

KIC 011959569

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})
011959569-01	OBS	7497.01	46.148188	173.246540	333062.0	12.000	47208.5	-1.0	1.94	5383	86.84	41.55
011959569-02	OBS	No	46.148618	146.395280	203342.3	18.957	28735.4	17681.0	1.94	5383	89.38	41.55

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011959569-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—MOD_ODDEVEN_ALT—HAS_SEC_TCE—CENT_NOFITS
011959569-02	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 011959569-01

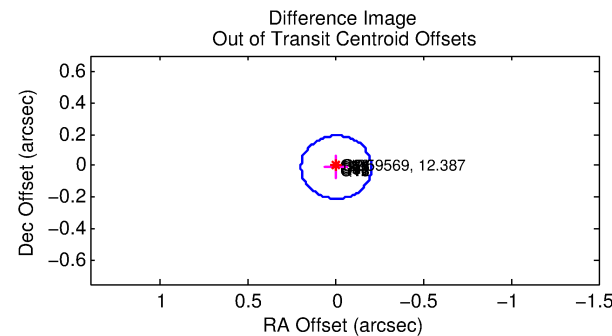
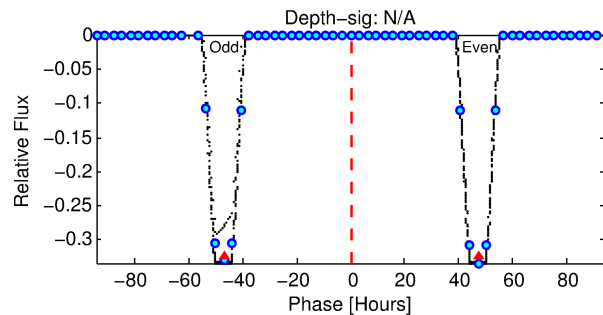
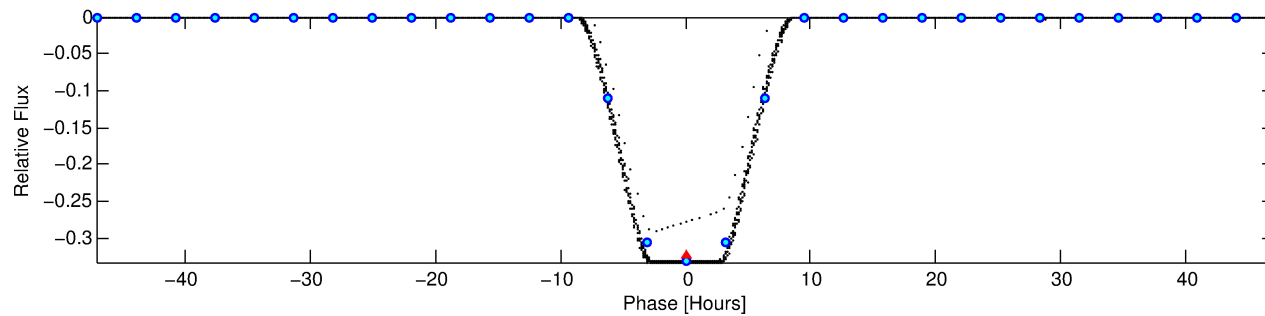
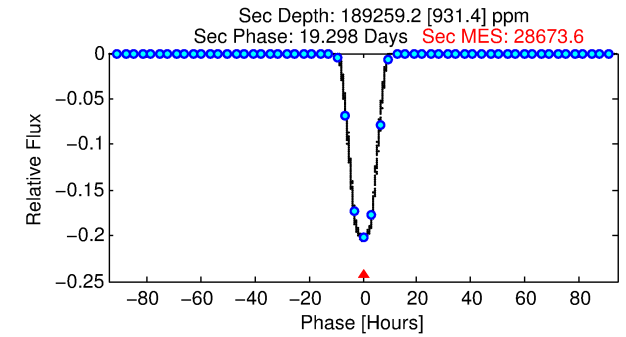
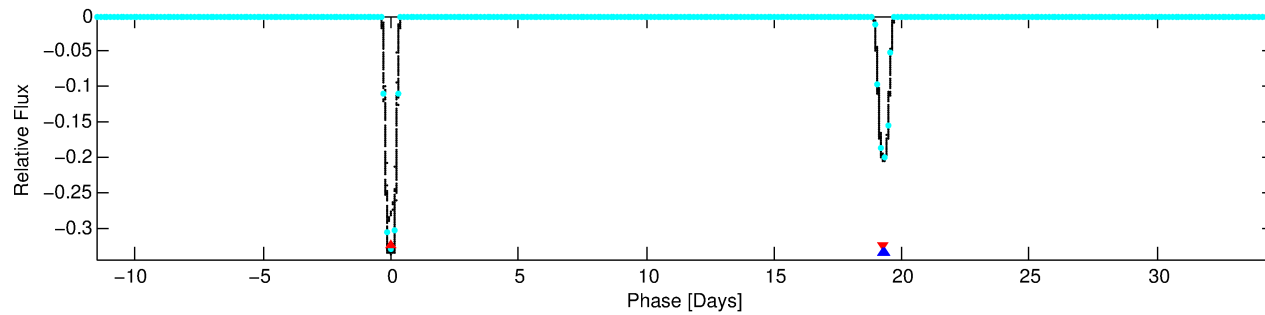
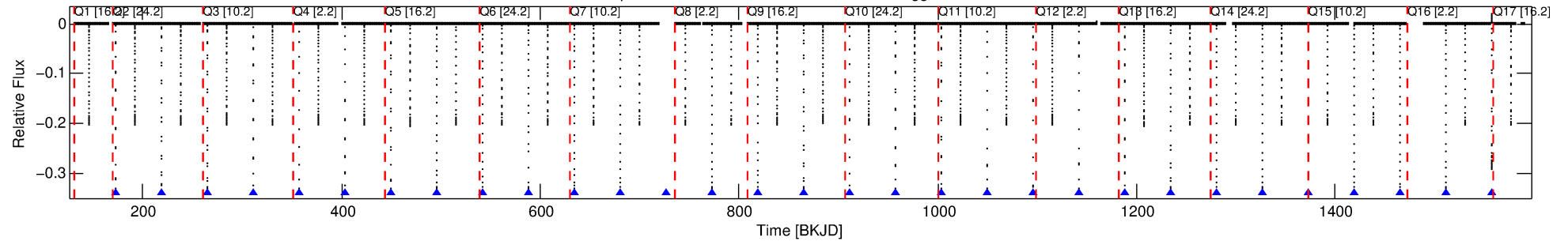
No Significant Match Found

DV One-Page Summary

KIC: 11959569 Candidate: 1 of 2 Period: 46.148 d

KOI: K07497.01 Corr: 0.792

Kp: 12.39 R*: 1.94 Rs Teff: 5383.0 K Logg: 3.91 Fe/H: 0.140



TPS TCE Results:

Period = 46.14819 d
Epoch = 173.2465 BKJD

DV fit results are unavailable

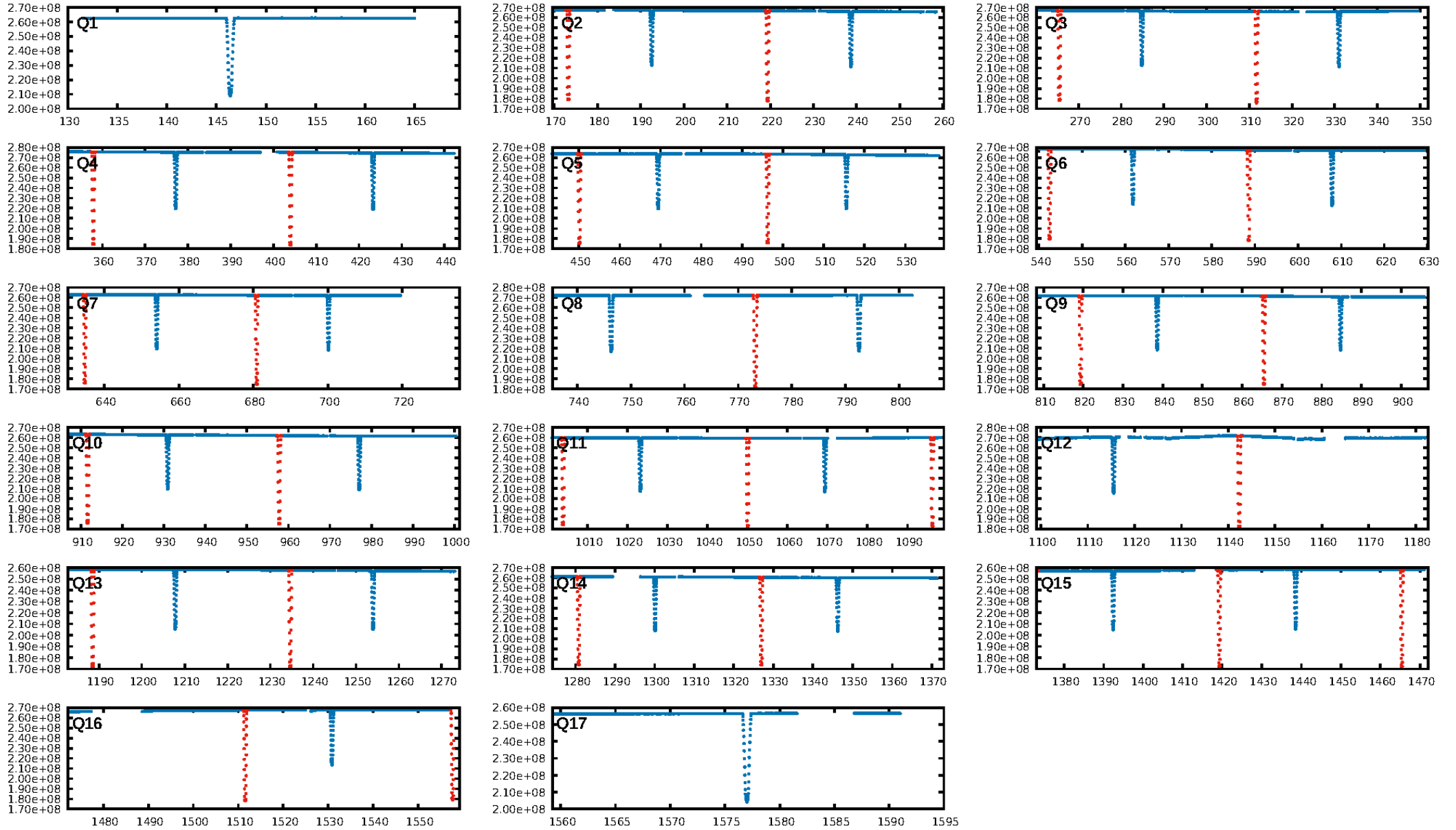
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [29/29]
GhostDiagnostic-chr: 3.42
Centroid-sig: 0.0%
Centroid-so: 0.169 arcsec [585.40σ]
OotOffset-rm: 0.009 arcsec [0.13σ]
KicOffset-rm: 0.098 arcsec [1.45σ]
OotOffset-st: 4/4/4/3 [15]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 1.00 [15/15]
DiffImageOverlap-fno: 1.00 [15/15]

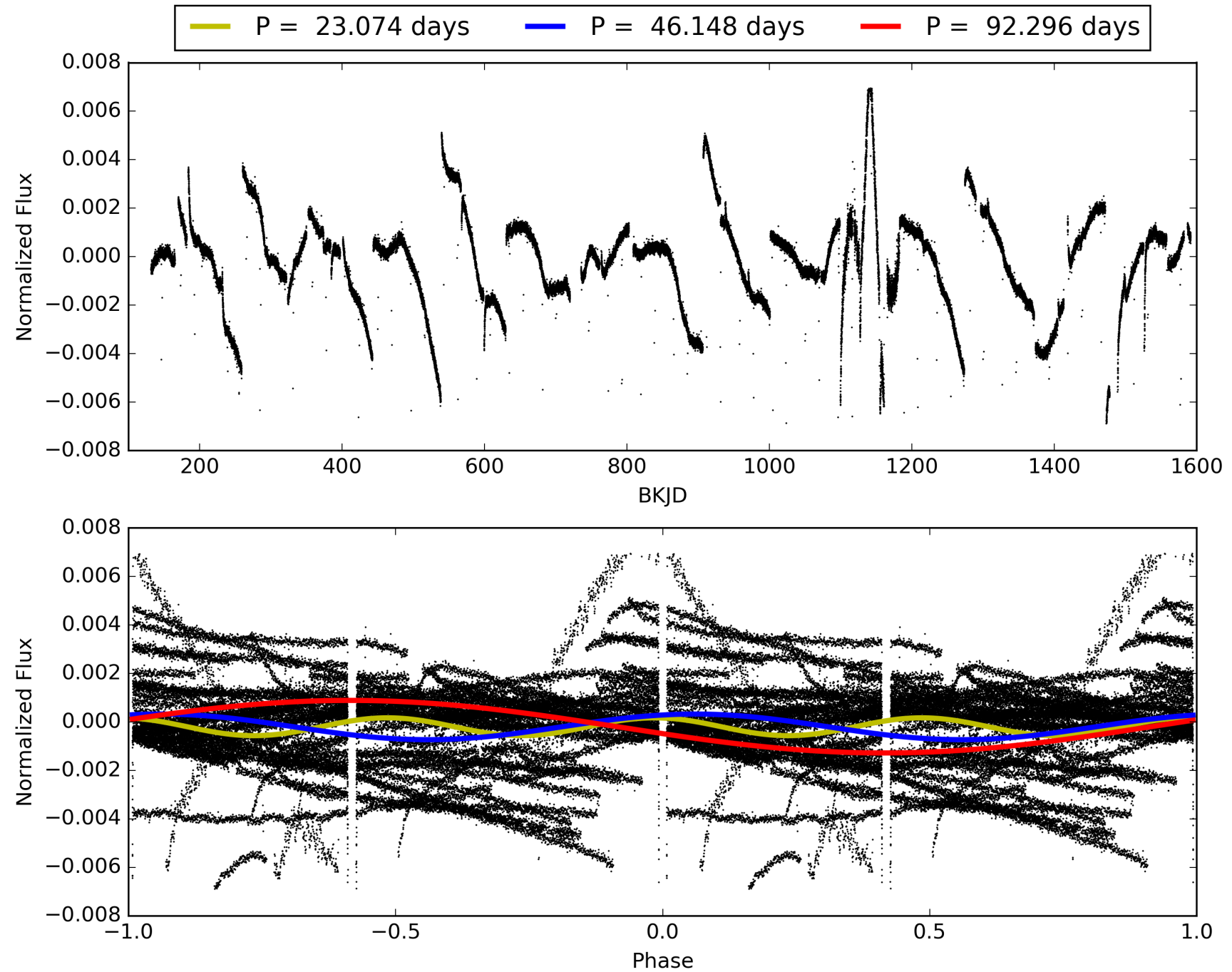
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:28:48 Z

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

TCE 011959569-01, PDC Light Curves

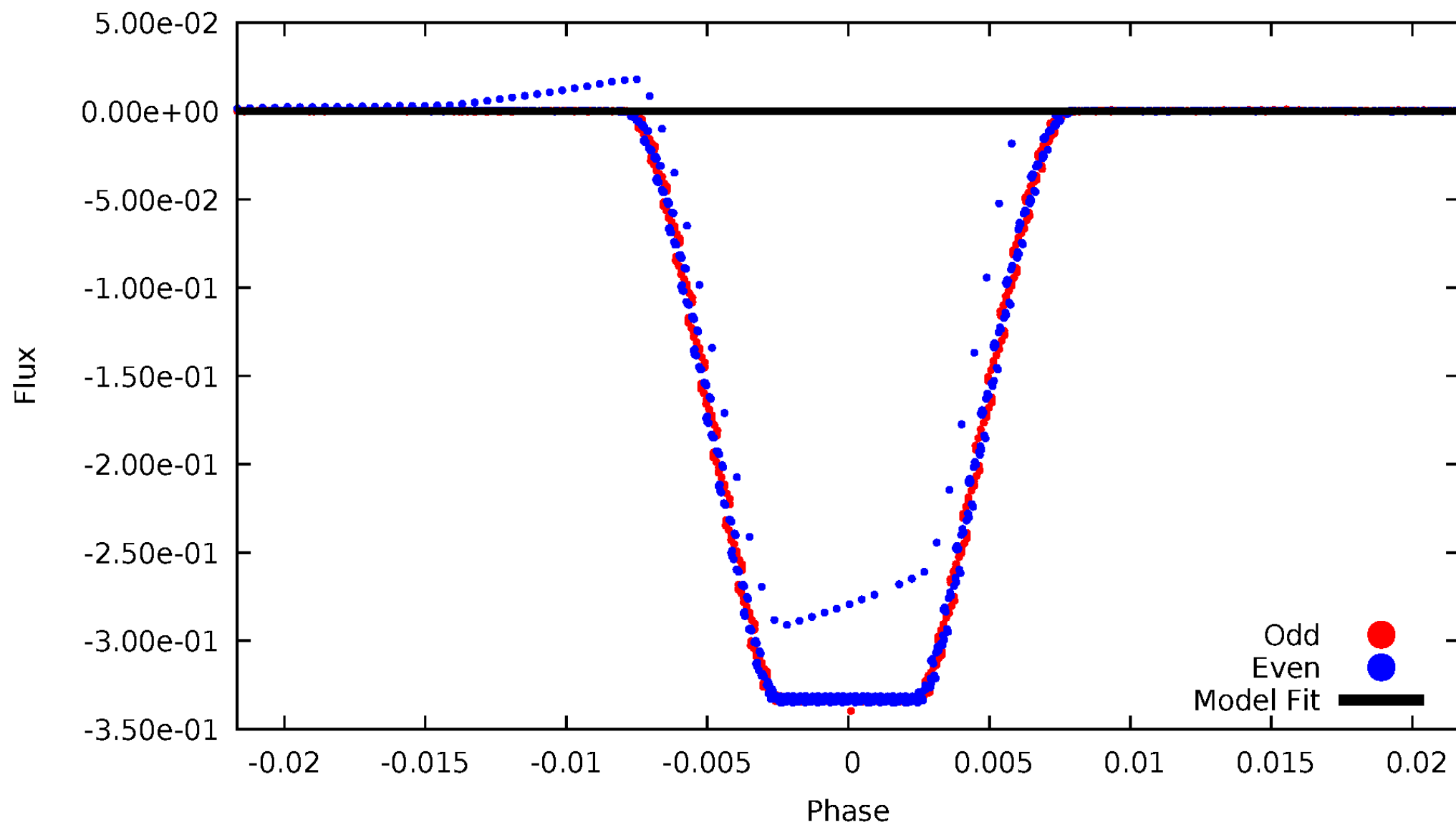


TCE 011959569-01



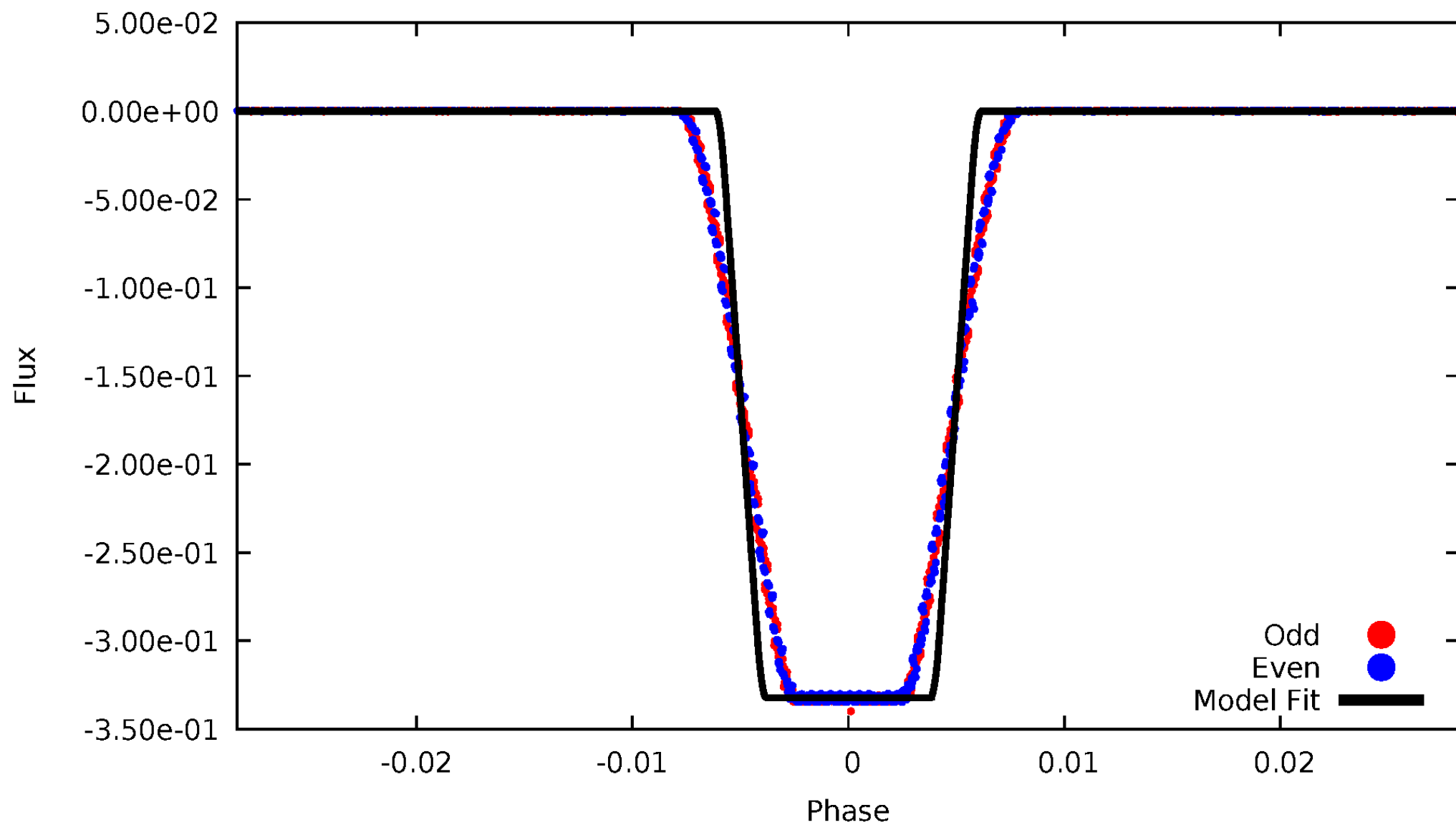
DV Odd/Even

TCE 011959569-01



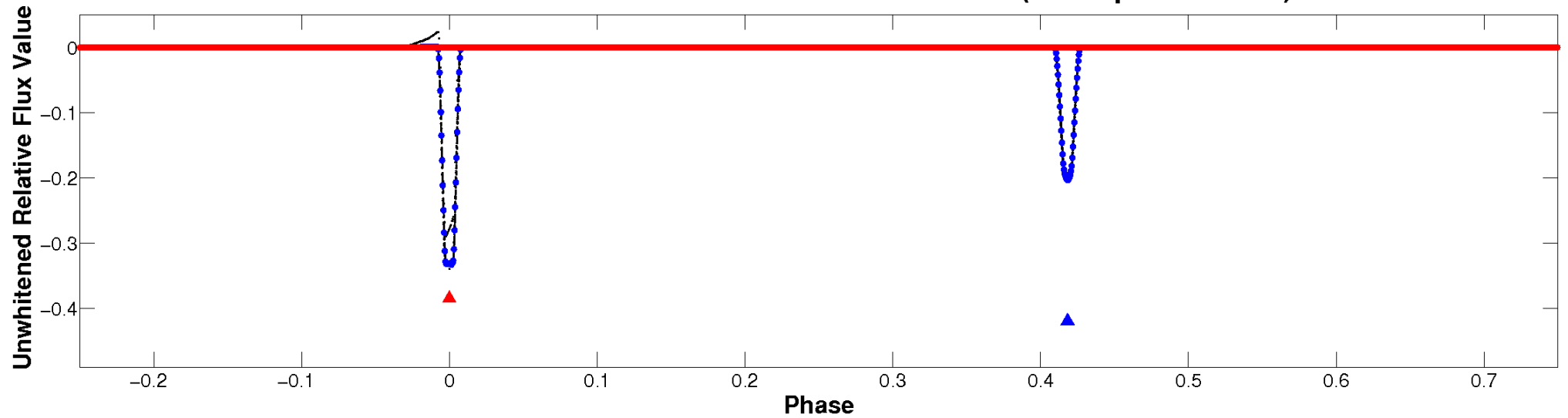
ALT Odd/Even

TCE 011959569-01



Non-Whitened Vs. Whitened Light Curve

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

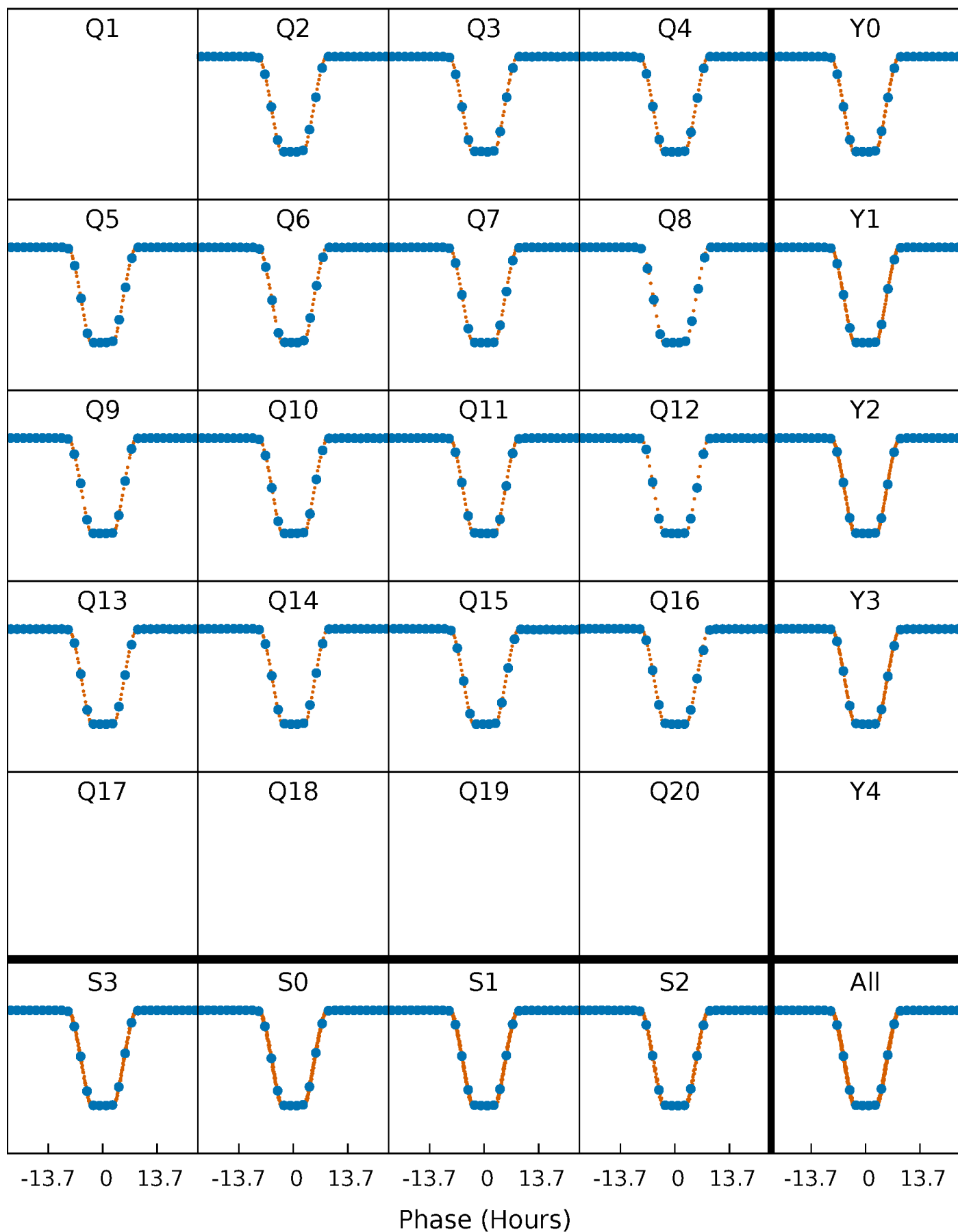


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



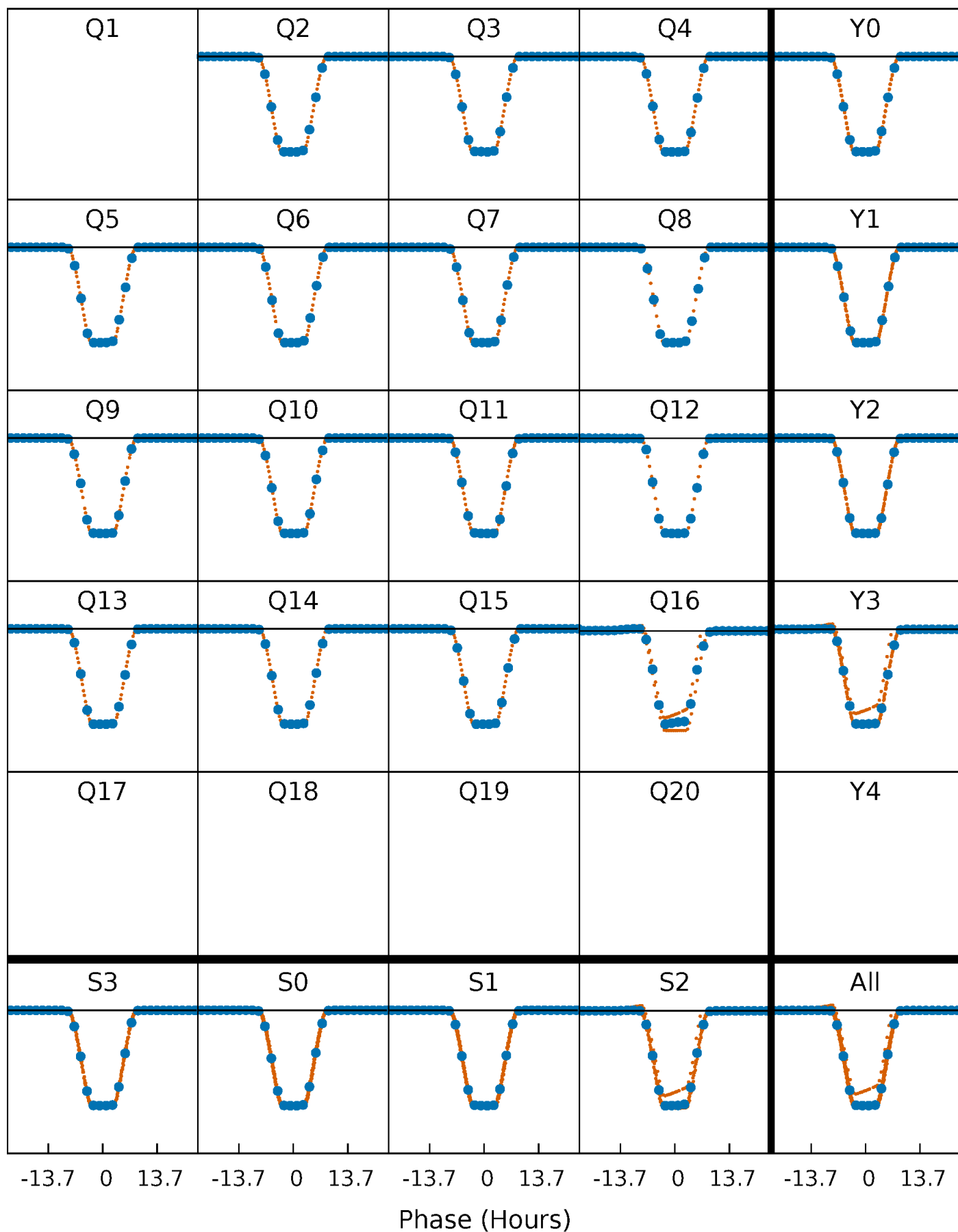
PDC Quarter-Phased Transit Curves

TCE 011959569-01 P= 46.148188 Days $T_0=173.246540$ (BKJD)



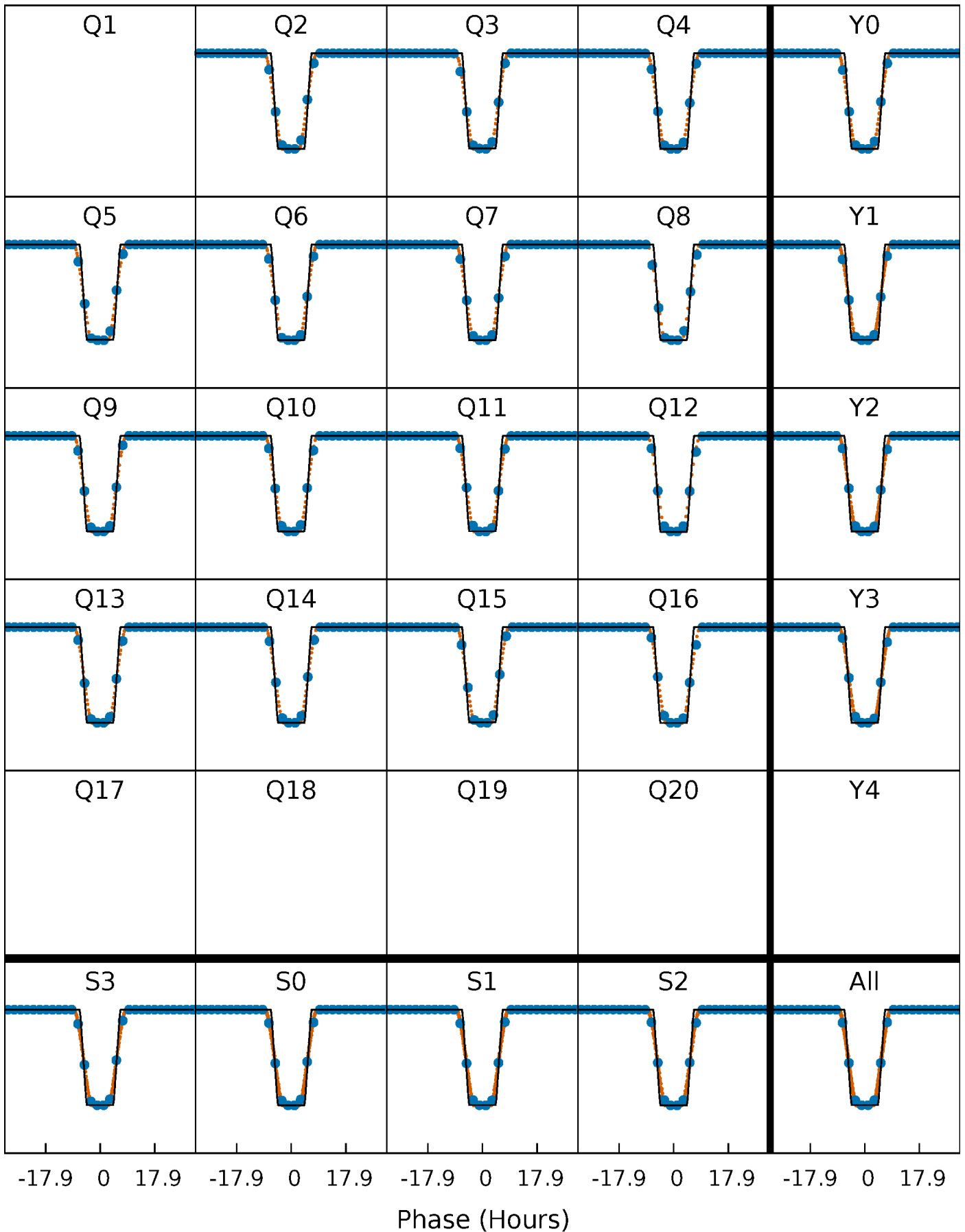
DV Quarter-Phased Transit Curves

TCE 011959569-01 P= 46.148188 Days $T_0=173.246540$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

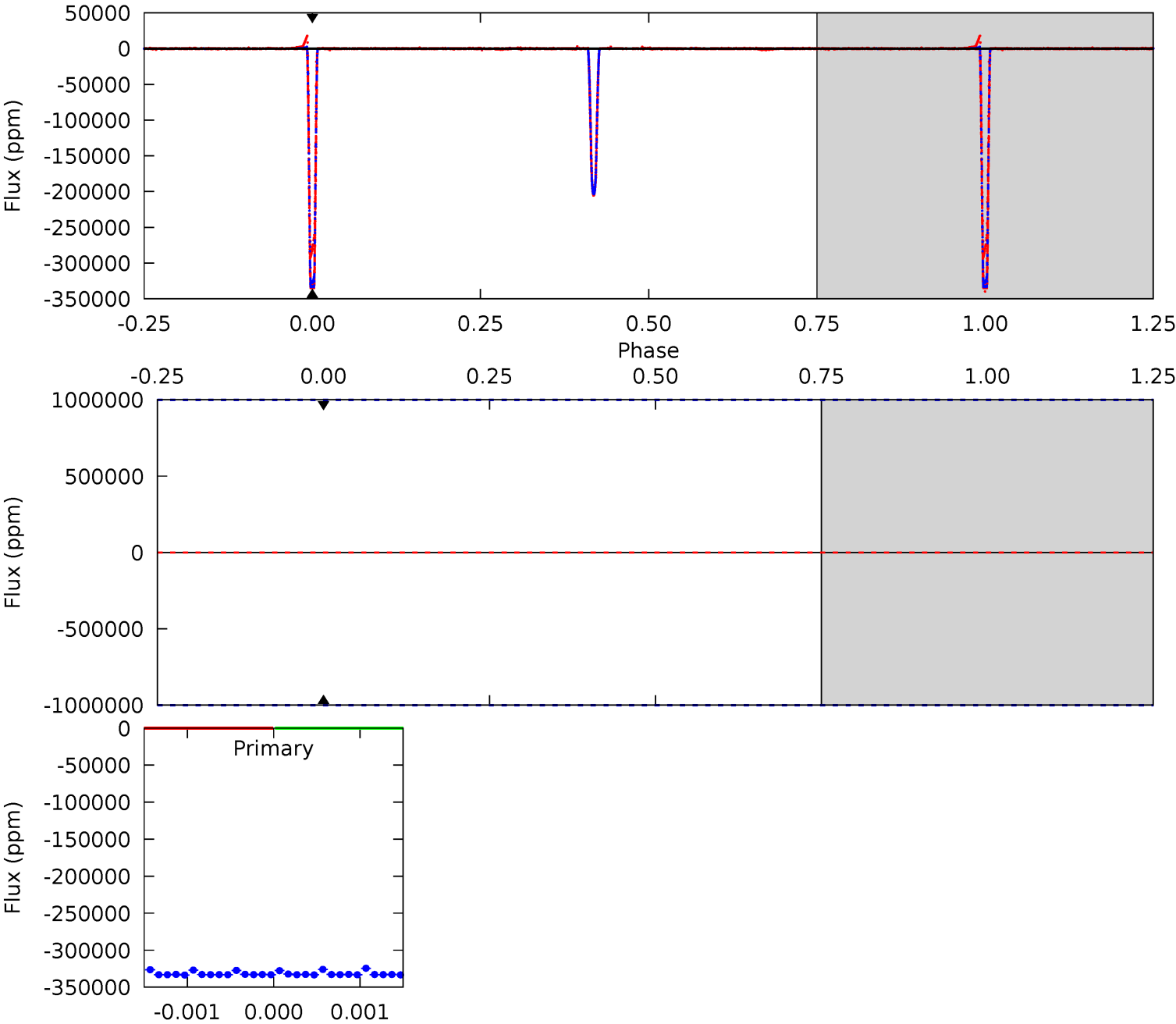
TCE 011959569-01 P= 46.148188 Days $T_0=173.245195$ (BKJD)



DV Model-Shift Uniqueness Test

011959569-01, P = 46.148188 Days, E = 127.098352 Days

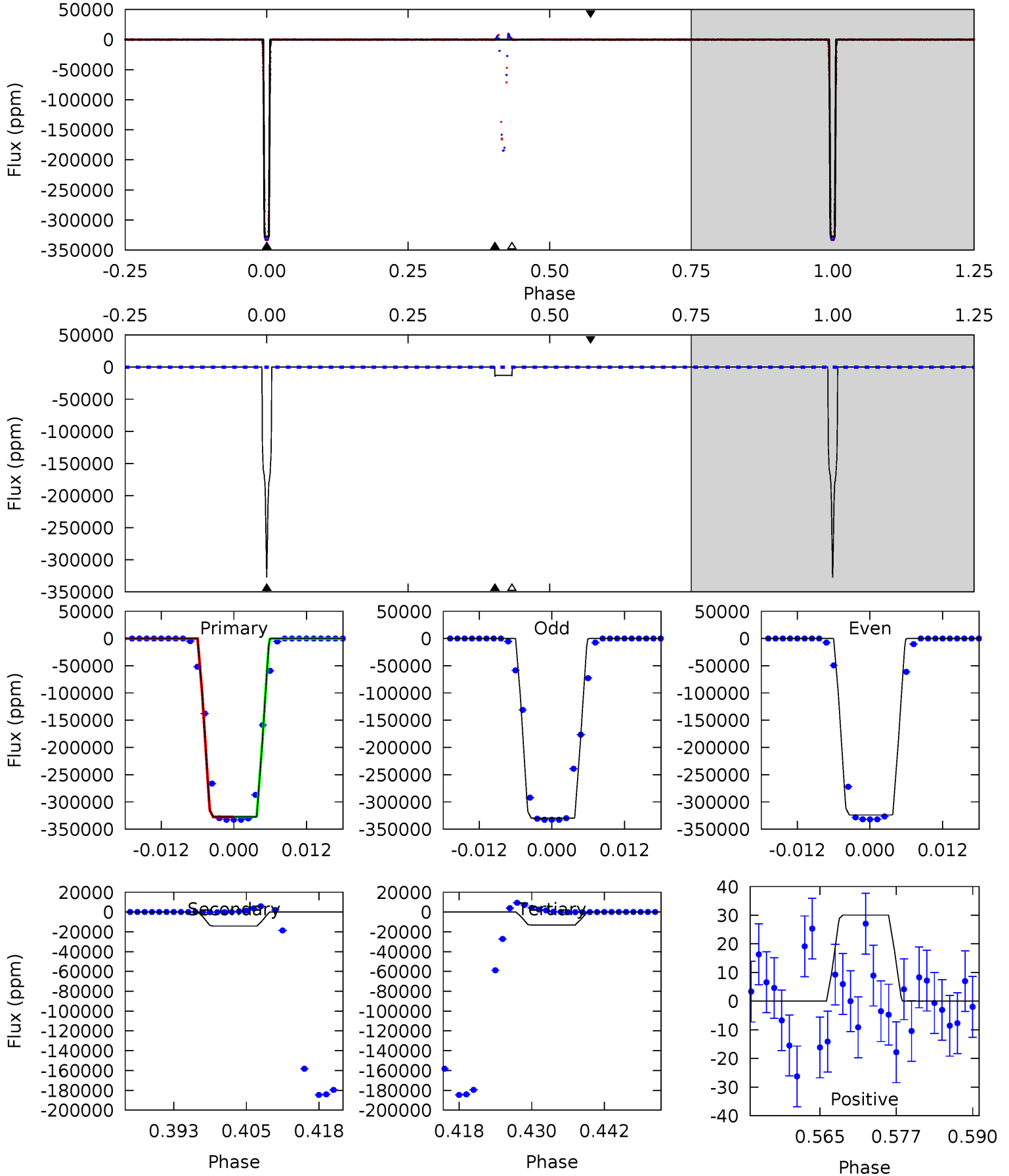
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

011959569-01, P = 46.148188 Days, E = 127.097007 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1971	85.5	79.7	0.18	4.99	2.50	2.46	1891	1971	5.78	85.3	22.4	1.00	0.00	0



Stellar Parameters For KIC 011959569

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5383^{+178}_{-129}	$3.908^{+0.338}_{-0.135}$	$0.140^{+0.250}_{-0.200}$	$1.935^{+0.439}_{-0.658}$	$1.105^{+0.146}_{-0.160}$	$0.215^{+0.471}_{-0.084}$
	+3%/-2%	+9%/-3%	+179%/-143%	+23%/-34%	+13%/-14%	+219%/-39%
Source	PHO1	FLK73	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 011959569-01 / KOI 7497.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$84.27^{+24.15}_{-24.99}$	895^{+63}_{-77}	3193^{+1899}_{-7982}	42^{+648}_{-584}
Alt.	-14213 ± 166	$116.66^{+27.72}_{-28.96}$	890^{+67}_{-86}	3086^{+183}_{-140}	40^{+30}_{-13}

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 $A_{obs} \gg 1.0$

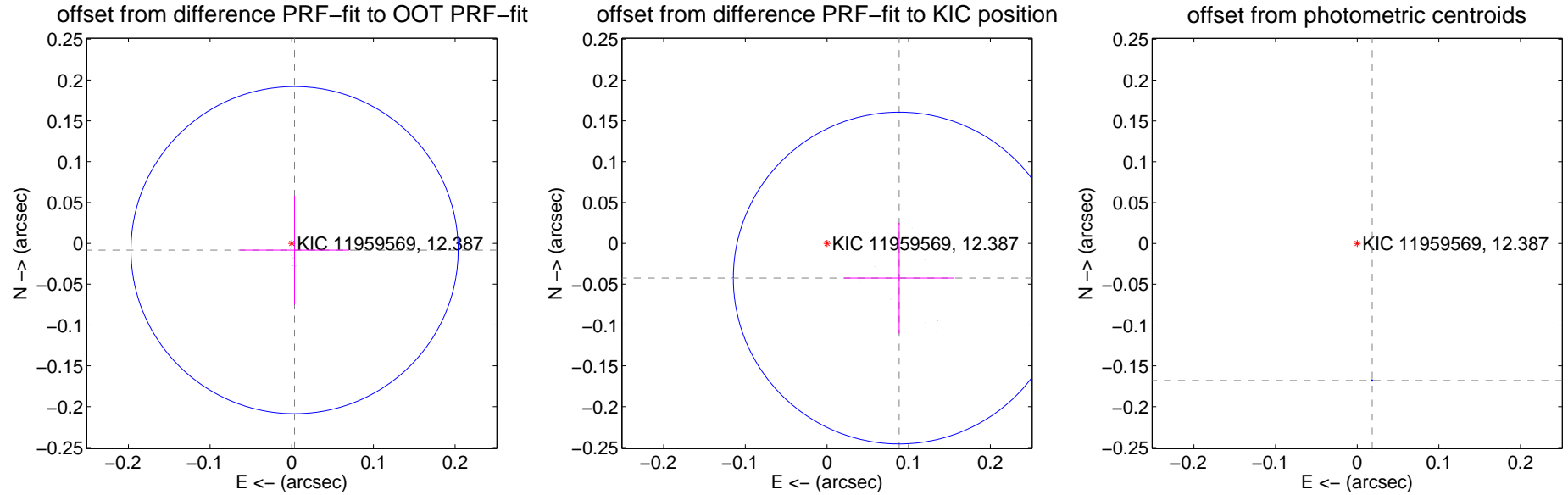
DV Centroid Data

Supplemental centroid analysis for 011959569-01. Kepler magnitude: 12.39. Transit SNR -1.00

There are 15 quarters with good PRF difference image offsets

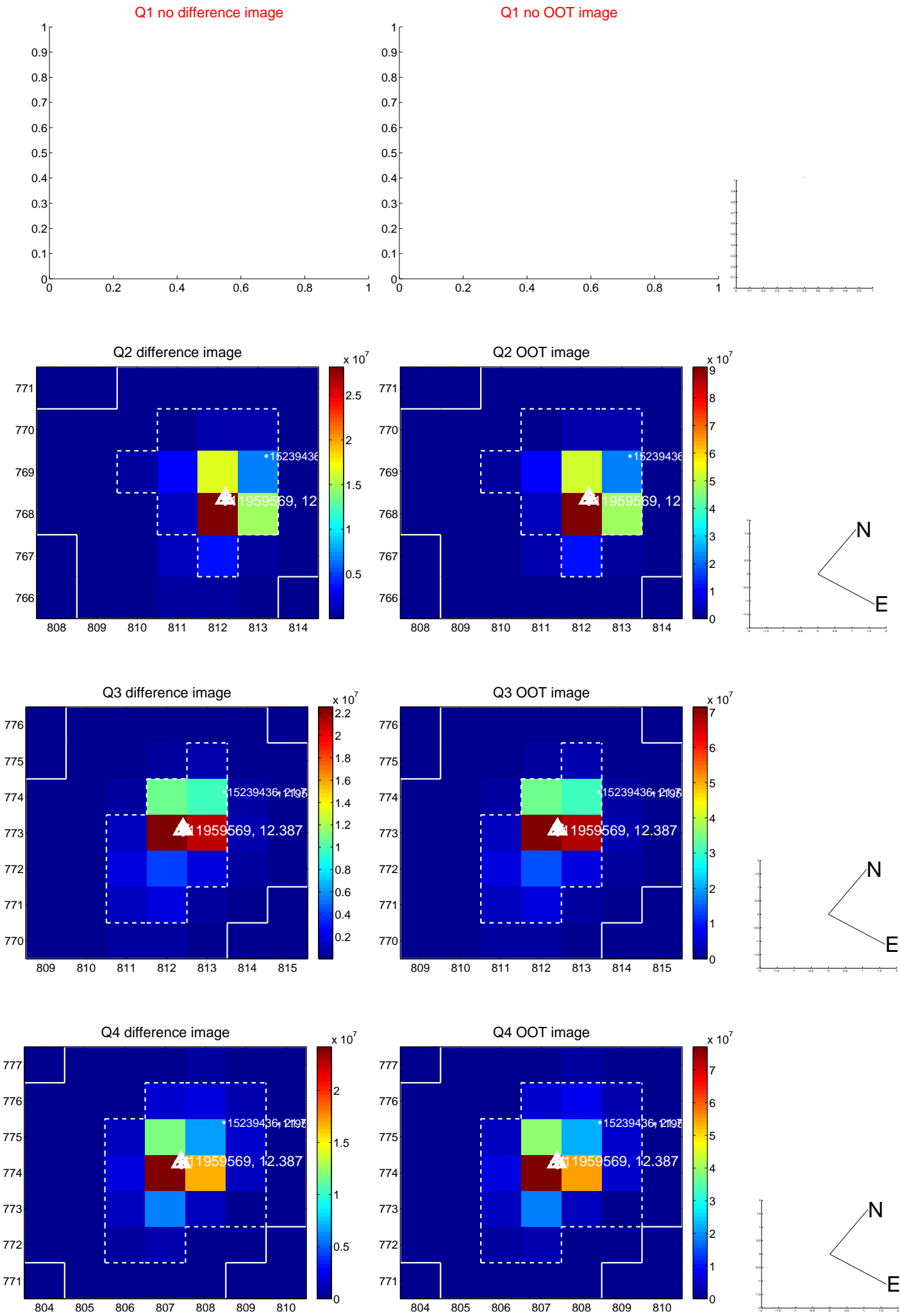
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.009 ± 0.067	0.13	-0.003 ± 0.067	-0.008 ± 0.067
PRF-fit source offset from KIC position	0.098 ± 0.068	1.45	-0.088 ± 0.067	-0.043 ± 0.068
photometric centroid source offset	0.17 ± 0.00	585.40	-0.02 ± 0.00	-0.17 ± 0.00

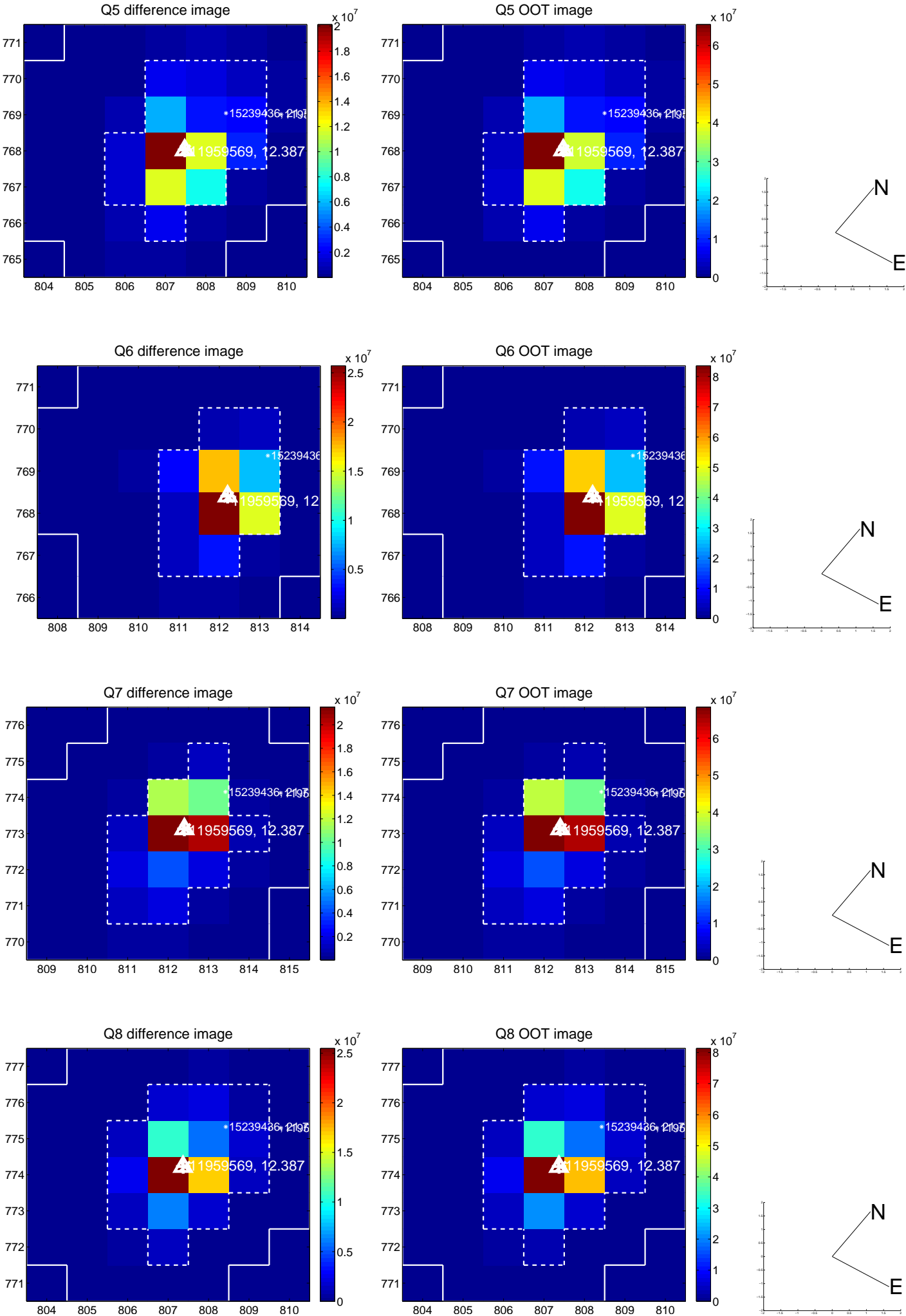


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

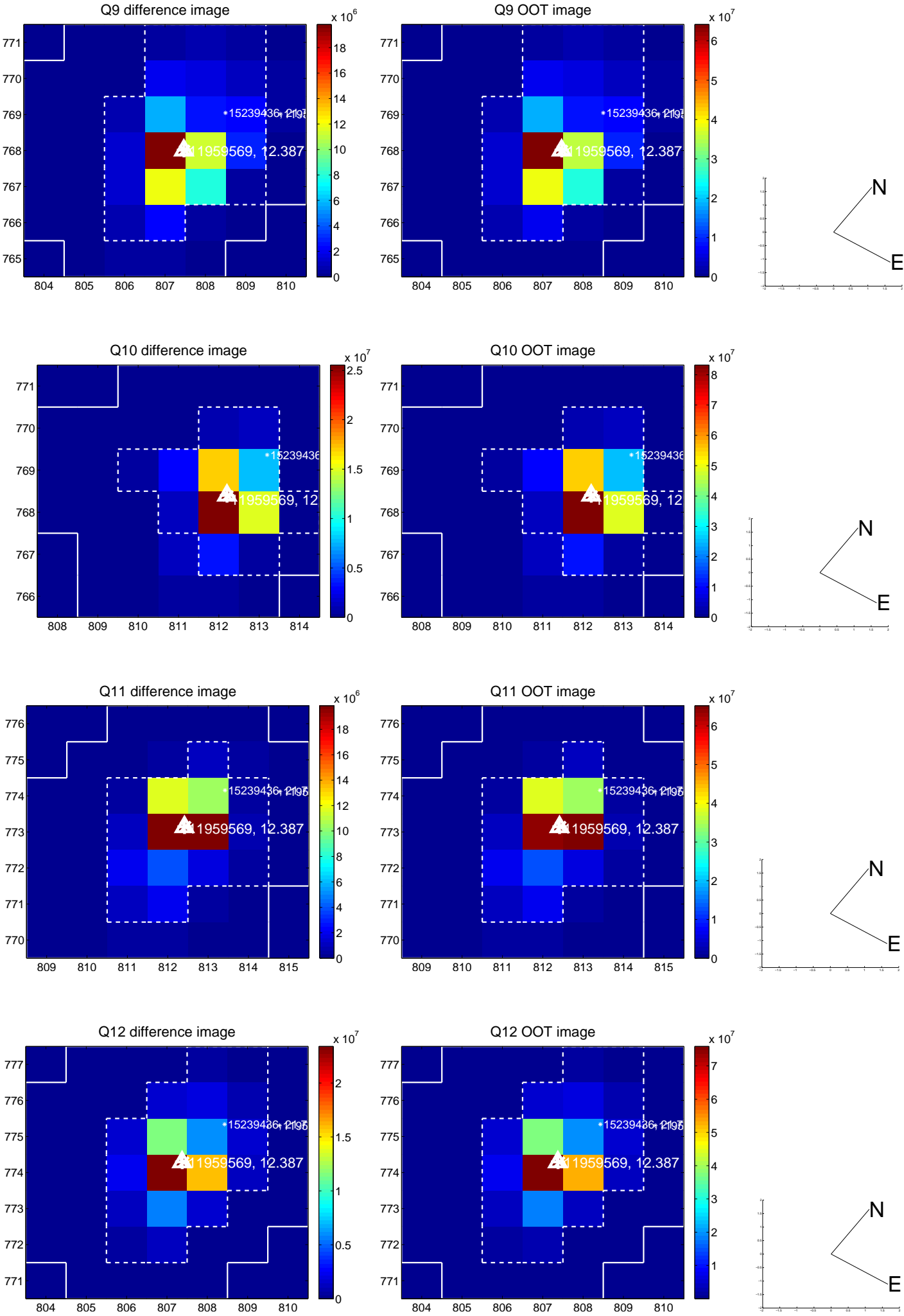
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



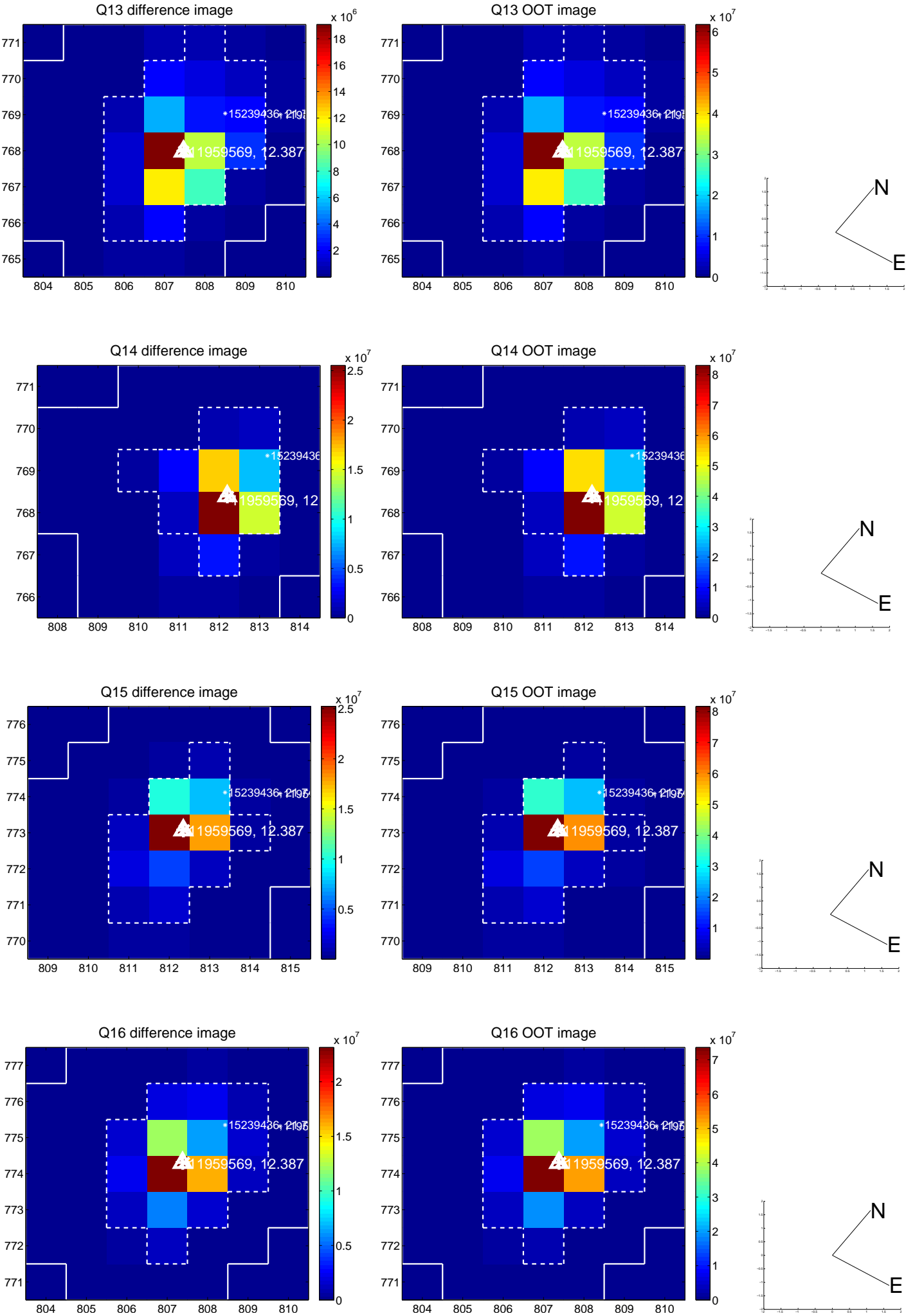
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



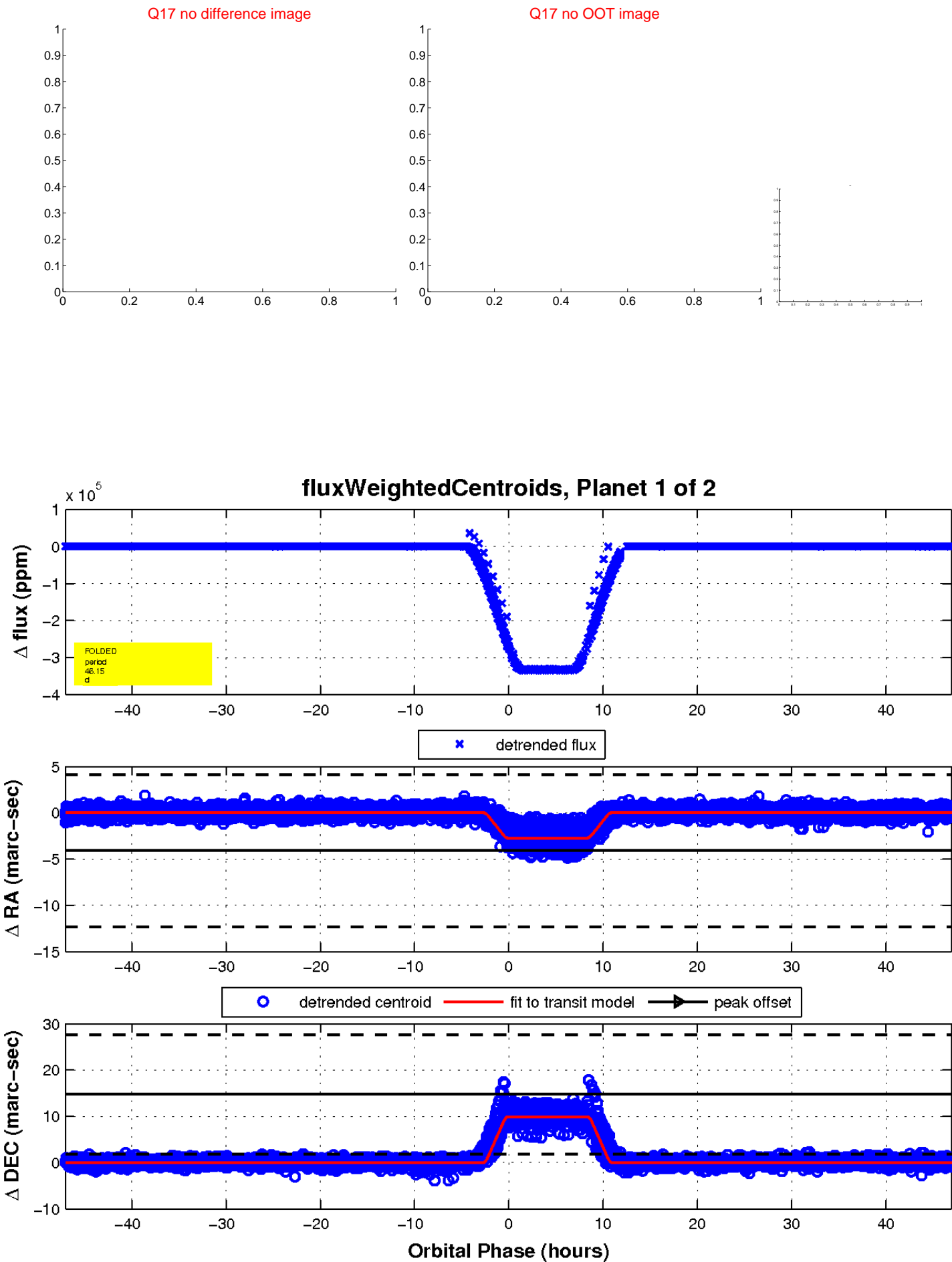
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

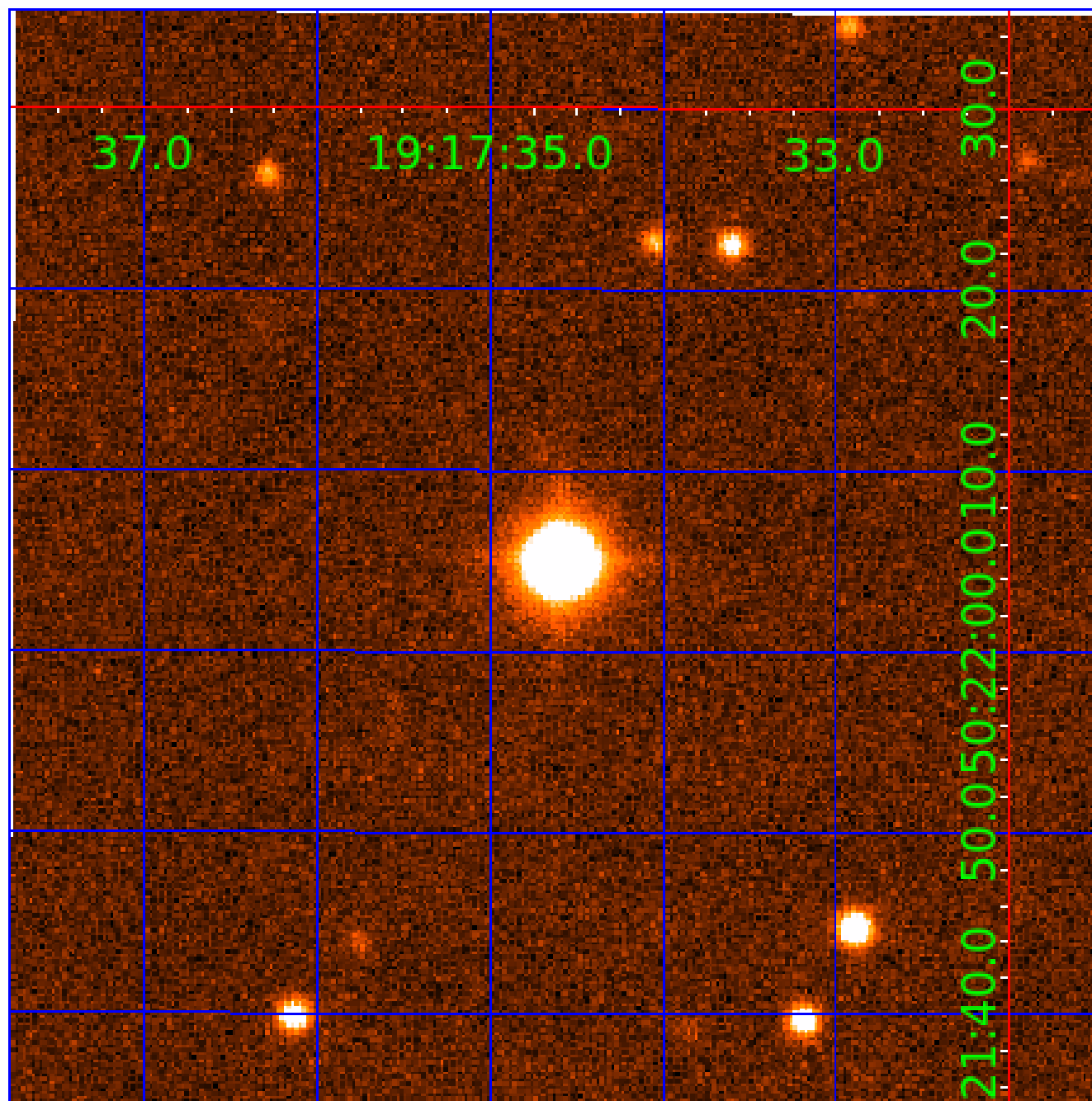


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011959569

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})
011959569-01	OBS	7497.01	46.148188	173.246540	333062.0	12.000	47208.5	-1.0	1.94	5383	86.84	41.55
011959569-02	OBS	No	46.148618	146.395280	203342.3	18.957	28735.4	17681.0	1.94	5383	89.38	41.55

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011959569-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—MOD_ODDEVEN_ALT—HAS_SEC_TCE—CENT_NOFITS
011959569-02	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.

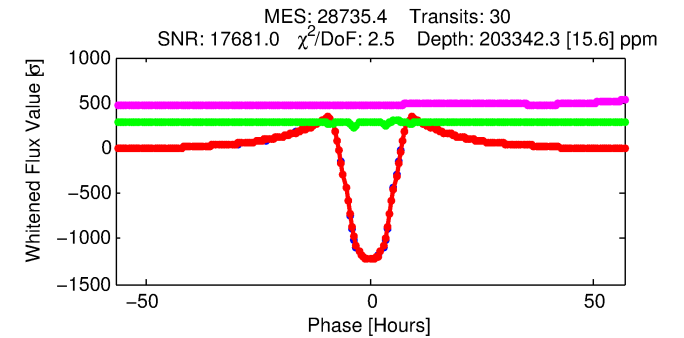
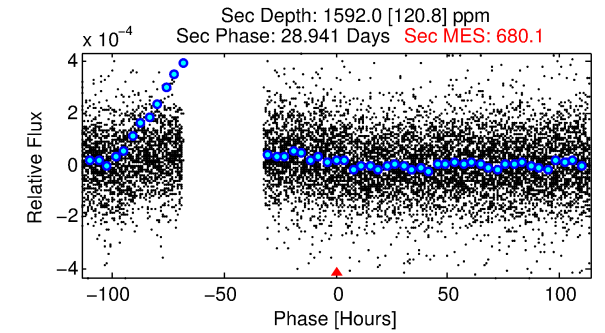
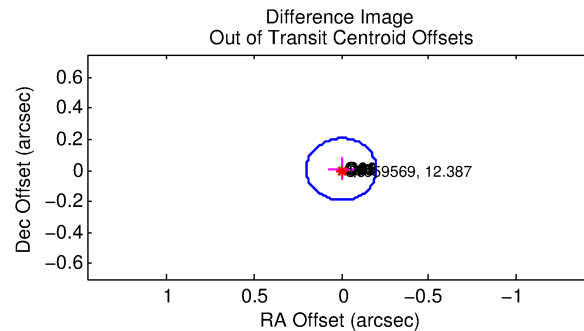
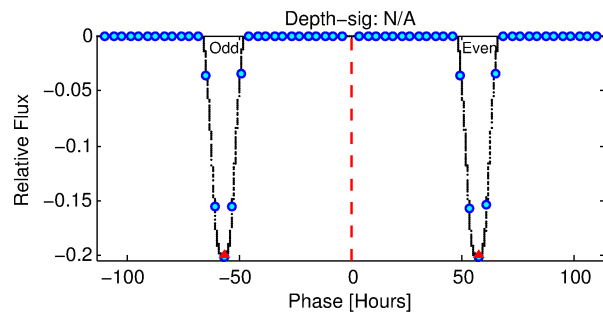
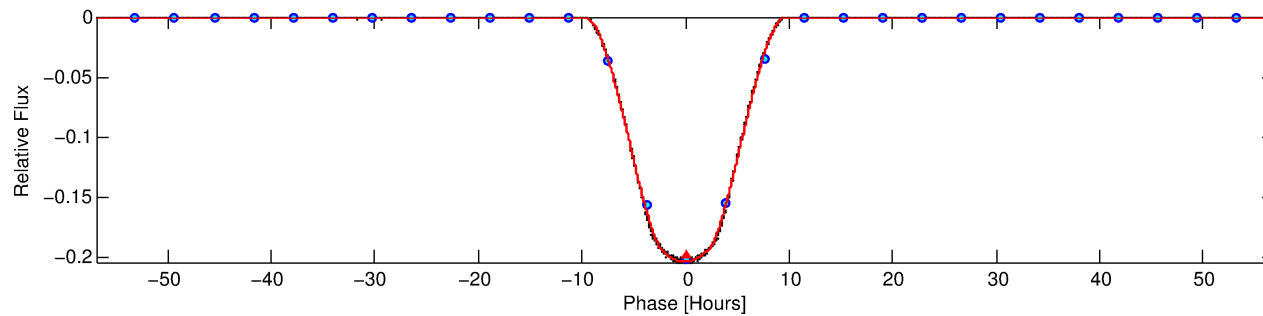
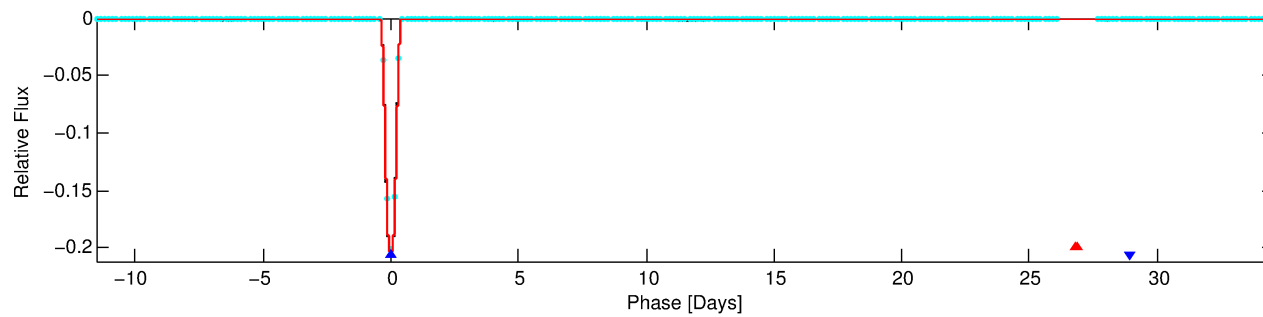
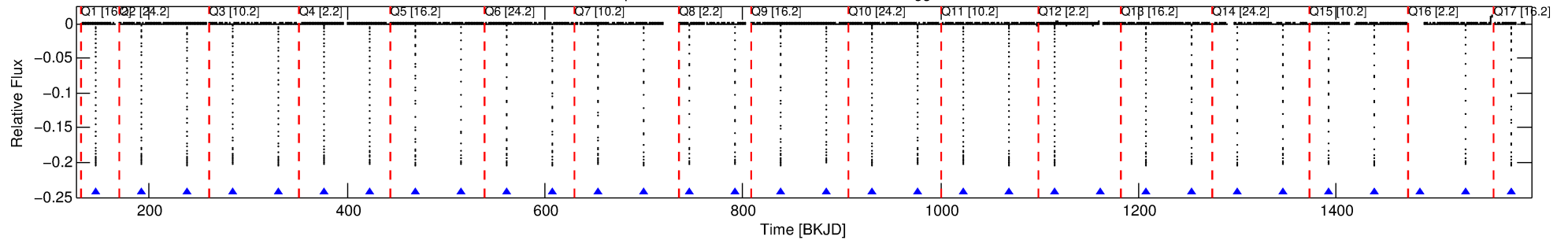
Ephemeris Match Information For 011959569-02

No Significant Match Found

DV One-Page Summary

KIC: 11959569 Candidate: 2 of 2 Period: 46.149 d
KOI: K07497 Corr: No Ephemeris Match

Kp: 12.39 R*: 1.94 Rs Teff: 5383.0 K Logg: 3.91 Fe/H: 0.140



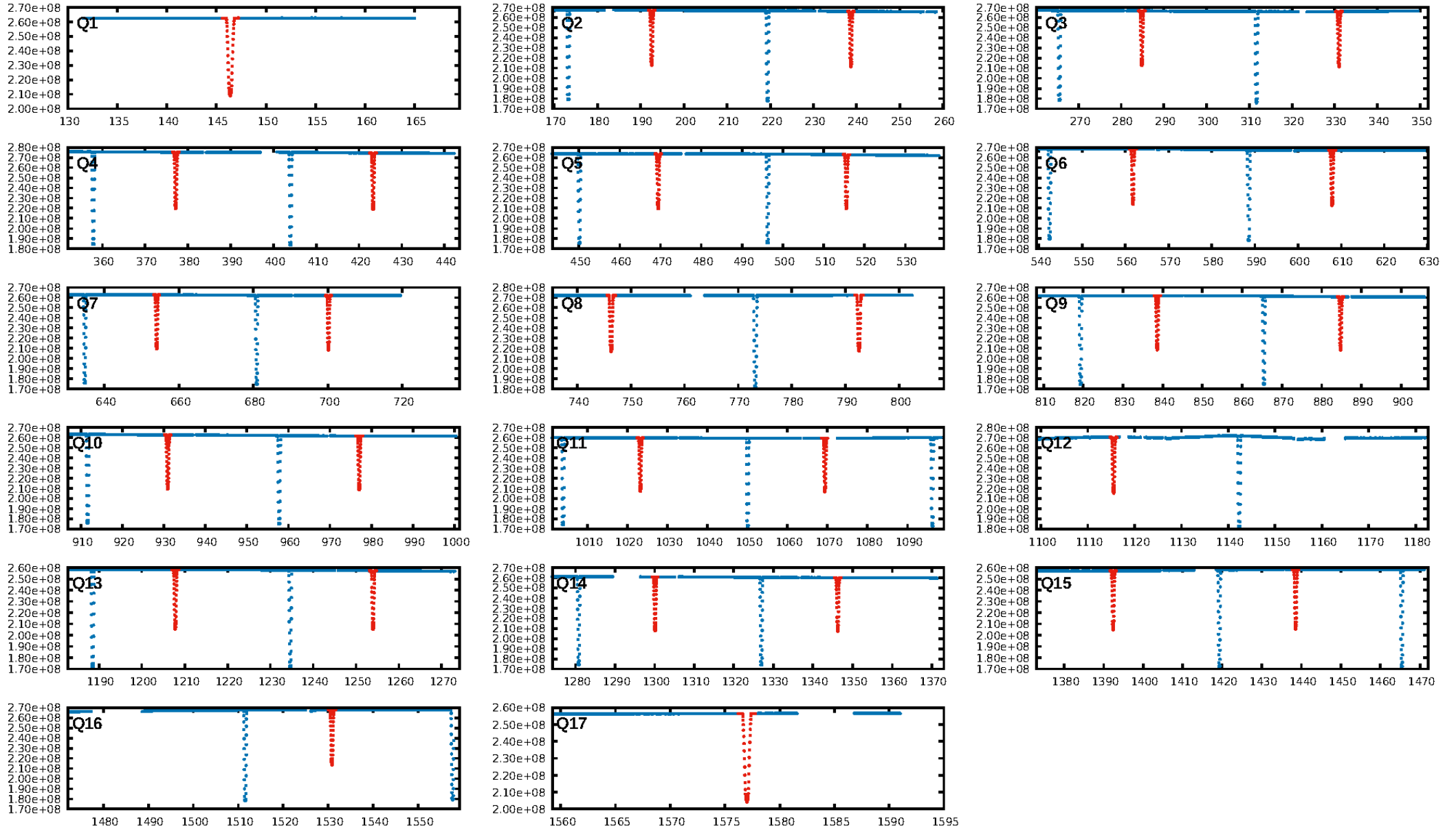
DV Fit Results:

Period = 46.14862 [0.00000] d
Epoch = 146.3953 [0.0000] BKJD
Rp/R* = 0.4233 [0.0000]
a/R* = 25.18 [0.00]
b = 0.44 [0.00]
Seff = 41.55 [24.16]
Teq = 647 [94] K
Rp = 89.38 [30.39] Re
a = 0.2604 [0.0897] AU
Ag = 7.43 [4.25] [1.51σ]
Teffp = 1653 [63] K [8.8σ]

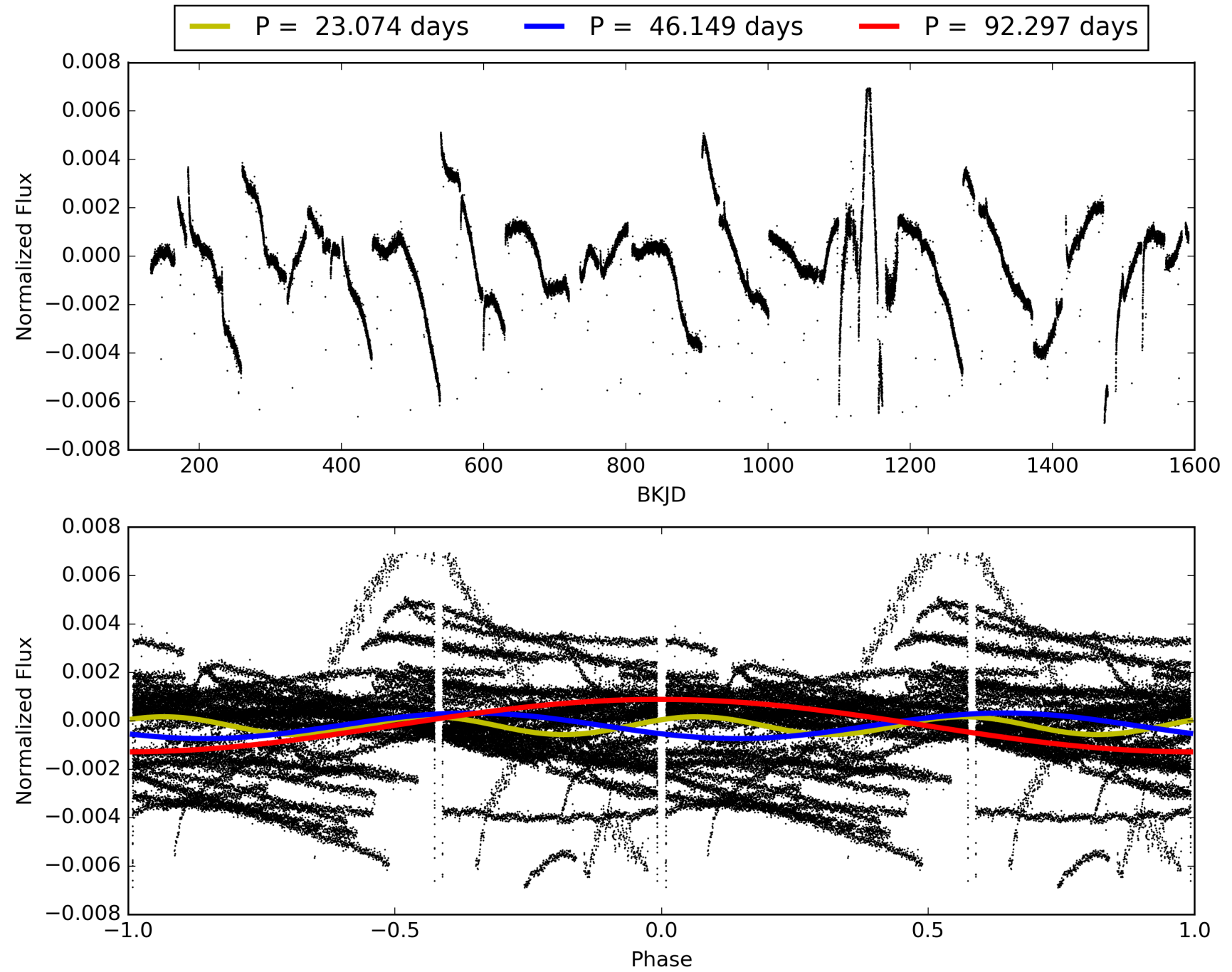
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [28/28]
GhostDiagnostic-chr: 6.453
Centroid-sig: 0.0%
Centroid-so: 0.137 arcsec [297.79σ]
OotOffset-rm: 0.008 arcsec [0.12σ]
KicOffset-rm: 0.089 arcsec [1.31σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [16/16]

TCE 011959569-02, PDC Light Curves

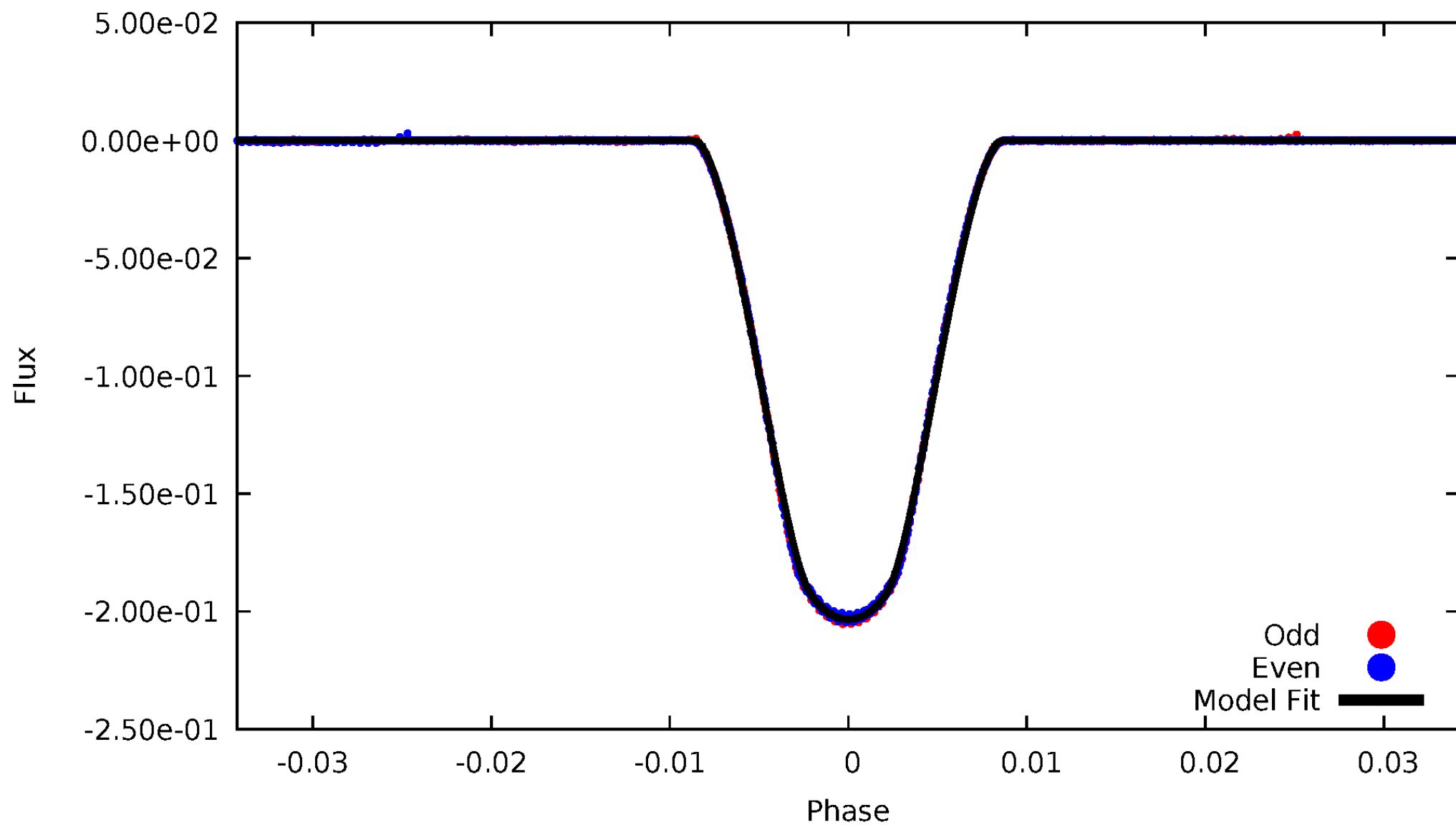


TCE 011959569-02



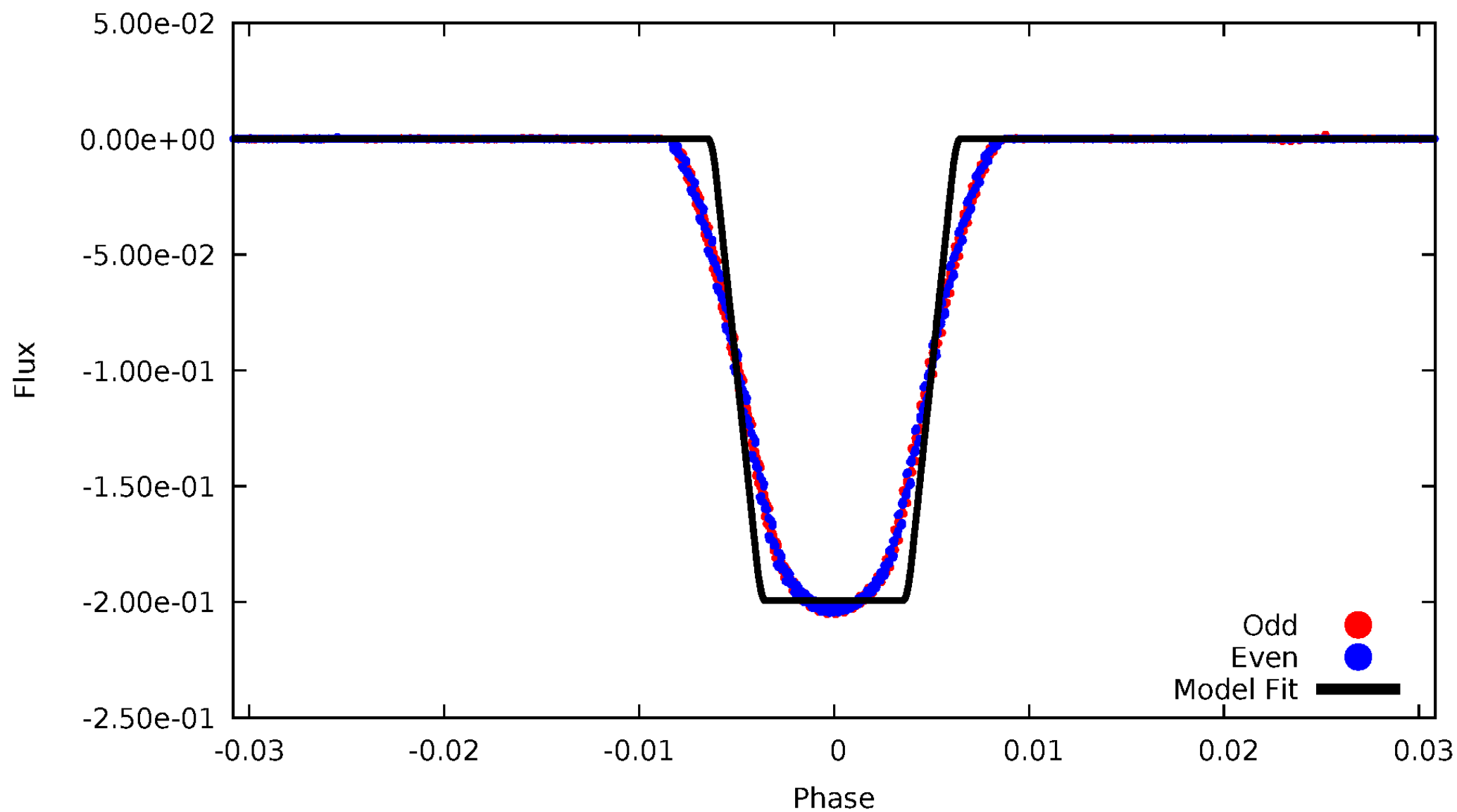
DV Odd/Even

TCE 011959569-02



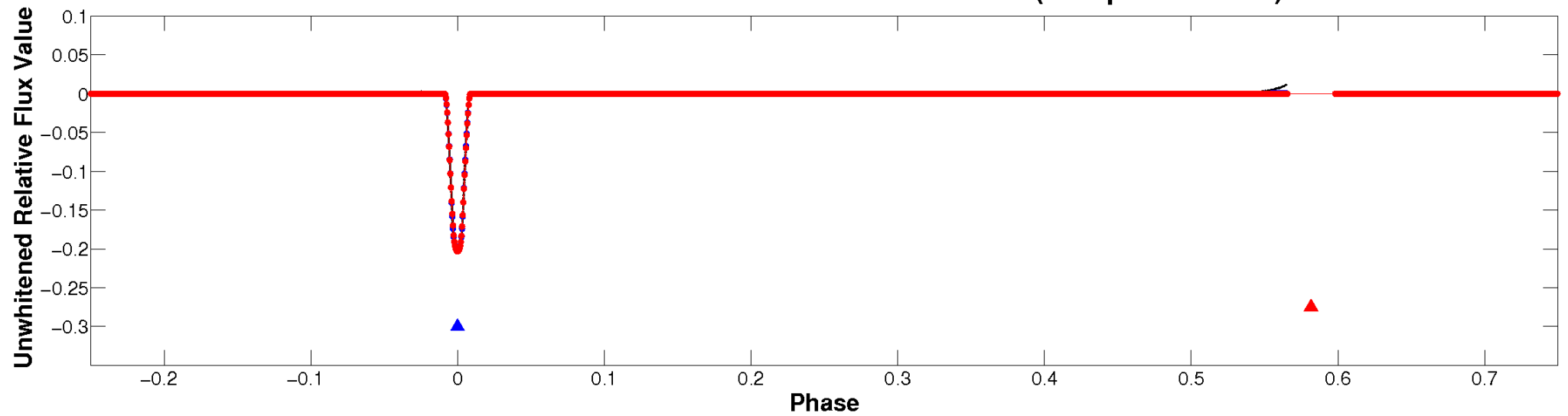
ALT Odd/Even

TCE 011959569-02

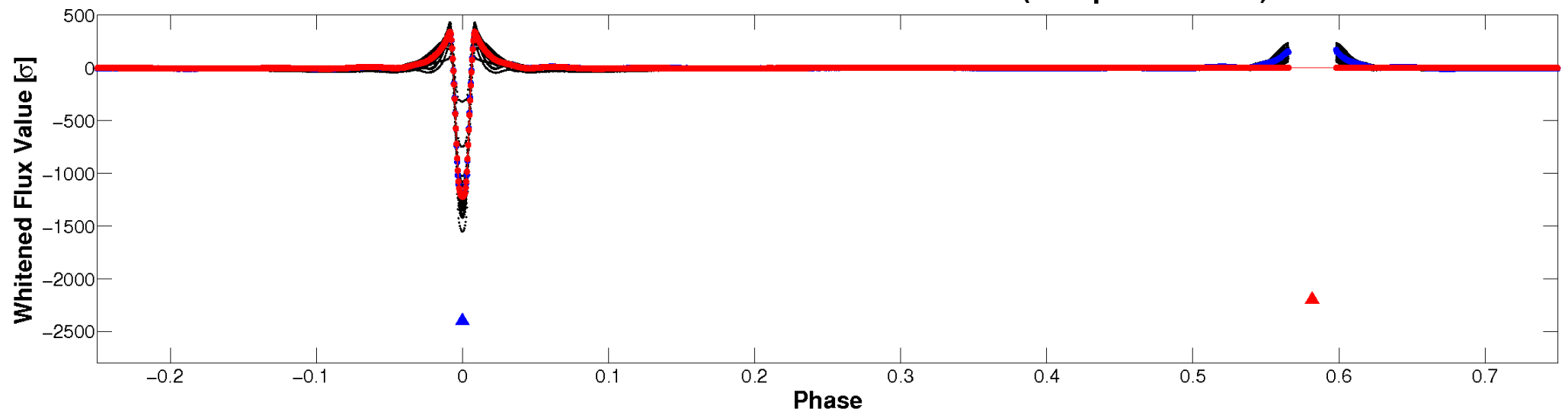


Non-Whitened Vs. Whitened Light Curve

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

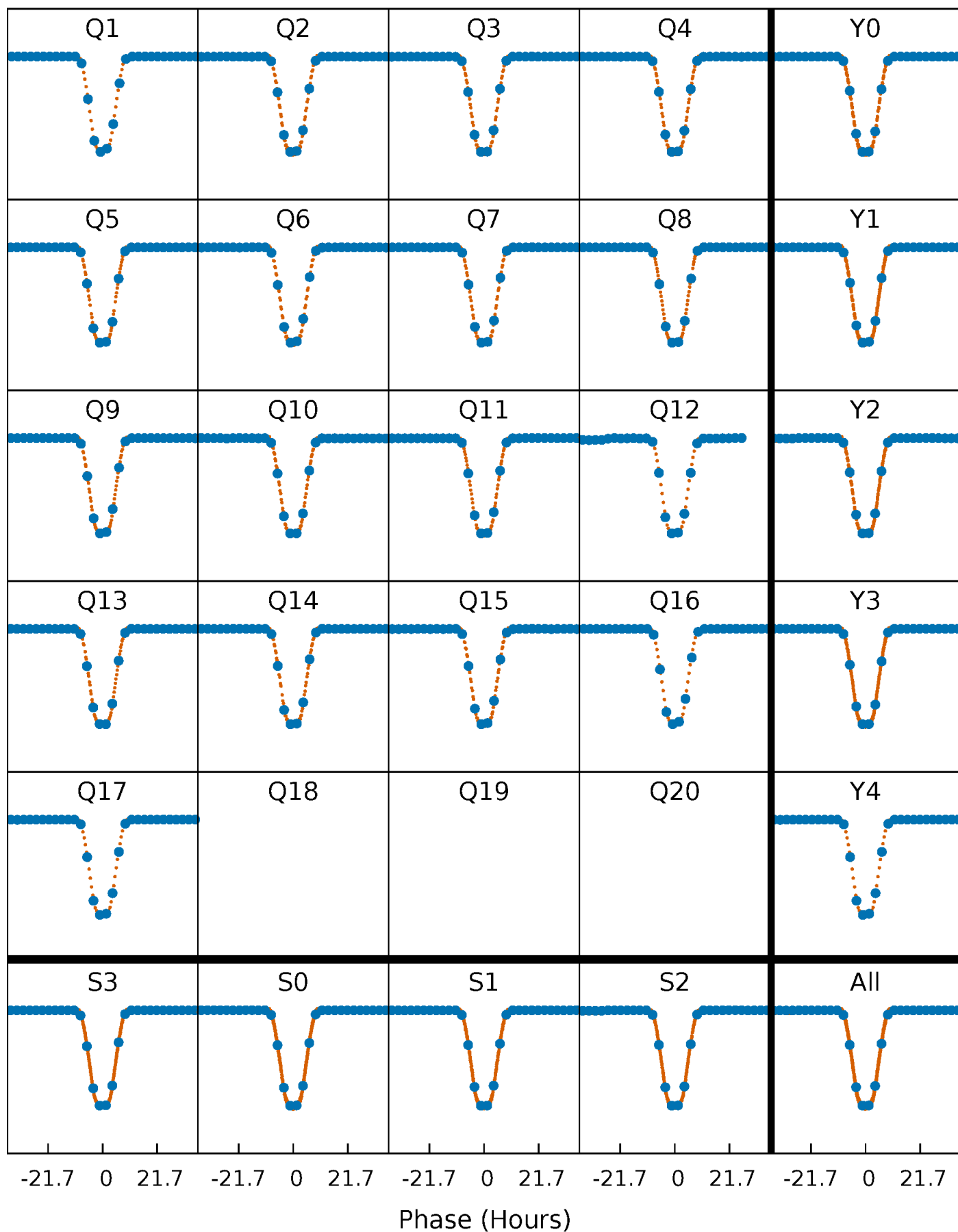


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



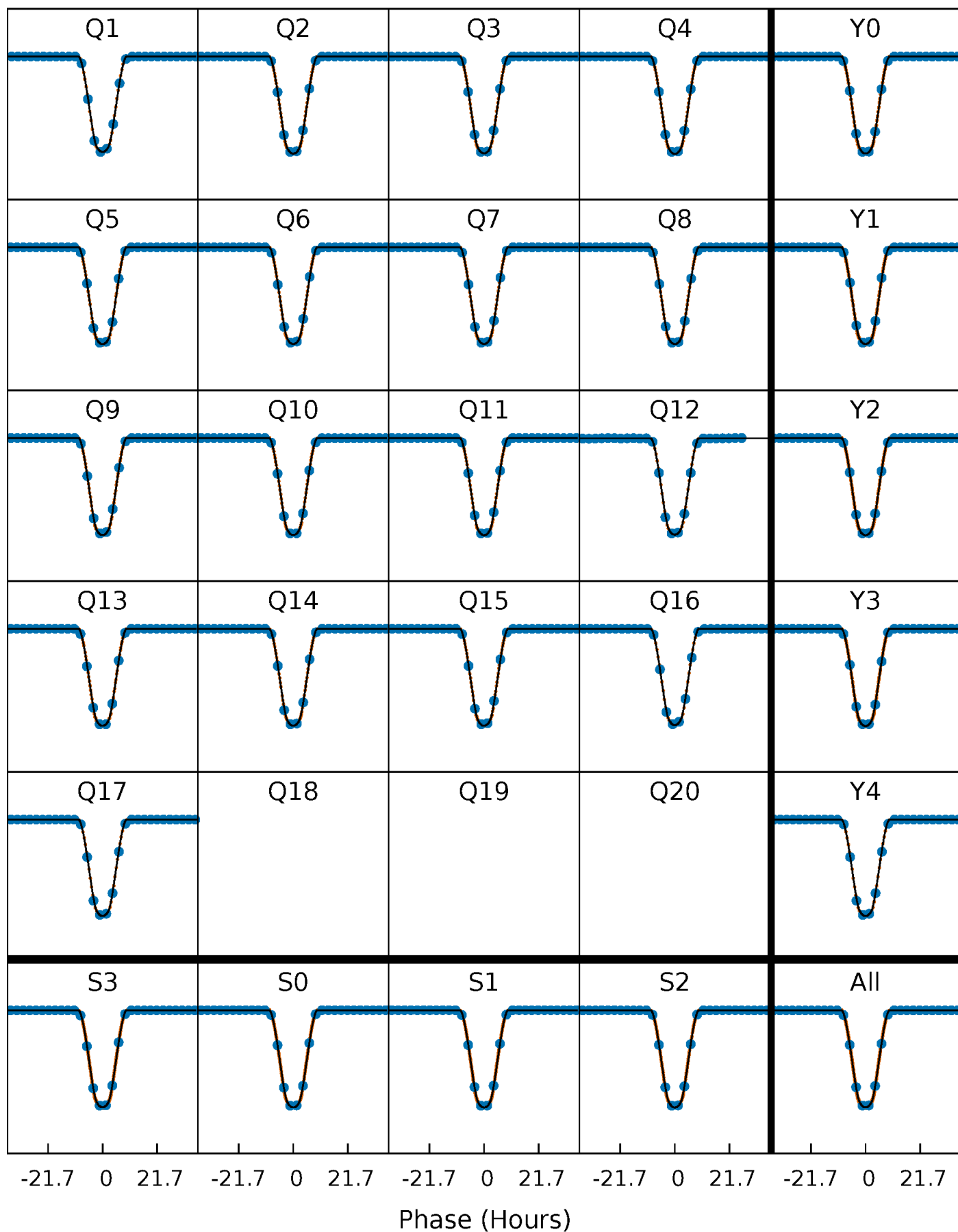
PDC Quarter-Phased Transit Curves

TCE 011959569-02 P= 46.148618 Days $T_0=146.395280$ (BKJD)



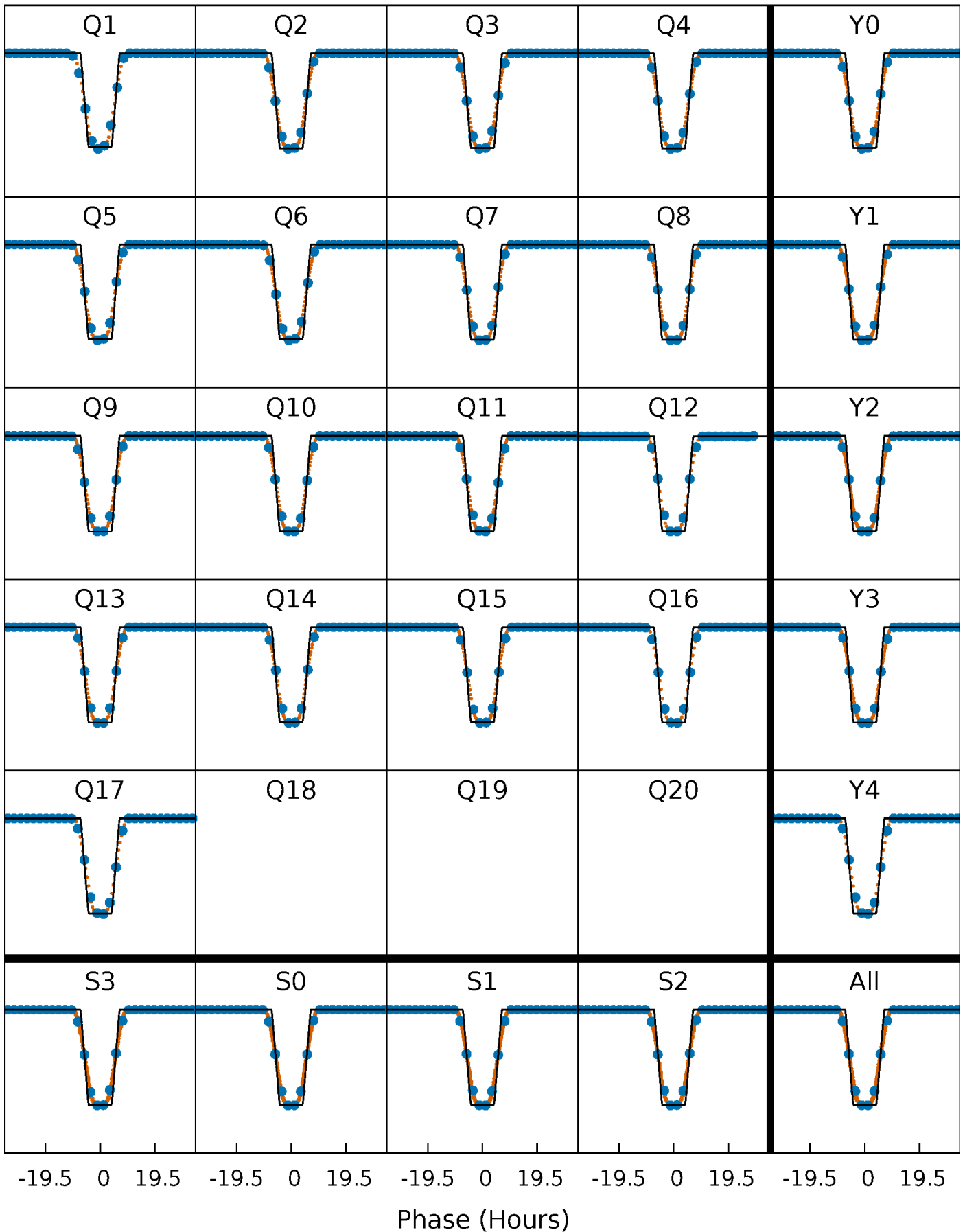
DV Quarter-Phased Transit Curves

TCE 011959569-02 P= 46.148618 Days $T_0=146.395280$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

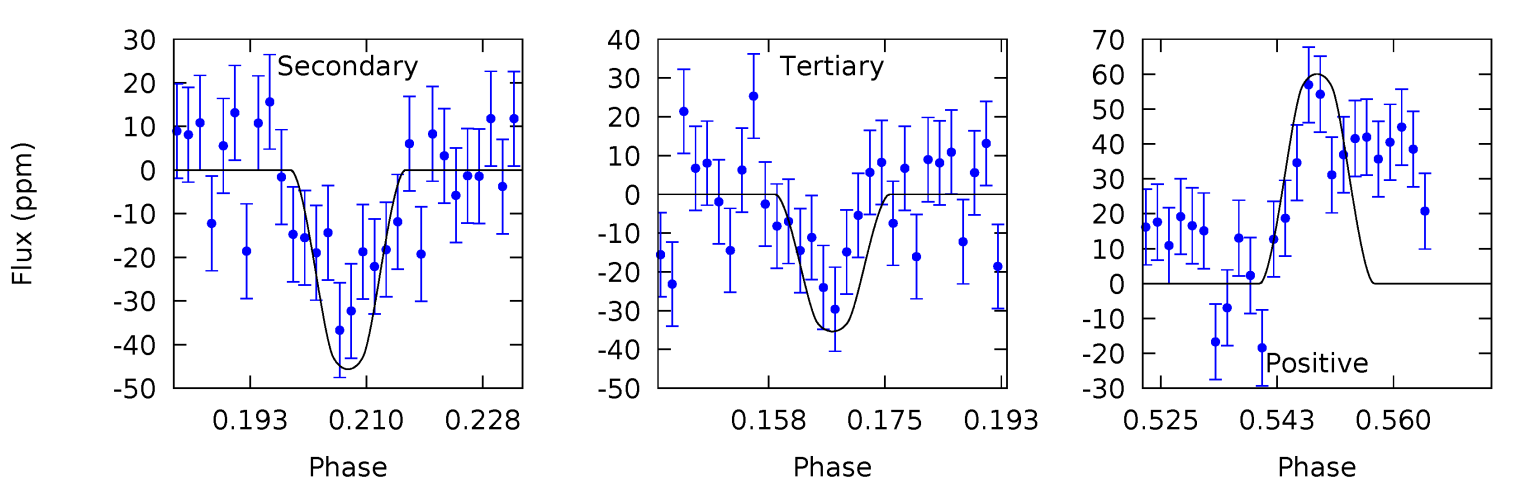
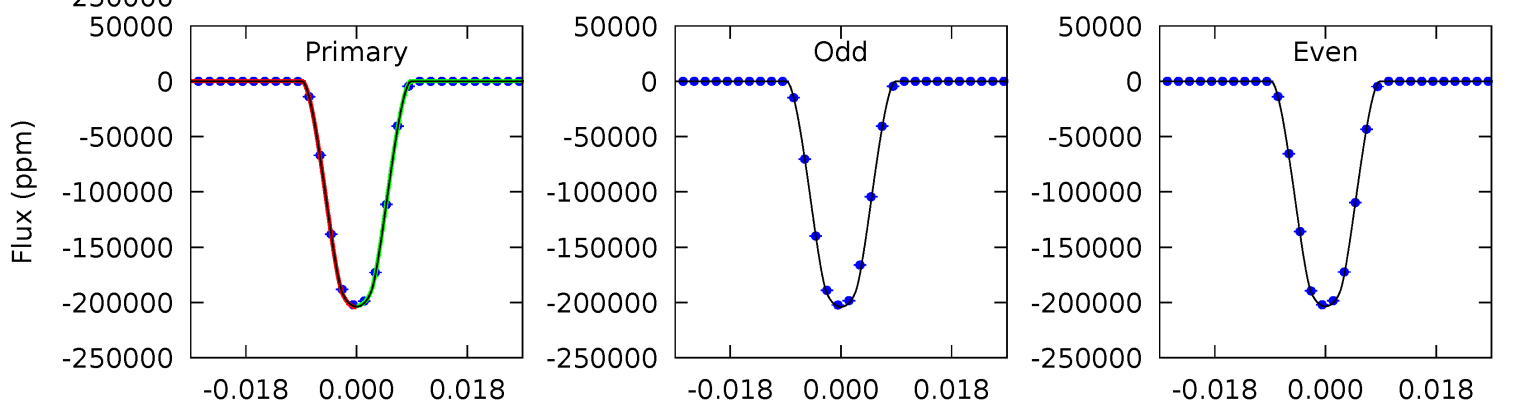
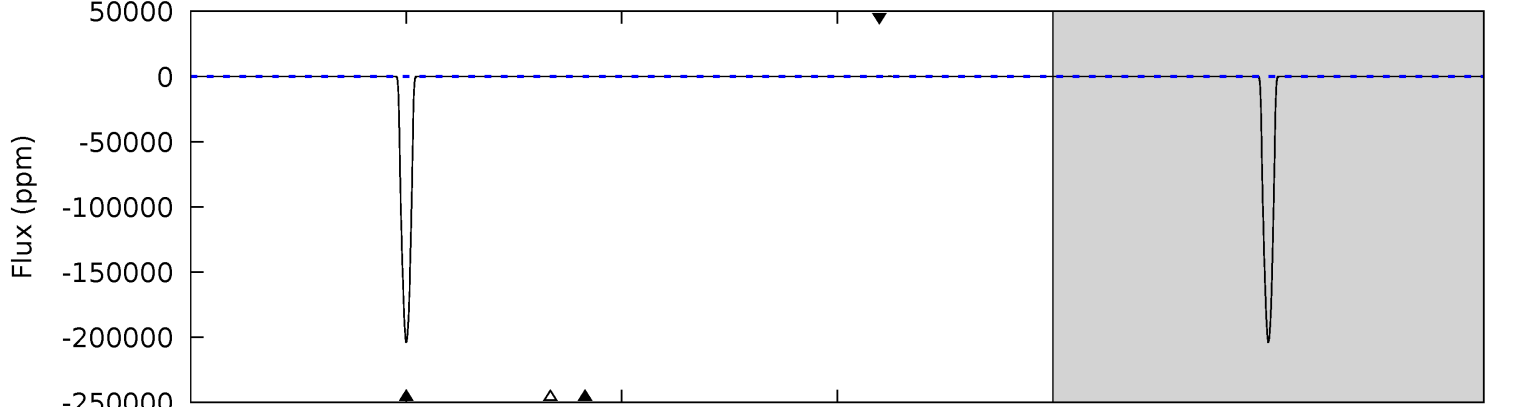
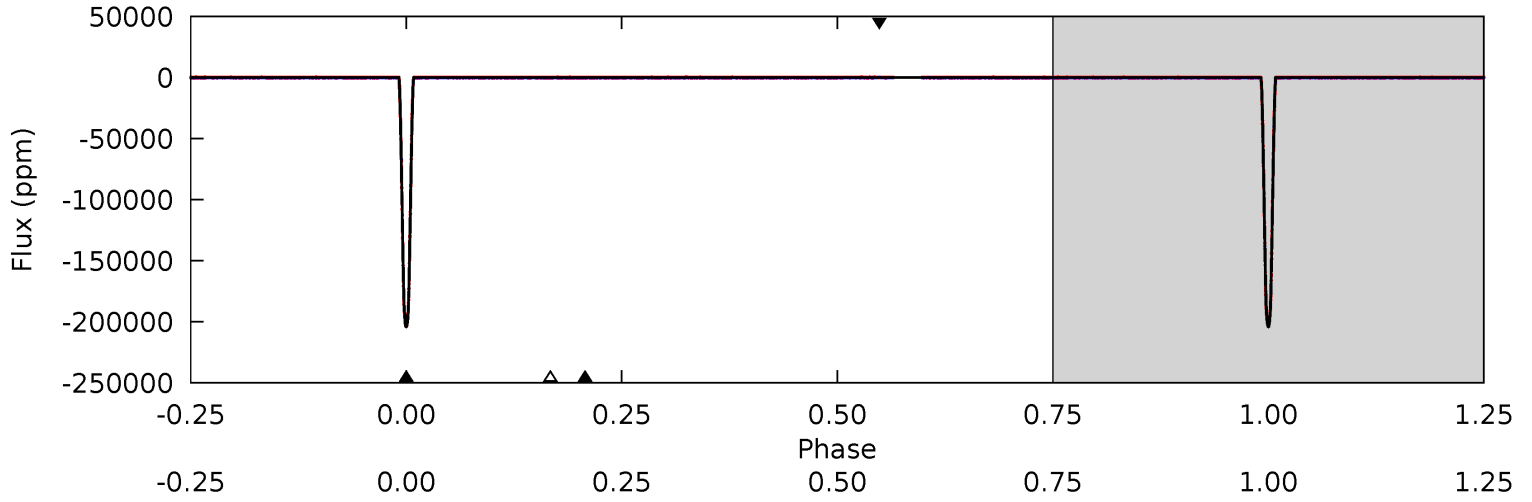
TCE 011959569-02 P= 46.148132 Days $T_0=146.401496$ (BKJD)



DV Model-Shift Uniqueness Test

011959569-02, P = 46.148618 Days, E = 100.246662 Days

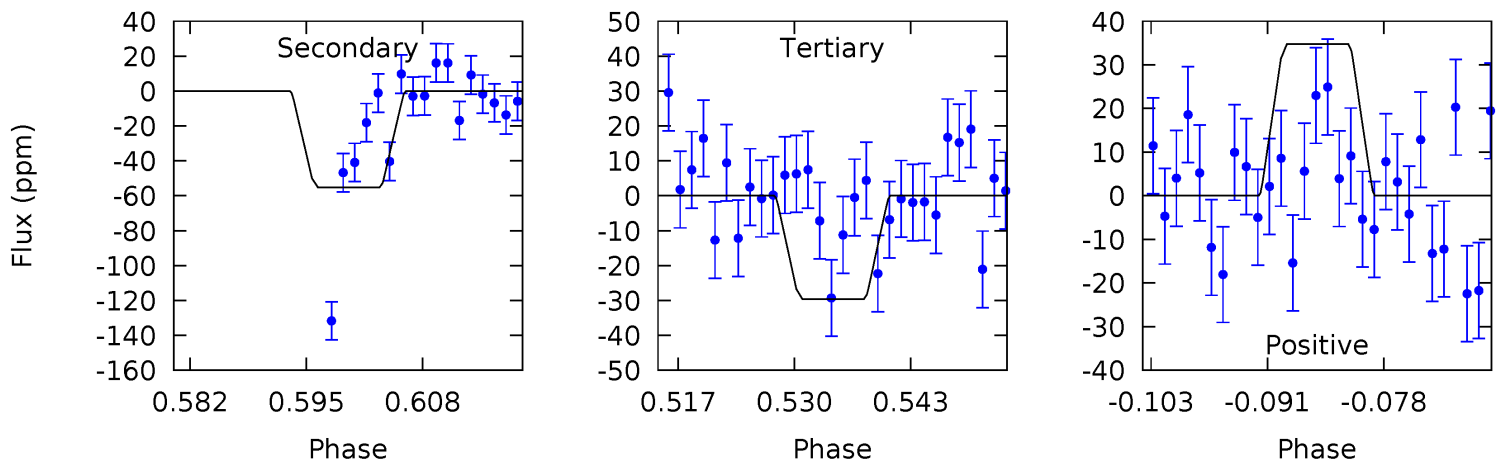
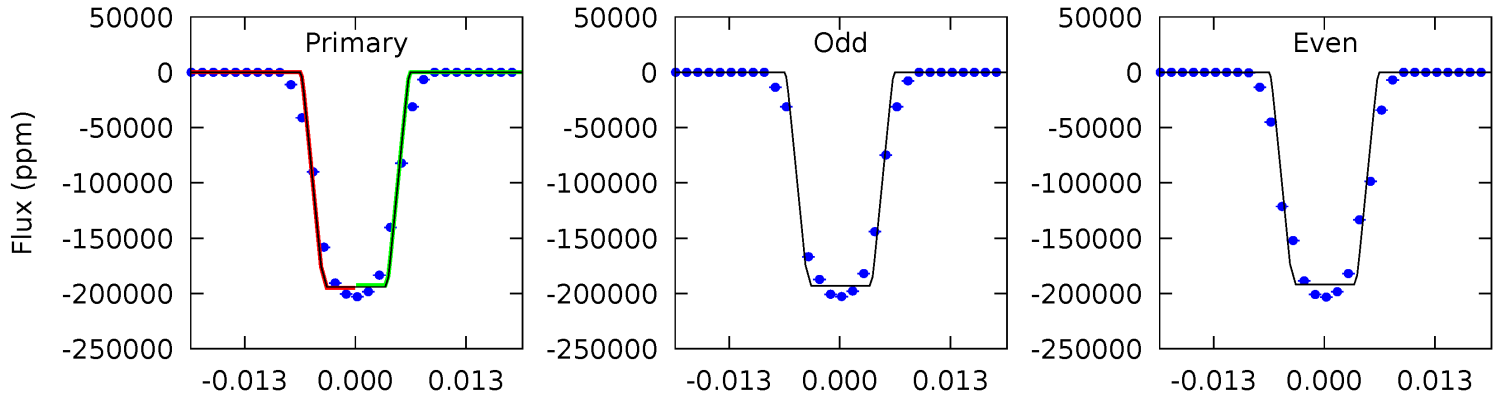
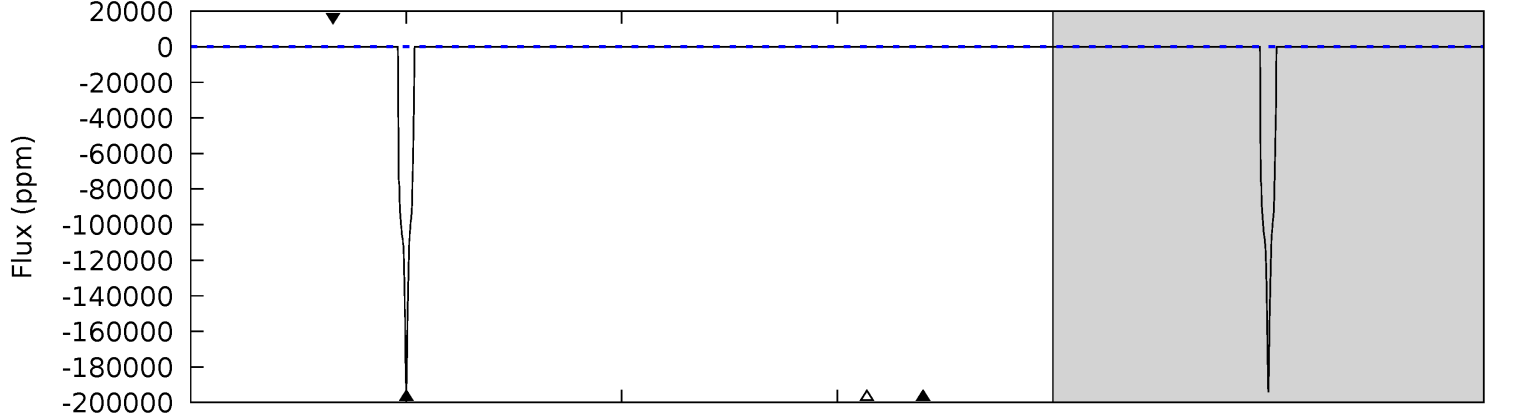
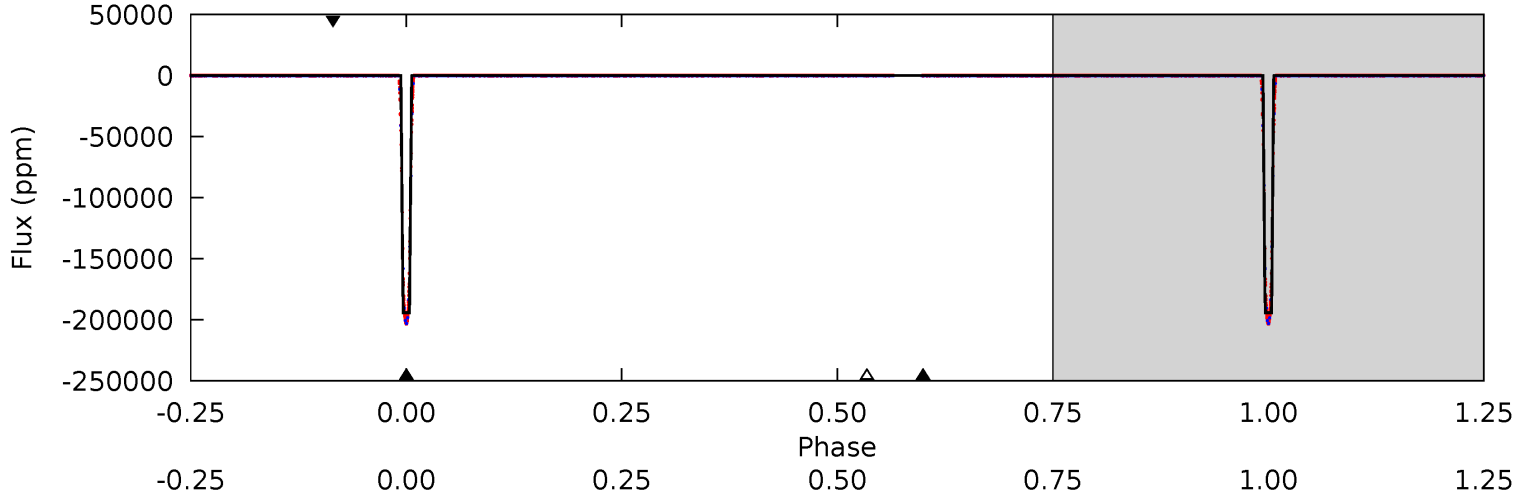
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44534	9.98	7.73	13.1	4.92	2.38	3.39	44526	44521	2.25	-3.15	46.0	1.00	0.00	140.2



Alt Model-Shift Uniqueness Test

011959569-02, P = 46.148132 Days, E = 100.253364 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22900	6.52	3.49	4.10	4.98	2.49	1.13	22897	22896	3.03	2.42	77.8	1.00	0.00	0



Stellar Parameters For KIC 011959569

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5383^{+178}_{-129}	$3.908^{+0.338}_{-0.135}$	$0.140^{+0.250}_{-0.200}$	$1.935^{+0.439}_{-0.658}$	$1.105^{+0.146}_{-0.160}$	$0.215^{+0.471}_{-0.084}$
	+3%/-2%	+9%/-3%	+179%/-143%	+23%/-34%	+13%/-14%	+219%/-39%
Source	PHO1	FLK73	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 011959569-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-46 ± 5	$88.35^{+11.21}_{-17.19}$	896^{+66}_{-80}	-1575^{+2974}_{-105}	$0.223^{+0.103}_{-0.053}$
Alt.	-55 ± 8	$92.86^{+11.82}_{-17.36}$	895^{+67}_{-82}	-1530^{+3042}_{-137}	$0.245^{+0.124}_{-0.065}$

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 $A_{obs} \gg 1.0$

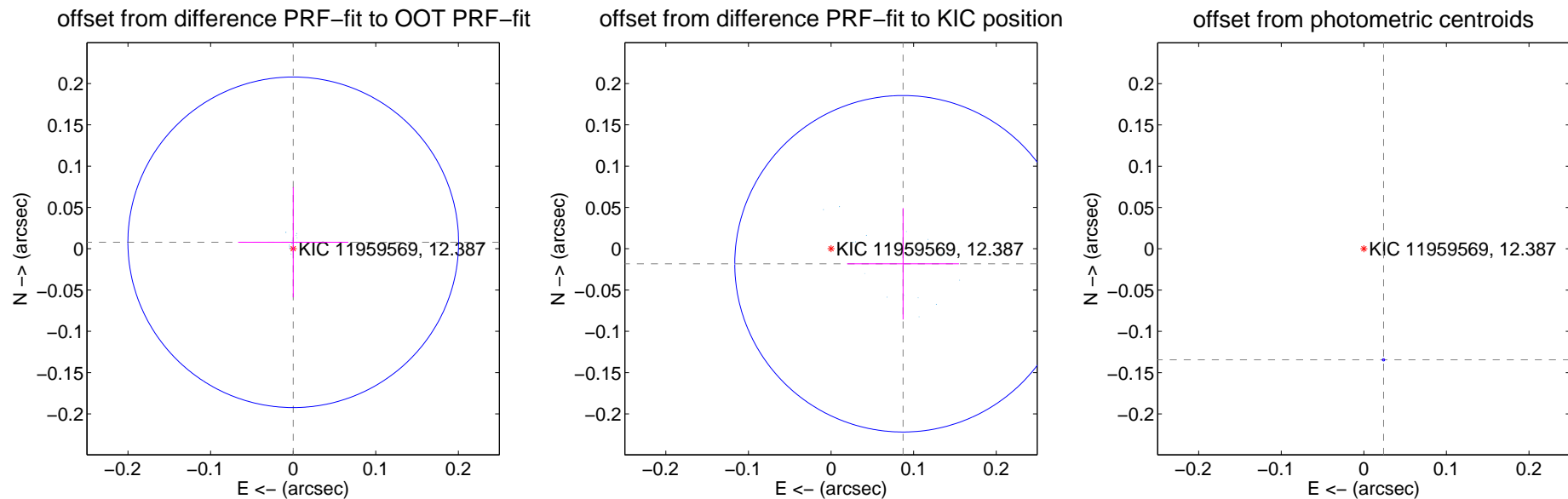
DV Centroid Data

Supplemental centroid analysis for 011959569-02. Kepler magnitude: 12.39. Transit SNR 17680.99

There are 16 quarters with good PRF difference image offsets

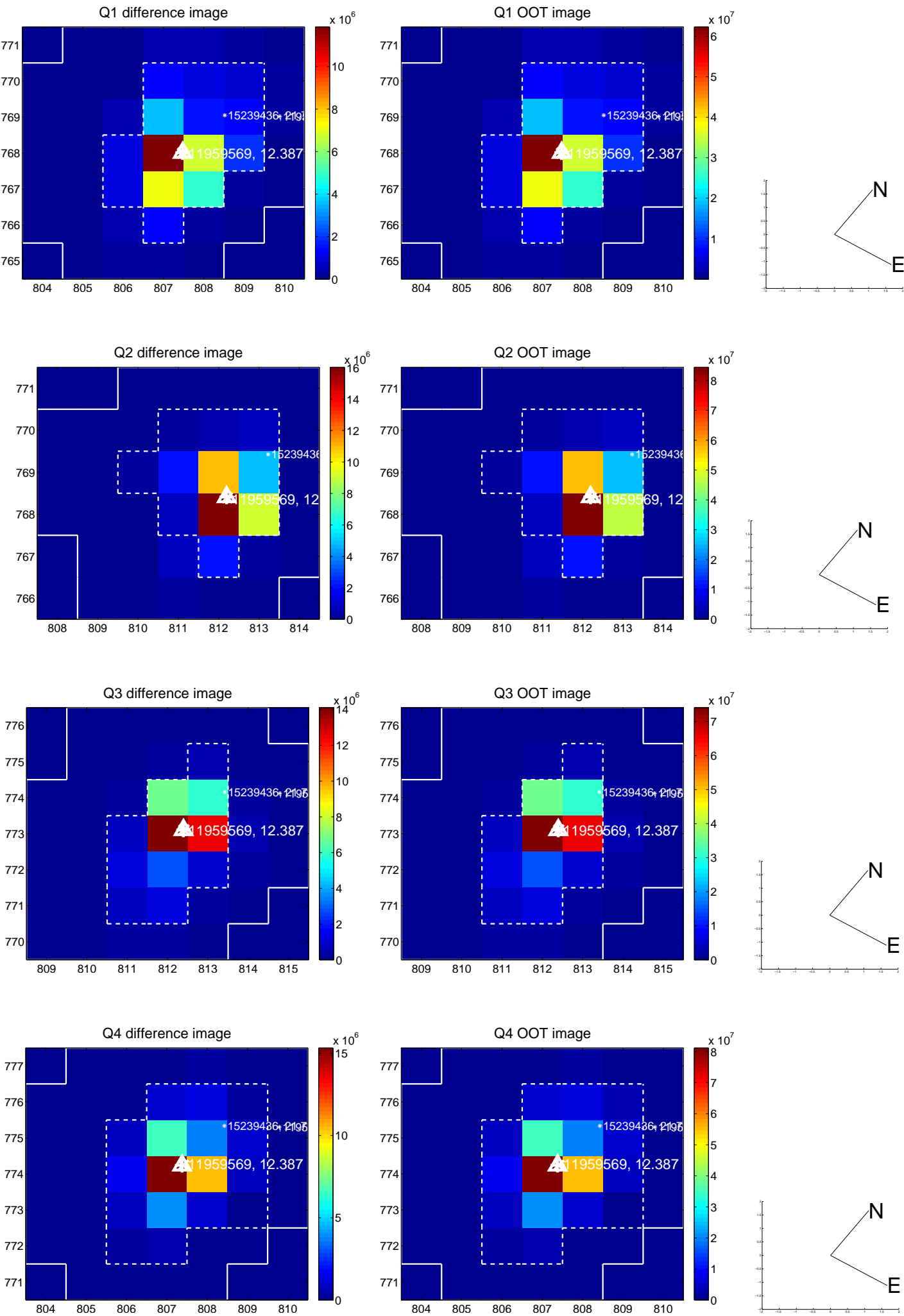
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.008 ± 0.067	0.12	-0.000 ± 0.067	0.008 ± 0.067
PRF-fit source offset from KIC position	0.089 ± 0.068	1.31	-0.087 ± 0.068	-0.018 ± 0.067
photometric centroid source offset	0.14 ± 0.00	297.79	-0.02 ± 0.00	-0.13 ± 0.00

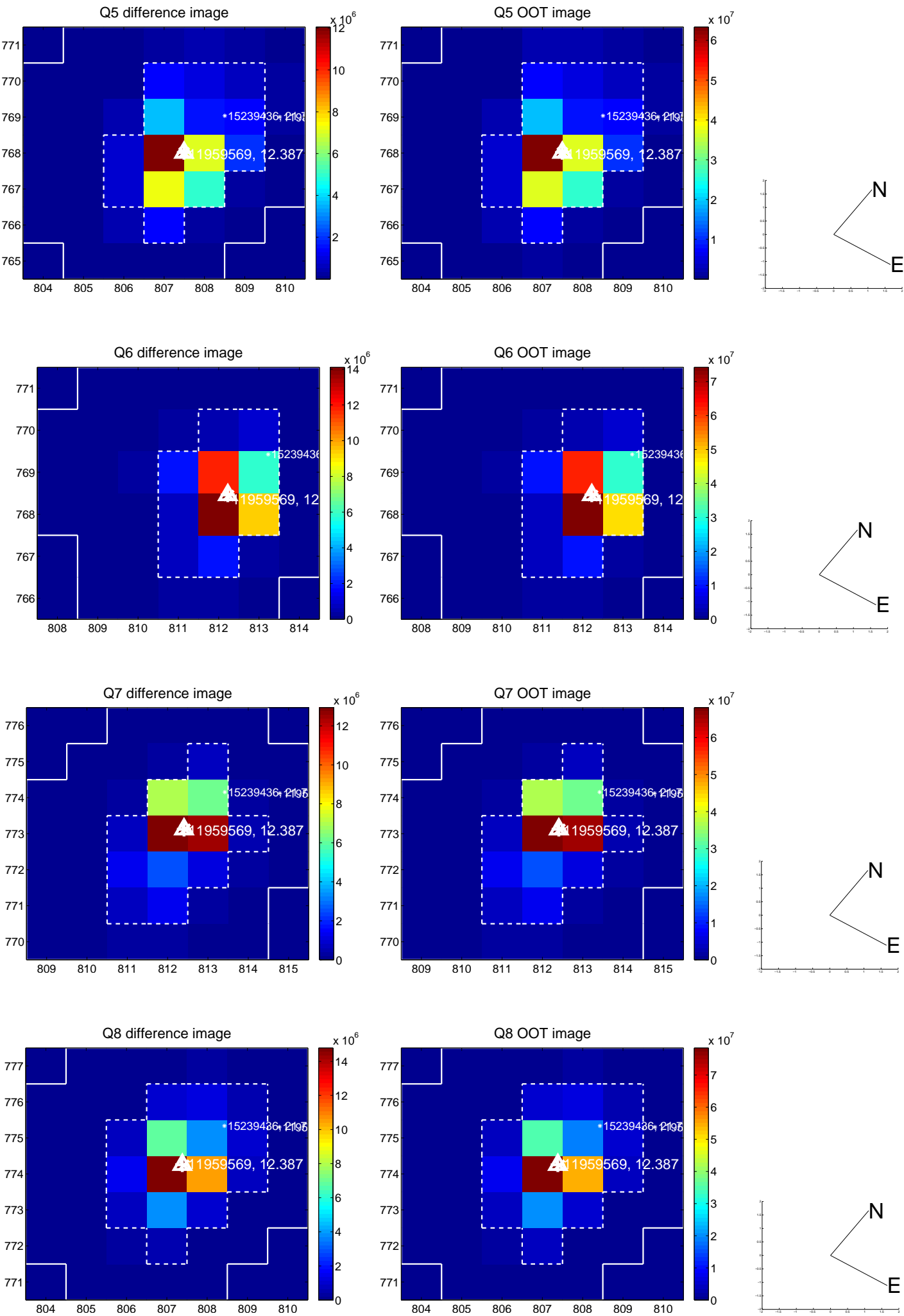


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

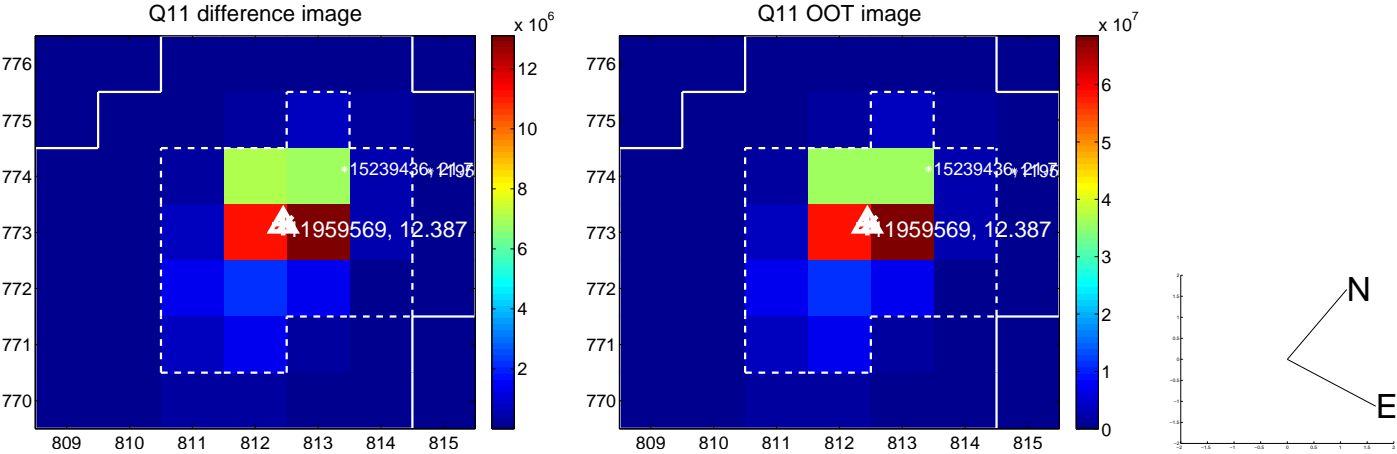
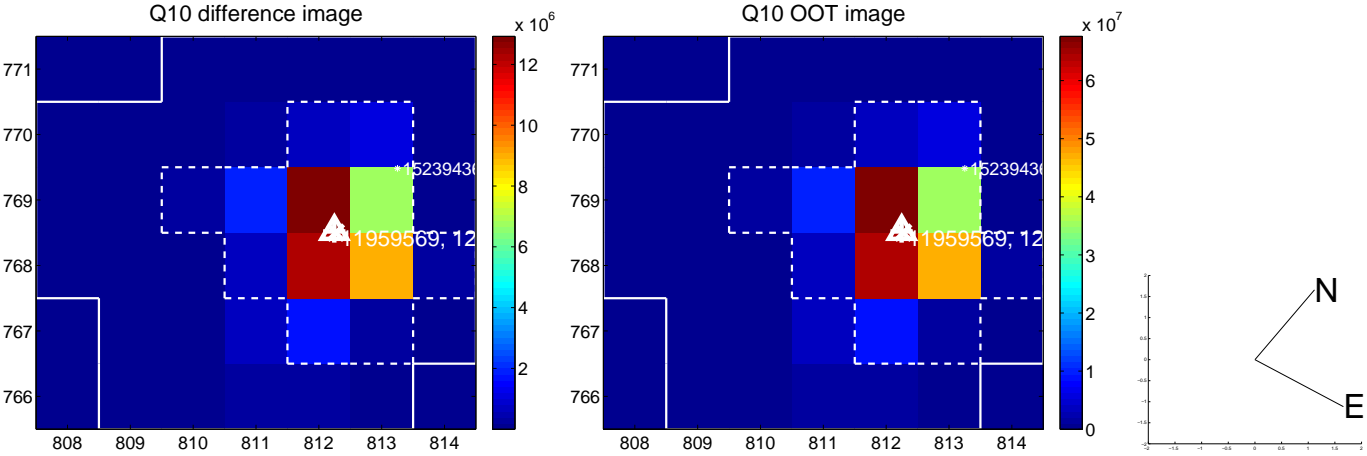
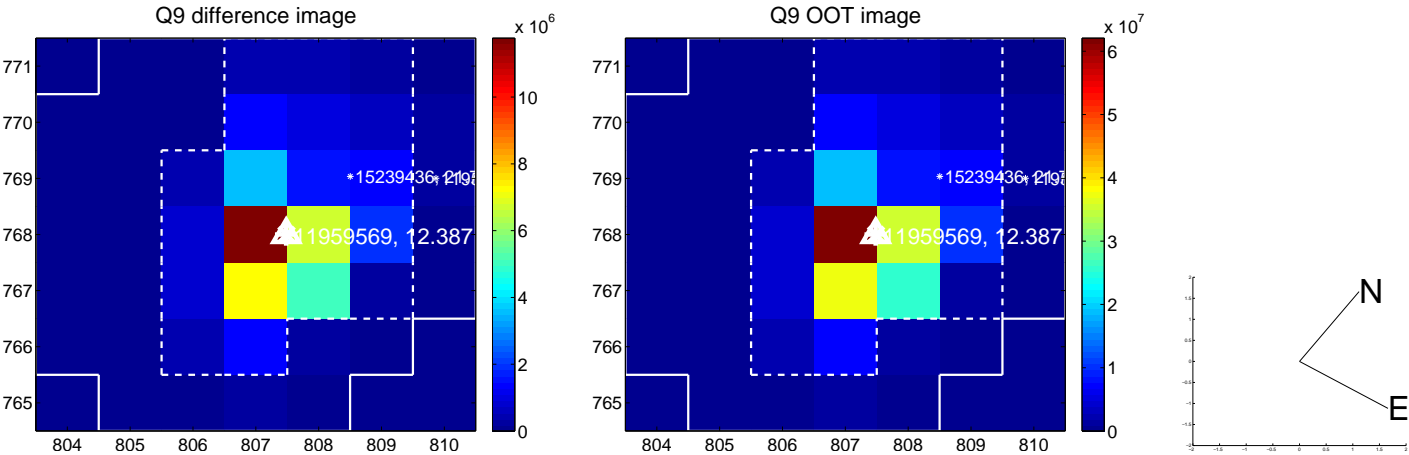
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



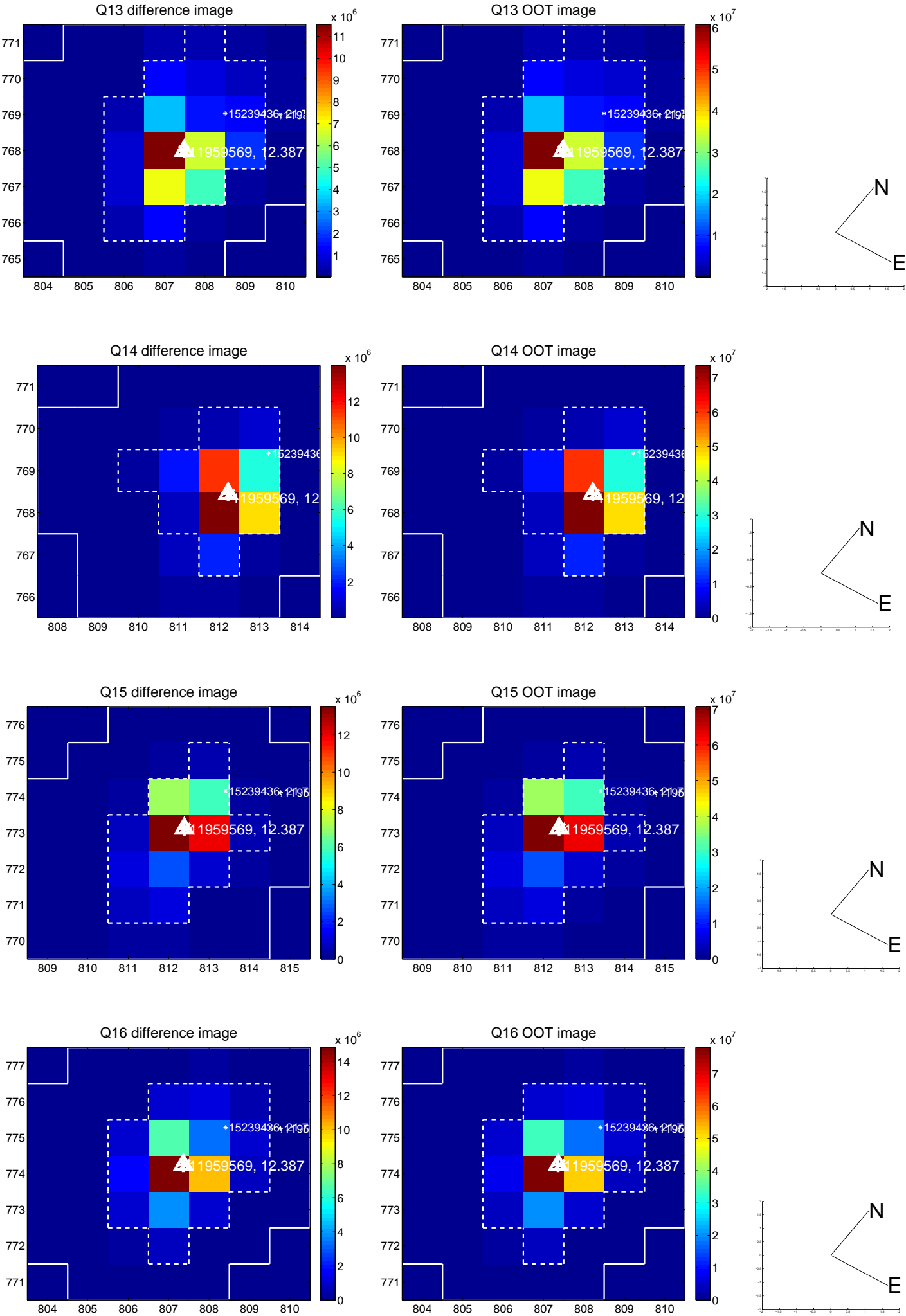
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



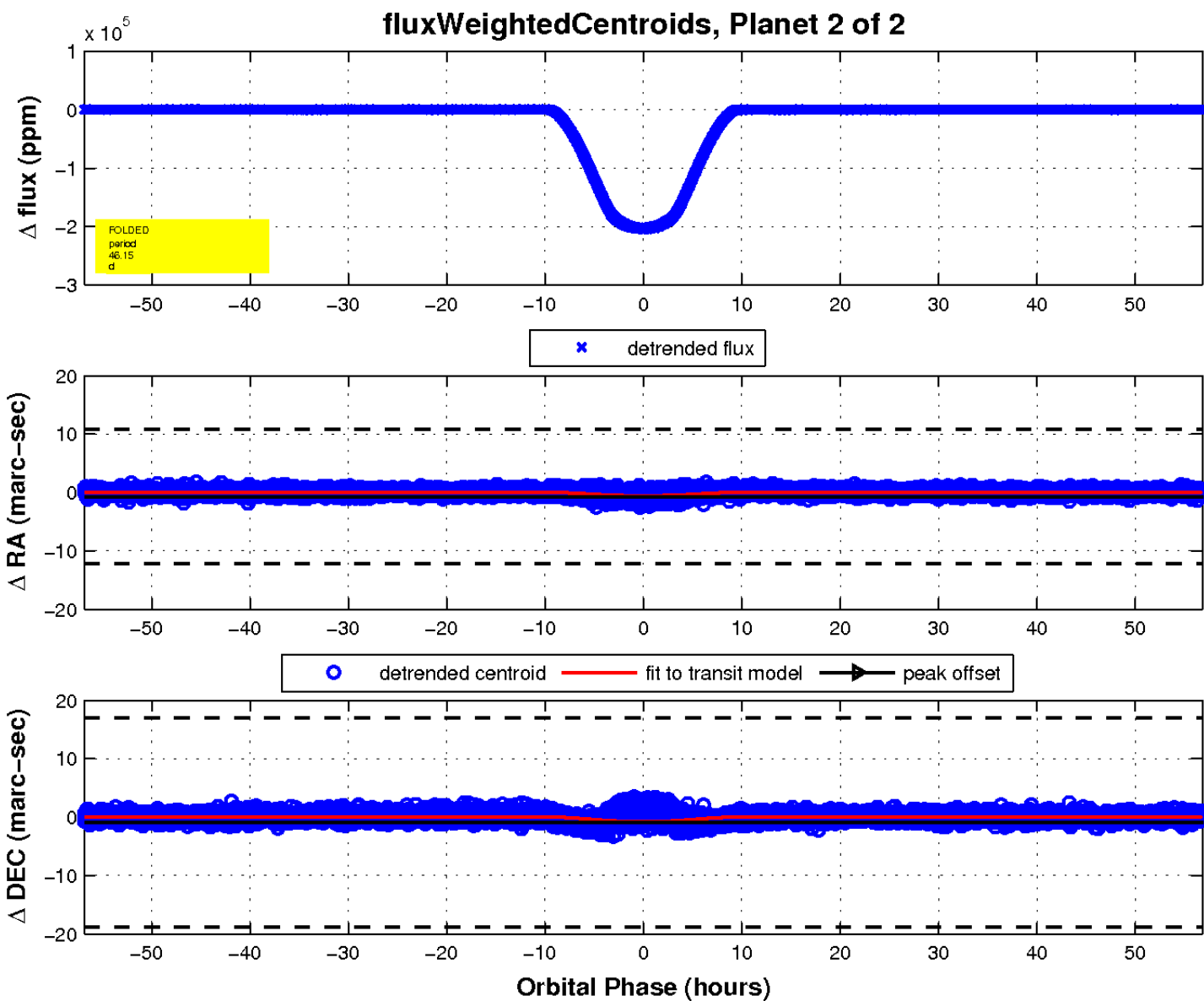
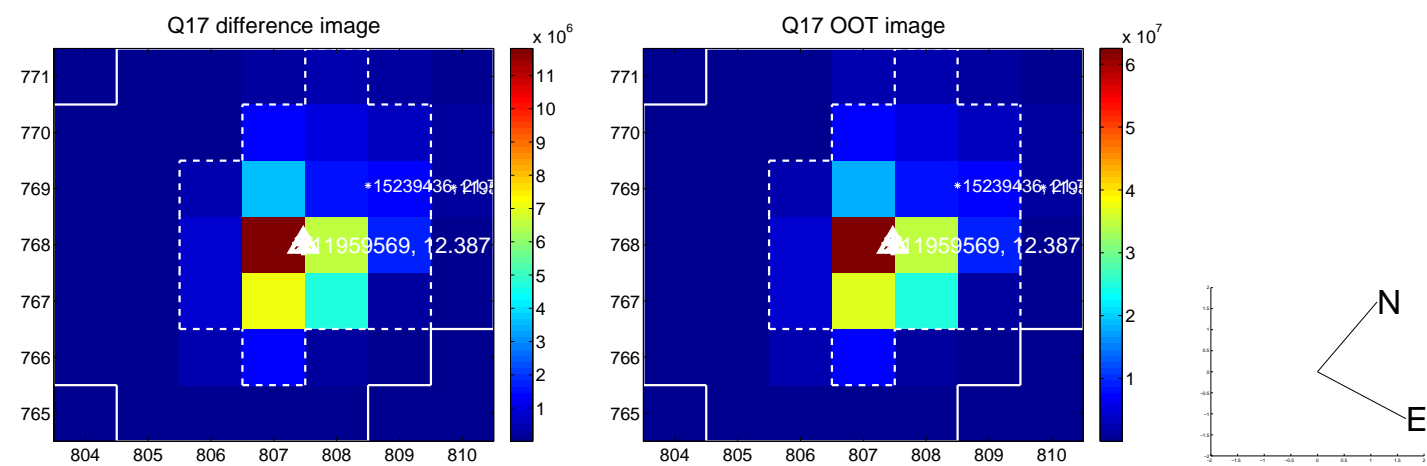
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

