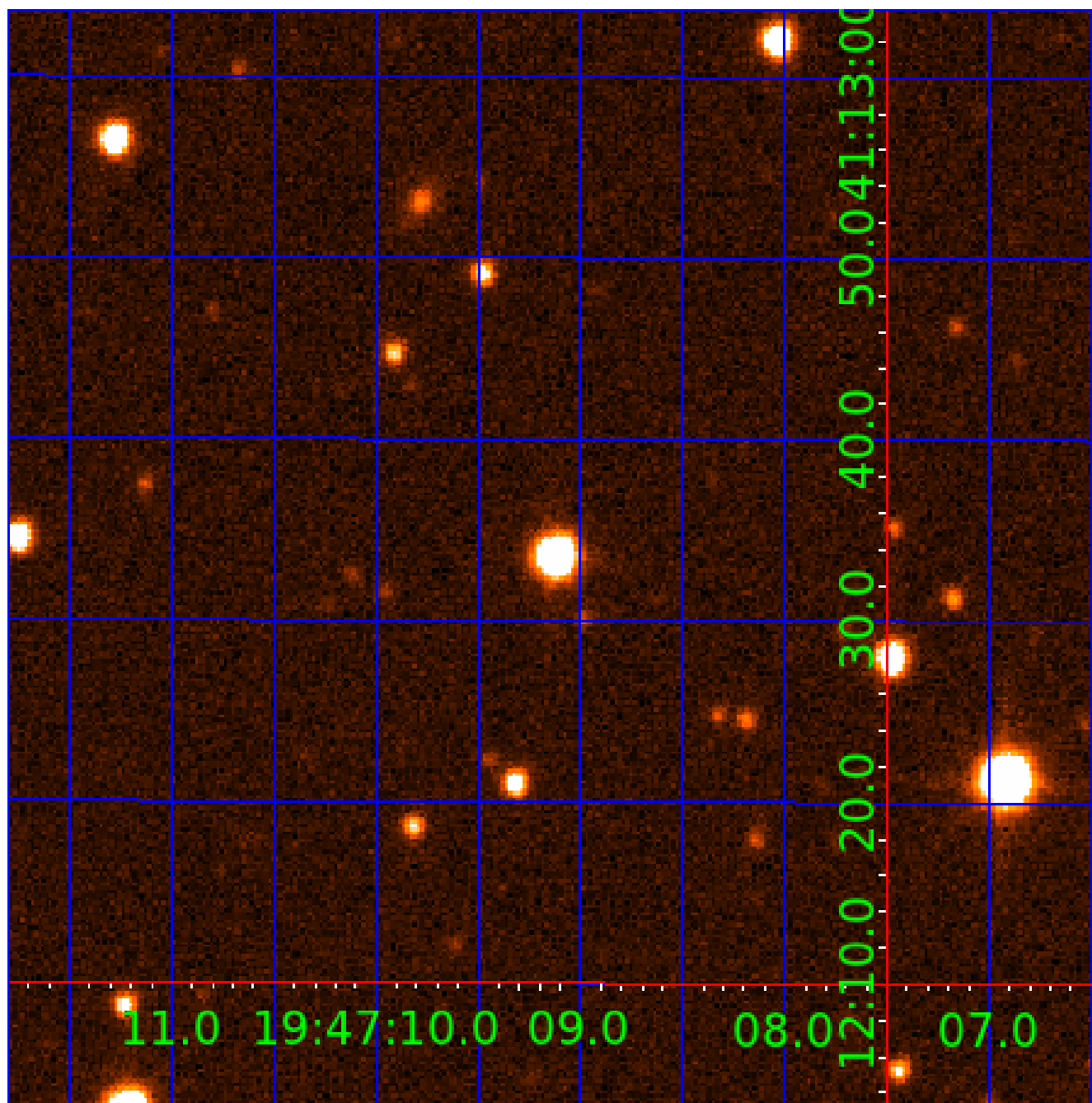


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005978913

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})
005978913-01	OBS	No	0.792386	131.554942	9.8	4.381	9.6	2.0	1.35	6637	0.45	9907.62
005978913-02	OBS	No	0.674598	131.627327	159.0	8.095	9.6	17.8	1.35	6637	2.26	12278.86

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005978913-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
005978913-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—CENT_UNRESOLVED_OFFSET

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

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

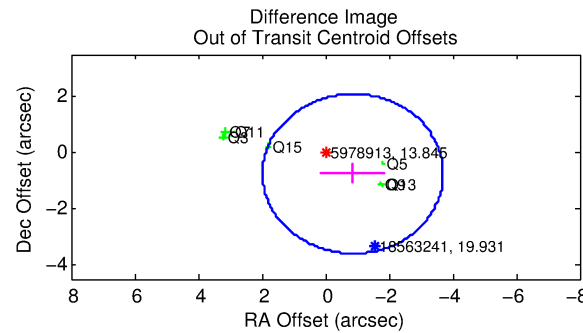
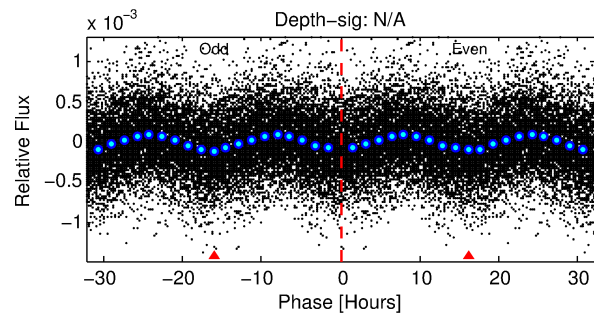
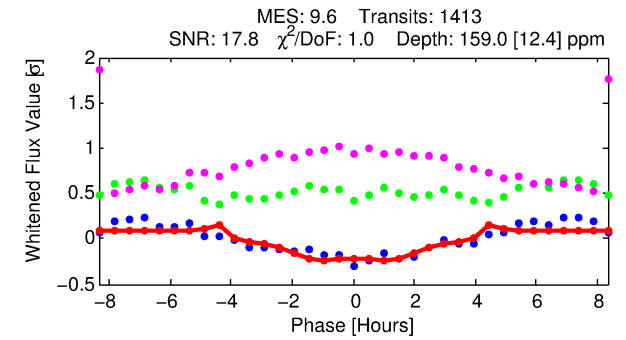
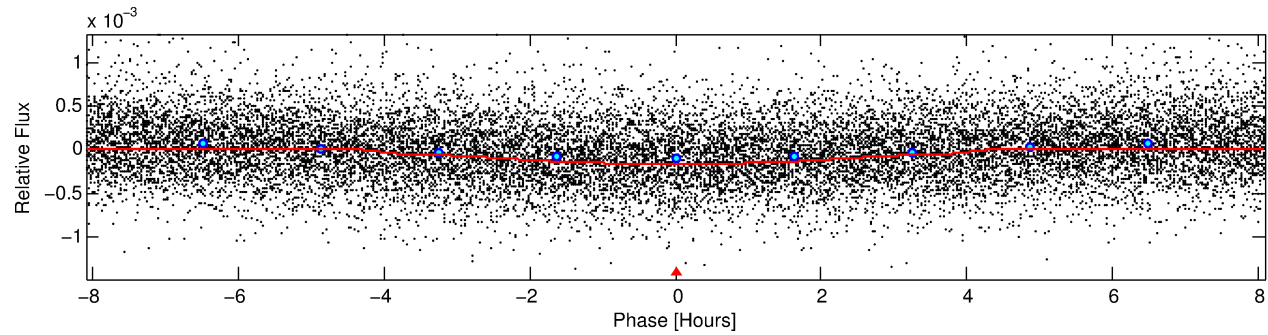
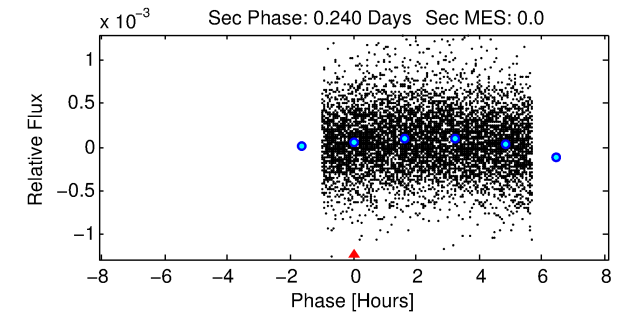
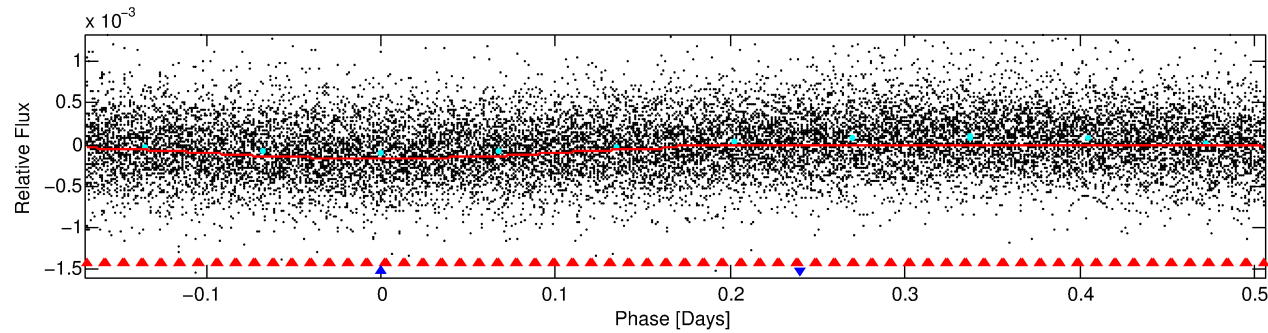
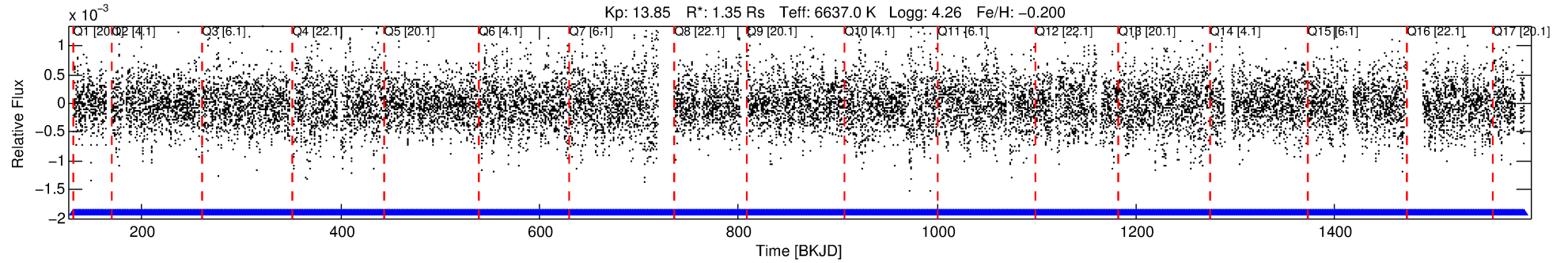
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005978913-02

No Significant Match Found

DV One-Page Summary

KIC: 5978913 Candidate: 2 of 2 Period: 0.675 d



DV Fit Results:

Period = 0.67460 [0.00001] d
Epoch = 131.6273 [0.0029] BKJD
Rp/R* = 0.0153 [0.0006]
a/R* = 1.00 [0.00]
b = 0.98 [0.00]
Seff = 12278.86 [4892.08]
Teff = 2684 [267] K
Rp = 2.26 [0.72] Re
a = 0.0161 [0.0042] AU
Ag = N/A
Teffp = N/A

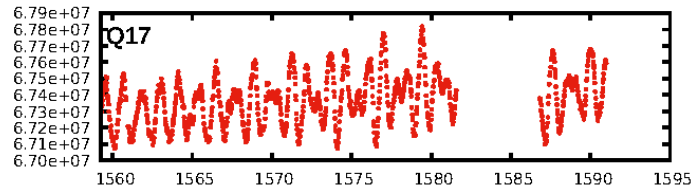
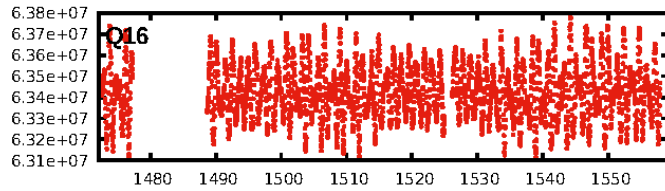
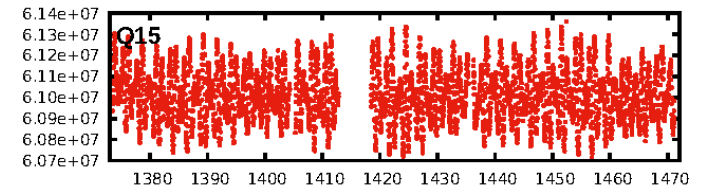
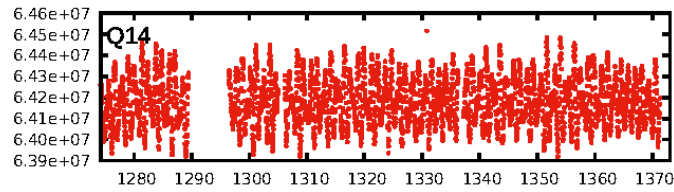
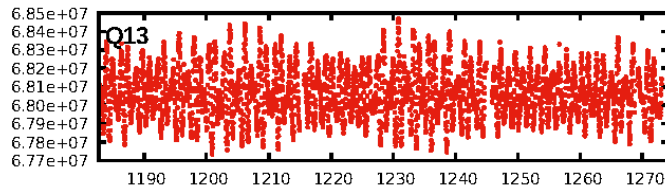
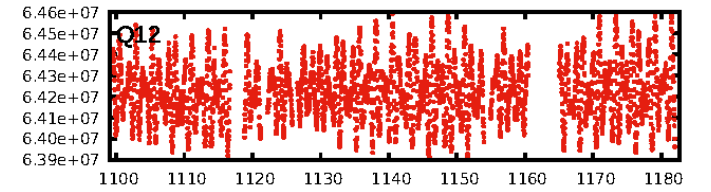
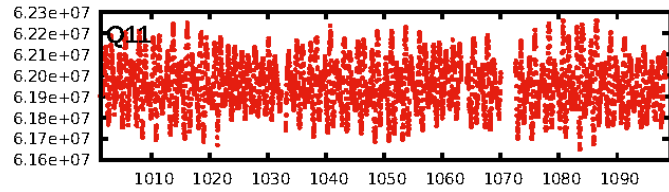
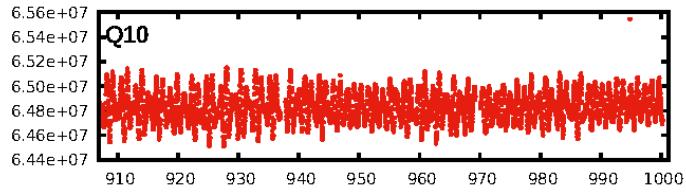
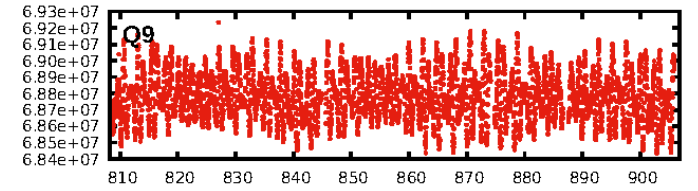
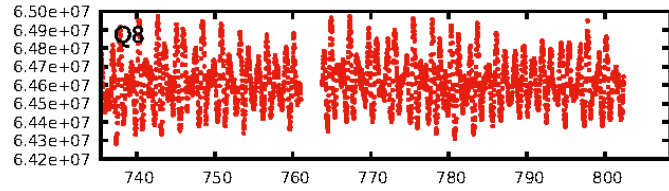
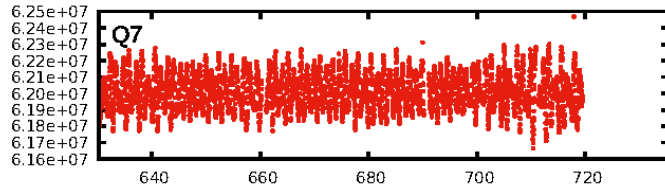
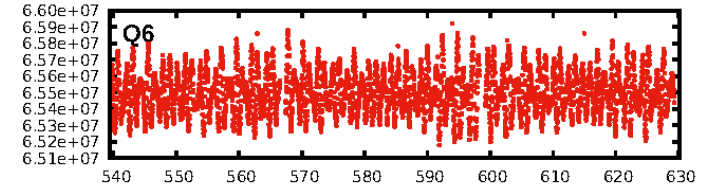
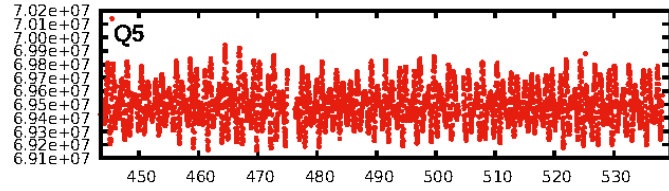
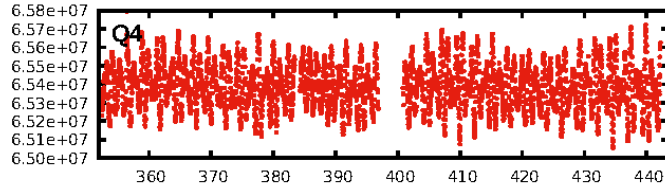
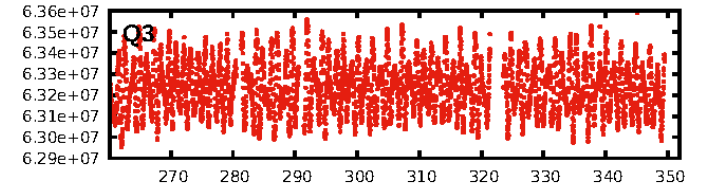
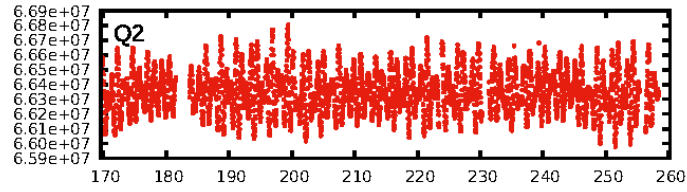
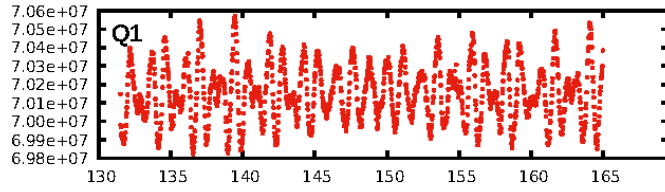
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 24.1% [0.31σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1351/1351]
GhostDiagnostic-chr: 3.13
Centroid-sig: 0.1%
Centroid-so: 0.199 arcsec [1.61σ]
OotOffset-rm: 1.148 arcsec [1.21σ]
KicOffset-rm: 1.150 arcsec [1.40σ]
OotOffset-st: 0/4/0/3 [7]
KicOffset-st: 0/4/0/3 [7]
DiffImageQuality-fgm: 0.86 [6/7]
DiffImageOverlap-fno: 0.00 [0/17]

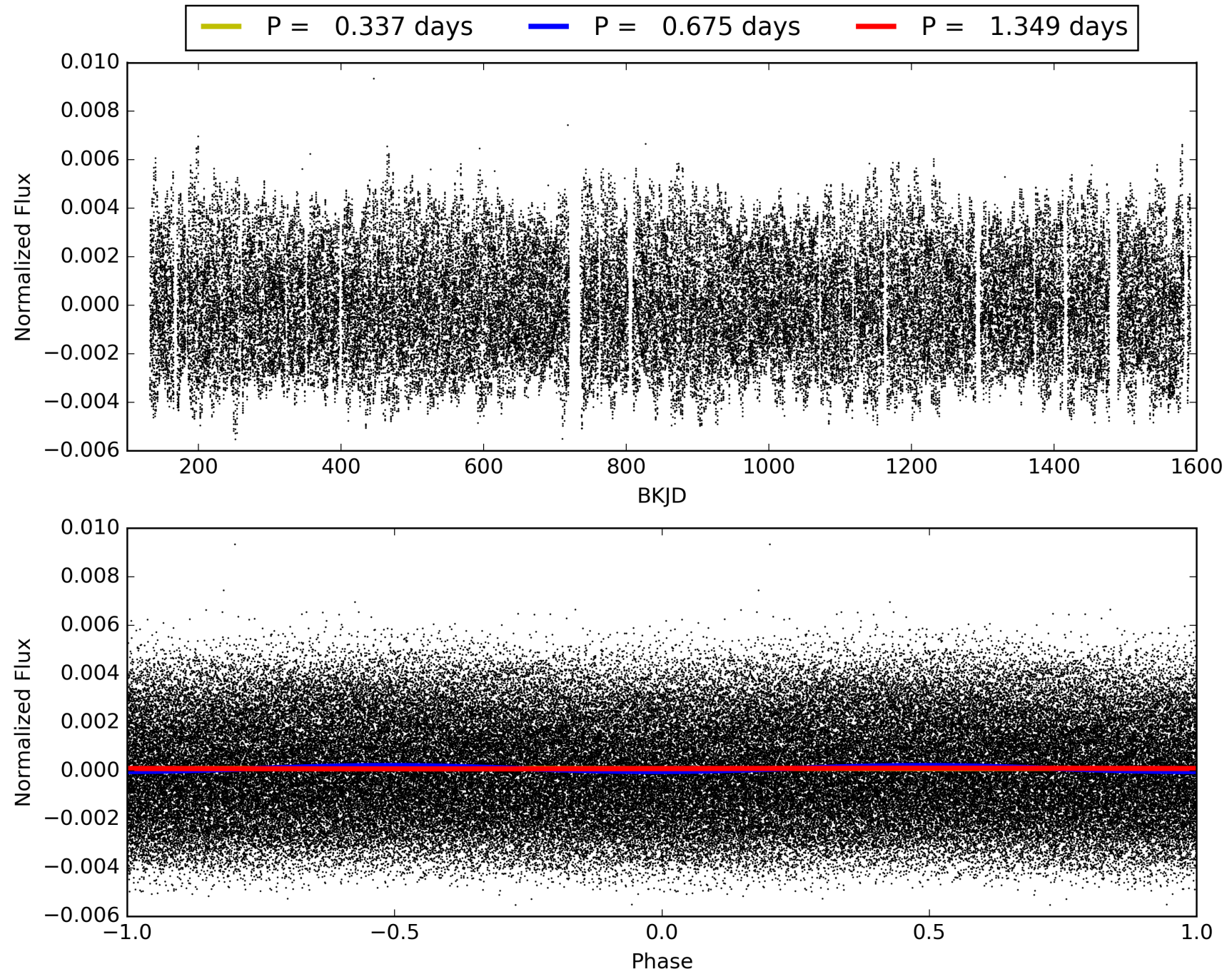
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:15:52 Z

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

TCE 005978913-02, PDC Light Curves

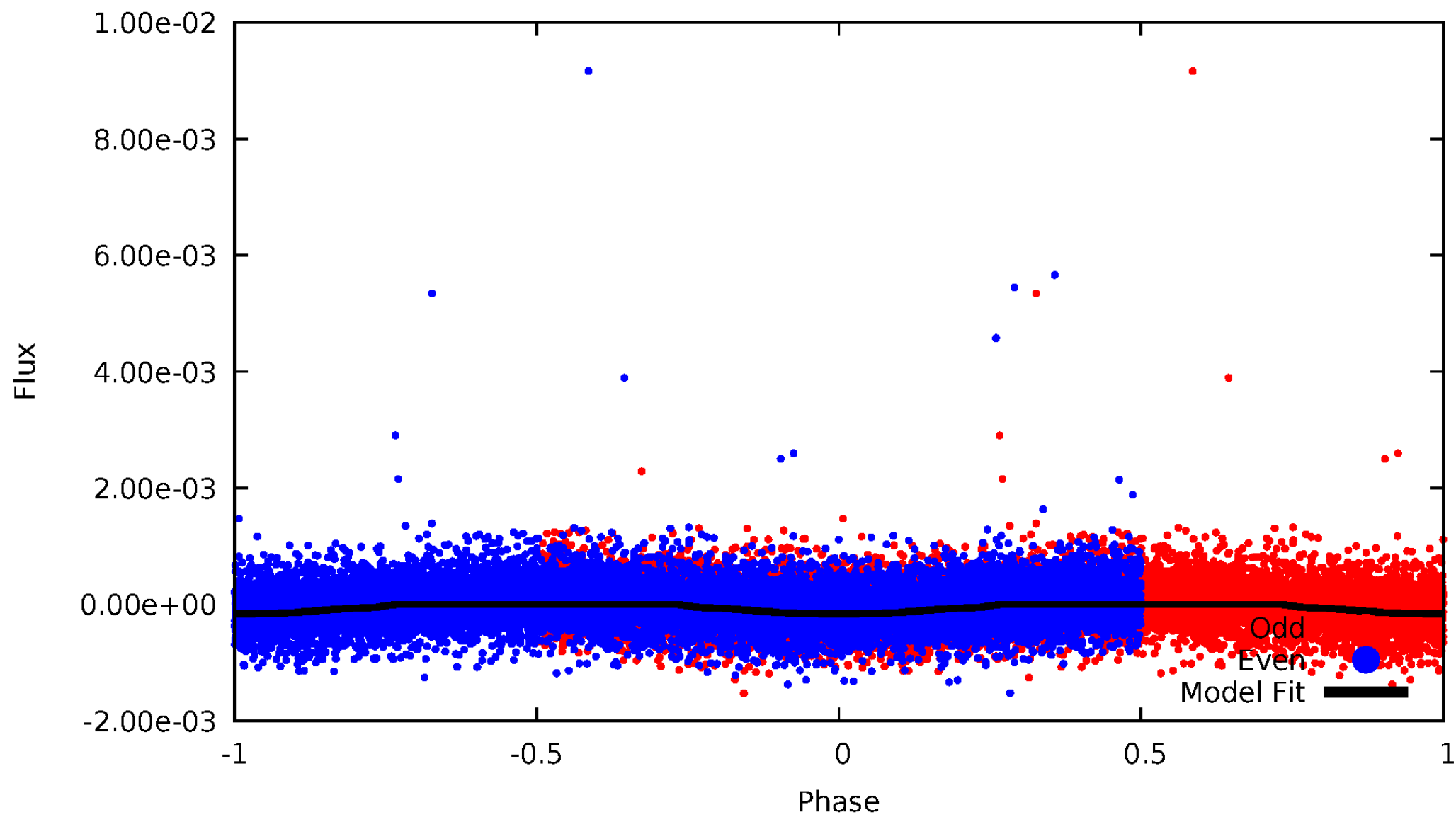


TCE 005978913-02



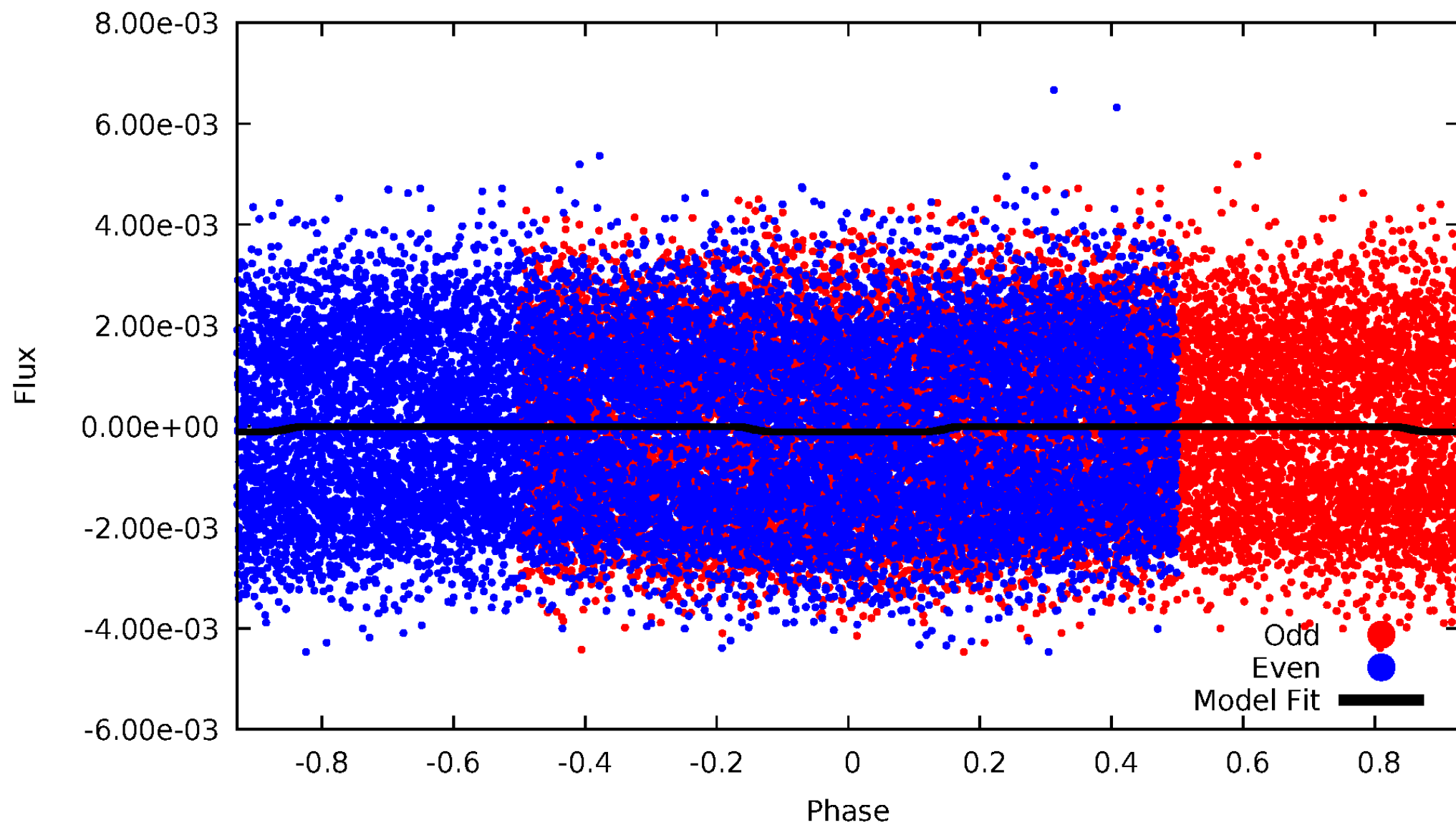
DV Odd/Even

TCE 005978913-02



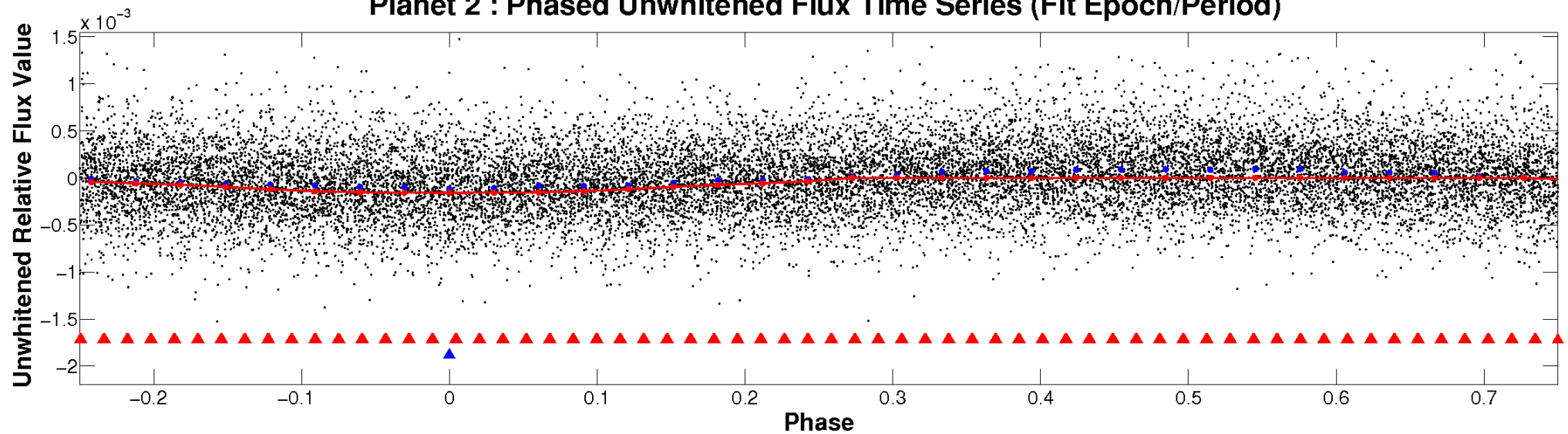
ALT Odd/Even

TCE 005978913-02

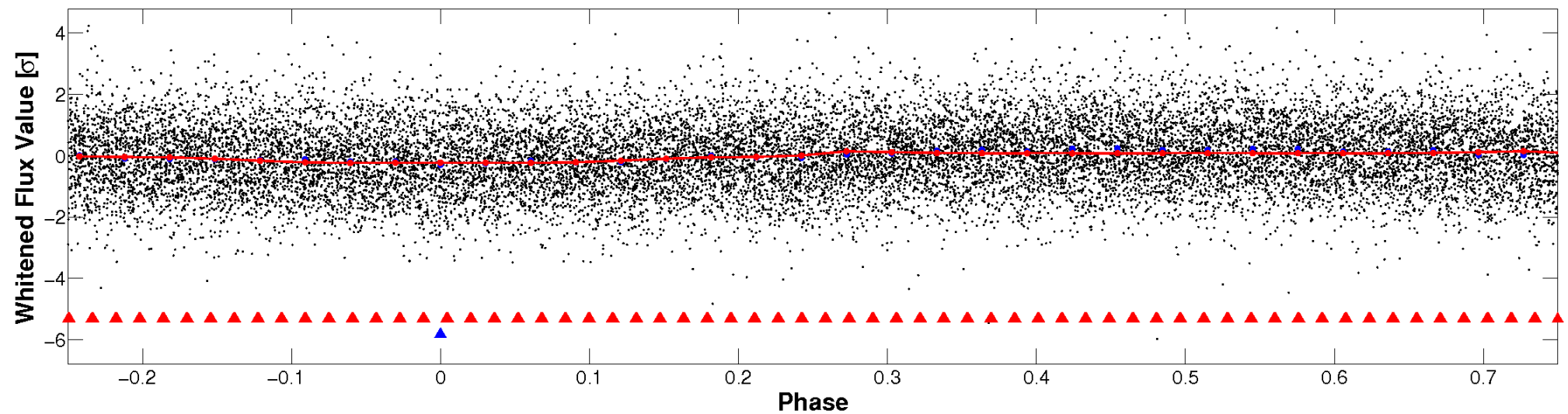


Non-Whitened Vs. Whitened Light Curve

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

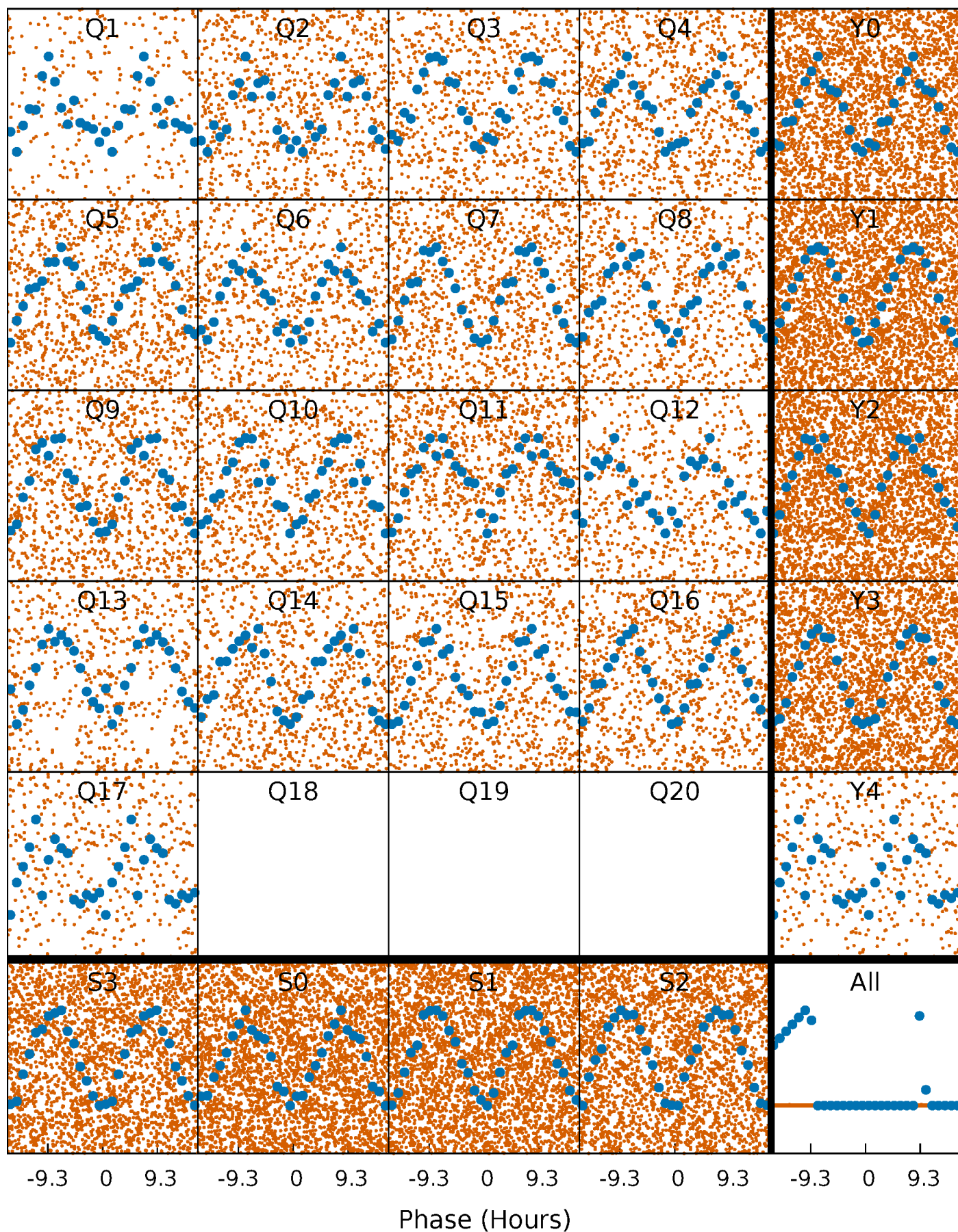


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



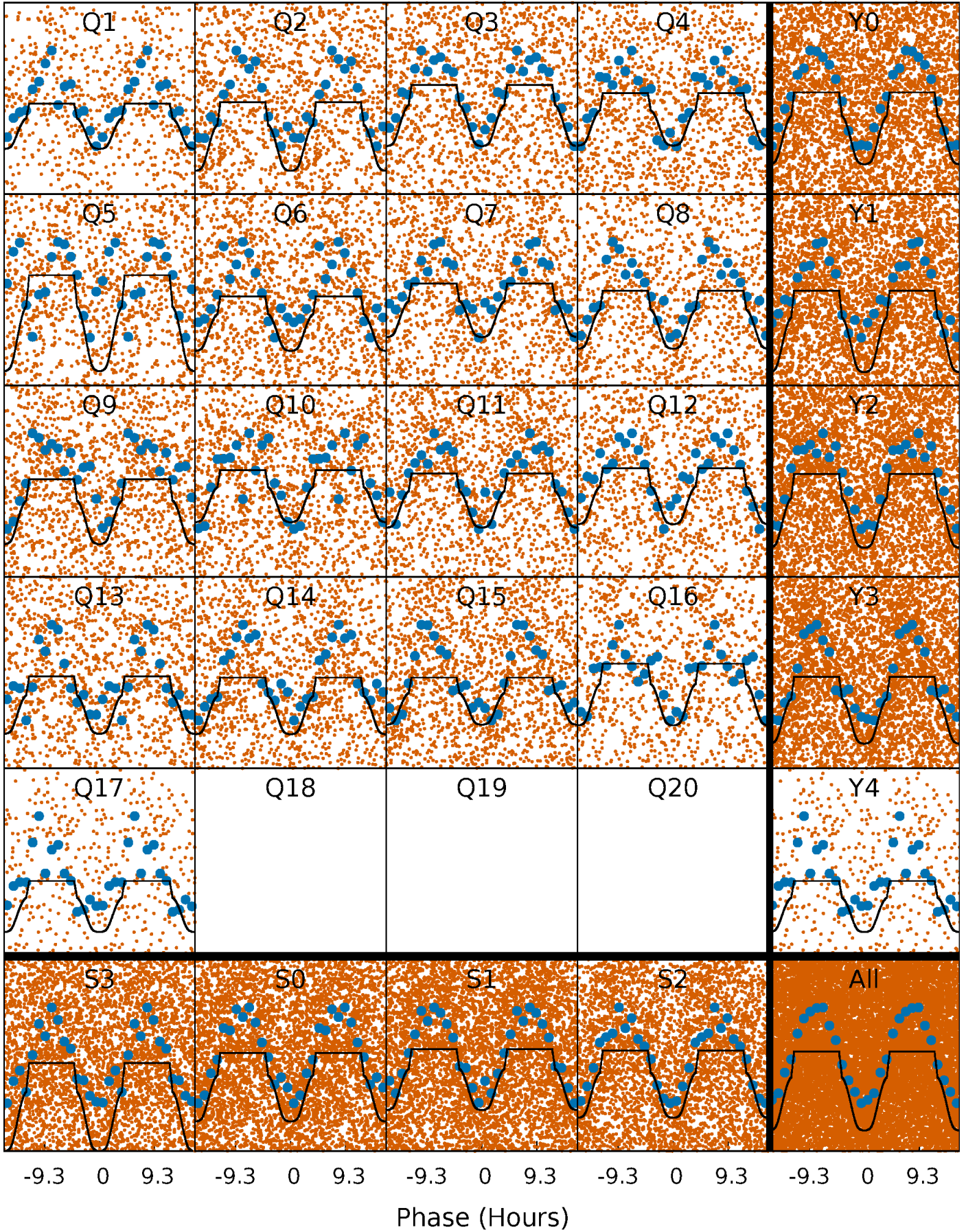
PDC Quarter-Phased Transit Curves

TCE 005978913-02 P= 0.674598 Days $T_0=131.627328$ (BKJD)



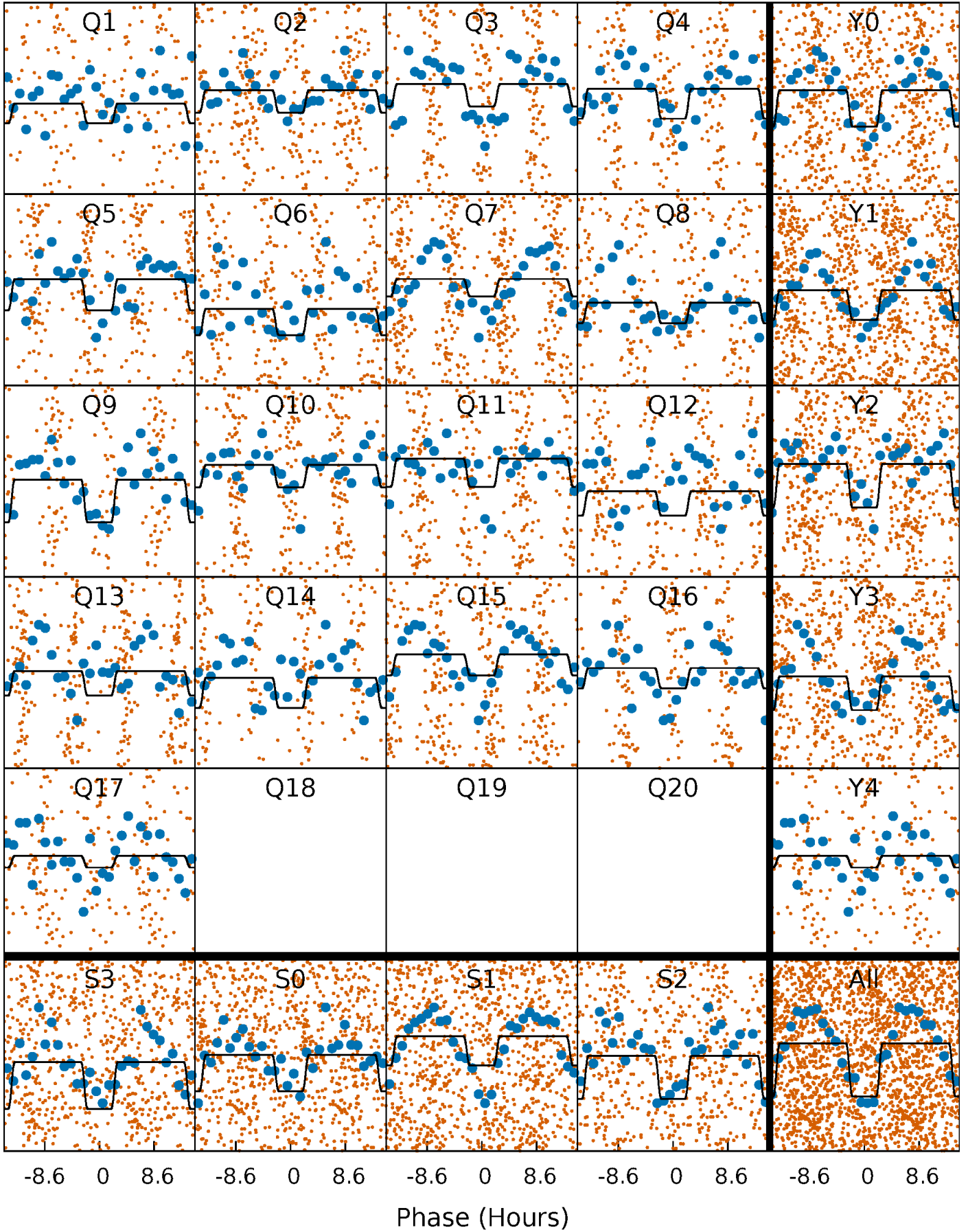
DV Quarter-Phased Transit Curves

TCE 005978913-02 P= 0.674598 Days $T_0=131.627328$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

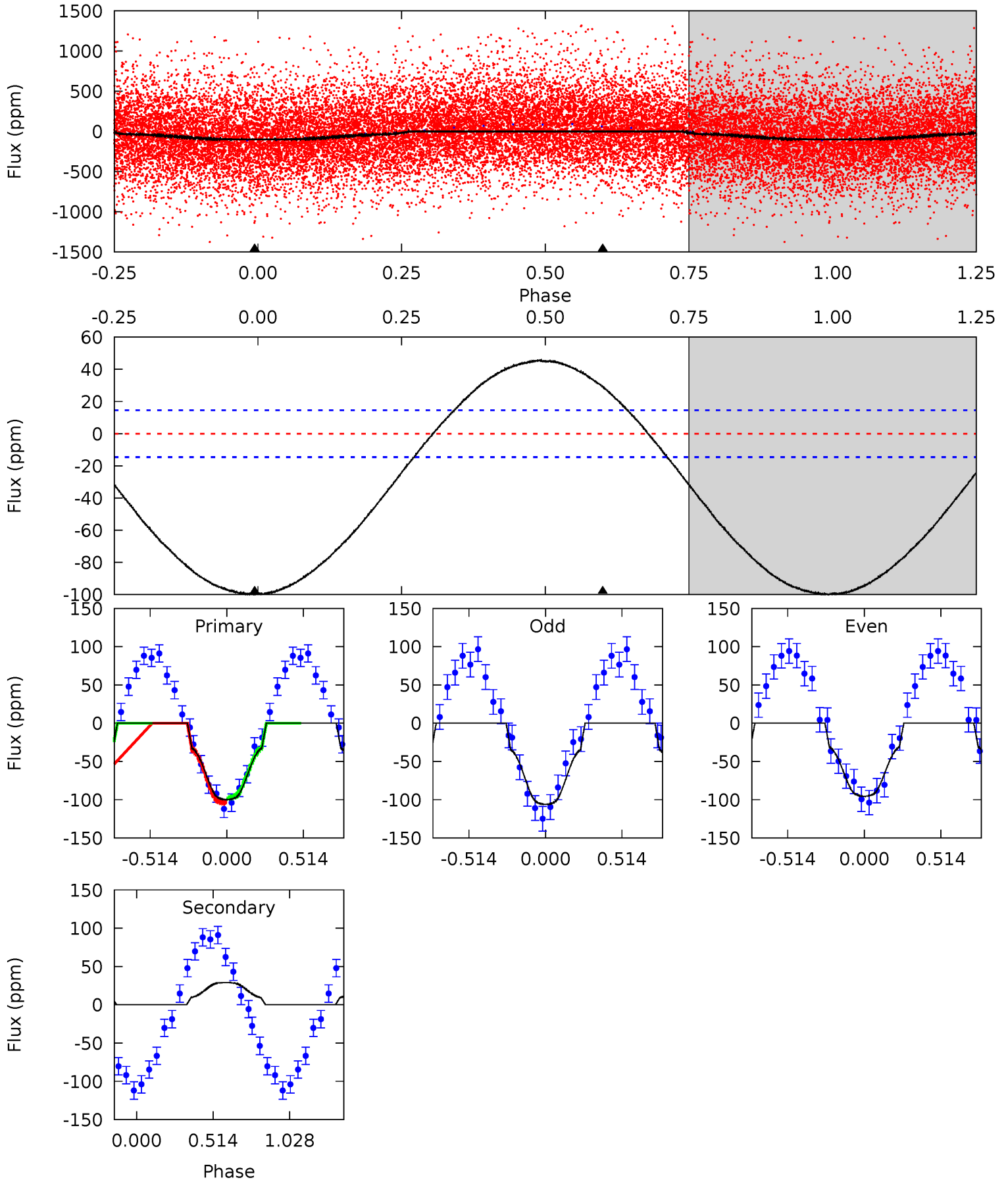
TCE 005978913-02 P= 0.674650 Days $T_0=131.576631$ (BKJD)



DV Model-Shift Uniqueness Test

005978913-02, P = 0.674598 Days, E = 131.627328 Days

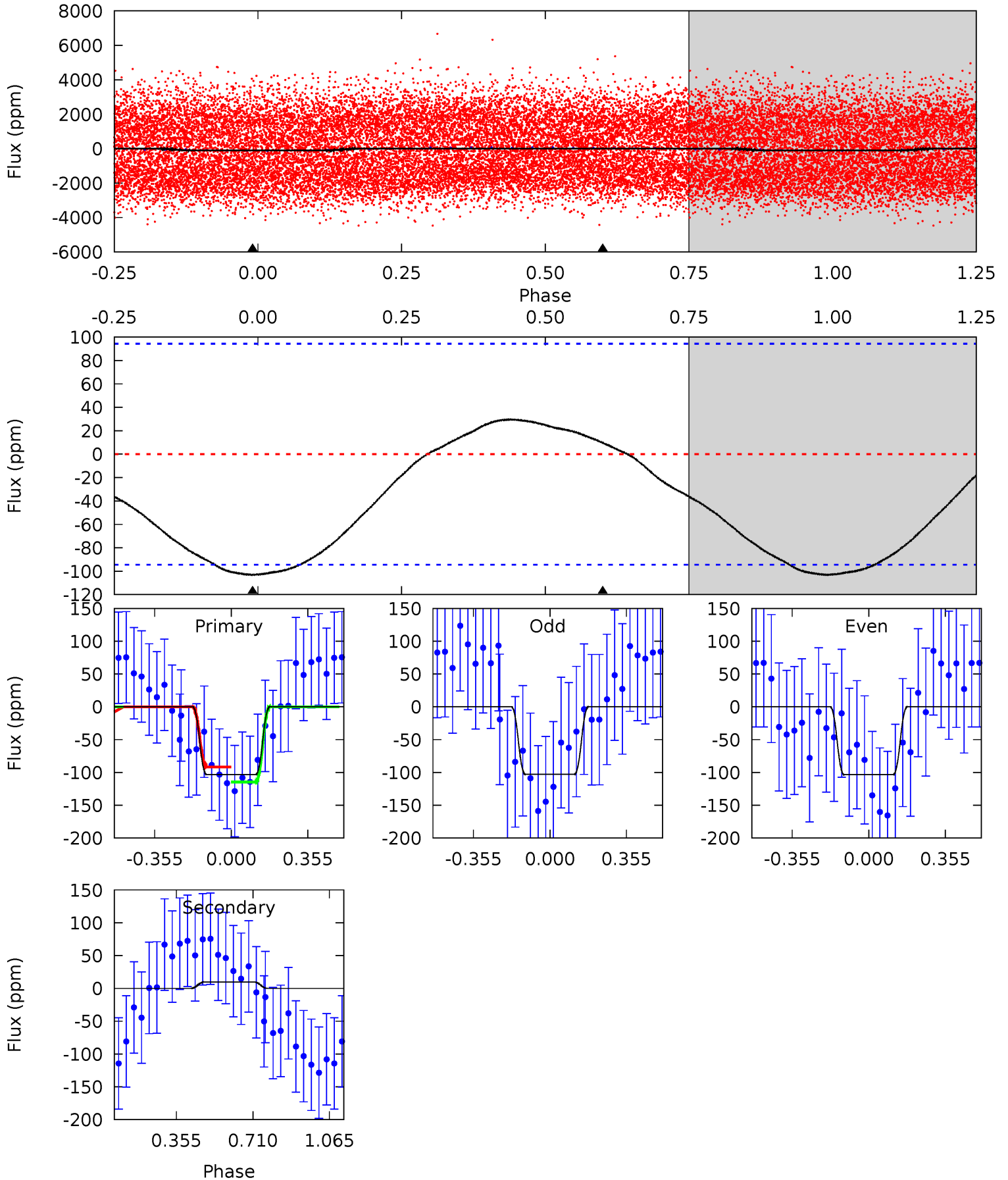
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.8	-8.38	0	0	4.21	0.65	3.52	28.8	28.8	-8.38	-8.38	1.55	0.75	0.32	0.89



Alt Model-Shift Uniqueness Test

005978913-02, P = 0.674650 Days, E = 131.576631 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.69	-0.44	0	0	4.29	0.93	0.43	4.69	4.69	-0.44	-0.44	0.01	0.46	0.22	0.53



Stellar Parameters For KIC 005978913

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6637^{+162}_{-232}	$4.262^{+0.108}_{-0.201}$	$-0.200^{+0.250}_{-0.300}$	$1.351^{+0.425}_{-0.229}$	$1.221^{+0.175}_{-0.195}$	$0.698^{+0.430}_{-0.363}$
	+2%/-3%	+3%/-5%	+125%/-150%	+31%/-17%	+14%/-16%	+62%/-52%
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 005978913-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	29 ± 3	$2.28^{+0.41}_{-0.24}$	3779^{+285}_{-211}	-4466^{+148}_{-146}	$-0.775^{+0.196}_{-0.206}$
Alt.	10 ± 22	$1.54^{+0.27}_{-0.18}$	3781^{+300}_{-208}	-4337^{+8188}_{-842}	$-0.579^{+1.319}_{-1.324}$

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 $A_{obs} \gg 1.0$

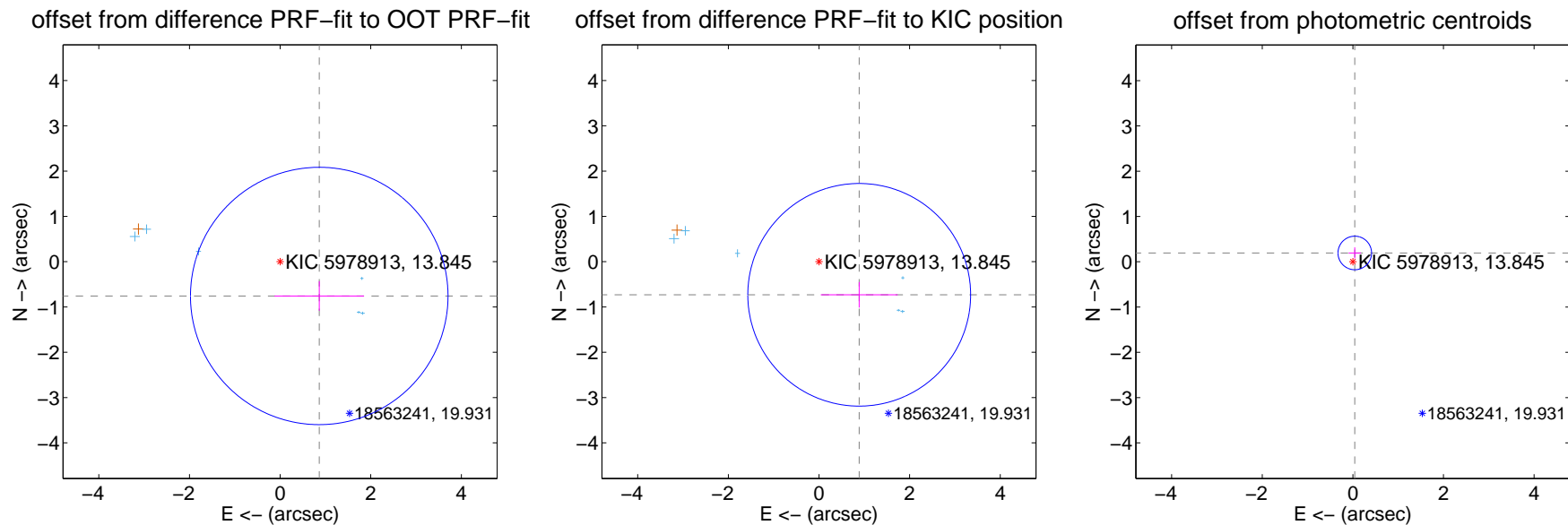
DV Centroid Data

Supplemental centroid analysis for 005978913-02. Kepler magnitude: 13.85. Transit SNR 17.81

There are 6 quarters with good PRF difference image offsets

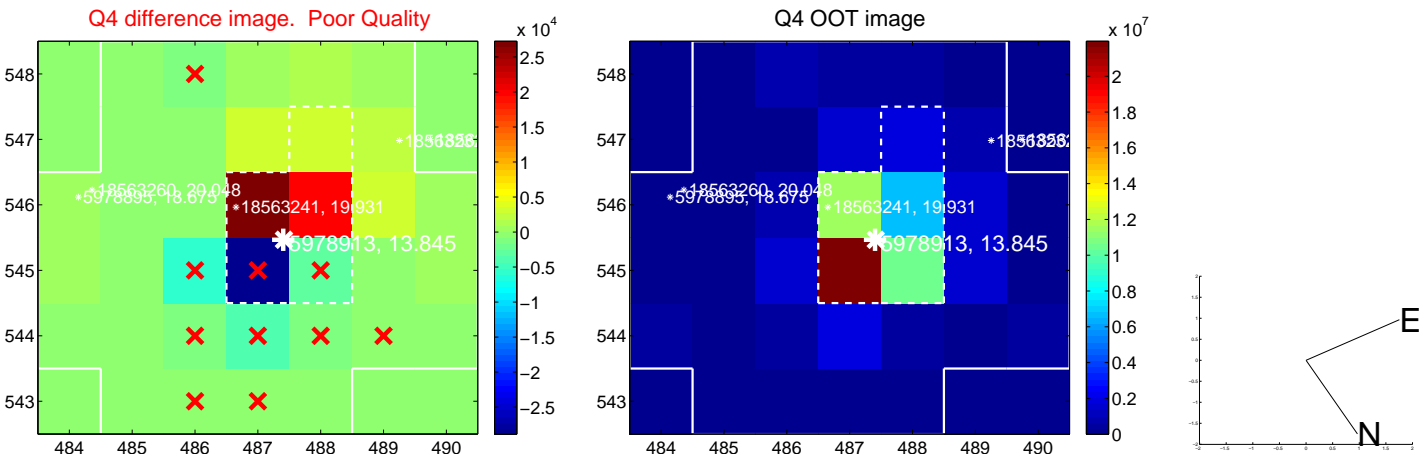
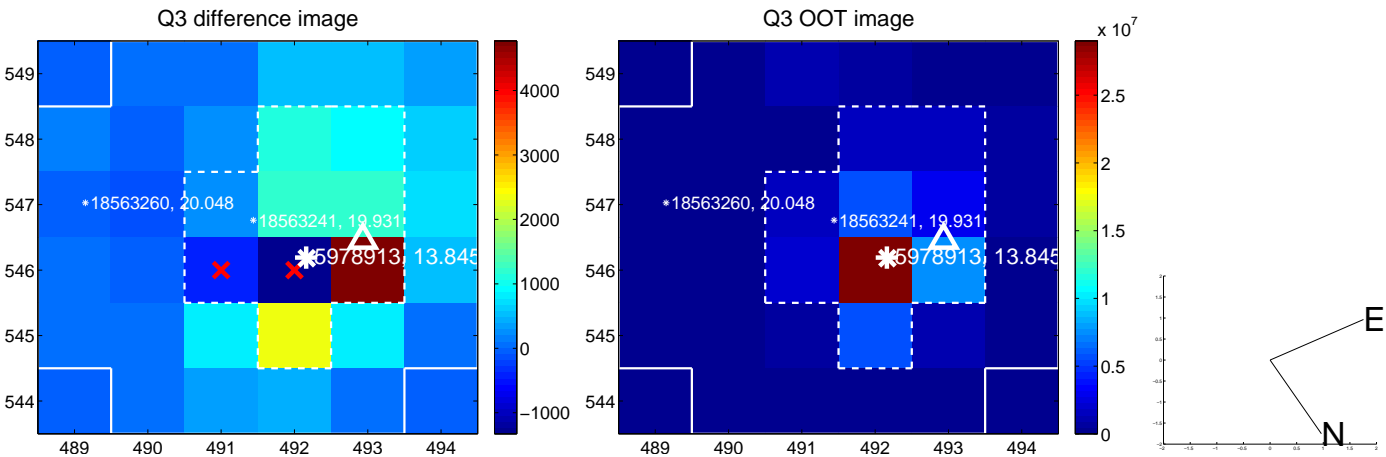
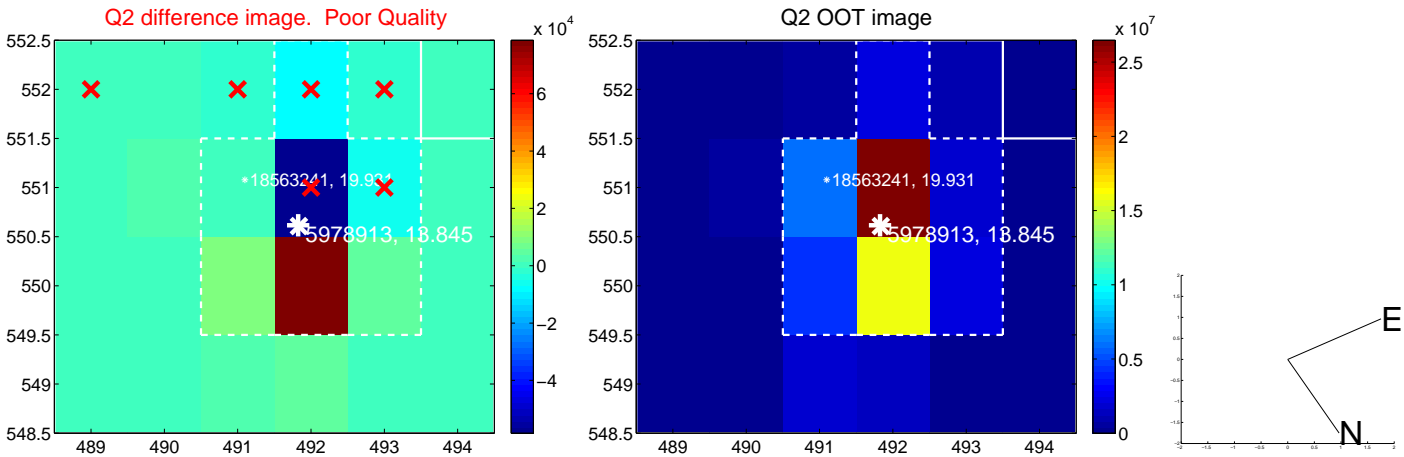
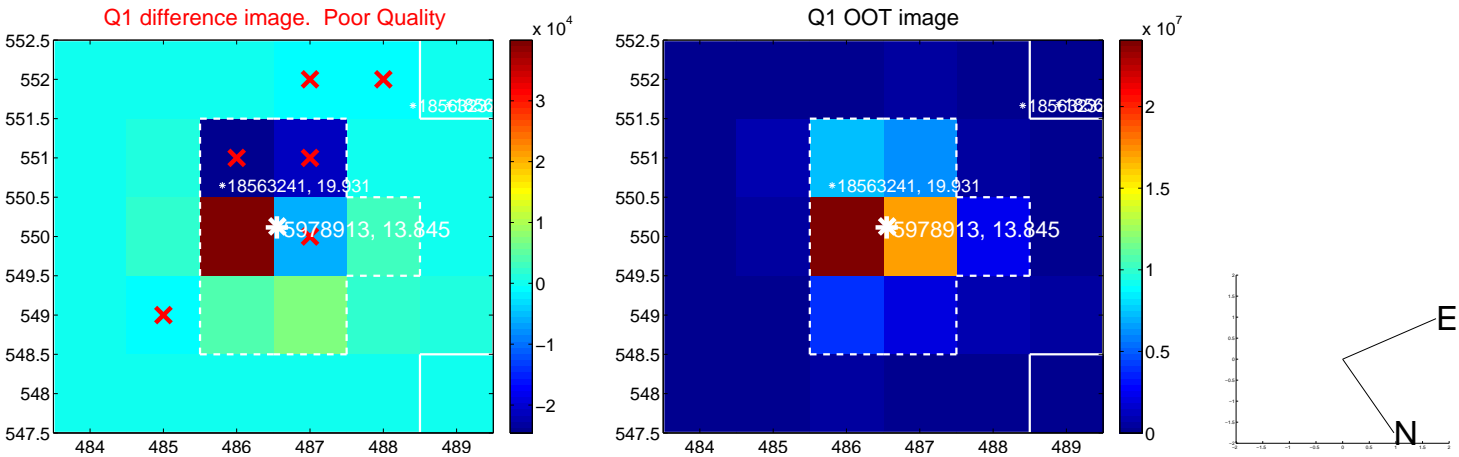
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.148 ± 0.947	1.21	-0.863 ± 0.986	-0.757 ± 0.325
PRF-fit source offset from KIC position	1.150 ± 0.819	1.40	-0.888 ± 0.849	-0.731 ± 0.282
photometric centroid source offset	0.20 ± 0.12	1.61	-0.04 ± 0.14	0.19 ± 0.12

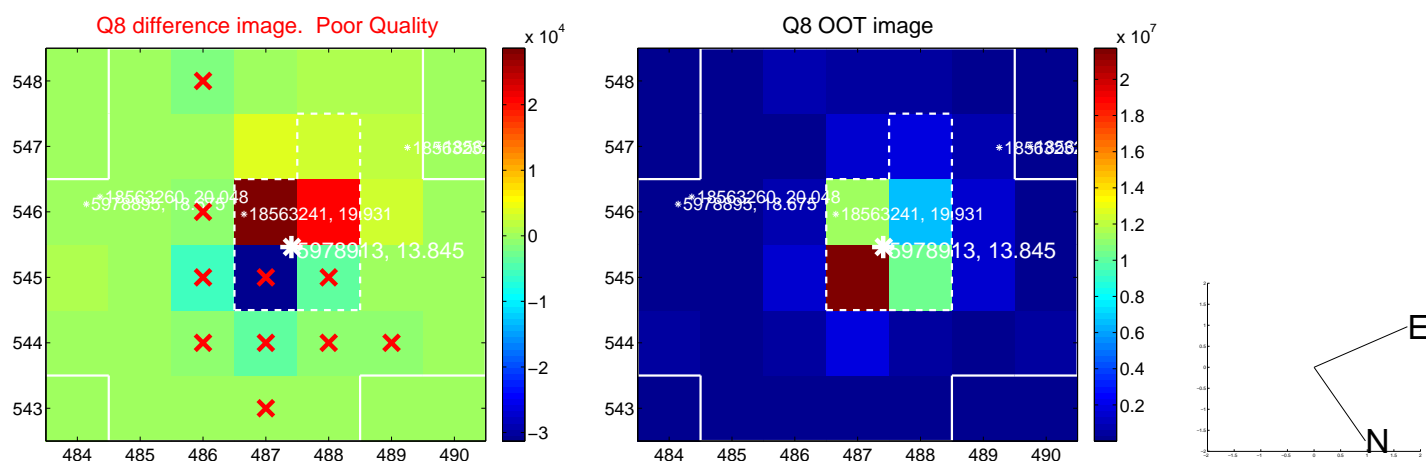
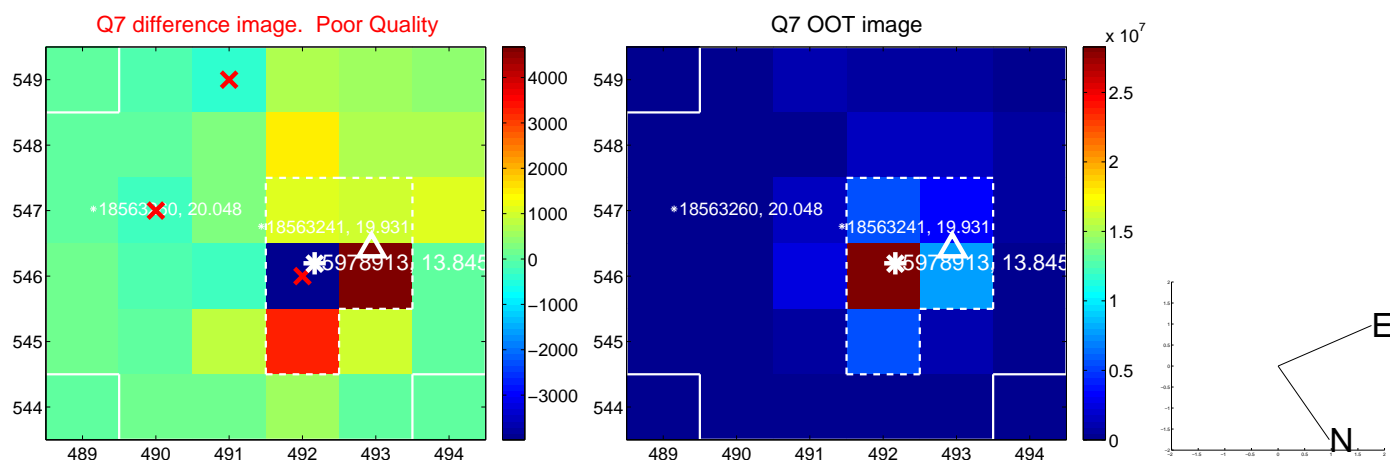
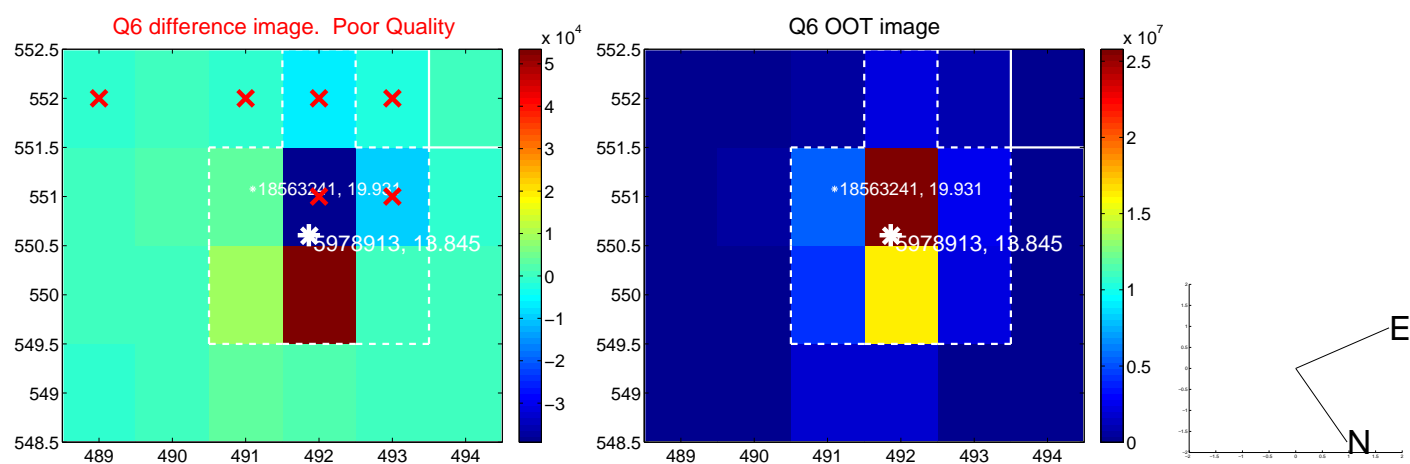
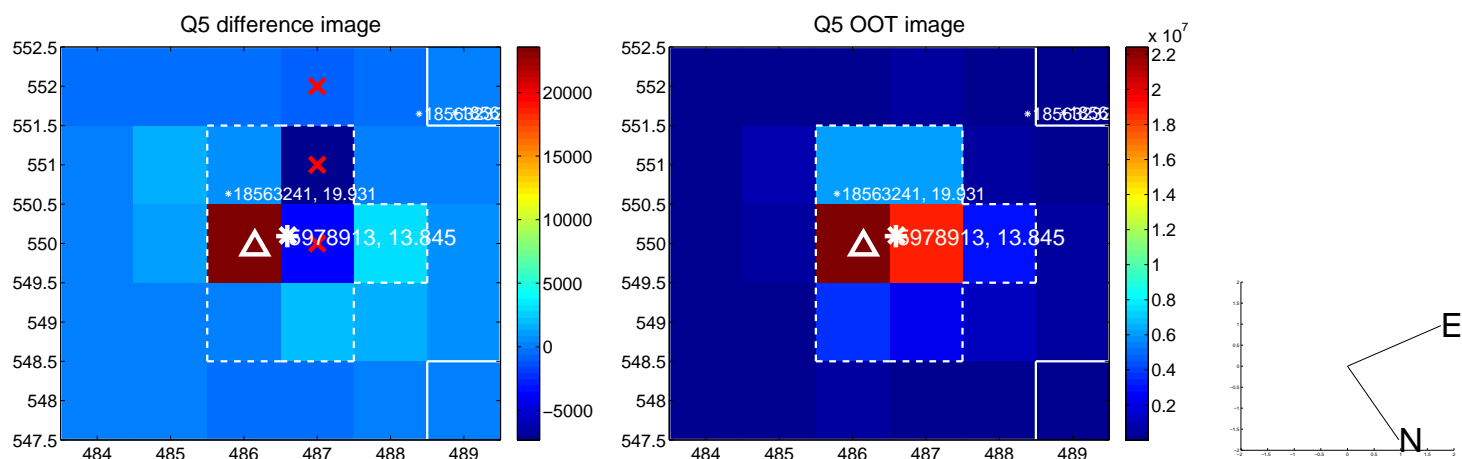


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

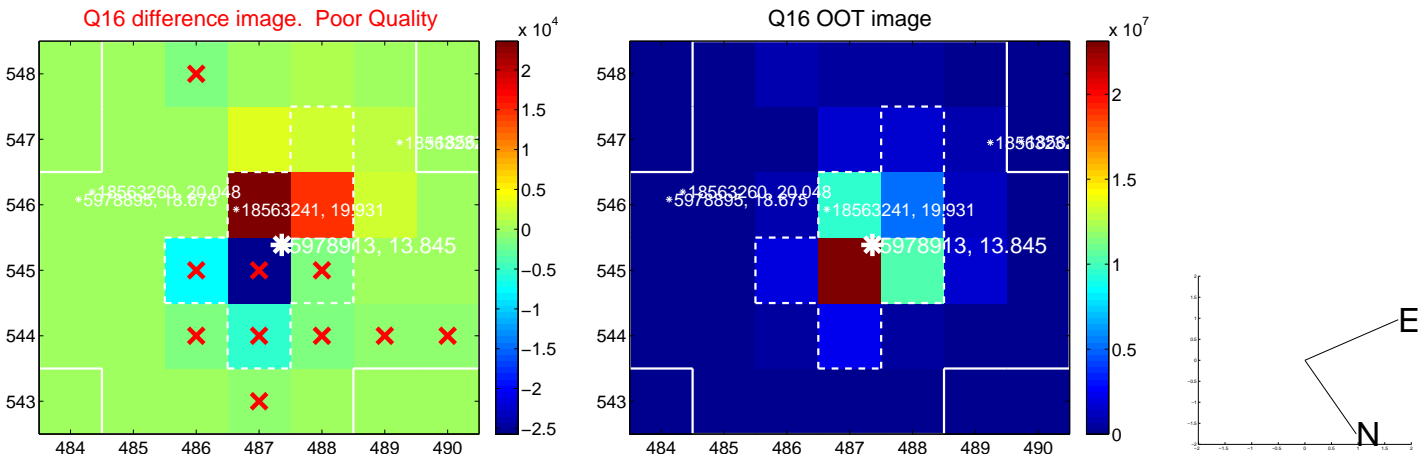
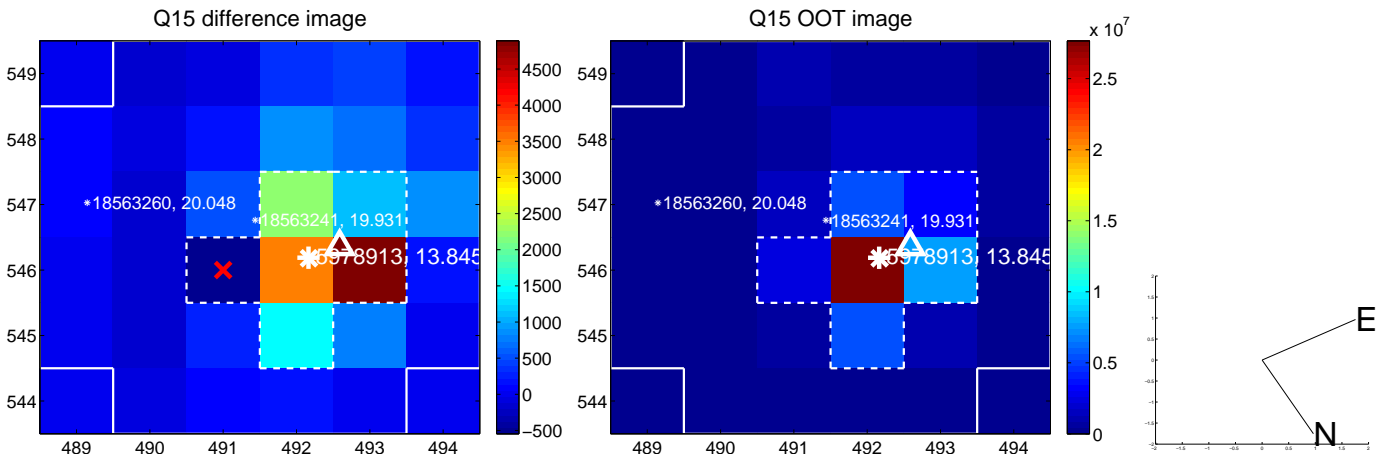
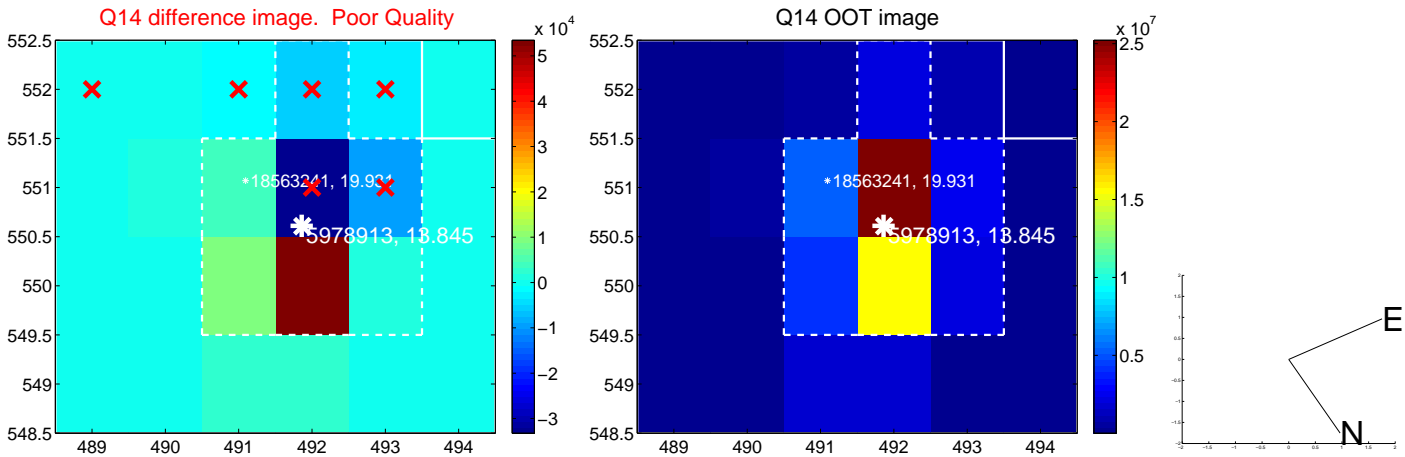
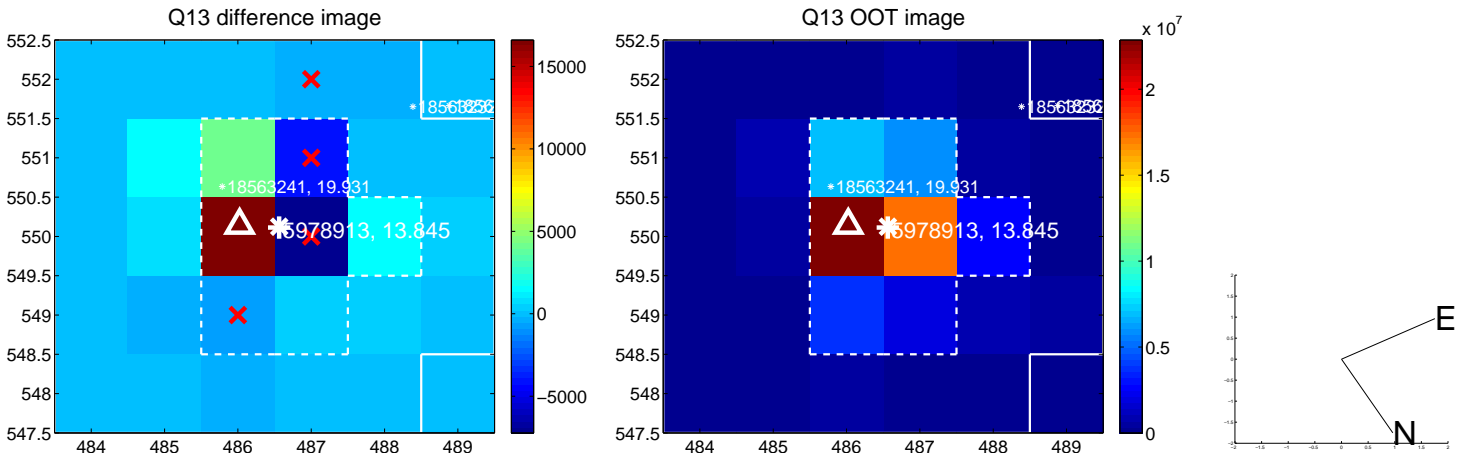
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



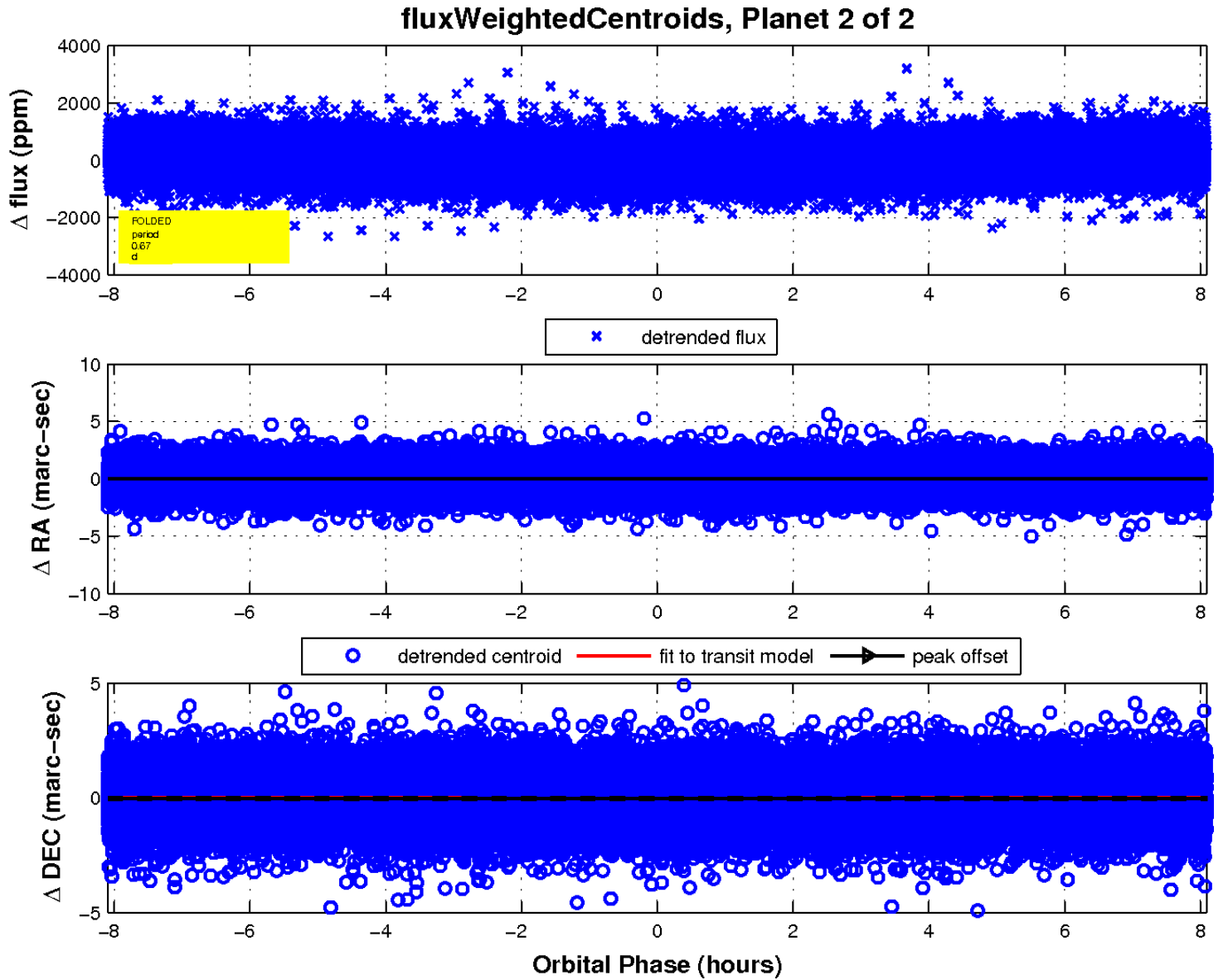
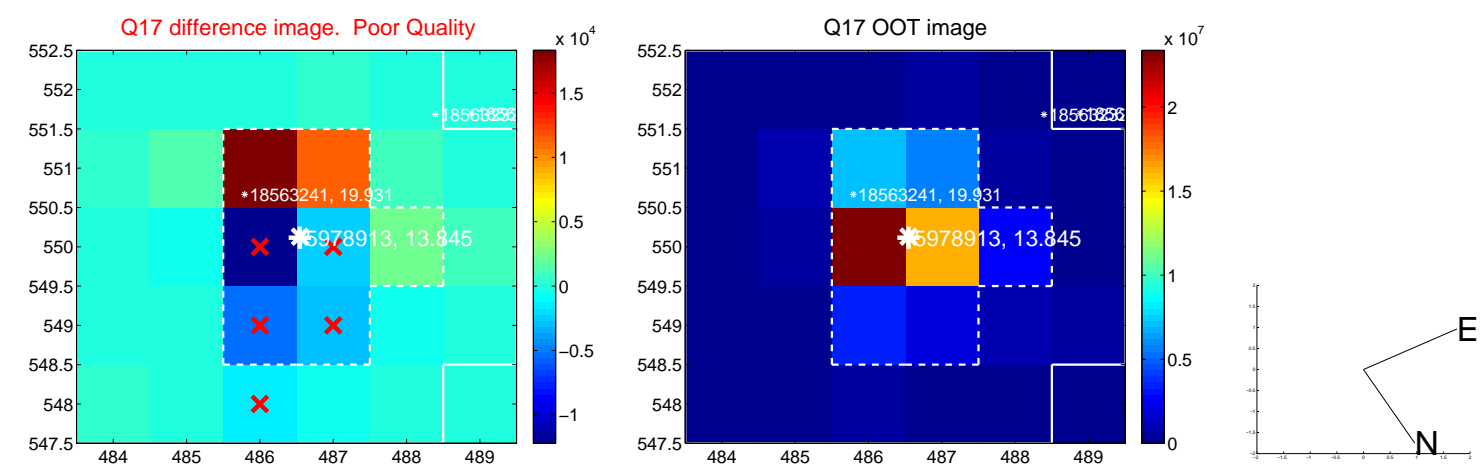
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

