ERRATA:
ℓ-ADIC IMAGES OF GALOIS FOR ELLIPTIC CURVES OVER $\mathbb{Q}$

JEMERY ROUSE, ANDREW V. SUTHERLAND, DAVID ZUREICK-BROWN
WITH JOHN VOIGHT

This note gives errata for the article *ℓ-adic images of Galois for elliptic curves over $\mathbb{Q}$* [1].

(1) Page 9, line 1: "$hgu \mapsto hg\chi_N(\sigma)u$" should be "$HgU(N) \mapsto Hg\chi_H(\sigma)U(N)$".

(2) Page 9, line 7: "that contain a conjugate of" should be "fixed by the action of".

(3) (5.1): "$j(E) \in k$" should be "$j(E) \in \mathbb{F}_q$".

(4) Table 9, section 11: The totals listed in the "SW" line of the first part of Table 9 are incorrect due to double counting 312435 elliptic curves of prime conductor that are included in two parts of the Stein–Watkins database. The Stein–Watkins database contains all elliptic curves over $\mathbb{Q}$ of absolute discriminant at most 10^{12} that have c_6-invariant of absolute value at most $1.44 \cdot 10^{12}$ whose conductor N meets either of the following criteria (which are not mutually exclusive): (1) $N \le 10^8$, (2) $N \le 10^{10}$ is prime.

The corrected counts in the first part of the table are:

SW	35585316	3671438	181222	43966	2048	7444	368	1024	97776484	136789294

The counts in the second part of the table are the same (none of the double-counted curves are non-surjective at more than one prime).

(5) Proposition A.6: the final phrase should be "conductor dividing N" (not "character of modulus N").

(6) [SW02]: the book title "Algorithmic Number Theory Symposium (ANTS I)" should be "Algorithmic Number Theory 5th International Symposium (ANTS V)".

REFERENCES

[1] Jeremy Rouse, Andrew V. Sutherland, and David Zureick-Brown, *ℓ-adic images of Galois for elliptic curves over $\mathbb{Q}$*, appendix with John Voight, Forum Math. Sigma **10** (2022), e62.