

KIC 010549576

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})
010549576-01	OBS	7341.01	9.089331	139.087002	94011.1	6.367	1408.2	928.7	2.02	7675	66.68	1235.99
010549576-02	OBS	No	9.089339	134.518091	24654.5	6.233	440.5	389.4	2.02	7675	35.07	1235.99

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010549576-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
010549576-02	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.

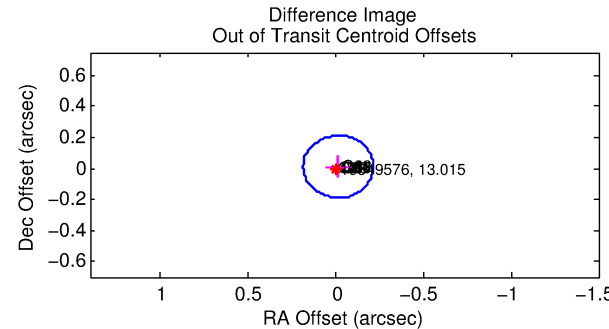
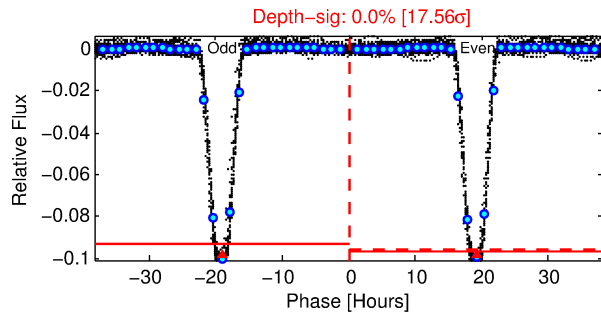
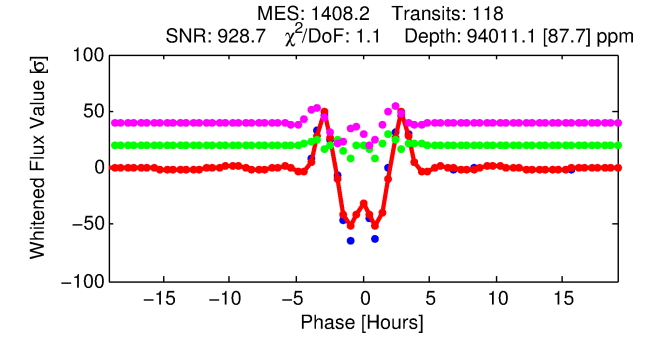
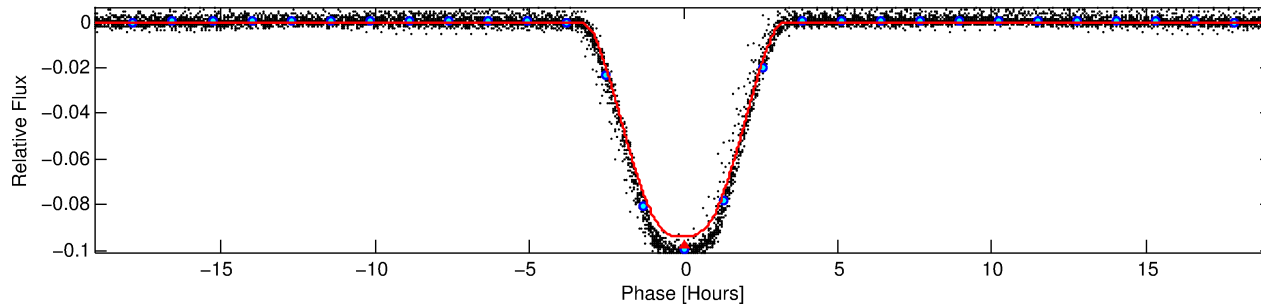
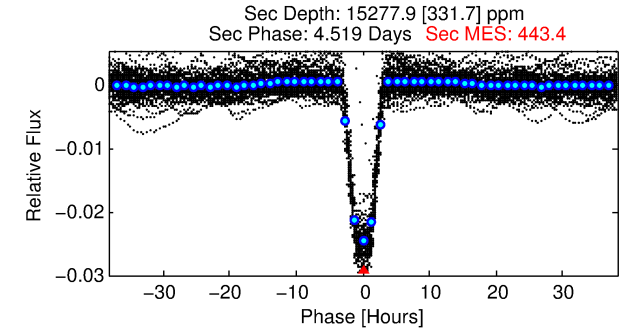
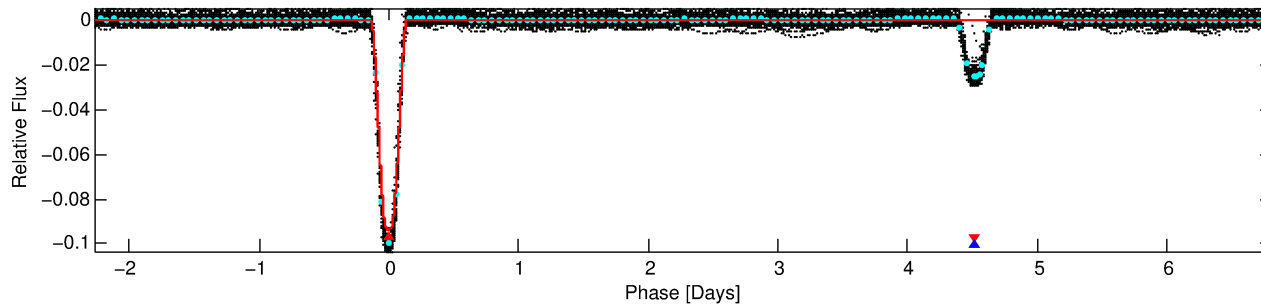
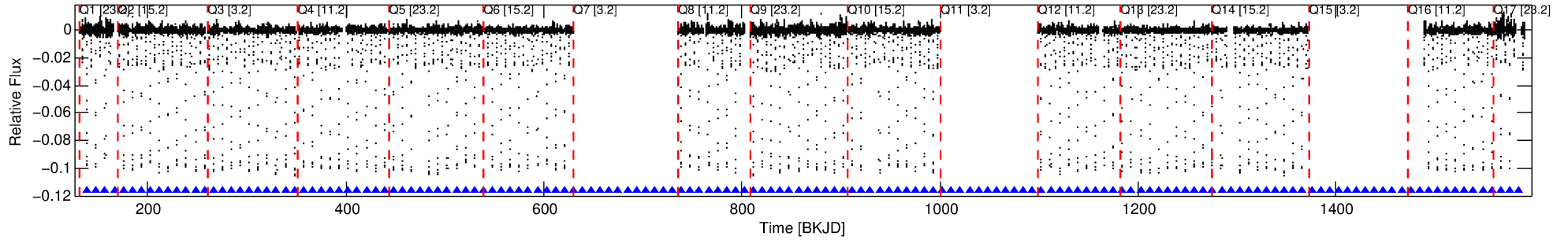
Ephemeris Match Information For 010549576-01

No Significant Match Found

DV One-Page Summary

KIC: 10549576 Candidate: 1 of 2 Period: 9.089 d
KOI: K07341.01 Corr: 0.993

Kp: 13.02 R*: 2.02 Rs Teff: 7675.0 K Logg: 4.05 Fe/H: -0.120



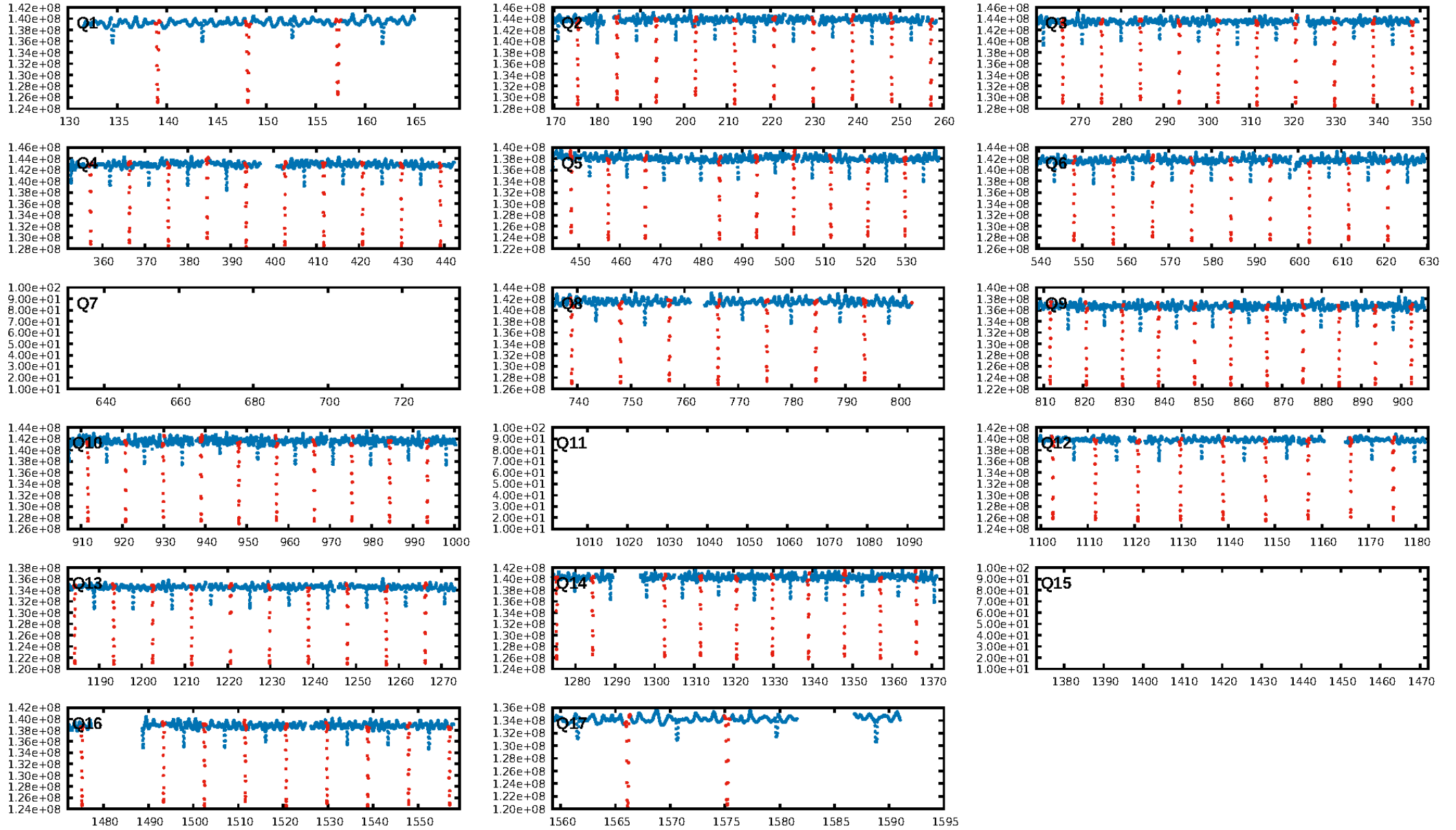
DV Fit Results:

Period = 9.08933 [0.00000] d
Epoch = 139.0870 [0.0000] BKJD
Rp/R* = 0.3032 [0.0001]
a/R* = 12.25 [0.00]
b = 0.67 [0.00]
Seff = 1235.99 [416.39]
Teff = 1512 [127] K
Rp = 66.68 [16.28] Re
a = 0.1011 [0.0208] AU
Ag = 19.31 [5.83] [3.14σ]
Teffp = 4900 [187] K [14.97σ]

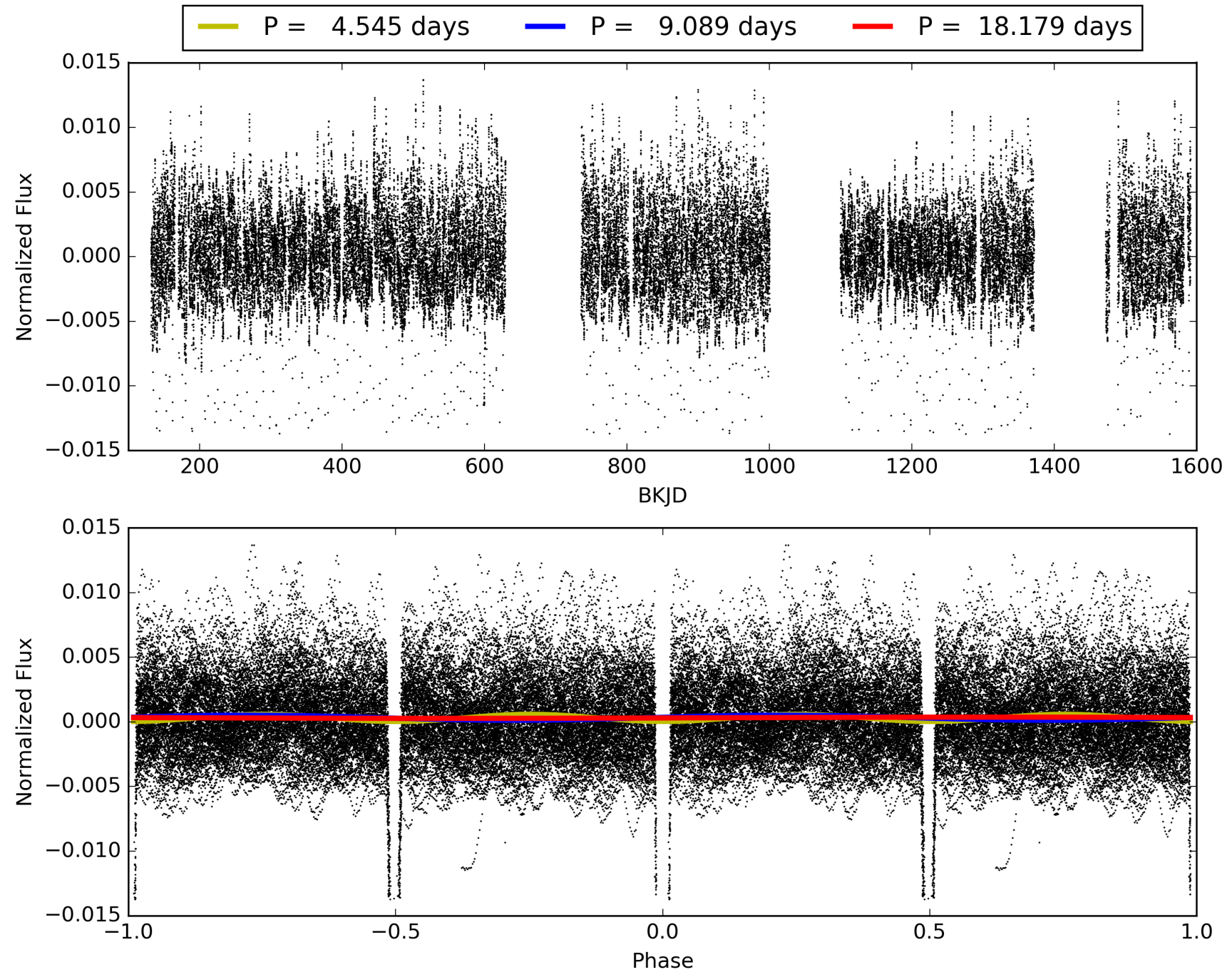
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [113/113]
GhostDiagnostic-chr: 1.698
Centroid-sig: 0.0%
Centroid-so: 0.090 arcsec [103.48σ]
OotOffset-rm: 0.019 arcsec [0.29σ]
KicOffset-rm: 0.121 arcsec [1.79σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 010549576-01, PDC Light Curves

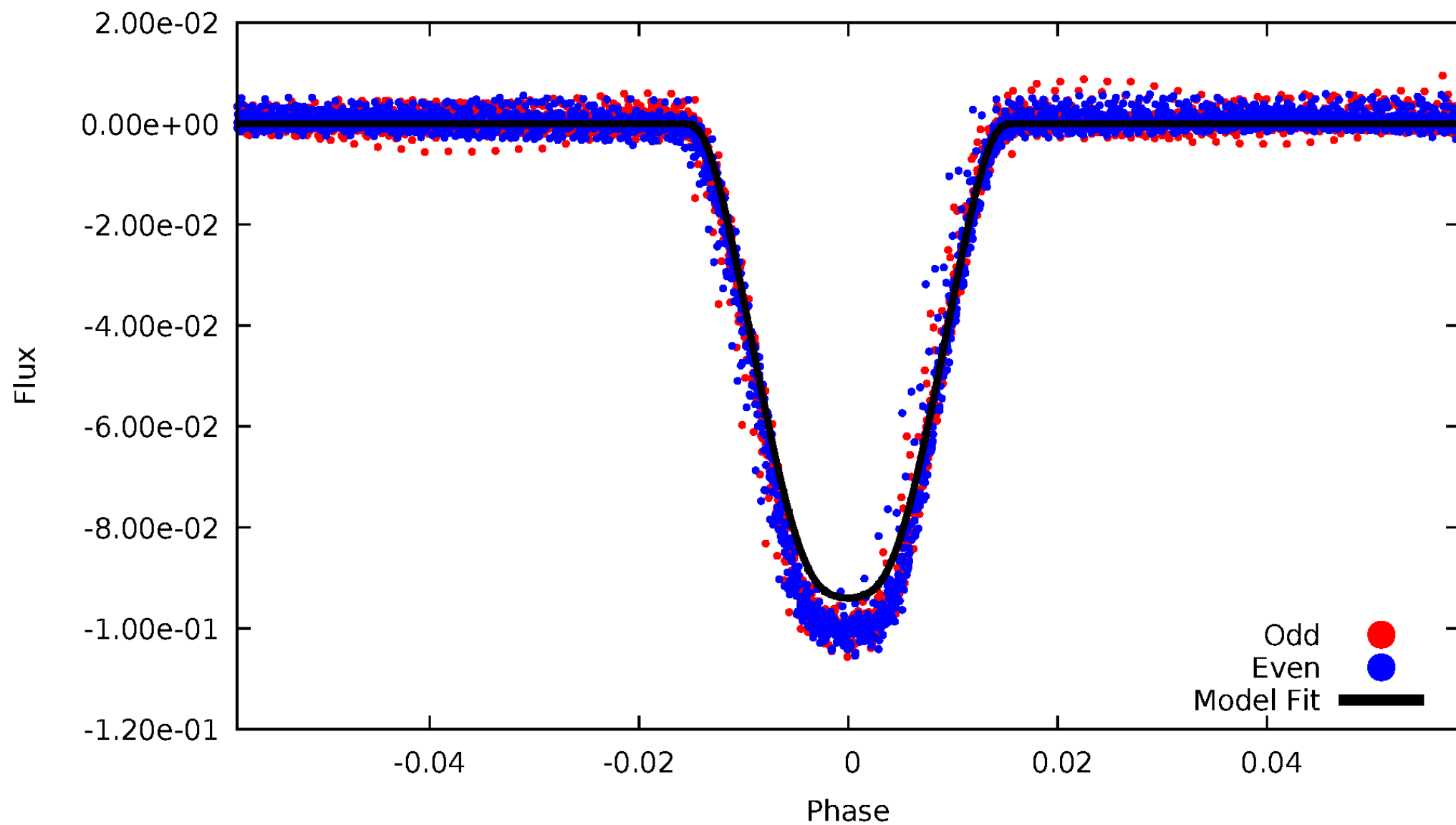


TCE 010549576-01



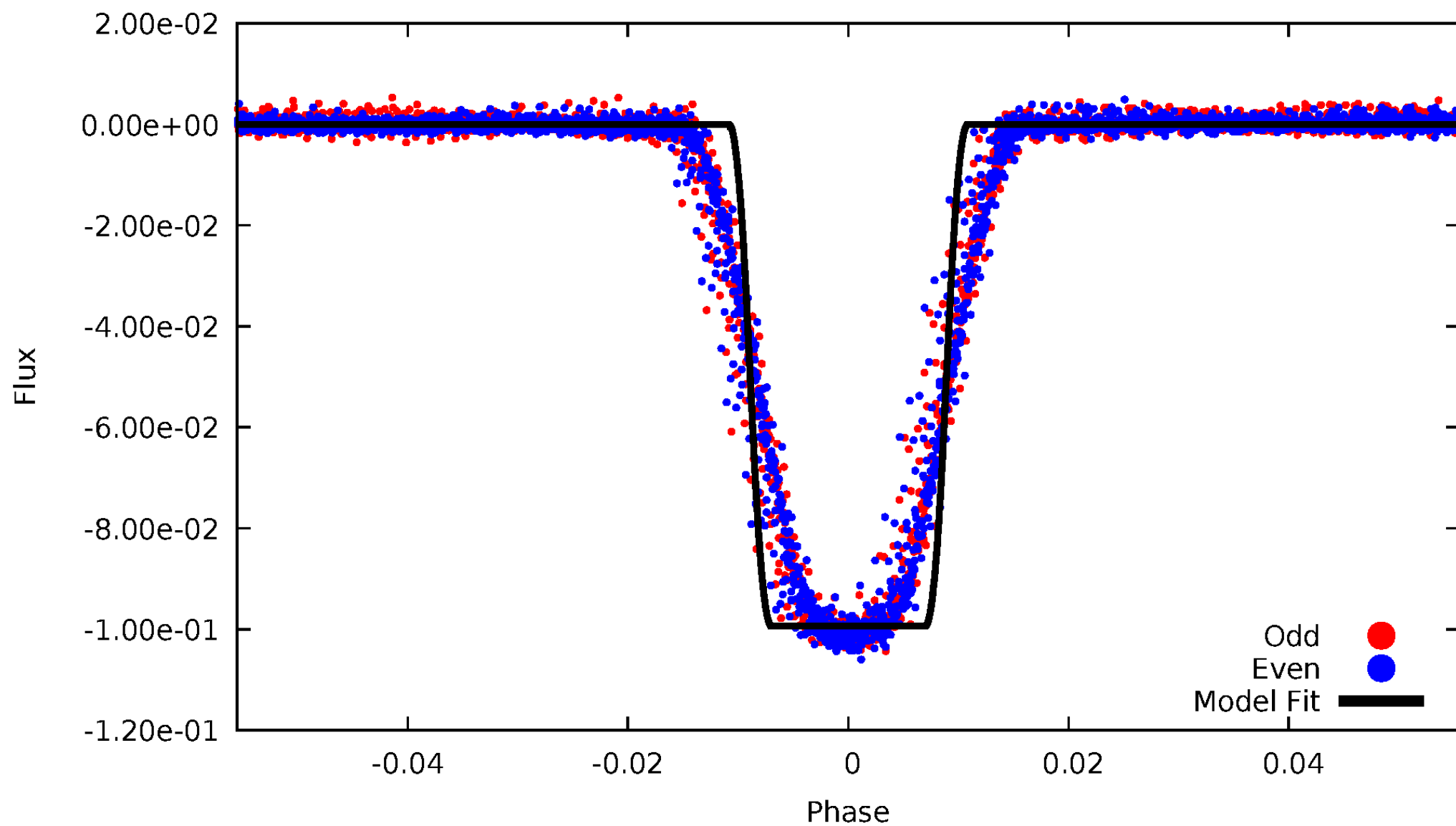
DV Odd/Even

TCE 010549576-01



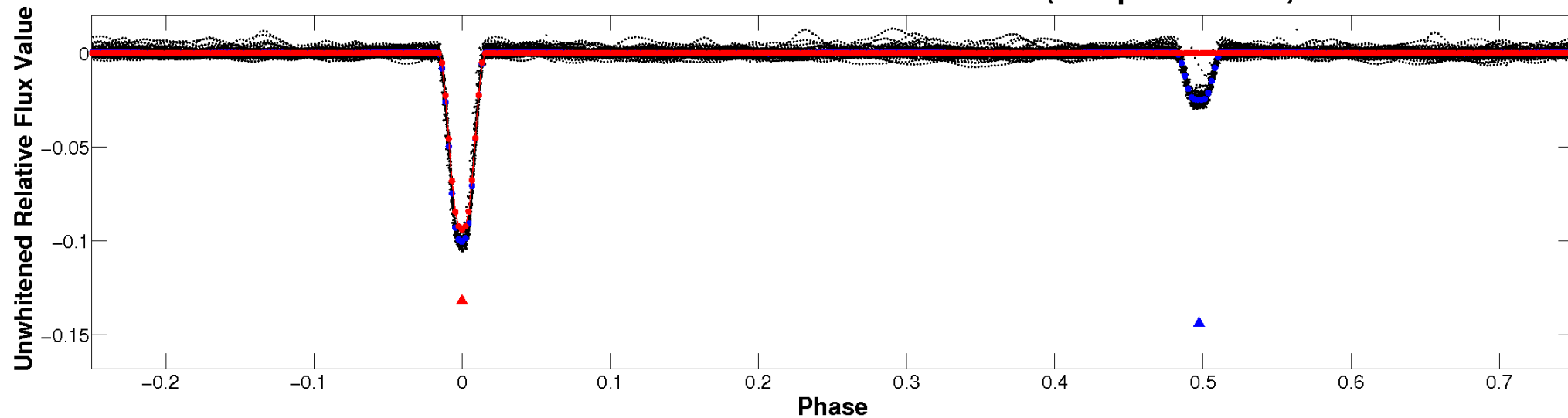
ALT Odd/Even

TCE 010549576-01

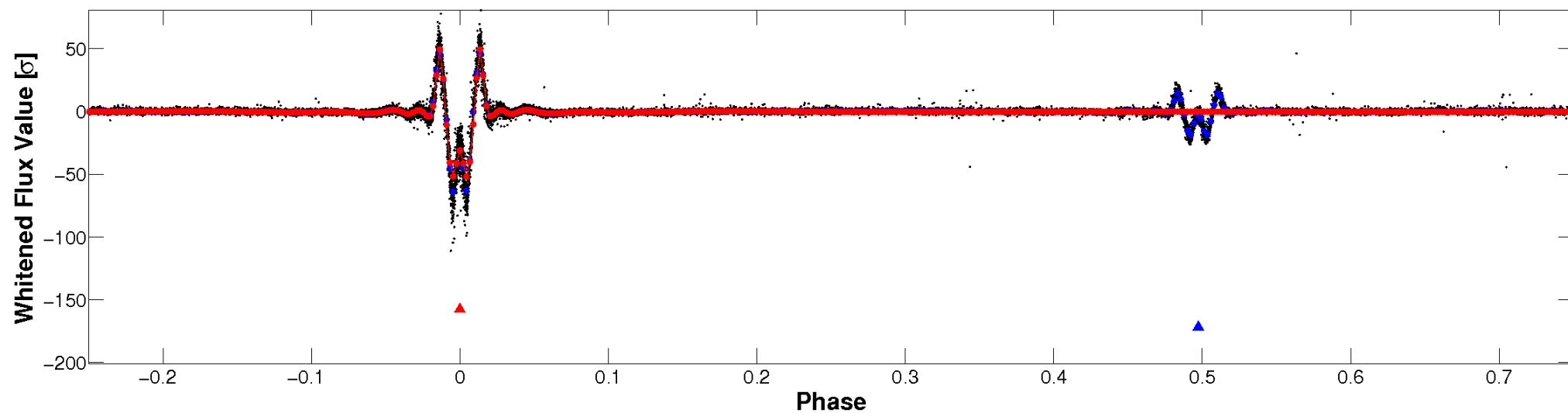


Non-Whitened Vs. Whitened Light Curve

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

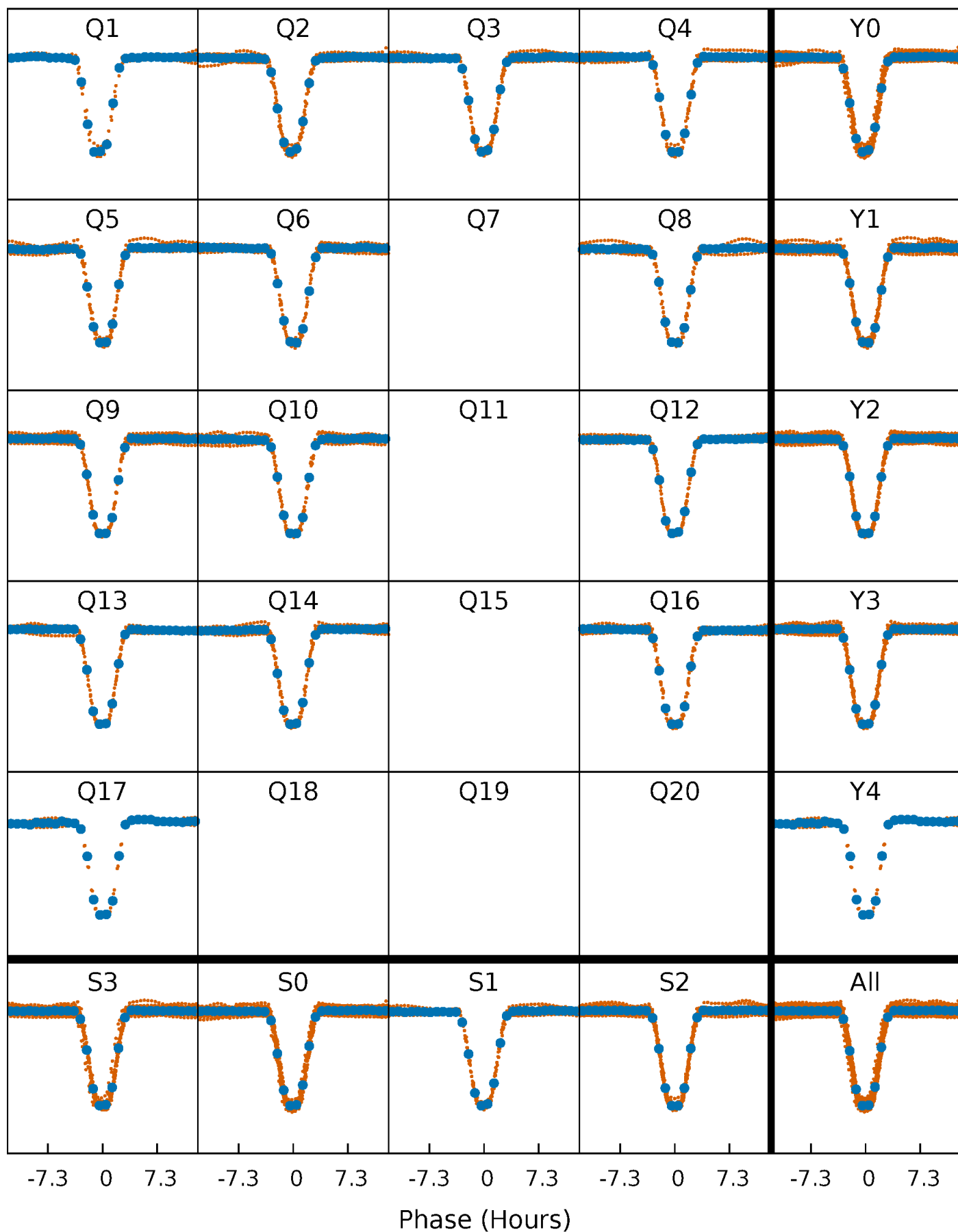


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



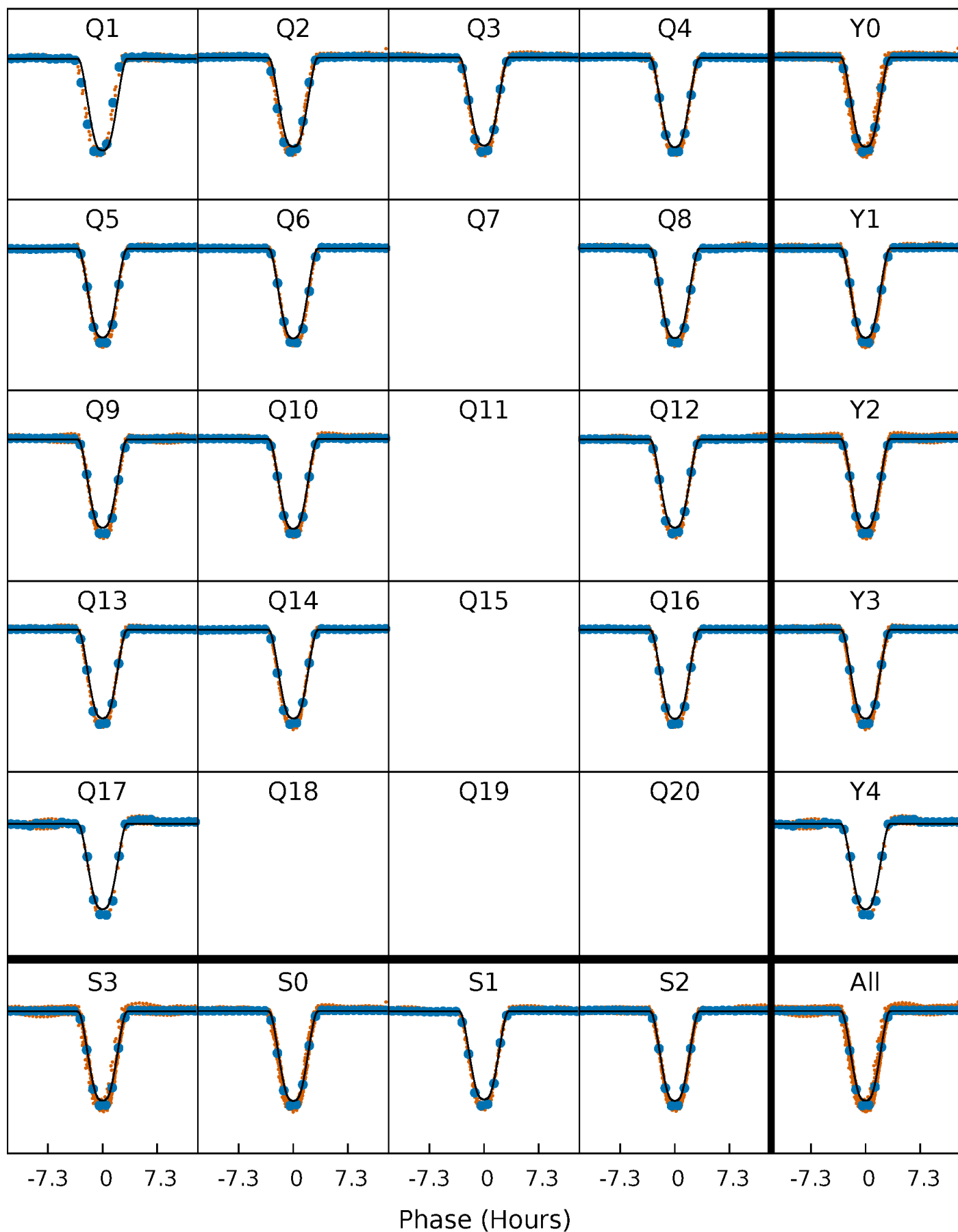
PDC Quarter-Phased Transit Curves

TCE 010549576-01 P= 9.089331 Days $T_0=139.087002$ (BKJD)



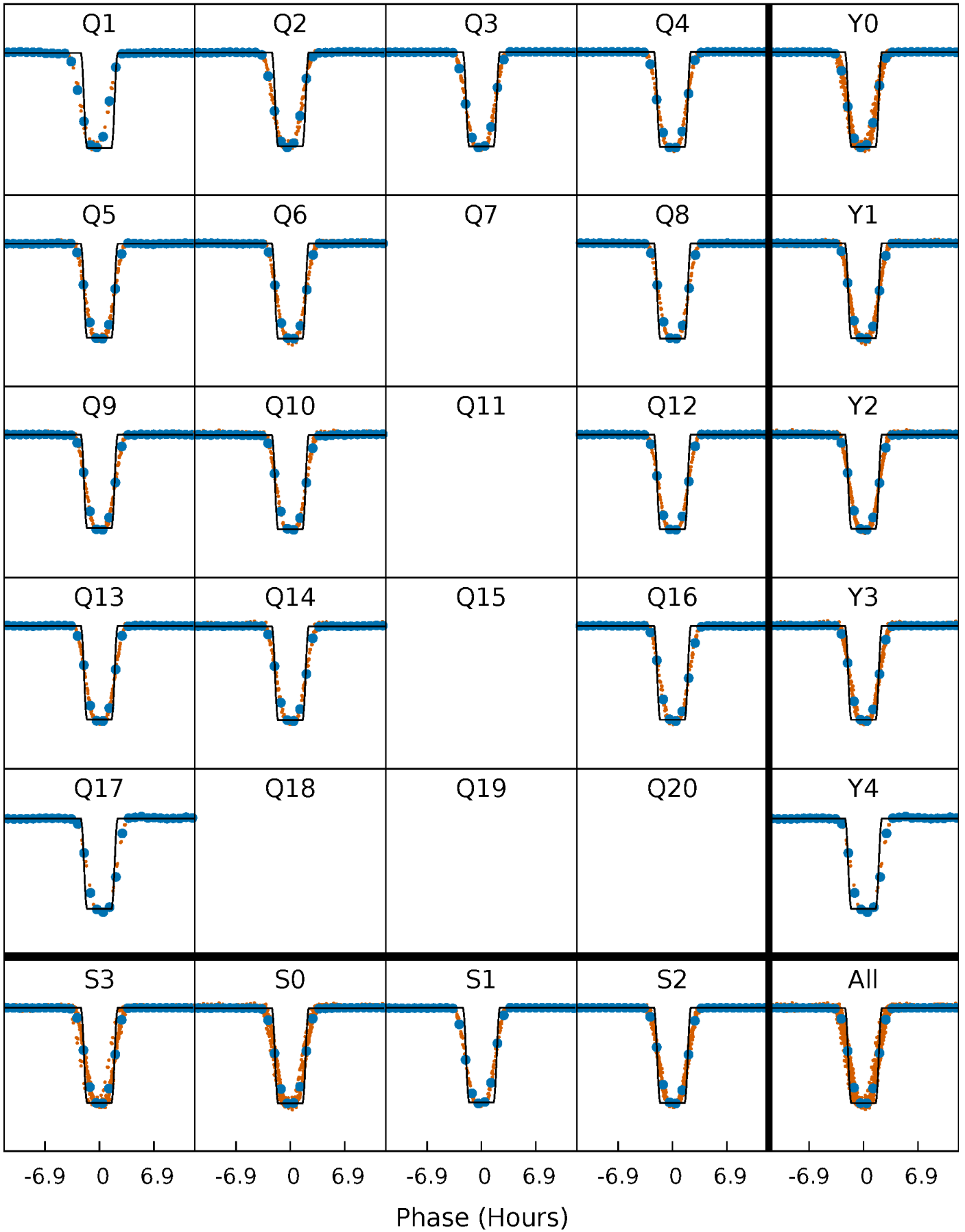
DV Quarter-Phased Transit Curves

TCE 010549576-01 P= 9.089331 Days $T_0=139.087002$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

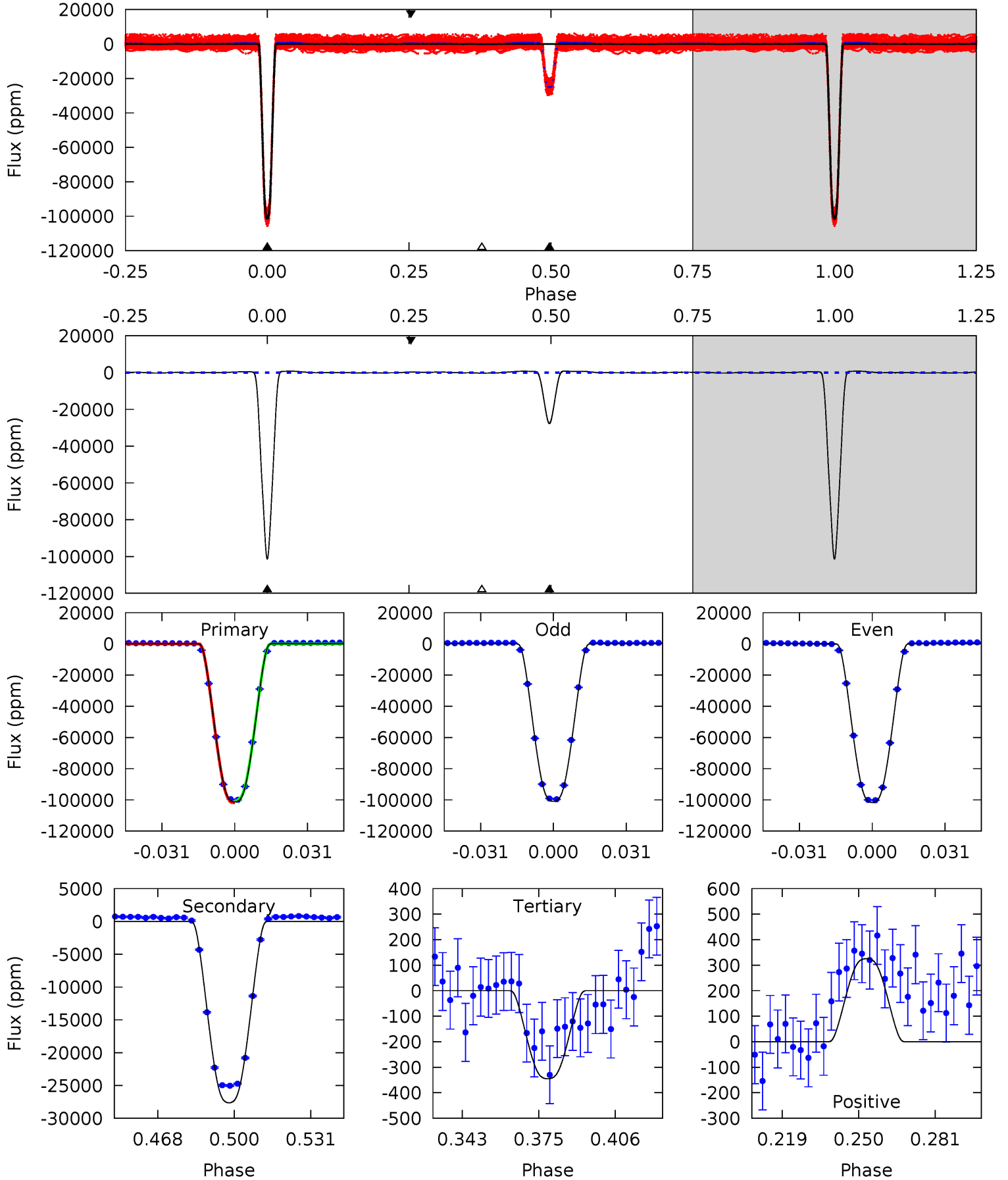
TCE 010549576-01 P= 9.089238 Days $T_0=139.091278$ (BKJD)



DV Model-Shift Uniqueness Test

010549576-01, P = 9.089331 Days, E = 129.997671 Days

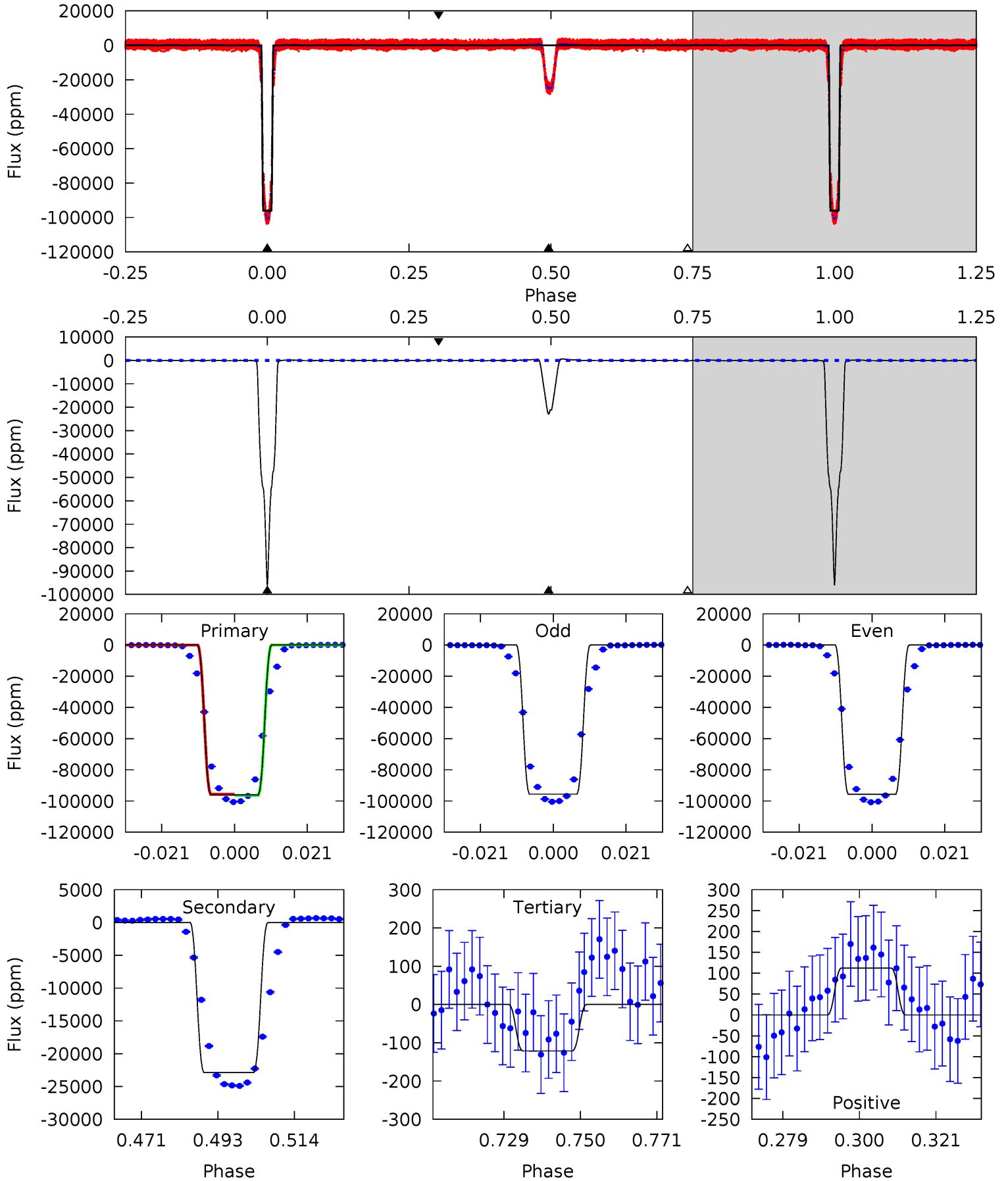
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2503	683.1	8.53	8.04	4.80	2.15	6.72	2495	2495	674.5	675.0	8.62	1.00	0.01	14.0



Alt Model-Shift Uniqueness Test

010549576-01, P = 9.089238 Days, E = 130.002040 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2518	599.1	3.18	2.94	4.88	2.30	2.64	2514	2515	595.9	596.1	1.59	1.00	0.01	8.35



Stellar Parameters For KIC 010549576

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7675^{+237}_{-290}	$4.051^{+0.165}_{-0.165}$	$-0.120^{+0.200}_{-0.350}$	$2.015^{+0.492}_{-0.492}$	$1.665^{+0.210}_{-0.257}$	$0.287^{+0.253}_{-0.126}$
	+3%/-4%	+4%/-4%	+167%/-292%	+24%/-24%	+13%/-15%	+88%/-44%
Source	KIC0	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 010549576-01 / KOI 7341.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-27649 ± 40	$67.07^{+9.30}_{-8.12}$	2123^{+143}_{-158}	5626^{+146}_{-182}	35^{+9}_{-7}
Alt.	-22858 ± 38	$69.59^{+10.42}_{-9.33}$	2122^{+145}_{-154}	5289^{+114}_{-150}	27^{+8}_{-6}

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

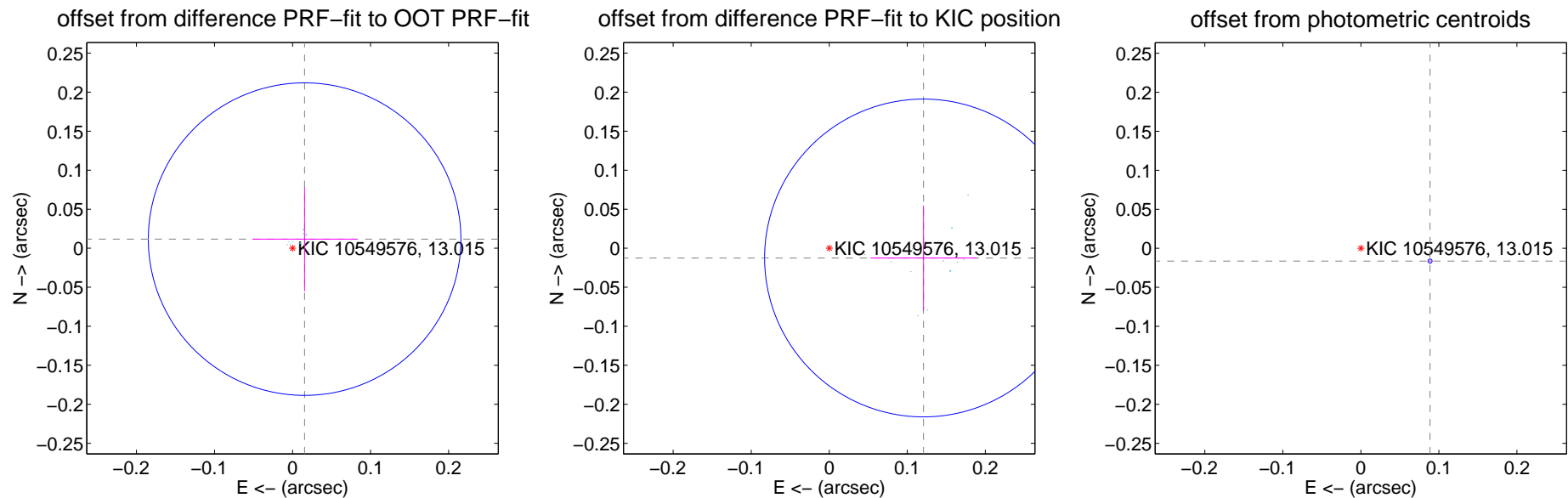
DV Centroid Data

Supplemental centroid analysis for 010549576-01. Kepler magnitude: 13.02. Transit SNR 928.71

There are 14 quarters with good PRF difference image offsets

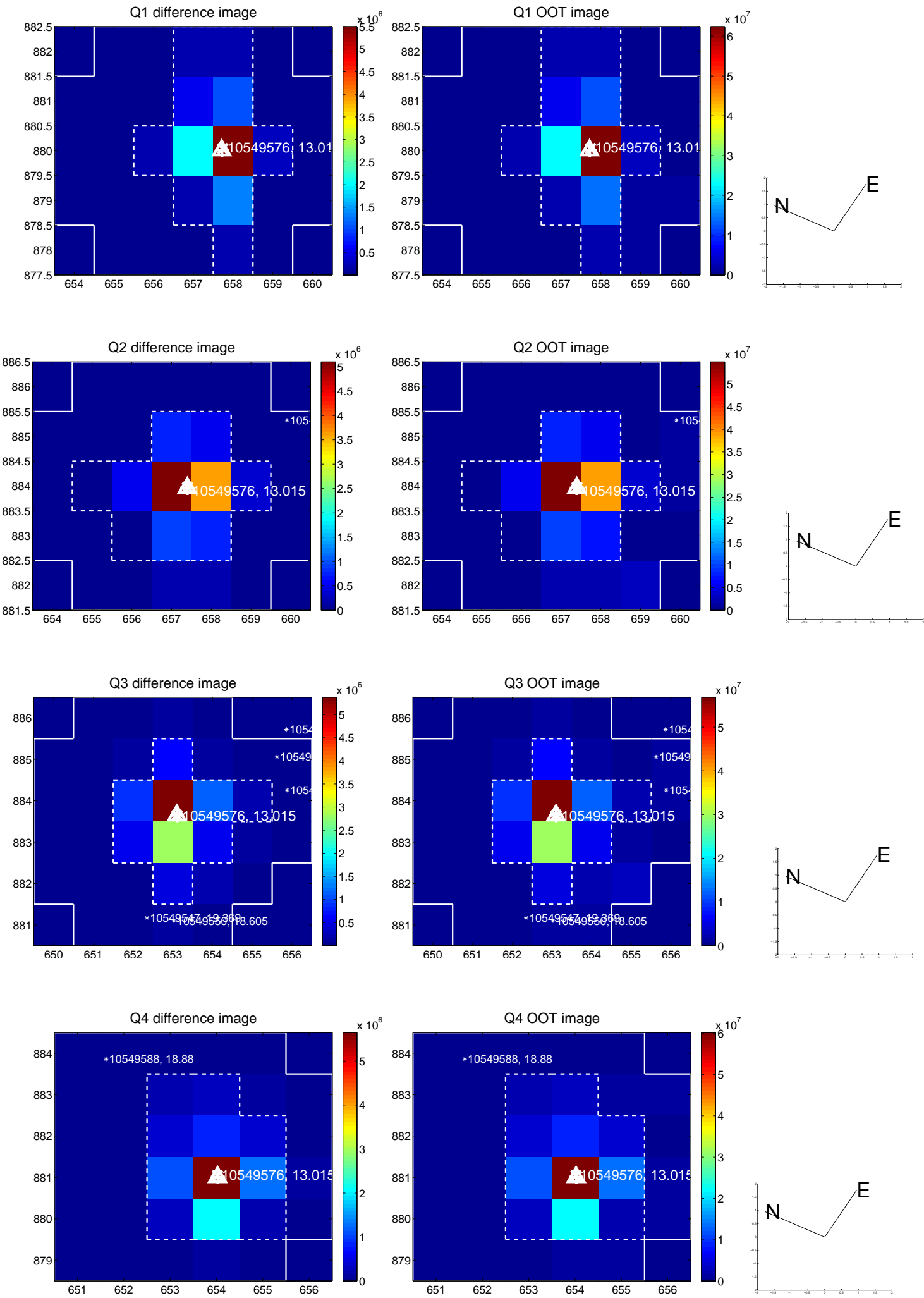
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.019 ± 0.067	0.29	-0.015 ± 0.067	0.012 ± 0.067
PRF-fit source offset from KIC position	0.121 ± 0.068	1.79	-0.121 ± 0.068	-0.012 ± 0.067
photometric centroid source offset	0.09 ± 0.00	103.48	-0.09 ± 0.00	-0.02 ± 0.00

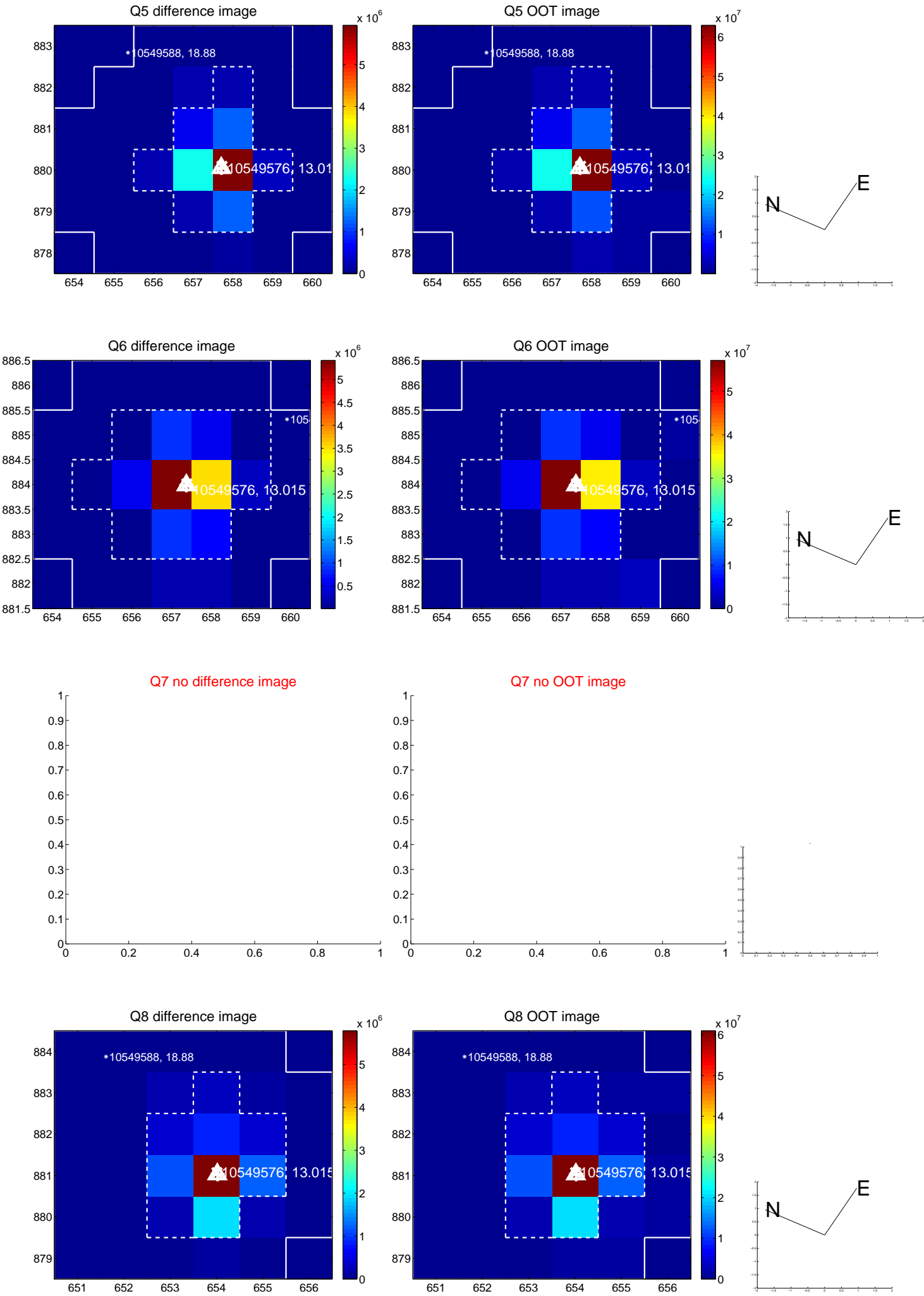


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

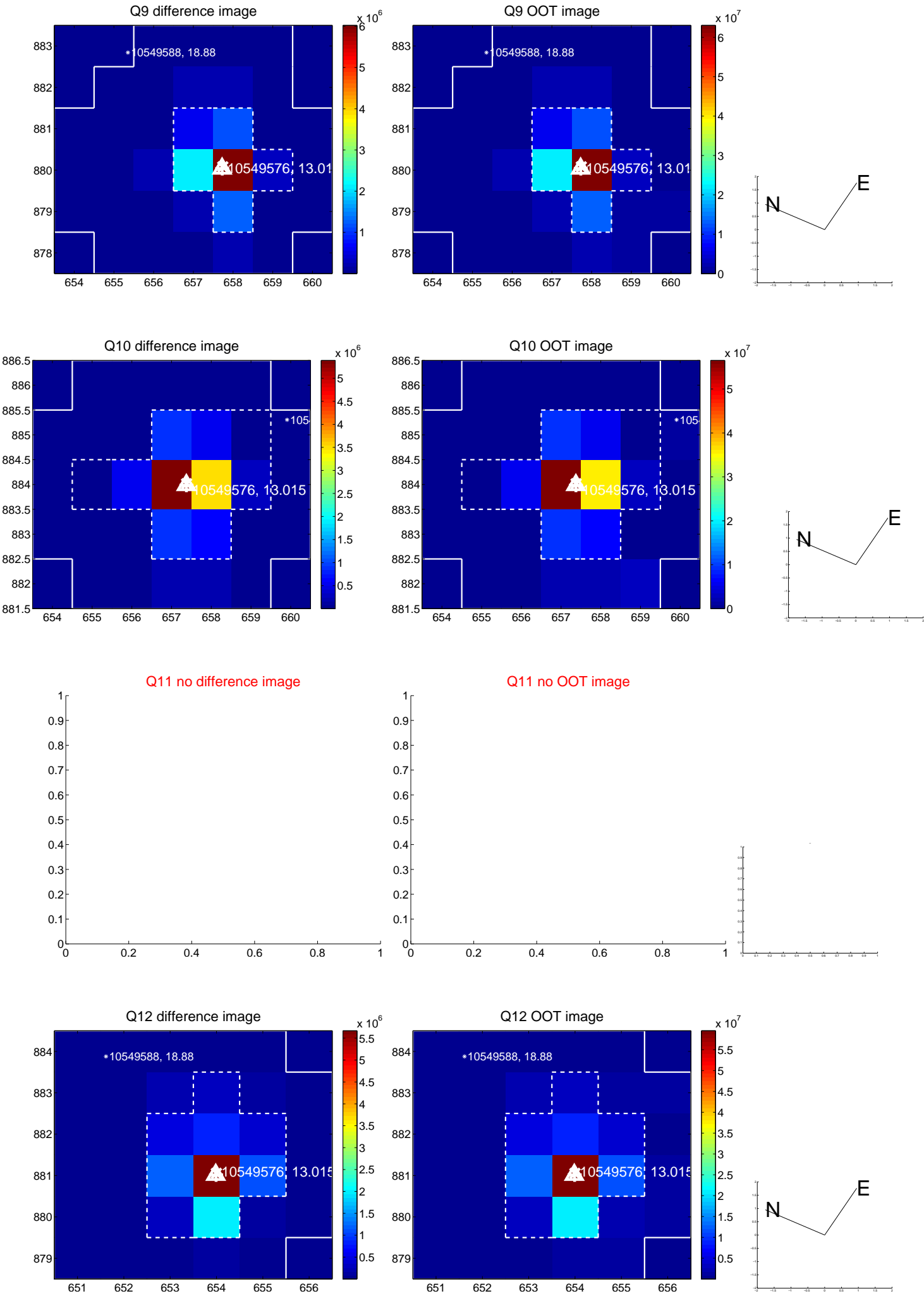
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



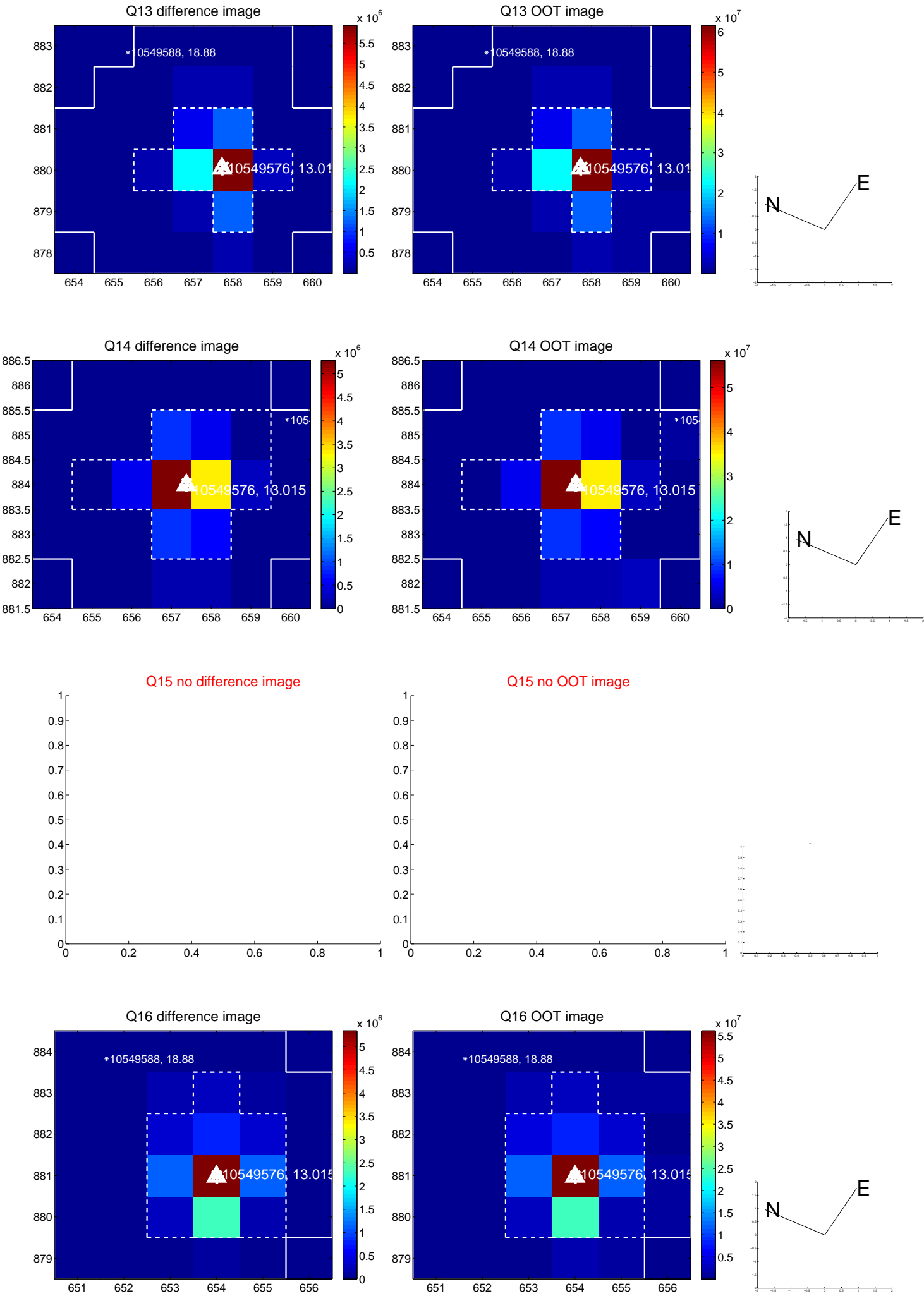
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



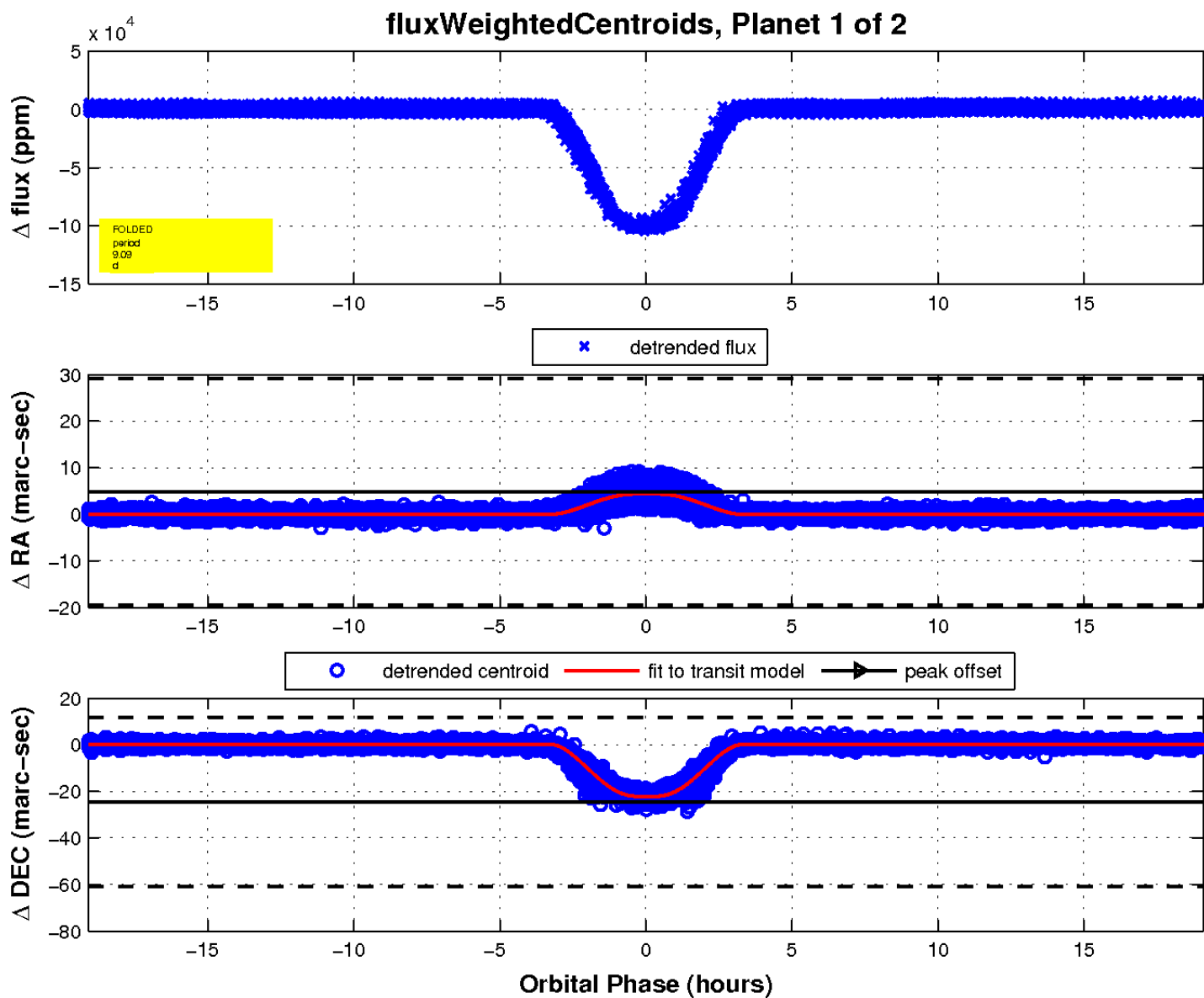
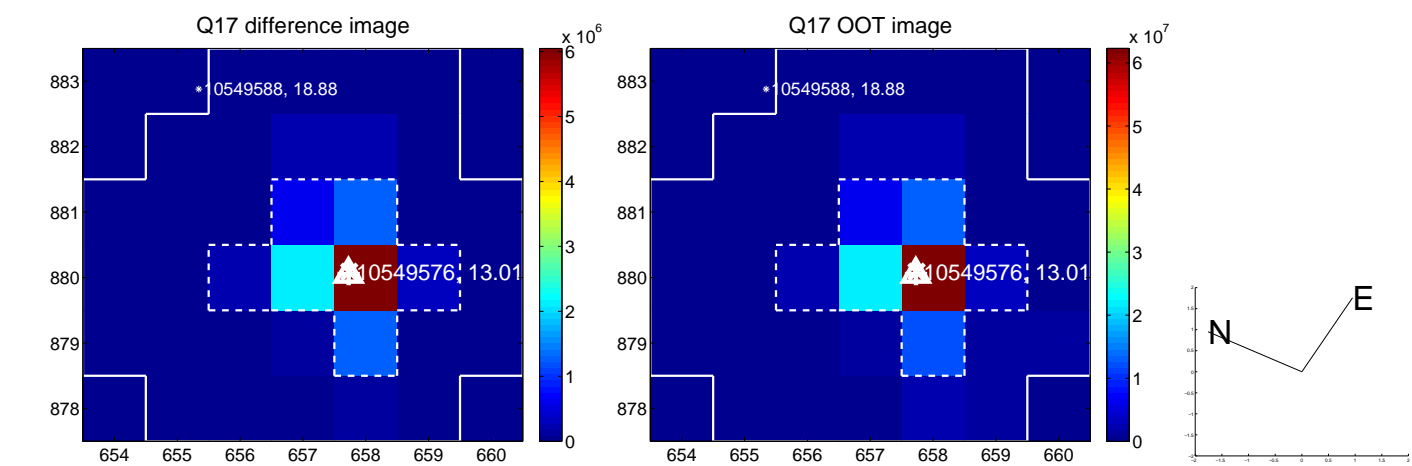
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



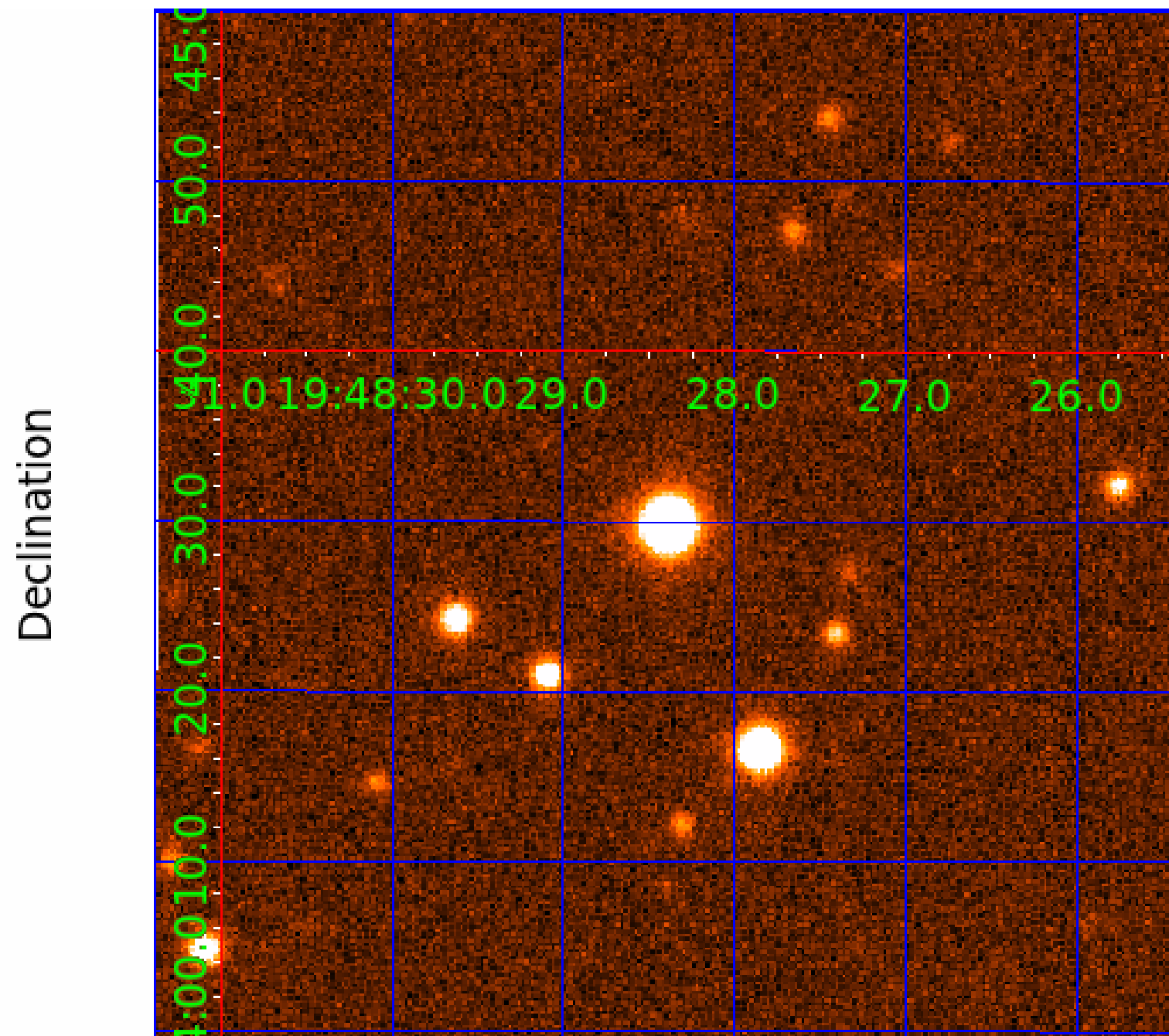
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 010549576

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})
010549576-01	OBS	7341.01	9.089331	139.087002	94011.1	6.367	1408.2	928.7	2.02	7675	66.68	1235.99
010549576-02	OBS	No	9.089339	134.518091	24654.5	6.233	440.5	389.4	2.02	7675	35.07	1235.99

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010549576-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
010549576-02	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.

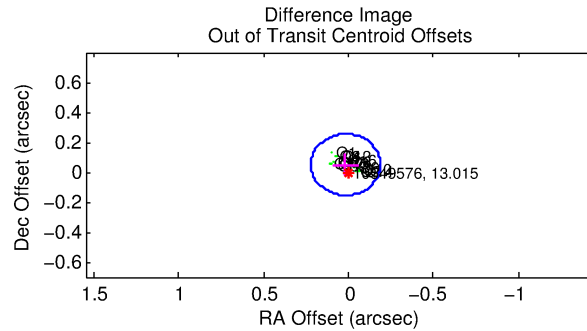
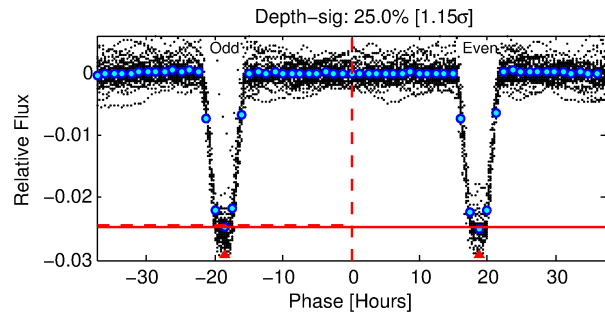
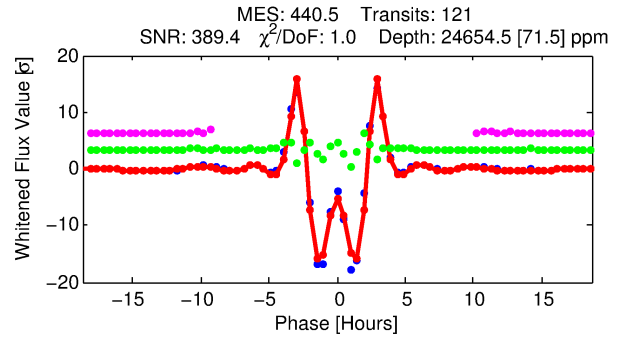
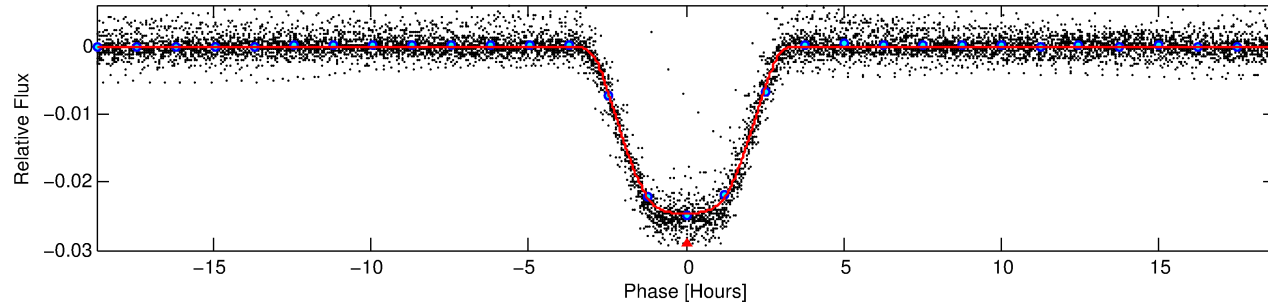
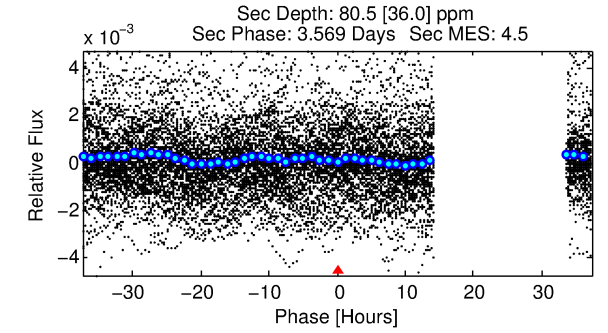
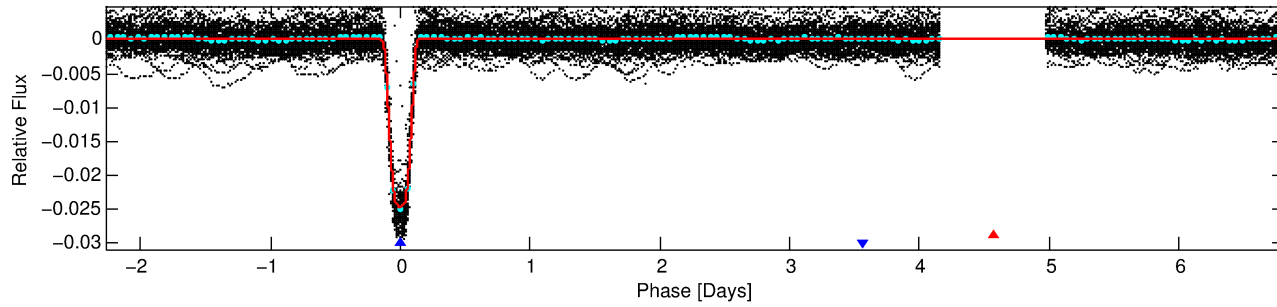
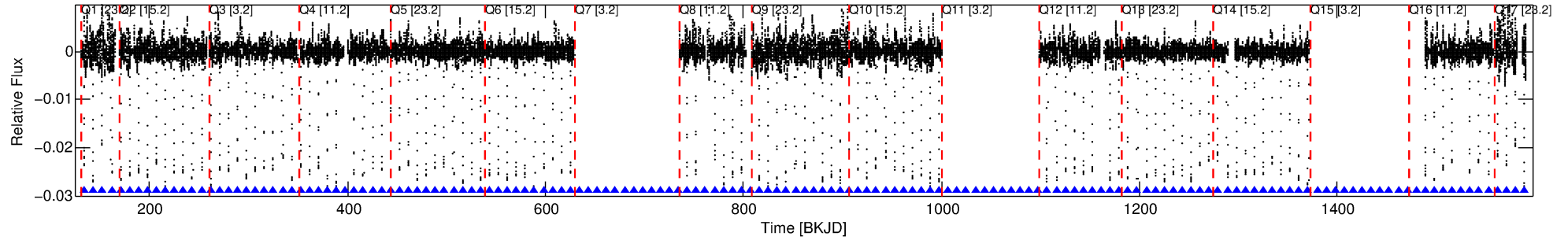
Ephemeris Match Information For 010549576-02

No Significant Match Found

DV One-Page Summary

KIC: 10549576 Candidate: 2 of 2 Period: 9.089 d
KOI: K07341 Corr: No Ephemeris Match

Kp: 13.02 R*: 2.02 Rs Teff: 7675.0 K Logg: 4.05 Fe/H: -0.120



DV Fit Results:

Period = 9.08934 [0.00000] d
Epoch = 134.5181 [0.0001] BKJD
Rp/R* = 0.1595 [0.0002]
a/R* = 9.46 [0.01]
b = 0.79 [0.00]
Seff = 1235.99 [416.39]
Teq = 1512 [127] K
Rp = 35.07 [8.56] Re
a = 0.1011 [0.0208] AU
Ag = 0.37 [0.20] [-3.19σ]
Teff = 1820 [215] K [1.24σ]

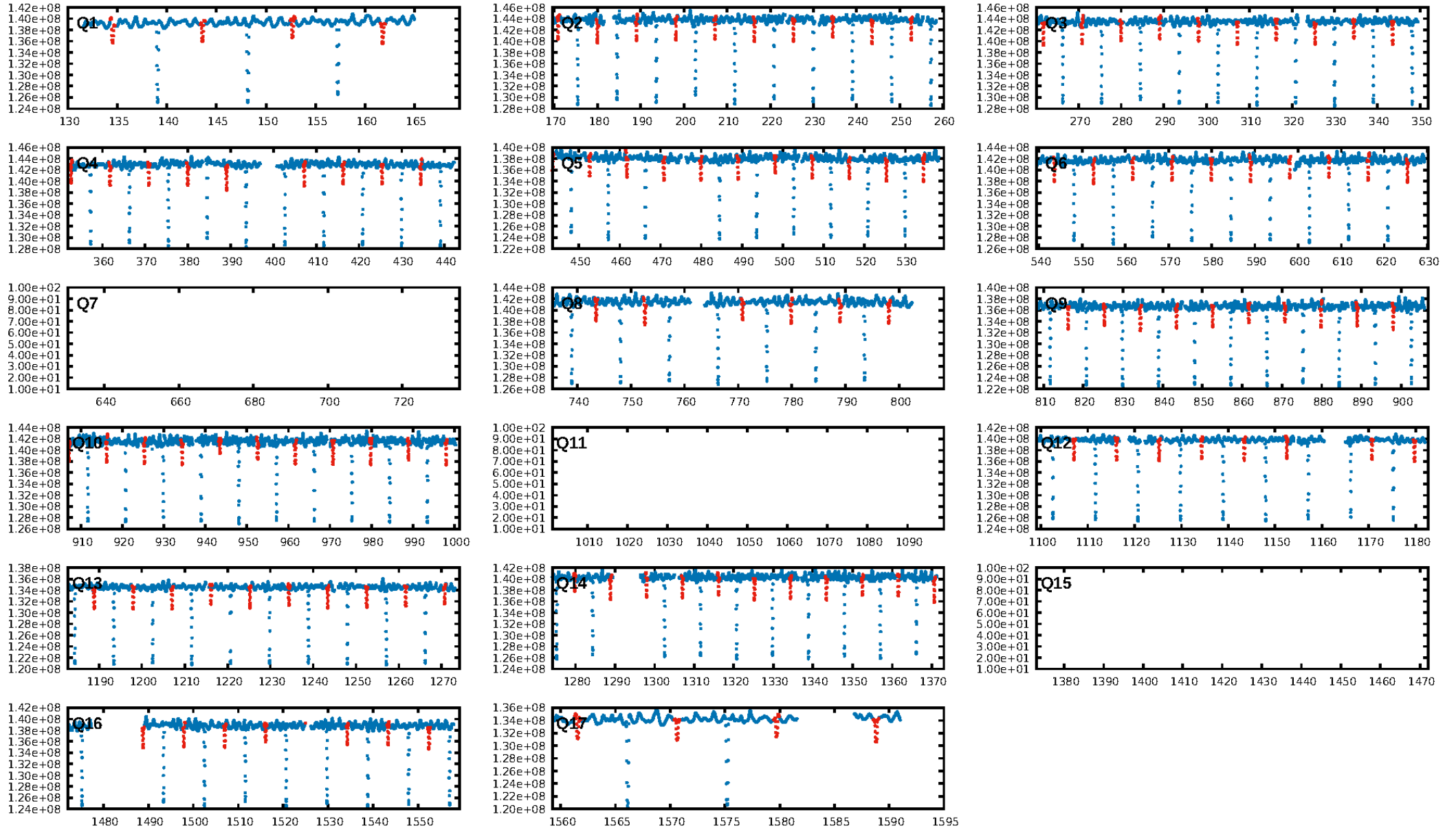
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 95.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [113/113]
GhostDiagnostic-chr: 1.562
Centroid-sig: 0.0%
Centroid-so: 0.046 arcsec [15.16σ]
OotOffset-rm: 0.054 arcsec [0.78σ]
KicOffset-rm: 0.074 arcsec [1.07σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

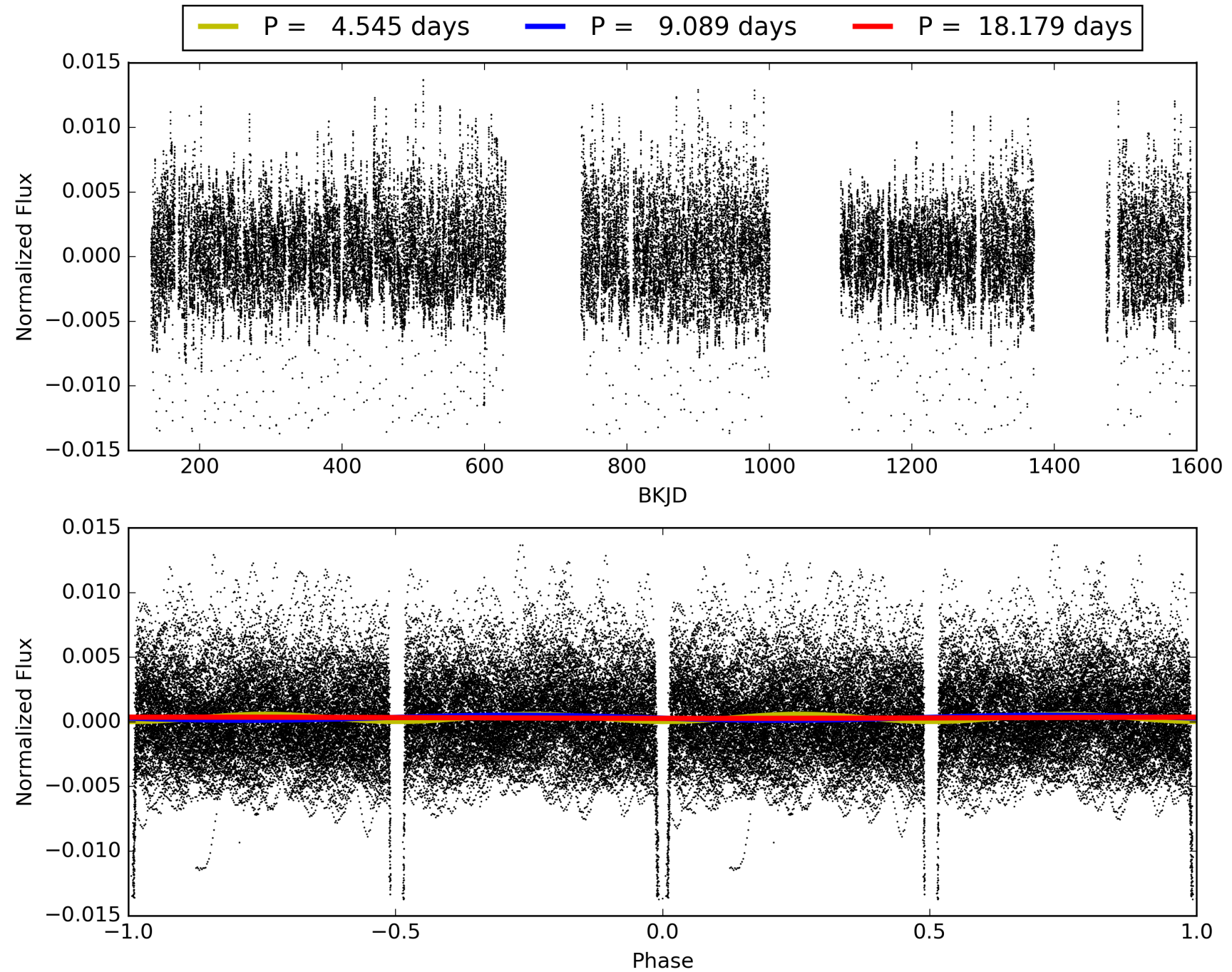
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:01:59 Z

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

TCE 010549576-02, PDC Light Curves

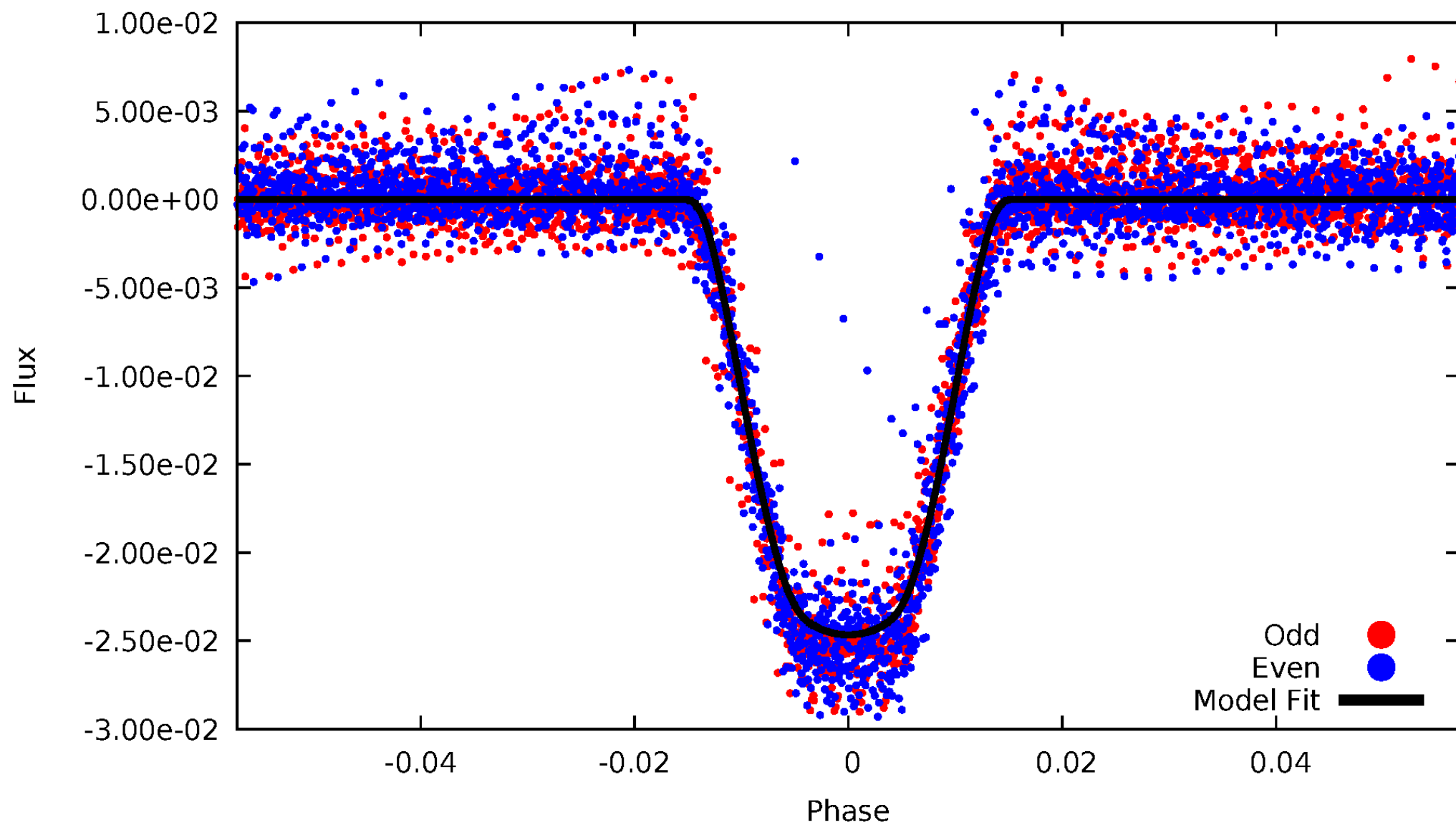


TCE 010549576-02



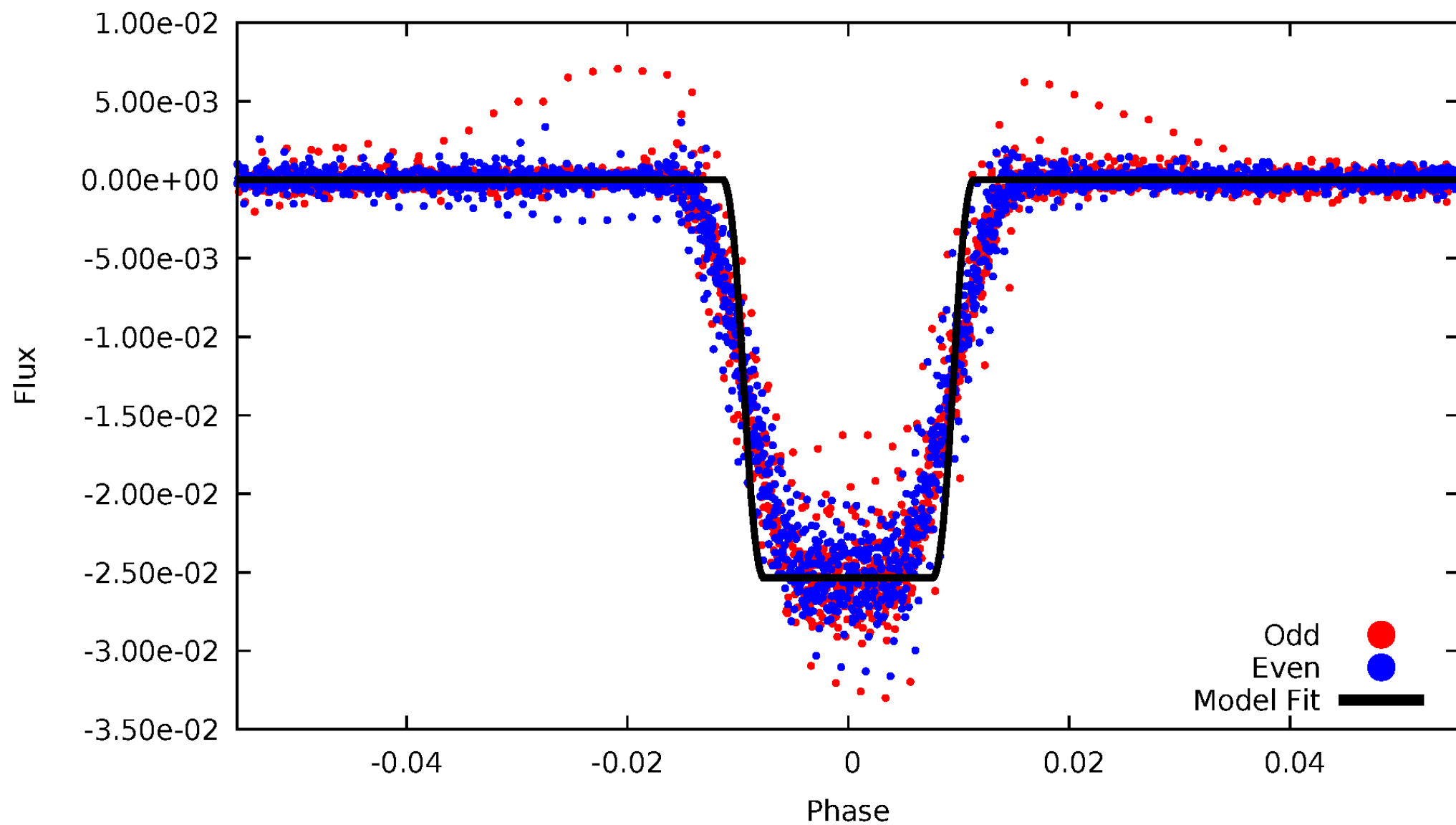
DV Odd/Even

TCE 010549576-02



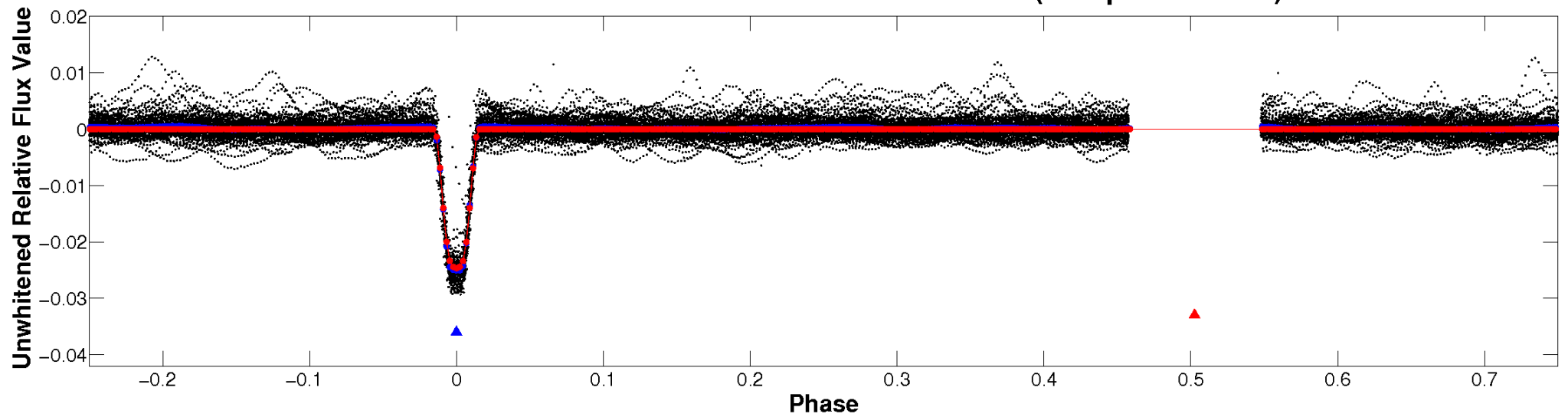
ALT Odd/Even

TCE 010549576-02

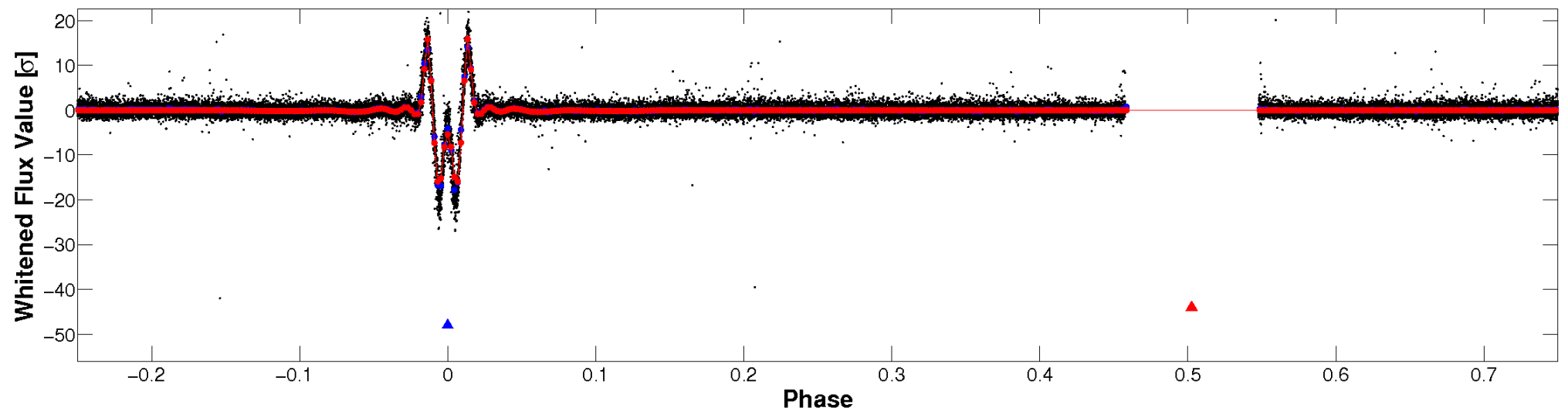


Non-Whitened Vs. Whitened Light Curve

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

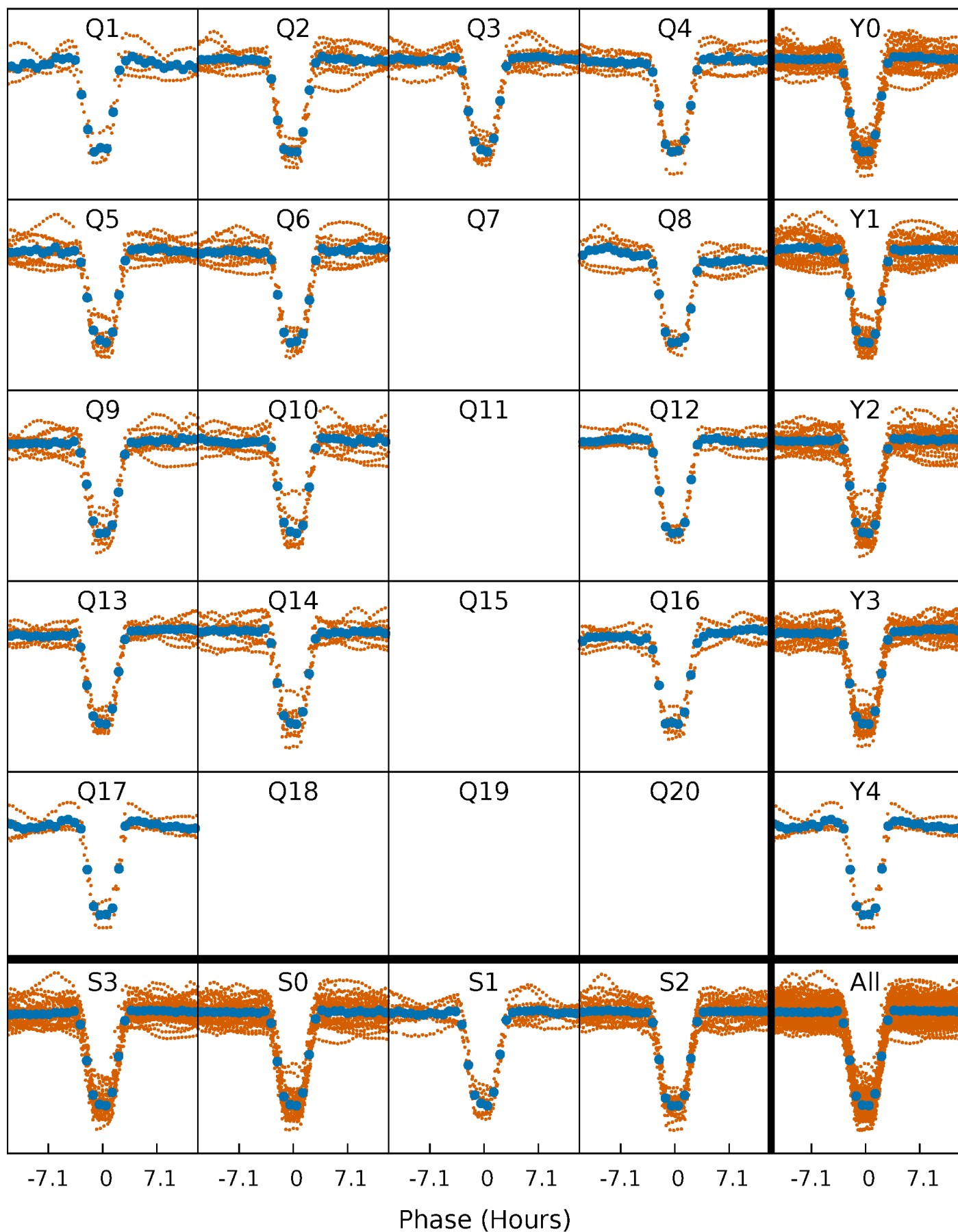


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



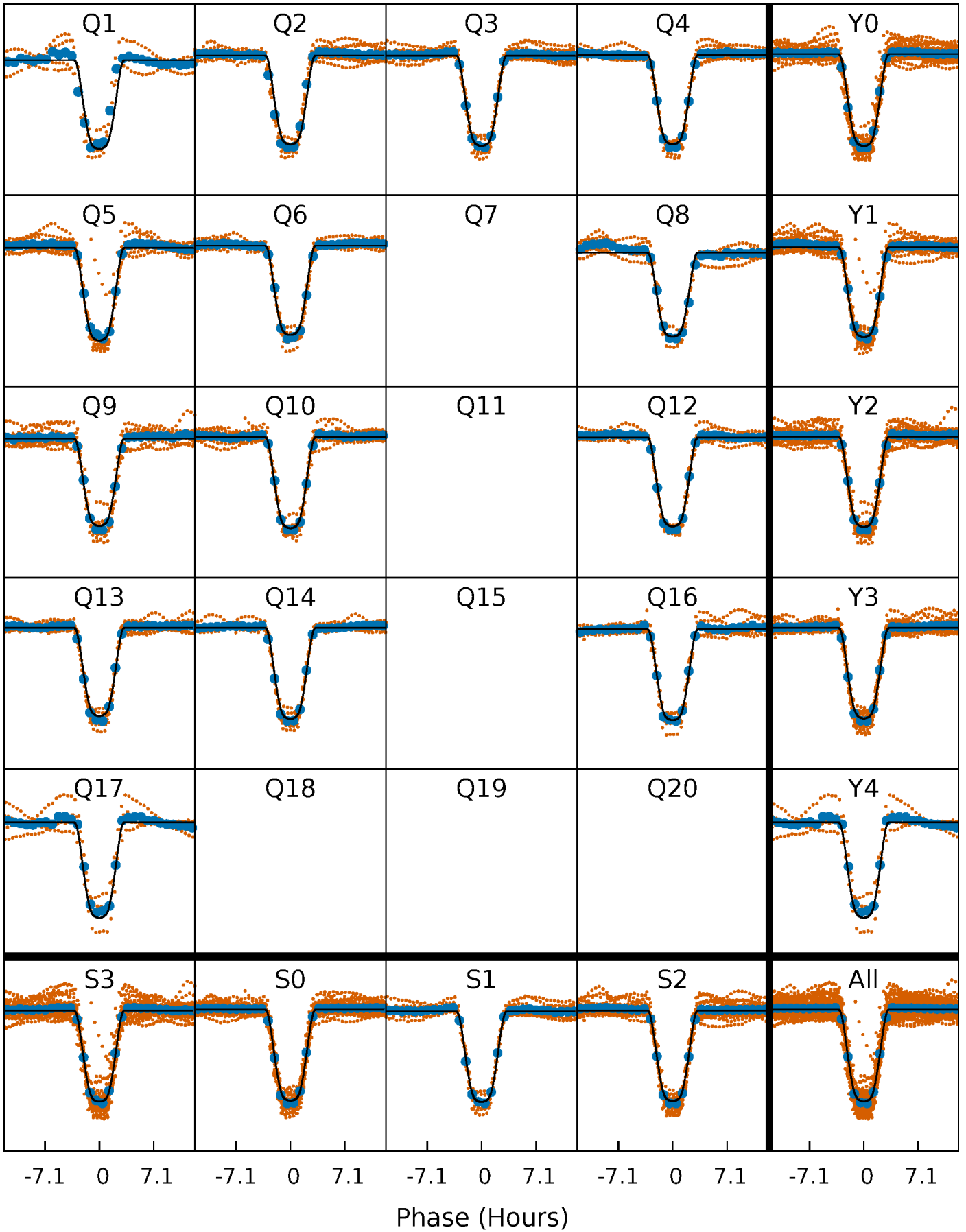
PDC Quarter-Phased Transit Curves

TCE 010549576-02 P= 9.089339 Days $T_0=134.518091$ (BKJD)



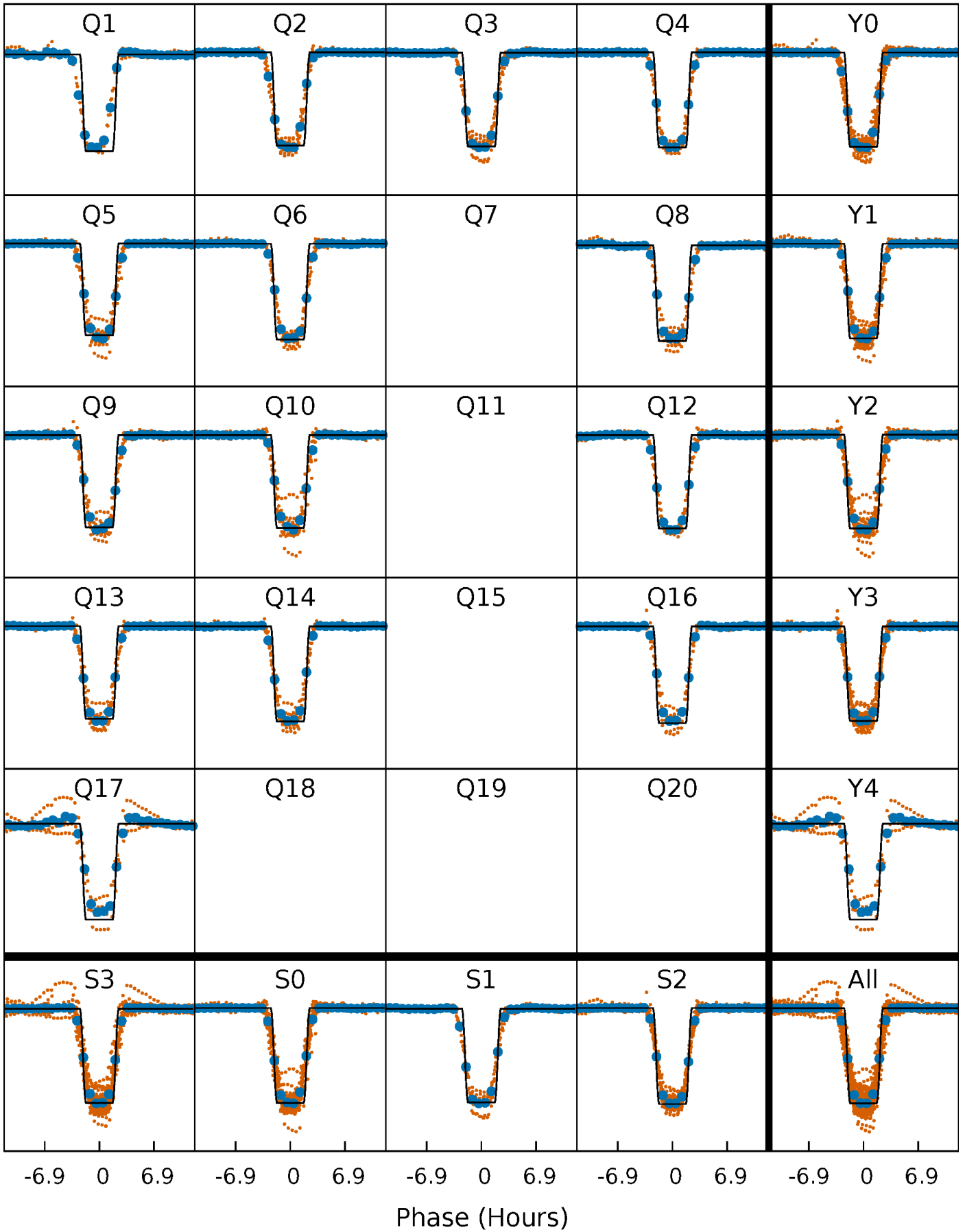
DV Quarter-Phased Transit Curves

TCE 010549576-02 P= 9.089339 Days $T_0=134.518091$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

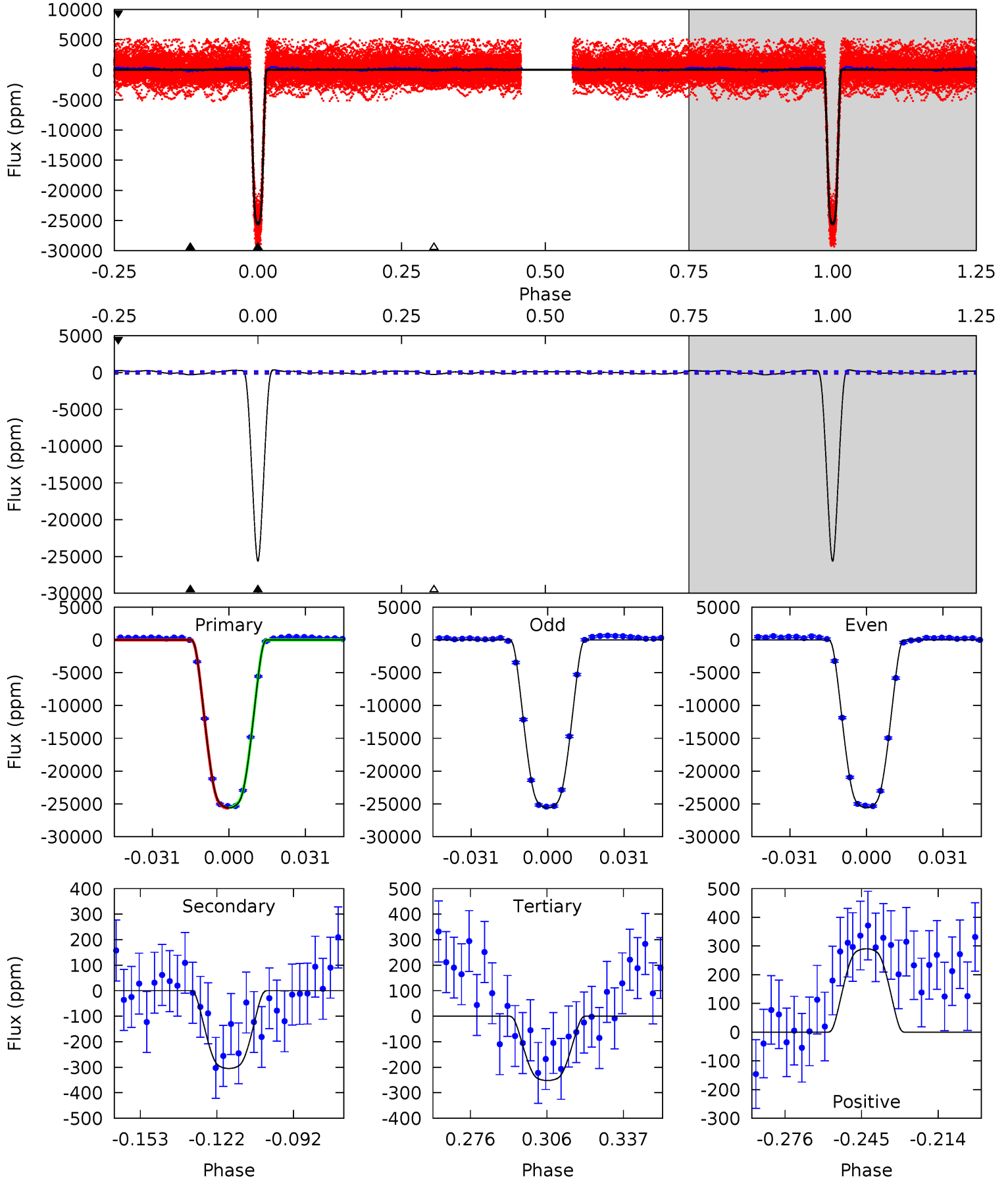
TCE 010549576-02 P= 9.089306 Days $T_0=134.519761$ (BKJD)



DV Model-Shift Uniqueness Test

010549576-02, P = 9.089339 Days, E = 125.428752 Days

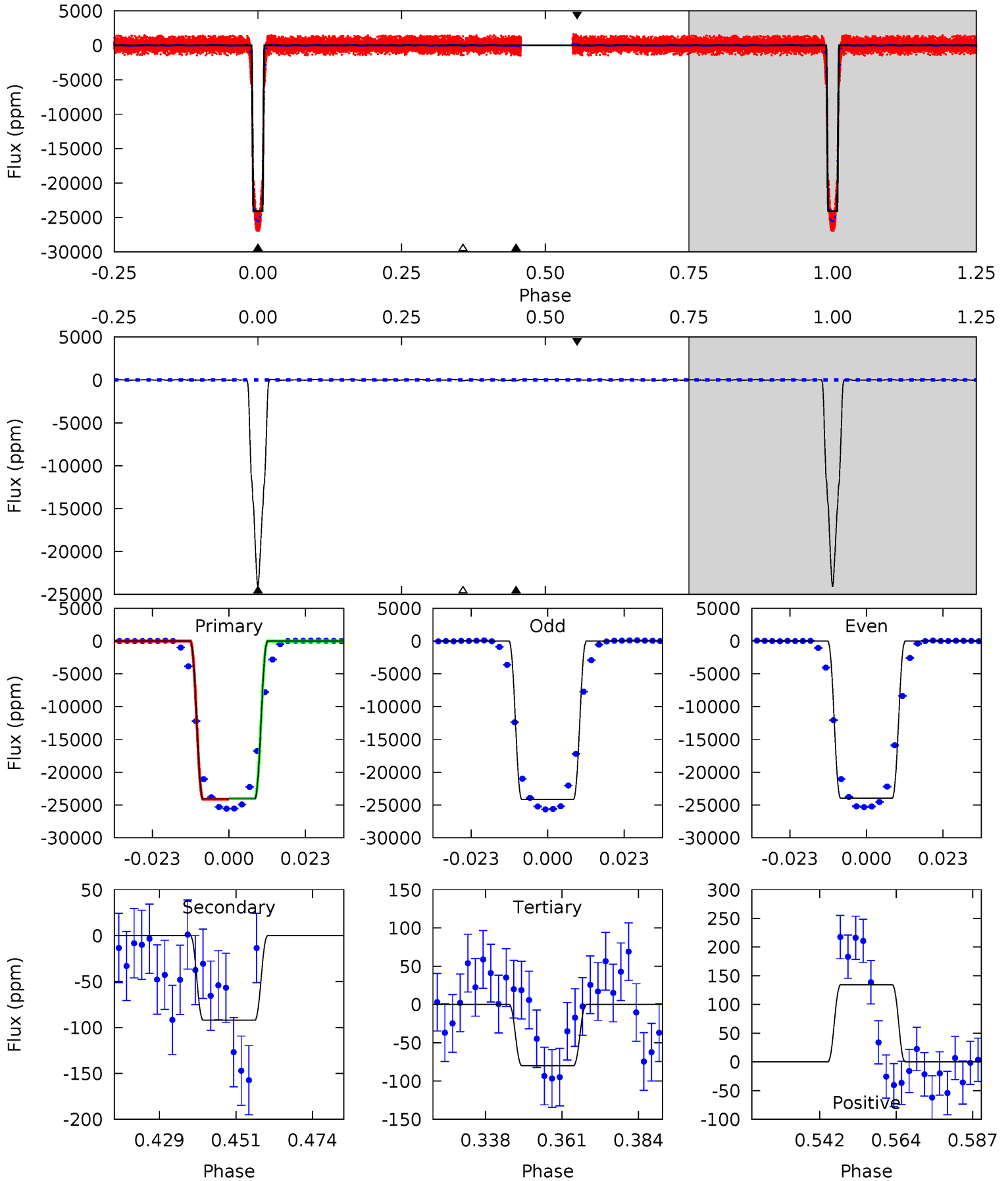
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
706.3	8.40	6.95	8.01	4.81	2.16	3.88	699.3	698.3	1.45	0.39	0.19	0.98	0.01	1.62



Alt Model-Shift Uniqueness Test

010549576-02, P = 9.089306 Days, E = 125.430455 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1445	5.53	4.79	8.06	4.87	2.28	1.56	1441	1437	0.74	-2.53	5.65	1.00	0.01	0



Stellar Parameters For KIC 010549576

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7675^{+237}_{-290}	$4.051^{+0.165}_{-0.165}$	$-0.120^{+0.200}_{-0.350}$	$2.015^{+0.492}_{-0.492}$	$1.665^{+0.210}_{-0.257}$	$0.287^{+0.253}_{-0.126}$
	+3%/-4%	+4%/-4%	+167%/-292%	+24%/-24%	+13%/-15%	+88%/-44%
Source	KIC0	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 010549576-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-305 ± 36	$35.56^{+4.64}_{-4.53}$	2125^{+143}_{-150}	3003^{+81}_{-93}	$1.341^{+0.398}_{-0.306}$
Alt.	-92 ± 17	$35.11^{+4.80}_{-4.51}$	2113^{+145}_{-146}	2273^{+163}_{-599}	$0.420^{+0.141}_{-0.116}$

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

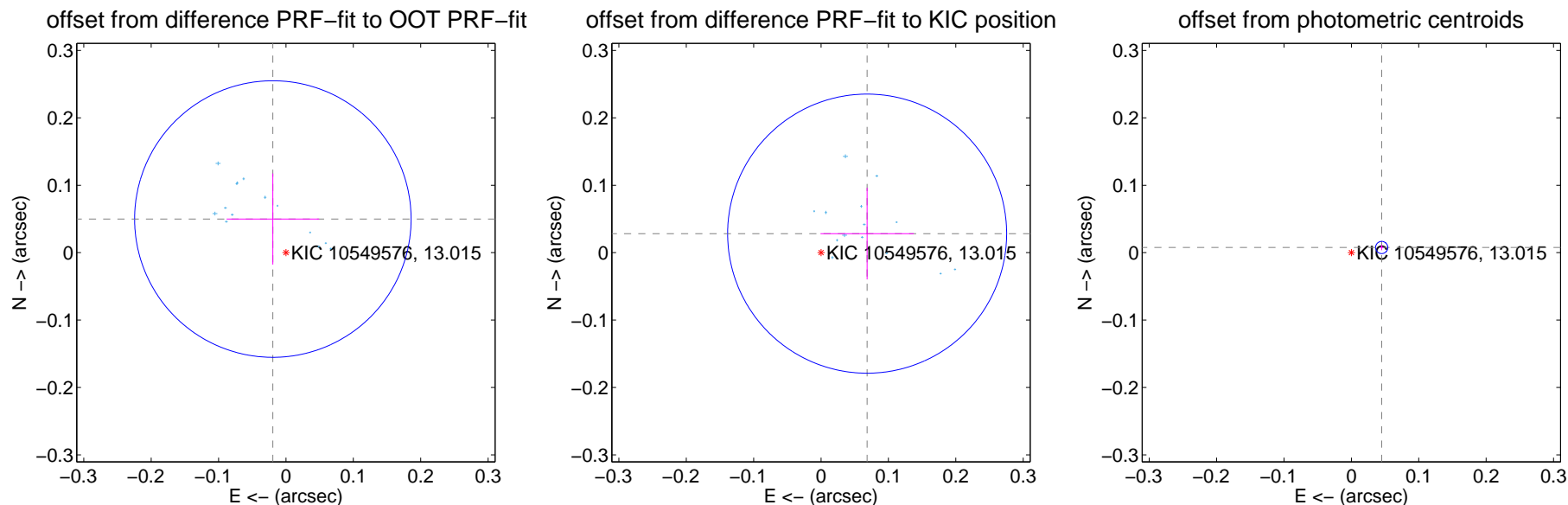
DV Centroid Data

Supplemental centroid analysis for 010549576-02. Kepler magnitude: 13.02. Transit SNR 389.39

There are 14 quarters with good PRF difference image offsets

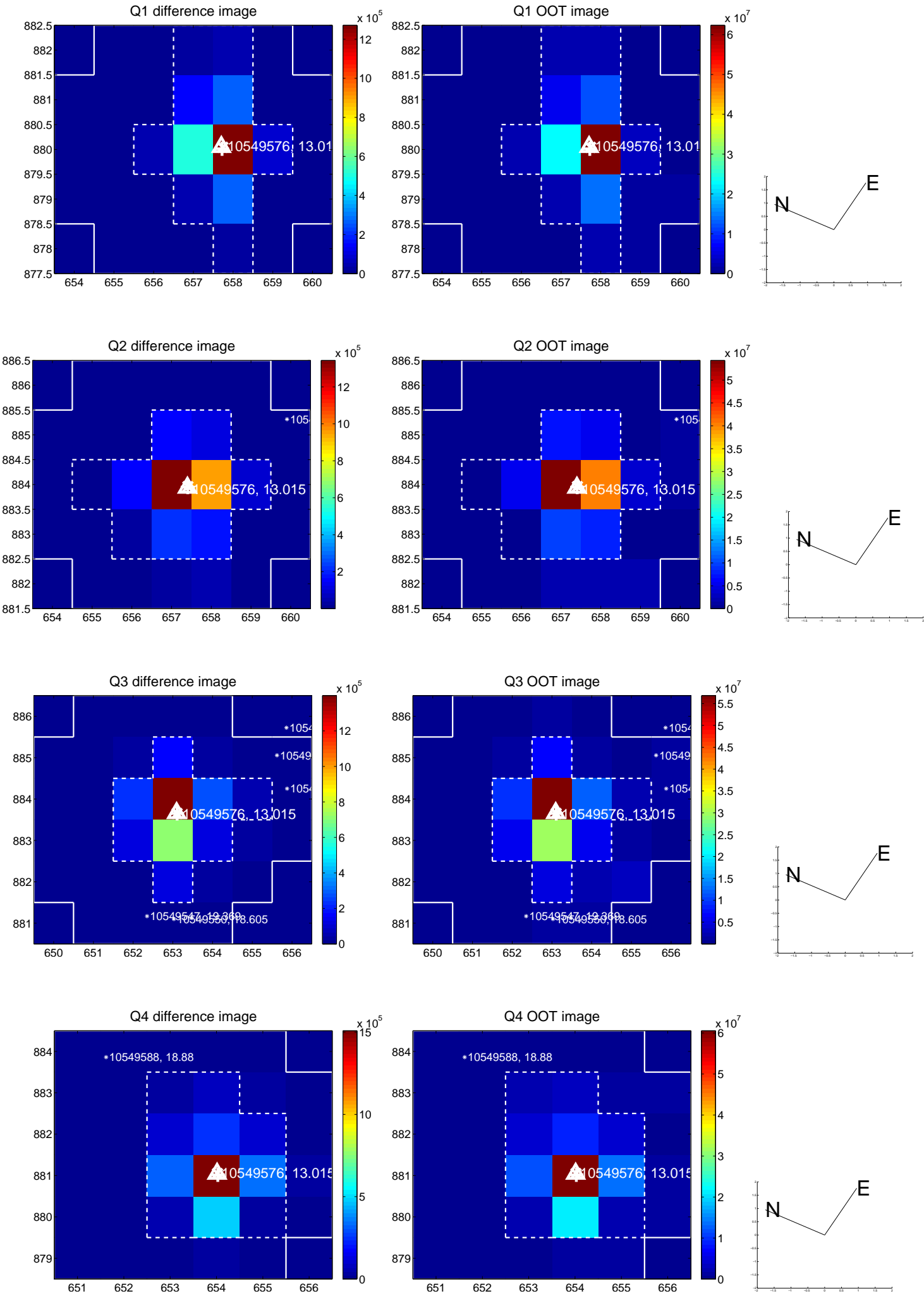
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.054 ± 0.068	0.78	0.019 ± 0.069	0.050 ± 0.068
PRF-fit source offset from KIC position	0.074 ± 0.069	1.07	-0.068 ± 0.069	0.028 ± 0.068
photometric centroid source offset	0.05 ± 0.00	15.16	-0.04 ± 0.00	0.01 ± 0.00

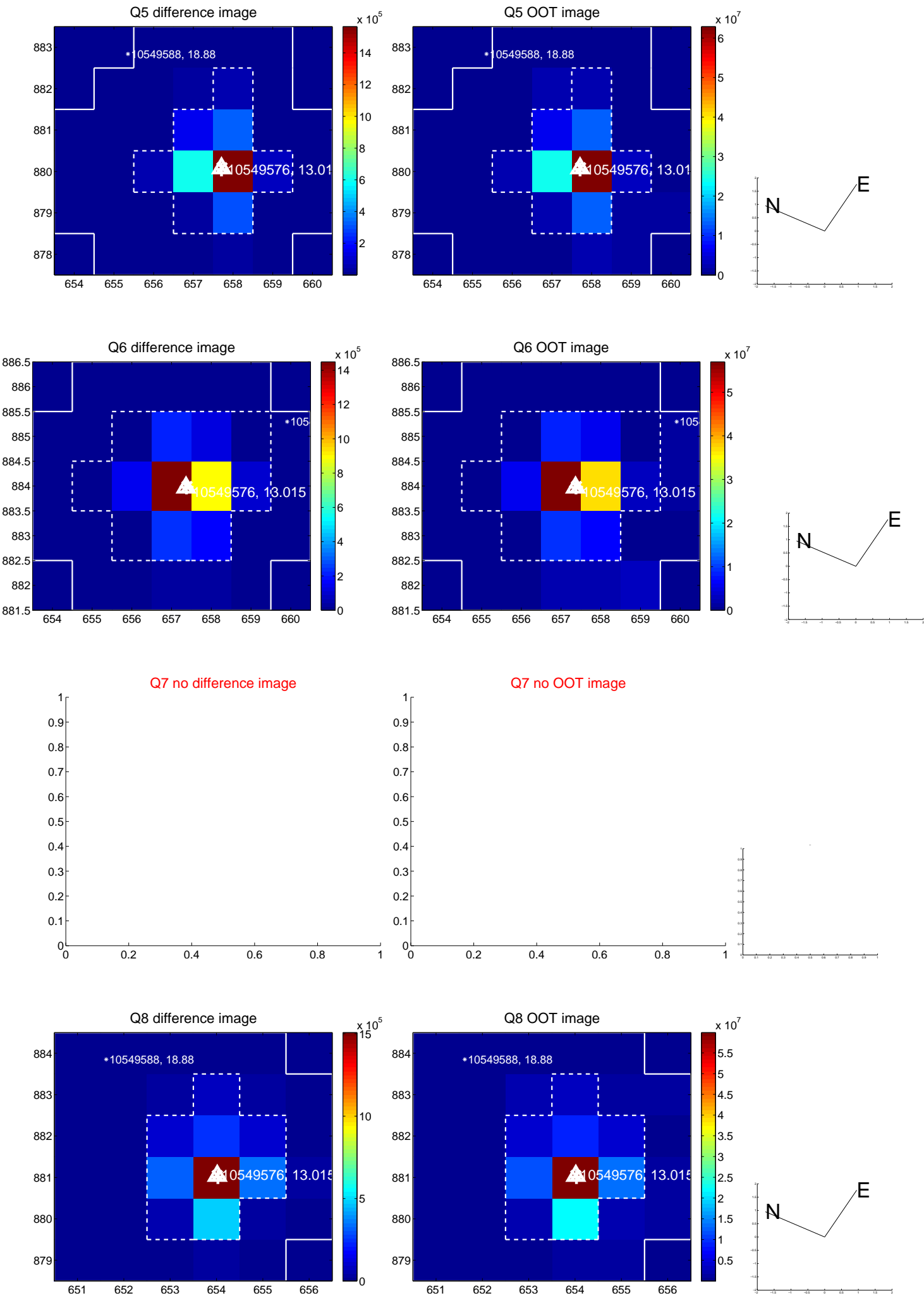


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

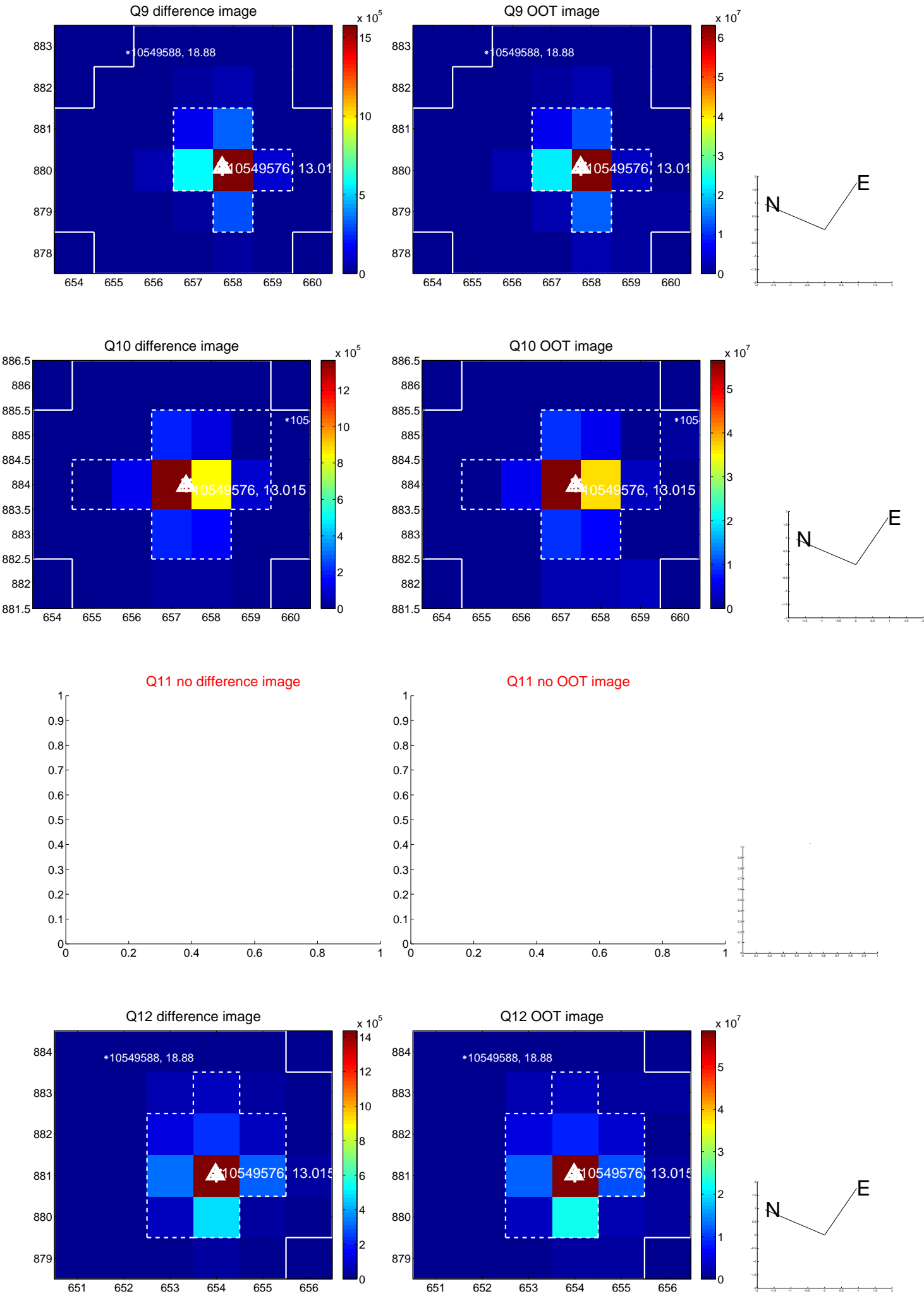
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



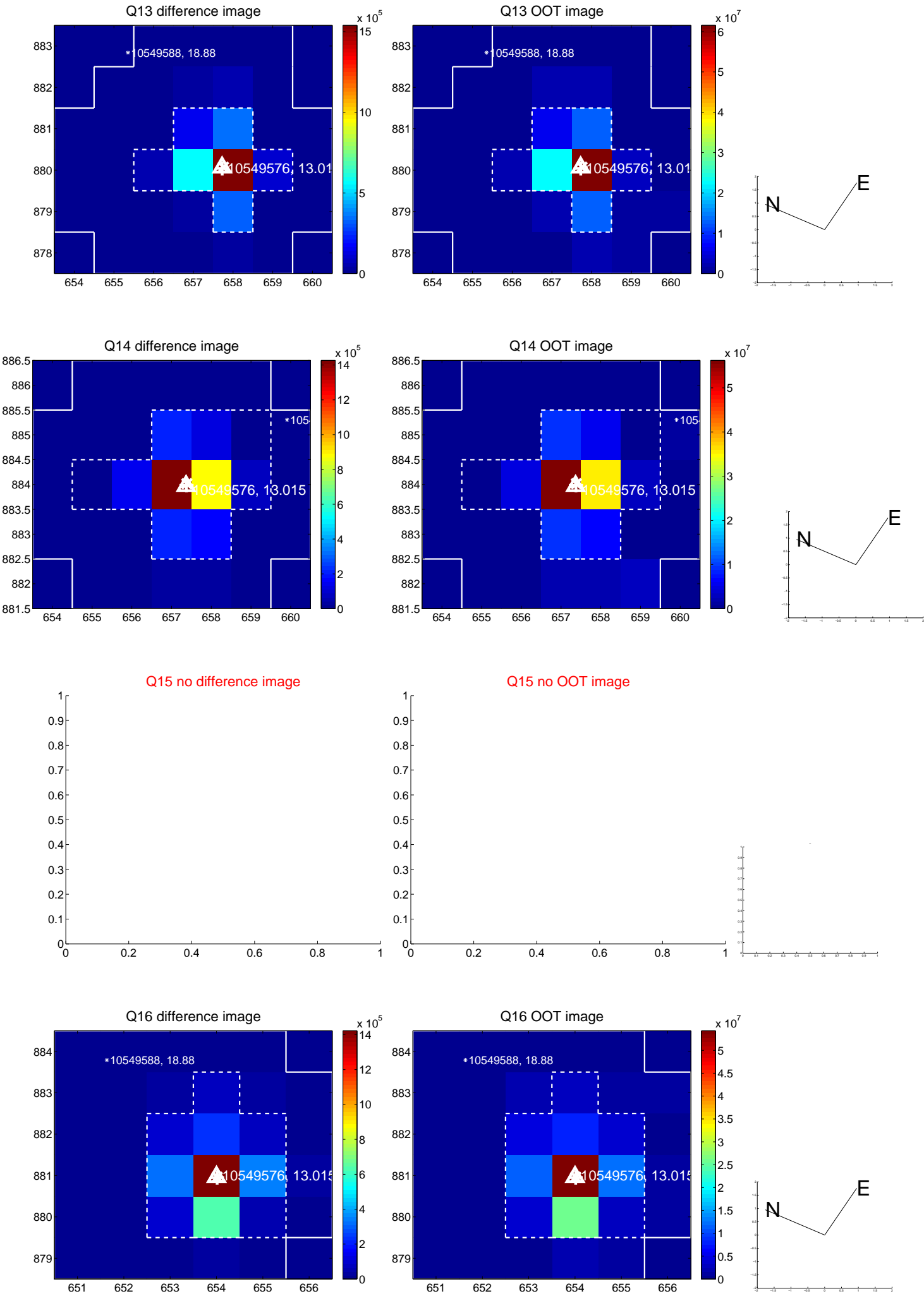
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



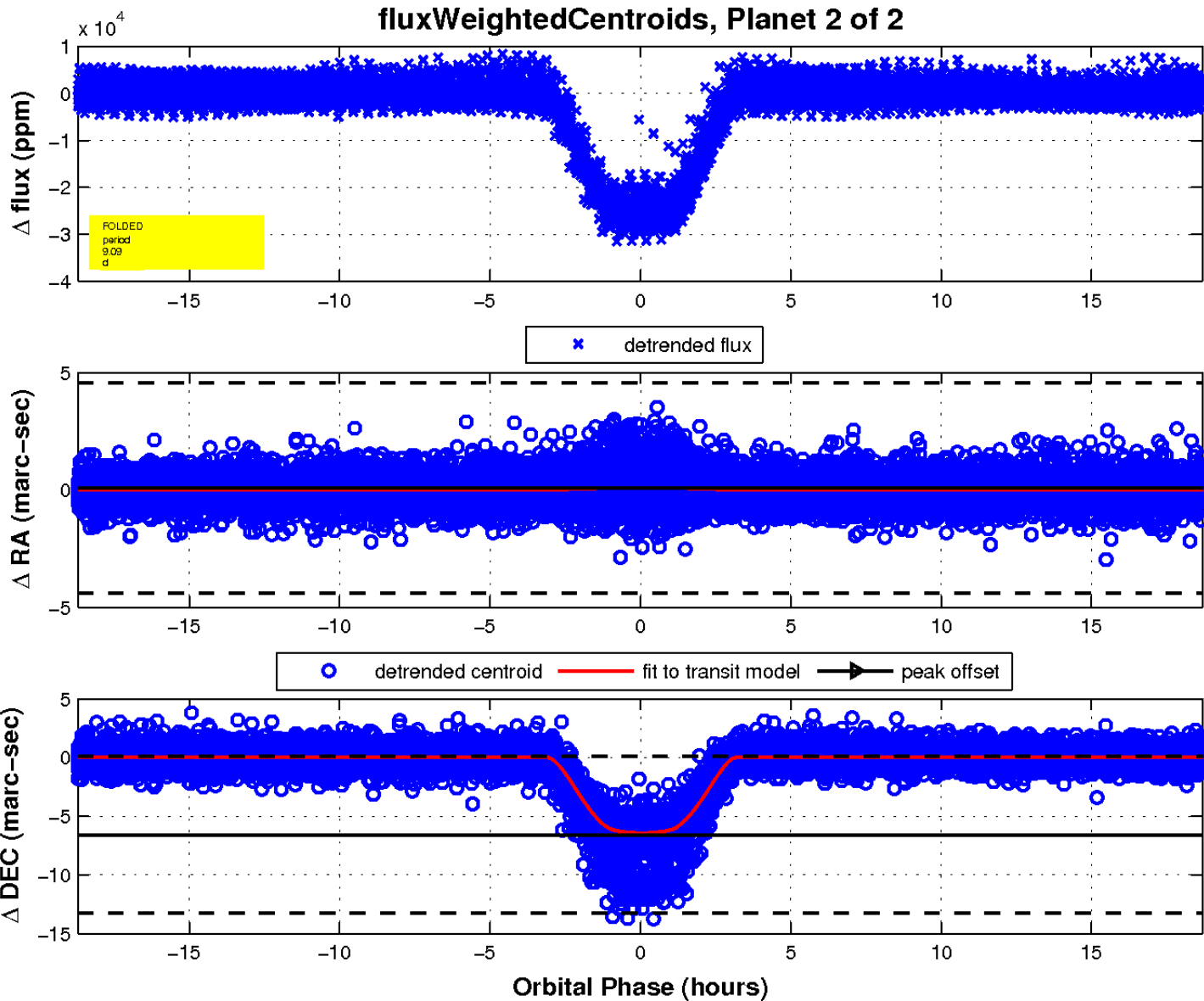
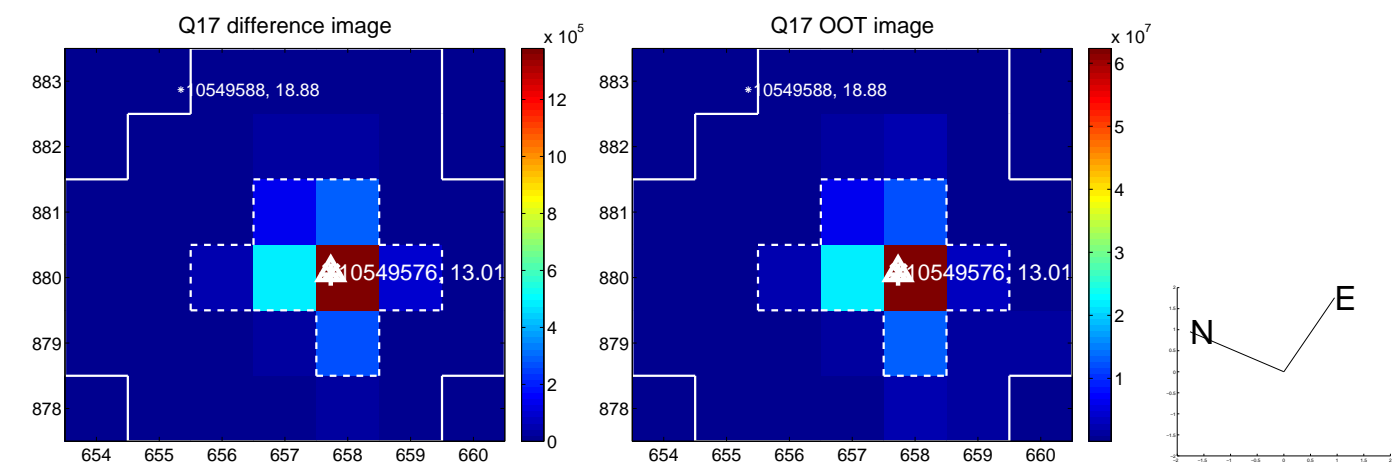
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

