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## INTEGRATING GEOLOGICAL AND AIRBORNE GEOPHYSICAL DATA TO REVIEW THE CARTOGRAPHY OF THE RIO ITANGUÁ BATHOLITH, ARAÇUAÍ OROGEN, BRAZIL

Julia Grochowski; Matheus Kuchenbecker; Danilo Barbuena; Tiago Amâncio Novo

OUTCROP	UTM_E	UTM_N	ELEVATION (m)	LITHOLOGY	DESCRIPTION	STRUCTURAL FEATURES
FS002	678122	8004389	862	Schist	Micaceous schist, cut by quartz veins, folded and crenulated.	Sn = 260/15
FS006	682888	8003935	860	Schist	Pink micaceous schist, cut by quartz veins, folded and crenulated.	Sn = 285/29
FS010	680513	7998885	945	Quartzite	Laminate micaceous white quartzite, folded.	S0 = 150/04
FS011	681336	7998245	791	Schist	White quartz-schist.	Sn = 286/26
FS014	681840	7994688	774	Quartzite/Schist	Beige micaceous quartzite grading to a pink schist with crenulation.	Sn = 011/24 (crenulation); Sn = 325/26
FS015	682537	7996092	790	Schist	White quartz-schist.	Sn = 004/30
FS023	683947	7993424	862	Metagabbro	Dark grey, altered rock. Foliated and crenulated.	Sn = 285/17 (crenulation)
FS024	684063	7993132	829	Quartzite	Micaceous foliated quartzite, beige, cut by quartz veins. Tight folds and chevron.	fold axis = 60/20
FS025	685135	7993222	791	Schist	Pink schist with anastomosed foliation.	Sn = 270/50
FS026	681628	7995466	758	Gneiss	White to grey altered gneisse, cut by quartz veins. Drainage.	Sn = 76/13
FS027	681688	7995432	759	Gneiss	White to grey altered banded rock. Drainage.	
FS028	681921	7995062	759	Gneiss	White to grey altered banded rock. Drainage.	
FS029	684749	7998987	804	Granodiorite	Fresh rock exposure of a mesocratic granitoid, foliated, cut by quartz veins. Fine- to medium-grained, sigmoidal structures.	Sn=235/13
FS030	686018	7998652	735	Granodiorite	Grey fresh granitoid, with pervasive fracture planes. Medium-grained, equigranular. Drainage.	Sn=246/11
FS031	685796	7998395	751	Granodiorite	Fresh rock exposure of a mesocratic granitoid, foliated. Fine- to medium-grained.	
FS032	685431	8004977	742	Granite	Equigranular granite with pegmatoid veins of cm muscovite. Leucocratic, altered, medium-grained.	
FS033	685410	8005038	746	Quartzite	Micaceous quartzite, in contact with granite fom FS032 outcrop. No evidence of a shear zone.	S0 = 90/26
FS034	685808	8005025	764	Granite	Big granite outcrop, rounded hill. Cut by veins that are cut by faults.	
FS035	685748	8004930	792	Granite	Top of the hill from last outcrop. White fresh rock, fine- to medium-grained, leucocratic. Cut by many quartz veins that are faulted.	
FS036	687723	8005358	753	Granite	Leucocratic equigranular granite, fine- to medium-grained.	
FS037	690302	8006154	764	Granite	Leucocratic equigranular granite, fine- to medium-grained. Altered. Drainage.	
FS038	693007	8002867	808	Granite	Leucocratic equigranular granite, fine- to medium-grained. Altered, foliated. Drainage.	
FS039	684728	8001558	753	Granodiorite	Fresh rock exposure of a mesocratic granitoid, foliated. Fine- to medium-grained.	Sn = 42/34
FS040	685960	8000811	747	Granodiorite	Fresh rock exposure of a mesocratic granitoid, foliated. Fine- to medium-grained.	
FS041	688969	8000293	747	Granite	Leucocratic equigranular granite, medium-grained.	
FS043	691880	7996169	787	Quartzite	Micaceous white quartzite, foliated, cut by small quartz veins.	Sn = 259/15
FS044	691910	7996397	773	Quartzito micáceo	Micaceous white quartzite, foliated, in the drainage.	Sn = 290/25
FS045	692447	7999065	794	Quartzito micáceo	Micaceous white quartzite, foliated, in the drainage.	
FS046	692498	8001062	804	Granite	Granitoid with pronounced foliation, anastomosed. Leucocratic, meium-grained. Drainage.	
FS047	694659	8000857	1001	Schist	Altered, white to pink schist.	Sn = 290/15
FS048	694583	7999649	1100	Quartzite	Foliated white quartzite, amidst a reddish soil, that cut and transformed the quartzite in cobble-sized clasts.	
FS051	699058	8007003	790	Granite	Leucocratic granite, coarse-grained. Drainage.	
FS056	711923	8020893	787	Schist	Altered beige schist.	
FS057	711796	8020865	779	Schist	Altered and crenulated fine-grained schist.	
FS058	700867	8020385	764	Granite	Leucocratic medium-grained granite, fresh, fractured, with no foliation. Drainage.	F1 = 135/90; F2 = 005/72; F3 = 255/81
FS060	685765	8014057	688	Phyllite	Dark grey phyllite, foliated and cut by many quartz veins, with boxwork. Drainage (Araçuaí River)	

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OUTCROP	UTM_E	UTM_N	ELEVATION (m)	LITHOLOGY	DESCRIPTION	STRUCTURAL FEATURES
FS061	687805	8014259	735	Granite	Medium-grained equigranular granite, leucocratic, a little altered. Foliation is incipient, and discreet shear zones are found, as well as fractures.	Shear zones: 145/45; 118/42; 138/70; 135/80 (dextral); 65/75 (cm, sinistral); 110/50; 60/50 (dm); 80/80 (dextral); Quartz veins: 275/85; 56/90; 285/90; 80/90; 290/85; 240/80; 105/90; 105/90; 90/90; Fractures: 65/80; 120/90; 85/90; 22/90; 60/90
FS062	688395	8014892	797	Granite	Leucocratic altered granite, medium-grained, equigranular.	
FS063	689112	8014729	817	Granite	Leucocratic altered granite, medium-grained, equigranular.	
FS064	699320	8018738	715	Granite	Porphyritic granite with anastomosed foliation. Leucocratic, with feldspar phenocrysts. Aplitic dikes cut the rock. Drainage (Itanguá River)	Fracture = 85/90; Foliation = 203/20, 180/20; Dike = 180/40
FS065	698757	8019085	730	Granite	Porphyritic granite with anastomosed foliation. Leucocratic, with eye-shaped feldspar phenocrysts. Drainage (Itanguá River)	
FS066	698804	8020341	711	Granite	Porphyritic granite with anastomosed foliation. Leucocratic, with eye-shaped feldspar phenocrysts. Drainage (Itanguá River)	
FS067	699309	8016041	742	Granite	Porphyritic granite with anastomosed foliation. Leucocratic, with eye-shaped feldspar phenocrysts. Drainage (Itanguá River)	
FS068	699160	8015340	744	Granite	Porphyritic granite with anastomosed foliation. Leucocratic, with eye-shaped feldspar phenocrysts. Drainage (Itanguá River)	
FS069	698565	8014269	758	Granite	Porphyritic granite with anastomosed foliation. Leucocratic, with eye-shaped feldspar phenocrysts.	
FS070	699899	8009534	778	Schist	Foliated, folded and cranulated schist cut by quartz veins and pegmatoid mica veins.	Sn = 85/50; Fold axis = 25/25
FS071	699919	8009498	769	Granite	Foliated leucocratic granitoid cut by many quartz veins, folded. Drainage (Itanguá River)	Sn = 64/28
FS072	700040	8007368	776	Granite	Saprolith of a foliated granitoid.	
FS073	689516	8002205	785	Granite	Altered granitoid, leucocratic, coarse-grained, equigranular.	
FS074	689221	8001810	744	Granite	Altered foliated granitoid, leucocratic, coarse-grained, equigranular.	
FS075	684510	8002197	766	Granodiorite	Mesocratic granitoid, pronounced foliation, medium-grained, grey and fresh rock with a few quartz veins.	
FS076	687936	8011918	765	Granite	Leucocratic granitoid, coarse-grained, white to grey, cut by quartz veins.	
FS077	688255	8011766	775	Granite	Leucocratic granitoid, coarse-grained, white to grey, cut by quartz veins.	
FS078	689167	8011389	785	Granite	Porphyritic foliated granitoid, SC foliation in shear zones. Leucocratic, feldspar pegmatoid veins.	
FS079	699046	8009560	817	Granite	Foliated granitoid with SC foliation. Coarse-grained, grey and leucocratic.	
FS080	688096	8009641	828	Granite	Leucocratic equigranular granitoid, medium-grained, altered with incipient foliation.	
FS081	687572	8017652	741	Phyllite	Saprolite of a phyllite, with crenulation cleavage, altered, pink, fine powder.	
FS082	686634	8021731	687	Phyllite	Saprolite of a phyllite, with crenulation cleavage, altered, pink, fine powder.	
FS083	686779	8023353	676	Phyllite	Dark grey/green phyllite, folded, crenulated, with facoidal quartz veins. Altered magnetite crystals contoured by foliation. Drainage (Araçuaí River)	
FS084	688975	8020911	716	Phyllite	Saprolite of a phyllite, with crenulation cleavage, altered, pink, fine powder.	
FS085	690159	8017755	848	Granite	Leucocratic granitoid with feldspar phenocrysts of ~1 cm, grey, fresh.	
FS086	690570	8018489	802	Granite	Leucocratic granitoid with feldspar phenocrysts of ~1 cm, grey, fresh.	
FS087	690647	8016946	847	Granite	Leucocratic granitoid with feldspar phenocrysts of ~1 cm, grey, fresh.	
FS088	691445	8017190	805	Granite	Leucocratic granitoid, fine- to medium-grained, grey.	
FS089	691933	8017978	846	Granite	Leucocratic granitoid with feldspar phenocrysts of ~1 cm, contoured by foliation.	
FS090	695634	8019133	798	Granite	Leucocratic granitoid with cm-size feldspar phenocrysts, grey, fresh.	
FS091	694752	8023964	642	Schist	Grey schist with graphitic portions, altered. Cranulated and foliated.	Crenulation = 315/68; Sn = 340/75

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FS092	696675	8024355	810	Quartzite	White micaceous quartzite, fine- to medium-grained, cut by numerous quartz veins.	S0 = 195/20
FS093	697071	8024830	804	Metadiamicctite	Matrix-supported diamicctite with altered granite, quartzite and quartz clasts, size pebble to boulder. Graphite-rich portions and quartz veins cutting the rock.	
FS094	698116	8024550	678	Granite	Porphyritic granite, cm-sized feldspar phenocrysts. Shear zones with crenulated rocks. There is a micaceous quartzite in the northern contact of the granite, cut by many quartz veins. Aplitic dikes cutting the granite. Drainage (Itanguá River/Pio River)	Crenulation = 330/80; Sn quartzite = 0/44; Sn granite = 350/38; Dike = 330/60
FS097	701792	8020715	819	Granite	Leucocratic, equigranular granitoid.	
FS098	702063	8020534	859	Schist	Light grey schist.	
FS099	707780	8011890	844	Granite	Altered granite.	
FS100	706228	8011825	777	Granite	Equigranular, grey to pinkish granitoid. Amphibole crystals are visible. Fractures are very present, a few are filled by quartz veins. Drainage.	Fracture = 150/90, 110/90, 000/90; Foliation: 235/35, 285/24, 290/55
FS103	686936	7995388		Granodiorite	Mesocratic granitoid rich in biotite.	
FS104	690584	7992353	874	Quartzite	Foliated and bedded white quartzite with micaceous portions, cut by quartz veins.	Sn = 290/30
FS105	689554	7991624	786	Quartzite	Foliated and bedded white quartzite with micaceous portions, cut by quartz veins.	
FS106	688813	7991821	851	Schist	Graphitic schist, altered, with oxidized garnet phenocrysts.	Sn = 278/30
FS108	686022	7990443	733	Quartzite	Micaceous quartzite, stratified and foliated, cut by quartz veins. Large open folds. Drainage (Araçuaí River)	S0 = 310/10; fold axis = N-S
FS109	685917	7990378	743	Quartzite	Micaceous quartzite, stratified and foliated, cut by quartz veins. Large open folds. Drainage (Araçuaí River)	
FS111	684008	7991610	825	Quartzite	Micaceous foliated quartzite.	
FS112	682543	7994566	807	Quartzite	Micaceous foliated quartzite.	S0 = 315/15
FS114	689853	8011448	800	Granite	Banded granite, cm-dm thick quartz-feldspar and biotite layers. Quartz veins, sinistral shear zones concentrate biotites.	Banding = 90/75, 110/90, 110/85; Shear zone = 290/64
FS115	693278	8011617	712	Manganiferous schist	Manganese mine, on the top of a plateau.	
FS116	695470	8011185		Schist	Altered mica-schist. Foliated and with two crenulation directions.	Sn = 155/35; Sn+1 = 308/40; Sn+2 = 192/65
FS117	697754	8011207	863	Schist	Coluvionar soil with angulous pieces of dark grey schist.	
FS118	699177	8011138	754	Granite	Granitoid within a shear zone. Portions rich in biotite and others in quartz and feldspar. Quartz veins and crenulation.	Sn = 80/45; Stretch Lineation = 115/38;
FS119	698527	8006399	798	Schist	Mica-schist with quartz-feldspar pegmatoid veins, purple/grey.	Sn = 310/40
FS120	693961	8002928	922	Schist	Altered mica-schist.	Sn = 312/38
FS121	693019	8002929	825	Schist	Altered mica-schist.	Sn = 10/30
FS122	687243	7996827	746	Metagabbro	Coluvionar red soil with quartz veins, followed by an outcrop of very altered schist, dark grey to green, with alteration crust. Stretched feldspar crystals.	
FS123	688677	7994927	766	Metagabbro	Altered schist, dark grey to green, with alteration crust. Stretched feldspar crystals.	
FS124	688412	7995980	785	Metagabbro	Altered schist, dark grey to green, with alteration crust. Stretched feldspar crystals.	
FS125	690252	7994686	776	Schist	Very altered mica-schists, yellow/red/green alteration colours.	Sn = 290/55
FS126	689736	7993943	855	Schist	Very altered mica-schists, yellow/red/green alteration colours.	Sn = 290/40
FS127	688225	7998935	745	Metagabbro	Metabasic rock with red alteration crust and no schistosity. Amist a reddish soil, with quartz veins.	
FS128	688408	7997878	760	Metagabbro	Metabasic rock with red alteration crust and schistosity.	
FS129	687837	7997424	789	Metagabbro	Metabasic blocks.	
FS131	687237	8000031		Metagabbro	Foliated metabasic rock, with stretched feldspar agregates, amidst reddish soil.	
FS132	687106	7999716		Metagabbro	Grey schist, deformed, ardosian cleavage.	Sn = 275/28
FS133	688967	8000725	770	Granite	Equigranular beige to white granite, fine-grained, foliated and altered.	
FS135	690591	8001458	857	Granite	Saprolite of a granite, beige, cut by dm-size quartz veins.	Veins = 95/82

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FS136	691920	8001967	904	Granite	Saprolite of a granite, beige, cut by dm-size quartz veins.	Veins = 265/70
FS137	695123	8005694	914	Schist	Altered mica-schist, pink to grey, with pronounced crenulation. Sn completely folded.	Crenulation = 270/50
FS138	694933	8005502	932	Laterite	Laterite.	
FS139	695967	8006587	956	Laterite	Laterite.	
FS140	696257	8007123	950	Laterite/Schist	Pink altered schist topped by laterite.	
FS141	697520	8008120	886	Laterite/Schist	Pink altered schist topped by laterite.	Sn = 40/25
FS142	698552	8008333	957	Laterite/Schist	Pink altered schist topped by laterite.	
FS143	698886	8008459	922	Schist	Schist interstratified by quartzite, with foliation reflection.	S0 (contact) = 130/35; Sn schist = 120/45; Sn quartzite = 125/56
FS144	699072	8006661	901	Schist	Pink mica-schist.	
FS145	700165	8009134	806	Granite	Equigranular foliated granitoid blocks, with leucocratic veins. Drainage (Itanguá River)	
FS146	700782	8009156	829	Schist	Pink altered schist, pink soil.	Sn = 122/54
FS147	701613	8009263	819	Schist	Pink altered schist, pink soil.	Sn = 160/40
FS148	702173	8009486	830	Schist	Pink altered schist, pink soil.	
FS149	702392	8009455	828	Metagabbro	Metagabbro.	
FS150	702559	8009325	837	Granite	Rounded granite outcrop, cut by many quartz veins. The rock is foliated and leucocratic.	Sn = 255/50
FS151	706098	8012050	781	Granite	Leucocratic medium-grained equigranular granitoid, foliated, with planar banded structures. Cut by sigmoidal quartz veins.	Sn = 005/26; F1 = 313/90. 332/90; F2 = 185/90, 204/90; F3 = 100/90, 104/90; F4 = 351/90
FS153	701862	8013485	759	Schist	Altered mica-schist, cut by sheared quartz veins.	Sn = 105/50
FS155	703386	8012054	861	Schist	Altered pink to purple mica-schist, cut by sheared quartz veins.	Sn = 335/65, 328/74
FS158	704302	8011808	821	Granite	In-situ soil with boulder-sized granite blocks, altered and foliated.	
FS159	704356	8012026	781	Granite	Leucocratic granite with biotite, very altered and with marked fractures.	F1 = 292/71; F2 = 017/75
FS160	704205	8012569	784	Schist	Pink mica-schist covered by soil with quartz vein clasts.	Sn = 10/30
FS161	705114	8013322	770	Schist	Green to grey foliated and crenulated schist with phenocrysts.	Sn = 325/60, 315/59
FS162	705301	8012721	785	Breccia	Clast-supported breccia, with lateritic matrix and clasts of milky quartz vein and schists.	
FS163	707305	8011222	796	Schist	Pink mica-schist cut by quartz veins	Sn = 320/22
FS164	707191	8011226	811	Granite	Leucocratic foliated and fractured granite, fine- to medium-grained, feldspatic masses of cm-sized crystals.	Sn = 300/20; F1 = 340/70, F2 = 110/90, F3 = 45/90
FS165	687907	8015923	724	Granite	Boulder-sized blocks of leucocratic altered granite. Equigranular, medium-sized.	
FS166	688503	8017082	762	Schist	Grey altered mica-schist, sheared, with SC foliation.	Sn = 343/38
FS167	688659	8017397	762	Granite	Leucocratic altered granite. Equigranular, medium-sized.	
FS168	689222	8017825	775	Granite	Leucocratic altered granite. Equigranular, medium-sized.	
FS172	691028	8020372	754	Granite	Leucocratic altered granite. Equigranular, medium-sized.	
FS173	690915	8020324	761	Granite	Leucocratic altered granite. Equigranular, medium-sized, foliated and cut by pegmatoid vein of feldspar.	Sn = 160/75
FS175	692791	8022249	847	Granite	Granite blocks. Medium- to coarse-grained, equigranular, leucocratic.	
FS177	694536	8022080	760	Granite	Granite blocks. Medium- to coarse-grained, feldspar phenocrysts, leucocratic.	
FS178	694674	8022058	750	Granite	Granite blocks. Medium- to coarse-grained, feldspar phenocrysts, leucocratic, pronounced foliation. Drainage.	Sn = 155/32
FS179	695561	8021719	730	Granite	Porphyritic granite with 1,5 cm feldspar crystals, pronounced foliation, anostomosed, sheared. Drainage.	Sn = 35/25; F1 = 162/90; F2 = 26/90; Ln = 40/25
FS180	695693	8022363	730	Granite	Equigranular, medium-grained leucocratic granite, cut by a shear zone and quartz veins.	Sn = 235/20; Shear zone = 180/89
FS181	696211	8022523	738	Granite	Blocks of granite.	
FS183	696428	8023614	766	Schist	Saprolite of purple schist.	
FS184	695535	8019748	851	Schist/Granite	Saprolite of rock with schistosity.	Sn = 180/31
FS187	700378	8014528	810	Schist	Saprolite of a pink schist with lateritic cover.	Sn = 132/33

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FS188	700286	8015960	789	Granite	Porphyritic granite with anastomosed foliation.	Sn = 135/27
FS189	700430	8017346	731	Granite	Porphyritic granite with anastomosed foliation. Very altered.	Sn = 130/20
FS190	700374	8017788	719	Granite	Porphyritic granite with anastomosed foliation. Leucocratic, cut by aplitic dikes, little alteration. Drainage.	Sn = 160/35; Dike direction = 75
FS192	688368	8000967	727	Granite	Altered leucocratic granite, equigranular, medium-grained.	Sn aprox= 225/22
FS193	692773	8003397	795	Granite	Leucocratic granite, equigranular, medium-grained, altered.	
FS194	700447	8008483	774	Schist	Pink mica-schist.	Sn = 30/36
FS196	702168	8008842	816	Schist	Dark grey schist, altered.	
FS197	704032	8008950	818	Schist	Pink mica-schist saprolite, with thick soil layer.	Sn aprox= 295/35
FS200	705757	8009697	831	Granite	Equigranular, medium-grained granite in a shear zone, pronounced anastomosed foliation.	F1 = 295/85; F2 = 230/84; Sn = 350/46