

KIC 007177553

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})
007177553-01	OBS	6837.01	17.996460	139.543353	62172.7	4.672	8574.5	5075.2	2.25	5684	95.11	240.95
007177553-02	OBS	No	17.996382	134.913278	37034.4	3.000	6990.0	-1.0	2.25	5684	43.07	240.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007177553-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—DEEP_V_SHAPED—HAS_SEC_TCE
007177553-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

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.

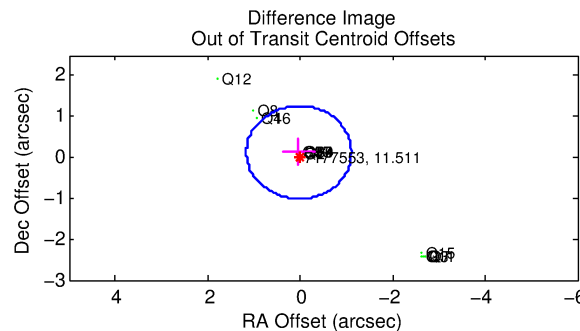
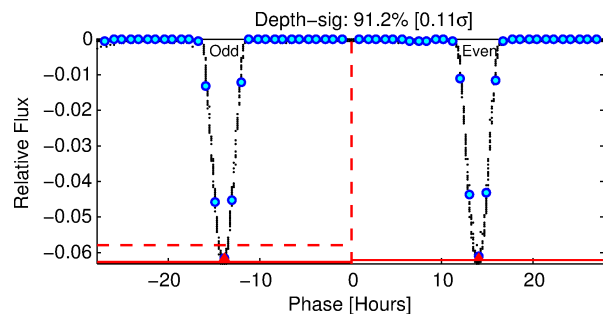
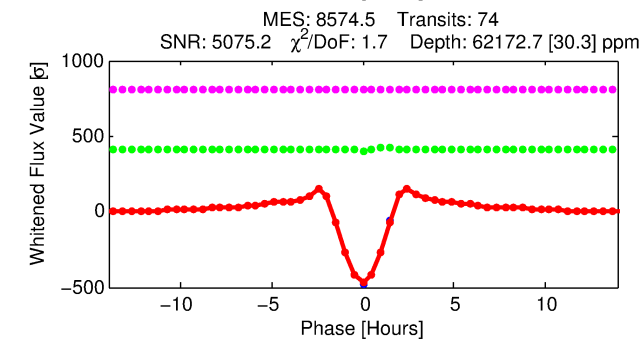
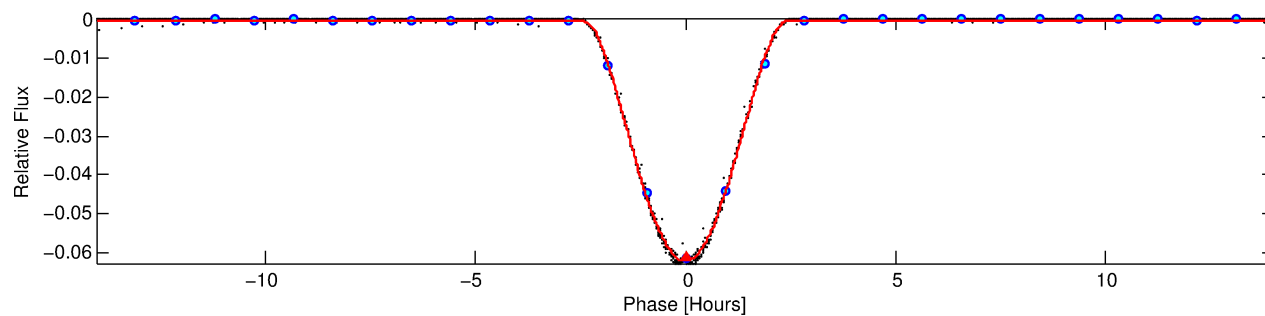
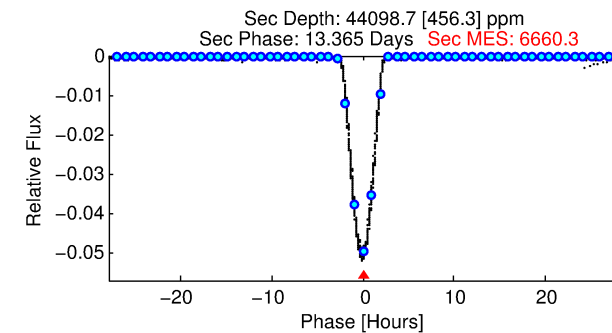
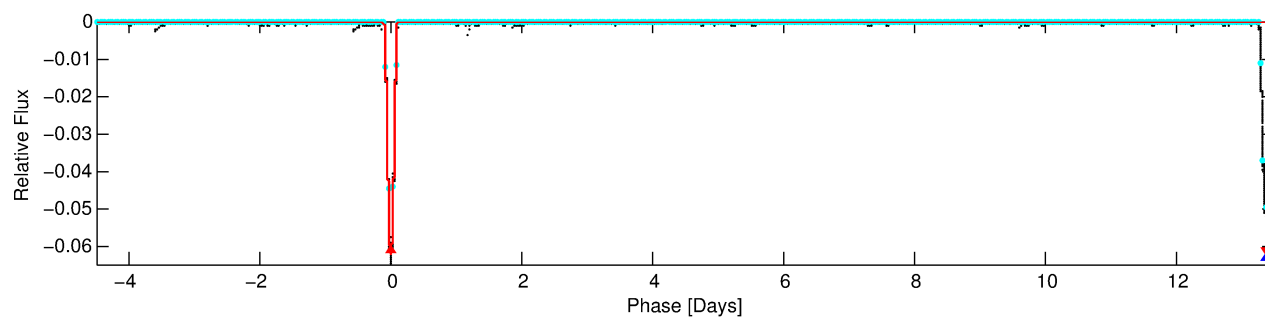
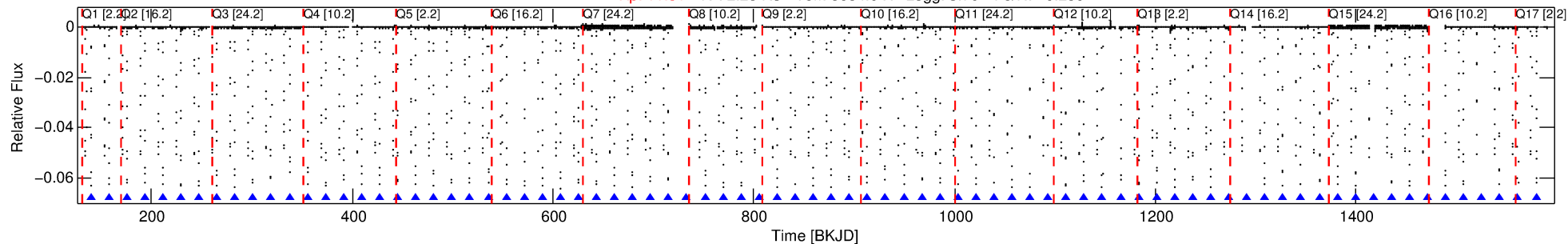
Ephemeris Match Information For 007177553-01

No Significant Match Found

DV One-Page Summary

KIC: 7177553 Candidate: 1 of 2 Period: 17.996 d
KOI: K06837.01 Corr: 0.998

Kp: 11.51 R*: 2.25 Rs Teff: 5684.0 K Logg: 3.79 Fe/H: -0.280



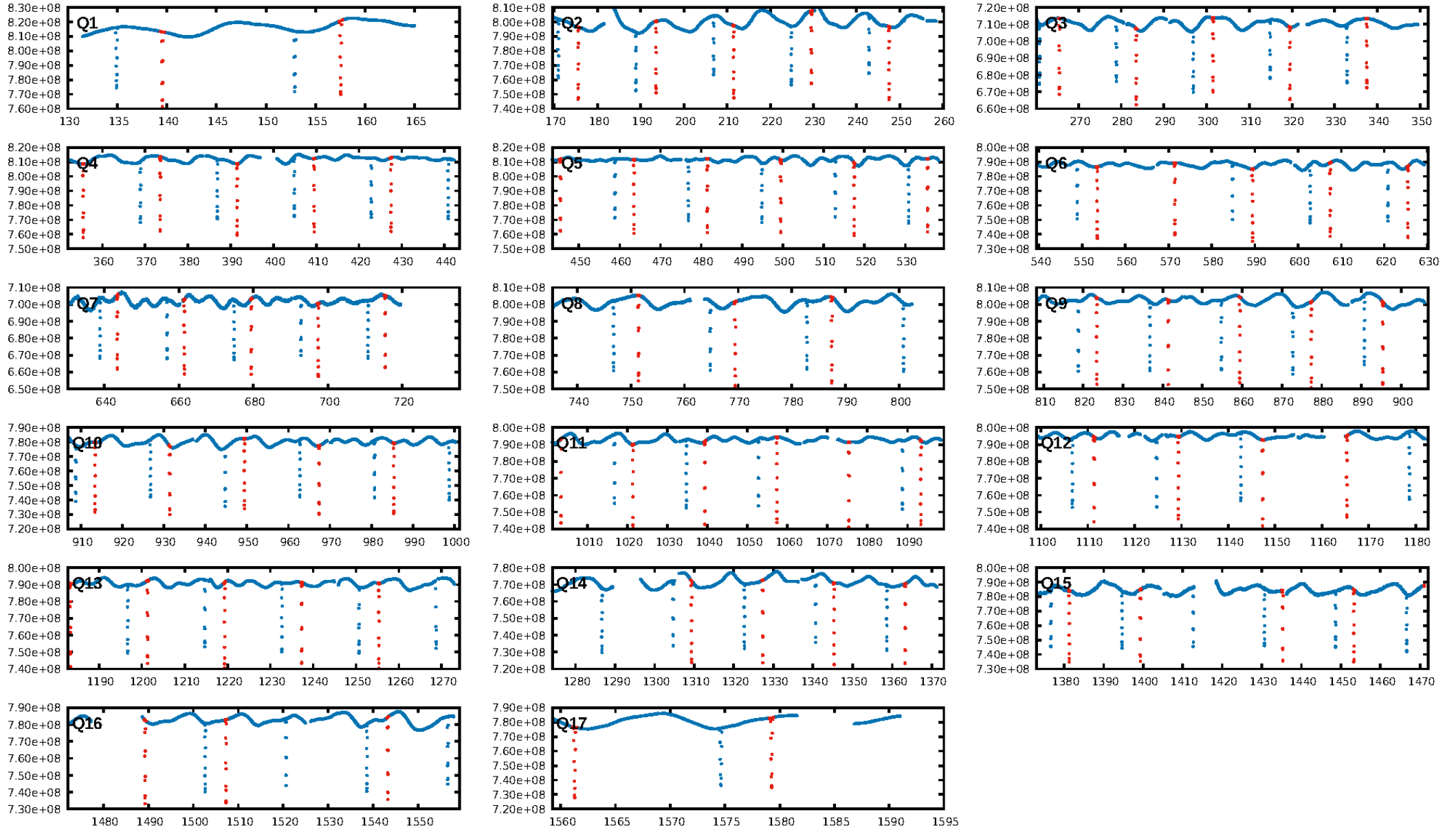
DV Fit Results:

Period = 17.99646 [0.00000] d
Epoch = 139.5434 [0.0000] BKJD
Rp/R* = 0.3876 [0.0063]
a/R* = 28.53 [0.01]
b = 0.99 [0.01]
Seff = 240.95 [263.76]
Teq = 1005 [275] K
Rp = 95.11 [58.21] Re
a = 0.1401 [0.0908] AU
Ag = 52.65 [57.23] [0.90σ]
Teffp = 4184 [144] K [10.24σ]

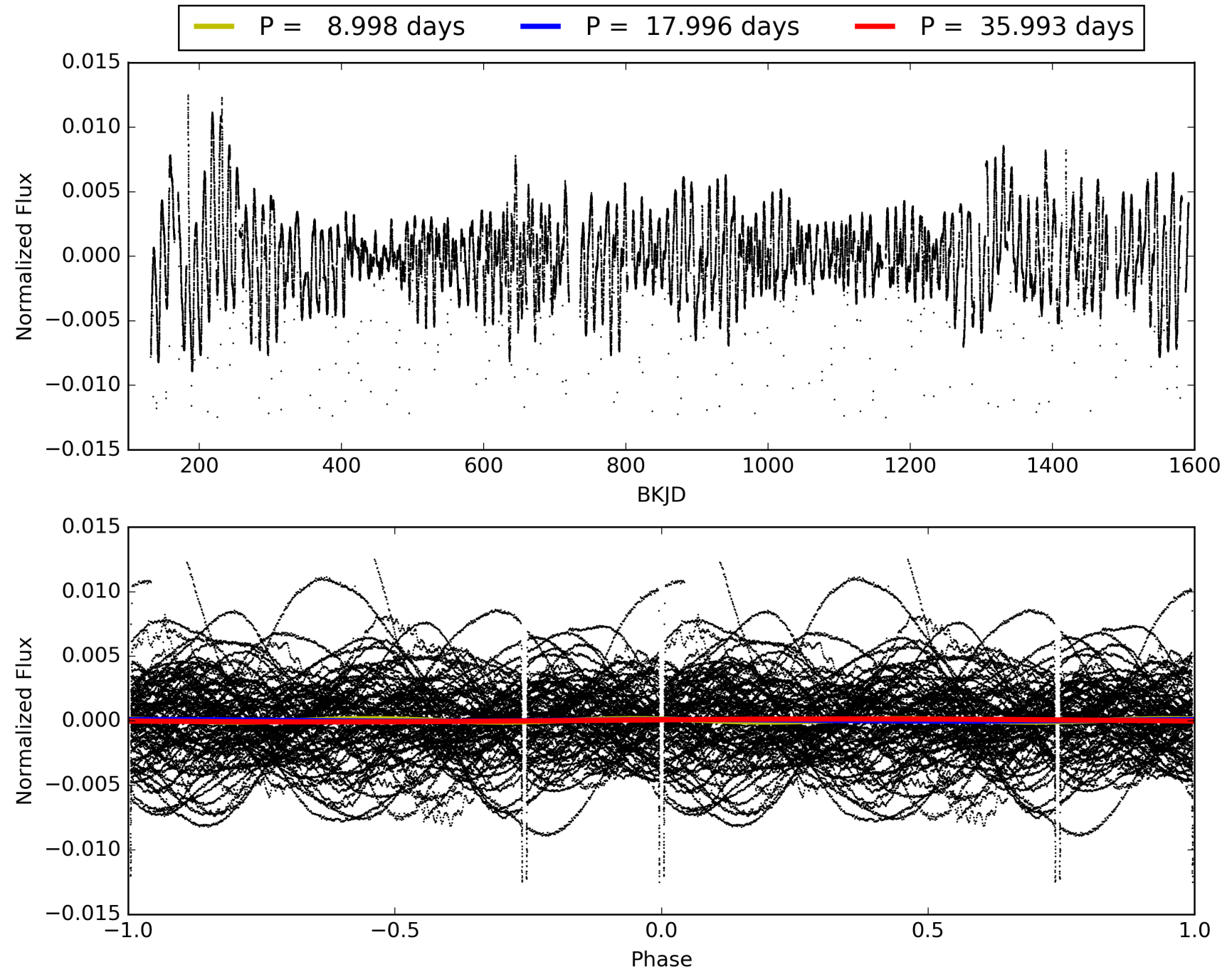
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 17.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [70/70]
GhostDiagnostic-chr: 3.192
Centroid-sig: 0.0%
Centroid-so: 0.436 arcsec [383.55σ]
OotOffset-rm: 0.128 arcsec [0.34σ]
KicOffset-rm: 0.611 arcsec [1.48σ]
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]

TCE 007177553-01, PDC Light Curves

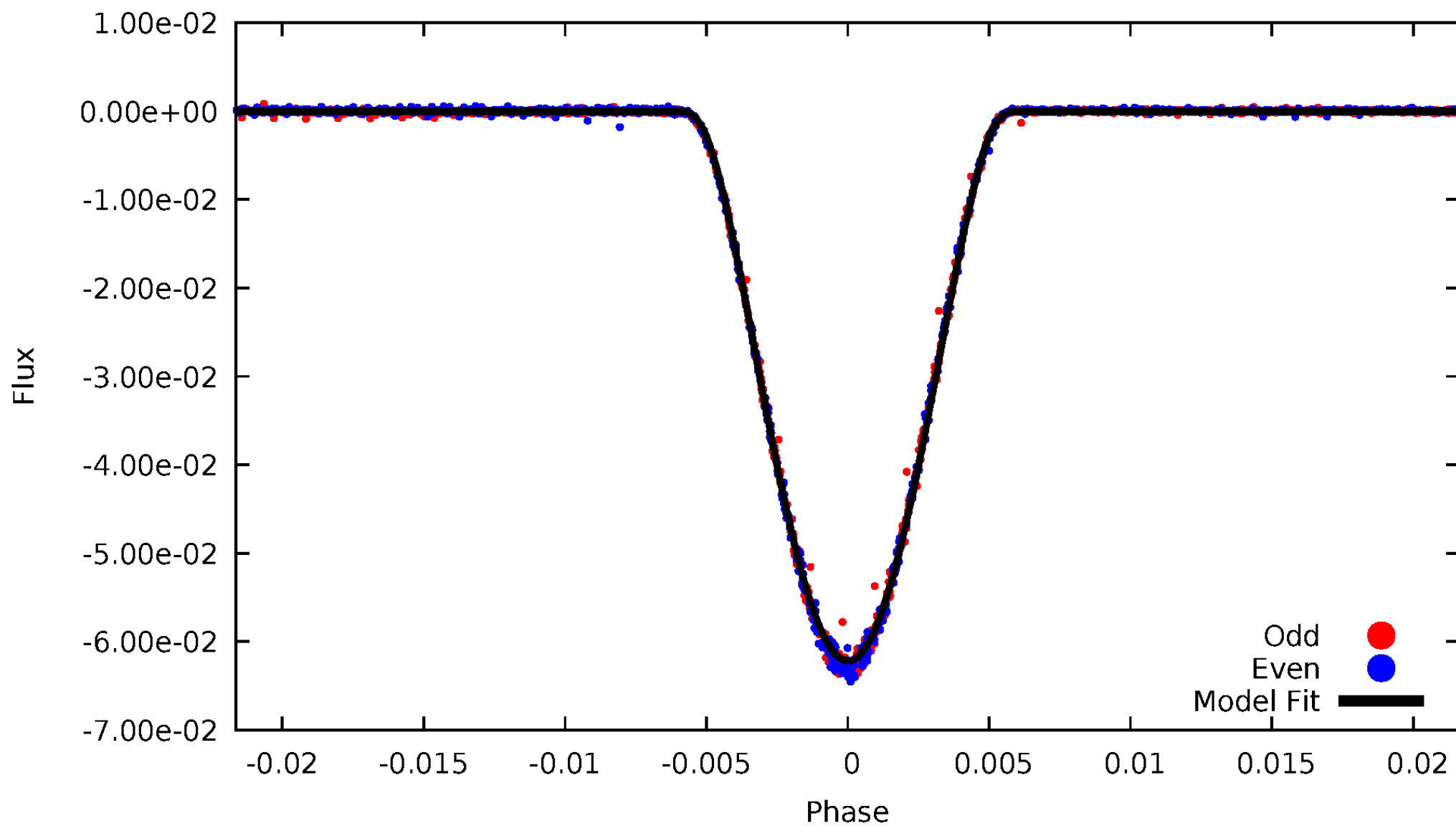


TCE 007177553-01



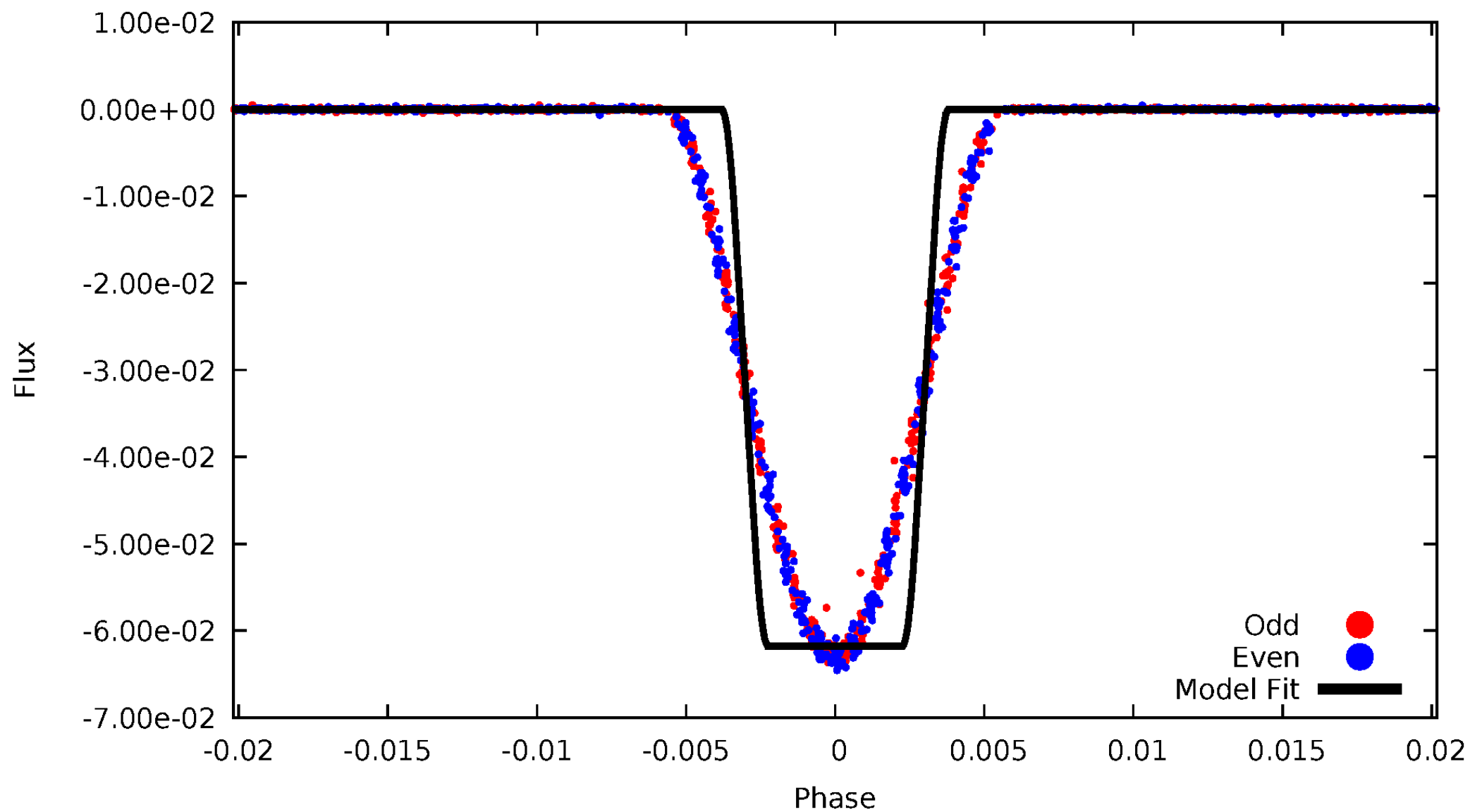
DV Odd/Even

TCE 007177553-01



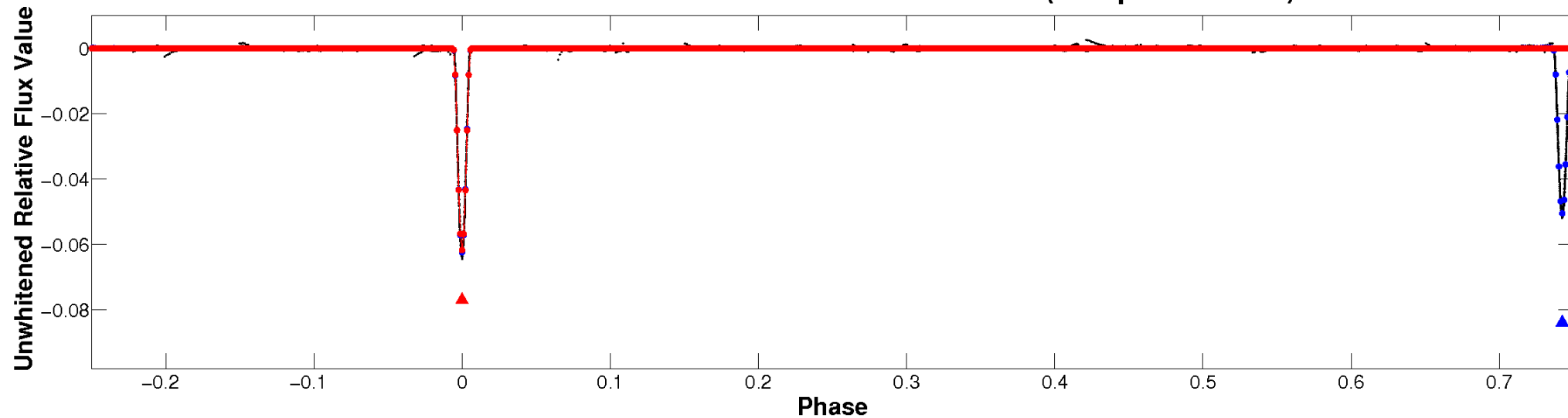
ALT Odd/Even

TCE 007177553-01

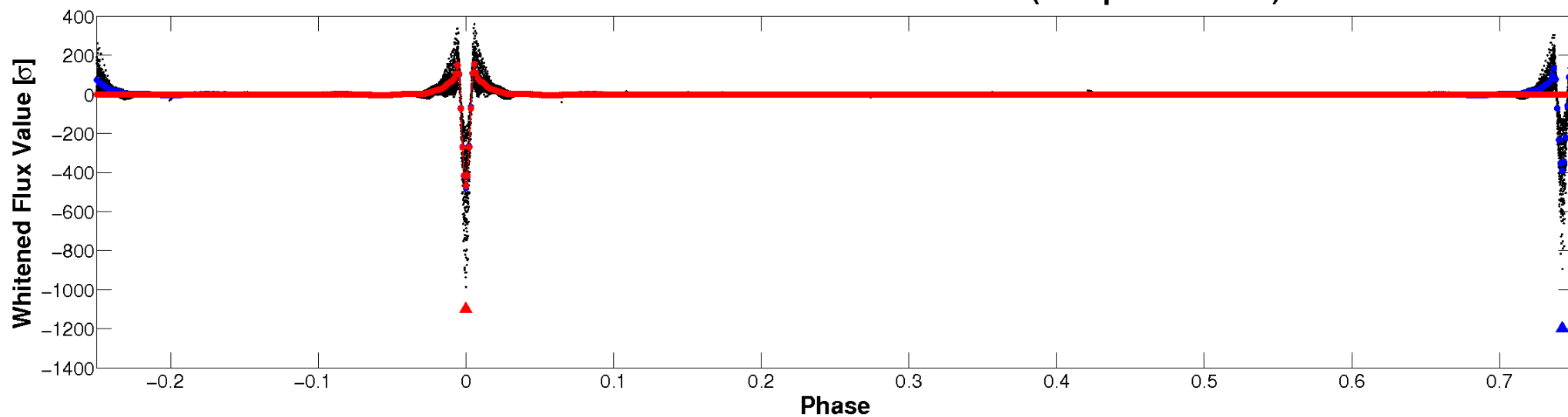


Non-Whitened Vs. Whitened Light Curve

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

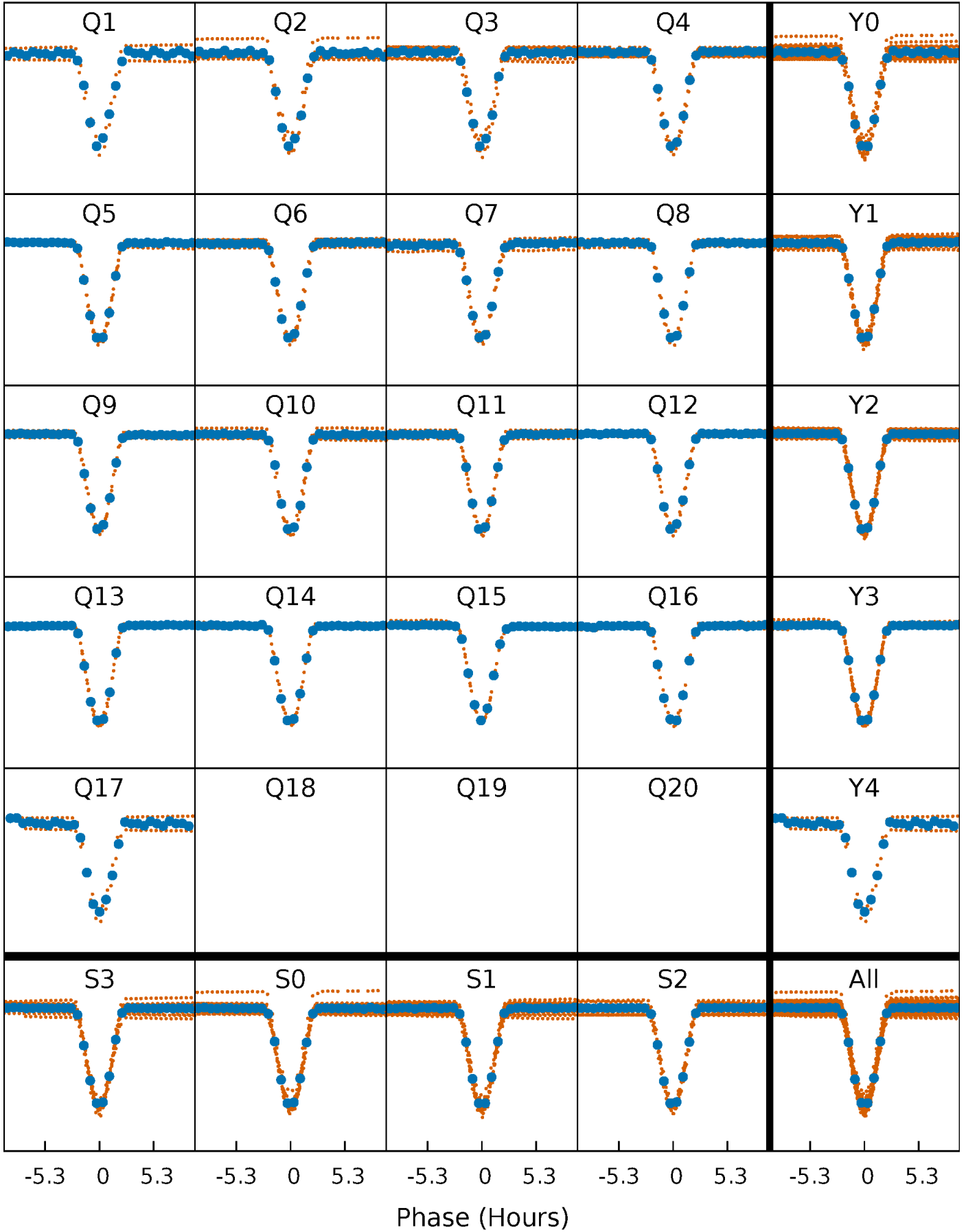


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



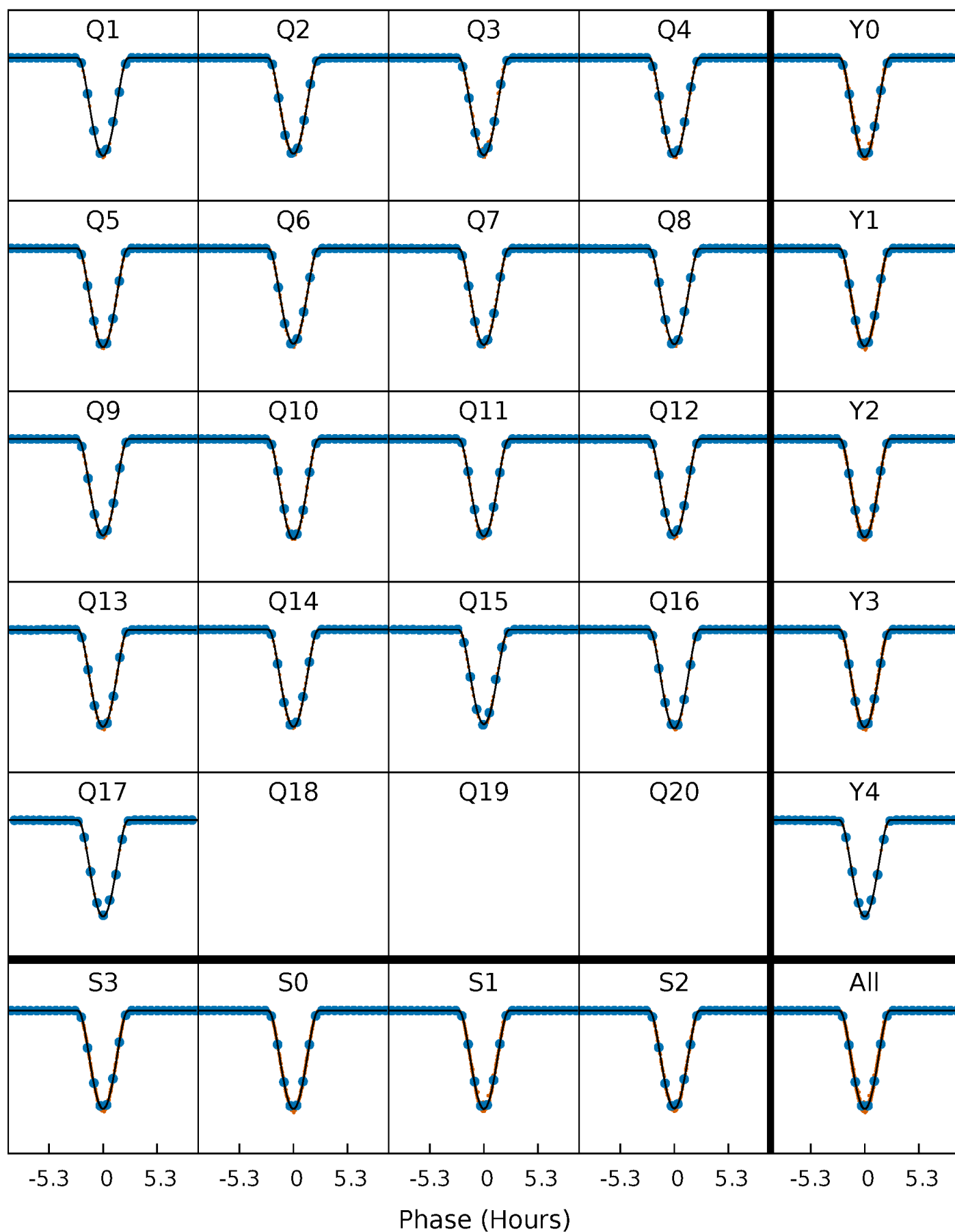
PDC Quarter-Phased Transit Curves

TCE 007177553-01 P= 17.996460 Days $T_0=139.543353$ (BKJD)



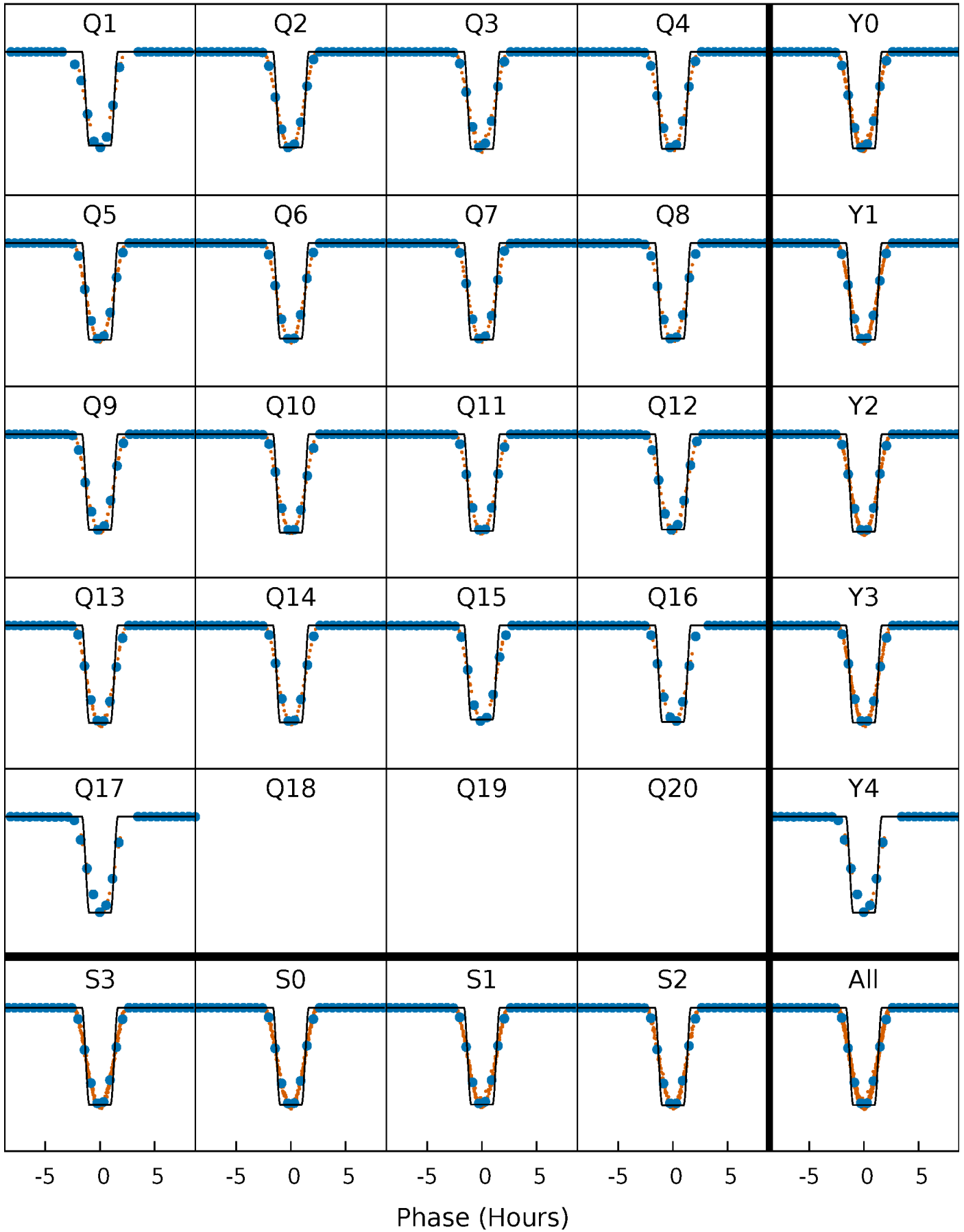
DV Quarter-Phased Transit Curves

TCE 007177553-01 P= 17.996460 Days $T_0=139.543353$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

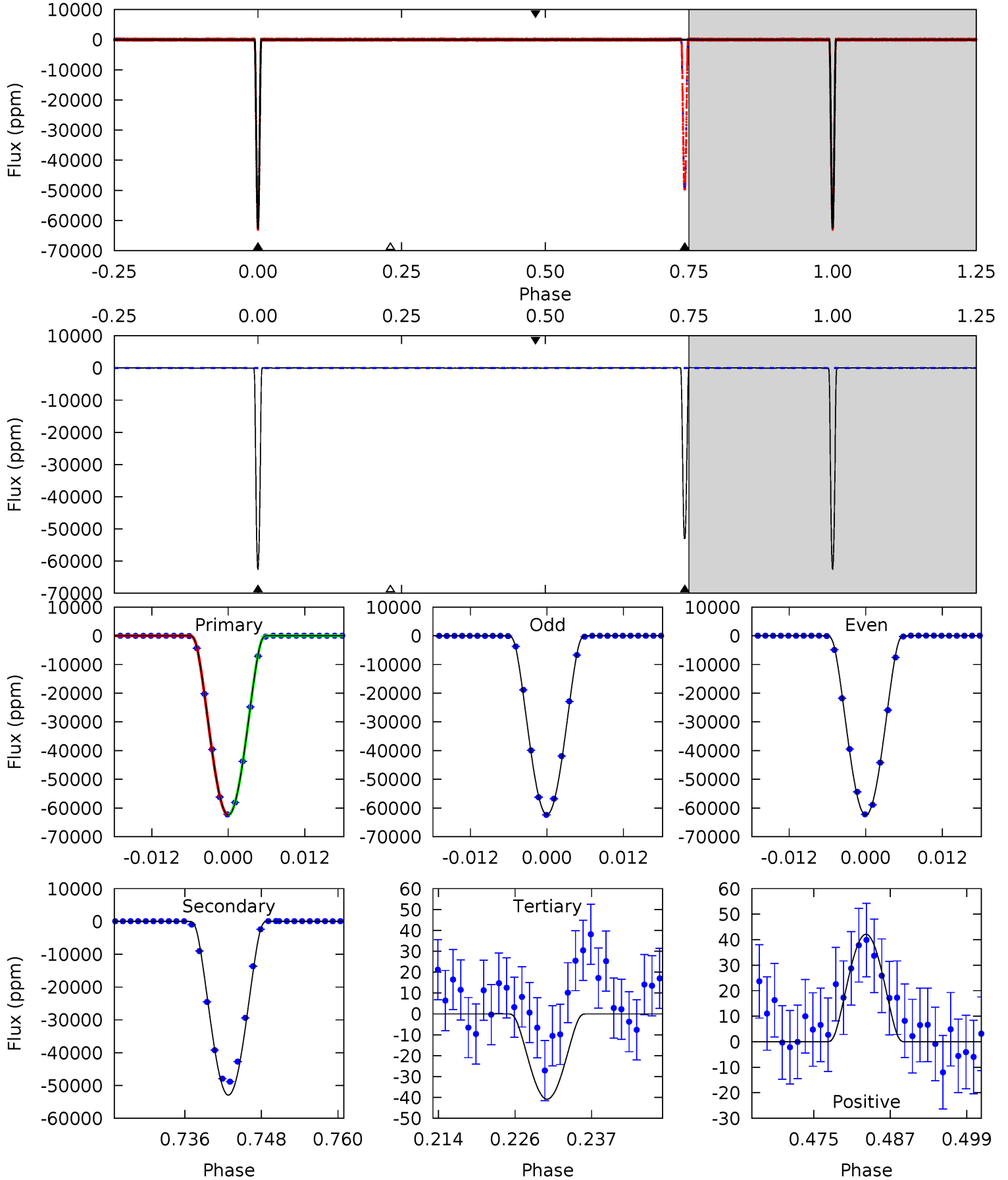
TCE 007177553-01 P= 17.996382 Days $T_0=139.546113$ (BKJD)



DV Model-Shift Uniqueness Test

007177553-01, P = 17.996460 Days, E = 121.546893 Days

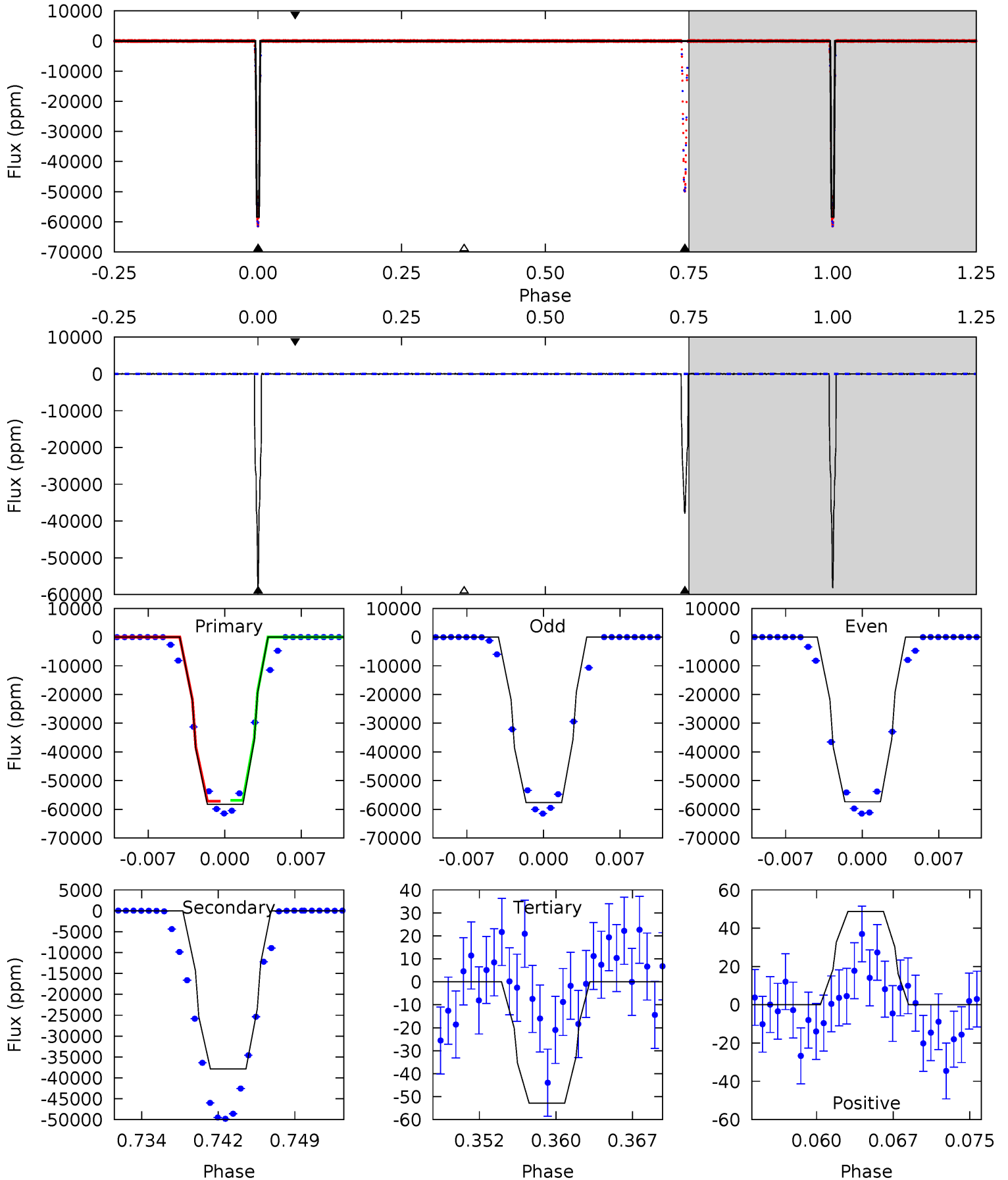
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12730	10795	8.32	8.58	4.99	2.52	3.87	12722	12722	10787	10787	18.5	1.00	0.00	0



Alt Model-Shift Uniqueness Test

007177553-01, P = 17.996382 Days, E = 121.549731 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4784	3109	4.34	4.00	5.08	2.67	1.20	4780	4780	3105	3105	12.0	1.00	0.00	0



Stellar Parameters For KIC 007177553

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5684^{+190}_{-173}	$3.788^{+0.656}_{-0.164}$	$-0.280^{+0.300}_{-0.250}$	$2.249^{+0.688}_{-1.376}$	$1.134^{+0.149}_{-0.277}$	$0.140^{+1.348}_{-0.060}$
	+3%/-3%	+17%/-4%	+107%/-89%	+31%/-61%	+13%/-24%	+961%/-43%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007177553-01 / KOI 6837.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-52947 ± 5	$89.09^{+18.67}_{-30.34}$	1360^{+143}_{-236}	4597^{+125}_{-126}	74^{+89}_{-22}
Alt.	-37861 ± 12	$57.96^{+10.86}_{-17.69}$	1369^{+130}_{-215}	5149^{+163}_{-163}	125^{+116}_{-34}

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 $A_{obs} \gg 1.0$

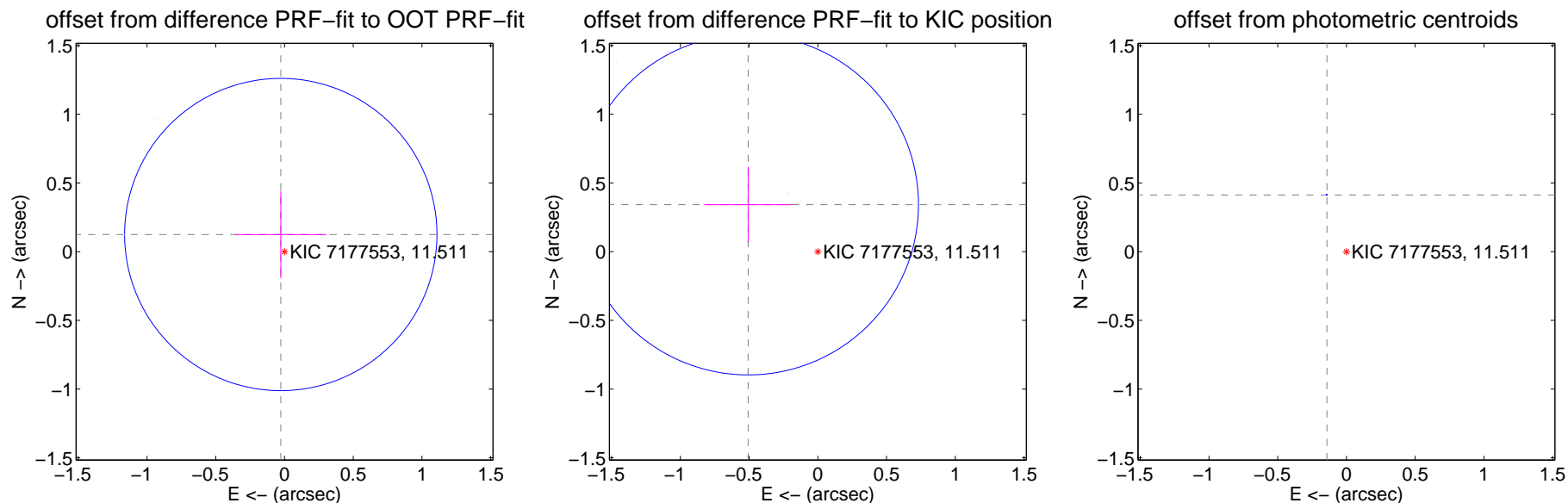
DV Centroid Data

Supplemental centroid analysis for 007177553-01. **Kepler magnitude: 11.51.** Transit SNR 5075.17

There are 17 quarters with good PRF difference image offsets

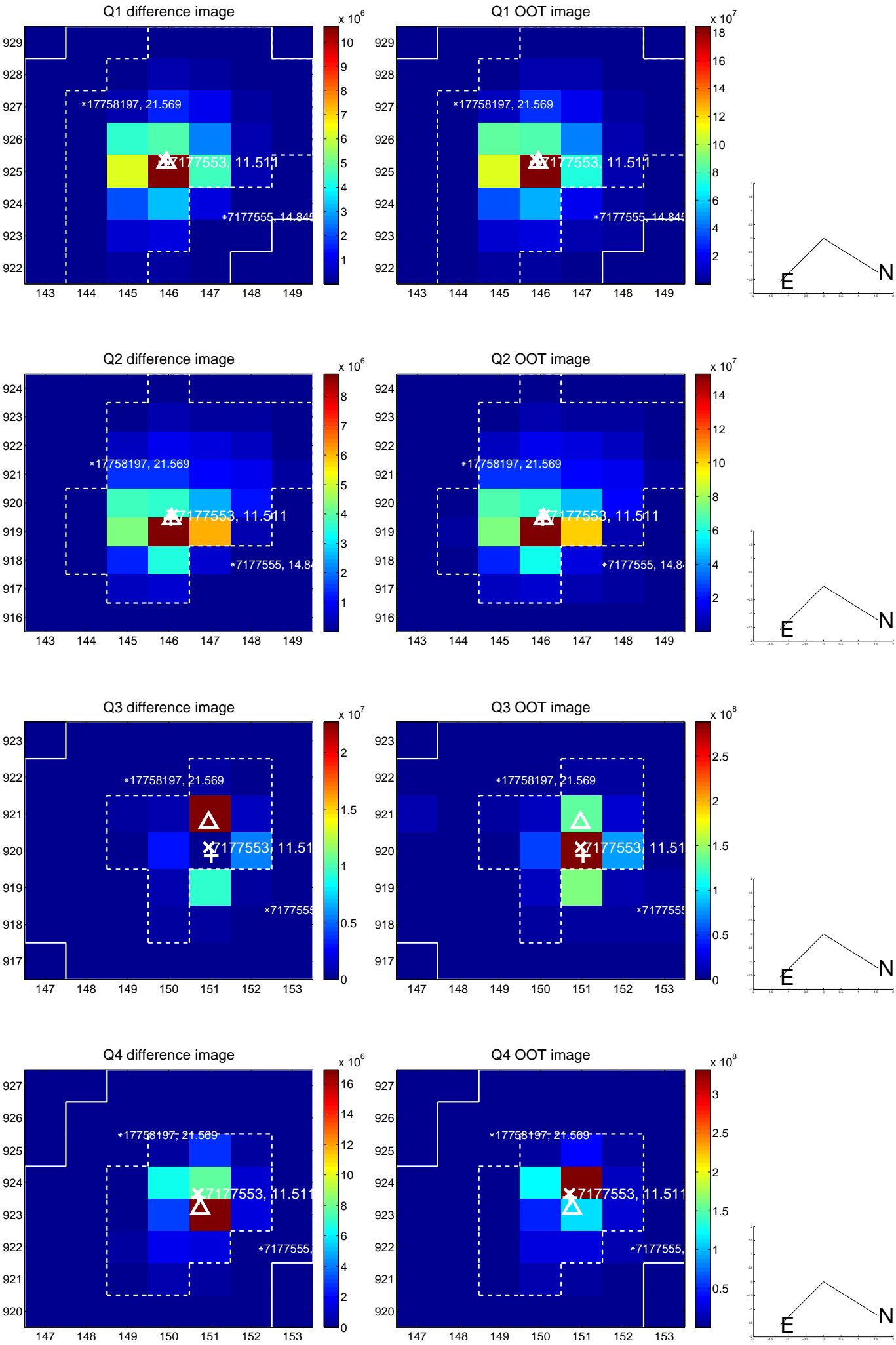
The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.128 ± 0.379	0.34	0.027 ± 0.332	0.125 ± 0.318
PRF-fit source offset from KIC position	0.611 ± 0.413	1.48	0.507 ± 0.320	0.342 ± 0.275
photometric centroid source offset	0.44 ± 0.00	383.55	0.14 ± 0.00	0.41 ± 0.00

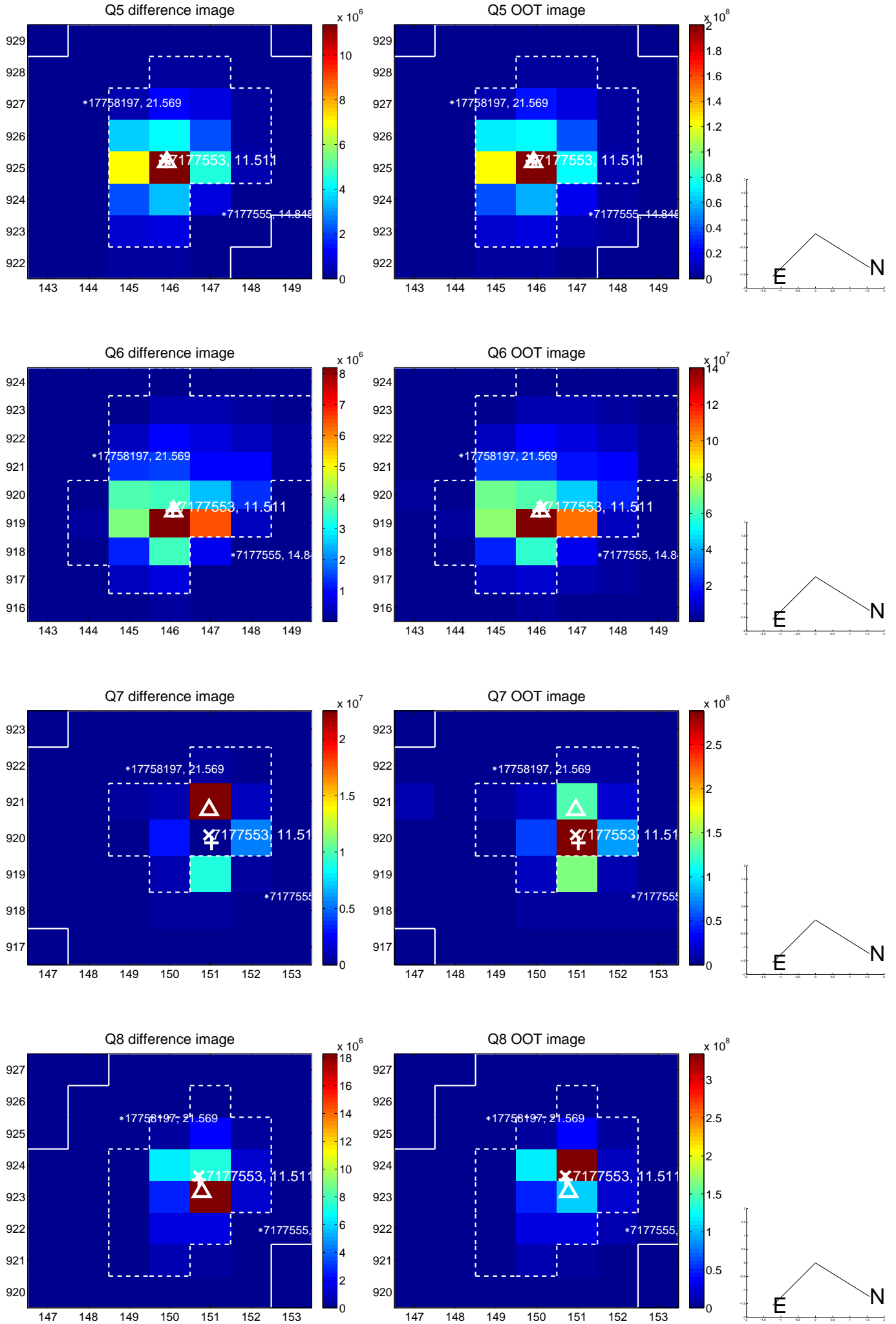


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

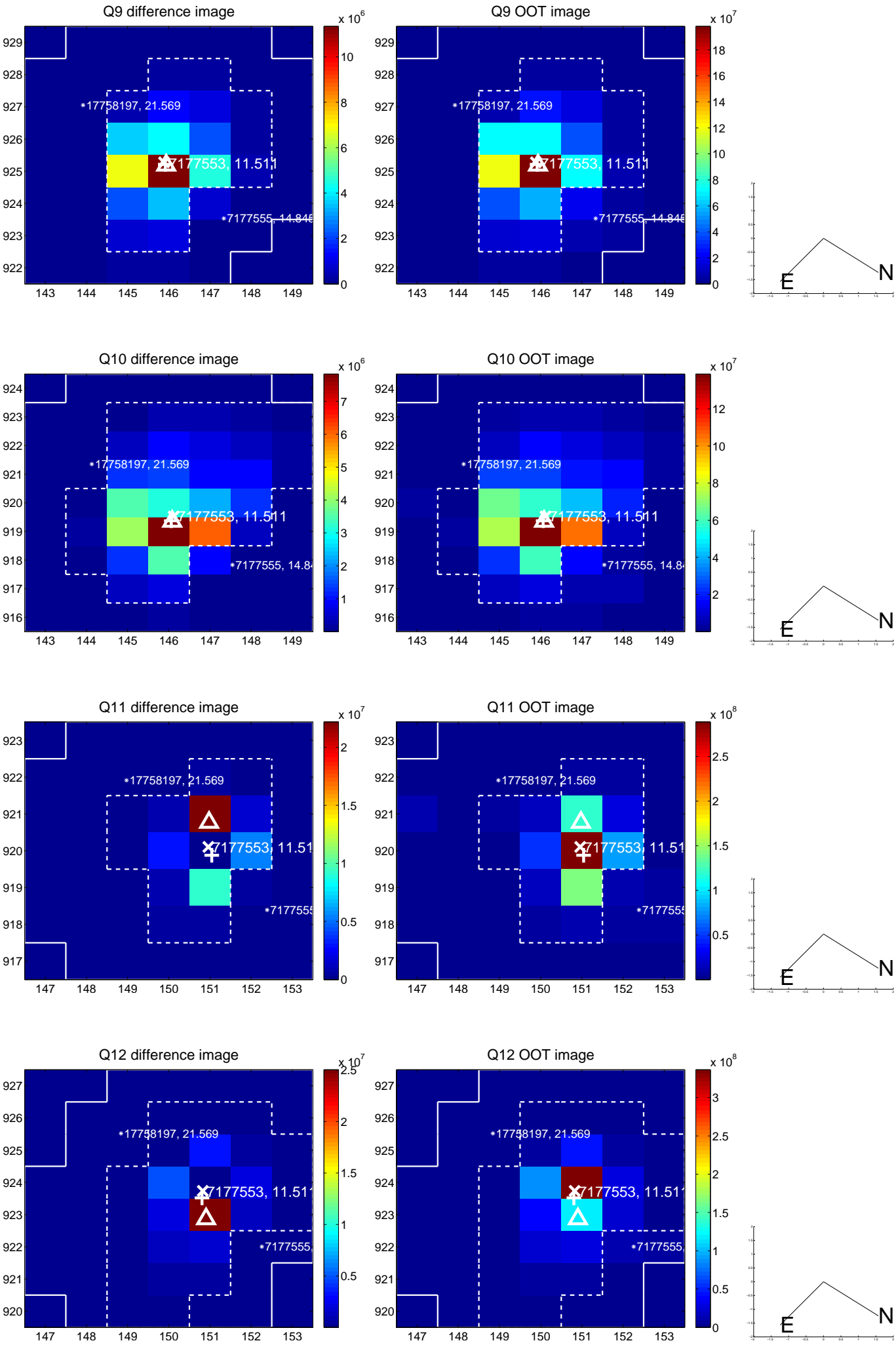
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



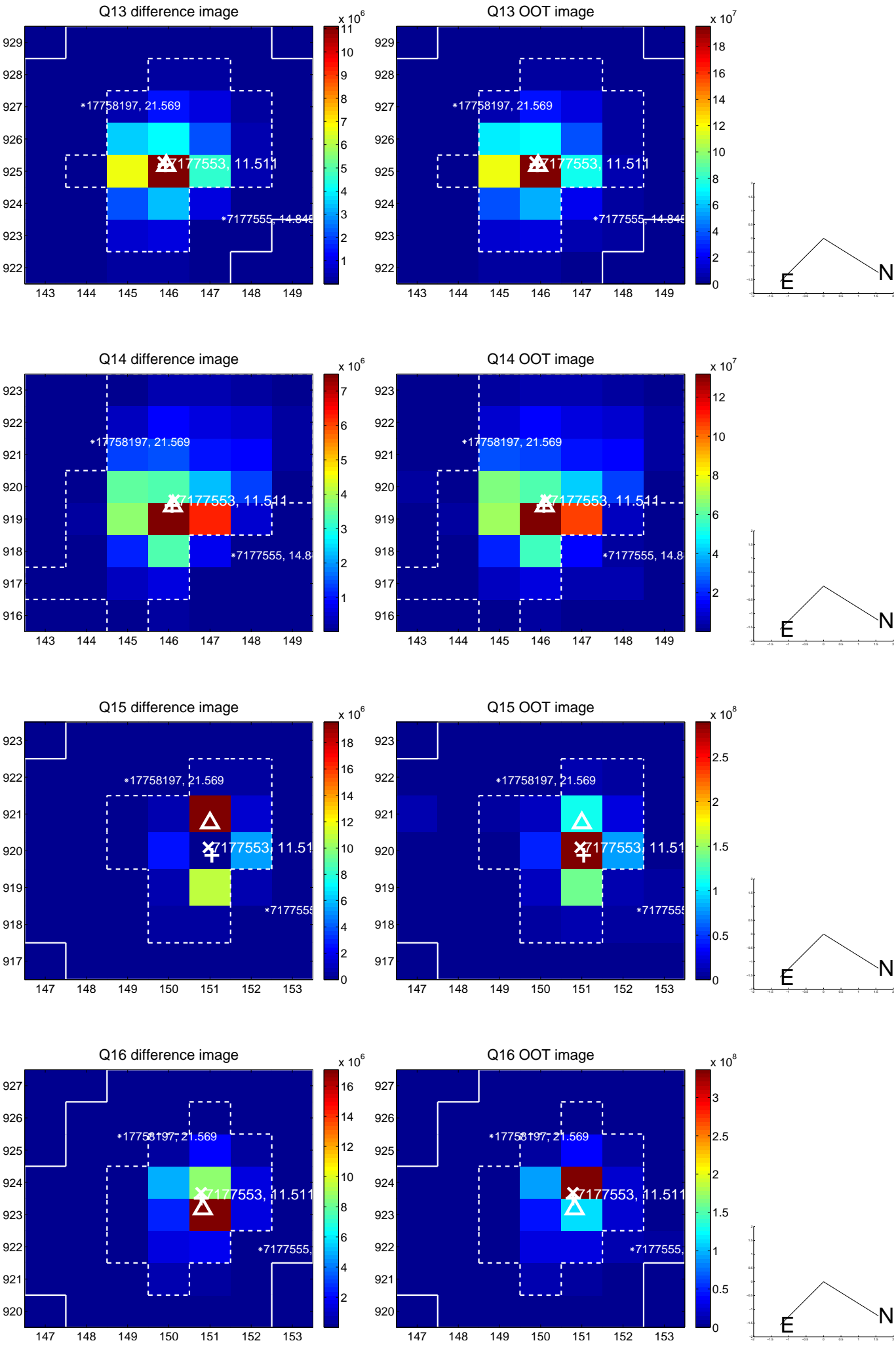
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



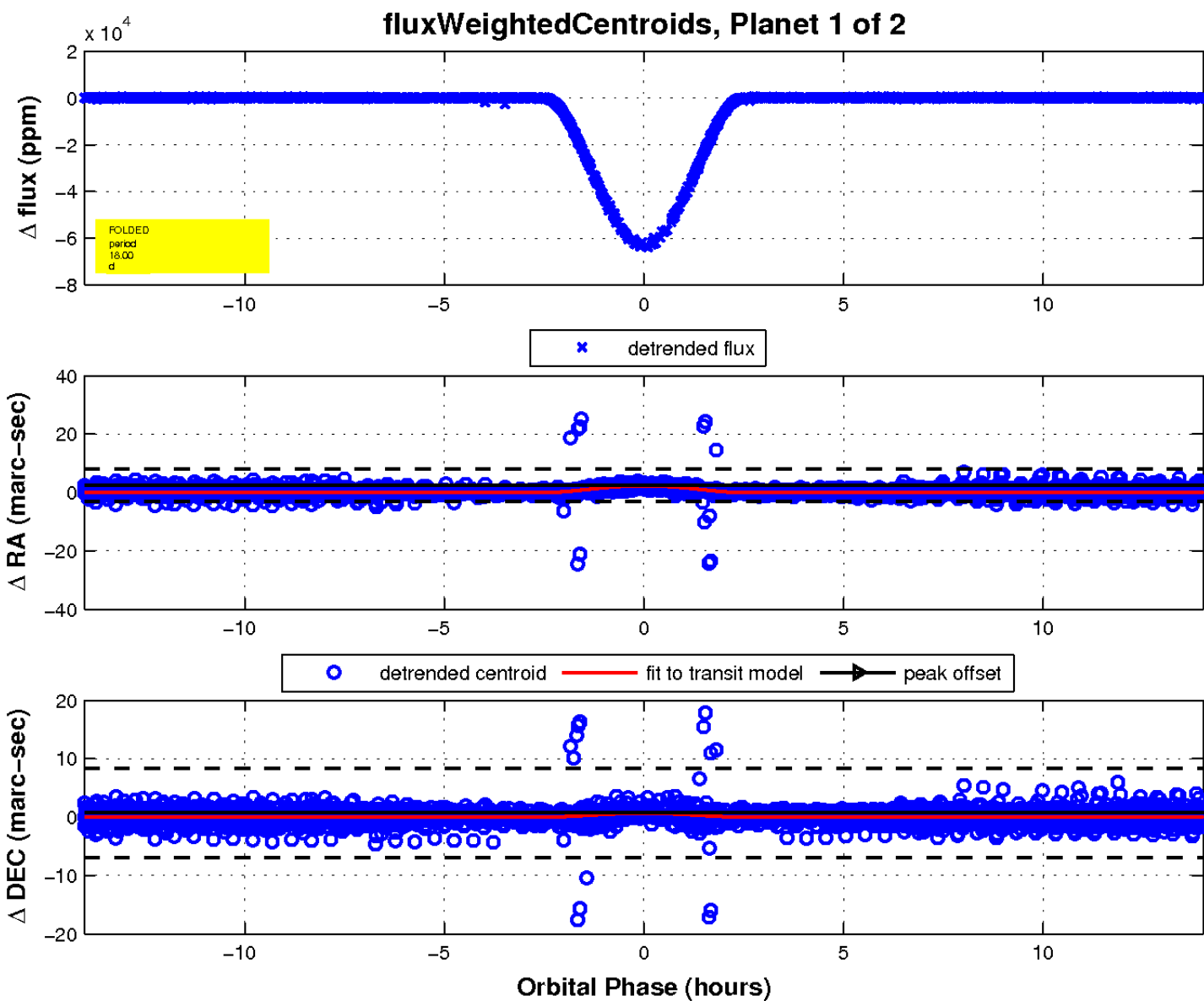
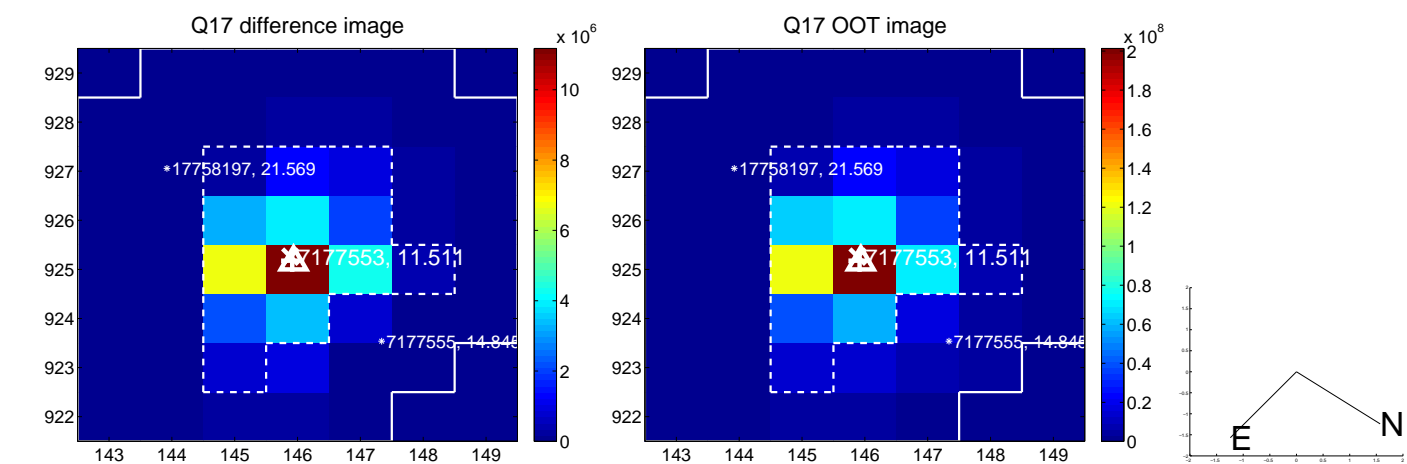
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

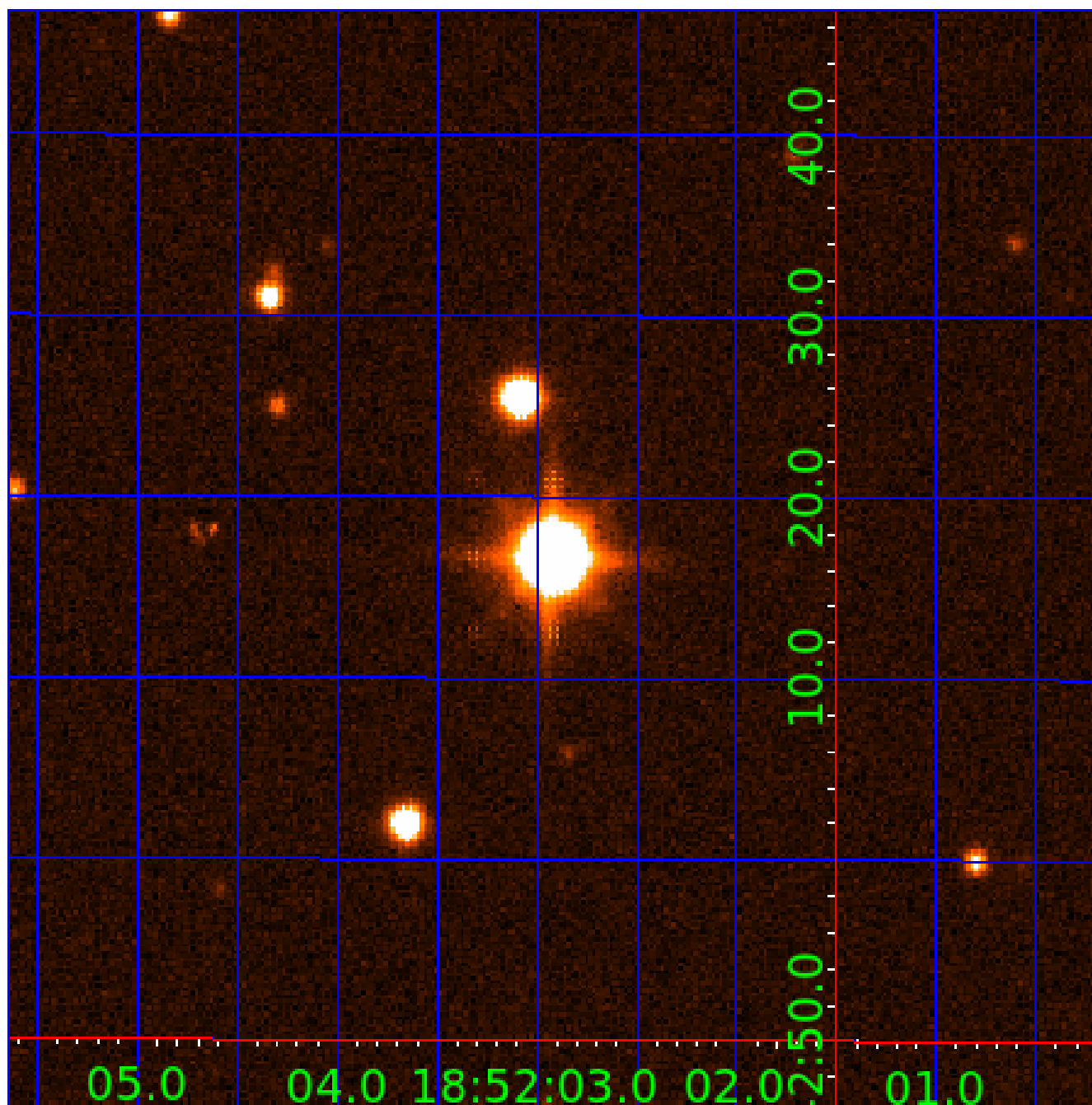


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007177553

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})
007177553-01	OBS	6837.01	17.996460	139.543353	62172.7	4.672	8574.5	5075.2	2.25	5684	95.11	240.95
007177553-02	OBS	No	17.996382	134.913278	37034.4	3.000	6990.0	-1.0	2.25	5684	43.07	240.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007177553-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—DEEP_V_SHAPED—HAS_SEC_TCE
007177553-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

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.

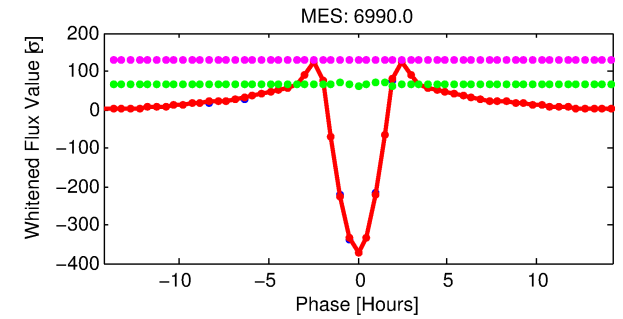
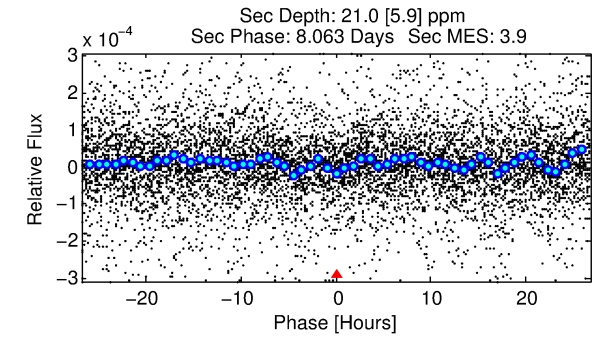
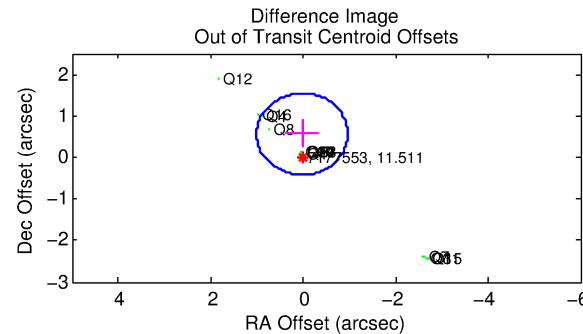
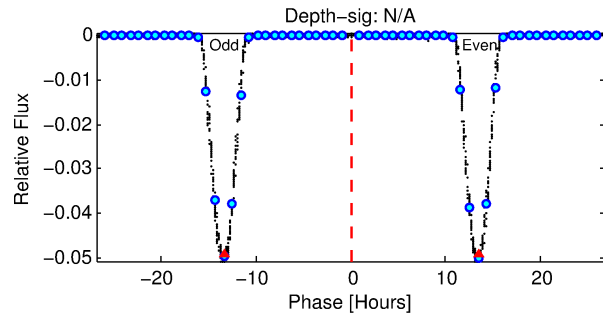
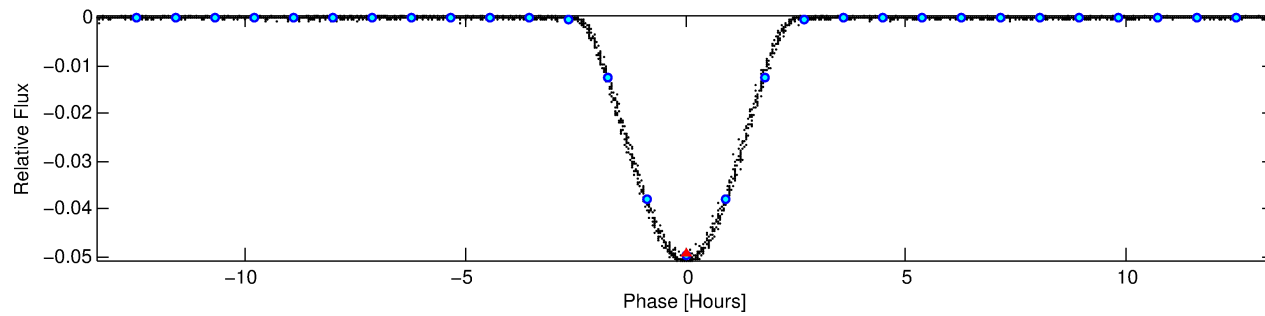
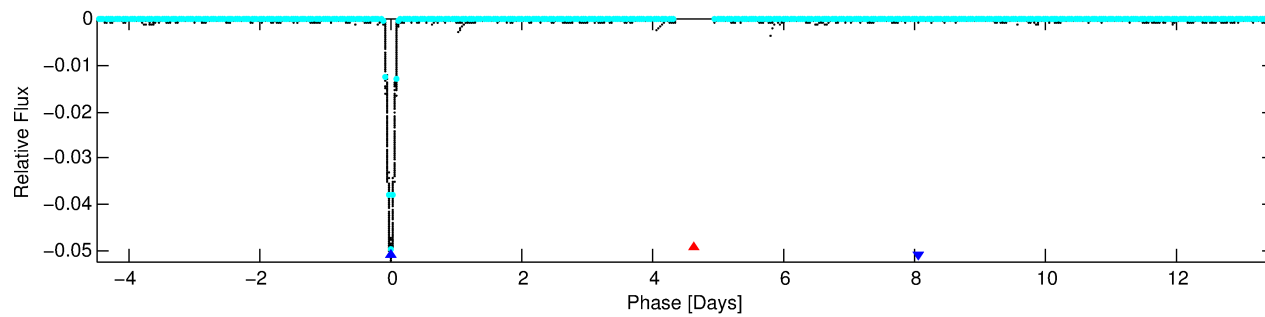
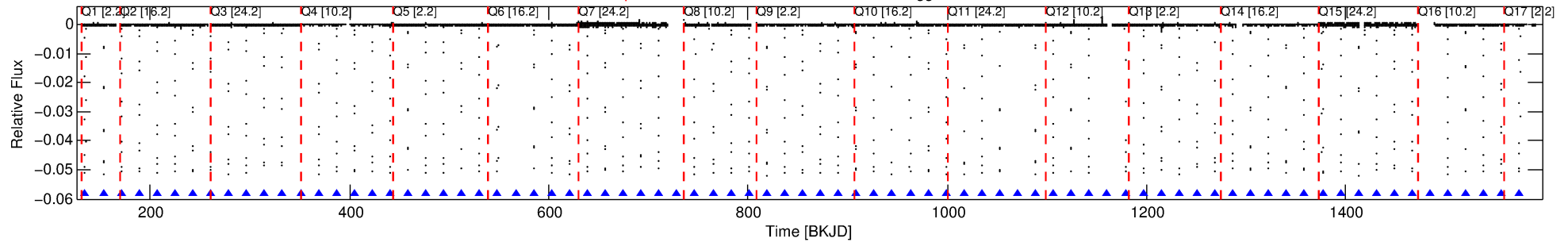
Ephemeris Match Information For 007177553-02

No Significant Match Found

DV One-Page Summary

KIC: 7177553 Candidate: 2 of 2 Period: 17.996 d
KOI: K06837 Corr: No Ephemeris Match

Kp: 11.51 R*: 2.25 Rs Teff: 5684.0 K Logg: 3.79 Fe/H: -0.280



TPS TCE Results:

Period = 17.99638 d
Epoch = 134.9133 BKJD

DV fit results are unavailable

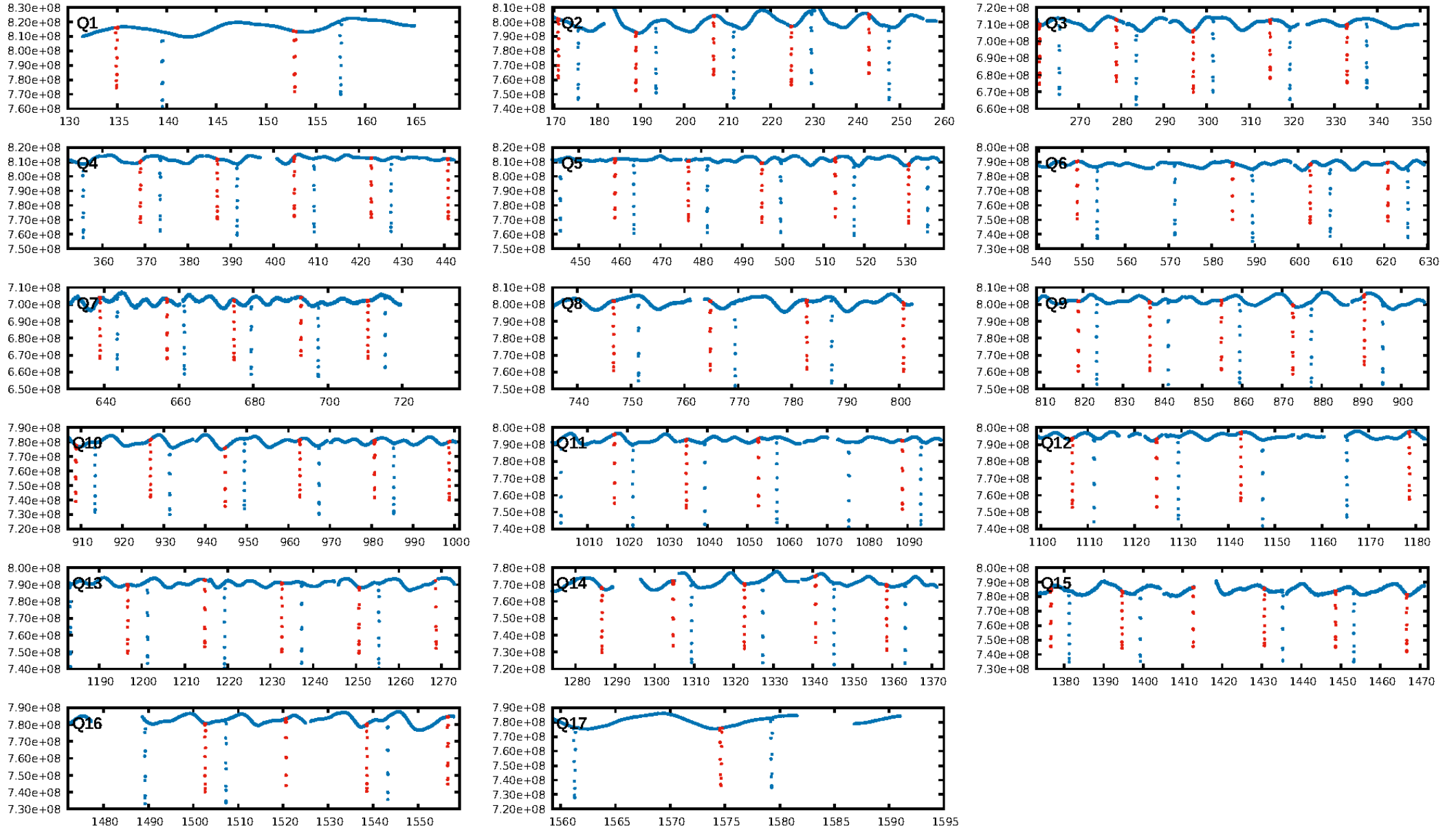
DV Diagnostic Results:

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 [72/72]
GhostDiagnostic-chr: 0.9245
Centroid-sig: 0.0%
Centroid-so: 0.445 arcsec [370.30σ]
OotOffset-rm: 0.565 arcsec [1.72σ]
KicOffset-rm: 0.805 arcsec [1.77σ]
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]

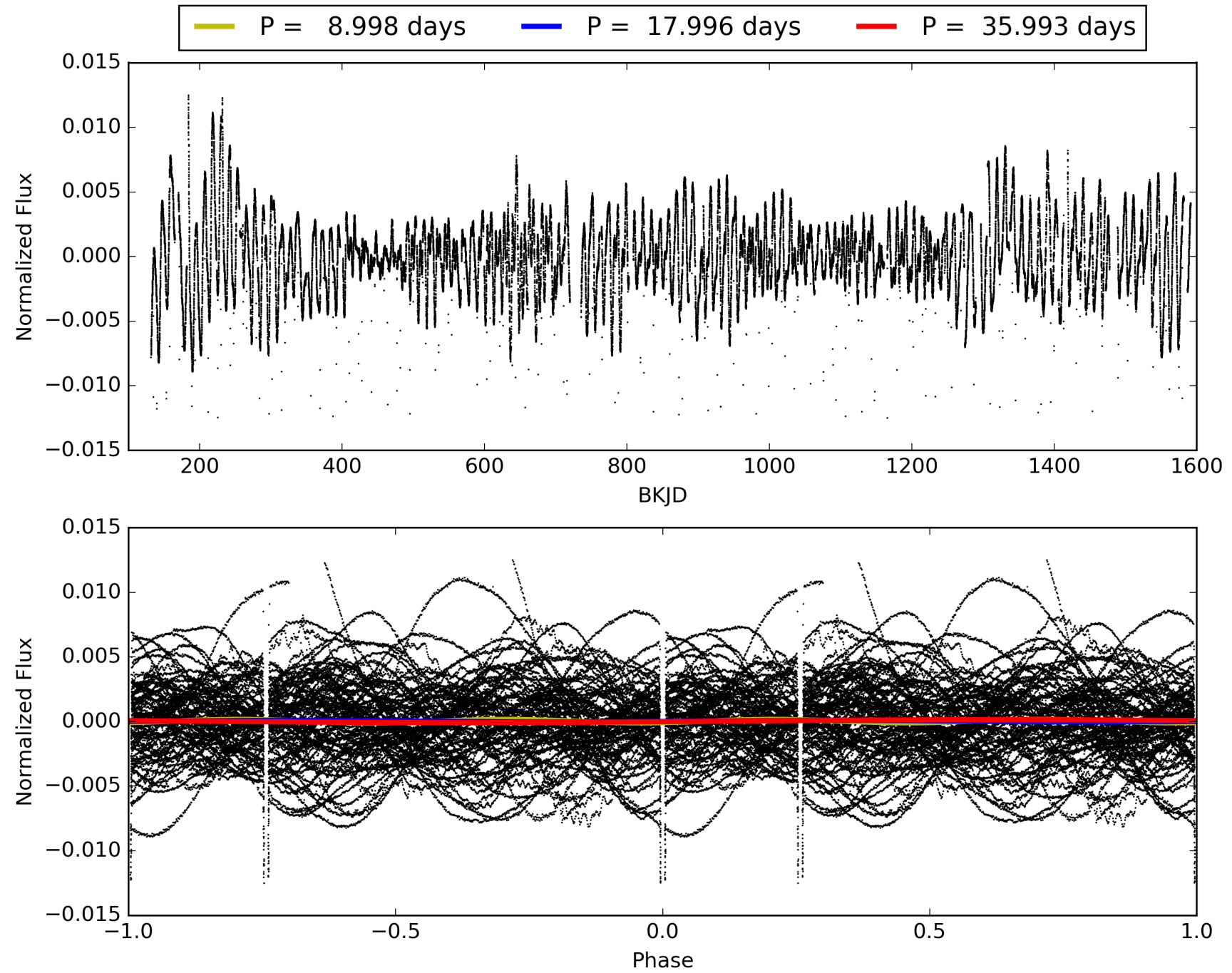
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 08:40:23 Z

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

TCE 007177553-02, PDC Light Curves

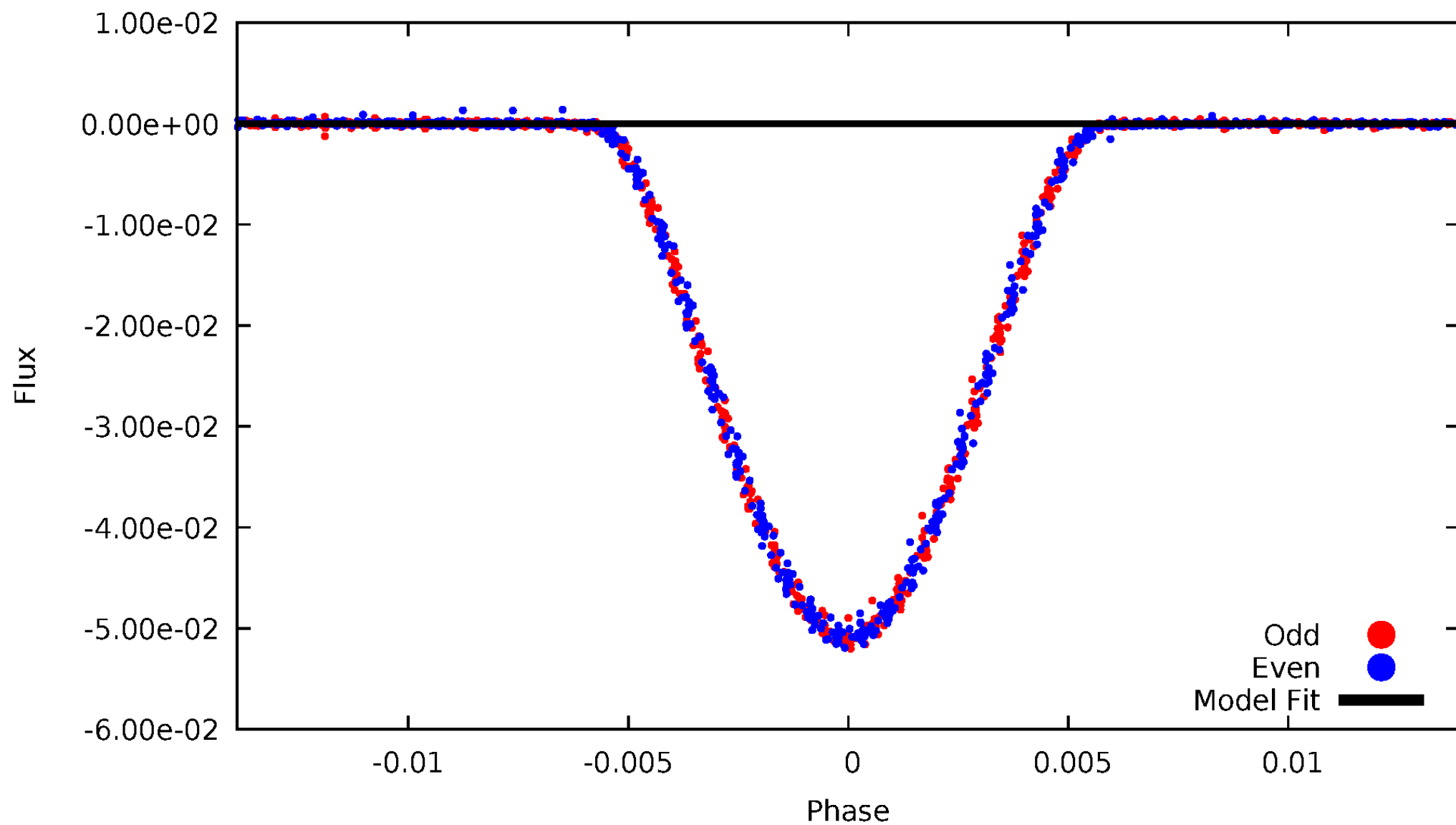


TCE 007177553-02



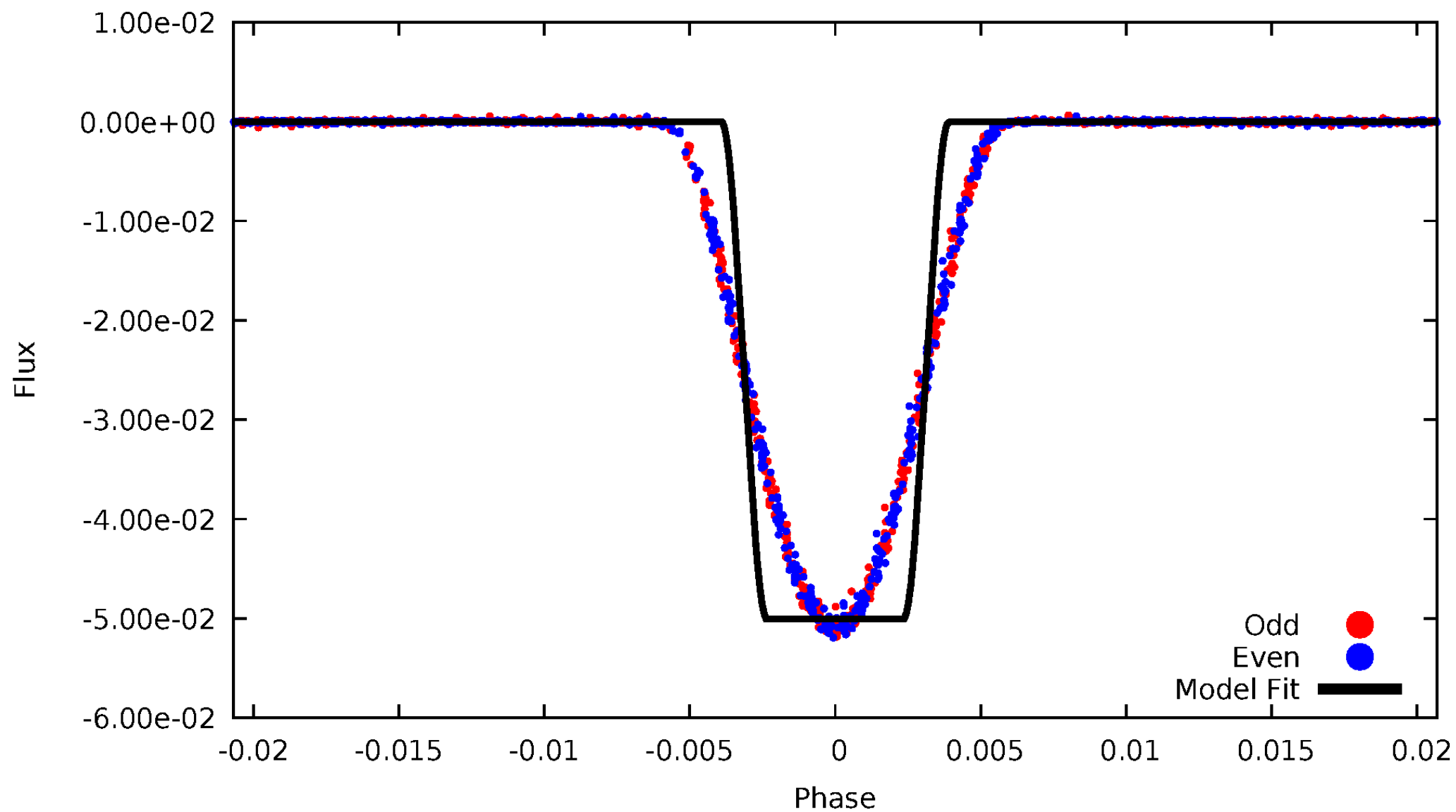
DV Odd/Even

TCE 007177553-02



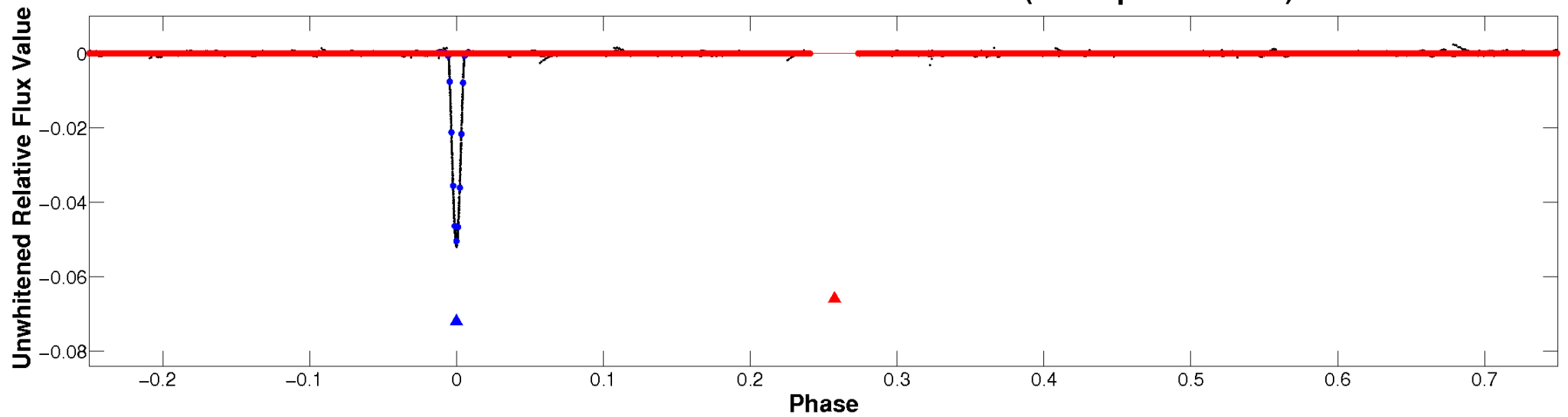
ALT Odd/Even

TCE 007177553-02



Non-Whitened Vs. Whitened Light Curve

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

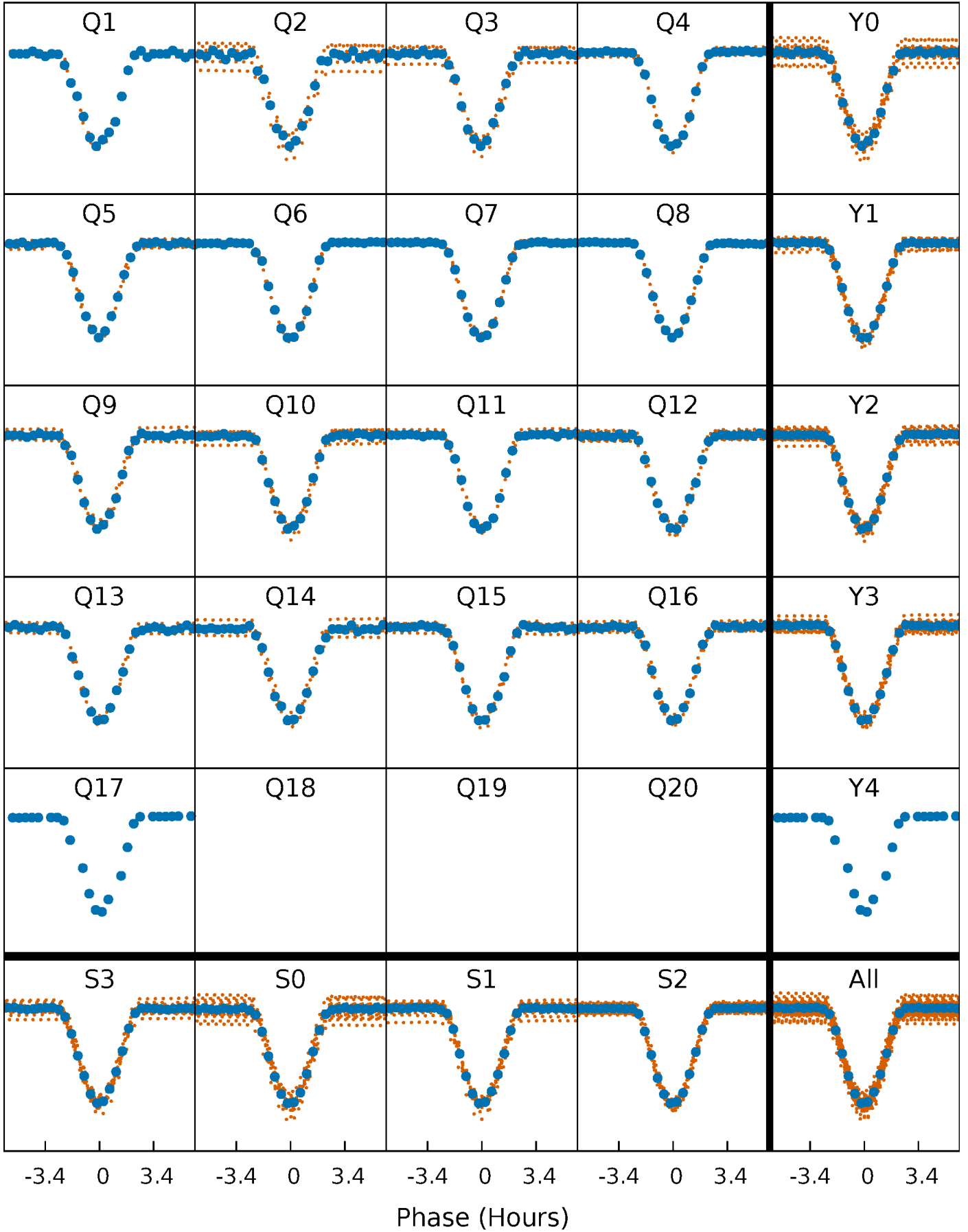


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



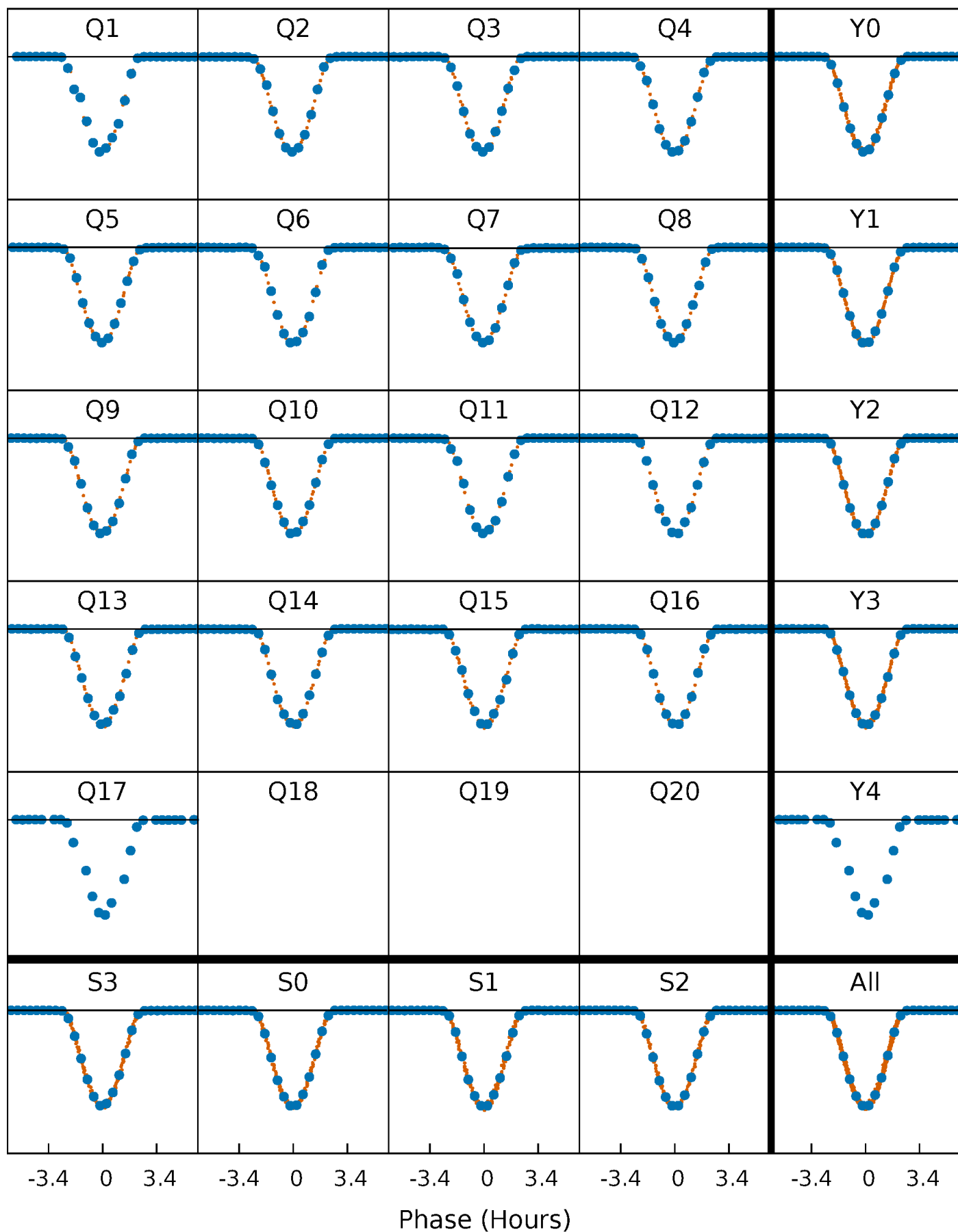
PDC Quarter-Phased Transit Curves

TCE 007177553-02 P= 17.996382 Days $T_0=134.913278$ (BKJD)



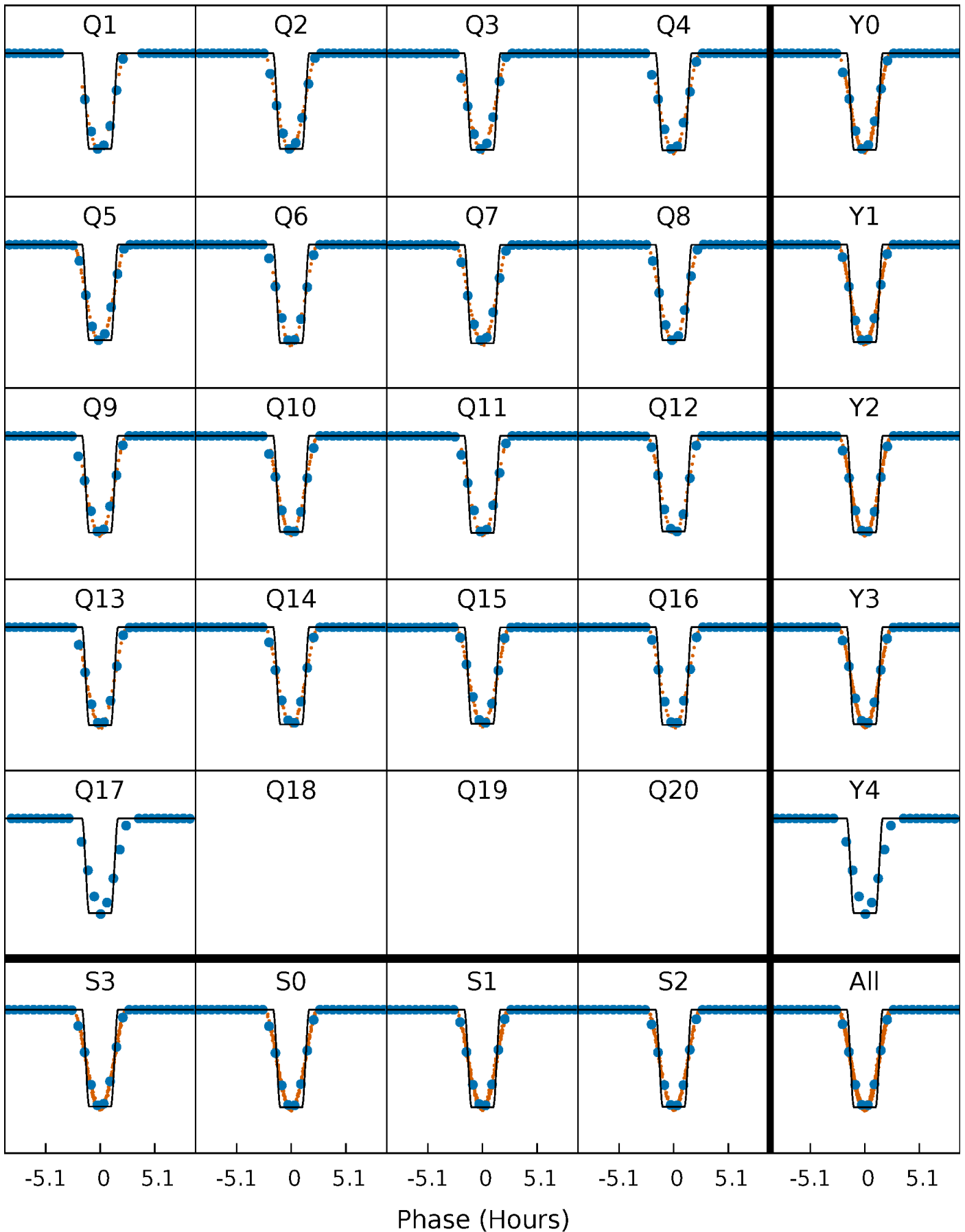
DV Quarter-Phased Transit Curves

TCE 007177553-02 P= 17.996382 Days $T_0=134.913278$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

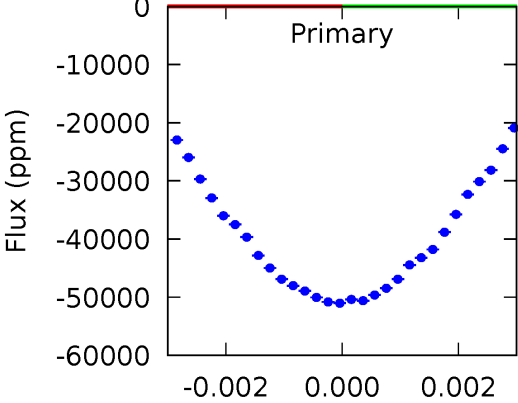
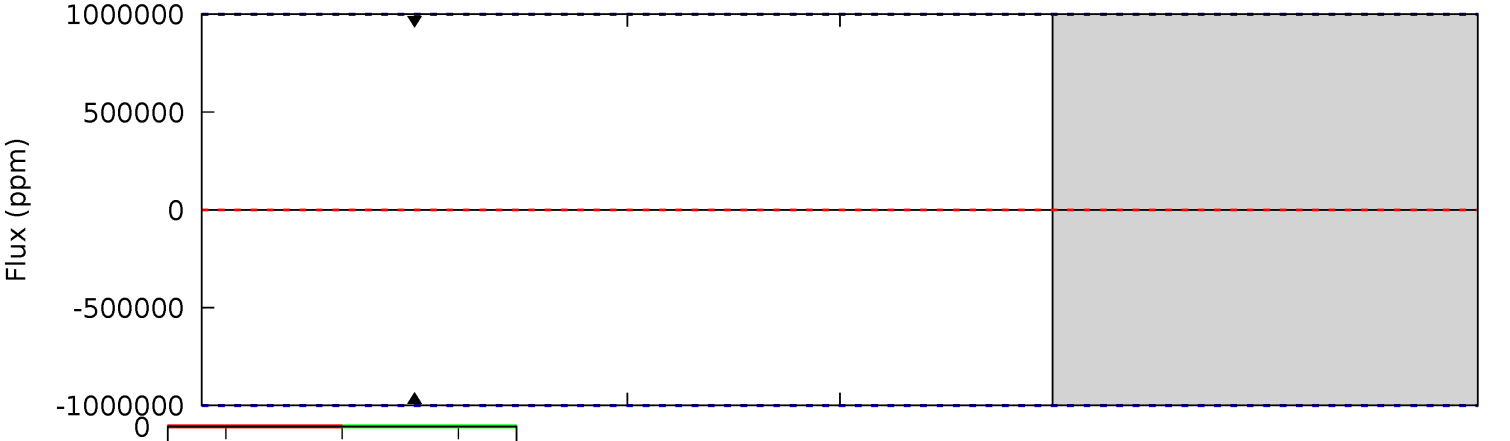
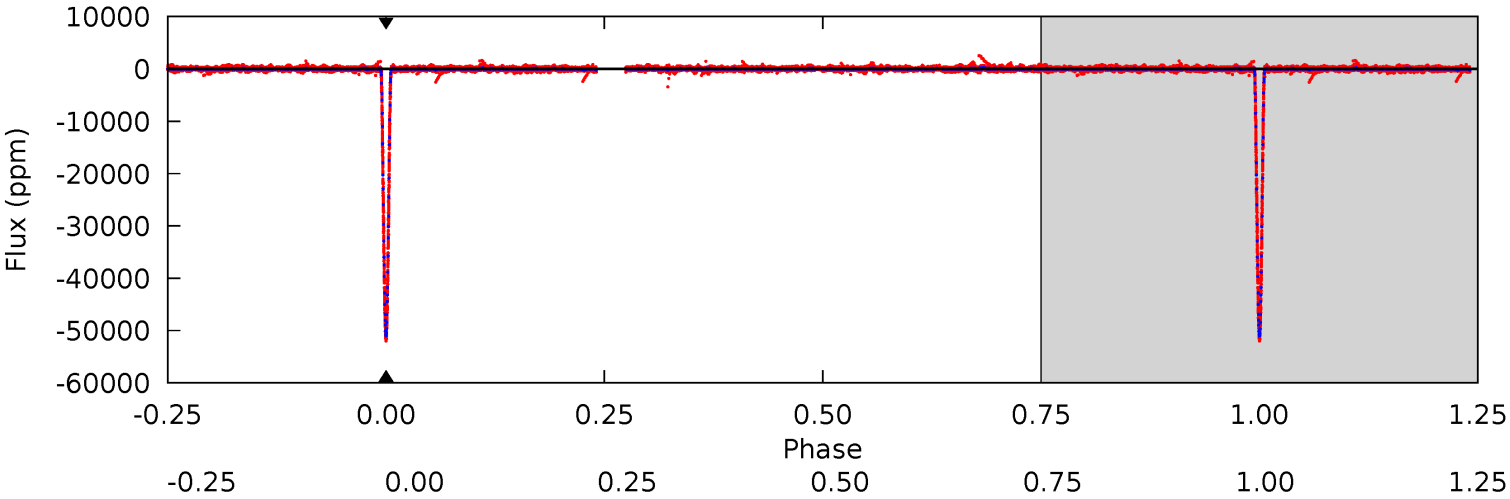
TCE 007177553-02 P= 17.996382 Days $T_0=134.912955$ (BKJD)



DV Model-Shift Uniqueness Test

007177553-02, P = 17.996382 Days, E = 116.916896 Days

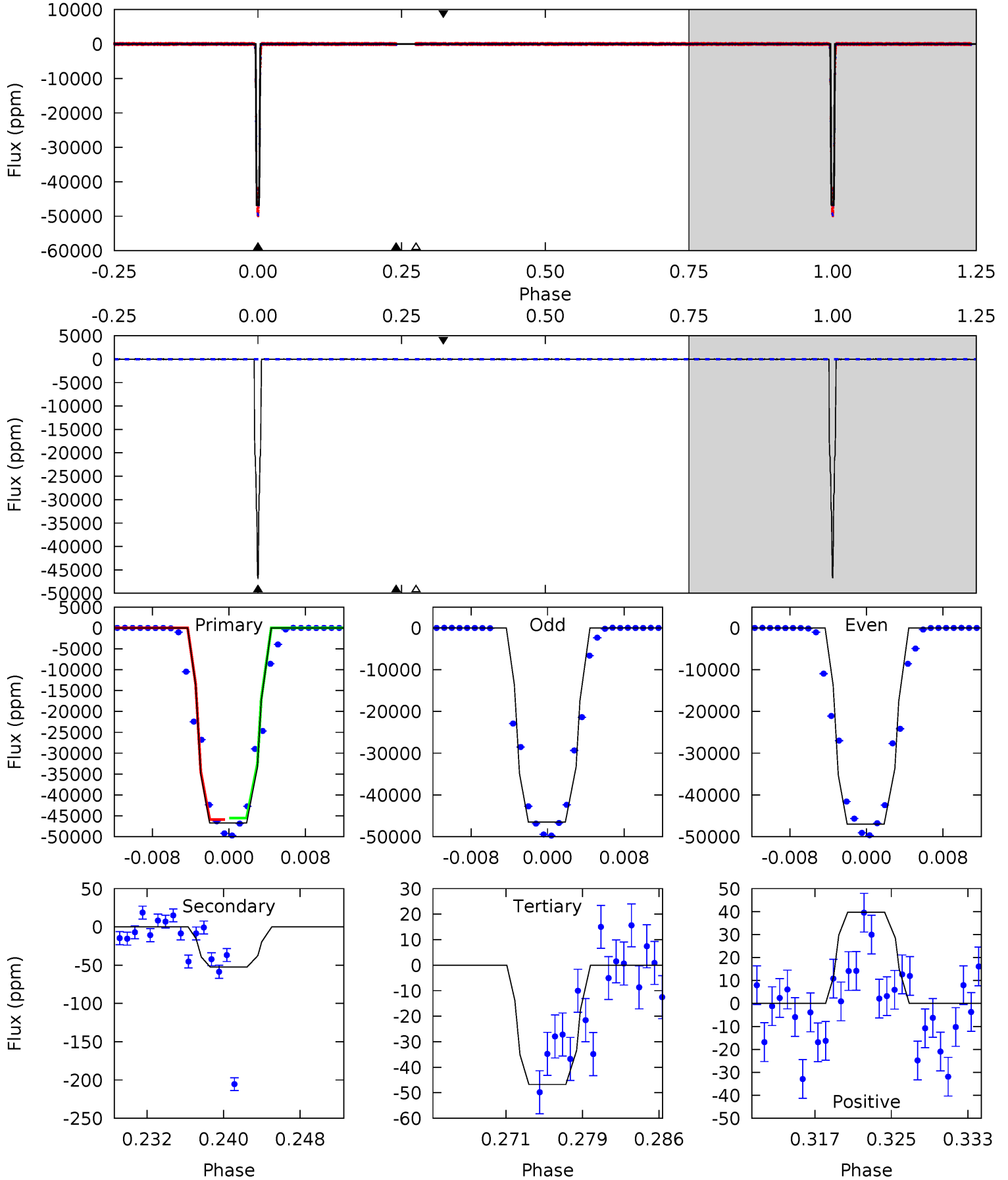
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007177553-02, P = 17.996382 Days, E = 116.916573 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5172	5.80	5.17	4.40	5.08	2.66	1.27	5167	5167	0.62	1.40	25.6	1.00	0.00	0



Stellar Parameters For KIC 007177553

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5684^{+190}_{-173}	$3.788^{+0.656}_{-0.164}$	$-0.280^{+0.300}_{-0.250}$	$2.249^{+0.688}_{-1.376}$	$1.134^{+0.149}_{-0.277}$	$0.140^{+1.348}_{-0.060}$
	+3%/-3%	+17%/-4%	+107%/-89%	+31%/-61%	+13%/-24%	+961%/-43%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007177553-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$38.47^{+27.51}_{-21.05}$	1359^{+135}_{-232}	3531^{+4956}_{-11303}	19^{+1096}_{-887}
Alt.	-52 ± 9	$47.75^{+28.53}_{-22.38}$	1363^{+139}_{-220}	-1759^{+3897}_{-305}	$0.238^{+0.614}_{-0.141}$

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

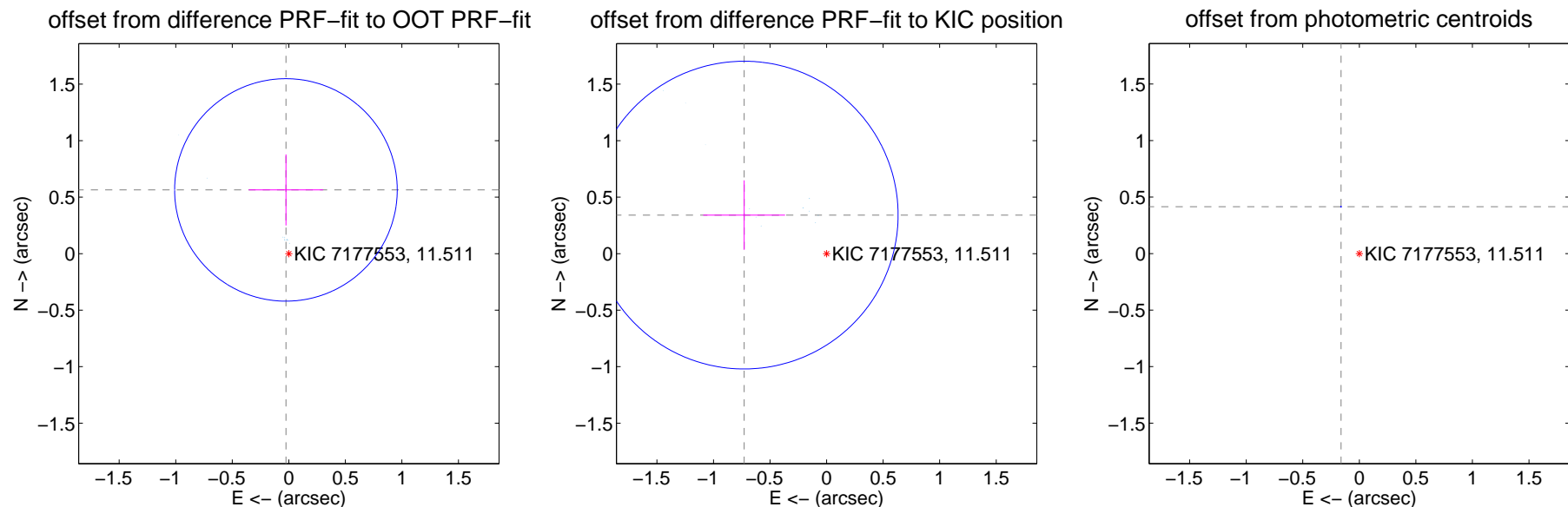
DV Centroid Data

Supplemental centroid analysis for 007177553-02. **Kepler magnitude: 11.51.** Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

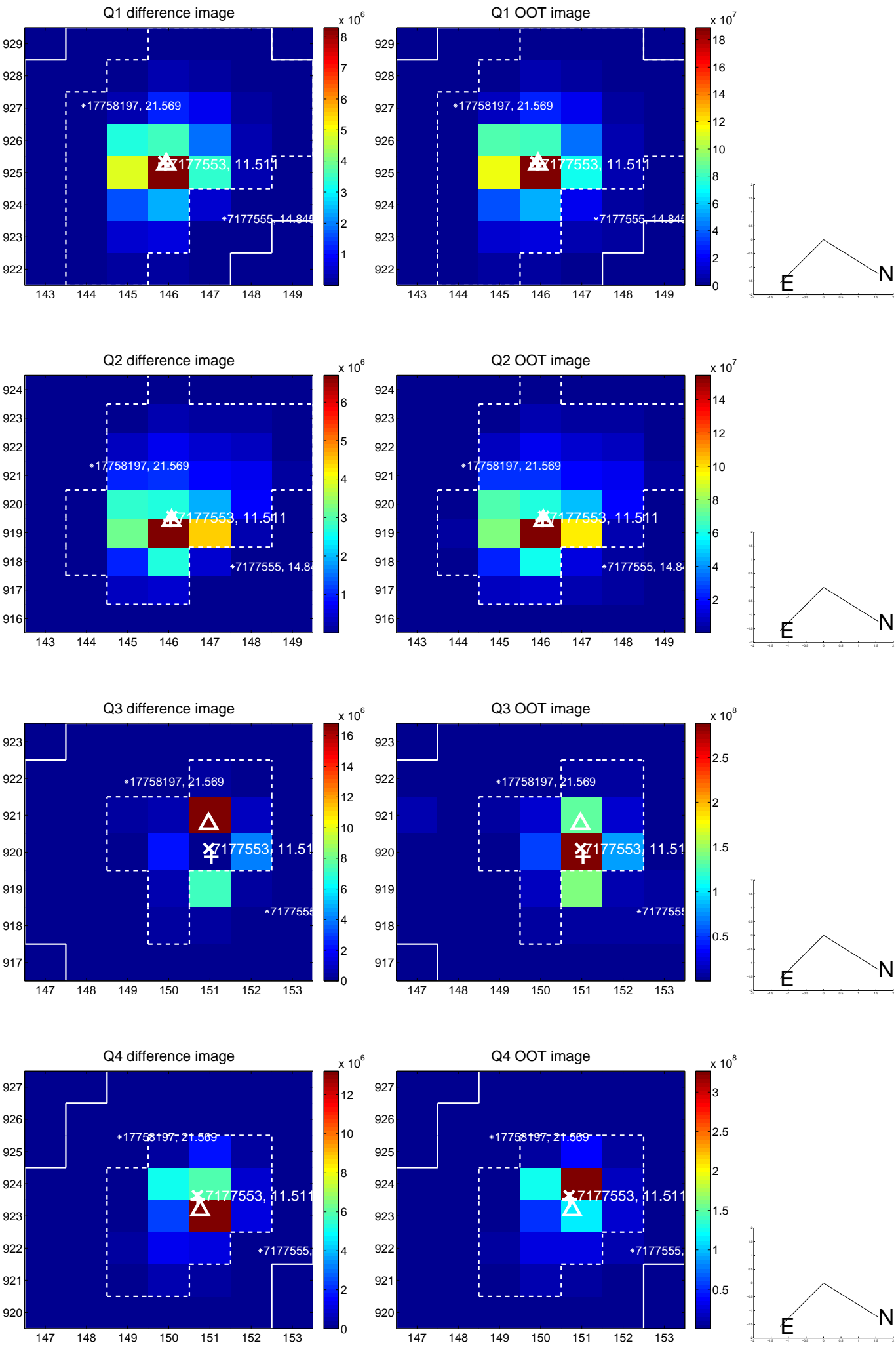
The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.565 ± 0.328	1.72	0.025 ± 0.328	0.564 ± 0.314
PRF-fit source offset from KIC position	0.805 ± 0.454	1.77	0.729 ± 0.362	0.341 ± 0.308
photometric centroid source offset	0.45 ± 0.00	370.30	0.16 ± 0.00	0.41 ± 0.00

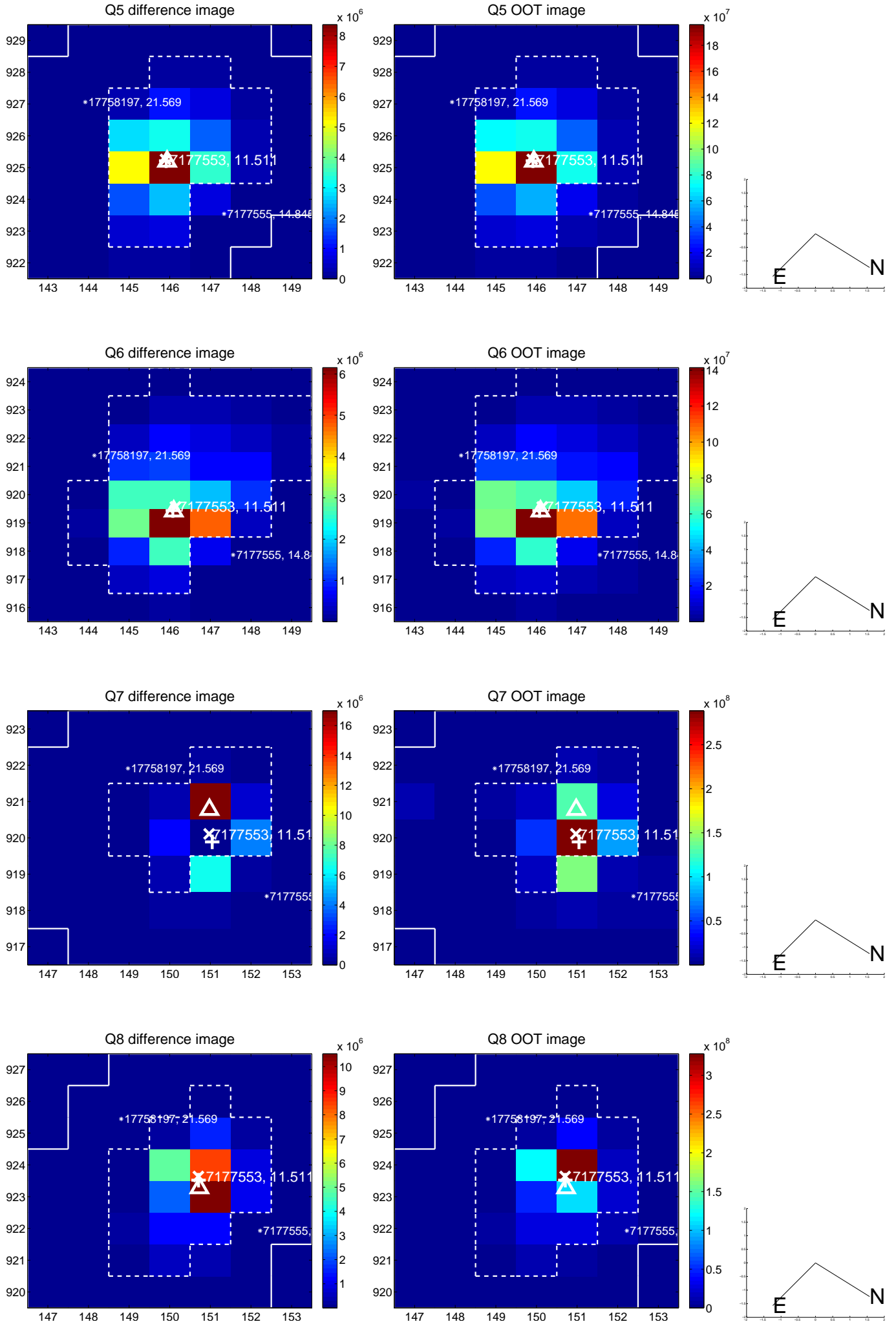


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

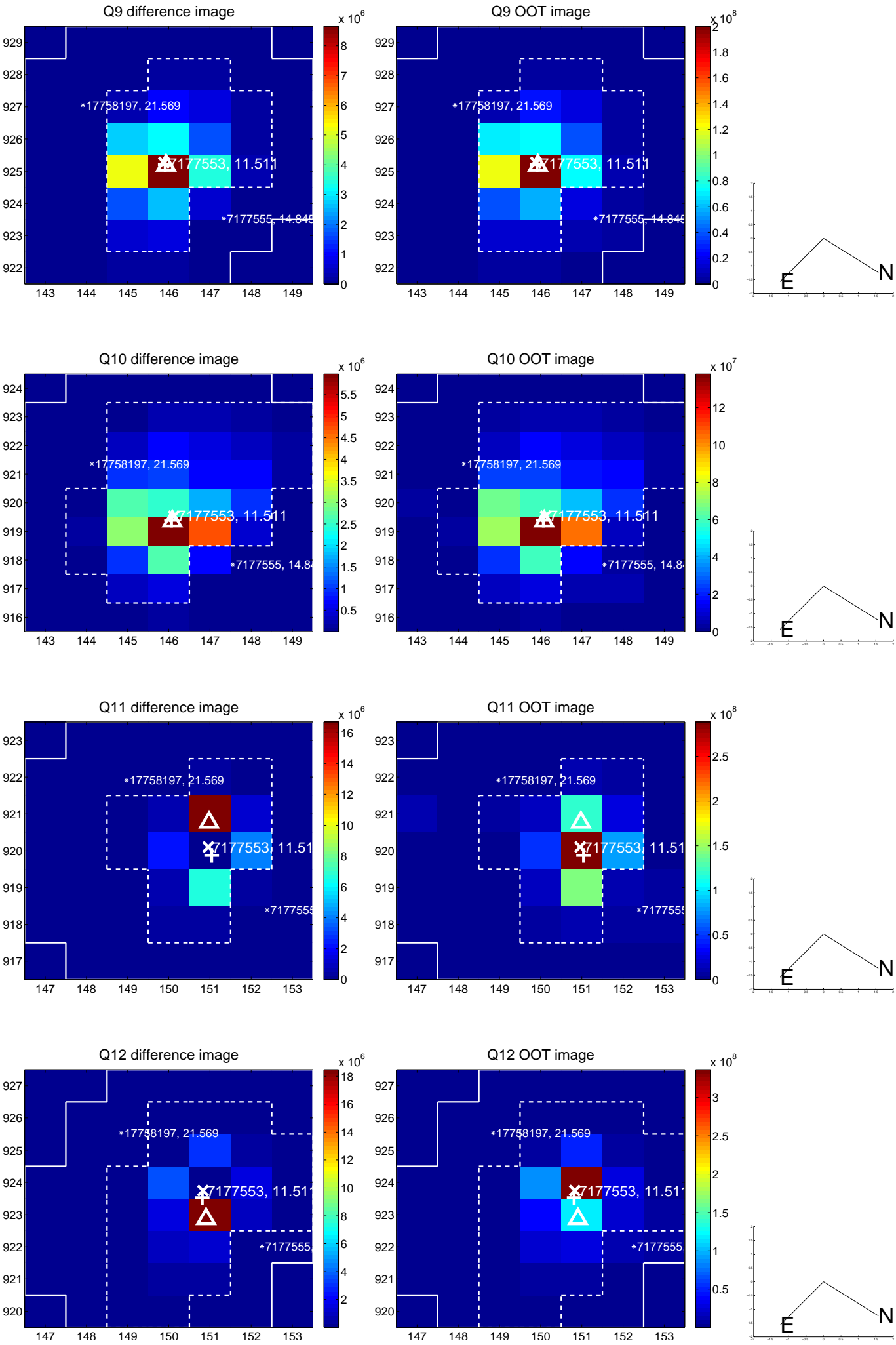
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



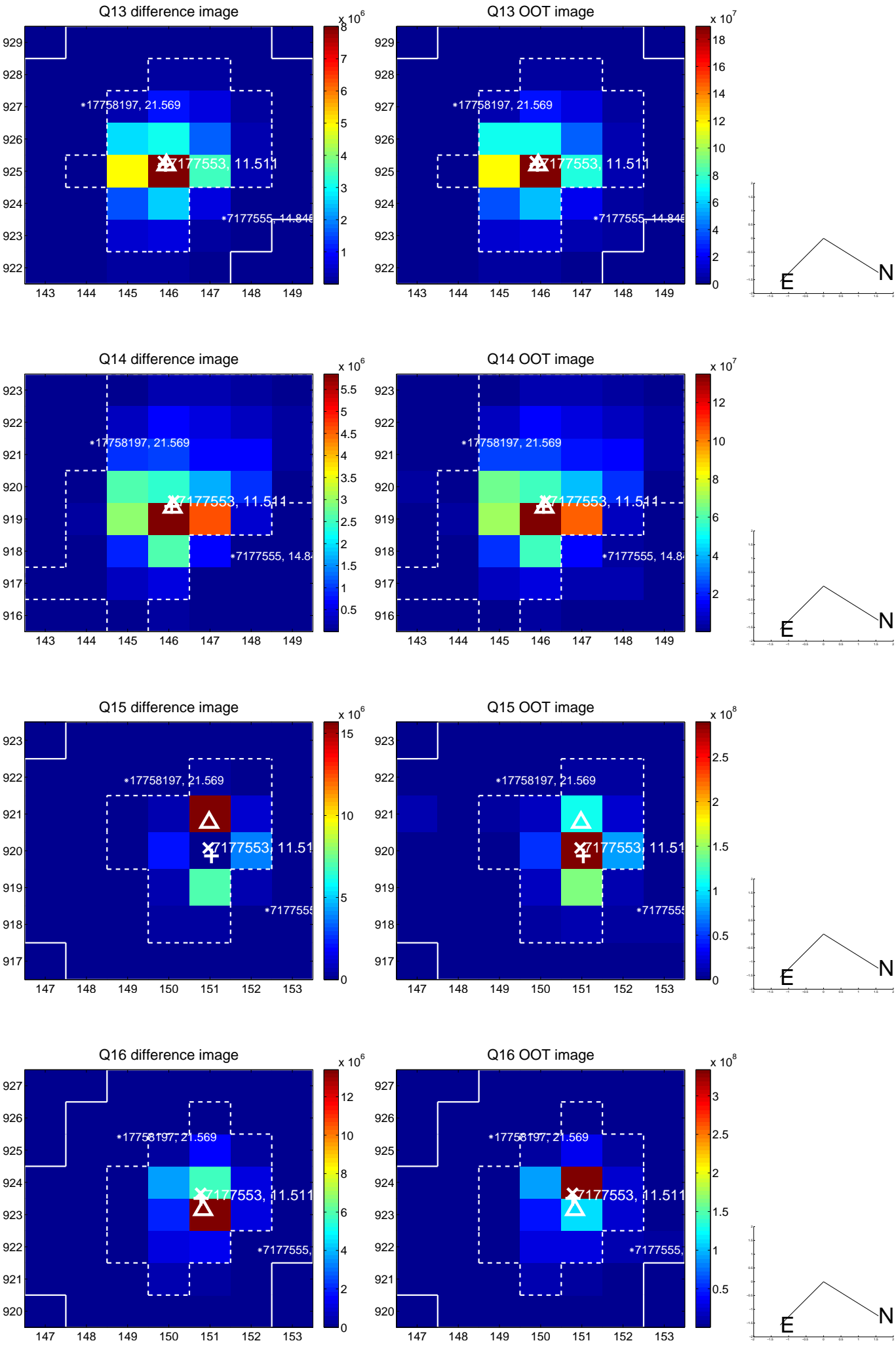
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



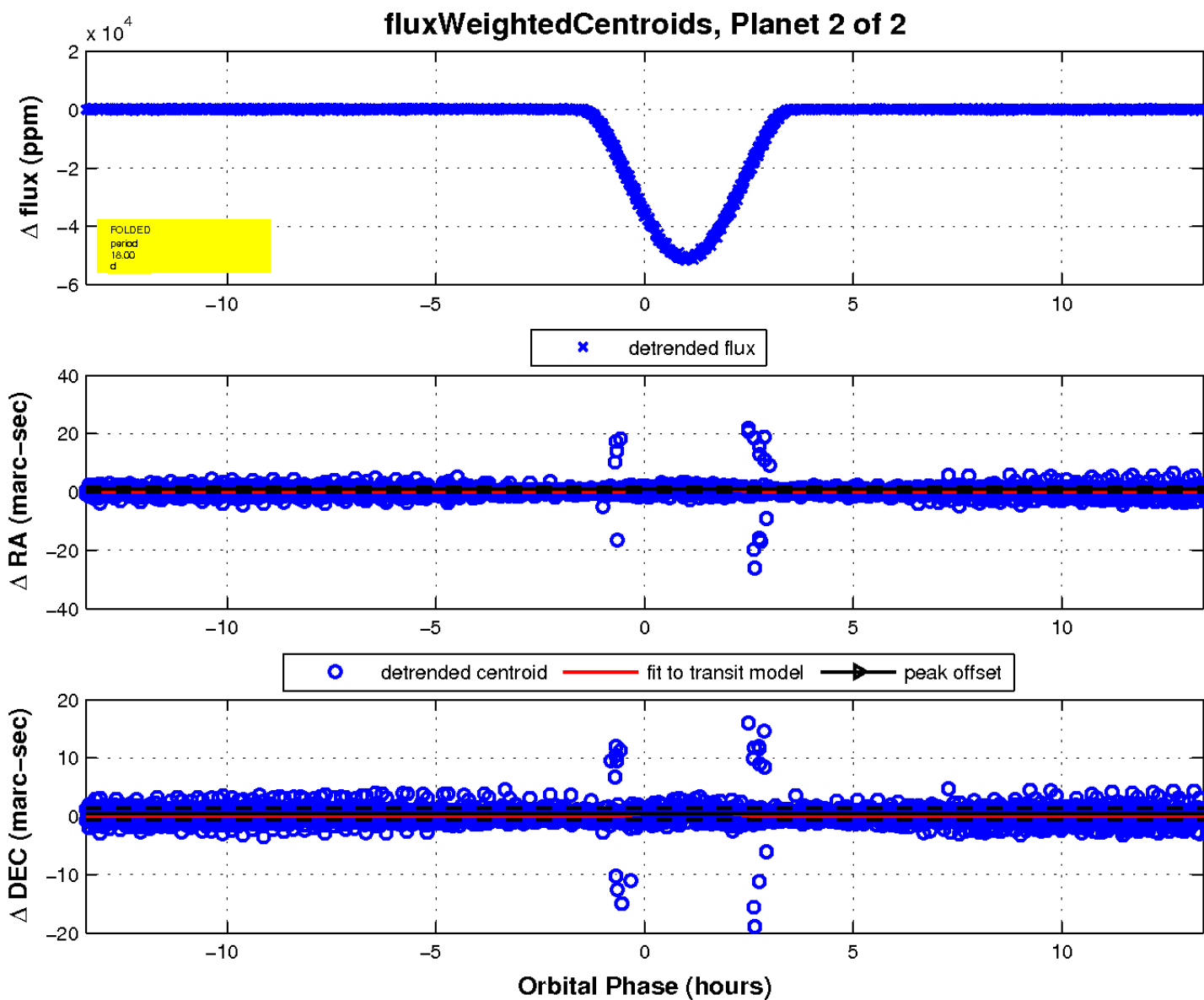
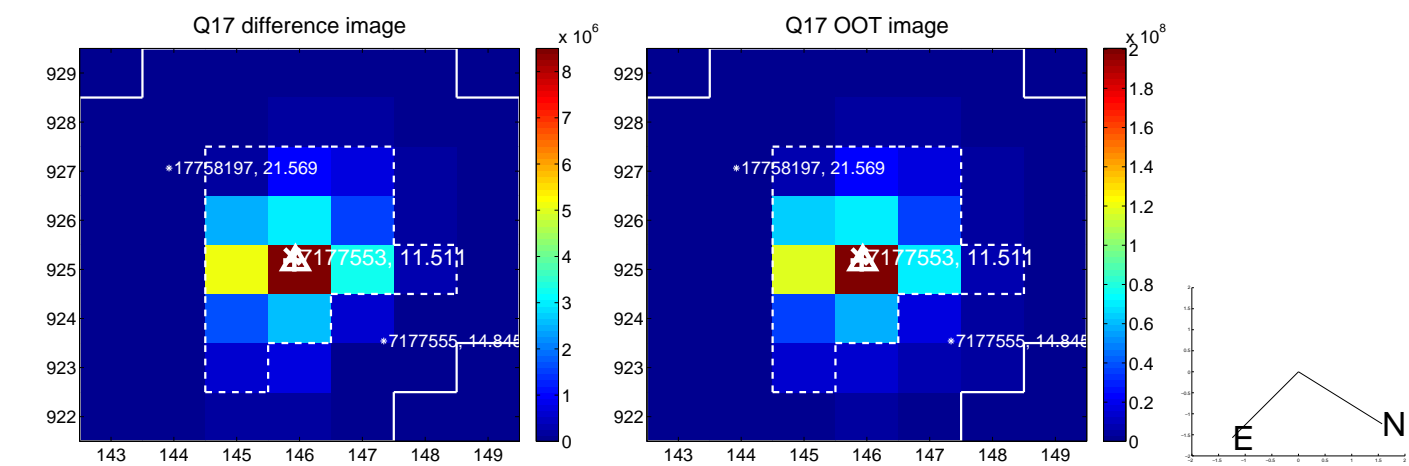
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

