

KIC 007972785

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})
007972785-01	OBS	0184.01	7.300736	133.566502	13056.1	5.826	1341.9	1335.3	1.14	6434	13.44	329.93
007972785-02	OBS	No	7.300637	137.228516	249.7	5.727	24.9	27.0	1.14	6434	2.11	329.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007972785-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
007972785-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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

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

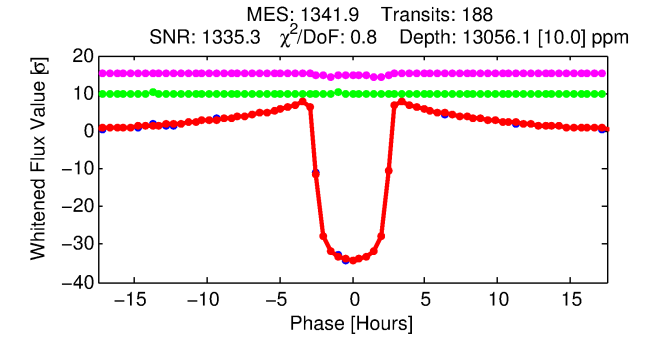
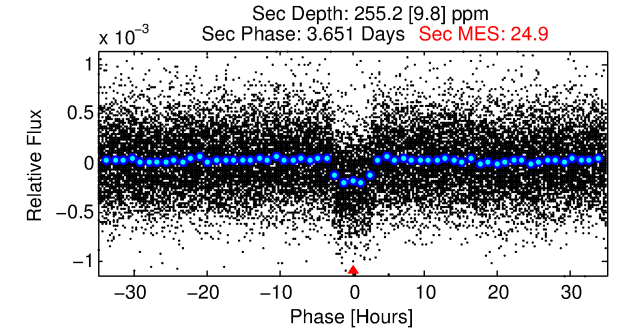
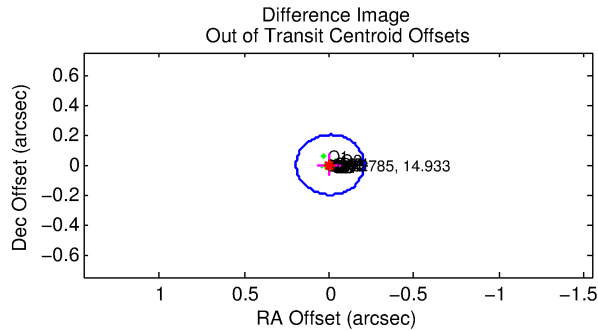
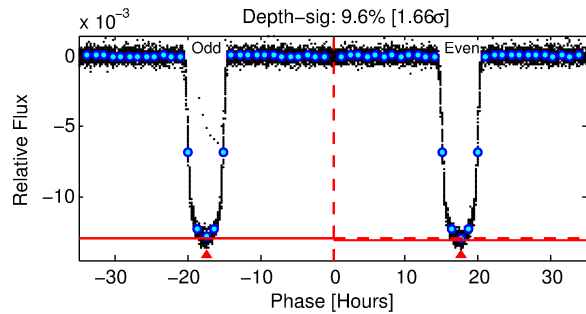
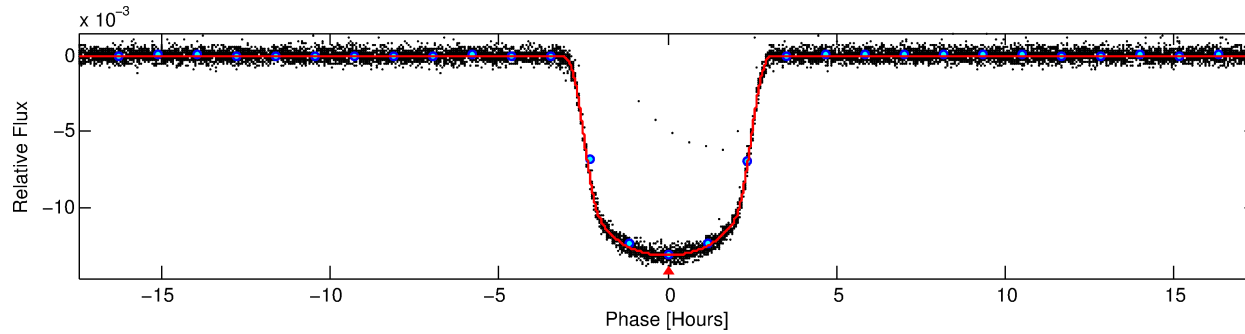
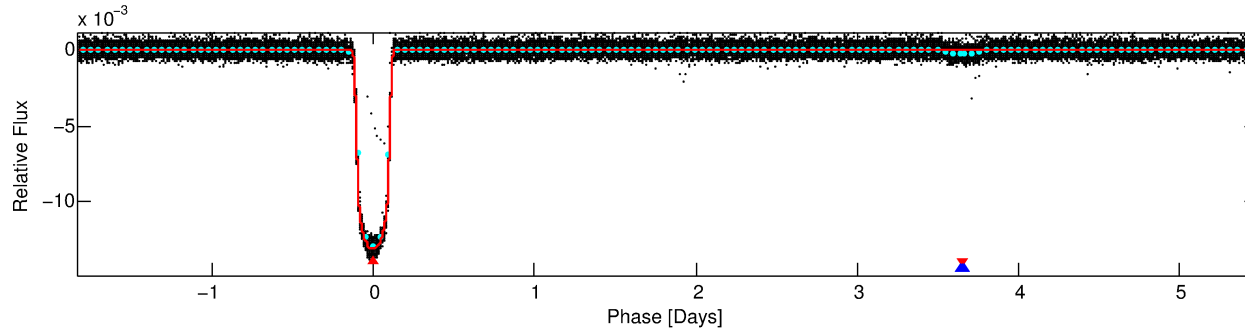
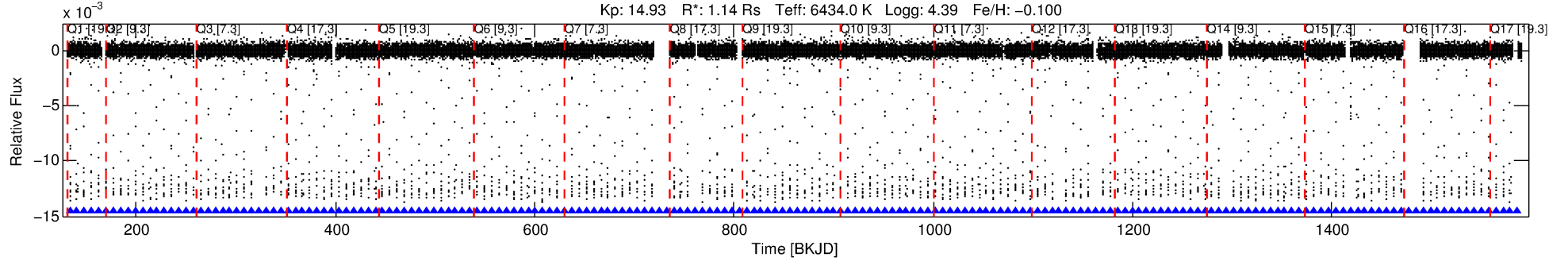
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007972785-01

No Significant Match Found

DV One-Page Summary

KIC: 7972785 Candidate: 1 of 2 Period: 7.301 d
KOI: K00184.01 Corr: 0.995



DV Fit Results:

Period = 7.30074 [0.00000] d
Epoch = 133.5665 [0.0001] BKJD
Rp/R* = 0.1083 [0.0001]
a/R* = 9.45 [0.04]
b = 0.51 [0.01]
Seff = 329.93 [138.53]
Teff = 1087 [114] K
Rp = 13.44 [4.60] Re
a = 0.0776 [0.0217] AU
Ag = 4.68 [1.86] [1.98 σ]
Teffp = 2471 [91] K [9.47 σ]

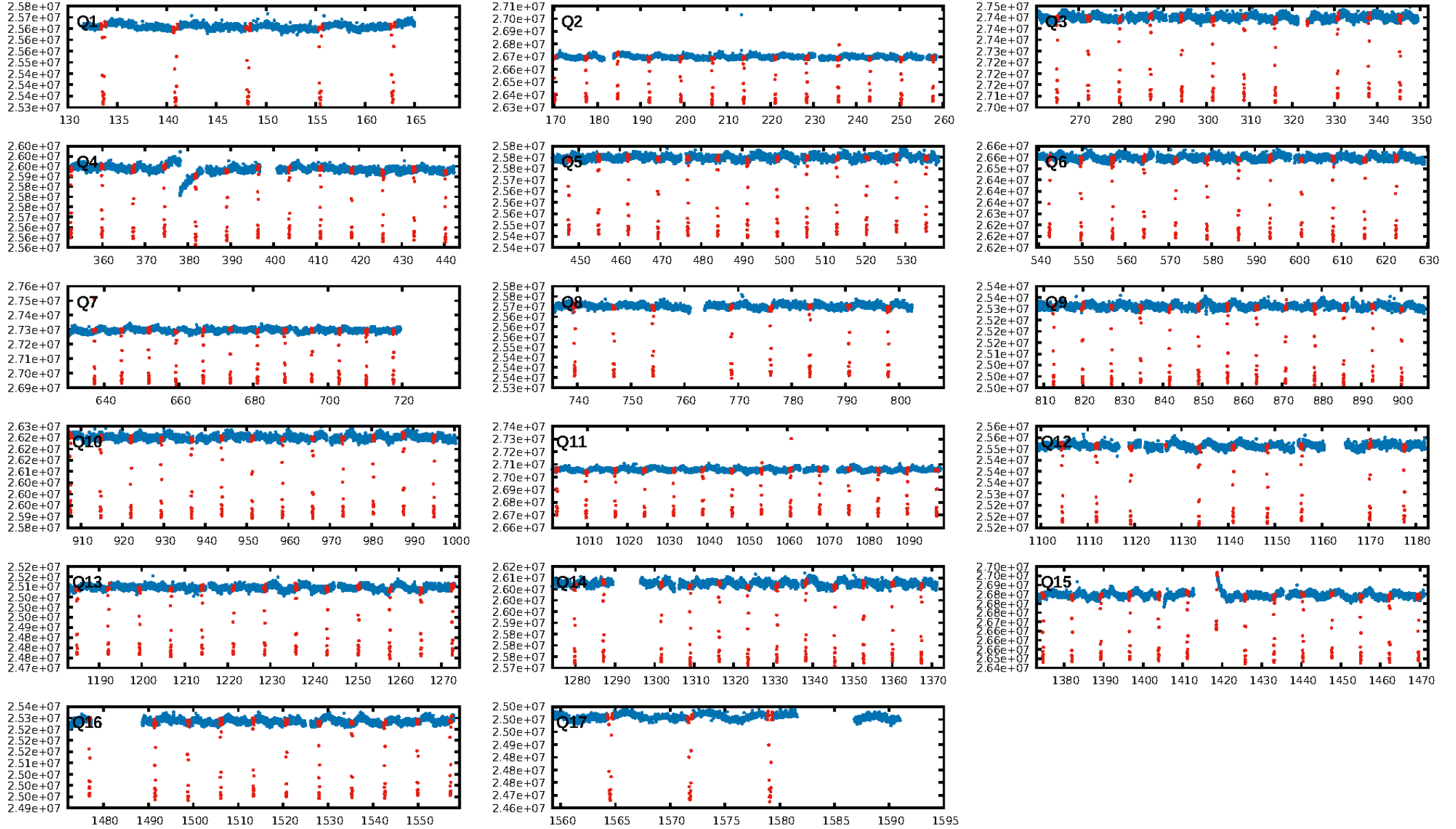
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [180/180]
GhostDiagnostic-chr: 6.455
Centroid-sig: 0.0%
Centroid-so: 0.100 arcsec [12.51 σ]
OotOffset-rm: 0.005 arcsec [0.08 σ]
KicOffset-rm: 0.103 arcsec [1.50 σ]
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]

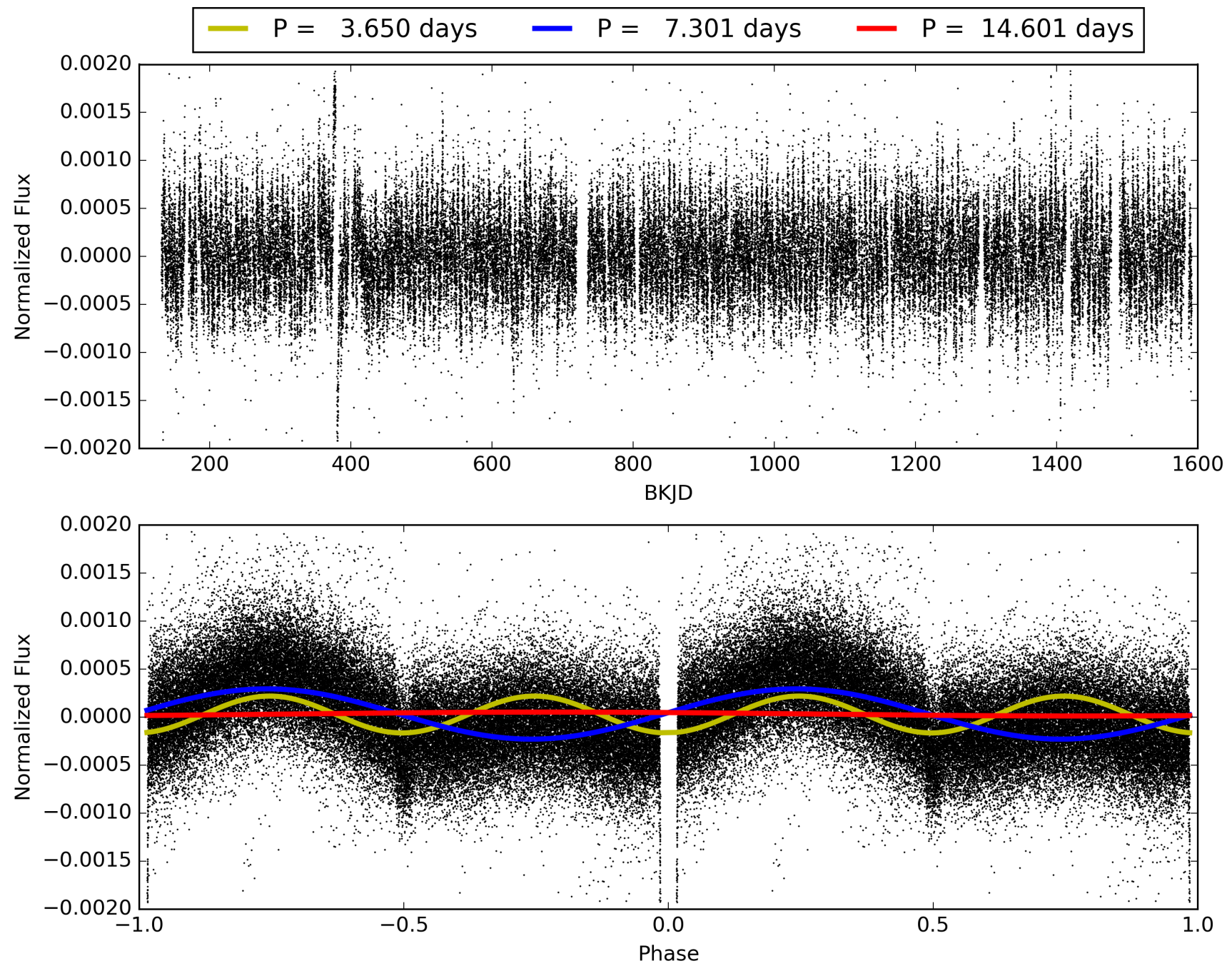
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 23:34:08 Z

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

TCE 007972785-01, PDC Light Curves

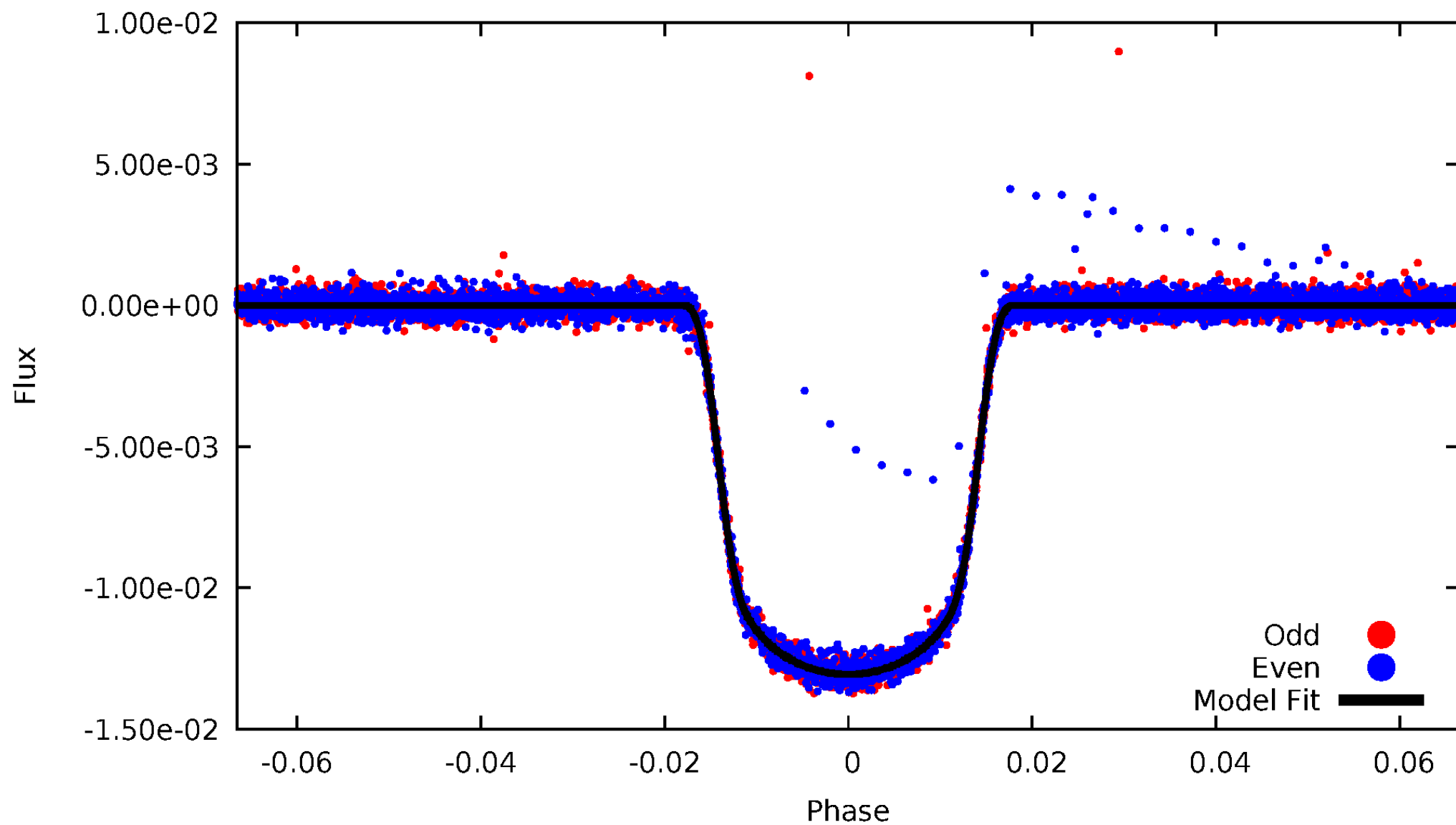


TCE 007972785-01



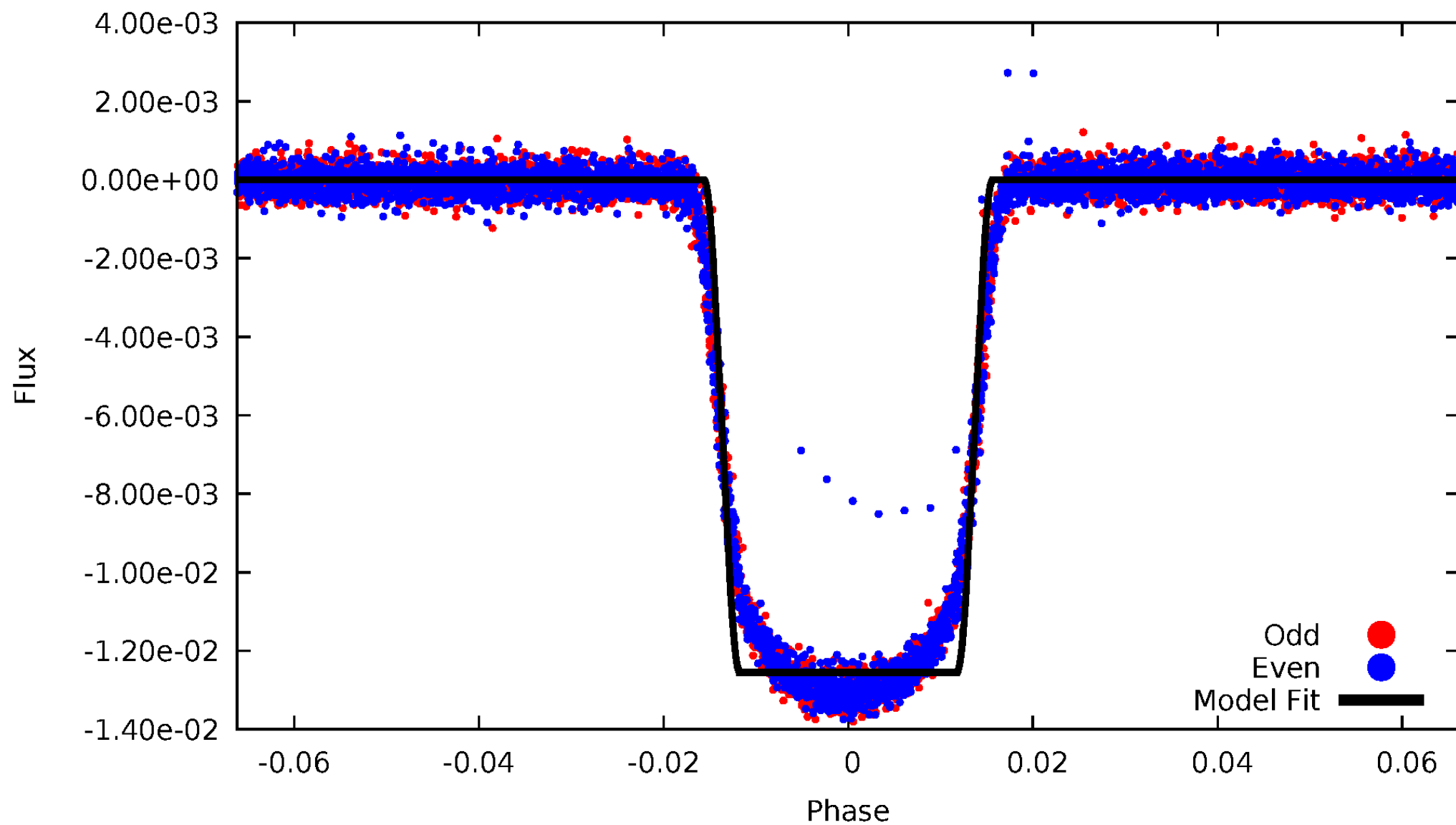
DV Odd/Even

TCE 007972785-01



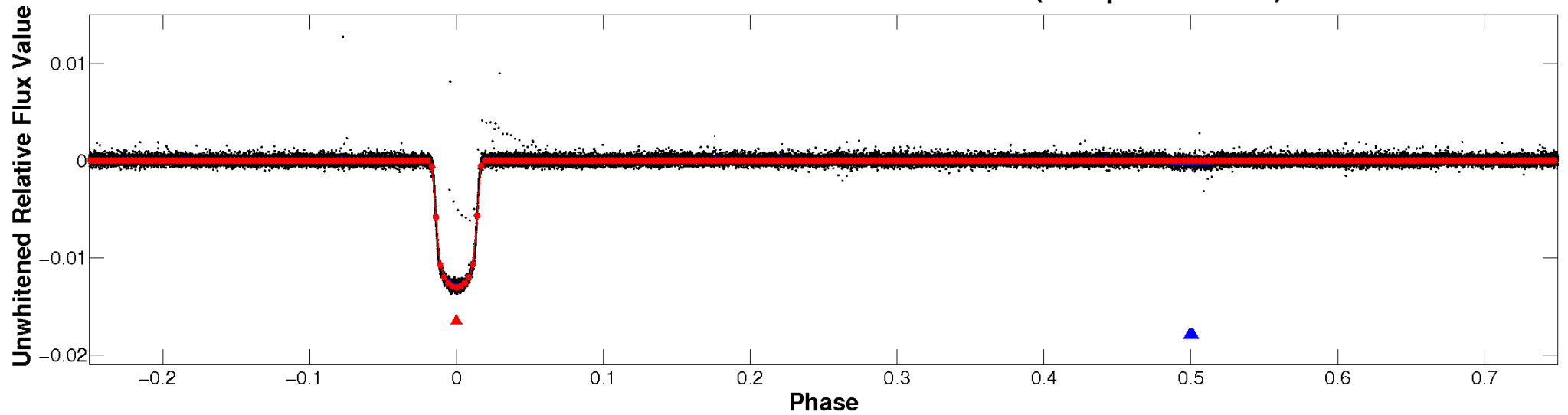
ALT Odd/Even

TCE 007972785-01

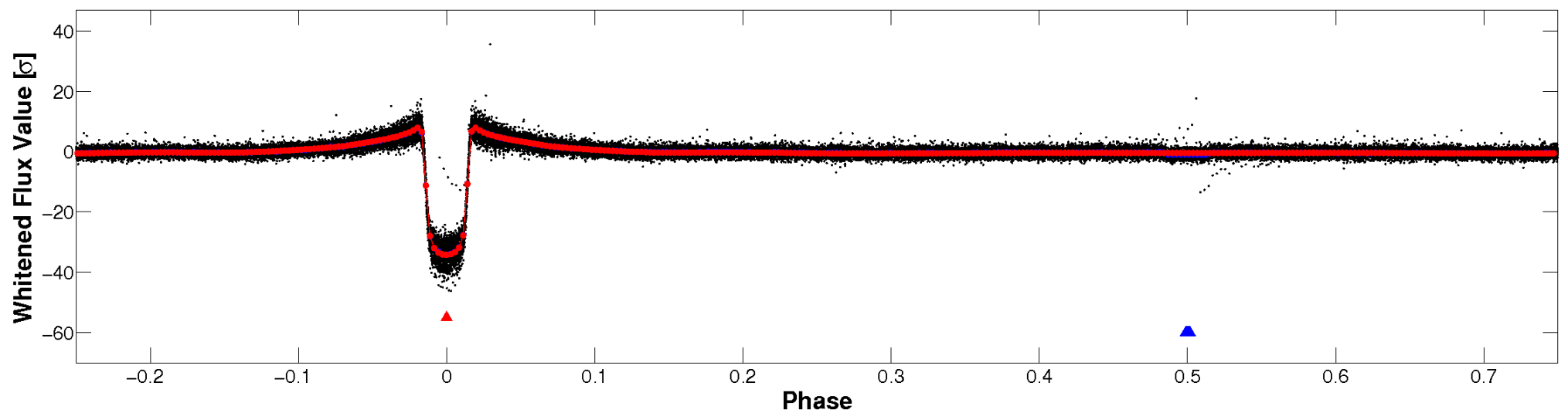


Non-Whitened Vs. Whitened Light Curve

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

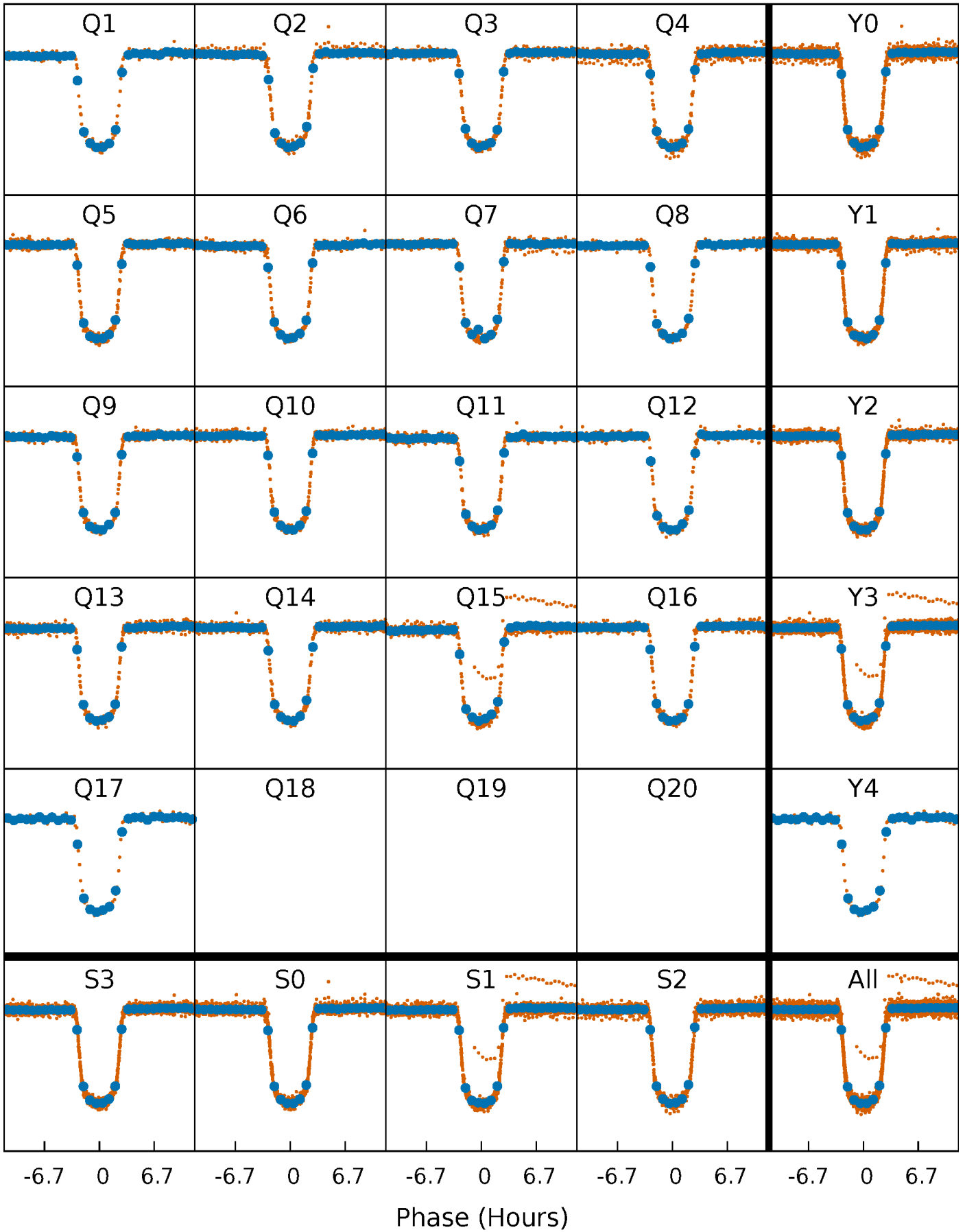


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



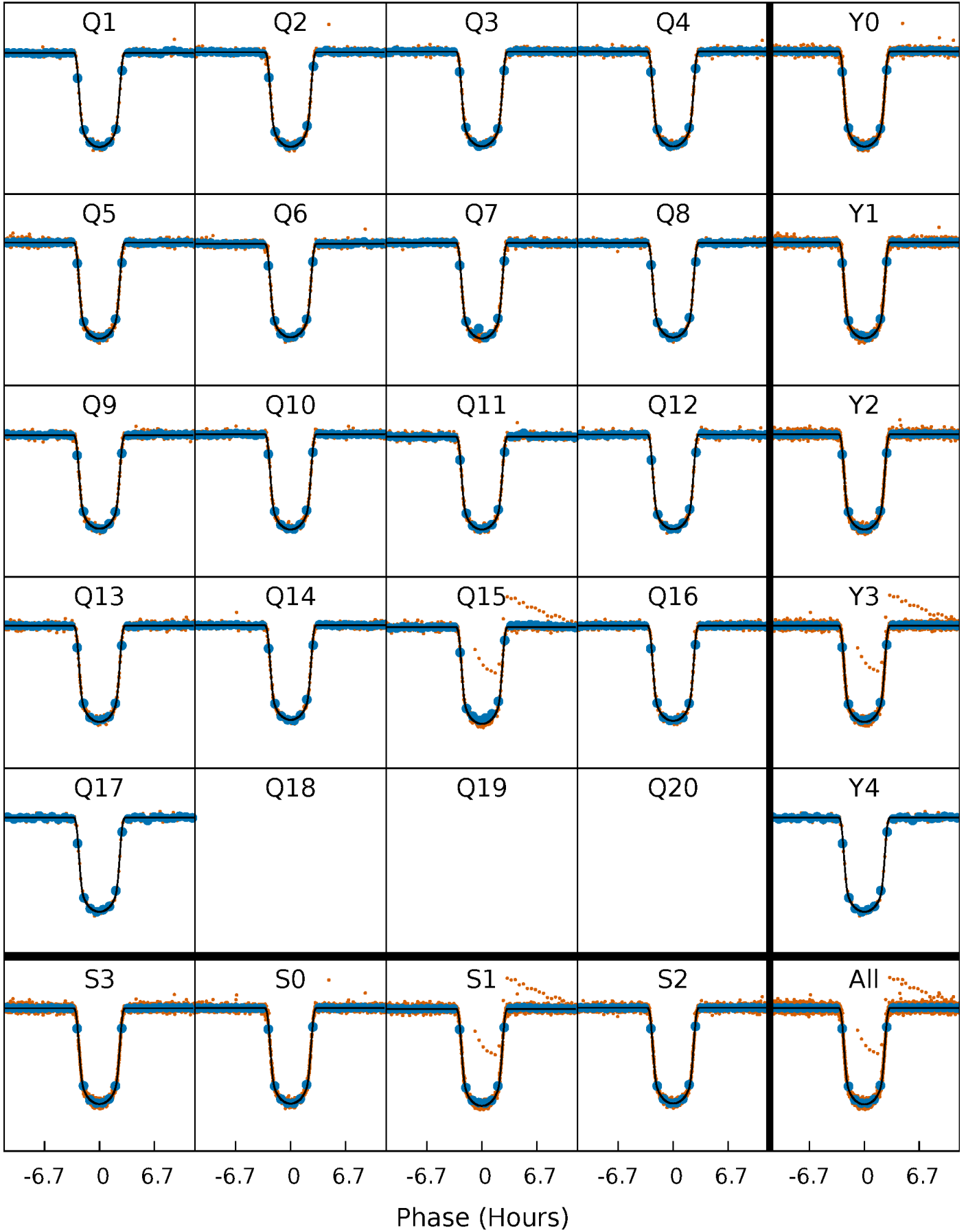
PDC Quarter-Phased Transit Curves

TCE 007972785-01 P= 7.300736 Days $T_0=133.566502$ (BKJD)



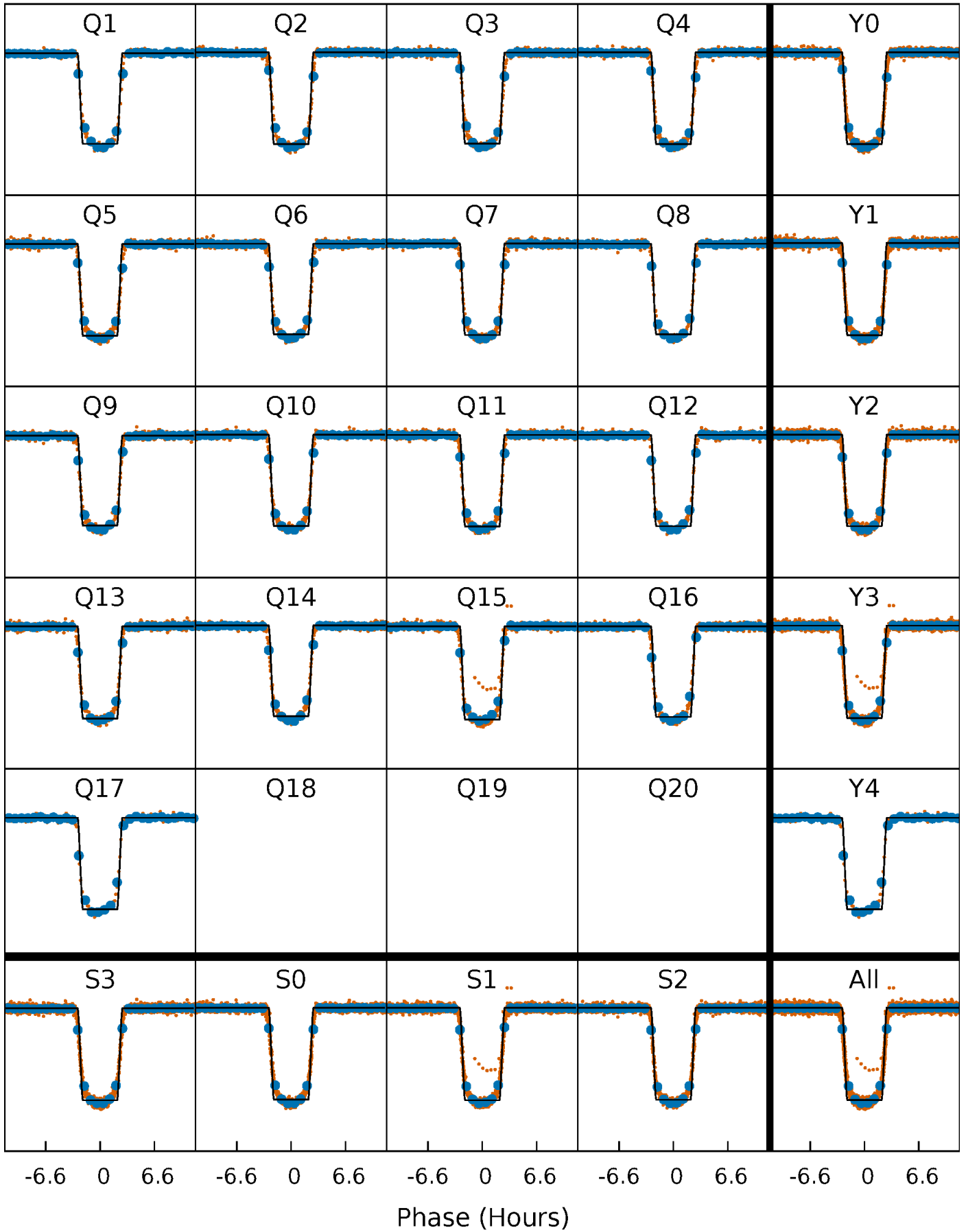
DV Quarter-Phased Transit Curves

TCE 007972785-01 P= 7.300736 Days $T_0=133.566502$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

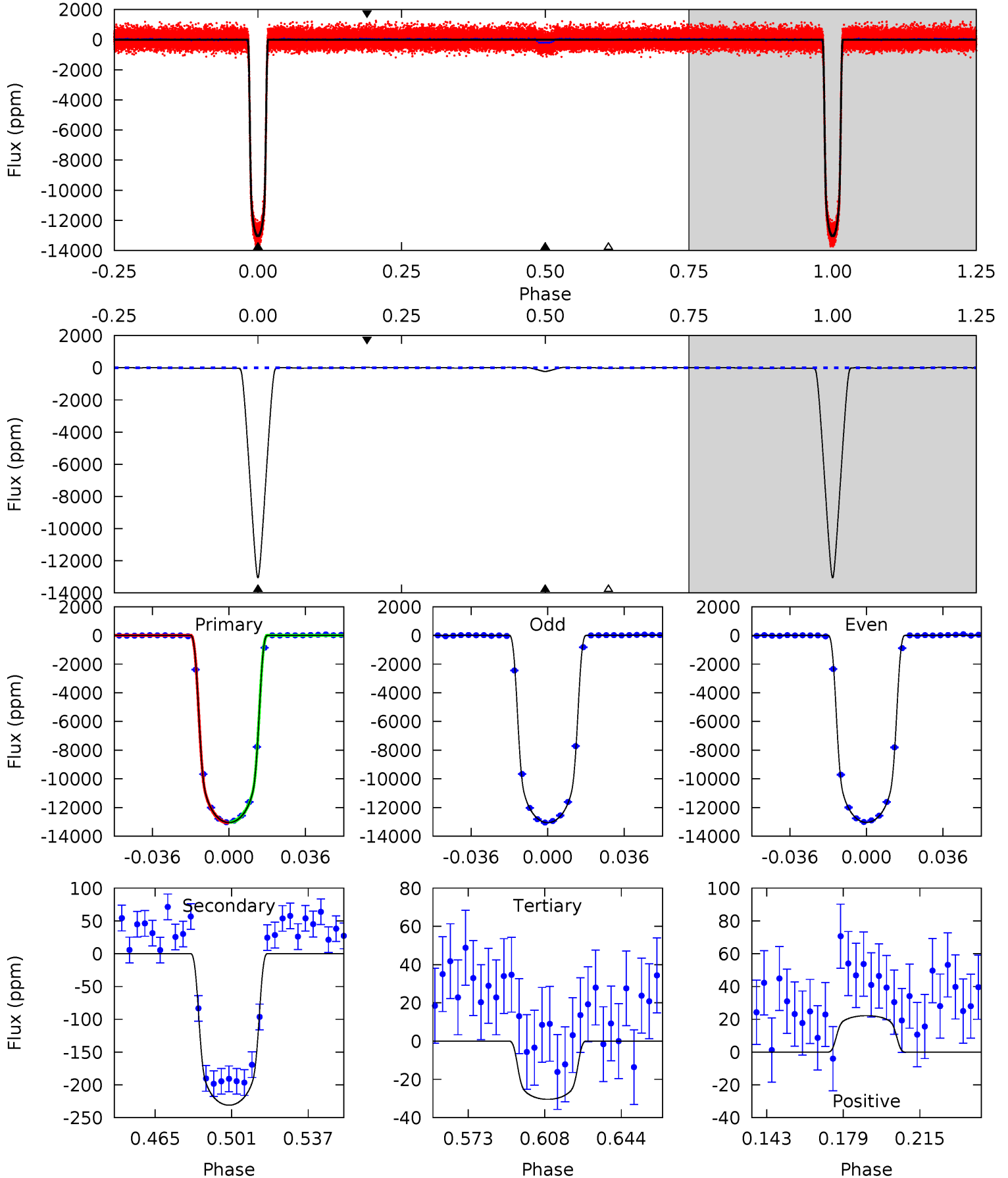
TCE 007972785-01 P= 7.300770 Days $T_0=133.563032$ (BKJD)



DV Model-Shift Uniqueness Test

007972785-01, P = 7.300736 Days, E = 126.265766 Days

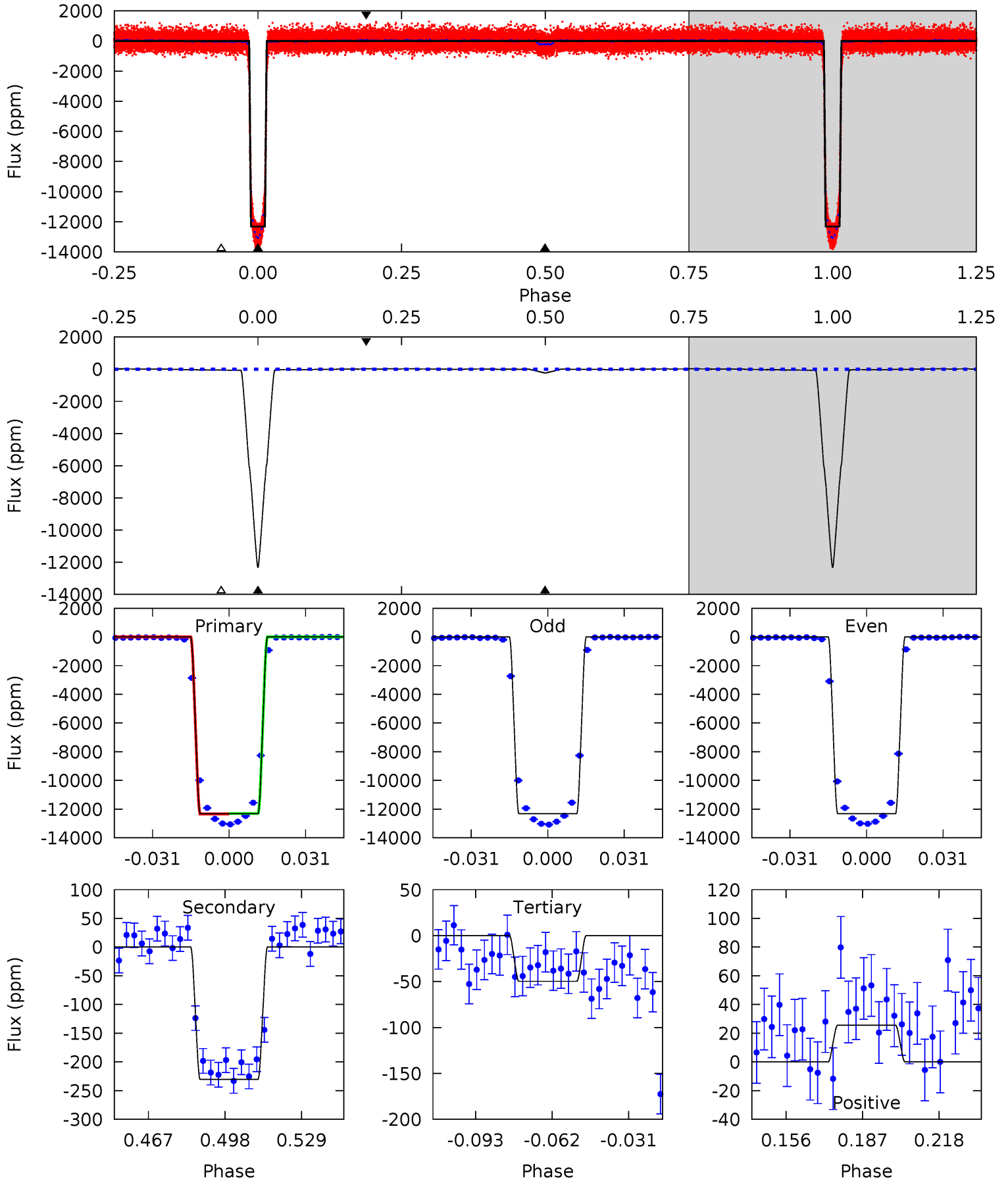
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2159	38.2	5.03	3.67	4.78	2.10	2.21	2154	2155	33.2	34.5	1.34	1.00	0.00	2.86



Alt Model-Shift Uniqueness Test

007972785-01, P = 7.300770 Days, E = 126.262262 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1824	34.1	7.37	3.79	4.80	2.16	3.02	1817	1820	26.8	30.4	0.31	1.00	0.00	2.93



Stellar Parameters For KIC 007972785

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6434^{+153}_{-230}	$4.394^{+0.070}_{-0.210}$	$-0.100^{+0.250}_{-0.300}$	$1.138^{+0.389}_{-0.130}$	$1.169^{+0.169}_{-0.169}$	$1.119^{+0.332}_{-0.607}$
	+2%/-4%	+2%/-5%	+250%/-300%	+34%/-11%	+14%/-14%	+30%/-54%
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 007972785-01 / KOI 0184.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-231 ± 6	$13.67^{+2.45}_{-1.08}$	1546^{+112}_{-86}	3020^{+47}_{-58}	$3.963^{+0.662}_{-0.960}$
Alt.	-231 ± 7	$14.07^{+2.69}_{-1.03}$	1541^{+116}_{-76}	2986^{+43}_{-63}	$3.713^{+0.615}_{-0.981}$

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 $A_{obs} \gg 1.0$

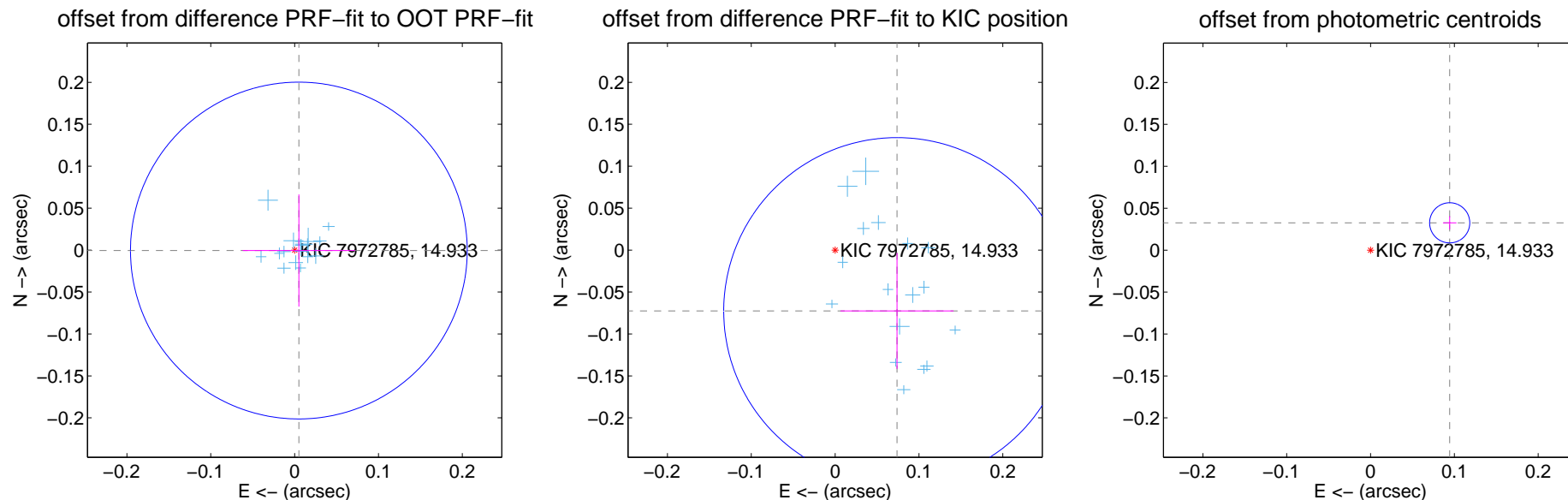
DV Centroid Data

Supplemental centroid analysis for 007972785-01. Kepler magnitude: 14.93. Transit SNR 1335.26

There are 17 quarters with good PRF difference image offsets

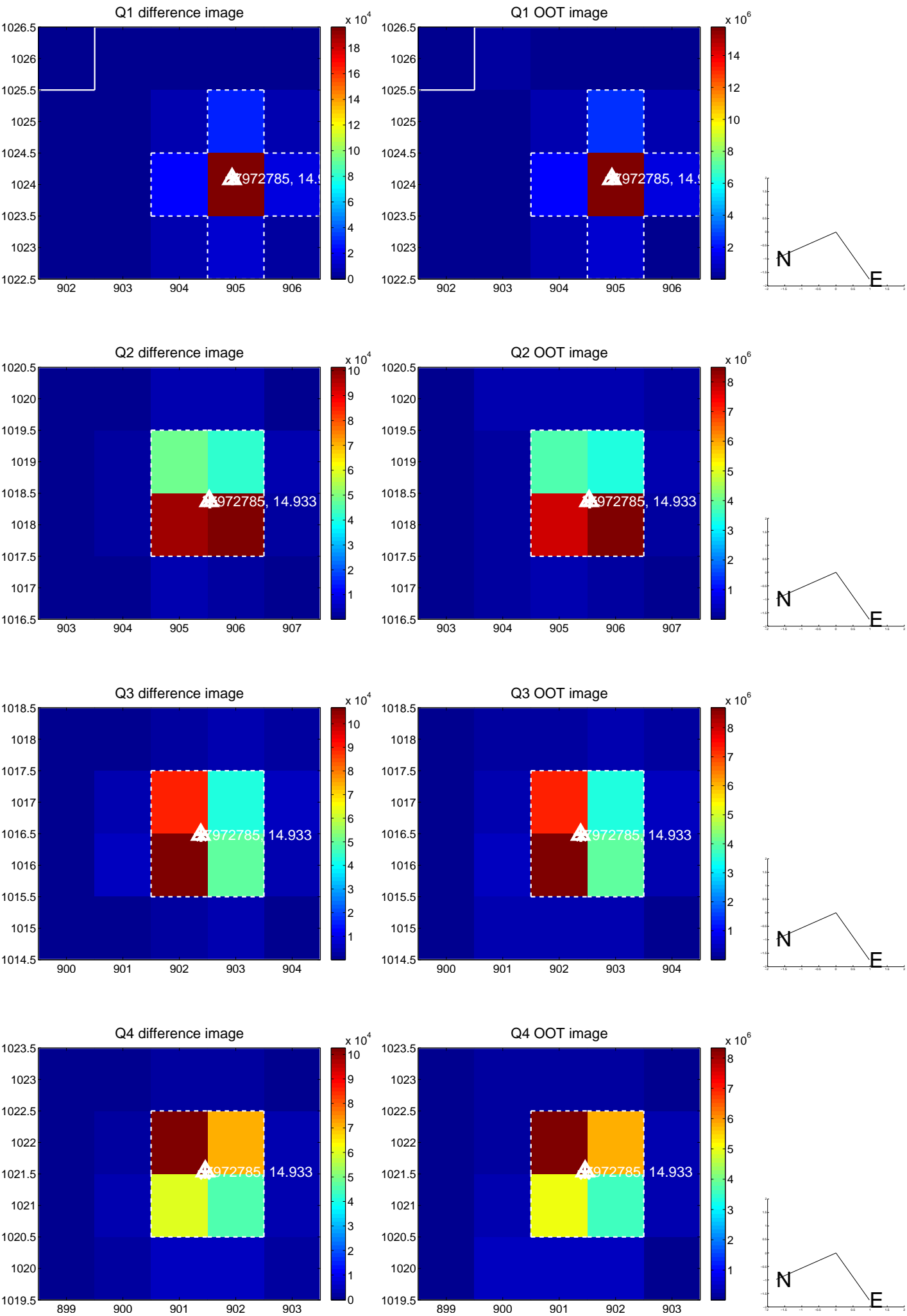
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.005 ± 0.067	0.08	-0.005 ± 0.067	-0.001 ± 0.067
PRF-fit source offset from KIC position	0.103 ± 0.069	1.50	-0.074 ± 0.067	-0.073 ± 0.069
photometric centroid source offset	0.10 ± 0.01	12.51	-0.09 ± 0.01	0.03 ± 0.01

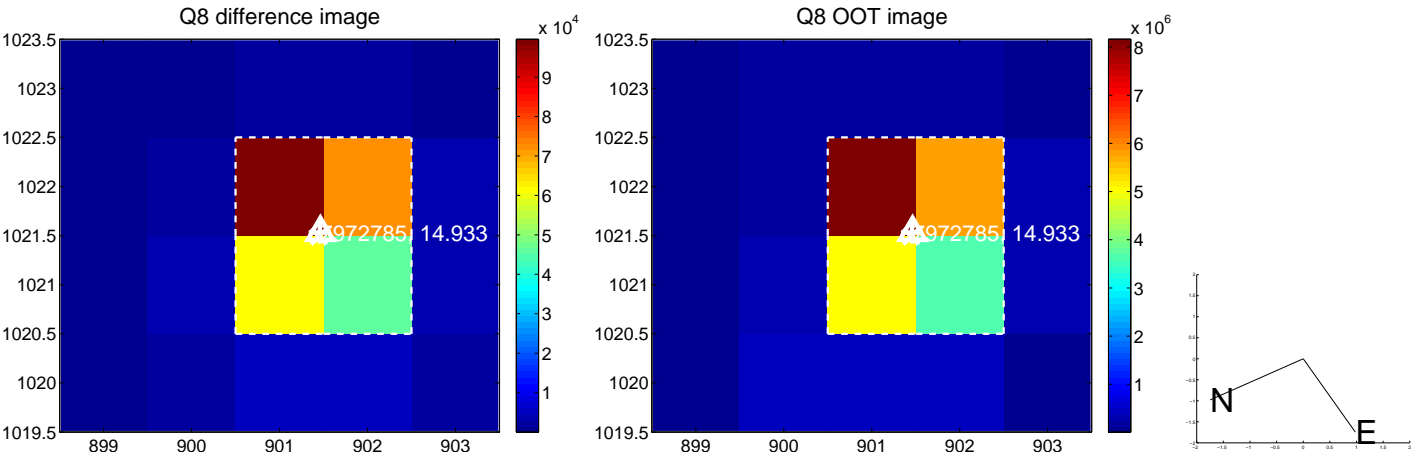
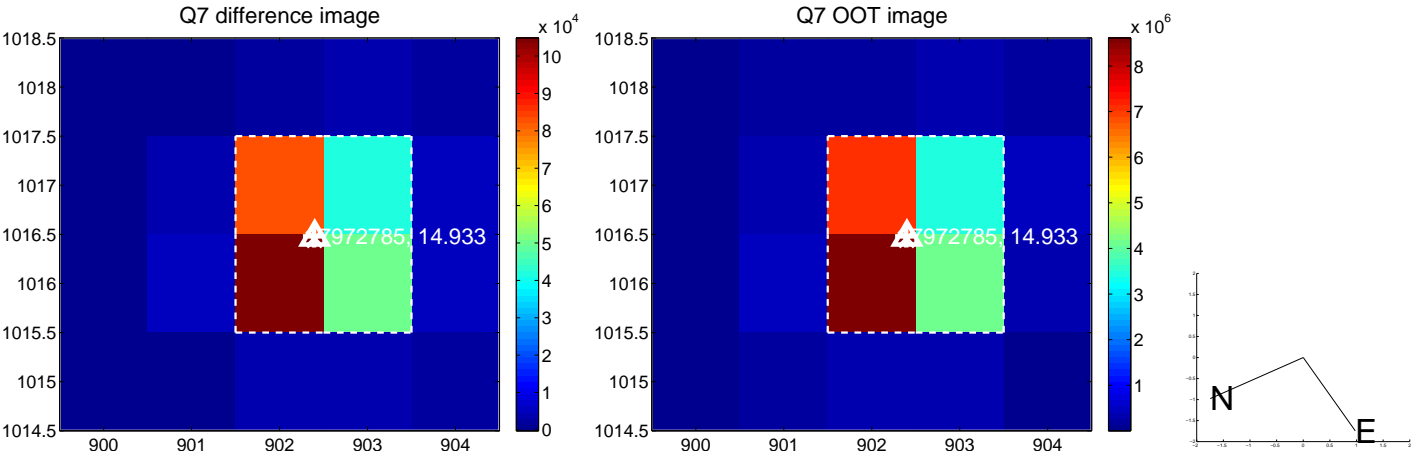
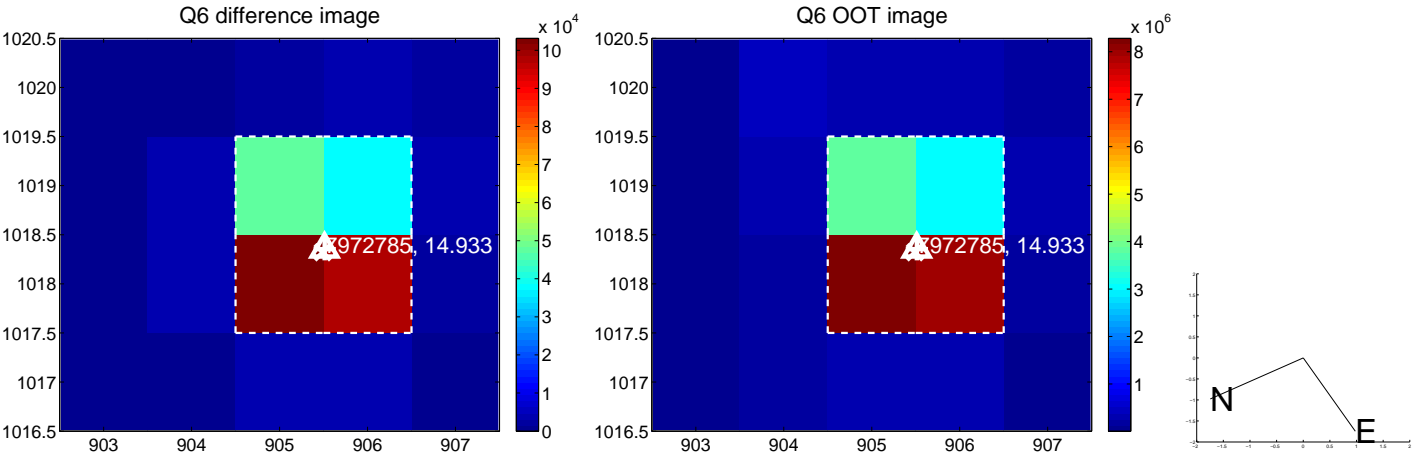
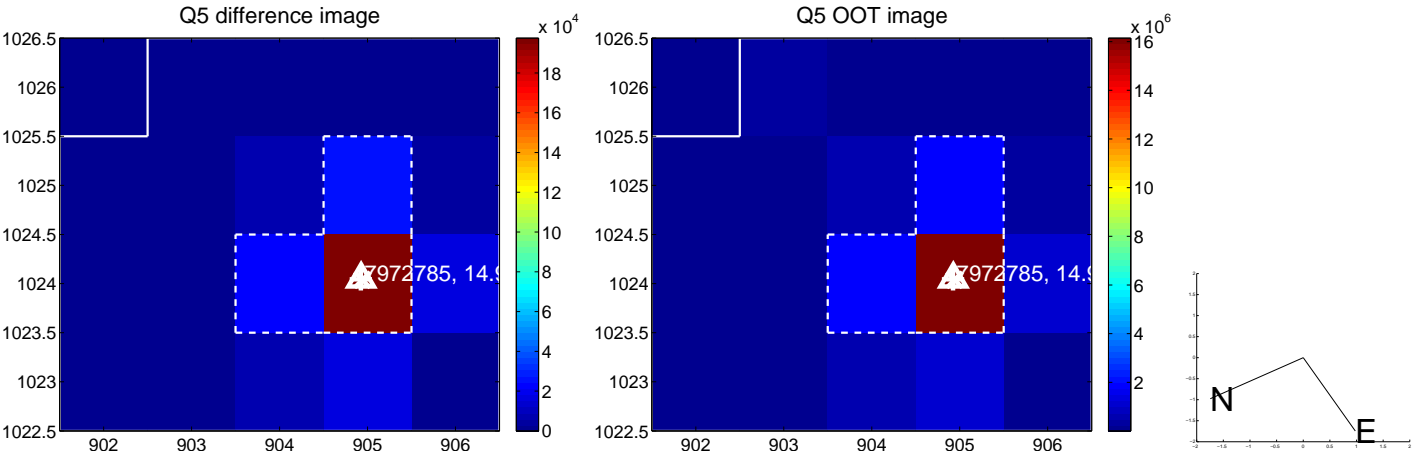


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

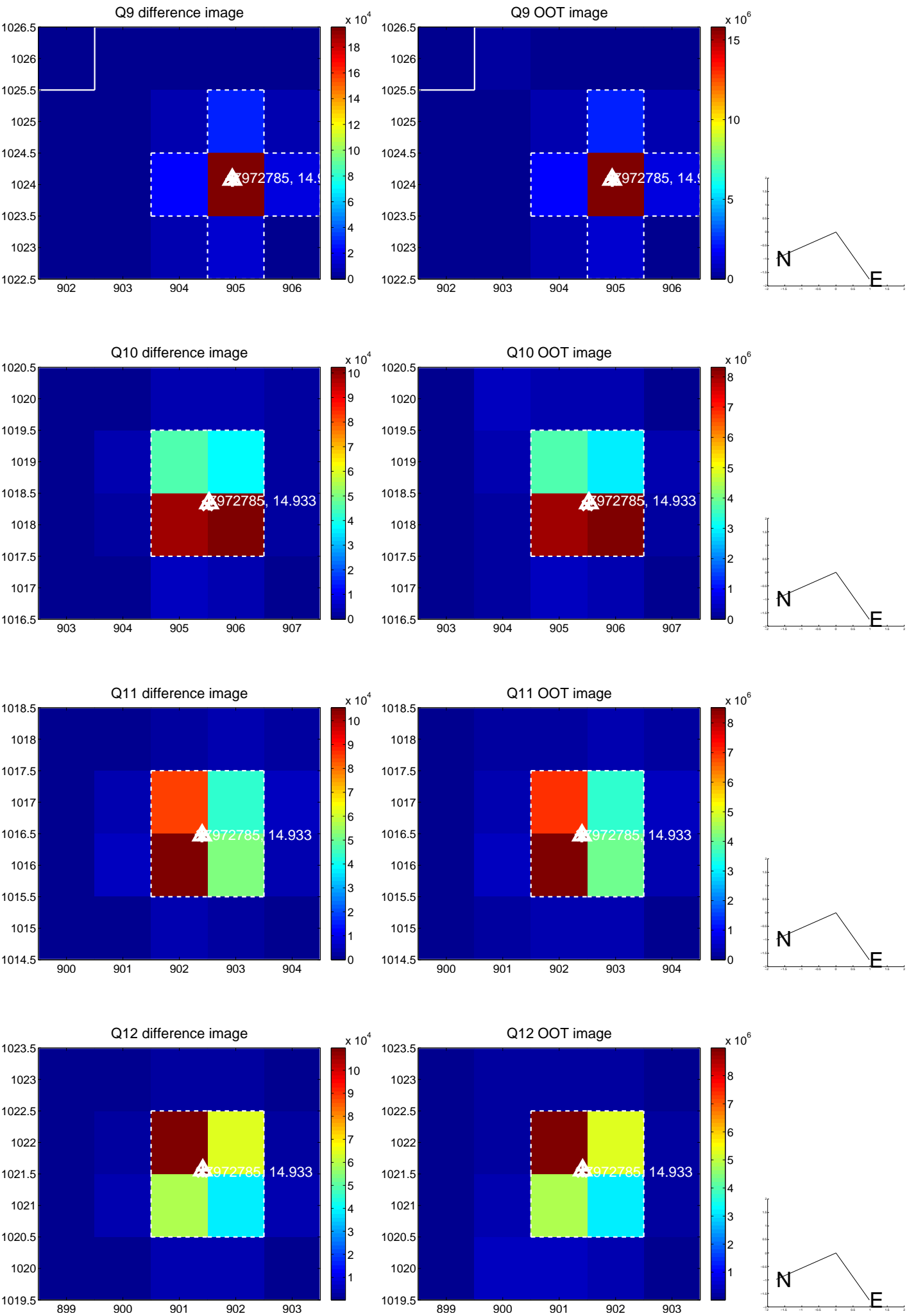
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



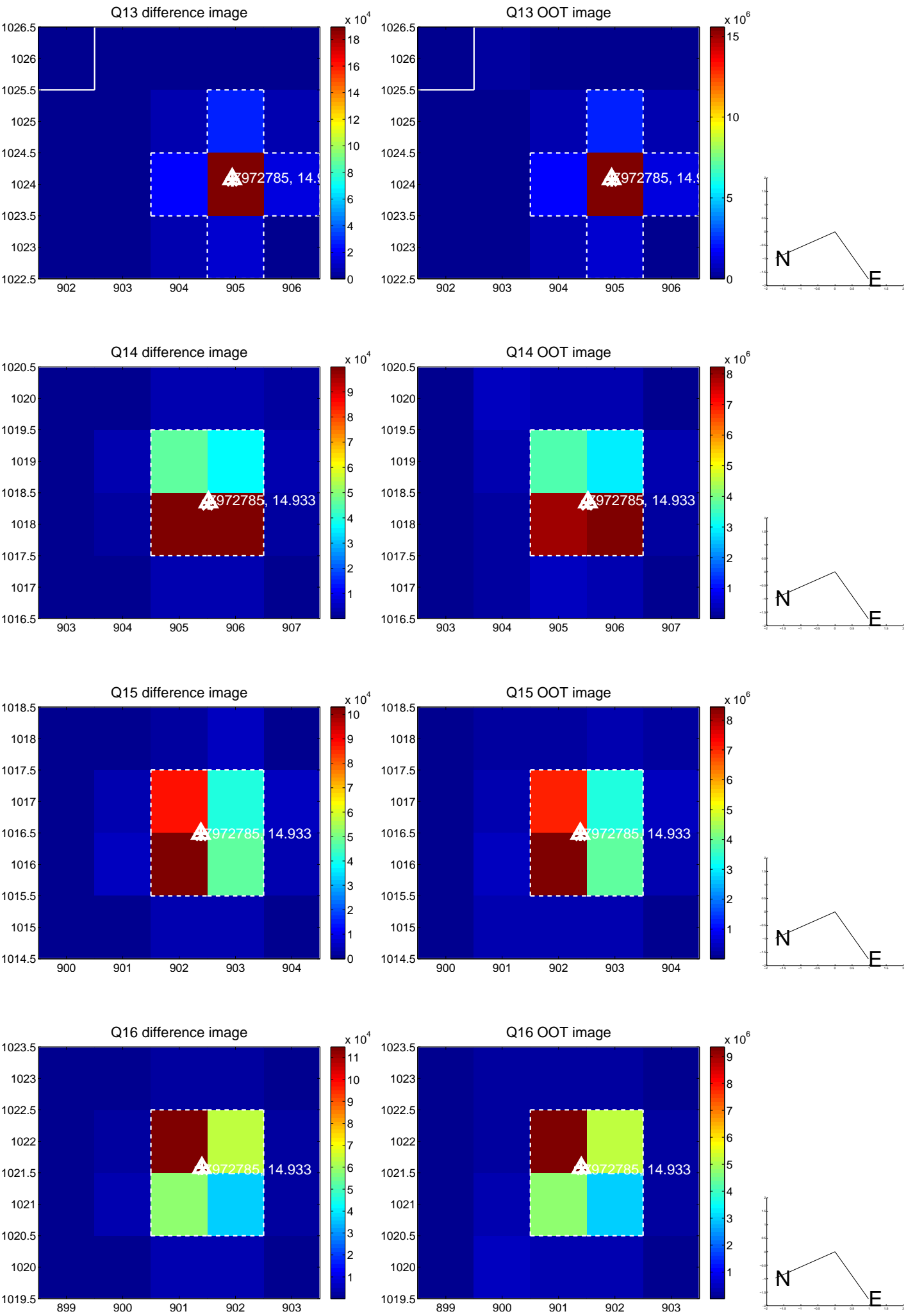
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



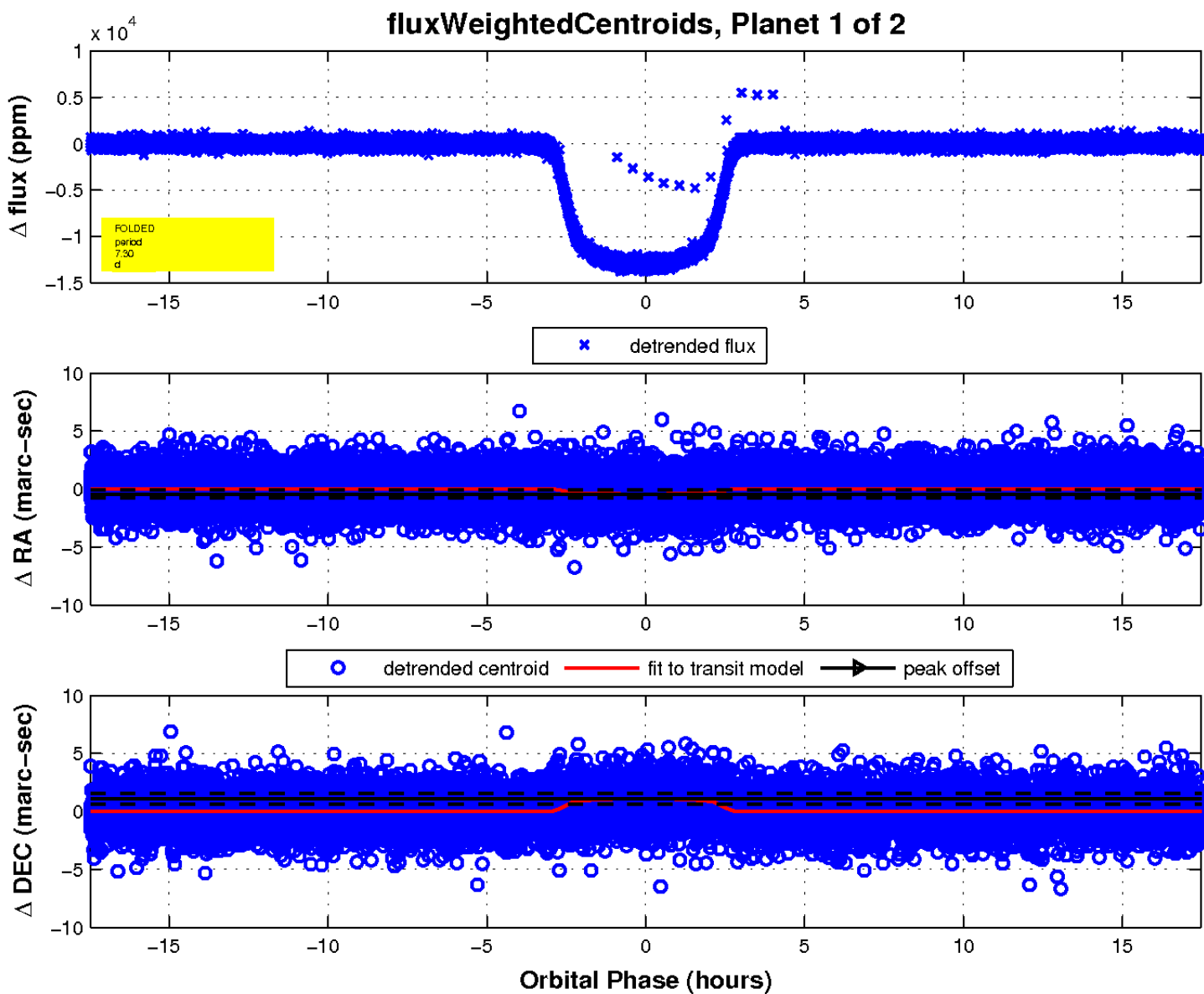
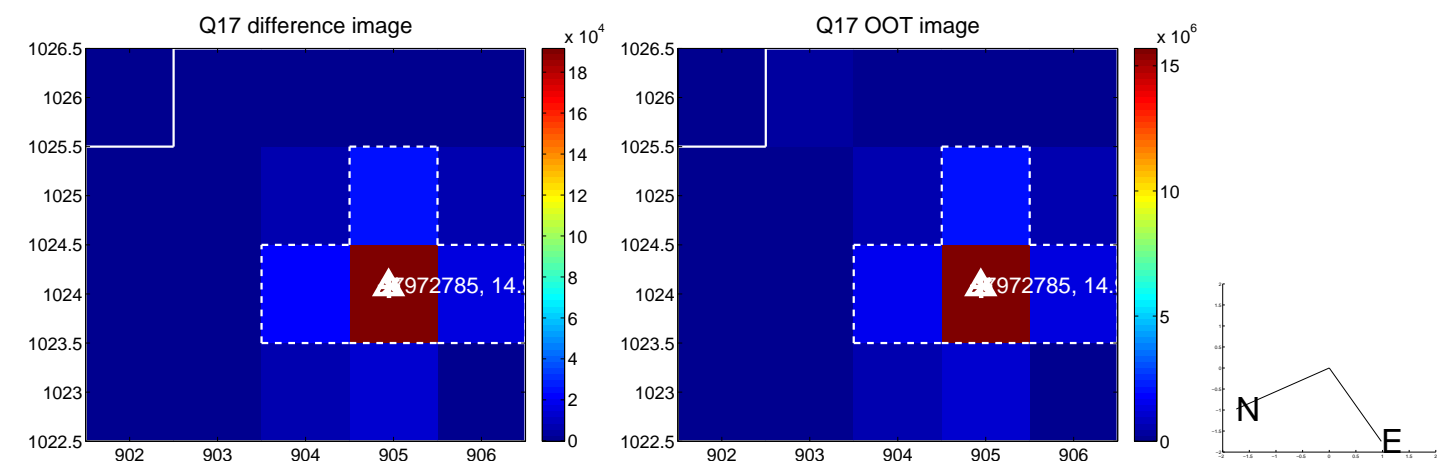
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

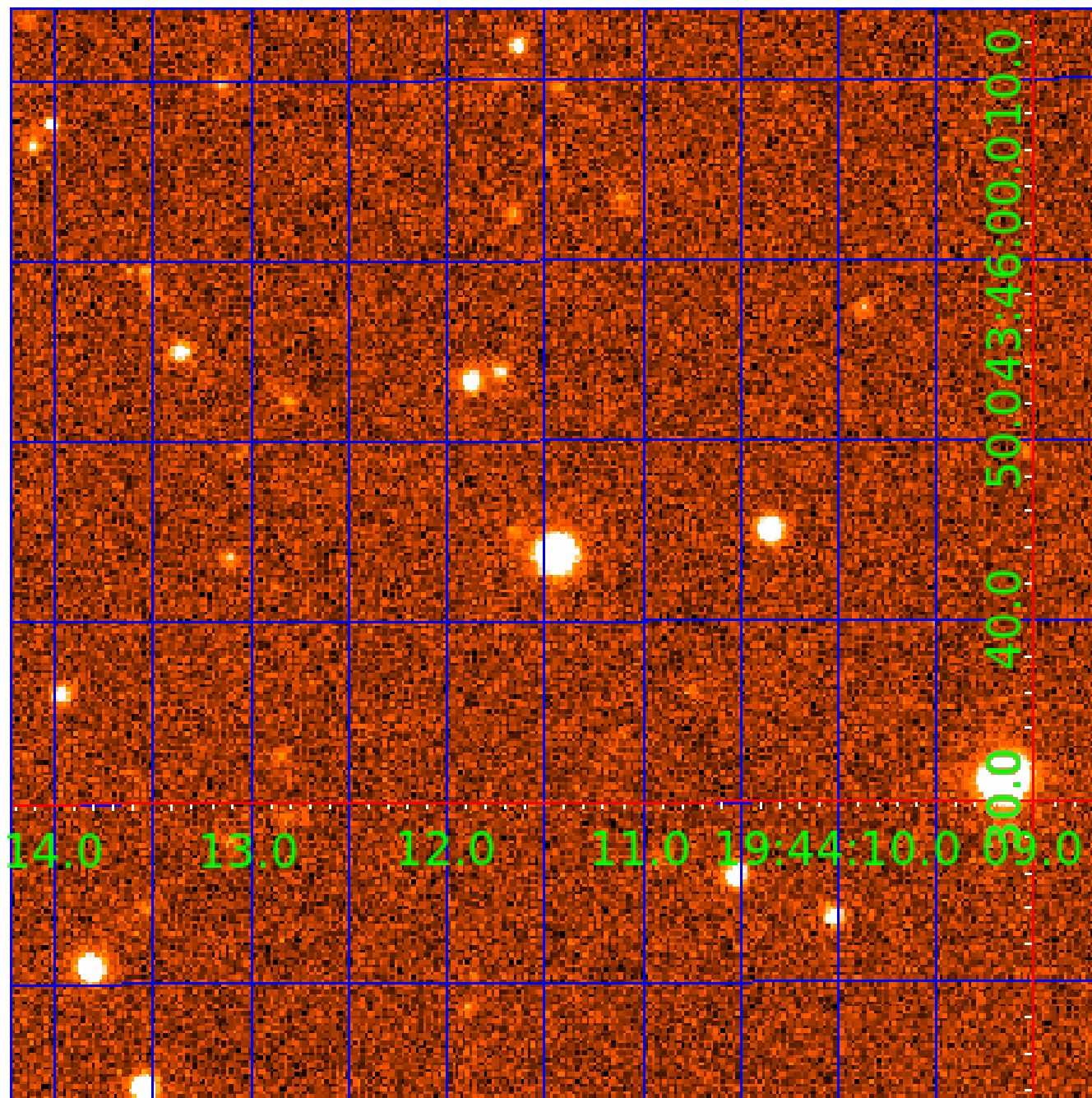


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007972785

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})
007972785-01	OBS	0184.01	7.300736	133.566502	13056.1	5.826	1341.9	1335.3	1.14	6434	13.44	329.93
007972785-02	OBS	No	7.300637	137.228516	249.7	5.727	24.9	27.0	1.14	6434	2.11	329.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007972785-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
007972785-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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

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

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

Ephemeris Match Information For 007972785-02

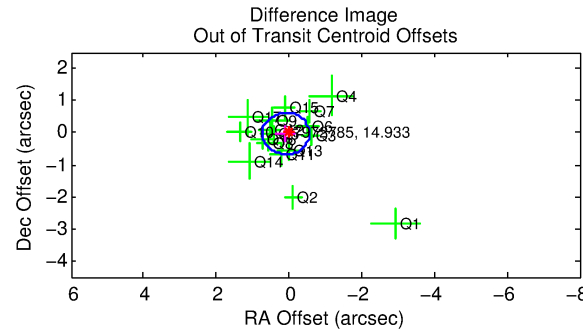
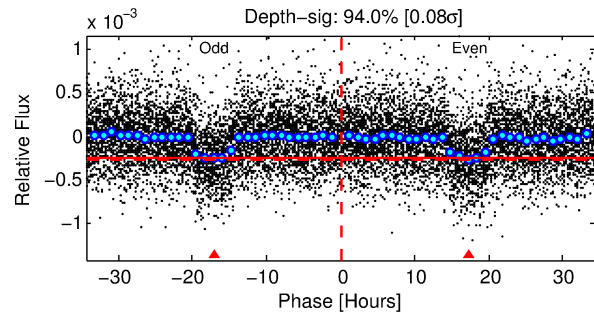
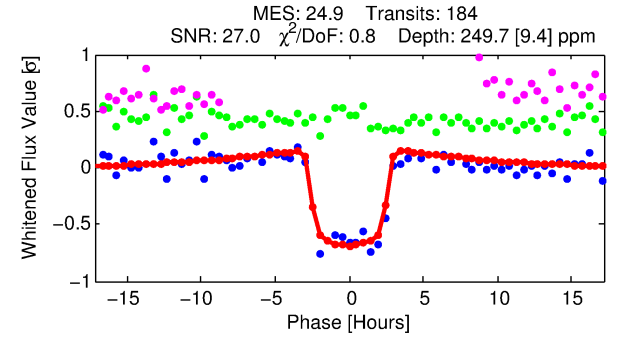
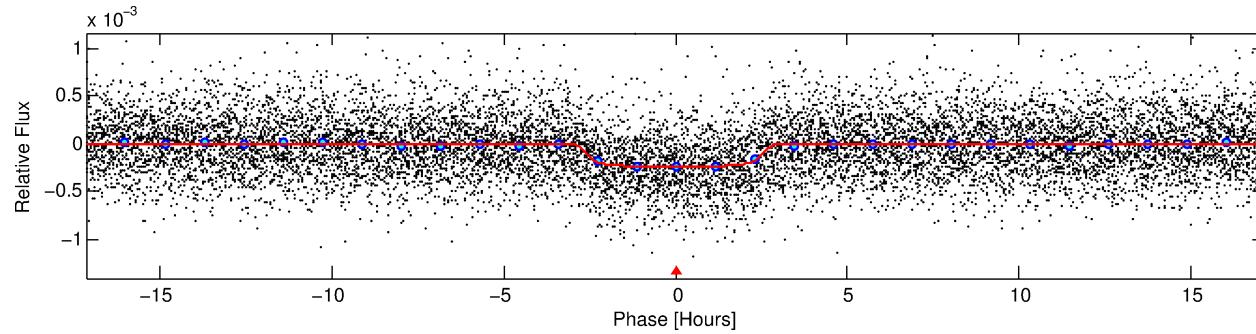
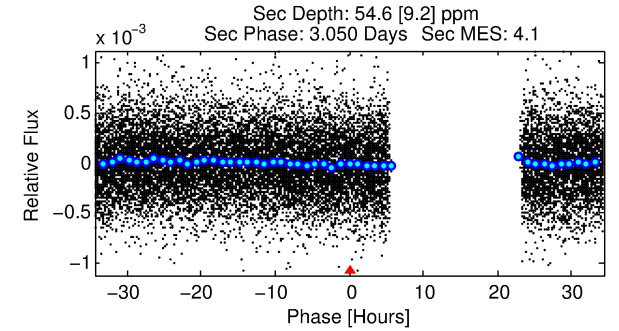
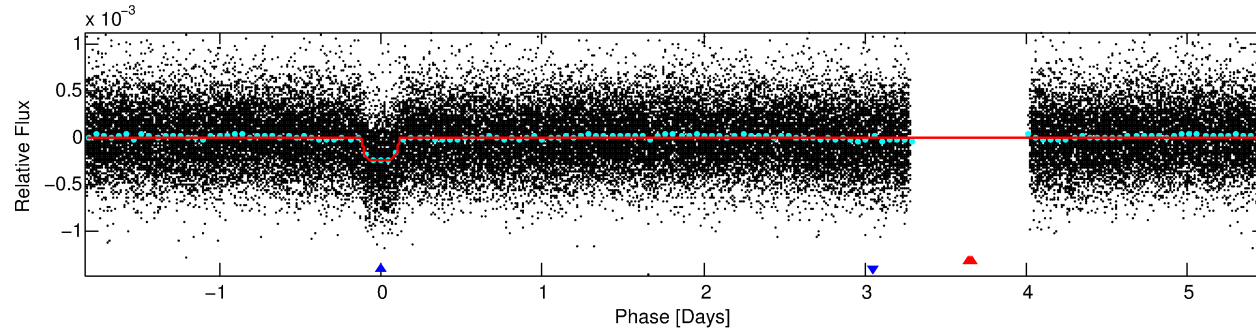
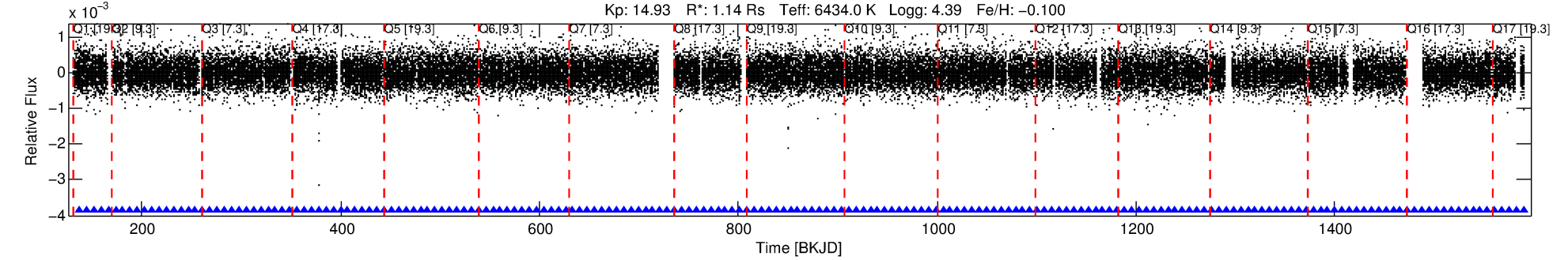
No Significant Match Found

DV One-Page Summary

KIC: 7972785 Candidate: 2 of 2 Period: 7.301 d

KOI: K00184 Corr: No Ephemeris Match

Kp: 14.93 R*: 1.14 Rs Teff: 6434.0 K Logg: 4.39 Fe/H: -0.100



DV Fit Results:

Period = 7.30064 [0.00003] d
Epoch = 137.2285 [0.0033] BKJD
Rp/R* = 0.0170 [0.0012]
a/R* = 4.66 [1.71]
b = 0.90 [0.08]
Seff = 329.94 [138.53]
Teq = 1087 [114] K
Rp = 2.11 [0.74] Re
a = 0.0776 [0.0217] AU
Ag = 40.75 [18.45] [2.15σ]
Teffp = 4245 [280] K [10.45σ]

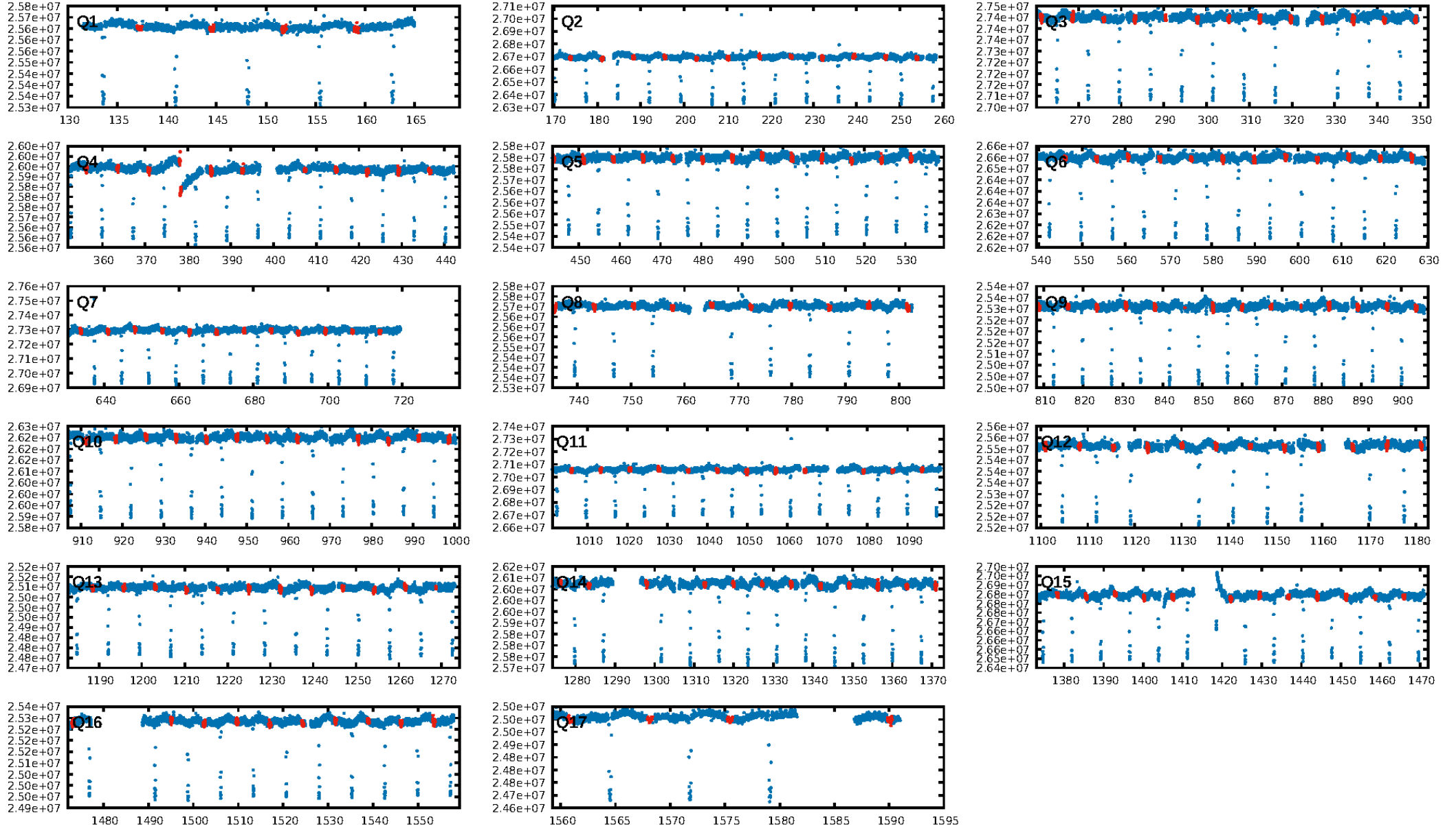
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.20e-125
RollingBand-fgt: 1.00 [176/176]
GhostDiagnostic-chr: 5.898
Centroid-sig: 0.5%
Centroid-so: 0.726 arcsec [1.76σ]
OotOffset-rm: 0.094 arcsec [0.44σ]
KicOffset-rm: 0.139 arcsec [0.57σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 1.00 [17/17]

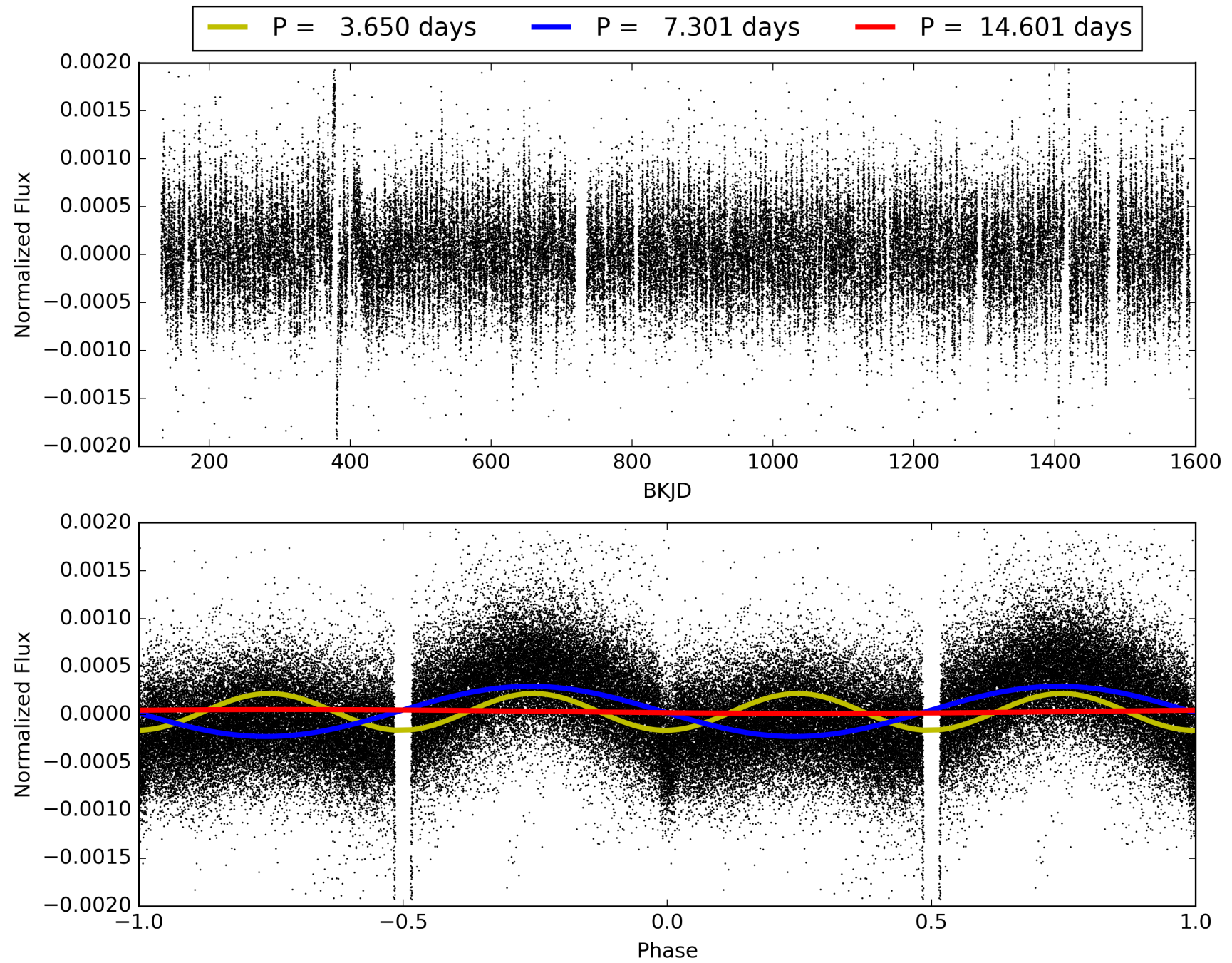
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 23:34:15 Z

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

TCE 007972785-02, PDC Light Curves

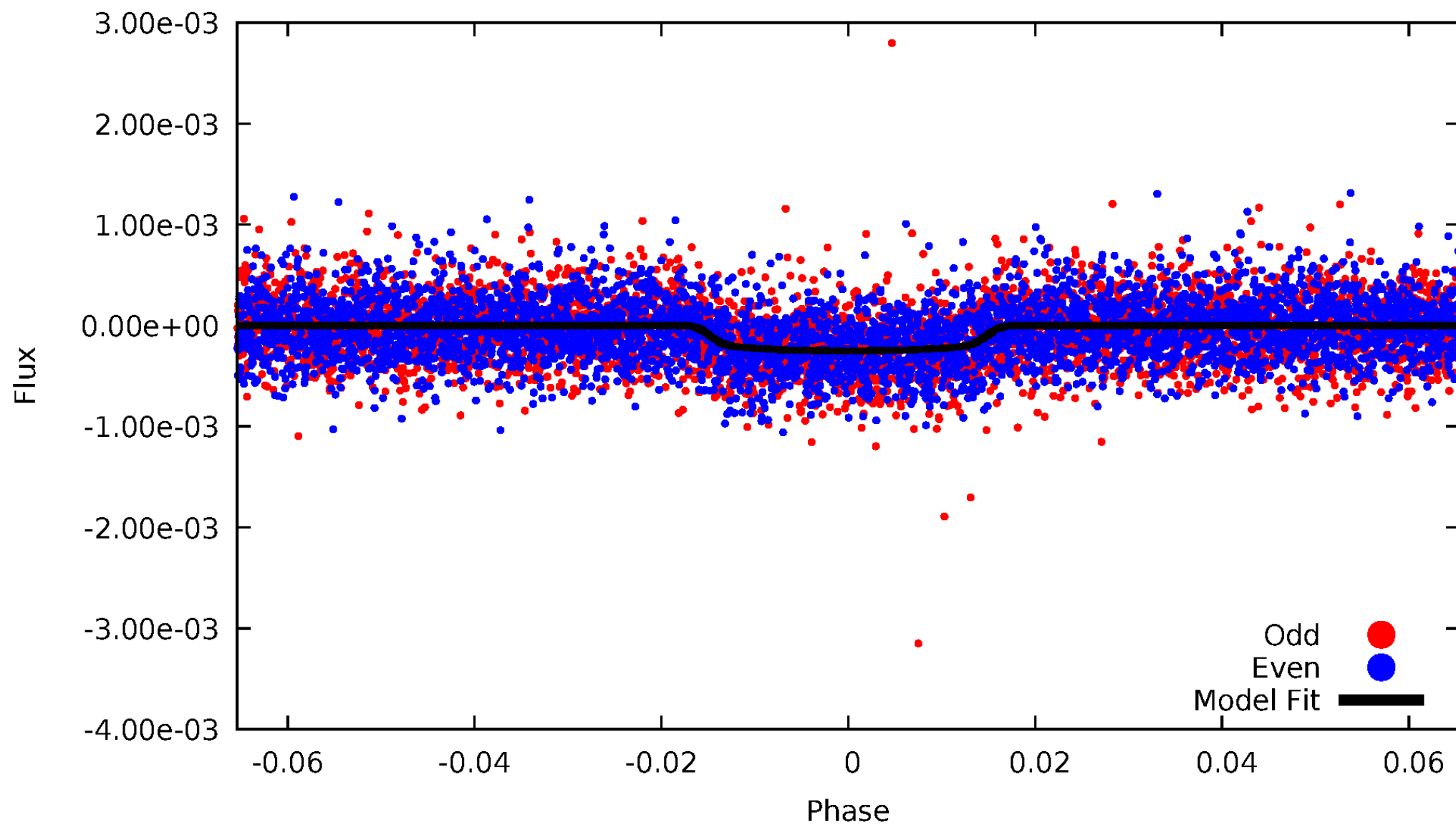


TCE 007972785-02



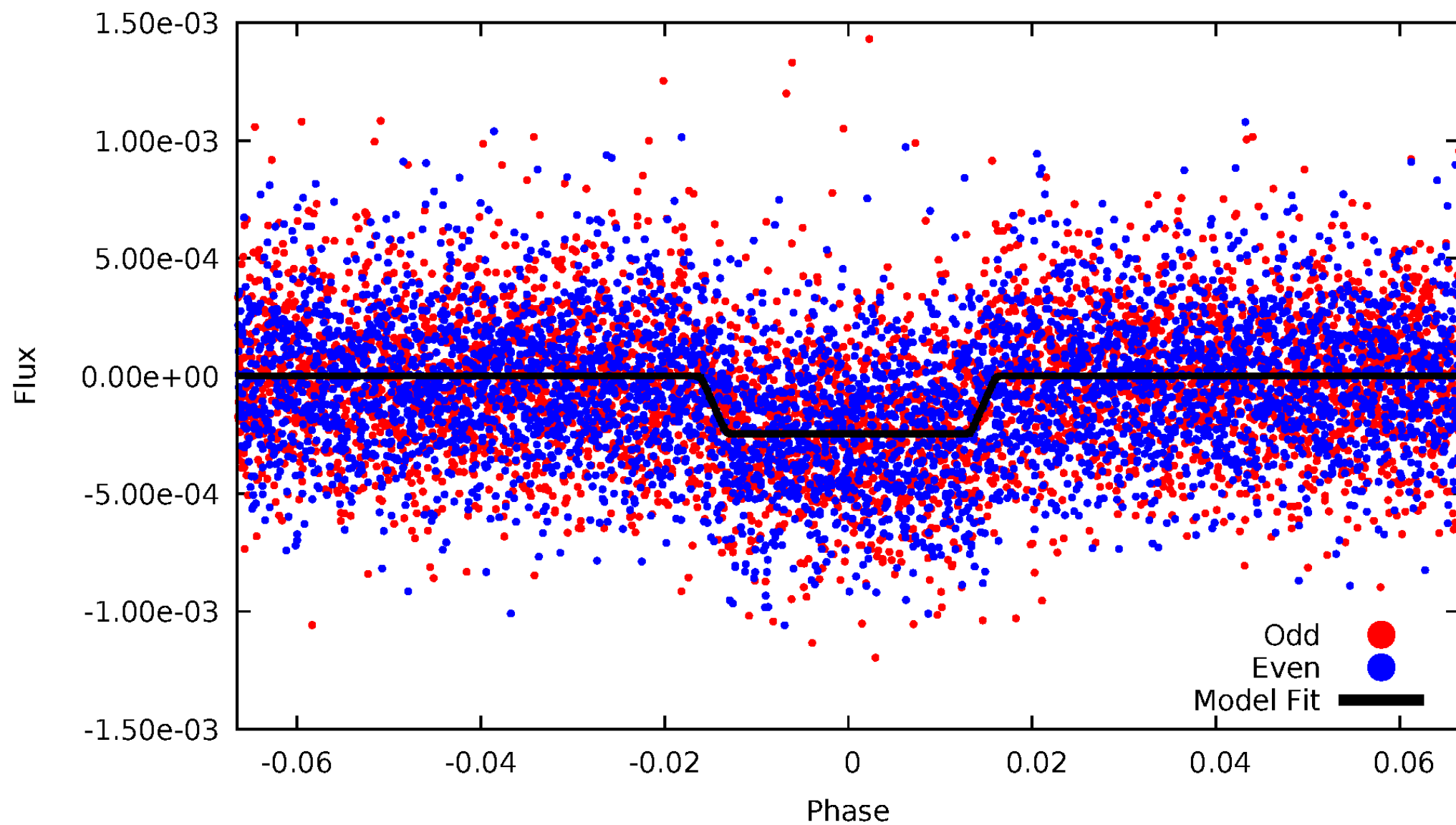
DV Odd/Even

TCE 007972785-02



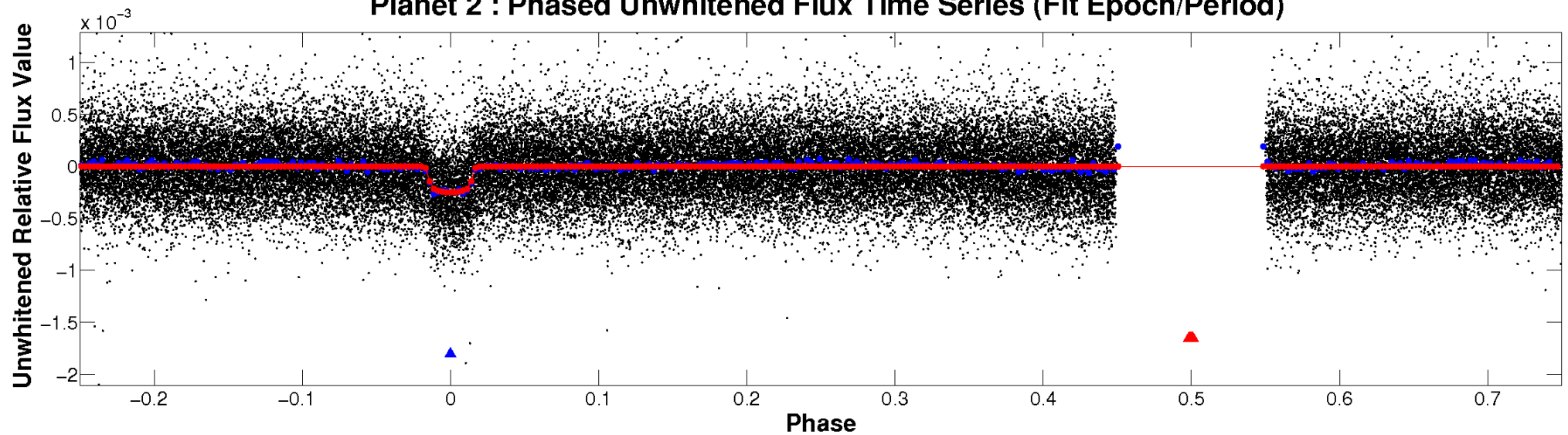
ALT Odd/Even

TCE 007972785-02

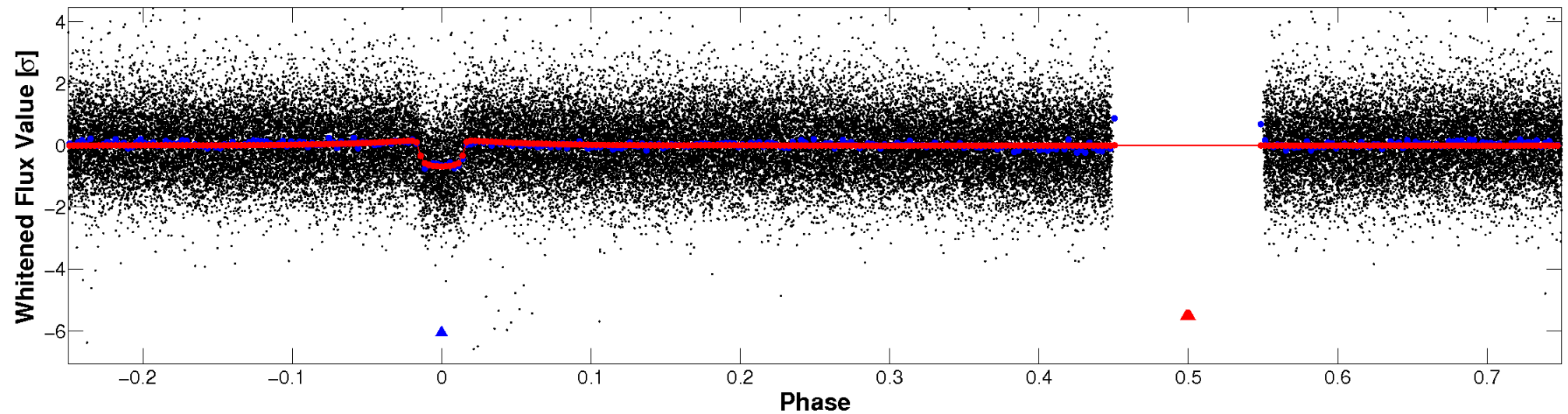


Non-Whitened Vs. Whitened Light Curve

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

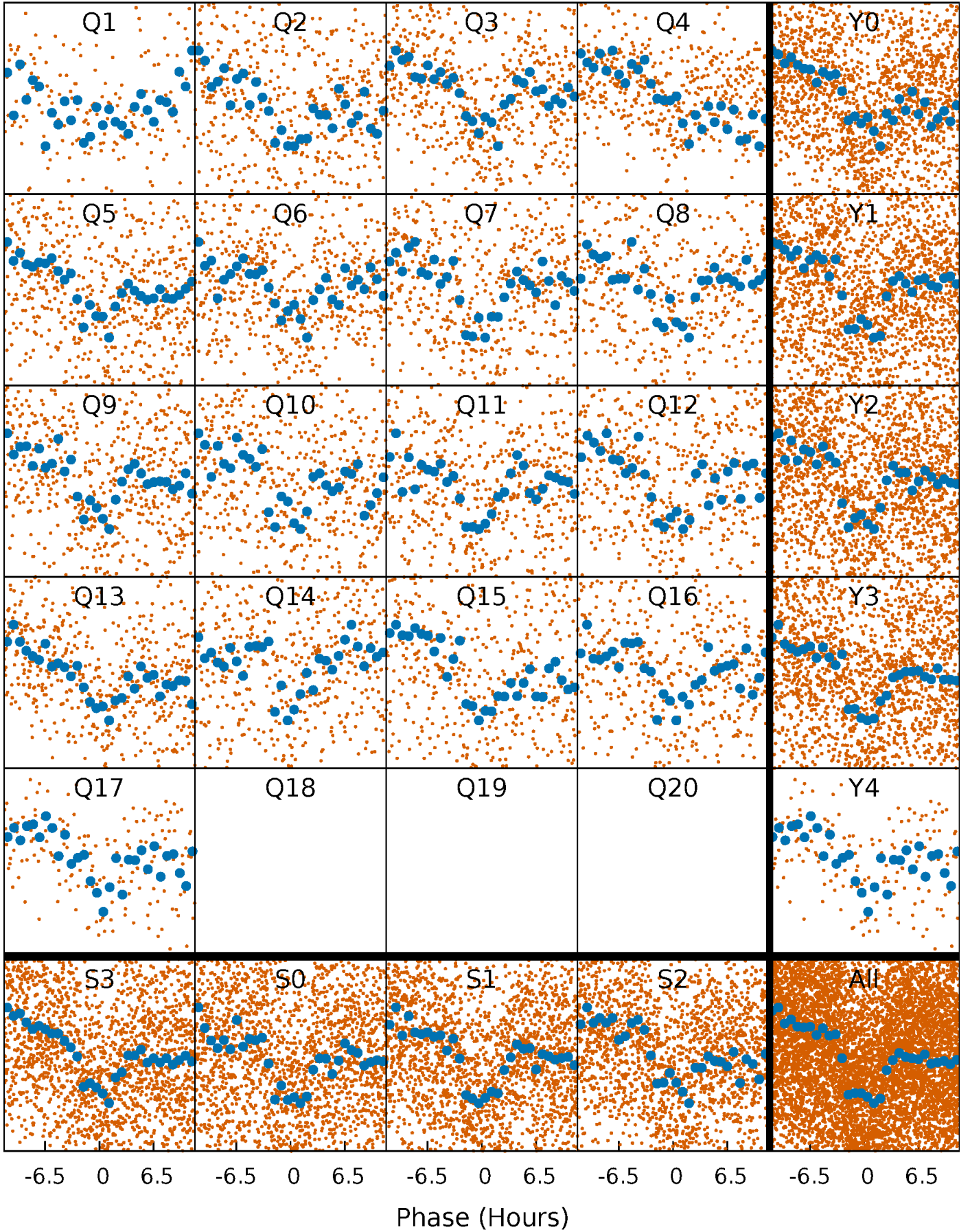


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



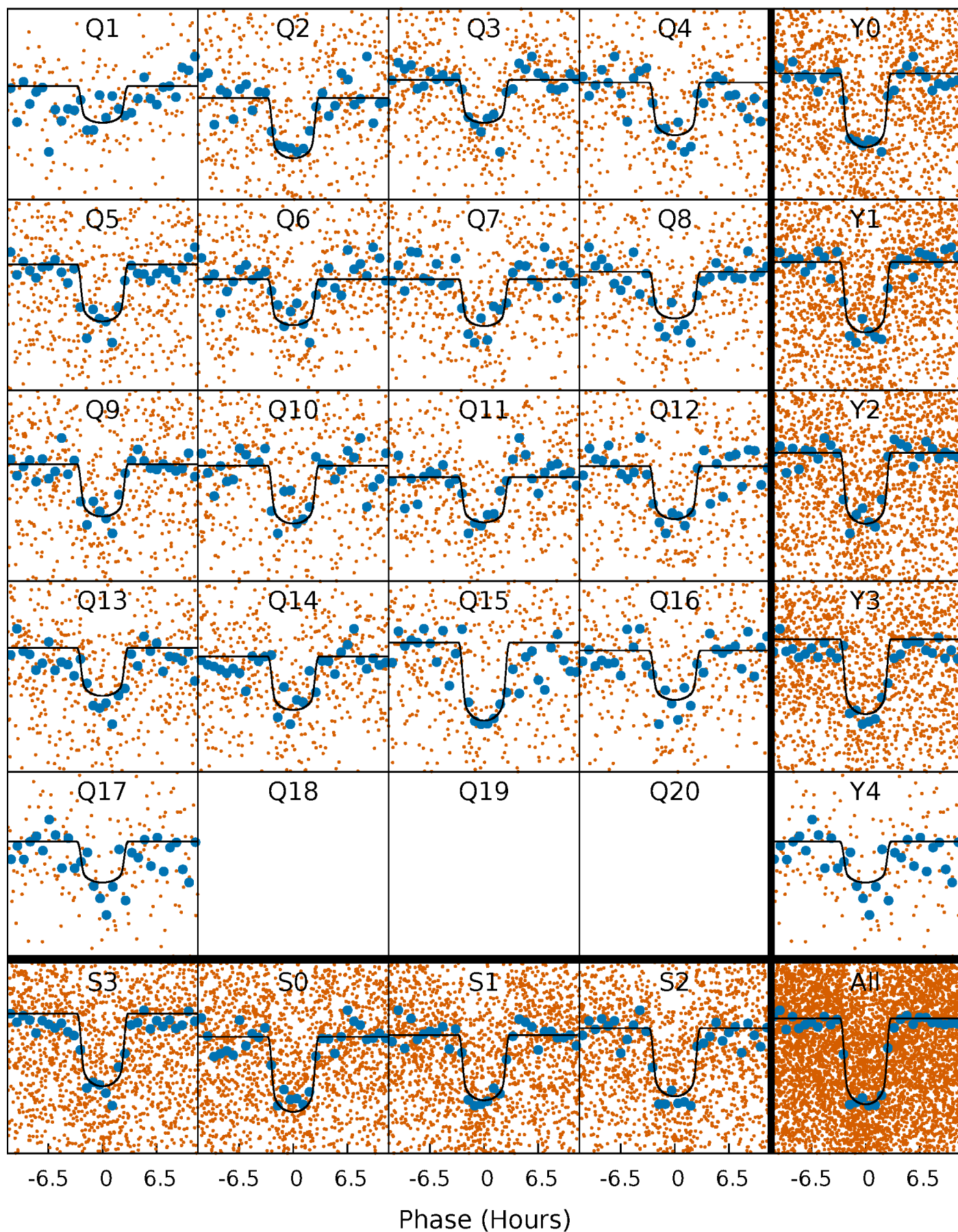
PDC Quarter-Phased Transit Curves

TCE 007972785-02 P= 7.300637 Days $T_0=137.228516$ (BKJD)



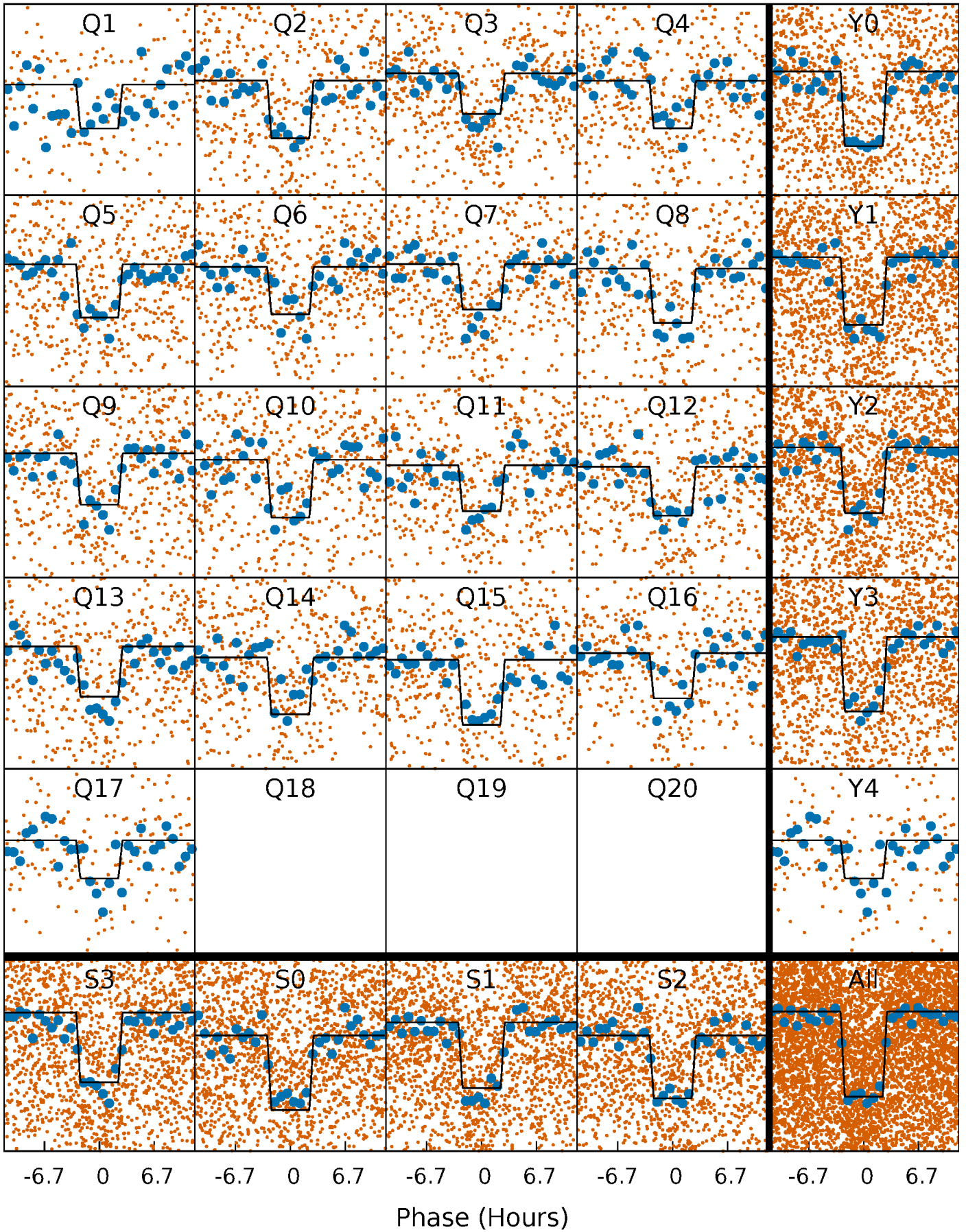
DV Quarter-Phased Transit Curves

TCE 007972785-02 P= 7.300637 Days $T_0=137.228516$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

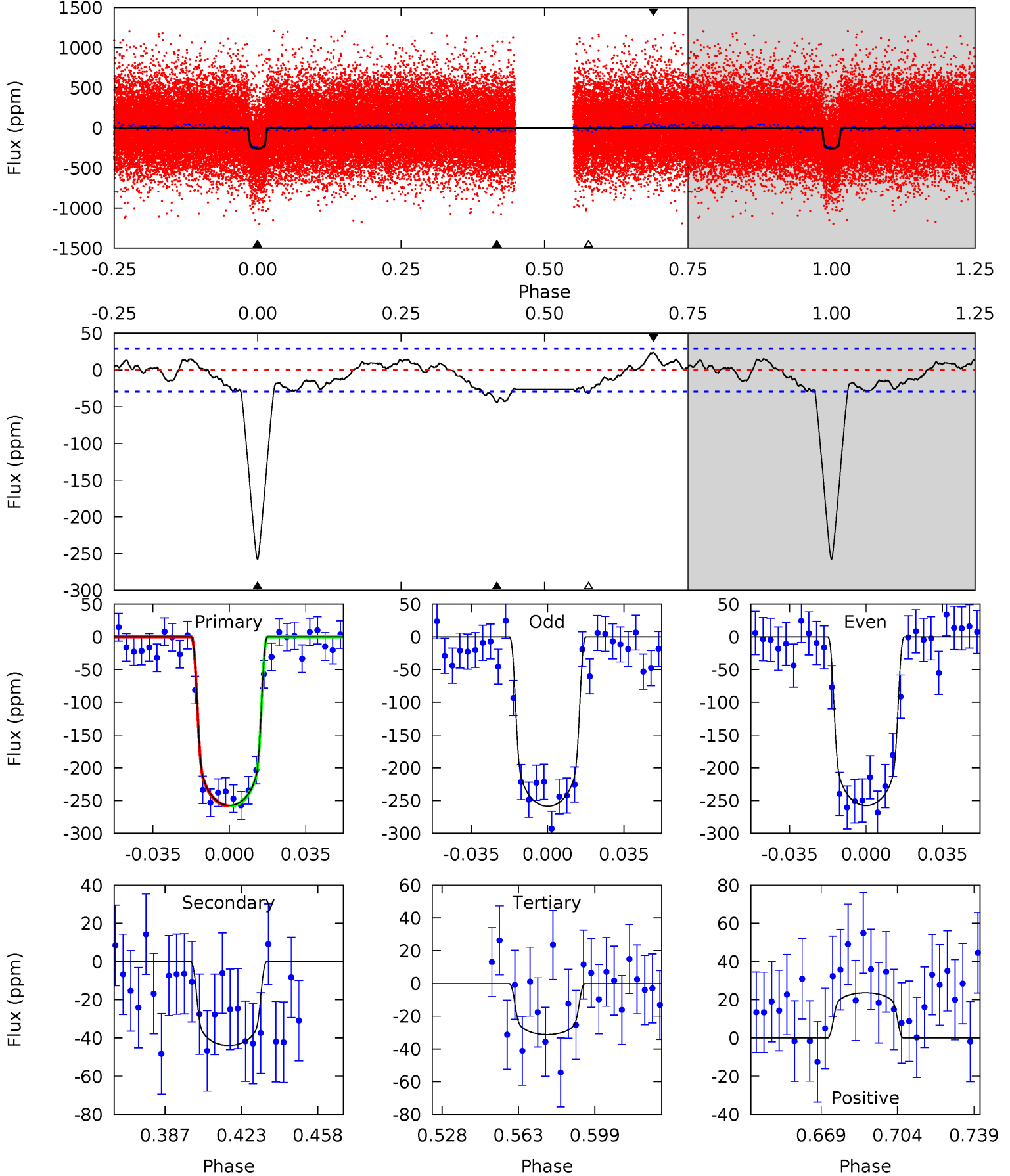
TCE 007972785-02 P= 7.300661 Days $T_0=137.224912$ (BKJD)



DV Model-Shift Uniqueness Test

007972785-02, P = 7.300637 Days, E = 129.927879 Days

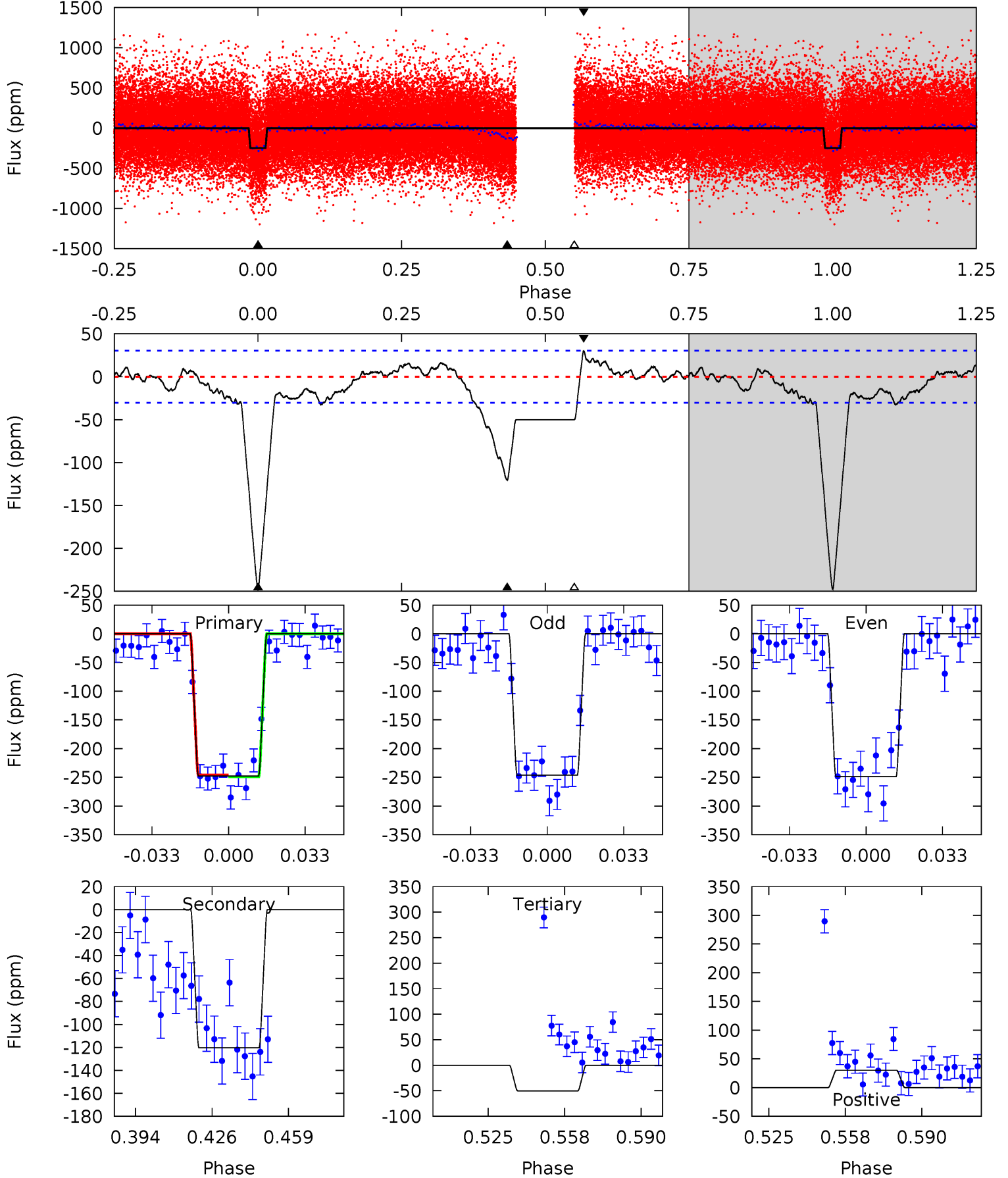
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
41.8	7.13	5.07	3.83	4.78	2.11	2.17	36.7	37.9	2.06	3.30	0.09	0.99	0.08	0.03



Alt Model-Shift Uniqueness Test

007972785-02, P = 7.300661 Days, E = 129.924251 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	19.0	7.91	4.77	4.79	2.13	2.42	31.3	34.4	11.1	14.3	0.20	0.97	0.11	0.25



Stellar Parameters For KIC 007972785

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6434^{+153}_{-230}	$4.394^{+0.070}_{-0.210}$	$-0.100^{+0.250}_{-0.300}$	$1.138^{+0.389}_{-0.130}$	$1.169^{+0.169}_{-0.169}$	$1.119^{+0.332}_{-0.607}$
	+2%/-4%	+2%/-5%	+250%/-300%	+34%/-11%	+14%/-14%	+30%/-54%
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 007972785-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-44 ± 6	$2.17^{+0.37}_{-0.25}$	1544^{+106}_{-80}	4250^{+186}_{-185}	30^{+9}_{-8}
Alt.	-120 ± 6	$1.99^{+0.36}_{-0.22}$	1543^{+108}_{-77}	5402^{+260}_{-236}	97^{+24}_{-24}

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

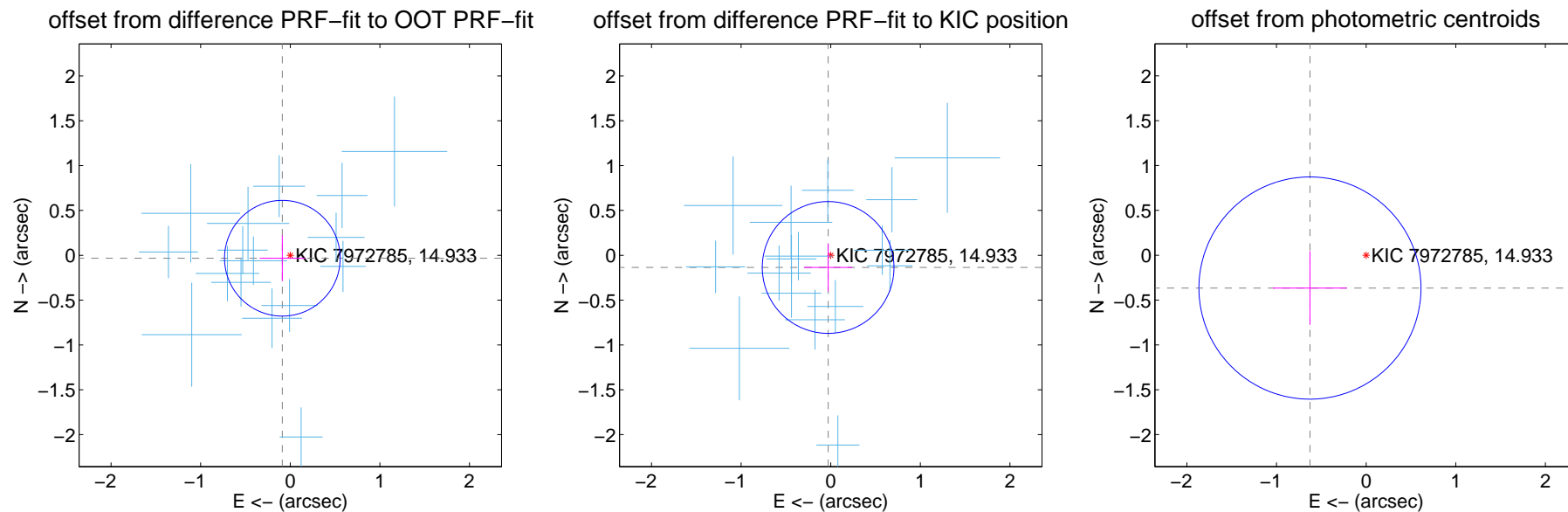
DV Centroid Data

Supplemental centroid analysis for 007972785-02. Kepler magnitude: 14.93. Transit SNR 27.02

There are 16 quarters with good PRF difference image offsets

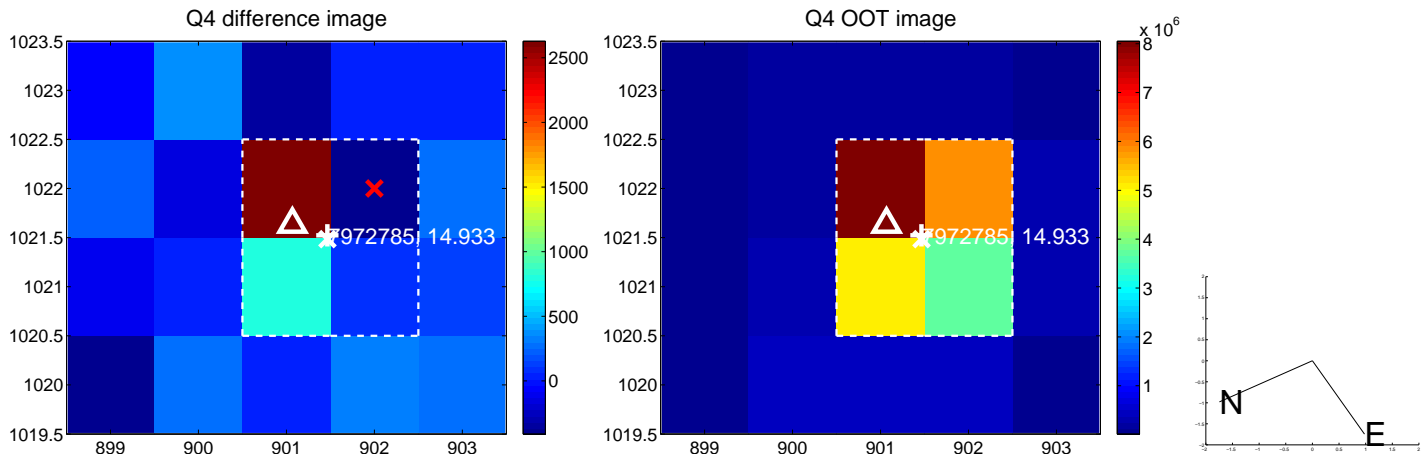
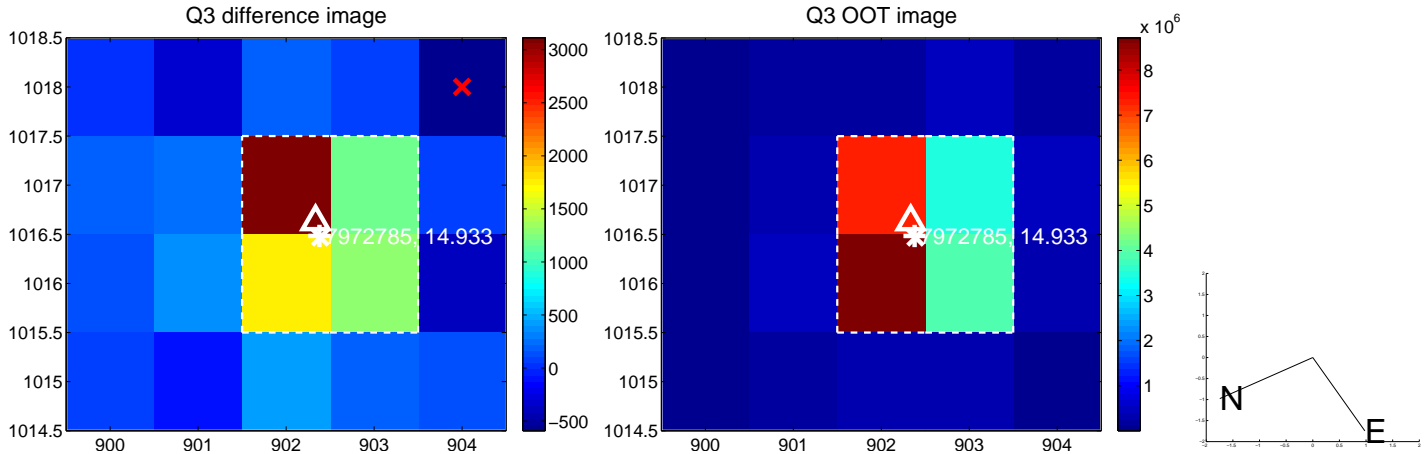
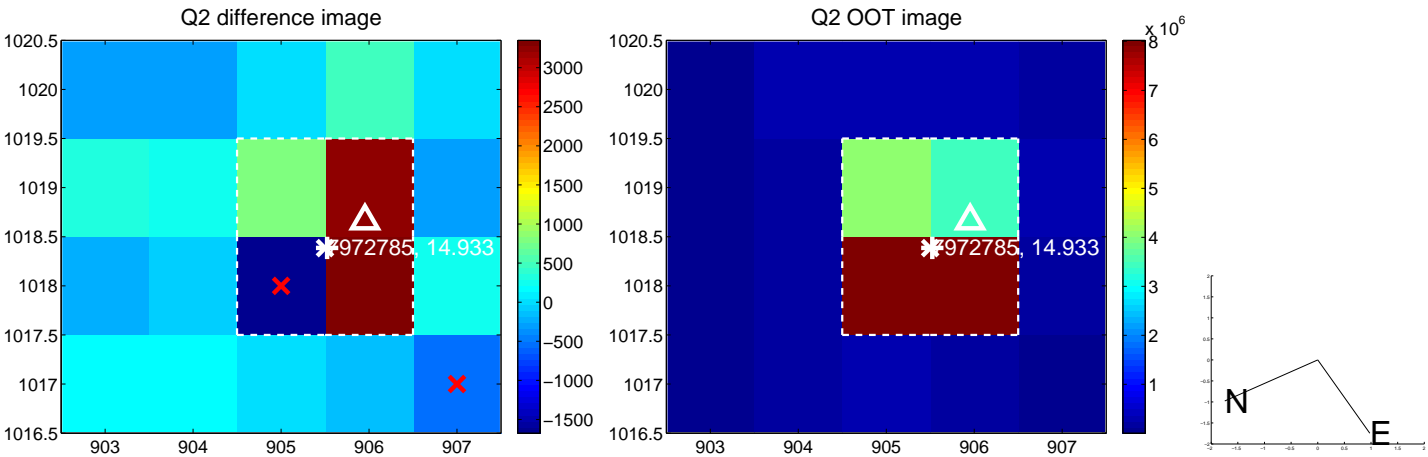
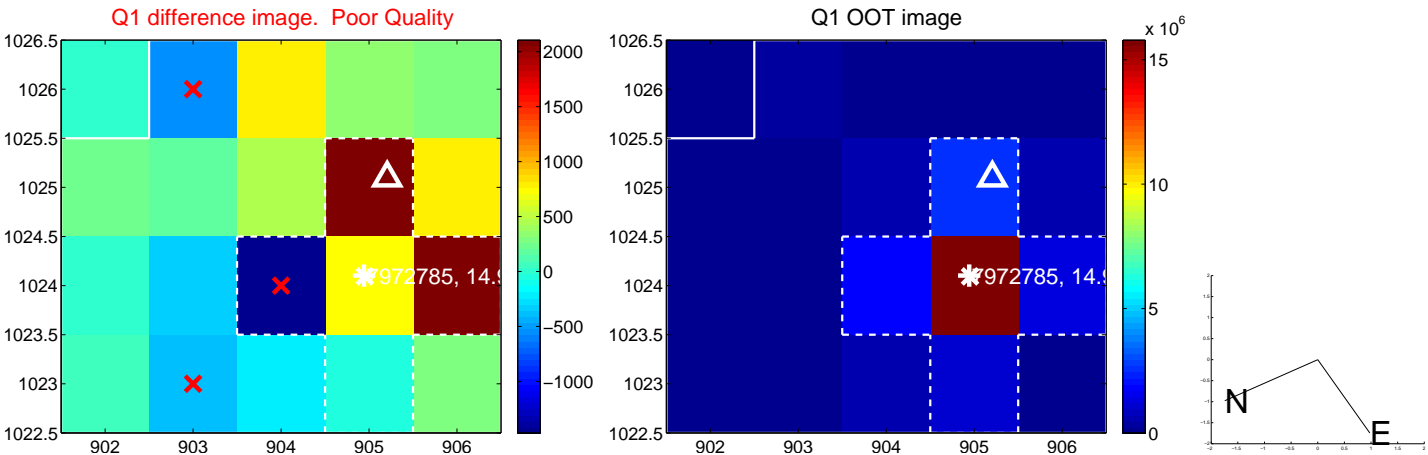
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.094 ± 0.215	0.44	0.088 ± 0.253	-0.033 ± 0.256
PRF-fit source offset from KIC position	0.139 ± 0.245	0.57	0.029 ± 0.270	-0.136 ± 0.266
photometric centroid source offset	0.73 ± 0.41	1.76	0.63 ± 0.41	-0.37 ± 0.41

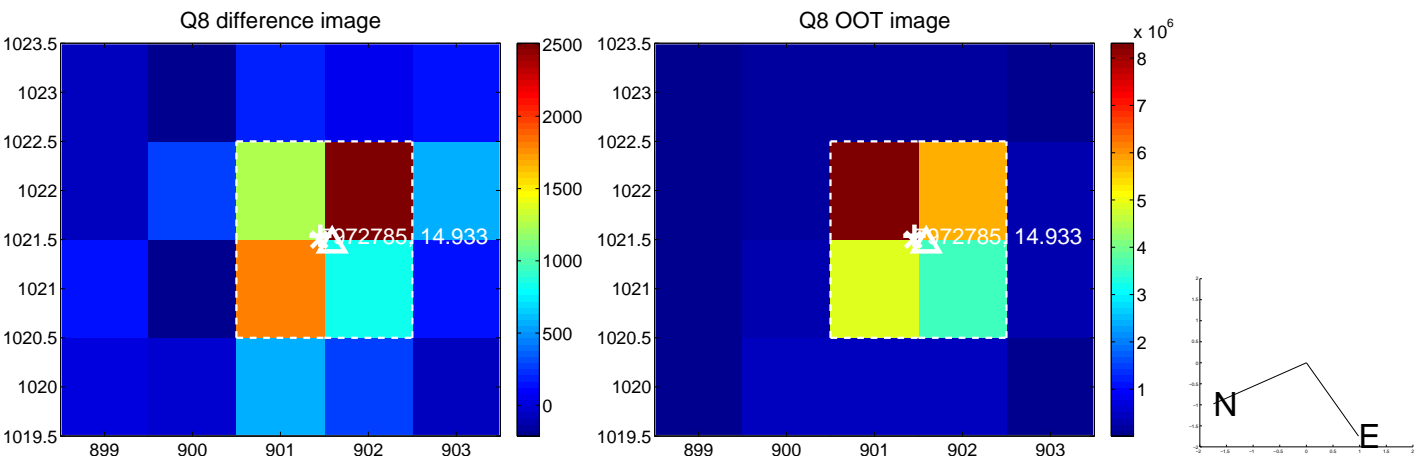
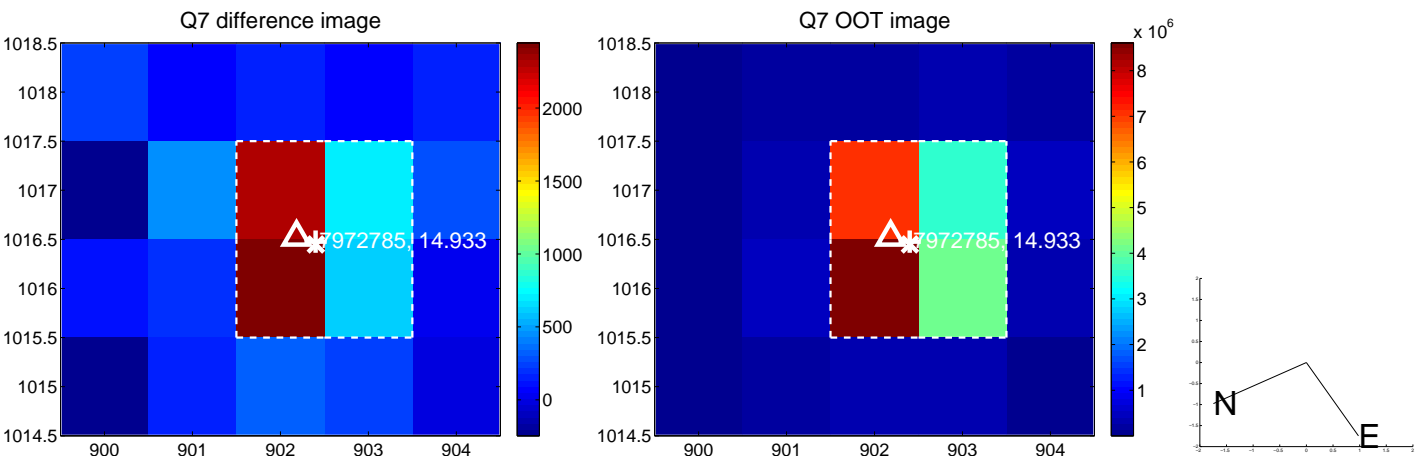
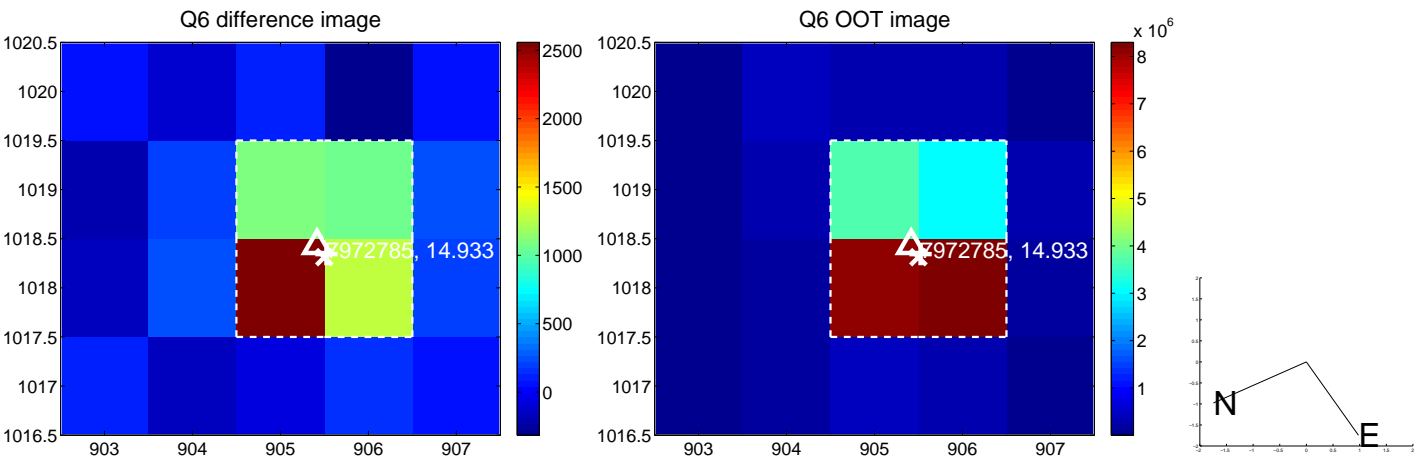
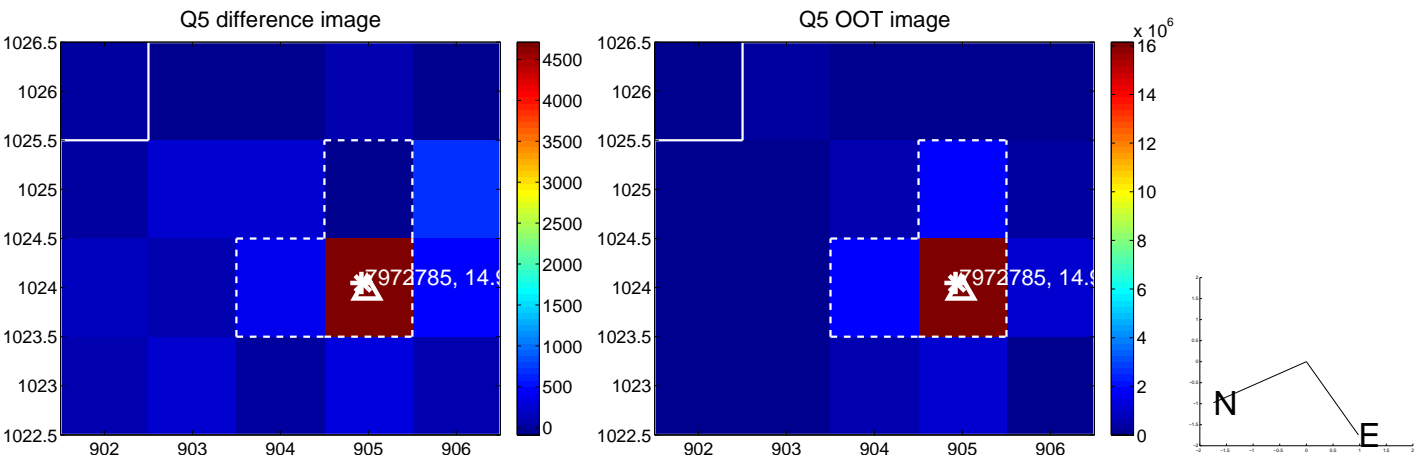


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

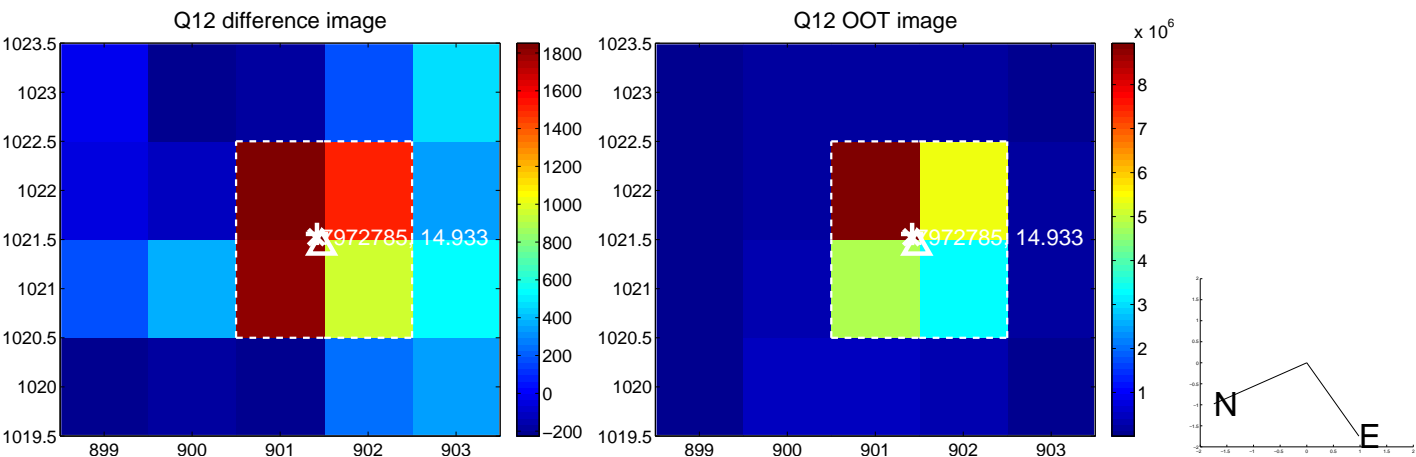
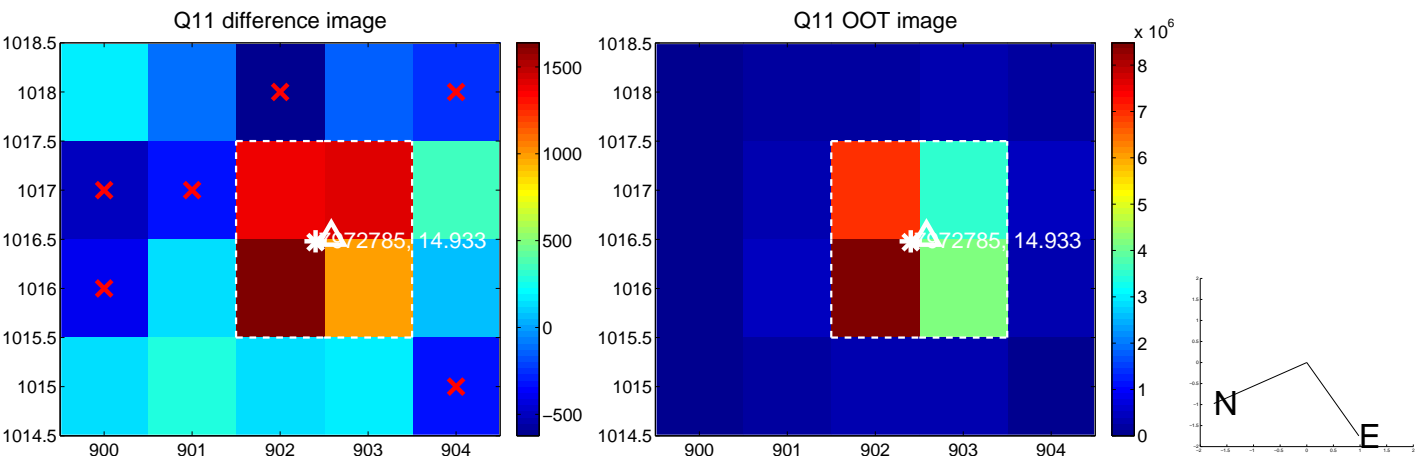
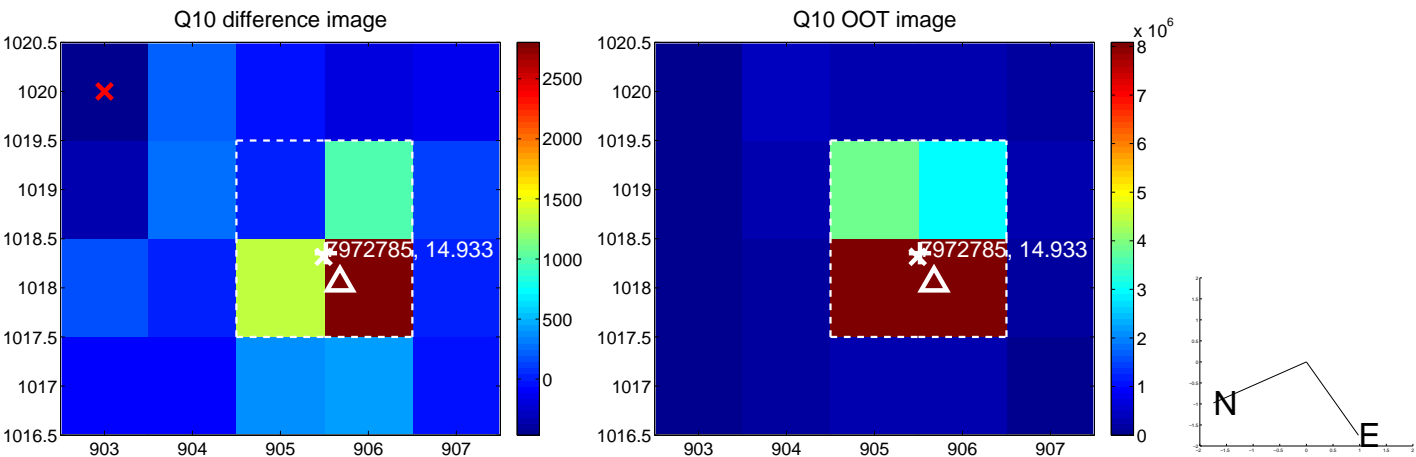
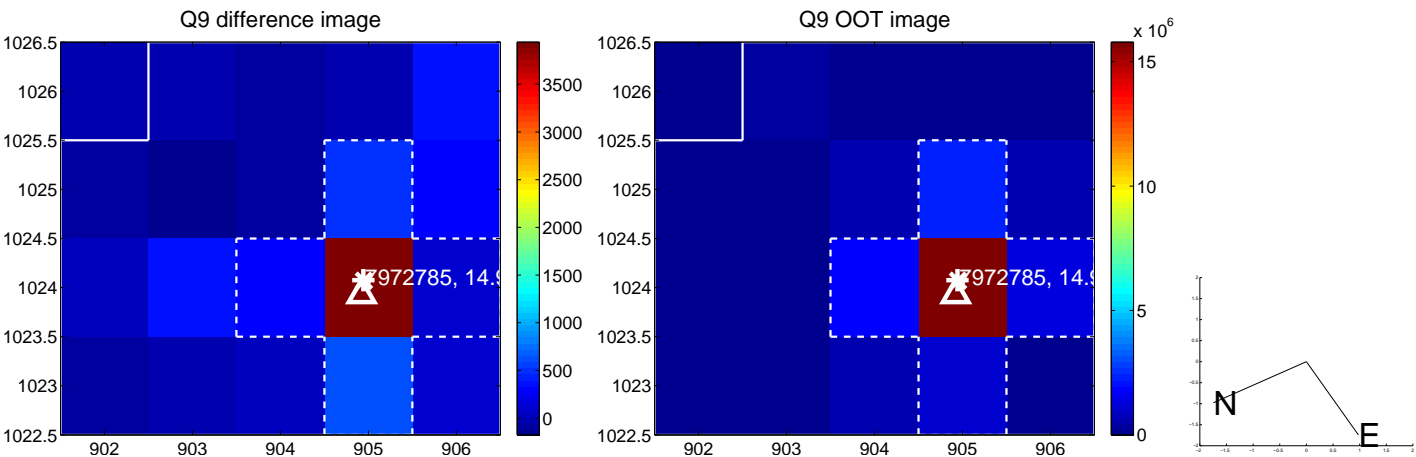
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



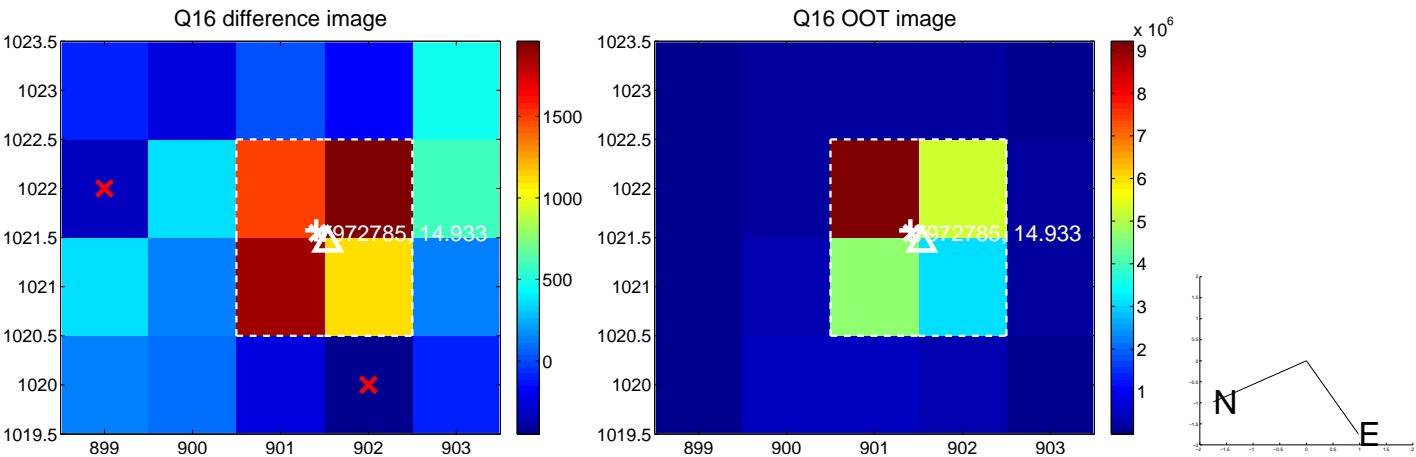
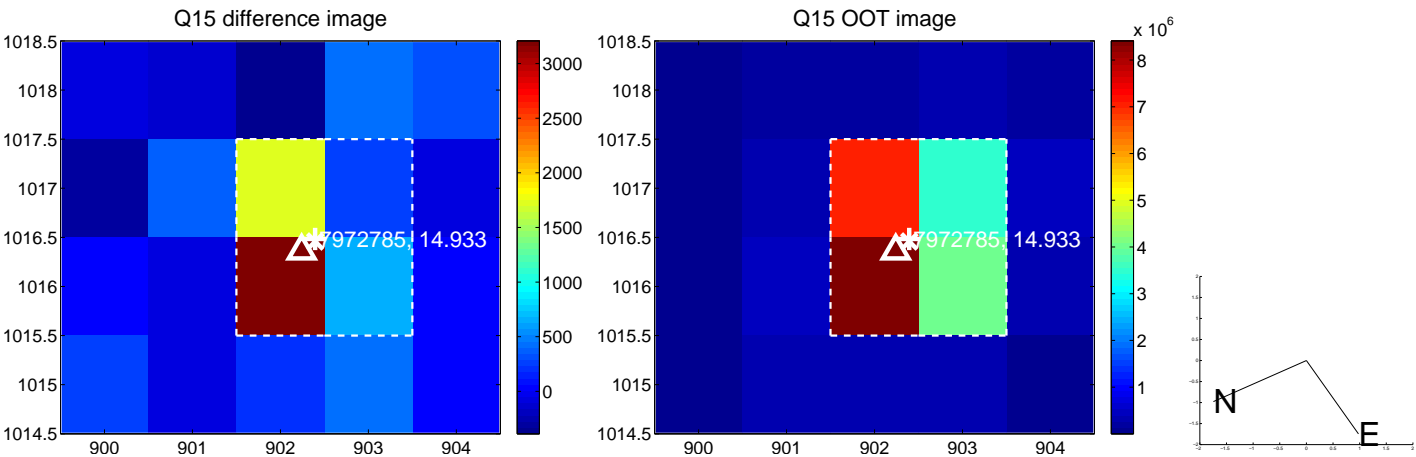
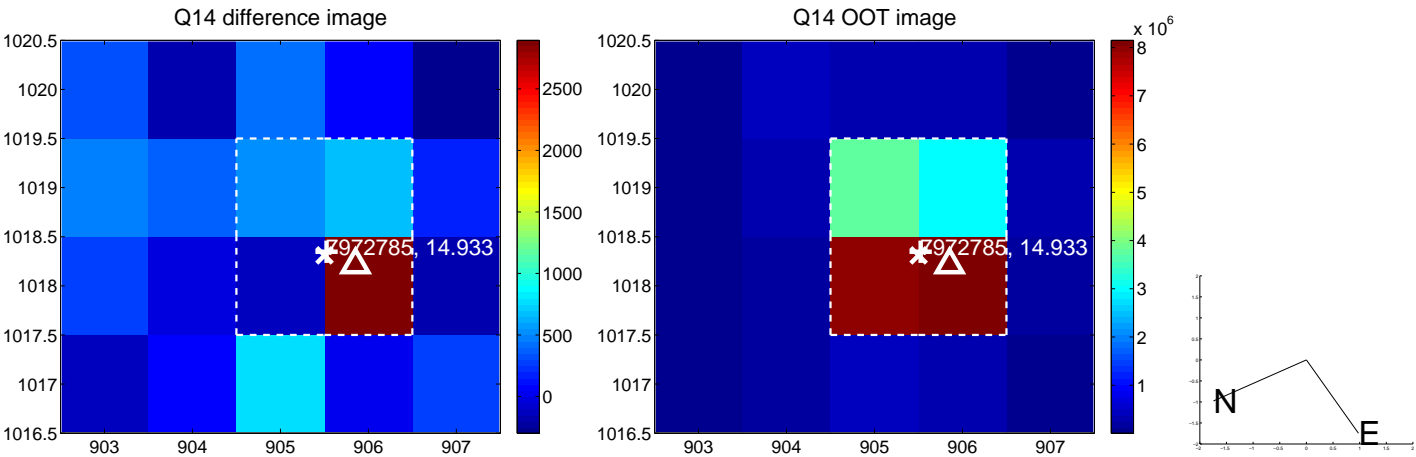
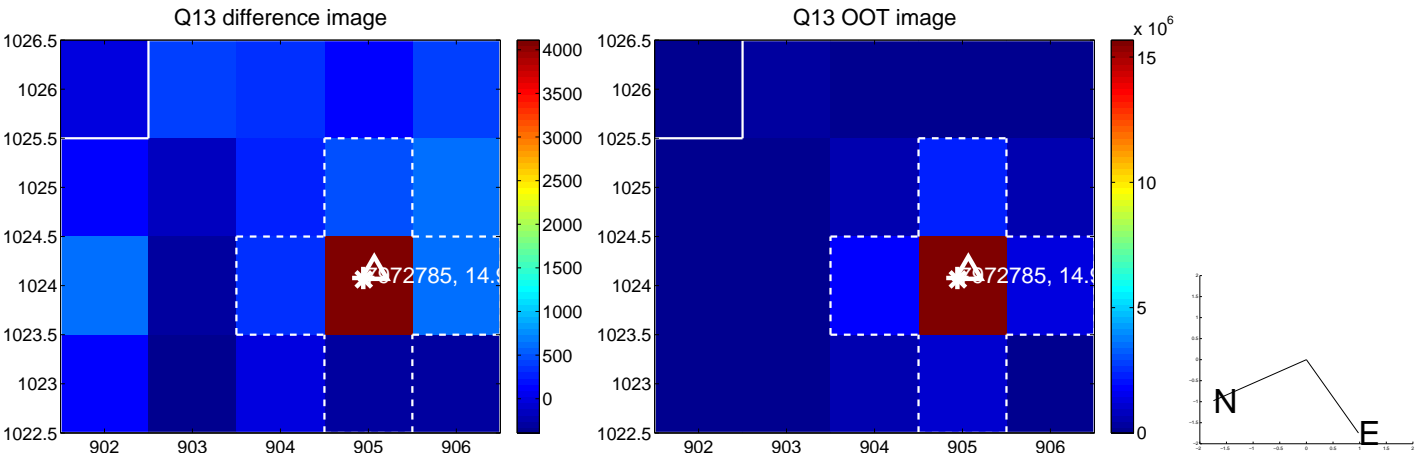
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



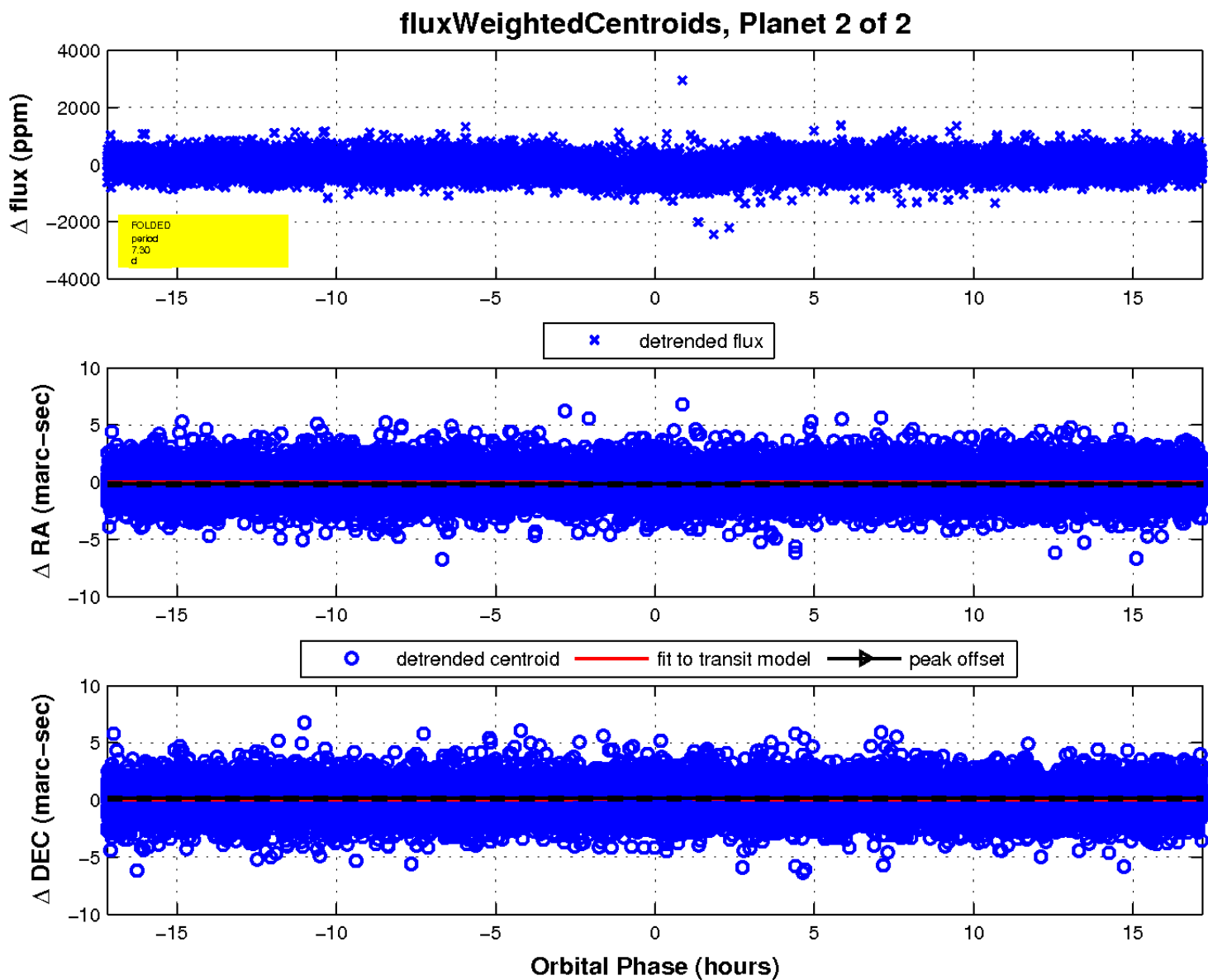
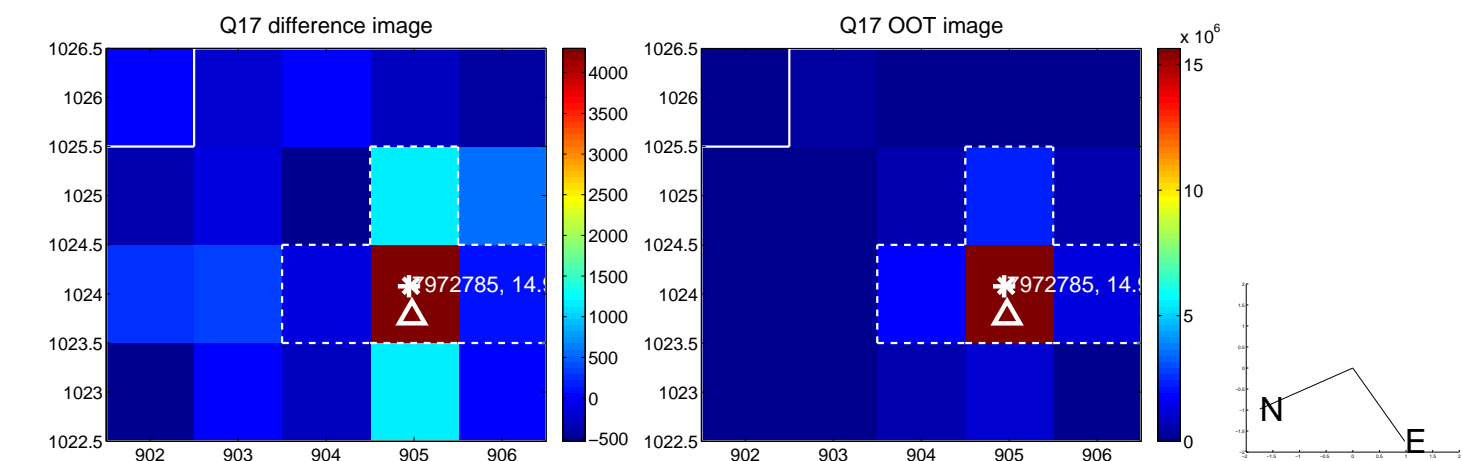
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

