

HELY C. BRANCO

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Curtin University
School of Earth and Planetary Sciences
Space Science and Technology Centre

EDUCATION

- 2022 PhD in Applied Geology at Curtin University
Thesis: Structure and evolution of Mars as recorded by impact basins
Supervisor: Associate Professor Katarina Miljkovic
- 2018-20 MSc in Physics and Astronomy at Federal University of Technology of Paraná
Thesis: Equilibrium shapes and Geology of transneptunian objects
Supervisor: Associate Professor Felipe Braga-Ribas
- 2011-16 BSc in Geology at Federal University of Paraná
Thesis: Planetary Geology - Earth as an analog to the study of planetary bodies
Supervisor: Assistant Professor Fernando Mancini
- 2014 Science Without Borders Student at University of Liverpool
Supervisor: Professor Alan Boyle

COMPLEMENTARY EDUCATION

- 2022 Mini-course "Gender and geosciences"
ABMGeo
- 2021 Mini-course "Cosmology"
Optics Student Chapter, Federal University of Paraná
- 2021 EUROVOLC-Nordvulk-Nordic EPOS Summer School
University of Iceland
- 2021 Workshop "Sexuality and gender workshop [SOMOS]"
Department of Psychology, Federal University of Paraná
- 2021 Workshop "Information reliability evaluation, 6th edition"
Department of Psychology, Federal University of Paraná
- 2020 Mini-course "Academic writing beyond elitism and romanticism"
Department of Psychology, Federal University of Paraná
- 2020 Mini-course "Diagenesis of carbonates and applications for reservoirs"
AAPG Student Chapter, Federal University of Paraná
- 2020 Mini-course "An introduction to oil and gas prospects evaluation"
AAPG Student Chapter, Federal University of Paraná
- 2019 Workshop "IAS Special Lecture Tour 2019"
AAPG Student Chapter, Federal University of Paraná
- 2019 Mini-course "Fluid inclusions"
SEG Student Chapter, Federal University of Paraná
- 2018 Mini-course "Microbialites and their applications for Astrobiology"
SEG Student Chapter, Federal University of Paraná

- 2017 Mini-course "Volcanic sequences mapping techniques"
Department of Geology, Federal University of Paraná
- 2017 Mini-course "Geology and the collective imaginary"
Department of Geology, Federal University of Paraná
- 2015 Mini-course "Microtextures of deformed rocks"
Department of Geology, Federal University of Paraná

ONLINE COURSES

- 2022 Astrobiology and the search for extraterrestrial life
The University of Edinburgh
- 2020 The Science of the Solar System
California Institute of Technology
- 2020 Philosophy and the Sciences: Introduction to the Philosophy of Physical Sciences
The University of Edinburgh
- 2020 The Dynamic Earth: A Course for Educators
American Museum of Natural History
- 2016 The Violent Universe
ANUx
- 2015 The Rise of Superheroes and Their Impact On Pop Culture
SmithsonianX
- 2015 Greatest Unsolved Mysteries of the Universe
ANUx
- 2015 Exploring Exoplanets
ANUx
- 2014 Cosmology
ANUx
- 2013 Introduction to Solid State Chemistry
MITx

AWARDS

- 2022 Best Student Poster - 2nd Prize
20th Australian Space Research Conference
- 2016 Best Student of the 2016 Geology Bachelor's Class
Department of Geology, Federal University of Paraná

SCIENTIFIC MEETINGS & COMPETITIONS

- 2021 NASA's InSightSeers Program - InSight Scientific Meeting #21
National Aeronautics and Space Administration
- 2020 Imperial Barrel Award Competition (participation only)
American Association of Petroleum Geologists

PROFESSIONAL EXPERIENCE

- 07.22 - 11.22 Teaching Assistant at Curtin University
Assisting with lectures, workshops, field work and marking for the units:
- Advanced Science units (NPSC2001 & NPSC 3000)
- Introduction to Planetary Sciences (GEOL1007)
- Geological Field Mapping (GEOL2009)
- 01.21 - 01.22 ESL Teacher at The Camp English School
Group and private English classes for non-native speakers
- 08.19 - 03.22 ESL teacher at Centro Europeu
Group and private English classes for non-native speakers
- 08.16 - 12.16 Geological Cartography Intern at Paraná's Geological Survey (Mineropar)
Assisting with geological mapping and GIS data manipulation
Supervisor: Dr Tadeu Lima
- 07.15 Geological Cartography Intern at Eschwege Centre of Geology
Geological field mapping of rocks from the Diamantina Group – Central-Western Brazil
Supervisor: Dr Eliza Peixoto
- 03.15 - 07.15 Teaching Assistant at Federal University of Paraná
Assisting with lectures, workshops, field work and marking for the unit:
- Igneous Petrology (GC010)
- 07.14 - 08.14 Geological Cartography Intern at University of Liverpool
Geological field mapping of rocks from Almeria – Spain, Donegal – Northern Ireland
and Holy Island – Wales
Supervisor: Professor Alan Boyle
- 03.11 - 12.13 Undergraduate Research Assistant at Federal University of Paraná
Assisting with geological mapping, thin section description, field work and GIS data
analysis of rocks from the Bauru Basin – Southern Brazil
Supervisor: Professor Luiz Alberto Fernandes

ACADEMIC PRODUCTION

JOURNAL PUBLICATIONS

1. **Branco, H. C.** (2022). Planetary Geology: an historical and philosophical overview. *Geology Today*, 38 (4). doi: 10.1111/gto.12401
2. **Branco, H. C.** (2021). Philosophical aspects of the “Principles of Geology” by Charles Lyell: a starter approach. *Terræ Didatica*, 17 (continuous publication), 1-x, e021039. doi: 0.20396/td.v17i00.8666003.

BOOK CHAPTERS

3. Fernandes, L. A.; **Branco, H. C.** (2015). Calcretes Neocretácicos da Formação Marília, Bacia Bauru. In: *Calcários do Cretáceo do Brasil: um atlas*. 1ª ed. Rio Claro : UNESP-GGCE-UNESPetro, p. 481-517

EXPANDED ABSTRACTS

4. **Branco, H. C.**; Mancini, F. (2021). Planetary Geology: Contributions from Earth Sciences to the study of the Universe. In: *Boletim da Sociedade Astronômica Brasileira*, 33 (1).
5. **Branco, H. C.**; Braga-Ribas, F. (2021). Considerations about the Equilibrium Shapes and Geology of TNOs. In: *Boletim da Sociedade Astronômica Brasileira*, 33 (1).
6. **Branco, H. C.**; Braga-Ribas, F. (2020). Equilibrium shapes and Geology of TNOS: a work in progress In: *Boletim da Sociedade Astronômica Brasileira*, 32 (1).

CONFERENCE ABSTRACTS

7. **Branco, H. C.** & Miljkovic, K. (2022). Numerical simulations of large impact events on Mars. *20th Australian Space Research Conference - Abstract Volume*. Sydney, AU.
8. **Branco, H. C.** (2021). Equilibrium Shapes and Geology of TNOs. *Geologists' Association Student Symposium 2021 - Abstract Volume*. London, UK.
9. **Branco, H. C.** & Braga-Ribas, F. (2018). Formas de equilíbrio de Objetos Transnetunianos - um estudo preliminar. *XIX Colóquio Brasileiro de Dinâmica Orbital - Programa e Livro de Resumos*. São José dos Campos (SP).
10. **Branco, H. C.** & Mancini, F. (2017). The importance of Earth analog models in the study of celestial bodies. *Anais do X Simpósio Sul-Brasileiro de Geologia*. Curitiba (PR).
11. **Branco, H. C.** & Mancini, F. (2016). Geologia Planetária: inferência e especulação científica no estudo da geologia de Marte. *Anais do 48º Congresso Brasileiro de Geologia*. Porto Alegre (RS).
12. Julião, E. L.; Virmond, A. L. & **Branco, H. C.** (2016). Geological Mapping and Structural Analysis of Holy Island, Anglesey, North Wales. *Anais do 48º Congresso Brasileiro de Geologia*. Porto Alegre (RS).
13. Fernandes, L. A.; **Branco, H. C.**; Fedalto, G.; Jaensch, S. E. & Salazar Junior, O. (2014). Grupos Caiuá e Bauru no Paraná: revisão cartográfica. *Anais do 47º Congresso Brasileiro de Geologia*. Salvador (BA).
14. Fernandes, L. A.; **Branco, H. C.**; Zorzetto, T.; Martin, C. M. & Jaensch, S. E. (2014). Guia de microtexturas de calcretes da Formação Marília (Bacia Bauru, Ks). *Anais do 47º Congresso Brasileiro de Geologia*. Salvador (BA).
15. Fernandes, L. A.; Jaensch, S. E. & **Branco, H. C.** (2014). Revisão estratigráfica da parte ocidental da Bacia Bauru (MT, MS, GO): resultados preliminares. *Anais do 47º Congresso Brasileiro de Geologia*. Salvador (BA).
16. Fedalto, G.; **Branco, H. C.**; Fernandes, L. A. & Maoski, E. (2012). Microtexturas de calcretes da Formação Marília (Bacia Bauru, Ks). *Anais do 46º Congresso Brasileiro de Geologia*. Santos (SP).

OTHER ACADEMIC PRODUCTIONS

17. **Branco, H. C.**; Titon, B. G. & Marchioro, T. de A. (2016). *Aspectos Geológicos da Região de Cedro Alto - Brusque (SC)*. Relatório de Mapeamento, Universidade Federal do Paraná. Curitiba, PR.
18. **Branco, H. C.**; Titon, B. G. & Marchioro, T. de A. (2016). *Mapa geológico 1:10.000 da região de Cedro Alto, Brusque (SC)*. Mapa geológico, Universidade Federal do Paraná. Curitiba, PR.
19. Andreis, L. G. K.; **Branco, H. C.** & Guimarães, D. P. (2015). *Relatório de Mapeamento Sedimentar - região de Mirador, Presidente Getúlio (SC)*. Relatório de Mapeamento, Universidade Federal do Paraná. Curitiba, PR.
20. Andreis, L. G. K.; **Branco, H. C.** & Guimarães, D. P. (2015). *Mapa geológico 1:25.000 da região de Mirador, Presidente Prudente (SC)*. Mapa geológico, Universidade Federal do Paraná. Curitiba, PR.

CONFERENCE PRESENTATIONS

1. **Branco, H. C.** & Miljkovic, K. (2022). *Numerical simulations of large impact events on Mars*. 20th Australian Space Research Conference.
2. **Branco, H. C.** & Miljkovic, K. (2022). *Impact cratering simulations as a tool to the study of planetary bodies*. XLV Reunião Anual da Sociedade Astronômica Brasileira.
3. **Branco, H. C.** & Mancini, F. (2021). *Planetary Geology: Contributions from Earth Sciences to the study of the Universe*. XLIV Reunião Anual da Sociedade Astronômica Brasileira.
4. **Branco, H. C.** & Braga-Ribas, F. (2021). *Considerations about the Equilibrium Shapes and Geology of TNOs*. XLIV Reunião Anual da Sociedade Astronômica Brasileira.
5. **Branco, H. C.** (2021). *Early Career Lightning Talk: Equilibrium Shapes of TNOs*. 25th Meeting of the NASA Small Bodies Assessment Group.
6. **Branco, H. C.** 2021. *Equilibrium Shapes and Geology of TNOs*. Geologists' Association Student Symposium 2021.
7. Braga-Ribas, F. & **Branco, H. C.** (2020). *A step forward to understand the equilibrium shape of big TNOs*. X Taller de Ciencias Planetarias.
8. **Branco, H. C.** & Braga-Ribas, F. (2019). *Formas de equilíbrio e geologia de Objetos Transnetunianos (TNOs)*. XLIII Reunião da Sociedade Astronômica Brasileira.
9. **Branco, H. C.** & Braga-Ribas, F. (2018). *Formas de equilíbrio de Objetos Transnetunianos: um estudo preliminar*. XIX Colóquio Brasileiro de Dinâmica Orbital.
10. **Branco, H. C.** (2018). *Geologia Planetária: a Ciência da Terra fora da Terra*. Seminários de Graduação em Física 2018, Universidade Federal do Paraná.
11. **Branco, H. C.** (2018). *Geologia Planetária: a Geologia como chave para a compreensão do Cosmos*. SEGEPAR 2018, Universidade Federal do Paraná.
12. **Branco, H. C.** & Mancini, F. (2017). *The importance of Earth analog models in the study of celestial bodies*. X Simpósio Sul-Brasileiro de Geologia.
13. **Branco, H. C.** & Mancini, F. (2016). *Geologia Planetária: inferência e especulação científica no estudo da geologia de Marte*. 48º Congresso Brasileiro de Geologia.
14. **Branco, H. C.** & Fernandes, L. A. (2013). *Contexto deposicional e estratigrafia da parte ocidental da Bacia Bauru*. 21º EVINCI e 6º EINTI, Universidade Federal do Paraná.
15. Fedalto, G.; **Branco, H. C.**; Fernandes, L. A. & Maoski, E. (2012). *Microtexturas de calcretes da Formação Marília (Bacia Bauru, Ks)*. 46º Congresso Brasileiro de Geologia.

ORGANISATION COMMITTEES

1. **Branco, H. C.**; Lange, L. de L. ; Antunes, R. de C. ; Valore, L. ; Garcia, A. ; Moreira, L. G. ; Rossi, I. ; Graf, R. ; Tomio, F. ; Favoreto, N. ; Ribeiro, L. ; Fischer, G. ; Martins, J. D. ; Borato, F. & Souza, K. S. de (2016). *XII Semana de Estudos Geológicos do Paraná (SEGEPAR) 40 anos - In memoriam a J.J. Bigarella.*

SCIENTIFIC COMMUNICATION & OUTREACH

1. Sansom, E.; Jones, E. & **Branco, H. C.** *Science Cafe Talk: Puzzling Planets.* Astrofest 2022.
2. Astrotubers (organisers); Rommel, F. L. & **Branco, H. C.** (guest speakers) (2021). *Live: Nos confins do Sistema Solar.* Canal Astrotubers (YouTube). Available at: <https://youtu.be/yWU-vW7SQ7g>