

### **Member Submissions**

Submissions for inclusion in the Newsletter are welcome from all members; please note that submissions may be held over for later editions. Wherever possible, text submissions should be sent via email in almost any word processing format. Images should be high resolution and uncompressed, although high resolution JPEGs are acceptable. Your name may be withheld only if requested at the time of submitting.

All enquiries and submissions should be addressed to the Editor and preferably sent by email to weaksignals@iinet.net.au

Your Committee

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The SAA can be contacted by post to the address above, or by email to any member of the Committee.

## Seismological Association of Australia Inc.

Welcome to the Newsletter of the Seismological Association of Australia Inc. PO Box 682, Mylor SA 5153

**Membership** of the SAA is open to all, with the only prerequisite being an interest in seismology. Membership applies for the calendar year. (January through to December)

Membership fees are: Full member \$50

A Membership application form can be obtained from the Treasurer by email or you may download it here.

Newsletter of the SAA Inc.



**2020 SAA Annual General Meeting** - The AGM was held via Zoom on October 26th and as a result, congratulations to Kevin McCue for volunteering to be a Committee member. Kevin may be able to add some balance to our SA centric bias by providing some news and events happening in the more populated areas of the country. The annual reports from the association's Chairperson, Secretary, Treasurer and Chief Seismologist were presented to the members attending and accepted. The new SAA Logo was introduced to members, you may have noticed one or two of them here and there in this newsletter. Blair Lade presented a more detailed talk about his recent experience using seismic equipment to search for returned rocket parts and payloads at Koonibba,SA in October. Another launch had been scheduled for November, this time Blair was to be on the payroll but an unexpected COVID-19 lockdown has delayed the launch until next year. Finally, the elections were conducted with the only change being the addition of Kevin to the Committee, as reported earlier.

**Members Meeting schedule 2021** - As we settle into what we've come to know as COVID normal, our irregular members meetings are going to be a feature of 2021 but will only happen on Zoom. These meetings will occur about every two months, the first being held on February 8th, the second being held on April 12th, the third on June 14th and the final on August 9th. The 2021 AGM is currently scheduled for October 25th.

**State of the Network** - Since the AGM, there has been some activity around rectifying some of the problems at a few of our seismic sites. David Love and Jim Deer headed down to Willalooka (WKA) armed with everything but the kitchen sink, determined to find a solution to the failure mentioned in the last SAA Newsletter. Apparently there had been an infestation of ants within the enclosure, specifically within the modem which was causing the problem. The 3G modem was upgraded and everything has now returned to normal. On the way home they dropped into Peake (PEAK) and upgraded the PC running WinSDR. The unexpected failure at Modbury Heights (THS) was found to be caused by an ancient wire crimp (several actually) in the DC lines between the solar panel and the MPPT solar controller. Most crimps available commercially are not waterproof and shouldn't be left to the elements. While expensive, environmental crimps are a much better solution for wire joins in the field but the best solution is replace the lot with a new continuous length of new wire. Sunnydale (SUND) wasn't getting any better with time so Blair & Peter recently replaced the Webtronics A/D card with an EchoPro for diagnostic purposes. The plan is to leave the EchoPro installed for about a month to allow monitoring of environmental conditions, DC voltages etc... to help determine the nature of the problem. Having had to review data usage at TPSO in order to have sufficient capacity for currently installed equipment, the new magnetometer and forseeable new installations, we need to upgrade the data plan. The property owner has agreed for us to piggyback onto his fixed wireless NBN plan for about the same cost as our current 2Gb/month consumption cost. We just need to connect the TPSO to the residence (about 200m) so a 2.4GHz or 5GHz radio link will be installed soon. Two new seismic stations are currently being constructed to join the SAA Network, Lockhart, NSW and Wilmington, SA

**On the Cover** - the new SAA Logo. Again, our thanks go to Kevin McCue for his initiative and persistence with this matter.



2020-11-20 10:59 SW of Oberon -33.96, 149.69 3.0ML



#### 2020-10-15 10:21 Cudal -33.30, 148.75 2.3ML



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Nov-Dec 2020



## Association of Australia Inc.

### 2020-11-05 22:23 Wedderburn -36.2751, 143.621 3.1MLv source: https://earthquakes.mappage.net.au/q.php Cobar Cubba Broken A32 A32 NEW SC WAL Mildura A20 A20 A79 Adelaide A39 Victor Ha Goolwa Shepparton Rural C A66 A66 Balla Melbourne ambie M1 M3 M1 A1 Warrnambool M11

### 2020-11-07 09:34 Cann River -37.77, 149.34 2.9MLv



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# **Recent Seismic Activity - Queensland**

2020-10-14 14:44 NE of Collinsville -20.34, 147.91 3.7ML



Sadly, there wasn't much in the way of seismic events to choose from in Queensland, from the beginning of October to the end of November. Not according to Geoscience Australia's website anyway.

So if you have felt, detected, recorded an event in your region (anywhere in Australia) I'm looking for info on two sizable quakes that have occured in each state since the last SAA Newsletter. The best reported will be published in the following edition. You can get an idea of what's important from the images on these pages event date/time in UTC, location coordinates and magnitude. If possible, please identify the stations used to determine the hypocentre of the earthquake.

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2020-10-04 18:04 East of Norseman -32.17, 122.76 2.9ML



### 2020-11-21 15:45 Quairading -31.97, 117.22 2.0ML



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# **Recent Seismic Activity - South Australia**





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# **Recent Seismic Activity - Tasmania**

2020-10-18 21:46 Indian Ocean -42.47, 141.72 3.7MLv



### 2020-11-25 08:36 Dover -43.59, 147.02 2.4ML



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## 2020-10-02 00:56 SW of Yulara -25.5936, 129.94 3.6MLv Source: https://earthquakes.mappage.net.au/q.php NORTHERN TERRITOR OUEENSL Australia USTRALIA delaide Great Australian Bight VICTOR Ballarato Melb

### 2020-11-07 09:34 Cann River -37.77, 149.34 2.9MLv





# "THE BIG EARTHQUKE"

### SEISMOLOGICAL RESEARCH.

### Advertiser (Adelaide, SA : 1889 - 1931), Saturday 23 January 1904, page 7

At a meeting of the astronomy, mathematics, physics, and mechanics' section of the Australasian Association for the Advancement of Science, held in Dunedin, and presided over by Professor Bragg, of Adelaide University, there were several references to the great South Australian earthquake of September, 1902.

Mr. G. Hogben, M.A., of the Seismological Observatory at Wellington, New Zealand, in presenting the report of the seismological committee, said the three most important earthquakes since the last meeting of the association were those at Cheviot (New Zealand) in November, 1901, in South Australia in September, 1902, and at Warrnambool in April, 1903. The Cheviot earthquake was very similar in character to that which threw down the Christchurch Cathedral spire in 1888, and probably came from a parallel line of fault. One interesting fact about it was that at Wellington there was a downthrow on the western side of the station amounting to 13/4 seconds of arc. That would mean, if it were general over New Zealand-though probably it was not-to a rise of 6 in. on the east coast and a fall of 8 in. on the west coast. The South Australian earthquake would give a great deal of food for thought, and, it was to be hoped that the time records would be more exact in future. The system of seismic origin in South Australia and Victoria was well worth examination. It was necessary to complete the Austral-asian system if Australasia was to contribute its quota to the earthquake knowledge of the world, and it was important to have the

observatories together, because one of the problems to be solved was as to the path of the earthquake waves, and until the path was known it would not be safe to draw conclusions as to the elasticity and density of the rocks. Tasmanians said that there were few earthquakes there, but, as a matter of fact, from the beginning of 1884 to 1887 there were 2,640 earthquakes in that island, or more than in all the rest of Australasia since records began, and one of these shocks threw down chimneys 360 miles away. Within 25 years there had been a rise of at least 50 ft. in the New Hebrides. Records were wanted to enable it to be seen if there was a general rising in the floor of the Western Pacific, and that could only be found by having a large number of stations.

The report stated that in Western Australia a Milne horizontal pendulum seismograph had been installed at the Perth Observatory, and had been continuously at work during the period covered by the report—January, 1902, to December, 1903. The Government Astronomer, Mr. W. E. Cooke, communicated seismograph records to Professor Milne for publication in the annual report of the Seismological Committee of the British Association. No special events had been reported, however. From Queensland there were no records available, as there were no seismological instruments of any kind in this State, nor any official channel through which seismic occurrences were systematically reported. A Milne (horizontal pendulum) seismograph had been installed at Sydney Observatory, but had not yet been started for systematic registrations, owing probably to the illness of the director, Mr. H. C. Russell. No seismic occurrences had been reported. There were no registering instruments in South Australia.



# "THE BIG EARTHQUKE"

### SEISMOLOGICAL RESEARCH.

Sir Charles Todd had, however, furnished a list of earthquakes reported to him from observers in different parts of the State. The most remarkable occurrence was the severe earthquake of September 19, 1902, in regard to which various maps showing the distributions of seismic energy, location of the epicentrum, etc., were supplied. In Victoria a Milne (horizontal pendulum) seismograph had been continuously at work in one of the underground rooms in the basement of the Melbourne University. The principal seismic events of the last two years were the Warrnambool earthquakes of April 7 and July 14, 1903.

The committee recommended—"(1) That one or more competent and influential members be added to the committee to represent Queensland: (2) that the Government of South Australia be asked by the council of the association to enable Sir Charles Todd to procure and install a Milne seismograph at the Adelaide Observatory, and a similar one at Port Darwin; (3) that the Government of the State of Tasmania be asked to establish a Milne seismograph at the University or at the weather office; and (4) that the Sydney Observatory be requested to start, as early as possible, the seismograph now installed at the Observatory." These recommendations, with the addition of a recommendation as to the establishment of seismographs at Norfolk Island, and also, if possible, at Tonga, were moved by Mr. Hogben and adopted.



An early model Gray-Milne seismometer used by the Melbourne Observatory from 1888. This older model was replaced in 1899 with another Milne, quite possibly the model recommended in this text.



# **Resources & useful links**

## Description **SAA Membership Application** SAA Flier SAA Newsletters SAA EqServer Melbourne University EqServer **Regional Seismic Network** Australian Public Seismic Network **Recent SA Earthquakes Central QLD Seismology Research Group** Astronomical Society of SA **Geoscience** Australia **Earthquake Services** Seismic Research Centre symCDC **IRIS Seismic Monitor** Joint Australian Tsunami Warning Centre Australian Earthquake Engineers Society Atlas of the Underworld **Atlas of Living Australia**

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