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# **CRUZIANA**

**NATURTEJO UNESCO GLOBAL GEOPARK - E-MAGAZINE**



# MONTHLY ACTIVITIES

**Measures against the social and economic crisis COVID-19 in the municipalities of Naturtejo Geopark.** The third and final period of the State of National Emergency is now over. Portugal has now 25.351 confirmed cases and 1.007 deaths per COVID-19. Meanwhile, 1.647 people have recovered and more than 400.000 have been tested. In the territory of Naturtejo Geopark, where so far only 5 cases without major consequences have been confirmed, municipalities have made a huge effort to assess and mitigate the social and economic consequences of the period we have gone through worldwide, with more than 3.400.000 people infected and almost 240.000 deaths in 212 countries. All municipalities have sponsored COVID-19 tests, distributed personal protective equipment to employees and IPSS, as well as food for families in need free of charge. The municipality of Oleiros has gone further, distributing of 5.000 soaps and 120.000 masks, thus reaching the entire population. This municipality also helps the elderly population with the co-payment of medicines. The municipality of Idanha-a-Nova has cancelled its Events calendar for 2020 and will distribute this money to families, companies and institutions in the municipality. Moreover, this municipality has a strong Lenten tradition. Idanha-a-Nova's Easter at Home made and exhibited via facebook a set of documentaries about the Easter traditions in the villages. The celebration of Holy Saturday was held from the windows, as was the Lady of Mércos in Castelo Branco. In Proença-a-Nova, the municipality distributed a sweet gift to the pre-school students at home a few weeks by now.

In order to complete the school year at home, all municipalities have provided tablets and laptops as loans so that students in need can follow classes from home. The municipality of Penamacor has invested in strengthening the wi-fi networks in the villages and the municipality of Castelo Branco has created a technical support hotline School at Home.

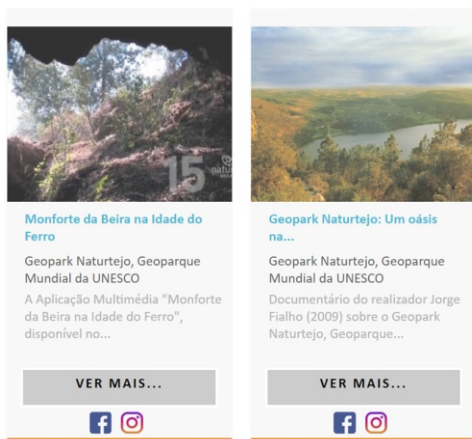
The municipality of Nisa is completing work on the new Health Centre. This municipality has also prepared accommodation for health professionals in case there is a second wave of the pandemic. The municipality of Oleiros took advantage of the absence of tourists to carry out works to enhance the Geomonument of Fraga da Água d'Alta.

All the municipalities offered a varied cultural and playful programming through social networks. CB Acontece brings children activities, physical exercise and music, for example. The municipality of Castelo Branco also holds the thematic fairs and festivals that were scheduled in a virtual way. The municipality of Penamacor has launched an artistic creation competition "Lynx under Perspective" dedicated to this emblematic species of the region and keeps its Guided and Staged Tours online.

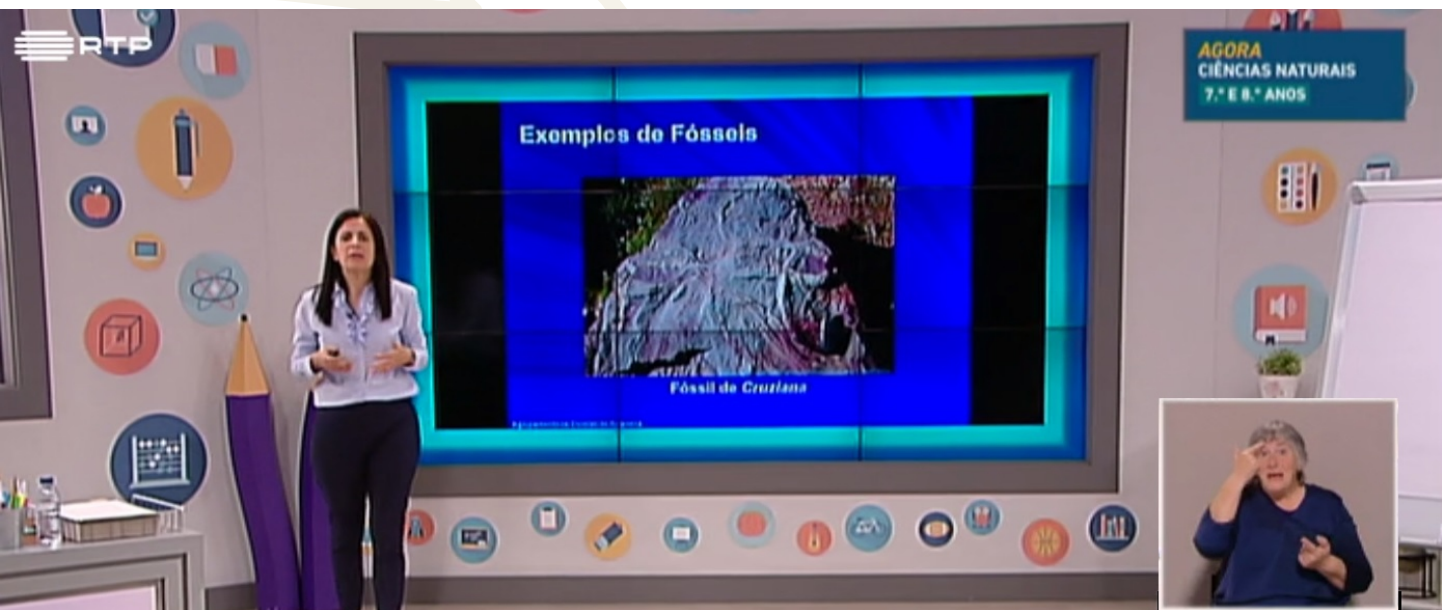
The Five Star Awards - Regions voted by Portuguese consumers elected in the territory of Naturtejo Geopark the village of Monsanto, the Roasted Kid from Oleiros, the cheeses of Nisa and its embroidery. Nisa's handicraft is recognized nationwide: Nisa's stoned pottery was at a design exhibition at the Palace of S. Bento, the official residence of the Prime Minister of Portugal, which was virtually open for the 25th of April celebrations. In the municipality of Proença-a-Nova, seven companies were recognized as SME Leader, and two of them achieved SME Excellence recognition. The municipality of Vila Velha de Ródão saw the board game Atmosquiz to be awarded in the Lusophone Creativity Awards, in the category Events - Environmental Awareness. The Out of Place Festival in Idanha-a-Nova integrated the European Ancient Music Network. Nisa's stoned pottery received the seal of nomination for the national competition 7 Wonders of Popular Culture.

**April 8th - Documentary From Stones Earth was Made: Stories of Beira Baixa on RTP2.** Beira Baixa is the province of Portugal where a very significant part of Geopark Naturtejo is located. This was the part chosen by Ocidental Filmes, from Lisbon, to the theme of a fantastic documentary. Deeply marked by the millenary dialogue between water and rock, this region holds some of the oldest natural and archaeological treasures in Europe. Scientists, naturalists and residents guided the director Madalena Boto on a journey of discovery of the region through its most extraordinary stories of overcoming and resistance. According to Visão magazine, the documentary that premiered on national television gives face and voice to people who live in the Geopark. An ultramarathonist runs a 281 kilometre race, showing overcoming and resilience; an illustrator, dedicated to teaching, finds inspiration in these landscapes and a team of geologists analyses the sliding risk of the large blocks of rocks that have been there for hundreds of thousands of years, among other characters and narratives. Naturtejo Geopark gave technical support to the conception and development of the script for this documentary, and Carlos Neto de Carvalho was one of the interviewees.





**April 18th – International Day of Monuments and Sites.** The International Day of Monuments and Sites was marked this year under the motto "Shared Heritage - Shared Cultures, Shared Heritage, Shared Responsibility". This date aims to increase public awareness of the diversity of heritage and the efforts needed to protect it. Naturtejo Geopark joined the celebrations promoted by the General Directorate of Cultural Heritage of the Ministry of Culture and ICOMOS (International Council of Monuments and Sites) which, given the current circumstances, took place entirely online. A huge program was developed, with about 600 initiatives to enjoy from home, with virtual tours, virtual exhibitions, presentations, films and all sorts of initiatives that could be disseminated online (through <http://w3.patrimoniocultural.pt/dims2020/digital/>). In an initiative that emphasized the notion of sharing as an inseparable legacy of heritage, Naturtejo Geopark presented the documentary "Naturtejo Geopark: An oasis in Europe" and the Multimedia Application "Monforte da Beira in the Iron Age", with 3D reconstitutions of the various phases of mining in underground caves.



**April 22nd – National Day of Geological Heritage with Penha Garcia's Fossils reaching all students of 7th and 8th grades.** At this time of confinement, the Ministry of Education and RTP national television launched the #STUDYATHOME project, a programme of television content to complement distance learning. In the first class of Natural Sciences of the 7th and 8th grades, the topics Fossils and Natural Resources were addressed, using as an example Penha Garcia's ichnofossils.





**April 22nd – International Earth Day: Start of maintenance work on planting native trees in Idanha-a-Nova.**

April 22nd celebrates International Planet Earth Day and National Geological Heritage Day. Since 1970 this day has been dedicated to our wonderful Planet, so this year it is the 50th anniversary of this celebration. Today, in the middle of the Covid-19 Pandemic, it is even more evident that the health of human beings is intrinsically linked to the health of the Planet.

Naturtejo Geopark couldn't fail to mark such an important date, although this year an activity open to the school public or the community cannot be organised, given the restrictions imposed by the pandemic. Thus, in partnership with the Municipality of Idanha-a-Nova and, in a different way, the team of the Educational Service paid tribute on this day to our Common House, starting the maintenance work of native baby and young trees in Tapada do Sobral, near the Raiano Cultural Center, the headquarters of the Geopark. These trees had been sown or planted during the Native Forest week, last November and December, with students from several schools in the village of Idanha-a-Nova, scouts and the community. These small trees will have to be cared by all of us over time, but for now they continue to grow and receive affection from a distance. For now, the education team will take care of them. This first phase of maintenance work lasted until the end of April. Manuela Catana and Catarina Caria assured these works, with the collaboration of a Tourism Technician from Idanha-a-Nova.

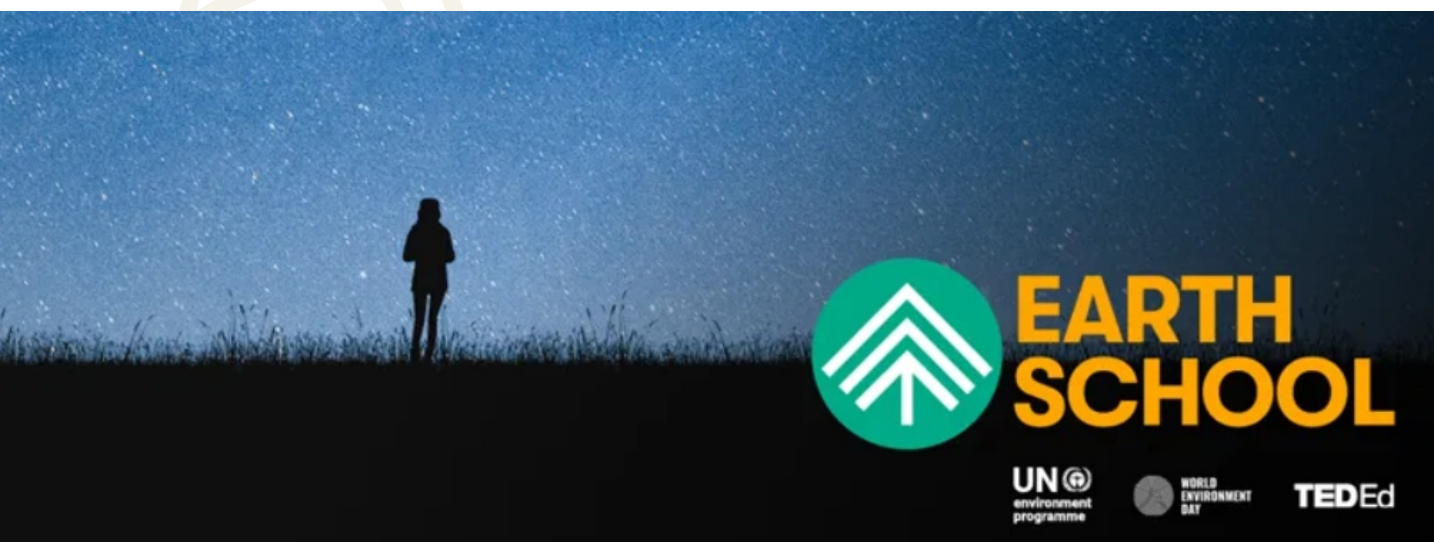
**April 26th – Lady of Almortão... My beautiful borderland Lady.** The Raiano Cultural Centre proposes to revisit the contents produced within the exhibition "The Devotion to the Lady of Almortão", held at the Raiano Cultural Centre in 2007.



**#GeoparkNaturtejoEmCasa.** In this context of global scale confinement, Naturtejo Geopark created the online platform 'Naturtejo Geopark At Home' which gathers digital content that can be explored at home. At a time when is not possible to physically visit Naturtejo Geopark, virtual visits, hobbies, challenges such as the 'Safari through the Fossils in our House', documentaries or reading suggestions are available. Given the schools closure and the implementation of distance learning, numerous educational resources such as teaching modules, games, recreational and educational activities and other tools on Geosciences for Sustainability were also gathered for teachers and students.



Other suggestions from Naturtejo Geopark's partners and other entities are also available, as well as a large set of proposals from other UNESCO Global Geoparks. 'Naturtejo Geopark At Home' is accessible in <https://www.naturtejo.com/casa.php> and also being promoted on Facebook at #GeoparkNaturtejoEmCasa.



### **Program "Earth School - Escola da terra": online vídeos and "missions" on Naturtejo Geopark's facebook.**

To celebrate International Earth Day, the United Nations Environment Programme (UNEP) launched an online Programme to keep students connected with nature in times of Covid-19 Pandemic, between April 22nd (International Earth Day) and June 5th (International Environment Day). "Let's embark on a month of daily adventures - or Missions - that will help you understand and celebrate our natural world as we learn about how dependent we are on our planet. Now more than ever, we need to protect and care for Earth. Join us to learn something incredible every week day between Earth Day and International Environment Day. In each lesson, you'll find fascinating resources compiled by experts on Planet Earth topics and ideas for getting involved in ways that make a difference. Join us to learn more, create, act and share your journey (#EarthSchool) towards a healthier and more ecological life". Learn all about the "Earth School" Program:

[https://www.unenvironment.org/news-and-stories/press-release/earth-school-launches-keep-students-connected-nature-time-covid-19?fbclid=IwAR1bTCQteQVb0bBfvjmsJzjEKTEX3FuSPd1Pf4FGWpynGs7y\\_eEn0rN9hZk](https://www.unenvironment.org/news-and-stories/press-release/earth-school-launches-keep-students-connected-nature-time-covid-19?fbclid=IwAR1bTCQteQVb0bBfvjmsJzjEKTEX3FuSPd1Pf4FGWpynGs7y_eEn0rN9hZk)

Videos and Missions/Tests on the content addressed in the videos:

<https://ed.ted.com/earth-school>

Every day of the week a new thematic video on sustainability education of this program is shared on the Facebook page of Naturtejo Geopark. An excellent educational resource for teachers to use in online distance learning times, with the advantage of being able to select subtitles in Portuguese, in the videos and respond to missions / challenges also in Portuguese. In addition, the educational activities of Naturtejo Geopark have not stopped. The digital educational resources are available at Naturtejo Geopark educational programs microsite - <http://www.geonaturescola.com/> - with suggestions of activities developed by Naturtejo Geopark team and other institutions specialized in geosciences education for sustainability. Virtual Geopark takes us to make virtual visits at <https://www.naturtejo.com/geopark-virtual.php>. Also, and as already mentioned, the campaign #NaturtejoGeoparkAtHome (#GeoparkNaturtejoEmCasa) shares suggestions from our partners regarding education, tourism, local products, services during quarantine and suggestions for virtual activities such as books, movies or games (Facebook -<https://www.facebook.com/naturtejogeopark/>) - Finally, the series created for the Facebook page of Naturtejo Geopark (#Naturtejo GeoparkDidYouKnow | #GeoparkNaturtejoSabiaQue) about the geodiversity and geological heritage of Naturtejo Geopark (<https://www.facebook.com/naturtejogeopark/>)



**Interpretation of Barrocal Park concluded.** The landscape architecture company Topiaris and the municipality of Castelo Branco are completing the Barrocal Park, a project coordinated by the architect Teresa Barão. One of the candidates for the Landezine International Landscape architecture award, this investment budgeted at more than one million euros in its first stage, aims to protect and enhance a characteristic granite landscape extending over 40 hectares, in the heart of the urban area of the city of Castelo Branco. The project is well advanced and promises to open to the public later this summer. With the support of Naturtejo Geopark, the company Topiaris has been concluding the contents, from directional signage to the interpretation of the main spaces, viewpoints and geodiversity. More than 20 panels will be distributed in the points of interest of the first phase, with information and original graphics, in Portuguese and English. A bilingual brochure has also been developed and a general guide of the Park and a webpage are currently being prepared.

**Naturtejo Geopark in three scientific project applications to the Science and Technology Foundation.** Naturtejo Geopark and the researchers with whom it has collaborated have taken advantage of this period to develop scientific projects. There are three projects submitted to the Foundation for Science and Technology that seek funding for scientific activity, with some of this focusing on geodiversity of the geopark. Thus, researcher Martim Afonso Ferreira de Sousa Chichorro, from the Faculty of Sciences and Technology of the Nova University of Lisboa is responsible for the application PTDC/CTA-GEO/1389/2020 to the 'Competition for the Financing of Scientific Research and Technological Development Projects in All Scientific Domains - 2020', designated by 'Rift-to-Drift Evolution between the supercontinents Gondwana and Pangeia'. As already announced in the previous edition, this project will have a strong intervention in the areas of Penha Garcia and Salvaterra do Extremo. The PTDC/HAR-ARQ/3191/2020 Project has been submitted to the 'Competition for the Financing of Scientific Research and Technological Development Projects in All Scientific Domains - 2020', with the designation 'Variscite', by the Responsible Researcher Carlos Odriozola, from the University of Seville. The main goal of this project is the geochemical analysis of protohistoric Roman archaeological materials, namely ornaments, produced with phosphates as a gem, as well as the identification on the mines' territory from where they may have come. Finally, Carlos Neto de Carvalho will participate as external evaluator of the project of the researcher Silvério Figueiredo, of the Polytechnic Institute of Tomar, under the theme "Dinosaurs of the Cabo Espichel", and candidate to the same financing program of the Foundation for Science and Technology.



# IMPACT OF GEOPARK IN MEDIA



## TV & Radio

April 8th (RTP2) - Documentary From Stones Earth was Made: Stories of Beira Baixa

## Newspapers & www

April (I Like This Magazine) – Biodiversity Tours

April (newsletter.roteirodeminas@dgeg.pt) – Naturtejo Geopark in various dissemination channels

April 18th (Reconquista online) – Covid-19:Monuments and Sites celebrated online

April 23rd (Reconquista) – Barrocal Park is one of the candidates for the Landezine International Landscape Architecture Award

April 29th (www.itinari.com) - Penha Garcia fortress & Naturtejo's 450 million-year-old snakes

# SCIENTIFIC CONTRIBUTIONS FOR THE GEOPARK AND THE GEOSCIENCES



- NETO DE CARVALHO, C., FIGUEIREDO, S., MUÑIZ, F., BELO, J., CUNHA, P.P., BAUCON, A., CÁCERES, L.M. & RODRÍGUEZ VIDAL, J. - Tracking the last elephants in Europe during the Würm Pleniglacial: the importance of the Late Pleistocene aeolianite record in SW Iberia. *Ichnos*, DOI: 10.1080/10420940.2020.1744586

- BAYET-GOLL, A., DARAEI, M., MOUSAVI TAHER, S.P., ETEMAD-SAEED, N., NETO DE CARVALHO, C., ZANDKARIMID, K., MONACO, P., ZOHDI, A., RABBANI, J. & NASIRI, Y. 2020 - Variations of the trace fossil *Zoophycos* with respect to paleoenvironment and sequence stratigraphy in the Mississippian Mobarak Formation, northern Iran. *Palaeogeography, Palaeoclimatology, Palaeoecology*, <https://doi.org/10.1016/j.palaeo.2020.109754>



# PROMOTION FOR THE GENERAL PUBLIC



- #GeoparkNaturtejoemcasa ([www.naturtejo.com](http://www.naturtejo.com))
- App Biodiversity Tours



**GEOETHICS & GROUNDWATER  
MANAGEMENT CONGRESS**  
PORTO · PORTUGAL  
MAY 18-22 · 2020



## PROMOTION FOR THE GENERAL PUBLIC



**NOVO CORONAVÍRUS  
COVID - 19**

**Proteja-se a si  
e aos outros**

**Siga os conselhos das  
autoridades de saúde**

**Protect yourself and others  
Follow the advice of health  
authorities**

**naturtejo**  
GEOPARK

**Estado de Mato Grosso do Sul**

### Visit Naturtejo Geopark in:



[www.geoparknaturtejo.com](http://www.geoparknaturtejo.com)



[www.facebook.com/geoparknaturtejo.mesetameridional](https://www.facebook.com/geoparknaturtejo.mesetameridional)



[www.instagram.com/geopark\\_naturtejo/](https://www.instagram.com/geopark_naturtejo/)



[www.youtube.com/geoparknaturtejo](https://www.youtube.com/geoparknaturtejo)

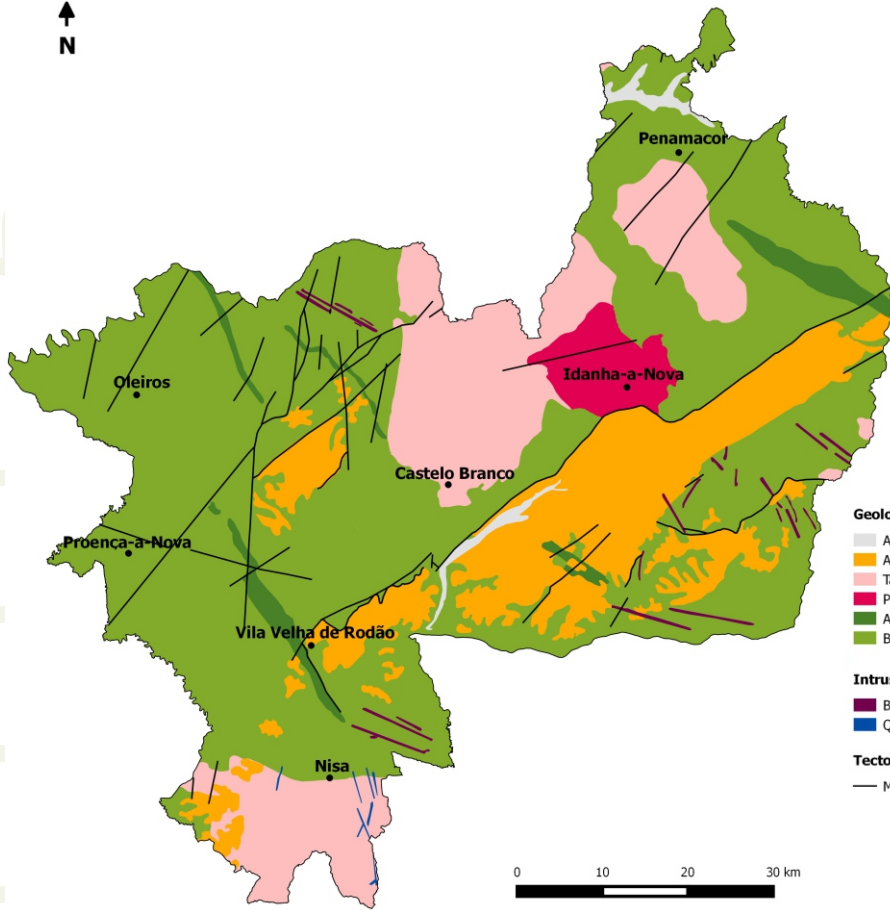


[issuu.com/geoparknaturtejo](https://issuu.com/geoparknaturtejo)



[www.slideshare.net/geoparknaturtejomesetameridional](https://www.slideshare.net/geoparknaturtejomesetameridional)





**Geological Formations (Ma-Million years)**

- Alluvium and fluvial terraces - Pliocene-Holocene (1Ma-present)
- Arkoses, breccias and conglomerates - Eocene-Pliocene (50-2.6Ma)
- Tardi-Variscan orogenic granites (315-300Ma)
- Pre-Variscan granodiorites (480-472Ma)
- Armorican Quartzite and schists - Ordovician-Lower Silurian (488-435Ma)
- Beiras Group (schists and greywackes) - Neoproterozoic (610-542Ma)

**Intrusive rocks**

- Basic rocks, aplites and pegmatites
- Quartz

**Tectonic**

- Main faults

## Geoparks: Geology with human face





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**CRUZIANA**

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