Calibrating high-precision Faraday rotation measurements
for LOFAR and the next generation of low-frequency
radio telescopes
(Corrigendum)

C. Sotomayor-Beltran1, C. Sobey2, J. W. T. Hesels3,4, G. de Bruyn3,5, A. Noutsos2, A. Alexov6,7, J. Anderson2,
A. Asgekar3, I. M. Avruch7,8, R. Beck2, M. E. Bell9,10, M. R. Bell10, M. J. Bentum3, G. Bernardi5, P. Best11,
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M. W. Wise3,4, O. Wucknitz28,2, S. Yatawatta3, and P. Zarka26

1 Astronomisches Institut der Ruhr-Universität Bochum, Universitätsstr. 150, 44780 Bochum, Germany
e-mail: sotomayor@astro.rub.de
2 Max-Planck-Institut für Radioastronomie, Auf dem Hügel 69, 53121 Bonn, Germany
3 ASTRON, the Netherlands Institute for Radio Astronomy, Postbus 2, 7990 AA Dwingeloo, The Netherlands
4 Astronomical Institute "Anton Pannekoek," University of Amsterdam, Science Park 904, 1098 XH Amsterdam, The Netherlands
5 Kapteyn Astronomical Institute, PO Box 800, 9700 AV Groningen, The Netherlands
6 Space Telescope Science Institute, 3700 San Martin Drive, Baltimore, MD 21218, USA
7 SKON Netherlands Institute for Space Research, Sorbonnelaan 2, 3584 CA Utrecht, The Netherlands
8 ARC Centre of Excellence for All-sky astrophysics (CAASTRO), Sydney Institute of Astronomy, University of Sydney Australia, Redfern NSW 2016, Australia
9 School of Physics and Astronomy, University of Southampton, Southampton, SO17 1BJ, UK
10 Max Planck-Institut für Astrophysik, Karl Schwarzschild Str. 1, 85741 Garching, Germany
11 Institute for Astronomy, University of Edinburgh, Royal Observatory of Edinburgh, Blackford Hill, Edinburgh EH9 3HJ, UK
12 Leiden Observatory, Leiden University, PO Box 9513, 2300 RA Leiden, The Netherlands
13 University of Hamburg, Gojenbergsweg 112, 21029 Hamburg, Germany
14 Jacobs University Bremen, Campus Ring 1, 28759 Bremen, Germany
15 Leibniz-Institut für Astrophysik Potsdam (AIP), An der Sternwarte 16, 14482 Potsdam, Germany
16 Thüringer Landessternwarte, Sternwarte 5, 07778 Tautenburg, Germany
17 Department of Astrophysics/MAPP, Radboud University Nijmegen, PO Box 9010, 6500 GL Nijmegen, The Netherlands
18 Laboratoire Lagrange, UMR 7293, Université de Nice Sophia-Antipolis, CNRS, Observatoire de la Côte d’Azur, 06300 Nice, France
19 Laboratoire de Physique et Chimie de l’Environnement et de l’Espace, LPC2E UMR 7328 CNRS, 45071 Orléans Cedex 02, France
20 Jodrell Bank Center for Astrophysics, School of Physics and Astronomy, The University of Manchester, Manchester M13 9PL, UK
21 Astrophysics, University of Oxford, Denys Wilkinson Building, Keble Road, Oxford OX1 3RH
22 Astro Space Center of the Lebedev Physical Institute, Profsoyuznaya str. 84/32, 117997 Moscow, Russia
23 Center for Information Technology (CIT), University of Groningen, 9712 CP Groningen, The Netherlands
24 Centre de Recherche Astrophysique de Lyon, Observatoire de Lyon, 9 Av. Charles André, 69561 Saint-Genis Laval Cedex, France
25 Service d’Astrophysique, Observatoire de Paris, CNRS/INSU, 18330 Nançay, France
26 LESIA, UMR CNRS 8109, Observatoire de Paris, 92195 Meudon, France
27 Harvard-Smithsonian Center for Astrophysics, 60 Garden Street, Cambridge, MA 02138, USA
28 Argelander-Institut für Astronomie, University of Bonn, Auf dem Hügel 71, 53121 Bonn, Germany

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This erratum corrects Figs. 2 and 3 of our original paper (Sotomayor-Beltran et al. 2013). Due to a simple error in plotting the input data, these maps of ionospheric total electron content (TEC) were inverted north-south and improperly stretched to match the underlying cartographic projection. The properly mapped figures are presented here (see also the Appendix of

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Fig. 2. GIMs representing the VTEC across the globe for April 11th, 2011 (the date of the first LOFAR observing campaign, see Sect. 5) obtained courtesy of CODE. The maps range from minimum (blue) to maximum (red) VTEC values of $0.0 - 87.2$ TECU (1 TECU $= 10^{16}$ electrons/m$^2$). The triangles indicate the location of the LOFAR core stations in the Netherlands, the squares mark the SKA core sites in South Africa and Western Australia, and the circles indicate the site of the GMRT.

Fig. 3. The VTEC across Europe for March 23rd, 2012 (the date of the third LOFAR campaign, see Sect. 5) at 00:00 UT, obtained courtesy of ROB. The square indicates the LOFAR core stations and the triangles represent the locations of the international stations.

Arora et al. 2015). The ionospheric prediction code, ionFR, and other figures presented in the paper were not affected by this inversion error, which was purely a plotting error applying to Figs. 2 and 3.

This mapping error led to the incorrect conclusion that the Equatorial Ionization Anomaly (EIA) can sometimes pass directly over the planned sites of the Square Kilometre Array (SKA). Though ionospheric calibration is a challenging problem, it is a challenge that is being met (e.g., Arora et al. 2015). Unfortunately, the incorrect assertion that the EIA passes over the chosen sites for the SKA overstated the severity of the problem for these locations, which have been meticulously chosen and proven to be excellent sites for low-frequency radio astronomy.

All other conclusions in the paper remain unaffected.

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References

Arora, B. S., Morgan, J., Ord, S. M., et al. 2015, PASA, 32, 029