

KIC 002019297

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})
002019297-01	OBS	No	3.794077	132.709153	49.3	8.437	9.8	10.7	2.40	6771	2.02	3274.01
002019297-02	OBS	No	3.795502	132.993659	47.7	6.725	8.0	8.0	2.40	6771	1.96	3272.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002019297-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
002019297-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

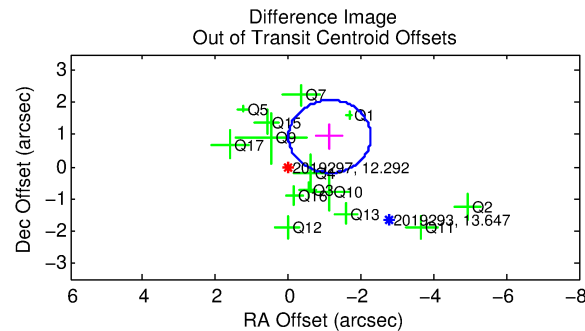
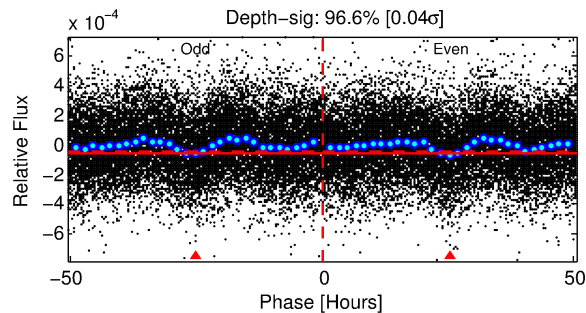
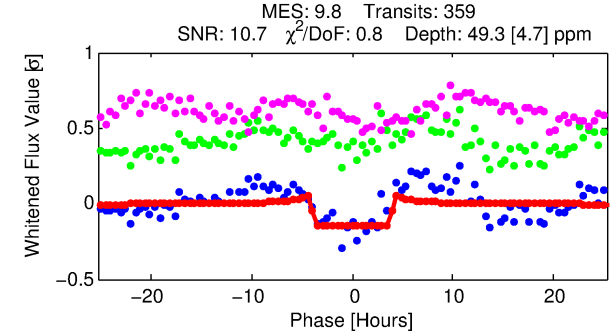
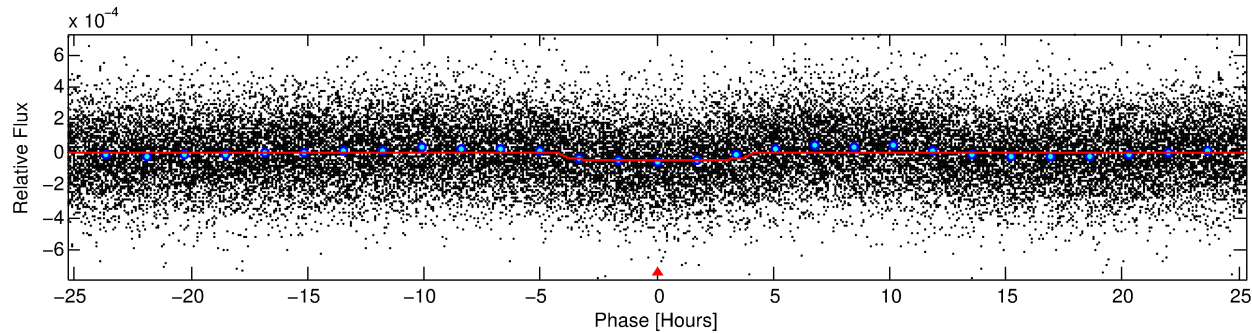
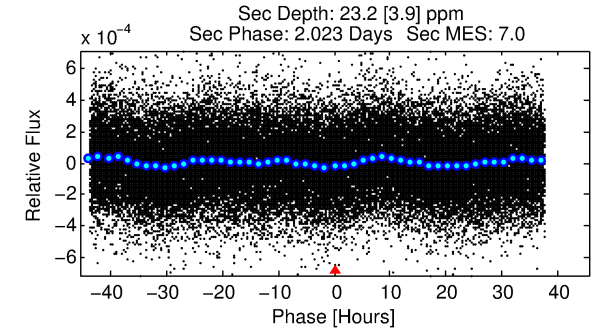
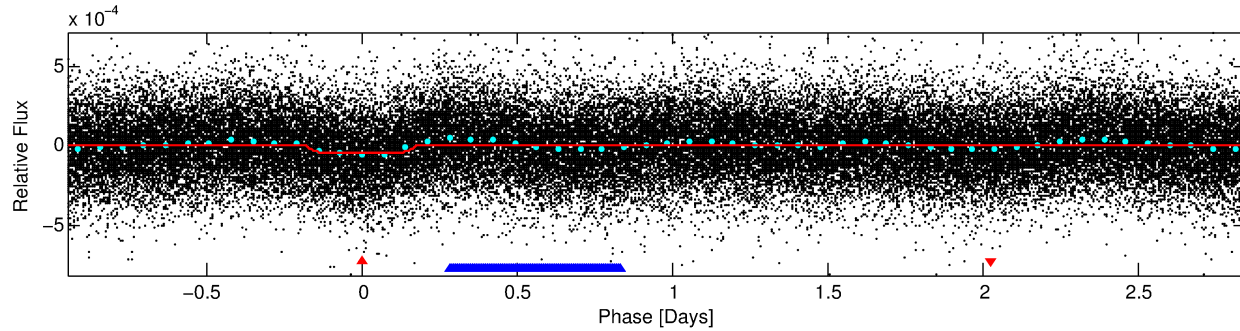
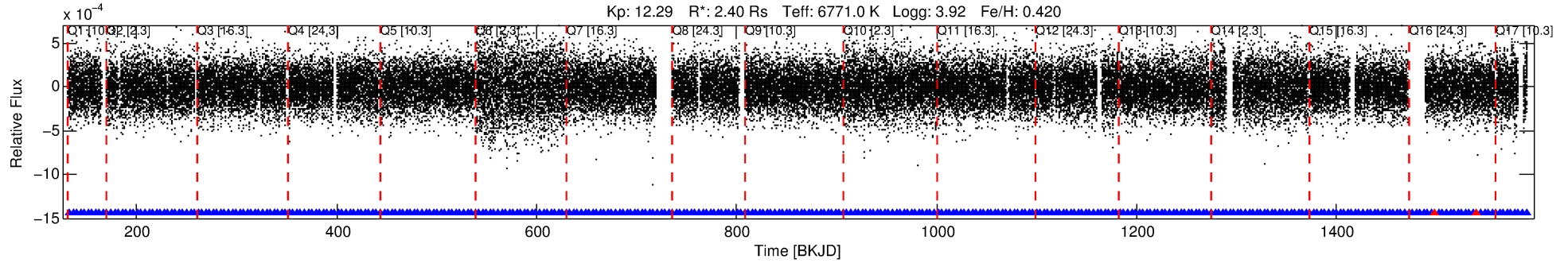
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002019297-01

No Significant Match Found

DV One-Page Summary

KIC: 2019297 Candidate: 1 of 2 Period: 3.794 d



DV Fit Results:

Period = 3.79408 [0.00003] d
Epoch = 132.7092 [0.0055] BKJD
Rp/R* = 0.0077 [0.0008]
a/R* = 1.64 [0.59]
b = 0.93 [0.08]
Seff = 3274.01 [1055.92]
Teff = 1929 [156] K
Rp = 2.03 [0.51] Re
a = 0.0576 [0.0119] AU
Ag = 10.34 [4.36] [2.15σ]
Teffp = 5348 [377] K [8.39σ]

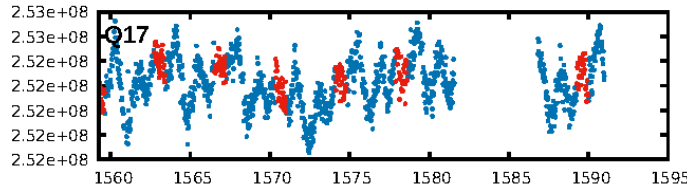
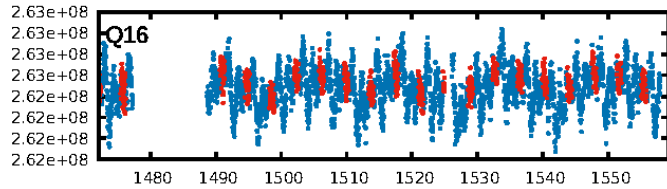
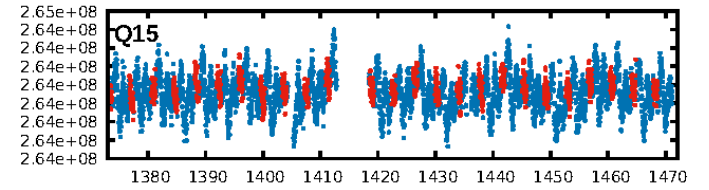
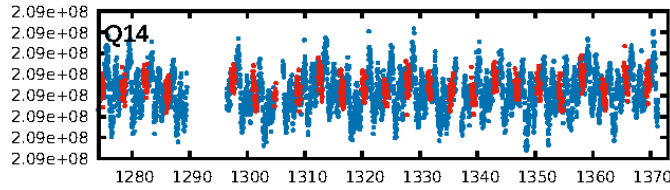
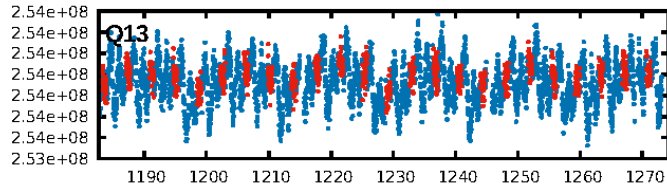
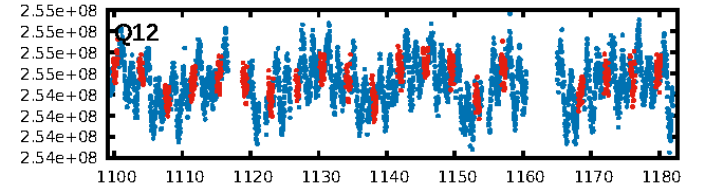
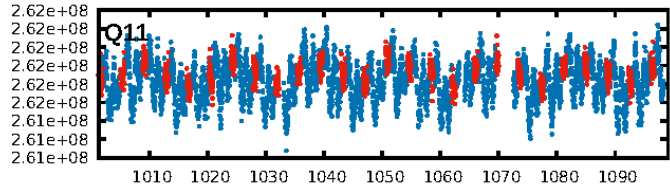
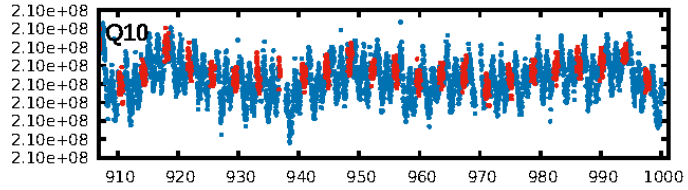
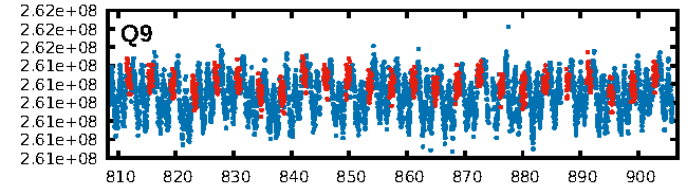
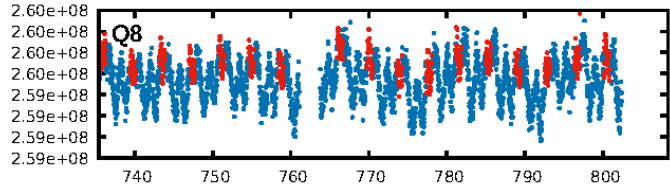
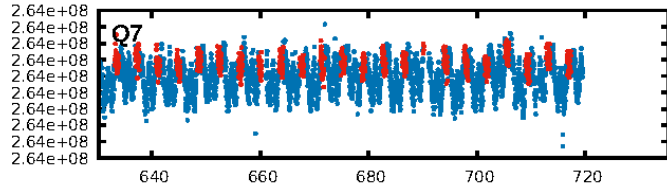
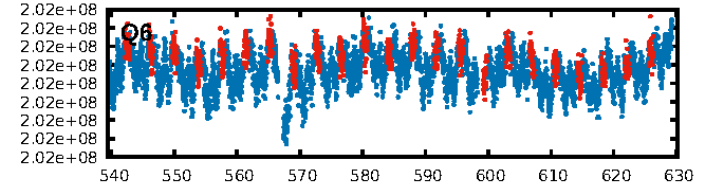
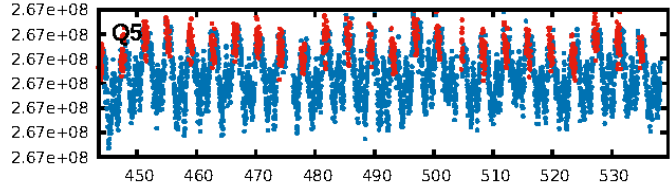
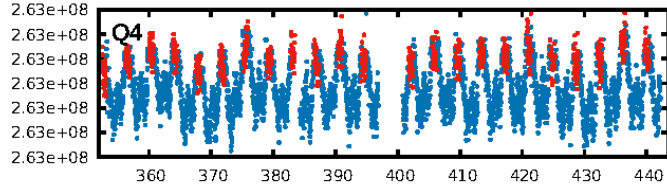
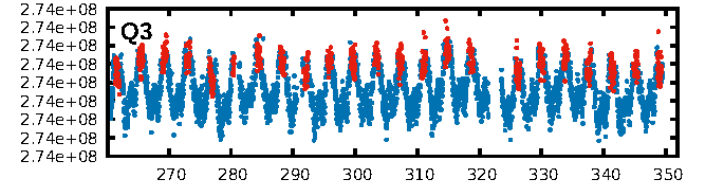
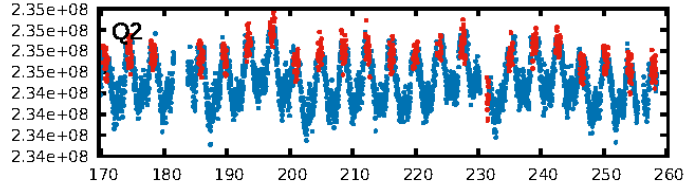
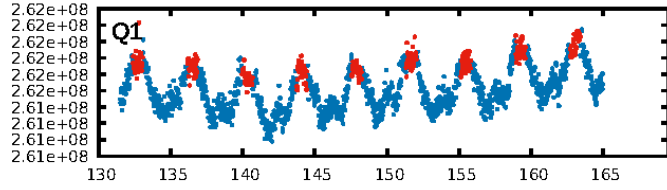
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.3% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.53e-17
RollingBand-fgt: 0.99 [341/343]
GhostDiagnostic-chr: 1.361
Centroid-sig: 27.6%
Centroid-so: 0.309 arcsec [0.71σ]
OotOffset-rm: 1.477 arcsec [3.92σ]
KicOffset-rm: 1.507 arcsec [4.00σ]
OotOffset-st: 2/4/3/5 [14]
KicOffset-st: 2/4/3/5 [14]
DiffImageQuality-fgm: 0.14 [2/14]
DiffImageOverlap-fno: 0.12 [2/17]

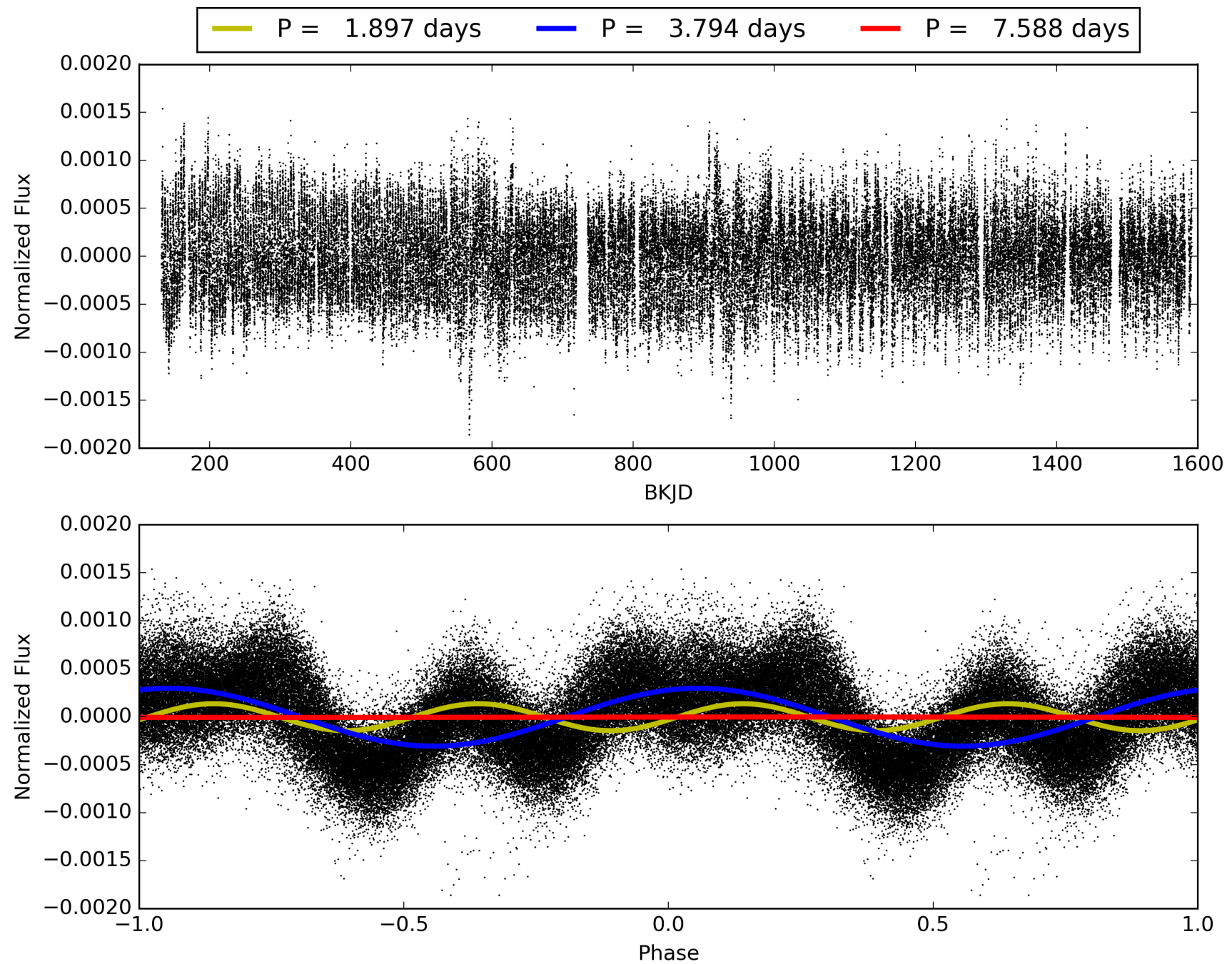
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 002019297-01, PDC Light Curves

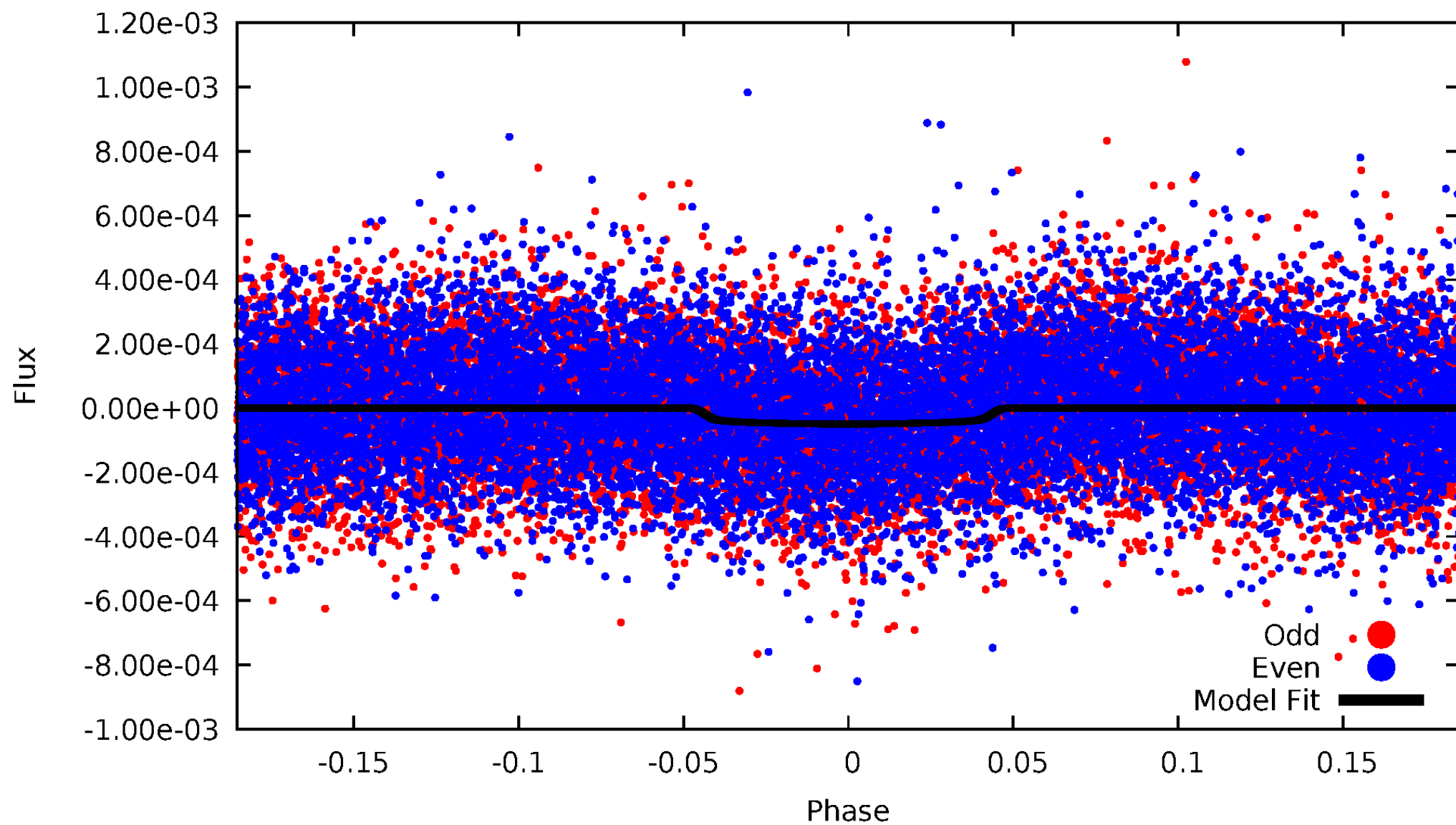


TCE 002019297-01



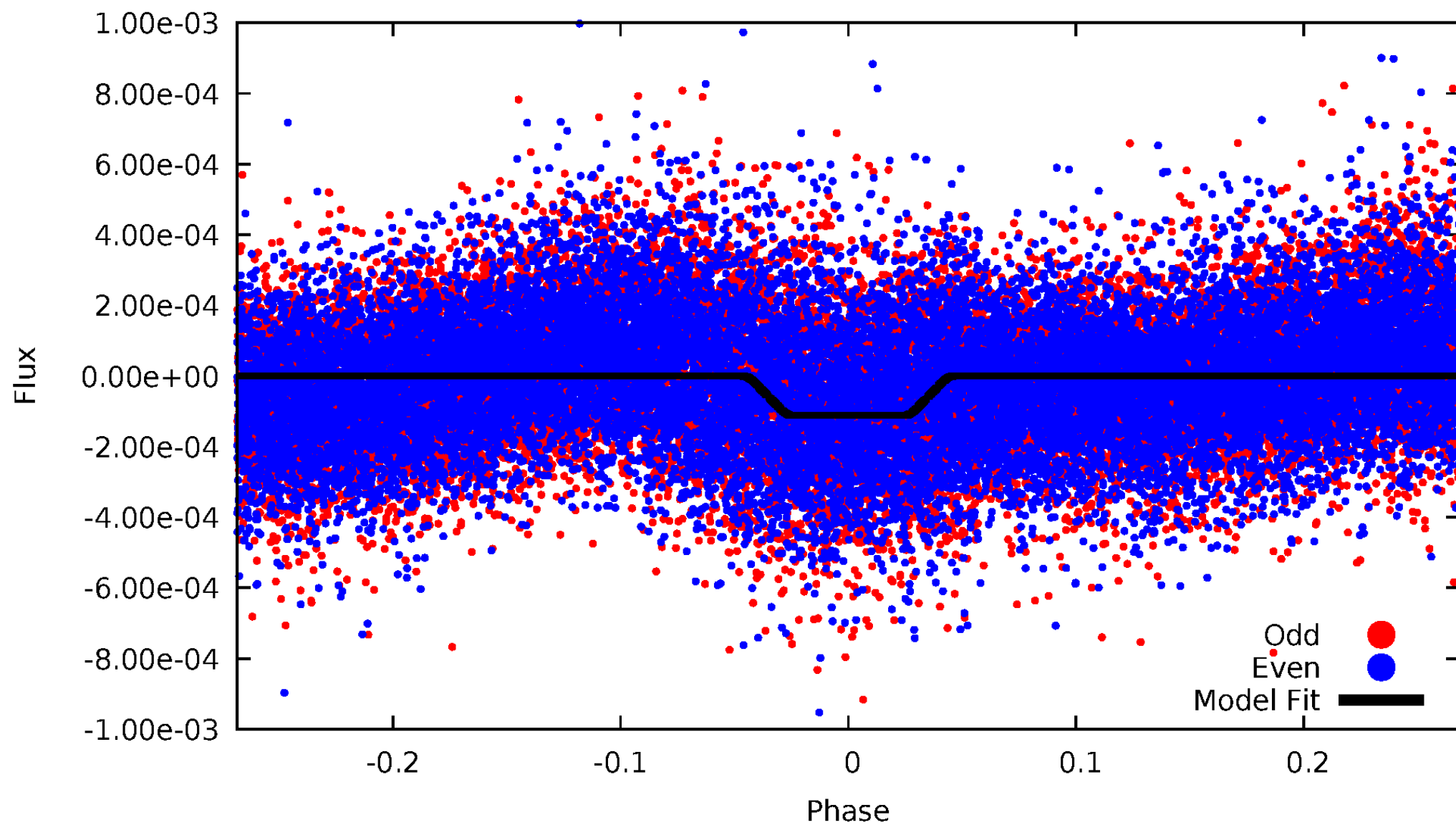
DV Odd/Even

TCE 002019297-01



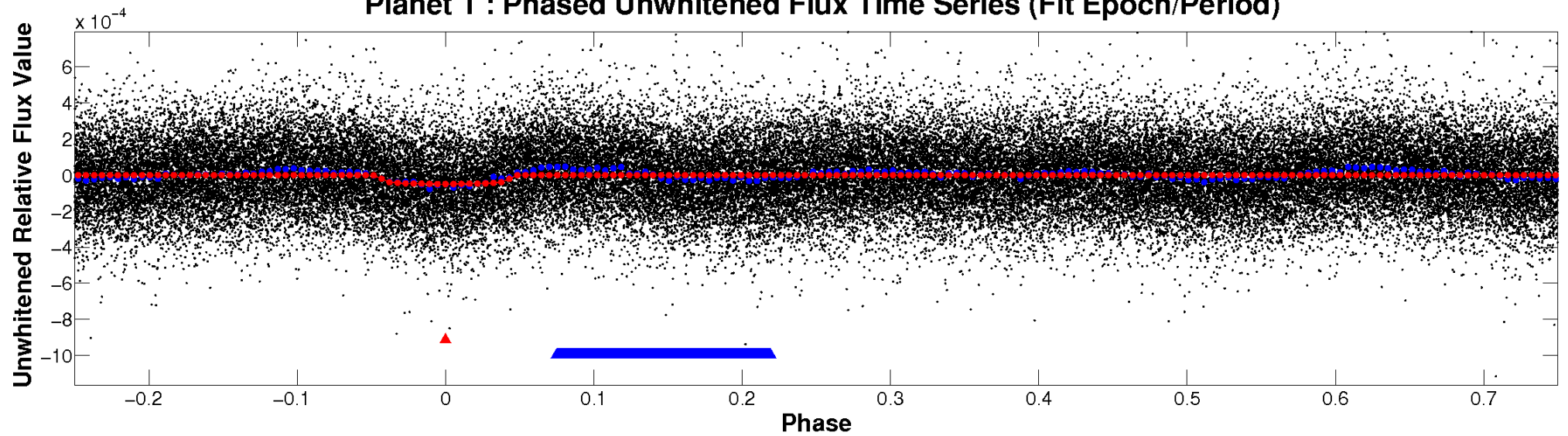
ALT Odd/Even

TCE 002019297-01

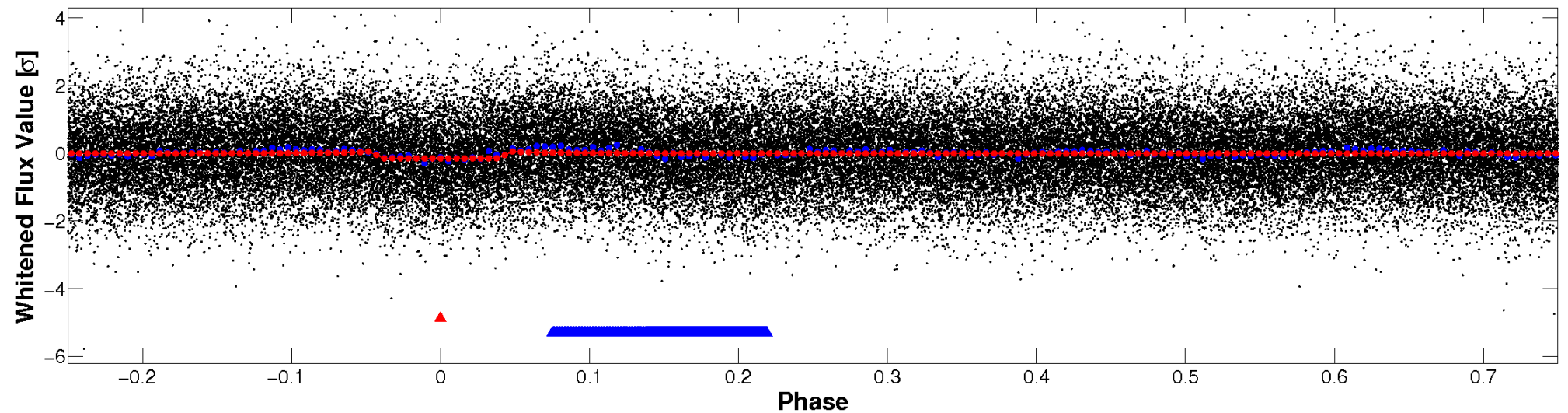


Non-Whitened Vs. Whitened Light Curve

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

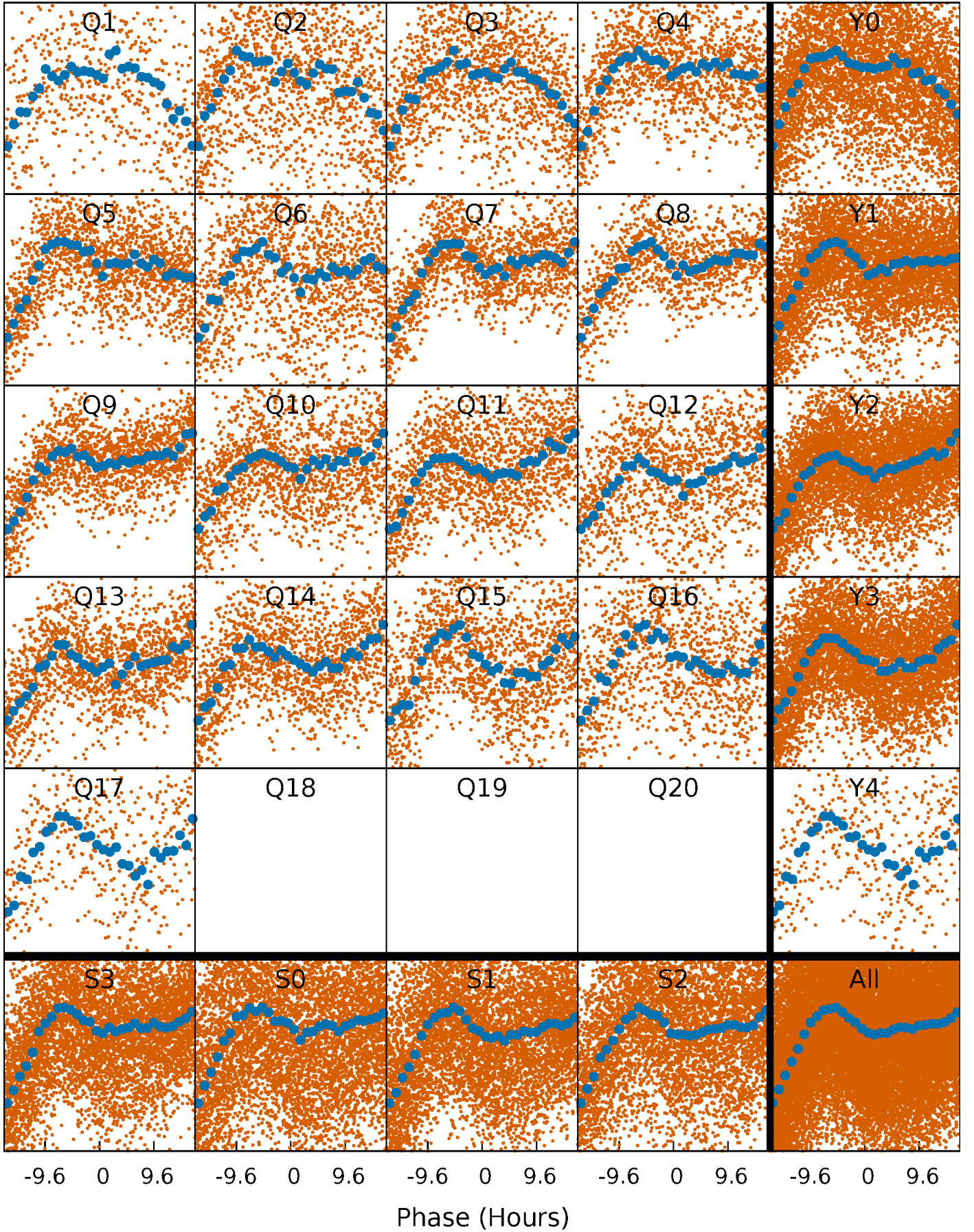


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



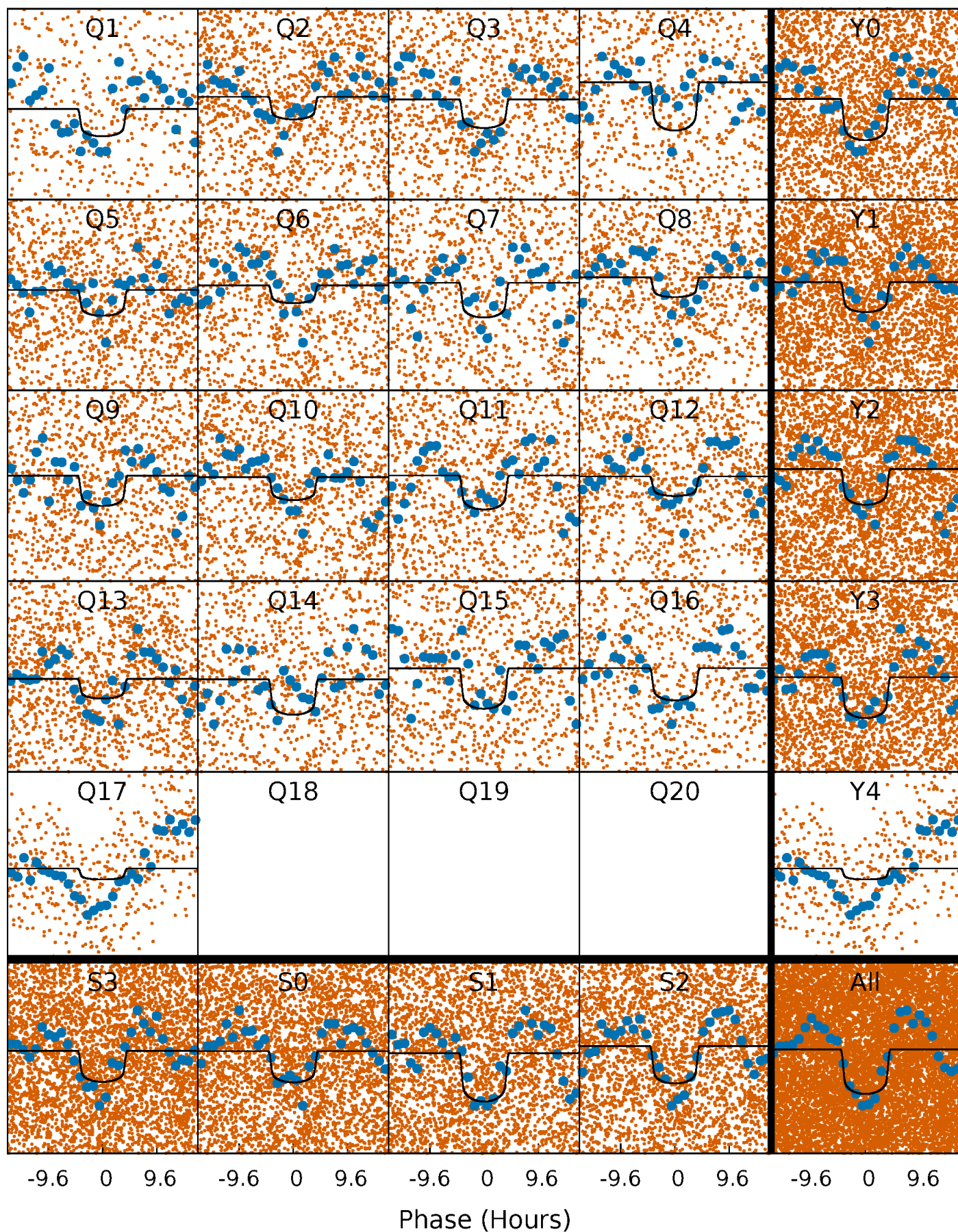
PDC Quarter-Phased Transit Curves

TCE 002019297-01 P= 3.794077 Days $T_0=132.709153$ (BKJD)



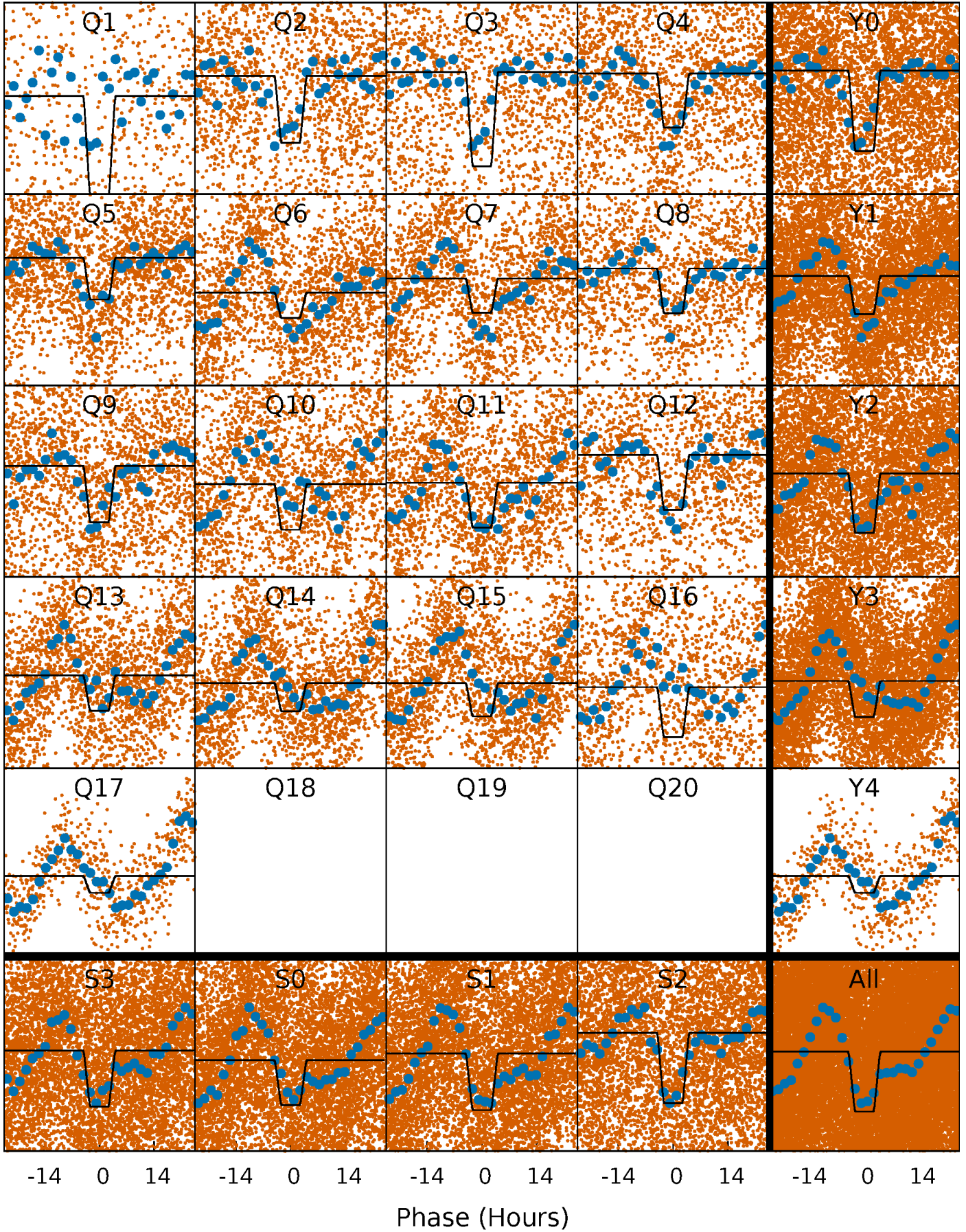
DV Quarter-Phased Transit Curves

TCE 002019297-01 P= 3.794077 Days $T_0=132.709153$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

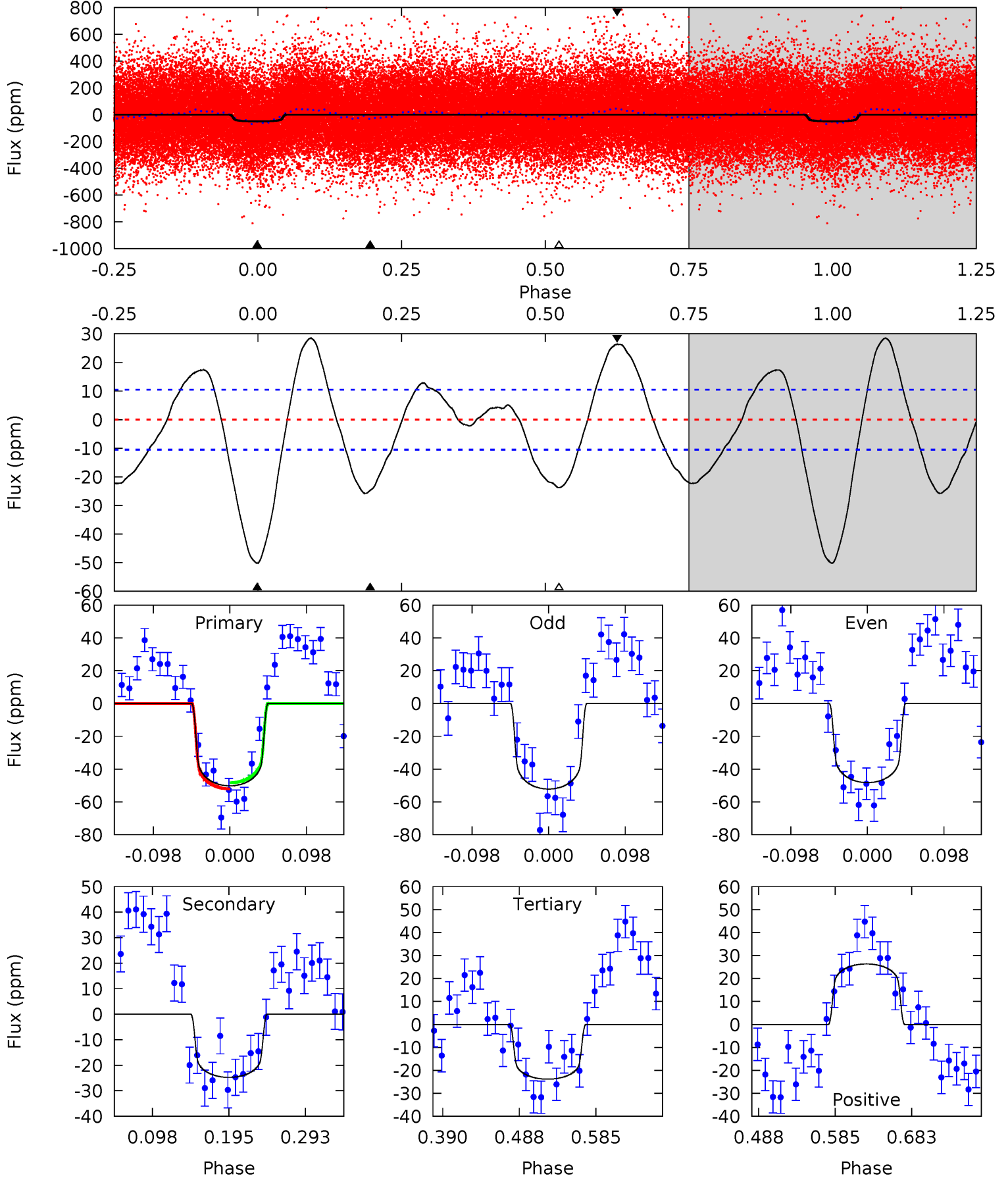
TCE 002019297-01 P= 3.794149 Days $T_0=132.759289$ (BKJD)



DV Model-Shift Uniqueness Test

002019297-01, P = 3.794077 Days, E = 128.915076 Days

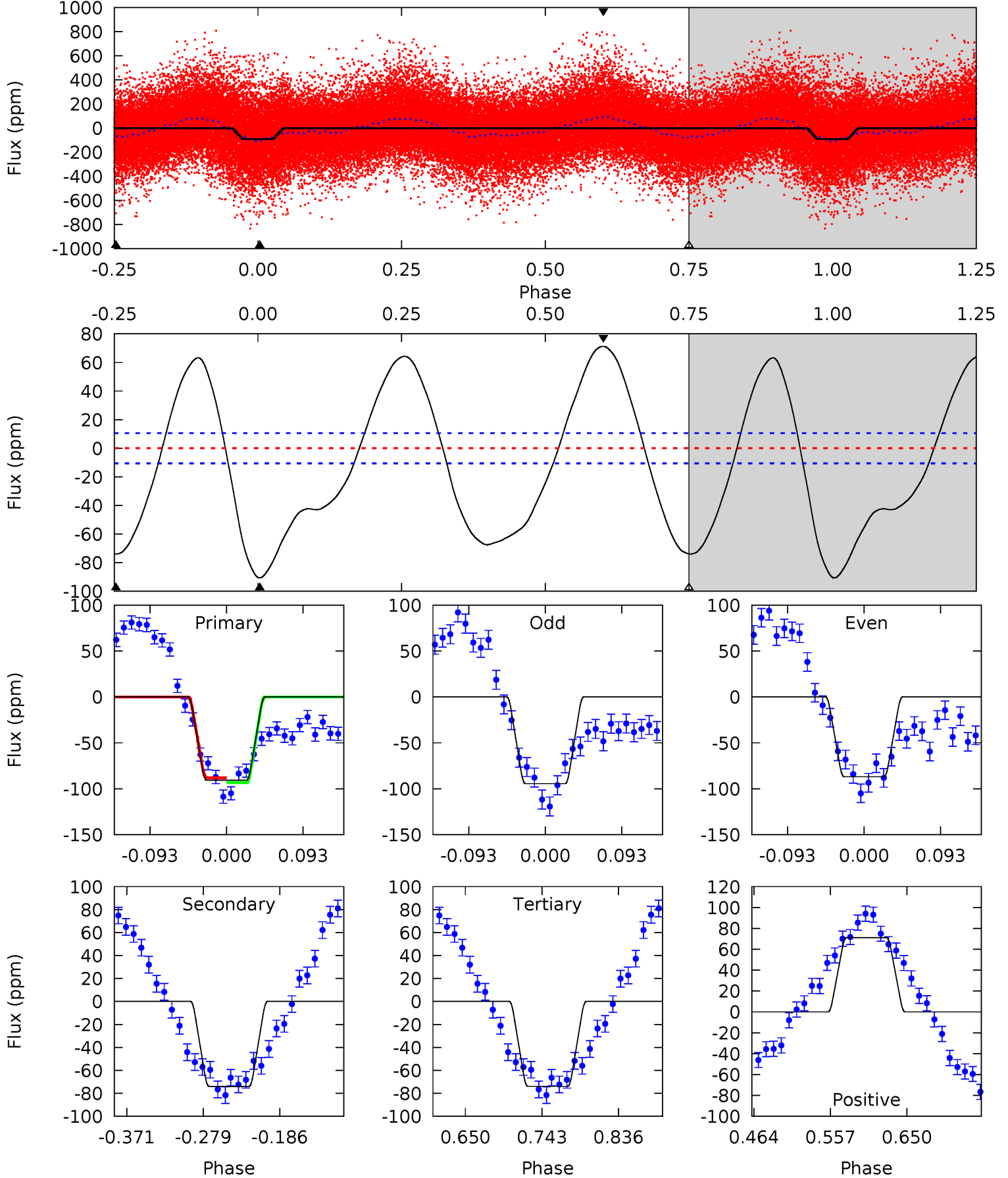
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.8	10.8	10.4	11.5	4.57	1.66	6.15	11.5	10.4	0.41	-0.68	0.85	1.05	0.36	0.82



Alt Model-Shift Uniqueness Test

002019297-01, P = 3.794149 Days, E = 128.965140 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
39.2	32.0	31.9	30.8	4.58	1.68	20.5	7.27	8.40	0.05	1.18	1.61	0.98	0.44	1.12



Stellar Parameters For KIC 002019297

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6771^{+67}_{-94}	$3.925^{+0.182}_{-0.098}$	$0.420^{+0.050}_{-0.200}$	$2.402^{+0.364}_{-0.545}$	$1.773^{+0.093}_{-0.202}$	$0.180^{+0.171}_{-0.054}$
	+1%/-1%	+5%/-2%	+12%/-48%	+15%/-23%	+5%/-11%	+95%/-30%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 002019297-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-25 ± 2	$2.00^{+0.27}_{-0.30}$	2677^{+110}_{-141}	5394^{+298}_{-267}	11^{+4}_{-3}
Alt.	-74 ± 2	$2.70^{+0.35}_{-0.34}$	2682^{+120}_{-151}	6061^{+302}_{-238}	18^{+5}_{-4}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

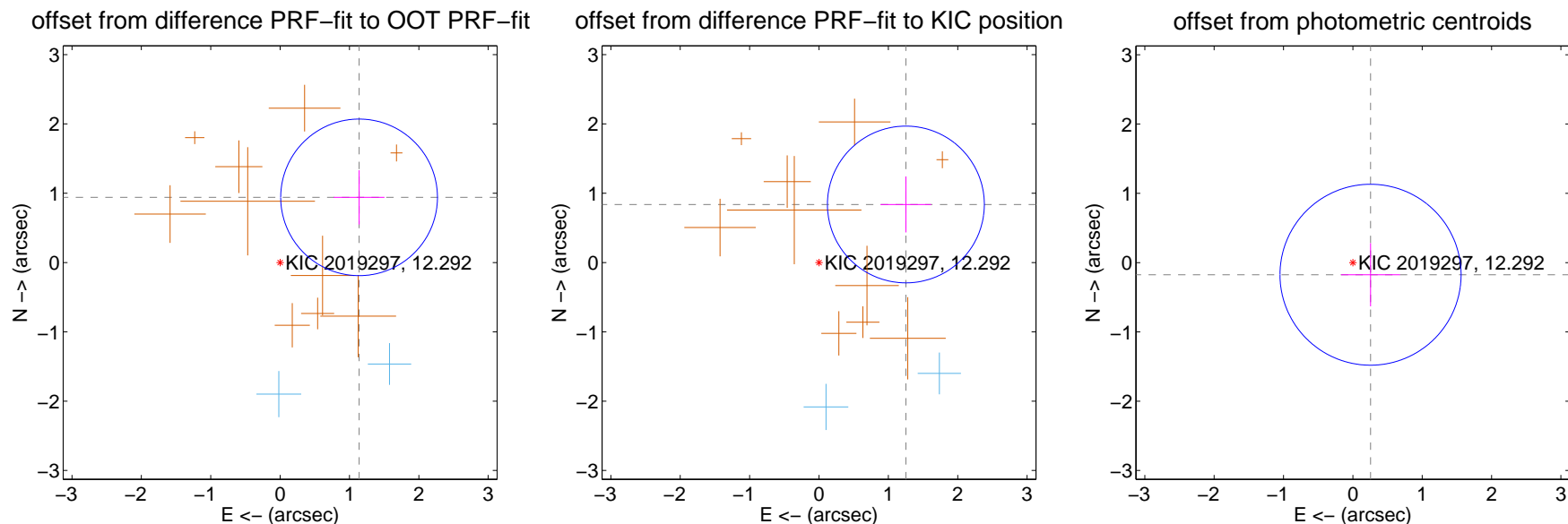
DV Centroid Data

Supplemental centroid analysis for 002019297-01. Kepler magnitude: 12.29. Transit SNR 10.68

There are 2 quarters with good PRF difference image offsets

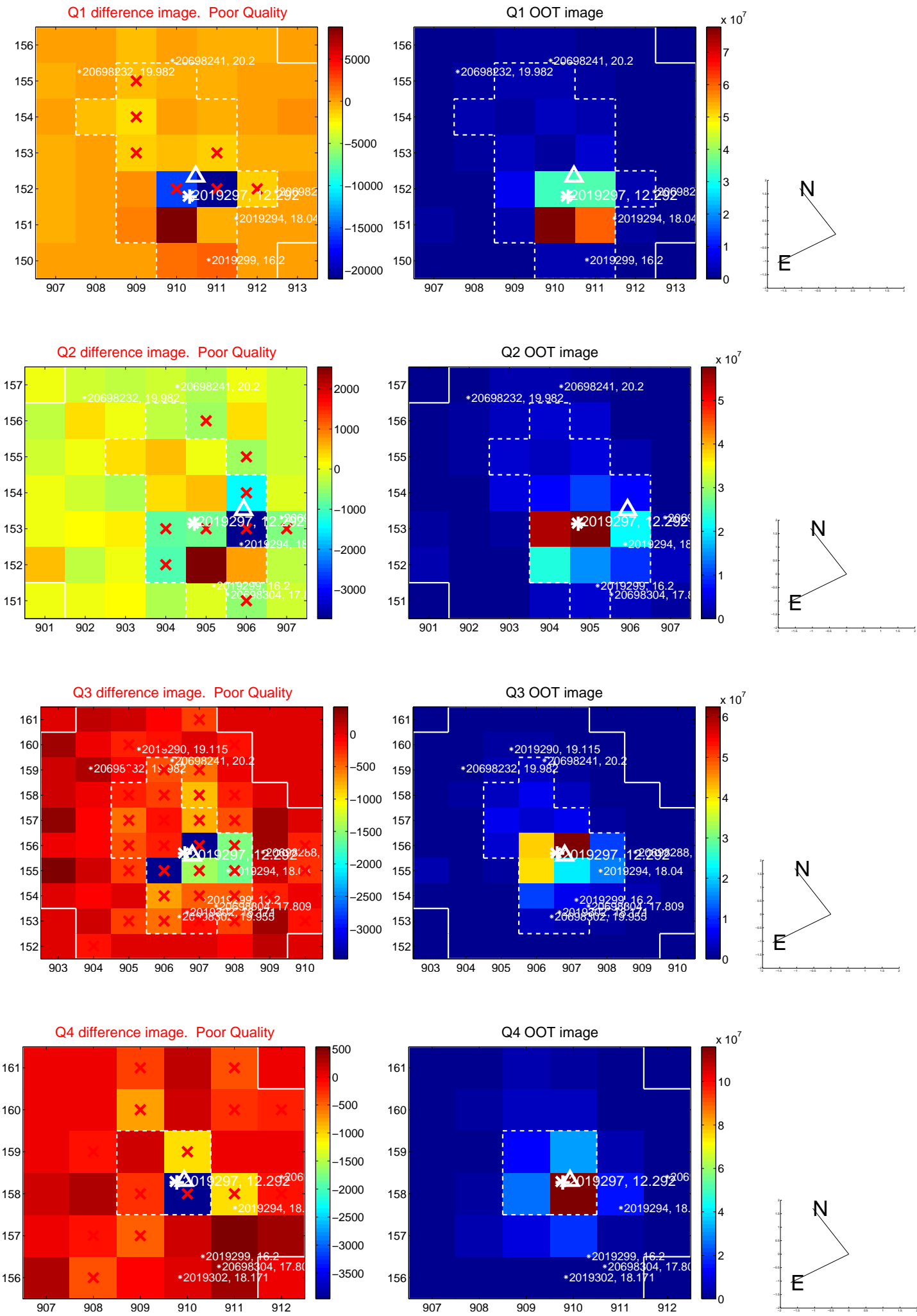
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.477 ± 0.377	3.92	-1.138 ± 0.366	0.940 ± 0.391
PRF-fit source offset from KIC position	1.507 ± 0.377	4.00	-1.253 ± 0.365	0.838 ± 0.403
photometric centroid source offset	0.31 ± 0.44	0.71	-0.25 ± 0.42	-0.17 ± 0.46

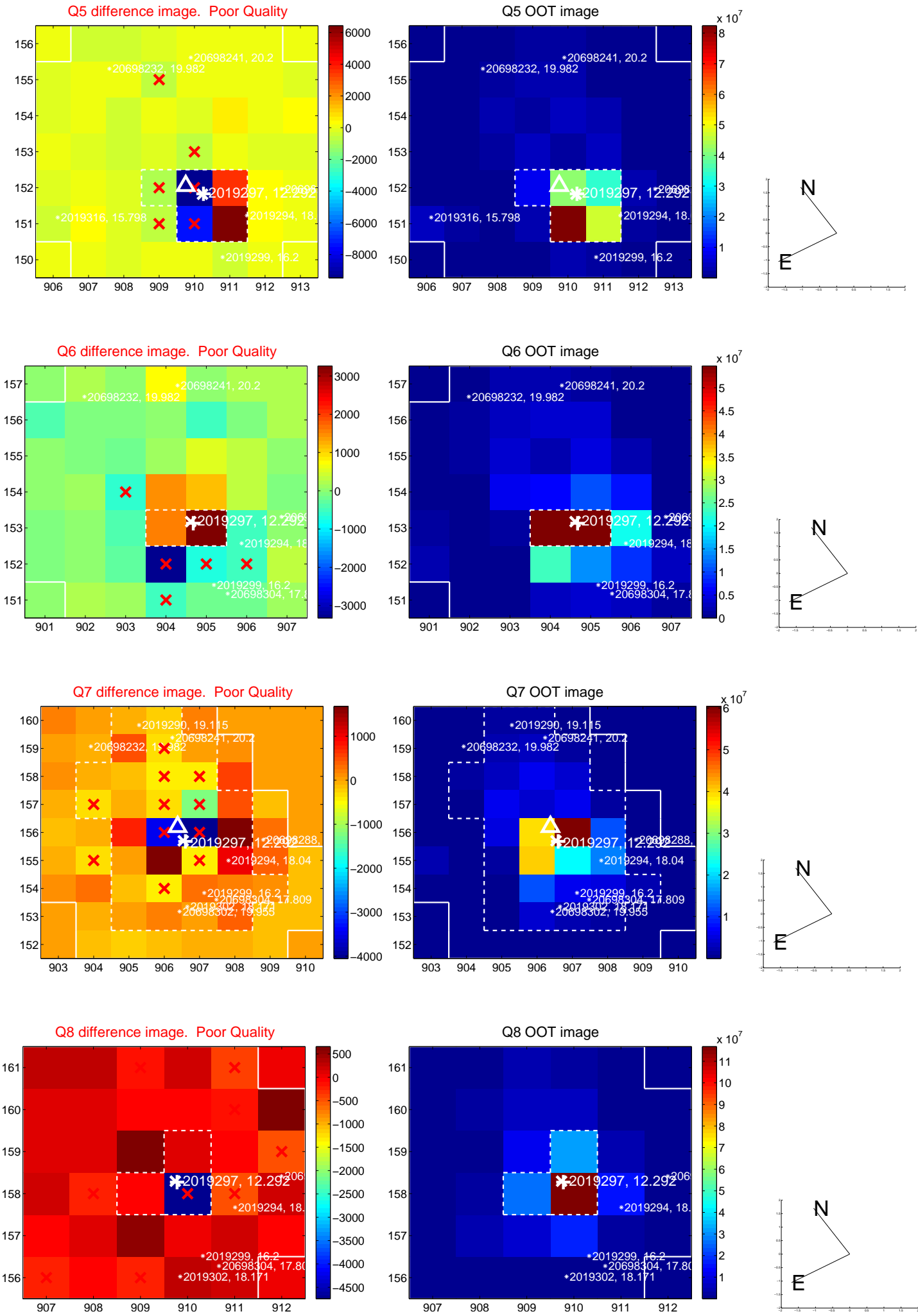


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

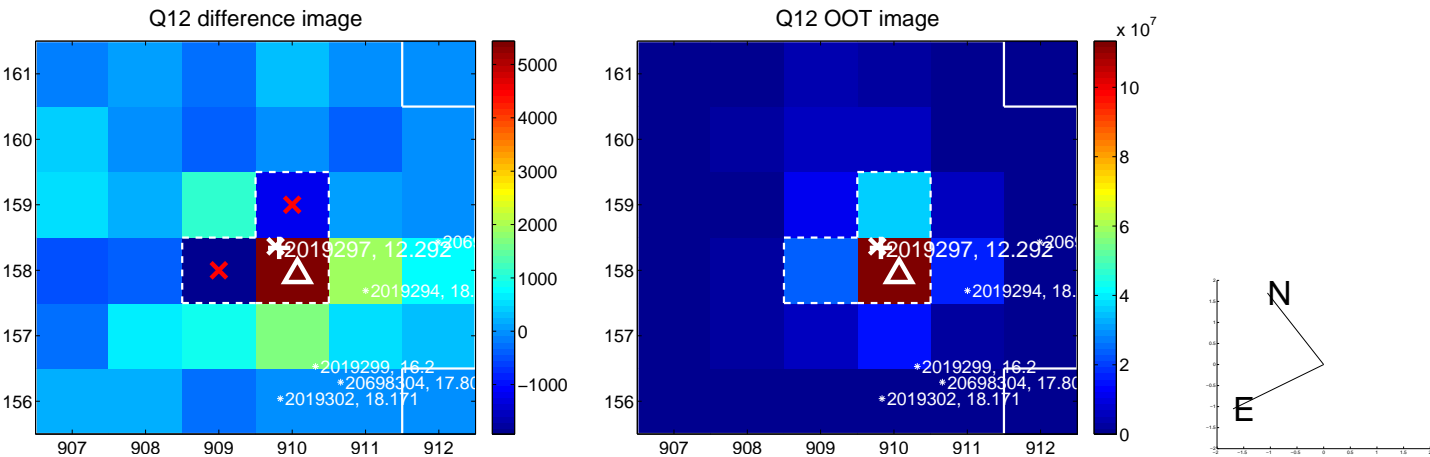
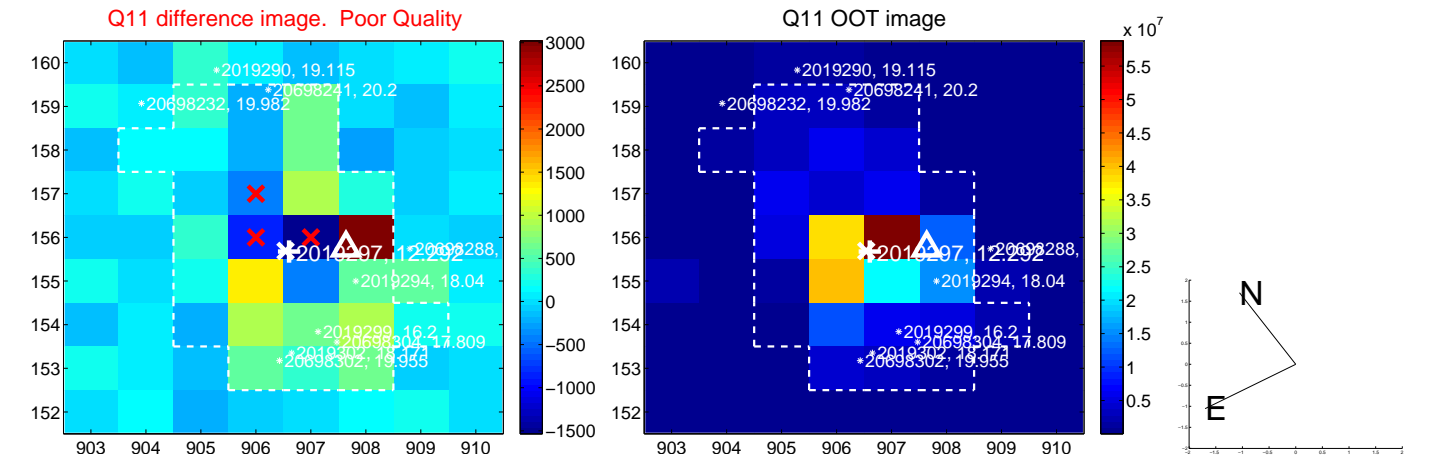
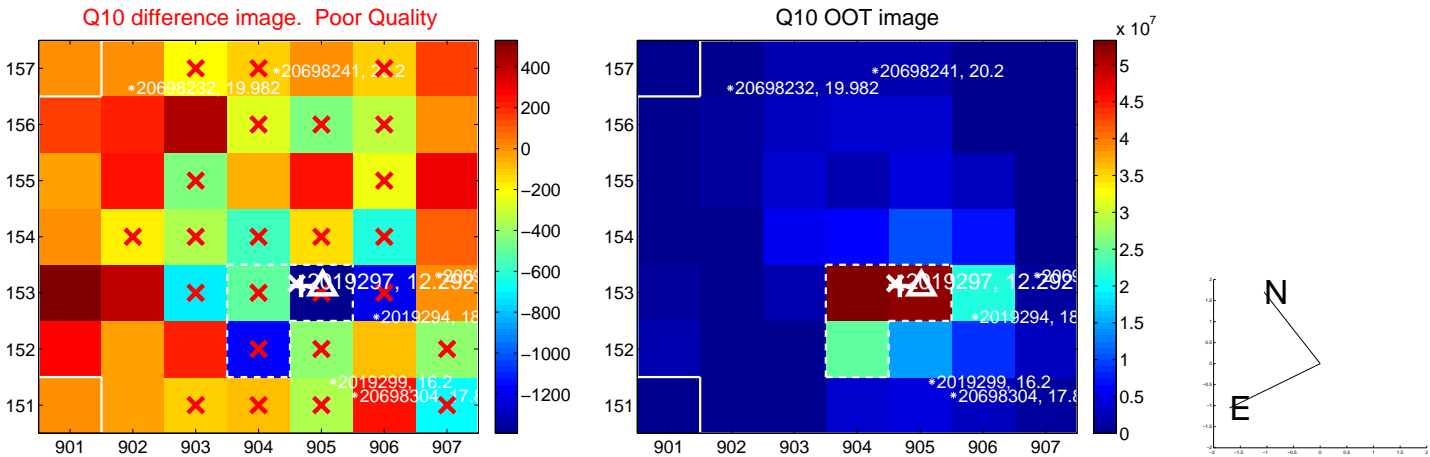
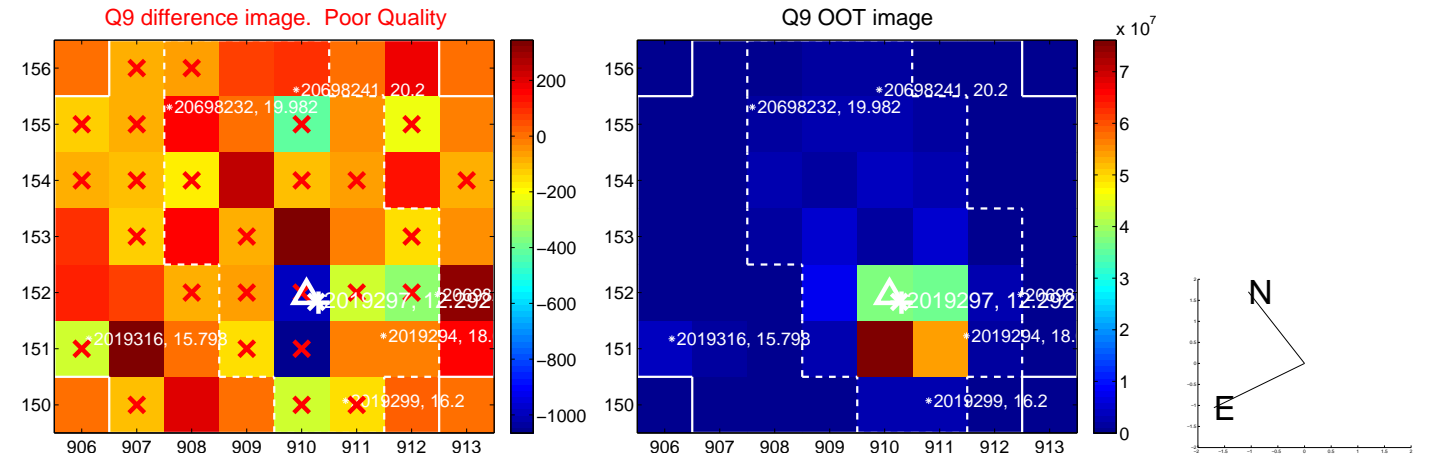
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



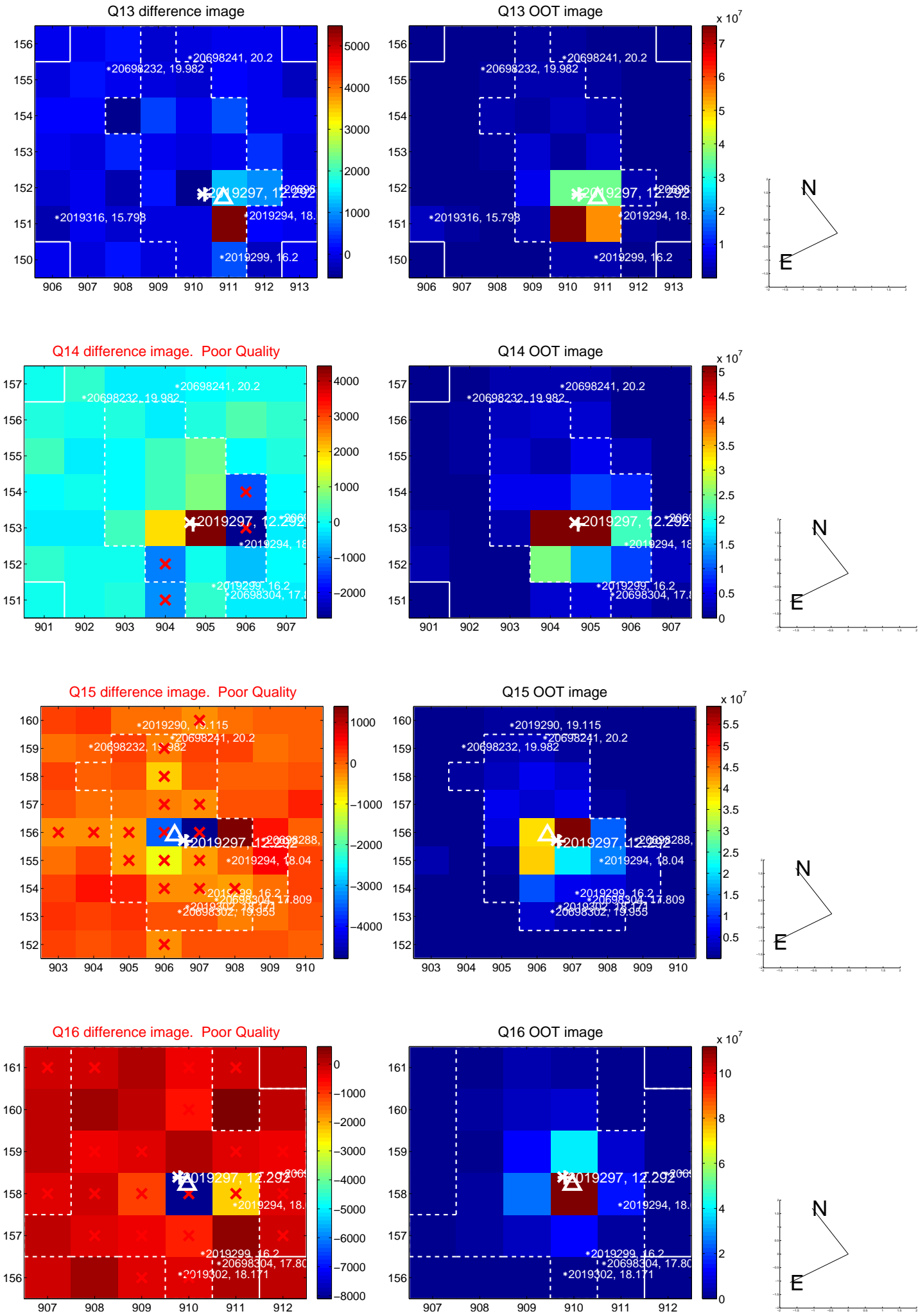
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



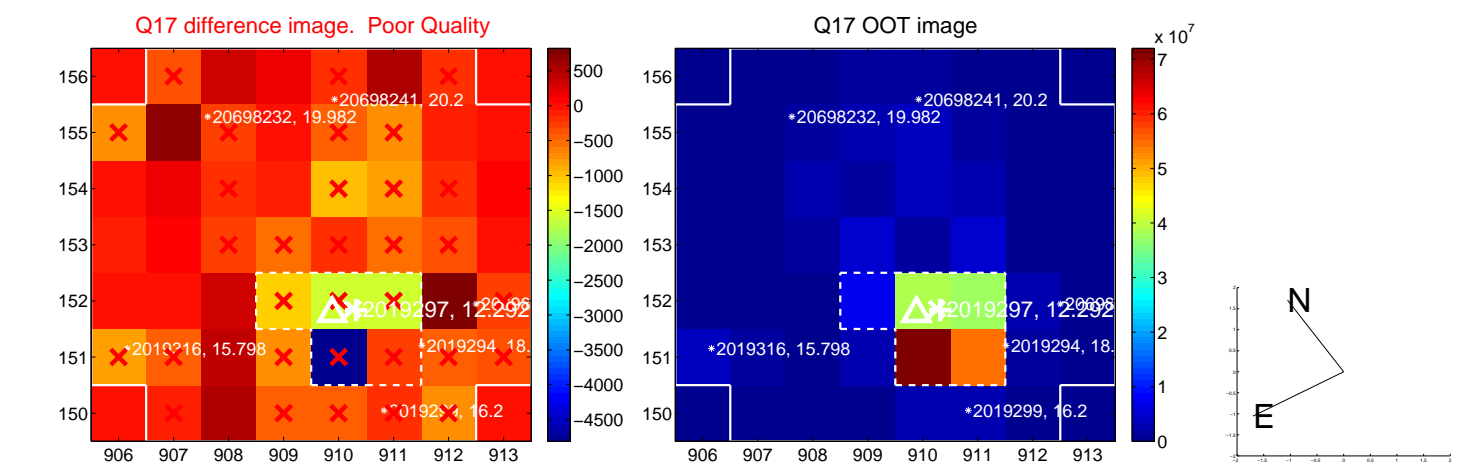
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



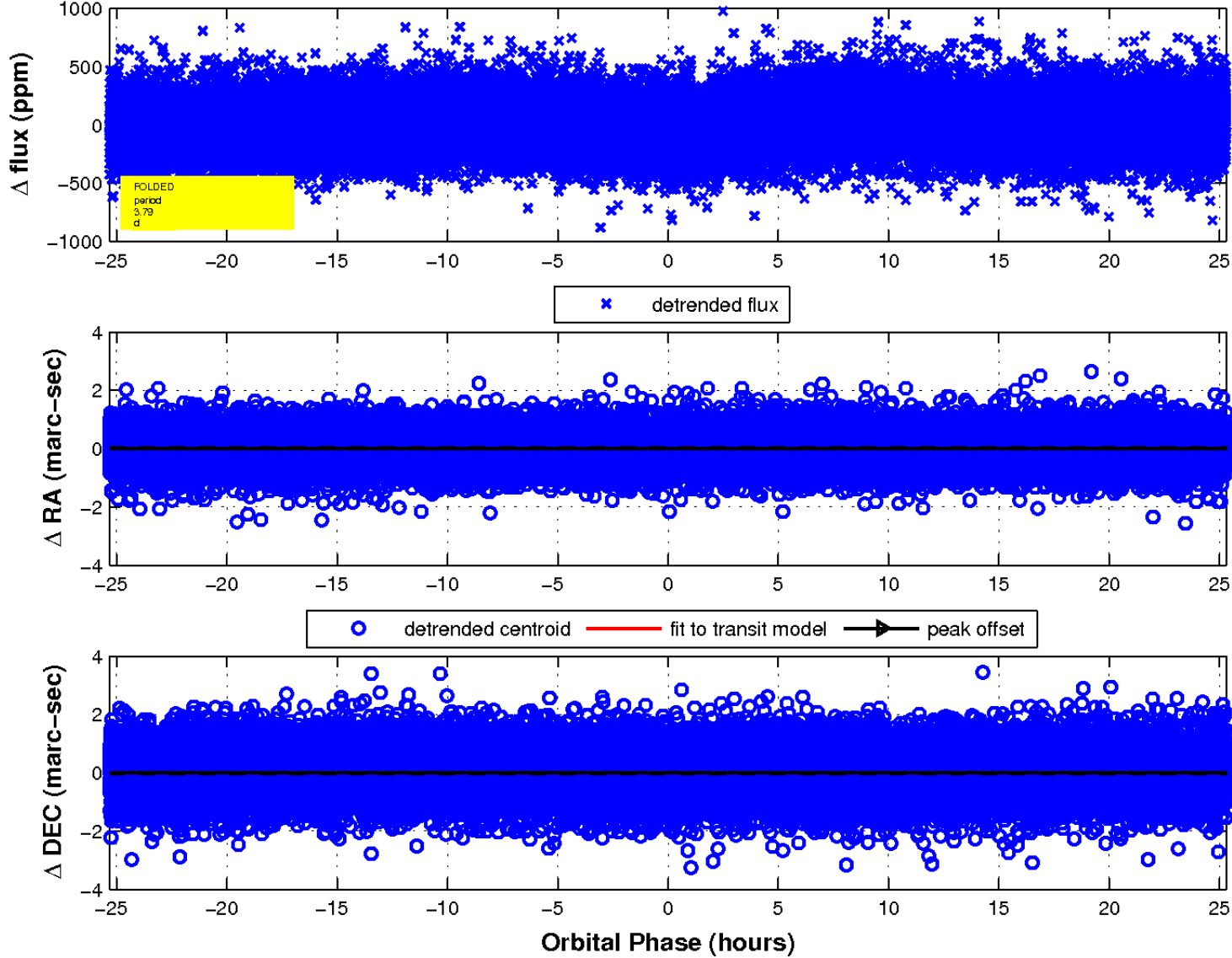
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



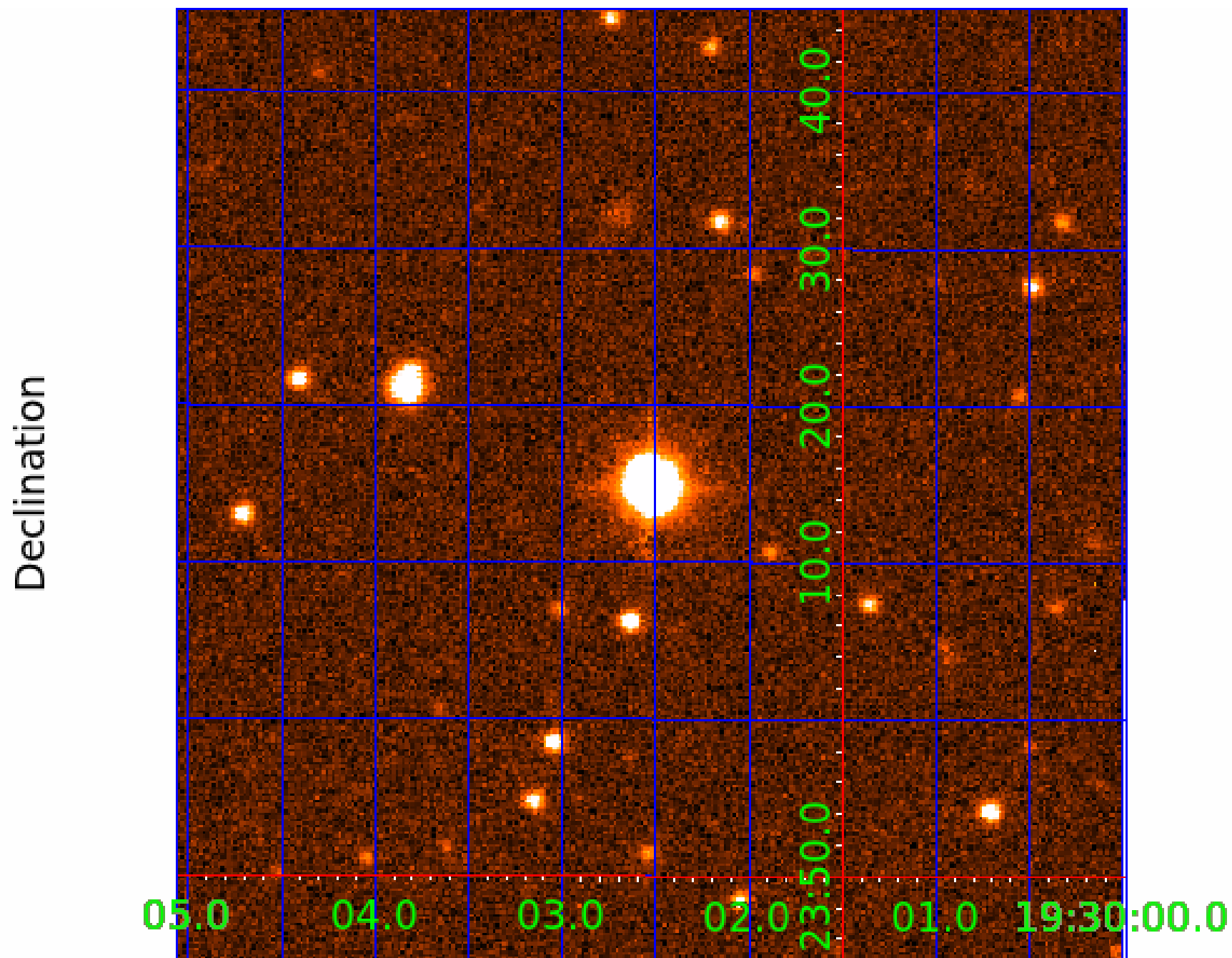
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 2



UKIRT Image



KIC 002019297

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})
002019297-01	OBS	No	3.794077	132.709153	49.3	8.437	9.8	10.7	2.40	6771	2.02	3274.01
002019297-02	OBS	No	3.795502	132.993659	47.7	6.725	8.0	8.0	2.40	6771	1.96	3272.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002019297-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
002019297-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

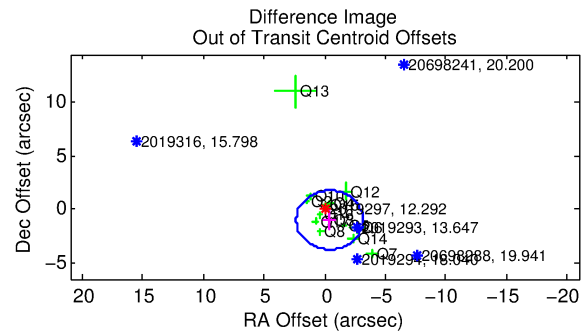
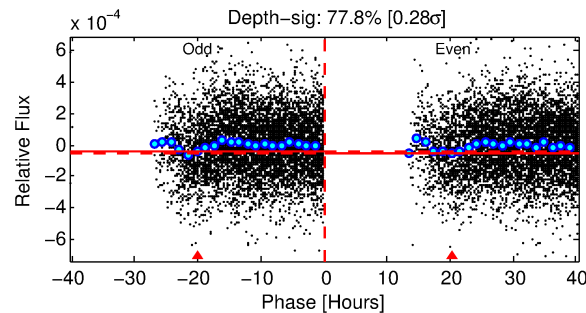
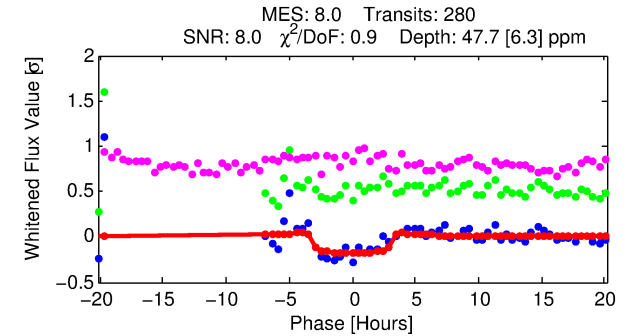
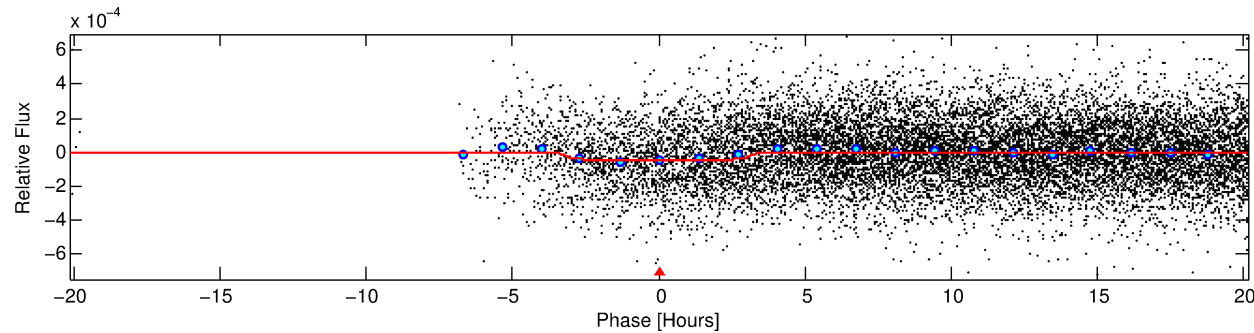
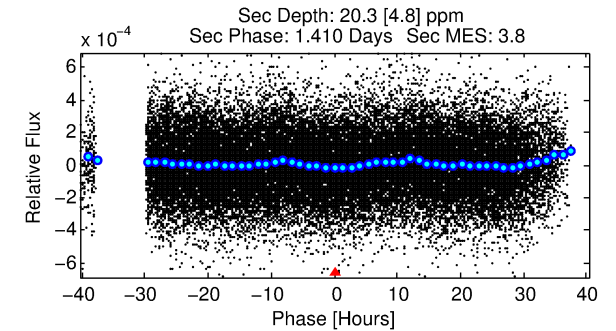
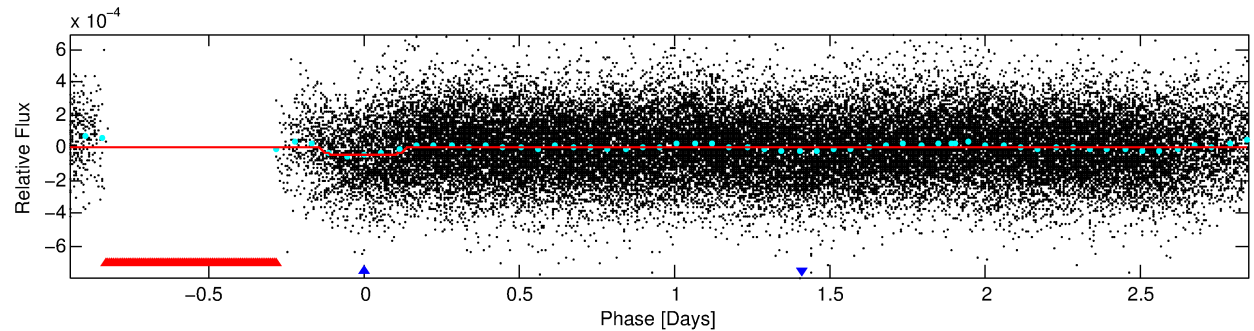
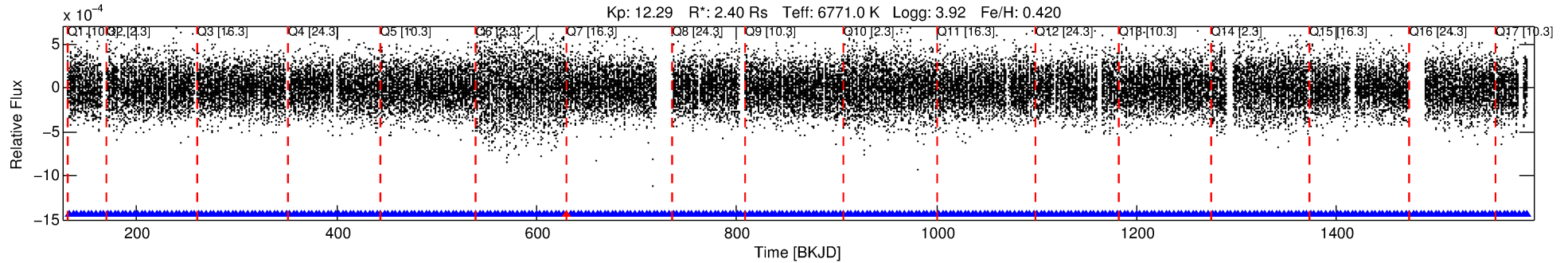
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002019297-02

No Significant Match Found

DV One-Page Summary

KIC: 2019297 Candidate: 2 of 2 Period: 3.796 d



DV Fit Results:

Period = 3.79550 [0.00004] d
Epoch = 132.9937 [0.0077] BKJD
Rp/R* = 0.0075 [0.0017]
a/R* = 2.03 [2.03]
b = 0.92 [0.23]
Seff = 3272.37 [1055.40]
Teq = 1929 [156] K
Rp = 1.96 [0.64] Re
a = 0.0576 [0.0119] AU
Ag = 9.63 [5.89] [1.47σ]
Teffp = 5253 [690] K [4.70σ]

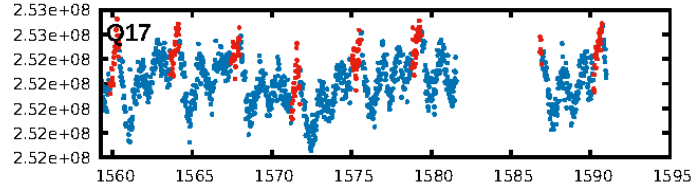
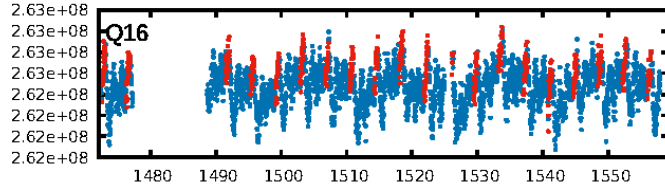
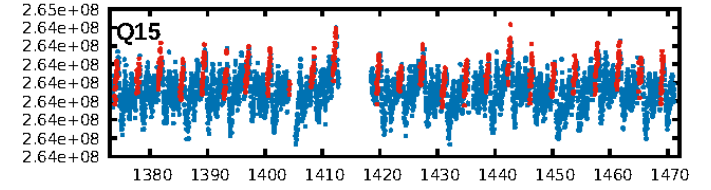
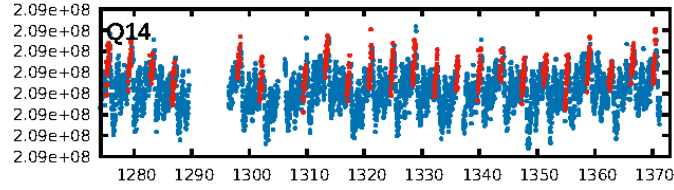
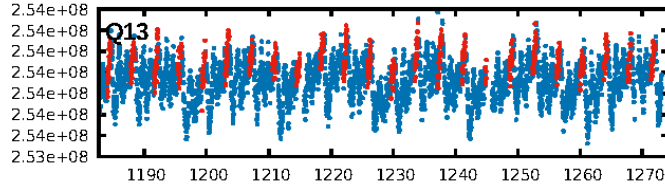
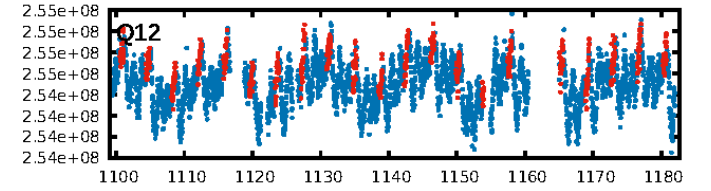
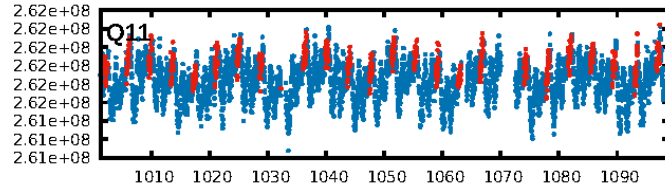
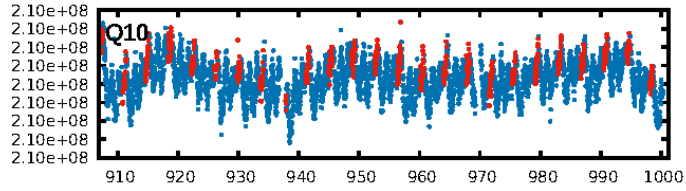
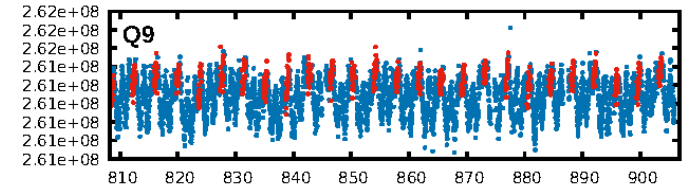
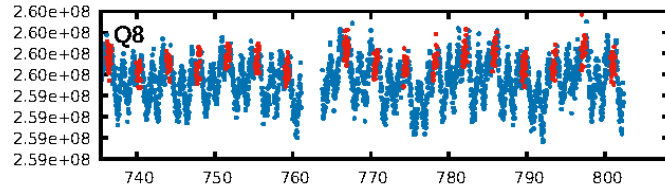
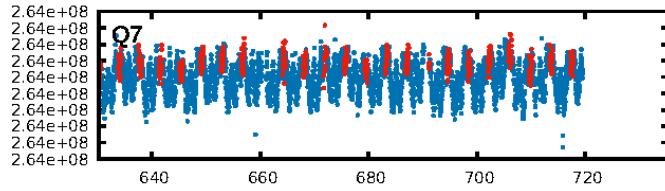
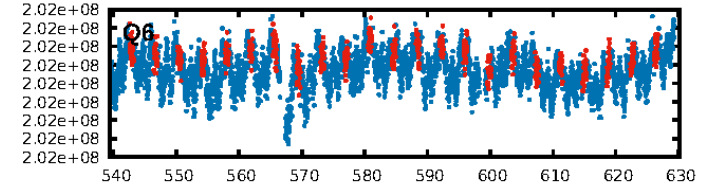
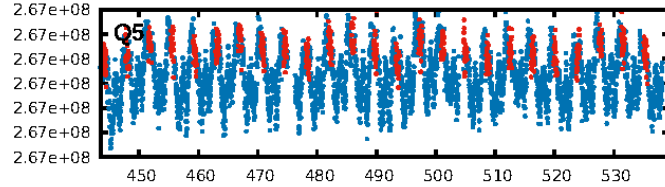
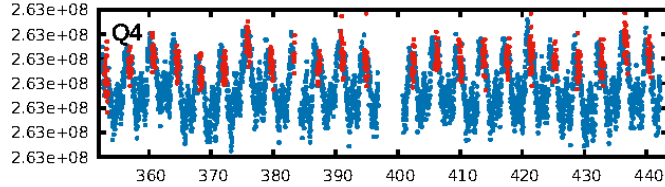
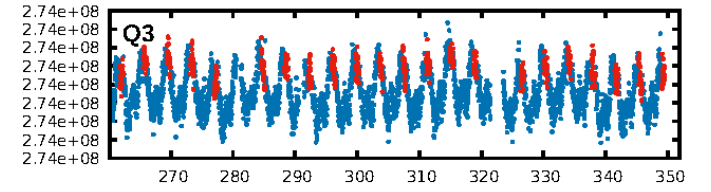
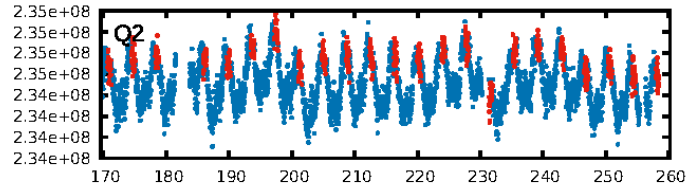
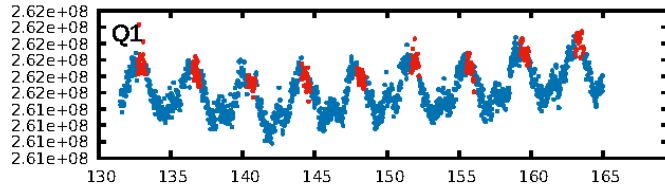
DV Diagnostic Results:

ShortPeriod-sig: 0.3% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: 3.21e-12
RollingBand-fgt: 1.00 [272/273]
GhostDiagnostic-chr: -1.308
Centroid-sig: 74.8%
Centroid-so: 0.666 arcsec [1.32σ]
OotOffset-rm: 1.075 arcsec [1.17σ]
KicOffset-rm: 1.270 arcsec [1.36σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 0.07 [1/15]
DiffImageOverlap-fno: 0.24 [4/17]

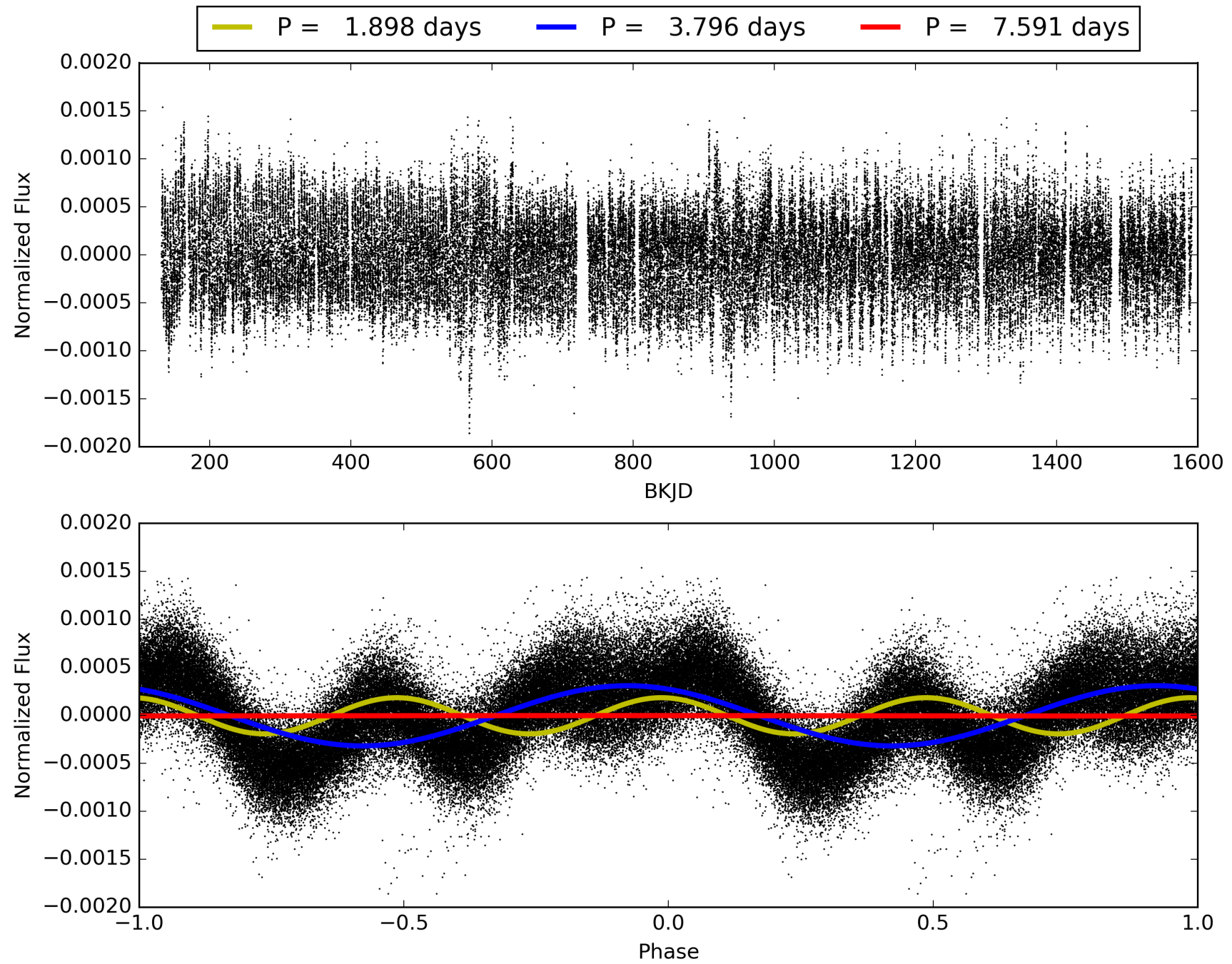
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 02:04:14 Z

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

TCE 002019297-02, PDC Light Curves

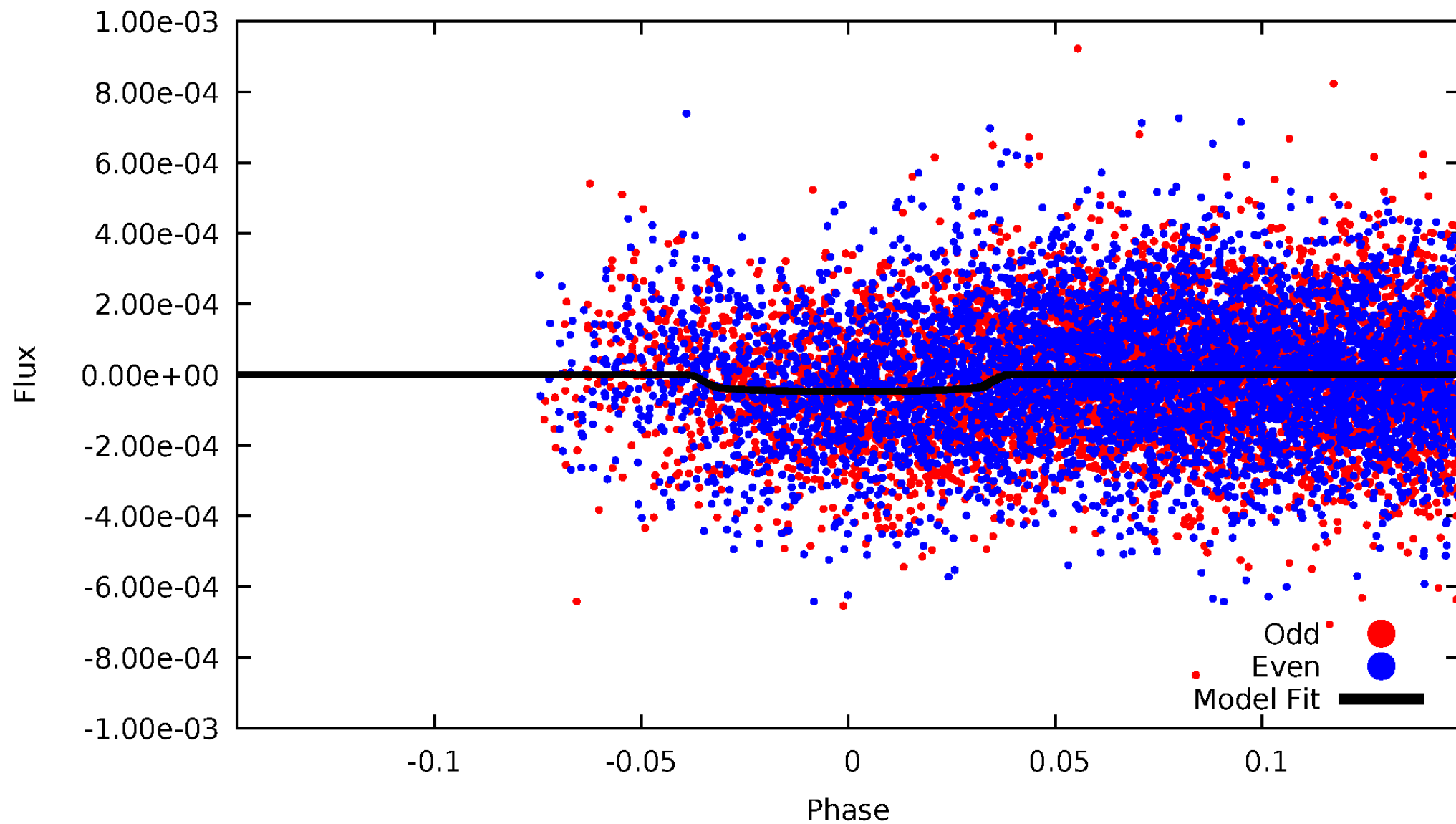


TCE 002019297-02



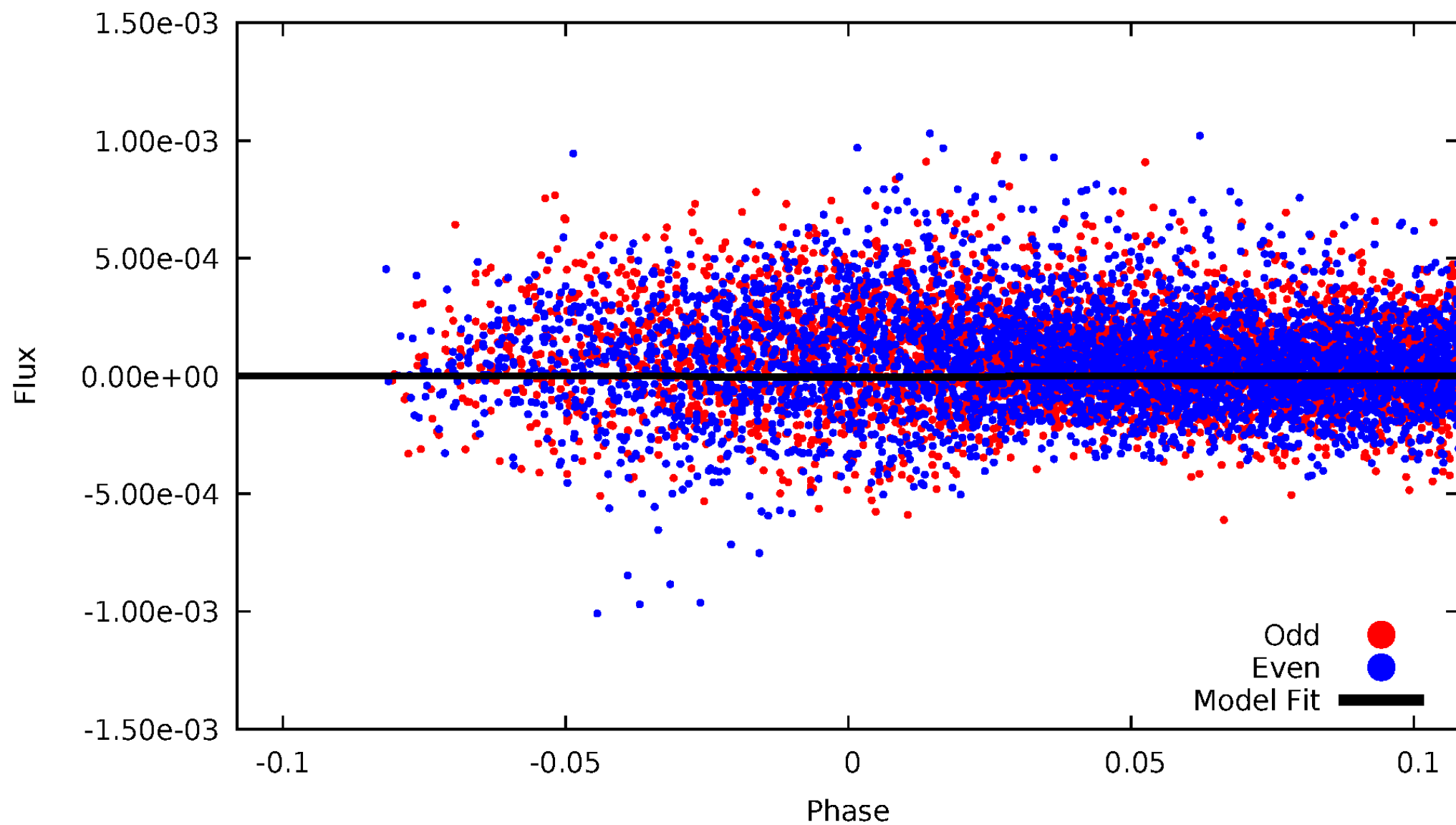
DV Odd/Even

TCE 002019297-02



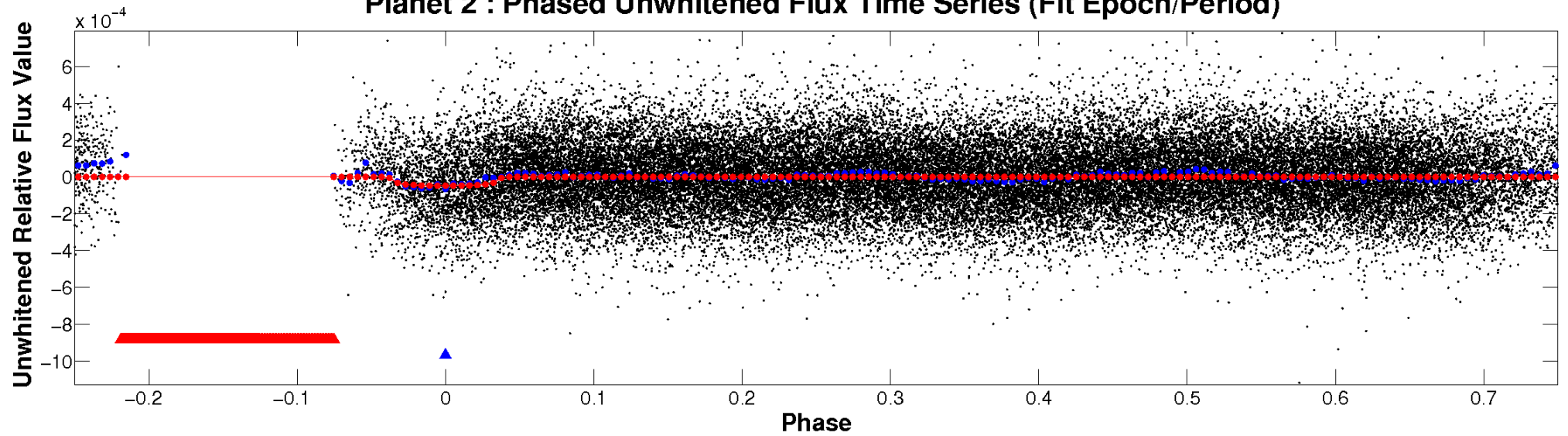
ALT Odd/Even

TCE 002019297-02

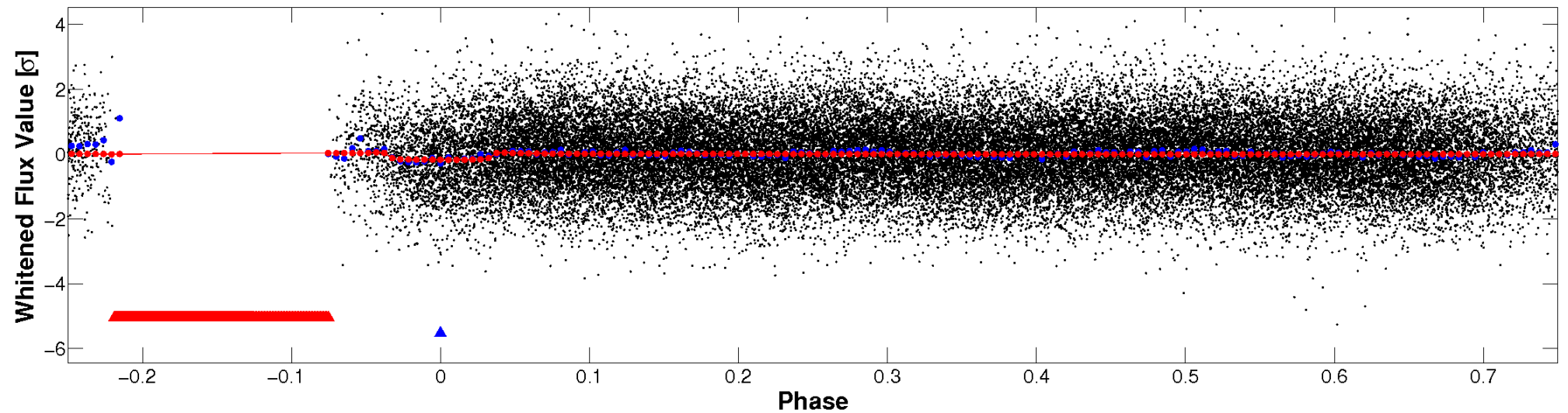


Non-Whitened Vs. Whitened Light Curve

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

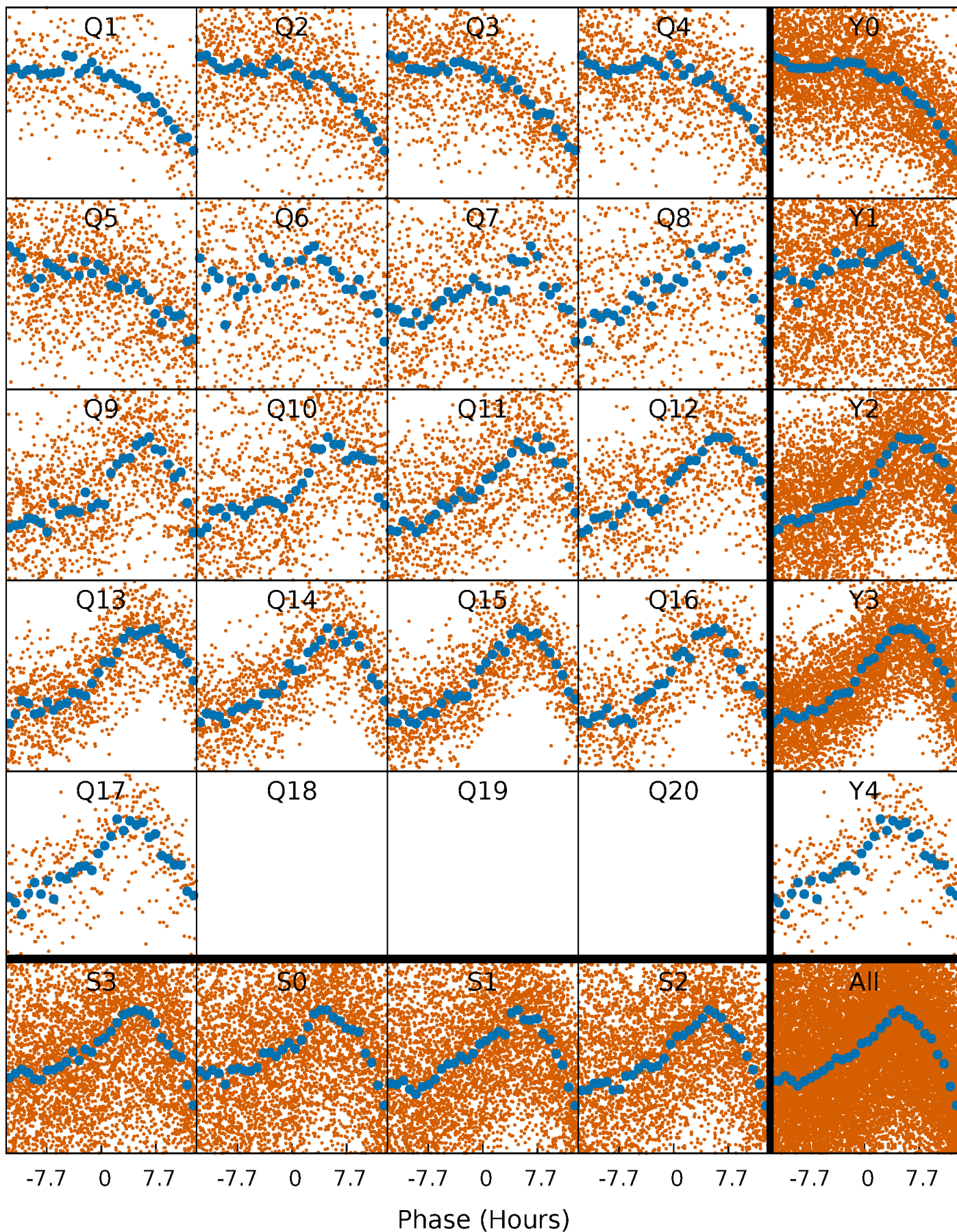


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



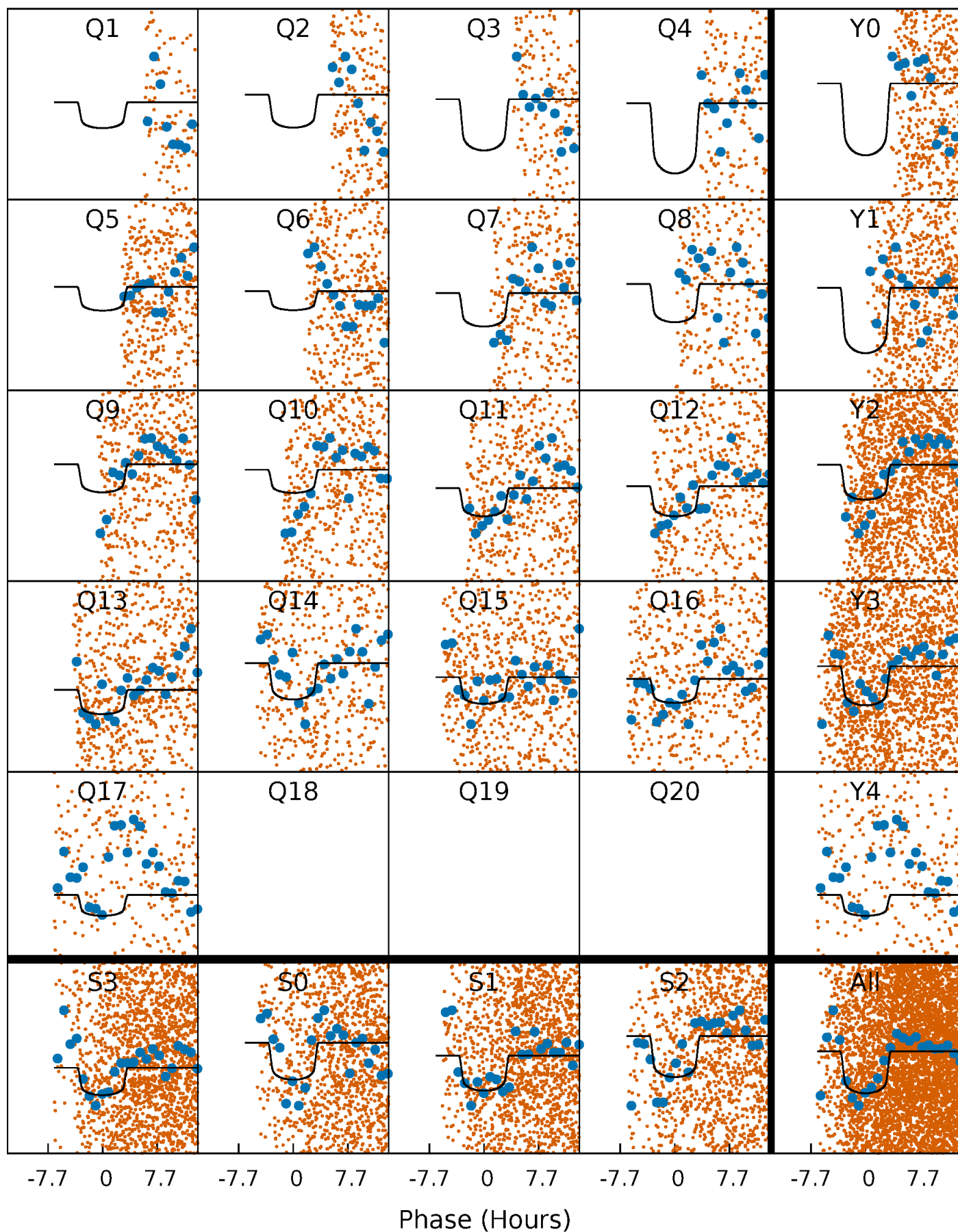
PDC Quarter-Phased Transit Curves

TCE 002019297-02 $P = 3.795502$ Days $T_0 = 132.993659$ (BKJD)



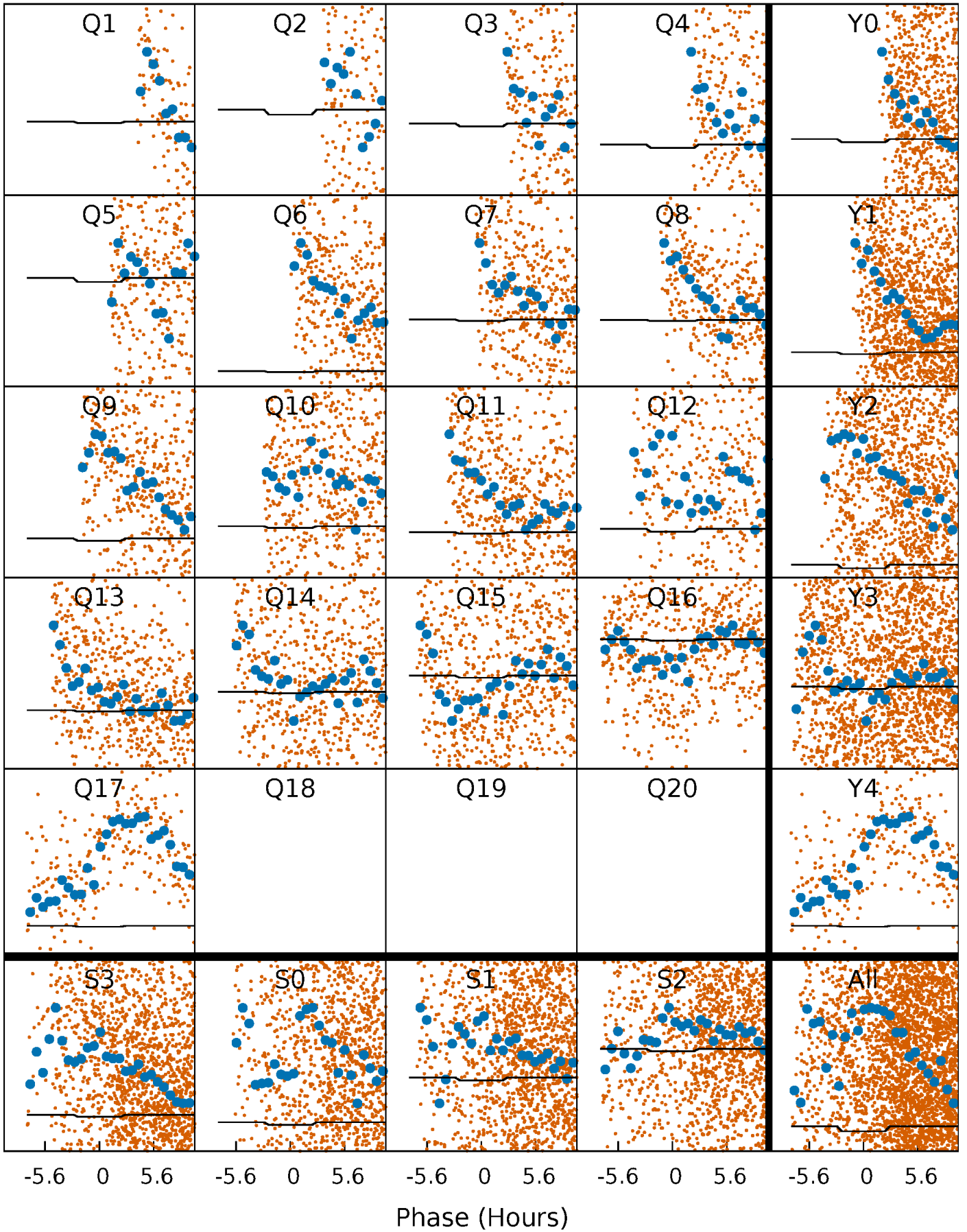
DV Quarter-Phased Transit Curves

TCE 002019297-02 $P = 3.795502$ Days $T_0 = 132.993659$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

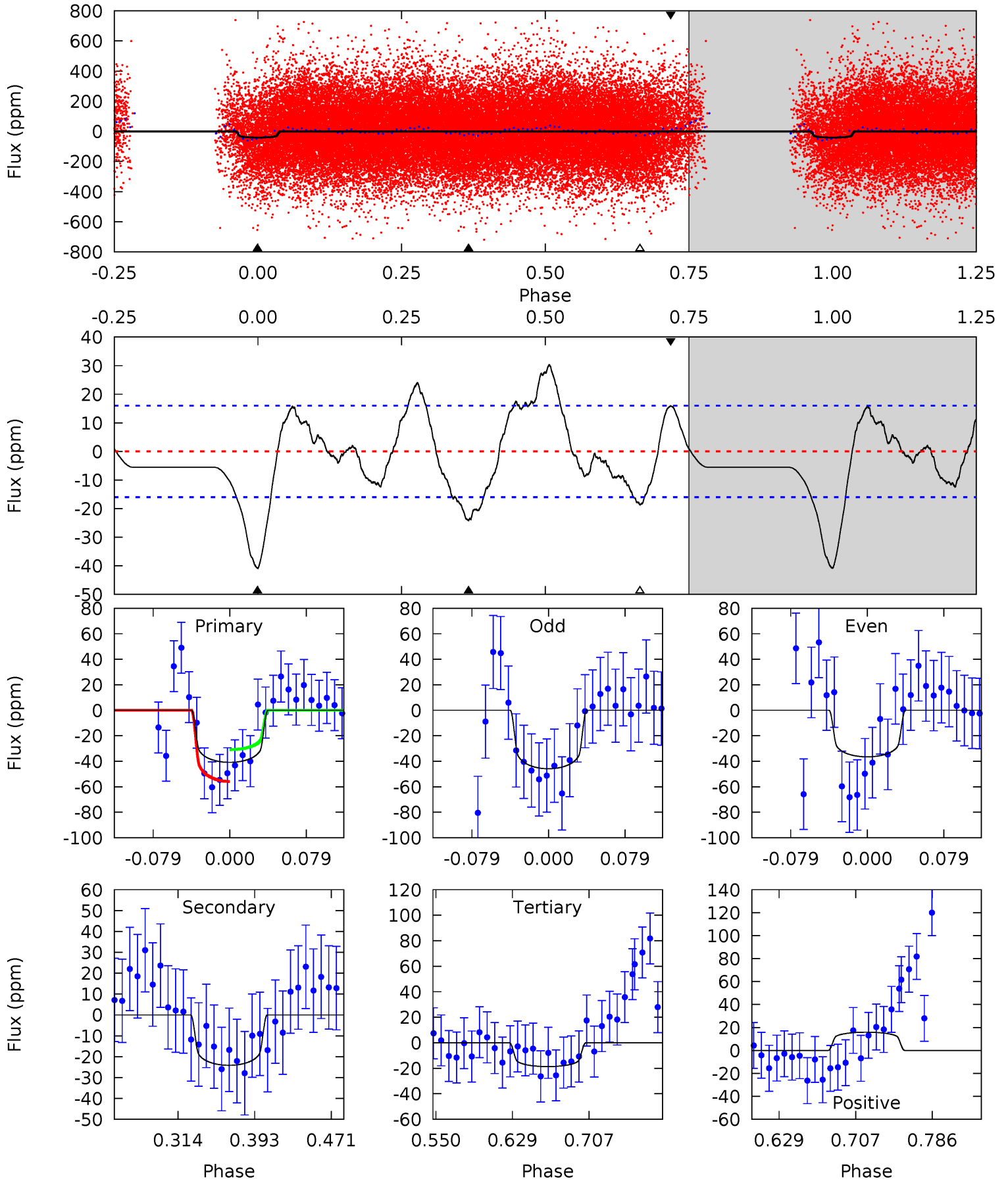
TCE 002019297-02 P= 3.795351 Days $T_0=133.077715$ (BKJD)



DV Model-Shift Uniqueness Test

002019297-02, P = 3.795502 Days, E = 129.198157 Days

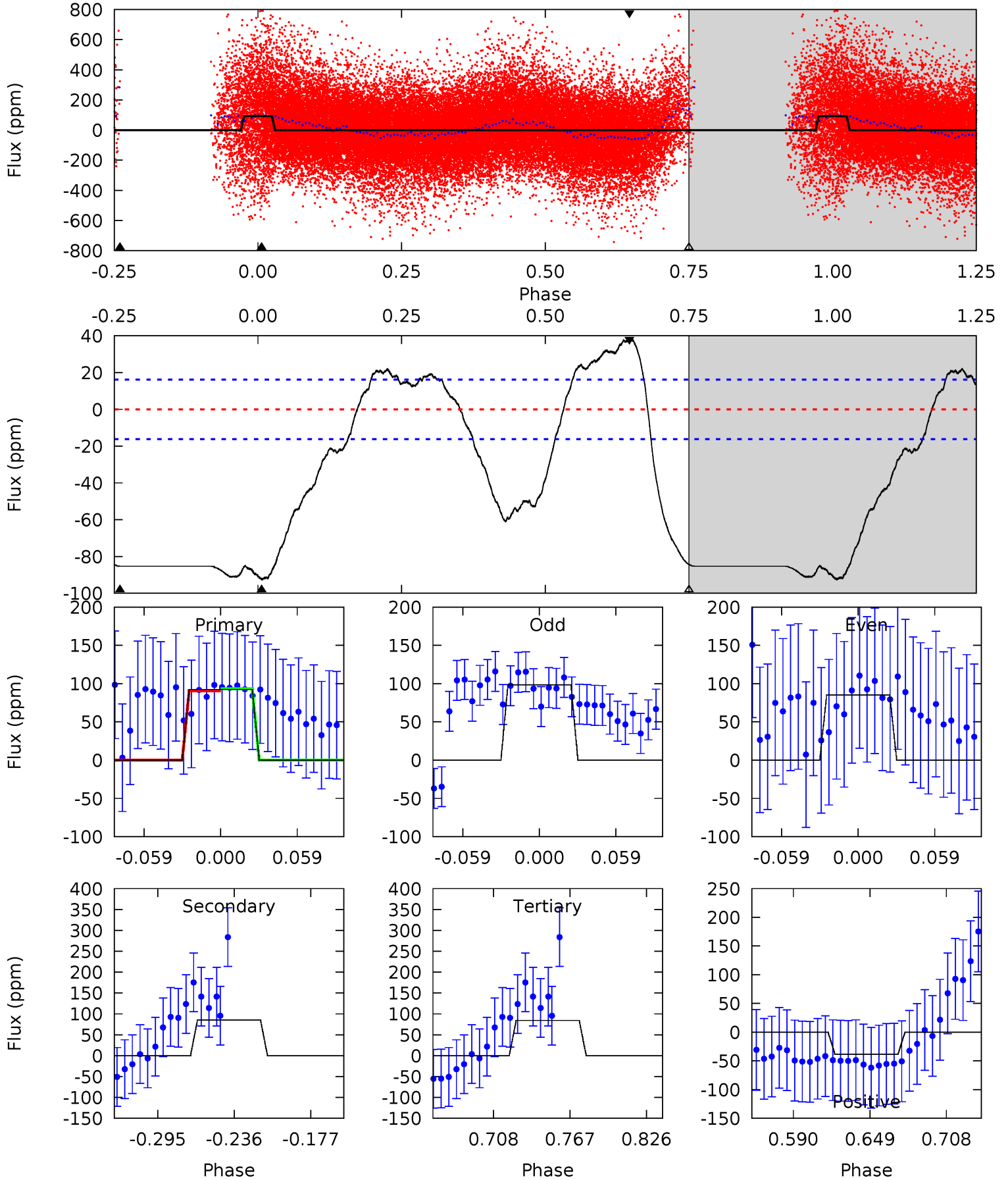
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	6.95	5.39	4.57	4.62	1.76	3.54	6.38	7.20	1.57	2.38	1.35	0.62	0.43	3.50



Alt Model-Shift Uniqueness Test

002019297-02, P = 3.795351 Days, E = 129.282364 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.6	24.6	24.3	11.0	4.67	1.89	9.08	2.36	15.6	0.31	13.6	1.90	0.96	0.29	0.38



Stellar Parameters For KIC 002019297

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6771^{+67}_{-94}	$3.925^{+0.182}_{-0.098}$	$0.420^{+0.050}_{-0.200}$	$2.402^{+0.364}_{-0.545}$	$1.773^{+0.093}_{-0.202}$	$0.180^{+0.171}_{-0.054}$
	+1%/-1%	+5%/-2%	+12%/-48%	+15%/-23%	+5%/-11%	+95%/-30%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 002019297-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-24 ± 3	$1.90^{+0.50}_{-0.44}$	2673^{+113}_{-148}	5449^{+702}_{-540}	12^{+9}_{-5}
Alt.	-85 ± 3	$0.61^{+0.44}_{-0.35}$	2682^{+120}_{-176}	19096^{+41778}_{-7559}	423^{+1944}_{-283}

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 $A_{obs} \gg 1.0$

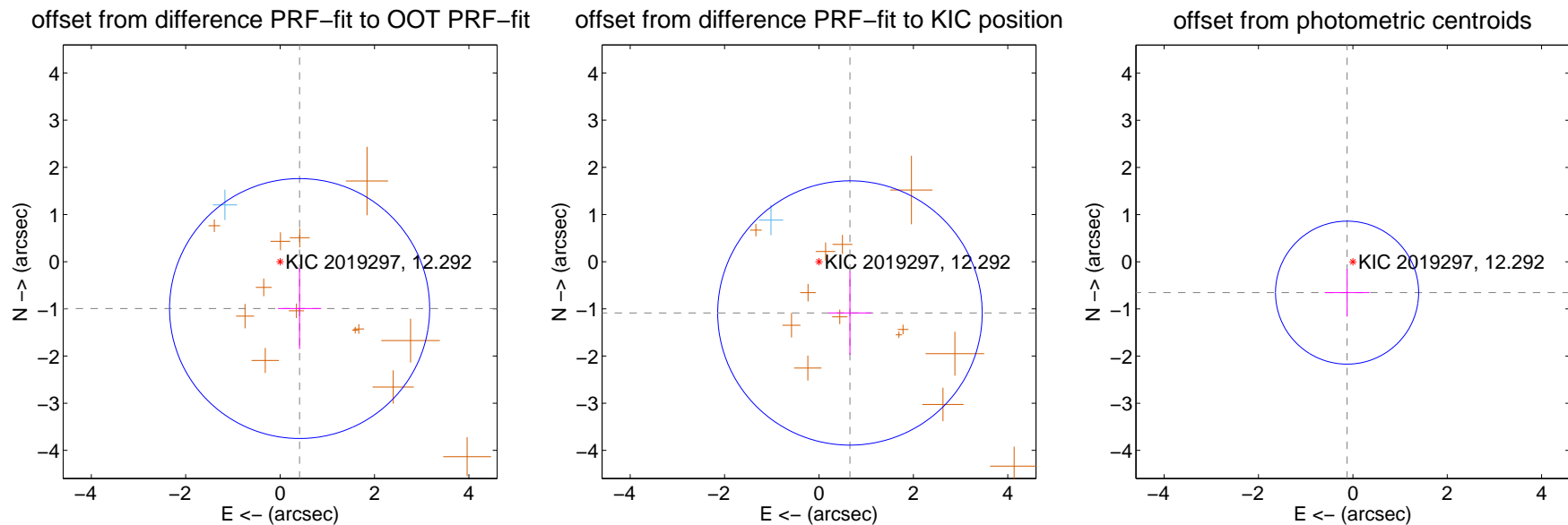
DV Centroid Data

Supplemental centroid analysis for 002019297-02. Kepler magnitude: 12.29. Transit SNR 7.98

There are 1 quarters with good PRF difference image offsets

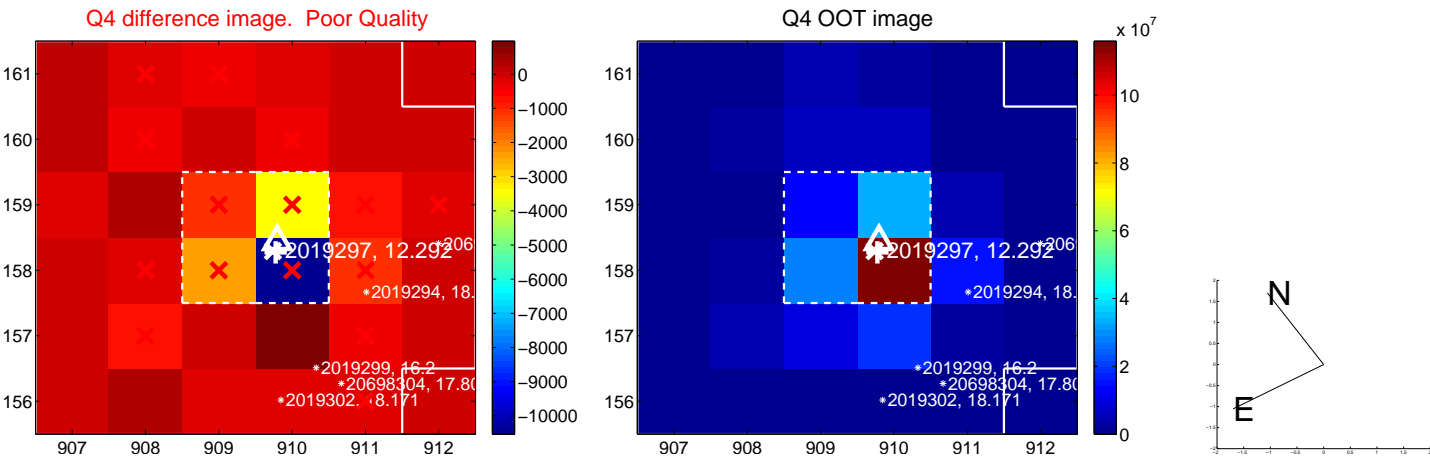
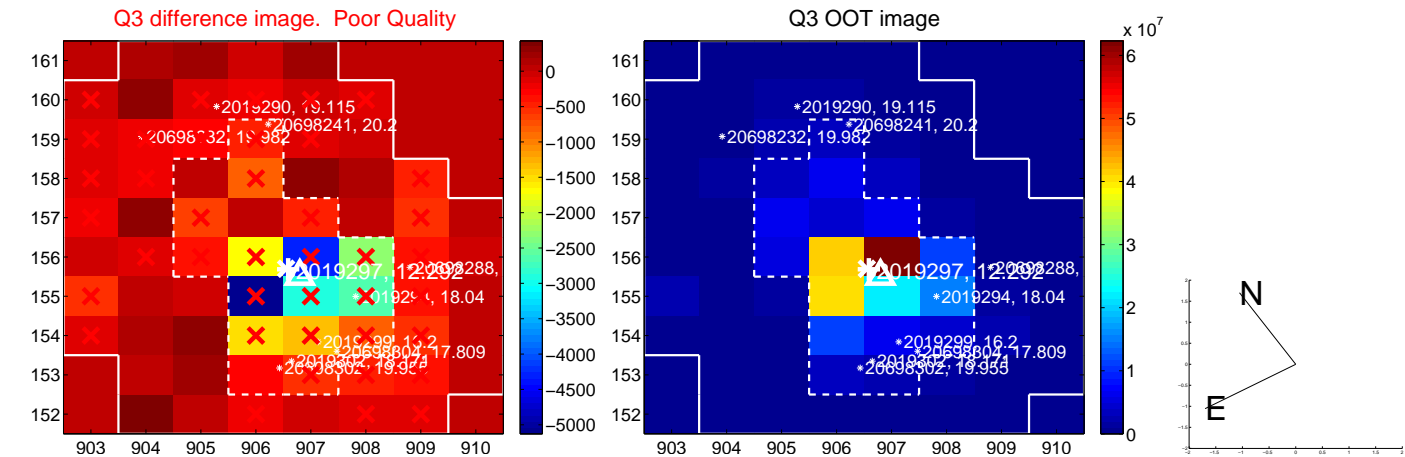
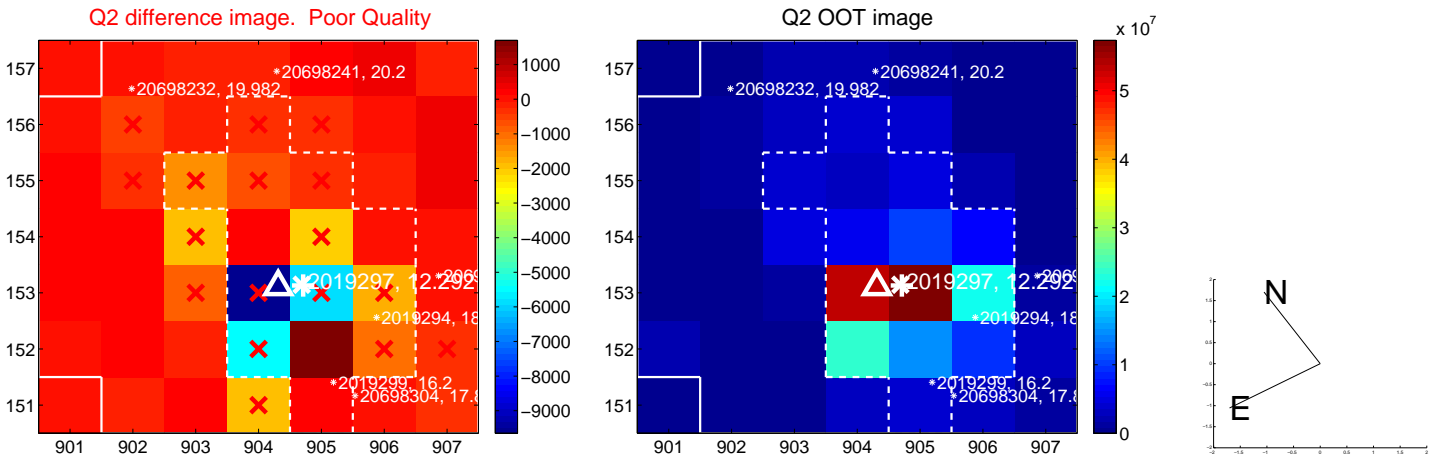
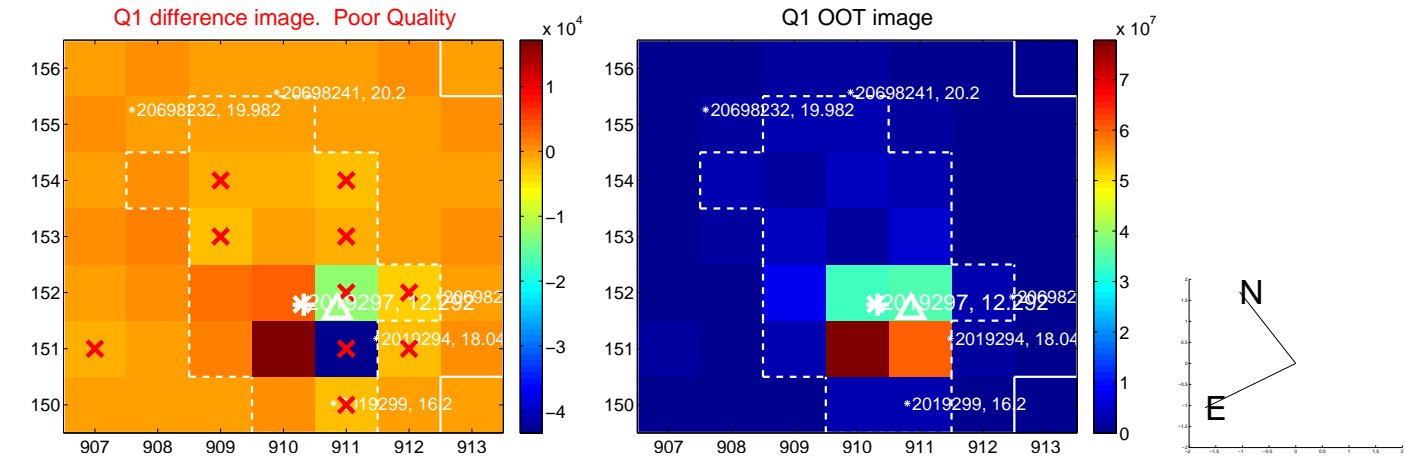
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.075 ± 0.918	1.17	-0.413 ± 0.458	-0.993 ± 0.860
PRF-fit source offset from KIC position	1.270 ± 0.934	1.36	-0.656 ± 0.456	-1.087 ± 0.886
photometric centroid source offset	0.67 ± 0.51	1.32	0.12 ± 0.48	-0.65 ± 0.51

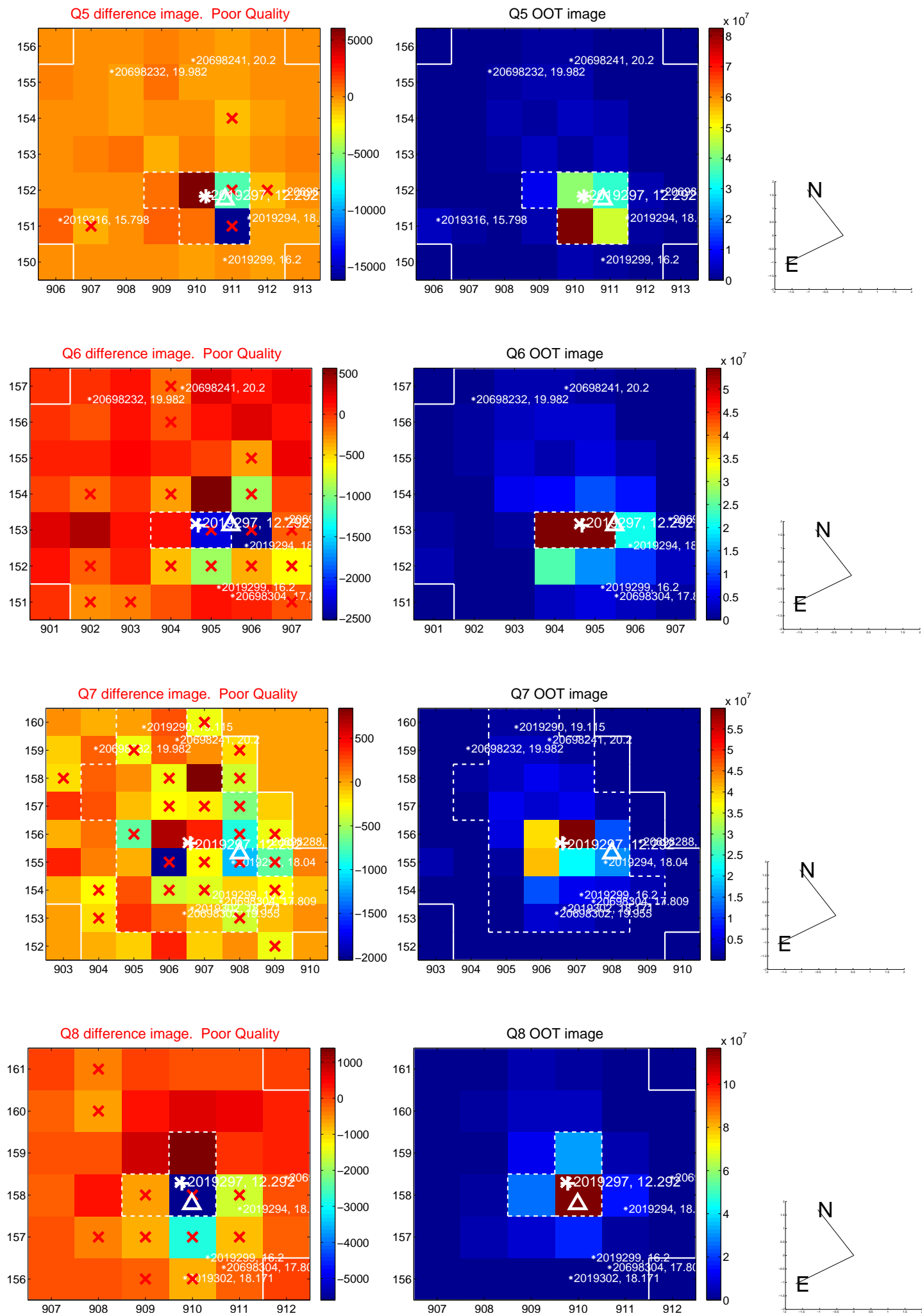


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

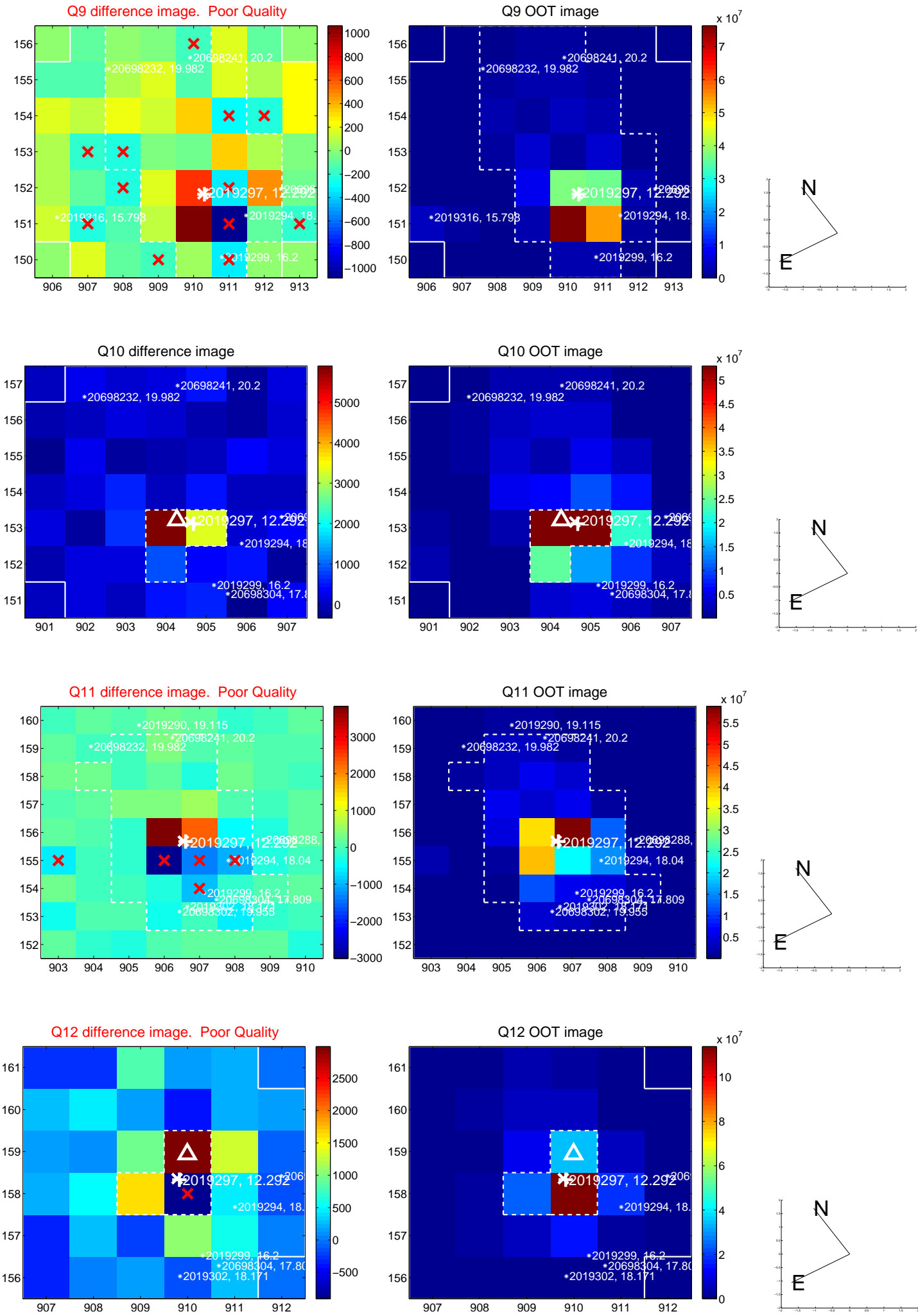
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



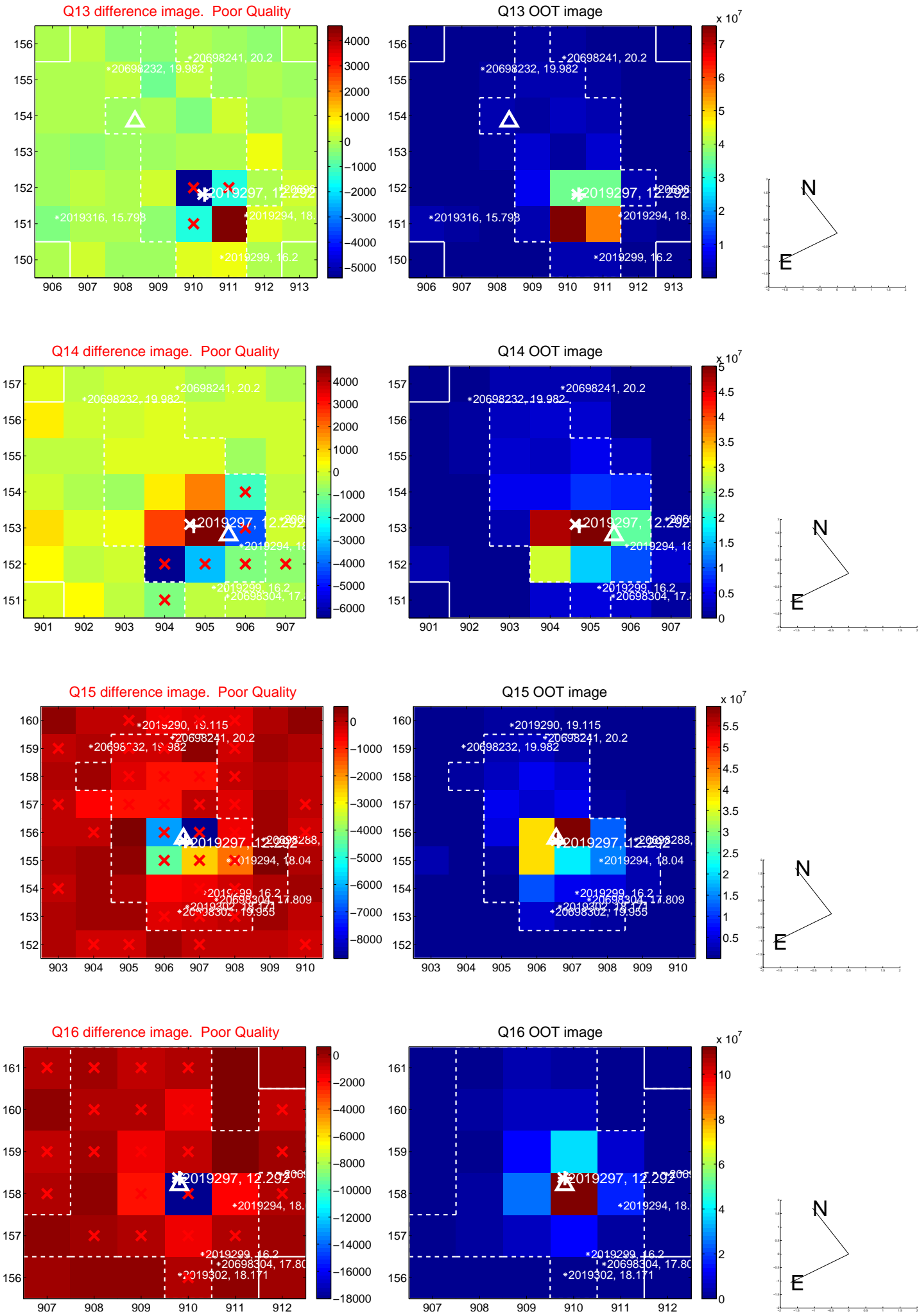
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



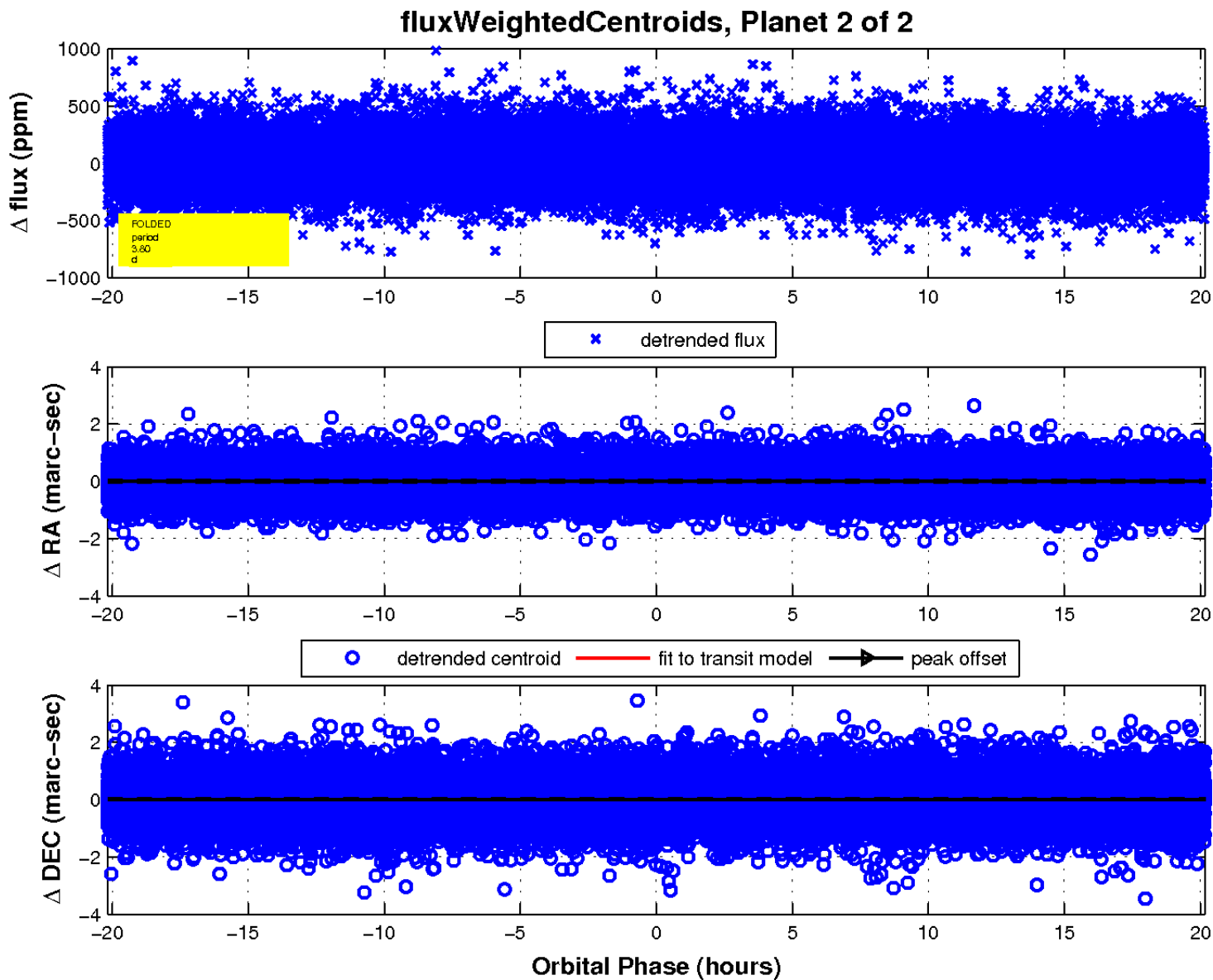
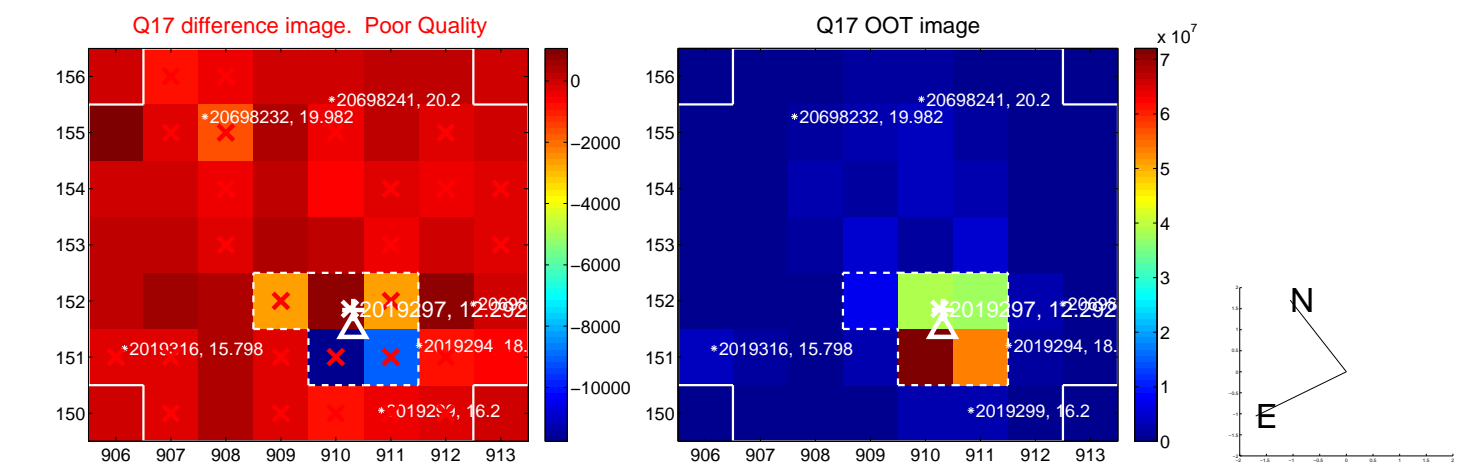
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

