

KIC 010798605

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})
010798605-01	OBS	3390.01	56.048108	159.167689	53096.0	4.065	1346.1	1029.8	0.78	5222	31.30	6.08
010798605-02	OBS	No	56.048497	167.753402	9569.9	4.739	259.7	243.3	0.78	5222	12.75	6.08

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010798605-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
010798605-02	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 010798605-01

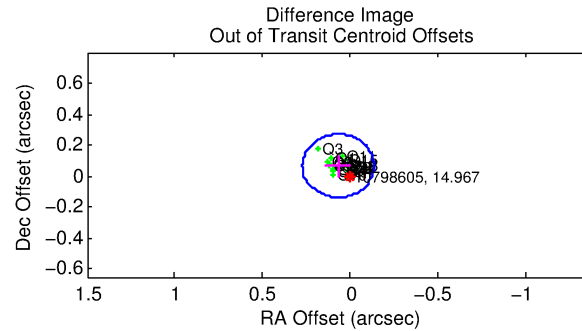
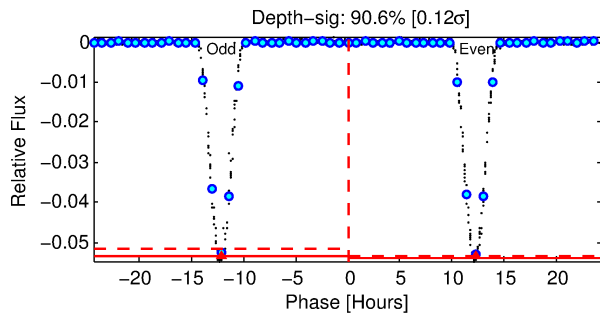
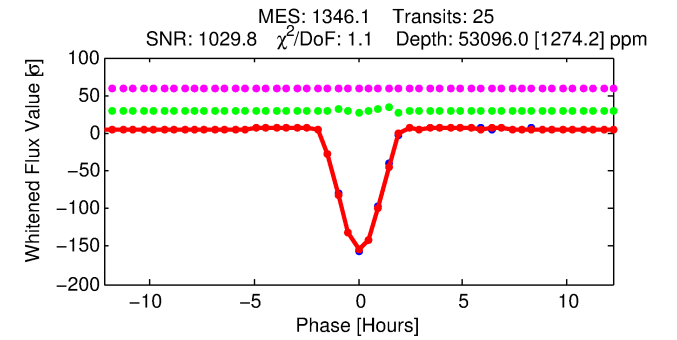
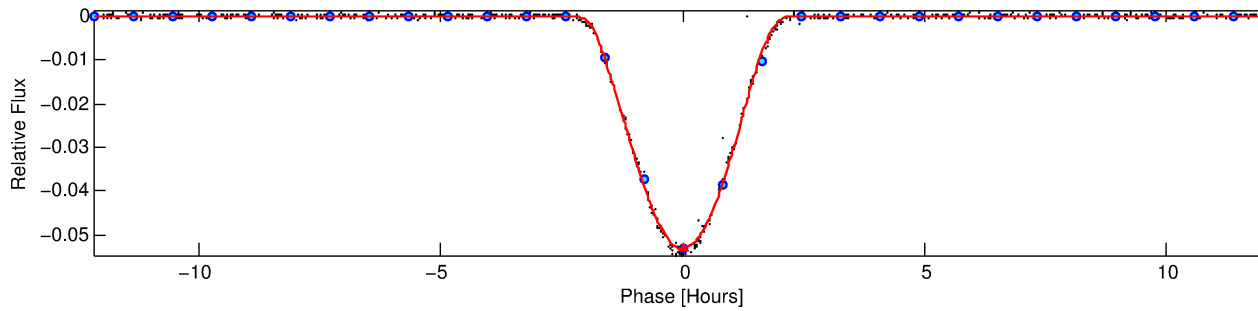
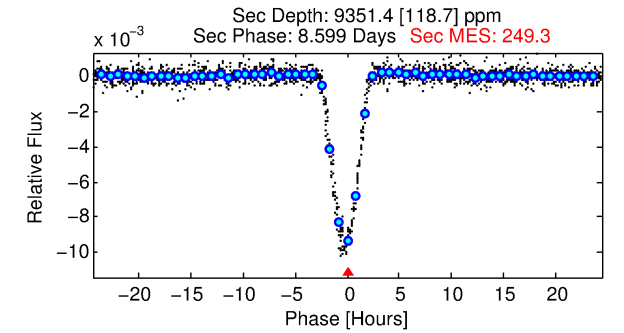
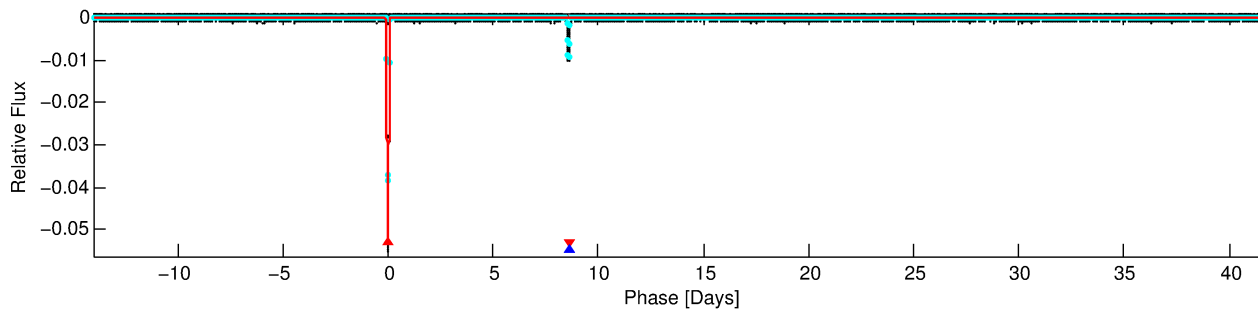
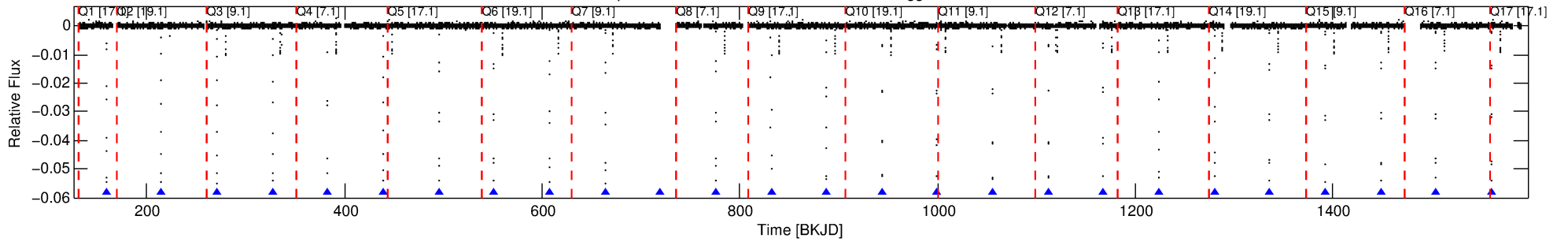
No Significant Match Found

DV One-Page Summary

KIC: 10798605 Candidate: 1 of 2 Period: 56.048 d

KOI: K03390.01 Corr: 0.999

Kp: 14.97 R*: 0.78 Rs Teff: 5222.0 K Logg: 4.52 Fe/H: -0.300



DV Fit Results:

Period = 56.04811 [0.00001] d
Epoch = 159.1677 [0.0001] BKJD
Rp/R* = 0.3678 [0.0563]
a/R* = 98.30 [0.13]
b = 1.00 [0.07]
Seff = 6.08 [1.55]
Teq = 400 [26] K
Rp = 31.30 [6.65] Re
a = 0.2583 [0.0365] AU
Ag = 350.31 [133.16] [2.62σ]
Teffp = 2678 [220] K [10.28σ]

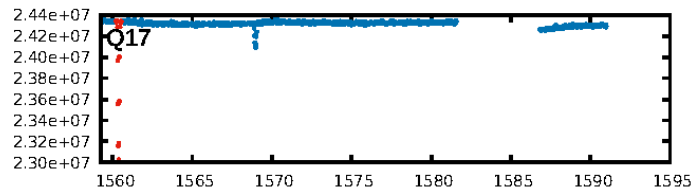
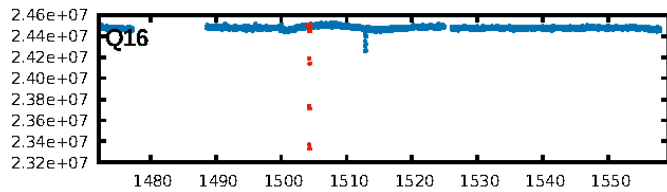
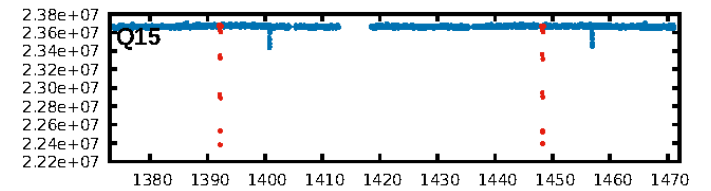
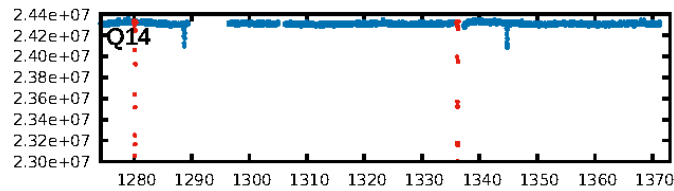
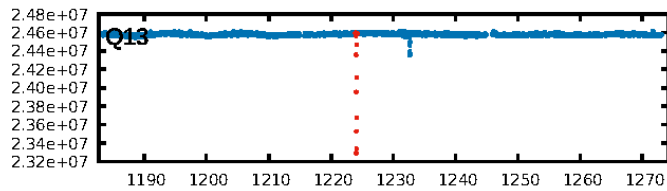
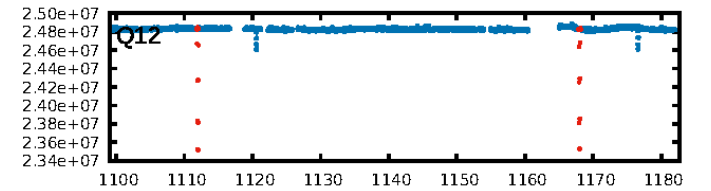
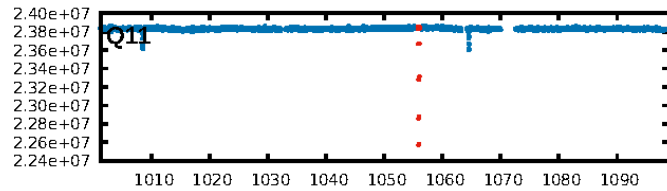
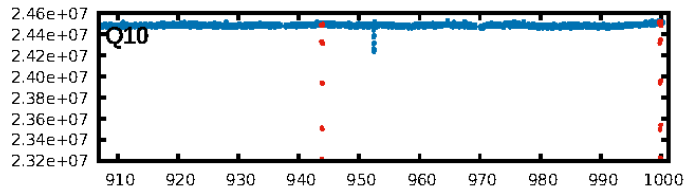
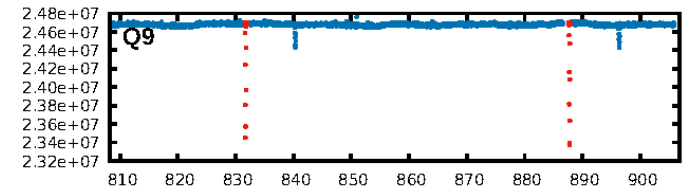
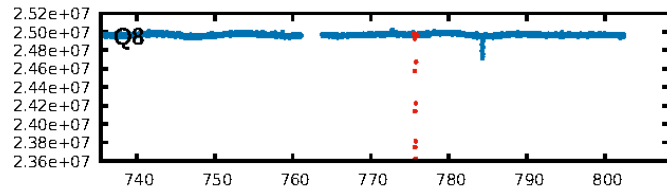
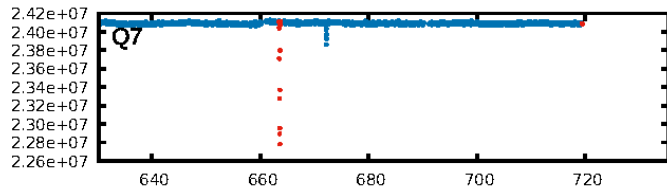
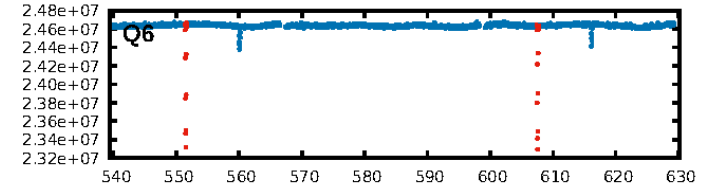
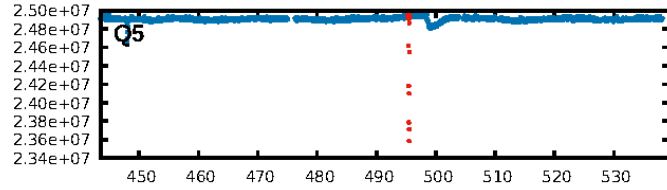
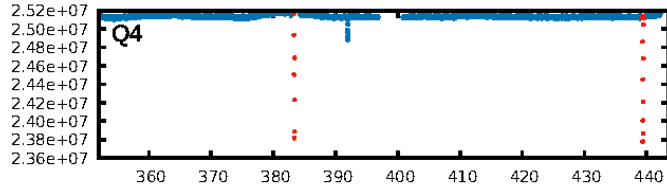
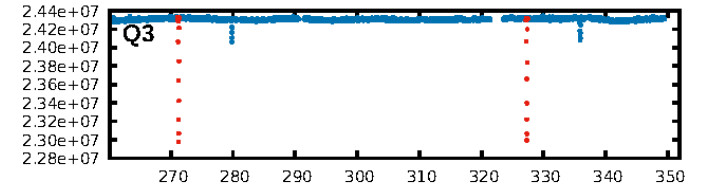
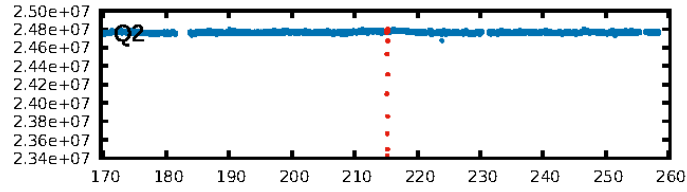
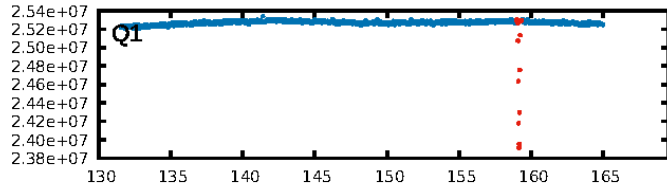
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 2.4%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [23/23]
GhostDiagnostic-chr: 4.15
Centroid-sig: 0.0%
Centroid-so: 0.116 arcsec [14.50σ]
OotOffset-rm: 0.098 arcsec [1.43σ]
KicOffset-rm: 0.038 arcsec [0.55σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [16/16]

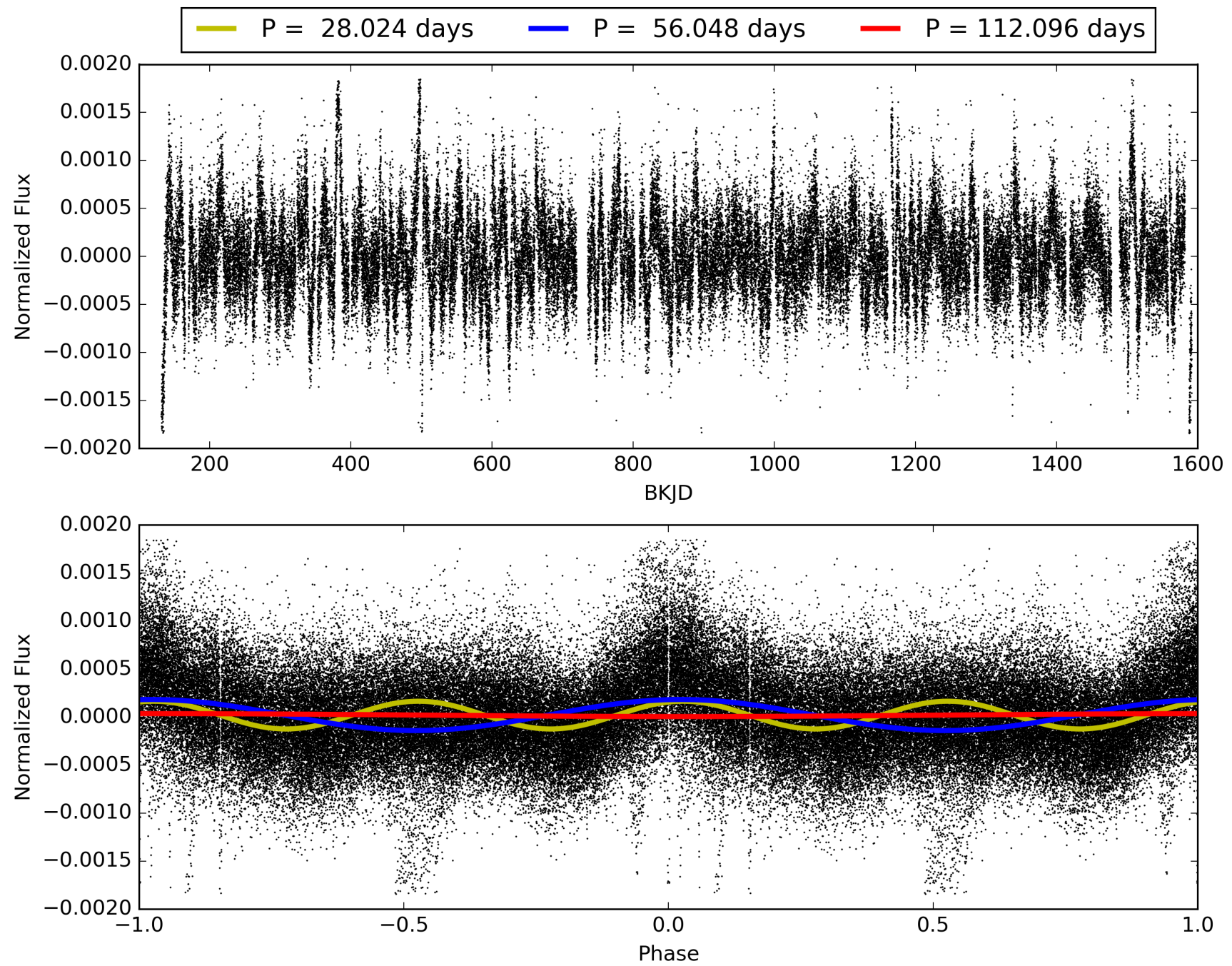
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 09:46:42 Z

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

TCE 010798605-01, PDC Light Curves

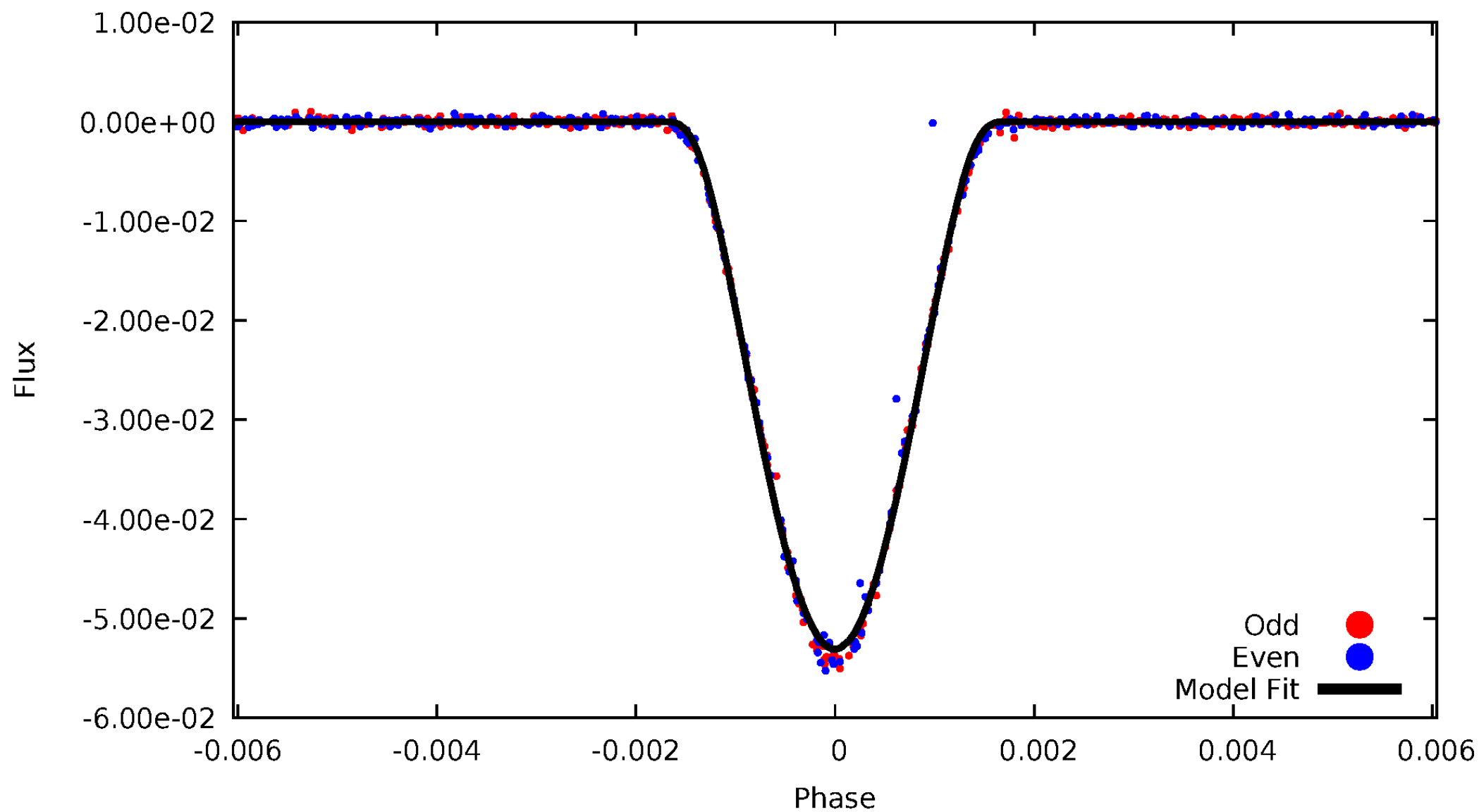


TCE 010798605-01



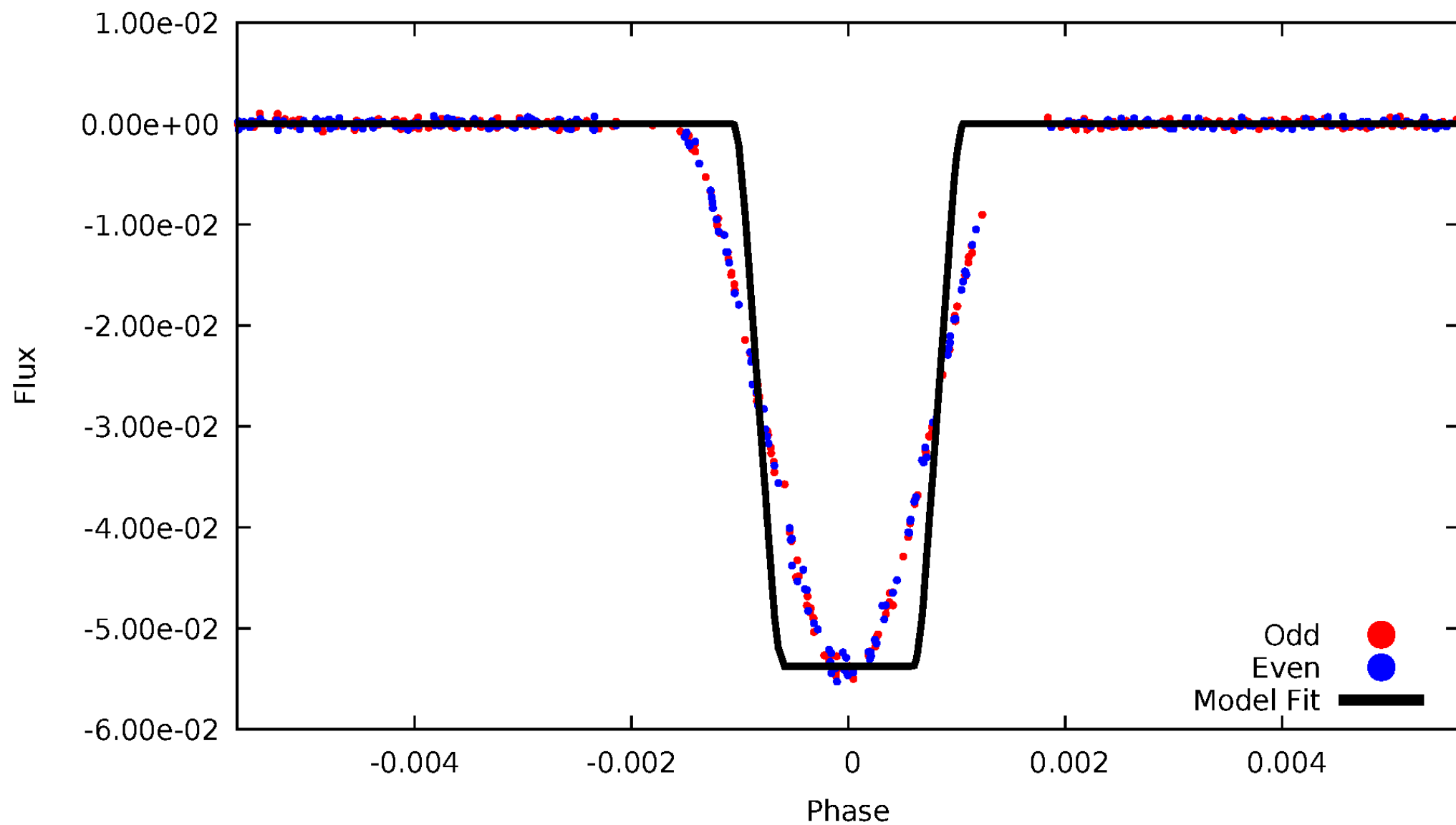
DV Odd/Even

TCE 010798605-01



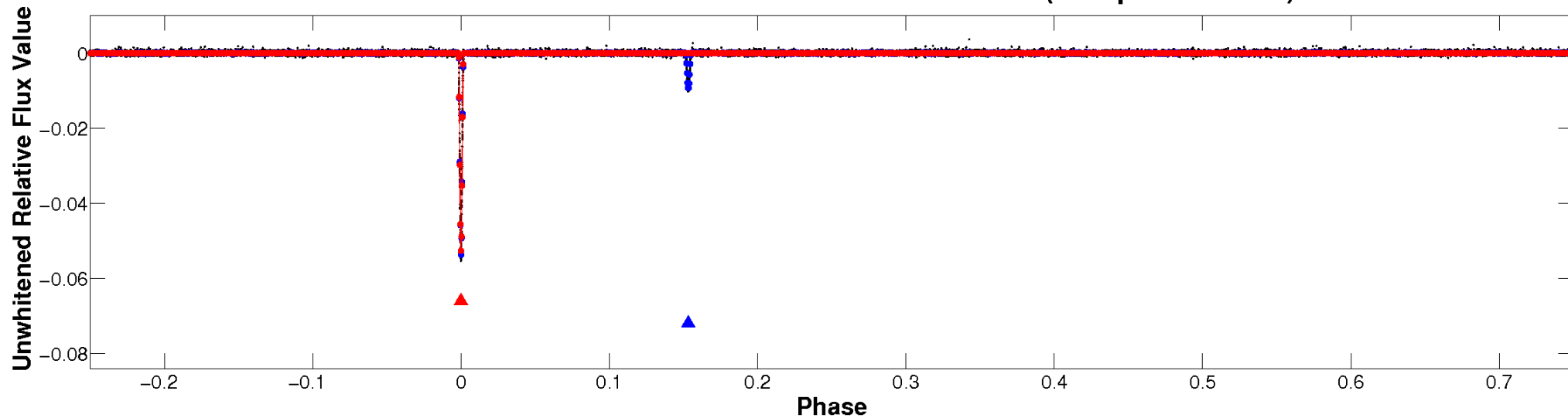
ALT Odd/Even

TCE 010798605-01

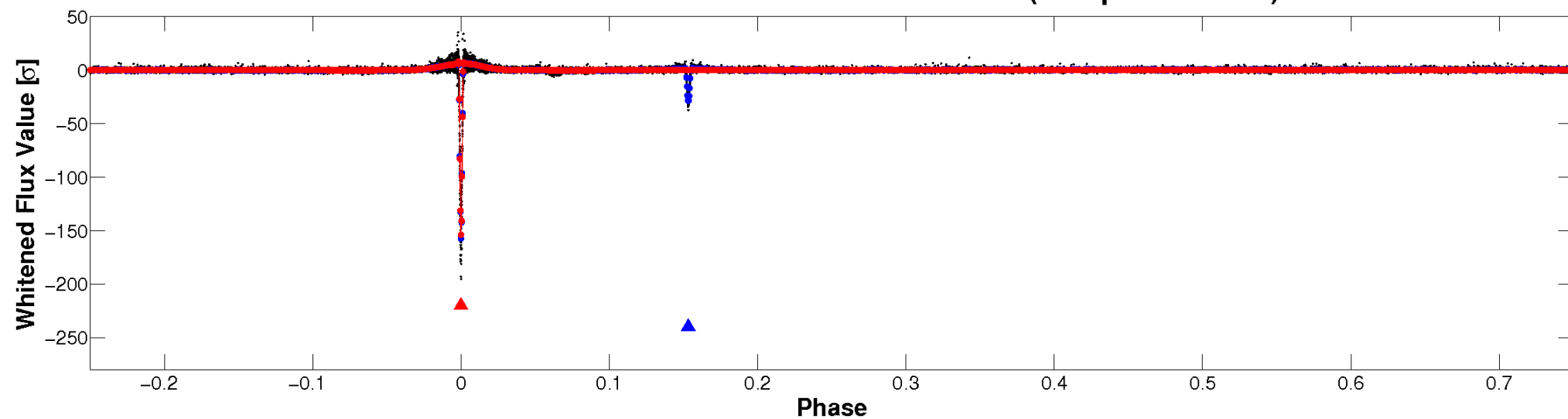


Non-Whitened Vs. Whitened Light Curve

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

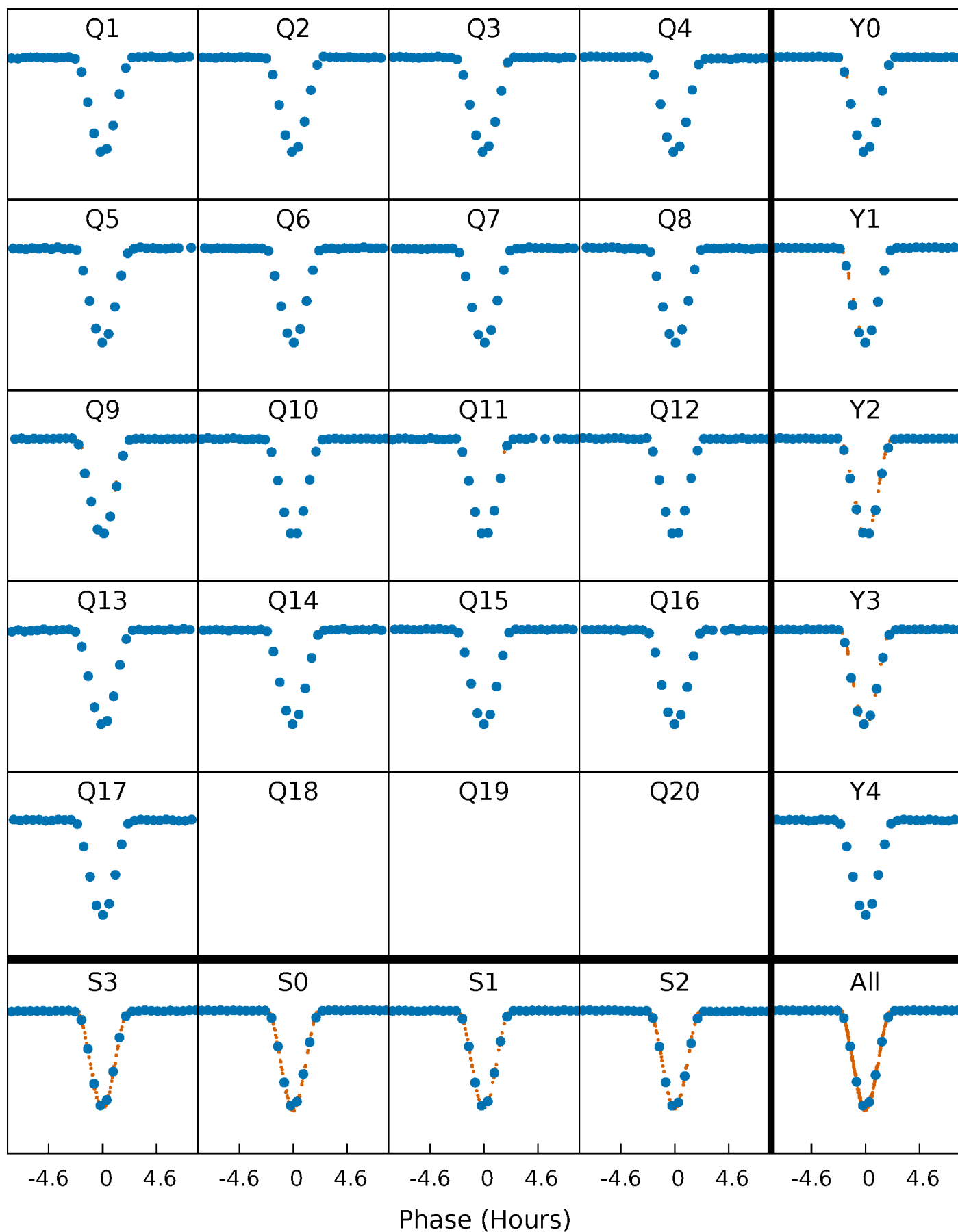


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



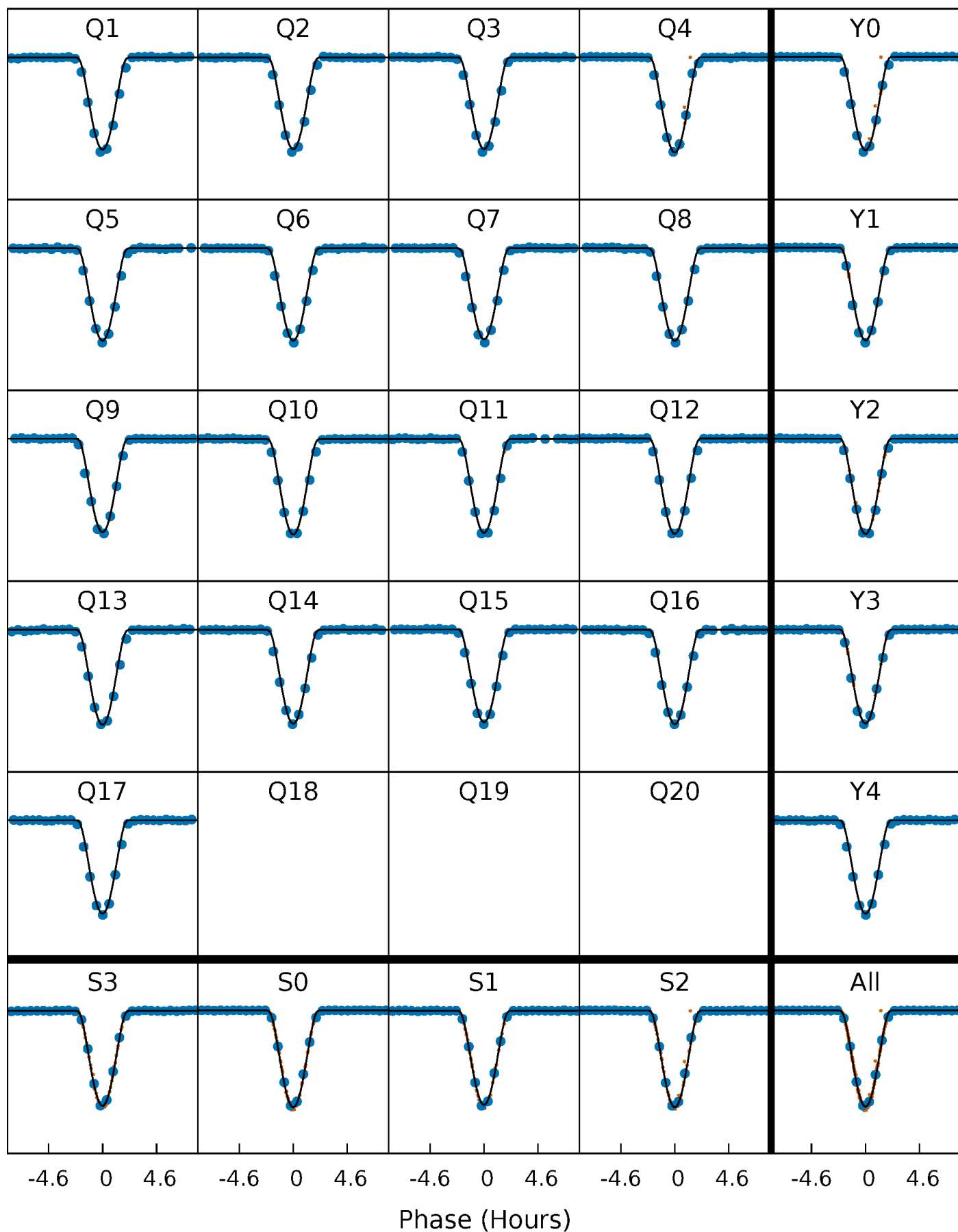
PDC Quarter-Phased Transit Curves

TCE 010798605-01 P= 56.048108 Days $T_0=159.167689$ (BKJD)



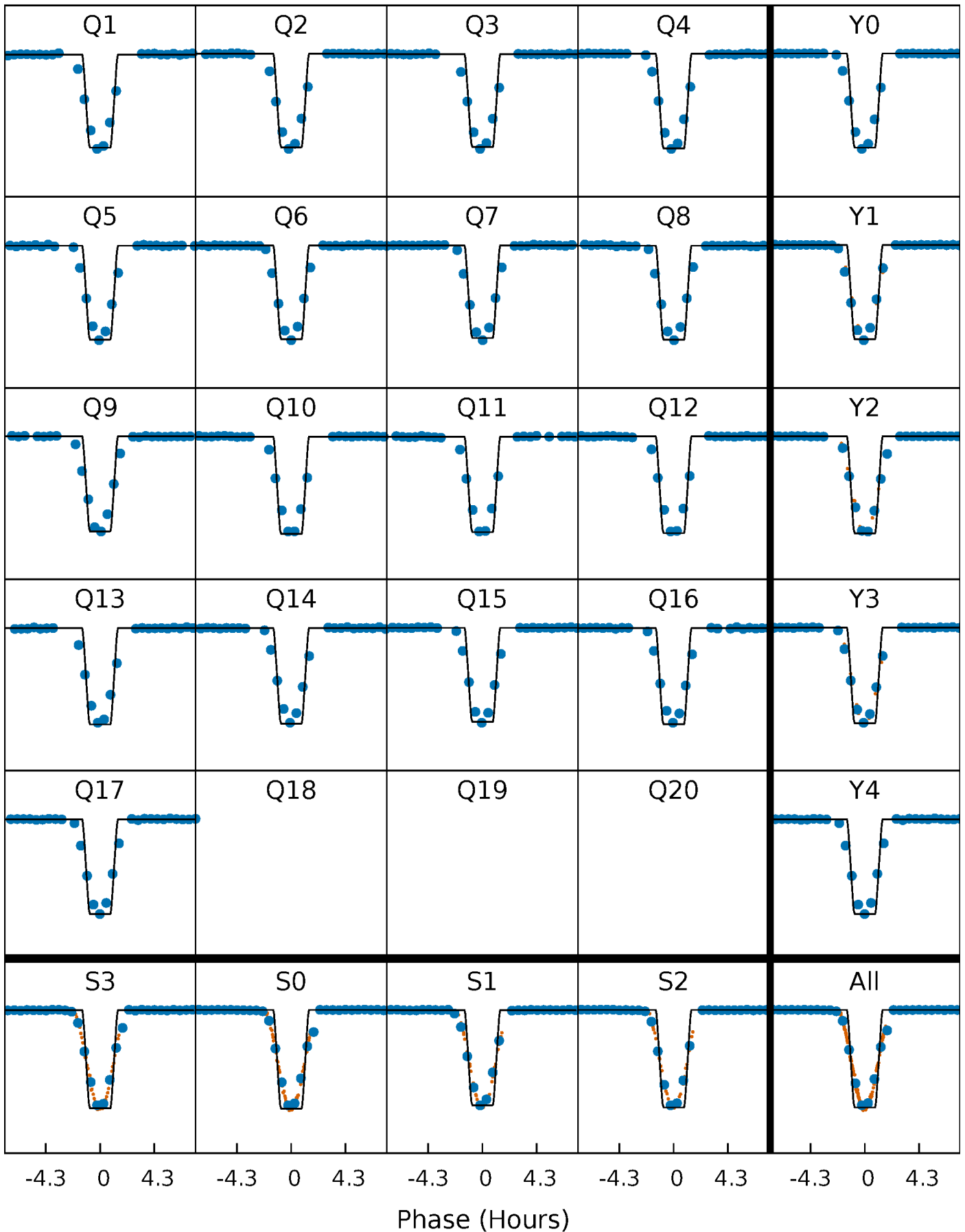
DV Quarter-Phased Transit Curves

TCE 010798605-01 P= 56.048108 Days $T_0=159.167689$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

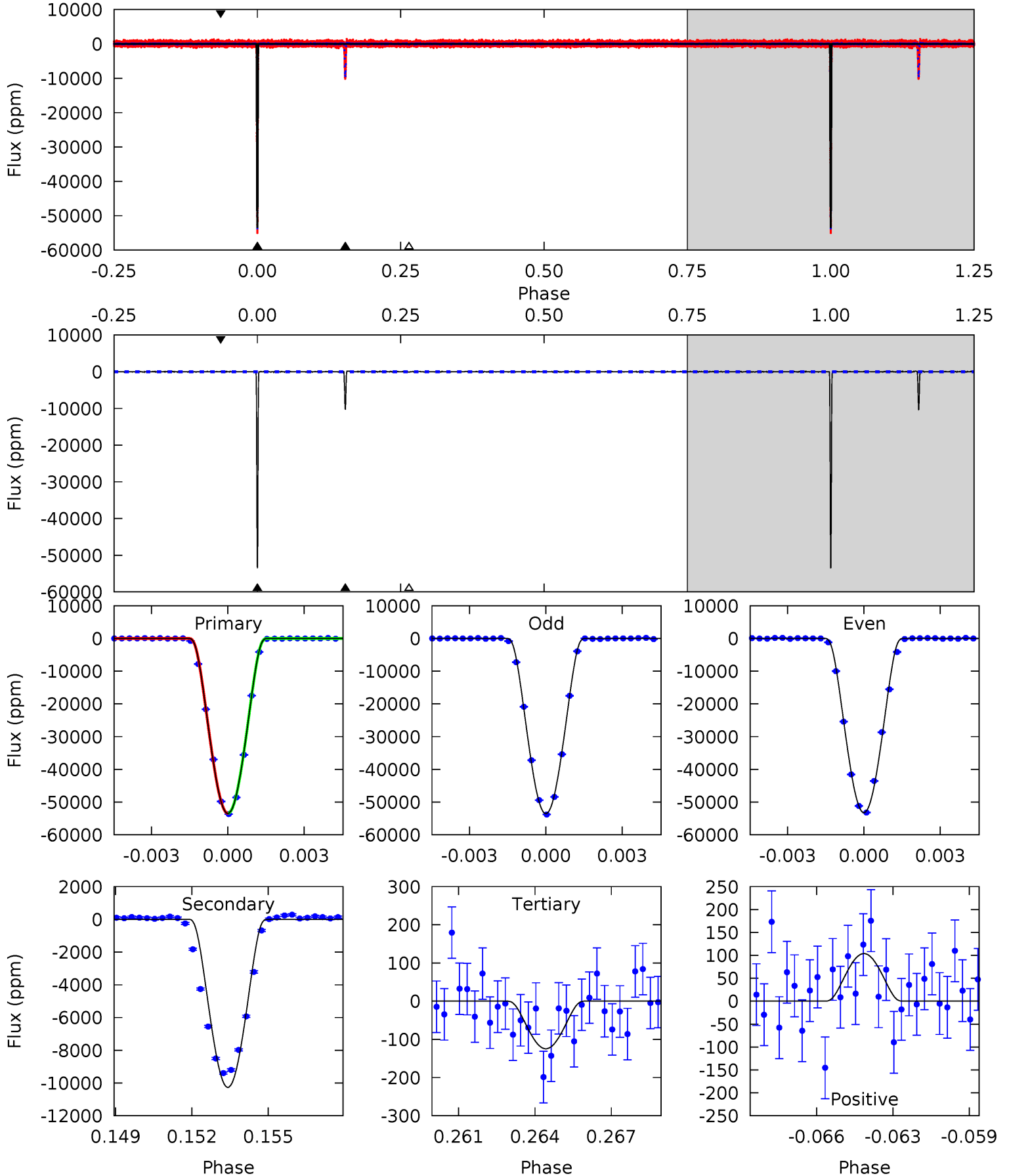
TCE 010798605-01 P= 56.048054 Days $T_0=159.168293$ (BKJD)



DV Model-Shift Uniqueness Test

010798605-01, P = 56.048108 Days, E = 103.119581 Days

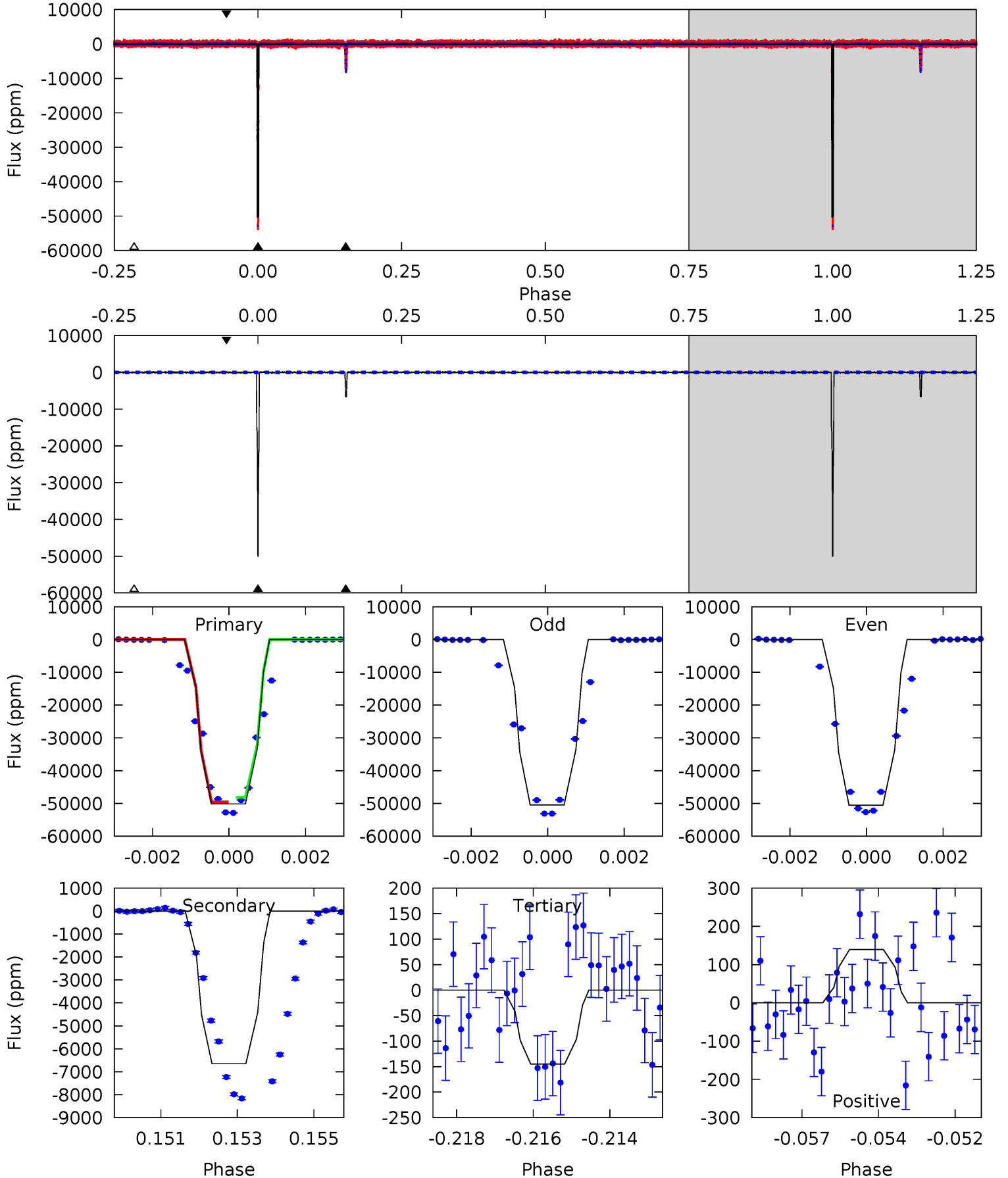
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2528	485.1	5.89	4.90	5.23	2.94	1.70	2522	2523	479.2	480.2	7.35	1.00	0.00	0.32



Alt Model-Shift Uniqueness Test

010798605-01, P = 56.048054 Days, E = 103.120239 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1332	176.5	3.85	3.70	5.32	3.08	4.54	1328	1328	172.7	172.8	1.40	1.00	0.00	0



Stellar Parameters For KIC 010798605

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5222^{+156}_{-156}	$4.518^{+0.096}_{-0.132}$	$-0.300^{+0.350}_{-0.300}$	$0.780^{+0.115}_{-0.094}$	$0.730^{+0.116}_{-0.050}$	$2.169^{+0.861}_{-0.675}$
	+3%/-3%	+2%/-3%	+117%/-100%	+15%/-12%	+16%/-7%	+40%/-31%
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 010798605-01 / KOI 3390.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-10269 ± 21	$31.93^{+5.83}_{-5.56}$	563^{+29}_{-27}	3280^{+191}_{-141}	377^{+185}_{-105}
Alt.	-6645 ± 38	$20.34^{+5.56}_{-5.33}$	563^{+28}_{-30}	3529^{+357}_{-250}	600^{+490}_{-224}

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 $A_{obs} \gg 1.0$

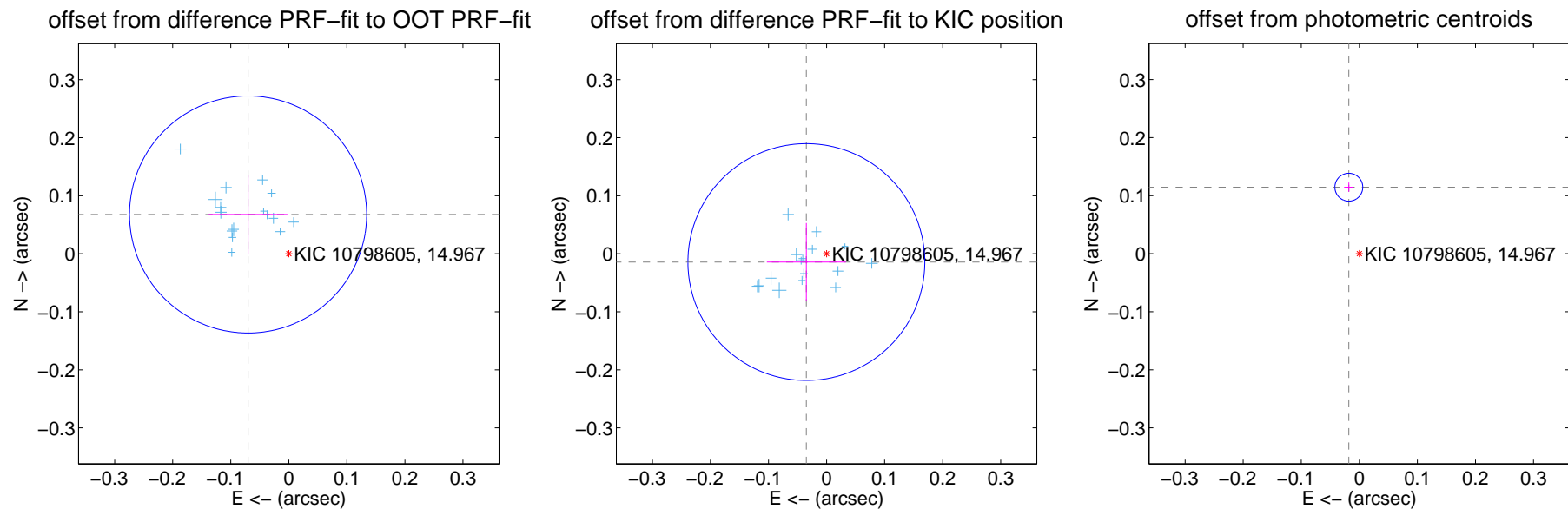
DV Centroid Data

Supplemental centroid analysis for 010798605-01. Kepler magnitude: 14.97. Transit SNR 1029.84

There are 16 quarters with good PRF difference image offsets

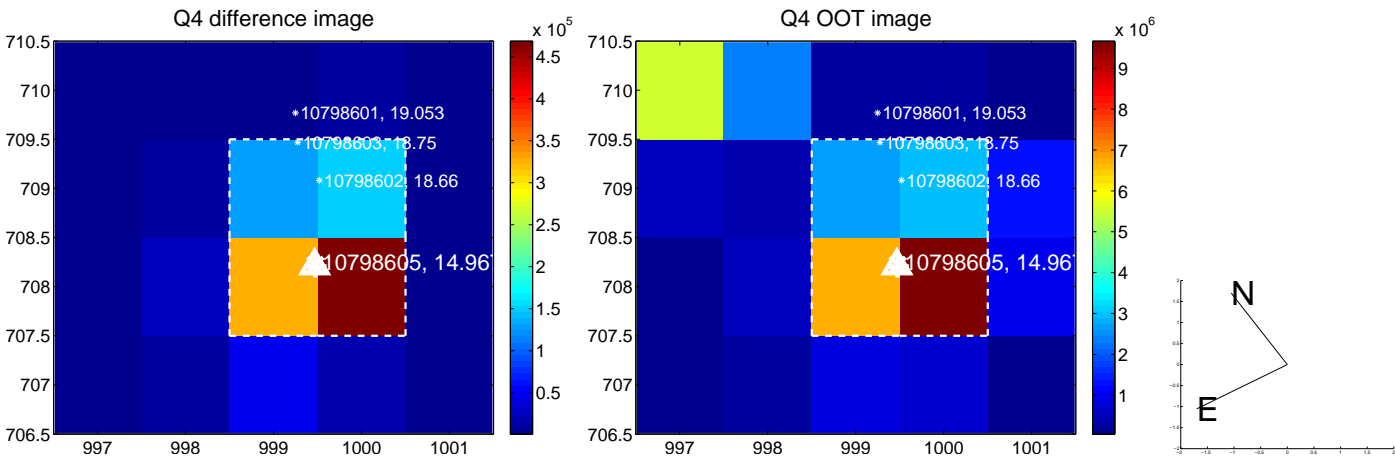
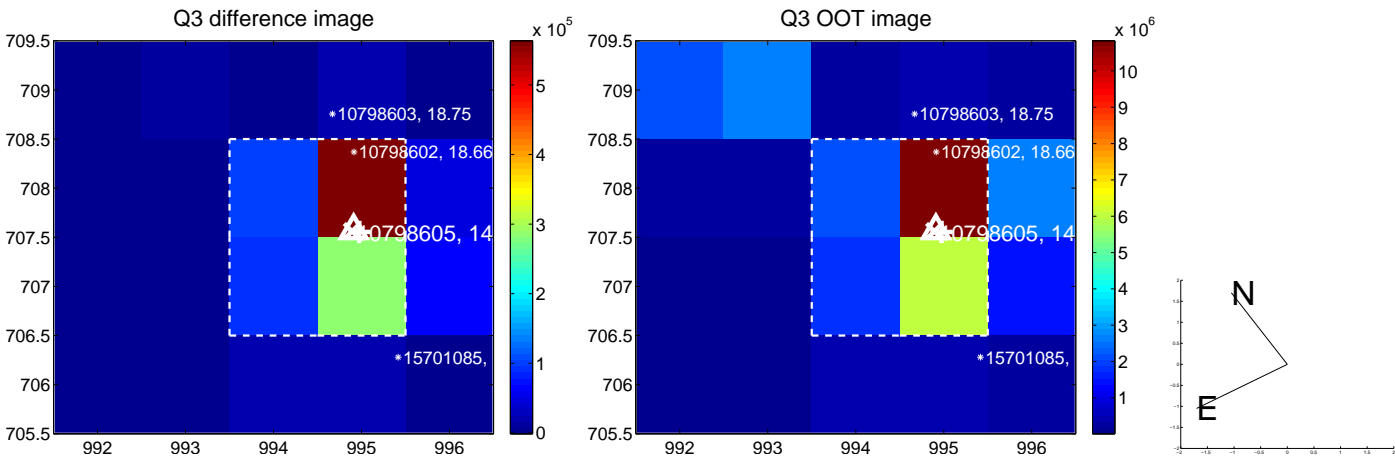
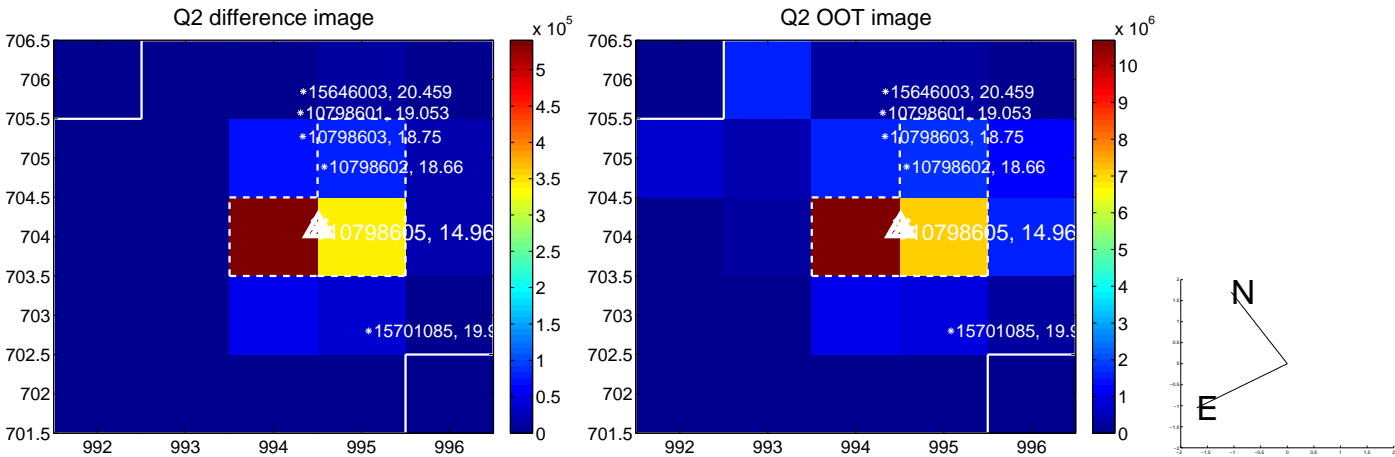
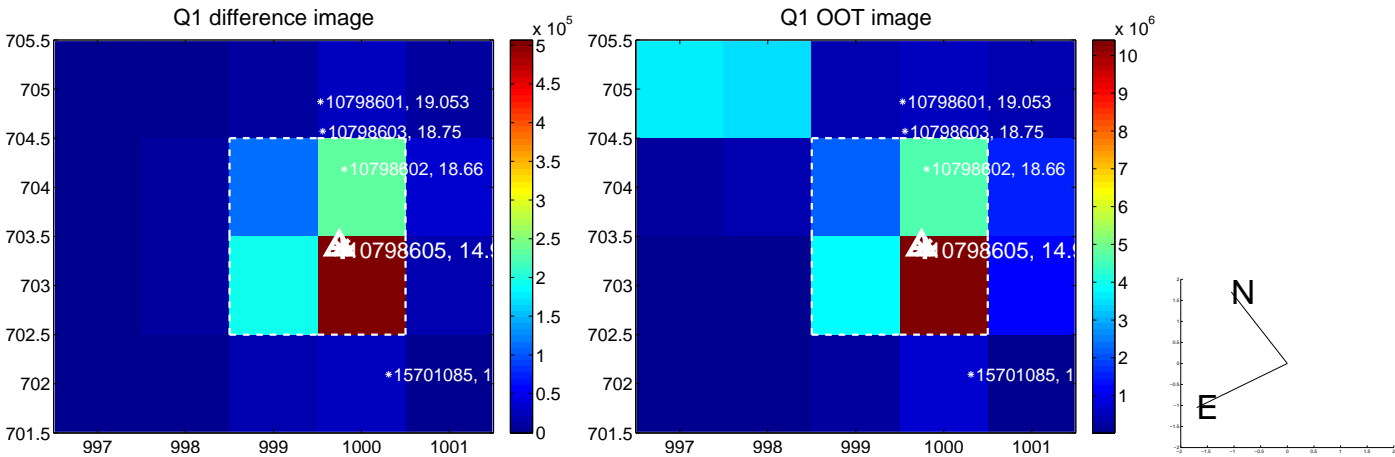
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.098 ± 0.068	1.43	0.070 ± 0.068	0.068 ± 0.068
PRF-fit source offset from KIC position	0.038 ± 0.068	0.55	0.035 ± 0.068	-0.014 ± 0.067
photometric centroid source offset	0.12 ± 0.01	14.50	0.02 ± 0.01	0.11 ± 0.01

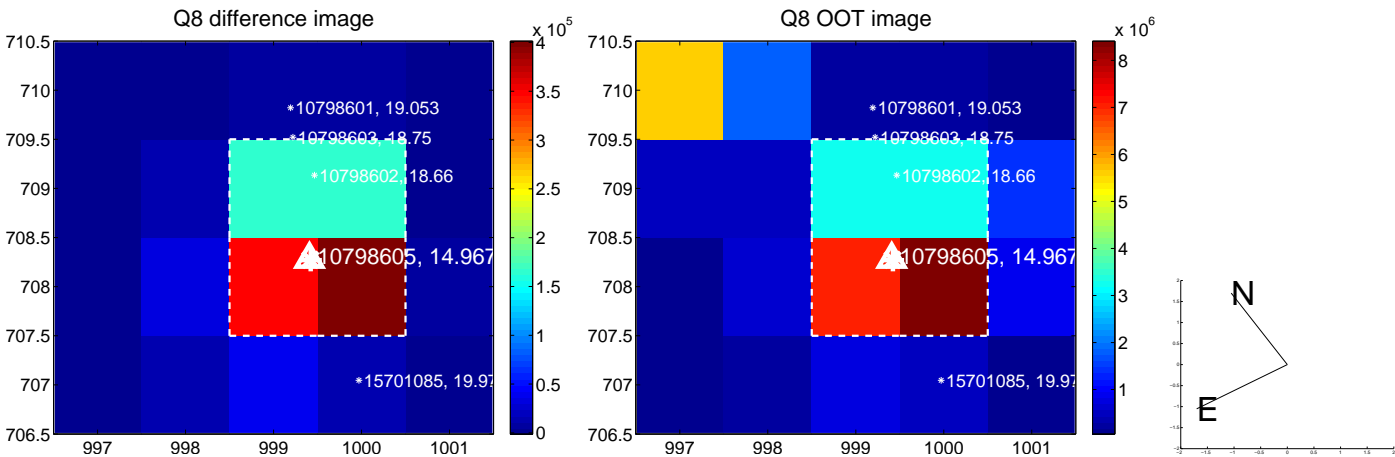
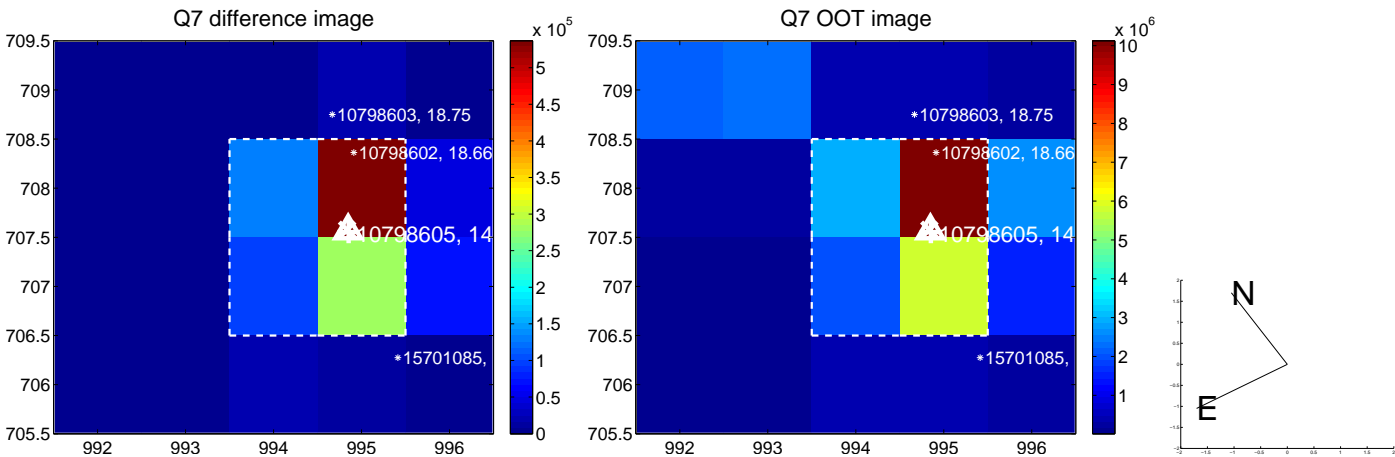
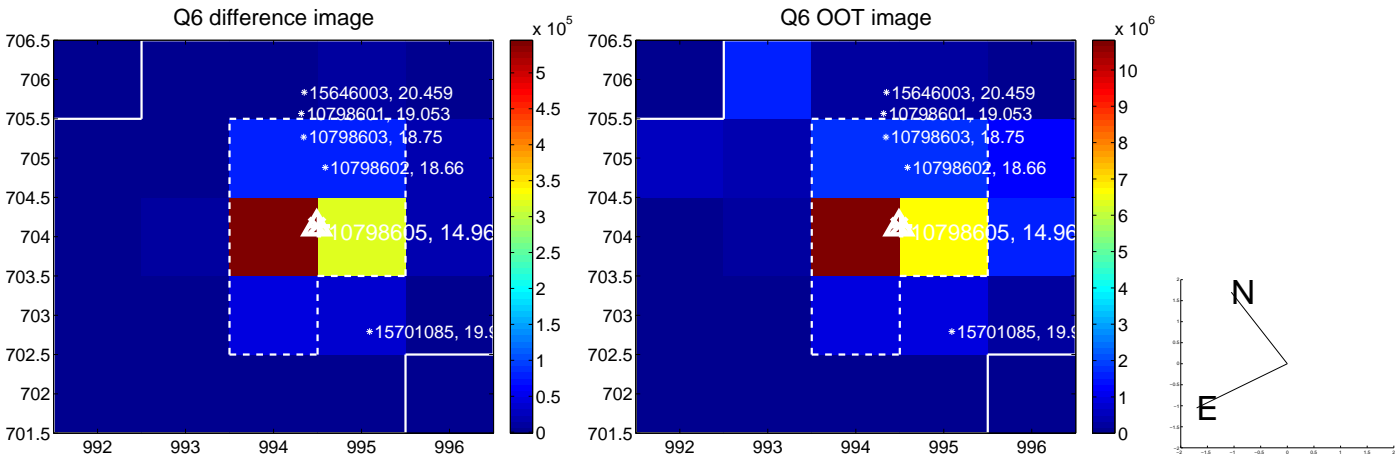
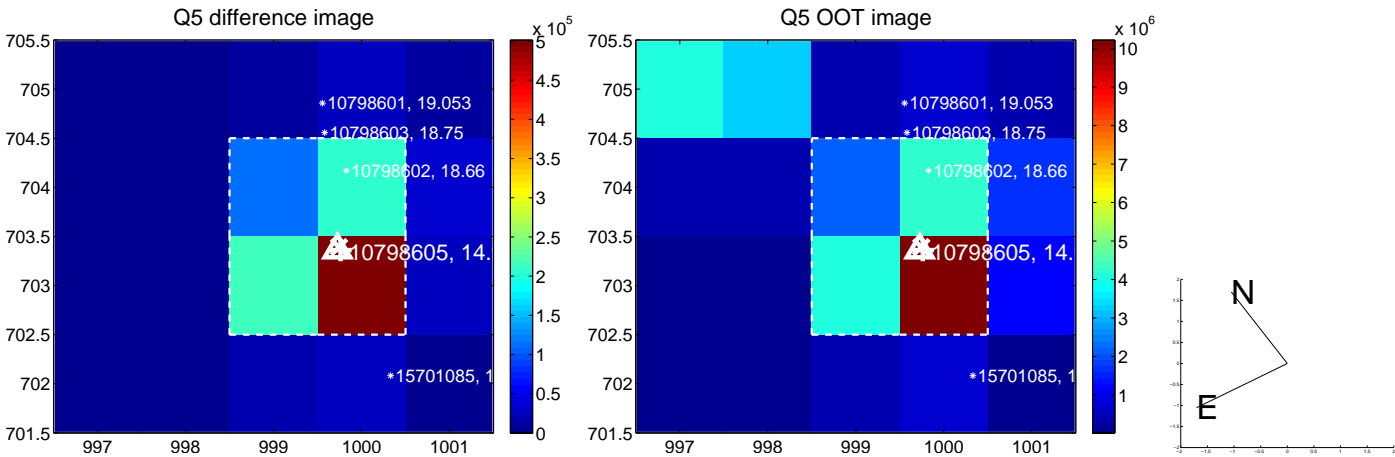


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

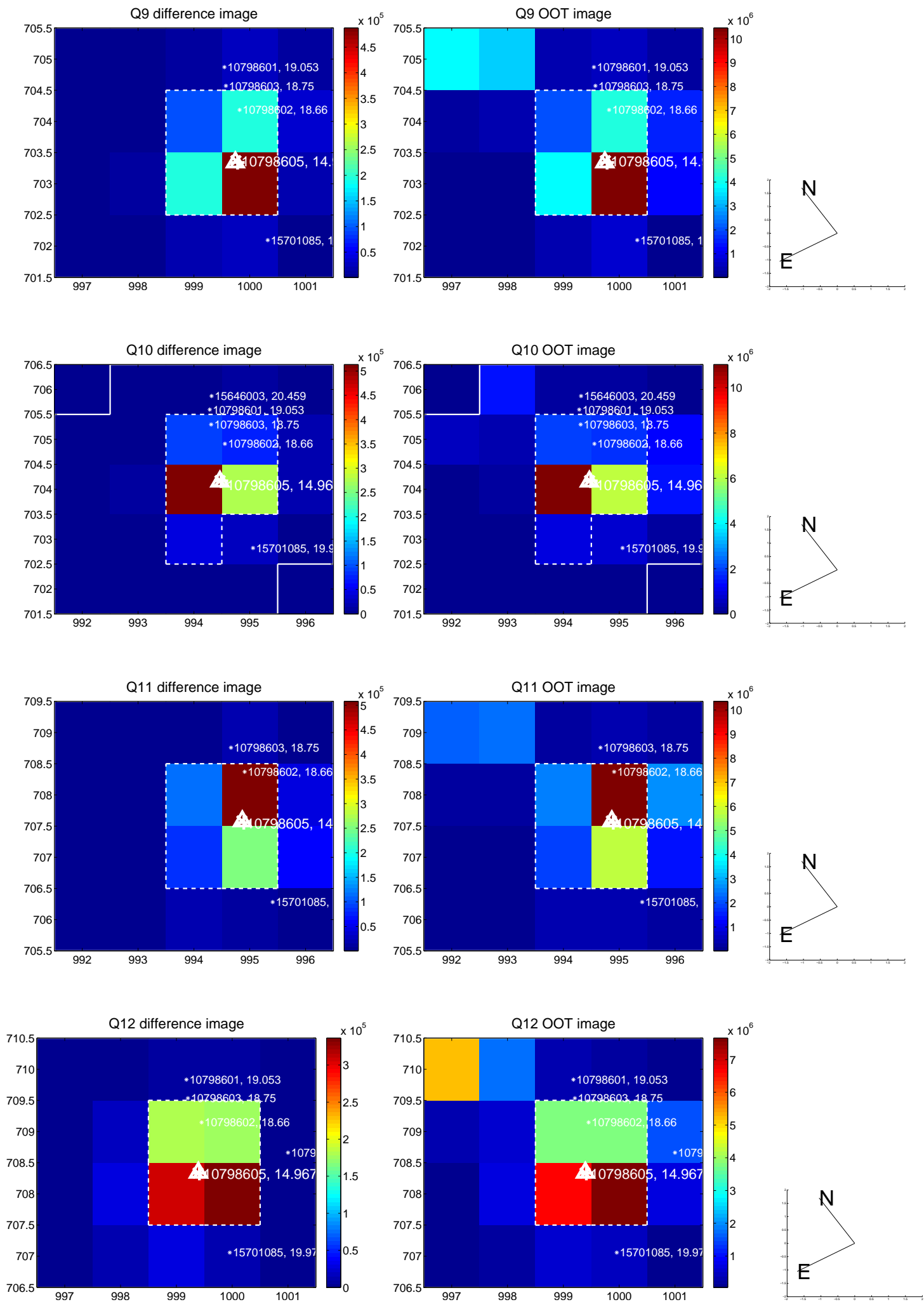
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



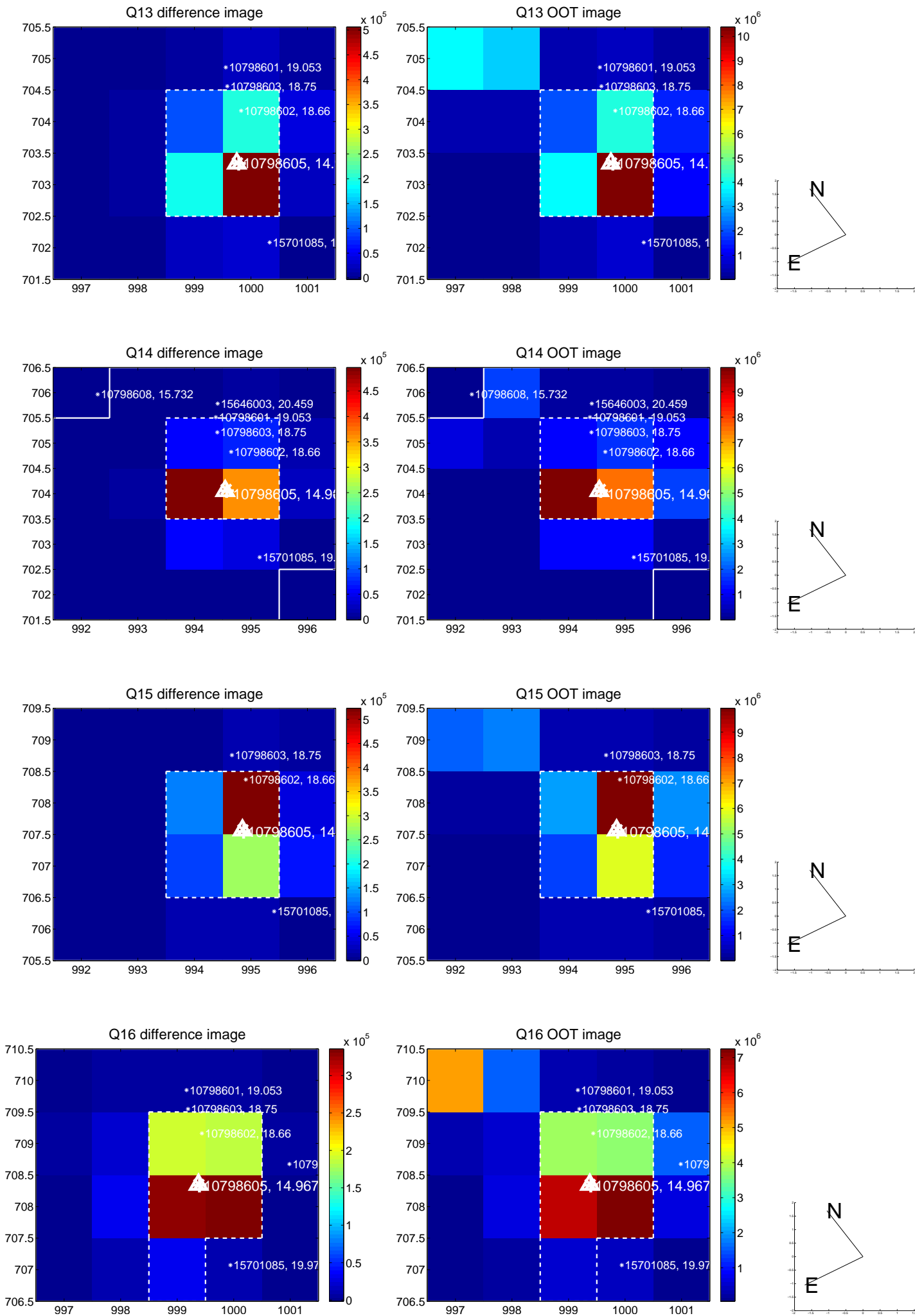
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



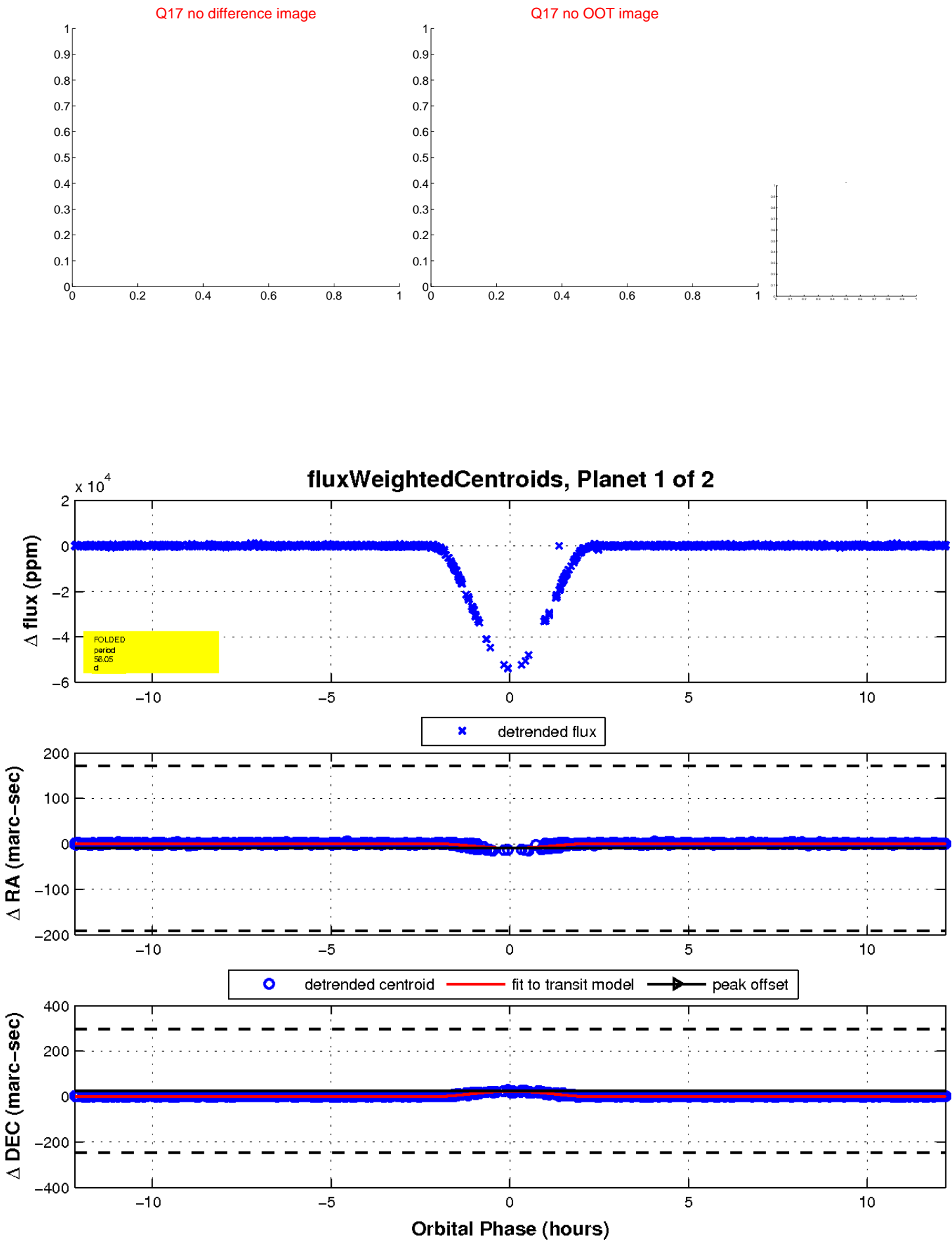
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

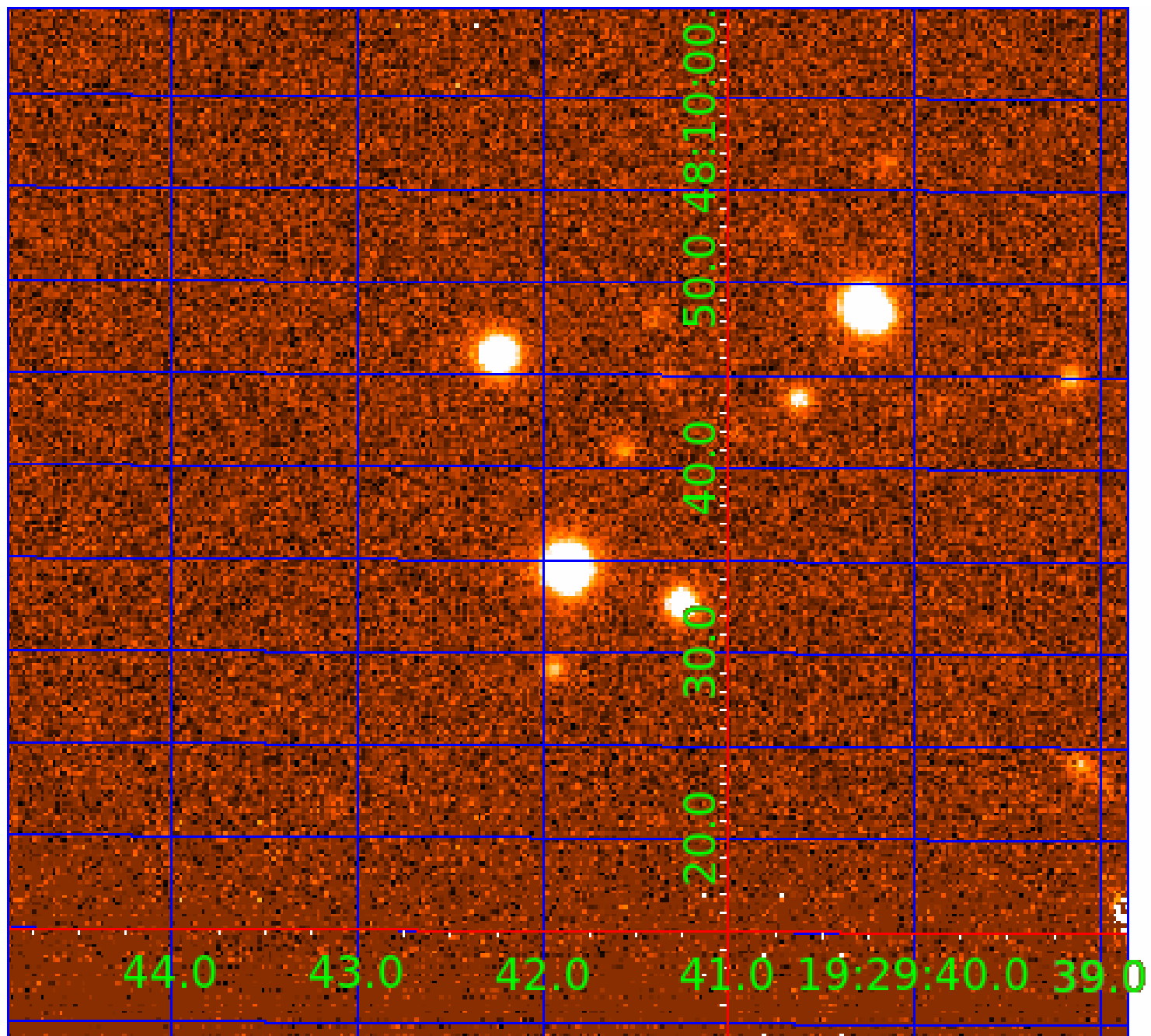


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010798605

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})
010798605-01	OBS	3390.01	56.048108	159.167689	53096.0	4.065	1346.1	1029.8	0.78	5222	31.30	6.08
010798605-02	OBS	No	56.048497	167.753402	9569.9	4.739	259.7	243.3	0.78	5222	12.75	6.08

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010798605-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
010798605-02	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.

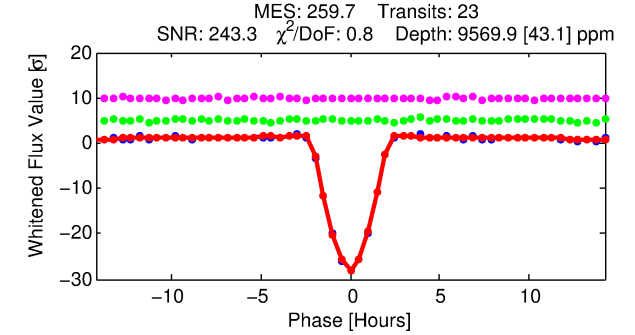
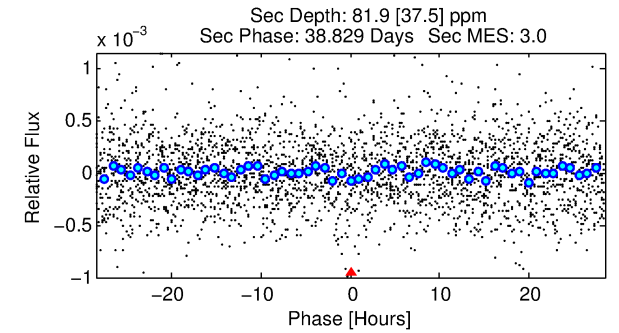
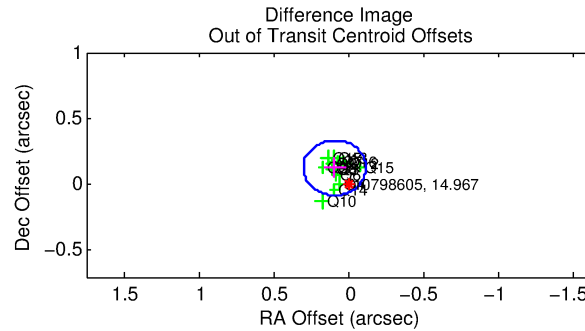
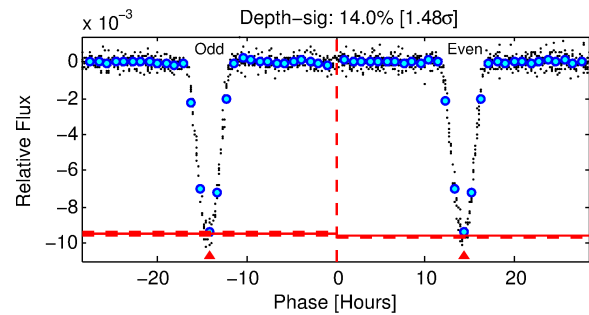
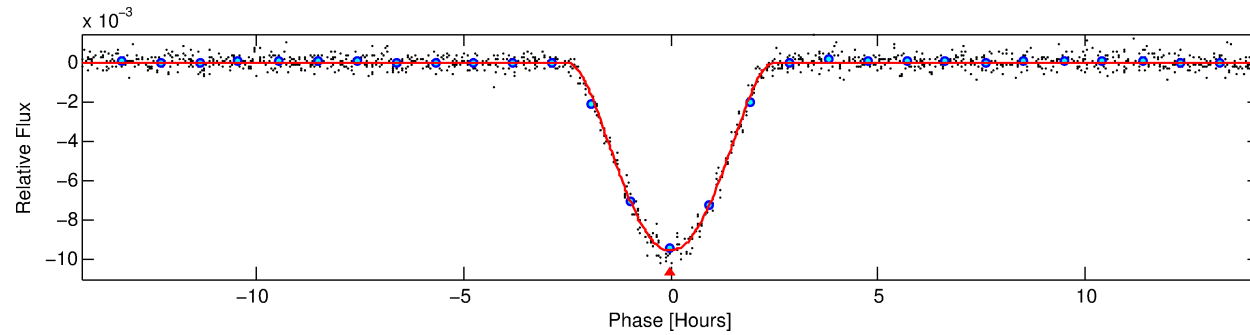
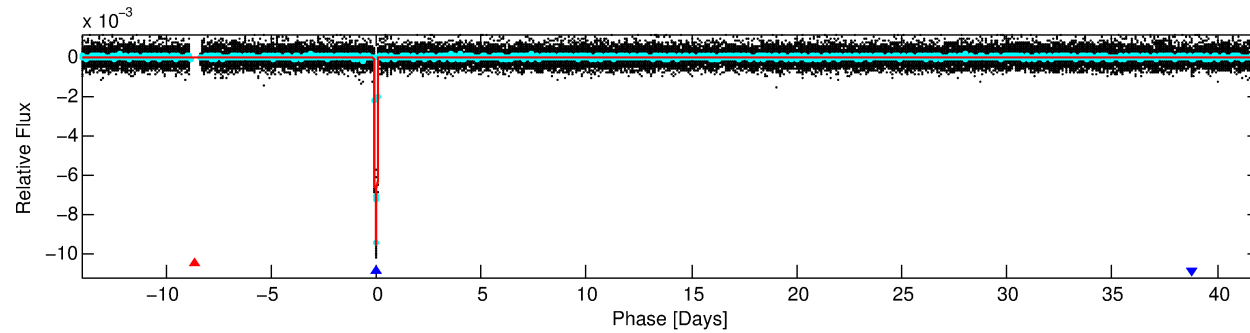
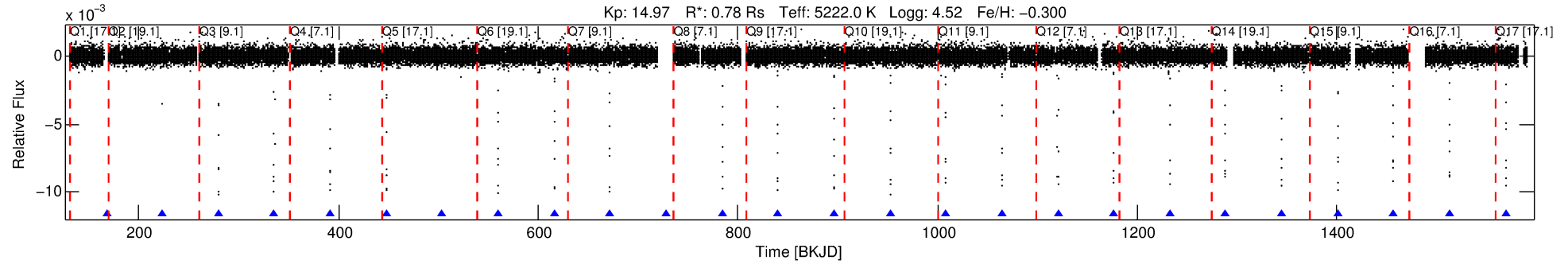
Ephemeris Match Information For 010798605-02

No Significant Match Found

DV One-Page Summary

KIC: 10798605 Candidate: 2 of 2 Period: 56.048 d

KOI: K03390 Corr: No Ephemeris Match



DV Fit Results:

Period = 56.04850 [0.00003] d
Epoch = 167.7534 [0.0005] BKJD
Rp/R* = 0.1498 [0.0226]
a/R* = 54.68 [1.48]
b = 0.98 [0.03]
Seff = 6.08 [1.55]
Teq = 400 [26] K
Rp = 12.75 [2.69] Re
a = 0.2583 [0.0365] AU
Ag = 18.48 [10.97] [1.59 σ]
Teffp = 1283 [180] K [4.85 σ]

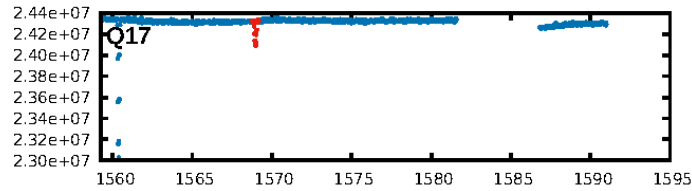
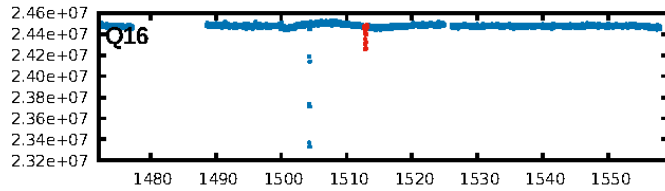
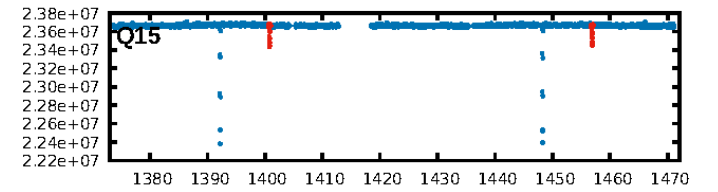
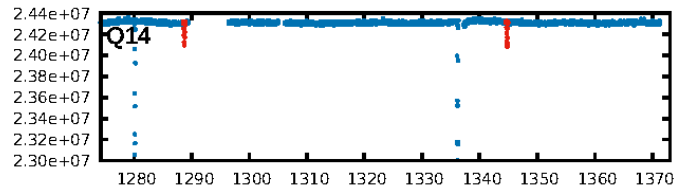
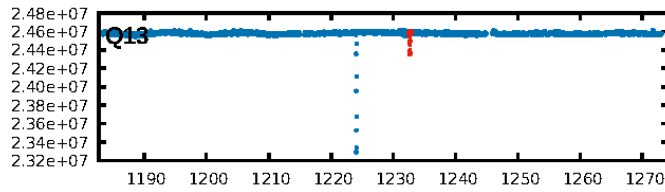
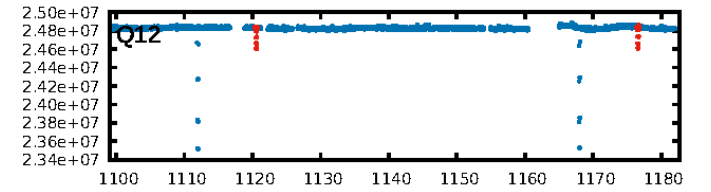
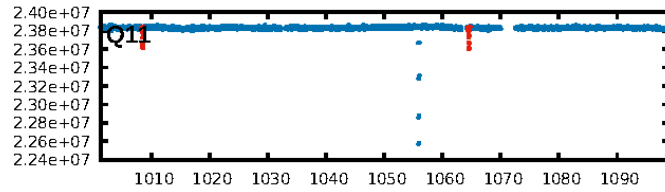
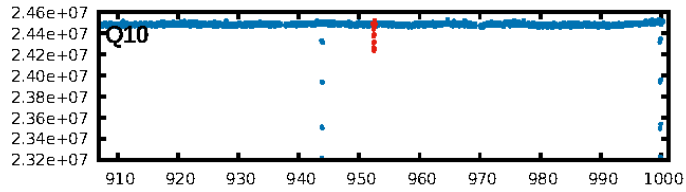
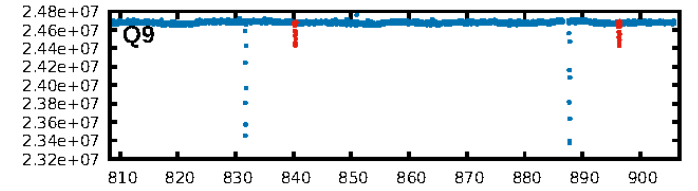
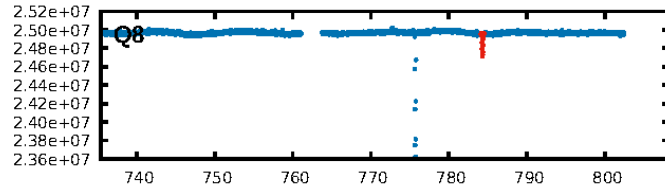
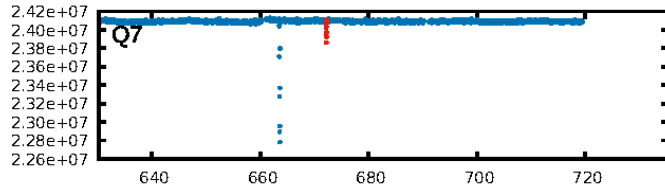
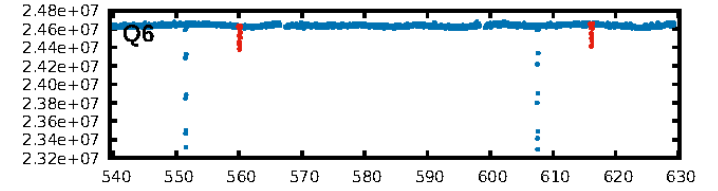
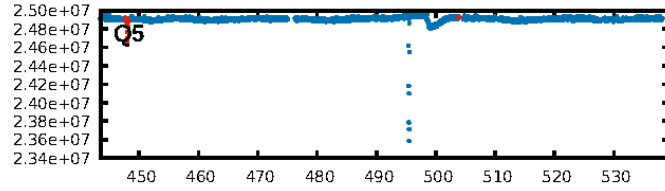
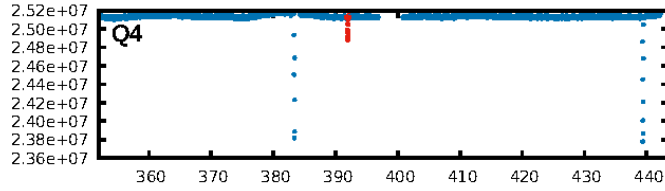
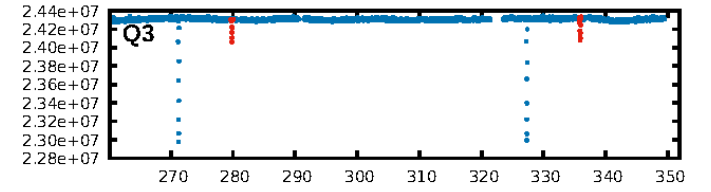
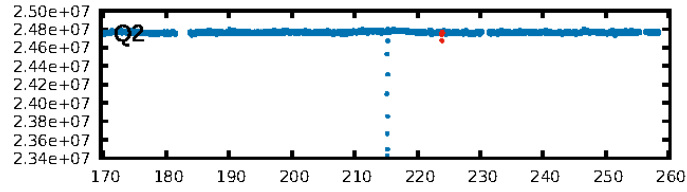
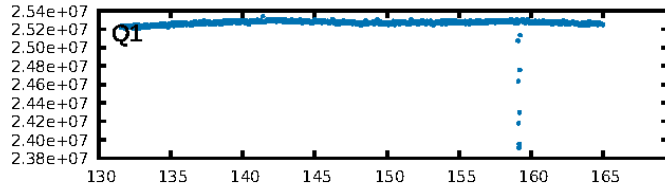
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00e]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [22/22]
GhostDiagnostic-chr: 5.696
Centroid-sig: 0.0%
Centroid-so: 0.065 arcsec [1.51 σ]
OotOffset-rm: 0.155 arcsec [2.23 σ]
KicOffset-rm: 0.050 arcsec [0.71 σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

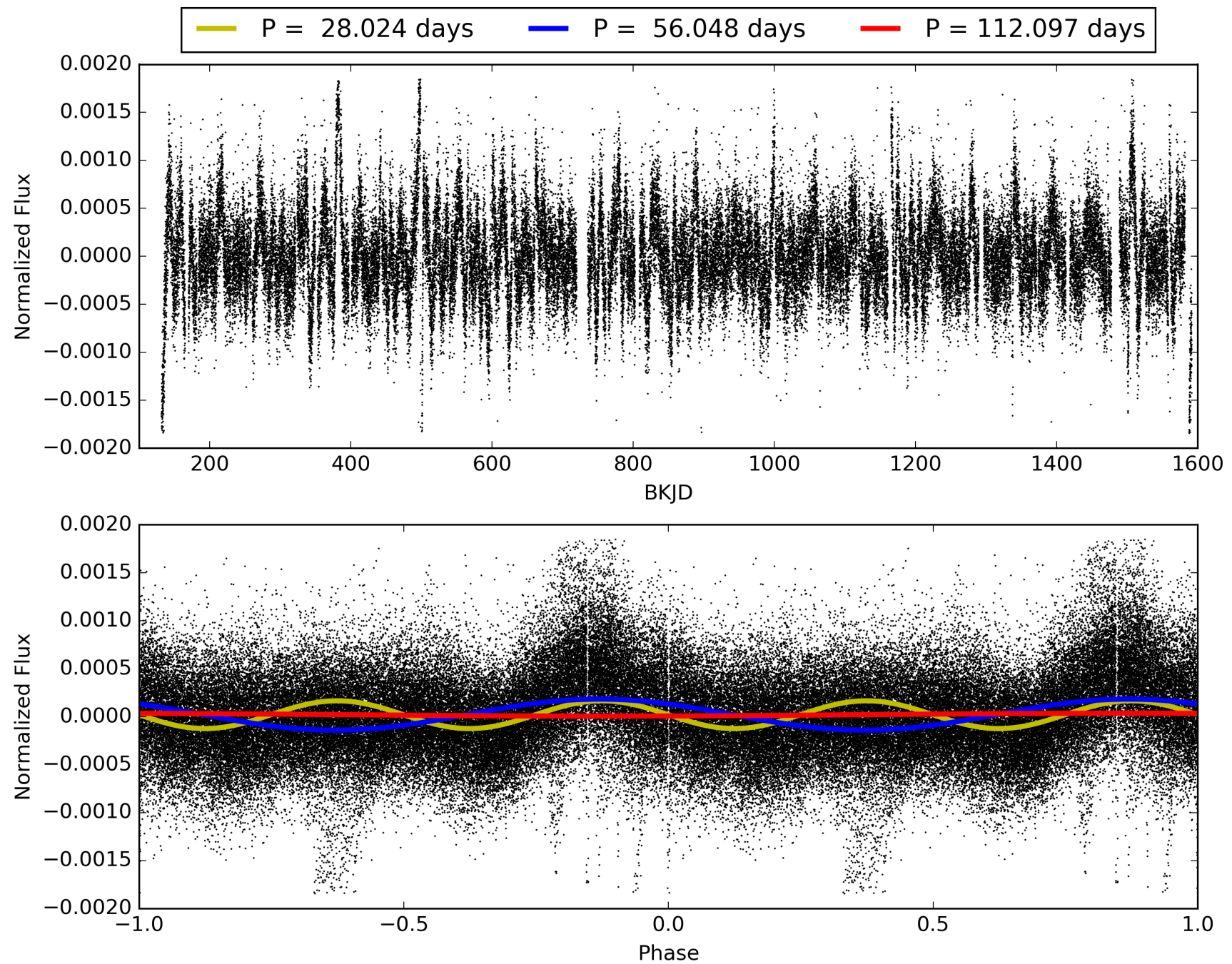
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 09:46:47 Z

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

TCE 010798605-02, PDC Light Curves

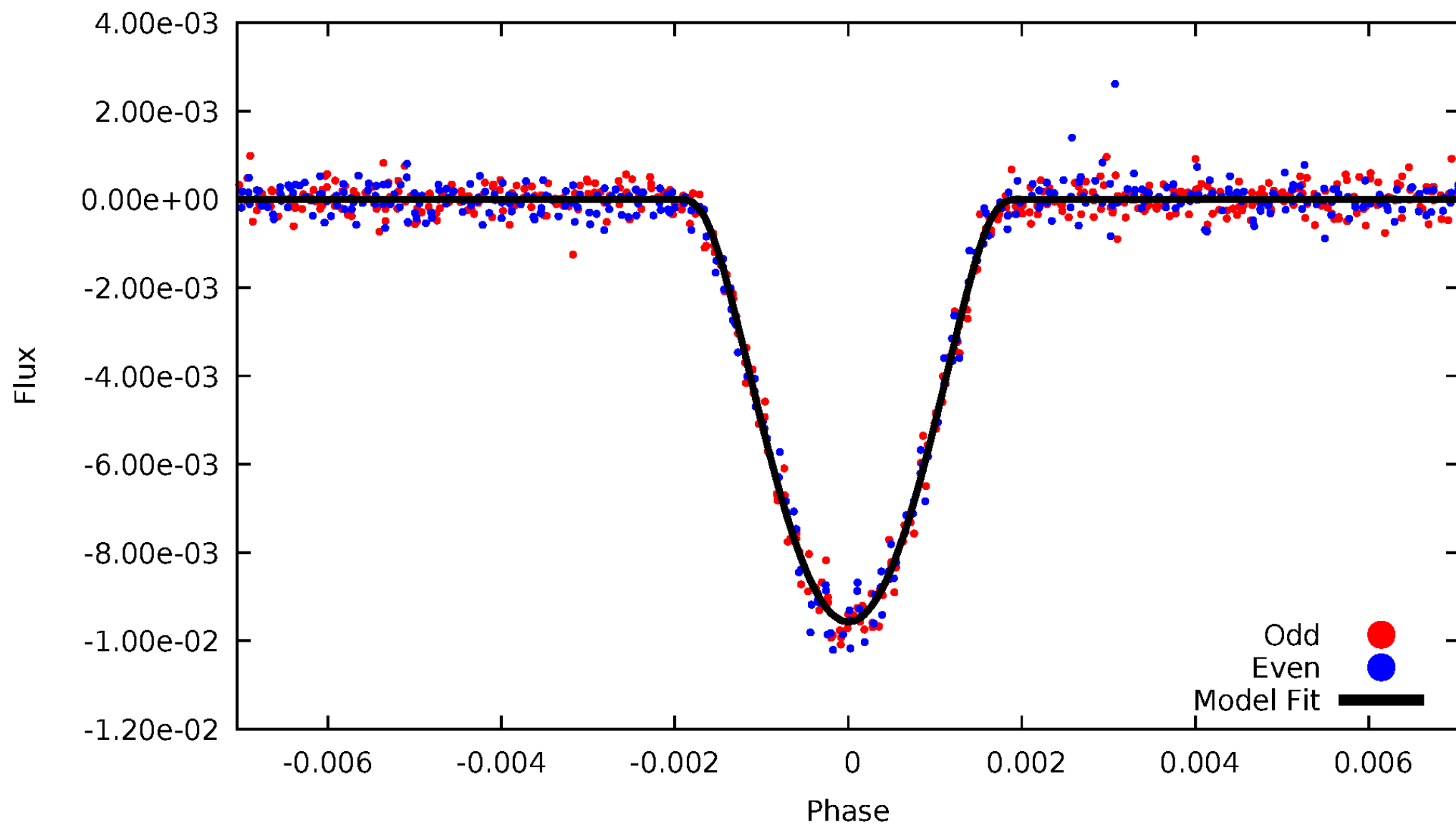


TCE 010798605-02



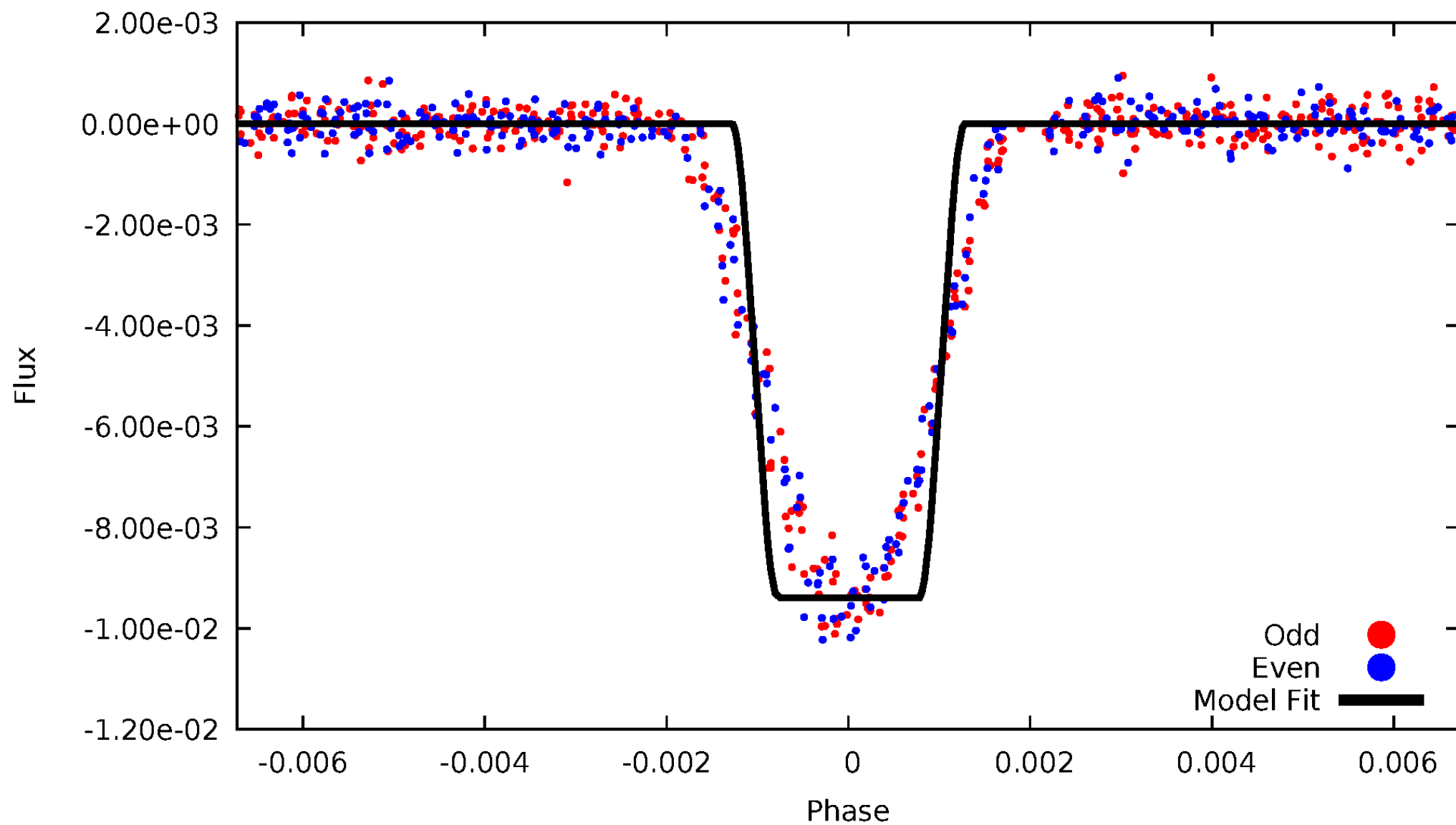
DV Odd/Even

TCE 010798605-02



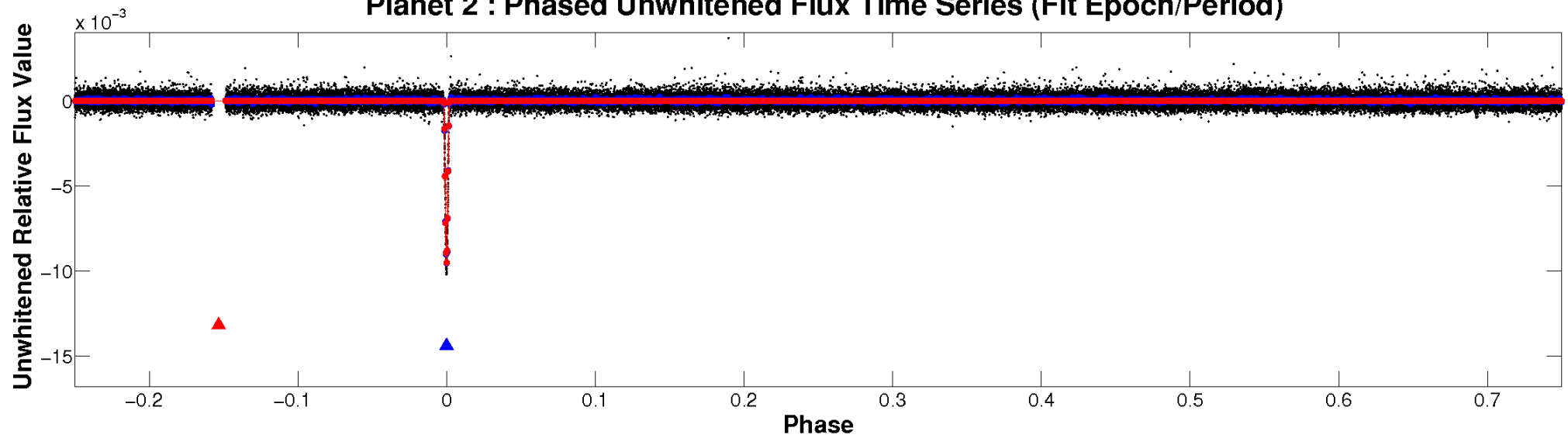
ALT Odd/Even

TCE 010798605-02

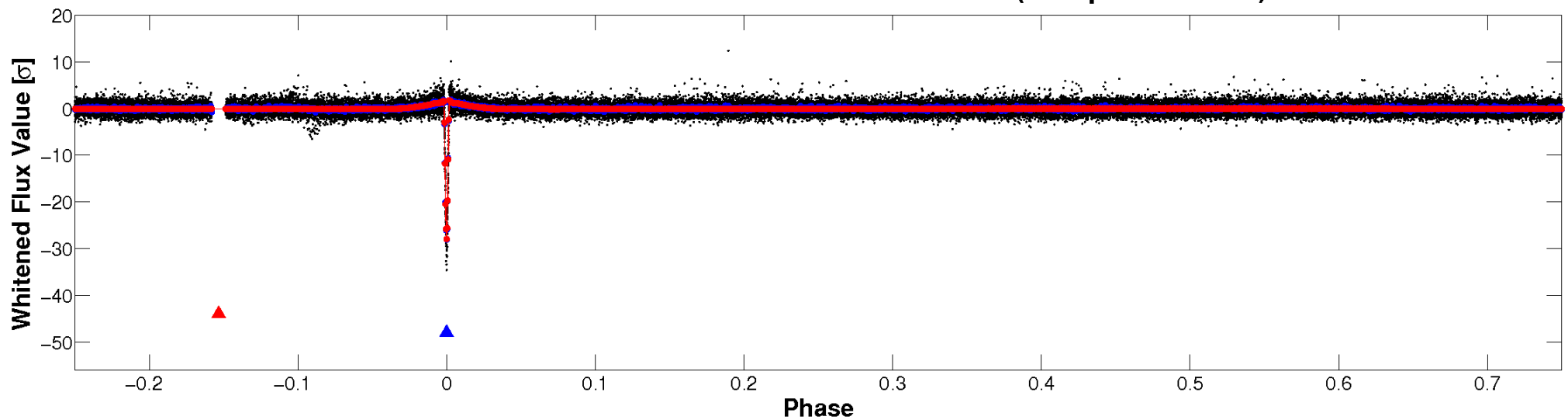


Non-Whitened Vs. Whitened Light Curve

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

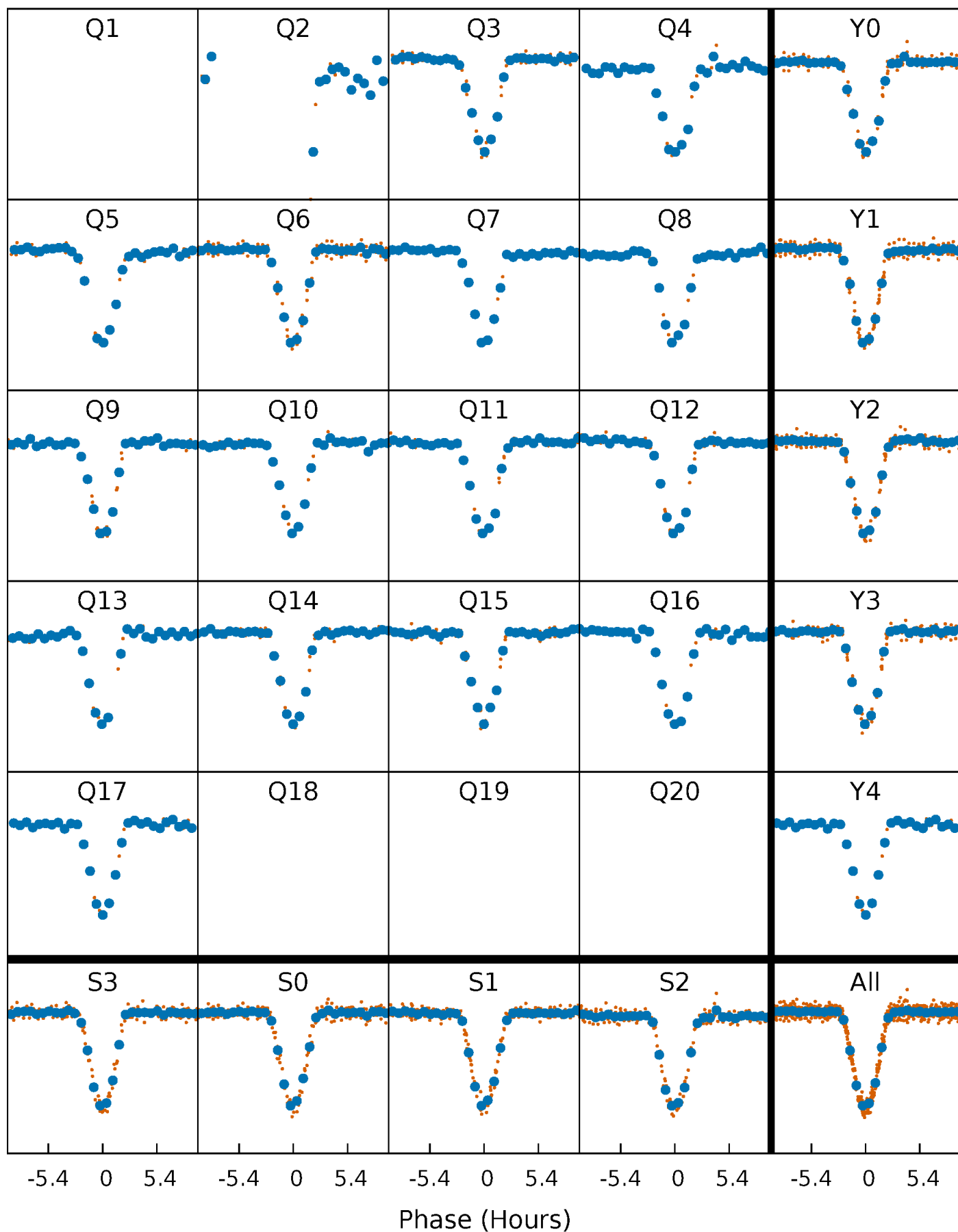


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



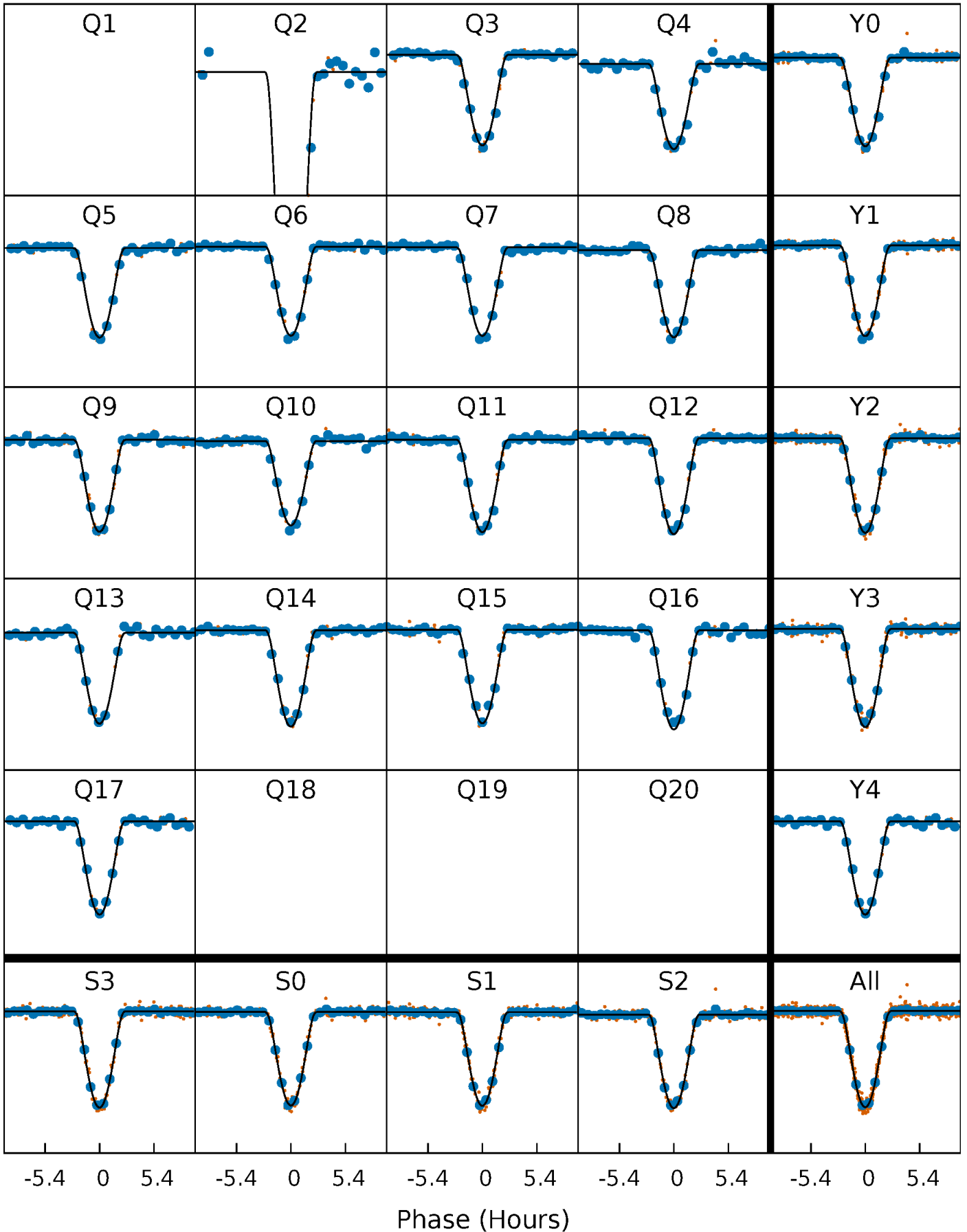
PDC Quarter-Phased Transit Curves

TCE 010798605-02 P= 56.048497 Days $T_0=167.753402$ (BKJD)



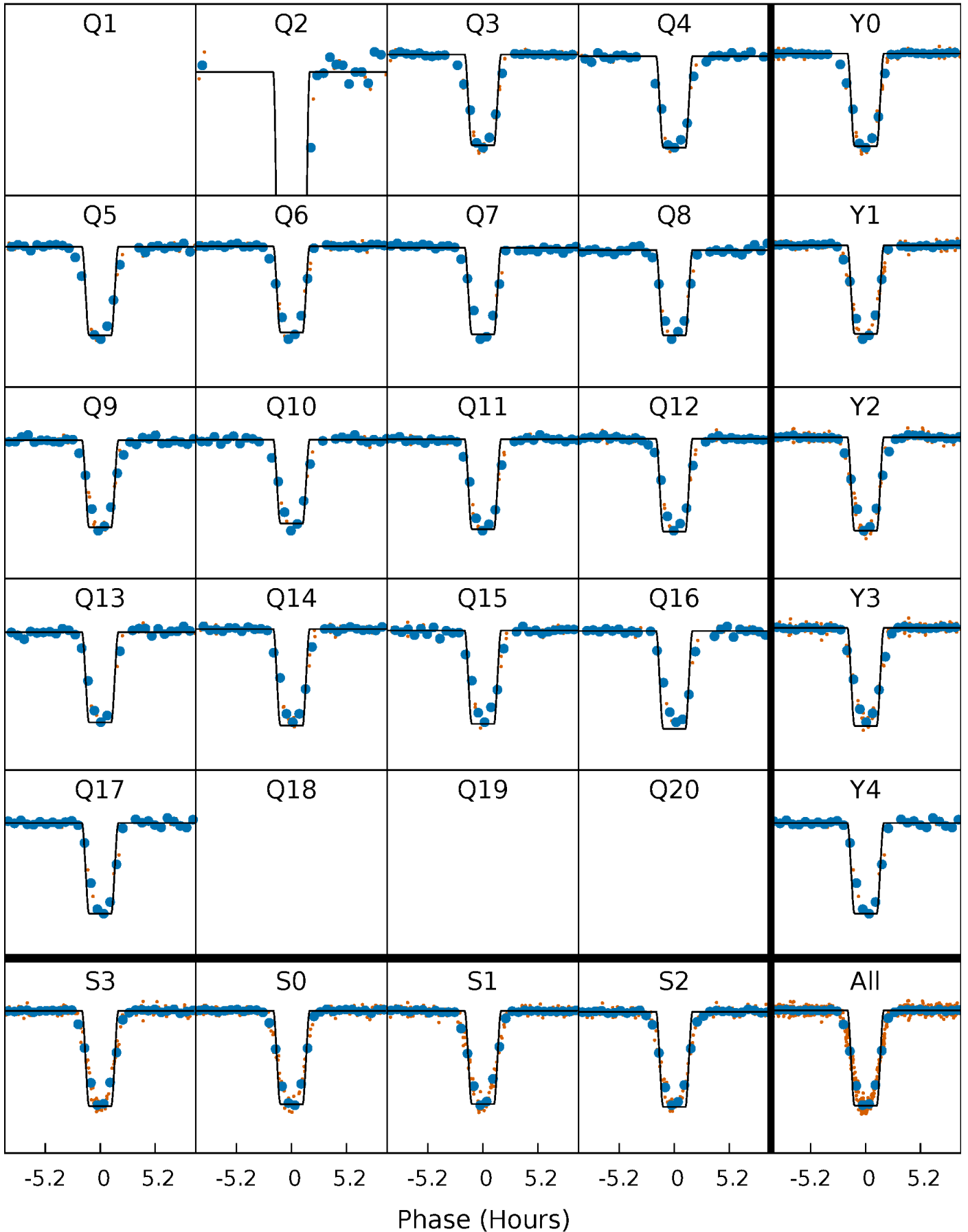
DV Quarter-Phased Transit Curves

TCE 010798605-02 $P = 56.048497$ Days $T_0 = 167.753402$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

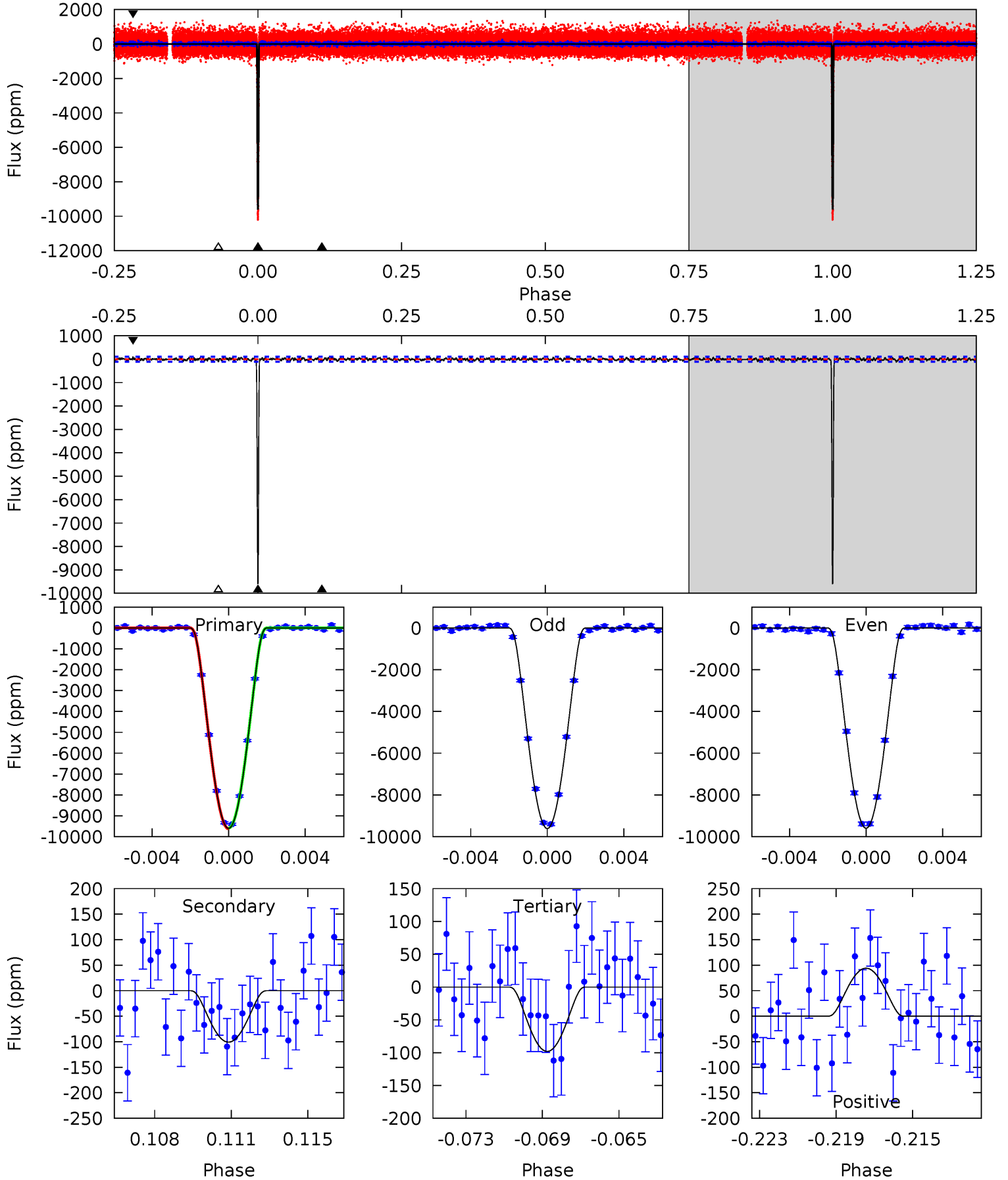
TCE 010798605-02 P= 56.048006 Days $T_0=167.760161$ (BKJD)



DV Model-Shift Uniqueness Test

010798605-02, P = 56.048497 Days, E = 111.704905 Days

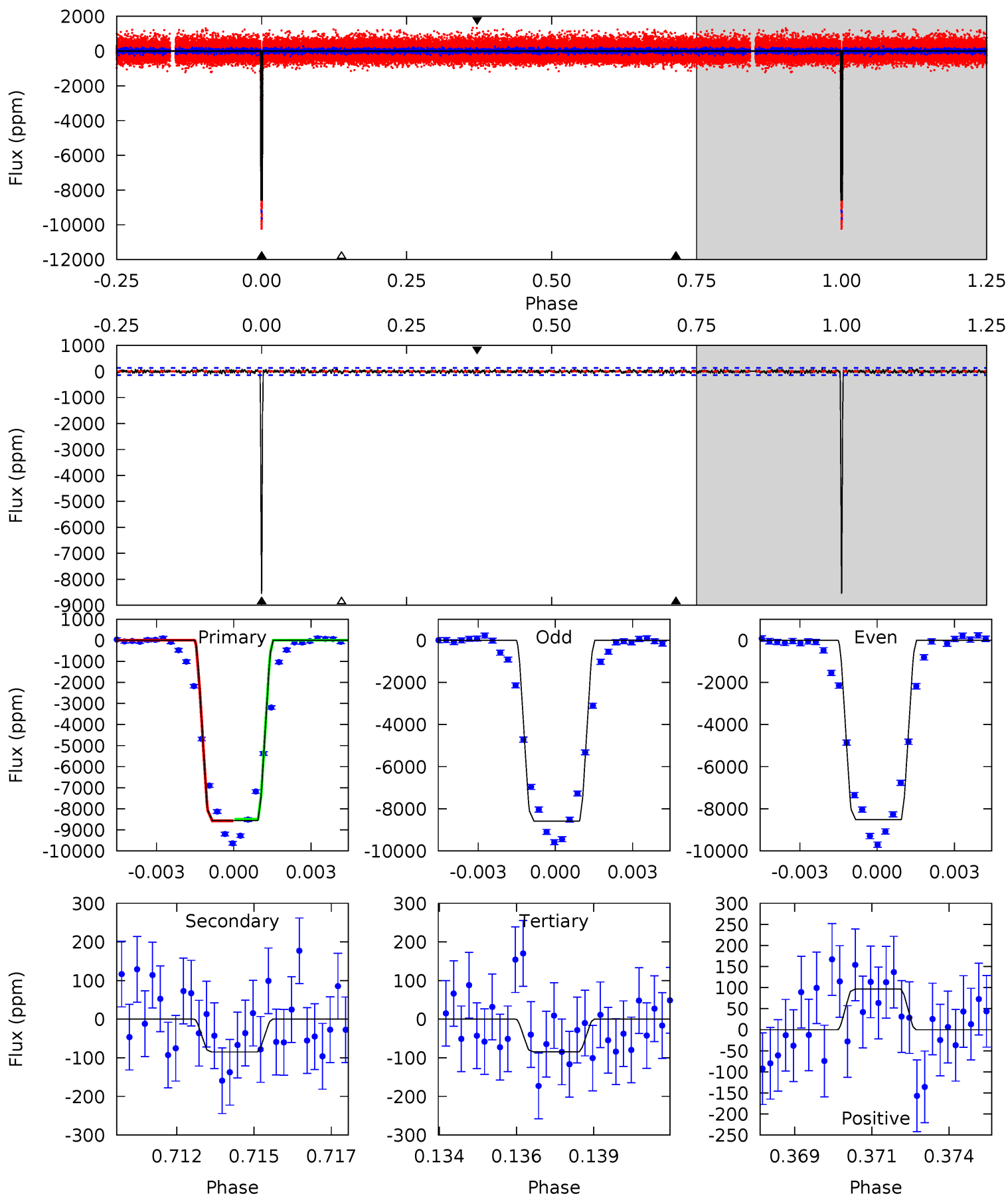
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
472.9	4.96	4.83	4.63	5.21	2.89	1.51	468.0	468.2	0.13	0.33	0.34	1.01	0.01	0.86



Alt Model-Shift Uniqueness Test

010798605-02, $P = 56.048006$ Days, $E = 111.712155$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
325.2	3.22	3.21	3.67	5.28	3.02	1.09	321.9	321.5	0.01	-0.44	1.22	0.99	0.01	1.28



Stellar Parameters For KIC 010798605

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5222^{+156}_{-156}	$4.518^{+0.096}_{-0.132}$	$-0.300^{+0.350}_{-0.300}$	$0.780^{+0.115}_{-0.094}$	$0.730^{+0.116}_{-0.050}$	$2.169^{+0.861}_{-0.675}$
	+3%/-3%	+2%/-3%	+117%/-100%	+15%/-12%	+16%/-7%	+40%/-31%
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 010798605-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-101 ± 20	$12.99^{+2.34}_{-2.14}$	560^{+31}_{-25}	2264^{+103}_{-101}	22^{+10}_{-7}
Alt.	-85 ± 26	$8.33^{+2.18}_{-2.00}$	563^{+29}_{-25}	2460^{+187}_{-173}	45^{+34}_{-22}

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

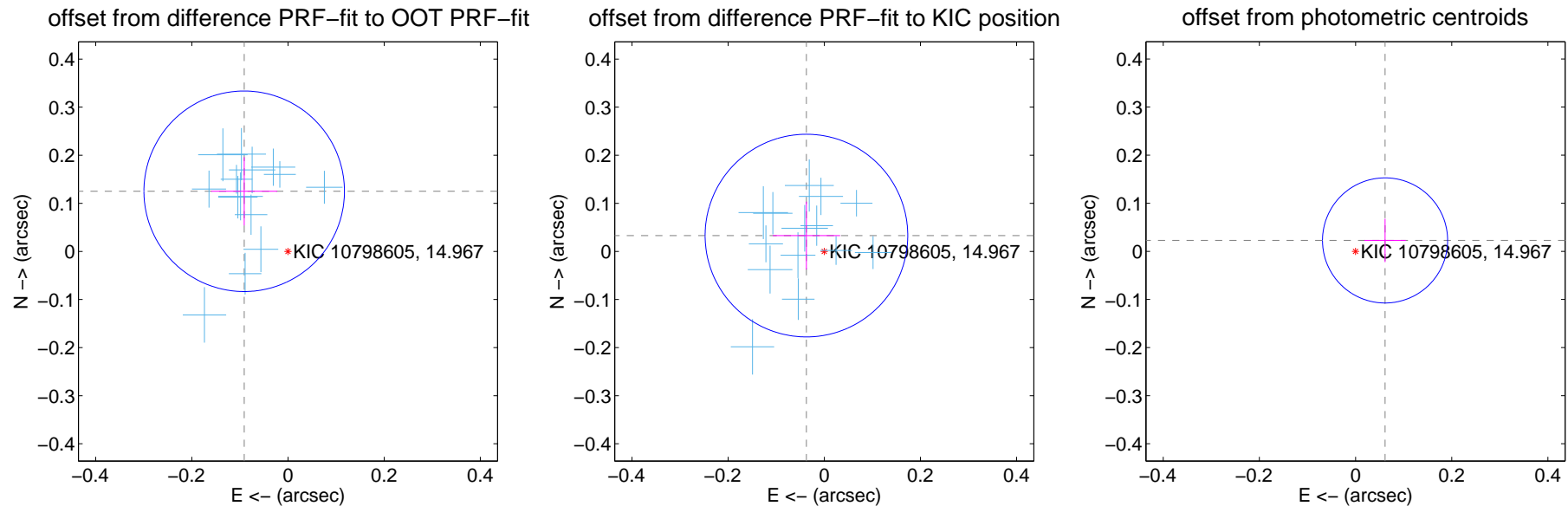
DV Centroid Data

Supplemental centroid analysis for 010798605-02. Kepler magnitude: 14.97. Transit SNR 243.26

There are 14 quarters with good PRF difference image offsets

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

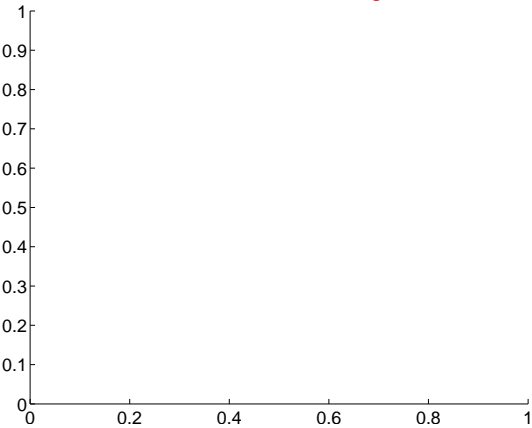
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.155 ± 0.070	2.23	0.091 ± 0.069	0.125 ± 0.071
PRF-fit source offset from KIC position	0.050 ± 0.070	0.71	0.037 ± 0.070	0.033 ± 0.070
photometric centroid source offset	0.07 ± 0.04	1.51	-0.06 ± 0.04	0.02 ± 0.05



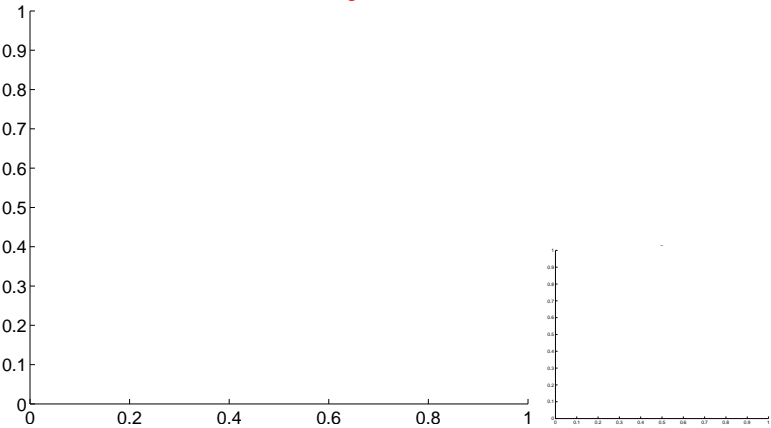
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

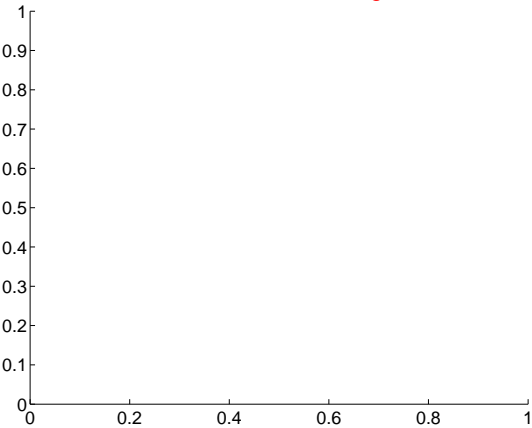
Q1 no difference image



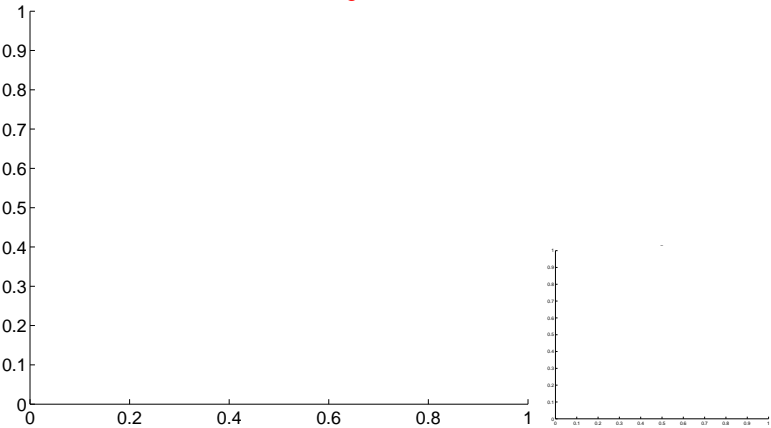
Q1 no OOT image



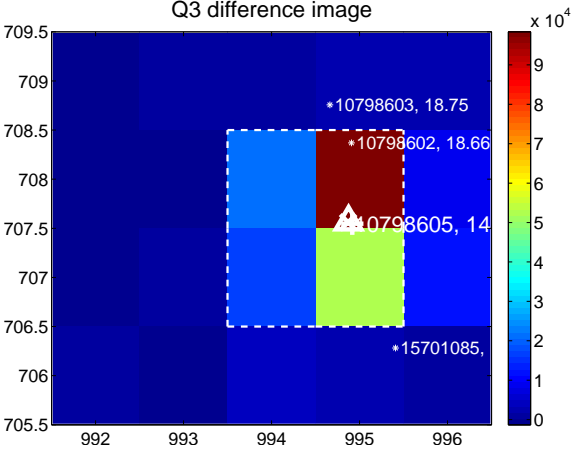
Q2 no difference image



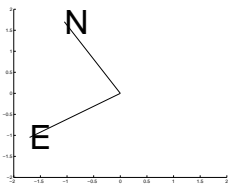
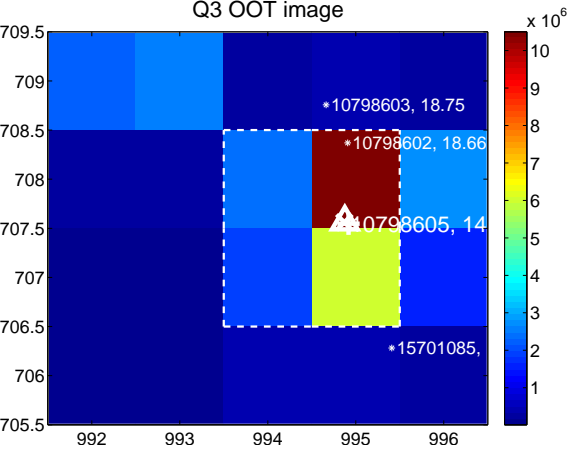
Q2 no OOT image



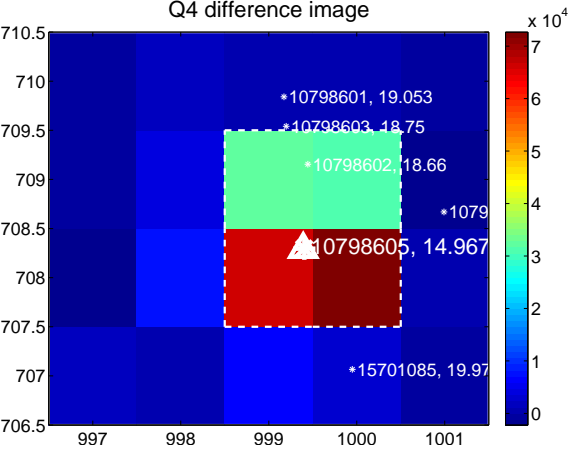
Q3 difference image



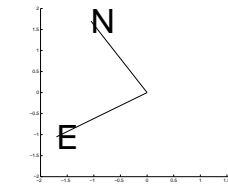
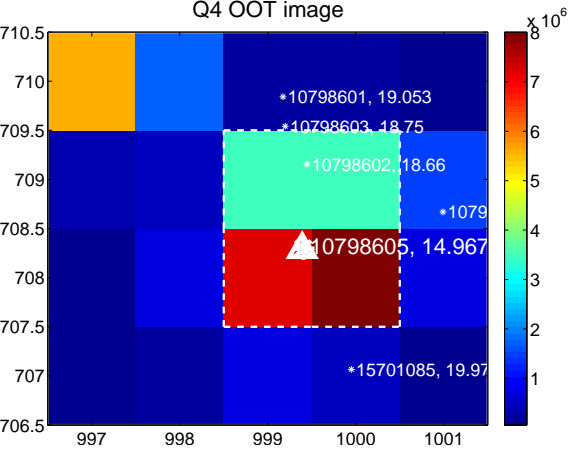
Q3 OOT image



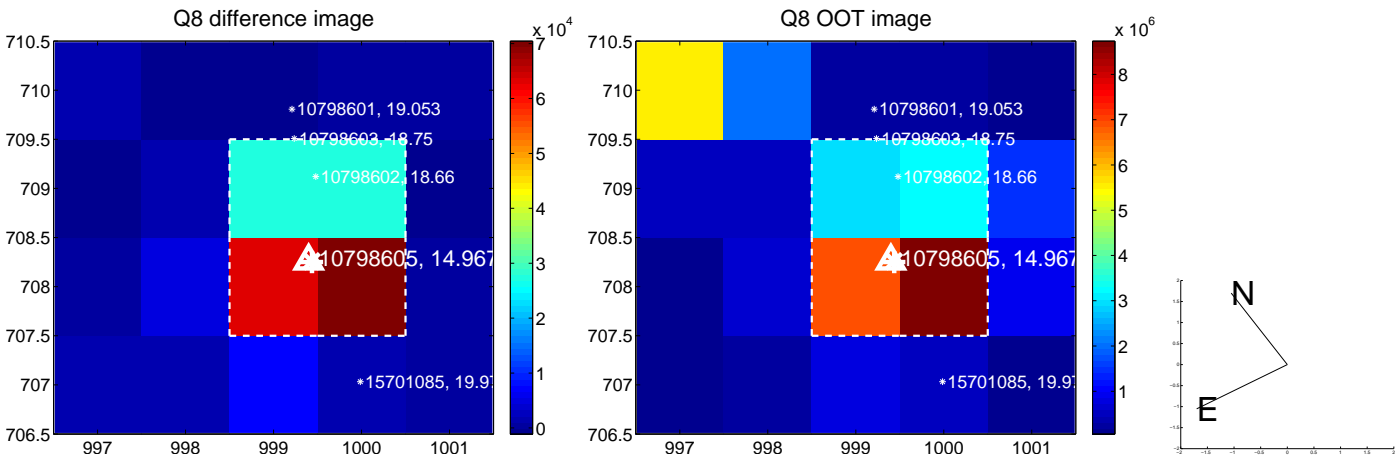
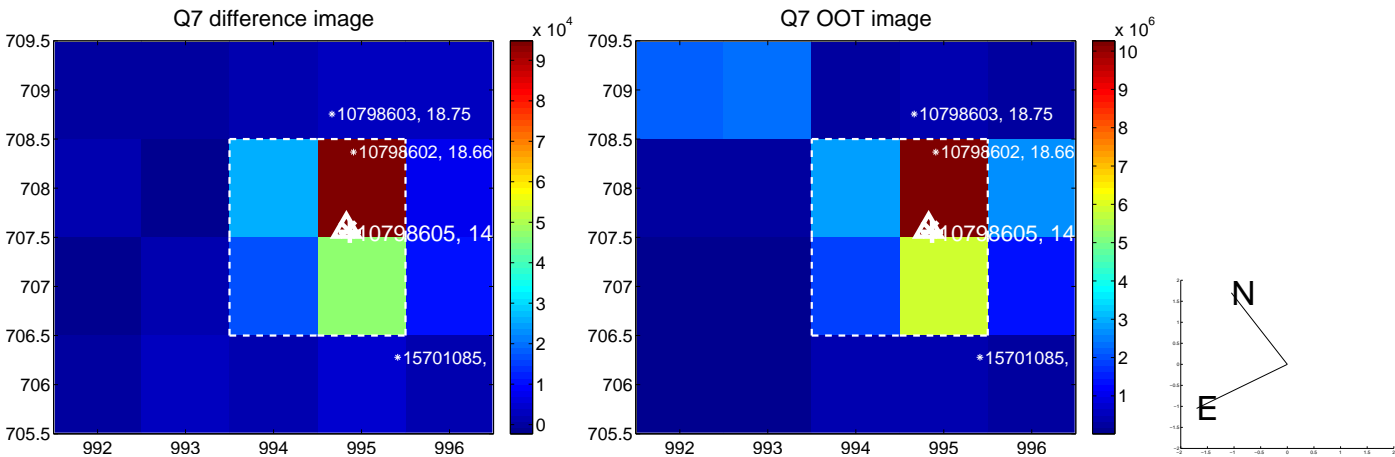
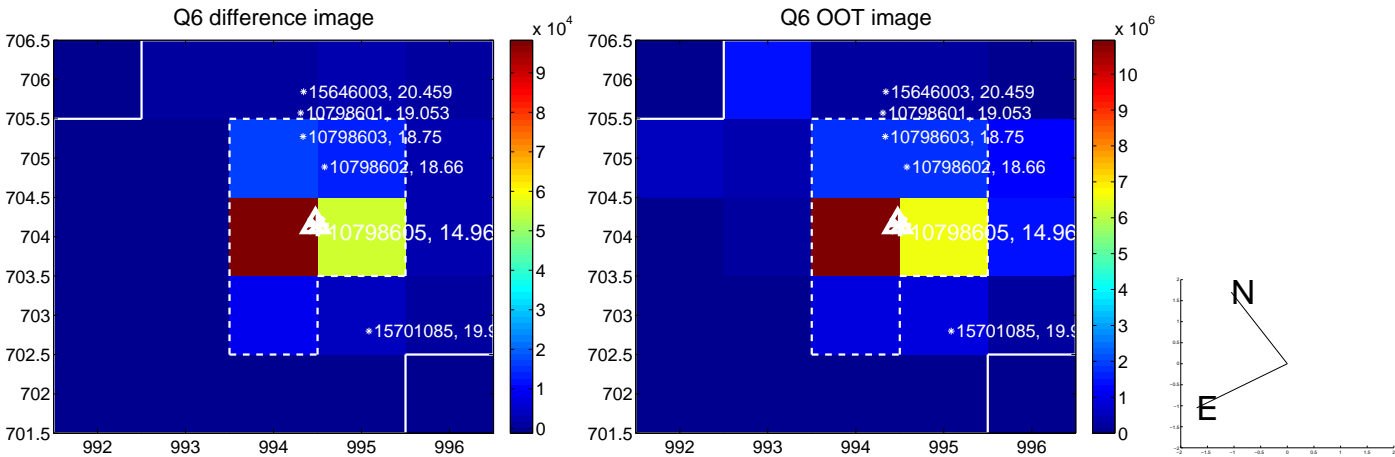
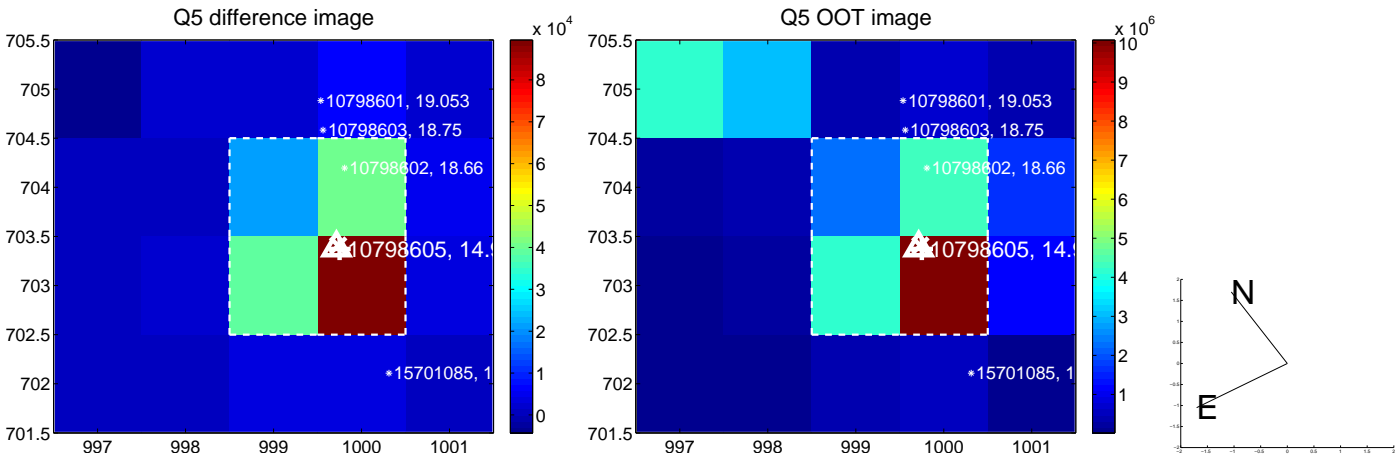
Q4 difference image



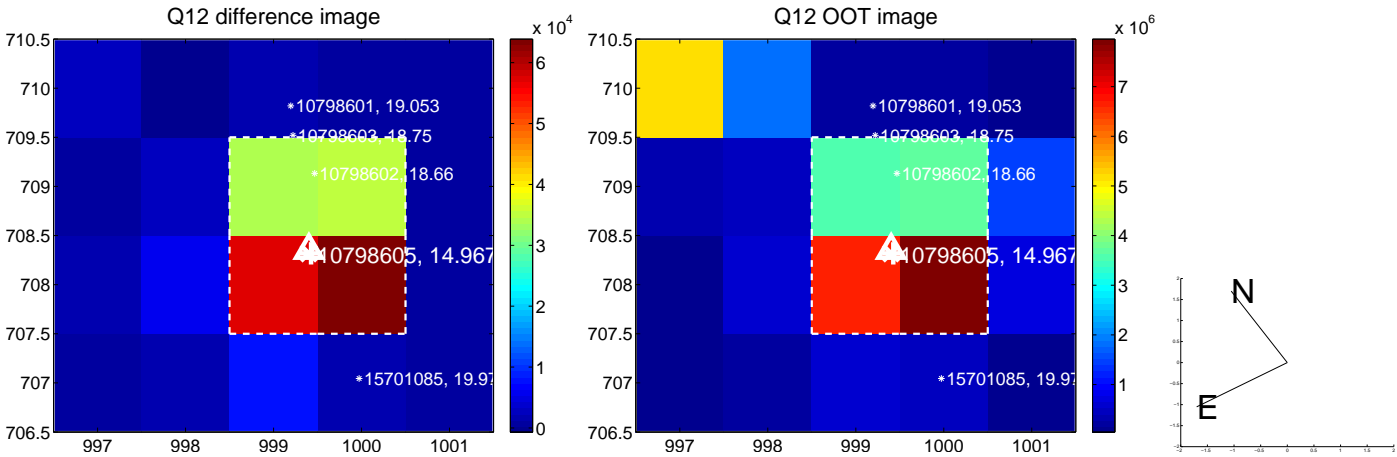
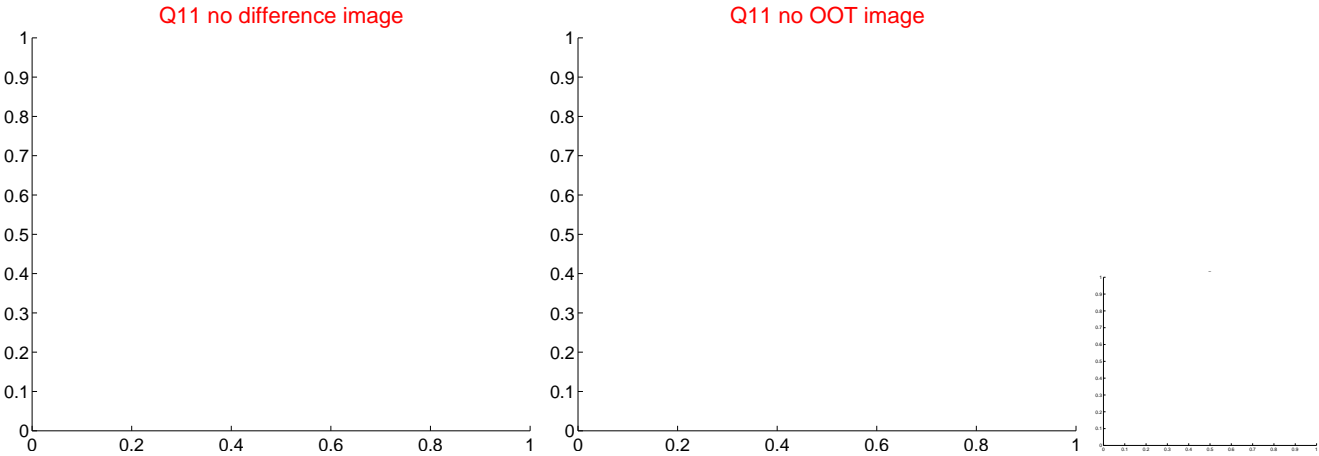
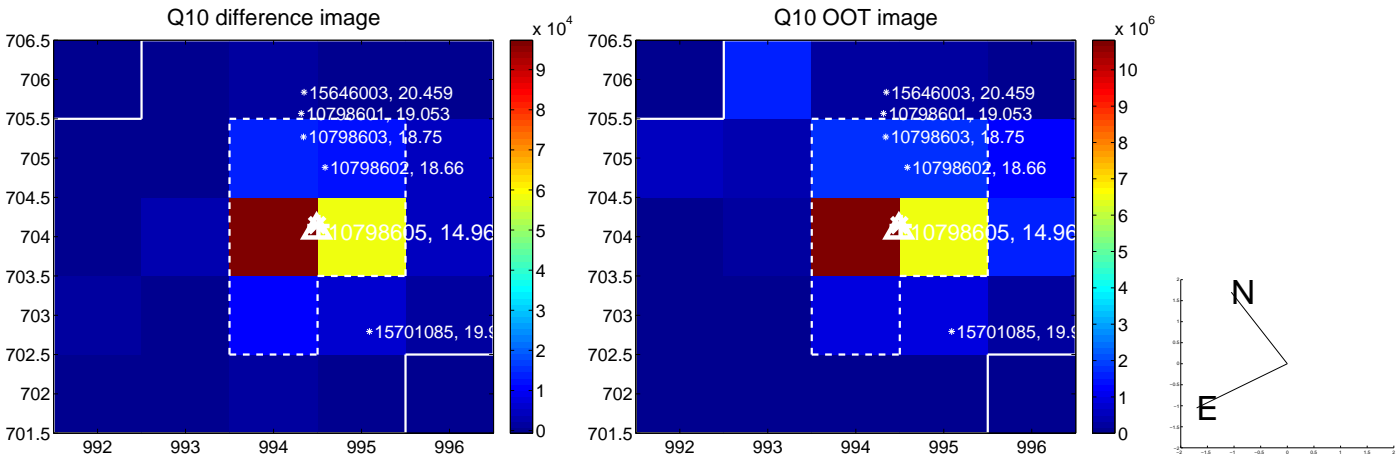
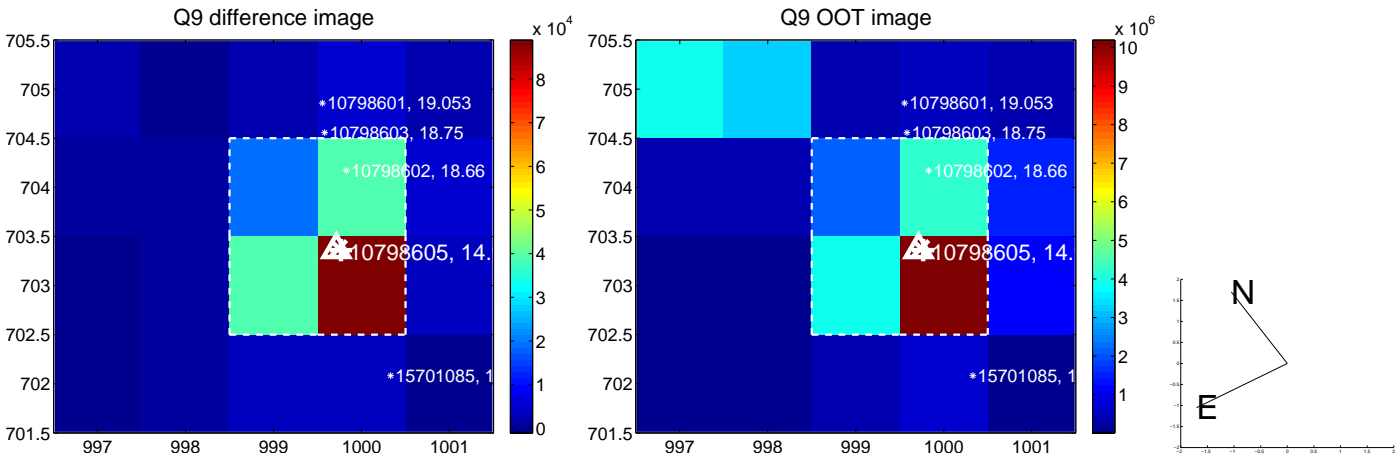
Q4 OOT image



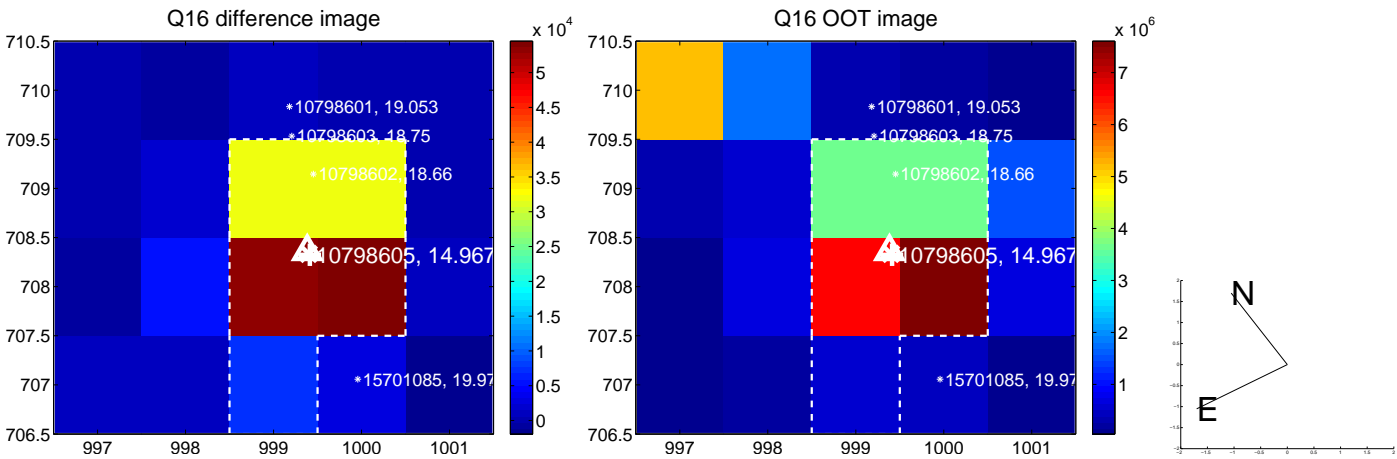
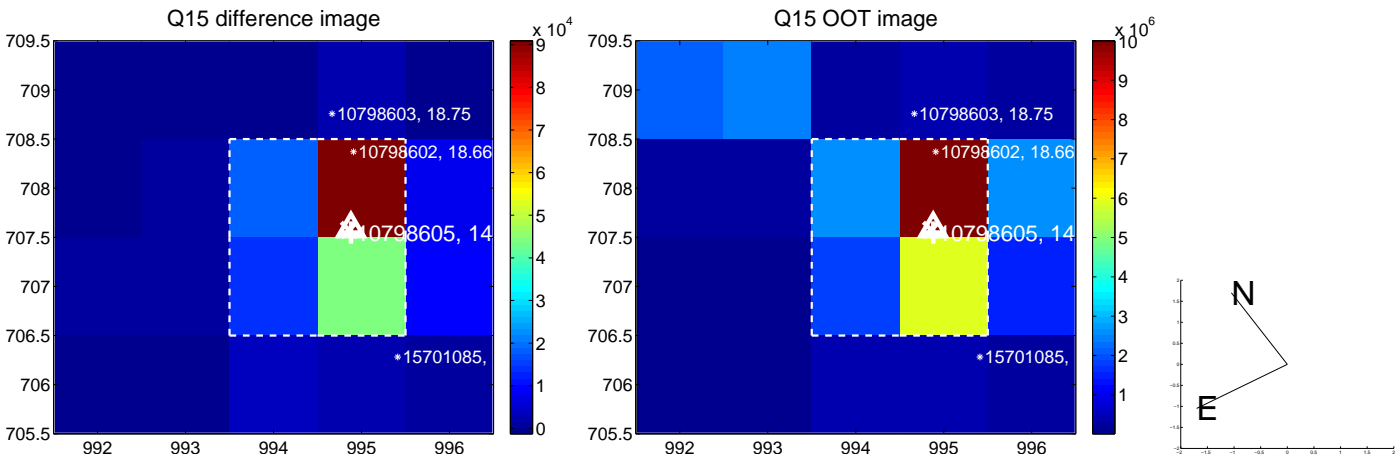
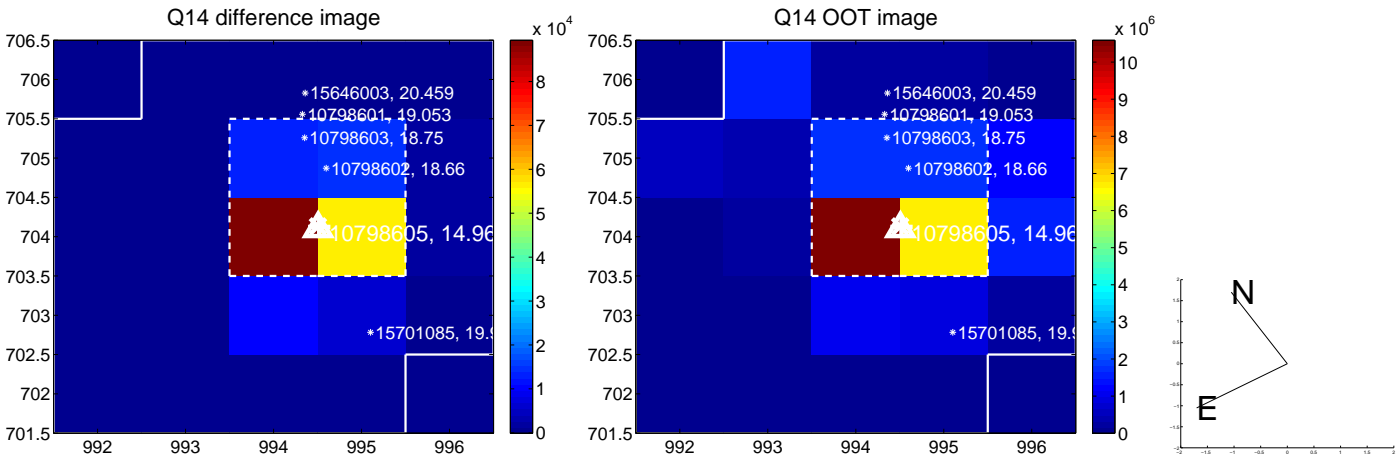
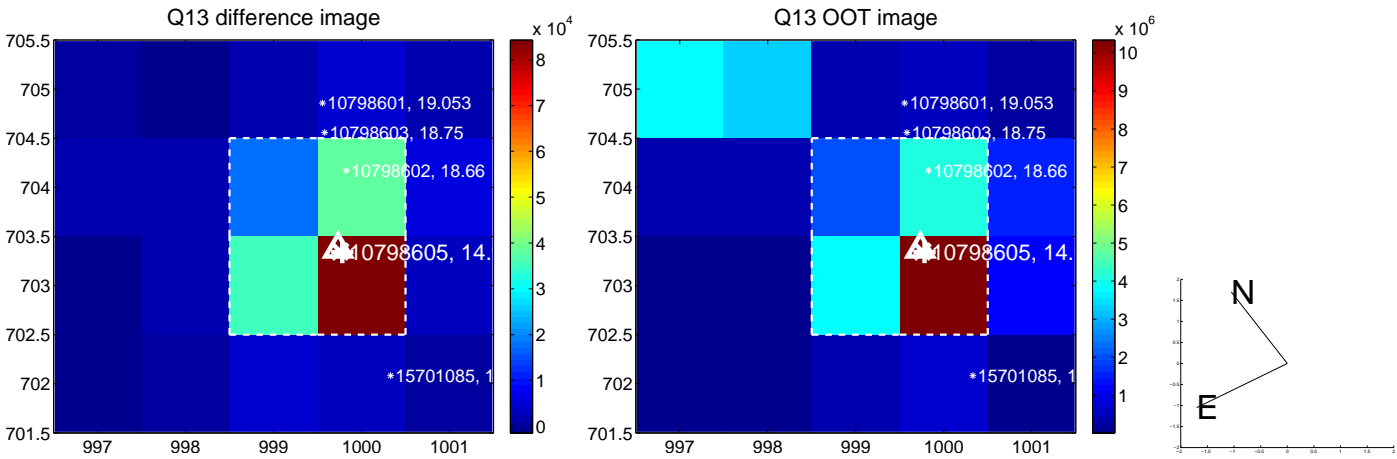
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



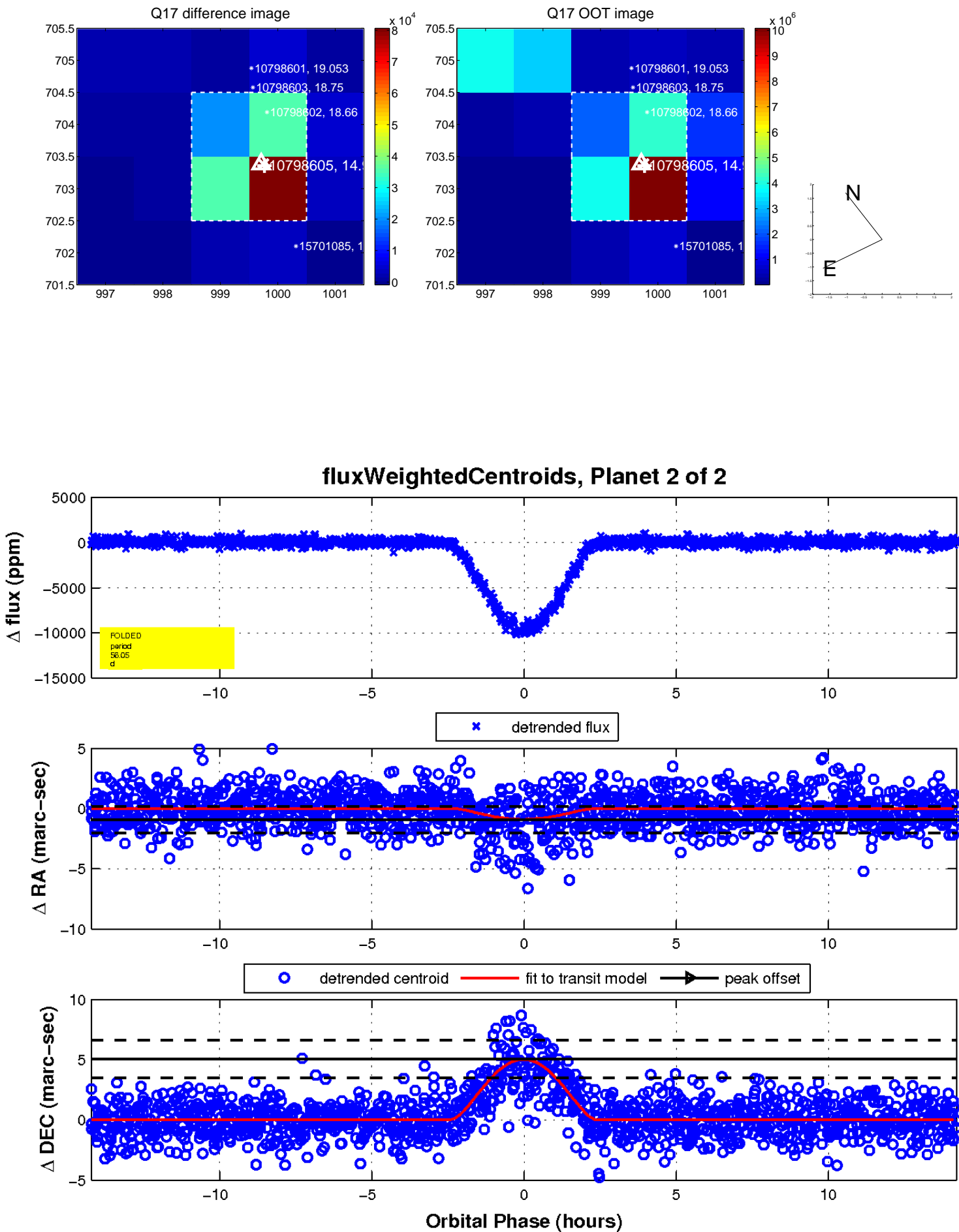
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

