

Argumentative Scientific Text

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Recorded Accounts of Meteoritic Events in the Oral Traditions of Indigenous Australians

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Descriptions of natural events, such as fireballs and meteorite impacts, are found within Indigenous Australian oral traditions. Studies of oral traditions demonstrate that they extend beyond the realm of myth and legend; they contain structured knowledge about the natural world (science) as well as historic accounts of natural events and geo-hazards. These traditions could lead to the discovery of meteorites and impact sites previously unknown to Western science. In addition to benefiting the scientific study of meteoritics, this study can help social scientists better understand the nature and longevity of oral traditions and further support the growing body of evidence that oral traditions contain historical accounts of natural events. In a previous study led by the author in 2009, no meteorite-related oral traditions were identified that led to the discovery of meteorites and/or impact craters. This paper challenges those initial findings.

Warning to Aboriginal Readers: This paper contains the names of Aboriginal people who have passed away.

Keywords: Indigenous Australians; meteorites; geomythology; oral traditions; history of meteoritics; cultural astronomy.



The study of meteoritic phenomena in Indigenous oral traditions has been a topic of research interest for several years, particularly in Australia (see Bevan and Bindon 1996; Goldsmith 2000, Hamacher 2011, Hamacher and Goldsmith 2013, Hamacher and Norris 2009, 2010, 2011a). Research in the growing discipline of *geomythology* - a close cousin of *ethnoastronomy* - involves investigating oral traditions for descriptions of past geologic events (Vitaliano 1973) that may provide insight into both the culture that observed and recorded them, and for information about the event that might contribute to our understanding of geological phenomena. The study of

geomythology provides important insights into how natural events are understood and incorporated into oral traditions, as well as providing direct methods for dating oral traditions.

Hamacher and Norris (2009) published a treatise on meteorite falls and impact events in Indigenous Australian oral traditions. One of the main goals of the research was to determine if meteoritic events were recorded in oral tradition and whether these traditions would lead to the (re)discovery of meteorites and impact structures previously unknown to Western science. In the 2009 study, no oral traditions accounts were found that led to the discovery of meteorites or craters. Additionally, no oral traditions were identified from Queensland or

Victoria except for an account of Aboriginal people interacting with one of the Cranbourne meteorites near Melbourne and a possible account of a meteorite fall in the Torres Strait. No evidence at the time connected any of the Indigenous traditions of impact events to known impact sites.

Research since 2009 reveals more Indigenous accounts of meteoritic events from across Australia, particularly Queensland and Victoria. Analysis reveals that meteorites and craters recorded in oral tradition were later verified by Western science.

The purpose of this study – like the 2009 study – is not to validate or

legitimize Indigenous oral traditions, as they do not need to be validated or legitimized. Instead, this study tests three hypotheses:

1. Indigenous oral traditions contain historical accounts of meteoritic events;
2. Indigenous oral traditions can lead to the identification of meteorite falls and impact craters previously unknown to Western Science; and
3. Scientific studies of these falls and/or craters can help us understand the nature and longevity of Indigenous oral traditions.

Name	State	Latitude	Longitude	Type	Found
Benyeo	VIC	−38.283	141.616		
Carnarvon	WA	−24.884	113.657		
Helidon Springs	QLD	−27.549	152.099		
Henbury	NT	−24.572	133.148	IIIA	1931
Lake Argyle	WA	−16.361	128.748		
Lake Macquarie	NSW	−32.995	151.600		
Lilydale	VIC	−37.769	145.341		
Monte Colina	SA	−29.400	139.983	L3	1963
Munpeowie	SA	−29.583	139.900	IC	1909
Narraburra	NSW	−34.367	147.878	IIIB	1855
Saibai	QLD	−09.381	142.615		

Table 1: Places described in the results, including the name, location, meteorite and year found (if known). Meteorite locations, types, and years found from Bevan (1992).

RESULTS

Using the methodologies of the Hamacher and Norris (2009) study, this paper reveals eight oral traditions that describe meteoritic events and three minor accounts that describe meteoric phenomena or the presence of a meteorite by Indigenous people. Each of these accounts are recorded in the literature as having special significance to Indigenous Australians, providing

both a location and description of the event. These are then analysed to determine if they support or reject the hypotheses described above. The locations of each account (Table 1) are used to determine if any meteorites were recovered from the region using Bevan (1992), Gibbons (1977), Grady (2000), and (Meteoritical Society 2013).

Places mentioned in the text are shown on a map of Australia in Figure 4, with

those mentioned in the Torres Strait shown in Figure 1 (in order of their appearance in the paper).

Henbury Meteorites Conservation Reserve, Northern Territory

In the 2009 study by the author (Hamacher and Norris 2009:66-67), there was little evidence that the formation of the Henbury crater field, which occurred < 4,700 years BP, was recorded in oral tradition. The only suggestion was in the name (*chindu china waru chingi yabu*, roughly translating to “sun walk fire devil rock”), which vaguely suggested a living memory of the event. Recent research by Hamacher and Goldsmith (2013:299-303) uncovered additional records relating to Aboriginal views of the site and these records clearly indicate a living memory of the impact recorded in oral traditions.

The name “*chindu china waru chingi yabu*” is of the Luritja language. Historical documents give more information about Aboriginal views of the site. When James M. Mitchell visited the site in 1921, he took an Aboriginal guide. His interest was piqued when his guide refused to go near them, saying that it was a place where a fire “*debil-debil*” [devil] came out of the sky and killed everything in the vicinity. He visited the craters again in 1934 and took another Aboriginal guide with him. The guide said Aboriginal people would not camp within two miles of the craters or even venture within half a mile of them, describing them as a place where the fire-devil lived. He claimed they did not collect water that filled some of the craters, fearing the fire devil would fill them with a piece of iron. The guide said his grandfather saw the fire devil and it came from the sun. Aboriginal groups to the north of Henbury

(including the Kaitish and Warramunga) hold traditions that meteors are fiery “*debil-debils*” that hurtle from the skies to feast upon the entrails of the recently deceased (Hill 1937).

In March 1932, an unnamed resident of the area undertook independent research and spoke to local Aboriginal elders. According to the elders, all young Aboriginal people were forbidden from going near the craters. The elders described them as the place where “a fiery devil ran down from the sun and made his home in the Earth. The devil will kill and eat any bad blackfellows,” (see Hamacher and Goldsmith 2013:300-301).

These varied (but similar) accounts, recorded over a period of 10 years, seem to confirm the presence of an oral tradition describing the impact formation of the craters. There is the question of cultural contamination, i.e. colonial scientific interest in the site influencing Aboriginal traditions, but there is no evidence that this occurred. The consistency of the traditions over the 10-year time period in which they were recorded supports the hypothesis that the traditions were pre-colonial, but we cannot know either way for certain. By 1945, colonial interest in the craters led to Aboriginal people collecting and selling pieces of the “star that fell to Earth” (Vox 1945), indicating outside influence by this point.

These accounts stand in contrast to claims in the literature that no oral traditions of the Henbury impact can be found and that the crater field was of no interest to local Aboriginal people (Alderman 1932, Anonymous 1934). The current evidence indicates that Aboriginal people witnessed the event, recorded the incident in oral traditions, and those traditions remained intact through the 1930s (and possibly later).



Figure 1: Places described in the Torres Strait, underlined in red. Image Kelisi (Wikipedia).

teaching rather than traditional knowledge (Saibai Islanders were converted to Christianity after the arrival of the London Missionary Society in 1871) and concluded that (ibid:6):

“...unless its fall was actually observed by reliable witnesses, I am afraid that the meteoritic origin of this specimen would not be accepted on the evidence

of legendary reports. It would be unsafe to say that a body with the characteristics of andesite might not reach the earth from space, but

possibilities are not probabilities, and such a substance would have to furnish unexceptional credentials before it would be admitted amongst meteorites.”

During the period MacGregor was governor of Queensland (1909-1914), a man named Philip Bell located a large metallic stone, partly buried in the ground, on Saibai (Bell 1930:27). The section of stone above the ground measured 1.8 x 1.5 m wide and 0.9 m high and was estimated to weigh more than 50 tonnes. Bell’s attempts to chip off bits of the stone or drill in it were

similar to one from the Awabakal people on the Central Coast of New South Wales, who have traditions about an event that occurred at Lake Macquarie (called *Kurra Kurran*) (Threlkeld 1834:51, Hamacher and Norris 2009:69). In the tradition, people killed lice by roasting them on a fire. This angered a sky being, which took the form of a giant goanna. He cast down a fiery stone from the sky that killed many people at Fennel Bay. Bits of petrified wood that jet out of the soil represent fragments of the preserved fallen stone.

Another detailed account of this oral tradition is provided in Anonymous (1913), but does not mention the fall of a stone or the burning of lice. Instead, it describes the flood originating from a flood. According to this version, the Aboriginal people of Brisbane called Helidon Spring *Gooneol Goong* meaning "water from the moon". The Aboriginal people near what is now Toowoomba called the spring *Woorrajimigh*, meaning "the place where the clouds fall down." The identity of the person who collected the story and the Aboriginal person(s) who shared it are not given, so the account must be taken cautiously. The close association of the first oral tradition with similar Aboriginal traditions along the eastern coast indicates that the oral tradition is not a fabrication, although there seem to be multiple variations of the tradition. The site is now a caravan park and there are no recorded meteorite finds from the area.

Other Accounts

Lake Argyle in the far northeastern corner of Western Australia was formed when the Australian government dammed the Ord River in 1963. In 1986, Aboriginal artist Rover Thomas (c1926-1998) said the place that is now

Lake Argyle was where a star fell to Earth long ago (Deutscher and Hackett n.d.). No meteorites or impact craters are registered from the area.

In some cases, Aboriginal communities attributed cosmic origins to terrestrial objects. In 1885, a large half-ton coral "stone" was identified by a constable north of Carnarvon, Western Australia that local Aboriginal people claimed "fell from the moon" (Anonymous 1885a,b).



Across Australia, transient celestial phenomena, such as meteors, comets, eclipses, and aurorae, were generally seen as omens of death and disease or attributed to the actions of spirits and evil beings (Hamacher and Norris 2010, 2011a,b, Hamacher 2013, respectively). This explains the generally negative and fearful reaction of Indigenous people to witnessing significant meteoritic events such as airbursts (exploding meteors) and meteorite impacts. Examples not described in previous research include airbursts over Bairnsdale, Victoria in May 1880 (Melbourne Chamber of Commerce 1880:3), Currawillinghi homestead in far southern Queensland in September 1890 (Anonymous 1890), and Bellenger Heads in northern coastal New South Wales in June 1899 (Anonymous 1899). Near misses - where people were nearly struck by falling meteorites - are recorded from the Herbert River Valley in northern Queensland in November 1882 (Lumholtz 1889:175-176) and the Swan River in Perth, Western Australia in July 1838 (Anonymous 1838:3). These are only a few examples of many recorded in historical documents.

It should be emphasized that many Indigenous Australians, particularly those in more remote regions, maintain

strong traditions despite 225 years of colonisation, Christian conversion, and Western education. Sometimes these traditions mix with Western understandings of the world and highlight issues with cultural sensitivity, even among Aboriginal people themselves.

While working as a consultant in Kakadu National Park (Northern Territory) the author and a colleague developed an Aboriginal astronomy night tour for a local Indigenous-owned tourism company. While training the tour guides (most of whom were Aboriginal) during a night session, two bright meteors streaked across the sky. One of the Aboriginal guides said that in local Gagudju traditions, the appearance of a meteor signified that someone had died. Although the tour guides were lighthearted about the appearance of the meteors, the following morning met with somber news: during the night, two members of the local Aboriginal community had passed away. Some of the training had to be postponed while the Aboriginal guides were engaged in “sorry business” (a period of ceremony and mourning when someone passes away).

There is little doubt that the guides discussed the appearance of the two meteors and it is possible that the event reinforced a cultural perception that meteors were portents of death. This event highlights the importance of acknowledging cultural sensitivity and serves to show the influence of oral traditions on contemporary Aboriginal cultures.



This report analyzes 11 oral traditions and historical records (in eight groups) that have been identified since the Hamacher and Norris (2009) study,

which challenges the previous conclusion that no meteoritic events recorded in oral tradition led to the (re)discovery of meteorites and/or craters that were previously unknown to Western science.

The oral traditions of the Narraburra, Henbury, Monte Collina, and Murnpeowie meteorites are plausible instances of Aboriginal oral traditions leading to (or coinciding with) colonial identification of the meteorites (supporting hypothesis #2). H.C. Russell confirms this in regards to the Narraburra meteorite, but the Murnpeowie and Monte Collina meteorites are unconfirmed.

Aboriginal views of Henbury are only recorded in the literature after it was suspected of being an impact site, but the presence of oral traditions describing its formation suggest its origin was known to Aboriginal people before colonisation (supporting hypotheses #1 and #2). The Henbury account is important in demonstrating the longevity of oral traditions. If the tradition is a living memory of the event, it is well over 4,500 years old (supporting hypothesis #3). Unlike Henbury, analysis of the Narraburra meteorite's exposure to Earth's atmosphere suggests the fall was not witnessed, but rather inferred.

The accounts from Saibai, Lilydale, Benyeo, Monte Barcoola, Helidon Springs, Lake Argyle, and Carnarvon are not associated with a confirmed meteorite or impact crater. Some of these accounts could potentially be confirmed (such as the alleged meteoritic materials used to build the Benyeo Homestead, the (re)discovery of a meteorite on Saibai, or a meteorite west of Monte Barcoola.

The descriptions of Lilydale, Lake

Argyle, Carnarvon, and Helidon Springs are not likely to be associated with a meteorite or crater. These seem to be either misidentifications or mythological/symbolic in nature.

This is not conclusive and future research could shed more light on the relationship between these places and oral traditions of meteoritic events.

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Figure 3: Places described in the text. Map by the author.



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