



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

# Calendar 2020



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
Australia Day holiday 27	28	29	30	31		



Geological Survey of  
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# January 2020

[www.dmir.s.wa.gov.au](http://www.dmir.s.wa.gov.au)

*This natural arch is a distinctive feature on the eastern part of the Uaroo  
1:100 000 geological map, published in 2017. The vertical fabric is a  
bedding-parallel cleavage developed in ferruginous siltstone of  
the 2008–1799 Ma Ashburton Formation*

*Photo by Huntly Cutten*





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	GSWA Open Day 21	22	23
24	25	26	27	28	29	



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Western Australia**



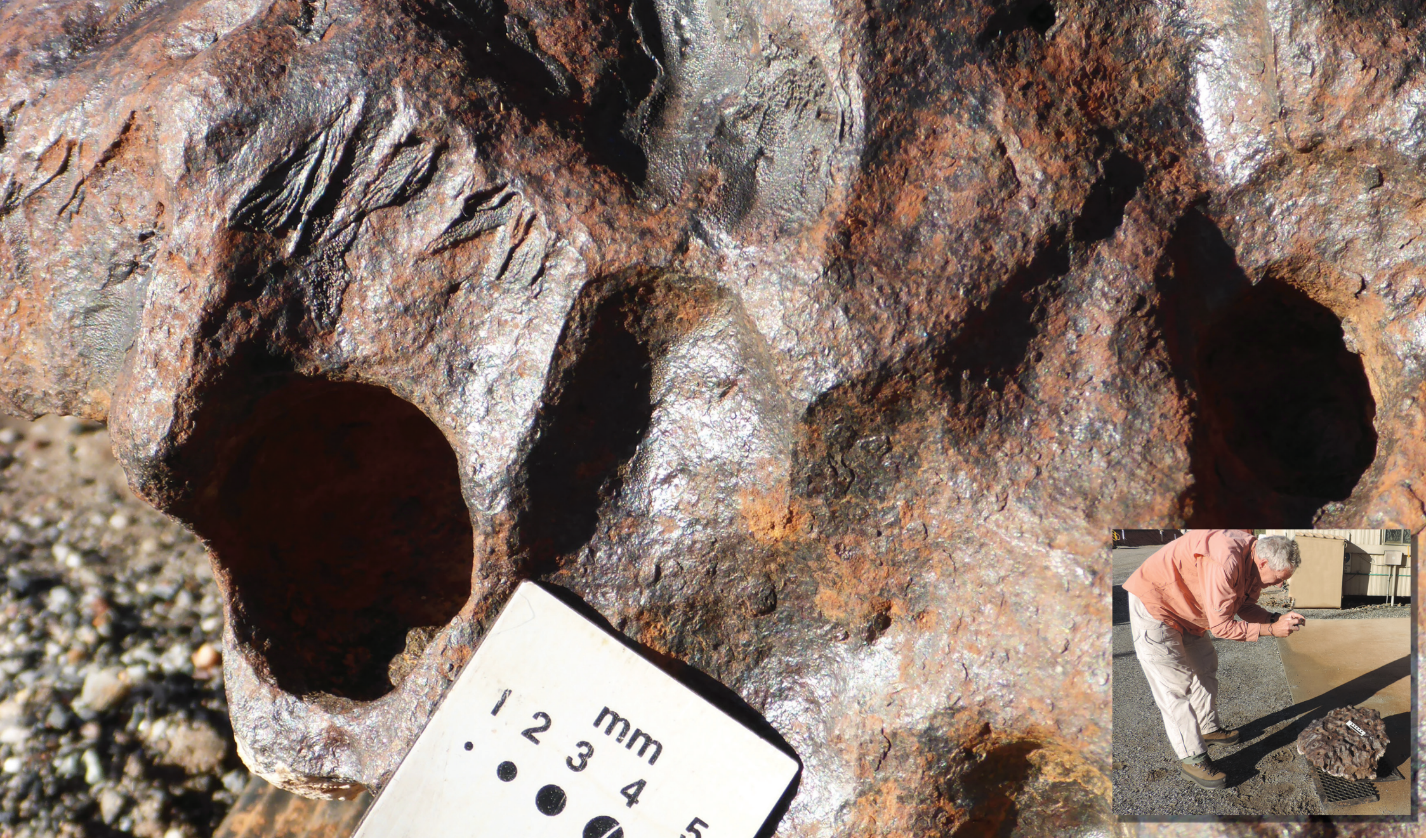
# February 2020

[www.dmirs.wa.gov.au](http://www.dmirs.wa.gov.au)

*The GSWA drone is preparing for an automated flight during routine fieldwork in the Eastern Goldfields. Overlapping low-altitude photos will be merged to produce a photogrammetry model of metaconglomerate outcropping on the shore of Lake Lefroy, along the Speedway Fault, approximately 5 km southwest of Kambalda. Ongoing GSWA work in this region has resulted in significant revisions to the Eastern Goldfields greenstone stratigraphy*

*Photo by Ivan Zibra*





March



Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
30	31					1
Labour Day (WA) 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



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# March 2020

[www.dmirs.wa.gov.au](http://www.dmirs.wa.gov.au)

*Close-up of the ablated surface of a nickel-iron meteorite discovered in early 2019 about 1 km north of the openpit at Paulsens gold mine, 105 km south of Pannawonica, southwest Pilbara. Compared with terrestrial rocks, the size of this oblate 50 x 50 x 20 cm meteorite belies its weight – estimated at nearly 500 kg! Based on the preservation of delicate surface features, it may be a relatively recent arrival*

*Photos by David Martin and Olga Blay*





April



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



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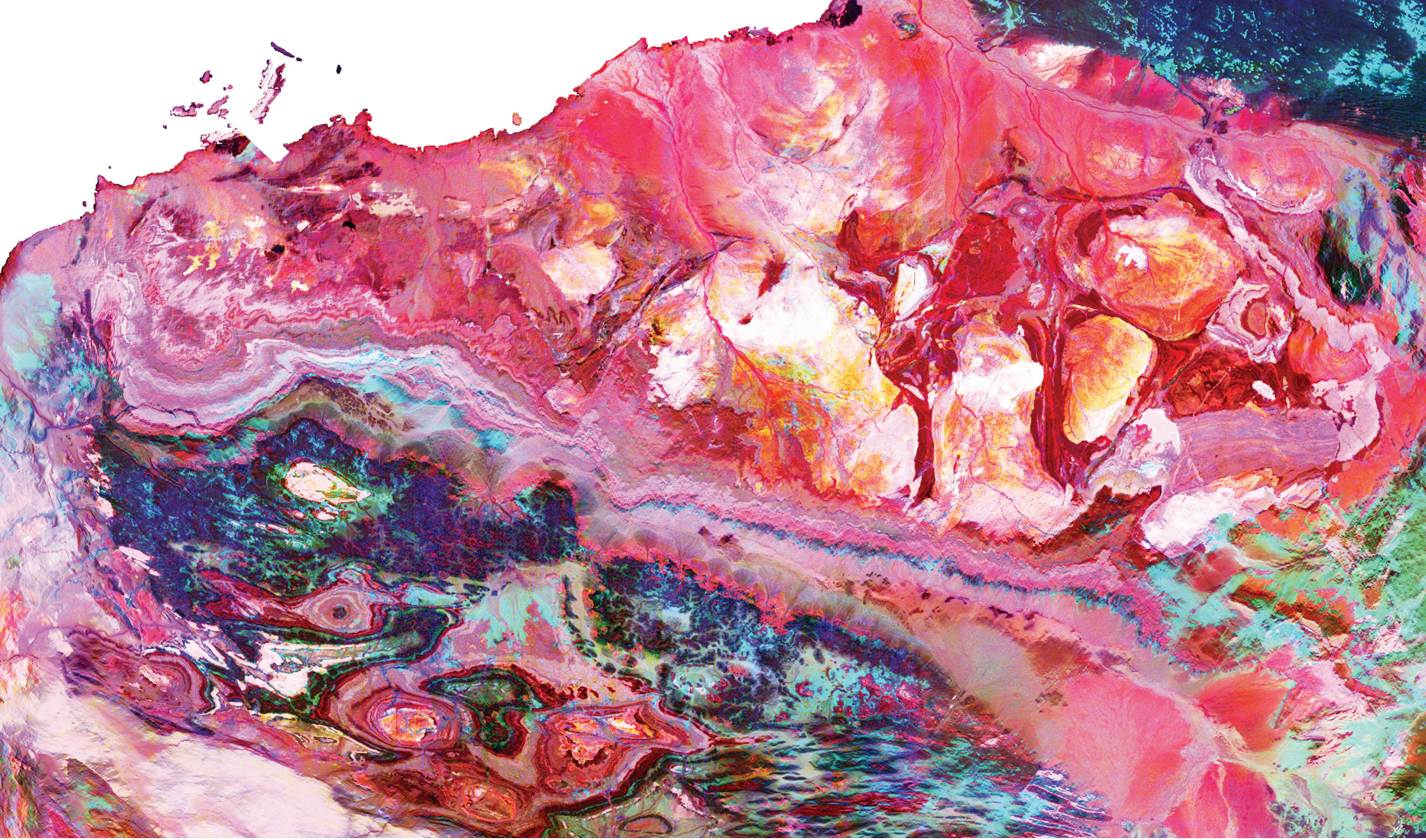
# April 2020

[www.dmirs.wa.gov.au](http://www.dmirs.wa.gov.au)

*The smooth form of Mount Taylor (997 m) appears pierced by dried flower spears of grass trees (Xanthorrhoea sp.). Situated on the Western Australia – Northern Territory border, about 2 km north of the Great Central Road and 73 km east-northeast of Giles Meteorological Station and Warakurna Roadhouse, this prominent peak exposes early Neoproterozoic rocks from the basal section of the Amadeus Basin – Dean Quartzite at top overlying Kulail Sandstone (banded unit) on lower slopes*

*Photo by Peter Haines*





May



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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# May 2020

[www.dmirs.wa.gov.au](http://www.dmirs.wa.gov.au)

*A ternary (K–Th–U) radiometric image reveals stark differences in rock types across the Pilbara region. Granitic complexes (lighter hues) and greenstone belts (darker hues) of the Paleoproterozoic to Mesoproterozoic East Pilbara Terrane (top right) comprise one of the oldest pieces of crust on Earth. Mafic, felsic and sedimentary units of the Neoproterozoic Fortescue Basin (paler pink hues) trend west-northwest across the image, overlain to the south by the BIF-rich Neoproterozoic to Paleoproterozoic Hamersley Basin (mainly dark hues)*

*Image prepared by John Brett*





June



Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Western Australia 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	26	27	28
29	30					



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# June 2020

[www.dmirs.wa.gov.au](http://www.dmirs.wa.gov.au)

*The machinery of active mines appears as though floating over Lake Lefroy, near Kambalda, Eastern Goldfields. The photo is taken from rocky outcrops on the northern shore of the lake where metaconglomerate belonging to the Black Flag Group (right foreground), deformed along the Speedway Fault, exhibits subvertical foliation defined by flattened clasts of felsic volcanic rocks*

*Photo by Ivan Zibra*





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

[www.dmirs.wa.gov.au](http://www.dmirs.wa.gov.au)

*Spectacular pillow basalt exposure, with quartz veins skirting some pillow margins and filling interstices, located about 25 km northeast of Paraburdoo along the Paraburdoo – Tom Price road. These rocks are assigned to the upper part of the Fortescue Group, for which initial stratigraphic re-interpretations were published in the Fortescue–Hamersley, 2018: Geological Information Series digital package*

*Photo by David Martin*





August



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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# August 2020

[www.dmirs.wa.gov.au](http://www.dmirs.wa.gov.au)

National Science Week 15–23 August

The basal unconformity of the 1590–1514 Ma Kiangi Creek Formation (Edmund Group) is being closely examined where it overlies saprolitic granitic rock of the 1820–1775 Ma Moorarie Supersuite. Located east of the Abra mining camp on the Calyie 1:100 000 geological map, the exposure is in an area known by geologists as the Coobarra Dome. Locals refer to this region as 'The Desert', a mostly flat plain of red sand and spinifex grass

Photo by Huntly Cutten





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	27
Queen's Birthday (WA) 28	29	30				



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# September 2020

[www.dmirs.wa.gov.au](http://www.dmirs.wa.gov.au)

*Mulla Mulla (Ptilotus exaltatus) in flower has a tenacious hold on a bare outcrop of granitic rock belonging to the Walganna Suite in the Youanmi Terrane, Yalgarna Craton, 70 km west of Mount Magnet. Extending its roots through a tiny fracture in the rock, the annual herb grows up to 60 cm high and adds a splash of colour to the landscape during the wildflower season*

*Photo by Ivan Zibra*





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 11–17 October



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# October 2020

[www.dmirs.wa.gov.au](http://www.dmirs.wa.gov.au)

*Weathered sandstone of the late Neoproterozoic (Ediacaran) Carnegie Formation, western Amadeus Basin. This exposure is located in the Mu Hills, 133 km north-northeast of the Giles Meteorological Station and Warakurna Roadhouse. The white colouration is a powdery dusting of salt over the dark red sandstone, accentuating the faint traces of bedding*

*Photo by Peter Haines*





November



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



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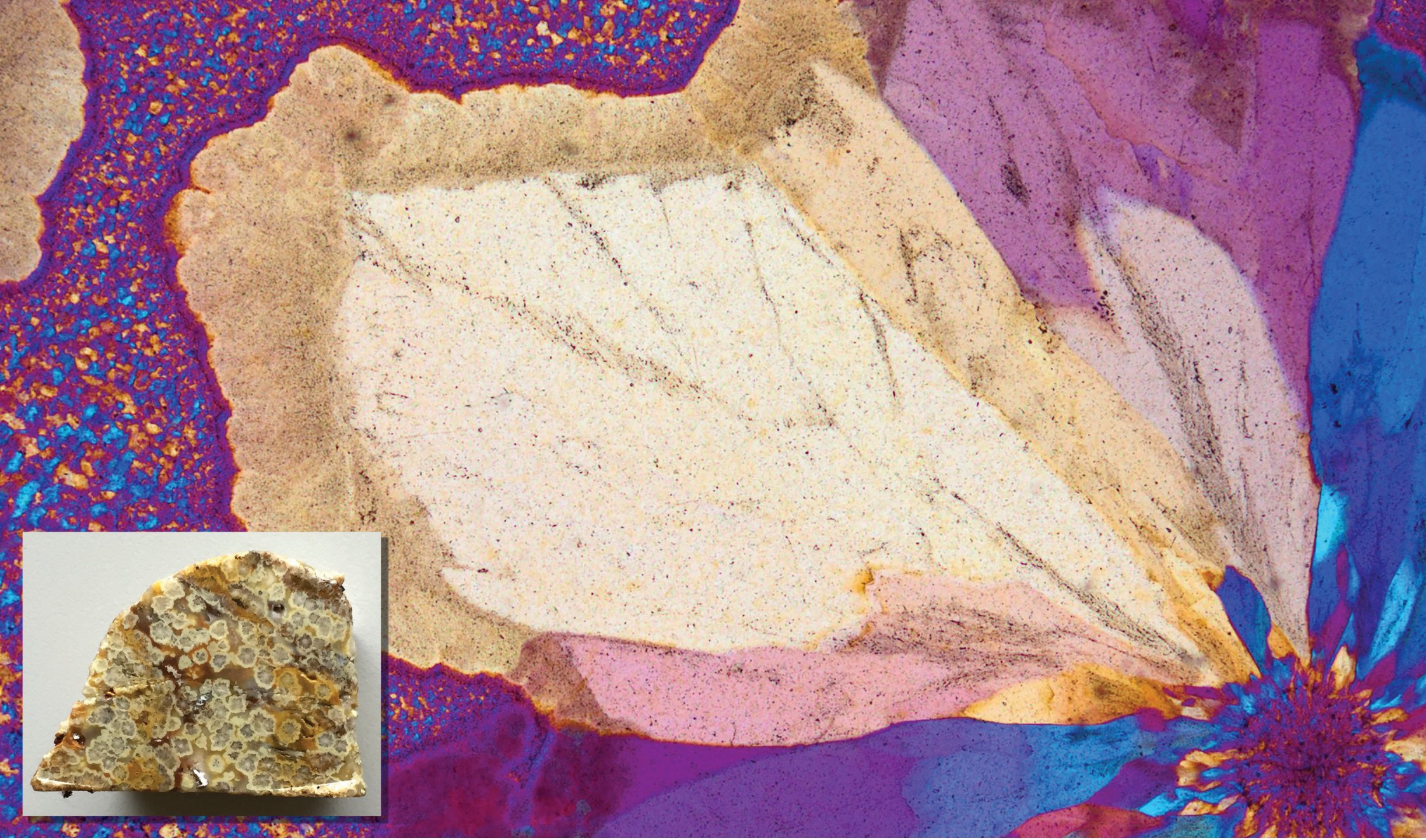
# November 2020

[www.dmir.s.wa.gov.au](http://www.dmir.s.wa.gov.au)

*View of an intraformational angular unconformity (midway downslope from the horizon) in the Kungarra Formation, the basal unit of the 2445–2208 Ma Turee Creek Group in the upper part of the Mount Bruce Supergroup. This location is at the east end of the Wyloo Anticline on the Hardey 1:100 000 geological map, southern Pilbara, visited during the 2019 field season to re-examine the stratigraphy of the late Archean – Paleoproterozoic Fortescue and Hamersley Groups*

*Photo by Olga Blay*





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



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# December 2020

[www.dmirs.wa.gov.au](http://www.dmirs.wa.gov.au)

*Thin section view of a microgranitic vein intruded into the Kambalda Komatiite, near Lake Ballard, about 50 km northwest of Menzies, Eastern Goldfields. The rock was originally very fine grained and included cryptocrystalline silica, but underwent static recrystallization, producing a 'flamboyant' texture resembling flower petals (up to 2 mm long), defined by fibre-like quartz crystals that grew radially from a central core*

*Photomicrograph by Ivan Zibra*



MINISTER FOR MINES AND PETROLEUM  
Hon. Bill Johnston MLA

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DEPARTMENT OF MINES, INDUSTRY REGULATION AND SAFETY  
David Smith

EXECUTIVE DIRECTOR  
GEOSCIENCE AND RESOURCE STRATEGY  
Jeff Haworth

The Department of Mines, Industry Regulation and Safety (DMIRS) carries out geoscientific studies that reveal the geological framework of Western Australia and the potential for mineral and energy resources. Our aim is to make Western Australia the preferred destination for local, national, and multinational explorers.

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 on EIS go to <[www.dmp.wa.gov.au/EIS](http://www.dmp.wa.gov.au/EIS)>.

The Geological Survey of Western Australia (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.

The photographs for this calendar were taken by DMIRS staff (rather than professional photographers) during our field activities that take us to remote and beautiful locations throughout the State.

Front cover image: Ephemeral flow of the Coonegan River sporadically refreshes this exposure of rhythmically banded jasper and chert in the upper part of the 3460 Ma Marble Bar Chert Member of the Duffer Formation, Marble Bar Pool, East Pilbara. The overturned, steeply dipping chert beds were locally intruded post-lithification by a blue-grey chert, creating an angular, jigsaw breccia  
Photo by Leon Normore

Back cover image: A tiny island, which likely represents the remnants of a sand dune, emerges from the flat, salty surface on Lake Lefroy, near Kambalda, Eastern Goldfields  
Photo by Ivan Zibra



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