

KIC 008984706

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})
008984706-01	OBS	6190.01	10.135402	132.323847	252096.0	5.710	11667.7	6539.9	1.42	5895	87.39	271.36
008984706-02	OBS	No	5.067696	132.416882	193059.0	3.500	11692.1	-1.0	1.42	5895	62.66	683.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008984706-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—DEEP_V_SHAPED—HAS_SEC_TCE
008984706-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

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.

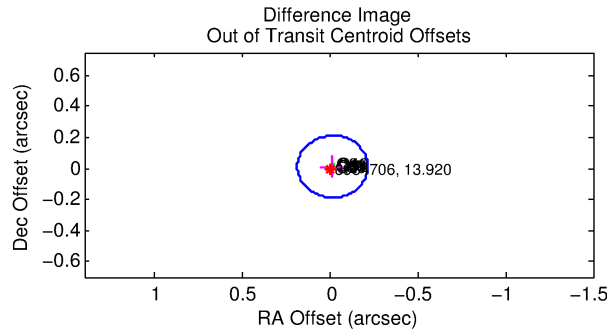
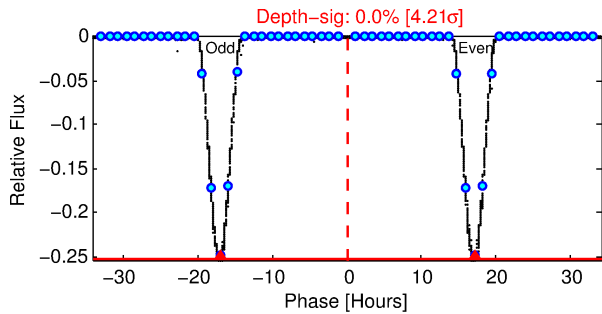
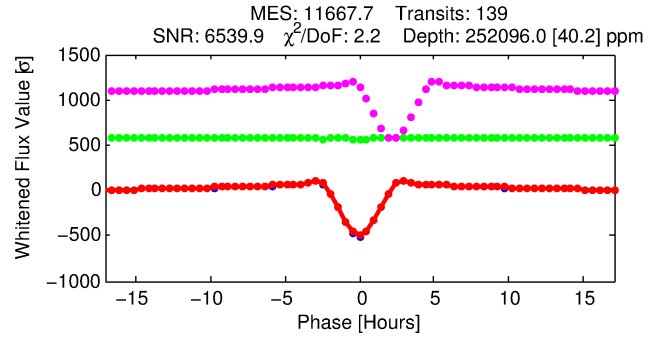
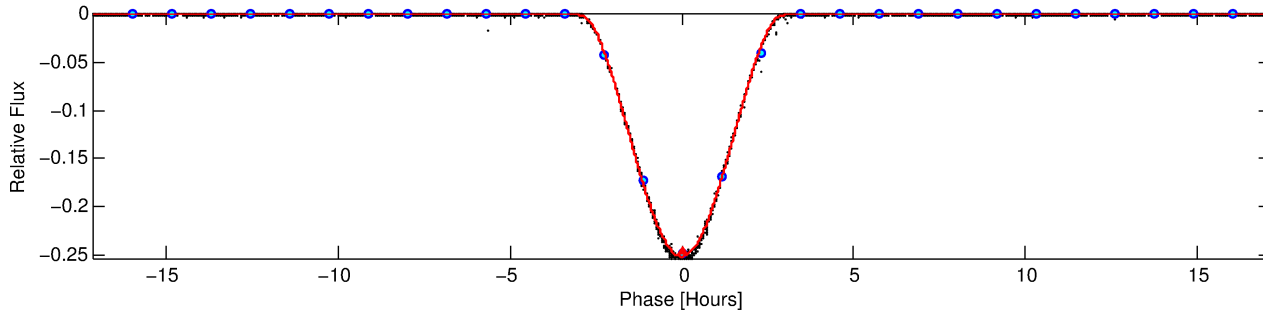
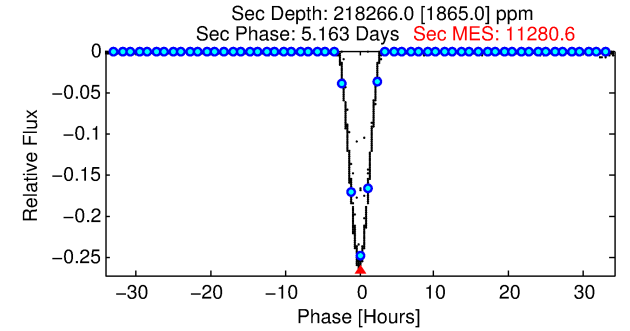
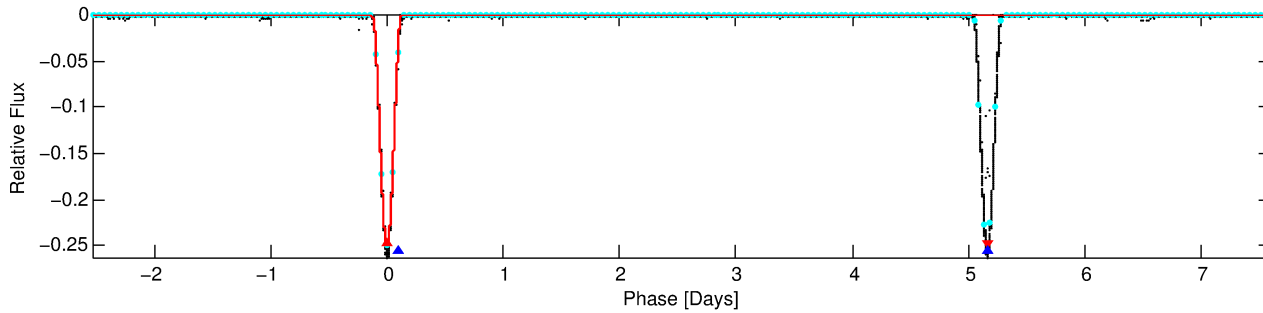
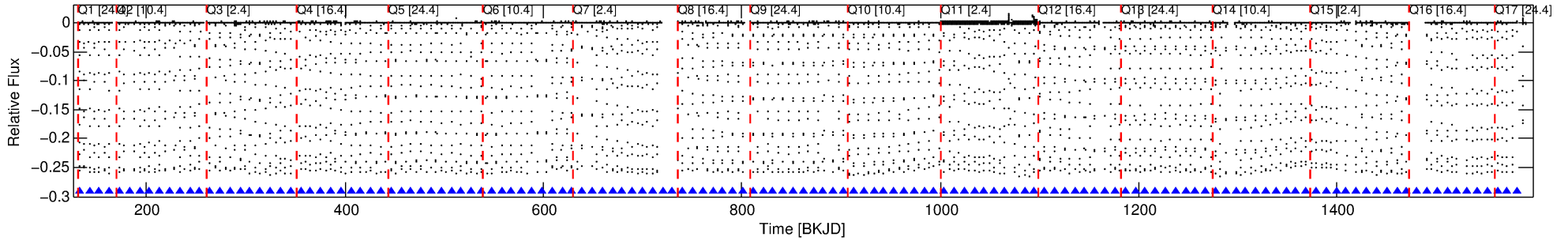
Ephemeris Match Information For 008984706-01

No Significant Match Found

DV One-Page Summary

KIC: 8984706 Candidate: 1 of 2 Period: 10.135 d
KOI: K06190.01 Corr: 0.999

Kp: 13.92 R*: 1.42 Rs Teff: 5895.0 K Logg: 4.10 Fe/H: -0.320



DV Fit Results:

Period = 10.13540 [0.00000] d
Epoch = 132.3238 [0.0000] BKJD
Rp/R* = 0.5659 [0.0075]
a/R* = 19.06 [0.03]
b = 0.69 [0.01]
Seff = 271.36 [159.28]
Teq = 1035 [152] K
Rp = 87.39 [29.79] Re
a = 0.0894 [0.0311] AU
Ag = 125.54 [72.25] [1.72σ]
Teffp = 5356 [163] K [19.37σ]

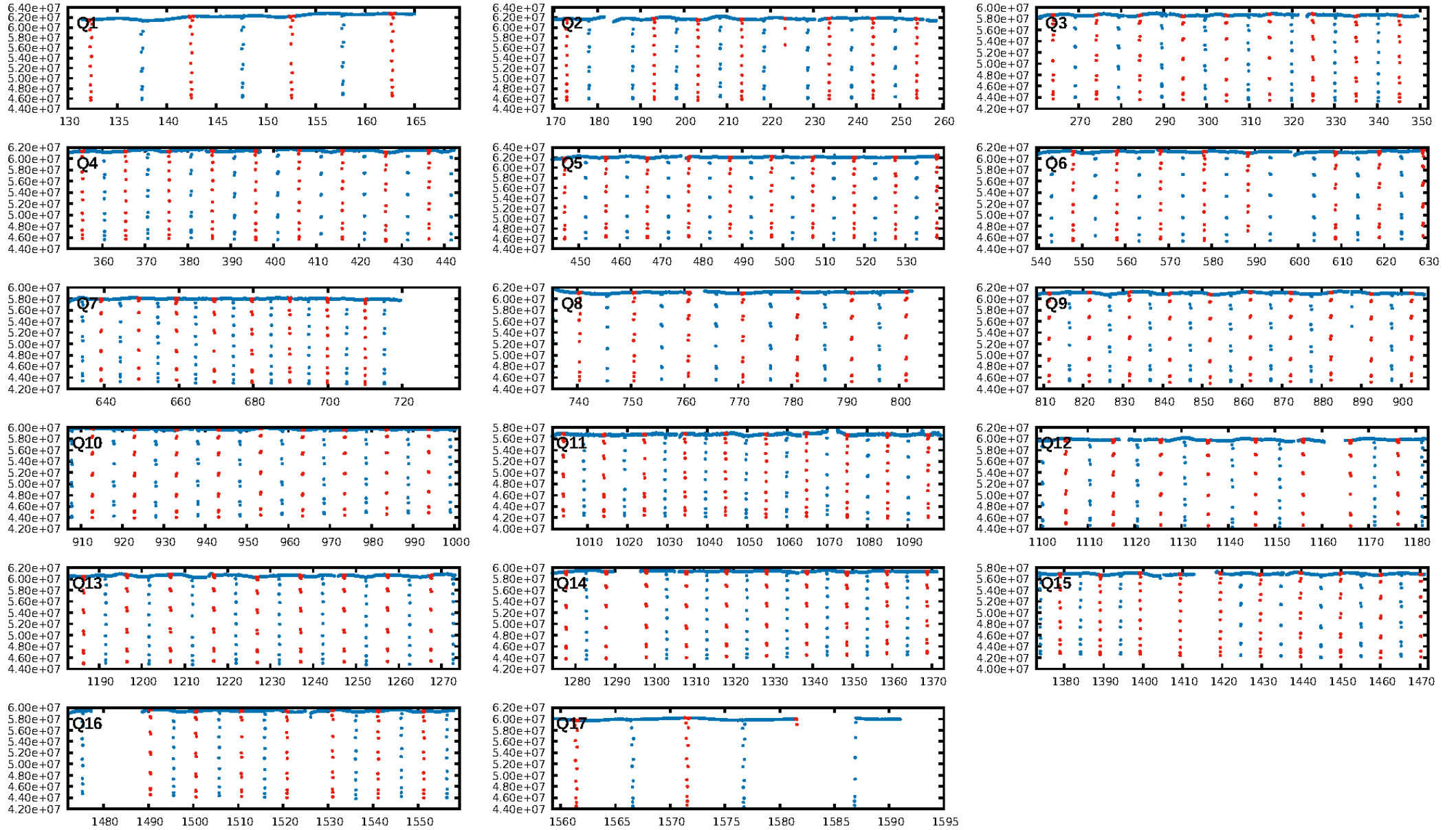
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [18.16σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [132/132]
GhostDiagnostic-chr: 3.497
Centroid-sig: 0.0%
Centroid-so: 0.927 arcsec [1427.48σ]
OotOffset-rm: 0.018 arcsec [0.27σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.100 arcsec [1.47σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

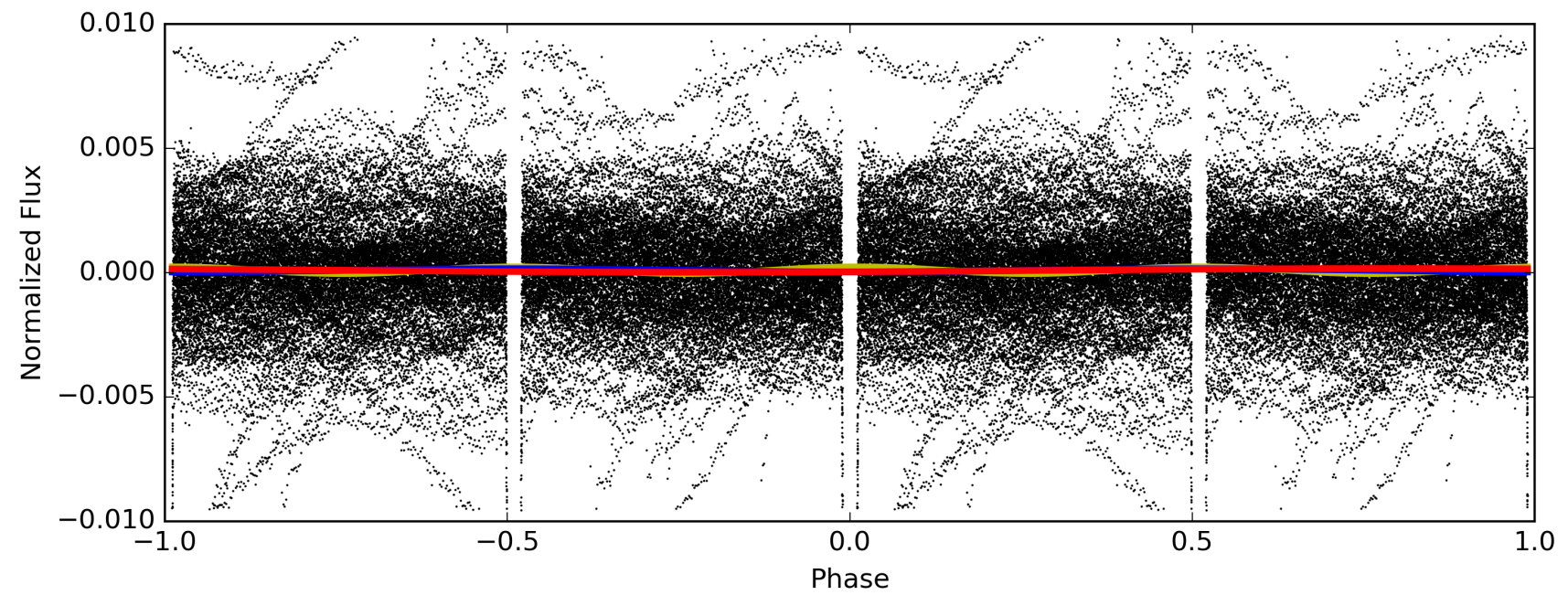
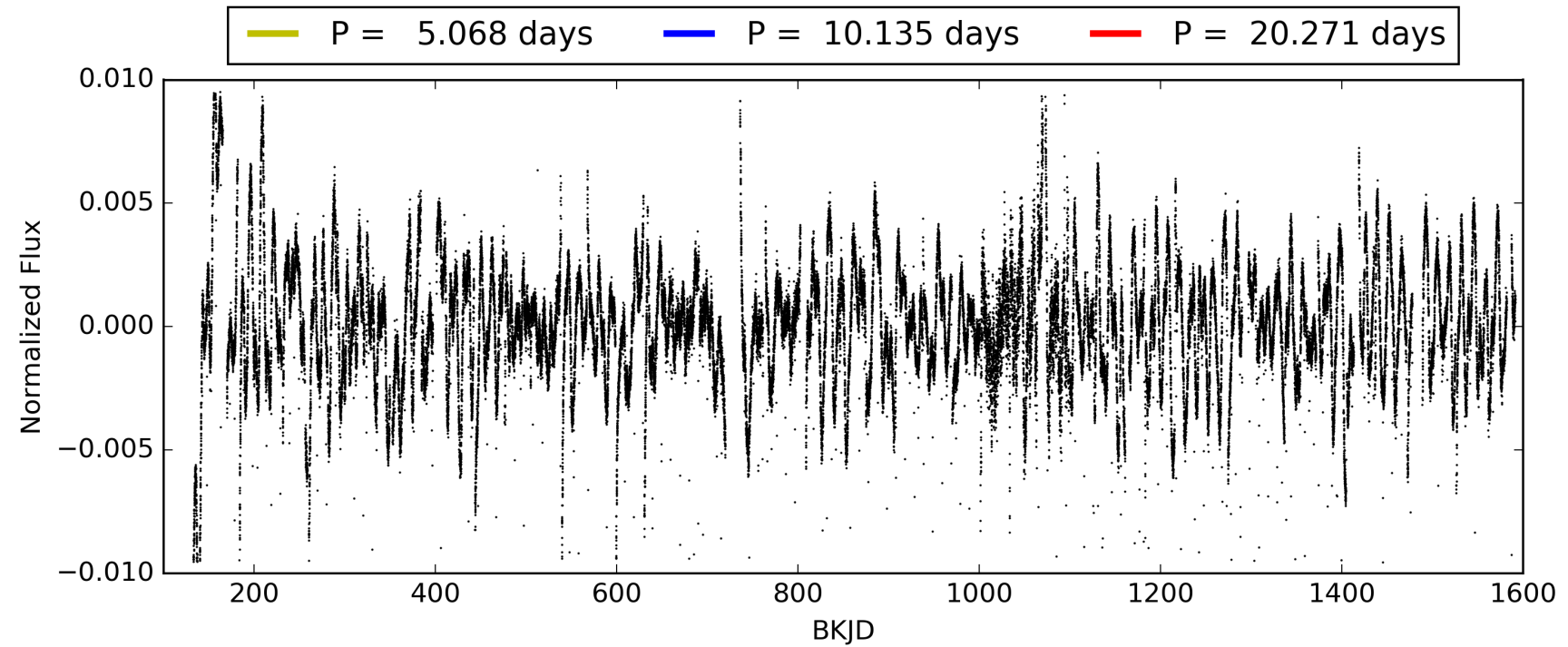
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008984706-01, PDC Light Curves

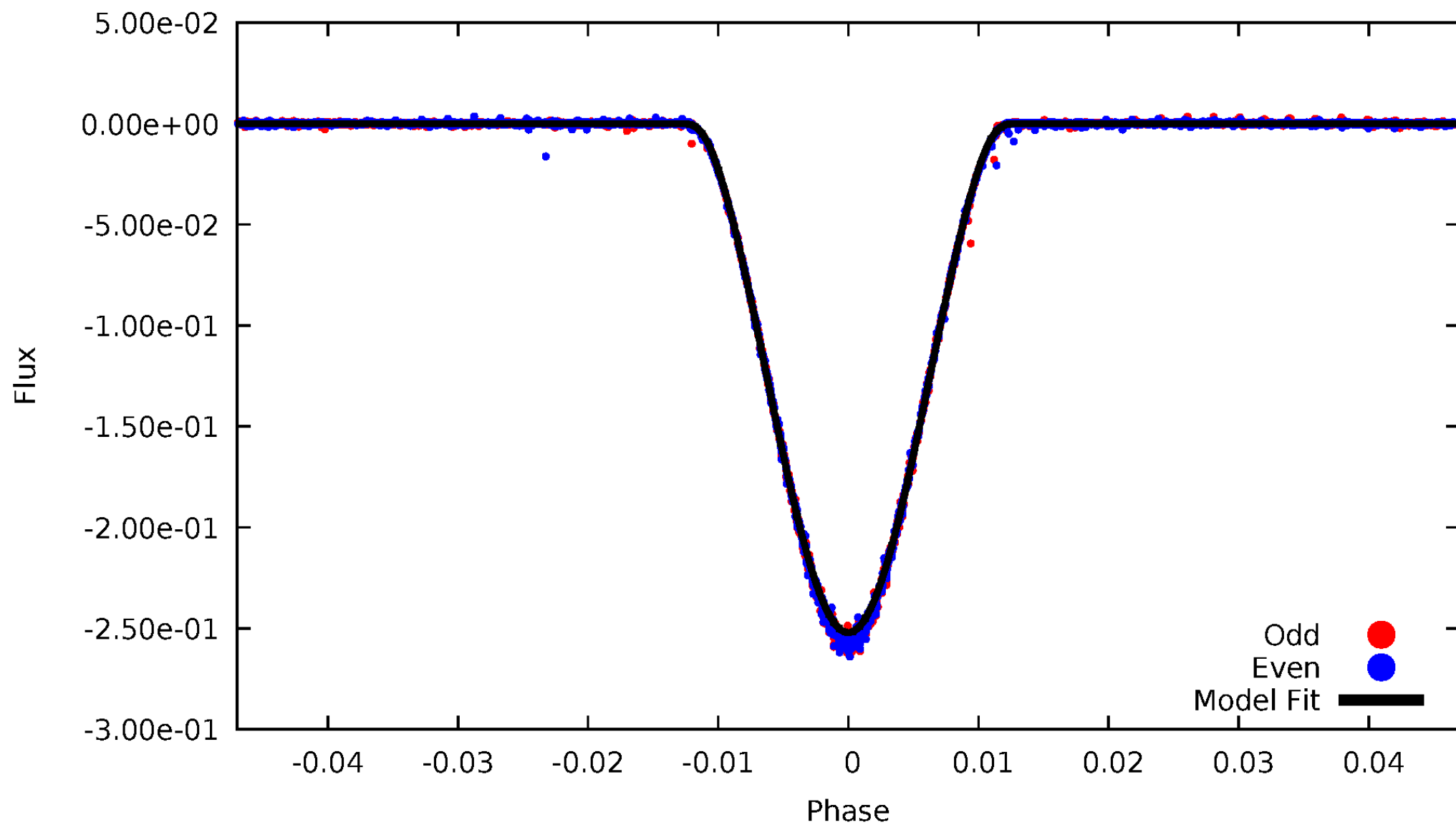


TCE 008984706-01



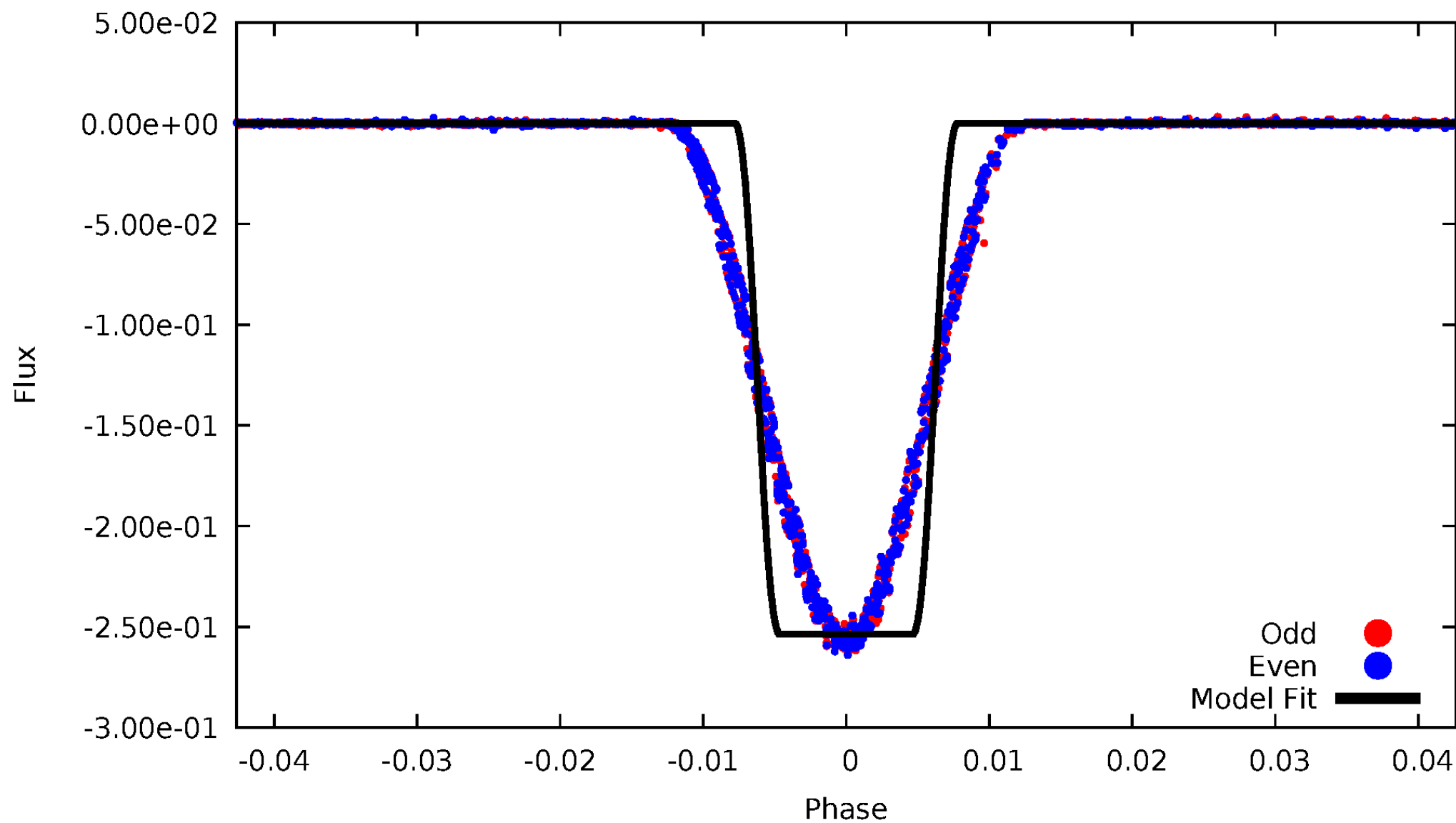
DV Odd/Even

TCE 008984706-01



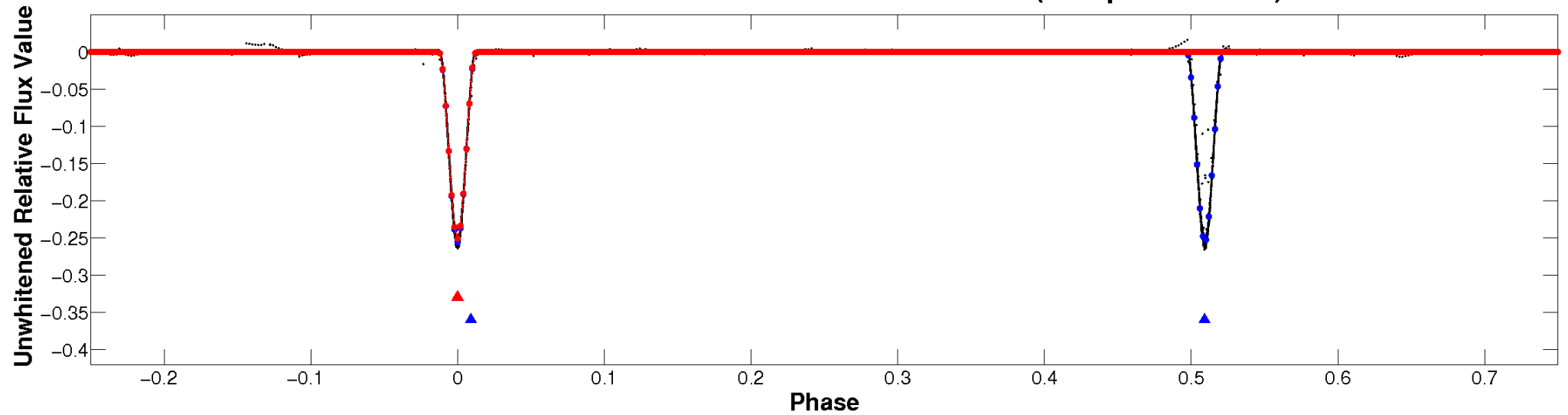
ALT Odd/Even

TCE 008984706-01

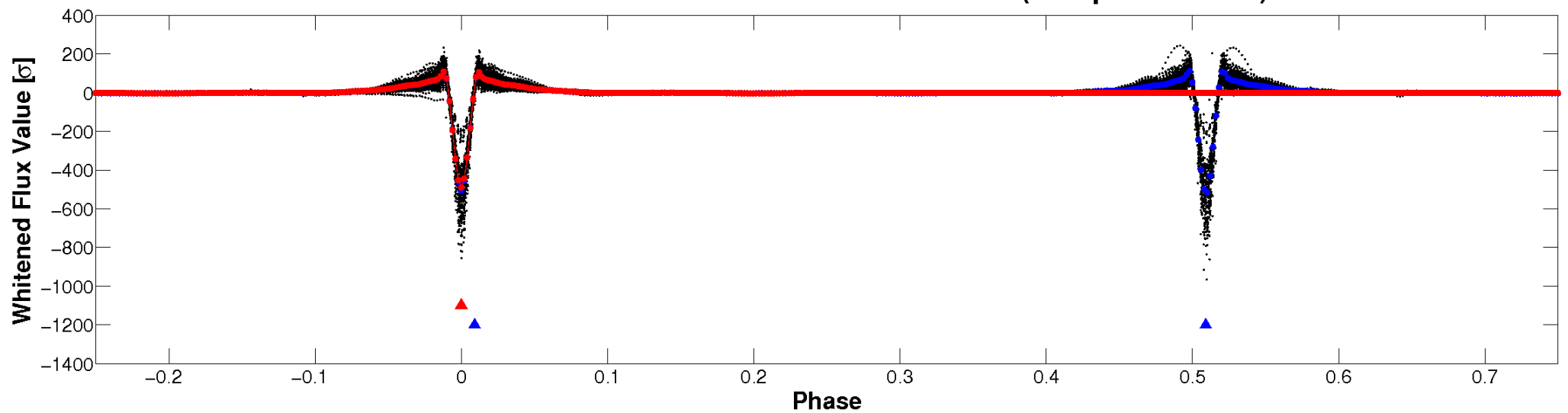


Non-Whitened Vs. Whitened Light Curve

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

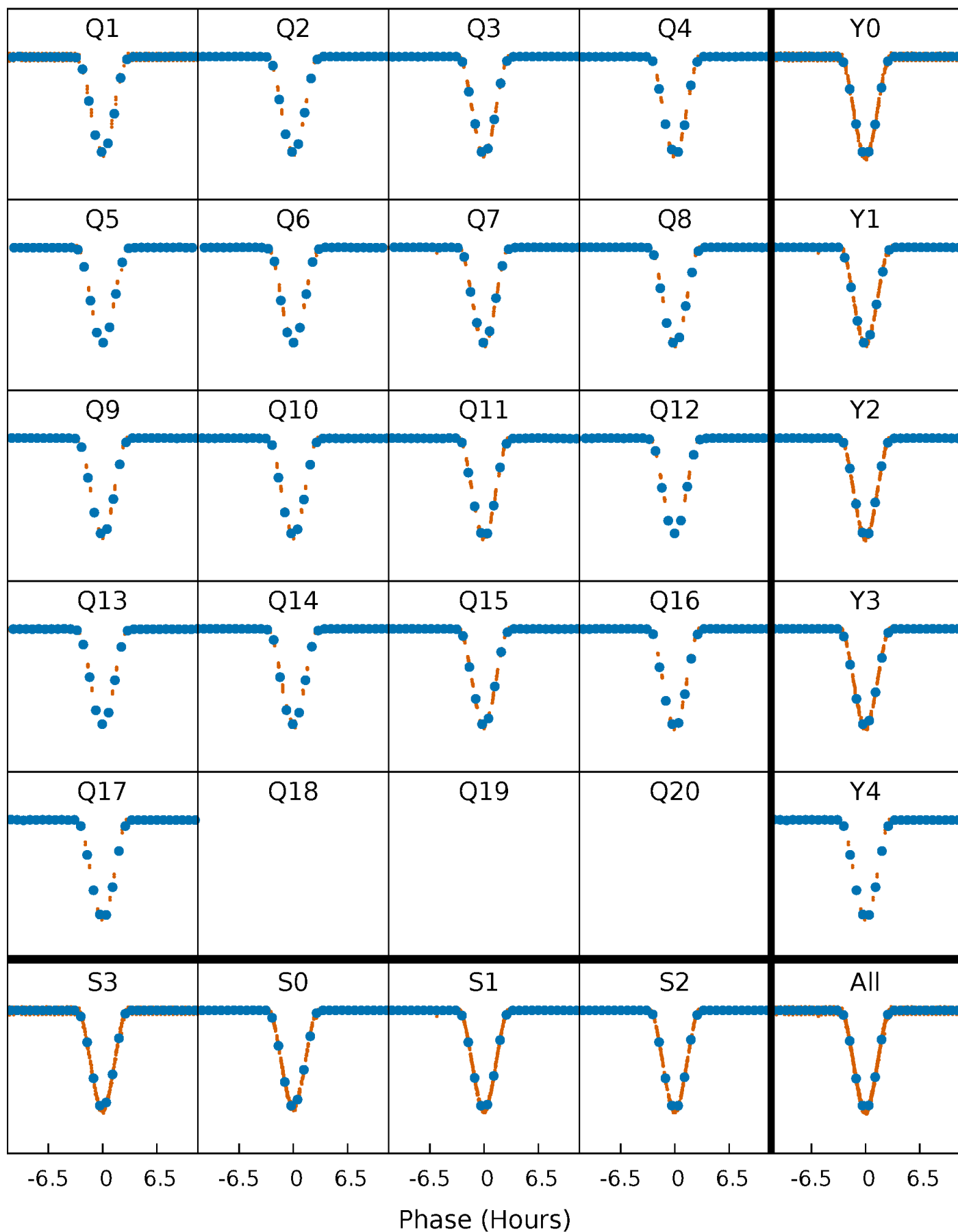


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



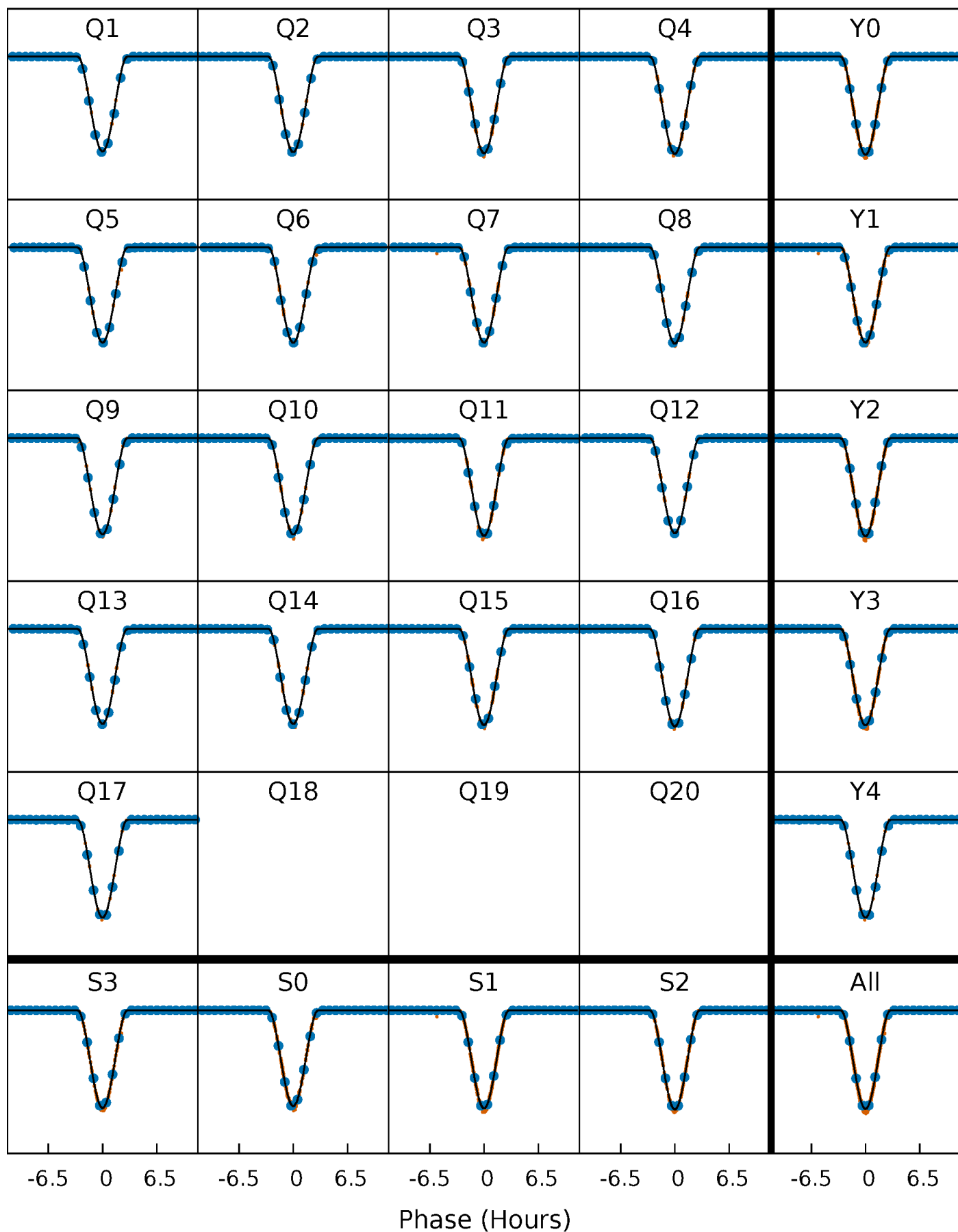
PDC Quarter-Phased Transit Curves

TCE 008984706-01 P= 10.135402 Days $T_0=132.323847$ (BKJD)



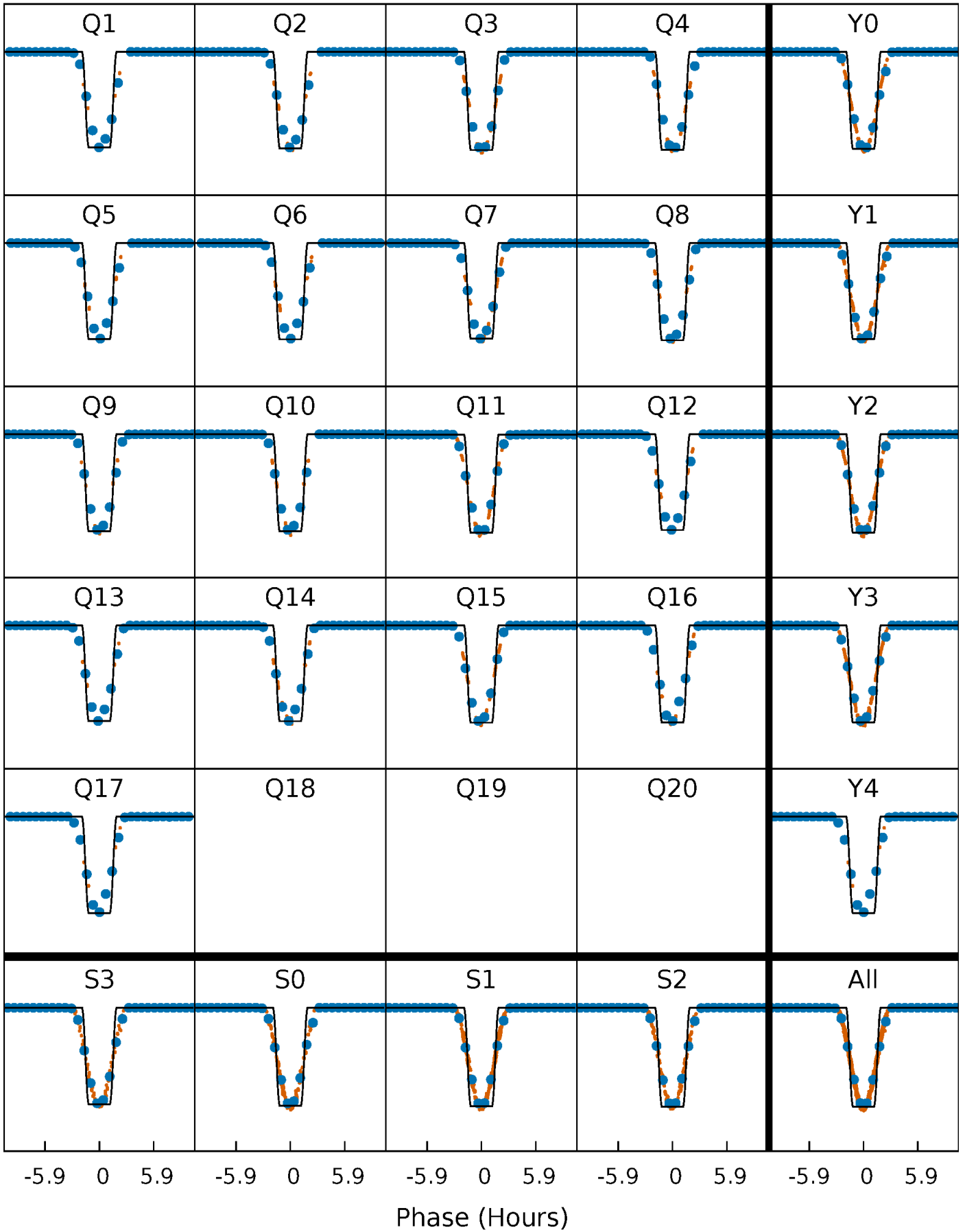
DV Quarter-Phased Transit Curves

TCE 008984706-01 P= 10.135402 Days $T_0=132.323847$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

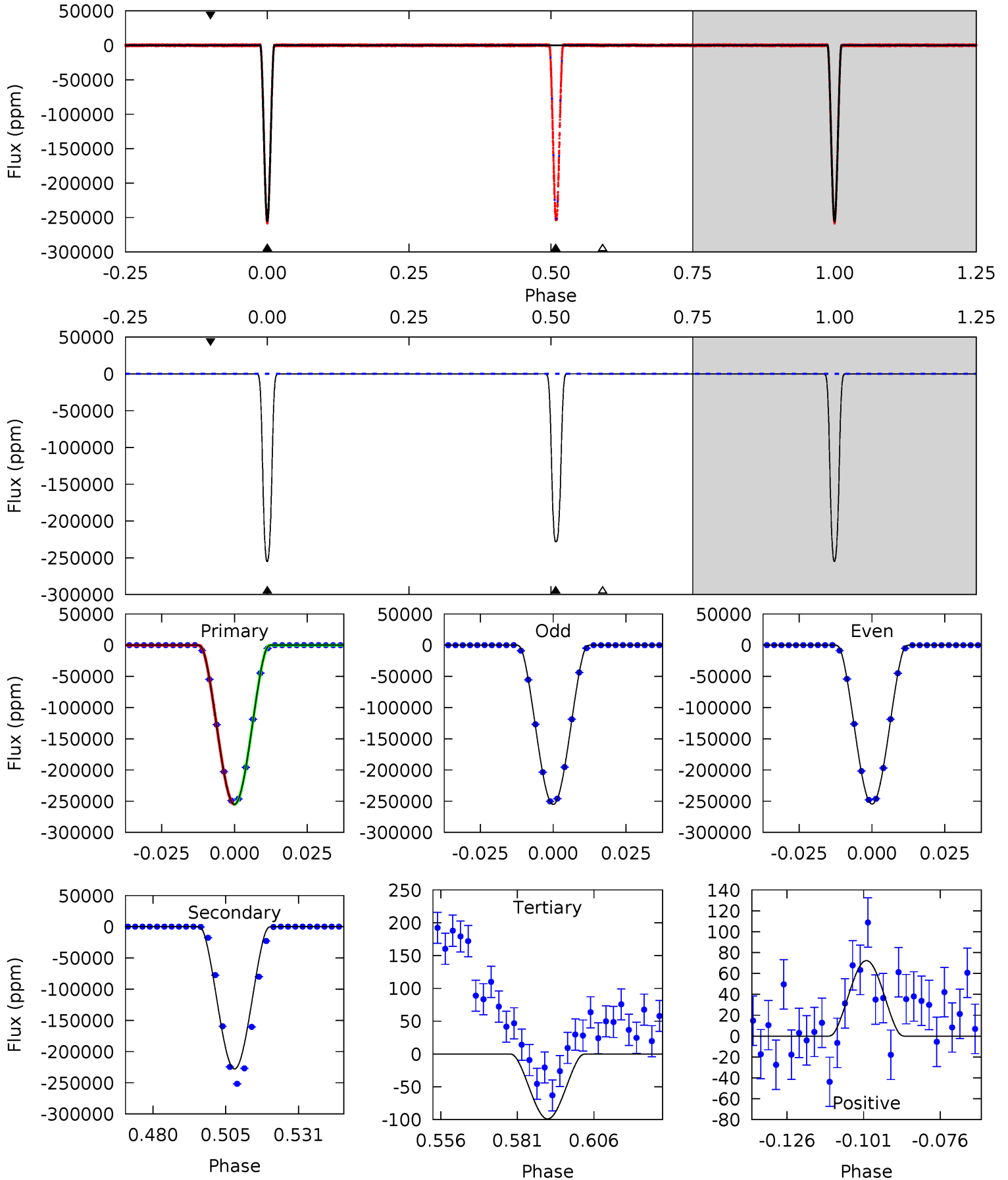
TCE 008984706-01 P= 10.135469 Days $T_0=132.318869$ (BKJD)



DV Model-Shift Uniqueness Test

008984706-01, P = 10.135402 Days, E = 122.188445 Days

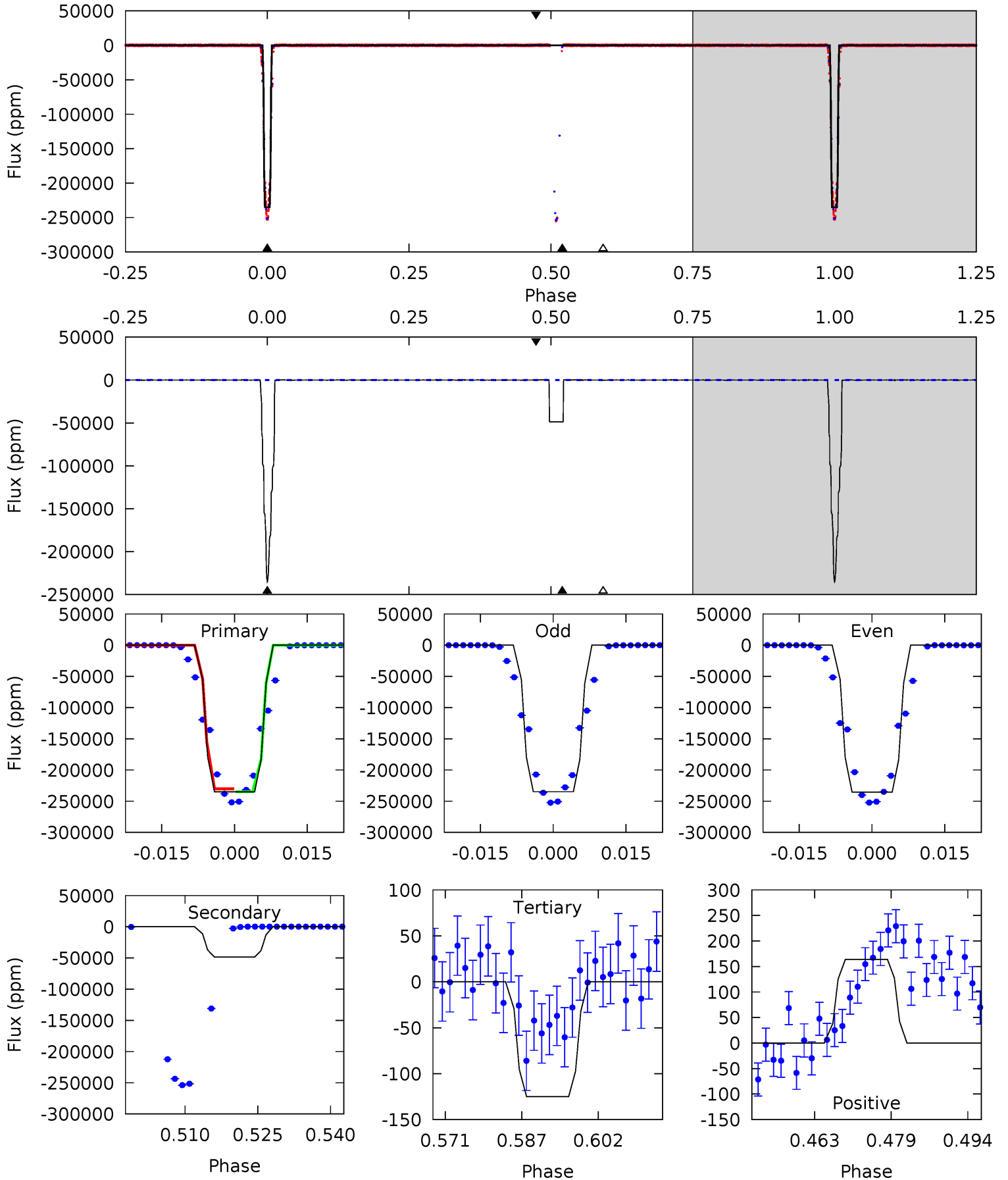
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24259	21684	9.41	6.88	4.85	2.24	5.98	24249	24252	21675	21678	26.8	1.00	0.00	0



Alt Model-Shift Uniqueness Test

008984706-01, P = 10.135469 Days, E = 122.183400 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8499	1760	4.52	5.93	4.94	2.42	40.9	8494	8493	1755	1754	15.1	1.00	0.00	0



Stellar Parameters For KIC 008984706

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5895^{+175}_{-175}	$4.103^{+0.344}_{-0.159}$	$-0.320^{+0.300}_{-0.300}$	$1.415^{+0.394}_{-0.482}$	$0.926^{+0.128}_{-0.093}$	$0.460^{+1.146}_{-0.230}$
	+3%/-3%	+8%/-4%	+94%/-94%	+28%/-34%	+14%/-10%	+249%/-50%
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 008984706-01 / KOI 6190.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-227904 ± 11	$85.56^{+13.67}_{-16.18}$	1423^{+116}_{-140}	5767^{+168}_{-183}	180^{+88}_{-46}
Alt.	-48664 ± 28	$76.63^{+11.09}_{-14.08}$	1423^{+119}_{-132}	4203^{+95}_{-94}	39^{+19}_{-9}

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

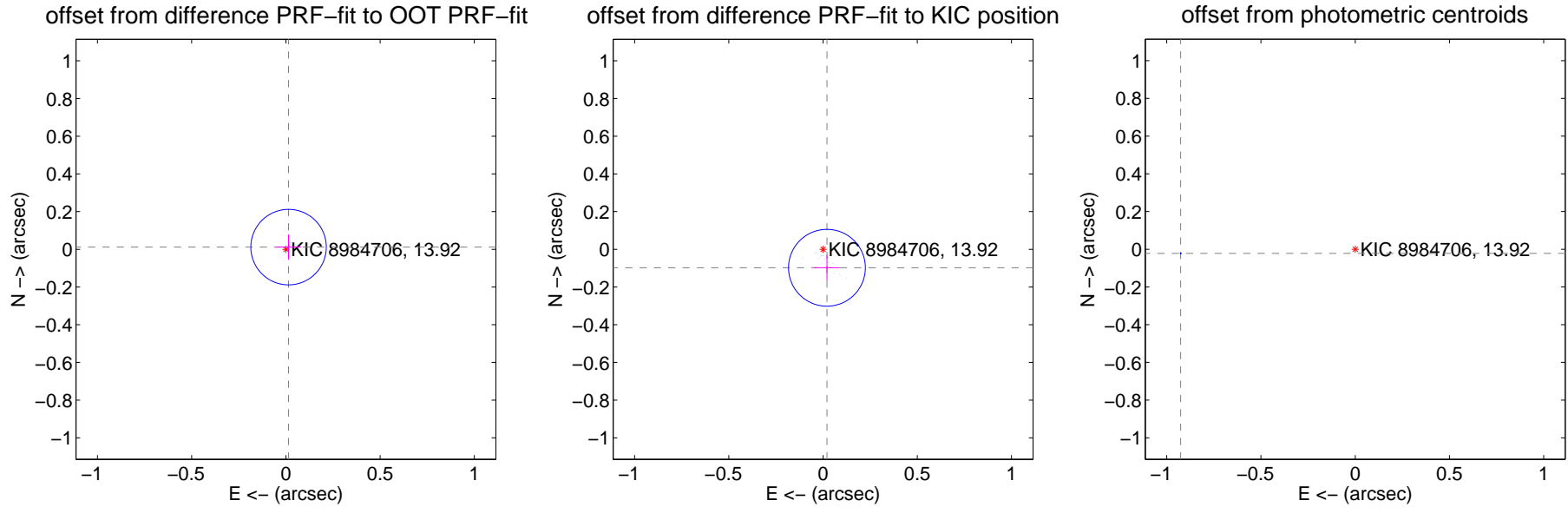
DV Centroid Data

Supplemental centroid analysis for 008984706-01. Kepler magnitude: 13.92. Transit SNR 6539.90

There are 17 quarters with good PRF difference image offsets

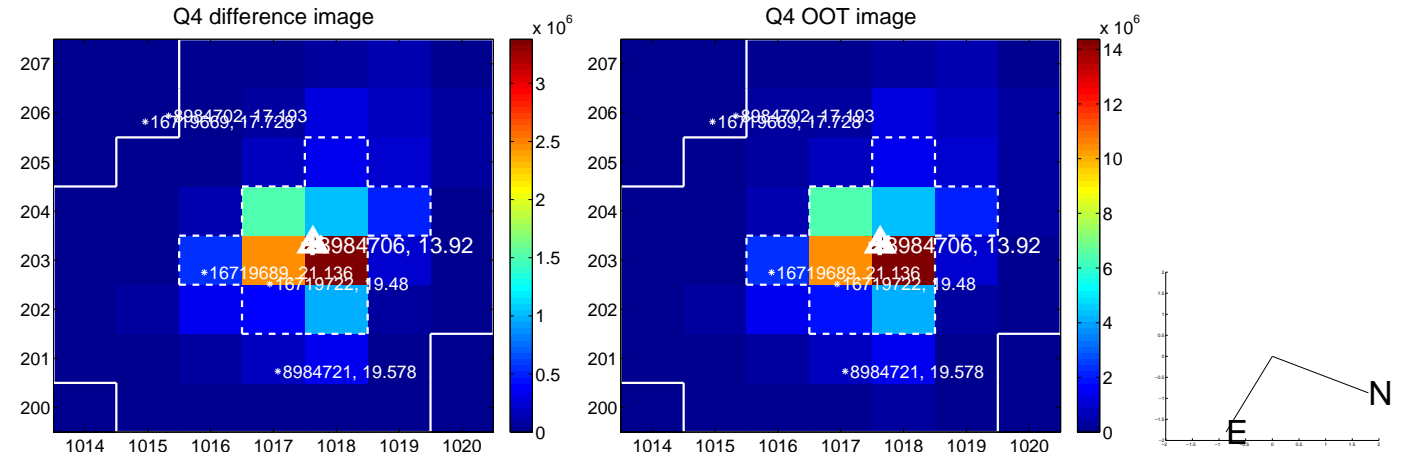
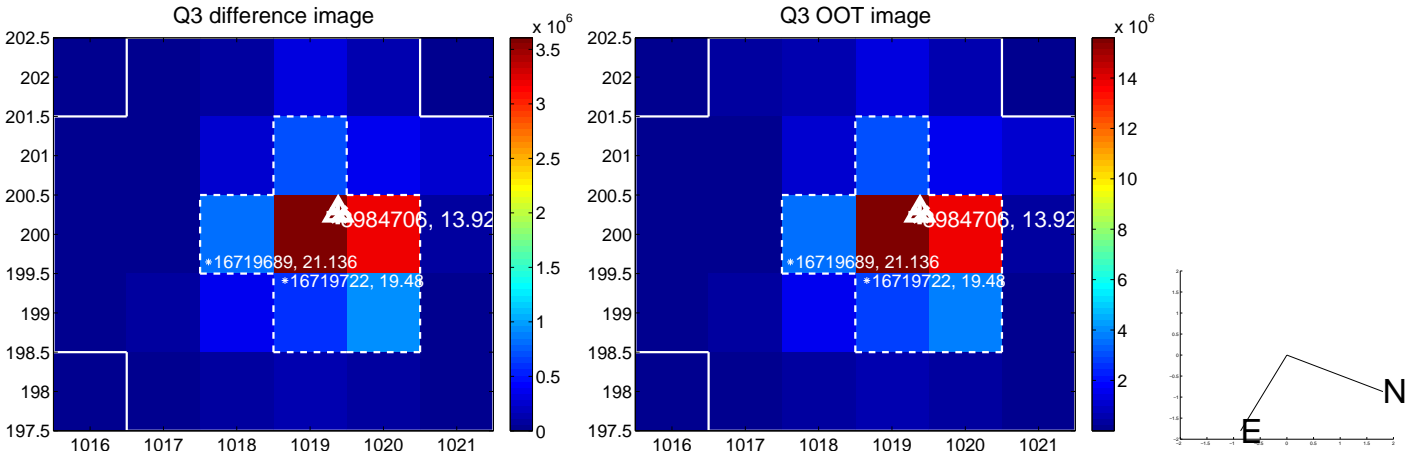
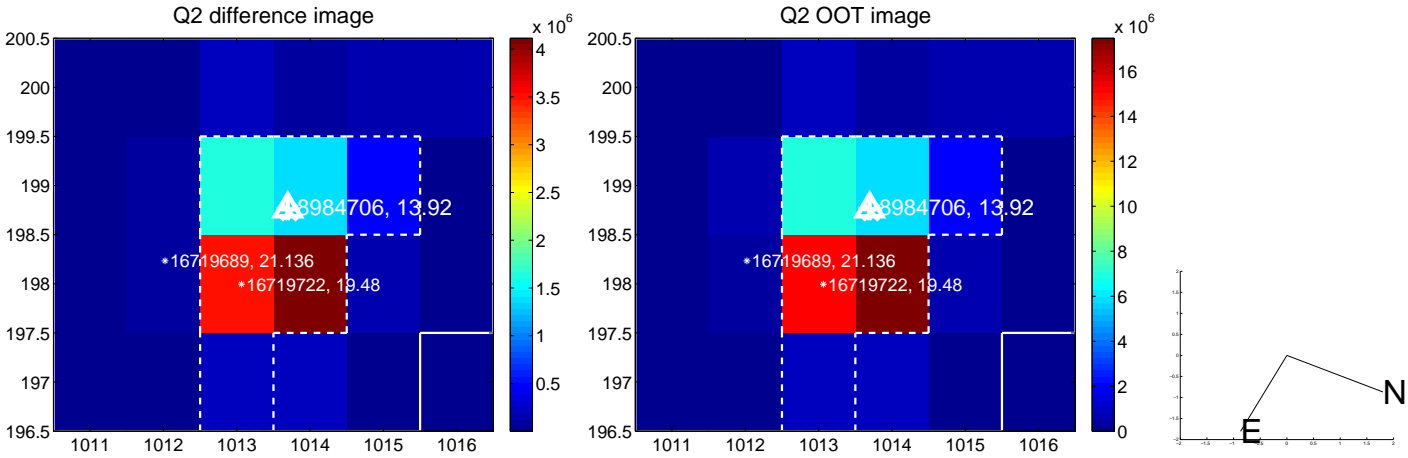
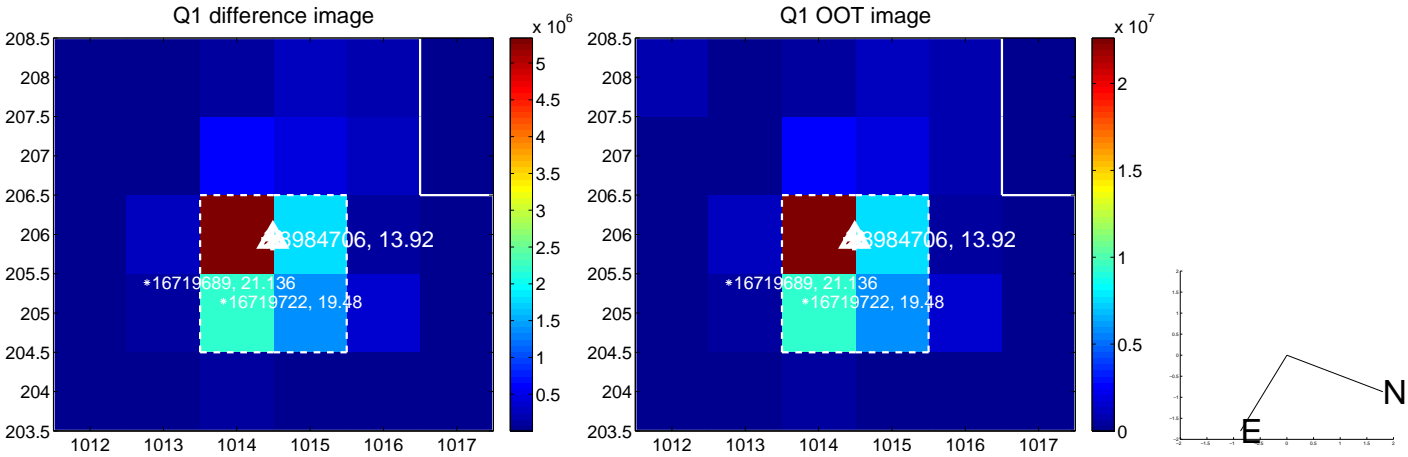
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.018 ± 0.067	0.27	-0.014 ± 0.067	0.012 ± 0.067
PRF-fit source offset from KIC position	0.100 ± 0.068	1.47	-0.021 ± 0.068	-0.098 ± 0.068
photometric centroid source offset	0.93 ± 0.00	1427.48	0.93 ± 0.00	-0.02 ± 0.00

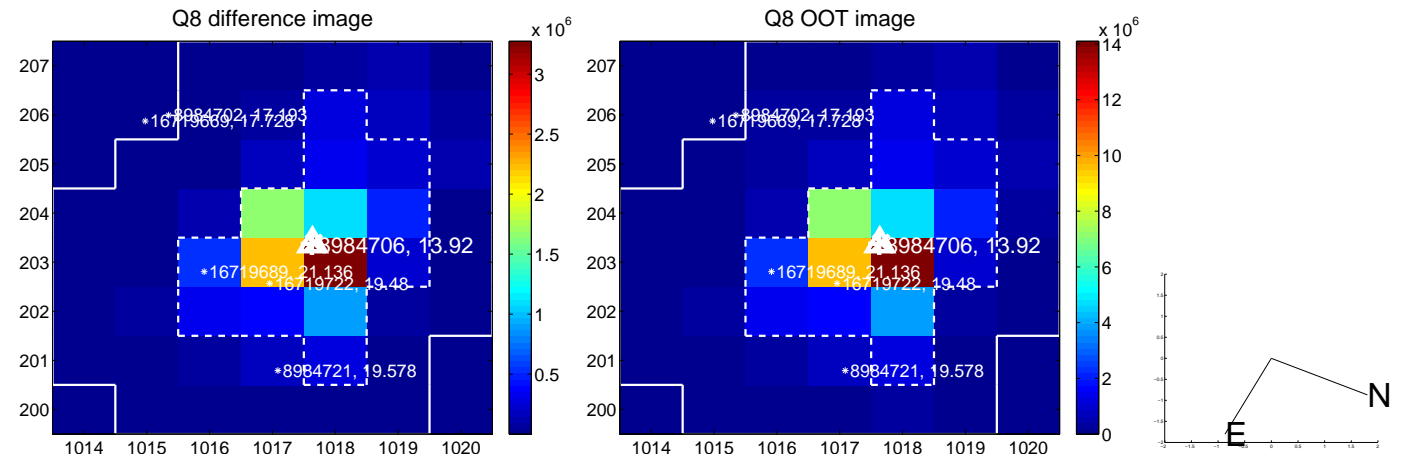
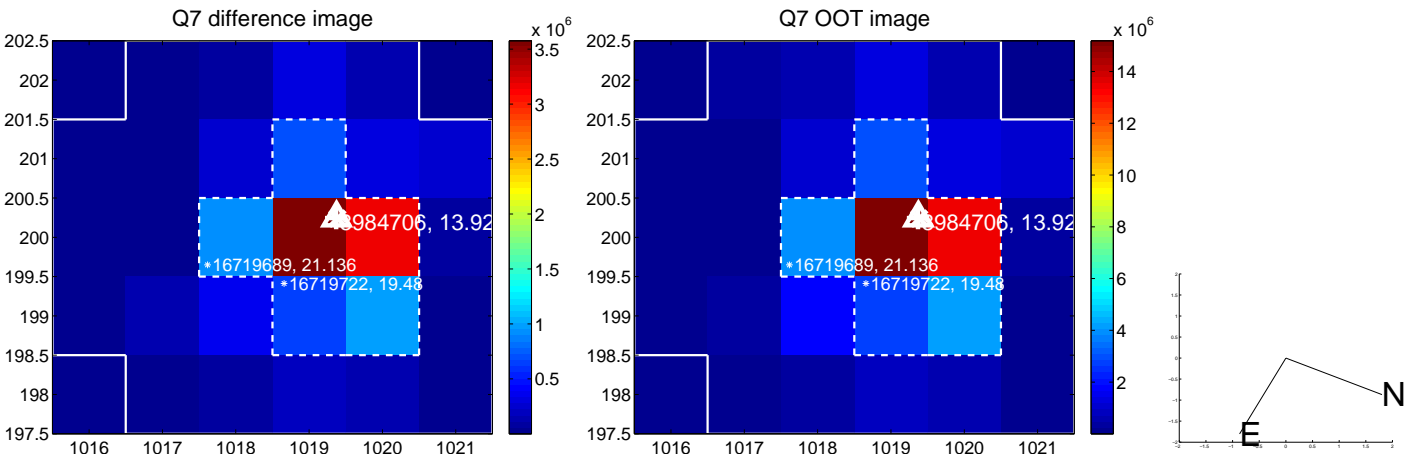
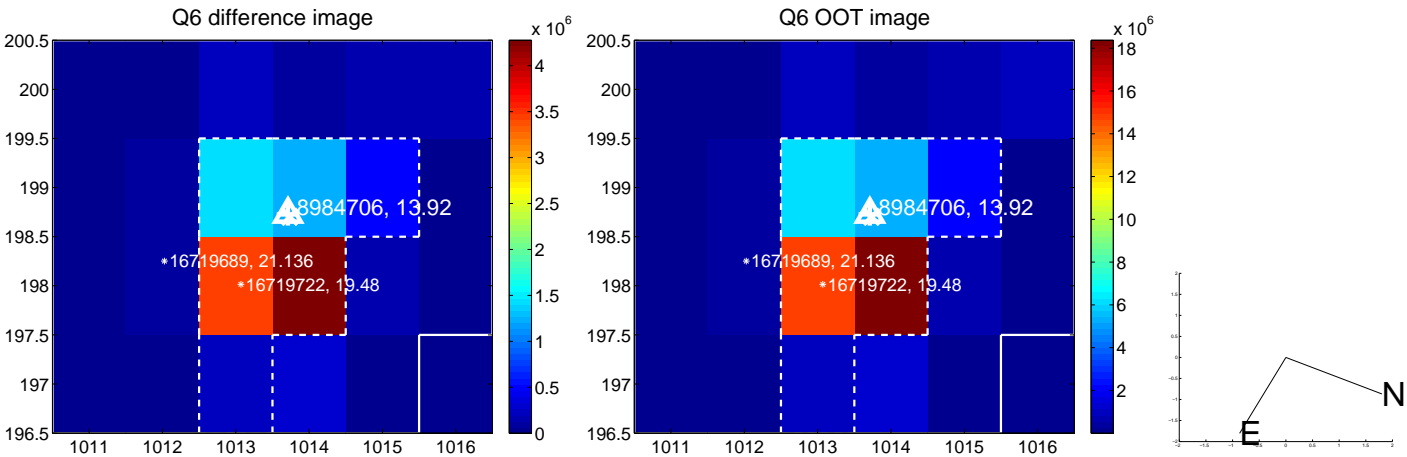
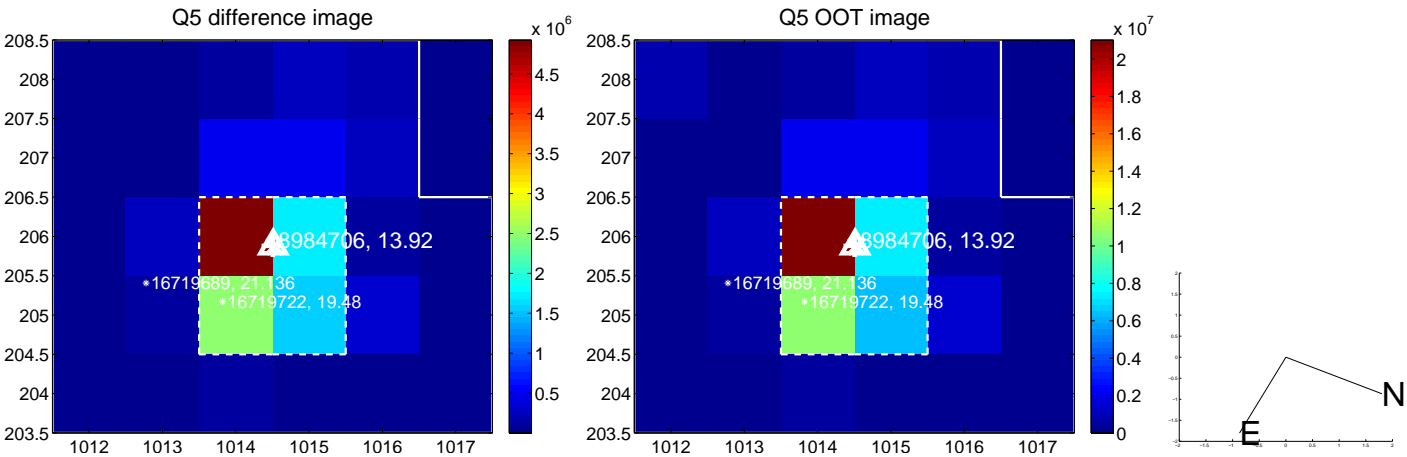


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

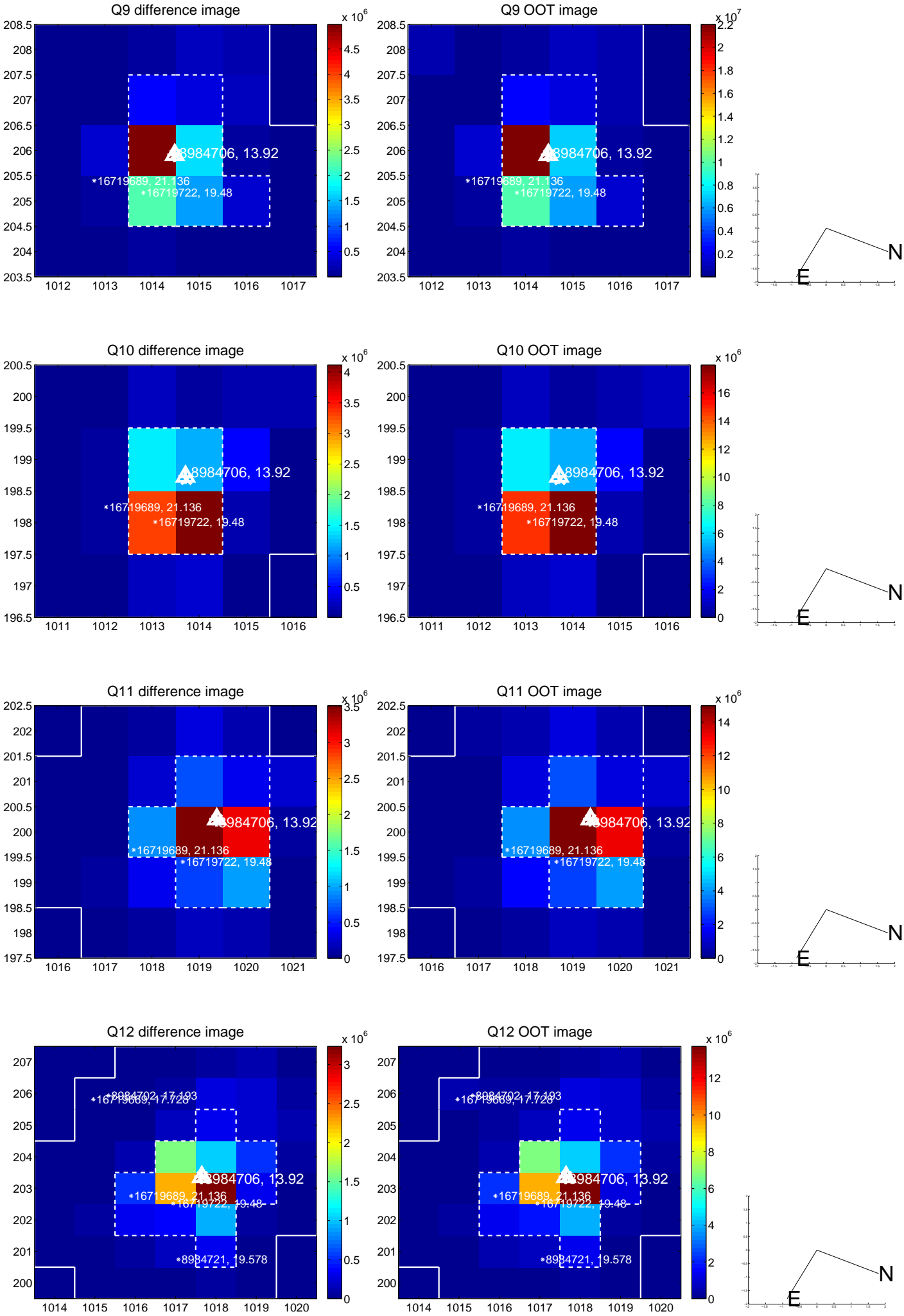
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



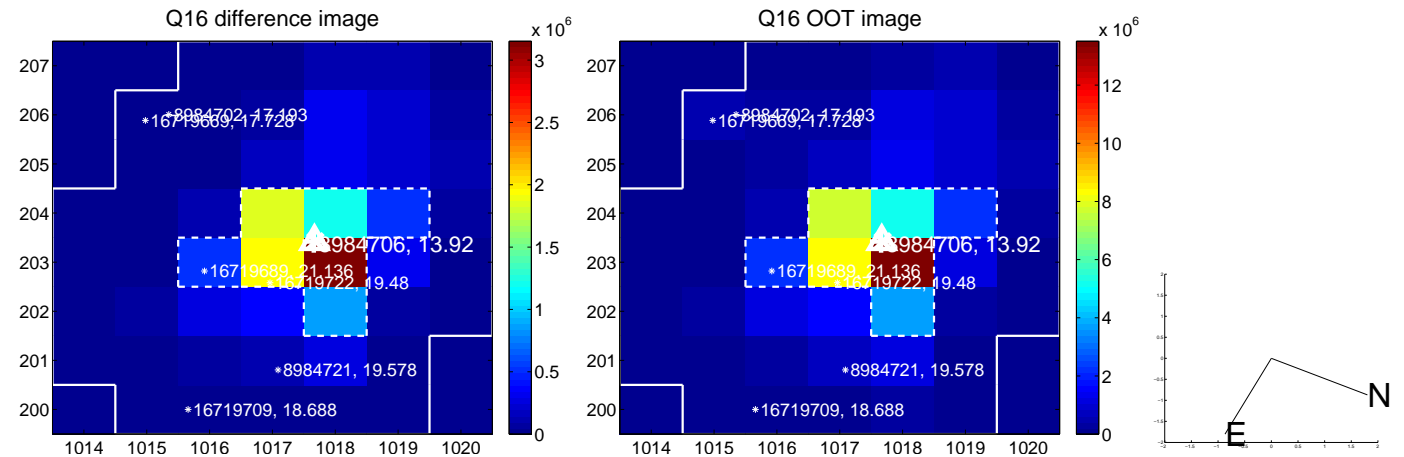
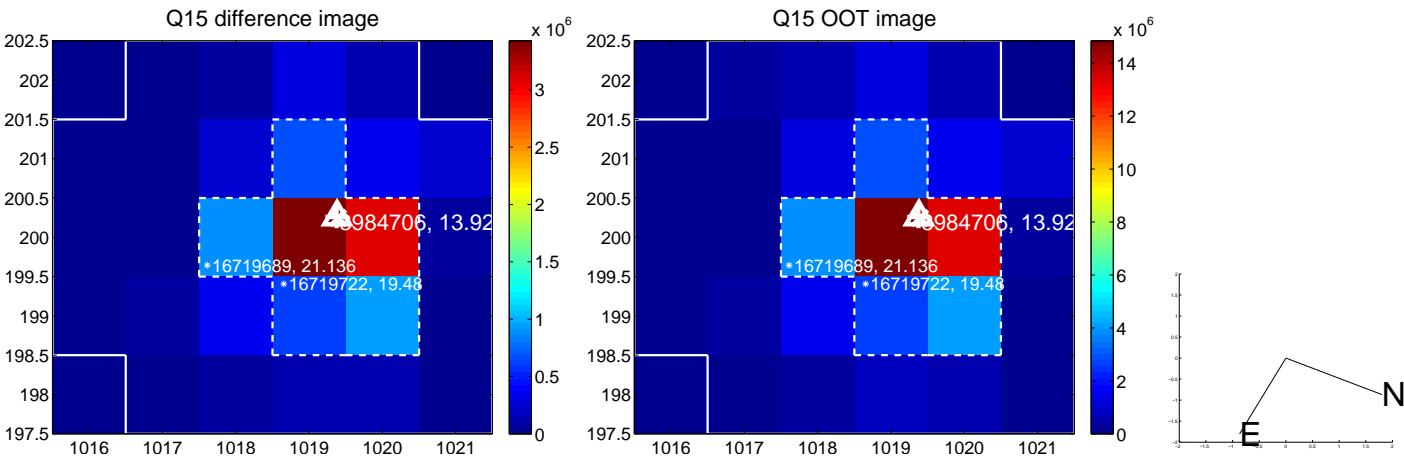
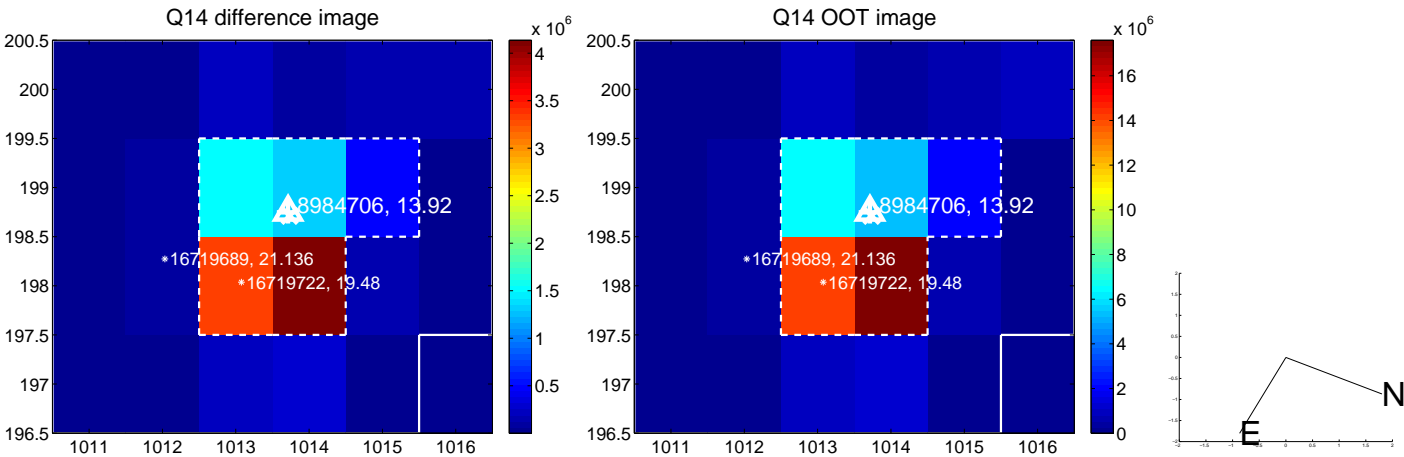
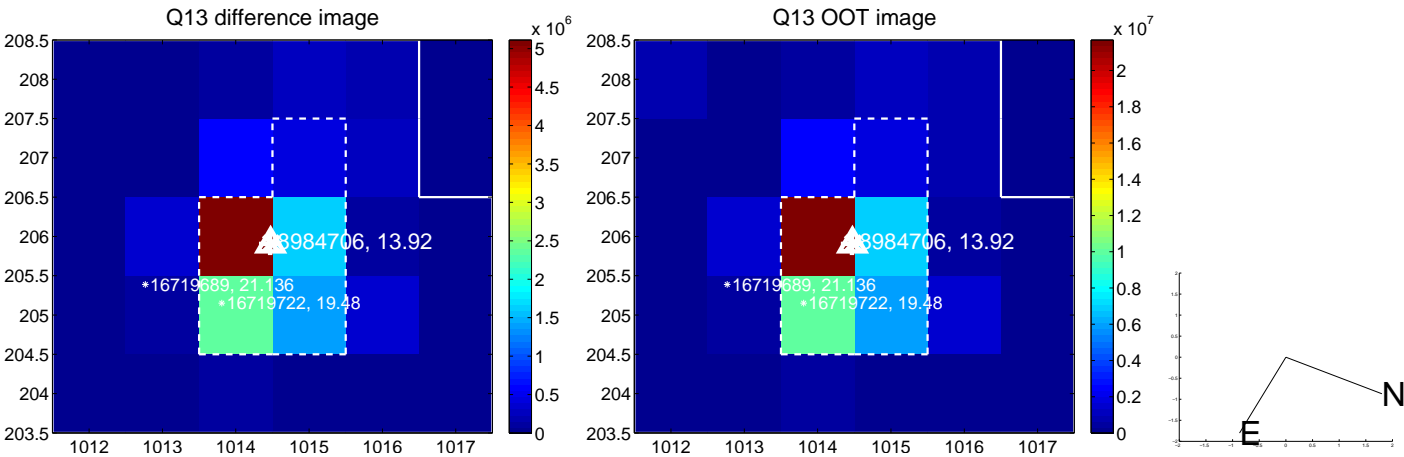
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



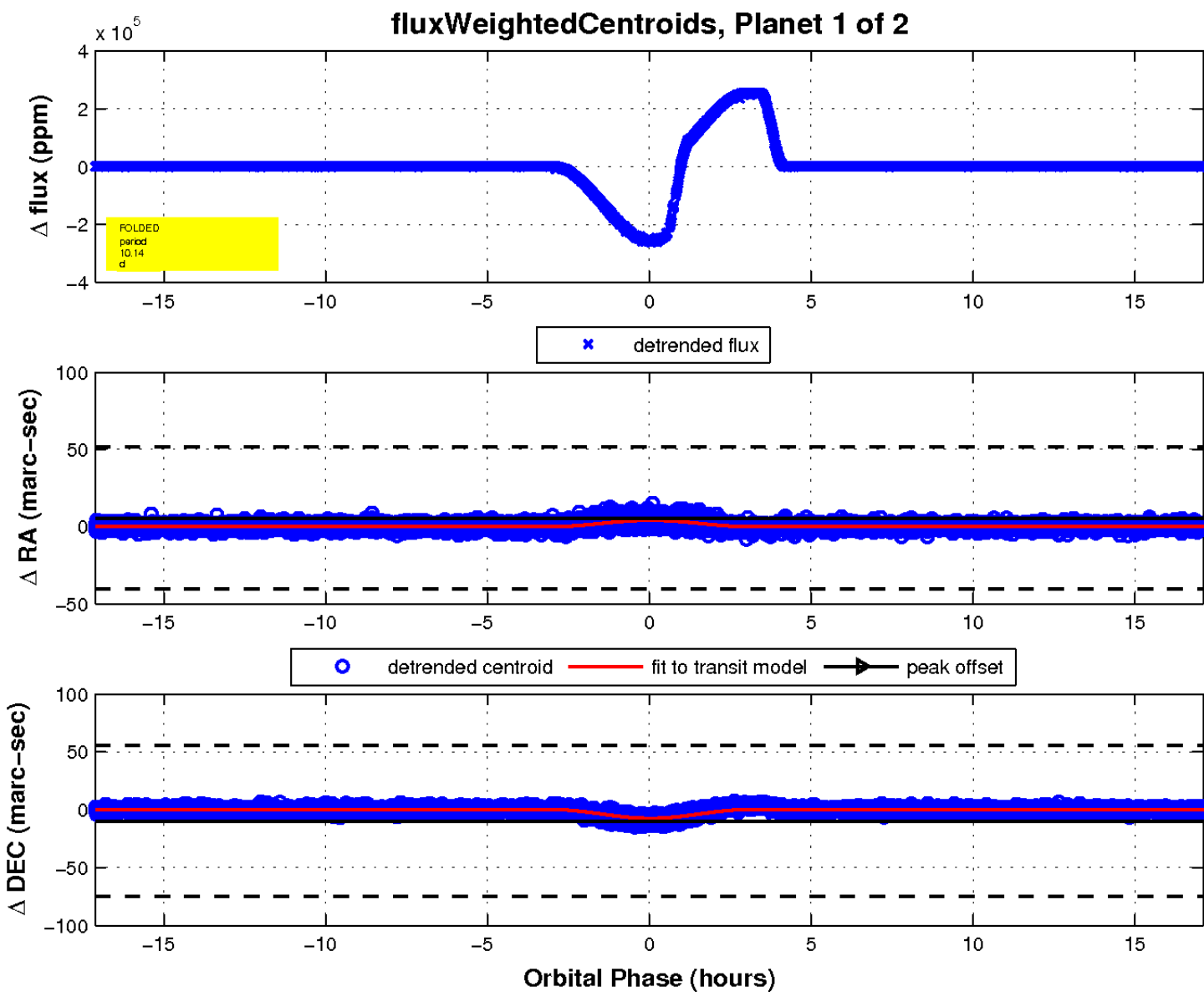
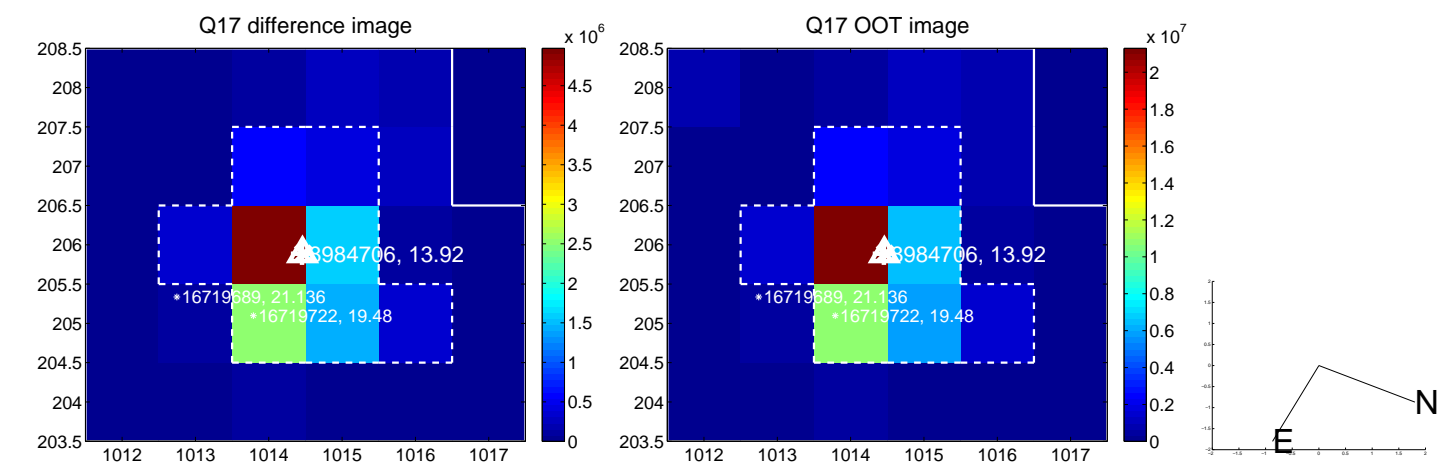
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

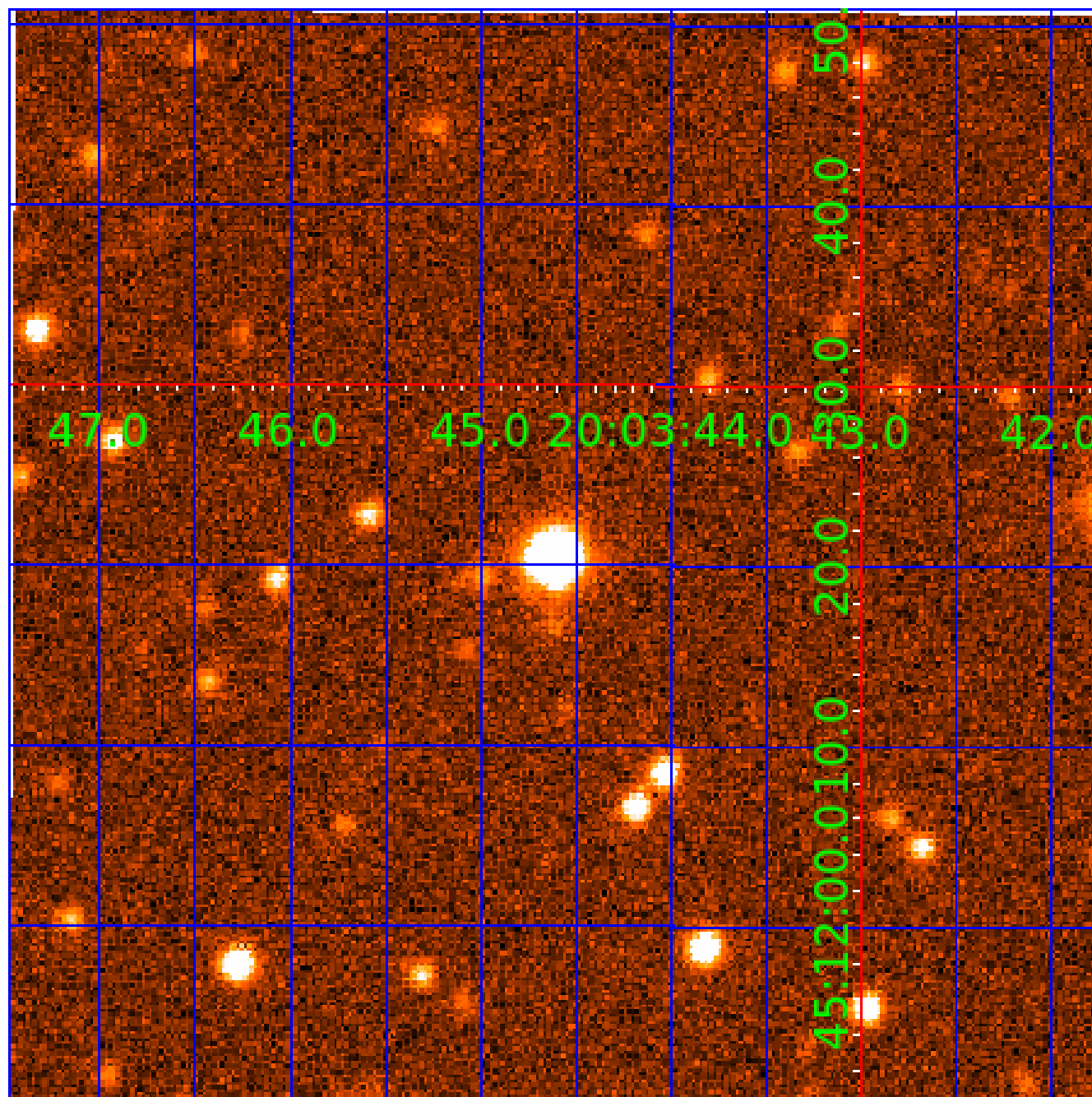


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008984706

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})
008984706-01	OBS	6190.01	10.135402	132.323847	252096.0	5.710	11667.7	6539.9	1.42	5895	87.39	271.36
008984706-02	OBS	No	5.067696	132.416882	193059.0	3.500	11692.1	-1.0	1.42	5895	62.66	683.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008984706-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—DEEP_V_SHAPED—HAS_SEC_TCE
008984706-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

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 008984706-02

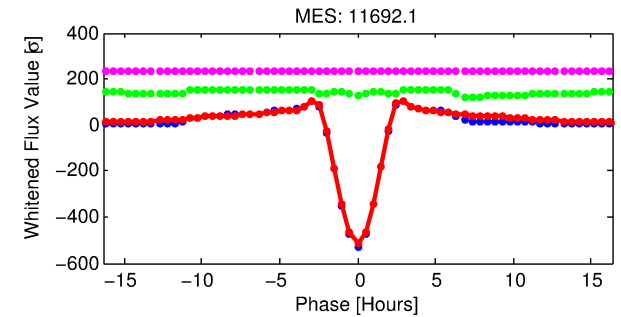
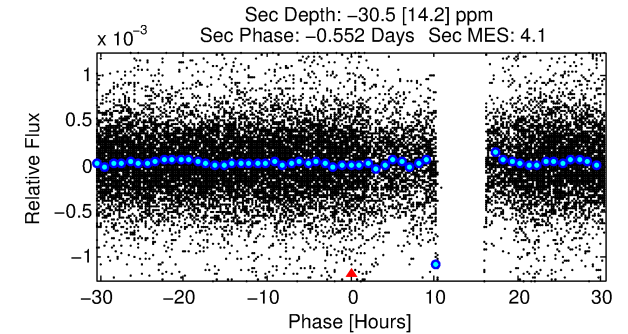
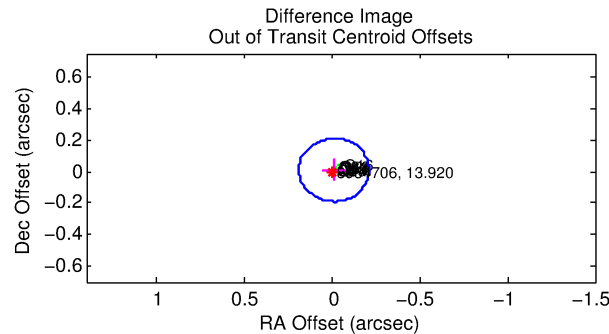
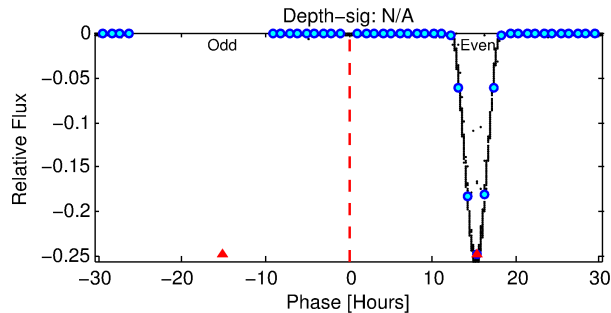
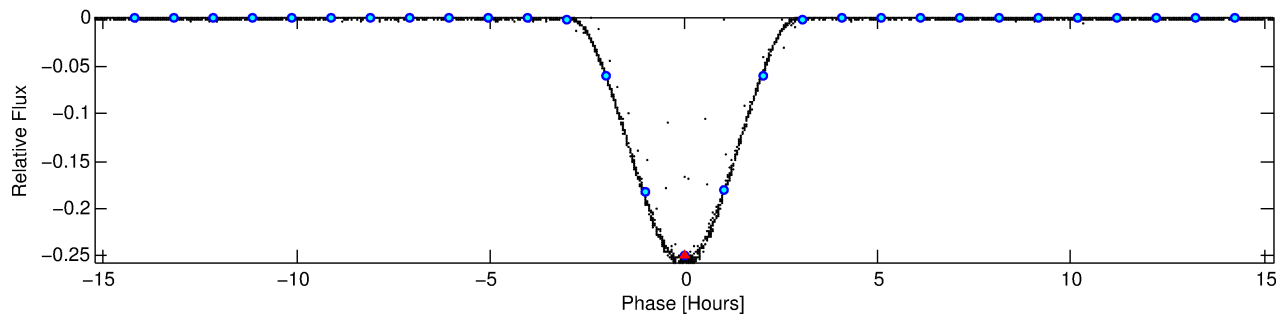
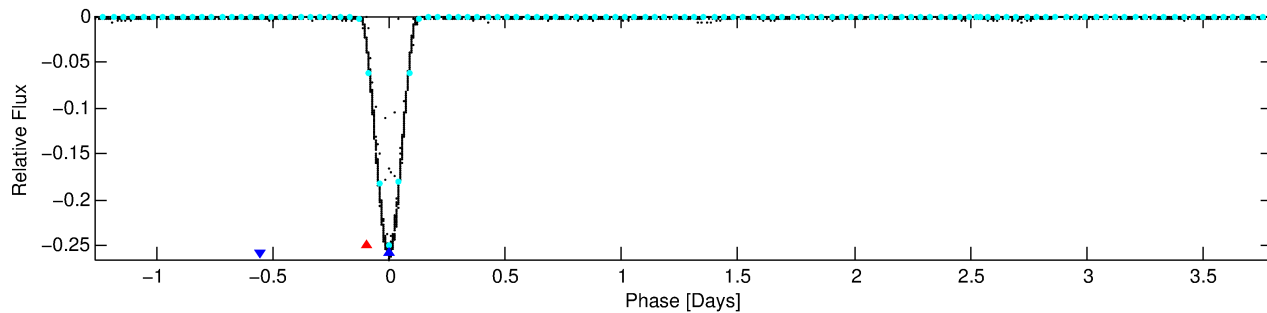
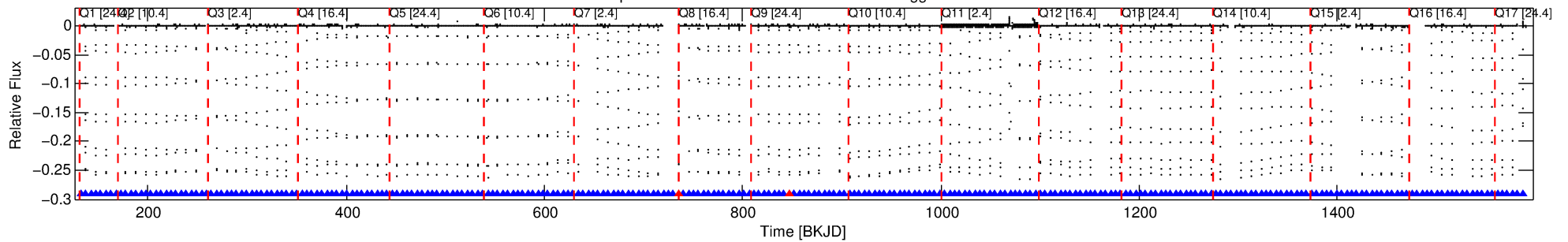
No Significant Match Found

DV One-Page Summary

KIC: 8984706 Candidate: 2 of 2 Period: 5.068 d

KOI: K06190 Corr: No Ephemeris Match

Kp: 13.92 R*: 1.42 Rs Teff: 5895.0 K Logg: 4.10 Fe/H: -0.320



TPS TCE Results:

Period = 5.06770 d
Epoch = 132.4169 BKJD

DV fit results are unavailable

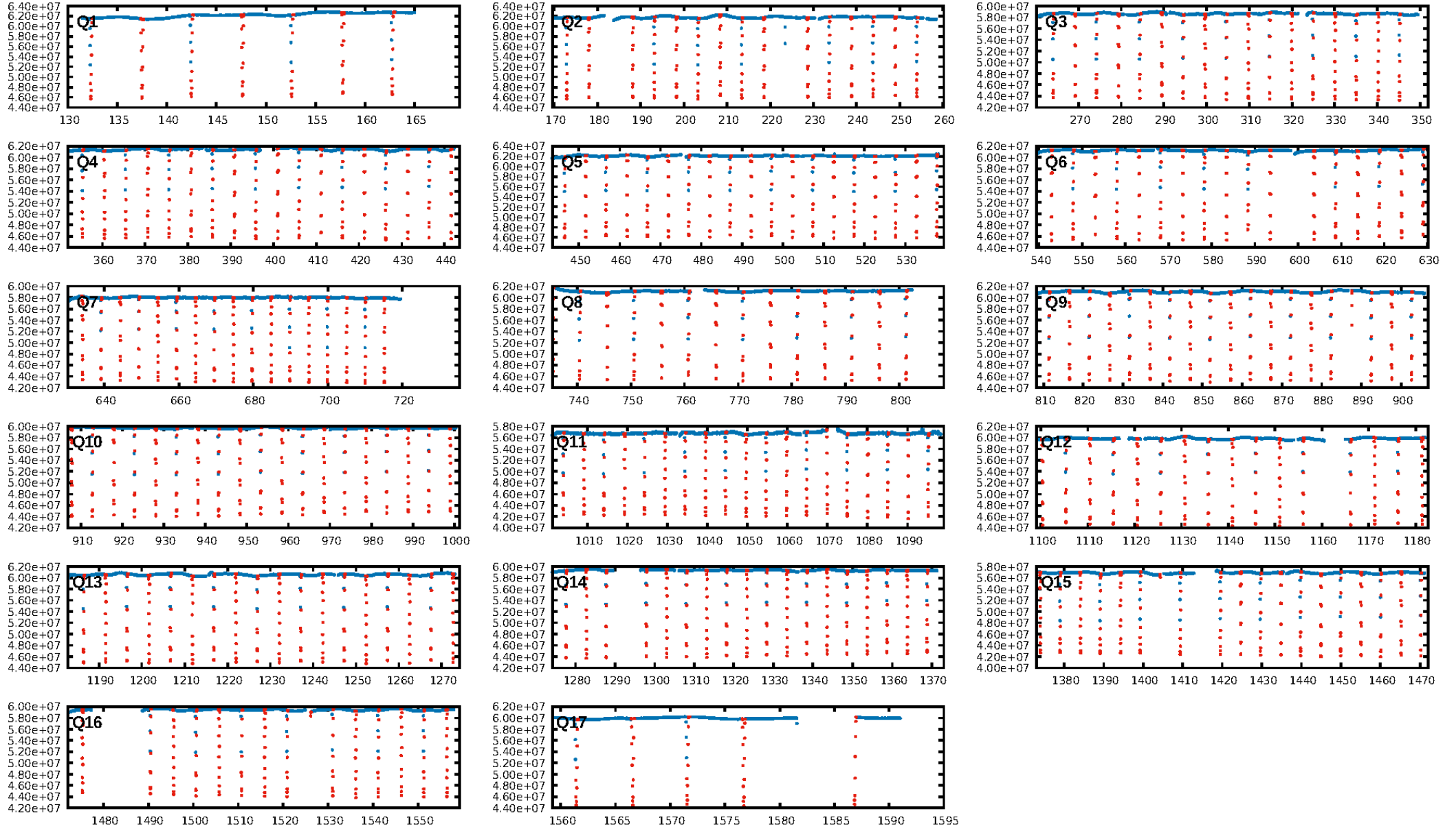
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [18.16σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.98 [126/128]
GhostDiagnostic-chr: 1.407
Centroid-sig: 0.0%
Centroid-so: 0.941 arcsec [2040.74σ]
OotOffset-rm: 0.016 arcsec [0.24σ]
KicOffset-rm: 0.100 arcsec [1.47σ]
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]

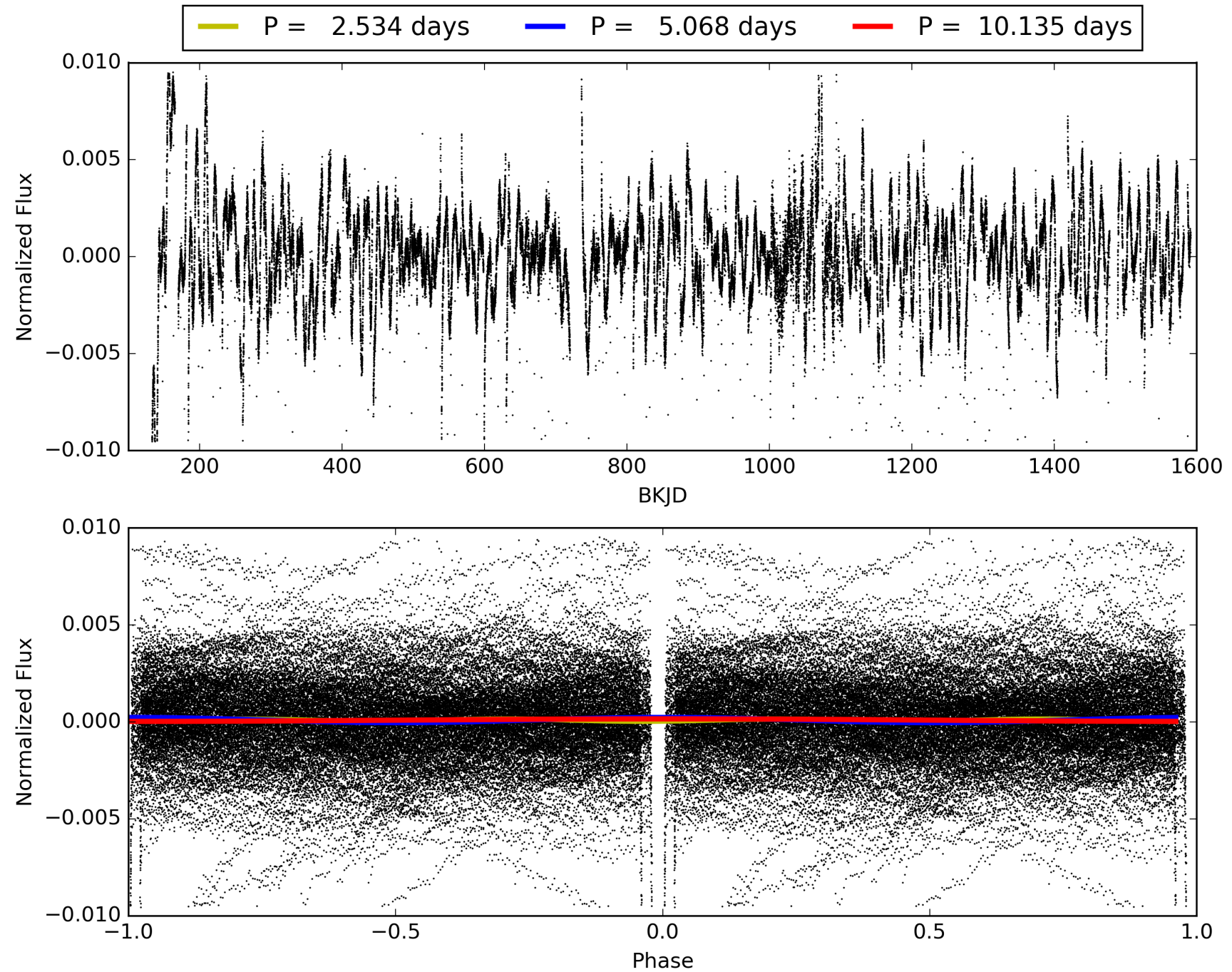
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:33:19 Z

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

TCE 008984706-02, PDC Light Curves

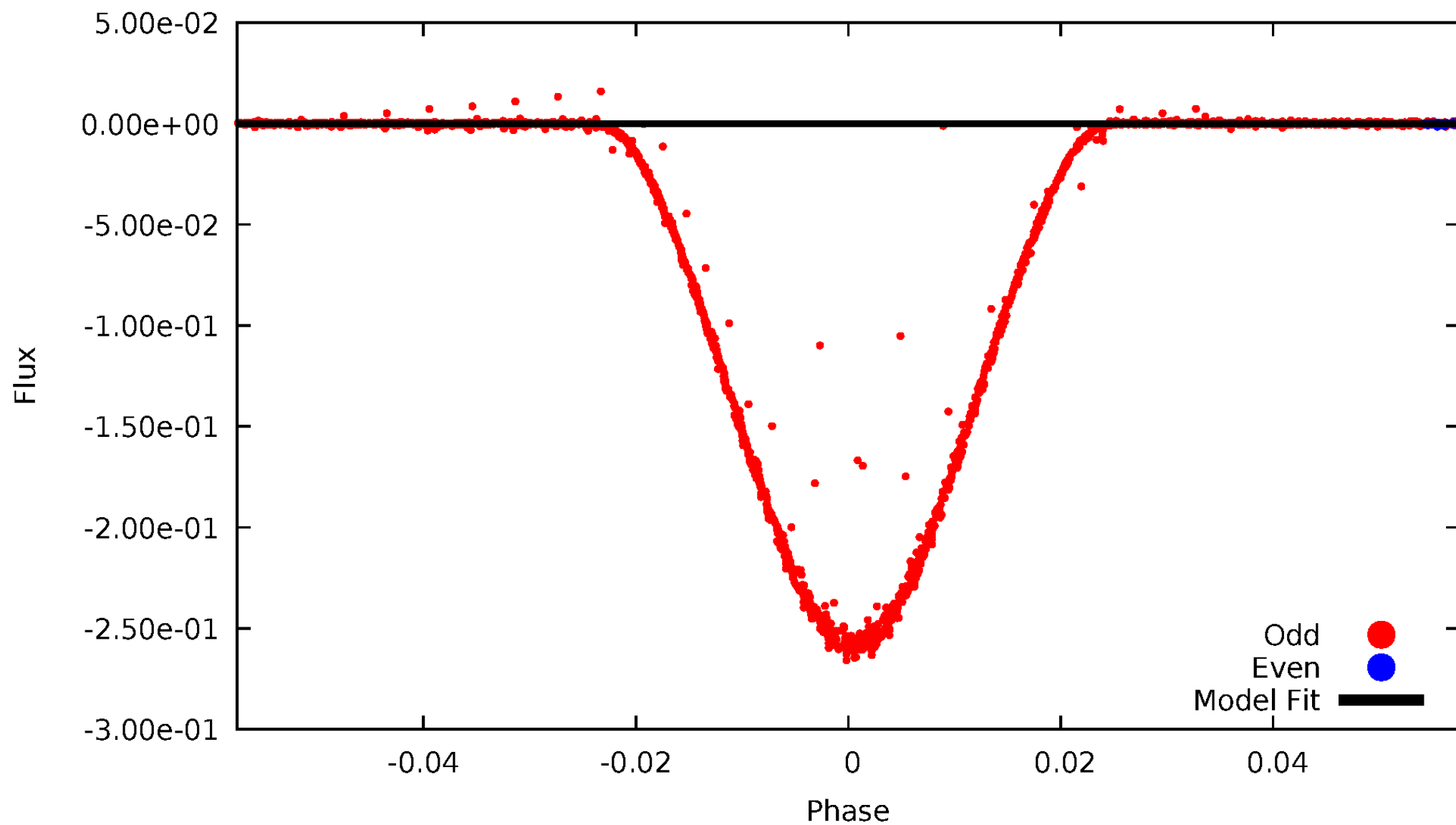


TCE 008984706-02



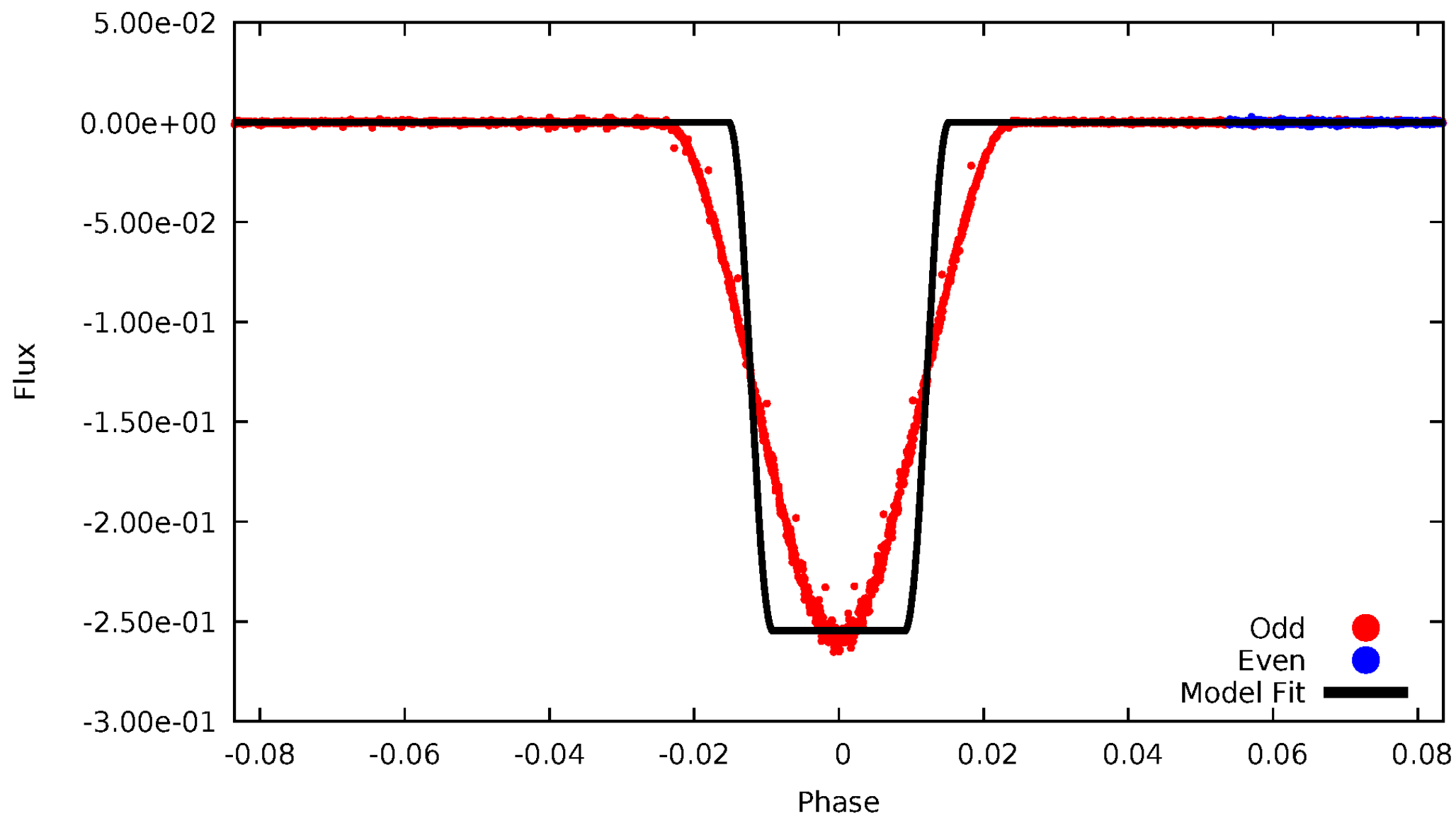
DV Odd/Even

TCE 008984706-02



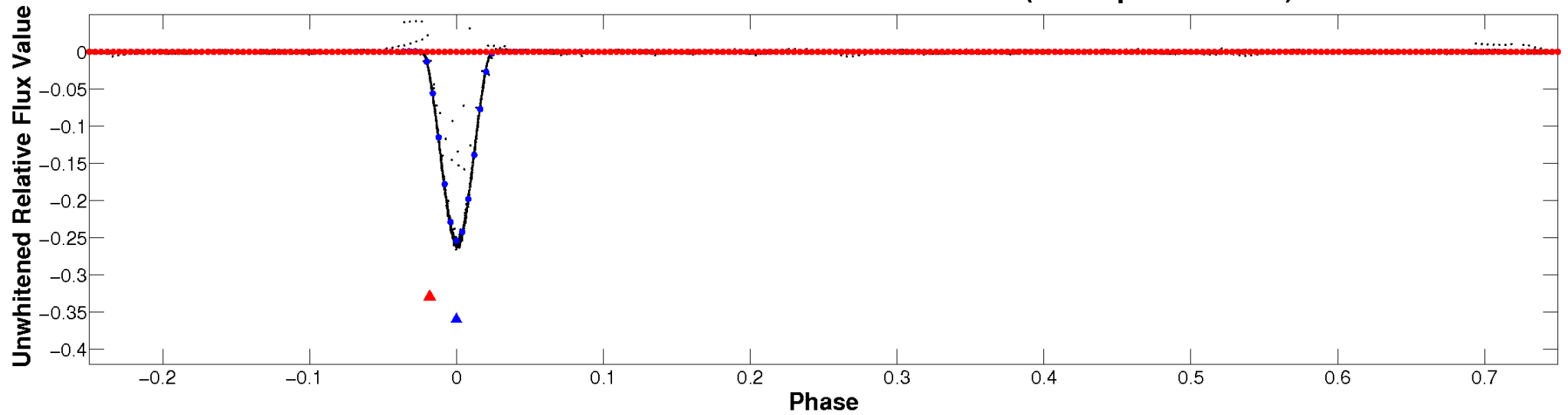
ALT Odd/Even

TCE 008984706-02

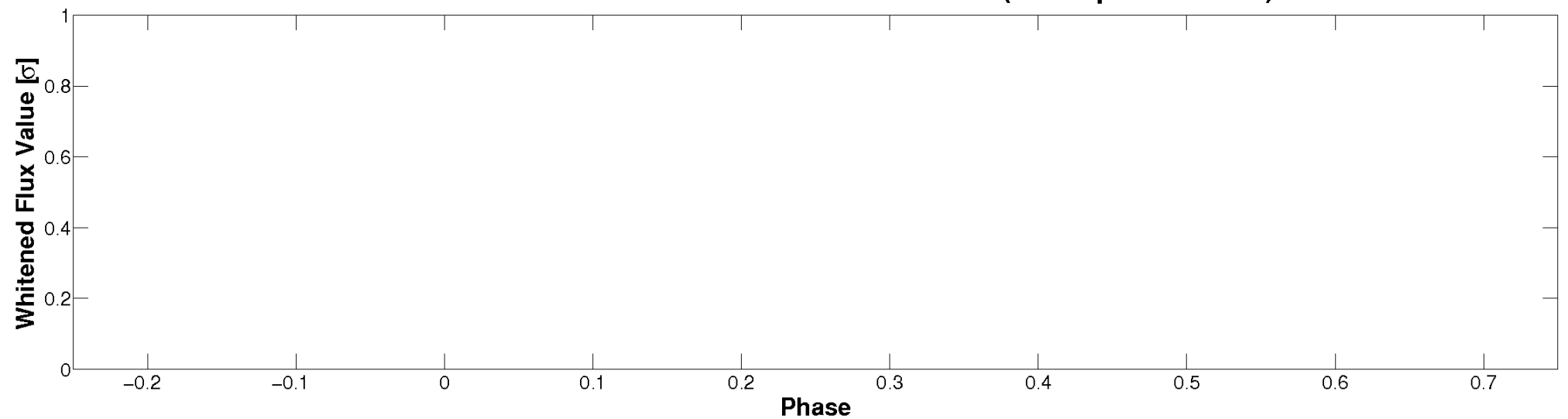


Non-Whitened Vs. Whitened Light Curve

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

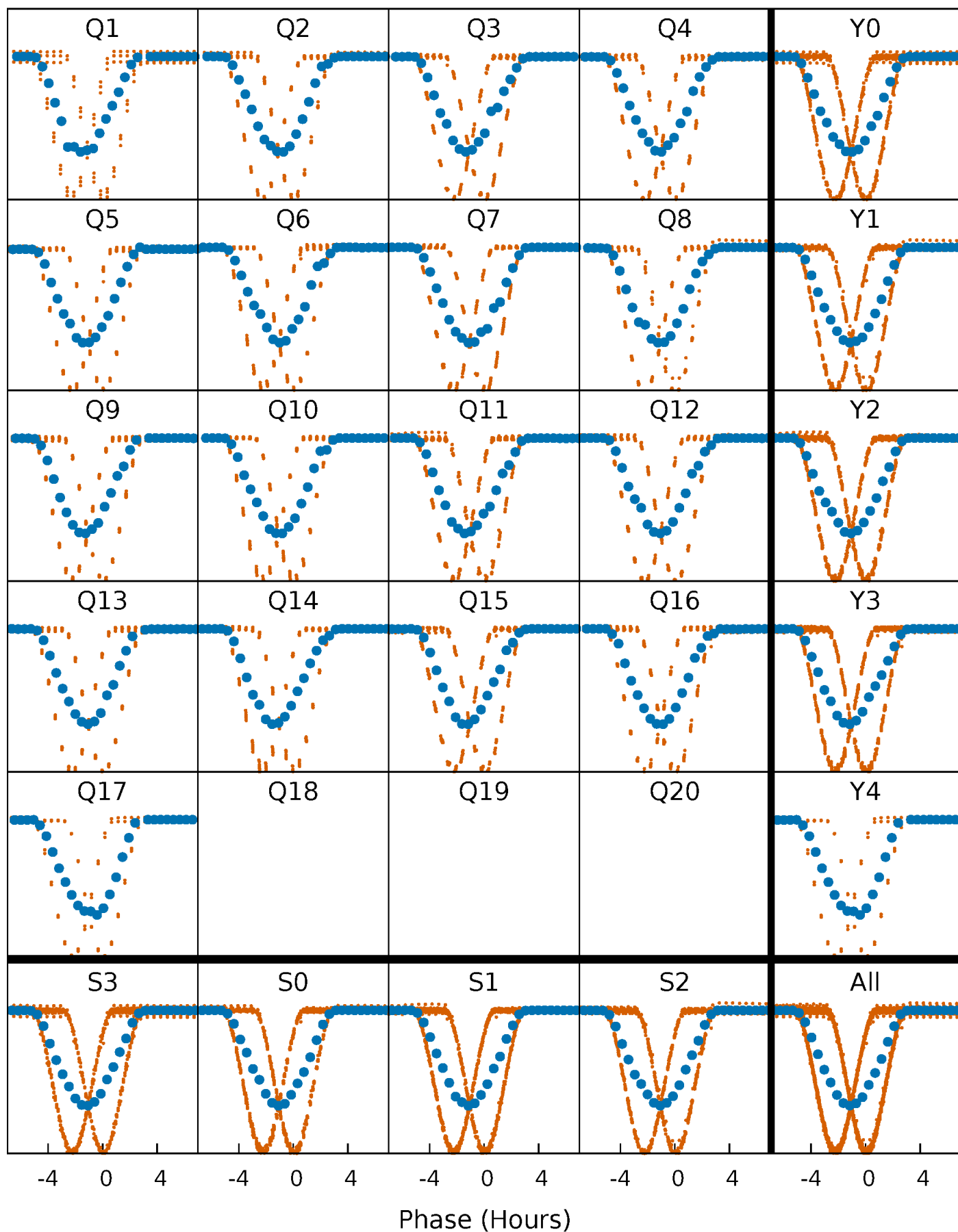


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



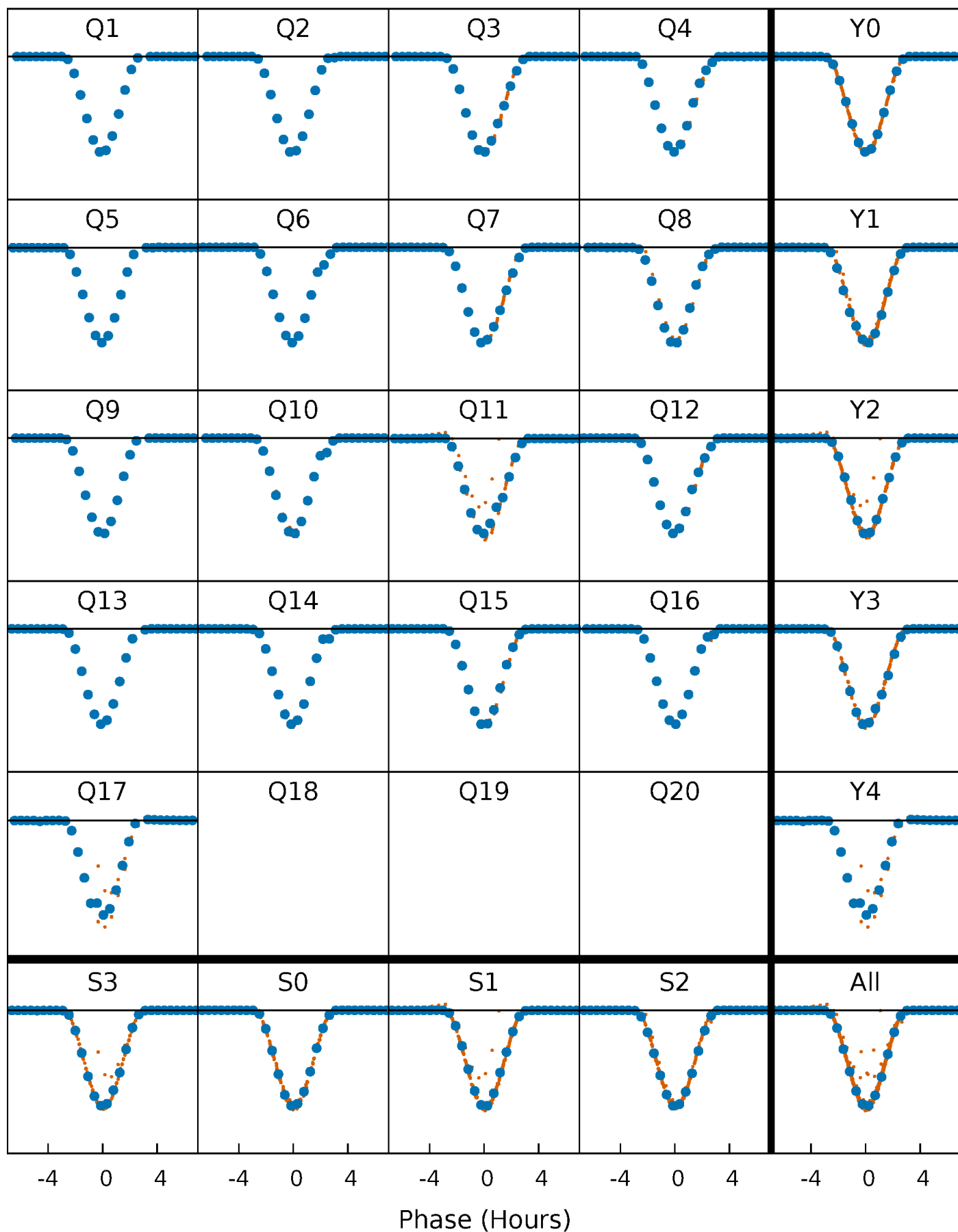
PDC Quarter-Phased Transit Curves

TCE 008984706-02 P= 5.067696 Days $T_0=132.416882$ (BKJD)



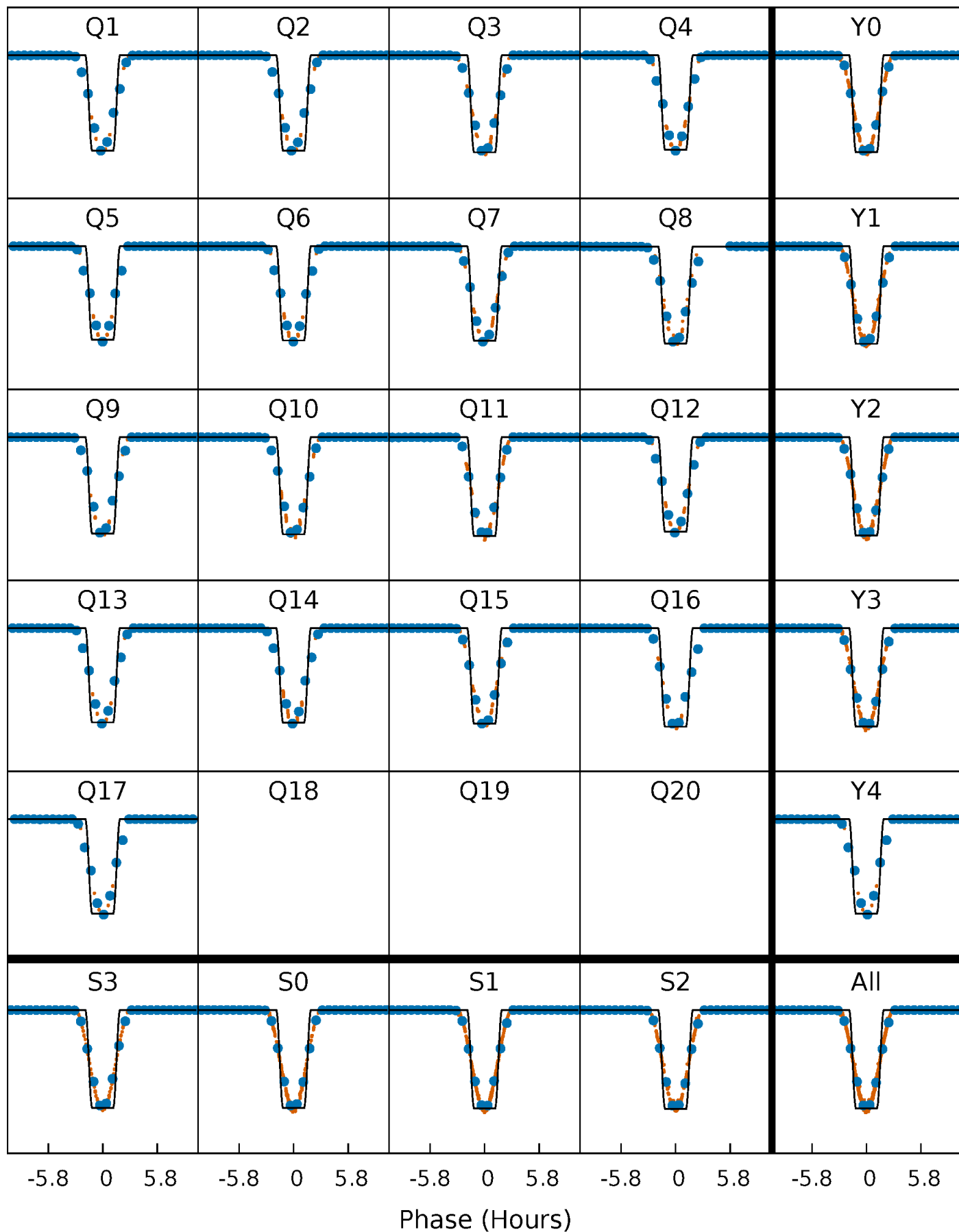
DV Quarter-Phased Transit Curves

TCE 008984706-02 P= 5.067696 Days $T_0=132.416882$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

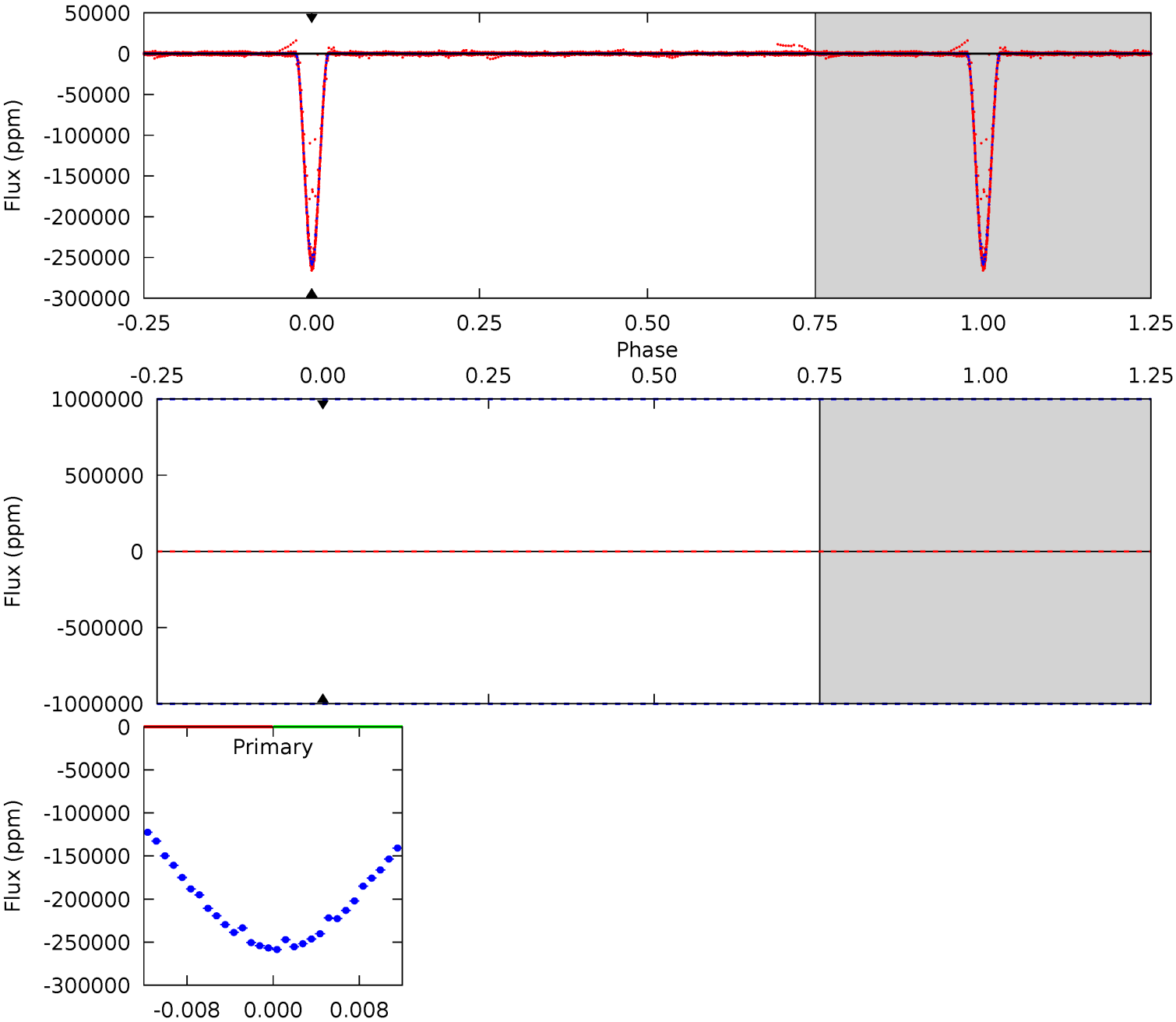
TCE 008984706-02 P= 5.067696 Days $T_0=132.419578$ (BKJD)



DV Model-Shift Uniqueness Test

008984706-02, P = 5.067696 Days, E = 127.349186 Days

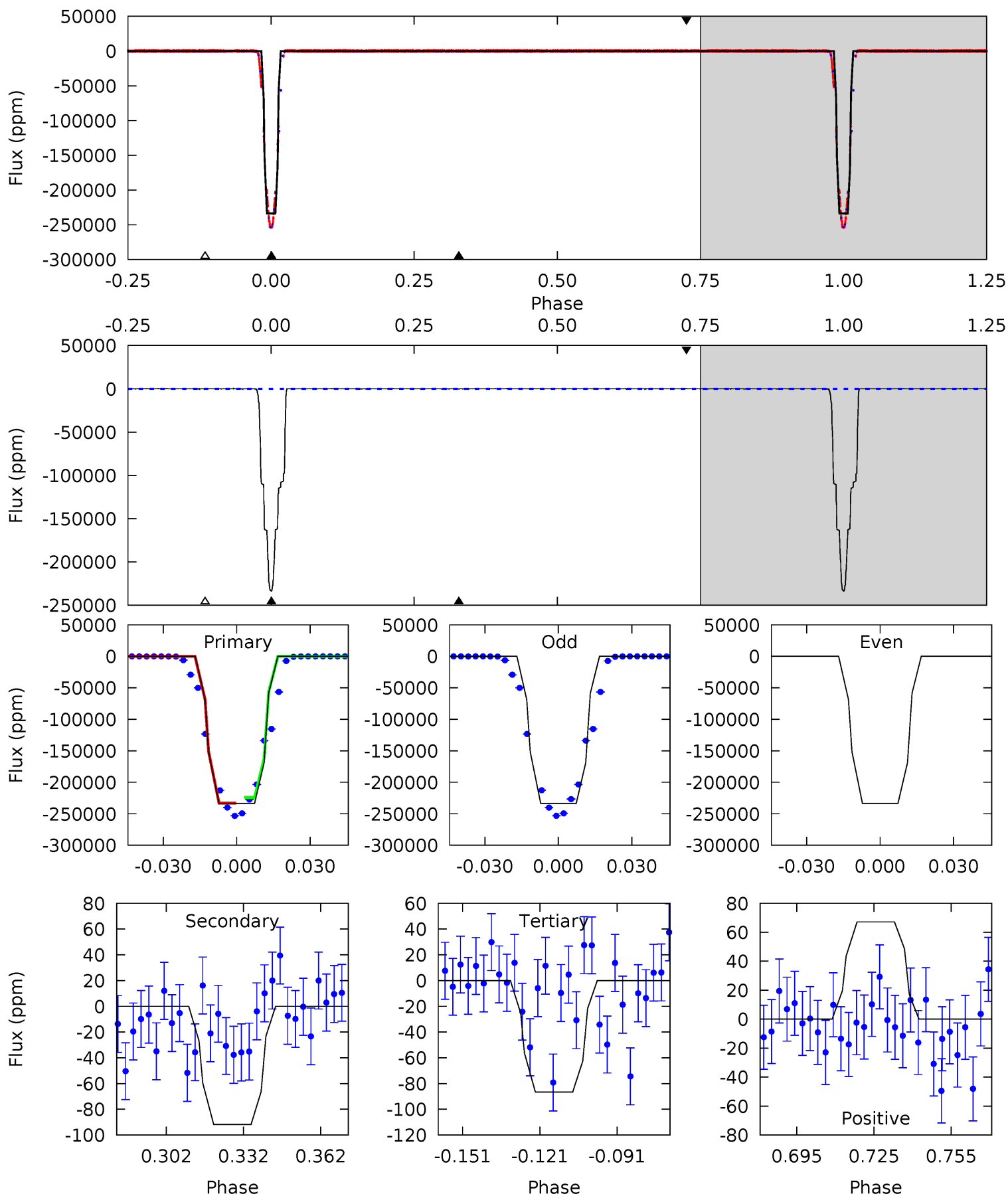
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008984706-02, P = 5.067696 Days, E = 127.351882 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11004	4.32	4.08	3.16	4.81	2.17	1.10	11000	11001	0.25	1.16	0	1.00	0.00	0



Stellar Parameters For KIC 008984706

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5895^{+175}_{-175}	$4.103^{+0.344}_{-0.159}$	$-0.320^{+0.300}_{-0.300}$	$1.415^{+0.394}_{-0.482}$	$0.926^{+0.128}_{-0.093}$	$0.460^{+1.146}_{-0.230}$
	+3%/-3%	+8%/-4%	+94%/-94%	+28%/-34%	+14%/-10%	+249%/-50%
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 008984706-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$60.93^{+18.74}_{-18.58}$	1804^{+141}_{-188}	3240^{+2224}_{-8431}	$3.692^{+57.243}_{-47.701}$
Alt.	-92 ± 21	$74.14^{+22.41}_{-19.57}$	1805^{+133}_{-171}	-2342^{+120}_{-94}	$0.029^{+0.027}_{-0.013}$

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

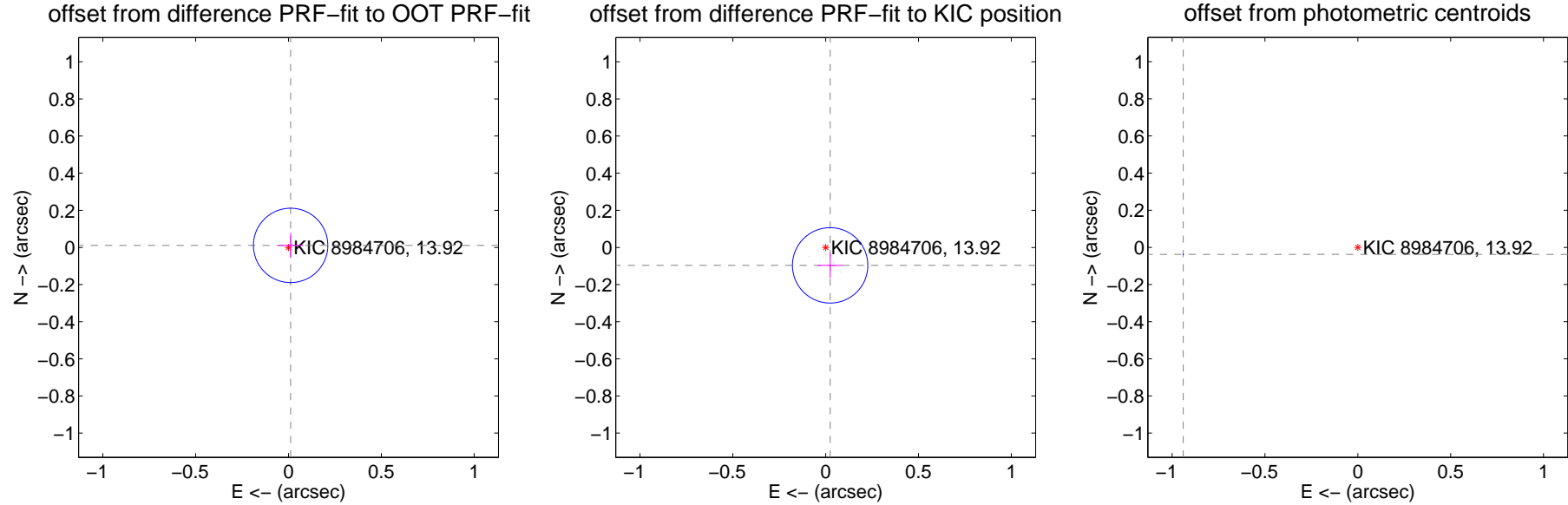
DV Centroid Data

Supplemental centroid analysis for 008984706-02. Kepler magnitude: 13.92. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

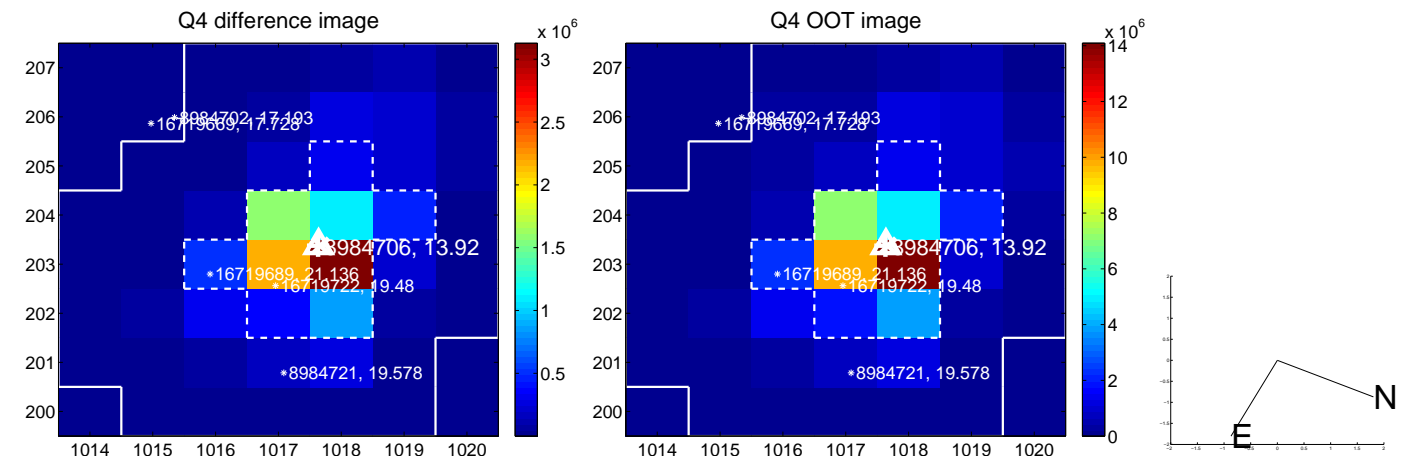
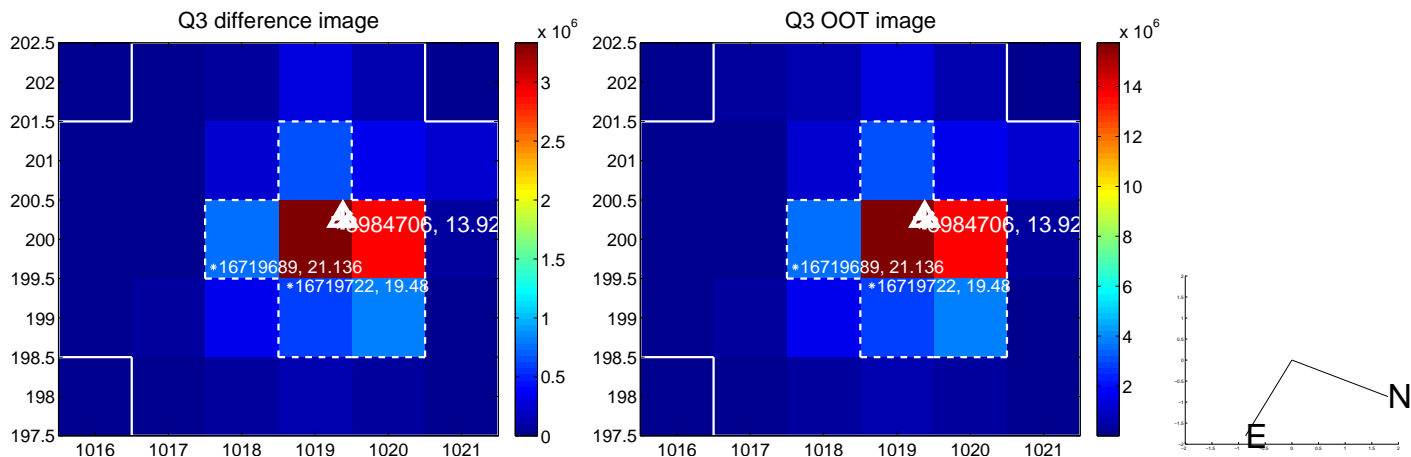
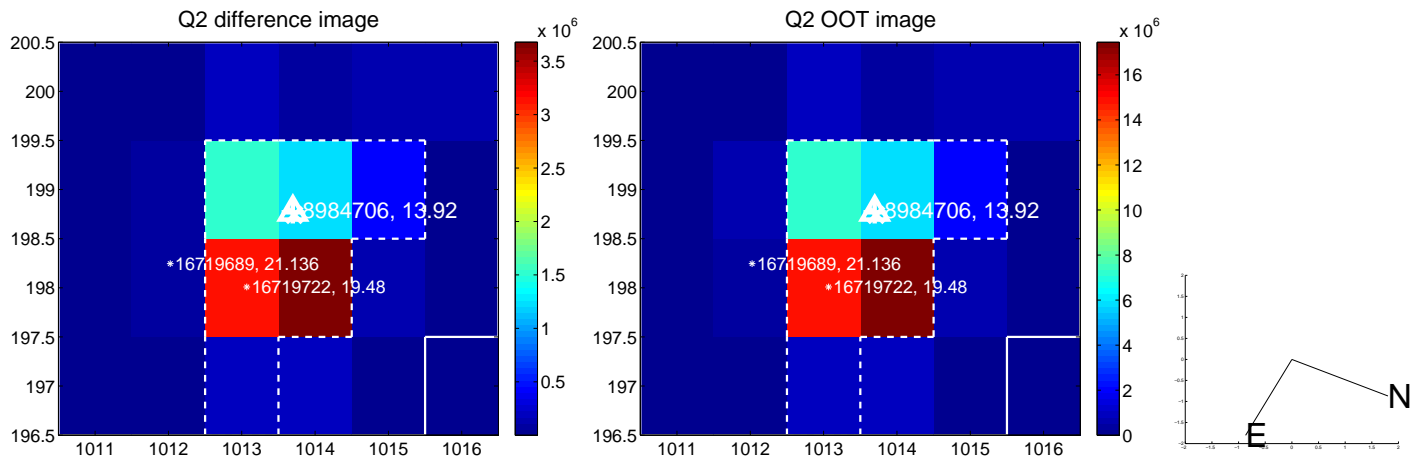
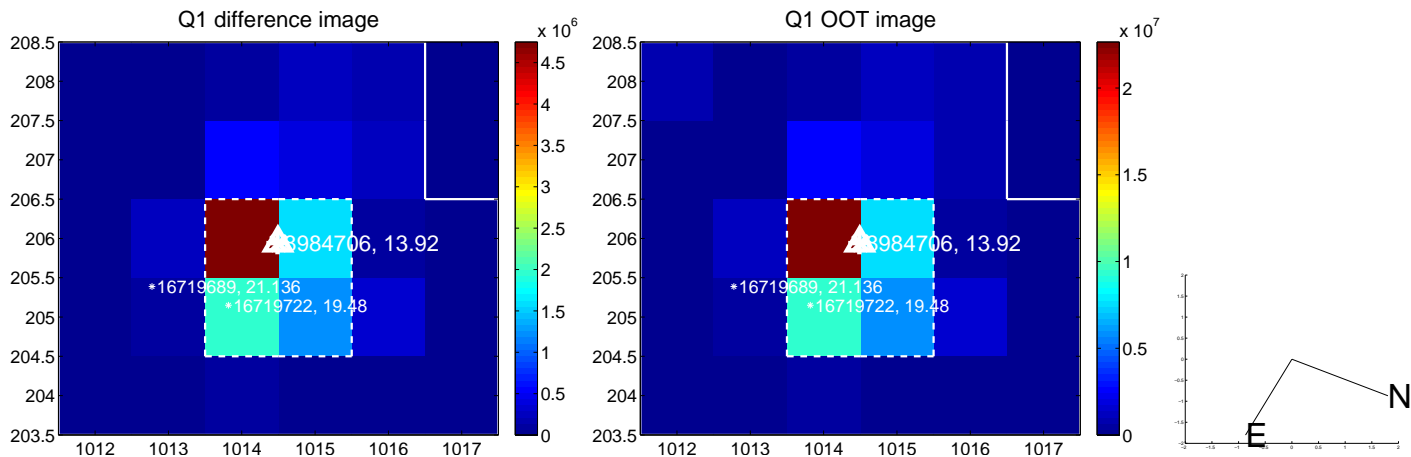
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.016 ± 0.067	0.24	-0.011 ± 0.067	0.011 ± 0.067
PRF-fit source offset from KIC position	0.100 ± 0.068	1.47	-0.024 ± 0.068	-0.097 ± 0.067
photometric centroid source offset	0.94 ± 0.00	2040.74	0.94 ± 0.00	-0.04 ± 0.00

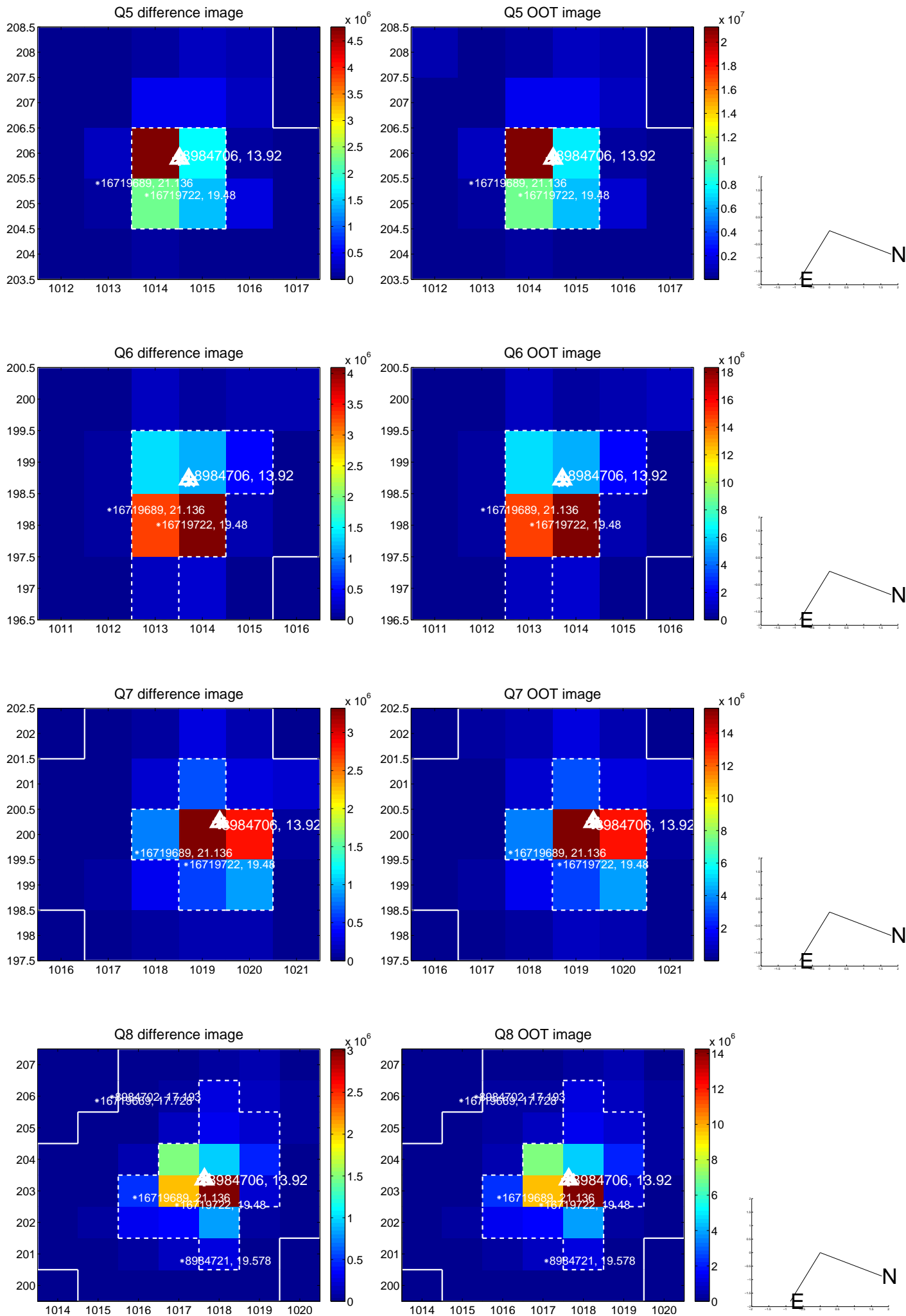


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

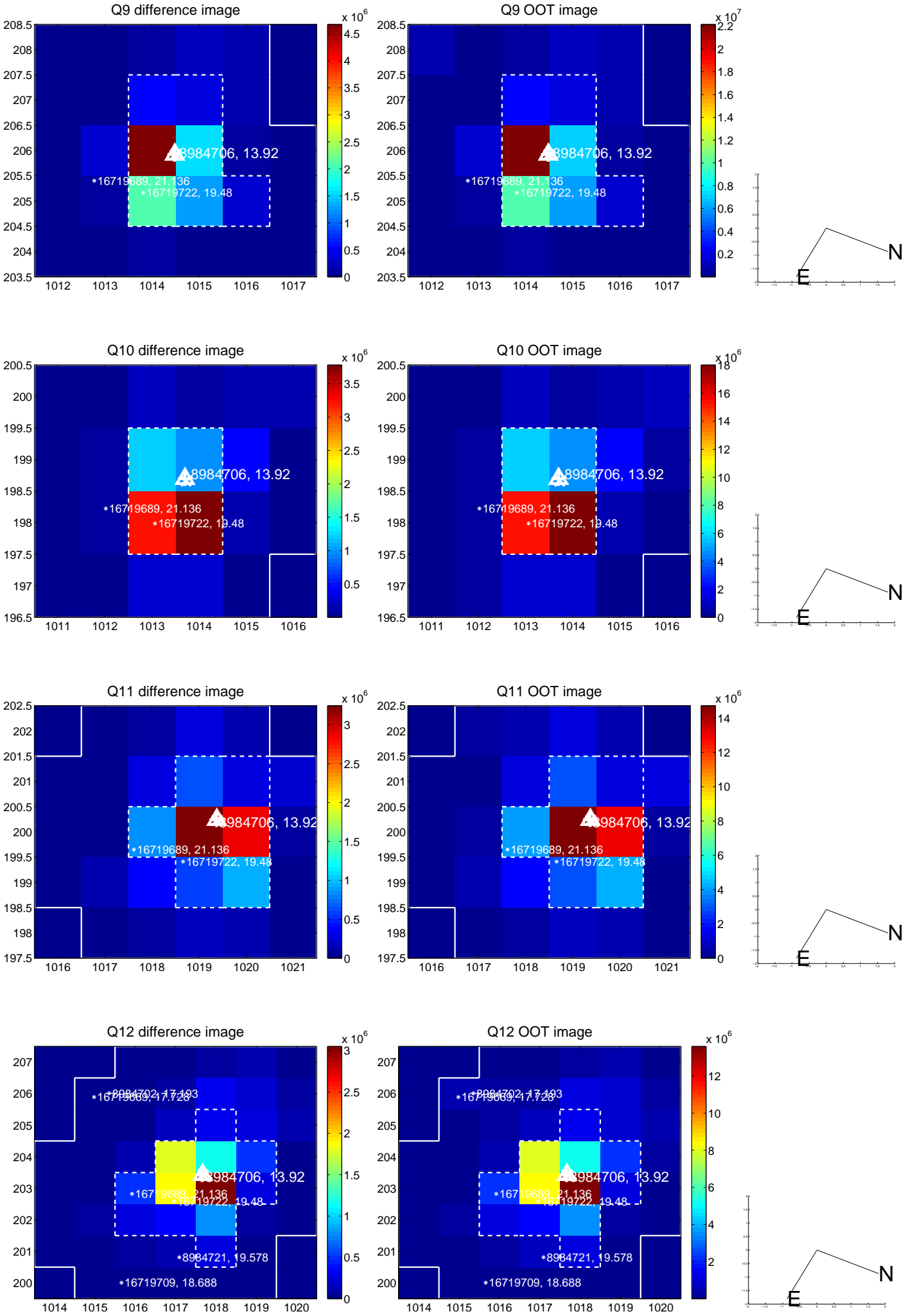
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



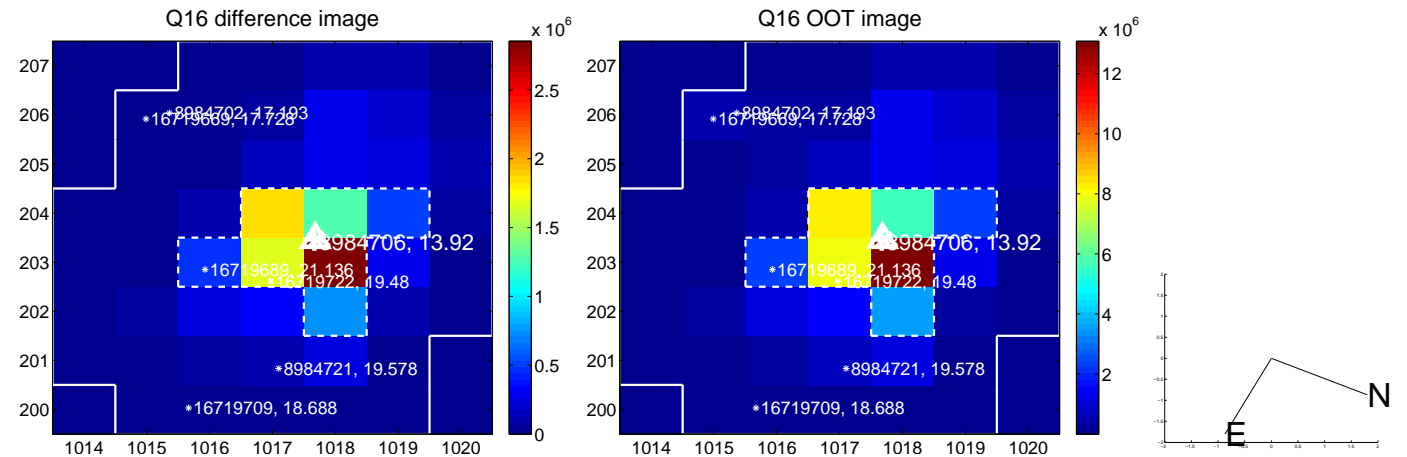
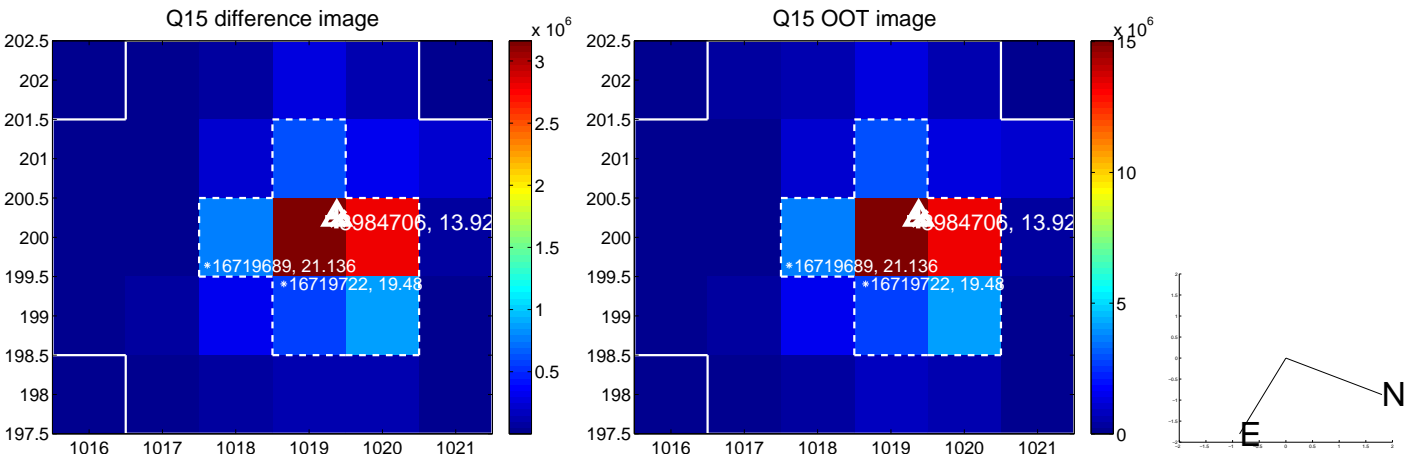
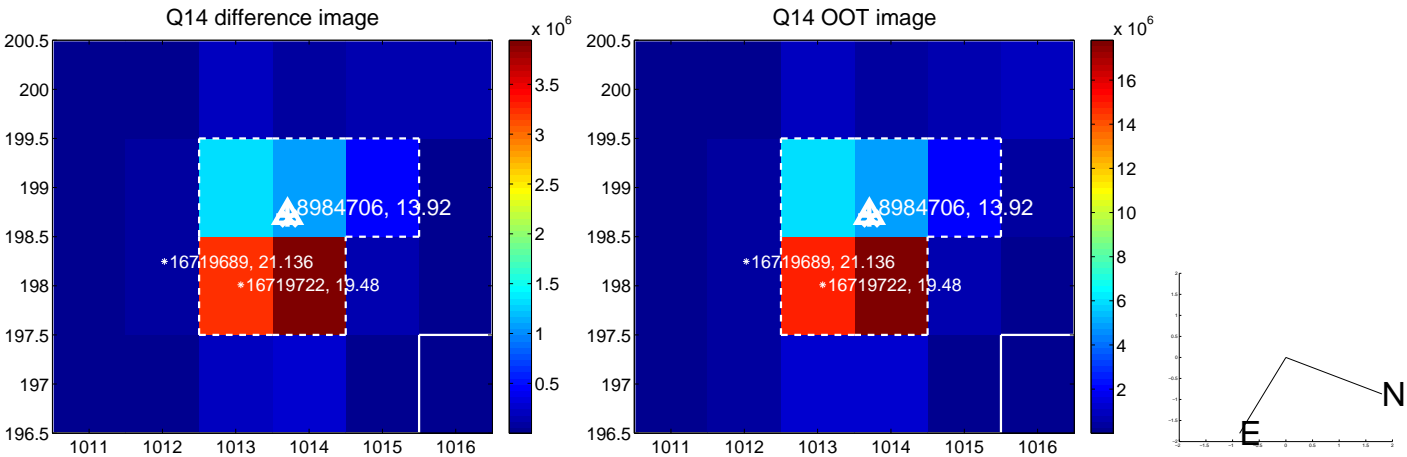
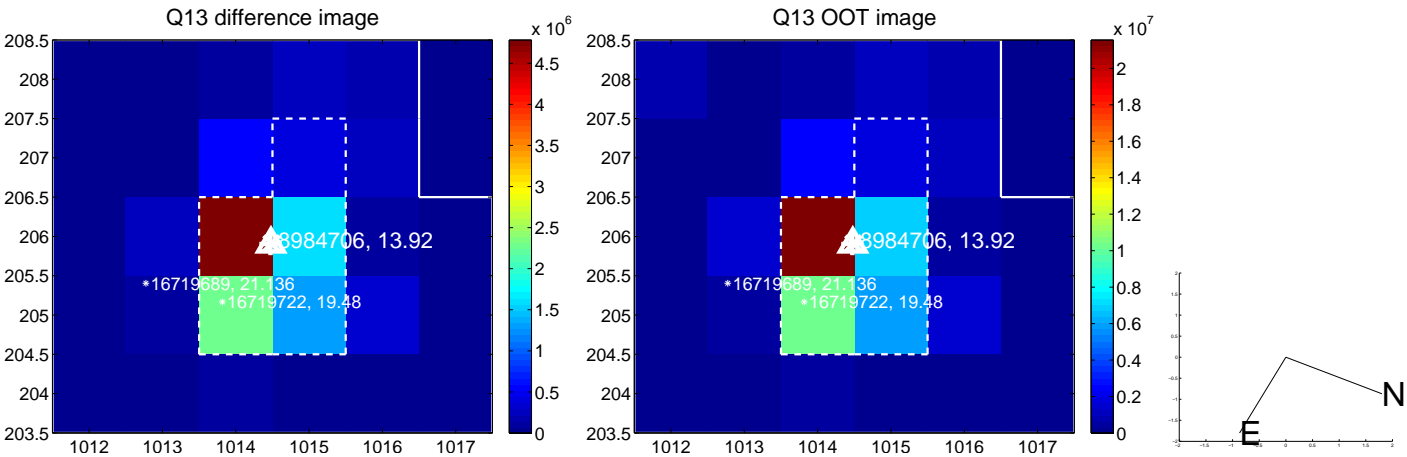
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

