



Government of Western Australia
Department of Mines, Industry Regulation
and Safety

Calendar 2021



Perth

Geological Survey of
Western Australia





January

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
				New Year's Day 1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	Australia Day 26	27	28	29	30	31



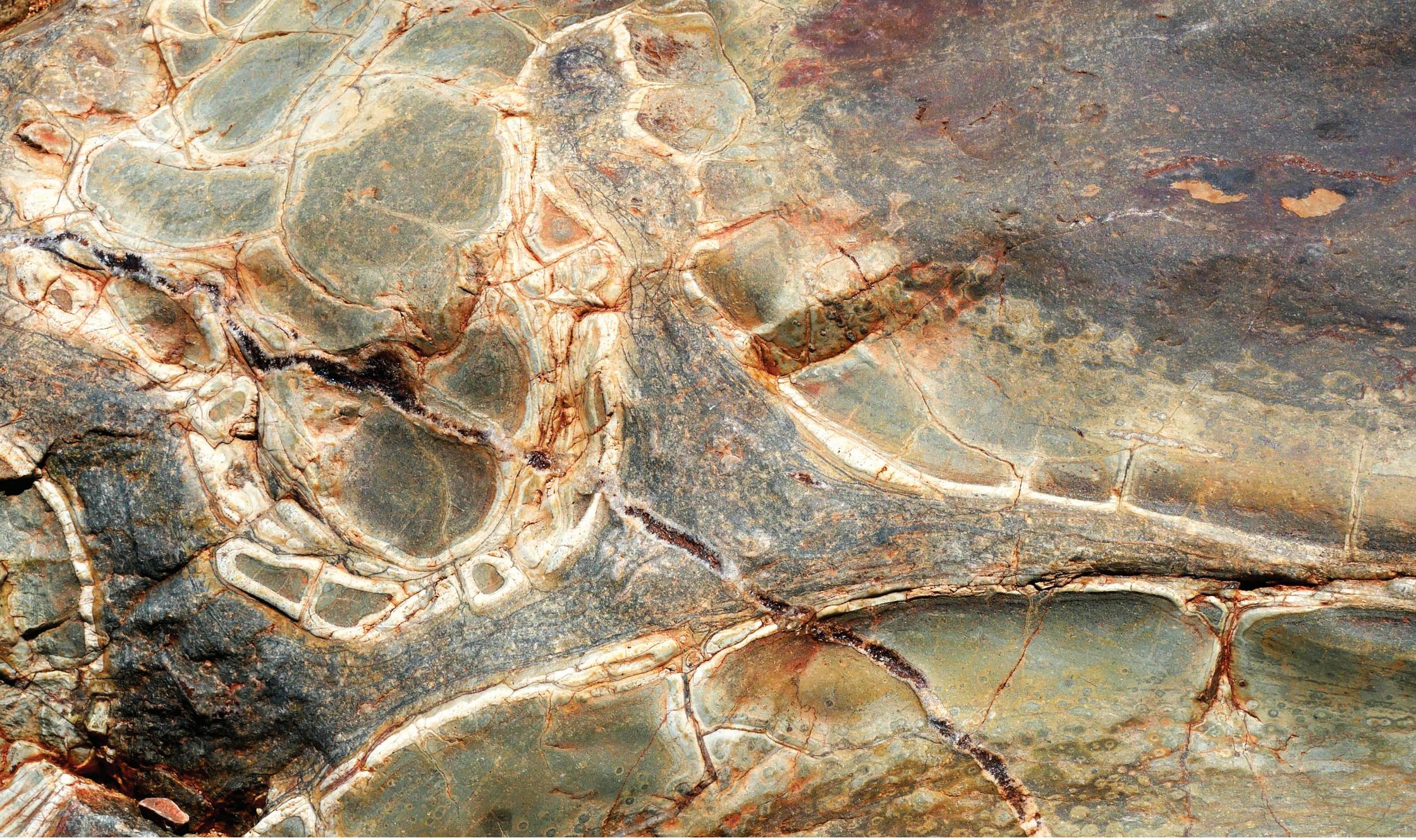
Geological Survey of
Western Australia



January 2021

Salty waves along the Bunbury foreshore at Casuarina Point smash against jointed columns of Bunbury Basalt, distinctive for its plagioclase phenocrysts. These rocks formed during volcanic eruptions 130 million years ago, as greater India and Australia parted ways during the breakup of eastern Gondwana and the opening of the Indian Ocean

Photo by Michael Wingate



February

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28



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February 2021

Pillowed forms of the Apex Basalt (3460–3440 Ma) near Marble Bar resemble an ancient crocodile skin: curved glassy margins where the lava cooled rapidly envelop darker cores with concentric arrays of vesicles; and an interpillow matrix of hardened sediment and hyaloclastite intimately cradles the entwined pillows. Field of view is 50 cm across

Photo by Charlotte Hall



March

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Labour Day (WA) 1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				



**Geological Survey of
Western Australia**



March 2021

Sunset falls on seven-inch diameter drill casing as it awaits deployment into the depths of the Waukarlycarly Embayment, southwestern Canning Basin. Stratigraphic drillhole Waukarlycarly 1 was successfully drilled by DDH1's ER01 rig, reaching a total depth of 2680.53 m within weakly metamorphosed dolomite of the Yeneena Basin. This project was jointly funded by Commonwealth and State Governments

Photo by Leon Normore



April

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
			1	Good Friday 2	3	Easter Sunday 4
Easter Monday 5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	Anzac Day 25
26	27	28	29	30		

Geologists' Day 4 April

Emus wander among scattered, wind-swept outcrops of Tamala Limestone, an eolianite limestone less than one million years old that stretches along the coast of Western Australia from Albany to Shark Bay. The Tamala Limestone owes its origin to blustery conditions similar to those that are weathering it now

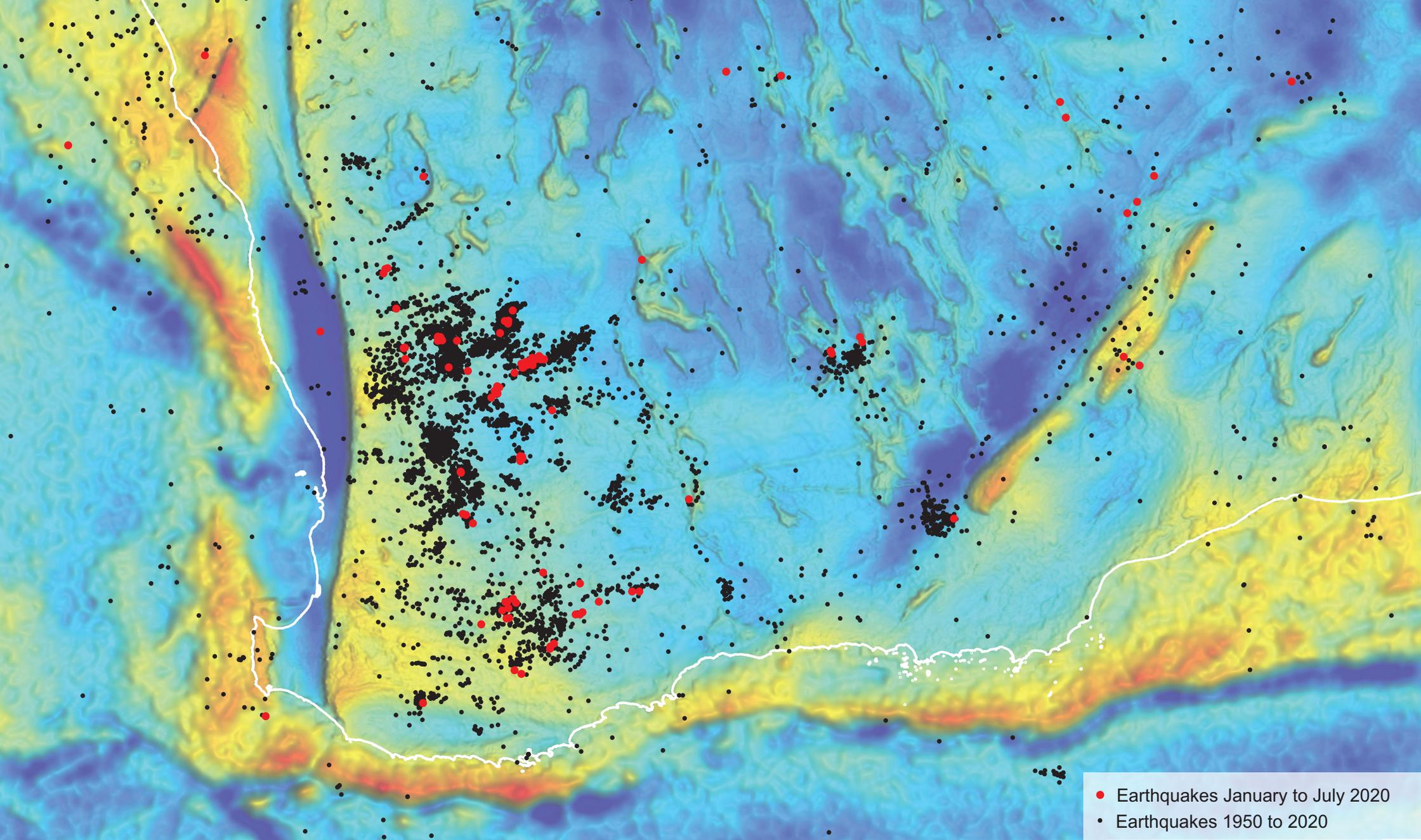
Photo by Ivan Zibra



Geological Survey of
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April 2021



May

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
31					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30



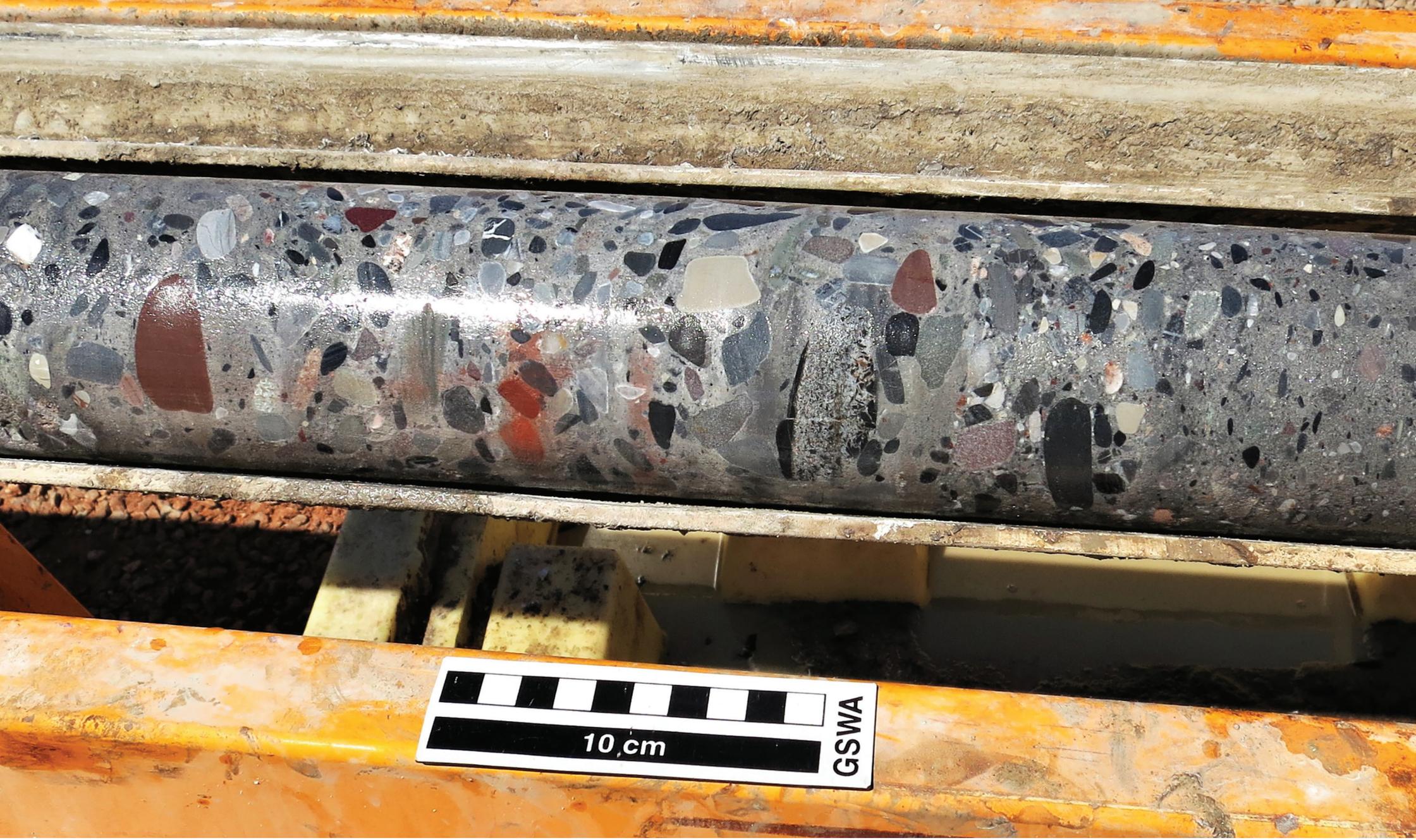
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May 2021

Looking like peppercorns spilled across a Bouguer gravity image of southwestern Western Australia, the locations of low-magnitude earthquakes that frequently shake this region are clustered in space and time. Unusually, few of these tremors are associated with major structures, and they rarely rupture the Earth's surface. Past and current earthquake data can be viewed on Geoscience Australia's website (www.earthquakes.ga.gov.au)

Image Lucy Brisbout and Geoscience Australia



June

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	1	2	3	4	5	6
Western Australia Day 7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				



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June 2021

Just out of the core barrel, these multicoloured river pebbles in a Grant Group conglomerate last saw the light of day about 300 million years ago during the Late Paleozoic ice age. The core was recovered during drilling of the Waukarlycarly 1 stratigraphic drillhole on the southwestern margin of the Canning Basin

Photo by Peter Haines



July

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	



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July 2020

This wave-like cuesta embraces the lower scrubland about 10 km south of the Ashburton River near Mount Vernon. The landscape results from the contrast in weathering resistance of sedimentary rocks where ~1100 million-year-old silicified Calyie Formation forms a resistant cap over softer siltstone, mudstone and sandstone of the Backdoor Formation

Photo by Olga Blay



August

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
30	31					1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

National Science Week 14–22 August

These strikingly coloured, folded metasedimentary rocks in a small cave of the Hamersley Gorge, southern Pilbara region, resemble a multilayered strawberries-and-cream cake. Hamersley Gorge is the most remote of all the gorges in the Karijini National Park and dramatically displays the forces that shaped the rocks in that area

Photo by Lucy Brisbout



August 2021



September

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
Queen's Birthday (WA) 27	28	29	30	31		



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September 2021

Outcrops of sandstone protrude from this western Pilbara landscape like quills of a sunburnt porcupine. Very fine-grained, finely laminated Paleoproterozoic Ashburton Formation (~1800 million years old) is overprinted by an intense cleavage (S1) that is parallel to the sandstone bedding (S0), reflecting the strong tectonic deformation of the area

Photo by Bernd Striewski



October

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Earth Science Week 10–16 October

Stromatolites are remarkably abundant in the Duck Creek Dolomite, an early Proterozoic unit in the Wyloo Group, exposed in the Duck Creek Gorge, western Pilbara. These microbialites record an ecosystem that thrived about 1800 million years ago.

Photo by Bernd Striewski





November

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	GIS Day	17	18	19	20
22	23	24	25	26	27	28
29	30					



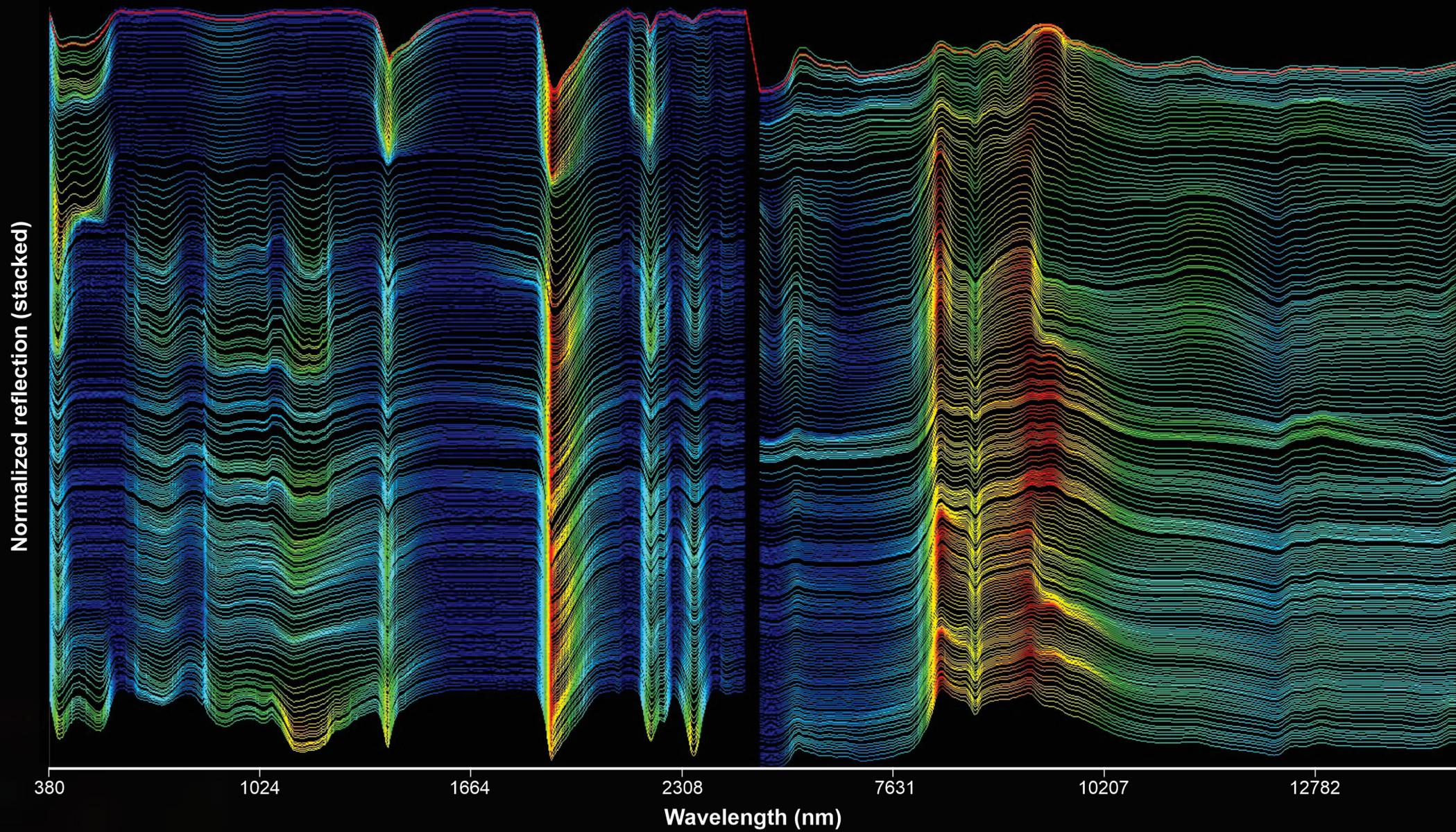
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November 2021

These dramatic cliffs in d'Entrecasteaux National Park, just west of Windy Harbour, are close to 100 m high. Erosion of softer material has exposed calcified solution pipes several metres long in eolian carbonate rocks of the Pleistocene to Holocene Tamala Limestone

Photo by Michael Wingate



December

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
		1	2	3	St Barbara's Day* 4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	Christmas Day 25	Boxing Day 26
27	28	29	30	31		

*St Barbara is the patron saint of miners



Geological Survey of
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December 2021

A curtain of rainbow colours brings to life HyLogger spectral data acquired from samples of ditch cuttings collected at 3-m intervals in the Waukarlycarly 1 stratigraphic drillhole, southwestern Canning Basin. Regolith and rocks of the Carboniferous–Permian Grant Group were sampled from the surface down to 579 m. Signatures of ferric oxide, sericite–illite, kaolinite, quartz and albite are revealed to the experienced eye

Image prepared by Lena Hancock and Adam Symonds



Long cinnamon beaches are interrupted by Mesozoic and Quaternary sandstone which headbutts its way into the turquoise sea at Cape Leveque, 220 km north of Broome in the Kimberley region of Western Australia. Named after Pierre Leveque, a hydrographer on the French ship Geographe, which visited in 1803, the cape is called Kooljaman by the Bardi people who are the custodians of this land
Photo by Robin Bower



January



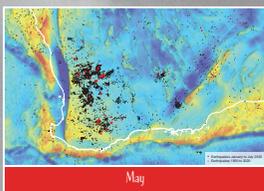
February



March



April



May



June



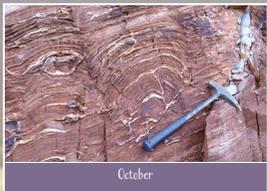
July



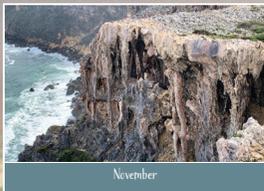
August



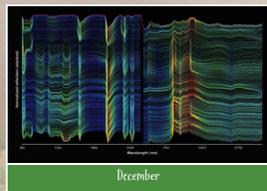
September



October



November



December



A storm brews near the Paulsens Gold mine in the Wyloo Inlier, northwestern Gascoyne region. Fieldwork for the day was cut short due to strong winds causing this menacing dust storm. The race was on to get back to camp before rain flooded all access tracks
Photo by Imogen Fielding

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The Geological Survey of Western Australia (GSWA), a division of the Department of Mines, Industry Regulation and Safety (DMIRS), carries out geoscientific studies that reveal the geological framework and evolution of Western Australia, and the potential for mineral and energy resources.

GSWA publishes a vast amount of pre-competitive geoscience information on the State, contributing to billions of dollars' worth of resources for exploration and development.

DMIRS manages the Exploration Incentive Scheme (EIS), a State Government initiative to encourage exploration in Western Australia for the long-term sustainability of the State's resources sector. For more information about EIS, go to <www.dmirs.wa.gov.au/eisdrilling>.

The photographs for this calendar were taken by DMIRS staff during field activities in remote and beautiful locations throughout the State.

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