Botswana Geoscience Institute
Excellence in Geoscience

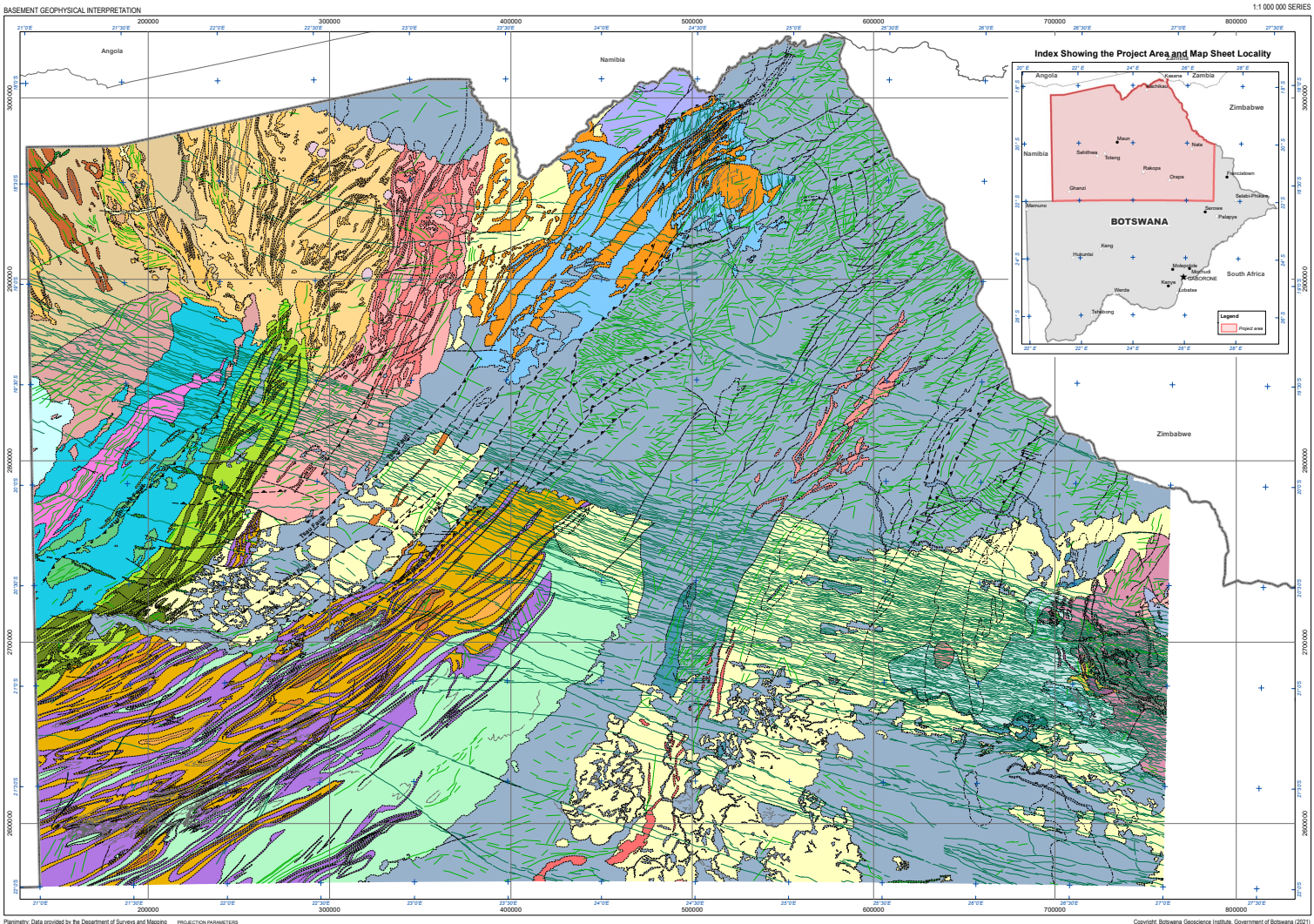
BASEMENT GEOPHYSICAL INTERPRETATION

NORTHERN BOTSWANA

REPUBLIC OF BOTSWANA

BASEMENT GEOPHYSICAL INTERPRETATION

1:1 000 000 SERIES



Planimetry: Data provided by the Department of Surveys and Mapping Ministry of Land Management, Water and Sanitation Services, Gaborone, Botswana

PROJECTION PARAMETERS

BNGRS50 PCS COLLINS
Authority: Custom

Projection: Transverse Mercator
False Easting: 450000.0
False Northing: 5000000.0
Central Meridian: 24.0
Scale Factor: 0.9992
Latitude Of Origin: 0.0
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_GRS_1980
Angular Unit: Degree (0.017453292519943)
Prime Meridian: Greenwich (0.0)
Datum: D_GRS_1980
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

1:1,000,000

0 40 80 120 160 kilometers

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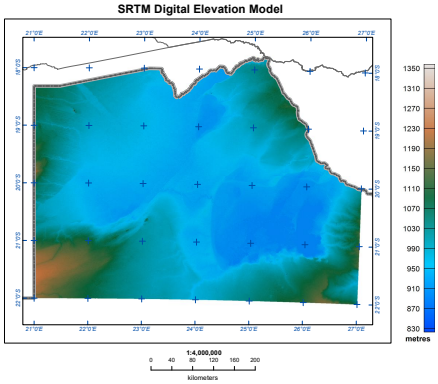
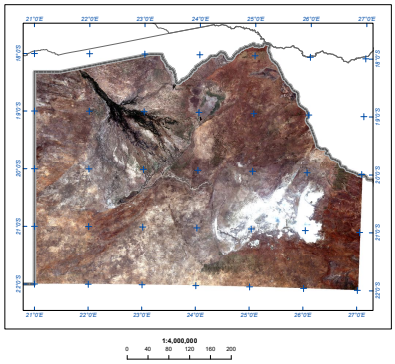
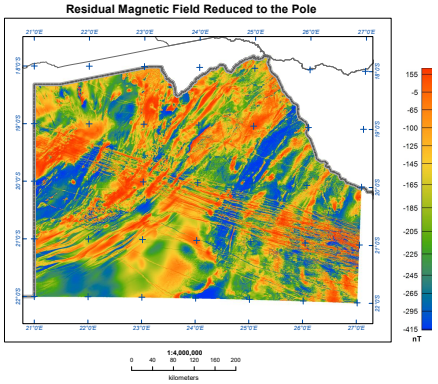
SRTM Digital Elevation Model



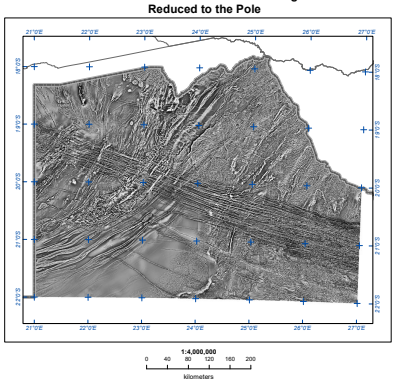
Sentinel 2 True Colour Composite (RGB: Bands 4-3-2)



Residual Magnetic Field Reduced to the Pole



First Vertical Derivative of the Residual Magnetic Field Reduced to the Pole



Legend

Lithology	Formation	Group	Supergroup	Age
Dolerite			*Late Karoo*	
Kvd Undifferentiated intrusive and/or extrusive Karoo dolerite and basalt	*Karoo volcanics*			EARLY JURASSIC
Kvt Late basalt flow		Stormberg Lava		
Kv Flood basalt; variably amygdaloidal with minor siliciclastic sedimentary interbeds and lenses	*Undifferentiated*		*Karoo*	
KL Orange, red or white sandstone, locally calcareous with reddish siltstone		Lebung		UPPER TRIASSIC TO EARLY JURASSIC
KB Pale grey, non-carbonaceous siltstone, mudstone and thin limestone		Beaufort		PERMO-TRIASSIC BOUNDARY
KE Interbedded coal, carbonaceous siltstone and mudstone and white, poorly cemented arkosic sandstone and rare tonstein		Ecca		PERMIAN
Gx Low-grade metasedimentary rock comprising dolomite, ironstone, sandstone, siltstone, conglomerate, and quartzite		Xaudum		NEOPROTEROZOIC TO EARLY CAMBRIAN
Gxi Ironstone				
Gxu Unknown				
gf Inferred felsic intrusive				NEOPROTEROZOIC TO CAMBRIAN
Gk Chert-rich marble and dolomite	*Aha Hills*			
Gnd Granitoid gneiss and amphibolite		Chihabadum Complex		?
Gk Dolomite, chert, metapelite, marble		Koanaka		
Gb Amphibolite, magnetite-schist and granite gneiss; metasedimentary rock		Rolbok		
Gbt Amphibolite and magnetite-bearing schist				
GDu Undifferentiated weakly metamorphosed sedimentary and volcanic rock				NEOPROTEROZOIC
GDc Carbonate-bearing siliciclastic sedimentary rock	*Chinamba Hills*			
GDm Well-sorted, fine- to medium- grained arkosic sandstone, interbedded with siltstone, mudstone and limestone	*Mamuno*			
GDd Parallel-laminated grey-green siltstone and mudstone with interbedded fine-grained sandstone	*D'Kar*	Ghanzi	*Ghanzi-Chobe*	
GDn Wacke, arkose that are locally interbedded with pebbly layer and granulestone. Tan to pink sandstone with minor interbedded maroon mudstone and abundant parallel laminated 'grit' beds near the top of the formation	*Ngwako Pan*			
Gz Massive feldspar (quartz) porphyry with subordinate pyroclastic flow deposits	*Goha Hills*			MESOPROTEROZOIC TO NEOPROTEROZOIC
GP Rhyolite, dacite, and basaltic rock, ignimbrite, pyroclastic flow deposits and minor pepperite	*Kgwebe*	Sinclair		
GPc Epiclastic and tuffaceous sedimentary rock and sandstone, grit, minor conglomerate				
GC Dolerite, gabbronorite, basalt		Xade Complex		
GKC Granite gneiss, granite, amphibole-gneiss, migmatite and metadolerite		Kwando Complex		MESOPROTEROZOIC
GKD Amphibole-gneiss and metadolerite				
GT Ferruginous and micaceous quartzite, quartz-mica-schist, metamorphosed conglomerate, minor shale, phyllite, sandstone		Tsodilo Hills		
GTt Metasedimentary rock				
GTi Banded iron formation				
GNf Granite and augen gneiss		Quangwadum Complex		PALEOPROTEROZOIC
GT Granite and gneiss				PALEOPROTEROZOIC TO ARCHEAN
MU Undifferentiated metavolcanic and metasedimentary rock				
MSs Schist, banded iron formation and minor associated serpentinite bodies. Rare metabasalt and metadolerite	*Sebotha*			
MT Limestone, pelite and quartzite	*Lepashe*			
MQ Calcareous quartzite, limestone, minor pelitic and orthoquartzite lithologies	*Dihudi*	Matsitama		
MMb Metabasalt with amygdaloidal structures, metadolerite, agglomerate and metatuff. Rare volcaniclastic units, pelitic schist with minor ultramafic schist, intercalated limestone and orthoquartzite horizons	*Mmabgong*			
MMm Pelitic schist, intercalated limestone and orthoquartzite				ARCHEAN?
MMp Felspathic granulite and gneiss with minor schist	*Tsaru-Tsaru*			
MDgn Undifferentiated grey to light grey migmatitic gneiss of medium grained banded rock with biotite-rich layers alternating with light grey leucocratic layers				
MDu Metasyncrude				
MDG Varied granitoid, migmatite and gneiss with subordinate intercalations of metasediments and amphibolite		Mosetse River Complex		
MDgn Granitoid and migmatitic gneiss with subordinate intercalcations of metasediments, serpentinite and amphibole	*Jankie gneiss*			
MDma Marble, quartzite, pelitic schist, graphitic and chloritic schist and amphibolite	*Mosupe supracrustal assemblage*			

Structure

- *Geological boundary inferred*
- *Basement (Pre-Karoo) geological boundary*
- *Thrust fault inferred*
- *Fault inferred*
- *Normal fault inferred*
- *Anticline*
- *Syncline*
- *Fold axis*
- *Formline*
- *Lineament*
- *Shear zone inferred*
- Dolerite dyke

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