

KIC 011502172

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})
011502172-01	OBS	7452.01	25.431878	135.618830	47317.8	5.175	2542.9	1499.6	0.90	5754	33.74	30.98
011502172-02	OBS	No	25.431960	146.866141	17176.3	5.615	924.3	756.2	0.90	5754	20.87	30.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011502172-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
011502172-02	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.

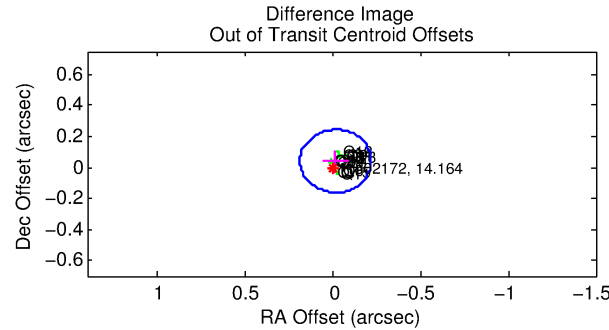
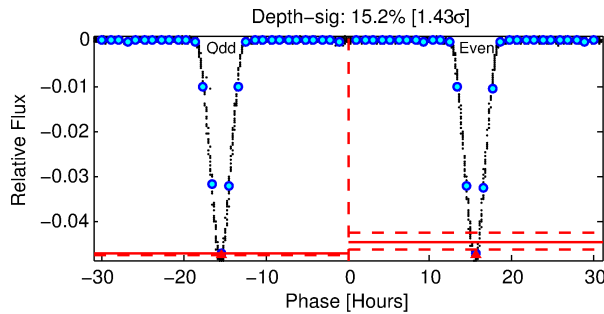
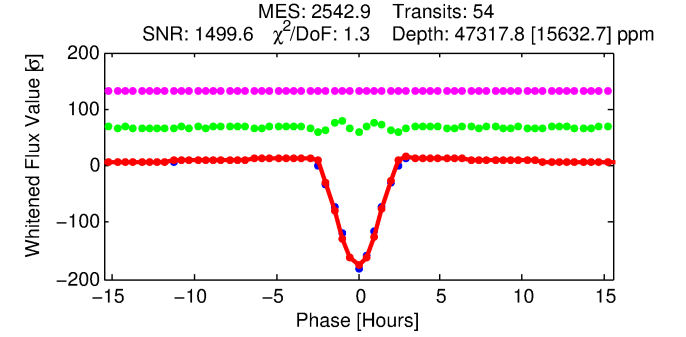
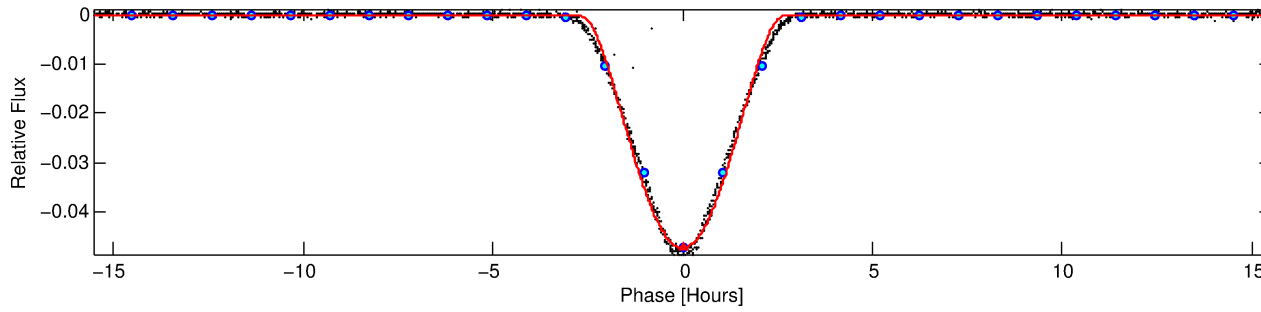
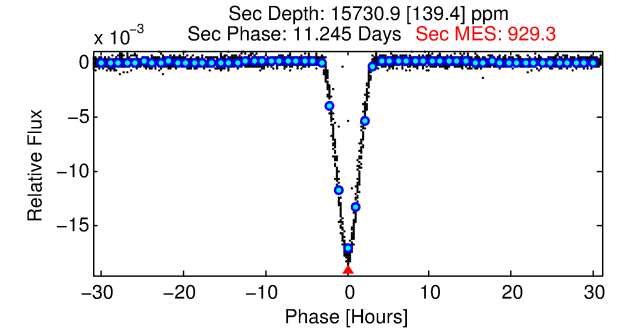
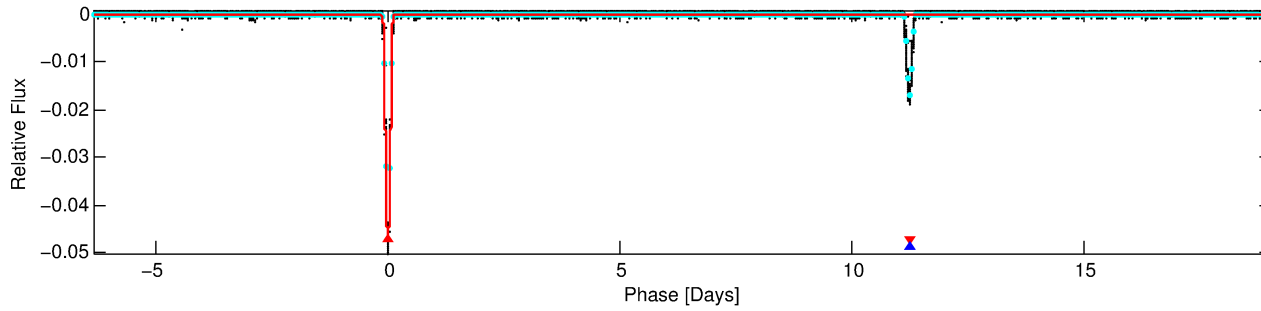
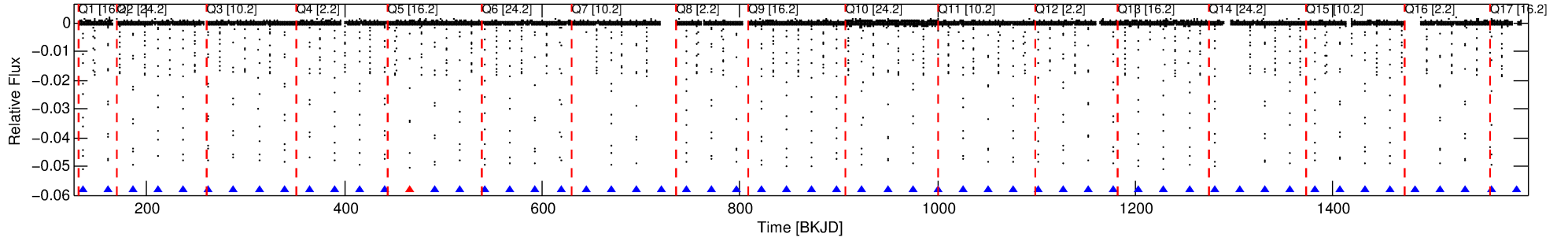
Ephemeris Match Information For 011502172-01

No Significant Match Found

DV One-Page Summary

KIC: 11502172 Candidate: 1 of 2 Period: 25.432 d
KOI: K07452.01 Corr: 0.994

Kp: 14.16 R*: 0.90 Rs Teff: 5754.0 K Logg: 4.46 Fe/H: -0.340



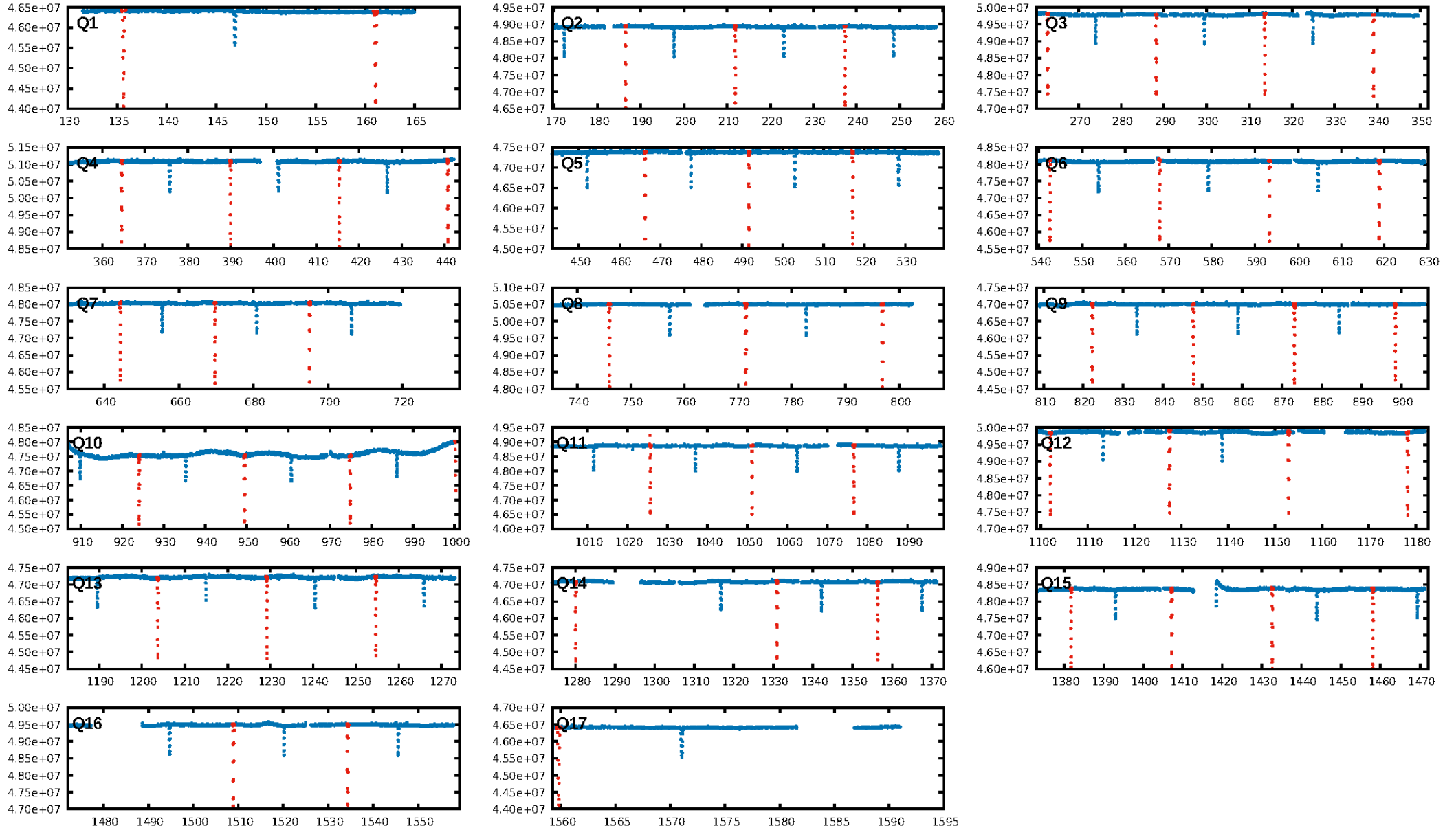
DV Fit Results:

Period = 25.43188 [0.00000] d
Epoch = 135.6188 [0.0001] BKJD
Rp/R* = 0.3436 [0.0198]
a/R* = 33.71 [0.04]
b = 1.00 [0.10]
Seff = 30.98 [10.36]
Teq = 602 [50] K
Rp = 33.74 [8.69] Re
a = 0.1602 [0.0344] AU
Ag = 195.17 [65.77] [2.95σ]
Teffp = 3477 [137] K [19.66σ]

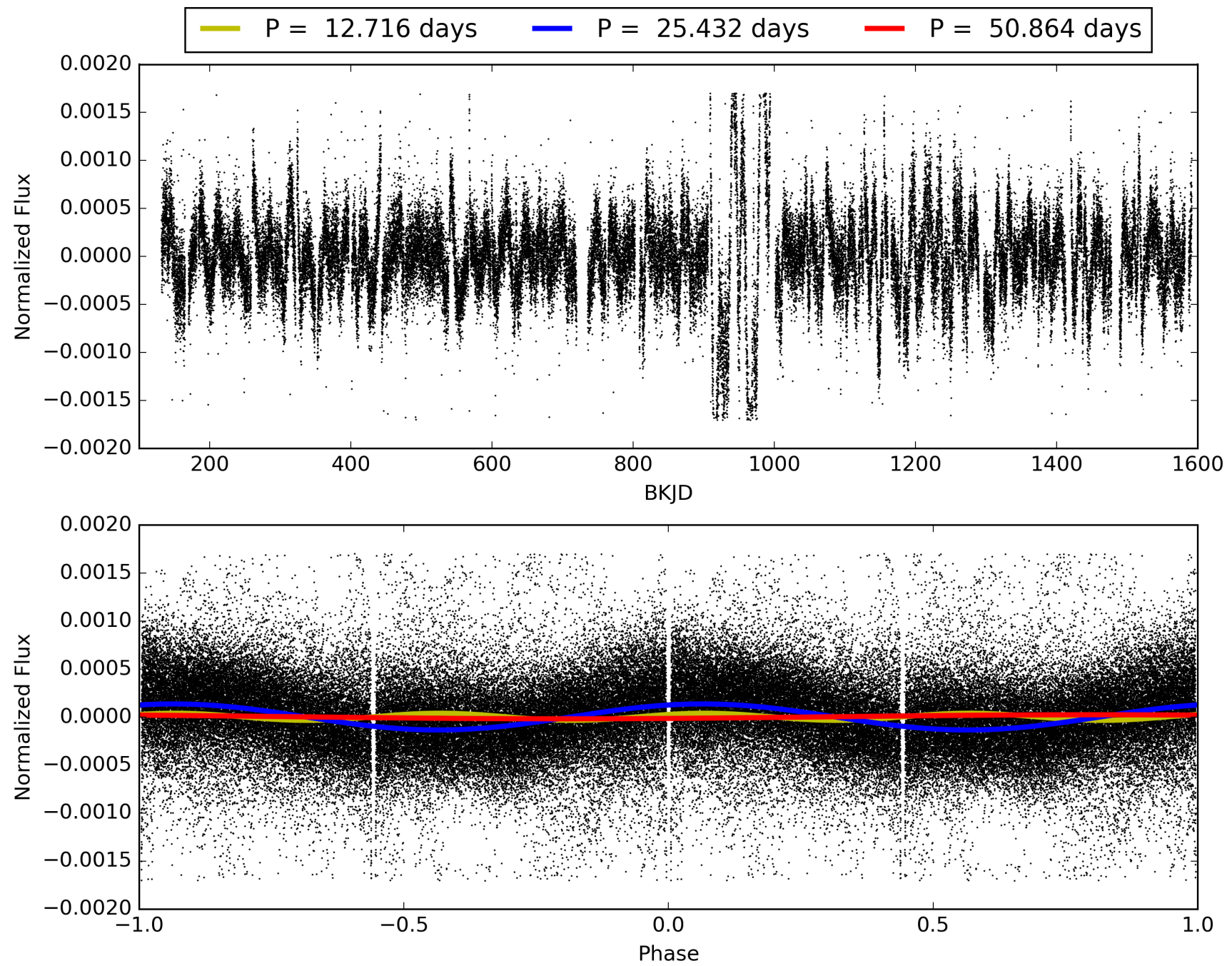
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.98 [50/51]
GhostDiagnostic-chr: 3.721
Centroid-sig: 0.0%
Centroid-so: 0.101 arcsec [21.13σ]
OotOffset-rm: 0.044 arcsec [0.66σ]
KicOffset-rm: 0.063 arcsec [0.93σ]
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]

TCE 011502172-01, PDC Light Curves

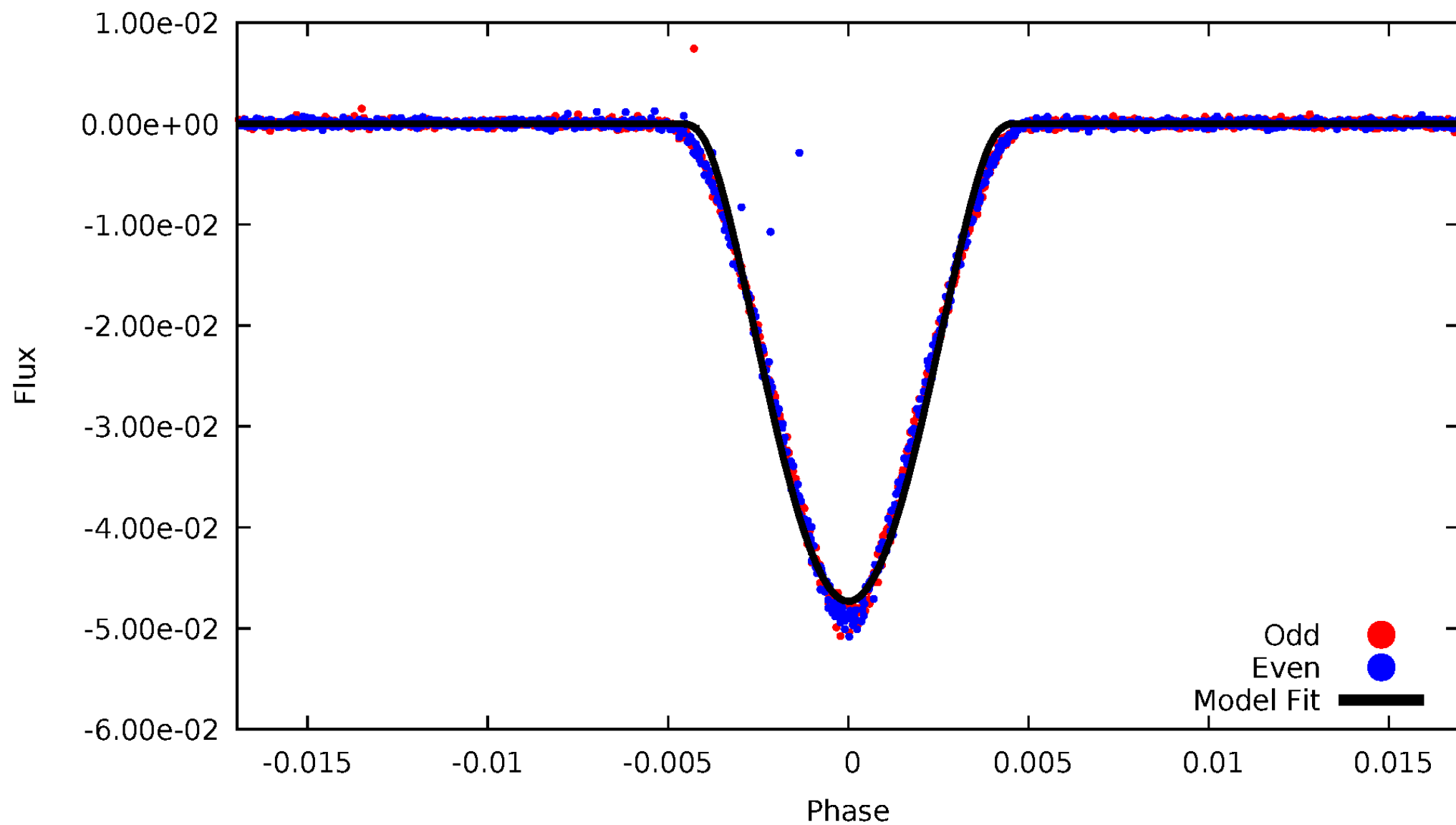


TCE 011502172-01



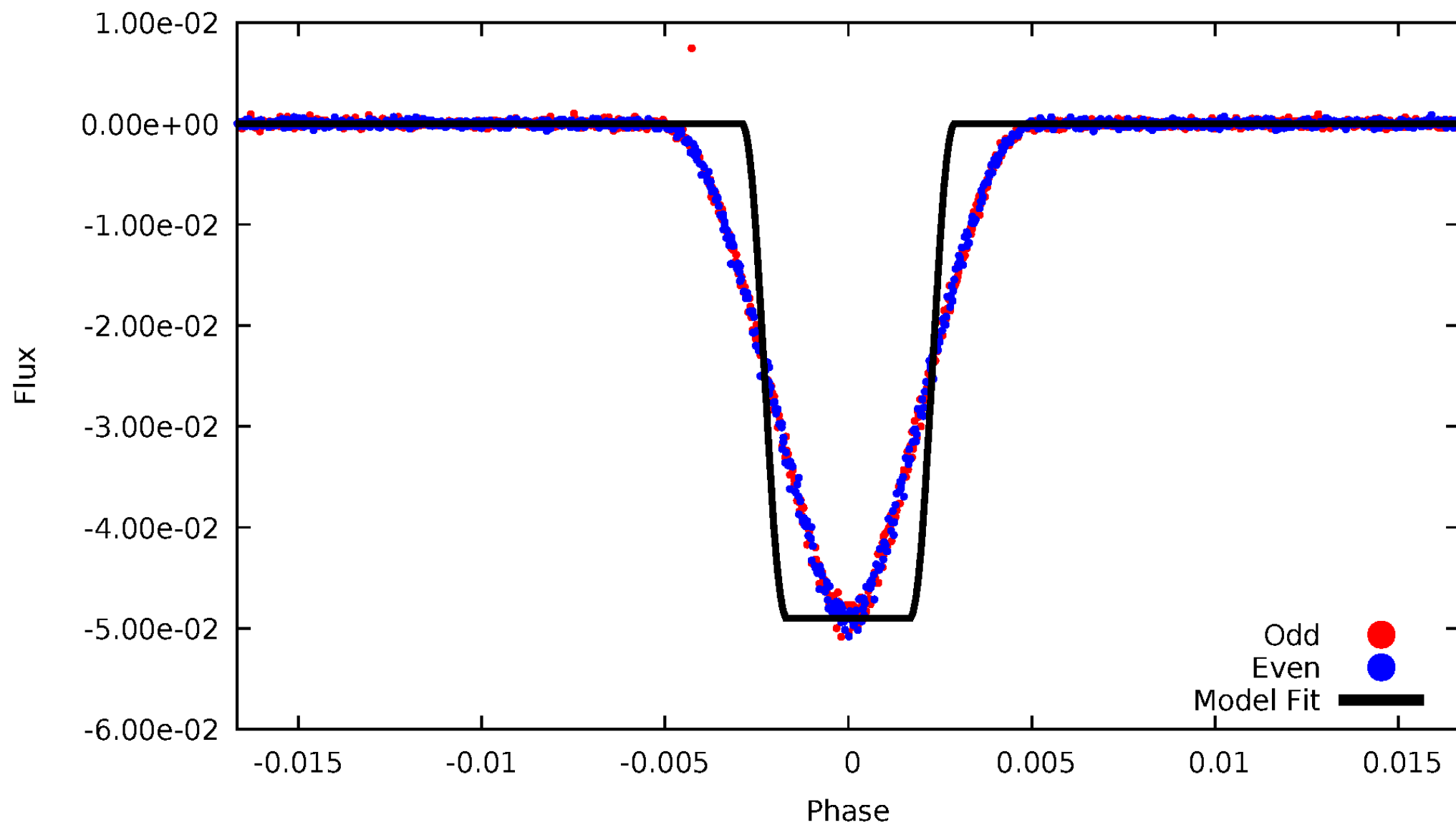
DV Odd/Even

TCE 011502172-01



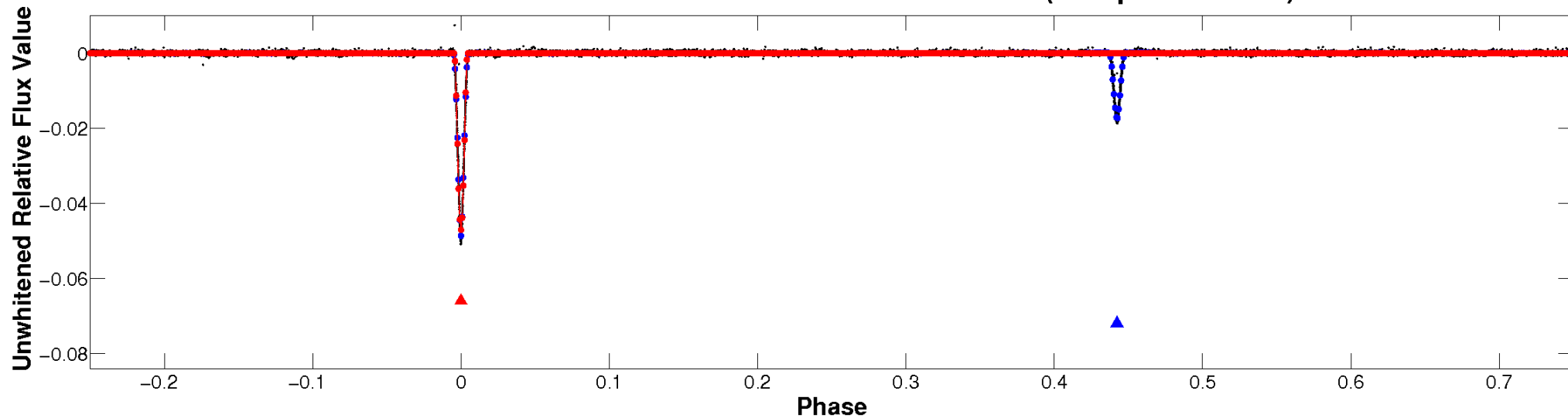
ALT Odd/Even

TCE 011502172-01

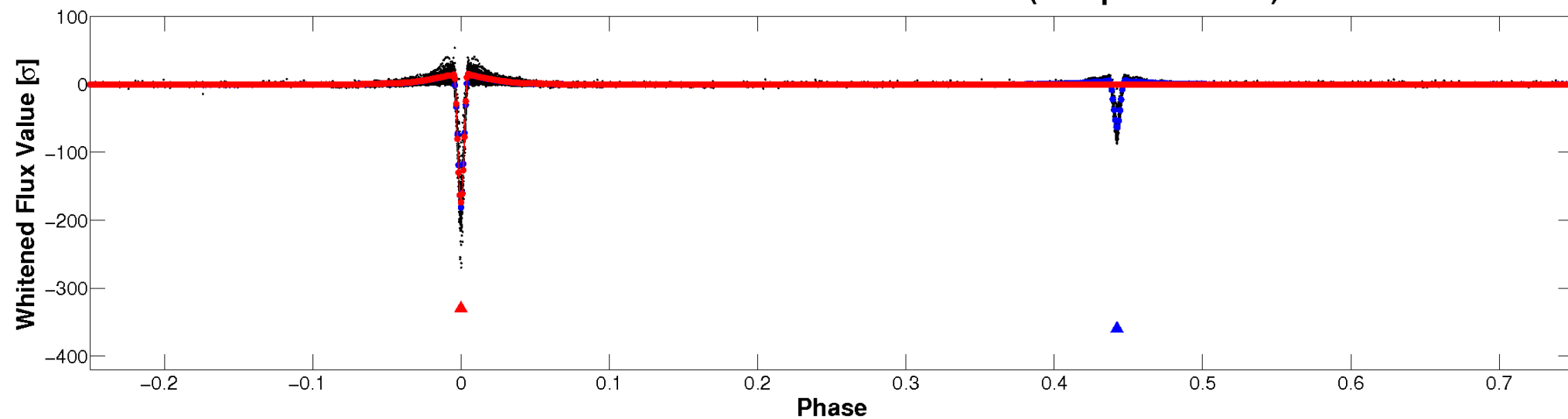


Non-Whitened Vs. Whitened Light Curve

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

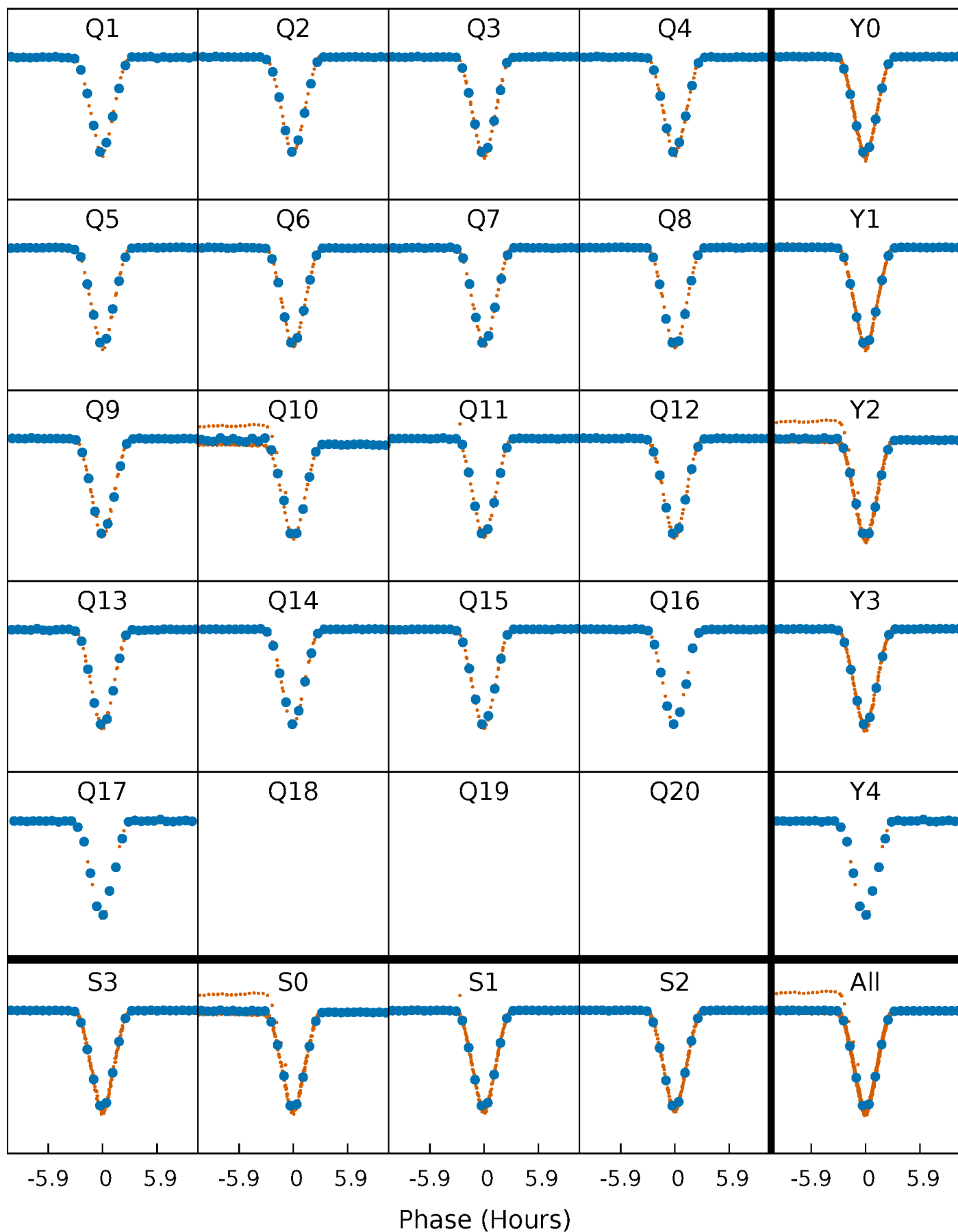


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



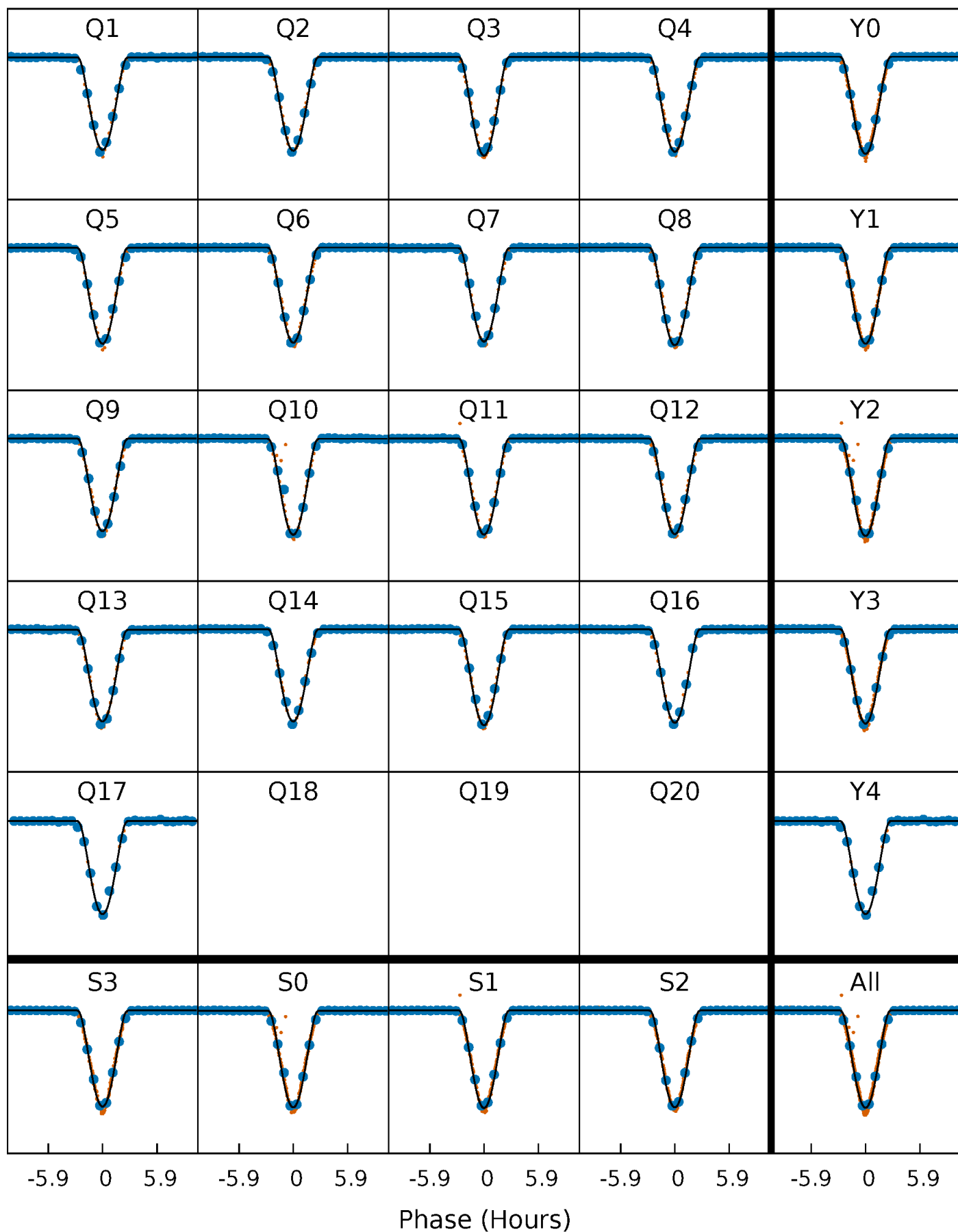
PDC Quarter-Phased Transit Curves

TCE 011502172-01 P= 25.431878 Days $T_0=135.618830$ (BKJD)



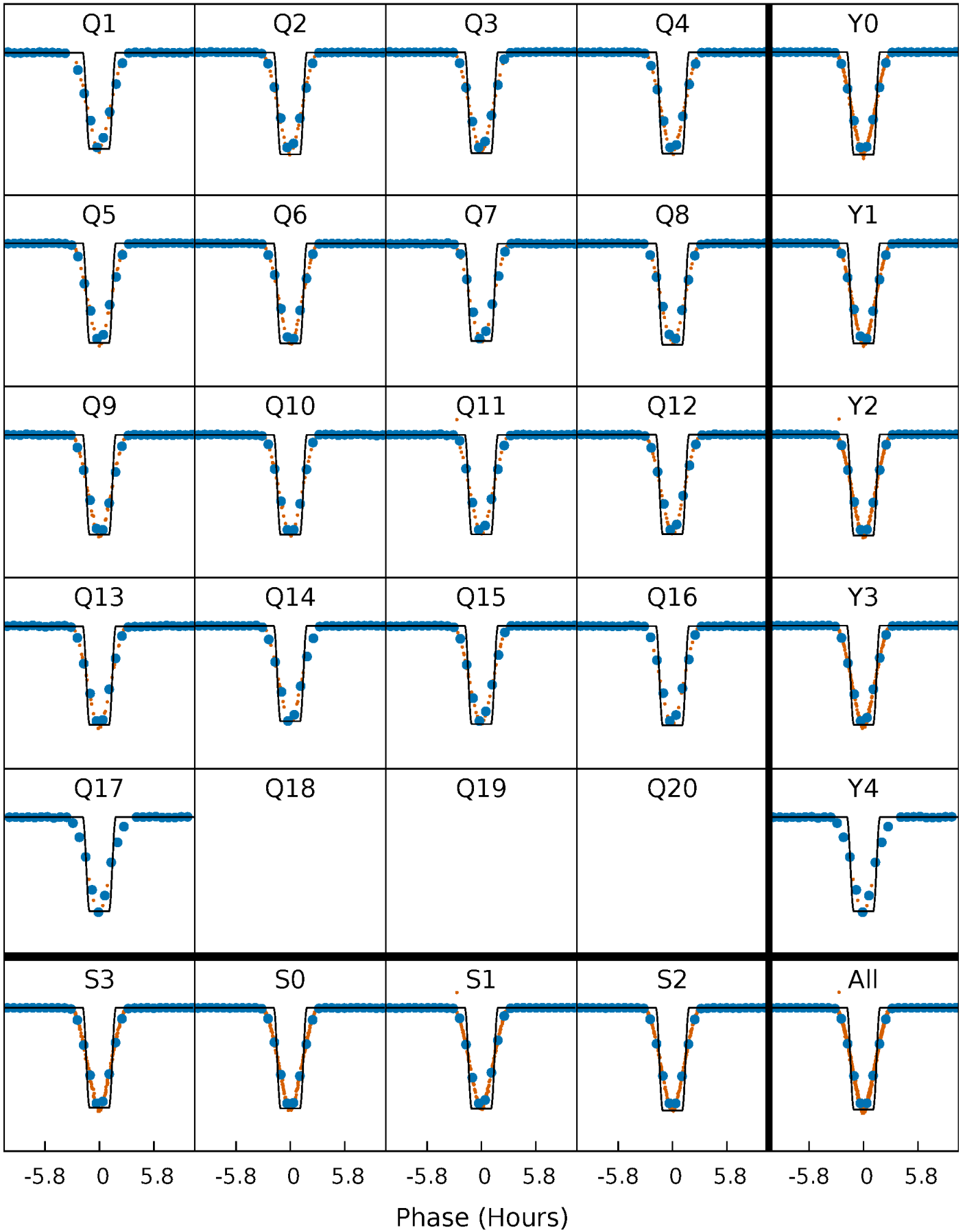
DV Quarter-Phased Transit Curves

TCE 011502172-01 P= 25.431878 Days $T_0=135.618830$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

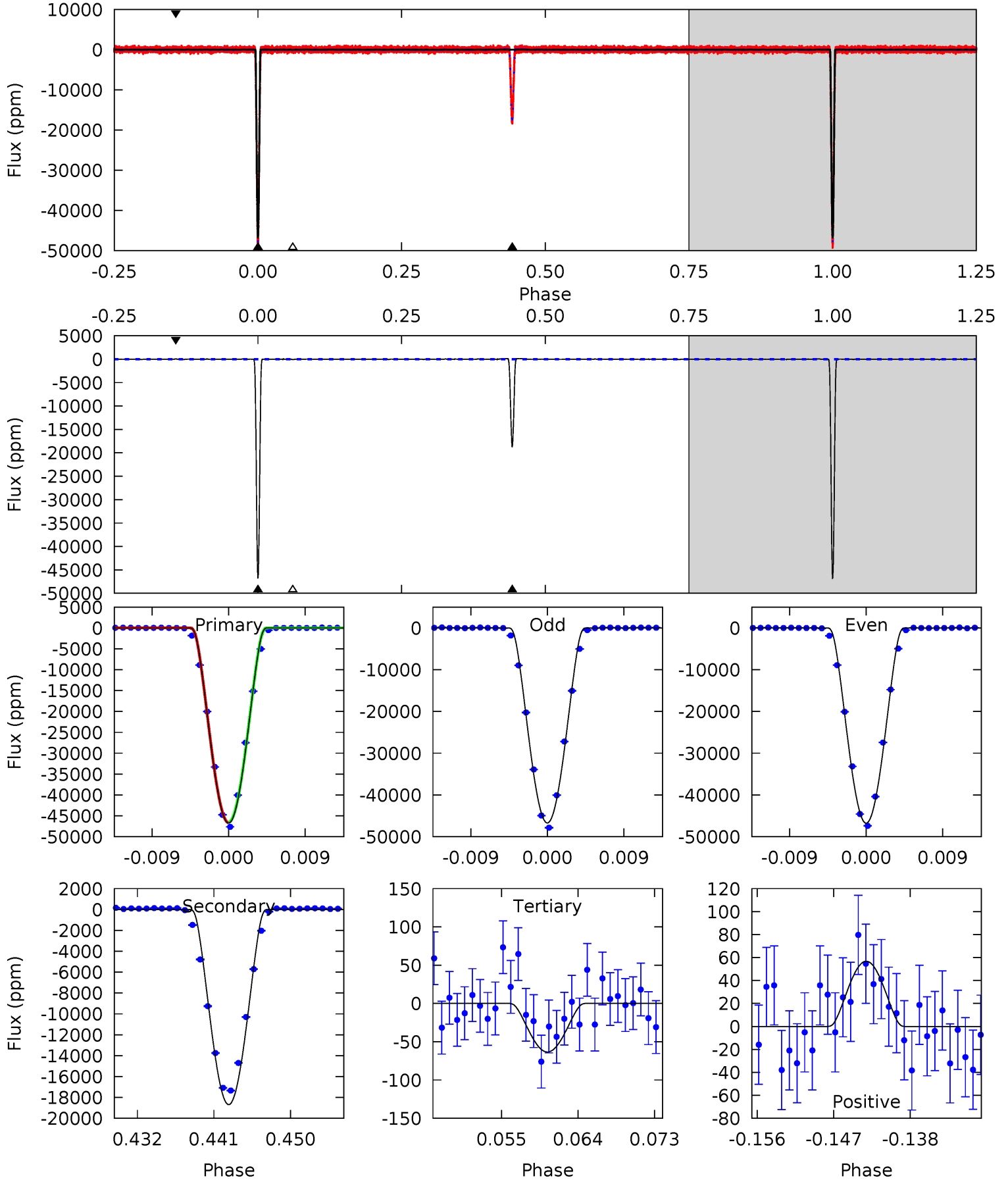
TCE 011502172-01 P= 25.431863 Days $T_0=135.619079$ (BKJD)



DV Model-Shift Uniqueness Test

011502172-01, P = 25.431878 Days, E = 110.186952 Days

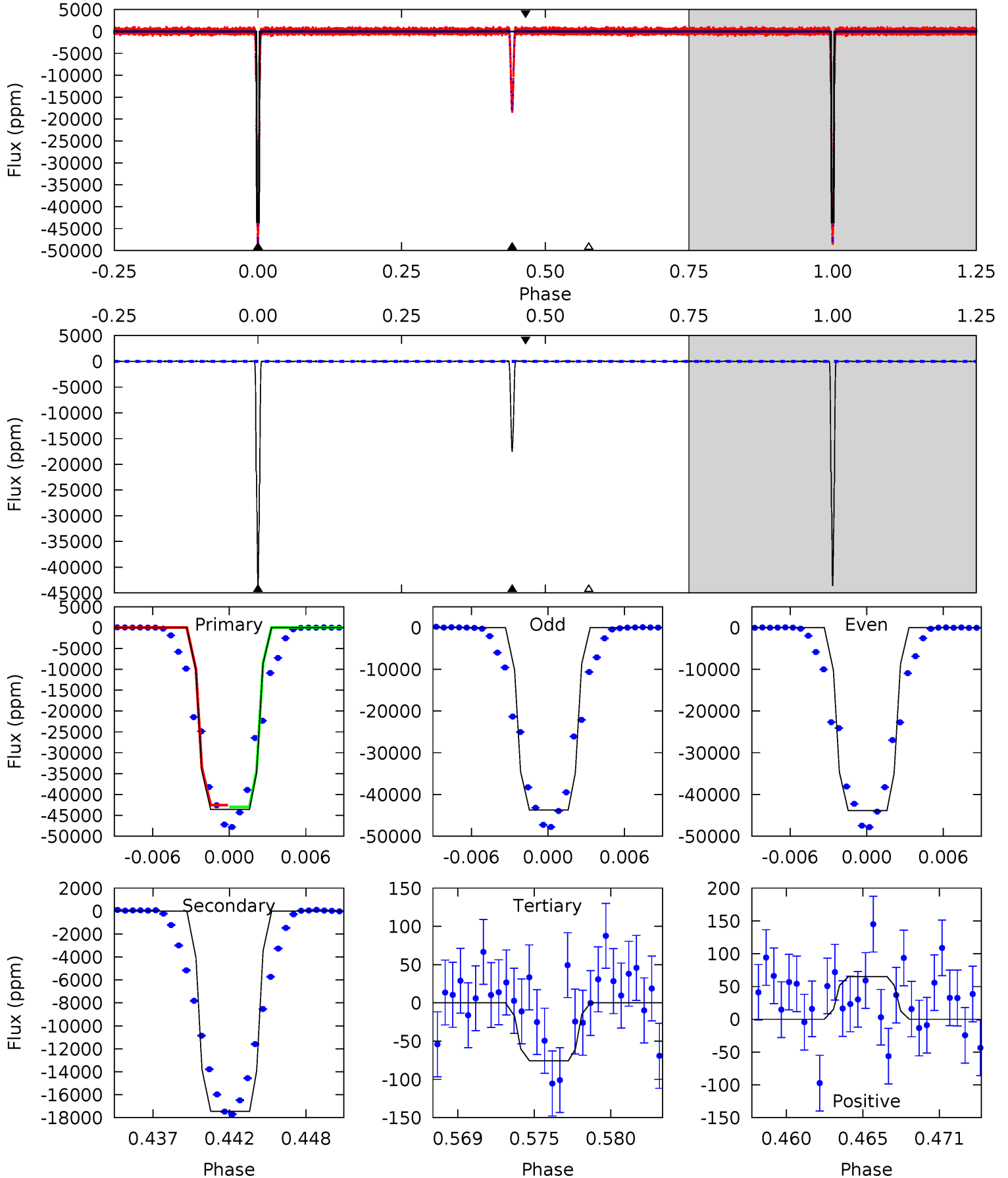
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4177	1671	5.67	5.07	5.04	2.61	2.36	4172	4172	1665	1666	2.87	0.99	0.00	1.06



Alt Model-Shift Uniqueness Test

011502172-01, P = 25.431863 Days, E = 110.187216 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2359	944.1	4.10	3.51	5.13	2.76	1.25	2355	2355	940.0	940.6	3.72	1.00	0.00	0



Stellar Parameters For KIC 011502172

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5754^{+155}_{-155}	$4.458^{+0.108}_{-0.175}$	$-0.340^{+0.300}_{-0.300}$	$0.900^{+0.226}_{-0.122}$	$0.847^{+0.109}_{-0.073}$	$1.639^{+0.783}_{-0.764}$
	+3%/-3%	+2%/-4%	+88%/-88%	+25%/-14%	+13%/-9%	+48%/-47%
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 011502172-01 / KOI 7452.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-18693 ± 11	$34.13^{+4.61}_{-3.47}$	844^{+56}_{-41}	3972^{+117}_{-106}	232^{+56}_{-53}
Alt.	-17450 ± 18	$21.99^{+3.28}_{-2.72}$	844^{+54}_{-39}	4623^{+220}_{-179}	517^{+168}_{-118}

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

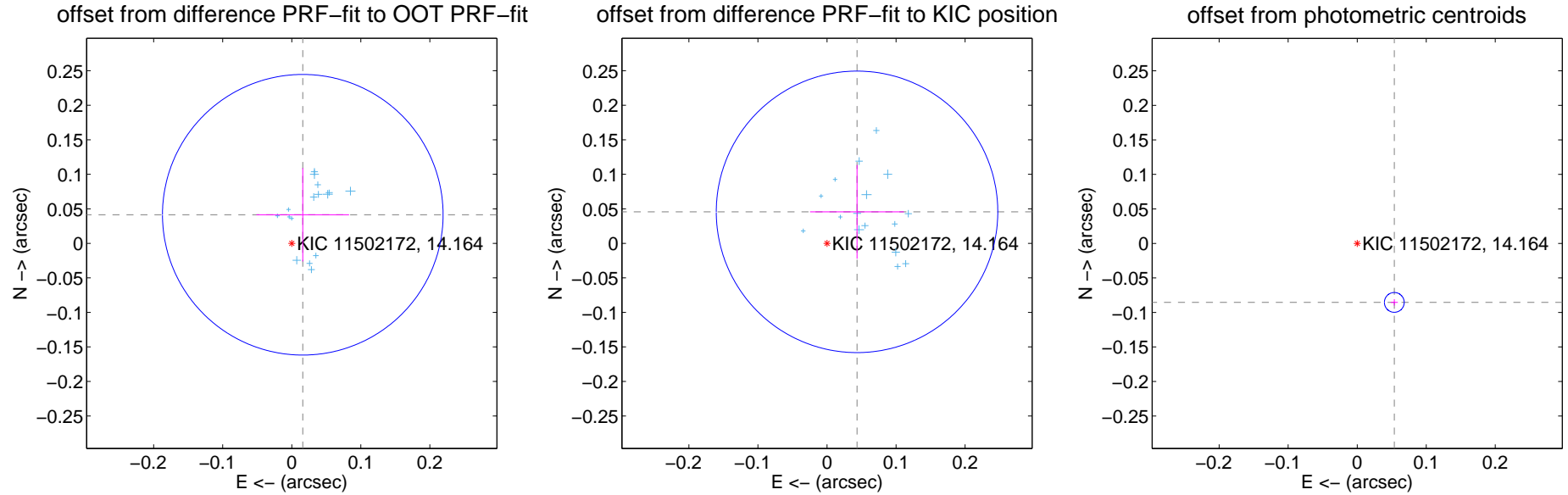
DV Centroid Data

Supplemental centroid analysis for 011502172-01. Kepler magnitude: 14.16. Transit SNR 1499.57

There are 16 quarters with good PRF difference image offsets

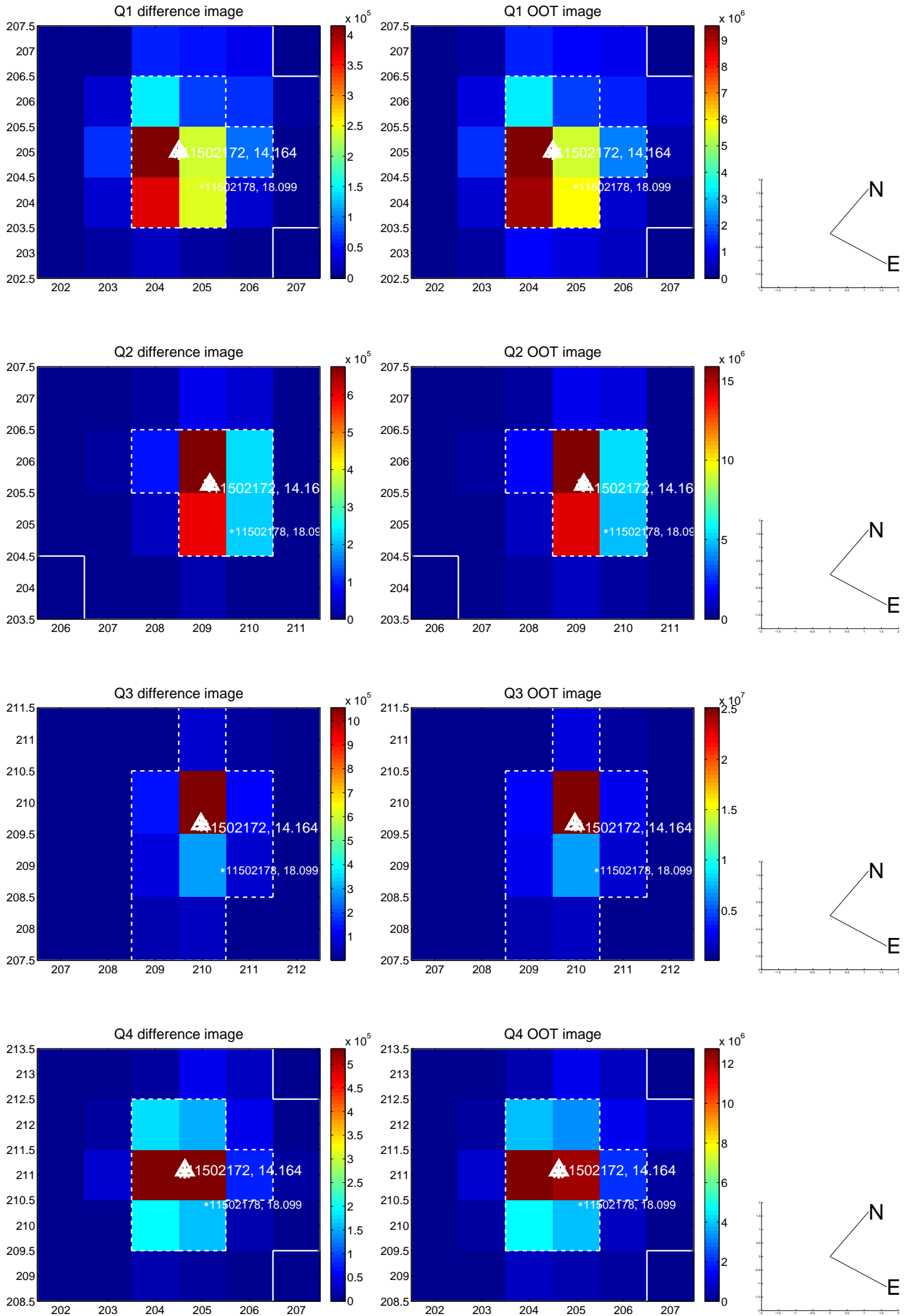
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.044 ± 0.068	0.66	-0.016 ± 0.067	0.041 ± 0.068
PRF-fit source offset from KIC position	0.063 ± 0.068	0.93	-0.043 ± 0.068	0.046 ± 0.068
photometric centroid source offset	0.10 ± 0.00	21.13	-0.05 ± 0.01	-0.09 ± 0.00

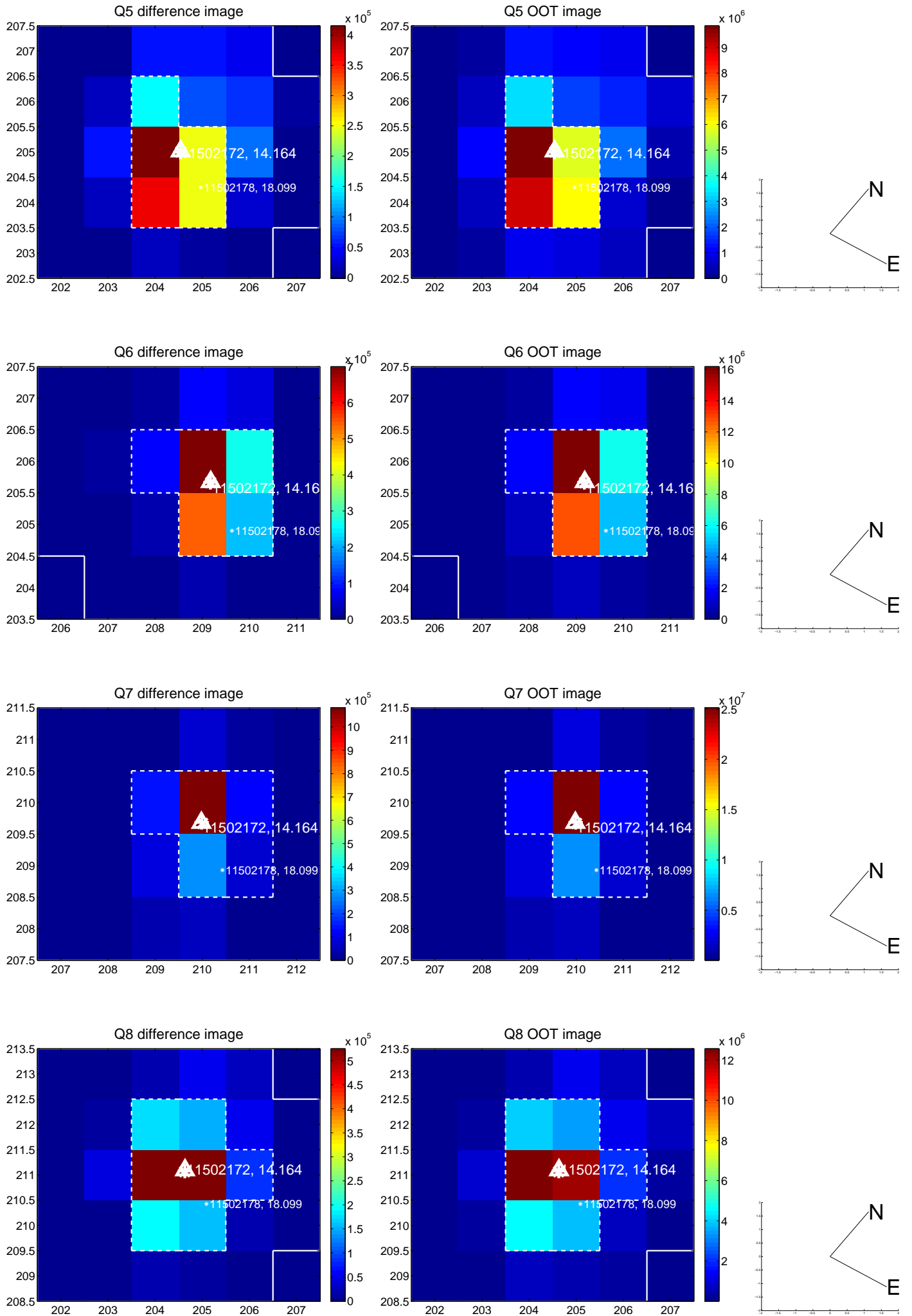


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

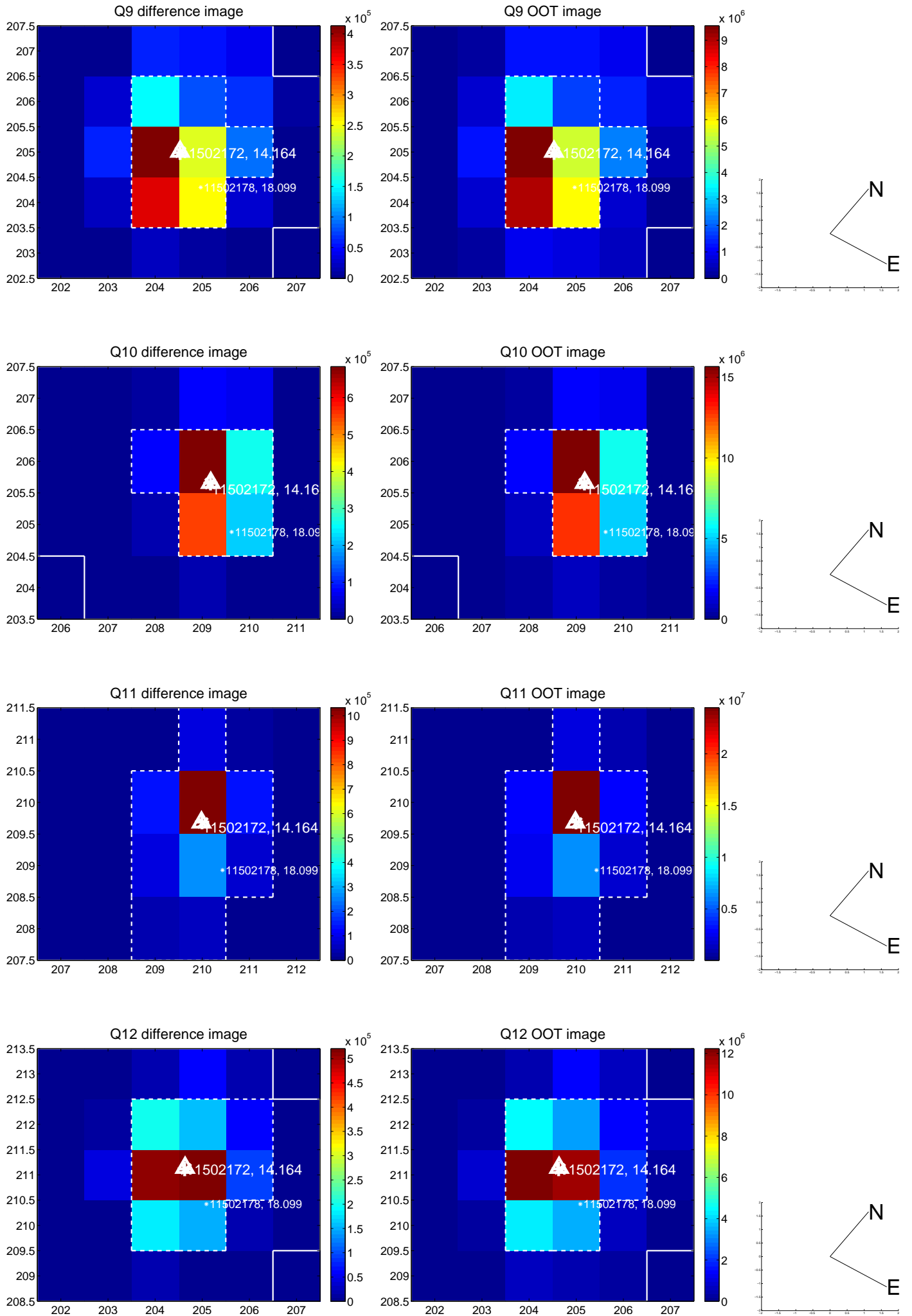
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



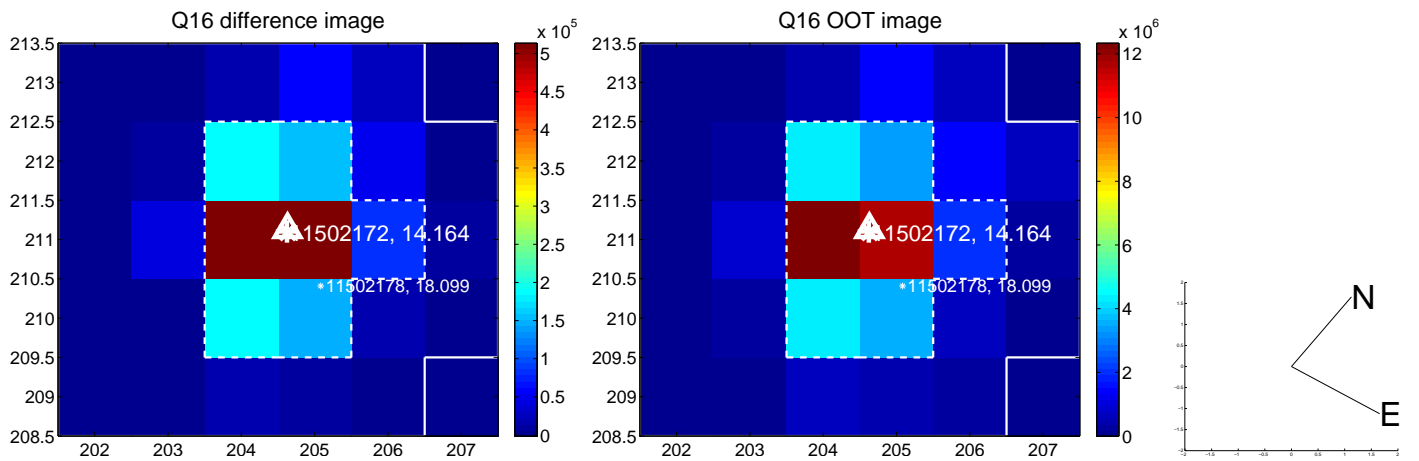
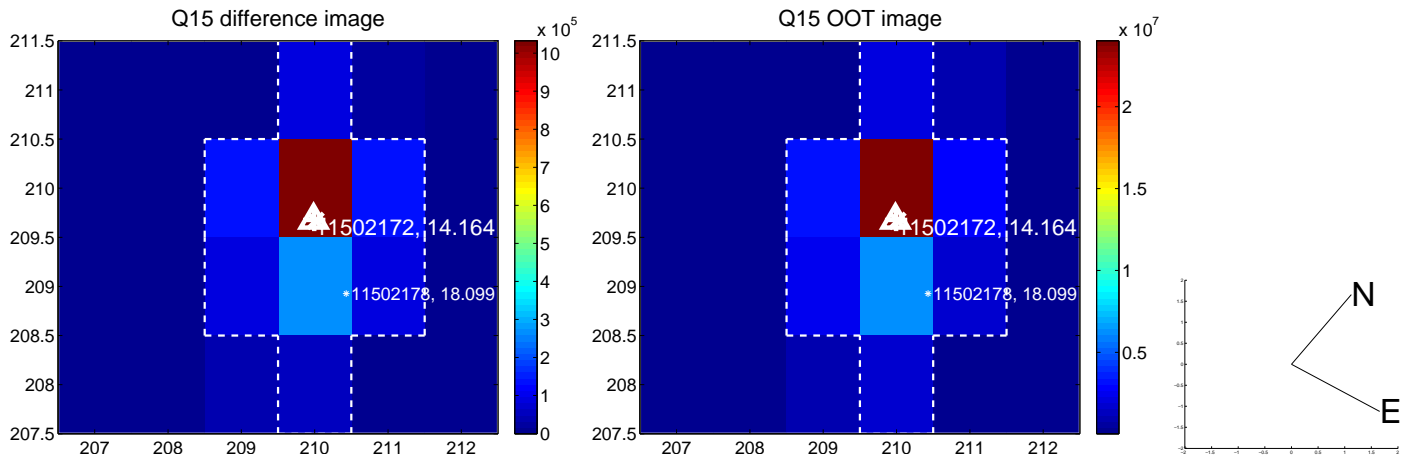
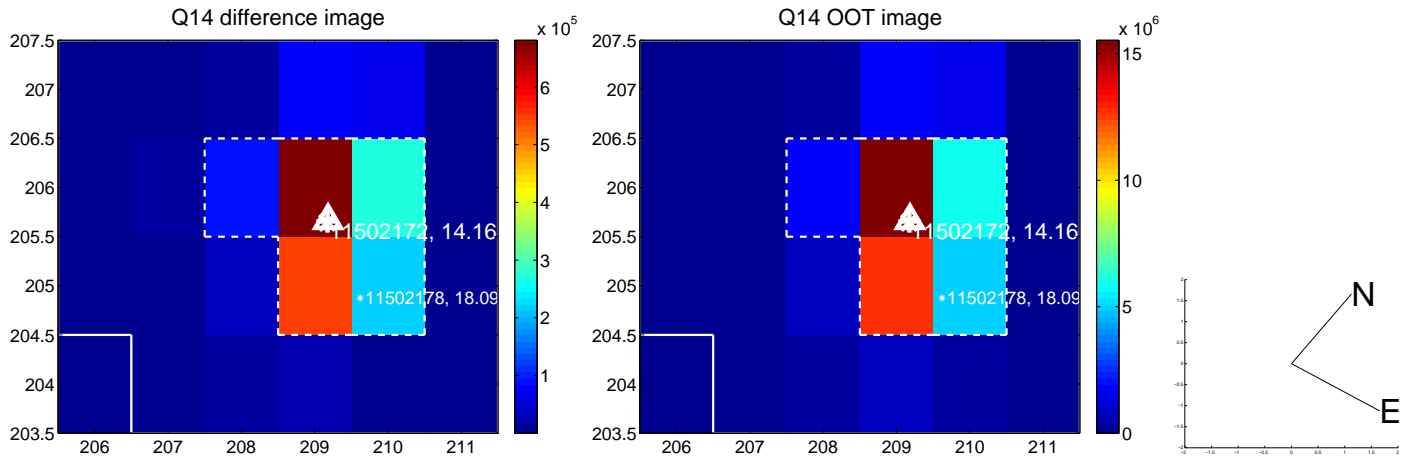
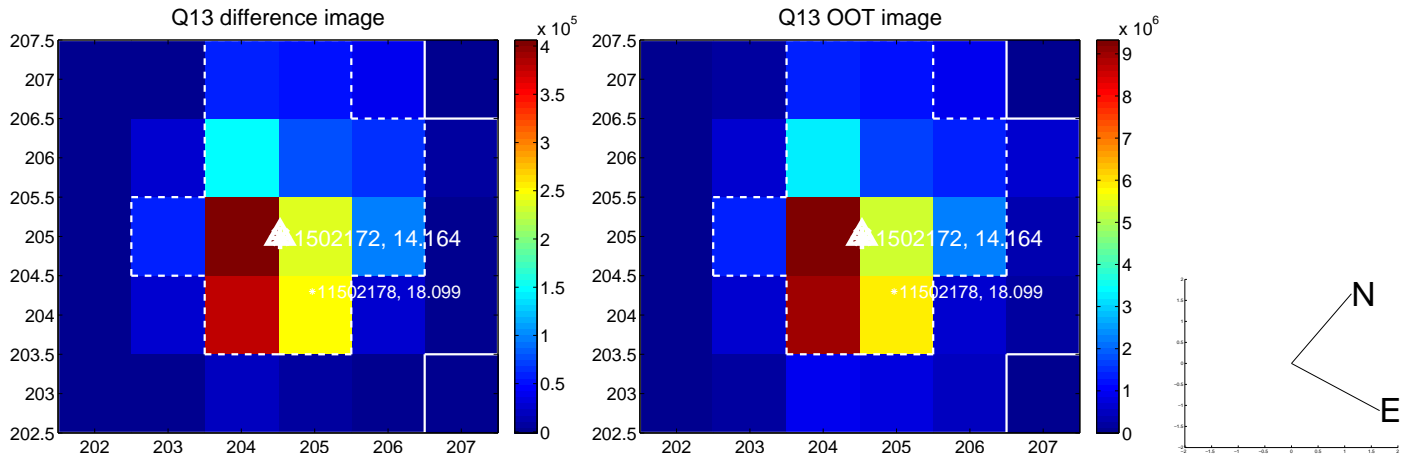
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



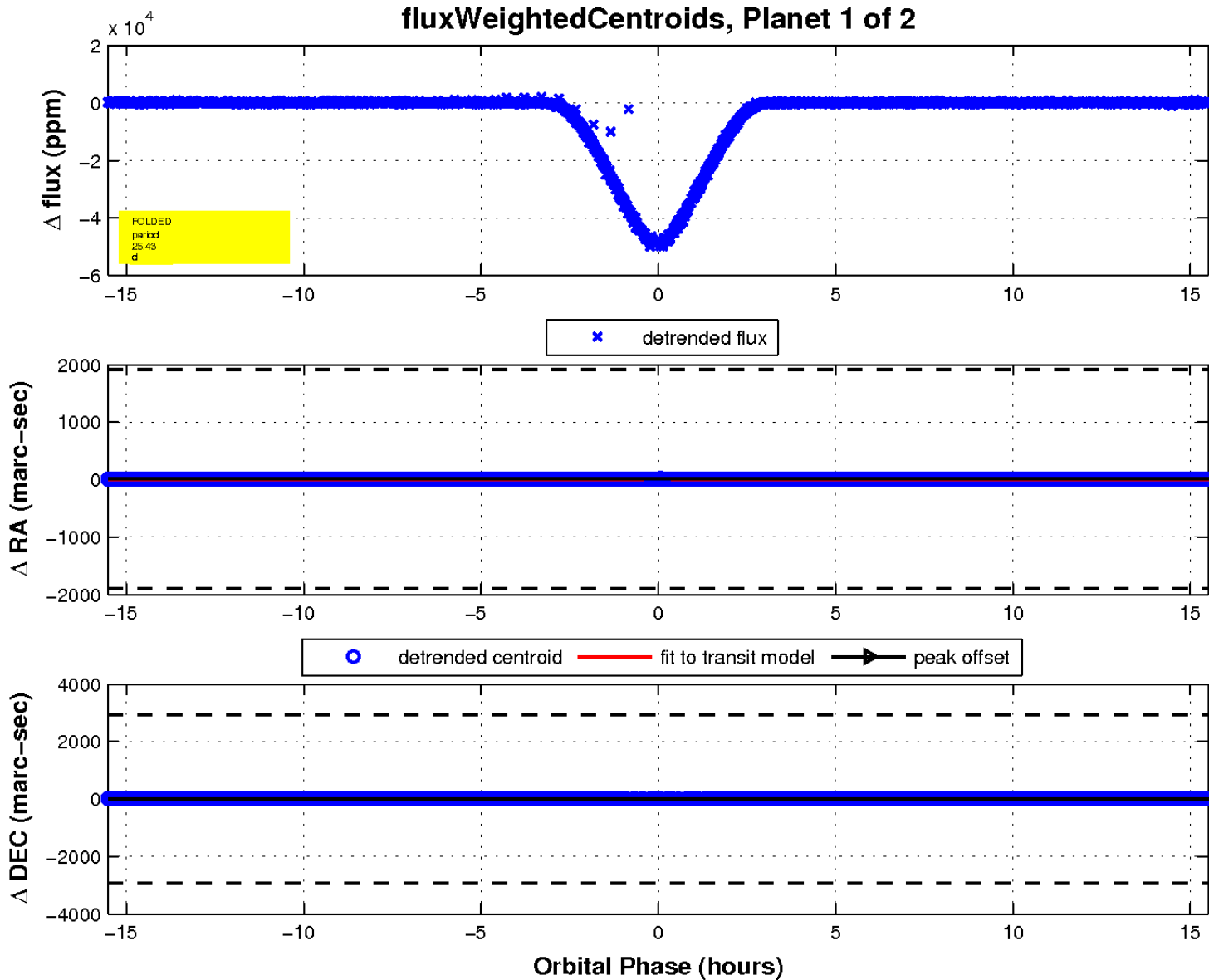
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

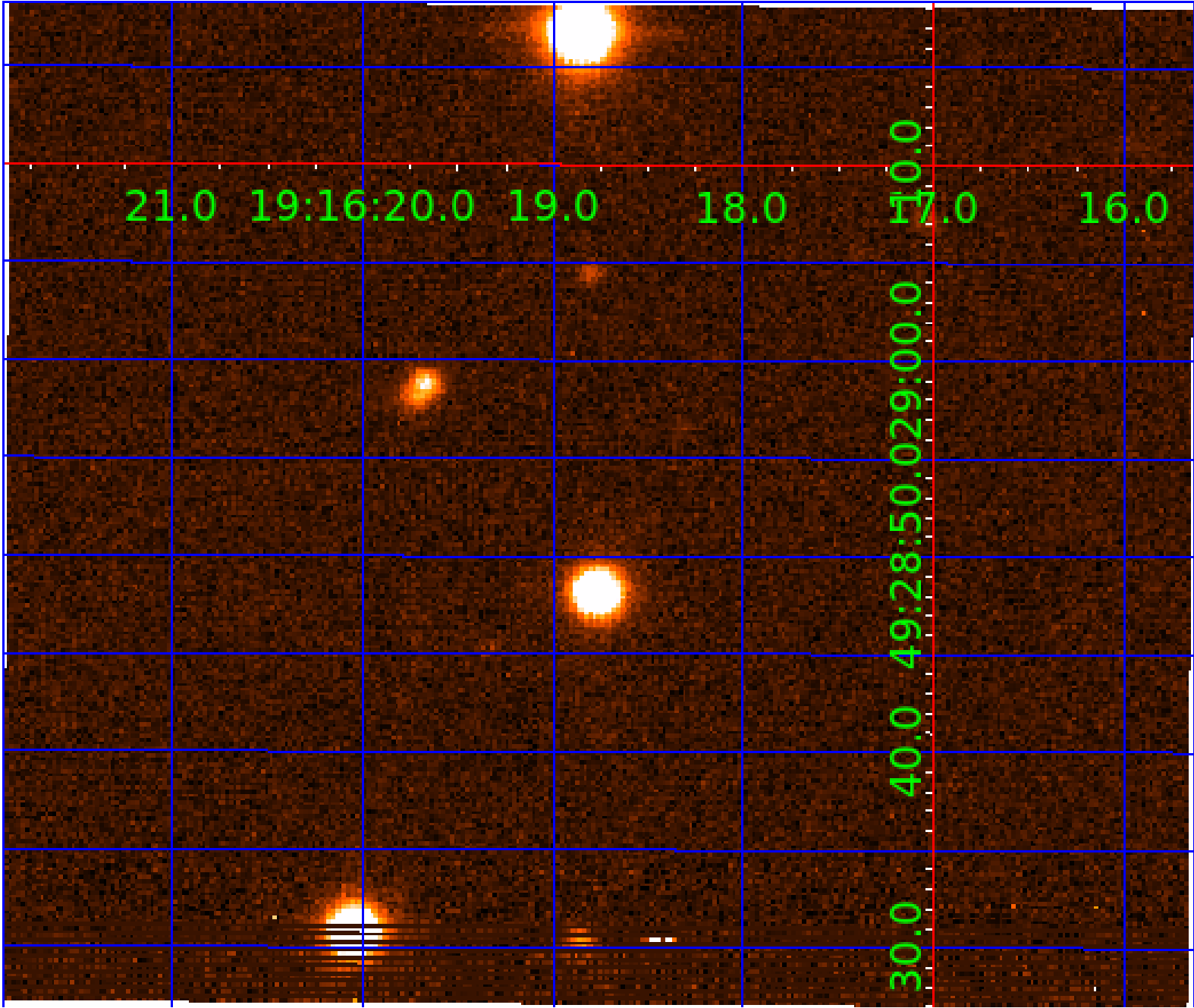


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011502172

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})
011502172-01	OBS	7452.01	25.431878	135.618830	47317.8	5.175	2542.9	1499.6	0.90	5754	33.74	30.98
011502172-02	OBS	No	25.431960	146.866141	17176.3	5.615	924.3	756.2	0.90	5754	20.87	30.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011502172-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
011502172-02	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 011502172-02

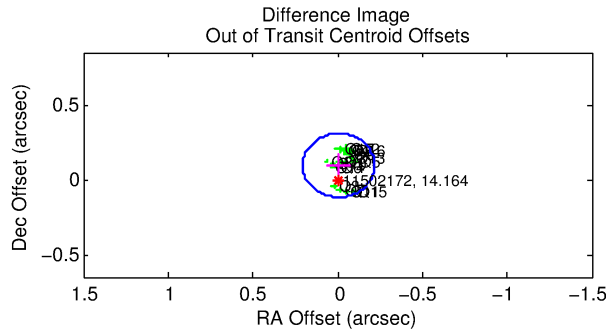
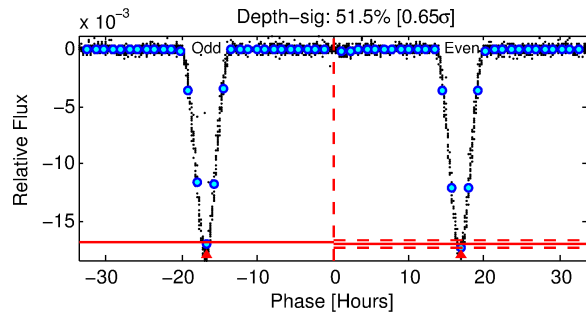
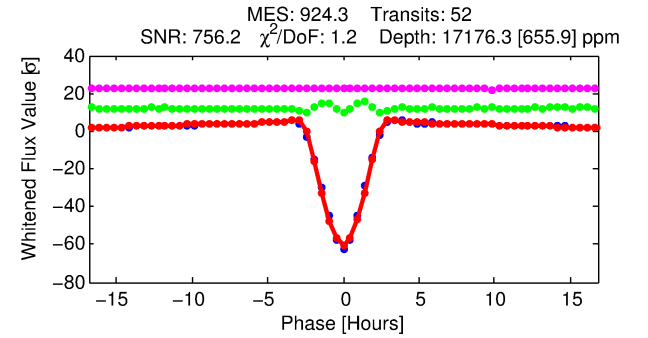
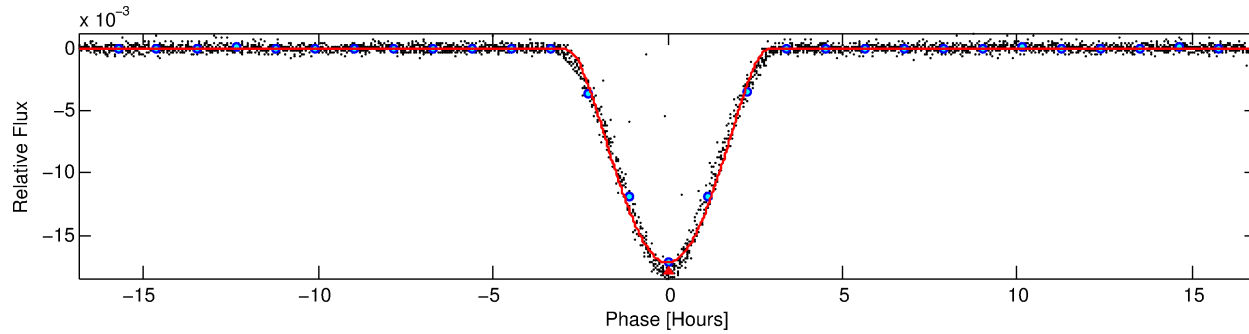
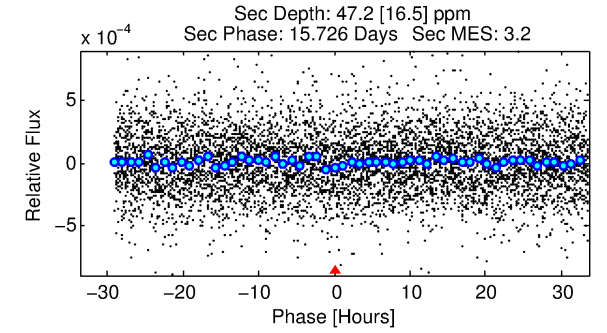
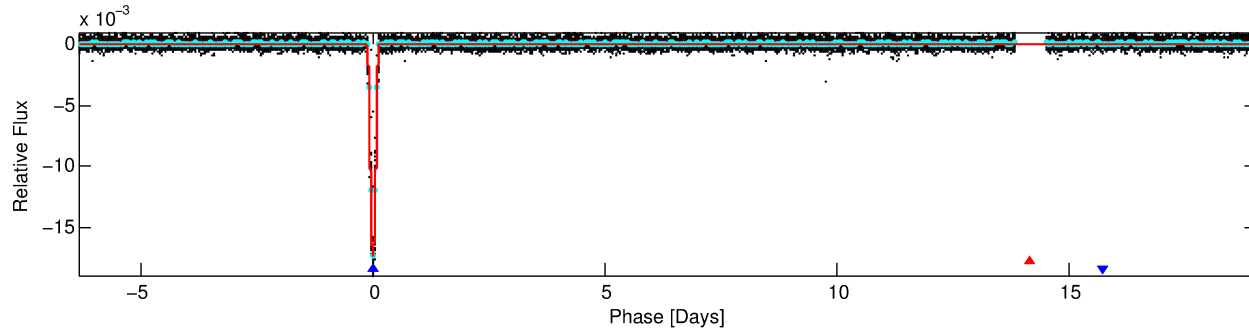
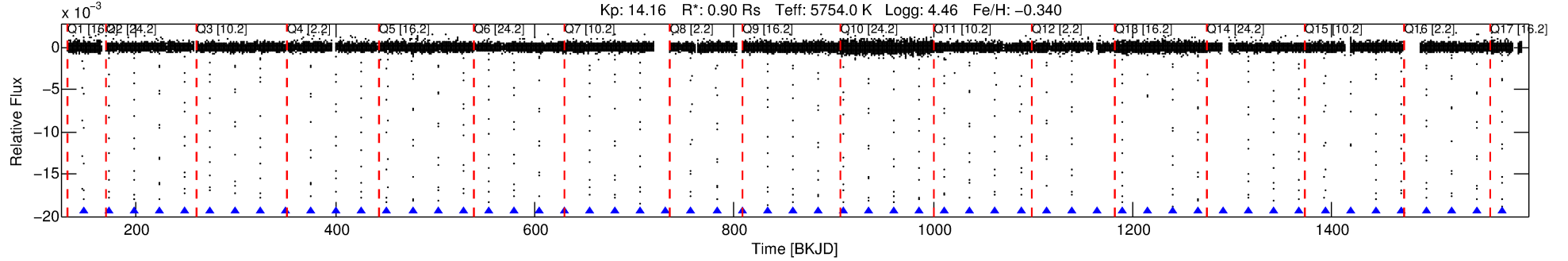
No Significant Match Found

DV One-Page Summary

KIC: 11502172 Candidate: 2 of 2 Period: 25.432 d

KOI: K07452 Corr: No Ephemeris Match

Kp: 14.16 R*: 0.90 Rs Teff: 5754.0 K Logg: 4.46 Fe/H: -0.340



DV Fit Results:

Period = 25.43196 [0.00000] d
Epoch = 146.8661 [0.0002] BKJD
Rp/R* = 0.2125 [0.0174]
a/R* = 23.75 [0.21]
b = 1.00 [0.03]
Seff = 30.98 [10.36]
Teq = 602 [50] K
Rp = 20.87 [5.51] Re
a = 0.1602 [0.0344] AU
Ag = 1.53 [0.76] [0.70σ]
Teffp = 1035 [104] K [3.76σ]

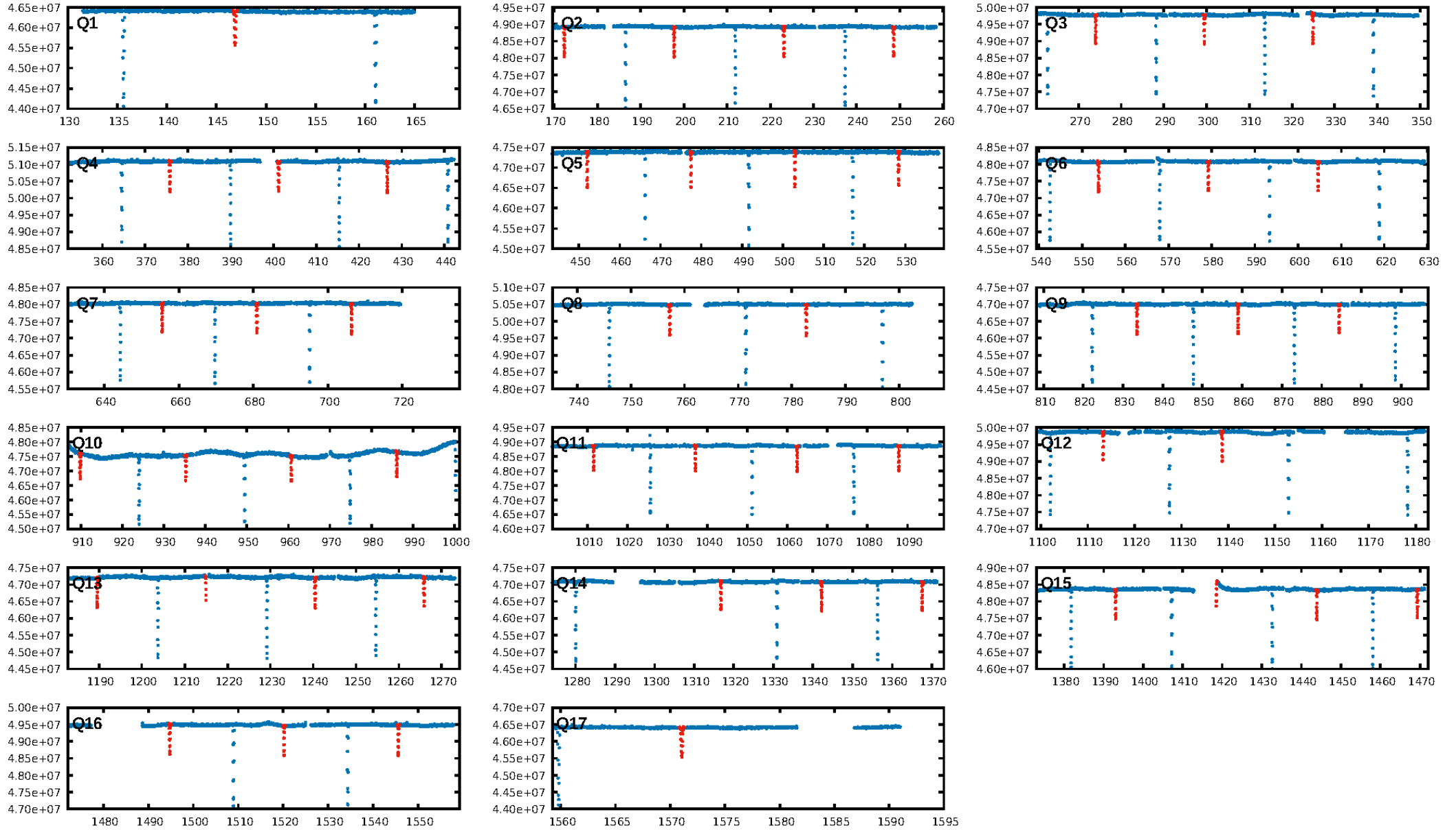
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 4.9%
ModelChiSquareGof-sig: 9.1%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [50/50]
GhostDiagnostic-chr: 3.655
Centroid-sig: 0.0%
Centroid-so: 0.046 arcsec [3.49σ]
OotOffset-rm: 0.096 arcsec [1.35σ]
KicOffset-rm: 0.103 arcsec [1.46σ]
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]

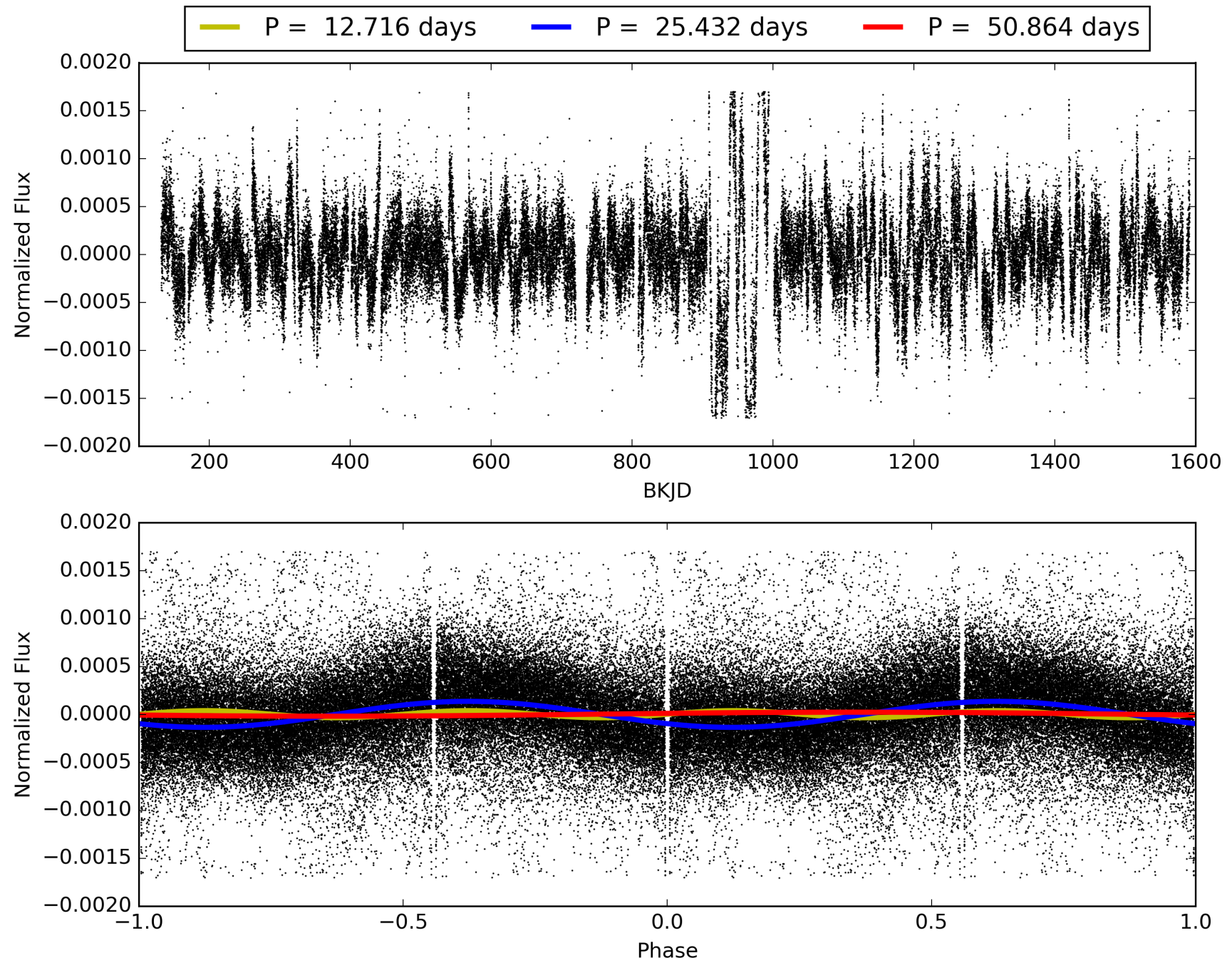
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:20:26 Z

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

TCE 011502172-02, PDC Light Curves

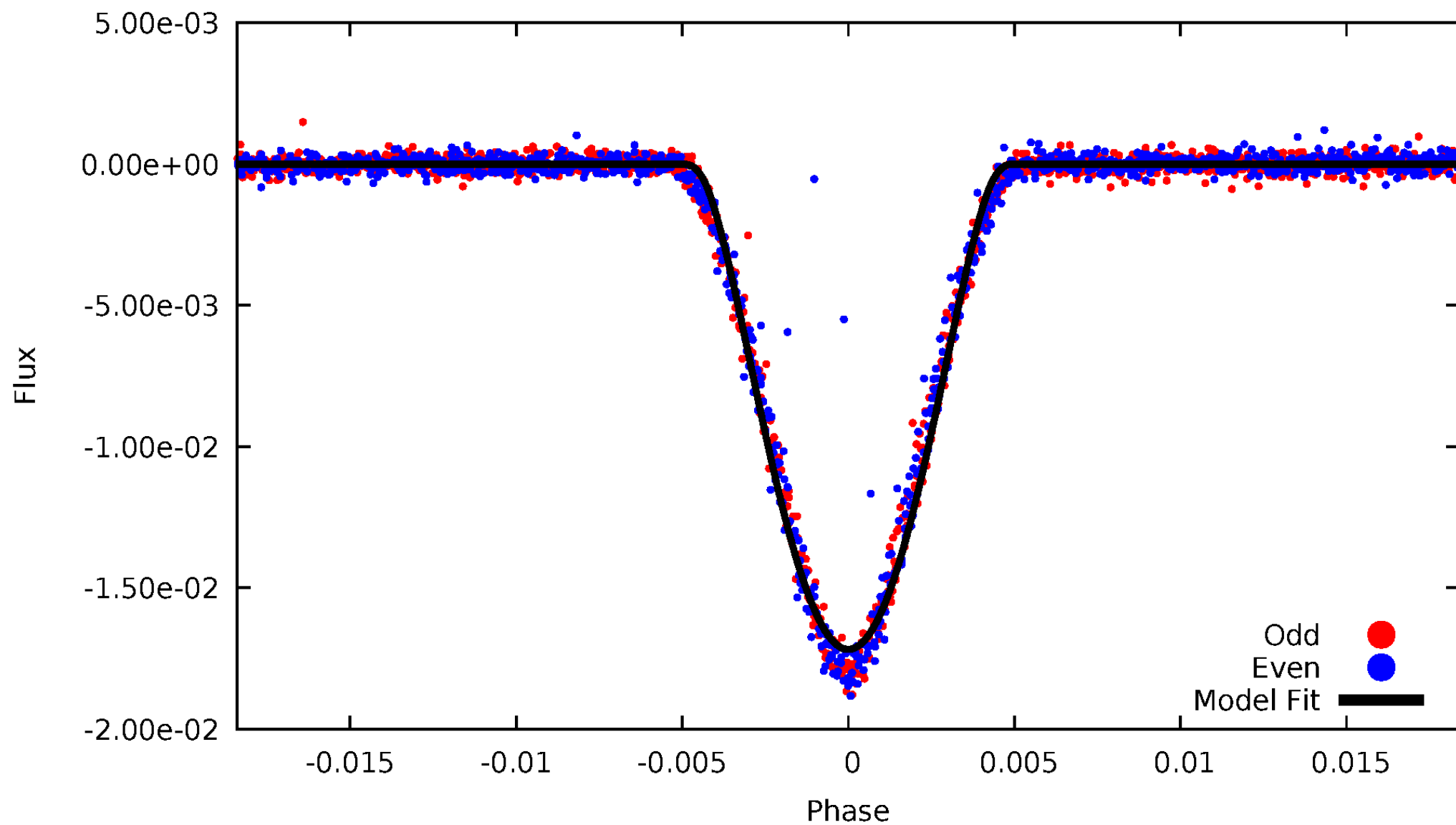


TCE 011502172-02



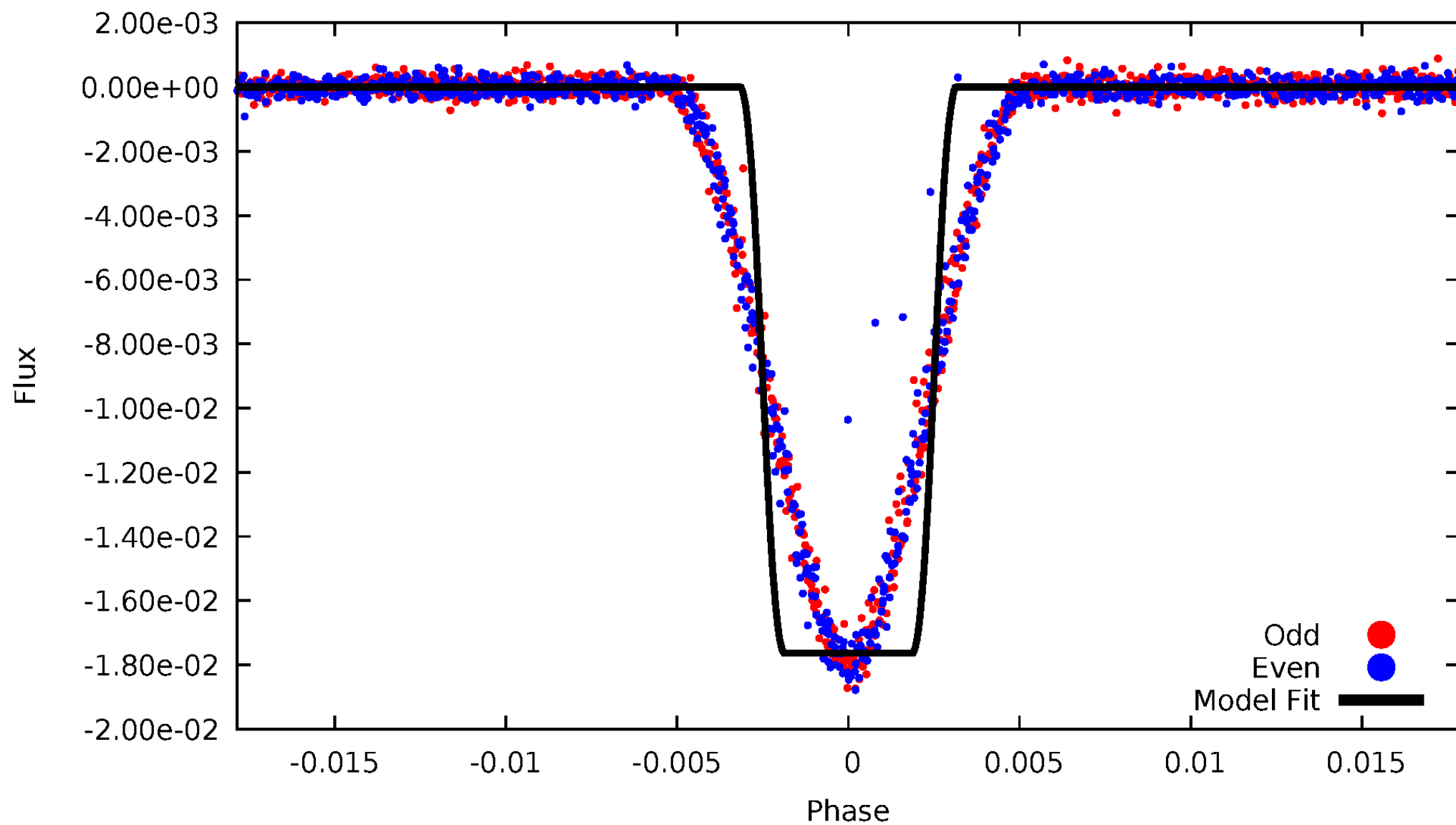
DV Odd/Even

TCE 011502172-02



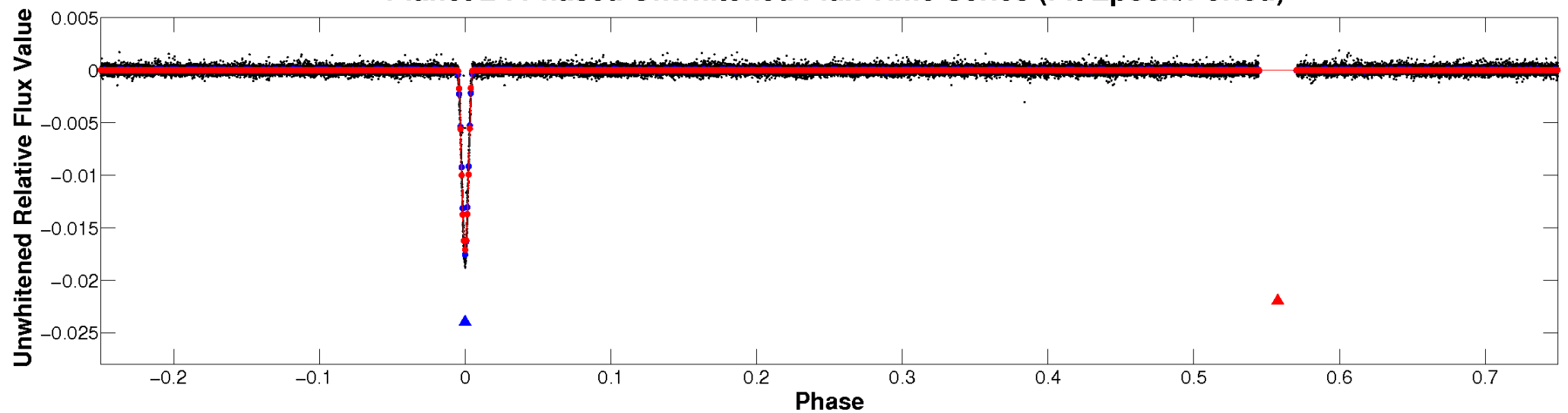
ALT Odd/Even

TCE 011502172-02

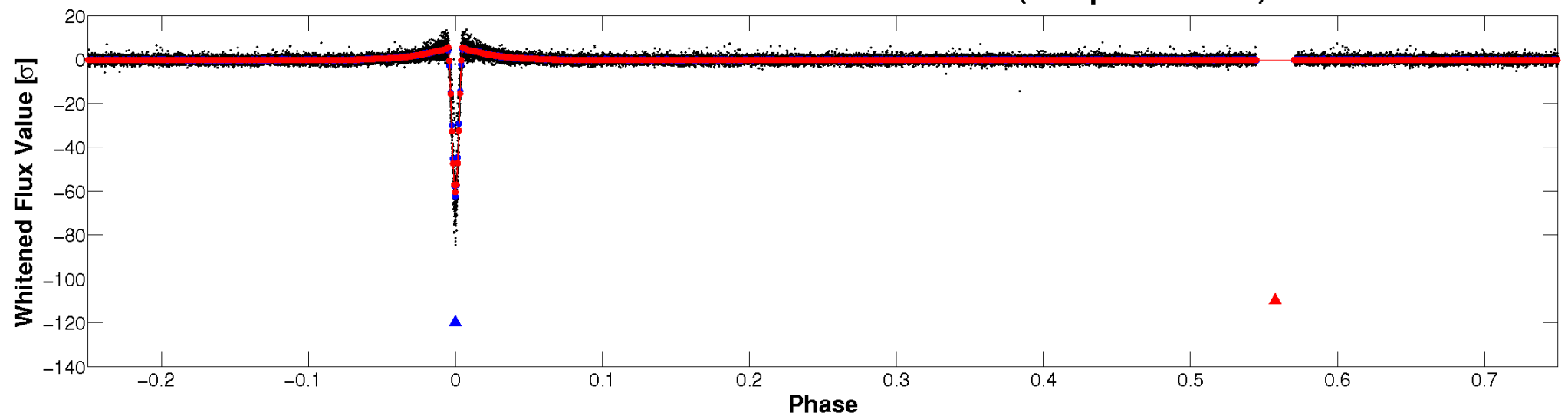


Non-Whitened Vs. Whitened Light Curve

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

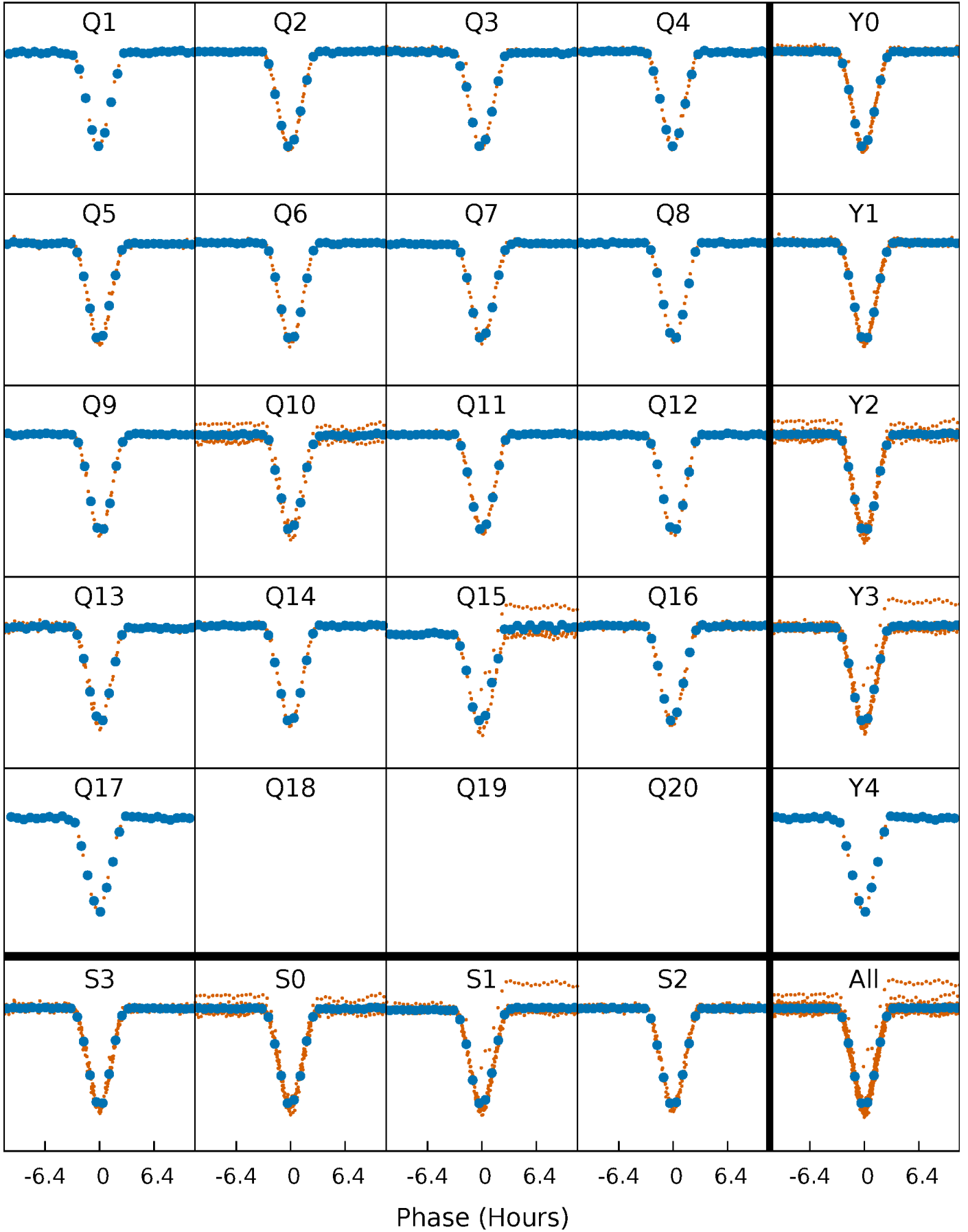


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



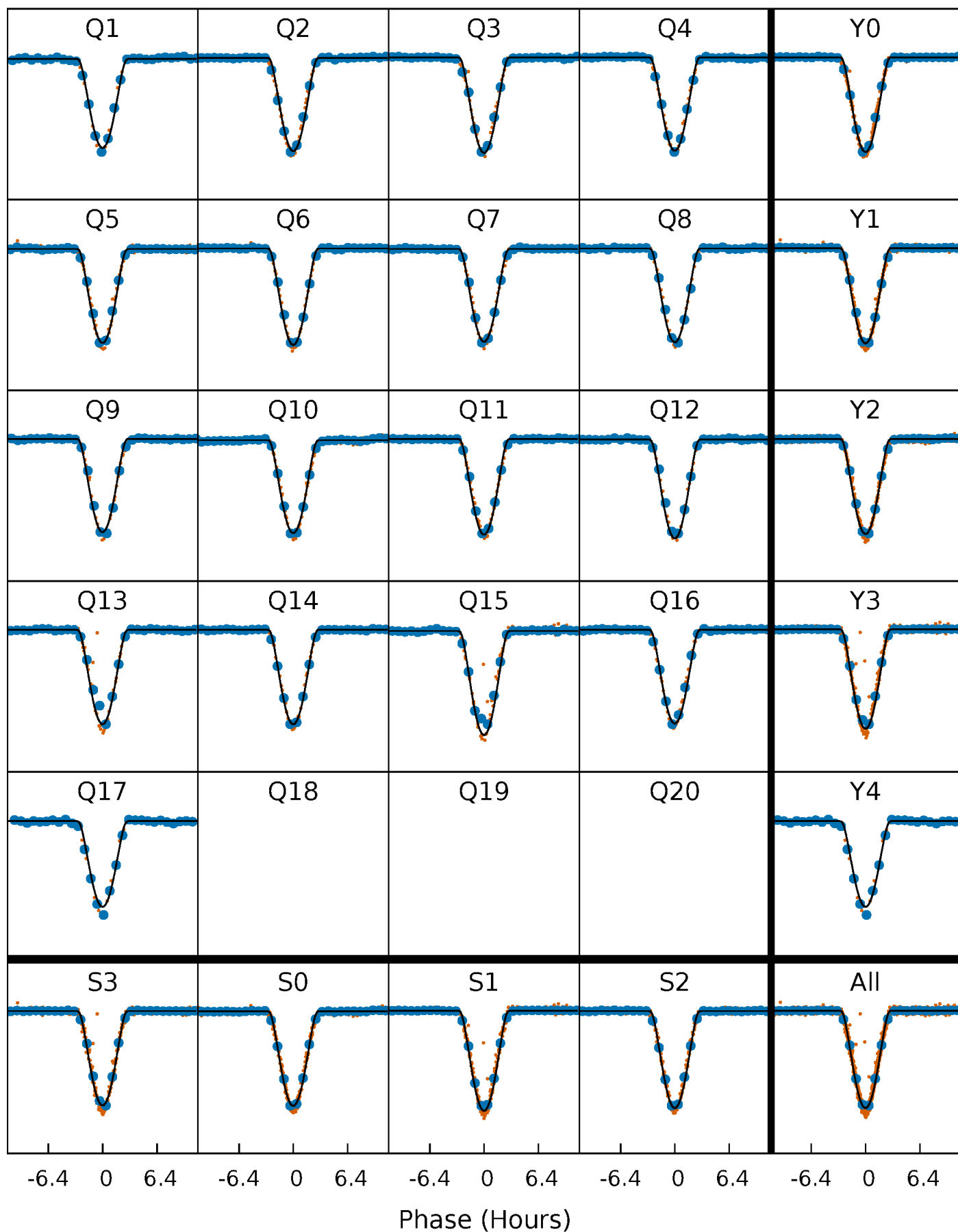
PDC Quarter-Phased Transit Curves

TCE 011502172-02 P= 25.431960 Days $T_0=146.866141$ (BKJD)



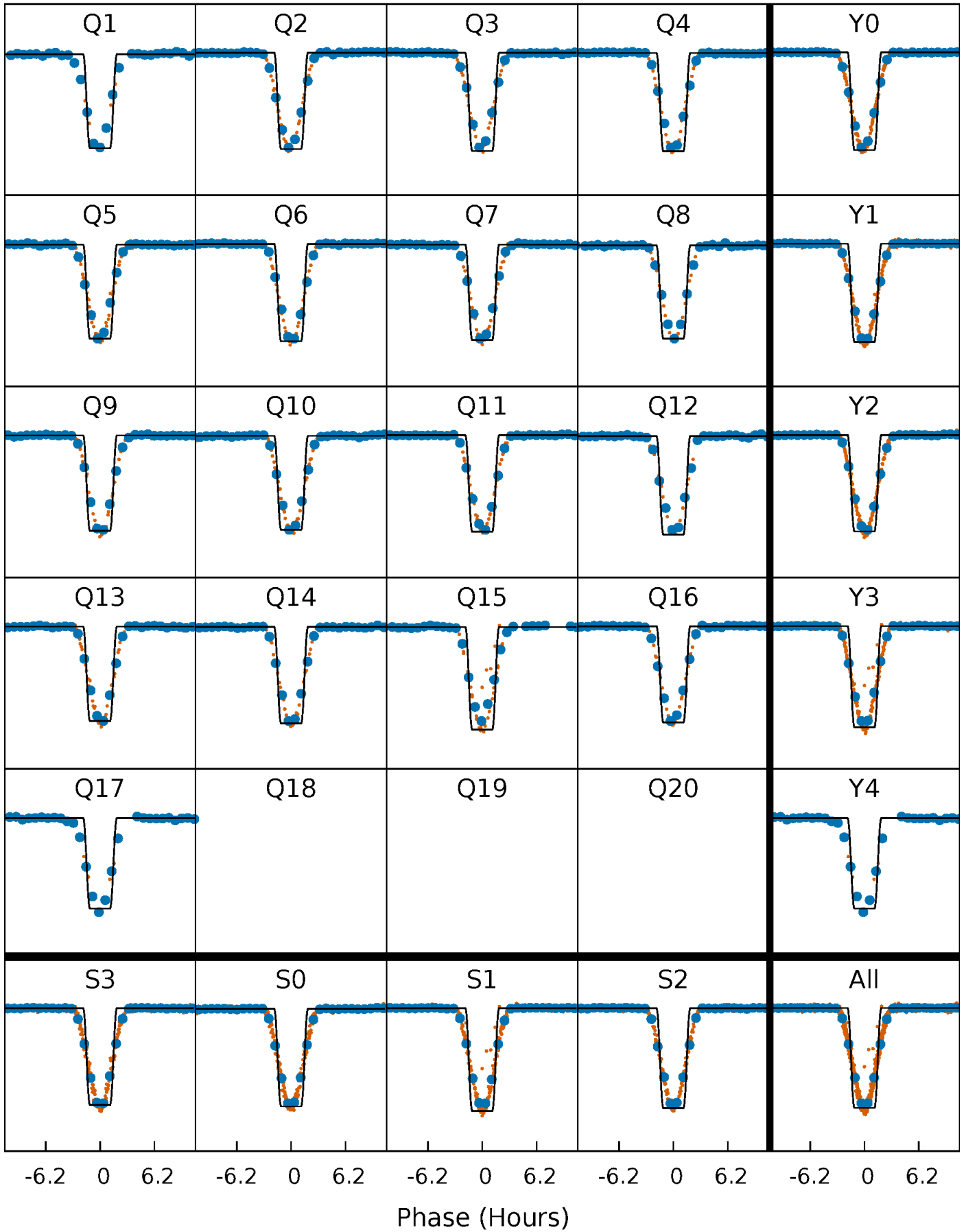
DV Quarter-Phased Transit Curves

TCE 011502172-02 P= 25.431960 Days $T_0=146.866141$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

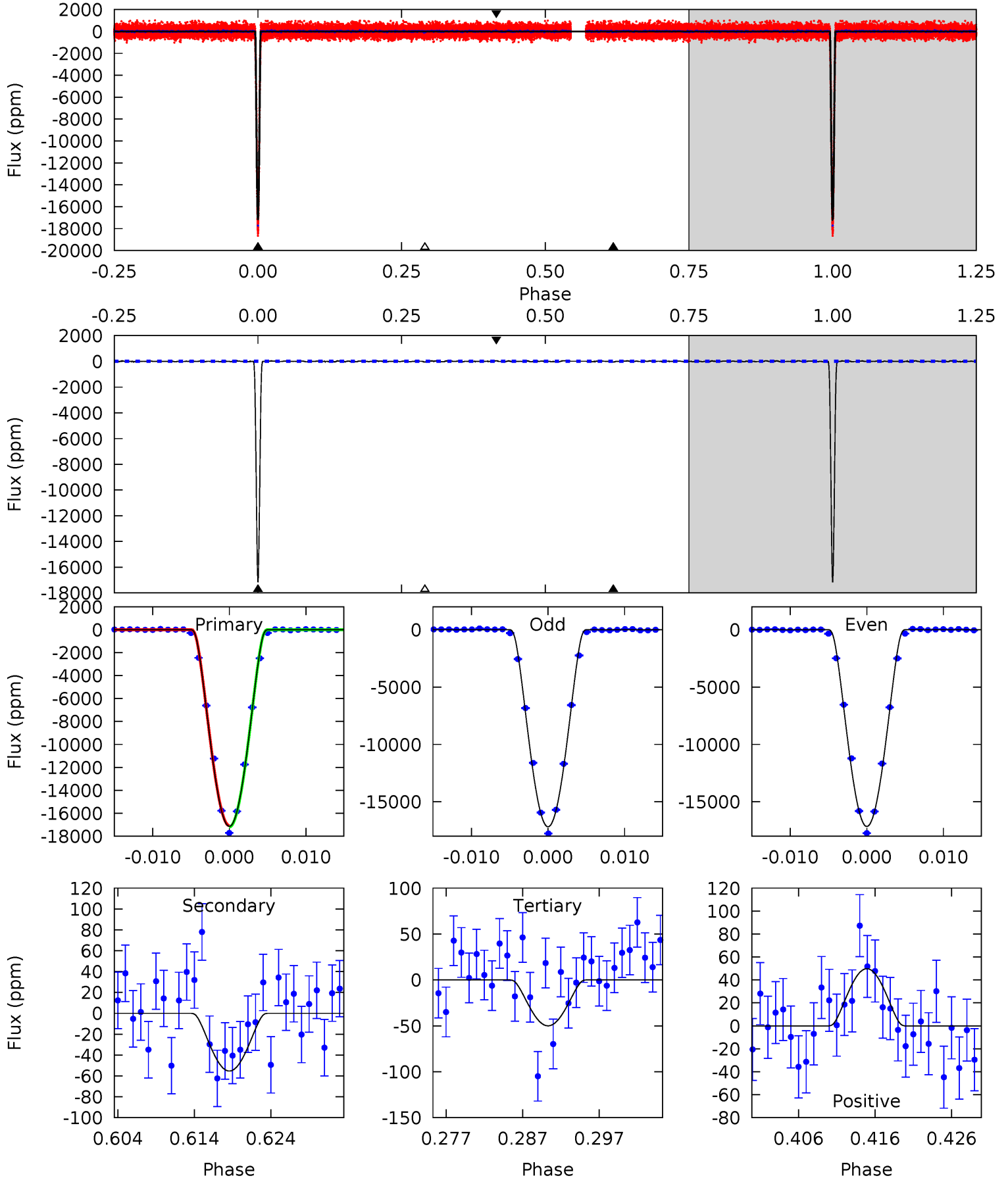
TCE 011502172-02 P= 25.431863 Days $T_0=146.868056$ (BKJD)



DV Model-Shift Uniqueness Test

011502172-02, P = 25.431960 Days, E = 121.434181 Days

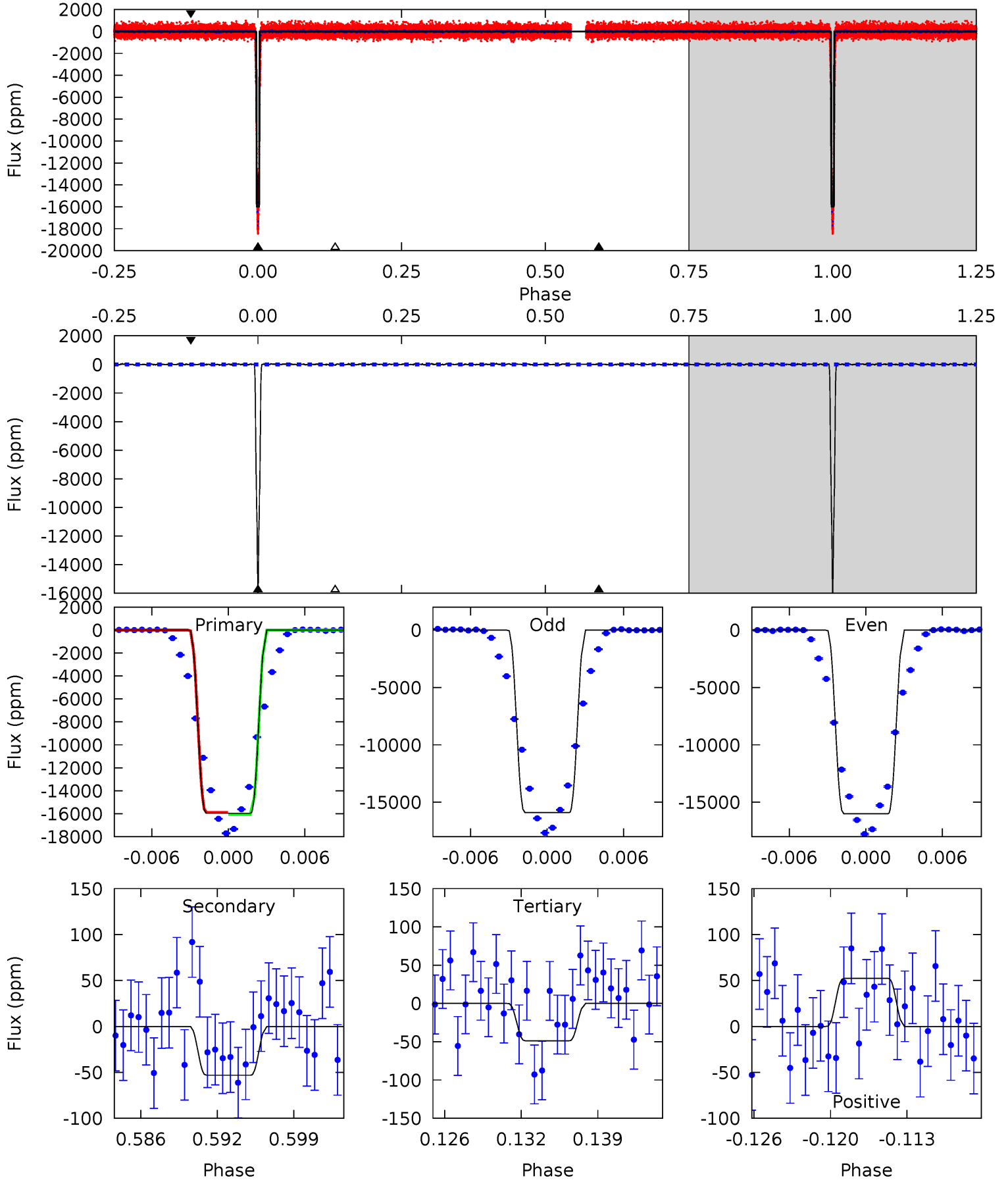
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1644	5.31	4.79	4.77	5.03	2.58	1.76	1639	1639	0.51	0.53	1.26	0.98	0.00	5.56



Alt Model-Shift Uniqueness Test

011502172-02, P = 25.431863 Days, E = 121.436193 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1059	3.52	3.23	3.47	5.11	2.73	1.14	1056	1056	0.29	0.06	3.24	0.99	0.00	0



Stellar Parameters For KIC 011502172

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5754^{+155}_{-155}	$4.458^{+0.108}_{-0.175}$	$-0.340^{+0.300}_{-0.300}$	$0.900^{+0.226}_{-0.122}$	$0.847^{+0.109}_{-0.073}$	$1.639^{+0.783}_{-0.764}$
	+3%/-3%	+2%/-4%	+88%/-88%	+25%/-14%	+13%/-9%	+48%/-47%
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 011502172-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-55 ± 10	$21.31^{+3.24}_{-2.67}$	847^{+57}_{-46}	2021^{+70}_{-71}	$1.699^{+0.670}_{-0.487}$
Alt.	-53 ± 15	$13.22^{+2.44}_{-2.10}$	844^{+55}_{-43}	2254^{+113}_{-120}	$4.202^{+2.388}_{-1.557}$

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

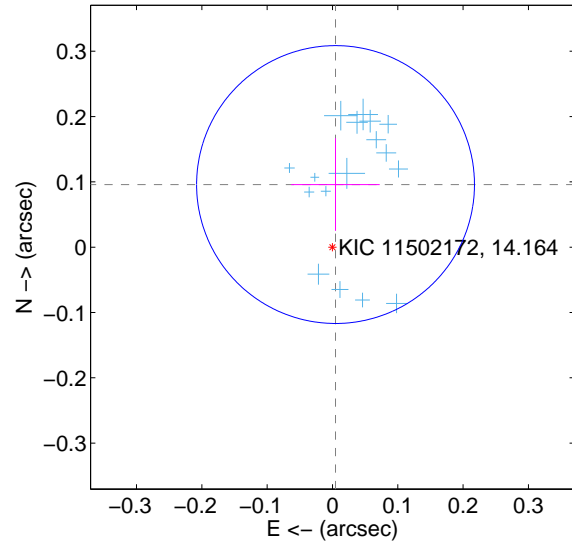
Supplemental centroid analysis for 011502172-02. Kepler magnitude: 14.16. Transit SNR 756.17

There are 17 quarters with good PRF difference image offsets

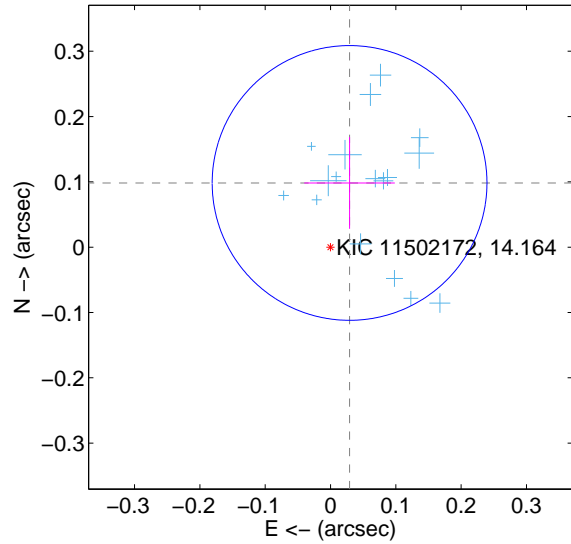
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.096 ± 0.071	1.35	-0.005 ± 0.068	0.096 ± 0.071
PRF-fit source offset from KIC position	0.103 ± 0.070	1.46	-0.029 ± 0.069	0.098 ± 0.070
photometric centroid source offset	0.05 ± 0.01	3.49	0.04 ± 0.01	-0.02 ± 0.01

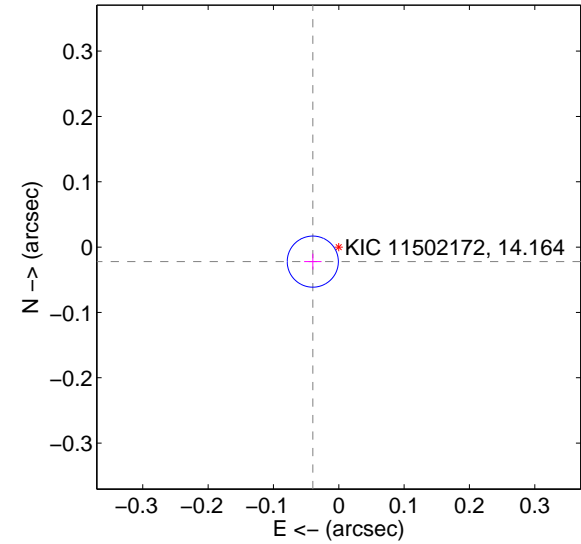
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

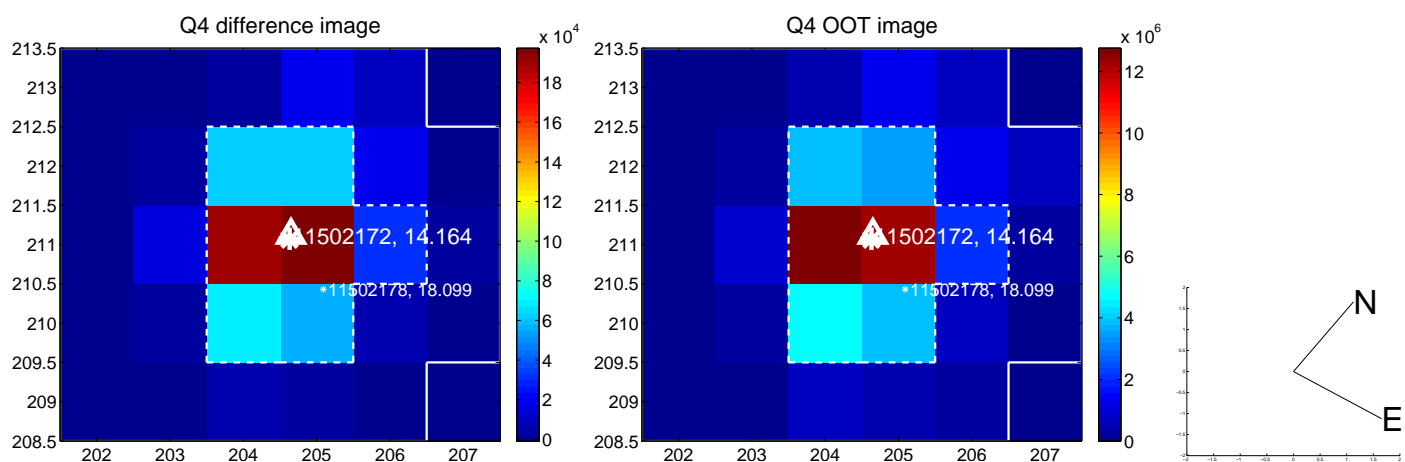
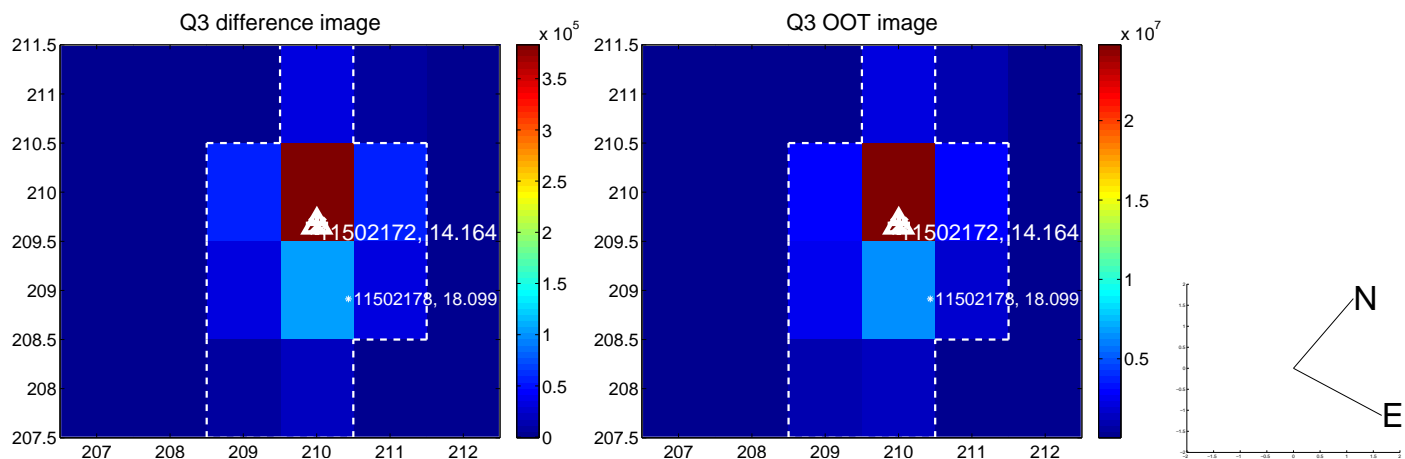
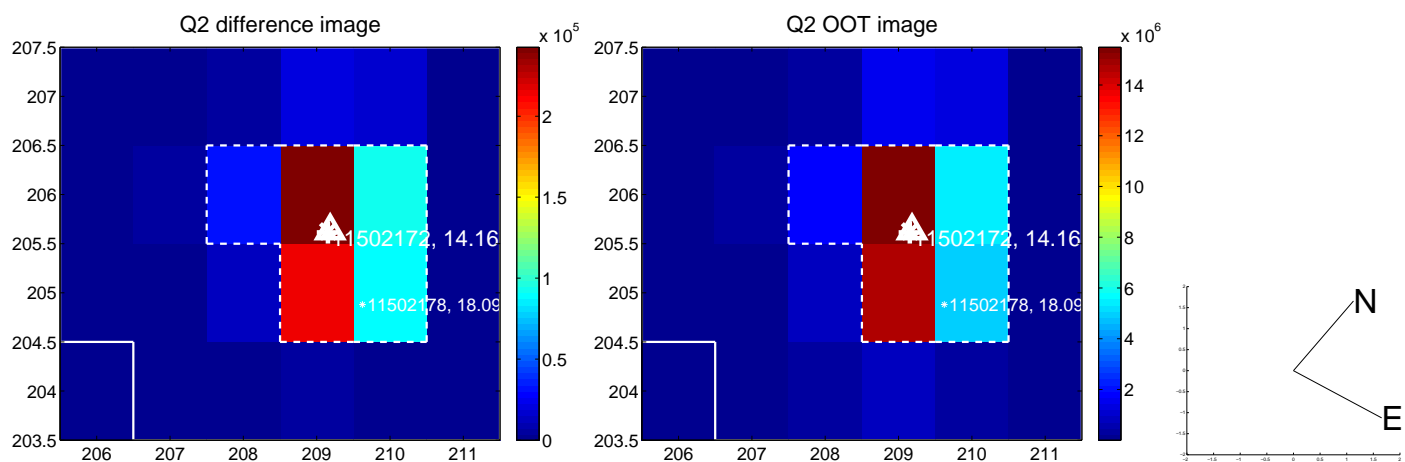
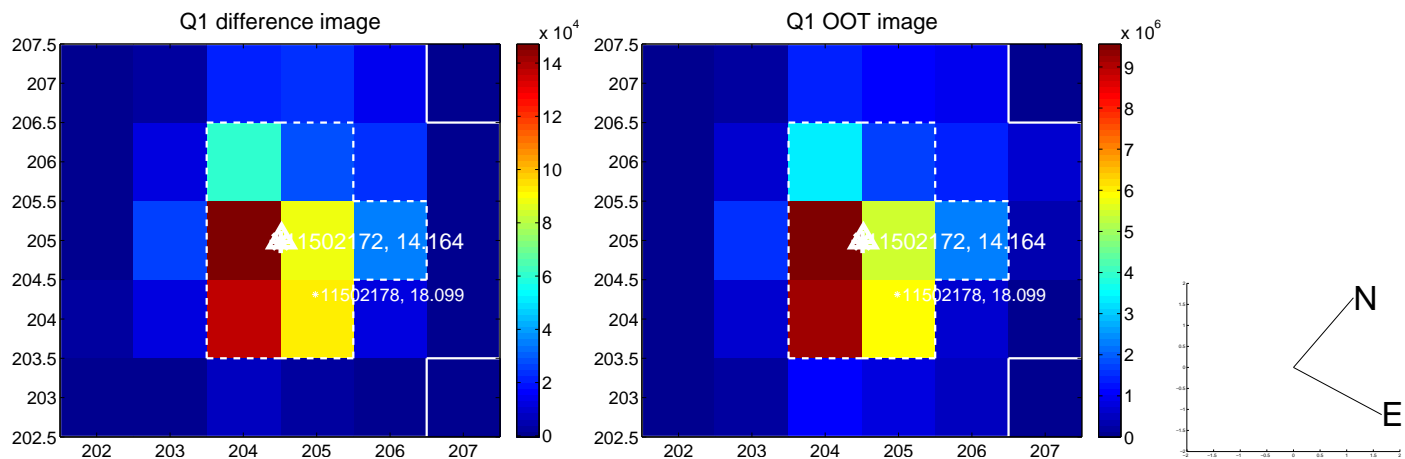


offset from photometric centroids

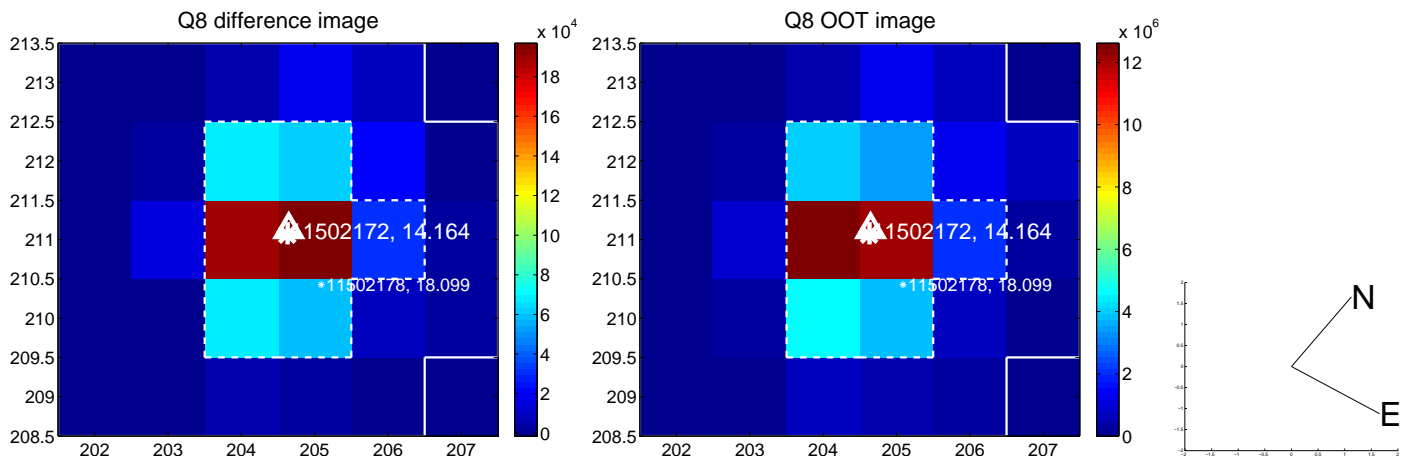
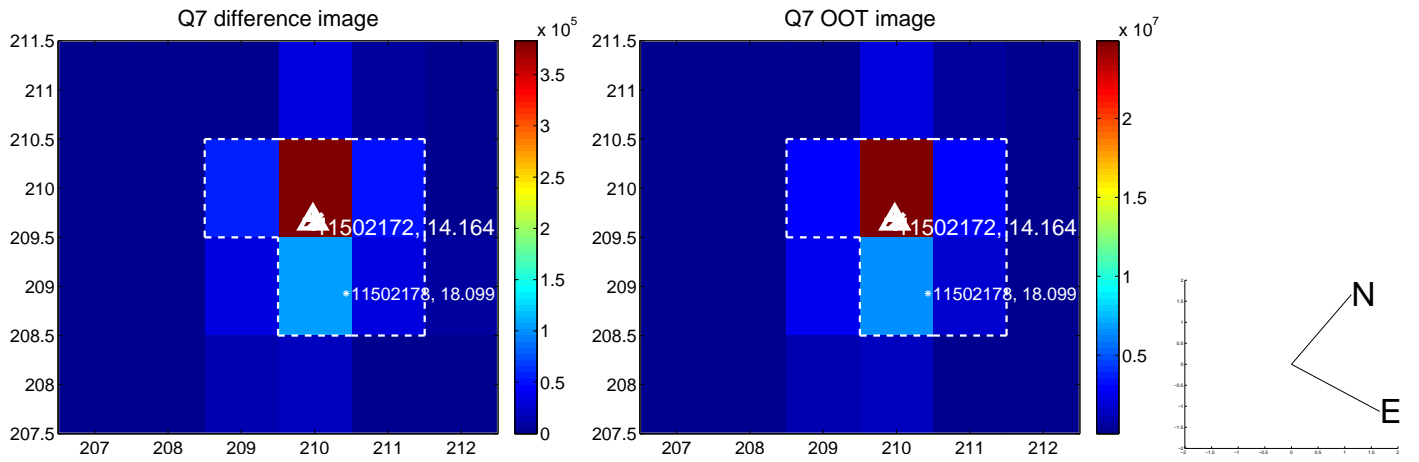
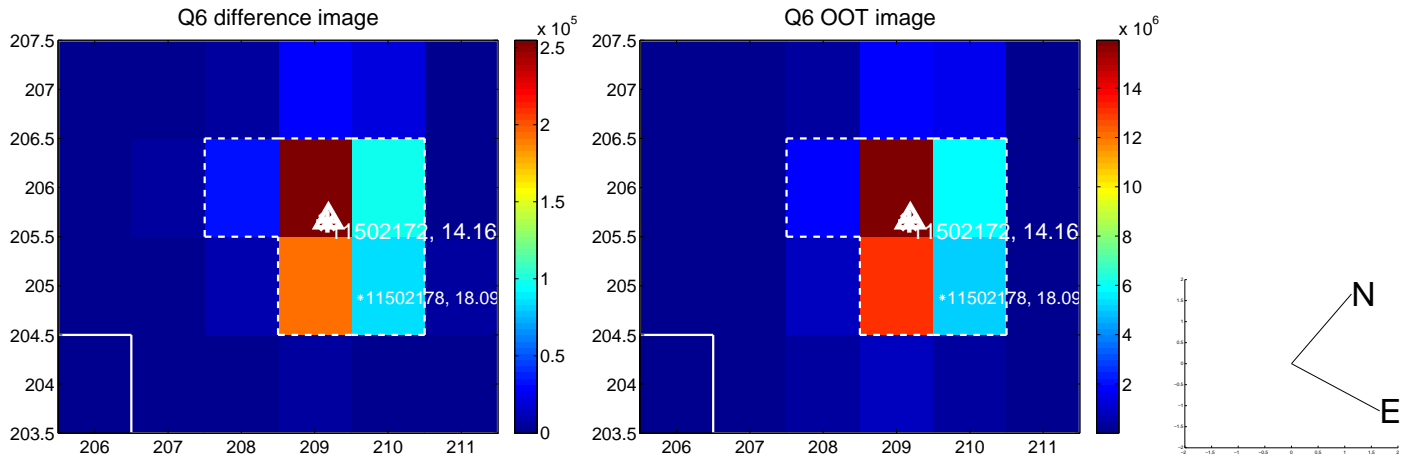
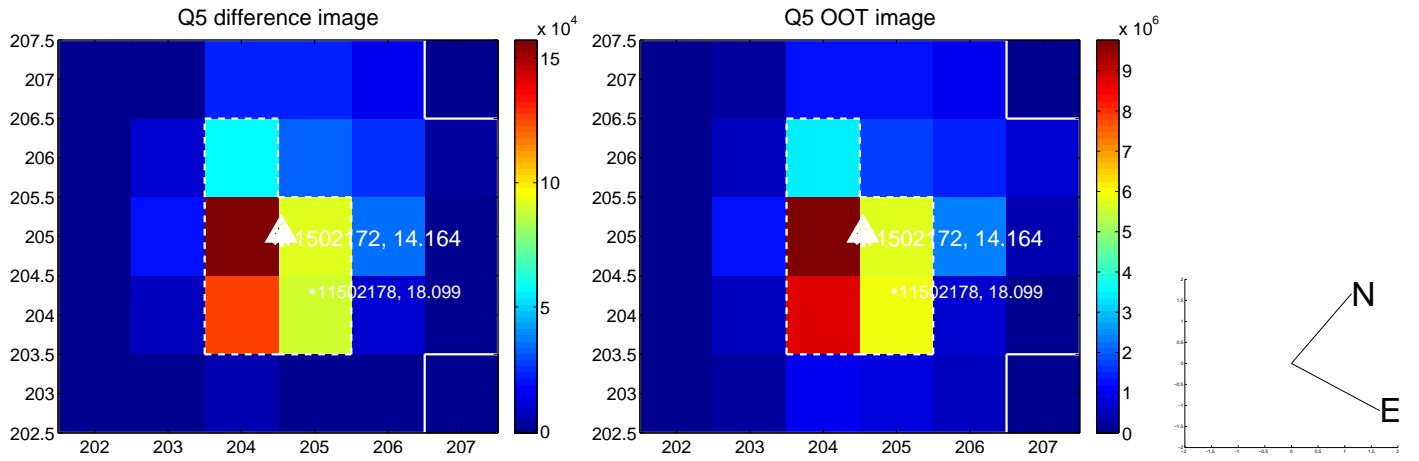


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

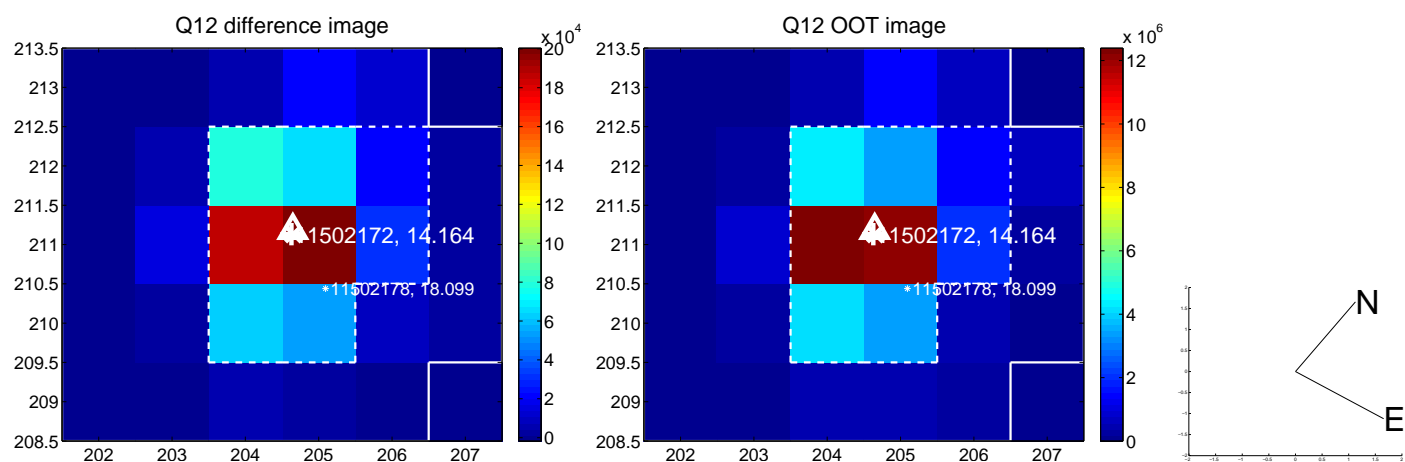
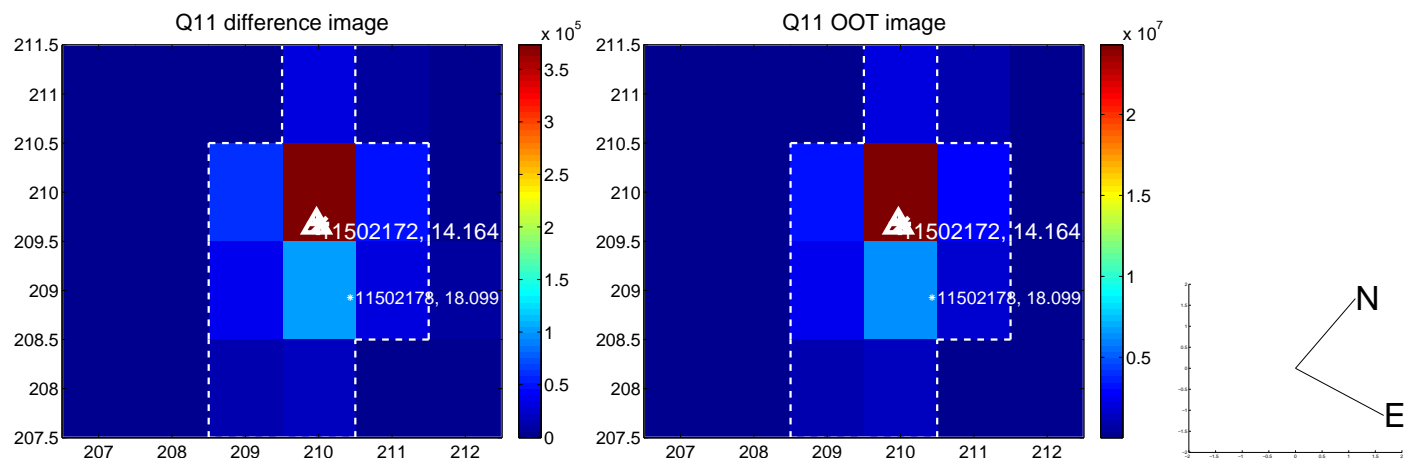
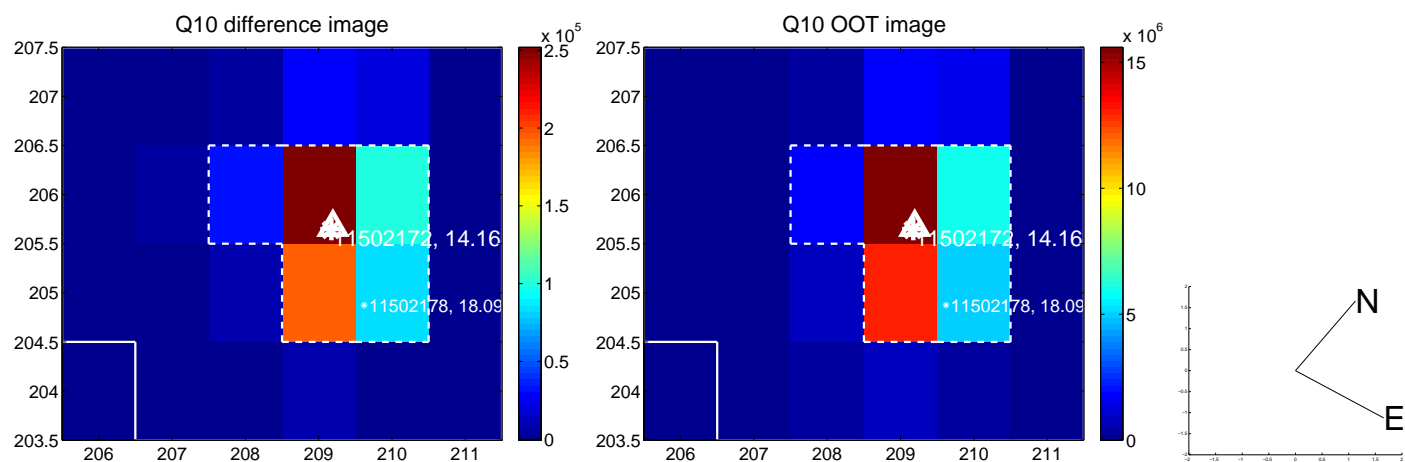
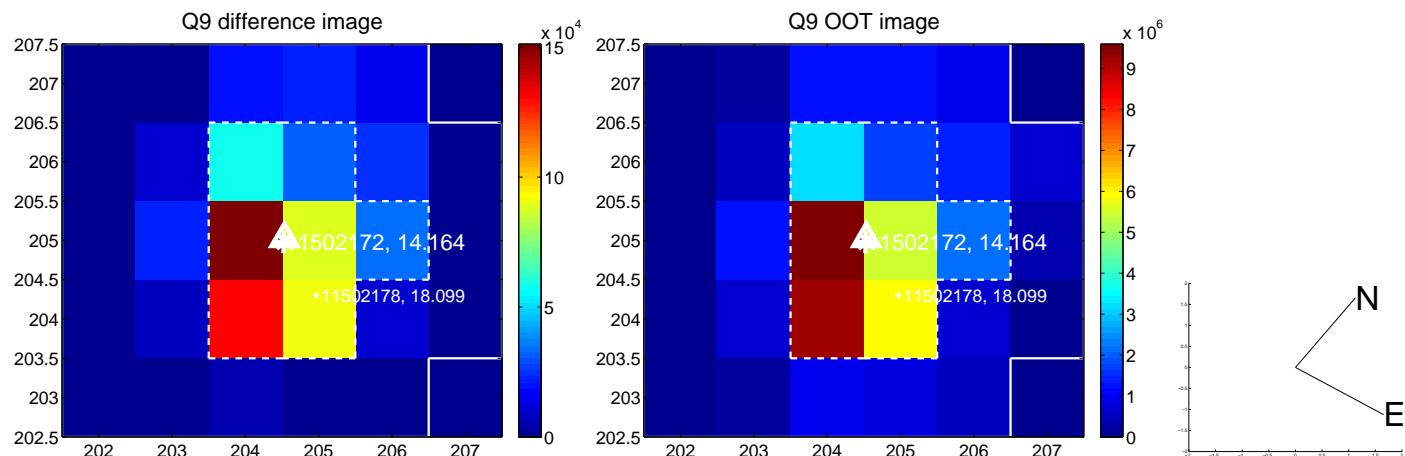
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



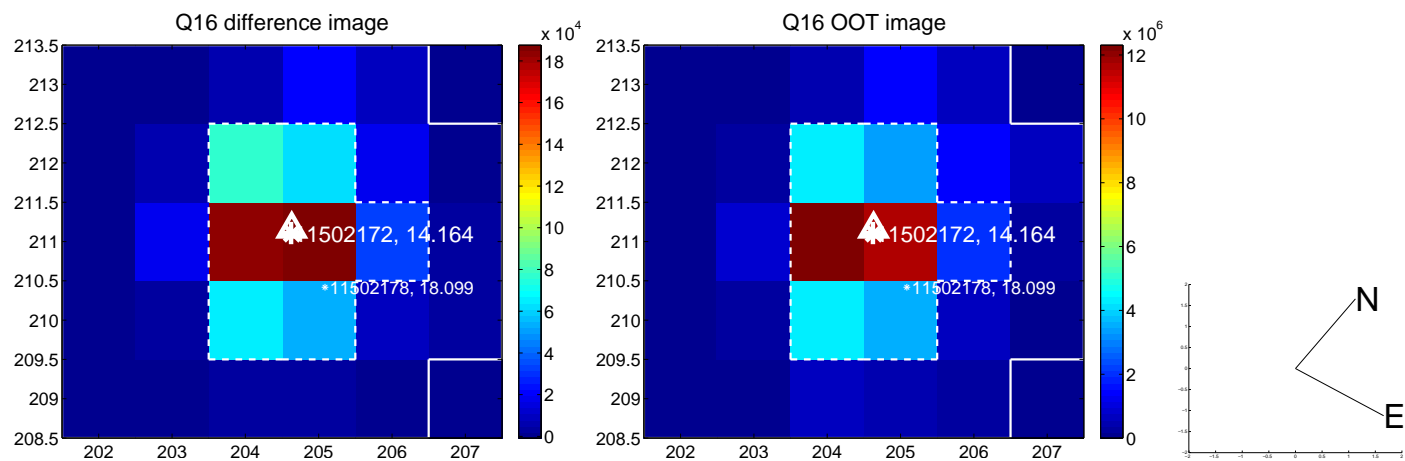
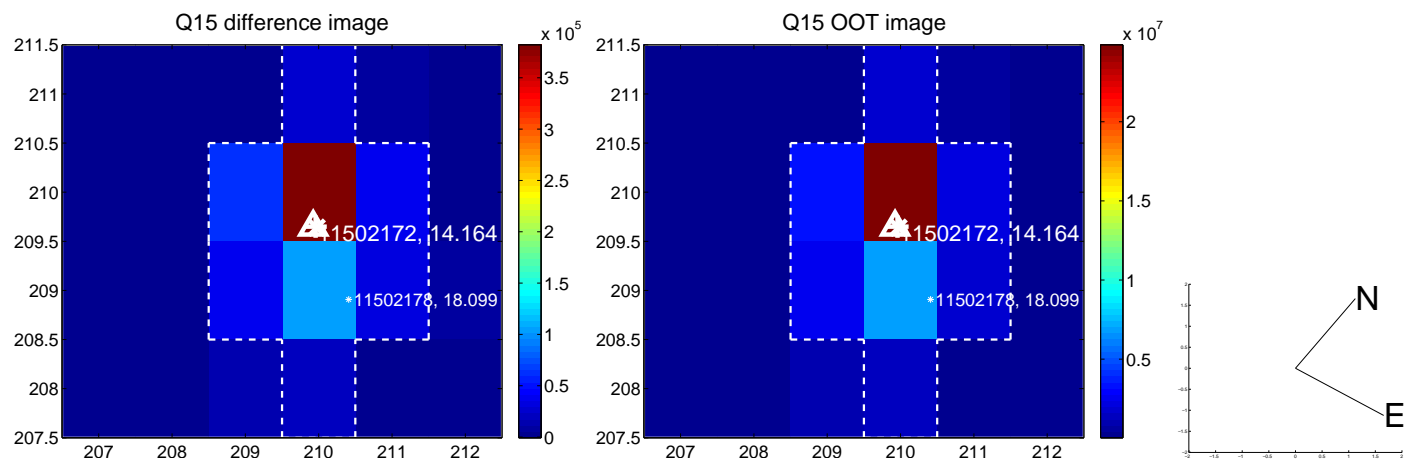
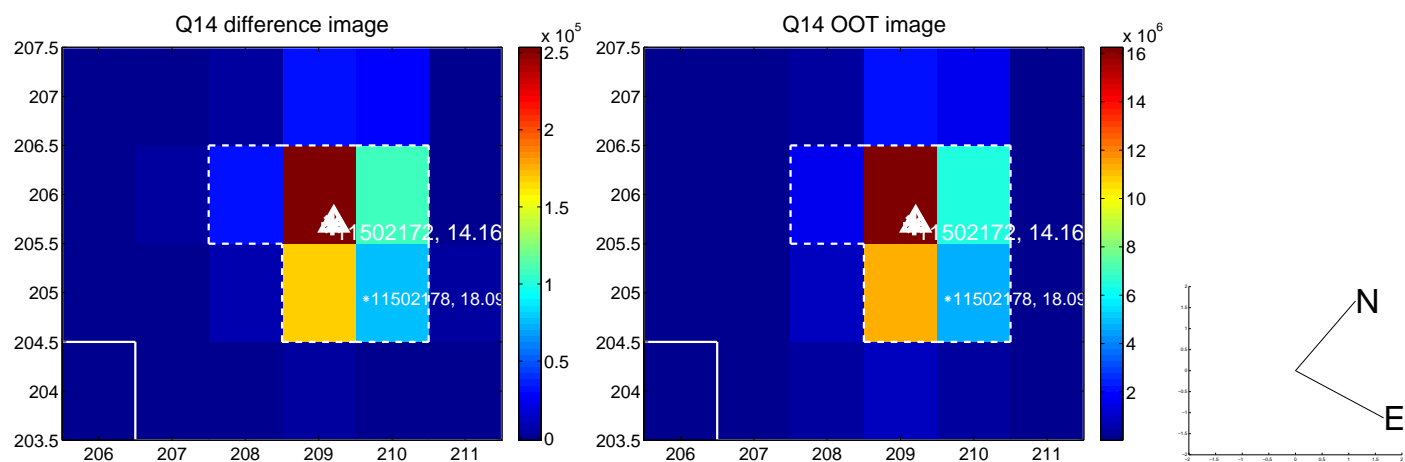
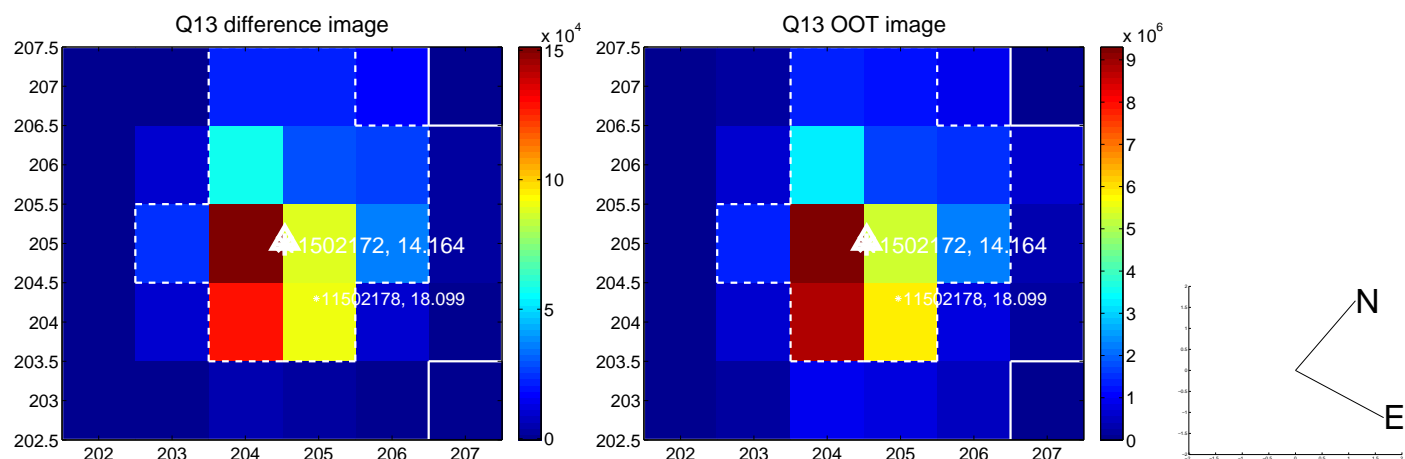
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



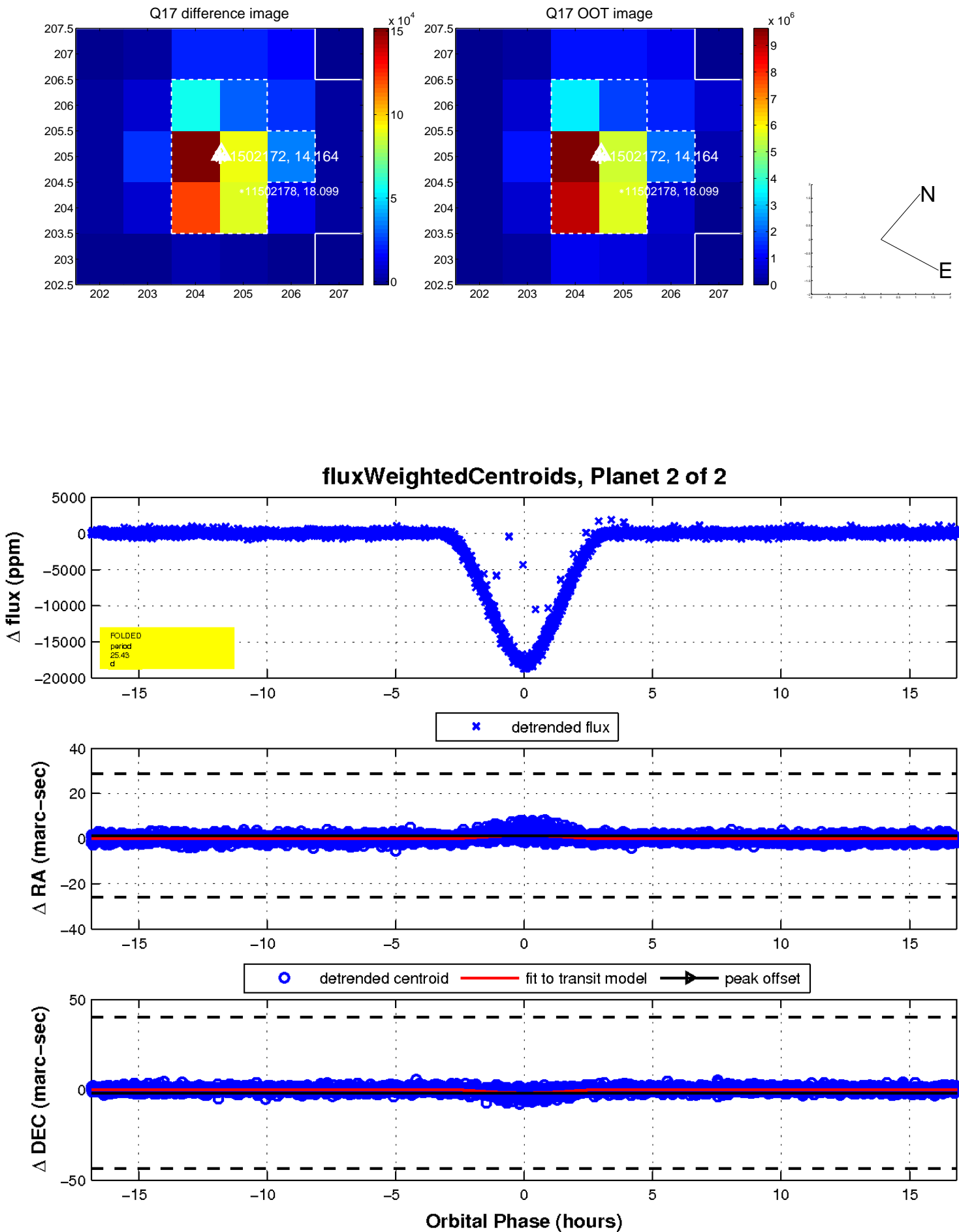
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

