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tectonics of lithosphere plate were formed green stone (Unakhinsky, Vetrenny belts archeozoic) and granulite (Laplandsky, Zverevsko-Sutamsky, Edgeksky) belts. Their development has resulted to final kraton of a continental crust of regions.

300-20 Poster Accioly, Ana Cláudia

REE SIGNATURES FROM PYROXENES OF PASSIRA ANORTHOSITIC COMPLEX, BORBOREMA PROVINCE - NE BRAZIL

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Keywords: Passira Complex; Anorthosite; Pyroxenes; REE; Borborema Province

The Passira Anorthositic Complex (PAC) is located in NE Brazil and does a massif-type Complex constitute a batholith mainly composed by anorthosites and gabbros. The PAC was affected by two tectonic-metamorphic events. Textures typically developed during retrometamorphism in granulite-facies are present. The age of the PAC is 1.7 Ga. The main anorthosites facies present are "pegmatitic", "pyroxene bearing" and "foliated" while the associated gabbroic rocks are "foliated", "garnet bearing" and "norites". Augite and hyperstene are present in gabbros and enstatite in anorthosites. The garnet from garnet bearing gabbros shows REE signatures with CeN/YbN<10-3. This relation is the same determined for pyrope almost pure in Fe-gabbros associates with ophiolites described in literature. Some pyroxenes from both gabbros and anorthosites have different patterns from those expected for normal mafic rocks. REE signatures from pyroxenes of anorthosites and gabbros are different, but both have strong LREE enrichment. Pyroxenes show ratios in order to LaN/YbN >10 for gabbros and LaN/YbN >15 for anorthosites, suggesting that both pyroxenes were in equilibrium with LREE enriched liquids. The different signatures of these rocks are attributed to magmatic fractionation processes and/or metamorphism. Four main factors may explain the LREE- enriched patterns of pyroxenes: (1) syn-crystallization metassomatism; (2) enrichment by lower crust assimilation during residence of mafic magma at the base of the crust; (3) presence of an enriched mantle source for the magmas; (4) a possibly influence of a deep statherian mantle plume. Field relations and evidences from strontium and neodymium isotopes date obtained can to favors the second and third possibilities above. These arguments suggest a mixed source for PAC's rocks (enriched mantle and incorporation crustal material).

300-21 Poster Molano Mendoza, Juan Carlos

MESOZOIC TO CENOZOIC EVOLUTION OF THE ROMERAL SUTURE AT THE NORTHWESTERN SOUTH AMERICA MARGIN

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Keywords: Northwestern South America; First - order suture evolution; Break - up Pangea; Accretion terranes; Caribbean plate

The Romeral Fault System (RFS) represents a first-order continental suture of nortwestern South America, crossing the western flank of Colombian Central Cordillera and the foothills of the Ecuadorian Cordillera Real. It juxtaposes western oceanic terranes (Arquia and Quebradagrande Complexes of Colombia, Alao, Guamote, Pallatanga, Macuchi, Piñon, El Oro and Raspas Complexes of Ecuador) to eastern continentalized units (Cajamarca Complex in Colombia, and Amotape and Loja terranes). These terranes are characterized by marked density contrasts. Accordingly, the western terranes are the site of a pronounced positive Bouger anomaly. The suture itself contains fragments of recycled continental material represented by high-grade metamorphic terranes (Puqui and Chinchina complexes) and Permic - Triassic intrusive unites in Colombia and the Chaucha terrane and various S-type granitoids of the Amotape and Loja terranes in Ecuador. These intrusive units are interpreted to represent crustal melts which formed during the Triassic- Jurassic break-up of Pangea, reflecting a regional thermal event. The continental margin resulting from this event became thereafter the site of a volcanic arc, representd by the Early to Late Cretaceous Quebradagrande Complex in Colombia and the Alao terrane and Celica Formation in Ecuador, until the Late Cretaceous to Early Paleogene accretion oceanic terrains produced the present tectonic setting. This latter accretionary event was triggered by an enhanced mid - Atlantic rifting and the inception of the Pacific Superplume event that ultimately gave rise to the Caribbean plate. The succeding Paleogene to recent magmatic activity owes its origin to a lithospheric thinning of a continental plate as a consecuence of the absorption of a lower lithospheric mantle. The remaining activity of the Pacific plume at the Galapagos Hot Spot is responsible for the actual plate convergence.

300-22 Poster De Paulo, Valeria Guimaraes

40AR/39AR AGES OF PALEO AND MESOPROTEROZOICS ROCKS OF SW AMAZONIAN CRATON

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Keywords: Amazonian Craton; 40Ar/39Ar geochonology; thermochronologic history; crustal evolution

The SW region of Amazonian craton presents policyclic evolution between 1.80-1.00 Ga and is comprised of the Rio Negro-Juruena, Rondoniana and Sunsas Provinces. The evolution of this region has being characterized by four orogens: Alto Jauru (1.79-1.74 Ga), Cachoeirinha (1.58-1.52 Ga), Suíte Santa Helena (1.45-1.42 Ga) e Sunsas/Aguapeí (1.0-0.9 Ga). The Alto Jauru orogen consists of TTG gneissic associations, greenstone sequences and intrusive granitoids origined in volcanic arc setting. Eight 40Ar/39Ar step-heating analyses were carried out in minerals (biotite and hornblende) to investigate the thermal history and crustal evolution of this region. From the Alto Jauru orogen was sampled the gneiss banded and two biotite grains provide large dispersion of apparent ages, suggesting heterogenity in reservoir of the argon. Apparent age diagram yielded integrated ages of 1472 ± 6 Ma, interpreted as minimum ages of regional cooling episode. Three analyses of hornblende present ages varing from 1310 to 1400 Ma, possibly because smaller grain size become more susceptible to argon loss. 40Ar/39Ar step-heating methodology applied on biotite of pyroclastic tuff (U-Pb age about 1758 ± 7 Ma) presented integrated age of 1507 ± 7 Ma. The results found for this terrane demonstrated a geochronological correlation with metamorphic process linked Cachoeirinha orogen. Biotite and hornblende grains separates from granite and a tonalite origined during Cachoeirinha orogen were analyzed and the apparent age diagrams indicated well-defined plateau ages of 1520-1540 Ma. Biotite grains from a granitic sample were analized, and integrated ages about 1526 ± 2 Ma were obtained due argon loss in the initial steps. Thermochronologic history of SW region Amazonian craton is coherent with regional policyclic events and 40Ar/39Ar ages here presented probably correspond to regional cooling period of Cachoeirinha orogen.

300-23 Poster Geraldes, Mauro

GEOCHEMISTRY AND ISOTOPIC CONSTRAINTS ON THE ORIGIN OF THE MESOPROTEROZOIC RIO BRANCO "ANOROGENIC" PLUTONIC SUITE, SW OF AMAZONIAN CRATON, BRAZIL: HIGH HEAT FLOW AND CRUSTAL EXTENSION BEHIND THE SANTA HELENA ARC ?

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Keywords: Amazonian craton; Mesoproterozoic; Bimodal magmatism; U-Pb ages; Isotope geochemistry

The Rio Branco plutonic suite occurs in the southwestern Amazonian craton and is intrusive into the ca. 1.79 Ga Alto Jauru terrane. The suite comprises basic (gabbro, diabase and basalt) and felsic rocks (porphyritic granite and rapakivi granite). Hybrid rocks (monzosyenite) with rapakivi-like textures indicate commingling and mixing among the basic and felsic magmas. Silica contents range from 45% to 47 % in the basic rocks and from 69% to 71% in the felsic rocks. Lithogeochemical investigation also indicates higher contents of K2O, Rb, Zr, Ba in felsic rocks, comparable with results reported elsewhere for rapakivi granites. Trace element discrimination diagrams indicate that the Rio Branco felsic and basic rocks both have within-plate signature. In addition, the felsic rocks have strongly fractionated REE patterns showing marked negative Eu anomalies, probably due to plagioclase fractionation. The basic rocks are similarly LREE enriched, but display flatter patterns, characteristic of weakly fractionated gabbros. Single grain IDTIMS U-Pb analysis yielded an upper intercept age of 1427 ± 10 (MSWD=1.7) for magmatic zircon from a granophyre of RBS. This age contrasts significantly with an upper intercept age of 1471 ± 8 Ma (with a concordant 207Pb/206Pb age of 1471 ± 18 Ma), obtained on zircon from a sample of the basic group. The latter rocks show positive eNd (1420) ranging from +1.2 to +1.9 (TDM=1.86 - 1.82 Ga), indicating mantle-derivation, whereas the felsic ones yielded eNd (1420) values from +0.2 to -1.0 (TDM = 1.80-1.73 Ga), indicating some older crust in their source. The Rio Branco suite is interpreted to have formed at ca. 1.47 - 1.42 Ga from mixture of mantle source and crustal derived magma. High heat flow and extensional environment is proposed for the origin of the RBS as a response to the inboard Santa Helena arc (ca. 1.45-1.42 Ga) developed at the southwestern margin of the Amazonian craton at about the same time.

300-24 Poster Laux, Jorge Henrique

TWO NEOPROTEROZOIC CRUSTAL ACCRETION EVENTS IN THE BRASÍLIA BELT, CENTRAL BRAZIL

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Keywords: Crustal accretion; Geocronology U-Pb; Goiás Magmatic Arc; orthogneiss; Brazil

New U-Pb and Sm-Nd isotopic data for orthogneisses and granitoid rocks from the Neoproterozoic Goiás Magmatic Arc in western Goiás helped to better constrain the geological evolution of this large section of juvenile crust in the western part of the Brasília Belt. Orthogneiss rock samples have U-Pb crystallization ages of 804 ± 6 Ma, 669 ± 3 Ma, 662 ± 12 Ma, 634 ± 8 Ma, 630 ± 5, and 637 ± 20 Ma, and present eNd(T) values varying within a large range, between + 2.8 and -15.1. Rock units with negative eNd(T) are more frequent in the eastern part of the studied area, to the south of Anicuns, indicating the presence of older continental crust in that part of the arc. Metagranitoids in this area have ages of 821 ± 10 Ma, 810 ± 10 Ma, 792 ± 5 Ma, 790 ± 12, 748 ± 4 Ma, 782 ± 14 Ma, and 614 ± 5 Ma, and eNd(T) values between +5.1 and -3.7. The data presented here combined with those in the literature suggest that igneous activity in the Goiás Magmatic Arc took place in two different episodes: the older between ca. 890 and 790 Ma, probably in intraoceanic settings, and the younger between ca. 670 and 615 Ma, most likely in an active continental margin, at the end of the Brasiliano orogeny. The paucity of igneous events in the interval between ca. 750 and 670 Ma may interpreted as a result of shallow angle of subduction prevailing for most of that time interval.

300-25 Poster Rodrigo Alejandro, Fernández Vasquez

NEW GEOLOGICAL SURVEY AT ELLSWORTH MOUNTAINS, WEST ANTARCTICA

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Keywords: Ellsworth; Antarctica; Heritage; Patriot Hills; Geochemical provenance

The Ellsworth Mountains (EM), are located inland south of the Wedell sea, forming part of the Ellsworth - Whitmore Mountains (EWM) crustal block, one of the five allochthonous terranes which forming West Antarctica (Dalziel and Elliot, 1982). Palaeogeographyc recontructions suggest that the EWM crustal block originated from a position adjacent to southern Africa and the Coats Land coast of Antarctica along palaeo-Pacific margin of Gondwana, but much uncertainty exist about its palaeo-orientation (Curtis M. & Storey B., 1996; Curtis M., 1998; Curtis M. & Lomas S., 1999; Curtis M., 2001). The stratigraphic succession of the EM, comprises some what greater than 13000 m in thickness including clastic, calcareous and argillic sedimentary rocks, and volcanic strata, ranging in age from Cambrian to Permian. The lower part of the succession comprises the Lower to Upper Cambrian Heritage Group (HG; Webers et al, 1992) and the uppermost Cambrian to Devonian Crashsite Group (CG; Spörli, 1992). In this contribution, we present results of a broad geological study of the Middle to Late Cambrian Liberty Hills (LHF) and Minaret (MF) Formations (Heritage group) carried out at Patriot Hills (80°S), and Lower Middle to Late Cambrian Heritage Group (HG) and of the Upper Cambrian to Devonian Crashsite Group (CG), which crop along the Sentinel and northern Heritage Range (SNHR). Ours paleomagnetic results show very complex multicomponent and unstable magnetization; only viscous magnetization produced by the present