

Provenance, modification and use of manganese-rich rocks at Le Moustier, Dordogne, France

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S3 Figures

Results of analyses conducted on Mn-rich geological samples from Dordogne and Lot regions of France

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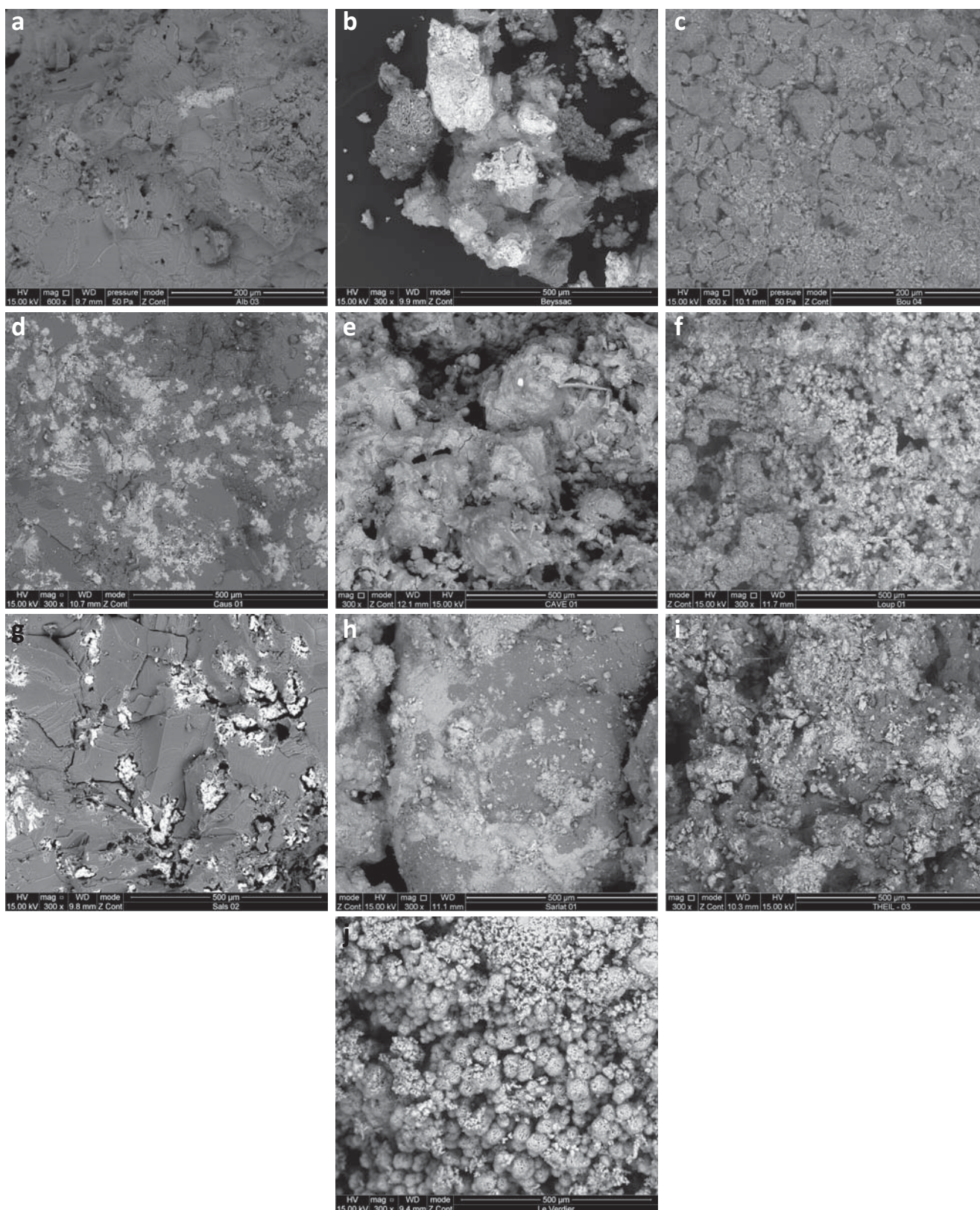


Figure A. SEM images in back-scattered electron mode of selected geological samples; a: *Mine d'Albas* (ALB-03); b: *Grotte de Beys-sac* (BEY-01); c: *Grotte du Trou du Vent* (BOU-04); d: *Mine de Causse du Cluzel* (CAU-01); e: *Grotte-Cave* (CAV-01); f: *Grotte du Loup* (LOU-01); g: *Mine de Sals* (SAL-02); h: *Sarlats* (SAR-01); i: *Mine de Le Theil* (THE-03); j: *Carrière Le Verdier* (VER-01).

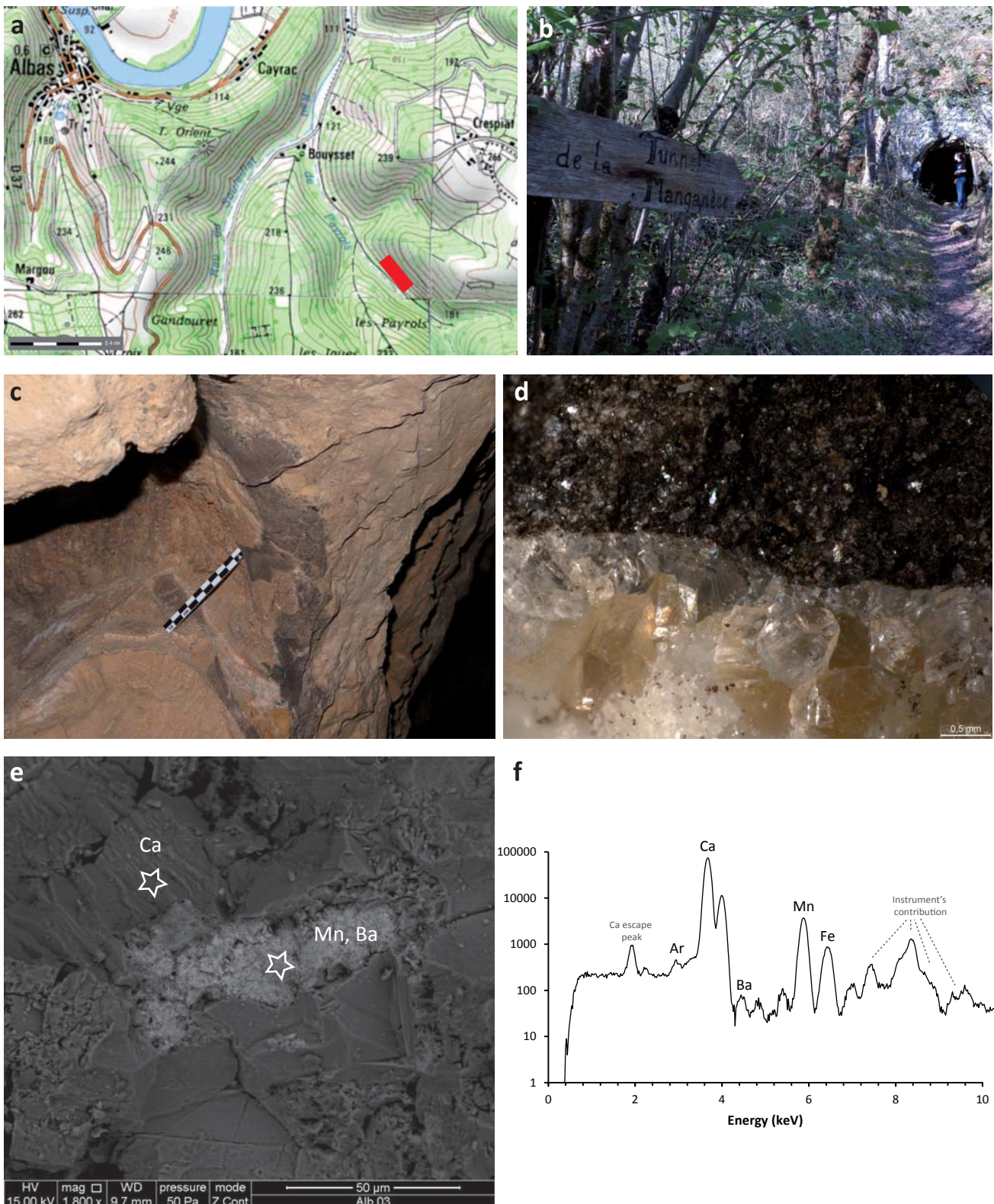


Figure B. Results of analyses conducted on samples from *Mine d'Albas*. a: location of the outcrop (in red); b: view of the entrance of the tunnel (@C. Magarzo); c: photo of the sampled area; d: macro photo of the surface of the sample ALB-03; e: SEM image in BSE mode; f: EDXRF obtained from pulverized sample.

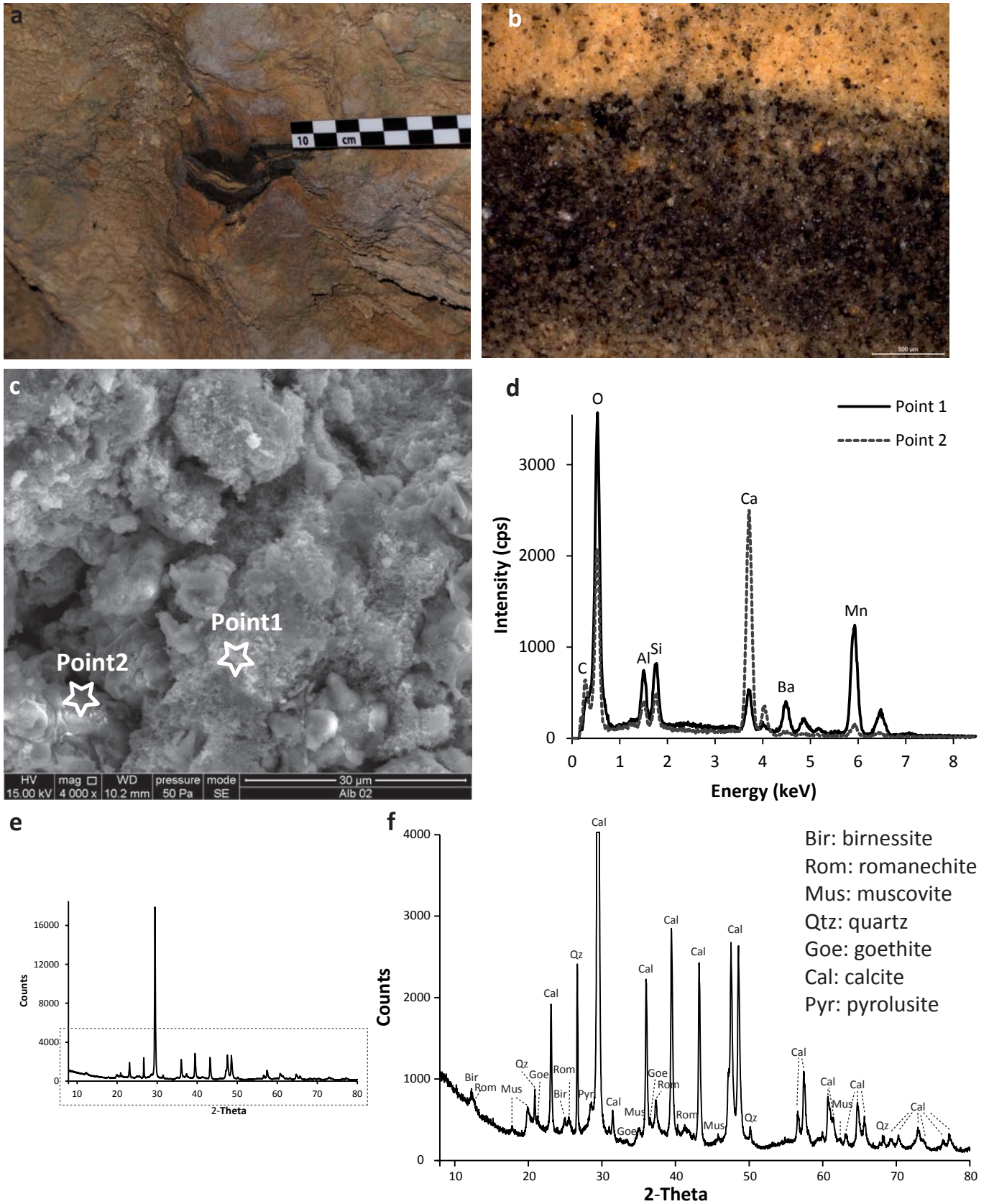


Figure C. Results of analyses conducted on samples from *Mine d'Albas*. a: photo of the sampled area (@C. Magarzo); b: macro photo of the surface of sample ALB-02; c: SEM image in SE mode of sample ALB-02 (stars indicate analysed spots); d: EDS spectra of spots 1 and 2 indicated in c; e, f: X-ray diffractogram obtained from pulverized sample ALB-01.

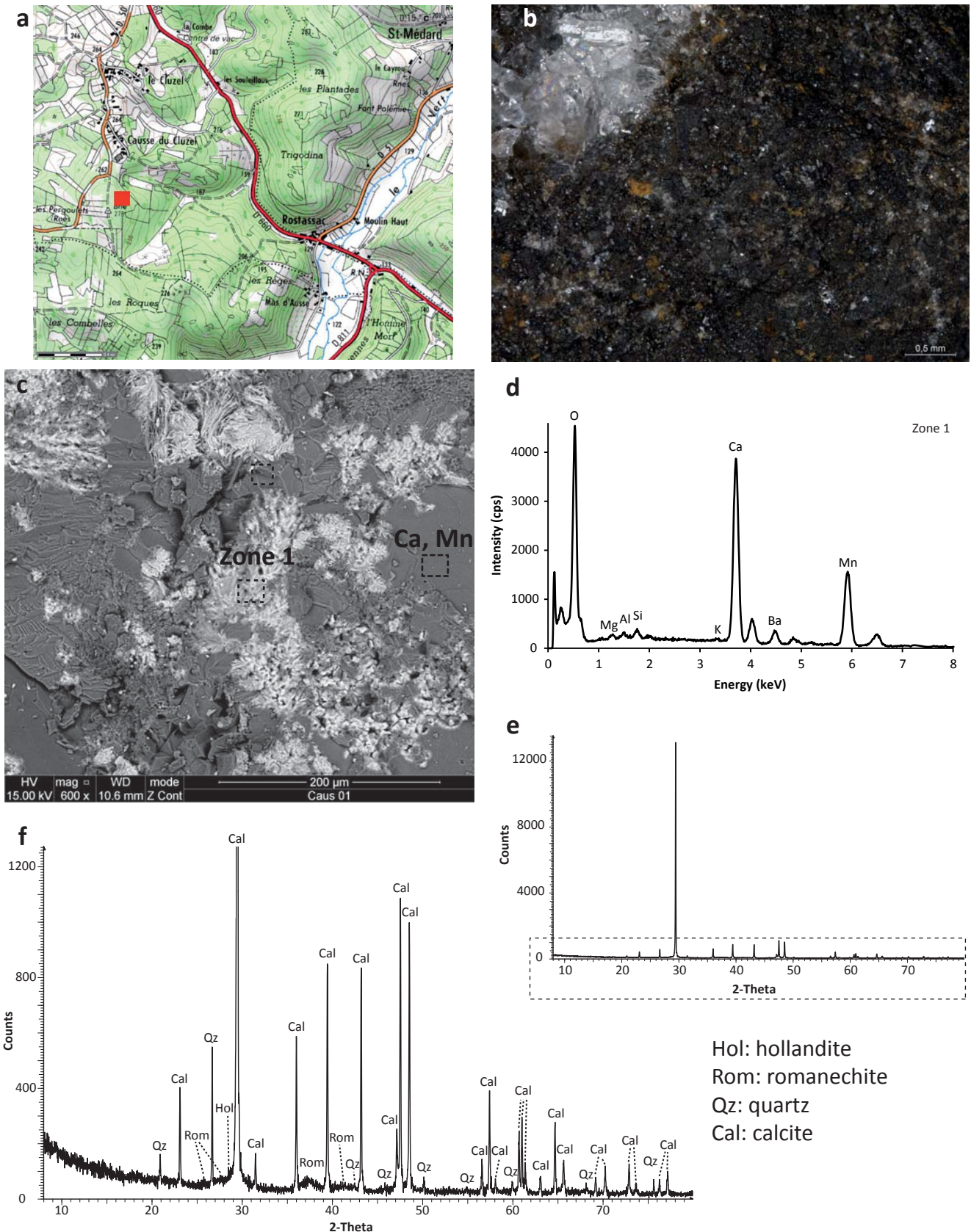


Figure D. Results of analyses conducted on samples from *Mine de Causse du Cluzel*. a: location of the outcrop (red square); b: macro photo of the surface of the sample CAU-01 ; c: SEM images in BSE mode of the sample (zones indicate analysed areas); d: EDS spectrum of zone 1 represented in c; e: X-ray diffractogram obtained from pulverized sample; f: zoom of the X-ray diffractogram represented in e.

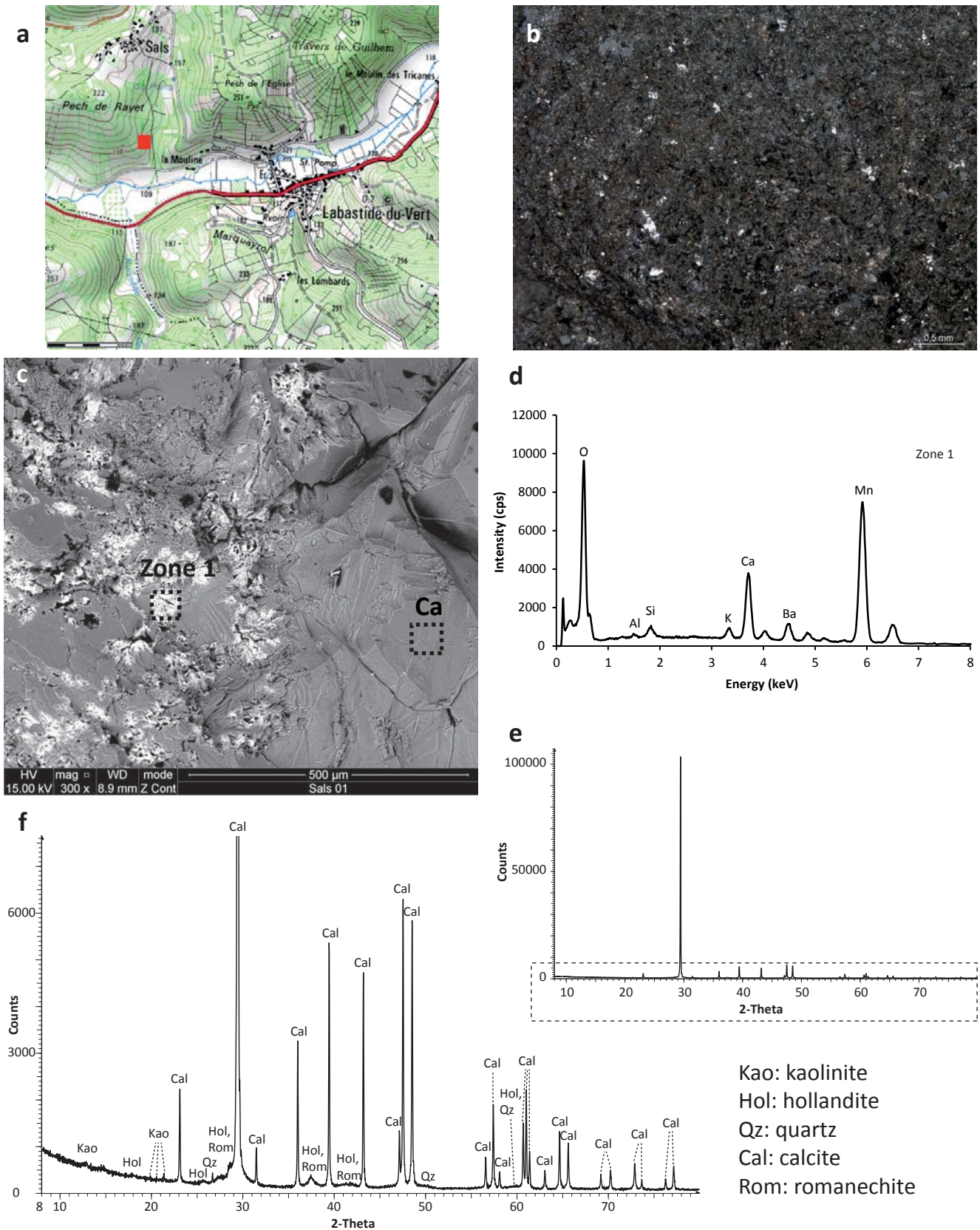


Figure E. Results of analyses conducted on samples from *Mine de Sals*. a: location of the outcrop (red square); b: macro photo of the surface of the sample SAL-01; c: SEM images in BSE mode of the sample (squares indicate analysed area); d: EDS spectrum of zone 1 represented in c; e: X-ray diffractogram obtained from pulverized sample; f: zoom of the X-ray diffractogram represented in e.

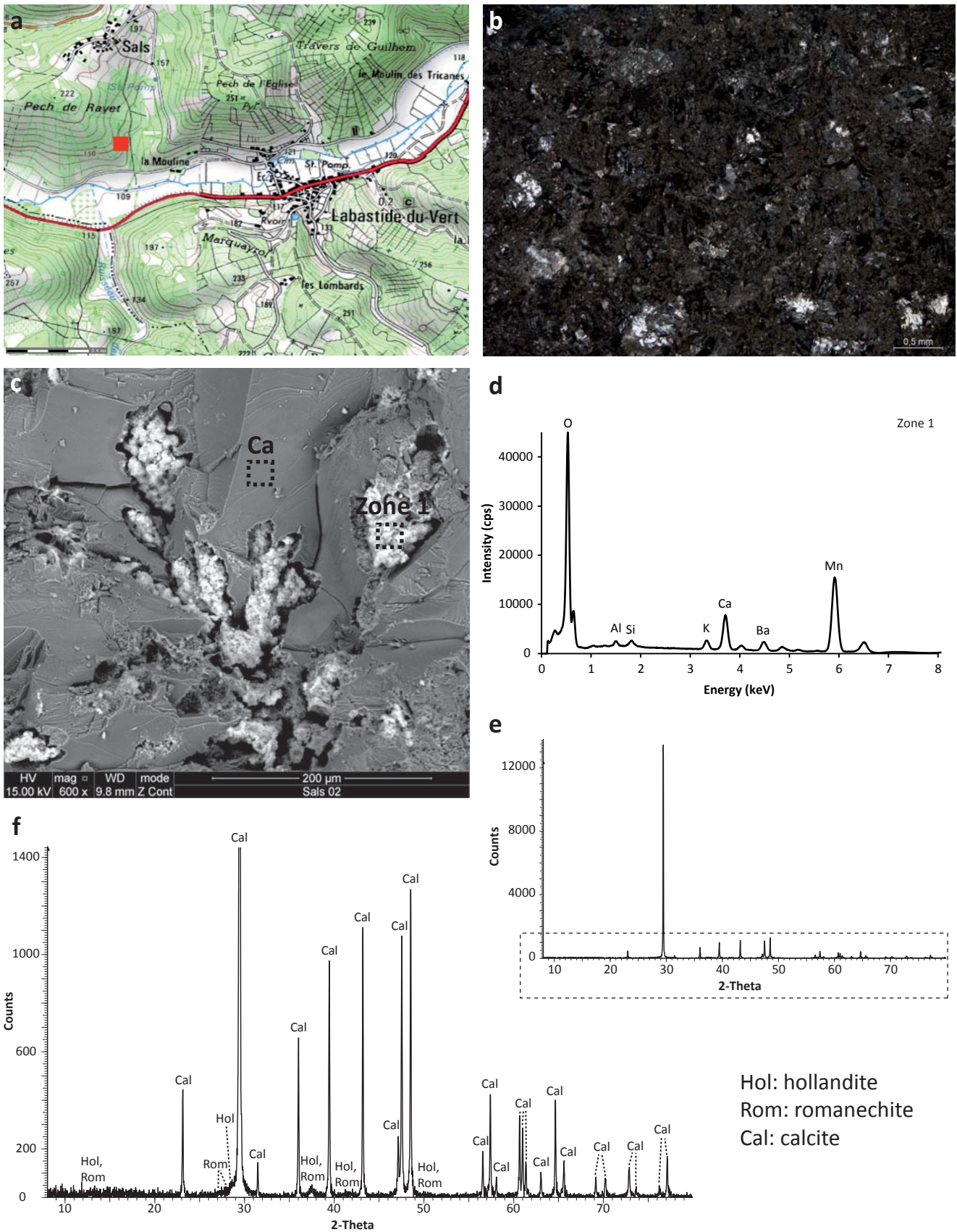


Figure F. Results of analyses conducted on samples from *Mine de Sals*. a: location of the outcrop (red square); b: macro photo of the surface of the sample SAL-02; c: SEM images in BSE mode of the sample (zones indicate analysed area); d: EDS spectrum of zone 1 represented in c; e: X-ray diffractogram obtained from pulverized sample; f: zoom of the x-ray diffractogram represented in e.

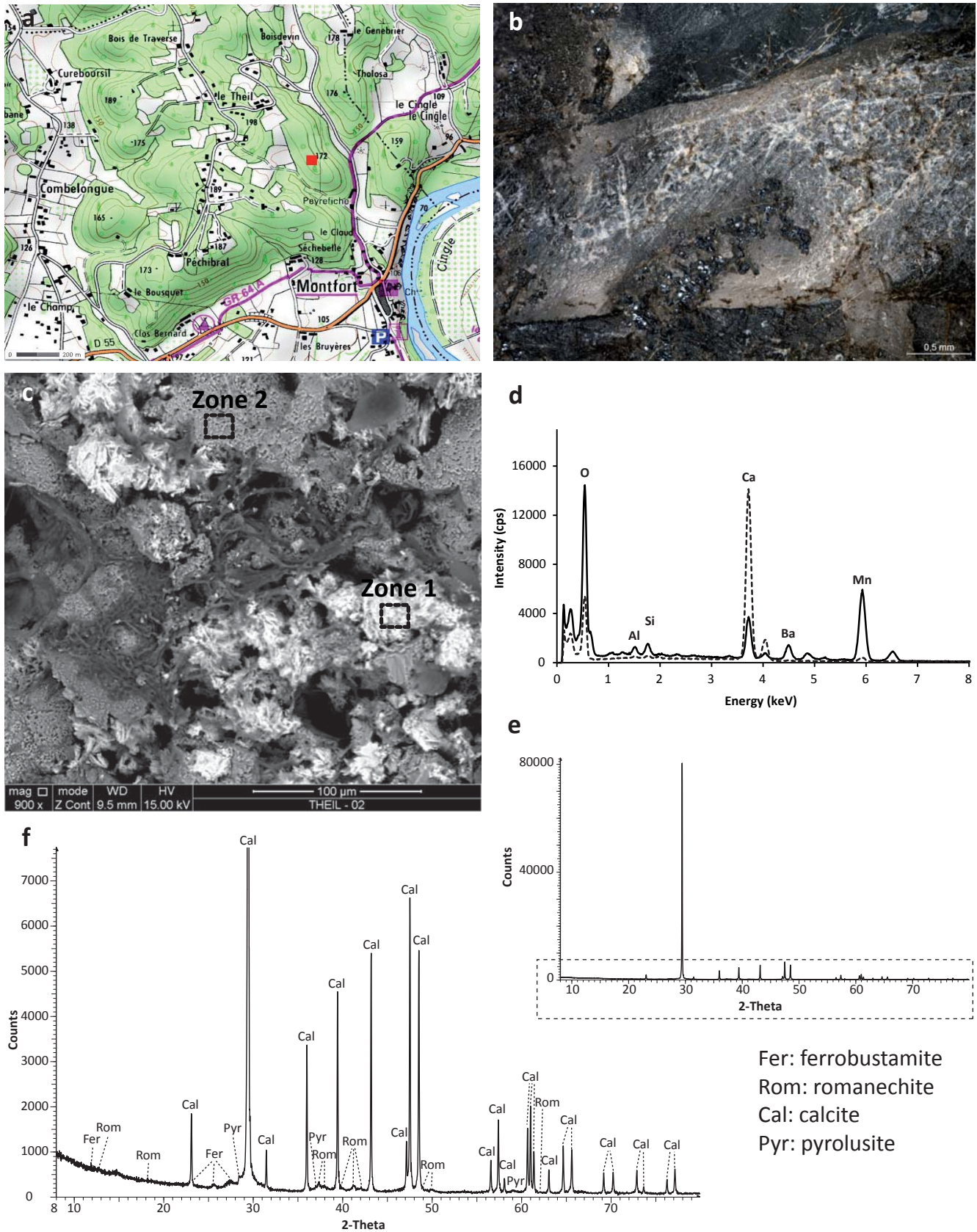


Figure G. Results of analyses conducted on samples from *Mine de Le Theil*. a: location of the outcrop (red square); b: macro photo of the surface of the sample THE-02; c: SEM image in BSE mode of the sample (squares indicate analysed areas); d: EDS spectrum of zones 1 and 2 (straight and dotted line, respectively) indicated in c; e: X-ray diffractogram obtained from pulverized sample; f: zoom of the X-ray diffractogram represented in e.

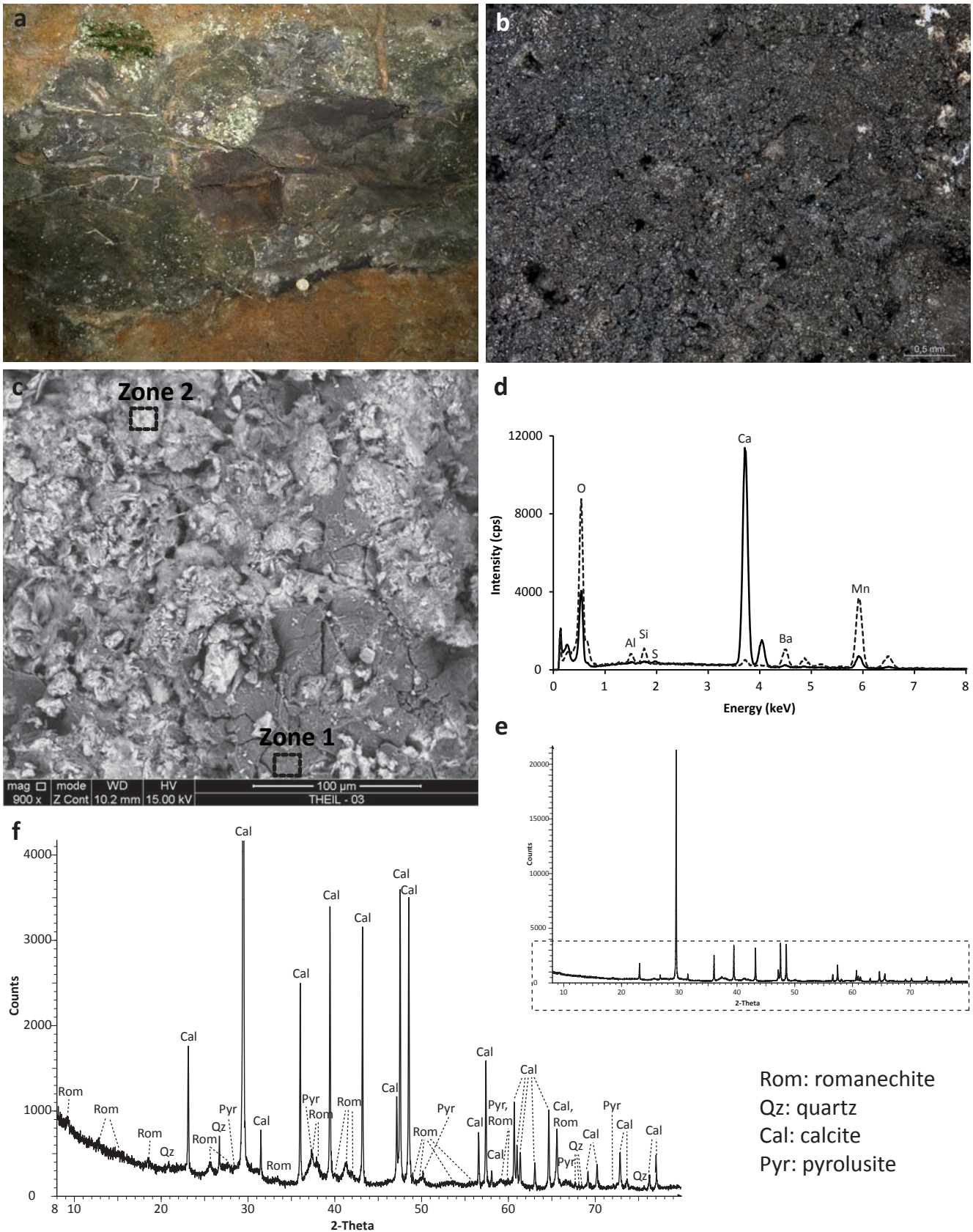


Figure H. Results of analyses conducted on samples from *Mine de Le Theil*. a: photo of the sampled area; b: macro photo of the surface of the sample THE-03; c: SEM image in BSE mode of the sample (squares indicate analysed areas); d: EDS spectrum of zones 1 and 2 (straight and dotted line, respectively) indicated in c; e: X-ray diffractogram obtained from pulverized sample; f: zoom of the X-ray diffractogram represented in e.

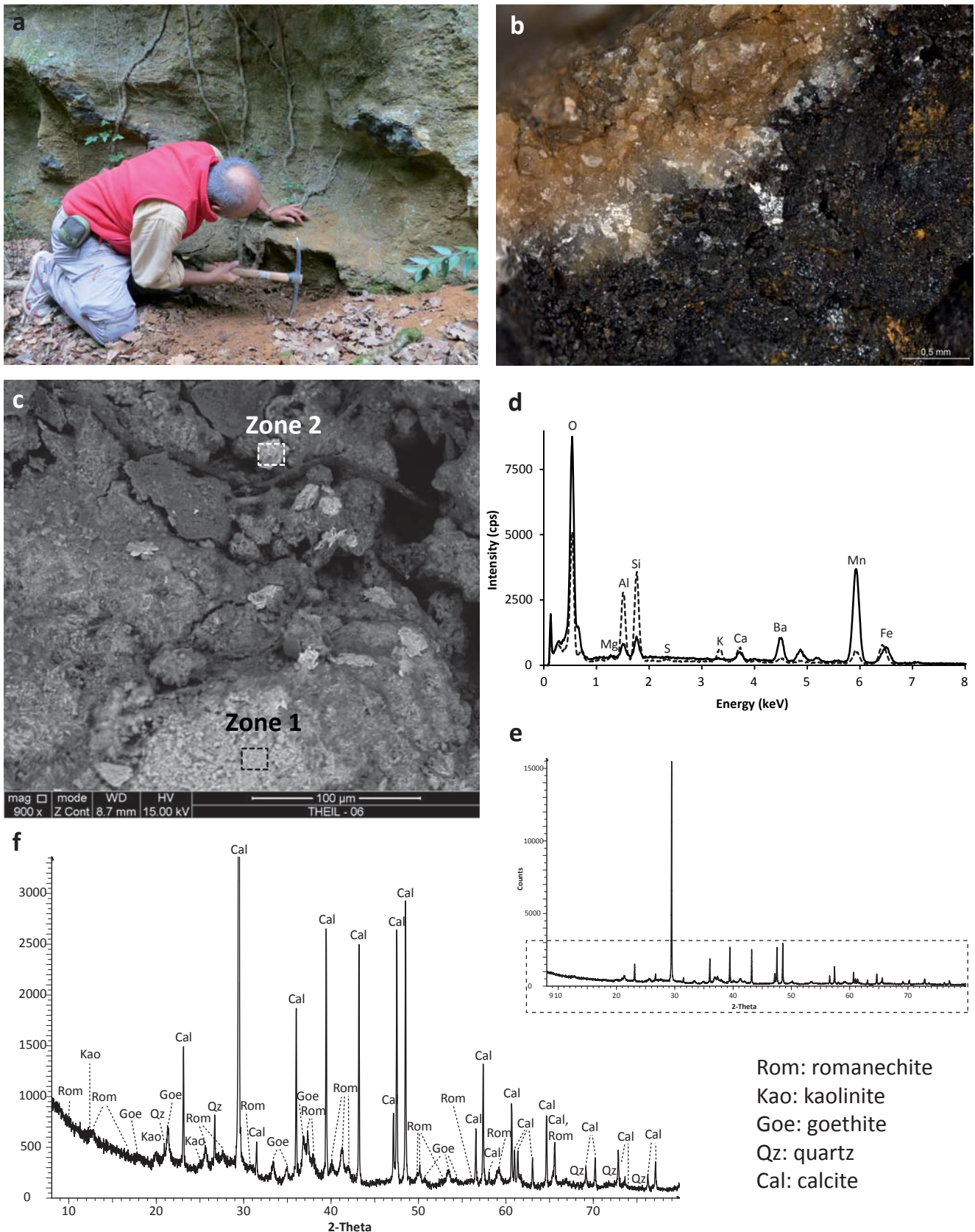


Figure I. Results of analyses conducted on samples from *Mine de Le Theil*. a: photo of the sampled area; b: macro photo of the surface of the sample THE-06; c: SEM image in BSE mode of the sample (squares indicate analysed areas); d: EDS spectrum of zones 1 and 2 (straight and dotted line, respectively) indicated in c; e: X-ray diffractogram obtained from pulverized sample; f: zoom of the X-ray diffractogram represented in e.

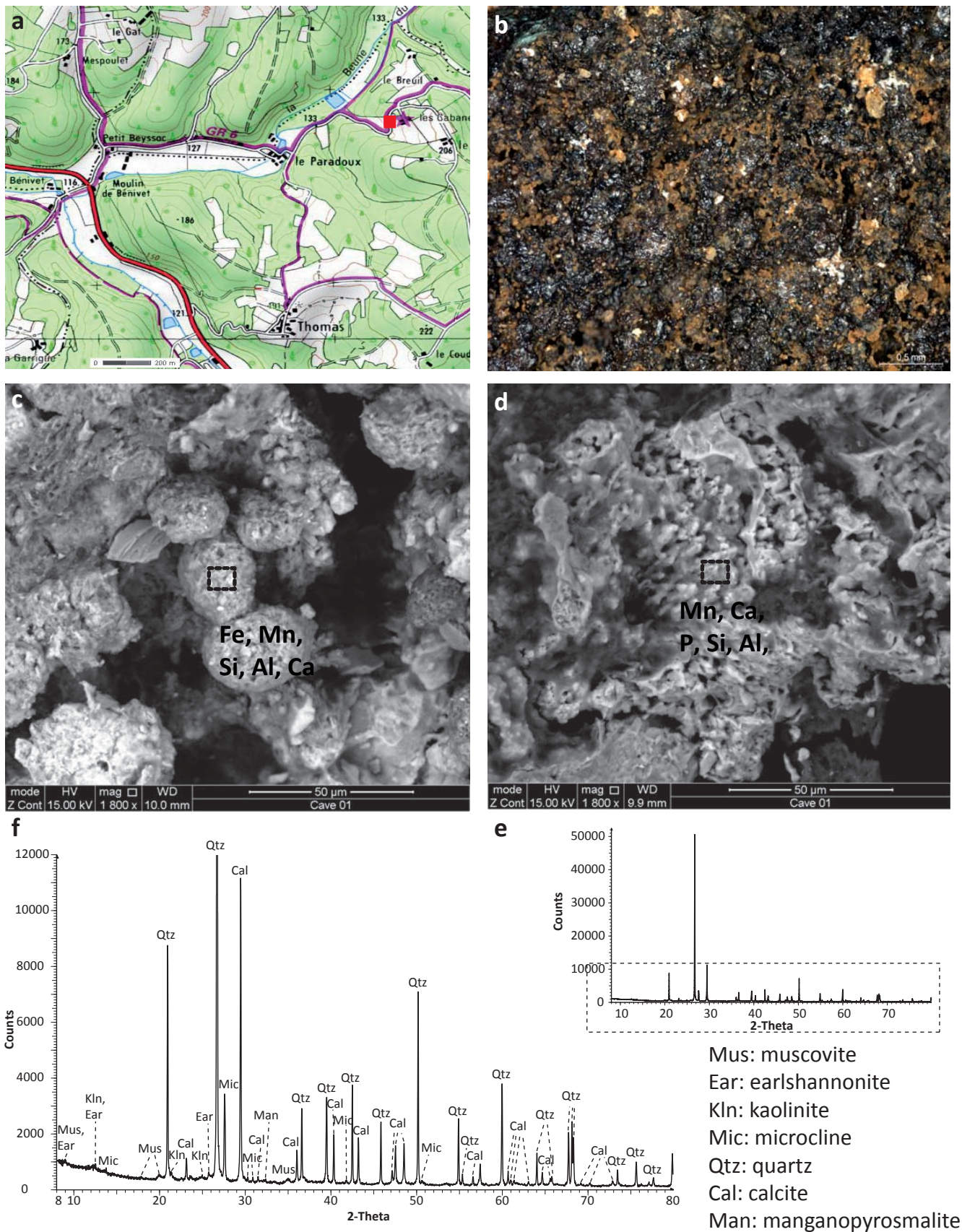


Figure J. Results of analyses conducted on samples from *Grotte-Cave*. a: location of the cave (red square); b: macro photo of the surface of the sample CAV-01; c, d: SEM images in BSE mode of the sample (squares indicate analysed areas); e: X-ray diffractogram obtained from pulverized sample; f: zoom of the X-ray diffractogram represented in e.

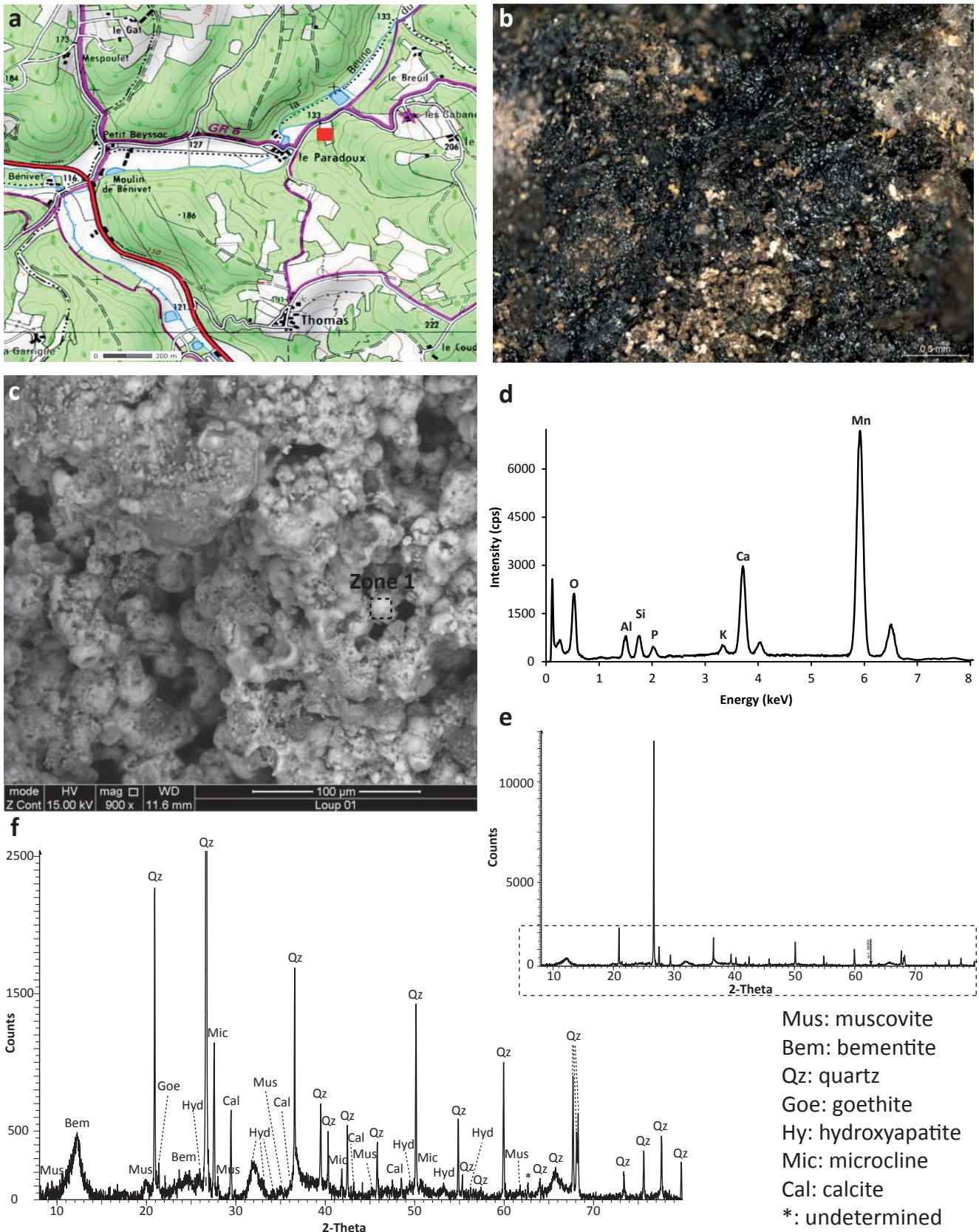


Figure K. Results of analyses conducted in samples from *Grotte du Loup*. a: location of the cave (red square); b: macro photo of the surface of the sample LOU-01; c: SEM images in BSE mode of the sample (square indicates analysed area); d: EDS spectrum of zone 1 represented in c; e: X-ray diffractogram obtained from pulverized sample; f: zoom of the X-ray diffractogram represented in e.

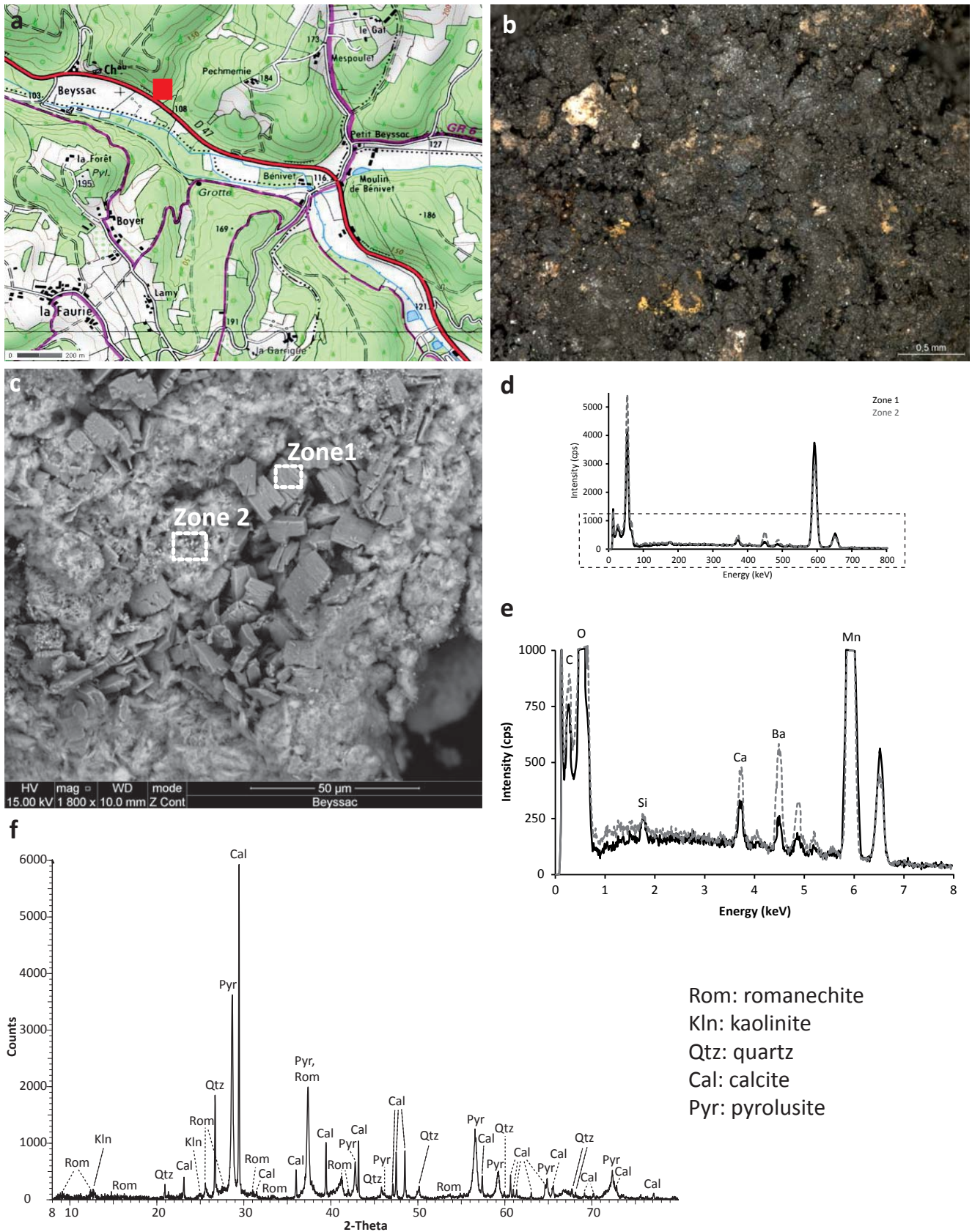


Figure L. Results of analyses conducted in samples from *Grotte de Beysac*. a: location of the cave (red square); b: macro photo of the surface of the sample BEY-01; c: SEM image in BSE mode of the sample (zones 1 and 2 indicate analysed areas); d, e: EDS spectra at different scales of zones 1 and 2 indicated in c (straight and dotted line, respectively); f: X-ray diffractogram obtained from pulverized sample.

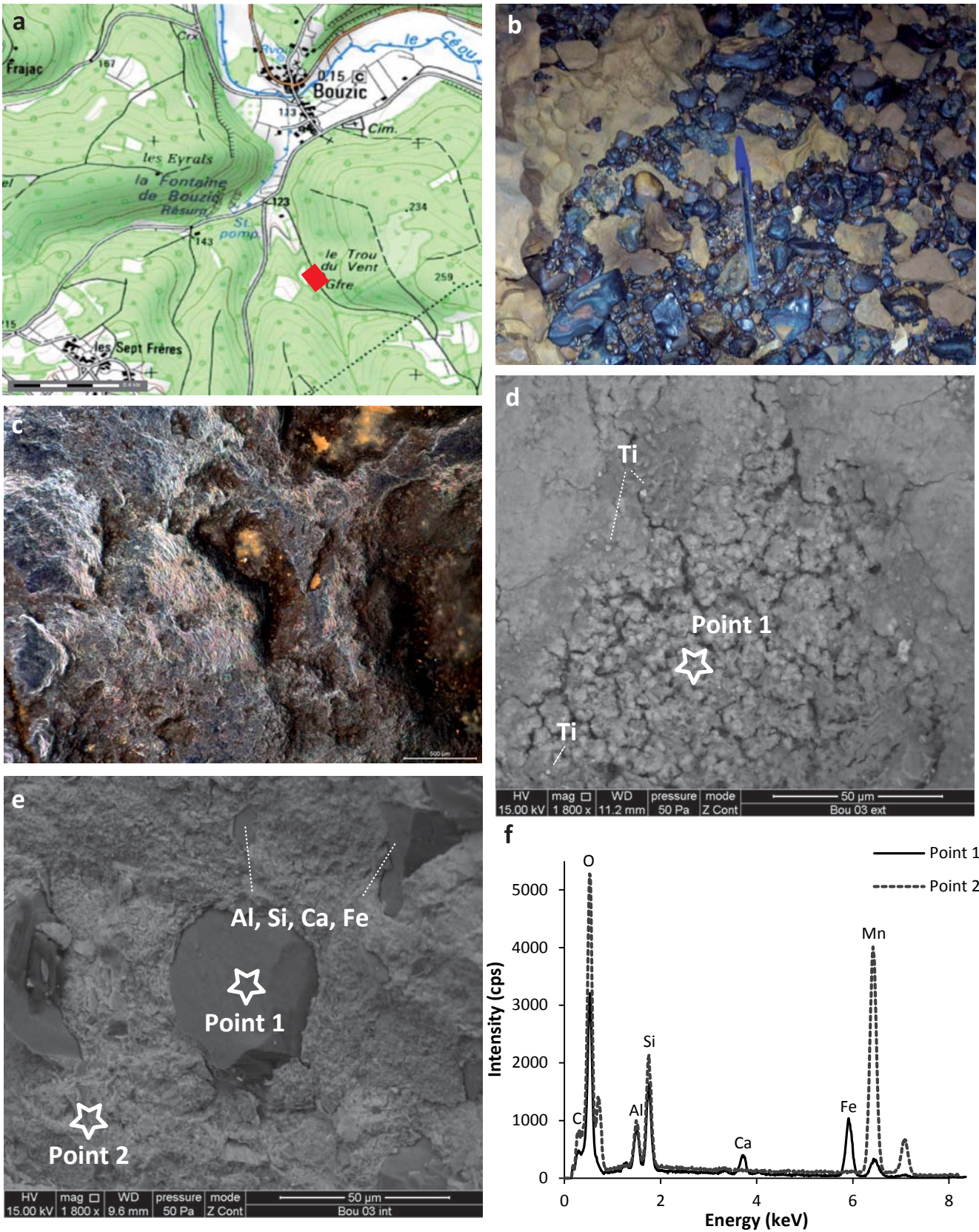


Figure M. Results from analyses conducted on samples from *Grotte du Trou du Vent - Bouzic*. a: location of the cave (in red); b: photo of the sampled area (@O. Huard); c: macro photo of the sample BOU-03 ; d, e: SEM images in BSE mode of the sample (d: external part; e: internal part). Stars indicate analysed spots; f: EDS spectra of spots 1 and 2 indicated in d and e.

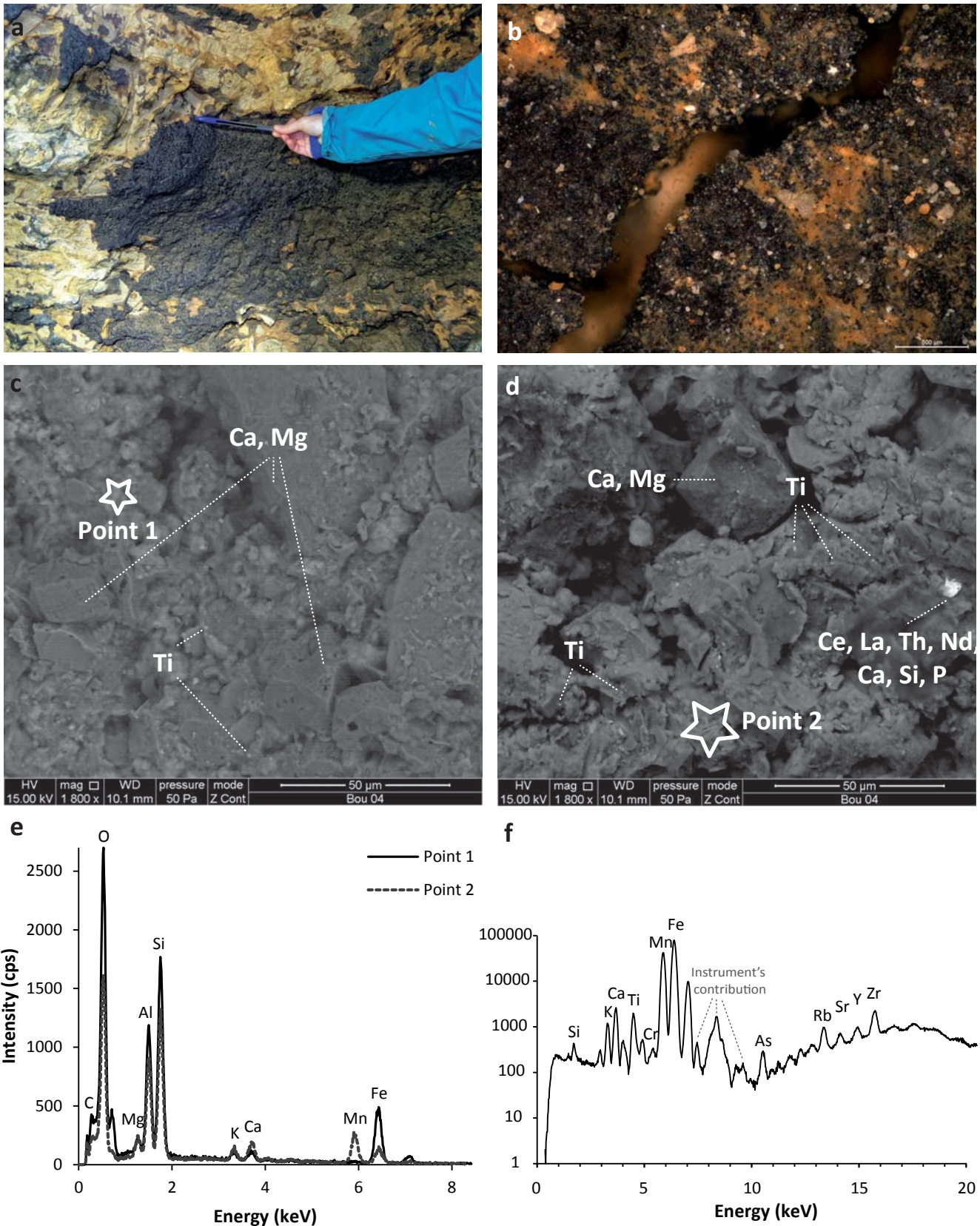


Figure N. Results from analyses conducted on samples from *Grotte du Trou du Vent - Bouzic*. a: photo of the sampled area (@O. Huard); b: macro photo of the sample BOU-04; c, d: SEM images in BSE mode of the sample. Stars indicate analysed spots; e: EDS spectra of spots 1 and 2 indicated in c and d; f: EDXRF spectrum from pulverized sample.

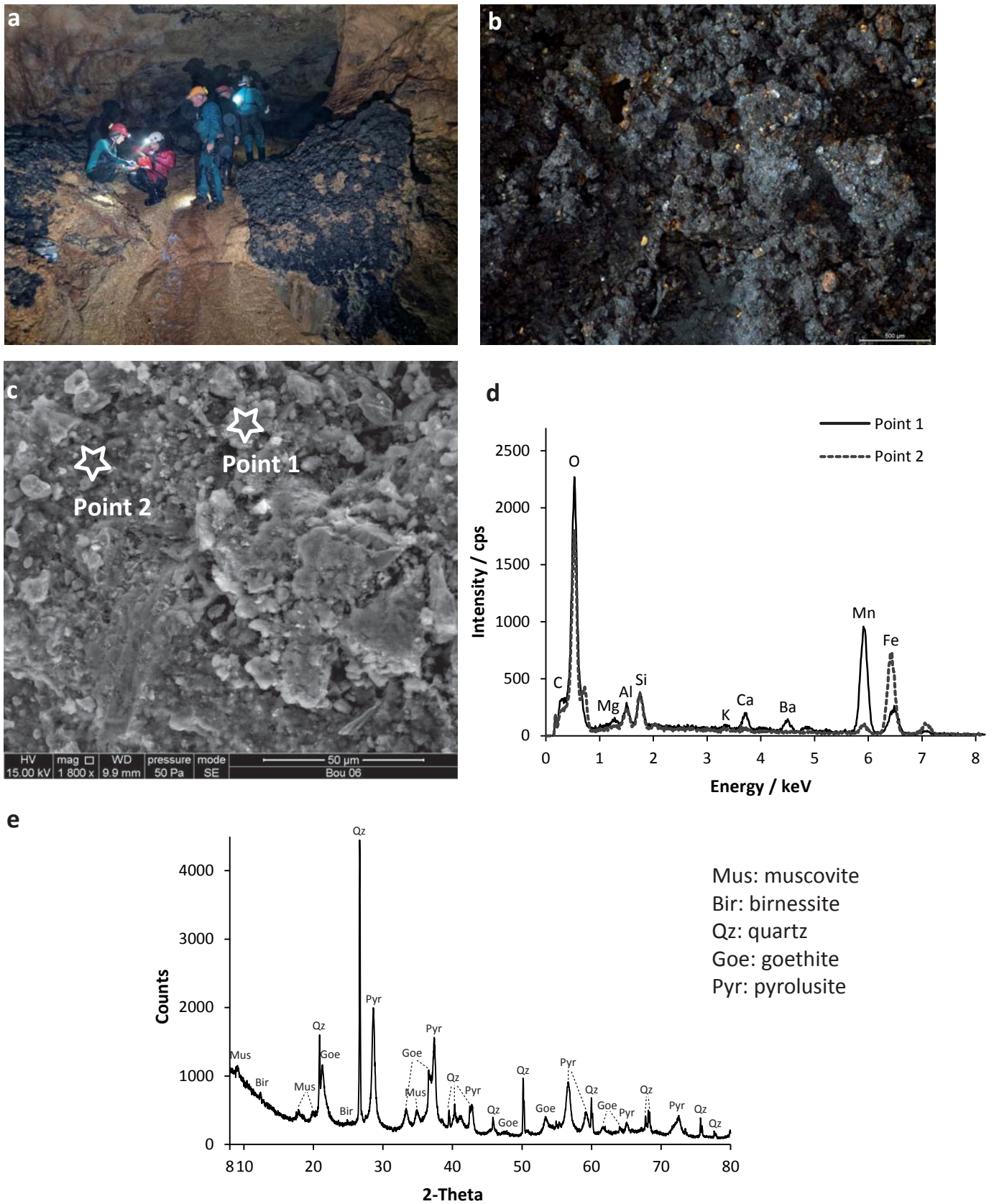


Figure O. Results from analyses conducted on samples from *Grotte du Trou du Vent - Bouzic*. a: photo of the sampled area (@O. Huard); b: macro photo of the sample BOU-06; c: SEM image in SE mode of the sample. Stars indicate analysed spots; e: EDS spectra of spots 1 and 2 indicated in c; e: XRD spectrum from pulverized sample.

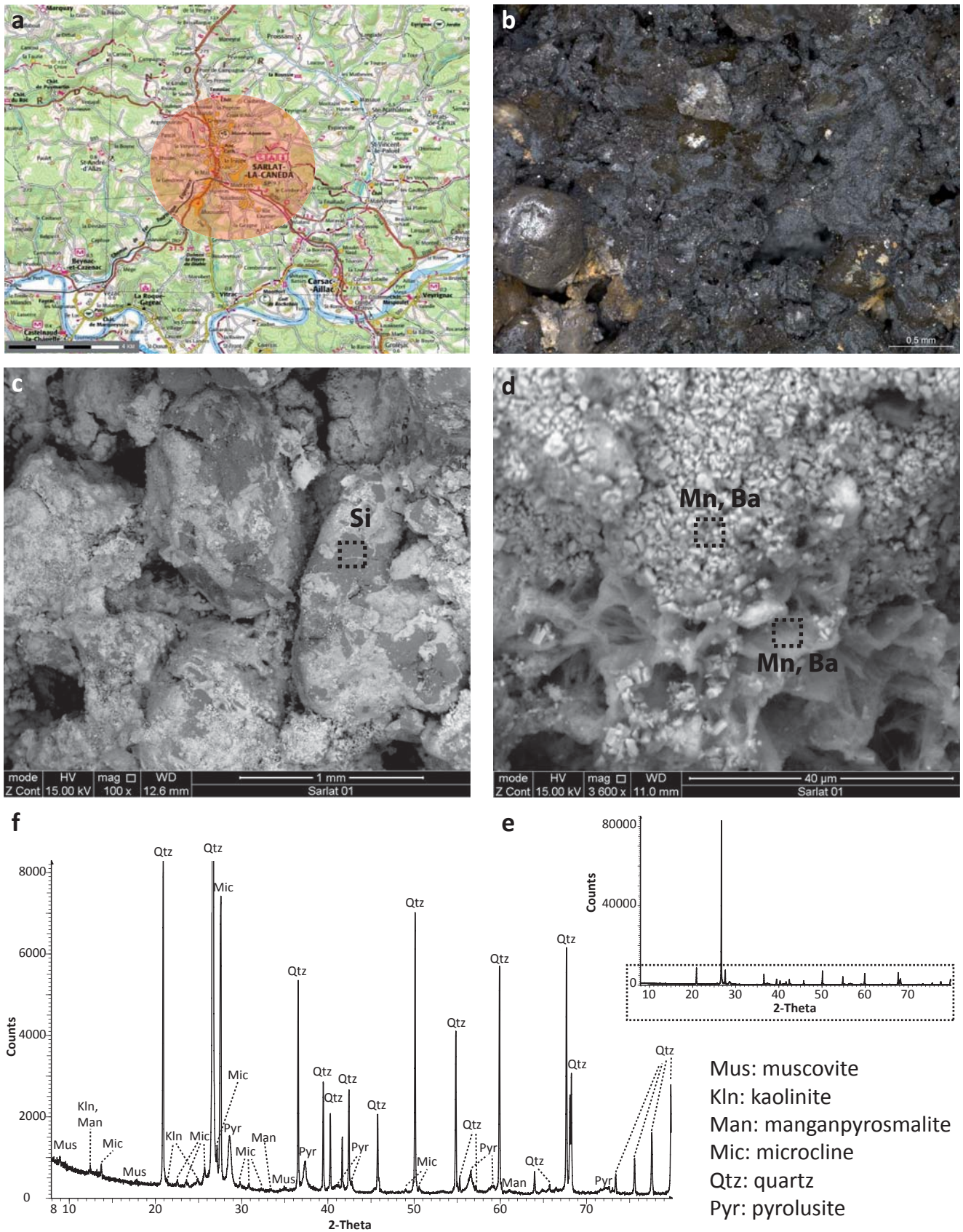


Figure P. Results from analyses conducted on samples from Sarlat. a: approximate location of the outcrop; b: macro photo of the surface of the sample SAR-01; c, d: SEM images in BSE mode of the sample (zones indicate analysed area); e, f: X-ray diffractogram obtained from pulverized sample.

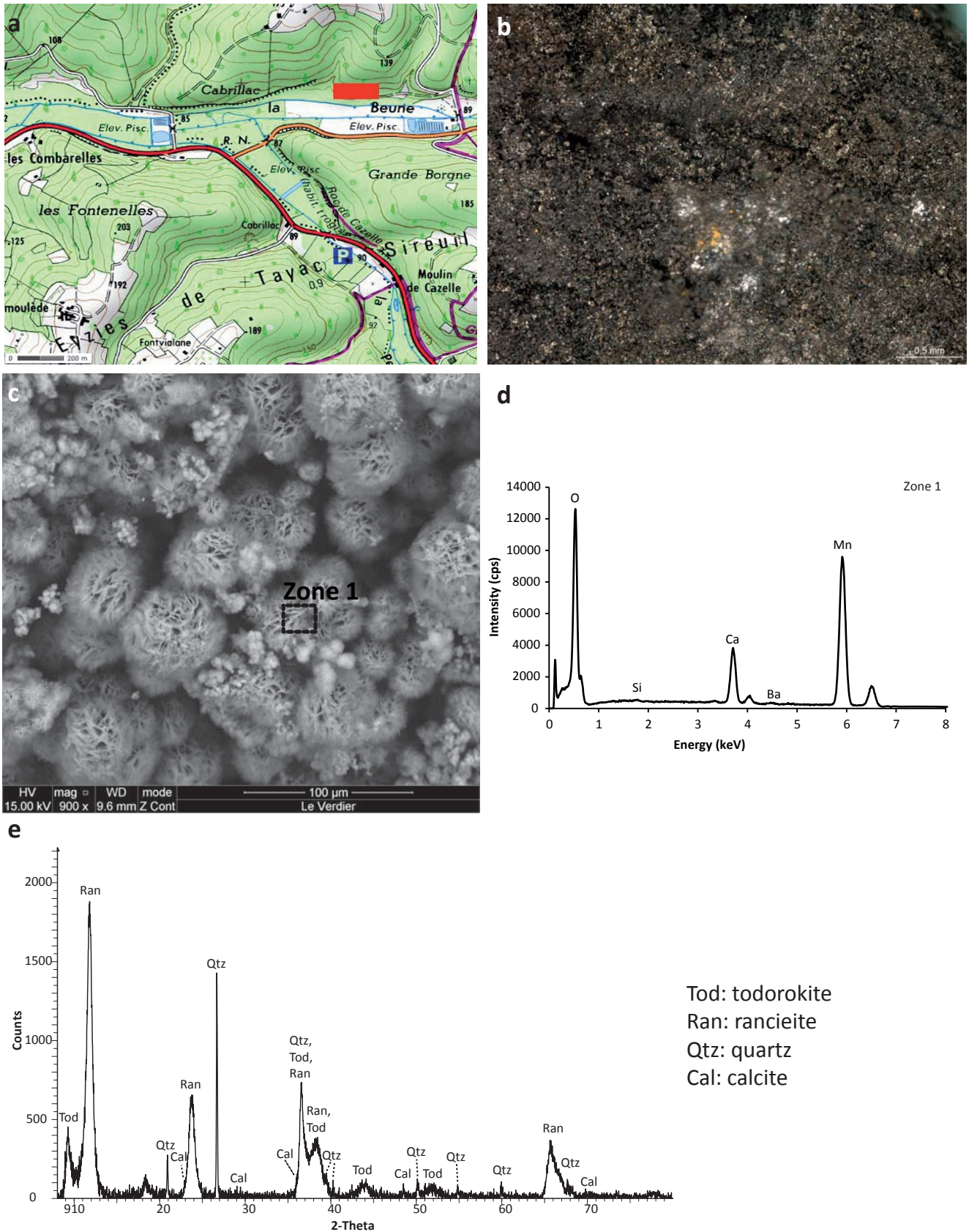


Figure Q. Results of analyses conducted on samples from *Carrière Le Verdier*. a: location of the outcrop (red square); b: macro photo of the surface of the sample VER-01; c: SEM image in BSE mode of the sample (zone 1 indicate analysed area); d: EDS spectrum of zone 1 indicated in c; e: X-ray diffractogram obtained from pulverized sample.

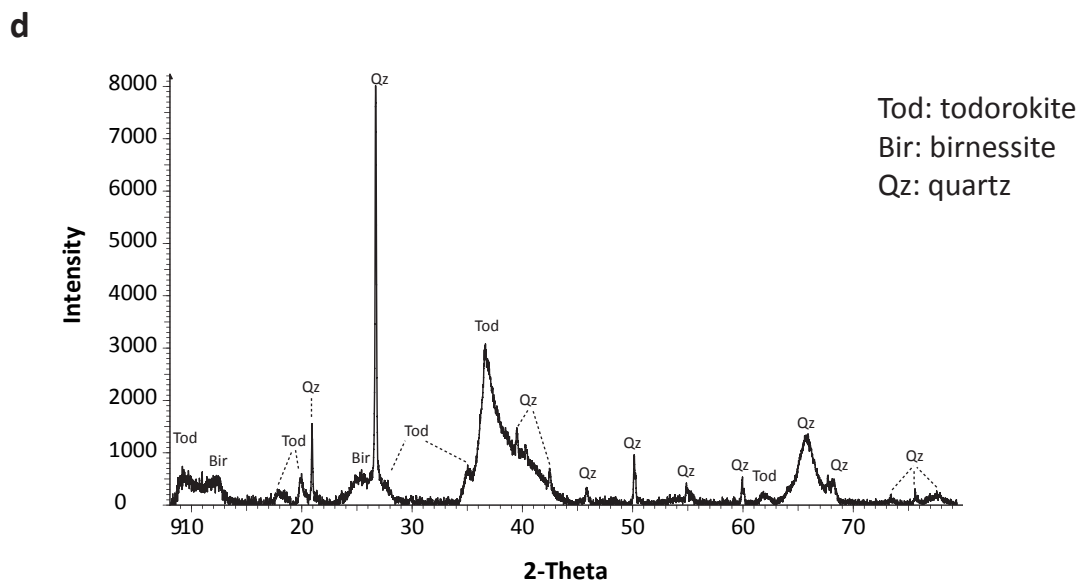
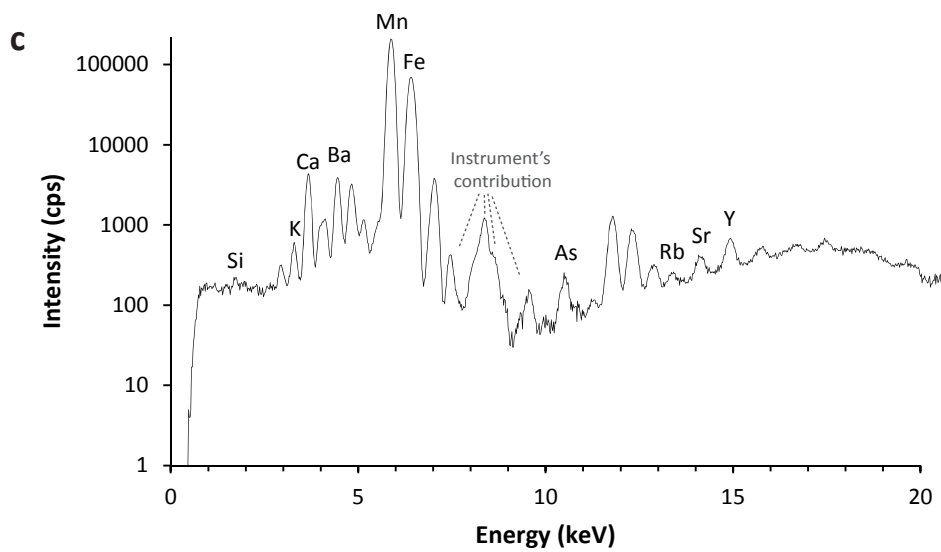
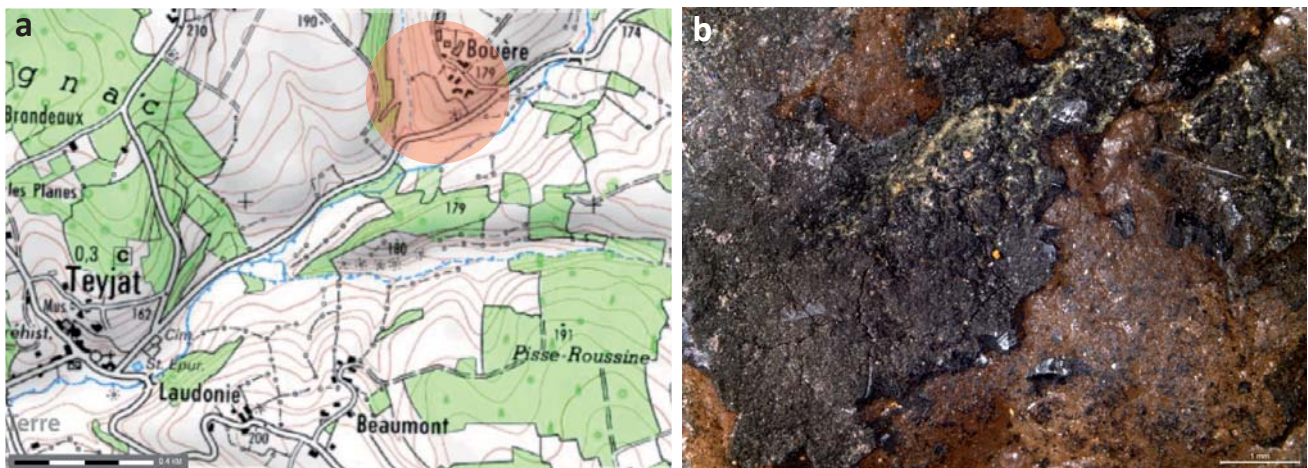


Figure R. Results of analyses conducted on the sample from *Teyjat*. a: location of the outcrop (in red); b: macro photo of the sample; c, d: EDXRF and XRD spectra from pulverized sample.

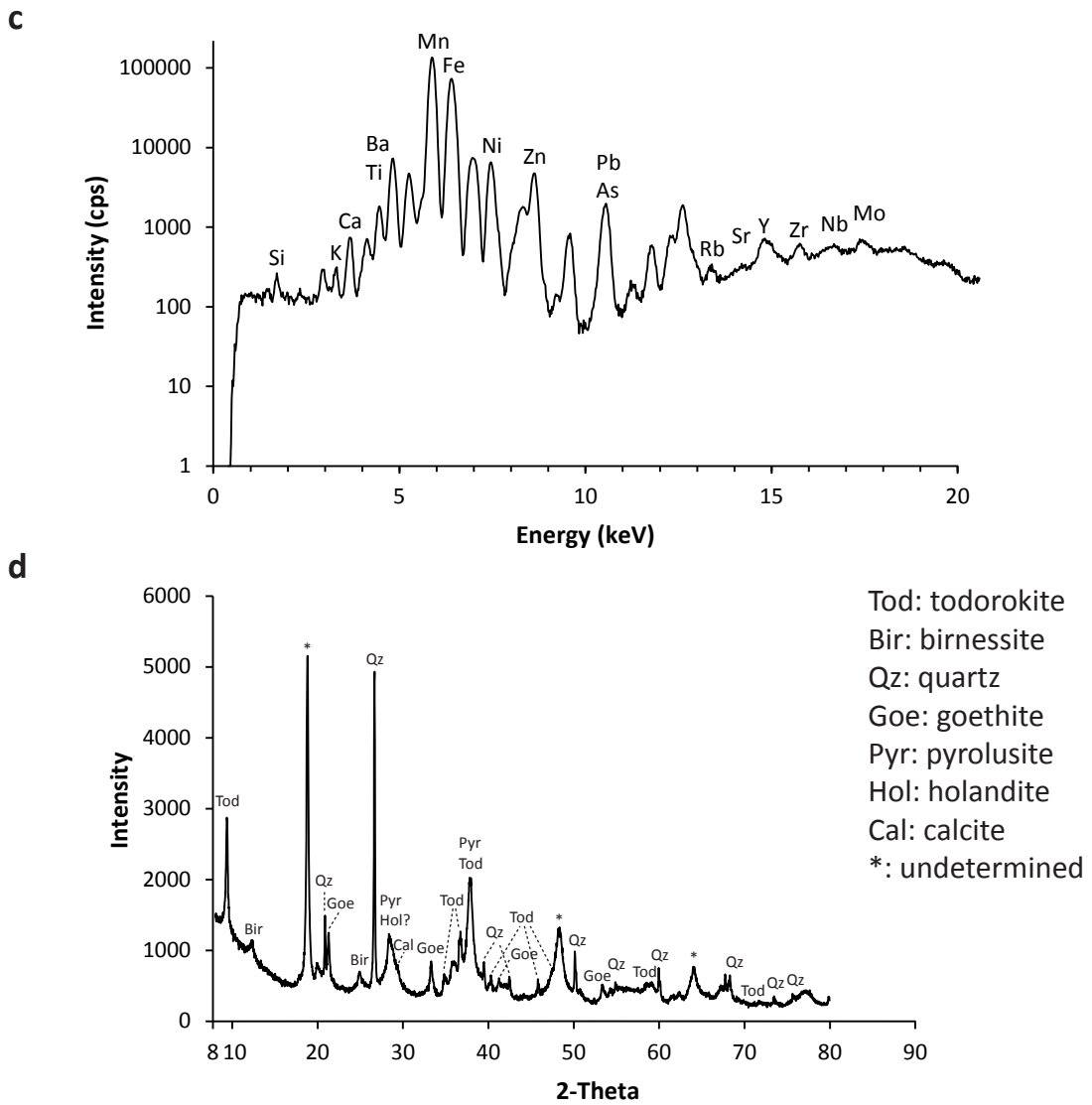
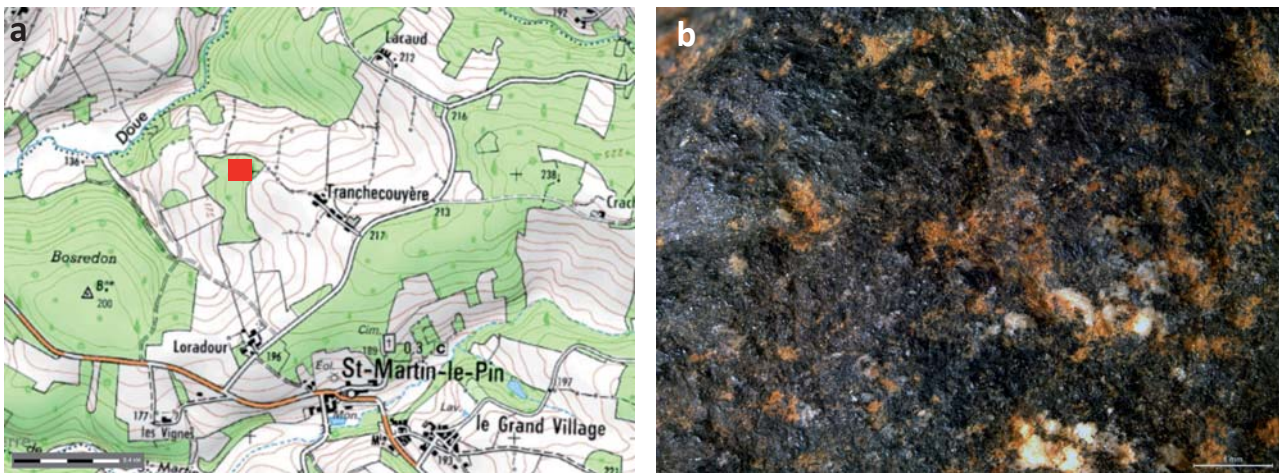


Figure S. Results of analyses conducted on the sample from *Tranchecouyère*. a: location of the outcrop (in red); b: macro photo of the sample; c, d: EDXRF and XRD spectra from pulverized sample.