

KIC 005473535

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})
005473535-01	OBS	3894.01	1.673652	131.676132	283.5	2.088	30.0	33.6	1.05	6444	2.37	2116.32
005473535-02	OBS	No	0.836822	131.675773	87.6	1.941	11.5	12.2	1.05	6444	1.16	5332.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005473535-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
005473535-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET

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.

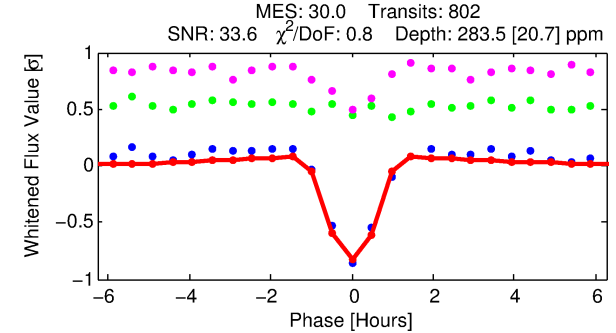
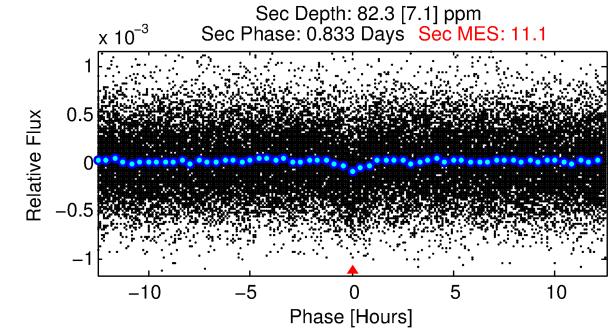
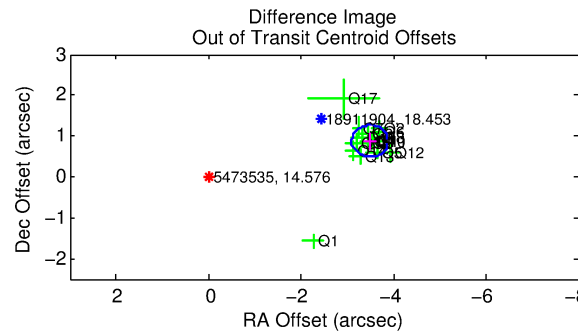
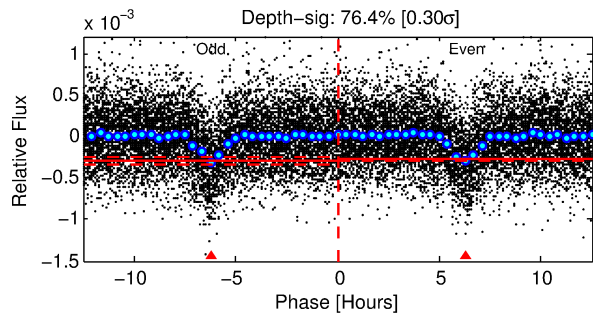
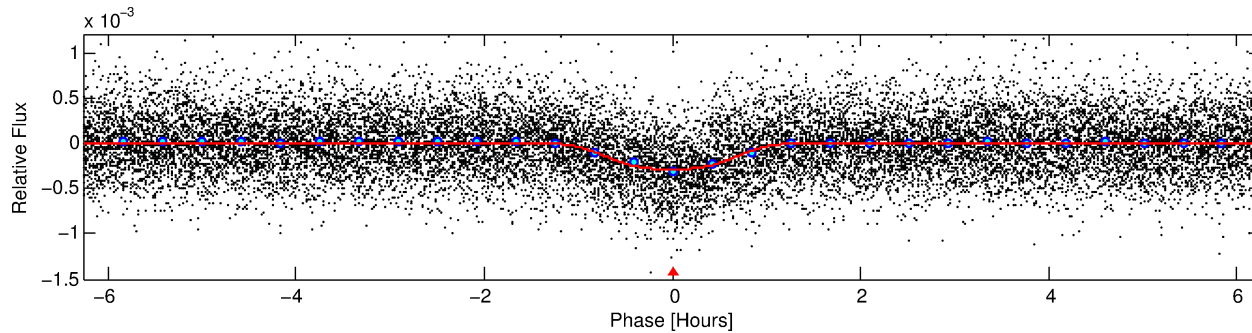
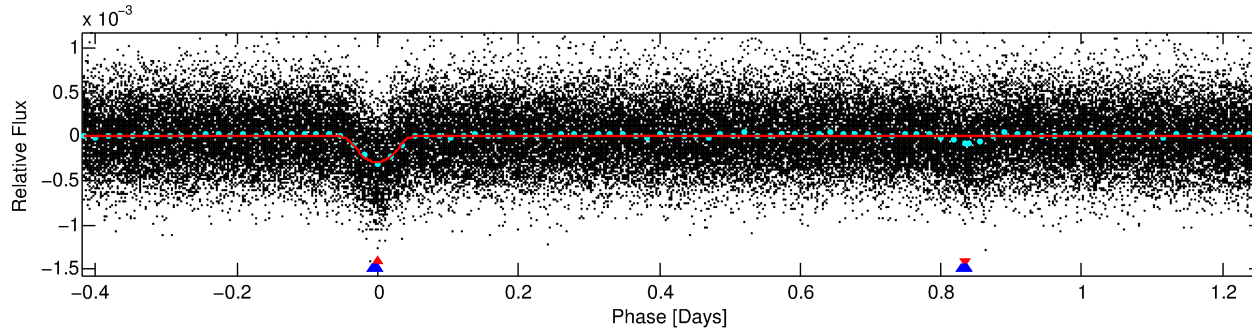
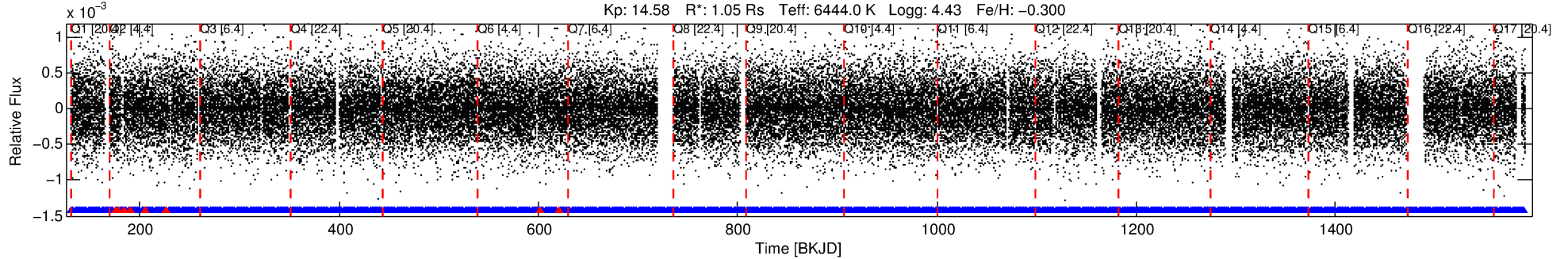
Ephemeris Match Information For 005473535-01

No Significant Match Found

DV One-Page Summary

KIC: 5473535 Candidate: 1 of 2 Period: 1.674 d
KOI: K03894.01 Corr: 0.906

Kp: 14.58 R*: 1.05 Rs Teff: 6444.0 K Logg: 4.43 Fe/H: -0.300



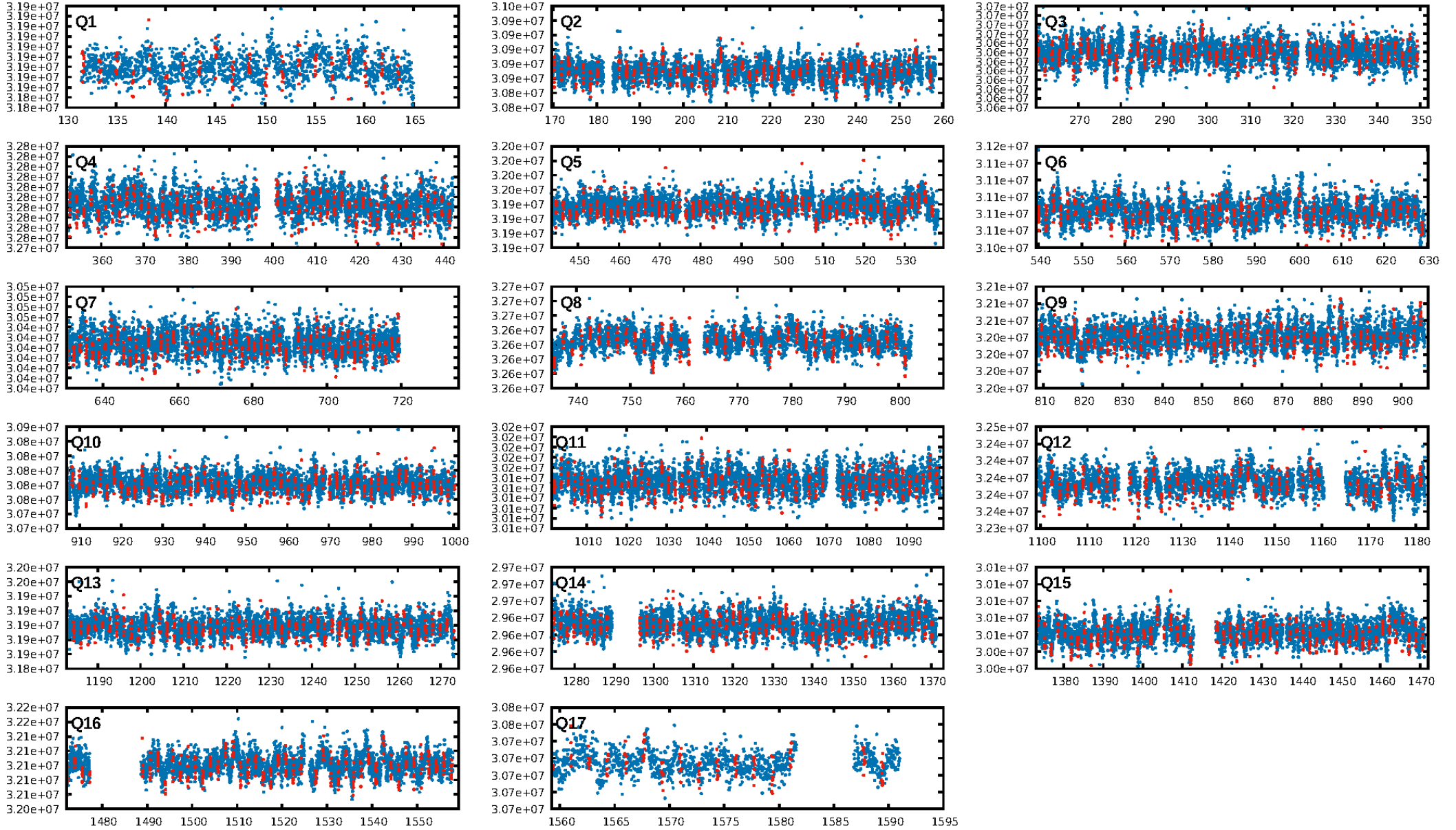
DV Fit Results:

Period = 1.67365 [0.00000] d
Epoch = 131.6761 [0.0008] BKJD
Rp/R* = 0.0206 [0.0012]
a/R* = 2.02 [0.14]
b = 0.98 [0.01]
Seff = 2116.32 [827.19]
Teq = 1730 [169] K
Rp = 2.36 [0.76] Re
a = 0.0285 [0.0073] AU
Ag = 6.55 [2.57] [2.16σ]
Teffp = 4278 [213] K [9.38σ]

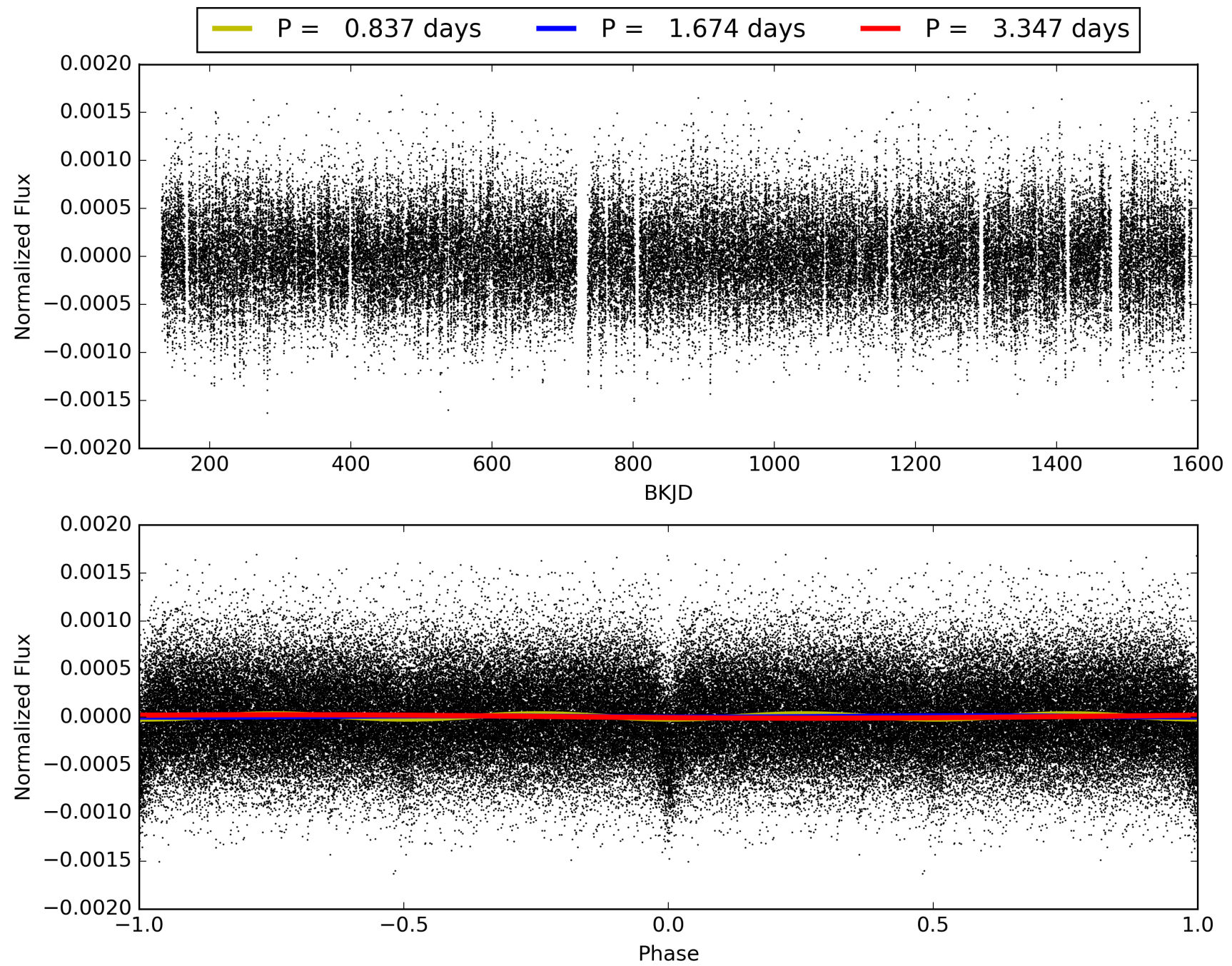
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [7.05σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.38e-185
RollingBand-fgt: 0.99 [758/766]
GhostDiagnostic-chr: 1.703
Centroid-sig: 0.0%
Centroid-so: 1.860 arcsec [3.32σ]
OotOffset-rm: 3.596 arcsec [27.66σ]
KicOffset-rm: 3.483 arcsec [26.34σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 005473535-01, PDC Light Curves

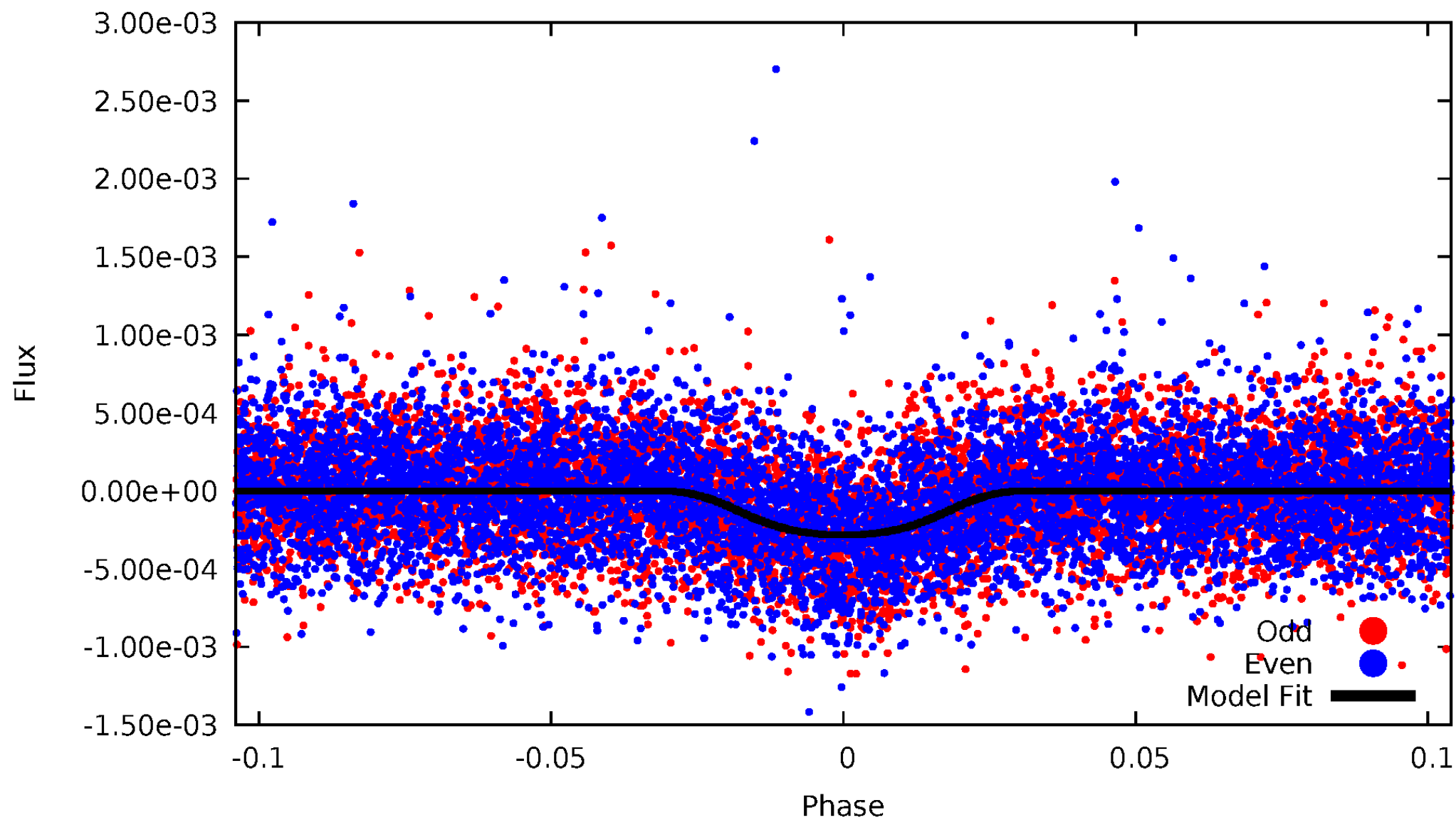


TCE 005473535-01



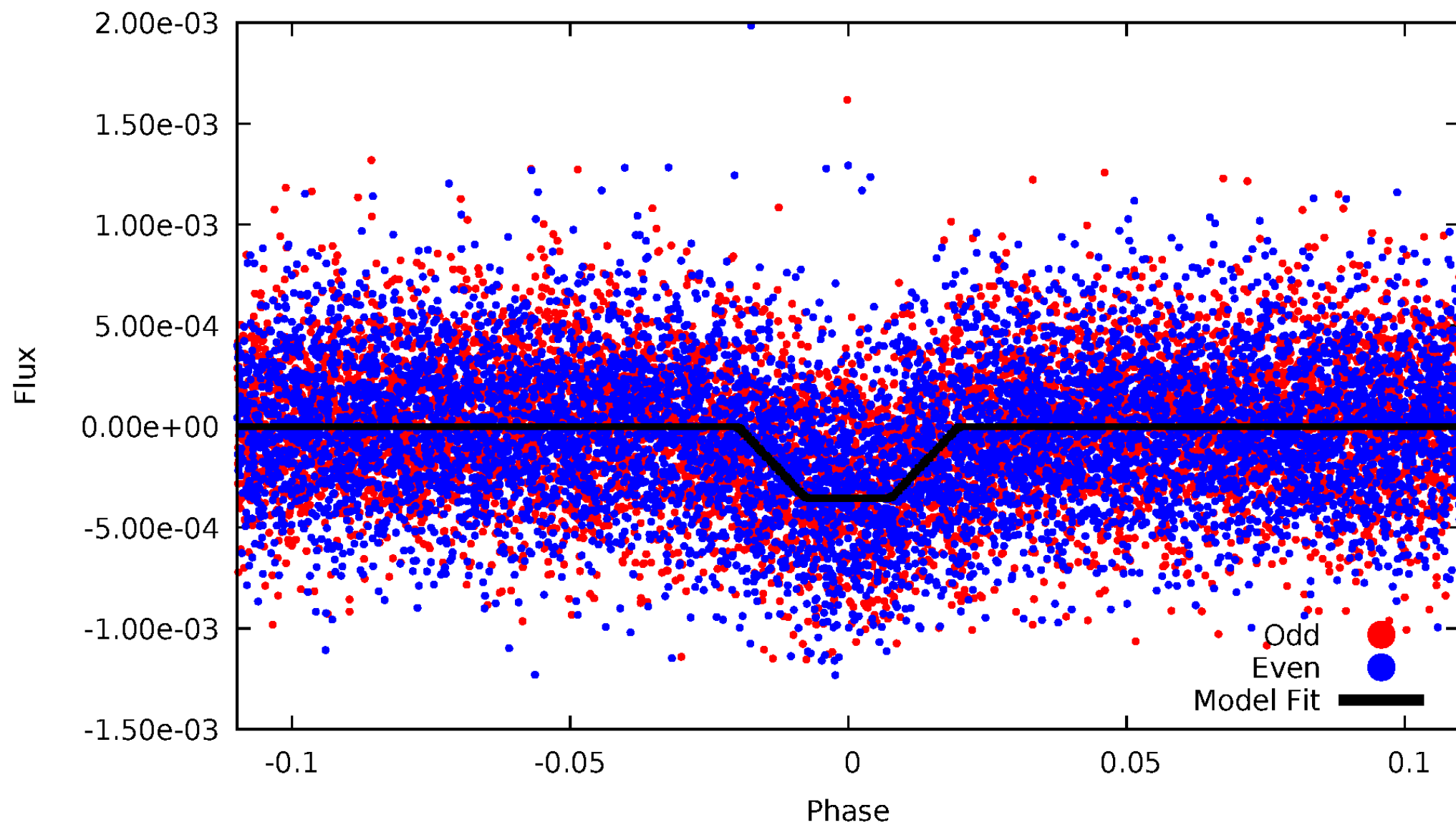
DV Odd/Even

TCE 005473535-01

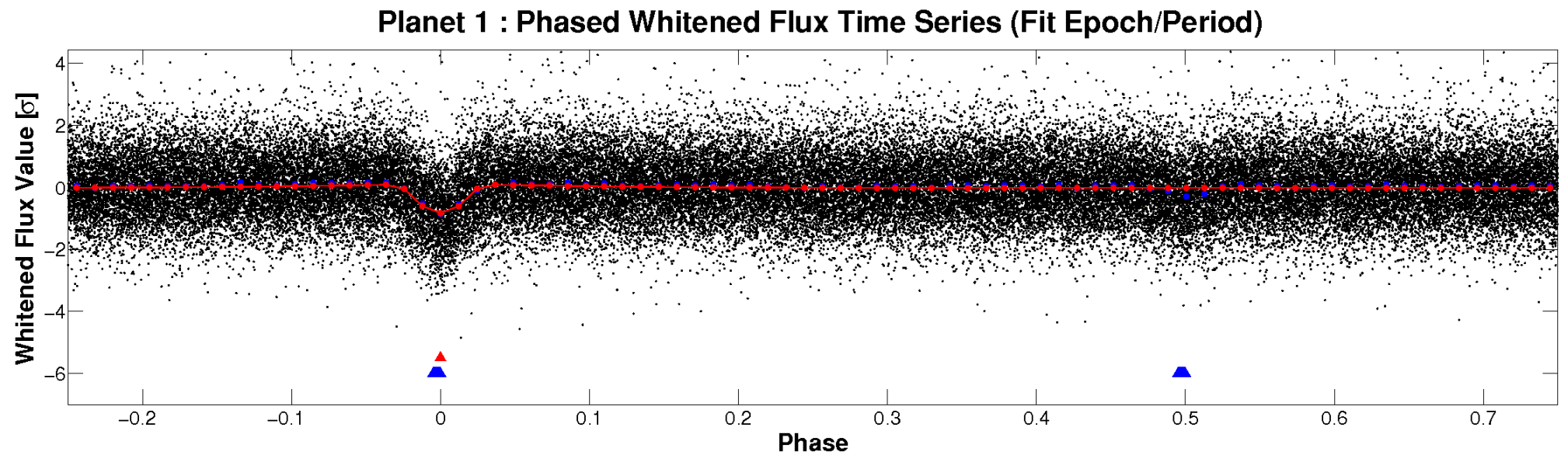
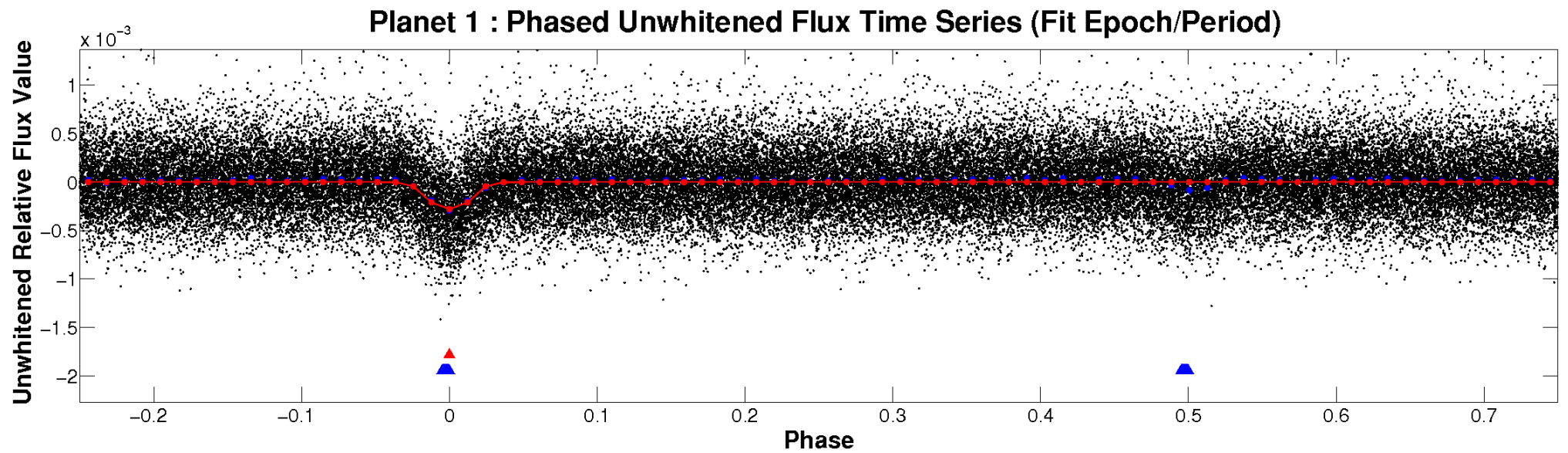


ALT Odd/Even

TCE 005473535-01

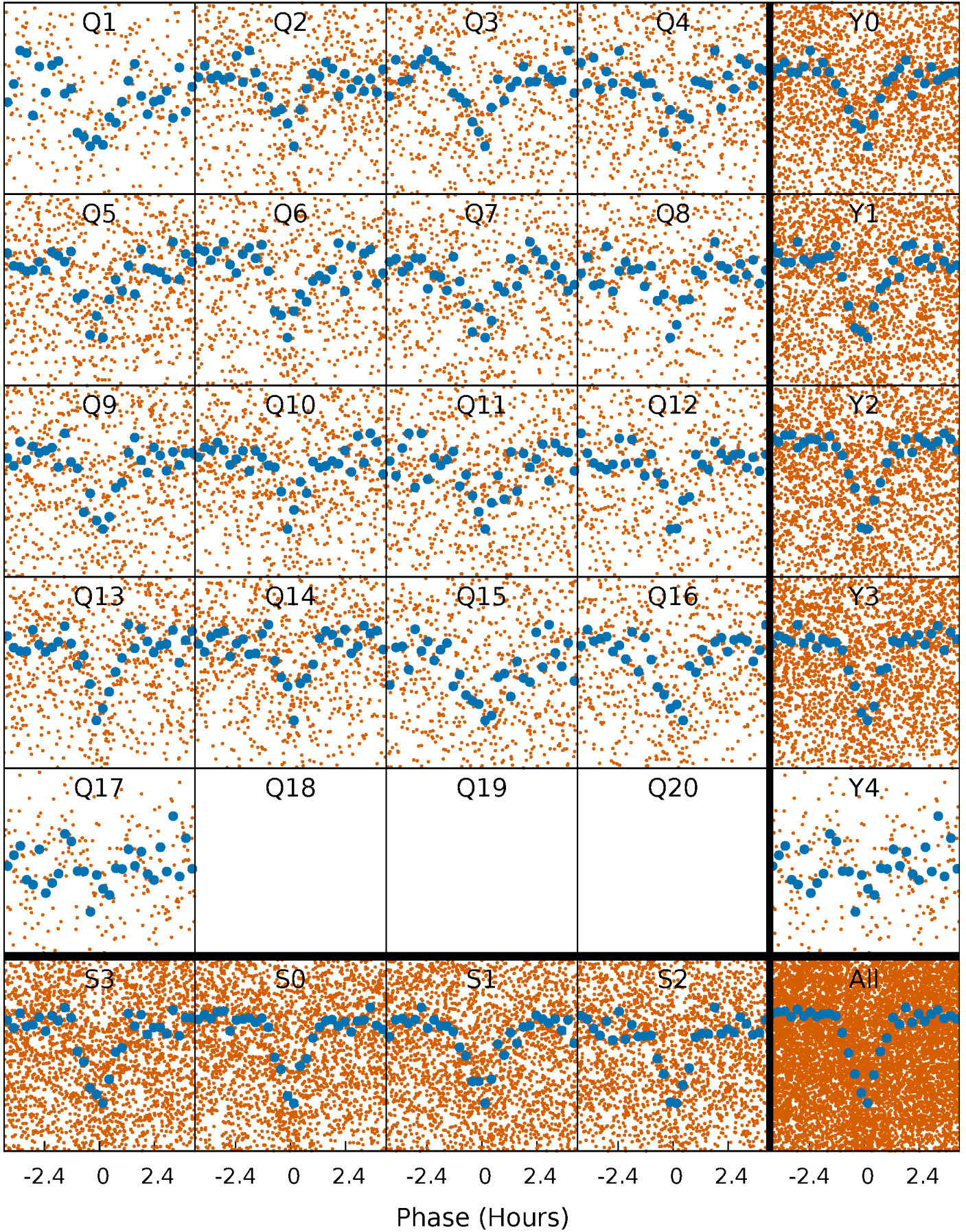


Non-Whitened Vs. Whitened Light Curve



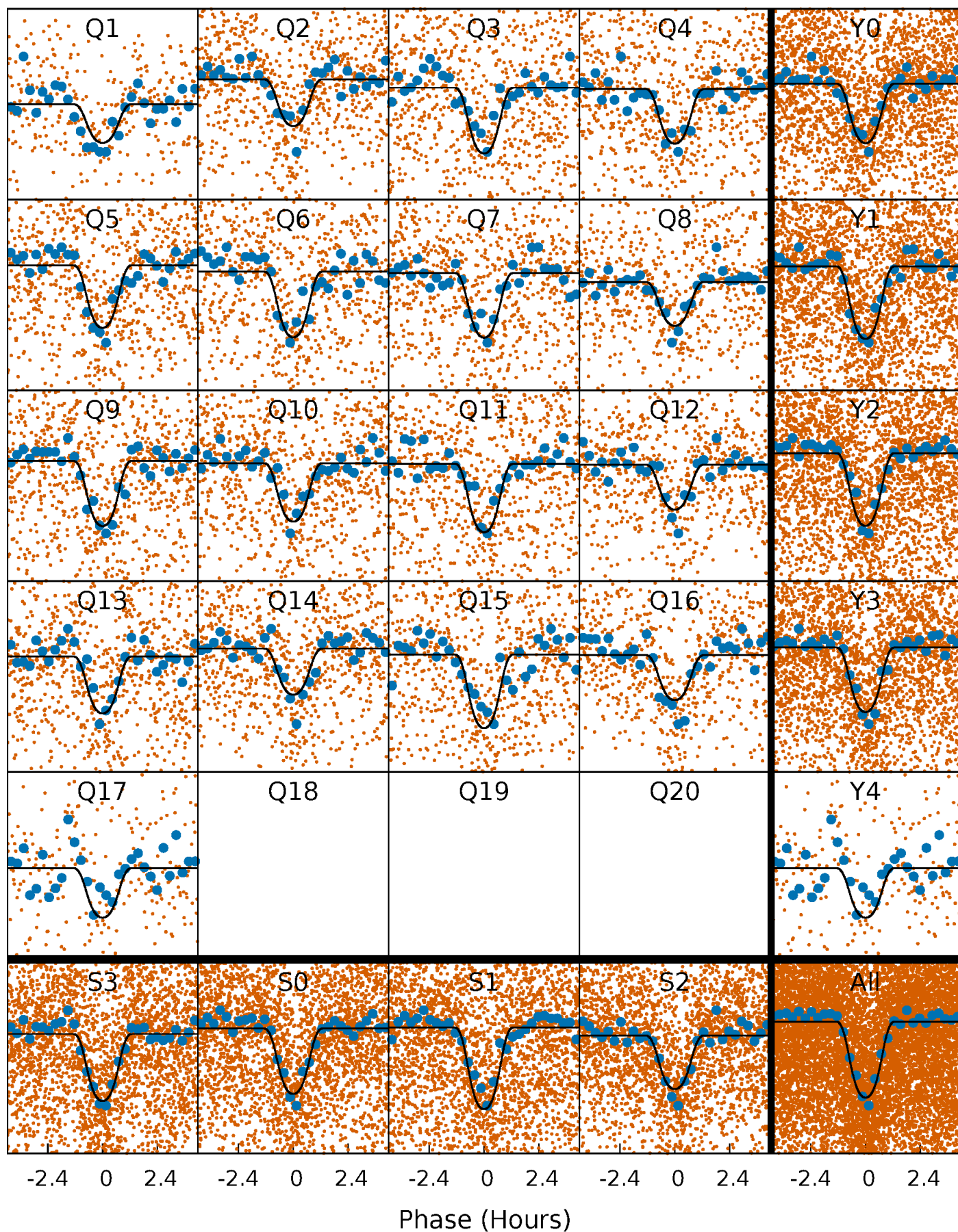
PDC Quarter-Phased Transit Curves

TCE 005473535-01 P= 1.673652 Days $T_0=131.676132$ (BKJD)



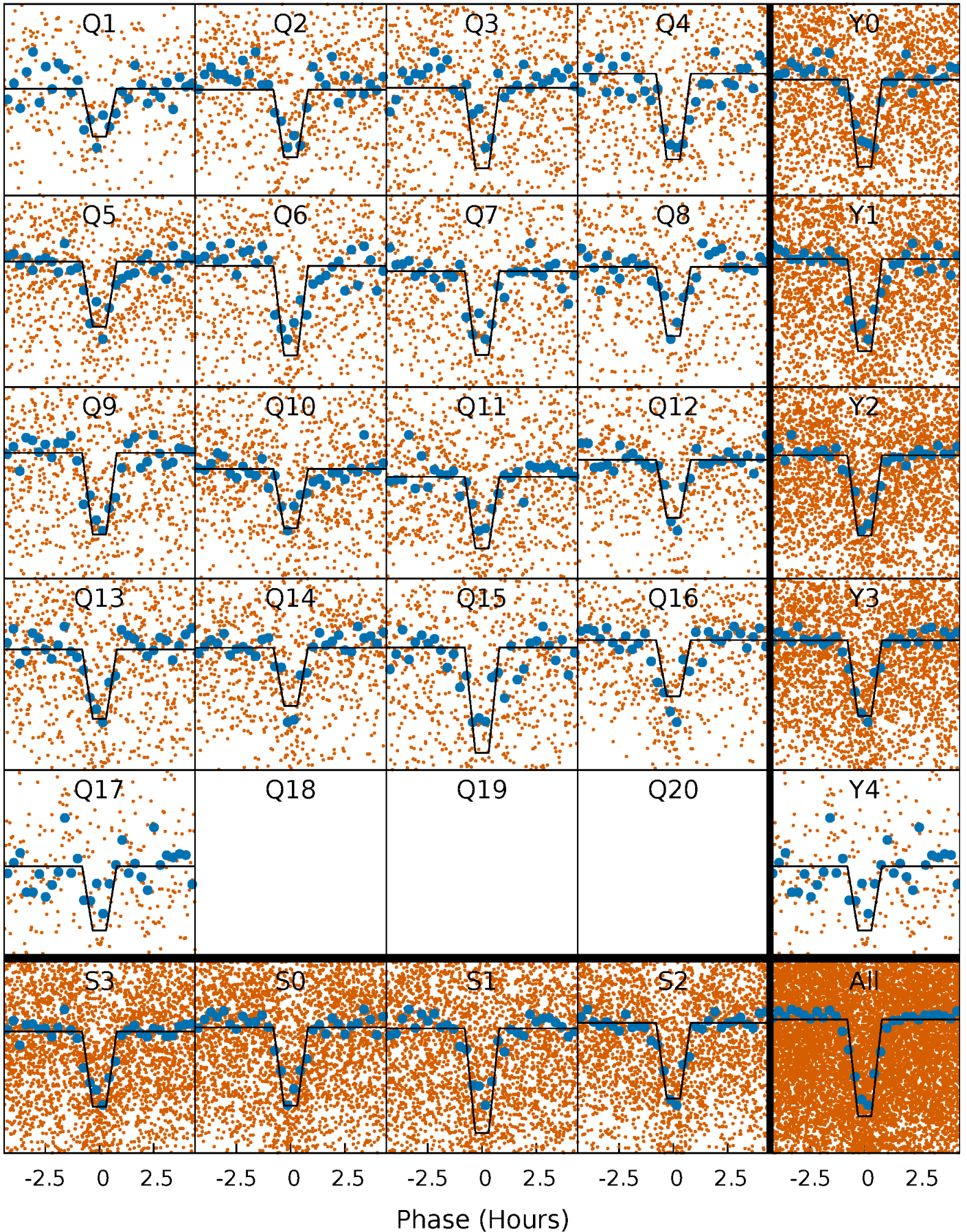
DV Quarter-Phased Transit Curves

TCE 005473535-01 P= 1.673652 Days $T_0=131.676132$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

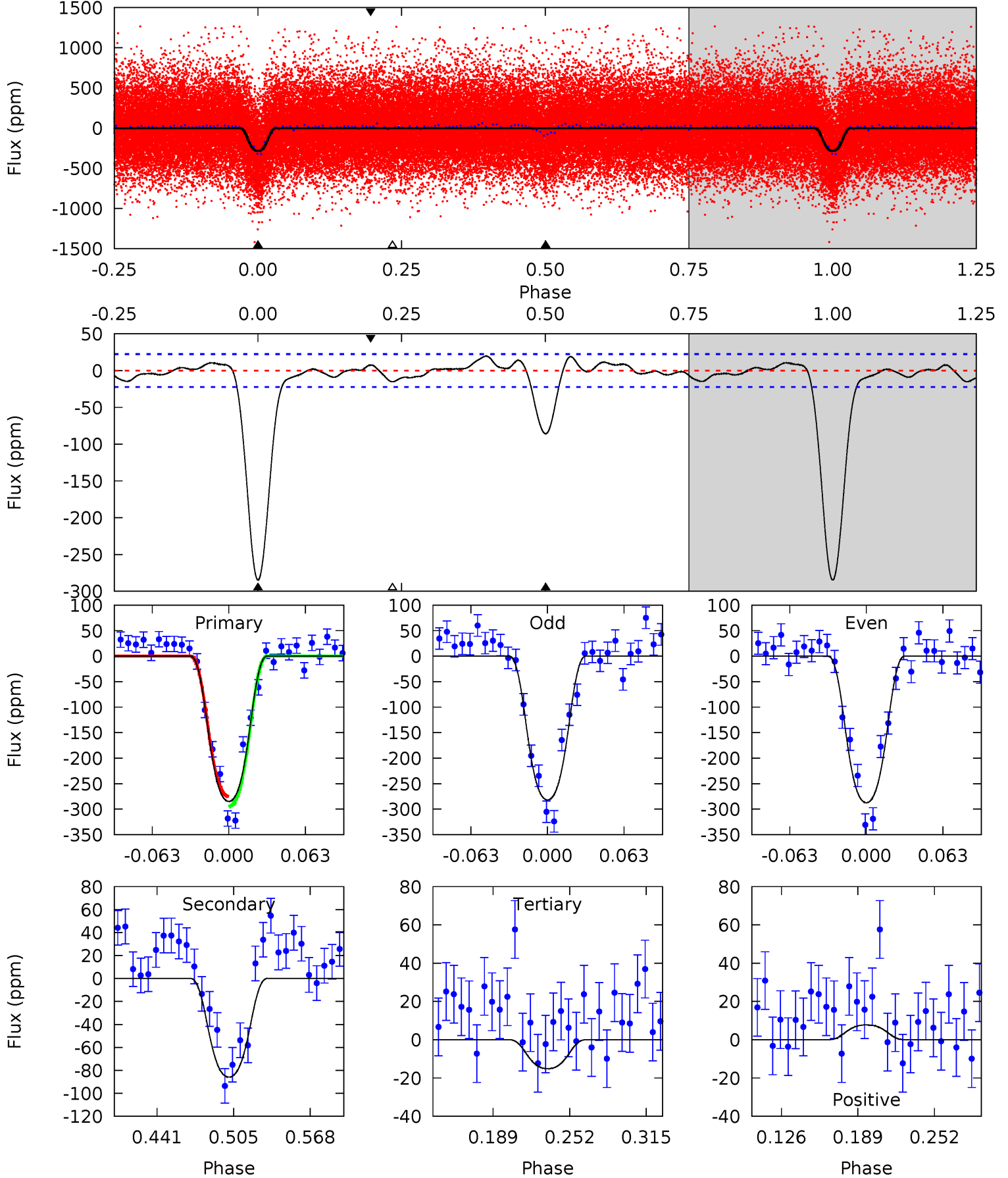
TCE 005473535-01 P= 1.673670 Days $T_0=131.668855$ (BKJD)



DV Model-Shift Uniqueness Test

005473535-01, P = 1.673652 Days, E = 130.002480 Days

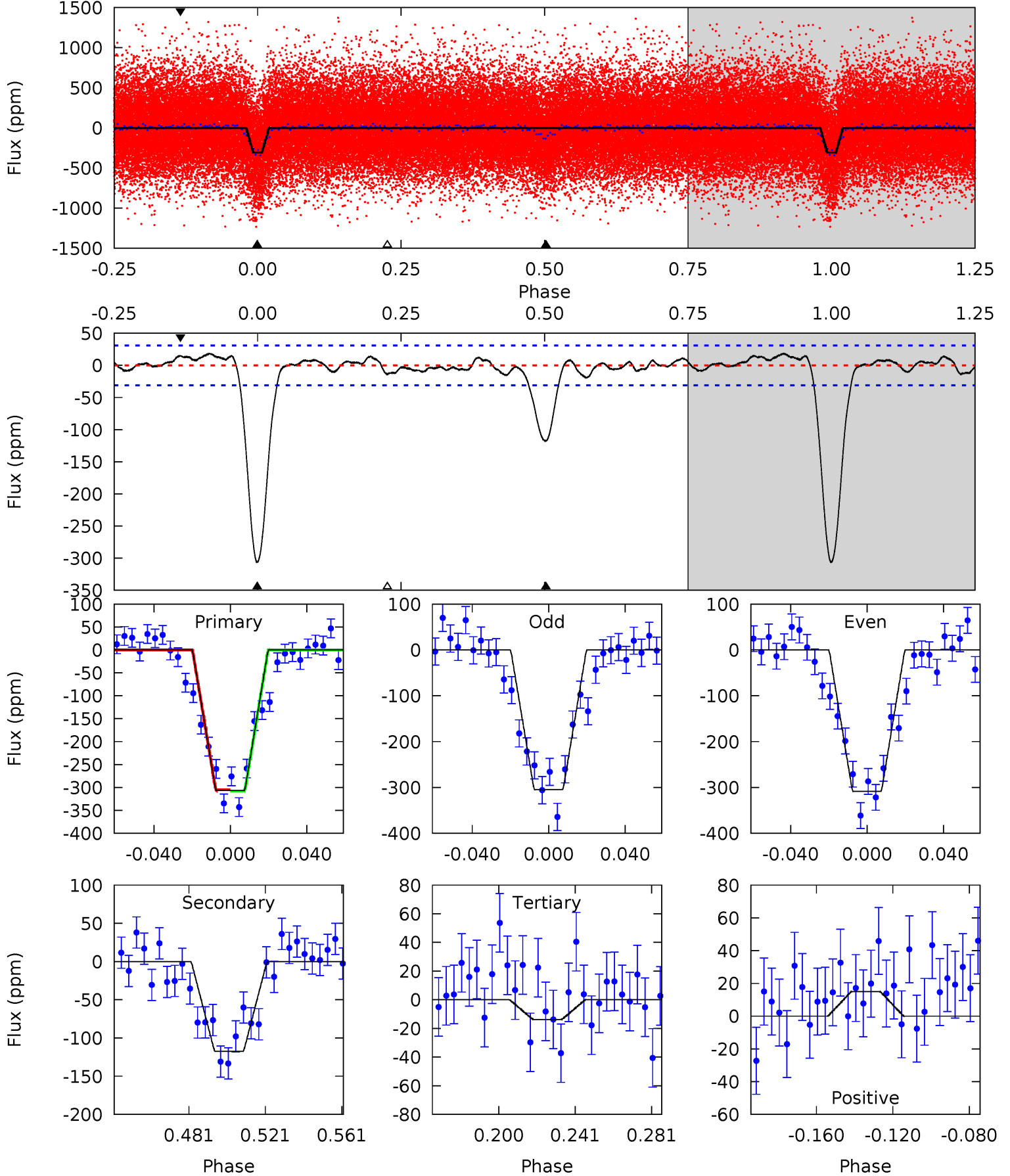
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
59.2	17.9	3.14	1.61	4.66	1.86	1.49	56.0	57.6	14.7	16.2	0.57	1.01	0.06	2.03



Alt Model-Shift Uniqueness Test

005473535-01, P = 1.673670 Days, E = 129.995185 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.0	18.0	2.11	2.30	4.75	2.05	1.20	44.9	44.7	15.9	15.7	0.29	0.99	0.06	0.25



Stellar Parameters For KIC 005473535

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6444^{+155}_{-222}	$4.433^{+0.065}_{-0.195}$	$-0.300^{+0.250}_{-0.300}$	$1.053^{+0.332}_{-0.111}$	$1.094^{+0.152}_{-0.137}$	$1.320^{+0.366}_{-0.683}$
	+2%/-3%	+1%/-4%	+83%/-100%	+32%/-11%	+14%/-13%	+28%/-52%
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 005473535-01 / KOI 3894.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-86 ± 5	$2.43^{+0.43}_{-0.28}$	2453^{+192}_{-123}	4452^{+158}_{-149}	$6.351^{+1.554}_{-1.676}$
Alt.	-118 ± 7	$2.21^{+0.39}_{-0.22}$	2453^{+173}_{-119}	4940^{+177}_{-189}	10^{+2}_{-2}

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

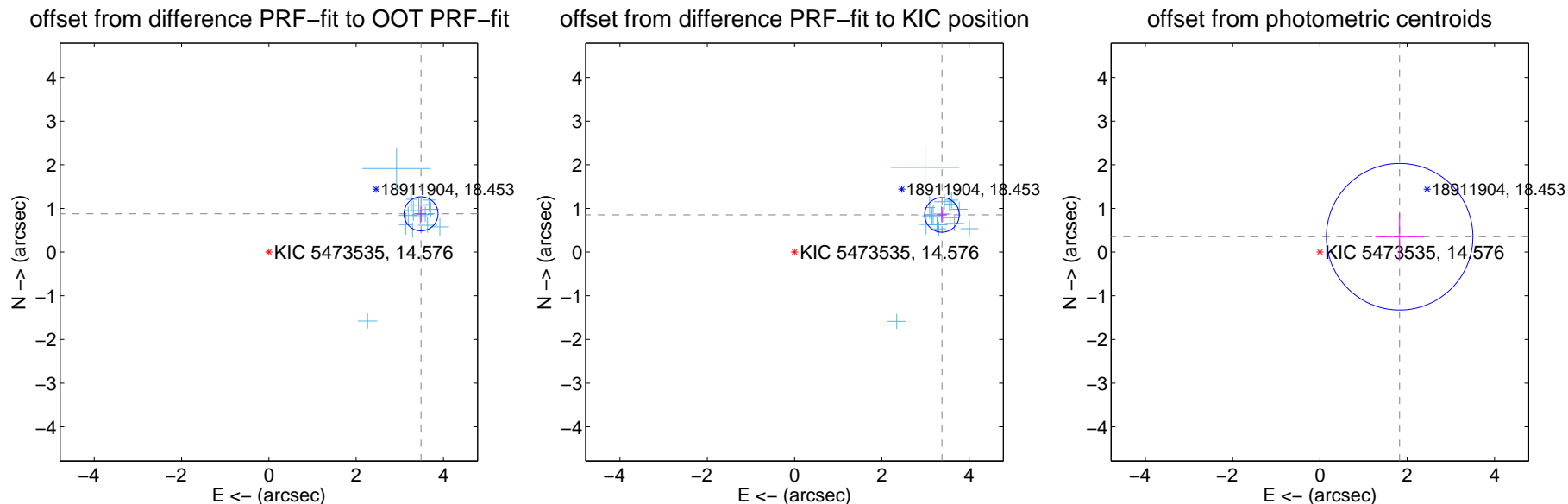
DV Centroid Data

Supplemental centroid analysis for 005473535-01. Kepler magnitude: 14.58. Transit SNR 33.64

There are 17 quarters with good PRF difference image offsets

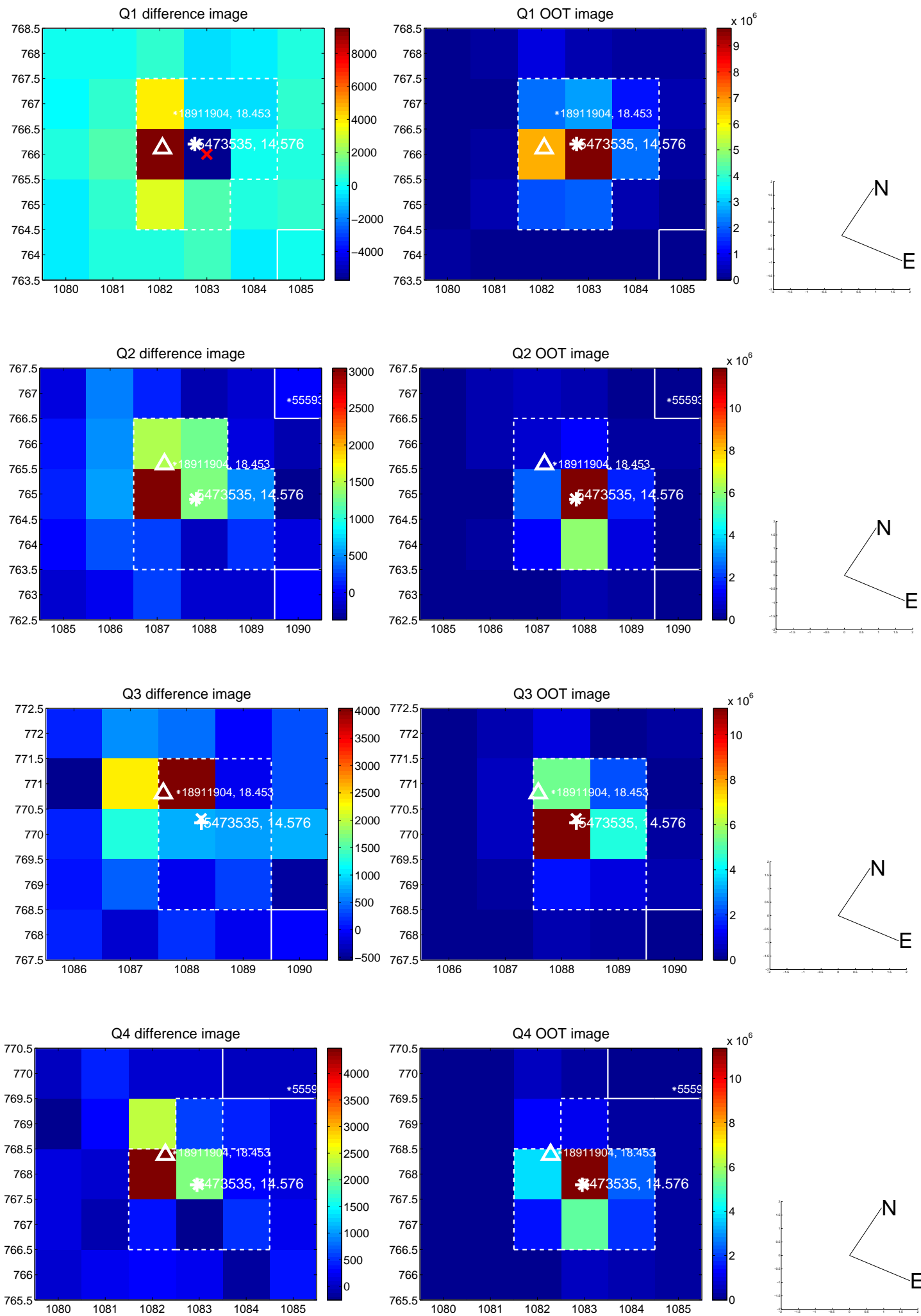
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.596 ± 0.130	27.66	-3.487 ± 0.111	0.876 ± 0.181
PRF-fit source offset from KIC position	3.483 ± 0.132	26.34	-3.378 ± 0.111	0.852 ± 0.178
photometric centroid source offset	1.86 ± 0.56	3.32	-1.83 ± 0.56	0.35 ± 0.54

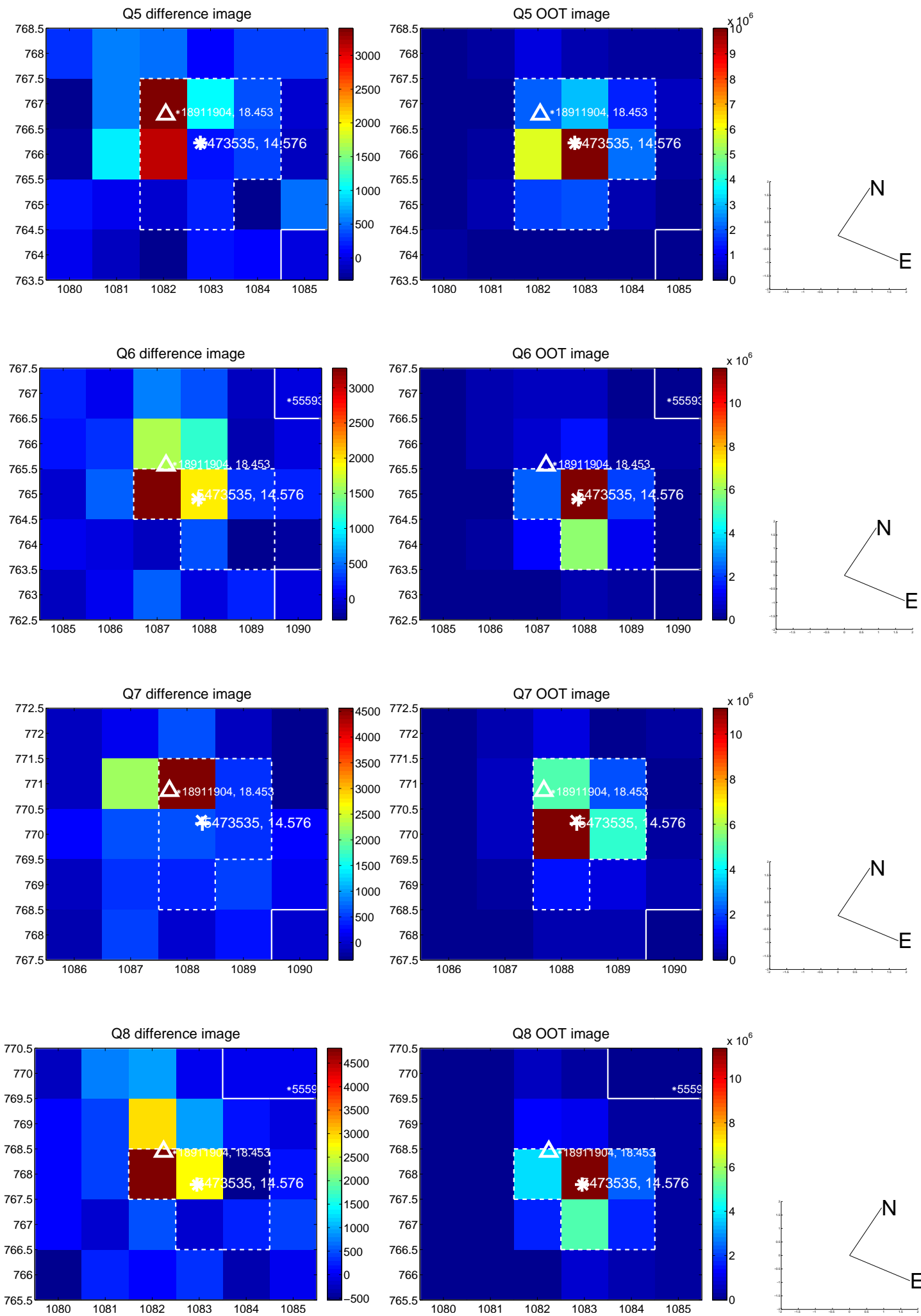


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

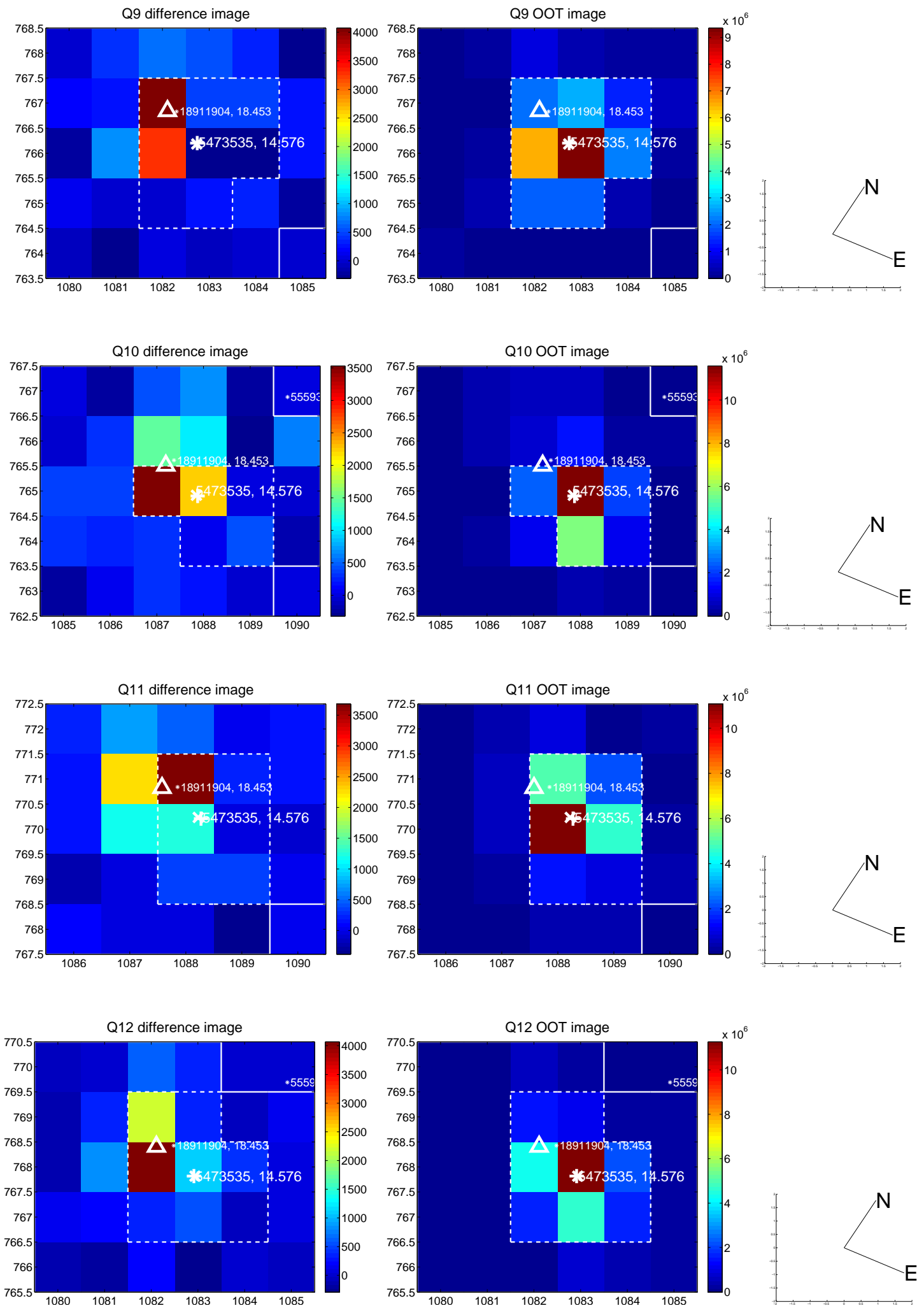
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



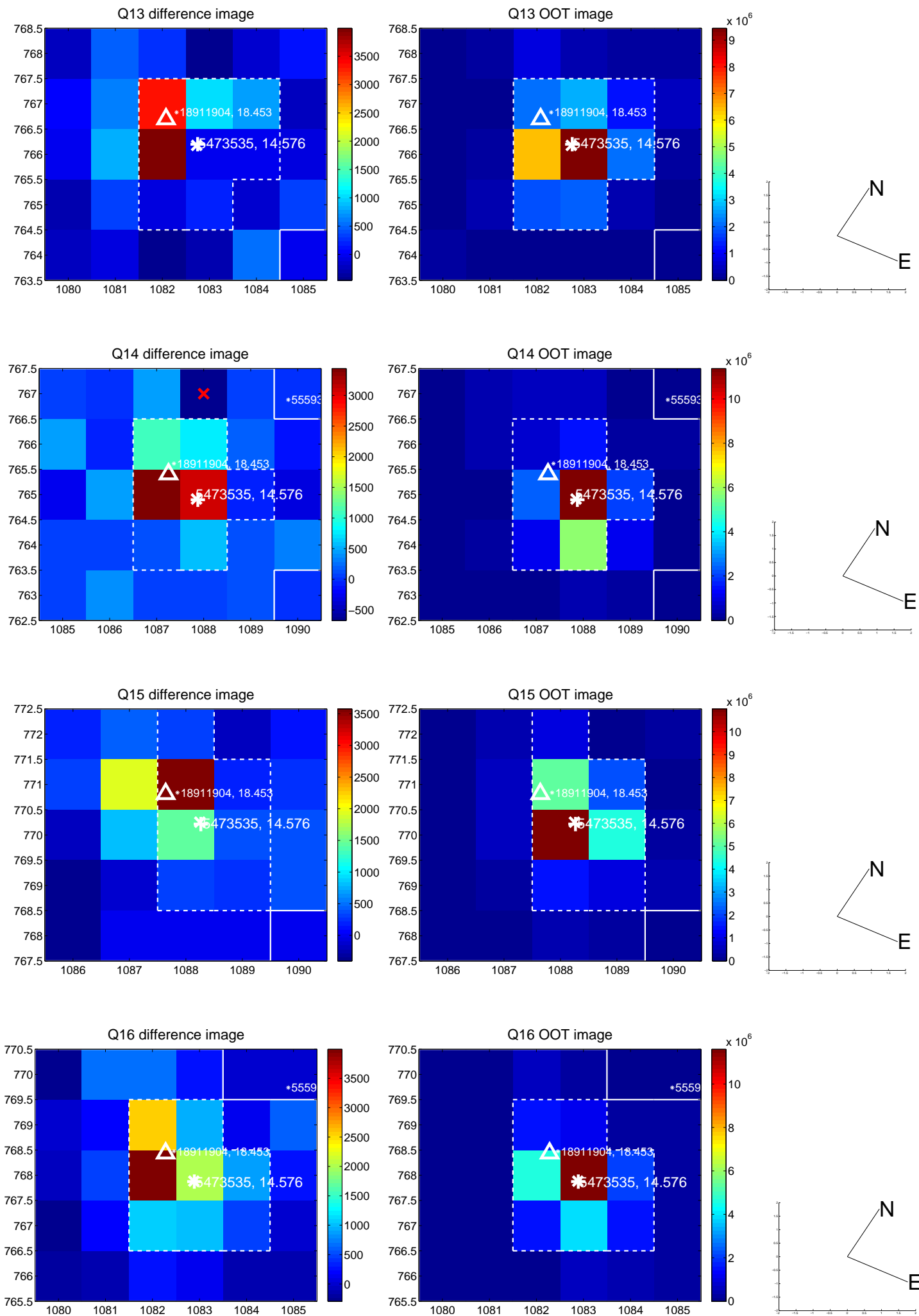
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



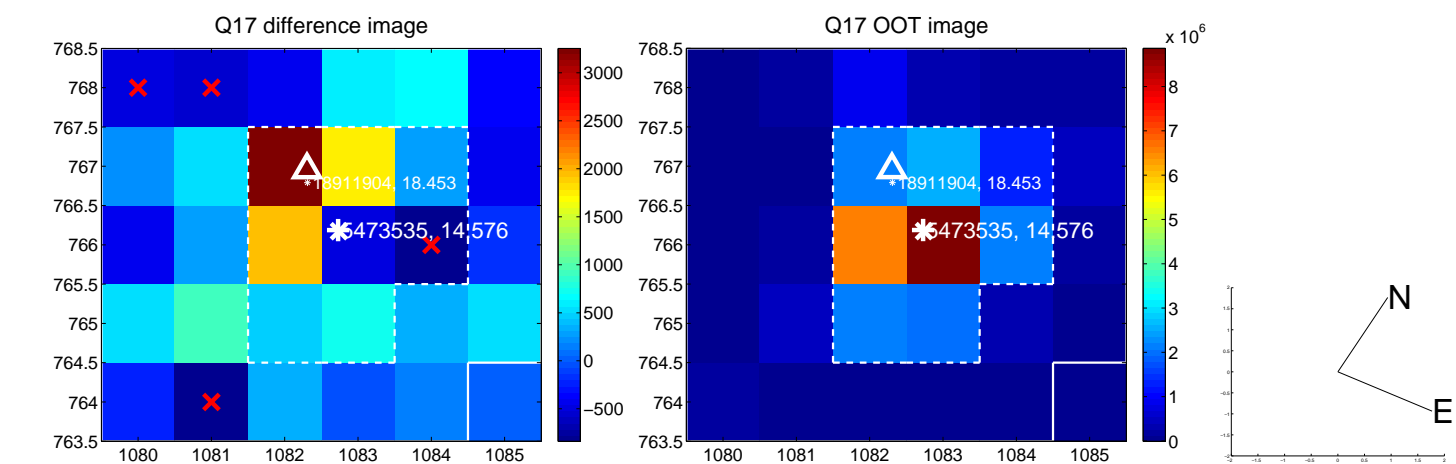
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



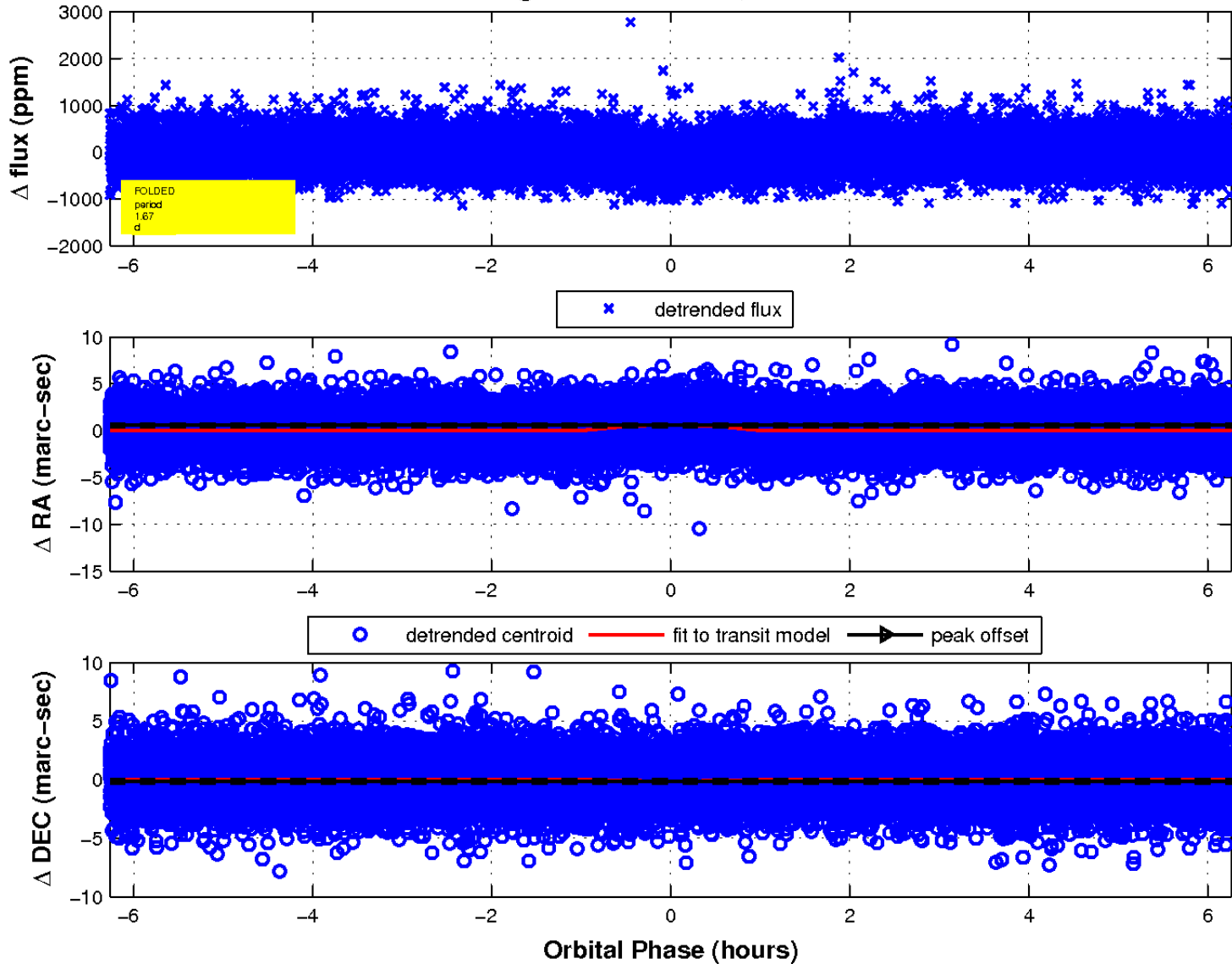
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

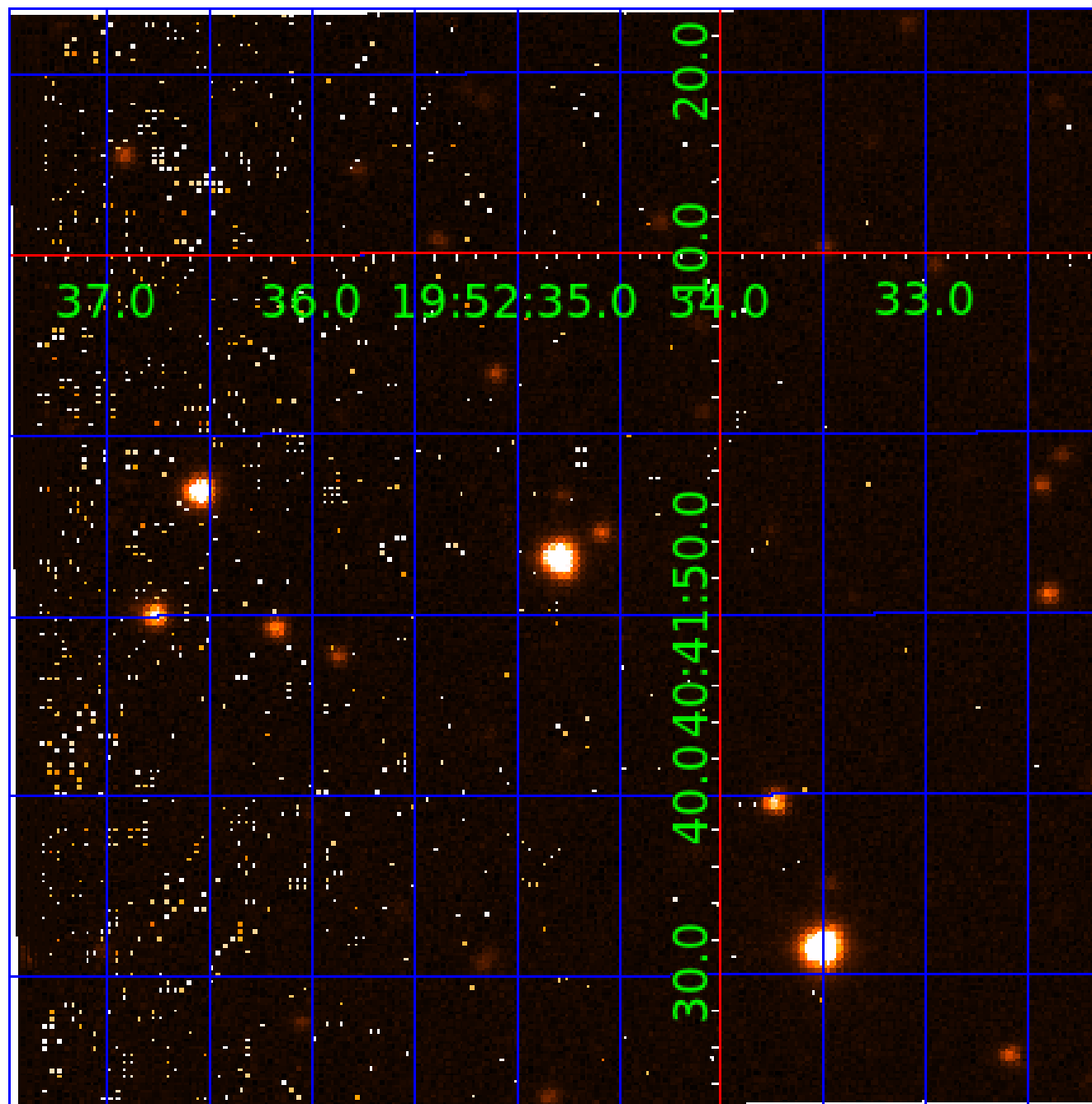


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005473535

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})
005473535-01	OBS	3894.01	1.673652	131.676132	283.5	2.088	30.0	33.6	1.05	6444	2.37	2116.32
005473535-02	OBS	No	0.836822	131.675773	87.6	1.941	11.5	12.2	1.05	6444	1.16	5332.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005473535-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
005473535-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET

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 005473535-02

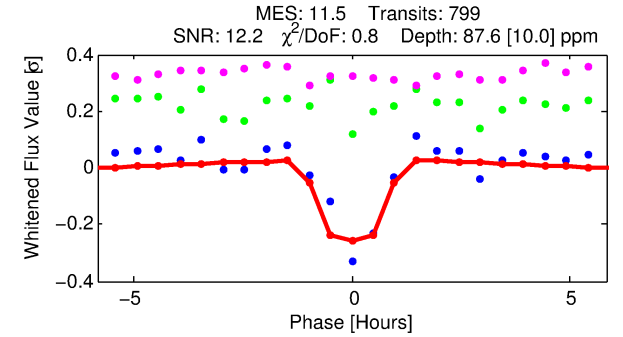
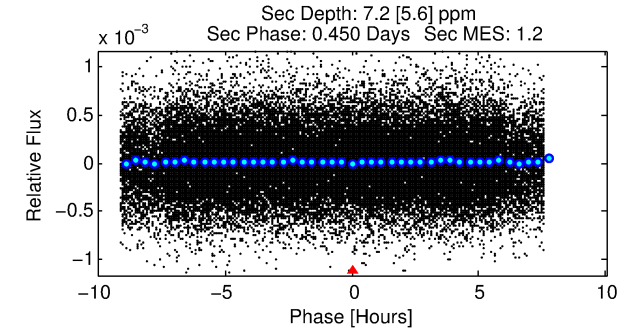
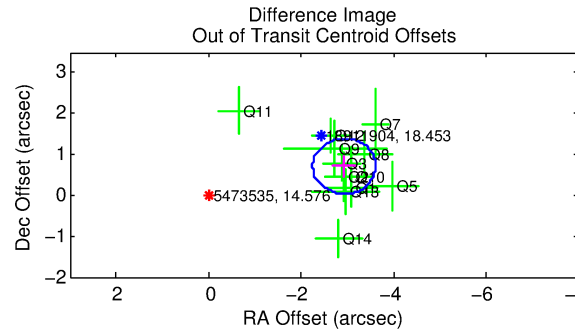
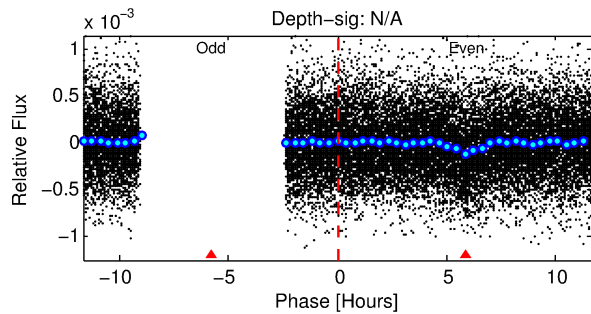
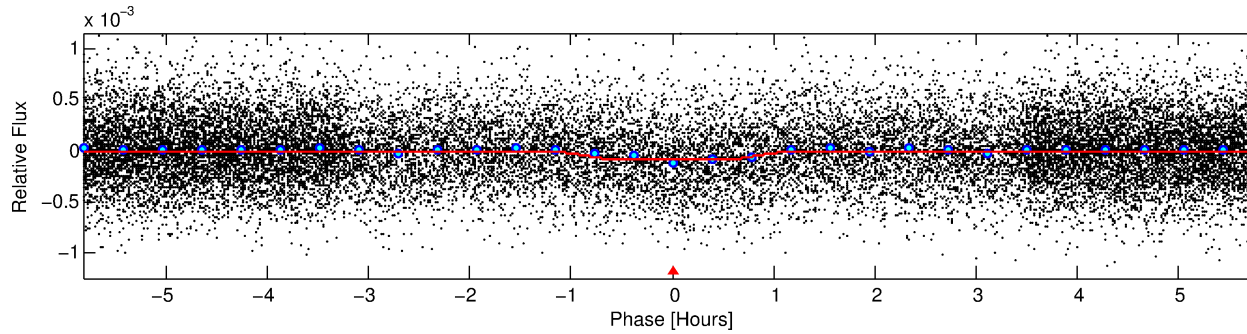
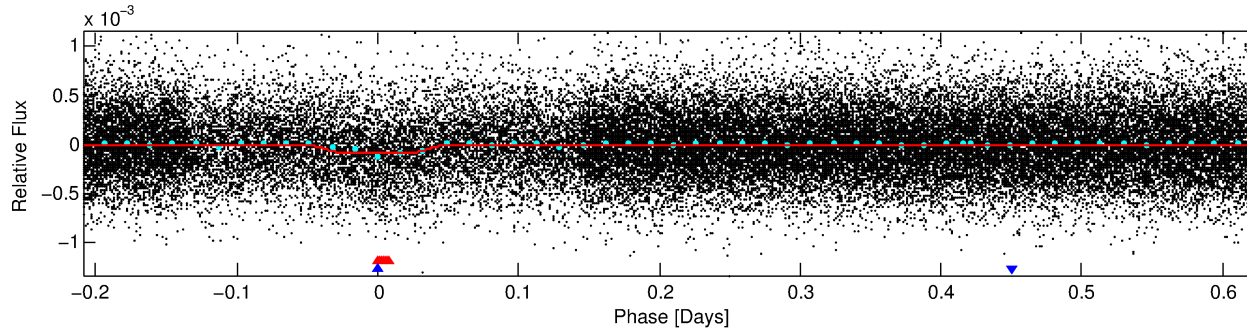
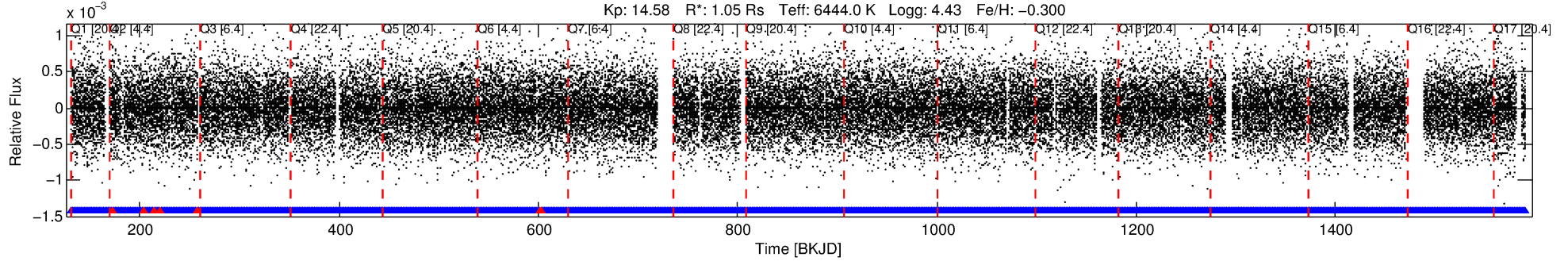
No Significant Match Found

DV One-Page Summary

KIC: 5473535 Candidate: 2 of 2 Period: 0.837 d

KOI: K03894 Corr: No Ephemeris Match

Kp: 14.58 R*: 1.05 Rs Teff: 6444.0 K Logg: 4.43 Fe/H: -0.300



DV Fit Results:

Period = 0.83682 [0.00001] d
Epoch = 131.6758 [0.0021] BKJD
Rp/R* = 0.0101 [0.0053]
a/R* = 1.74 [3.56]
b = 0.91 [0.61]
Seff = 5332.83 [2084.40]
Teff = 2179 [213] K
Rp = 1.16 [0.71] Re
a = 0.0179 [0.0046] AU
Ag = 0.95 [1.29] [-0.04σ]
Teffp = 3326 [1093] K [1.03σ]

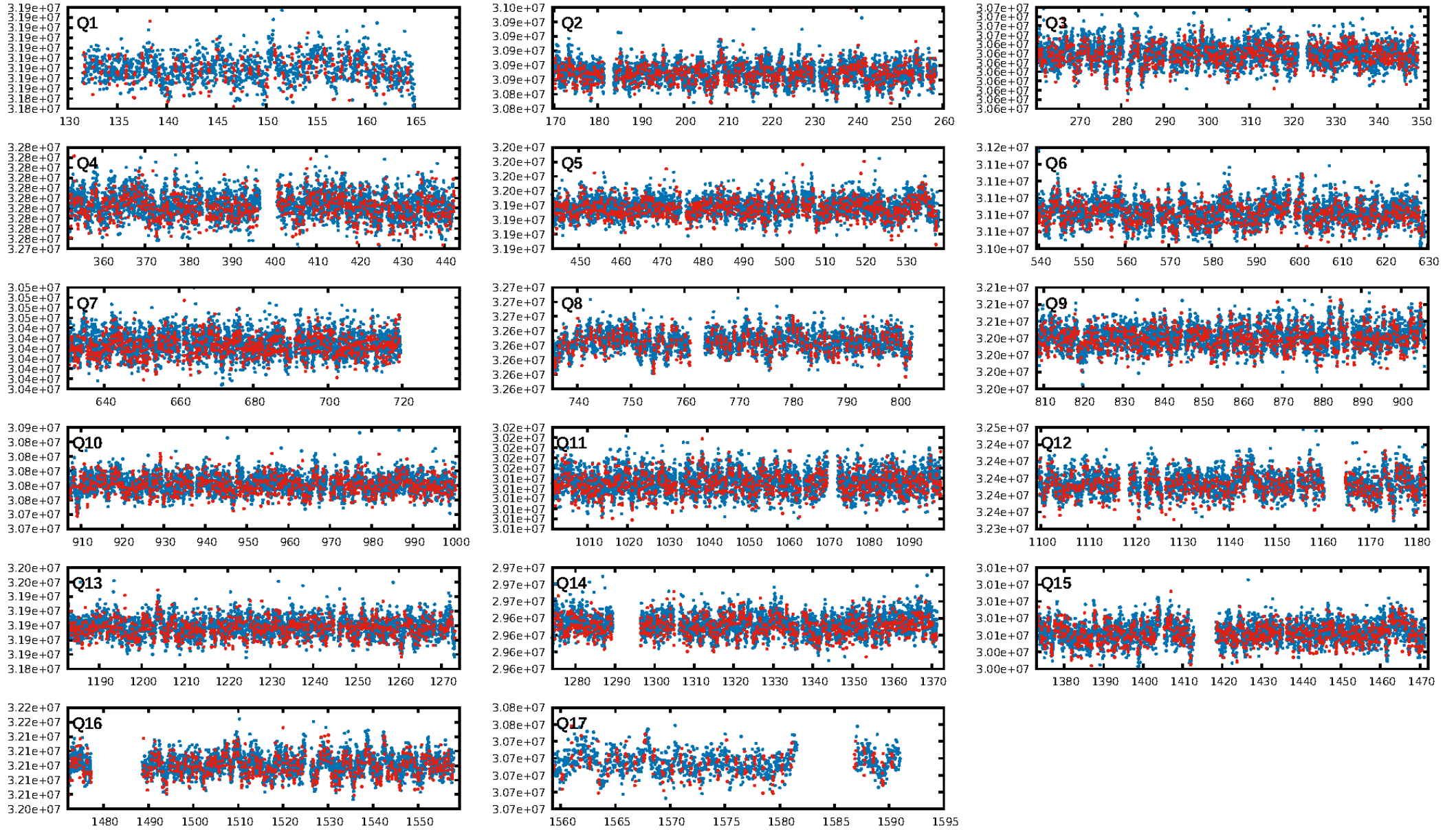
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [7.05σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.99e-29
RollingBand-fgt: 0.99 [756/763]
GhostDiagnostic-chr: 2.996
Centroid-sig: 0.0%
Centroid-so: 3.604 arcsec [3.31σ]
OotOffset-rm: 3.016 arcsec [13.35σ]
KicOffset-rm: 3.157 arcsec [13.74σ]
OotOffset-st: 3/3/2/4 [12]
KicOffset-st: 3/3/2/4 [12]
DiffImageQuality-fgm: 0.83 [10/12]
DiffImageOverlap-fno: 1.00 [17/17]

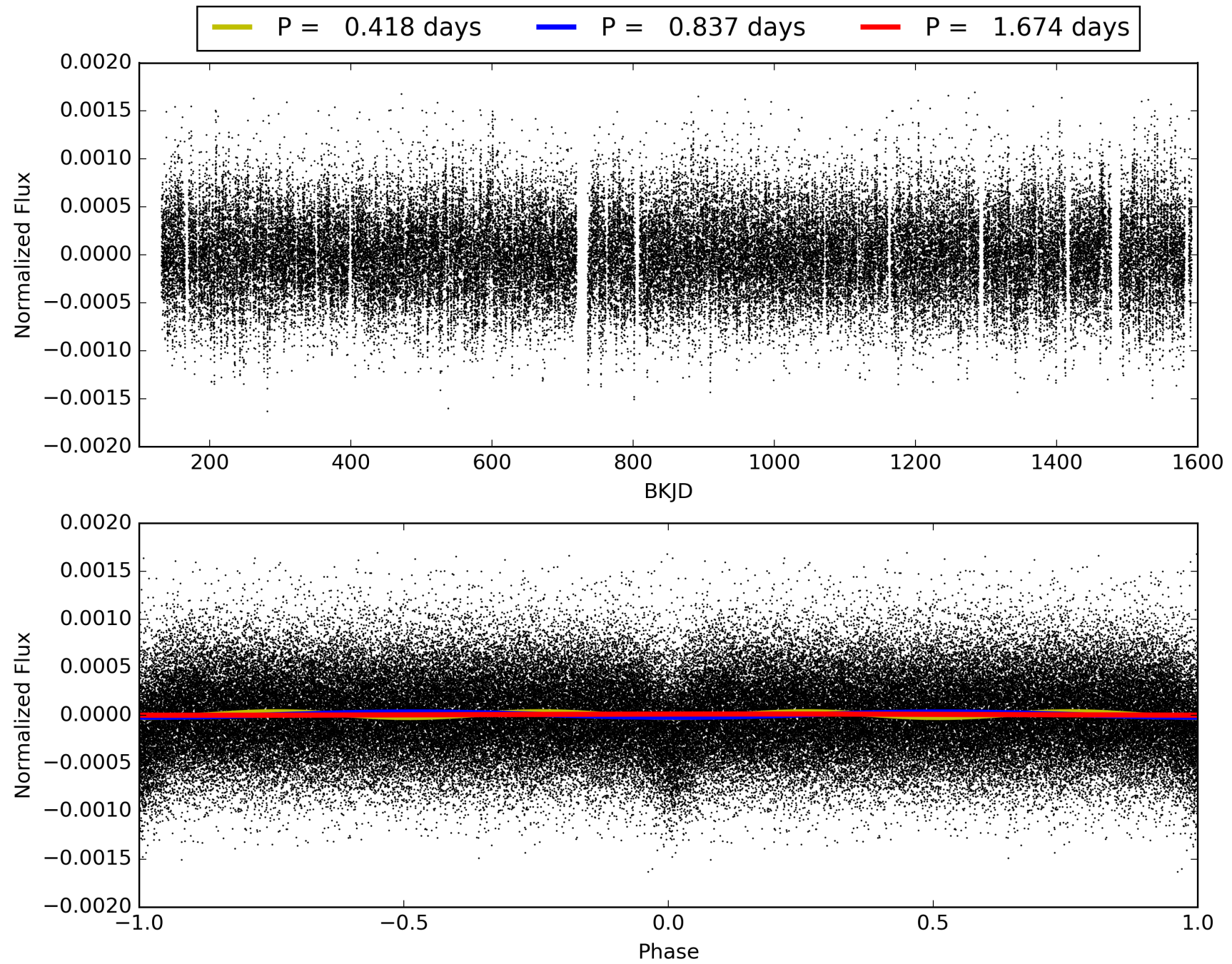
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:17:18 Z

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

TCE 005473535-02, PDC Light Curves

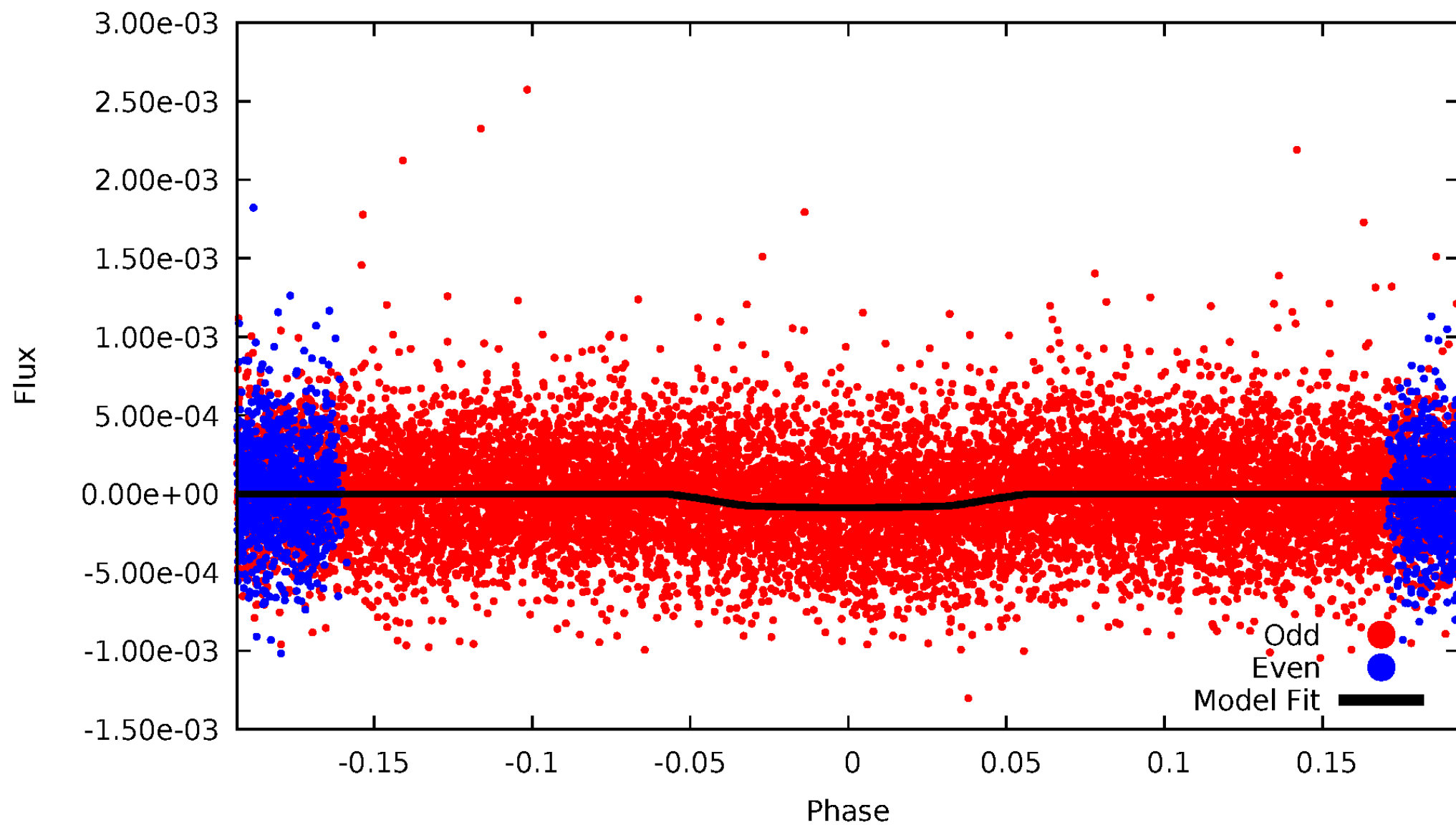


TCE 005473535-02



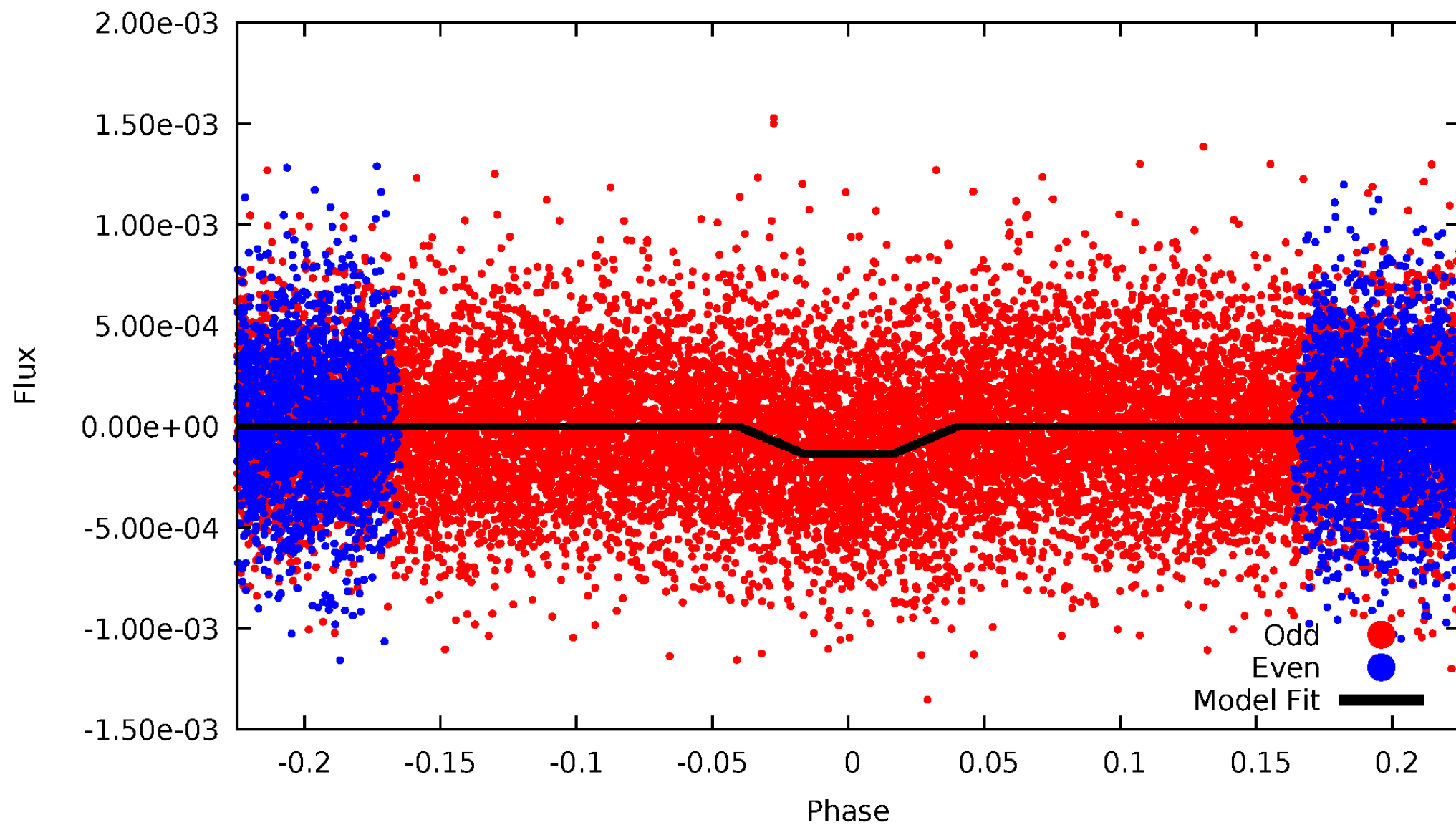
DV Odd/Even

TCE 005473535-02



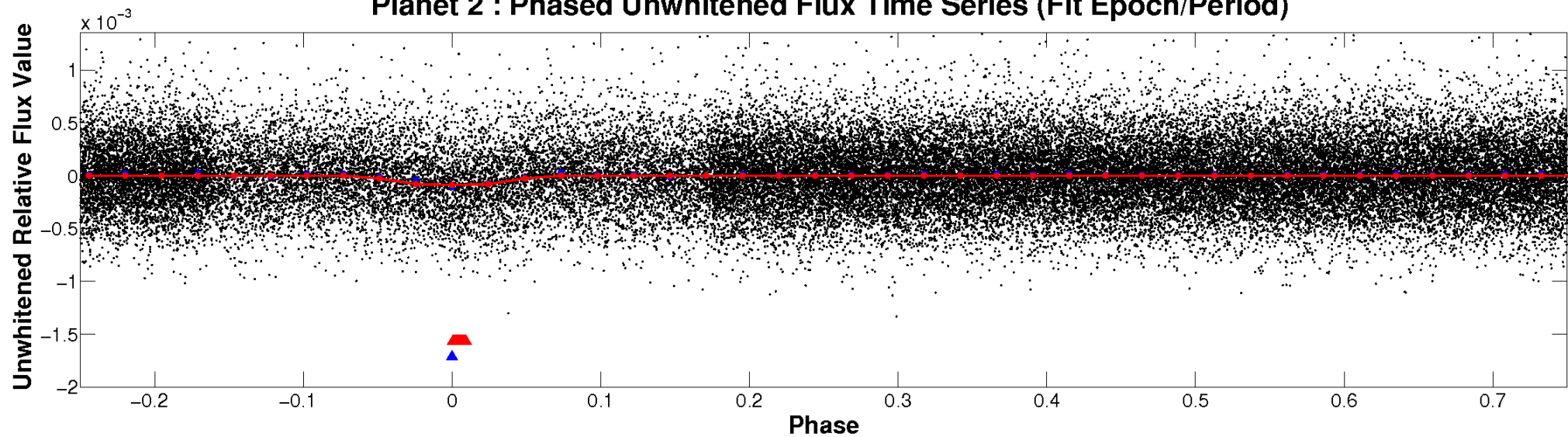
ALT Odd/Even

TCE 005473535-02

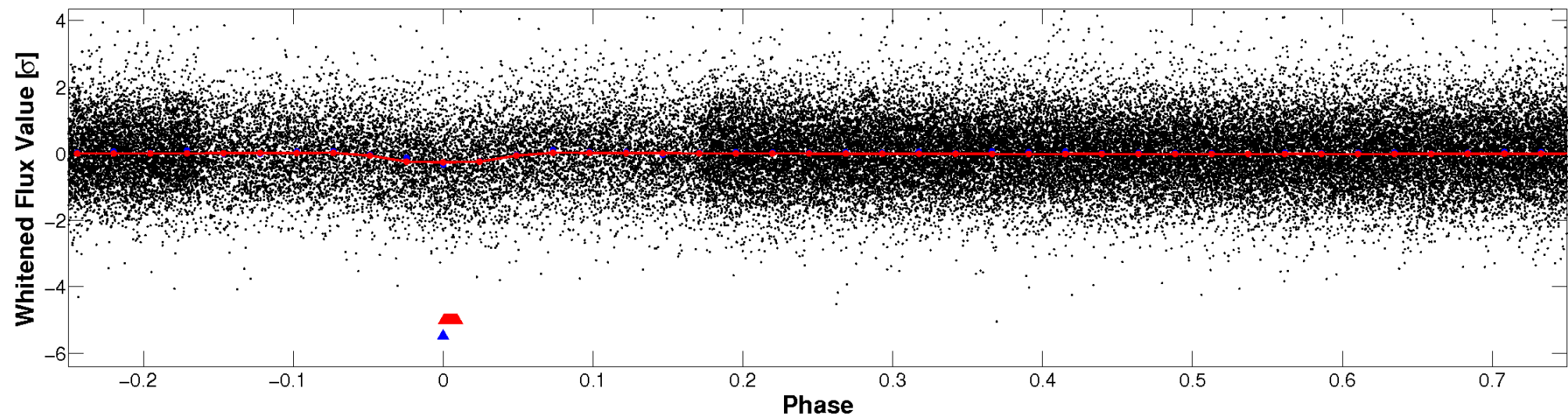


Non-Whitened Vs. Whitened Light Curve

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

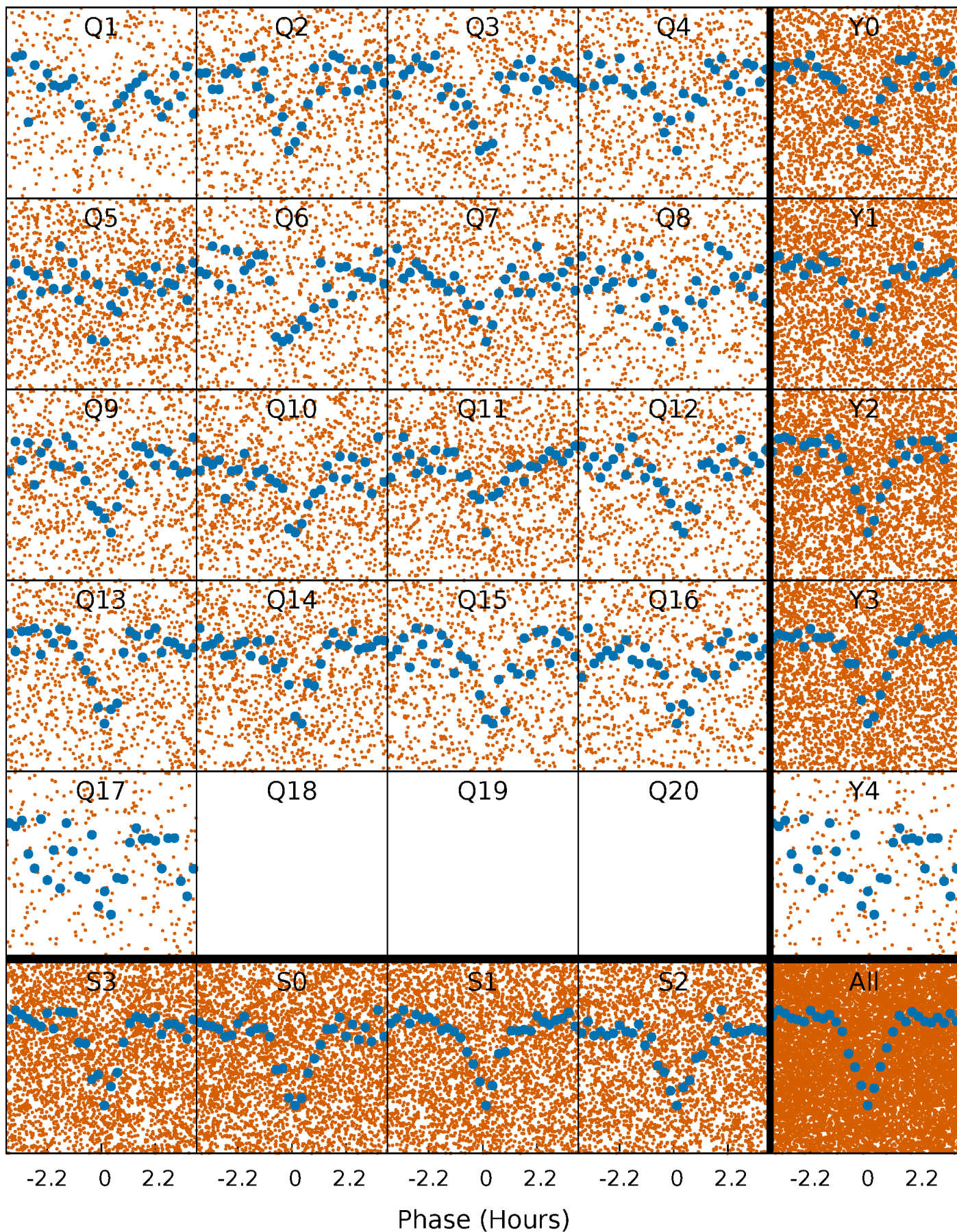


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



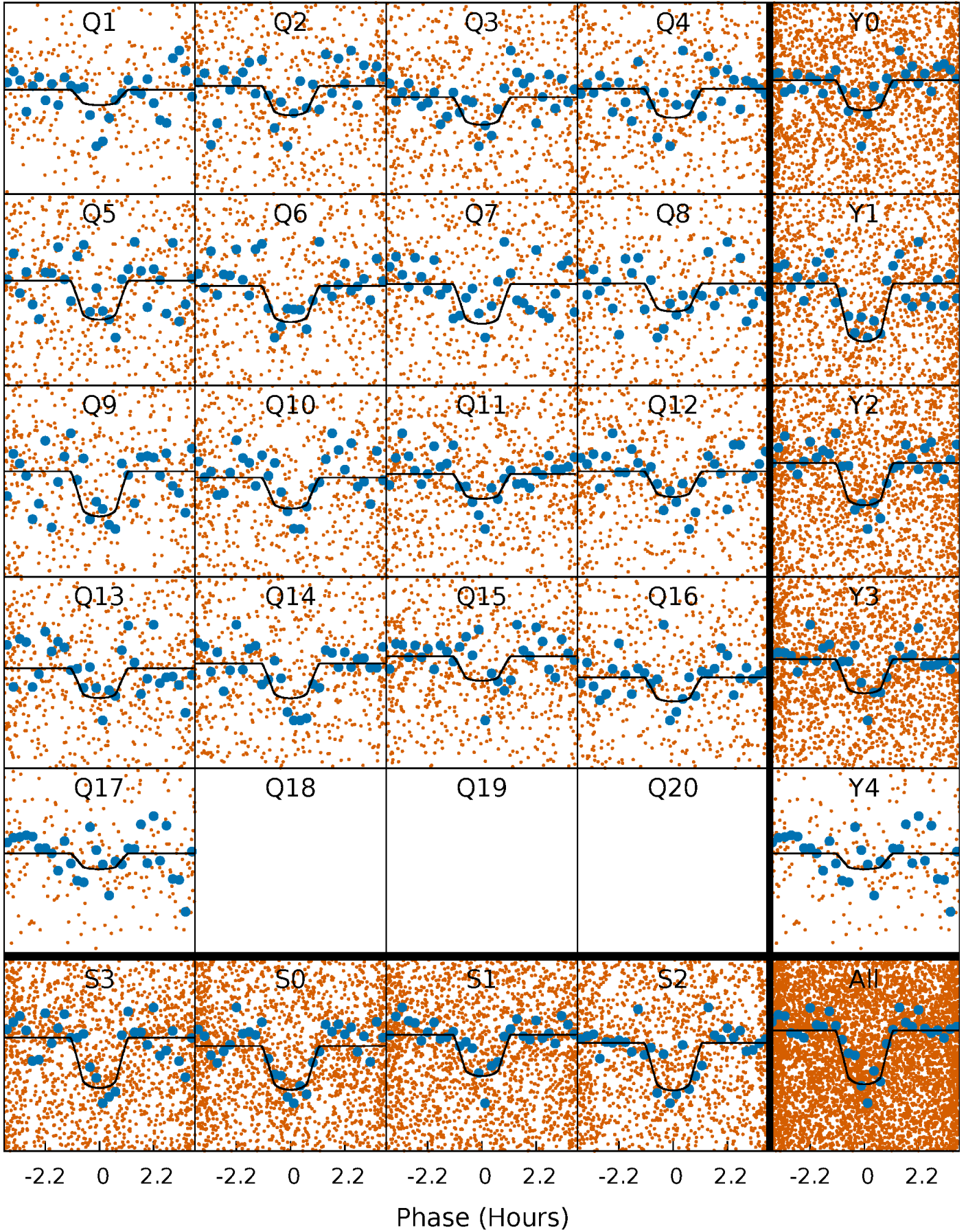
PDC Quarter-Phased Transit Curves

TCE 005473535-02 P= 0.836822 Days $T_0=131.675773$ (BKJD)



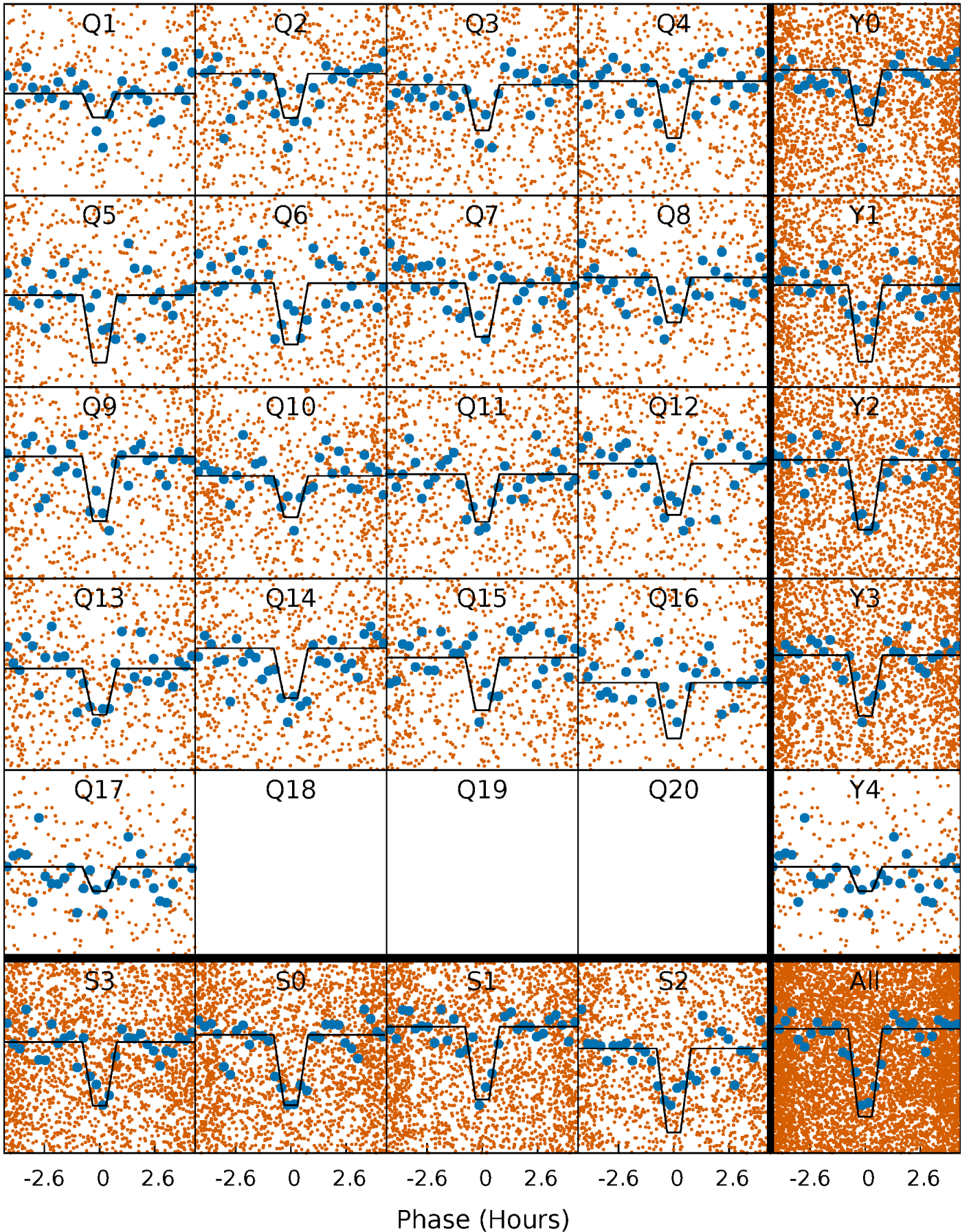
DV Quarter-Phased Transit Curves

TCE 005473535-02 P= 0.836822 Days $T_0=131.675773$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

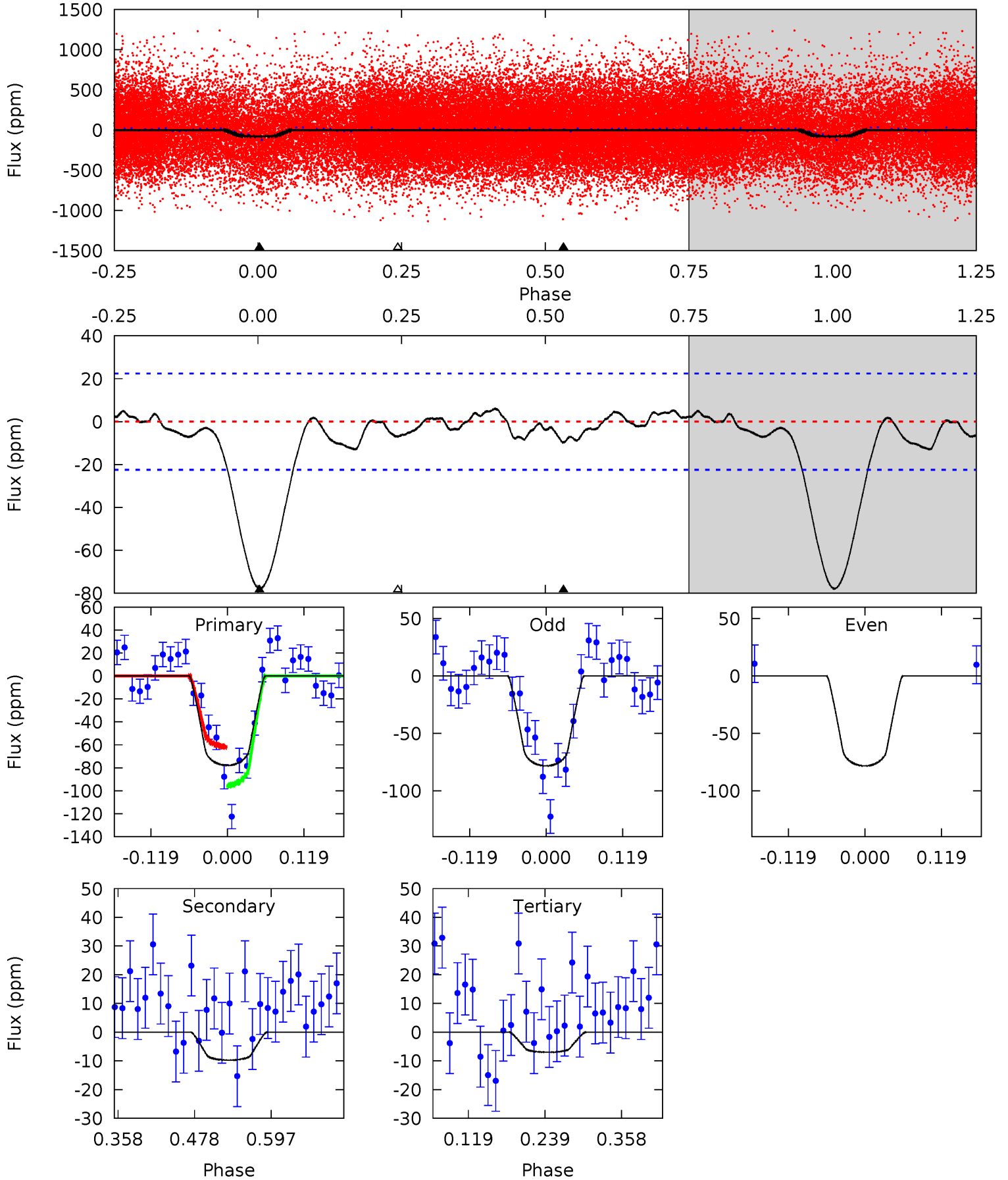
TCE 005473535-02 P= 0.836830 Days $T_0=131.672661$ (BKJD)



DV Model-Shift Uniqueness Test

005473535-02, P = 0.836822 Days, E = 130.838951 Days

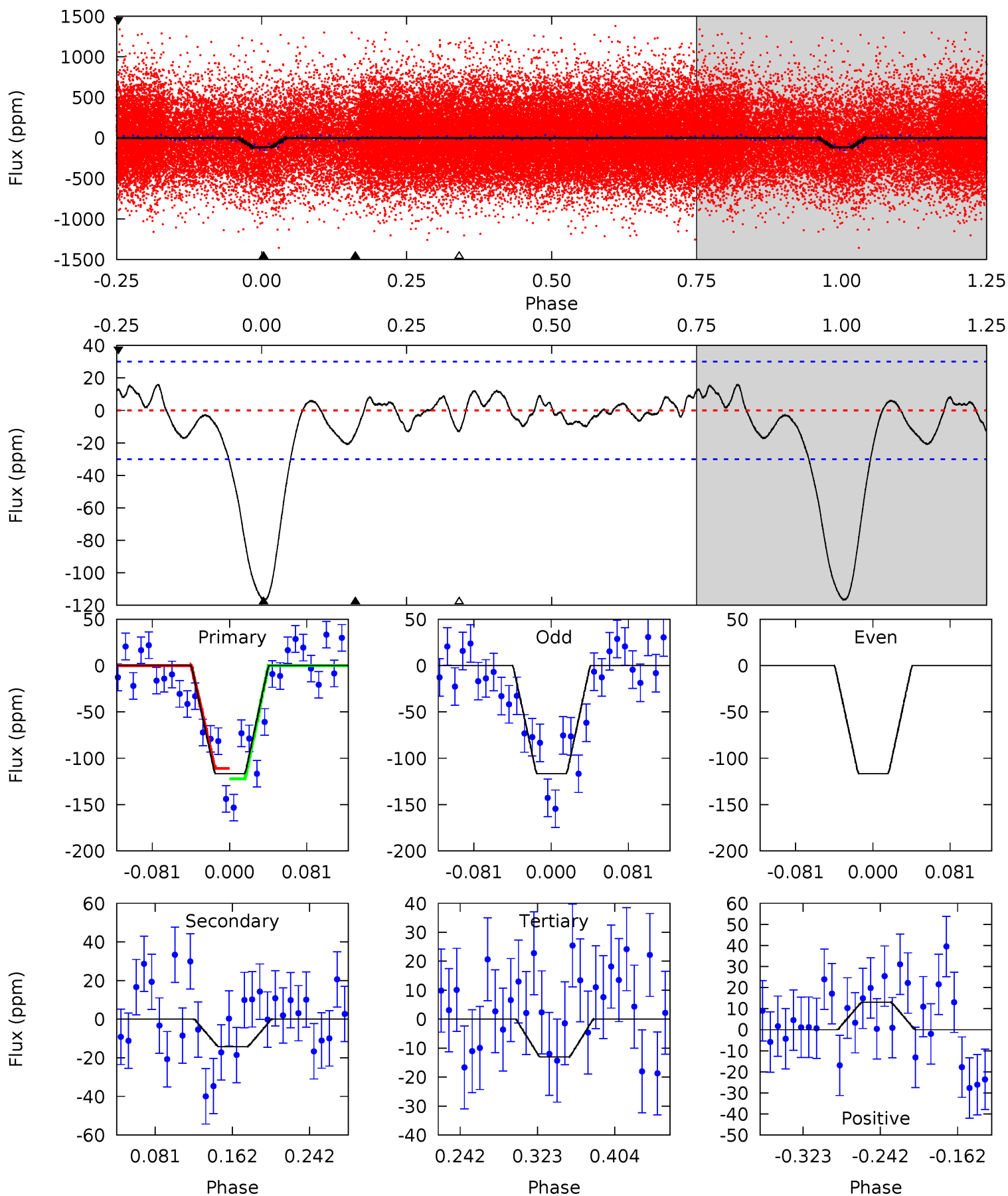
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.7	1.97	1.41	0	4.53	1.56	0.87	14.3	15.7	0.56	1.97	0	0.90	0.07	3.40



Alt Model-Shift Uniqueness Test

005473535-02, P = 0.836830 Days, E = 130.835831 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.9	2.17	2.00	1.99	4.61	1.75	1.11	15.9	15.9	0.18	0.18	0	0.94	0.12	0.85



Stellar Parameters For KIC 005473535

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6444^{+155}_{-222}	$4.433^{+0.065}_{-0.195}$	$-0.300^{+0.250}_{-0.300}$	$1.053^{+0.332}_{-0.111}$	$1.094^{+0.152}_{-0.137}$	$1.320^{+0.366}_{-0.683}$
	+2%/-3%	+1%/-4%	+83%/-100%	+32%/-11%	+14%/-13%	+28%/-52%
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 005473535-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-10 ± 5	$1.21^{+0.68}_{-0.61}$	3096^{+213}_{-152}	3720^{+1271}_{-1147}	$1.135^{+3.294}_{-0.772}$
Alt.	-14 ± 7	$1.43^{+0.69}_{-0.67}$	3081^{+214}_{-145}	3699^{+1137}_{-877}	$1.135^{+2.914}_{-0.700}$

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 $A_{obs} \gg 1.0$

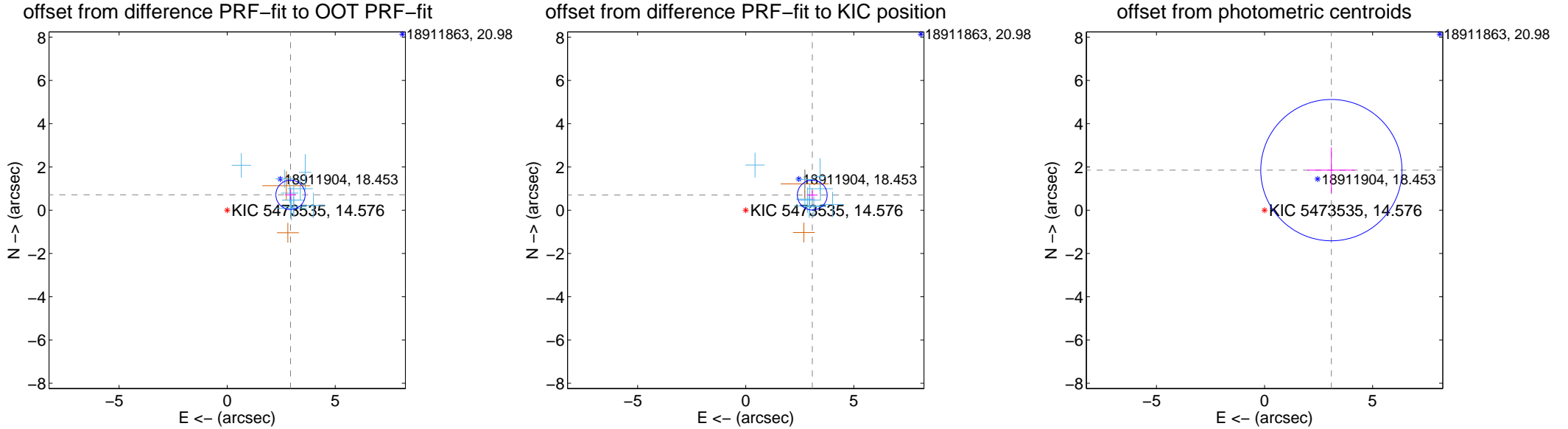
DV Centroid Data

Supplemental centroid analysis for 005473535-02. Kepler magnitude: 14.58. Transit SNR 12.17

There are 10 quarters with good PRF difference image offsets

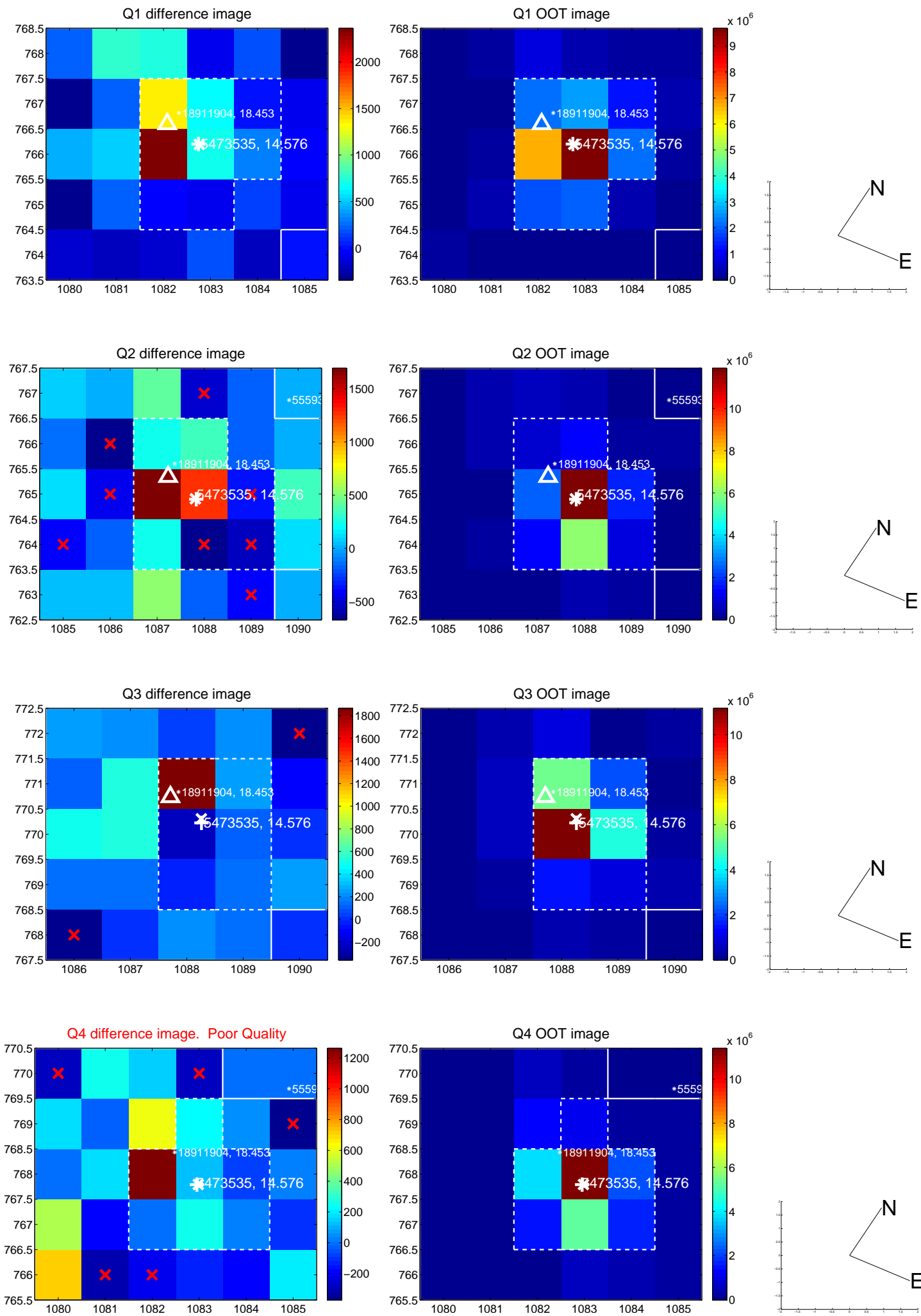
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.016 ± 0.226	13.35	-2.931 ± 0.255	0.712 ± 0.248
PRF-fit source offset from KIC position	3.157 ± 0.230	13.74	-3.079 ± 0.248	0.699 ± 0.220
photometric centroid source offset	3.60 ± 1.09	3.31	-3.09 ± 1.10	1.85 ± 1.05

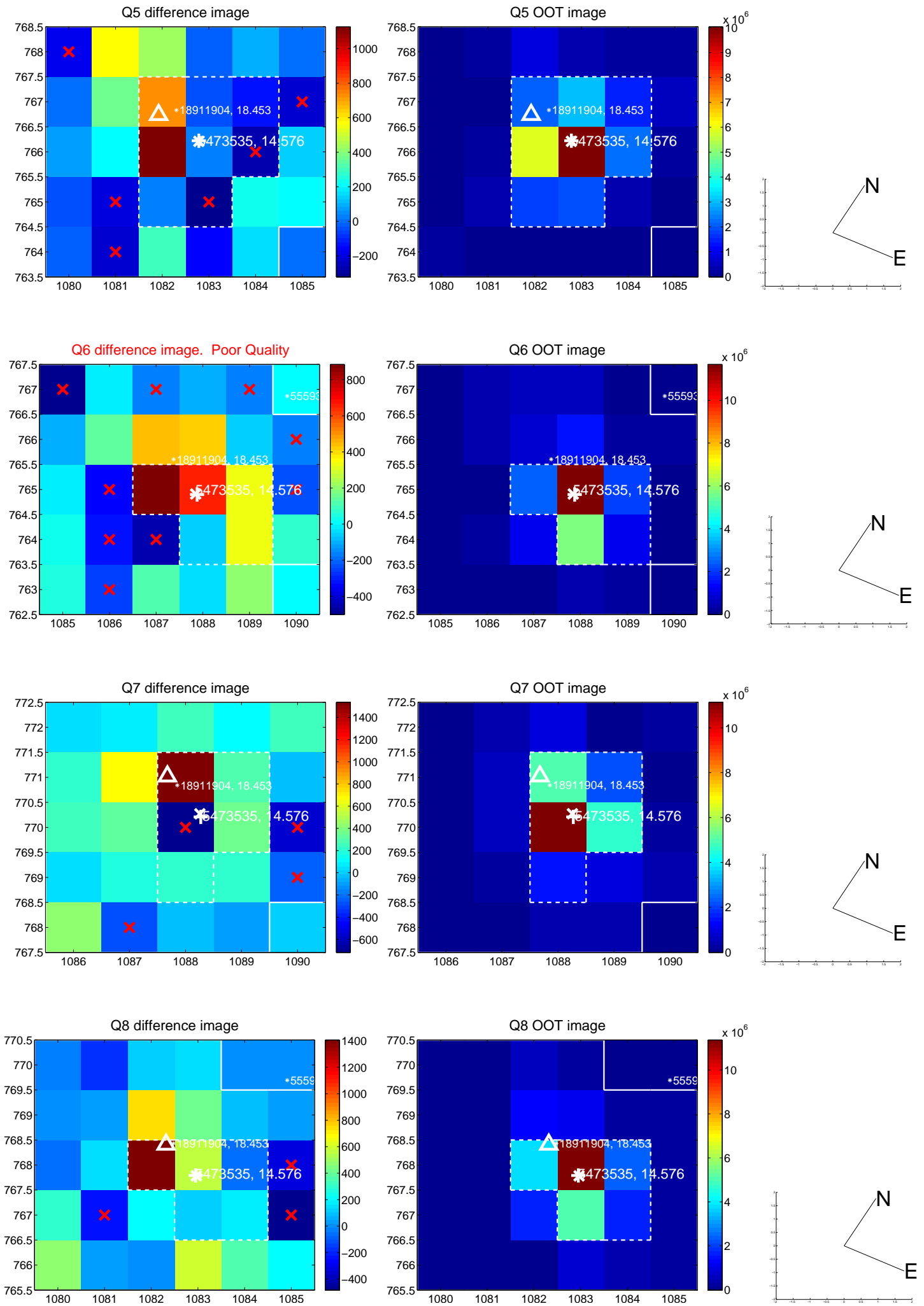


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

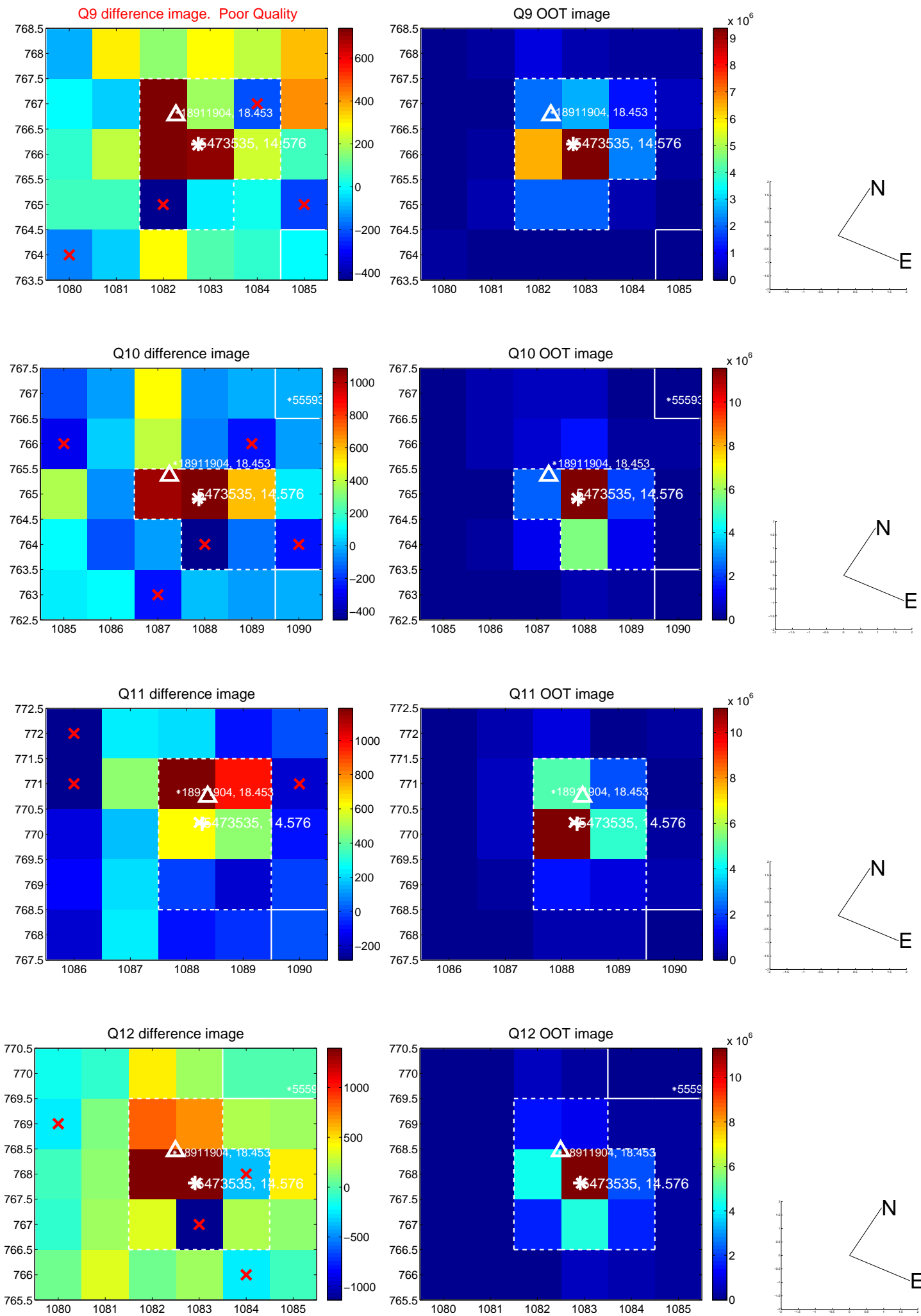
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



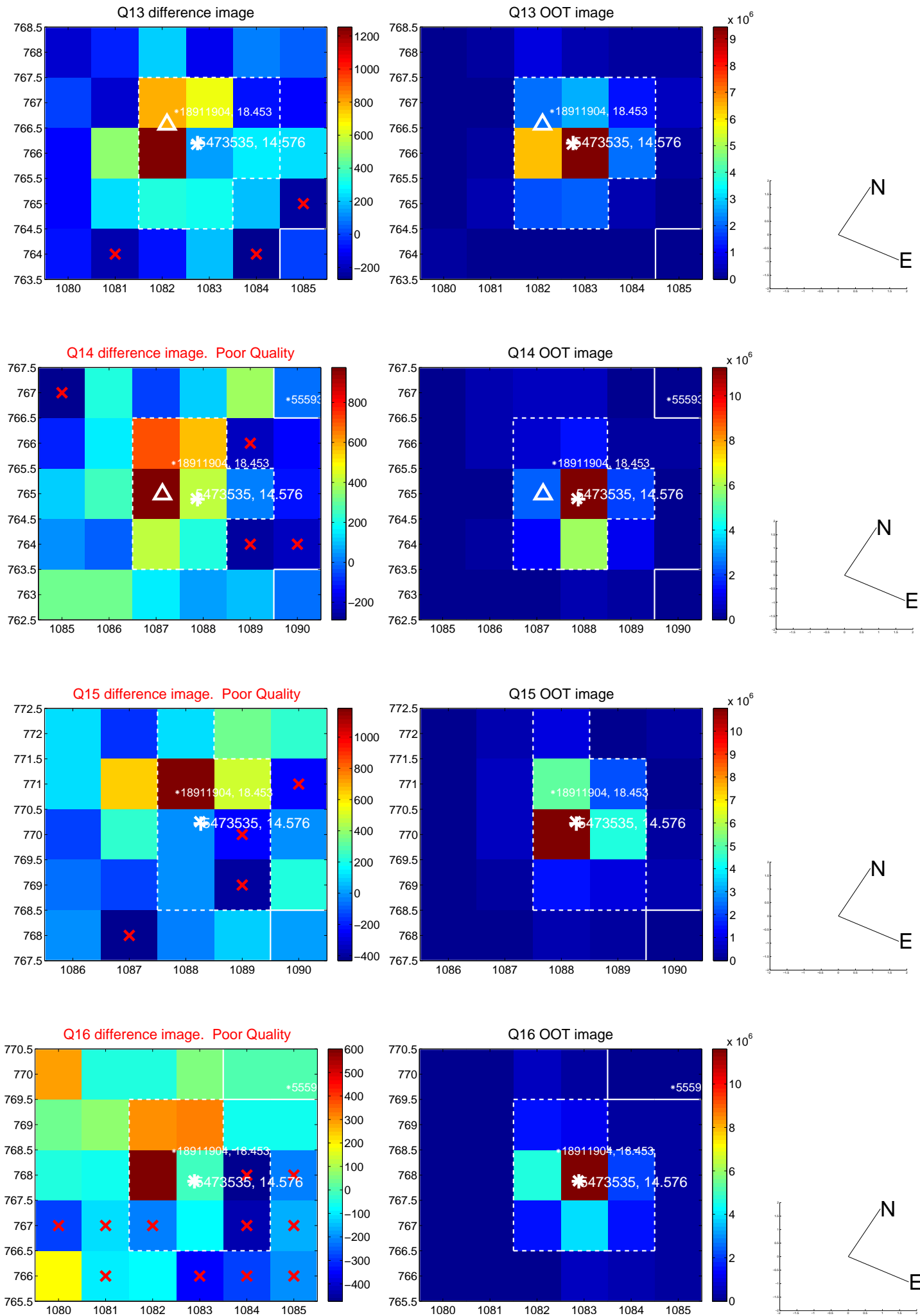
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



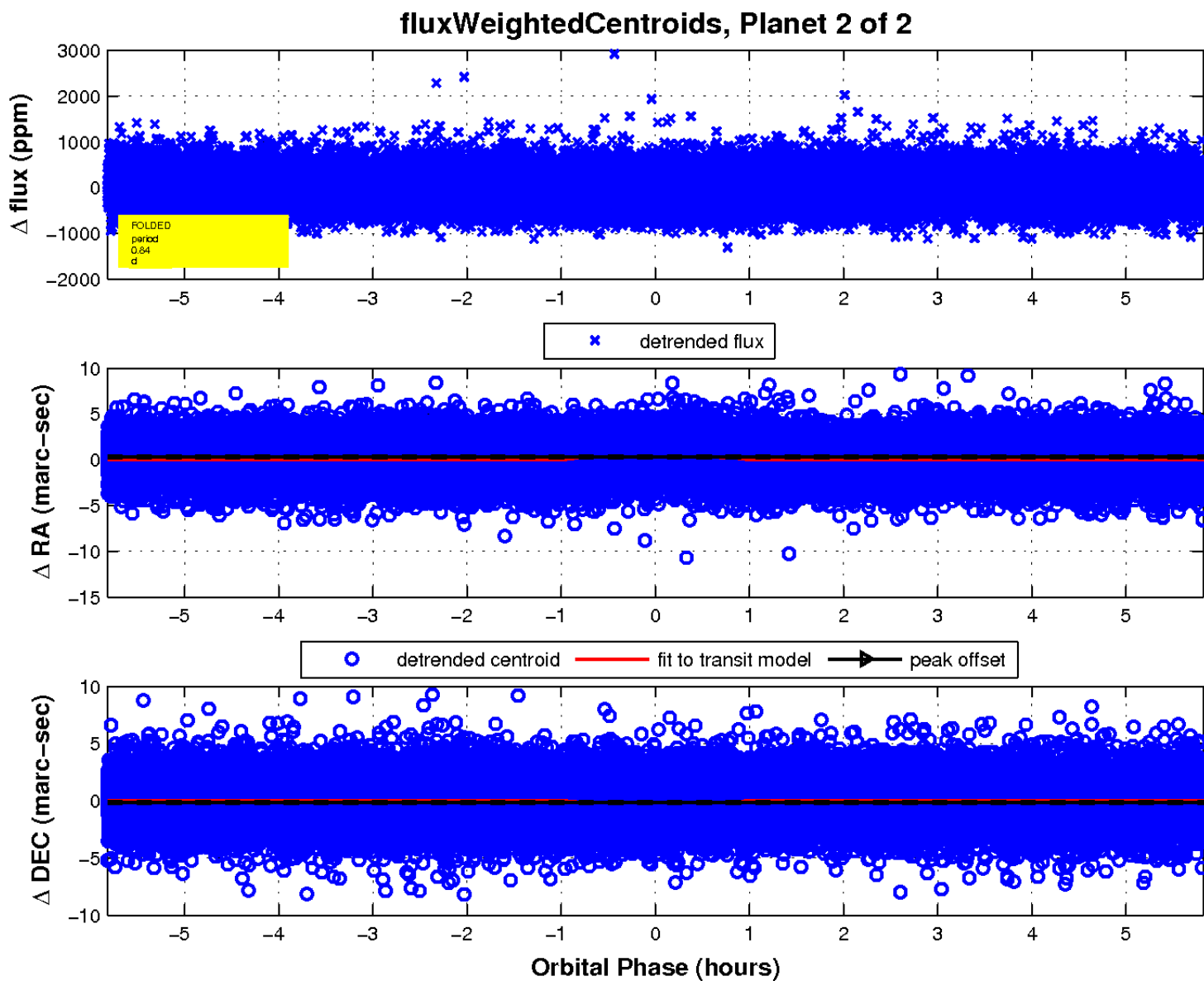
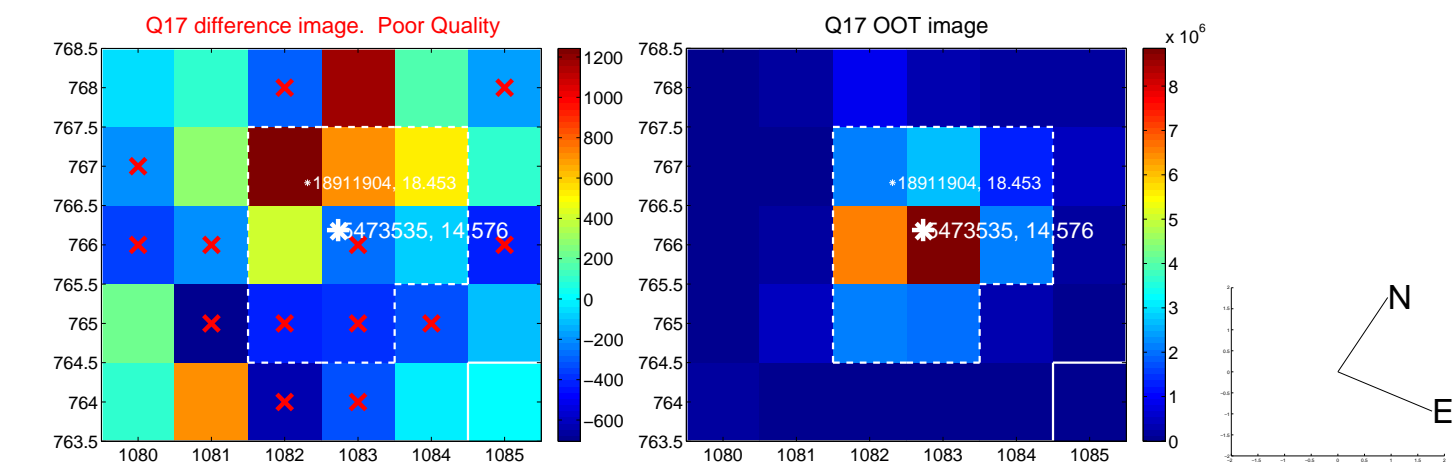
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

